

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAI ROUTE 24 (I-24)
SECTION (64-3B)L-1

NAVIGATIONAL LIGHTING REPAIRS
MASSAC COUNTY

C-99-061-11

F.A.I. RTE. I-24	SECTION 64-3B(L)-1	COUNTY MASSAC ILLINOIS	TOTAL SHEETS 7	SHEET NO. 1
CONTRACT NO. 78273				

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 2

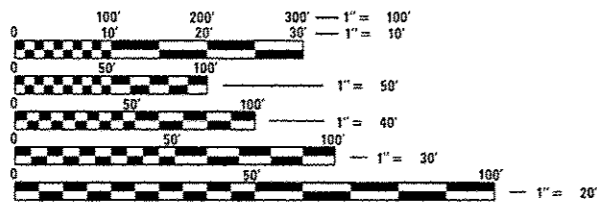
TRAFFIC DATA

I-24 TRAFFIC DATA

2009 ADT = 30,360
20% TRUCKS

TOWNSHIPS:

COUNTY UNIT ROAD DISTRICT



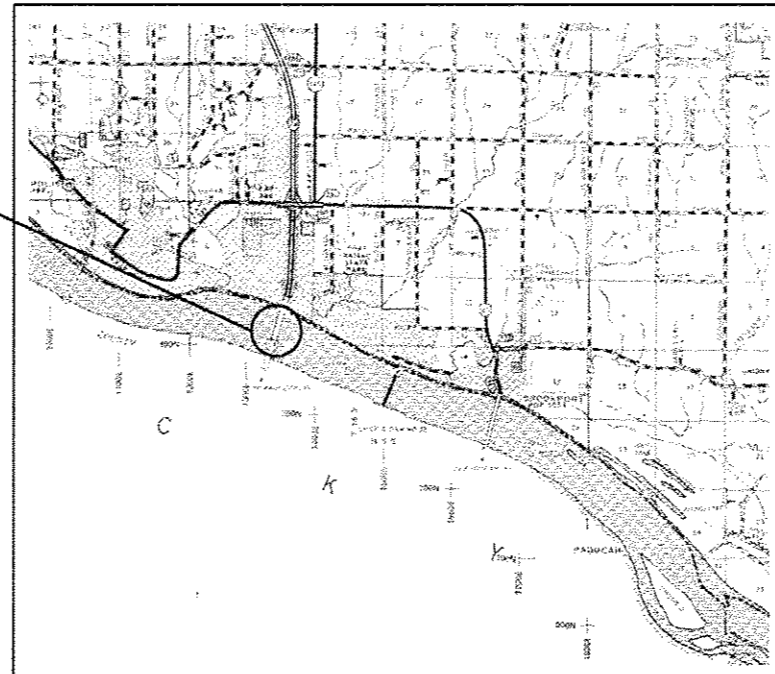
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER: T. WAYNE HALSTEAD (618) 351-5228
PROJECT MANAGER: DAVID PICHE (618) 351-5227

CONTRACT NO. 78273

EXISTING STRUCTURE NO. 064-0035
FAI 24



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 26 20 13
Jeffrey L. Keim
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

April 26 20 13
John P. Baranzelli, P.E. /a
ENGINEER OF DESIGN AND ENVIRONMENT

April 26 20 13
Omer Osman, P.E. /a
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

GENERAL NOTES

- 1) IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECKS AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.
- 2) COMMITMENTS: NONE AS OF MARCH 22, 2013.

SUMMARY OF QUANTITIES

STATE FUNDING
 50% ILLINOIS, 50% KENTUCKY
 CONSTRUCTION TYPE CODE
 0021
 MASSAC
 SN 064-0035

CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2
67100100	MOBILIZATION	L SUM	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1
X8260110	NAVIGATION LIGHTING SYSTEM	L SUM	1

STANDARDS

- 000001-06
- 701101-03
- 701400-06
- 701406-06
- 701901-02

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS, GENERAL NOTES, STANDARDS, SUMMARY OF QUANTITIES
- 3-7 NAVIGATIONAL LIGHTING PLAN DETAILS

