

04-25-14 LETTING ITEM 034

INDEX OF SHEETS

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4. TYPICAL SECTIONS
- 5-8. PROPOSED NAVIGATION OBSTRUCTION WARNING LIGHTING REPLACEMENT PLAN

STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701601-09 URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NON-TRAVERSABLE MEDIAN
- 701901-03 TRAFFIC CONTROL DEVICES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

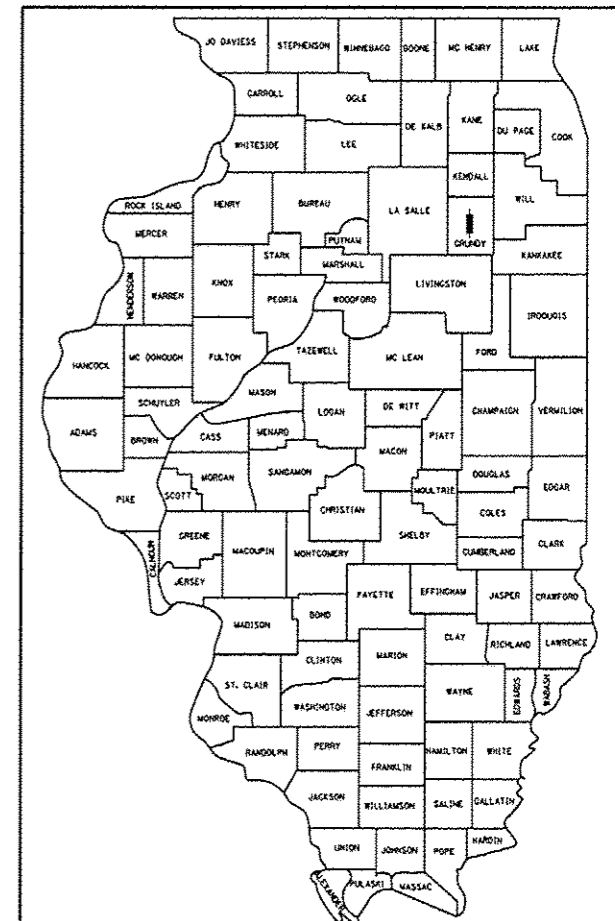
**PROPOSED
HIGHWAY PLANS**

**FAP ROUTE 326 (IL ROUTE 47)
SECTION (111 BR-1)I**

**REMOVE AND REPLACE
NAVIGATIONAL LIGHTING
GRUNDY COUNTY**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(111 BR-1)I	GRUNDY	8	1
		ILLINOIS	CONTRACT NO. 66D28	

D-93-002-14



LOCATION OF SECTION INDICATED THUS: - ■ -

FUNCTIONAL CLASSIFICATION

OTHER PRINCIPAL ARTERIAL

2013 ADT = 22700

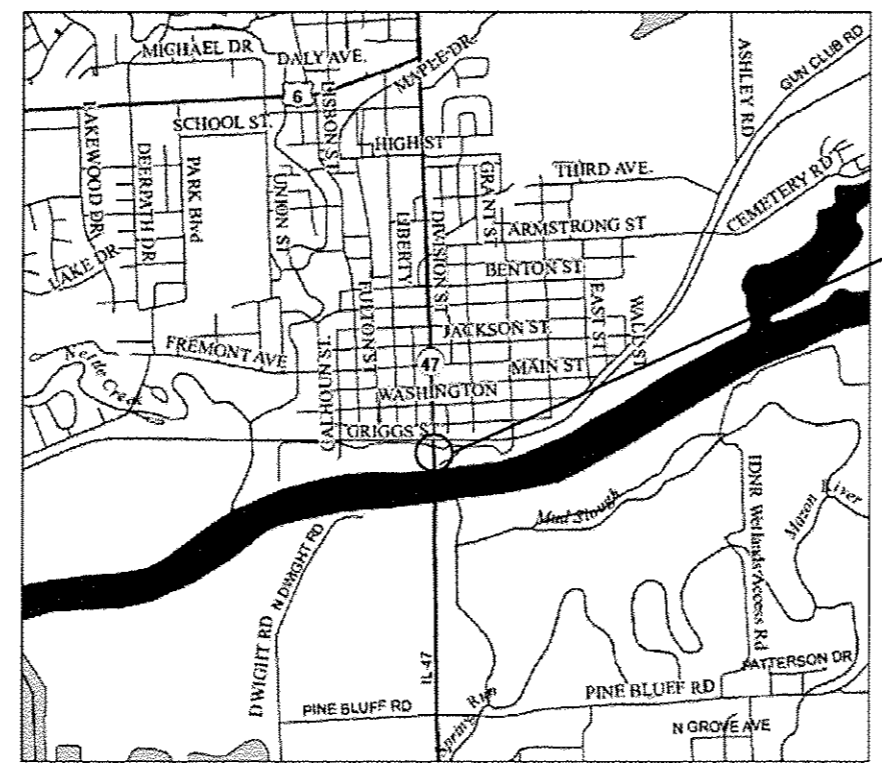
P.V. = 86.4% S.U. = 6.8% M.U. = 6.8%

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 2-7 2014
Paul Coetzee
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
March 21 2014
John D. Baranelli
ENGINEER OF DESIGN AND ENVIRONMENT
March 21 2014
Omar Osman
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

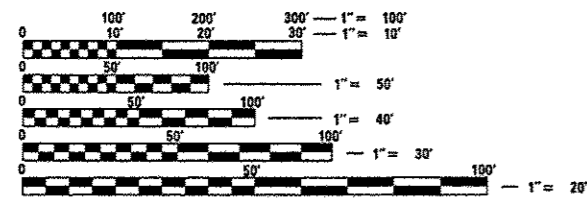
**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

C-93-021-14



PROJECT LOCATION
SN: 032-0099
STA: 27 + 012.700

POINT LOCATION



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER: JOE KANNEL, P.E.
UNIT CHIEF: RON WOODSHANK
DISTRICT NO. (815)-434-6131
CONTRACT NO. 66D28

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO ROUTINE VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENSIONS AND DETAILS AFFECTING THE UNIT BID PRICE FOR THE WORK.

