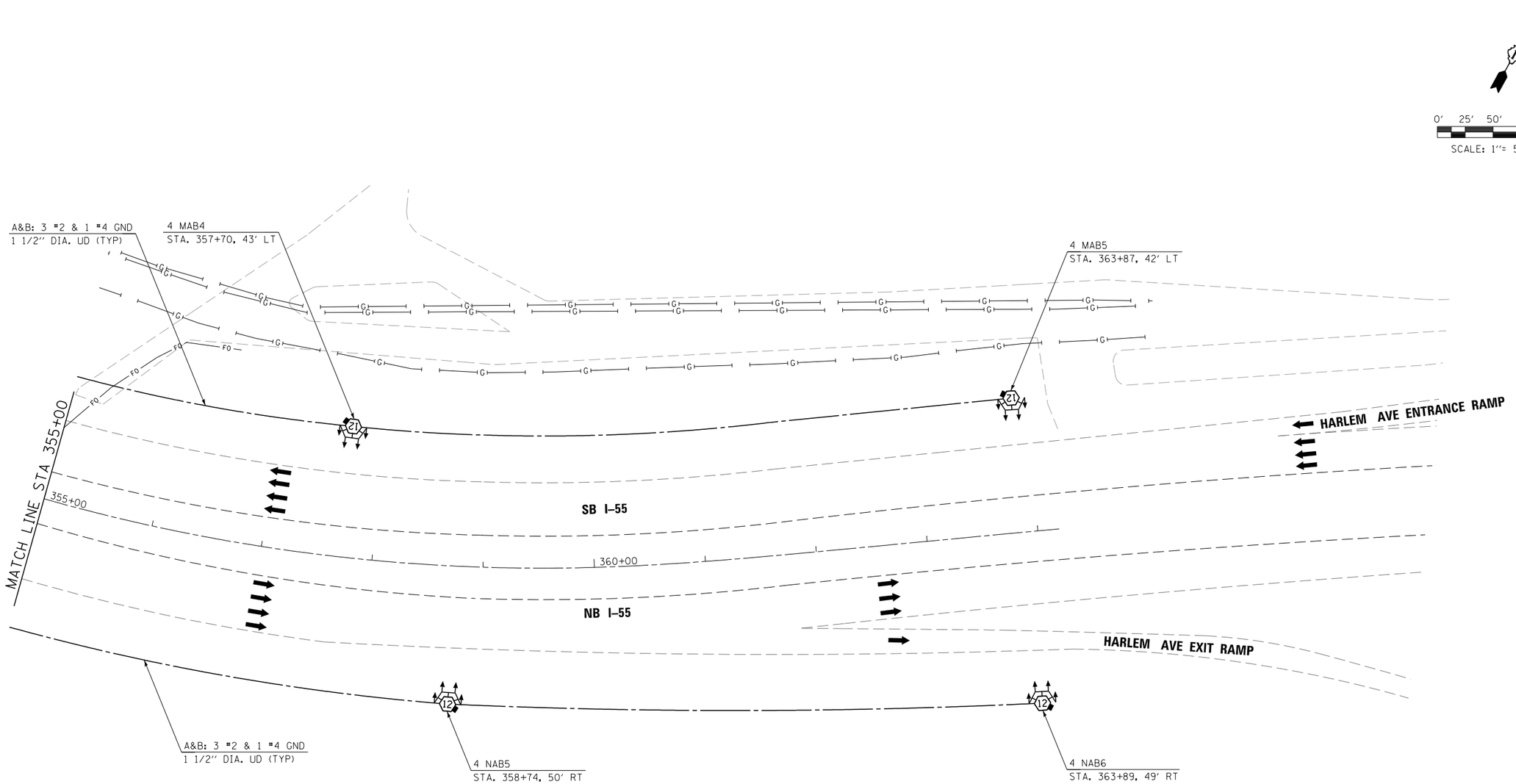
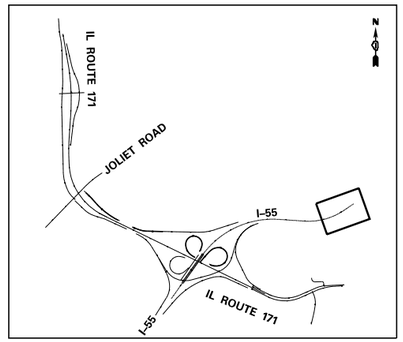
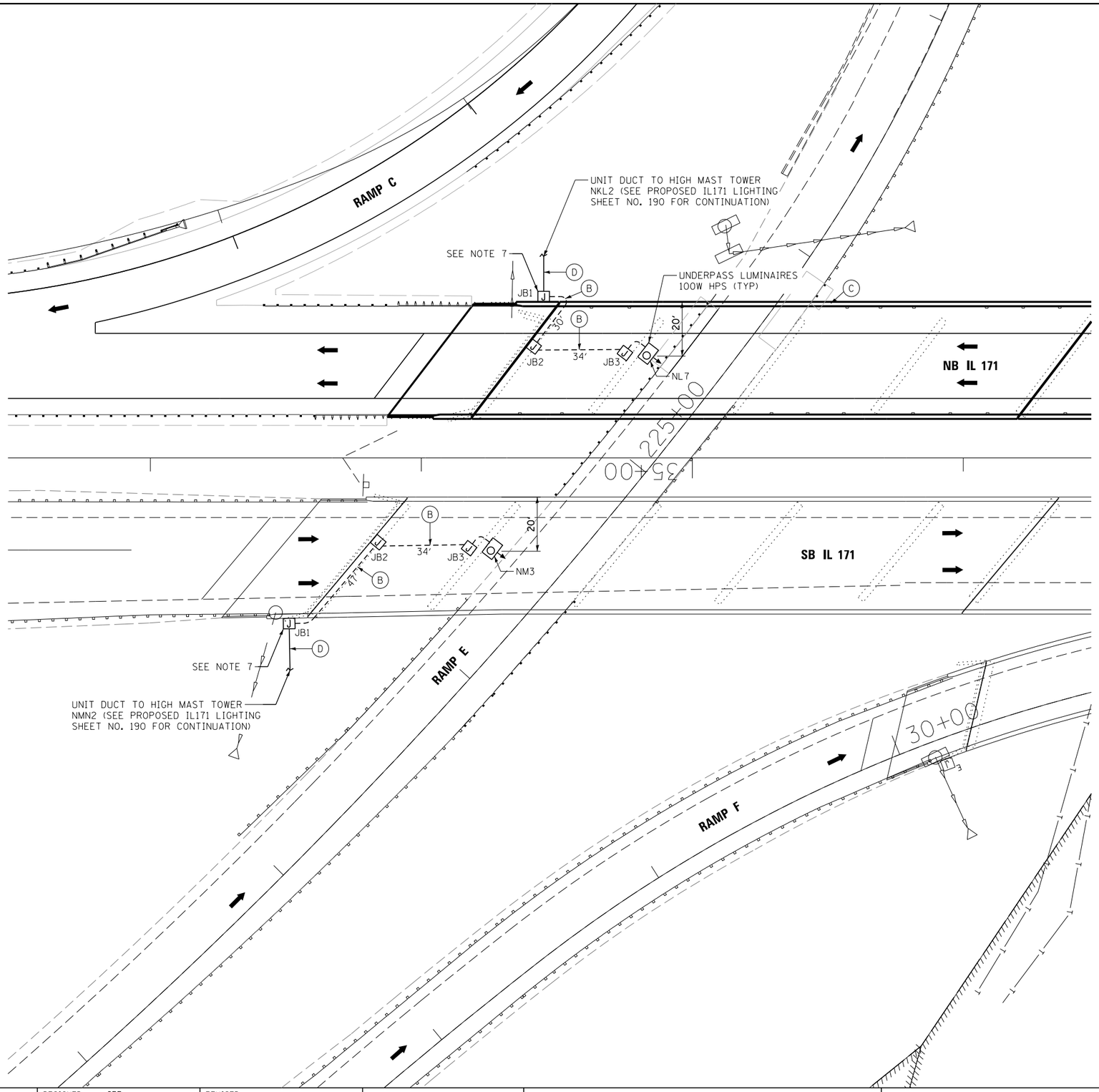




FILE NAME =	DESIGNED - GRR	REVISED -	benesch engineers · scientists · planners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED LIGHTING PLAN I-55
...\D160W75-sht-I55-prlight-NB-14.dgn	DRAWN - JLW	REVISED -			
USER NAME = jworthington	CHECKED - GHT	REVISED -			SCALE: 1"=50' SHEET 31 OF 61 SHEETS STA. TO STA.
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -			

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	201
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



N

0' 10' 20' 40'

SCALE: 1"= 20'

LEGEND

(A) CONDUIT ATTACHED TO STRUCTURE, 1" DIA. PVCC RGC WITH 3-1/C NO. 10 AND 1/C NO. 10 GND.

(B) CONDUIT ATTACHED TO STRUCTURE, 1" DIA. PVCC RGC WITH 2-1/C NO. 10 AND 1/C NO. 10 GND.

(C) CONDUIT EMBEDDED IN STRUCTURE, 2" DIA. PVC WITH 3-1/C NO. 2 AND 1/C NO. 4 GND.

(D) CONDUIT ATTACHED TO STRUCTURE, 2 1/2 " DIA. PVCC RGC WITH UNIT DUCT AS NOTED ON PLANS (FOR TRANSITION TO UNDERGROUND) - 10'

JB1 JUNCTION BOX, STAINLESS STEEL, 18"x12"x6", ATTACHED TO PARAPET

JB2 JUNCTION BOX, STAINLESS STEEL, 12"x12"x6", ATTACHED TO ABUTMENT

JB3 JUNCTION BOX, STAINLESS STEEL, 6"x6"x4", ATTACHED TO TOP OF PIER CAP

NOTES:

1. UNDERPASS LUMINAIRES SHALL BE MOUNTED TO THE FACE OF PIERS AT A MOUNTING HEIGHT OF APPROXIMATELY 15'.
2. THE DISTANCES SHOWN BETWEEN THE UNDERPASS LUMINAIRE IS MEASURED FROM CENTER OF LUMINAIRES.
3. THE CABLE SPLICES AT THE JUNCTION BOX SHALL BE DONE ACCORDING TO THE SPLICING DETAIL SHOWN ON IDOT-D1 STANDARD DETAIL DRAWING NO. BE-702 PROVIDE DOUBLE POLE FUSE HOLDERS WITH 5 AMP FUSE AND SOLID NEUTRAL.
4. UNDERPASS LUMINAIRES SHALL BE INSTALLED AS SHOWN ON IDOT-D1 STANDARDS DRAWING NO. BE-902. SEE THIS DETAIL FOR FURTHER INFORMATION ON CONDUIT ROUTING AND INSTALLATION.
5. AT ALL LOCATIONS WHERE EXPANSION/DEFLECTION CAN OCCUR IN CONDUIT ATTACHED TO STRUCTURE AND FOR CONNECTION TO LUMINAIRES THE CONTRACTOR SHALL UTILIZE LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT.
6. SEE LIGHTING PLAN SHEET FOR CONDUIT EMBEDDED IN PARAPET WALL AND ASSOCIATED CABLING.
7. CONTRACTOR SHALL PROVIDE AND INSTALL TWO POLE WEATHERPROOF FUSE HOLDERS INSIDE THE FIRST UNDERPASS LIGHTING JUNCTION BOX. PROVIDE 10A FUSE AND SOLID NEUTRAL FOR EACH FUSE HOLDER.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-underpass-RampE.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -

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DEPARTMENT OF TRANSPORTATION

UNDERPASS LIGHTING PLAN
RAMP E UNDER IL171

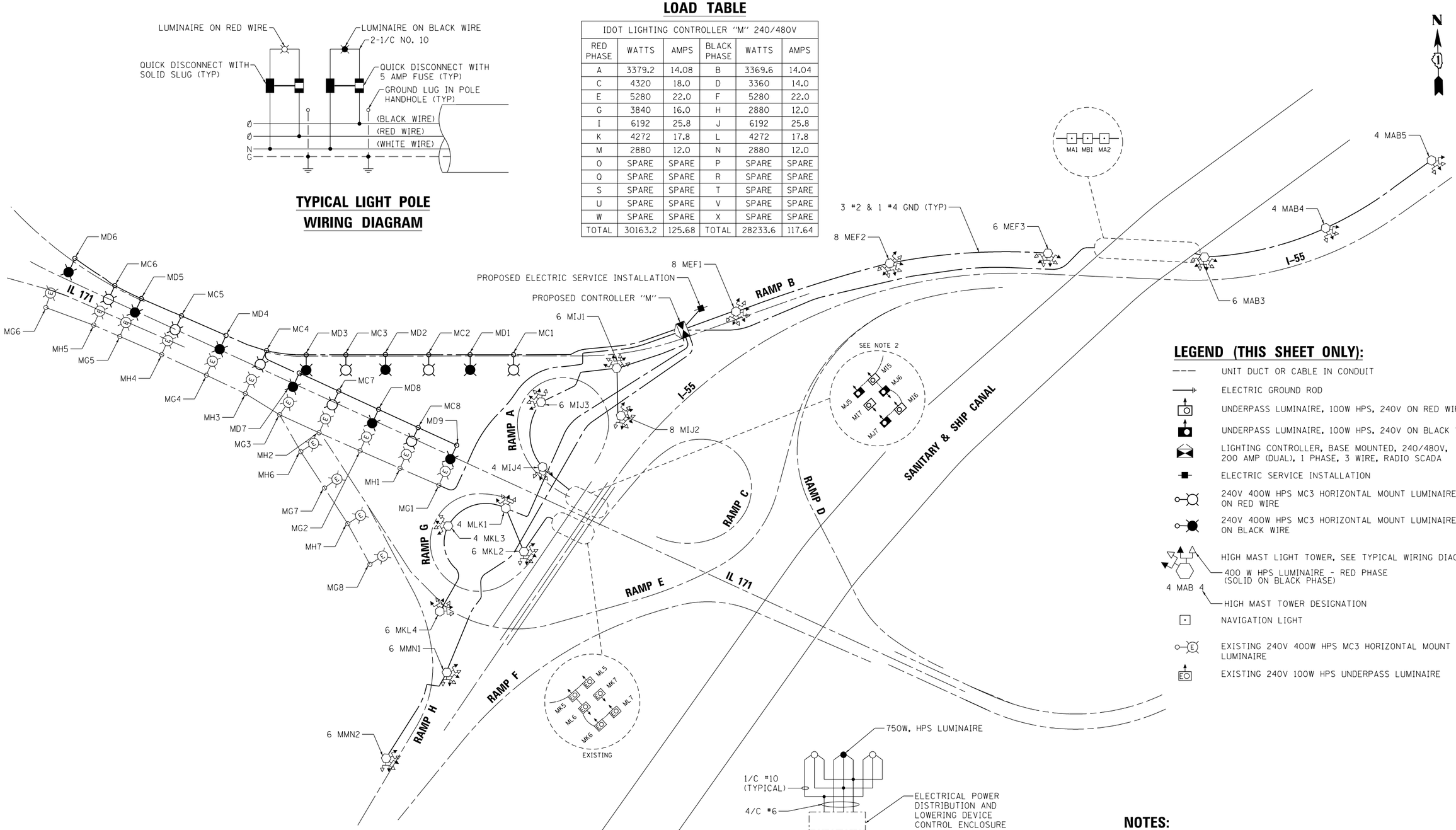
SCALE: 1"=20' | SHEET 32 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	202
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

LOAD TABLE

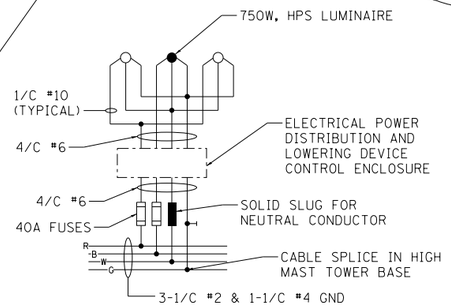
IDOT LIGHTING CONTROLLER "M" 240/480V					
RED PHASE	WATTS	AMPS	BLACK PHASE	WATTS	AMPS
A	3379.2	14.08	B	3369.6	14.04
C	4320	18.0	D	3360	14.0
E	5280	22.0	F	5280	22.0
G	3840	16.0	H	2880	12.0
I	6192	25.8	J	6192	25.8
K	4272	17.8	L	4272	17.8
M	2880	12.0	N	2880	12.0
O	SPARE	SPARE	P	SPARE	SPARE
Q	SPARE	SPARE	R	SPARE	SPARE
S	SPARE	SPARE	T	SPARE	SPARE
U	SPARE	SPARE	V	SPARE	SPARE
W	SPARE	SPARE	X	SPARE	SPARE
TOTAL	30163.2	125.68	TOTAL	28233.6	117.64

TYPICAL LIGHT POLE WIRING DIAGRAM



LEGEND (THIS SHEET ONLY):

- UNIT DUCT OR CABLE IN CONDUIT
- ELECTRIC GROUND ROD
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON RED WIRE
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON BLACK WIRE
- LIGHTING CONTROLLER, BASE MOUNTED, 240/480V, 200 AMP (DUAL), 1 PHASE, 3 WIRE, RADIO SCADA
- ELECTRIC SERVICE INSTALLATION
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON RED WIRE
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON BLACK WIRE
- HIGH MAST LIGHT TOWER, SEE TYPICAL WIRING DIAGRAM
- 400 W HPS LUMINAIRE - RED PHASE (SOLID ON BLACK PHASE)
- 4 MAB 4 — HIGH MAST TOWER DESIGNATION
- NAVIGATION LIGHT
- EXISTING 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE
- EO — EXISTING 240V 100W HPS UNDERPASS LUMINAIRE



TYPICAL HIGH MAST TOWER WIRING DIAGRAM

NOTES:

1. EXISTING LIGHTING INSTALLATIONS ARE "FOR INFORMATION ONLY".
2. NORTHBOUND UNDERPASS LIGHTS, SHOWN ARE PROPOSED AND WILL BE INSTALLED BY OTHERS UNDER CONTRACT 60W78.
3. THE CONTRACTOR SHALL TAKE CONTROL AND MAINTAIN ALL LIGHTING CIRCUITS ON CONTROLLER "M" EXCEPT FOR THE EXISTING AND PROPOSED I-55 UNDERPASS LIGHTING WHICH WILL BE MAINTAINED BY CONTRACT 60W78. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-wiring-01.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -

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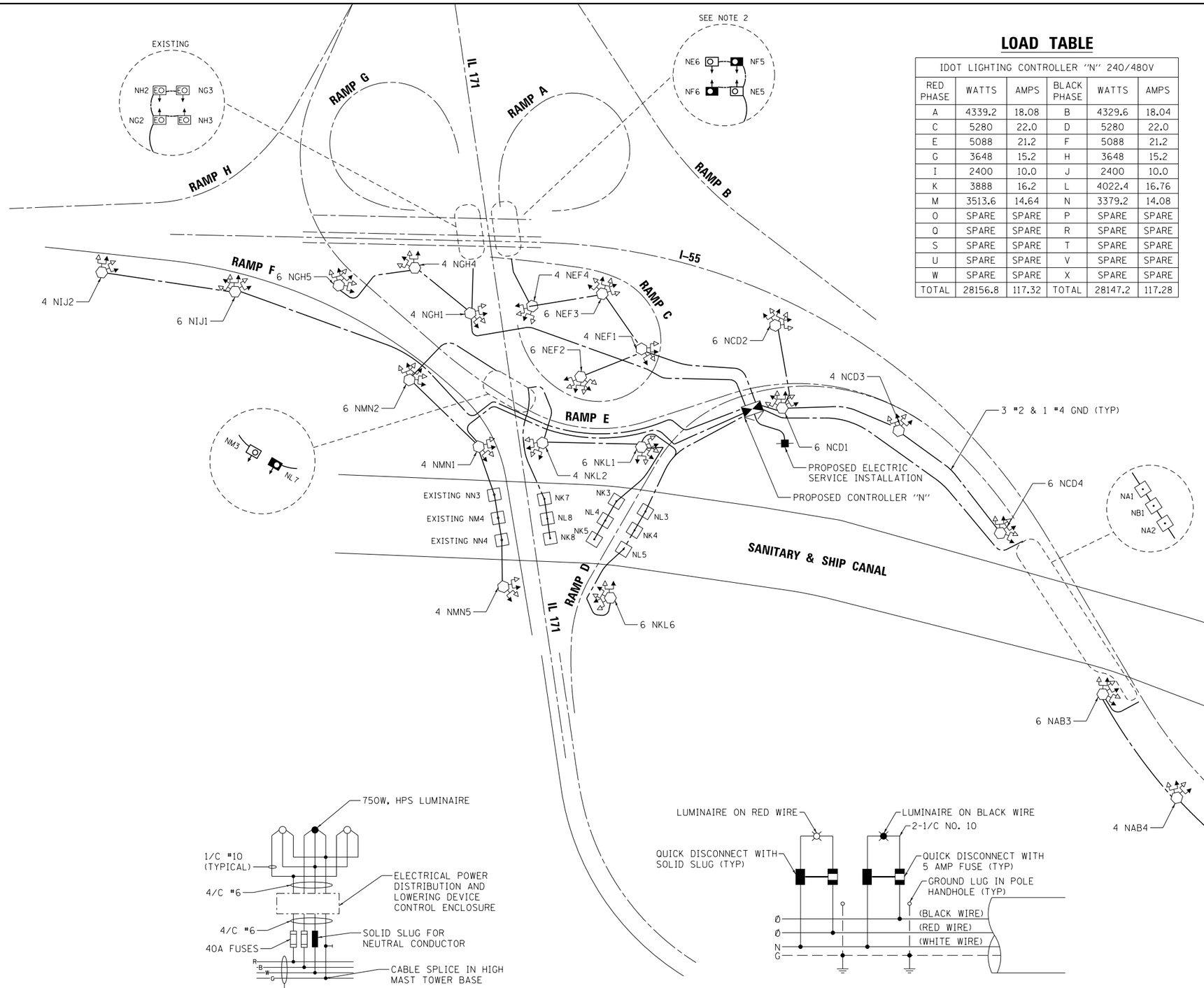
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER "M"
WIRING DIAGRAM

SCALE: N.T.S. | SHEET 33 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	203
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



LOAD TABLE

IDOT LIGHTING CONTROLLER "N" 240/480V					
RED PHASE	WATTS	AMPS	BLACK PHASE	WATTS	AMPS
A	4339.2	18.08	B	4329.6	18.04
C	5280	22.0	D	5280	22.0
E	5088	21.2	F	5088	21.2
G	3648	15.2	H	3648	15.2
I	2400	10.0	J	2400	10.0
K	3888	16.2	L	4022.4	16.76
M	3513.6	14.64	N	3379.2	14.08
O	SPARE	SPARE	P	SPARE	SPARE
Q	SPARE	SPARE	R	SPARE	SPARE
S	SPARE	SPARE	T	SPARE	SPARE
U	SPARE	SPARE	V	SPARE	SPARE
W	SPARE	SPARE	X	SPARE	SPARE
TOTAL	28156.8	117.32	TOTAL	28147.2	117.28

LEGEND (THIS SHEET ONLY):

- UNIT DUCT OR CABLE IN CONDUIT
- ELECTRIC GROUND ROD
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON RED WIRE
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON BLACK WIRE
- LIGHTING CONTROLLER, BASE MOUNTED, 240/480V, 200 AMP (DUAL), 1 PHASE, 3 WIRE, RADIO SCADA
- ELECTRIC SERVICE INSTALLATION
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON RED WIRE
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON BLACK WIRE
- HIGH MAST LIGHT TOWER, SEE TYPICAL WIRING DIAGRAM
- 400 W HPS LUMINAIRE - RED PHASE (SOLID ON BLACK PHASE)
- 4 MAB 4 — HIGH MAST TOWER DESIGNATION
- NAVIGATION LIGHT
- EO — EXISTING 240V 100W HPS UNDERPASS LUMINAIRE

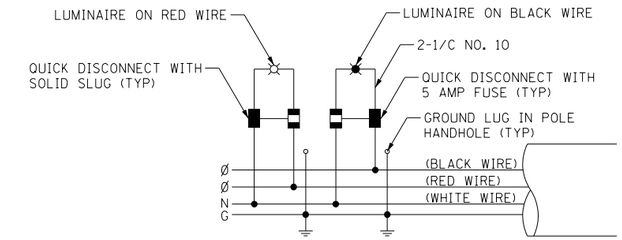
NOTES:

1. EXISTING LIGHTING INSTALLATIONS ARE "FOR INFORMATION ONLY".
2. NORTHBOUND UNDERPASS LIGHTS AT I-55 SHOWN ARE PROPOSED AND WILL BE INSTALLED BY OTHERS UNDER CONTRACT 60W78.
3. THE CONTRACTOR SHALL TAKE CONTROL AND MAINTAIN ALL LIGHTING CIRCUITS ON CONTROLLER "N" EXCEPT FOR THE EXISTING AND PROPOSED I-55 UNDERPASS LIGHTING WHICH WILL BE MAINTAINED BY CONTRACT 60W78. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

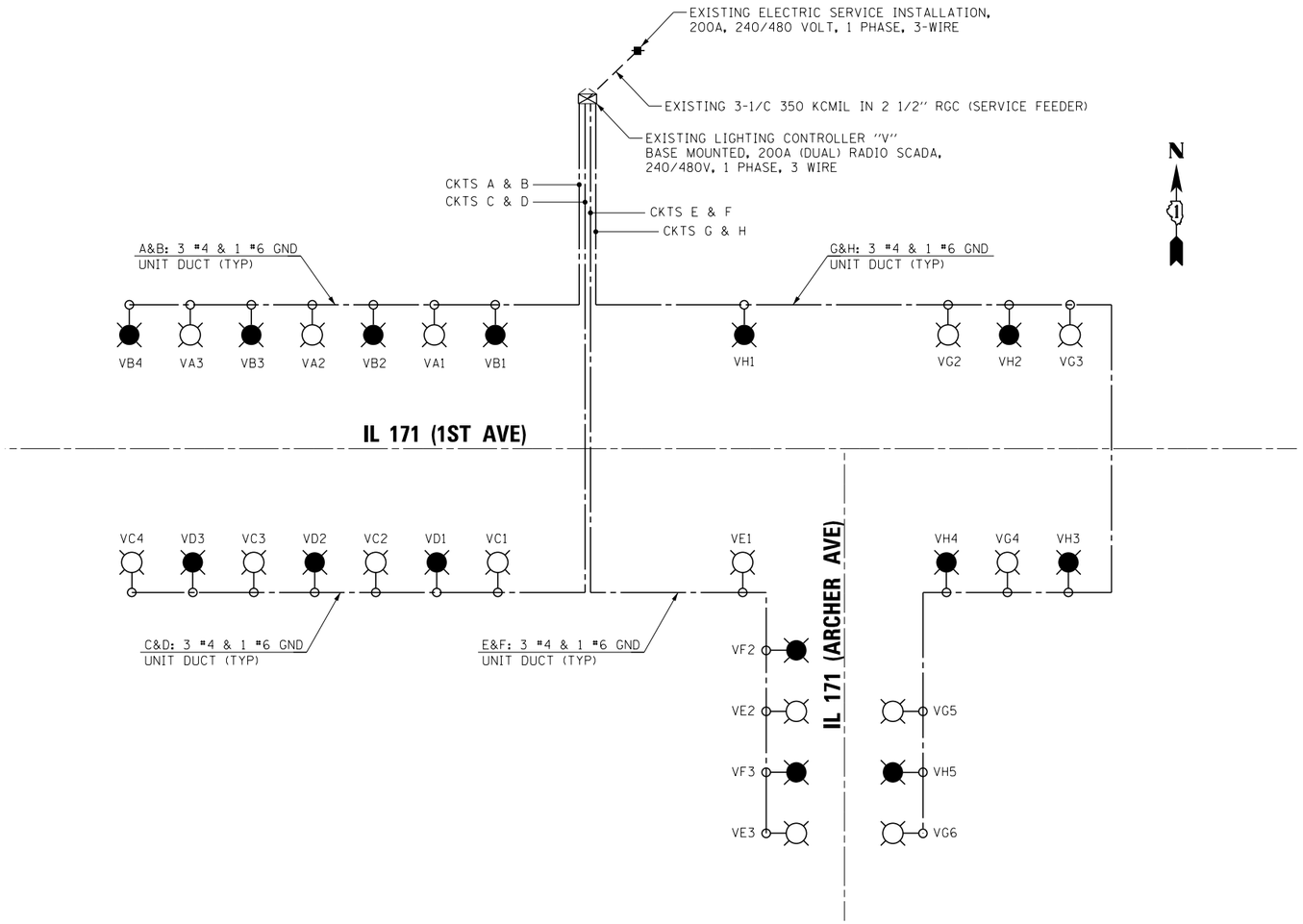
TYPICAL HIGH MAST TOWER WIRING DIAGRAM

TYPICAL LIGHT POLE WIRING DIAGRAM

FILE NAME = ...\D160W75-sht-IL171-wiring-02.dgn	DESIGNED - GRR	REVISED -	benesch engineers · scientists · planners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER "N" WIRING DIAGRAM	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = jworthington	DRAWN - JLW	REVISED -				372/373	2013-037B-R	COOK	787	204
PLOT DATE = 8/31/2015	CHECKED - GHT	REVISED -						CONTRACT NO. 60W75		
	DATE - 6/12/2015	REVISED -			SCALE: N.T.S. SHEET 34 OF 61 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		



TYPICAL LIGHT POLE WIRING DIAGRAM



LOAD TABLE

IDOT LIGHTING CONTROLLER "V" 240/480V					
RED PHASE	WATTS	AMPS	BLACK PHASE	WATTS	AMPS
A	1434	6.0	B	1912	8.0
C	1912	8.0	D	1434	6.0
E	1434	6.0	F	956	4.0
G	2390	10.0	H	2390	10.0
I	SPARE	SPARE	J	SPARE	SPARE
TOTAL	7170	30.0	TOTAL	6692	28.0

NOTES:

1. EXISTING LIGHTING INSTALLATIONS ARE "FOR INFORMATION ONLY".
2. SOUTHBOUND LIGHTS AND LIGHTS AT/EAST OF ARCHER AVE ARE EXISTING TO REMAIN.

LEGEND (THIS SHEET ONLY):

- UNIT DUCT OR CABLE IN CONDUIT
- ELECTRIC GROUND ROD
- EXISTING LIGHTING CONTROLLER, BASE MOUNTED, 240/480V, 200 AMP (DUAL) RADIO SCADA, 1 PHASE, 3 WIRE
- ELECTRIC SERVICE INSTALLATION
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON RED WIRE
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON BLACK WIRE

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-wiring-03.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -

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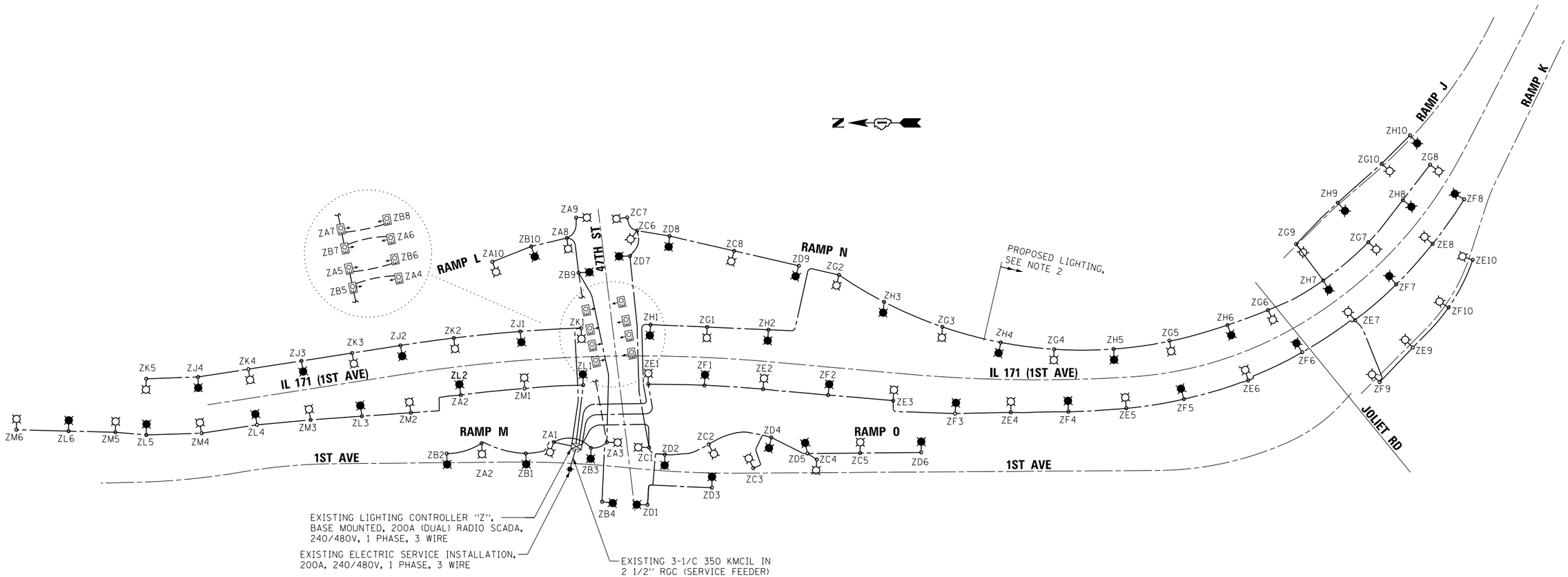
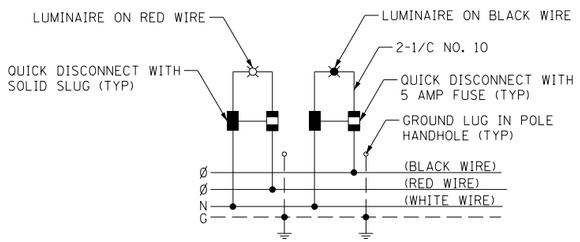
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER "V" WIRING DIAGRAM

SCALE: N.T.S. | SHEET 35 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	205
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		





TYPICAL LIGHT POLE WIRING DIAGRAM

LOAD TABLE

IDOT LIGHTING CONTROLLER "Z" 240/480V					
RED PHASE	WATTS	AMPS	BLACK PHASE	WATTS	AMPS
A	3348	14.0	B	3348	14.0
C	3824	15.9	D	4302	17.9
E	4780	19.9	F	4780	19.9
G	4780	19.9	H	4780	19.9
I	SPARE	SPARE	J	1912	8.0
K	2390	10.0	L	2868	12.0
M	2868	12.0	N	SPARE	SPARE
O	SPARE	SPARE	P	SPARE	SPARE
TOTAL	21990	91.7	TOTAL	21990	91.7

LEGEND

- UNIT DUCT OR CABLE IN CONDUIT
- ELECTRIC GROUND ROD
- EXISTING LIGHTING CONTROLLER, BASE MOUNTED, 240/480V, 200 AMP (DUAL) RADIO SCADA, 1 PHASE, 3 WIRE
- ELECTRIC SERVICE INSTALLATION
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON RED WIRE
- 240V 400W HPS MC3 HORIZONTAL MOUNT LUMINAIRE ON BLACK WIRE
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON RED WIRE
- UNDERPASS LUMINAIRE, 100W HPS, 240V ON BLACK WIRE
- EXISTING 240V 100W HPS UNDERPASS LUMINAIRE

NOTES:

1. EXISTING LIGHTING INSTALLATIONS ARE "FOR INFORMATION ONLY".
2. SOUTHBOUND LIGHTS AND ALL LIGHTS AT THE 47TH STREET INTERCHANGE ARE EXISTING AND WILL REMAIN.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-wiring-04.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -

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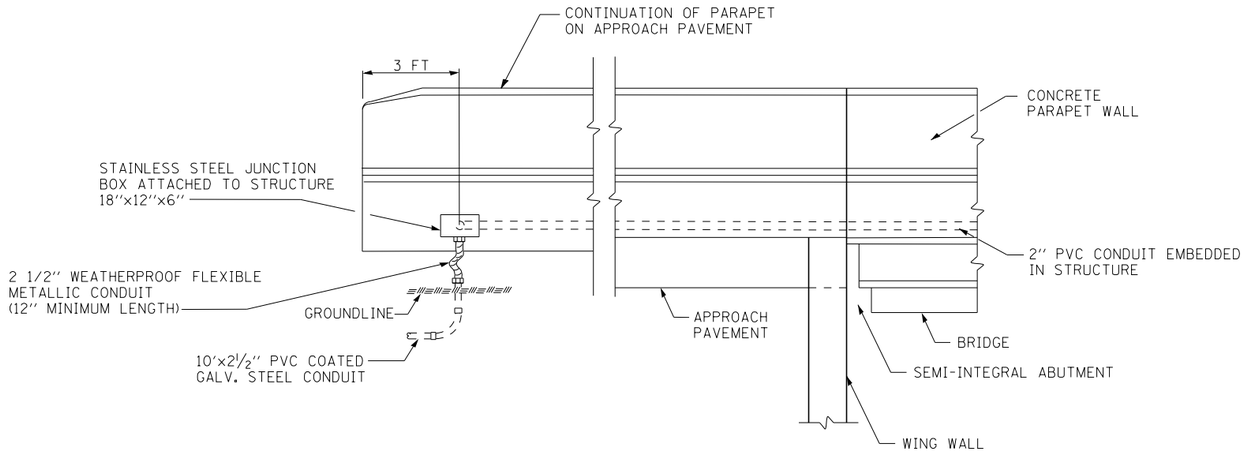
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER "Z" WIRING DIAGRAM

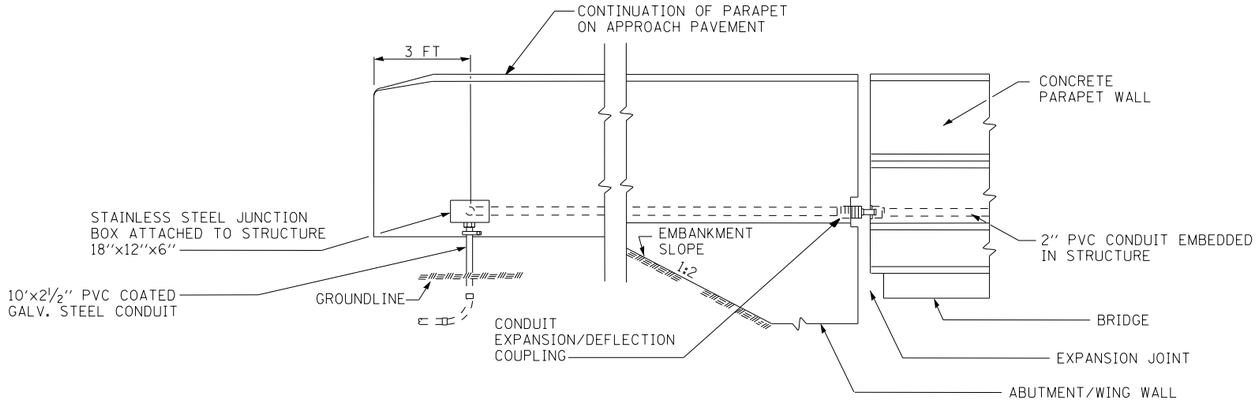
SCALE: N.T.S. | SHEET 36 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	206
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



CONDUIT DETAIL

(SEMI-INTEGRAL ABUTMENT-SN 016-0489)



CONDUIT DETAIL

(OPEN ABUTMENT)

FILE NAME =	DESIGNED - GRR	REVISED -	
...\D160W75-sht-IL171-conduit-detail-NB-01.dgn	DRAWN - JLW	REVISED -	
USER NAME = jworthington	CHECKED - GHT	REVISED -	
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -	

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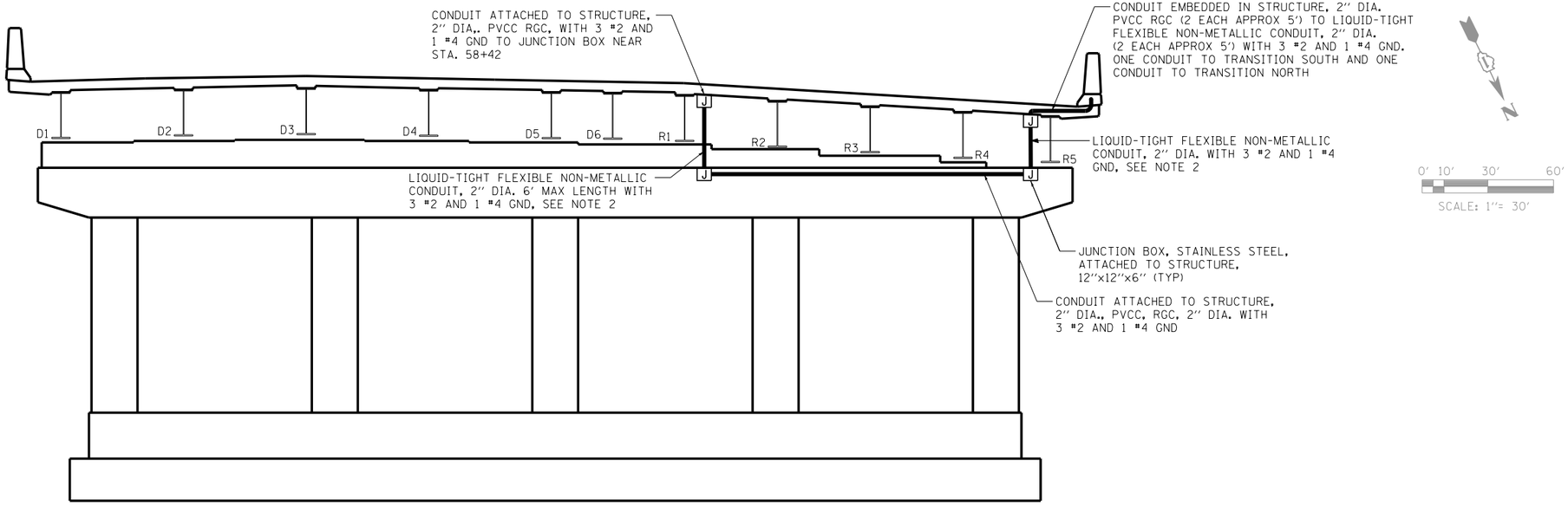
DEPARTMENT OF TRANSPORTATION

CONDUIT TRANSITION DETAILS

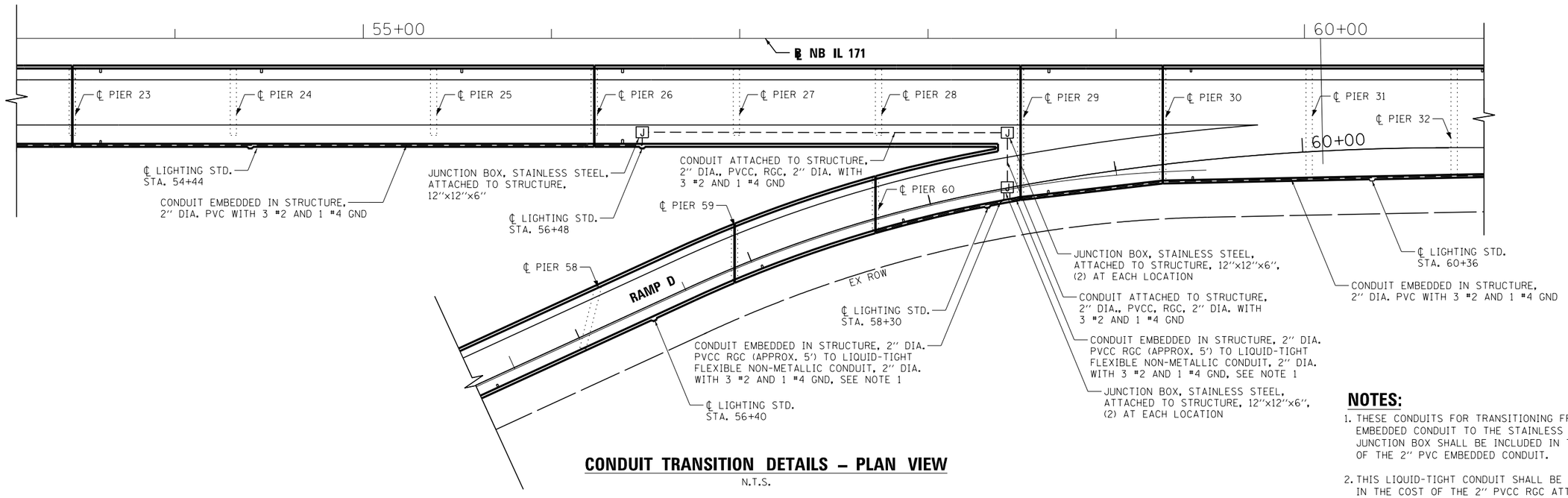
SCALE: N.T.S. | SHEET 37 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	207
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



CONDUIT TRANSITION DETAILS – ELEVATION AT PIER 29 – ℄ BRG. PIER 29 – SN 016-2456

N.T.S.



CONDUIT TRANSITION DETAILS – PLAN VIEW

N.T.S.

NOTES:

1. THESE CONDUITS FOR TRANSITIONING FROM 2" PVC EMBEDDED CONDUIT TO THE STAINLESS STEEL JUNCTION BOX SHALL BE INCLUDED IN THE COST OF THE 2" PVC EMBEDDED CONDUIT.
2. THIS LIQUID-TIGHT CONDUIT SHALL BE INCLUDED IN THE COST OF THE 2" PVCC RGC ATTACHED TO STRUCTURE.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-conduit-detail-NB-02.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 8/31/2015	DATE - 6/12/2015	REVISED -

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DEPARTMENT OF TRANSPORTATION

CONDUIT TRANSITION DETAILS

SCALE: N.T.S. | SHEET 38 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	208
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

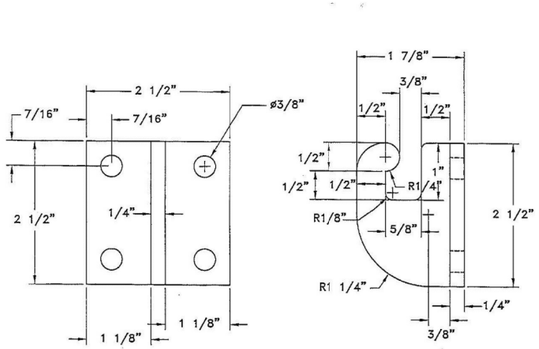


PLATE HOOK

ONE PER SWIVEL REQUIRED

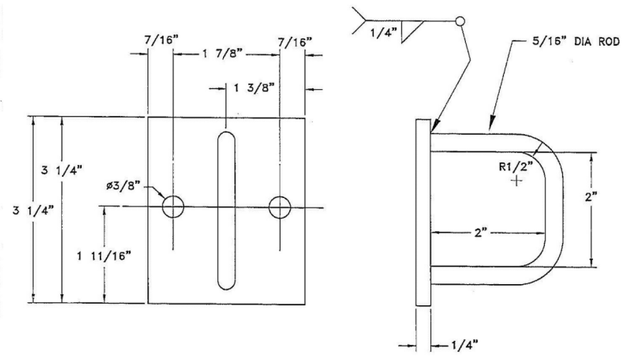
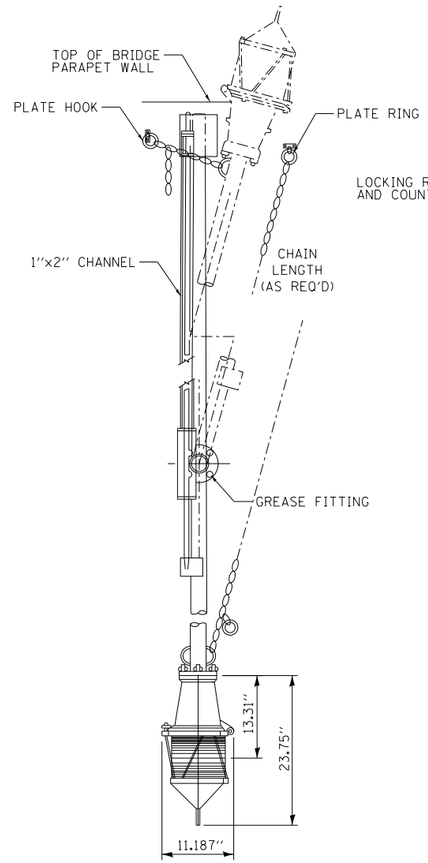


PLATE RING

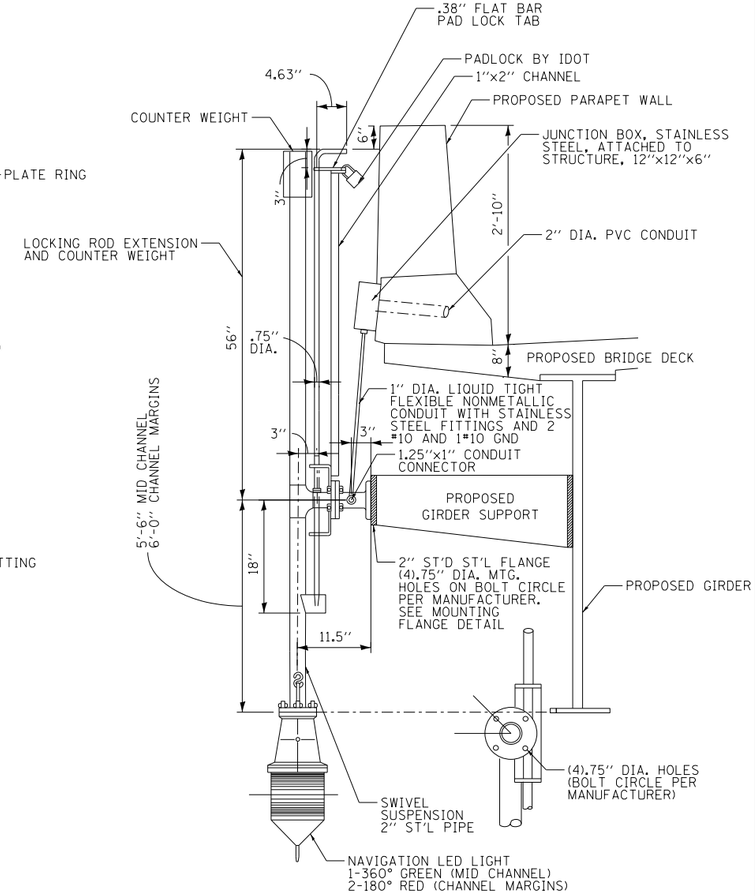
ONE PER SWIVEL REQUIRED

MATERIAL:
CARBON STEEL

FINISH:
HOT DIP GALVANIZED



NAVIGATION LUMINAIRE



NAVIGATION LIGHT FIXTURE AND LOCKING SWIVEL ASSEMBLY FOR NB IL-171 BRIDGE

NOTES:

1. ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE. CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD PRIOR TO SUBMITTING SHOP DRAWINGS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF THE NAVIGATION LIGHT ASSEMBLY.
3. PLATE RING AND PLATE HOOK SHALL BE ATTACHED TO PARAPET WALL. SEE STRUCTURAL PLANS FOR PARAPET WALL DETAILS.
4. FOR DIMENSIONS OF OTHER STRUCTURAL MEMBERS, REFER TO STRUCTURAL DRAWINGS.
5. TOP OF NAVIGATION LIGHT HOUSING SHALL BE AT THE SAME ELEVATION AS THE BOTTOM OF ADJACENT GIRDER.
6. LIQUID TIGHT CONDUIT AND CABLES FROM JUNCTION BOX TO NAVIGATION LIGHT SHALL BE INCLUDED IN THE COST OF THE NAVIGATION LIGHTING SYSTEM.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-NavLight-01.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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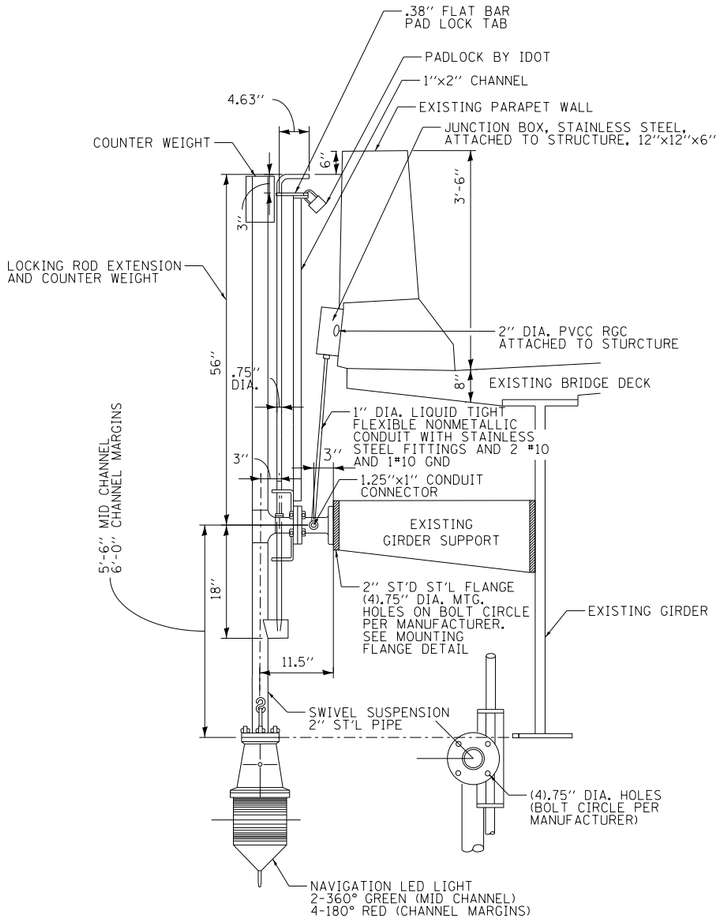
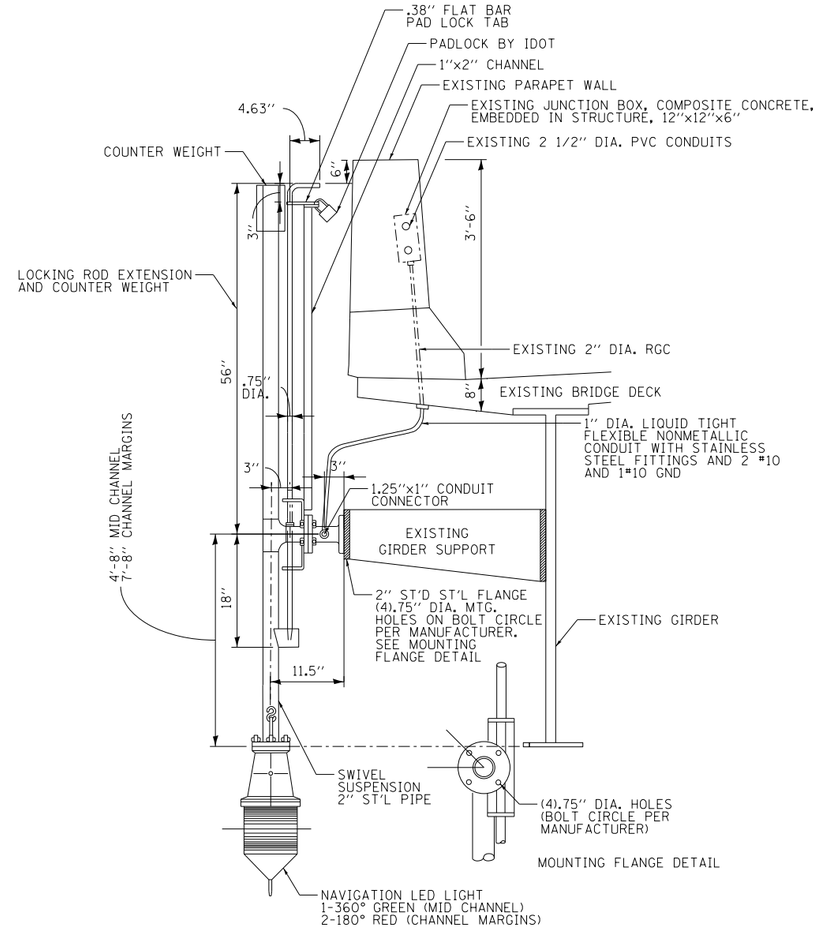
NAVIGATION LIGHTING DETAILS

SCALE: N.T.S. | SHEET 39 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	209
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



NAVIGATION LIGHT FIXTURE AND LOCKING SWIVEL ASSEMBLY RAMP D BRIDGE (NB IL–171 TO NB I–55)



NAVIGATION LIGHT FIXTURE AND LOCKING SWIVEL ASSEMBLY NB I–55 AND SB I–55 BRIDGES

NOTES:

1. ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE. CONTRACTOR SHALL VERIFY DIMENSIONS IN FIELD PRIOR TO SUBMITTING SHOP DRAWINGS.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL OF THE NAVIGATION LIGHT ASSEMBLY.
3. PLATE RING AND PLATE HOOK SHALL BE ATTACHED TO PARAPET WALL. SEE STRUCTURAL PLANS FOR PARAPET WALL DETAILS.
4. FOR DIMENSIONS OF OTHER STRUCTURAL MEMBERS, REFER TO STRUCTURAL DRAWINGS.
5. TOP OF NAVIGATION LIGHT HOUSING SHALL BE AT THE SAME ELEVATION AS THE BOTTOM OF ADJACENT GIRDER.
6. LIQUID TIGHT CONDUIT AND CABLES FROM JUNCTION BOX TO NAVIGATION LIGHT SHALL BE INCLUDED IN THE COST OF THE NAVIGATION LIGHTING SYSTEM.

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-NavLight-02.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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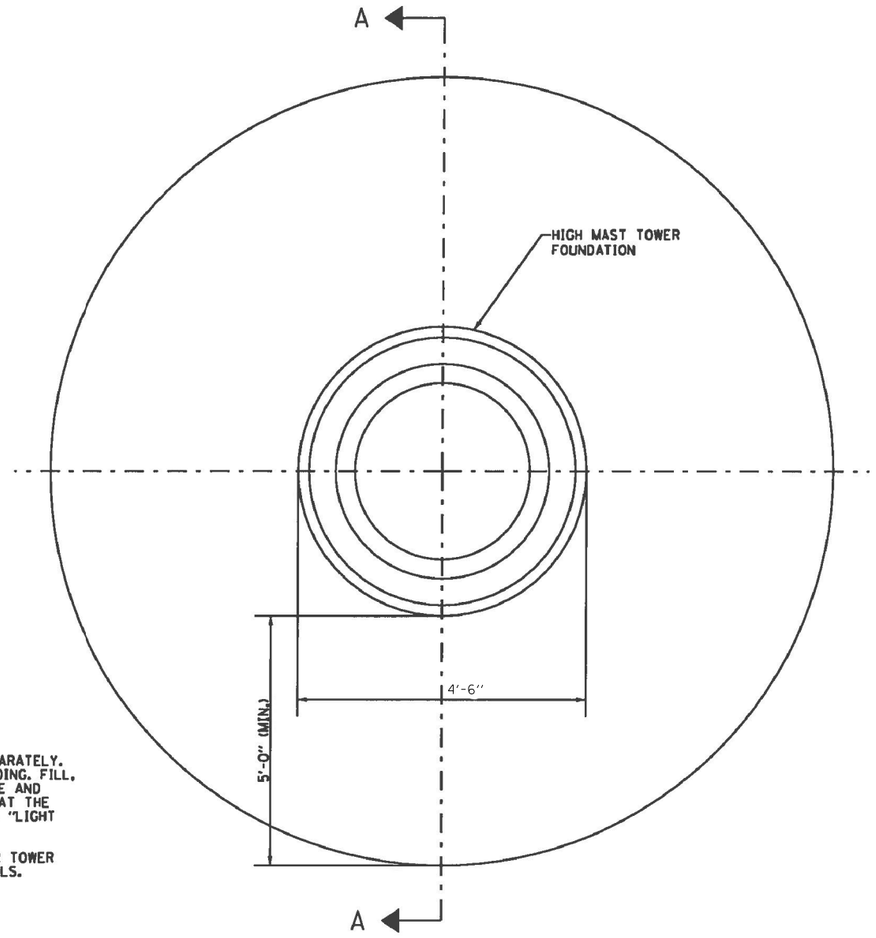
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NAVIGATION LIGHTING DETAILS

SCALE: N.T.S. | SHEET 40 OF 61 SHEETS | STA. | TO STA.

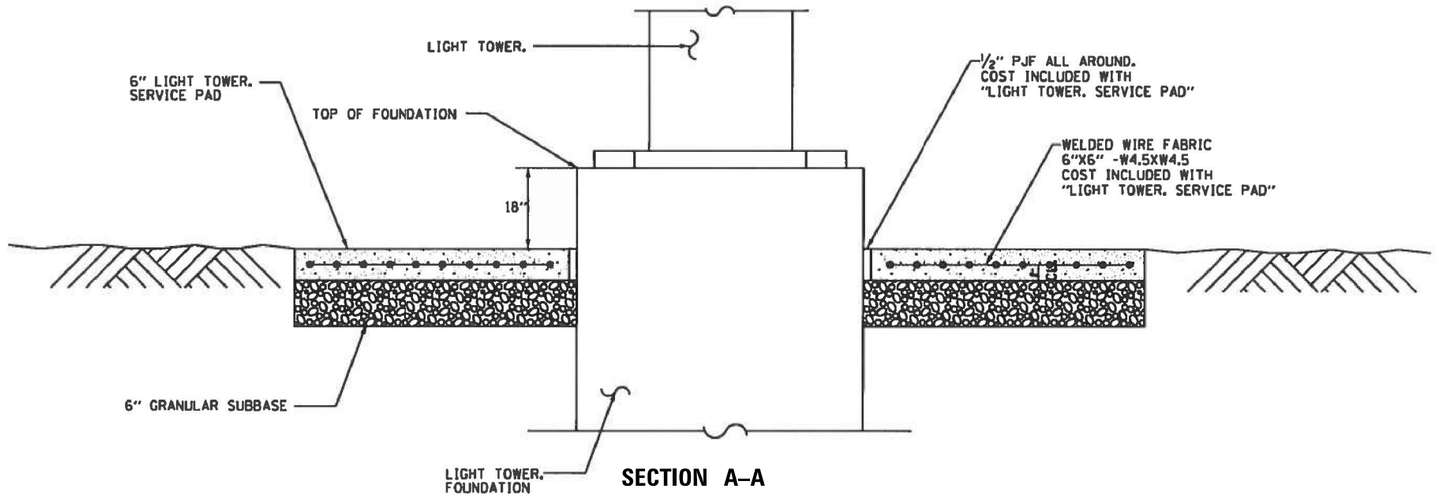
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	210
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



NOTES:

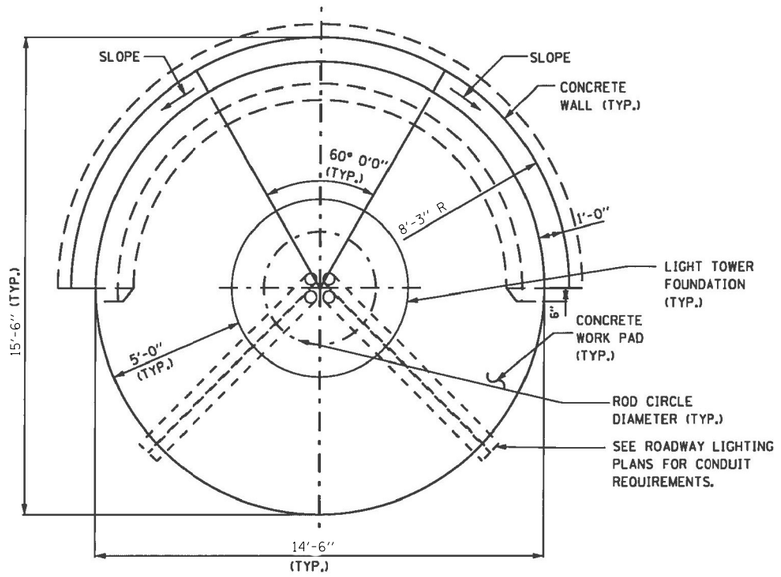
1. THE LIGHT TOWER AND LIGHT TOWER FOUNDATION SHALL BE PAID FOR SEPARATELY. ALL REMAINING WORK INCLUDING GRADING, FILL, SERVICE PAD, RUSTICATION, CONCRETE AND REINFORCEMENT SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR "LIGHT TOWER SERVICE PAD".
2. SEE IDOT-D1 DRAWING NO BE-506 FOR TOWER FOUNDATION AND GROUND WELL DETAILS.