Prepared By: *Joe Zlanic*
 DISTRICT STUDIES & PLANS ENGINEER

Examined By: *John E. ...*
 DISTRICT LAND ACQUISITION ENGINEER

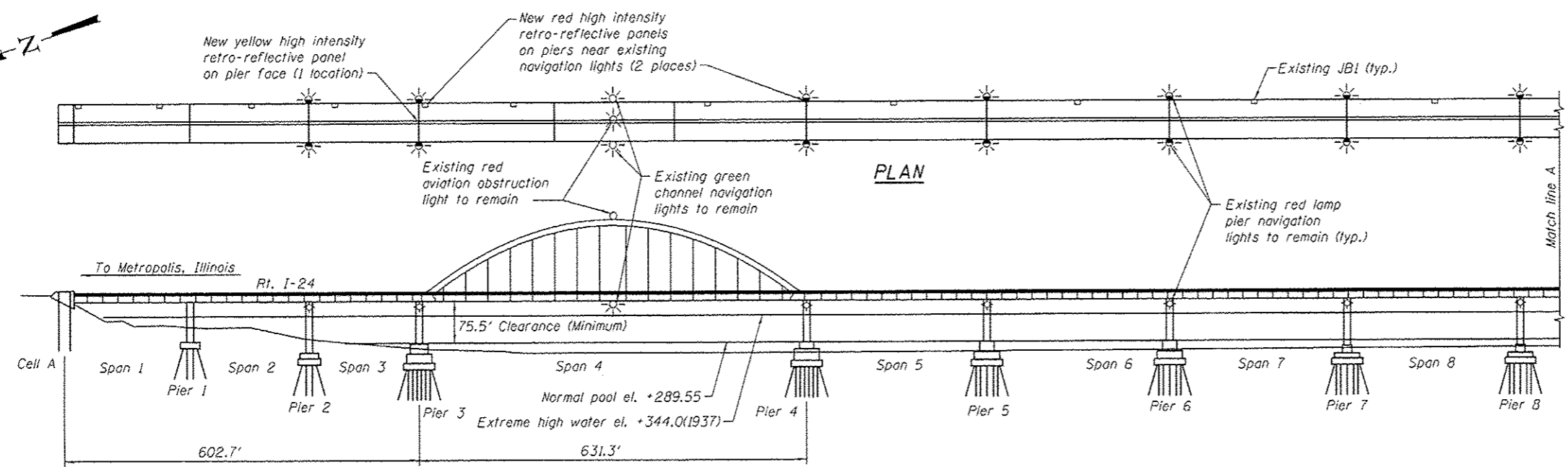
Examined By: *Carrie Nelson*
 DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *Keith ...*
 DISTRICT OPERATIONS ENGINEER

Examined By: *...*
 DISTRICT PROJECT IMPLEMENTATION ENGINEER

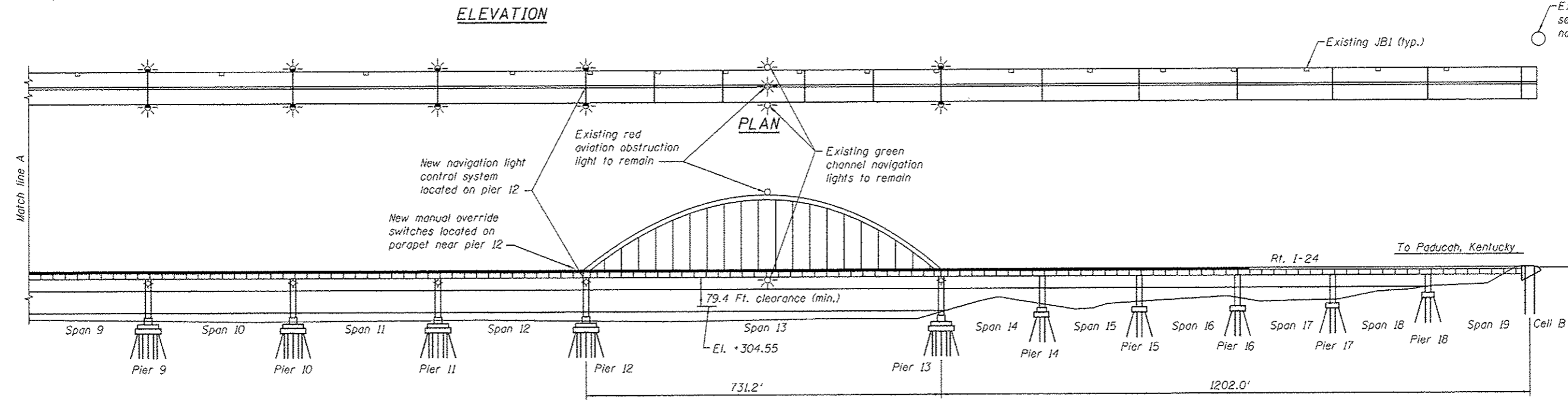
Examined By: *Douglas ...*
 DISTRICT CONSTRUCTION ENGINEER

Examined By: *...*
 DISTRICT MATERIALS ENGINEER



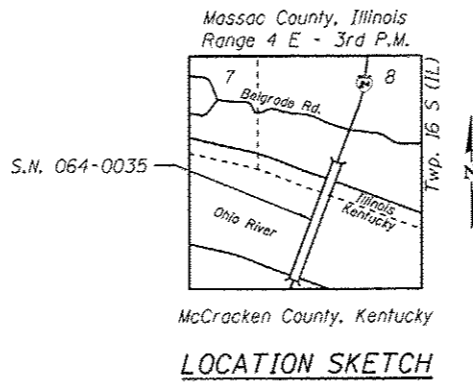
INDEX OF SHEETS

1. Plan and Elevation
2. Wiring Details
3. Mounting Details
4. Retro-Reflective Panel Details - Red Panels
5. Retro-Reflective Panel Details - Yellow Panel



GENERAL NOTES:

1. See special provisions for additional requirements not shown.
2. All work over or in the navigable waterway must be coordinated with the U.S. Coast Guard 45 days in advance of the activity.
3. All elevations are in feet and refer to USCOE Ohio River datum.
4. 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 that masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces shall be Gray, Munsell No. 5B 7/1.
5. The Contractor shall maintain the existing aviation and navigation obstruction warning lights such that they remain operational at all times. Should the Contractor elect to use a temporary navigation light system, all costs shall be included in the price bid. All temporary navigation light systems used during construction shall be removed from the site and shall become the property of the contractor.
6. This work, as herein specified, will be paid for at the contract lump sum price for NAVIGATION LIGHTING SYSTEM.



