NOTES:
1. ALL JUNCTION BOXES SHOWN ON THIS SHEET ARE NON-METALLIC, EMBEDDED IN STRUCTURE.

N

MATCHLINE "M"
SEE SHEET 8 OF 13
FOR CONTINUATION

MATCHLINE "N"
SEE SHEET 10 OF 13
FOR CONTINUATION

PROPOSED LIGHTING CONTROLLER "T"
STA 938+27, SET BACK 70 FT

3-350 MCM
IN 3" RGSC

UC, RGSC
(2) 3" DIA., 101 FT

EX ROW

CKTS: TG & TH
3-1/C#2, 1/C#4 GND,
1 1/2" DIA. UNIT DUCT
(TYP.)

TA2
STA 944+45
SET BACK 15 FT

TB1
STA 942+20
SET BACK 15 FT

TA1
STA 939+95
SET BACK 15 FT

TG1
STA 937+65
SET BACK 15 FT

TH1
STA 935+43

TG2
STA 933+12

21" X 11" X8"
STA 936+47

945+00

940+00

WB STONY ISLAND CON (LINE F)

935+00

830+00

835+00

825+00

EB STONY ISLAND CON (LINE E)

TE1
STA 935+43

TF2
STA 933+12

21" X 11" X 8
STA 936+47

TF1
STA 937+65
SET BACK 15 FT

TC1
STA 827+35
SET BACK 15 FT

TD1
STA 825+10
SET BACK 15 FT

TC2
STA 822+85
SET BACK 15 FT

CKTS: TC & TD
3-1/C#2, 1/C#4 GND,
1 1/2" DIA. UNIT DUCT
(TYP.)

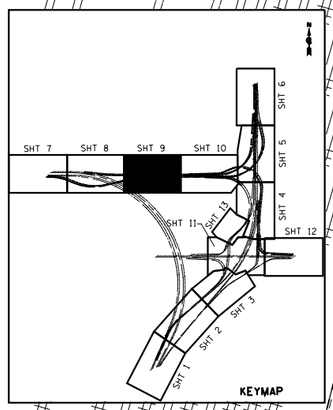
CKTS: TE & TF
3-1/C#2, 1/C#4 GND,
1 1/2" DIA. UNIT DUCT
(TYP.)

NORFOLK SOUTHERN

EX BR ROW

WOODLAWN AVE

EX ROW



EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

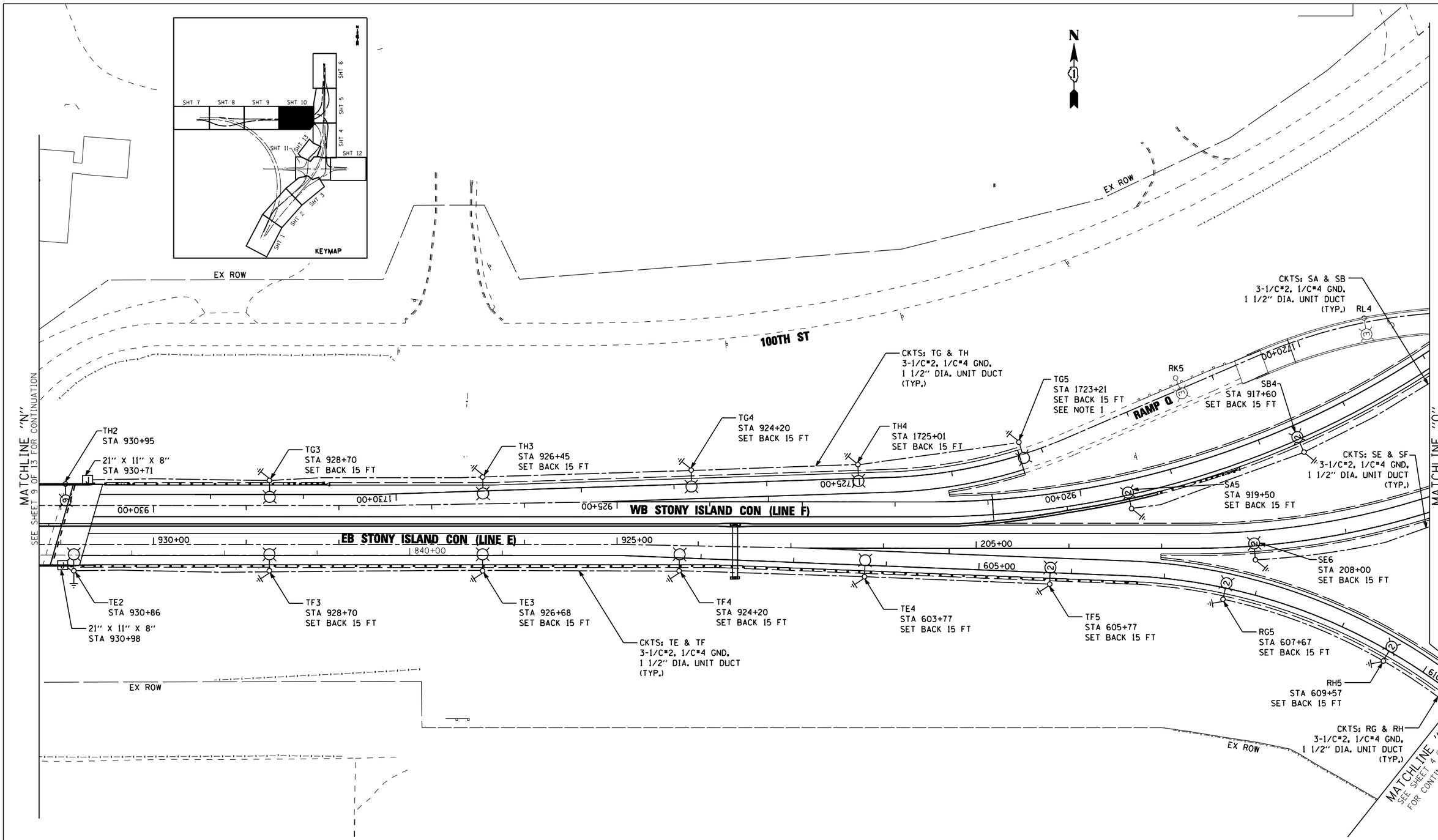
PROPOSED LIGHTING PLAN
STONY ISLAND CONNECTOR

SCALE: 1"=50' | SHEET NO. 9 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	301
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

LT-23

S:\Projects\3818 Stony Island Feeder - BBA\Project Work\CADD Sheets\D1660J12-sht-light-23.dgn



NOTES:
1. ALL JUNCTION BOXES SHOWN ON THIS SHEET ARE NON-METALLIC, EMBEDDED IN STRUCTURE.

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LT-24

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
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	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED LIGHTING PLAN
STONY ISLAND CONNECTOR

SCALE: 1"=50' | SHEET NO. 10 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	302
		CONTRACT NO. 60J12		
		ILLINOIS	FED. AID PROJECT	

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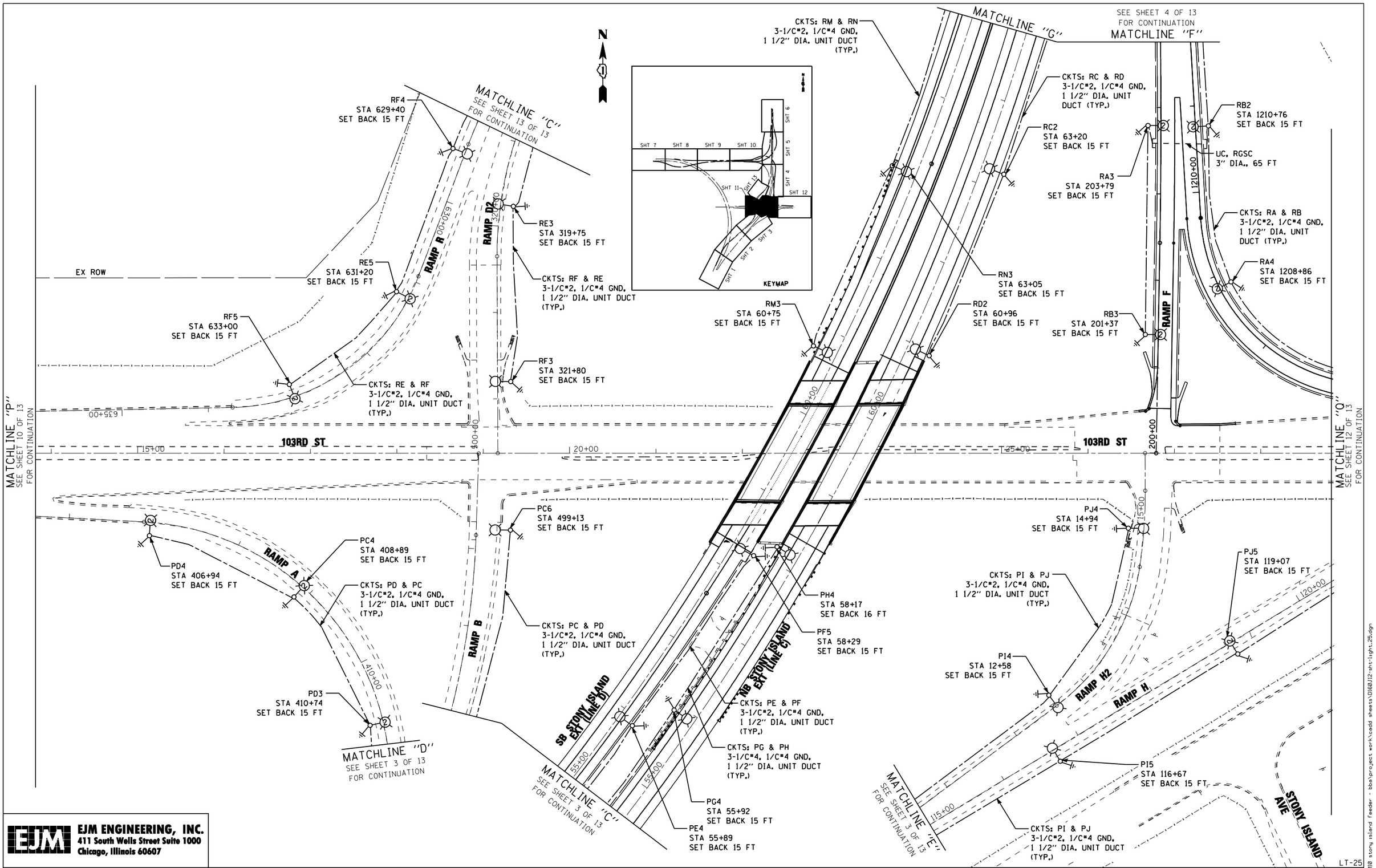

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FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

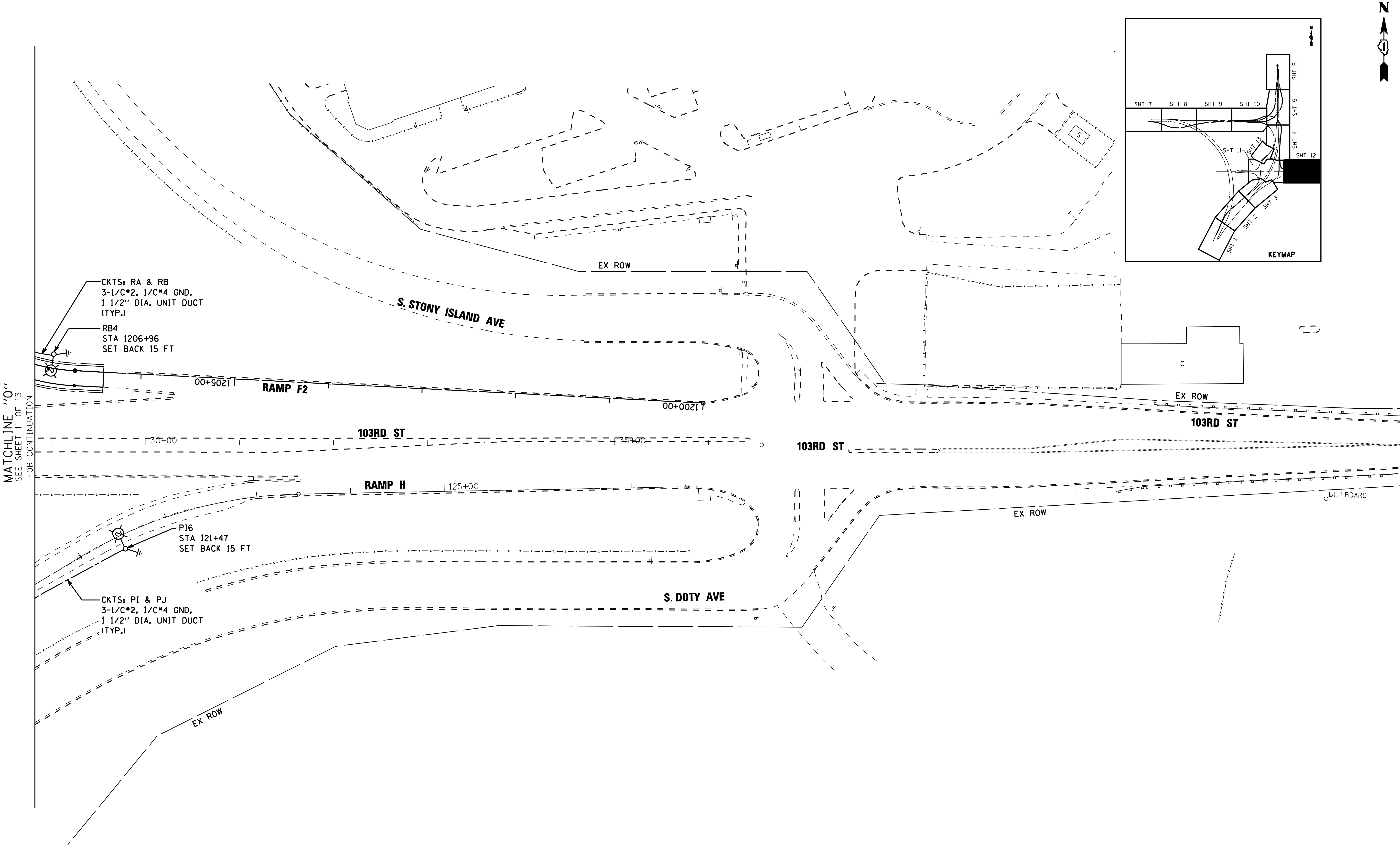
PROPOSED LIGHTING PLAN
103RD STREET

SCALE: 1"=50' | SHEET NO. 11 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	303
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

LT-25

st-projects\3810 stony island feeder - bbh\project work\cadd sheets\D1680J12-ztnlight-25.dgn



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FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -	
		DRAWN - BHH	REVISED -	
	PLOT SCALE = 50.000'/ IN.	CHECKED - MKR	REVISED -	
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED LIGHTING PLAN
103RD STREET

SCALE: 1"=50' | SHEET NO. 12 OF 13 SHEETS | STA. | TO STA.

LT-26

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	304
		CONTRACT NO. 60J12		

ILLINOIS | FED. AID PROJECT

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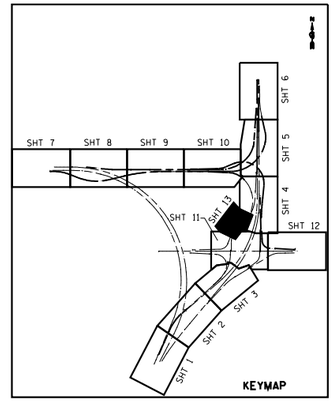

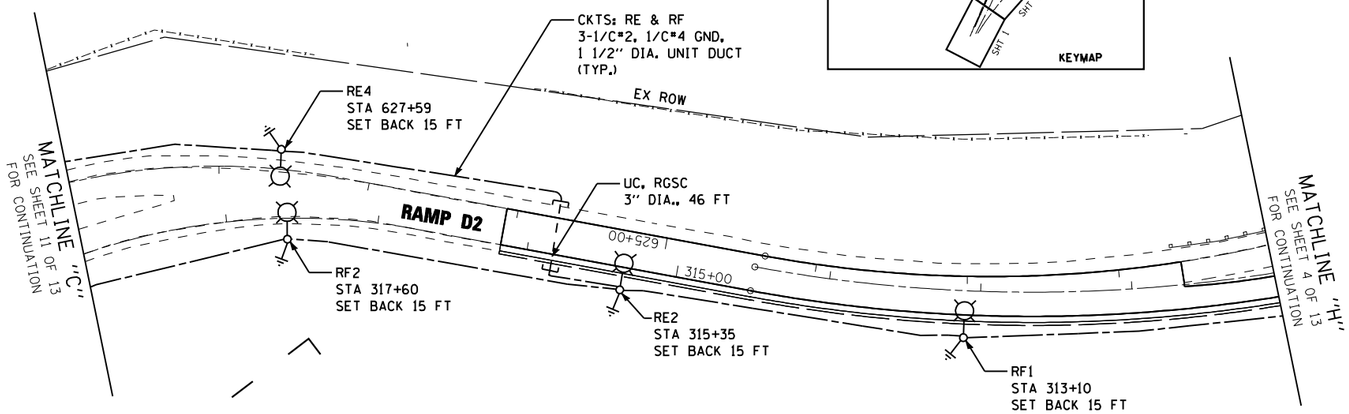

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LT-27

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

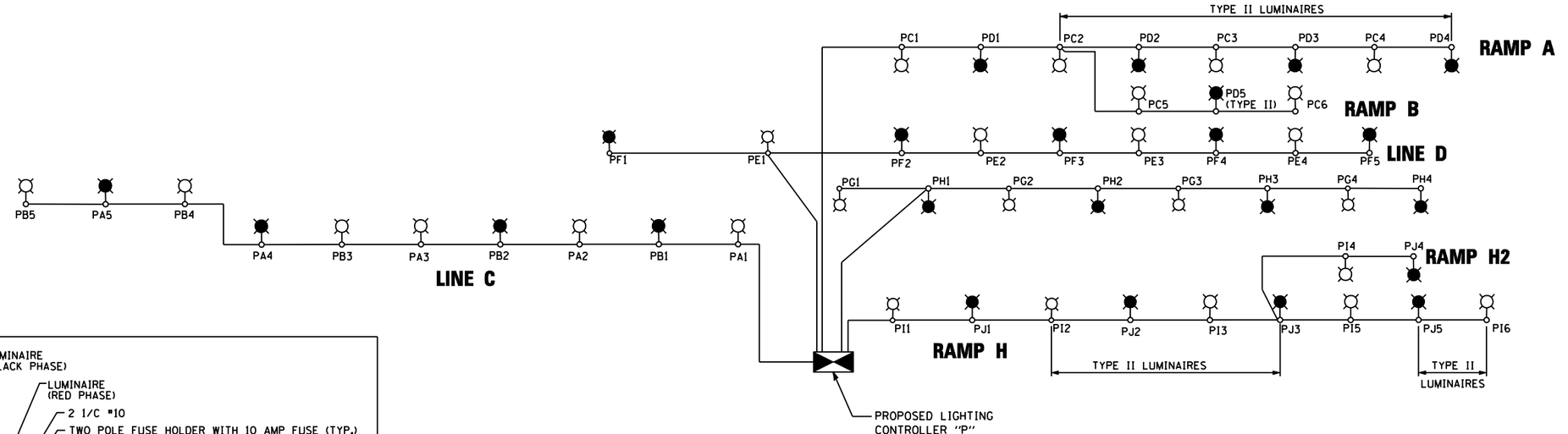
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

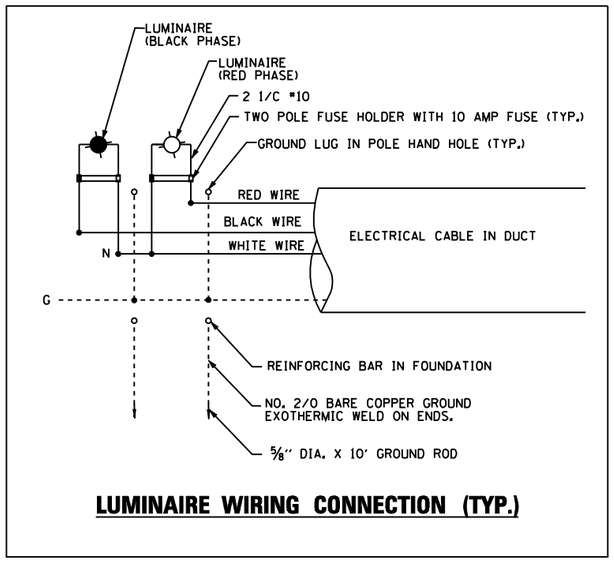
PROPOSED LIGHTING PLAN
STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 13 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	305
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

LOAD TABLE LIGHTING CONTROLLER "P" (@ 240 VOLT)					
CIRCUIT	RED PHASE		CIRCUIT	BLACK PHASE	
	AMPS	WATTS		AMPS	WATTS
A	10	2400	B	10	2400
C	12	2880	D	10	2400
E	8	1920	F	10	2400
G	8	1920	H	8	1920
I	12	2880	J	10	2400
TOTAL	50	12000	TOTAL	48	11520





LUMINAIRE WIRING CONNECTION (TYP.)

LEGEND

- PROPOSED 400W LIGHTING UNIT (RED PHASE) (TYPE III U.N.O.)
- PROPOSED 400W LIGHTING UNIT (BLACK PHASE) (TYPE III U.N.O.)
- EXISTING LIGHTING UNIT FROM PREVIOUS CONTRACT
- LIGHTING CONTROLLER, 240/480V, SINGLE PHASE, 3 WIRE
- 100W HPS UNDERPASS LUMINAIRE, 240V (RED PHASE), TYPE IV
- 100W HPS UNDERPASS LUMINAIRE, 240V (BLACK PHASE), TYPE IV

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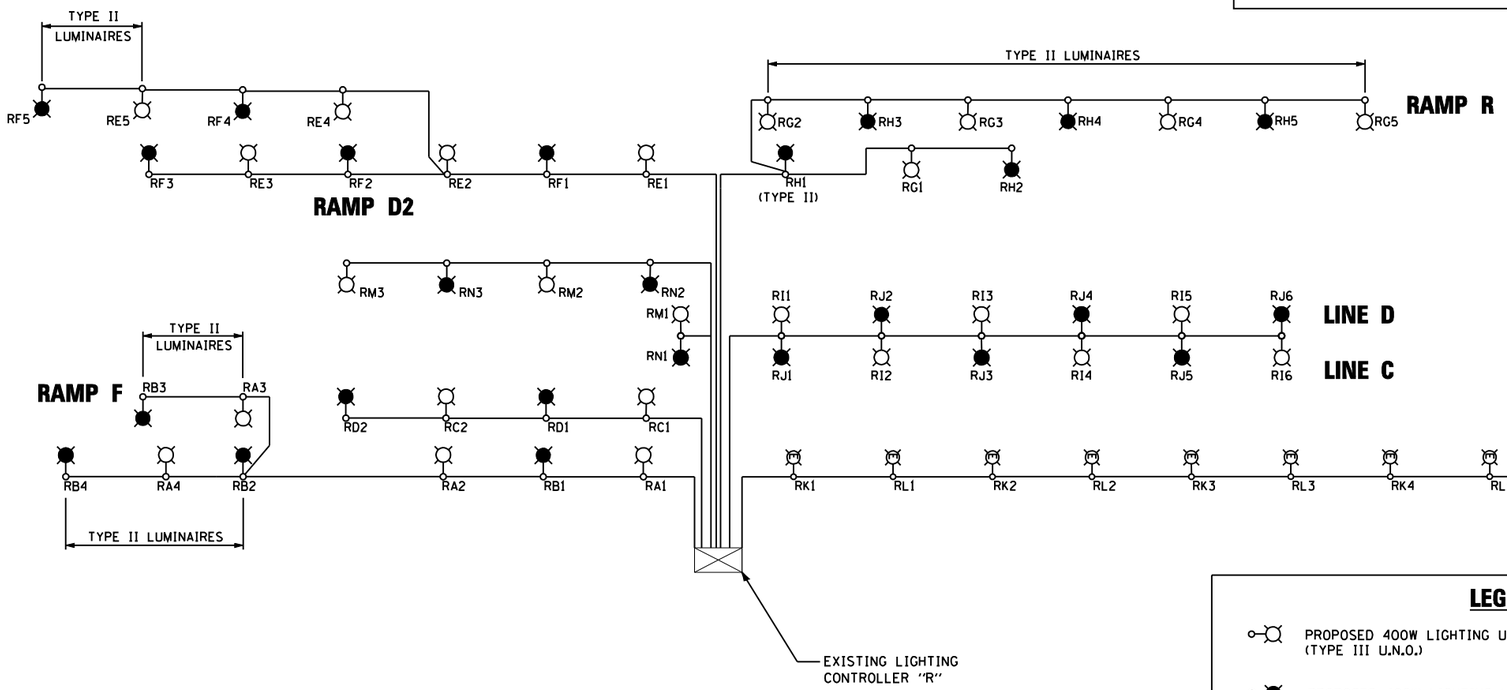
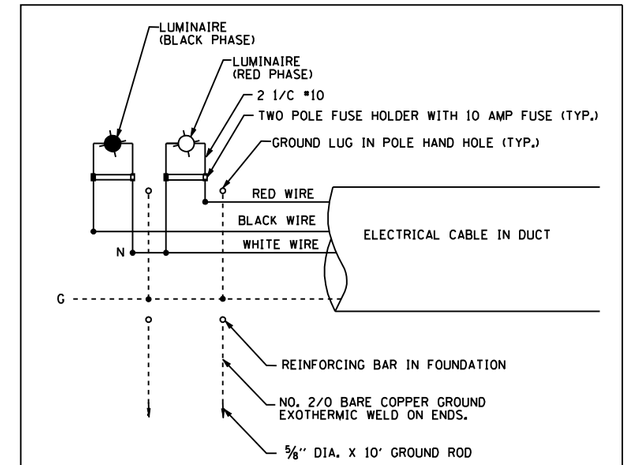
LT-28

FILE NAME =	USER NAME = rswenson	DESIGNED - JWL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STONY ISLAND SINGLE LINE DIAGRAM – CONTROLLER "P"	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN - BHH	REVISED -			94	2012-059-BR	COOK	631 / 306
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -					CONTRACT NO. 60J12	
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -		SCALE: NONE / SHEET NO. 1 OF 1 SHEETS / STA. / TO STA.			ILLINOIS FED. AID PROJECT	

s:\projects\3010 stony island feeder - bob\project work\cadd sheets\10160J12-sht-light.28.dgn

LOAD TABLE LIGHTING CONTROLLER "R" (@ 240 VOLT)					
CIRCUIT	RED PHASE		CIRCUIT	BLACK PHASE	
	AMPS	WATTS		AMPS	WATTS
A	8	1920	B	8	1920
C	4	960	D	4	960
E	10	2400	F	10	2400
G	10	2400	H	10	2400
I	12	2880	J	12	2880
K	10	2400	L	8	1920
M	6	1440	N	6	1440
TOTAL	60	14400	TOTAL	58	13920





LUMINAIRE WIRING CONNECTION (TYP.)

LEGEND

- PROPOSED 400W LIGHTING UNIT (RED PHASE) (TYPE III U.N.O.)
- PROPOSED 400W LIGHTING UNIT (BLACK PHASE) (TYPE III U.N.O.)
- EXISTING 400W LIGHTING UNIT FROM PREVIOUS CONTRACT
- LIGHTING CONTROLLER, 240/480V, SINGLE PHASE, 3 WIRE
- 100W HPS UNDERPASS LUMINAIRE, 240V (RED PHASE), TYPE IV
- 100W HPS UNDERPASS LUMINAIRE, 240V (BLACK PHASE), TYPE IV

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LT-29

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

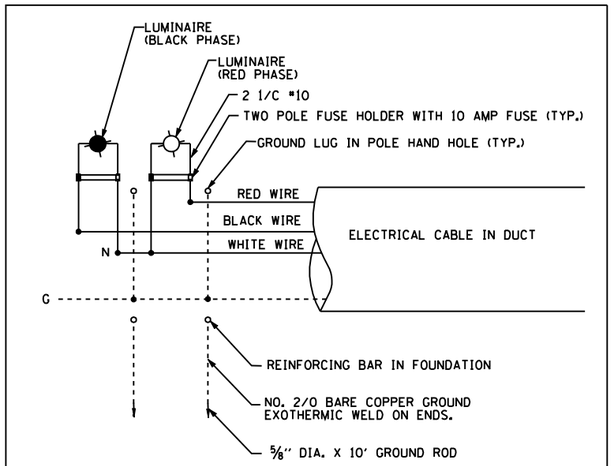
STONY ISLAND
SINGLE LINE DIAGRAM – CONTROLLER "R"

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

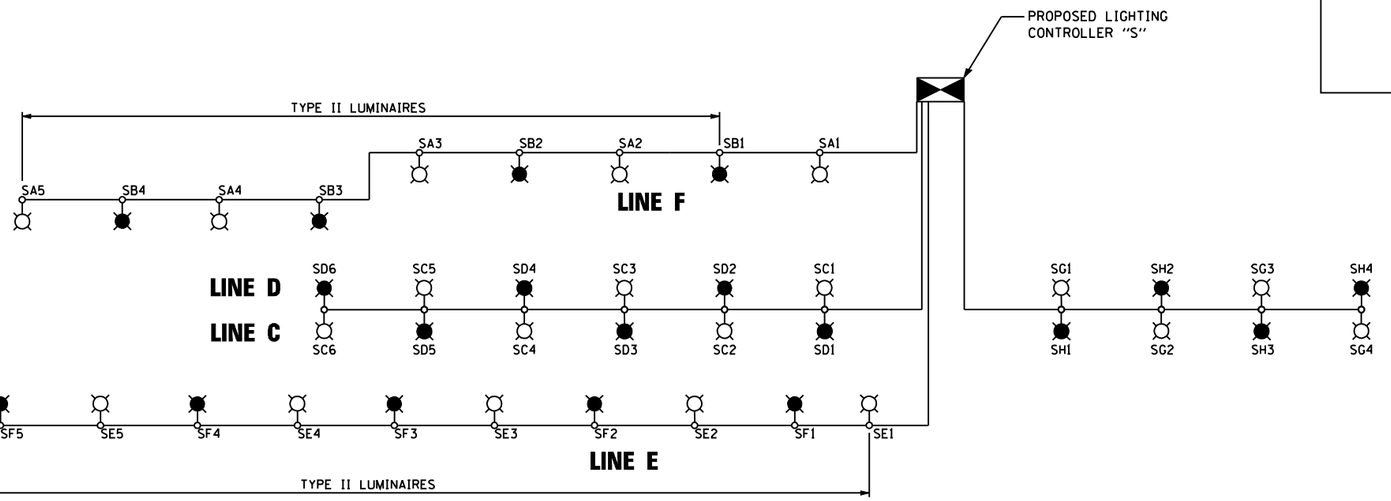
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	307
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

s:\projects\3808 stony island feeder - bb\project work\road sheets\0130212-sht-light_29.dgn

LOAD TABLE LIGHTING CONTROLLER "S" (@ 240 VOLT)					
CIRCUIT	RED PHASE		CIRCUIT	BLACK PHASE	
	AMPS	WATTS		AMPS	WATTS
A	10	2400	B	8	1920
C	12	2880	D	12	2880
E	12	2880	F	10	2400
G	8	1920	H	8	1920
TOTAL	42	10080	TOTAL	48	11520



LUMINAIRE WIRING CONNECTION (TYP.)



LEGEND

- PROPOSED 400W LIGHTING UNIT (RED PHASE) (TYPE III U.N.O.)
- PROPOSED 400W LIGHTING UNIT (BLACK PHASE) (TYPE III U.N.O.)
- EXISTING LIGHTING UNIT FROM PREVIOUS CONTRACT
- LIGHTING CONTROLLER, 240/480V, SINGLE PHASE, 3 WIRE
- 100W HPS UNDERPASS LUMINAIRE, 240V (RED PHASE), TYPE IV
- 100W HPS UNDERPASS LUMINAIRE, 240V (BLACK PHASE), TYPE IV

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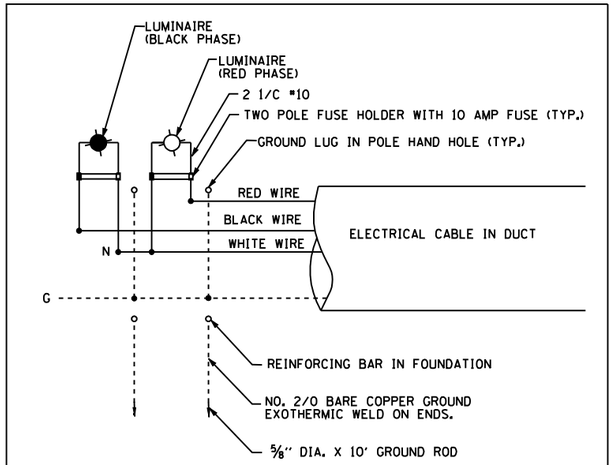
Chicago, Illinois 60607

LT-30

FILE NAME =	USER NAME = rswenson	DESIGNED - JWL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STONY ISLAND SINGLE LINE DIAGRAM – CONTROLLER "S"	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		DRAWN - BHH	REVISED -			94	2012-059-BR	COOK	631 / 308
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -					CONTRACT NO. 60J12	
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -		SCALE: NONE / SHEET NO. 1 OF 1 SHEETS / STA. / TO STA.		ILLINOIS	FED. AID PROJECT	

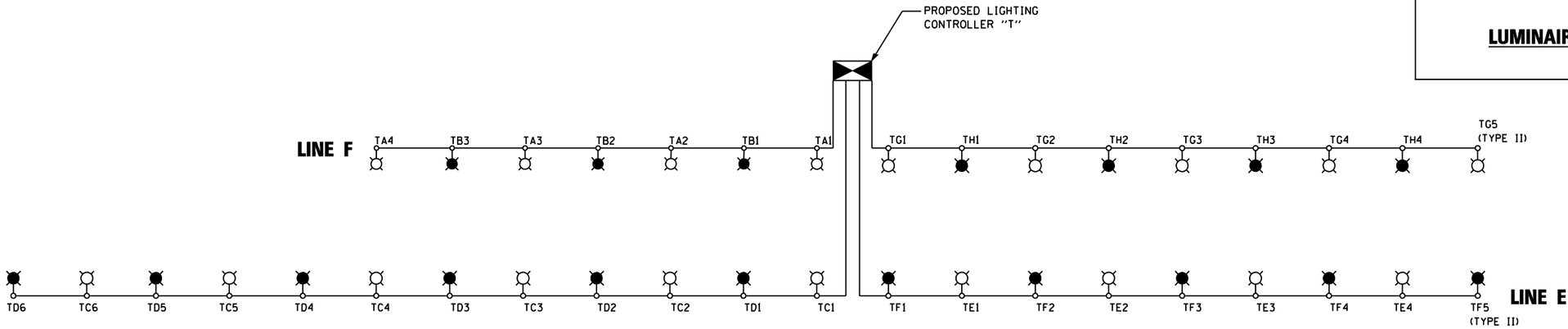
s:\projects\3010 stony island feeder - bbs\project work\cadd sheets\01260j12-sht-light_30.dgn

LOAD TABLE LIGHTING CONTROLLER "T" (@ 240 VOLT)					
CIRCUIT	RED PHASE		CIRCUIT	BLACK PHASE	
	AMPS	WATTS		AMPS	WATTS
A	8	1920	B	6	1440
C	12	2880	D	12	2880
E	8	1920	F	10	2400
G	10	2400	H	8	1920
TOTAL	38	9120	TOTAL	36	8640



LUMINAIRE WIRING CONNECTION (TYP.)

N



LEGEND

- PROPOSED 400W LIGHTING UNIT (RED PHASE) (TYPE III U.N.O.)
- PROPOSED 400W LIGHTING UNIT (BLACK PHASE) (TYPE III U.N.O.)
- EXISTING LIGHTING UNIT FROM PREVIOUS CONTRACT
- LIGHTING CONTROLLER, 240/480V, SINGLE PHASE, 3 WIRE
- 100W HPS UNDERPASS LUMINAIRE, 240V (RED PHASE), TYPE IV
- 100W HPS UNDERPASS LUMINAIRE, 240V (BLACK PHASE), TYPE IV

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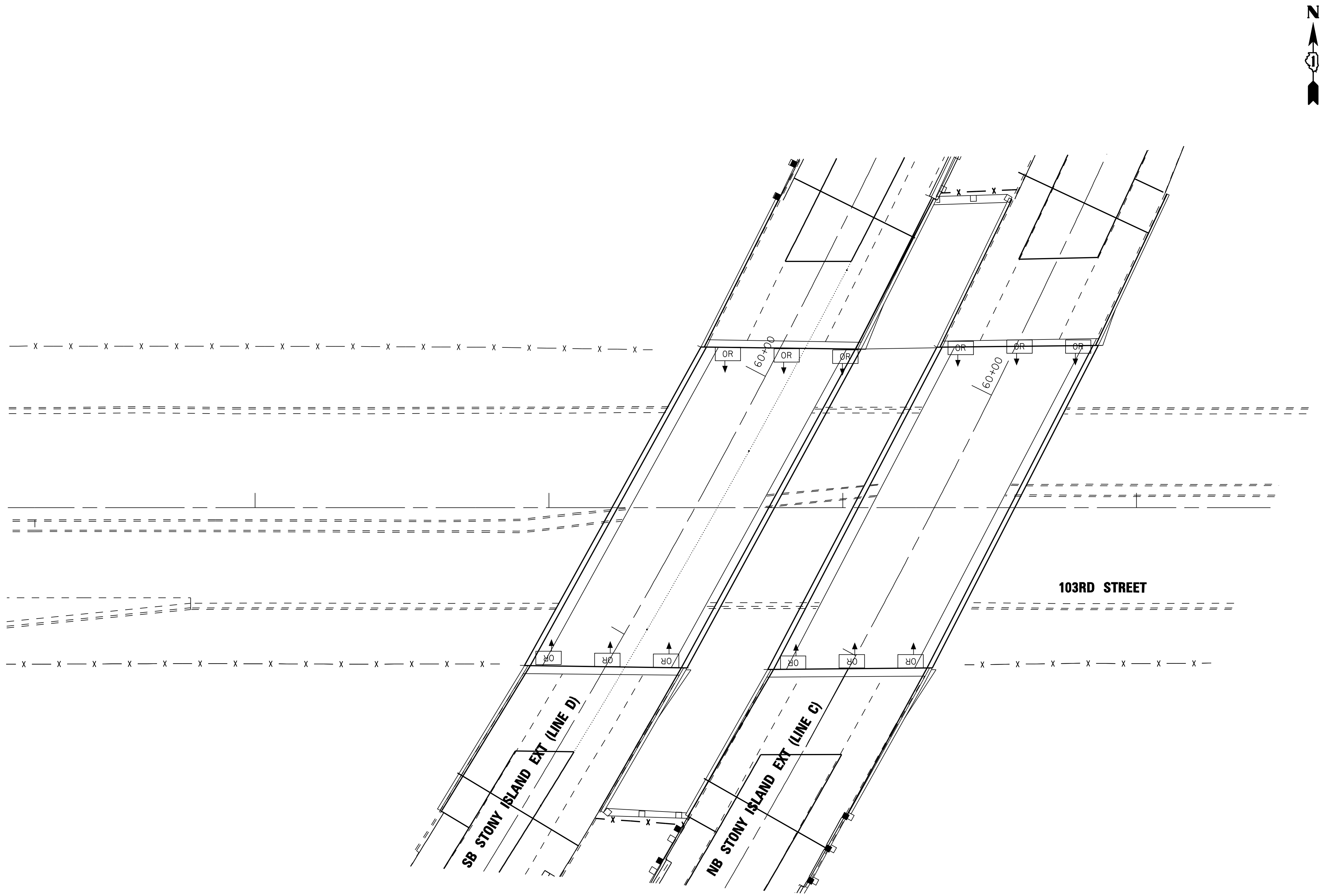
LT-31

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STONY ISLAND SINGLE LINE DIAGRAM – CONTROLLER "T"
		DRAWN - BHH	REVISED -		
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -		SCALE: NONE / SHEET NO. 1 OF 1 SHEETS / STA. / TO STA.
	PLOT DATE = 5/3/2013	DATE - 3/29/13	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	309
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

s:\projects\3808 stony island feeder - bbs\project work\road sheets\0808j12-sht-light_31.dgn



NOTES:

1. UNDERPASS LUMINAIRES ON SB STRUCTURE MUST REMAIN IN OPERATION DURING STAGE I CONSTRUCTION. PROPOSED UNDERPASS LUMINAIRES ON NB STRUCTURE MUST BE ACTIVATED AT THE COMMENCEMENT OF STAGE II CONSTRUCTION.

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Chicago, Illinois 60607

LT-32

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STONY ISLAND EXTENSION OVER 103RD STREET CDOT UNDERPASS LIGHTING REMOVAL PLAN	
		DRAWN - BHH	REVISED -			
	PLOT SCALE = 50.000'/ IN.	CHECKED - MKR	REVISED -			
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=20'	SHEET NO. OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	310
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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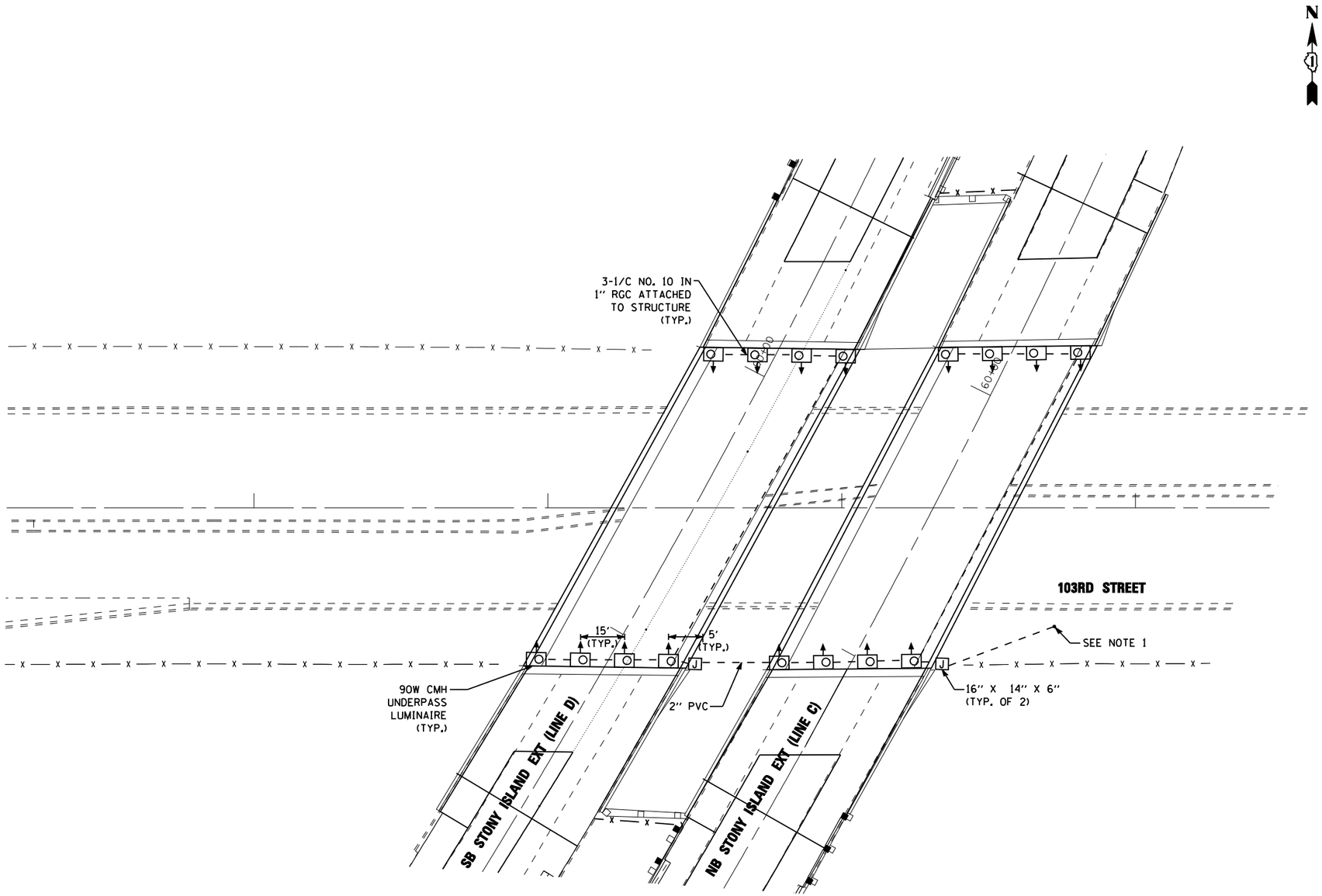

NOTES:

1. LOCATE EXISTING CONDUIT AND SPLICE TO NEW 2" PVC CONDUIT. REMOVE AND REPLACE EXISTING TRIPLEXED NO. 6 CABLE BETWEEN UNDERPASS LIGHTING MAIN JUNCTION BOX AND EXISTING CDOT TRANSCLOSURE #2. THE COST OF CABLE REMOVAL IS INCLUDED IN THE COST OF THE NEW CABLE.
2. 4" X 4" X 3" JUNCTION BOXES LOCATED AT EACH UNDERPASS LUMINAIRE ARE NOT SHOWN FOR CLARITY.

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411 South Wells Street Suite 1000
Chicago, Illinois 60607

LT-33

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

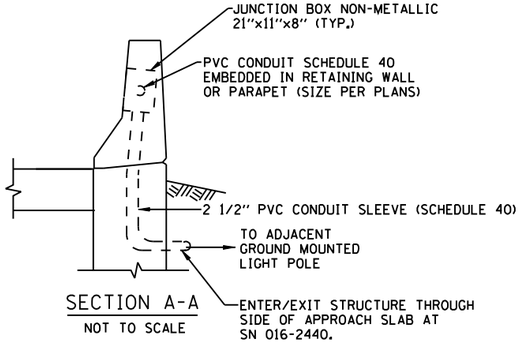
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

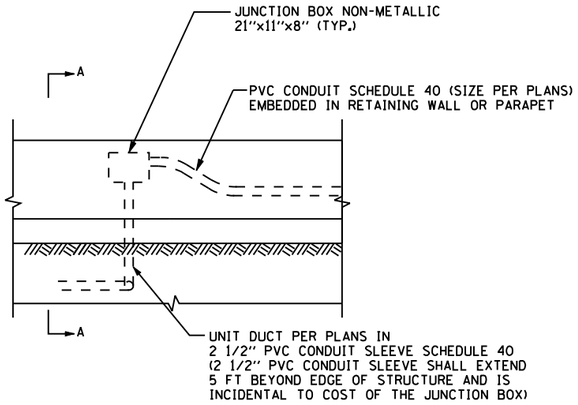
STONY ISLAND EXTENSION OVER 103RD STREET
CDOT UNDERPASS LIGHTING PLAN

SCALE: 1"=20' | SHEET NO. OF SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	311
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

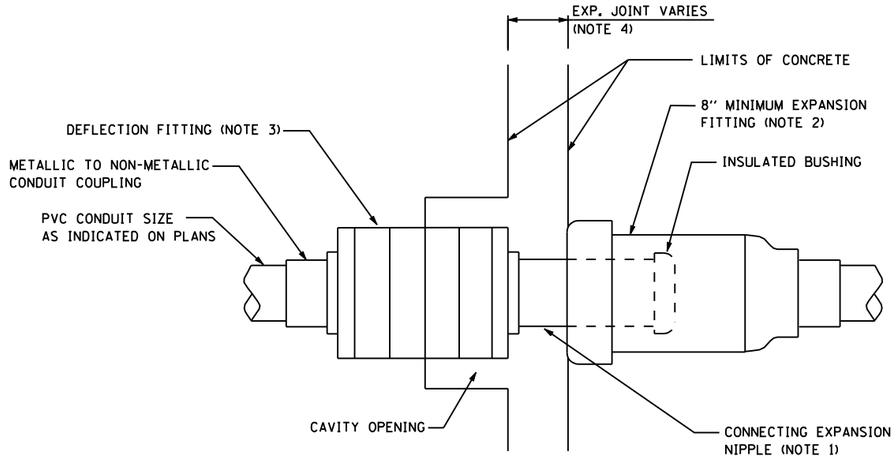
st-projects\3808 stony island feeder - bbs\project work\cadd sheets\D1680J12-ant-light-33_P-cop UPL.dgn





UNDERGROUND TO EMBEDDED CONDUIT TRANSITION

NOT TO SCALE



CONDUIT EXPANSION/DEFLECTING COUPLING

NOT TO SCALE

NOTES:

1. PROVIDE REQUIRED LENGTH OF CONNECTING EXPANSION NIPPLE. REFER TO STRUCTURAL DRAWINGS FOR THE EXPANSION JOINT CHARACTERISTICS.
2. THE BARREL OF THE FITTING SHALL BE FULLY EMBEDDED IN THE CONCRETE ON ONE SIDE OF THE EXPANSION JOINT.
3. A CAVITY OPENING, IF REQUIRED, SHALL BE 3" LARGER DIA. AND A MAX. DEPTH OF HALF OF THE DEFLECTION FITTING SHALL BE CENTERED IN THE OPENING AND EMBEDDED IN THE CONCRETE ONLY UP TO THE DEFLECTION FITTING CENTER.
4. REFER TO STRUCTURAL PLANS FOR EACH EXPANSION JOINT WIDTH, AND OTHER STRUCTURAL DETAILS.

EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

LT-34

FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

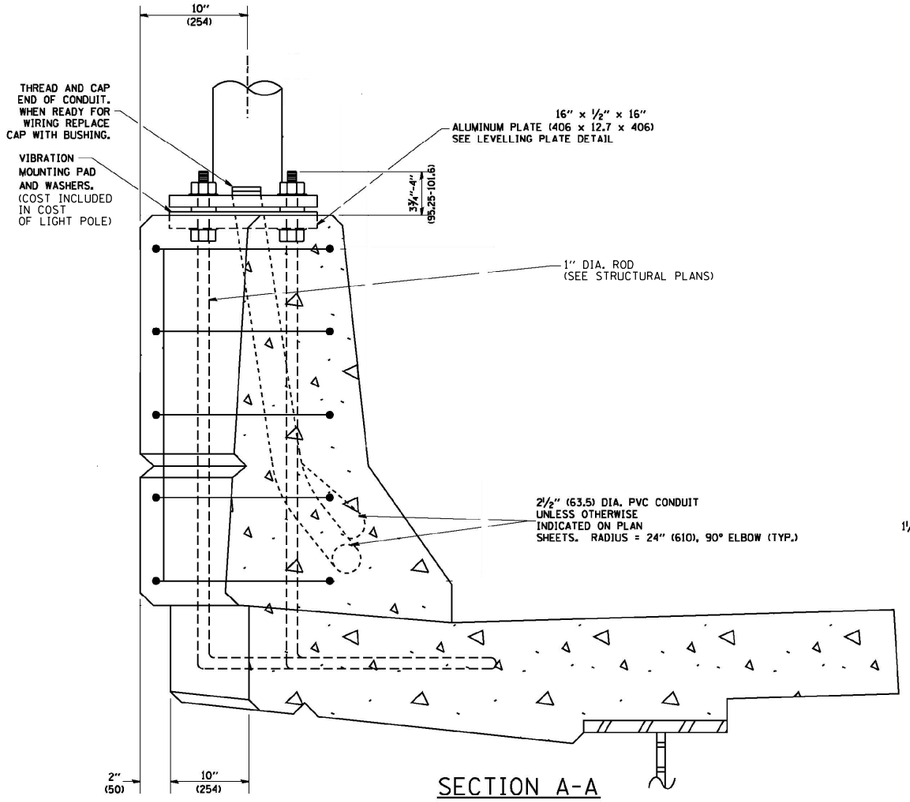
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STONY ISLAND EXTENSION
ELECTRICAL DETAILS

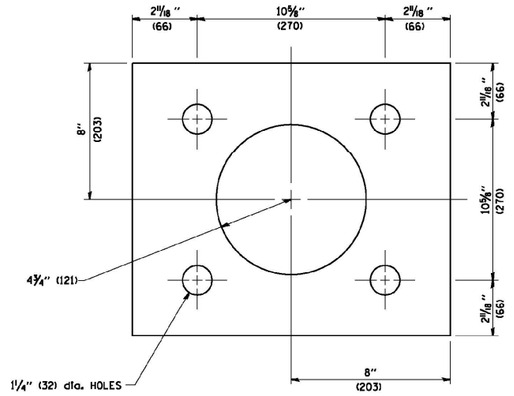
SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	312
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

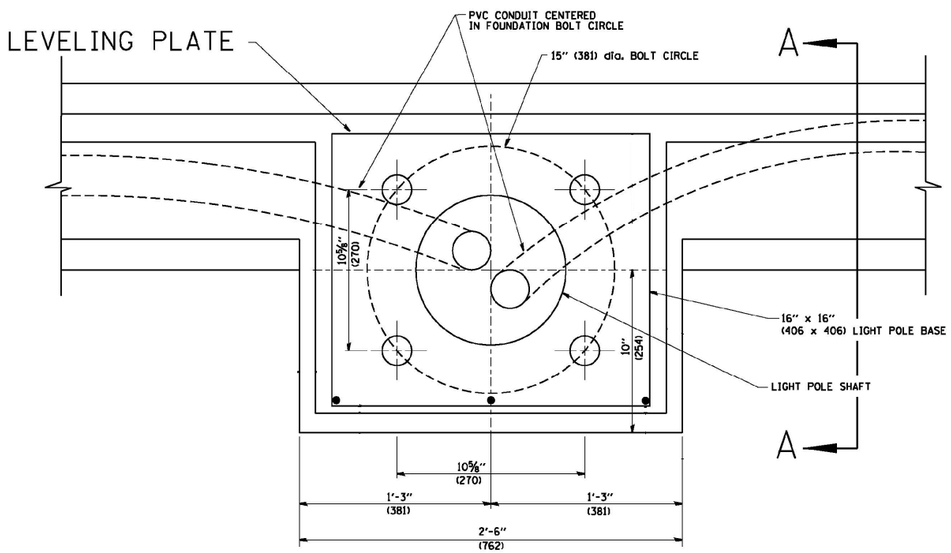
s:\projects\3808 stony island feeder - bbs\project work\road plan sheets\0160j12-sht-light-34-EJM details.dgn



SECTION A-A



LEVELING PLATE DETAIL



PLAN

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. LEVEL LIGHT POLE PLATES, USING THE FLANGE NUTS, PRIOR TO POURING THE PARAPET WALL. THE TOP OF THE PLATE SHALL BE AT THE SAME ELEVATION AS THE FINISHED CONCRETE PARAPET.
3. THE COST OF ANCHOR BOLTS, CONDUIT, LEVELLING PLATE AND FOUNDATION IS INCLUDED IN THE COST OF THE BRIDGE STRUCTURE.

EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

E-35

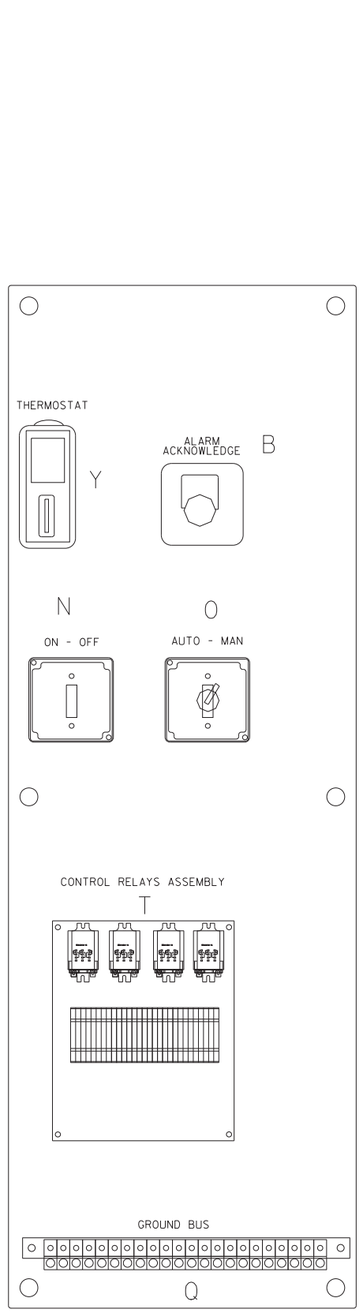
FILE NAME =	USER NAME = rswanson	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - MKR	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

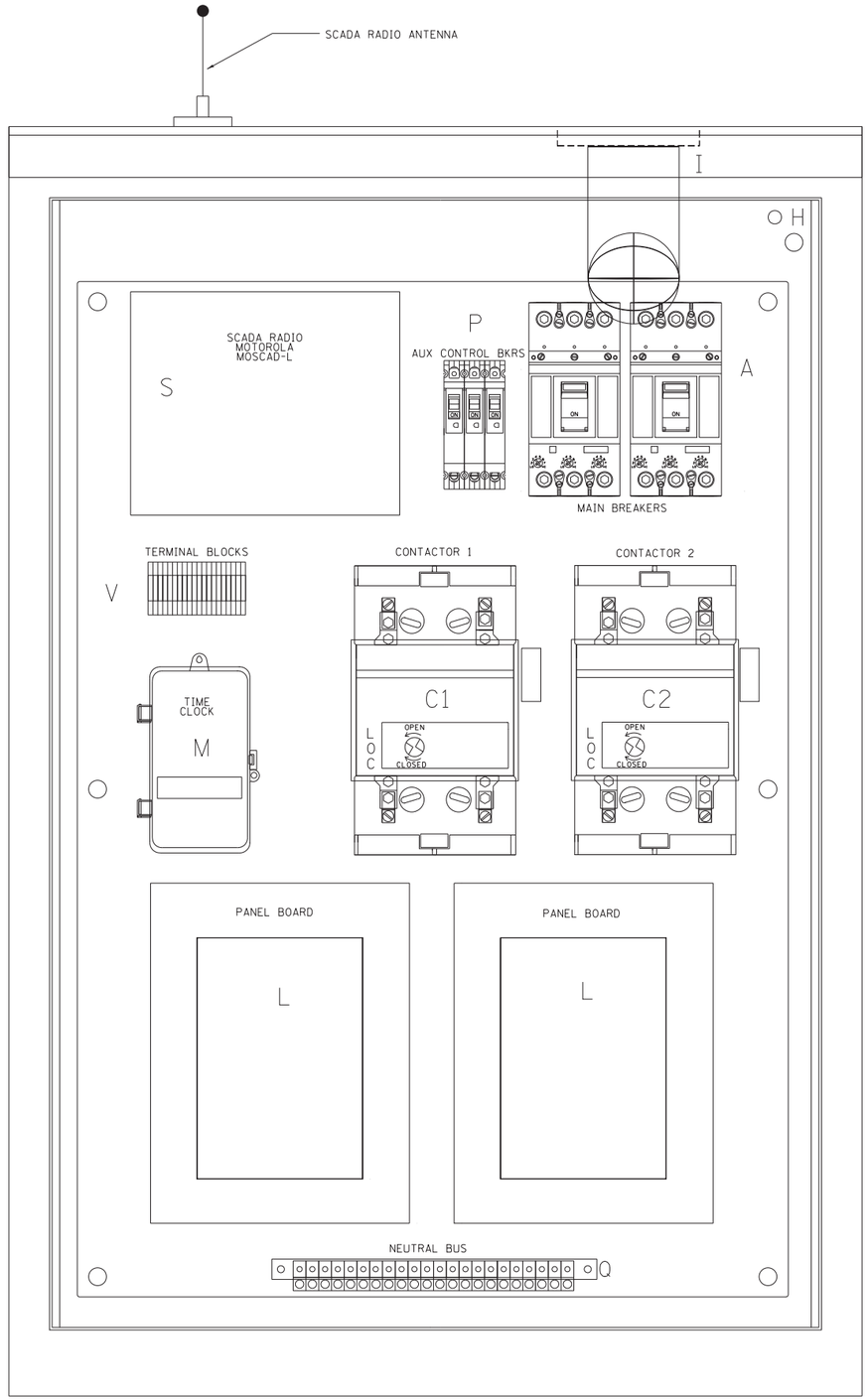
LIGHT POLE MOUNTED ON CONCRETE PARAPET WALL
15" (381 mm) BOLT CIRCLE

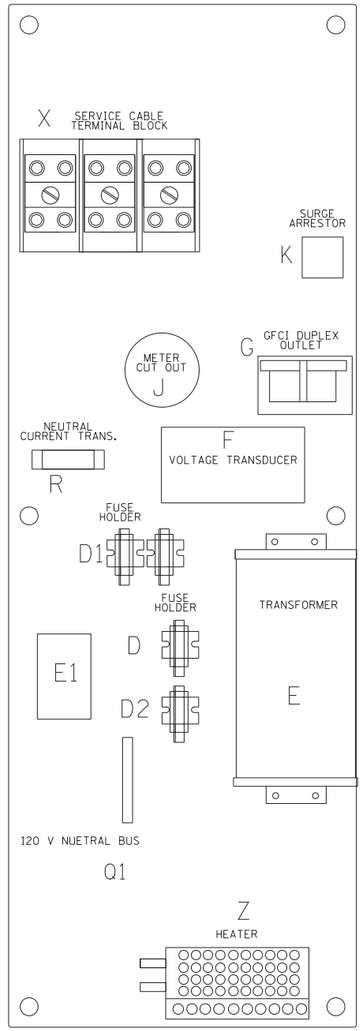
SCALE: NONE | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	313
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



LEFT SIDE PANEL





RIGHT SIDE PANEL

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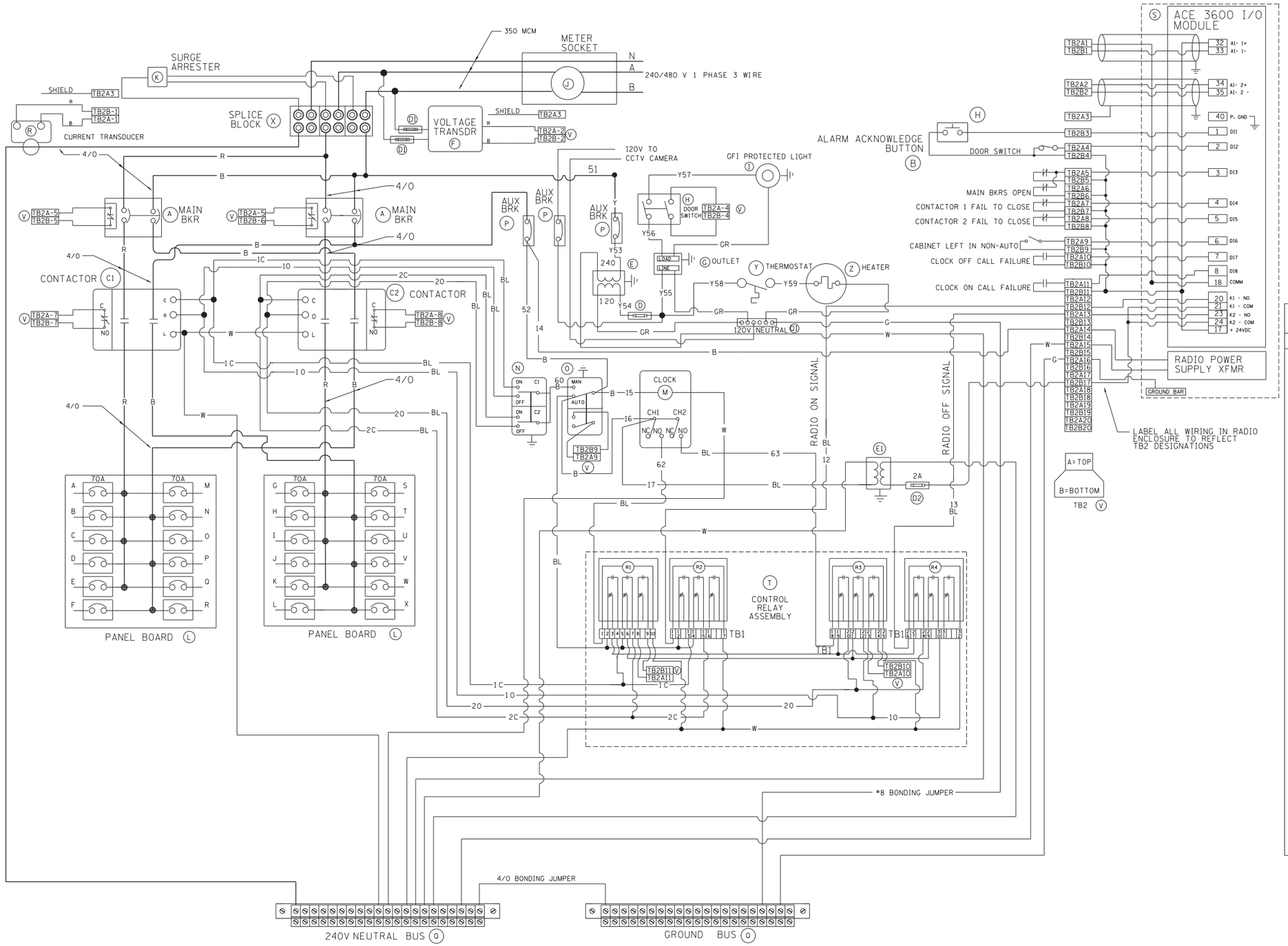
		DRAWN -	REVISED - R. TOMSONS 05-11-09
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 03-10-10
	PLOT DATE = 3/29/2012	DATE -	REVISED - R. TOMSONS 03-29-12

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. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	314
	BE-205	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	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-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
Q1	1	COPPER NEUTRAL BUS WITH 1 1/0 AND #6 CONDUCTOR POINTS
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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	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. 2 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	315
	BE-205	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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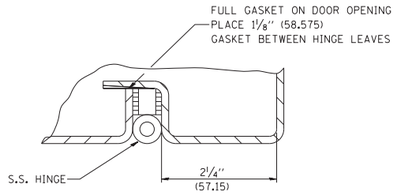

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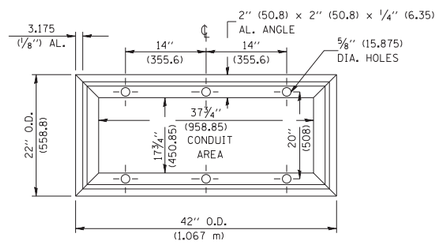
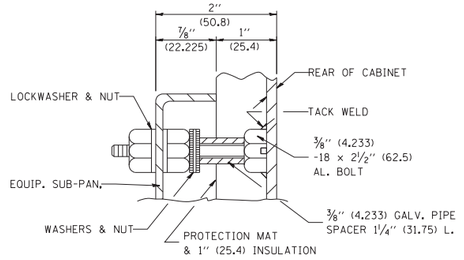


BASE MTG. DETAIL



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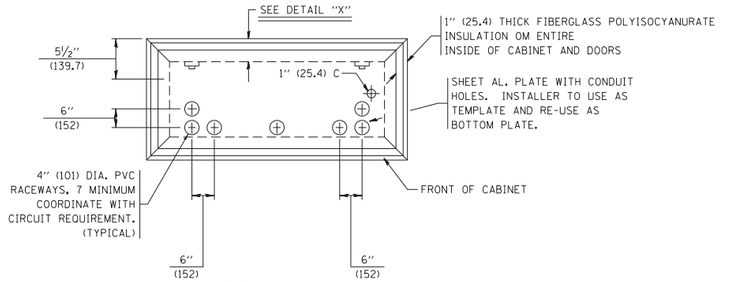

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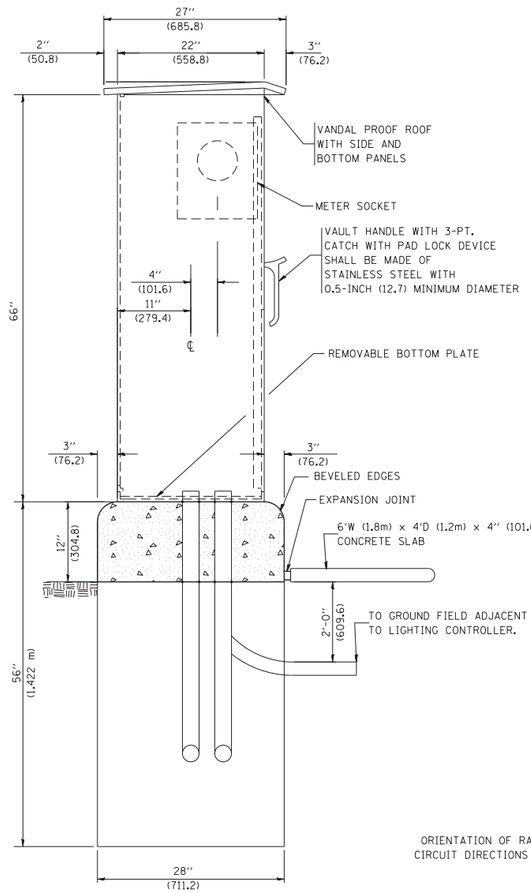
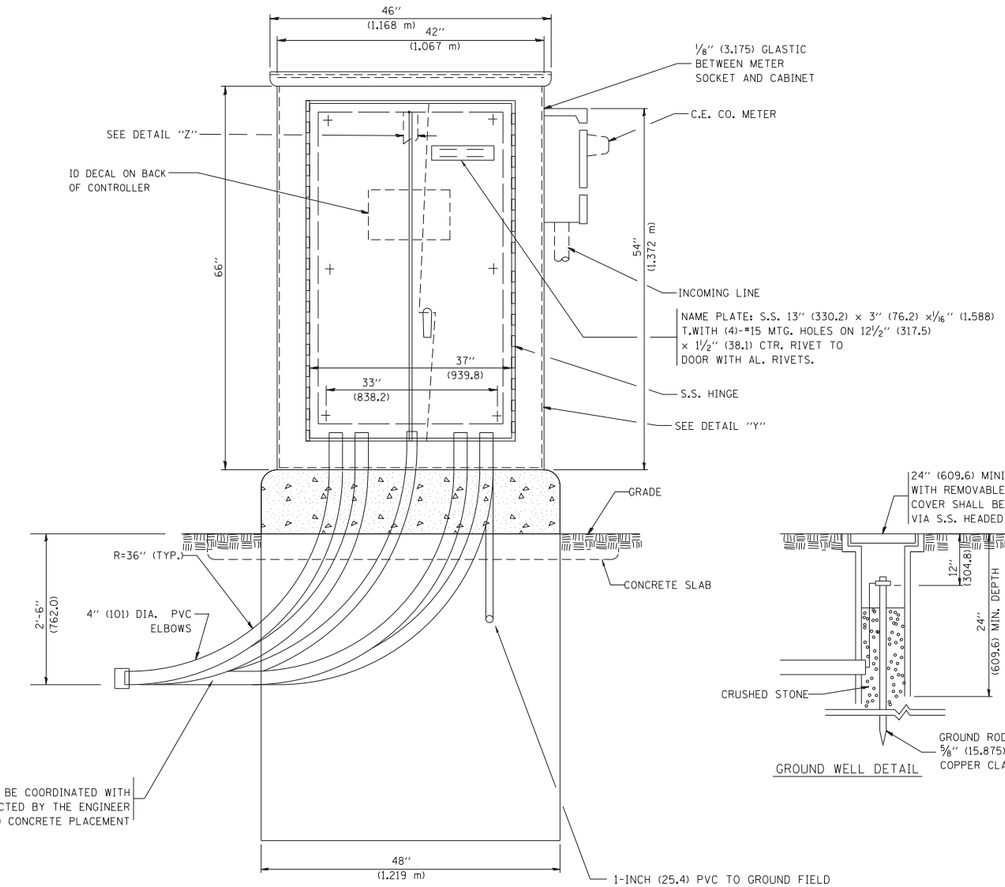
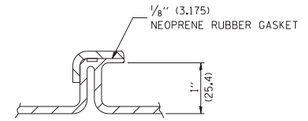


LEFT SIDE ELEVATION



FRONT ELEVATION



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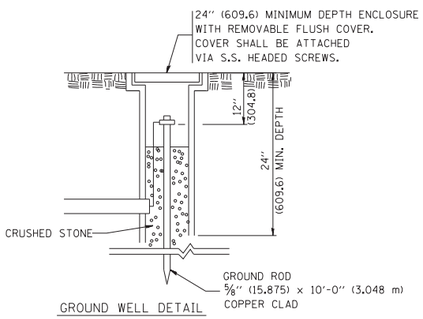
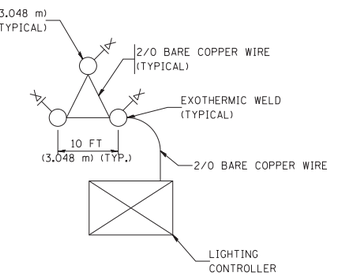


GROUND WELL DETAIL



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

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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. 3 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	316
	BE-205	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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:

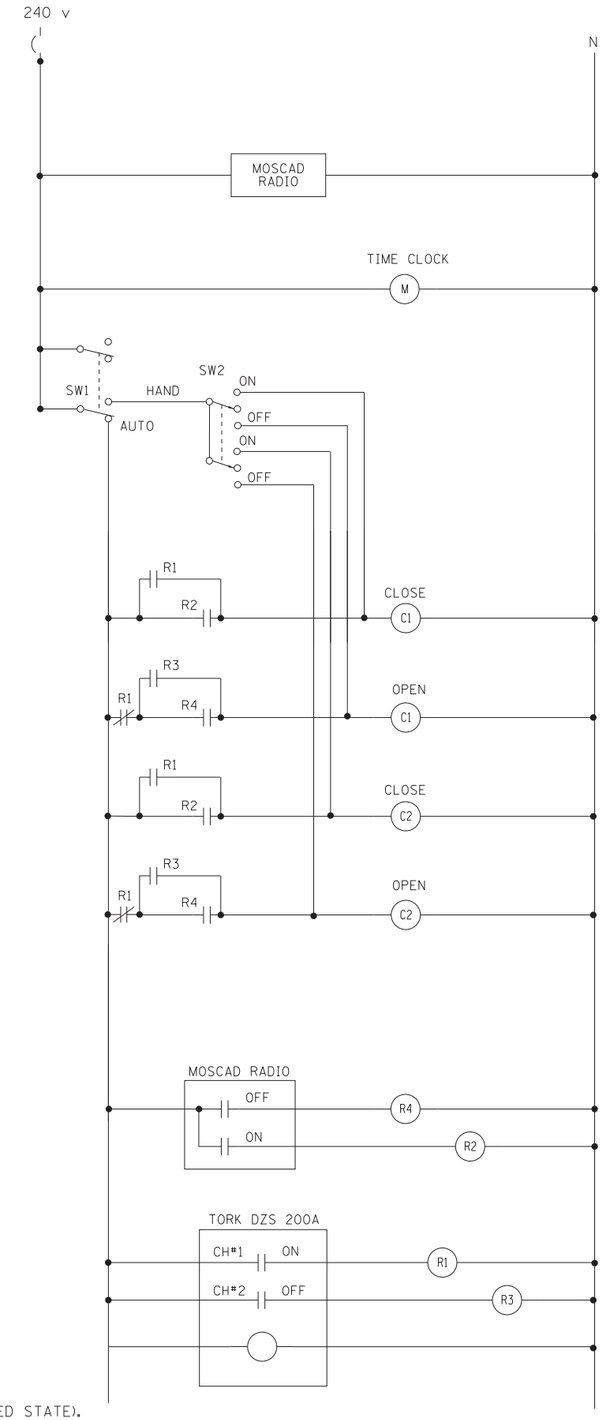
    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
    G - GREY

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

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\be205.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - R. TOMSONS 08-19-04
		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. 4 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	317
	BE-205	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

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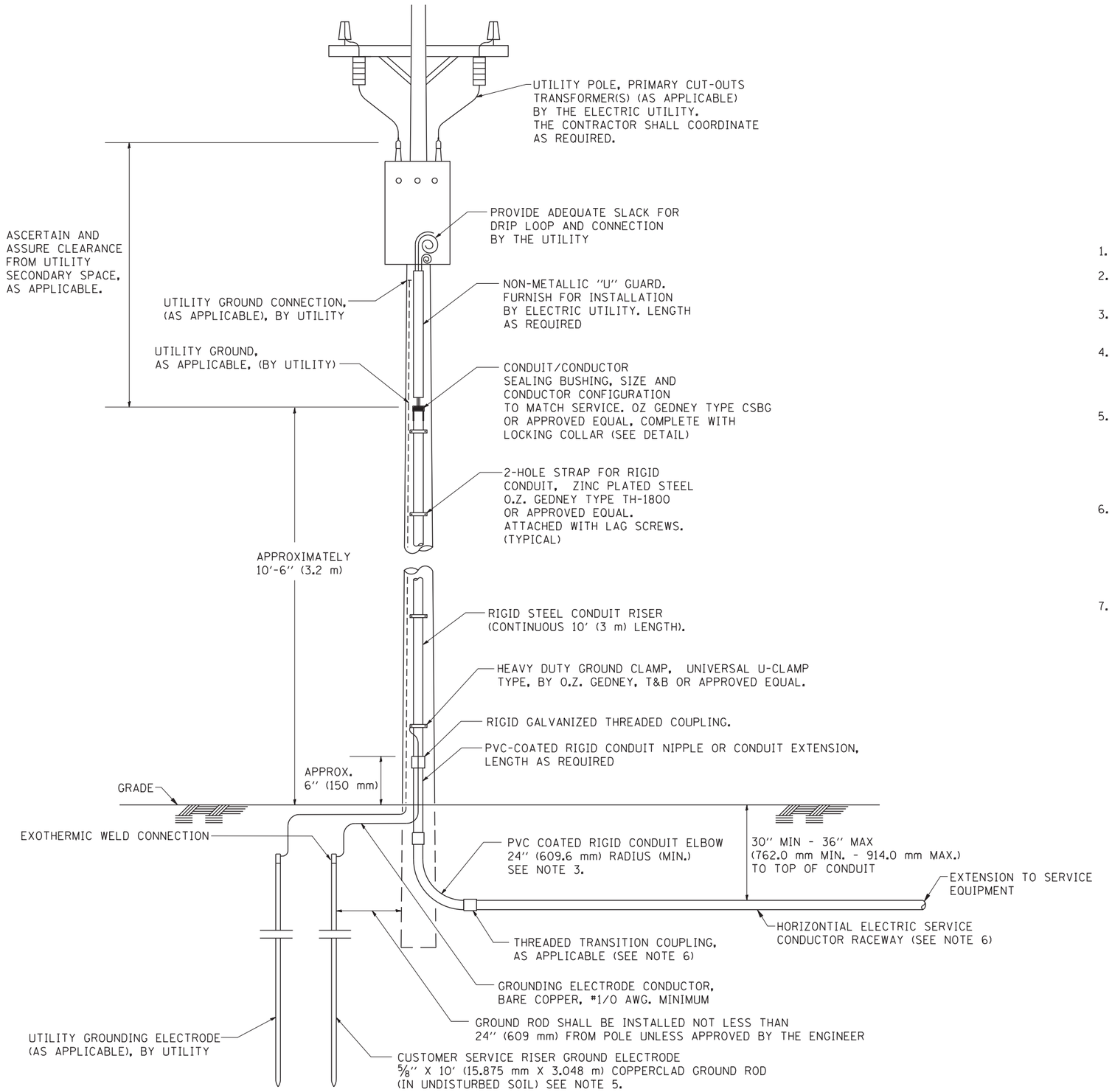
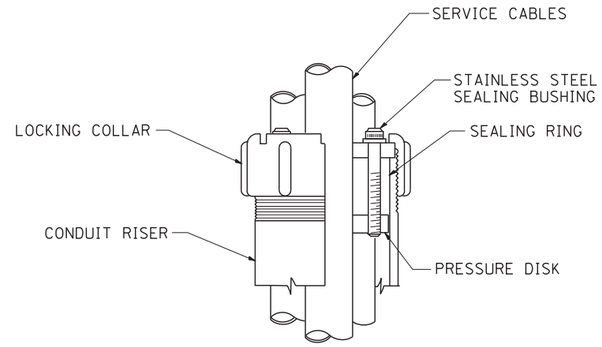


APPLICATION

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

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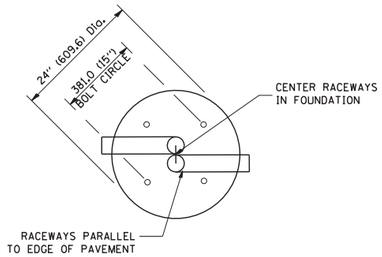
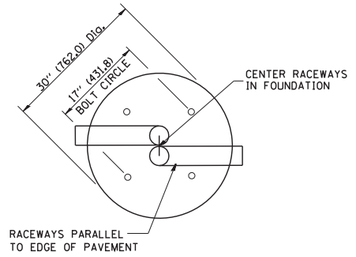
		DRAWN -	REVISED -				**BE-220**; CONTRACT NO. 60J12
	PLOT SCALE = 50.0000 '/ IN.	CHECKED - MEA	REVISED -		SCALE: NONE; SHEET NO. 1 OF 1 SHEETS; STA.; TO STA.		FED. ROAD DIST. NO. 1; ILLINOIS; FED. AID PROJECT
	PLOT DATE = 1/4/2008	DATE -	REVISED -				

LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

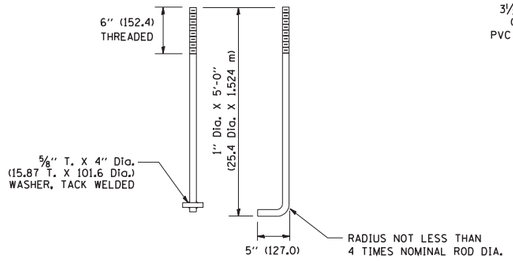
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Qu = 0.375 TON/SQ. FT.	13'-0" (3.96 m)	15'-0" (4.57 m)
MEDIUM CLAY Qu = 0.75 TON/SQ.FT	9'-6" (2.09 m)	10'-9" (3.23 m)
STIFF CLAY Qu = 1.50 TON/SQ. FT.	7'-0" (2.13 m)	8'-0" (2.44 m)
LOOSE SAND Ø = 34°	9'-0" (2.74 m)	10'-0" (3.05 m)
MEDIUM SAND Ø = 37.5°	8'-3" (2.52 m)	9'-0" (2.74 m)
DENSE SAND Ø = 40°	7'-9" (2.36 m)	9'-0" (2.74 m)



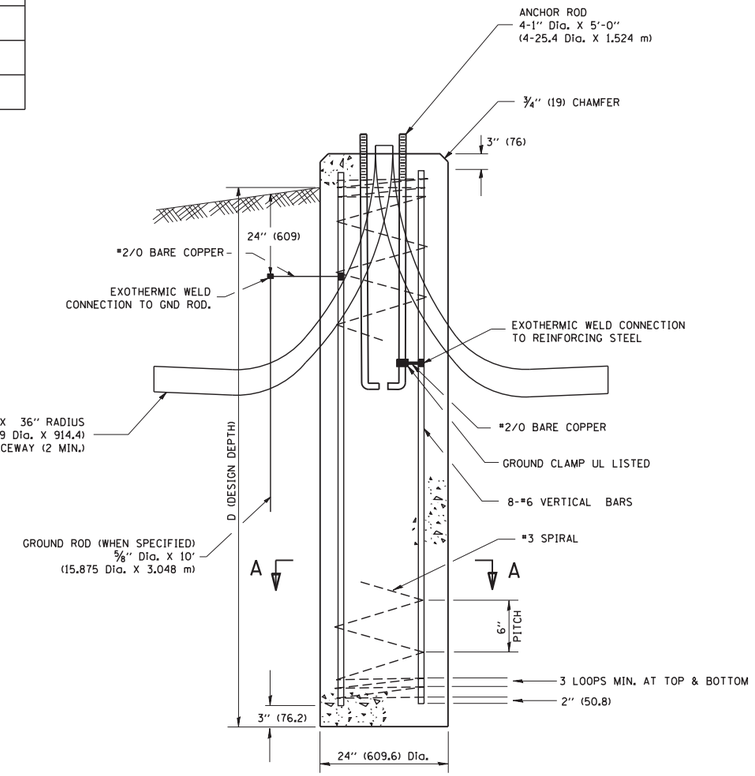
TOP VIEW



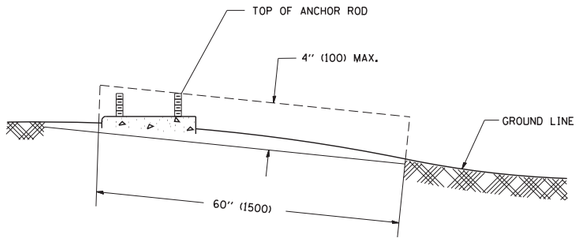
TOP VIEW



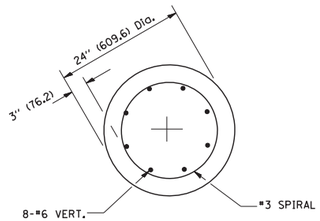
ANCHOR ROD DETAIL



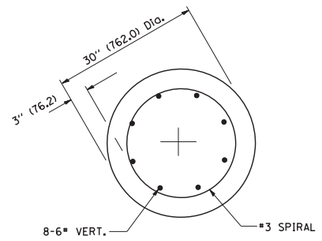
FOUNDATION DETAIL



FOUNDATION EXTENSION DETAIL



SECTION A-A



SECTION A-A

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IN PLACED.
3. THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 100MM (4 IN.) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED, IN ACCORDANCE WITH AASHTO GUIDELINES. IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
4. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
5. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3/4-IN. (20 mm).
6. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
7. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
8. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
9. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
10. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
11. ANCHOR RODS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
12. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
13. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
14. THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.

FILE NAME = W:\diststd\22x34\be301.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 04-22-02
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

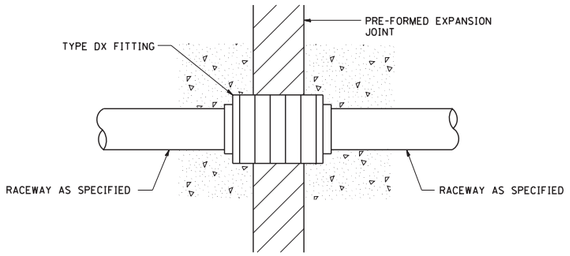
LIGHT POLE FOUNDATION
40' (12.192 m) TO 47 1/2' (14.478 m) M.H. 15" (381 mm) BOLT CIRCLE

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

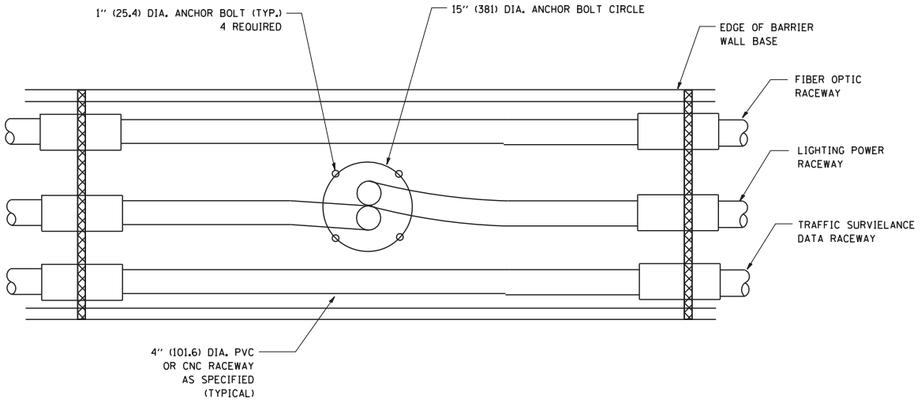
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	319
	BE-301	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

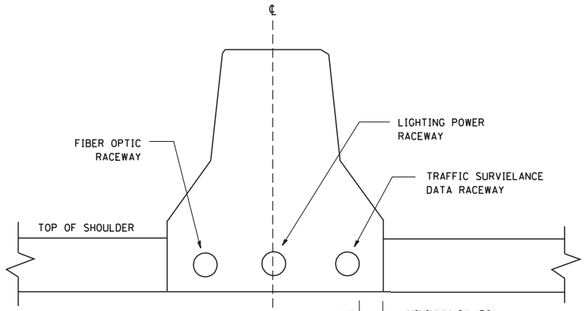
NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR BOLTS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IS PLACED IN THE FORMS.
3. THE CONTRACTOR AT HIS OPTION MAY SUBSTITUTE #4 (15 m) TIES AT 12" (304.8 m) CTRS. FOR THE #3 (3 m) SPIRAL. TACKWELDED TYPE BOLT MAY BE SUBSTITUTED FOR THE HOOK TYPE BOLT.
4. COLD BENDING OF THE HOOK BOLT SHALL NOT BE ALLOWED.
5. EXCAVATION FOR THE POLE FOUNDATION SHALL BE MADE WITH AN AUGER 24 INCHES (609.6 m) IN DIAMETER.
6. THE ENGINEER SHALL DETERMINE THE TYPE OF SOIL DURING EXCAVATION AND SELECT THE DESIGN DEPTH OF FOUNDATION FROM THE DESIGN TABLE USING THE DOMINANT CHARACTERISTIC OF THE SOIL ENCOUNTERED.
7. BARRIER WALL EXPANSION AND CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH STANDARD DETAIL 637001-02 AND 637006 AS APPLICABLE.

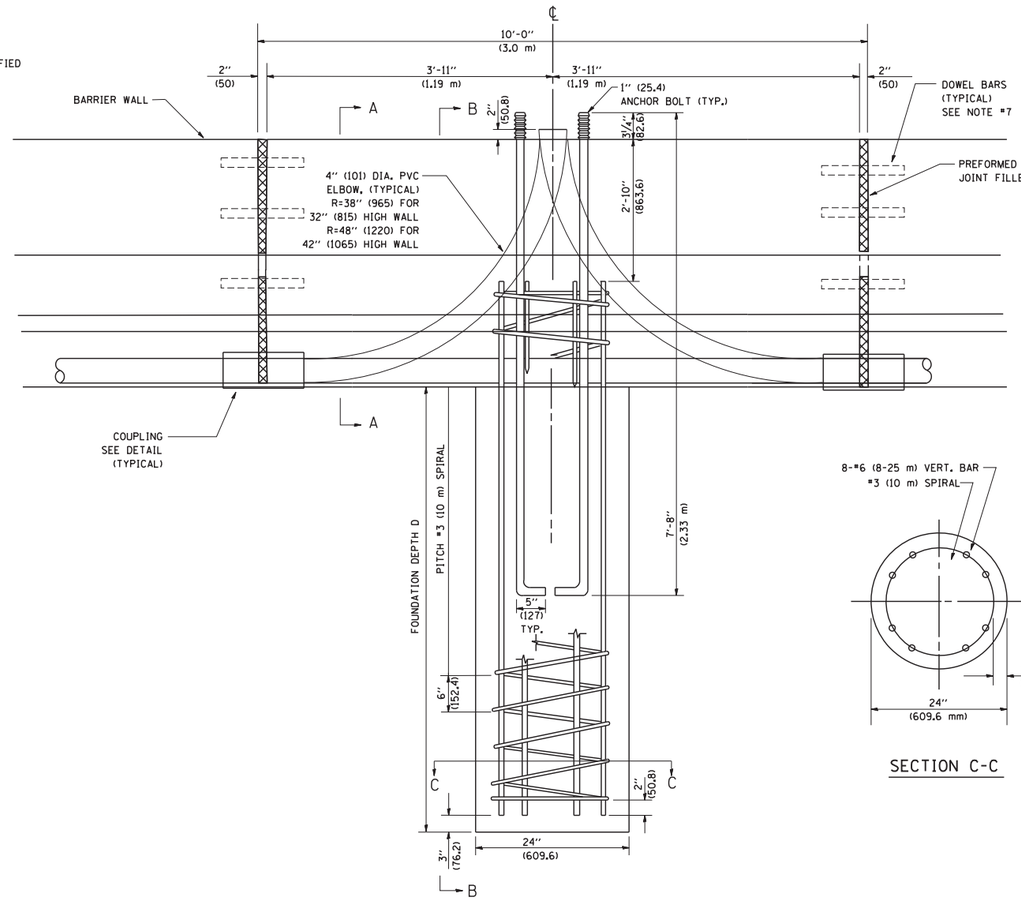


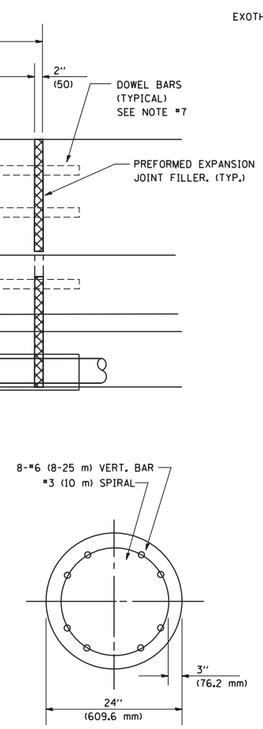
CONDUIT DEFLECTION FITTING DETAIL



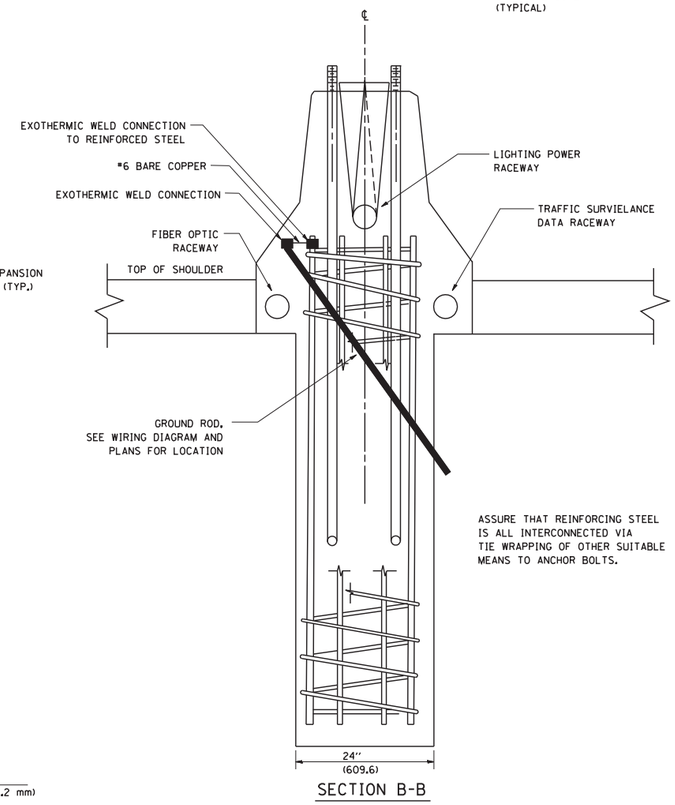


SECTION A-A





SECTION C-C



SECTION B-B

FOUNDATION DEPTH

TYPE OF SOIL	FOUND FEPTH D	REINFORCEMENT IN FOUNDATION	
		VERTICAL BARS	SPIRAL
ROCK OR SOLIDIFIED SLAG	5'-0" (1.52 m)	NONE	NONE
DENSE SAND	7'-9" (2.36 m)	8-#6 x 9'-0" (8-20 m x 2.74 m)	#3 x 90' (3 m x 27.43 m)
MEDIUM SAND	8'-3" (2.51 m)	8-#6 x 9'-5" (8-20 m x 2.87 m)	#3 x 94' (3 m x 28.65 m)
LOOSE SAND	9'-0" (2.74 m)	8-#6 x 10'-2" (8-20 m x 3.09 m)	#3 x 100' (3 m x 30.48 m)
STIFF CLAY	7'-0" (2.13 m)	8-#6 x 10'-8" (8-20 m x 2.48 m)	#3 x 80' (3 m x 24.38 m)
MEDIUM CLAY	9'-6" (2.89 m)	8-#6 x 10'-8" (8-20 m x 3.25 m)	#3 x 104' (3 m x 31.69 m)
SOFT CLAY	13'-0" (3.96 m)	8-#6 x 14'-2" (8-20 m x 4.32 m)	#3 x 144' (3 m x 43.89 m)

DESIGN: 80 MPH AASHTO

FILE NAME = W:\diststd\22x34\be322.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 04-07-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

24" (609.6 mm) DIA. LIGHT POLE FOUNDATION INTEGRAL WITH DOUBLE FACE BARRIER WALL

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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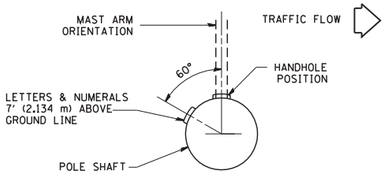
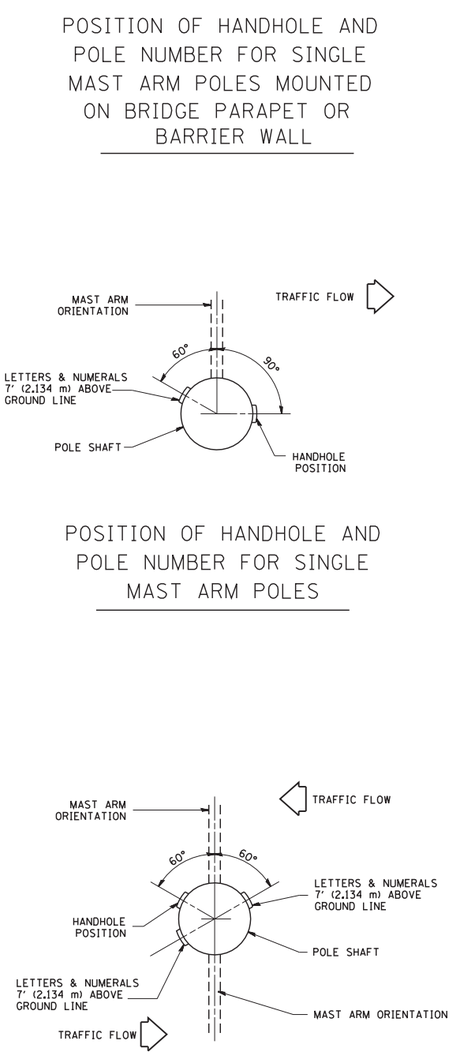
	BE-322	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

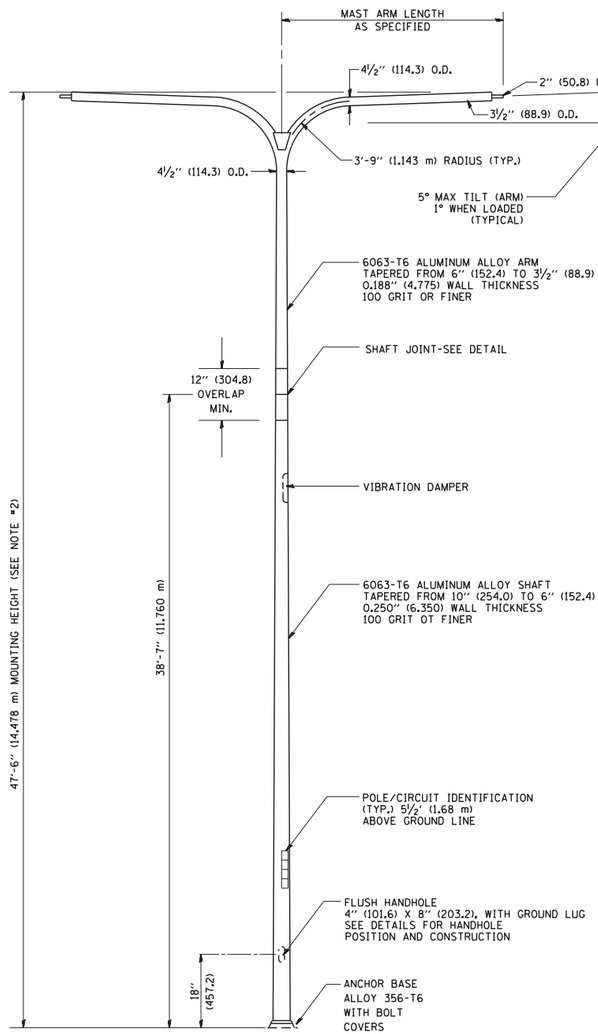


POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES MOUNTED ON BRIDGE PARAPET OR BARRIER WALL

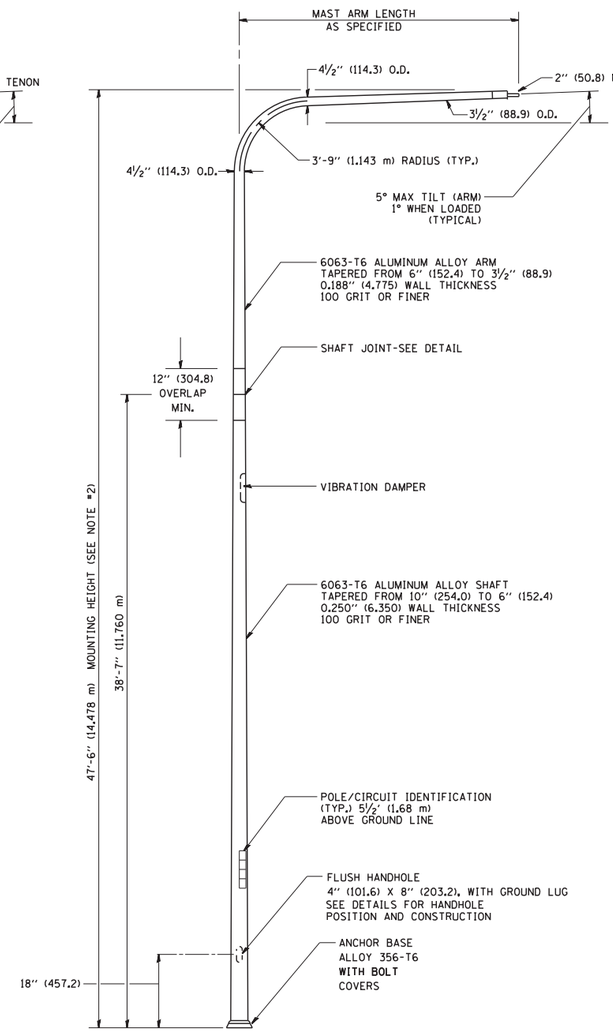
POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES



POSITION OF HANDHOLE AND POLE NUMBER FOR TWIN MAST ARM POLES



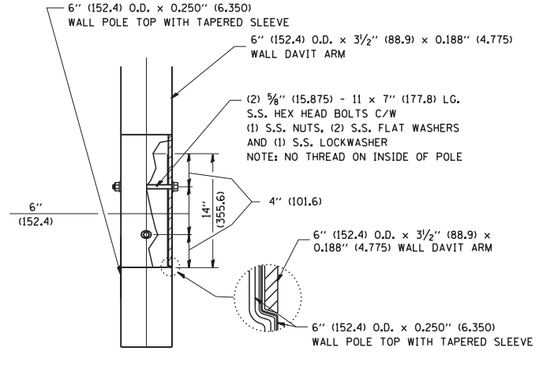
TWIN ARM POLE



SINGLE ARM POLE

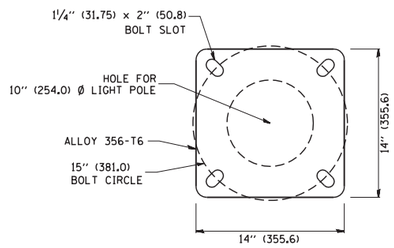
NOTES:

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.



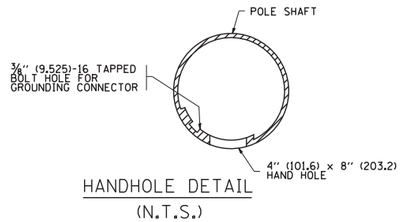
DAVIT ARM CONNECTION

[14" (355.6) OVERLAP SHOWN]



LIGHT POLE BASE PLATE DETAIL

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



HANDHOLE DETAIL

(N.T.S.)

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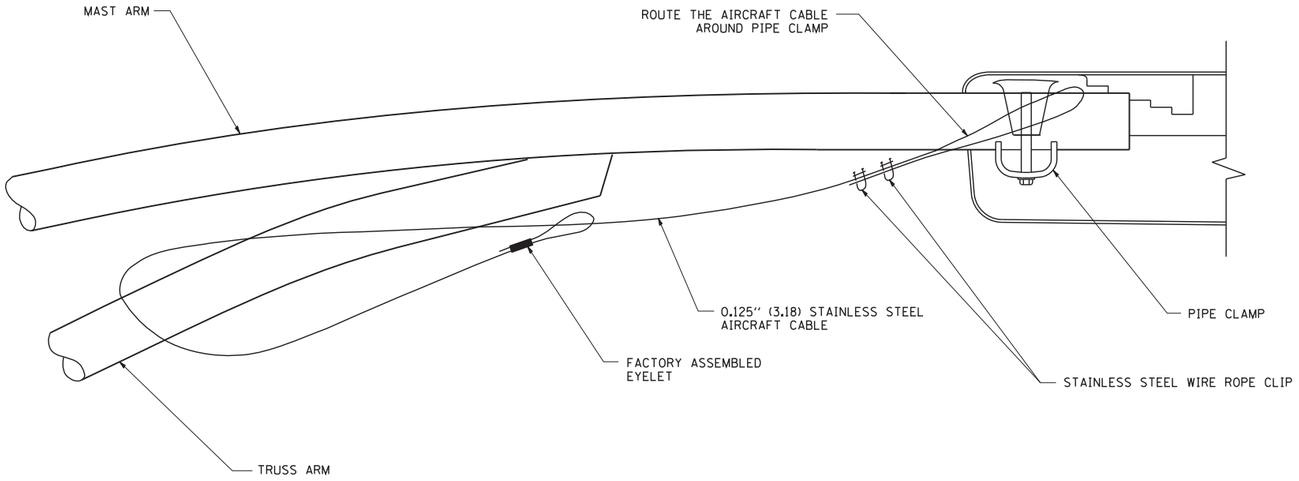
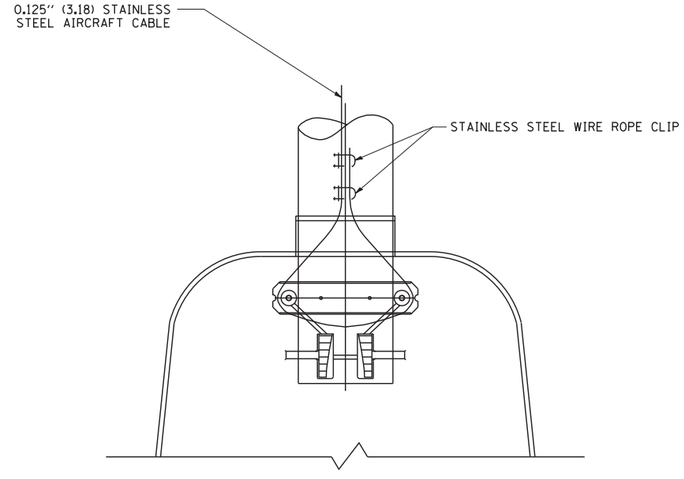
		DRAWN - LEY	REVISED - D. DREW 05-07-92				2012-059-BR	COOK	631	321
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - R. TOMSONS 09-06-00				**BE-410**	CONTRACT NO.	60J12	
	PLOT DATE = 1/4/2008	DATE -	REVISED - R. TOMSONS 09-02-03		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



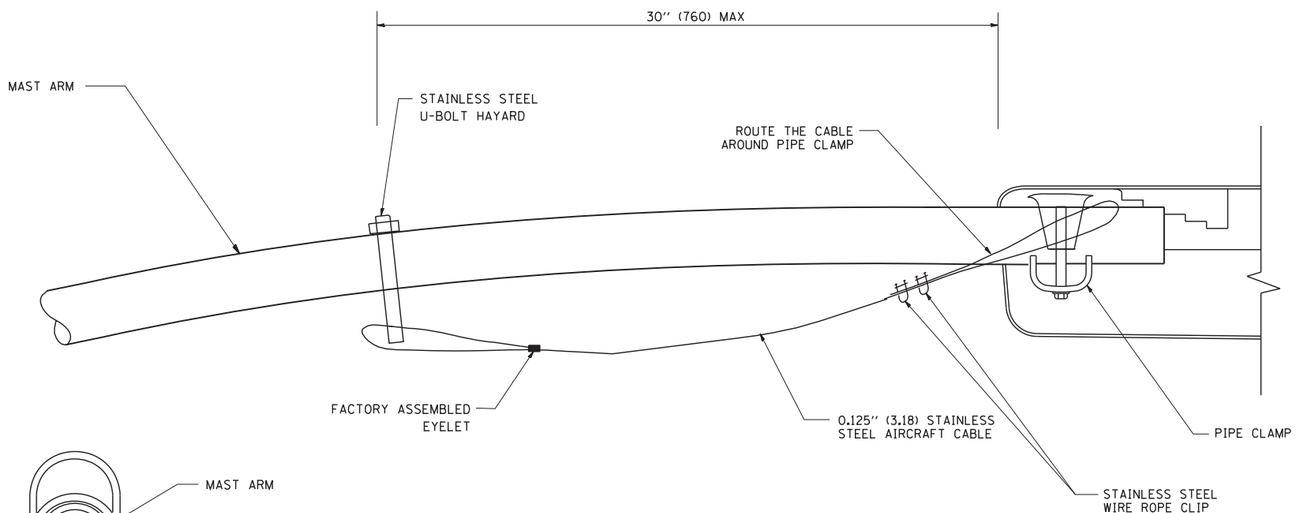
SIDE VIEW (TRUSS ARM)

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. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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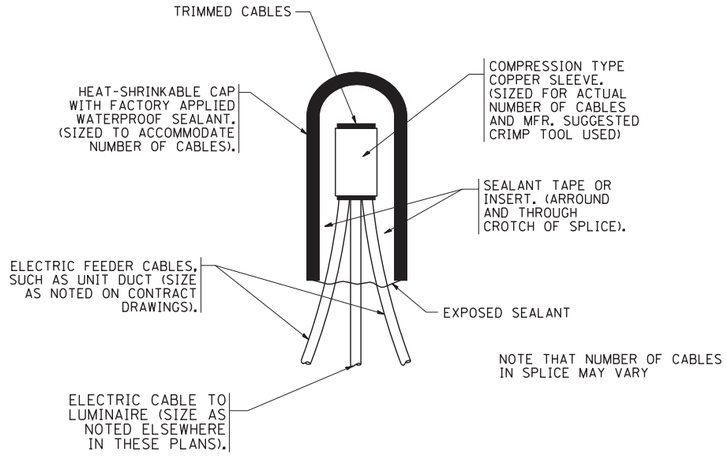
	BE-701	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TYPICAL SPLICE DETAIL

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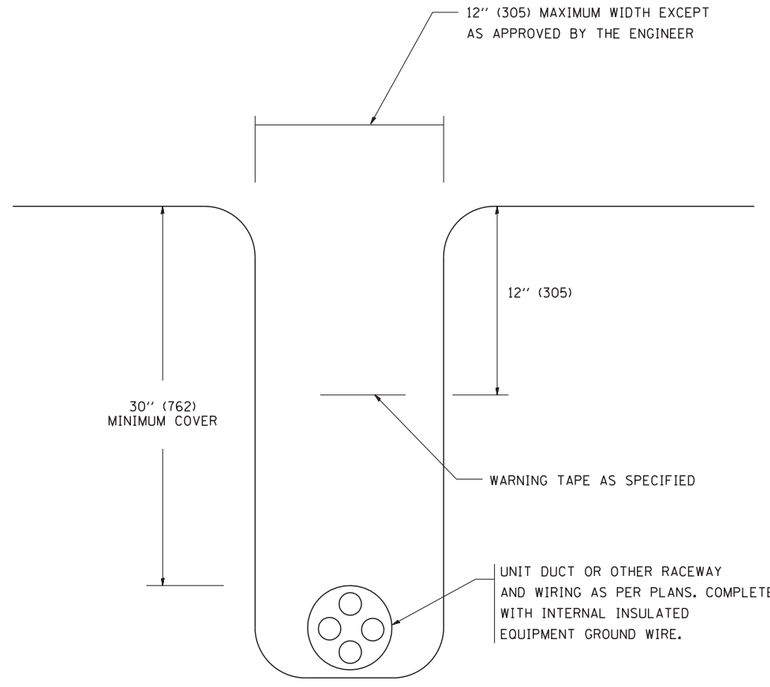
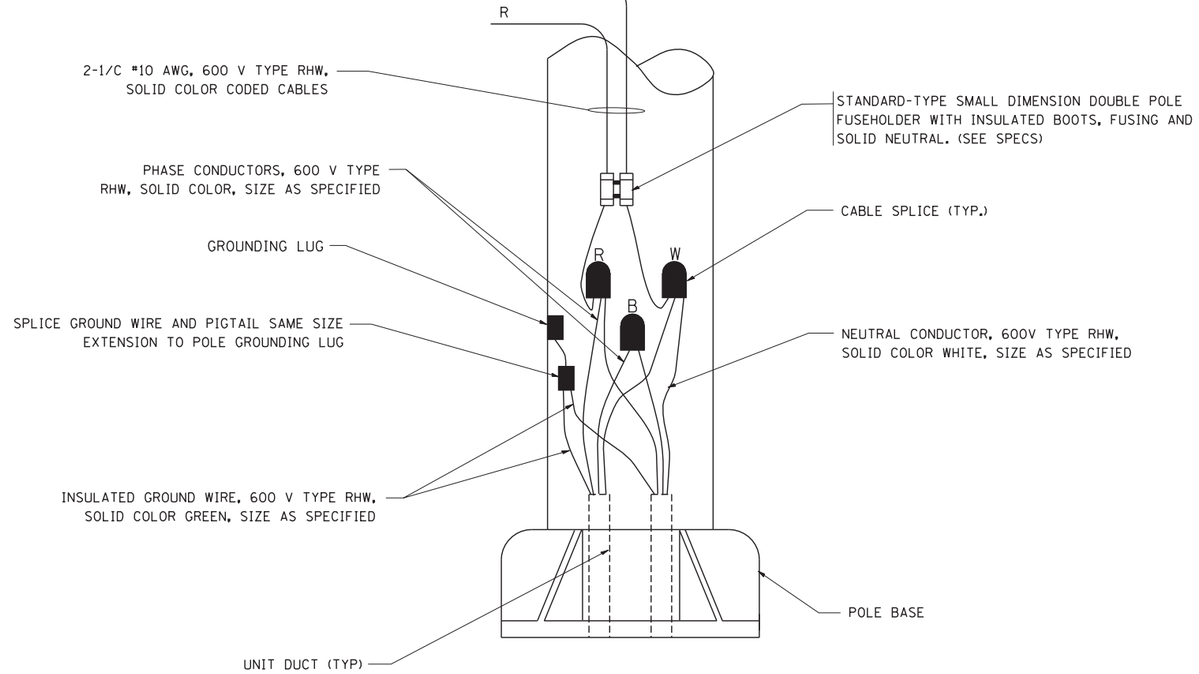


TYPICAL WIRING IN TRENCH DETAIL

N.T.S.



POLE WIRING DETAIL

N.T.S.

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	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISC. ELECTRICAL DETAILS
SHEET A

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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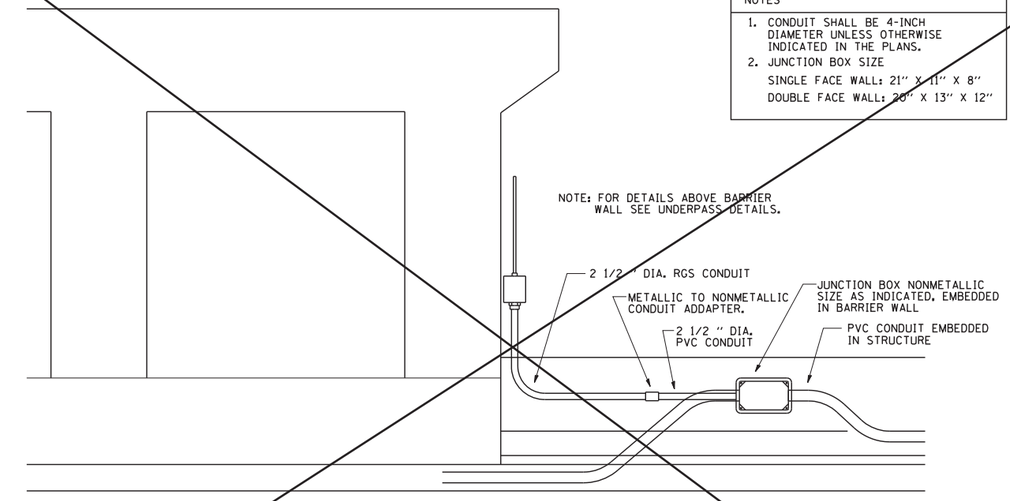
	BE-702	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

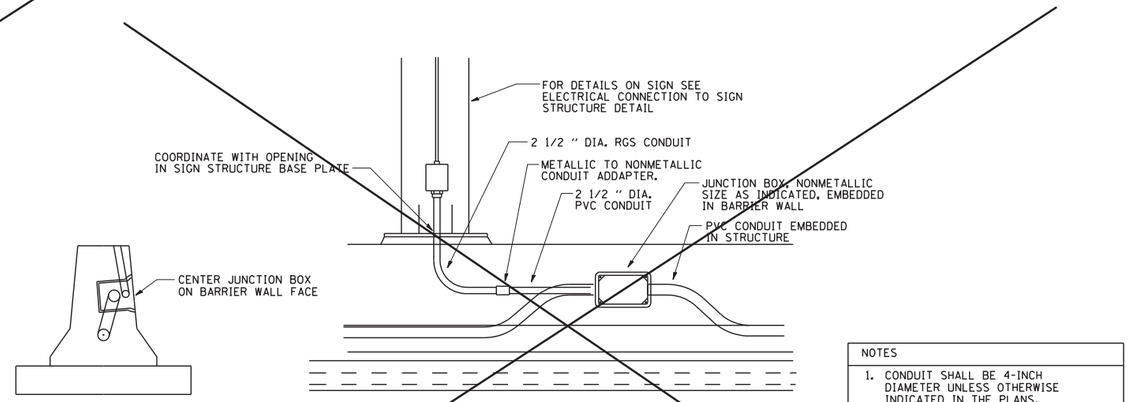


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BWD

ELECTRIC CONNECTION TO UNDERPASS LIGHTING

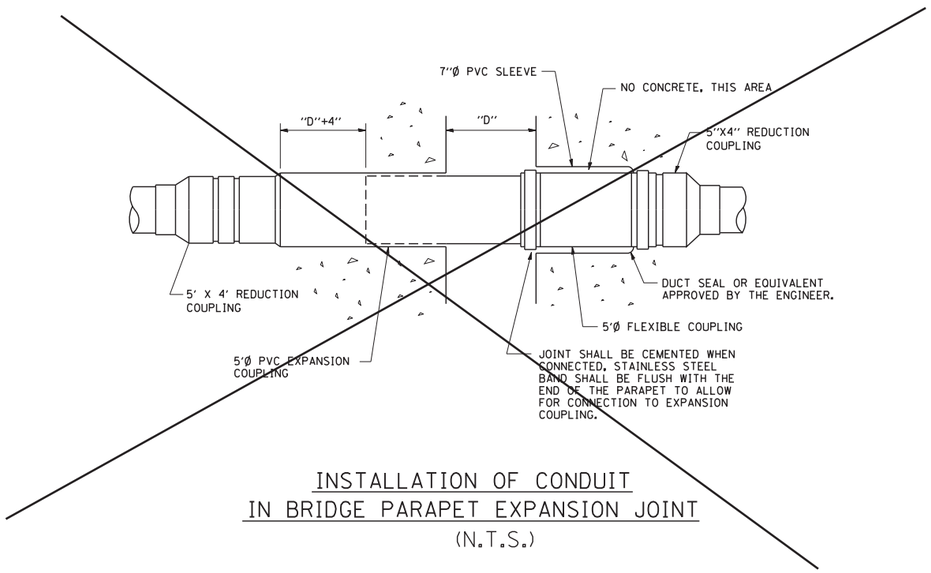


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - SGN

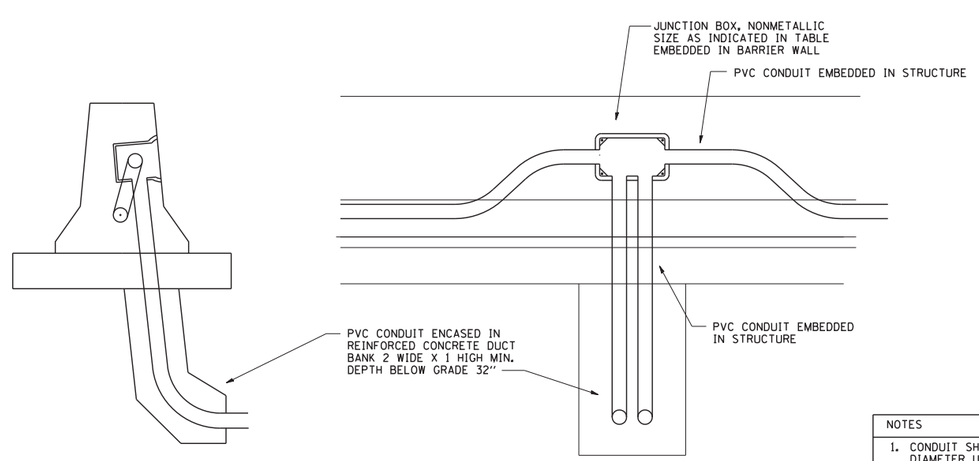
JUNCTION BOX EMBEDDED IN BARRIER WALL FOR SIGN LIGHTING



INSTALLATION OF CONDUIT

IN BRIDGE PARAPET EXPANSION JOINT

(N.T.S.)



NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BW

JUNCTION BOX EMBEDDED IN BARRIER WALL

NOTE: CROSSED-OUT DETAILS ARE NOT APPLICABLE TO THIS CONTRACT.