TYPE A – LIGHT TOWER, SERVICE PAD DETAILS – PLAN VIEW

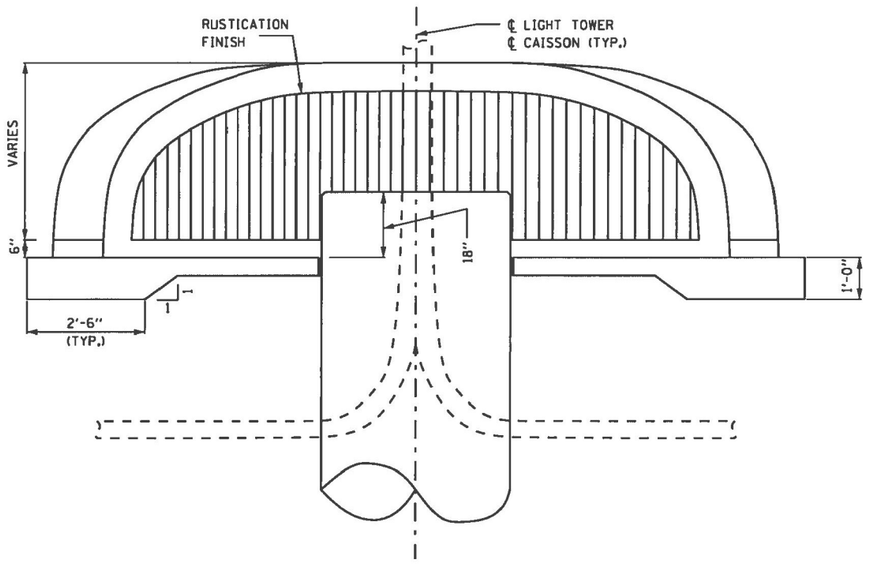


SECTION A–A

FILE NAME = ...\D160W75-sht-IL171-highmast-A.dgn	DESIGNED - GRR	REVISED -	benesch engineers · scientists · planners	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HIGH MAST LIGHT TOWER PAD DETAIL TYPE A	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = jworthington	DRAWN - JLW	REVISED -				372/373	2013-037B-R	COOK	787	211
PLOT DATE = 6/17/2015	CHECKED - GHT	REVISED -						CONTRACT NO. 60W75		
	DATE - 6/12/2015	REVISED -			SCALE: N.T.S. SHEET 41 OF 61 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		



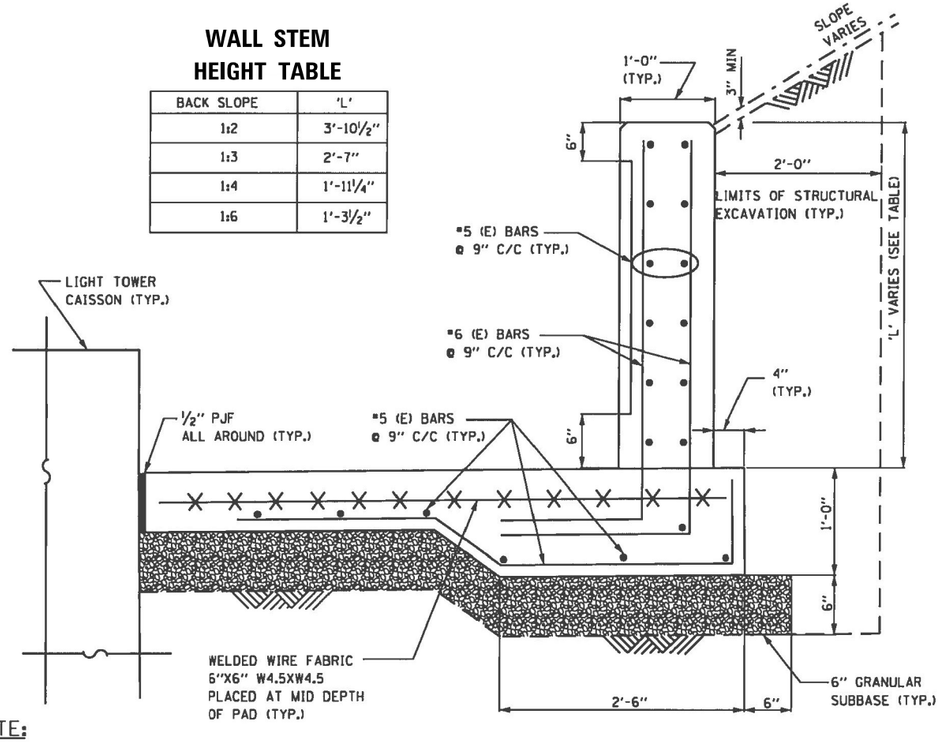
LIGHT TOWER, SERVICE PAD, SPECIAL DETAILS – PLAN VIEW



ELEVATION – WITH WALL

WALL STEM HEIGHT TABLE

BACK SLOPE	'L'
1:2	3'-10½"
1:3	2'-7"
1:4	1'-11¼"
1:6	1'-3½"

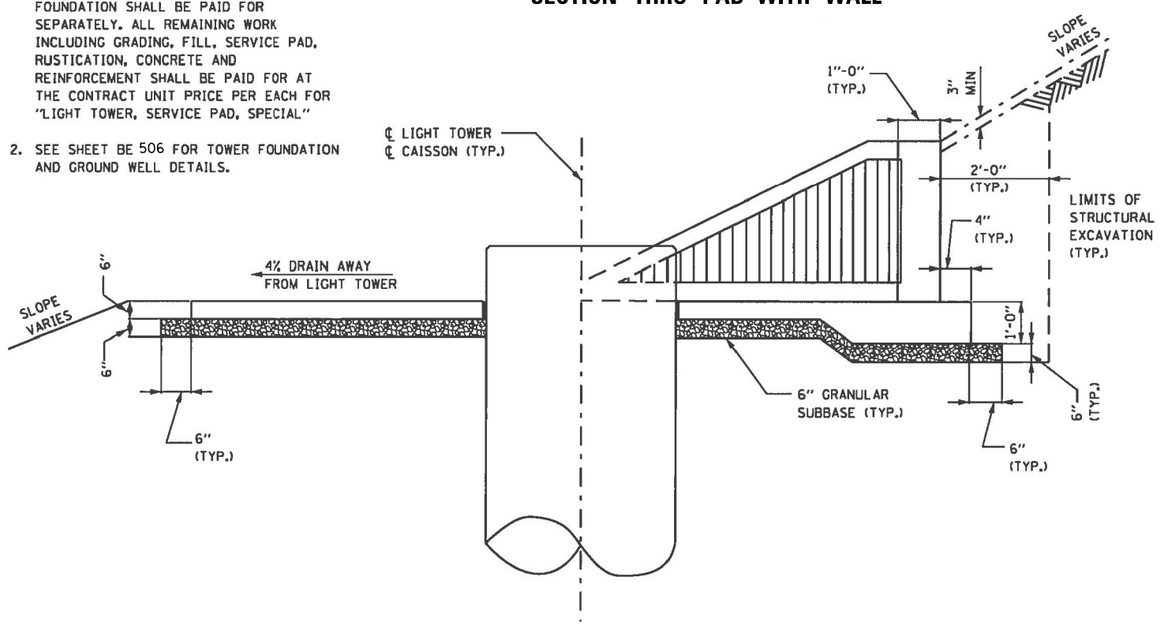


SECTION THRU PAD–WITH WALL

NOTE:

1. THE LIGHT TOWER AND LIGHT TOWER FOUNDATION SHALL BE PAID FOR SEPARATELY. ALL REMAINING WORK INCLUDING GRADING, FILL, SERVICE PAD, RUSTICATION, CONCRETE AND REINFORCEMENT SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR "LIGHT TOWER, SERVICE PAD, SPECIAL"

2. SEE SHEET BE 506 FOR TOWER FOUNDATION AND GROUND WELL DETAILS.



SECTION THRU EMBANKMENT – WITH WALL

FILE NAME =	DESIGNED - GRR	REVISED -
...\D160W75-sht-IL171-highmast-B.dgn	DRAWN - JLW	REVISED -
USER NAME = jworthington	CHECKED - GHT	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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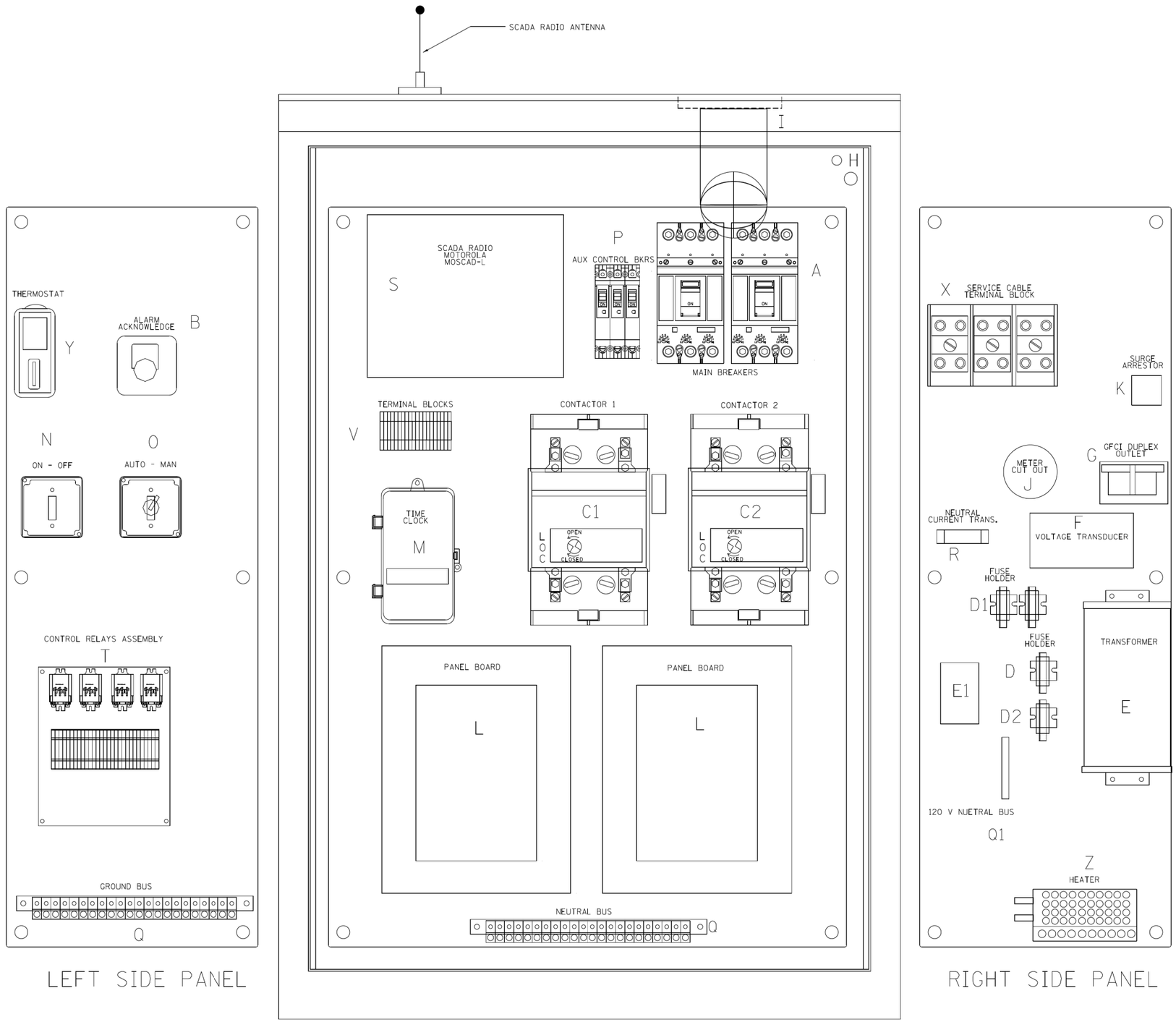
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER PAD DETAIL TYPE B

SCALE: N.T.S. | SHEET 42 OF 61 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	212
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 200 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2 *	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-20 FUSE
D1	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
D2	1	FINGERSAFE FUSE HOLDER WITH KTK-2A FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
E1	1	0.25 KVA 240/120 - 24 VAC TRANSFORMER
F	1	VOLTAGE TRANSDUCER WITH COVERED TERMINALS
G	1	20 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE OR APPROVED EQUAL
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
Q1	1	COPPER NEUTRAL BUS WITH 1 #6 AND 8 #12 CONDUCTOR POINTS
R	1	CURRENT TRANSDUCER
S	1	MOTOROLA MOSCAD-L RADIO, 240 V
T *	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4) . QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X *	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

* TERMINALS SHALL BE COVERED WITH CLEAR PLEXIGLASS SHEET

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		DRAWN -	REVISED - R. TOMSONS 05-11-09
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA

SCALE: NONE | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	213
	BE-205A	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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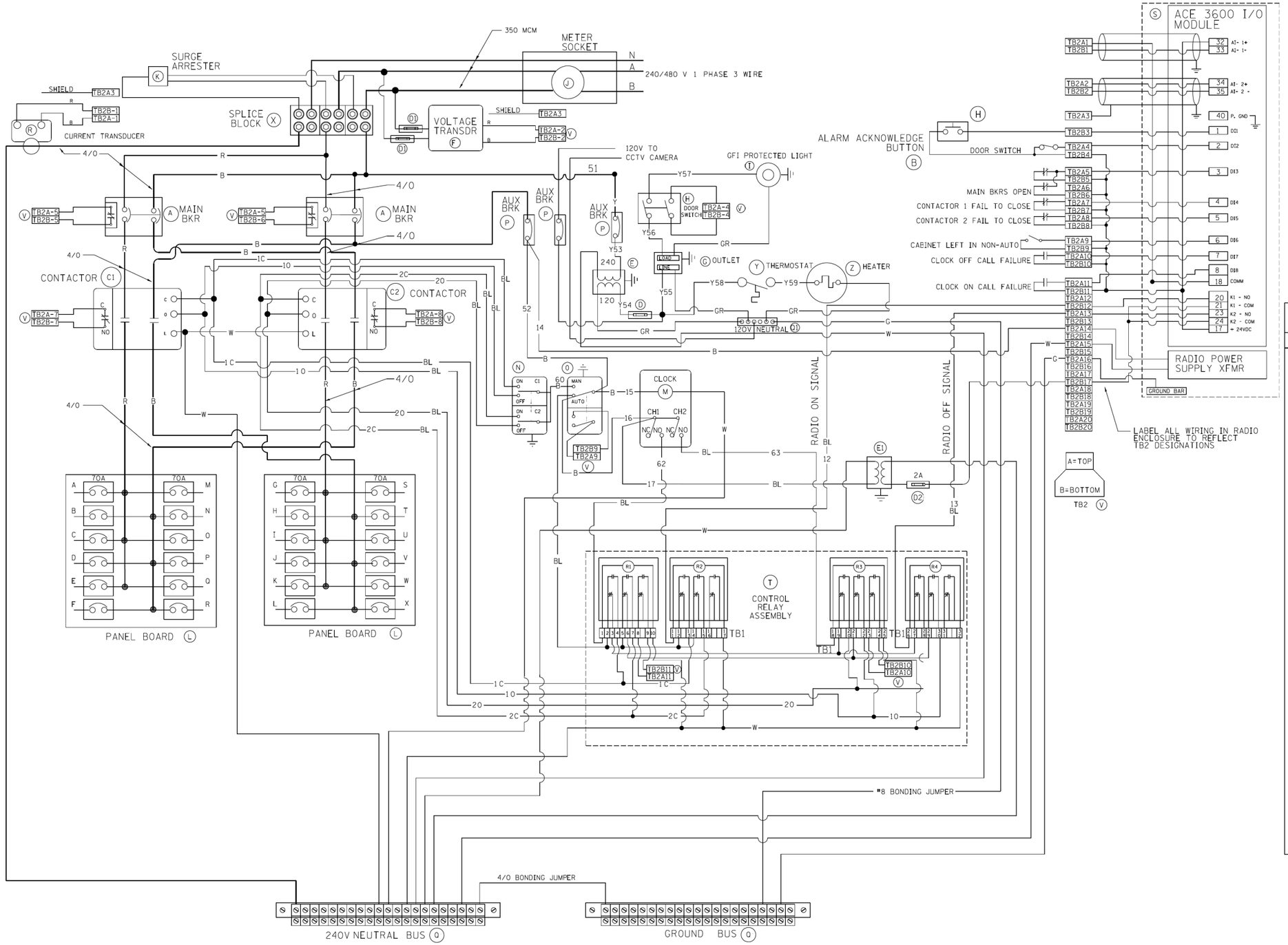

BILL OF MATERIALS

ITEM *	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 200 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-20A FUSE
D1	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
D2	1	FINGERSAFE FUSE HOLDER WITH KTK- 2A FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
E1	1	0.25 KVA 240/120-24 VAC TRANSFORMER
F	1	VOLTAGE TRANSDUCER
G	1	15 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH A-20GQ-B7-K
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
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R	1	CURRENT TRANSDUCER
S	1	MOTOROLA ACE 3600
T	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4) . QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

*

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		DRAWN -	REVISED - R. TOMSONS 05-11-09			372/373	2013-037B-R	COOK	787	214
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10				BE-205B	CONTRACT NO. 60W75		
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE SHEET NO. 2 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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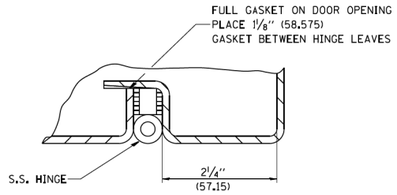
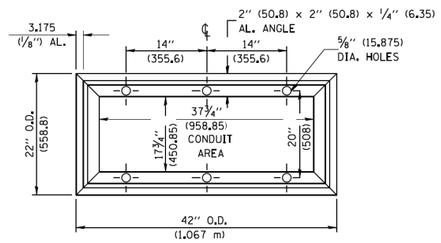
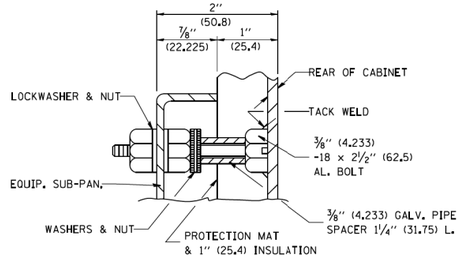


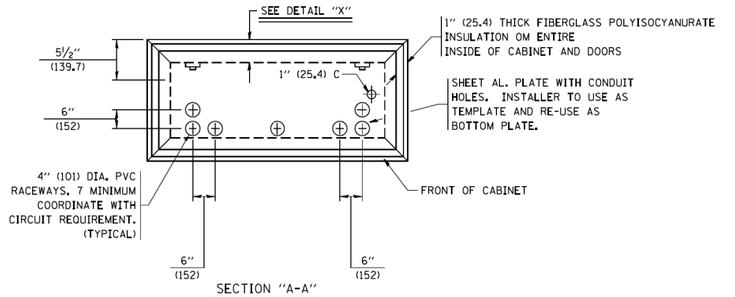
DETAIL "Y"



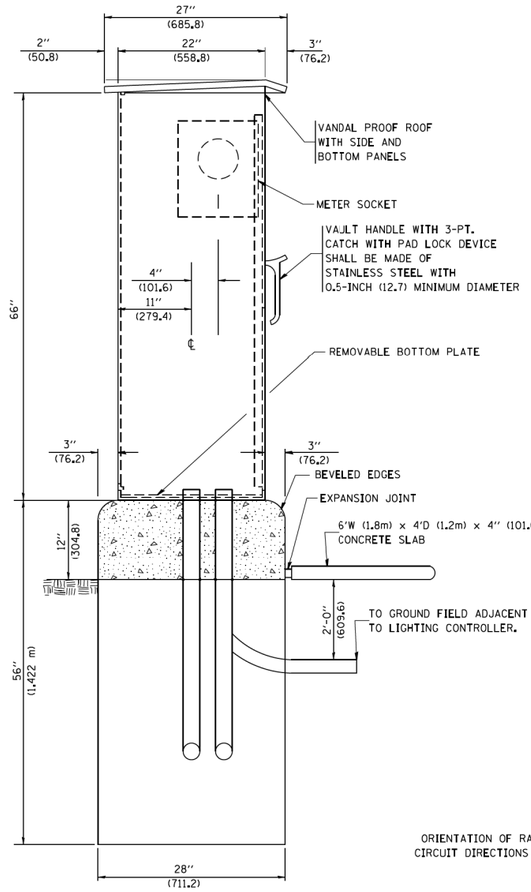
BASE MTG. DETAIL



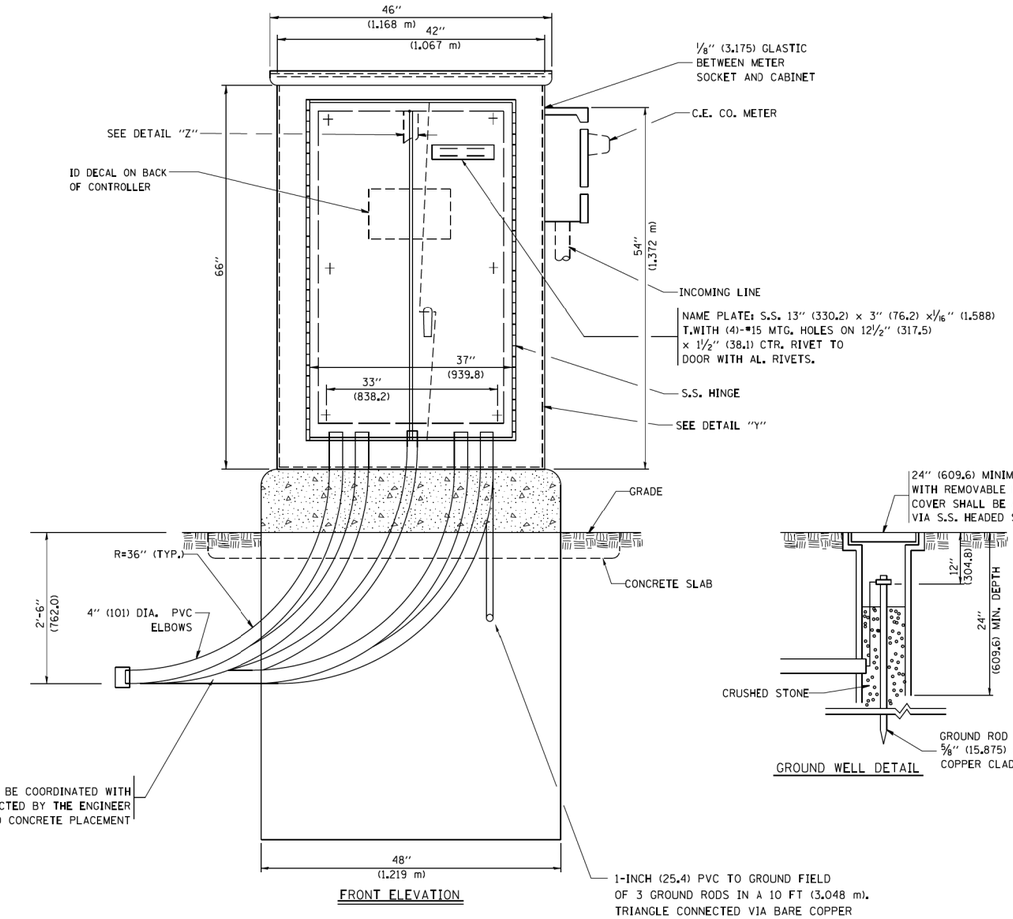
DETAIL "X"



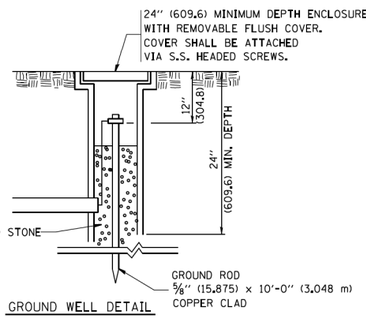
SECTION "A-A"



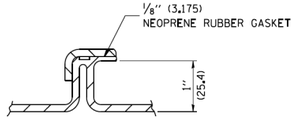
LEFT SIDE ELEVATION



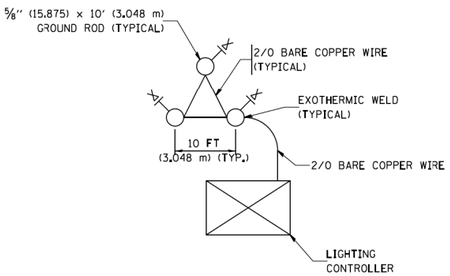
FRONT ELEVATION



GROUND WELL DETAIL



DETAIL "Z"



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be205.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 08-19-04	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. TOMSONS 05-11-09			372/373	2013-037B-R	COOK	787	215
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10				BE-205C		CONTRACT NO. 60W75	
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12		SCALE: NONE	SHEET NO. 3 OF 4 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT

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NOTES

1. CABINET SHALL BE FABRICATED FROM 0.125-INCH (3.175) SHEET ALUMINUM #3003H14, FORMED AND ARC WELDED.
2. ALL SCREWS AND HARDWARE SHALL BE PLATED, GALVANIZED, OR MADE OF BRASS, ALUMINUM OR STAINLESS STEEL, UNLESS OTHERWISE NOTED.
3. NAME PLATE SHALL HAVE ENGRAVED 0.75-INCH (19.05) HIGH LETTERS FILLED IN BLACK: "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
4. ONE INCH THICK POLYISOCYANURATE INSULATION SHALL BE INSTALL AND PERMANENTLY CEMENTED ON ALL SIDES OF THE CABINET AND DOORS.
5. CABINET SHALL BE PRIMED AND PAINTED AS SPECIFIED.
6. ELECTRIC UTILITY METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET AS SHOWN ON THE PANEL LAYOUT DIAGRAM.
7. THE COMPLETED CONTROLLER SHALL BE U.L. LISTED AS AN INDUSTRIAL CONTROL PANEL UNDER UL508.
8. METAL MOUNTING PANEL SHALL BE FABRICATED FROM THE SAME MATERIAL AS THE CABINET AND SHALL BE FLANGED BACK 0.75-INCHES I.D. ON 4 SIDES.
9. CIRCUIT BREAKERS AND CONTACTORS AND OTHER COMPONENTS SHALL BE MOUNTED ON 0.125-INCH (3.175) THICK GLASTIC INSULATION BACK PANEL.
10. ALL DEVICES SHALL BE FRONT REMOVABLE.
11. TIME CLOCK CHANNEL 1 N.O. CONTACT IS CLOSED NIGHT AND OPEN DAY (LIGHTS ON).
12. SET LATITUDE TO 42 DEGREES. SET CH.1 TO 23 MINUTES AFTER ASTRONOMICAL SUNSET, 50 MINUTES BEFORE ASTRONOMICAL SUNRISE. SET CH.2 TO 60 MINUTES AFTER ASTRONOMICAL SUNSET (WITH A SIGNAL LENGTH OF 1 SECOND), +28 MINUTES AFTER ASTRONOMICAL SUNRISE (WITH A SIGNAL LENGTH OF 7 SECONDS.)
13. BUS BAR SHALL HAVE 22 LUG TERMINALS SIZED TO ACCOMMODATE REQUIRED WIRE SIZES. 240V NEUTRAL BUS SHALL BE PAINTED WHITE, GROUND BUS SHALL BE PAINTED GREEN, AND THE 120V NEUTRAL BUS SHALL BE PAINTED GREY.
14. ALL LUGS SHALL BE OF COPPER SCREWS AND CONNECTORS, SPRING HELD.
15. ALL WIRING TERMINATIONS SHALL BE RATED NOT LESS THAN 75 DEGREE CENTIGRADE.
16. ALL CONTROL WIRING SHALL BE 600V #12 TYPE MTW, SCADA WIRING SHALL BE #18.
17. ALL POWER WIRING SHALL BE 600V TYPE RHH/RHW.
18. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:

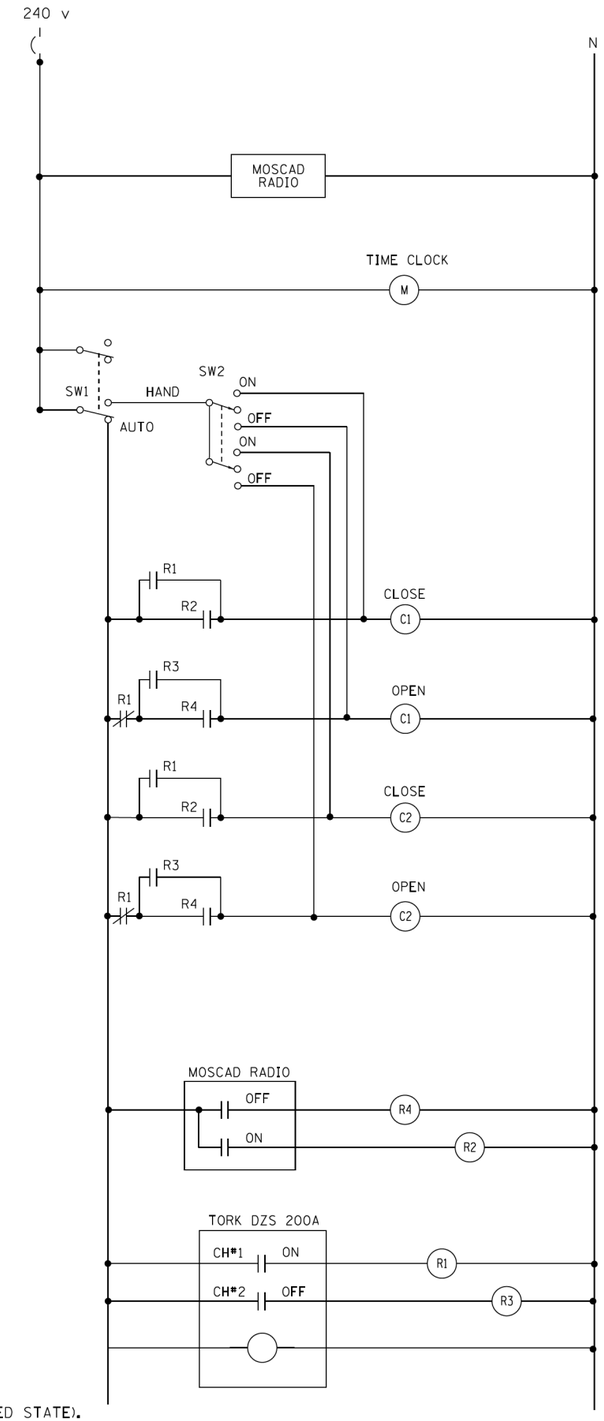
    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
    G - GREY

19. MOSCAD I/O WIRING SHALL BE:

    DIGITAL INPUT (DI) WIRING SHALL BE #18 MTW PURPLE.

    ANALOG INPUT (AI) WIRING SHALL BE #18, 2/C SHIELDED.

    AI AND DI WIRING MAY BE BUNDLED TOGETHER, BUT SHALL NOT BE BUNDLED WITH OTHER WIRING.
20. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
21. SCHEMATIC SHOWN WITH BREAKER OPEN, CONTACTOR OPEN, CABINET DOOR CLOSED, CLOCK NOT ACTIVE (DE-ENERGIZED STATE).
22. A LAMINATED COPY OF THE CIRCUIT SCHEMATIC AND SCADA I/O DIAGRAM (NO SMALLER THAN 11"x17" EACH) SHALL BE ATTACHED TO THE INSIDE OF THE CONTROLLER WITH STAINLESS STEEL SCREWS.



CONTROL CIRCUIT LADDER LOGIC DIAGRAM

MOSCAD I/O ASSIGNMENTS		
TERM	MOSCAD DESTINATION	DESCRIPTION OF INPUT
1	DIGITAL INPUT 1	ALARM KNOWLEDGE
2	DIGITAL INPUT 2	DOOR OPEN
3	DIGITAL INPUT 3	MAIN(S) BREAKER OPEN
4	DIGITAL INPUT 4	CONTACTOR 1 OPEN
5	DIGITAL INPUT 5	CONTACTOR 2 OPEN
6	DIGITAL INPUT 6	CABINET IN NON-AUTO
7	DIGITAL INPUT 7	BACK-UP CLOCK OFF CALL
8	DIGITAL INPUT 8	BACK-UP CLOCK ON CALL
17	24 V+	24+VDC
18	DI COMMON	COMMON
21	K1 C	K1 COMMON
22	K1 NO	LIGHTS ON CALL
24	K2 C	K2 COMMON
25	K2 NO	LIGHTS OFF CALL
32	ANALOG INPUT 1 (+)	CABINET NEUTRAL CURRENT
33	ANALOG INPUT 1 (-)	CABINET NEUTRAL CURRENT
34	ANALOG INPUT 2 (+)	CABINET SERVICE VOLTAGE
35	ANALOG INPUT 2 (-)	CABINET SERVICE VOLTAGE
40	P. GROUND	GROUND

ALL ANALOG INPUTS WILL BE 4-20 MA ONLY. DIGITAL OUTPUT RELAYS WILL BE ELECTRICALLY ENERGIZED AND MOMENTARILY HELD

MIXED I/O MODULE MODEL NUMBER V436

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	PLOT DATE = 3/29/2012	CHECKED -	REVISED - R. TOMSONS 03-10-10
		DATE -	REVISED - R. TOMSONS 03-29-12

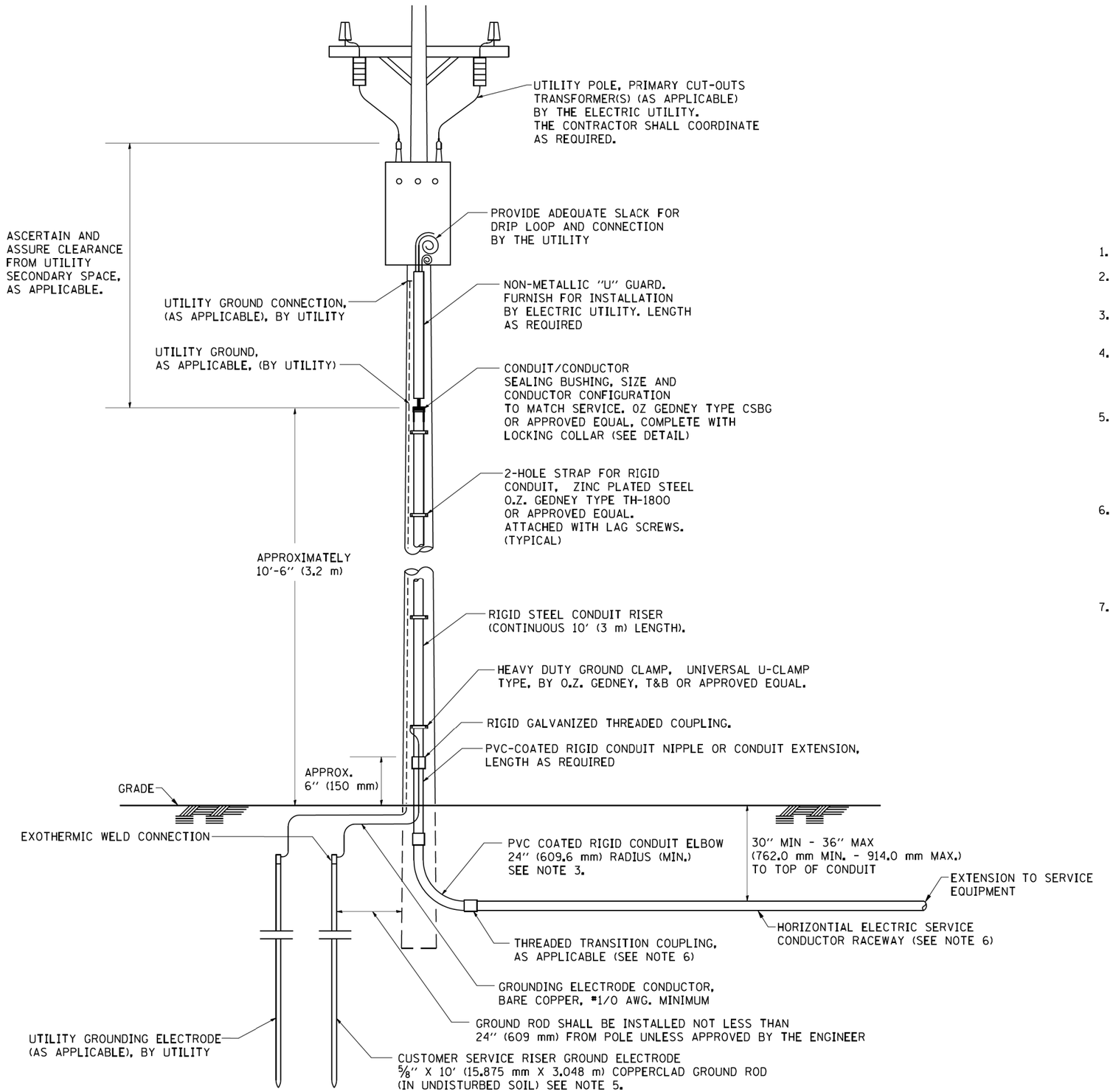
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, BASE MOUNTED, 480VOLT, 200AMP (DUAL) RADIO SCADA

SCALE: NONE | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	216
	BE-205D	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

be205.dgn 3/29/2012 11:12:23 AM User:drivakosgn

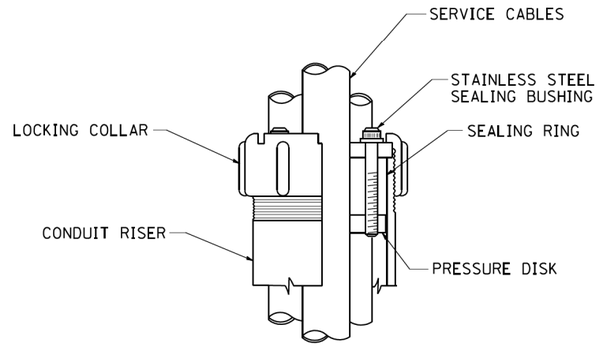


APPLICATION

THIS DETAIL APPLIES FOR LOW VOLTAGE ELECTRIC SERVICE (660 V OR LESS) FROM AN OVERHEAD UTILITY SUPPLY TO SEPERATLY-MOUNTED SERVICE EQUIPMENT.

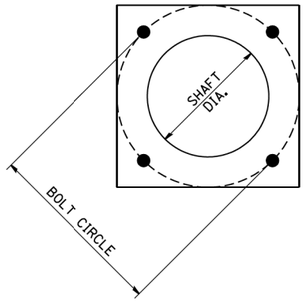
NOTES

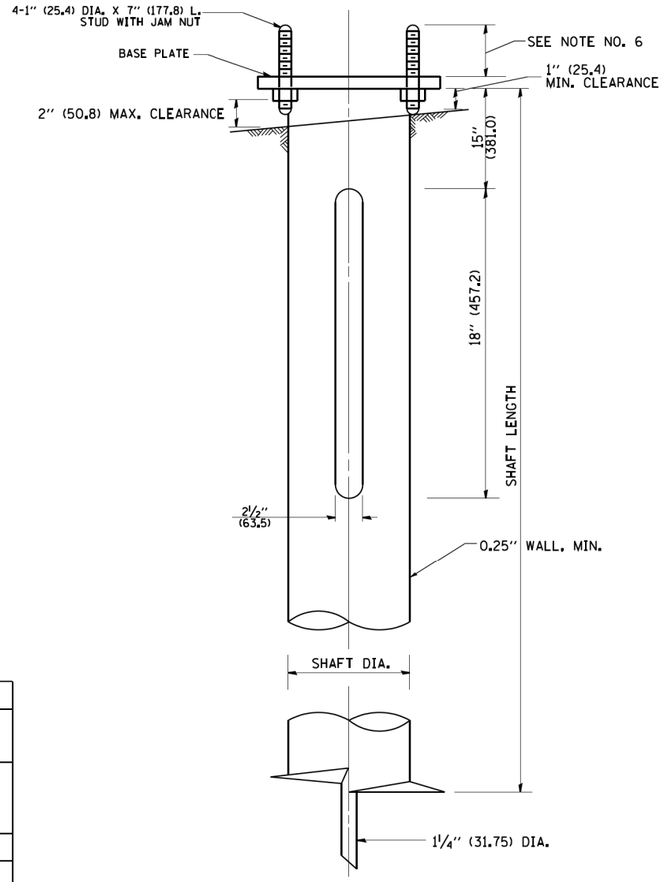
1. SERVICE VOLTAGE SHALL BE AS INDICATED ELSEWHERE IN THE DRAWINGS.
2. UNLESS OTHERWISE INDICATED, ITEMS AND WORK SHALL BE INCLUDED AND PAID AS PART OF THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.
3. CONDUIT AND CONNECTOR DIAMETER SHALL MATCH THE DIAMETER OF THE SERVICE CONDUCTOR RACEWAY AS INDICATED ON THE PLANS.
4. PVC COATED RACEWAYS AND ACCESSORIES SHALL BE CAREFULLY INSTALLED WITH MFR RECOMMENDED TOOLS AND PROCEDURES TO AVOID DAMAGE. ANY DAMAGE SHALL BE REPAIRED WITH COMPATIBLE PVC TOUCH-UP MATERIAL TO THE SATISFACTION OF THE ENGINEER OR THE DAMAGED MATERIAL SHALL BE REPLACED AT NO ADDITIONAL COST.
5. THE CONTRACTOR SHALL OBTAIN INSPECTION AND APPROVAL BY THE ENGINEER OF SERVICE RISER GROUND ELECTRODE, RISER ELBOW, NIPPLE AND CONNECTION TO SERVICE CONDUCTOR RACEWAY EXTENSION BEFORE BACKFILL AND SHALL ALSO OBTAIN INSPECTION OF SERVICE RISER AND SEALING BUSHING BEFORE UTILITY "U" GUARD INSTALLATION AND SERVICE CONNECTION.
6. THE HORIZONTAL ELECTRIC SERVICE CONDUCTOR RACEWAY SHALL BE AS INDICATED AND SHALL BE MEASURED SEPARATELY FOR PAYMENT. WHEN THE RACEWAY IS PVC-COATED RIGID GALVANIZED STEEL, THE COUPLING SHALL BE THE SAME. WHEN THE RACEWAY IS PVC CONDUIT (IN CONCRETE), THE COUPLING SHALL BE A METALIC TO NON METALIC ADAPTER. WHEN THE RACEWAY IS ENCASED IN CONCRETE, THE CONCRETE SHALL EXTEND TO COVER THE COUPLING.
7. PLANS AND DETAILS INDICATE THE GENERAL NATURE AND REQUIREMENTS. THEY DO NOT SHOW EVERY ACCESSORY AND ATTACHMENT, AND THEY DO NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENTS OF THE SPECIFICATIONS AND SPECIAL PROVISIONS TO ASCERTAIN UTILITY REQUIREMENTS AND TO COORDINATE ACCORDINGLY, FURNISHING ALL ITEMS AND WORK NOT PROVIDED BY THE UTILITY, BUT NECESSARY FOR A COMPLETE SERVICE INSTALLATION IS REQUIRED AND SHALL BE INCLUDED IN THE ELECTRIC UTILITY SERVICE INSTALLATION PAY ITEM.



SEALING BUSHING DETAIL

FILE NAME = W:\diststd\22x34\be220.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 03-03-06	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**ELECTRIC SERVICE INSTALLATION AERIAL, REMOTE DISCONNECT**		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -				372/373	2013-037B-R	COOK	787	217
	PLOT SCALE = 50.0000 '/ IN.	CHECKED - MEA	REVISED -					**BE-220**		CONTRACT NO. 60W75	
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		





HELIX FOUNDATION SIZE

POLE MOUNTING HEIGHT	BOLT CIRCLE	SHAFT DIAMETER	SHAFT LENGTH	BASEPLATE
30 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
31 FT.-35 FT.	11½"	8⅝"	6 FT.	12"x12"x1"
36 FT.-40FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
41 FT.-45 FT.	15"	8⅝"	6 FT.	15"x15"x1¼"
46 FT.-50 FT.	15"	10"	8 FT.	15"x15"x1¼"

METAL HELIX FOUNDATION MATERIALS

ITEM	MATERIAL REQUIREMENT
BASEPLATE	AASHTO M 270M, GRADE 36 (M270M, GRADE 250)
SHAFT	ASTM A 252, GRADE 2 (PHOSPHOROUS 0.04% MAXIMUM, SULFUR 0.05% MAXIMUM)
HELIX SCREW	AASHTO M 183 (ASTM A 635)
PILOT POINT	AASHTO M 270 (ASTM A 575)
ANCHOR RODS/STUDS	AASHTO M 314 (ASTM F 1554)
HEXAGON NUTS	AASHTO M 291M (ASTM A 563) GRADE DH, OR AASHTO M 292 (ASTM A 194) GRADE 2H
WASHERS	AASHTO M 293 (ASTM F 436)

NOTES:

1. ALL DIMENSION IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. ALL MATERIAL SHALL BE GALVINIZED ACCORDING TO AASHTO M111, UNLESS OTHERWISE SPECIFIED.
3. ALL WELDS SHALL BE CONTINUOUS AND NOT LESS THAN ¼" (6.35 mm) FILLET WELDS. THE WELDED FOUNDATION SHALL BE CAPABLE OF WITHSTANDING 10,000 FT/LBS (13558.18 n.m) OF INSTALLATION TORQUE APPLIED ABOUT THE AXIS OF THE FOUNDATION.
4. THE HELIX FOUNDATION SHAFT SHALL BE INSTALLED VERTICAL AND THE BASE PLATE SHALL BE IN LEVEL. THE BREAKAWAY COUPLINGS AND HARDWARE SHALL NOT BE USED TO ALIGN THE POLE INSTALLATION.
5. THE CABLE TRENCH SHALL BE BACKFILLED AND FIRMLY COMPACTED BEFORE THE INSTALLATION OF THE LIGHT POLE.
6. THE CONTRACTOR SHALL COORDINATE EXTENSION OF ANCHOR BOLTS ABOVE TOP OF THE BASE PLATE WITH THE BREAKAWAY DEVICE MANUFACTURER'S REQUIREMENTS.
7. ANY VOIDS WITHIN THE METAL FOUNDATION SHALL BE FILLED WITH FINE AGGREGATE.
8. METAL FOUNDATIONS SHALL BE INSTALLED IN UNDISTURBED SOIL. PREDRILLING A PILOT HOLE AND/OR BACKFILLING AROUND THE FOUNDTION IS NOT ALLOWED.
9. THE METAL FOUNDATION SHALL NOT BE INSTALLED TO A TORQUE WHICH EXCEEDS THE MANUFACTURER'S MAXIMUM TORQUE RATING NOR SHALL IT BE INSTALLED TO AN INSTALLATION TORQUE VALUE OF LESS THAN 3,500 FT LB (4,750 KNM). METAL FOUNDATIONS THAT ARE NOT INSTALLED TO FULL INSTALLATION DEPTH OR DO NOT ACHIEVE THE MINIMUM INSTALLATION TORQUE SHALL BE REMOVED AND REPLACED WITH A CONCRETE FOUNDATION AT NO ADDITIONAL COST.
10. THE BASEPLATE SHALL BE PERPENDICULAR TO THE SHAFT AXIS (± 1°) AND THE HOLE CENTERLINE SHALL BE CONCENTRIC (± 0.188) TO THE SHAFT AXIS.
11. THE PILOT POINT AND SHAFT AXIS SHALL BE CONCENTRIC (± 0.125) AND IN LINE (± 2°).
12. THE BASEPLATE SHALL BE STAMPED WITH THE MANUFACTURERS NAME AND DATE OF MANUFACTURE.
13. GRADING AROUND LIGHT POLE FOUNDATIONS SHALL MEET THE REQUIREMENTS OF ARTICLE 836.03 OF THESTANDARD SPECIFICATIONS.

FILE NAME = W:\diststd\22x34\be305.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN - DLB	REVISED -
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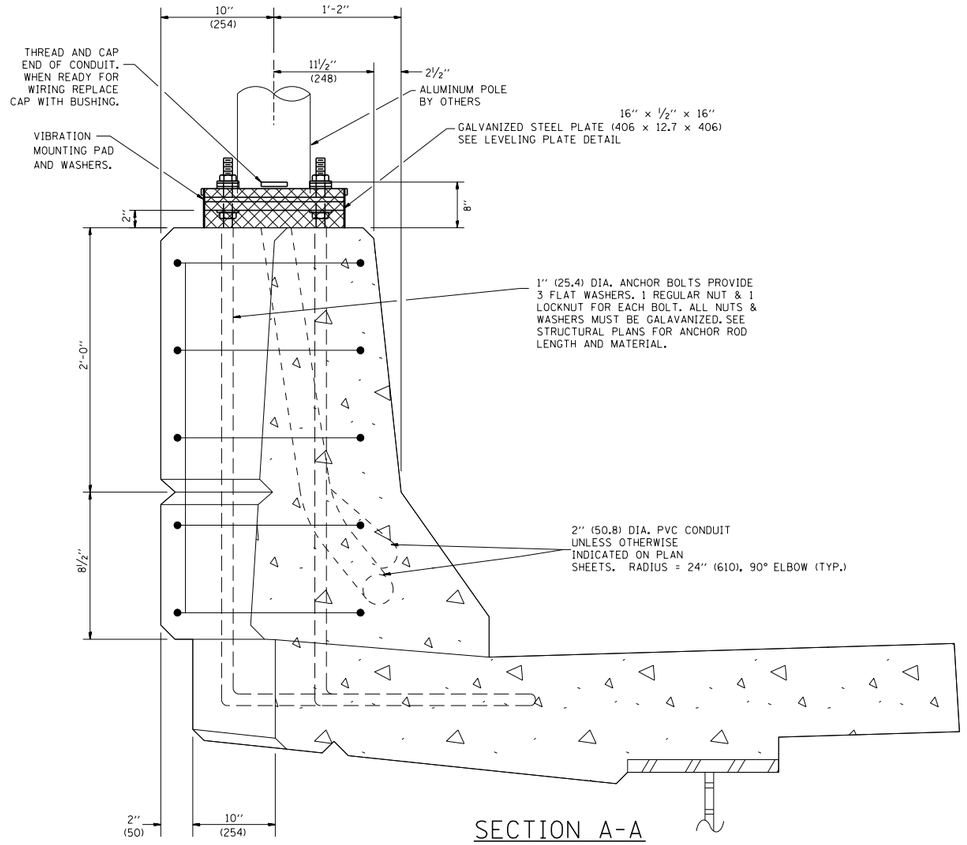
	PLOT DATE = 1/4/2008	DATE - 02-27-07	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

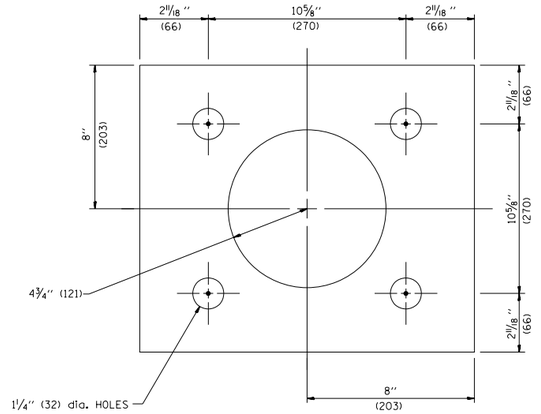
LIGHT POLE FOUNDATION, METAL

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

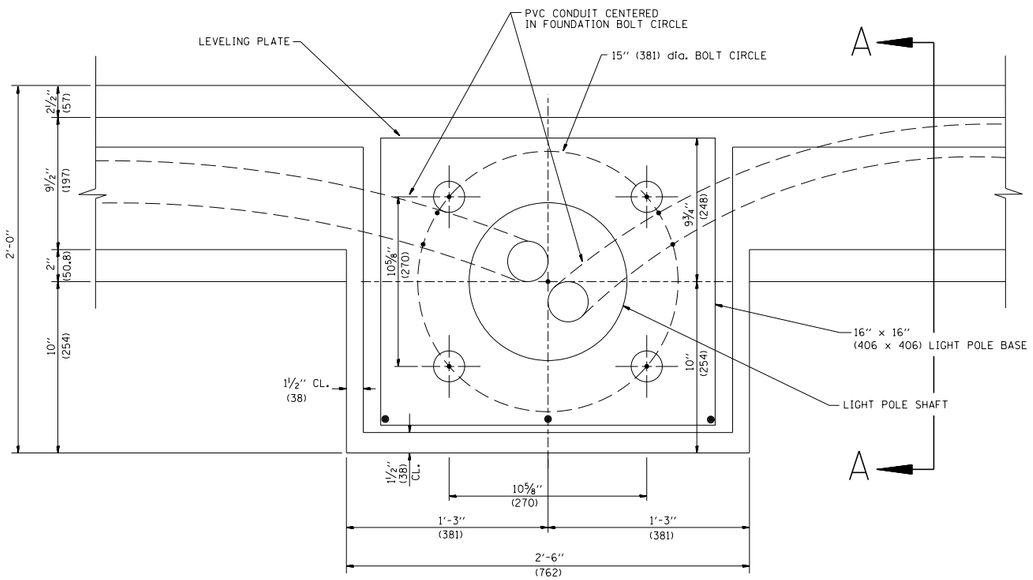
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	218
	BE-305	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



SECTION A-A



LEVELING PLATE DETAIL



PLAN

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE COST OF ANCHOR BOLTS, LEVELING PLATE AND FOUNDATION IS INCLUDED IN THE COST OF THE BRIDGE STRUCTURE.
3. SEE STRUCTURAL PLANS FOR REBAR DETAILS.

FILE NAME =	DESIGNED -	REVISED -
...\D160W75-sht-IL171-BE-330-NB.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

benesch engineers · scientists · planners

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE MOUNTED ON CONCRETE PARAPET
WALL, 15″ (381 mm) BOLT CIRCLE

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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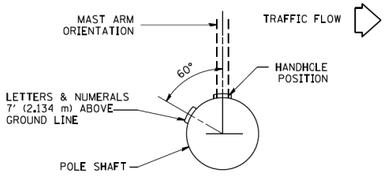
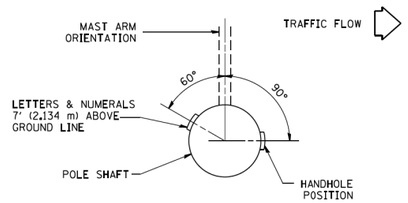
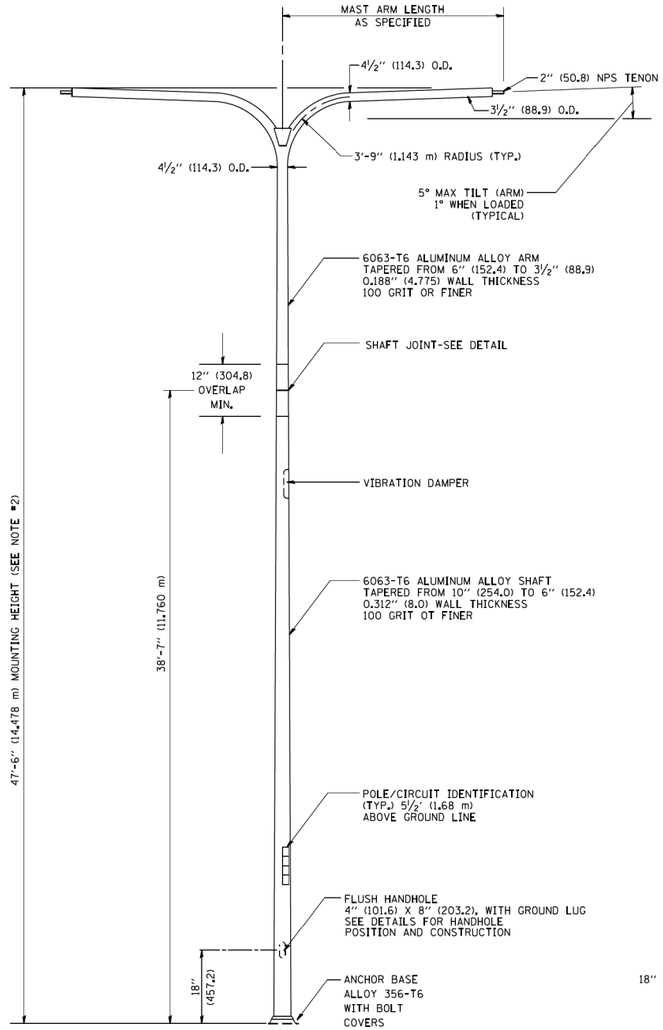
	BE-330	CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



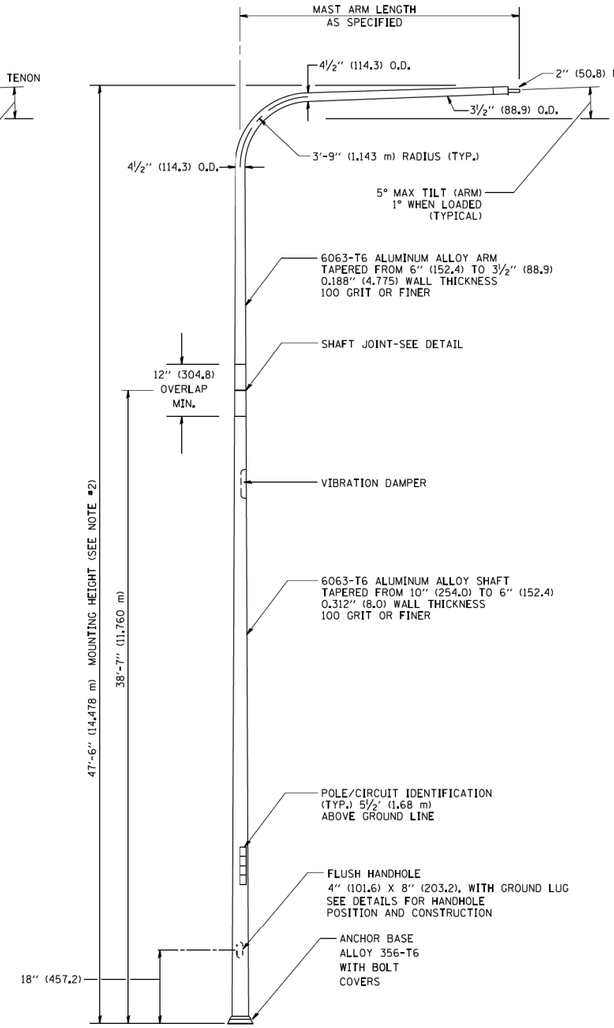
POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES MOUNTED ON BRIDGE PARAPET OR BARRIER WALL



POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES



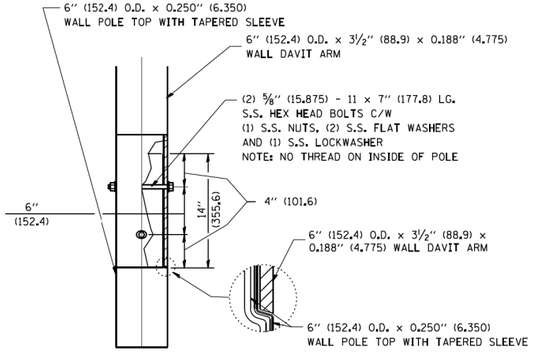
TWIN ARM POLE



SINGLE ARM POLE

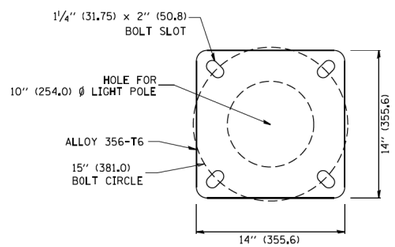
NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
3. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
4. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
5. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
6. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
7. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
8. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



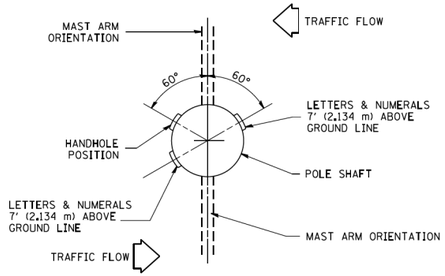
DAVIT ARM CONNECTION

[14" (355.6) OVERLAP SHOWN]

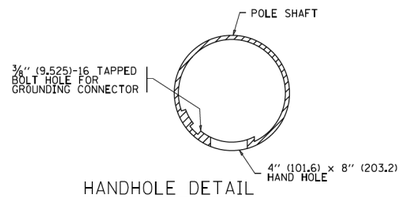


LIGHT POLE BASE PLATE DETAIL

(FOR POLE MOUNTED ON 15 INCH (381.0) BOLT CIRCLE FOUNDATION)



POSITION OF HANDHOLE AND POLE NUMBER FOR TWIN MAST ARM POLES



HANDHOLE DETAIL

(N.T.S.)

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		DRAWN - LEY	REVISED - R. TOMSONS 09-06-00			372/373	2013-037B-R	COOK	787	220
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - R. TOMSONS 09-02-03				**BE-410**		CONTRACT NO. 60W75	
	PLOT DATE = 4/4/2013	DATE -	REVISED - R. TOMSONS 01-18-13		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.		FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

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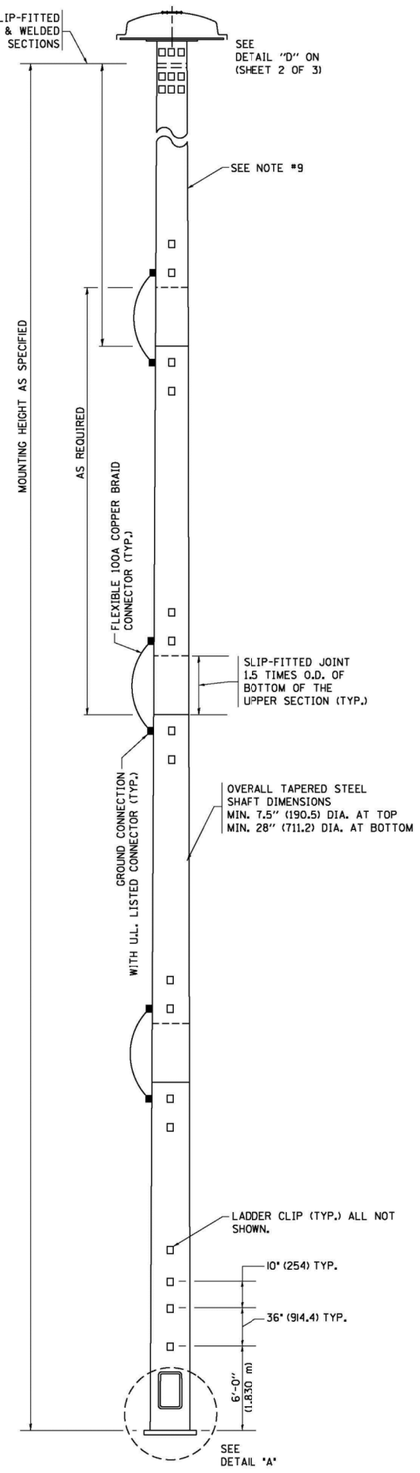
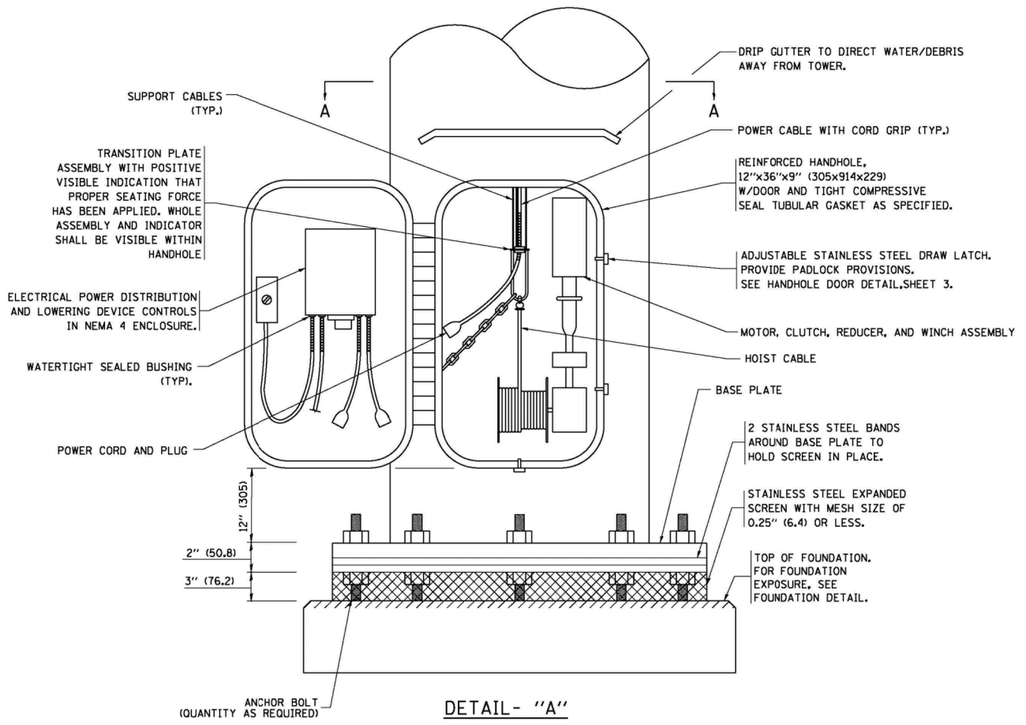
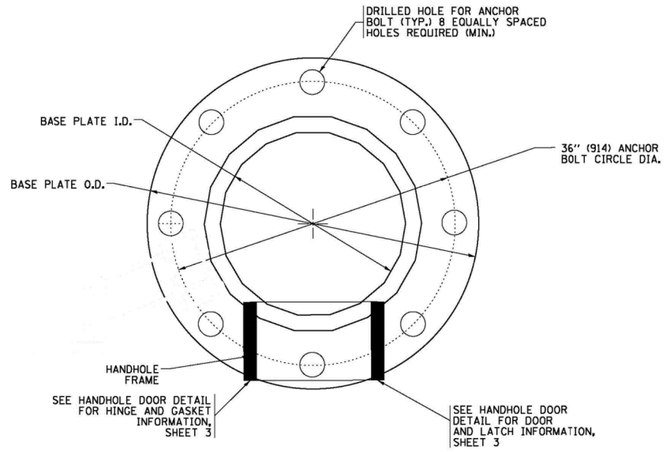




DETAIL- "A"

3 CABLE LOWERING & SUPPORT MECHANISM SHOWN.



SECTION - A-A

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE DESIGN SHALL BE BASED UPON AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" CURRENT AT THE TIME THE PROJECT IS ADVERTISED AND A TOTAL COMBINED LUMINAIRE WEIGHT OF 720 LBS. (326 kg) AND HAVING A TOTAL PROJECTED AREA OF 24 SQ. FT. (7.3 sq. m).
3. ALL TOWER SHAFT COMPONENTS, INCLUDING, BUT NOT LIMITED TO THE SHAFT SECTIONS, BASE PLATE, LADDER CLIPS, HANDHOLE DOOR, HANDHOLE REINFORCING, RAIN GUTTER, AND BASE PLATE, SHALL BE FABRICATED FROM HIGH-STRENGTH, LOW ALLOY, STEEL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI (345 K PA) ACCORDING TO AASHTO M 223 (ASTM A 572 GR50)
4. THE ELECTRIC MOTOR, MOTOR GEAR REDUCER, WINCH DRUM ASSEMBLY AND AUTOMATIC SHUTOFF SWITCH OF THE LOWERING DEVICE SHALL BE ACCESSIBLE FROM THE FRONT OF THE TOWER FOR EASY REMOVAL AND MAINTENANCE. ALL COMPONENTS SHALL BE REMOVABLE THROUGH THE HANDHOLE.
5. THE LIGHT TOWER SHAFT SHALL HAVE LADDER CLIPS. CLIPS SHALL BEGIN 6 FT. (1.8 m) ABOVE THE BASE PLATE WITH ALTERNATE 1.8 m (900) AND 10 INCH (250) SPACING THEREAFTER, FOR THE ENTIRE LENGTH. THE TOP 10 FT. (3 m) OF THE POLE SHAFT SHALL HAVE 3 SETS OF CLIPS. EACH SET OF CLIPS SHALL BE 120 DEGREES APART. CLIPS SHALL BE 0.25 X 2 INCHES (6 X 50) WELDED TO THE SHAFT TO PRODUCE A SLOT 0.625 INCHES (15.9) DEEP AND 1.625 INCHES (41.3) LONG. THE TOP INSIDE EDGE SHALL BE CHAMFERED.
6. A COPPER BONDING JUMPER SHALL BOND SLIP-FIT POLE SECTIONS TOGETHER WITH A FLAT COPPER MESH AND STAINLESS STEEL GROUND LUGS.
7. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
8. THE ENTIRE TOWER INCLUDING THE SHAFT, HANDHOLE, HANDHOLE DOOR, BASE PLATE AND ALL OTHER ELEMENTS WELDED TO THE SHAFT SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 (ASTM A 123) AND THEN PAINTED AS SPECIFIED. THE LUMINAIRE RING SHALL BE PRIMED AND PAINTED AS SPECIFIED.
9. THE FINISH COAT SHALL BE ANSI 70, SKY GREY COLOR SAMPLE TO BE SUBMITTED FOR APPROVAL.
10. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
11. THE LIGHT TOWER SHALL BE STRAIGHT AND CENTERED ON ITS LONGITUDINAL AXIS, UNDER NO-WIND CONDITIONS, SO WHEN EXAMINED WITH A TRANSIT FROM ANY DIRECTION, THE DEVIATION FROM THE NORMAL SHALL NOT EXCEED 1/8 IN. IN 3 FT (2 mm IN 1 m) WITHIN ANY 5 FT (1.5 m) OF HEIGHT, WITH TOTAL DEVIATION NOT TO EXCEED 3 IN. (75) FROM THE VERTICAL AXIS THROUGH THE CENTER OF THE POLE BASE.
12. PVC CONDUIT WILL NOT BE ALLOWED FOR ANY LIGHT TOWER COMPONENT.
13. COUNTER WEIGHTS TO BE INCLUDED AS A PART OF THE LIGHT TOWER PAY ITEM.

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	PLOT DATE = 2/27/2013	DATE -	REVISED - 02-27-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
120 FT TO 140 FT (36 m TO 43 m)

SCALE: NONE | SHEET NO. 1 OF 3 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	221
	BE-505 A	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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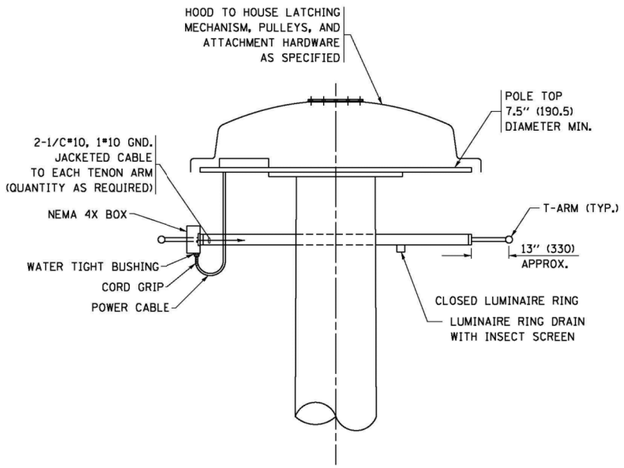
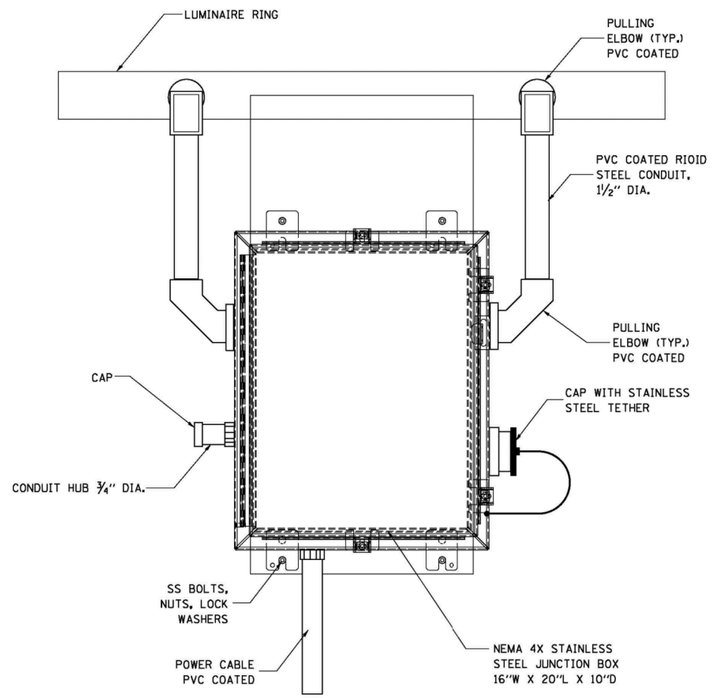


DETAIL-"D"



FRONT VIEW
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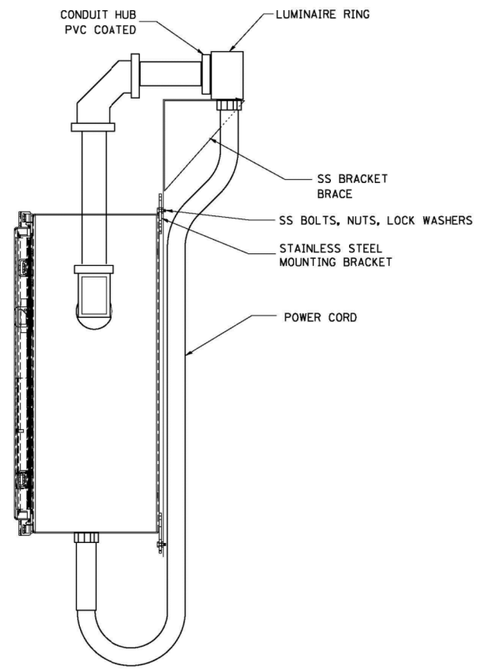
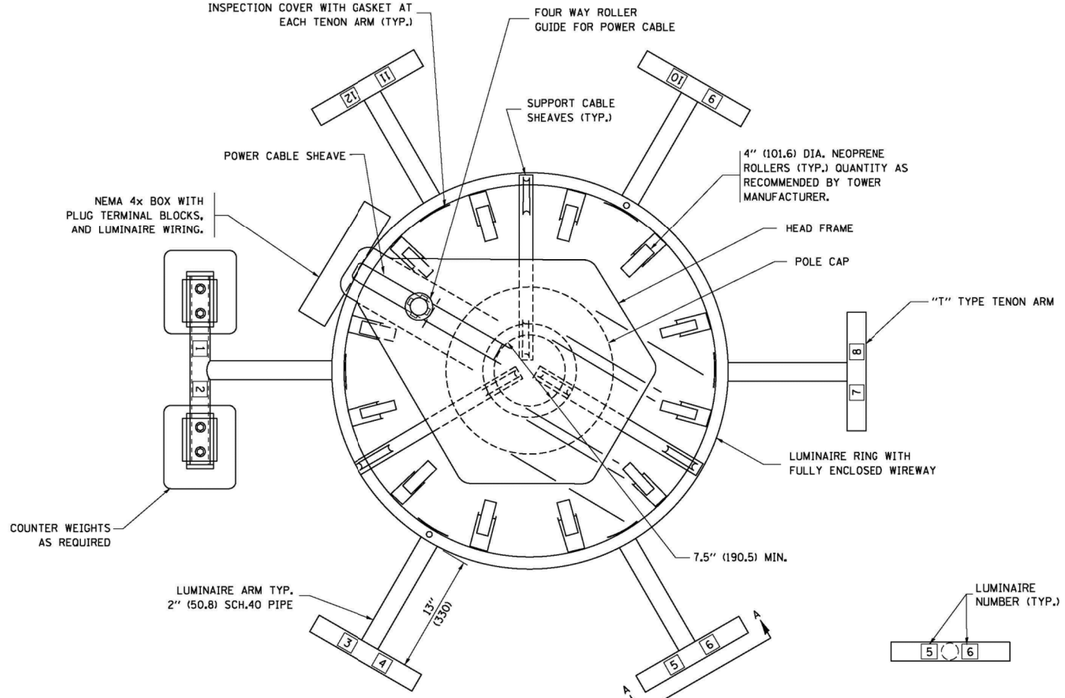


SIDE VIEW
N.T.S.

