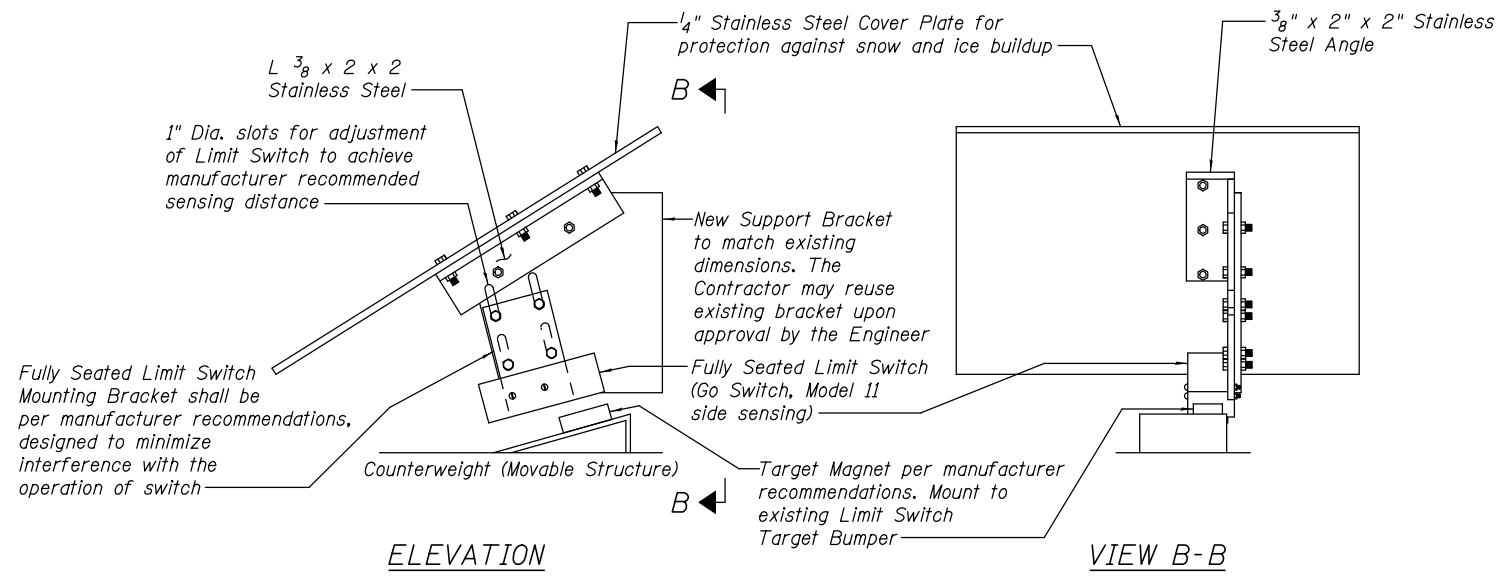
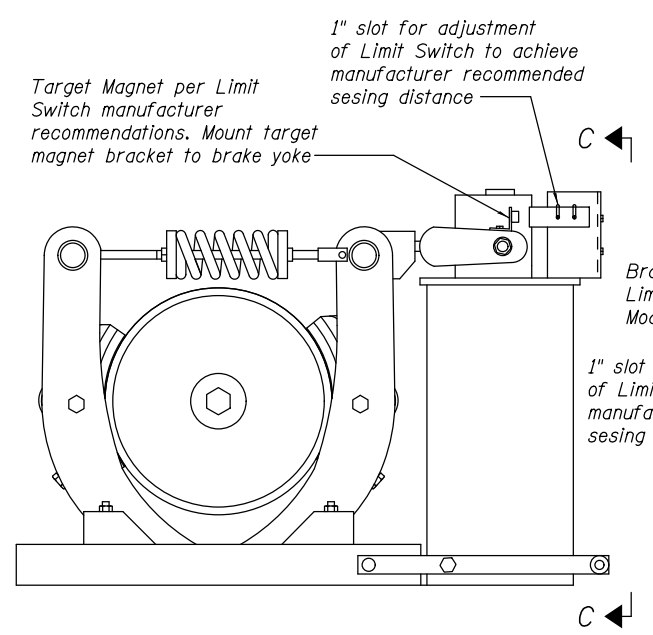


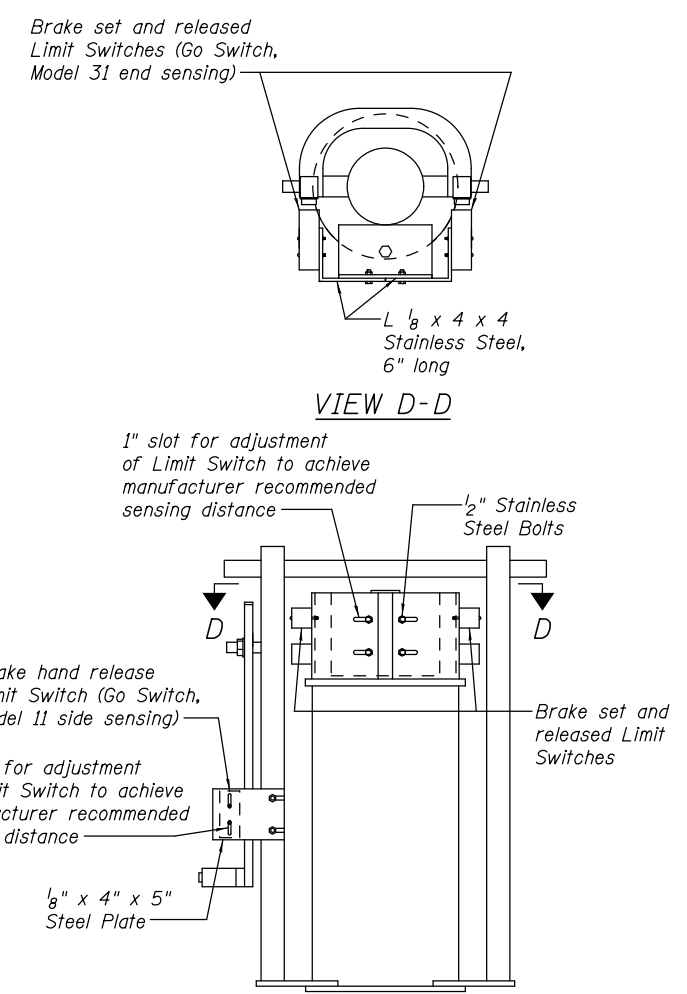
EXISTING JACKSON STREET FULLY SEATED LIMIT SWITCHES



PROPOSED JACKSON STREET FULLY SEATED LIMIT SWITCHES
(Typical of Jackson Street, Cass Street, Jefferson Street, and McDonough Street Fully Seated Limit Switches)



PROPOSED JACKSON STREET BRAKES LIMIT SWITCHES
(Typical of Jackson Street, Cass Street, and Jefferson Street Motor and Machinery Brake Limit Switches)



- NOTES**
1. All measurements are to be field verified prior to fabrication.
 2. The Contractor shall submit Limit Switch mounting details to the Engineer for approval prior to ordering any materials or completing any work.



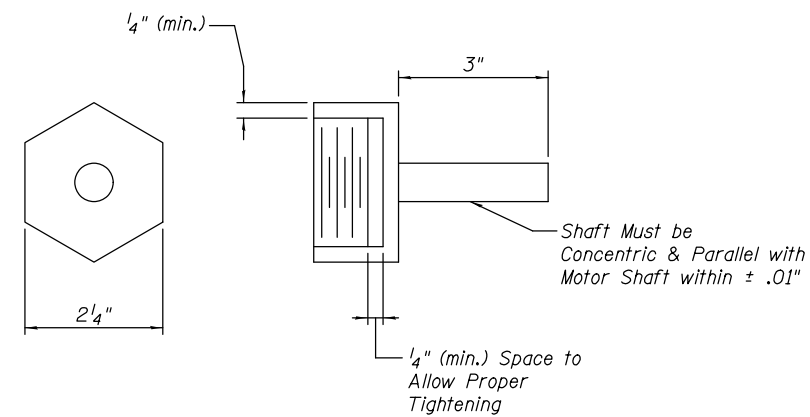
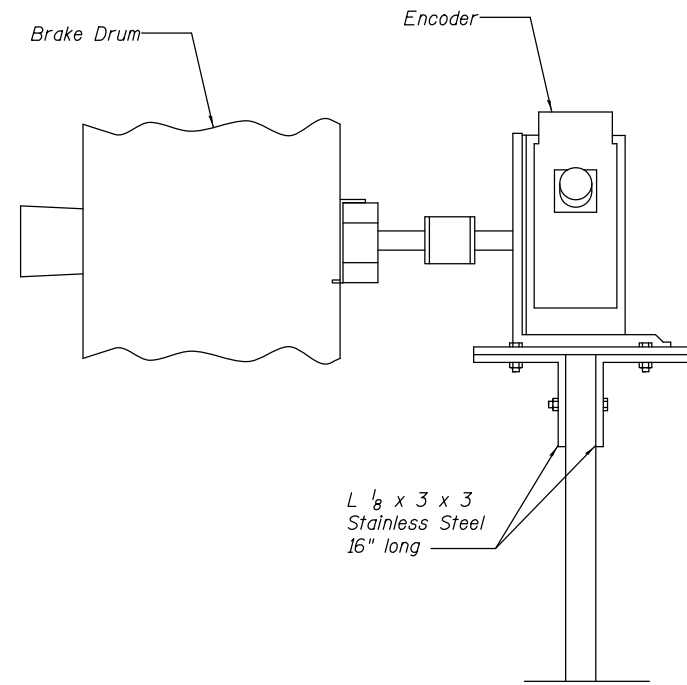
USER NAME =	DESIGNED - K.M. GABLE	REVISED -
	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION JACKSON STREET - MISCELLANEOUS ELECTRICAL DETAILS - 1
SHEET NO. 91 OF 97 SHEETS

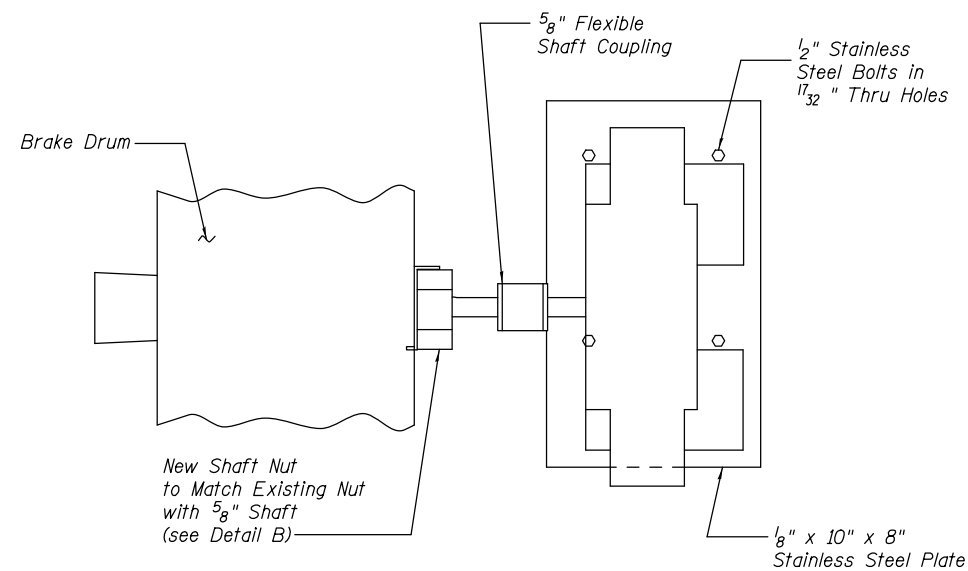
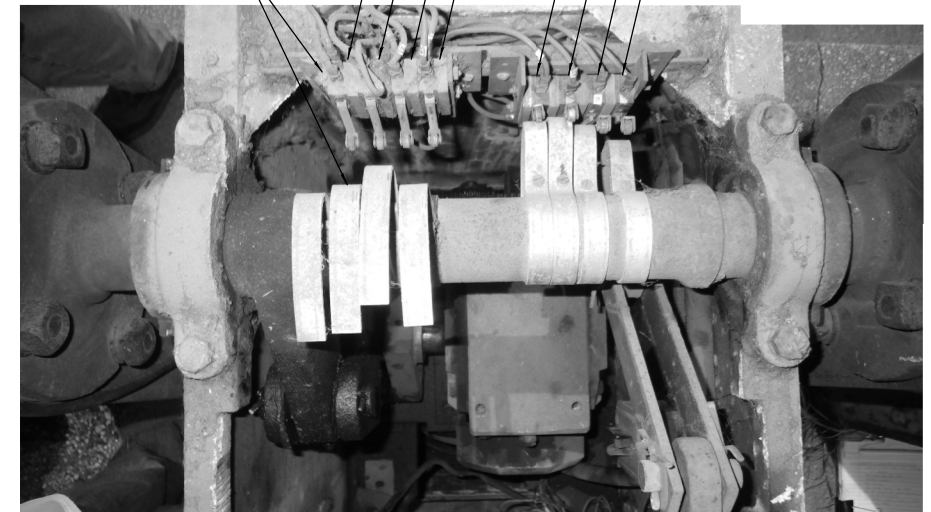
F.A.U. RTE. 0297	SECTION 2011-045-I	COUNTY WILL	TOTAL SHEETS 466	SHEET NO. 201
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

Existing gate limit switches shall be replaced with new lever arm limit switches



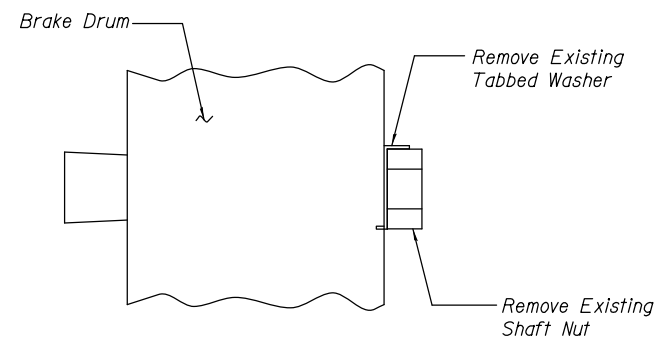
DETAIL B

Lever arm limit switches mounting assembly and shaft trip arms shall be adjusted as required for desired switch indications



PROPOSED MOTOR ENCODER DETAIL

(Typical of Ruby Street, Jackson Street, Cass Street, Jefferson Street, and McDonough Street Motor Encoders)



EXISTING MOTOR BRAKE

NOTES

1. All measurements are to be field verified prior to fabrication.
2. Limit switch lever arm length shall be field verified. New switches lever arm lengths shall be matched in-kind to existing switches.
3. Traffic gate repairs shall include the replacement of all wiring to the traffic gates. Refer to conduit tabulation drawings for each bridge for conductor requirements.
4. Replacement of traffic gate warning gongs (under Integrated Bridge Controls System pay item) shall be coordinated with traffic gate repairs.

