04-27-2018 LETTING ITEM 159

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	1
	ILLINOIS	CONTRACT NO. 60P55		

FOR INDEX OF SHEETS, SEE SHEET NO. 2 – KEY PLAN

FOR LIST OF STANDARDS, SEE SHEET NO.2 – KEY PLAN

IDOT – ELECTRICAL MAINTENANCE
MEADE ELECTRIC
(708) 588–2544

IMPROVEMENT LOCATED IN THE CITY OF JOLIET AND VILLAGE OF ROCKDALE

LICENSED PROFESSIONAL ENGINEER
DAVID W. PETERMEIER
062.052553
STATE OF ILLINOIS

David Petermeier 2/19/18

DAVID W. PETERMEIER DATE
ILLINOIS PROFESSIONAL ENGINEER NO. 062.052553
REGISTRATION EXPIRES 11/30/2019
OVERALL PROJECT MANAGEMENT
ADDITIONAL PROFESSIONAL SEALS WITH THE DESIGNATED RESPONSIBILITY FOR INDIVIDUAL DRAWINGS IS SHOWN ON SHEETS 2 AND 431

100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

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: ANA ABREU (847) 705–4482
PROJECT MANAGER: SERIN KELLER (847) 705–4556

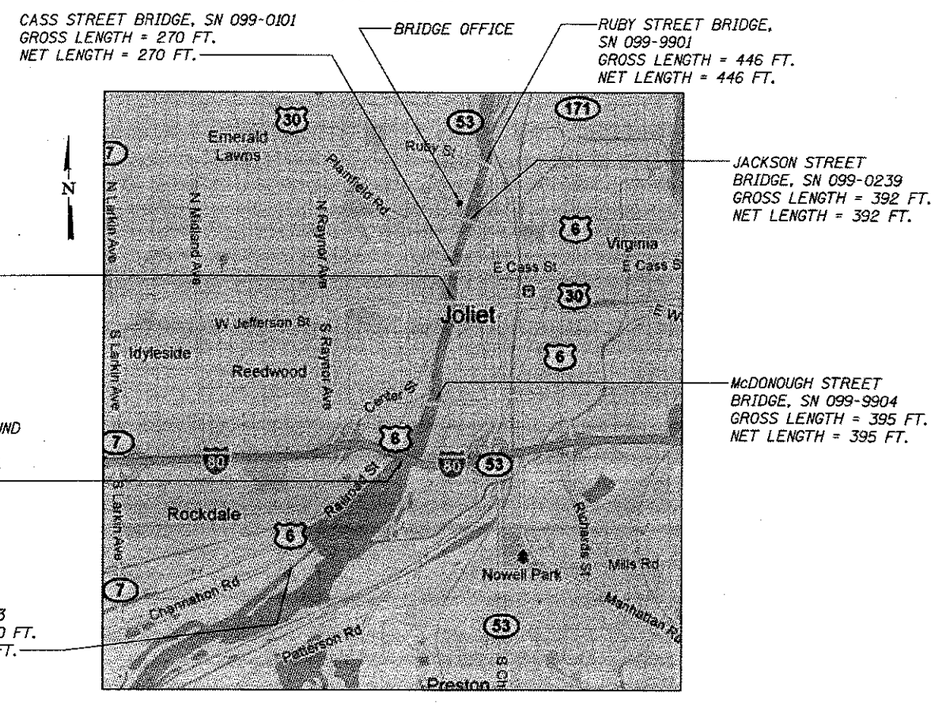
CONTRACT NO. 60P55

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

VARIOUS ROUTES IN THE CITY OF JOLIET
SECTION 2011–045–I
PROJECT NHPP–STP–FAP6(281)
VARIOUS MOVABLE BRIDGES, LOCAL
CENTRALIZED CONTROL AND OPERATION
WILL COUNTY

C–91–578–11

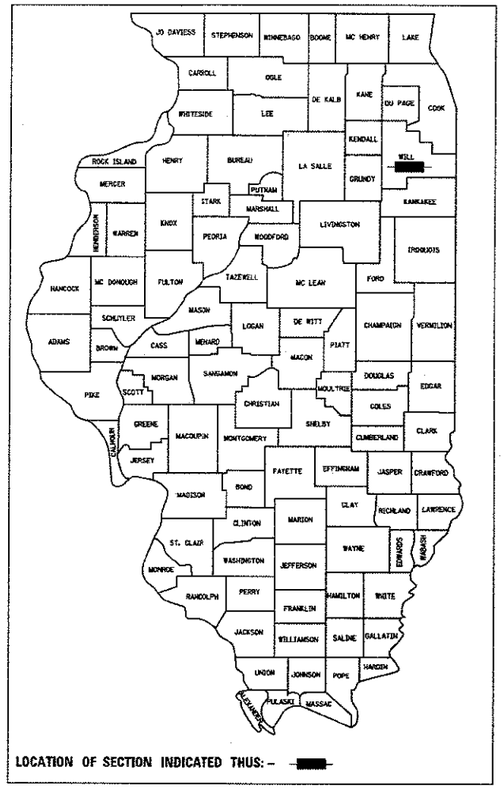


LOCATION MAP

No Scale

GROSS LENGTH = 2309 FT. = 0.44 MILE
NET LENGTH = 2309 FT. = 0.44 MILE

D–91–301–09



LOCATION OF SECTION INDICATED THUS:–

MODJESKI–MASTERS
Experience great bridges.

PREPARED BY:
MODJESKI AND MASTERS, INC.
#4 SUNSET HILLS PROFESSIONAL CENTER
EDWARDSVILLE, IL 62025

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED January 24 20 18
Matthew A. Quigley /BB
REGIONAL ENGINEER
Mar 23 20 18
for
ENGINEER OF DESIGN AND ENVIRONMENT
Mar 23 20 18
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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INDEX OF DRAWINGS

LICENSED PROFESSIONAL ENGINEER
DAVID W. PETERMEIER
062.052553
STATE OF ILLINOIS

2/19/18
DATE

DAVID W. PETERMEIER
ILLINOIS PROFESSIONAL ENGINEER NO. 062.052553
REGISTRATION EXPIRES 11/30/2019
SHEETS: 2–7, 108–110, 206–207, 245–246, 283–285, 324–325, 417–418

DAVID W. PETERMEIER
081.005642
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

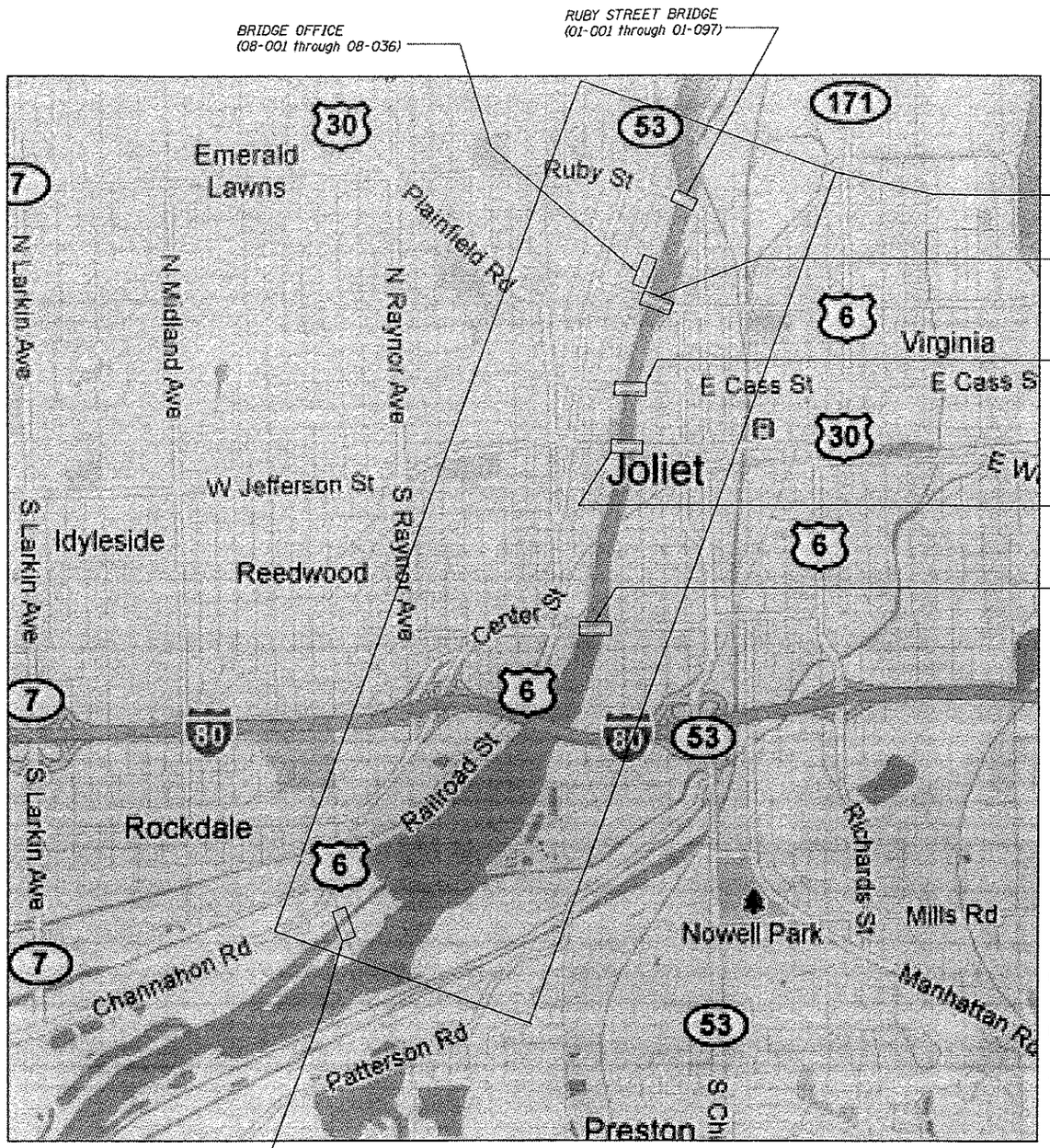
2/19/18
DATE

DAVID W. PETERMEIER
ILLINOIS STRUCTURAL ENGINEER NO. 081.005642
REGISTRATION EXPIRES 11/30/2018
SHEETS: 107, 466

LICENSED PROFESSIONAL ENGINEER
ROBERT I. PETERS
062.069632
STATE OF ILLINOIS

2/19/18
DATE

ROBERT I. PETERS
ILLINOIS PROFESSIONAL ENGINEER NO. 062.069632
REGISTRATION EXPIRES 11/30/2019
SHEETS: 2–106, 11–205, 208–244, 247–282, 286–323, 326–416, 419–430, 458–465



KEY PLAN

No Scale

HIGHWAY STANDARDS

000001–06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
701601–09	URBAN LANE CLOSURE, MULTILANE, 1W OR 2W WITH NONTRAVERSABLE MEDIAN
701701–10	URBAN LANE CLOSURE, MULTILANE INTERSECTION
701901–07	TRAFFIC CONTROL DEVICES

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	CHECKED - L.V. BORDEN	REVISED	
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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
KEY PLAN
SHEET NO. 2 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	2
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

URBAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE								
				NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	100% CITY OF JOLIET
				BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	OTHER	UTILITY	UTILITY
				0013	0013	0013	0013	0013	0013	0044	0043	0043
				SN 099-9901	SN 099-0239	SN 099-0101	SN 099-0166	SN 099-9904	SN 099-9903	URBAN	SN 099-0056	URBAN
				Ruby St.	Jackson St.	Cass St.	Jefferson St.	McDonough St.	Brandon Rd.	Bridge Office	I-80	City of Joliet
42400300	PORTLAND CEMENT CONCRETE SIDEWALK 6 INCH	SQ FT	800.0	400.0		80.0		320.0				
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	20	4	4	4	4	4				
44000600	SIDEWALK REMOVAL	SQ FT	800	400		80		320				
50200100	STRUCTURE EXCAVATION	CU YD	149	149								
50200400	ROCK EXCAVATION FOR STRUCTURES	CU YD	3	3								
50300225	CONCRETE STRUCTURES	CU YD	66.0	66.0								
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4400	4400								
60603900	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12 (ABUTTING EXISTING PAVEMENT)	FOOT	20.0	4.0	4.0	4.0	4.0	4.0				
67100100	MOBILIZATION	L SUM	1	0.15	0.15	0.15	0.15	0.15	0.15	0.05	0.05	
81025200	CONDUIT ENCASED, REINFORCED CONCRETE, 2" DIA., PVC 1 WIDE X 1 HIGH	FOOT	10									10
81025300	CONDUIT ENCASED, REINFORCED CONCRETE, 2" DIA., PVC 2 WIDE X 1 HIGH	FOOT	30		30							
81100605	CONDUIT ATTACHED TO STRUCTURE, 2" DIA., PVC COATED GALVANIZED STEEL	FOOT	5									5
81300220	JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 6" x 6" X 4"	EACH	1								1	
81300840	JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 18" X 18" X 12"	EACH	1									1

* - SPECIALTY ITEM

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	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
PROJECT SUMMARY OF QUANTITIES - 1
SHEET NO. 3 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	3
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY (URBAN)	CONSTRUCTION CODE: NHPP 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-9901 Ruby St.	STPU 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-0239 Jackson St.	NHPP 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-0101 Cass St.	NHPP 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-0166 Jefferson St.	STPU 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-9904 McDonough St.	STPU 80% FEDERAL 20% STATE BRIDGE 0013 SN 099-9903 Brandon Rd.	STPU 80% FEDERAL 20% STATE OTHER 0044 URBAN Bridge Office	STPU 80% FEDERAL 20% STATE UTILITY 0043 SN 099-0056 I-80	100% CITY OF JOLIET UTILITY 0043 URBAN City of Joliet
	81300960	JUNCTION BOX, STAINLESS STEEL, ATTACHED TO STRUCTURE, 42" X 36" X 12"	EACH	1							1		
*	87302515	ELECTRIC CABLE AERIAL SUSPENDED, SERVICE, NO. 6 3C	FOOT	290								290	
*	X0100003	CLEARING AND GRUBBING	SQ YD	360	255	35		30	40				
	X0324912	RADIO ANTENNA	EACH	7	1	1	1	1	1	1	1		
	X0326254	LAPTOP COMPUTER	EACH	1							1		
	X0326267	VIDEO SERVER	EACH	1									1
	X0326500	BRIDGE OPERATION AND MAINTENANCE DURING CONSTRUCTION	L SUM	1	0.167	0.167	0.167	0.167	0.166	0.166			
	X0326544	WINDOW BLINDS	L SUM	1							1		
	X0326555	MAIN SPAN DRIVE MOTORS	EACH	22	4	4	4	4	4	2			
	X0326564	VECTOR-CONTROLLED MOTOR DRIVES	EACH	18		4	4	4	4	2			
	X0326615	INTEGRATED BRIDGE CONTROLS SYSTEM	L SUM	1	0.167	0.167	0.167	0.167	0.166	0.166			
*	X0326948	CLOSED CIRCUIT TELEVISION CAMERA STRUCTURE, 50 FT. MOUNTING HEIGHT	EACH	4		2			2				
*	X0326949	CLOSED CIRCUIT TELEVISION CAMERA STRUCTURE FOUNDATION, 30" DIAMETER	FOOT	40		20			20				
*	X0326964	FIBER OPTIC INTERCONNECT CABINET	EACH	8	1	1	1	1	2	1	1		

* - SPECIALTY ITEM

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	CHECKED - L.V. BORDEN	REVISED	
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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
PROJECT SUMMARY OF QUANTITIES - 2
SHEET NO. 4 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	4
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY (URBAN)	CONSTRUCTION CODE: NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	100% CITY OF JOLIET
					BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	OTHER	UTILITY	UTILITY
					0013	0013	0013	0013	0013	0013	0044	0043	0043
					SN 099-9901	SN 099-0239	SN 099-0101	SN 099-0166	SN 099-9904	SN 099-9903	URBAN	SN 099-0056	URBAN
					Ruby St.	Jackson St.	Cass St.	Jefferson St.	McDonough St.	Brandon Rd.	Bridge Office	I-80	City of Joliet
	X0327345	WORKSTATION FURNITURE, IDOT DISTRICT 1	L SUM	1							1		
	X6700410	ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL)	CAL MO	30	4	4	4	4	4	4	4	2	
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	0.167	0.167	0.167	0.167	0.166	0.166			
	X7015005	CHANGEABLE MESSAGE SIGN	CAL DAY	60				60					
*	X8040102	ELECTRIC SERVICE INSTALLATION, SPECIAL	EACH	2							1	1	
*	X8040300	ELECTRICAL SERVICE CONNECTION	EACH	2							1	1	
*	X8040310	ELECTRICAL SERVICE DISCONNECT	EACH	1								1	
*	X8780105	CONCRETE FOUNDATIONS (SPECIAL)	EACH	1					1				
*	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.143	0.143	0.143	0.143	0.143	0.143	0.142		
*	Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	336	56	56	56	56	56	56			
*	Z0033052	COMMUNICATIONS VAULT	EACH	1									1
*	Z0033062	RADIO TRANSCEIVER	EACH	9	1	1	1	1	1	1	3		
*	Z0073400	TEMPORARY SUPPORT SYSTEM	EACH	6	1	1	1	1	1	1			
*	Z0073510	TEMPORARY TRAFFIC SIGNAL TIMING	EACH	53	17	1	3	6	22	4			

* - SPECIALTY ITEM

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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
PROJECT SUMMARY OF QUANTITIES - 3
SHEET NO. 5 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	5
		CONTRACT NO. 60P55		
		ILLINOIS FED. AID PROJECT		

	CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE								
					NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	NHPP 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	STPU 80% FEDERAL 20% STATE	100% CITY OF JOLIET
					BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	OTHER	UTILITY	UTILITY
					0013	0013	0013	0013	0013	0013	0044	0043	0043
					SN 099-9901	SN 099-0239	SN 099-0101	SN 099-0166	SN 099-9904	SN 099-9903	URBAN	SN 099-0056	URBAN
					Ruby St.	Jackson St.	Cass St.	Jefferson St.	McDonough St.	Brandon Rd.	Bridge Office	I-80	City of Joliet
*	X1400311	BRIDGE ELECTRICAL INSTALLATION	EACH	6	1	1	1	1	1	1			
*	X1400312	DC DRIVE SYSTEM	EACH	1	1								
*	X1400313	SYSTEMS INTEGRATION	L SUM	1	0.13	0.13	0.13	0.13	0.13	0.13	0.11	0.11	
*	X1400314	BRIDGE CONTROL CCTV SYSTEM	EACH	7	1	1	1	1	1	1	1		
*	X1400315	WIRELESS BACKUP NETWORK	EACH	8	1	1	1	1	1	1	1	1	
*	X1400327	PUBLIC ADDRESS SYSTEMS	EACH	7	1	1	1	1	1	1	1		
	X0320017	FURNITURE REMOVAL, PROTECTION, RETURN	L SUM	1							1		
	X3400005	DEMOLITION - INTERIOR	L SUM	1							1		
	X0320044	WALL ASSEMBLY	L SUM	1							1		
	X0320045	EXTERIOR DOOR AND WINDOW ASSEMBLY	L SUM	1							1		
	X0320046	DOORS, FRAMES, AND HARDWARE	L SUM	1							1		
	X0320018	FINISHES	L SUM	1							1		
	X0320019	CASEWORK	L SUM	1							1		
	X0320039	TOILET ACCESSORIES	L SUM	1							1		

* - SPECIALTY ITEM

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED
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	PLOT DATE =	CHECKED - R.I. PETERS	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
PROJECT SUMMARY OF QUANTITIES - 4
SHEET NO. 6 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	6
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY (URBAN)	CONSTRUCTION CODE: NHPP 80% FEDERAL 20% STATE	CONSTRUCTION CODE: STPU 80% FEDERAL 20% STATE	CONSTRUCTION CODE: NHPP 80% FEDERAL 20% STATE	CONSTRUCTION CODE: NHPP 80% FEDERAL 20% STATE	CONSTRUCTION CODE: STPU 80% FEDERAL 20% STATE	CONSTRUCTION CODE: STPU 80% FEDERAL 20% STATE	CONSTRUCTION CODE: STPU 80% FEDERAL 20% STATE	CONSTRUCTION CODE: STPU 80% FEDERAL 20% STATE	CONSTRUCTION CODE: 100% CITY OF JOLIET
					BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	OTHER	UTILITY	UTILITY
					0013	0013	0013	0013	0013	0013	0044	0043	0043
					SN 099-9901	SN 099-0239	SN 099-0101	SN 099-0166	SN 099-9904	SN 099-9903	URBAN	SN 099-0056	URBAN
					Ruby St.	Jackson St.	Cass St.	Jefferson St.	McDonough St.	Brandon Rd.	Bridge Office	I-80	City of Joliet
	X0320043	FIRE EXTINGUISHERS	L SUM	1							1		
*	X0320048	PLUMBING WORK BRIDGE OFFICE	L SUM	1							1		
*	X0320049	MECHANICAL HVAC WORK BRIDGE OFFICE	L SUM	1							1		
*	X0320053	ELECTRICAL WORK BRIDGE OFFICE	L SUM	1							1		
*	X0320054	DIESEL ENGINE GENERATOR	EACH	1							1		
*	X1400328	AUTOMATIC TRANSFER SWITCH	EACH	1							1		
*	X1400329	SCADA SYSTEM	L SUM	1	0.143	0.143	0.143	0.143	0.143	0.143	0.142		
*	X1400330	RUBY STREET AERIAL CABLES	L SUM	1	1								
*	X1400331	JACKSON STREET AND MCDONOUGH STREET AERIAL CABLES	L SUM	1		0.5			0.5				
*	X1400332	CASS STREET AND JEFFERSON STREET AERIAL CABLES	L SUM	1			0.5	0.5					
*	X1400333	BRANDON ROAD AERIAL CABLES	L SUM	1						1			
*	X1400334	AERIAL CABLE SUPPORT SYSTEM	L SUM	1	1								
Ø	Z0076600	TRAINEES	HOUR	4000	4000								
Ø	Z0076604	TRAINEES - TRAINING PROGRAM GRADUATE	HOUR	4000	4000								

* - SPECIALTY ITEM

Ø 0042

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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
PROJECT SUMMARY OF QUANTITIES - 5
SHEET NO. 7 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	7
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

ELECTRICAL GENERAL NOTES:

1. General

1.01 All work shall comply with the current edition of the National Electrical Code in effect at the bid opening time, and all applicable state and/or local codes.

1.02 All Equipment, Raceways, Wiring, etc. shall be installed in a neat and workman like manner in accordance with NECA 1 (standard practice of good workmanship in electrical construction), and without violating any required clear working space (NEC 110.26).

1.03 In no way shall these plans be interpreted as requiring a violation of the National Electrical Code, or any other applicable Federal, State, or Local Code or regulation. In any case of dispute between these plans and the National Electrical Code, the more stringent requirement shall govern.

1.04 The installation of all equipment and materials shall comply with their respective manufacturers' recommendations and installation procedures.

1.05 The Contractor is required to deliver a complete, working, and safe electrical system.

1.06 Variations from these plans must be submitted to the Engineer for approval. All changes shall be reflected in the as-built drawings.

1.07 In addition to the materials, components, and equipment shown on the plans. provide all Raceways, Junction and Pull Boxes, Fittings, Conductors, Connectors, and other items required to provide a complete, functional, and safe installation.

1.08 The Contractor shall bear full responsibility for verification of all relevant dimensions, equipment specifications, electrical loads, circuit loads, and similar information prior to purchase and/or fabrication of equipment or materials. Equipment ratings and/or wire sizes shown on the plans shall be increased where required by the loads served.

1.09 All Equipment, Raceways, Wiring, etc. shown on these plans, or otherwise required, shall be new unless specifically noted otherwise.

1.10 Locations of Raceways, Cables, and Equipment shown are diagrammatic only. Exact locations shall be determined in the field by the Contractor and subject to the approval of the Engineer.

1.11 The Contractor is required to coordinate with the local Electric Utility Company for all electric service interruptions required by his work.

1.12 The Contractor is responsible for supplying any temporary power required.

1.13 Where details are not provided or fully developed, the Contractor shall provide the additional detail development necessary to provide and submit layout drawings and shop drawings for review.

1.14 All Rigid Metal Conduit shall be steel, Hot-Dip galvanized inside and outside.

2. Wiring materials & methods

2.01 Unless explicitly indicated otherwise, only the following wiring methods are permitted.
(1) All locations
1. Rigid Metal Conduit
2. Liquidtight Flexible Metal Conduit (LFMC), plastic jacket

2.02 All conduit connections to Motors and similar equipment shall be made with flexible conduit. Length of flexible conduit shall be not less than 18 inches but not more than 36 inches.

2.03 Rigid Conduits shall be supported within 18 inches of all terminations and at regular intervals not to exceed 6 feet. Flexible conduits shall be supported within 12 inches of all terminations and at regular intervals not to exceed 3 feet.

2.04 All Conduit connections to Boxes and Enclosures which do not have integral threaded hubs shall utilize weatherproof grounding type hubs or connectors. All Hubs and Connectors shall have insulated throats or be provided with insulated bushings.

2.05 Any Conduit routings shown on these plans are conceptual only. Actual routings shall be determined by the Contractor based on actual conditions and submitted to the Engineer for approval.

2.06 All conductors shall be stranded copper type XHHW-2, except where shown otherwise on the plans. The minimum size for field power and control wiring shall be 12 AWG. Conductor insulation shall have a 600V minimum rating.

2.07 Neutral Conductors shall not be shared between multiple branch circuits, except for designated multiwire lighting and receptacle circuits where clearly shown on the plans.

2.08 Conductor fill in raceways shall not exceed 40%. Minimum conduit size shall be $\frac{3}{4}$ inch.

2.09 Wiring in Enclosures, Cabinets, Boxes, etc. shall be neatly routed and bundled with PVC Cable Ties or placed in non-metallic wiring troughs.

2.10 Spare and un-terminated Conductors shall be capped, or connected to spare Terminal Blocks where available, and clearly identified as spares. One full turn of slack for all spare conductors shall be provided in all Enclosures,, Cabinet, Boxes, etc.

2.11 One full turn of slack shall be provided for all Conductors in all Pull Boxes, Junction Boxes, and Terminal Cabinets.

2.12 Raceways crossing expansion joints, or otherwise subject to movement, shall be provided with expansion and/or deflection fittings, or other approved means, to compensate for such movement. Each such expansion and/or deflection means shall be provided with an external copper bonding jumper, sized 6 AWG minimum. Provide adequate slack in conductors to accomodate the expansion.

2.13 Conductors splices shall be made only in Junction Boxes, Outlet or Device Boxes, and Equipment Enclosures. Splices shall be made only on Terminal Blocks, except for splices at Luminaries and wiring devices which shall utilize compression type, or similar approved, connectors. Limit use of set-screw type connectors to devices to be replaced during long term maintenance. Twist-on (wirenut) type connectors shall not be used. Terminal Blocks shall not have more than two conductors per terminal.

2.14 Layout of Terminal Blocks in Junction Boxes and Terminal Cabinets shall comply with the requirements for wire bending space given in NEC 312.6, except that the minimum space permitted shall be 2 inches. Proposed layouts including anticipated locations and sizes of knockouts shall be submitted for approval prior to fabrication.

2.15 A Conduit Body or Box shall be provided on at least one side of all flexible conduits.

2.16 Unless specifically indicated otherwise, Conduit and Cable entrances in damp and wet locations shall be made in the bottom of Cabinets and/or Enclosures.

2.17 Conductors with green colored insulation shall be used only for Grounding Conductors. Re-identification of Conductors with green colored insulation, such as with colored tape, is not permitted.

2.18 Fittings for use with flexible conduit shall be stainless steel with thermoplastic insulator and sealing ring.

ELECTRICAL GENERAL NOTES (CONTINUED):

3. Miscellaneous materials & methods

3.01 All Bolts, Nuts, Washers, Concrete Anchors, and similar hardware shall be type 316 stainless steel. All Concrete Anchors shall be epoxy adhesive type.

3.02 All bolted and similar connections shall utilize Lock Washers. Connections which do not permit the use of Lock Washers shall utilize an approved medium strength threadlocking adhesive.

3.03 Supports for electrical equipment shall be fabricated from type 316 stainless steel or type A36 steel hot-dip galvanized after fabrication.

3.04 The operating handle(s) of all manually operable devices shall not be less than 2 feet, nor more than 6'-7", above the floor.

3.05 Equipment Enclosures, Cabinets, Boxes, and similar items shall be installed plumb and securely fastened in place.

4. Identification

4.01 All Conductors shall be uniquely identified and clearly labeled with machine printed, weatherproof, non-shrink sleeve type labels.

4.02 All Terminal Blocks shall be clearly labeled, at each terminal position, with machine printed labels.

4.03 All Electrical Equipment Enclosures. Pull and Junction Boxes, and similar items shall be clearly labeled with engraved plastic weatherproof labels (white text on black background) attached with Stainless Steel Hardware.

4.04 The Contractor shall be responsible for developing a comprehensive wire numbering system and shall label all Wires, Cables, and Terminal Blocks. Identification numbers shall be coordinated for consistency and accuracy with numbers shown on the Contractor's wiring diagrams and shop drawings, field wiring diagrams, and any other diagrams showing the same item.

5. Grounding & bonding

5.01 Provide grounding and bonding of all systems per NEC Article 250.

5.02 All circuits shall include an equipment Grounding Conductor. Equipment Grounding Conductors shall be sized equal to the circuit Conductors, except where shown otherwise on the plans.

5.03 All grounding type Hubs and Connectors in a Box or Enclosure shall be bonded together and to the Box or Enclosure with a stranded copper bonding jumper sized equal to the largest equipment Grounding Conductor in the Box or Enclosure.

5.04 All Grounding Conductors within an Equipment Enclosure or Terminal Cabinet shall be terminated on a common uninsulated grounding bar.

6. Removals, salvage, & disposal

6.01 Except where specifically noted otherwise, only existing concrete embedded Raceways and Boxes may be abandoned in place. Existing underground Raceways, underground Boxes, and other underground equipment shall be abandoned in place, except where specifically noted otherwise.

6.02 Existing concrete embedded Raceways which are to be abandoned in place shall have all Conductors removed, be ground flush with the concrete, and filled with non-shrink grout flush with the concrete.

6.03 Existing concrete embedded boxes which are to be abandoned in place shall have all Conductors removed and be covered with a new blank galvanized steel cover.

6.04 The locations and characteristics of all Raceways, Boxes, and Equipment which are abandoned in place shall be clearly documented on the as-built drawings.

6.05 The Contractor shall give the Owner the option of salvaging all Electrical Equipment which is to be removed. The Contractor shall remove all equipment which the Owner wishes to salvage from the project site and deliver it to the location designated by the District 1 Engineer. All equipment which is to be salvaged shall be handled with care at all times to avoid damage.

6.06 All electrical equipment which is to be removed and the Owner does not wish to salvage shall become the property of the Contractor and shall be removed from the project site.

6.07 The Contractor shall bear full responsibility for proper disposal of removed equipment and materials in accordance with all applicable regulations.

6.08 Perform all removals in such a manner as to avoid damage to existing Equipment and/or Conductors which are to remain.

7. Working drawings & submittals

7.01 The Contractor shall be responsible for providing all required working drawings and product submittals, working in cooperation and communication with the Engineer in order to provide a complete, functional, and safe installation in accordance with the requirements and intents of these plans, the specifications, the contract documents, and all applicable codes.

7.02 All required working drawings and product descriptive data shall be submitted to the Engineer for review and approval. Such items must be approved by the Project Engineer prior to purchase of the related materials and/or undertaking of the related work.

7.03 Submit complete descriptive data for each item of equipment and material.

7.04 Wiring diagrams and schematics provided in these plans are for illustrating minimum requirements only. The Contractor shall bear full responsibility for developing all required diagrams, including field interconnection diagrams.

7.05 Wiring layouts and tabulations provided in these plans are for illustrating minimum requirements only. The Contractor shall bear full responsibility for developing the actual layouts and tabulations.

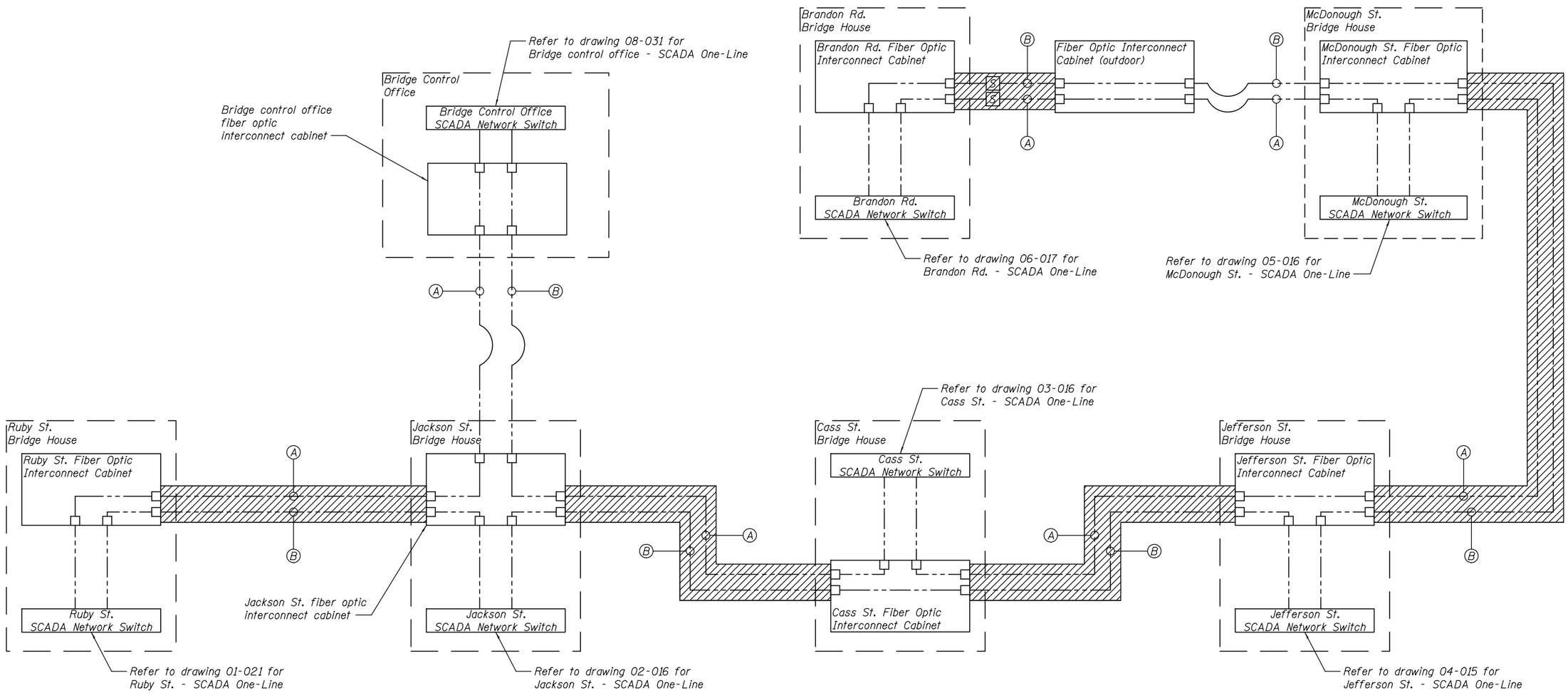
7.06 The Contractor shall develop all final mounting details for all equipment. Such details shall comply with typical details shown on these plans.

8. Work in the waterway

8.01 For any work requiring Work Barges in the waterways, the Work Barges shall have a Towboat present at all times.

9. Utility

9.01 Obtain complete ComEd information for each bridge and bridge office location prior to commencing work.



LEGEND

- Fiber optic connection
- (A) Conduit A
- (B) Conduit B
- [S] Fiber optic cable splice, mainline
- Bridge aerial cables
- Denotes portion of Fiber Optic Network to be installed under future separate Fiber Optic Contract

GENERAL NOTE:

1. General bridge interconnecting self-healing ring topology. See specific bridge house/office for site detail.

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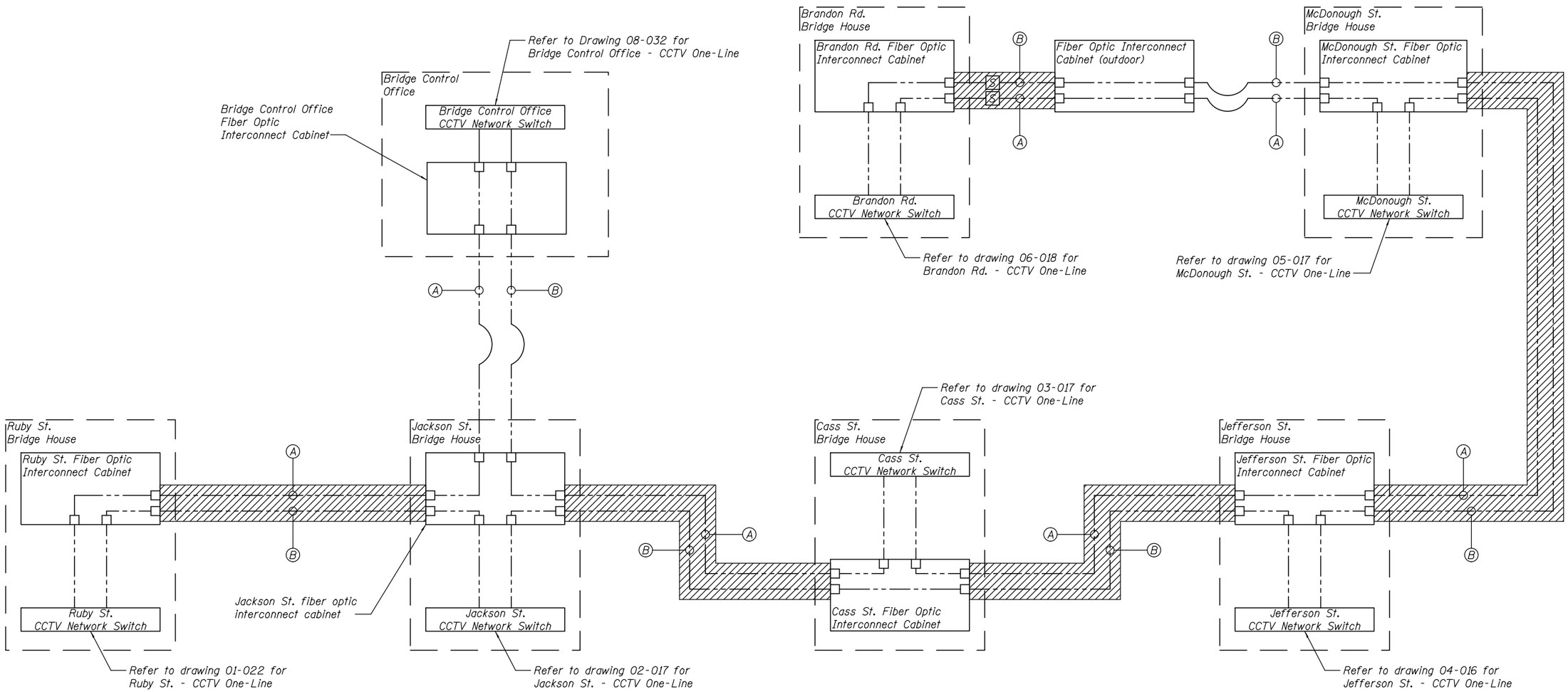
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
SCADA SYSTEM TOPOLOGY
SHEET NO. 10 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	10
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



LEGEND

- Fiber optic connection
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GENERAL NOTE:

1. General bridge interconnecting self-healing ring topology. See specific bridge house/office for site detail.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CCTV SYSTEM TOPOLOGY
SHEET NO. 11 OF 13 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	11
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

DISTRIBUTION CABLE FIBER ASSIGNMENTS				ORIGINATION	VARIES, SEE NOTE 1		
DISTRIBUTION CABLE DESIGNATION		DCF- TYPICAL, SEE NOTE 1		DESTINATION	VARIES, SEE NOTE 1		
BUFFER TUBE	FIBER	FIBER NO	ASSIGNMENT	BUFFER TUBE	FIBER NO	FIBER NO	ASSIGNMENT
BLUE	Blue 1	1	SCADA	SLATE	Blue 1	49	
	Orange 2	2	SCADA		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	CCTV	WHITE	Blue 1	61	
	Orange 2	14	CCTV		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	

NOTES

1. *Distribution cable fiber assignments are typical of all fiber distribution cables. Refer to sheet nos. 12 and 13 for system topologies. The contractor shall assign discrete labels to all fiber connections.*

LATERAL CABLE FIBER ASSIGNMENTS		
LCF- TYPICAL SCADA		
FIBER NO	FUNCTION	CONNECTION
1	SCADA IN TX	
2	SCADA IN RX	
3	SCADA OUT TX	
4	SCADA OUT RX	
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- TYPICAL CCTV		
FIBER NO	FUNCTION	CONNECTION
1	CCTV IN TX	
2	CCTV IN RX	
3	CCTV OUT TX	
4	CCTV OUT RX	
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		

NOTES

1. *Lateral cable fiber assignments, as shown, are typical at the Bridge Control Office, Ruby Street Bridge, Jackson Street Bridge, Cass Street Bridge, Jefferson Street Bridge, McDonough Street Bridge, and Brandon Road Bridge. The contractor shall assign discrete labels to all fiber connections.*

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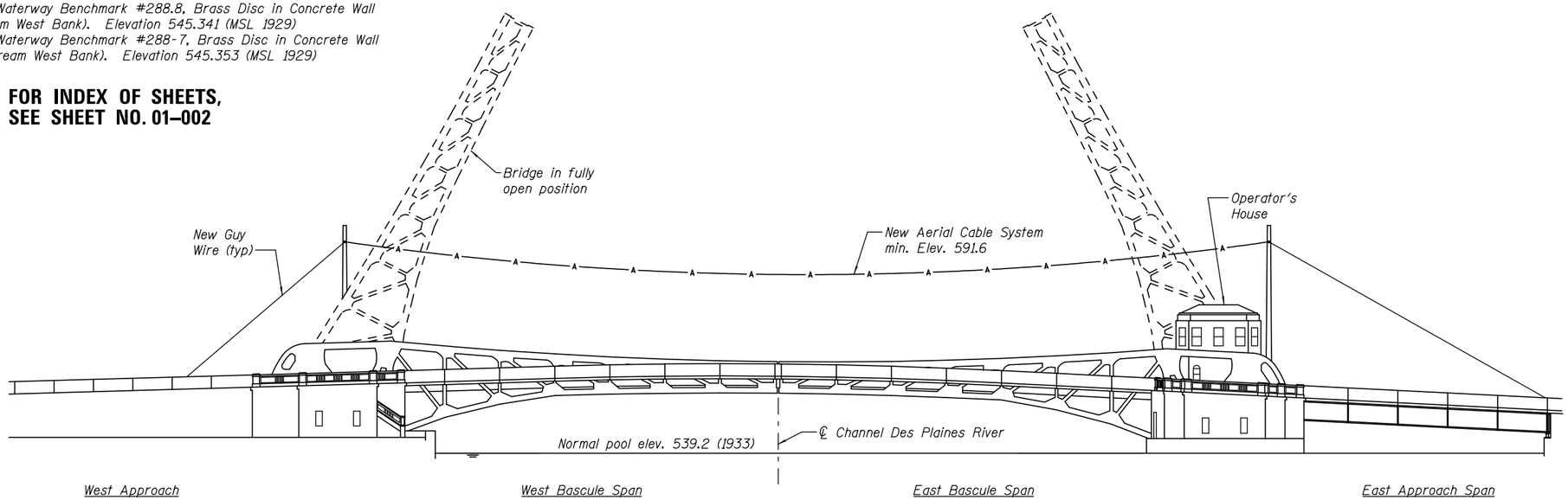
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
TWELVE FIBER LATERAL CABLE FIBER ASSIGNMENTS
SHEET NO. 13 OF 13 SHEETS

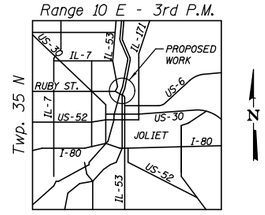
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VARIES	2011-045-I	WILL	466	13
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

Benchmark:
Illinois Waterway Benchmark #288.8. Brass Disc in Concrete Wall (Upstream West Bank). Elevation 545.341 (MSL 1929)
Illinois Waterway Benchmark #288-7. Brass Disc in Concrete Wall (Downstream West Bank). Elevation 545.353 (MSL 1929)

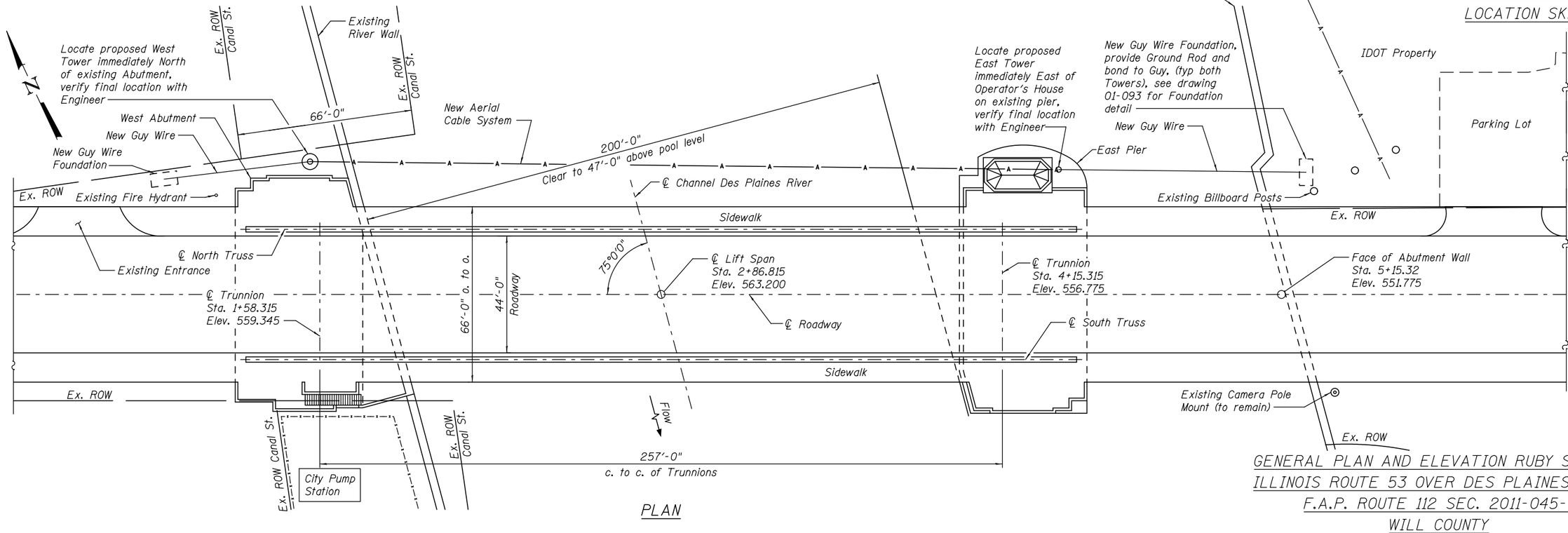
FOR INDEX OF SHEETS, SEE SHEET NO. 01–002



ELEVATION



LOCATION SKETCH



PLAN

GENERAL PLAN AND ELEVATION RUBY STREET
ILLINOIS ROUTE 53 OVER DES PLAINES RIVER
F.A.P. ROUTE 112 SEC. 2011-045-I
WILL COUNTY
STATION 2+86.815
STRUCTURE NO. 099-9901

RUBY, Drawing 01-001

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	14
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

INDEX OF SHEETS

RUBY, Drawing 01-002

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STATE OF ILLINOIS
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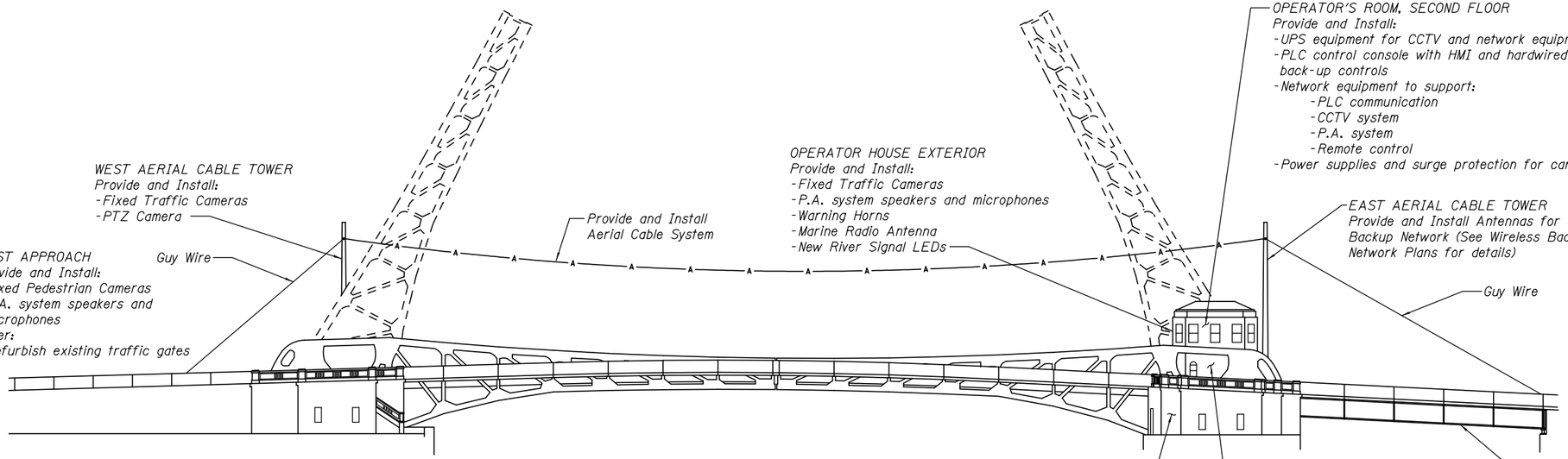
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – INDEX OF SHEETS
SHEET NO. 2 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	15
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