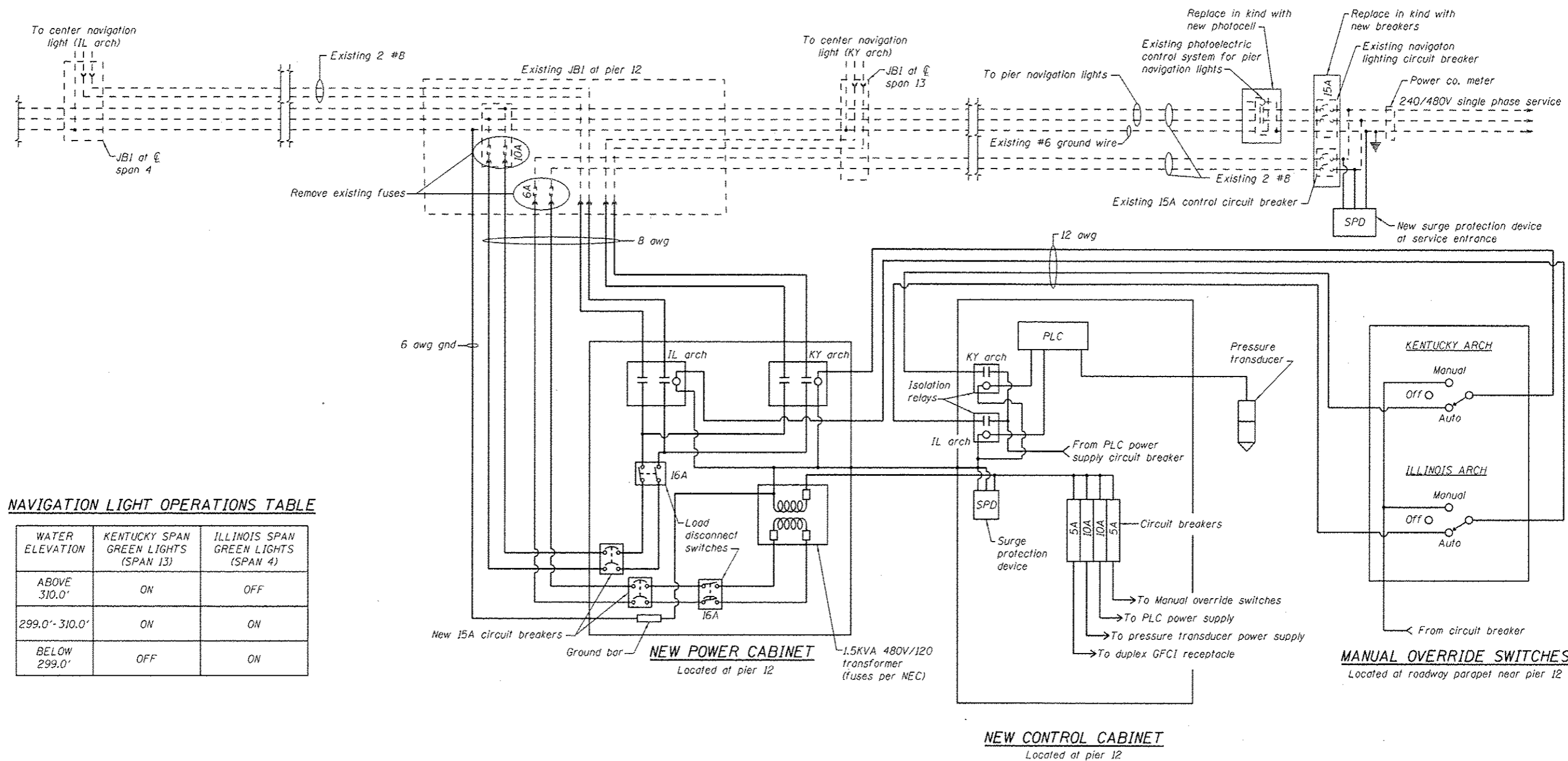
LANCE V. BORDEN
 CARISLE, PENNSYLVANIA
 ILLINOIS LICENSED ELECTRICAL
 ENGINEER NO. 062-061047
 EXPIRES 11/30/2013

NAVIGATION LIGHT AUTOMATIC CONTROLS
F.A.I. ROUTE 24 SEC. (64-3B)I-1
MASSAC COUNTY
PLAN AND ELEVATION
STRUCTURE NO. 064-0035

	USER NAME *	DESIGNED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE *	CHECKED - LVB, DECEMBER 2011	REVISED - LVB, APRIL 2013		24	(64-3B)I-1	MASSAC	7	3
	PLOT DATE * MARCH, 2013	DRAWN - RSJ, DECEMBER 2011	REVISED - RSJ, APRIL 2013		CONTRACT NO. 78273			ILLINOIS FED. AID PROJECT	
		CHECKED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013		SHEET NO. 1 OF 5 SHEETS				

LEGEND

- - - Existing wiring, conduits and junction boxes
- New wiring, conduits and cabinets



NAVIGATION LIGHT OPERATIONS TABLE

WATER ELEVATION	KENTUCKY SPAN GREEN LIGHTS (SPAN 13)	ILLINOIS SPAN GREEN LIGHTS (SPAN 4)
ABOVE 310.0'	ON	OFF
299.0' - 310.0'	ON	ON
BELOW 299.0'	OFF	ON