Provide and install new gate motor disconnect switch



Replace existing terminal blocks. Provide and install new terminal box inside gate enclosure to house new terminal blocks



PROPOSED TRAFFIC GATE REPAIRS

(Typical of all bridge traffic gates)



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

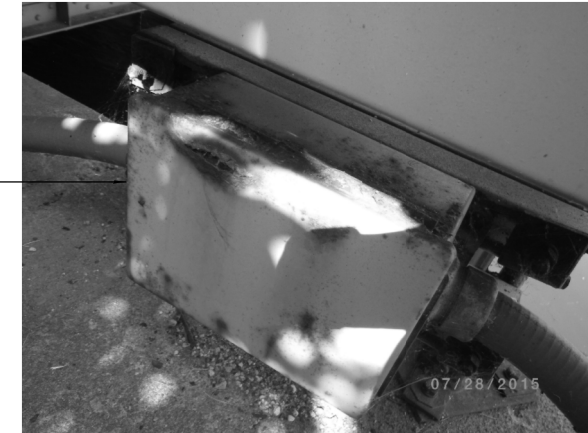
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JACKSON STREET - MISCELLANEOUS ELECTRICAL DETAILS - 2
SHEET NO. 92 OF 97 SHEETS

JACKSON, Drawing 02-092		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0297	2011-045-I	WILL	466	202	CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT						

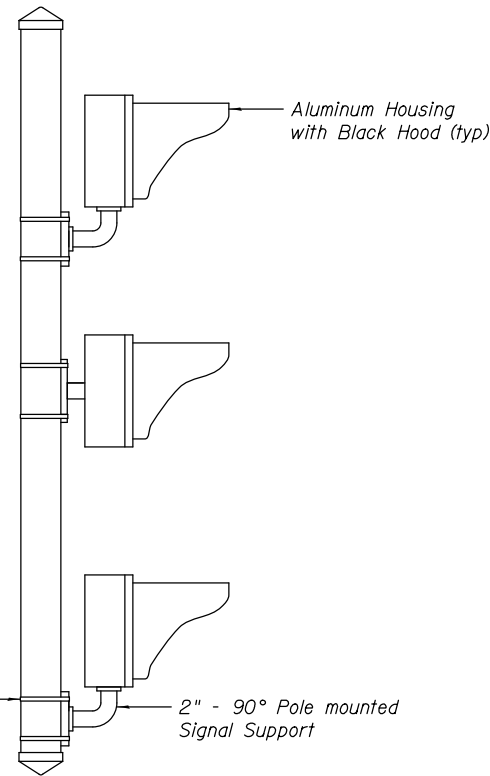


Replace flexible conduits to River Signals, size in-kind

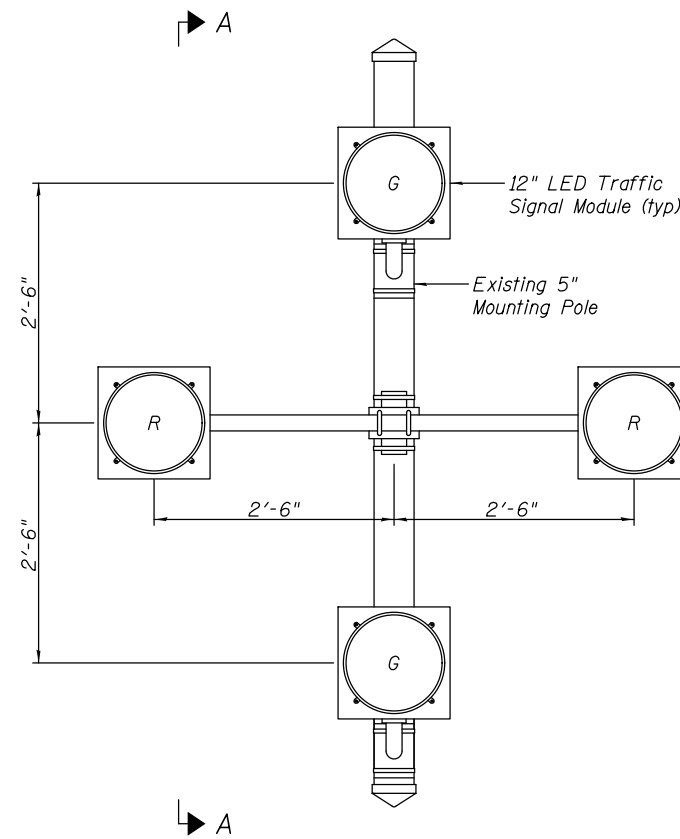
Replace corroded pull box to Jackson St. generator with new NEMA 4X stainless steel enclosure, size in-kind (located on river wall behind generator)



JACKSON STREET GENERATOR PULL BOX



VIEW A-A



LED UPGRADE TO EXISTING RIVER SIGNALS

(Typical of Ruby Street, Jackson Street, Cass Street, and Jefferson Street bridges)

Replace flexible cables to Center Span Navigation Lights, size in-kind



CENTER SPAN NAVIGATION LIGHTS

(Typical for all bridges)

NOTES

1. Replace existing waterway traffic lights with 12" LED'S. Provide and install new signal supports sized as required for existing mounting poles.
2. All measurements shall be field verified prior to fabrication.
3. Typical for (2) locations, upstream and downstream.



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

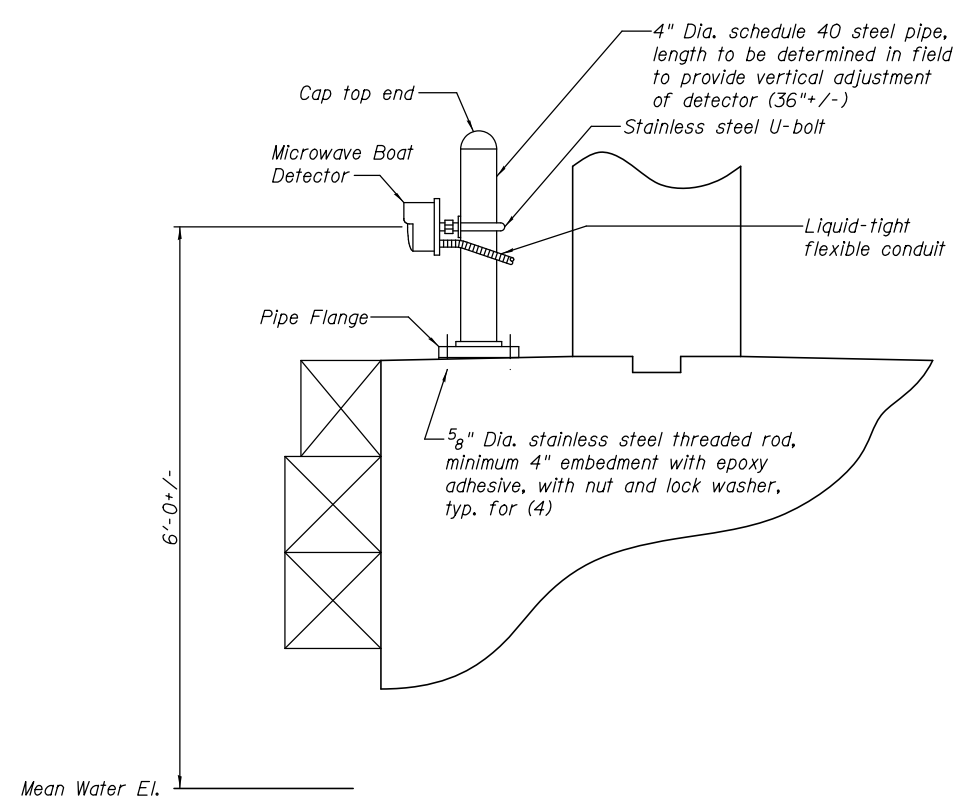
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JACKSON STREET - MISCELLANEOUS ELECTRICAL DETAILS - 3

SHEET NO. 93 OF 97 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0297	2011-045-I	WILL	466	203
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT

JACKSON, Drawing 02-093

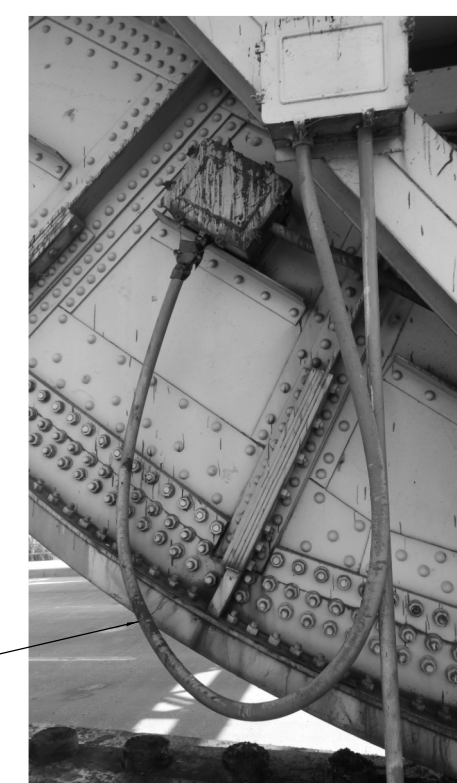


BOAT DETECTOR MOUNTING DETAIL
 (Typical of Ruby Street, Jackson Street, Cass Street, Jefferson Street, McDonough Street, and Brandon Road)

Remove existing fixed/movable span terminal cabinets (all near and farside locations) and provide new as required



FIXED / MOVABLE SPAN TERMINAL CABINETS
 (Typical of Jackson Street, Cass Street, Jefferson Street, and McDonough Street Bridges)



Provide and install new flexible cables to movable span

FLEXIBLE CABLES TO MOVABLE SPAN
 (Typical of Jackson Street, Cass Street, Jefferson Street, and McDonough Street Bridges)

NOTES

1. All measurements are to be field verified prior to fabrication.
2. Refer to the Conduit Diagram and Tabulation drawings for movable span terminal cabinet and flexible cable requirements. The Contractor shall provide the appropriate terminal cabinets and flexible cables per the specified wiring requirements.

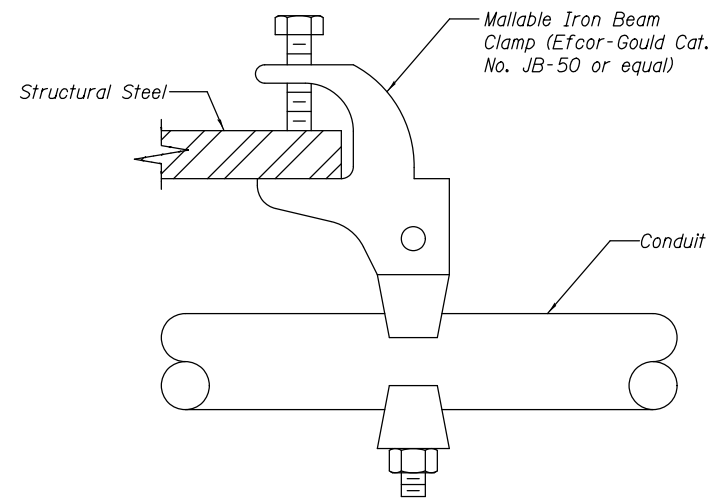


USER NAME =	DESIGNED - R.I. PETERS	REVISED _____
	CHECKED - L.V. BORDEN	REVISED _____
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED _____
PLOT DATE =	CHECKED - R.I. PETERS	REVISED _____

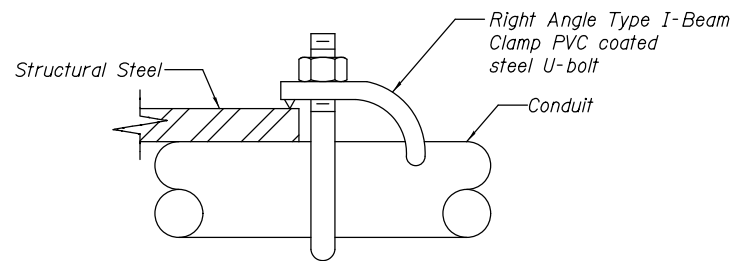
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
 LOCAL CENTRALIZED CONTROL AND OPERATION
 JACKSON STREET – MISCELLANEOUS ELECTRICAL DETAILS – 4**
 SHEET NO. 94 OF 97 SHEETS

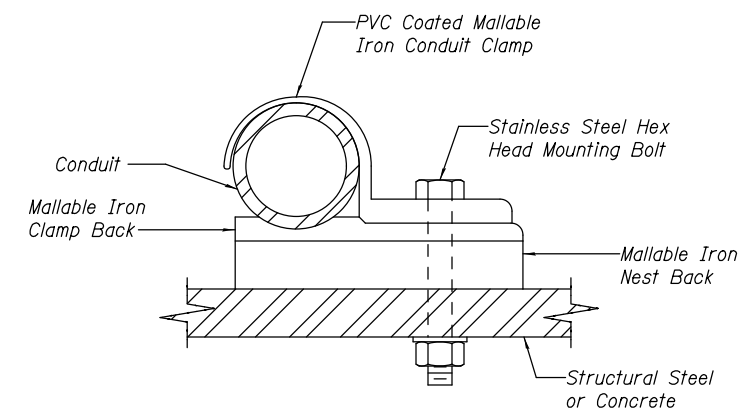
JACKSON, Drawing 02-094				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0297	2011-045-I	WILL	466	204
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



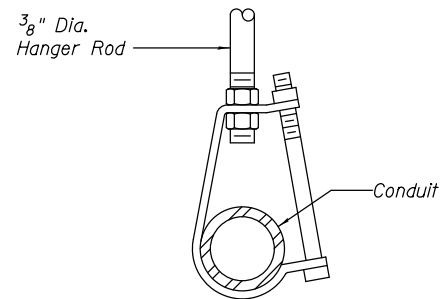
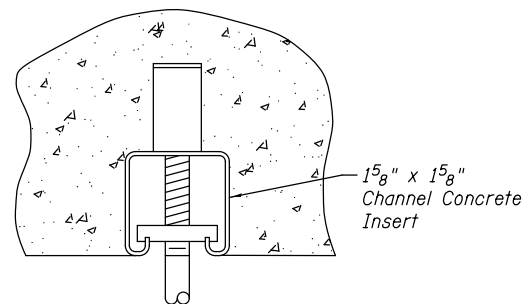
BEAM CLAMP 1



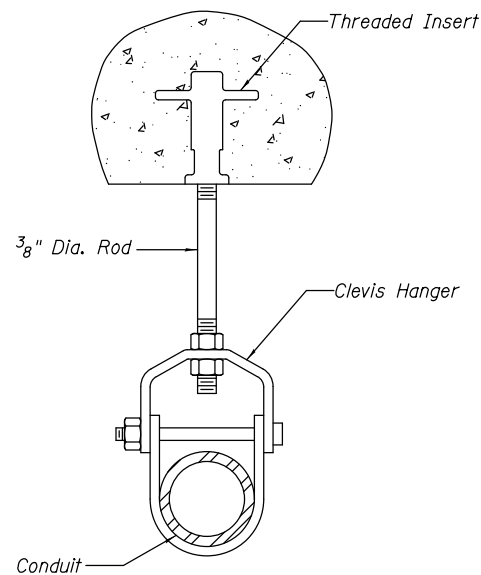
BEAM CLAMP 2



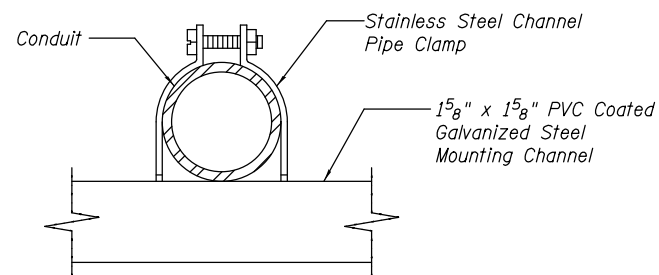
CONDUIT "C" CLAMP



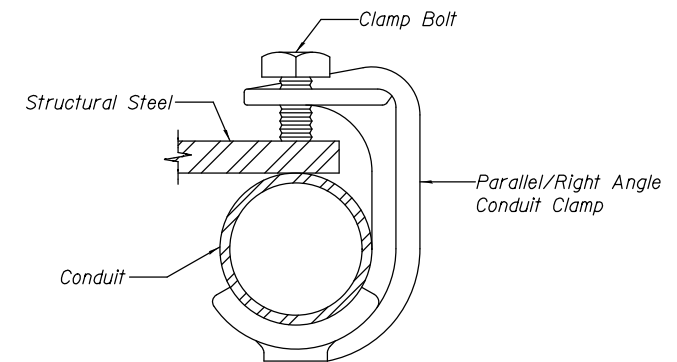
CONDUIT HANGER DETAIL



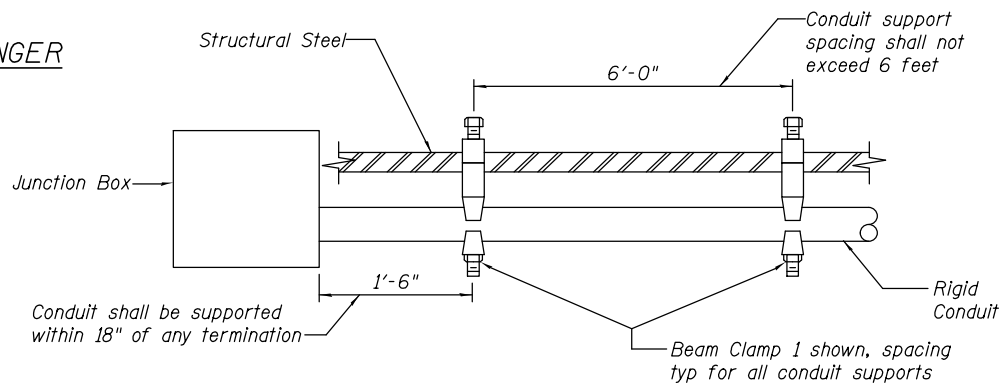
CLEVIS HANGER



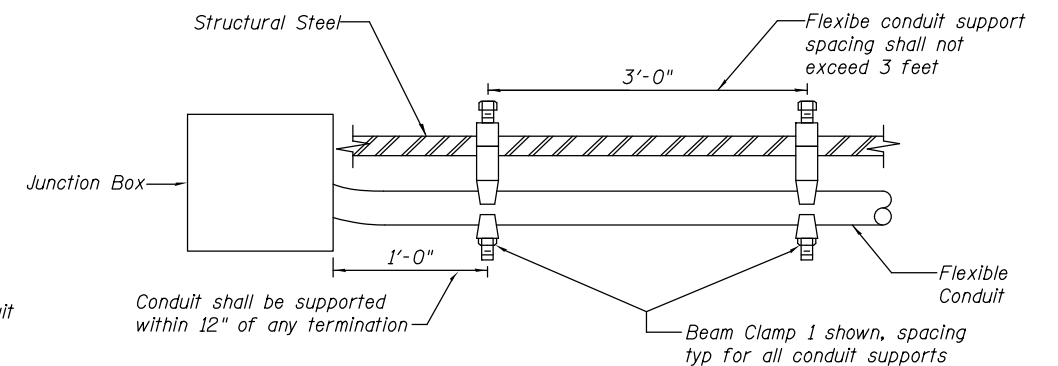
CHANNEL PIPE CLAMP



"J" TYPE BEAM CLAMP



RIGID CONDUIT SUPPORT SPACING DETAILS



FLEXIBLE CONDUIT SUPPORT SPACING DETAILS

NOTES

1. The Contractor shall submit conduit mounting details to the Engineer for approval.
2. All details shown are typical of all bridge locations requiring conduit mounting to the bridge or other structure.