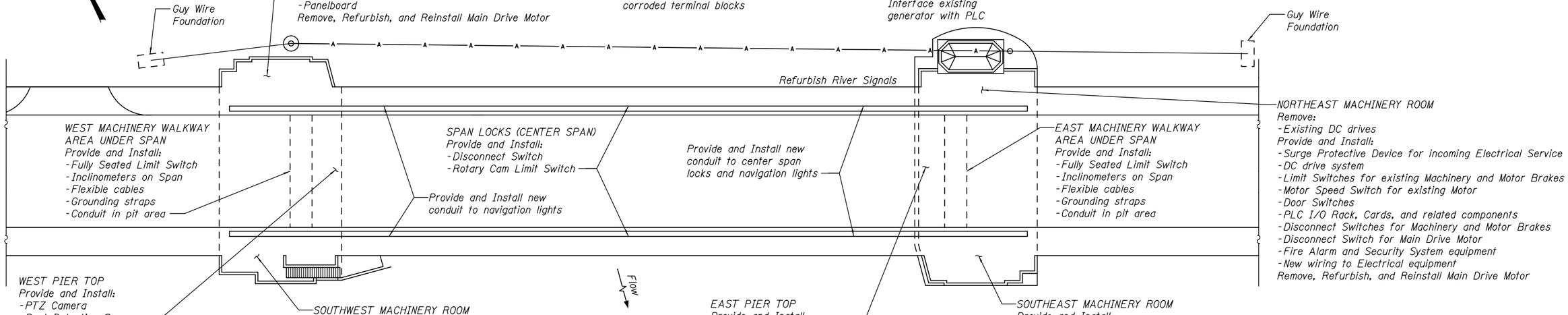
ELEVATION

NORTHWEST MACHINERY ROOM
Provide and Install:
-Limit Switches for existing Machinery and Motor Brakes
-Motor Speed Switch for existing Motor
-Door Switches
-Disconnect Switches for Machinery and Motor Brakes
-Disconnect Switch for Main Drive Motor
-Rotary Cam Limit Switch with resolver
-Panelboard
Remove, Refurbish, and Reinstall Main Drive Motor

NORTHWEST MACHINERY ROOM (CONT'D)
Provide and Install:
-New wiring to Electrical equipment
-Power supplies and surge protection for cameras
-Power supplies, surge protection, amplifiers, and transformers for P.A. system
-Terminal blocks in submarine cabinet to replace corroded terminal blocks

ELECTRICAL ROOM, FIRST FLOOR
Remove:
-Existing relay logic control system
Provide and Intall:
-Power Monitor (interface to PLC for remote monitoring)
-PLC control panel
-UPS equipment for PLC
-Drive control and communication interface with PLC
-Intrusion detection

ELECTRICAL ROOM, FIRST FLOOR (CONT'D)
Provide and Install:
-Fire Alarm and Security System equipment
-Fiber Optic Interconnection equipment
-New wiring to Electrical equipment
Other:
-Interface the existing Automatic Transfer Switch to PLC for remote monitoring



PLAN

RUBY, Drawing 01-003

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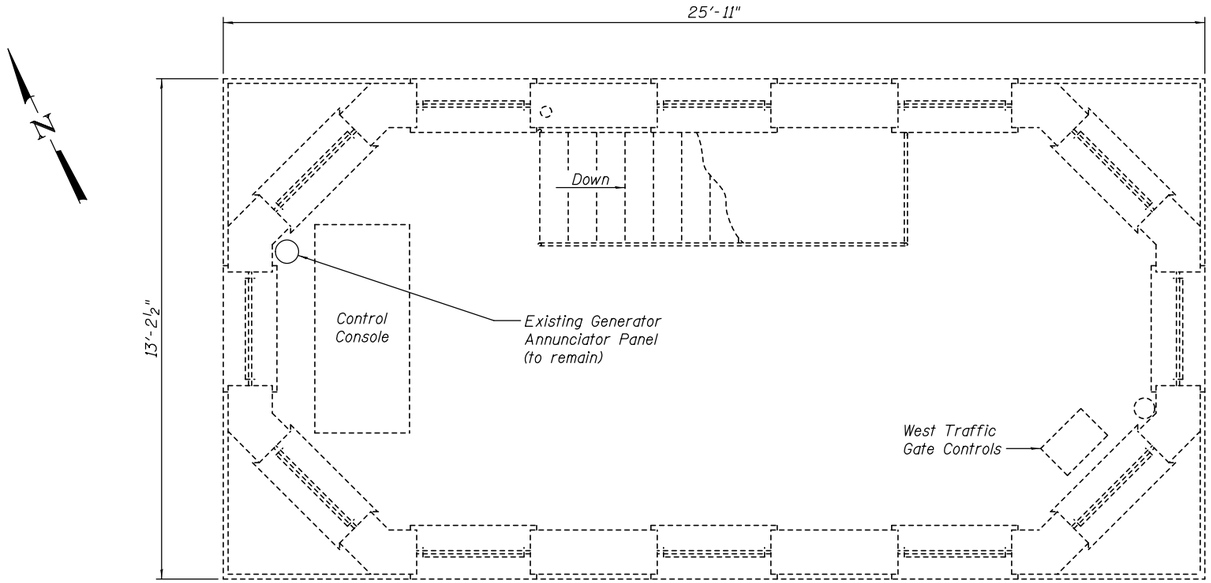
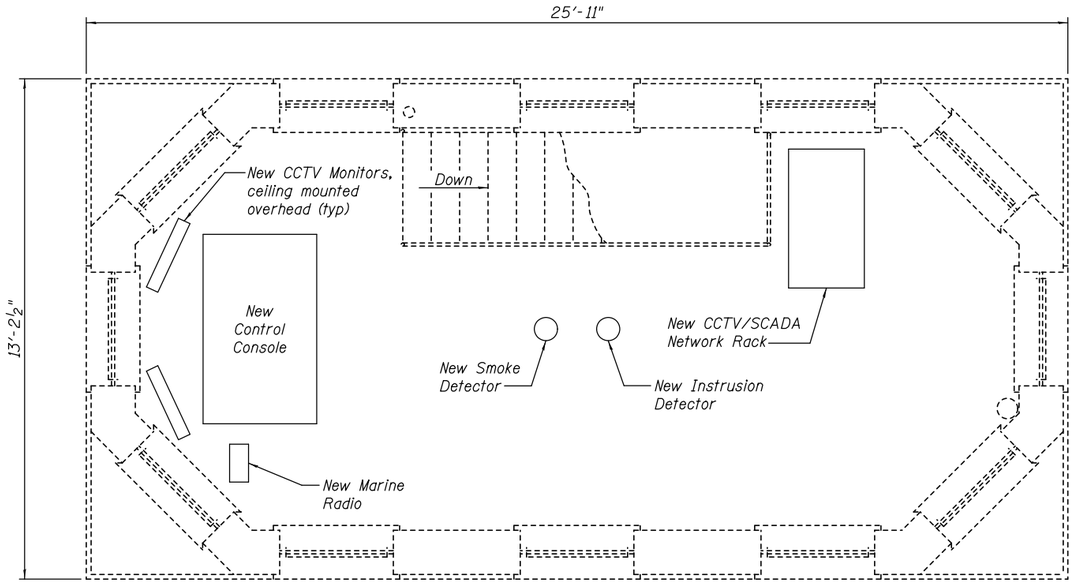
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – ELECTRICAL SCOPE PLAN AND ELEVATION
SHEET NO. 3 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	16
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



PLAN

EXISTING OPERATOR'S ROOM SECOND FLOOR LAYOUT



PLAN

PROPOSED OPERATOR'S ROOM SECOND FLOOR LAYOUT

RUBY, Drawing 01-004

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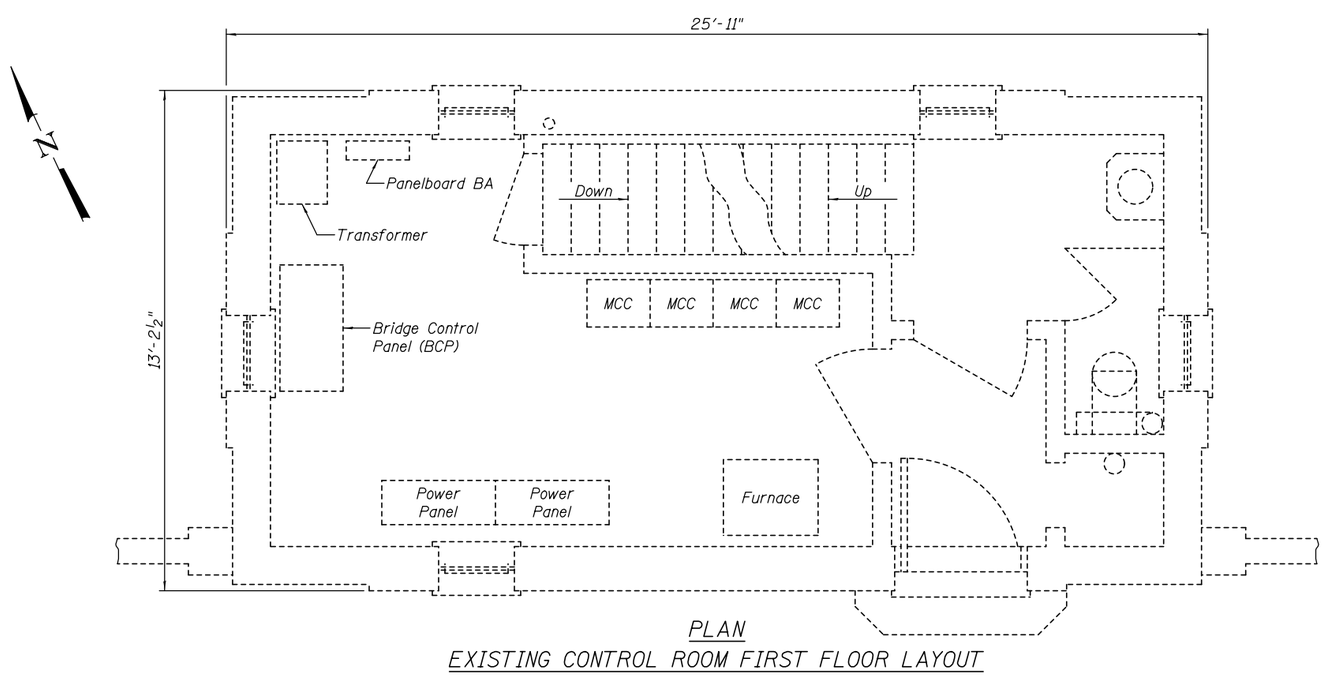
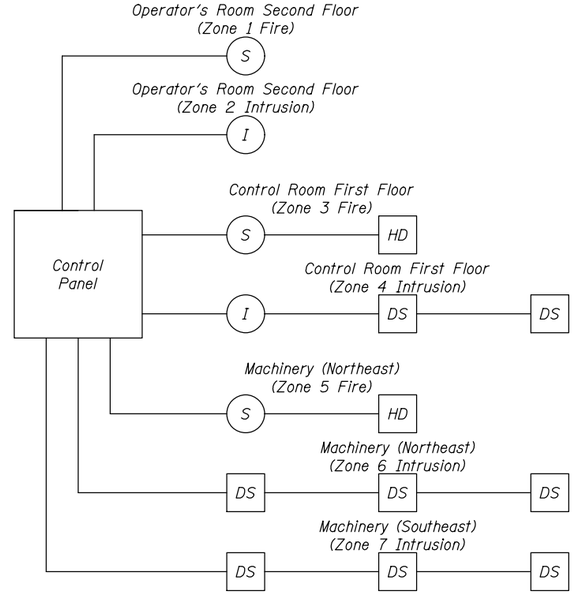
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – OPERATOR'S HOUSE DETAILS – 1
SHEET NO. 4 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	17
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

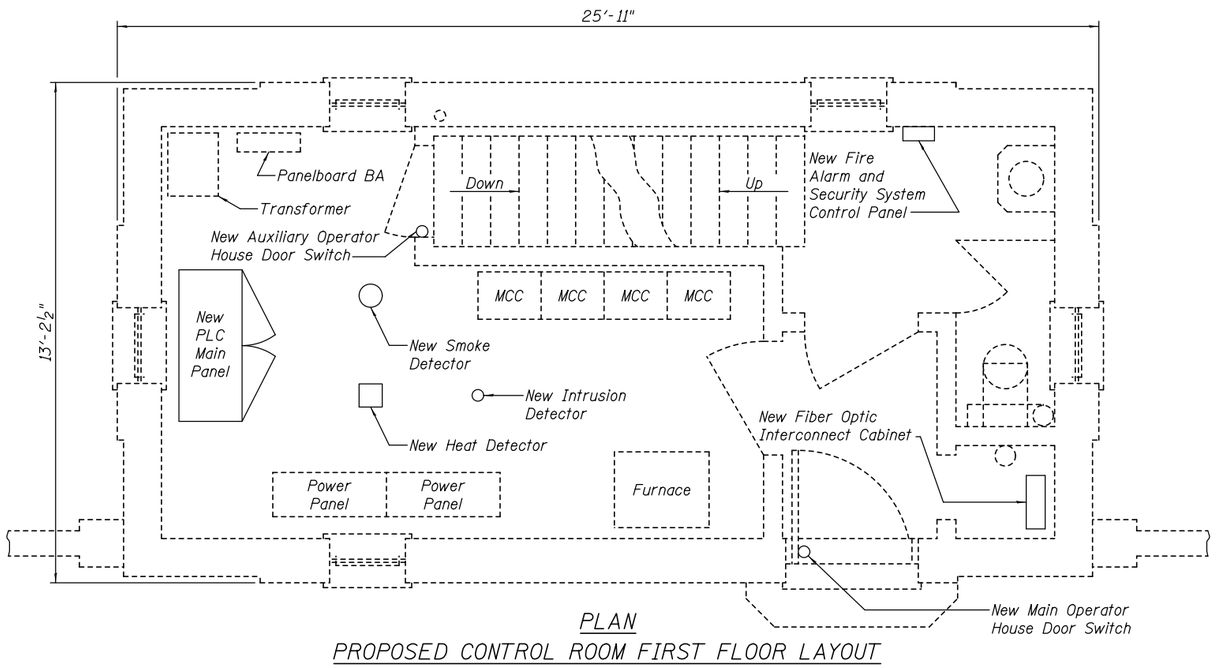


PLAN

EXISTING CONTROL ROOM FIRST FLOOR LAYOUT



FIRE ALARM AND SECURITY SYSTEM



PLAN

PROPOSED CONTROL ROOM FIRST FLOOR LAYOUT

LEGEND

- S — Smoke Detector
- I — Intrusion Detector
- HD — Heat Detector
- DS — Door Switch

RUBY, Drawing 01-005

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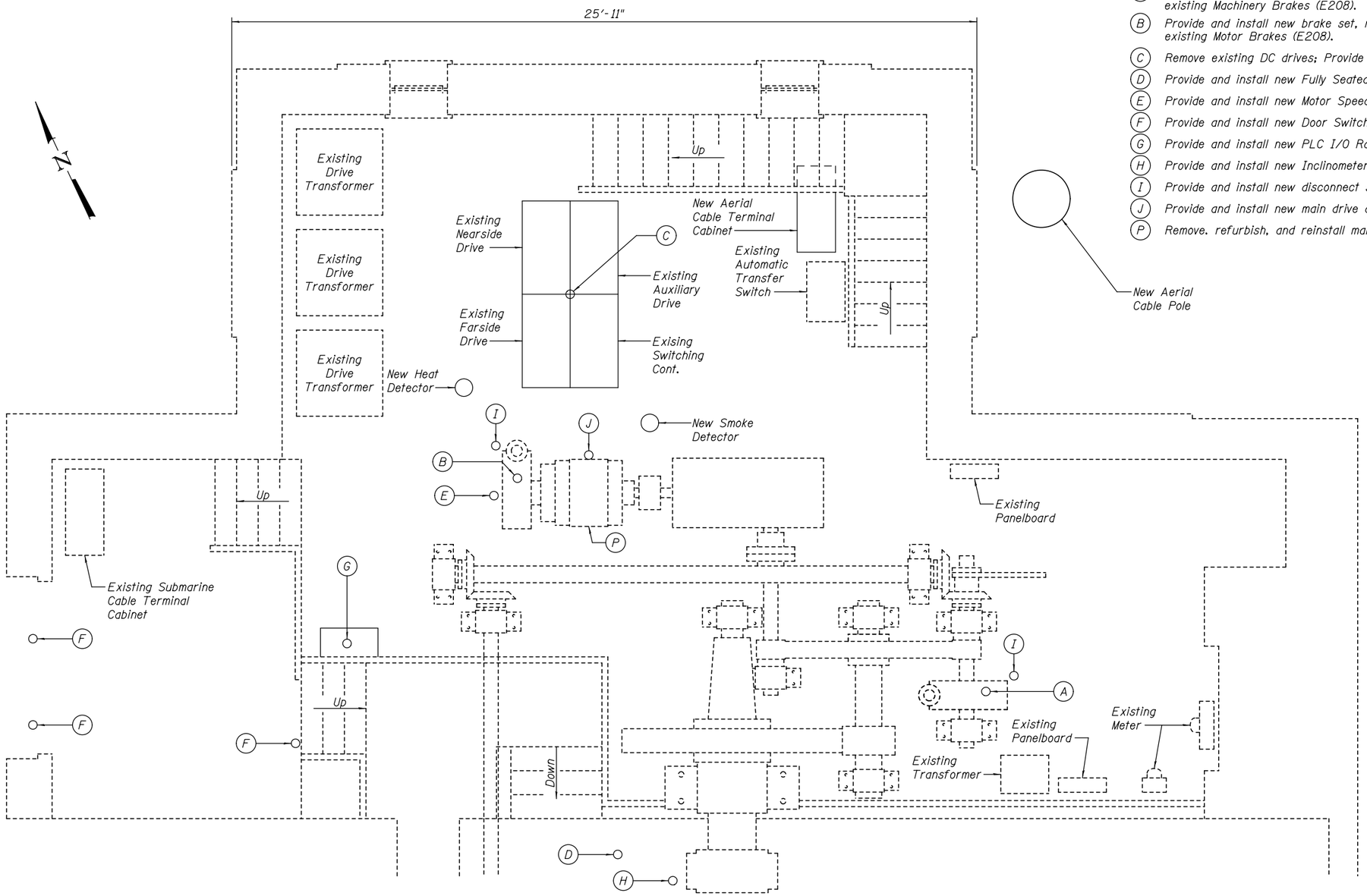
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – OPERATOR'S HOUSE DETAILS – 2

SHEET NO. 5 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	18
		CONTRACT NO. 60P55		
		ILLINOIS	FED. AID PROJECT	



PLAN

MACHINERY ROOM - NORTHEAST

(A) Provide and install new brake set, released, and hand released Limit Switches for existing Machinery Brakes (E208).

(B) Provide and install new brake set, released, and hand released Limit Switches for existing Motor Brakes (E208).

(C) Remove existing DC drives; Provide and install new DC drive system.

(D) Provide and install new Fully Seated Limit Switch (E208).

(E) Provide and install new Motor Speed Switch for existing Motor (E209).

(F) Provide and install new Door Switches (E210).

(G) Provide and install new PLC I/O Rack, Cards, Enclosure, and related components.

(H) Provide and install new Inclinometers (2) on Span (E207).

(I) Provide and install new disconnect switch (E106).

(J) Provide and install new main drive disconnect switch (E104).

(P) Remove. refurbish, and reinstall main drive motor.

NOTES:

1. Contractor is alerted to the fact that cabinets may need to be custom sized to fit available space.
2. Electrical equipment shall be installed to provide adequate NEC working space.

RUBY, Drawing 01-006

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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – NEARSIDE NORTH MACHINERY LAYOUT
SHEET NO. 6 OF 97 SHEETS

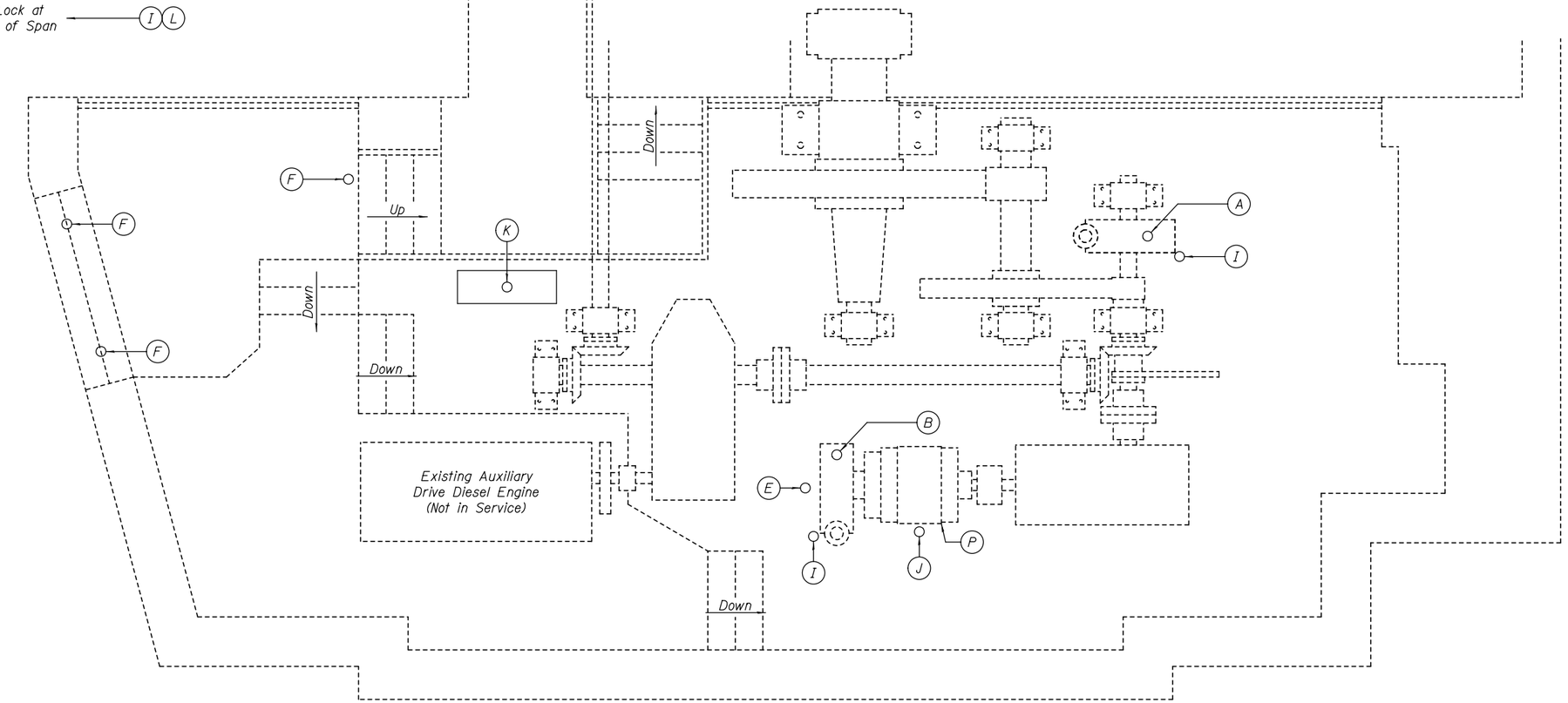
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	19
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

Replace in-kind, all grounding straps to movable span

(N)

Provide New Strain Relief Grips for flexible conduits at connections to Junction Boxes

Span Lock at Center of Span — (I) (L)



PLAN
MACHINERY ROOM - SOUTHEAST

(A) Provide and install new brake set, released, and hand released Limit Switches for existing Machinery Brakes (E208).

(B) Provide and install new brake set, released, and hand released Limit Switches for existing Motor Brakes (E208).

(E) Provide and install new Motor Speed Switch for existing Motor (E209).

(F) Provide and install new Door Switches (E210).

(I) Provide and install new disconnect switch (E106).

(J) Provide and install new main drive disconnect switch (E104).

(K) Provide and install new rotary cam limit switch with resolver (E206).

(L) Provide and install new rotary cam limit switch (E204).

(N) Replace flexible conduits and grounding straps to movable span.

(P) Remove, refurbish, and reinstall main drive motor.

RUBY, Drawing 01-007

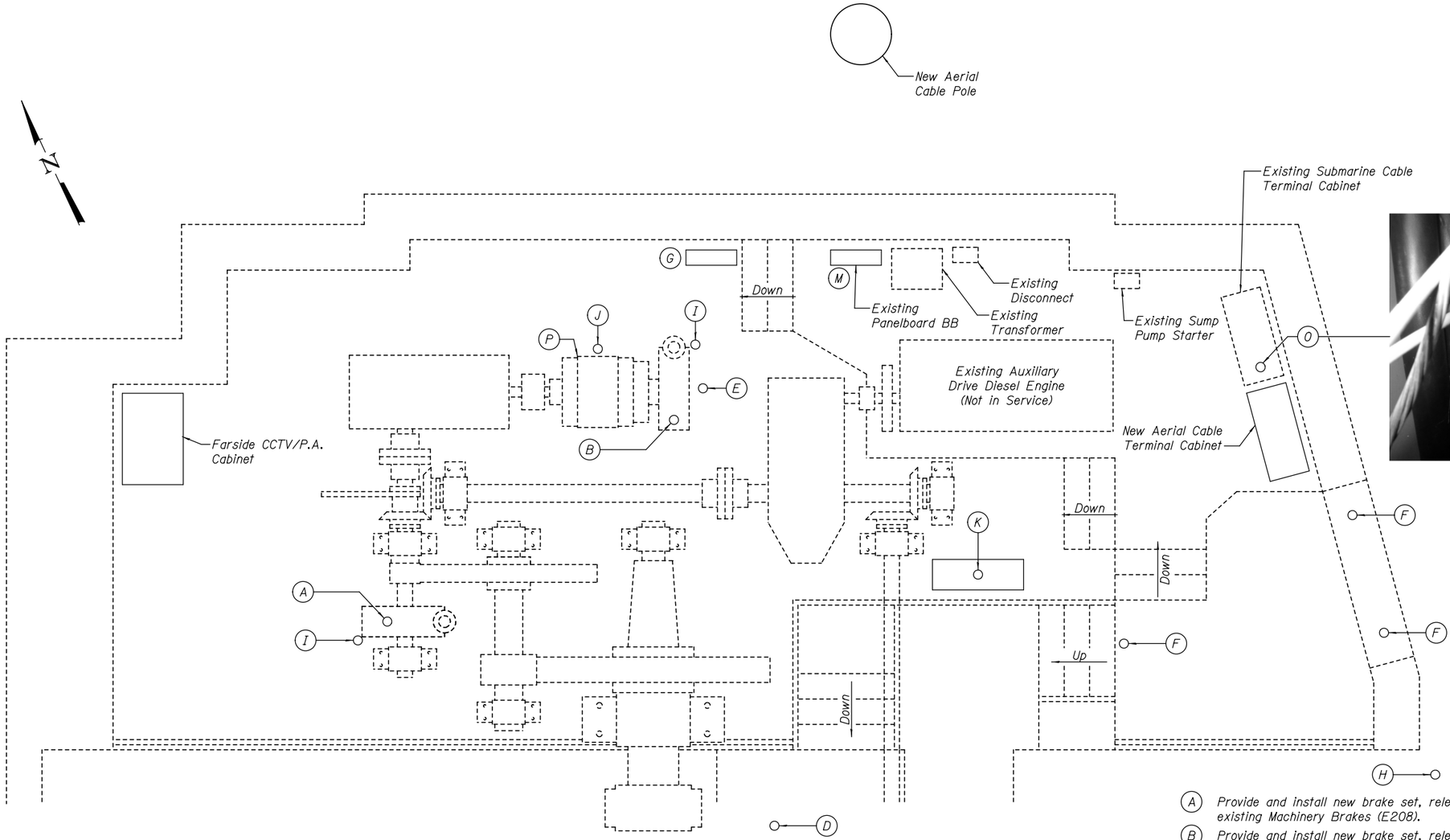
MODJESKI and MASTERS
Experience great bridges.

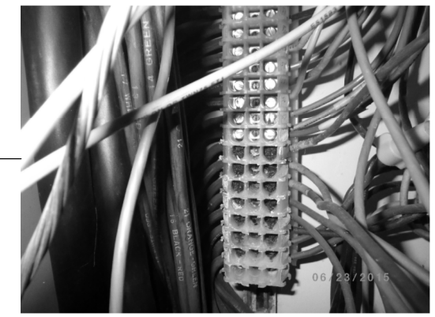
USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – NEARSIDE SOUTH MACHINERY LAYOUT
SHEET NO. 7 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	20
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			





PLAN

MACHINERY ROOM - NORTHWEST

(A) Provide and install new brake set, released, and hand released Limit Switches for existing Machinery Brakes (E208).

(B) Provide and install new brake set, released, and hand released Limit Switches for existing Motor Brakes (E208).

(D) Provide and install new Fully Seated Limit Switch (E208).

(E) Provide and install new Motor Speed Switch for existing Motor (E209).

(F) Provide and install new Door Switches (E210).

(G) Provide and install new PLC I/O Rack, Cards, Enclosure, and related components.

(H) Provide and install new Inclinometers (2) on Span (E207).

(I) Provide and install new disconnect switch (E106).

(J) Provide and install new main drive disconnect switch (E104).

(K) Provide and install new rotary cam limit switch with resolver (E206).

(M) Replace existing panelboard (E110).

(O) Replace corroded Terminal Blocks in Submarine Cable Terminal Cabinet.

(P) Remove. refurbish, and reinstall main drive motor.

RUBY, Drawing 01-008

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

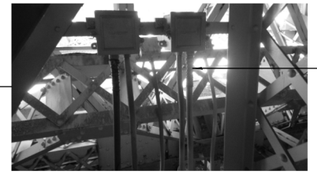
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – FARSIDE NORTH MACHINERY LAYOUT
SHEET NO. 8 OF 97 SHEETS

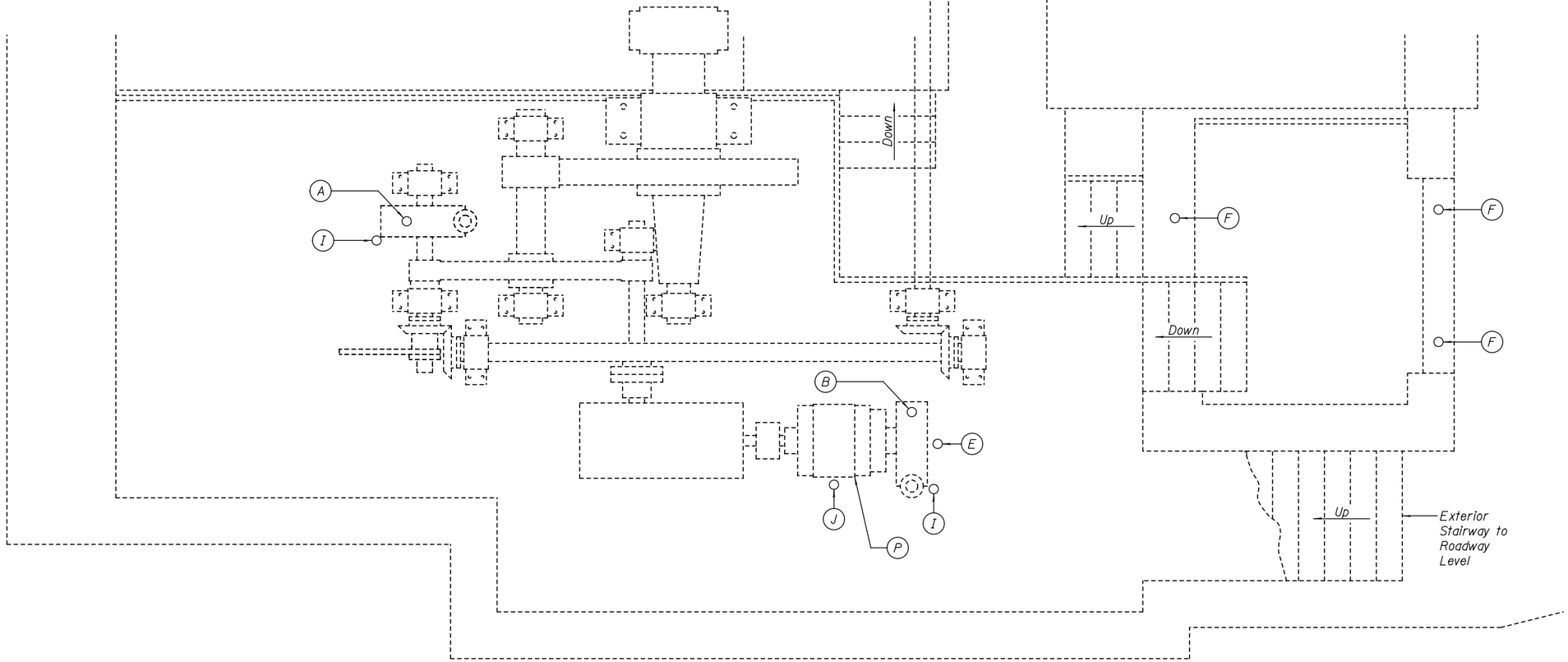
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	21
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

Replace in-kind, all grounding straps to movable span

N



Provide New Strain Relief Grips for flexible conduits at connections to Junction Boxes



PLAN
MACHINERY ROOM - SOUTHWEST

(A) Provide and install new brake set, released, and hand released Limit Switches for existing Machinery Brakes (E208).

(B) Provide and install new brake set, released, and hand released Limit Switches for existing Motor Brakes (E208).

(E) Provide and install new Motor Speed Switch for existing Motor (E209).

(F) Provide and install new Door Switches (E210).

(I) Provide and install new disconnect switch (E106).

(J) Provide and install new main drive disconnect switch (E104).

(N) Replace flexible conduits and grounding straps to movable span.

(P) Remove, refurbish, and reinstall main drive motor.

RUBY, Drawing 01-009

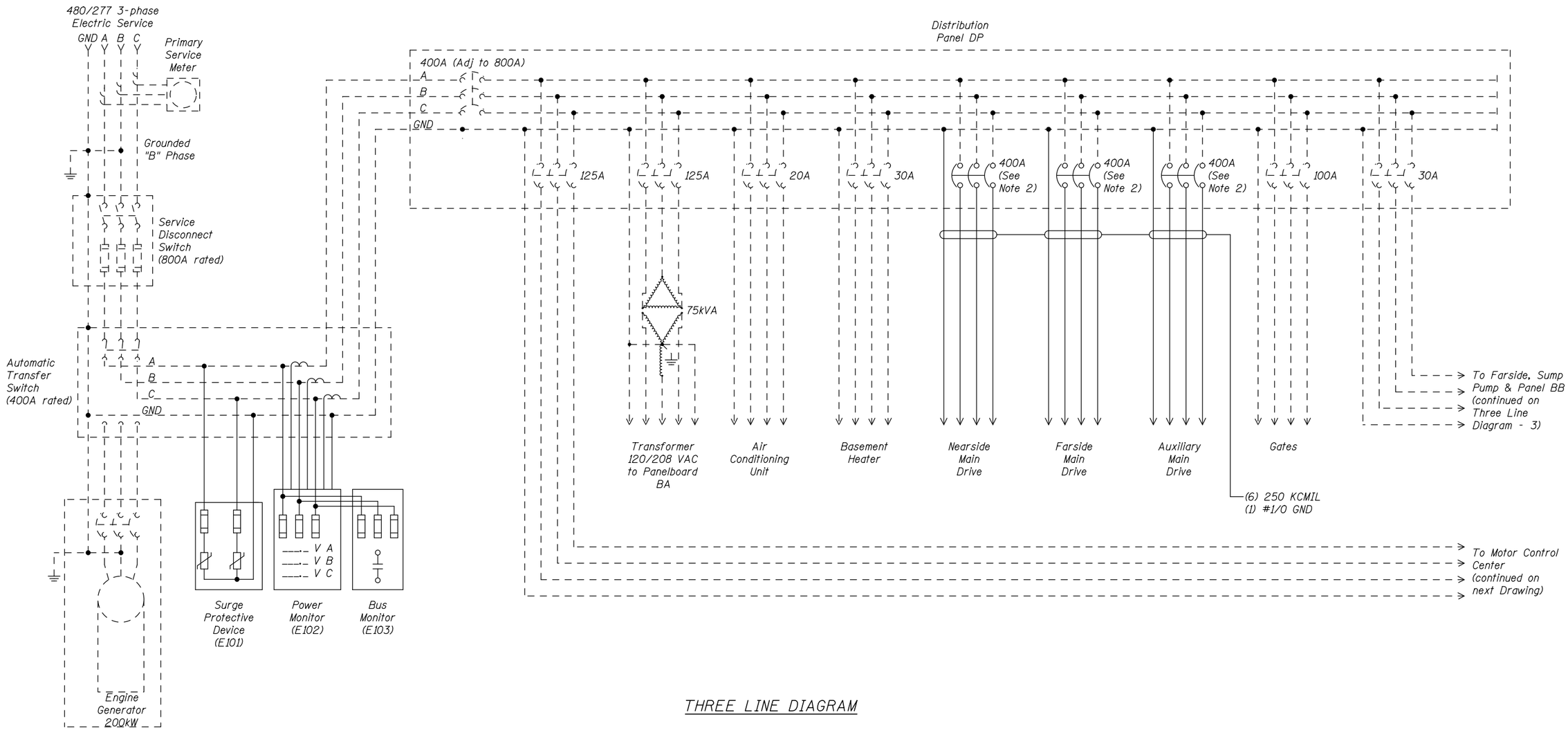
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – FARSIDE SOUTH MACHINERY LAYOUT
SHEET NO. 9 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	22
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



THREE LINE DIAGRAM

LEGEND

- - - - - Existing Equipment, Wiring, and Conduit
——— New Equipment, Wiring, and Conduit

NOTES:

1. The Contractor shall provide an appropriately sized Nema 12 electrical enclosure for the power monitor, bus monitor, and associated components.
2. Breaker frame size shall be 400A. Set trip amps to lower value per drive manufacturer recommendations.

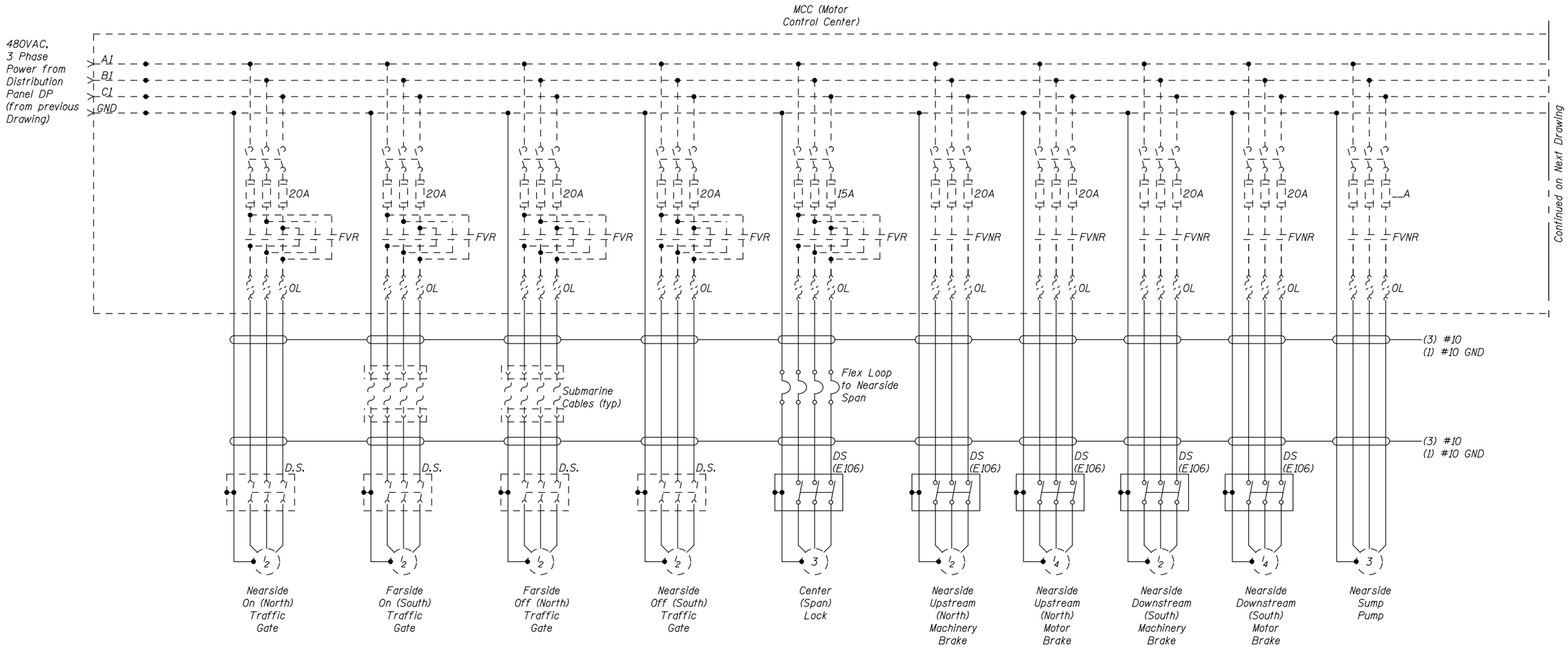
RUBY, Drawing 01-010

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - L.V. BORDEN	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – THREE LINE DIAGRAM – 1
SHEET NO. 10 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	23
		CONTRACT NO. 60P55		
		ILLINOIS FED. AID PROJECT		



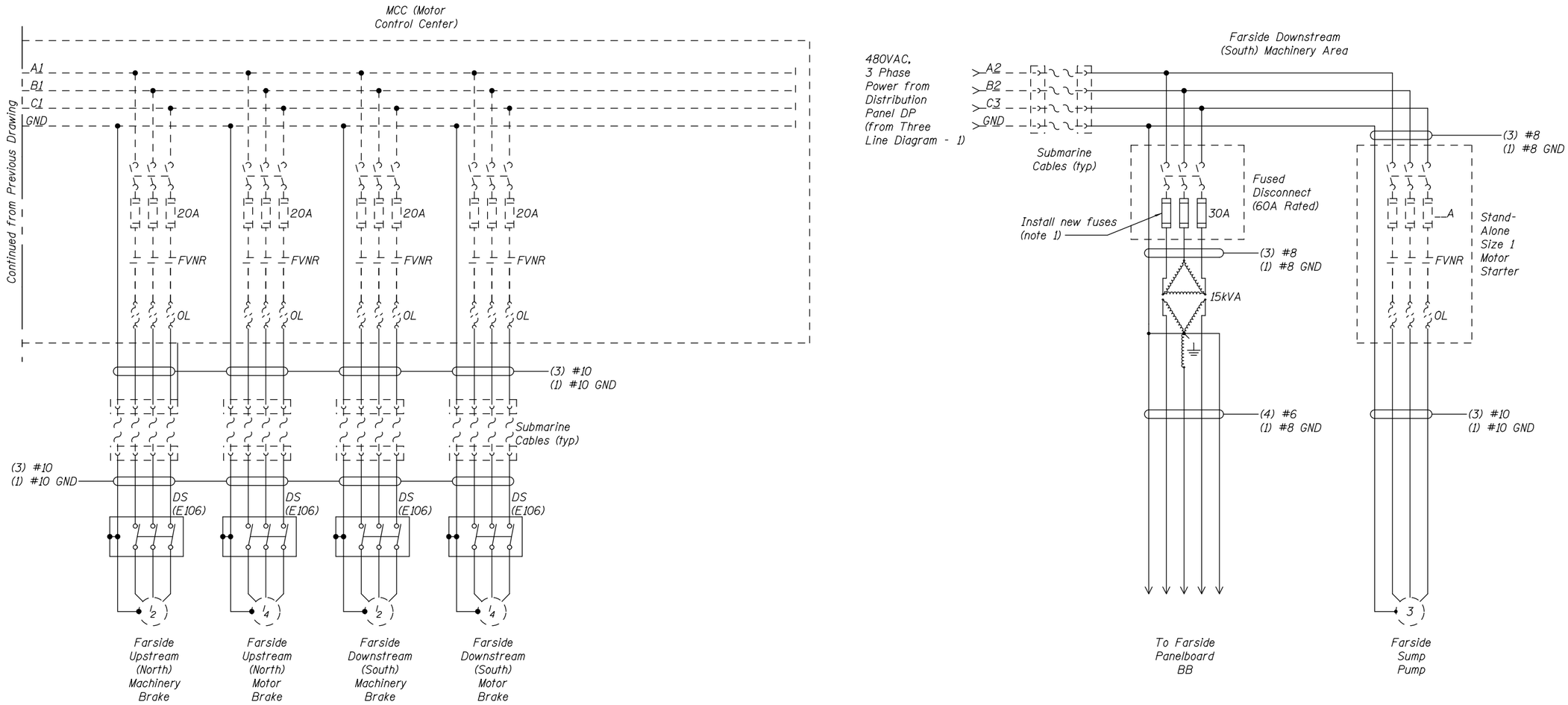
THREE LINE DIAGRAM

LEGEND

- – – – – Existing Equipment, Wiring, and Conduit
- ——— New Equipment, Wiring, and Conduit
- (#) Motor with HP

RUBY, Drawing 01-011

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION RUBY STREET – THREE LINE DIAGRAM – 2	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - L.V. BORDEN	REVISED ___			112	2011-045-I	WILL	466	24
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___					CONTRACT NO. 60P55		
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___		SHEET NO. 11 OF 97 SHEETS			ILLINOIS	FED. AID PROJECT	



THREE LINE DIAGRAM - EXISTING EQUIPMENT

LEGEND

- – – – – Existing Equipment, Wiring, and Conduit
- ——— New Equipment, Wiring, and Conduit
- (#) Motor with HP

NOTES:

1. Fuses shall be Class RK5, dual element, current-limiting, time-delay rated for 600VAC, 200KAIC.

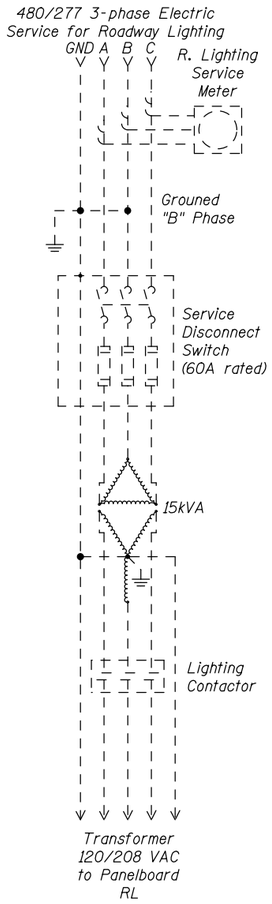
RUBY, Drawing 01-012

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___	

MODJESKI and MASTERS
Experience great bridges.

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – THREE LINE DIAGRAM – 3
SHEET NO. 12 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	25
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



THREE LINE DIAGRAM - EXISTING EQUIPMENT

LEGEND

- - - - - Existing Equipment, Wiring, and Conduit
———— New Equipment, Wiring, and Conduit

NOTES:

1. This drawing is included for reference only. No modifications to the equipment are required..

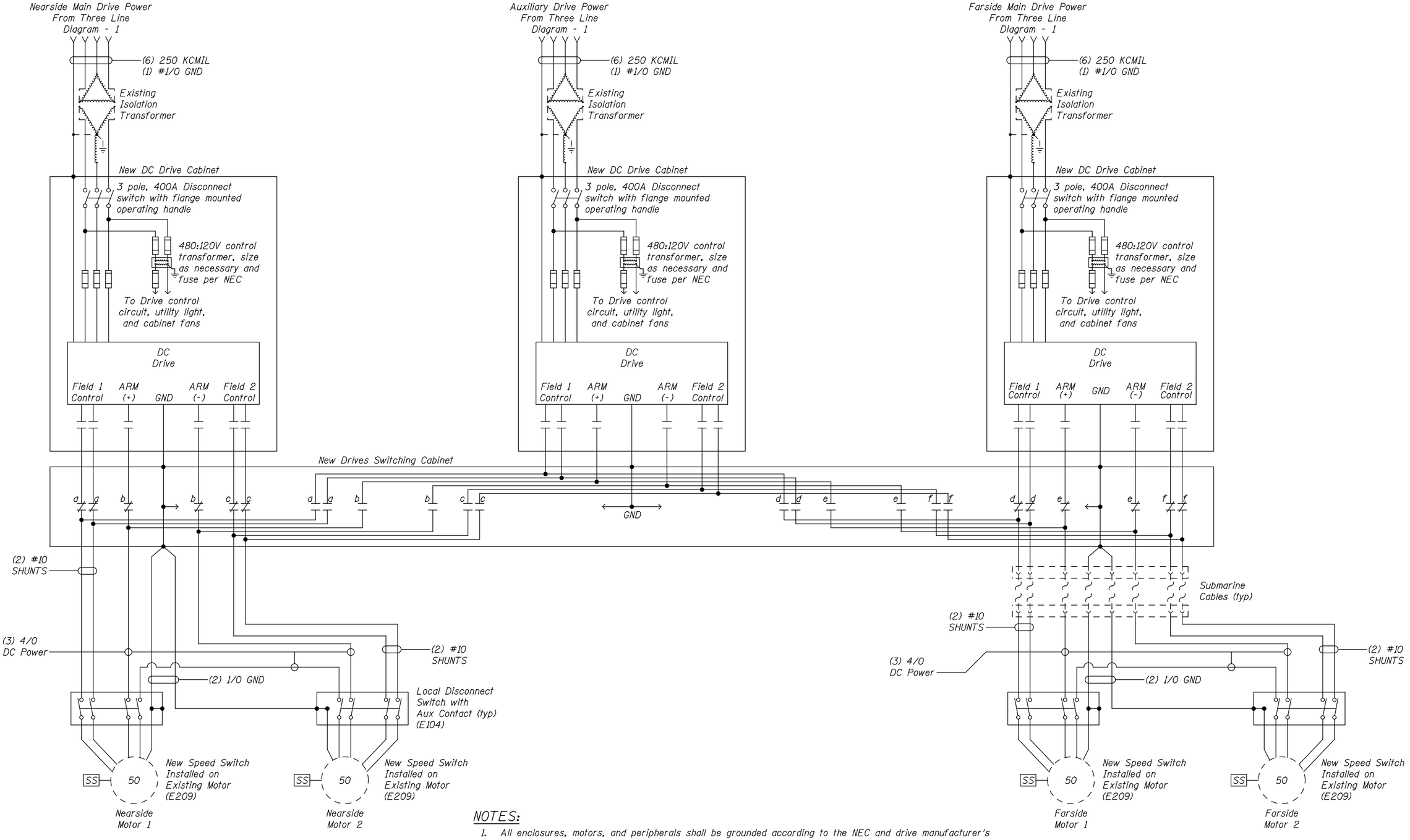
RUBY, Drawing 01-013

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - L.V. BORDEN	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – THREE LINE DIAGRAM – 4
SHEET NO. 13 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	26
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. All enclosures, motors, and peripherals shall be grounded according to the NEC and drive manufacturer's recommendations.
2. Contractor is alerted to the fact that cabinets may need to be custom sized to fit available space in existing machinery area and to provide NEC working space around cabinets.
3. Provide fuse or circuit breaker protection for DC drives as recommended by drive manufacturer.
4. Existing isolation transformers are permitted, but not required, to be reused depending on drive manufacturer's recommendations.