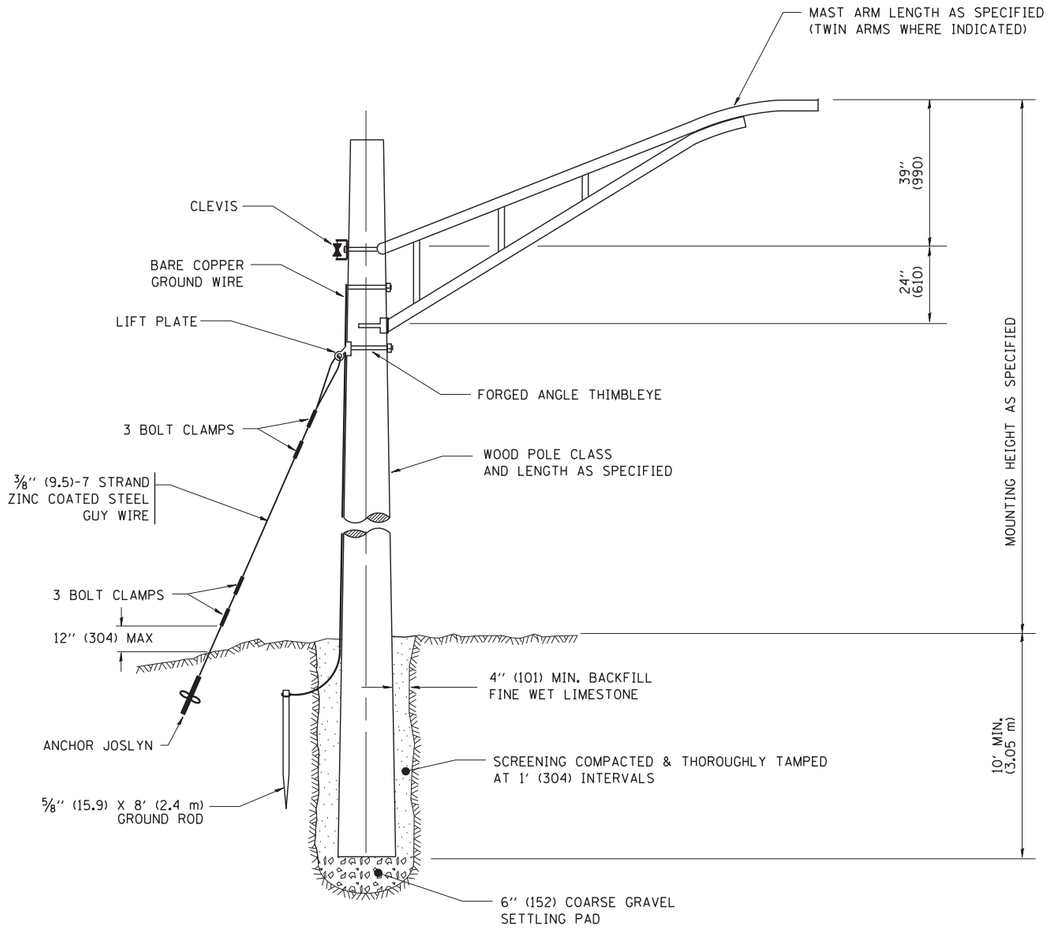
FILE NAME = be703.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 2/5/2009	DATE - 01-20-2009	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

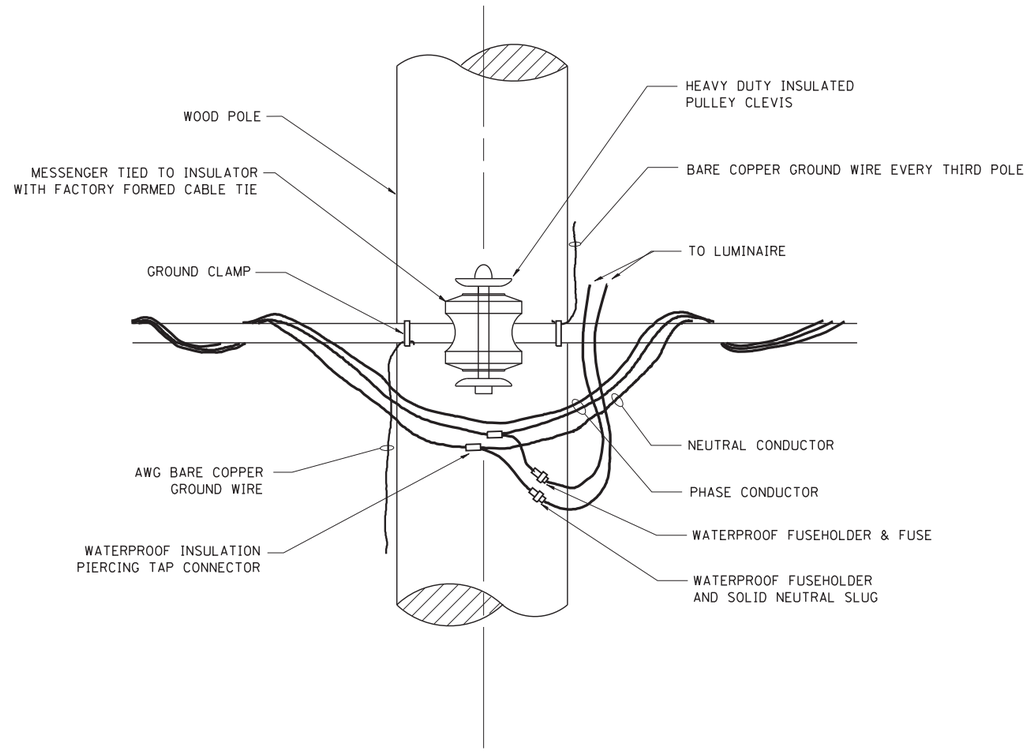
MISCELLANEOUS ELECTRICAL DETAILS, SHEET B
J BOX EMBEDDED IN BARRIER WALL – INSTALLATION OF CONDUIT IN BRIDGE PARAPET EXPANSION JOINT – ELECTRIC CONNECTION TO UNDERPASS LIGHTING

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	324
	BE-703	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TEMPORARY LIGHT POLE DETAIL



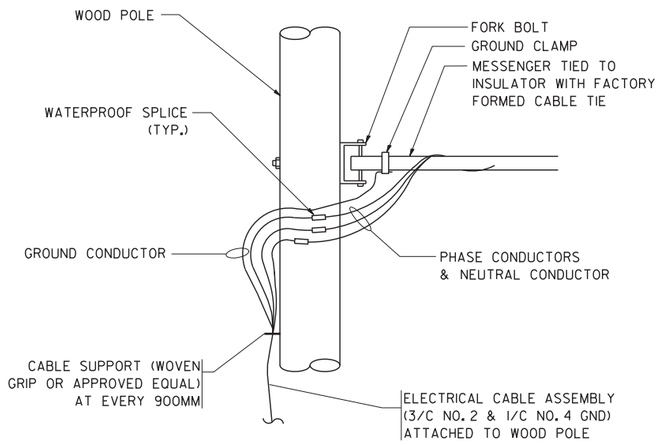
TEMPORARY LIGHT POLE ATTACHMENT DETAIL

NOTES:

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

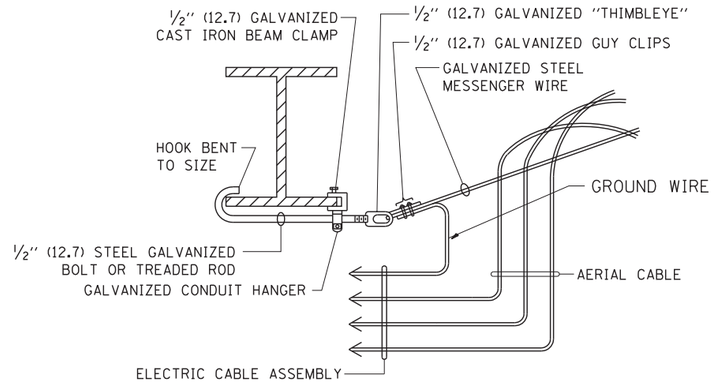
FILE NAME = W:\diststd\22x34\be800.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**TEMPORARY LIGHT POLE DETAILS**
		DRAWN -	REVISED -		
	PLOT SCALE = 50.000 '/ IN.	CHECKED -	REVISED -		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE /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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	325
	BE-800	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



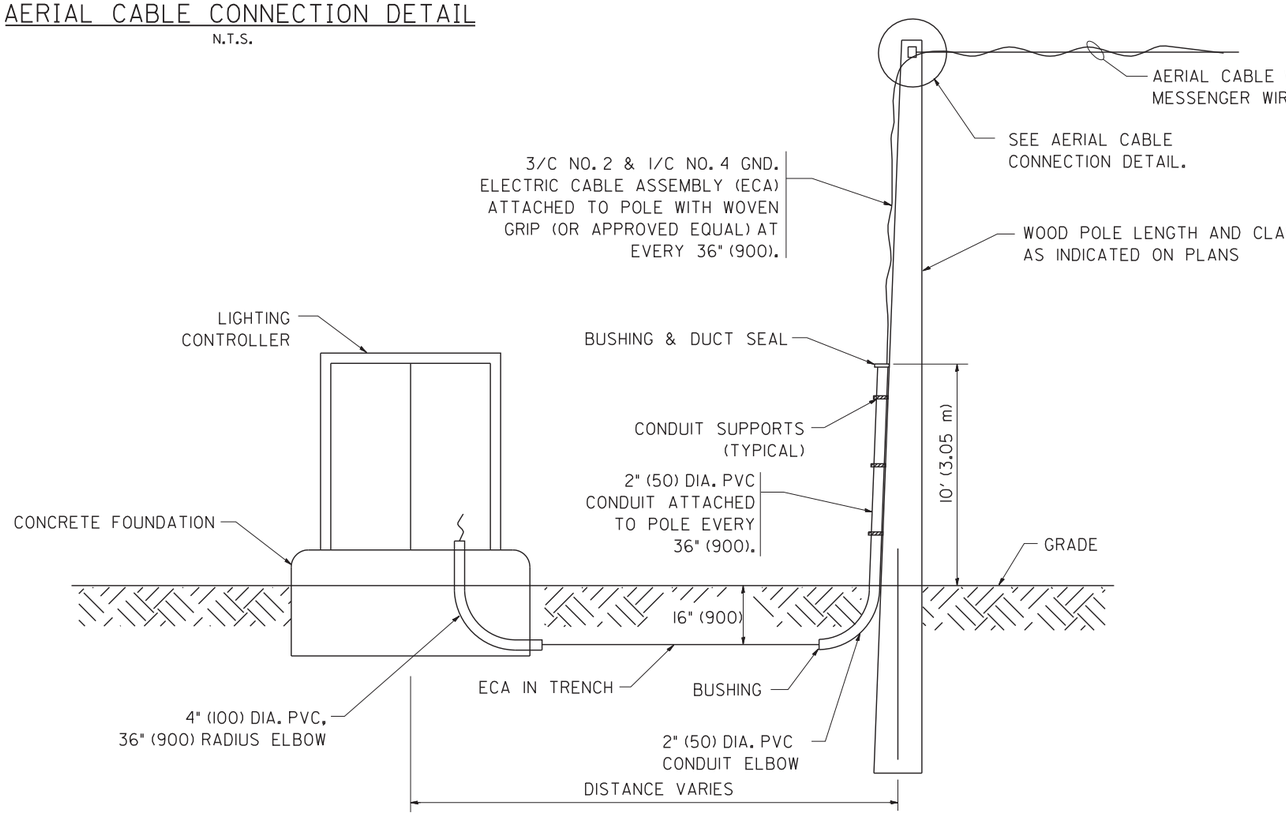
AERIAL CABLE CONNECTION DETAIL

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.

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		DRAWN -	REVISED -
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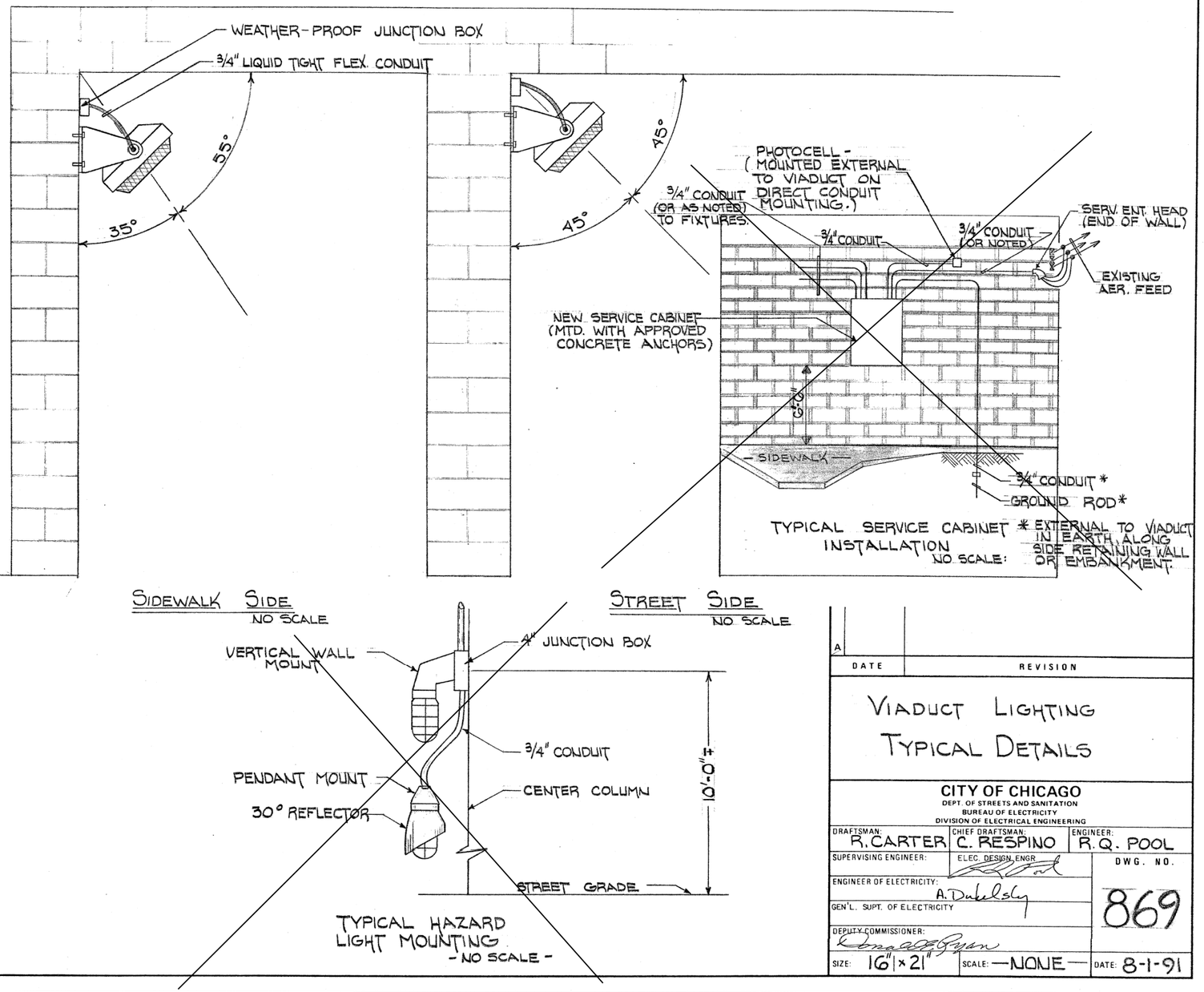
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY AERIAL CABLE INSTALLATION

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	326
	BE-801	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



	DATE	REVISION
A		

VIADUCT LIGHTING TYPICAL DETAILS

CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

DRAFTSMAN:	CHIEF DRAFTSMAN:	ENGINEER:
R. CARTER	C. RESPINO	R. Q. POOL

SUPERVISING ENGINEER: ELEC. DESIGN ENGR
ENGINEER OF ELECTRICITY: A. Dubelsky
GEN'L. SUPT. OF ELECTRICITY
DEPUTY COMMISSIONER:

DWG. NO. 869

SIZE: 16" x 21" SCALE: —NONE— DATE: 8-1-91

511700
CENTURY BLUE PRINT 90280 1/87

EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

E-49

FILE NAME =	USER NAME = $USER$	DESIGNED - JWL	REVISED -
		DRAWN - BHH	REVISED -
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	PLOT DATE = $DATE$	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CDOT UNDERPASS LIGHTING MOUNTING DETAILS

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	327
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

$FILE$

ITS LEGEND

- PROPOSED HEAVY-DUTY HANDHOLE (PER TSC DETAIL TY-ITSC-400*15)
- PROPOSED COMMUNICATIONS VAULT
- PROPOSED JUNCTION BOX, STAINLESS STEEL SIZE AND MOUNTING PER PLANS
- PROPOSED CCTV DOME CAMERA (80 FT. M.H. U.N.O.)
- PROPOSED CCTV EQUIPMENT CABINET, GROUND MOUNT
- PROPOSED LIGHTING CONTROLLER
- FO — PROPOSED FIBER OPTIC CABLE IN CONDUIT AS SHOWN ON PLANS
- PROPOSED UNIT DUCT AS SHOWN ON PLANS
- PROPOSED UNDERGROUND CONDUIT AS SHOWN ON PLANS
- PROPOSED CONDUIT ATTACHED TO STRUCTURE AS SHOWN ON PLANS

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
CAT	CATEGORY
CCTV	CLOSED CIRCUIT TELEVISION
CNC	COILABLE NONMETALLIC CONDUIT
DMS	DYNAMIC MESSAGE SIGN
F	FIBER
FO	FIBER OPTIC
KVA	KILOVOLT AMPERE
M.H.	MOUNTING HEIGHT
PVCC	POLYVINYL CHLORIDE COATED
RGC	RIGID GALVANIZED CONDUIT
U.N.O.	UNLESS NOTED OTHERWISE

ITS SCHEDULE OF QUANTITIES

ITEM	UNIT	QUANTITY
ELECTRIC UTILITY SERVICE CONNECTION	L SUM	0.5
UNDERGROUND CONDUIT, GALVANIZED STEEL, 2" DIA.	FOOT	2000
UNDERGROUND CONDUIT, GALVANIZED STEEL, 4" DIA.	FOOT	863
UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 1 1/4" DIA.	FOOT	1000
UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 2" DIA.	FOOT	1500
UNDERGROUND CONDUIT, COILABLE NONMETALLIC CONDUIT, 4" DIA.	FOOT	1500
CONDUIT ATTACHED TO STRUCTURE, 4" DIA., PVC COATED GALVANIZED STEEL	FOOT	1460
JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 42" X 36" X 12"	EACH	12
HEAVY-DUTY HANDHOLE	EACH	52
UNIT DUCT, 600V, 2-1C NO. 4, 1/C NO.6 GROUND, (XLP-TYPE USE), 1 1/4" DIA. POLYETHYLENE	FOOT	4768
UNIT DUCT, 600V, 2-1C NO. 2, 1/C NO.2 GROUND (XLP-TYPE USE). 1 1/4" DIA. POLYETHYLENE	FOOT	410
REMOVAL OF LIGHTING CONTROLLER	EACH	5
REMOVAL OF ELECTRIC SERVICE INSTALLATION	EACH	2
ELECTRIC CABLE ASSEMBLY IN CONDUIT, 600V (XLP-TYPE TC) 2/C NO. 6 AND NO. 8	FOOT	2000
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 14 1 PAIR	FOOT	4600
CONCRETE FOUNDATION, TYPE D	FOOT	16
REMOVE EXISTING HANDHOLE	EACH	1
REMOVE EXISTING CONCRETE FOUNDATION	EACH	5
DIGITAL LOOP DETECTOR SENSOR UNIT (4 CHANNEL)	EACH	9
TONE EQUIPMENT - 3 FREQUENCY RECEIVER PROGRAMMABLE	EACH	19
TONE EQUIPMENT - 3 FREQUENCY TRANSMITTER PROGRAMMABLE	EACH	19
TONE EQUIPMENT - POWER SUPPLY	EACH	6
TONE EQUIPMENT - MOUNTING FRAME	EACH	4
CABINET HOUSING EQUIPMENT, TYPE III	EACH	4
CLOSED CIRCUIT TELEVISION DOME CAMERA	EACH	6
CABINET, MODEL 334	EACH	1
FIBER OPTIC INNERDUCT 1 1/4" DIA.	FOOT	39594
ETHERNET SWITCH	EACH	1
CLOSED CIRCUIT TELEVISION CAMERA INSTALLATION	EACH	6
CLOSED CIRCUIT TELEVISION CAMERA STRUCTURE, 50 FT. MOUNTING HEIGHT	EACH	1
CLOSED CIRCUIT TELEVISION CAMERA STRUCTURE FOUNDATION, 30" DIAMETER	FOOT	10
STEP-DOWN TRANSFORMER	EACH	1
ATMS SYSTEM INTEGRATION	L SUM	1
BUDGETARY ALLOWANCE FOR CCTV INTEGRATION	L SUM	1
ELECTRICAL SERVICE DISCONNECT	EACH	2
FIBER OPTIC CABLE 96 FIBERS, SINGLE MODE	FOOT	40378
FIBER OPTIC CABLE 12 FIBERS, SINGLE MODE	FOOT	900
FIBER OPTIC TERMINATION PANEL, 12F OR 24F	EACH	1
ELECTRIC CABLE IN CONDUIT, LEAD-IN, NO. 18 4/C, TWISTED, SHIELDED	FOOT	2500
INDUCTION LOOP	FOOT	1250
COMMUNICATIONS VAULT	EACH	2
CCTV CAMERA STRUCTURE, FOUNDATION, 80 FT. MOUNTING HEIGHT	FOOT	85
CCTV CAMERA STRUCTURE, GALVANIZED STEEL, 80 FT. MOUNTING HEIGHT	EACH	5
CCTV EQUIPMENT CABINET - GROUND MOUNT	EACH	6
CONCRETE FOUNDATION, SURVEILLANCE CABINET, MODEL 334	EACH	1
DMS REMOVAL AND INSTALLATION	L SUM	1
ELECTRIC CABLE IN CONDUIT, NO. 19, 25 PAIR	FOOT	1500
ELECTRIC CABLE IN CONDUIT, NO. 19, 6C	FOOT	1500
FIBER OPTIC SPLICE - LATERAL	EACH	4
FIBER OPTIC SPLICE - MAINLINE	EACH	5
FIBER OPTIC TRANSCEIVER PAIR	EACH	2
REMOVE EXISTING TRAFFIC SURVEILLANCE EQUIPMENT	L SUM	1
T1 CHANNEL BANK	EACH	1

GENERAL NOTES:

1. ALL NEW CONDUITS, HANDHOLES, BOXES, AND APPURTENANCES ARE ILLUSTRATED DIAGRAMMATICALLY. THE ACTUAL LOCATIONS IN THE FIELD SHALL MEET WITH THE APPROVAL OF THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE EXPANSION/DEFLECTION COUPLINGS AT BRIDGE EXPANSION JOINTS FOR ALL CONDUITS ATTACHED TO STRUCTURE. THE COST OF THIS WORK IS INCLUDED IN THE PRICE OF THE CONDUIT ATTACHED TO STRUCTURE.
3. ELECTRICAL CONNECTIONS TO LIGHTING CONTROLLERS FOR CCTV POWER, INCLUDING A STEP DOWN TRANSFORMER AND CIRCUIT BREAKER, ARE INCLUDED IN THE COST OF THE ITEM "CLOSED CIRCUIT TELEVISION CAMERA INSTALLATION."
4. UNDERGROUND 1¼" CNC SHOWN ON THE PROPOSED ITS PLANS WILL BE PAID FOR AS "FIBER OPTIC INNERDUCT 1¼" DIA."

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	PLOT DATE = 4/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS GENERAL NOTES, LEGEND, AND SCHEDULE OF QUANTITIES
STONY ISLAND EXTENSION

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	328
		CONTRACT NO. 60J12		
	ILLINOIS	FED. AID PROJECT		

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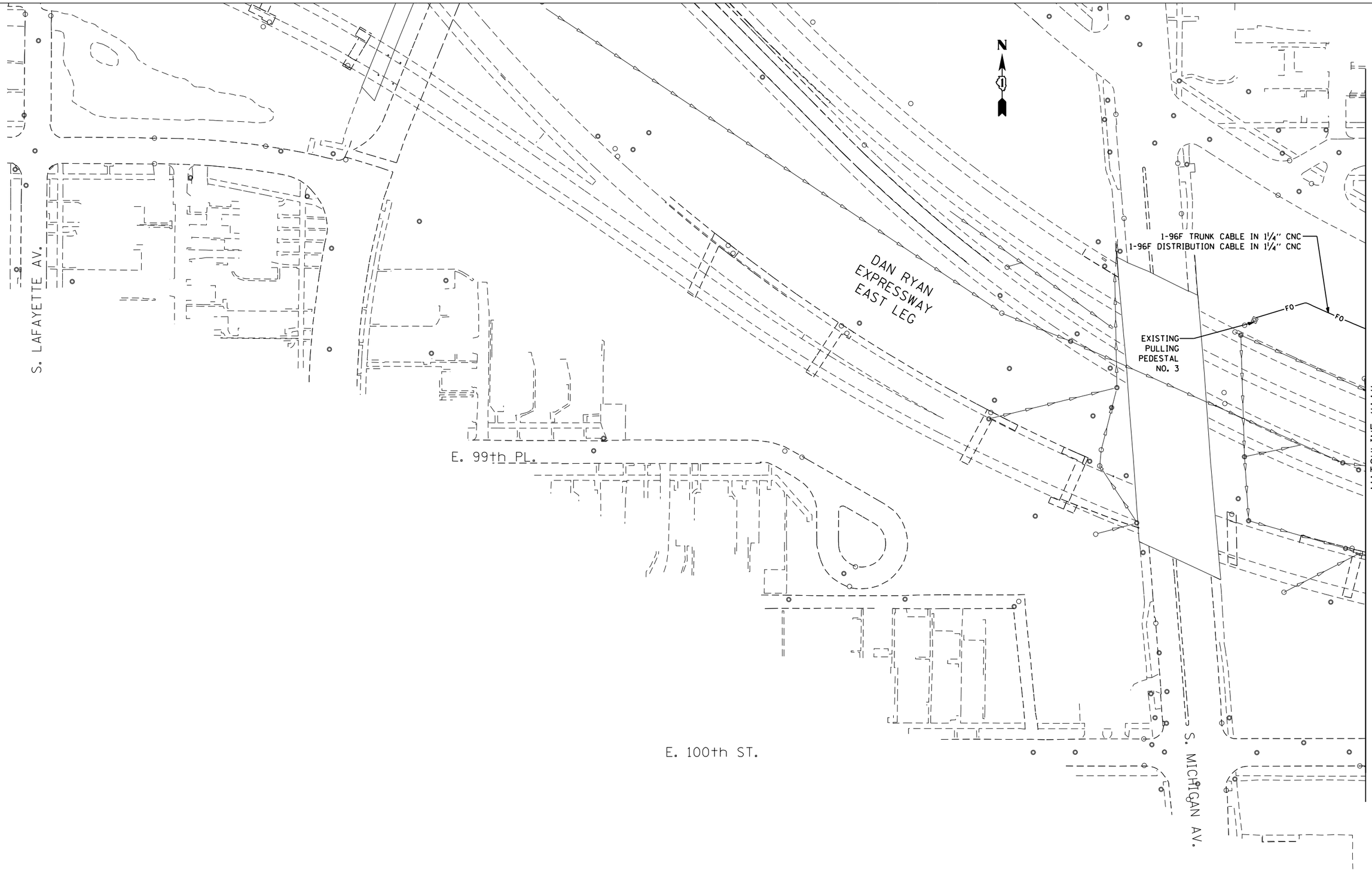

ITS-02

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		DRAWN - PS	REVISED -	**DEPARTMENT OF TRANSPORTATION**	**I-94 AT STONY ISLAND EXTENSION**	94	2012-059-BR	COOK	631	329
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50' SHEET NO. 1 OF 18 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

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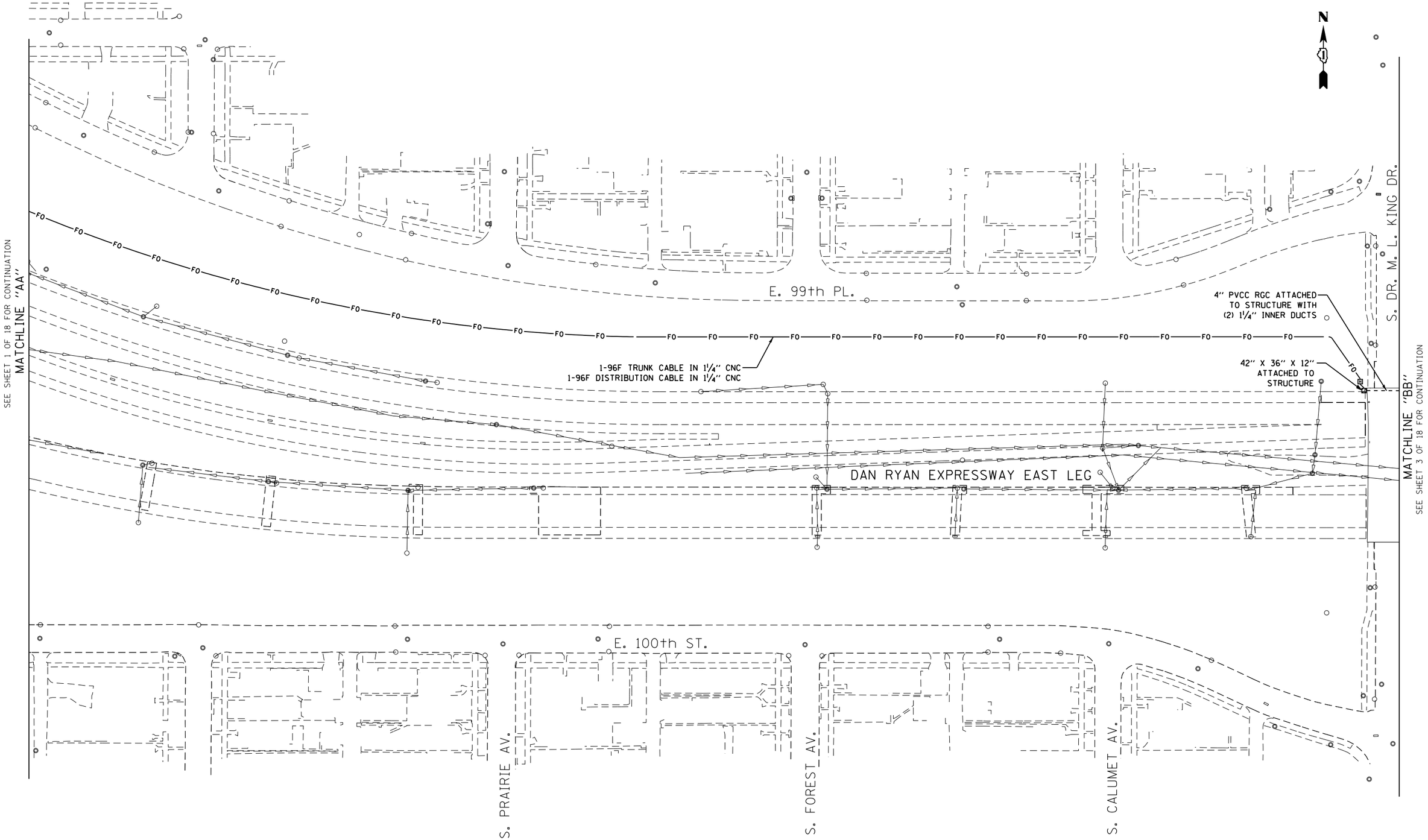

ITS-03

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		DRAWN - PS	REVISED -				94	2012-059-BR	COOK	631	330
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -						CONTRACT NO. 60J12		
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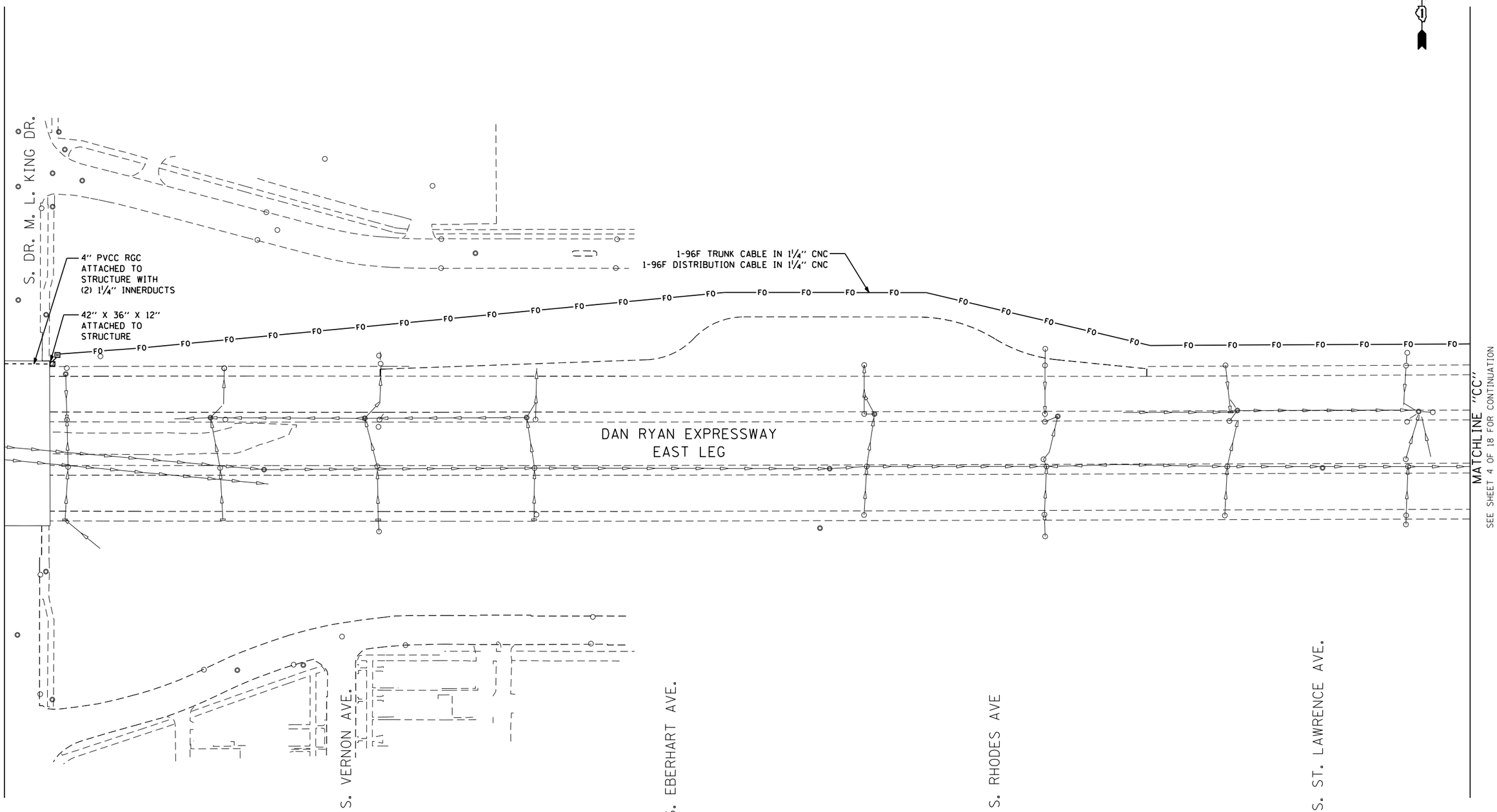

ITS-04

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		DRAWN - PS	REVISED -			94	2012-059-BR	COOK	631	331
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50' SHEET NO. 3 OF 18 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

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SEE SHEET 3 OF 18 FOR CONTINUATION
MATCHLINE "CC"

1-96F TRUNK CABLE IN 1¼" CNC
1-96F DISTRIBUTION CABLE IN 1¼" CNC
(TYP.)

4" PVCC RGC WITH
(2) 1¼" INNER DUCTS

BILLBOARD

CANADIAN NATIONAL RR

COTTAGE GROVE AVE

EX ROW

WB FAI-94 BISHOP FORD FWY (LINE B)

4" PVCC RGC WITH
(2) 11"4" INNER DUCTS

EB FAI-94 BISHOP FORD FWY (LINE A)

1065+00

800+00

805+00

MATCHLINE "L"
SEE SHEET 5 OF 18 FOR CONTINUATION

N

ITS-05

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	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 4 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	332
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

N

ELEVATED CONVEYOR

1-96F TRUNK CABLE IN 1¼" CNC
1-96F DISTRIBUTION CABLE IN 1¼" CNC

1-96F DISTRIBUTION CABLE IN 1¼" CNC

EX ROW

FIBER OPTIC
SPLICE - MAINLINE

UNIT DUCT
2-1/C #4 WITH
#6 GND

4" RGC

4" RGC WITH
(2) 1¼" INNERDUCTS

CCTV CAMERA
BF01A

1-12F DISTRIBUTION
CABLE IN 1¼" CNC

1-96F TRUNK CABLE IN 1¼" CNC
1-96F DISTRIBUTION CABLE IN 1¼" CNC

WB FAI-94
BISHOP FORD FWY (LINE B)

EB FAI-94 BISHOP FORD FWY (LINE A)

EB STONY ISLAND CON (LINE E)

FIBER OPTIC
SPLICE LATERAL

EX ROW

APT

70+00
65+00
60+00
955+00
960+00
1060+00
1055+00
1050+00
810+00
815+00
820+00

SEE SHEET 4 OF 18 FOR CONTINUATION
MATCHLINE "L"

MATCHLINE "M"
SEE SHEET 11 OF 18 FOR CONTINUATION

MATCHLINE "DD"
SEE SHEET 6 OF 18 FOR CONTINUATION

ITS-06

FILE NAME =	USER NAME = pscott	DESIGNED - RT	REVISED -	**STATE OF ILLINOIS**	**ITS PLAN**
		DRAWN - PS	REVISED -	**DEPARTMENT OF TRANSPORTATION**	**I-94 AT STONY ISLAND EXTENSION**
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		

SCALE: 1"=50' | SHEET NO. 5 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	333
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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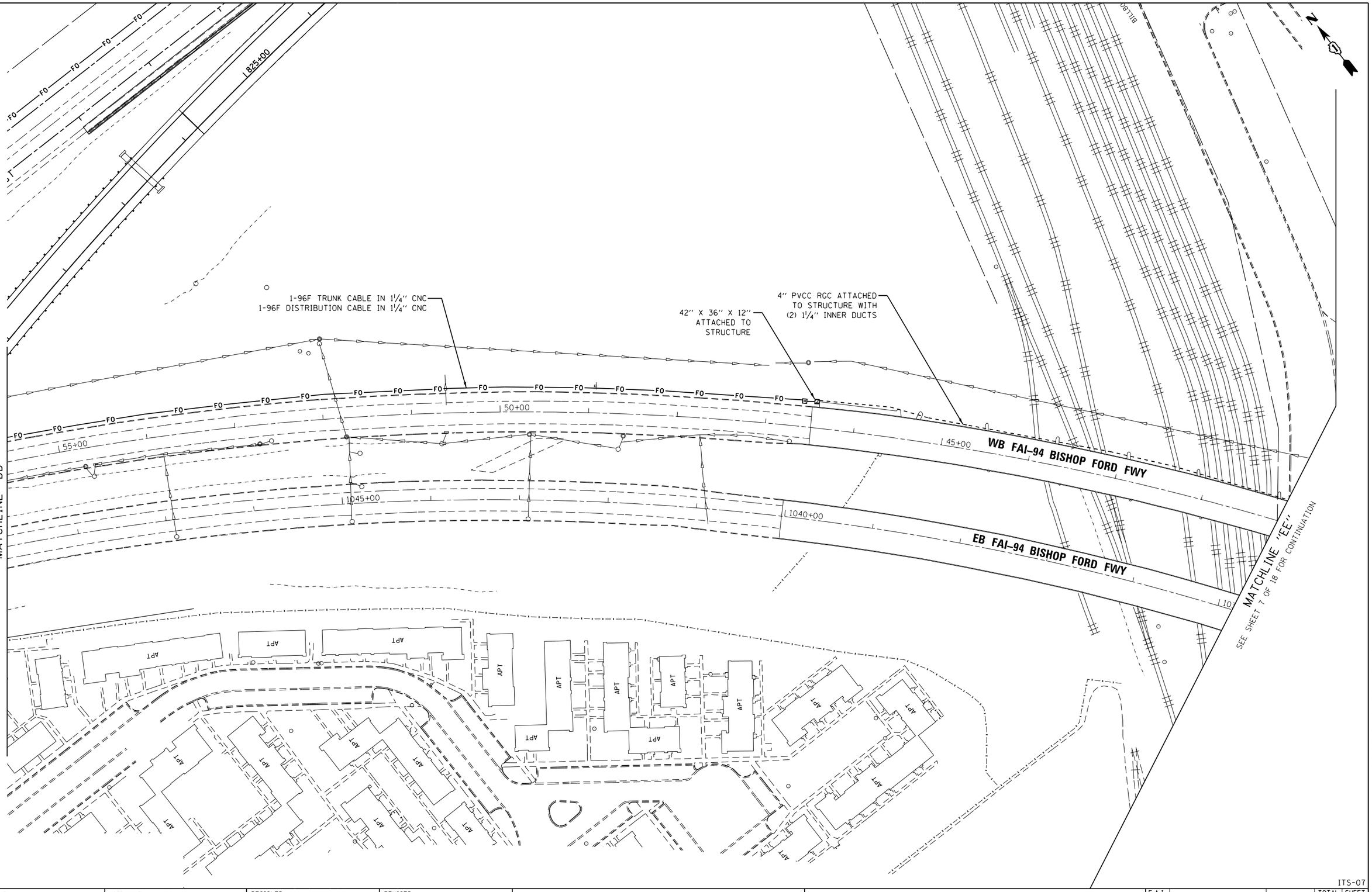

ITS-07

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	PLOT DATE = 3/29/2013	DATE - 3/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 6 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	334
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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EX ROW

E. 103RD ST.

4" PVCC RGC ATTACHED TO STRUCTURE WITH (2) 1¼" INNER DUCTS

42" X 36" X 12" ATTACHED TO STRUCTURE

1-96F TRUNK CABLE IN 1¼" CNC
1-96F DISTRIBUTION CABLE IN 1¼" CNC

EXISTING LIGHTING CONTROLLER "L"

4" PVCC RGC ATTACHED TO STRUCTURE WITH (2) 1¼" INNER DUCTS

UNIT DUCT 2-1/C #4 WITH #6 GND

CCTV CAMERA BF02A

1-96F TRUNK CABLE IN 1¼" CNC
1-96F DISTRIBUTION CABLE IN 1¼" CNC

1-12F DISTRIBUTION CABLE IN 1¼" CNC

FIBER OPTIC SPLICE LATERAL

42" X 36" X 12" ATTACHED TO STRUCTURE

WB FAI-94 BISHOP FORD FWY

EB FAI-94 BISHOP FORD FWY

S. WOODLAWN AVE.

640+00

710+00

400+00

360+00

350+00

400+00

1030+00

1025+00

410+00

SEE SHEET 6 OF 18 FOR CONTINUATION
MATCHLINE "EE"

MATCHLINE "FF"
SEE SHEET 8 OF 18 FOR CONTINUATION

ITS-08

FILE NAME = ...\D160J12-sht-ITS_08.dgn	USER NAME = pscott	DESIGNED - RT	REVISED -
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	PLOT DATE = 3/29/2013	DATE - 3/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 7 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	335
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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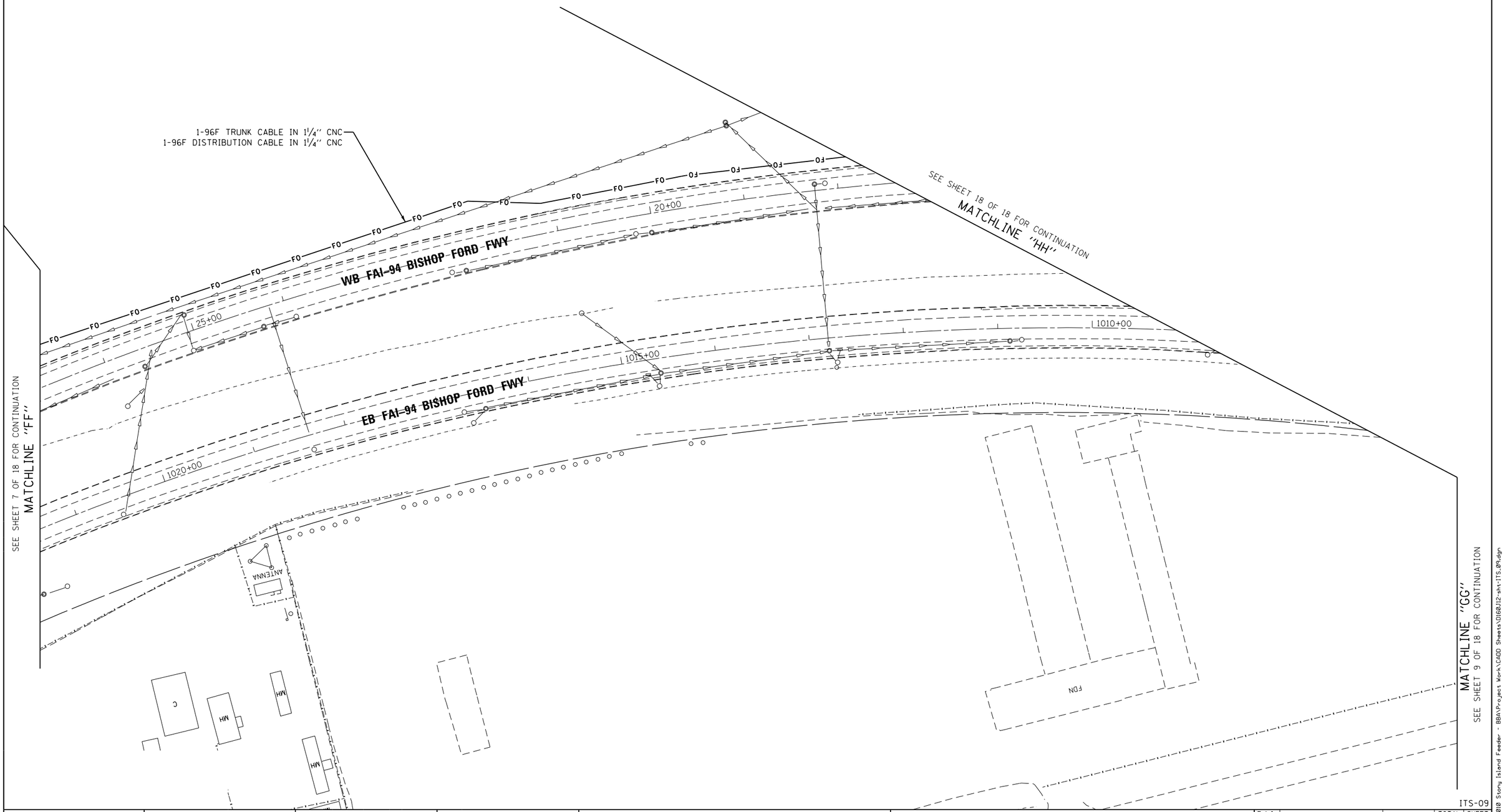

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	PLOT DATE = 3/29/2013	DATE - 3/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

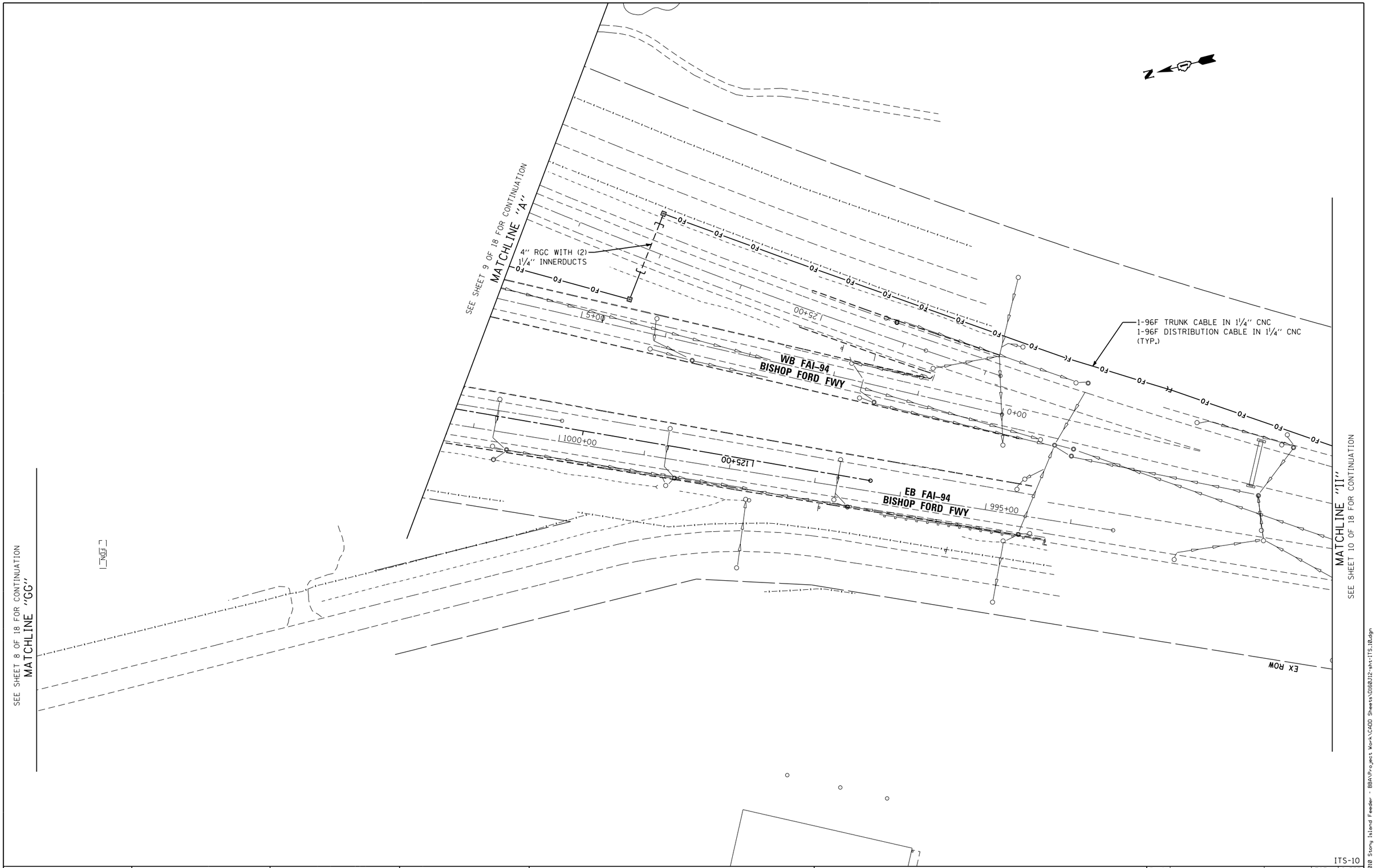
ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 8 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	336
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

ITS-09

S:\Projects\3018 Stony Island Feeder - BBA\Project Work\CADD Sheets\D160J12-sht-ITS.09.dgn



ITS-10

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	PLOT DATE = 3/29/2013	DATE - 3/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 9 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	337
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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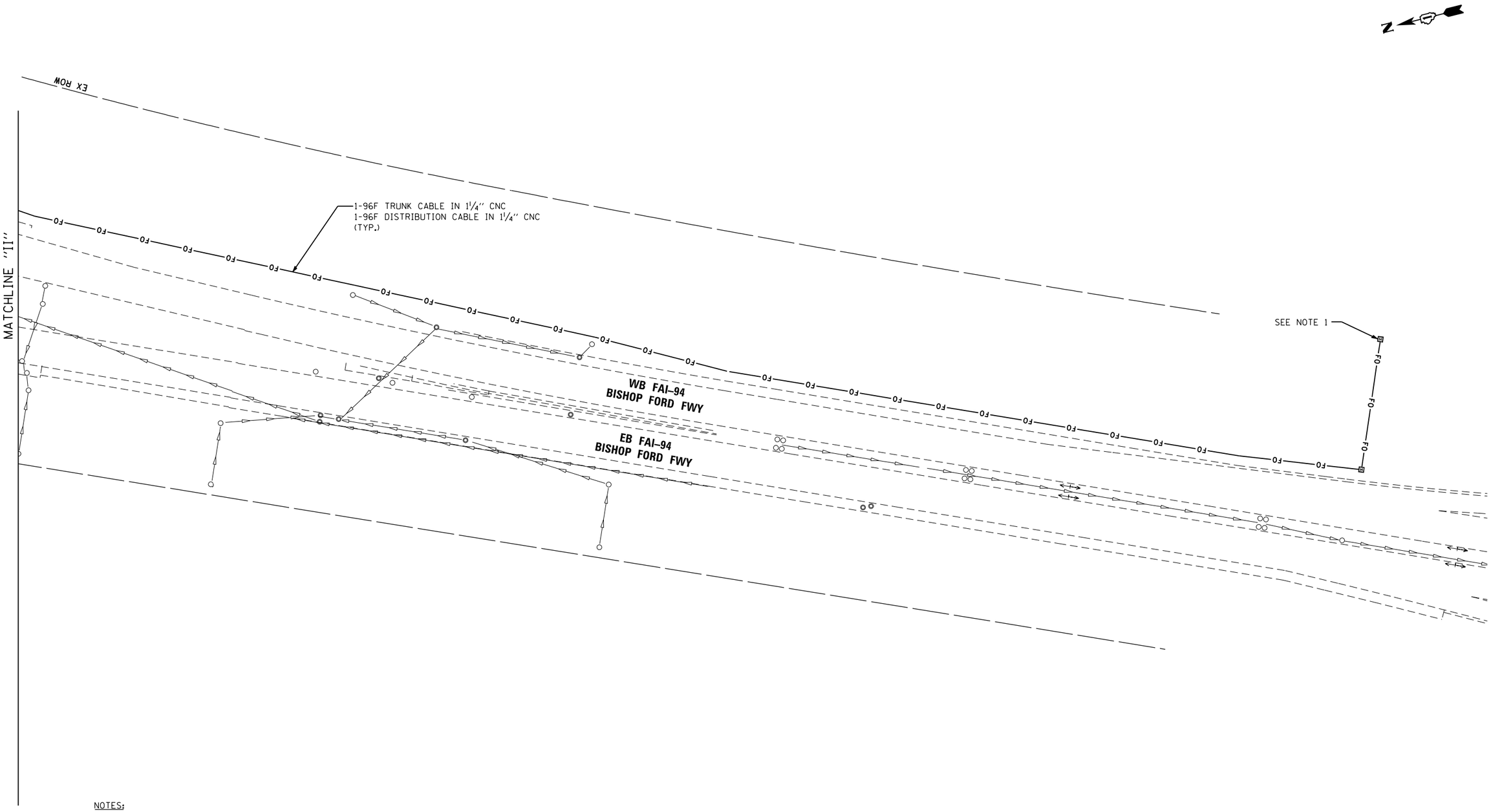

NOTES:

1. INSTALL HANDHOLE IN NON-PAVED AREA OUTSIDE OF PUMP STATION NO. 27 BUILDING AS DIRECTED BY ENGINEER. COIL FIBER OPTIC CABLE IN HANDHOLE PER SPECIFICATIONS. PROVIDE KNOCKOUTS IN ALL WALLS OF HANDHOLE FOR FUTURE CONDUIT EXTENSION.

ITS-11

FILE NAME = ...\D160J12-sht-ITS_11.dgn	USER NAME = pscott	DESIGNED - RT	REVISED -
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	PLOT DATE = 3/29/2013	DATE - 3/29/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 10 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	338
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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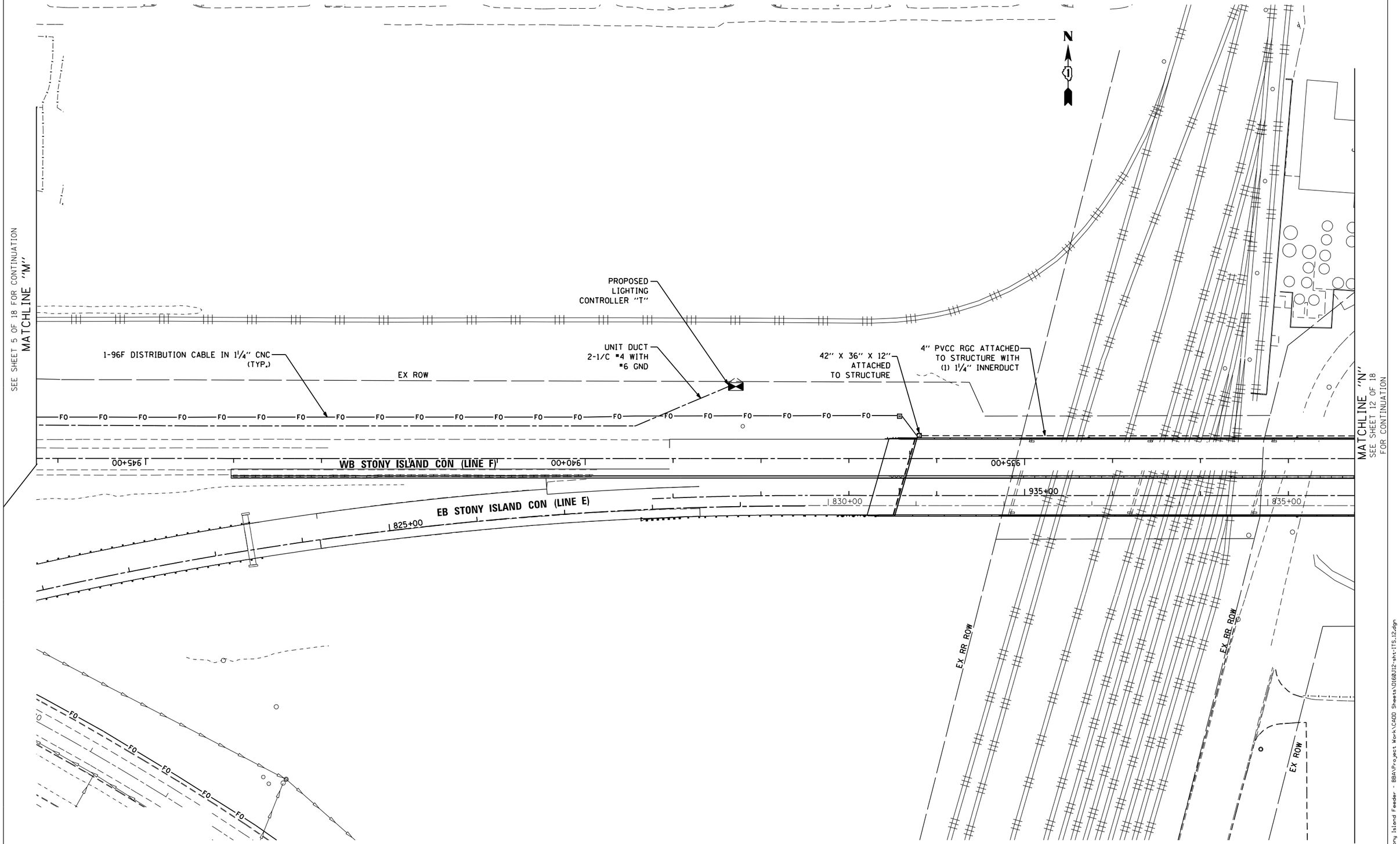

ITS-12

FILE NAME =	USER NAME = pscott	DESIGNED - RT	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**ITS PLAN STONY ISLAND CONNECTOR**		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - PS	REVISED -				94	2012-059-BR	COOK	631	339
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -						CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50'	SHEET NO. 11 OF 18 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

S:\Projects\3018 Stony Island Feeder - BBA\Project Work\CADD Sheets\D160J12-sht-ITS_12.dgn

SEE SHEET 11 OF 18 FOR CONTINUATION
MATCHLINE "N"

N

EX ROW

FIBER OPTIC SPLICE - MAINLINE

4" PVCC RGC WITH
(1) 1¼" INNER DUCT

42" X 36" X 12"
ATTACHED TO
STRUCTURE

1-96F DISTRIBUTION CABLE IN 1¼" CNC
(TYP.)

FO

1720+00
1725+00
1730+00
920+00
925+00
930+00

WB STONY ISLAND CON (LINE F)

EB STONY ISLAND CON (LINE E)

840+00
925+00
930+00
205+00
605+00
610+00

WETLAND

WETLAND

EX ROW

EX ROW

MATCHLINE "O"
SEE SHEET 14 OF 18 FOR CONTINUATION

MATCHLINE "JJ"
SEE SHEET 15 OF 18
FOR CONTINUATION

ITS-13

FILE NAME =	USER NAME = pscott	DESIGNED - RT	REVISED -
		DRAWN - PS	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 12 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	340
		CONTRACT NO. 60J12		
	ILLINOIS	FED. AID PROJECT		

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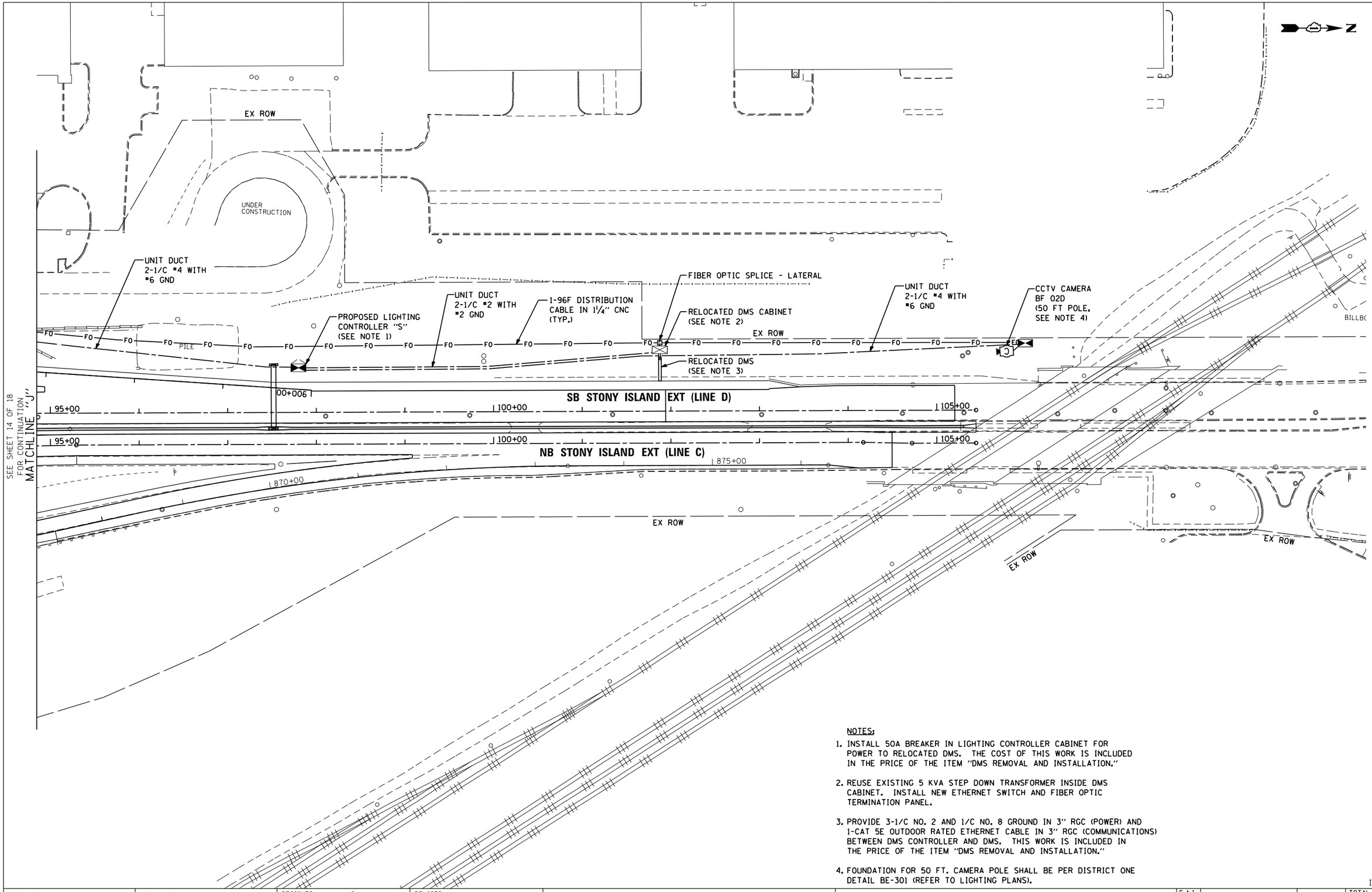

NOTES;

1. INSTALL 50A BREAKER IN LIGHTING CONTROLLER CABINET FOR POWER TO RELOCATED DMS. THE COST OF THIS WORK IS INCLUDED IN THE PRICE OF THE ITEM "DMS REMOVAL AND INSTALLATION."
2. REUSE EXISTING 5 KVA STEP DOWN TRANSFORMER INSIDE DMS CABINET. INSTALL NEW ETHERNET SWITCH AND FIBER OPTIC TERMINATION PANEL.
3. PROVIDE 3-1/C NO. 2 AND 1/C NO. 8 GROUND IN 3" RGC (POWER) AND 1-CAT 5E OUTDOOR RATED ETHERNET CABLE IN 3" RGC (COMMUNICATIONS) BETWEEN DMS CONTROLLER AND DMS. THIS WORK IS INCLUDED IN THE PRICE OF THE ITEM "DMS REMOVAL AND INSTALLATION."
4. FOUNDATION FOR 50 FT. CAMERA POLE SHALL BE PER DISTRICT ONE DETAIL BE-301 (REFER TO LIGHTING PLANS).