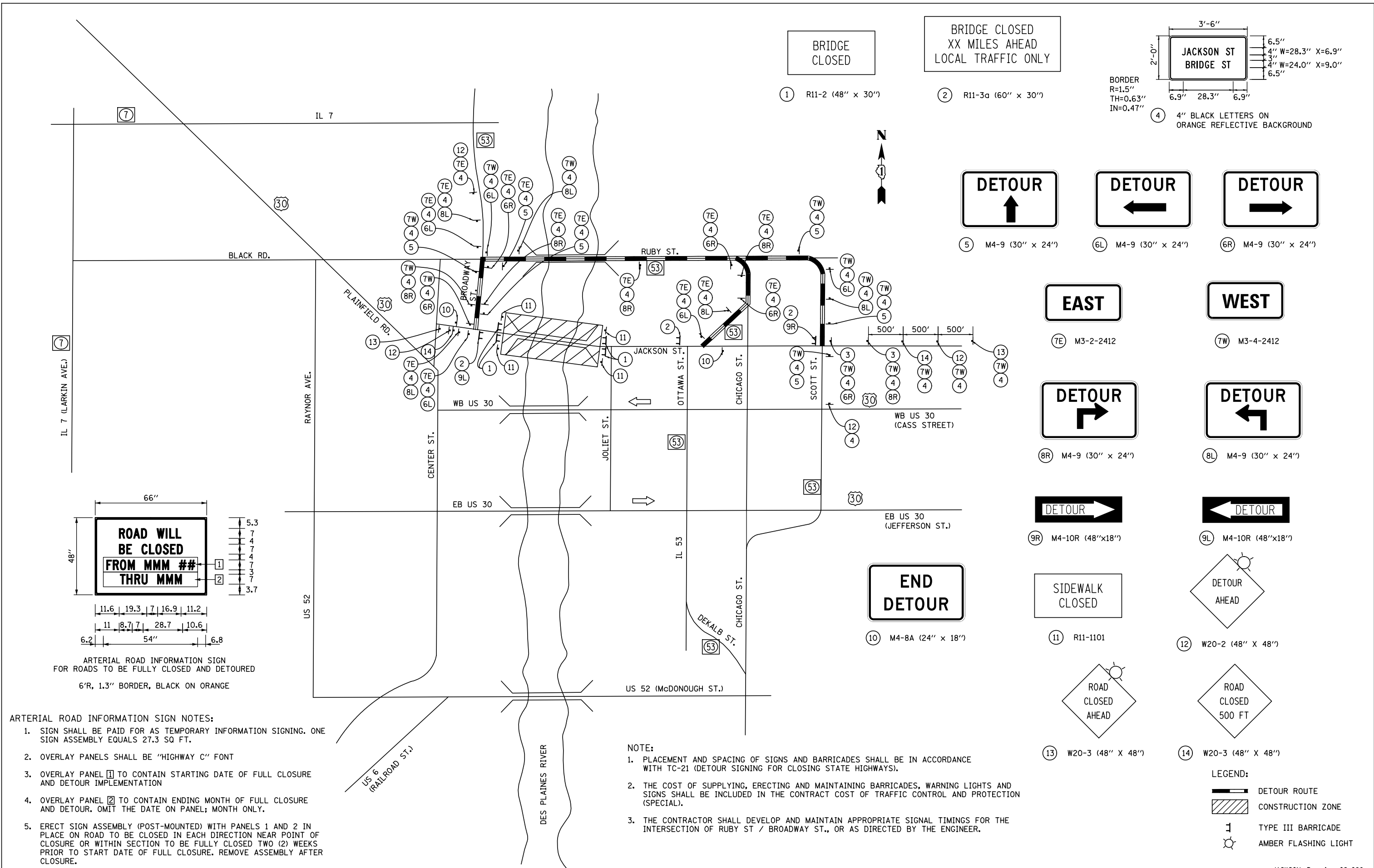


USER NAME =	DESIGNED - K.M. GABLE	REVISED	___
	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - R.L. REED	REVISED	___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

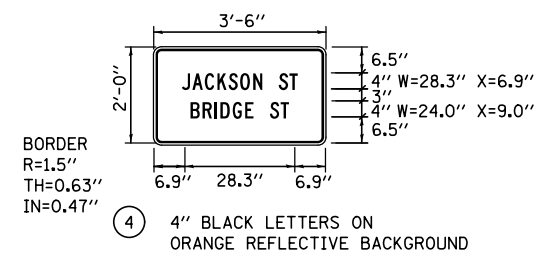
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JACKSON STREET - CONDUIT MOUNTING DETAILS
SHEET NO. 95 OF 97 SHEETS

JACKSON, Drawing 02-095			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
0297	2011-045-I	WILL	466
		SHEET NO. 205	
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			



BRIDGE CLOSED
 ① R11-2 (48" x 30")

BRIDGE CLOSED
 XX MILES AHEAD
 LOCAL TRAFFIC ONLY
 ② R11-3a (60" x 30")



DETOUR
 ↑
 ⑤ M4-9 (30" x 24")

DETOUR
 ←
 ⑥ M4-9 (30" x 24")

DETOUR
 →
 ⑥R M4-9 (30" x 24")

EAST
 ⑦E M3-2-2412

WEST
 ⑦W M3-4-2412

DETOUR
 ↗
 ⑧R M4-9 (30" x 24")

DETOUR
 ↖
 ⑧L M4-9 (30" x 24")

DETOUR
 →
 ⑨R M4-10R (48"x18")

DETOUR
 ←
 ⑨L M4-10R (48"x18")

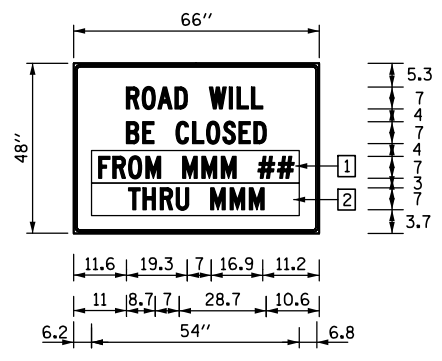
SIDEWALK CLOSED
 ⑪ R11-1101

DETOUR AHEAD
 ⑫ W20-2 (48" X 48")

ROAD CLOSED AHEAD
 ⑬ W20-3 (48" X 48")

ROAD CLOSED 500 FT
 ⑭ W20-3 (48" X 48")

END
 DETOUR
 ⑩ M4-8A (24" x 18")



ARTERIAL ROAD INFORMATION SIGN FOR ROADS TO BE FULLY CLOSED AND DETOURED
 6'R, 1.3" BORDER, BLACK ON ORANGE

- ARTERIAL ROAD INFORMATION SIGN NOTES:
- SIGN SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING. ONE SIGN ASSEMBLY EQUALS 27.3 SQ FT.
 - OVERLAY PANELS SHALL BE "HIGHWAY C" FONT
 - OVERLAY PANEL ① TO CONTAIN STARTING DATE OF FULL CLOSURE AND DETOUR IMPLEMENTATION
 - OVERLAY PANEL ② TO CONTAIN ENDING MONTH OF FULL CLOSURE AND DETOUR. OMIT THE DATE ON PANEL; MONTH ONLY.
 - ERECT SIGN ASSEMBLY (POST-MOUNTED) WITH PANELS 1 AND 2 IN PLACE ON ROAD TO BE CLOSED IN EACH DIRECTION NEAR POINT OF CLOSURE OR WITHIN SECTION TO BE FULLY CLOSED TWO (2) WEEKS PRIOR TO START DATE OF FULL CLOSURE. REMOVE ASSEMBLY AFTER CLOSURE.

- NOTE:
- PLACEMENT AND SPACING OF SIGNS AND BARRICADES SHALL BE IN ACCORDANCE WITH TC-21 (DETOUR SIGNING FOR CLOSING STATE HIGHWAYS).
 - THE COST OF SUPPLYING, ERECTING AND MAINTAINING BARRICADES, WARNING LIGHTS AND SIGNS SHALL BE INCLUDED IN THE CONTRACT COST OF TRAFFIC CONTROL AND PROTECTION (SPECIAL).
 - THE CONTRACTOR SHALL DEVELOP AND MAINTAIN APPROPRIATE SIGNAL TIMINGS FOR THE INTERSECTION OF RUBY ST / BROADWAY ST., OR AS DIRECTED BY THE ENGINEER.

- LEGEND:
- DETOUR ROUTE
 - CONSTRUCTION ZONE
 - TYPE III BARRICADE
 - AMBER FLASHING LIGHT



USER NAME =	DESIGNED - MGR	REVISED
	CHECKED - RAG	REVISED
PLOT SCALE =	DRAWN - MGR	REVISED
PLOT DATE =	CHECKED - T.P. LAVIN	REVISED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
 LOCAL CENTRALIZED CONTROL AND OPERATION
 JACKSON STREET - S.N. 099-0239 DETOUR ROUTE - 1
 SHEET NO. 96 OF 97 SHEETS

JACKSON, Drawing 02-096			
F.A.U. R.T.E.	SECTION	COUNTY	TOTAL SHEETS
0297	2011-045-I	WILL	466
			SHEET NO. 206
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

ROUTE MARKERS

FOR U.S. ROUTES
M1-40-2424

FOR ILLINOIS ROUTES
M1-50-2424

R.R. UNMARKED ROUTES
SPECIAL 24" x 18" VARIABLE
4" BLACK LETTERS ON WHITE
REFLECTIVE BACKGROUND

ARROWS SIGNS

M5-1L-2115

M5-1R-2115

M6-1-2115

M6-1-2115

M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

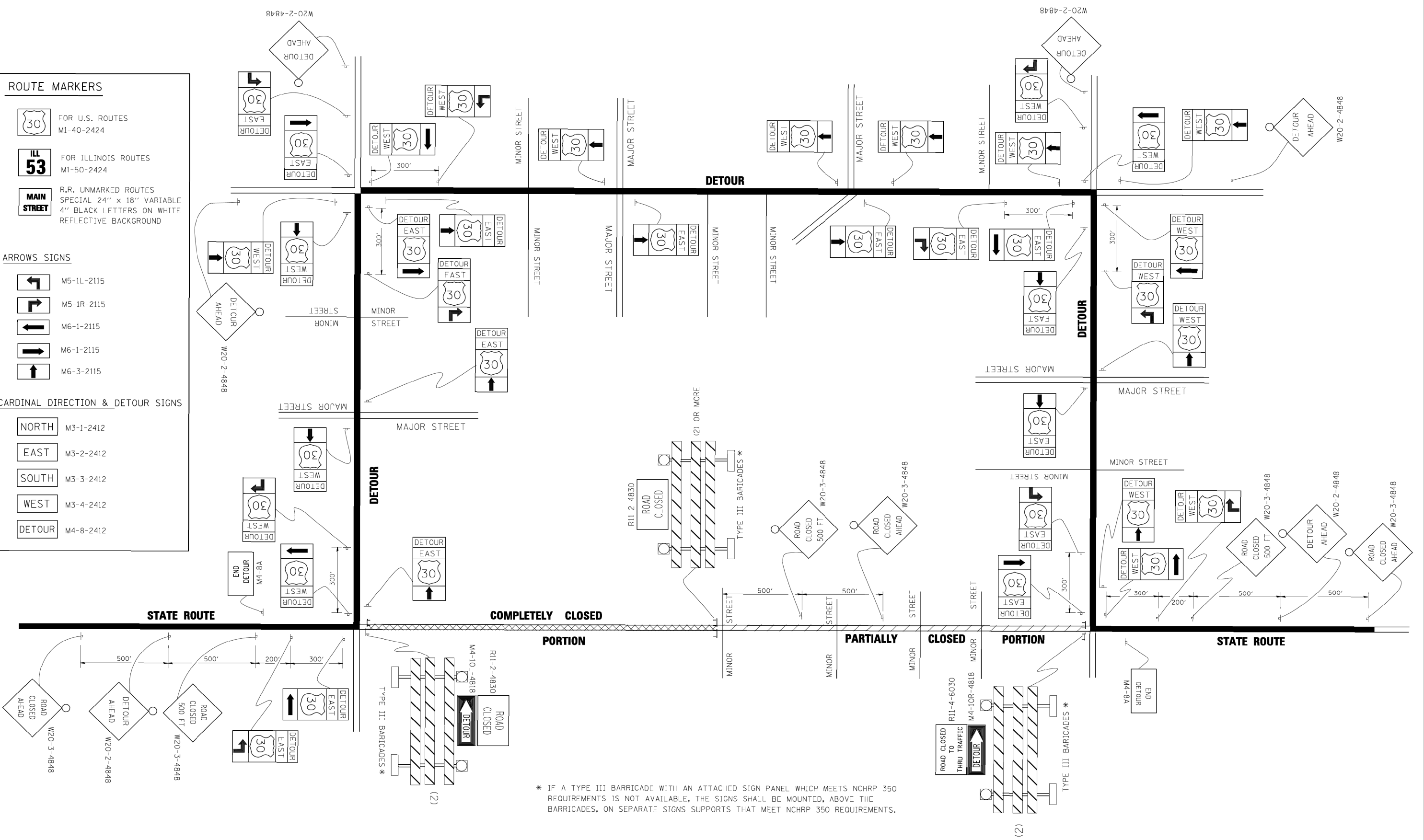
NORTH M3-1-2412

EAST M3-2-2412

SOUTH M3-3-2412

WEST M3-4-2412

DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

IDOT DISTRICT 1 STANDARD TC-21



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

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

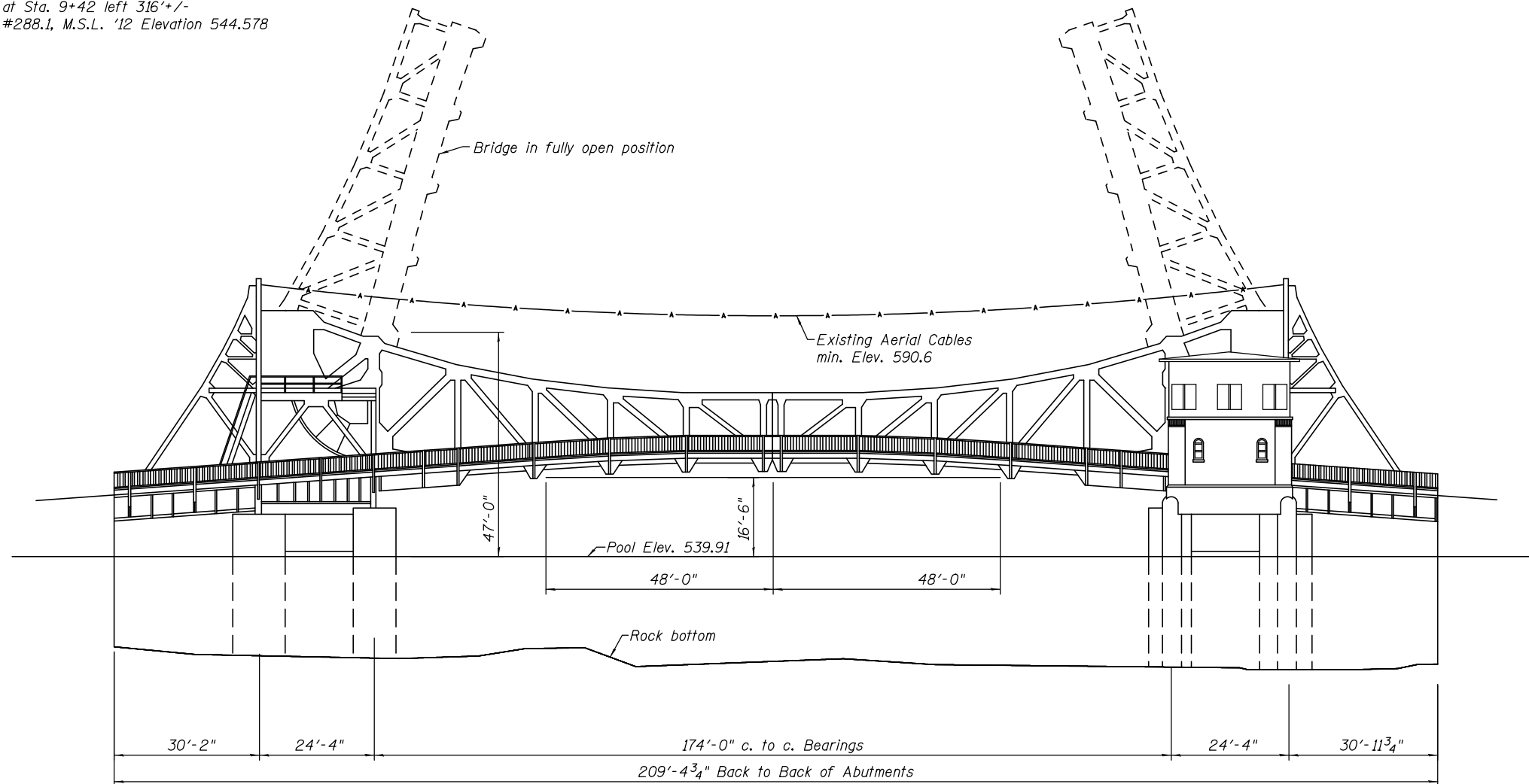
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
DETOUR SIGNING FOR CLOSING STATE HIGHWAYS**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0297	2011-045-I	WILL	466	207
TC-21			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