LEGEND

- - - - - Existing Equipment, Wiring, and Conduit
——— New Equipment, Wiring, and Conduit
(#) Motor with HP

RUBY, Drawing 01-014

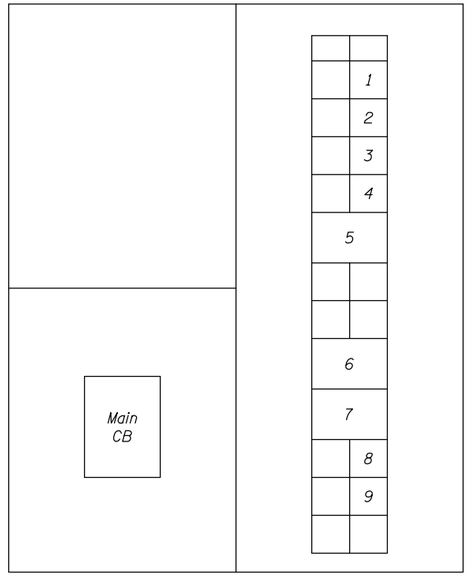
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED	___
	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	___
PLOT DATE =	CHECKED - K.M. GABLE	REVISED	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – THREE LINE DIAGRAM – 5
SHEET NO. 14 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	27
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



ELEVATION

EXISTING DISTRIBUTION PANEL DP LAYOUT

Scale:None

DISTRIBUTION PANEL DP

Voltage:	277/480V	Location:	Operator House Electrical Room
Phase / Wire:	3 Ph / 3W	Fed From:	Bridge Service via Automatic Transfer Sw.
Manufacturer / Model:	Square-D / QED	Mounting Enclosure:	Freestanding / Nema 1
Bus Amperes:	800		
Main Circuit Breaker:	Adj. Trip at 400A / 800A Frame		
Short Circuit:	65,000 AIC at 480VAC		

Description	Load(Amps) A	B	C	Breaker Poles	Amps		Breaker Amps	Poles	Load(Amps) A	B	C	Description
Air Conditioning Unit	7.2	7.2	7.2	3	20	1 2	100	3	-	-	-	Gates
Motor Control Center	19.3	19.3	19.3	3	125	3 4	125	3	90.3	90.3	90.3	75kVA Trans / BA Panel
Nearside Main Drive	260	260	260	3	400	5 6	400	3	260	260	260	Farside Main Drive
Aux Drive	-	-	-	3	400	7 8	30	3	18.1	18.1	18.1	Farside Sump Pump & Panel BB
Basement Heater	-	-	-	3	30	9						

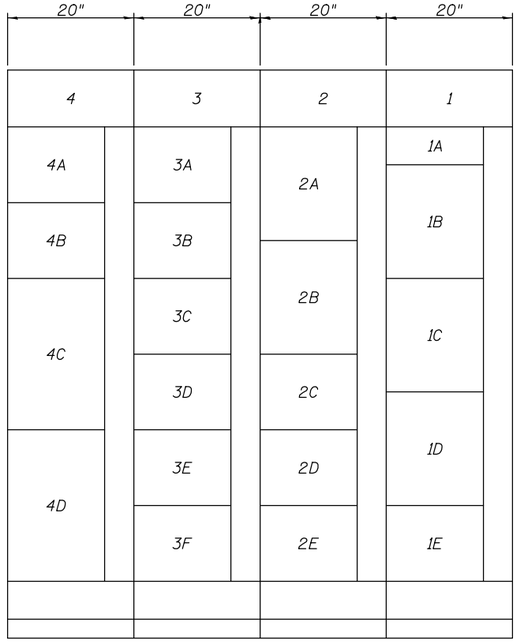
EXISTING DISTRIBUTION PANEL DP SCHEDULE

NOTES:

1. The Contractor shall field verify all DP loads served, DP layout, and ratings.
2. This drawing is included for reference, no modifications other than breaker adjustments are anticipated.

RUBY, Drawing 01-015

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION RUBY STREET – DISTRIBUTION PANEL LAYOUT	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - L.V. BORDEN	REVISED ___			112	2011-045-I	WILL	466	28
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___					CONTRACT NO. 60P55		
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___		SHEET NO. 15 OF 97 SHEETS			ILLINOIS	FED. AID PROJECT	



ELEVATION
EXISTING MOTOR CONTROL CENTER (MCC) LAYOUT

Scale:None

MOTOR CONTROL CENTER DATA

Voltage: 480V
Phase / Wire: 3 Ph / 3W
Bus Amperes: 600A Horizontal / 300A Vertical
Manufacturer / Model: Square D / Model 5, Class 8998
Enclosure: Nema Type 1
Braced for: 10,000 Symmetrical Amps

Unit Loc.	Description	Motor HP	Unit Type
1A	Incoming Main Lugs	-	ML
1B	Nearside On (North) Traffic Gate	1/2	FVR
1C	Farside On (South) Traffic Gate	1/2	FVR
1D	Farside Off (North) Traffic Gate	1/2	FVR
1E	Space	-	SP
2A	Nearside Off (South) Traffic Gate	1/2	FVR
2B	Center (Span) Lock	3	FVR
2C	Nearside Upstream (North) Machinery Brake	1/2	FVNR
2D	Nearside Upstream (North) Motor Brake	1/4	FVNR
2E	Space	-	SP
3A	Nearside Downstream (South) Machinery Brake	1/2	FVNR
3B	Nearside Downstream (South) Motor Brake	1/4	FVNR
3C	Nearside Sump Pump	3	FVNR
3D	Farside Upstream (North) Machinery Brake	1/2	FVNR
3E	Farside Upstream (North) Motor Brake	1/4	FVNR
3F	Space	-	SP
4A	Farside Downstream (South) Machinery Brake	1/2	FVNR
4B	Farside Downstream (South) Motor Brake	1/4	FVNR
4C	Space	-	SP
4D	Space	-	SP

Unit Types:
CB - Circuit Breaker Disconnect
FD - Fused Disconnect
FVNR - Full Voltage, Non Reversing Motor Starter
FVR - Full Voltage, Reversing Motor Starter
ML - Main Lugs
SP - Space

NOTES:

1. The Contractor shall field verify all MCC loads served.

RUBY, Drawing 01-016

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – MCC LAYOUT
SHEET NO. 16 OF 97 SHEETS

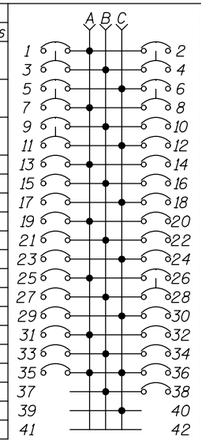
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	29
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

PANELBOARD BA

Voltage: 120/208V
Phase / Wire: 3 Ph / 4W
Bus Amperes: 400
Main Circuit Breaker: 250A
Short Circuit: 42,000 AIC

Location: Operator House Electrical Room
Fed From: DP via 75kVA Transformer
Mounting Enclosure: Surface / Nema 1

Description	Load(Amps) A	B	C	Breaker Poles	Amps		Breaker Amps	Poles	Load(Amps) A	B	C	Description
Downstream Receptacles - South Wall	-	-	-	2	100	1 3	100	2	-	-	-	Spare
Electric Toilet	-	-	-	2	30	5 7	100	2	-	-	-	Furnace
BCP Panel (Controls)	-	-	-	2	60	9 11	20	1				(Unknown Use)
Recept, 2nd floor	-	-	-	1	20	13	20	1				(Unknown Use)
1" Lights d.stream&catwalk	-	-	-	1	20	15	20	1				Recepts, upstream low. lev.
Receptacle downstream	-	-	-	1	20	17	20	1				Light, upstream, lower
BR Sump Pump outlet	-	-	-	1	20	19	20	1	-	-	-	Spare
R. Center Lock Receptacle	-	-	-	1	20	21	20	1				Traffic gate heater
Yel. Spare J.Box upstream	-	-	-	1	20	23	20	1				Spare
Drive Units Light	-	-	-	1	20	25	100	2	-	-	-	Spare
Drive Units Power	-	-	-	1	20	27						
Drive Units Spare	-	-	-	1	20	29	20	1	-	-	-	Spare
Aux. Engine	-	-	-	1	20	31	20	1	-	-	-	Hot Water Tank
Aux. Engine	-	-	-	1	20	33	20	1	-	-	-	Water Pipe Heat Tape
Aux. Engine	-	-	-	1	20	35	20	1	-	-	-	(20 FL Upstream)
						37	40	1	-	-	-	Generator Heater
						39						
						41						



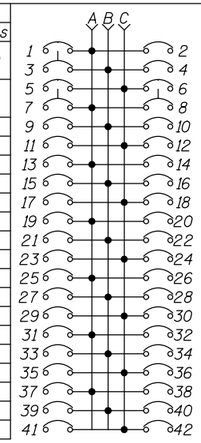
EXISTING PANELBOARD BA SCHEDULE

PANELBOARD BA

Voltage: 120/208V
Phase / Wire: 3 Ph / 4W
Bus Amperes: 400
Main Circuit Breaker: 250A
Short Circuit: 42,000 AIC

Location: Operator House Electrical Room
Fed From: DP via 75kVA Transformer
Mounting Enclosure: Surface / Nema 1
Manufacturer: Square-D, Type NQOD

Description	Load(Amps) A	B	C	Breaker Poles	Amps		Breaker Amps	Poles	Load(Amps) A	B	C	Description
Downstream Receptacles - South Wall	30	30	-	2	100	1 3	20	1	6	-	-	N.S. Traffic&Gate Lts, Gongs
Electric Toilet	16	-	16	2	30	5 7	20	1	-	6	-	F.S. Traffic&Gate Lts, Gongs
PLC Controls	-	12	-	1	20	9 11	100	2	70	-	70	Furnace
PLC Panel Auxiliary	-	-	5	1	20	13	20	1	-	6	-	(Unknown Use, Verify)
Recept, 2nd floor	6	-	-	1	20	15	20	1	-	-	6	(Unknown Use, Verify)
1" Lights d.stream&catwalk	-	6	-	1	20	17	20	1	6	-	-	Recepts, upstream low. lev.
Receptacle downstream	-	-	2	1	20	19	20	1	-	5	-	Light, upstream, lower
BR Sump Pump outlet	2	-	-	1	20	21	20	1	-	-	10	Traffic gate heater
R. Center Lock Receptacle	-	4	-	1	20	23	20	1	4	-	-	Span Navigation Lights
Yel. Spare J.Box upstream	-	-	2	1	20	25	20	1	-	3	-	Pier Navigation Lights
Drive Units Light	5	-	-	1	20	27	20	1	-	-	8	Nearside CCTV Cameras
Drive Units Power	-	5	-	1	20	29	20	1	2	-	-	Fire/Security System
Drive Units Spare	-	-	5	1	20	31	20	1	-	8	-	Network UPS / Rack
Aux. Engine (Verify)	-	-	-	1	20	33	20	1	-	-	8	CCTV System / Rack
Aux. Engine (Verify)	-	-	-	1	20	35	20	1	12	-	-	Hot Water Tank
Aux. Engine (Verify)	-	-	-	1	20	37	20	1	-	8	-	Water Pipe Heat Tape
Signal (Warning) Horn	1	-	-	1	20	39	20	1	-	-	6	(20 FL Upstream)
River Signal Lights	-	1	-	1	20	41	40	1	-	-	-	Spare
Nearside Boat Detection	-	-	1	1	20		20	1	-	20	-	Generator Heater
							20	1	-	-	8	Public Address System



A	B	C
160	114	147

Total Connected Load = 160 Amps/Phase
Demand Factor = 65%
Demand Load = 104 Amps/Phase

PROPOSED PANELBOARD BA SCHEDULE (EXISTING PANELBOARD WITH PROPOSED CIRCUITS)

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Rearrange circuits and provide new nreakers as shown in panelboard BA.
3. The Contractor shall provide a neat typewritten or computer printed circuit legend with circuit descriptions for each panelboard.
4. Circuits shall be arranged as required to balance loading.
5. Power for PLC and Remote I/O racks shall utilize the same (A, B, or C) phase where fed from the same power source.
6. The Contractor shall investage usage of three circuits labeled for use with Aux Engine. If existing circuits are not utilized, remove conductors and label as spares.

RUBY, Drawing 01-017

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – PANELBOARD SCHEDULE – 1
SHEET NO. 17 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	30
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

PANELBOARD EMA

Voltage: 120/240V
Phase / Wire: 1 Ph / 3W
Bus Amperes: 100A
Main Circuit Breaker: 100A (Transfer Switch Feed)
Short Circuit: 10,000 AIC

Location: Nearside North Machinery Area (Basement)
Fed From: Panelboard BA / Transfer Switch
Mounting Enclosure: Surface / Nema 1

Description	Load(Amps) A	Load(Amps) B	Breaker Poles	Breaker Amps			Breaker Amps	Breaker Poles	Load(Amps) A	Load(Amps) B	Description
(BA Panel Feed)	-	-	2	100	1	2	20	1	-	-	RED
YEL	-	-	1	20	3	4	20	1	-	-	South Wall Receptacle
BR	-	-	1	20	5	6	20	1	-	-	Heat Tape
BK	-	-	1	20	7	8	20	1	-	-	Intercom
Fixture	-	-	1	20	9	10	20	1	-	-	Marine Siren
Camera	-	-	1	20	11	12	20	1	-	-	Intercom
					13	14	20	1	-	-	Spare
					15	16					
					17	18					

A B

EXISTING PANELBOARD EMA SCHEDULE

PANELBOARD RL

Voltage: 120/240V
Phase / Wire: 1 Ph / 3W
Bus Amperes: 100A
Main Circuit Breaker: 100A
Short Circuit: 10,000 AIC

Location: Nearside North Machinery Area (Basement)
Fed From: Service via 15kVA Transformer/Contactor
Mounting Enclosure: Surface / Nema 1

Description	Load(Amps) A	Load(Amps) B	Load(Amps) C	Breaker Poles	Breaker Amps		Breaker Amps	Breaker Poles	Load(Amps) A	Load(Amps) B	Load(Amps) C	Description
Nearside Roadway Lighting	-	-	-	2	20	1	2	20	2	-	-	-	Farside Roadway Lighting
Nearside Truss Lighting	-	-	-	1	20	3	4					
Nearside Truss Lighting	-	-	-	1	20	5	6	20	1	-	-	-	Farside Truss Lighting
Spare	-	-	-	1	20	7	8	20	1	-	-	-	Farside Truss Lighting
Spare	-	-	-	1	20	9	10	20	1	-	-	-	Spare
						11	12	20	1	-	-	-	Spare

A B

EXISTING PANELBOARD RL SCHEDULE
(SEPARATE SERVICE FOR ROADWAY LIGHTING)

PANELBOARD BB

Voltage: 120/240V
Phase / Wire: 1 Ph / 3W
Bus Amperes: 100A
Main Circuit Breaker: N/A
Short Circuit: 10,000 AIC

Location: Farside North Machinery Area
Fed From: Distribution Panel DP via 15kVA Trans.
Mounting Enclosure: Surface / Nema 1

Description	Load(Amps) A	Load(Amps) B	Breaker Poles	Breaker Amps			Breaker Amps	Breaker Poles	Load(Amps) A	Load(Amps) B	Description
	-	-	1	20	1	2	20	1	-	-	Lighting
Lighting	-	-	1	20	3	4	20	1	-	-	Receptacle
Receptacle	-	-	1	20	5	6	20	1	-	-	Heater
Receptacle	-	-	1	20	7	8	20	1	-	-	
	-	-	1	20	9	10	20	1	-	-	
	-	-	1	20	11	12	20	1	-	-	
	-	-	1	20	13	14	20	1	-	-	
Heater	-	-	1	40	15	16	20	1	-	-	
					17	18					
					19	20					

A B

EXISTING PANELBOARD BB SCHEDULE

PANELBOARD BB

Voltage: 120/208V
Phase / Wire: 3 Ph / 4W
Bus Amperes: 100A
Main Circuit Breaker: 50
Short Circuit: 10,000 AIC

Location: Farside North Machinery Area
Fed From: Distribution Panel DP via 15kVA Trans.
Mounting Enclosure: Surface / Nema 4X

Description	Load(Amps) A	Load(Amps) B	Load(Amps) C	Breaker Poles	Breaker Amps		Breaker Amps	Breaker Poles	Load(Amps) A	Load(Amps) B	Load(Amps) C	Description
Receptacle	6	-	-	1	20	1	2	20	1	5	-	-	Lighting
Lighting	-	5	-	1	20	3	4	20	1	-	6	-	Receptacle
Heater	-	-	20	1	40	5	6	20	1	-	-	-	Spare
Receptacle	6	-	-	1	20	7	8	20	1	4	-	-	Farside Network Equipment
Farside Remote I/O	-	3	-	1	20	9	10	20	1	-	8	-	Heater
Farside Remote I/O Auxiliary	-	-	3	1	20	11	12	20	1	-	-	-	Spare
Farside Boat Detection	1	-	-	1	20	13	14	20	1	8	-	-	Farside CCTV Cameras
Farside Mach. Area Alarm	-	1	-	1	20	15	16	15	-	-	-	-	Spare
Spare	-	-	-	-	20	17	18	15	-	-	-	-	Spare

A	B	C
30	23	23

Total Connected Load = 30 Amps/Phase
Demand Factor = 65%
Demand Load = 20 Amps/Phase

A B C

PROPOSED PANELBOARD BB SCHEDULE (E110)

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Remove idle circuits from panelboard EMA when existing CCTV equipment has been removed.
3. Remove existing panelboard BB. Provide and install new panelboard BB.
4. Circuits shall be arranged as required to balance loading.
5. The Contractor shall provide a neat typewritten or computer printed circuit legend with circuit descriptions for each panelboard.
6. Power for PLC and Remote I/O racks shall utilize the same (A, B, or C) phase where fed from the same power source.

RUBY, Drawing 01-018

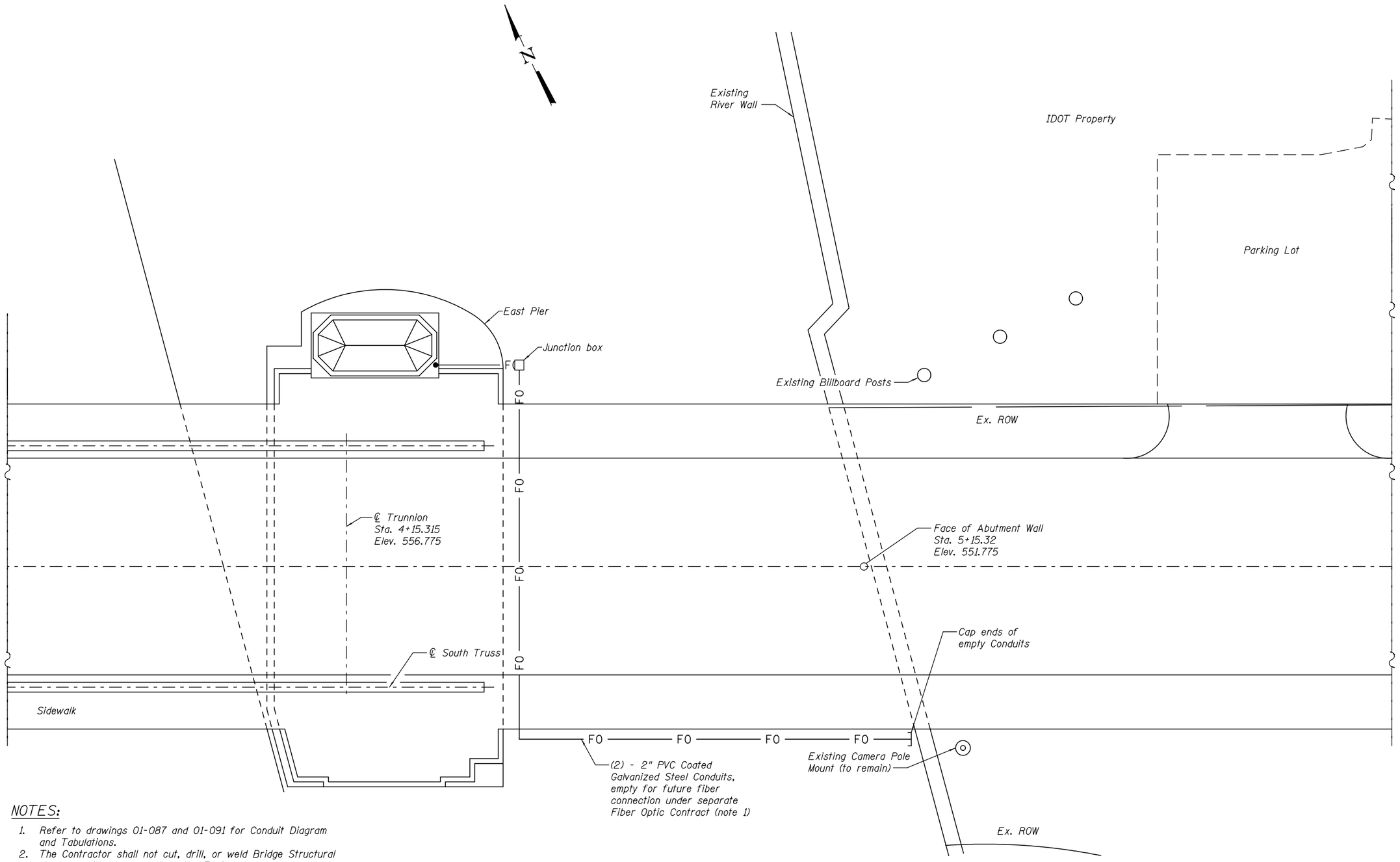
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – PANELBOARD SCHEDULE – 2
SHEET NO. 18 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	31
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. Refer to drawings 01-087 and 01-091 for Conduit Diagram and Tabulations.
2. The Contractor shall not cut, drill, or weld Bridge Structural Members without approval by the Engineer.
3. Provide conduit expansion/deflection fittings at all structural expansion joints and at locations subject to structural movement.
4. Refer to drawing 02-095 for typical details on mounting conduits to structure.

10' 5' 0 10' 20'
1"=10'-0"

RUBY, Drawing 01-019

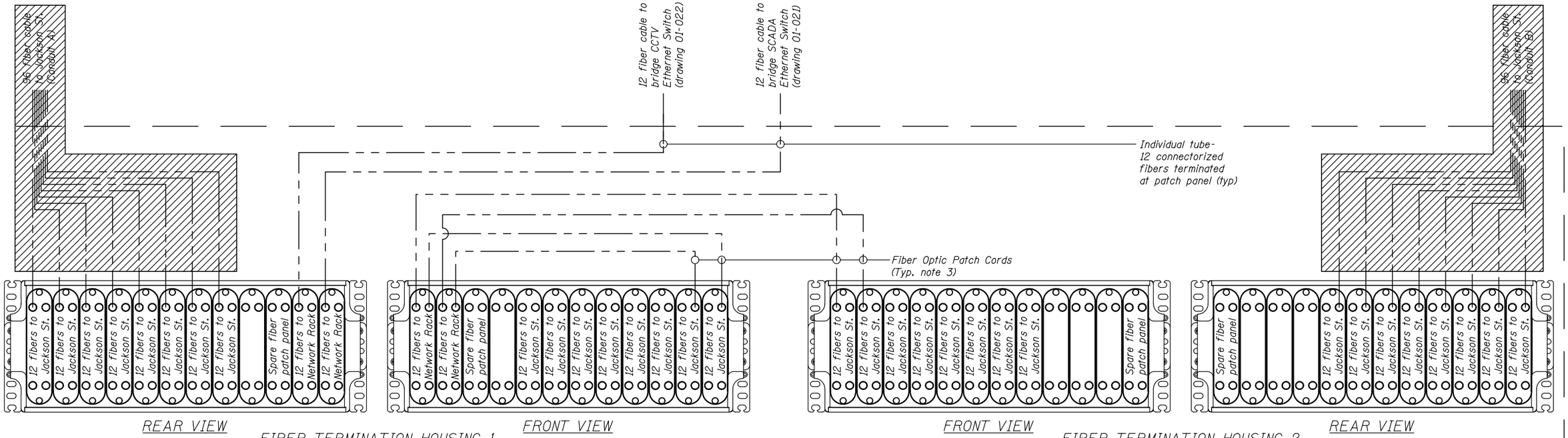
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - R.S. JOHNSON	REVISED ___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – FIBER OPTIC ROUTE TO OPERATOR HOUSE
SHEET NO. 19 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	32
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



LEGEND

Fiber optic connection

Denotes to be installed under future separate Fiber Optic Contract

NOTES:

1. Refer to sheet nos. 12 and 13 for fiber optic interconnections with other bridges.
2. All fiber optic cable shown is singlemode type.
3. Provide patch cables to interconnect all 96 fibers of main network cables between locations.

RUBY, Drawing 01-020

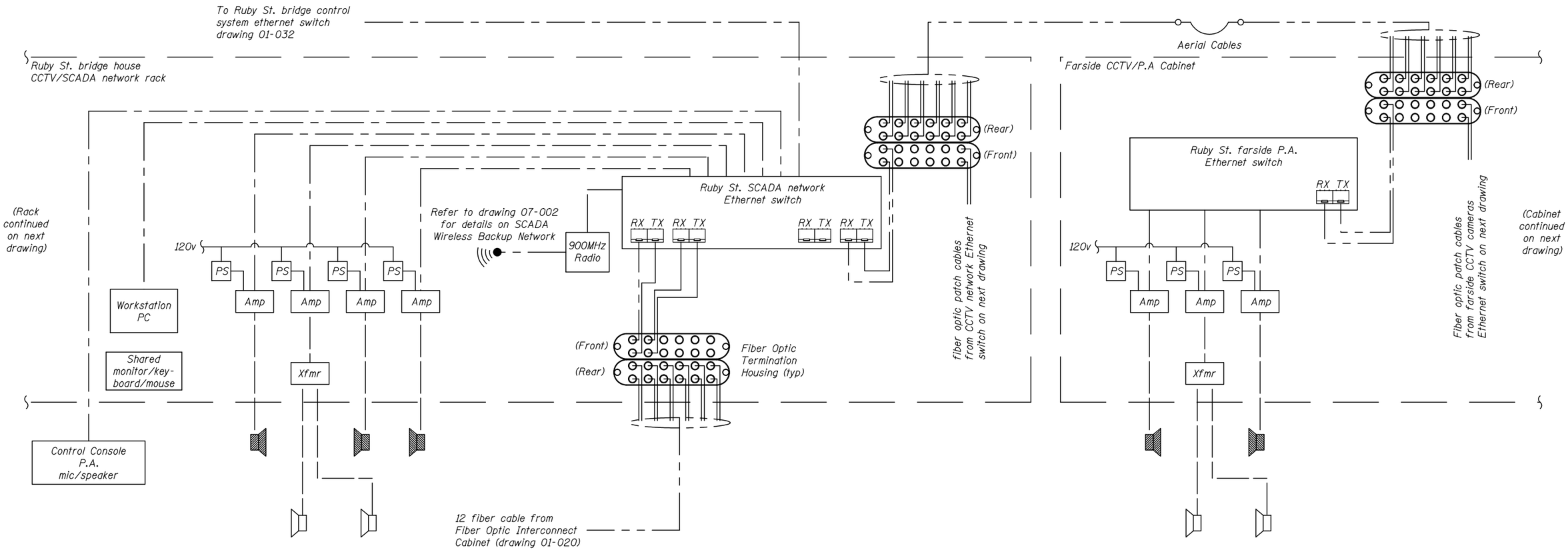
USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___	

MODJESKI and MASTERS Experience great bridges.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – FIBER OPTIC INTERCONNECT CABINET
SHEET NO. 20 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	33
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



LEGEND

- Speaker wire connection
- Fiber optic connection
- Cat6 ethernet connection
- Power connection
- Video / Comm connection
- Two-way speaker
- One-way speaker
- Wireless network antenna

PUBLIC ADDRESS SYSTEMS EQUIPMENT

Item No.	Quantity	Item Description
1	1	Rack mount workstation computer
2	1	Monitor, pointer, and keyboard for computer
3	1	Console microphone/speaker and accessories
4	7	Amplifier power supply
5	7	Network speaker amplifier
6	2	One-way speaker transformer
7	5	Two-way outdoor speaker
8	4	One-way outdoor speaker
9	9	Speaker surge protection
10	as req.	Circuit breaker
11	2	Surge Protective Device
12	1	24VDC power supply
13	1	Industrial Ethernet switch
14	1	Utility receptacle
15	as req.	Accessories and installation hardware

WIRELESS BACKUP NETWORK EQUIPMENT

Item No.	Quantity	Item Description
1	1	900 MHz Ethernet radio
2	1	900 MHz antenna with installation hardware & accessories
3*	1	2.4 GHz Ethernet radio
4*	2	2.4 GHz Antenna with insullation hardware & accessories
5	3	Antenna surge suppressor
6	2	Surge Protective Device
7	2	Circuit breaker
8	2	24VDC power supply/UPS
9	as req.	Accessories and installation hardware

* 1 Radio, and 2 antennas for CCTV wireless system, shown on drawing 01-022.

SCADA SYSTEM EQUIPMENT

Item No.	Quantity	Item Description
1	1	CCTV/SCADA network rack
2	1	Rack mounted UPS (Uninterruptible Power Supply)
3	1	SCADA network Ethernet switch
4	4	Rack mount fiber termination housings, 12 position
5	as req.	Rack accessores and hardware

NOTES:

1. These equipment schedules are provided for reference and do not provide an exhaustive listing of all equipment required.
2. The Contractor shall be responsible for developing a complete bill of materials of equipment required.

RUBY, Drawing 01-021

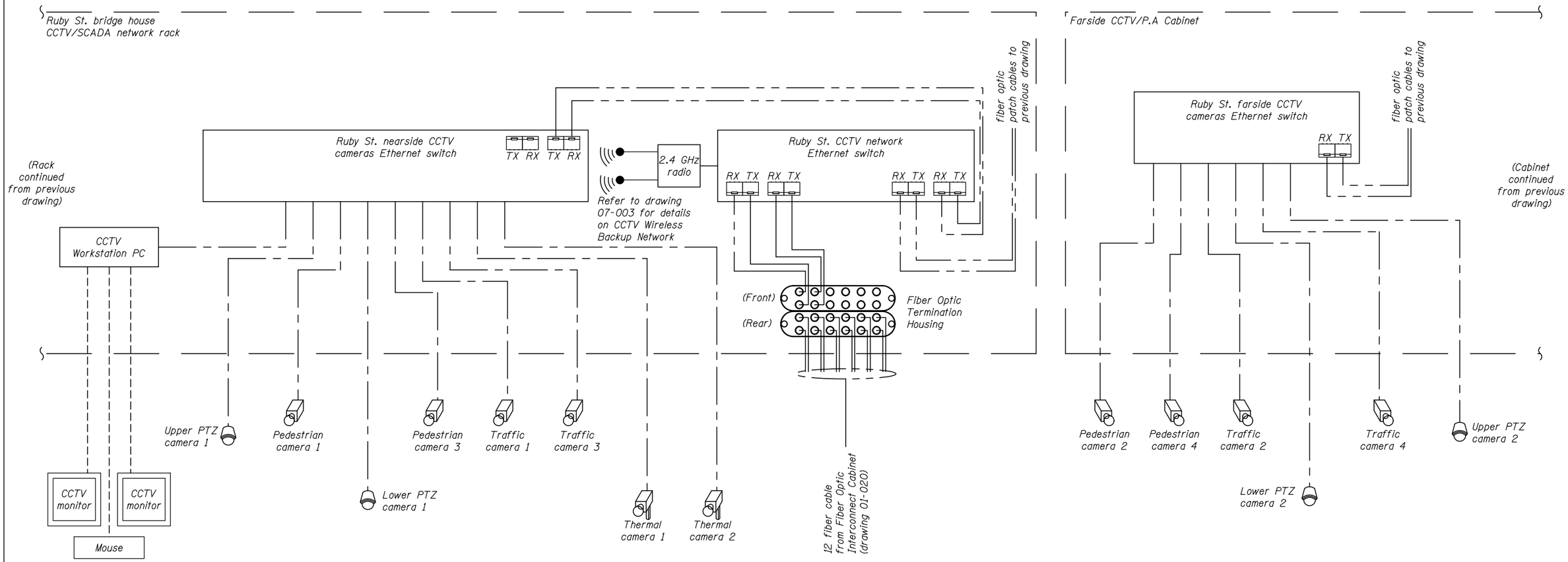
MODJESKI and MASTERS Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – SCADA ONE-LINE
SHEET NO. 21 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	34
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



LEGEND

- Fiber optic connection
- Cat6 connection
- Power connection
- Video / Comm connection
- Pan-tilt-zoom (PTZ) camera
- Pan-tilt thermal camera
- Fixed camera
- Wireless Network Antenna

BRIDGE CONTROL CCTV SYSTEM EQUIPMENT

Item No.	Quantity	Item Description
1	1	Rack mounted UPS (Uninterruptible Power Supply)
2	1	CCTV network Ethernet switch
3	1	Nearside CCTV camera Ethernet switch
4	4	Rack mount fiber termination housings, 12 position
5	1	CCTV Workstation PC
6	1	Mouse / pointer
7	2	31.5" 1080p video monitor
8	4	Pan-Tilt-Zoom CCTV camera with lens, enclosure, and accessories
9	2	Pan-Tilt Thermal CCTV camera with lens, enclosure, accessories
10	8	Fixed CCTV camera with lens, enclosure, accessories
11	14	CCTV ethernet surge protection
12	as req.	Camera power supplies
13	as req.	camera circuit breakers
14	as req.	POE (Power Over Ethernet) converters

BRIDGE CONTROL CCTV SYSTEM EQUIPMENT (continued)

Item No.	Quantity	Item Description
15	1	Farside Cabinet for CCTV and public address equipment with equipment & accessories
16	2	Surge Protective Device
17	1	Industrial cabinet UPS
18	1	24VDC power supply
19	1	Industrial Ethernet switch
20	1	Cabinet mount fiber termination housing, 12 position

NOTES:

1. These equipment schedules are provided for reference and do not provide an exhaustive listing of all equipment required.
2. The Contractor shall be responsible for developing a complete bill of materials of equipment required.

RUBY, Drawing 01-022

MODJESKI and MASTERS
Experience great bridges.

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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CCTV ONE-LINE
SHEET NO. 22 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	35
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

RUBY ST. PEDESTRAIN CAMERA 1	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	35 ft
Camera tilt (°)	-2°

RUBY ST. PEDESTRAIN CAMERA 2	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	25 ft
Camera tilt (°)	-1.5°

RUBY ST. PEDESTRAIN CAMERA 3	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	25 ft
Camera tilt (°)	-1.5°

RUBY ST. PEDESTRAIN CAMERA 4	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	25 ft
Camera tilt (°)	-1.5°

Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.

**Zoom lens focal length shall be field adjusted to the desired field of view.*

N

RUBY, Drawing 01-023

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – PEDESTRIAN CAMERA LAYOUT
SHEET NO. 23 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	36
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

RUBY ST. TRAFFIC CAMERA 1	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-20°

RUBY ST. TRAFFIC CAMERA 2	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	70 ft
Camera tilt (°)	-30°

RUBY ST. TRAFFIC CAMERA 3	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-5°

RUBY ST. TRAFFIC CAMERA 4	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	70 ft
Camera tilt (°)	-15°

Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.

**Zoom lens focal length shall be field adjusted to the desired field of view.*

N

RUBY, Drawing 01-024

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – TRAFFIC CAMERA LAYOUT
SHEET NO. 24 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	37
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY ST. UPPER PTZ CAMERA 1	
Camera type	Upper PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-90° to 5°

RUBY ST. UPPER PTZ CAMERA 2	
Camera type	Upper PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	70 ft
Camera tilt (°)	-90° to 5°

N

NOTES:

1. Camera field of view is shown for illustration purposes and is adjustable as required.
2. Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.

RUBY, Drawing 01-025

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – UPPER PTZ CAMERA LAYOUT
SHEET NO. 25 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	38
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY ST. THERMAL CAMERA 1	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°

RUBY ST. THERMAL CAMERA 2	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°

N

Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.

Human Identification*
(26 vertical Pixels on Target)

Human Recognition*
(8 vertical Pixels on Target)

Human Detection*
(2 vertical Pixels on Target)

*Viewing distance criteria based on image resolution of 640x480 (VGA format)

RUBY, Drawing 01-026

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___
	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – THERMAL CAMERA LAYOUT
SHEET NO. 26 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	39
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY STREET LOWER PTZ CAMERA 1	
Camera type	Lower PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	9 ft
Camera tilt (°)	0° (at rest)

N

RUBY STREET LOWER PTZ CAMERA 2	
Camera type	Lower PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	9 ft
Camera tilt (°)	0° (at rest)

NOTES:

1. Camera field of view shown for illustration purposes and is adjustable as required.
2. Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.

RUBY, Drawing 01-027

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – LOWER PTZ CAMERA LAYOUT
SHEET NO. 27 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	40
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

N

90db audible
1-way speaker

2-way microphone range
2-way speaker

RUBY, Drawing 01-028

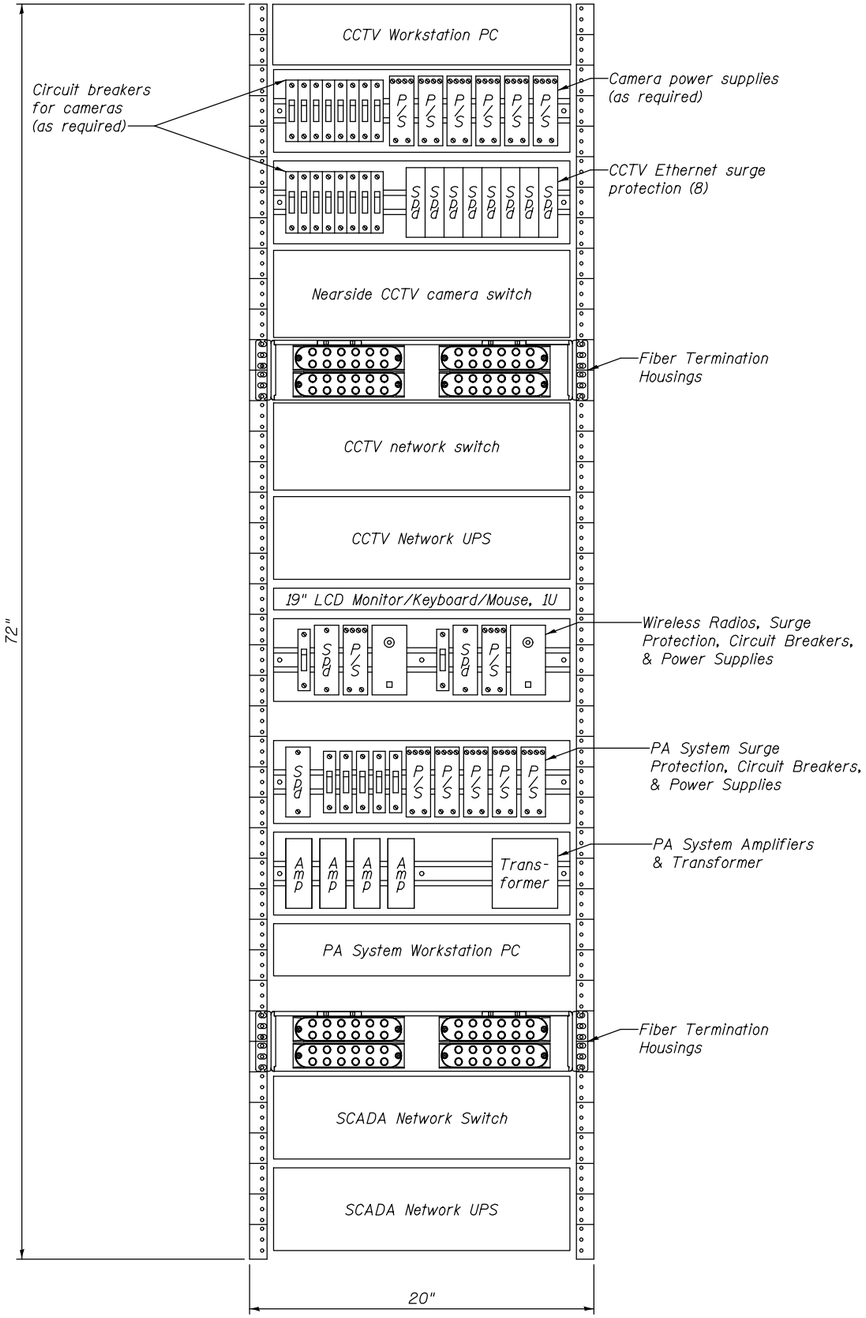
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___
	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED ___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___

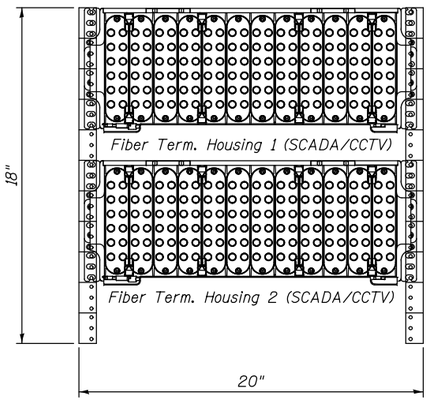
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – P.A. SPEAKER LAYOUT
SHEET NO. 28 OF 97 SHEETS

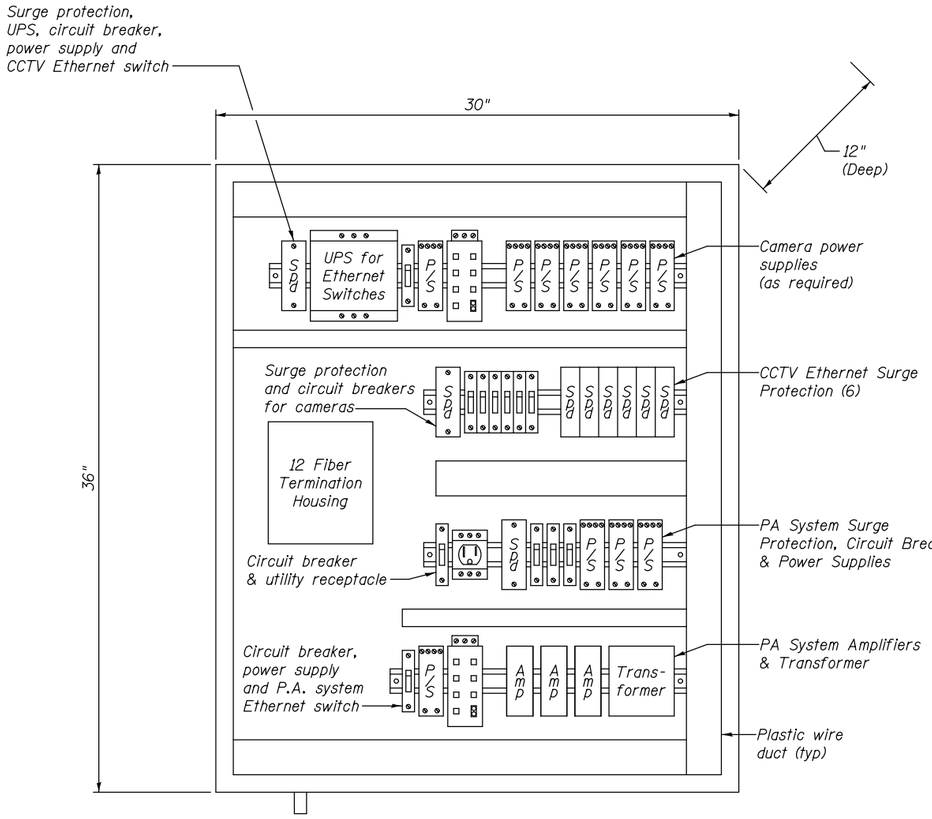
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	41
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



CCTV/SCADA NETWORK RACK



FIBER OPTIC INTERCONNECT CABINET



FARSIDE CCTV/P.A. CABINET

NOTES:

1. Rack and cabinet layouts shown are conceptual. The Contractor shall be responsible for developing and submitting layouts with all required components.
2. The Systems Integrator shall be responsible for coordinating cabinet sizing requirements to accomodate equipment serving all applicable systems.