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE PRESENCE OF DEPARTMENT-OWNED ELECTRICAL CABLE WITHIN THE LIMITS OF THE PROPOSED IMPROVEMENT. THE CONTRACTOR SHALL PROTECT THE ELECTRICAL CABLE FROM DAMAGE DUE TO HIS CONSTRUCTION OPERATIONS. ALL DAMAGE TO THE DEPARTMENT OWNED ELECTRICAL CABLE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. THIS SHALL INCLUDE ALL TEMPORARY REPAIRS REQUIRED TO KEEP THE FACILITY OPERATIONAL WHILE MATERIAL IS OBTAINED TO MAKE PERMANENT REPAIRS. SPLICING OF ELECTRICAL CABLE SHALL NOT BE ALLOWED. ELECTRICAL CABLE SHALL BE REPLACED, FROM POLE TO POLE OR CONTROLLER.

PROPOSED NAVIGATION OBSTRUCTION WARNING LUMINAIRE STATIONS ARE BASED ON THE AS-BUILT PLANS. CONTRACTOR SHALL VERIFY EXACT LOCATIONS IN THE FIELD.

EXISTING NAVIGATION OBSTRUCTION WARNING LUMINAIRES AT THE LOCATIONS SHOWN ON THE AS-BUILT PLANS SHALL BE REMOVED AND REPLACED.

THE CONTRACTOR IS REQUIRED TO KEEP THE NAVIGATION LIGHTING OPERATIONAL DURING CONSTRUCTION ACCORDING TO ARTICLE 843.02 OF THE STANDARD SPECIFICATION BOOK, AND AS DIRECTED BY THE ENGINEER

SEE NAVIGATION OBSTRUCTION WARNING LIGHTING DETAIL FOR SECTION A-A.

THE CONTRACTOR SHALL PROVIDE ONE EXTRA RED AND ONE EXTRA GREEN LED LUMINAIRE FOR MAINTENANCE STOCK. THE COST OF THIS WORK SHALL BE INCLUDED IN THE WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED PAY ITEM.

THE CONTRACTOR SHALL TAKE INSULATION RESISTANCE MEASUREMENTS OF THE EXISTING NAVIGATION LIGHTING CIRCUITS BEFORE ANY MODIFICATIONS ARE MADE AND PROVIDE WRITTEN RESULTS TO THE ENGINEER. EXISTING CIRCUITS NOT TESTED AND PROPERLY DOCUMENTED SHALL BE SUBJECT TO THE INSULATION RESISTANCE REQUIREMENTS OF ARTICLE 801.13 AT THE CONTRACTOR'S EXPENSE. AFTER THE PROPOSED NAVIGATION LUMINAIRES ARE INSTALLED AND ALL NEEDED MODIFICATIONS ARE MADE TO THE EXISTING CONTROLLER, THE CONTRACTOR SHALL TAKE INSULATION RESISTANCE MEASUREMENTS ACCORDING TO ARTICLE 801.13 AND PROVIDE WRITTEN RESULTS TO THE ENGINEER. IF THE TEST RESULTS DO NOT MEET OR EXCEED THE ORIGINAL READINGS, THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR REQUIRED TO BRING THE CIRCUITS BACK UP TO THAT LEVEL AT HIS OWN EXPENSE. THE COST OF INSULATION RESISTANCE TESTING SHALL BE INCLUDED IN THE WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED PAY ITEM.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER SHOWN IN THE LIST OF STANDARDS OR THE COPY INCLUDED IN THESE PLANS.

COMMITMENTS

DATE: 2-4-14

PREPARED BY: *Tom Beaulieu*
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: *[Signature]*
DISTRICT CONSTRUCTION ENGINEER

[Signature]
DISTRICT MATERIALS ENGINEER

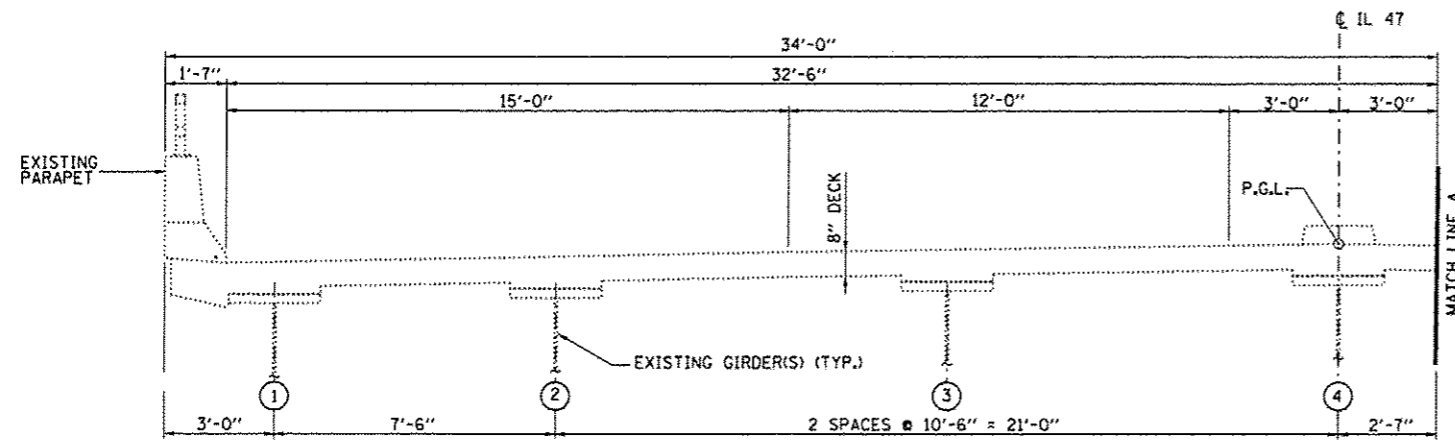
Bruce A. Hulse
DISTRICT OPERATIONS ENGINEER

FILE NAME *	USER NAME * Potelyj	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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PLOT DATE * 2/4/2014	DATE -	REVISED -	ILLINOIS FED. AID PROJECT							
MODELNAME*				SCALE:	SHEET OF SHEETS	STA.	TO STA.			