LUMINAIRE RING TERMINAL BOX



TOP VIEW

SECTION A-A

NOTES:

1. LUMINAIRE WIRES SHALL EXTEND 24 INCHES (609 mm) LONGER THAN THEIR RESPECTIVE TENON ARM AND SHALL BE TRAINED BACK INTO THE ARM WHICH SHALL THEN BE CLOSED WITH A CAP AS SPECIFIED ALL WIRES SHALL BE CAPPED WITH HEAT SHRINK INSULATING BOOTS, CRIMP CAPS ARE UNACCEPTABLE. ALL RING WIRES SHALL BE TAGGED WITH WIRE MARKERS AT BOTH ENDS THE TENON ARMS SHALL ALSO BE TAGGED CORRESPONDING TO THE WIRING CONTAINED WITHIN.
2. SPLICING WILL NOT BE ALLOWED WITHIN THE LUMINAIRE RING.
3. ALL TOWER SHAFT HARDWARE, SUCH AS GROUND LUGS, JUNCTION BOXES, HARDWARE FOR THE HANDHOLE DOOR, INCLUDING THE HANDLE/LATCH MECHANISM, HINGE AND DOOR STOP, SHALL BE STAINLESS STEEL. ALL CONDUIT AND CONDUIT FITTINGS SHALL BE PVC COATED GALVANIZED STEEL.
4. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.

FILE NAME = c:\pw_work\pwidot\bauerdl\d0108315\be505b.dgn	USER NAME = bauerdl	DESIGNED -	REVISED - 09-02-03	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**HIGH MAST LIGHT TOWER 120 FT TO 140 FT (36 m TO 43 m)**
		DRAWN -	REVISED - 03-22-10		
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - 09-02-10		SCALE: NONE | SHEET NO. 2 OF 3 SHEETS | STA. | TO STA.
	PLOT DATE = 2/27/2013	DATE -	REVISED - 02-27-13		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	222
	BE-505B	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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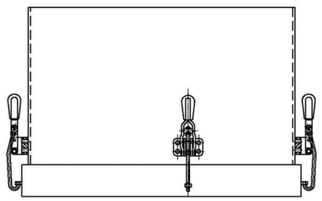
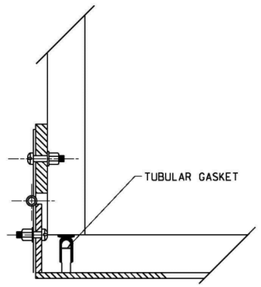
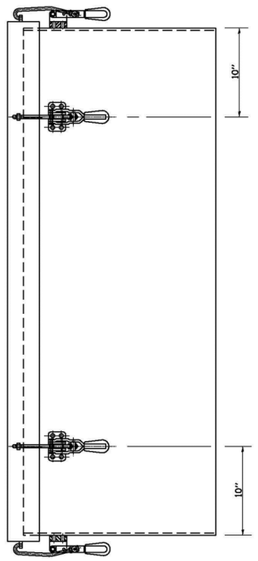


TOP VIEW



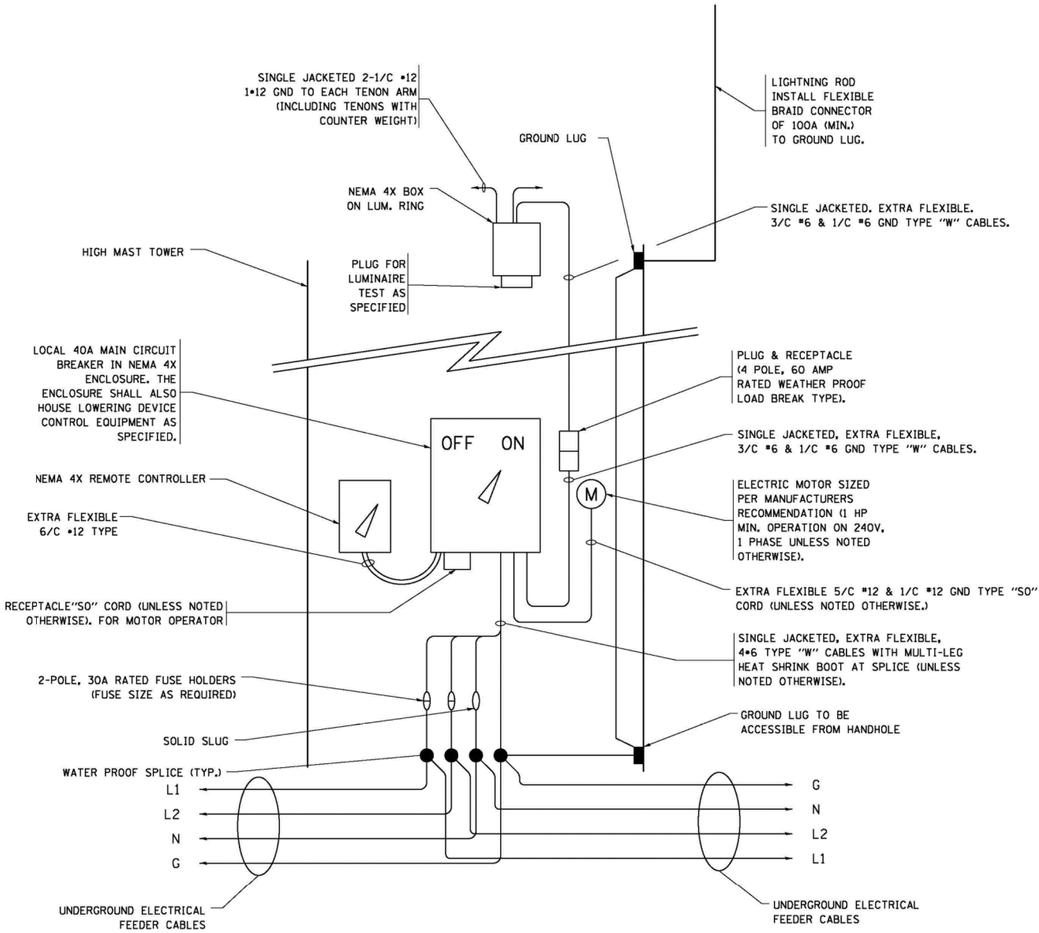
HINGE DETAIL



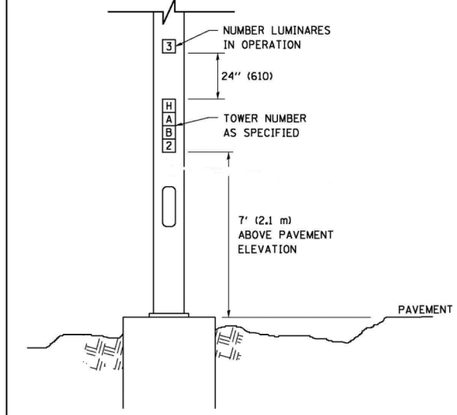
SIDE VIEW

LATCH DETAIL

HANDHOLE DOOR DETAILS



HIGH MAST POLE WIRING DIAGRAM



LIGHT TOWER NUMBERING DETAIL

FILE NAME = c:\pw_work\pwidot\bauerdl\d0108315\be505.dgn	USER NAME = bauerdl	DESIGNED -	REVISED - 09-02-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HIGH MAST LIGHT TOWER 120 FT TO 140 FT (36 m TO 43 m)			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - 03-22-10					372/373	2013-037B-R	COOK	787	223
	PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - 09-02-10						BE-505 C		CONTRACT NO. 60W75	
	PLOT DATE = 2/27/2013	DATE -	REVISED - 02-27-13		SCALE: NONE	SHEET NO. 3 OF 3 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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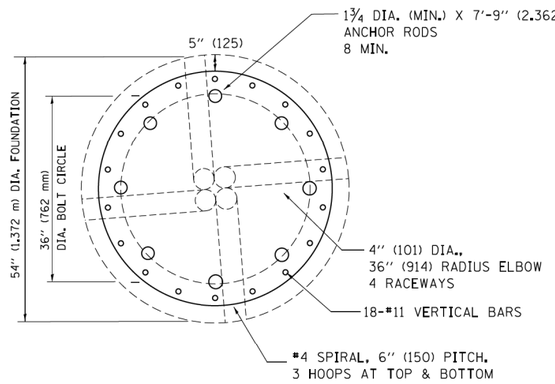
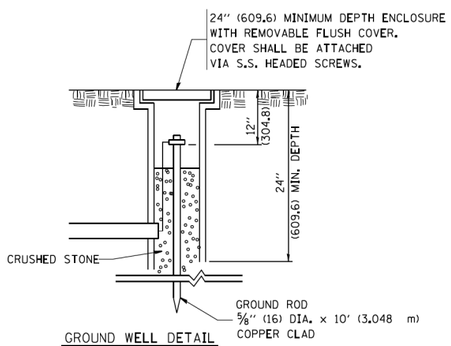
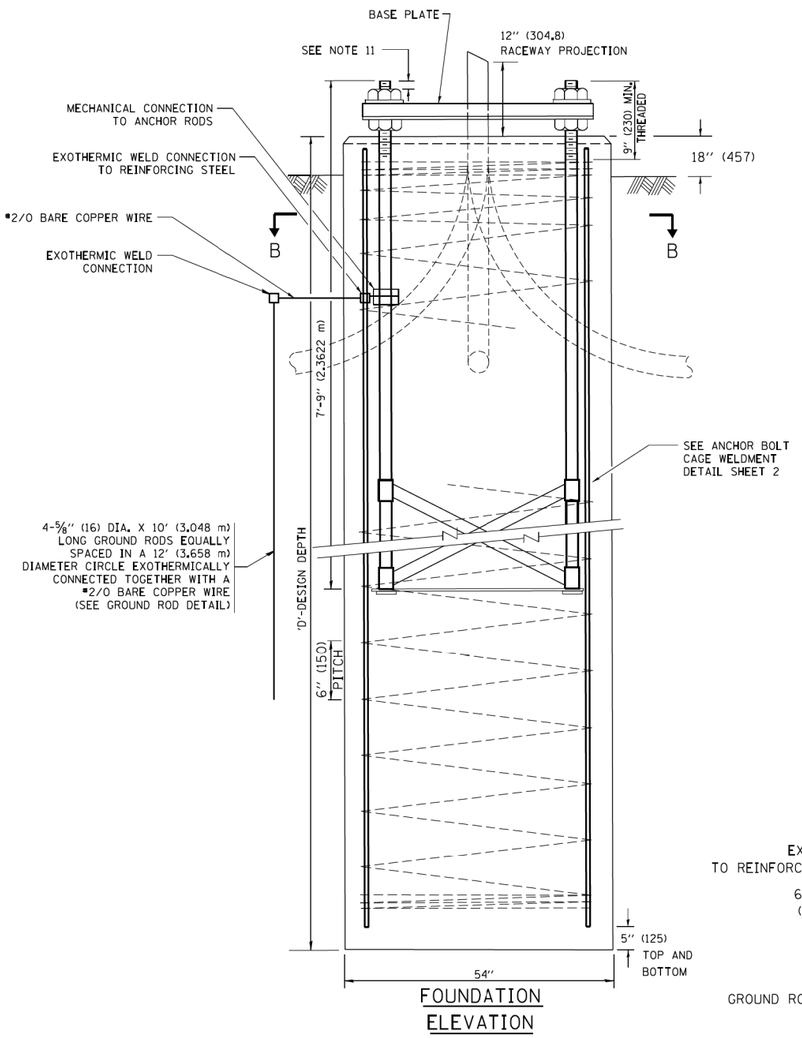
SHAFT LENGTH (D) TABLE					
SOIL CONSISTENCY		AVERAGE STRENGTH	LIGHT TOWER MOUNTING HEIGHT		
		Qu In tsf (Qu In kPa)	120 FT. (37 m)	130 FT. (40 m)	140 FT. (43 m)
COHESIVE	SOFT	<0.5 (<50)	25'-0" (7.6 m)	26'-6" (8.0 m)	27'-6" (8.3 m)
	MEDIUM	0.5 TO 1 (50 to 100)	20'-6" (6.2 m)	21'-6" (6.4 m)	22'-0" (6.7 m)
	STIFF	1 TO 2 (100 TO 200)	17'-6" (5.2 m)	18'-0" (5.4 m)	18'-6" (5.5 m)
	VERY STIFF	2 TO 4 (200 TO 400)	15'-0" (4.5 m)	15'-6" (4.6 m)	16'-0" (4.7 m)
	HARD	>4 (>400)	13'-6" (4.0 m)	13'-6" (4.1 m)	14'-0" (4.2 m)
		N In BLOWS/FT. (N In BLOWS/0.3m)			
GRANULAR	VERY LOOSE	<5 (<5)	19'-0" (6.3 m)	20'-0" (6.0 m)	20'-6" (6.2 m)
	LOOSE	5 TO 10 (5 TO 10)	17'-6" (5.7 m)	18'-0" (5.5 m)	18'-6" (5.6 m)
	MEDIUM	10 TO 25 (10 TO 25)	16'-6" (5.5 m)	17'-0" (5.2 m)	17'-6" (5.3 m)
	DENSE	25 TO 50 (25 TO 50)	15'-6" (5.2 m)	16'-6" (4.9 m)	16'-6" (5.0 m)
	VERY DENSE	>50 (>50)	15'-0" (4.5 m)	15'-6" (4.7 m)	16'-0" (4.8 m)



SECTION-B-B



GROUND WELL DETAIL



FOUNDATION ELEVATION

DESIGN NOTES

(1) ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

(2) THE ANCHOR RODS SHALL BE VERTICAL NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.

(3) THE GAP BETWEEN THE FOUNDATION AND THE BASE PLATE SHALL BE ENCLOSED WITH A STAINLESS STEEL SCREEN FASTENED WITH A STAINLESS STEEL BAND.

(4) THE TOP OF THE FOUNDATION TO 18" (450) BELOW GRADE SHALL BE FORMED.

(5) SURFACE WATER WILL NOT BE PERMITTED TO ENTER THE HOLE AND ALL WATER WHICH MAY HAVE INFILTRATED INTO THE HOLE SHALL BE REMOVED BEFORE PLACING CONCRETE.

(6) THE LIGHT TOWER SHALL NOT BE ERECTED UNTIL AFTER THE CONCRETE HAS BEEN CURED ACCORDING TO ARTICLE 1020.13.

(7) ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO AASHTO M 314 OR ASTM F1554, GRADE 725(GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.9.

(8) ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED FOR APPROVAL WITH TOWER MANUFACTURER REQUIREMENTS.

(9) REINFORCEMENT BARS SHALL BE ACCORDING TO ARTICLE 1006.10

(10) TWO ANCHOR RODS OPPOSITE EACH OTHER SHALL HAVE THE ANCHOR ROD THREADS PEENED AFTER NUTS ARE INSTALLED.

(11) A MINIMUM OF THREE FULL THREADS SHALL REMAIN EXPOSED AFTER LIGHT TOWER IN INSTALLED.

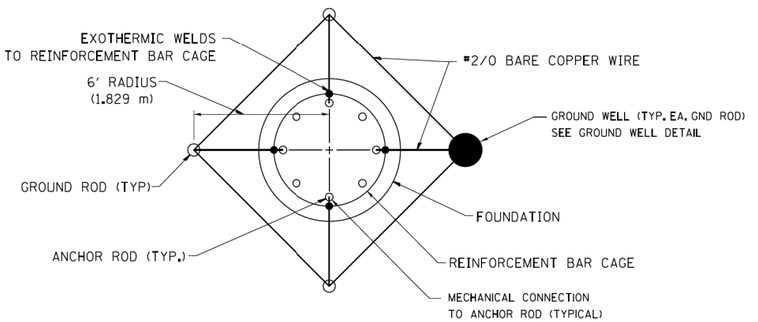
(12) ALL GROUNDING INDICATED IN THE PLANS SHALL BE INCLUDED IN THE COST OF THE LIGHT TOWER FOUNDATION AND SHALL NOT BE PAID FOR SEPARATELY.

(13) CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED

(14) ANCHOR ROD QUANTITY, DIAMETER, AND LENGTH SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.

(15) COORDINATE THE ROD CIRCLE DIAMETER OF THE TOWER WITH THE DIAMETER OF THE ANCHOR ROD CAGE.

(16) THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.



GROUND ROD DETAIL

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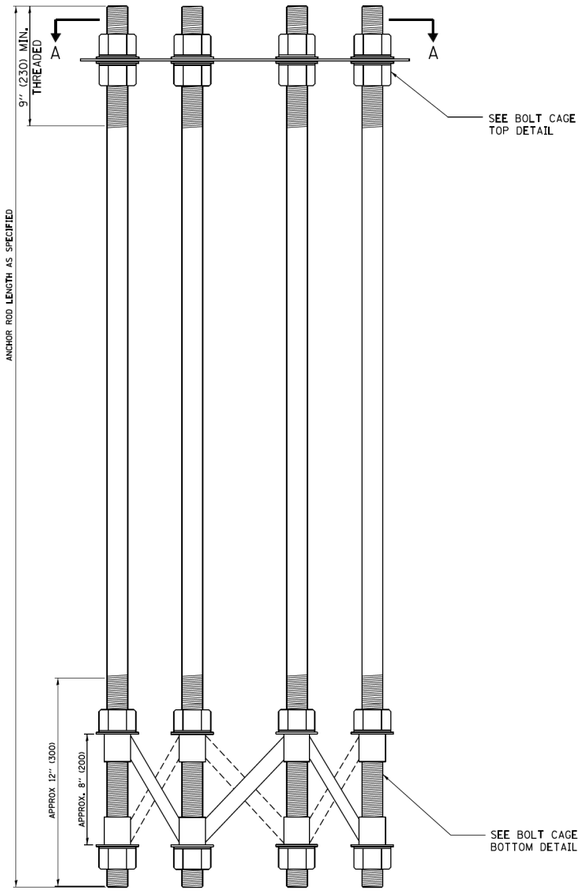
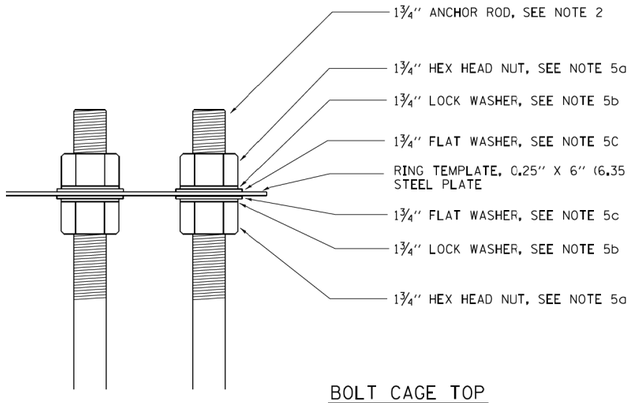
		DRAWN -	REVISED - R. TOMSONS 02-27-13			372/373	2013-037B-R	COOK	787	224
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED -				BE-506A		CONTRACT NO. 60W75	
	PLOT DATE = 2/27/2013	DATE - 03-12-10	REVISED -		SCALE: NONE	SHEET NO. 1 OF 2 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT

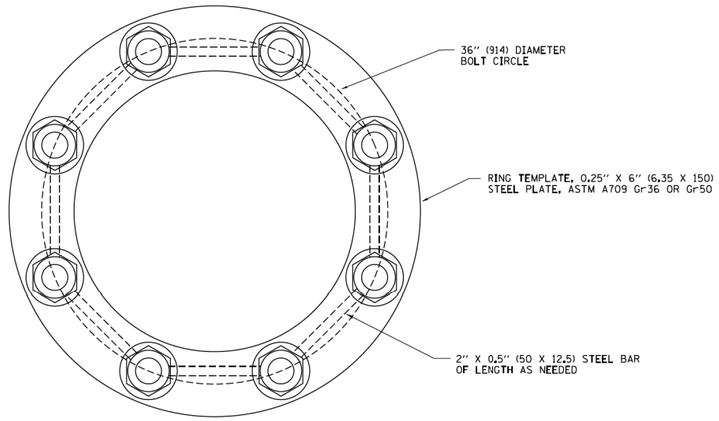
be506.dgn 2/27/2013 8:16:14 AM User:bauerdl



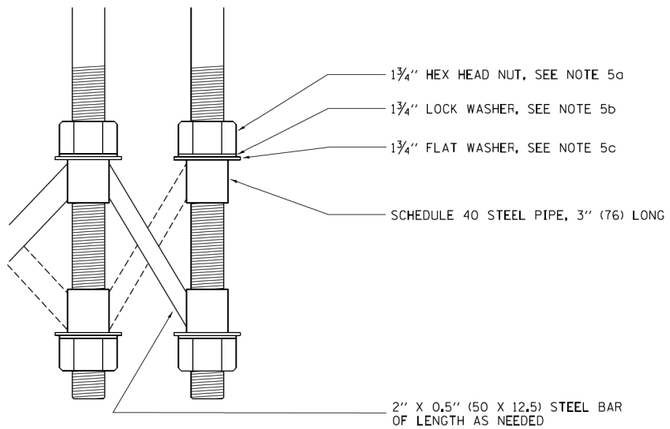
ANCHOR BOLT CAGE



BOLT CAGE TOP



SECTION A-A



BOLT CAGE BOTTOM

NOTES

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN
2. ANCHOR RODS SHALL BE STRAIGHT AND SHALL BE ACCORDING TO AASHTO M 314 OR ASTM F1554, GRADE 725 (GRADE 105) AND GALVANIZED ACCORDING TO ARTICLE 1006.09.
3. ANCHOR ROD INFORMATION SHALL BE SUBMITTED FOR APPROVAL AND SHALL BE FULLY COORDINATED WITH TOWER MANUFACTURERS REQUIREMENTS.
4. CUT NUTS, OR JAM NUTS, ARE NOT ALLOWED
5. ANCHOR ROD CAGE HARDWARE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

   a) 1¾" HEX HEAD NUTS
   AASHTO M291, GRADE C, C3, D ,DH OR DH3
   HOT DIPPED GALVANIZED AASHTO M 232

   b) 1¾" HELICAL LOCK WASHERS
   ANSI/ASME B18.21.1
   I.D. 1.758 - 1.778
   O.D. 2.596 MAX.
   WIDTH 0.383 MIN.
   THICKNESS 0.469 MIN.
   HARDNESS 26-45 ROCKWELL C
   HOT DIPED GALVANIZED AASHTO M232

   c) 1¾" FLAT WASHERS
   AASHTO M293
   O.D. 3.25
   I.D. 1.875
   THICKNESS 0.16 - 0.25
   HARDNESS 26-45 ROCKWELL C.
   HOT DIPED GALVANIZED AASHTO M232

6. THE SHAFT LENGTHS SHALL BE BASED ON SOIL BORINGS IN THE PLANS AND OR A DETERMINATION OF SOIL CONDITIONS BY THE ENGINEER.
7. ALL FOUNDATION REINFORCEMENT STEEL SHALL BE EPOXY COATED.
8. THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.
9. ANCHOR RODS AND ALL ASSOCIATED HARDWARE ARE SHOWN AS MINIMUMS. SIZING SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.

FILE NAME = c:\pw_work\pwidot\bauerdl\d0108315\be506b.dgn	USER NAME = bauerdl	DESIGNED - R. TOMSONS 09-02-10	REVISED - R. TOMSONS 02-27-13
	PLOT SCALE = 50.000 ' / in.	DRAWN -	REVISED -
	PLOT DATE = 2/27/2013	CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST LIGHT TOWER
120 FT TO 140 FT FOUNDATION DETAIL

SCALE: NONE | SHEET NO. 2 OF 2 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	225
	BE-506B	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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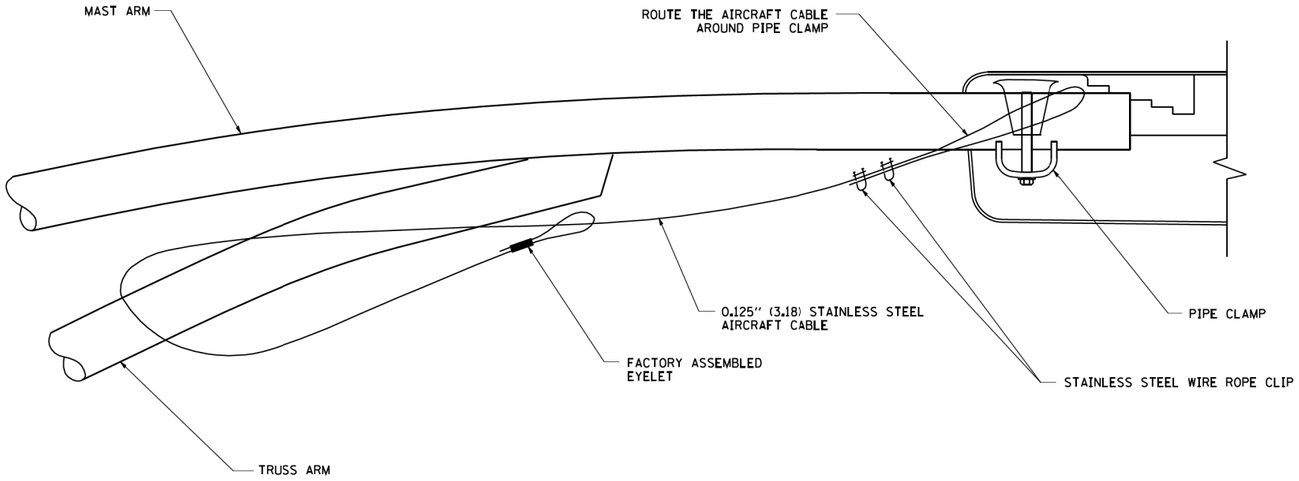
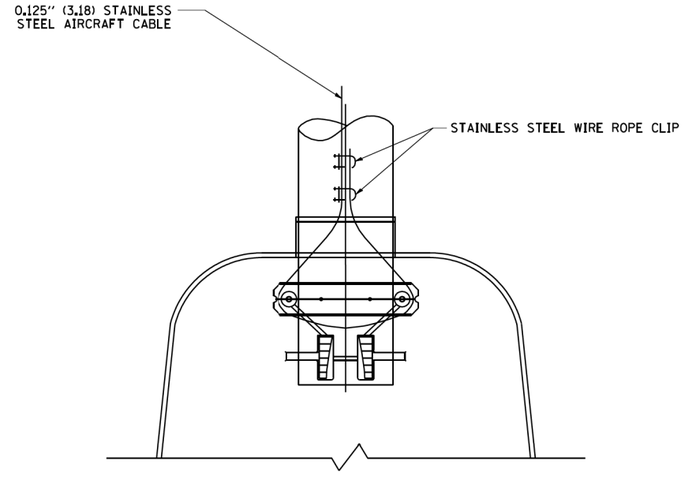


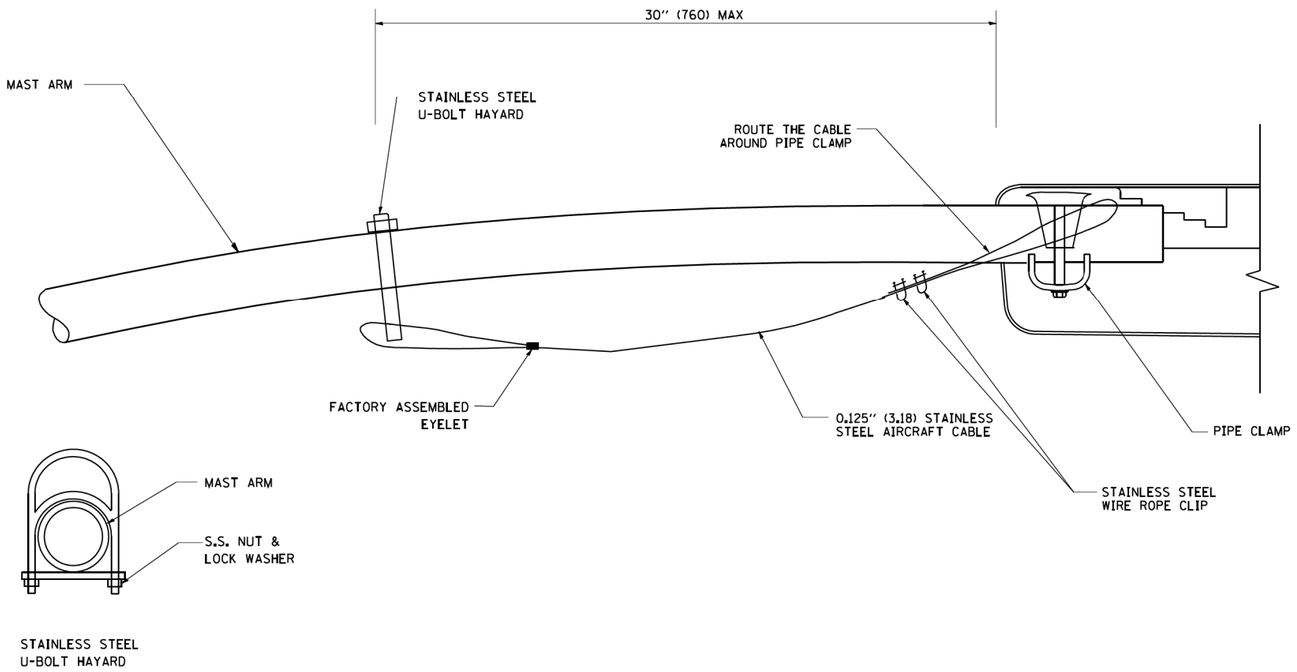
SIDE VIEW (TRUSS ARM)

N.T.S.



BOTTOM VIEW

N.T.S.



SIDE VIEW (SINGLE MEMBER OR DAVIT ARM)

N.T.S.

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE SHOWN.
2. CONTRACTOR SHALL ADJUST THE WIRE CLIP TO ELIMINATE ANY SLACK FROM THE WIRE ROPE.
3. THE 0.125" (3.18) STAINLESS STEEL AIRCRAFT CABLE SHALL REMAIN VISIBLE FROM THE GROUND LEVEL.
4. THE BREAKING STRENGTH OF THE CABLE SHALL BE 1700 LBS. MIN.

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		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LUMINAIRE SAFETY CABLE ASSEMBLY

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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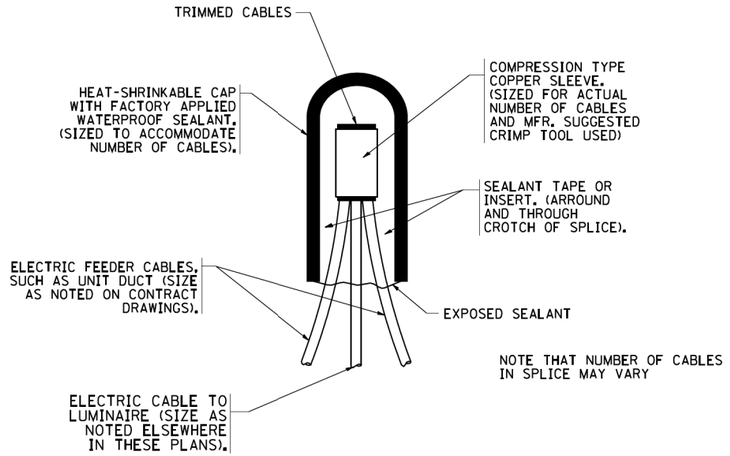
	BE-701	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TYPICAL SPLICE DETAIL

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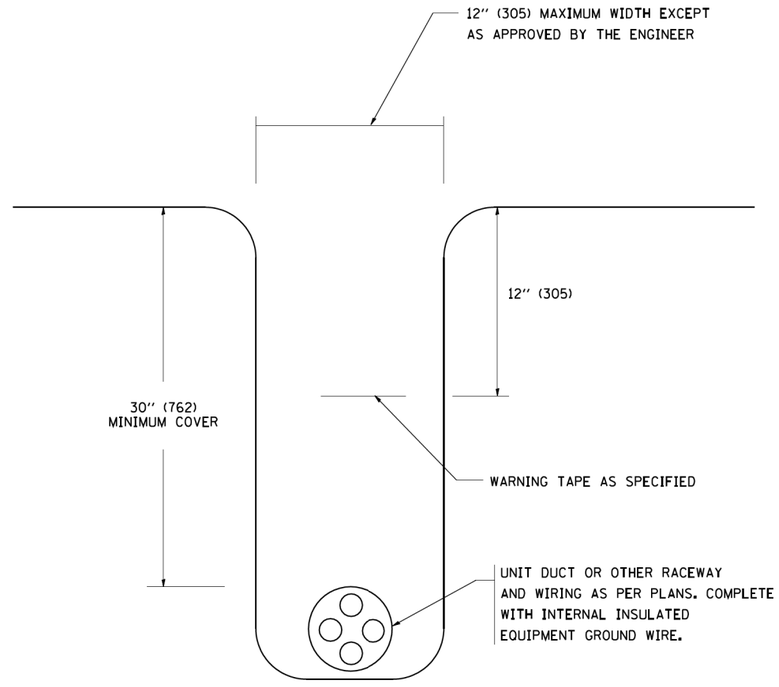

TYPICAL WIRING IN TRENCH DETAIL

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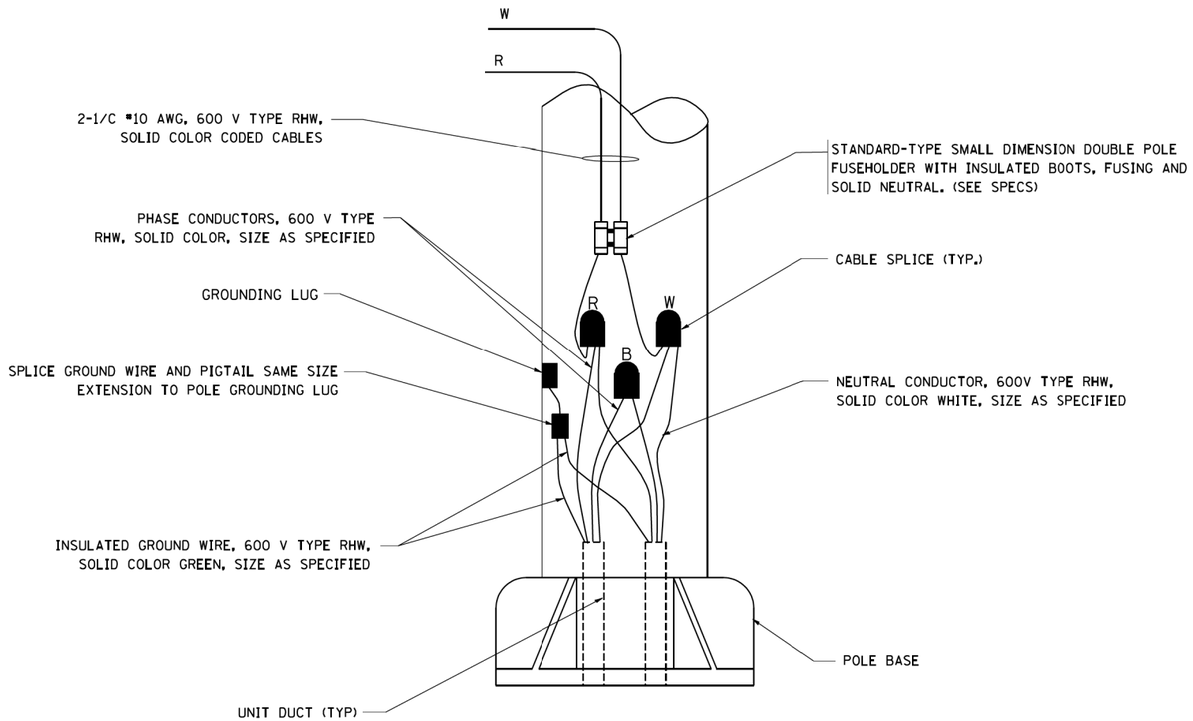

POLE WIRING DETAIL

N.T.S.

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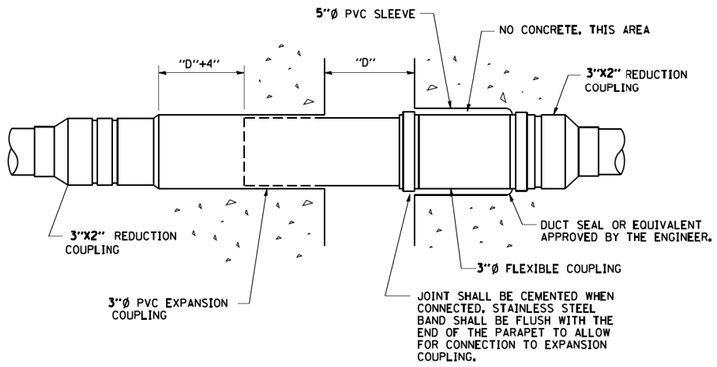
		DRAWN -	REVISED -						372/373	2013-037B-R	COOK	787	227
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -							BE-702	CONTRACT NO. 60W75		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



INSTALLATION OF CONDUIT
IN BRIDGE PARAPET EXPANSION JOINT
(N.T.S.)

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		DRAWN -	REVISED -
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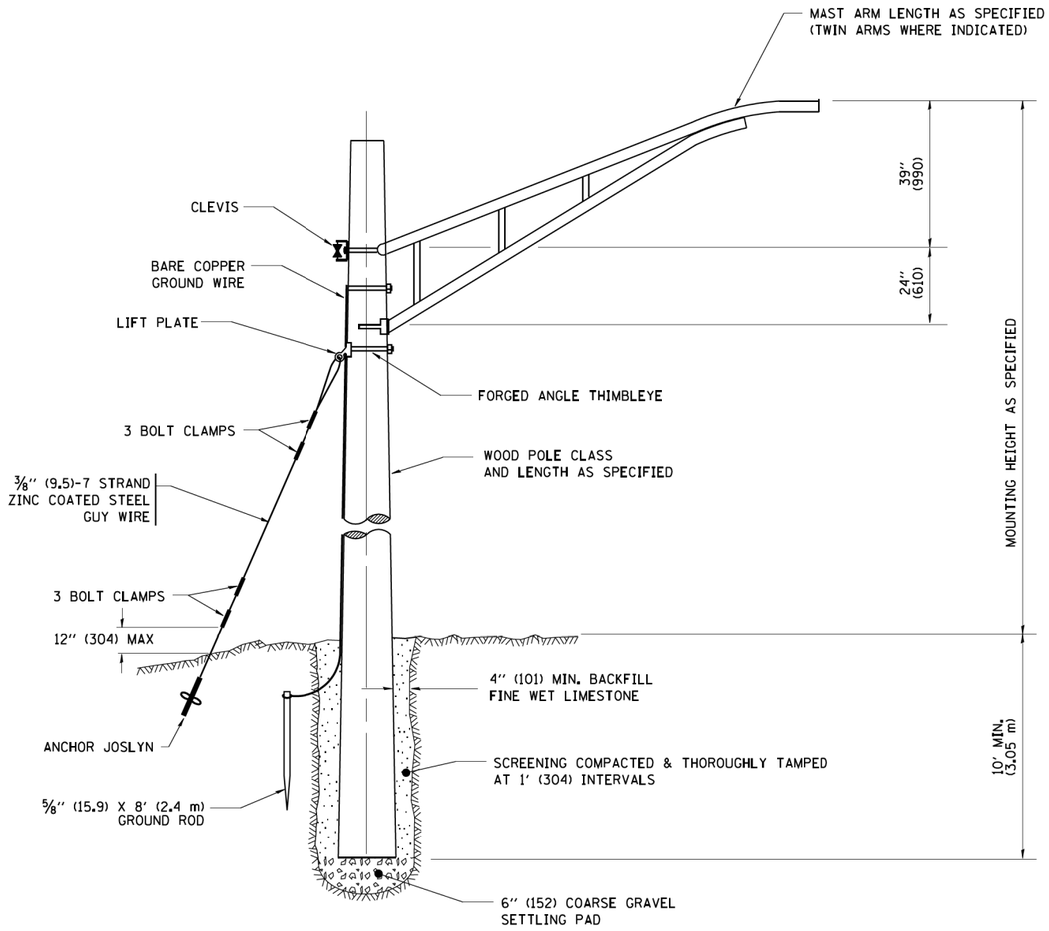
	PLOT DATE = 2/5/2009	DATE - 01-20-2009	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

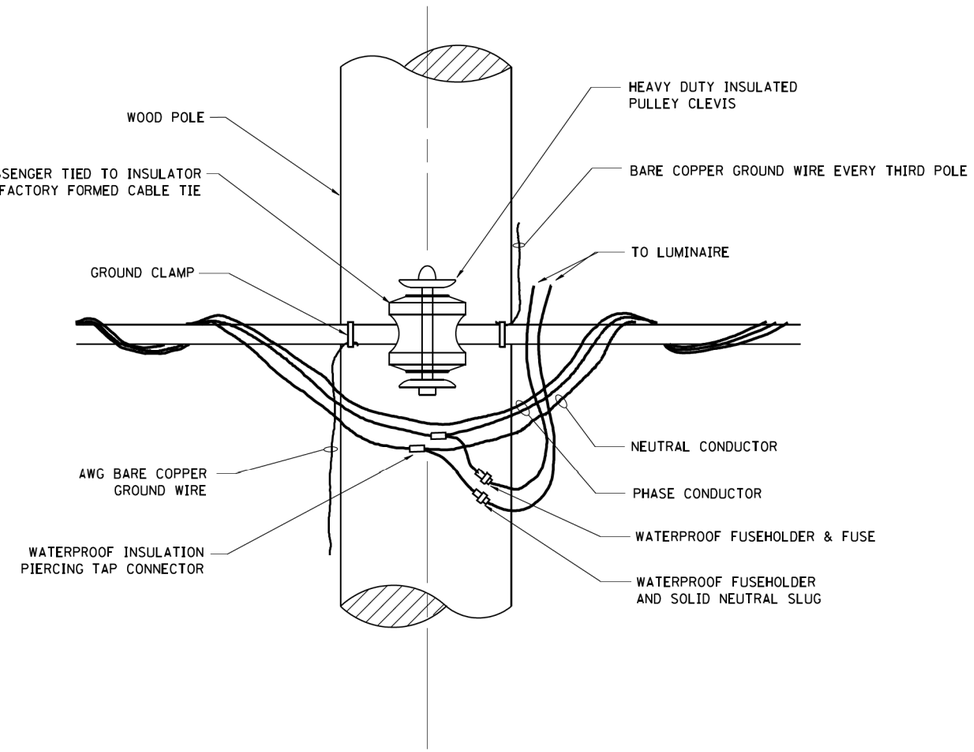
MISCELLANEOUS ELECTRICAL DETAILS, SHEET B
J BOX EMBEDDED IN BARRIER WALL – INSTALLATION OF CONDUIT IN BRIDGE PARAPET EXPANSION JOINT – ELECTRIC CONNECTION TO UNDERPASS LIGHTING

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	228
	BE-703	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TEMPORARY LIGHT POLE DETAIL



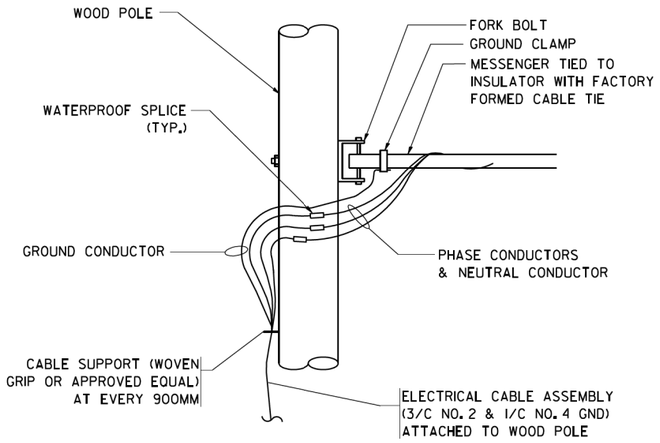
TEMPORARY LIGHT POLE ATTACHMENT DETAIL

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED

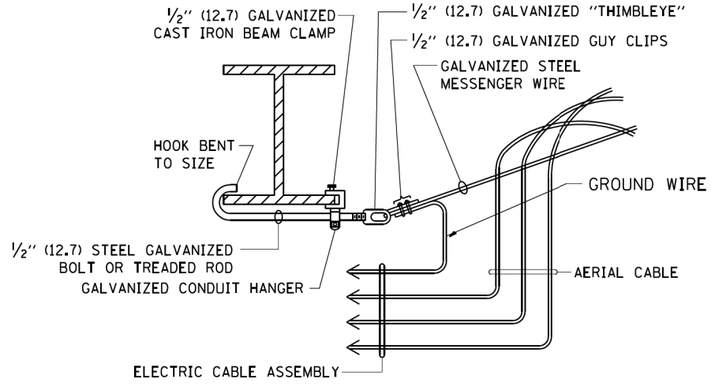
FILE NAME = W:\diststd\22x34\be800.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**TEMPORARY LIGHT POLE DETAILS**
		DRAWN -	REVISED -		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	229
	BE-800	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



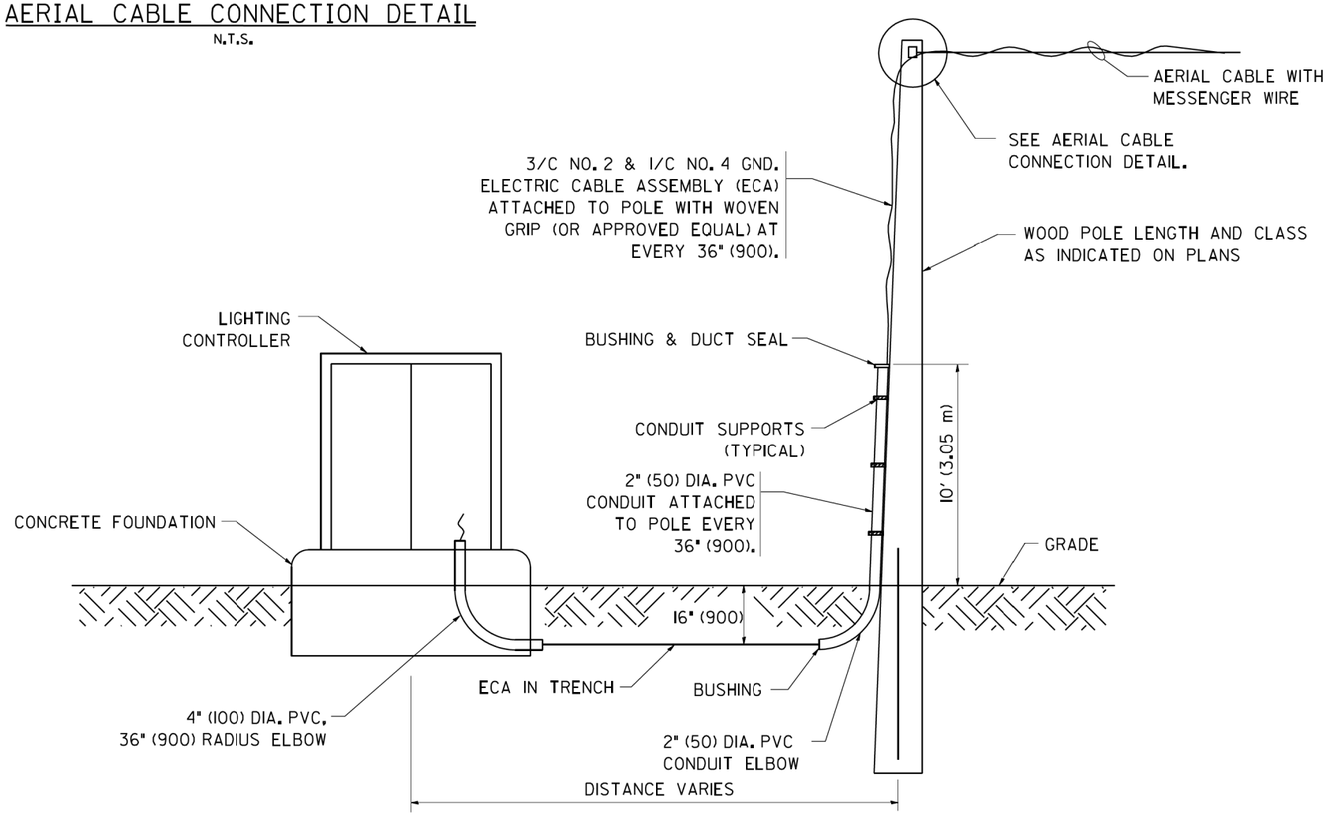
AERIAL CABLE CONNECTION DETAIL

N.T.S.



AERIAL CABLE ATTACHED TO STRUCTURE

NOT TO SCALE



WOOD POLE TO LIGHTING CONTROLLER WIRING CONNECTION DETAIL

N.T.S.

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. SEE PROPOSED LIGHTING PLAN FOR CONDUIT, CABLE AND ROUTING.
3. THE CONTRACTOR SHALL PROVIDE INTERMEDIATE SUPPORTS TO MAINTAIN MINIMUM CLEARANCES. REFER TO AERIAL AERIAL CABLE ATTACHED TO STRUCTURE DETAIL.
4. COST OF SPLICES AND MOUNTING HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE FOR AERIAL CABLE.

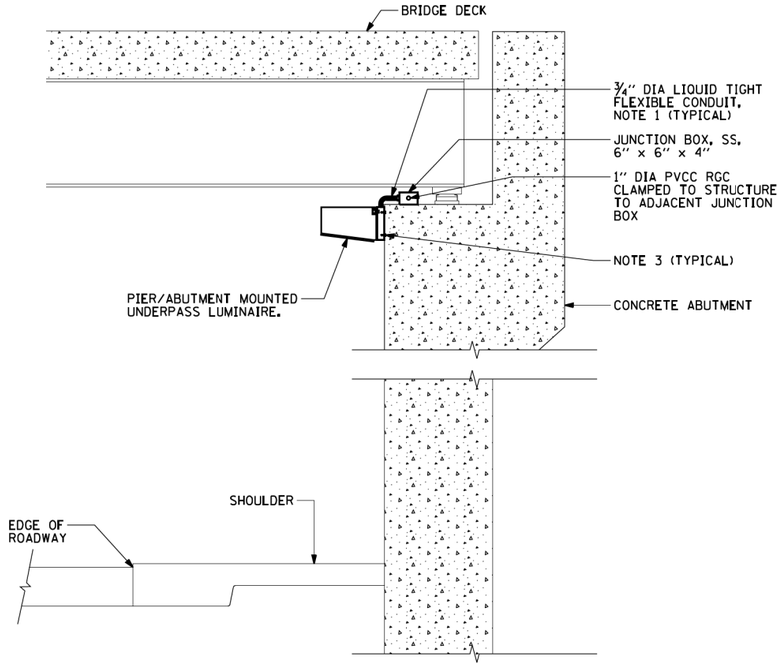
FILE NAME = W:\diststd\22x34\be801.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

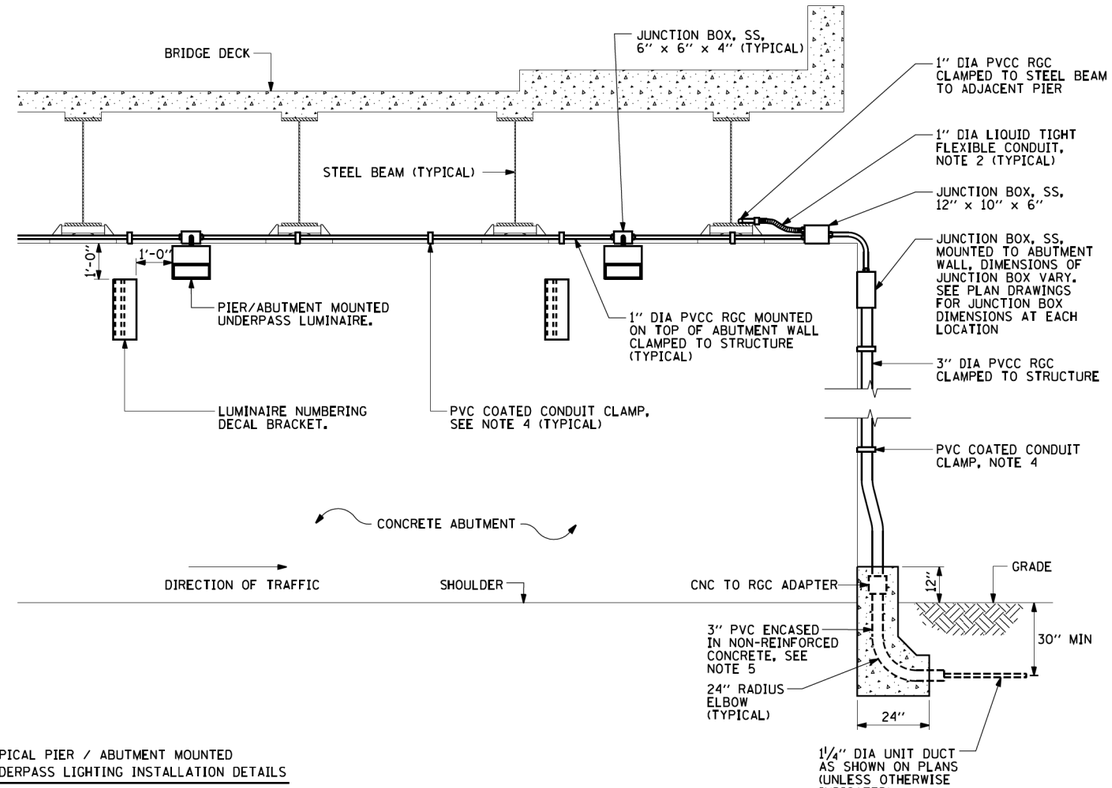
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY AERIAL CABLE INSTALLATION

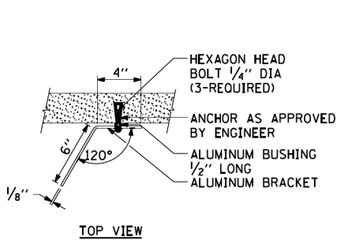
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	230
	BE-801	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

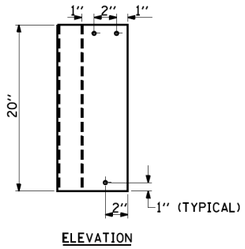




TYPICAL PIER / ABUTMENT MOUNTED
UNDERPASS LIGHTING INSTALLATION DETAILS



TOP VIEW



ELEVATION

LUMINAIRE NUMBERING DECAL BRACKET
NOT TO SCALE

PVC COATED CONDUIT BEAM CLAMP
NOT TO SCALE

PVC COATED CONDUIT CLAMP
NOT TO SCALE

NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT THE COST OF THE ¾" DIA. RIGID STEEL CONDUIT AND ¾" DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE LUMINAIRE INSTALLATION.
2. UNDERPASS LUMINAIRE MOUNTED TO FACE OF PIER OR ABUTMENT WALL. MOUNTING HEIGHT OF 1" BELOW THE TOP OF PIER OR ABUTMENT WALL TYPICAL FOR ALL PIER/ABUTMENT MOUNTED UNDERPASS LUMINAIRES UNLESS OTHERWISE NOTED.
3. EXPANSION ANCHOR, POWDER ACTUATED FASTENERS WILL NOT BE ALLOWED. EXPANSION ANCHOR MUST BE SIZED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
4. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
5. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
6. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.

FILE NAME = W:\diststd\22x34\be902.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 01-25-05
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER /ABUTMENT MOUNTED UNDERPASS LUMINAIRE INSTALLATION DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	231
	BE-902	CONTRACT NO. 60W75		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ammerst Court, Suite 204
Naperville, Illinois 60565
(630) 325-1988

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-01
Station 363+88 (CL I-55)
Offset 97.20ft Left
Ground Surface Elev. ____ 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 (%)	Material
				12.0" ASPHALT
	30			CRUSHED STONE-dense (Fill)
	16		4	
	14			
	3			CLAY LOAM-brown & gray-stiff to very stiff (Fill)
-5	3	1.0	21	
	5	P		
	2			
	3	2.0	17	
	4	P		
	4			
	5	3.0	17	
-10	7	P		
	3			
	5	1.8	21	
	7	B		
	2			
	2	1.0	20	
-15	3	P		
	3			
	5	2.0	17	
	5	P		
	10			
	8	2.2	17	
-20	11	B		
	2			CLAY LOAM-brown & gray-stiff to very stiff (Fill) *(continued)*
-25	3	1.1	24	
	5	B		
	2			
	2	1.1	24	
	4	B		
	2			
	2		23	
-30	3			
	2			
	3	1.2	28	
	3	B		
	3			
	4	1.5	25	
-35	6	P		
	4			
	6	1.2	15	
	8	B		
	21			SANDY CLAY LOAM-gray-dense to very dense
	26	7.1	12	
-40	26	B		

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-01
Station 363+88 (CL I-55)
Offset 97.20ft Left
Ground Surface Elev. ____ 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 (%)	Material
				SANDY CLAY LOAM-gray-dense to very dense *(continued)*
	23			
	24	9.1	12	
	32	B		
	21			
-45	50/5"	3.5	12	
		B		
	47			
	50/5"	5.1	10	
	32	B		
	33	6.7	17	End Of Boring @ -50.0'. Boring backfilled with cuttings.
-50	50/5"	B		

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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/5/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-02
Station 364+17 (CL I-55)
Offset 112.40ft Right
Ground Surface Elev. ____ ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter ____ ft ▼
Upon Completion ____ ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				8.0" ASPHALT
	7			CLAY LOAM-dark brown & gray-stiff to very stiff (Fill)
	4	2.5	16	
	4	B		
	5			
	9		19	
-5	12			
	4			
	6	2.7	14	
	8	B		
	3			
	5	1.5	18	
-10	6	P		
	5			SILTY CLAY-dark brown, gray & spotted black-stiff to hard (Fill)
	5	4.5	19	
	7	P		
	4			
	3	1.0	21	
-15	4	P		
	3			CLAY LOAM-brown & gray-medium stiff to stiff (Fill)
	3	0.5	23	
	4	B		
	3			
	3	0.6	19	
-20	3	B		
	3			CLAY LOAM-brown & gray-medium stiff to stiff (Fill) *(continued)*
	3	0.7	23	
	3	B		
	3			
	3	1.1	21	
-25	4	B		
	6			CRUSHED BRICK-medium dense (Fill)
	5		29	
	9			
	4			CLAY LOAM-gray-medium stiff to stiff (Fill)
	4	1.0	21	
-30	4	B		
	5	1.5	19	
-35	6	P		
	3			SILTY CLAY LOAM-gray & spotted black-loose (Possible Fill)
	3		27	
	3			
	13			CLAY LOAM-gray-hard
	17		12	
-40	23			

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\150025 BENESCH\ IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\150025 BORING LOGS\150025_LOG.GPJ 11/3/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-01.dgn	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
USER NAME = jworthington	DRAWN -	REVISED -	HIGH MAST TOWER FOUNDATION SOIL BORINGS
PLOT DATE = 6/17/2015	CHECKED -	REVISED -	SCALE: SHEET 1 OF 19 SHEETS STA. TO STA.
	DATE - 6/12/2015	REVISED -	

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F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	232
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ameresl Court, Suite 204
Naperville, Illinois 60565
(630) 325-1986

SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/5/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-02
Station 364+17 (CL I-55)
Offset 112.40ft Right
Ground Surface Elev. ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-hard *(continued)*			
	11		
	16	7.0	12
	22	B	
	13		
-45	12	4.8	12
	13	B	
	6		
	10	6.5	12
	15	B	
CLAY LOAM with FRACTURED ROCK-gray-dense	7		
End Of Boring @ -50.0'. Boring backfilled with cuttings. -50	25		13
	23		
-55			
-60			

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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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-03
Station 357+54 (CL I-55)
Offset 91.80ft Left
Ground Surface Elev. 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 (%)
12.0" ASPHALT			
CRUSHED STONE-medium dense (Fill)	25		
	9		3
	5		
CLAY LOAM-dark brown, gray & black-medium dense to dense (Fill)	4		
-5	7	1.5	21
	19	P	
	9		
	35		9
	17		
	8		
-10	9		8
	7		
	6		
	6		
	6		
CLAY-gray-hard (Fill)	6		
	7		15
-15	10		
CLAY LOAM-brown & gray-stiff to hard (Fill)	5		
	7	1.7	16
	10	B	
	5		
	5	2.0	11
-20	5	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*			
	12		
	12	5.9	14
	18	B	
	4		
-25	5	1.9	22
	5	B	
PEAT-dark gray to black-loose			
	2		
	3	1.5	61
	5	P	
ORGANIC SILTY CLAY LOAM-dark brown & gray-very loose to loose	2		
-30	2	0.4	31
	2	B	
	3		
	3	1.2	25
	3	B	
	2		
-35	2	1.3	37
	3	B	
	2		
	2	1.3	45
	3	B	
	2		
	2	1.6	45
-40	3	B	

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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 Ameresl Court, Suite 204
Naperville, Illinois 60565
(630) 325-1986

SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-03
Station 357+54 (CL I-55)
Offset 91.80ft Left
Ground Surface Elev. 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 (%)
SANDY CLAY LOAM-gray-dense to very dense	2		
	9		11
	21		
	16		
-45	18		15
	25		
	23		
	50/5"		13
	38		
End Of Boring @ -50.0'. Boring backfilled with cuttings. -50	28		13
	50/5"		
-55			
-60			

Z:\PROJECTS\2015\150025 BENESCH IL-171 FIRST AVE. IDOT FTB 154, ITEM 14\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

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)

FILE NAME =	DESIGNED -	REVISED -
...\D160W75-sht-HMT-sb-NB-02.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: SHEET 2 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	233
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ameresl Court, Suite 204
Naperville, Illinois 60565
(630) 325-1988

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/18/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-04
Station 358+87 (CL I-55)
Offset 80.80ft Right
Ground Surface Elev. 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 (%)
12.0" ASPHALT			
6.0" CRUSHED STONE	10		
CLAY LOAM-brown & gray-medium stiff to very stiff (Fill)	10 8		6
	6		
	7	2.8	17
-5	8	B	
	7		
	8 11	2.8 B	15
	6		
	50/1	1.9	19
-10		B	
	10		
	10 7	3.3 P	18
	8		
	4 8	2.0 P	17
-15			
	7		
	7 7	1.0 B	20
	5		
	5 7	1.0 B	18
-20			
CLAY LOAM-brown & gray-medium stiff to very stiff (Fill) *(continued)*	3		
	3 4	0.6 B	17
	5		
	12 9	2.0 P	23
-25			
	5		
	5 5	0.6 B	18
	5		
	7 8	1.5 P	18
-30			
	6		
	8 8	1.0 P	19
	6		
	9 8	1.0 B	18
-35			
	3		
	7 7	1.0 P	23
	4		
	5 7	0.5 P	21
-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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/18/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-04
Station 358+87 (CL I-55)
Offset 80.80ft Right
Ground Surface Elev. 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 LOAM-brown & gray-medium stiff to very stiff (Fill) *(continued)*	3		
	4 5	1.0 P	25
SILTY CLAY LOAM-gray-loose	3		
	3 3	1.0 P	37
-45			
CLAY LOAM with FRACTURED ROCK-gray-dense to very dense	18		
	22 30	1.5 B	15
	21		
End Of Boring @ -50.0'. Boring backfilled with cuttings.	30 50/5"		16
-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)

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805 Ameresl Court, Suite 204
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(630) 325-1988

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/27/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-05
Station 351+51 (CL I-55)
Offset 84.50ft Left
Ground Surface Elev. 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 (%)
12.0" ASPHALT			
CRUSHED STONE-medium dense (Fill)	15		
	10 10		5
CLAY LOAM-brown & gray-stiff to hard (Fill)	2		
	3 4	1.8 B	20
-5			
	3		
	4 7	4.3 B	17
	6		
	8 11	5.3 B	17
-10			
	3		
	3 7	1.9 B	20
	4		
	4 7	1.8 B	21
-15			
	6		
	8 11	1.6 B	22
	6		
	6 10	2.0 B	20
-20			
CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*	3		
	6 12	2.7 B	19
	10		
	16 16	2.2 B	20
-25			
	7		
	7 10	1.0 P	21
	8		
	8 26	1.8 B	19
-30			
	7		
	6 6	1.8 B	21
	6		
CLAYEY SAND, GRAVEL & FRACTURED ROCK-gray-loose to dense (Fill)	12 35		24
-35			
	5		
	3 3		9
	3		
	29 25		6
-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\150025 BENESCH IL-171 FIRST AVE. IDOT FTB 154, ITEM 14\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-03.dgn	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
USER NAME = jworthington	DRAWN -	REVISED -	HIGH MAST TOWER FOUNDATION SOIL BORINGS
PLOT DATE = 6/17/2015	CHECKED -	REVISED -	SCALE: SHEET 3 OF 19 SHEETS STA. TO STA.
	DATE - 6/12/2015	REVISED -	

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F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	234
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ammerst Court, Suite 204
Naperville, Illinois 60565
(630) 325-1988

SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/27/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-05
Station 351+51 (CL I-55)
Offset 84.50ft Left
Ground Surface Elev. 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 (%)
CLAYEY SAND, GRAVEL & FRACTURED ROCK-gray-loose to dense (Fill) *(continued)*	19		
	22		9
FRACTURED ROCK-gray-very dense (Possible Fill)	50/"		
	38		
	50/2"		5
-45			
	50/3"		
			14
	50/2"		
End Of Boring @ -50.0'. Boring backfilled with cuttings. -50			4
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/18/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-06
Station 353+87 (CL I-55)
Offset 75.70ft Right
Ground Surface Elev. 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 (%)
14.0" ASPHALT			
8.0" CRUSHED STONE	24		
CLAY LOAM-brown & gray-medium stiff to very stiff (Fill)	15		3
	13		
	5		
	8	3.6	18
-5	9	B	
	4		
	4	1.9	22
	5	B	
	6		
	6	2.4	20
-10	13	B	
	11		
	6		21
	11		
	7		
	7		26
-15	8		
	4		
	5	0.9	22
	5	B	
	4		
-20	5	2.3	22
	6	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-brown & gray-medium stiff to very stiff (Fill) *(continued)*	4		
	4	0.8	22
	4	B	
	2		
	3	1.0	18
-25	6	P	
	3		
	3	1.0	18
	3	P	
	3		
	5	1.1	22
-30	6	B	
	5		
	7	1.0	21
	8	B	
	5		
	6	1.5	22
-35	9	B	
FRACTURED ROCK-gray-dense to very dense (Possible Fill)	36		
	50		14
	30		
	11		
	11		17
-40	19		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/18/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-06
Station 353+87 (CL I-55)
Offset 75.70ft Right
Ground Surface Elev. 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 (%)
FRACTURED ROCK-gray-dense to very dense (Possible Fill) *(continued)*	28		
	10		7
	50/4"		
Drillers Observation - Possible Bedrock or Boulders			
-45			
End Of Boring @ -45.0'. Boring backfilled with cuttings.			
-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)
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Z:\PROJECTS\2015\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-04.dgn	DESIGNED -	REVISED -
	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: SHEET 4 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	235
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/17/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-07
Station 350+68 (CL I-55)
Offset 69.00ft Right
Ground Surface Elev. 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 (%)	Material
				12.0" ASPHALT
	11			12.0" CRUSHED STONE
	8		5	
	6			CLAY LOAM-brown & gray-stiff to hard (Fill)
	4			
-5	5	3.3	20	
	6	B		
	3			
	4	1.3	18	
	5	B		
	3			
-10	8	5.0	14	
	8	B		
	5			
	7	2.7	17	
	11	B		
	4			
-15	5	2.7	18	
	10	B		
	6			
	6	1.6	18	
	11	B		
	3			
-20	6	1.8	20	
	7	B		
				FRACTURED ROCK-gray-medium dense to very dense (Apparent Fill)
-25	6			CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*
	8	1.8	21	
	6	B		
	4			
	6			
-30	9	1.4	20	
	13	B		
	4			
	5	1.9	21	
	7	B		
	5			
-35	8	1.8	20	
	8	B		
	5			
	7	1.9	20	
	9	B		
	3			
	4		18	
	8			
	7			
-40	7		18	
	8			
	12			
	35		15	
	16			

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/17/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-07
Station 350+68 (CL I-55)
Offset 69.00ft Right
Ground Surface Elev. 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 (%)	Material
				FRACTURED ROCK-gray-medium dense to very dense (Apparent Fill) *(continued)*
	50/3"			
			6	
	4			
-45	6		12	
	9			
	50/1"			
			10	
	27			
-50	12		8	End Of Boring @ -50.0'. Boring backfilled with cuttings.
	15			

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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/27/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-08
Station 343+90 (CL I-55)
Offset 52.90ft Left
Ground Surface Elev. 618.20 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 (%)	Material
				15.0" ASPHALT
				616.95
	14			CLAY LOAM-brown & gray-stiff to hard (Fill)
	7	4.5	18	
	6	P		
	5			
-5	6	4.2	13	
	8	B		
	5			
	6	1.6	16	
	6	B		
	8			
-10	8	3.0	11	
	15	P		
	4			
	6	1.0	25	
	9	B		
	8			
-15	6	2.8	22	
	9	B		
	8			
	6	1.8	19	
	9	B		
	6			
-20	10	2.5	22	
	12	B		
				CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*
-25	7			
	8	1.5	16	
	21	B		
	5			
	5	1.4	21	
	9	B		
	7			
-30	7	2.5	16	
	11	P		
	6			
	8	2.0	15	
	27	B		
				585.20
				FRACTURED ROCK-gray-dense to very dense (Possible Fill)
	50/"		12	
-35				
	23			
	14		9	
	24			
	50/3"			
-40			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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FILE NAME =	DESIGNED -	REVISED -	
...\D160W75-sht-HMT-sb-NB-05.dgn	DRAWN -	REVISED -	
USER NAME = jworthington	CHECKED -	REVISED -	
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: SHEET 5 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	236
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/27/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-08
Station 343+90 (CL I-55)
Offset 52.90ft Left
Ground Surface Elev. 618.20 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 (%)
FRACTURED ROCK-gray-dense to very dense (Possible Fill) *(continued)*			
	50/5"		
			7
	29		
	21		5
-45	21		
	12		
	23		8
	29		
	12		
End Of Boring @ -50.0'. Boring backfilled with cuttings. 568.20 -50	12		13
	20		
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/17/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-09
Station 341+87 (CL I-55)
Offset 72.20ft Right
Ground Surface Elev. 625.00 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 (%)
14.0" ASPHALT			
623.83			
6.0" CRUSHED STONE 623.33	15		
CLAY LOAM-brown & gray-stiff to hard (Fill)	9		18
	5		
	5		
	5	3.8	17
-5	7	B	
	5		
	6	2.7	21
	8	B	
	6		
	6	4.0	19
-10	8	B	
	5		
	7	1.8	23
	7	B	
	3		
	5	1.0	29
-15	7	B	
	5		
	6	1.1	19
	9	B	
	8		
	15	4.0	16
-20	12	P	

CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	6		
	8	1.4	18
	10	B	
	6		
	9	1.9	22
-25	11	B	
	7		
	7	1.2	18
	10	B	
	6		
	11	1.1	21
-30	17	B	
594.50			
CRUSHED STONE-medium dense to very dense (Apparent Fill)	50/4"		17
	17		
	15		15
-35	10		
	21		
	24		9
	9		
	19		
-40	21		8
	43		

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/17/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-09
Station 341+87 (CL I-55)
Offset 72.20ft Right
Ground Surface Elev. 625.00 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 (%)
CRUSHED STONE-medium dense to very dense (Apparent Fill) *(continued)*			
	50/3"		
			16
	50/3"		
-45			8
579.50			
SANDY CLAY LOAM with FRACTURED ROCK-gray-very dense	22		
	39		12
	40		
	31		
End Of Boring @ -50.0'. Boring backfilled with cuttings. 575.00 -50	50/3"		14
-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)

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...\D160W75-sht-HMT-sb-NB-06.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: SHEET 6 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	237
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 8/21/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY JZ
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-10
Station 336+72 (CL I-55)
Offset 86.40ft Left
Ground Surface Elev. 623.00 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 (%)
12.0" ASPHALT			
622.00			
CLAY LOAM-brown & gray-stiff to hard (Fill)	5		
	3	4.5	20
	4	B	
	2		
-5	2	2.4	15
	5	B	
	3		
	5	3.7	19
	6	B	
	5		
-10	7	4.5	14
	9	P	
	4		
	7	1.8	17
	7	B	
610.00			
SILTY CLAY-brown & gray-medium dense (Fill)	5		
	7		26
-15	8		
	5		
	7		28
	9		
605.00			
CLAY to CLAY LOAM-brown & gray-stiff to very stiff (Fill)	5		
	6	2.0	22
-20	8	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY to CLAY LOAM-brown & gray-stiff to very stiff (Fill) *(continued)*	4		
	5	1.5	22
	5	P	
	4		
	6	2.0	21
-25	7	P	
	5		
	7	2.2	22
	8	B	
595.00			
CLAY LOAM-gray-stiff (Possible Fill)	5		
	8	1.5	17
-30	10	B	
592.50			
GRAVEL-gray-dense to very dense	12		
	16		20
	17		
	18		
	20		15
-35	20		
	19		
	23		10
	21		
	18		
	21		11
-40	24		

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 8/21/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY JZ
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-10
Station 336+72 (CL I-55)
Offset 86.40ft Left
Ground Surface Elev. 623.00 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 (%)
GRAVEL-gray-dense to very dense *(continued)*	50/0"		
			11
580.00			
CLAY LOAM-gray-hard	16		
	25	4.5	19
-45	29	P	
	13		
	22	5.5	13
	27	B	
	17		
End Of Boring @ -50.0'. Boring backfilled with cuttings.	30	6.8	14
573.00	33	B	
-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)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ameresl Court, Suite 204
Naperville, Illinois 60565
(630) 325-9388

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/4/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-11
Station 43+89 (BL Ramp D)
Offset 35.80ft Right
Ground Surface Elev. 611.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 586.2 ft ▼
Upon Completion 586.2 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
610.20			89
CLAY LOAM-brown & gray-very stiff to hard (Fill)	4		
	18	2.3	13
	7	P	
	3		
-5	5	4.3	12
	6	P	
	2		
	4	2.6	19
	6	B	
	4		
-10	12	4.1	20
	23	B	
600.70			
CRUSHED STONE-medium dense to dense (Fill)	9		
	13		3
	15		
	13		
	17		6
-15	17		
	4		
	12		5
	12		
	7		
-20	12		4
	14		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
590.70			
SILTY LOAM-brown & gray-loose	2		
	3		20
	5		
588.20			
ORGANIC SILTY LOAM-medium dense	4		
	5		38
-25 ▼	5		
585.70			
ORGANIC SILTY SAND & GRAVEL-gray-loose	2		
	3		38
	4		
583.20			
SILTY CLAY LOAM-gray-medium dense to dense	7		
	11	3.2	11
-30	15	B	
	11		
	11		13
	16		
	10		
	19		12
-35	25		
575.70			
SILT-gray-medium dense to dense	12		
	15		20
	17		
	7		
	8		24
-40	11		

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\150025 BENESCH IL-171 FIRST AVE (IDOT FTB 154, ITEM 14)\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-07.dgn	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
USER NAME = jworthington	CHECKED -	REVISED -	
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 7 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	238
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/4/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-11
Station 43+89 (BL Ramp D)
Offset 35.80ft Right
Ground Surface Elev. 611.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 586.2 ft
Upon Completion 586.2 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SILT-gray-medium dense to dense *(continued)*
	7			
	10		23	
568.20	15			
				SILTY GRAVEL
	5			FRACTURED-gray-very dense
-45	6		26	
	10			
	17			
564.20	50/2"		9	
				Auger Refusal @ -47.0'. End Of Boring. Boring backfilled with cuttings.
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 8/22/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-12
Station 35+71 (BL Ramp B)
Offset 6.70ft Right
Ground Surface Elev. 614.40 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 (%)	
				13.0" ASPHALT
613.32				
612.90	8			5.0" CRUSHED STONE
	5	3.8	14	CLAY LOAM-dark brown &
	5	P		gray-stiff to hard (Fill)
	5			
-5	5	4.4	15	
	5	B		
	3			
	3	3.4	20	
	3	B		
	2			
	4	2.3	22	
-10	4	P		
	5			
	8	1.3	25	
	8	P		
	19			
	14	4.5	14	
-15	11	P		
	8			
	6	4.5	17	
	6	P		
	6			
	7	3.0	13	
-20	7	P		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
593.90				
	7			SILTY CLAY LOAM-gray-medium
	14		14	dense
	14			
590.90				
	13			FRACTURED
	6		12	ROCK-gray-medium dense to very
-25	8			dense
	18			
	18		12	
	42			
	24			
-30	50/2"		10	
583.90				
	11			SANDY CLAY LOAM with
	19	4.5	14	GRAVEL-gray-dense
	23	P		
	13			
	16		13	
-35	35			
578.90				
	30			COBBLES, BOULDERS &
	50/4"		10	FRACTURED ROCK-gray-very
				dense
	50/5"			
574.90				
-40			10	

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 8/22/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-12
Station 35+71 (BL Ramp B)
Offset 6.70ft Right
Ground Surface Elev. 614.40 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 (%)	
				Drillers Observation: Weathered
	50/0"			Fractured Rock *(continued)*
572.40				
				Drillers Observation: Possible
570.90				Bedrock
				End Of Boring @ -43.5'. Boring
-45				backfilled with cuttings.
-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\2015\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

FILE NAME =	DESIGNED -	REVISED -
...\D160W75-sht-HMT-sb-NB-08.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 8 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	239
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/4/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-13
Station 329+65 (CL I-55)
Offset 107.30ft Right
Ground Surface Elev. 603.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
602.00			22
CLAY LOAM-brown-very stiff (Fill)	3		
	5	3.5	17
	6	P	
600.00			
CRUSHED STONE-medium dense (Fill)	18		
	12		7
-5	12		
597.50			
SANDY CLAY LOAM-gray-medium dense (Fill)	5		
	7		13
	8		
	15		
	14		11
-10	14		
592.50			
CRUSHED STONE-loose to very dense (Fill)	14		
	19		4
	15		
	7		
	8		4
-15	7		
	43		
	50/4"		4
	7		
	4		4
-20	3		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
582.50			
SILTY LOAM-brown & gray-medium dense	3		
	6		14
	16		
580.00			
CLAY LOAM-gray-hard	9		
	15		15
-25	27		
	9		
	14		7
	23		
	15		
	14		12
-30	15		
572.50			
SAND & GRAVEL-gray-dense	8		
	23		6
	15		
570.00			
SILTY CLAY LOAM with GRAVEL-gray-very dense	5		
	13		13
-35	50		
567.50			
Auger Refusal @ -35.5'. End Of Boring. Boring backfilled with cuttings.			
-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/3/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-14
Station 38+66 (BL Ramp D)
Offset 54.30ft Right
Ground Surface Elev. 603.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 591.2 ft ▼
Upon Completion 578.2 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
602.20			44
CLAY LOAM-brown, gray & black-very stiff to hard (Fill)	5		
	6	4.5	19
	8	P	
	3		
	4	3.0	19
-5	6	B	
	3		
	4	3.1	16
	5	B	
595.20			
CRUSHED STONE-medium dense (Fill)	27		
	9		9
-10	11		
	16		
	11		12
	6		
590.20			
CLAY-brown & gray-stiff	4		
	5	1.3	23
-15	7	P	
	2		
	3	1.4	25
	4	B	
585.20			
CLAY LOAM-gray-very stiff to hard	21		
	24	4.9	11
-20	28	B	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-very stiff to hard *(continued)*			
	17		
	22	5.4	12
	26	B	
	14		
	17	7.4	12
▽ -25	22	B	
	12		
	20	3.3	12
	23	B	
575.20			
SILTY LOAM-gray-medium dense to dense	13		
	19	3.2	15
	22	B	
-30			
	5		
	10	4.2	17
	16	B	
570.20			
SILTY LOAM-gray-very dense	50/3"		
			17
-35			
567.70			
FRACTURED ROCK-gray-very dense	31		
	24		7
	19		
	21		
	27		4
-40	48		

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/3/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-14
Station 38+66 (BL Ramp D)
Offset 54.30ft Right
Ground Surface Elev. 603.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 591.2 ft ▼
Upon Completion 578.2 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
FRACTURED ROCK-gray-very dense *(continued)*			
	50/2"		
561.20			6
Auger Refusal @ -42.0'. End Of Boring. Possible Bedrock.			
-45			
-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\2015\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/3/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-09.dgn	DESIGNED -	REVISED -	benesch engineers · scientists · planners
USER NAME = jworthington	DRAWN -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
PLOT DATE = 6/17/2015	CHECKED -	REVISED -	HIGH MAST TOWER FOUNDATION SOIL BORINGS
	DATE - 6/12/2015	REVISED -	SCALE: SHEET 9 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	240
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 8/28/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-15
Station 41+73 (BL Ramp B)
Offset 64.40ft Left
Ground Surface Elev. 598.30 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 589.3 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" CLAYEY TOPSOIL-dark brown to black (Fill) 597.30			10
CLAY LOAM-dark brown-hard (Fill)	8		
	10	4.5	10
	12	P	
	5		
-5	5	4.5	17
	5	P	
592.80			
CRUSHED STONE-loose to medium dense (Fill)	8		
	7		6
	5		
	6		
▼	4		14
-10	5		
	8		
	10		3
	8		
	6		
	7		6
-15	9		
	7		
	7		7
	10		
580.30			
SILTY CLAY LOAM-gray-medium dense	5		
	7	3.5	14
-20	8	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
577.80			
SILT-gray-very dense			
	24		
	50/4"		13
575.30			
SILTY LOAM with FRACTURED ROCK-gray-very dense			
	50/5"		
-25			9
572.80			
FRACTURED ROCK & GRAVEL-gray-very dense	50/3"		
			16
	50/4"		
			8
-30 567.80			
SANDY LOAM with FRACTURED ROCK-gray-very dense	50/3"		
			17
564.30	50/1"		
Drillers Observation: Possible Bedrock			
562.30			
End Of Boring @ -36.0'. Boring backfilled with cuttings.			
-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 8/27/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-16
Station 53+57 (BL Ramp A)
Offset 57.60ft Left
Ground Surface Elev. 603.40 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 588.4 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
18.0" TOPSOIL			24
601.90	3		
CLAY LOAM-dark brown-stiff to hard	7	4.5	16
	12	P	
	3		
-5	7	2.8	17
	8	P	
	3		
	5	1.5	14
	4	P	
	3		
	7	2.0	17
-10	17	P	
592.90			
CRUSHED STONE-medium dense to dense (Fill)	13		
	15		4
	25		
	17		
	17		6
▼ -15	8		
	10		
	10		15
	12		
	6		
-20	6		9
	7		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
582.90			
SAND, GRAVEL & FRACTURED ROCK-gray-very dense			
	27		
	41		8
	37		
	26		
-25	50/3"		7
	29		
	39		9
	30		
575.40			
SAND-gray-very dense			
	28		
	31		21
-30	36		
	33		
	50/3"		23
570.40			
SAND, GRAVEL & FRACTURED ROCK-gray-very dense			
	44		
	50		7
-35	50/4"		
	50/1"		
566.40			
Drillers Observation: Possible Bedrock			
564.90			
End Of Boring @ -38.5'. Boring backfilled with cuttings.	50/0"		
-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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(630) 325-1988

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/5/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-17
Station 22+85 (BL Ramp C)
Offset 50.80ft Right
Ground Surface Elev. 602.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 586.0 ft ▼
Upon Completion 587.5 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6.0" TOPSOIL-black 602.00			18
ORGANIC SILTY CLAY-dark brown, gray & black-loose to medium dense (Fill)	5		
	5	2.8	18
	6	P	
	3		
-5	3	1.0	37
	3	P	
	2		
	2	2.8	44
	3	P	
	2		
	2	1.0	50
-10	4	P	
	2		
591.00			
SILTY CLAY-dark brown & gray-stiff (Fill)	4	1.0	23
589.50	14	P	
COBBLES, BOULDERS & FRACTURED ROCK-medium dense to very dense	12		
	9		4
▽ -15	7		
▼	50/4"		
			6
	50/4"		
-20			8

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
582.00			
CLAYEY SAND & GRAVEL-gray-medium dense (Apparent Fill)	49		
	16		14
	7		
579.50			
SANDY CLAY LOAM with FRACTURED ROCK-gray-very dense	16		
	34		8
-25	50/2"		
	18		
	50/4"		10
	50/3"		
-30			8
	50/4"		
			9
569.00	50/0"		
Auger Refusal @ -33.5'. End Of Boring. Boring backfilled with cuttings.			
-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)

FILE NAME = ...\D160W75-sht-HMT-sb-NB-10.dgn	DESIGNED -	REVISED -
	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 10 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	241
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ammerst Court, Suite 204
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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/5/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-18
Station 26+62 (BL Ramp C)
Offset 57.70ft Right
Ground Surface Elev. 600.30 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 591.8 ft
Upon Completion 590.3 ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
600.13				2.0" TOPSOIL-black
			31	CRUSHED STONE-very dense (Fill)
	50/3"			
			2	
597.30				CLAY LOAM-dark brown & gray-very stiff (Fill)
	5			
-5	7	2.8	17	
	5	P		
	11			
	17	2.8	18	
	16	P		
592.30				COBBLES, BOULDERS & FRACTURED ROCK-medium dense (Apparent Fill)
	11			
	14		8	
-10	18			
	5			
	6		14	
	8			
	12			
	15		4	
-15	13			
	8			
	5		7	
	5			
582.30				SANDY LOAM-brown & gray-medium dense (Apparent Fill)
	3			
	4		19	
-20	6			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SANDY LOAM-brown & gray-medium dense (Apparent Fill) *(continued)*
	4			
	4		22	
	7			
576.30				SILTY SAND with GRAVEL-gray-very dense
	15			
-25	50/5"		16	
	25			
	29		10	
	41			
571.80				Drillers Observation: Possible Bedrock
	50/0"			
570.80			5	
				Auger Refusal @ -29.5'. End Of Boring. Boring backfilled with cuttings.
-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/16/13

ROUTE FAP 372/373 (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 HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-19
Station 48+42 (BL Ramp A)
Offset 18.30ft Left
Ground Surface Elev. 613.60 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 (%)	Description
				3.0" ASPHALT, 12.0" CONCRETE
612.35				CLAY LOAM-brown & gray-very stiff to hard (Fill)
	6			
	4	4.2	20	
	4	B		
	3			
-5	5	4.5	14	
	6	P		
	6			
	8	4.7	13	
	8	B		
	3			
	5	3.3	14	
-10	7	B		
	8			
	7		13	
	7			
	3			
	10	4.5	13	
-15	12	P		
598.10				SILTY CLAY LOAM-gray-dense (Fill)
	19			
	15		17	
	17			
595.60				CLAY LOAM-brown & gray-medium dense (Fill)
	5			
	7		26	
-20	12			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
593.10				CRUSHED STONE-gray-medium dense to dense (Fill)
	5			
	13		16	
	17			
	12			
-25	7		8	
	11			
	3			
	5		5	
	5			
	5			
	17		3	
-30	7			
583.10				SILTY CLAY LOAM-gray-dense to very dense
	14			
	17		14	
	23			
	7			
	19		12	
-35	31			
	16			
	24	7.3	14	
	37	B		
	50/0"			
-40				Drillers Observation: Boulders from -38.0'-39.5'

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/16/13

ROUTE FAP 372/373 (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 HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. ____
Station ____
BORING NO. LB-19
Station 48+42 (BL Ramp A)
Offset 18.30ft Left
Ground Surface Elev. 613.60 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 (%)	Description
				SILTY CLAY LOAM-gray-dense to very dense *(continued)*
	27			
	29	9.6	14	
	32	B		
570.60				FRACTURED ROCK-gray-very dense
	50/3"			
-45			8	
	50/5"			
			6	
	50/4"			
			7	End Of Boring @ -50.0'. Boring backfilled with cuttings.
563.60				
-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\2016\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

FILE NAME =	DESIGNED -	REVISED -
...\D160W75-sht-HMT-sb-NB-11.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 11 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	242
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ameresl Court, Suite 204
Naperville, Illinois 60565
(630) 325-1986

SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/12/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY TZ
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-20
Station 44+38 (BL Ramp A)
Offset 5.60ft Right
Ground Surface Elev. 617.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 587.2 ft
Upon Completion 587.2 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" ASPHALT 616.20			
12.0" CRUSHED STONE 615.20	12		
CLAY to CLAY LOAM-brown & gray-stiff to hard (Fill)	11	2.5	18
	6	P	
	3		
-5	3	1.5	23
	4	P	
	3		
	5	2.8	22
	6	P	
	5		
	7	4.5	12
-10	12	P	
	3		
	4	2.9	13
	8	B	
	3		
	6	2.0	20
-15	7	B	
	45		
	32	2.5	15
	19	P	
SILTY CLAY LOAM-brown & gray-dense to very dense (Fill) 599.20	6		
	12		13
-20	50/4"		
SILTY CLAY LOAM-brown & gray-dense to very dense (Fill) *(continued)*			
	9		
	24		15
	26		
	14		
-25	19		15
	26		
CRUSHED STONE-medium dense to dense (Fill) 591.70	10		
	19		7
	18		
	23		
	18		4
-30	6		
	6		
	7		7
	12		
	16		
-35	11		6
	7		
SAND & GRAVEL-gray-dense 581.70	6		
	16		11
	27		
	30		
	23		6
-40	25		

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.
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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/12/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY TZ
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-20
Station 44+38 (BL Ramp A)
Offset 5.60ft Right
Ground Surface Elev. 617.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 587.2 ft
Upon Completion 587.2 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-gray-dense *(continued)* 576.70			
SANDY CLAY LOAM with FRACTURED ROCK-gray-very dense	50		
	50/2"	4.5	9
		P	
	50/2"		
-45		4.5	6
		P	
	49		
	50/5"	4.5	11
		P	
	27		
	39	4.5	10
End Of Boring @ -50.0'. Boring backfilled with cuttings. 567.20	50/5"	P	
-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)

Geo Services, Inc.
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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/12/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
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.
Station
BORING NO. LB-21
Station 24+36 (BL Ramp G)
Offset 3.80ft Right
Ground Surface Elev. 620.10 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 (%)
13.0" ASPHALT 619.02			
5.0" CRUSHED STONE 618.60	4		
CLAY LOAM-brown & gray-stiff to hard	4	4.1	17
	4	B	
	4		
-5	6	5.7	17
	8	B	
	5		
	6	4.0	19
	7	B	
	3		
	4	1.3	18
-10	50/3"	B	
SANDY CLAY LOAM with STONE-dark brown-medium dense (Fill) 609.60	4		
	5		16
	5		
	11		
	11		15
-15	7		
SILTY CLAY LOAM-brown & gray-medium dense (Fill) 604.60	4		
	14		12
	14		
	18		
	12		13
-20	5		
SILTY CLAY LOAM-brown & gray-medium dense (Fill) *(continued)*			
	9		
	7		18
	12		
	8		
-25	11		16
	10		
	14		
	20		25
	8		
CRUSHED STONE-dense to very dense (Fill) 592.10	28		
	35		8
-30	22		
	25		
	38		9
	35		
	23		
	20		9
-35	22		
CLAY LOAM-gray-very stiff to hard 584.60	9		
	5	4.5	13
	15	P	
	12		
	18	3.0	17
-40	35	B	

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\150025 BENESCH IL-171 FIRST AVE. IDOT FTB 154, ITEM 4A\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-12.dgn	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HIGH MAST TOWER FOUNDATION SOIL BORINGS
USER NAME = jworthington	DRAWN -	REVISED -	benesch engineers · scientists · planners	SCALE: SHEET 12 OF 19 SHEETS STA. TO STA.
PLOT DATE = 6/17/2015	CHECKED -	REVISED -		
	DATE - 6/12/2015	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	243
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Geo Services, Inc.
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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/12/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
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. _____
Station _____
BORING NO. LB-21
Station 24+36 (BL Ramp G)
Offset 3.80ft Right
Ground Surface Elev. 620.10 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 LOAM-gray-very stiff to hard *(continued)* 579.60			
SILTY LOAM-gray-very dense	24		
	34		19
	50/4"		
577.10			
SAND, GRAVEL & FRACTURED ROCK-gray-very dense	50/0"		
-45			
	50/3"		
			12
	50/3"		
			10
570.10			
End Of Boring @ -50.0'. Boring backfilled with cuttings.			
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/9/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO. _____
Station _____
BORING NO. LB-22
Station 20+08 (BL Ramp G)
Offset 56.10ft Right
Ground Surface Elev. 600.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 592.0 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
599.50			31
CLAY LOAM-dark brown-medium dense (Fill)	4		
	5		17
	9		
597.50			
CRUSHED STONE-medium dense (Fill)	10		
	10		9
-5	9		
	3		
	5		7
	9		
	4		
-10	4		9
	6		
	14		
	9		7
	7		
587.50			
SILTY CLAY LOAM-dark brown to black-stiff	4		
	4	1.0	32
-15	13	P	
585.00			
SILTY LOAM-gray-dense to very dense	11		
	26		13
	30		
	24		
-20	31		16
	43		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
580.00			
SILTY LOAM with FRACTURED ROCK-gray-very dense	35		
	50/4"		10
577.50			
SILTY CLAY LOAM with FRACTURED ROCK-gray-very dense	25		
	40	4.5	9
-25	41	P	
	50/4"		
			8
	45		
	50/5"	4.5	10
-30		P	
570.00			
SILTY LOAM-gray-very dense	28		
	35		15
	50		
	50/5"		
			12
565.00			
FRACTURED ROCK-dense	40		
	22		12
	22		
562.50			
Auger Refusal @ -38.0'. End Of Boring. Boring backfilled with cuttings.			
-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/13/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO. _____
Station _____
BORING NO. LB-23
Station 38+49 (BL IL171)
Offset 68.70ft Right
Ground Surface Elev. 622.20 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 (%)
12.0" ASPHALT			
621.20			
3.0" CRUSHED STONE 620.95	9		
CLAY LOAM-brown & gray-very stiff to hard (Fill)	2	2.0	17
	2	P	
	4		
	6	4.7	17
-5	9	B	
	2		
	3	2.2	20
	3	B	
	3		
-10	3	2.4	16
	4	B	
611.70			
SILTY CLAY LOAM-gray-medium dense (Fill)	3		
	8	4.5	12
	11	P	
	4		
	8	4.5	11
-15	10	P	
	3		
	6	3.5	13
	6	P	
604.20			
CLAY LOAM-brown & gray-very stiff to hard (Fill)	2		
	9	4.5	22
-20	11	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-brown & gray-very stiff to hard (Fill) *(continued)*			
	5		
	9	5.4	20
	13	B	
	7		
	8	2.9	19
-25	12	B	
	6		
	7		23
594.20	8		
CRUSHED STONE-medium dense to very dense (Fill)	20		
	50/4"		22
-30			
	20		
	12		11
	17		
	19		
	18		10
-35	18		
	12		
	15		1
	12		
	15		
	18		16
-40	21		

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 FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/3/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-13.dgn	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
USER NAME = jworthington	DRAWN -	REVISED -	HIGH MAST TOWER FOUNDATION SOIL BORINGS
PLOT DATE = 6/17/2015	CHECKED -	REVISED -	SCALE: SHEET 13 OF 19 SHEETS STA. TO STA.
	DATE - 6/12/2015	REVISED -	

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F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	244
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Ammerst Court, Suite 204
Naperville, Illinois 60565
(630) 325-1986

GSI Job No. 10025

SOIL BORING LOG

Page 2 of 2

Date 9/13/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW

SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station

BORING NO. LB-23
Station 38+49 (BL IL171)
Offset 68.70ft Right
Ground Surface Elev. 622.20 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 (%)
581.70			
CLAY LOAM-gray-hard	9		
	13	4.7	18
	17	B	
	7		
-45	10	5.0	16
	12	B	
576.70			
SILTY LOAM-gray-dense	12		
	18		19
	23		
574.20			
SANDY CLAY LOAM with GRAVEL-gray-dense	14		
	19		10
-50 572.20	25		
End Of Boring @ -50.0'. Boring backfilled with cuttings.			
-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\2015\10025 BENESCH, IL-171 FIRST AVE. IDOT FTB 154, ITEM 14\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

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Geotechnical, Environmental & Civil Engineering
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(630) 325-1986

GSI Job No. 10025

SOIL BORING LOG

Page 1 of 1

Date 9/9/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW

SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station

BORING NO. LB-24
Station 12+31 (BL Ramp G)
Offset 32.30ft Right
Ground Surface Elev. 598.00 ft

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

Groundwater Elev.:
First Encounter 585.0 ft ▼
Upon Completion 585.0 ft ▽
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
597.00			21
CLAY LOAM-dark brown to black-very loose to loose	5		
	5		23
	4		
	3		
-5	1		18
	2		
	2		
	2	1.0	26
	3	P	
	3		
	3		13
-10	4		
587.50			
SILTY CLAY-dark brown to black-medium stiff (Fill)	2		
	3	0.6	38
585.00 ▼	4	B	
CLAY LOAM with STONE-dark brown & gray-medium dense (Fill)	3		
	6		11
-15	5		
582.50			
CRUSHED STONE-medium dense to very dense (Fill)	5		
	4		19
	6		
	28		
-20	34		8
	36		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CRUSHED STONE-medium dense to very dense (Fill) *(continued)*			
	50/5"		
			7
575.00			
SILTY CLAY LOAM with FRACTURED ROCK-gray-very dense			
	28		
-25	29		9
	42		
	45		
	30		8
	27		
	50/5"		
			9
-30 568.00			
Auger Refusal @ -30.0'. End Of Boring. Boring backfilled with cuttings.			
-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)

Z:\PROJECTS\2015\10025 BENESCH, IL-171 FIRST AVE. IDOT FTB 154, ITEM 44\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

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(630) 325-1986

GSI Job No. 10025

SOIL BORING LOG

Page 1 of 2

Date 9/6/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW

SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM

COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station

BORING NO. LB-25
Station 38+69 (BL IL171)
Offset 59.80ft Left
Ground Surface Elev. 622.00 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 (%)
12.0" ASPHALT			
621.00			
6.0" CRUSHED STONE	7		
620.50			
CLAY to CLAY LOAM-brown & gray-very stiff to hard (Fill)	2	3.0	15
	4	P	
	2		
-5	4	2.3	22
	4	B	
	2		
	3	4.9	16
	8	B	
614.00			
SILTY CLAY LOAM with GRAVEL-gray-medium dense (Fill)	9		
	7		10
-10	12		
611.50			
CLAY to CLAY LOAM-brown & gray-stiff to hard (Fill)	4		
	6	1.3	21
	7	B	
	4		
	6	1.8	19
-15	10	P	
	5		
	7		22
	13		
	6		
-20	7	1.8	17

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY to CLAY LOAM-brown & gray-stiff to hard (Fill) *(continued)*			
	11		
	18	4.5	20
	12	P	
	8		
-25	8	4.5	15
	12	P	
596.50			
SILTY CLAY LOAM-brown-loose (Fill)	5		
	4	1.5	21
	4	P	
594.00			
CRUSHED STONE-medium dense to very dense (Fill)	39		
	38		12
-30	35		
	12		
	7		12
	10		
	10		
	14		11
-35	14		
586.50			
ORGANIC SILTY LOAM-black-loose	2		
	2		56
	3		
584.00			
SILTY LOAM-brown & gray-loose	3		
-40	3		25
	5		

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\10025 BENESCH, IL-171 FIRST AVE. IDOT FTB 154, ITEM 14\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-14.dgn	DESIGNED -	REVISED -
	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 14 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	245
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/6/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-25
Station 38+69 (BL IL171)
Offset 59.80ft Left
Ground Surface Elev. 622.00 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 (%)
SILTY LOAM-brown & gray-loose *(continued)*	581.50			
CLAY LOAM-gray-very dense		11		
		24	1.8	11
		50/4"	P	
	579.00			
SANDY LOAM-gray-very dense		50/5"		13
	-45			
	576.50			
SANDY CLAY LOAM with GRAVEL-gray-very dense		40		
		50/4"		11
		48		
		50/1"		9
	572.00			
End Of Boring @ -50.0'. Boring backfilled with cuttings.	-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 8/27/13

ROUTE FAP 372/373 (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 Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-26
Station 315+27 (CL I-55)
Offset 60.40ft Right
Ground Surface Elev. 602.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 587.7 ft ▼
Upon Completion n/a ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
14.0" ASPHALT				
	601.03			
CRUSHED STONE-medium dense		9		
		6		3
		6		
	599.20			
CLAY LOAM-brown & gray-hard (Fill)		3		
		7	5.8	19
	-5	7	B	
		5		
		10	4.3	14
		11	P	
		6		
		9	4.5	13
	-10	39	P	
	591.70			
CRUSHED STONE-medium dense to dense (Fill)		4		
		9		8
		14		
		6		
▼		6		6
	-15	5		
		3		
		5		11
		12		
		7		
		9		9
	-20	14		

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CRUSHED STONE-medium dense to dense (Fill) *(continued)*		5		
		49		16
		50/3"		
	579.20			
SANDY CLAY LOAM with FRACTURED ROCK-very dense		22		
		29	2.2	10
	-25	37	B	
		50/3"		
				7
	574.20			
COBBLES-gray-very dense		50/1"		
				1
	571.70			
CLAY-gray-very stiff		7		
		11	3.2	24
		18	B	
	569.20			
CLAY LOAM-gray-very dense		12		
		50/5"		10
	-35			
	566.70			
SAND & GRAVEL-gray-very dense		15		
		50/3"		6
		12		
		14		13
	-40	50/4"		

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 8/27/13

ROUTE FAP 372/373 (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 Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-26
Station 315+27 (CL I-55)
Offset 60.40ft Right
Ground Surface Elev. 602.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 587.7 ft ▼
Upon Completion n/a ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND & GRAVEL-gray-very dense *(continued)*	561.20			
Drillers Observation: COBBLES & BOULDERS		15		
		50/2"		10
	559.70			
Drillers Observation: Possible Bedrock				
	557.70			
End Of Boring @ -44.5'. Boring backfilled with cuttings.	-45			
	-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\2015\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/3/15

FILE NAME =	DESIGNED -	REVISED -	
...\D160W75-sht-HMT-sb-NB-15.dgn	DRAWN -	REVISED -	
USER NAME = jworthington	CHECKED -	REVISED -	
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 15 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	246
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/10/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Geo Probe

STRUCT. NO.
Station
BORING NO. LB-27
Station 26+40 (BL Ramp E)
Offset 4.10ft Right
Ground Surface Elev. 618.50 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 (%)
16.5" ASPHALT			
617.13	17		
CLAY LOAM-dark brown & gray-stiff to hard (Fill)	5		16
	3		
	3		
-5	5	3.3	17
	7	P	
	4		
	12	3.0	11
	6	P	
	3		
-10	5	3.9	16
	6	B	
	3		
	4	1.4	20
	6	B	
	4		
-15	7	4.1	16
	9	B	
	3		
	7	2.7	17
	10	B	
	4		
-20	5	1.5	22
	6	B	
CLAY LOAM-dark brown & gray-stiff to hard (Fill) *(continued)*	2		
	2	2.3	20
	5	B	
595.50			
CRUSHED STONE-medium dense (Fill)	2		
	7		18
-25	17		
	8		
	12		14
	8		
	10		
	14		16
-30	12		
	5		
	6		1
	5		
585.50			
SILTY CLAY LOAM-gray-medium dense to dense	6		
	7		6
-35	8		
	9		
	12	4.9	19
	12	B	
	10		
	13	3.6	19
-40	15	B	

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/10/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Geo Probe

STRUCT. NO.
Station
BORING NO. LB-27
Station 26+40 (BL Ramp E)
Offset 4.10ft Right
Ground Surface Elev. 618.50 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 (%)
SILTY CLAY LOAM-gray-medium dense to dense *(continued)*	17		
	24	5.9	13
	35	B	
	20		
	26	6.2	12
-45	32	B	
573.00			
SILTY LOAM-gray-very dense	14		
	28		19
	35		
Drillers Observation: Boulders from -48.0'-49.0'	19		
568.00			
	25		21
-50	50/4"		
End Of Boring @ -50.5'. Boring backfilled with cuttings.			
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 9/16/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Geo Probe

STRUCT. NO.
Station
BORING NO. LB-30
Station 27+27 (BL Ramp D)
Offset 2.30ft Right
Ground Surface Elev. 625.90 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 (%)
9.0" ASPHALT			
625.15			
6.0" CRUSHED STONE	5		
624.65			
CLAY LOAM-dark brown, gray & spotted black-stiff to very stiff (Fill)	5		14
	5		
	2		
	3	2.3	17
-5	6	B	
	4		
	4	1.8	18
	5	P	
	8		
	20	1.5	19
-10	23	P	
	7		
	5		12
	11		
	6		
	8	2.7	18
-15	11	B	
	6		
	7	1.8	19
	9	B	
	5		
-20	7	2.6	19
	12	B	
CLAY LOAM-dark brown, gray & spotted black-stiff to very stiff (Fill) *(continued)*	11		
	10	1.5	19
	17	B	
	11		
	8	1.4	23
-25	9	B	
	4		
	6	1.7	20
	9	B	
	6		
	7	2.2	19
-30	10	B	
	8		
	8	2.4	17
	11	B	
	6		
	6	1.7	19
-35	12	B	
	6		
	10	2.0	21
	14	B	
	5		
-40	7	1.5	24
	12	B	

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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FILE NAME = ...\D160W75-sht-HMT-sb-NB-16.dgn	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
USER NAME = jworthington	CHECKED -	REVISED -	
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 16 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	247
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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Geotechnical, Environmental & Civil Engineering
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Naperville, Illinois 60565
(630) 325-9388

SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 9/16/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SW 1/4, SEC. 12, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Geo Probe

STRUCT. NO.
Station
BORING NO. LB-30
Station 27+27 (BL Ramp D)
Offset 2.30ft Right
Ground Surface Elev. 625.90 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 LOAM-dark brown, gray & spotted black-stiff to very stiff (Fill) *(continued)*			
	4		
	7	1.5	21
	8	B	
582.90			
SANDY LOAM-gray-very dense			
	16		
-45	50/5"		16
580.40			
SANDY CLAY LOAM-gray-very dense			
	28		
	35	3.8	12
	48	B	
	30		
End Of Boring @ -50.0'. Boring backfilled with cuttings.	50/3"	2.7	12
575.90 -50		B	
-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)

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/10/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-32
Station 212+20 (BL Ramp E)
Offset 40.40ft Right
Ground Surface Elev. 604.50 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 590.0 ft
Upon Completion 590.5 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
603.50			18
CLAY LOAM-brown & gray-very stiff to hard	7		
	10	4.5	12
	13	P	
	6		
-5	30	4.0	13
	12	P	
	3		
	5	4.0	12
	10	P	
	9		
	10	3.5	17
-10	12	P	
594.00			
CRUSHED STONE-medium dense (Fill)	13		
	6		4
	13		
	8		
	14		7
-15	14		
	6		
	6		11
	5		
	8		
	8		10
-20	11		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
584.00			
SAND & GRAVEL-gray-very dense (Possible Fill)			
	10		
	23		11
	50/5"		
581.50			
CLAYEY SAND, GRAVEL & FRACTURED ROCK-gray-very dense	50/5"		
-25			8
579.00			
SILTY CLAY LOAM-gray-very dense	46		
	46		15
	50/5"		
576.50			
SILTY LOAM-gray-very dense	23		
	50/4"		14
-30			
574.00			
SILTY SAND, GRAVEL & FRACTURED ROCK-gray-very dense	50/4"		
			11
572.00			
Auger Refusal @ -32.5'. End Of Boring. Boring backfilled with cuttings.			
-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/11/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-33
Station 217+20 (BL Ramp E)
Offset 65.60ft Right
Ground Surface Elev. 601.00 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 588.0 ft
Upon Completion 588.0 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" TOPSOIL-black			
600.00			23
CLAY LOAM-brown & gray-very stiff to hard (Fill)	5		
	6	2.5	23
	4	P	
	7		
-5	7	5.1	14
	7	B	
	3		
	5	2.7	16
	9	B	
593.00			
CRUSHED STONE-loose to dense (Fill)	27		
	28		4
-10	32		
	14		
	6		4
	8		
	4		
	4		12
-15	3		
	9		
	7		6
	3		
583.00			
ORGANIC SILTY CLAY LOAM-black-loose	3		
	3		13
-20	5		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
580.50			
SAND-gray-medium dense			
	8		
	12		19
	15		
578.00			
CLAY LOAM-gray-hard			
	9		
	17	4.0	12
-25	15	P	
	50/3"		
574.00		4.5	11
Drillers Observation: Possible Bedrock		P	
573.00			
End Of Boring @ -28.0'. Boring backfilled with cuttings.	50/0"		
-30			
-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)

Z:\PROJECTS\2015\10025 BENESCH IL-171 FIRST AVE. IDOT FTB 154, ITEM 14\10025 BORING LOGS\10025_LOG.GPJ 1/13/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-17.dgn	DESIGNED -	REVISED -
	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 17 OF 19 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	248
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/10/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY CW
SECTION 2013-037B-R LOCATION SE 1/4, SEC. 11, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-34
Station 308+25 (CL I-55)
Offset 156.60ft Left
Ground Surface Elev. 604.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 588.2 ft
Upon Completion 588.2 ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12.0" SANDY TOPSOIL-black			
603.20			
CLAY LOAM-brown & gray-hard (Fill)	6		
	8	4.5	14
	9	P	
	7		
	12		8
-5	10		
	6		
	8	4.4	11
	8	B	
596.20			
CRUSHED STONE-medium dense to very dense (Fill)	50/5"		
			5
-10			
	10		
	10		6
	5		
	6		
	7		3
-15	16		
▼			
	5		
	10		1
	16		
	13		
	19		9
-20	16		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CRUSHED STONE-medium dense to very dense (Fill) *(continued)*			
	6		
	6		9
	7		
581.20			
SANDY CLAY LOAM with STONE-gray-medium dense (Fill)	4		
	5		14
-25	9		
578.70			
SANDY GRAVEL-gray-dense	13		
	26		7
	50/4"		
576.20			
SANDY CLAY LOAM with FRACTURED ROCK-gray-very dense	27		
	40		10
-30	50/5"		
	50/5"		
	40		9
	50/3"		7
-35			
	50/1"		
567.70			
Auger Refusal @ -36.5'. End Of Boring. Boring backfilled with cuttings.			
-40			

Z:\PROJECTS\2015\150025 BENESCH\ IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 8/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION NE 1/4, SEC. 14, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-35
Station 18+83 (BL Ramp F)
Offset 5.70ft Right
Ground Surface Elev. 610.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter Dry to 20.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
13.5" ASPHALT			
609.08			
6.5" CRUSHED STONE	7		
609.03			
CLAY LOAM-brown & gray-stiff to hard (Fill)	3		9
	3		
	7		
	8	4.5	11
-5	9	P	
	14		
	21	4.5	9
	22	P	
	3		
	11	1.5	10
-10	17	P	
	5		
	10	3.0	10
	11	P	
	5		
	6	4.8	13
-15	6	B	
	5		
	9	3.3	12
	12	P	
592.20			
CRUSHED STONE-medium dense to dense (Fill)	10		
	11		10
-20	12		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CRUSHED STONE-medium dense to dense (Fill) *(continued)*			
	12		
	10		8
-25	8		
	14		
	13		18
	5		
	15		
	16		17
-30	14		
579.70			
SAND-gray-medium dense	8		
	10		26
	11		
577.20			
PEAT-dark gray	5		
	6		66
-35	8		
574.70			
SILTY CLAY-dark gray-medium stiff	3		
	7	0.8	33
	9	P	
572.20			
CLAY LOAM-gray-hard	10		
	14	4.8	16
-40	14	B	

Z:\PROJECTS\2015\150025 BENESCH\ IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 8/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY KD
SECTION 2013-037B-R LOCATION NE 1/4, SEC. 14, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE Diedrich Automatic

STRUCT. NO.
Station
BORING NO. LB-35
Station 18+83 (BL Ramp F)
Offset 5.70ft Right
Ground Surface Elev. 610.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter Dry to 20.0' ft
Upon Completion n/a ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-hard *(continued)*			
	9		
	15	4.0	18
	16	B	
567.20			
SANDY CLAY LOAM with FRACTURED ROCK-gray-very dense	36		
	50/3"		13
-45			
	18		
	31		10
563.20	50/3"		
Drillers Observation: Possible Bedrock			
561.70			
End Of Boring @ -48.5'. Boring backfilled with cuttings.	50/0"		
-50			
-55			
-60			

Z:\PROJECTS\2015\150025 BENESCH\ IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\150025 BORING LOGS\150025_LOG.GPJ 1/13/15

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)

FILE NAME =	DESIGNED -	REVISED -
...\D160W75-sht-HMT-sb-NB-18.dgn	DRAWN -	REVISED -
USER NAME = jworthington	CHECKED -	REVISED -
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -

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HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: SHEET 18 OF 19 SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	249
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 1
Date 9/9/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION NE 1/4, SEC. 14, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-36
Station 119+34 (BL Ramp H)
Offset 4.40ft Right
Ground Surface Elev. 612.00 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 (%)
11.5" ASPHALT				
611.04				
CLAY LOAM-dark brown & gray-stiff to hard (Fill)		6		
		2		16
		6		
		4		
	-5	4	4.4	15
		6	B	
		2		
		4	1.5	15
		11	P	
		4		
	-10	5	4.5	16
		7	P	
		6		
		7	4.5	15
		7	P	
		5		
	-15	12	4.5	17
		10	P	
596.50				
CRUSHED STONE-medium dense to very dense		16		
		17		17
		11		
		50/2"		
	-20			19
CRUSHED STONE-medium dense to very dense *(continued)*		16		
		10		4
		14		
		12		
	-25	7		8
		7		
		9		
		7		8
	-30	7		
		10		5
		14		
		20		
		20		4
		28		
579.00				
SANDY LOAM with FRACTURED ROCK-dark gray-dense (Fill)		19		
		21		8
577.00	-35	26		
End Of Boring @ -35.0'. Boring backfilled with cuttings.				
	-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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SOIL BORING LOG

GSI Job No. 10025
Page 1 of 2
Date 8/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION NE 1/4, SEC. 14, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-37
Station 13+51 (BL Ramp F)
Offset 4.60ft Right
Ground Surface Elev. 612.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 605.7 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
15.0" ASPHALT				
610.95				
CRUSHED CONCRETE-medium dense		26		
		6		1
		4		
609.20				
CRUSHED STONE with SAND & GRAVEL-medium dense		17		
		9		7
	-5	8		
606.70				
CLAY LOAM-brown & gray-hard (Fill) ▼		6		
		7	4.5	13
		13	P	
		5		
	-10	8	4.5	12
		50/3"	P	
601.70				
CRUSHED STONE-very dense (Fill)		50/4"		
				8
599.20				
CLAYEY GRAVEL & STONE-dark brown-medium dense (Fill)		12		
		16		9
	-15	13		
596.70				
CLAY LOAM-dark brown & gray-hard (Fill)		5		
		13	4.5	11
		14	P	
594.20				
CRUSHED STONE-medium dense to very dense (Fill)		30		
	-20	50/3"		5
CRUSHED STONE-medium dense to very dense (Fill) *(continued)*		13		
		7		9
		6		
	-25	9		14
		7		
		5		
		15		12
		18		
		7		
	-30	17		11
		22		
		7		
		9		6
		12		
		8		
	-35	13		8
		17		
		17		
		24		6
		29		
574.20				
CLAY LOAM-gray-hard		19		
		27	7.3	11
	-40	33	S	

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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SOIL BORING LOG

GSI Job No. 10025
Page 2 of 2
Date 8/26/13

ROUTE FAP 372/373 (IL 171) DESCRIPTION IL Route 171 from 47th St. to 55th St. LOGGED BY NW
SECTION 2013-037B-R LOCATION NE 1/4, SEC. 14, TWP. T38N, RNG. R12E, 3rd PM
COUNTY Cook DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO.
Station
BORING NO. LB-37
Station 13+51 (BL Ramp F)
Offset 4.60ft Right
Ground Surface Elev. 612.20 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft
Groundwater Elev.:
First Encounter 605.7 ft ▼
Upon Completion n/a ft
After ____ Hrs. ____ ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray-hard *(continued)*				
571.70				
SILTY LOAM-gray-dense		20		
		21		22
		25		
		18		
	-45	22		20
		27		
566.70				
FRACTURED ROCK-gray-very dense		50/1"		
				2
		50/4"		
End Of Boring @ -50.0'. Boring backfilled with cuttings.				10
562.20	-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\2015\10025 BENESCH, IL-171 FIRST AVE. (IDOT FTB 154, ITEM 14)\10025 BORING LOGS\10025_LOG.GPJ 11/3/15

FILE NAME = ...\D160W75-sht-HMT-sb-NB-19.dgn	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
USER NAME = jworthington	CHECKED -	REVISED -	
PLOT DATE = 6/17/2015	DATE - 6/12/2015	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HIGH MAST TOWER FOUNDATION
SOIL BORINGS

SCALE: | SHEET 19 OF 19 SHEETS | STA. | TO STA.

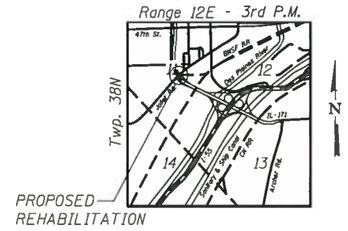
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372/373	2013-037B-R	COOK	787	250
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	

Benchmark: Square cut in N.W. corner of Traffic Control Box north of Joliet Road 20' ± east of the IL 171 Bridge - El. 611.99

Existing Structure:
The structure is a six simple span, composite multi-beam bridge with a 7½ inch reinforced concrete deck. The original structure was built in 1964. In 1994, the approach slabs, deck, parapets, and joints were replaced, one fascia beam was added to the east, slopewalls, piers and abutments were widened, steel painted, fixed and expansion bearings were replaced, and substructures were repaired. In 1998, substructure concrete was repaired.

A crossover shall be utilized to maintain traffic during construction.

No salvage.



LOCATION SKETCH

DESIGN SPECIFICATIONS

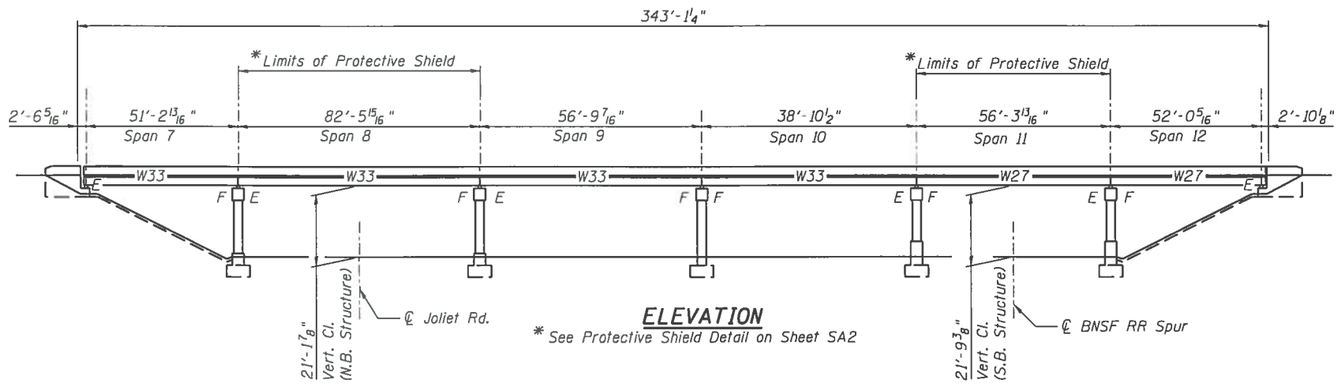
2002 AASHTO Standard Specifications for highway Bridges, 17th Edition

DESIGN STRESSES

f'c = 3.500 psi
fy = 60,000 psi (reinforcement)
fy = 36,000 psi (existing structural steel)
fy = 50,000 psi (proposed structural steel repair)

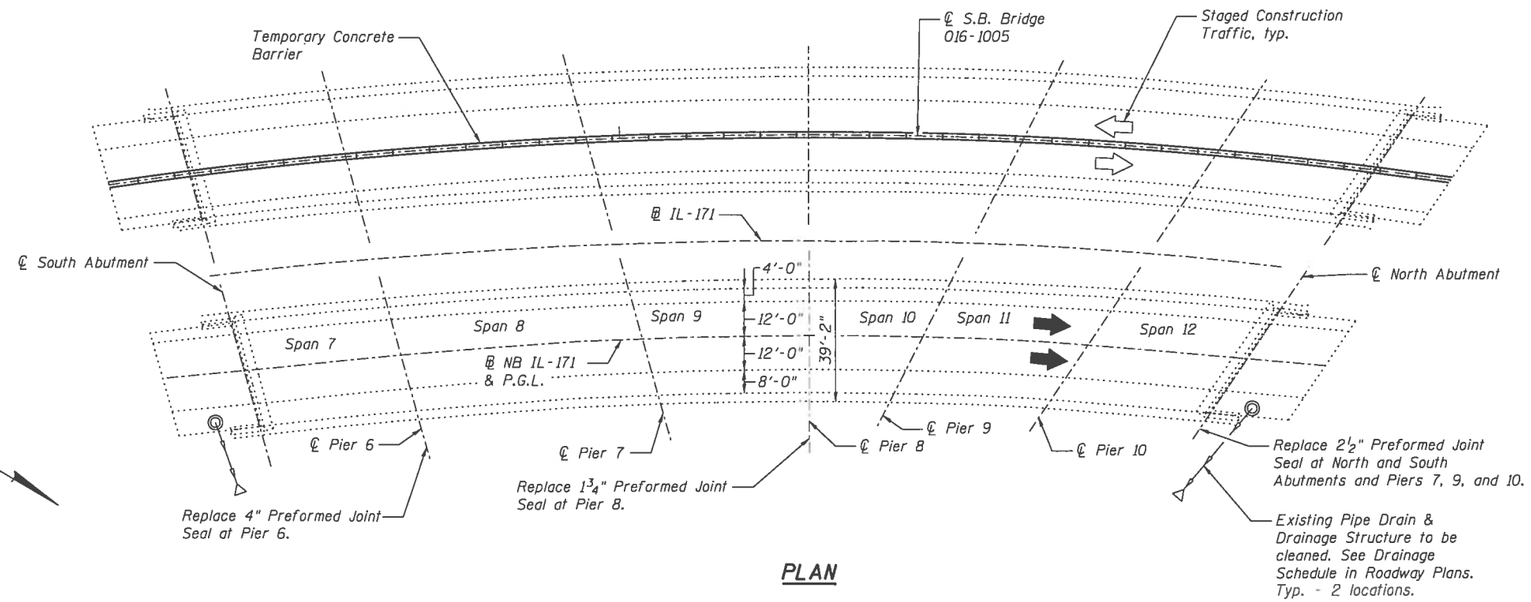
SCOPE OF WORK

1. Repair abutments and piers with epoxy crack sealing.
2. Structural concrete repair of abutments and piers.
3. Replace all preformed joint seals.
4. Vegetation removal.
5. Clean existing deck floor drains.
6. Clean and seal bridge deck, approach slabs and parapets.
7. Remove abandoned conduit attached to girder.
8. Deck slab repairs.
9. Structural steel repair on the west fascia girder of Span 8.



ELEVATION

* See Protective Shield Detail on Sheet SA2



PLAN

KURT J. NAUS
081-006578
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

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

GENERAL PLAN AND ELEVATION
NB IL-171 OVER JOLIET ROAD & BNSF RR SPUR
FAP 372 - SECTION 2013-037B-R
COOK COUNTY
STATION 77+49.49
STRUCTURE NO. 016-1006

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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	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. SA1 OF SA7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	251
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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6/10/2015

GENERAL NOTES

1. 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.

2. Protective Coat shall be applied to the entire top surface of the deck and approach slabs and the tops and inside vertical faces of all parapets. All surfaces to be sealed shall be cleaned thoroughly prior to sealer application.

3. A crossover shall be utilized to maintain traffic during construction.

4. There are 13 floor drains on this bridge. The floor drains shall be cleaned with the bridge deck prior to application of the Protective Coat. Cost included with "Protective Coat".

5. Cost of vegetation removal to be included with "Selective Clearing". See Special Provision.

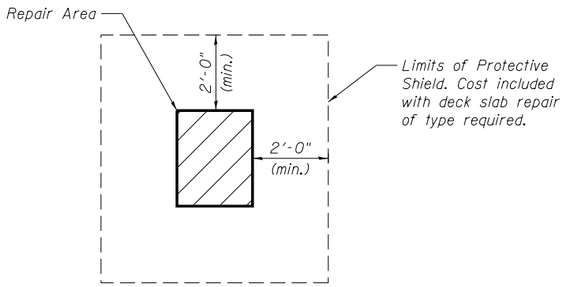
6. The existing structural steel coating contains lead. The Contractor shall take all precautions to deal with the presence of lead on this project.

7. 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 "Structural Steel Repair". The intermediate and top coats shall be applied under a separate painting contract.

8. 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".

INDEX OF SHEETS

For existing bridge plans, see Sheets SAX1 thru SAX7, immediately following Sheet SA7.



PROTECTIVE SHIELD DETAIL

TOTAL BILL OF MATERIAL

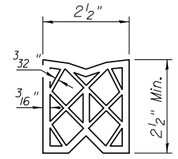
	ITEM	UNIT	SUPER	SUB	TOTAL
	Protective Coat	Sq Yd	1,926		1,926
*	Preformed Joint Seal 1 3/4"	Foot	37.5		37.5
*	Preformed Joint Seal 2 1/2"	Foot	207.5		207.5
*	Preformed Joint Seal 4"	Foot	38.5		38.5
**	Epoxy Crack Injection	Foot		37	37
	Remove Conduit Attached to Structure	Foot	686		686
	Structural Steel Repair	Pound	3,580		3,580
**	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft		153	153
**	Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq Ft		31	31
***	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
****	Selective Clearing	Unit		2	2

* Includes cost of Removal and Disposal of Existing Joint Seals.

** 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.

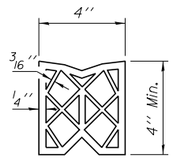
*** The quantity shown is an estimate. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.

**** The quantity for this work is estimated. The intent for this work is to remove accumulations of rubbish, vegetation, etc., on the existing slopewalls.



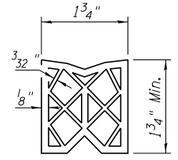
PREFORMED JOINT SEAL (2 1/2")

(Abutments, Piers 7, 9, & 10)



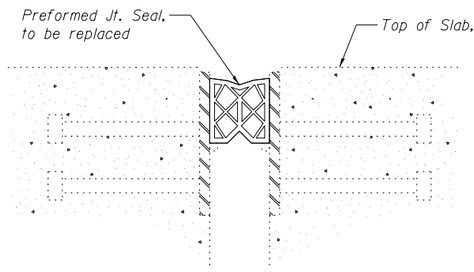
PREFORMED JOINT SEAL (4")

(Pier 6)

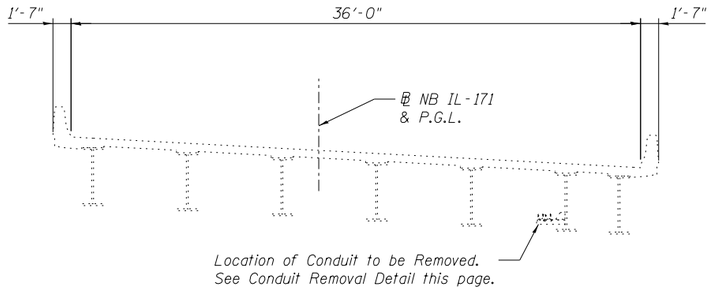


PREFORMED JOINT SEAL (1 3/4")

(Pier 8)

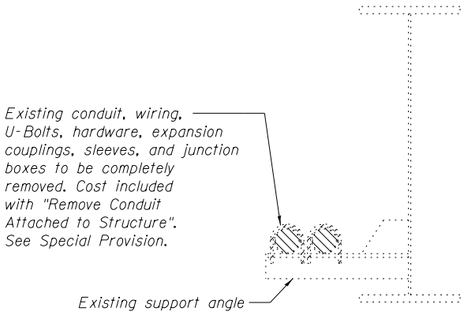


PREFORMED JOINT SEAL PLACEMENT DETAIL



SECTION - CONDUIT REMOVAL LOCATION

(Looking North)



CONDUIT REMOVAL DETAIL

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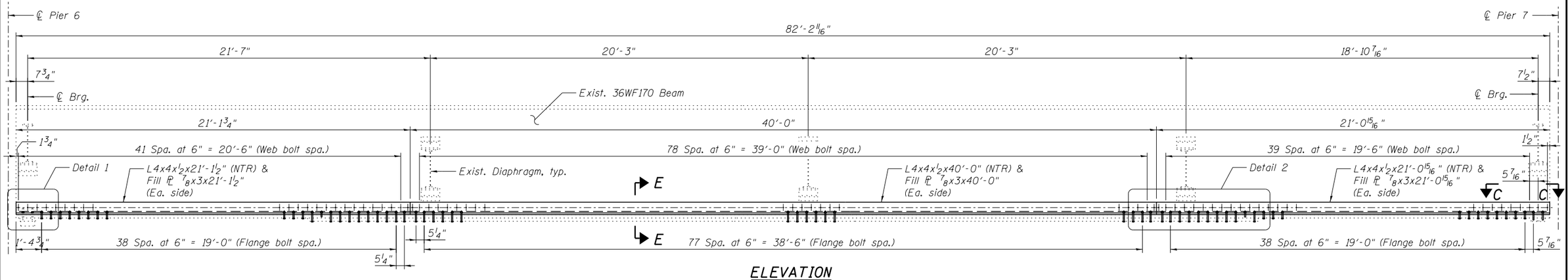
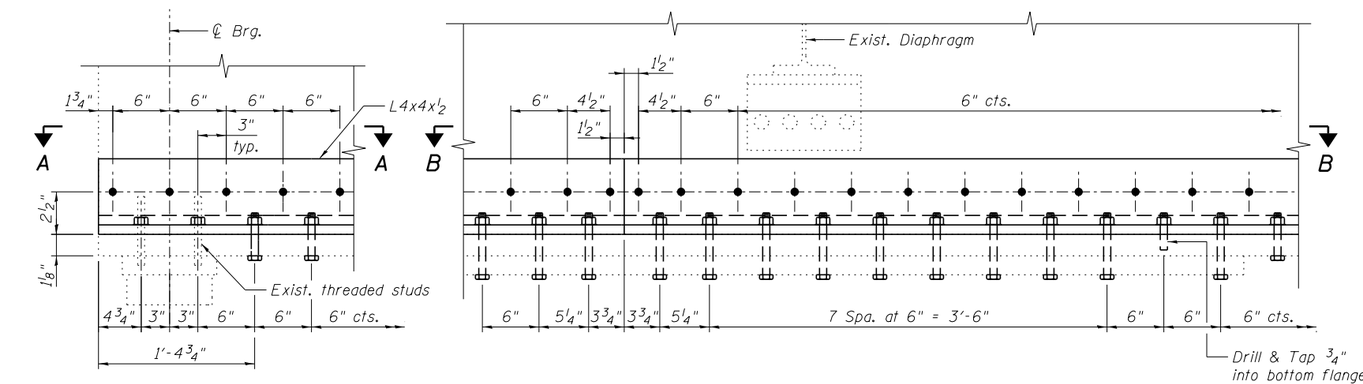
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, BILL OF MATERIAL AND INDEX OF SHEETS
STRUCTURE NO. 016-1006
SHEET NO. SA2 OF SA7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	252
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

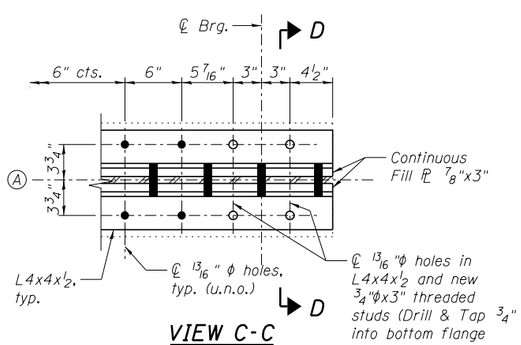


ELEVATION

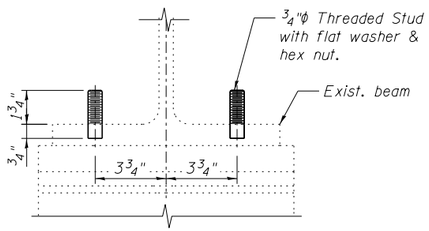


DETAIL 1

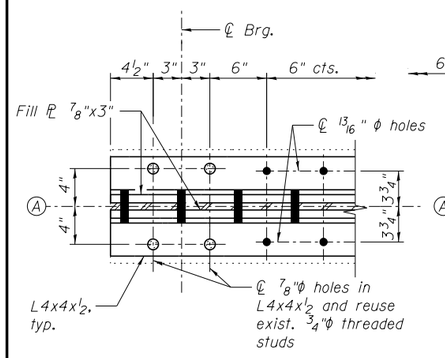
DETAIL 2



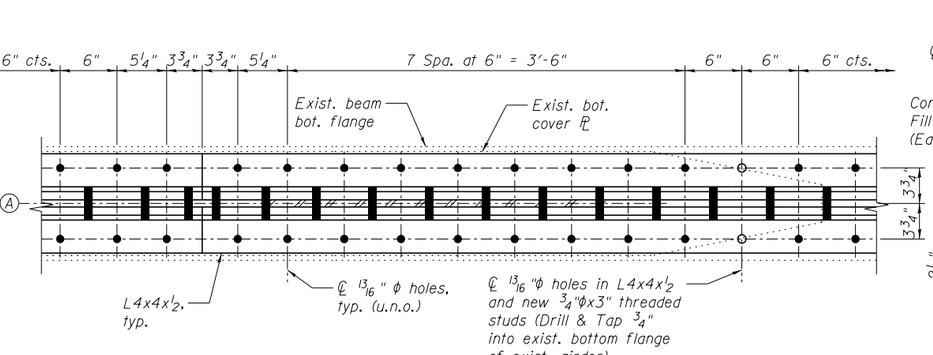
VIEW C-C



SECTION D-D



VIEW A-A



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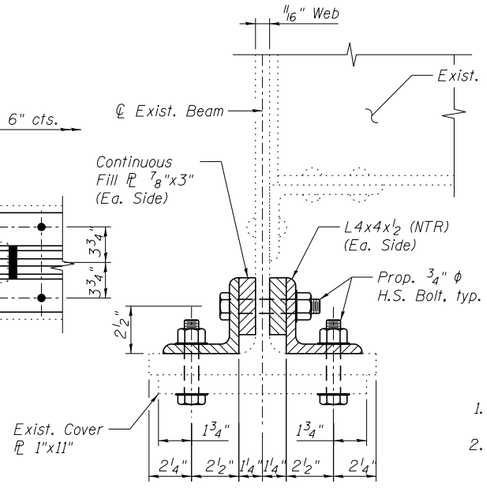
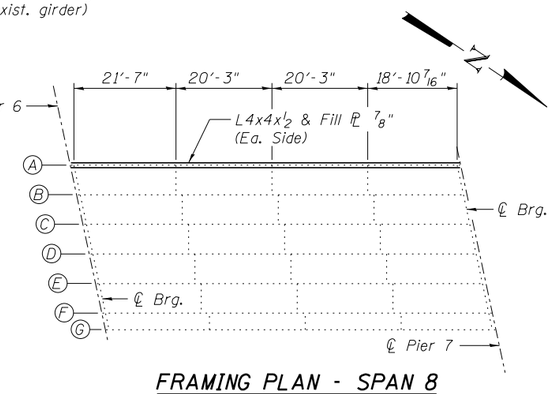


SECTION E-E



FRAMING PLAN - SPAN 8

NOTES:

1. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4" diameter, holes 13/16" diameter.
2. Cost of furnishing all labor, equipment and materials necessary to furnish and install the 2-L4x4x1/2 and two fill plates as shown shall be included with "Structural Steel Repair". See Special Provision.
3. Angles and fill plates shall conform to the requirements of AASHTO M270 Grade 50.
4. Cost of field drilling included with "Structural Steel Repair".
5. Contractor shall verify locations of existing diaphragms, dimensions and hole locations and make necessary approved adjustments prior to construction or ordering of materials. Cost included with "Structural Steel Repair".
6. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
7. All steel repairs shall be done with no live load on the bridge.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	3,580

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REPAIRS – SPAN 8
STRUCTURE NO. 016–1006
SHEET NO. SA3 OF SA7 SHEETS

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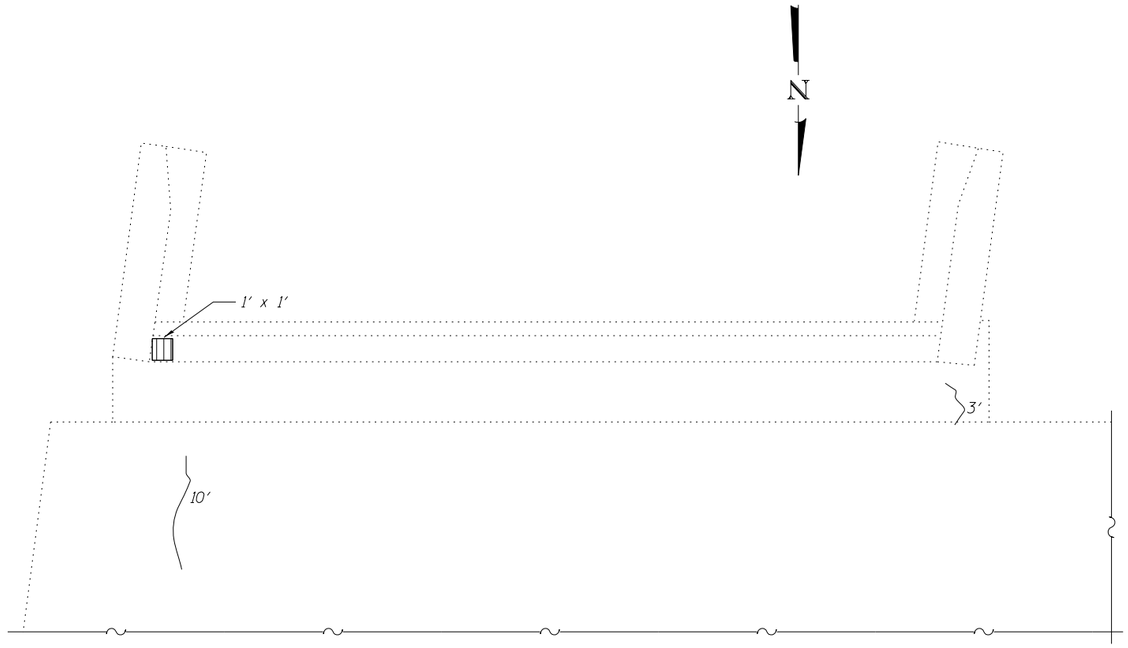
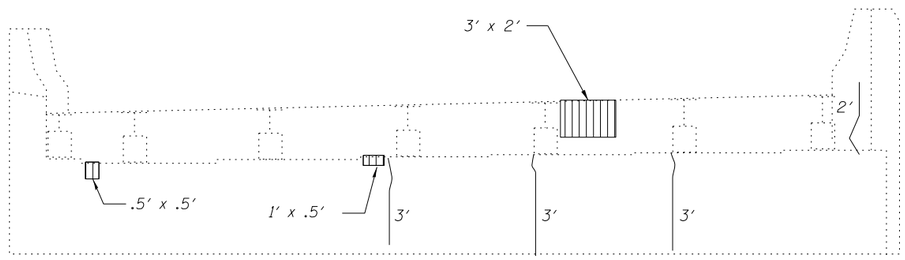
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



PLAN - SOUTH ABUTMENT



ELEVATION - SOUTH ABUTMENT

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	8
	Epoxy Crack Injection	Foot	24

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIRS – SOUTH ABUTMENT
STRUCTURE NO. 016–1006
SHEET NO. SA4 OF SA7 SHEETS