RUBY, Drawing 01-029

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
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PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___	

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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – NETWORK CABINET DETAILS
SHEET NO. 29 OF 97 SHEETS

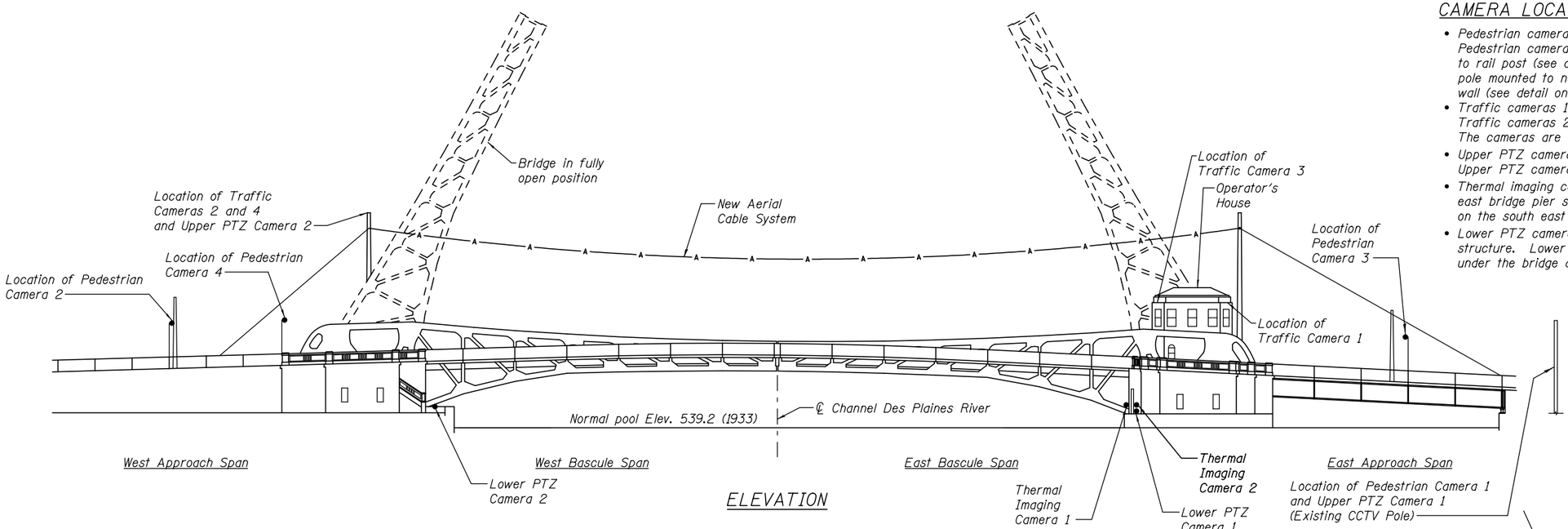
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	42
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

CAMERA LOCATIONS AND DESCRIPTIONS

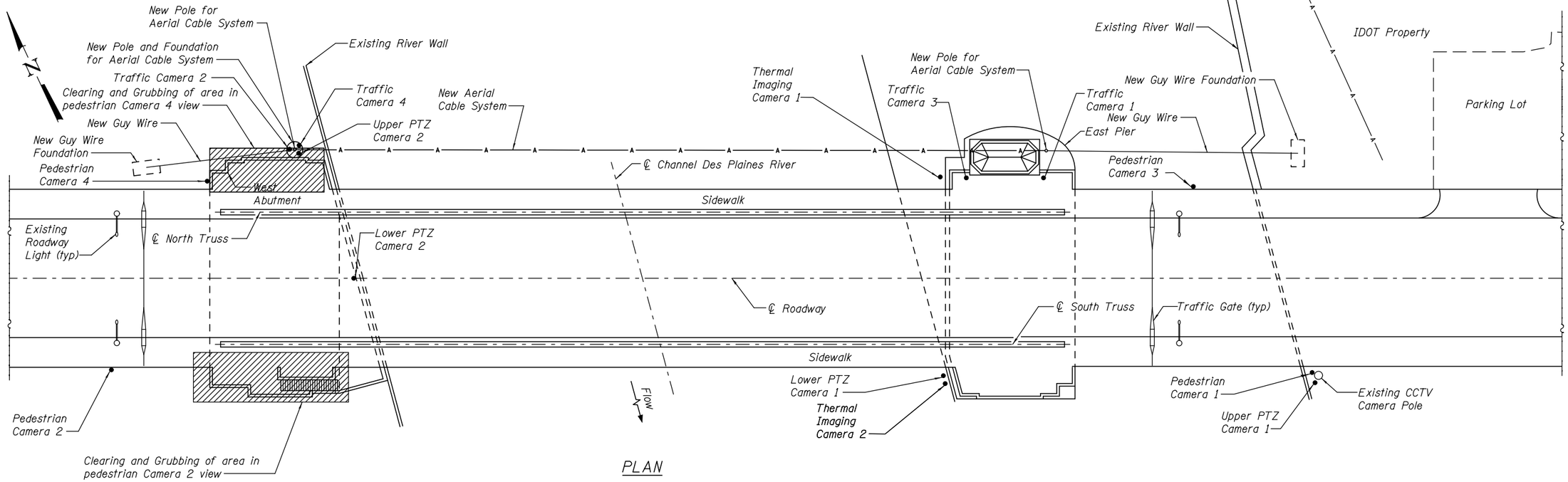
- *Pedestrian camera 1 is located on the existing CCTV camera pole. Pedestrian cameras 2 and 3 are pole mounted to new pole attached to rail post (see detail on drawing 04-024). Pedestrian camera 4 is pole mounted to new pole attached to west face of west abutment wall (see detail on drawing 01-031).*
- *Traffic cameras 1 and 3 are located on the existing operator's house. Traffic cameras 2 and 4 are located on the new aerial cable pole. The cameras are aimed at the traffic gates.*
- *Upper PTZ camera 1 is located on the existing CCTV camera pole. Upper PTZ camera 2 is located on the new aerial cable pole.*
- *Thermal imaging camera 1 is located near the fence on the north east bridge pier structure. Thermal imaging camera 2 is located on the south east bridge pier stucture.*
- *Lower PTZ camera 1 is located on the south east bridge pier structure. Lower PTZ camera 2 is located on the west side under the bridge at the center.*

NOTES:

1. *All locations shown are approximate. The Contractor shall field verify all camera mounting locations and submit proposed mounting locations to the Engineer for approval. All camera locations shall be clear of the movable span.*
2. *Lower PTZ cameras' pan and tilt range of motion shall allow viewing of the area directly under the bridge.*
3. *For cameras located on new aerial cable pole, refer to drawing 06-027 for mounting details.*



ELEVATION



PLAN

RUBY, Drawing 01-030

USER NAME =	DESIGNED - K.M. GABLE	REVISED ___	
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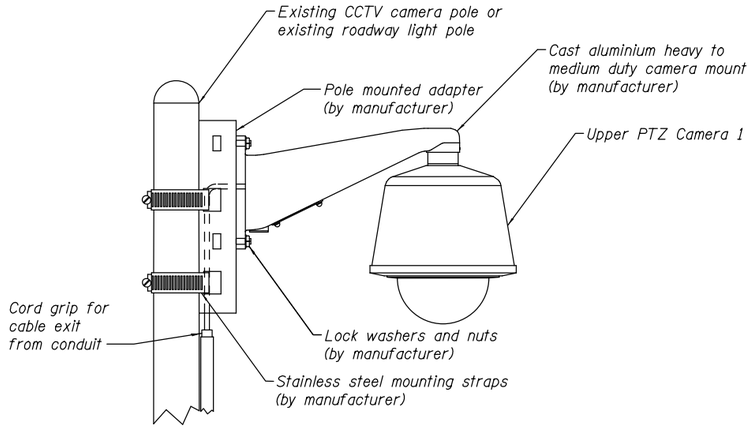
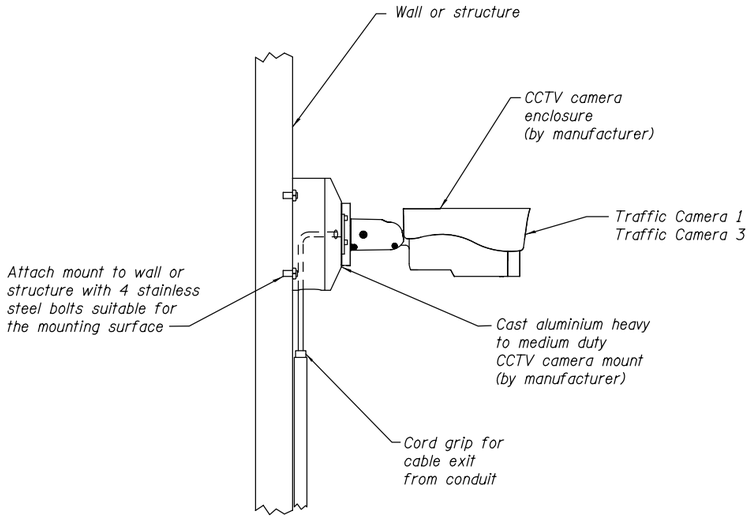
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CCTV PLAN AND ELEVATION
SHEET NO. 30 OF 97 SHEETS

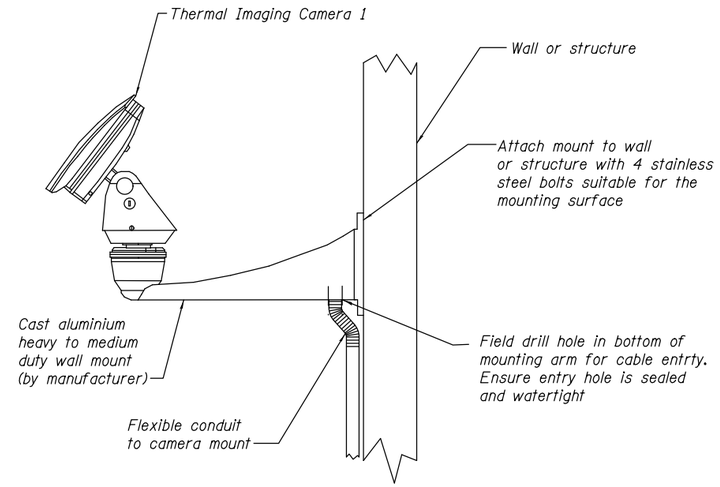
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	43
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



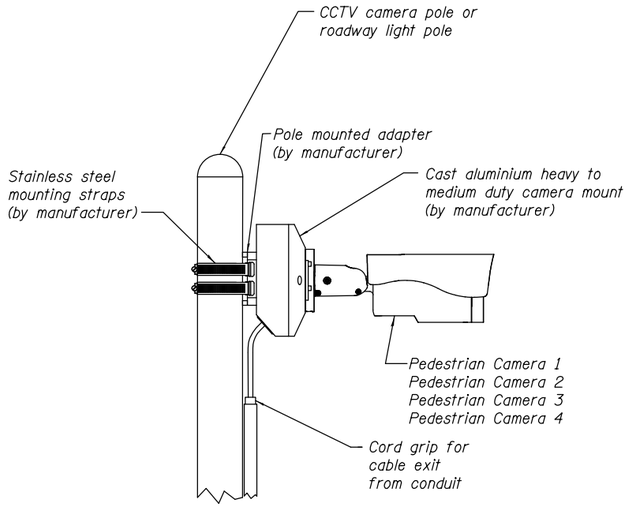
POLE MOUNTED PTZ DOME CAMERA



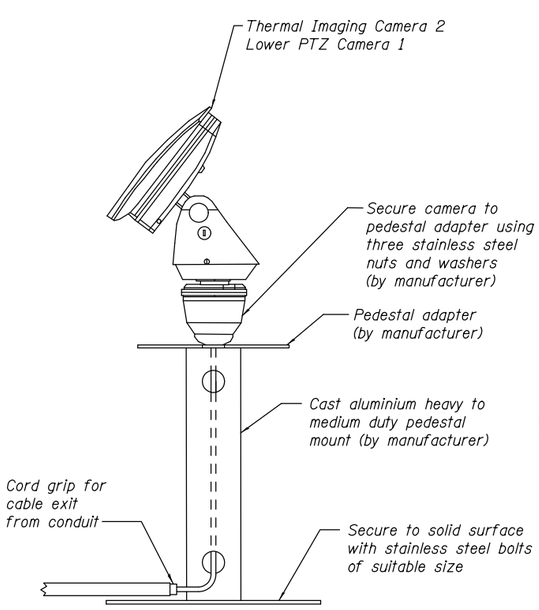
WALL OR STRUCTURE MOUNTED FIXED CAMERA



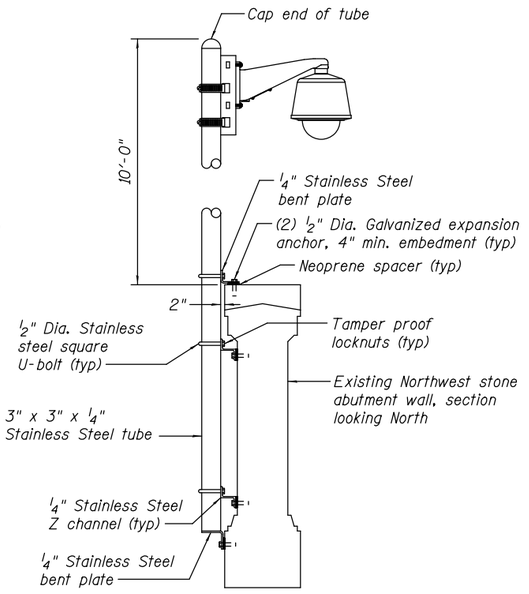
WALL OR STRUCTURE MOUNTED THERMAL IMAGING PTZ CAMERA



POLE MOUNTED FIXED CAMERA

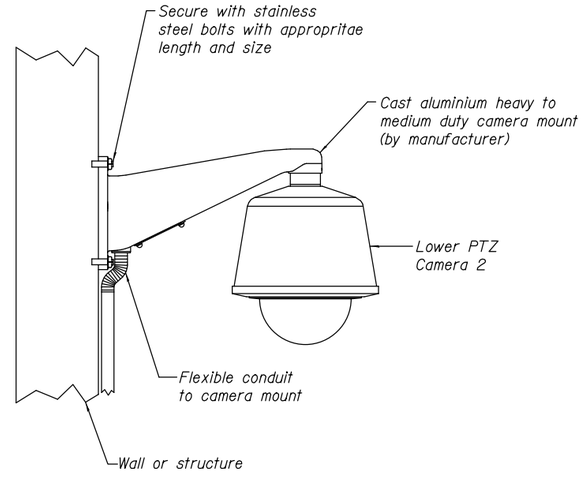


PEDESTAL MOUNTED THERMAL IMAGING PTZ CAMERA



CAMERA POLE MOUNT DETAIL TO EXISTING ABUTMENT WALL

(note 3)



WALL OR STRUCTURE MOUNTED PTZ DOME CAMERA

NOTES:

1. For camera locations, refer to CCTV Plan and Elevation drawings.
2. Cable routing details provide one acceptable routing method. Routing details may vary depending on camera manufacturer.
3. The Contractor shall submit details for pole mounting to existing abutment wall, including all materials, to the Engineer for approval.

RUBY, Drawing 01-031

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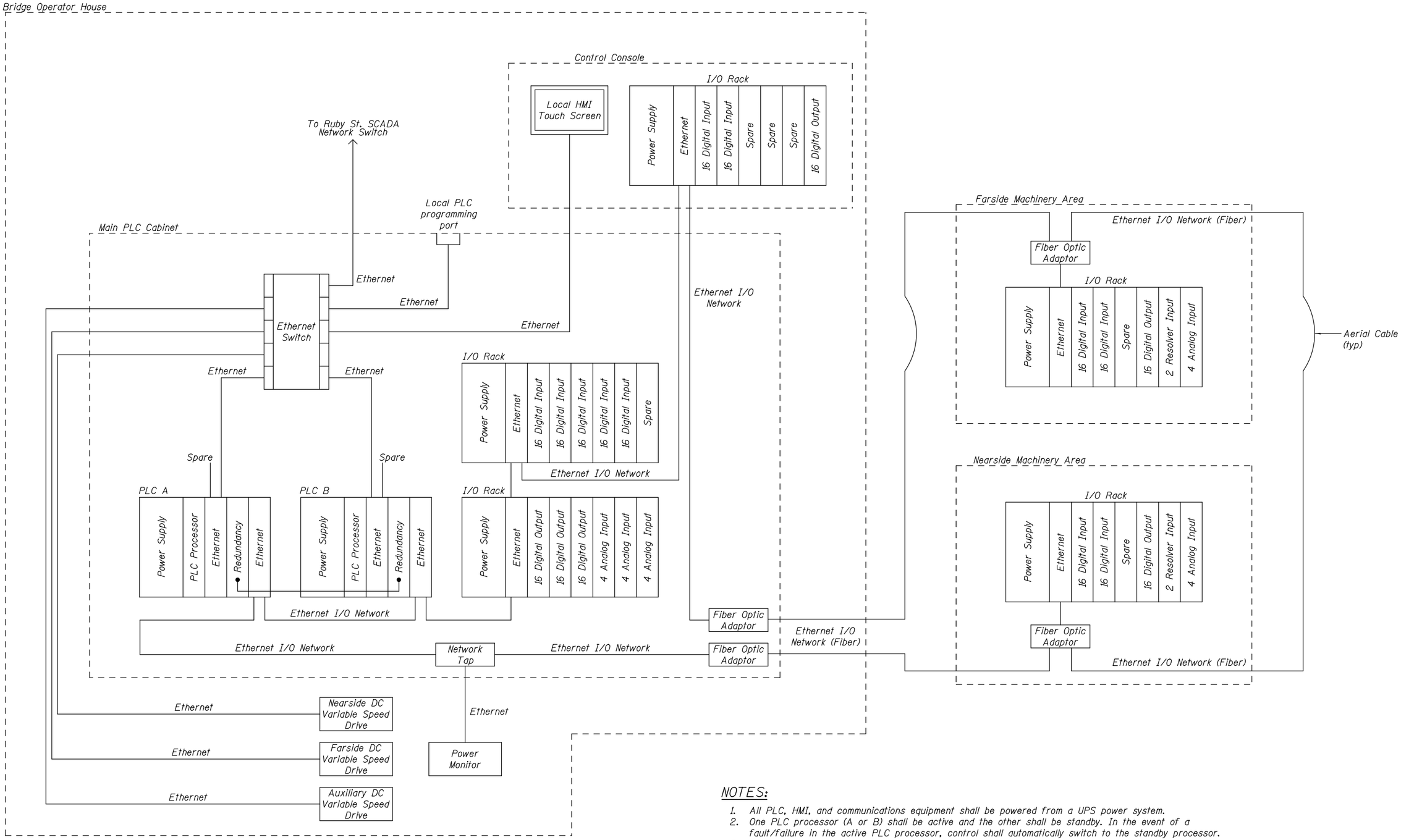
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CCTV MOUNTING DETAILS
SHEET NO. 31 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	44
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. All PLC, HMI, and communications equipment shall be powered from a UPS power system.
2. One PLC processor (A or B) shall be active and the other shall be standby. In the event of a fault/failure in the active PLC processor, control shall automatically switch to the standby processor.
3. All equipment shown is new.

RUBY, Drawing 01-032

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	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

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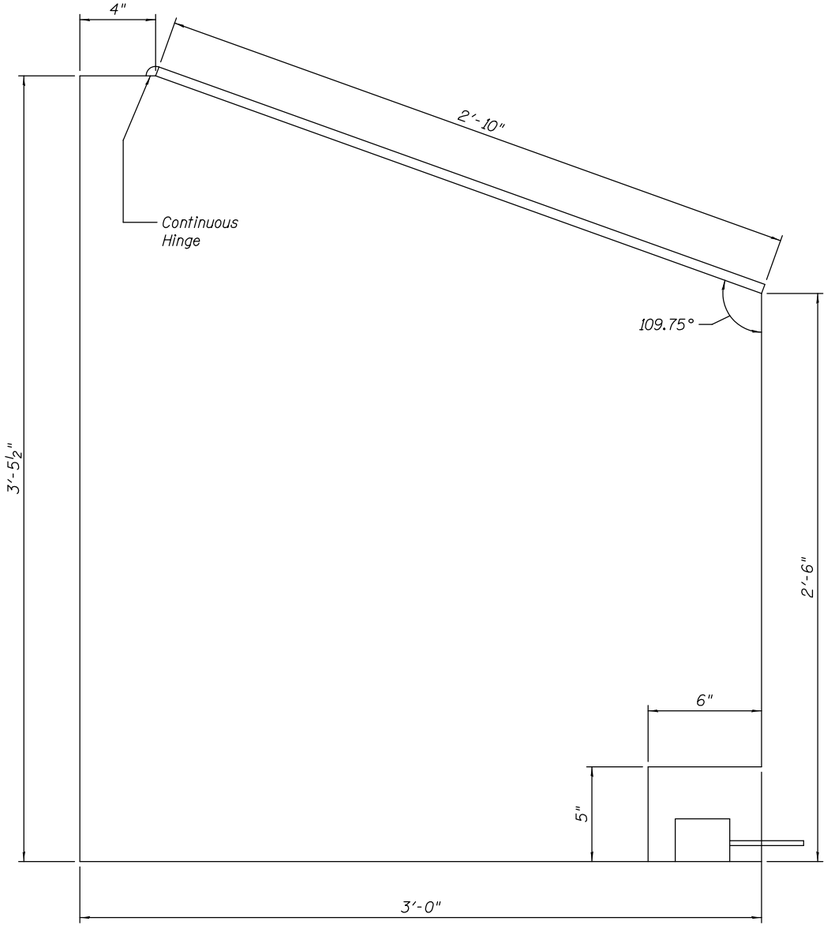
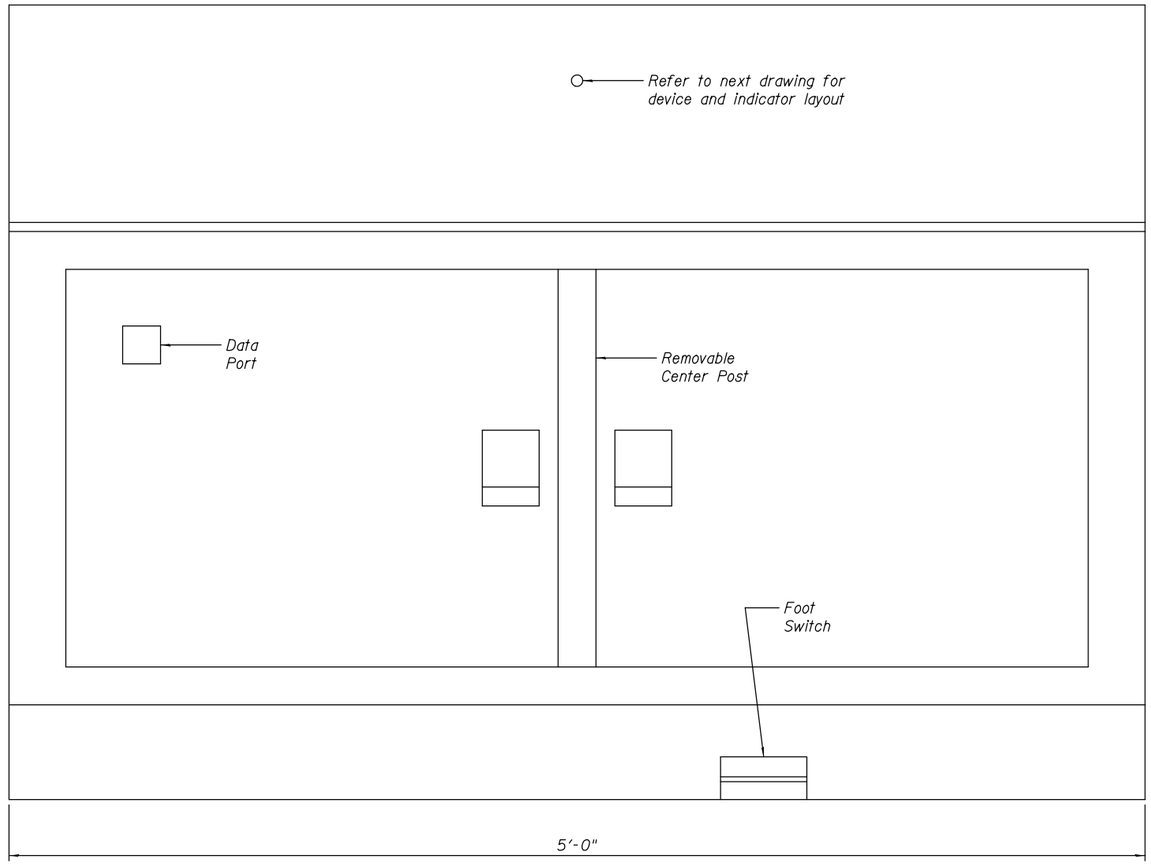
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – BRIDGE CONTROL DIAGRAM
SHEET NO. 32 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	45
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



SIDE VIEW



FRONT VIEW

NOTES:

1. All dimensions shown are approximate. The Contractor shall submit control console layout and design drawings to the Engineer for approval. Actual control console size shall be based on available operator house space, cabinet components required, and fabrication requirtements.
2. Provide additional free standing tables for CCTV controller keyboard/joystick, amrine radio, and general utility use. Tables shall be sized and shaped to be placed at either side of the new control console as required by individual control house dimensions. Table tops shall be composite wood or laminated construction, 1½" minimum thickness with oil and moisture resiatant finish. Legs, top support, cross members, and bracing shall be constructed of powder coated formed steel, minimum 16 gauge. Leg design shall allow height adjustment in 1" increments between approximately 29" to 33".

RUBY, Drawing 01-033

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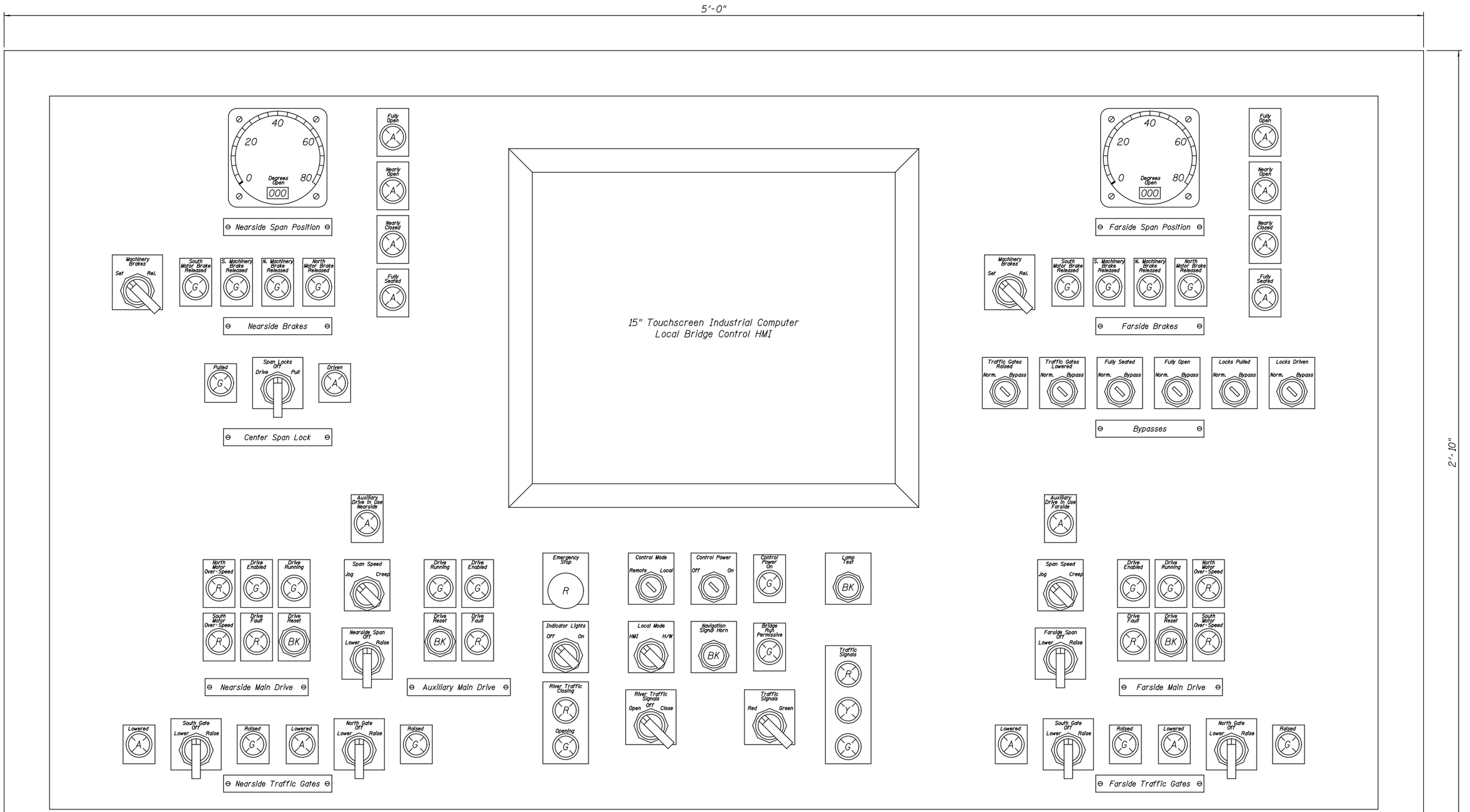
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – NEW BRIDGE CONTROL CONSOLE – 1
SHEET NO. 33 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	46
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



CONTROL CONSOLE DEVICE AND INDICATOR LAYOUT

RUBY, Drawing 01-034

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
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LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – NEW BRIDGE CONTROL CONSOLE – 2
SHEET NO. 34 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	47
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

GENERAL ELECTRICAL POWER AND CONTROL CIRCUIT SCHEMATIC SYMBOLS

- Disconnect Switch
- Circuit Breaker (CB)
- Control Circuit Supplementary Protector (SP) — SP
- Fuse
- Thermal Overload Relay (OL) or Thermal Element
- Three Phase, Delta-Wye Transformer
- Single Phase Transformer
- Motor — M
- Resistor
- Reactor
- Terminal Block or Equipment Terminal — , or
- Wiring
- Wiring Connection
- Wiring not connected — or
- Wiring Connection - to or from as indicated
- Ground or Bonding Connection
- Basic (relay or contactor) contact - Normally open or normally closed as indicated
- Limit Switch (LS) - Normally closed
- Limit Switch (LS) - Normally open
- Control Relay (CR) — CR
- Interposing Relay (IR) — IR
- Magnetic Contactor (MC) — MC
- Timing Relay (TR) — TR
- Indicator Light (IL) - color as indicated (A = Amber, R = Red, G = Green, BL = Blue, Y = Yellow, W = White) — A
- Pushbutton (PB) - Normally open or normally closed as indicated
- Mushroom Head Pushbutton (PB) - Normally open or normally closed as indicated
- Timed Contact - On-Delay - Normally open or normally closed as indicated

- Selector Switch (SS) with Pushbutton Type Contacts - Text adjacent to Contact indicates operating sequence (O = Open, x = Closed, - Arrows indicate spring return positions

PLC SYSTEM SYMBOLS

- PLC Discrete Output (DO) — II
- PLC Discrete Input (DI)
- PLC Analog Output (AO)
- PLC Analog Input (AI)
- PLC Internal (Logical) Coil
- PLC Internal (Logical) Latch or Unlatch Coil — L, U
- PLC Internal (Logical) one-shot rising instruction — [OSR]
- PLC Internal (Logical) Contact - Normally open or normally closed as indicated —][ ]/[
- PLC Internal (Logical) Timer - On-delay (Ton) or off-delay (Toff) as indicated - EN = Timer enabled, DN = Timer done — T*** Timer Delay T*** ***Sec, EN, DN
- PLC Internal Function — Function

CONTROL CONSOLE INDICATOR AND BUTTON COLOR LEGEND

MISCELLANEOUS

Number in parenthesis to the left of control device (Limit Switches, Pushbuttons, Selector Switches, etc.) Contacts indicates the contact designation.

Control circuit device designations are as follows.

N = Nearside	F = Farside
N = North	S = South

GENERAL LEGEND

Symbol	Description
ACK	Acknowledged
ATS	Automatic Transfer Switch
AUT	Automatic
AUX	Auxiliary
BAT	Battery
BM	Bus Monitor
BYP	Bypass
CB	Circuit Breaker
CCTV	Closed Circuit Television
CON	Contactor
CP	Control Power
CR	Control Relay
CS	Control Switch
DC	Direct Current (DC Drive)
ES	Emergency Stop
FLT	Fault
GEN	Generator
HC	Hand Crank Mechanism
HMI	Operator Interface
HW	Hard-Wired Mode
IL	Indicator Light
IN	Inclinometer Sensor
I/O	Input/Output
IR	Interposing Relay
LOC	Local Mode (HMI or HW)
LS	Limit Switch
MAN	Manual
MC	Magnetic Contactor
MCC	Motor Control Center
MD	Main Drive
OL	Motor Overload Relay
PB	Push Button
PLC	Programmable Logic Controller
REM	Remote Mode (SCADA)
RS	Resolver Sensor
SCADA	Supervisory Control and Data Acquisition
SPD	Surge Protective Device
SP	Supplementary Protection
SS	Selector Switch or Speed Switch
SW	Switch
TMR	Timer
TR	Timing Relay
UPS	Uninterruptible Power Supply
UTIL	Utility

RUBY, Drawing 01-035

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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT LEGEND – 1
SHEET NO. 35 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	48
		CONTRACT NO. 60P55		
		ILLINOIS	FED. AID PROJECT	

LOGIC DIGITAL INPUT LEGEND

Symbol	Description	Address
ATS-G	Generator Power Source Selected	I:004
ATS-GH	Generator Power Available/Healthy	I:005
ATS-U	Utility Power Source Selected	I:002
ATS-UH	Utility Power Available/Healthy	I:003
BM	Bus Monitor Fault	I:006
CR-BDET	Boat Detection (No Boat Present)	I:021
CR-CP	Control Power On	I:301
CR-FTS	Foot Switch	I:308
CR-FNGR	Farside North Gate Raised	I:321
CR-FNGL	Farside North Gate Lowered	I:322
CR-FSGR	Farside South Gate Raised	I:323
CR-FSGL	Farside South Gate Lowered	I:324
CR-FAUX	Farside Using Auxiliary Drive B	I:069
CR-MD-BE	Auxiliary Main Drive B Enabled	I:074
CR-MD-BF	Auxiliary Main Drive B Fault	I:076
CR-MD-BR	Auxiliary Main Drive B Running	I:075
CR-MD-FAE	Farside Main Drive A Enabled	I:071
CR-MD-FAF	Farside Main Drive A Fault	I:073
CR-MD-FAR	Farside Main Drive A Running	I:072
CR-MD-NAE	Nearside Main Drive A Enabled	I:065
CR-MD-NAF	Nearside Main Drive A Fault	I:067
CR-MD-NAR	Nearside Main Drive A Running	I:066
CR-NAUX	Nearside Using Auxiliary Drive B	I:068
CR-NNGL	Nearside North Gate Lowered	I:318
CR-NNGR	Nearside North Gate Raised	I:317
CR-NSGL	Nearside South Gate Lowered	I:320
CR-NSGR	Nearside South Gate Raised	I:319
CR-RSIGC	River Traffic Signal Closing (Signal Is Red)	I:313
CR-RSIGO	River Traffic Signal Opening (Signal Is Green)	I:312
CR-SLD	Span Lock Driven	I:041
CR-SLP	Span Lock Pulled	I:042
CR-TSR	Red Traffic Signal	I:310
CR-TSY	Yellow Traffic Signal	I:311
CS-REM(REM)	Remote Scada Control Mode	I:303
CS-REM(LOC)	Local Control Mode	I:304
CS-HW(H/W)	Local Console Hard-wired Switch Controls	I:305
CS-HW(HMI)	Local HMI Controls	I:306
LS-FBAS	Farside Brake A Set	I:717
LS-FBAR	Farside Brake A Released	I:718
LS-FBAHR	Farside Brake A Hand Released	I:725
LS-FBBS	Farside Brake B Set	I:719
LS-FBBR	Farside Brake B Released	I:720
LS-FBBHR	Farside Brake B Hand Released	I:726
LS-FBCS	Farside Brake C Set	I:721
LS-FBCR	Farside Brake C Released	I:722
LS-FBCHR	Farside Brake C Hand Released	I:727
LS-FBDS	Farside Brake D Set	I:723
LS-FBDR	Farside Brake D Released	I:724
LS-FBDHR	Farside Brake D Hand Released	I:728
LS-FFS	Farside Fully Seated	I:704
LS-FSC(1)	Farside Fully Open	I:705
LS-FSC(2)	Farside Nearly Open	I:706
LS-FSC(3)	Farside Nearly Closed	I:707
LS-FSC(4)	Farside Fully Closed	I:708
LS-NBAS	Nearside Brake A Set	I:517
LS-NBAR	Nearside Brake A Released	I:518
LS-NBAHR	Nearside Brake A Hand Released	I:525

LOGIC DIGITAL INPUT LEGEND (CONTINUED)

Symbol	Description	Address
LS-NBBS	Nearside Brake B Set	I:519
LS-NBBR	Nearside Brake B Released	I:520
LS-NBBHR	Nearside Brake B Hand Released	I:526
LS-NBCS	Nearside Brake C Set	I:521
LS-NBCR	Nearside Brake C Released	I:522
LS-NBCHR	Nearside Brake C Hand Released	I:527
LS-NBDS	Nearside Brake D Set	I:523
LS-NBDR	Nearside Brake D Released	I:524
LS-NBDHR	Nearside Brake D Hand Released	I:528
LS-NFS	Nearside Fully Seated	I:504
LS-NSC(1)	Nearside Fully Open	I:505
LS-NSC(2)	Nearside Nearly Open	I:506
LS-NSC(3)	Nearside Nearly Closed	I:507
LS-NSC(4)	Nearside Fully Closed	I:508
SS-FAOS	Farside Motor A Over-Speed	I:029
SS-FBOS	Farside Motor B Over-Speed	I:030
SS-NAOS	Nearside Motor A Over-Speed	I:027
SS-NBOS	Nearside Motor B Over-Speed	I:028
PB-ES	Emergency Stop Push Button	I:302
PB-WH	Warning Horn Push Button	I:307
SPD	Surge Protective Device Status	I:001
	CCTV UPS Low Battery	I:332
	CCTV UPS Fault	I:331
	Farside I/O UPS Low Battery	I:702
	Farside I/O UPS Fault	I:701
	Farside Machinery Door Switches 1 & 2	I:703
	Farside Machinery Door Switches 3 & 4	I:710
	Operator's Room Fire Alarm	I:019
	Electrical Room Fire Alarm	I:020
	Main UPS Low Battery	I:008
	Main UPS Fault	I:007
	Nearside I/O UPS Low Battery	I:502
	Nearside I/O UPS Fault	I:501
	Nearside Machinery Door Switches 1 & 2	I:503
	Nearside Machinery Door Switches 3 & 4	I:510
	Operator House-Main Door Switch	I:011
	Operator House-Auxiliary Door Switch	I:012

LOGIC ANALOG/SPECIALTY INPUT LEGEND

Symbol	Description	Address
	Analog Input Far Drive A Speed	I:184
	Analog Input Far Drive A Torque	I:185
	Analog Input Farside Resolver PLC Input	I:790
	Analog Input Farside Inclinometer PLC Input	I:794
	Analog Input Near Drive A Speed	I:180
	Analog Input Near Drive A Torque	I:181
	Analog Input Auxiliary Drive B Speed	I:182
	Analog Input Auxiliary Drive B Torque	I:183
	Analog Input Nearside Resolver PLC Input	I:590
	Analog Input Nearside Inclinometer PLC Input	I:594

LOGIC DIGITAL OUTPUT LEGEND

Symbol	Description	Address
CR-BAGR	Bypass All Gates Raised	O:354
CR-BSFS	Bypass Span Fully Seated	O:355
CR-FMWH	Farside Machinery Area Warning Horn	O:765
CR-NMWH	Nearside Machinery Area Warning Horn	O:565
CR-RR	Request Red Traffic Signal	O:353
CR-WH	Warning Horn	O:362
IR-DSL	Drive (Lock) Span Lock	O:139
IR-LFNG	Lower Farside North Traffic Gate	O:104
IR-LFSG	Lower Farside South Traffic Gate	O:106
IR-LNNG	Lower Nearside North Traffic Gate	O:100
IR-LNSG	Lower Nearside South Traffic Gate	O:102
IR-MDBC	Auxiliary Drive B Creep Speed	-
IR-MDBJ	Auxiliary Drive B Jog Speed	-
IR-MDBT	Auxiliary Drive B Reduced Torque Mode	-
IR-MDBE	Enable Auxiliary Drive B	O:127
IR-MDBL	Auxiliary Main Drive B Lower	O:131
IR-MDBR	Auxiliary Main Drive B Raise	O:129
IR-MDBS	Reset Auxiliary Drive B Fault	O:135
IR-MDFAC	Farside Main Drive A Creep Speed	O:133
IR-MDFAJ	Farside Main Drive A Jog Speed	O:132
IR-MDFAT	Farside Main Drive A Reduced Torque Mode	O:137
IR-MDFAE	Enable Farside Main Drive A	O:126
IR-MDFAL	Farside Main Drive A Lower	O:130
IR-MDFAR	Farside Main Drive A Raise	O:128
IR-MDFAS	Reset Farside Drive A Fault	O:134
IR-MDNAC	Nearside Main Drive A Creep Speed	O:123
IR-MDNAJ	Nearside Main Drive A Jog Speed	O:122
IR-MDNAT	Nearside Main Dirve A Reduced Torque Mode	O:136
IR-MDNAE	Enable Nearside Main Drive A	O:116
IR-MDNAL	Nearside Main Drive A Lower	O:120
IR-MDNAR	Nearside Main Drive A Raise	O:118
IR-MDNAS	Reset Nearside Drive A Fault	O:124
IR-PSL	Pull (Unlock) Span Lock	O:138
IR-RFBA	Farside Main Motor A Brake A Release	O:112
IR-RFBB	Farside Main Motor B Brake B Release	O:113
IR-RFBC	Farside North Machinery Brake C Release	O:114
IR-RFBD	Farside South Machinery Brake D Release	O:115
IR-RFNG	Raise Farside North Traffic Gate	O:105
IR-RFSG	Raise Farside South Traffic Gate	O:107
IR-RNBA	Nearside Main Motor A Brake A Release	O:108
IR-RNBB	Nearside Main Motor B Brake B Release	O:109
IR-RNBC	Nearside North Machinery Brake C Release	O:110
IR-RNBD	Nearside North Machinery Brake D Release	O:111
IR-RNNG	Raise Nearside North Traffic Gate	O:101
IR-RNSG	Raise Nearside South Traffic Gate	O:103
IR-RSIGO	River Traffic Signal Opening	O:359
IR-RSIGC	River Traffic Signal Closing	O:360
IR-SES1	Software Emergency Stop Relay 1	O:349
IR-SES2	Software Emergency Stop Relay 2	O:350
IR-SCP1	Software Control Power Relay 1	O:351
IR-SCP2	Software Control Power Relay 2	O:352

RUBY, Drawing 01-036

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED	___
	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - N.U. KALGHATGI	REVISED	___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT LEGEND – 2
SHEET NO. 36 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	49
		CONTRACT NO. 60P55		
		ILLINOIS	FED. AID PROJECT	

PLC LOGIC BINARY LEGEND

Symbol	Description
ADE	All Drives Enabled
AGL	All Gates Lowered
AGR	All Gates Raised
ALD	All Locks Driven
ALP	All Locks Pulled
BDET	Boat Detection
BMF	Bus Monitor Fault
BRP	Bridge Run Permissive
BYP AGL	Bypass All Traffic Gates Lowered
BYP AGR	Bypass All Traffic Gates Raised
BYP ALD	Bypass All Locks Driven
BYP ALP	Bypass All Locks Pulled
BYP FO	Bypass Bridge Fully Open
BYP FS	Bypass Bridge Fully Seated
BYP SFO	Bypass Span Fully Open
BYP SFS	Bypass Span Fully Seated
BYP INHIB	Bypass Inhibit
FFC	Farside Fully Closed
FFO	Farside Fully Open
FFS	Farside Fully Seated
FFS1	Farside Span Fully Seated (Set Brakes)
FFS2	Farside Span Fully Seated (De-energize Drives)
FL	Farside Lower
FNC	Farside Nearly Closed
FNG	Farside North Gate
FNO	Farside Nearly Open
FO	Bridge Fully Open
FOS	Farside Span Overspeed
FR	Farside Raise
FS	Bridge Fully Seated
FSG	Farside South Gate
IN-F	Farside Span Position PLC Inclinomter
IN-N	Nearside Span Position PLC Inclinometer
MAF	Major Fault
MDN-R	Near Main Drive Raise
MDF-R	Far Main Drive Raise
MIF	Minor Fault
ML	Master Lower
MR	Master Raise
NFC	Nearside Fully Closed
NFO	Nearside Fully Open
NFS	Nearside Fully Seated
NFS1	Nearside Span Fully Seated (Set Brakes)
NFS2	Nearside Span Fully Seated (De-energize Drives)
NL	Nearside Lower
NNC	Nearside Nearly Closed
NNG	Nearside North Gate
NNO	Nearside Nearly Open
NOS	Nearside Span Overspeed
NR	Nearside Raise
NS	Normal Stop
NSG	Nearside South Gate
SFS	Span Fully Seated
SL	Span Lock
TSG	Traffic Signal Green
TSR	Traffic Signal Red
TSY	Traffic Signal Yellow

PLC LOGIC BINARY LEGEND (CONTINUED)

Symbol	Description
UMAF	Unacknowledged Major Fault
UMIF	Unacknowledged Minor Fault
WH-DLY	Warning Horn Delay Before Bridge Movement

HARDWIRED LEGEND

CR-ALD	All Locks Driven
CR-ALP	All Locks Pulled
CR-FONAV	Bridge Fully Open Navigation Lights Power
CR-FSCFC	Farside Span Control Fully Closed
CR-FSCFO	Farside Span Control Fully Open
CR-FSCNC	Farside Span Control Nearly Closed
CR-FSCNO	Farside Span Control Nearly Open
CR-MDBE	Auxiliary Main Drive B Enable
CR-MDBL	Auxiliary Main Drive B Lower
CR-MDBR	Auxiliary Main Drive B Raise
CR-MDBS	Auxiliary Main Drive B Reset
CR-MDFAE	Main Drive Farside A Enable
CR-MDFAL	Main Drive Farside A Lower
CR-MDFAR	Main Drive Farside A Raise
CR-MDFAS	Main Drive Farside A Reset
CR-MDFC	Main Drive Farside Creep Speed
CR-MDFJ	Main Drive Farside Jog Speed
CR-MDFRT	Main Drive Farside Reduced Torque
CR-MDNAE	Main Drive Nearside A Enable
CR-MDNAL	Main Drive Nearside A Lower
CR-MDNAR	Main Drive Nearside A Raise
CR-MDNAS	Main Drive Nearside A Reset
CR-MDNC	Main Drive Nearside Creep Speed
CR-MDNJ	Main Drive Nearside Jog Speed
CR-MDNRT	Main Drive Nearside Reduced Torque
CR-MSCFL	Manual Span Control Farside Lower
CR-MSCFR	Manual Span Control Farside Raise
CR-MSCNL	Manual Span Control Nearside Lower
CR-MSCNR	Manual Span Control Nearside Raise
CR-NSCFC	Nearside Span Control Fully Closed
CR-NSCFO	Nearside Span Control Fully Open
CR-NSCNC	Nearside Span Control Nearly Closed
CR-NSCNO	Nearside Span Control Nearly Open
CR-RFB	Farside Release Brakes
CR-RNB	Nearside Release Brakes
CS-AUX	Select Auxiliary Drive-Off, Nearside, or Farside
CS-BAGL	Bypass All Gates Lowered Select, Byp or Off
CS-BAGR	Bypass All Gates Raised Select, Byp or Off
CS-BALD	Bypass All Locks Driven Select, Byp or Off
CS-BALP	Bypass All Locks Pulled Select, Byp or Off
CS-BSFO	Bypass Span Fully Open
CS-BSFS	Bypass Span Fully Seated
CS-FBR	Farside Brake Select, Set or Release
CS-FNG	Farside North Traffic Gate Select, Raise or Lower
CS-FSG	Farside South Traffic Gate Select, Raise or Lower
CS-IL	Control Console Indicator Lights On-Off
CS-MSCF	Manual Span Control Far Select, Raise or Lower
CS-MSCN	Manual Span Control Near Select, Raise or Lower
CS-MSSF	Manual Span Speed Far Select, Jog or Creep
CS-MSSN	Manual Span Speed Near Select, Jog or Creep
CS-NBR	Nearside Brake Select, Set or Release

HARDWIRED LEGEND (CONTINUED)

Symbol	Description
CS-NNG	Nearside North Traffic Gate Select, Raise or Lower
CS-NSG	Nearside South Traffic Gate Select, Raise or Lower
CS-RSIG	River Signals Select, Open or Close
CS-SL	Span Lock Select, Pull or Drive
CS-TSR	Traffic Signals to Red Light
IN-FHW	Farside Span Position
IN-NHW	Nearside Span Position
MC-DSL	Drive Span Lock Motor Starter
MC-LFNG	Farside North Traffic Gate Lower Motor Starter
MC-LFSG	Farside South Traffic Gate Lower Motor Starter
MC-LNNG	Nearside North Traffic Gate Lower Motor Starter
MC-LNSG	Nearside South Traffic Gate Lower Motor Starter
MC-PSL	Pull Span Lock Motor Starter
MC-RFBA	Farside Main Motor A Brake Motor Starter
MC-RFBB	Farside Main Motor B Brake Motor Starter
MC-RFBC	Farside North Machinery Brake Motor Starter
MC-RFBD	Farside South Machinery Brake Motor Starter
MC-RFNG	Farside North Traffic Gate Raise Motor Starter
MC-RFSG	Farside South Traffic Gate Raise Motor Starter
MC-RNBA	Nearside Main Motor A Brake Motor Starter
MC-RNBB	Nearside Main Motor B Brake Motor Starter
MC-RNBC	Nearside North Machinery Brake Motor Starter
MC-RNBD	Nearside South Machinery Brake Motor Starter
MC-RNNG	Nearside North Traffic Gate Raise Motor Starter
MC-RNSG	Nearside South Traffic Gate Raise Motor Starter
PB-BRS	Auxiliary Main Drive B Fault Reset
PB-FARS	Farside Main Drive A Fault Reset
PB-NARS	Nearside Main Drive A Fault Reset
PB-WH	Warning Horn, Push Button

HARDWIRED TIMING RELAYS

TR-BDETF	Boat Detected Fault
TR-FFS1	Farside Span Fully Seated (Set Brakes) Delay
TR-FFS2	Farside Span Fully Seated (Deenergize Drives) Delay
TR-NFS1	Nearside Span Fully Seated (Set Brakes) Delay
TR-NFS2	Nearside Span Fully Seated (Deenergize Drives) Delay
TR-TSY	Traffic Signal Yellow Time
TR-WH	Warning Horn Time

PLC TIMERS

T1	Bus Monitor Timer
T2	Boat Detection Timer
T3	Farside Fully Seated Timer 1
T4	Farside Fully Seated Timer 2
T5	Nearside Fully Seated Timer 1
T6	Nearside Fully Seated Timer 2
T7	Warning Horn Timer

RUBY, Drawing 01-037

MODJESKI and MASTERS
Experience great bridges.

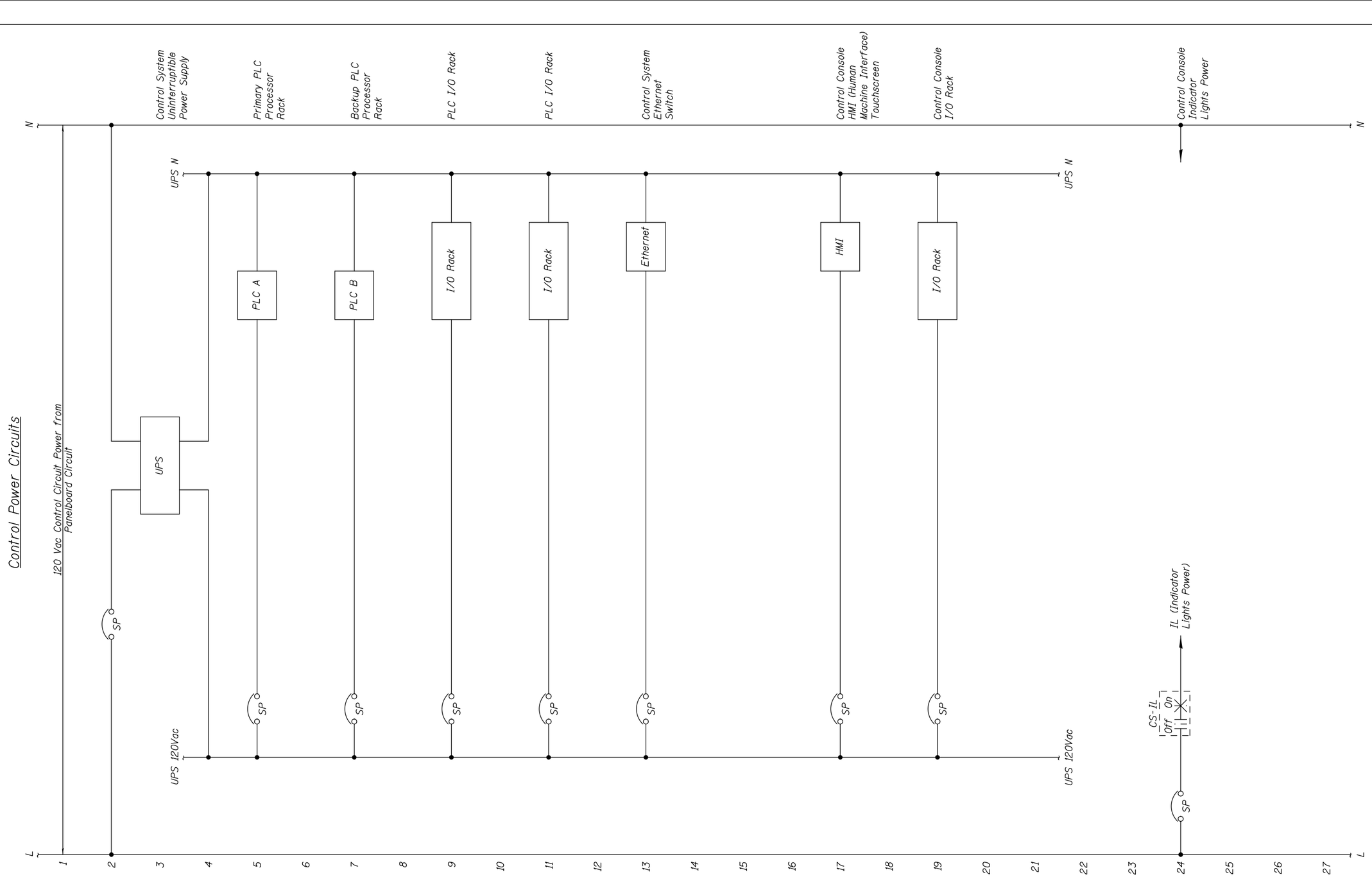
USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - N.U. KALGHATGI	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT LEGEND – 3
SHEET NO. 37 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	50
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

Control Power Circuits



RUBY, Drawing 01-038

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 1
SHEET NO. 38 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	51
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

MODJESKI-MASTERS
Experience past bridges.