CONSTR. CODE
 STATE FUNDS
 100% STATE
 BRIDGE
 0021
 URBAN

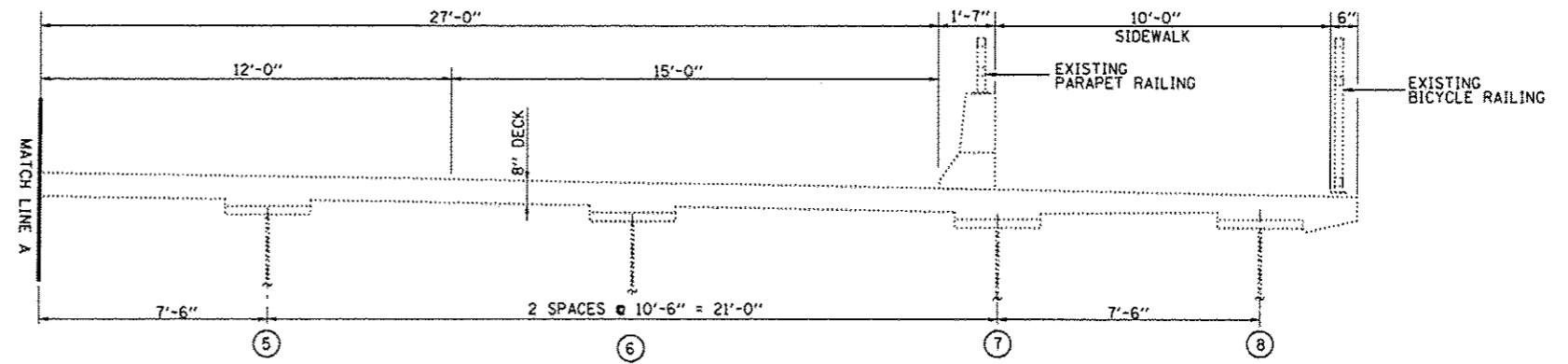
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67100100	MOBILIZATION	L SUM	1	1
70102630	TRAFFIC CONTROL AND PROTECTION, STANDARD 701601	L SUM	1	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1	1
82200605	WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED	EACH	6	6
84301100	REMOVAL OF NAVIGATION OBSTRUCTION WARNING LIGHTING UNIT	EACH	6	6
X8950130	MODIFY EXISTING LIGHTING CONTROLLER	EACH	1	1

Rev.



TYPICAL DECK CROSS SECTION

SN: 032-0099
SB LANES

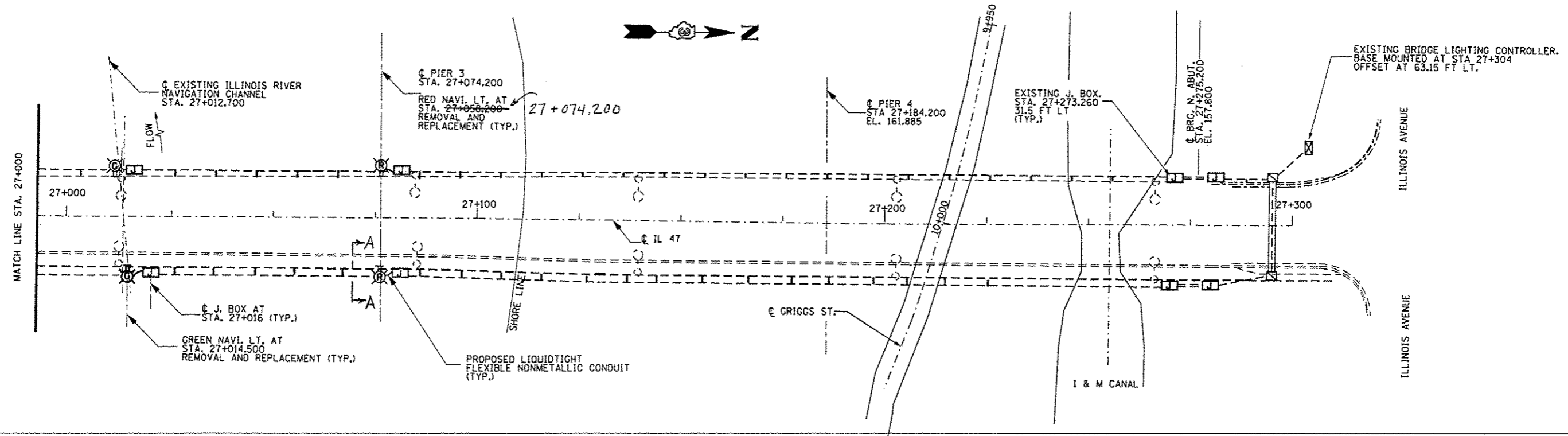
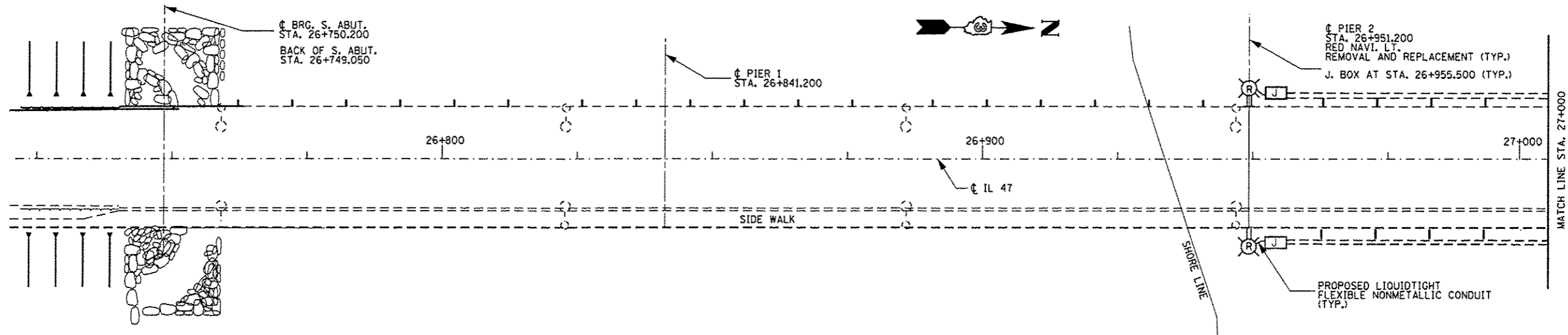