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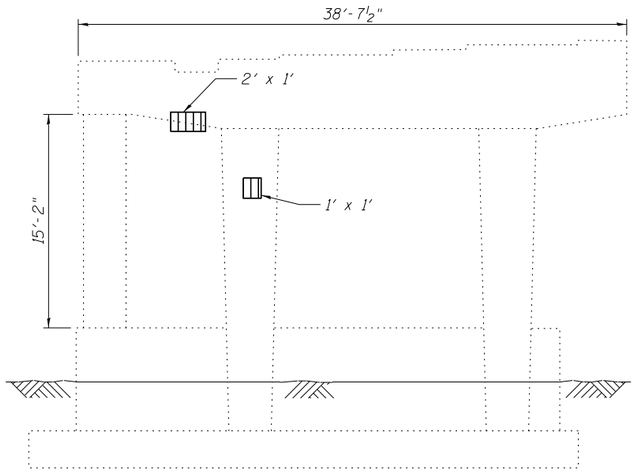
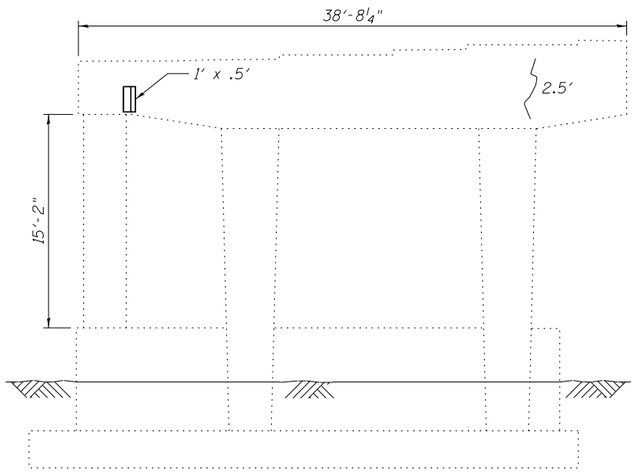
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



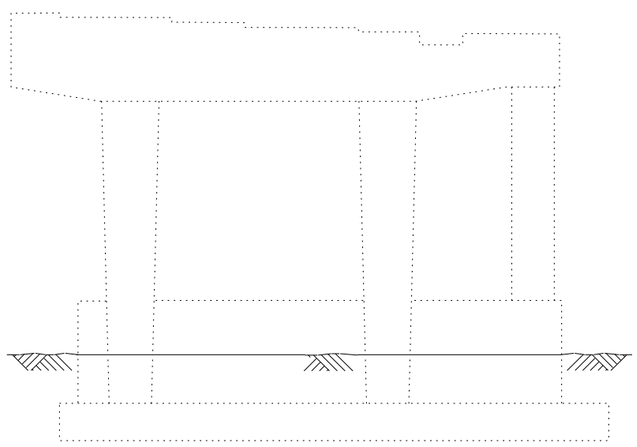
PIER 6
(Looking South)



PIER 7
(Looking South)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	23
	Epoxy Crack Injection	Foot	6



PIER 6
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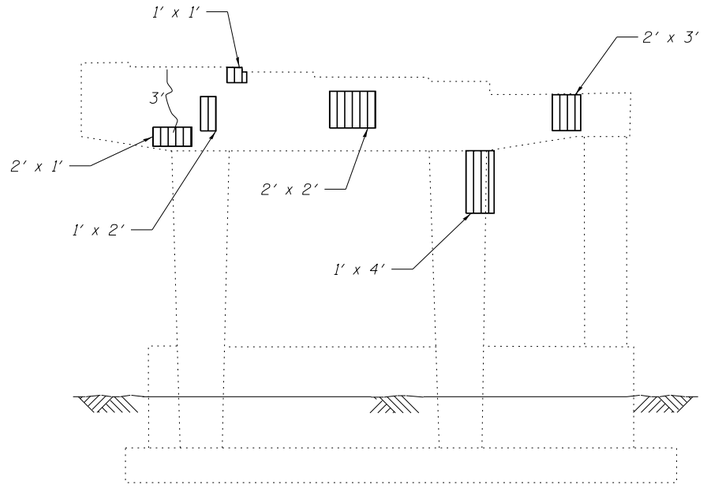

PIER 7
(Looking North)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIRS – PIERS 6 & 7
STRUCTURE NO. 016–1006
SHEET NO. SA5 OF SA7 SHEETS

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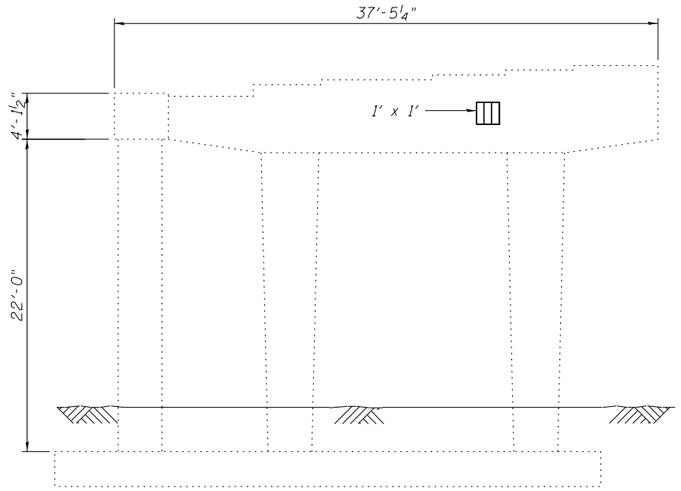
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



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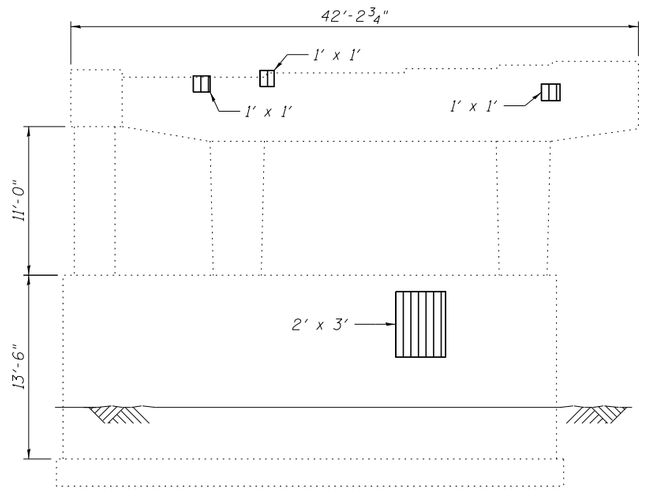
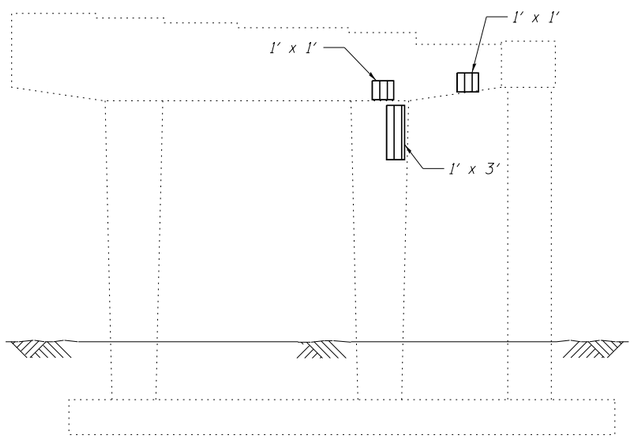


PIER 9
(Looking South)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	40



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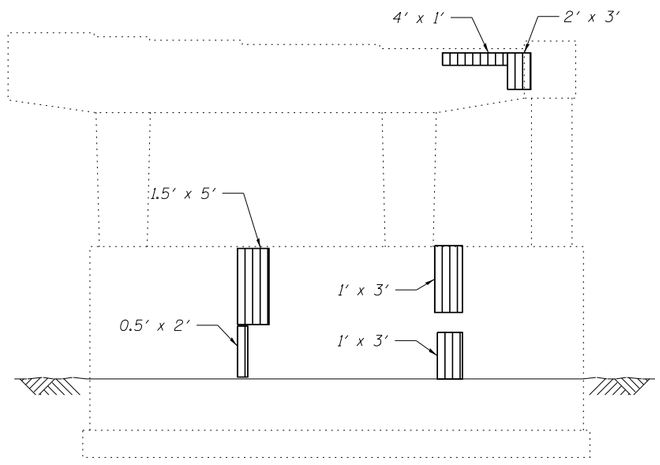

PIER 9
(Looking North)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIRS – PIERS 8 & 9
STRUCTURE NO. 016–1006
SHEET NO. 5A6 OF 5A7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	256
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

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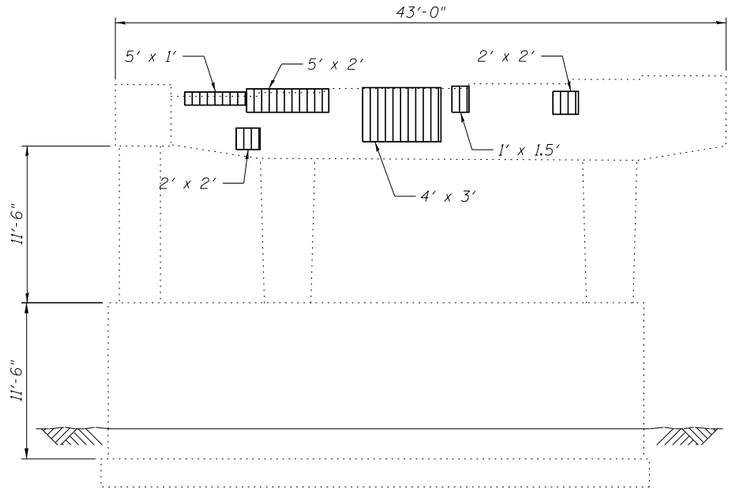

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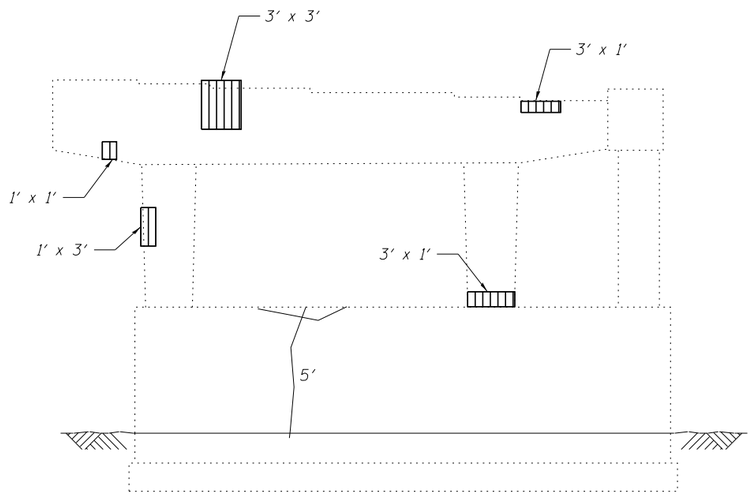

PIER 10
(Looking North)

BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	56
	Epoxy Crack Injection	Foot	5

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DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIRS – PIER 10
STRUCTURE NO. 016–1006
SHEET NO. SA7 OF SA7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	257
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S-1	SHEETS S-48
COUNTY: COOK	TOTAL SHEETS 383, SHEET NO. 106

Benchmark

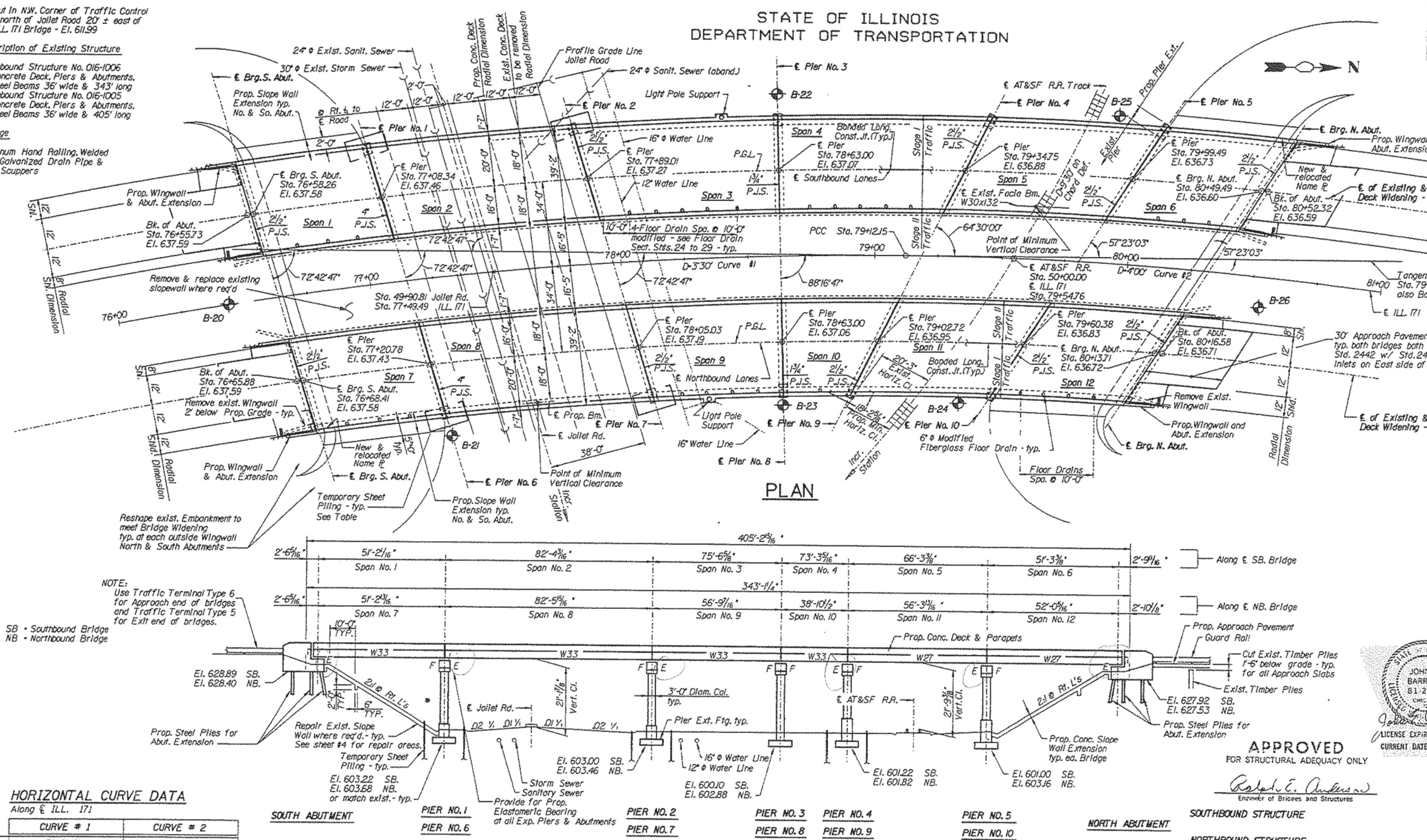
"□" cut in N.W. Corner of Traffic Control Box north of Joliet Road 20' ± east of the ILL 171 Bridge - El. 611.99

Description of Existing Structure

Northbound Structure No. 016-1006
Concrete Deck, Piers & Abutments,
Steel Beams 36' wide & 343' long
Southbound Structure No. 016-1005
Concrete Deck, Piers & Abutments,
Steel Beams 36' wide & 405' long

Salvage

Aluminum Hand Railing, Welded Steel Galvanized Drain Pipe & Deck Scuppers



STATION 77+49.4
BUILT 199 BY
STATE OF ILLINOIS
FAU.RT. 2746 SEC. 606-628VB
F.A. PROJ. STPM-7003(115)
LOADING HS20
STR. NO. 016-1005

NAME PLATE
SOUTHBOUND

STATION 77+49.4
BUILT 199 BY
STATE OF ILLINOIS
FAU.RT. 2746 SEC. 606-628VB
F.A. PROJ. STPM-7003(115)
LOADING HS20
STR. NO. 016-1006

NAME PLATE
NORTHBOUND

STATION	TRACK ELEVATION
48+00	611.20
49+00	610.99
50+00	610.61
51+00	610.31
52+00	610.20

AT&SF R.R. TOP OF TRACK ELEVATION

TEMPORARY SHEET PILING TOP & BOTTOM ELEVATION

PIER 1	TOP EL.	611.5
	BOTT. EL.	600.2
PIER 2	TOP EL.	611.5
	BOTT. EL.	600.0
PIER 6	TOP EL.	611.0
	BOTT. EL.	600.6
PIER 7	TOP EL.	611.0
	BOTT. EL.	600.4

STATE OF ILLINOIS LICENSED ENGINEER JOHN E. BARRETT 81-2762 CHICAGO
LICENSE EXPIRES: 11-30-94
CURRENT DATE: 12-28-93

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Engineer of Bridges and Structures

SOUTHBOUND STRUCTURE
NORTHBOUND STRUCTURE

HORIZONTAL CURVE DATA
Along ℄ ILL. 171

	CURVE # 1	CURVE # 2
Δc	31°12'18"	22°24'00"
Dc	3°30'00"	4°00'00"
Rc	1637.02	1,432.39
Tc	457.14	283.62
Lc	891.57	560.00
L.C.	880.59	556.44
Ec	62.63	27.81

DESIGNED	RC
CHECKED	ELD
DRAWN	MF
CHECKED	ELD

124bpe01.dgn prt date 12-27-93

STAGING INSTRUCTIONS

STAGE I:
Outer median lanes shall be used for traffic while inner lanes are reconstructed with new deck.

STAGE II:
Inner lanes of reconstructed bridge shall be used for traffic while outer lanes are reconstructed with new deck.

DESIGN SPECIFICATIONS
AASHTO (1992)

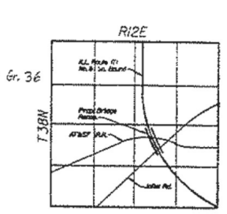
LOADING HS20-44
Allow 25#/sq. ft. for future wearing surface.

SEISMIC DATA
S.P.C. - A
"A" - 0.04
Site Coeff. - 1.0

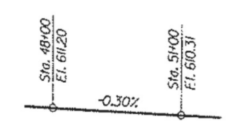
DESIGN STRESSES

New Deck & Renab. Structures
f'_c = 3,500 psi
f_y = 60,000 psi (Reinf.)
f_y = 36,000 psi (New Beams) M270 Gr. 36

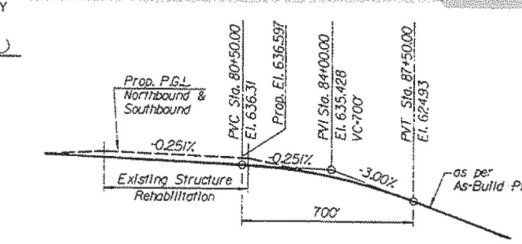
Existing Structures
f_c = 1,400 psi
f_s = 20,000 psi (Reinf.)
f_y = 36,000 psi (Beams)
Soil Pressure All. = 5200 #/Sq. Ft.



LOCATION SKETCH



PROFILE GRADE LINE
Joliet Road



PROFILE GRADE LINES
ILL. Route 171
along ℄ Northbound & Southbound Structures

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
333 N. MICHIGAN AVENUE SUITE 2300 CHICAGO, ILLINOIS 60601
JOB NO. 124

GENERAL PLAN
BRIDGE REHABILITATION ILLINOIS ROUTE 171
NORTHBOUND & SOUTHBOUND
OVER JOLIET RD. & AT&SF R.R.
FAU 2746 SECTION 606-628 VB
STATION 77+49.4
COOK COUNTY
STRUCTURE NO. 016-1005 S.B.
STRUCTURE NO. 016-1006 N.B.

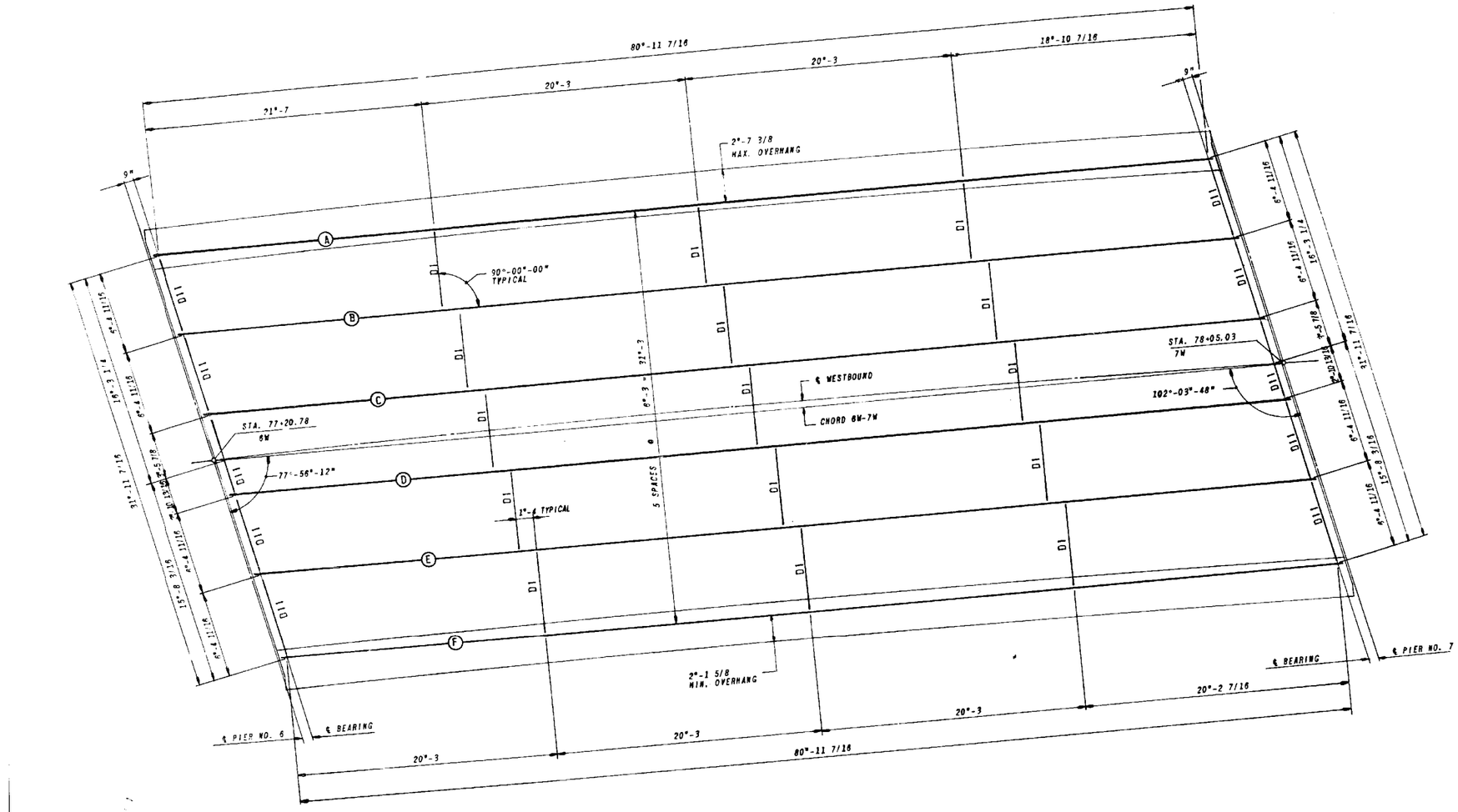
FOR INFORMATION ONLY

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

FILE NAME =	USER NAME = jsurber	DESIGNED - CMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLAN INFORMATION 1 OF 7 STRUCTURE NO. 016-1006	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - JAW	REVISED -			372	2013-037B-R	COOK	787	258
016-1006-60W75-008-Existing gpe.dgn	PLOT SCALE =	DRAWN - CMK	REVISED -			CONTRACT NO. 60W75				
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -		SHEET NO. SAX1 OF SAX7 SHEETS	ILLINOIS FED. AID PROJECT				

X:\10000S\10093\Eng_Docs_Phase_II\SN_016_1005_1006_1st_Ave_over_Joliet_Rd\Final\Plans\016-1006-60W75-008-Existing gpe.dgn 3:37:09 PM 6/10/2015

F.A. RTE.	SECTION	EXPRESSWAYS	TOTAL SHEETS	SHEET NO.
133	0606-628 VB	SOUTHWEST	87	39
STA		TO STA		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



NOTE: SEE SHEET "SUMMARY OF BEAMS WESTBOUND" FOR ELEVATIONS TOP OF STEEL, LENGTH OF COVERPLATES, SHEAR CONNECTOR SPACINGS AND DETAIL DIMENSIONS.

FRAMING PLAN SPAN NO. 8 WEST BOUND

REVISIONS	
NAME	DATE
DESIGNED S.T.-P.X.	
REVIEWED C.W.W.	

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY
F.A. RT. 133
LAWNDALE AVE. STRUCTURE OVER JOLIET ROAD & SANTA FE R.Y. SPUR
SECTION 0606-628VB
FRAMING PLAN SPAN NO. 8 W.B.
SCALE: HORIZ. 1"=1'-0 VERT.
DATE 2-18-1964
DRAWN BY D.U.
CHECKED BY L.B.E.

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

FILE NAME = 016-1006-60W75-009-Exist fr plan1.dgn	USER NAME = jsurber	DESIGNED - CMK	REVISED -
		CHECKED - JAW	REVISED -
	PLOT SCALE =	DRAWN - CMK	REVISED -
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

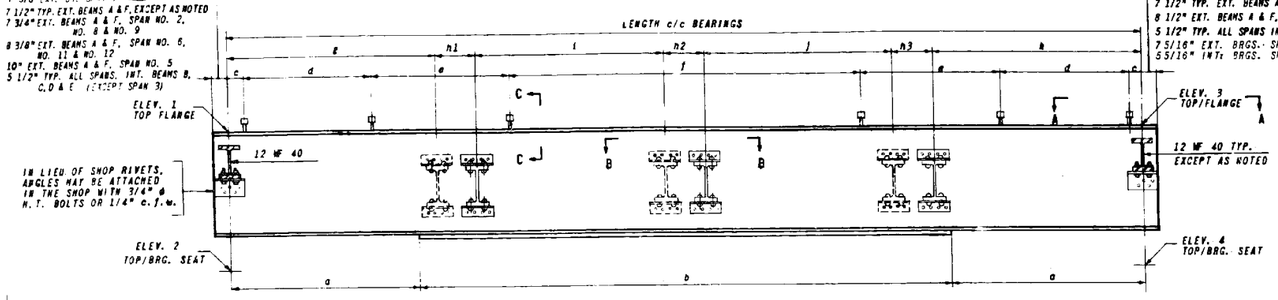
EXISTING PLAN INFORMATION 2 OF 7
STRUCTURE NO. 016-1006
SHEET NO. SAX2 OF SAX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	259
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

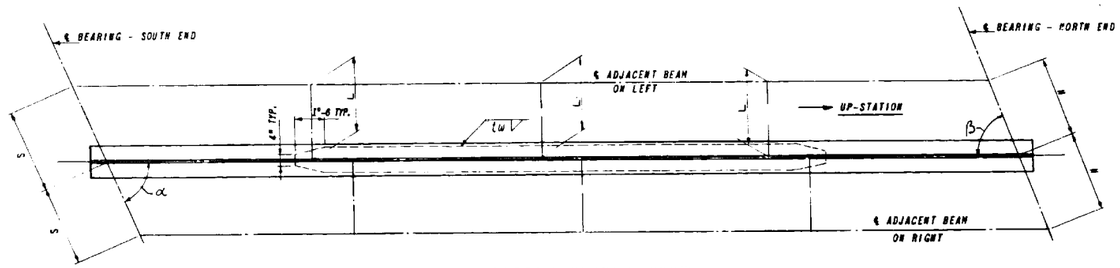
F.A. RTE	SECTION	EXPRESSWAYS	TOTAL SHEETS	SHEET NO
133	0606-628 VB	SOUTHWEST		43A
STA		TO STA		
FED ROAD DIST NO 7		ILLINOIS	FED. AID PROJECT	

5 3/8" INT. BM. SPAN 3
7 5/8 EXT. BM. SPAN 7
7 1/2" TYP. EXT. BEAMS A & F, EXCEPT AS NOTED
7 3/4" EXT. BEAMS A & F, SPAN NO. 2, NO. 8 & NO. 9
8 3/8" EXT. BEAMS A & F, SPAN NO. 6, NO. 11 & NO. 12
10" EXT. BEAMS A & F, SPAN NO. 5
5 1/2" TYP. ALL SPANS, INT. BEAMS B, C, D & E (EXCEPT SPAN 3)

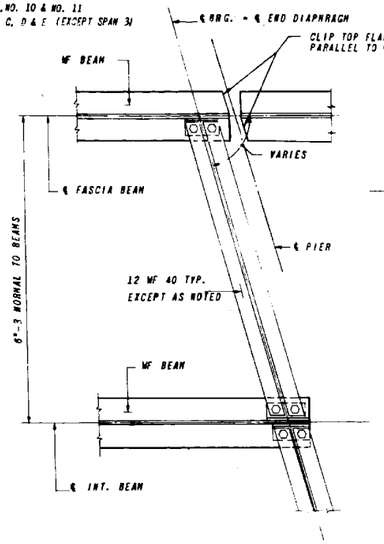
7 1/2" TYP. EXT. BEAMS A & F, EXCEPT AS NOTED
8 1/2" EXT. BEAMS A & F, SPAN NO. 4, NO. 10 & NO. 11
5 1/2" TYP. ALL SPANS INT. BEAMS B, C, D & E (EXCEPT SPAN 3)
7 5/16" EXT. BRGS. - SPAN 3
5 5/16" INT. BRGS. - SPAN 3



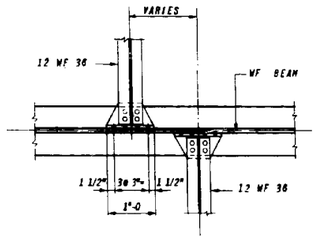
ELEVATION
TYPICAL INTERIOR GIRDER



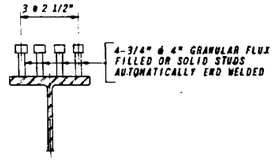
PLAN - BOTTOM FLANGE SHOWN
BEAMS ARE PARALLEL TO CHORD



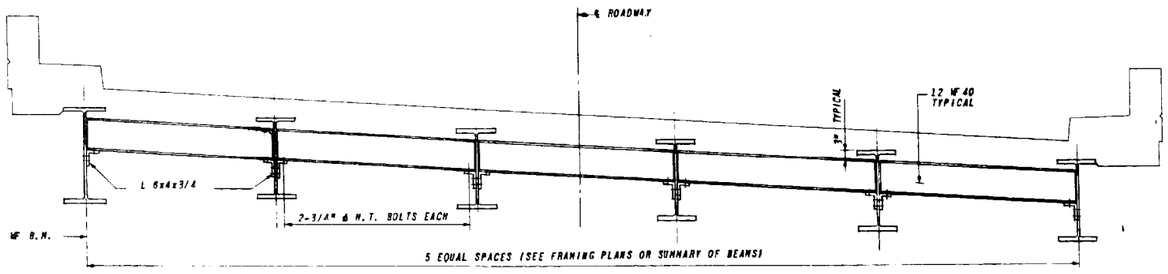
SECTION A-A



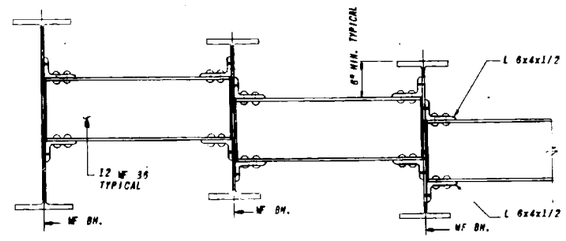
SECTION B-B



SECTION C-C
SHEAR CONNECTOR DETAIL



END DIAPHRAGM



TYPICAL INTERMEDIATE DIAPHRAGM

REQ'D: 107 D1 @ 6'-3
2 EACH DA1 @ 6'-5, DA12 @ 6'-6 1/4, DA13 @ 5'-10 7/8
1 EACH DA2 @ 6'-3 5/8, DA3 @ 6'-4 3/8, DA4 @ 6'-5 1/8
DA5 @ 5'-11 3/16, DA6 @ 5'-11 1/2, DA7,A,B 6'-1 15/16,
DA7 @ 5'-11 3/4, DA8 @ 6'-5 15/16, DA9 @ 6'-2 13/16,
DA10 @ 6'-2 3/4, DA11 @ 5'-0 3/8, DA14 @ 5'-11
10 DA15 @ 6'-4 13/16

SUMMARY OF END DIAPHRAGM

SPAN NO.	DIAPHRAGM	C/C BRG.	REQ'D	SPAN NO.	DIAPHRAGM	C/C BRG.	REQ'D	SPAN NO.	DIAPHRAGM	C/C BRG.	REQ'D	SPAN NO.	DIAPHRAGM	C/C BRG.	REQ'D
1	D2	6'-4	8	4	D5	6'-3	5	6	D9	7'-1	10	10	D5	6'-3	3
	DE1	6'-7	2		D6	6'-11 7/16	5	7	D10	6'-4 1/16	8		D13	6'-11 13/16	3
2	D3	6'-4 9/16	10	5	D7	6'-9 11/16	3		DE10	6'-7 3/8	2		DE13	5'-8 3/4	1
3	D4	6'-5 3/8	3		D8	7'-3	3	8	D11	6'-4 11/16	10		DE14	6'-4 3/16	1
	D5	6'-3	3		DE6	6'-11 7/8	1	9	D12	6'-5 1/2	4		DE15	6'-8 13/16	1
	DE2	6'-1 1/4	1		DE7	7'-3 15/16	1		D5	6'-3	4		DE16	6'-8 9/16	1
	DE3	5'-5 7/16	1		DE8	6'-9 11/16	1		DE11	6'-1 1/4	1	11	D14	6'-10 9/16	5
	DE4	6'-0 1/8	1		DE9	6'-10 5/8	1		DE12	5'-10 7/8	1		D15	7'-4 1/4	5
	DE5	6'-5 7/8	1									12	D16	7'-4 1/4	10

This sheet(43A) supplies sheet(43) of the original contract drawings. All revisions made by the consultant. 2 DEC 16 65

AS BUILT

ILLINOIS DIVISION OF HIGHWAYS
SOUTHWEST EXPRESSWAY

REVISIONS		
	NAME	DATE
1	L.D.BARRETT	3/29/65
DESIGNED	ST	
REVIEWED	E.W.B.	

F.A. RT 133
LAWNDALE AVE. STRUCTURE OVER JOLIET ROAD & SANTA FE RR SPUR
SECTION 0606-628VB
STRUCTURAL STEEL DETAILS
SCALE: HORIZ.
VERT.
DATE 2-18-1964
DRAWN BY J.W.
CHECKED BY L.B.B.

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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 - CMK	REVISED -
		CHECKED - JAW	REVISED -
016-1006-60W75-010-Ex steel details.dgn	PLOT SCALE =	DRAWN - CMK	REVISED -
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION 3 OF 7
STRUCTURE NO. 016-1006
SHEET NO. SAX3 OF SAX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	260
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.U. 2746	606-628VB	COOK	353	118
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

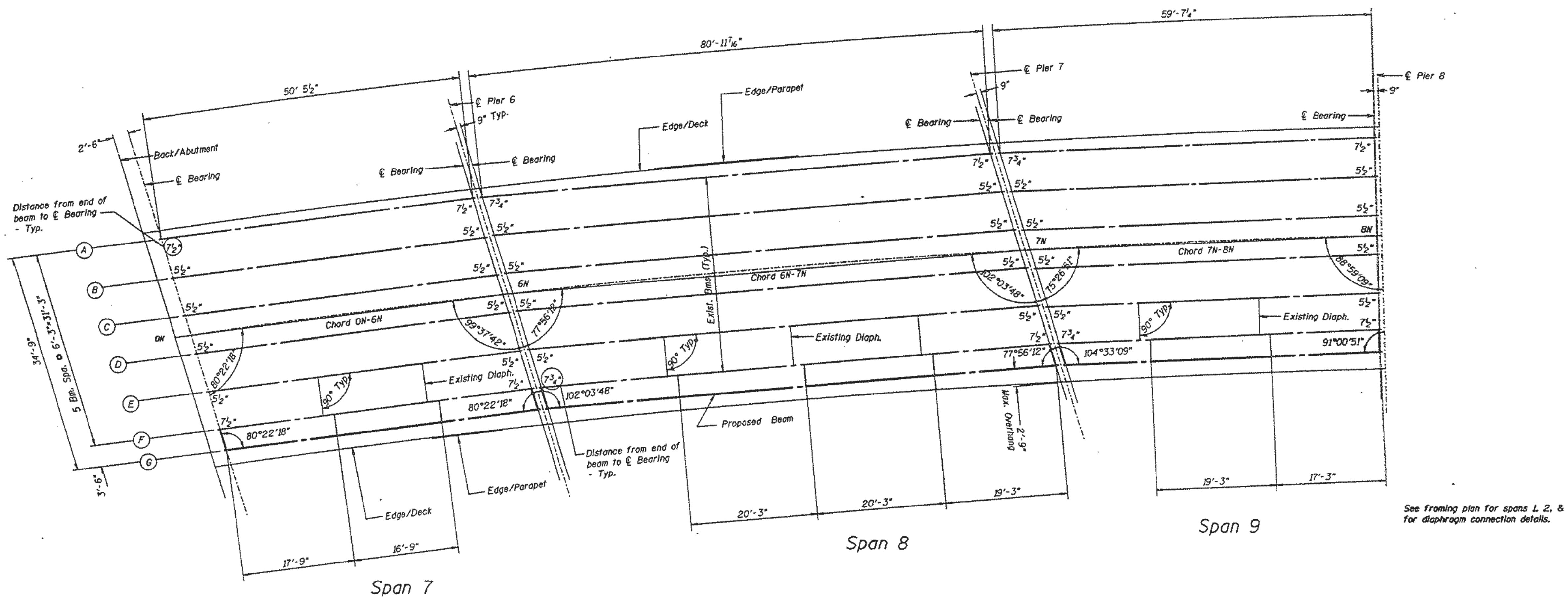
SHEET NO. S-13

SHEETS S-48

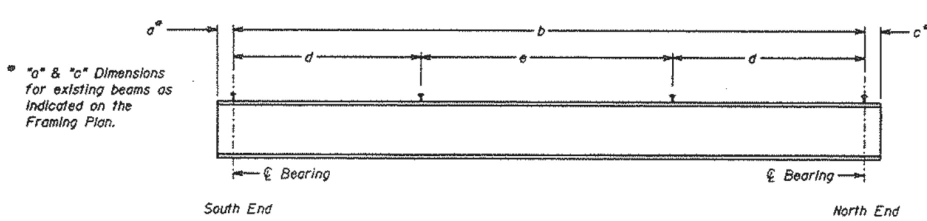
Note: For table of new beam Moments and Shears, see next sheet.

Contractor shall exercise extreme care to not damage the existing beams during removal of the concrete deck.

Saw cutting of existing slab over stringers will not be allowed.



See framing plan for spans 1, 2, & 3 for diaphragm connection details.



* "a" & "c" Dimensions for existing beams as indicated on the Framing Plan.

Notes:

All new beams shall have ¾" ϕ x 4" shear studs, 3 across. See Section A-A, Sheet S-11
All new end diaphragms are W12x40.
New intermediate diaphragms are W12x35, 3'-6" long.
Contractor shall leave existing studs in place, inspecting them for possible damage.
Top of Steel elevations are for fabrication use only.

NEW BEAM DATA

Span	Bm Size	a	b	c	d	e	Top of Steel South	Top of Steel North	Bearing Ht. South	Bearing Ht. North	End Diaph. Length South	End Diaph. Length North
7	W33x118	7½"	50'-5 3/8"	7½"	25 @ 8½"	14 @ 1'-1½"	635.81	635.69	E 3¼"	F 1'-1 3/8"	3'-6 5/8"	3'-6 5/8"
8	W33x221	7¾"	80'-11 7/8"	7½"	33 @ 10"	20 @ 1'-3"	635.68	635.49	E 4 5/16"	F 1'-2"	3'-7"	3'-7"
9	W33x118	7¾"	50'-0¾"	7½"	24 @ 8½"	14 @ 1'-1½"	635.49	635.37	E 3¼"	F 1'-1 3/8"	3'-7 3/8"	3'-6"
10	W33x118	7½"	27'-7 7/8"	8½"	14 @ 8½"	7 @ 1'-1½"	635.36	635.26	F 1'-1 3/8"	E 3¼"	3'-6"	3'-11"
11	W27x84	8 3/8"	51'-6 3/8"	8½"	32 @ 6½"	19 @ 10½"	635.26	635.08	F 1'-1 3/8"	E 3¼"	3'-10¼"	4'-1½"
12	W27x84	8 3/8"	51'-2 1/8"	7½"	33 @ 6½"	18 @ 10½"	635.07	634.93	F 1'-1 3/8"	E 3¼"	4'-0¼"	4'-0¼"

DESIGNED	JAA
CHECKED	ELD
DRAWN	JAA
CHECKED	ELD

1248f003.dgn prt date 12-21-93

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
333 N. MICHIGAN AVENUE SUITE 2300 CHICAGO, ILLINOIS 60601
JOB NO. 124

FRAMING PLAN SPANS 7, 8, & 9

BRIDGE REHABILITATION ILLINOIS ROUTE 171 NORTHBOUND
OVER JOLIET RD. & AT&SF R.R.
FAU 2746 SECTION 606-628 VB
STATION 77+49.4
COOK COUNTY

STRUCTURE NO. 016-1006 N.B.

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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 - CMK	REVISED -
016-1006-60W75-011-Exist fr plan2.dgn		CHECKED - JAW	REVISED -
	PLOT SCALE =	DRAWN - CMK	REVISED -
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION 4 OF 7
STRUCTURE NO. 016-1006
SHEET NO. SAX4 OF SAX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	261
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

X:\10000S\10093\Eng_Docs_Phase_II\SN_016_1005_1006_1st_Ave_over_Joliet_Rd\Final\Plans\016-1006-60W75-011-Exist fr plan2.dgn

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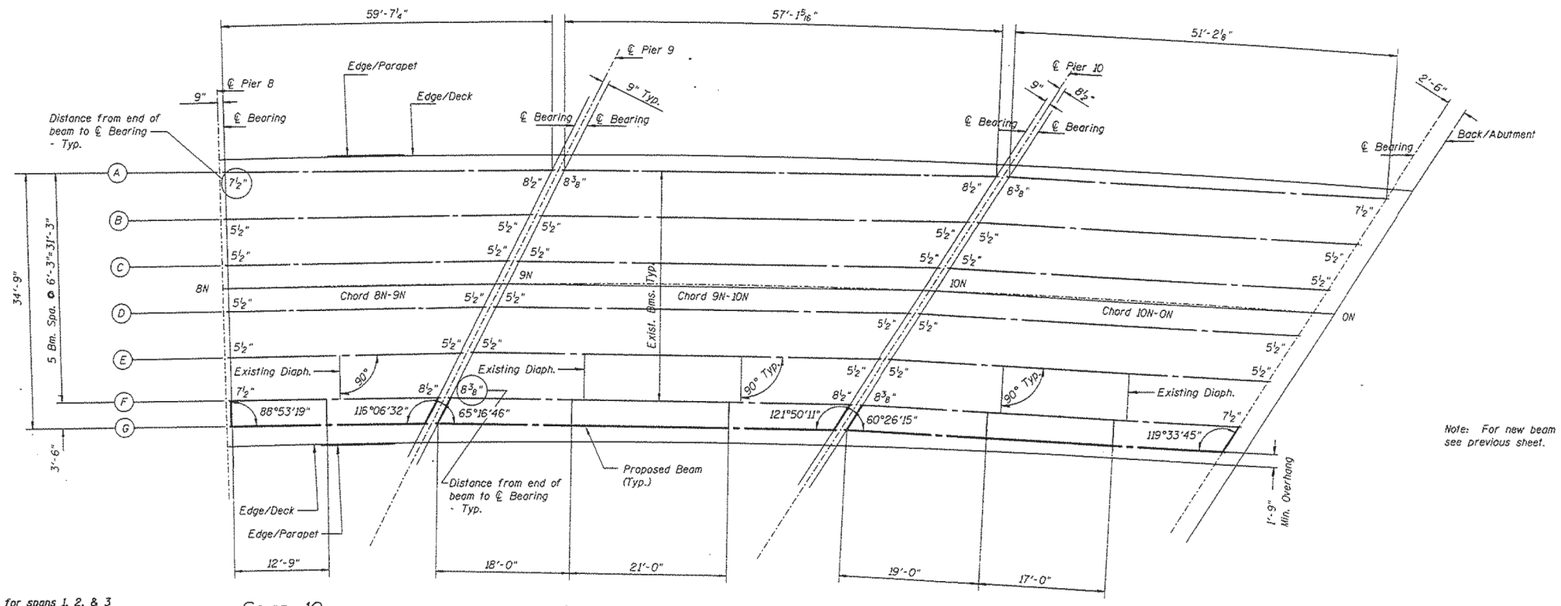
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. U. 2746	606-628VB	COOK	383	119
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-14

SHEETS S-48

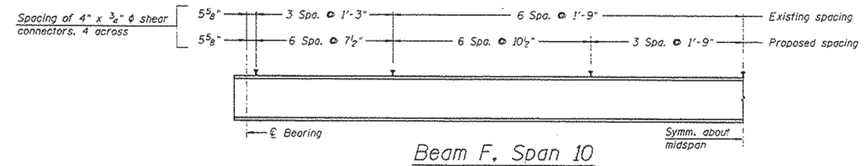
Contractor shall exercise extreme care to not damage the existing beams during removal of the concrete deck.

Saw cutting of existing slab over stringers will not be allowed.



See framing plan for spans 1, 2, & 3 for diaphragm connection details.

Note: For new beam dimensions and other data, see previous sheet.



Beam F, Span 10

Showing location of 48 additional shear connectors

EXTERIOR GIRDER MOMENT TABLE

		Sp. 4	Sp. 5	Sp. 7	Sp. 12
Similar for Spans		2, 3, 8	-	1, 9, 10	6, 11
Sections		W33X221	W27X178	W33X118	W27X84
Is	(in⁴)	12800	6990	5900	2850
Ic	(in⁴)	22410	13503	13337	7404
Ss	(in³)	755	503	359	214
Sc	(in³)	942	929	498	313
Z	(in³)	855	567	415	244
Ψ	(K/ft.)	0.643	0.600	0.540	0.506
MD	('K)	539	335	172	168
sD	(K/ft.)	0.488	0.488	0.488	0.488
MsD	('K)	409	272	155	152
ML	('K)	483	373	253	262
M (Imp)	('K)	117	97	72	74
S3(ML+I)	('K)	1000	784	544	561
Mc	('K)	2533	1809	1131	1159
Mu	('K)	2632	1960	1843	1273
fsD non-comp	(K.S.I.)	8.6	8.0	5.7	9.5
fsD (comp)	(K.S.I.)	14.4	13.6	9.9	16.4
fs3(L+I)	(K.S.I.)	12.9	14.6	13.1	21.5
fs (Overload)	(K.S.I.)	27.3	28.2	23.1	37.9
fs (Total)	(K.S.I.)	-	-	-	-
VR	(K)	33	33	31	32

EXTERIOR GIRDER REACTION TABLE

		Sp. 4	Sp. 5	Sp. 7	Sp. 12
Similar for Spans		2, 3, 8	-	1, 9, 10	6, 11
Sections		W33X221	W27X178	W33X118	W27X84
RL + RsD	(K)	46.3	35.4	25.9	25.7
RL	(K)	26.6	25.8	24.5	24.6
Imp.	(K)	6.5	6.7	7.0	7.0
R (Total)	(K)	79.4	68.9	57.4	57.3

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum live Load + Impact shear range in span.
Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.
Mo (Applied Moment)=1.3(MD + MsD + S3(ML + I)).
Mu is the Full Plastic Moment Capacity for Compact, Braced section.
fs (Overload) is the sum of the stresses due to MD + MsD + S3(ML + I).
fs (Total) is the sum of the stresses due to 1.3(MD + MsD + S3(ML + I)).

DESIGNED	JAA
CHECKED	ELD
DRAWN	JAA
CHECKED	ELD

prt date 12:27:93
1240fg04.dgn

FRAMING PLAN SPANS 10, 11, & 12

BRIDGE REHABILITATION ILLINOIS ROUTE 171 NORTHBOUND
OVER JOLIET RD. & AT&SF R.R.
FAU 2746 SECTION 606-628 VB
STATION 77+49.4
COOK COUNTY

STRUCTURE NO. 016-1006 N.B.

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
332 N. MICHIGAN AVENUE SUITE 2900 CHICAGO, ILLINOIS 60601
JOB NO. 124

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

FILE NAME =	USER NAME = jsurber	DESIGNED - CMK	REVISED -
		CHECKED - JAW	REVISED -
016-1006-60W75-012-Exist fr plan3.dgn	PLOT SCALE =	DRAWN - CMK	REVISED -
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLAN INFORMATION 5 OF 7
STRUCTURE NO. 016-1006
SHEET NO. SAX5 OF SAX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	262
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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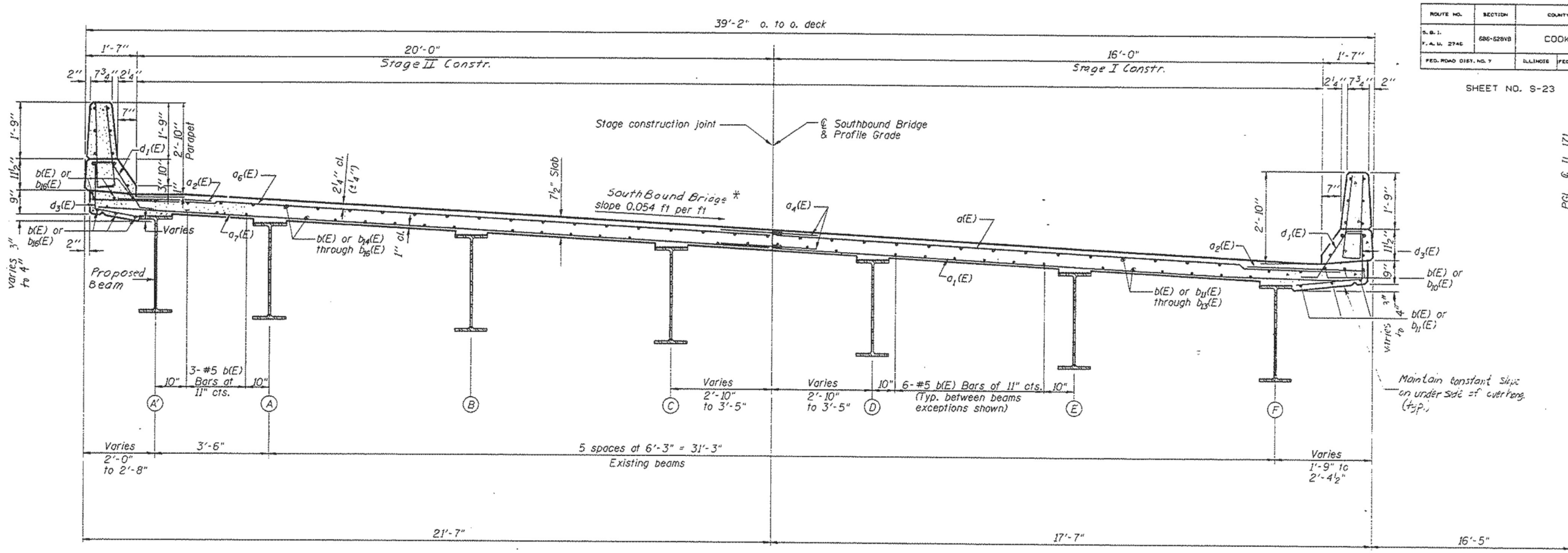
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.U. 2746	606-628VB	COOK	383	128
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-23 SHEETS S-48



NORTH BOUND BRIDGE CROSS SECTION
(LOOKING SOUTH)

SOUTHBOUND BRIDGE CROSS SECTION

(Looking North)

Bars shown are specific to span #4; other spans are similar.

* South Bound Bridge & North Bound Bridge are symmetrical by 180° rotation, except the Superelevation of both bridges slope down toward the East

Notes: See Sheet #s S11 thru S22 for superstructure details and Sheet #s S24 thru S29 for Bills of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet #s S24 thru S29 for parapet reinforcement.

DESIGNED	MK
CHECKED	JAA
DRAWN	EF
CHECKED	JAA

1240060.dgn prt date 12-27-93

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
JOB NO. 124

DECK CROSS SECTION
BRIDGE REHABILITATION ILLINOIS ROUTE 171
NORTHBOUND & SOUTHBOUND
OVER JOLIET RD. & AT&SF R.R.
FAU 2746 SECTION 606-628 VB
STATION 77+49.4
COOK COUNTY
STRUCTURE NO. 016-1005 SOUTHBOUND
STRUCTURE NO. 016-1006 NORTHBOUND

FOR INFORMATION ONLY

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

FILE NAME =	USER NAME = jsurber	DESIGNED - CMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLAN INFORMATION 6 OF 7 STRUCTURE NO. 016-1006
		CHECKED - JAW	REVISED -		
016-1006-60W75-013-Ex cross section.dgn	PLOT SCALE =	DRAWN - CMK	REVISED -		
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -		SHEET NO. SAX6 OF SAX7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	263
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

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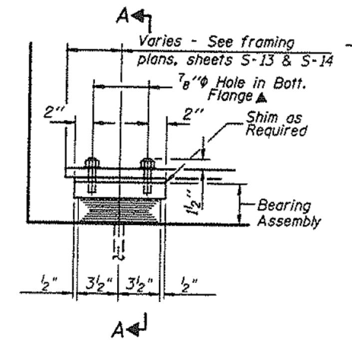
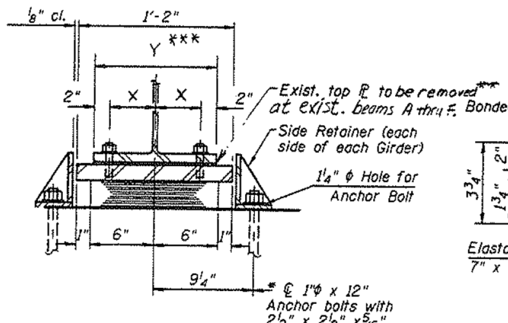
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.U. 2746	606-628VB	COOK	385	121
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S-16

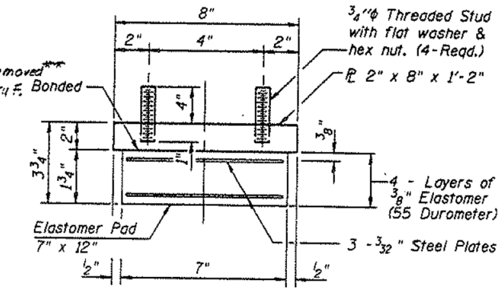
SHEETS S-48



ELEVATION AT ABUTS. PIER 7, 9, & 10



SECTION A-A



BEARING ASSEMBLY

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

TYPE I ELASTOMERIC EXPANSION BEARING
NORTH AND SOUTH ABUTS. PIERS 7, 9 & 10
NORTHBOUND BRIDGE

** The Contractor shall remove the existing top ℞ welded to the bottom flange by the air arc method. Cost shall be included in Furn. & Erect. Structural Steel.

*** Dimensions vary. See Table 2 for Beam Dimensions.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	42

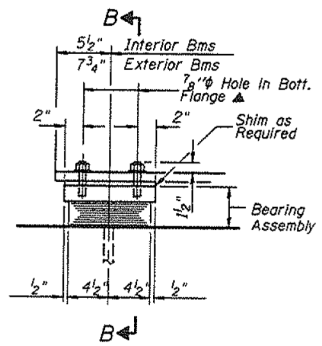
TABLE 2, North Bound Bridge

BEAM	N. ABUT. X	N. ABUT. Y	PIER 6 X	PIER 6 Y	PIER 7 X	PIER 7 Y	PIER 9 X	PIER 9 Y	PIER 10 X	PIER 10 Y	S. ABUT. X	S. ABUT. Y
A	3 1/4"	6 1/2"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"
B	3 1/4"	6 1/2"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"
C	3 1/4"	6 1/2"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"
D	3 1/4"	6 1/2"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"
E	3 1/4"	6 1/2"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"	3 1/4"	6 1/2"
F	4"	8"	4"	8"	4"	8"	4"	8"	3 1/4"	6 1/2"	3 1/4"	6 1/2"

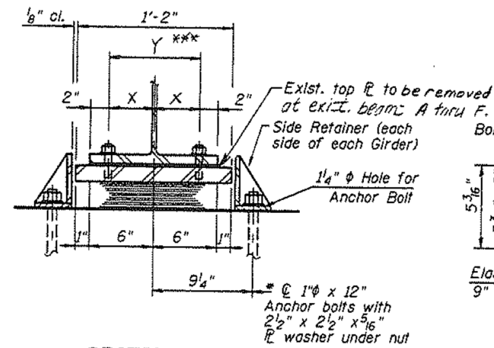
FIXED BEARING TABLE

	PIERS	PLATE A	PLATE B	lt	lb	a	b	c	d	No.req'd.
FIXED BEARING NO. 1	7	1 3/4" X 9" X 1'-5"	1" X 9" X 2'-0 1/2"	17"	24 1/2"	3"	2@5"	5"	5"	1
FIXED BEARING NO. 2	6,8,9,10	1 3/8" X 9" X 1'-0 1/2"	3/4" X 9" X 1'-8"	12 1/2"	20"	3"	2@3 1/4"	3 1/4"	5"	5

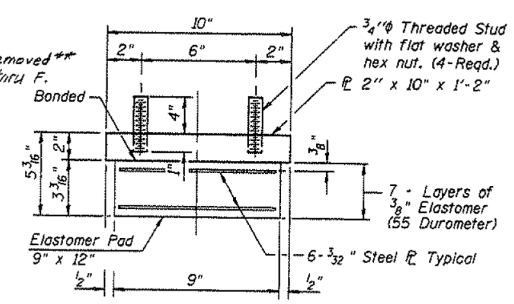
NOTE: 2 Brgs. Pier 8



ELEVATION AT PIER 6



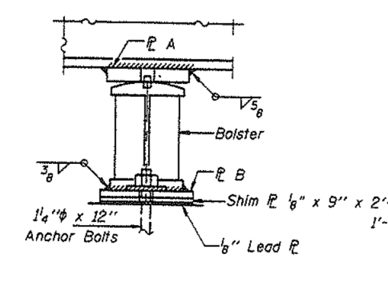
SECTION B-B



BEARING ASSEMBLY

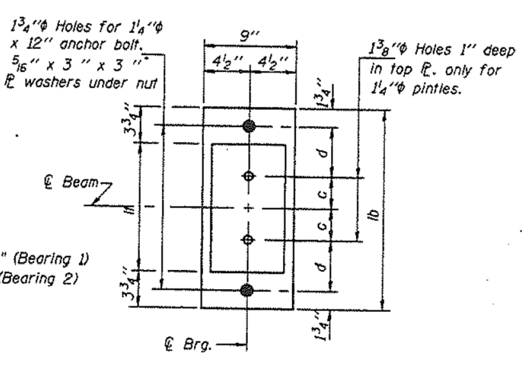
Note: Shim plates shall not be placed under Bearing Assembly.

TYPE I ELASTOMERIC EXPANSION BEARING
PIER 6
NORTHBOUND BRIDGE



PIER

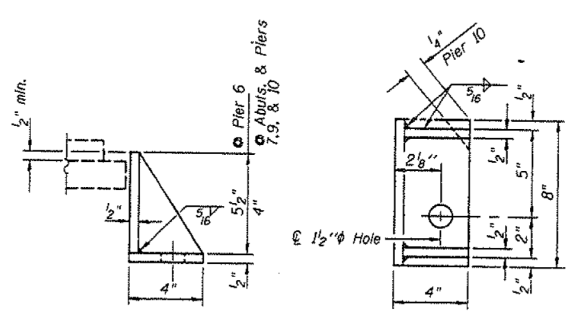
SEE TABLE FOR LOCATIONS AND DIMENSIONS



PLAN SEE TABLE FOR LOCATIONS AND DIMENSIONS

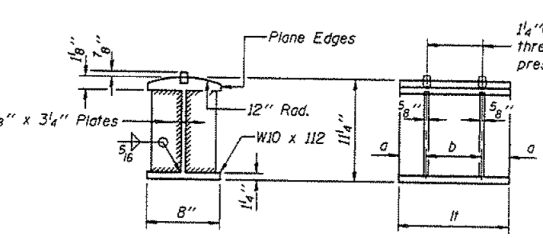
NOTE:
Existing steel shall not be raised more than 1/8" above existing elevation for removal of existing exp. bearings.
Jack all beams simultaneously. The max. difference in elevation of two adjacent beams shall not be more than 1/8" during jacking.
Anchor bolts shall be removed or cut off and ground flush with top of concrete and sealed with epoxy.
If anchor bolts are removed, exist. holes shall be filled with non-shrink grout.

▲ Note: 7/8 φ Holes shall be field drilled in bottom flange by Contractor at existing beams A thru F. 7/8"φ holes shall be shop drilled for new plates. Cost shall be included in Furn. & Erecting Struct. Steel. (L. Sum)



SIDE RETAINER

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



DETAIL OF BOLSTER

SEE TABLE FOR LOCATIONS AND DIMENSIONS

Note: For detail of 1 1/4 φ pintle, see sht. S-15.

DESIGNED	ELD & UT
CHECKED	JAA
DRAWN	EF
CHECKED	JAA

ELASTOMERIC & FIXED BEARING DETAILS
BRIDGE REHABILITATION ILLINOIS ROUTE 171
NORTHBOUND & SOUTHBOUND
OVER JOLIET RD. & AT&SF R.R.
FAU 2746 SECTION 606-628 VB
STATION 77+49.4
COOK COUNTY
STRUCTURE NO. 016-1006 NORTHBOUND

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
JOB NO. 124

FOR INFORMATION ONLY

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

FILE NAME =	USER NAME = jsurber	DESIGNED - CMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLAN INFORMATION 7 OF 7 STRUCTURE NO. 016-1006	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - JAW	REVISED -			372	2013-037B-R	COOK	787	264
016-1006-60W75-014-Ex bearing.dgn	PLOT SCALE =	DRAWN - CMK	REVISED -			CONTRACT NO. 60W75				
	PLOT DATE = 6/10/2015	CHECKED - JAW	REVISED -		SHEET NO. SAX7 OF SAX7 SHEETS	ILLINOIS FED. AID PROJECT				

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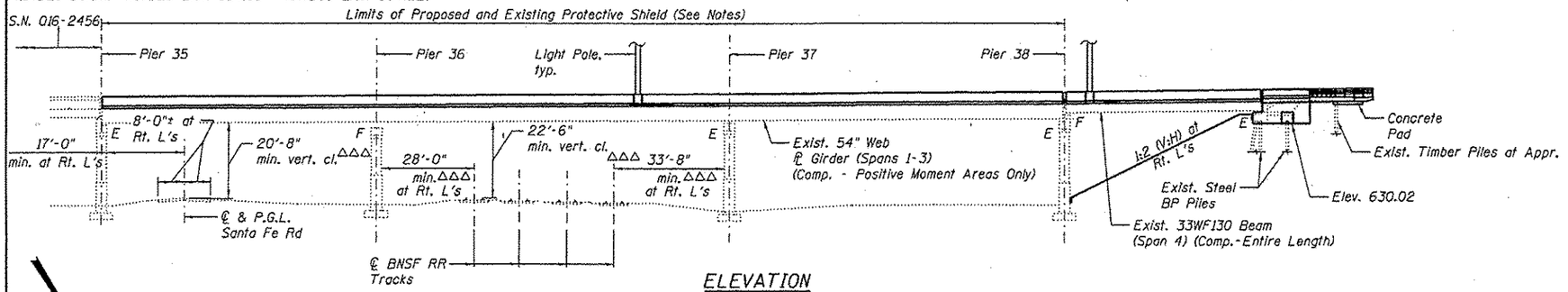
Bench Mark: Chiseled square of NE corner of NB IL-171 bridge wingwall over BNSF R.R. El. 640.61

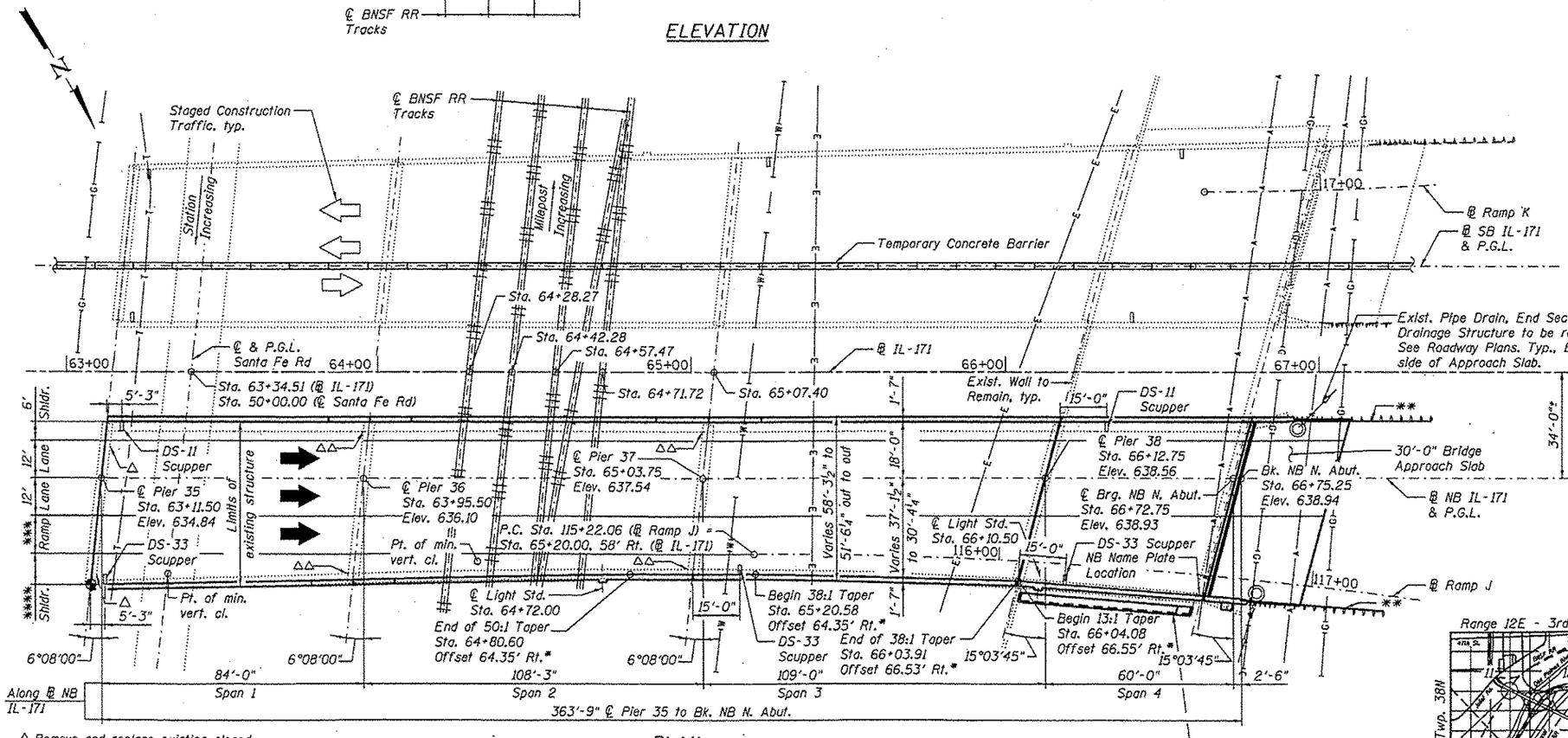
Existing Structure: S.N. 016-2454 (NB) was built in 1964 as F.A. Rte. 133, Section 0606-627VB at Sta. 65+06.90. Existing structure consists of a three span reinforced concrete deck on seven continuous 54" steel welded plate girders in spans 1 thru 3 and a single span reinforced concrete deck on eight steel 33" WF beams in span 4. The reinforced concrete deck is 8½" thick, including a 1½" microsilica concrete overlay. The substructure consists of open stub abutments founded on steel piles at the north end and by multi-column circular piers founded on spread footings. The south pier is shared with S.N. 016-2456 (NB). S.N. 016-2454 measures 363'-9" from back of north abutment to centerline of south pier, with an out-to-out deck width varying from 50'-3¼" to 57'-4". Piers 35, 36, and 37 are at a skew angle of 6°08'00" and Pier 38 and the North Abutment are at a skew angle of 15°03'45". The concrete deck is to be removed and replaced with traffic 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. 584.50 = NAVD88 Elev. 584.22.

Notes:
Existing Protective Shield to be removed. (Cost Included in "Removal of Existing Deck No. 1").
No freefall drains will be permitted over Santa Fe Road and the BNSF RR tracks or within 10 ft. of cross arms of a railroad pole line.
BNSF RR Milepost 12.08 is located approximately at the ℄ IL-171.



ELEVATION



PLAN

△ Remove and replace existing closed drainage system. See sheets SB24 and SB25.
△△ Remove existing closed drainage system.
△△△ Based on Phase I survey information dated 08/11/2008

* Offset measured perpendicular to ℄ IL-171
** Traffic Barrier Terminal Type 6 Std. 631031
*** Ramp width varies 12'-0" to 18'-7¼", measured perpendicular to ℄ NB IL-171
**** Shoulder width varies 6'-3¼" to 9'-8¼", measured perpendicular to ℄ NB IL-171

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

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)

LOADING HS20-44

No future wearing surface allowed.

SEISMIC DATA

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

LICENSED STRUCTURAL ENGINEER ★ STATE OF ILLINOIS ★
LYNN M. STOCK
081-006848
N. AURORA

Lynn M. Stock
Licensed Structural Engineer
State of Illinois No. 081-006848
Expires 11/30/2016

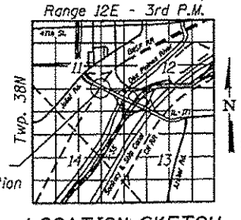
6/9/15
Date

EXISTING UTILITY LEGEND

- Underground Storm Sewer
- A — Aerial Electric Line
- G — Underground Gas Line
- E — Underground Electric Line
- T — Underground Telephone Line
- W — Underground Water Line
- Existing Drainage Structure

APPROVED
For Structural Adequacy Only

Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
NB IL-171 OVER BNSF RR
FAP 372 - SECTION 2013-037B-R
COOK COUNTY
STATION 65+07.40
STRUCTURE NO. 016-2454

LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Lin_41	DESIGNED - RGB	REVISED -
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	PLOT SCALE =	DRAWN - RMH	REVISED -
	PLOT DATE = 6/8/2015 3:39:04 PM	CHECKED - JRS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. SB1 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	265
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

1. All new fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $^{7}/_{8}$ in. ϕ, holes $^{15}/_{16}$ in. ϕ, unless otherwise noted.

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

3. The Contractor shall test the existing welds by non-destructive methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dye penetrant (PT), magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges and Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.