USER NAME =		DESIGNED -	R.I. PETERS
		CHECKED -	J.G. STRENKOSKI
PLOT SCALE =		DRAWN -	R.I. PETERS
PLOT DATE =		CHECKED -	J.G. STRENKOSKI

REVISED	REVISED	REVISED
___	___	___
REVISED	REVISED	REVISED
___	___	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

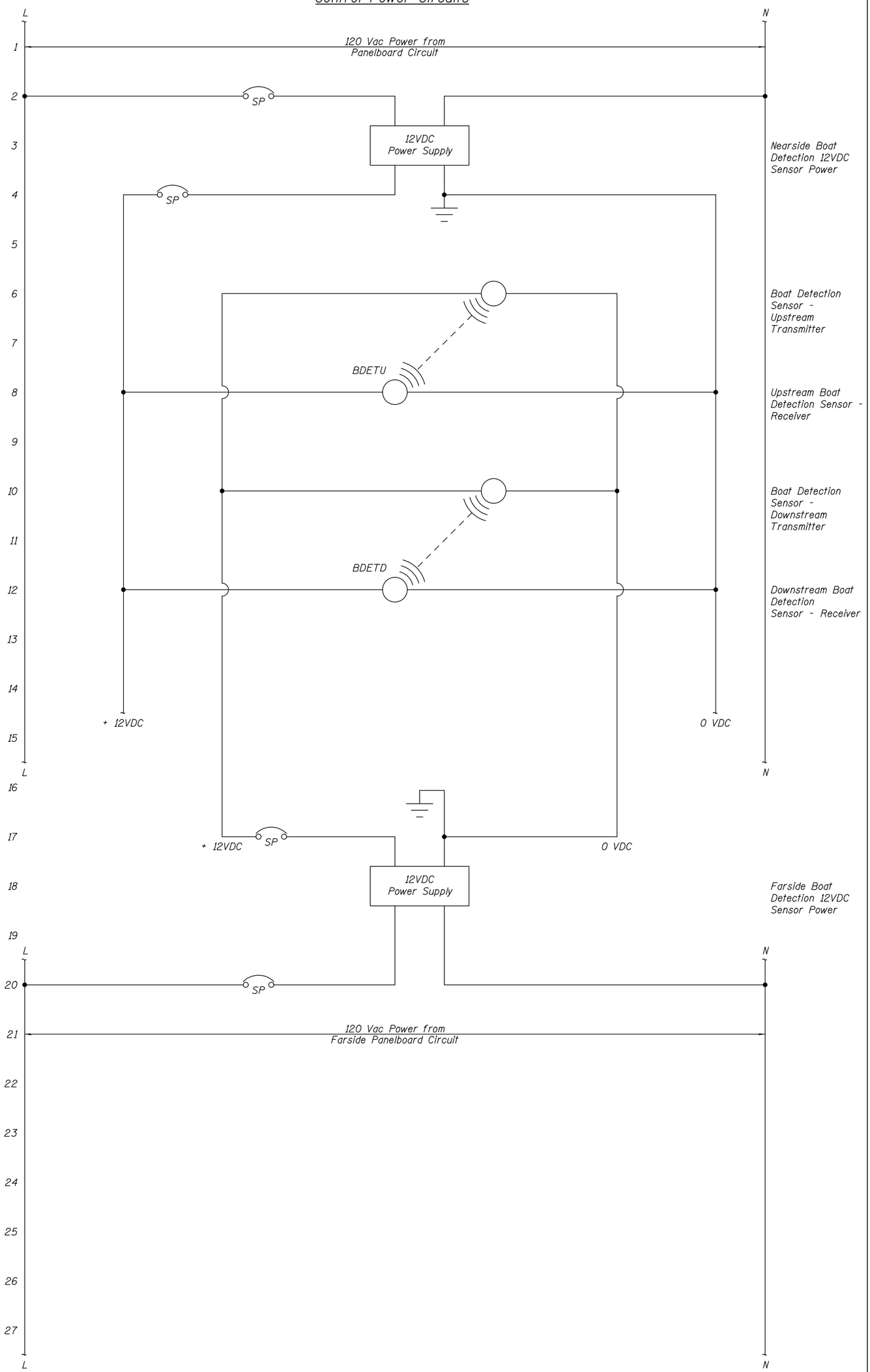
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 2

SHEET NO. 39 OF 97 SHEETS

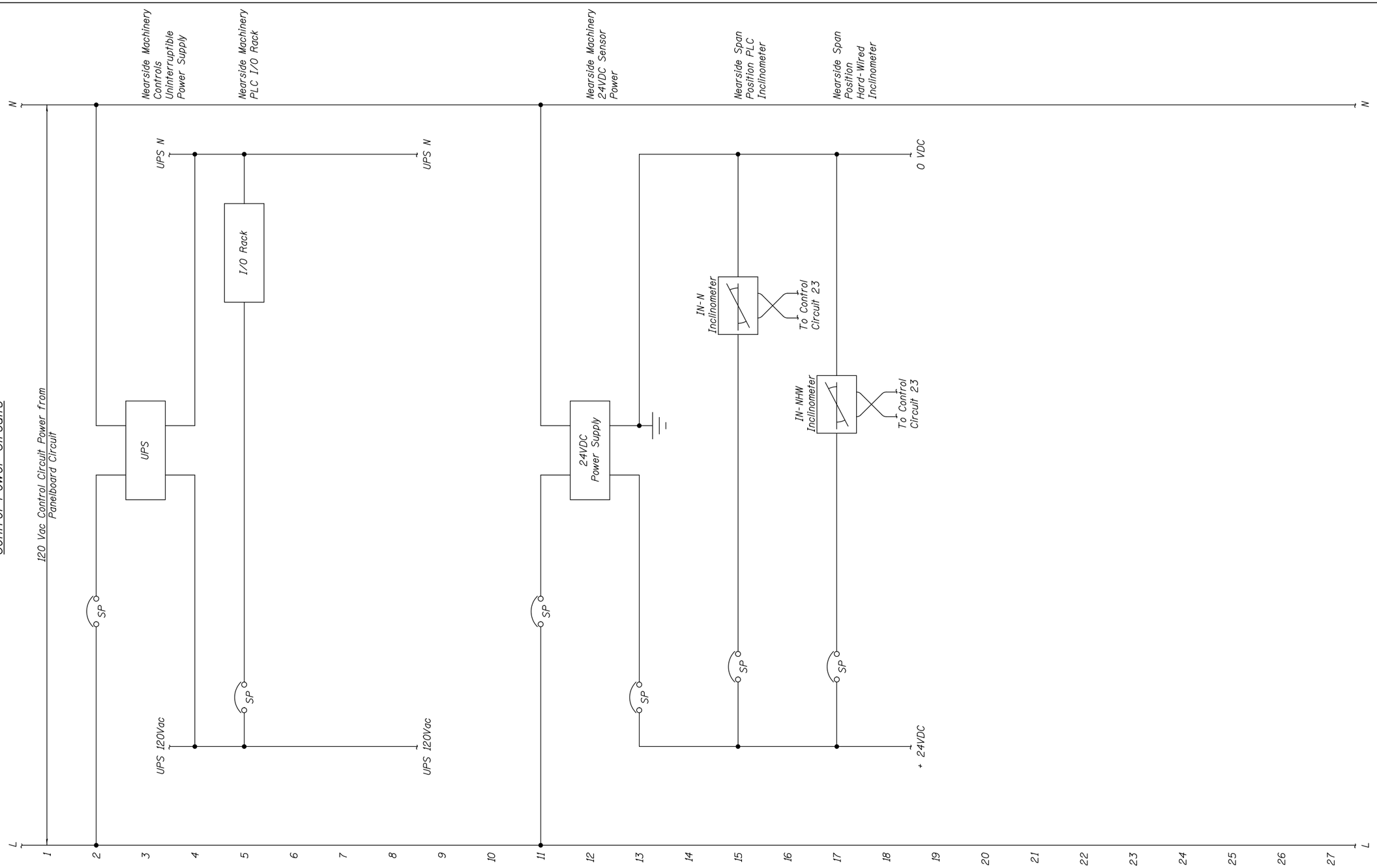
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	52
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-039

Control Power Circuits



Control Power Circuits



NOTES:

1. Install inclinometers on the span close to the trunnion area. Provide the appropriate loop of flexible cable to accommodate full span travel.

RUBY, Drawing 01-040

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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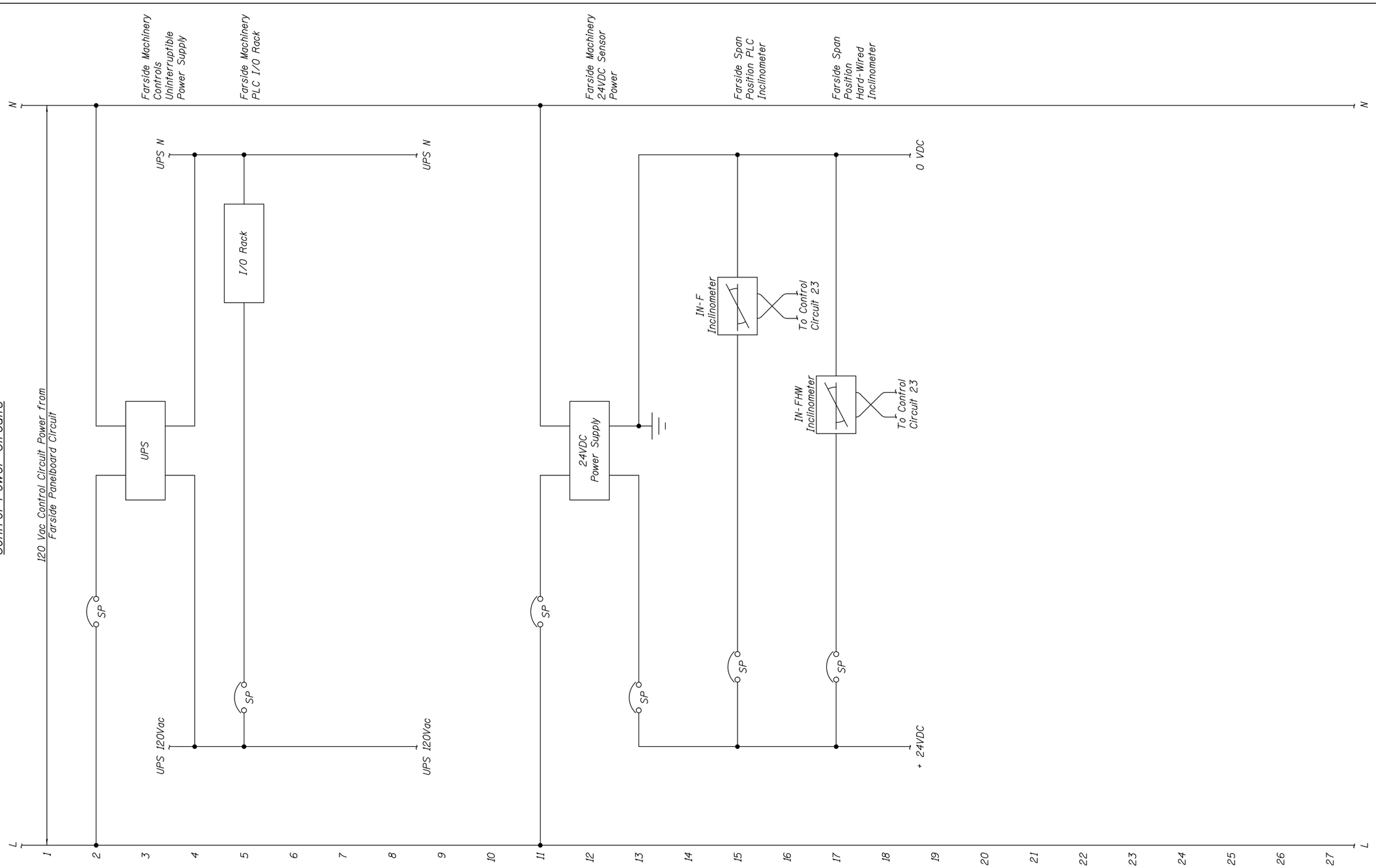
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 3
SHEET NO. 40 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	53
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

Control Power Circuits



NOTES:

1. Install inclinometers on the span close to the trunnion area. Provide the appropriate loop of flexible cable to accommodate full span travel.

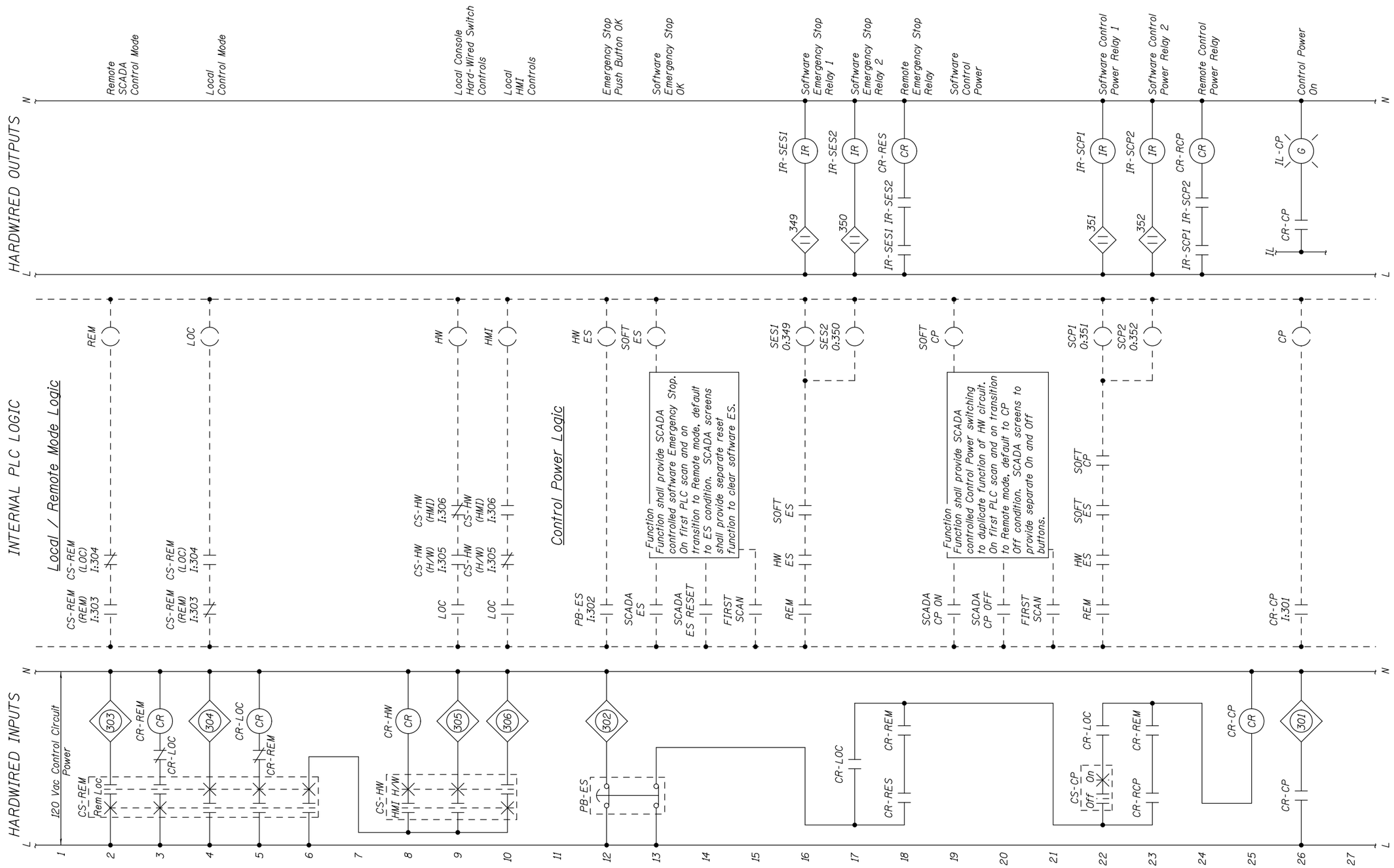
RUBY, Drawing 01-041

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 4
SHEET NO. 41 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	54
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. Emergency stop Pushbuttons shall be illuminated type and shall be wired to illuminate when pressed.

RUBY, Drawing 01-042

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
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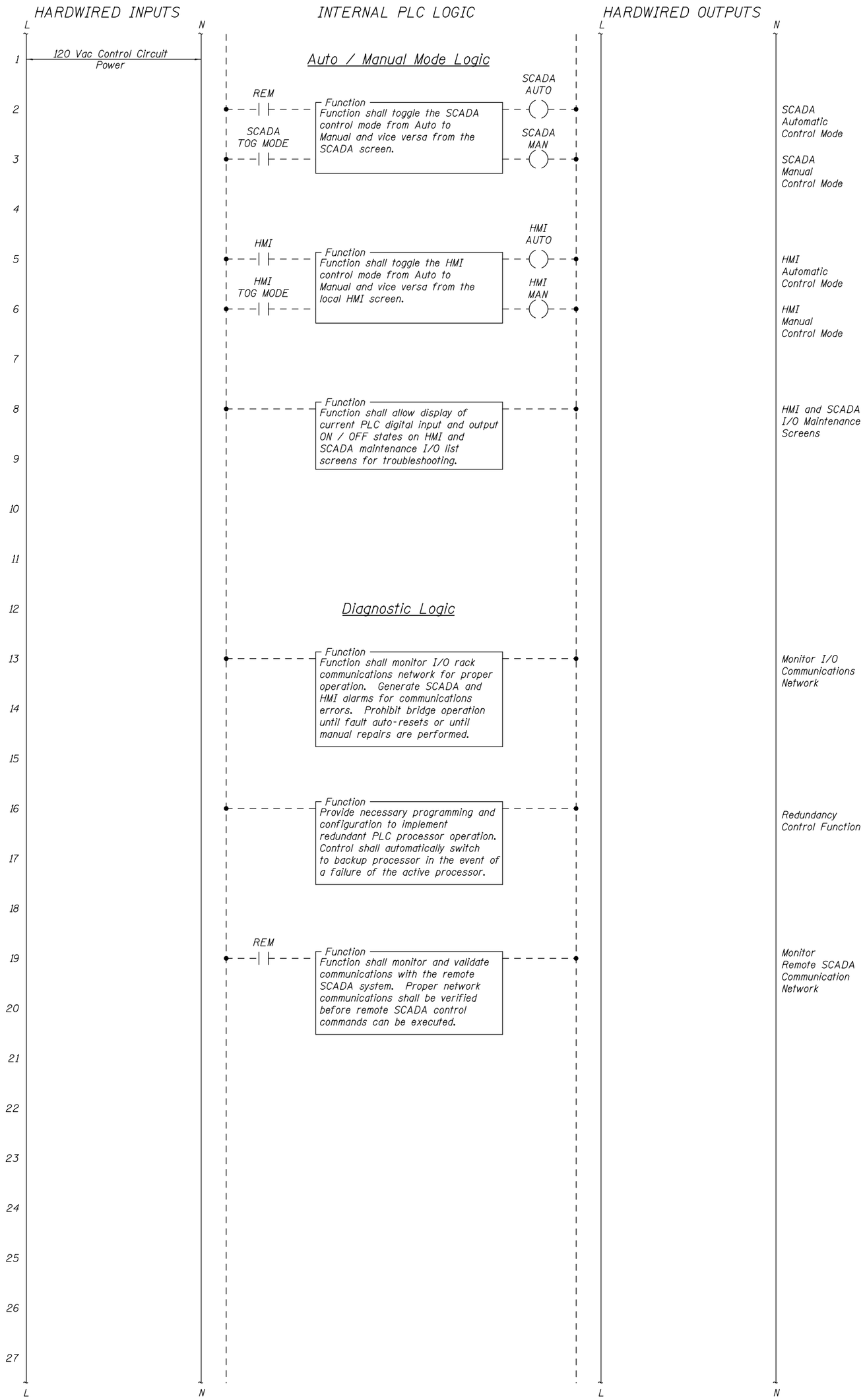
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 5
SHEET NO. 42 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	55
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Experience you can bridge.

USER NAME =			
PLOT SCALE =			
PLOT DATE =			

DESIGNED	-	R.I. PETERS	REVISED
CHECKED	-	J.G. STRENKOSKI	REVISED
DRAWN	-	R.I. PETERS	REVISED
CHECKED	-	J.G. STRENKOSKI	REVISED

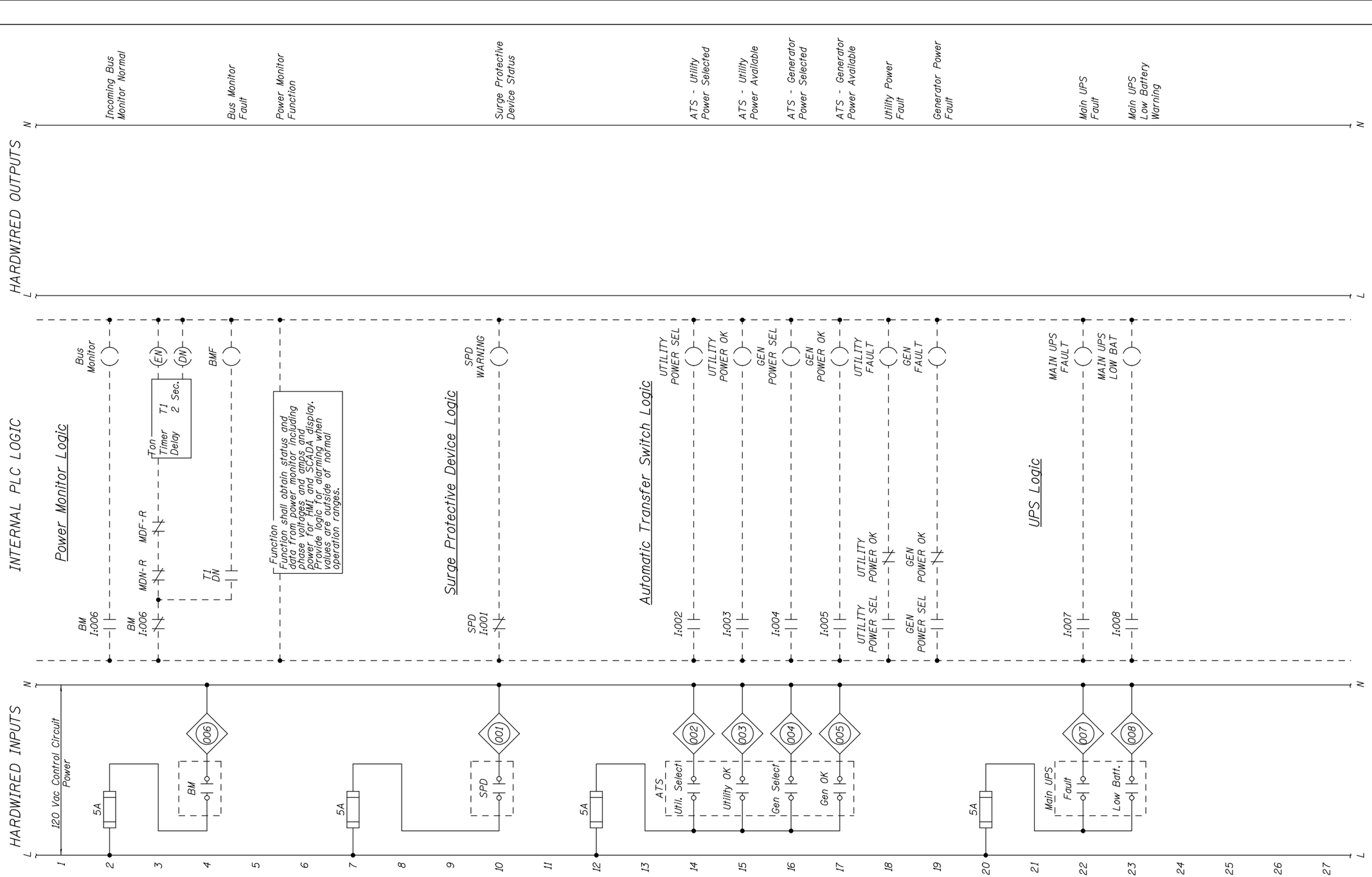
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 6

SHEET NO. 43 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	56
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY. Drawing 01-043



NOTES:

1. Provide additional timers as required to condition PLC inputs from sensing devices.

RUBY, Drawing 01-044

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

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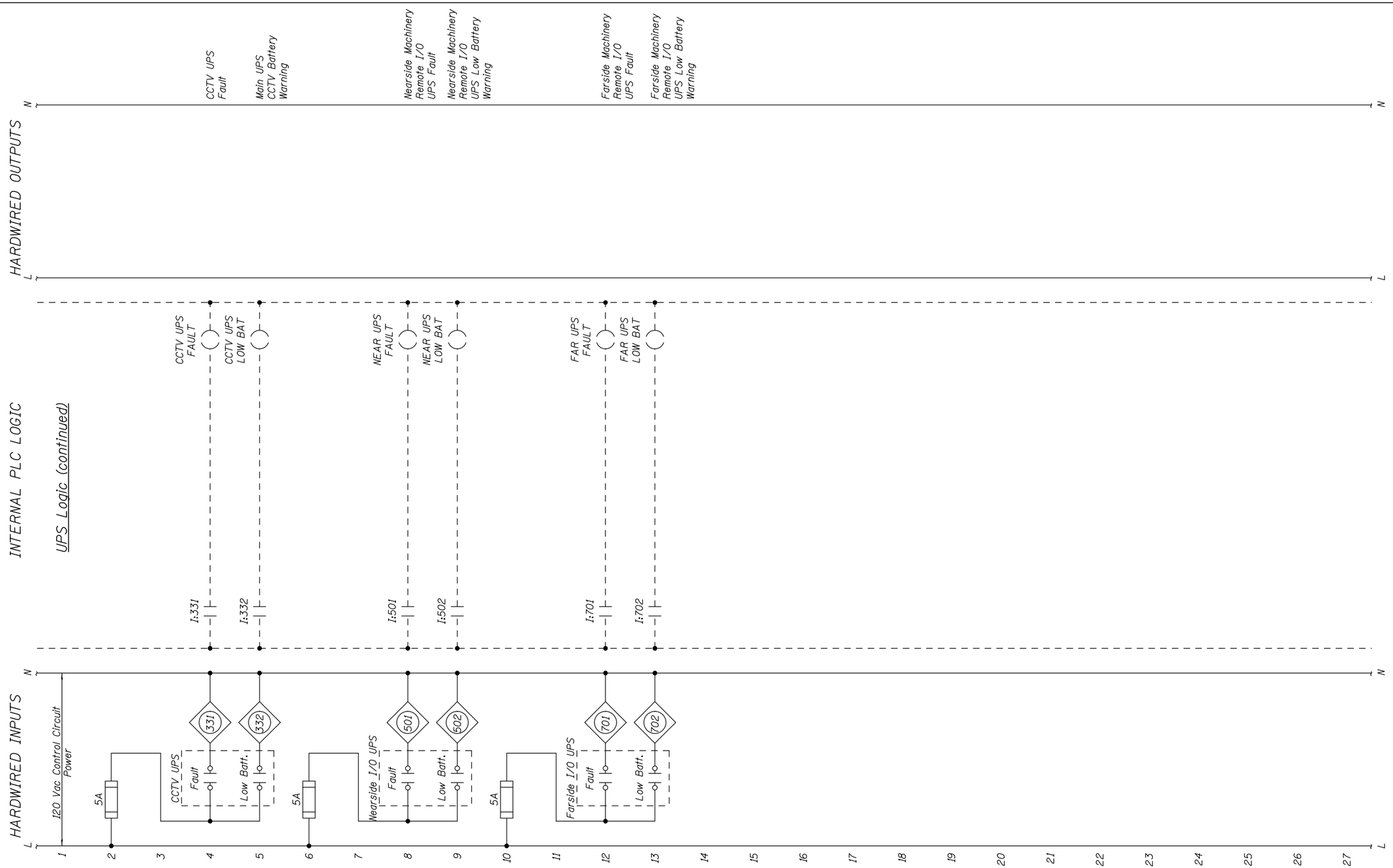
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 7
SHEET NO. 44 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	57
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

INTERNAL PLC LOGIC

UPS Logic (continued)



NOTES:

1. Provide additional timers as required to condition PLC inputs from sensing devices.

RUBY, Drawing 01-045

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

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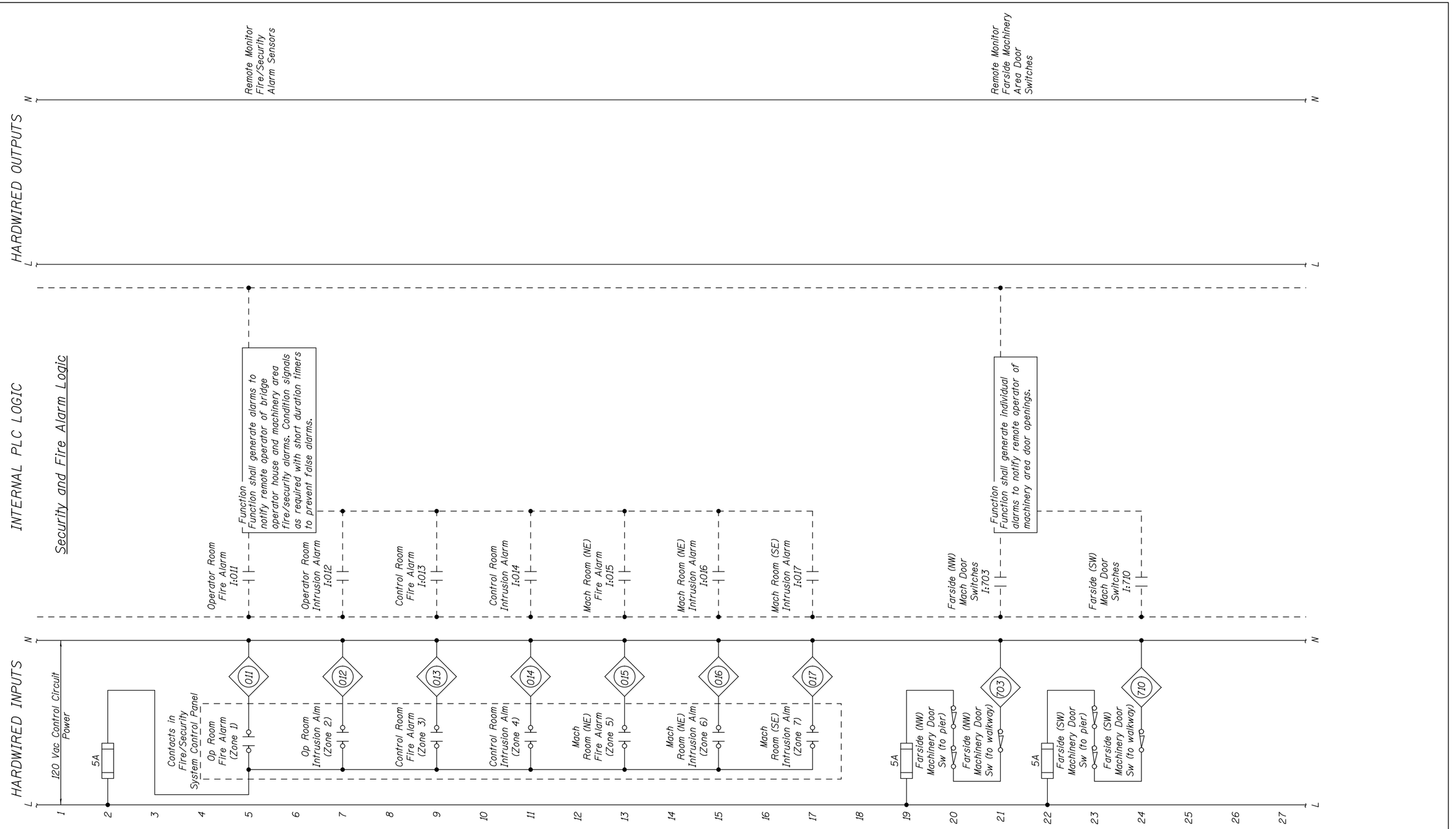
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 8
SHEET NO. 45 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	58
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. Provide additional timers as required to condition PLC inputs.
2. Where possible, switches and sensors shall be wired to provide fail-safe operation.

RUBY, Drawing 01-046

MODJESKI and MASTERS
Experience great bridges.

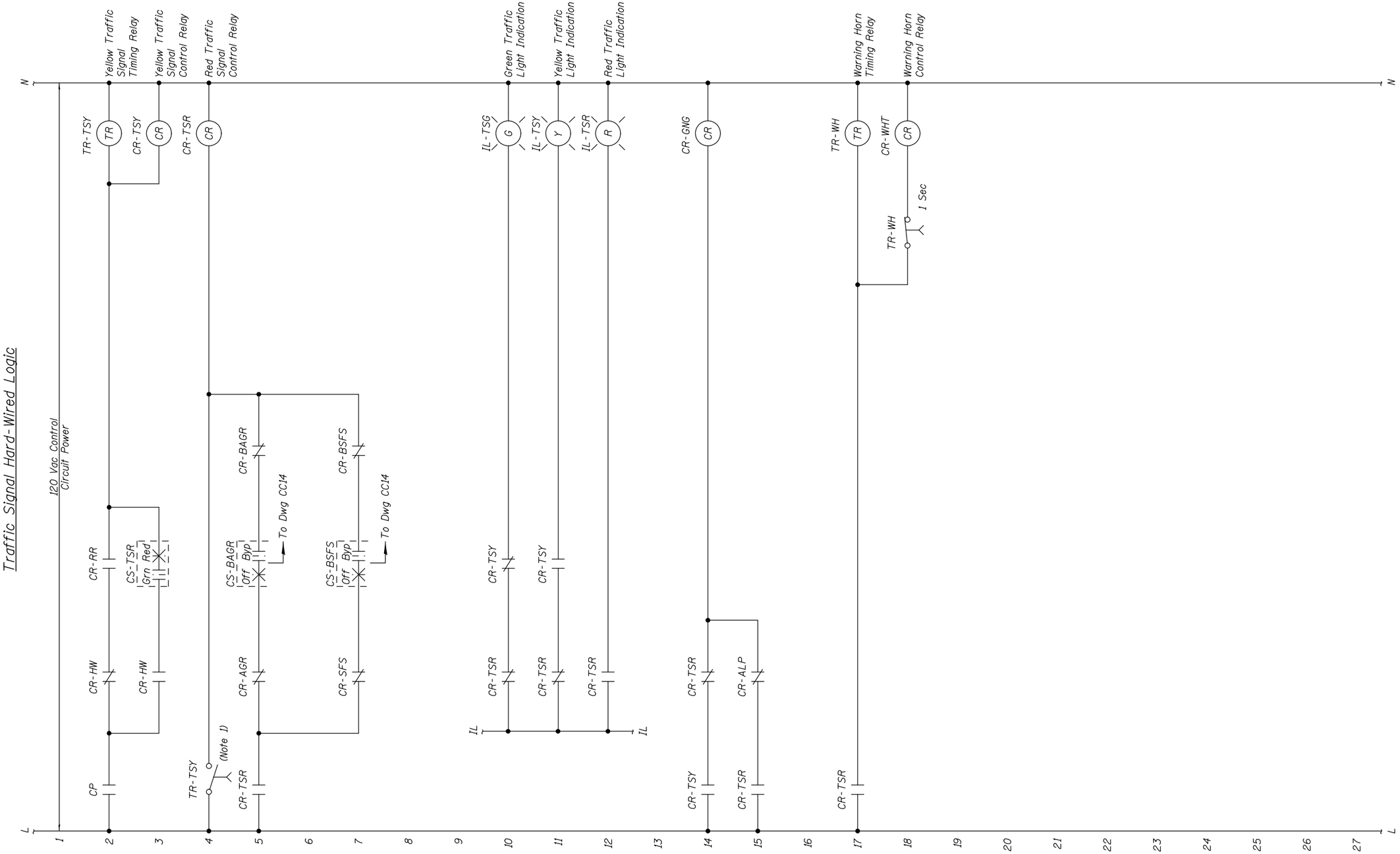
USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 9
SHEET NO. 46 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	59
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

Traffic Signal Hard-Wired Logic



NOTES:

1. Set timer preset according to IDOT requirements for yellow light cycle time.

RUBY, Drawing 01-047

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

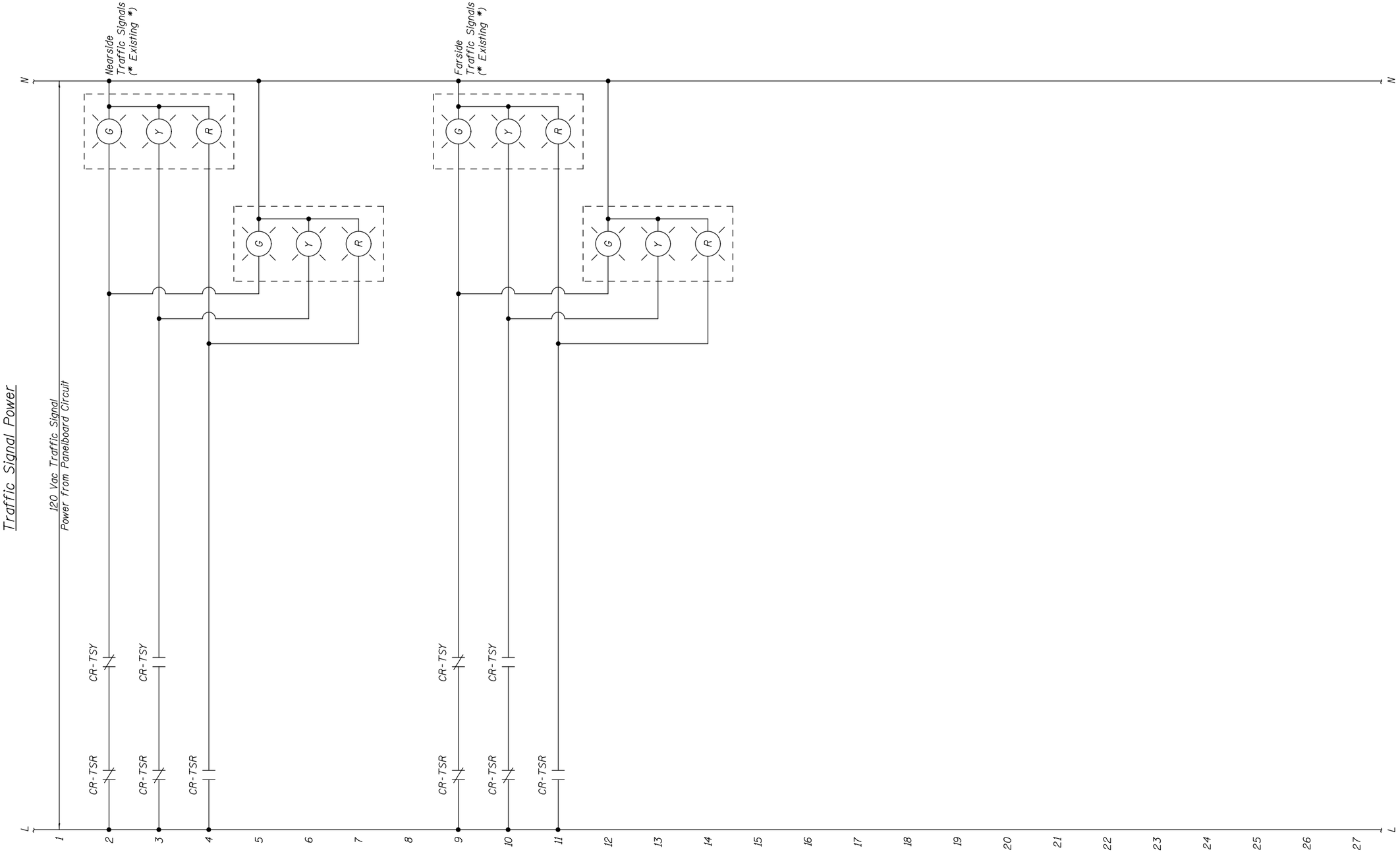
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 10
SHEET NO. 47 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	60
		CONTRACT NO. 60P55		
		ILLINOIS	FED. AID PROJECT	

Traffic Signal Power

120 Vac Traffic Signal
Power from Panelboard Circuit



RUBY, Drawing 01-048

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

MODJESKI and MASTERS
Experience great bridges.

STATE OF ILLINOIS
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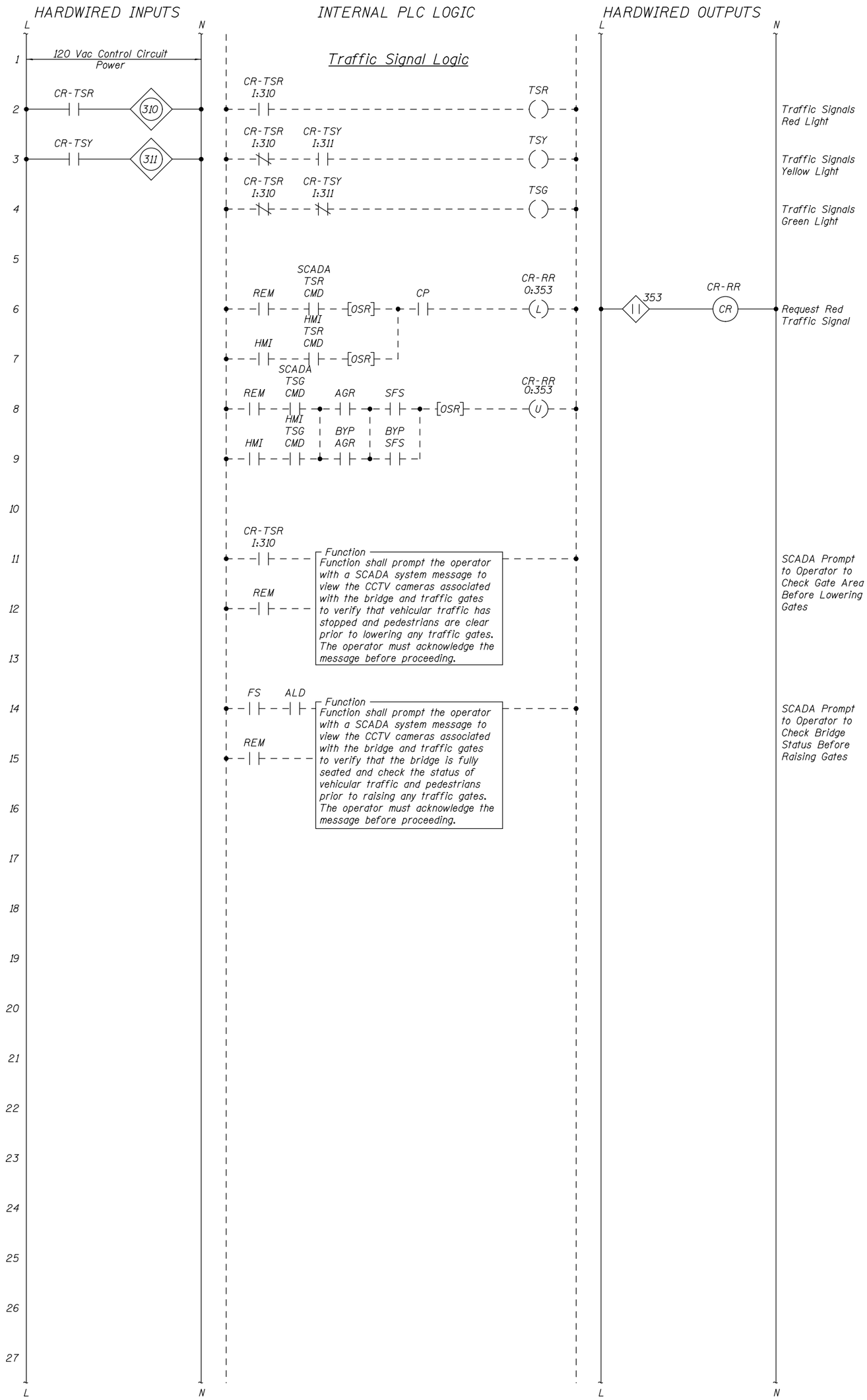
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 11
SHEET NO. 48 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	61
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



MODJESKI-MASTERS
Experience past bridges.

USER NAME =	
PLOT SCALE =	
PLOT DATE =	

DESIGNED	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI
DRAWN	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI

REVISED	
REVISED	
REVISED	
REVISED	

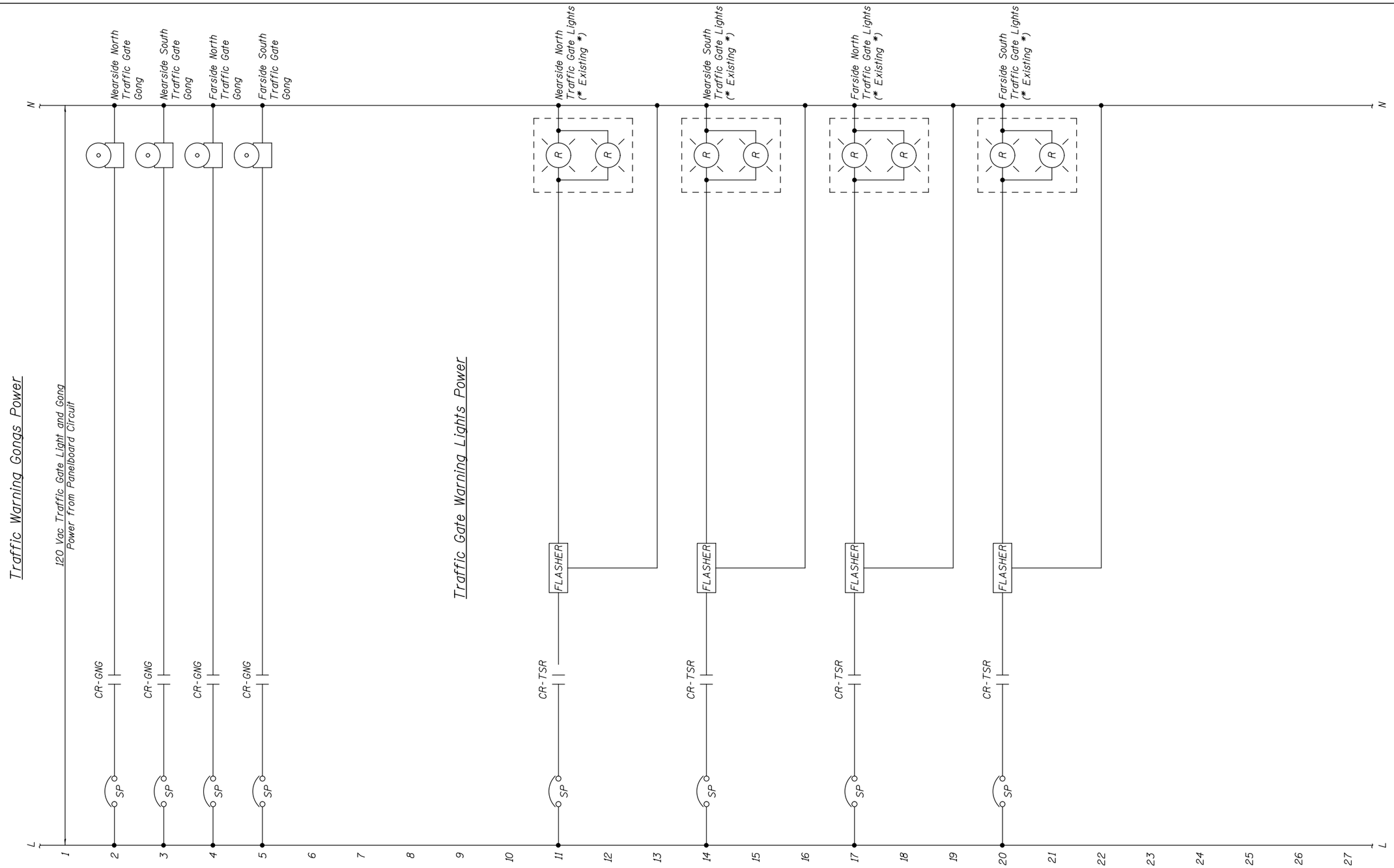
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 12

SHEET NO. 49 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	62
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-049



NOTES:

1. *Nearside and farside devices shall be supplied from seperate circuits where shown on the panelboard schedule drawings.*
2. *Existing traffic gate gongs shall be replaced with new units (E201).*

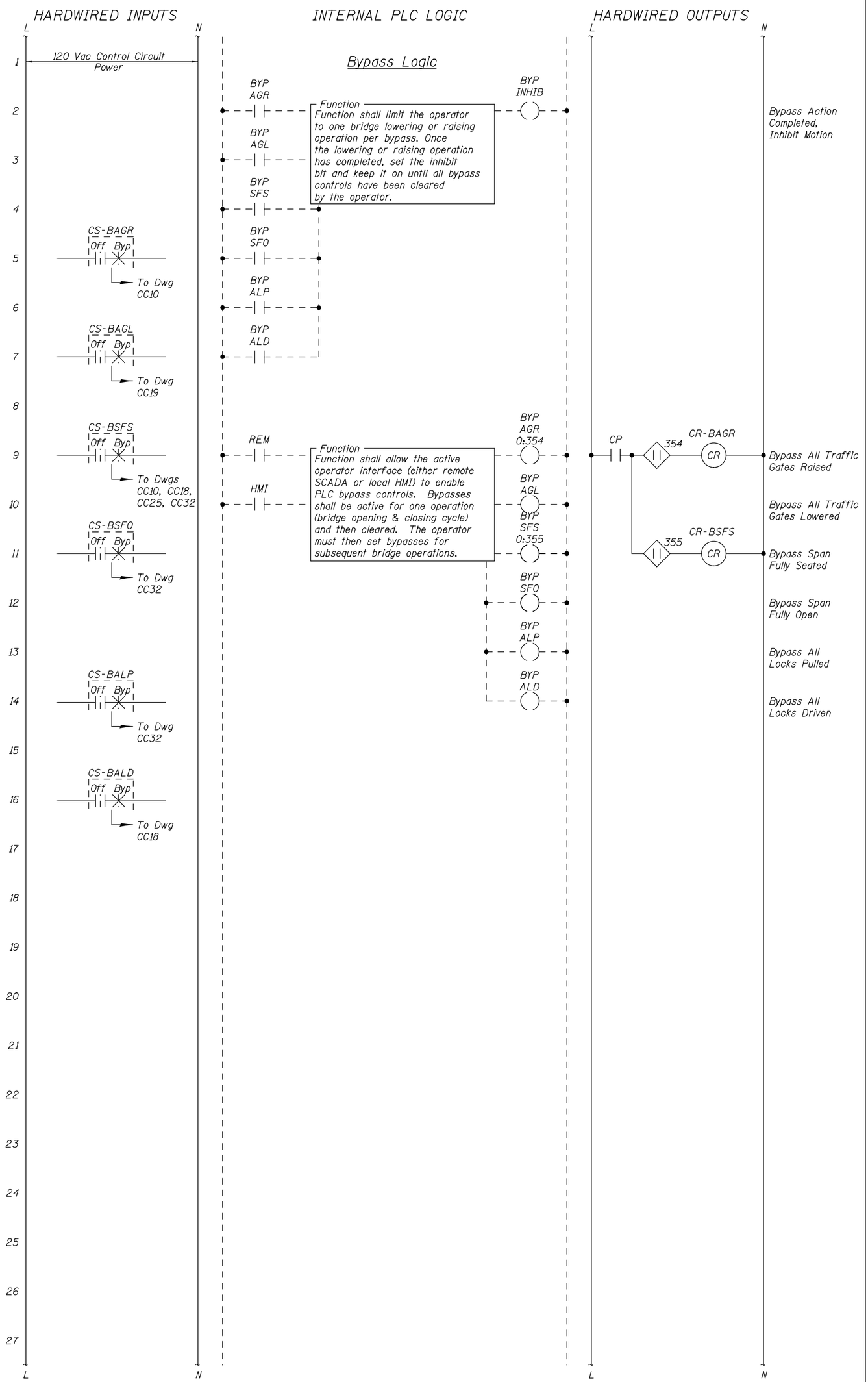
RUBY, Drawing 01-050

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 13
SHEET NO. 50 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	63
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



MODJESKI-MASTERS
Experience past bridges.