TYPICAL DECK CROSS SECTION

SN: 032-0099
NB LANES

FOR INFORMATION ONLY.

FILE NAME *	USER NAME * Petelyj	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTION				F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
en:\pwwork\pwwork\petelyj\0303159\036628-shr-details.dgn		DRAWN - YOGESH PATEL	REVISED -		326	(111 BR-11)	GRUNDY	8	4				
	PLOT SCALE * 4995.6995' / in.	CHECKED - RON WOODSHANK	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.				CONTRACT NO. 66D28				
#MODELNAME*	PLOT DATE * 1/31/2014	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								



PROPOSED NAVIGATION OBSTRUCTION WARNING LIGHTING REPLACEMENT PLAN

FAP ROUTE 326 (IL ROUTE 47)

SN: 032-0099

LEGEND

- EXISTING CABLE IN CONDUIT.
- PROPOSED NAVIGATION OBSTRUCTION WARNING LUMINAIRE, 360 DEGREE GREEN CENTER CHANNEL, LED.
- PROPOSED NAVIGATION OBSTRUCTION WARNING LUMINAIRE, 180 DEGREE RED CHANNEL MARGIN, LED.
- EXISTING LIGHTING CONTROL CABINET.
- EXISTING HANDHOLE
- EXISTING JUNCTION BOX ATTACHED TO STRUCTURE.
- EXISTING LIGHTING UNIT.

NOTE:
SEE PLAN SHEET 6 FOR SECTION A-A.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
REM NAV OBS WL UNIT	EACH	6
WATWY OBS WARN LM LED	EACH	6
MOD EX LTG CONTROLLER	EACH	1