ITS-14

FILE NAME =	USER NAME = pscott	DESIGNED - JG	REVISED -
		DRAWN - PS	REVISED -
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 13 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	341
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

S:\Projects\3810 Stony Island Feeder - BBA\Project Work\CADD Sheets\I60J12-sht-ITS.14.dgn

SEE SHEET 12 OF 18 FOR CONTINUATION
MATCHLINE "O"

SEE SHEET 15 OF 18 FOR CONTINUATION
MATCHLINE "I"

SEE SHEET 13 OF 18 FOR CONTINUATION
MATCHLINE "J"

1-96F DISTRIBUTION CABLE IN 1¼" CNC

FIBER OPTIC SPLICE LATERAL

4" RGC WITH (1) 1 ¼" INNERDUCT

1-12F DISTRIBUTION CABLE IN 1¼" CNC

UNIT DUCT 2-1/C #4 WITH #6 GND

CCTV CAMERA BF02A

4" RGC

1-96F DISTRIBUTION CABLE IN 1¼" CNC

EX ROW

SB STONY ISLAND EXT (LINE D)

NB STONY ISLAND EXT (LINE C)

EX ROW

ITS-15

FILE NAME =	USER NAME = rswanson	DESIGNED - RT	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**ITS PLAN I-94 AT STONY ISLAND EXTENSION**	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - PS	REVISED -			94	2012-059-BR	COOK	631	342
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50' SHEET NO. 14 OF 18 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

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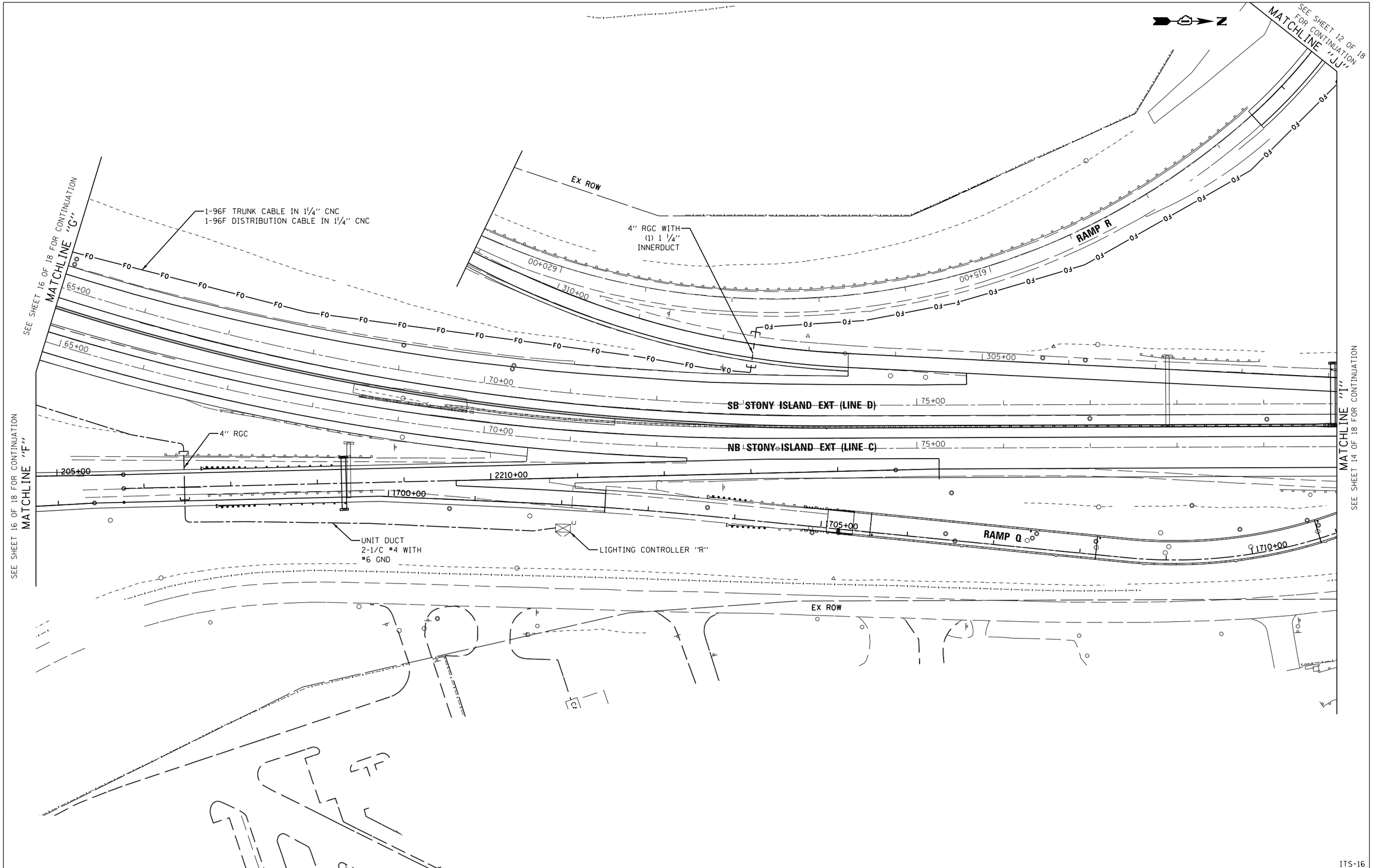

ITS-16

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		DRAWN - PS	REVISED -		**I-94 AT STONY ISLAND EXTENSION**
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -		SCALE: 1"=50' | SHEET NO. 15 OF 18 SHEETS | STA. | TO STA.
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	343
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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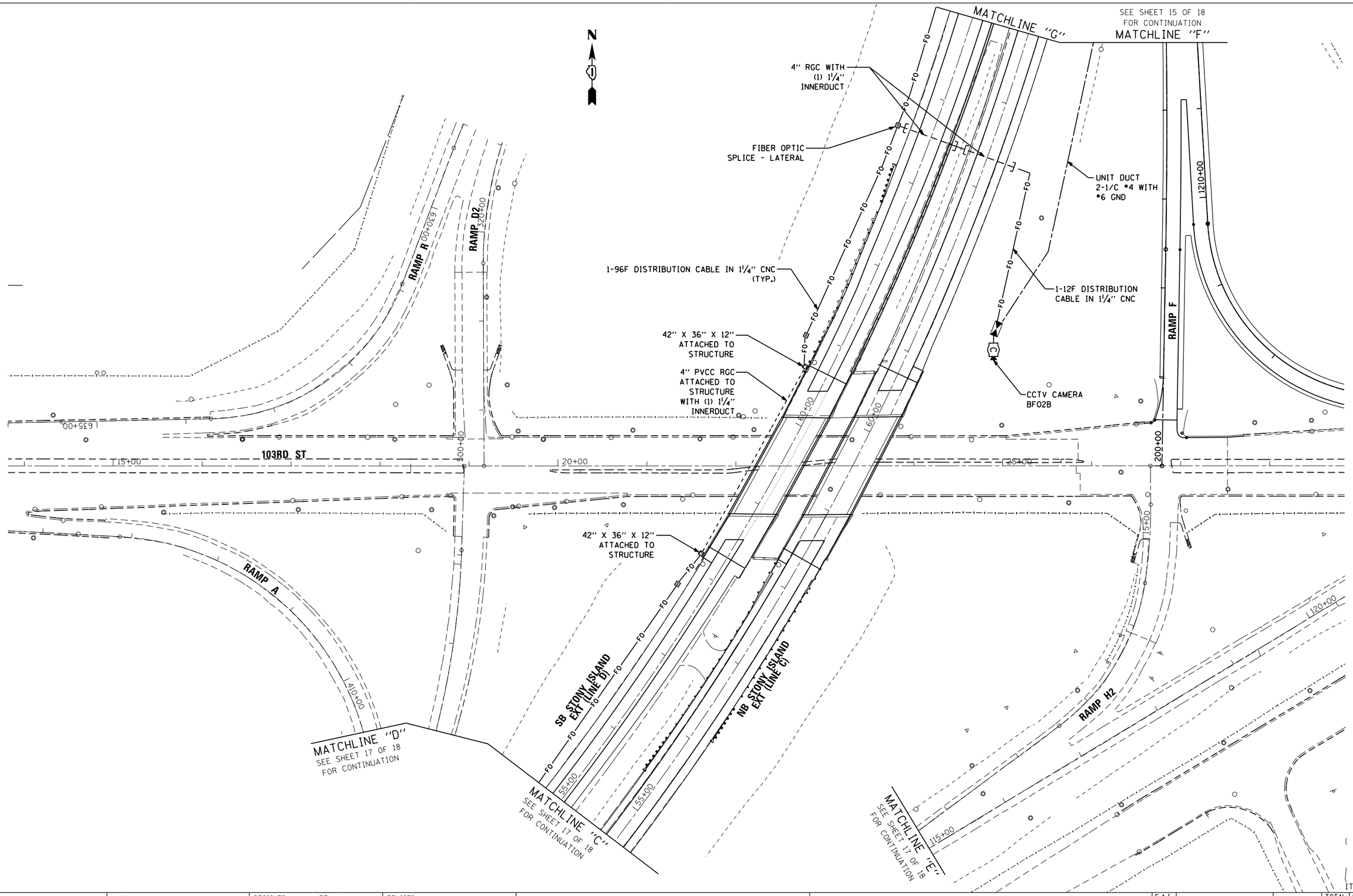

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	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ITS PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 16 OF 18 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	344
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

ITS-17

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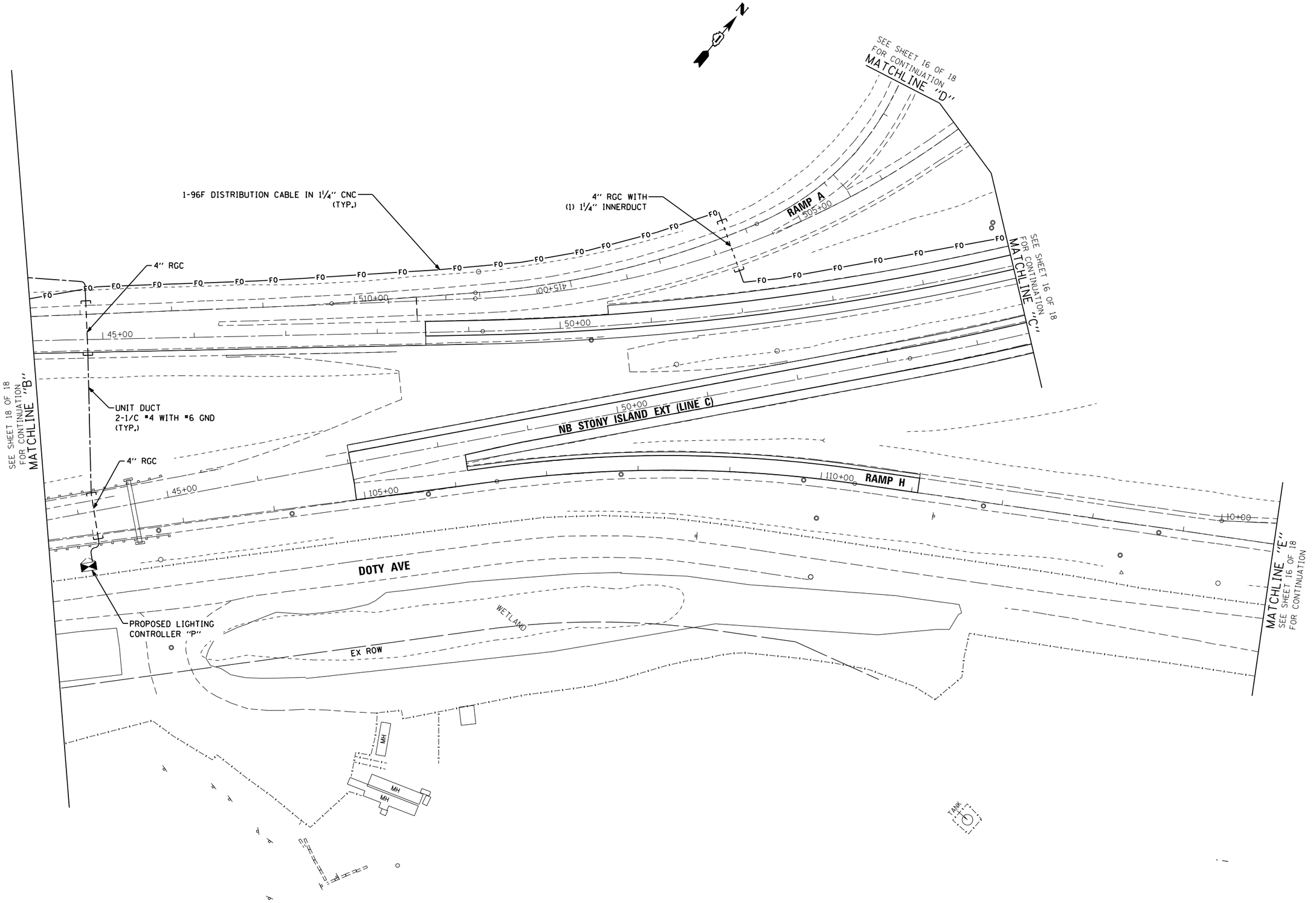

ITS-18

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		DRAWN - PS	REVISED -			94	2012-059-BR	COOK	631	345
	PLOT SCALE = 50.000' / IN.	CHECKED - RS	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50' SHEET NO. 17 OF 18 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

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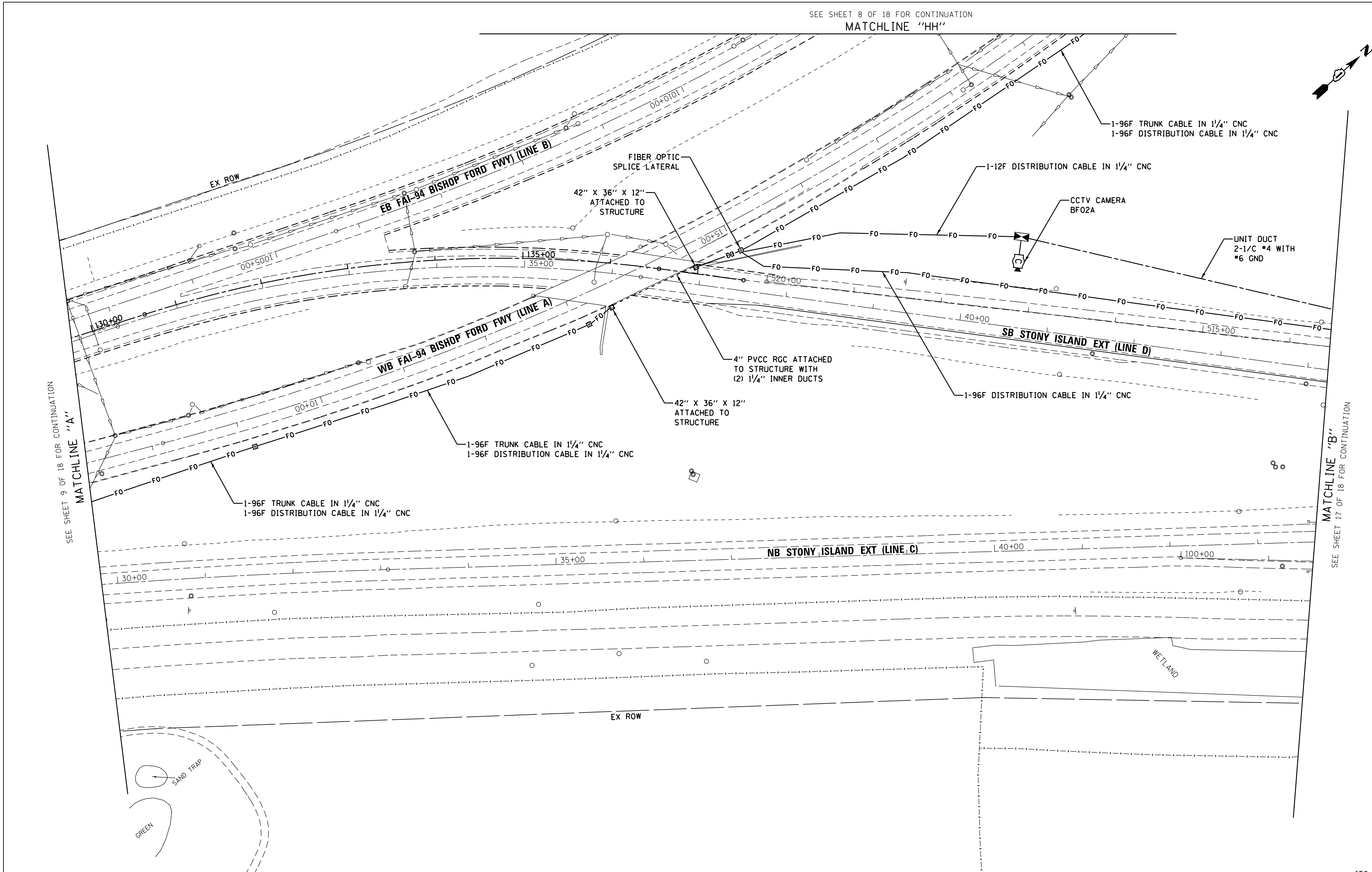

ITS-19

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		DRAWN - PS	REVISED -			94	2012-059-BR	COOK	631	346
	PLOT SCALE = 50.000'/ IN.	CHECKED - RS	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -		SCALE: 1"=50' / SHEET NO. 18 OF 18 SHEETS / STA. / TO STA.			ILLINOIS FED. AID PROJECT		

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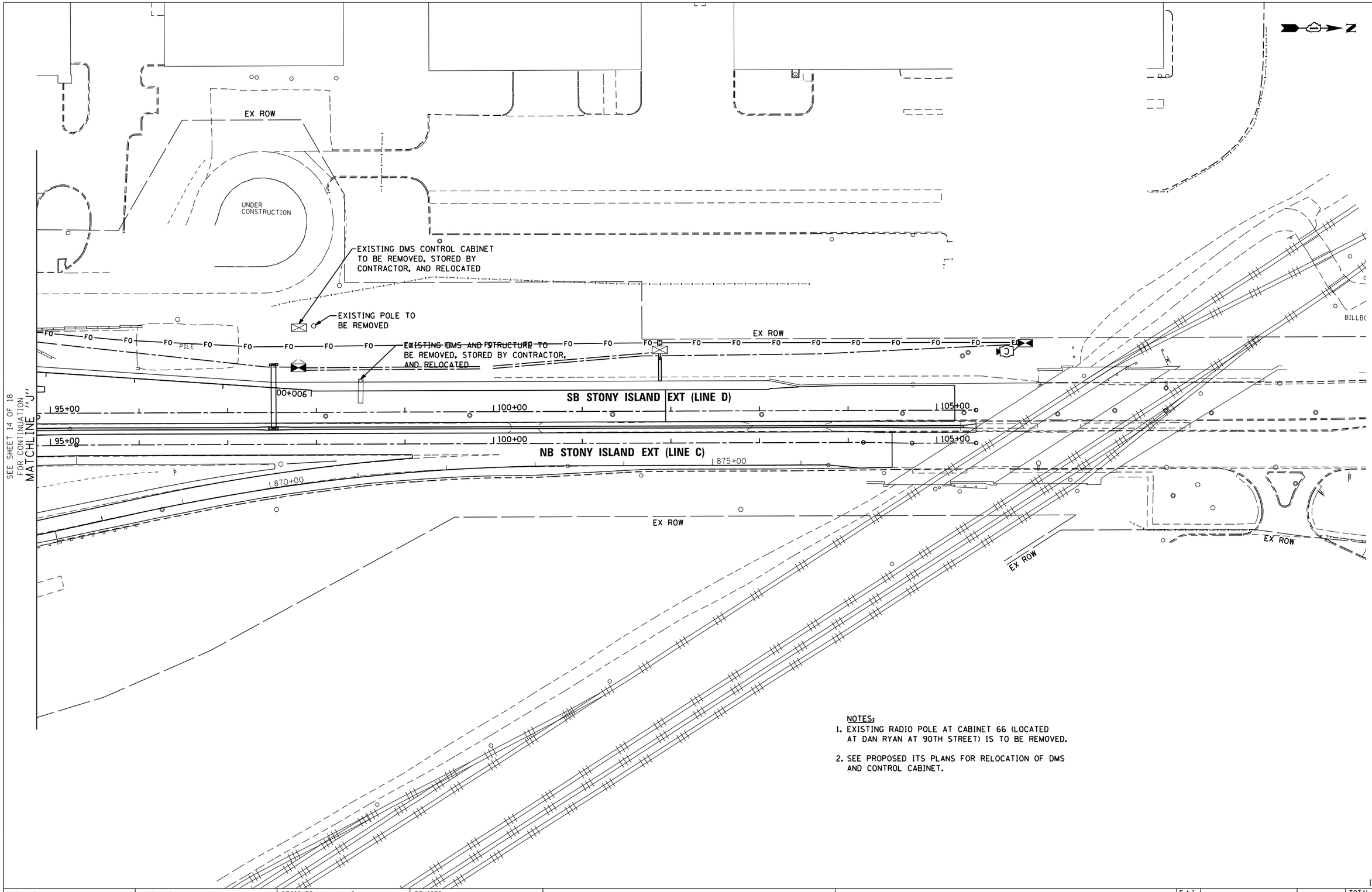

NOTES;

1. EXISTING RADIO POLE AT CABINET 66 (LOCATED AT DAN RYAN AT 90TH STREET) IS TO BE REMOVED.
2. SEE PROPOSED ITS PLANS FOR RELOCATION OF DMS AND CONTROL CABINET.

ITS-20

FILE NAME =	USER NAME = pscott	DESIGNED - JG	REVISED -
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	PLOT DATE = 3/29/2013	DATE - 3/29/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DMS REMOVAL PLAN
I-94 AT STONY ISLAND EXTENSION

SCALE: 1"=50' | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	347
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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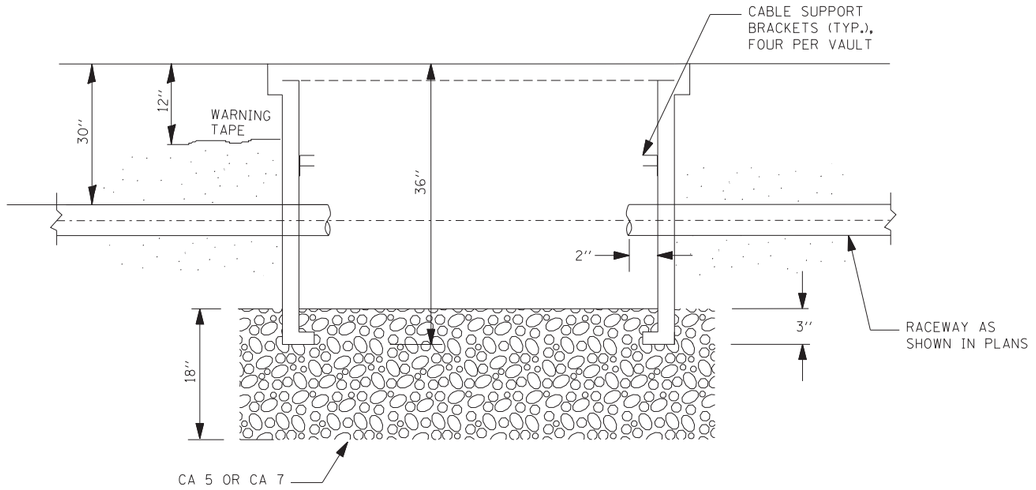

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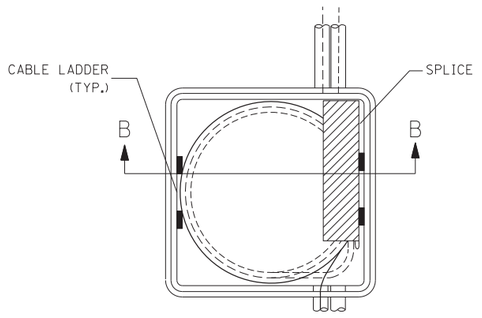
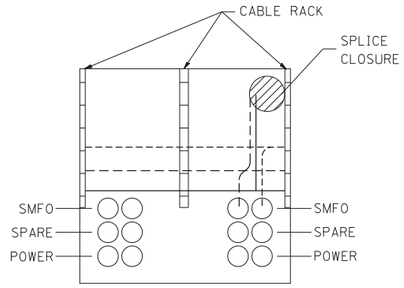
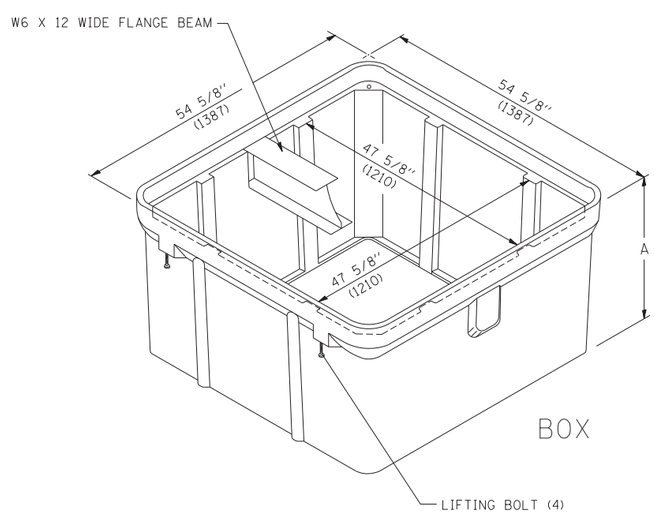


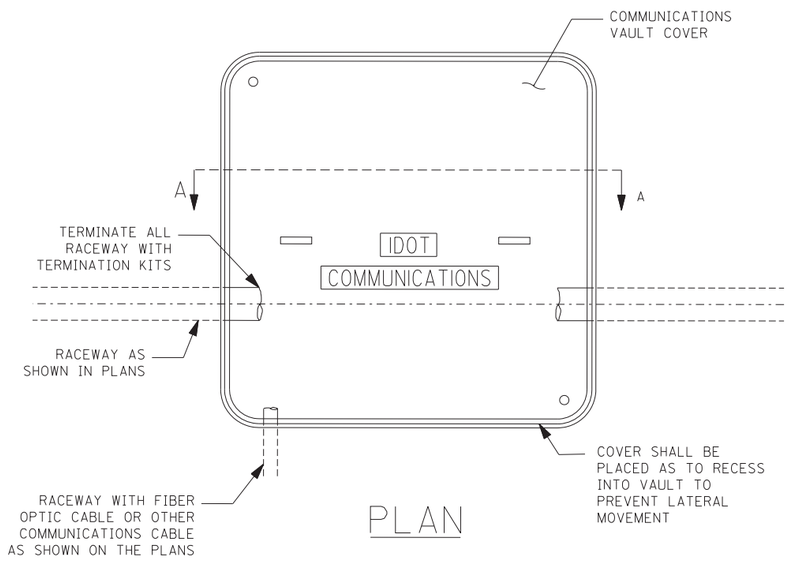


SECTION B-B



BOX

ISOMETRIC



PLAN

NOTES:

1. BOX SHALL HAVE AN OPEN BASE.
2. COVER SHALL WITHSTAND A 22,500/33,750 DESIGN/TEST LOADING AND SHALL LOCK.
3. ALL OPENINGS IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION OR PUNCH DRIVEN AT TIME OF PLACEMENT. IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
4. FIELD PLACEMENT OF COMMUNICATIONS VAULT SHALL BE AS DIRECTED BY THE ENGINEER.
5. ALL DIMENSIONS ARE MINIMUM AND A LARGER SIZE HANDHOLE MAY BE USED, WITH THE APPROVAL OF THE ENGINEER, TO FACILITATE USING A MANUFACTURER'S STANDARD PRODUCT.

FILE NAME = c:\pw_work\PWIDOT\LEYSA\d0108315\be705.dgn	USER NAME = leysa	DESIGNED -	REVISED -
		DRAWN -	REVISED -
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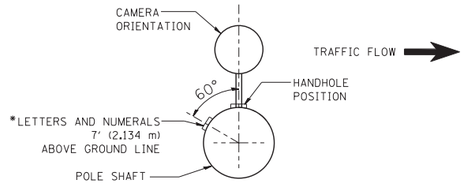
	PLOT DATE = 3/29/2010	DATE - 03-22-10	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

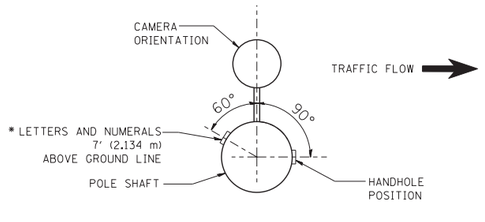
COMMUNICATIONS VAULT, COMPOSITE CONCRETE

SCALE: NONE | SHEET NO. 1 OF 9 SHEETS | STA. | TO STA.

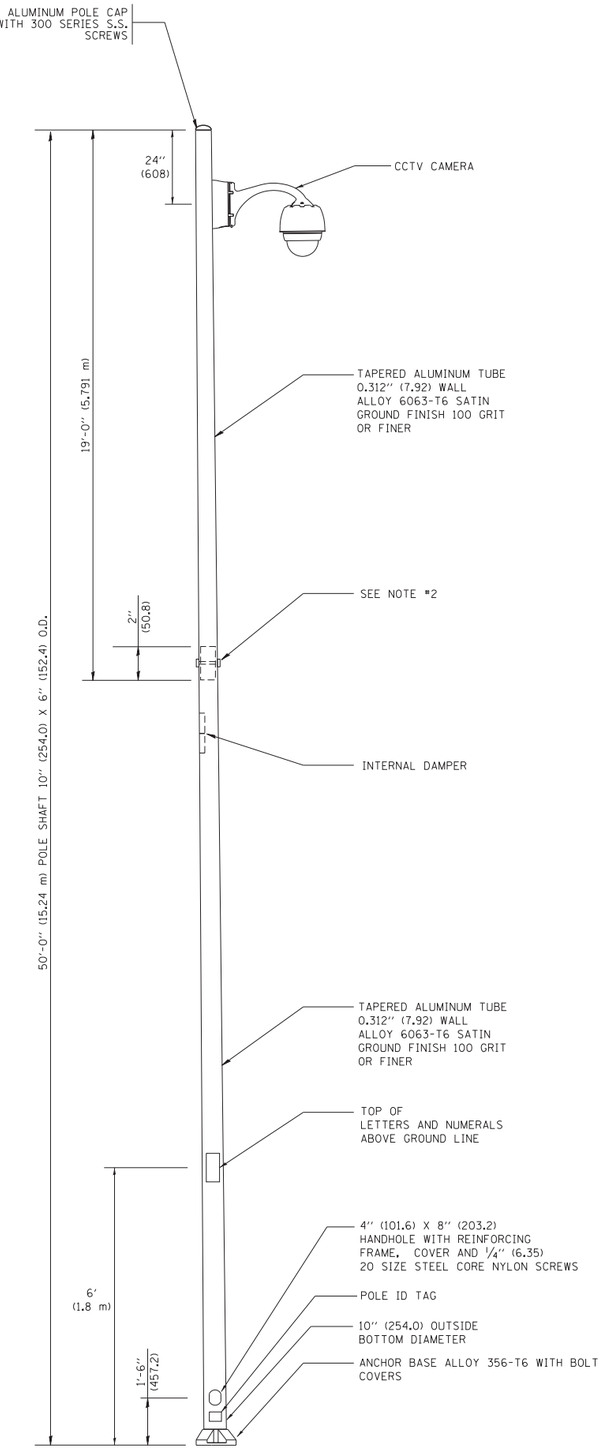
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	348
	BE-705	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



POSITION OF HANDHOLE AND CAMERA NUMBER FOR POLE MOUNTED ON BRIDGE PARAPET OR BARRIER WALL

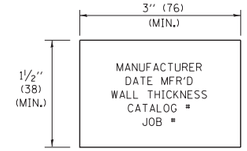


POSITION OF HANDHOLE AND CAMERA NUMBER



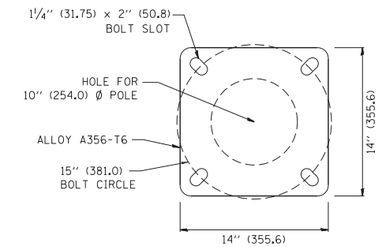
NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
3. THE POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
4. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
5. POLES WILL BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S INSTRUCTIONS.
6. POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.



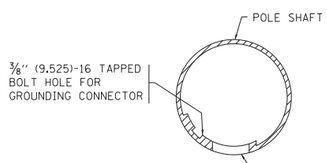
POLE ID TAG

NTS



POLE BASE PLATE DETAIL

15 INCH (381.0) BOLT CIRCLE



HANDHOLE DETAIL

(N.T.S.)

ITS-22

FILE NAME = c:\pw_work\pwidot\bauerdl\d0108315\be1000.dgn	USER NAME = bauerdl	DESIGNED -	REVISED - R. TOMSONS 09-06-00	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CCTV CAMERA STRUCTURE 50' (15.24 m) MOUNTING HEIGHT			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. TOMSONS 09-03-03					94	2012-059-BR	COOK	631	349
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - R. TOMSONS 02-27-13						BE-1000	CONTRACT NO. 60J12		
	PLOT DATE = 2/27/2013	DATE -	REVISED -		SCALE: NONE	SHEET NO. 2 OF 9 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

TRUNK CABLE FIBER ASSIGNMENTS				ORIGINATION			
TRUNK CABLE DESIGNATION	TCF-			DESTINATION			
BUFFER TUBE	FIBER	FIBER NO	ASSIGNMENT	BUFFER TUBE	FIBER NO	FIBER NO	ASSIGNMENT
BLUE	Blue 1	1		SLATE	Blue 1	49	
	Orange 2	2			Orange 2	50	
	Green 3	3			Green 3	51	
	Brown 4	4			Brown 4	52	
	Slate 5	5			Slate 5	53	
	White 6	6			White 6	54	
	Red 7	7			Red 7	55	
	Black 8	8			Black 8	56	
	Yellow 9	9			Yellow 9	57	
	Violet 10	10			Violet 10	58	
	Rose 11	11			Rose 11	59	
	Aqua 12	12			Aqua 12	60	
ORANGE	Blue 1	13		WHITE	Blue 1	61	
	Orange 2	14			Orange 2	62	
	Green 3	15			Green 3	63	
	Brown 4	16			Brown 4	64	
	Slate 5	17			Slate 5	65	
	White 6	18			White 6	66	
	Red 7	19			Red 7	67	
	Black 8	20			Black 8	68	
	Yellow 9	21			Yellow 9	69	
	Violet 10	22			Violet 10	70	
	Rose 11	23			Rose 11	71	
	Aqua 12	24			Aqua 12	72	
GREEN	Blue 1	25		RED	Blue 1	73	
	Orange 2	26			Orange 2	74	
	Green 3	27			Green 3	75	
	Brown 4	28			Brown 4	76	
	Slate 5	29			Slate 5	77	
	White 6	30			White 6	78	
	Red 7	31			Red 7	79	
	Black 8	32			Black 8	80	
	Yellow 9	33			Yellow 9	81	
	Violet 10	34			Violet 10	82	
	Rose 11	35			Rose 11	83	
	Aqua 12	36			Aqua 12	84	
BROWN	Blue 1	37		BLACK	Blue 1	85	
	Orange 2	38			Orange 2	86	
	Green 3	39			Green 3	87	
	Brown 4	40			Brown 4	88	
	Slate 5	41			Slate 5	89	
	White 6	42			White 6	90	
	Red 7	43			Red 7	91	
	Black 8	44			Black 8	92	
	Yellow 9	45			Yellow 9	93	
	Violet 10	46			Violet 10	94	
	Rose 11	47			Rose 11	95	
	Aqua 12	48			Aqua 12	96	

ITS-23

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRUNK CABLE FIBER ASSIGNMENTS
FAI XX TO YY

SCALE: NONE | SHEET NO. 3 OF 9 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	350
	BE-2100	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

DISTRIBUTION CABLE FIBER ASSIGNMENTS				ORIGINATION			
DISTRIBUTION CABLE DESIGNATION	DCF-			DESTINATION			
BUFFER TUBE	FIBER	FIBER NO	ASSIGNMENT	BUFFER TUBE	FIBER NO	FIBER NO	ASSIGNMENT
BLUE	Blue 1	1		SLATE	Blue 1	49	
	Orange 2	2			Orange 2	50	
	Green 3	3			Green 3	51	
	Brown 4	4			Brown 4	52	
	Slate 5	5			Slate 5	53	
	White 6	6			White 6	54	
	Red 7	7			Red 7	55	
	Black 8	8			Black 8	56	
	Yellow 9	9			Yellow 9	57	
	Violet 10	10			Violet 10	58	
	Rose 11	11			Rose 11	59	
	Aqua 12	12			Aqua 12	60	
ORANGE	Blue 1	13		WHITE	Blue 1	61	
	Orange 2	14			Orange 2	62	
	Green 3	15			Green 3	63	
	Brown 4	16			Brown 4	64	
	Slate 5	17			Slate 5	65	
	White 6	18			White 6	66	
	Red 7	19			Red 7	67	
	Black 8	20			Black 8	68	
	Yellow 9	21			Yellow 9	69	
	Violet 10	22			Violet 10	70	
	Rose 11	23			Rose 11	71	
	Aqua 12	24			Aqua 12	72	
GREEN	Blue 1	25		RED	Blue 1	73	
	Orange 2	26			Orange 2	74	
	Green 3	27			Green 3	75	
	Brown 4	28			Brown 4	76	
	Slate 5	29			Slate 5	77	
	White 6	30			White 6	78	
	Red 7	31			Red 7	79	
	Black 8	32			Black 8	80	
	Yellow 9	33			Yellow 9	81	
	Violet 10	34			Violet 10	82	
	Rose 11	35			Rose 11	83	
	Aqua 12	36			Aqua 12	84	
BROWN	Blue 1	37		BLACK	Blue 1	85	
	Orange 2	38			Orange 2	86	
	Green 3	39			Green 3	87	
	Brown 4	40			Brown 4	88	
	Slate 5	41			Slate 5	89	
	White 6	42			White 6	90	
	Red 7	43			Red 7	91	
	Black 8	44			Black 8	92	
	Yellow 9	45			Yellow 9	93	
	Violet 10	46			Violet 10	94	
	Rose 11	47			Rose 11	95	
	Aqua 12	48			Aqua 12	96	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRIBUTION CABLE FIBER ASSIGNMENTS
FAI XX TO YY

SCALE: NONE | SHEET NO. 4 OF 9 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	351
	BE-2110	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LATERAL CABLE FIBER ASSIGNMENTS		
LCF-		
FIBER NO	FUNCTION	CONNECTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

LATERAL CABLE FIBER ASSIGNMENTS		
LCF-		
FIBER NO	FUNCTION	CONNECTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

LATERAL CABLE FIBER ASSIGNMENTS		
LCF-		
FIBER NO	FUNCTION	CONNECTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

LATERAL CABLE FIBER ASSIGNMENTS		
LCF-		
FIBER NO	FUNCTION	CONNECTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

ITS-25

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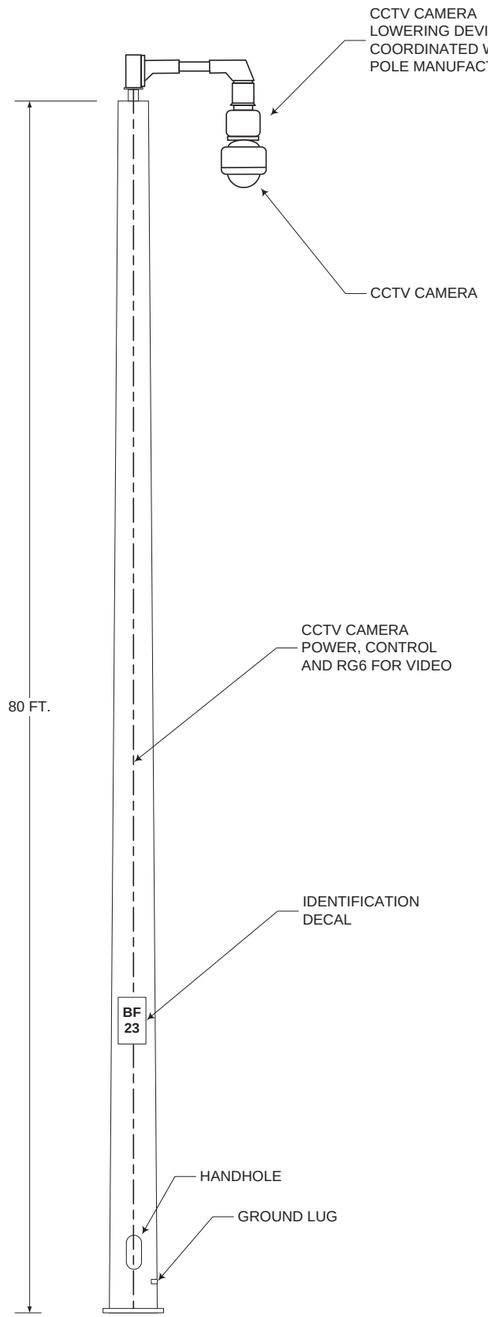

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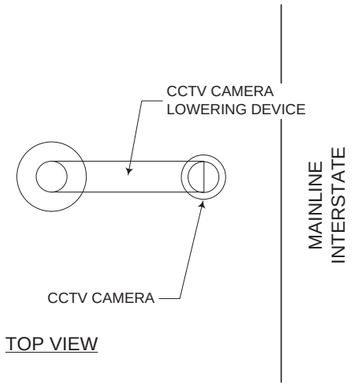

TOP VIEW

GENERAL NOTES

1. LOADING AND ALLOWABLE STRESS CRITERIA: 1994 AASHTO
2. MAXIMUM 1-INCH POLE TOP DEFLECTION WITH 30 MPH WIND VELOCITY, NO GUST.
3. LOCATIONS OF THE CCTV CAMERA INSTALLATIONS ARE APPROXIMATE. THE CONTRACTOR MAY ADJUST THE LOCATIONS OF THE INSTALLATIONS TO FACILITATE INSTALLATION WITH WRITTEN APPROVAL OF THE RESIDENT ENGINEER AND THE ELECTRICAL DESIGN SECTION. ALL STANDARD NON-FRANGIBLE SETBACK REQUIREMENTS AS WELL AS CLEAR ZONE REQUIREMENTS SHALL BE MAINTAINED.
4. THE POLE SHALL BE A MAXIMUM OF THREE SECTIONS FOR FIELD ASSEMBLY. THE POLE SHAFTS SHALL BE A ROUND CROSS SECTION AND MEET THE REQUIREMENTS OF ASTM A595 GRADE A WITH A MINIMUM YIELD STRENGTH OF 55,000 PSI. THE BOTTOM SECTION SHALL HAVE A MINIMUM .3125 WALL THICKNESS AND A MINIMUM DIAMETER OF 23". THE POLE SHALL HAVE A PROVISION FOR VENTING AT THE TOP AND BOTTOM TO PREVENT CONDENSATION BUILDUP ON THE INTERIOR OF THE POLE SHAFT.
5. CABLE SUPPORTS SHALL BE PROVIDED OF ALL CABLES INSIDE OF POLE SO THAT NO CABLE LOADING IS EXCEEDED. CALCULATIONS SHALL BE SUBMITTED FOR THE CABLES BEING FURNISHED.
6. ALL EQUIPMENT SHALL BE GROUNDED.
7. DOCUMENTATION SHALL BE SUBMITTED THAT THE POLE IS FULLY COORDINATED WITH THE CAMERA LOWERING DEVICE.
8. ALL CABLES, INCLUDING LOWERING DEVICE CABLES, SHALL BE WITHIN THE POLE SHAFT. EXTERNAL CABLING WILL NOT BE PERMITTED.
9. UNLESS OTHERWISE INDICATED, OR AS DIRECTED BY THE ENGINEER, THE CAMERA LOWERING DEVICE SHALL BE ORIENTED PERPENDICULAR TO THE MAINLINE INTERSTATE FOR THE LEAST OBSTRUCTED VIEW OF THE INTERSTATE ROADWAY.

MATERIAL REQUIREMENTS

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT	A572 GR. 65	65
BASE PLATE	A36	36
POLE TOP PLATE	A36	36
ANCHOR BOLTS	F1554 GR. 55	55
GALVANIZING, STURCTURE	A123	N/A
GALVANIZING, HARDWARE	A153	N/A

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		DRAWN	REVISED
	PLOT SCALE	CHECKED	REVISED
	PLOT DATE	DATE 1/1/2013	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

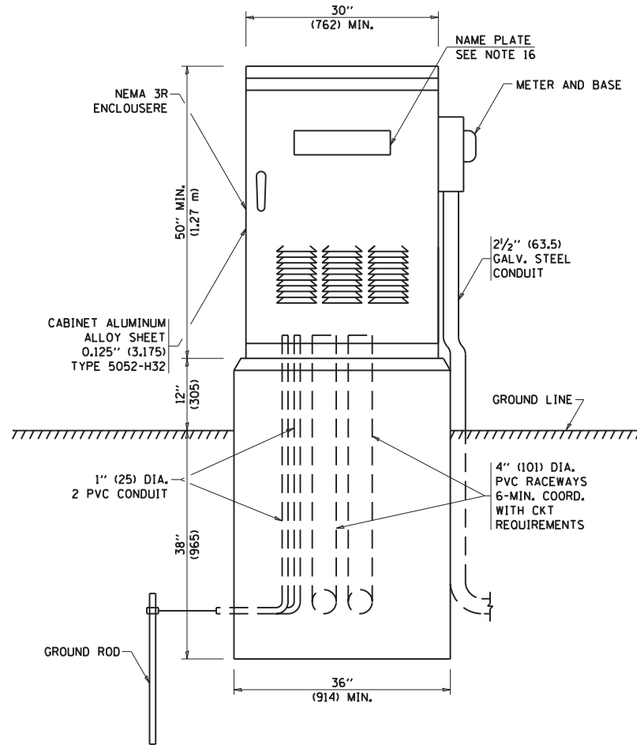
CCTV CAMERA STRUCTURE
80 FT M.H., GALVANIZED STEEL

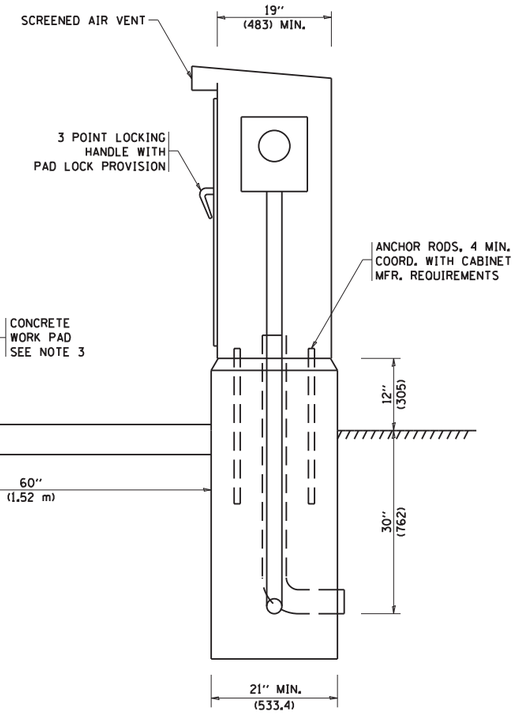
SCALE: NONE | SHEET NO. 6 OF 9 SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	353
		CONTRACT NO.	60J12	
	ILLINOIS	FED. AID PROJECT		

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. FOUNDATION SIZE SHALL BE COORDINATED WITH CABINET SIZE AND MFR.
3. IN FRONT OF CONTROL CABINET DOOR, REMOVE VEGETATION AND 2" (50.8 mm) TOP SOIL, LEVEL THE AREA AND ON TOP, PLACE LENGTH WISE PARALLEL TO CONTROL CABINET, A CONCRETE PAD 36" (914.4 mm) x 60" (18.288 m) x 4" (101 mm) MIN. SIZE. THE COST OF LABOR AND MATERIALS ARE INCLUDED IN THE COST OF THE CONTROLLER.
4. DOOR SHALL BE CONSTRUCTED FROM SAME TYPE OF MATERIAL AND THICKNESS AS CABINET.
5. DOOR SHALL BE EQUIPPED WITH THREE POINT LATCHING MECHANISM WITH NYLON ROLLERS AT TOP THE BOTTOM.
6. DOOR HINGE SHALL BE A HEAVY GAUGE CONTINUOUS HINGE WITH A 1/4" (6.35 mm) DIA. STAINLESS STEEL HINGE PIN.
7. ALL EXTERNAL HARDWARE SHALL BE STAINLESS STEEL.
8. METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET, NEAR TO THE SERVICE POLE.
9. THE HEADS OF CONNECTORS SCREWS SHALL BE PAINTED WHITE FOR NEUTRAL BAR CONNECTION AND GREEN FOR GROUND BAR CONNECTORS.
10. PROVIDE SEALING GROMMETS FOR ALL OPEN WIRING EXTENDED FROM DEVICES IN BOXES OR CABINETS WITHIN THE CONTROL CABINET.
11. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.
12. THE CONTROLLER SHALL BE CONSTRUCTED TO U.L. STD. 508 AND BEAR THE U.L. LABEL "ENCLOSED INDUSTRIAL CONTROL PANEL".
13. 12" (304.8) X 16" (406.4 mm) STAINLESS STEEL EXTERIOR NAMEPLATE SHALL BE ENGRAVED TO READ "STATE OF ILLINOIS" UNLESS OTHERWISE SPECIFIED.





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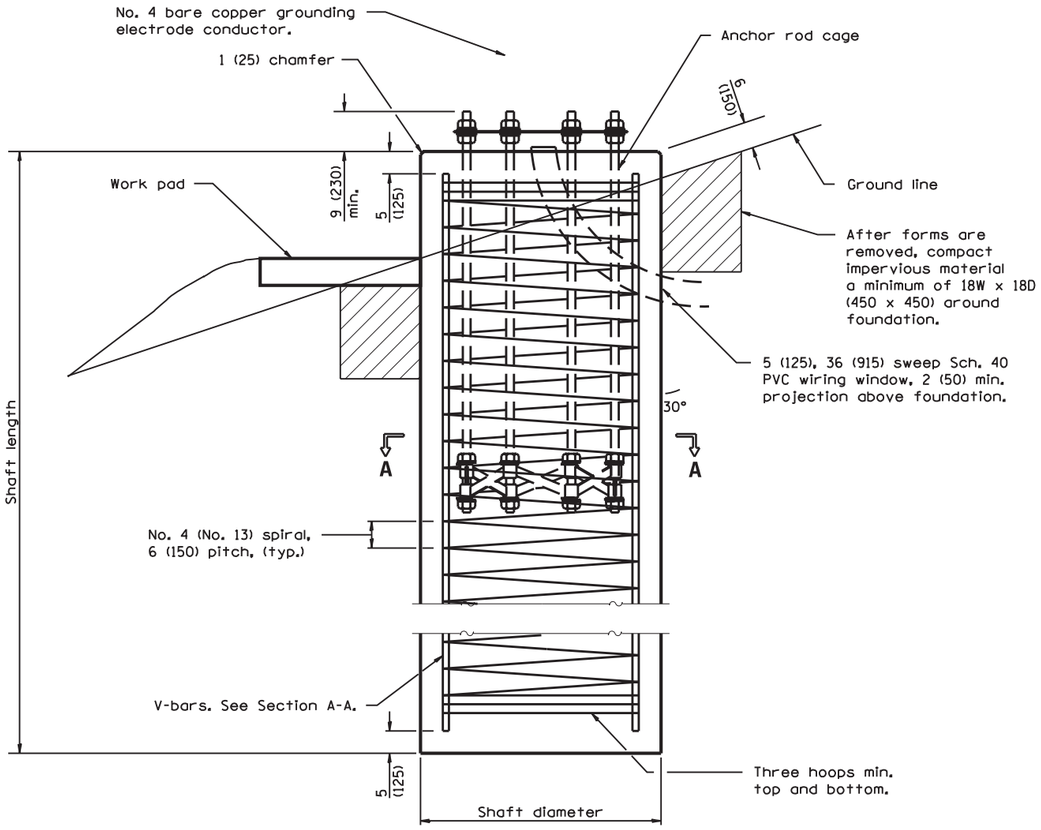
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CCTV CAMERA EQUIPMENT CABINET

SCALE: NONE | SHEET 7 OF 9 SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	354
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		



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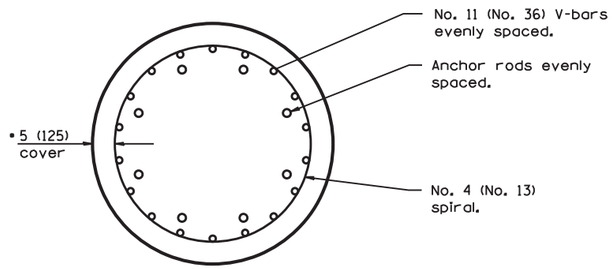

SECTION A–A

• See Rod and Reinforcement Table.

SHAFT LENGTH TABLE			
SOIL CONSISTENCY		AVERAGE STRENGTH	HEIGHT
		Qu in tsf (Qu in kPa)	80′ (24 m)
Cohesive	SOFT	< 0.5 (< 50)	20′-6″ (6.2 m)
	MEDIUM	0.5 to 1 (50 to 100)	17′-0″ (5.1 m)
	STIFF	1 to 2 (100 to 200)	14′-6″ (4.4 m)
	VERY STIFF	2 to 4 (200 to 400)	13′-0″ (3.8 m)
	HARD	> 4 (> 400)	11′-6″ (3.5 m)
		N in BLOWS/FT. (N in BLOWS/0.3m)	
Granular	VERY LOOSE	< 5 (< 5)	16′-6″ (5.0 m)
	LOOSE	5 to 10 (5 to 10)	15′-0″ (4.6 m)
	MEDIUM	10 to 25 (10 to 25)	14′-6″ (4.4 m)
	DENSE	25 to 50 (25 to 50)	14′-0″ (4.1 m)
	VERY DENSE	> 50 (> 50)	13′-0″ (3.9 m)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

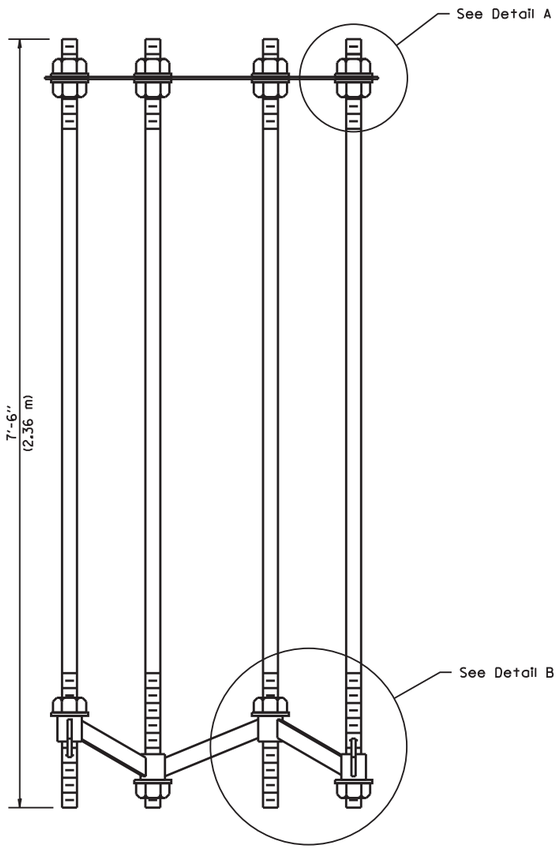
CCTV CAMERA STRUCTURE, 80 FT. M.H.
FOUNDATION, SHEET 1 OF 2

SCALE: NONE | SHEET 8 OF 9 SHEETS | STA. _____ | TO STA. _____

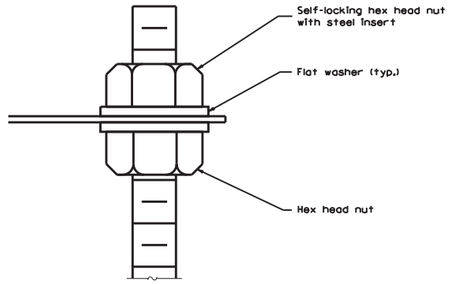
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	355
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

ROD AND REINFORCEMENT TABLE					
TOWER HEIGHT	ANCHOR ROD DIAM. (MIN)	ROD CIRCLE DIAM. (MIN)	TOWER BASE DIAM. (MIN)	DRILLED SHAFT DIAM. (1)	V BAR QTY.
80′ (25 m)	1½ (38)	30 (760)	24 (610)	4′-0″ (1.2 m)	14

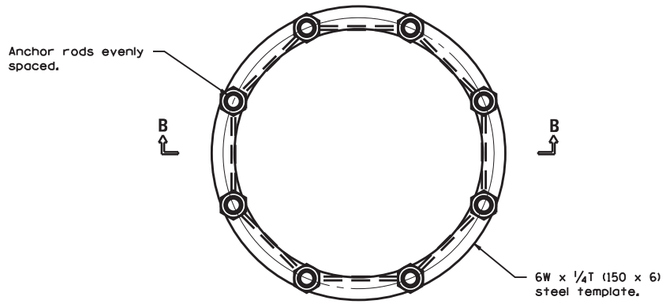
(1) Diameter based on a 5 (125) conc. cover. The min. cover shall be 3 (75) in dry shaft excavation and 4 (100) in a wet hole. When rock is encountered a 5 (125) cover against soil and a 2 (50) cover against rock shall be required.



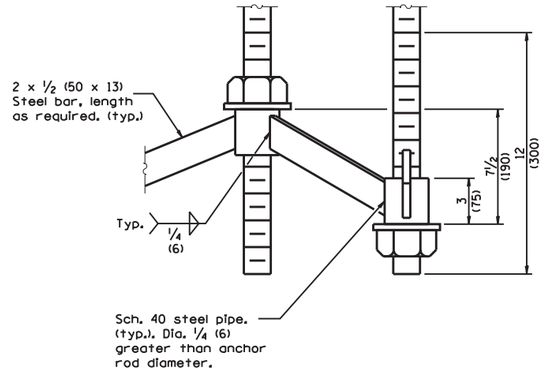
SECTION B–B



DETAIL A



ANCHOR ROD CAGE (PLAN)



DETAIL B

GENERAL NOTES

Anchor rod quantity, diameter, and length shall be determined by the CCTV structure manufacturer and approved by the Engineer. Each foundation shall have a minimum of 8 anchor rods.

All foundation reinforcement steel shall be epoxy coated.

The cost of reinforcement shall be included in the cost of the foundation.

Steel anchor rod forms shall not be removed for a minimum of 3 days after concrete is poured. The tower shall not be set for a minimum of 7 days or as approved by the Engineer.

Coordinate the rod circle diameter of the structure with the diameter of the anchor rod cage.

The foundation shall be poured monolithically and shall have no construction joints.

Grounding electrodes shall be installed in an access well when there is a conflict in using the method shown.

All dimensions are in inches (millimeters) unless otherwise shown.

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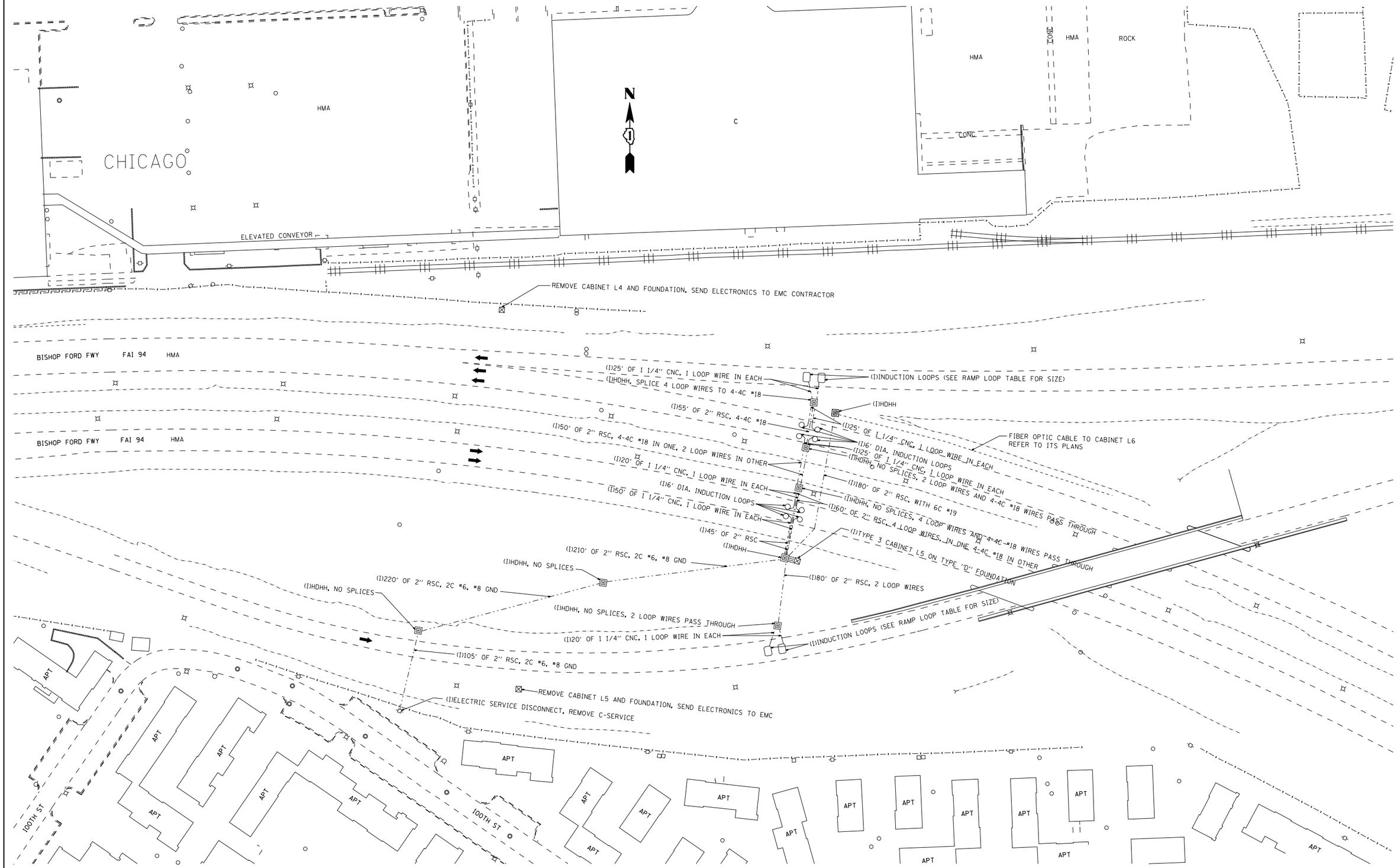
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CCTV CAMERA STRUCTURE, 80 FT. M.H.
FOUNDATION, SHEET 2 OF 2

SCALE: NONE | SHEET 9 OF 9 SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	356
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE
ELLIS AVE.