USER NAME =	
PLOT SCALE =	
PLOT DATE =	

DESIGNED	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI
DRAWN	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI

REVISED	REVISED	REVISED
—	—	—

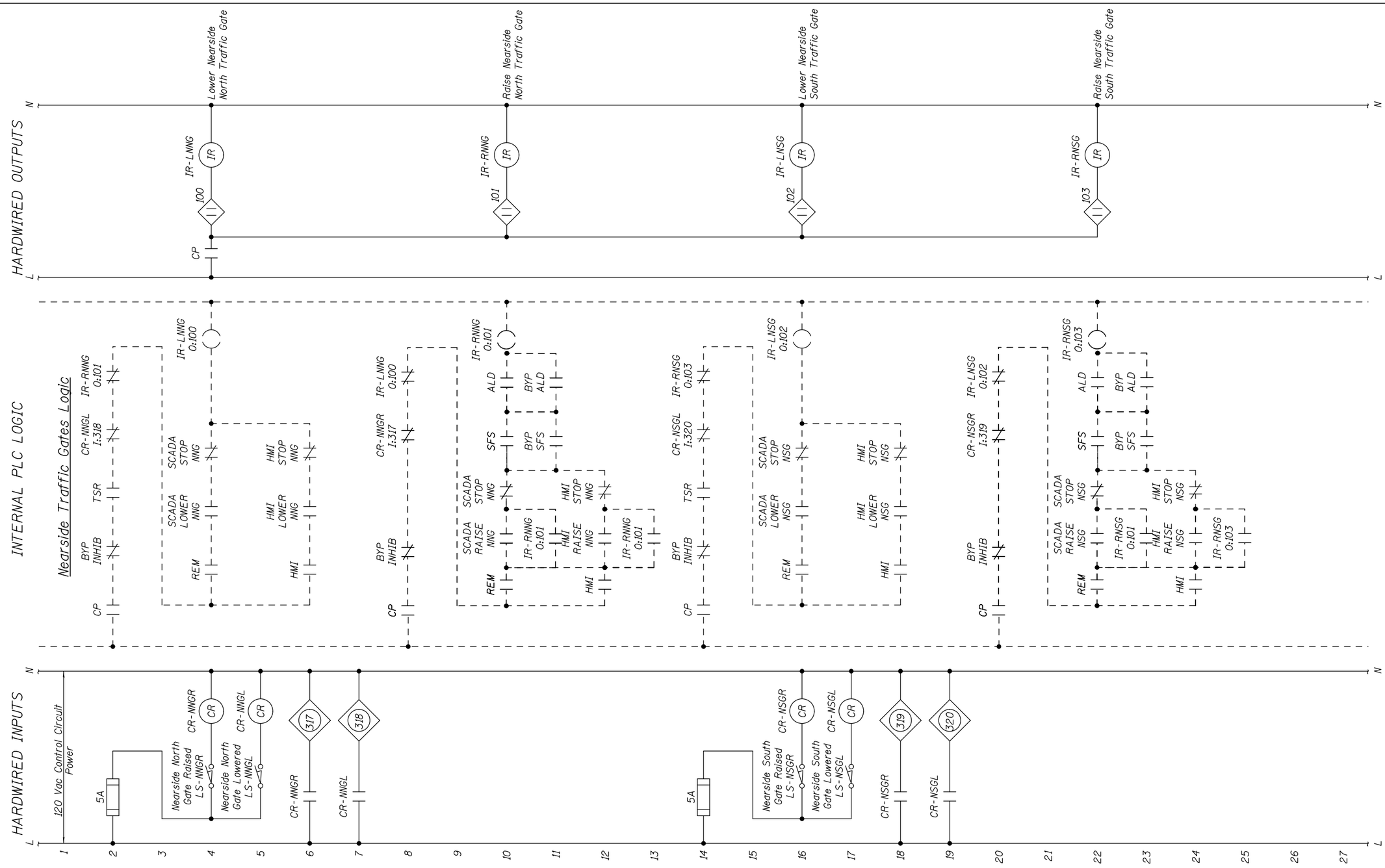
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 14

SHEET NO. 51 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	64
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-051



NOTES:

1. *Provide additional interlocking logic to prevent off-going traffic gates from being closed until corresponding on-going gate is closed (ie. nearside north gate must be fully lowered before farside north gate is lowered and farside south gate must be fully lowered before nearside south gate is lowered).*

RUBY, Drawing 01-052

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

MODJESKI and MASTERS
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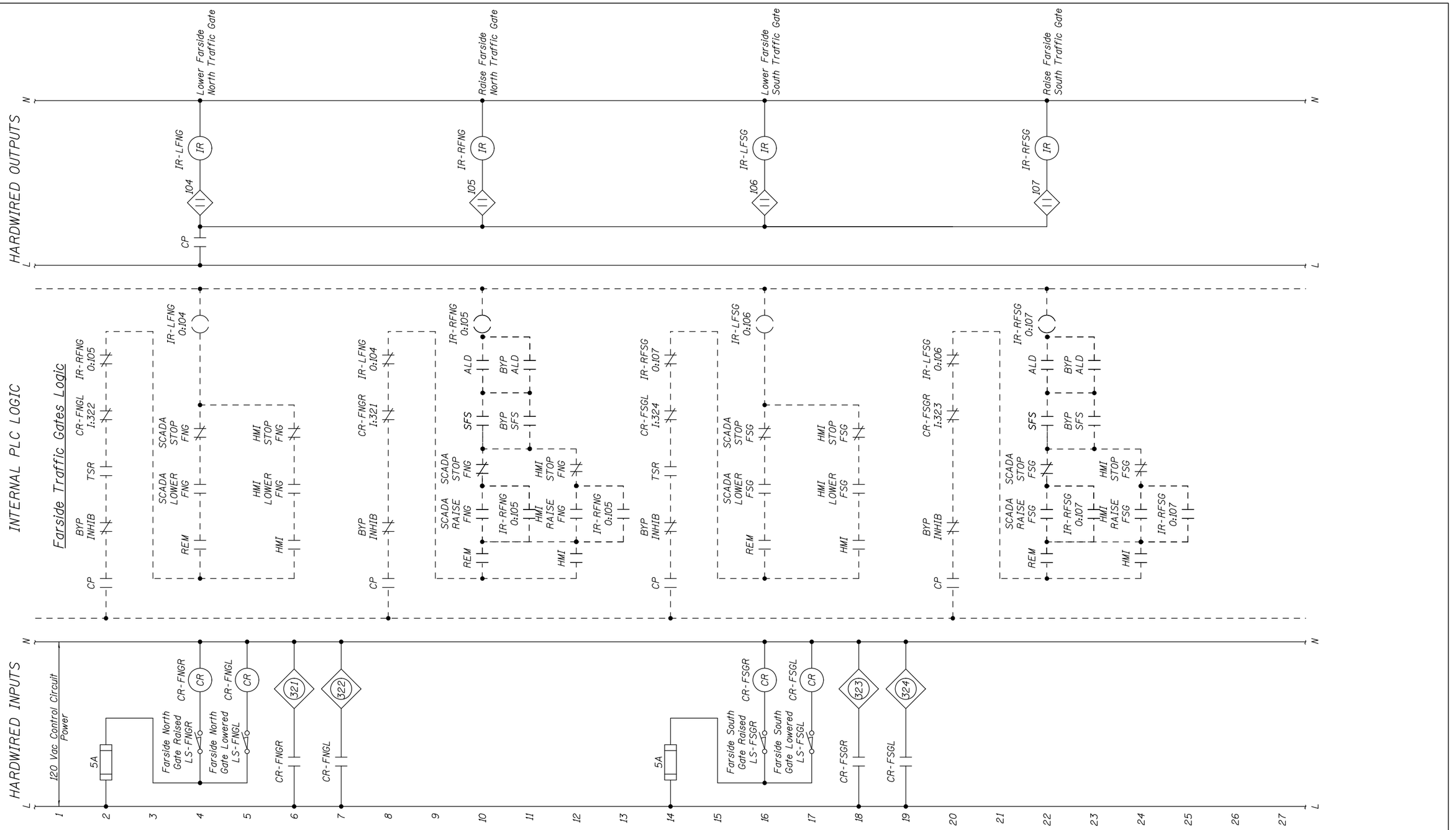
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 15
SHEET NO. 52 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	65
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. *Provide additional interlocking logic to prevent off-going traffic gates from being closed until corresponding on-going gate is closed (ie. nearside north gate must be fully lowered before farside north gate is lowered and farside south gate must be fully lowered before nearside south gate is lowered).*

RUBY, Drawing 01-053

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

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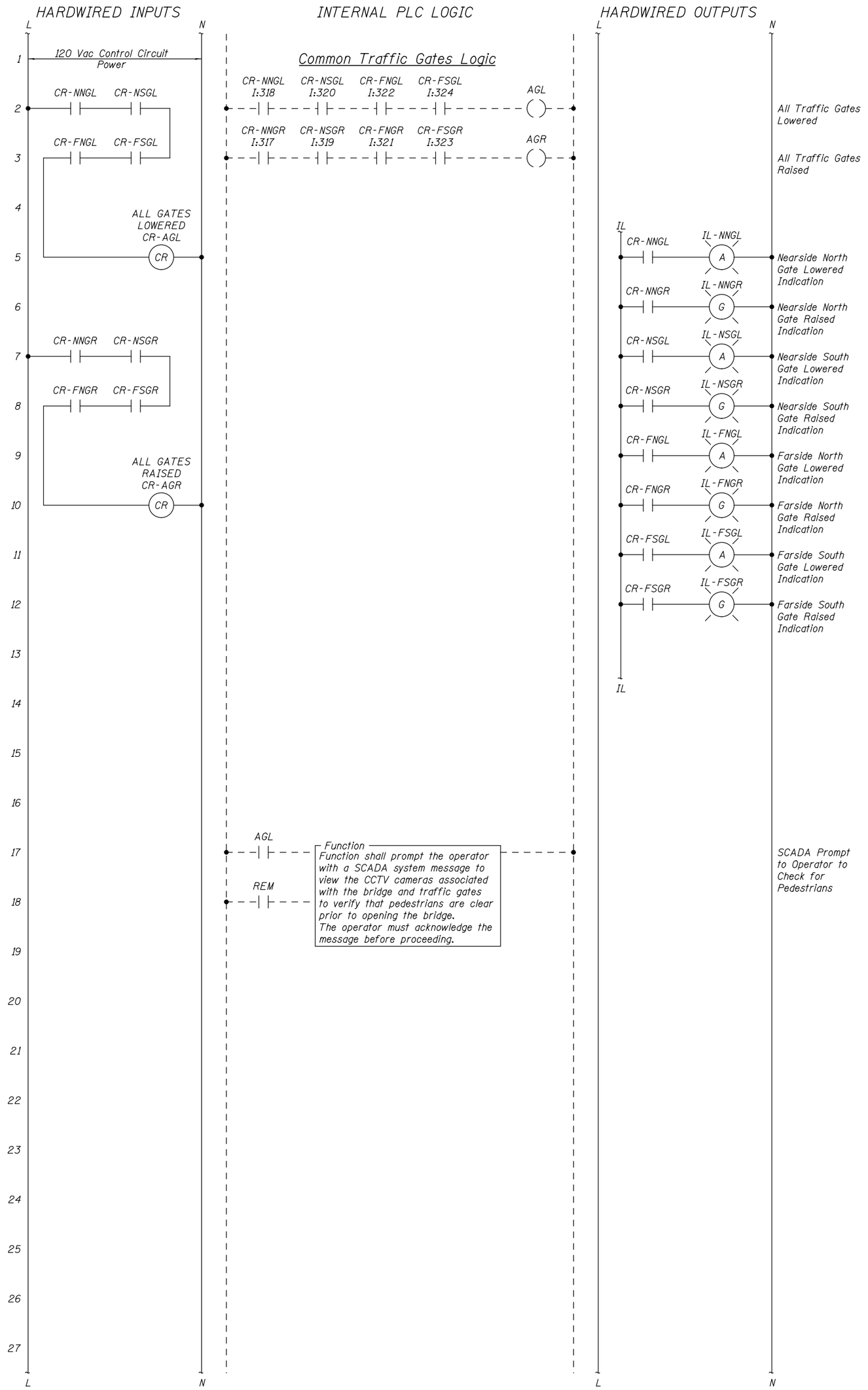
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 16
SHEET NO. 53 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	66
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Experience past bridges.

USER NAME =		DESIGNED -	R.I. PETERS
		CHECKED -	J.G. STRENKOSKI
PLOT SCALE =		DRAWN -	R.I. PETERS
PLOT DATE =		CHECKED -	J.G. STRENKOSKI
		REVISED	
		REVISED	
		REVISED	

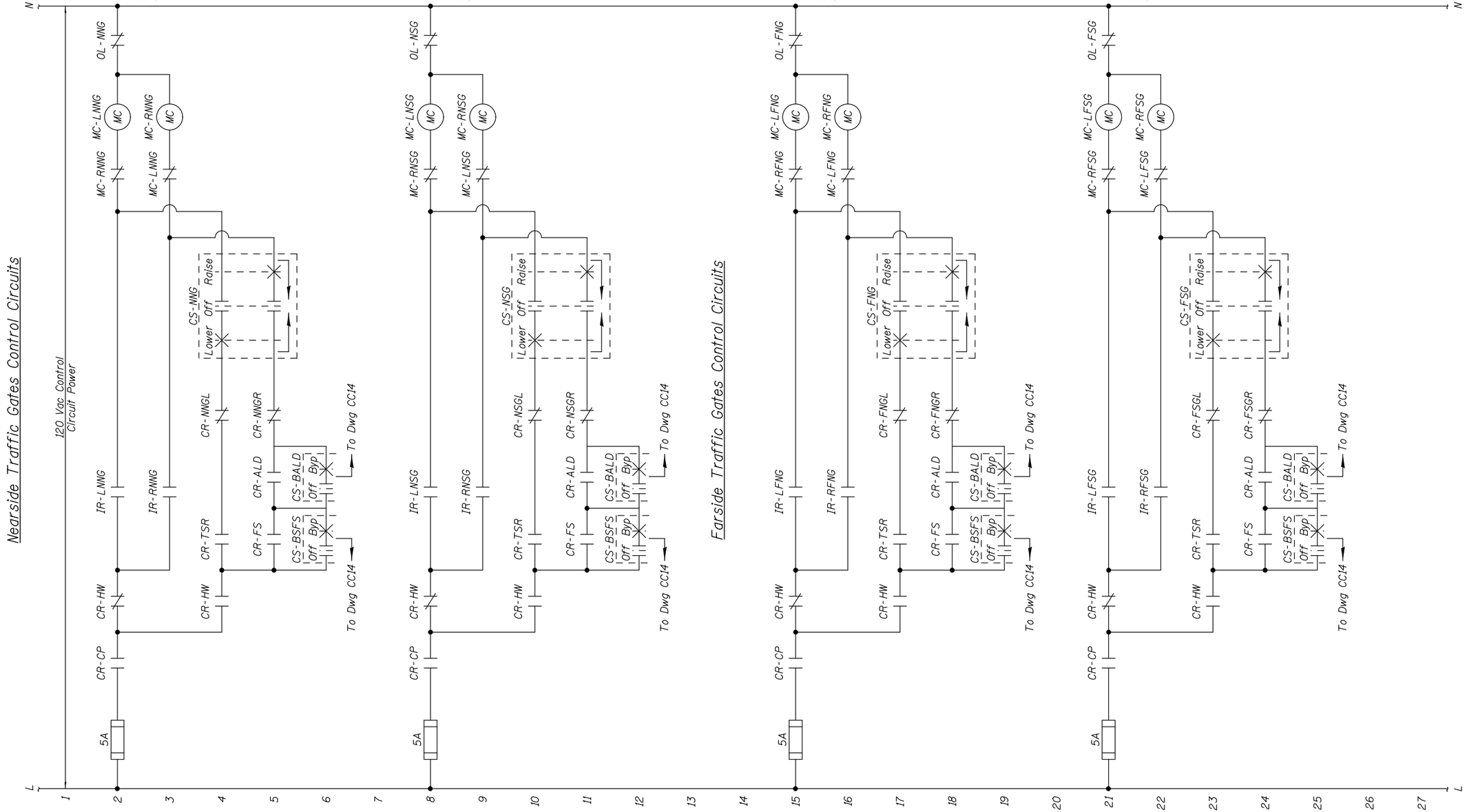
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 17

SHEET NO. 54 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	67
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-054



NOTES:

1. Rewire existing MCC starters as required to implement new control logic.

RUBY, Drawing 01-055

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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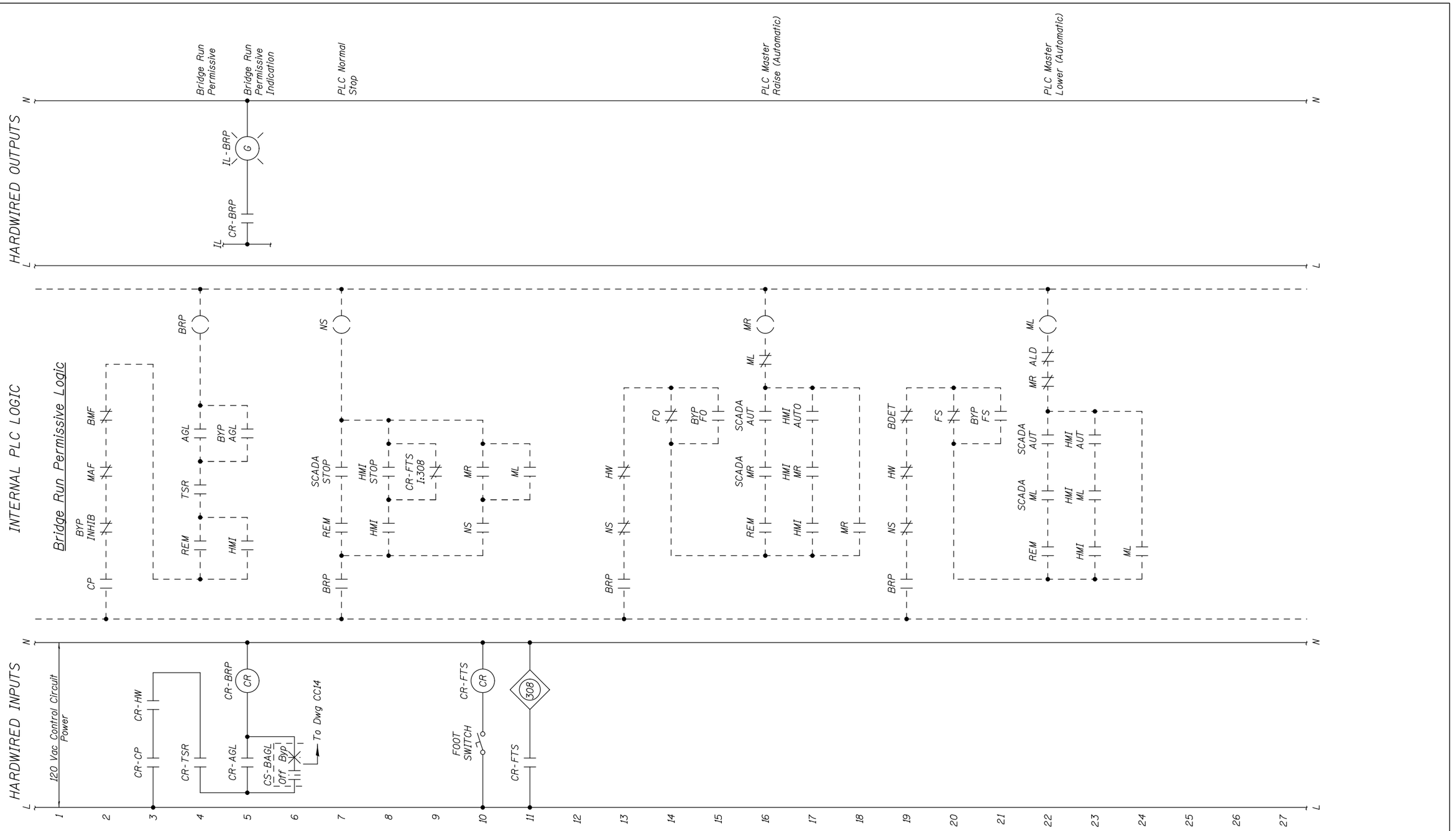
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 18
SHEET NO. 55 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	68
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



RUBY, Drawing 01-056

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

MODJESKI and MASTERS
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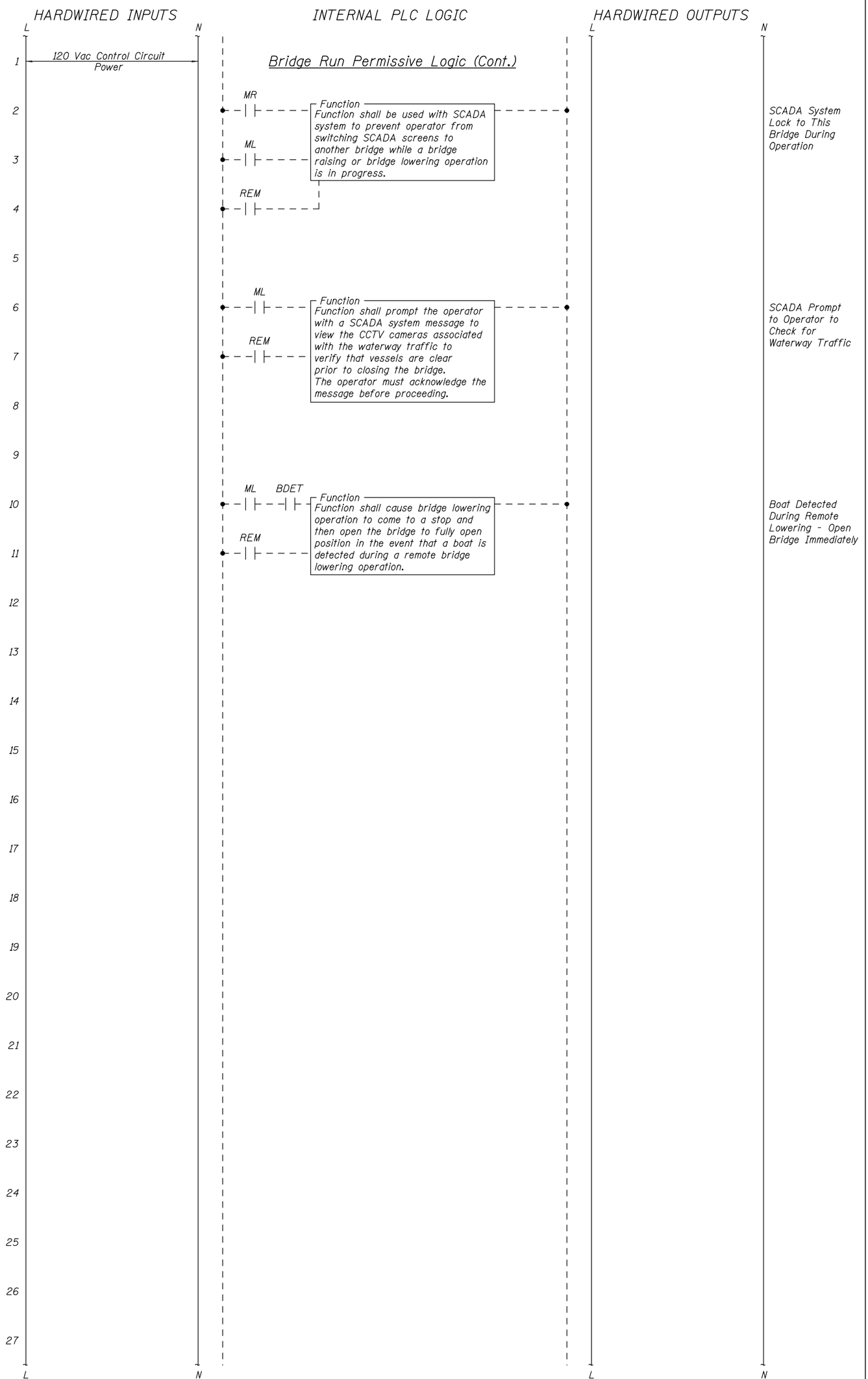
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 19
SHEET NO. 56 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	69
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Engineers and Architects

USER NAME =		DESIGNED -	R.I. PETERS
		CHECKED -	J.G. STRENKOSKI
PLOT SCALE =		DRAWN -	R.I. PETERS
PLOT DATE =		CHECKED -	J.G. STRENKOSKI
		REVISED	REVISED
		REVISED	REVISED
		REVISED	REVISED

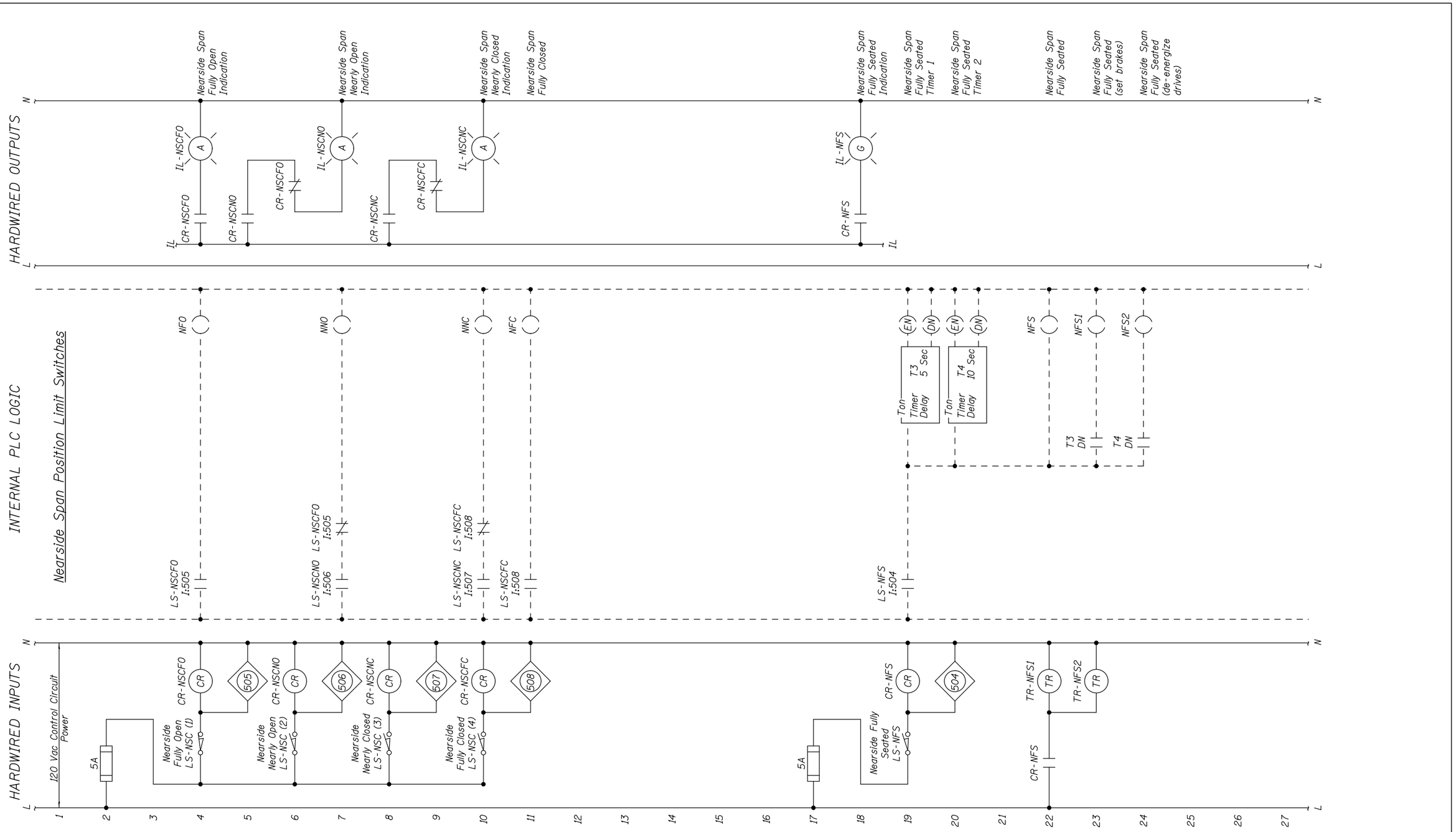
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET - CONTROL CIRCUIT - 20

SHEET NO. 57 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	70
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-057



NOTES:

1. *Provide additional de-bounce timers as required to condition PLC inputs for sensing devices.*

RUBY, Drawing 01-058

USER NAME =	DESIGNED - R.I. PETERS	REVISED	___
	CHECKED - J.G. STRENKOSKI	REVISED	___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	___

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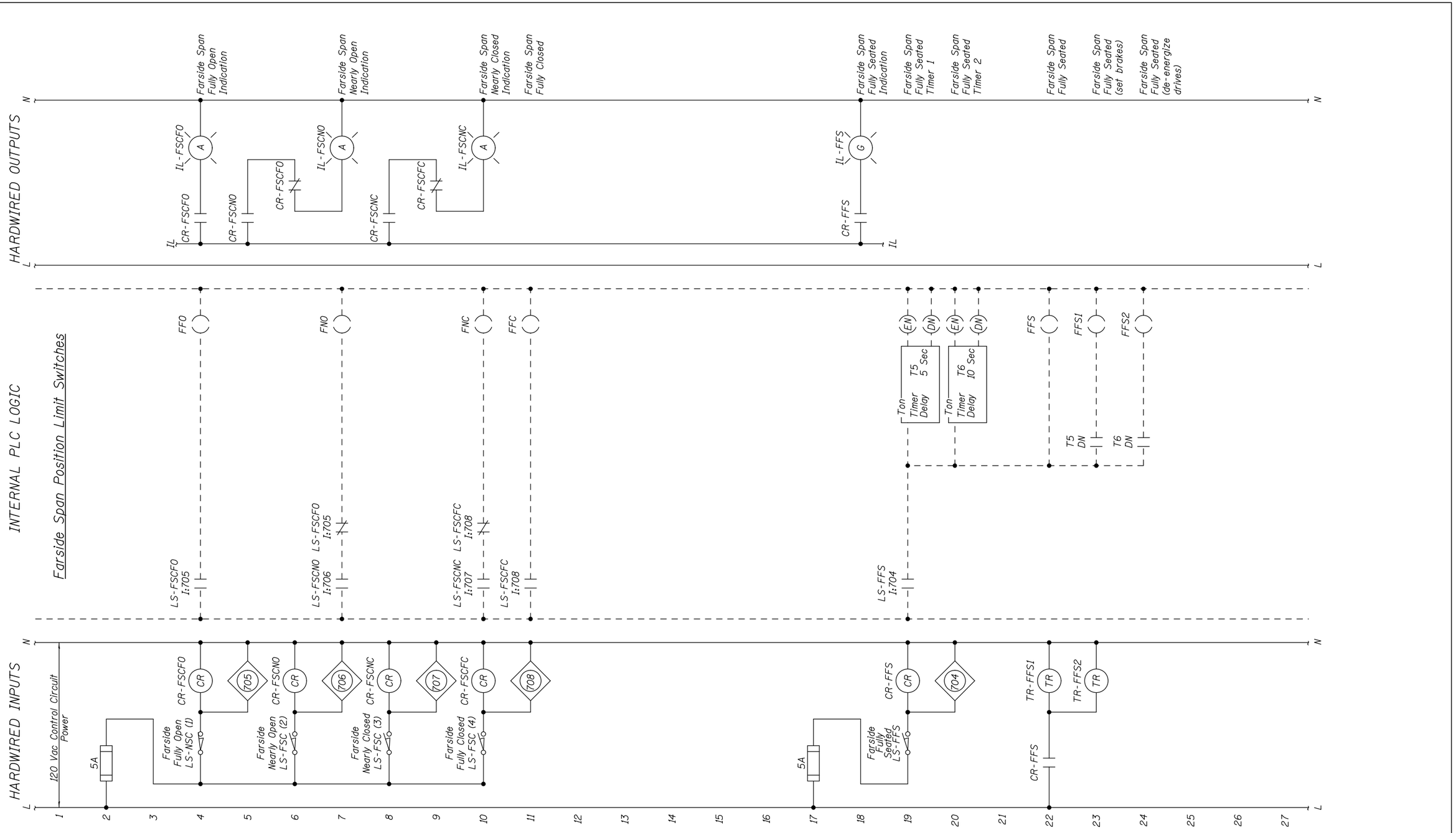
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 21
SHEET NO. 58 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	71
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. Provide additional de-bounce timers as required to condition PLC inputs for sensing devices.

RUBY, Drawing 01-059

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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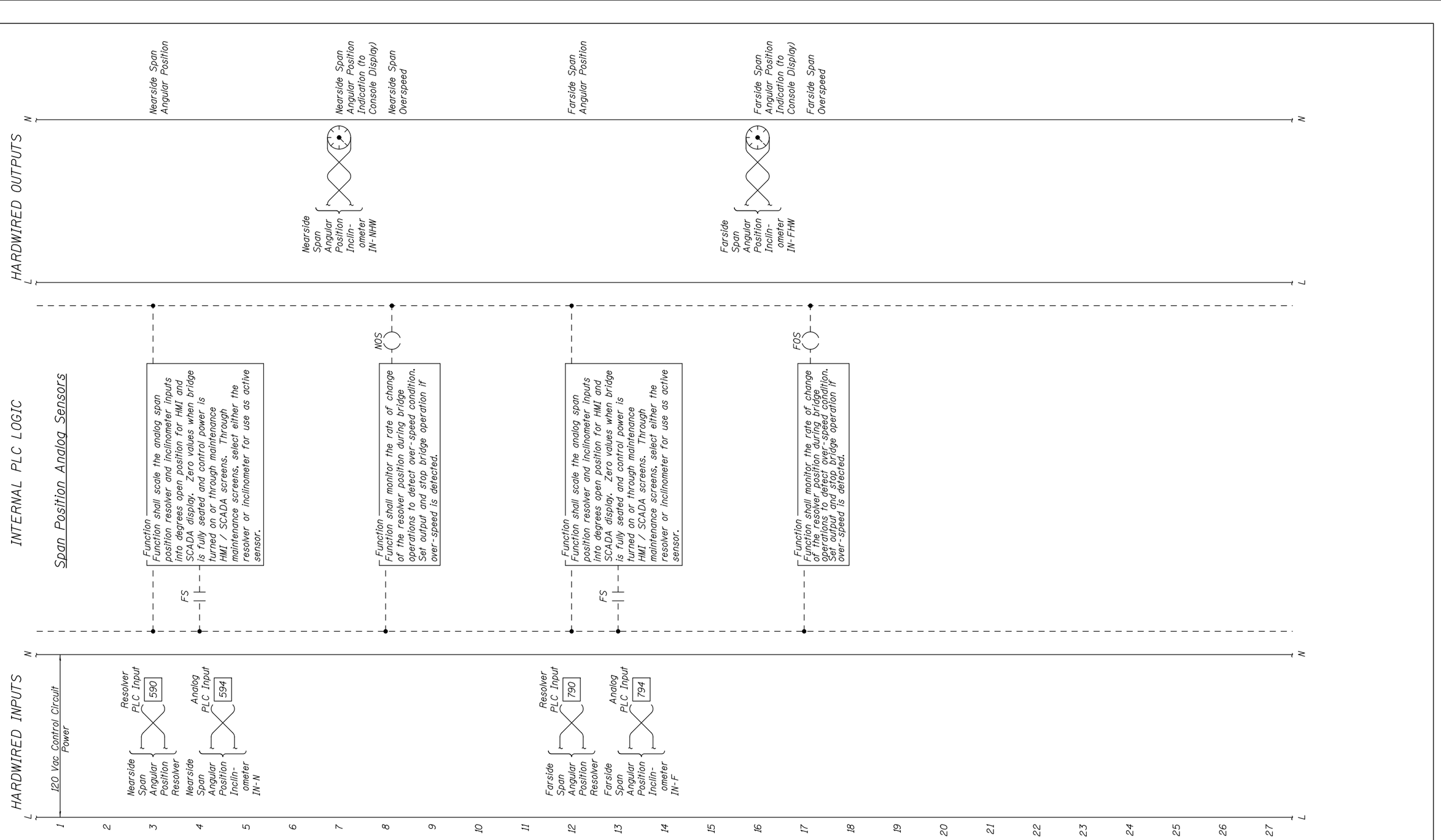
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 22
SHEET NO. 59 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	72
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



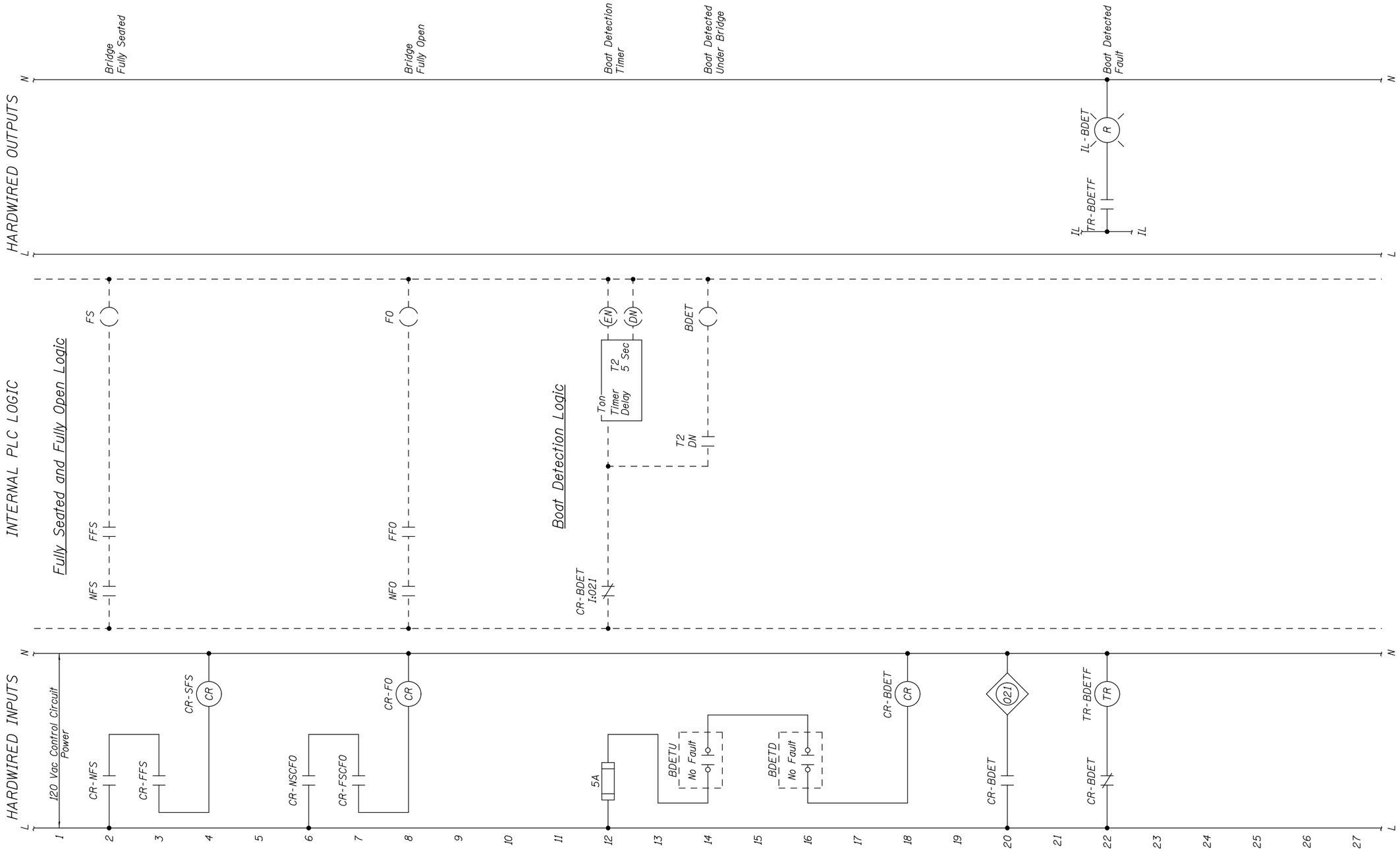
RUBY, Drawing 01-060

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 23
SHEET NO. 60 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	73
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

1. Wire all boat detection sensor contacts back to main PLC cabinet for ease of maintenance and troubleshooting. Do not field "daisy chain" contacts device-to-device.

RUBY, Drawing 01-061

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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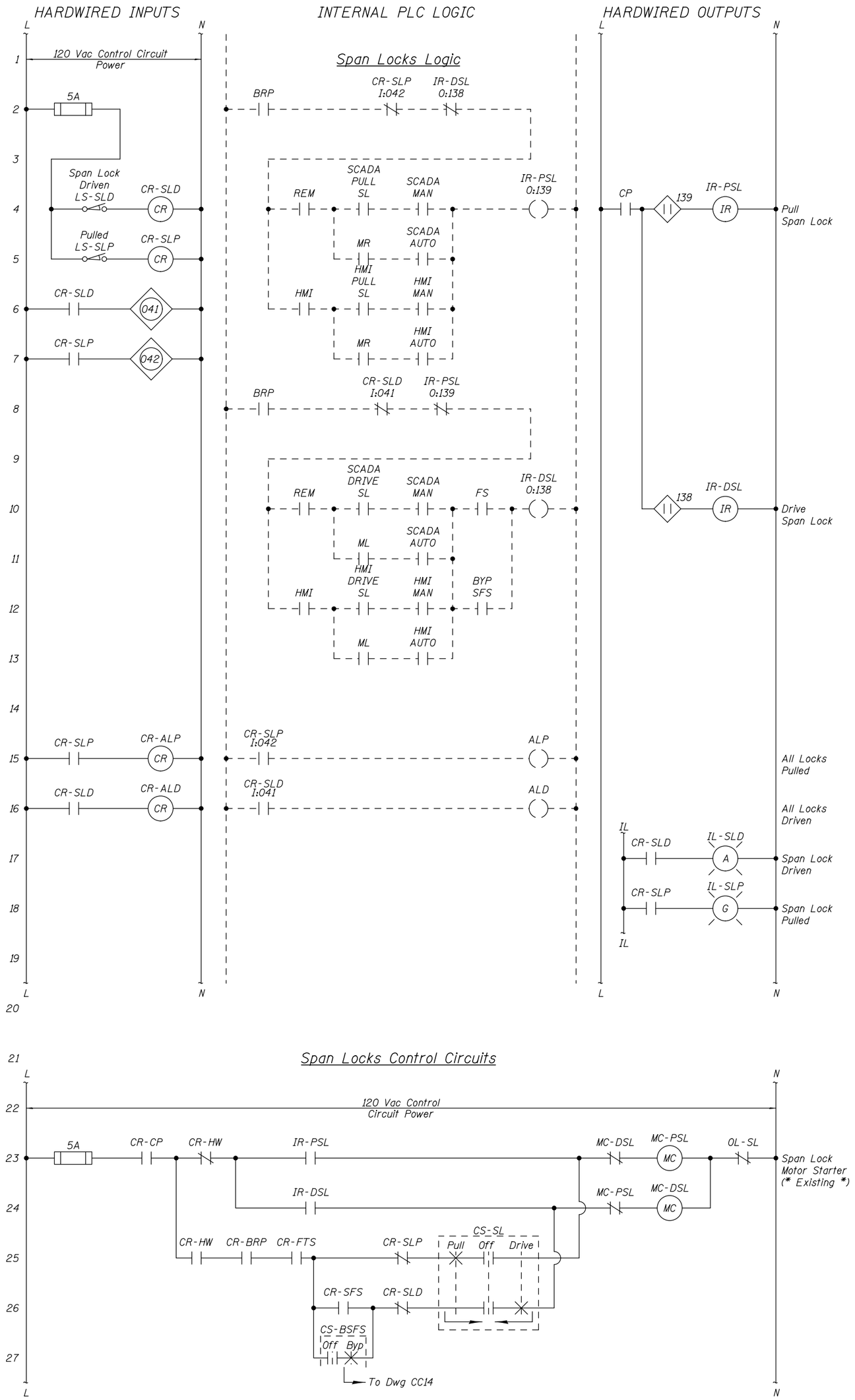
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 24
SHEET NO. 61 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	74
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

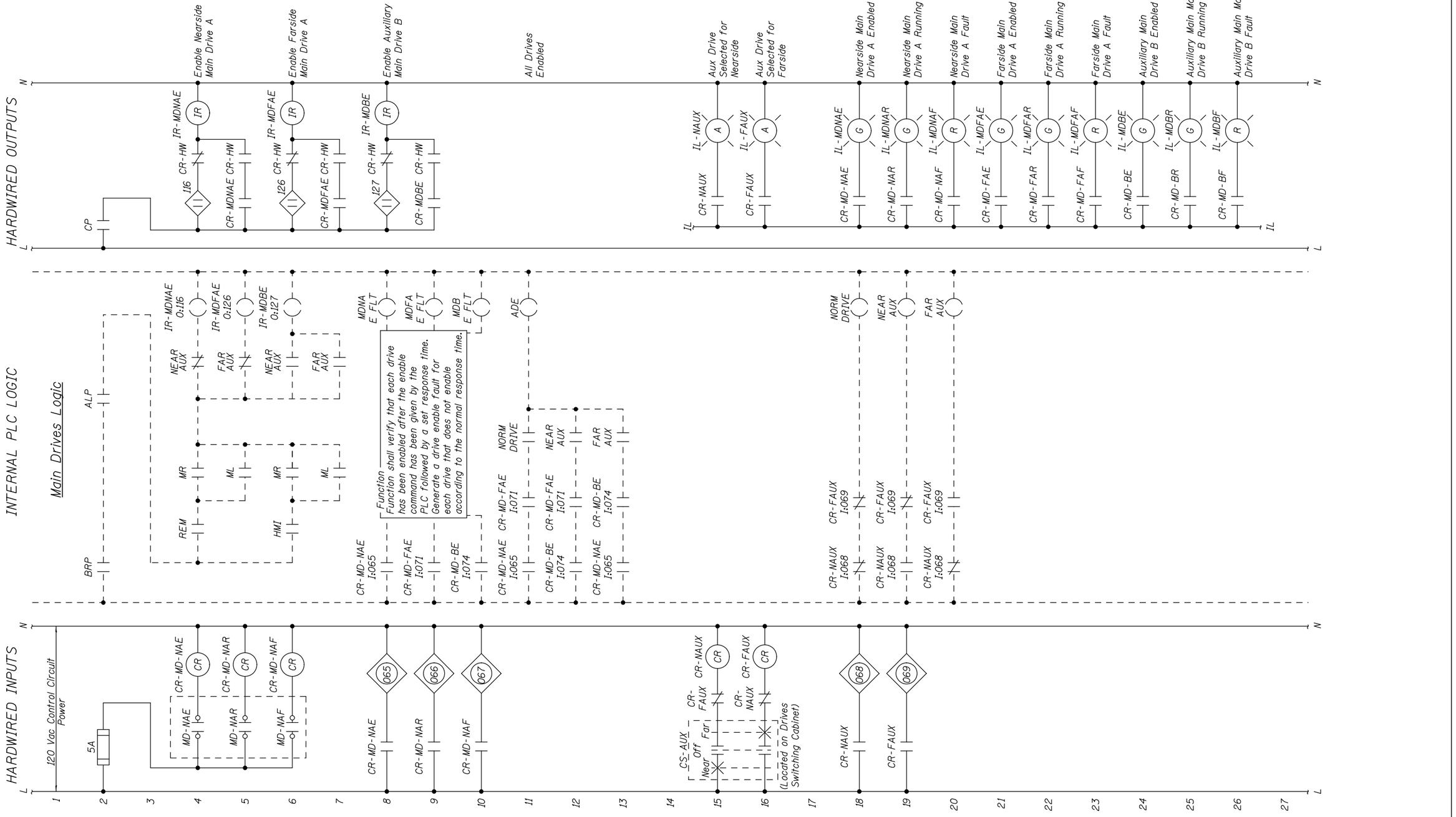
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 25

SHEET NO. 62 OF 97 SHEETS

USER NAME =		DESIGNED -	R.I. PETERS
PLOT SCALE =		CHECKED -	J.G. STRENKOSKI
PLOT DATE =		DRAWN -	R.I. PETERS
		CHECKED -	J.G. STRENKOSKI
	REVISED	REVISED	REVISED
	REVISED	REVISED	REVISED

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	75
ILLINOIS FED. AID PROJECT		CONTRACT NO. 60P55		

RUBY, Drawing 01-062



NOTES:

1. Provide additional control circuits to control contactors in Drives Switching Cabinet to allow the Auxiliary Drive to be used with nearside or farside motors based on the position of CS-AUX (Reference Drawing: Three Line Diagram - 5)

RUBY, Drawing 01-063

USER NAME =	DESIGNED - R.I. PETERS	REVISED	
	CHECKED - J.G. STRENKOSKI	REVISED	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	

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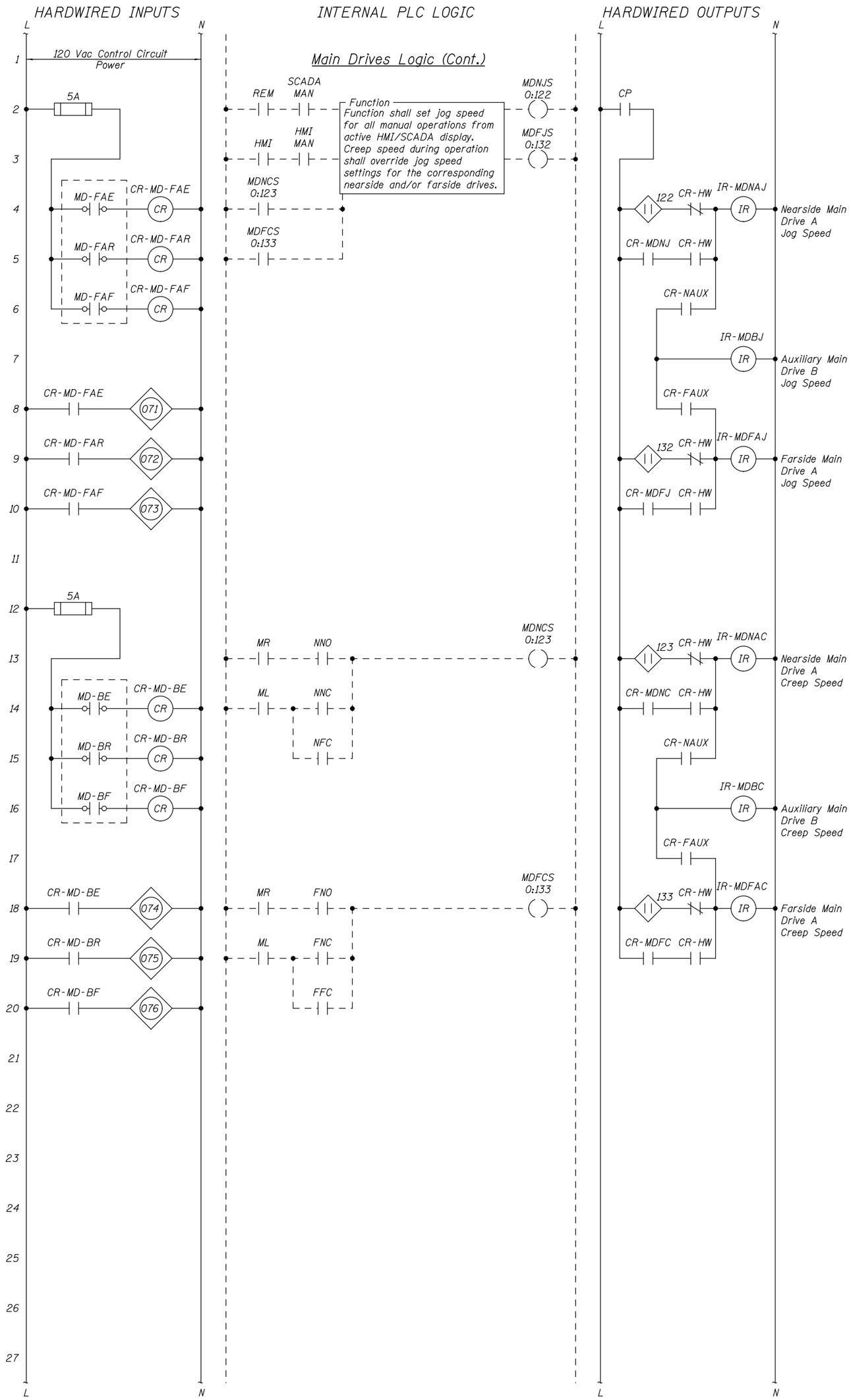
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 26
SHEET NO. 63 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	76
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



MODJESKI-MASTERS
Experience you can trust.