NOTES:

1. See special provisions for additional requirements not shown.



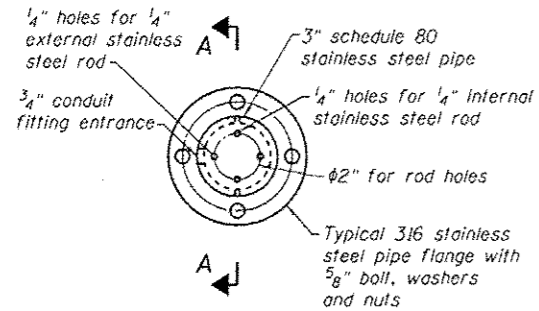
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PLOT SCALE *	DRAWN - RSJ, DECEMBER 2011	REVISED - RSJ, APRIL 2013
PLOT DATE = MARCH, 2013	CHECKED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

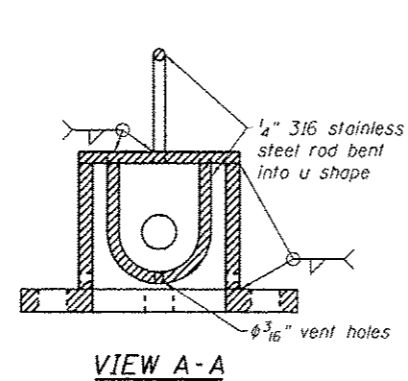
**NAVIGATION LIGHT AUTOMATIC CONTROLS
WIRING DETAILS**

SHEET NO. 2 OF 5 SHEETS

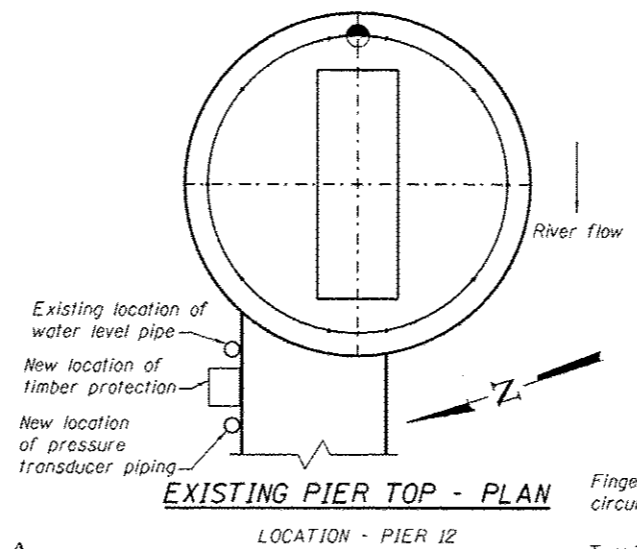
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 78273			ILLINOIS FED. AID PROJECT	