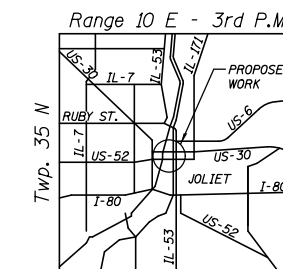
JACKSON, Drawing 02-097

SHEET NO. 97 OF 97 SHEETS

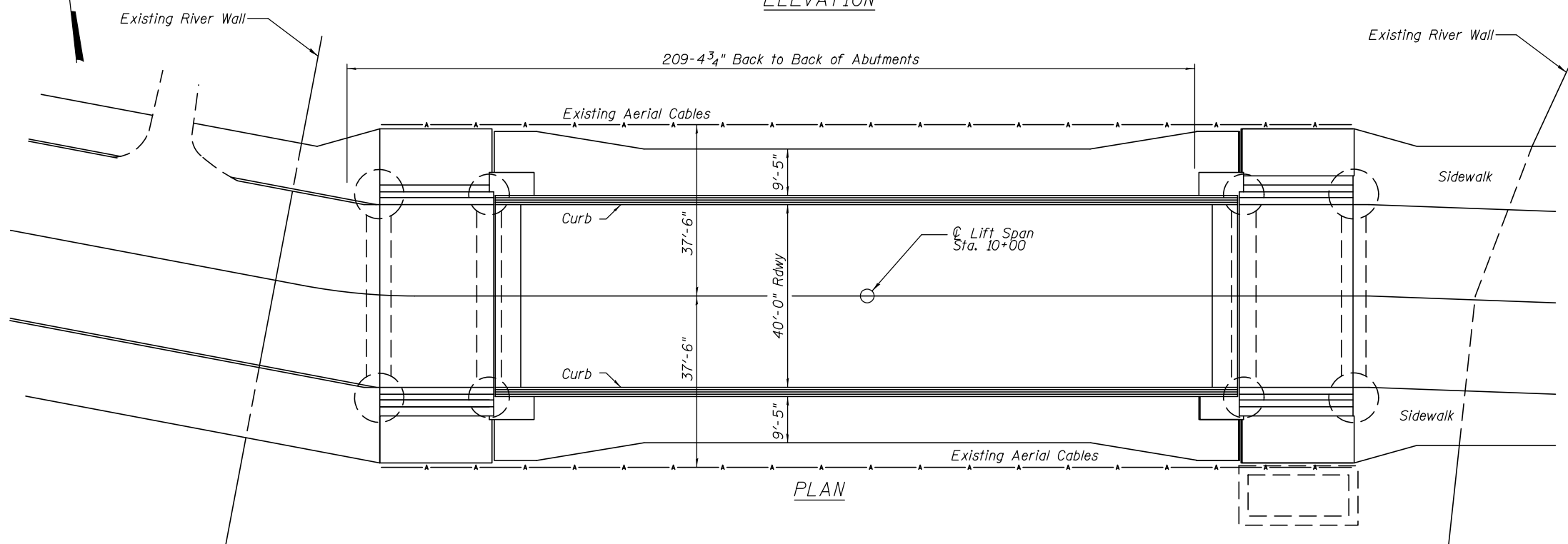
Benchmark:
 Brass Disc in Concrete Wall at Sta. 9+42 left 316'+/-
 Illinois Waterway Benchmark #288.1, M.S.L. '12 Elevation 544.578



ELEVATION



LOCATION SKETCH



PLAN

GENERAL PLAN AND ELEVATION CASS STREET
 U.S. ROUTE 30 W.B. OVER DES PLAINES RIVER
 F.A.P. ROUTE 607 SEC. 2011-045-I
 WILL COUNTY
 STATION 000.680
 STRUCTURE NO. 099-0101



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

SHEET NO. 1 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	208
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT

CASS, Drawing 03-001

INDEX OF SHEETS

<u>SHEET</u>	<u>LOCAL SHEET</u>	<u>DESCRIPTION</u>
208	03-001	GENERAL PLAN AND ELEVATION
209	03-002	INDEX OF SHEETS
210	03-003	ELECTRICAL SCOPE PLAN AND ELEVATION
211 - 212	03-004 - 03-005	OPERATOR'S HOUSE DETAILS
213	03-006	NEAR SIDE MACHINERY LAYOUT
214	03-007	FAR SIDE MACHINERY LAYOUT
215 - 217	03-008 - 03-010	THREE LINE DIAGRAMS
218	03-011	MCC LAYOUT
219 - 220	03-012 - 03-013	PANELBOARD SCHEDULES
221	03-014	FIBER OPTIC ROUTE TO OPERATOR HOUSE
222	03-015	FIBER OPTIC INTERCONNECT CABINET
223	03-016	SCADA ONE-LINE
224	03-017	CCTV ONE-LINE
225 - 229	03-018 - 03-022	CCTV CAMERA LAYOUTS
230	03-023	PUBLIC ADDRESS SPEAKER LAYOUT
231	03-024	NETWORK CABINET DETAILS
232	03-025	CCTV PLAN AND ELEVATION
233	03-026	BRIDGE CONTROL DIAGRAM
234 - 235	03-027 - 03-028	NEW BRIDGE CONTROL CONSOLE
236	03-029	ELECTRICAL EQUIPMENT SCHEDULE
237 - 239	03-030 - 03-032	CONDUIT DIAGRAMS
240 - 243	03-033 - 03-036	CONDUIT TABULATIONS
244	03-037	AERIAL CABLE DETAILS
245 - 246	03-038 - 03-039	CONSTRUCTION DETOUR ROUTE

CASS, Drawing 03-002

	USER NAME =	DESIGNED - R.I. PETERS	REVISED _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION CASS STREET - INDEX OF SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - L.V. BORDEN	REVISED _____			607	2011-045-I	WILL	466	209
	PLOT SCALE =	DRAWN - R.L. REED	REVISED _____			CONTRACT NO. 60P55				
	PLOT DATE =	CHECKED - R.I. PETERS	REVISED _____	SHEET NO. 2 OF 39 SHEETS						
						ILLINOIS FED. AID PROJECT				

GENERAL STRUCTURE

- Remove wiring from existing conduit and install new wiring where applicable
- Provide and Install new wiring and conduit to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
- Fixed Traffic Cameras
- Aerial Terminal Cabinets

OPERATOR HOUSE EXTERIOR

- Provide and Install:
- Warning Horns
- Marine Radio Antenna

OPERATOR'S ROOM

- Provide and Install:
- UPS equipment for CCTV and network equipment
- PLC control console with HMI and hardwired relay back-up controls
- PLC control panel
- Network equipment to support:
- PLC communication
- CCTV system
- P.A. system
- Remote control

OPERATOR'S ROOM (CONT'D)

- Provide and Install:
- Power supplies and surge protection for cameras
- Local CCTV system and monitors
- Radios, power supplies, and surge protection for Wireless Back-up Radio System
- Power supplies, surge protection, amplifiers, and transformers for P.A. system
- Fire Alarm and Security System equipment
- Marine Radio
- Fiber Optic Interconnect equipment
- New wiring to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
- Fixed Traffic Cameras
- Antennas for Wireless Backup Network (See Wireless Backup Network Plans for details)
- Aerial Terminal Cabinet

EAST APPROACH

- Provide and Install:
- PTZ Camera
- P.A. system speakers and microphones
- Other:
- Refurbish existing traffic gates

WEST APPROACH

- Provide and Install:
- PTZ Camera
- P.A. system speakers and microphones
- Other:
- Refurbish existing traffic gates

WEST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
- Motor Encoders for existing Motors
- Door Switches
- Disconnect Switches for Machinery and Motor Brakes
- Disconnect Switches for Main Drive Motors
- Rotary Cam Limit Switch with resolver
- Inclinometers
- Panelboard
- PLC I/O Rack, Cards, and related components
- New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

WEST PIER TOP

- Provide and Install:
- PTZ Camera
- Thermal Imaging Camera
- Boat Detection Sensors
- Replace:
- All conduit on pier

EAST PIER TOP

- Provide and Install:
- PTZ Camera
- Thermal Imaging Camera
- Boat Detection Sensors
- Replace:
- All conduit on pier

ELECTRICAL ROOM

- Remove:
- Existing relay logic control system
- Existing Main Drives
- Provide and Install:
- Surge Protective Device for incoming Electrical Service
- Power Monitor (interface to PLC for remote monitoring)
- Drive control and communication interface with PLC
- Intrusion detection
- Access Control for entry
- Variable Speed Drives

ELECTRICAL ROOM (CONT'D)

- Provide and Install:
- Braking Resistors
- Transformer
- Panelboard
- Fire Alarm and Security System equipment
- New wiring to Electrical equipment
- Other:
- Interface the existing Automatic Transfer Switch to PLC for remote monitoring

ELEVATION

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

NORTHWEST FIXED TOWER STRUCTURE (SIDEWALK ELEVATION)

- Provide and Install:
- Power supplies and surge protection for cameras
- Power supplies, surge protection, amplifiers, and transformers for P.A. system

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

EAST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
- Motor Encoders for existing Motors
- Door Switches
- Disconnect Switches for Machinery and Motor Brakes
- Disconnect Switches for Main Drive Motors
- Rotary Cam Limit Switch with resolver
- Inclinometers
- Panelboard
- PLC I/O Rack, Cards, and related components
- New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

PLAN



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 -

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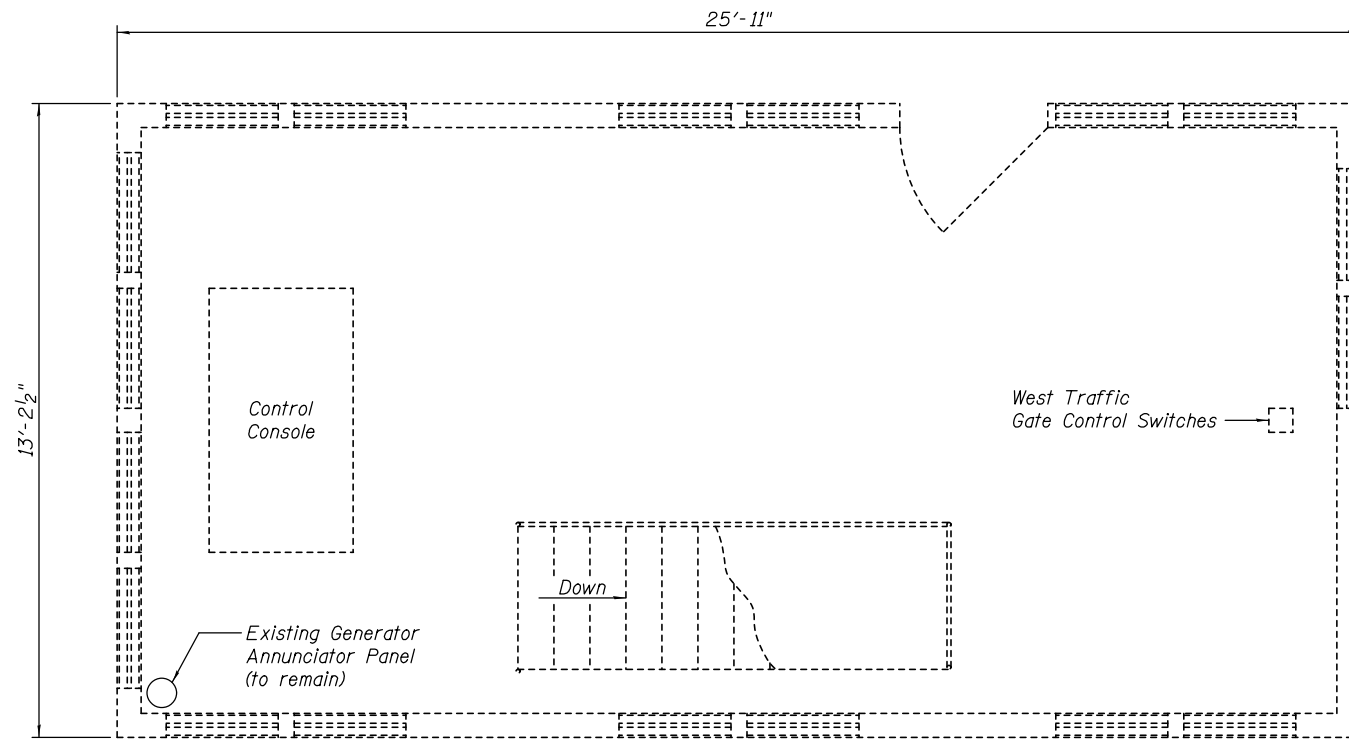
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - ELECTRICAL SCOPE PLAN AND ELEVATION**

SHEET NO. 3 OF 39 SHEETS

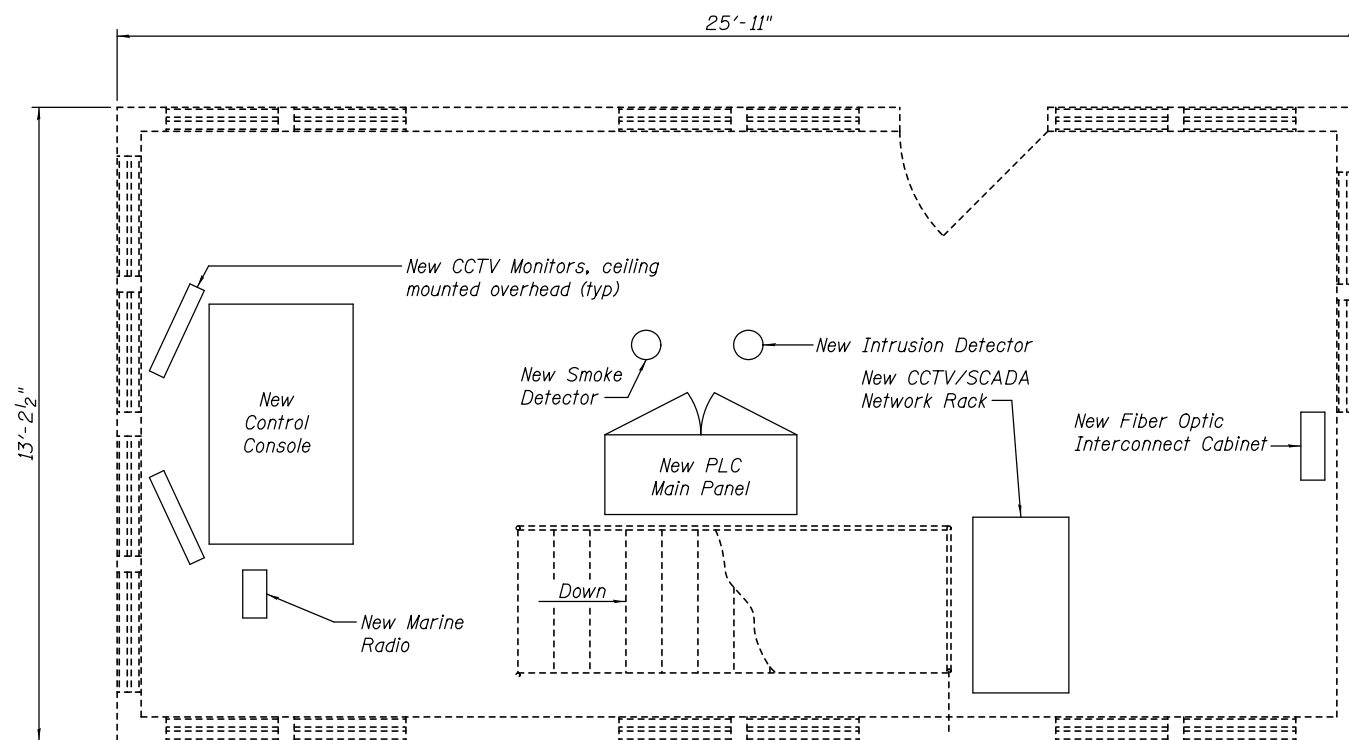
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	210
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT

CASS, Drawing 03-003



PLAN
EXISTING OPERATOR'S ROOM FLOOR LAYOUT



PLAN
PROPOSED OPERATOR'S ROOM FLOOR LAYOUT



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

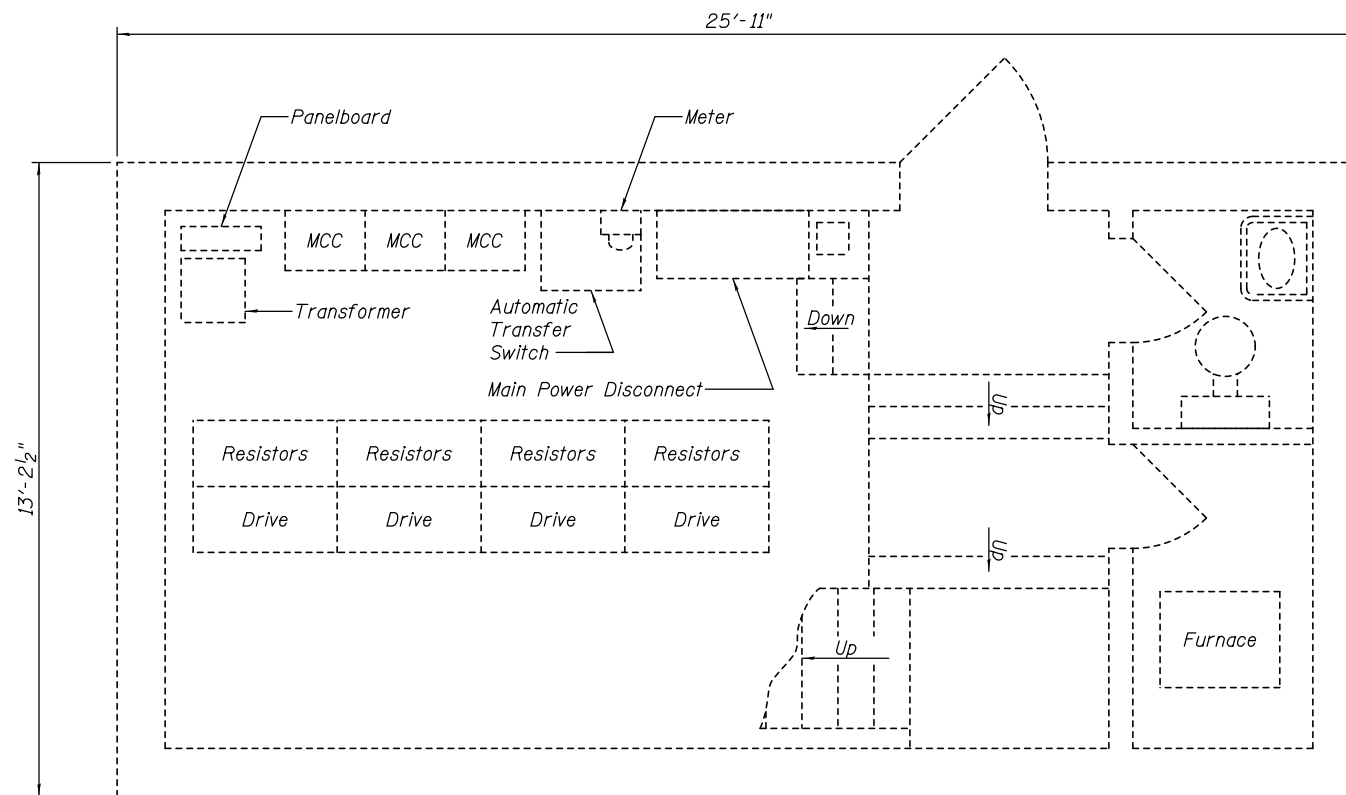
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - OPERATOR'S HOUSE DETAILS - 1

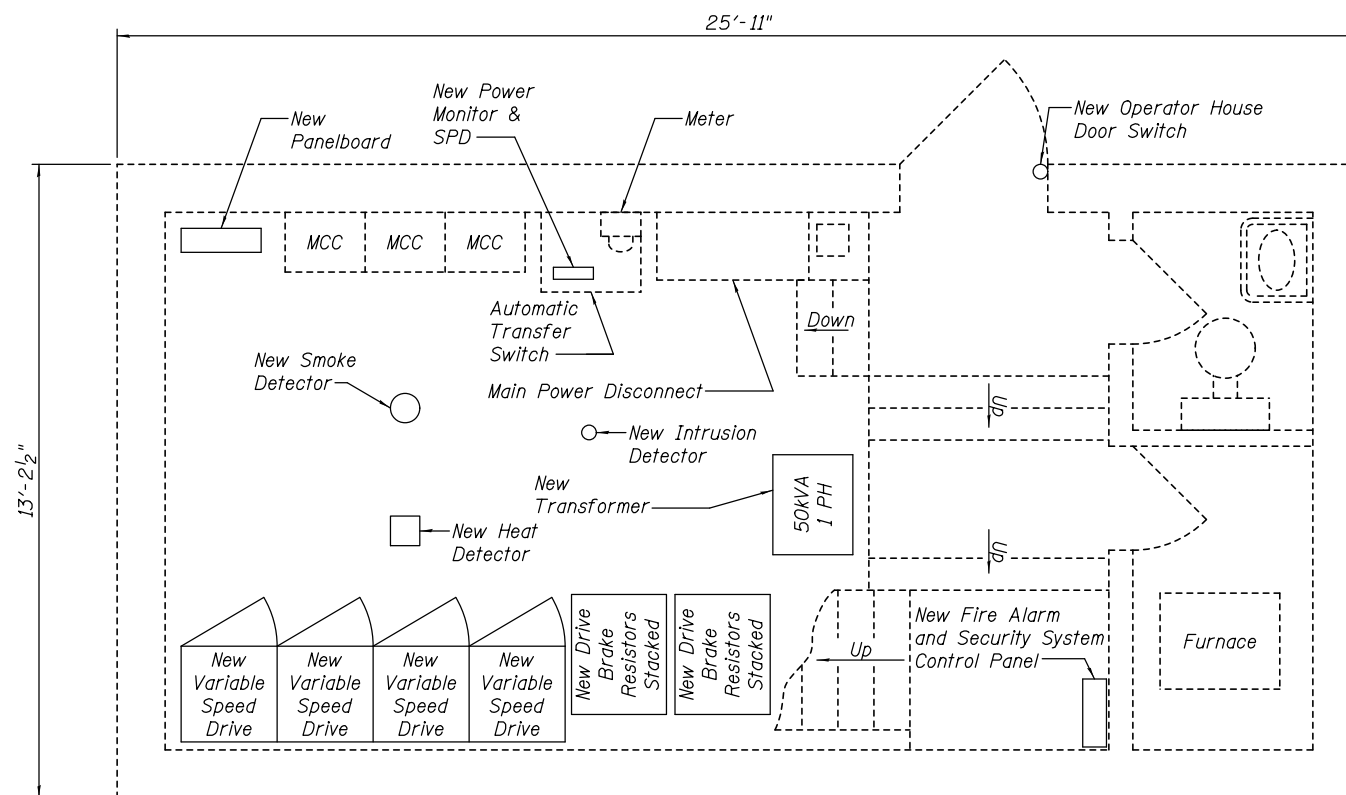
SHEET NO. 4 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	211
CONTRACT NO. 60P55			ILLINOIS FED. AID PROJECT	

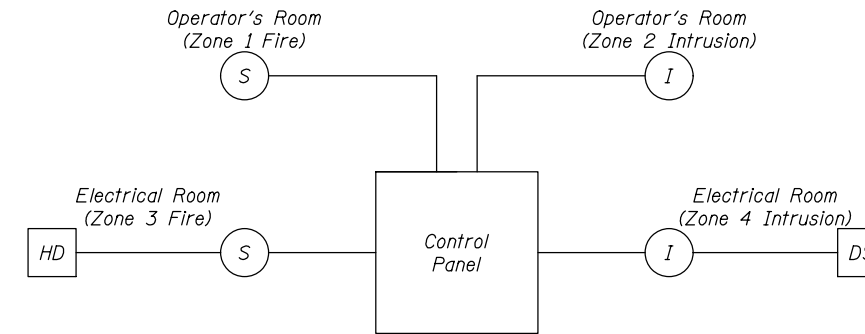
CASS, Drawing 03-004



PLAN
EXISTING OPERATOR'S ROOM FLOOR LAYOUT



PLAN
PROPOSED ELECTRICAL ROOM FLOOR LAYOUT



FIRE ALARM AND SECURITY SYSTEM

LEGEND

- (S) Smoke Detector
- (I) Intrusion Detector
- [HD] Heat Detector
- [DS] Door Switch

NOTES:

1. Contractor is alerted to the fact that cabinets may need to be custom sized to fit available space in existing electrical rooms and to provide NEC working space around cabinets.
2. Items not labeled as new are intended to remain.



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

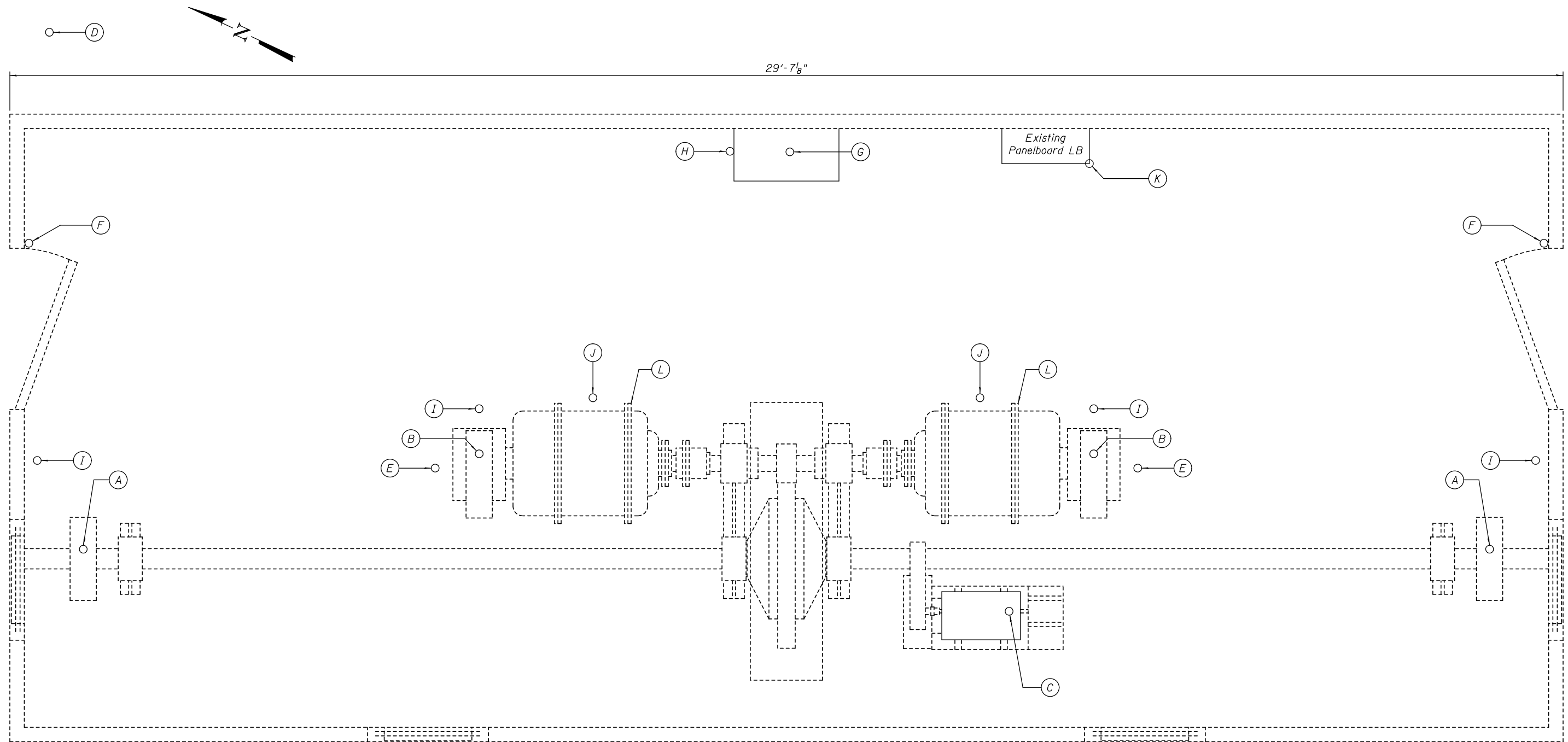
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - OPERATOR'S HOUSE DETAILS - 2

SHEET NO. 5 OF 39 SHEETS

F.A.P. RTE.		SECTION		COUNTY		TOTAL SHEETS		SHEET NO.	
607		2011-045-I		WILL		466		212	
CONTRACT NO. 60P55									
ILLINOIS FED. AID PROJECT									

CASS, Drawing 03-005



PLAN
CASS STREET EAST MACHINERY ENCLOSURE

- | | |
|--|---|
| <ul style="list-style-type: none"> (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208). (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208). (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206). (D) Provide and install new Fully Seated Limit Switch (on Span) (E208). (E) Provide and install new Motor Encoders for existing Motors. (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 Inclometers (2) (E207). (I) Provide and install new brake disconnect switch (E106). | <ul style="list-style-type: none"> (J) Provide and install new main drive motor disconnect switch (E105). (K) Remove existing Panelboard and install new Panelboard (E109). (L) Remove, refurbish, and reinstall main drive motor. |
|--|---|



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

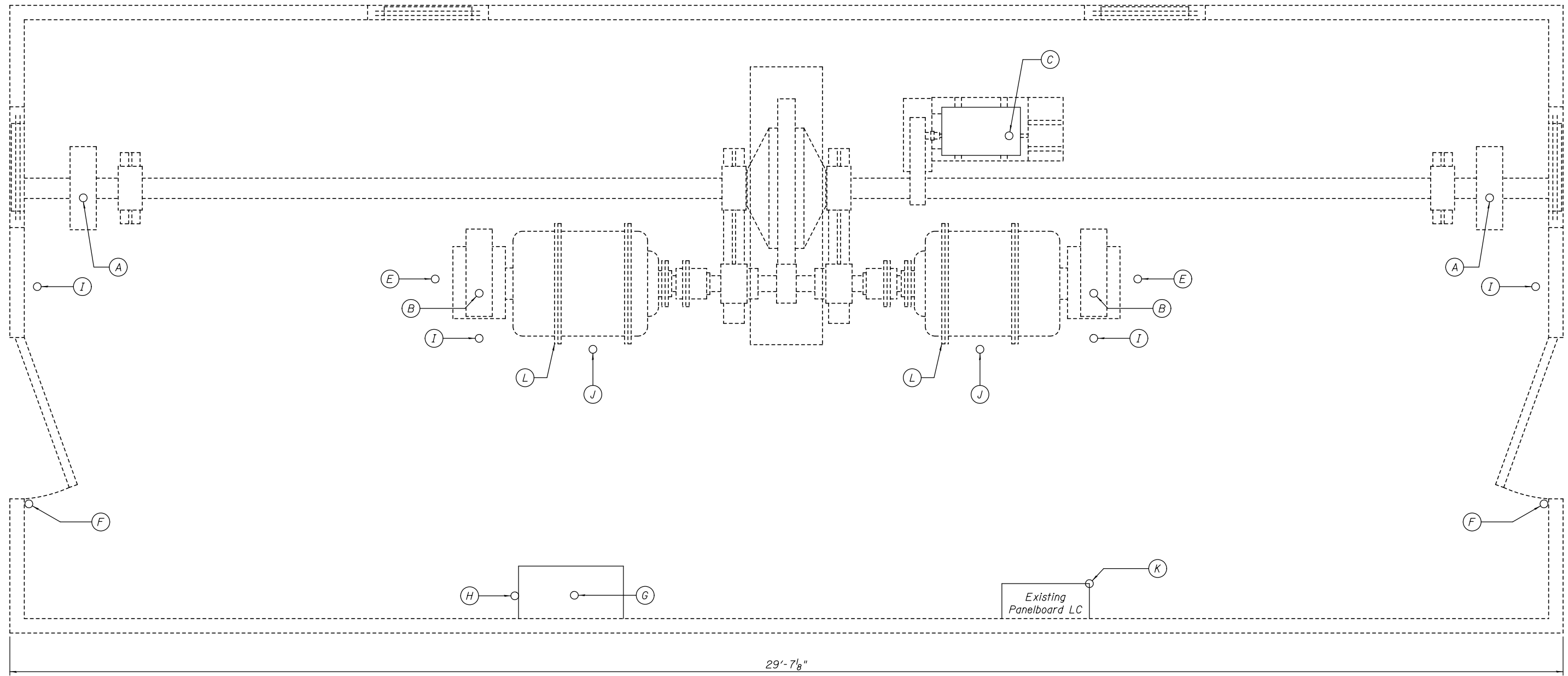
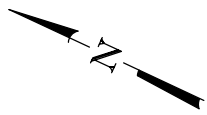
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**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - NEARSIDE MACHINERY LAYOUT**

SHEET NO. 6 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	213
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-006



PLAN
CASS STREET WEST MACHINERY ENCLOSURE

- (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208).
- (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208).
- (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206).
- (D) Provide and install new Fully Seated Limit Switch (on Span) (E208).
- (E) Provide and install new Motor Encoders for existing Motors.
- (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) (E207).
- (I) Provide and install new brake disconnect switch (E106).
- (J) Provide and install new main drive motor disconnect switch (E105).
- (K) Remove existing Panelboard and install new Panelboard (E109).
- (L) Remove, refurbish, and reinstall main drive motor.