	USER NAME =	DESIGNED - R.I. PETERS	REVISED
PLOT SCALE =		CHECKED - J.G. STRENKOSKI	REVISED
PLOT DATE =		DRAWN - R.I. PETERS	REVISED
		CHECKED - J.G. STRENKOSKI	REVISED

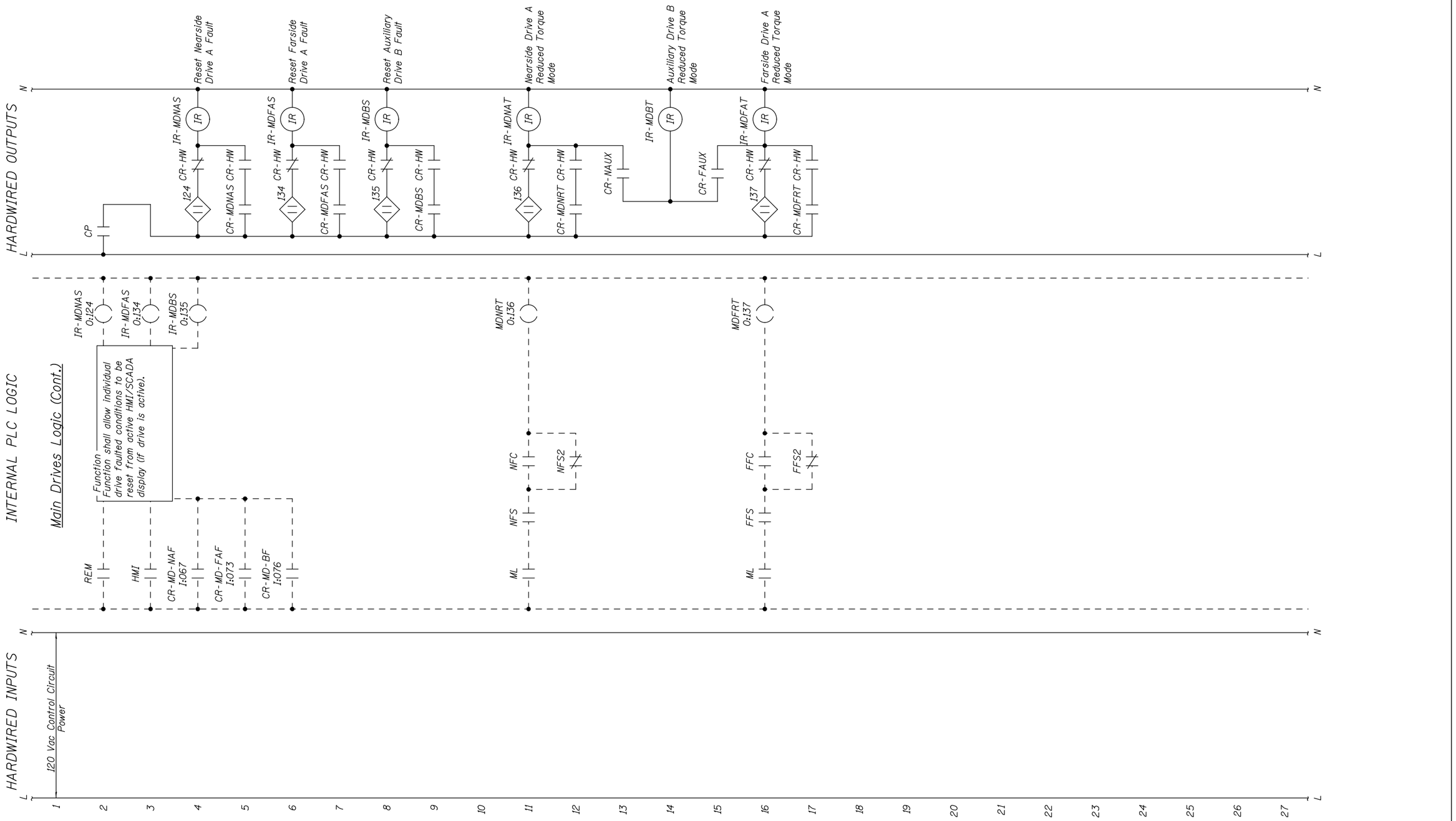
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 27

SHEET NO. 64 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	77
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-064



RUBY, Drawing 01-065

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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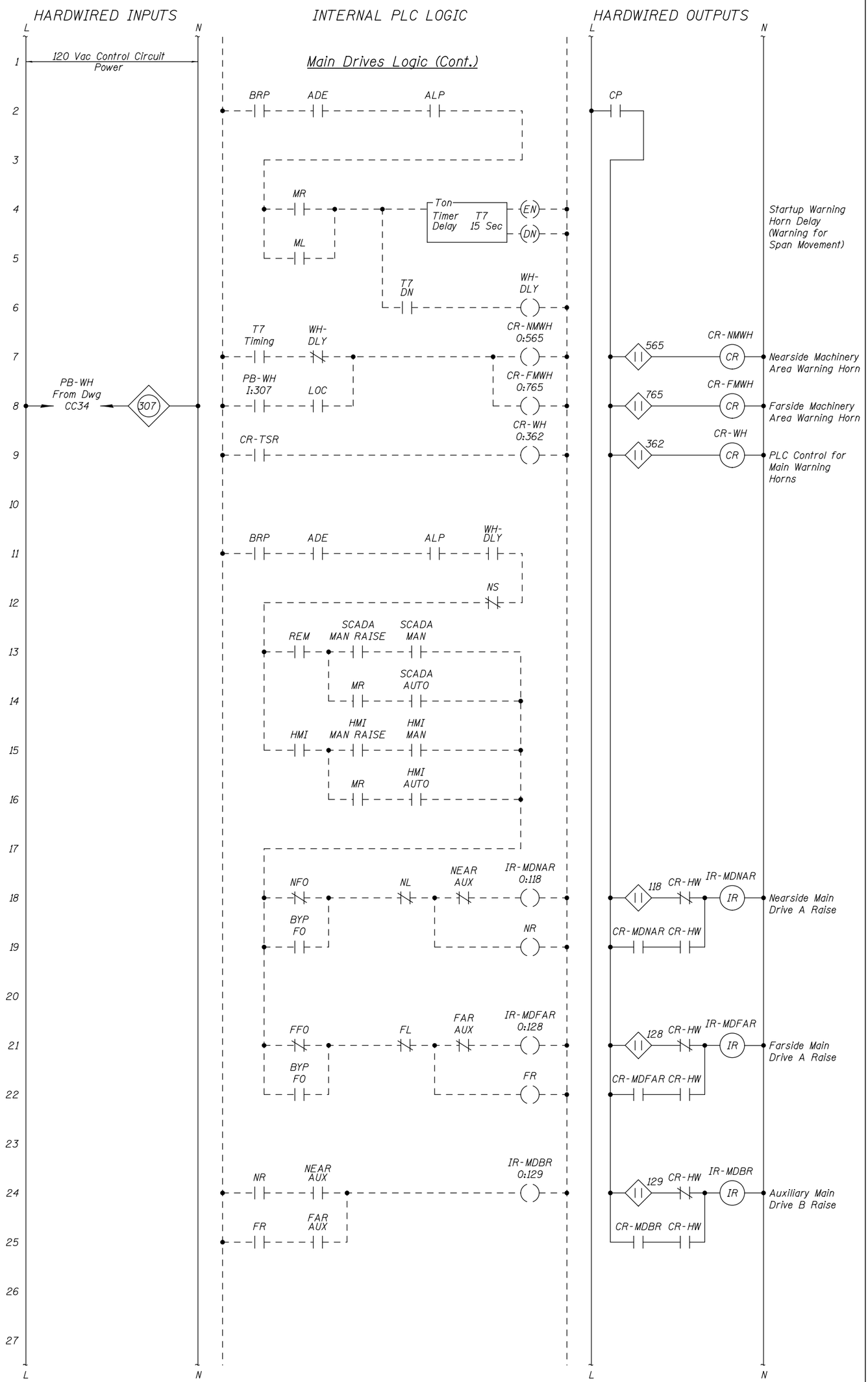
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 28

SHEET NO. 65 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	78
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
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USER NAME =	
PLOT SCALE =	
PLOT DATE =	

DESIGNED	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI
DRAWN	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI

REVISED	REVISED	REVISED
REVISED	REVISED	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 29

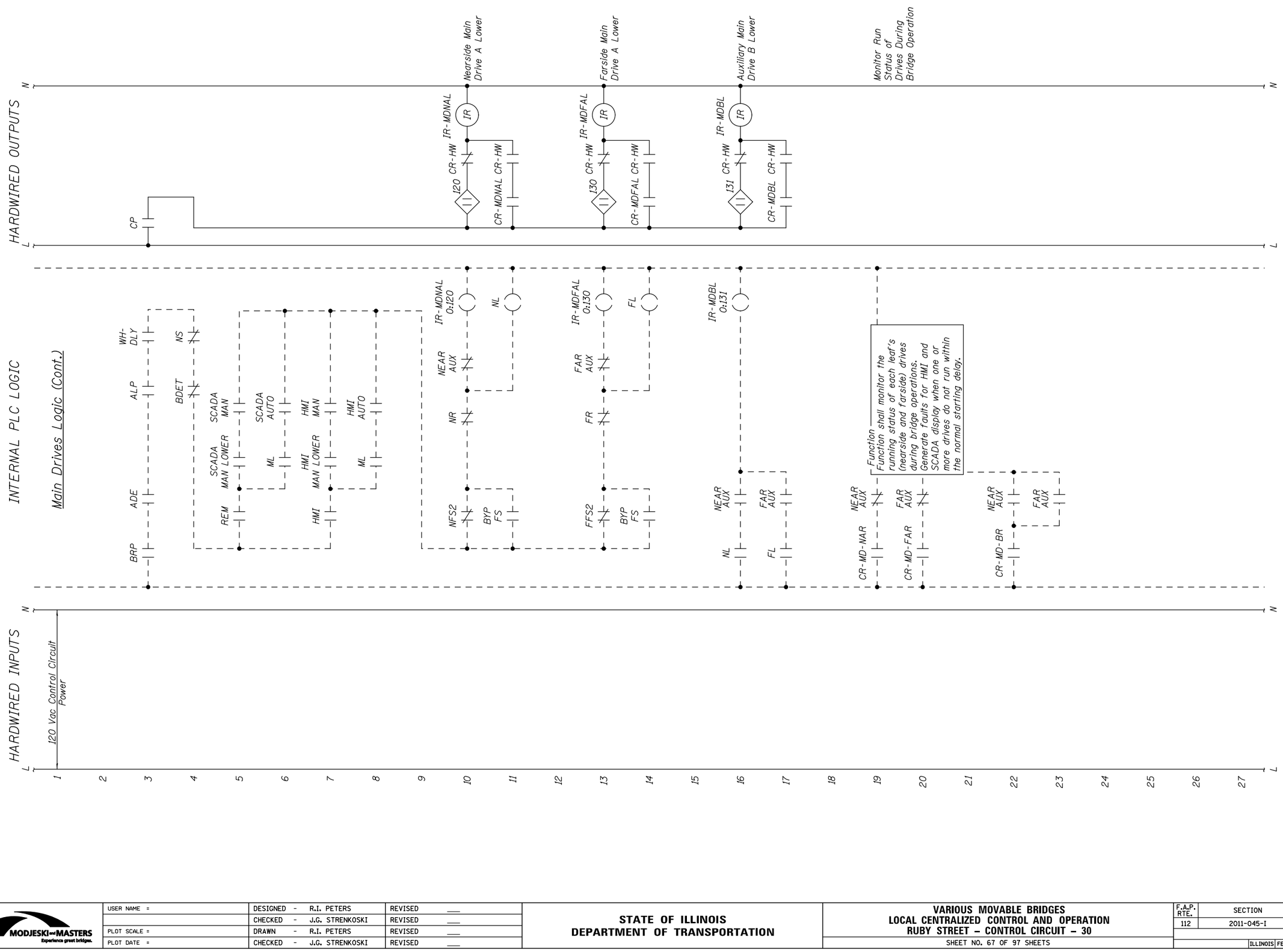
SHEET NO. 66 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	79
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-066

INTERNAL PLC LOGIC

Main Drives Logic (Cont.)



RUBY, Drawing 01-067

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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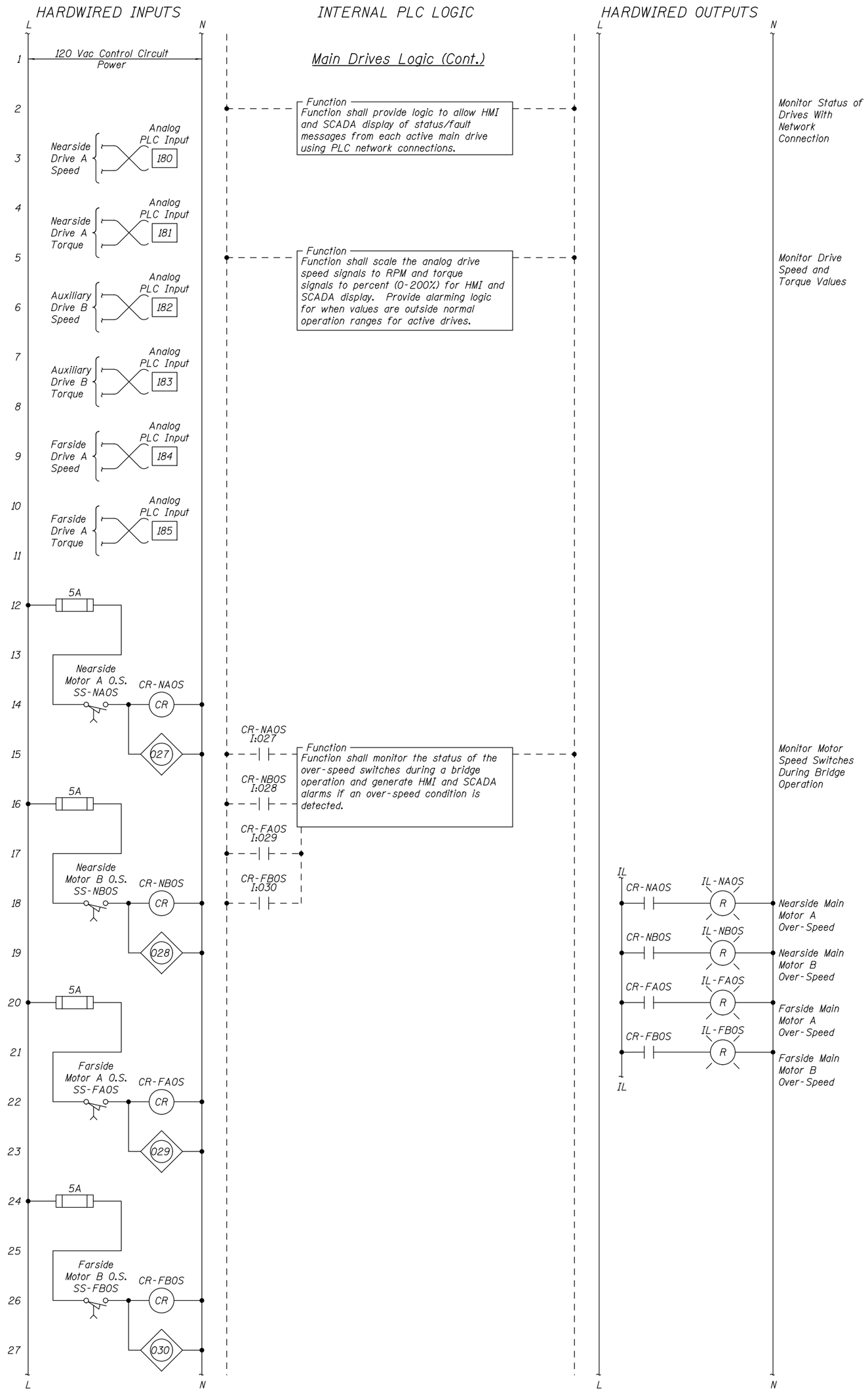
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 30
SHEET NO. 67 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	80
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Experience past bridges.

USER NAME =		DESIGNED -	R.I. PETERS
		CHECKED -	J.G. STRENKOSKI
PLOT SCALE =		DRAWN -	R.I. PETERS
PLOT DATE =		CHECKED -	J.G. STRENKOSKI
		REVISED	
		REVISED	
		REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

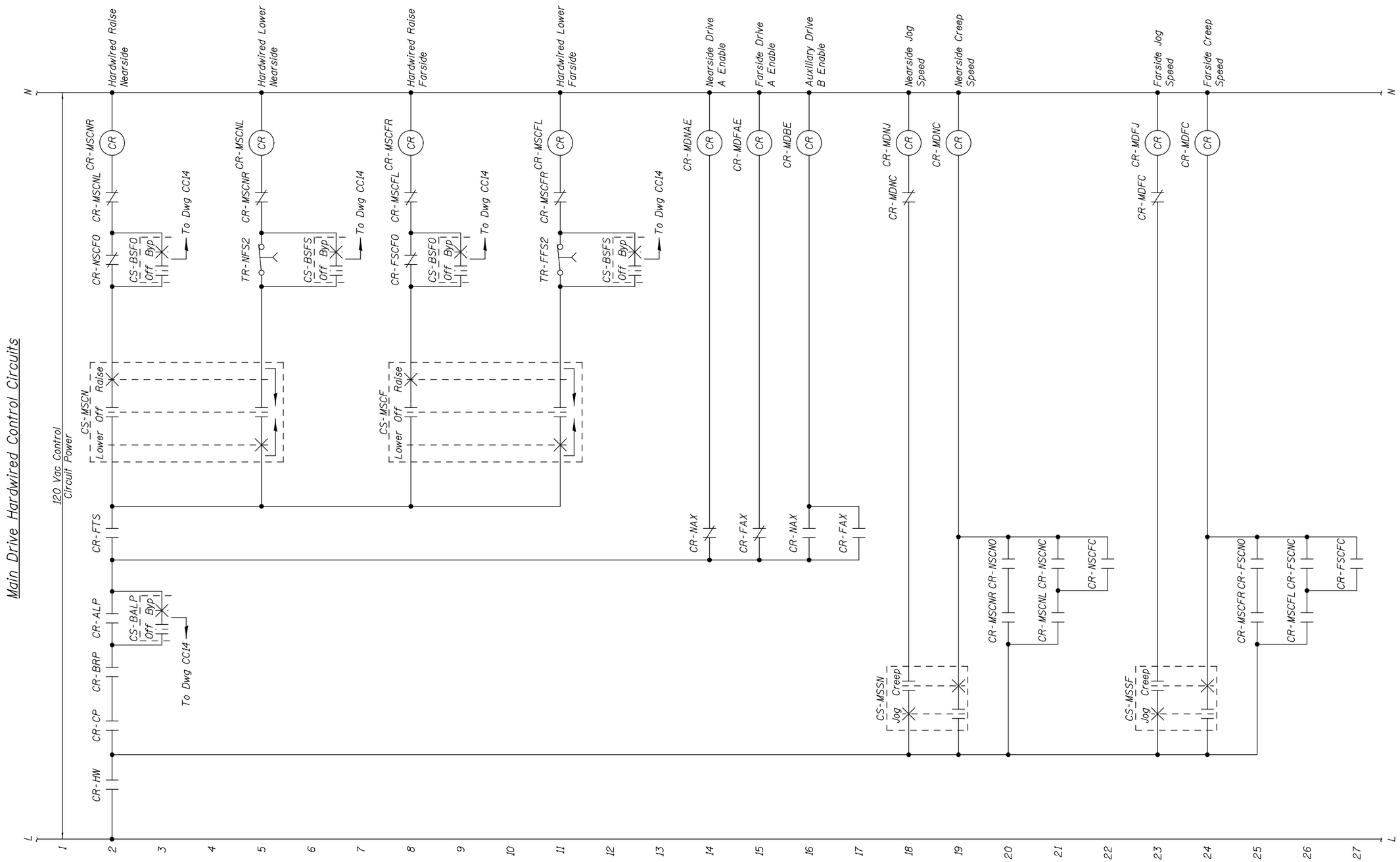
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET - CONTROL CIRCUIT - 31

SHEET NO. 68 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	81
ILLINOIS FED. AID PROJECT	CONTRACT NO. 60P55			

RUBY, Drawing 01-068

Main Drive Hardwired Control Circuits



NOTES:

1. *Provide additional control circuits to enable drive output contractors when the corresponding drive is enabled. (Reference Drawing: Three Line Diagram - 5)*

RUBY, Drawing 01-069

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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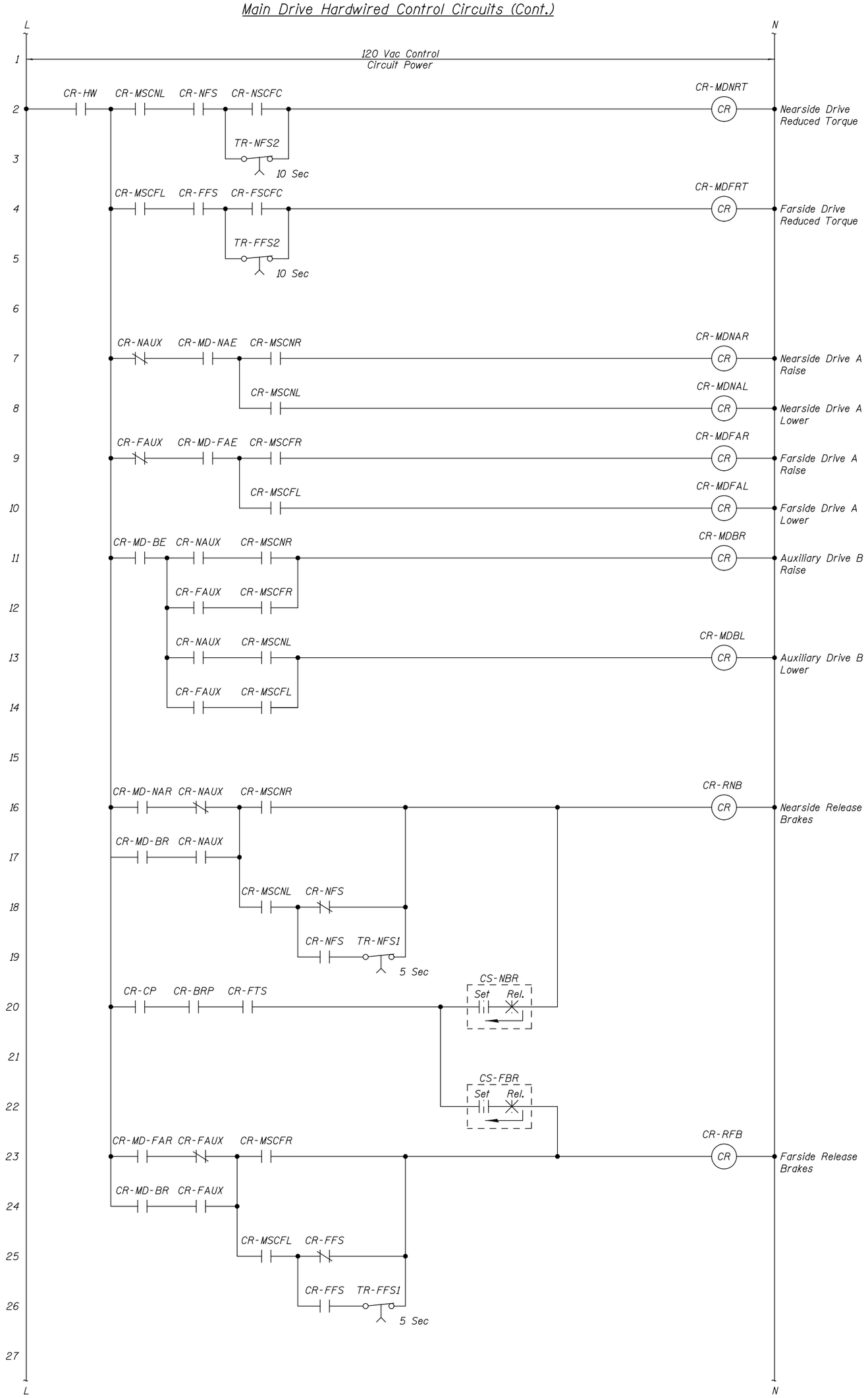
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 32
SHEET NO. 69 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	82
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Experience you can trust.

USER NAME =		DESIGNED - R.I. PETERS	REVISED
		CHECKED - J.G. STRENKOSKI	REVISED
PLOT SCALE =		DRAWN - R.I. PETERS	REVISED
PLOT DATE =		CHECKED - J.G. STRENKOSKI	REVISED

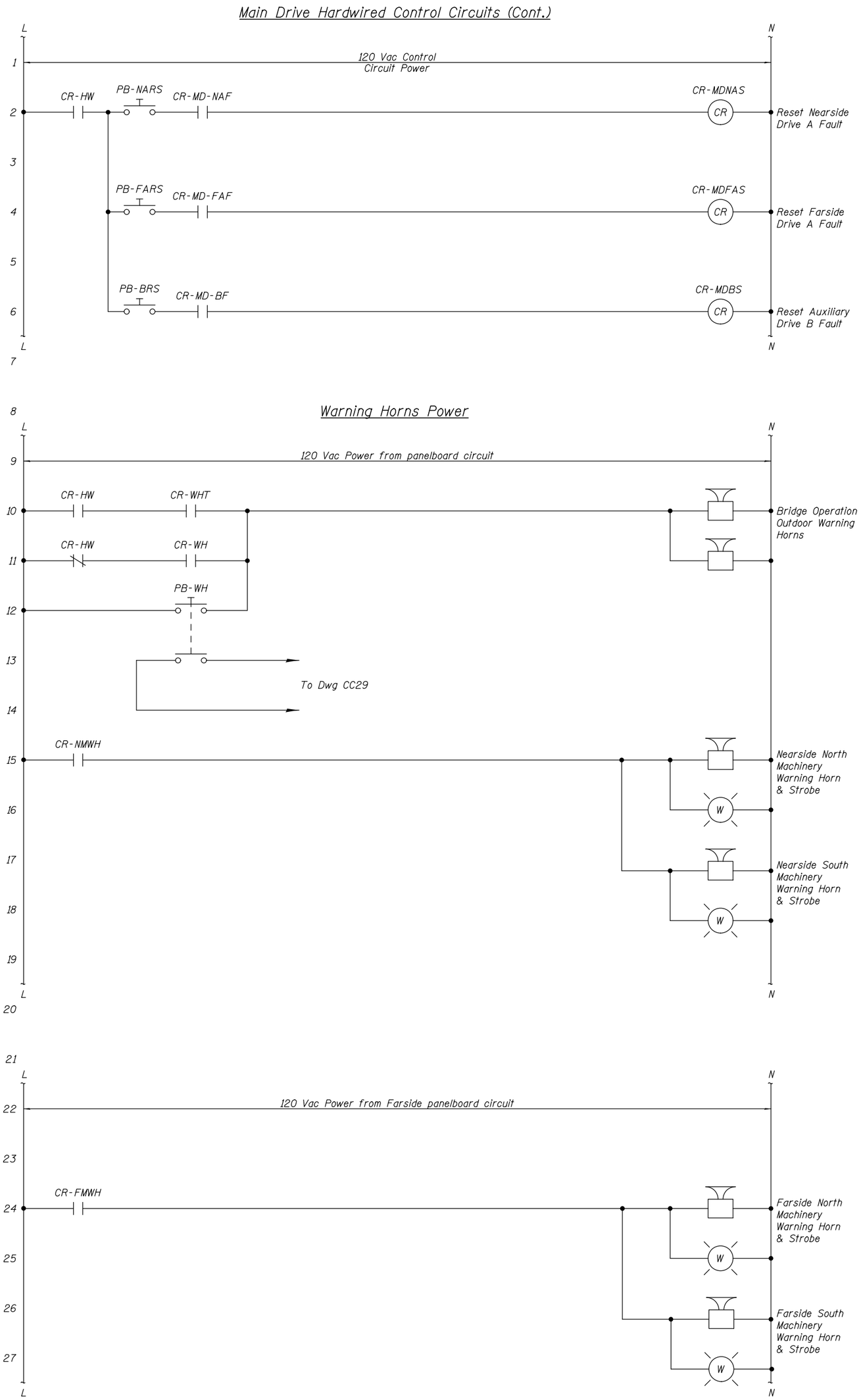
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET - CONTROL CIRCUIT - 33

SHEET NO. 70 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	83
ILLINOIS FED. AID PROJECT	CONTRACT NO. 60P55			

RUBY, Drawing 01-070



MODJESKI-MASTERS
Experience past bridges.

USER NAME =		DESIGNED - R.I. PETERS	REVISED ___
PLOT SCALE =		CHECKED - J.G. STRENKOSKI	REVISED ___
PLOT DATE =		DRAWN - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET - CONTROL CIRCUIT - 34

SHEET NO. 71 OF 97 SHEETS

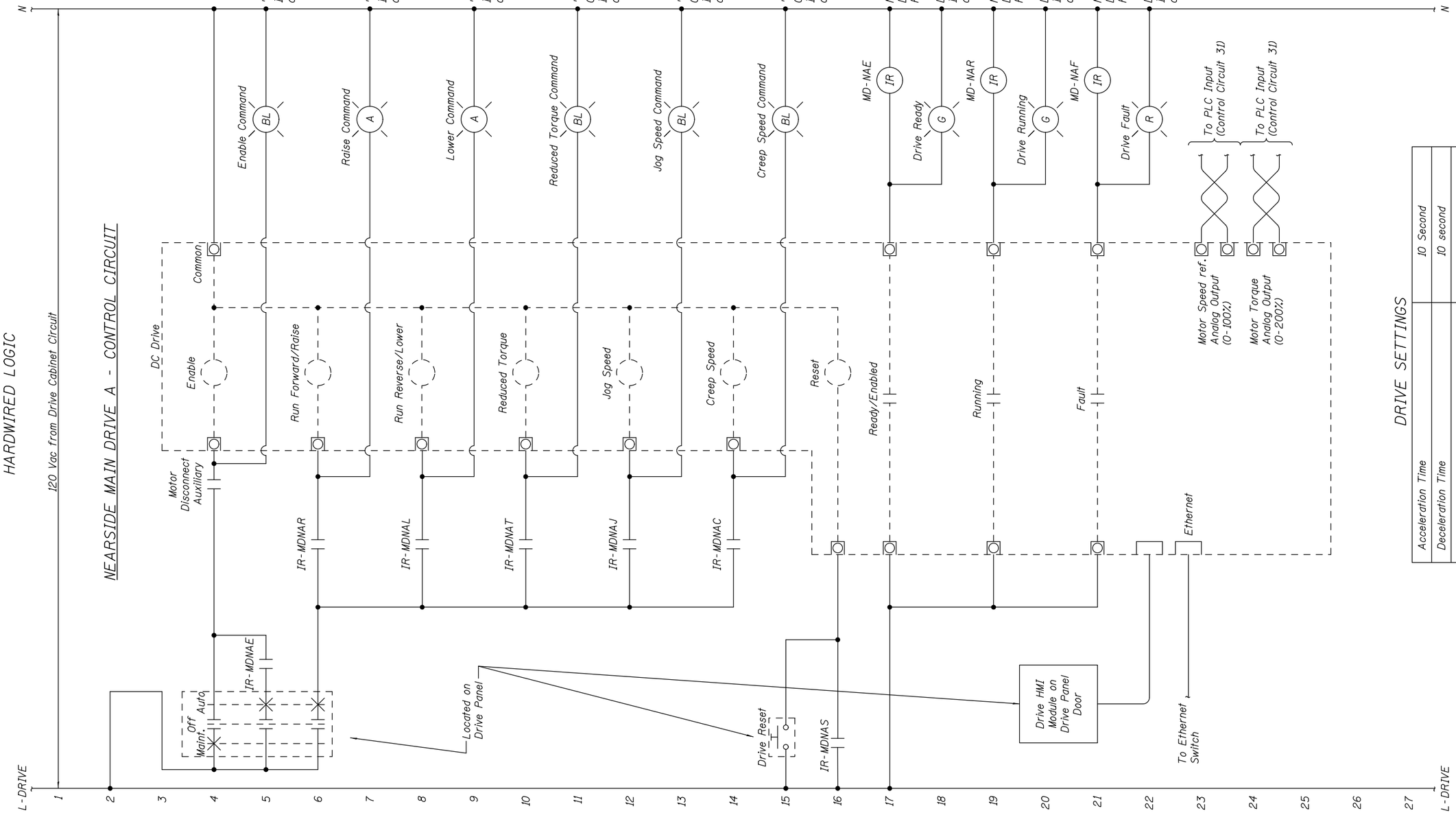
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	84
		CONTRACT NO. 60P55		
		ILLINOIS FED. AID PROJECT		

RUBY, Drawing 01-071

HARDWIRED LOGIC

120 Vac from Drive Cabinet Circuit

NEARSIDE MAIN DRIVE A - CONTROL CIRCUIT



DRIVE SETTINGS

Acceleration Time	10 Second
Deceleration Time	10 second
Stop Mode	Coast
Auto Start	False
Auto Restart	False
Motor Stall Time	20 Seconds
Maximum Torque Limit	150% Motor rated

Note: All settings shall be adjusted as required in the field.

NOTES:

1. Indicator Light shall be mounted on the DC drive Panel and shall be push-to-test type.
2. Maintenance mode is intended to be used for setup and testing with the drive HMI unit.
3. The Drive Ethernet connection is intended to allow the PLC to access drive fault messages and drive operating condictions. No control operations shall be performed using this connection.

RUBY, Drawing 01-072

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - J.G. STRENKOSKI	REVISED ___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

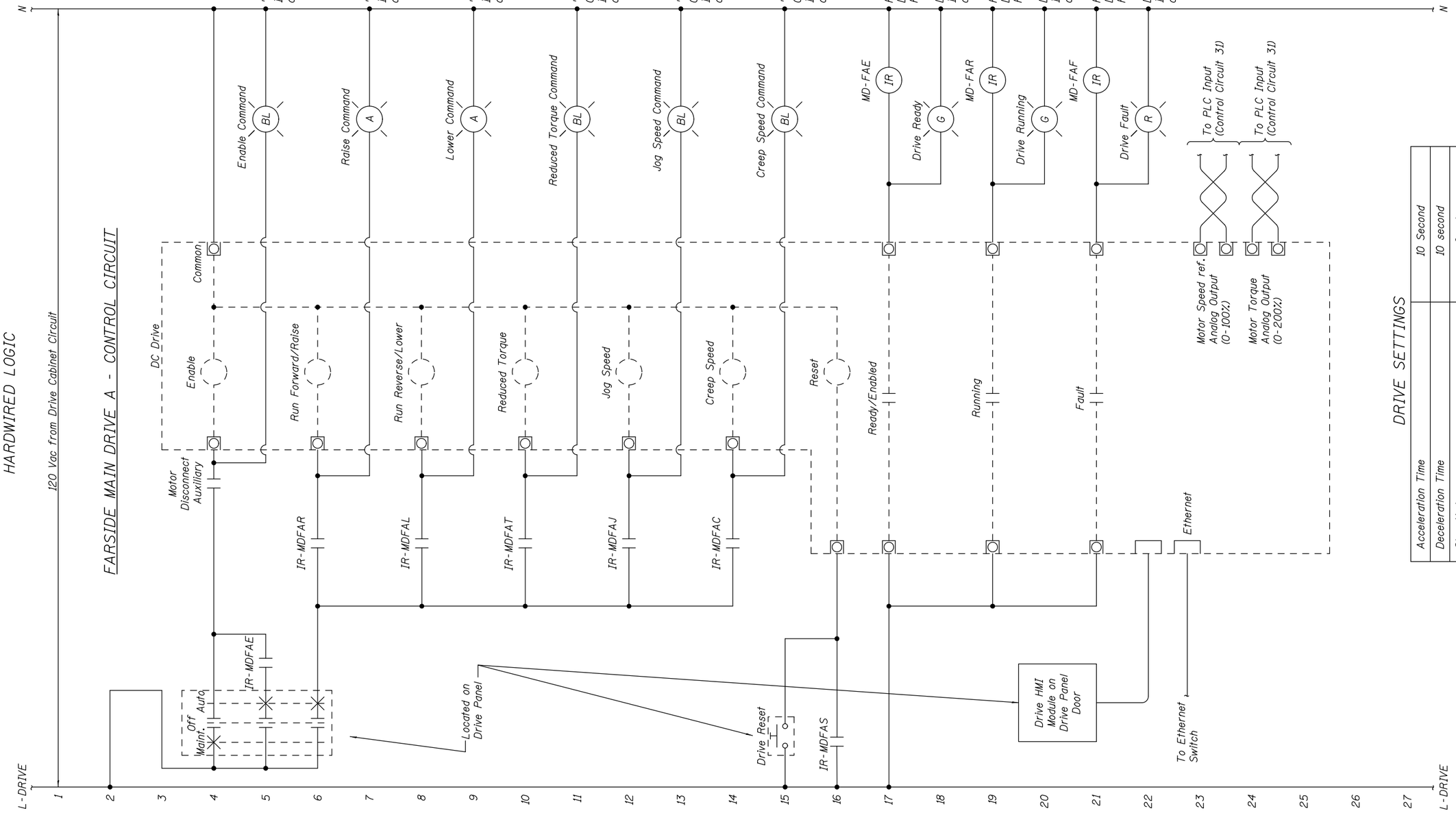
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 35
SHEET NO. 72 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	85
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

HARDWIRED LOGIC

FARSIDE MAIN DRIVE A - CONTROL CIRCUIT



DRIVE SETTINGS

Acceleration Time	10 Second
Deceleration Time	10 second
Stop Mode	Coast
Auto Start	False
Auto Restart	False
Motor Stall Time	20 Seconds
Maximum Torque Limit	150% Motor rated

Note: All settings shall be adjusted as required in the field.

NOTES:

1. Indicator Light shall be mounted on the DC drive Panel and shall be push-to-test type.
2. Maintenance mode is intended to be used for setup and testing with the drive HMI unit.
3. The Drive Ethernet connection is intended to allow the PLC to access drive fault messages and drive operating condictions. No control operations shall be performed using this connection.

RUBY, Drawing 01-073

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED	___
	CHECKED - J.G. STRENKOSKI	REVISED	___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

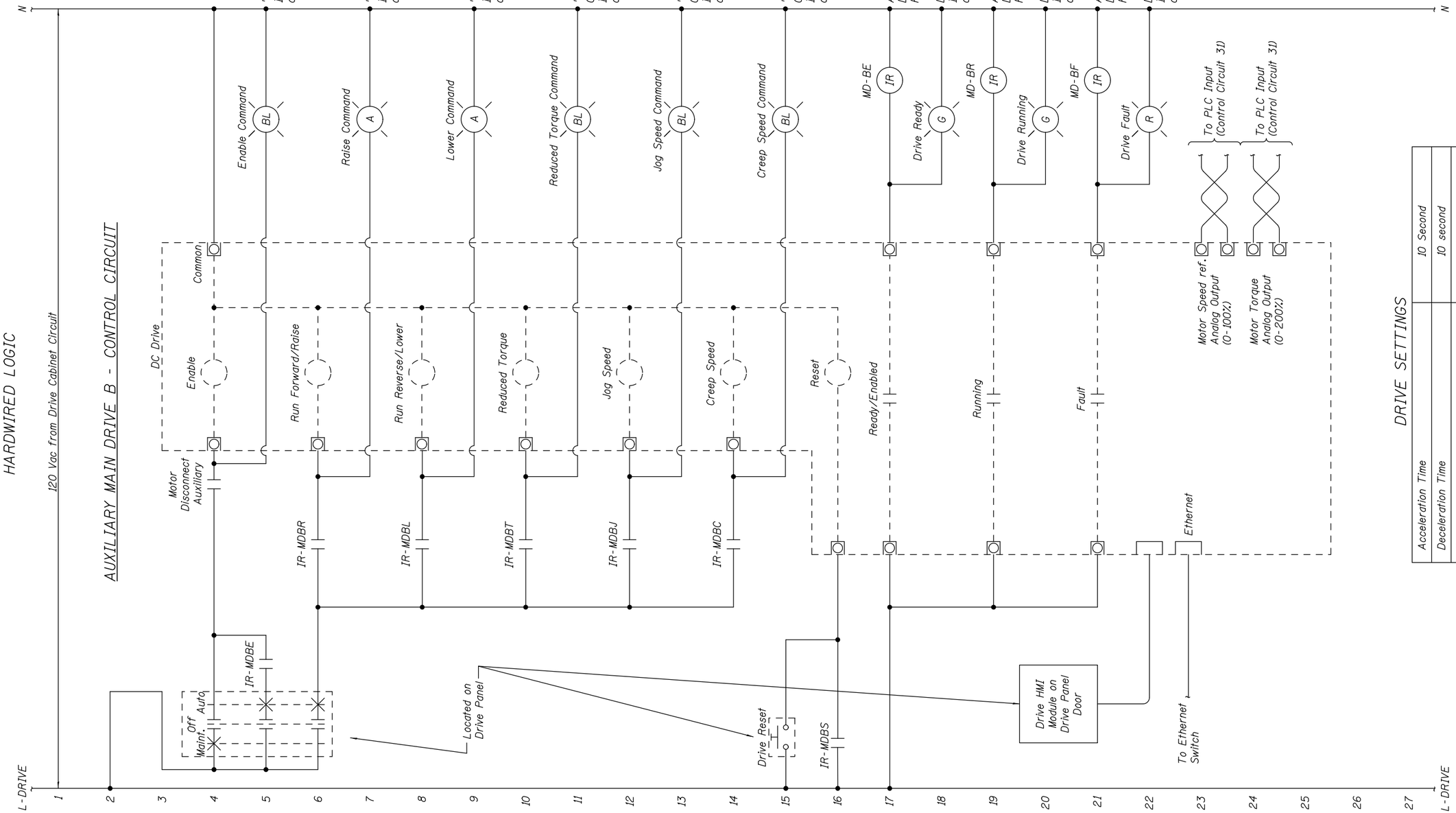
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 36
SHEET NO. 73 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	86
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

HARDWIRED LOGIC

120 Vac from Drive Cabinet Circuit

AUXILIARY MAIN DRIVE B - CONTROL CIRCUIT



DRIVE SETTINGS

Acceleration Time	10 Second
Deceleration Time	10 second
Stop Mode	Coast
Auto Start	False
Auto Restart	False
Motor Stall Time	20 Seconds
Maximum Torque Limit	150% Motor rated

Note: All settings shall be adjusted as required in the field.

NOTES:

1. Indicator Light shall be mounted on the DC drive Panel and shall be push-to-test type.
2. Maintenance mode is intended to be used for setup and testing with the drive HMI unit.
3. The Drive Ethernet connection is intended to allow the PLC to access drive fault messages and drive operating conditions. No control operations shall be performed using this connection.

RUBY, Drawing 01-074

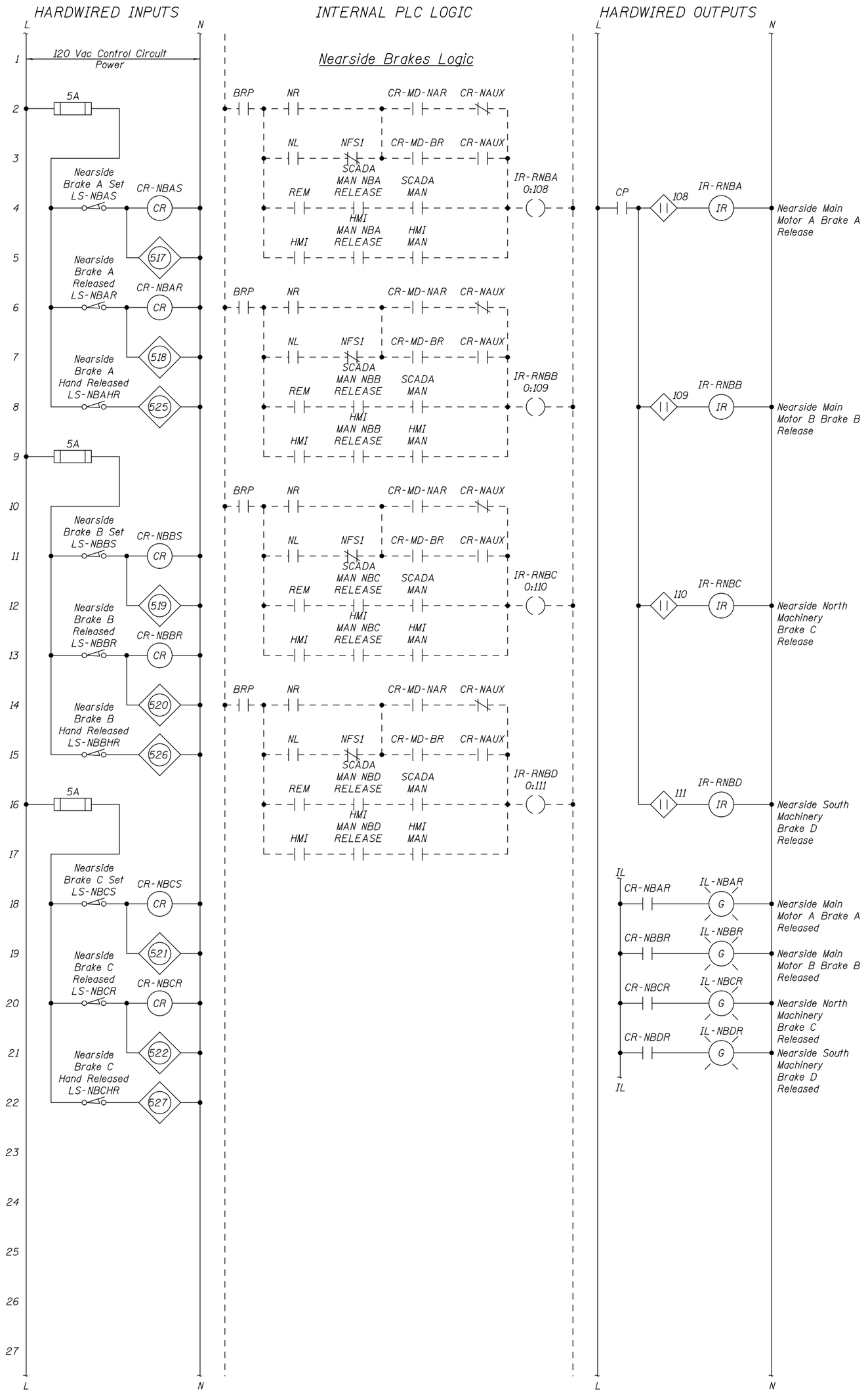
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - J.G. STRENKOSKI	REVISED ___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 37
SHEET NO. 74 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	87
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



MODJESKI-MASTERS
Experience great bridges.