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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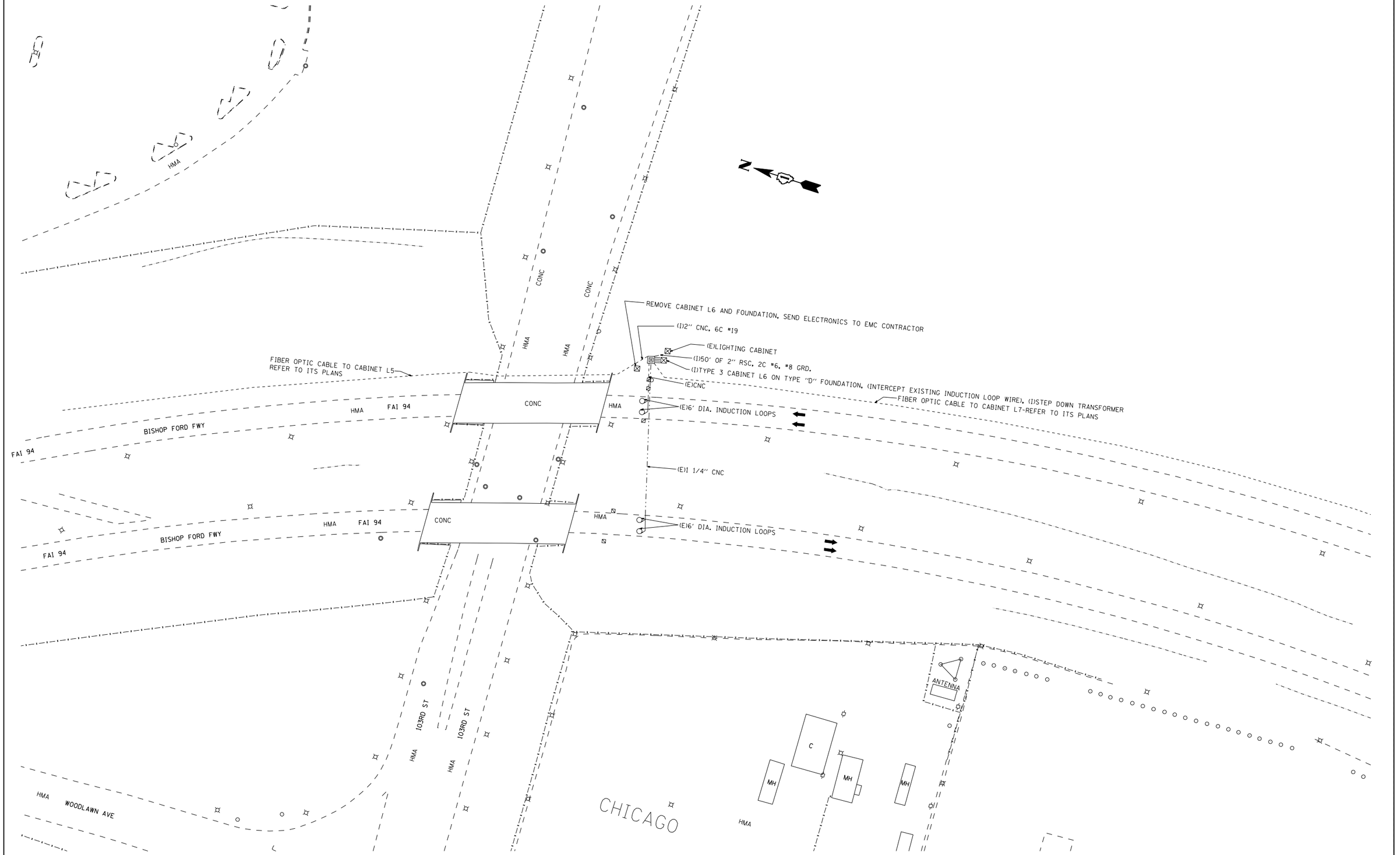
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		



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N

HMA

ROCK

HMA

GOLF GREEN

SAND TRAP

SAND TRAP

SAND TRAP

SAND TRAP

SAND TRAP

HMA

HMA

SAND TRAP

HMA

DOTY AVE

CONC

FIBER OPTIC CABLE TO CABINET L6
REFER TO ITS PLANS

HMA

CONC

HMA

(1)HDHH

(1)90' OF 2" RSC, 6C #19

(1)TYPE 3 CABINET L7 ON TYPE "D" FOUNDATION

(1)50' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)100' OF 2" RSC, 2 LOOP WIRES, 2-4C #18 WIRES

(1)INDUCTION LOOPS (SEE RAMP LOOP TABLE FOR SIZE)

(1)HDHH, 2 LOOP WIRES, 2-4C #18 PASS THROUGH

(1)25' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)165' OF 2" RSC, 2-4C #18

(1)6' DIA. INDUCTION LOOPS

(1)20' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)HDHH, SPLICE 2 LOOP WIRES TO 2-4C #18

(1)475FT. OF 2" RSC, 2C #6 WITH 2C #6- #8 GROUND

(1)475FT. OF 2" CNC, 6C #19

(1)HDHH

REMOVE CABINET L7 AND FOUNDATION. SEND ELECTRONICS TO EMC CONTRACTOR

HMA

BISHOP FORD FWY

FAI 94

(1)HDHH, SPLICE 2 LOOP WIRES TO 2-4C #18 WIRES

(1)20' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)70' OF 2" RSC, 2-4C #18 WIRES

(1)6' DIA. INDUCTION LOOPS

(1)25' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)HDHH 4 LOOP WIRES AND 2-4C #18 PASS THRU

(1)65' OF 2" RSC, 4 LOOP WIRES IN ONE 2-4C #18 IN OTHER

(1)30 OF 2" RSC, 4 LOOP WIRES IN LAND AND 2-4C #18 2 LOOP WIRES IN OTHER

(1)HDHH, NO SPLICES, 6 LOOP WIRES AND 2-4C #18 PASS THROUGH

(1)120' OF 1 1/4" CNC, 1 LOOP WIRE IN EACH

(1)6' DIA. INDUCTION LOOPS

(1)475FT. OF 2" RSC, 2C #6 WITH 2C #6- #8 GROUND

(1)475FT. OF 2" CNC, 6C #19

(1)COMMUNICATION VAULT (INTERCEPT FIBER)

(1)25'-1 1/4" FIBER OPTIC INNERDUCT, 2 SM FIBERS

(1)10' OF 2" RSC, 6C #19

(1)TYPE 3 CABINET L9 ON TYPE "D" FOUNDATION

REMOVE CABINET L9 AND FOUNDATION.
SEND ELECTRONICS TO EMC CONTRACTOR

HMA

DOTY AVE

HMA

BISHOP FORD FWY

FAI 94

(1)TYPE 3 CABINET BFT1 ON FOUNDATION. (1)25 PAIR CABLE TO TERMINAL BLOCKS TO T1 CHANNEL BANK TO 2 SM FIBERS

(1)1015' OF 4" CNC, 25 PAIR #19, INTERCEPT BARRIER WALL DUCT. SPLICE IN FIRST JUNCTION BOX

(1)185' OF 2" RSC, 2C #6, #8 GRD.

(1)ELECTRIC SERVICE DISCONNECT, REMOVE C-SERVICE

ROCK/HMA

L EDN

CHICAGO

ROCK

WOODLAWN AVE

DOTY AVE

NOTE:
INSTALL HEAVY DUTY HANDHOLE EVERY 750FT. FOR 6C #19

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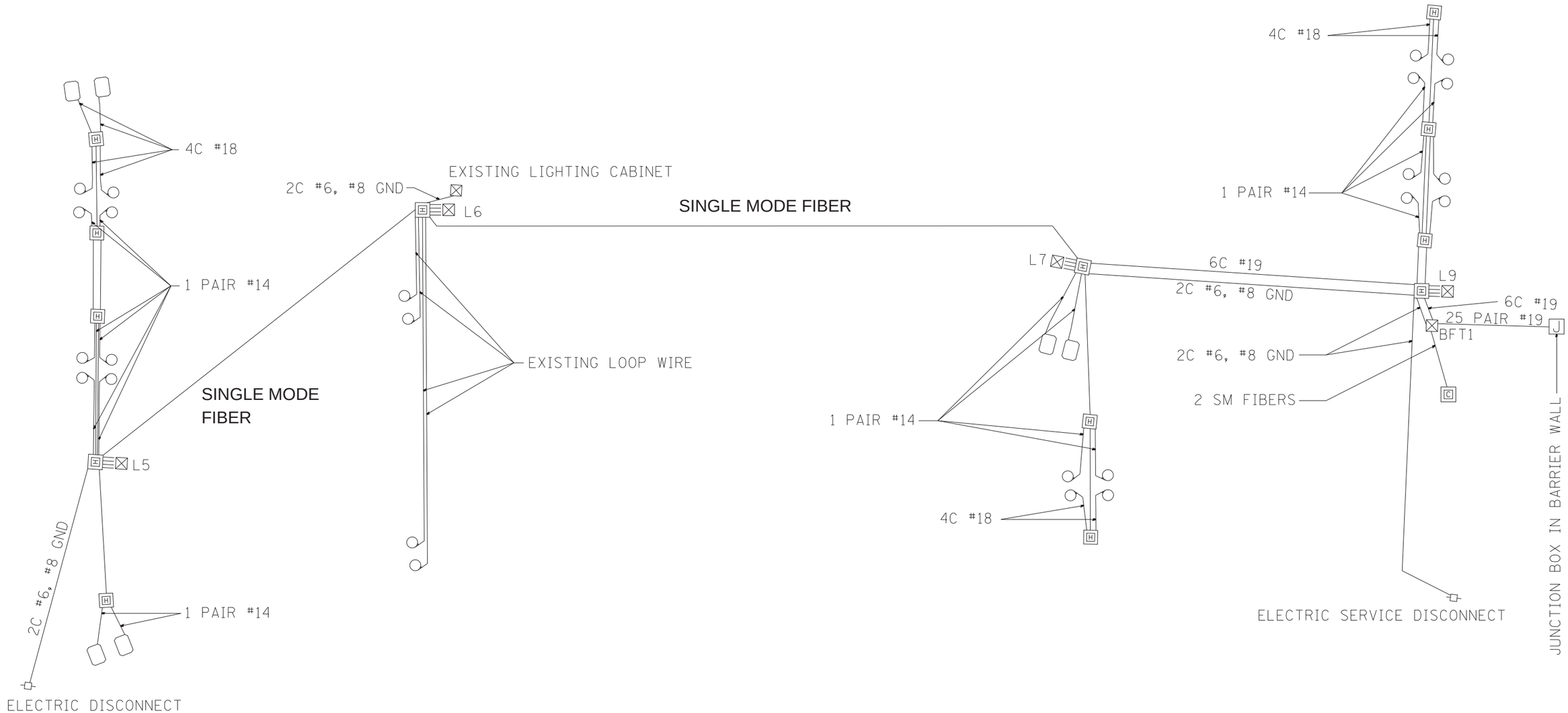
$FILE$		DRAWN - G.M.	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - J.G.	REVISED -
	PLOT DATE = $DATE$	DATE - 12/05/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC SURVEILLANCE
STONY ISLAND

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

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			631	359
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		



ITS-33

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	PLOT DATE = 12/12/2012	DATE - 12/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STONY ISLAND FEEDER
WIRING DIAGRAM

SCALE: NONE | SHEET 1 OF 16 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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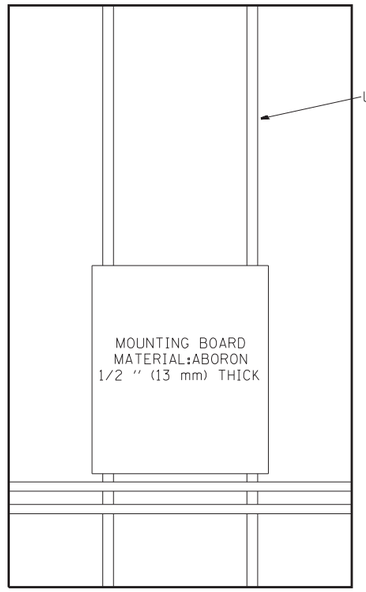
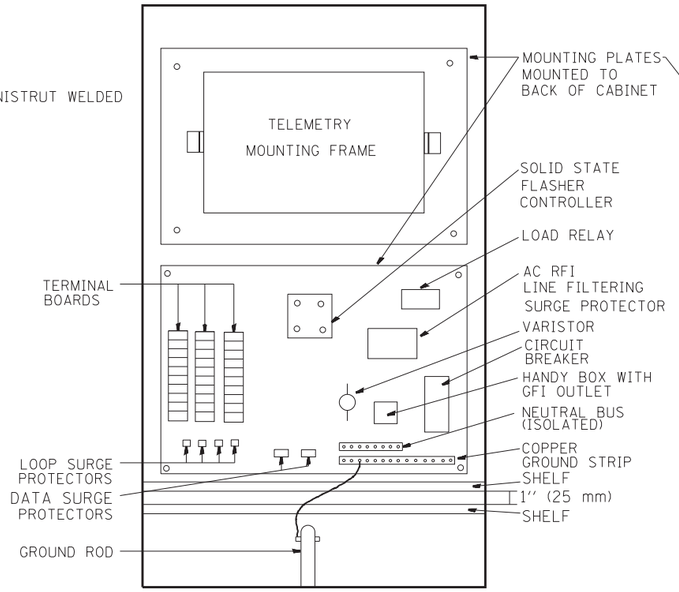
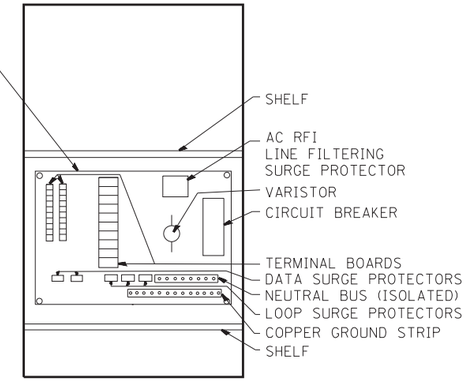
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



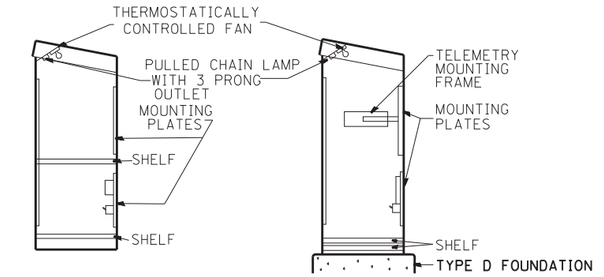
SIDE VIEW ESP 3 & 4 CABINET



ESP 3 CABINET



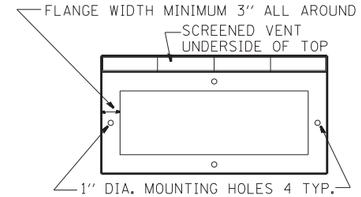
ESP 2 CABINET



ESP 2 CABINET ESP 3 CABINET

PROFILE VIEWS

NOTE: MOUNTING PLATES TO BE MOUNTED TO BACK PANEL OF CABINET



BOTTOM VIEW
MOUNTING PATTERN

TYPICAL CABINET INTERIORS

STANDARD TRAFFIC SYSTEMS CENTER CABINETS

MINIMUM DIMENSIONS INSIDE

TYPE	HEIGHT (IN-mm)	WIDTH (IN-mm)	DEPTH (IN-mm)	THICKNESS (IN-mm)	MATERIAL
ESP1	22.5'' (571.5 mm)	14.25'' (361.95mm)	9.75'' (247.65mm)	3/16 '' (4.76mm)	FABRICATED ALUMINUM
ESP2	36'' (914.4mm)	20'' (508.0mm)	15'' (381.0mm)	73/16'' (4.76mm)	FABRICATED ALUMINUM
ESP3	49.5'' (1.26 m)	30'' (762.0mm)	17'' (431.8mm)	3/16 '' (4.76mm)	FABRICATED ALUMINUM
ESP4	55'' (1.4 m)	44'' (1.12 m)	26'' (660.4mm)	3/16'' (4.76mm)	FABRICATED ALUMINUM

NOTES:

1. CABINETS, CABINET POSTS AND CABINET PEDESTALS SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION T637 OF THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS". THE FINAL COAT SHALL BE (X) IN COLOR. THE INTERIOR SHALL BE PAINTED WHITE. SIGNAL POSTS AND HEADS TO BE FEDERAL YELLOW 89-19(MAUTZ).

2. CABINETS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION T400 OF THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS".

3. ALL CABINETS WHICH ARE SERVICED BY 117 VOLTS A.C. POWER SHALL BE EQUIPPED WITH A 10 AMP CIRCUIT BREAKER, A.C. R.F.I. LINE FILTERING SURGE PROTECTOR, VARISTOR, DATA SURGE AND LOOP SURGE PROTECTORS AS INCIDENTAL TO THE COST OF THE CABINET. CMS CABINETS TYPE IV SHALL HAVE A 60 AMP. CIRCUIT BREAKER MINIMUM.

4. ESP 2/3/4 CABINETS SHALL BE FITTED WITH A THERMOSTATICALLY CONTROLLED FAN. IT SHALL BE MOUNTED AT THE TOP OF THE CABINET. THE FAN SHALL BE CAPABLE OF OPERATING AT 130 CPM AT 160' (48.8 m) OF STATIC WATER PRESSURE. A PORCLAIN BASED PULL CHAIN FIXTURE WITH 3 PRONG OUTLET SHALL ALSO BE PROVIDED.

5. RAMP METERING ESP 3 TYPE CABINETS SHALL ALSO BE EQUIPPED WITH A LOAD RELAY AND 2 CIRCUIT FLASHER. LAMPS, FAN, LOAD RELAY, AND 2 CIRCUIT FLASHER SHALL BE INCIDENTAL TO THE COST OF THE CABINET

6. INCIDENTAL TO THE COST OF EACH CABINET THE CONTRACTOR SHALL CONSTRUCT A 5 INCH (130mm) PCC SIDEWALK OF A RECTANGULAR AREA 3 FEET (915 mm) BY 4 FEET (1.25 m) IMMEDIATELY ADJACENT TO THE CABINET FOUNDATION ON THE SAME SIDE OF THE FOUNDATION AS THE CABINET DOOR TO PROVIDE FOOTING DURING INSTALLATION AND MAINTENANCE.

7. ANCHOR BOLTS FOR PEDESTAL AND BASE MOUNTED CABINETS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CABINET.

8. ALL CABINETS SHALL HAVE TERMINAL BLOCKS AND SHELVES AS SHOWN. THESE ITEMS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CABINET.

9. THE CABINET DOOR SHALL BE HINGED ON THE RIGHT SIDE WHEN FACING THE CABINET. THE DOOR SHALL BE FURNISHED WITH A GASKET THAT SHALL FORM A WEATHER TIGHT SEAL BETWEEN THE CABINET AND DOOR. THE HINGES SHALL BE CONTINUOUS AND BOLTED TO THE CABINET AND DOOR UTILIZING 1/4-20 STAINLESS STEEL CARRIAGE BOLTS AND NY-LOCK NUTS. THE HINGES WILL BE MADE OF STAINLESS STEEL WITH A 0.25 INCH (6.35 mm) DIAMETER STAINLESS STEEL HINGE PIN. THE HINGE PIN SHALL BE CAPPED TOP AND BOTTOM BY WELD TO RENDER IT TAMPER PROOF.

10. THE LATCHING MECHANISM SHALL BE A 3 POINT DRAW ROLLER TYPE. THE CENTER CATCH AND PUSHRODS SHALL BE EITHER CADMIUM OR ZINC PLATED, TYPE II CLASS I. PUSHRODS WILL BE TURNED EDGEWISE AT THE OUTWARD SUPPORTS AND SHALL BE 0.25 INCH (6.35 mm) BY 0.75 INCH (19.05 mm), MINIMUM. ROLLERS SHALL HAVE A MINIMUM DIAMETER OF 0.875 INCH (22.22 mm) AND WILL BE MADE OF NYLON. THE CENTER CATCH SHALL BE FABRICATED FROM 0.14 INCH (3.55 mm) STEEL, MIMIMUM. WHEN THE DOOR IS CLOSED AND LATCHED, IT WILL BE LOCKED. THE LATCHING HANDLE SHALL HAVE A PROVISION FOR PADLOCKING IN THE CLOSED POSITION. AN OPERATING HANDLE SHALL BE FURNISHED WITH EACH LOCK. THE HANDLE WILL BE STAINLESS STEEL WITH A 0.75 INCH (19.05 mm) DIAMETER SHANK.

11. THE ENCLOSURE SHALL BE EQUIPPED WITH TWO ADJUSTABLE "C" MOUNTING CHANNELS WELDED ON BOTH SIDE WALLS AND BACK WALL OF THE ENCLOSURE, ALLOWING VERSATILE POSITIONING OF SHELVES OR PANELS. MOUNTING CHANNELS SHALL BE FACTORY PAINTED SAME COLOR AS INTERIOR OF CABINET.

12. CABINET DOOR SHALL NOT HAVE COMPARTMENT DOORS OR LOUVERS.

13. ALL FIELD CABINETS SHALL BE FITTED WITH BRASS LOCKS.

14. ESP TYPE 2 & 3 CABINETS FITTED WITH TWO SHELVES AS SHOWN.

15. POST TOP MOUNTED CABINETS, SHALL HAVE A 0.25 INCH (6.3 mm) BOTTOM OF CABINET WELDED.

16. THE CONTROL CABINET SHALL BE SET PLUMB ON THE FOUNDATION AND FASTENED TO THE ANCHOR BOLTS WITH NUTS AND WASHERS. FLAT WASHERS SHALL BE INSTALLED BELOW AND ABOVE THE BASE PLATE OF THE CONTROL CABINET. LOCKWASHERS SHALL BE INSTALLED ON TOP OF THE TOP FLAT WASHER.

(X)

EDENS	WALNUT *
KENNEDY	BLUE STREAK **
EISENHOWER	CARIBBEAN BLUE *
I-290/IL53/I-355	POST OFFICE BLUE **
RYAN	YELLOW STONE II **
I-55	MEDIUM BRONZE *
I-57	RED BARON **
CAL-KING	BLUE STREAK **
LAKE SHORE DR.	GREEN *
I-80	STATUARY BRONZE **

ALL RAMP METERING CABINETS LIME GREEN ***. ALL POSTS, T.S. HEADS AND SERVICES WILL BE PAINTED FEDERAL YELLOW.

* MORTON POWDER PAINT COLOR OR EQUIVALENT.
** O'BRIEN POWDER PAINT COLOR OR EQUIVALENT.
*** BENJAMIN MOORE ENAMEL COLOR OR EQUIVALENT.

NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR CONFORMING TO COLOR REQUIREMENTS

ITS-34

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	PLOT DATE = 12/6/2012	CHECKED - R.L.	REVISED - 02/98		
		DATE - 06/21/94	REVISED - 03/99		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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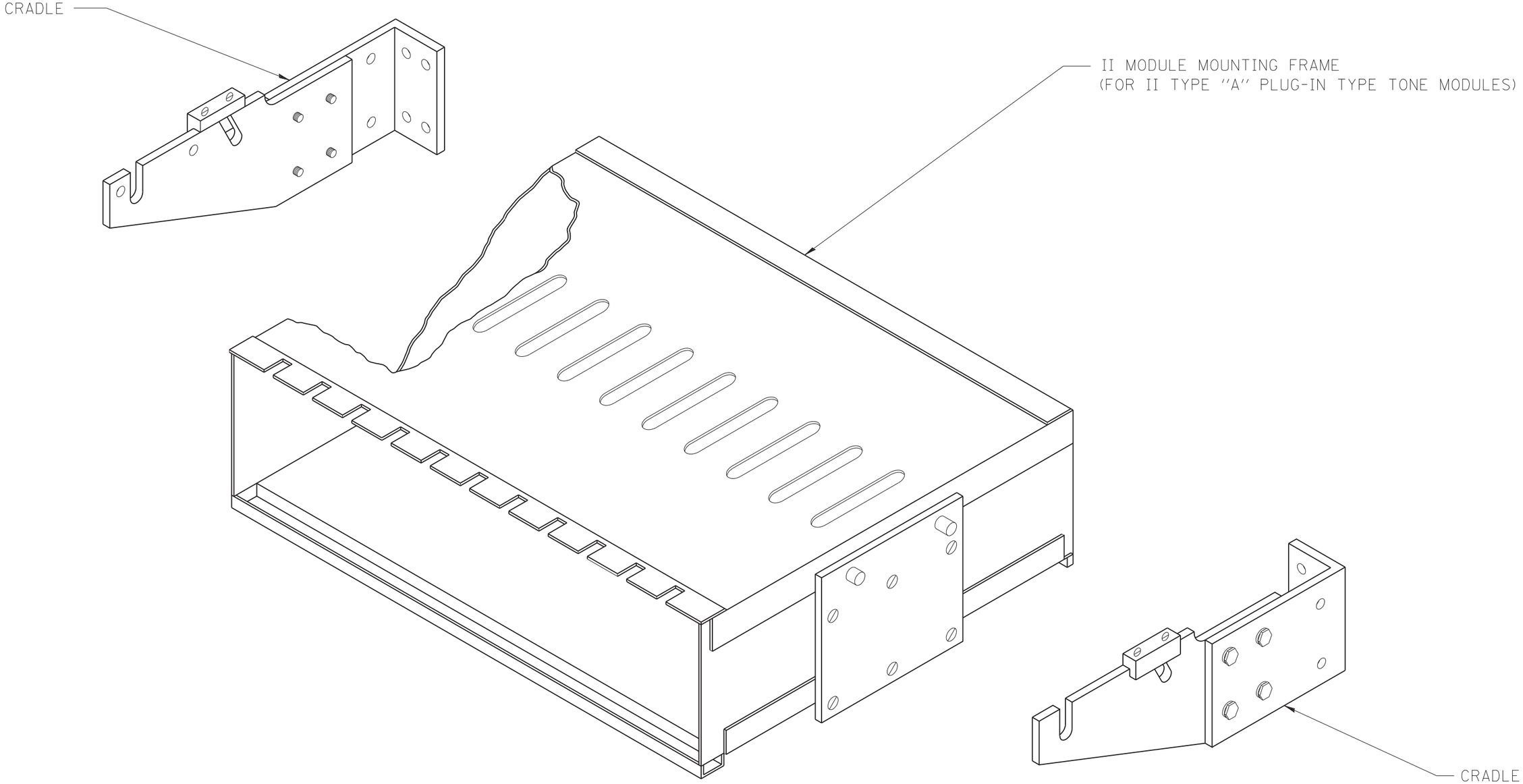
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



NOTE:

TYPE ''A'' TONE MODULES ARE PLUG
IN UNIT MEASURING 5-7/32'' (132.55 mm) X 1.5'' (38.1 mm) X 13-3/4'' (349.25 mm)

ITS-35

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 06/94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER	FIELD MOUNTING FRAME WITH CRADLE ASSEMBLY	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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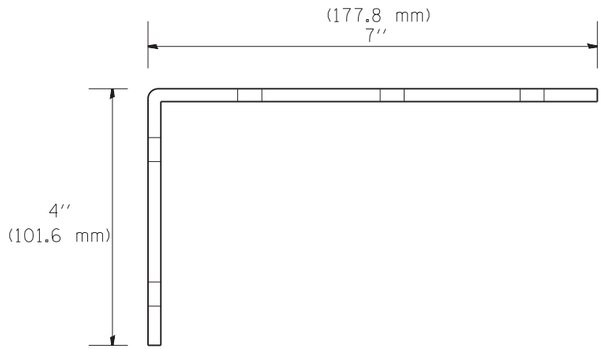
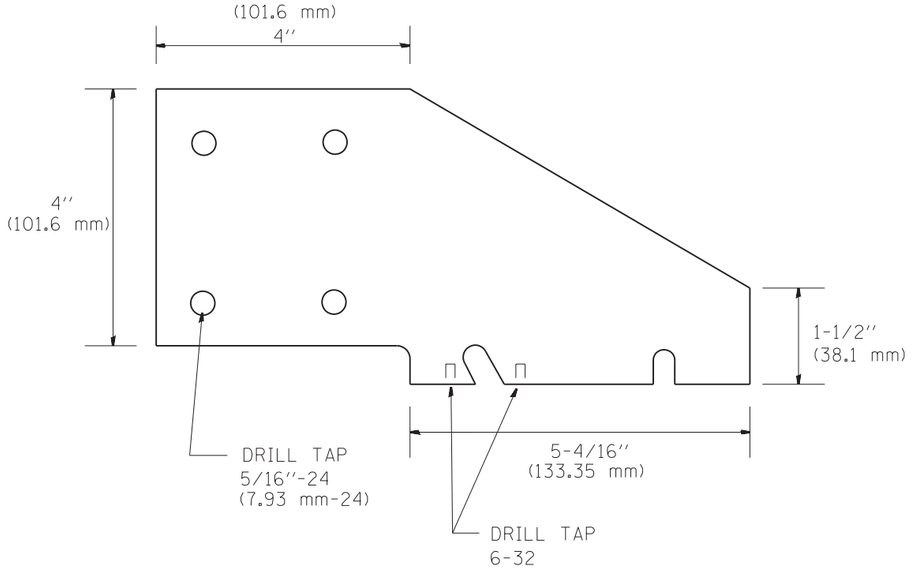
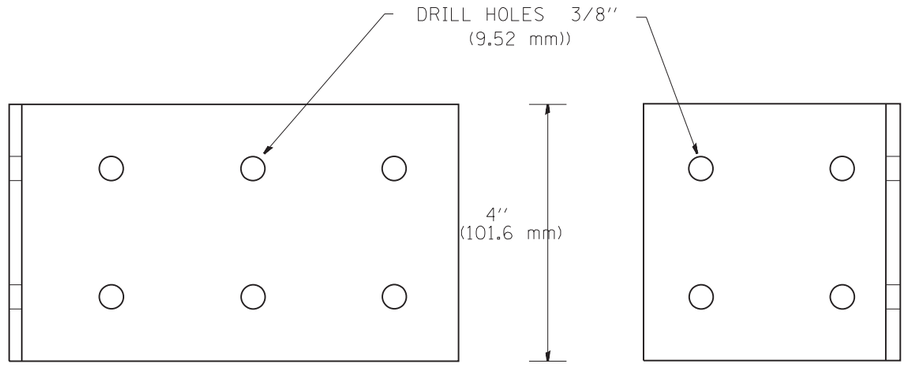
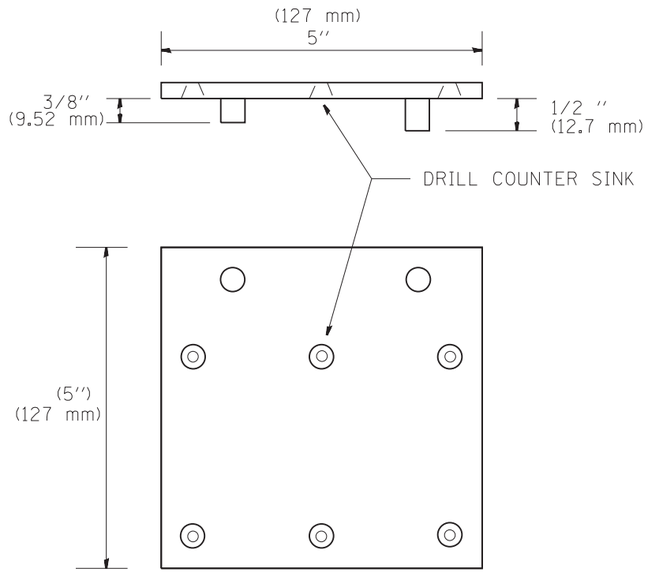
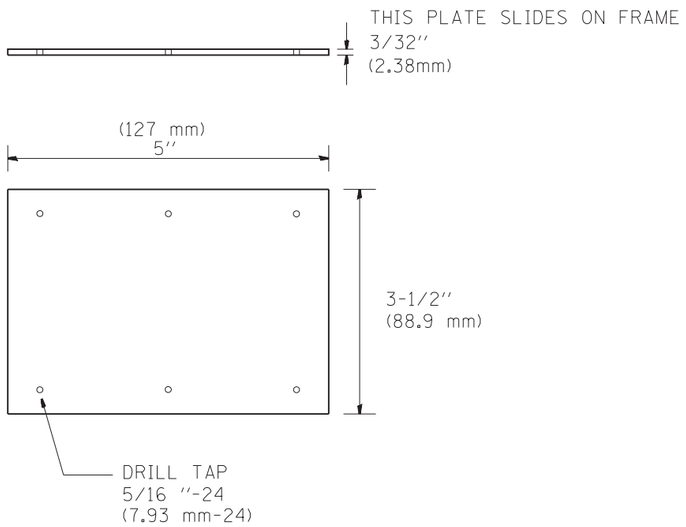
		DATE - 06/21/94	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

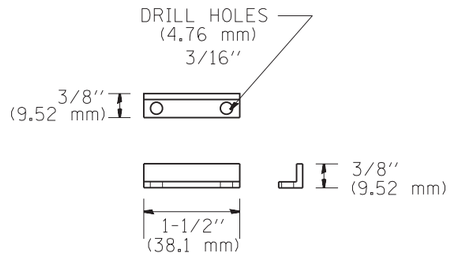












ITS-36

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		DRAWN - G.M.	REVISED - 09/96			94	2012-059-BR	COOK	631	363
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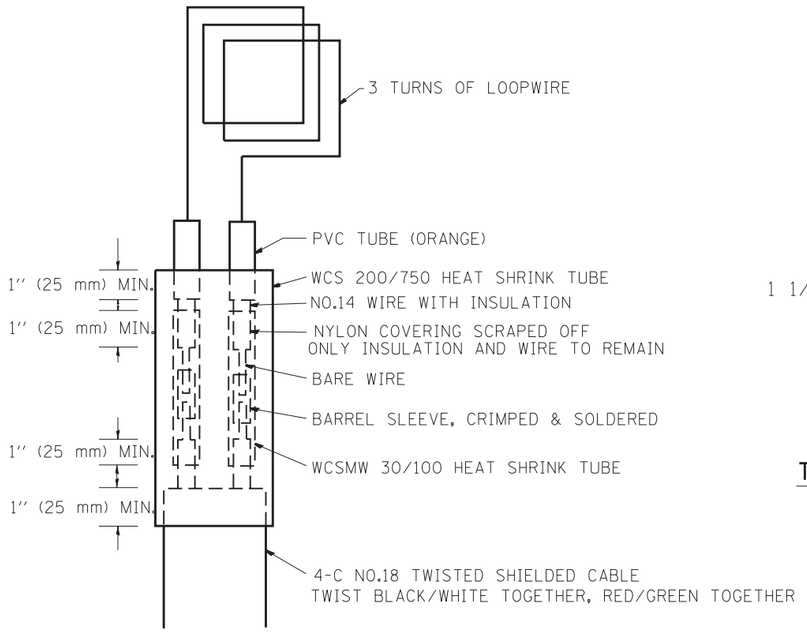
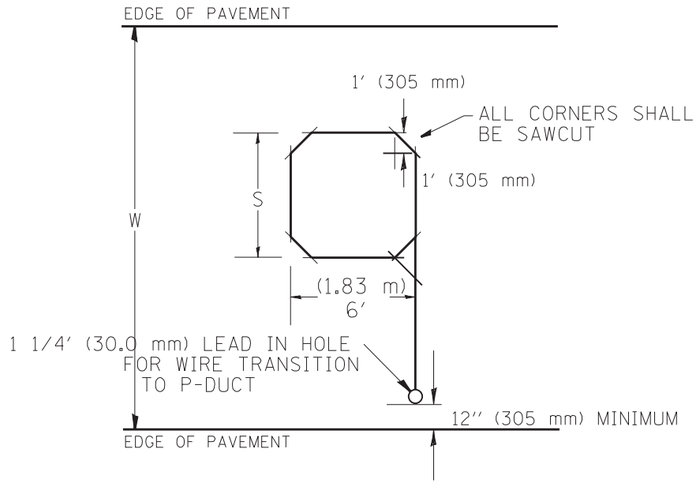
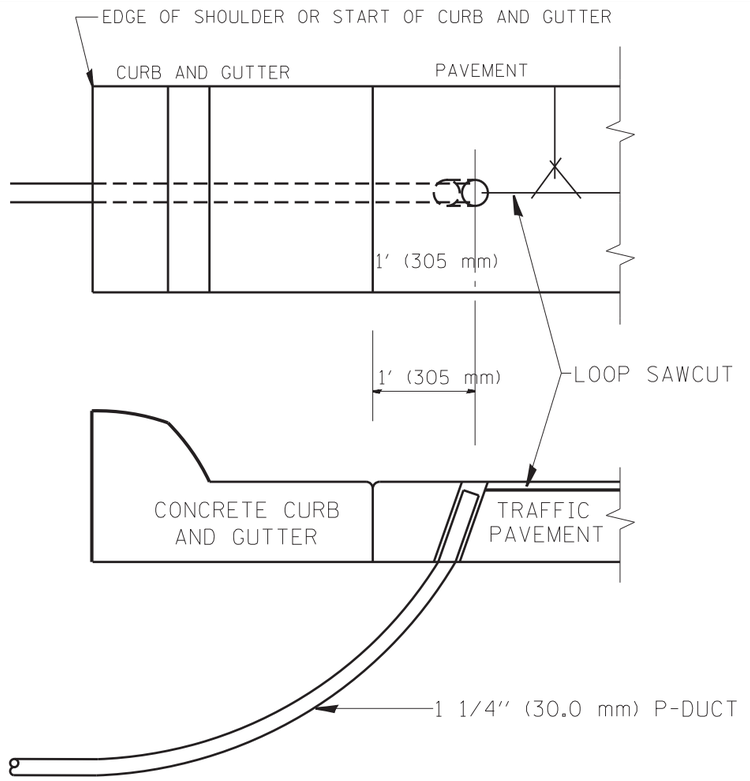
	PLOT DATE = 12/6/2012	DATE - 06/21/94	REVISED -		SCALE: NONE SHEET NO. 4 OF 16 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LOOP SPLICING REQUIREMENTS



TYPICAL "S" FT. BY 6' (1.83 m) INDUCTION LOOP SAWCUT LAYOUT FOR RAMPS



CURB AND GUTTER LOOP LEAD-IN TRANSITION DETAIL

TABLE 1	
WIDTH (W)	WIDTH (S)
12' (3.7 m)	8' (2.5 m)
13' (4.0 m)	9' (2.8 m)
14' (4.3 m)	10' (3.1 m)
15' (4.6 m)	11' (3.4 m)
16' (4.9 m)	12' (3.7 m)
17' (5.2 m)	13. (4.0 m)
18' (5.5 m)	14' (4.3 m)
19' (5.8 m)	15' (4.6 m)
20' (6.1 m)	18' (4.9 m)
21' (6.4 m)	17' (5.2 m)
22' (6.7 m)	18' (5.5 m)
23' (7.0 m)	19' (5.8 m)
24' (7.3 m)	20' (6.1 m)
25' (7.6 m)	21' (6.4 m)

NOTES

1. EACH LOOP SHALL BE SPLICED TO A 4-C NO.18 TWISTED SHIELDED LEAD IN WHEN 150' (45 m) OR MORE FROM CABINET.
2. LOOPS SHALL BE SPLICED IN HANDHOLES ONLY, OTHERWISE WRITTEN PERMISSION SHALL BE OBTAINED FROM TSC ENGINEER.
3. LOOPS SHALL NOT BE SPLICED IN SERIES.
4. EACH LOOP LEAD IN SHALL BE IDENTIFIED AND PERMANENTLY COLOR CODED IN THE COREHOLE, HANDHOLE & CABINETS THRU WHICH THEY ENTER OR PASS AND TAGGED WITH THE CORRECT NOMENCLATURES.

ITS-37

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 6/94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER	RECTANGULAR INDUCTION LOOP TYPICAL	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 100.0000 '/ in.	DRAWN - G.M.	REVISED - 11/95			94	2012-059-BR	COOK	631	364
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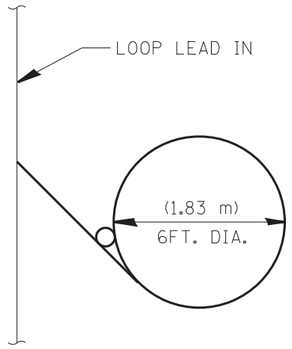
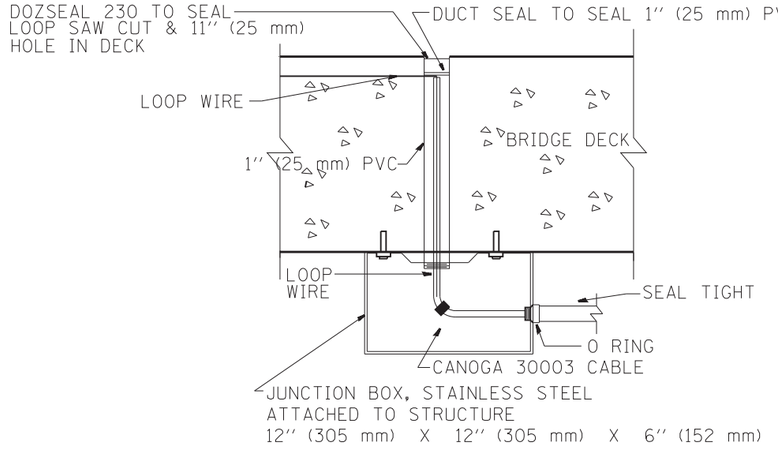
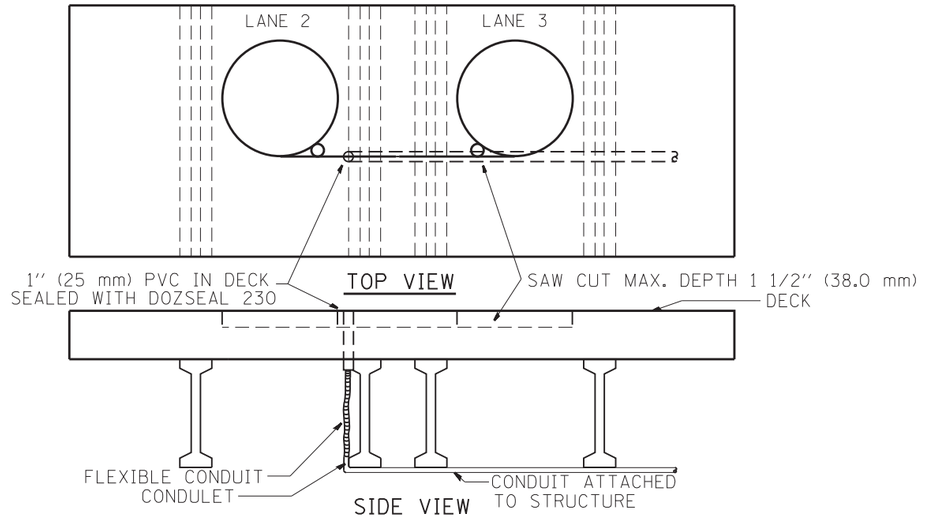
		DATE - 6-22-94	REVISED - 10/96			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



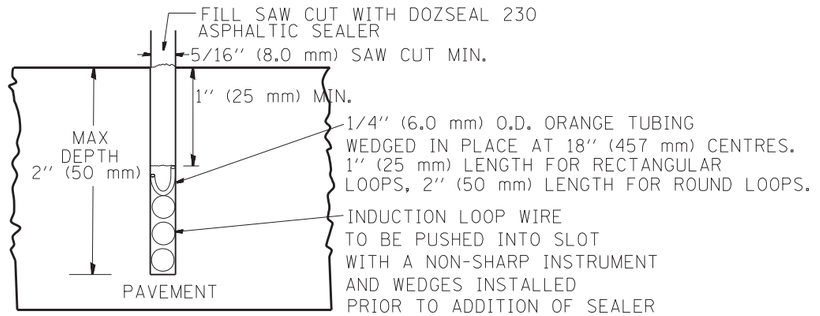
TYPICAL LOOP SAWCUT LAYOUT



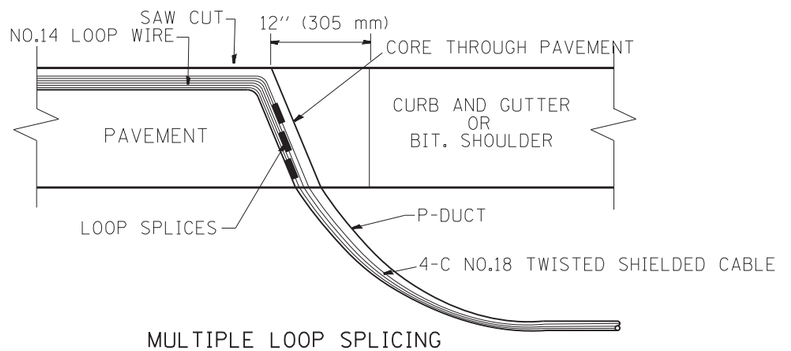
LOOP JUNCTION BOX UNDER BRIDGE DECK



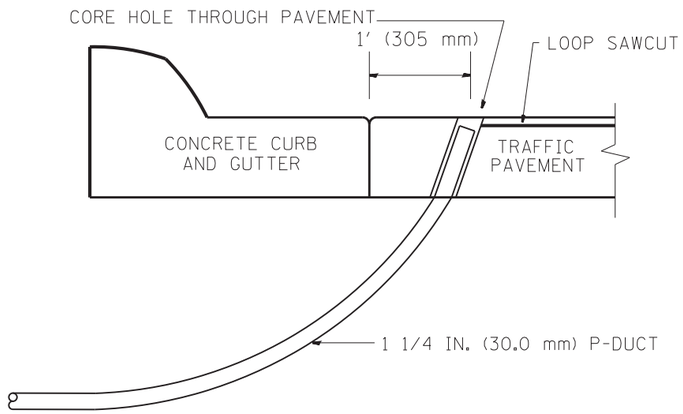
LOOP TRANSITION IN BRIDGE DECK



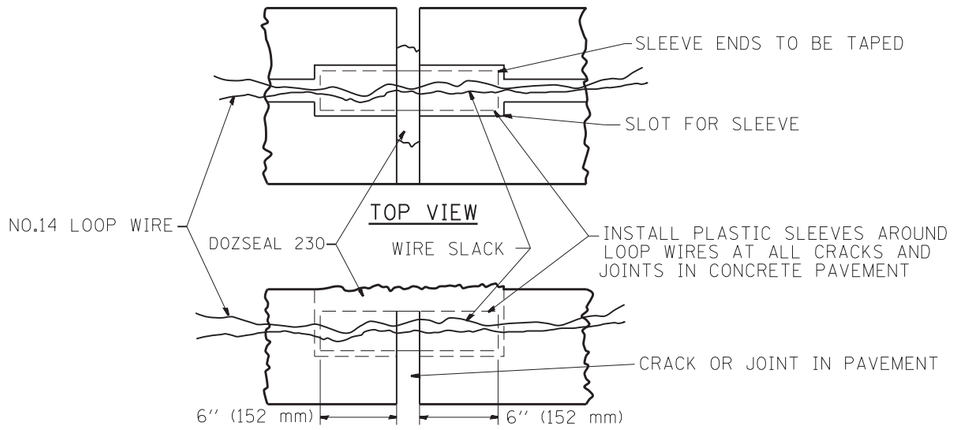
LOOP CROSS SECTION IN PAVEMENT



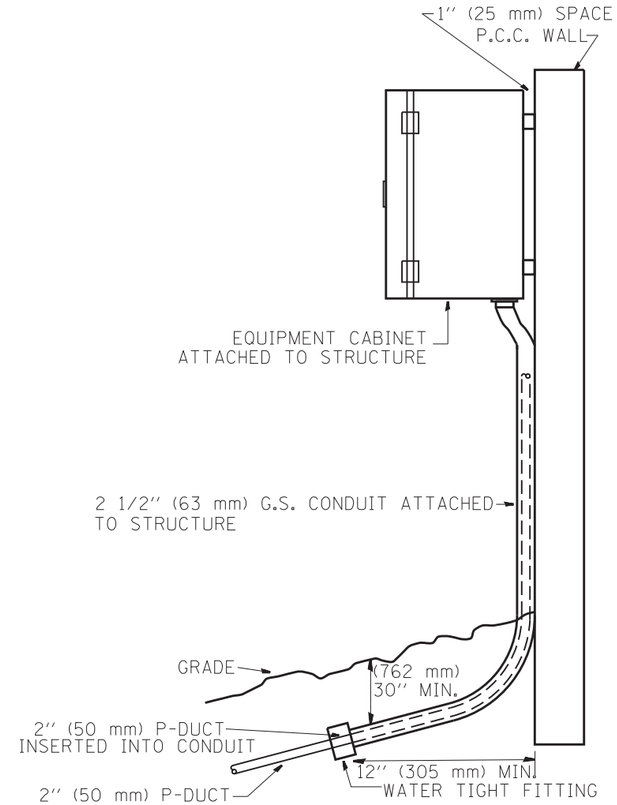
MULTIPLE LOOP SPLICING



SIDE SECTION LOOP LEAD-IN
TRANSITION DETAIL



SIDE SECTION
PAVEMENT CRACK TRANSVERSE SLEEVE



SIDE VIEW
POLYETHYLENE DUCT/GS. CONDUIT TRANSITION

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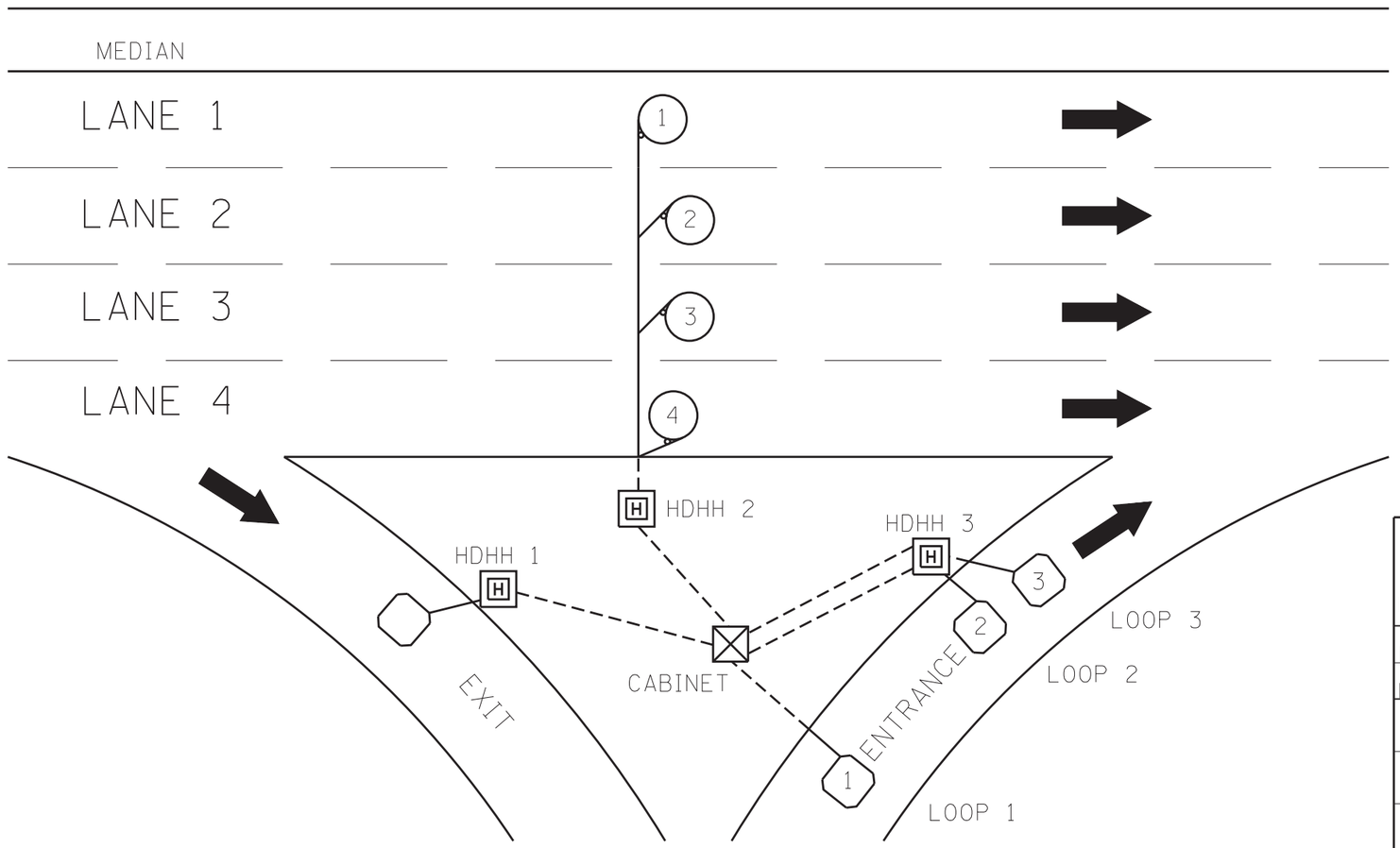
	PLOT SCALE = 100.0000 ' / in.	CHECKED - R.L.	REVISED - 11/95
	PLOT DATE = 12/6/2012	DATE - 06/22/94	REVISED - 10/96

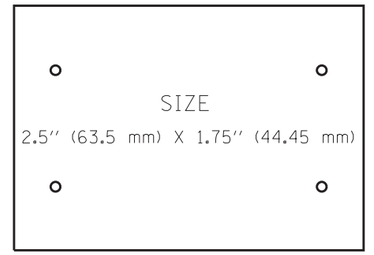
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

LOOP, CONDUIT & DUCT INSTALLATION DETAILS

SCALE: NONE | SHEET NO. 6 OF 16 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	365
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





SUGGESTED TAG
PANDUIT
#MP25OW175-C
OR EQUIVALENT

HDHH 1 EXAMPLE

IB-EB EXIT
CCW IN/
TO CABINET #____

HDHH 2 EXAMPLE

IB (OB) LANE #__
CCW /OUT
TO CABINET #____

HDHH 3 EXAMPLE

IB-EB ENT.
LOOP #2
CW IN/

NOTE:
EACH LOOP WIRE SHALL BE TAGGED AS ''IN'' OR ''OUT'' AND ''CW'' OR ''CCW''. SHIELDED CABLE WILL BE TAGGED IN EACH HANDHOLE AND CABINET TO MATCH THE CABLE LOG.

LOOP ANALYZER

LOCATION_____ DATE_____

LOOP LOCATION LANE DIRECTION	LOOP WIRE MARKED AND CODED	LOOP SIZE	FREQ. INDUCTANCE	INSULATION	LOOP RESISTANCE

ITS-39

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 6/94
		DRAWN - G.M.	REVISED - 10/96
	PLOT SCALE = 100.0000 '/ in.	CHECKED - R.L.	REVISED -
	PLOT DATE = 12/6/2012	DATE - 6-27-94	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

LOOP STATUS REPORT

SCALE: NONE | SHEET NO. 7 OF 16 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	366
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SYSTEMS CENTER (TY-1TSC-418#7)

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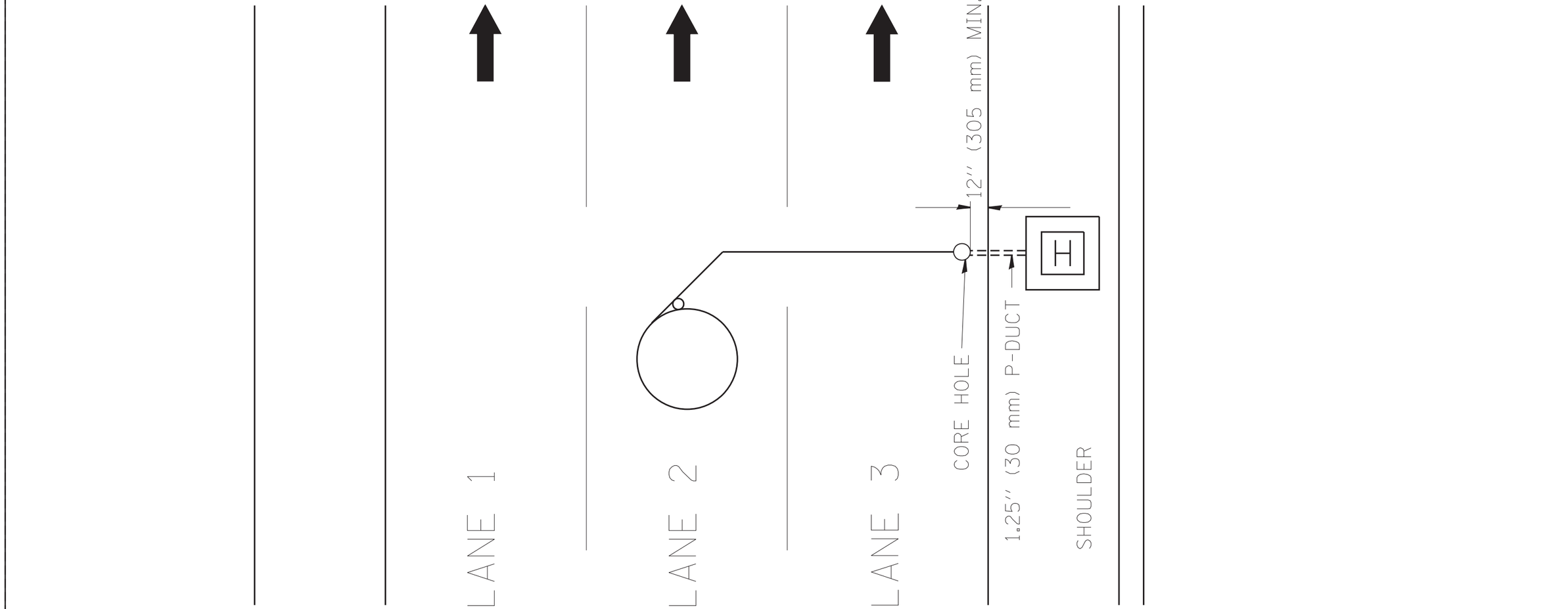

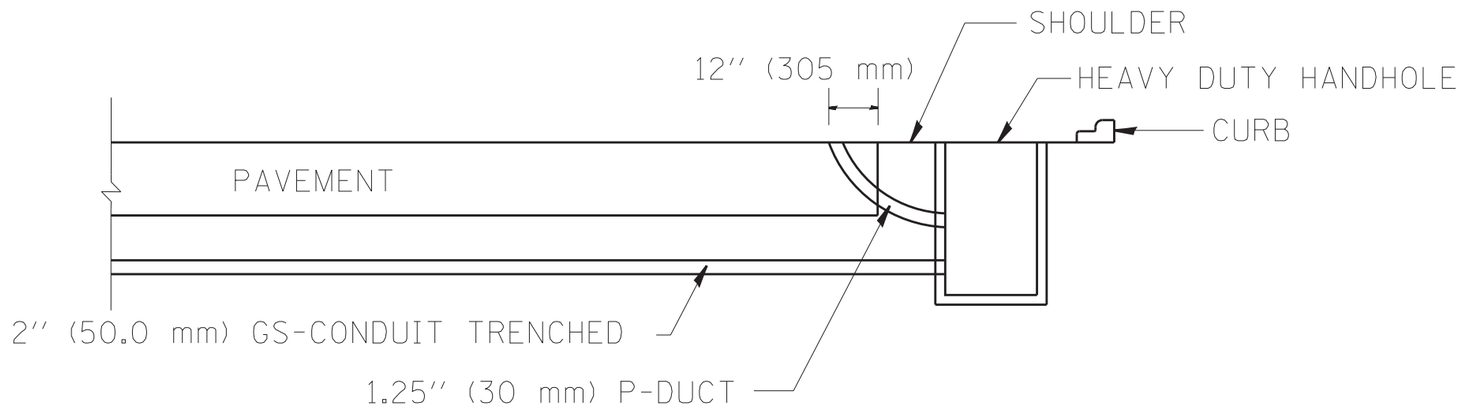

ITS-40

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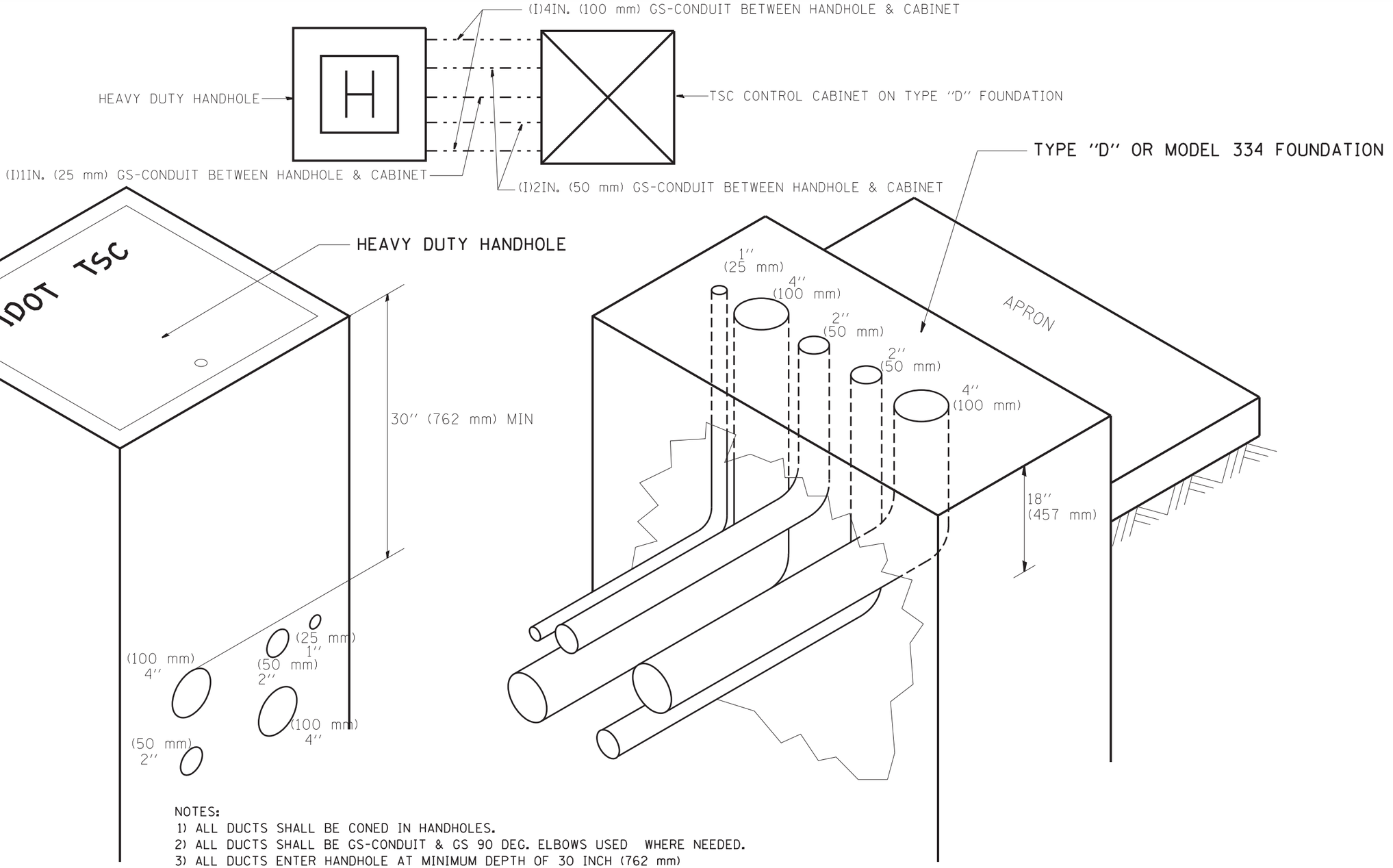
		DRAWN - C.M.	REVISED - T.C.			94	2012-059-BR	COOK	631	367
	PLOT SCALE = 100.0000 ' / in.	CHECKED - R.L.	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 12/6/2012	DATE - 11/7/95	REVISED -		SCALE: NONE SHEET NO. 8 OF 16 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SYSTEMS CENTER (TY-1TSC-418#8)



NOTES:

1) ALL DUCTS SHALL BE CONED IN HANDHOLES.
2) ALL DUCTS SHALL BE GS-CONDUIT & GS 90 DEG. ELBOWS USED WHERE NEEDED.
3) ALL DUCTS ENTER HANDHOLE AT MINIMUM DEPTH OF 30 INCH (762 mm)
4) ALL HANDHOLE COVERS SHALL READ "IDOT TSC".
5) ALL CABINET HANDHOLES SHALL BE HEAVY DUTY.
6) DUCTS SHALL BE CENTERED IN CABINET FOUNDATION/HANDHOLE AS SHOWN.
7) CONDUITS SHALL BE SPACED 305 mm (1 FOOT) CENTER TO CENTER IN HEAVY DUTY HANDHOLE.
8) INSTALL 3/4" X 10' (20 mm X 3 m) COPPER CLAD STEEL GROUND ROD IN HDHH PROVIDED AS CABINET PAD. EXOTHERMIC WELD CONNECTION FROM GROUND ROD TO #6 GROUND WIRE INSULATED (GREEN).
9) BOND ALL GSC CONDUITS IN CABINET FOUNDATION.
10) INSTALL #6 GROUND WIRE IN 1IN. (25 mm) GSC FROM HANDHOLE TO CABINET.
11) TYPE "D" FOUNDATION SHALL BE 18" FROM TOP OF FOUNDATION TO FINISHED GRADE.