USER NAME =	DESIGNED - R.I. PETERS	REVISED -
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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

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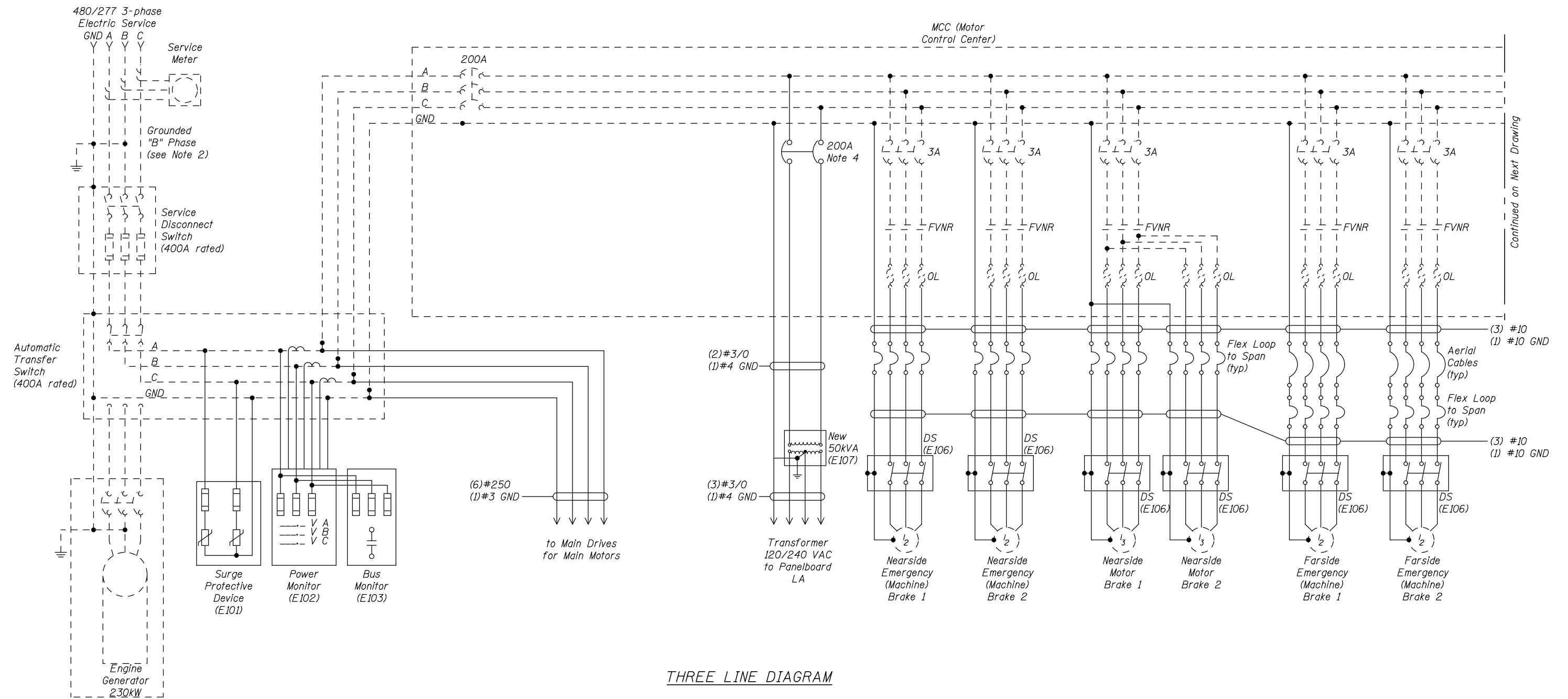
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - FARMSIDE MACHINERY LAYOUT

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	214
CONTRACT NO. 60P55				

SHEET NO. 7 OF 39 SHEETS

ILLINOIS FED. AID PROJECT

CASS, Drawing 03-007



THREE LINE DIAGRAM

LEGEND

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

NOTES:

1. The Contractor shall provide an appropriately sized Nema 12 electrical enclosure for the power monitor, bus monitor, and associated components.
2. The Contractor shall be responsible for sizing all breakers, fuses, and conductors according to equipment and NEC requirements.
3. Verify that service is grounded "B" phase. Field testing suggested that the MCC "C" phase is grounded.
4. Modify MCC buckets to provide new circuit breakers.



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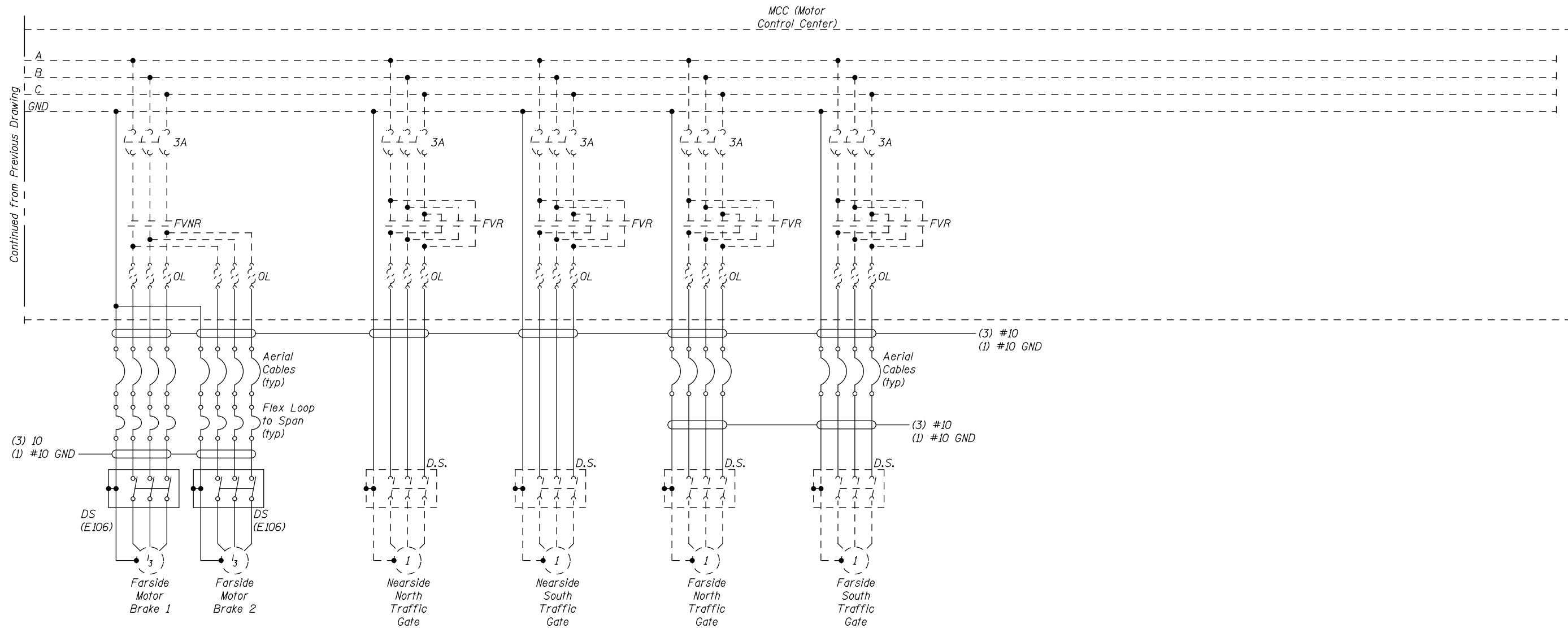
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - THREE LINE DIAGRAM - 1

SHEET NO. 8 OF 39 SHEETS

CASS, Drawing 03-008	
F.A.P. RTE. 607	SECTION 2011-045-I
COUNTY WILL	TOTAL SHEETS 466
	SHEET NO. 215
CONTRACT NO. 60P55	

ILLINOIS FED. AID PROJECT



THREE LINE DIAGRAM

LEGEND

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



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

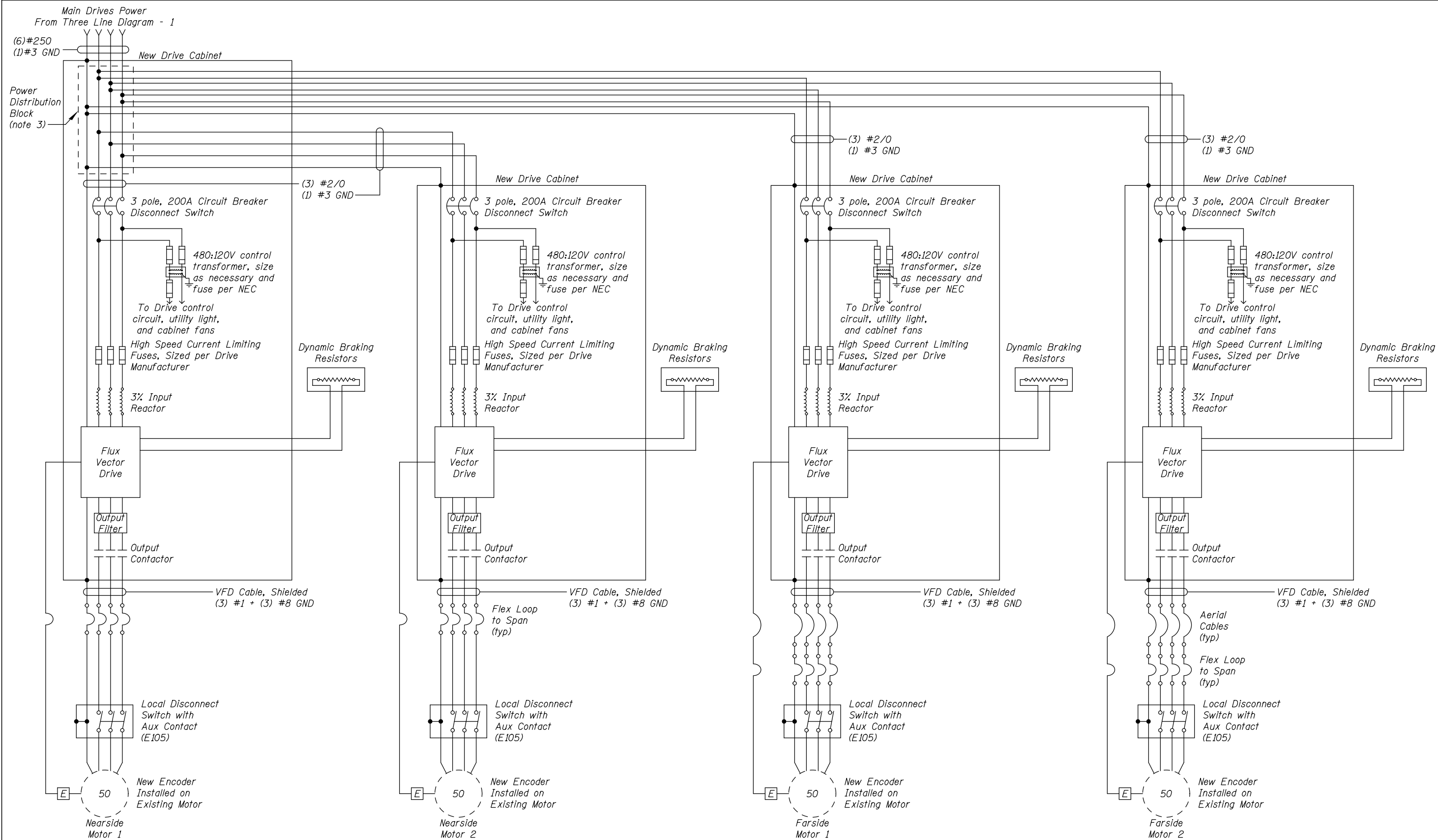
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - THREE LINE DIAGRAM - 2

SHEET NO. 9 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	216
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-009



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 electrical rooms and to provide NEC working space around cabinets.
3. Provide power distribution block in NE VFD cabinet to tap incoming feeder conductors to each main drive.

LEGEND

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



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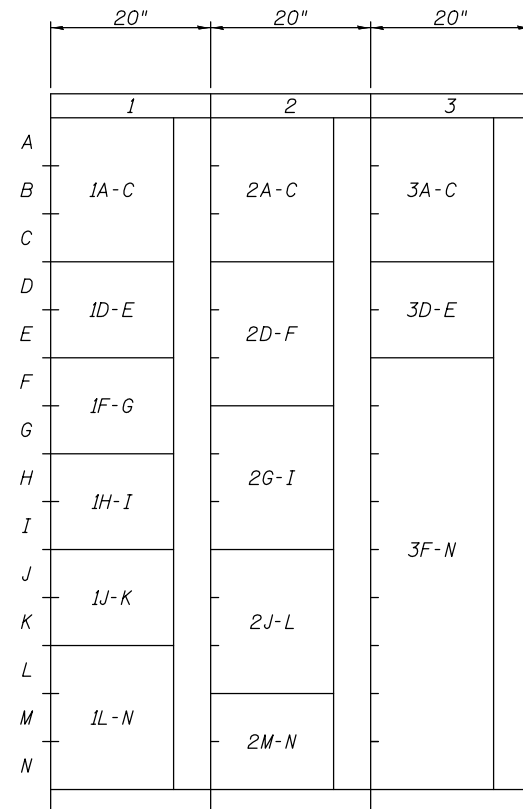
**STATE OF ILLINOIS
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**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - THREE LINE DIGARAM - 3**
SHEET NO. 10 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	217
CONTRACT NO. 60P55				

CASS, Drawing 03-010

ILLINOIS FED. AID PROJECT



ELEVATION
EXISTING MOTOR CONTROL CENTER (MCC) LAYOUT
 Scale:None

NOTES:

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

MOTOR CONTROL CENTER DATA			
Voltage:	480V		
Phase / Wire:	3 Ph / 3W		
Bus Amperes:	600A Horizontal / 300A Vertical		
Manufacturer / Model:	Square D / Model 4, Class 8998		
Enclosure:	Nema Type 1		
Braced for:	25,000 Symmetrical Amps		
Unit Loc.	Description	Motor HP	Unit Type
1A-C	Incoming Main Breaker	-	CB
1D-E	Nearside Emergency (Machine) Brake 1	1/2	FVNR
1F-G	Nearside Emergency (Machine) Brake 2	1/2	FVNR
1H-I	Farside Emergency (Machine) Brake 1	1/2	FVNR
1J-K	Farside Emergency (Machine) Brake 2	1/2	FVNR
1L-N	Nearside Motor Brakes 1 & 2	2 X 1/3	FVNR
2A-C	Farside Motor Brakes 1 & 2	2 X 1/3	FVNR
2D-F	Nearside On (North) Traffic Gate	1	FVR
2G-I	Nearside Off (South) Traffic Gate	1	FVR
2J-L	Farside On (South) Traffic Gate	1	FVR
2M-N	Space	-	SP
3A-C	Farside Off (North) Traffic Gate	1	FVR
3D-E	25kVA Transformer Disconnect (Panelboard)	-	CB
3F-N	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