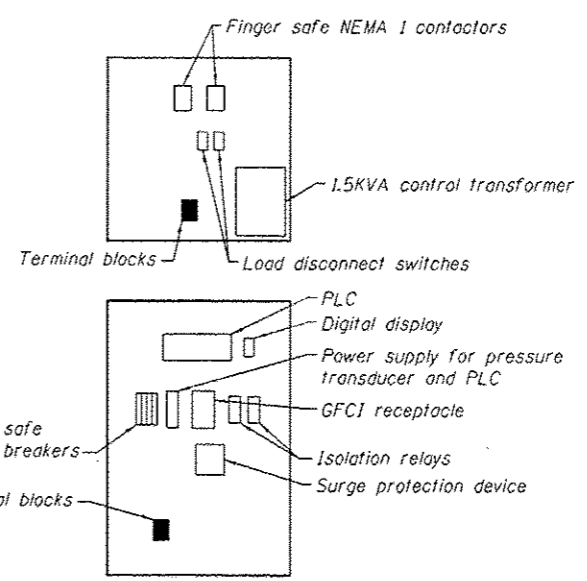
TOP CAP DETAILS



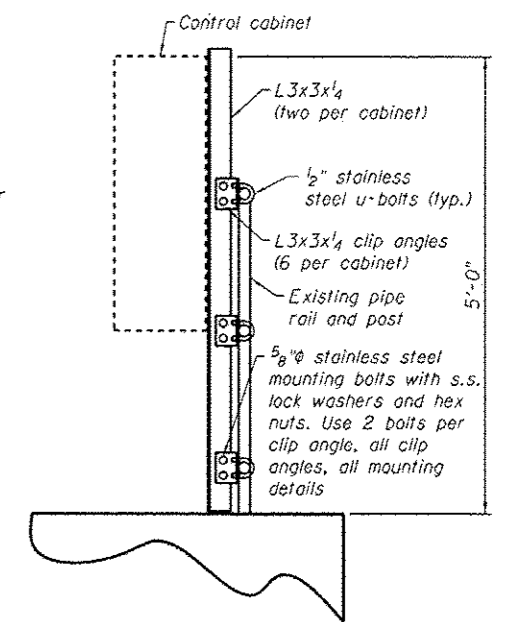
VIEW A-A



EXISTING PIER TOP - PLAN
LOCATION - PIER 12

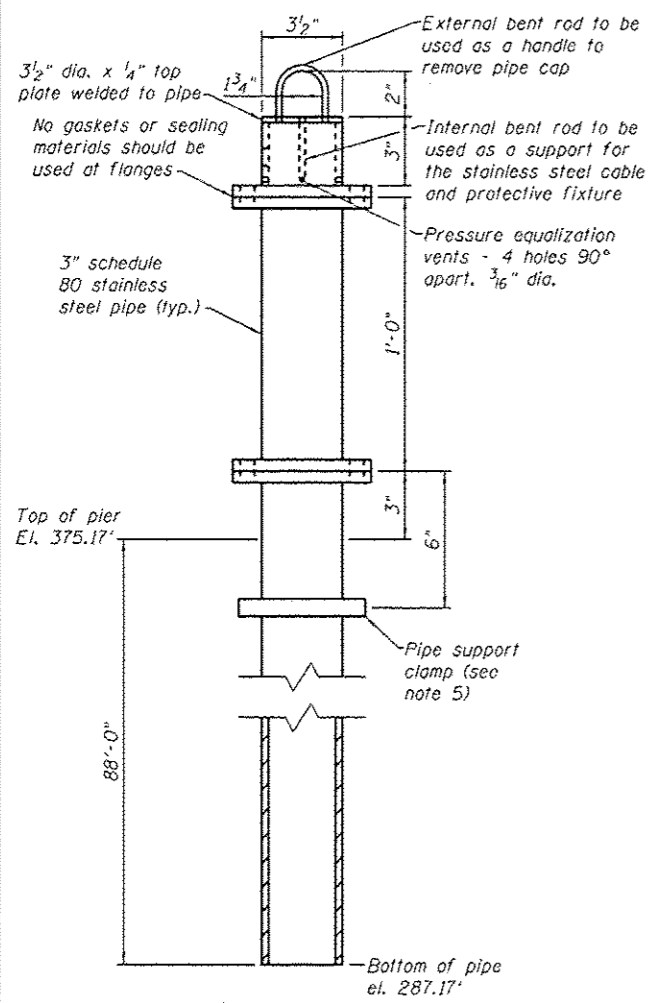


CONTROL AND POWER CABINET LAYOUTS

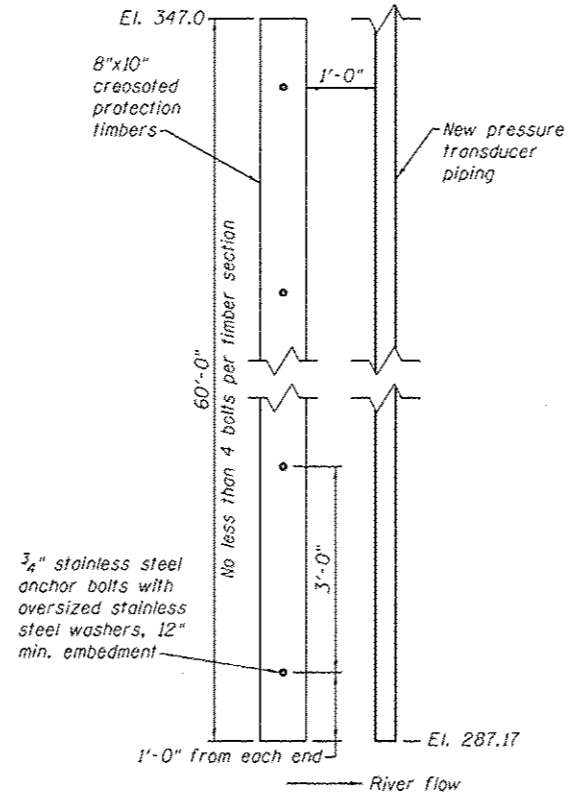


**CONTROL CABINET MOUNTING
DETAILS ON PIER 12**

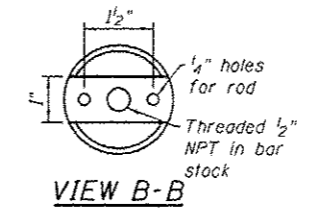
NEW CABINETS SHALL BE MOUNTED IN SAME LOCATION AS EXISTING SYSTEM (SEE NOTES)