ITS-41

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 09/96
		DRAWN - G.M.	REVISED - 03/99
	PLOT SCALE = 100.0000 ' / in.	CHECKED - R.L.	REVISED - 04/99
	PLOT DATE = 12/6/2012	DATE - 06/05/95	REVISED - 07/2010

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

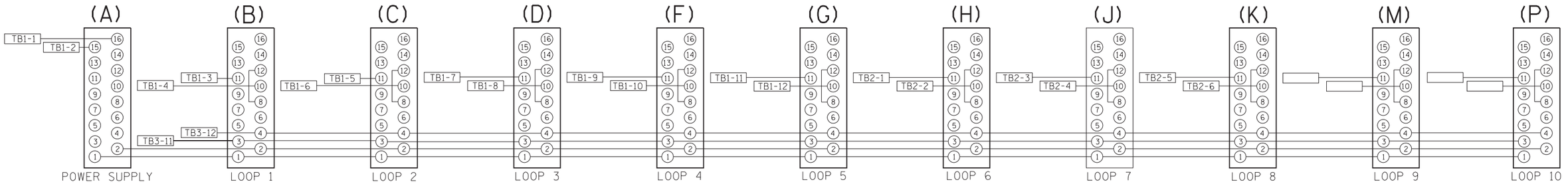
CABINET - HANDHOLE CONDUIT DETAIL

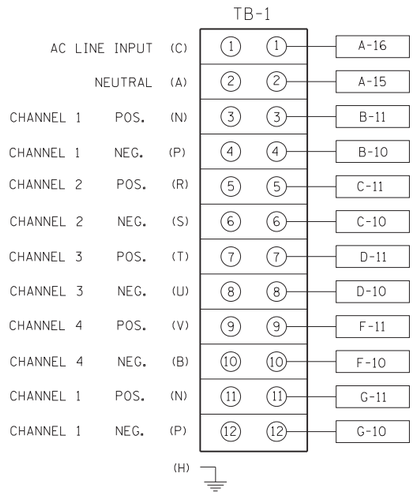
SCALE: NONE | SHEET NO. 9 OF 16 SHEETS | STA. | TO STA.

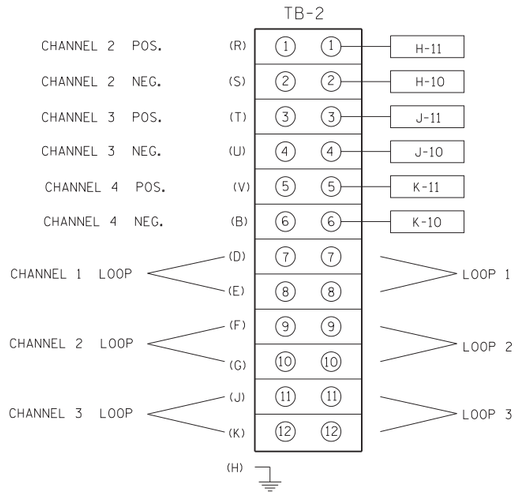
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	368
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

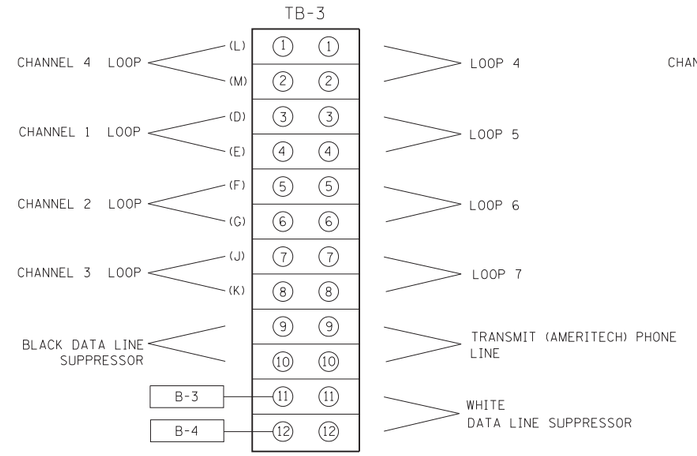
TRAFFIC SYSTEMS CENTER (TY-1TSC-400#11)

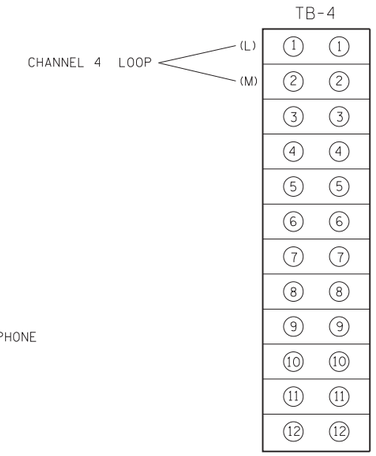
BACK VIEW OF TONE RACK

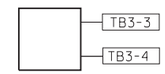


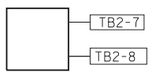


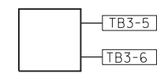


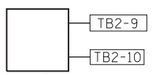


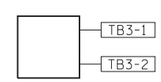


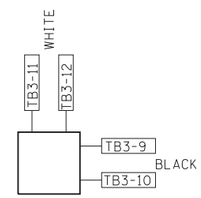


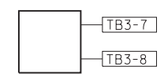


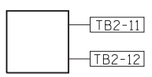


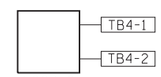


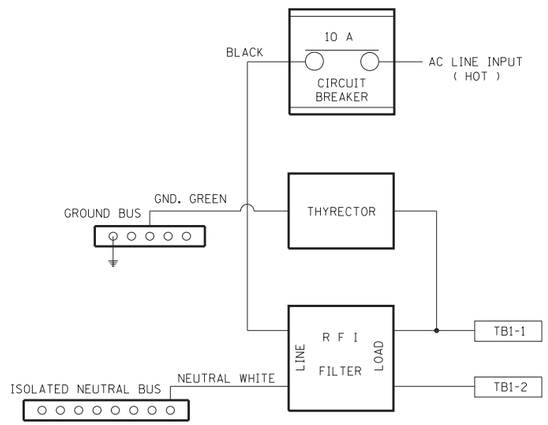








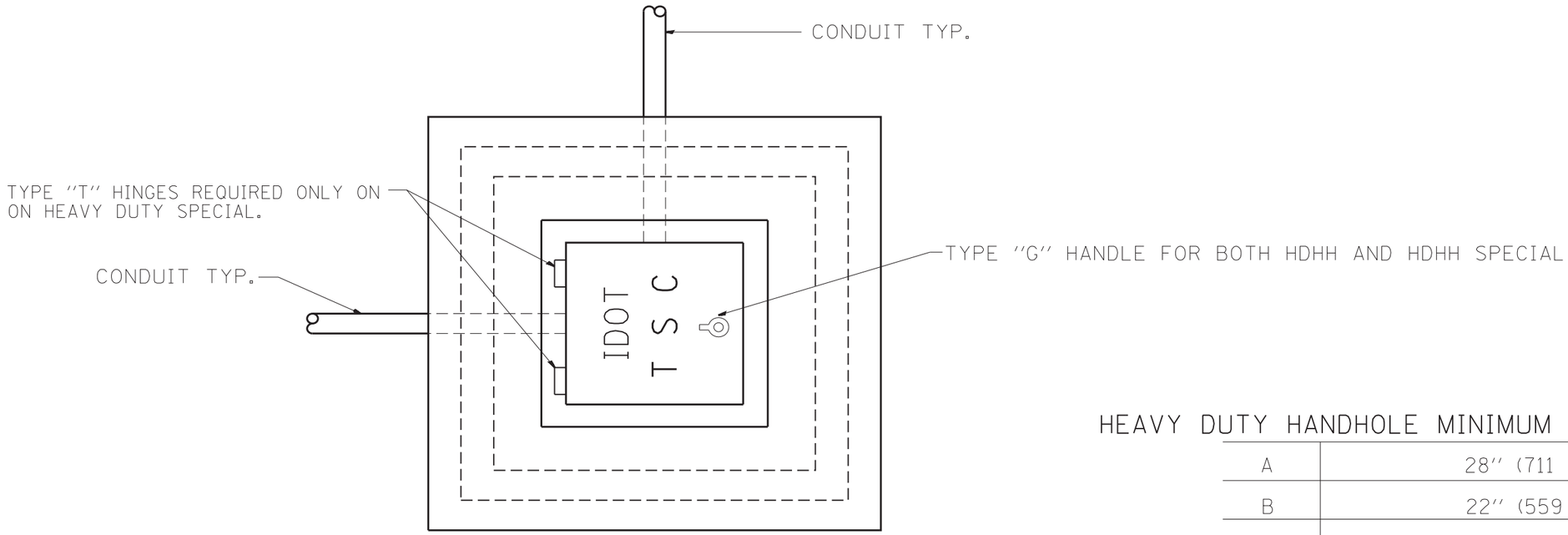




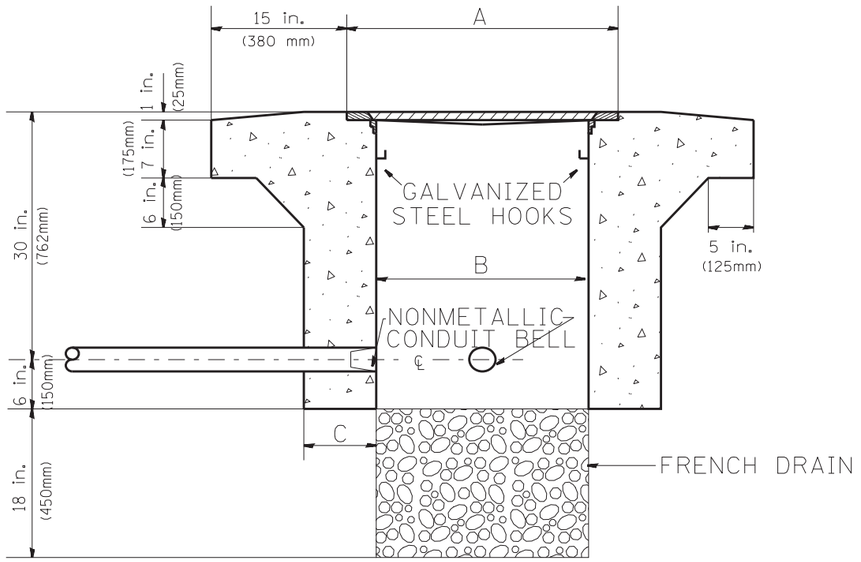
ITS-42

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L	REVISED - 02-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER	TYPE 3 CABINET WIRING DIAGRAM	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 100.0000 ' / in.	DRAWN - G.M.	REVISED - 05-99			94	2012-059-BR	COOK	631	369
	PLOT DATE = 12/6/2012	CHECKED - R.L	REVISED -						CONTRACT NO.	60J12
		DATE - 10-17-95	REVISED -		SCALE: NONE SHEET NO. 10 OF 16 SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SYSTEMS CENTER (TY-1TSC-400#13)



PLAN



ELEVATION

HEAVY DUTY HANDHOLE MINIMUM DIMENSIONS (UNHINGED)

A	28" (711 mm)
B	22" (559 mm)
C	8" (200 mm)

(FRAME AND COVER 260 LBS. (118 Kg.) MIN.)

HEAVY DUTY HANDHOLE SPECIAL MINIMUM DIMENSIONS

A	31.5" (800 mm)
B	30.0" (762 mm)
C	10.0" (250 mm)

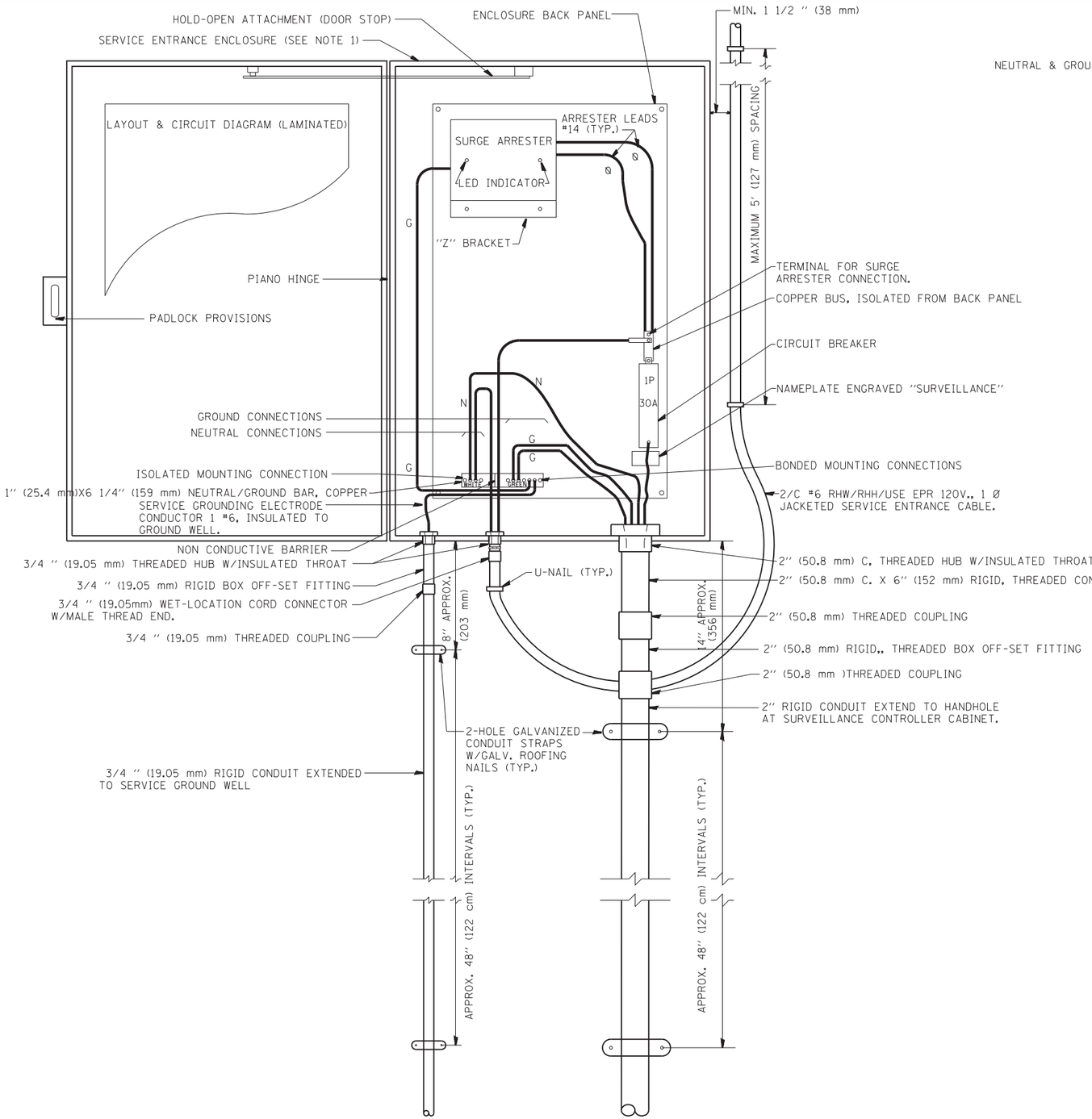
(FRAME AND COVER 405 LBS. (184 Kg. (405))

PC CONCRETE - HEAVY DUTY HAND HOLE

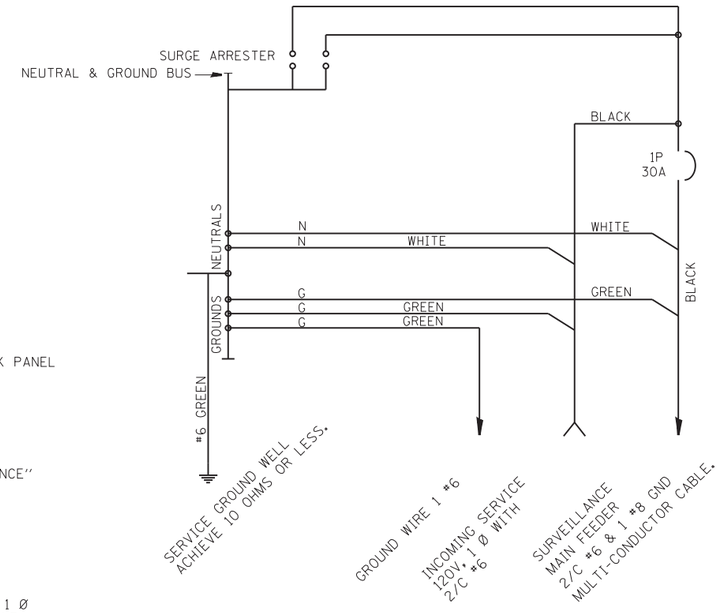
ITS-43

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 04/97	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER	PC CONCRETE - HEAVY DUTY HAND HOLE			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 100.0000 ' / in.	DRAWN - G.M.	REVISED -					94	2012-059-BR	COOK	631	370
	PLOT DATE = 12/6/2012	CHECKED - R.L.	REVISED -							CONTRACT NO. 60J12		
		DATE - 09/11/96	REVISED -		SCALE: NONE	SHEET NO. 11 OF 16 SHEETS	STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SYSTEMS CENTER (TY-1TSC-400#15)



ELECTRIC SERVICE GENERAL LAYOUT DIAGRAM



SCHEMATIC DIAGRAM

NOTES:

1.- ELECTRIC SERVICE SHALL BE OF THE VOLTAGE INDICATED. WHERE 120-VOLT SERVICE IS INDICATED, SERVICE DROP CABLE SHALL BE INSTALLED ACCORDINGLY AND LIGHTING MAIN FEEDER CABLE SHALL BE OMITTED.

2.- THE ELECTRIC SERVICE BOX SHALL BE NEMA 4X STAINLESS STEEL, NOMINALLY 12" (305 mm) X 18" (457 mm) X 8" (203 mm), WITH PIANO HINGED DOOR, STEEL BACK PANEL, FAST-ACTING STAINLESS STEEL ENCLOSURE CLAMPS, PADLOCK PROVISIONS, DOOR STOP KIT AND STEEL BACK PANEL, HOFFMAN CATALOG A-16H1208SS6LP/A-16P2/A-DSTOPK/C-PMK12, OR APPROVED EQUAL.

3.- THE ELECTRIC SERVICE EQUIPMENT ASSEMBLY SHALL BE UL LABELED, SUITABLE FOR USE AS SERVICE EQUIPMENT.

4.- CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC BOLT-ON TYPE WITH A MINIMUM INTERRUPTING CAPACITY OF 25,000 SYMMETRICAL AMPERES AT 240 VOLTS. THEY SHALL BE LOCKABLE IN THE "OFF" POSITION FOR COMPLIANCE WITH OSHA LOCK-OUT/TAG-OUT REQUIREMENTS. HANDLES SHALL BE ⚠ TRIP FREE.

5.- THE SURGE PROTECTOR SHALL BE SUITABLE FOR 240/120 VOLT SINGLE PHASE 60HZ AC ELECTRICAL SERVICE, WITH A SURGE ENERGY CAPABILITY OF >3600 JOULES OR BETTER AT 8/20 MICROSECONDS, RATED -40 TO 65 DEGREES C., WITH LED OPERATING INDICATORS, AND SHALL BE UL LISTED PER UL 1449, CUTLER-HAMMER CMOV 230L065XST OR APPROVED EQUAL. SURGE PROTECTOR SHALL BE WIRED FOR 120 V SERVICE. FOLLOW MANUFACTURER RECOMMENDED WIRING SPECIFICATIONS.

6.- BUS BARS, CONNECTORS AND LUGS SHALL BE COPPER, INSULATED AND ISOLATED AND CONFIGURED TO PREVENT SHORTED CONDITIONS FROM TIGHTENING TERMINATIONS, ETC. THE OVERALL BUS SECTION SHALL BE CONFIGURED BEHIND AN INSULATING BARRIER SHIELD WHICH IS REMOVABLE FOR ACCESS TO CONNECTIONS.

7.- THE COMBINATION GROUND AND NEUTRAL BAR SHALL BE CONFIGURED WITH SEPARATE GROUND AND NEUTRAL SECTIONS AND SPARE TERMINALS AS INDICATED. THE HEADS OF GROUND SCREWS SHALL BE PAINTED GREEN. THE HEADS OF NEUTRAL SCREWS SHALL BE PAINTED WHITE.

8.- A PLASTIC LAMINATED LAYOUT AND CIRCUIT DIAGRAM SHALL BE AFFIXED TO THE INTERIOR SIDE OF THE ENCLOSURE DOOR.

9.- A 2-COLOR ENGRAVED PLASTIC NAMEPLATE, ATTACHED WITH SCREWS, AND ENGRAVED AS INDICATED, SHALL BE PROVIDED FOR EACH MAIN BREAKER.

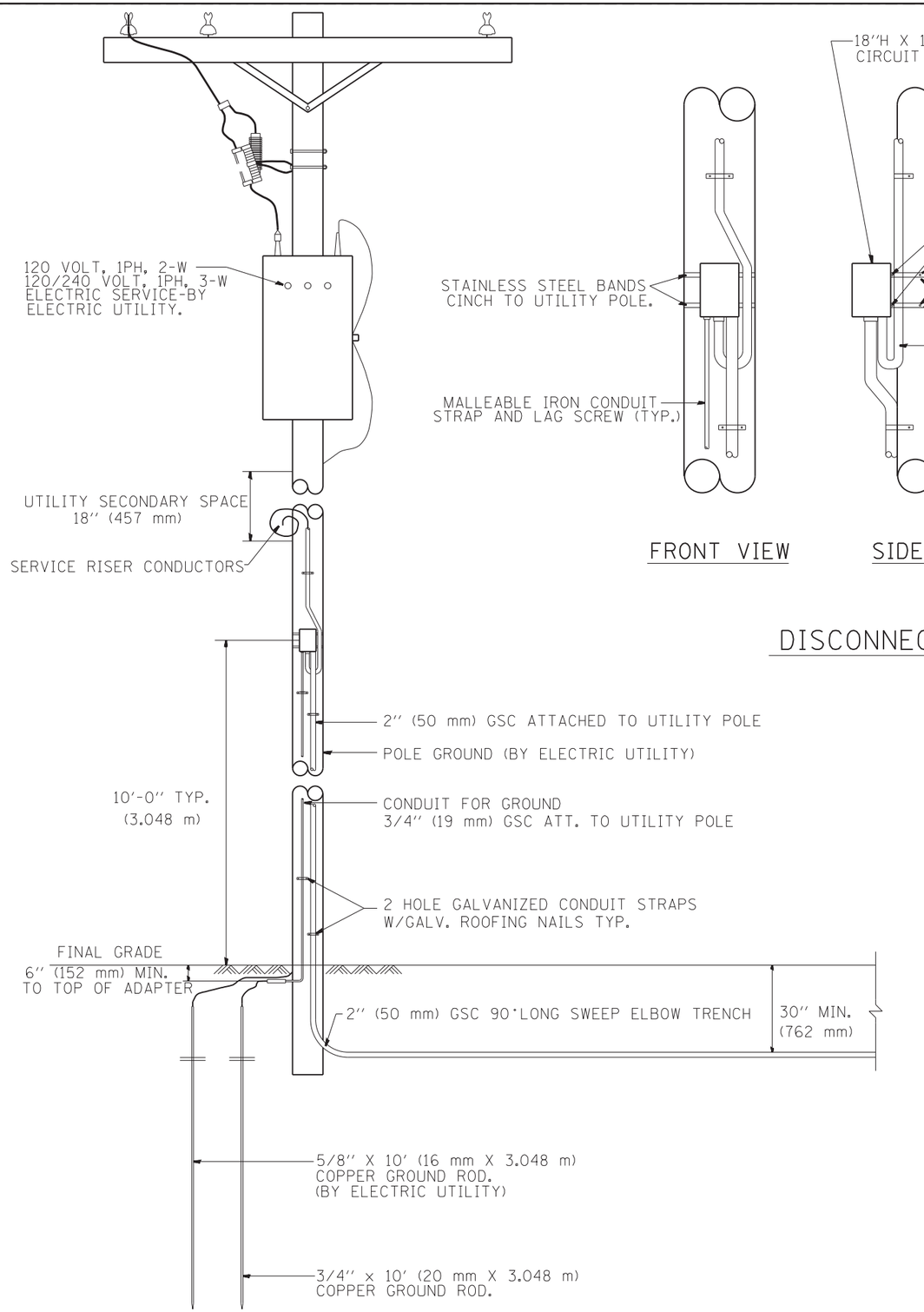
10.- PROVIDE ON LAYOUT AND CIRCUIT DIAGRAM A BILL OF MATERIALS USED WITH CATALOG NUMBERS.

11.- REFER TO T.S.C. TYPICAL DRAWING TY-1TSC-400#20 FOR POLE MOUNTED DISCONNECT MOUNTING DETAILS.

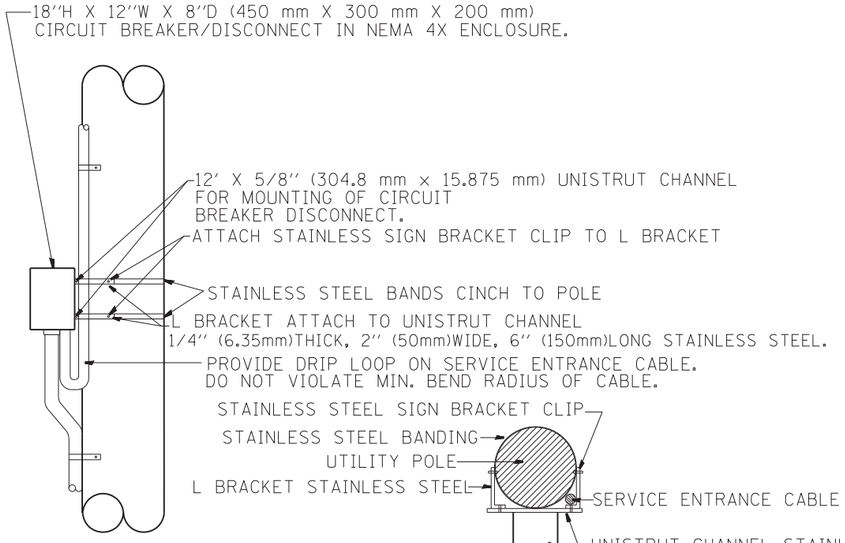
ITS-44

FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - R.L.	REVISED - 03/01/99	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION TRAFFIC SYSTEMS CENTER	DISTRICT 1 SURVEILLANCE POLE-MOUNTED ELECTRIC SERVICE BOX DETAIL
	PLOT SCALE = 100.0000 ' / in.	DRAWN - G.M.	REVISED - 03/30/99		
	PLOT DATE = 12/6/2012	CHECKED - R.L.	REVISED - 04/99		SCALE: NONE | SHEET NO. 12 OF 16 SHEETS | STA. | TO STA.
		DATE - 02/24/99	REVISED - 04/12/99 ⚠		

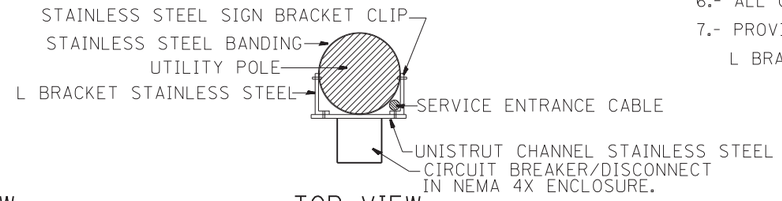
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	371
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FRONT VIEW



SIDE VIEW

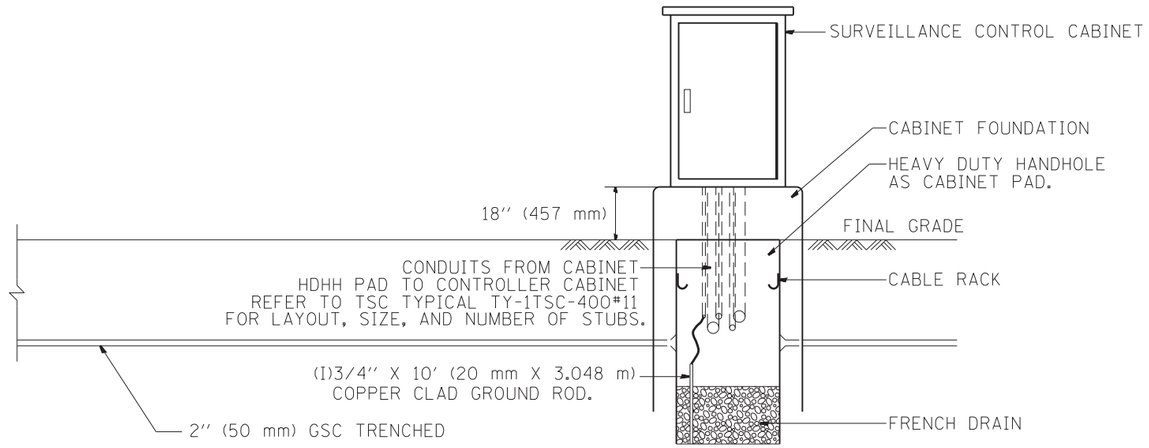


TOP VIEW

NOTES:

1.- ALL CONDUIT BUSHINGS SHALL HAVE AN ISOLATED THROAT.
2.- PROVIDE HEAT SHRINK BOOT AT THE TOP OF THE SERVICE ENTRANCE CABLE FOR MOISTURE PROOFING.
3.- ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC UNLESS OTHERWISE NOTED.
4.- ATTACH INCOMING ELECTRIC SERVICE CABLE TO UTILITY POLE EVERY 5 FEET USING INSULATED U-NAIL.
5.- PROVIDE CABLE RACK IN HANDHOLES.
6.- ALL CONDUCTORS SHALL BE COPPER.
7.- PROVIDE STAINLESS STEEL HARDWARE TO ATTACH L BRACKETS TO UNISTRUT AND TO SIGN HANGER.

NTS
DISCONNECT MOUNTING DETAIL



ITS-45

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		DRAWN - G.M.	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - R.L.	REVISED -
	PLOT DATE = 12/6/2012	DATE - 03/30/99	REVISED -

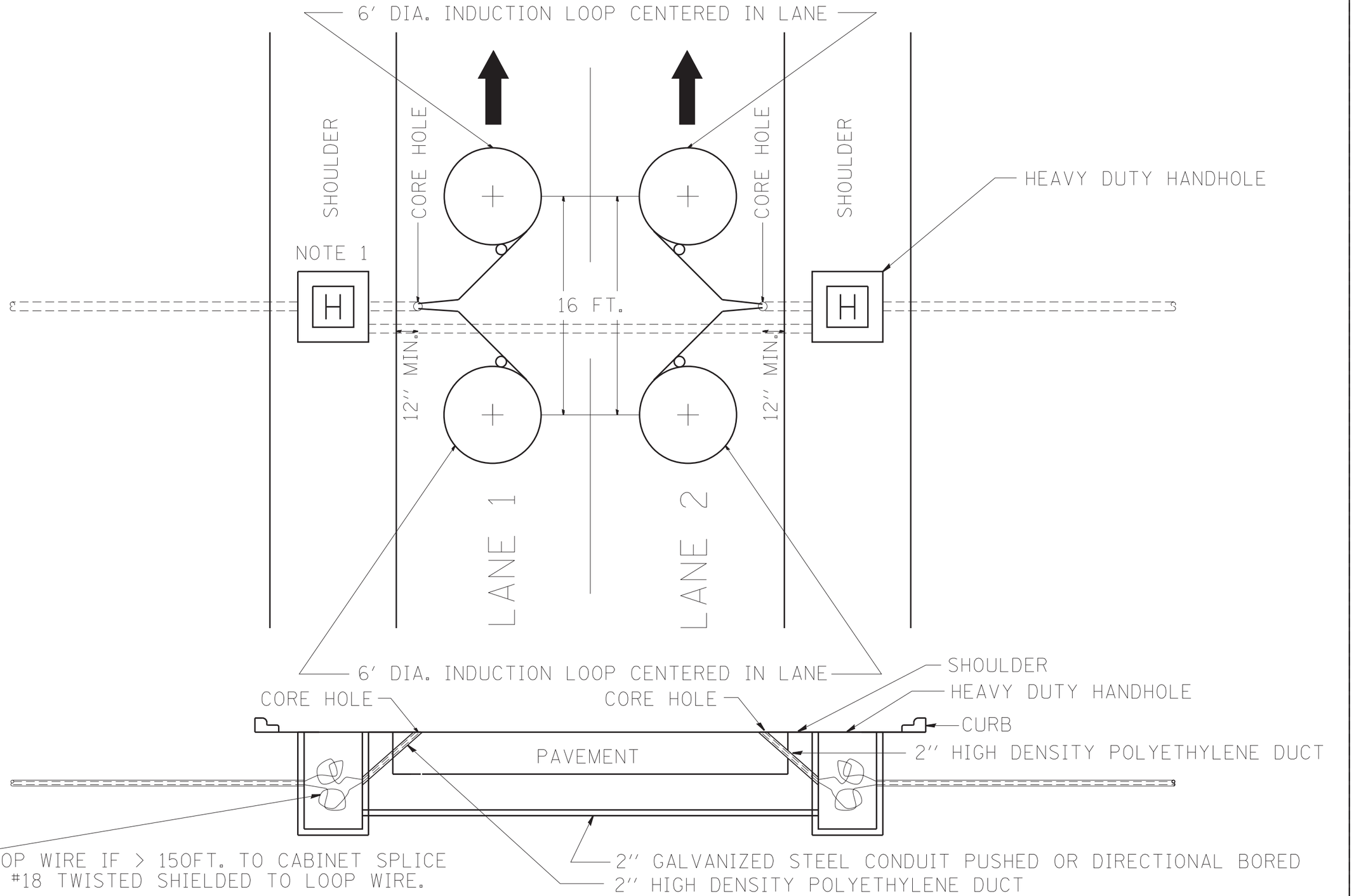
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

POLE MOUNTED
DISCONNECT MOUNTING DETAILS

SCALE: NONE | SHEET NO. 13 OF 16 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	372
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

TRAFFIC SYSTEMS CENTER (TY-1TSC-400#20)



NOTE 1: IF HDHH NOT POSSIBLE THEN LANE 1 LOOPS USE SAME CORE HOLE AS LANE 2 LOOPS. IN THE OTHER DIRECTION, LANE 2 LOOPS WILL USE SAME CORE HOLE AS LANE 1 LOOPS.

ITS-46

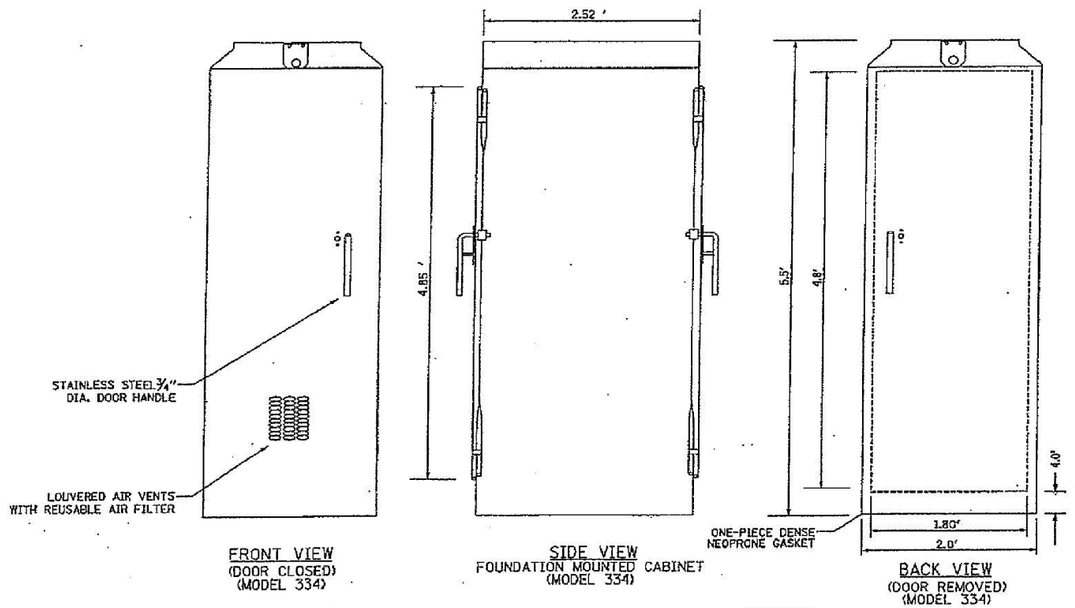
FILE NAME = c:\pw_work\pwidot\mezag\d0287541\TSCTYP.dgn	USER NAME = mezag	DESIGNED - J.G.	REVISED - 07/27/2010
		DRAWN - G.M.	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - J.G.	REVISED -
	PLOT DATE = 12/6/2012	DATE - 06/25/2010	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
TRAFFIC SYSTEMS CENTER

TRAFFIC SURVEILLANCE
2 LANE SPEED, COUNT, CLASSIFICATION STATION

SCALE: NONE | SHEET NO. 14 OF 16 SHEETS | STA. | TO STA.

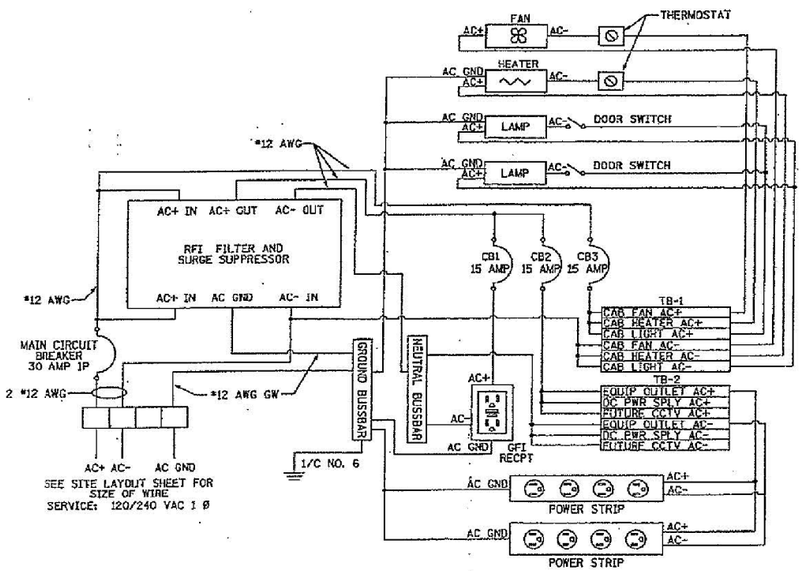
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	373
		CONTRACT NO. 60J12		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



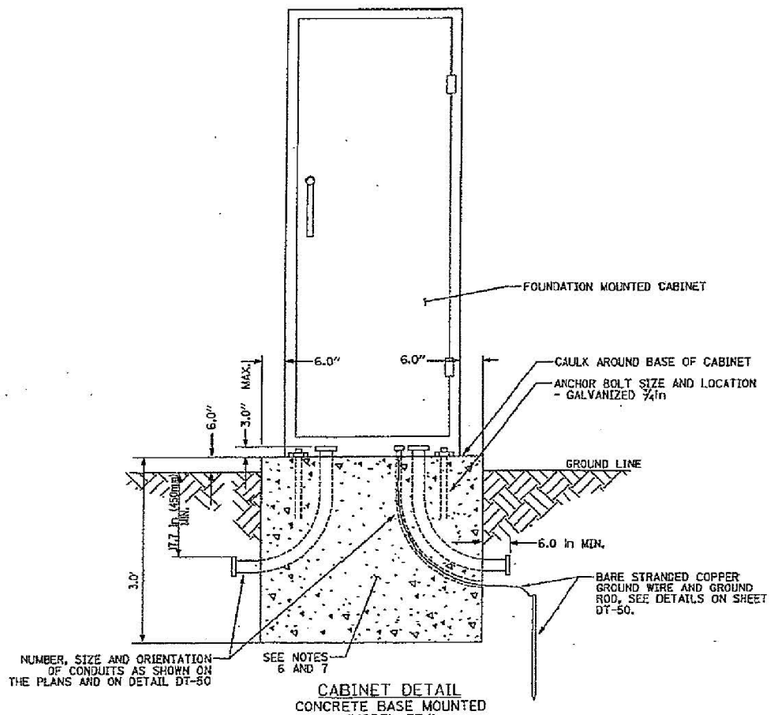
FRONT VIEW
(DOOR CLOSED)
(MODEL 334)

SIDE VIEW
FOUNDATION MOUNTED CABINET
(MODEL 334)

BACK VIEW
(DOOR REMOVED)
(MODEL 334)



SURVEILLANCE CABINET POWER DISTRIBUTION ASSEMBLY (PDA)
NOT TO SCALE



CABINET DETAIL
CONCRETE BASE MOUNTED
(MODEL 334)

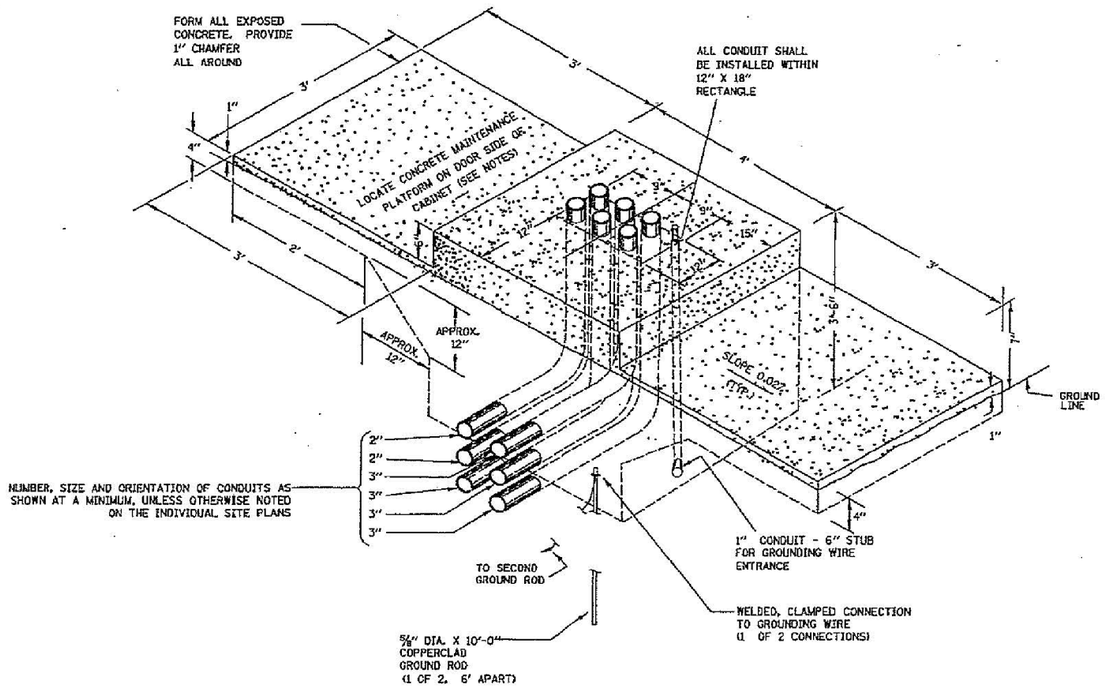
NOTES

1. REFER TO SPECIAL PROVISIONS FOR CABINET DETAILS AND ADDITIONAL REQUIREMENTS.
2. CABINET ENTRIES INCLUDE VERTICAL ARRANGEMENT FOR MAJOR EQUIPMENT ITEMS ONLY.
3. INSTALL ADDITIONAL ITEMS ON SIDE AND BACK PANELS PER THE SPECIAL PROVISIONS.
4. THE CONTRACTOR SHALL INSTALL INSULATED BUSHINGS AND DUCT SEALANT AT ALL CONDUIT BEND TERMINATIONS IN FOUNDATIONS.
5. CONCRETE BASE TO BE FORMED AT LEAST 6.0 in ABOVE THE GROUND SURFACE.
6. CONCRETE BASE MUST BE CAST IN PLACE.
7. ALL WORK INDICATED SHALL BE PAID FOR UNDER ITEM CABINET, MODEL 334 EXCLUSIVE OF THE CONCRETE FOUNDATION.
8. CABINET BOTTOM CONFIGURATION SHALL BE AS DIRECTED BY THE ENGINEER.

ITS-47

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FIBER OPTIC CABLE INSTALLATION CABINET, MODEL 334 DETAILS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			94	2012-059-BR	COOK	631	374
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: 1"=50' SHEET NO. 15 OF 16 SHEETS STA. TO STA.			ILLINOIS FED. AID PROJECT		

$FILE$



TYPICAL DETAIL

CONCRETE BASE, CONTROLLER CABINET

NOTES

1. INSTALL FOUR ¾ INCH DIAMETER X 12 INCH MINIMUM LENGTH APPROVED J-BOLTS TO ANCHOR THE CABINET BASES. THE ANCHOR BOLTS SHALL BE GALVANIZED STEEL AND LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.
2. CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED AND LEVEL. PRIOR TO CABINET INSTALLATION. LEVELING OF TOP SURFACES AFTER CONCRETE BASE HAS CURED SHALL ONLY BE ACCOMPLISHED BY GRINDING.
3. MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
4. CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.
5. CONCRETE MAINTENANCE PLATFORM AND CABINET FOUNDATION FOR CABINET SHALL BE A MONOLITHIC POUR.
6. WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.
7. CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 3 INCH.
8. MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.
9. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.
10. CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
11. PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
12. ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
13. ALL METALLIC CONDUIT ENDS AT TOP OF CONCRETE BASES SHALL HAVE BUSHINGS AND ALL NON METALLIC CONDUIT ENDS AT TOP OF CONCRETE BASES SHALL HAVE END BELLS.

FILE NAME =	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FIBER OPTIC CABLE INSTALLATION
CONCRETE FOUNDATION, TYPE 1 DETAIL (FOR CABINET, MODEL 334)

SCALE: 1"=50' | SHEET NO. 16 OF 16 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	375
		CONTRACT NO. 60J12		
		ILLINOIS	FED. AID PROJECT	

$FILE$

Bench Mark: Iron Pipe approximately 4' behind outside concrete barrier of Eastbound I-94, approximately 140' southeast of West Abutment, Elevation 602.38.

Existing Structure: Structure No. 016-2436 was constructed in 1970 by the Cook County Department of Highways. The superstructure is a steel wide flange beam bridge with three simple spans, 90'-0 11/16", 68'-3 3/4" and 86'-3 3/16" long, supporting a composite 7" reinforced concrete deck. The end-to-end length of the bridge deck is 260'-6 1/4" with a constant out-to out deck width of 37'-0". The substructure consists of two closed concrete abutments with concrete wingwalls extending parallel to the Stony Island Connector and two solid wall concrete piers, all supported on concrete piles. The bridge will be replaced using staged construction, maintaining one lane of traffic in each stage.

No salvage.

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications with 2010 Interims

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.0912g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.155g
Soil Site Class = D

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

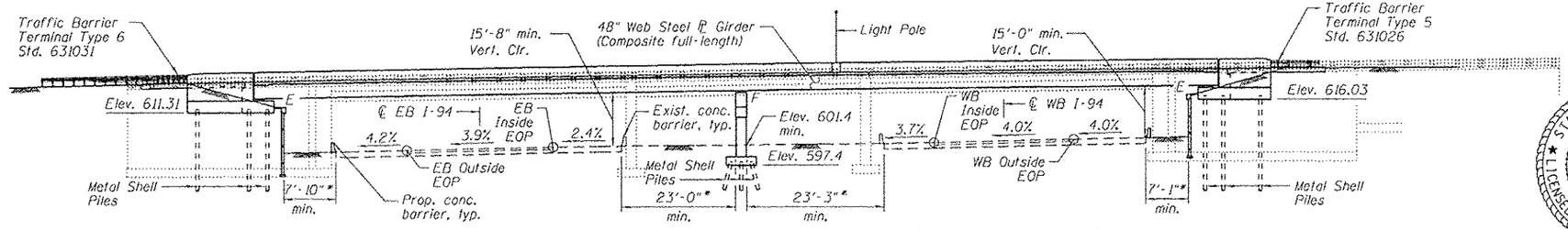
FIELD UNITS

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

SCOPE OF WORK

1. Remove and replace existing bridge and approach slabs.

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

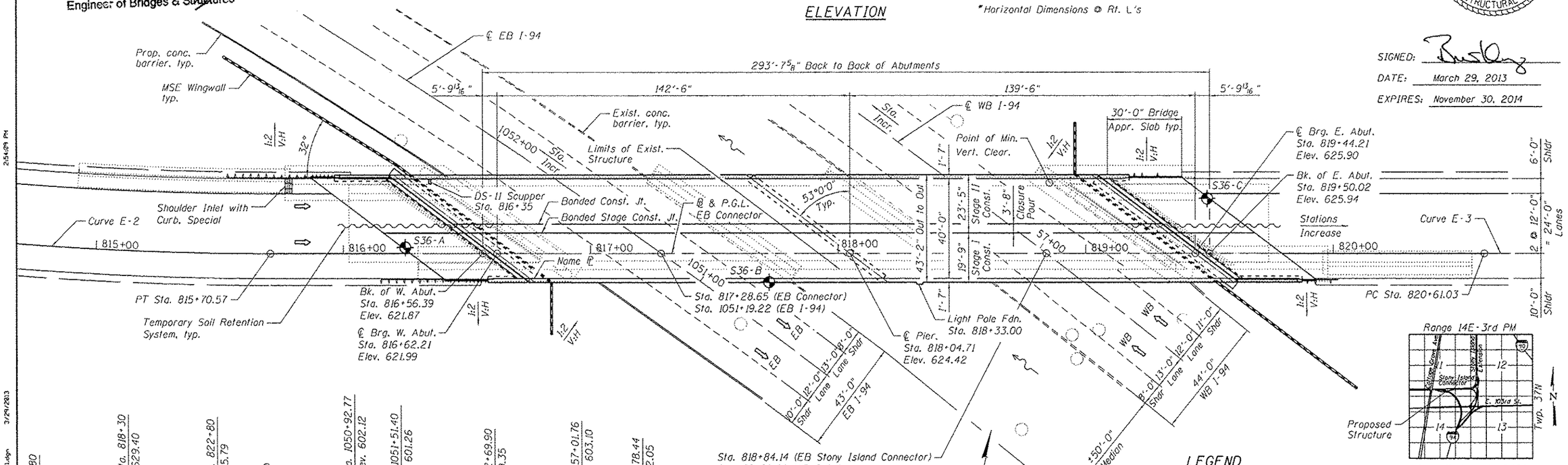


ELEVATION

*Horizontal Dimensions @ Rt. L's

STATE OF ILLINOIS
BRENT KUNZ
81-006200
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

SIGNED:
DATE: March 29, 2013
EXPIRES: November 30, 2014

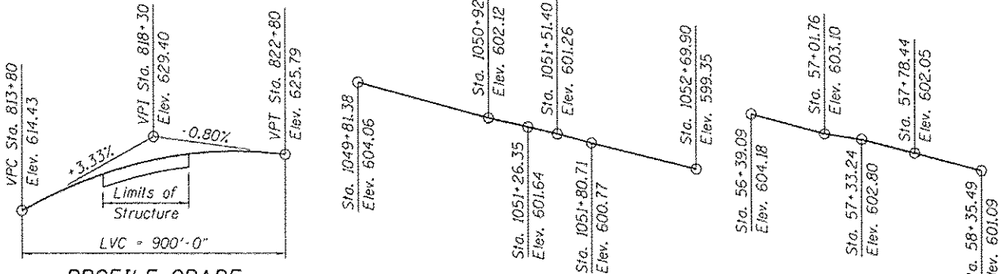


PLAN

LOCATION SKETCH

LEGEND

S36-X = Soil Boring Location and Identifier
Drainage Ditch



PROFILE GRADE (Along ℄ EB Stony Island Connector)

PROFILE GRADE (Along EB I-94 Inside Edge of Pavement)

PROFILE GRADE (Along WB I-94 Inside Edge of Pavement)

Note:
The existing Profile Grades for EB and WB I-94 were obtained from survey data.

CURVE DATA

(℄ EB I-94)	(℄ WB I-94)	(Curve E-2)	(Curve E-3)
P.I. = Sta. 1049+07.94	P.I. = Sta. 57+39.08	P.I. = Sta. 811+83.37	P.I. = Sta. 825+21.29
Δ = 113° 05' 28" (LT)	Δ = 117° 00' 14" (LT)	Δ = 34° 42' 59" (RT)	Δ = 13° 07' 40" (RT)
D = 2° 00' 02"	D = 1° 53' 53"	D = 4° 20' 26"	D = 1° 25' 57"
R = 2,864.00'	R = 3,018.50'	R = 1,320.00'	R = 4,000.00'
T = 4334.52'	T = 4926.13'	T = 412.60'	T = 460.26'
L = 5653.00'	L = 6164.09'	L = 799.81'	L = 916.49'
E = 2331.24'	E = 2758.88'	E = 62.98'	E = 26.39'
e = 3.9%	e = 4.0%	e = 5.8%	e = 3.2%
P.C. = Sta. 1005+73.42	P.C. = Sta. 8+12.95	P.C. = Sta. 807+70.77	P.C. = Sta. 820+61.03
P.T. = Sta. 1062+26.42	P.T. = Sta. 69+77.04	P.T. = Sta. 815+70.57	P.T. = Sta. 829+77.52

GENERAL PLAN & ELEVATION
EASTBOUND STONY ISLAND CONNECTOR OVER I-94 (BISHOP FORD FWY)
F.A.I. RTE. 94 - SEC. 2012-059-BR
COOK COUNTY
STATION 818+04.71
STRUCTURE NO. 016-2470

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED - TL	REVISED -
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	PLOT SCALE =	DRAWN - TL	REVISED -
	PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S-1 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	376
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

S:\10172-05_CADD\Structure\SN 016-2470\CADD Sheets\016-2470-GP01.dgn 3/29/2013
2:54:29 PM

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $\frac{7}{8}$" ϕ, holes $\frac{15}{16}$" ϕ, unless otherwise noted.

Calculated weight of Structural Steel =

AASHTO M 270 Grade 36 = 48,100 lb.
AASHTO M 270 Grade 50 = 526,390 lb.

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

Reinforcement bars designated (E) shall be epoxy coated.

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

Concrete Sealer shall be applied to all exposed surfaces of the abutment backwalls, bridge seats, and pile caps.

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

The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, field installed fasteners and damaged areas, all of which shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Reddish Brown, Munsell No. 2.5YR 3/4.

The concrete for bridge decks finished according to Article 503.16(a) of the Standard Specifications shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The machine used for finishing shall be set parallel to the skew for striking off and screeding the concrete.

See "Erection of Highly Skewed Steel Structures" Special Provision.

INDEX OF SHEETS

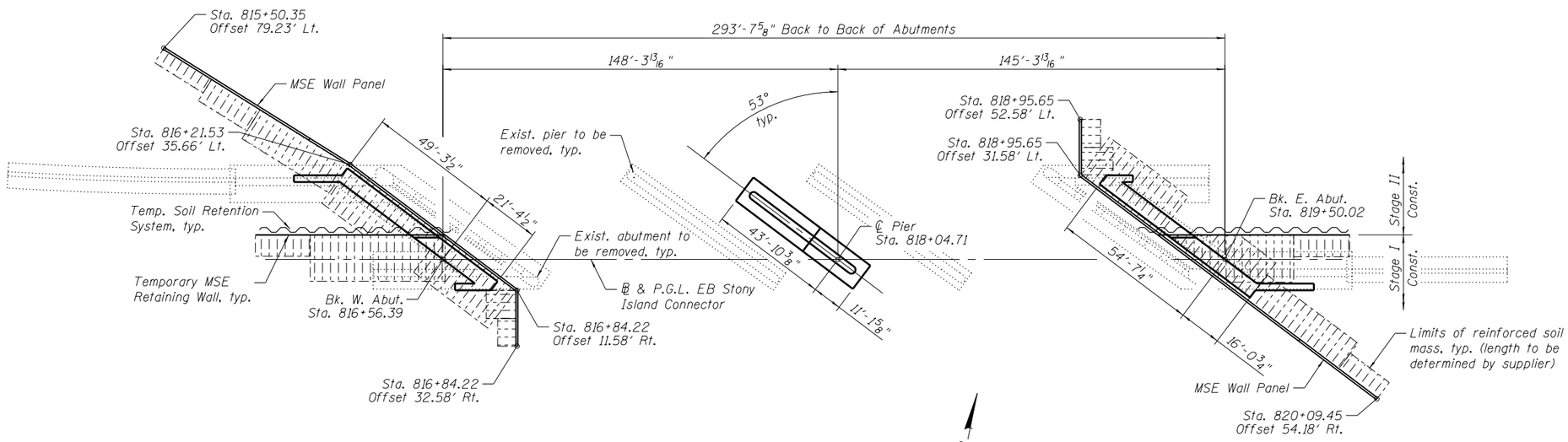
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures No. 1	Each	1	-	1
Protective Shield	Sq Yd	1,373	-	1,373
Structure Excavation	Cu Yd	-	3,070	3,070
Concrete Structures	Cu Yd	43.0	397.1	440.1
Concrete Superstructure	Cu Yd	546.8	-	546.8
Bridge Deck Grooving	Sq Yd	1,463	-	1,463
Protective Coat	Sq Yd	1,861	-	1,861
Furnishing and Erecting Structural Steel	L Sum	0.45	-	0.45
Stud Shear Connectors	Each	7,728	-	7,728
Reinforcement Bars, Epoxy Coated	Pound	139,470	35,740	175,210
Bar Splicers	Each	2,142	176	2,318
Furnishing Metal Shell Piles 12" X 0.250"	Foot	-	2,354	2,354
Furnishing Metal Shell Piles 14" X 0.312"	Foot	-	1,400	1,400
Driving Piles	Foot	-	3,754	3,754
Test Pile Metal Shells	Each	-	3	3
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	138	-	138
Elastomeric Bearing Assembly, Type I	Each	12	-	12
Anchor Bolts 1"	Each	24	-	24
Anchor Bolts $1\frac{1}{4}$"	Each	12	-	12
Concrete Sealer	Sq Ft	-	1,421	1,421
Drainage Scuppers, DS-11	Each	1	-	1
Drainage System	L Sum	-	0.5	0.5
Mechanically Stabilized Earth Retaining Wall	Sq Ft	-	4,250	4,250
Temparary Soil Retention System	Sq Ft	-	2,850	2,850
Temporary Mechanically Stabilized Earth Retaining Wall	Sq Ft	-	2,320	2,320

STATION 818+04.71
BUILT 20 BY
STATE OF ILLINOIS
F.A.I. RT. 94 SEC. 2012-059-BR
LOADING HL-93
STRUCTURE NO. 016-2470

NAME PLATE

See Std. 515001



FOOTING LAYOUT

Note:
Stations and offsets measured to front face of MSE wall panel.