PANELBOARD LA											
Voltage: 120/240V		Location: Operator House Electrical Room		Phase / Wire: 1 Ph / 3W		Fed From: MCC via Transformer, 25kVA		Bus Amperes: 125A		Mounting Enclosure: Surface / Nema 1	
Main Circuit Breaker: 125A		Short Circuit: 10,000 AIC									
Description	Load(Amps)		Breaker		A	B	Breaker	Load(Amps)		Description	
	A	B	Poles	Amps				Amps	Poles		A
F.S. Traffic & Gate Lights,Gongs	-	-	1	20	1	6	20	1	-	N.S. Traffic & Gate Lights,Gongs	
River Signals	-	-	1	20	3	6	20	1	-	River Lights	
House Lights	-	-	1	20	5	6	20	1	-	Receptacles	
Receptacle - Radio Transmitter	-	-	1	20	7	6	20	1	-	Receptacles	
Receptacle - CCTV	-	-	1	20	9	6	20	1	-	Bridge Walk Lights	
Pier Lights	-	-	1	20	11	6	20	1	-	Roadway Flood Lights	
Panelboard LB (Nearside Mach.)	-	-	2	30	13	6	30	2	-	Panelboard LC (Farside Mach.)	
Control Console	-	-	1	20	15	6	20	1	-	(Unknown Use)	
Toilet and Furnace Lights	-	-	1	20	17	6	20	1	-	Spare	
Signal Horn	-	-	1	20	19	6	20	1	-	(Unknown Use)	
Heater - Gate Farside	-	-	1	20	21	6	20	1	-	Spare	
Heater - Gate Farside	-	-	1	20	23	6	20	1	-	(Unknown Use)	
Heater - Gate Nearside	-	-	1	20	25	6	20	1	-	Spare	
Heater - Gate Nearside	-	-	1	20	27	6	30	2	-	(Unknown Use)	
Heater - Gate Nearside	-	-	1	20	29	6	50	2	-	Generator Heater	
(Unknown Use)	-	-	1	20	31	6					
(Unknown Use)	-	-	2	30	33	6					
					35	6					
					37						
					39						
					41						

EXISTING PANELBOARD LA SCHEDULE

NOTES:

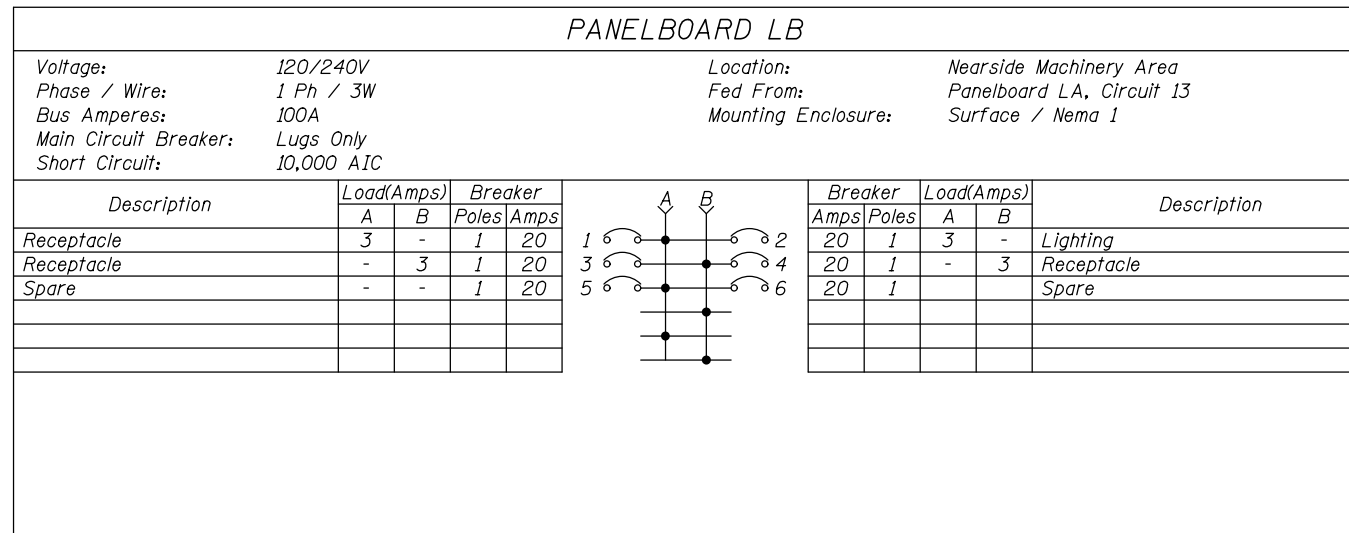
- The Contractor shall field verify all existing circuits before starting work.
- Remove existing panelboards. Provide and install new panelboards.
- The Contractor shall provide a neat typewritten or computer printed circuit legend with circuit descriptions for each panelboard.
- Circuits shall be arranged as required to balance loading.
- Power for PLC and Remote I/O racks shall utilize the same (A or B) phase.

PANELBOARD LA											
Voltage: 120/240V		Location: Operator House Electrical Room		Phase / Wire: 1 Ph / 3W		Fed From: MCC via Transformer, 50kVA		Bus Amperes: 225A		Mounting Enclosure: Surface / Nema 1	
Main Circuit Breaker: 200A		Short Circuit: 22,000 AIC									
Description	Load(Amps)		Breaker		A	B	Breaker	Load(Amps)		Description	
	A	B	Poles	Amps				Amps	Poles		A
F.S. Traffic & Gate Lights,Gongs	6	-	1	20	1	6	20	1	6	-	N.S. Traffic & Gate Lights,Gongs
N.S. Span Navigation Lights	-	2	1	20	3	6	20	1	-	2	F.S. Span Navigation Lights
House Lights	5	-	1	20	5	6	20	1	6	-	Receptacles
Receptacle - Radio Transmitter	-	1	1	20	7	6	20	1	-	6	Receptacles
Pier Navigation Lights	3	-	1	20	9	6	20	1	10	-	Bridge Walk Lights
Toilet and Furnace Lights	-	5	1	20	11	6	20	1	-	10	Roadway Flood Lights
Panelboard LB (Nearside Mach.)	9	8	2	30	13	6	30	2	9	8	Panelboard LC (Farside Mach.)
Heater - Gate Farside	2	-	1	20	15	6	20	1	6	-	(Unknown Use)
Heater - Gate Farside	-	2	1	20	17	6	20	1	-	6	(Unknown Use)
Heater - Gate Nearside	2	-	1	20	19	6	20	1	-	6	(Unknown Use)
Heater - Gate Nearside	-	2	1	20	21	6	30	2	10	10	(Unknown Use)
(Unknown Use)	6	-	1	20	23	6	50	2	25	25	Generator Heater
(Unknown Use)	16	16	2	30	25	6					
Signal (Warning) Horn	-	1	1	20	27	6					
River Signal Lights	1	-	1	20	29	6					
PLC Controls	-	12	1	20	31	6					
PLC Panel Auxiliary	5	-	1	20	33	6					
Wireless Radio Equipment	-	5	1	20	35	6					
Boat Detection	1	-	1	20	37	6					
					39	6					
					41	6					

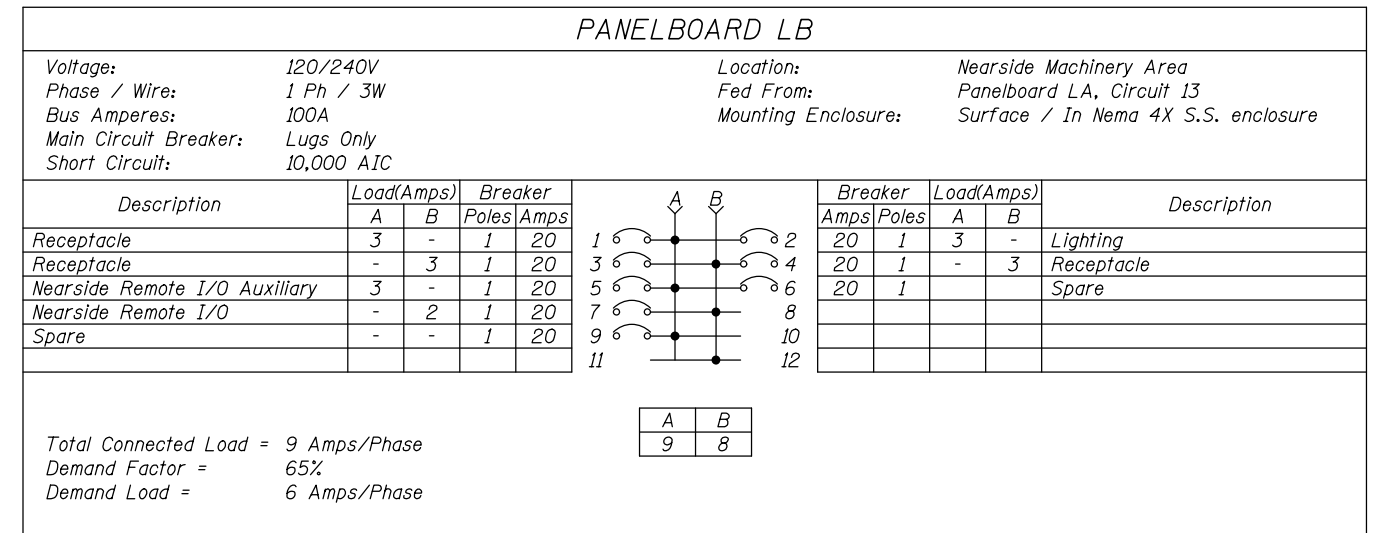
Total Connected Load = 150 Amps/Phase
 Demand Factor = 65%
 Demand Load = 98 Amps/Phase

A	B
150	145

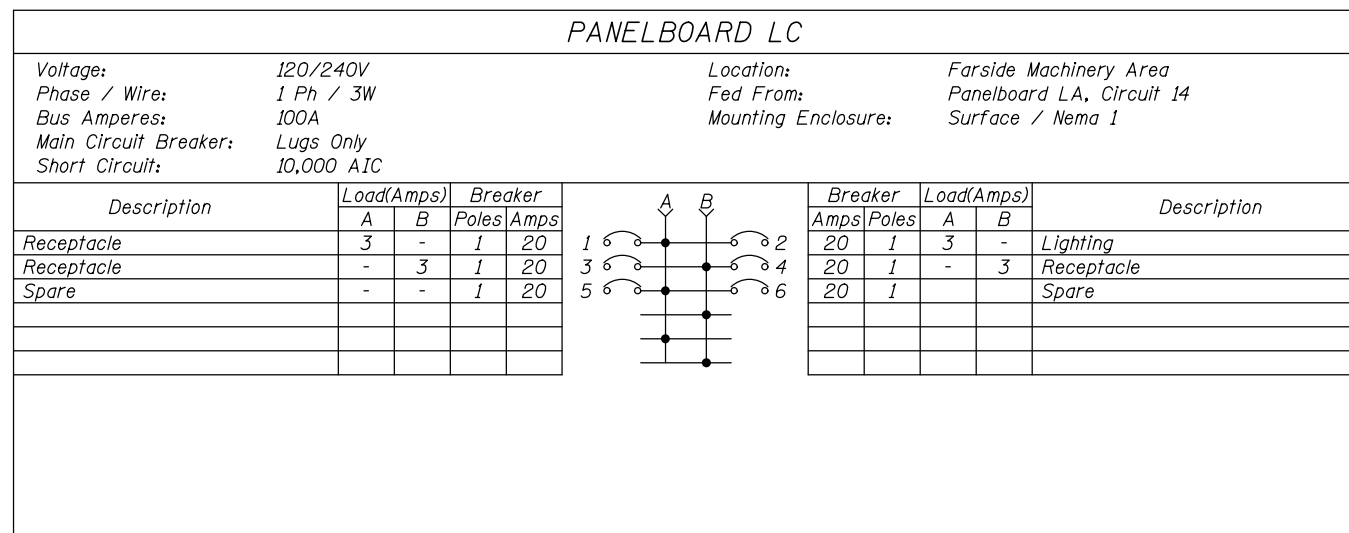
PROPOSED PANELBOARD LA SCHEDULE (E108)



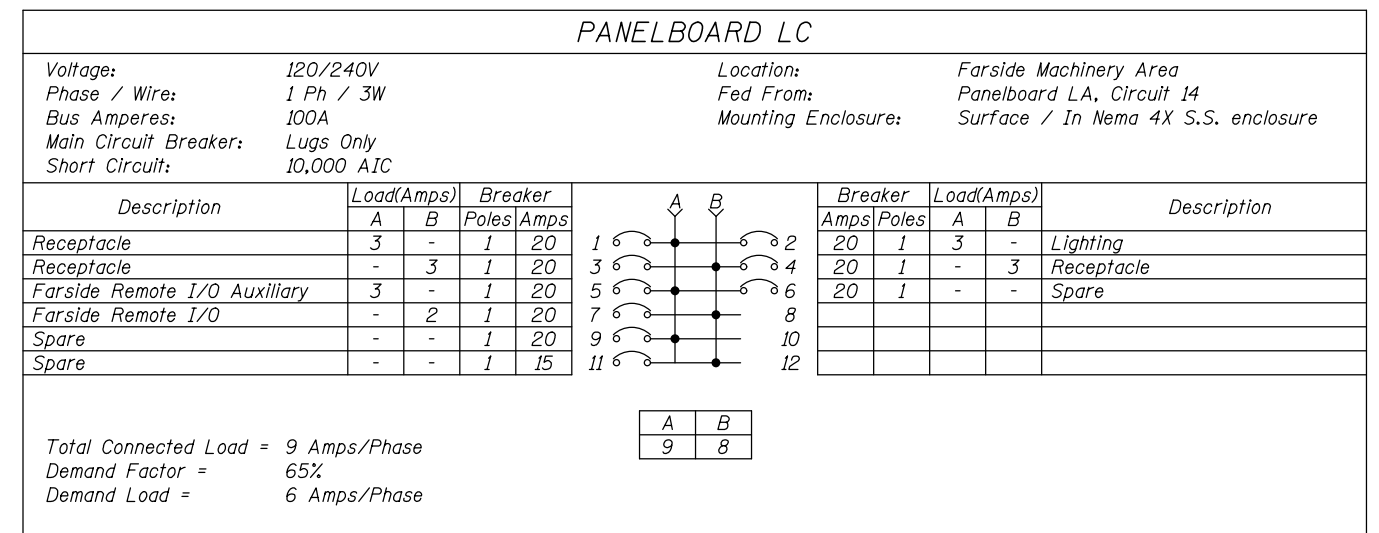
EXISTING PANELBOARD LB SCHEDULE



PROPOSED PANELBOARD LB SCHEDULE (E109)



EXISTING PANELBOARD LC SCHEDULE



PROPOSED PANELBOARD LC SCHEDULE (E109)

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Remove existing panelboards. Provide and install new panelboards.
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 or B) phase.