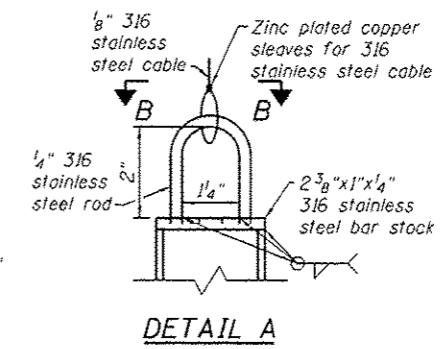
**NEW PRESSURE
TRANSDUCER PIPING**



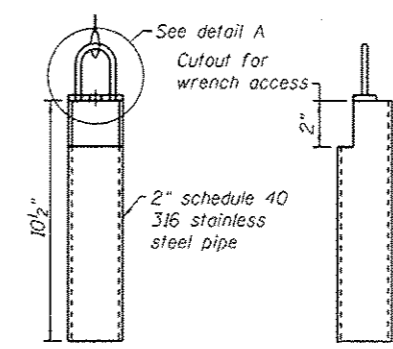
NEW TIMBER PROTECTION DETAILS



VIEW B-B

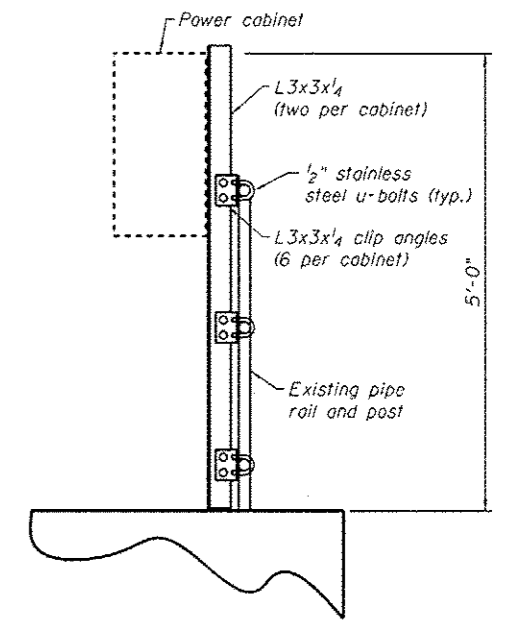


DETAIL A



**NEW PRESSURE TRANSDUCER
PROTECTIVE FIXTURE**

PRESSURE TRANSDUCER NOT SHOWN FOR CLARITY (SEE NOTE 9)



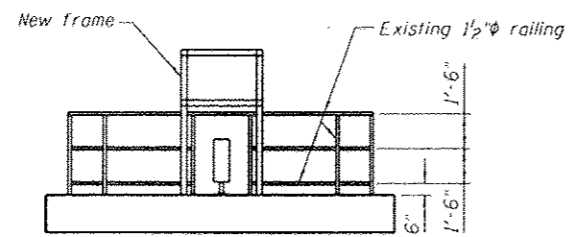
**POWER CABINET MOUNTING
DETAILS ON PIER 12**

NEW CABINETS SHALL BE MOUNTED IN SAME LOCATION AS EXISTING SYSTEM (SEE NOTES)

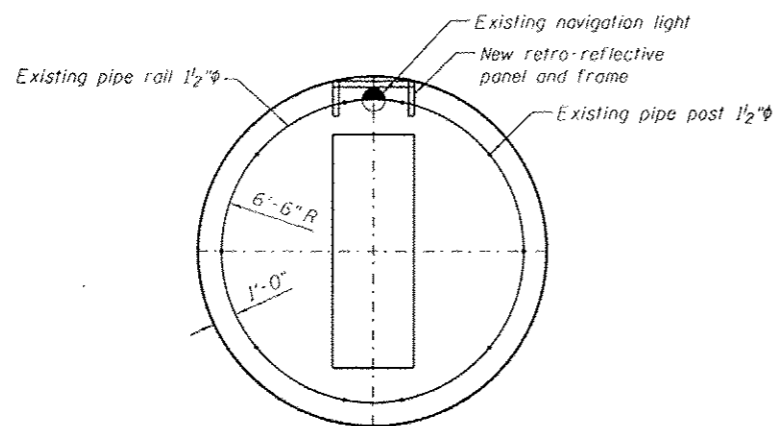
NOTES:

- See special provisions for additional requirements not shown.
- Verify all component dimensions, field verify all critical dimensions, and confirm compatibility prior to purchasing and installing.
- Pressure transducer shall be mounted per the manufacturers recommendation.
- Power and control cabinets shall be mounted such that their respective doors open greater than or equal to 90 degrees. Working clearances shall be per NEC.
- The first pipe clamp shall be 6" from the second flange joint, as shown above. There after, pipe supports shall be every 10". The last pipe support shall be 6" from the end of the pipe.
- The contractor shall remove the existing water level pipe system and replace with a new pressure transducer piping system and new timber protection system as shown.
- The contractor shall provide new 316 stainless steel clamps and hardware that is similar in design to the existing pipe mounts. Existing pipe clamps and hardware shall not be reused.
- The new piping system shall be mounted similar to existing system. Chemical adhesive anchors shall be used above the water line and below the water line, see special provisions for further clarification. New anchor bolts shall be 5/8" dia., and minimum embedment 6".
- Pressure transducer protective fixture shall be attached via 1/8" 316 stainless steel cable to the removable top cap as shown on this drawing. Protective fixture and pressure transducer shall be lowered into new pressure transducer piping and be lowered down to a length such that the bottom of the protective fixture does not protrude beyond the piping.

	USER NAME :	DESIGNED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NAVIGATION LIGHT AUTOMATIC CONTROLS MOUNTING DETAILS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - LVB, DECEMBER 2011	REVISED - LVB, APRIL 2013	24			(64-39)(1-1)	MASSAC	7	5	
	PLOT SCALE :	DRAWN - RSJ, DECEMBER 2011	REVISED - RSJ, APRIL 2013			CONTRACT NO. 78273				
	PLOT DATE :	CHECKED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013			SHEET NO. 3 OF 5 SHEETS		ILLINOIS FED. AID PROJECT		