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Chicago, Illinois
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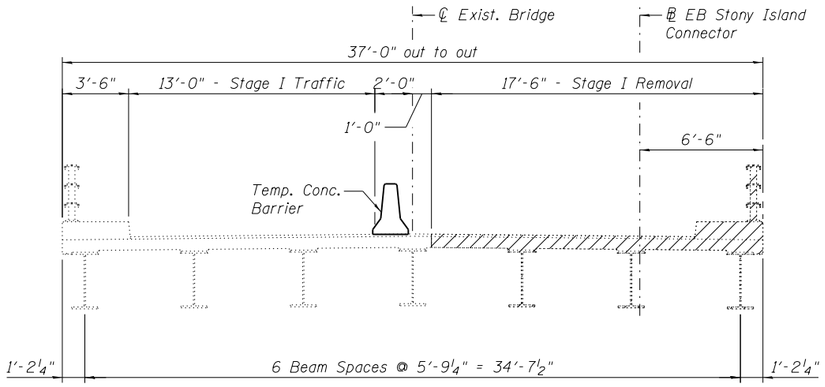
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

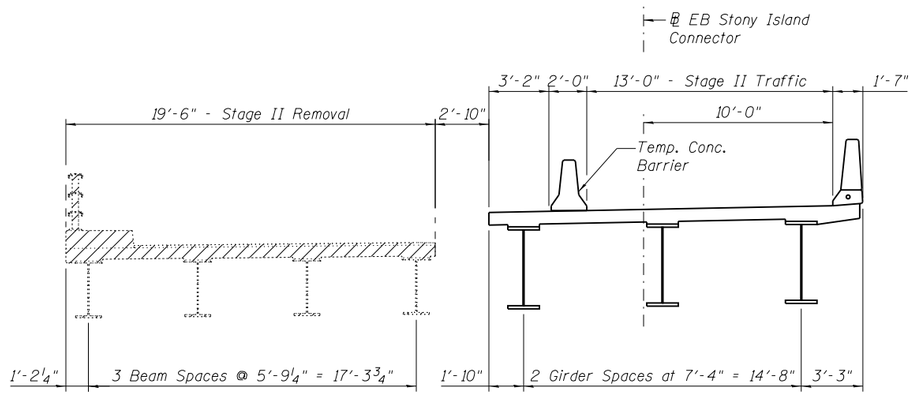
GENERAL DATA
STRUCTURE NO. 016-2470
SHEET NO. S-2 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	377
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



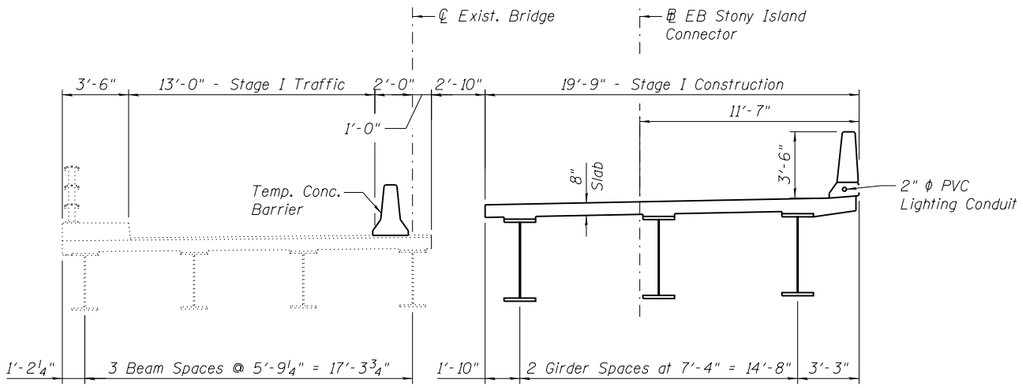
STAGE I REMOVAL

(Looking East)



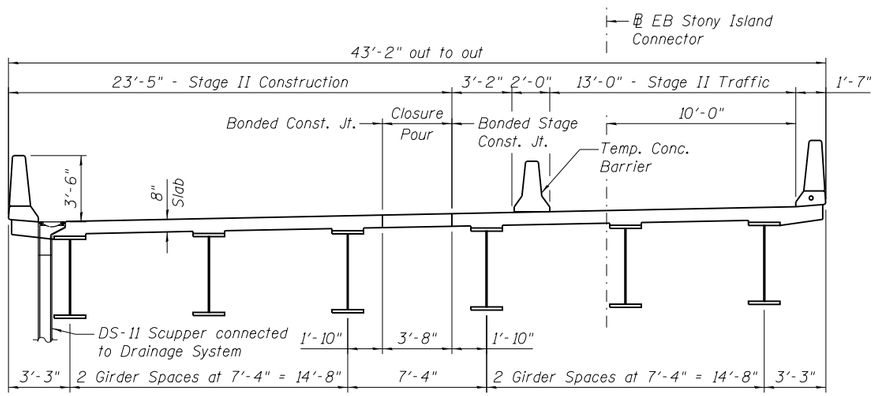
STAGE II REMOVAL

(Looking East)



STAGE I CONSTRUCTION

(Looking East)



STAGE II CONSTRUCTION

(Looking East)

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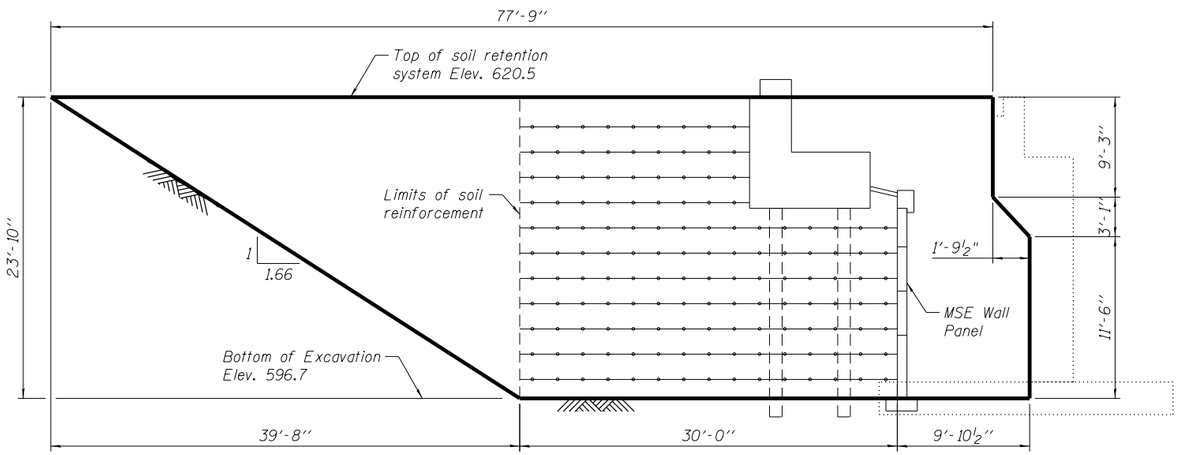
PLOT SCALE =	DRAWN - JGC	REVISED -
PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

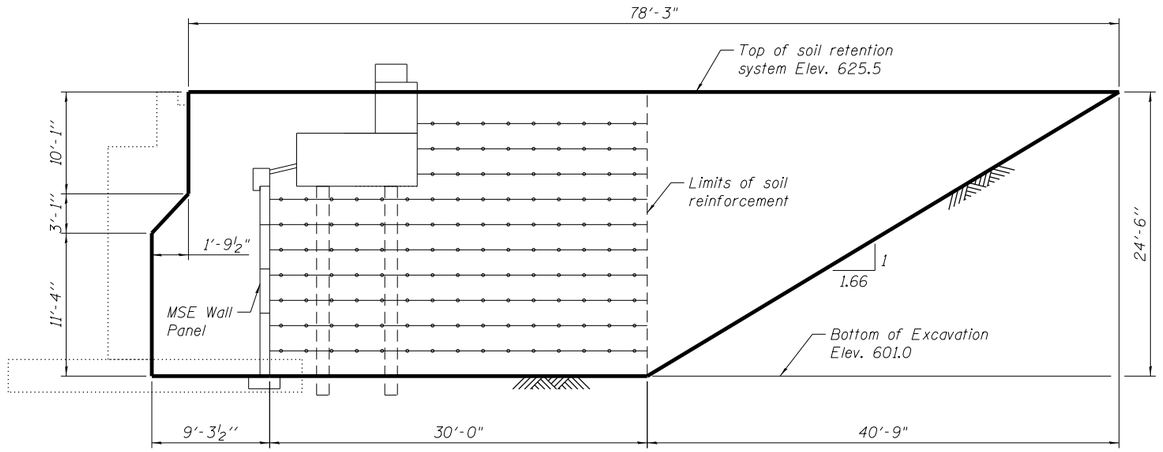
CONSTRUCTION STAGING DETAILS I
STRUCTURE NO. 016-2470
SHEET NO. S-3 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	378
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		



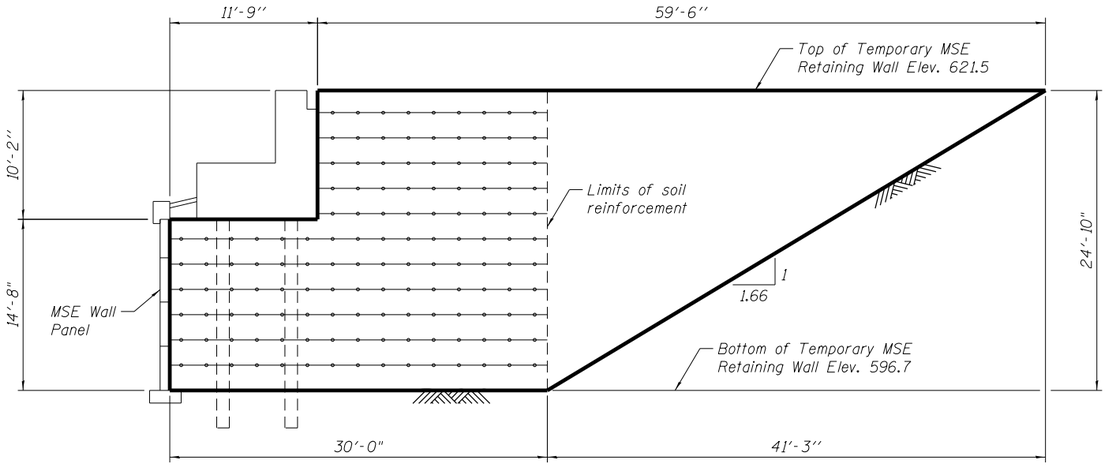
WEST ABUTMENT TEMPORARY SOIL RETENTION SYSTEM

(Looking North)



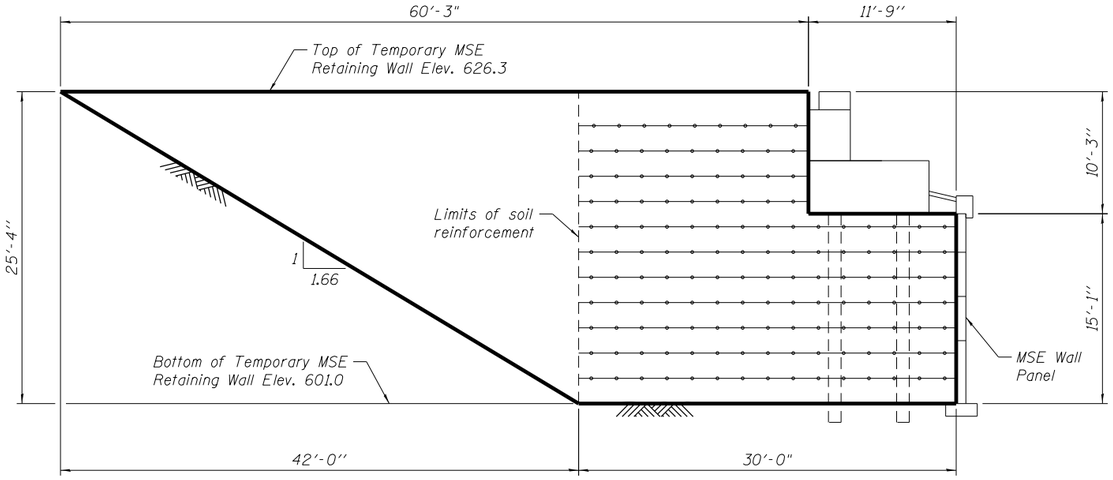
EAST ABUTMENT TEMPORARY SOIL RETENTION SYSTEM

(Looking North)



WEST ABUTMENT TEMPORARY MSE RETAINING WALL

(Looking South)



EAST ABUTMENT TEMPORARY MSE RETAINING WALL

(Looking South)

Notes:

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

The Contractor shall design the face of the temporary MSE retaining walls to permit attachment of straps from the permanent MSE walls in acute corners as applicable.

See MSE wall shop drawings for actual limits of soil reinforcement.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Soil Retention System	Sq. Ft.	2,850
Temporary Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	2,320

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CONSULTING ENGINEERS
Chicago, Illinois
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USER NAME =	DESIGNED - JGC	REVISED -	
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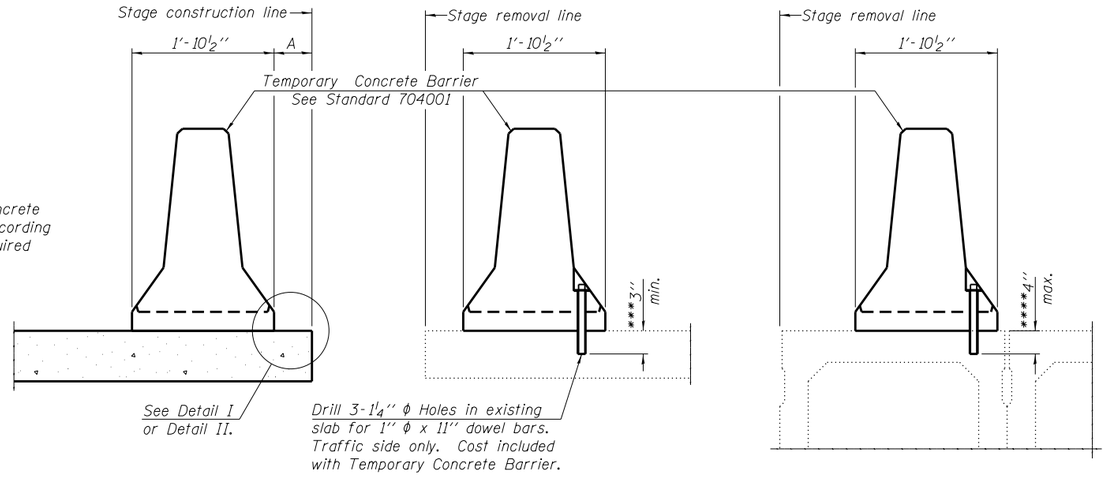
PLOT SCALE =	DRAWN - JGC	REVISED -	
PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION STAGING DETAILS II
STRUCTURE NO. 016–2470
SHEET NO. S-4 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	379
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

When "A" is 3'-6" 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'-6".



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1'' x 7' 'x ''W'' steel ℄ 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 ℄ 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.

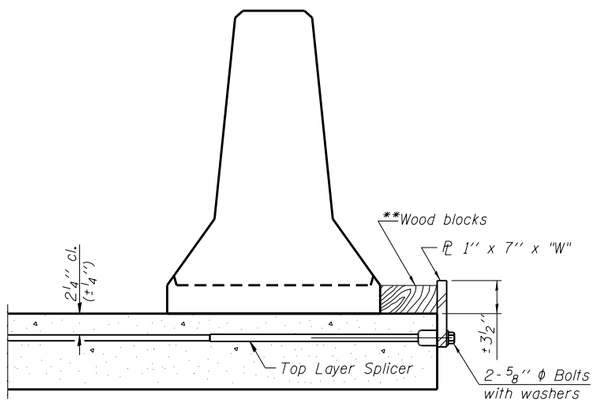
Cost of anchorage is included with Temporary Concrete Barrier.

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.

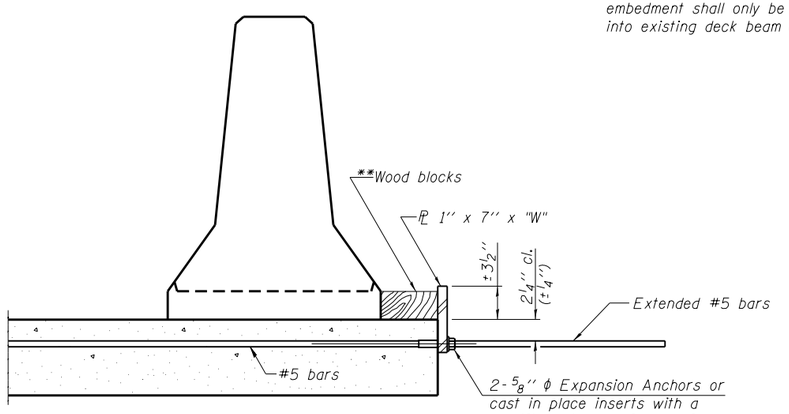
SECTIONS THRU SLAB OR DECK BEAM

*** 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.

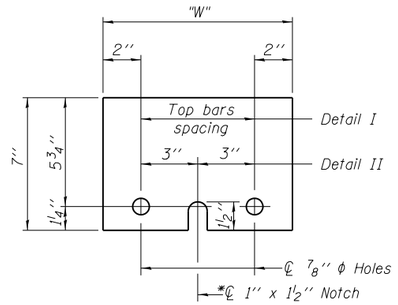
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℄ 1'' x 7'' x ''W''

* Required only with Detail II

** 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.

"W" = Top bars spacing + 4''

R-27

7-1-10

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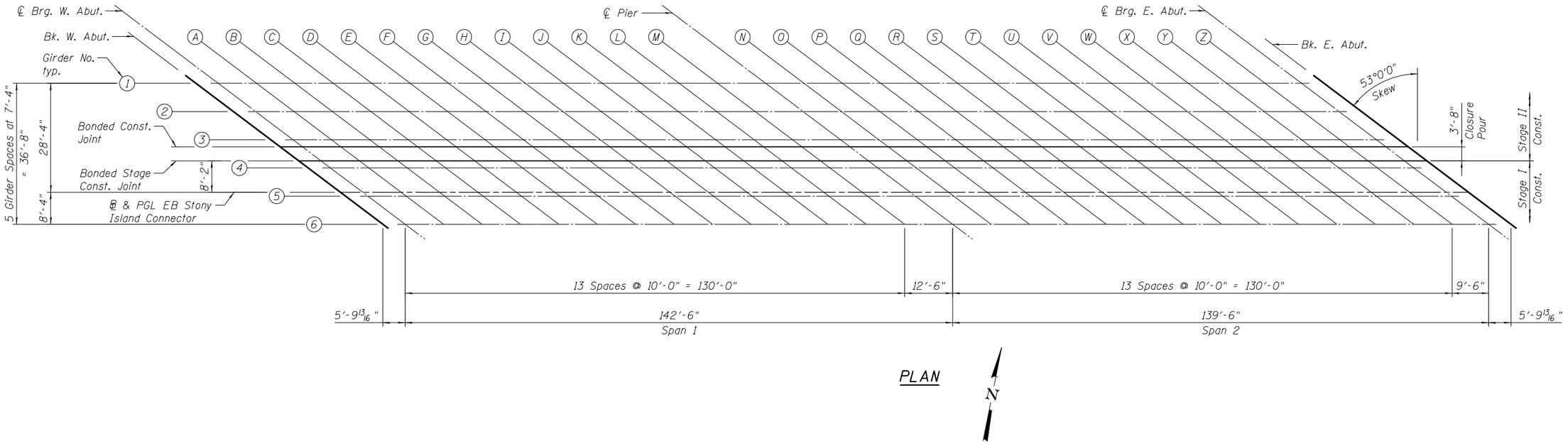
PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

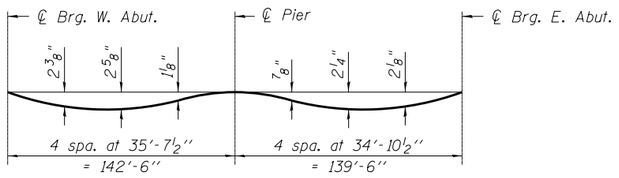
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-2470
SHEET NO. S-5 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	380
		CONTRACT NO. 60J12		
ILLINOIS	FED. AID PROJECT			



PLAN

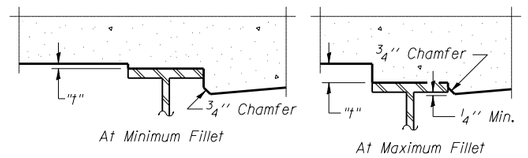
N



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheets S-7 through S-9.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets S-7 thru S-9, minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED - TL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS LAYOUT STRUCTURE NO. 016-2470
		CHECKED - JGC	REVISED -		
	PLOT SCALE =	DRAWN - JGC	REVISED -		
	PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -		SHEET NO. S-6 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	381
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+18.79	-28.33	620.14	620.14
℄ Brg. W. Abut.	816+24.61	-28.33	620.31	620.31
A	816+34.61	-28.33	620.60	620.67
B	816+44.61	-28.33	620.89	621.02
C	816+54.61	-28.33	621.17	621.35
D	816+64.61	-28.33	621.45	621.66
E	816+74.61	-28.33	621.67	621.91
F	816+84.61	-28.33	621.87	622.11
G	816+94.61	-28.33	622.06	622.28
H	817+04.61	-28.33	622.25	622.44
I	817+14.61	-28.33	622.43	622.59
J	817+24.61	-28.33	622.60	622.73
K	817+34.61	-28.33	622.78	622.86
L	817+44.61	-28.33	622.94	622.99
M	817+54.61	-28.33	623.11	623.13
℄ Pier	817+67.11	-28.33	623.30	623.30
N	817+77.11	-28.33	623.46	623.47
O	817+87.11	-28.33	623.61	623.63
P	817+97.11	-28.33	623.75	623.80
Q	818+07.11	-28.33	623.89	623.98
R	818+17.11	-28.33	624.02	624.15
S	818+27.11	-28.33	624.15	624.31
T	818+37.11	-28.33	624.28	624.46
U	818+47.11	-28.33	624.40	624.60
V	818+57.11	-28.33	624.51	624.71
W	818+67.11	-28.33	624.63	624.81
X	818+77.11	-28.33	624.73	624.89
Y	818+87.11	-28.33	624.83	624.94
Z	818+97.11	-28.33	624.93	624.99
℄ Brg. E. Abut.	819+06.61	-28.33	625.02	625.02
Bk. E. Abut.	819+12.42	-28.33	625.07	625.07

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+28.52	-21.00	620.65	620.65
℄ Brg. W. Abut.	816+34.34	-21.00	620.80	620.80
A	816+44.34	-21.00	621.07	621.14
B	816+54.34	-21.00	621.34	621.46
C	816+64.34	-21.00	621.60	621.77
D	816+74.34	-21.00	621.81	622.03
E	816+84.34	-21.00	622.01	622.24
F	816+94.34	-21.00	622.20	622.44
G	817+04.34	-21.00	622.39	622.61
H	817+14.34	-21.00	622.57	622.77
I	817+24.34	-21.00	622.75	622.91
J	817+34.34	-21.00	622.92	623.04
K	817+44.34	-21.00	623.09	623.17
L	817+54.34	-21.00	623.25	623.30
M	817+64.34	-21.00	623.41	623.43
℄ Pier	817+76.84	-21.00	623.60	623.60
N	817+86.84	-21.00	623.75	623.76
O	817+96.84	-21.00	623.89	623.92
P	818+06.84	-21.00	624.03	624.09
Q	818+16.84	-21.00	624.17	624.26
R	818+26.84	-21.00	624.30	624.42
S	818+36.84	-21.00	624.42	624.58
T	818+46.84	-21.00	624.54	624.73
U	818+56.84	-21.00	624.66	624.86
V	818+66.84	-21.00	624.77	624.97
W	818+76.84	-21.00	624.88	625.06
X	818+86.84	-21.00	624.98	625.13
Y	818+96.84	-21.00	625.08	625.19
Z	819+06.84	-21.00	625.17	625.23
℄ Brg. E. Abut.	819+16.34	-21.00	625.25	625.25
Bk. E. Abut.	819+22.15	-21.00	625.30	625.30

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+38.25	-13.67	621.11	621.11
℄ Brg. W. Abut.	816+44.07	-13.67	621.26	621.26
A	816+54.07	-13.67	621.50	621.57
B	816+64.07	-13.67	621.74	621.87
C	816+74.07	-13.67	621.96	622.13
D	816+84.07	-13.67	622.15	622.37
E	816+94.07	-13.67	622.34	622.57
F	817+04.07	-13.67	622.53	622.77
G	817+14.07	-13.67	622.71	622.94
H	817+24.07	-13.67	622.89	623.09
I	817+34.07	-13.67	623.06	623.22
J	817+44.07	-13.67	623.23	623.35
K	817+54.07	-13.67	623.39	623.47
L	817+64.07	-13.67	623.55	623.60
M	817+74.07	-13.67	623.70	623.72
℄ Pier	817+86.57	-13.67	623.89	623.89
N	817+96.57	-13.67	624.03	624.04
O	818+06.57	-13.67	624.17	624.20
P	818+16.57	-13.67	624.31	624.36
Q	818+26.57	-13.67	624.44	624.53
R	818+36.57	-13.67	624.56	624.69
S	818+46.57	-13.67	624.69	624.84
T	818+56.57	-13.67	624.80	624.99
U	818+66.57	-13.67	624.91	625.11
V	818+76.57	-13.67	625.02	625.22
W	818+86.57	-13.67	625.12	625.31
X	818+96.57	-13.67	625.22	625.37
Y	819+06.57	-13.67	625.31	625.42
Z	819+16.57	-13.67	625.40	625.46
℄ Brg. E. Abut.	819+26.07	-13.67	625.49	625.49
Bk. E. Abut.	819+31.88	-13.67	625.56	625.56

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS I
STRUCTURE NO. 016-2470

SHEET NO. S-7 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	382
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

BONDED CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+40.69	-11.83	621.22	621.22
℄ Brg. W. Abut.	816+46.51	-11.83	621.36	621.36
A	816+56.51	-11.83	621.60	621.67
B	816+66.51	-11.83	621.84	621.97
C	816+76.51	-11.83	622.04	622.22
D	816+86.51	-11.83	622.23	622.45
E	816+96.51	-11.83	622.42	622.66
F	817+06.51	-11.83	622.61	622.85
G	817+16.51	-11.83	622.79	623.02
H	817+26.51	-11.83	622.97	623.17
I	817+36.51	-11.83	623.14	623.30
J	817+46.51	-11.83	623.30	623.43
K	817+56.51	-11.83	623.47	623.55
L	817+66.51	-11.83	623.62	623.67
M	817+76.51	-11.83	623.78	623.80
℄ Pier	817+89.01	-11.83	623.96	623.96
N	817+99.01	-11.83	624.11	624.11
O	818+09.01	-11.83	624.24	624.27
P	818+19.01	-11.83	624.38	624.43
Q	818+29.01	-11.83	624.51	624.60
R	818+39.01	-11.83	624.63	624.76
S	818+49.01	-11.83	624.75	624.91
T	818+59.01	-11.83	624.87	625.05
U	818+69.01	-11.83	624.98	625.18
V	818+79.01	-11.83	625.08	625.28
W	818+89.01	-11.83	625.18	625.37
X	818+99.01	-11.83	625.28	625.43
Y	819+09.01	-11.83	625.37	625.48
Z	819+19.01	-11.83	625.46	625.52
℄ Brg. E. Abut.	819+28.51	-11.83	625.55	625.55
Bk. E. Abut.	819+34.32	-11.83	625.62	625.62

BONDED STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+45.55	-8.17	621.44	621.44
℄ Brg. W. Abut.	816+51.37	-8.17	621.57	621.57
A	816+61.37	-8.17	621.80	621.86
B	816+71.37	-8.17	622.01	622.14
C	816+81.37	-8.17	622.21	622.39
D	816+91.37	-8.17	622.40	622.62
E	817+01.37	-8.17	622.59	622.82
F	817+11.37	-8.17	622.77	623.01
G	817+21.37	-8.17	622.95	623.18
H	817+31.37	-8.17	623.12	623.32
I	817+41.37	-8.17	623.29	623.46
J	817+51.37	-8.17	623.46	623.58
K	817+61.37	-8.17	623.62	623.70
L	817+71.37	-8.17	623.77	623.82
M	817+81.37	-8.17	623.92	623.94
℄ Pier	817+93.87	-8.17	624.11	624.11
N	818+03.87	-8.17	624.25	624.26
O	818+13.87	-8.17	624.38	624.41
P	818+23.87	-8.17	624.51	624.57
Q	818+33.87	-8.17	624.64	624.73
R	818+43.87	-8.17	624.76	624.89
S	818+53.87	-8.17	624.88	625.04
T	818+63.87	-8.17	624.99	625.18
U	818+73.87	-8.17	625.10	625.30
V	818+83.87	-8.17	625.21	625.40
W	818+93.87	-8.17	625.30	625.49
X	819+03.87	-8.17	625.40	625.55
Y	819+13.87	-8.17	625.49	625.60
Z	819+23.87	-8.17	625.58	625.63
℄ Brg. E. Abut.	819+33.37	-8.17	625.67	625.67
Bk. E. Abut.	819+39.18	-8.17	625.73	625.73

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+47.99	-6.33	621.54	621.54
℄ Brg. W. Abut.	816+53.81	-6.33	621.67	621.67
A	816+63.81	-6.33	621.89	621.96
B	816+73.81	-6.33	622.10	622.22
C	816+83.81	-6.33	622.29	622.47
D	816+93.81	-6.33	622.48	622.70
E	817+03.81	-6.33	622.67	622.90
F	817+13.81	-6.33	622.85	623.09
G	817+23.81	-6.33	623.03	623.25
H	817+33.81	-6.33	623.20	623.40
I	817+43.81	-6.33	623.37	623.53
J	817+53.81	-6.33	623.53	623.66
K	817+63.81	-6.33	623.69	623.78
L	817+73.81	-6.33	623.85	623.89
M	817+83.81	-6.33	624.00	624.02
℄ Pier	817+96.31	-6.33	624.18	624.18
N	818+06.31	-6.33	624.32	624.33
O	818+16.31	-6.33	624.45	624.48
P	818+26.31	-6.33	624.58	624.64
Q	818+36.31	-6.33	624.71	624.80
R	818+46.31	-6.33	624.83	624.95
S	818+56.31	-6.33	624.94	625.10
T	818+66.31	-6.33	625.06	625.24
U	818+76.31	-6.33	625.16	625.36
V	818+86.31	-6.33	625.27	625.46
W	818+96.31	-6.33	625.36	625.55
X	819+06.31	-6.33	625.46	625.61
Y	819+16.31	-6.33	625.55	625.66
Z	819+26.31	-6.33	625.64	625.69
℄ Brg. E. Abut.	819+35.81	-6.33	625.73	625.73
Bk. E. Abut.	819+41.62	-6.33	625.78	625.78

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS II
STRUCTURE NO. 016-2470
SHEET NO. S-8 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	383
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

℄ & P.G.L. EASTBOUND STONY ISLAND CONNECTOR

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+56.39	0.00	621.87	621.87
℄ Brg. W. Abut.	816+62.21	0.00	621.99	621.99
A	816+72.21	0.00	622.19	622.26
B	816+82.21	0.00	622.39	622.52
C	816+92.21	0.00	622.58	622.76
D	817+02.21	0.00	622.77	622.98
E	817+12.21	0.00	622.95	623.18
F	817+22.21	0.00	623.13	623.37
G	817+32.21	0.00	623.30	623.53
H	817+42.21	0.00	623.47	623.67
I	817+52.21	0.00	623.63	623.80
J	817+62.21	0.00	623.79	623.92
K	817+72.21	0.00	623.95	624.03
L	817+82.21	0.00	624.10	624.15
M	817+92.21	0.00	624.25	624.26
℄ Pier	818+04.71	0.00	624.42	624.42
N	818+14.71	0.00	624.56	624.57
O	818+24.71	0.00	624.69	624.72
P	818+34.71	0.00	624.81	624.87
Q	818+44.71	0.00	624.94	625.03
R	818+54.71	0.00	625.05	625.18
S	818+64.71	0.00	625.17	625.32
T	818+74.71	0.00	625.27	625.46
U	818+84.71	0.00	625.38	625.58
V	818+94.71	0.00	625.48	625.67
W	819+04.71	0.00	625.57	625.75
X	819+14.71	0.00	625.66	625.81
Y	819+24.71	0.00	625.75	625.85
Z	819+34.71	0.00	625.83	625.88
℄ Brg. E. Abut.	819+44.21	0.00	625.90	625.90
Bk. E. Abut.	819+50.02	0.00	625.94	625.94

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+57.72	1.00	621.92	621.92
℄ Brg. W. Abut.	816+63.54	1.00	622.04	622.04
A	816+73.54	1.00	622.24	622.31
B	816+83.54	1.00	622.43	622.56
C	816+93.54	1.00	622.63	622.80
D	817+03.54	1.00	622.81	623.03
E	817+13.54	1.00	622.99	623.23
F	817+23.54	1.00	623.17	623.41
G	817+33.54	1.00	623.34	623.57
H	817+43.54	1.00	623.51	623.71
I	817+53.54	1.00	623.68	623.84
J	817+63.54	1.00	623.84	623.96
K	817+73.54	1.00	623.99	624.07
L	817+83.54	1.00	624.14	624.19
M	817+93.54	1.00	624.28	624.30
℄ Pier	818+06.04	1.00	624.46	624.46
N	818+16.04	1.00	624.59	624.60
O	818+26.04	1.00	624.73	624.75
P	818+36.04	1.00	624.85	624.91
Q	818+46.04	1.00	624.97	625.06
R	818+56.04	1.00	625.09	625.21
S	818+66.04	1.00	625.20	625.36
T	818+76.04	1.00	625.31	625.49
U	818+86.04	1.00	625.41	625.61
V	818+96.04	1.00	625.51	625.71
W	819+06.04	1.00	625.60	625.79
X	819+16.04	1.00	625.69	625.85
Y	819+26.04	1.00	625.78	625.88
Z	819+36.04	1.00	625.85	625.91
℄ Brg. E. Abut.	819+45.54	1.00	625.92	625.92
Bk. E. Abut.	819+51.35	1.00	625.96	625.96

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	816+67.45	8.33	622.27	622.27
℄ Brg. W. Abut.	816+73.27	8.33	622.38	622.38
A	816+83.27	8.33	622.58	622.64
B	816+93.27	8.33	622.77	622.89
C	817+03.27	8.33	622.95	623.13
D	817+13.27	8.33	623.14	623.35
E	817+23.27	8.33	623.31	623.55
F	817+33.27	8.33	623.49	623.72
G	817+43.27	8.33	623.65	623.88
H	817+53.27	8.33	623.82	624.02
I	817+63.27	8.33	623.98	624.14
J	817+73.27	8.33	624.13	624.25
K	817+83.27	8.33	624.28	624.36
L	817+93.27	8.33	624.43	624.47
M	818+03.27	8.33	624.57	624.59
℄ Pier	818+15.77	8.33	624.74	624.74
N	818+25.77	8.33	624.87	624.88
O	818+35.77	8.33	624.99	625.02
P	818+45.77	8.33	625.12	625.17
Q	818+55.77	8.33	625.23	625.32
R	818+65.77	8.33	625.34	625.47
S	818+75.77	8.33	625.45	625.61
T	818+85.77	8.33	625.55	625.74
U	818+95.77	8.33	625.65	625.85
V	819+05.77	8.33	625.75	625.94
W	819+15.77	8.33	625.84	626.02
X	819+25.77	8.33	625.92	626.07
Y	819+35.77	8.33	625.97	626.08
Z	819+45.77	8.33	626.03	626.08
℄ Brg. E. Abut.	819+55.27	8.33	626.07	626.07
Bk. E. Abut.	819+61.08	8.33	626.10	626.10

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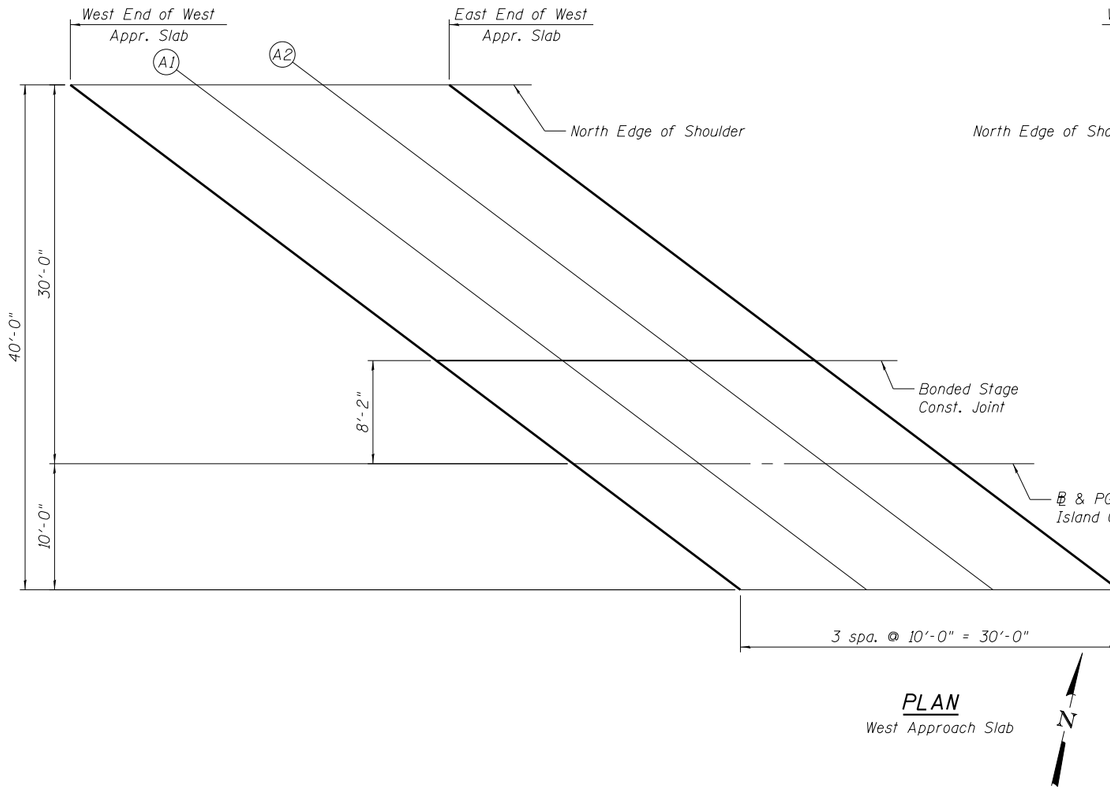
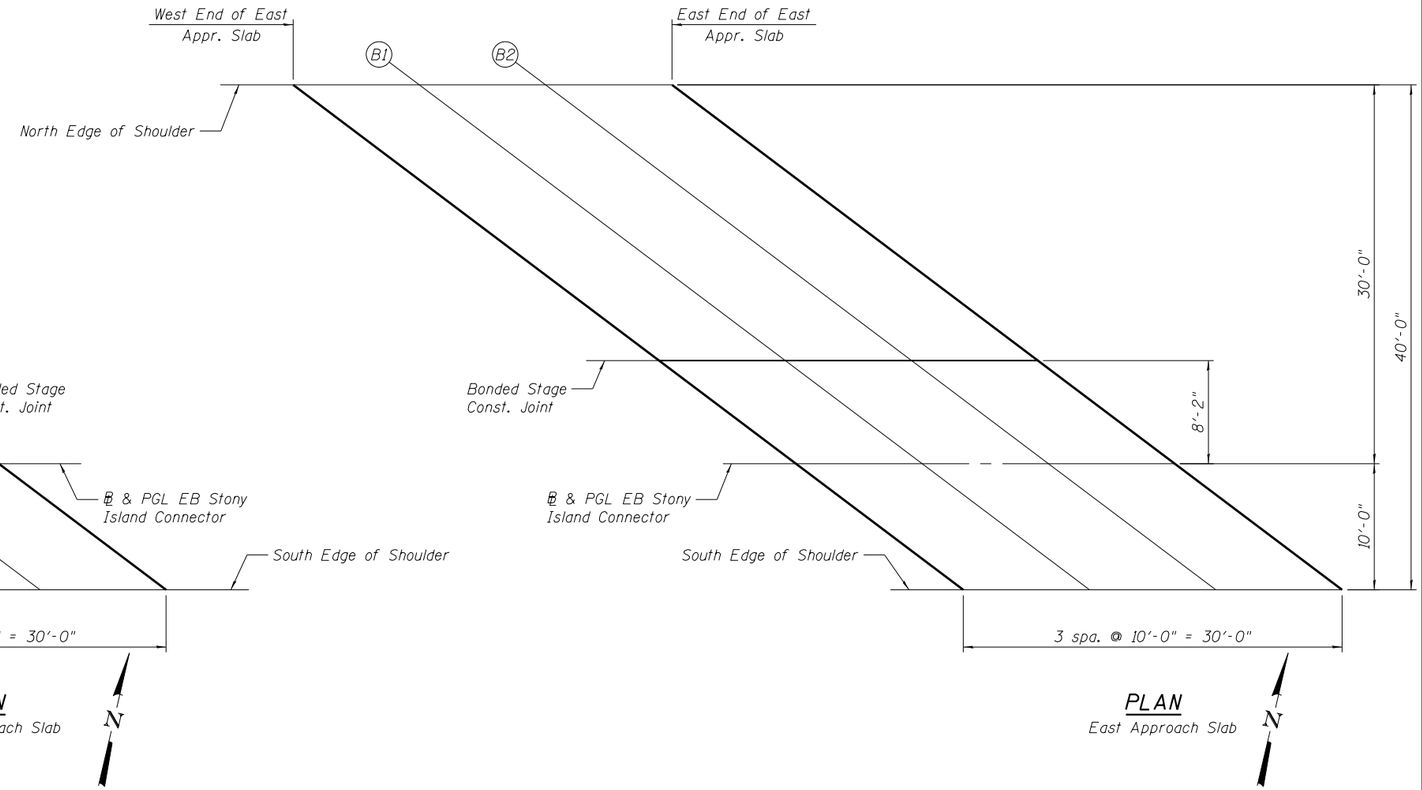
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS III
STRUCTURE NO. 016-2470
SHEET NO. S-9 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	384
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



PLAN
West Approach Slab



PLAN
East Approach Slab

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	815+87.41	-30.00	619.12
A1	815+98.41	-30.00	619.43
A2	816+07.41	-30.00	619.74
E. end of West Appr. Slab	816+17.41	-30.00	620.04
W. end of East Appr. Slab	819+09.38	-30.00	625.01
B1	819+19.38	-30.00	625.10
B2	819+29.38	-30.00	625.23
E. end of East Appr. Slab	819+39.38	-30.00	625.38

BONDED STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	816+16.38	-8.17	620.74
A1	816+26.38	-8.17	620.98
A2	816+36.38	-8.17	621.22
E. end of West Appr. Slab	816+46.38	-8.17	621.46
W. end of East Appr. Slab	819+38.35	-8.17	625.72
B1	819+48.35	-8.17	625.82
B2	819+58.35	-8.17	625.91
E. end of East Appr. Slab	819+68.35	-8.17	625.99

℄ & PGL EASTBOUND STONY ISLAND CONNECTOR

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	816+27.22	0.00	621.25
A1	816+37.22	0.00	621.47
A2	816+47.22	0.00	621.68
E. end of West Appr. Slab	816+57.22	0.00	621.89
W. end of East Appr. Slab	819+49.19	0.00	625.93
B1	819+59.19	0.00	626.00
B2	819+69.19	0.00	626.07
E. end of East Appr. Slab	819+79.19	0.00	626.13

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	816+40.49	10.00	621.81
A1	816+50.49	10.00	622.00
A2	816+60.49	10.00	622.18
E. end of West Appr. Slab	816+70.49	10.00	622.36
W. end of East Appr. Slab	819+62.46	10.00	626.12
B1	819+72.46	10.00	626.16
B2	819+82.46	10.00	626.19
E. end of East Appr. Slab	819+92.46	10.00	626.22

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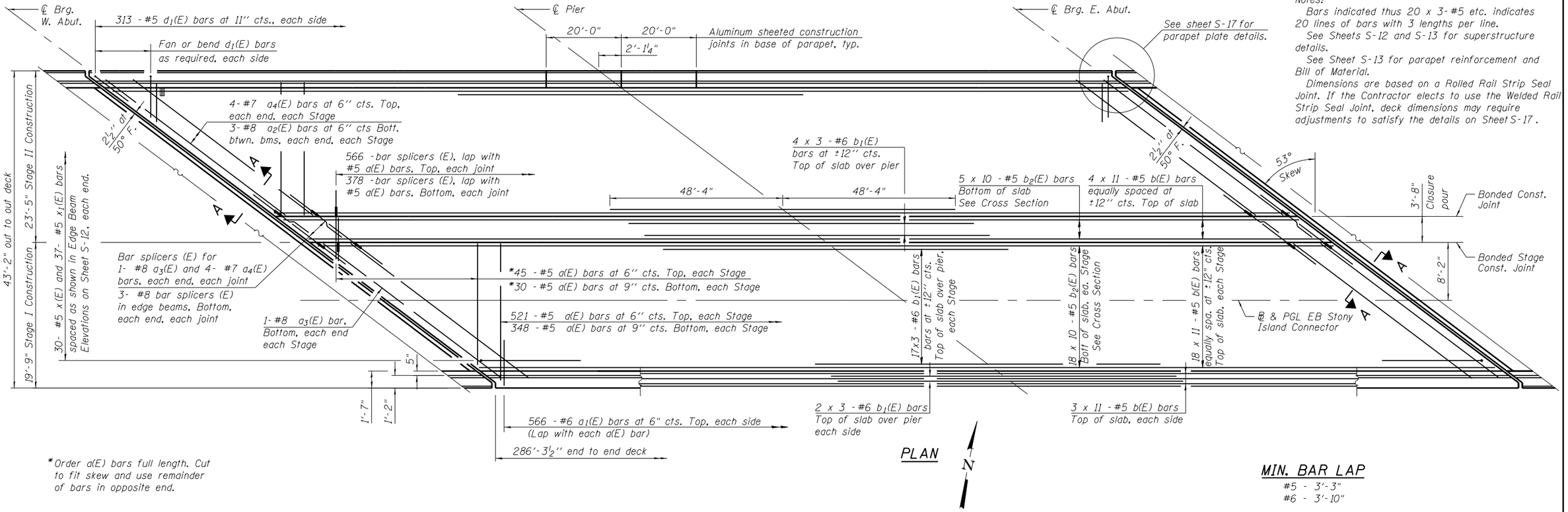
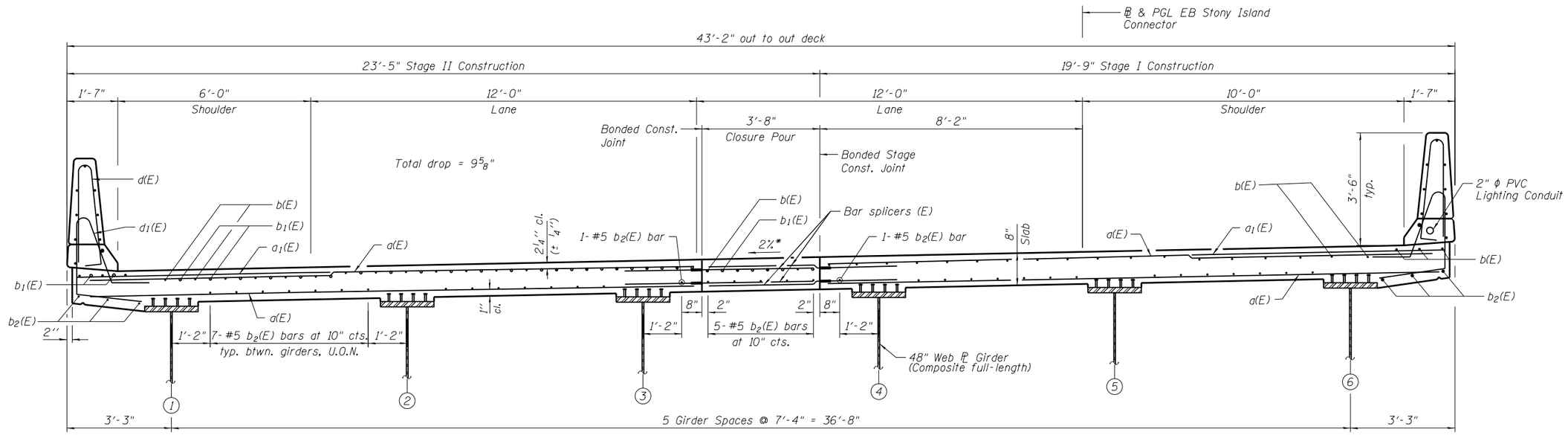
TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-2470
SHEET NO. S-10 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	385
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			





NEAR PIER

CROSS SECTION
(Looking East)

NEAR MIDSPAN

* Slope varies due to superelevation transitions. Superelevation transitions from -5.8% at Sta. 815+21.90 to -2.0% at Sta. 816+67.90, and from -2.0% at Sta. 819+23.78 to 0.0% at Sta. 820+00.03.

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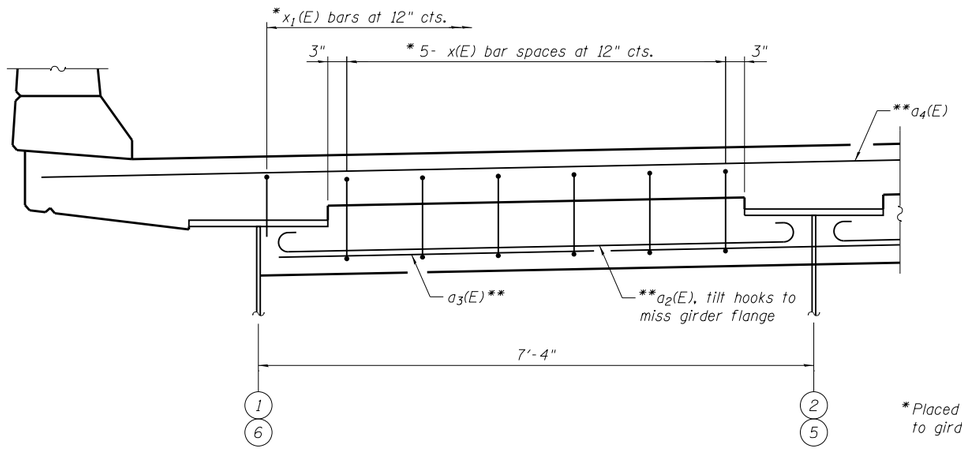
PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN & CROSS SECTION
STRUCTURE NO. 016-2470
SHEET NO. S-11 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	386
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

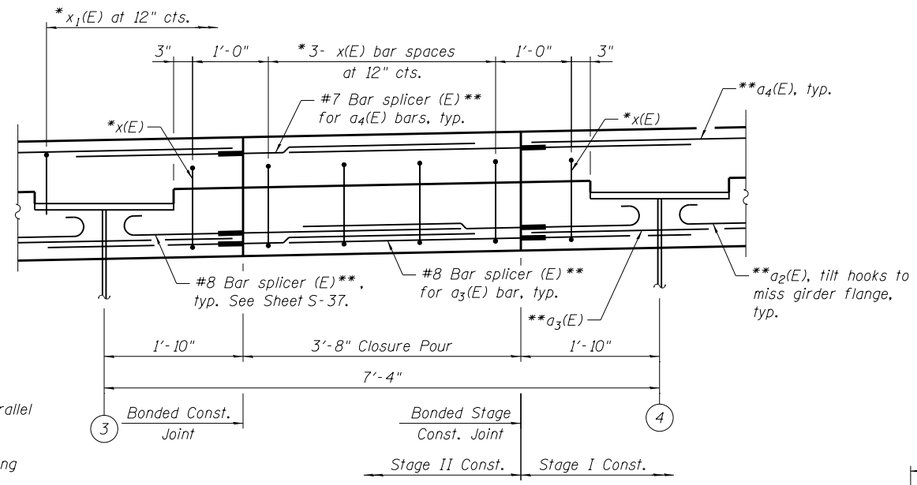


EDGE BEAM ELEVATION

(Typical between beams U.O.N.)

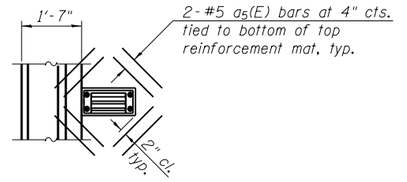
* Placed parallel to girders

** Placed along skew



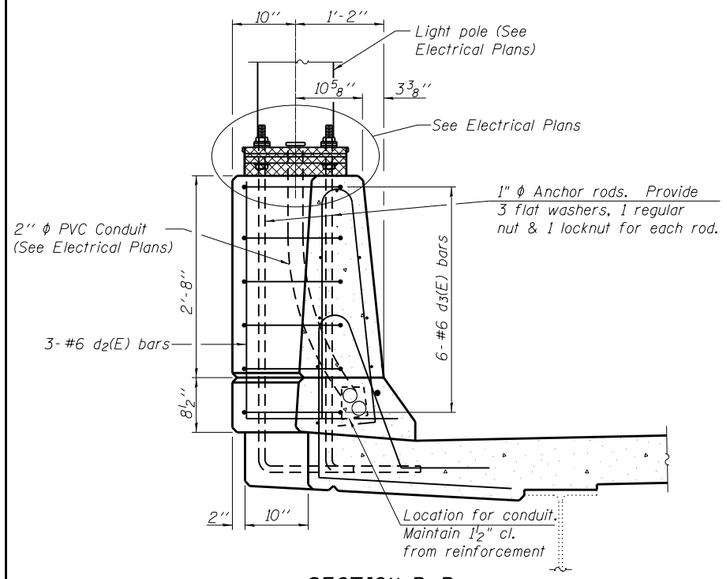
EDGE BEAM ELEVATION

(At Closure Pour)

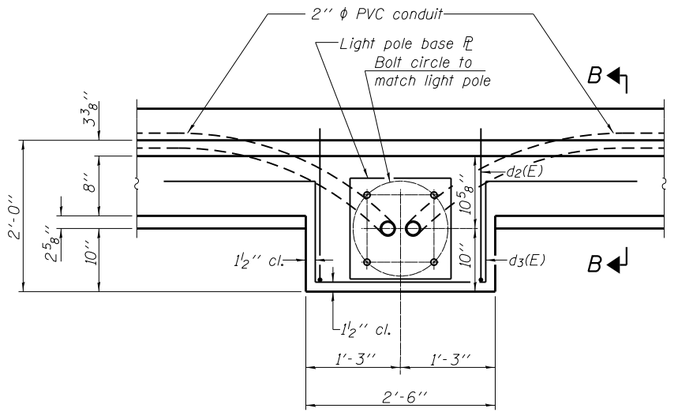


SCUPPER DETAIL

Note:
Cut longitudinal reinforcement to clear drainage scuppers.

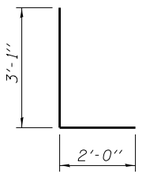


SECTION B-B

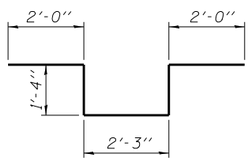


LIGHT POLE FOUNDATION PLAN

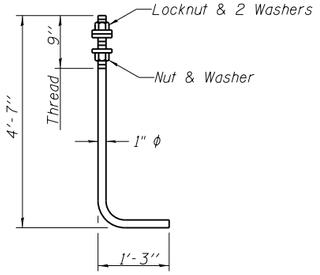
Note:
Cost of anchor rods is included with Concrete Superstructure.



BAR d2(E)



BAR d3(E)



ANCHOR ROD

(ASTM F 1554 Grade 105, full length hot dipped galvanized)

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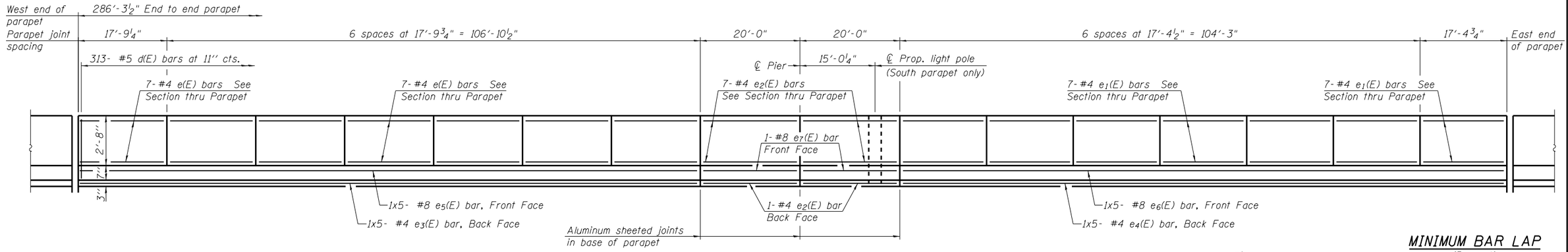
SUPERSTRUCTURE DETAILS I
STRUCTURE NO. 016-2470
SHEET NO. S-12 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	387
		CONTRACT NO. 60J12		
	ILLINOIS	FED. AID PROJECT		

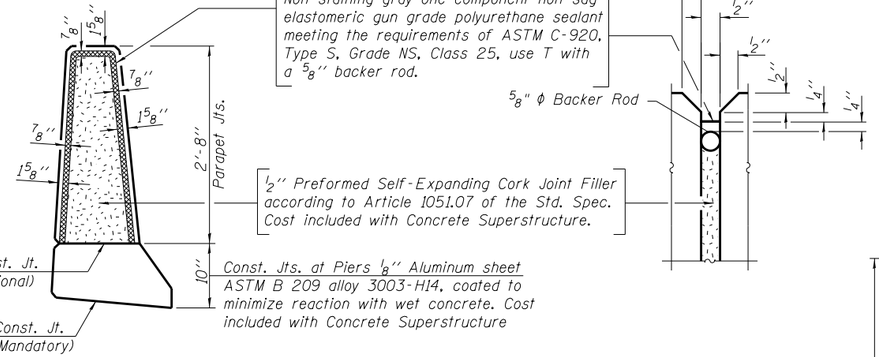


INSIDE ELEVATION OF NORTH PARAPET

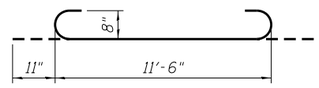
(South parapet mirrored)

MINIMUM BAR LAP

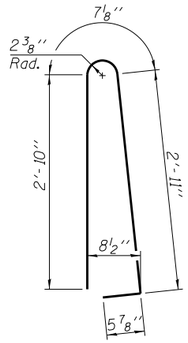
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



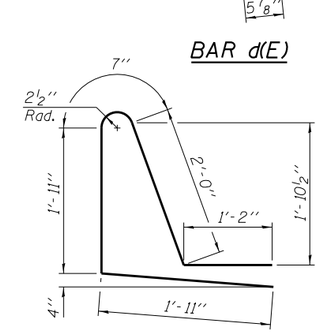
PARAPET JOINT DETAILS



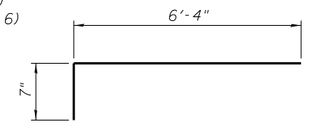
a2(E) BAR



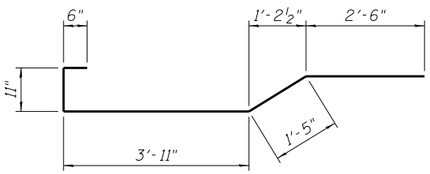
BAR d(E)



BAR d1(E)



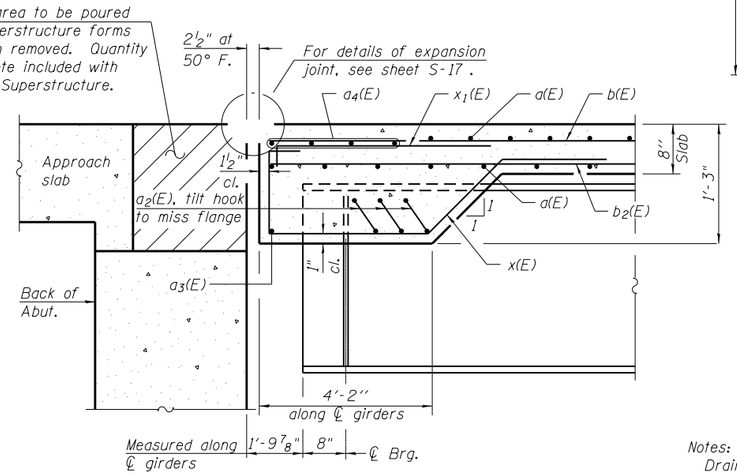
BAR x1(E)



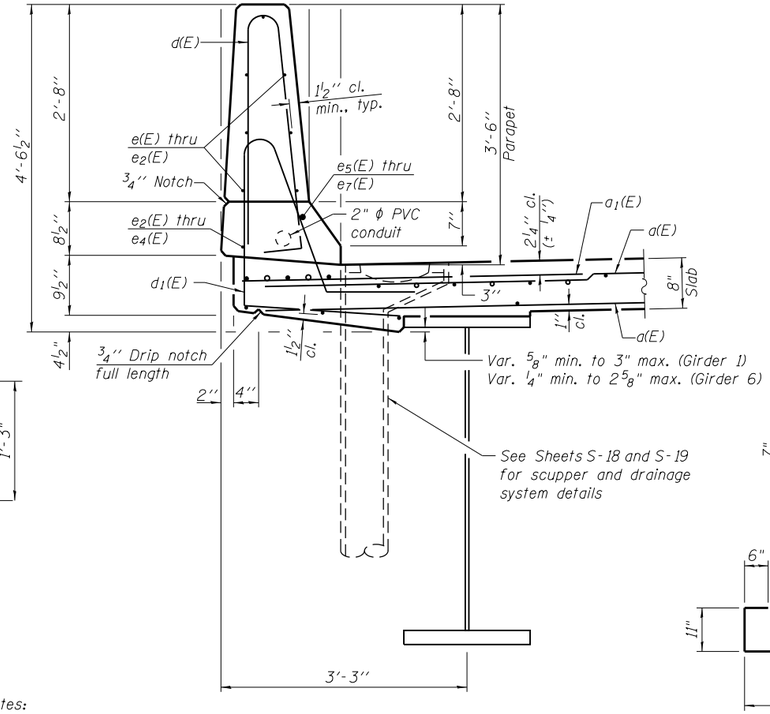
BAR x(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	1888	#5	19'-3"	
a1(E)	1132	#6	6'-6"	
a2(E)	24	#8	13'-4"	
a3(E)	4	#8	26'-10"	
a4(E)	16	#7	31'-11"	
a5(E)	8	#5	1'-6"	
b(E)	506	#5	29'-0"	
b1(E)	126	#6	34'-10"	
b2(E)	410	#5	31'-7"	
d(E)	626	#5	6'-10"	
d1(E)	626	#5	7'-7"	
d2(E)	3	#6	5'-1"	
d3(E)	6	#6	8'-11"	
e(E)	98	#4	17'-5"	
e1(E)	98	#4	17'-0"	
e2(E)	32	#4	19'-8"	
e3(E)	10	#4	26'-6"	
e4(E)	10	#4	25'-11"	
e5(E)	10	#8	29'-0"	
e6(E)	10	#8	28'-5"	
e7(E)	4	#8	19'-8"	
x(E)	60	#5	9'-3"	
x1(E)	74	#5	6'-11"	
Reinforcement Bars, Epoxy Coated			Pound	101,960
Concrete Superstructure			Cu. Yds.	430.0
Bridge Deck Grooving			Sq. Yds.	1,209
Protective Coat			Sq. Yds.	1,547

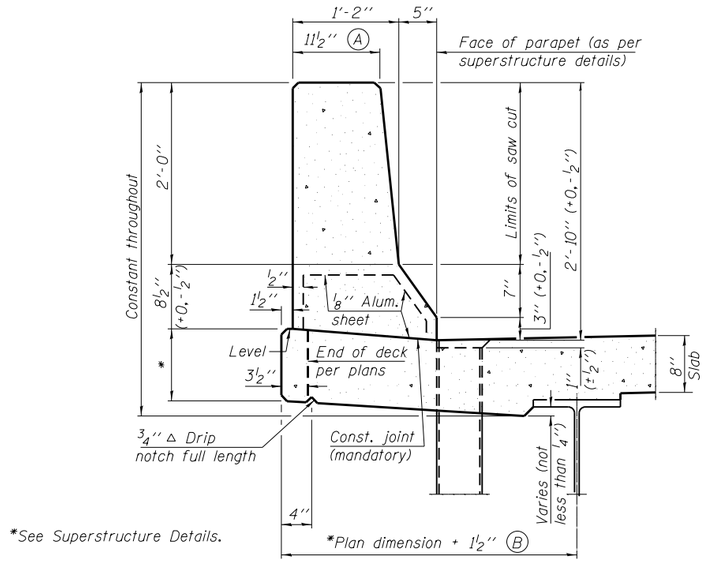


SECTION A-A



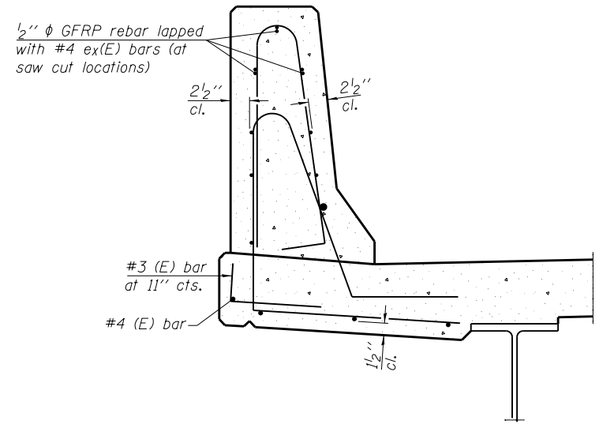
SECTION THRU PARAPET

Notes:
Drainage scuppers shall be located clear of all cross frames.



34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

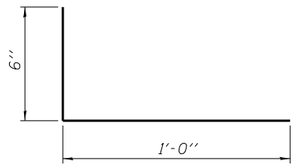
(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

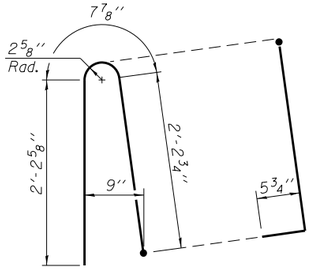
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

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.