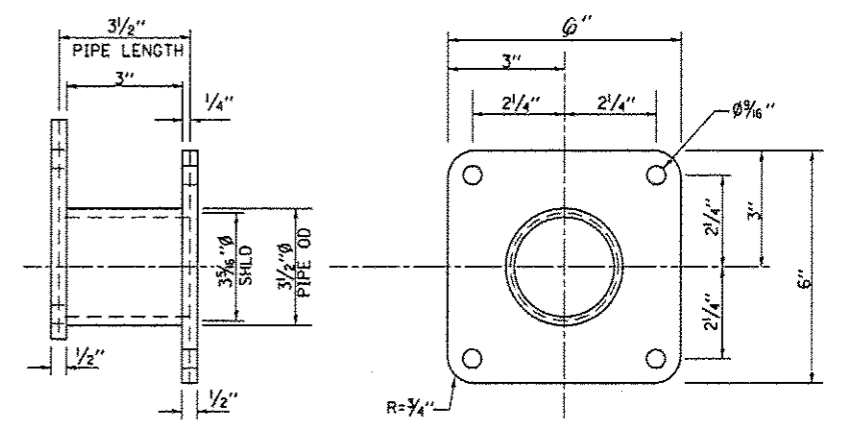
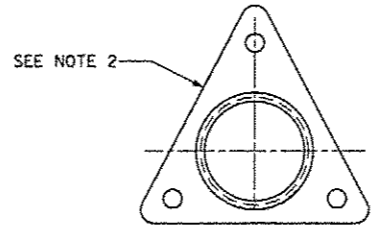
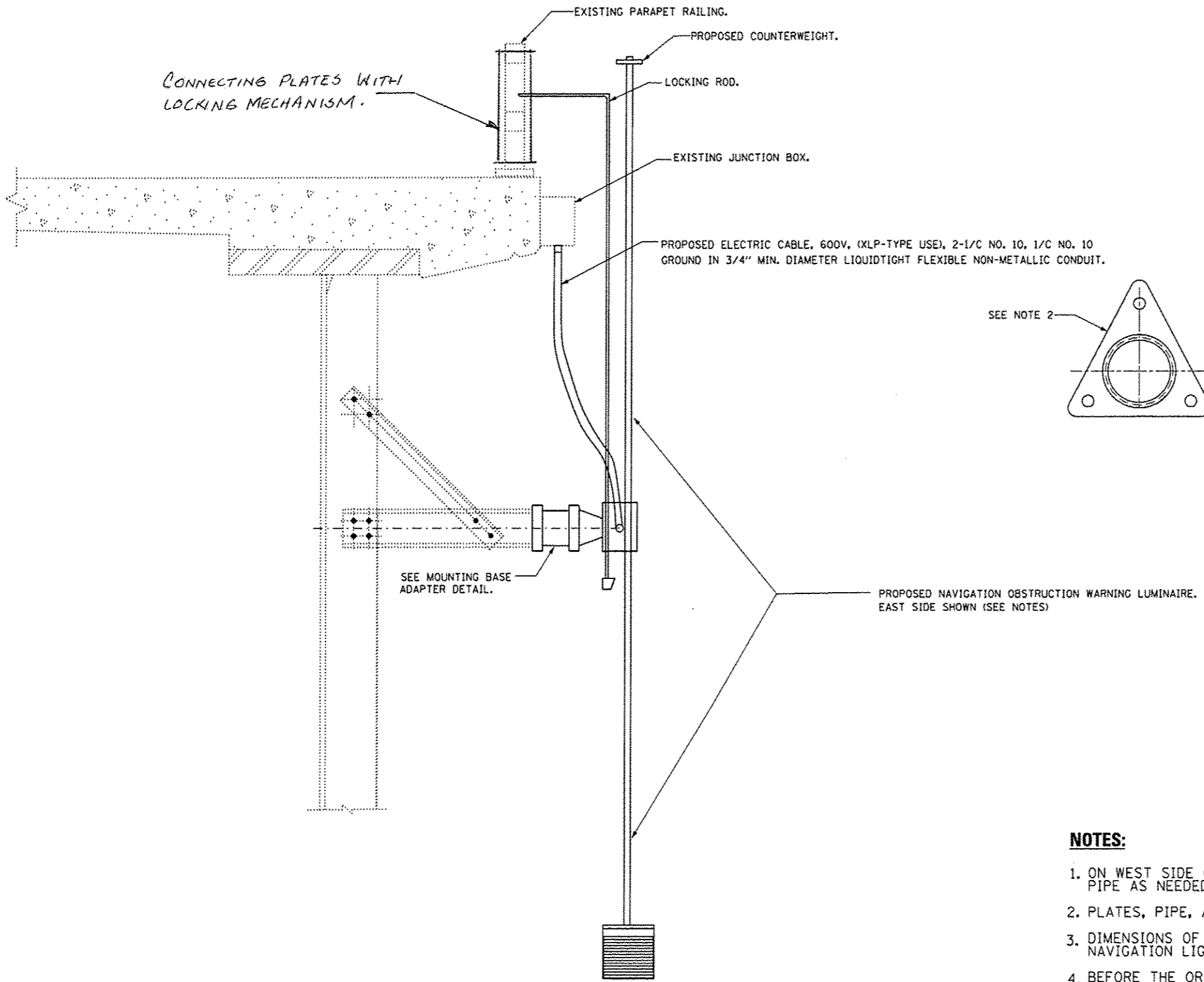
FILE NAME :	USER NAME :	DESIGNED :	REVISED :
o:\pwork\pedit\patel\j\0363159\0363159-0363159-0363159.dgn	Patel	- YOGESH PATEL	-
#MODELNAME#	PLOT SCALE :	DRAWN :	REVISED :
	1/4" = 1'-0"	- YOGESH PATEL	-
	PLOT DATE :	CHECKED :	REVISED :
	1/31/2014	- RON WOODSHANK	-
		DATE :	REVISED :

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PROPOSED NAVIGATION OBSTRUCTION WARNING
LIGHTING REPLACEMENT PLAN**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(111 BR-11)	GRUNDY	8	5
CONTRACT NO. 66D28				
[ILLINOIS] FED. AID PROJECT				

Rev.