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 $^{1}/_{4}$ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

6. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

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. Concrete Sealer shall be applied to the exposed faces of the reconstructed backwall and widened portions of the north abutment.

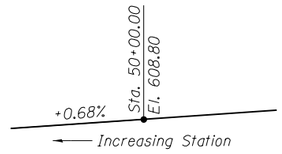
9. The Inorganic Zinc Rich Primer/Acrylic/Acrylic Paint System shall be used for shop and field painting of new structural steel. Only Inorganic Zinc Rich Primer shall be applied to the new structural steel in the shop under this contract and is included in "Structural Steel Repair". The intermediate and top coats shall be applied under a separate painting contract.

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. 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".

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

13. 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 Provisions for "Containment and Disposal of Lead Paint Cleaning Residues."



PROFILE GRADE SANTA FE RD

(Along ℄ Santa Fe Rd)

INDEX OF SHEETS

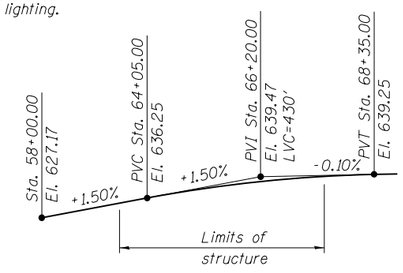
For Existing Bridge Plans, see Sheets SBX1 thru SBX14 immediately following Sheet SB34.

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 girders and beams where not already installed.
3. Remove and replace existing expansion joints.
4. Remove and replace approach slab.
5. Remove and replace backwall.
6. Repair spalls, delaminations and open cracks in substructures using structural repair of concrete and epoxy crack injection as shown.
7. Repair slopewall using epoxy crack injection as shown.
8. Modify wingwalls and slopewall as shown for the new deck width.
9. Retrofit steel superstructure fatigue prone details at cover plates as shown.
10. Remove all bottom wind bracing lateral angles.
11. Remove wind bracing gusset plates where shown.
12. Remove and dispose of existing electrical conduits and junction boxes attached to the beams and/or deck.
13. Remove and replace the existing closed drainage system at Pier 35.
14. Remove the existing closed drainage systems at Piers 36 and 37.
15. Perform miscellaneous repairs including repairing unseated anchor bolts, and removing debris and vegetation at slopewalls.
16. Remove and replace existing roadway lighting. See electrical plans for cost.

CURVE DATA - ℄ RAMP J

P.I. Sta. = 116+72.53
Δ = 11°05'22" (RT)
D = 3°41'47"
R = 1,550.00'
L = 300.00'
T = 150.47'
E = 7.2865'
P.C. Sta. = 115+22.06
P.T. Sta. = 118+22.06
S.E. = 3.9%



PROFILE GRADE NB IL-171

(Along ℄ NB IL-171)

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu. Yd.		21.6	21.6
	Removal of Existing Concrete Deck No. 1	Each	1		1
	Protective Shield	Sq. Yd.	1,772		1,772
	Structure Excavation	Cu. Yd.		103	103
	Concrete Structures	Cu. Yd.		49.0	49.0
	Concrete Superstructure	Cu. Yd.	702.8		702.8
	Bridge Deck Grooving	Sq. Yd.	2,116		2,116
	Protective Coat	Sq. Yd.	2,565		2,565
	Stud Shear Connectors	Each	1,642		1,642
	Reinforcement Bars, Epoxy Coated	Pound	185,110	4,570	189,680
	Bar Splicers	Each	57		57
	Slope Wall 4 Inch	Sq. Yd.		20	20
	Name Plates	Each		1	1
	Preformed Joint Strip Seal	Foot	168.0		168.0
	Concrete Sealer	Sq. Yd.		299	299
*	Epoxy Crack Injection	Foot		72	72
	Geocomposite Wall Drain	Sq. Yd.		44	44
	Remove Conduit Attached to Structure	Foot	756		756
	Granular Backfill for Structures	Cu. Yd.		103	103
	Structural Steel Removal	Pound	10,140		10,140
	Structural Steel Repair	Pound	4,700		4,700
	Containment and Disposal of Lead Paint Cleaning Residues No. 1	L. Sum	1		1
	Cleaning Bridge Seats	Sq. Ft.		854	854
*	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		318	318
*	Structural Repair of Concrete (Depth Greater than 5 Inches)	Sq. Ft.		64	64
	Drainage Scuppers, DS-11	Each	2		2
	Drainage Scuppers, DS-33	Each	3		3
	Drainage System	L. Sum		1	1
	Pipe Underdrains for Structures 4"	Foot		64	64
**	Selective Clearing	Unit		1	1
	Temporary Shoring and Cribbing	Each		3	3

* 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 (2008-09). Actual repair areas will be determined by the Engineer in the field.

** The quantity for this work is estimated. The intent for this work is to remove accumulations of rubbish, vegetation, etc., on the existing slopewall. See special provisions.

STATION 65+07.40
RE-BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 372
SEC. 2013-037B-R
LOADING HS20
STR. NO. 016-2454

NAME PLATE

(See Std. 515001)

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

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

USER NAME = Lin48	DESIGNED - RGB	REVISED -	
FILE NAME = ...\8162454_60W75_002_gennotes.dgn	CHECKED - JRS	REVISED -	
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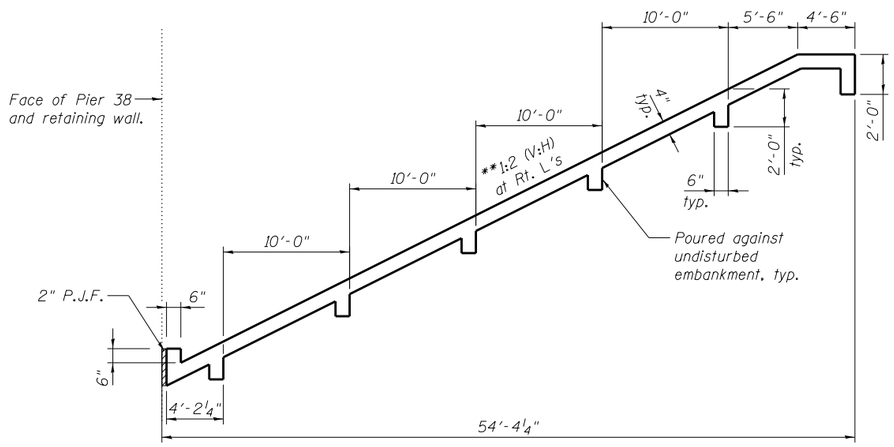
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, BILL OF MATERIAL, AND INDEX OF SHEETS
STRUCTURE NO. 016-2454

SHEET NO. SB2 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	266
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

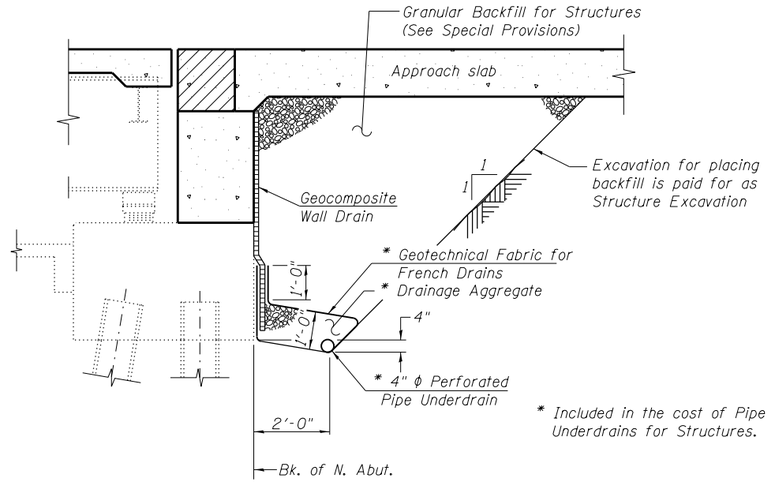


SECTION THRU SLOPEWALL

(Horizontal dimensions at Rt. L's to Abutment)

** Slope to match existing slopewall configuration.

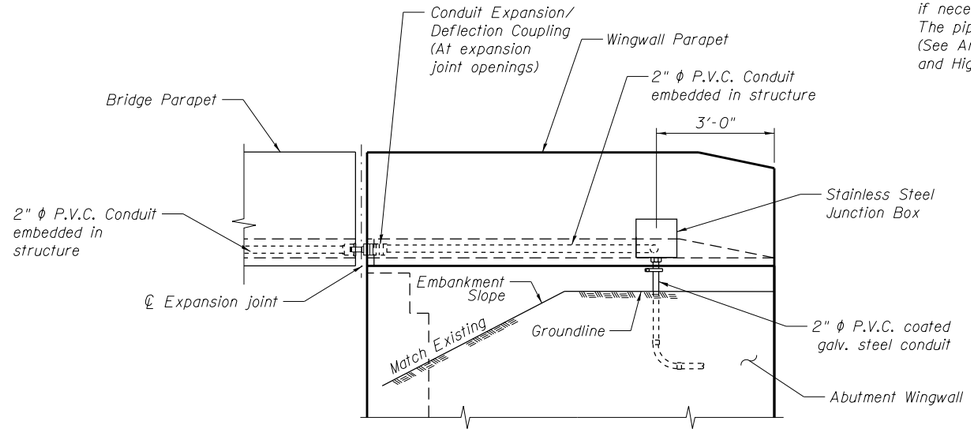
Note:
See Sheet SB28 for additional slopewall details.



SECTION THRU ABUTMENT

(Horizontal dimensions at Rt. L's to Abutment)

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipe shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



CONDUIT DETAIL

(East Parapet only)

For Conduit, Junction Box & Couplings, see Electrical Plans.

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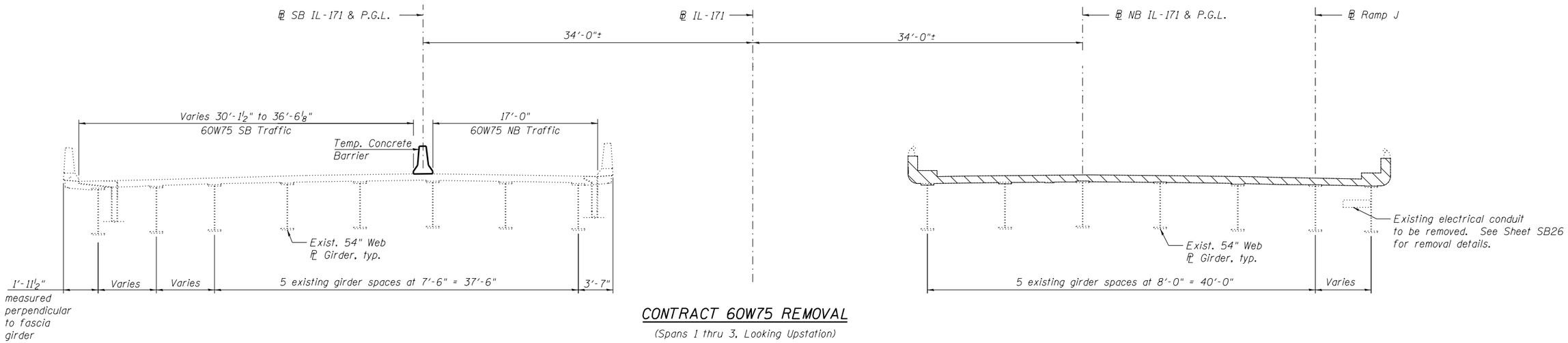
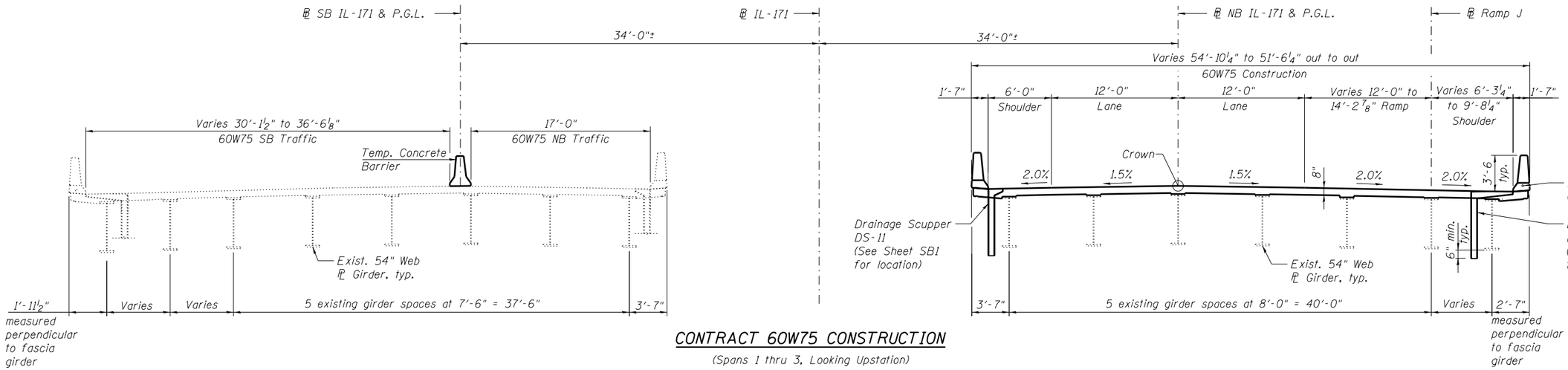
	PLOT DATE = 6/8/2015 3:39:05 PM	CHECKED - JRS	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	267
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



CONTRACT 60W75 REMOVAL

(Spans 1 thru 3, Looking Upstation)



CONTRACT 60W75 CONSTRUCTION

(Spans 1 thru 3, Looking Upstation)

Notes:
All dimensions are measured perpendicular to ℄ NB or SB IL-171 unless noted otherwise.
Temporary Concrete Barrier shall not be anchored to deck.
Refer to Sheet SB6 for Temporary Concrete Barrier.
See Roadway Plans for Maintenance of Traffic and Pay Item for Temporary Concrete Barrier.

LEGEND

▨ Removal of Existing Concrete Deck No. 1

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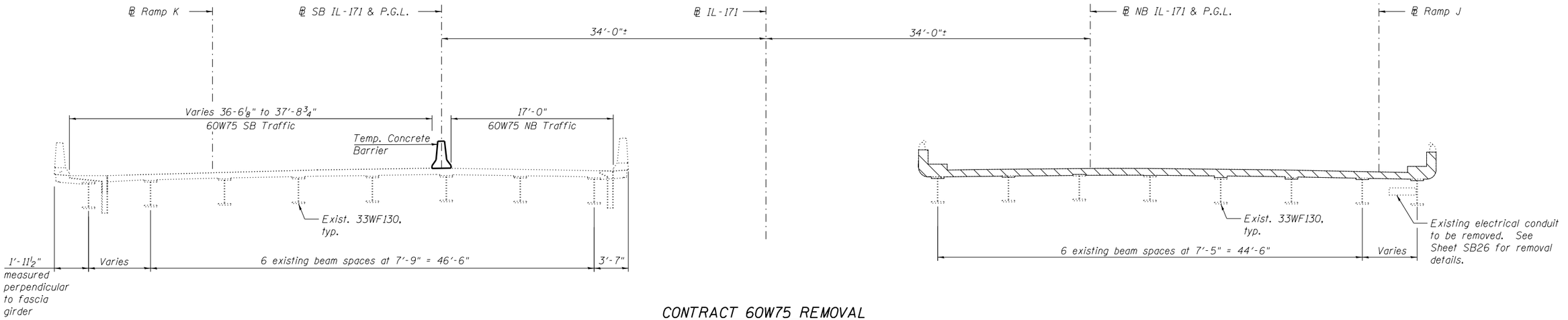
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

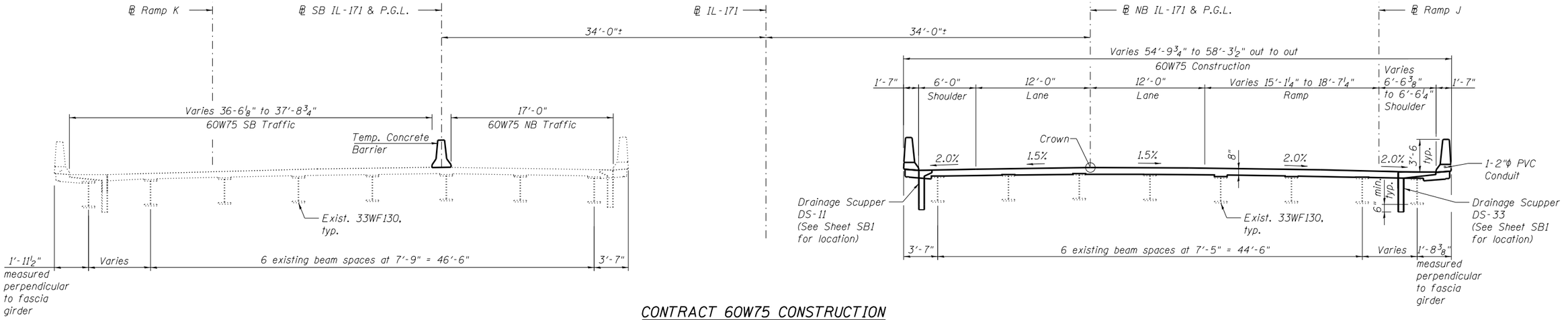
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB4 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	268
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



CONTRACT 60W75 REMOVAL

(Span 4, Looking Upstation)



CONTRACT 60W75 CONSTRUCTION

(Span 4, Looking Upstation)

LEGEND

▨ Removal of Existing Concrete Deck No. 1

Notes:

All dimensions are measured perpendicular to ℄ NB or SB IL-171 unless noted otherwise.

Temporary Concrete Barrier shall not be anchored to deck.

Refer to Sheet SB6 for Temporary Concrete Barrier.

See Roadway Plans for Maintenance of Traffic and Pay Item for Temporary Concrete Barrier.

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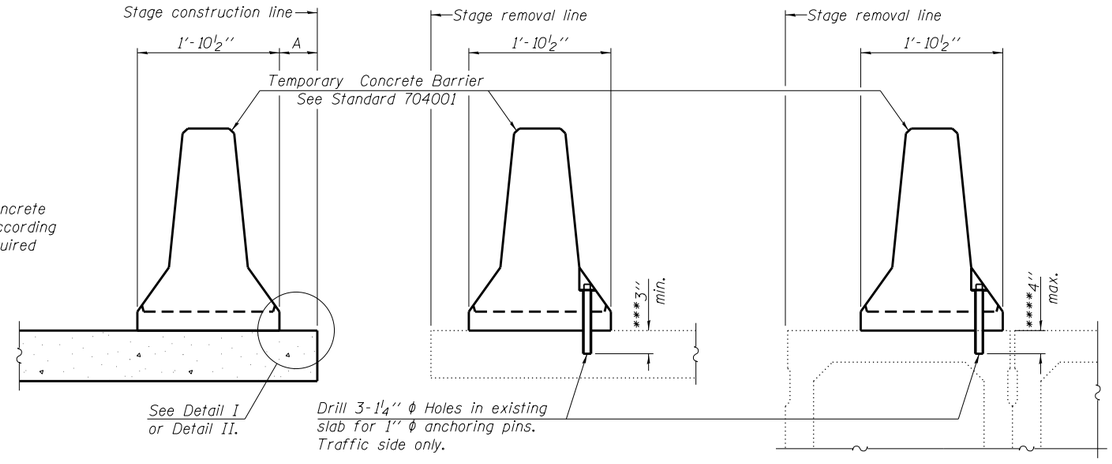
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB5 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	269
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

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

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.

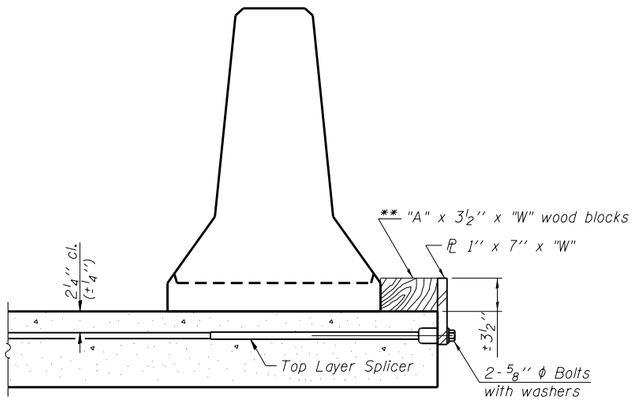
Cost of retainer assembly is included with Temporary Concrete Barrier.

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.

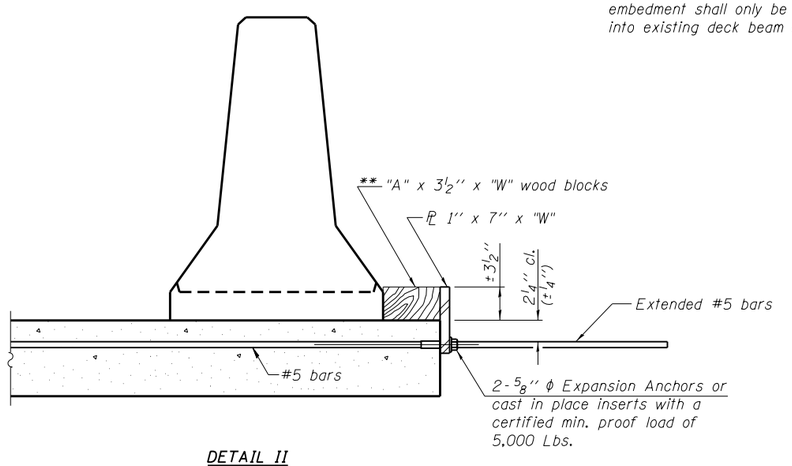
SECTIONS THRU SLAB OR DECK BEAM

*** 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.

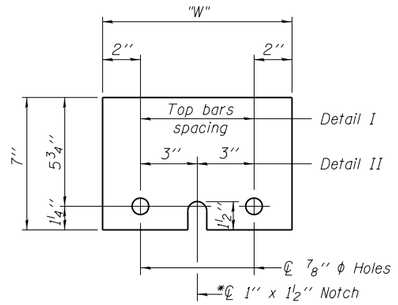
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



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.

R-27

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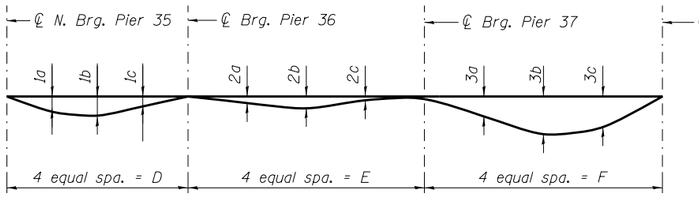
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-2454
SHEET NO. SB6 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	270
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



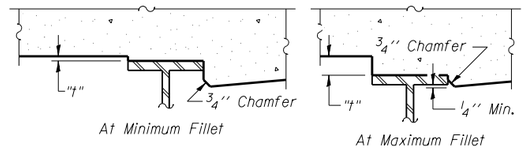
DEAD LOAD DEFLECTION DIAGRAM

(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 SB9, SB10 and SB11.

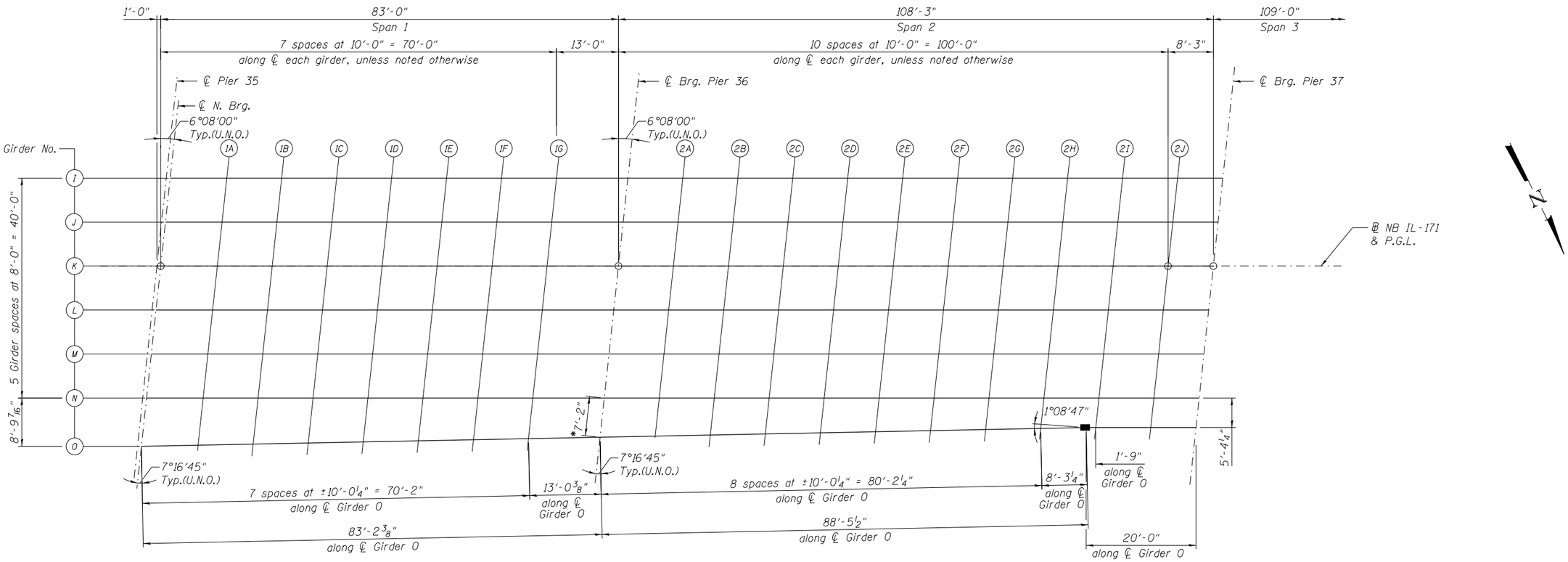
DEAD LOAD DEFLECTION TABLE

Girder	1a	1b	1c	2a	2b	2c	3a	3b	3c	D	E	F
I	5/8"	3/4"	3/8"	1/4"	3/8"	0"	7/8"	1 3/4"	1 3/8"	83'-0"	108'-3"	110'-8 1/2"
J						1/8"		1 5/8"				109'-5"
K		5/8"			1/2"		3/4"	1 1/2"	1 1/4"			108'-1 1/2"
L			1/4"					1 3/8"	1 1/8"			106'-10"
M		3/4"	3/8"		3/8"		5/8"	1 1/4"	1"			104'-3"
N		5/8"	1/4"				1/2"	1"	3/4"	83'-2 3/8"	108'-5 1/2"	102'-9 7/8"
O	1/2"											



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below and on sheet SB8. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets SB9, SB10 and SB11 minus 8" slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PARTIAL PLAN - SPANS 1 & 2

*Measured along ℄ Pier

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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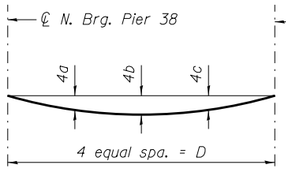
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 016-2454
SHEET NO. SB7 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	271
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	



DEAD LOAD DEFLECTION DIAGRAM

(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 SB9, SB10 and SB11.

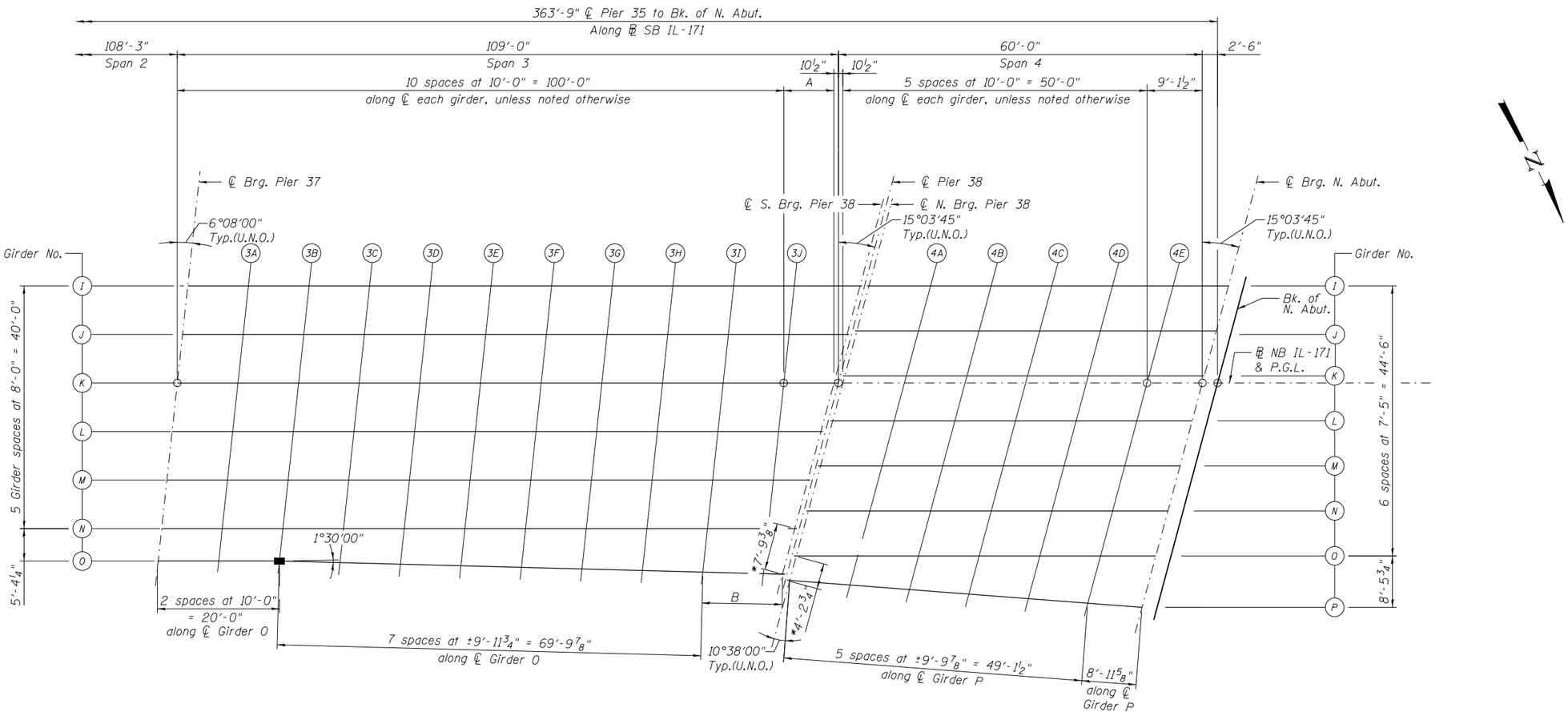
DEAD LOAD DEFLECTION TABLE

Girder	4a	4b	4c	D
I	3/4"	1"	3/4"	59'-1 1/2"
J	5/8"		5/8"	
K	5/8"		5/8"	
L	5/8"		5/8"	
M	5/8"		5/8"	
N	5/8"		5/8"	
O	5/8"	7/8"	5/8"	
P	1/2"	5/8"	1/2"	58'-1 1/8"

For Span 3 deflection data see Sheet SB7.

DISTANCE ALONG ℄ GIRDER FROM SCREED LINE 3J TO ℄ S. BRG. AT PIER 38

Girder	Distance A	Distance B
I	10'-8 1/2"	—
J	9'-5"	—
K	8'-1 1/2"	—
L	6'-10"	—
M	5'-6 1/2"	—
N	—	14'-3"
O	—	13'-0"



PARTIAL PLAN - SPANS 3 & 4

*Measured along ℄ Brg.

Notes:
For fillet height details see Sheet SB7.
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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Consulting Engineers
Westmont, Illinois

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 016-2454
SHEET NO. SB8 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	272
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

GIRDER I

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+13.22	-16.00	634.61	634.61
℄ N. BRG. PIER 35	63+14.22	-16.00	634.62	634.62
1A	63+24.22	-16.00	634.77	634.80
1B	63+34.22	-16.00	634.92	634.97
1C	63+44.22	-16.00	635.07	635.13
1D	63+54.22	-16.00	635.22	635.28
1E	63+64.22	-16.00	635.37	635.42
1F	63+74.22	-16.00	635.52	635.56
1G	63+84.22	-16.00	635.67	635.69
℄ BRG. & ℄ PIER 36	63+97.22	-16.00	635.87	635.87
2A	64+07.22	-16.00	636.02	636.02
2B	64+17.22	-16.00	636.17	636.18
2C	64+27.22	-16.00	636.31	636.33
2D	64+37.22	-16.00	636.45	636.48
2E	64+47.22	-16.00	636.59	636.62
2F	64+57.22	-16.00	636.72	636.75
2G	64+67.22	-16.00	636.85	636.86
2H	64+77.22	-16.00	636.97	636.98
2I	64+87.22	-16.00	637.09	637.09
2J	64+97.22	-16.00	637.21	637.20
℄ BRG. & ℄ PIER 37	65+05.47	-16.00	637.30	637.30
3A	65+15.47	-16.00	637.41	637.44
3B	65+25.47	-16.00	637.52	637.57
3C	65+35.47	-16.00	637.63	637.71
3D	65+45.47	-16.00	637.72	637.84
3E	65+55.47	-16.00	637.82	637.96
3F	65+65.47	-16.00	637.91	638.06
3G	65+75.47	-16.00	638.00	638.15
3H	65+85.47	-16.00	638.09	638.21
3I	65+95.47	-16.00	638.17	638.26
3J	66+05.47	-16.00	638.24	638.30
℄ S. BRG. PIER 38	66+16.18	-16.00	638.32	638.32
℄ PIER 38 SPAN 3	66+17.06	-16.00	638.33	638.33
℄ PIER 38 SPAN 4	66+17.06	-16.00	638.33	638.33
℄ N. BRG. PIER 38	66+17.93	-16.00	638.34	638.34
4A	66+27.93	-16.00	638.40	638.45
4B	66+37.93	-16.00	638.47	638.54
4C	66+47.93	-16.00	638.53	638.62
4D	66+57.93	-16.00	638.59	638.66
4E	66+67.93	-16.00	638.64	638.68
℄ BRG. N. ABUT.	66+77.06	-16.00	638.69	638.69
BK. N. ABUT.	66+79.56	-16.00	638.70	638.70

GIRDER J

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+12.36	-8.00	634.74	634.74
℄ N. BRG. PIER 35	63+13.36	-8.00	634.75	634.75
1A	63+23.36	-8.00	634.90	634.93
1B	63+33.36	-8.00	635.05	635.10
1C	63+43.36	-8.00	635.20	635.26
1D	63+53.36	-8.00	635.35	635.41
1E	63+63.36	-8.00	635.50	635.55
1F	63+73.36	-8.00	635.65	635.68
1G	63+83.36	-8.00	635.80	635.81
℄ BRG. & ℄ PIER 36	63+96.36	-8.00	636.00	636.00
2A	64+06.36	-8.00	636.15	636.15
2B	64+16.36	-8.00	636.29	636.31
2C	64+26.36	-8.00	636.44	636.46
2D	64+36.36	-8.00	636.58	636.61
2E	64+46.36	-8.00	636.71	636.75
2F	64+56.36	-8.00	636.85	636.88
2G	64+66.36	-8.00	636.98	637.00
2H	64+76.36	-8.00	637.10	637.11
2I	64+86.36	-8.00	637.22	637.22
2J	64+96.36	-8.00	637.34	637.33
℄ BRG. & ℄ PIER 37	65+04.61	-8.00	637.43	637.43
3A	65+14.61	-8.00	637.55	637.56
3B	65+24.61	-8.00	637.65	637.70
3C	65+34.61	-8.00	637.76	637.84
3D	65+44.61	-8.00	637.86	637.96
3E	65+54.61	-8.00	637.95	638.08
3F	65+64.61	-8.00	638.05	638.18
3G	65+74.61	-8.00	638.13	638.27
3H	65+84.61	-8.00	638.22	638.33
3I	65+94.61	-8.00	638.30	638.39
3J	66+04.61	-8.00	638.38	638.42
℄ S. BRG. PIER 38	66+14.03	-8.00	638.45	638.45
℄ PIER 38 SPAN 3	66+14.90	-8.00	638.45	638.45
℄ PIER 38 SPAN 4	66+15.06	-8.58	638.45	638.45
℄ N. BRG. PIER 38	66+15.93	-8.58	638.45	638.45
4A	66+25.93	-8.58	638.52	638.56
4B	66+35.93	-8.58	638.59	638.66
4C	66+45.93	-8.58	638.65	638.73
4D	66+55.93	-8.58	638.71	638.78
4E	66+65.93	-8.58	638.76	638.80
℄ BRG. N. ABUT.	66+75.06	-8.58	638.81	638.81
BK. N. ABUT.	66+77.56	-8.58	638.82	638.82

GIRDER K

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+11.50	0.00	634.84	634.84
℄ N. BRG. PIER 35	63+12.50	0.00	634.86	634.86
1A	63+22.50	0.00	635.01	635.03
1B	63+32.50	0.00	635.16	635.21
1C	63+42.50	0.00	635.31	635.37
1D	63+52.50	0.00	635.46	635.52
1E	63+62.50	0.00	635.61	635.66
1F	63+72.50	0.00	635.76	635.79
1G	63+82.50	0.00	635.91	635.92
℄ BRG. & ℄ PIER 36	63+95.50	0.00	636.10	636.10
2A	64+05.50	0.00	636.25	636.26
2B	64+15.50	0.00	636.40	636.41
2C	64+25.50	0.00	636.54	636.57
2D	64+35.50	0.00	636.69	636.72
2E	64+45.50	0.00	636.82	636.86
2F	64+55.50	0.00	636.96	636.99
2G	64+65.50	0.00	637.08	637.11
2H	64+75.50	0.00	637.21	637.22
2I	64+85.50	0.00	637.33	637.33
2J	64+95.50	0.00	637.45	637.44
℄ BRG. & ℄ PIER 37	65+03.75	0.00	637.54	637.54
3A	65+13.75	0.00	637.66	637.67
3B	65+23.75	0.00	637.76	637.81
3C	65+33.75	0.00	637.87	637.94
3D	65+43.75	0.00	637.97	638.07
3E	65+53.75	0.00	638.06	638.19
3F	65+63.75	0.00	638.16	638.29
3G	65+73.75	0.00	638.25	638.37
3H	65+83.75	0.00	638.33	638.44
3I	65+93.75	0.00	638.41	638.49
3J	66+03.75	0.00	638.49	638.53
℄ S. BRG. PIER 38	66+11.87	0.00	638.55	638.55
℄ PIER 38 SPAN 3	66+12.75	0.00	638.56	638.56
℄ PIER 38 SPAN 4	66+13.06	-1.17	638.54	638.54
℄ N. BRG. PIER 38	66+13.94	-1.17	638.55	638.55
4A	66+23.94	-1.17	638.62	638.66
4B	66+33.94	-1.17	638.69	638.76
4C	66+43.94	-1.17	638.75	638.83
4D	66+53.94	-1.17	638.81	638.88
4E	66+63.94	-1.17	638.86	638.90
℄ BRG. N. ABUT.	66+73.06	-1.17	638.91	638.91
BK. N. ABUT.	66+75.56	-1.17	638.92	638.92

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 016-2454
SHEET NO. SB9 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	273
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

℄ NB IL-171 & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+11.50	0.00	634.84	634.84
℄ N. BRG. PIER 35	63+12.50	0.00	634.86	634.86
1A	63+22.50	0.00	635.01	635.03
1B	63+32.50	0.00	635.16	635.21
1C	63+42.50	0.00	635.31	635.37
1D	63+52.50	0.00	635.46	635.52
1E	63+62.50	0.00	635.61	635.66
1F	63+72.50	0.00	635.76	635.79
1G	63+82.50	0.00	635.91	635.92
℄ BRG. & ℄ PIER 36	63+95.50	0.00	636.10	636.10
2A	64+05.50	0.00	636.25	636.26
2B	64+15.50	0.00	636.40	636.41
2C	64+25.50	0.00	636.54	636.57
2D	64+35.50	0.00	636.69	636.72
2E	64+45.50	0.00	636.82	636.86
2F	64+55.50	0.00	636.96	636.99
2G	64+65.50	0.00	637.08	637.11
2H	64+75.50	0.00	637.21	637.22
2I	64+85.50	0.00	637.33	637.33
2J	64+95.50	0.00	637.45	637.44
℄ BRG. & ℄ PIER 37	65+03.75	0.00	637.54	637.54
3A	65+13.75	0.00	637.66	637.67
3B	65+23.75	0.00	637.76	637.81
3C	65+33.75	0.00	637.87	637.94
3D	65+43.75	0.00	637.97	638.07
3E	65+53.75	0.00	638.06	638.19
3F	65+63.75	0.00	638.16	638.29
3G	65+73.75	0.00	638.25	638.37
3H	65+83.75	0.00	638.33	638.44
3I	65+93.75	0.00	638.41	638.49
3J	66+03.75	0.00	638.49	638.53
℄ S. BRG. PIER 38	66+11.87	0.00	638.55	638.55
℄ PIER 38 SPAN 3	66+12.75	0.00	638.56	638.56
℄ PIER 38 SPAN 4	66+12.75	0.00	638.56	638.56
℄ N. BRG. PIER 38	66+13.63	0.00	638.56	638.56
4A	66+23.63	0.00	638.64	638.68
4B	66+33.63	0.00	638.70	638.77
4C	66+43.63	0.00	638.76	638.84
4D	66+53.63	0.00	638.82	638.89
4E	66+63.63	0.00	638.88	638.92
℄ BRG. N. ABUT.	66+72.75	0.00	638.93	638.93
BK. N. ABUT.	66+75.25	0.00	638.94	638.94

GIRDER L

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+10.64	8.00	634.71	634.71
℄ N. BRG. PIER 35	63+11.64	8.00	634.72	634.72
1A	63+21.64	8.00	634.87	634.90
1B	63+31.64	8.00	635.02	635.07
1C	63+41.64	8.00	635.17	635.23
1D	63+51.64	8.00	635.32	635.38
1E	63+61.64	8.00	635.47	635.52
1F	63+71.64	8.00	635.62	635.66
1G	63+81.64	8.00	635.77	635.79
℄ BRG. & ℄ PIER 36	63+94.64	8.00	635.97	635.97
2A	64+04.64	8.00	636.12	636.12
2B	64+14.64	8.00	636.27	636.28
2C	64+24.64	8.00	636.41	636.44
2D	64+34.64	8.00	636.55	636.59
2E	64+44.64	8.00	636.69	636.73
2F	64+54.64	8.00	636.82	636.86
2G	64+64.64	8.00	636.95	636.98
2H	64+74.64	8.00	637.08	637.09
2I	64+84.64	8.00	637.20	637.20
2J	64+94.64	8.00	637.32	637.32
℄ BRG. & ℄ PIER 37	65+02.89	8.00	637.42	637.42
3A	65+12.89	8.00	637.53	637.54
3B	65+22.89	8.00	637.63	637.68
3C	65+32.89	8.00	637.74	637.81
3D	65+42.89	8.00	637.84	637.94
3E	65+52.89	8.00	637.94	638.05
3F	65+62.89	8.00	638.03	638.15
3G	65+72.89	8.00	638.12	638.24
3H	65+82.89	8.00	638.20	638.30
3I	65+92.89	8.00	638.29	638.36
3J	66+02.89	8.00	638.36	638.39
℄ S. BRG. PIER 38	66+09.72	8.00	638.42	638.42
℄ PIER 38 SPAN 3	66+10.60	8.00	638.42	638.42
℄ PIER 38 SPAN 4	66+11.07	6.25	638.45	638.45
℄ N. BRG. PIER 38	66+11.94	6.25	638.46	638.46
4A	66+21.94	6.25	638.53	638.57
4B	66+31.94	6.25	638.60	638.67
4C	66+41.94	6.25	638.66	638.74
4D	66+51.94	6.25	638.72	638.79
4E	66+61.94	6.25	638.78	638.81
℄ BRG. N. ABUT.	66+71.07	6.25	638.83	638.83
BK. N. ABUT.	66+73.57	6.25	638.84	638.84

GIRDER M

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+09.78	16.00	634.56	634.56
℄ N. BRG. PIER 35	63+10.78	16.00	634.57	634.57
1A	63+20.78	16.00	634.72	634.75
1B	63+30.78	16.00	634.87	634.92
1C	63+40.78	16.00	635.02	635.08
1D	63+50.78	16.00	635.17	635.23
1E	63+60.78	16.00	635.32	635.37
1F	63+70.78	16.00	635.47	635.50
1G	63+80.78	16.00	635.62	635.63
℄ BRG. & ℄ PIER 36	63+93.78	16.00	635.82	635.82
2A	64+03.78	16.00	635.97	635.97
2B	64+13.78	16.00	636.12	636.13
2C	64+23.78	16.00	636.26	636.29
2D	64+33.78	16.00	636.40	636.44
2E	64+43.78	16.00	636.54	636.58
2F	64+53.78	16.00	636.67	636.71
2G	64+63.78	16.00	636.80	636.83
2H	64+73.78	16.00	636.93	636.94
2I	64+83.78	16.00	637.05	637.05
2J	64+93.78	16.00	637.17	637.17
℄ BRG. & ℄ PIER 37	65+02.03	16.00	637.27	637.27
3A	65+12.03	16.00	637.38	637.39
3B	65+22.03	16.00	637.49	637.53
3C	65+32.03	16.00	637.59	637.66
3D	65+42.03	16.00	637.69	637.78
3E	65+52.03	16.00	637.79	637.90
3F	65+62.03	16.00	637.88	638.00
3G	65+72.03	16.00	637.97	638.08
3H	65+82.03	16.00	638.06	638.15
3I	65+92.03	16.00	638.14	638.20
3J	66+02.03	16.00	638.22	638.24
℄ S. BRG. PIER 38	66+07.57	16.00	638.26	638.26
℄ PIER 38 SPAN 3	66+08.44	16.00	638.27	638.27
℄ PIER 38 SPAN 4	66+09.07	13.67	638.32	638.32
℄ N. BRG. PIER 38	66+09.95	13.67	638.32	638.32
4A	66+19.95	13.67	638.40	638.44
4B	66+29.95	13.67	638.46	638.53
4C	66+39.95	13.67	638.53	638.61
4D	66+49.95	13.67	638.59	638.66
4E	66+59.95	13.67	638.65	638.68
℄ BRG. N. ABUT.	66+69.07	13.67	638.70	638.70
BK. N. ABUT.	66+71.57	13.67	638.71	638.71

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 016-2454
SHEET NO. SB10 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	274
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

GIRDER N

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+08.92	24.00	634.38	634.38
℄ N. BRG. PIER 35	63+09.92	24.00	634.40	634.40
1A	63+19.92	24.00	634.55	634.58
1B	63+29.92	24.00	634.70	634.75
1C	63+39.92	24.00	634.85	634.91
1D	63+49.92	24.00	635.00	635.06
1E	63+59.92	24.00	635.15	635.20
1F	63+69.92	24.00	635.30	635.33
1G	63+79.92	24.00	635.45	635.46
℄ BRG. & ℄ PIER 36	63+92.92	24.00	635.64	635.64
2A	64+02.92	24.00	635.79	635.80
2B	64+12.92	24.00	635.94	635.95
2C	64+22.92	24.00	636.09	636.11
2D	64+32.92	24.00	636.23	636.26
2E	64+42.92	24.00	636.37	636.40
2F	64+52.92	24.00	636.50	636.53
2G	64+62.92	24.00	636.63	636.66
2H	64+72.92	24.00	636.76	636.77
2I	64+82.92	24.00	636.88	636.88
2J	64+92.92	24.00	637.00	637.00
℄ BRG. & ℄ PIER 37	65+01.17	24.00	637.10	637.10
3A	65+11.17	24.00	637.21	637.22
3B	65+21.17	24.00	637.32	637.35
3C	65+31.17	24.00	637.42	637.48
3D	65+41.17	24.00	637.52	637.61
3E	65+51.17	24.00	637.62	637.72
3F	65+61.17	24.00	637.71	637.82
3G	65+71.17	24.00	637.80	637.90
3H	65+81.17	24.00	637.89	637.97
3I	65+91.17	24.00	637.97	638.02
℄ S. BRG. PIER 38	66+05.42	24.00	638.08	638.08
℄ PIER 38 SPAN 3	66+06.29	24.00	638.09	638.09
℄ PIER 38 SPAN 4	66+07.08	21.08	638.15	638.15
℄ N. BRG. PIER 38	66+07.95	21.08	638.16	638.16
4A	66+17.95	21.08	638.23	638.27
4B	66+27.95	21.08	638.30	638.37
4C	66+37.95	21.08	638.37	638.45
4D	66+47.95	21.08	638.43	638.50
4E	66+57.95	21.08	638.49	638.52
℄ BRG. N. ABUT.	66+67.08	21.08	638.54	638.54
BK. N. ABUT.	66+69.58	21.08	638.55	638.55

GIRDER O

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 35	63+07.97	32.81	634.19	634.19
℄ N. BRG. PIER 35	63+08.98	32.79	634.21	634.21
1A	63+19.00	32.59	634.36	634.39
1B	63+29.02	32.39	634.52	634.56
1C	63+39.04	32.19	634.67	634.73
1D	63+49.06	31.99	634.83	634.88
1E	63+59.08	31.78	634.98	635.03
1F	63+69.11	31.58	635.13	635.16
1G	63+79.13	31.38	635.29	635.30
℄ BRG. & ℄ PIER 36	63+92.16	31.12	635.49	635.49
2A	64+02.18	30.92	635.64	635.65
2B	64+12.20	30.72	635.80	635.81
2C	64+22.22	30.52	635.95	635.97
2D	64+32.24	30.32	636.09	636.12
2E	64+42.26	30.12	636.24	636.27
2F	64+52.28	29.92	636.37	636.40
2G	64+62.31	29.72	636.51	636.53
2H	64+72.33	29.52	636.64	636.65
2I	64+82.35	29.35	636.77	636.77
2J	64+92.35	29.35	636.89	636.88
℄ BRG. & ℄ PIER 37	65+00.60	29.35	636.98	636.98
3A	65+10.60	29.35	637.09	637.11
3B	65+20.60	29.35	637.20	637.23
3C	65+30.57	29.61	637.30	637.35
3D	65+40.54	29.87	637.40	637.47
3E	65+50.51	30.14	637.49	637.57
3F	65+60.48	30.40	637.58	637.66
3G	65+70.46	30.66	637.66	637.74
3H	65+80.43	30.92	637.75	637.81
3I	65+90.40	31.18	637.82	637.86
℄ S. BRG. PIER 38	66+03.39	31.51	637.92	637.92
℄ PIER 38 SPAN 3	66+04.26	31.54	637.92	637.92
℄ PIER 38 SPAN 4	66+05.08	28.50	637.99	637.99
℄ N. BRG. PIER 38	66+05.96	28.50	638.00	638.00
4A	66+15.96	28.50	638.07	638.11
4B	66+25.96	28.50	638.14	638.21
4C	66+35.96	28.50	638.21	638.28
4D	66+45.96	28.50	638.27	638.33
4E	66+55.96	28.50	638.33	638.36
℄ BRG. N. ABUT.	66+65.08	28.50	638.38	638.38
BK. N. ABUT.	66+67.58	28.50	638.39	638.39

GIRDER P

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 38 SPAN 4	66+04.02	32.43	637.90	637.90
℄ N. BRG. PIER 38	66+04.88	32.49	637.91	637.91
4A	66+14.68	33.25	637.97	638.00
4B	66+24.47	34.01	638.02	638.07
4C	66+34.27	34.77	638.07	638.12
4D	66+44.06	35.53	638.12	638.16
4E	66+53.86	36.29	638.16	638.18
℄ BRG. N. ABUT.	66+62.80	36.98	638.20	638.20
BK. N. ABUT.	66+65.25	37.17	638.21	638.21

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 016-2454

SHEET NO. SB11 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	275
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

WEST EDGE OF SHOULDER

Location	Station along ℄ IL-171	Offset from ℄ NB IL-171 & P.G.L.	Theoretical Grade Elevations
S. End of Appr. Pav't.	66+79.58	-18.00	638.66
A1	66+89.58	-18.00	638.71
A2	66+99.58	-18.00	638.75
N. End of Appr. Pav't.	67+09.58	-18.00	638.79

CROSS SLOPE BREAK 1

Location	Station along ℄ IL-171	Offset from ℄ NB IL-171 & P.G.L.	Theoretical Grade Elevations
S. End of Appr. Pav't.	66+77.96	-12.00	638.77
A1	66+87.96	-12.00	638.82
A2	66+97.96	-12.00	638.86
N. End of Appr. Pav't.	67+07.96	-12.00	638.90

℄ NB IL-171 & P.G.L

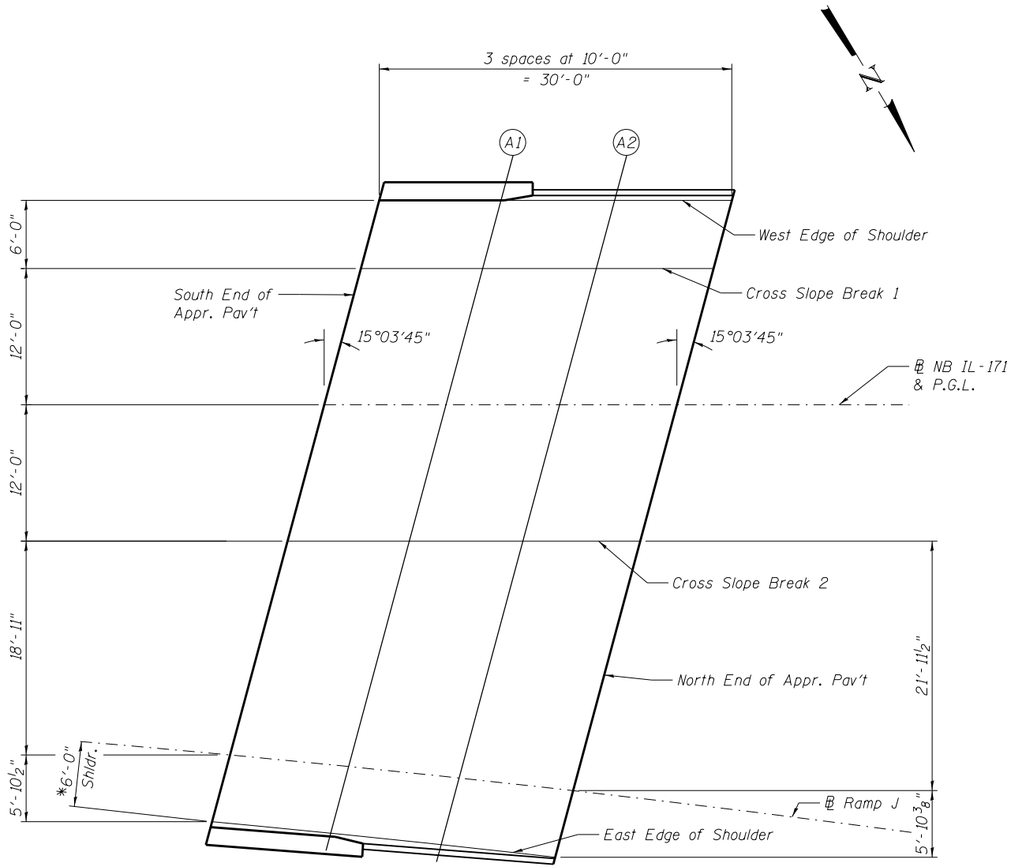
Location	Station along ℄ IL-171	Offset from ℄ NB IL-171 & P.G.L.	Theoretical Grade Elevations
S. End of Appr. Pav't.	66+74.73	0.00	638.94
A1	66+84.73	0.00	638.99
A2	66+94.73	0.00	639.03
N. End of Appr. Pav't.	67+04.73	0.00	639.07

CROSS SLOPE BREAK 2

Location	Station along ℄ IL-171	Offset from ℄ NB IL-171 & P.G.L.	Theoretical Grade Elevations
S. End of Appr. Pav't.	66+71.50	12.00	638.74
A1	66+81.50	12.00	638.79
A2	66+91.50	12.00	638.84
N. End of Appr. Pav't.	67+01.50	12.00	638.88

EAST EDGE OF SHOULDER

Location	Station along ℄ IL-171	Offset from ℄ NB IL-171 & P.G.L.	Theoretical Grade Elevations
S. End of Appr. Pav't.	66+64.83	36.79	638.21
A1	66+74.58	37.74	638.24
A2	66+84.31	38.74	638.27
N. End of Appr. Pav't.	66+94.02	39.81	638.29



* Dimension measured perpendicular to ℄ Ramp J

PLAN

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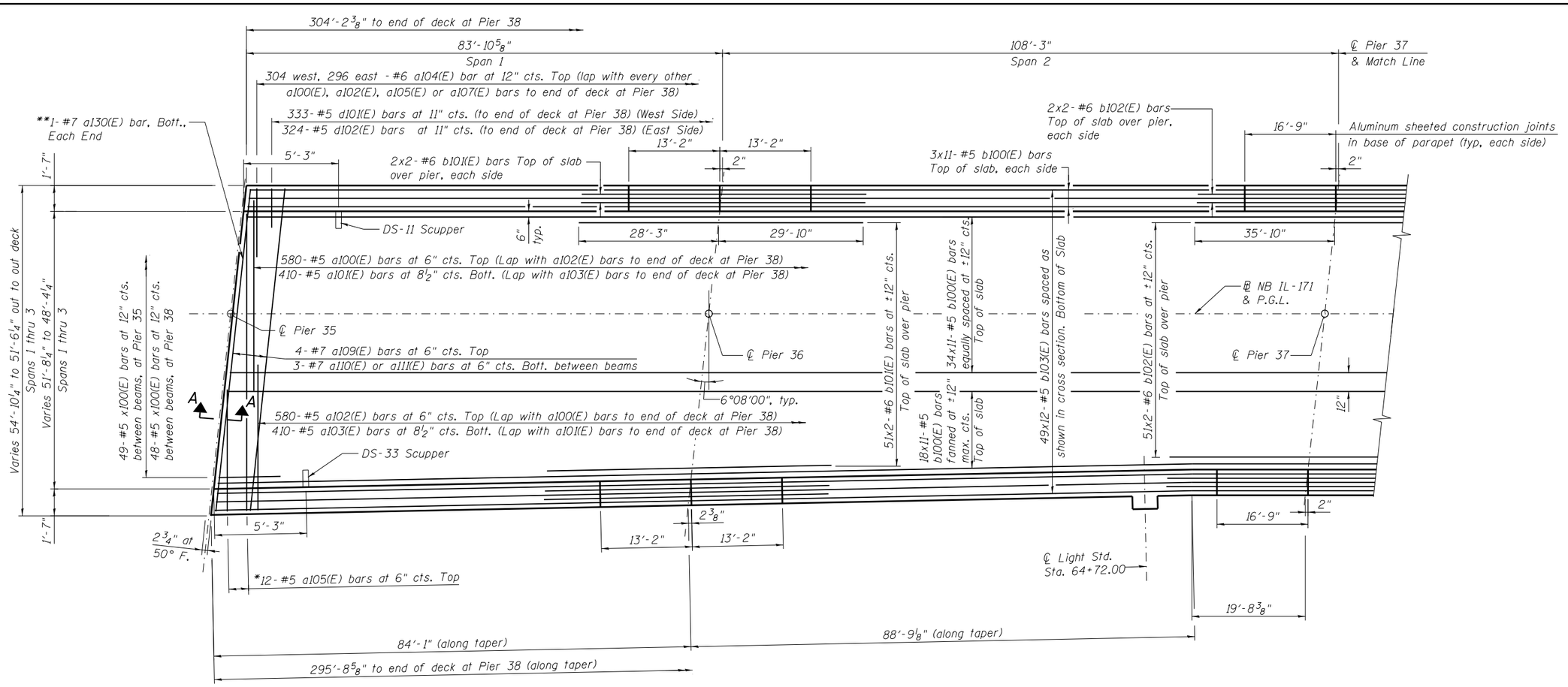
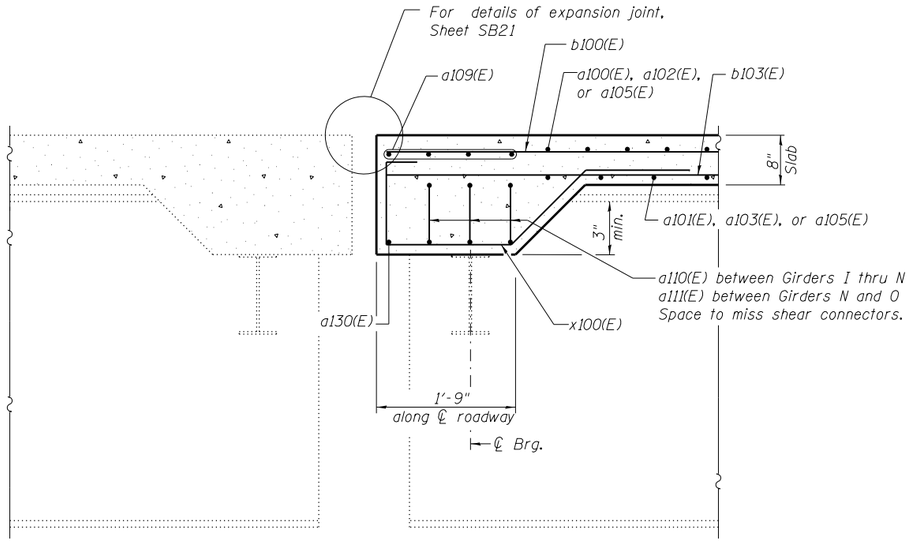
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-2454
SHEET NO. SB12 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	276
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	



PARTIAL PLAN - SPANS 1 & 2



SECTION A-A

* Order full length. Cut as shown and use remainder of bars in bottom of deck at same spacing as top bars. See bar cutting diagram on Sheet SB17.

** Cut to fit skew.

MINIMUM BAR LAP

#5 bar = 2'-7"
#6 bar = 3'-1"

Notes:
See Sheets SB16 & SB17 for superstructure details and Bill of Material.
Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SB21.

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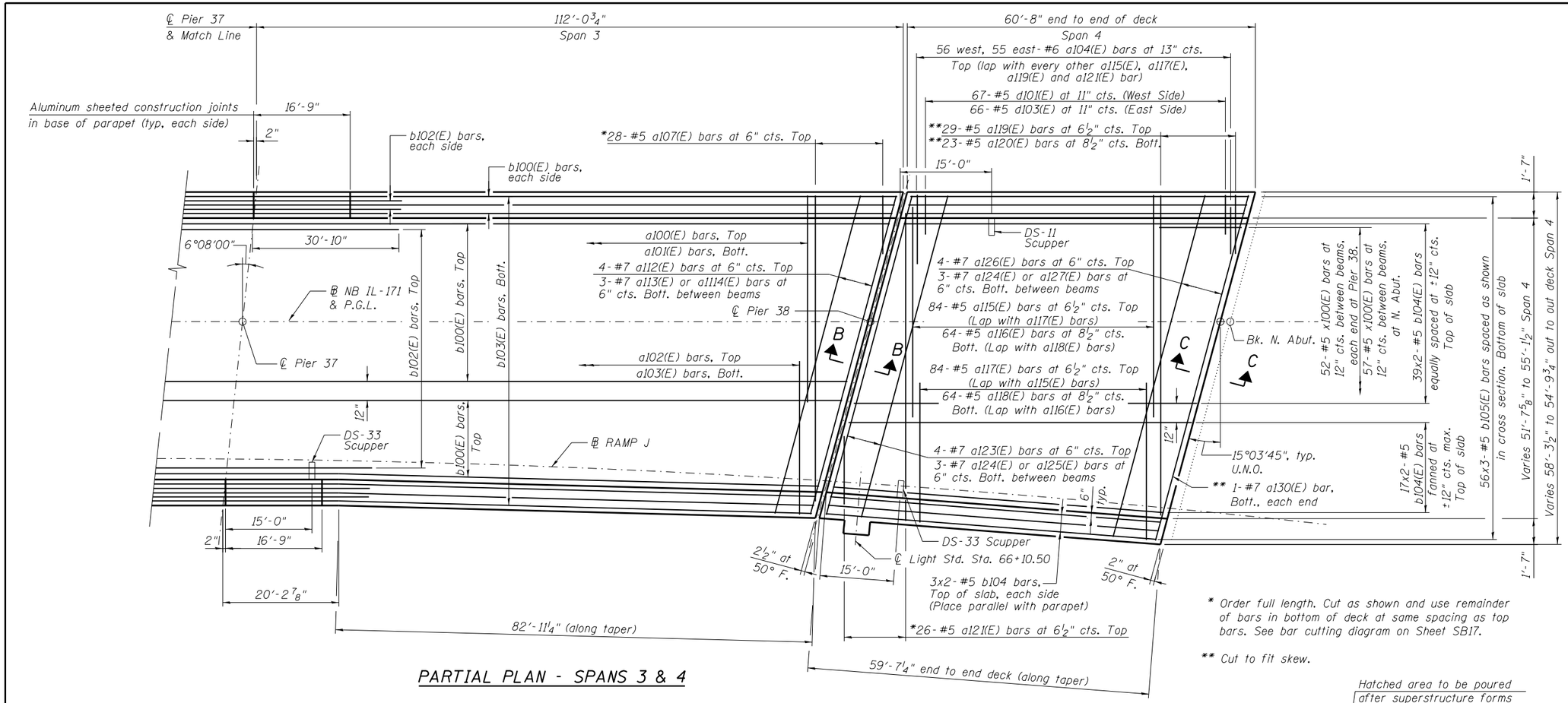
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 016-2454
SHEET NO. SB13 OF SB34 SHEETS

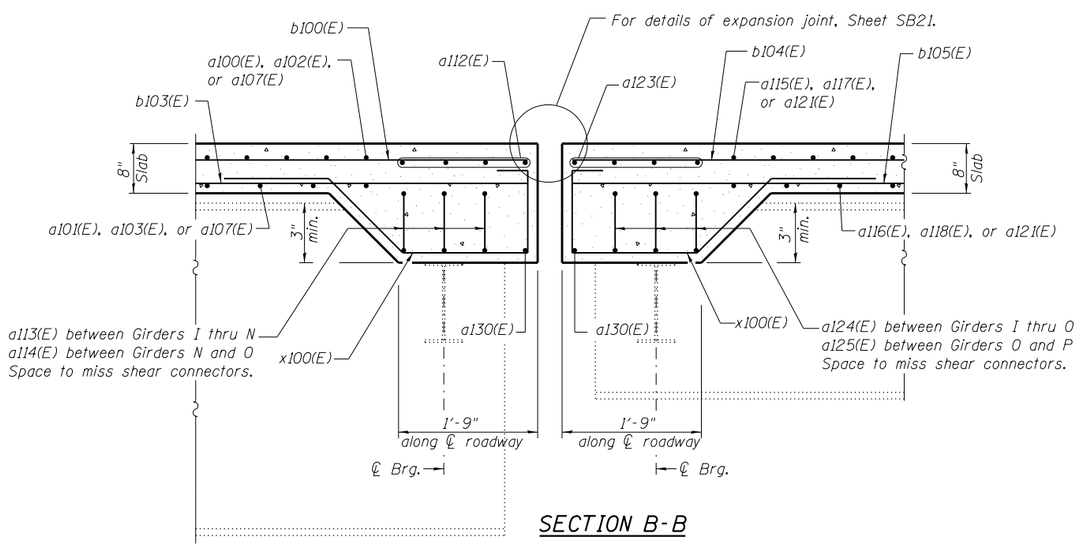
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	277
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



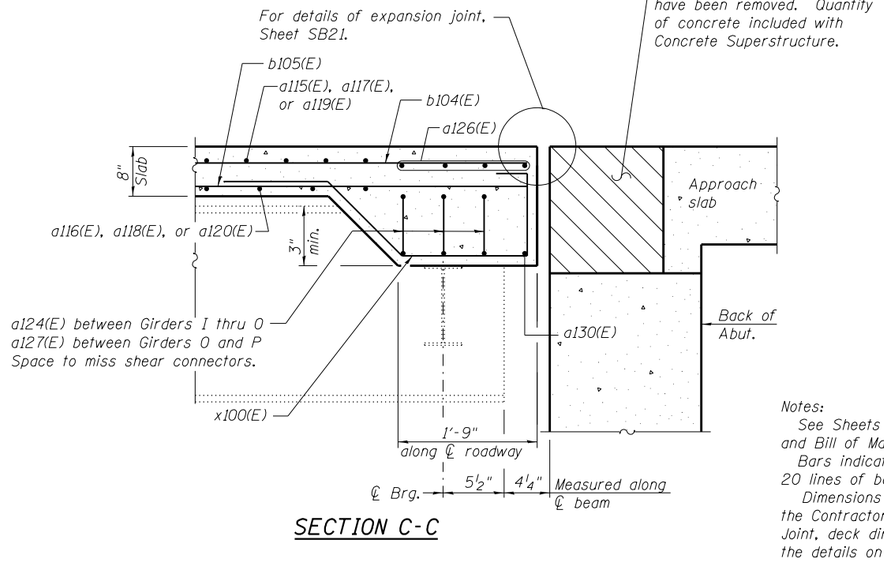
PARTIAL PLAN - SPANS 3 & 4

* Order full length. Cut as shown and use remainder of bars in bottom of deck at same spacing as top bars. See bar cutting diagram on Sheet SB17.