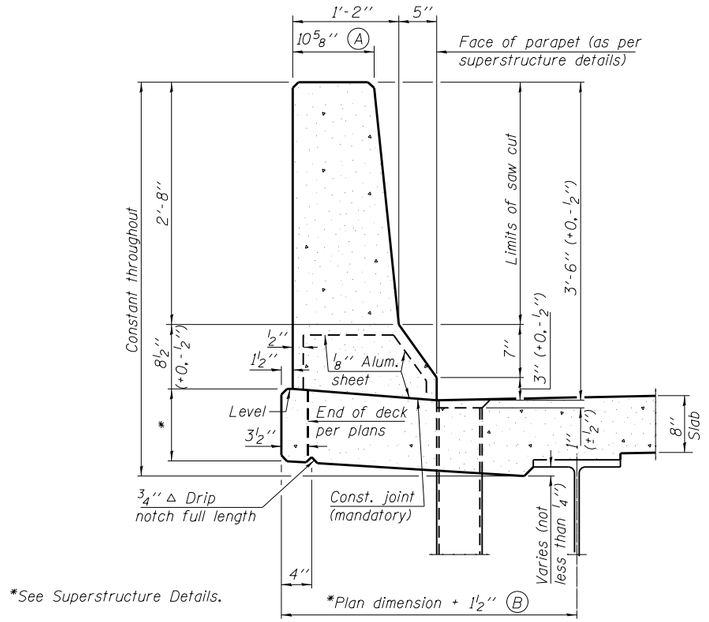


#3 (E) BAR



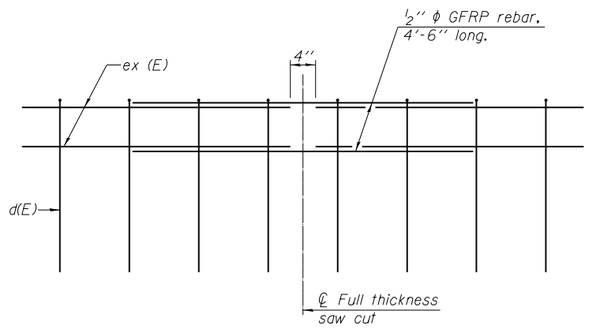
ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)



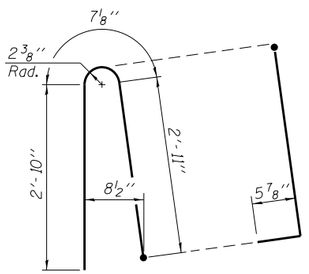
42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

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



ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)

SFP 34-42 8-16-12

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	PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -

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DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 016-2470
SHEET NO. S-14 OF S-53 SHEETS

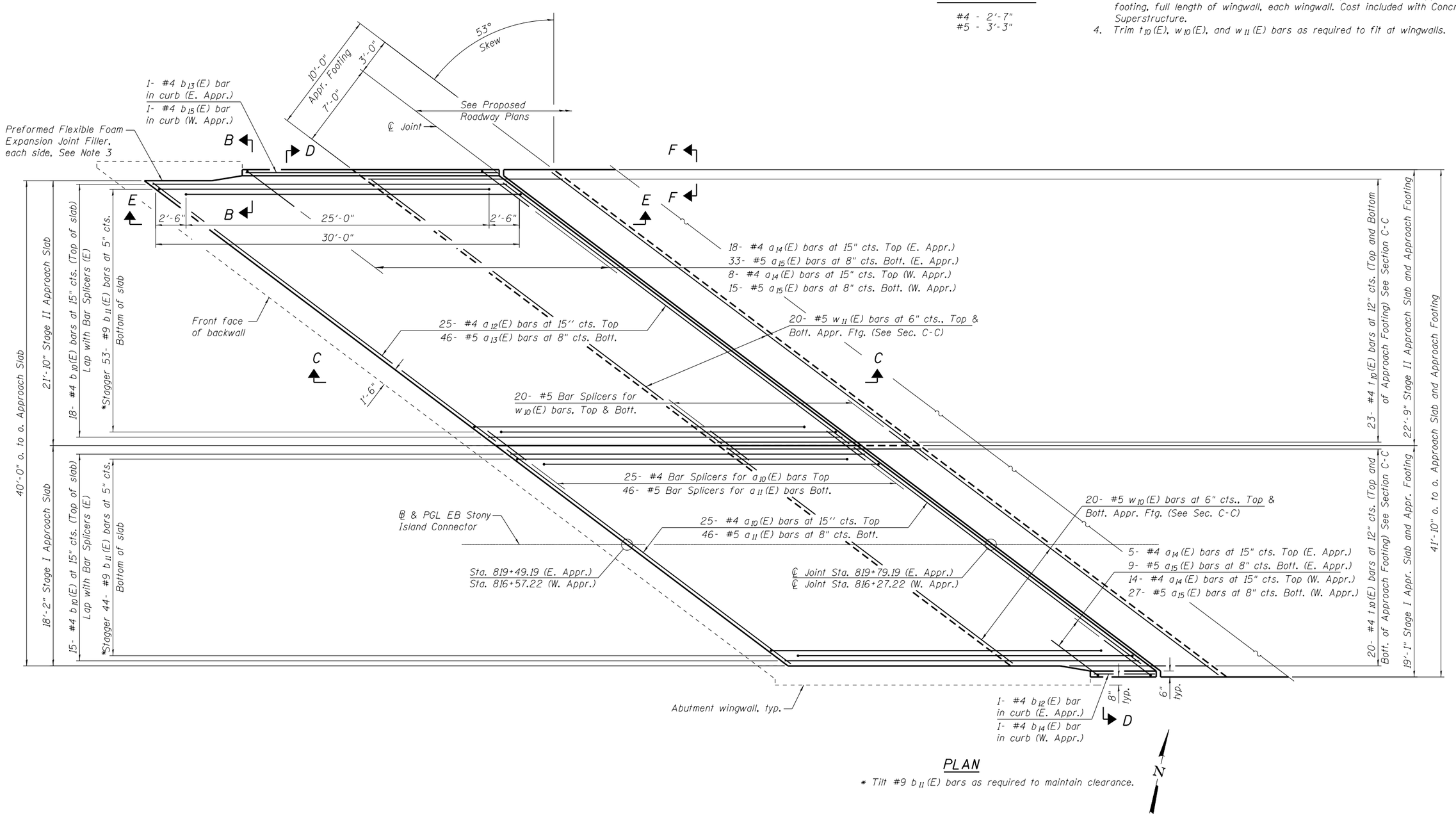
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	389
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

S:\1072\05_CADD\Structural\SN 0162470-60J12-014-PS01.dgn 3/29/2013 2:21:30 PM

Notes:
1. See sheet S-16 for sections and details.
2. a_{10}(E) thru a_{15}(E) bar spacings measured along ℄ EB Stony Island Connector.
3. Preformed Flexible Foam Expansion Joint Filler in accordance with Article 1051.09 of the Standard Specifications. Full depth of slab and approach footing, full length of wingwall, each wingwall. Cost included with Concrete Superstructure.
4. Trim t_{10}(E), w_{10}(E), and w_{11}(E) bars as required to fit at wingwalls.

MIN. BAR LAP

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



PLAN

* Tilt #9 b_{11}(E) bars as required to maintain clearance.

N

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PLOT SCALE =	DRAWN - TL	REVISED -
PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -

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DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS I
STRUCTURE NO. 016-2470
SHEET NO. S-15 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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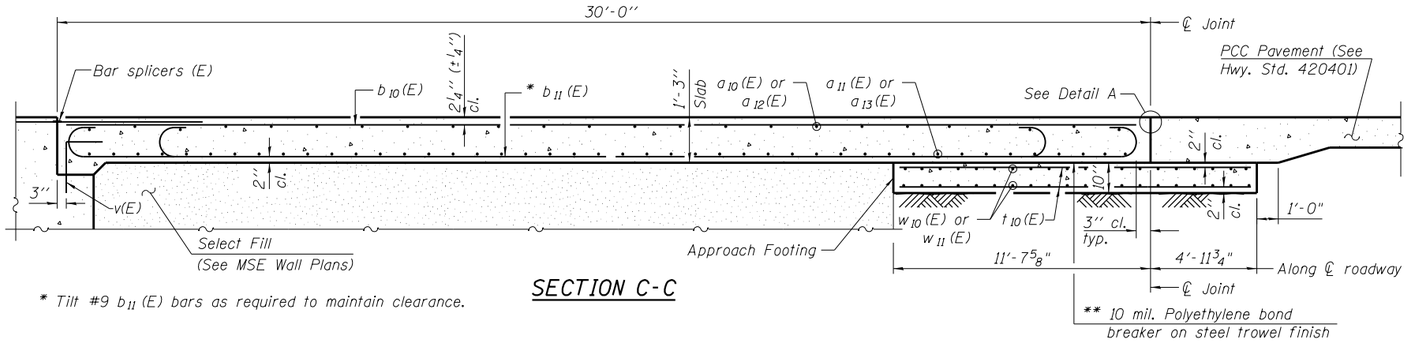
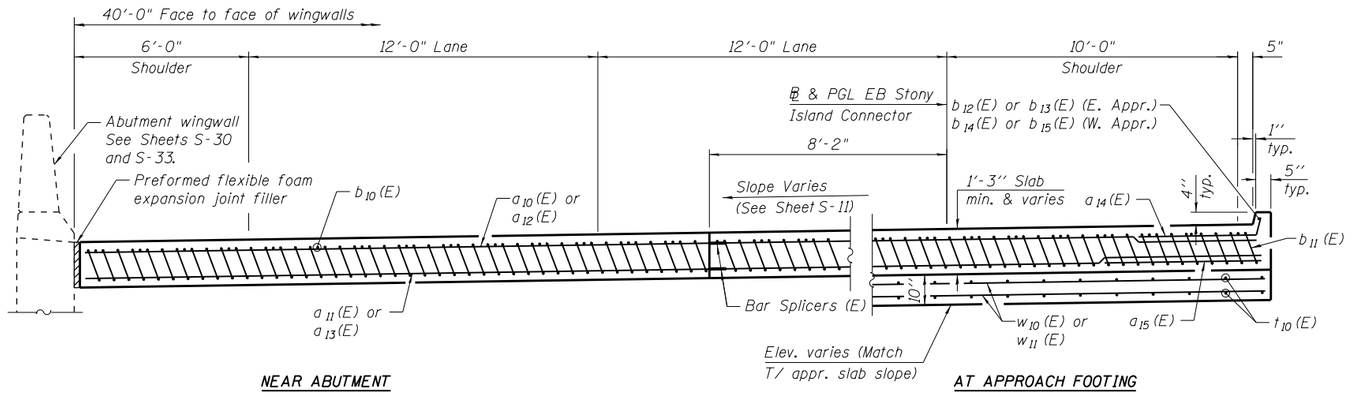
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



* Tilt #9 b_{11} (E) bars as required to maintain clearance.

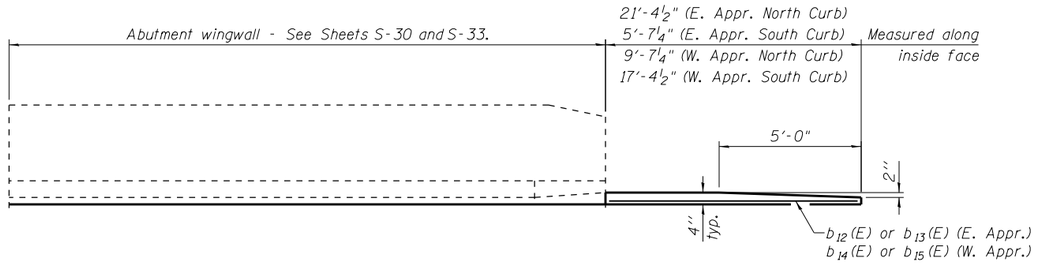
SECTION C-C



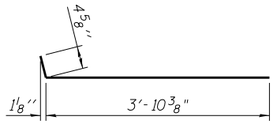
NEAR ABUTMENT — AT APPROACH FOOTING

SECTION D-D

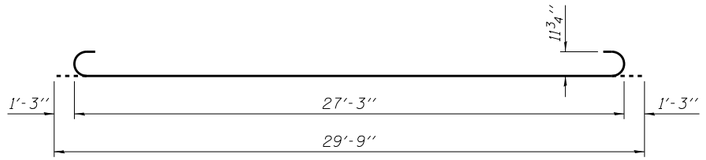
(See Plan for dimensions not shown)



VIEW E-E



BAR a_{14} (E)

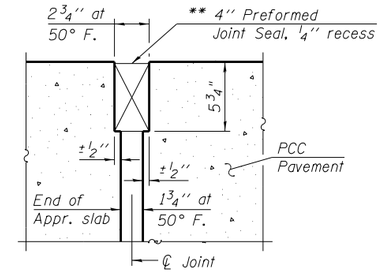


BAR b_{11} (E)

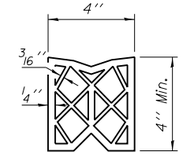
Notes:

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 v(E) bar details, see sheet S-31 or S-34.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet S-38.
Cost of excavation for approach footing included with Concrete Structures.
Quantity of Protective Coat in Bill of Material includes the quantity that shall be applied to the top and inside faces of the abutment wingwalls.

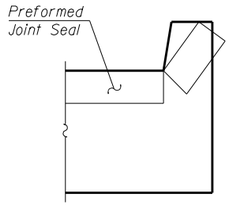
** Cost included with Concrete Superstructure.



DETAIL A

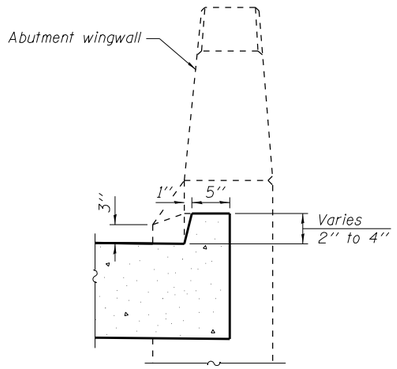


PREFORMED JOINT SEAL



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs.



VIEW B-B

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{10}(E)	50	#4	29'-7"	
a_{11}(E)	92	#5	29'-7"	
a_{12}(E)	50	#4	35'-8"	
a_{13}(E)	92	#5	35'-8"	
a_{14}(E)	45	#4	4'-3"	
a_{15}(E)	84	#5	4'-10"	
b_{10}(E)	66	#4	29'-4"	
b_{11}(E)	194	#9	29'-9"	
b_{12}(E)	1	#4	5'-3"	
b_{13}(E)	1	#4	21'-0"	
b_{14}(E)	1	#4	17'-0"	
b_{15}(E)	1	#4	9'-3"	
t_{10}(E)	172	#4	16'-3"	
w_{10}(E)	80	#5	31'-3"	
w_{11}(E)	80	#5	37'-5"	
Bridge Deck Grooving			Sq. Yd.	254
Protective Coat			Sq. Yd.	314
Concrete Superstructure			Cu. Yd.	116.8
Concrete Structures			Cu. Yd.	43.0
Reinforcement Bars, Epoxy Coated			Pound	37,510

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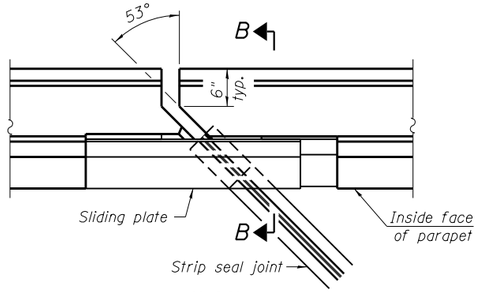
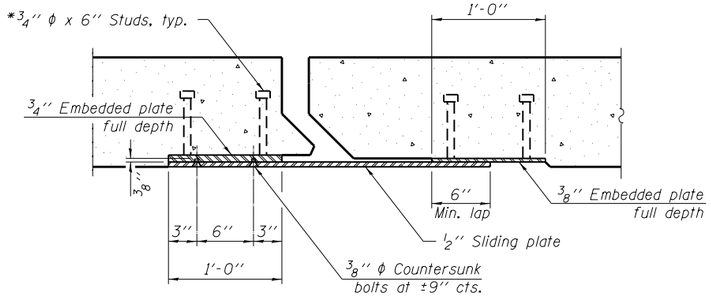
BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NO. 016-2470
SHEET NO. S-16 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	391
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

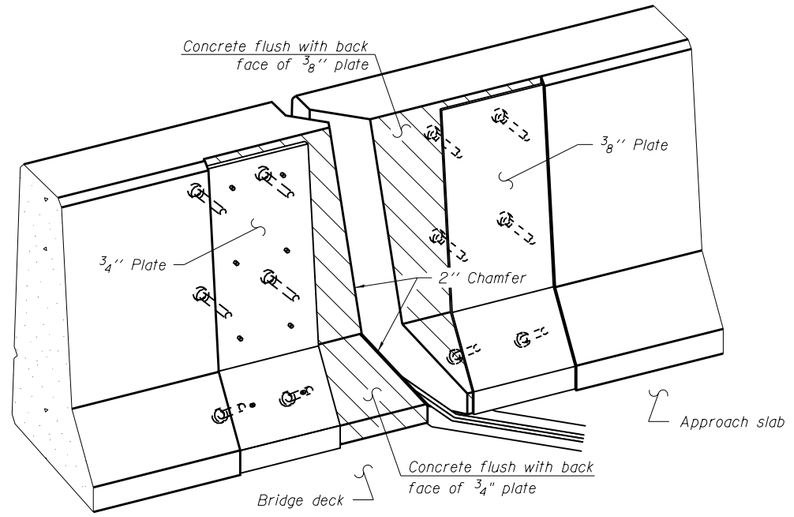


PLAN

Showing sliding plates at NE and SW bridge corners
NW and SE bridge corners similar.

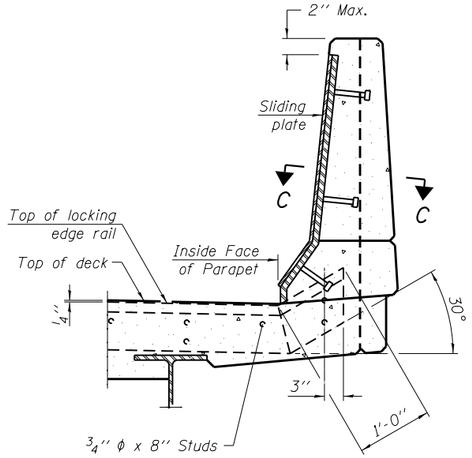


SECTION C-C

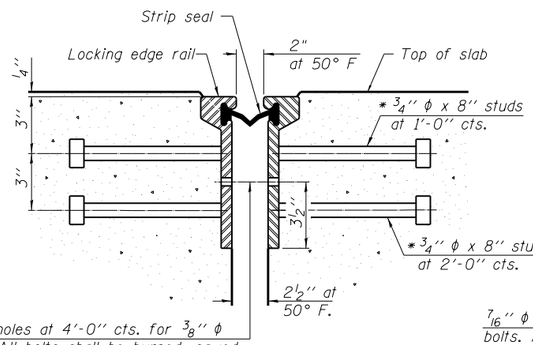


TRIMETRIC VIEW

Showing back plates only at NE and SW bridge corners
NW and SE bridge corners similar.

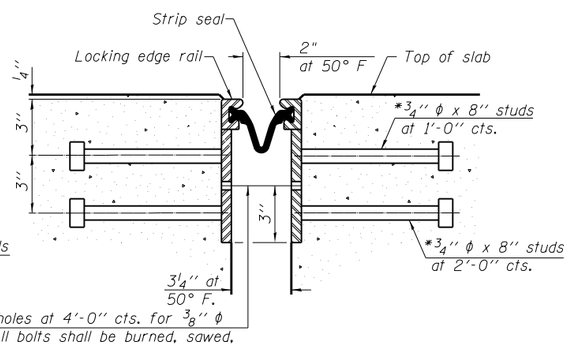


SECTION B-B



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

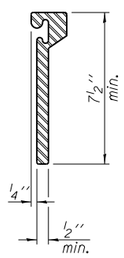
SECTION THRU ROLLED RAIL JOINT



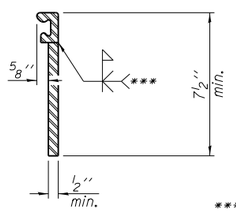
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

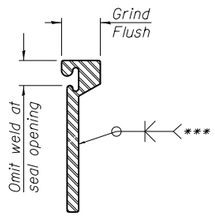
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

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 included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	138

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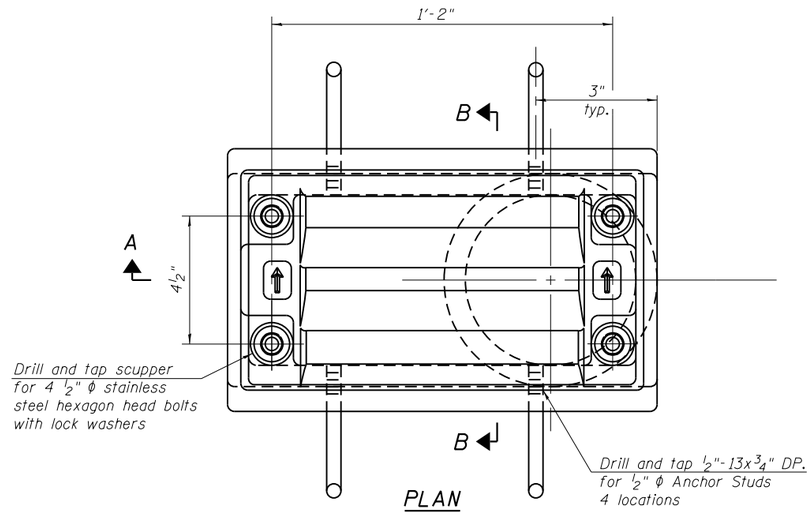
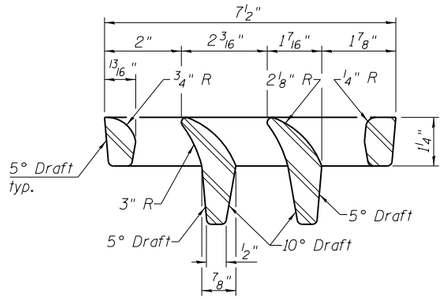
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-2470
SHEET NO. S-17 OF S-53 SHEETS

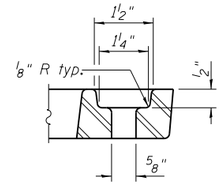
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	392
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



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 painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

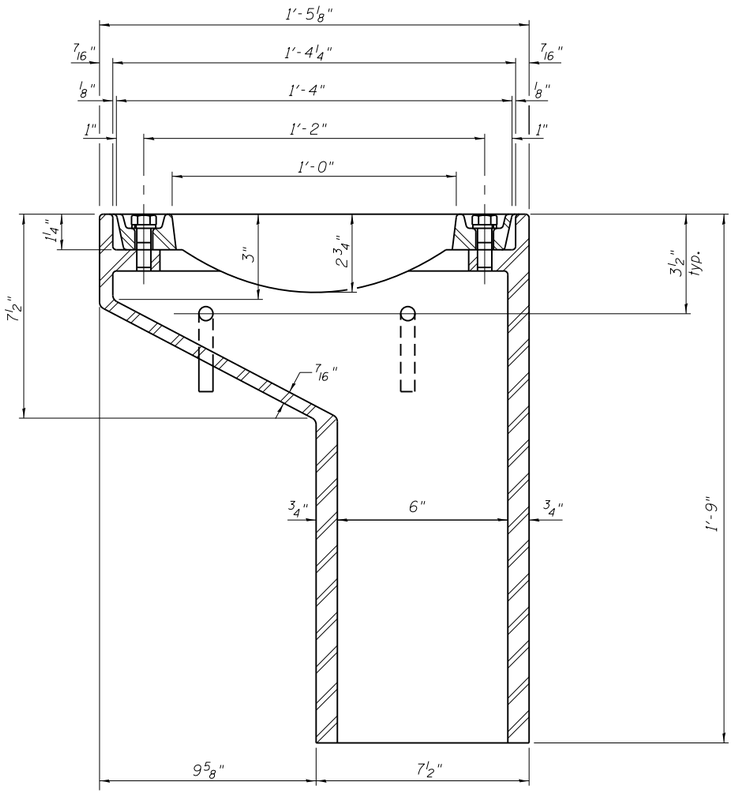
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

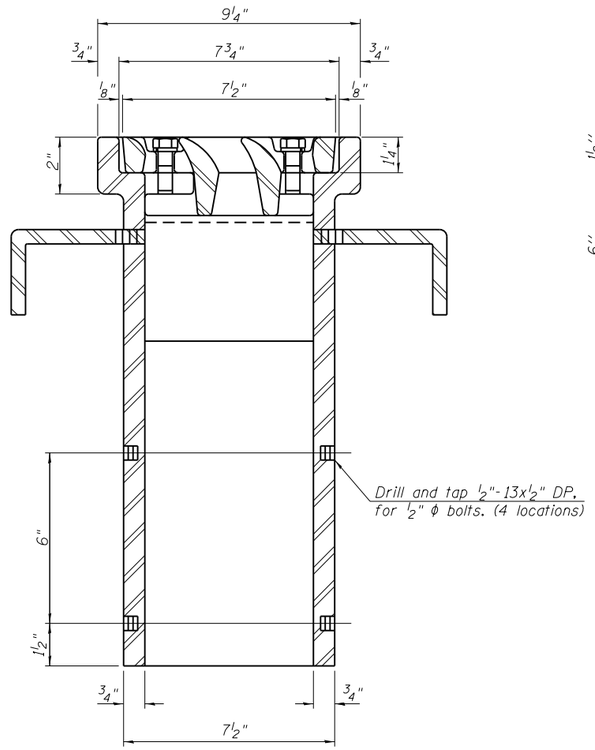
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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.

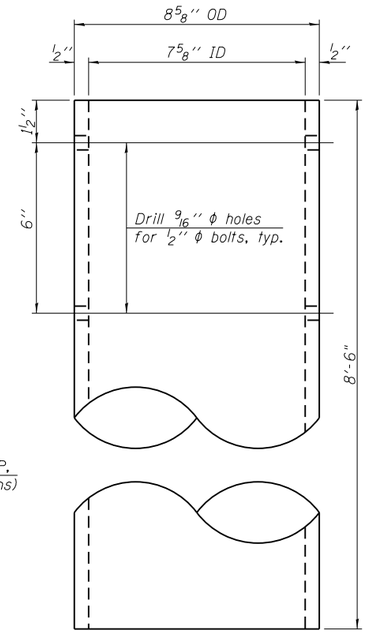


SECTION A-A

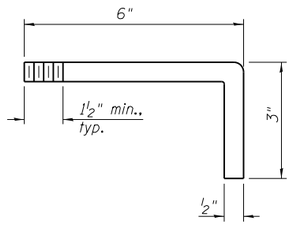
See sheet S-13 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	1

DS-11

7-1-10

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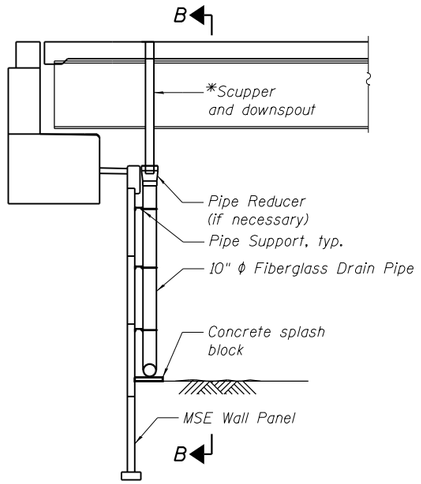
DEPARTMENT OF TRANSPORTATION

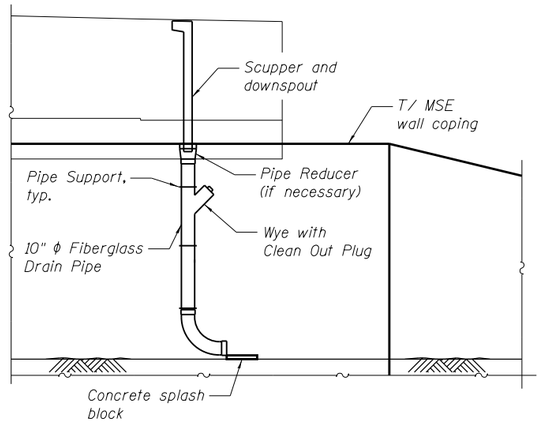
DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 016-2470
SHEET NO. S-18 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	393
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

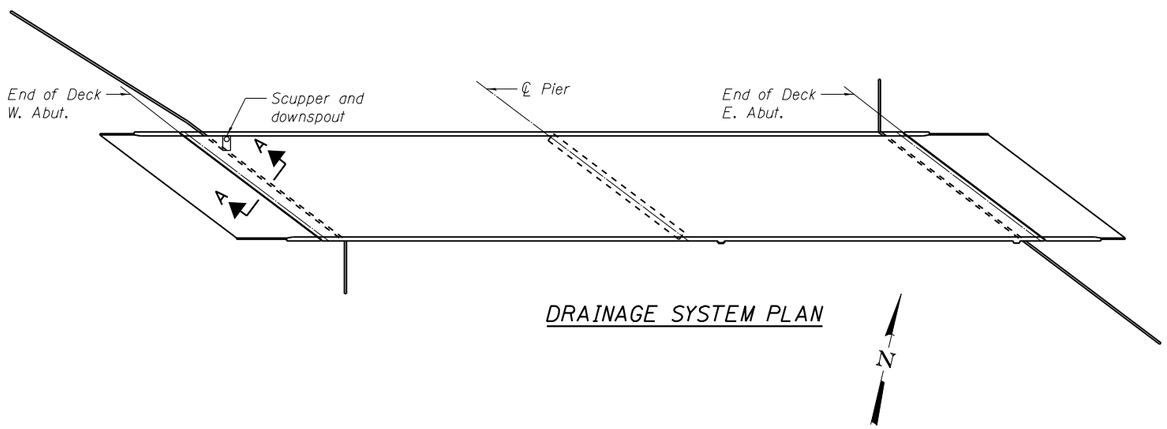


SECTION A-A

* Scupper and downspout are included in the cost of Drainage Scupper, DS-11, see Sheet S-18. See Sheet S-1 for drainage scupper location.



VIEW B-B



DRAINAGE SYSTEM PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	0.50

S:\1072\05_CADD\Structural\SN 0162470\CADD Sheets\0162470-60J12-019-DS02.dgn 3/29/2013 2:21:32 PM

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PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -

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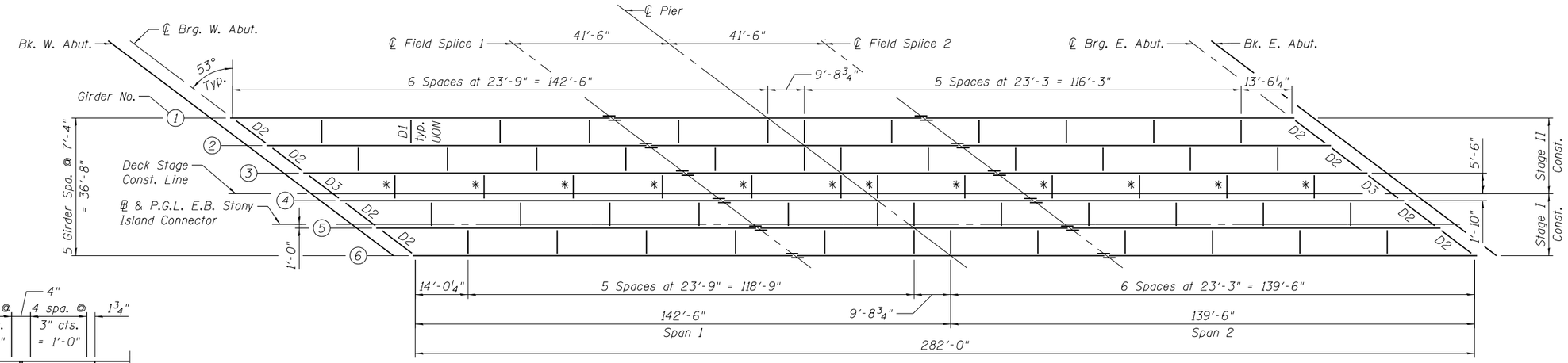
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 016-2470
SHEET NO. S-19 OF S-53 SHEETS

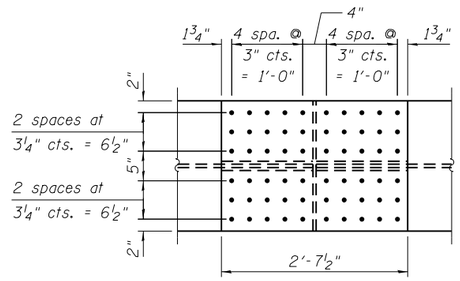
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	394
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



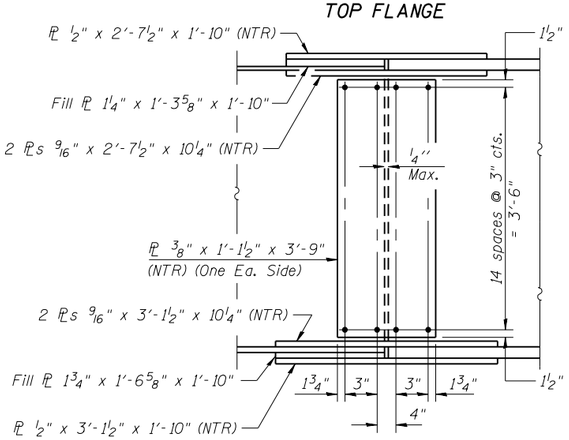
* Install articulated temporary bracing before primary Stage I deck pour and replace with Interior Cross Frame D1 before deck closure pour. See Sheet S-23 for articulated temporary bracing details.

FRAMING PLAN

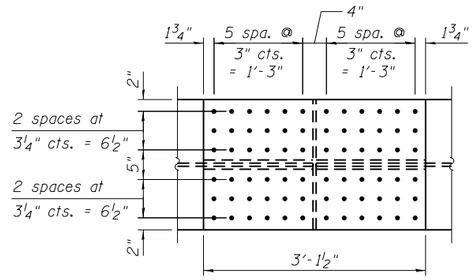
N



TOP FLANGE



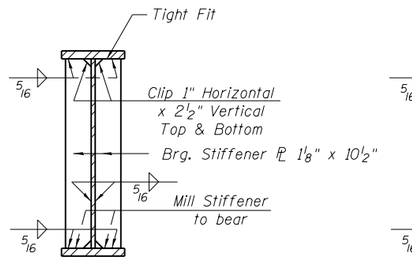
ELEVATION



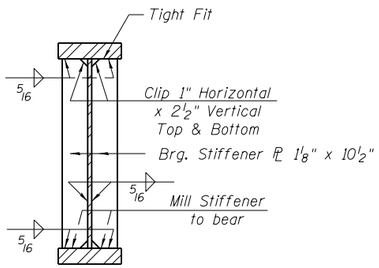
BOTTOM FLANGE

FIELD SPLICE DETAIL

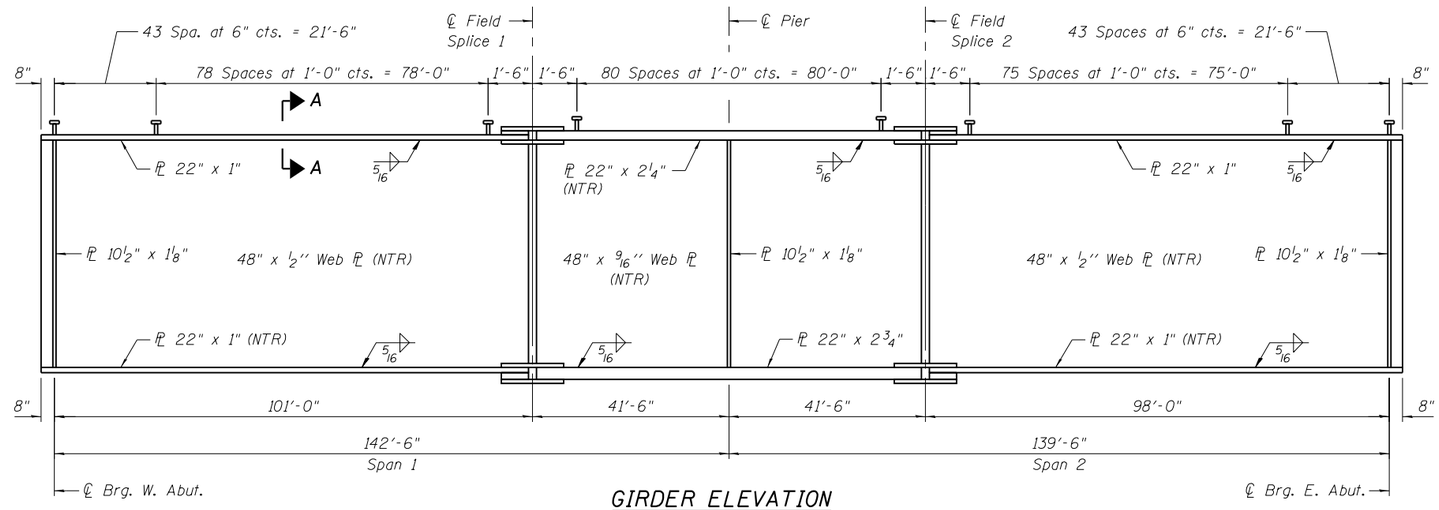
(12 Required)



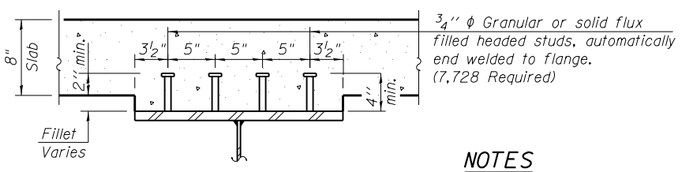
SECTION AT ABUTMENT



SECTION AT PIER



GIRDER ELEVATION



3/4" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (7,728 Required)

SECTION A-A

NOTES

1. Webs, flanges, splice plates and bearing stiffeners to be AASHTO M270 Grade 50 steel.
2. Plates designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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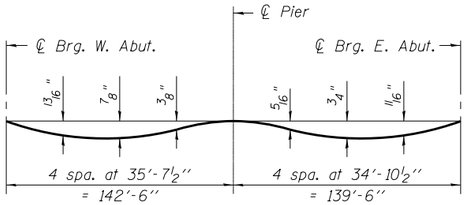
FRAMING PLAN
STRUCTURE NO. 016-2470
SHEET NO. S-20 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	395
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

TOP OF WEB ELEVATIONS

(For fabrication use only)

Girder No.	℄ Brg. W. Abut.	℄ Splice 1	℄ Pier	℄ Splice 2	℄ Brg. E. Abut.
1	619.50	621.76	622.39	623.02	624.21
2	619.99	622.07	622.68	623.30	624.44
3	620.45	622.38	622.97	623.57	624.68
4	620.86	622.69	623.26	623.84	624.92
5	621.23	622.99	623.54	624.10	625.11
6	621.57	623.28	623.82	624.36	625.26



STEEL DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of steel only.)

Note:
The calculated deflections of the primary girders under steel self-weight shall be used to detail the cross frame connections and to erect the structural steel such that the girders will be plumb within a tolerance of ±1/8" per vertical foot throughout when supporting their own weight.

INTERIOR GIRDER MOMENT TABLE				
		0.38 Sp. 1	Pier	0.62 Sp. 2
I_s	(in^4)	31023	74826	31023
$I_c(n)$	(in^4)	63619	-	63619
$I_c(3n)$	(in^4)	48296	-	48296
$I_c(cr)$	(in^4)	-	82432	-
S_s	(in^3)	1241	3039	1241
$S_c(n)$	(in^3)	1541	-	1541
$S_c(3n)$	(in^3)	1434	-	1434
$S_c(cr)$	(in^3)	-	3130	-
S_{xc}	(in^3)	1443	-	1455
DC1	(k/')	1.056	1.291	1.056
M_{DC1}	('k)	1277	3439	1169
DC2	(k/')	0.173	0.173	0.173
M_{DC2}	('k)	213	528	196
DW	(k/')	0.333	0.333	0.333
M_{DW}	('k)	411	1017	378
M_{L+IM}	('k)	1946	2574	1899
* f_l (Strength I)	(ksi)	15.3	14.5	15.4
$M_u + 1/3\, f_l\, S_{xc}$	('k)	6498	-	6219
$\phi_f M_n$	('k)	7489	-	7489
f_s DC1	(ksi)	12.3	13.6	11.3
f_s DC2	(ksi)	1.8	2.0	1.6
f_s DW	(ksi)	3.4	3.9	3.2
f_s (L+IM)	(ksi)	15.2	9.9	14.8
* f_l (Service II)	(ksi)	11.5	11.0	11.6
$f_s + f_l/2$ (Service II)	(ksi)	43.0	37.8	41.1
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5
$f_s + f_l/3$ (Total)(Strength I)	(ksi)	-	47.5	-
$\phi_f F_n$	(ksi)	-	50.0	-
V_f	(k)	76.1	60.5	77.0

* Calculated from an assumed unfactored f_l = 10 ksi.

INTERIOR GIRDER REACTION TABLE				
		W. Abut.	Pier	E. Abut.
R_{DC1}	(k)	53.1	212.1	51.0
R_{DC2}	(k)	8.6	31.9	8.3
R_{DW}	(k)	16.6	61.4	16.0
R_{L+IM}	(k)	122.4	200.7	121.5
R_{Total}	(k)	200.7	506.1	196.8

I_s, S_s: *Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) in uncracked sections 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-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads (in.⁴ and in.³).*

$I_c(cr)$, $S_c(cr)$: *Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).*

S_{xc}: *Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).*

DC1: *Un-factored non-composite dead load (kips/ft.).*

M_{DC1}: *Un-factored moment due to non-composite dead load (kip-ft.).*

DC2: *Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).*

M_{DC2}: *Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).*

DW: *Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).*

M_{DW}: *Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).*

M_{L+IM}: *Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).*

M_u (Strength I): *Factored design moment (kip-ft.).*
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L+IM}

f_l: *Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (ksi).*

$\phi_f M_n$: *Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).*

f_s DC1: *Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).*
M_{DC1} / S_{nc}

f_s DC2: *Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).*
M_{DC2} / $S_c(3n)$ or M_{DC2} / $S_c(cr)$ as applicable.

f_s DW: *Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).*
M_{DW} / $S_c(3n)$ or M_{DW} / $S_c(cr)$ as applicable.

f_s (L+IM): *Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).*
M_{L+IM} / $S_c(n)$ or M_{L+IM} / $S_c(cr)$ as applicable.

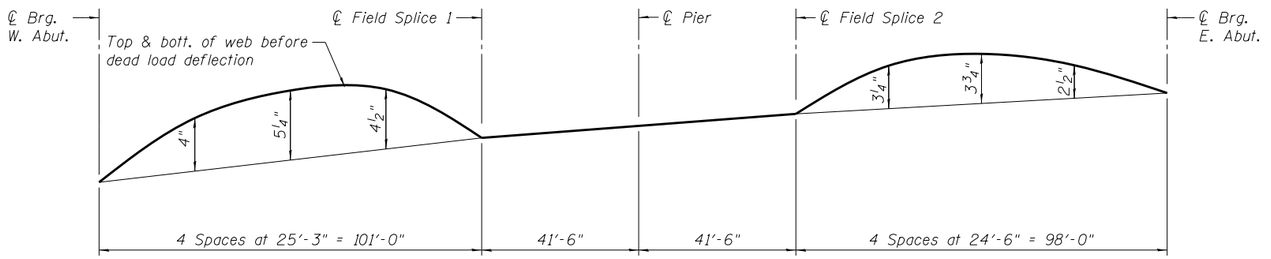
$f_s + f_l/2$ (Service II): *Sum of stresses as computed below (ksi).*
$f_{s\,DC1} + f_{sDC2} + f_{sDW} + 1.3\, f_s(L+IM) + f_l/2$

$0.95R_hF_{yf}$: *Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).*

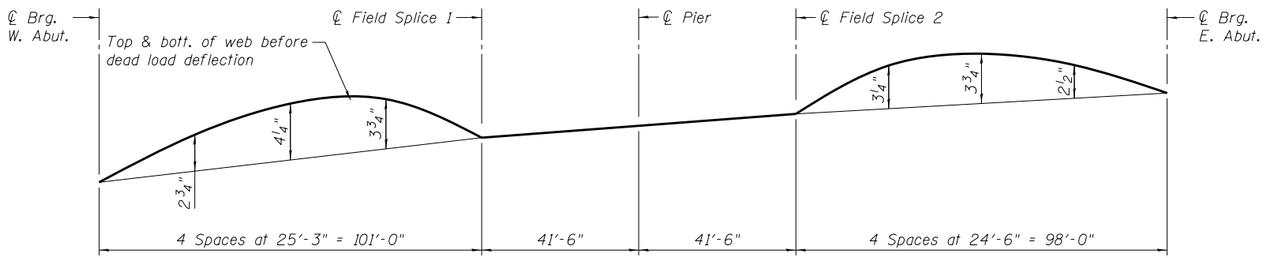
$f_s + f_l/3$ (Total)(Strength I): *Sum of stresses as computed below on non-compact section (ksi).*
1.25 ($f_{sDC1} + f_{sDC2}$) + 1.5 f_{sDW} + 1.75 $f_s(L+IM) + f_l/3$

$\phi_f F_n$: *Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).*

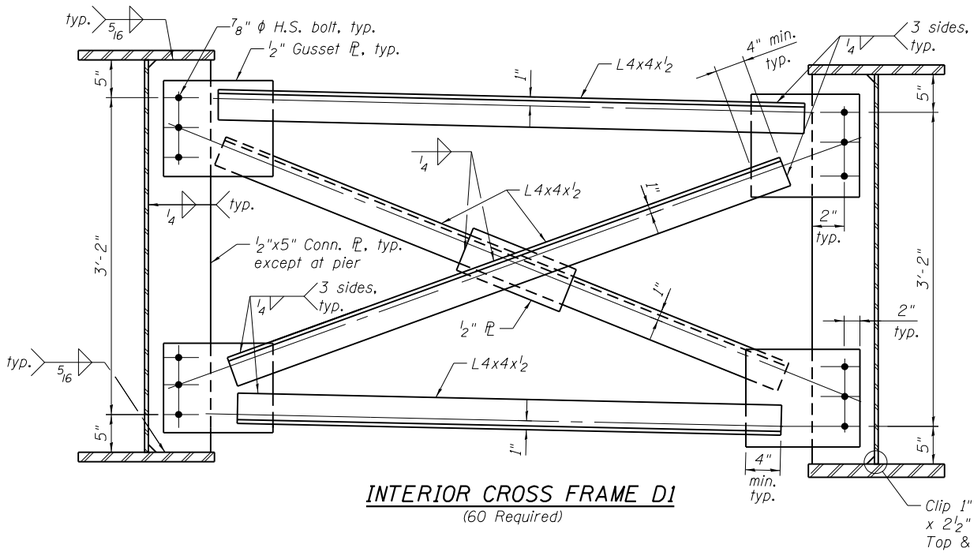
V_f: *Maximum factored shear range in span computed according to Article 6.10.10.*



CAMBER DIAGRAM GIRDERS 1 & 2

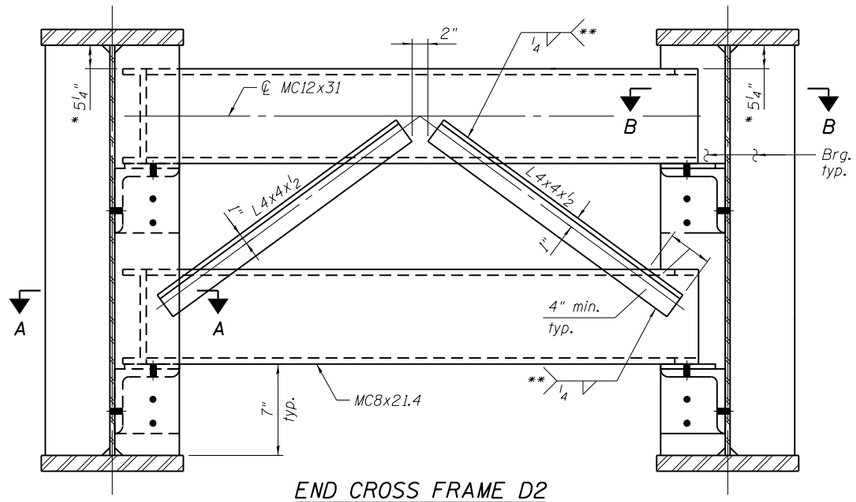


CAMBER DIAGRAM GIRDERS 3 THRU 6



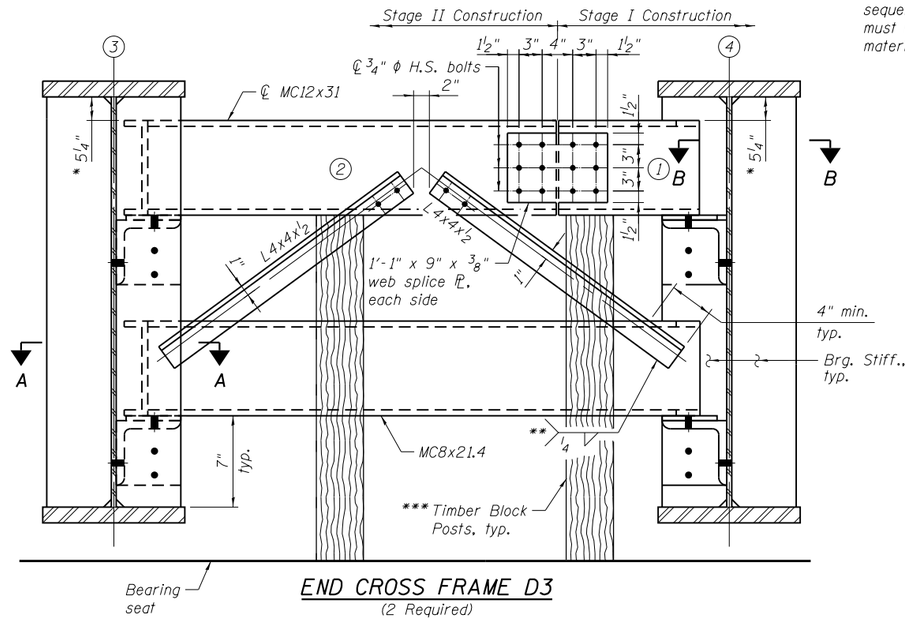
INTERIOR CROSS FRAME D1

(60 Required)



END CROSS FRAME D2

(8 Required)



END CROSS FRAME D3

(2 Required)

Notes:

All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

Each hole for all cross-frame connection bolts shall be 1 1/16" ϕ unless noted otherwise.

Two hardened washers are required for each set of 1 1/16" ϕ holes.

For Sections A-A & B-B, see Sheet S-23.

The Contractor may submit an alternate stage construction sequence for End Cross Frame D3. Any alternate sequence must be approved by the Engineer prior to ordering any material.

* Measured at ℄ Web

** 3 sides, to back face of channel only, typ.

*** Cost included with Furnishing and Erecting Structural Steel.

END CROSS FRAME D3
SUGGESTED STAGE CONSTRUCTION SEQUENCE

1. Order MC12 in two sections.
2. Attach section (1) of MC12 to Girder 4.
3. Place Timber Block Posts between section (1) of MC12 and abutment bearing seat before Stage I deck pour.
4. Attach section (2) of MC12 to both Girder 3 and section (1) of MC12 with splice plates.
5. Place Timber Block Posts between section (2) of MC12 and abutment bearing seat, halfway between splice and Girder 3, before Stage II deck pour.
6. Remove Timber Block Posts and install lower portion of cross-frame after Stage II deck pour.

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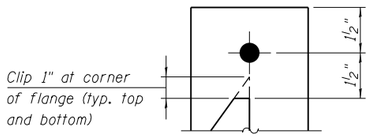
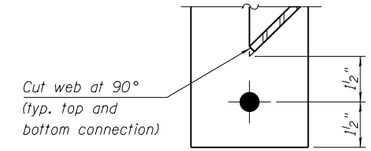
STRUCTURAL STEEL DETAILS II
STRUCTURE NO. 016-2470
SHEET NO. S-22 OF S-53 SHEETS

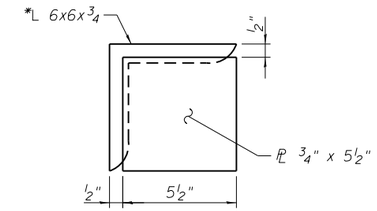
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	397
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



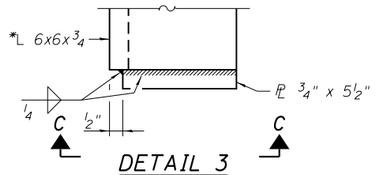
DETAIL 1



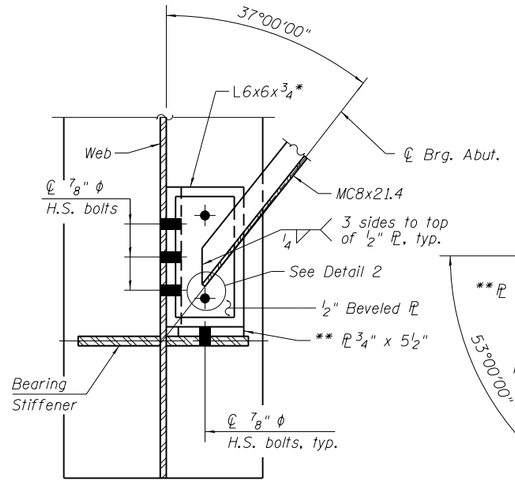
DETAIL 2



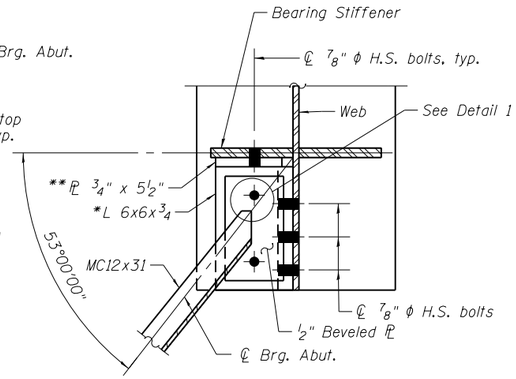
VIEW C-C



DETAIL 3



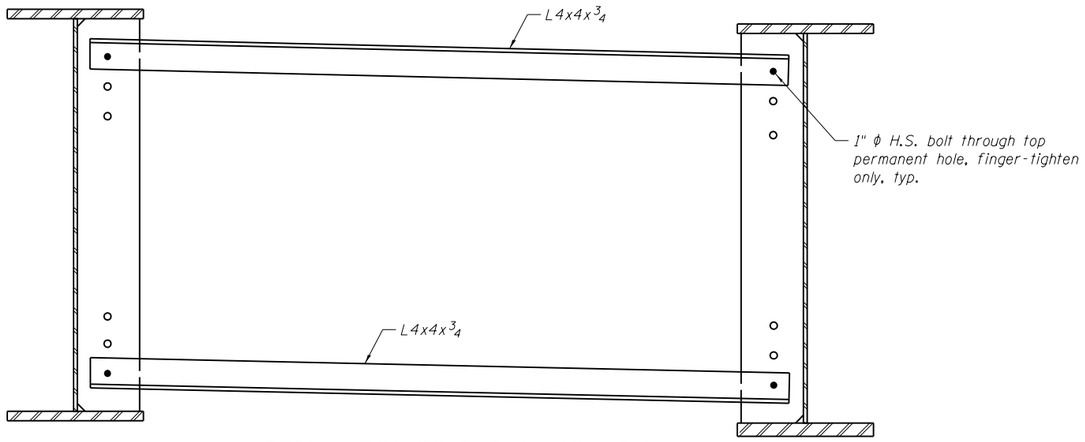
SECTION A-A
BOTTOM CONNECTION DETAIL



SECTION B-B
TOP CONNECTION DETAIL

* Two ¾" plates connected with ¼" fillet welds may be used in lieu of L6x6x¾.

** Weld ¾"x 5½" plate to seat as shown in Detail 3.



ARTICULATED TEMPORARY BRACING
(12 Required)

Note:
See Interior Cross Frame D1 on Sheet S-22 for dimensions and details not shown here.

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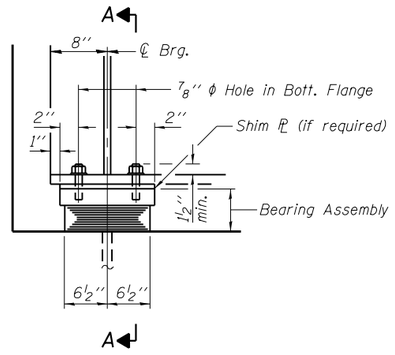
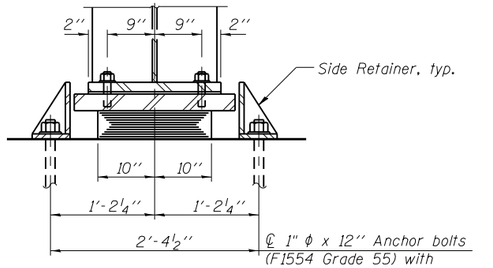
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS III
STRUCTURE NO. 016-2470
SHEET NO. S-23 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	398
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

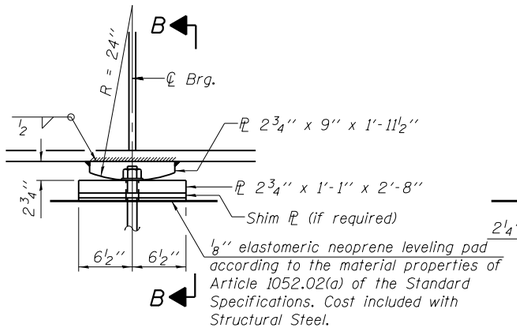


ELEVATION AT ABUT.

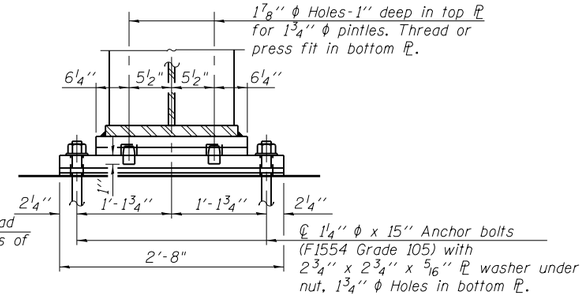


SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

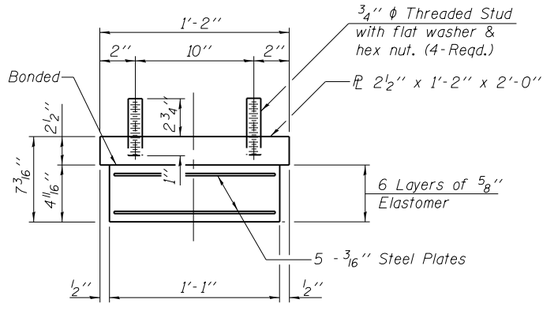


ELEVATION AT PIER



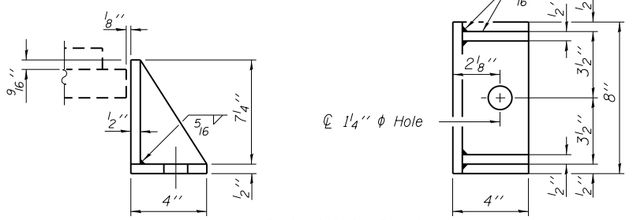
SECTION B-B

FIXED BEARING



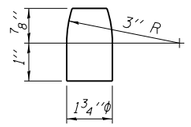
BEARING ASSEMBLY

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



SIDE RETAINER

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



PINTLE

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

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

Two 1/8'' adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Anchor Bolts, 1''	Each	24
Anchor Bolts, 1 1/4''	Each	12

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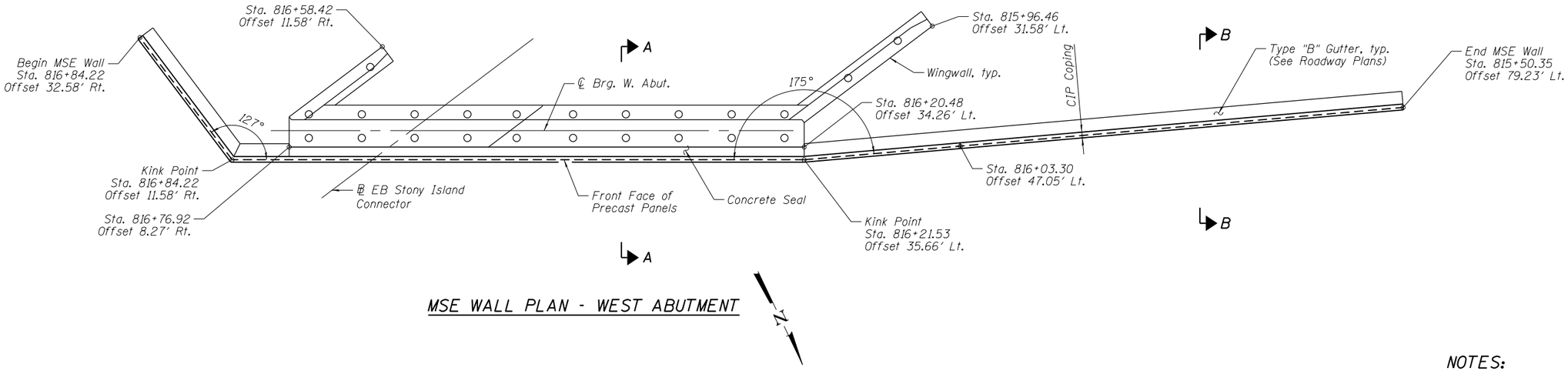
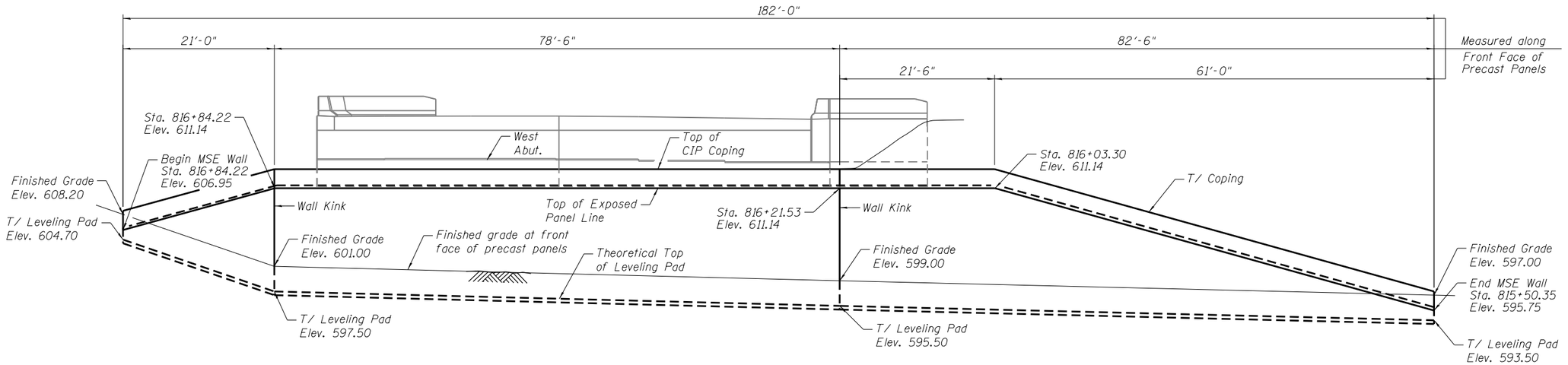
BEARING DETAILS
STRUCTURE NO. 016-2470
SHEET NO. S-24 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	399
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



MSE WALL PLAN - WEST ABUTMENT



MSE WALL ELEVATION - WEST ABUTMENT

(Looking West)

NOTES:

1. Stations and offsets are given to front face of precast panels relative to ℄ EB Stony Island Connector.
2. See Sheet S-27 for Sections A-A and B-B.

BILL OF MATERIAL

Item	Unit	Quantity
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	2,220
Structure Excavation	Cu. Yd.	1,481

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WEST ABUTMENT MSE RETAINING WALL
STRUCTURE NO. 016-2470
SHEET NO. S-25 OF S-53 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	400
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			