MOUNTING BASE ADAPTER DETAIL
See Note 3

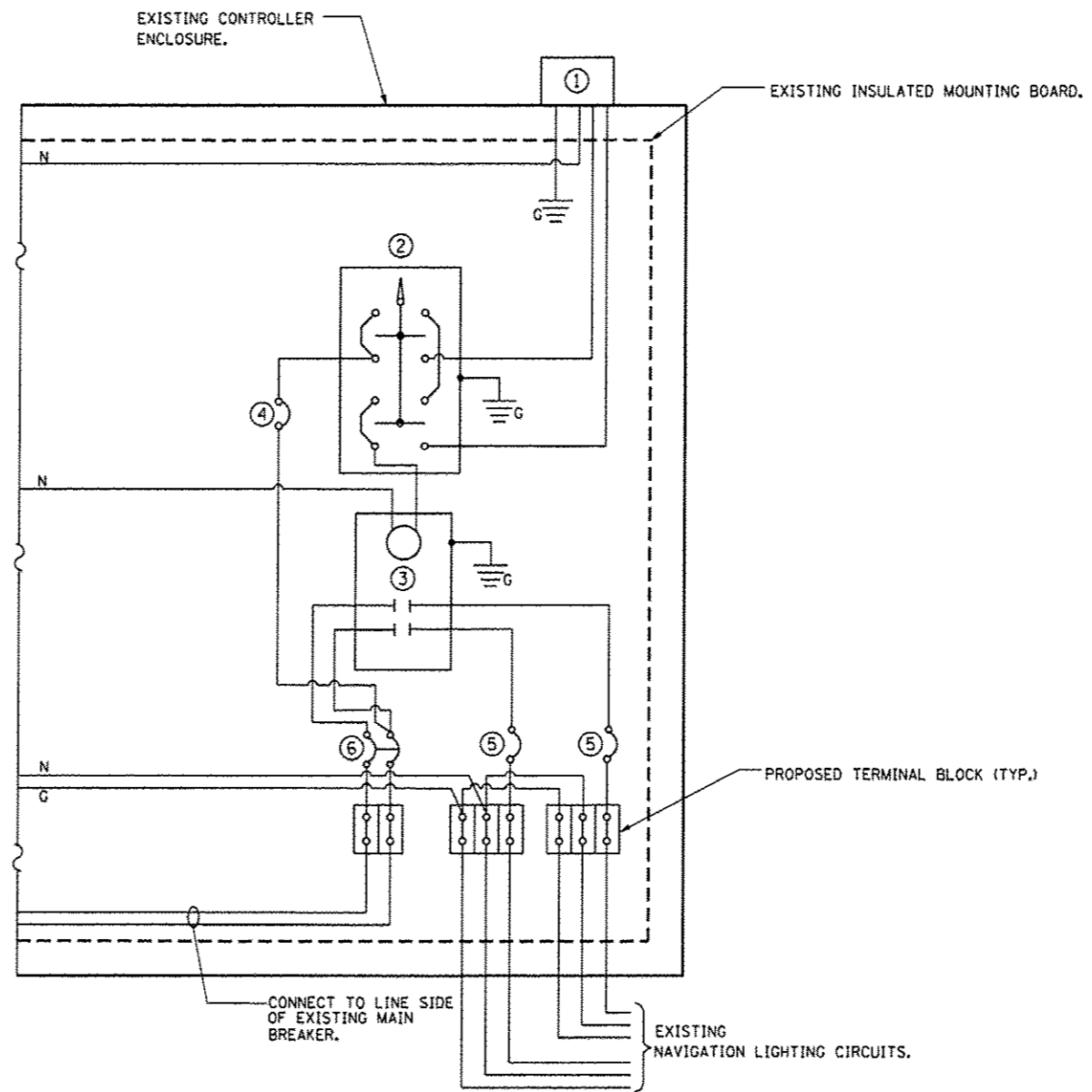
PROPOSED NAVIGATION OBSTRUCTION WARNING LUMINAIRE.
SECTION A-A

NOTES:

1. ON WEST SIDE OF BRIDGE, ADJUST LENGTH OF LOCKING ROD AND COUNTERWEIGHT PIPE AS NEEDED TO ACCOUNT FOR HEIGHT OF PARAPET WALL.
2. PLATES, PIPE, AND HARDWARE SHALL BE STAINLESS STEEL.
3. DIMENSIONS OF PLATE AND BOLT CIRCLE SHALL MATCH THAT OF THE EXISTING NAVIGATION LIGHT MOUNTING PLATE.
4. BEFORE THE ORDERING OF ANY MATERIALS OR FIXTURES, THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS FOR THE LUMINAIRE(S) THAT HE/SHE INTENDS TO INSTALL FOR APPROVAL BY THE ENGINEER AND THE BRIDGE MAINTENANCE ENGINEER. SEE SPECIAL PROVISION: WATERWAY OBSTRUCTION WARNING LUMINAIRE, LED FOR REQUIRED PROPERTIES.

FILE NAME *	USER NAME * Pateluj	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED NAVIGATION OBSTRUCTION WARNING LUMINAIRE DETAIL			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwwork\p\dot\pateluj\0366028-shr-detailed.dgn	PLOT SCALE * 4995.6995 ' / in.	DRAWN - YOGESH PATEL	REVISED -					326	(111 BR-11)	GRUNDY	8	8
MODELNAME	PLOT DATE * 1/31/2014	CHECKED - RON WOODSHANK	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	CONTRACT NO. 66D28	
		DATE -	REVISED -								ILLINOIS FED. AID PROJECT	

Rev.



LEGEND

- G CONNECT TO EXISTING GROUND BAR
- N CONNECT TO EXISTING NEUTRAL BAR
- ① PHOTOCELL WITH INTEGRAL SURGE ARRESTER FOR NAVIGATION LIGHTING
- ② HAND-OFF-AUTO SELECTOR SWITCH.
- ③ 60 AMP • ELECTRICALLY HELD CONTACTOR.
- ④ 15 AMP, 1 POLE CIRCUIT BREAKER.
- ⑤ EXISTING SINGLE-POLE CIRCUIT BREAKER FOR NAVIGATION LIGHTING.
- ⑥ 30 AMP • 2-POLE CIRCUIT BREAKER.
- SIZE LARGER AS NEEDED.

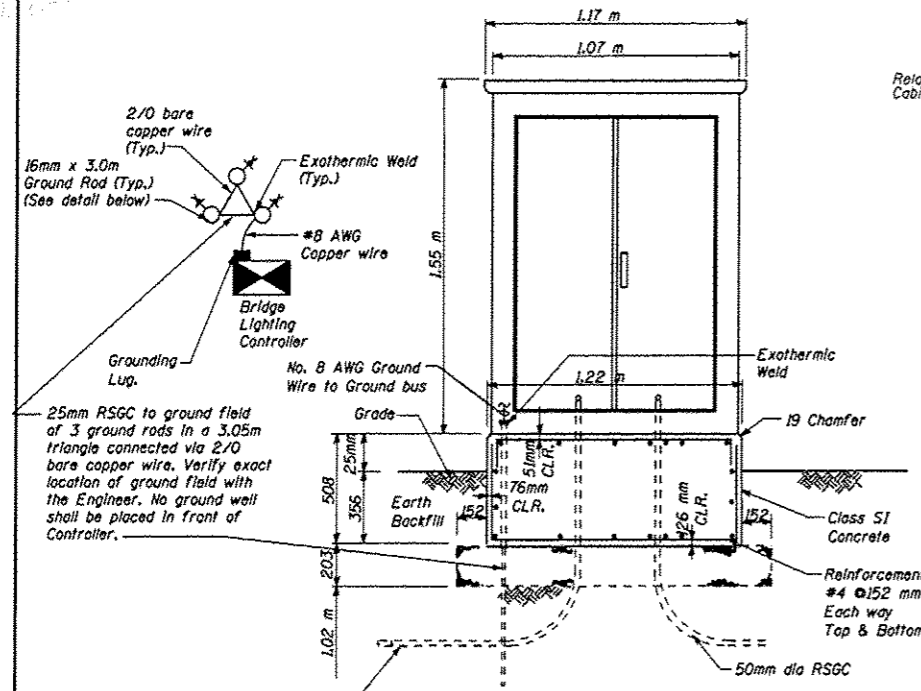
PROPOSED NAVIGATION LIGHTING CONTROL SCHEMATIC

NOTES:

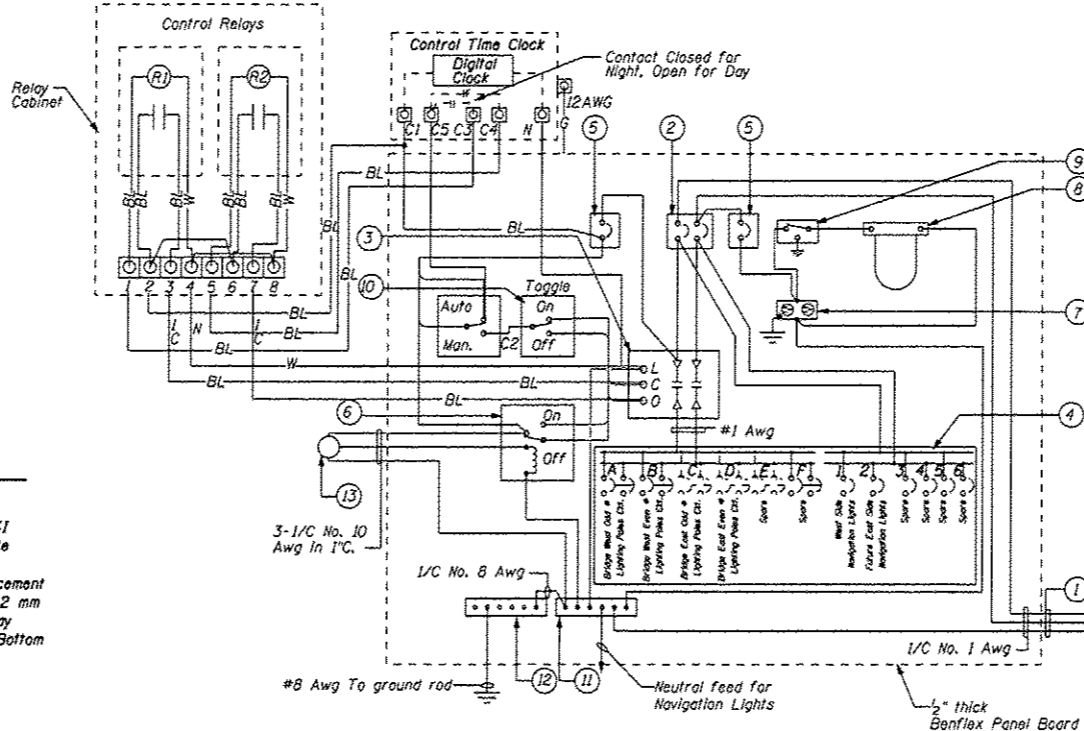
1. SEE AS-BUILTS FOR EXISTING LIGHTING CONTROLLER SCHEMATIC
2. SEE AS-BUILTS FOR EXISTING NAVIGATION LIGHTING CIRCUITING.
3. SEE SPECIAL PROVISION: MODIFY EXISTING LIGHTING CONTROLLER.

FILE NAME :	USER NAME : Pateljy	DESIGNED - YOGESH PATEL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PROPOSED NAVIGATION LIGHTING CONTROL SCHEMATIC	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
01\pe_work\pvdot\patel\jy\030315\94\036628-sh1t-details.dgn	DRAWN - YOGESH PATEL	REVISED -	326			(111 BR-11)	GRUNDY	8	7	
PLOT SCALE : 4995.6995 ' / in.	CHECKED - RON WOODSHANK	REVISED -	CONTRACT NO. 66D28							
#MODELNAME#	PLOT DATE : 1/31/2014	DATE -	REVISED -			SCALE:	SHEET OF SHEETS	STA. TO STA.	ILLINOIS FED. AID PROJECT	

RFS 01/2014



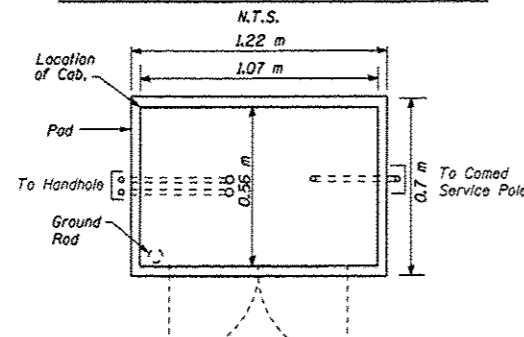
ELECTRICAL CONTROL CABINET & PAD ELEVATION
N.T.S.