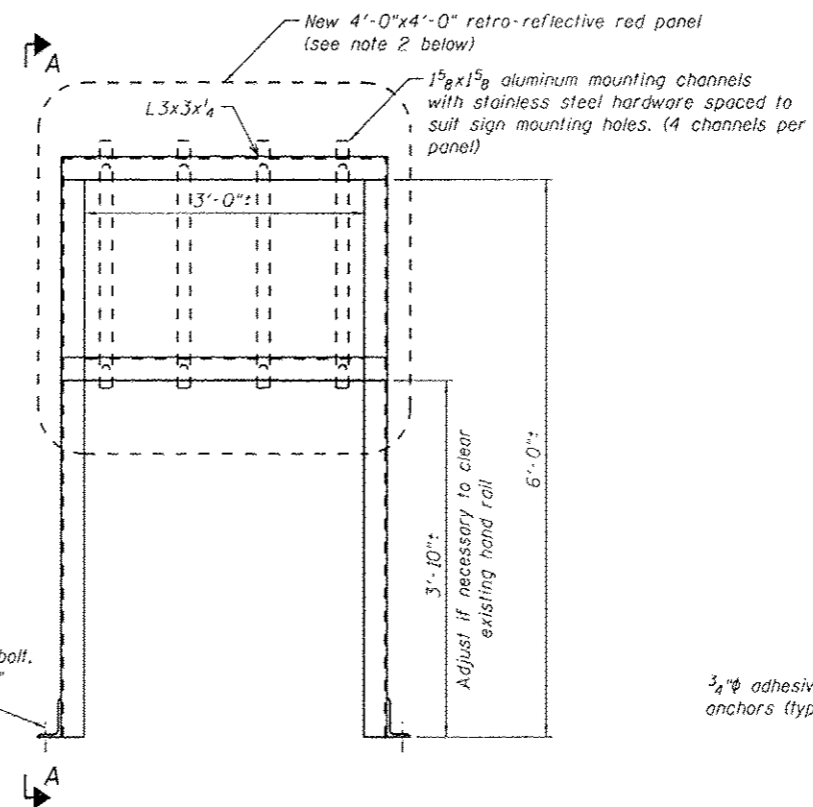


ELEVATION

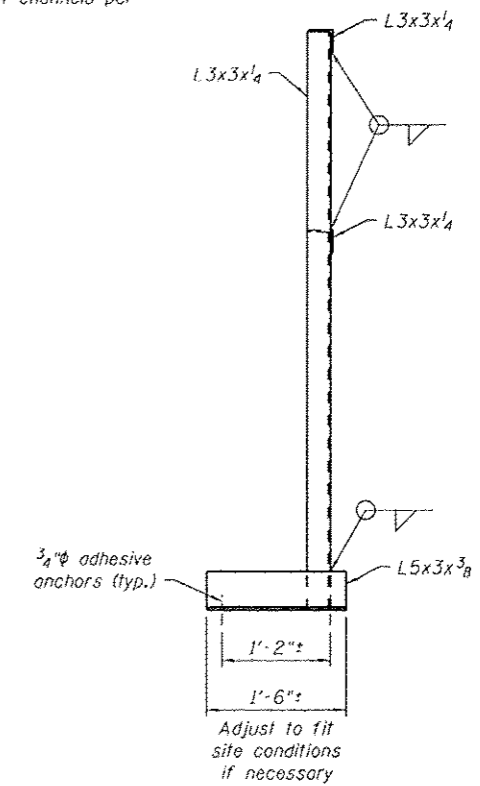


PLAN

TWO LOCATIONS - PIER 3 AND PIER 4



STEEL SUPPORT FRAME



VIEW A-A

NOTES:

1. See special provisions for additional requirements not shown.
2. Panels shall be attached with 1/2" stainless steel fasteners, spaced per panel manufacturers recommendations.