** Cut to fit skew.



SECTION B-B



SECTION C-C

MINIMUM BAR LAP

#5 bar = 2'-7"
#6 bar = 3'-1"

Notes:
See Sheets SB16 & SB17 for superstructure details and Bill of Material.
Bars indicated thus 20x3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.
Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet SB21.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 016-2454
SHEET NO. SB14 OF SB34 SHEETS

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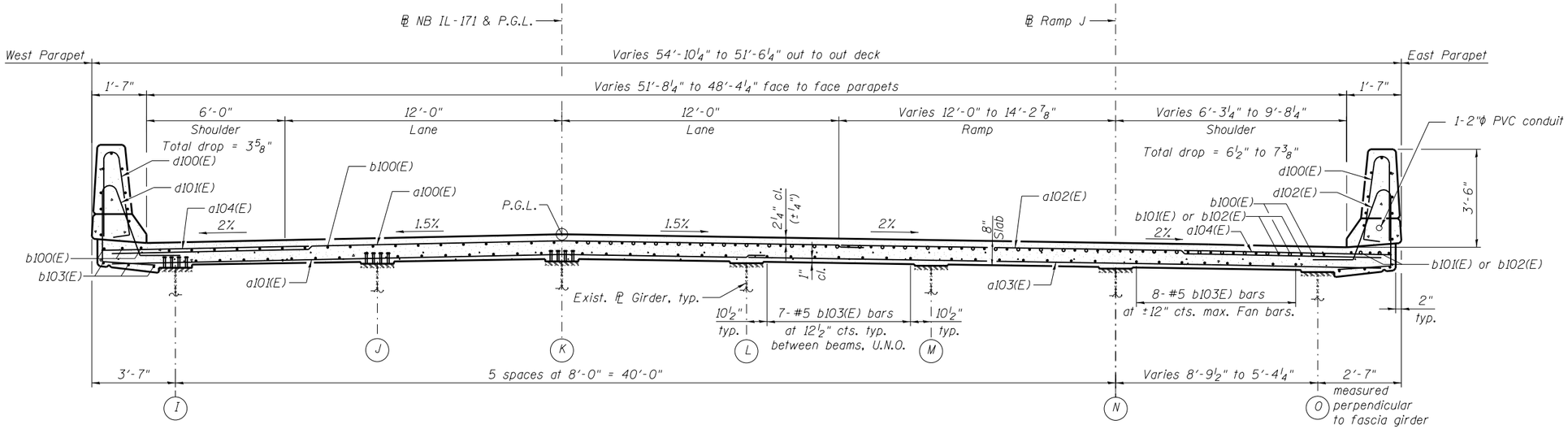
	ILLINOIS FED. AID PROJECT			



NEAR MIDSPAN

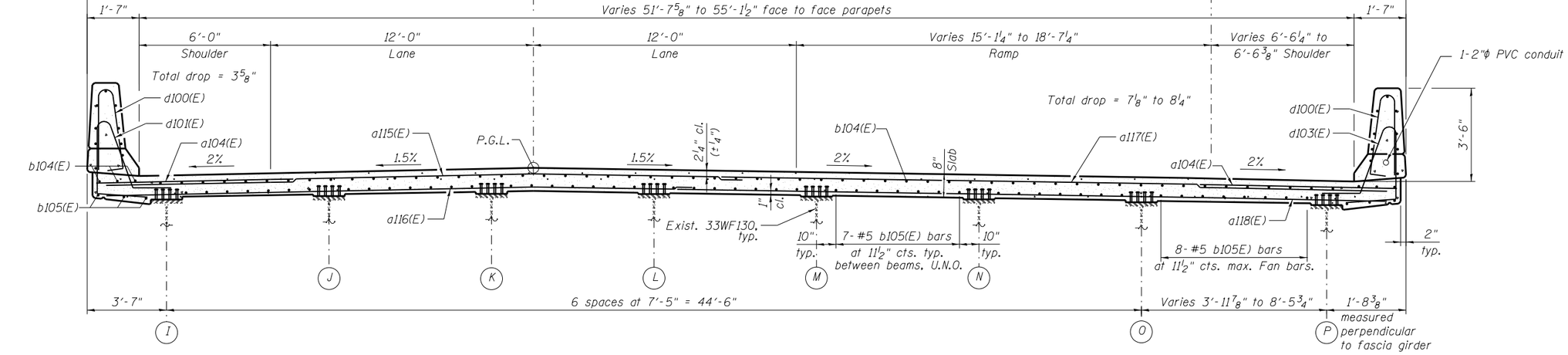
NEAR PIER

CROSS SECTION

(Spans 1 thru 3, Looking Upstation)

MINIMUM BAR LAP

#5 bar = 2'-7"



CROSS SECTION

(Span 4, Looking Upstation)

Note:
All dimensions are measured perpendicular to ℄ NB IL-171 unless noted otherwise.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 016-2454
SHEET NO. SB15 OF SB34 SHEETS

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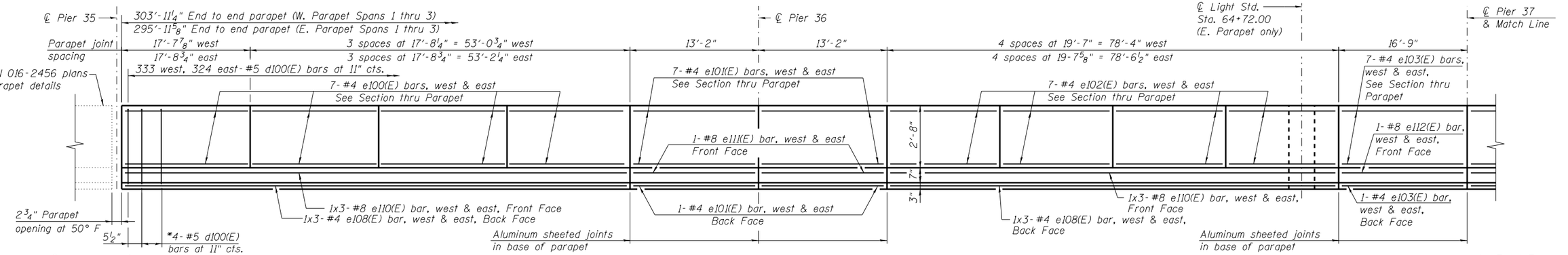
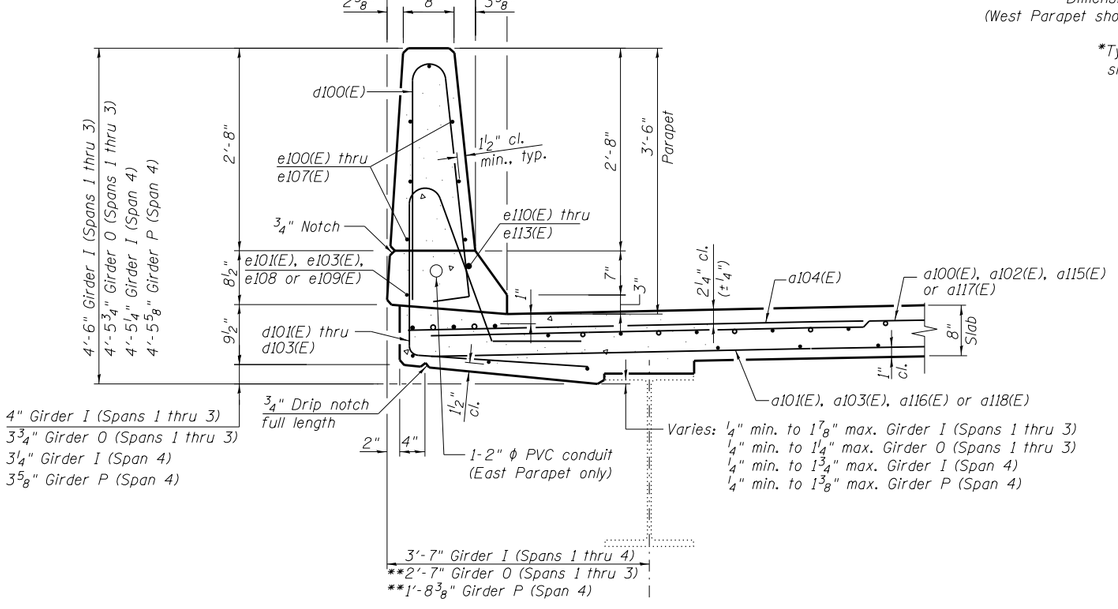
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF PARAPET

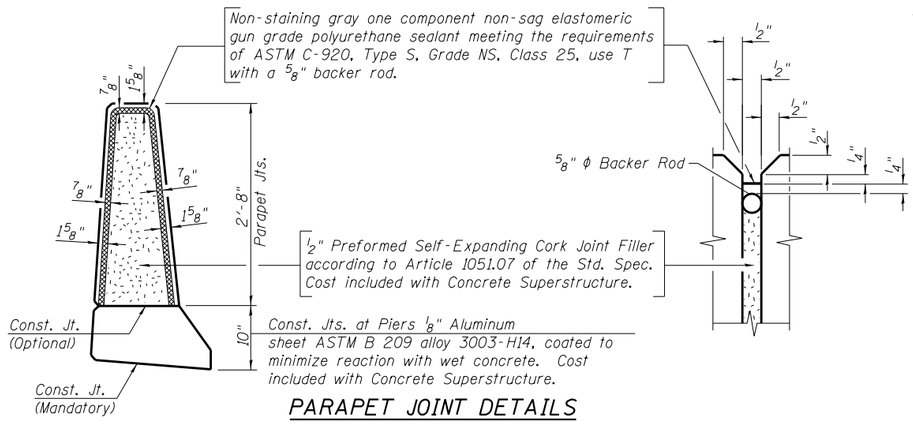
Dimensions measured along toe of parapet.
(West Parapet shown, East Parapet opposite hand and as noted)

*Typical at parapet ends and each side of aluminum sheeted joints.



SECTION THRU PARAPET

** Measured perpendicular to Fascia Girder



PARAPET JOINT DETAILS

MINIMUM BAR LAP

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

Note:
Bars indicated thus 1x2-#8 etc.
indicates 1 line of bars with 2 lengths per line.

(Sheet 1 of 2)

LIN ENGINEERING, LTD. Consulting Engineers Westmont, Illinois	USER NAME = Lin_41	DESIGNED - RGB	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB16 OF SB34 SHEETS

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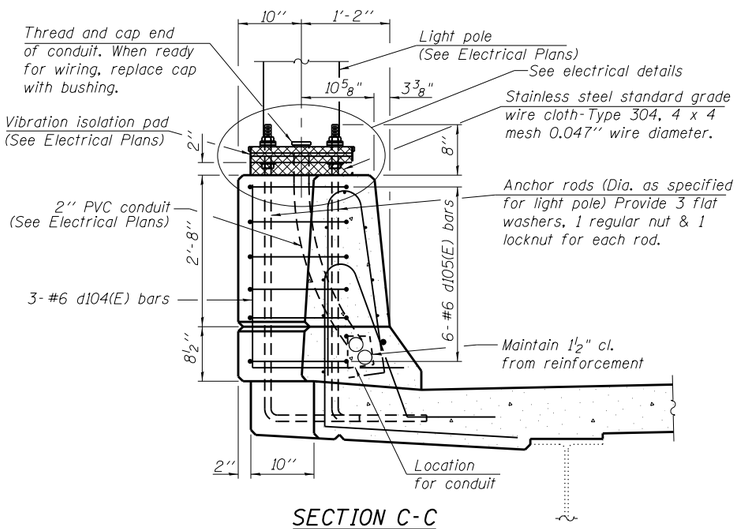
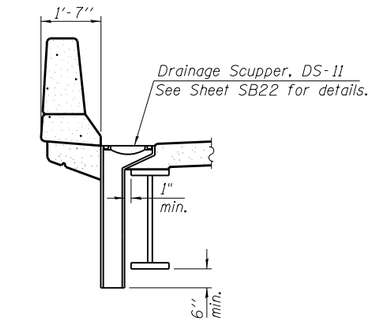
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

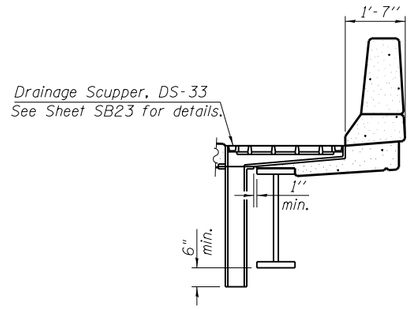


SECTION C-C



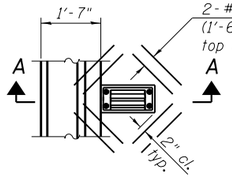
SECTION A-A

Girder I (Span 1 & 4)



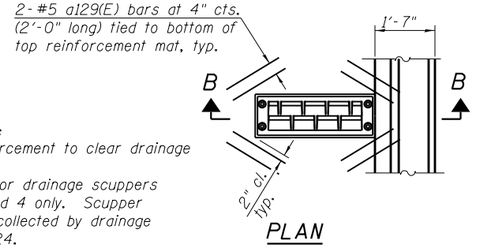
SECTION B-B

Girder O (Span 1 & 3)
Girder P (Span 4)



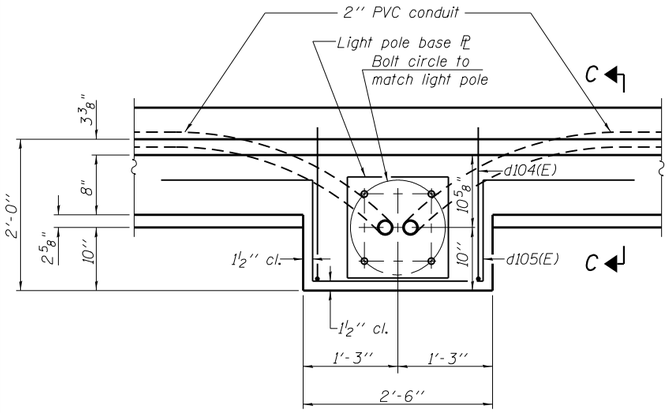
PLAN

Drainage Scupper Notes:
Cut longitudinal reinforcement to clear drainage scuppers.
Freefall downspouts for drainage scuppers are used in Spans 3 and 4 only. Scupper discharge in Span 1 is collected by drainage system. See Sheet SB24.



PLAN

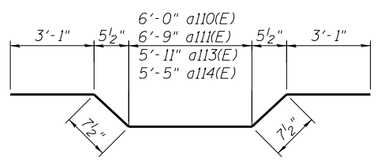
DRAINAGE SCUPPER REINFORCEMENT DETAILS



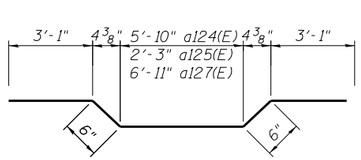
PLAN

LIGHT POLE FOUNDATION DETAILS

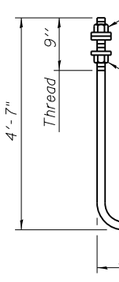
Cost of anchor rods is included with "Concrete Superstructure".



BARS a110(E), a111(E), a113(E), a114(E)

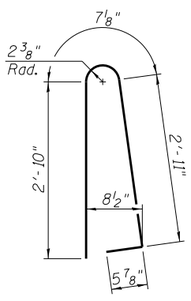


BARS a124(E), a125(E), a127(E)

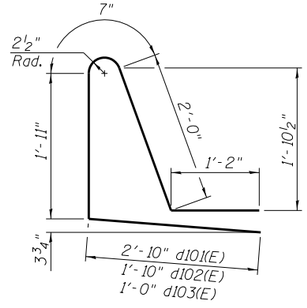


ANCHOR ROD

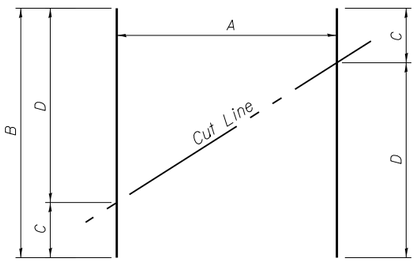
Diameter as specified for light poles. (ASTM F 1554 Grade 105) Full length hot dipped galvanized.



BAR d100(E)



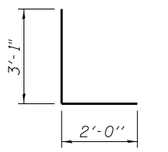
BARS d101(E), d102(E), d103(E)



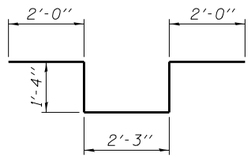
CUTTING DIAGRAM

Order full length. Cut as shown and use remainder of bars in bottom of deck at same spacing as top bars.

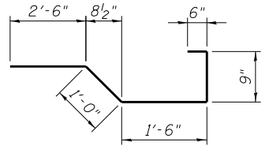
A	B	C	D
12 - #5 a105(E) bars	57'-3"	3'-1"	54'-2"
28 - #5 a107(E) bars	55'-10"	2'-10"	53'-0"
26 - #5 a121(E) bars	56'-11"	2'-9"	54'-2"



BAR d104(E)



BAR d105(E)



BARS x100(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a100(E)	580	#5	32'-3"	
a101(E)	410	#5	28'-3"	
a102(E)	580	#5	24'-7"	
a103(E)	410	#5	28'-7"	
a104(E)	711	#6	6'-6"	
a105(E)	12	#5	57'-3"	
a107(E)	28	#5	55'-10"	
a109(E)	4	#7	54'-11"	
a110(E)	15	#7	13'-5"	
a111(E)	3	#7	14'-2"	
a112(E)	4	#7	55'-3"	
a113(E)	15	#7	13'-4"	
a114(E)	3	#7	12'-10"	
a115(E)	84	#5	30'-2"	
a116(E)	64	#5	26'-6"	
a117(E)	84	#5	30'-1"	
a118(E)	64	#5	33'-9"	
a119(E)	29	#5	57'-7"	
a120(E)	23	#5	57'-7"	
a121(E)	26	#5	56'-11"	
a123(E)	4	#7	55'-3"	
a124(E)	36	#7	13'-0"	
a125(E)	3	#7	9'-5"	
a126(E)	4	#7	60'-0"	
a127(E)	3	#7	14'-1"	
a128(E)	16	#5	1'-6"	
a129(E)	24	#5	2'-0"	
a130(E)	4	#7	60'-0"	
b100(E)	638	#5	30'-0"	
b101(E)	110	#6	30'-7"	
b102(E)	110	#6	34'-11"	
b103(E)	588	#5	27'-9"	
b104(E)	124	#5	31'-6"	
b105(E)	168	#5	21'-11"	
d100(E)	918	#5	6'-10"	
d101(E)	400	#5	8'-6"	
d102(E)	324	#5	7'-6"	
d103(E)	66	#5	6'-8"	
d104(E)	6	#6	5'-1"	
d105(E)	12	#6	8'-11"	
e100(E)	56	#4	17'-5"	
e101(E)	32	#4	12'-11"	
e102(E)	56	#4	19'-4"	
e103(E)	32	#4	16'-6"	
e104(E)	35	#4	18'-9"	
e105(E)	35	#4	17'-1"	
e106(E)	28	#4	14'-11"	
e107(E)	28	#4	14'-7"	
e108(E)	20	#4	27'-5"	
e109(E)	6	#4	21'-6"	
e110(E)	20	#8	29'-7"	
e111(E)	4	#8	12'-11"	
e112(E)	4	#8	16'-6"	
e113(E)	4	#8	32'-10"	
x100(E)	206	#5	6'-3"	
Reinforcement Bars, Epoxy Coated		Pound	162,490	
Concrete Superstructure		Cu. Yd.	608.6	
Bridge Deck Grooving		Sq. Yd.	1,932	
Protective Coat		Sq. Yd.	2,359	

Notes:
For conduit and other electrical components see Electrical Plans.
The conduit shall be PVC pipe, Sch. 40.

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DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB17 OF SB34 SHEETS

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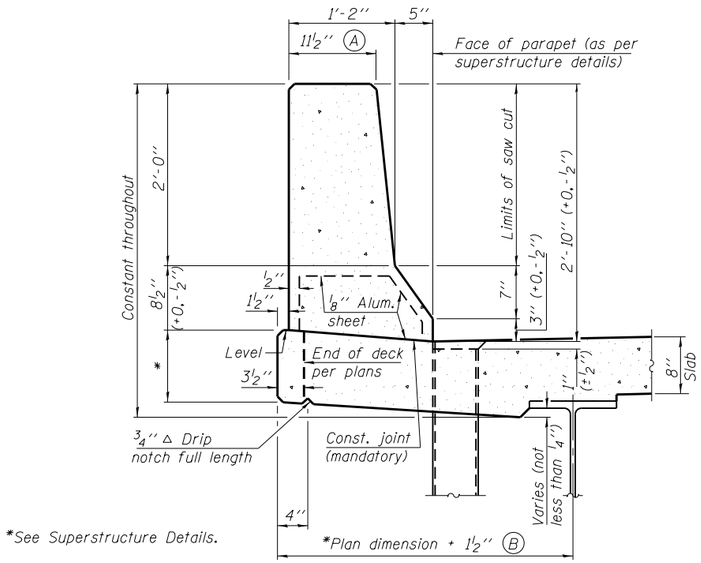
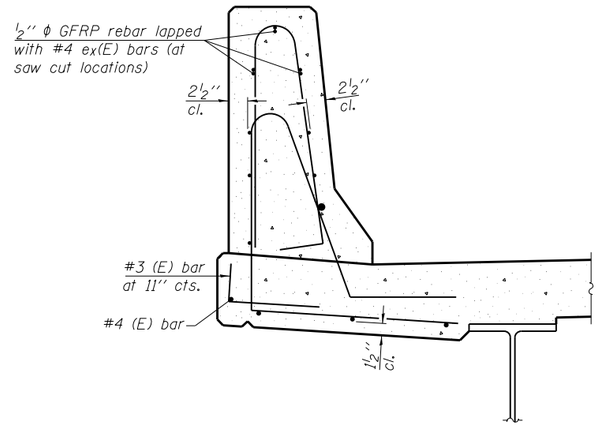
		CONTRACT NO. 60W75		
		ILLINOIS	FED. AID PROJECT	



34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

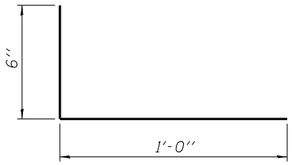
(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

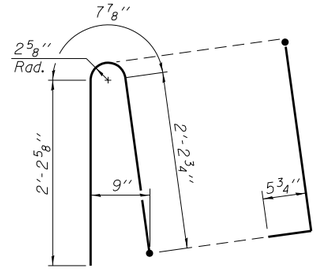
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.

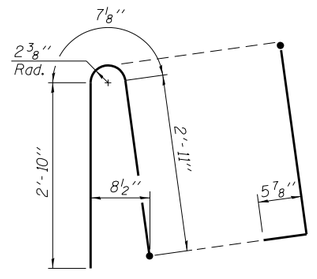


#3 (E) BAR



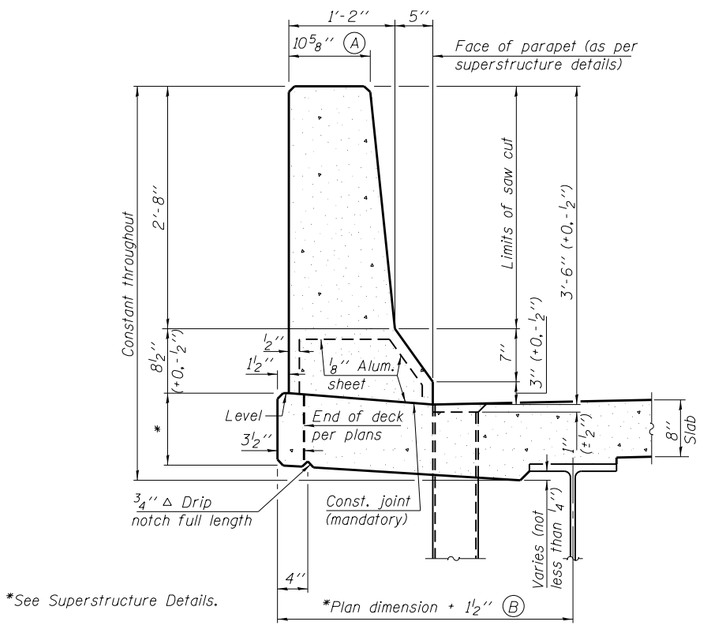
ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)



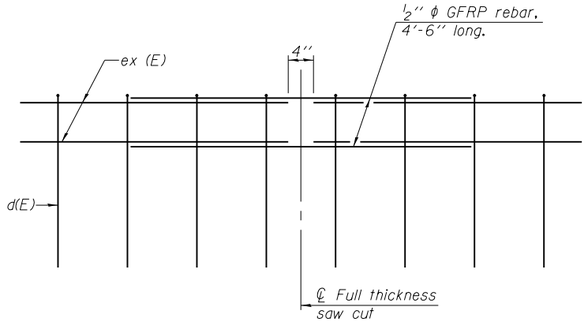
ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)



42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

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

SFP 34-42 8-16-12

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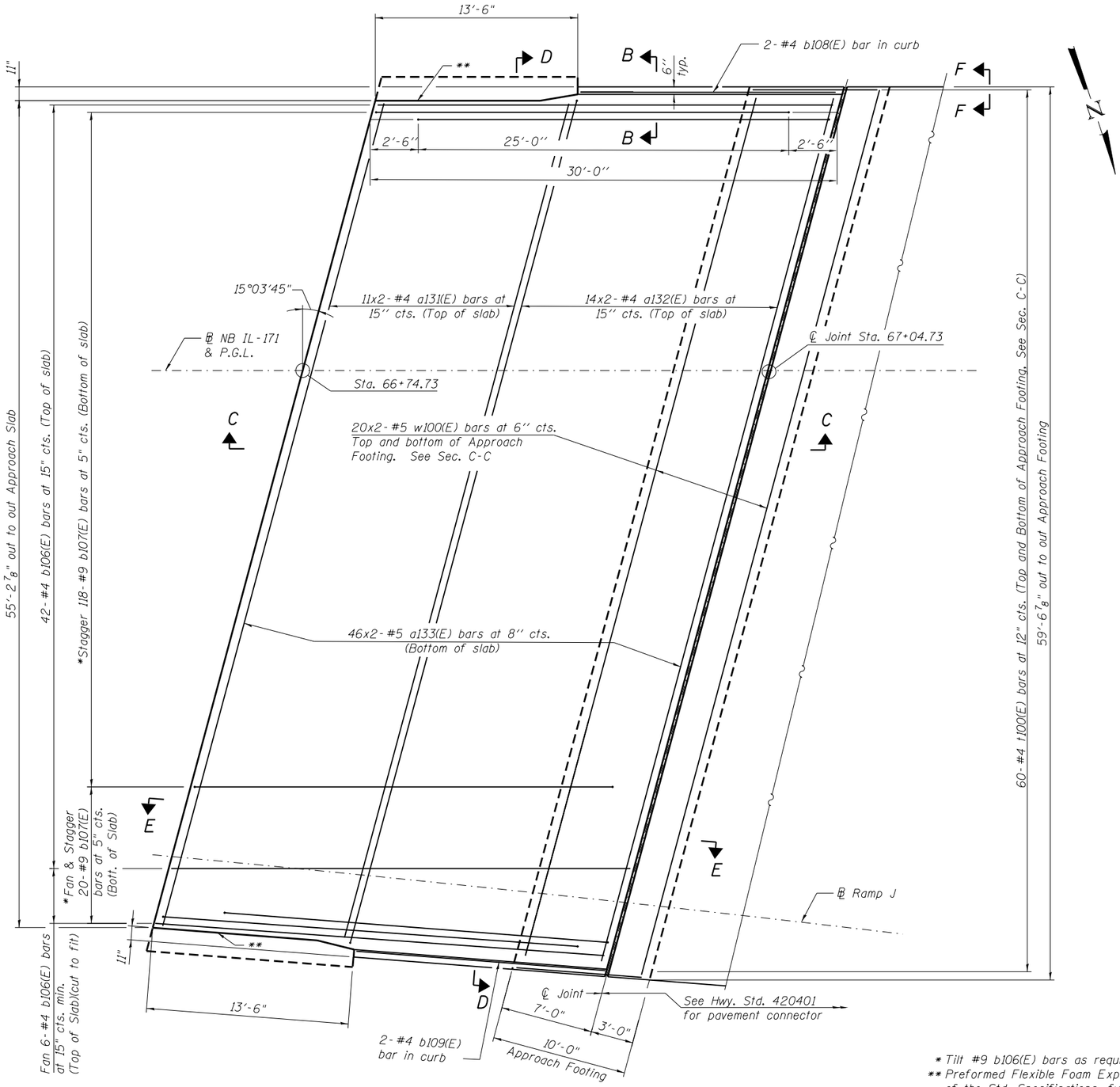
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIP FORMING OPTION
STRUCTURE NO. 016-2454
SHEET NO. SB18 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	282
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



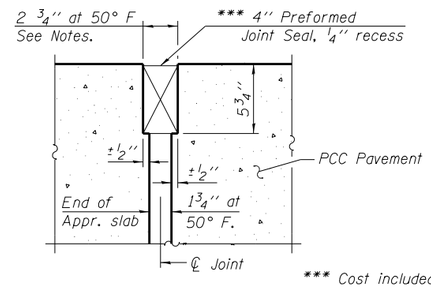
PLAN

Notes:

See sheet SB20 for Sections C-C & D-D and View E-E. a131(E), a132(E), and a133(E) bar spacings measured along ℄ Rdwy.

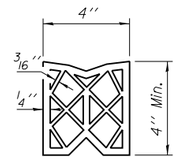
The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be 1 1/2" for installation purposes.

Bars indicated thus 12x2-#4 etc. indicates 12 lines of bars with 2 lengths per line.

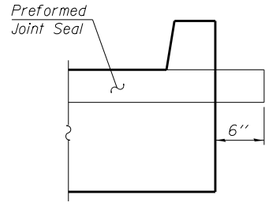


DETAIL A

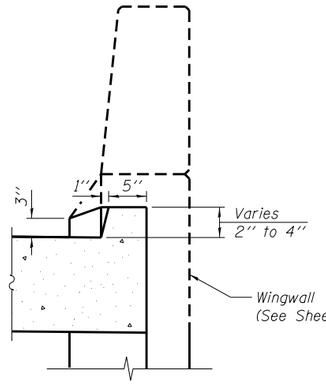
*** Cost included with Concrete Superstructure.



PREFORMED JOINT SEAL



VIEW F-F



VIEW B-B

MINIMUM BAR LAP

(Approach)

#4 bar = 2'-7"

#5 bar = 3'-3"

* Tilt #9 b106(E) bars as required to maintain clearance.

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

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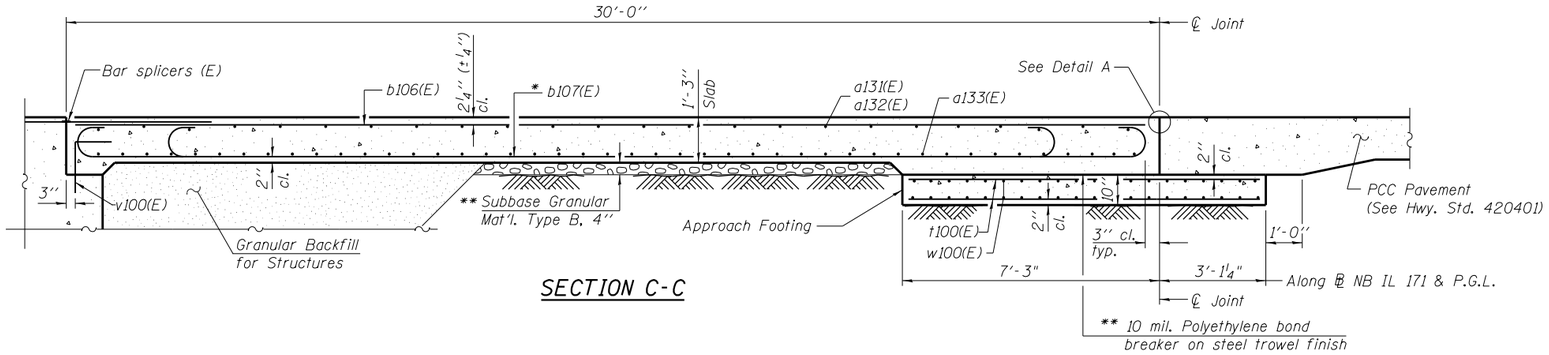
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

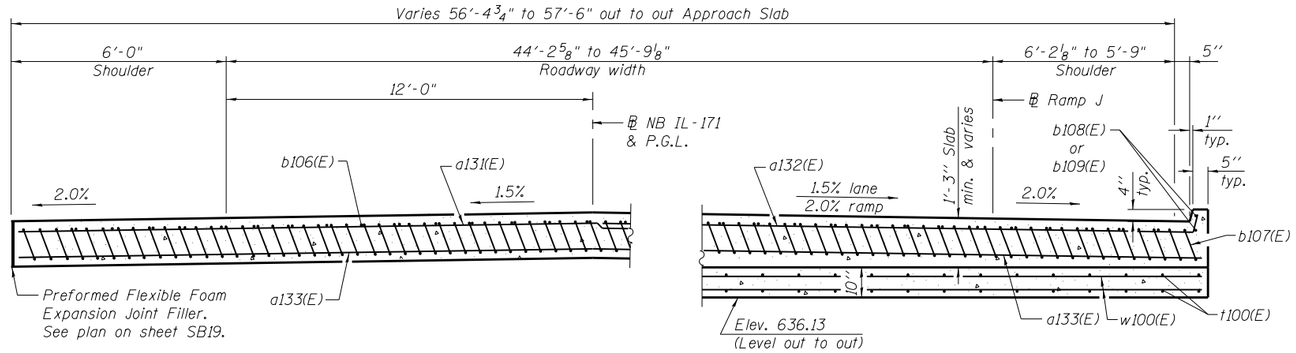
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB19 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	283
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



SECTION C-C

Notes:
See sheet SB19 for Detail A and View B-B.
Approach slab concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v100(E) bar details, see sheet SB29.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet SB34.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet SB3.
For Wingwall End Post details, see sheet SB30 thru SB31.
See Special Provisions for approach slab removal and Roadway Plans for approach slab removal quantities.



NEAR ABUTMENT

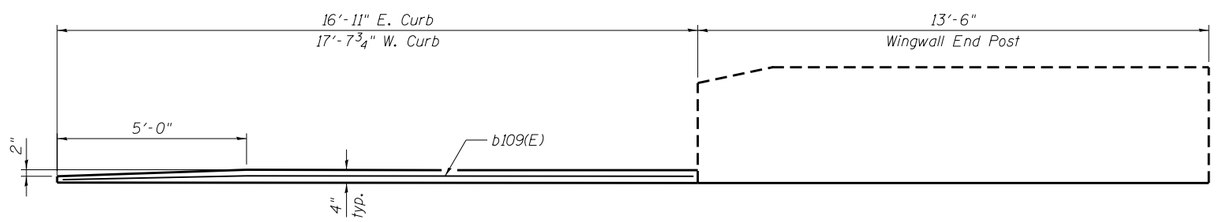
AT APPROACH FOOTING

* Tilt #9 b107(E) bars as required to maintain clearance.

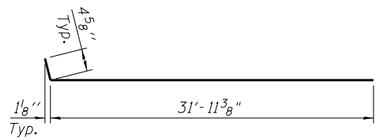
** Cost included with Concrete Superstructure.

SECTION D-D

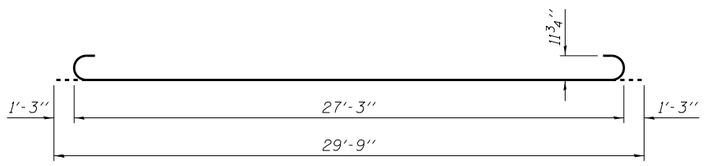
(See Plan for dimensions not shown)



VIEW E-E



BAR a132(E)



BAR b107(E)

APPROACH BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a131(E)	22	#4	30'-2"	———
a132(E)	28	#4	32'-4"	———
a133(E)	92	#5	32'-5"	———
b106(E)	48	#4	29'-8"	———
b107(E)	138	#9	29'-9"	⊂——⊃
b108(E)	2	#4	17'-2"	———
b109(E)	2	#4	16'-6"	———
t100(E)	120	#4	9'-11"	———
w100(E)	80	#5	32'-5"	———
Concrete Superstructure		Cu. Yd.	94.2	
Concrete Structures		Cu. Yd.	19.0	
Bridge Deck Grooving		Sq. Yd.	184	
Protective Coat		Sq. Yd.	206	
Reinforcement Bars, Epoxy Coated		Pound	22,620	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB20 OF SB34 SHEETS

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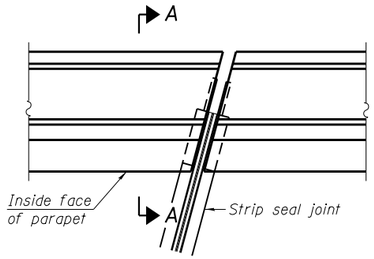
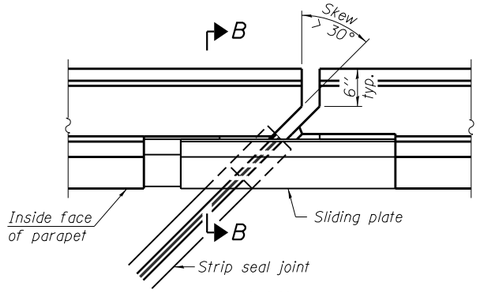
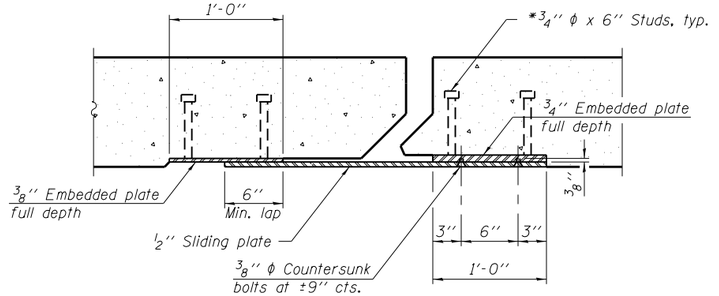
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



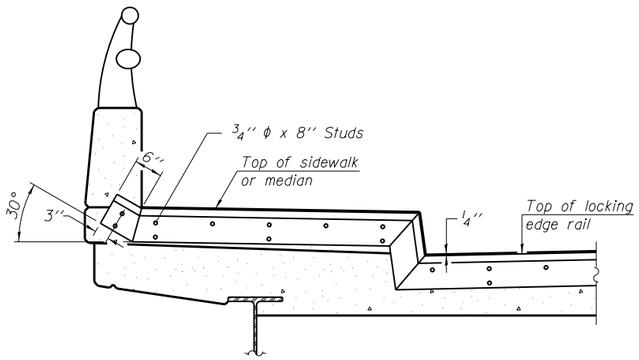
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

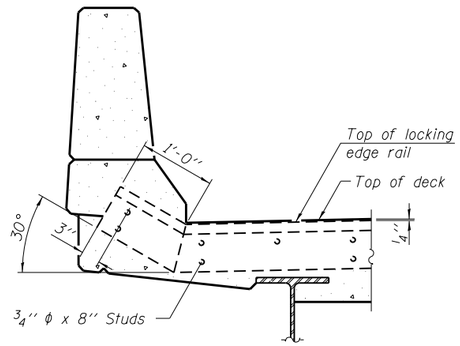


SECTION C-C

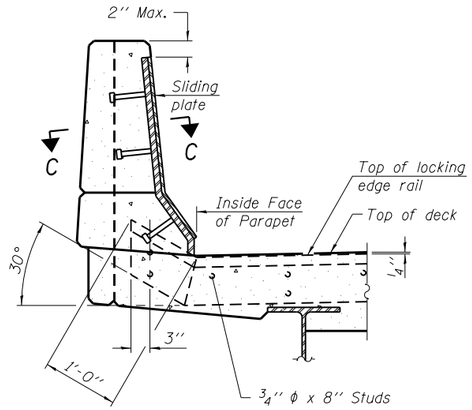


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

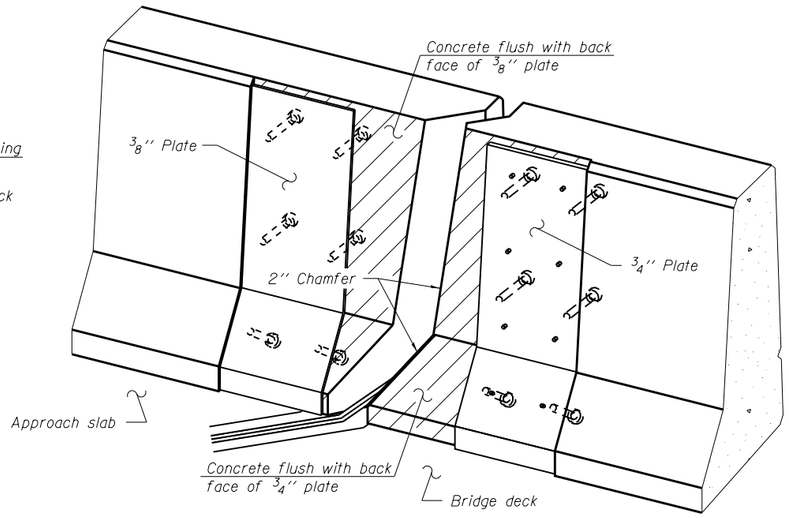
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



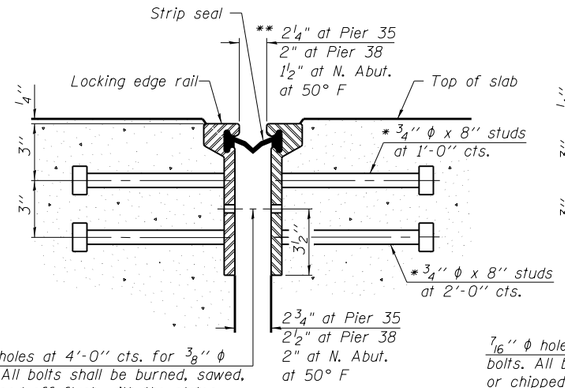
SECTION A-A



SECTION B-B

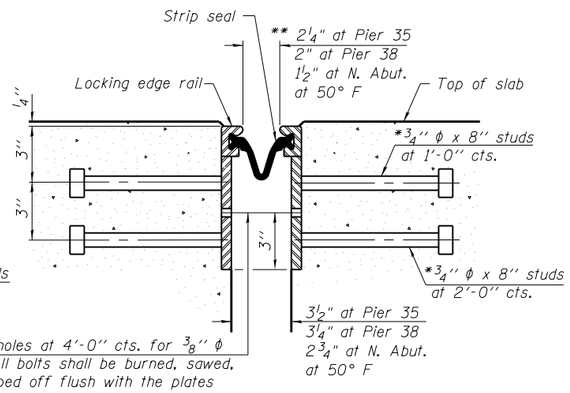


TRIMETRIC VIEW
(Showing back plates only)



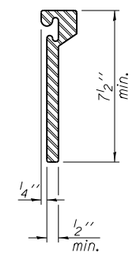
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU ROLLED RAIL JOINT

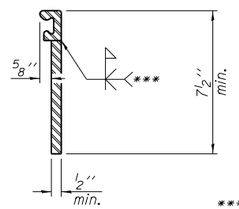


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

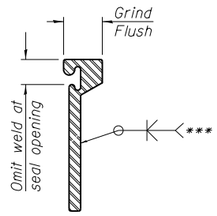
SECTION THRU WELDED RAIL JOINT



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.

LOCKING EDGE RAILS

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.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	168.0

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

** Strip Seal at Pier 35 shall be installed when the ambient temperature is at or below 80° F.

EJ-SSJ 1-27-12

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-2454
SHEET NO. SB21 OF SB34 SHEETS

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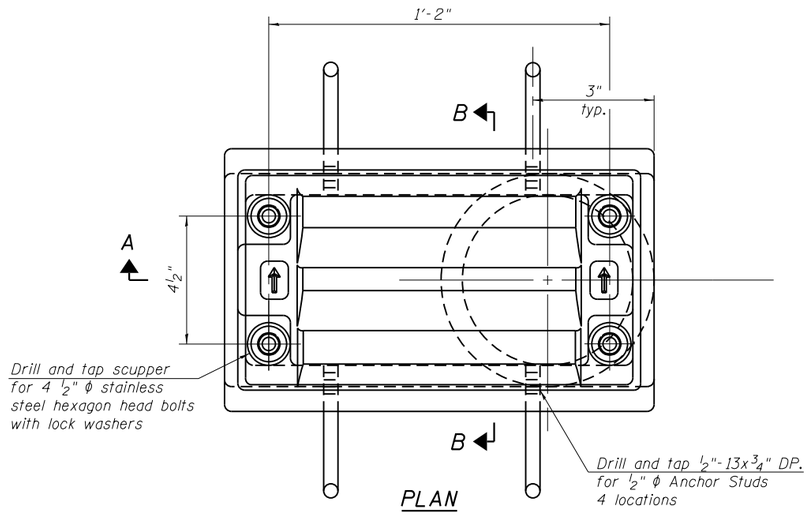
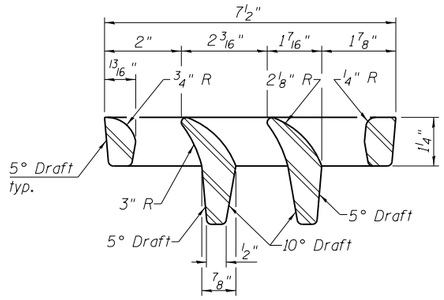
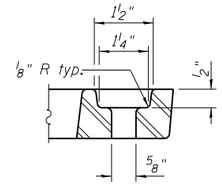
	ILLINOIS FED. AID PROJECT			



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.

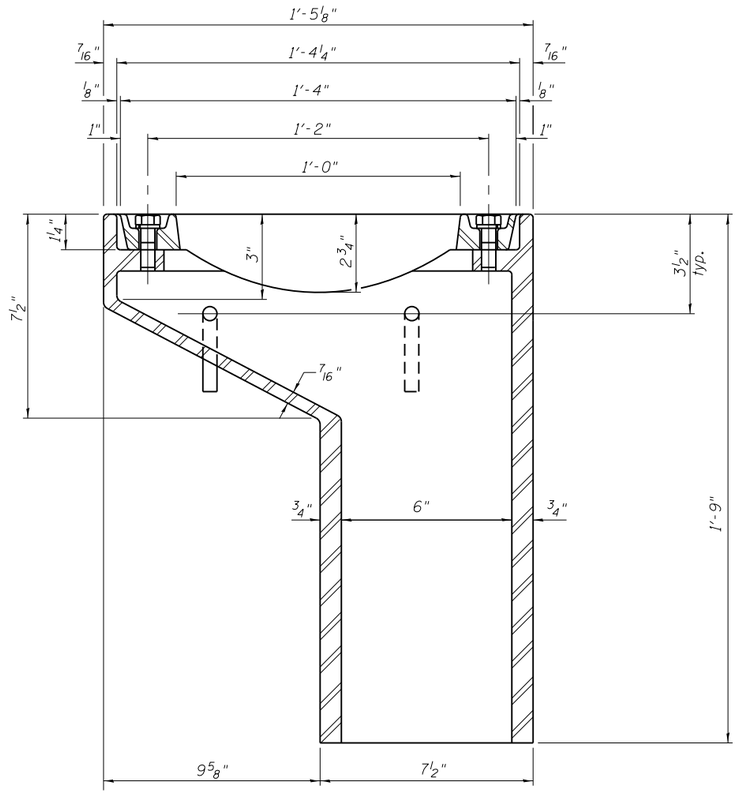
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

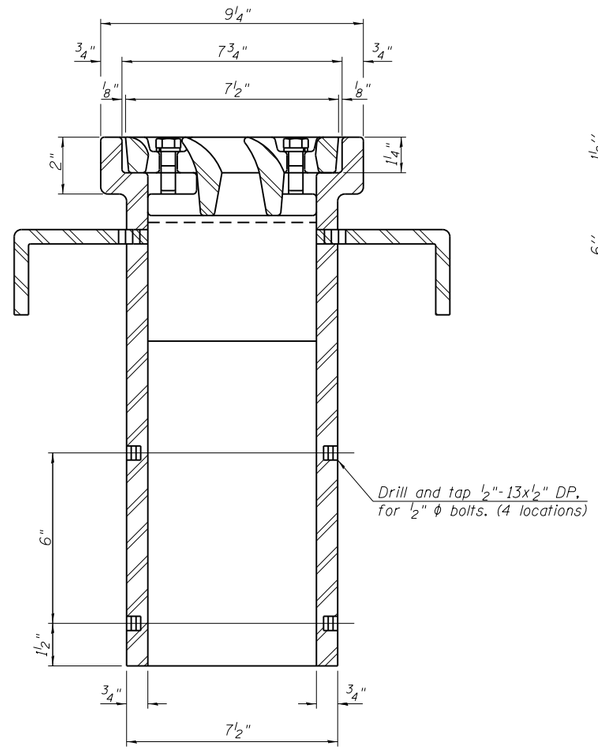
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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.

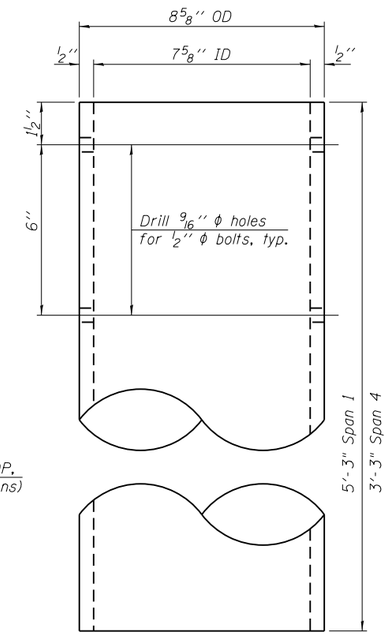


SECTION A-A

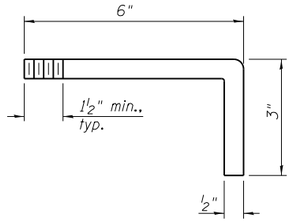
See Sheet SB17 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	2

DS-11 7-1-10

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Westmont, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 016-2454
SHEET NO. SB22 OF SB34 SHEETS

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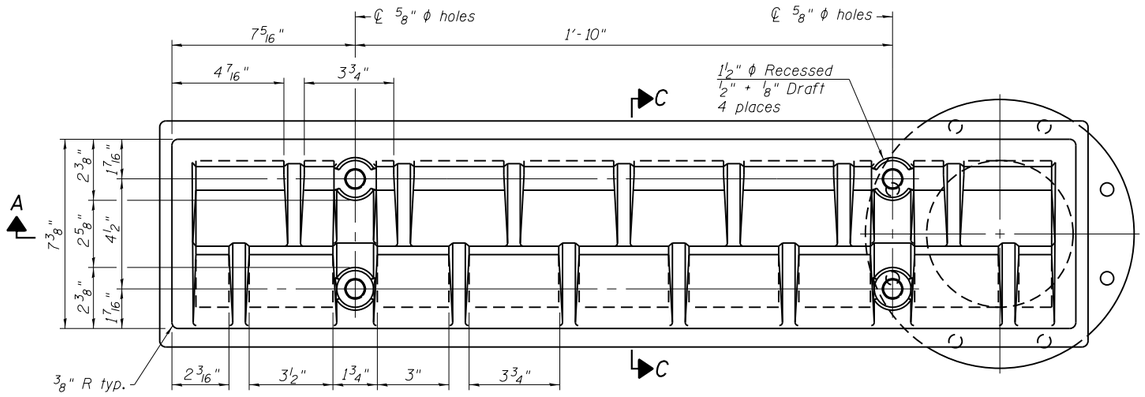
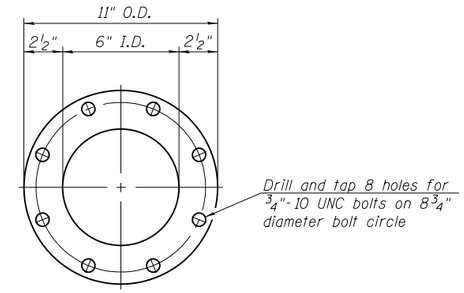
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



PLAN



VIEW B-B

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.

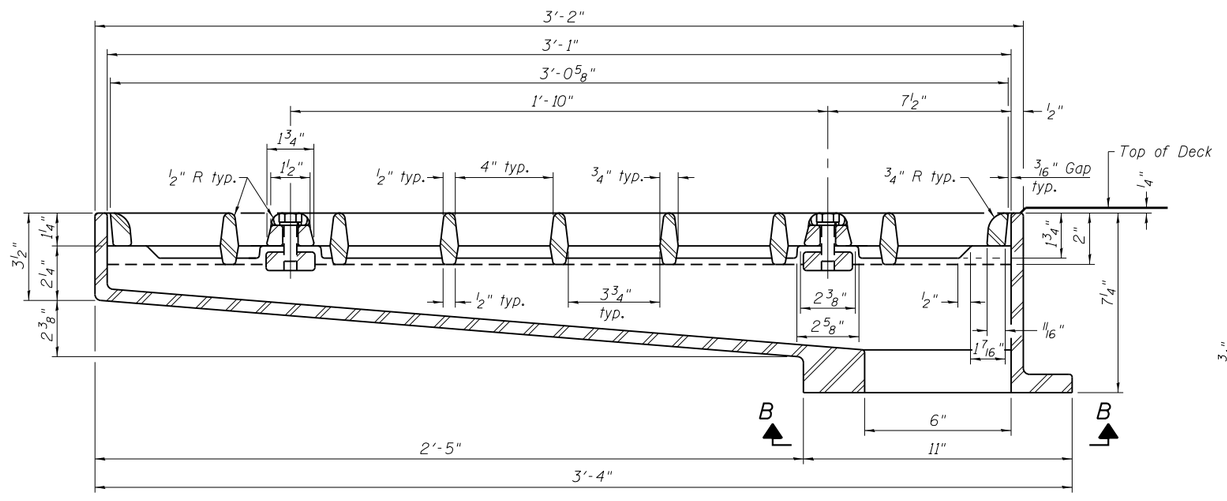
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

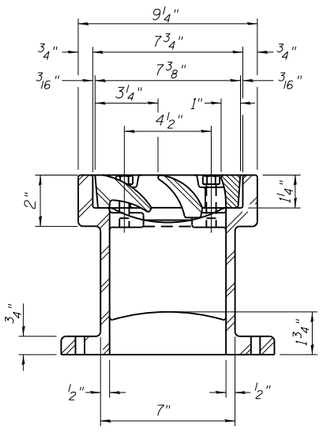
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.

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.

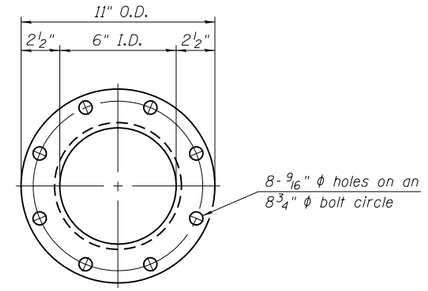


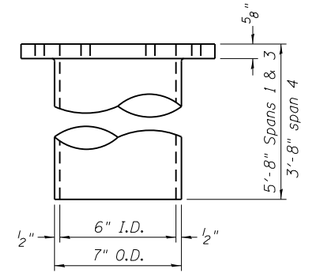
SECTION A-A

See Sheet SB17 for scupper location relative to parapet.

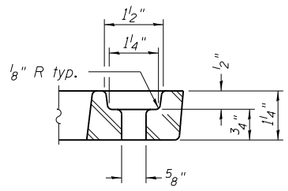


SECTION C-C

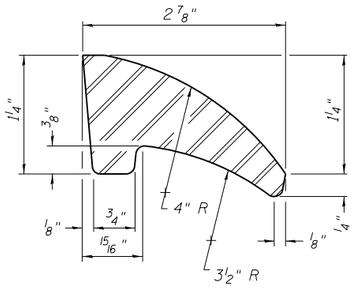




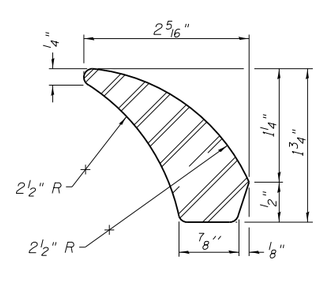
DOWNSPOUT



BOLT HOLE DETAIL



FIRST VANE DETAIL



SECOND VANE DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	3

DS-33 7-1-10

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Westmont, Illinois

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-33
STRUCTURE NO. 016-2454
SHEET NO. SB23 OF SB34 SHEETS

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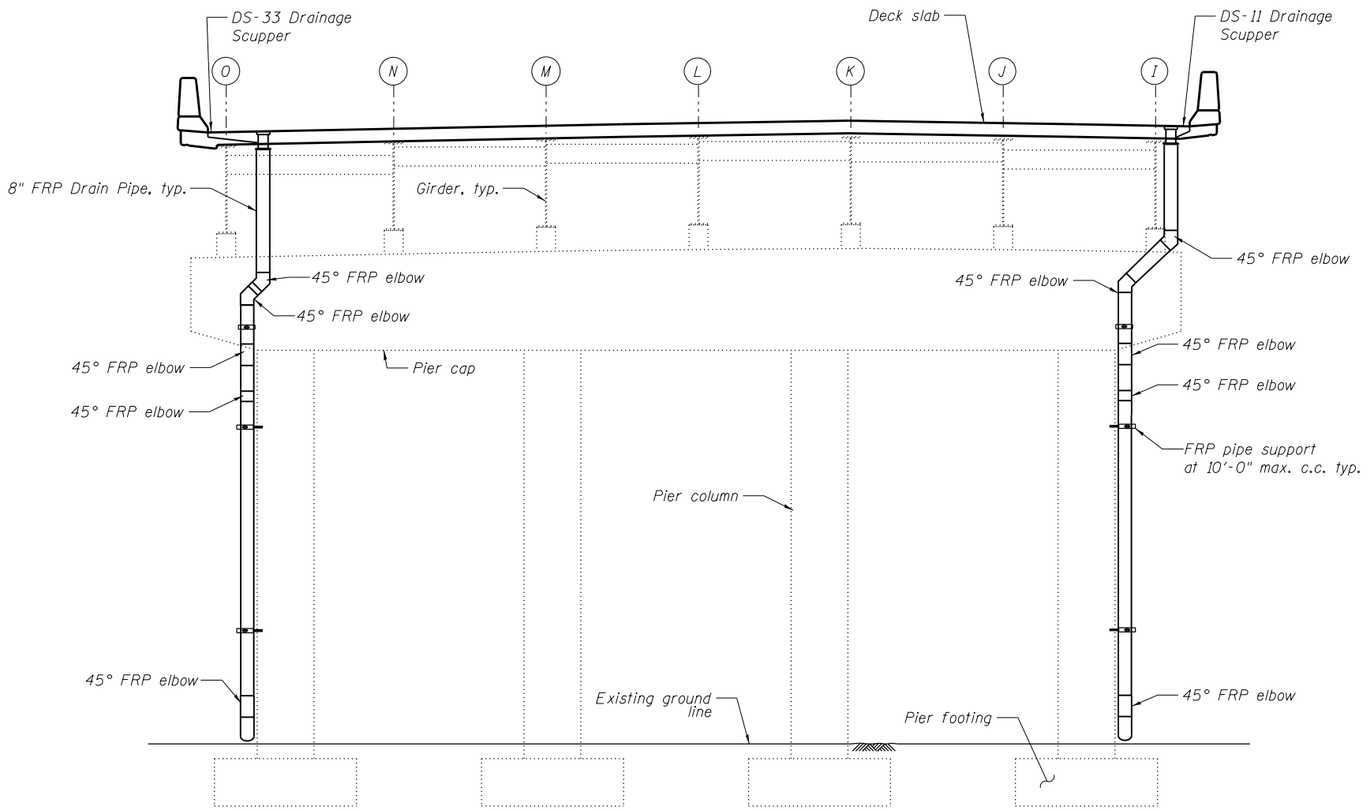
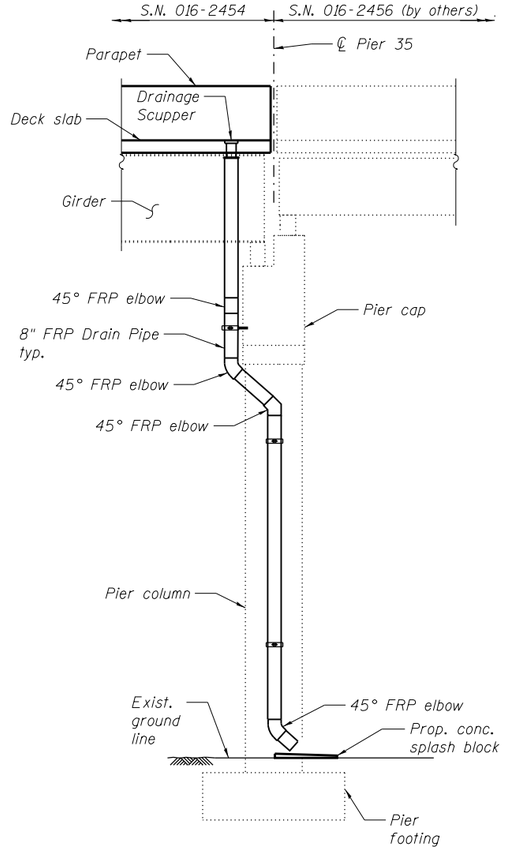
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



ELEVATION - PIER 35
(Looking Downstation)



END VIEW - PIER 35
(Looking East)

Notes:
Closed Drainage system shall be fabricated and installed in accordance with Special Provision "Drainage System".
The surface of the fiberglass shall be free of bond inhibiting agents.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System	L. Sum	1

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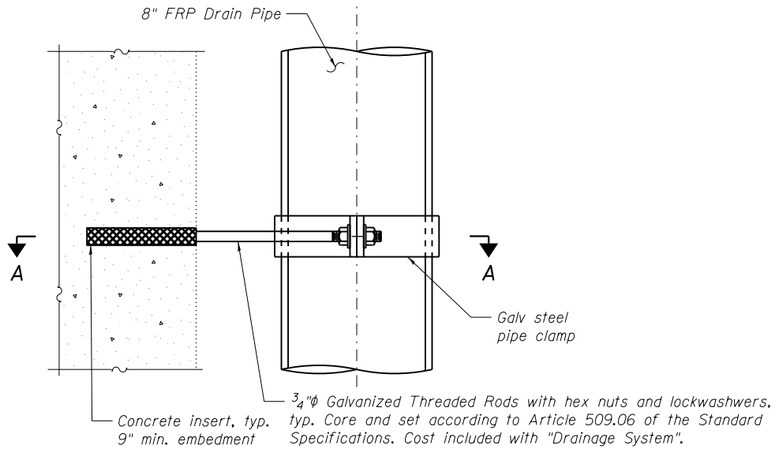
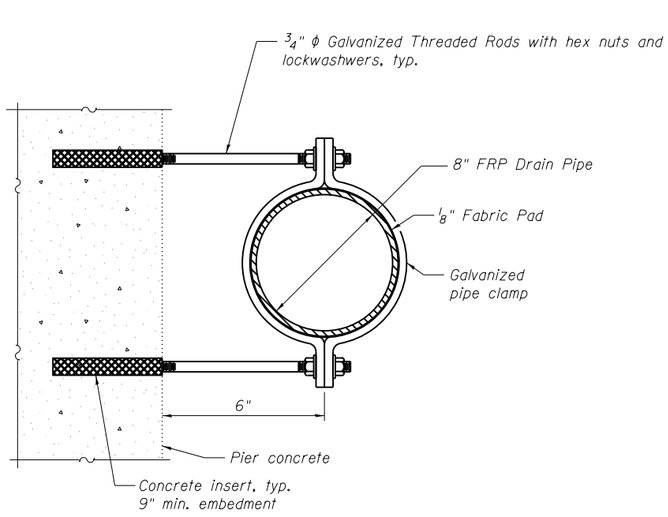
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB24 OF SB34 SHEETS

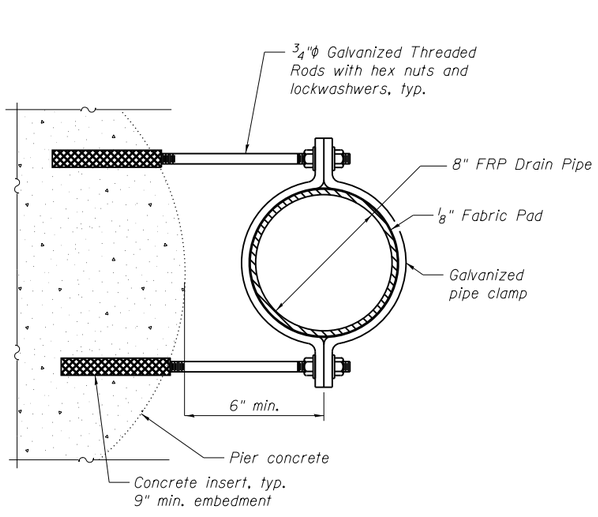
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	288
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



PIPE SUPPORT PLAN AT PIER



SECTION A-A
Pier Cap



SECTION A-A
Pier Column

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DEPARTMENT OF TRANSPORTATION

PIER DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB25 OF SB34 SHEETS

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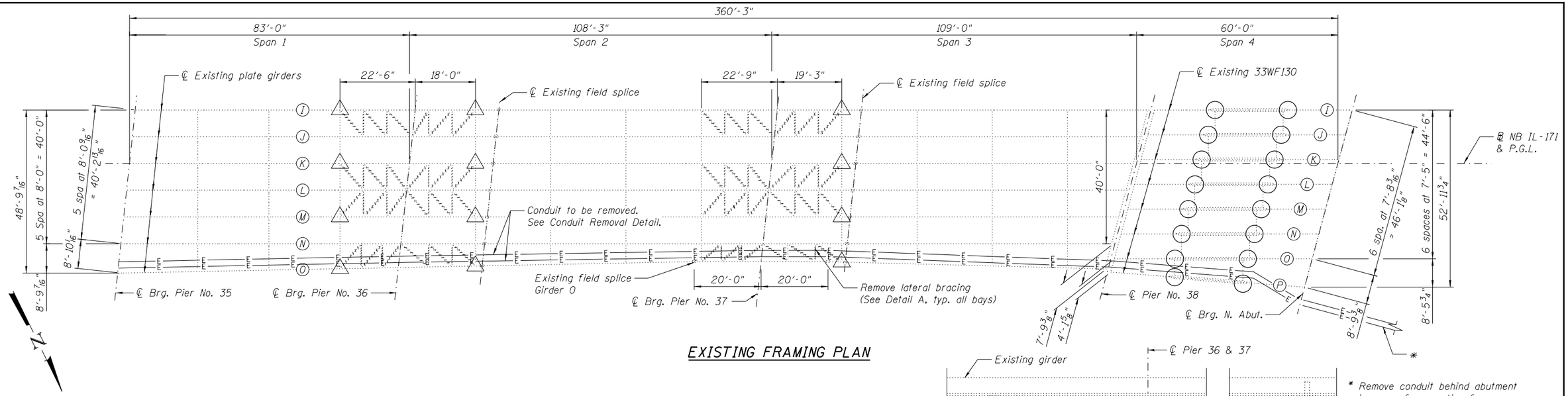
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



EXISTING FRAMING PLAN

INTERIOR GIRDER K AND BEAMS J THRU N MOMENT TABLE							
		0.4 Span 1	Pier 36	0.5 Span 2	Pier 37	0.6 Span 3	0.5 Span 4
I_s	(in^4)	19,198	32,273	20,731	47,092	29,331	8,238
$I_c(n)$	(in^4)	52,444	----	49,439	----	75,000	26,781
$I_c(3n)$	(in^4)	39,398	----	37,988	----	54,922	18,911
S_s	(in^3)	773	1,148	744	1,660	1,264	556
$S_c(n)$	(in^3)	1,080	----	1,002	----	1,638	866
$S_c(3n)$	(in^3)	1,001	----	929	----	1,530	782
$\wp$	(k/')	0.997	1.218	1.002	1.297	1.060	0.965
$M\wp$	('k)	470	868	330	1,384	911	411
$s\wp$	(k/')	0.151	----	0.151	----	0.151	0.130
$M_s\wp$	('k)	76	----	70	----	140	57
M_L	('k)	758.2	606.8	813.4	792.1	1,031.3	528.6
M_I	('k)	182.3	137.5	174.4	169.8	221.2	143.6
$\frac{5}{3}[M_L + I]$	('k)	1,567	1,241	1,646	1,603	2,088	1,120
M_a	('k)	2,748	2,742	2,661	3,884	4,079	2,065
* M_u	('k)	3,360	----	4,448	----	5,194	3,425
f_s $\wp$ non-comp	(ksi)	7.3	9.1	5.3	10.0	8.6	8.9
f_s $\wp$ (comp)	(ksi)	0.9	0.0	0.9	0.0	1.1	0.9
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)	17.4	13.0	19.7	11.6	15.3	15.5
f_s (Overload)	(ksi)	25.6	22.1	26.0	21.6	25.0	25.3
** f_s (Total)	(ksi)	----	28.7	----	28.1	----	----
VR	(k)	69.5	----	55.3	----	68.7	50.2

INTERIOR GIRDER K & BEAMS J THRU N REACTION TABLE							
		Pier 35 North	Pier 36	Pier 37	Pier 38 South	Pier 38 North	North Abutment
$R\wp$	(k)	36.3	116.7	147.8	51.0	32.4	32.4
R_L	(k)	50.3	70.0	77.7	51.8	45.7	45.7
R_I	(k)	12.1	15.9	16.7	11.1	12.4	12.4
R_{Total}	(k)	98.7	202.6	242.2	113.8	90.5	90.5

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

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total and Overload) due to non-composite dead loads ($in.^4$ 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 $in.^3$).

$\wp$: Un-factored non-composite dead load (kips/ft.).

$M\wp$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\wp$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\wp$: 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.).
$1.3\ [\ M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)]$

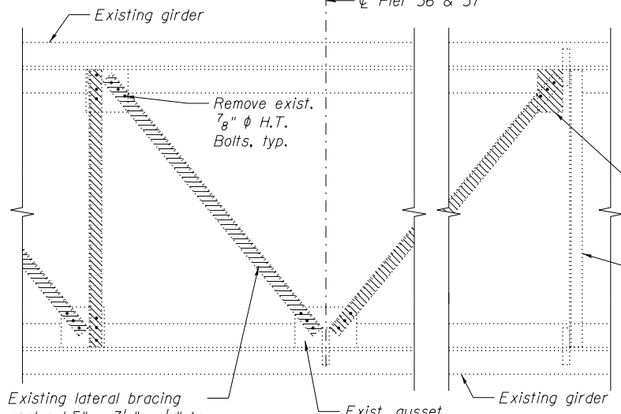
M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)]$

VR: Maximum L + impact shear range within the composite portion of the span for stud shear connector design (kips).

Notes:
No additional studs are being added to Spans 1, 3 and 4.
For Cover Plate Retrofit Details, see sheet SB27.
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 "Structural Steel Repair".



* Remove conduit behind abutment in area of excavation for new granular backfill. Cost included with "Remove Conduit Attached to Structure". See Special Provision.

DETAIL A

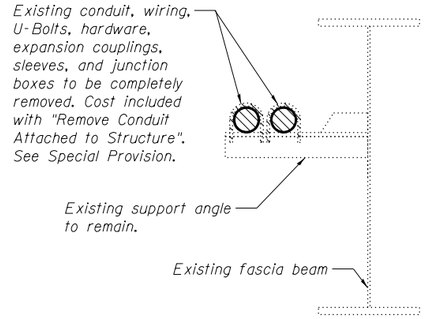
Removal of existing lateral bracing angles and connecting H.T. bolts is included in the unit price of "Structural Steel Removal". See Special Provision.