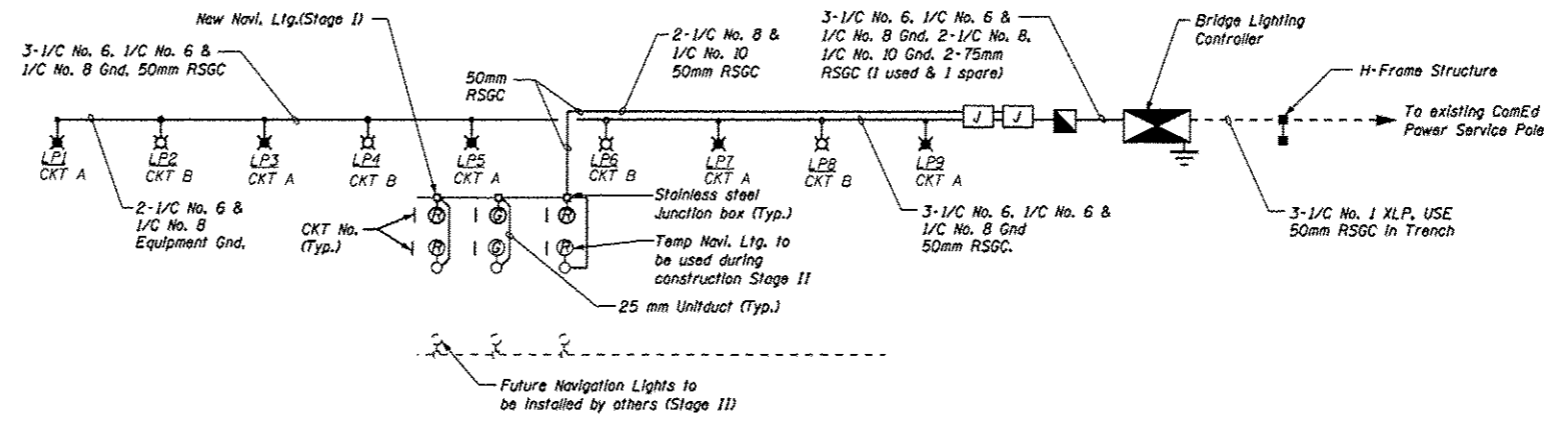
CONTROLLER CABINET WIRING DIAGRAM
N.T.S.

CONTROLLER WIRING DIAGRAM LEGEND

- 1 3-1/2 No. 1 service wire in 50mm Galvanized Steel Conduit for 120/240V, 1Ø, 3W, 60Hz. service.
- 2 100Amp main circuit breaker, 2 Pole 240V, non-interchangeable trip rating RMS-14000A at 240V.
- 3 100Amp remote control switch, electrically operated, mechanically held, 2-Pole, Single Throw, 240V control circuit, 240V.
- 4 Branch main circuit breakers, 2 Pole & 1 Pole, 240V., 20AT/50AF base, non-interchangeable trip rating RMS-14000A at 240V on 100Amp bus.
- 5 20Amp control circuit, circuit breaker 1 Pole, 120V 20AT/50AF base, non-interchangeable trip interrupting rating RMS 14000A at 240V.
- 6 20Amp, 1 Pole double throw, 120V relay.
- 7 20Amp, 120V duplex receptacle.
- 8 Weatherproof incandescent lighting fixture with 60Watt, 120V lamp.
- 9 Switch for lighting fixture mounted inside Cabinet
- 10 Toggle switches mounted on 100mmx100mm box.
- 11 Neutral bus bar, 6.25mmx25mmx300mm long mounted on panel with taps, (drill and tap as necessary with 4 spare).
- 12 Ground bus bar 6.25mmx25mmx300mm long mounted on panel with taps, (drill and tap as necessary with 4 spare).
- 13 Photocell mounted on top of the controller cabinet.

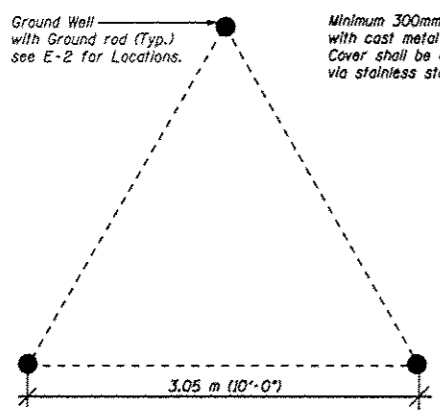


ELECTRICAL CABINET AND PAD PLAN
N.T.S.

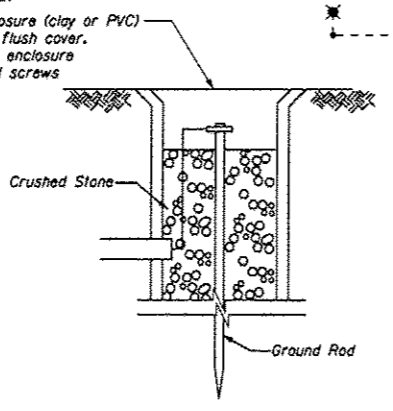


WIRING DIAGRAM
N.T.S.

- Notes:**
1. Entire Control Cabinet shall be grounded.
 2. All wiring shall be tagged with self-sticking wire markers
 3. Ground bus to be color coded green, neutral bus white, and bonded to cabinet enclosure, by listed pressure concentrators or listed clamps.
 4. All internal controller wiring to be #10 awg unless otherwise noted.
 5. Cabinet wiring insulation to be Type XHHW or approved equal.
 6. No Electric meter required for the lighting controller as the energy charges for the bridge lighting and the navigation lights will be paid by the city of Morris and IDOT, Division of Highways/Dist 3, Ottawa, Illinois respectively on flat rate basis.



GROUND FIELD DETAIL
N.T.S.



GROUND WELL DETAIL
N.T.S.

FOR INFORMATION ONLY.

FILE NAME =	USER NAME = Potelyj	DESIGNED = YOGESH PATEL	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING CONTROLLER WIRING DIAGRAM	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
u:\p\work\p\p\potelyj\08363159\036628-shr-detailed.dgn	PLOT SCALE = 4995.6995' / 1" =	DRAWN = YOGESH PATEL	REVISED =			326	(111 BR-11)	GRUNDY	8	8	
#MODELNAME#	PLOT DATE = 1/31/2014	CHECKED = RON WOODSHANK	REVISED =			CONTRACT NO. 66028					
		DATE =	REVISED =			[ILLINOIS] FED. AID PROJECT					