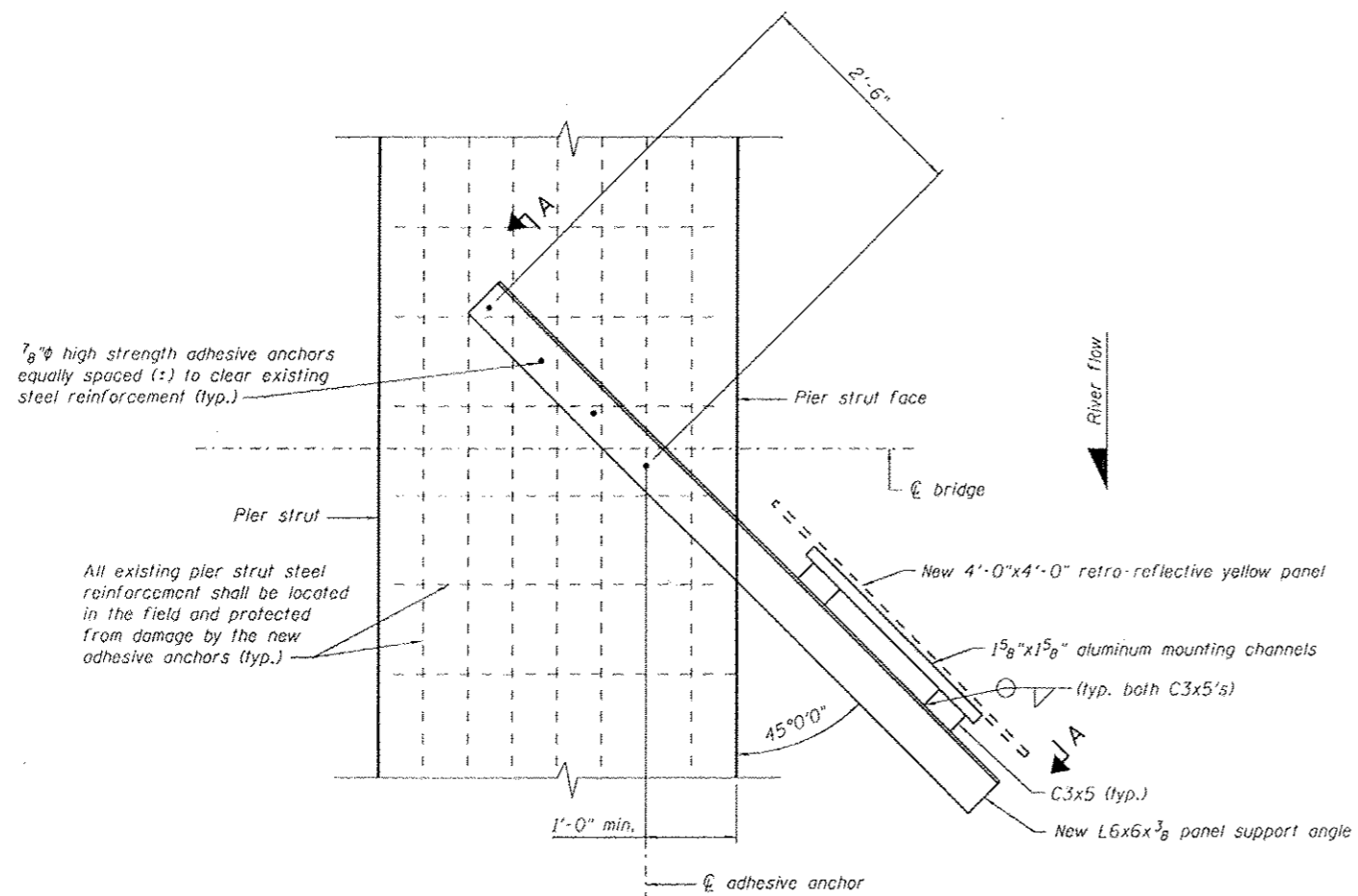
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PLOT SCALE :	DRAWN - RSJ, DECEMBER 2011	REVISED - RSJ, APRIL 2013
PLOT DATE : MARCH, 2013	CHECKED - CDV, DECEMBER 2011	REVISED - CDV, APRIL 2013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NAVIGATION LIGHT AUTOMATIC CONTROLS
RETRO-REFLECTIVE PANEL DETAILS - RED PANELS

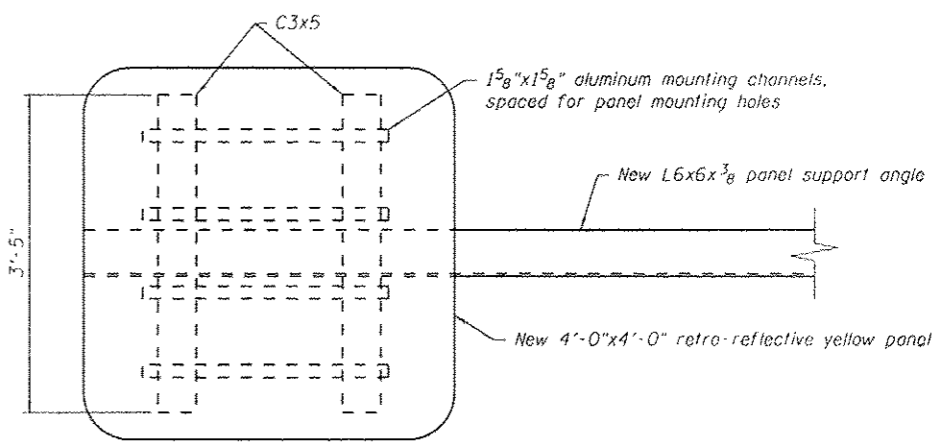
SHEET NO. 4 OF 5 SHEETS

F.A.I. RTE. 24	SECTION 164-3BIL-1	COUNTY MASSAC	TOTAL SHEETS 7	SHEET NO. 4
CONTRACT NO. T8273			ILLINOIS FED. AID PROJECT	



PARTIAL PLAN PIER 3

SEE DRAWING 1 FOR MOUNTING LOCATION



VIEW A-A

Provide panel support and adhesive system anchor, as specifically required elsewhere in these Plans and Specifications. Otherwise use the following: ASTM A709 Grade 50 sign support, ASTM F1554 Grade 36 anchor, and the Hilti HIT-RE 500 epoxy adhesive anchoring system, or another approved panel support, anchor, and adhesive system. Follow manufacturer's recommendations. Minimum anchor embedment to be 8 inches or per manufacturer's recommendations, whichever is larger. Yellow retro-reflective panel shall be located as shown on plans and shall face upstream.

NOTES:

1. See special provisions for additional requirements not shown.
2. Panels shall be attached with 1/2" stainless steel fasteners, spaced per panel manufacturers recommendations.

	USER NAME	DESIGNED - CDV, DECEMBER 2011	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NAVIGATION LIGHT AUTOMATIC CONTROLS RETRO-REFLECTIVE PANEL DETAILS - YELLOW PANEL	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PILOT SCALE	CHECKED - LVB, DECEMBER 2011	REVISED -			24	(64-38)-1	MASSAC	7	7
	PLOT DATE - MARCH 2013	DRAWN - RSJ, DECEMBER 2011	REVISED -	SHEET NO. 5 OF 5 SHEETS		CONTRACT NO. 78273		ILLINOIS FED. AID PROJECT		