LEGEND

○ Location of cover plate ends to be retrofitted per "Structural Steel Repair" Special Provision. (16 locations)

△ Remove existing gusset plates per "Structural Steel Removal" Special Provision. See Detail A. (12 locations)

Remove lateral bracing angles per "Structural Steel Removal" Special Provision.



CONDUIT REMOVAL DETAIL

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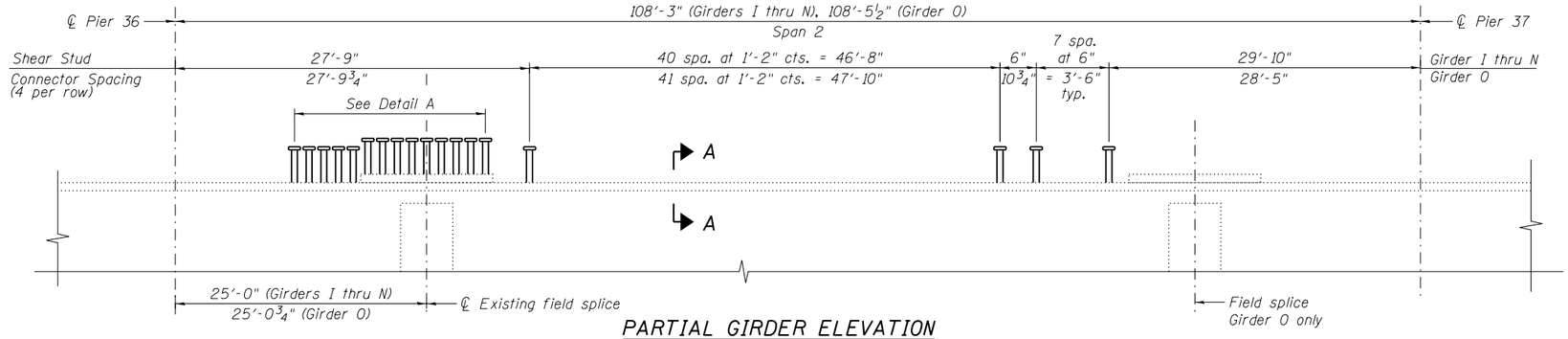
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

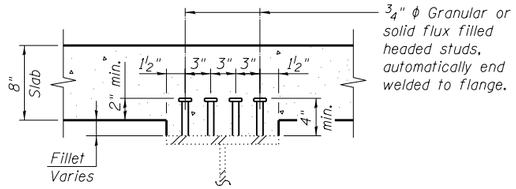
FRAMING PLAN
STRUCTURE NO. 016-2454
SHEET NO. SB26 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	290
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

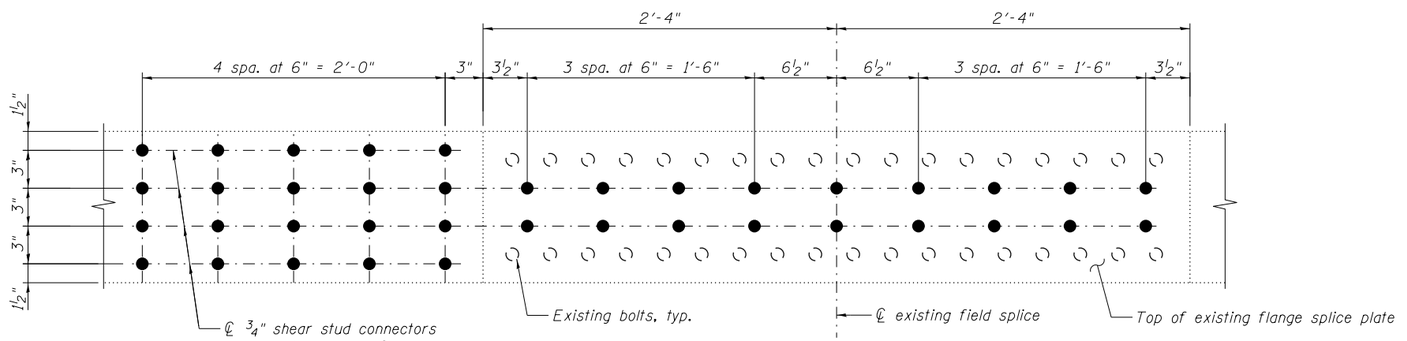


PARTIAL GIRDER ELEVATION

(No existing shear studs in Span 2.
No new shear studs shall be added to Spans 1, 3 and 4.)



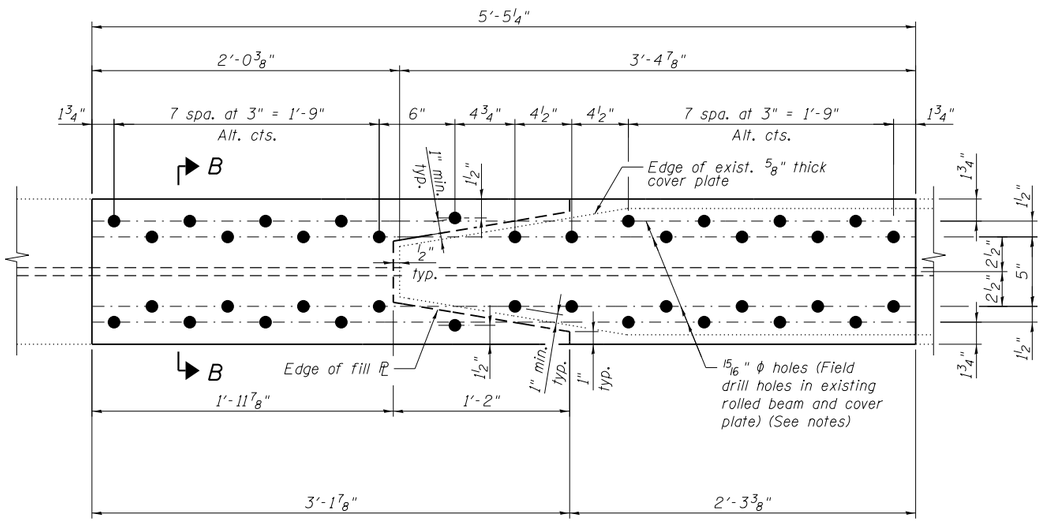
SECTION A-A



DETAIL A

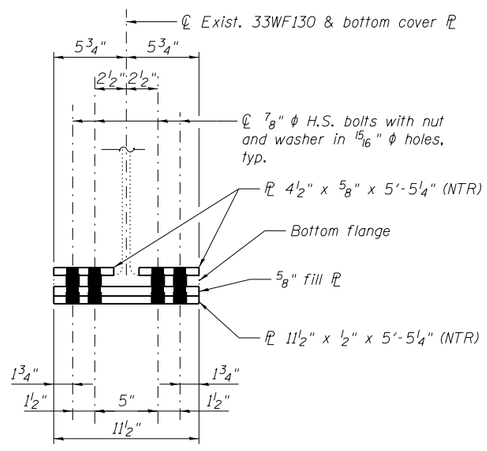
BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stud Shear Connectors	Each	1,642
Structural Steel Removal	Pound	10,140
Structural Steel Repair	Pound	4,700



COVER PLATE RETROFIT DETAIL (SPAN 4)

(Bottom flanges)



SECTION B-B

Notes:
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
Structural steel plates shall conform to the requirements of AASHTO M270 Grade 50.
See Sheet SB26 for locations of cover plate retrofits. Cost of cover plate retrofit and associated field drilling to be included with "Structural Steel Repair".

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB27 OF SB34 SHEETS

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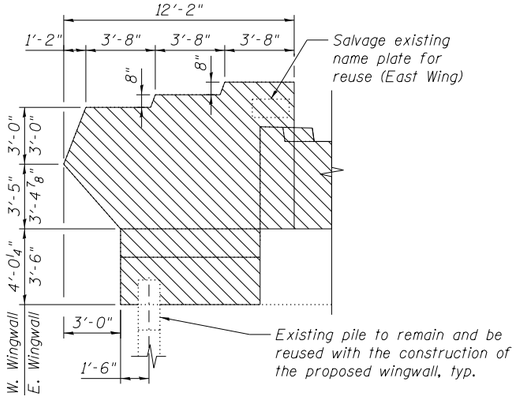
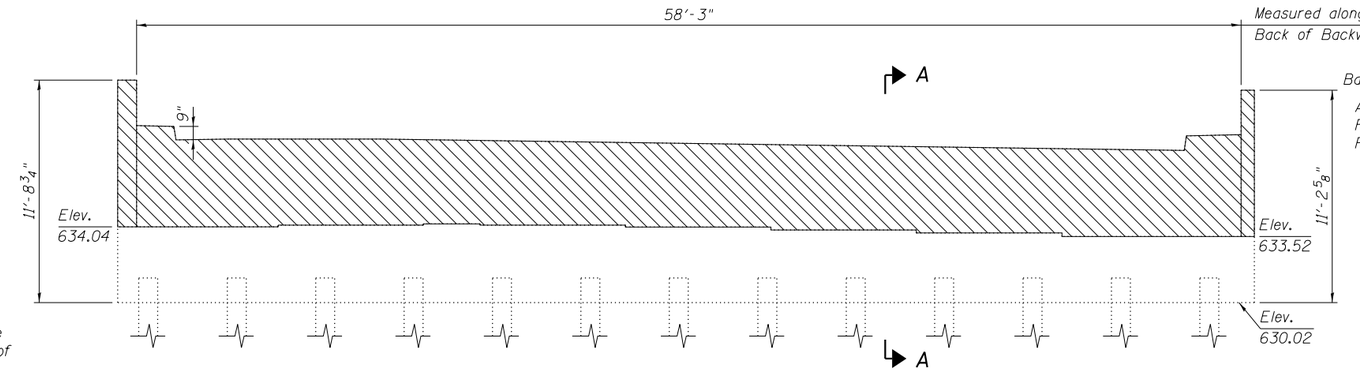
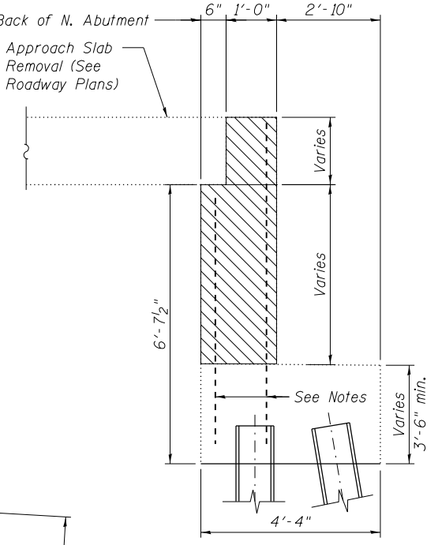
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



TYPICAL WINGWALL ELEVATION



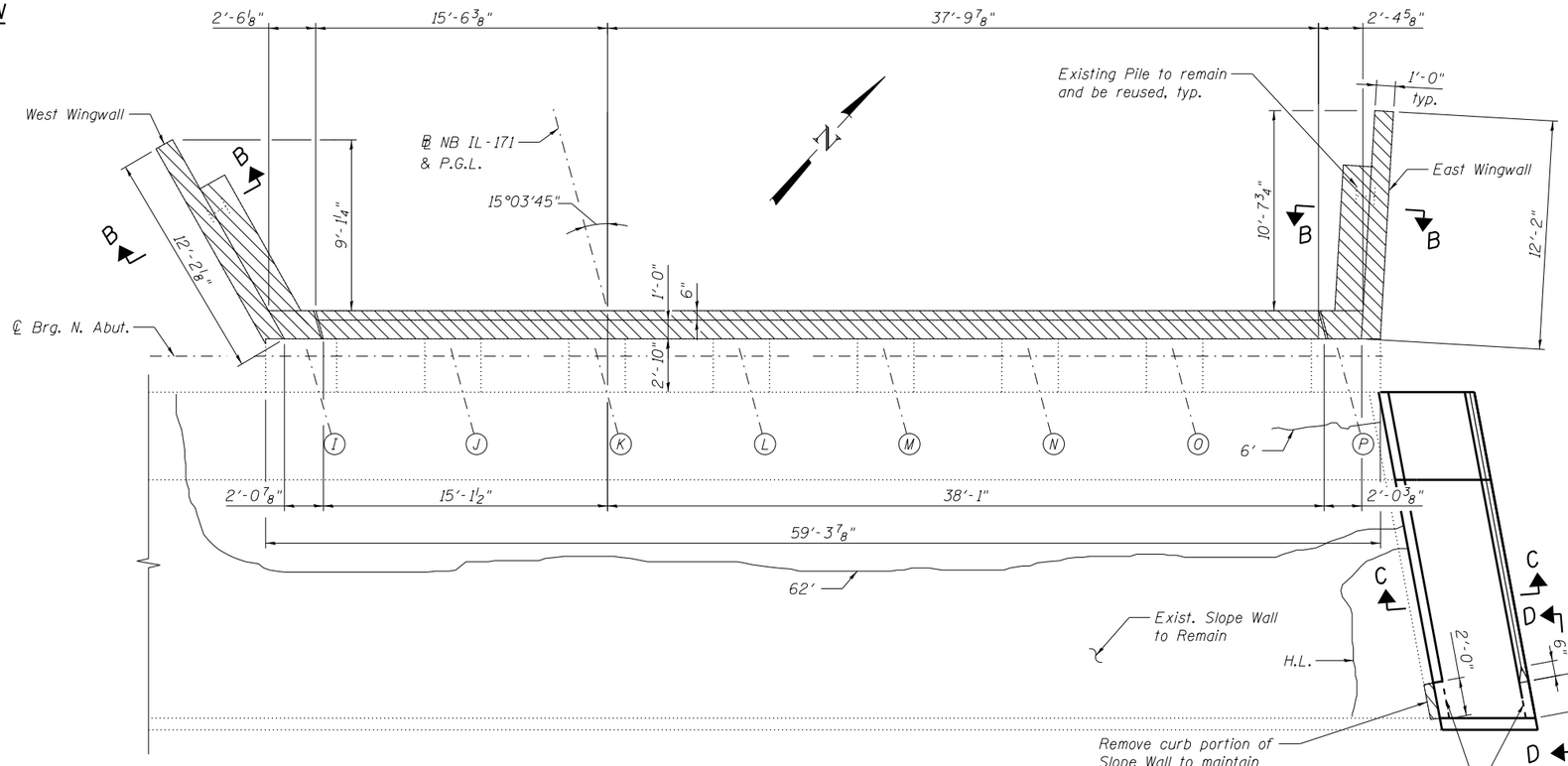
ELEVATION
(Looking Upstation)



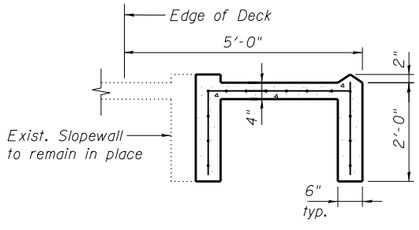
SECTION A-A

BEARING SEAT ELEVATIONS

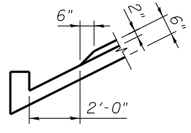
Beam No.	N. Abut.
I	634.04
J	634.12
K	634.18
L	634.12
M	634.02
N	633.86
O	633.70
P	633.52



PLAN



SECTION C-C



VIEW D-D

SECTION B-B

LEGEND

- Concrete Removal
- H.L. — Hairline Crack (Not to be repaired)
- Epoxy Crack Injection

Notes:

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with "Concrete Removal".

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 in "Concrete Removal".

Slope wall shall be reinforced with welded wire fabric, 6 in. X 6 in. W4.0 x W4.0, weighing 58 lbs per 100 sq ft.

Refer to Sheet SB3 for additional slopewall details.

Embankment required for the slopewall widening shall be paid for as "Furnished Excavation". See Roadway Plans.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	21.6
Epoxy Crack Injection	Foot	62
Slope Wall 4 Inch	Sq. Yd.	20

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Westmont, Illinois

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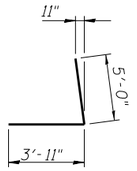
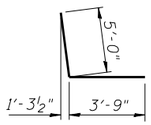
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT CONCRETE REMOVAL AND REPAIR DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB28 OF SB34 SHEETS

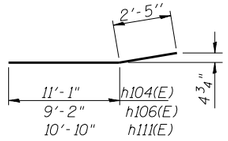
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	292
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



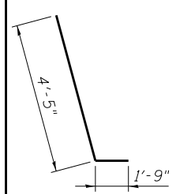
BAR h101(E)



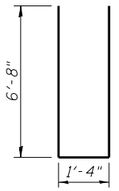
BAR h102(E)



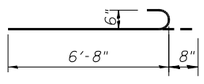
BAR h104(E), h106(E) & h111(E)



BAR h108(E)



BAR n100(E)



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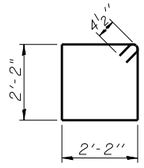

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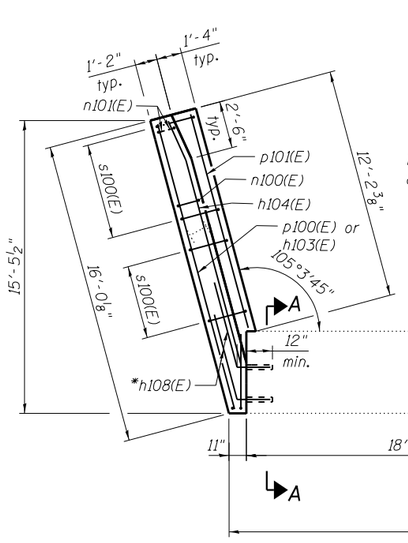
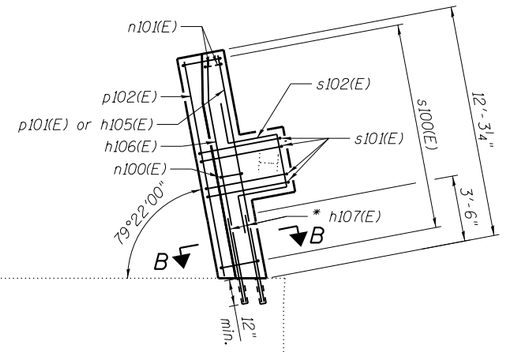


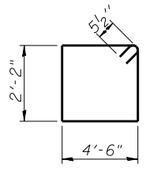


PLAN - PILE CAP

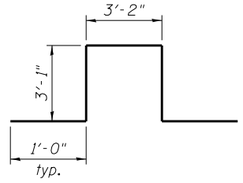
* Drill and grout 12" into existing abutment cap per Article 584 of the Standard Specifications. (Cost included with Concrete Structures).

ABUTMENT BILL OF MATERIAL

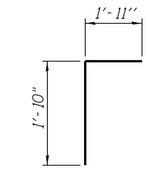
Bar	No.	Size	Length	Shape
h100(E)	16	#5	30'-1"	
h101(E)	12	#5	8'-11"	
h102(E)	12	#5	8'-9"	
h103(E)	1	#4	15'-8"	
h104(E)	1	#4	13'-6"	
h105(E)	1	#4	11'-10"	
h106(E)	1	#4	11'-7"	
h107(E)	6	#7	4'-6"	
h108(E)	6	#7	6'-2"	
h109(E)	11	#4	12'-9"	
h110(E)	11	#4	13'-6"	
h111(E)	14	#4	13'-3"	
h112(E)	10	#6	30'-5"	
n100(E)	21	#6	14'-8"	
n101(E)	12	#6	7'-4"	
p100(E)	3	#7	15'-8"	
p101(E)	6	#7	11'-10"	
p102(E)	3	#7	11'-6"	
s100(E)	26	#4	9'-5"	
s101(E)	4	#5	14'-3"	
s102(E)	3	#5	11'-4"	
v100(E)	58	#5	3'-9"	
v101(E)	58	#4	3'-8"	
v102(E)	29	#6	7'-11"	
v103(E)	6	#6	7'-2"	
v104(E)	22	#6	7'-11"	
v105(E)	58	#5	3'-1"	
v106(E)	58	#5	4'-5"	
v107(E)	57	#5	4'-1"	
Structure Excavation		Cu. Yd.	103	
Concrete Structures		Cu. Yd.	30.0	
Reinforcement Bars, Epoxy Coated		Pound	4,570	
Concrete Sealer		Sq. Ft.	299	



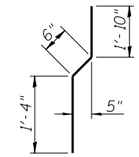
BAR s101(E)



BAR s102(E)



BAR v100(E)



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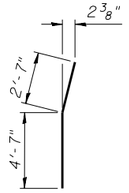
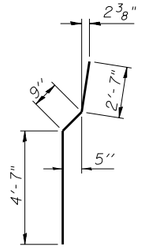
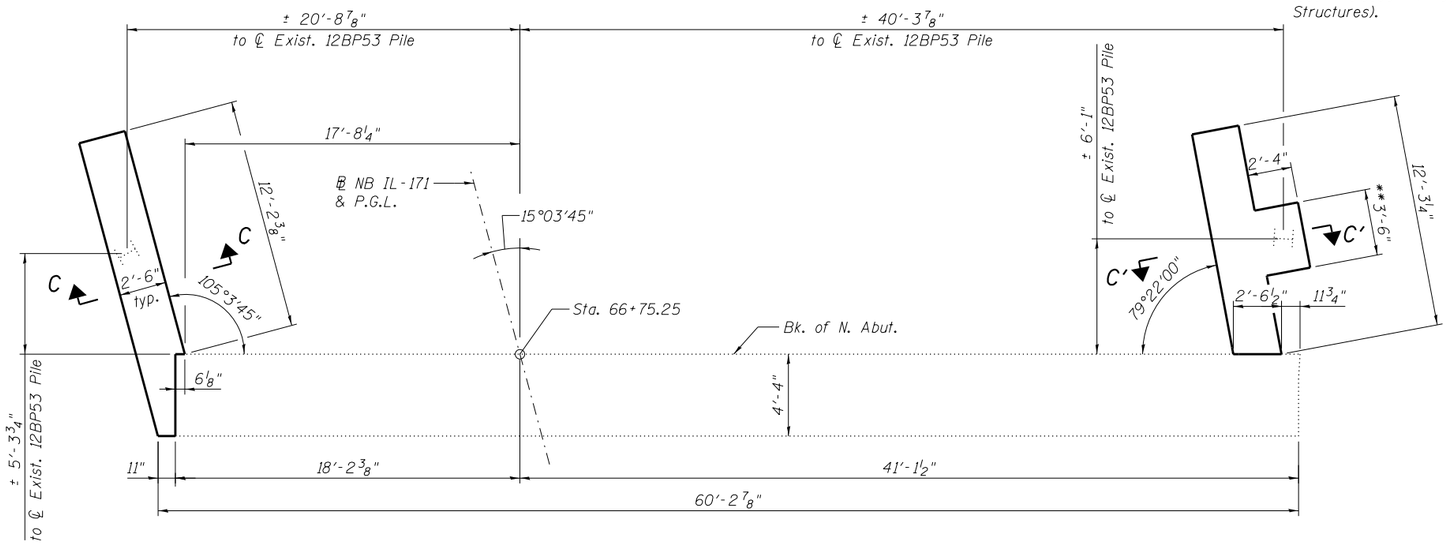


BAR v103(E)



BAR v104(E)



PLAN - PILE LAYOUT

** Centered about Exist. 12BP53 Pile.

PILE DATA

Type: HP12x53
Nominal Required Bearing: 264 k
Allowable Resistance Available: 88 k
Est. Length: 38'-0"
No. Production Piles: 2
No. Test Piles: 0

Note:
See Sheet SB31 for Sections A-A and B-B.
See Sheet SB30 for Section C-C.
See Sheet SB31 for Section C'-C'.

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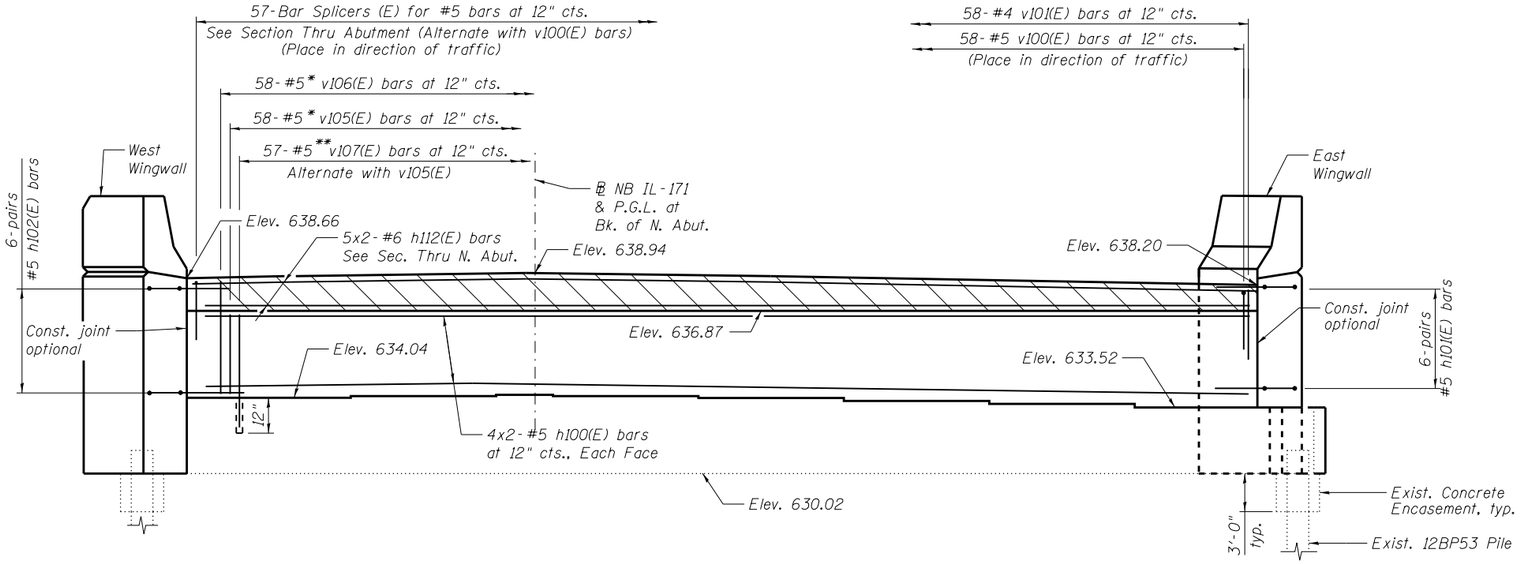
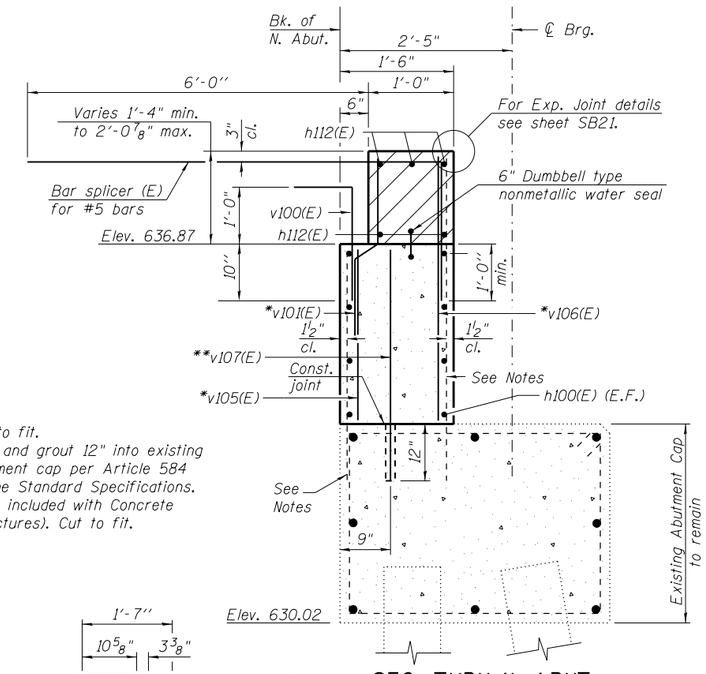
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT MODIFICATION DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB29 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	293
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			

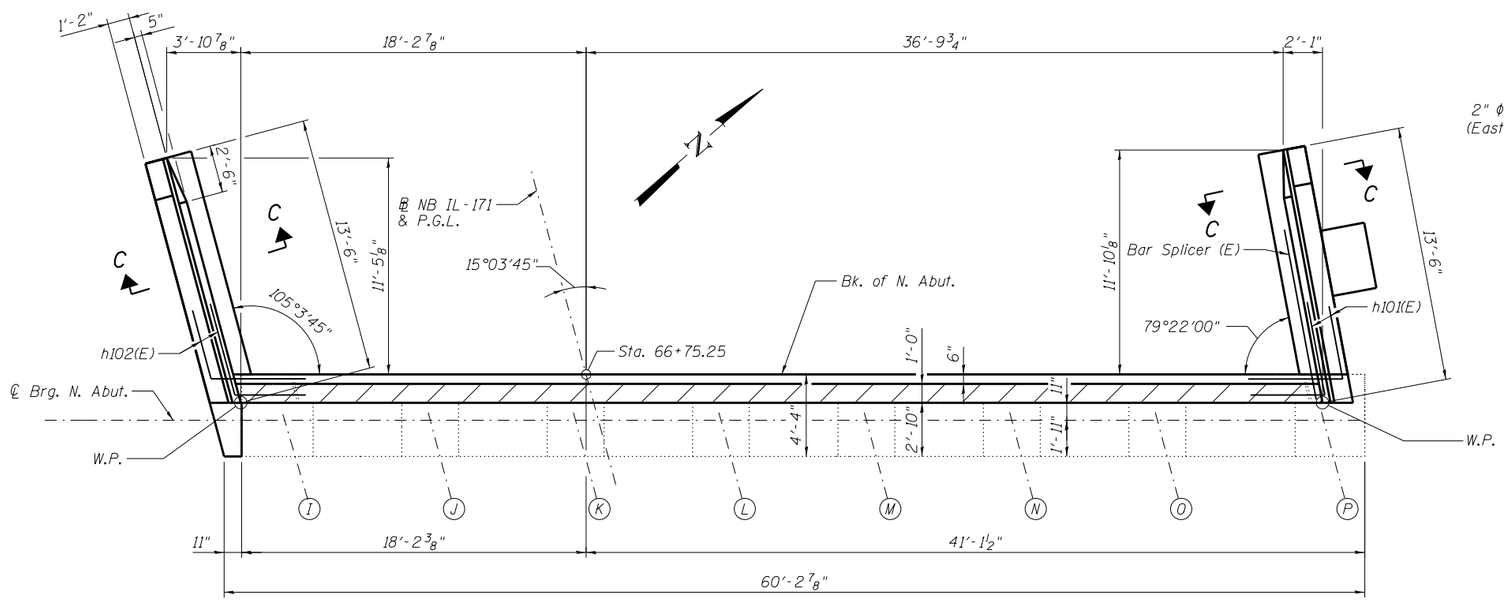


ELEVATION
(Looking Upstation)

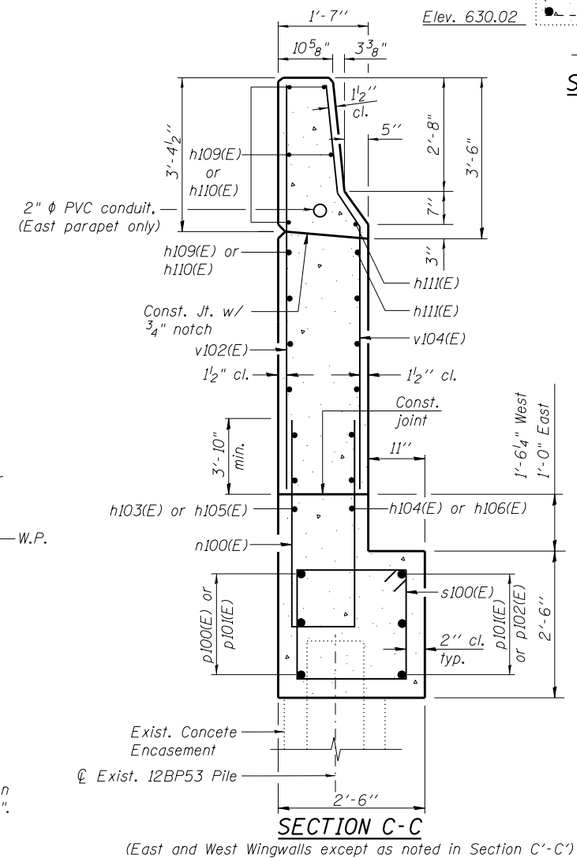


* Cut to fit.
** Drill and grout 12" into existing abutment cap per Article 584 of the Standard Specifications. (Cost included with Concrete Structures). Cut to fit.

SEC. THRU N. ABUT.



TOP VIEW



SECTION C-C
(East and West Wingwalls except as noted in Section C'-C')

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

Notes:
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with "Concrete Removal".
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with "Concrete Superstructure".
Concrete Sealer shall be applied to areas of newly placed concrete along the abutment backwall and cap.
For details of Bar Splicers, see sheet SB34.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT MODIFICATION DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB30 OF SB34 SHEETS

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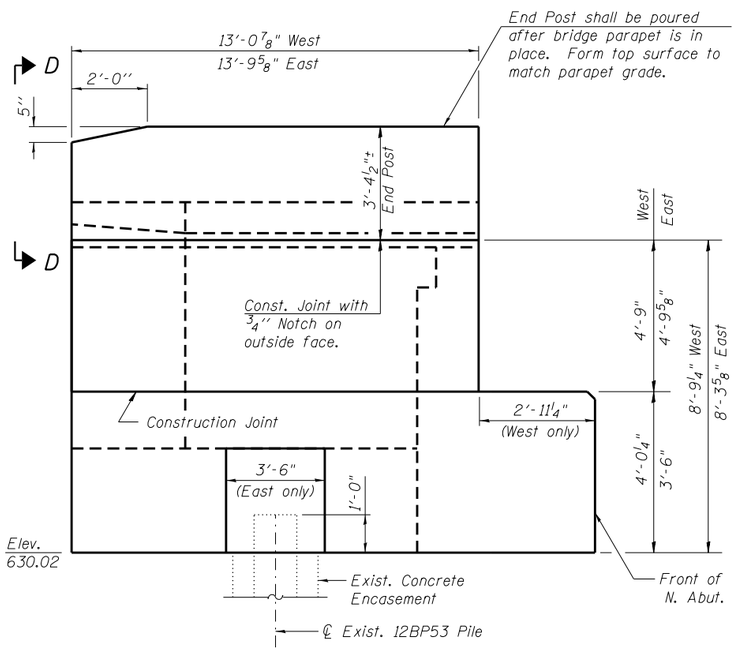
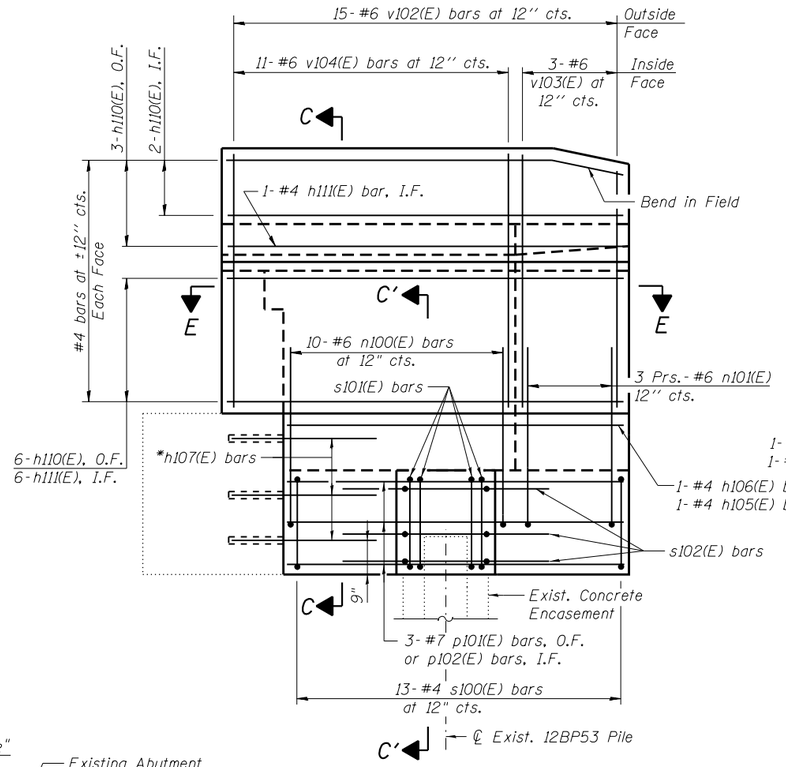
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		



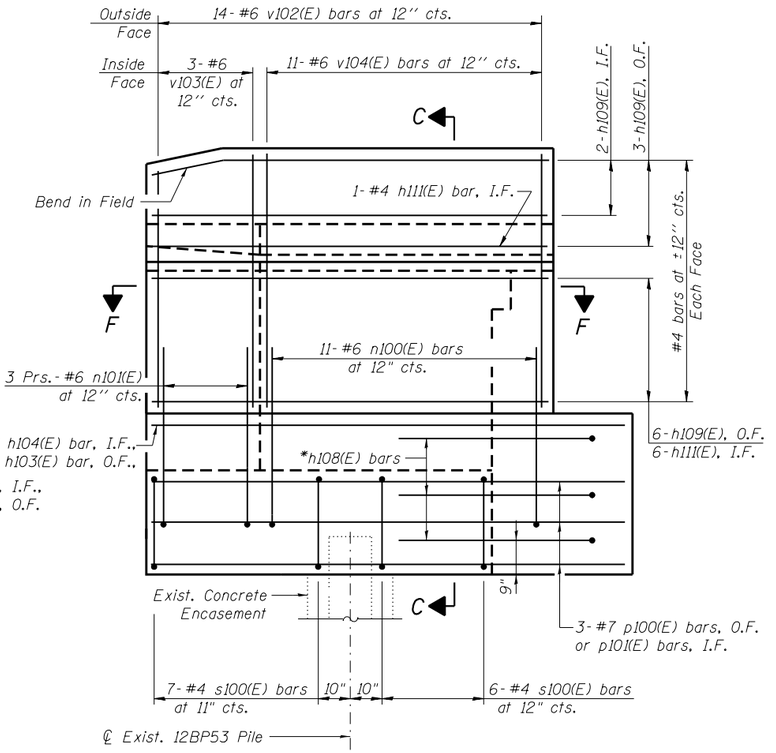
WINGWALL ELEVATION

Showing Dimensions
West Wingwall shown looking East
(East Wingwall opposite hand, Similar)



EAST WINGWALL ELEVATION

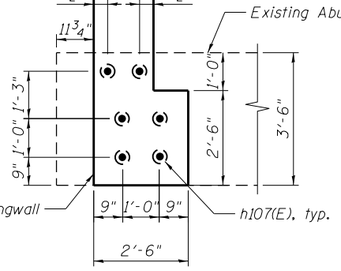
Showing Reinforcement
(Looking West)



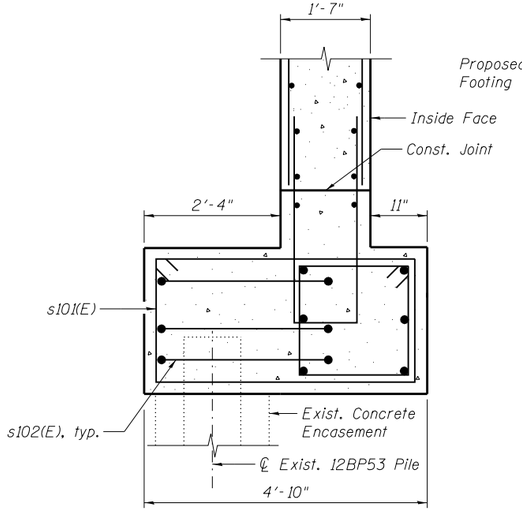
WEST WINGWALL ELEVATION

Showing Reinforcement
(Looking East)

* Drill and grout 12" into existing abutment cap per Article 584 of the Standard Specifications. (Cost included with Concrete Structures).

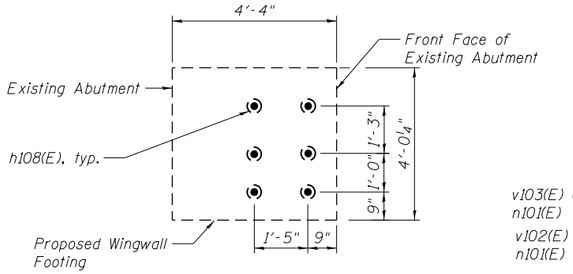


SECTION B-B



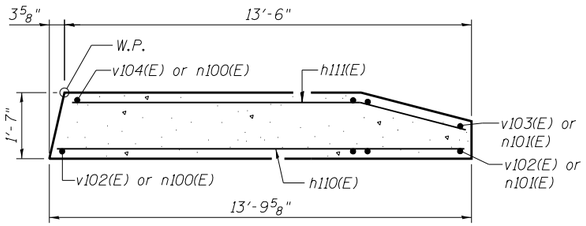
SECTION C'-C'

(East Wingwall at Exist. 12BP53 Pile)



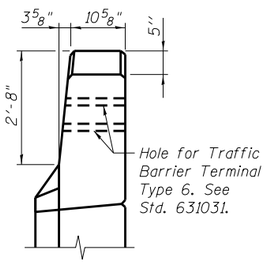
SECTION A-A

(Shown at rt. angles to existing abutment)

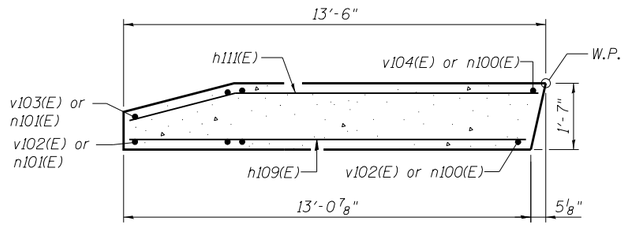


SECTION E-E

East Wingwall



VIEW D-D



SECTION F-F

West Wingwall

Notes:
Quantity of concrete in end post included with "Concrete Superstructure" on Sheet SB20.
Quantity of protective coat on end post included with "Protective Coat" on Sheet SB20.
See Std. 631031 for Traffic Barrier Terminal Type 6 Connection.
See Sheet SB30 for Section C-C.

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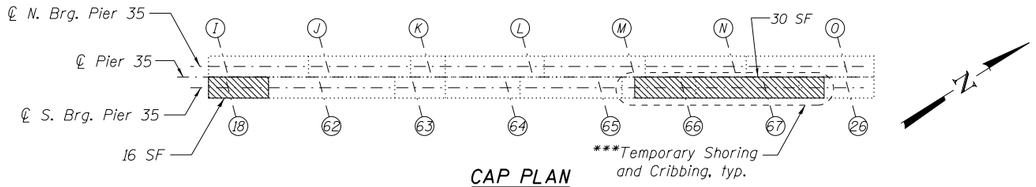
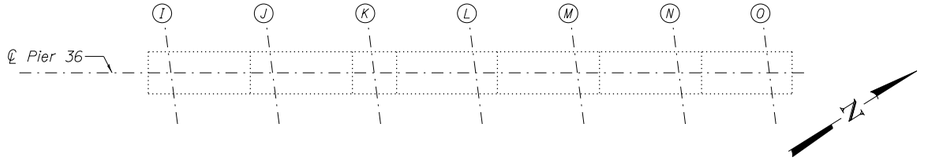
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT MODIFICATION DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB31 OF SB34 SHEETS

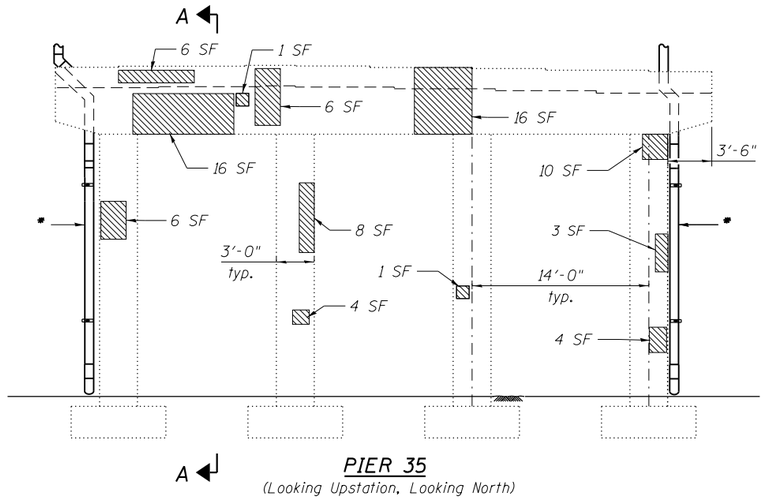
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	295
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



CAP PLAN

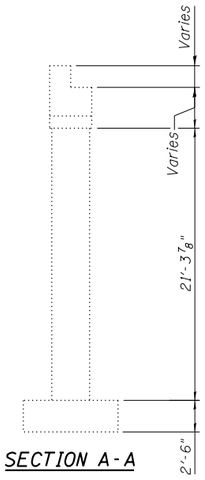


CAP PLAN

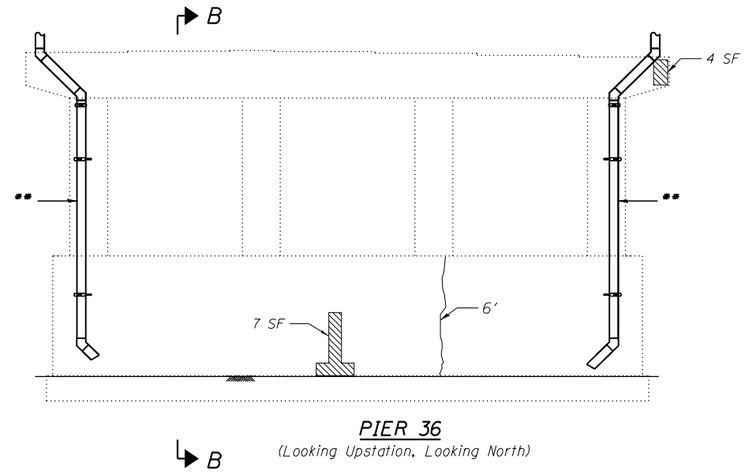


PIER 35

(Looking Upstation, Looking North)

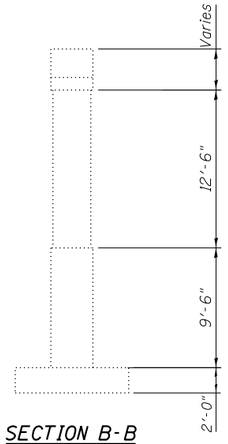


SECTION A-A

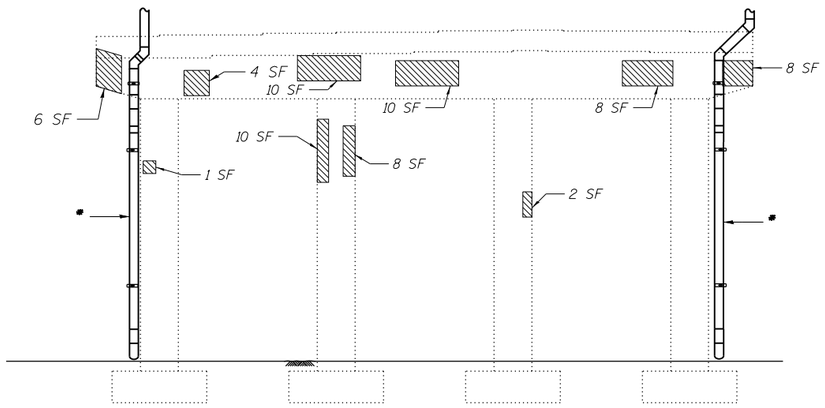


PIER 36

(Looking Upstation, Looking North)



SECTION B-B



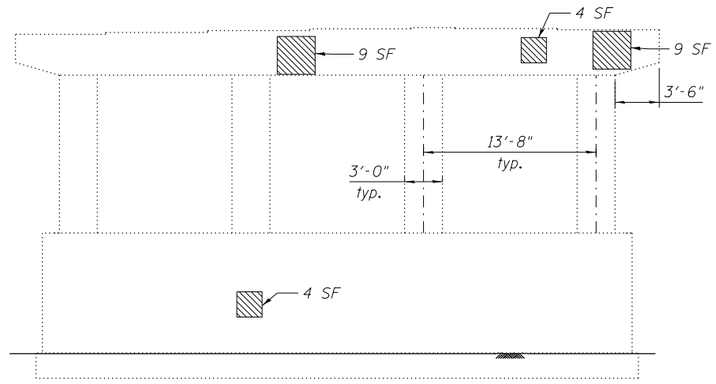
PIER 35

(Looking Downstation, Looking South)

**** REACTION TABLE

(Service Load Per Beam)

LOCATION	BEAM DEAD LOAD(k)
Pier 35 N. Brg.	6
Pier 35 S. Brg.	8



PIER 36

(Looking Downstation, Looking South)

LEGEND

- Structural Repair of Concrete (Depth equal to or less than 5 inches)
- * Existing closed drainage system to be removed & replaced. See Sheet SB24 for proposed drainage system details.
- ** Existing closed drainage system to be removed.
- 6' Crack (6 L.F.)
- *** The installation of Temporary Shoring and Cribbing shall not commence until the deck has been removed entirely. Coordinate with the construction on Str. No. 016-2456.
- **** Reactions provided are for the steel beam dead load only.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	231
Temporary Shoring and Cribbing	Each	3
Epoxy Crack Injection	Foot	6

Notes:

The existing closed drainage systems at Piers 35 and 36 shall be removed. The existing bolts in self drilling anchors shall be removed and the holes plugged. The plugged locations shall be coated with epoxy coating. Cost included with "Removal of Existing Concrete Deck No. 1".

Replacement of existing closed drainage systems is included in the "Drainage System" pay item.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER CONCRETE REPAIR AND DRAINAGE SYSTEM REMOVAL DETAILS
STRUCTURE NO. 016-2454

SHEET NO. SB32 OF SB34 SHEETS

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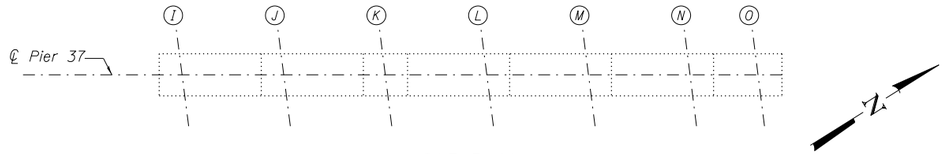
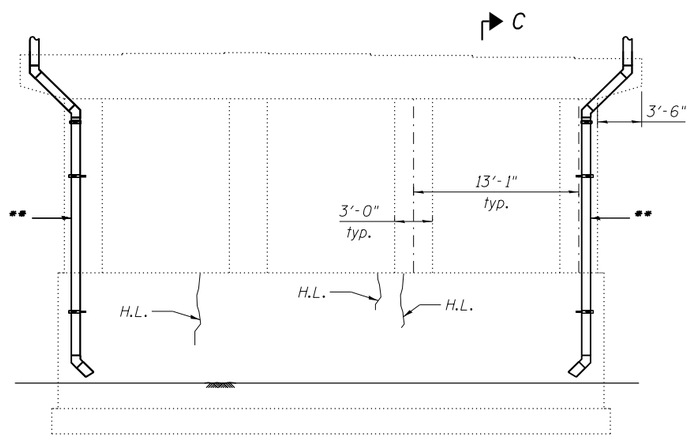
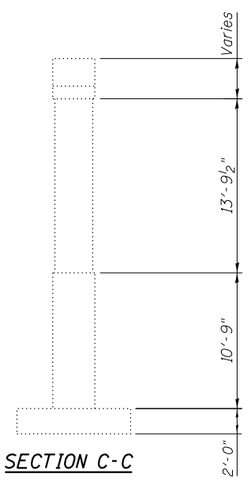
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			



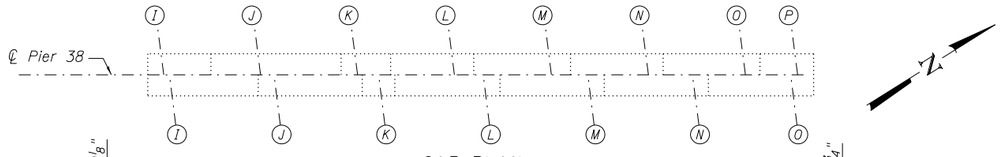
CAP PLAN



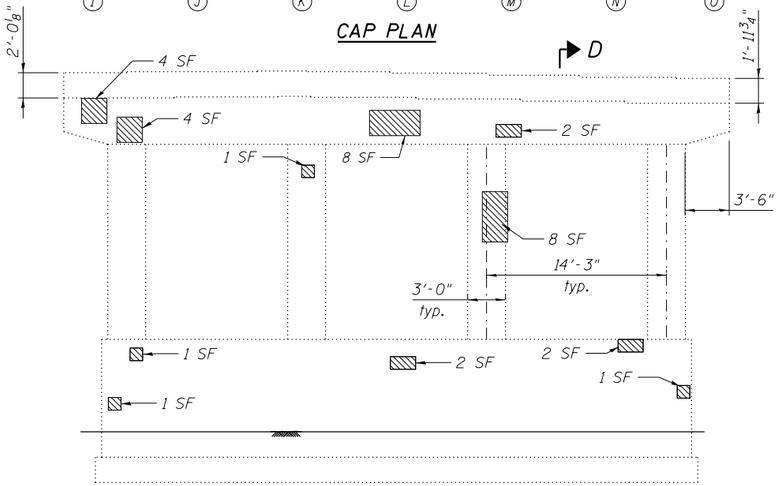
PIER 37
(Looking Upstation, Looking North)



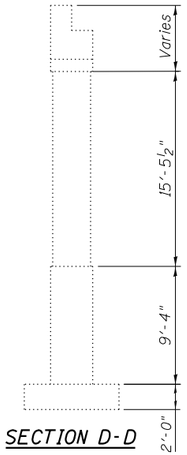
SECTION C-C



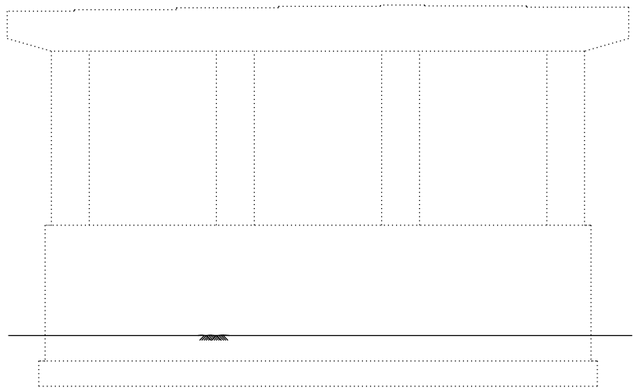
CAP PLAN



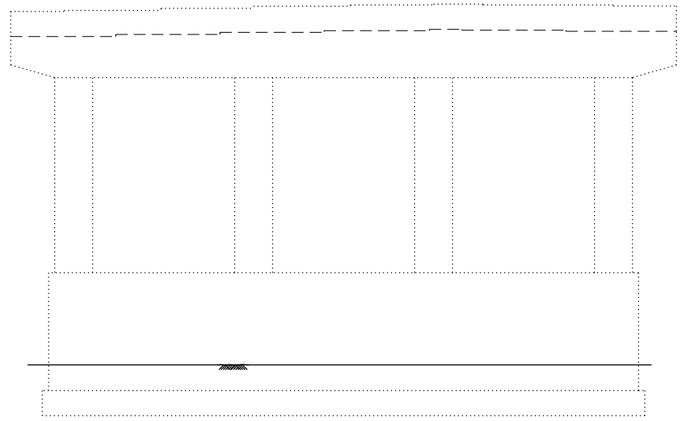
PIER 38
(Looking Upstation, Looking North)



SECTION D-D



PIER 37
(Looking Downstation, Looking South)



PIER 38
(Looking Downstation, Looking South)

LEGEND

Structural Repair of Concrete (Depth equal or less than 5 inches)

H.L. — Hairline Crack (Not to be repaired)

** Existing closed drainage system to be removed.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	34

Note:
The existing closed drainage systems at Pier 37 shall be removed. The existing bolts in self drilling anchors shall be removed and the holes plugged. The plugged locations shall be coated with epoxy coating. Cost included with "Removal of Existing Concrete Deck No. 1".

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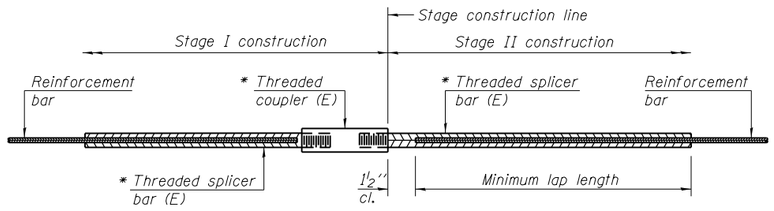
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER CONCRETE REPAIR AND DRAINAGE SYSTEM REMOVAL DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB33 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	297
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

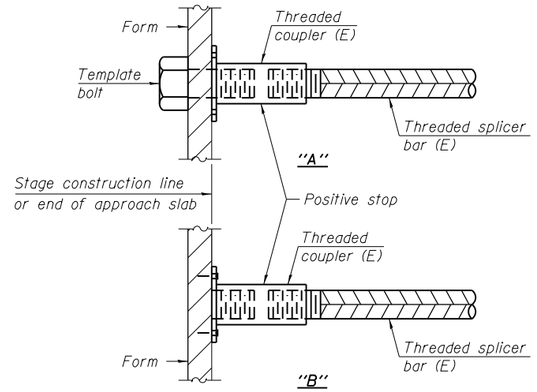
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

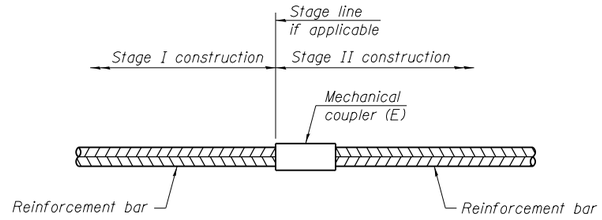
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



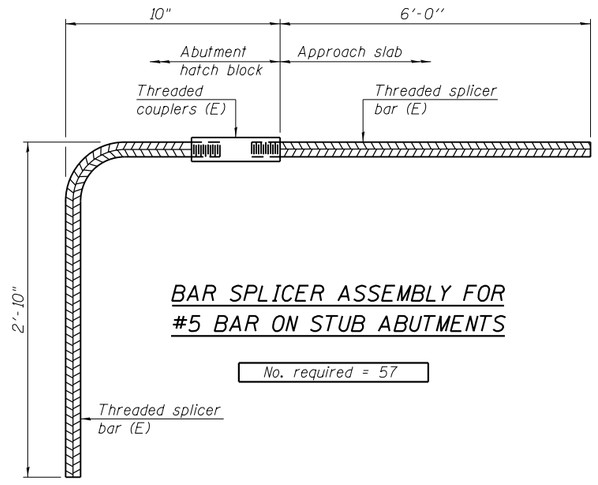
INSTALLATION AND SETTING METHODS

"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



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 57

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

8-31-12

LIN ENGINEERING, LTD.
Consulting Engineers
Westmont, Illinois

USER NAME = Lin_41	DESIGNED - RGB	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

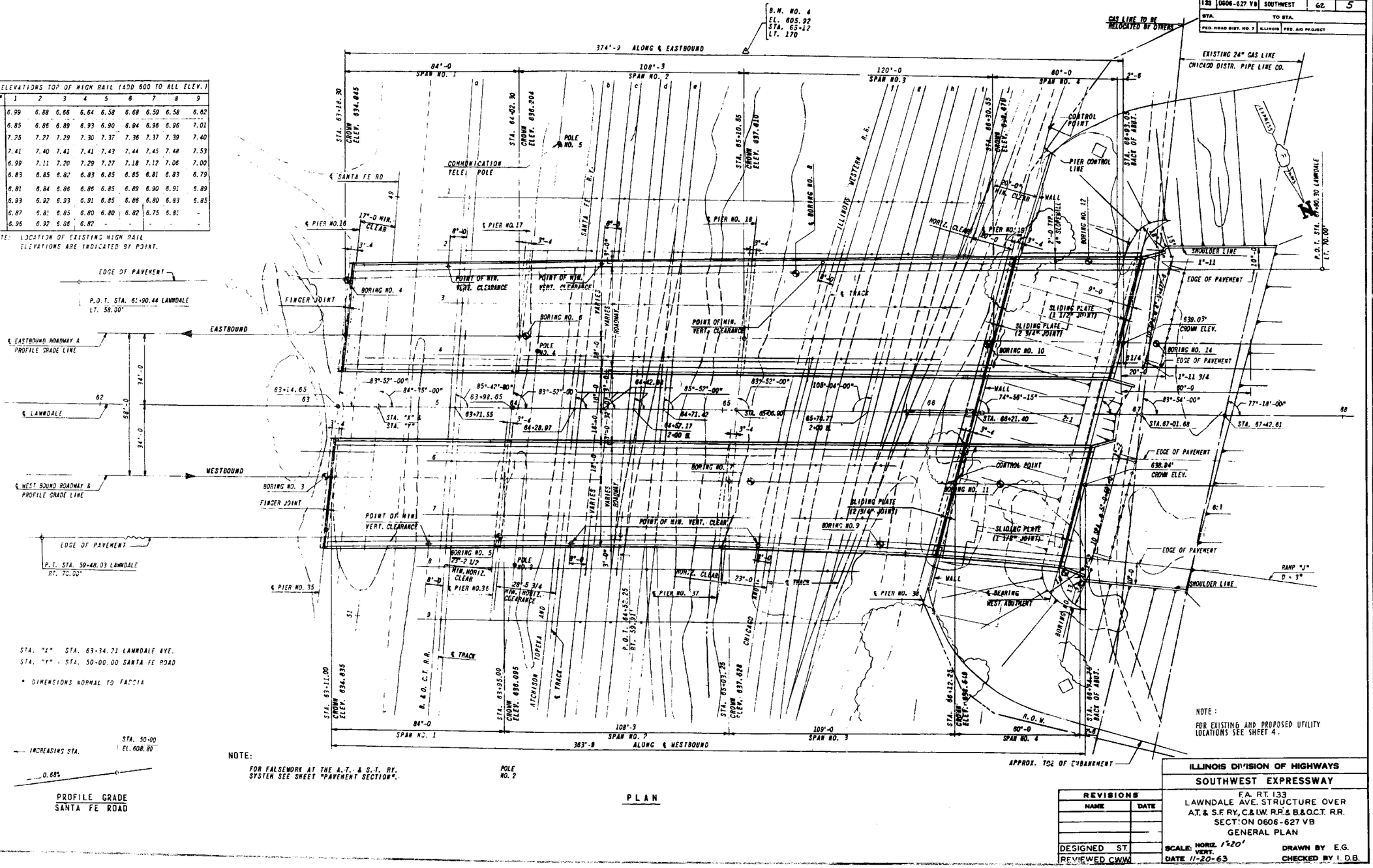
BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 016-2454
SHEET NO. SB34 OF SB34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	298
		CONTRACT NO. 60W75		
	ILLINOIS	FED. AID PROJECT		

F.A. RTE.	SECTION	EXPRESSWAYS	TOTAL SHEETS	SHEET NO.
133	0606-627 VB	SOUTHWEST	62	5
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

ELEVATIONS TOP OF HIGH RAIL (ADD 600 TO ALL ELEV.)									
ROW TRACK	1	2	3	4	5	6	7	8	9
a	6.99	6.88	6.66	6.64	6.58	6.68	6.59	6.58	6.62
b	6.85	6.86	6.89	6.93	6.90	6.94	6.96	6.96	7.01
c	7.25	7.27	7.29	7.30	7.37	7.36	7.37	7.39	7.40
d	7.41	7.40	7.41	7.41	7.43	7.44	7.45	7.48	7.53
e	6.99	7.11	7.20	7.29	7.27	7.18	7.12	7.06	7.00
f	6.83	6.85	6.82	6.83	6.85	6.85	6.81	6.83	6.79
g	6.81	6.84	6.88	6.86	6.85	6.89	6.90	6.91	6.89
h	6.93	6.92	6.93	6.91	6.85	6.86	6.80	6.83	6.85
i	6.87	6.81	6.85	6.80	6.80	6.82	6.75	6.81	-
j	6.96	6.92	6.86	6.82	-	-	-	-	-

NOTE: LOCATION OF EXISTING HIGH RAIL ELEVATIONS ARE INDICATED BY POINT.



REVISIONS	
NAME	DATE
DESIGNED ST.	
REVIEWED CWW	

ILLINOIS DIVISION OF HIGHWAYS

SOUTHWEST EXPRESSWAY

F.A. RT. 133
LAWNDALE AVE. STRUCTURE OVER A.T. & S.F. RY., C. & I.W. R.R. & B. & O.C.T. R.R.
SECTION 0606-627 VB
GENERAL PLAN

SCALE: HORIZ. 1"=20' VERT.
DRAWN BY E.G.
DATE 11-20-63
CHECKED BY I. D.B.

FOR INFORMATION ONLY

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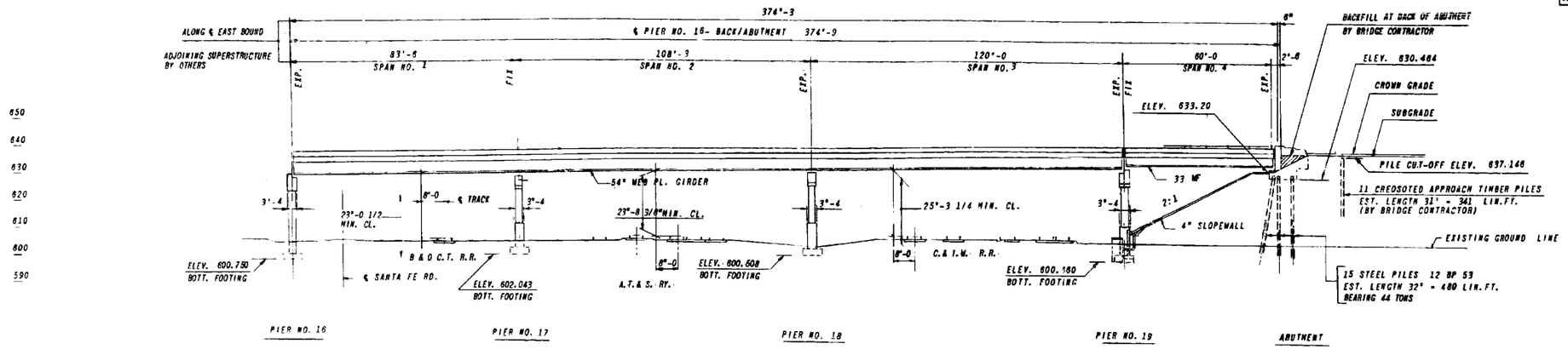
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2454
SHEET NO. SBX1 OF SBX14 SHEETS

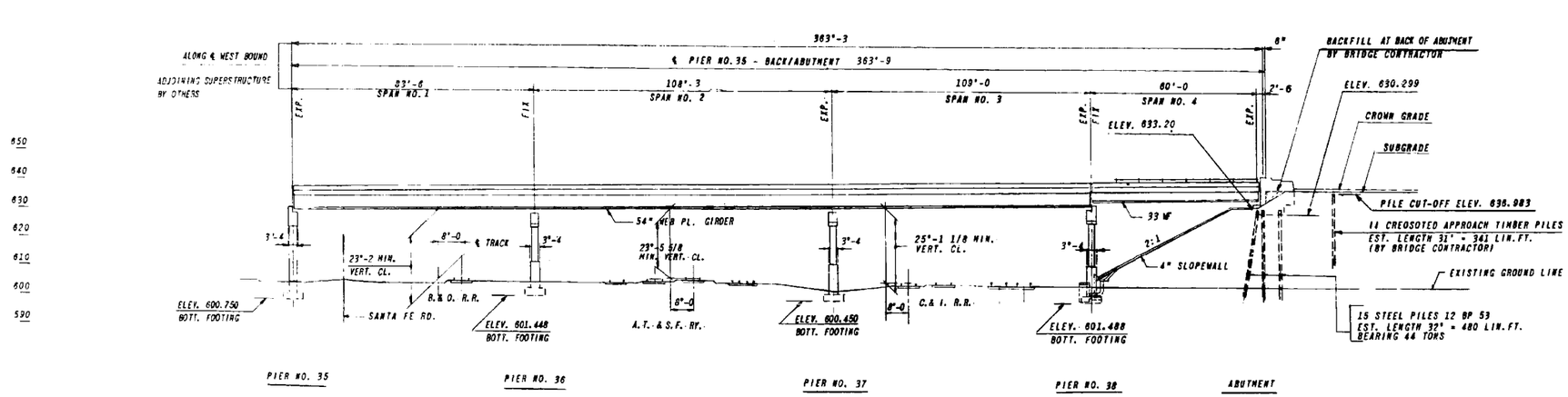
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	299
		CONTRACT NO. 60W75		
		ILLINOIS FED. AID PROJECT		

F.A. RTE.	SECTION	EXPRESSWAYS	TOTAL SHEETS	SHEET NO
133	0606-627 VB	SOUTHWEST	62	6
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



ELEVATION EASTBOUND STRUCTURE

B. M. NO. 4
EL. 605.92
STA. 65+12
LT. 170'



ELEVATION WESTBOUND STRUCTURE

ILLINOIS DIVISION OF HIGHWAYS	
SOUTHWEST EXPRESSWAY	
F.A. RT. 133	
LAWNDALE AVE. STRUCTURE OVER A.T. & S.F. RY., C. & I.W. R.R. & B. & O.C.T. R.R.	
SECTION 0606-627 VB	
ELEVATIONS	
SCALE: HORIZ. 1"=20' VERT. 1"=20'	DRAWN BY E.G.
DATE 11-20-03	CHECKED BY I.D.P.

REVISIONS	
NAME	DATE
DESIGNED ST.	
REVIEWED CWW	

FOR INFORMATION ONLY

USER NAME = Lin_41	DESIGNED - RGB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2454
SHEET NO. SBX2 OF SBX14 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-037B-R	COOK	787	300
		CONTRACT NO. 60W75		
	ILLINOIS FED. AID PROJECT			