USER NAME =	
PLOT SCALE =	
PLOT DATE =	

DESIGNED	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI
DRAWN	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI

REVISED		
REVISED		
REVISED		
REVISED		

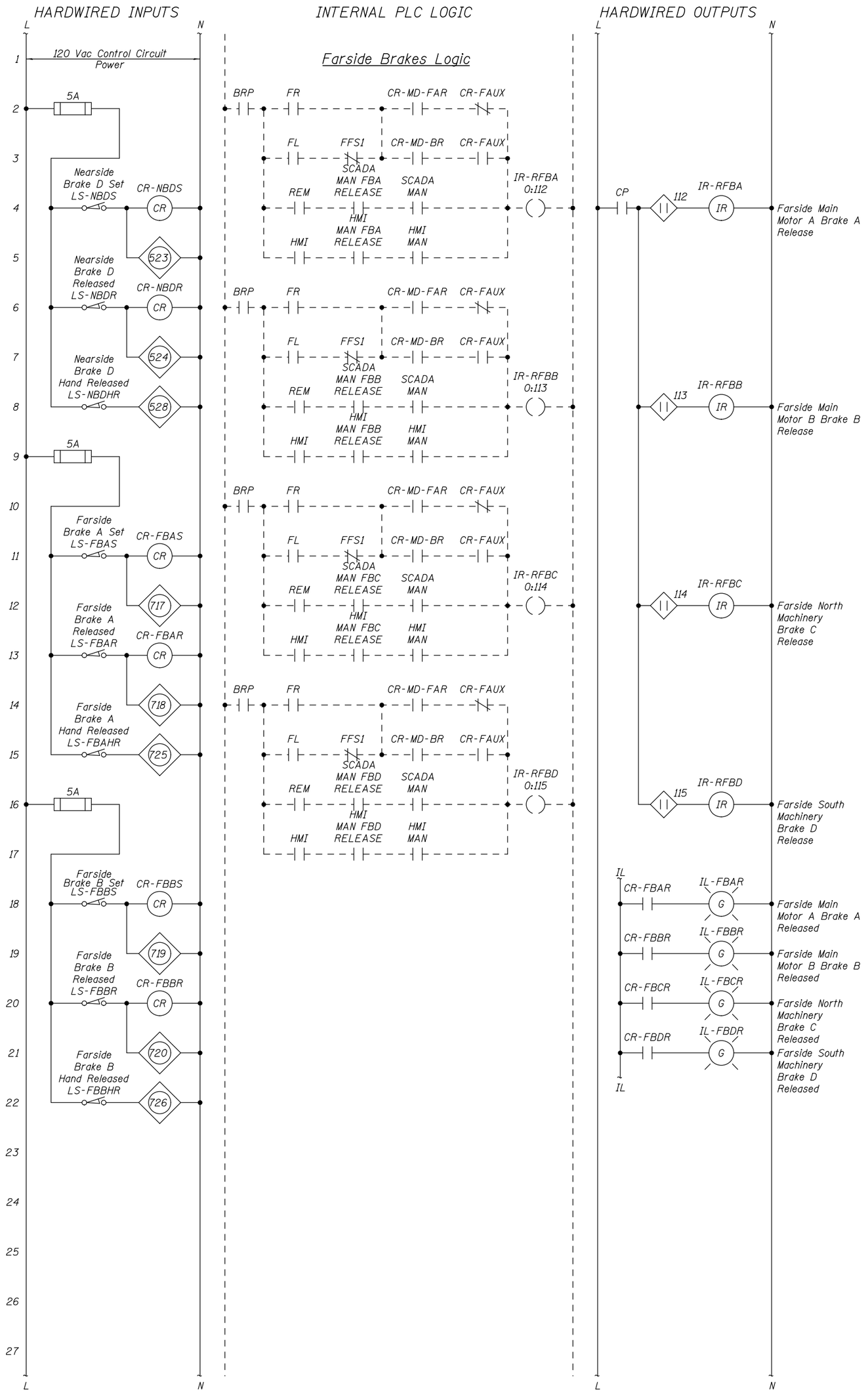
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 38

SHEET NO. 75 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	88
		CONTRACT NO. 60P55		
		ILLINOIS FED. AID PROJECT		

RUBY. Drawing 01-075



MODJESKI-MASTERS
Experience you can trust.

USER NAME =			
PLOT SCALE =			
PLOT DATE =			
	DESIGNED	-	R.I. PETERS
	CHECKED	-	J.G. STRENKOSKI
	DRAWN	-	R.I. PETERS
CHECKED	-	J.G. STRENKOSKI	
REVISED	REVISED	REVISED	
—	—	—	

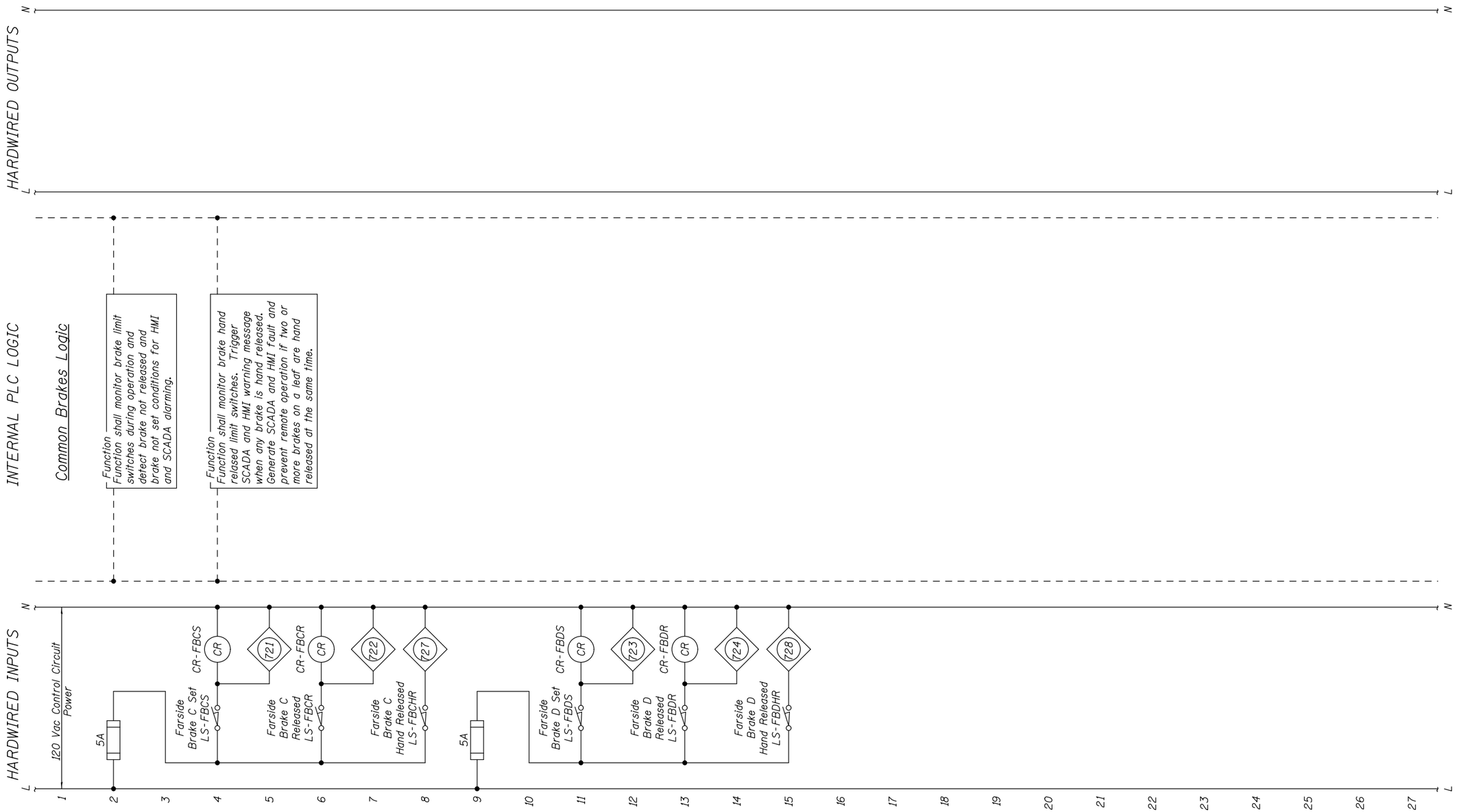
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 39

SHEET NO. 76 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	89
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-076



RUBY, Drawing 01-077

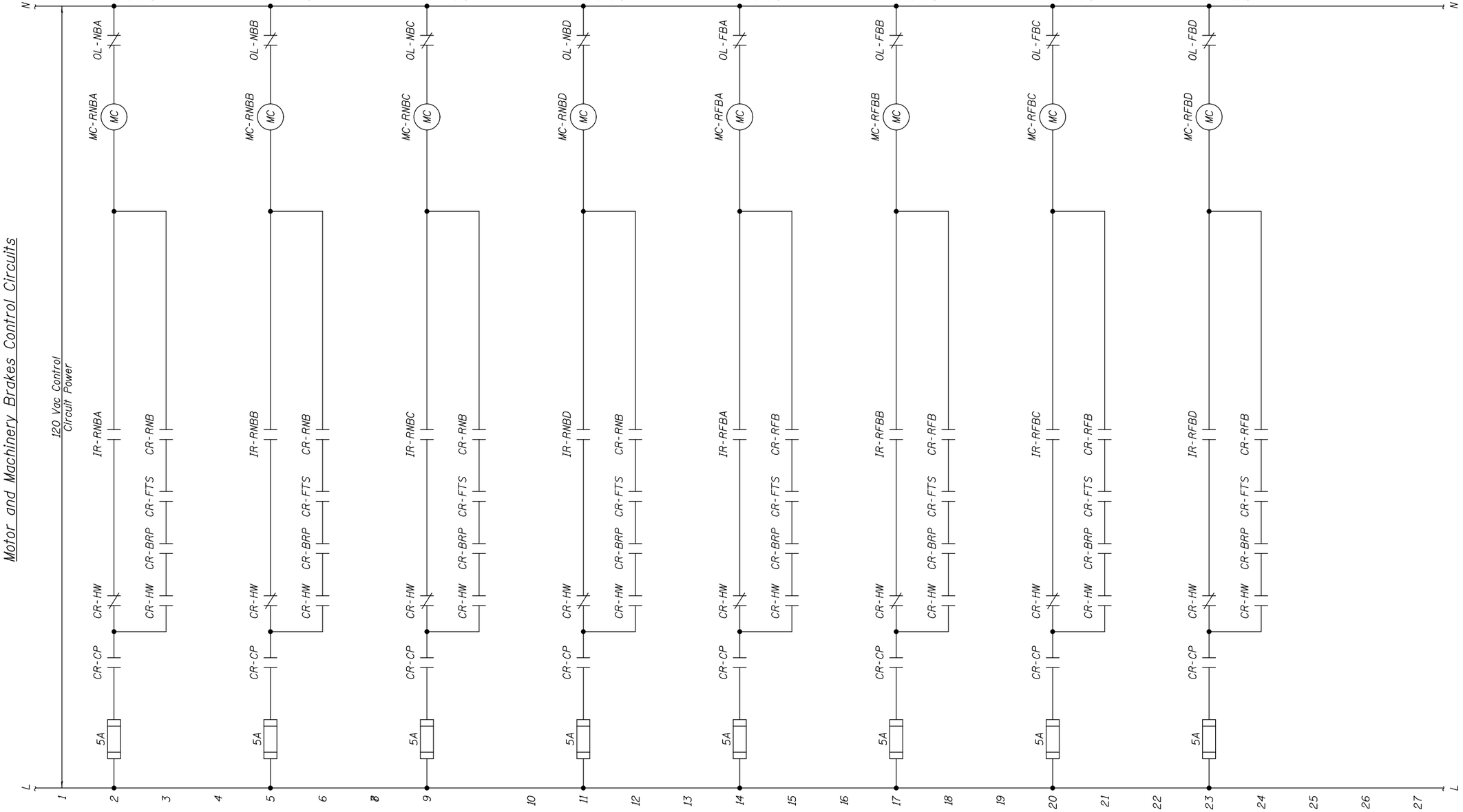
MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 40
SHEET NO. 77 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	90
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		

Motor and Machinery Brakes Control Circuits



NOTES:

1. Rewire existing MCC starters as required to implement new control logic.

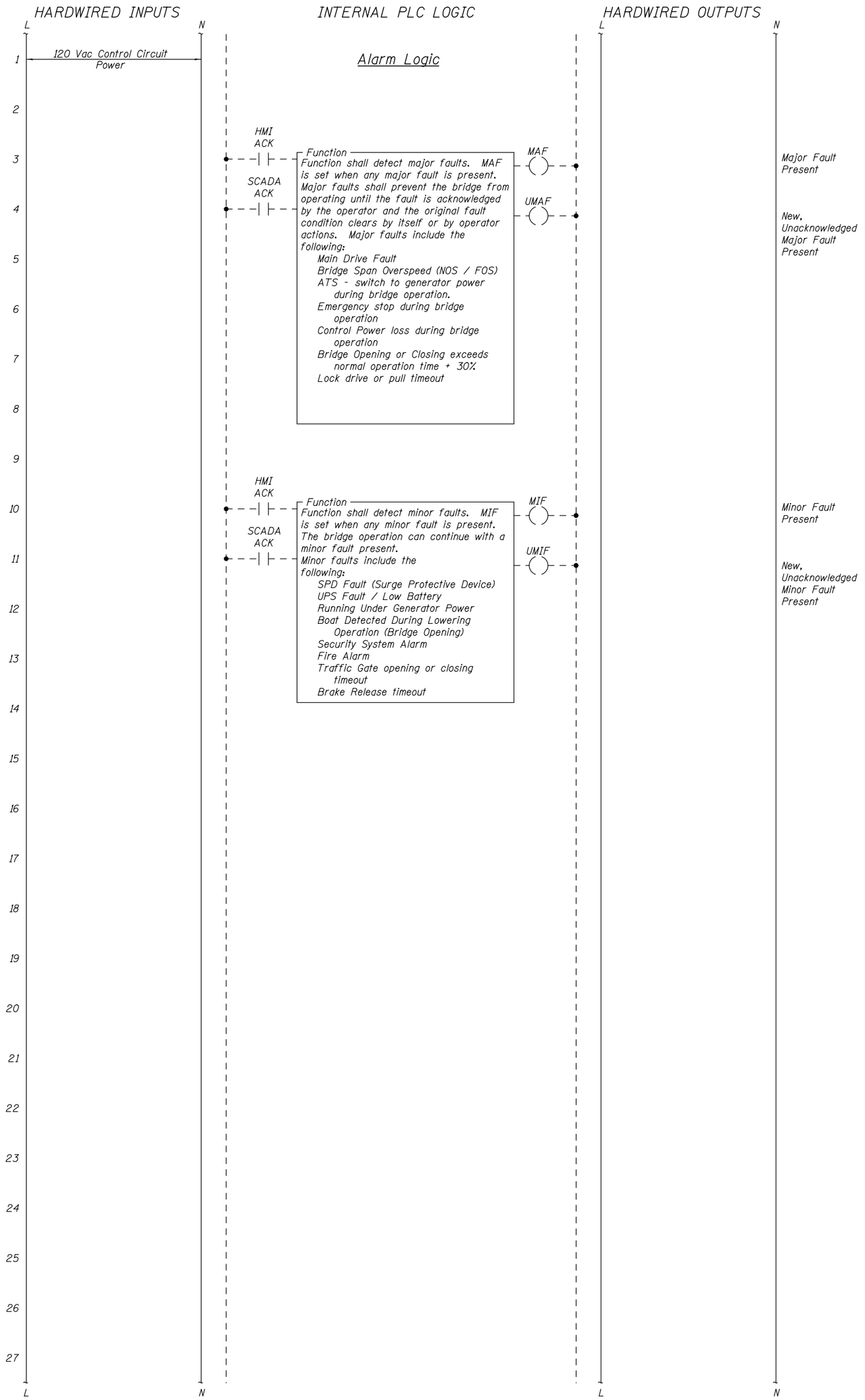
RUBY, Drawing 01-078

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - J.G. STRENKOSKI	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 41
SHEET NO. 78 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	91
		CONTRACT NO. 60P55		
		ILLINOIS	FED. AID PROJECT	



MODJESKI-MASTERS
Experience past the edge.

USER NAME =	
PLOT SCALE =	
PLOT DATE =	

DESIGNED	-	R.I. PETERS	REVISED
CHECKED	-	J.G. STRENKOSKI	REVISED
DRAWN	-	R.I. PETERS	REVISED
CHECKED	-	J.G. STRENKOSKI	REVISED

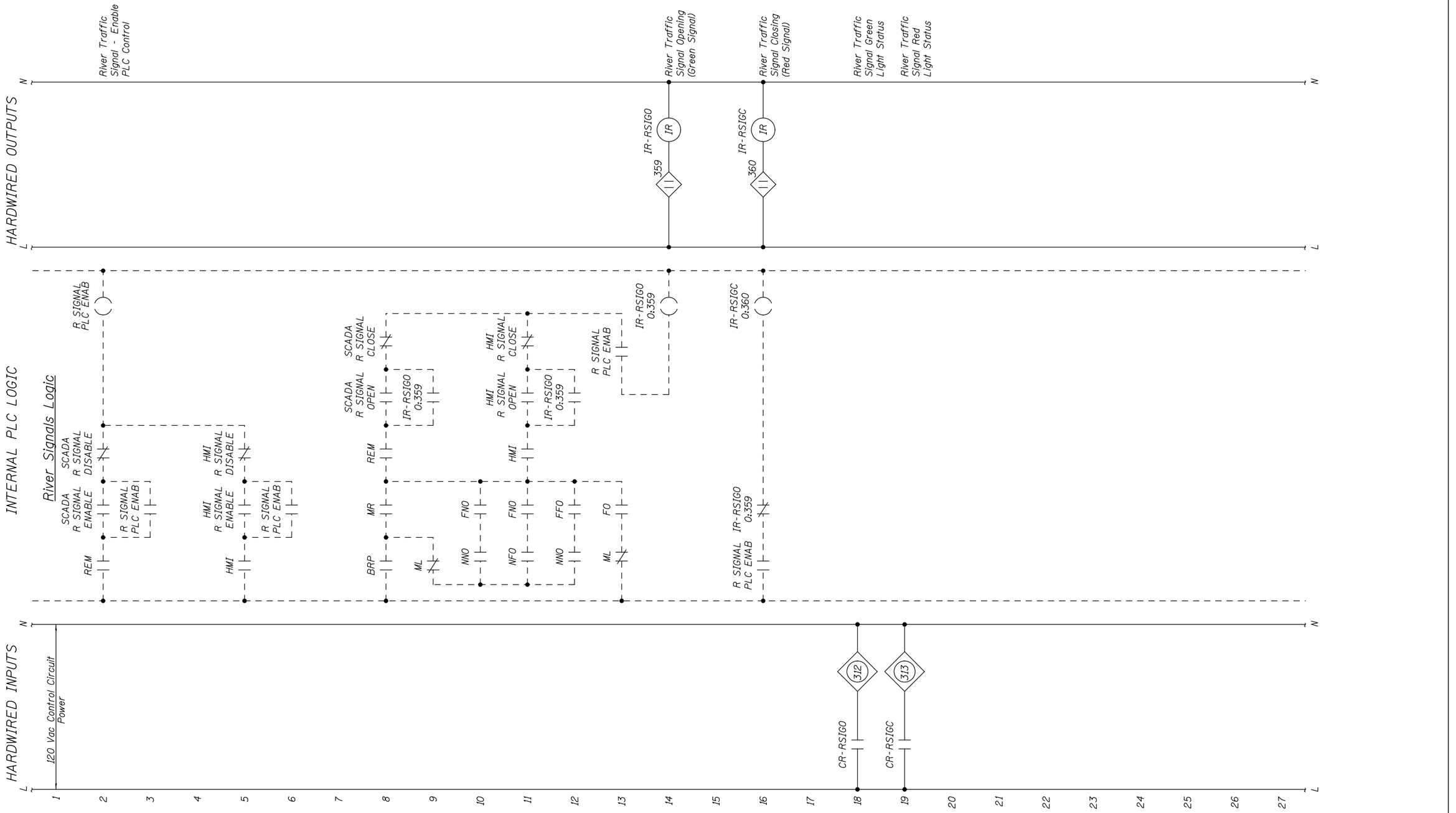
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET - CONTROL CIRCUIT - 42

SHEET NO. 79 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	92
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

RUBY, Drawing 01-079



RUBY, Drawing 01-080

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

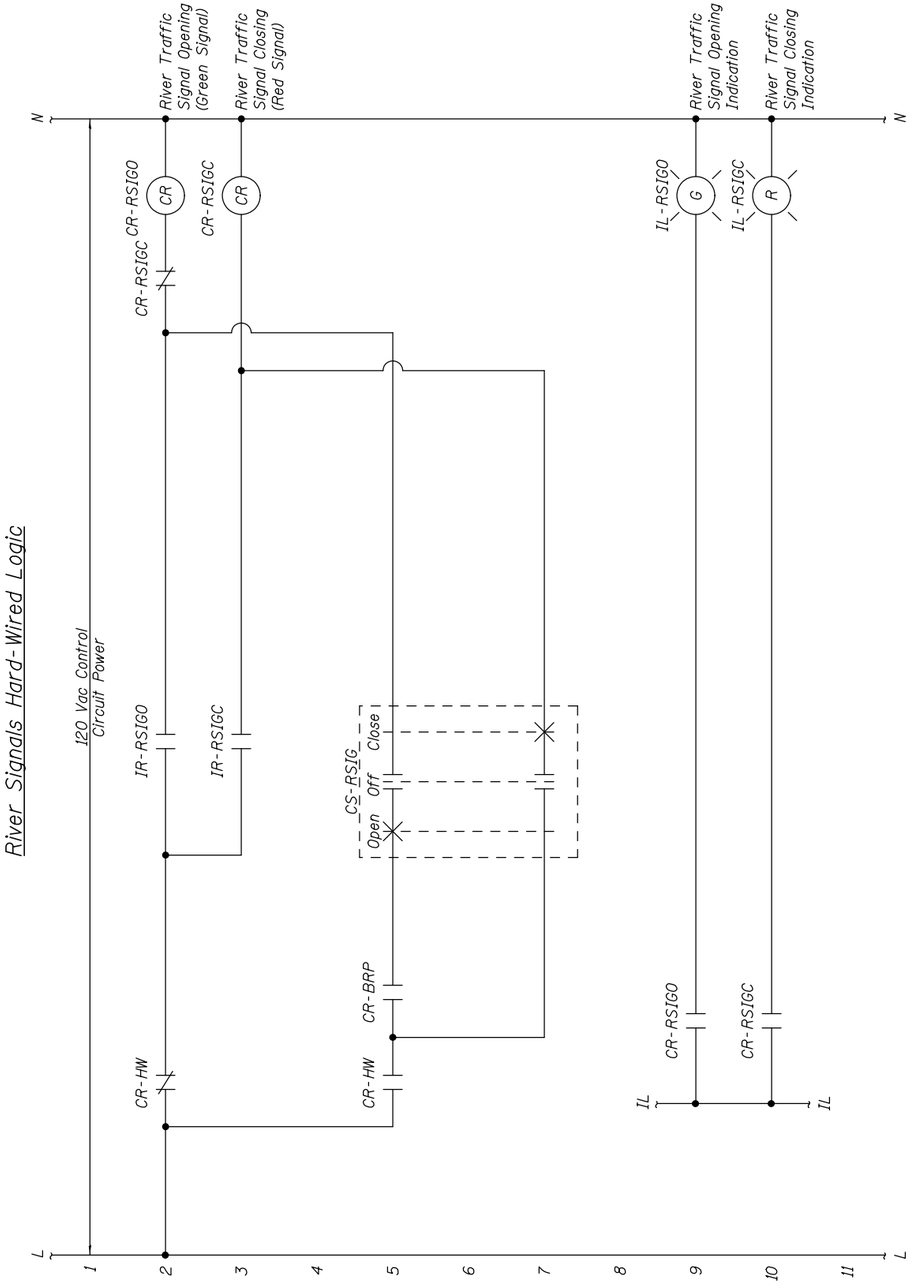
MODJESKI and MASTERS
Experience great bridges.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

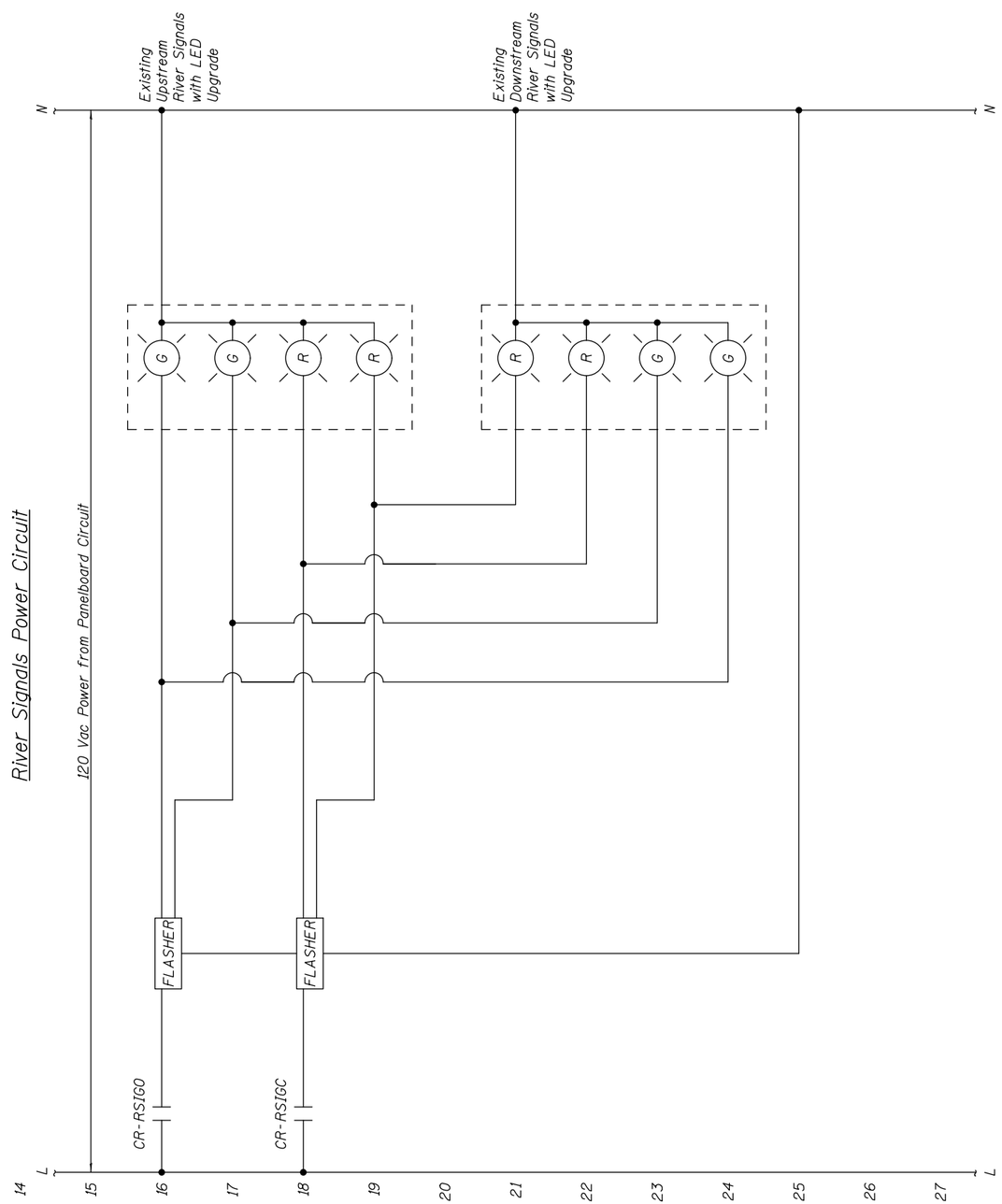
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 43
SHEET NO. 80 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	93
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

River Signals Hard-Wired Logic



River Signals Power Circuit



NOTES:

1. Flashers shall alternately flash active lights.

RUBY, Drawing 01-081

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - J.G. STRENKOSKI	REVISED ___	
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___	
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___	

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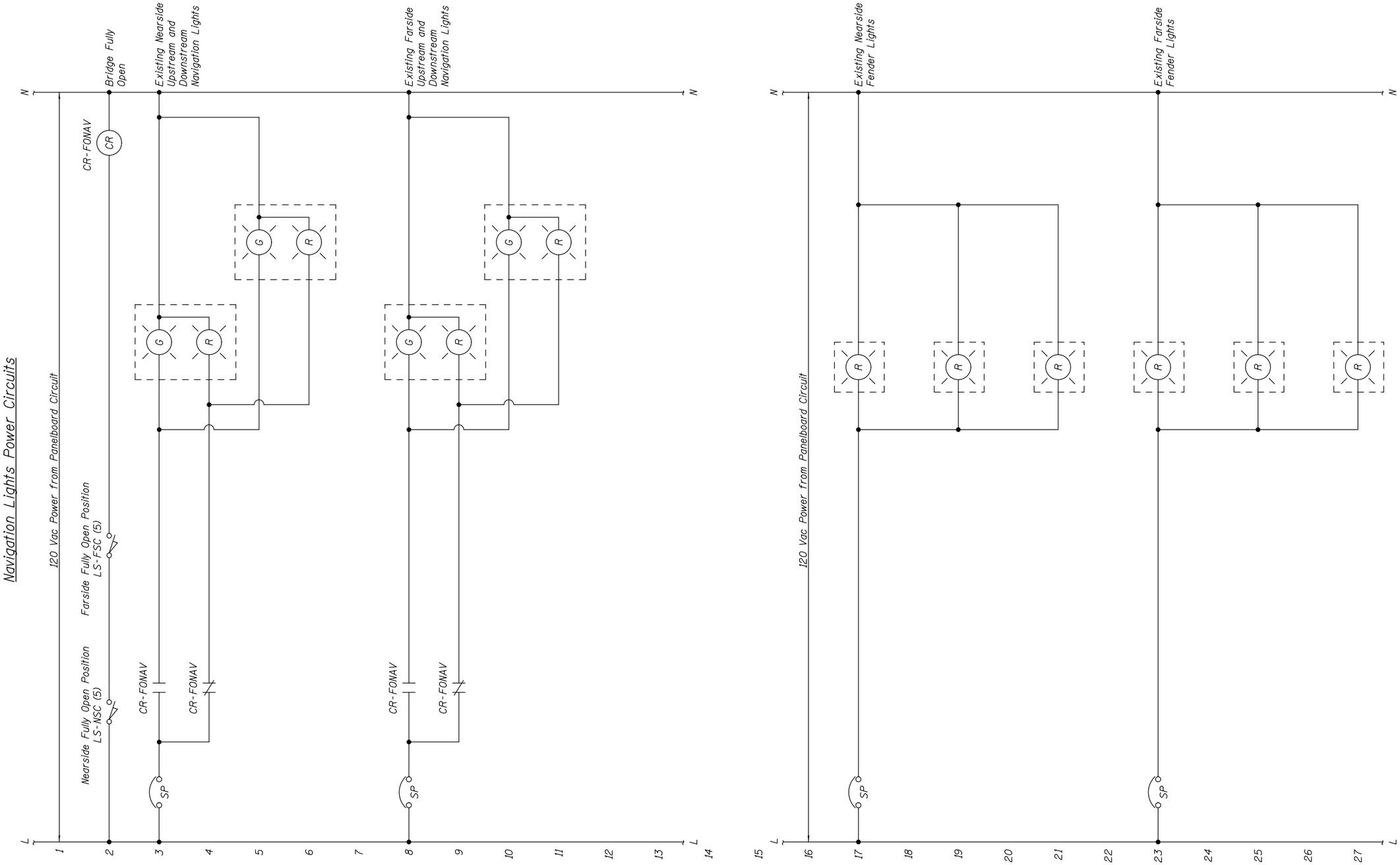
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 44
SHEET NO. 81 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	94
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

Navigation Lights Power Circuits



NOTES:

1. Wire all limit switch sensor contacts back to main PLC cabinet for ease of maintenance and troubleshooting. Do not field "daisy chain" contacts device-to-device.
2. Existing span navigation and fender (pier) lights shall be reused.

RUBY, Drawing 01-082

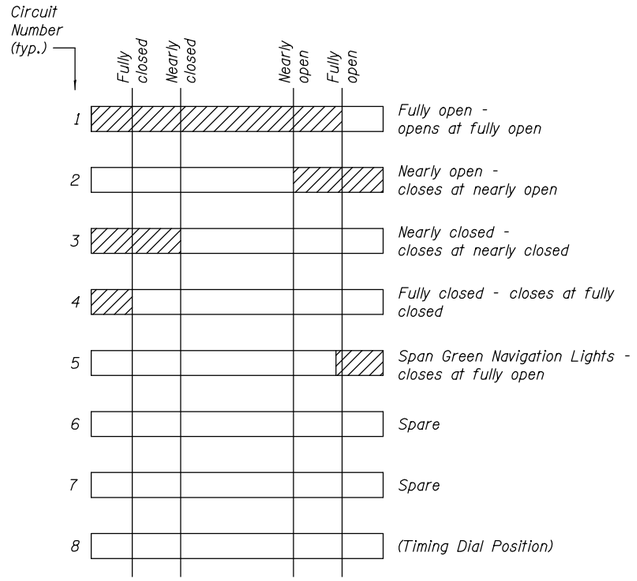
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - J.G. STRENKOSKI	REVISED ___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - J.G. STRENKOSKI	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

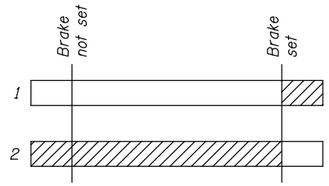
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONTROL CIRCUIT – 45
SHEET NO. 82 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	95
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



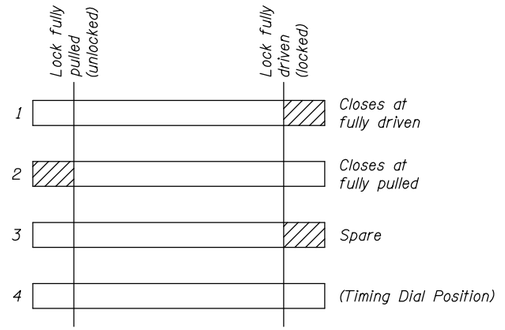
SPAN CONTROL ROTARY CAM LIMIT SWITCH

LS-FSC, LS-NSC



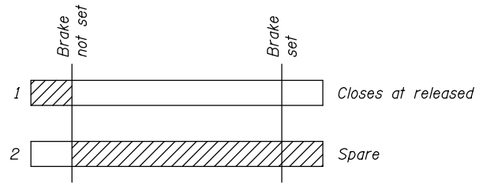
BRAKE SET LIMIT SWITCH

LS-FBAS, LS-FBBS, LS-FBCS,
LS-FBDS LS-NBAS, LS-NBBS,
LS-NBCS, LS-NBDS



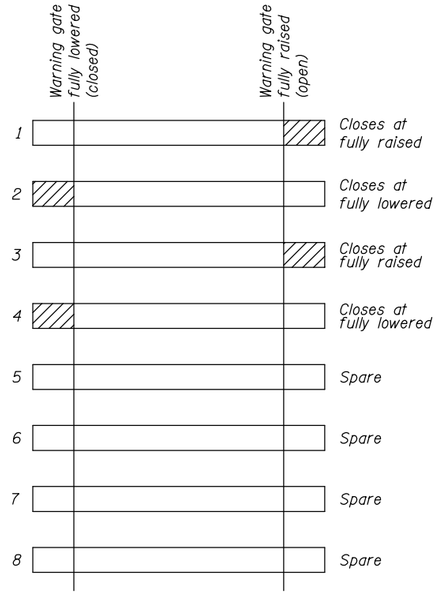
SPAN LOCK ROTARY CAM LIMIT SWITCH

LS-SLD, LS-SLP



BRAKE RELEASED LIMIT SWITCH

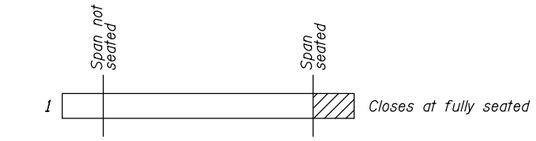
LS-FBAR, LS-FBBR, LS-FBCR,
LS-FBDR, LS-NBAR, LS-NBBR,
LS-NBCR, LS-NBDR



TRAFFIC GATE LIMIT SWITCH

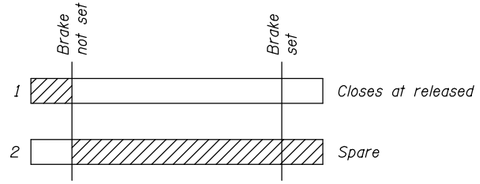
(see Jackson drawing 02-092 for repair details)

LS-NNGR/L, LS-NSGR/L,
LS-FNGR/L, LS-FSGR/L



SPAN FULLY SEATED LIMIT SWITCH

LS-FFS, LS-NFS



BRAKE HAND-RELEASED LIMIT SWITCH

LS-FBAHR, LS-FBBHR, LS-FBCHR,
LS-FBDHR, LS-NBAHR, LS-NBBHR,
LS-NBCHR, LS-NBDHR

LEGEND

Contacts closed

Contacts open

RUBY, Drawing 01-083

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___	
	CHECKED - L.V. BORDEN	REVISED ___	
PLOT SCALE =	DRAWN - R.L. REED	REVISED ___	
PLOT DATE =	CHECKED - R.I. PETERS	REVISED ___	

MODJESKI and MASTERS
Experience great bridges.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – LIMIT SWITCH CHARTS
SHEET NO. 83 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	96
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			

GROUP 100 EQUIPMENT

Item No.	Quantity	Item Name	Description
E101	1	Surge Protective Device (SPD)	Bridge electrical service SPD
E102	1	Power Monitor	Bridge electrical service power and energy meter
E103	1	Bus Monitor	Bridge electrical service ABC phase sequencing monitor
E104	4	200A Motor Disconnect Switch	Main drive DC motors, 4 pole
E105	N/A		
E106	9	30A Motor Disconnect Switch	Brake and span lock motors
E107	N/A		
E108	N/A		
E109	N/A		
E110	1	120/208V Panelboard, 18 Circuit	Replacement panelboard with breakers and accessories

GROUP 200 EQUIPMENT

Item No.	Quantity	Item Name	Description
E201	4	Traffic Gate Warning Gong	For existing traffic gates
E202	4	Machinery Warning Horn/Light	Machinery area startup warning
E203	2	Outdoor Warning Horn	Operator house exterior warning
E204	1	Rotary Cam Limit Switch	Span lock position sensing
E205	2	Boat Detection Sensor	Microwave transmitter and receiver sensor
E206	2	Rotary Cam Limit Switch/Resolver	Bridge position sensing
E207	4	Inclinometer	Bridge open angle sensing
E208	26	Magnetic Proximity Switch	Span fully seated and brake position sensing
E209	4	Motor Speed Switches	Main drive over-speed sensing
E210	14	Door Switch	Two piece magnetic contact switch for entry doors
E211	1	Fire Alarm & Security System	Monitor operator house for fire and intrusion

NOTES:

1. These equipment schedules are provided for reference and do not provide an exhaustive listing of all equipment required.
2. The Contractor shall be responsible for developing a complete bill of materials of equipment required.

RUBY, Drawing 01-084

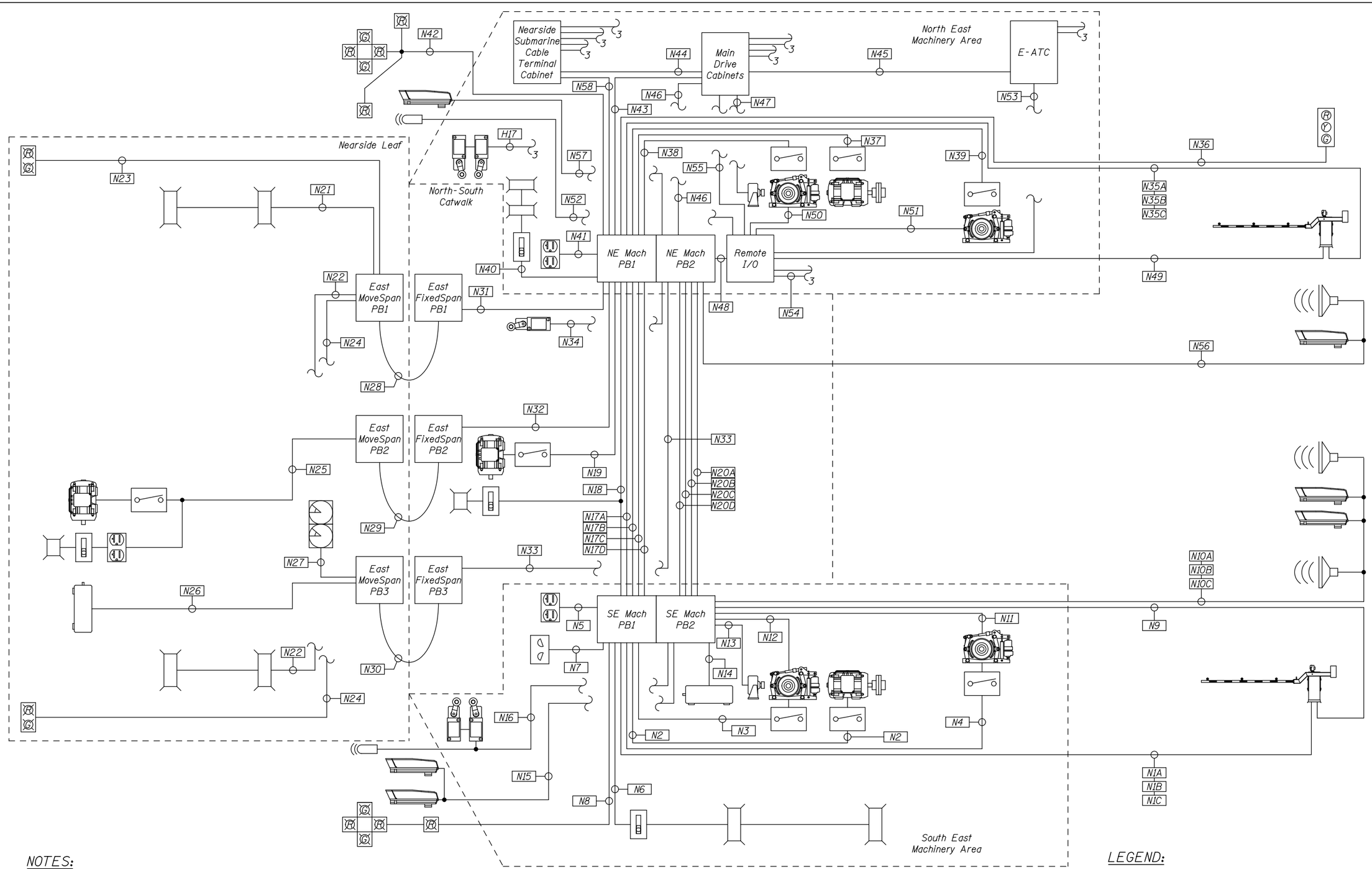
MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
	CHECKED - L.V. BORDEN	REVISED ___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – ELECTRICAL EQUIPMENT SCHEDULE
SHEET NO. 84 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	97
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. This layout and the accompanying tabulations are for reference only. All required raceways and wiring are not necessarily shown on this layout.
2. The Contractor shall be responsible for developing a complete wiring and conduit tabulations for all conductors and cables.

LEGEND:

3 Indicates continued on Ruby Street - Conduit Diagram - 3

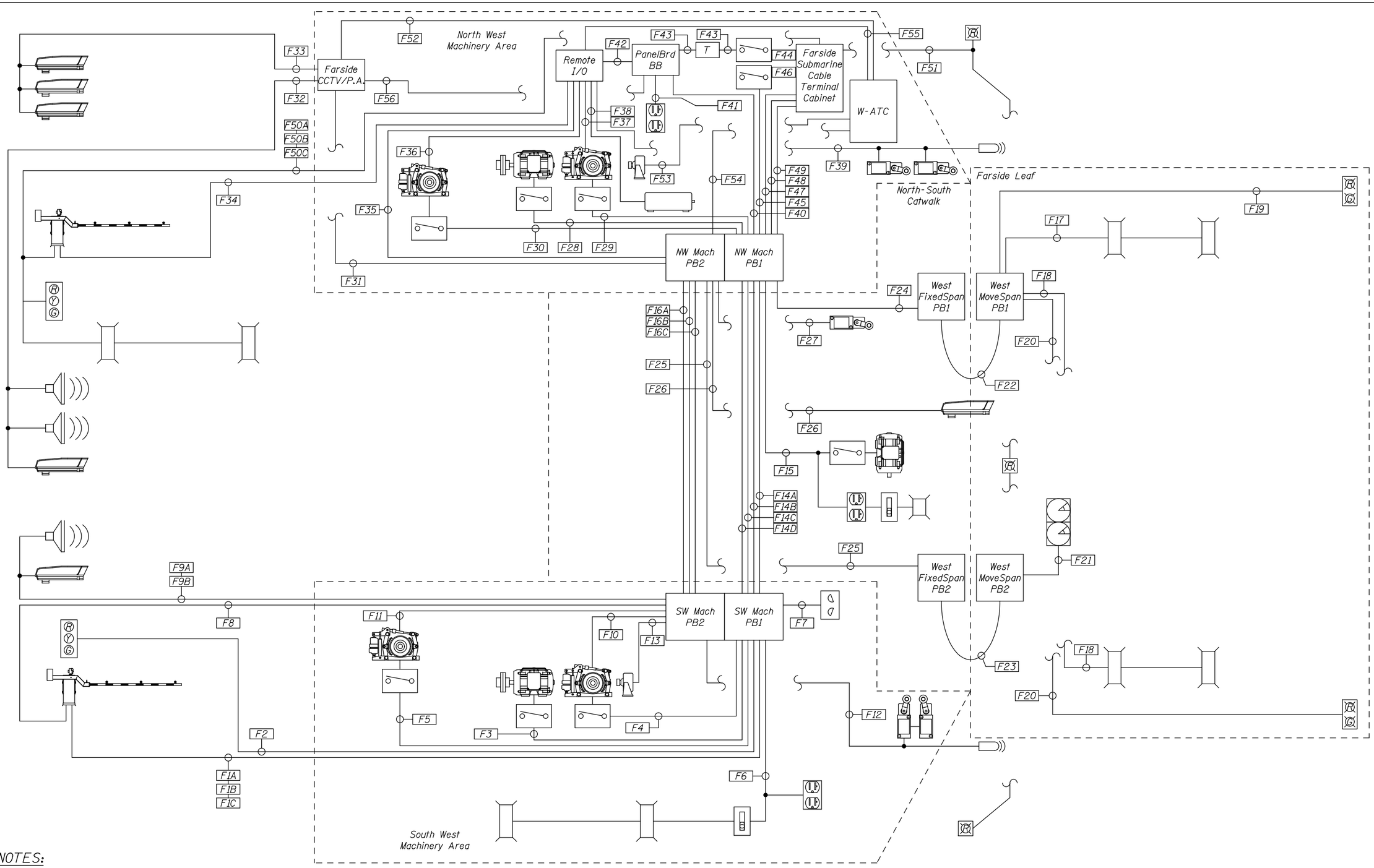
RUBY, Drawing 01-085

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - L.V. BORDEN	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONDUIT DIAGRAM – 1
SHEET NO. 85 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	98
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			



NOTES:

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2. The Contractor shall be responsible for developing a complete wiring and conduit tabulations for all conductors and cables.

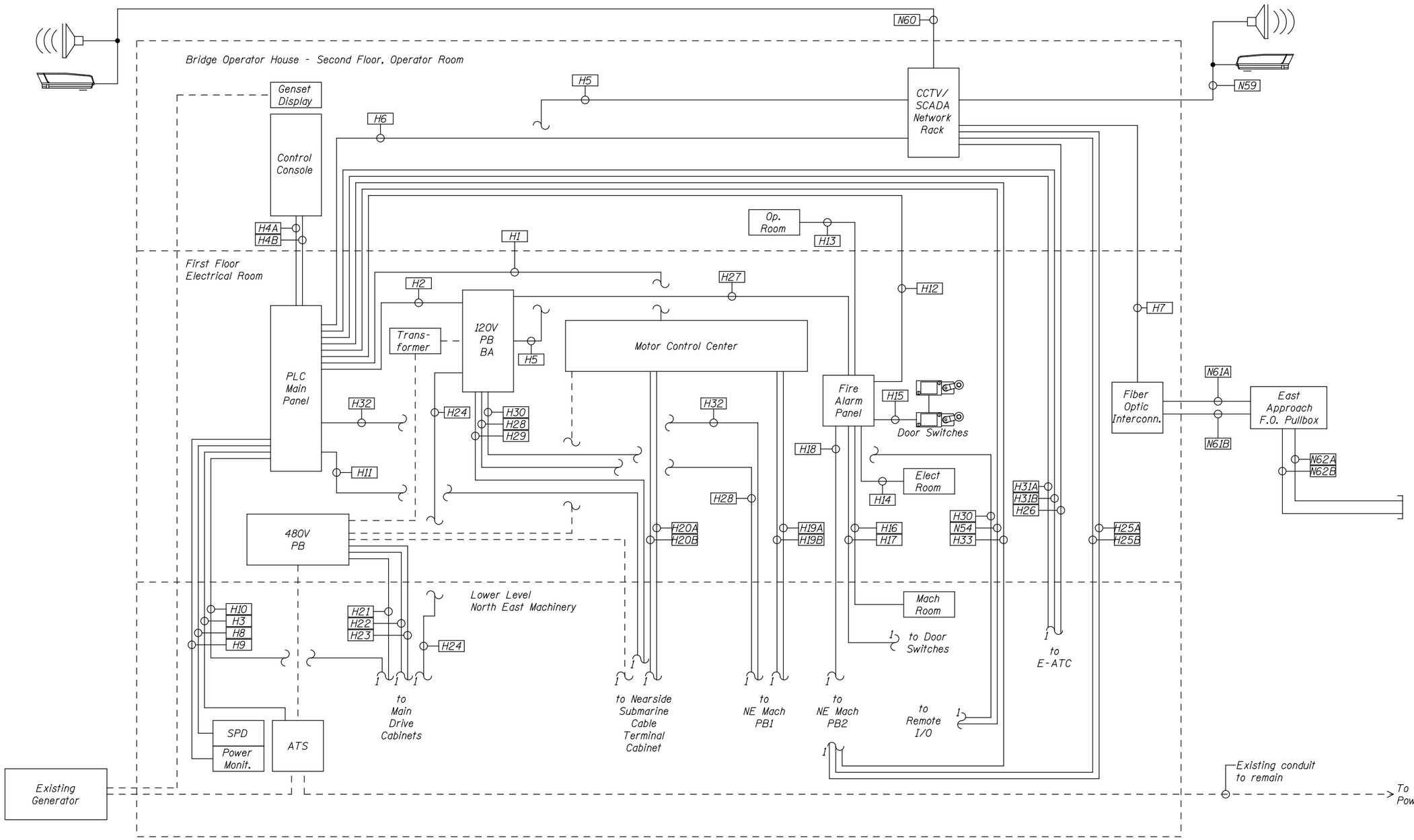
RUBY, Drawing 01-086

MODJESKI and MASTERS Experience great bridges.	USER NAME =	DESIGNED - R.I. PETERS	REVISED ___
		CHECKED - L.V. BORDEN	REVISED ___
	PLOT SCALE =	DRAWN - R.I. PETERS	REVISED ___
	PLOT DATE =	CHECKED - K.M. GABLE	REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONDUIT DIAGRAM – 2
SHEET NO. 86 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	99
		CONTRACT NO. 60P55		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. This layout and the accompanying tabulations are for reference only. All required raceways and wiring are not necessarily shown on this layout.
2. The Contractor shall be responsible for developing a complete wiring and conduit tabulations for all conductors and cables.

LEGEND:

1 Indicates continued on Ruby Street - Conduit Diagram - 1

RUBY, Drawing 01-087

MODJESKI and MASTERS
Experience great bridges.

USER NAME =	DESIGNED - R.I. PETERS	REVISED	___
	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	___
PLOT DATE =	CHECKED - K.M. GABLE	REVISED	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
RUBY STREET – CONDUIT DIAGRAM – 3
SHEET NO. 87 OF 97 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112	2011-045-I	WILL	466	100
		CONTRACT NO. 60P55		
	ILLINOIS FED. AID PROJECT			