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

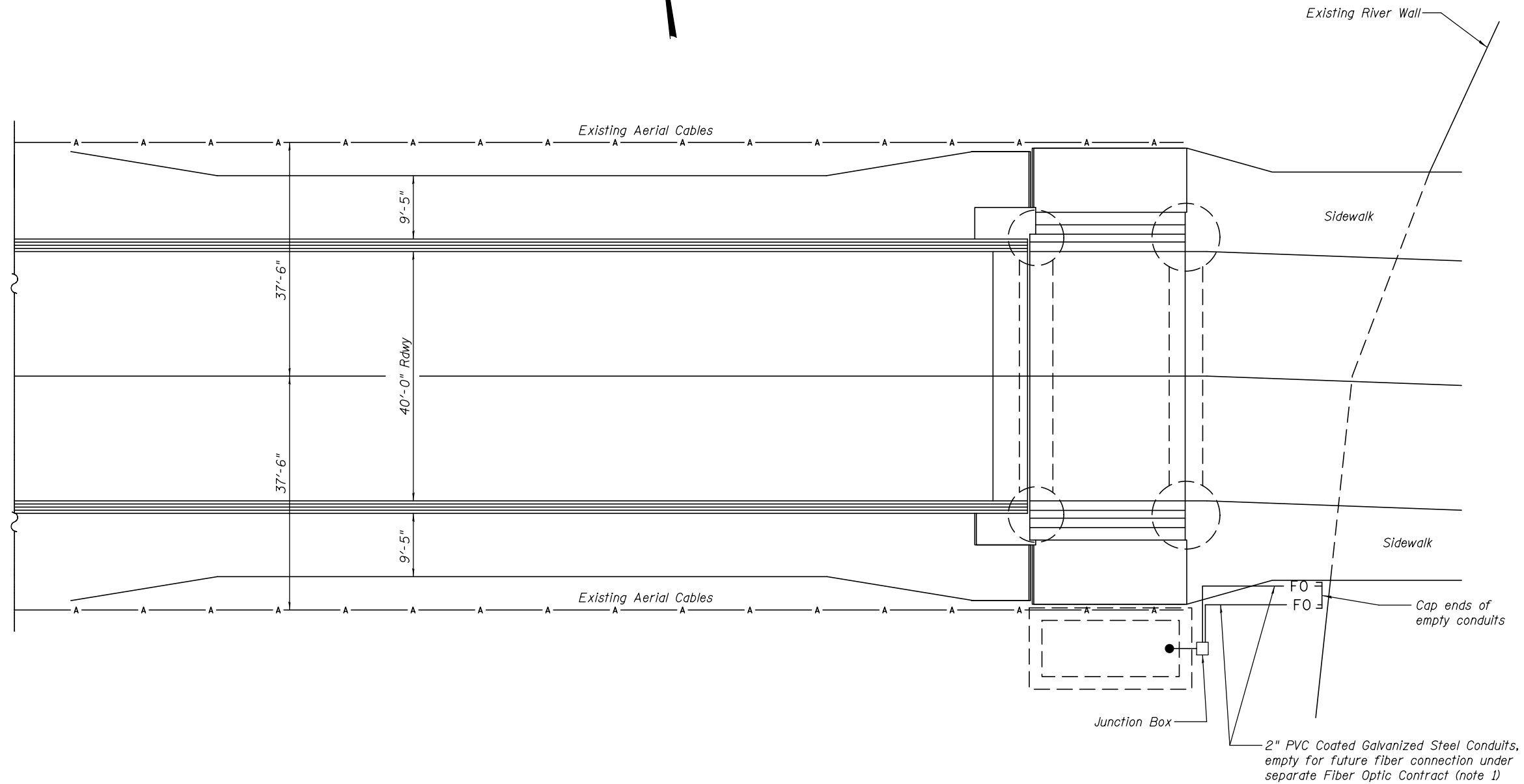
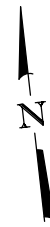
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - PANELBOARD SCHEDULE - 2**

SHEET NO. 13 OF 39 SHEETS

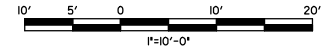
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	220
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-013



NOTES:

1. Refer to drawings 03-030 through 03-032 for Bridge Conduit Diagrams and 03-033 through 03-036 for Bridge Conduit 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 Jackson drawing 02-095 for typical details on mounting conduits to structure.



CASS, Drawing 03-014



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

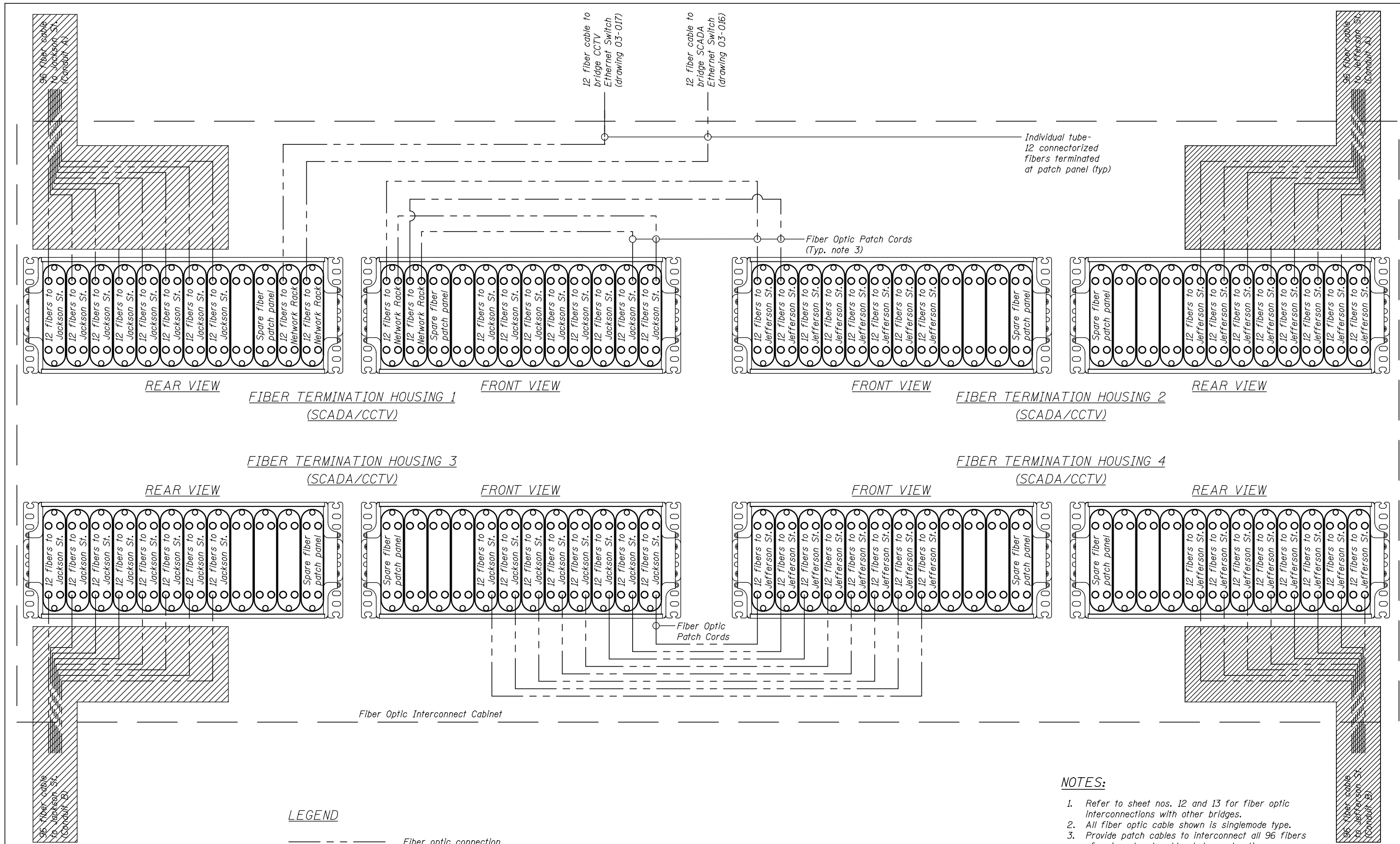
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - FIBER OPTIC ROUTE TO OPERATOR HOUSE**

SHEET NO. 14 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	221
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.



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**

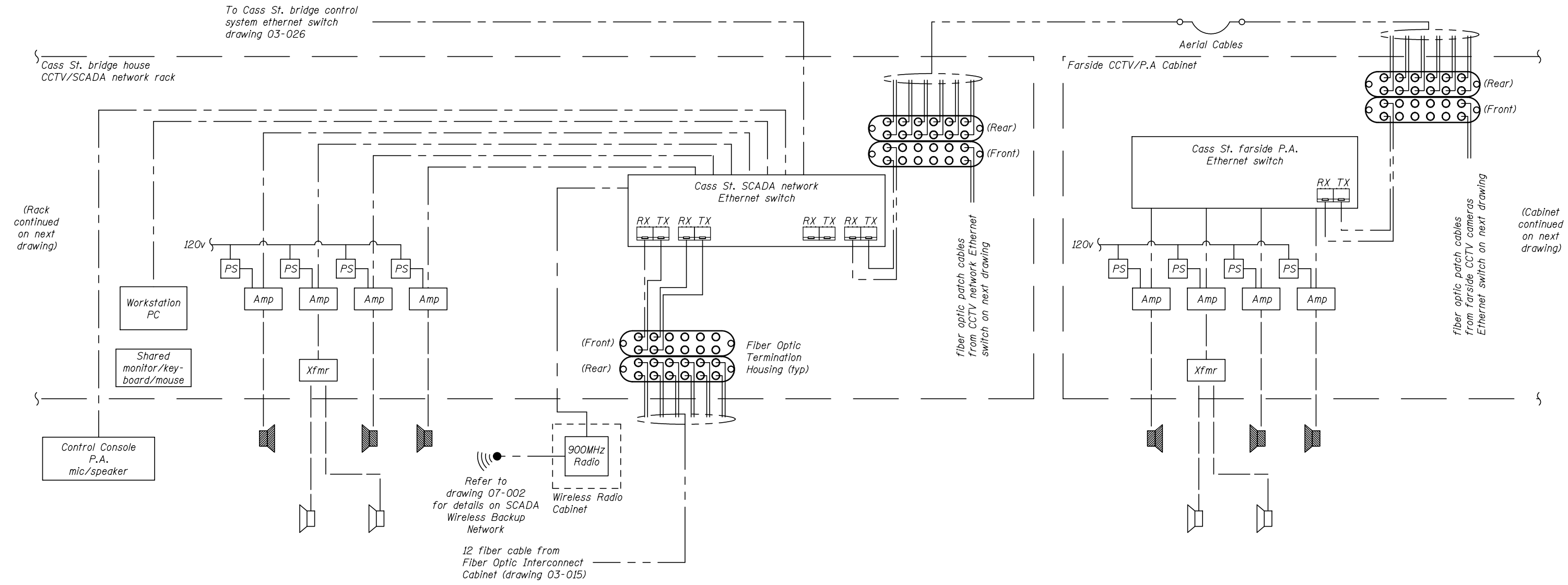
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - FIBER OPTIC INTERCONNECT CABINET**

F.A.P. RTE.		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607		2011-045-I	WILL	466	222
CONTRACT NO. 60P55					

SHEET NO. 15 OF 39 SHEETS

ILLINOIS FED. AID PROJECT

CASS, Drawing 03-015



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	8	Amplifier power supply
5	8	Network speaker amplifier
6	2	One-way speaker transformer
7	6	Two-way outdoor speaker
8	4	One-way outdoor speaker
9	10	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 installation 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
10	1	Wireless Radio Cabinet

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 accessories and hardware

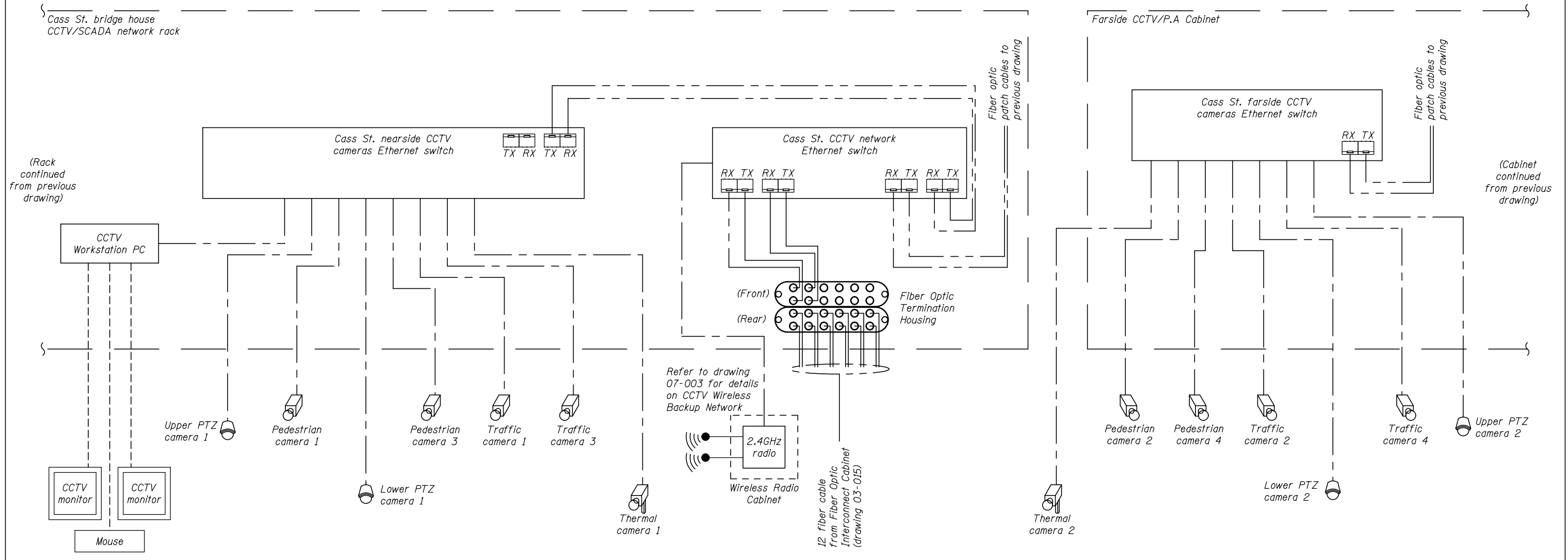
LEGEND

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

* 2.4 GHz Radio and antenna for CCTV wireless system, shown on drawing 03-017

NOTES:

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



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:

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



USER NAME =	DESIGNED - R.I. PETERS	REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CCTV ONE-LINE**

SHEET NO. 17 OF 39 SHEETS

CASS, Drawing 03-017		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	224	CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT						



CASS ST. PEDESTRIAN CAMERA 1	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-5°

CASS ST. PEDESTRIAN CAMERA 2	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-5°

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

CASS ST. PEDESTRIAN CAMERA 4	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-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.



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - PEDESTRIAN CAMERA LAYOUT**

SHEET NO. 18 OF 39 SHEETS

CASS, Drawing 03-018		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	225	CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT						



CASS ST. TRAFFIC CAMERA 1	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-35°

CASS ST. TRAFFIC CAMERA 2	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-35°

CASS ST. TRAFFIC CAMERA 3	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-25°

CASS ST. TRAFFIC CAMERA 4	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-25°

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.



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - TRAFFIC CAMERA LAYOUT**

SHEET NO. 19 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	226
				CONTRACT NO. 60P55
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-019



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

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

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.



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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
CASS STREET - UPPER PTZ CAMERA LAYOUT**

SHEET NO. 20 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	227
CONTRACT NO. 60P55				

CASS, Drawing 03-020

ILLINOIS FED. AID PROJECT

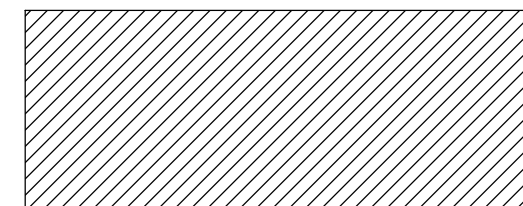


CASS ST. THERMAL CAMERA 1	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°

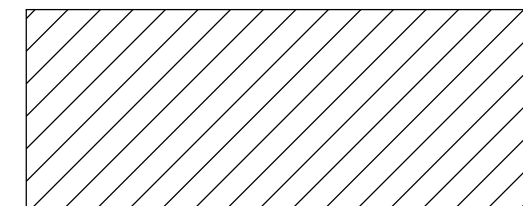


CASS ST. THERMAL CAMERA 2	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°

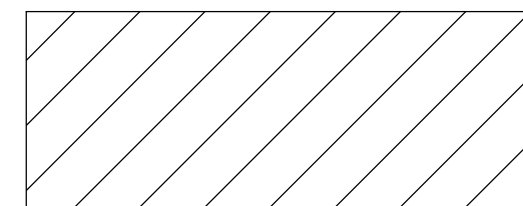
Camera height is based off of pool elevation (EL. +539.91). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.



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)



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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - THERMAL CAMERA LAYOUT

SHEET NO. 21 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	228
				CONTRACT NO. 60P55
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-021



CASS ST. 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)

CASS ST. 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.



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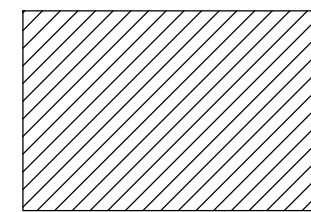
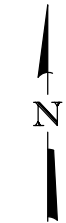
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DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - LOWER PTZ CAMERA LAYOUT**

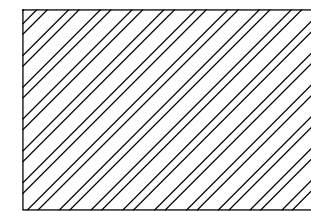
SHEET NO. 22 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	229
CONTRACT NO. 60P55				
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CASS, Drawing 03-022



90db audible
1-way speaker



2-way microphone range
2-way speaker



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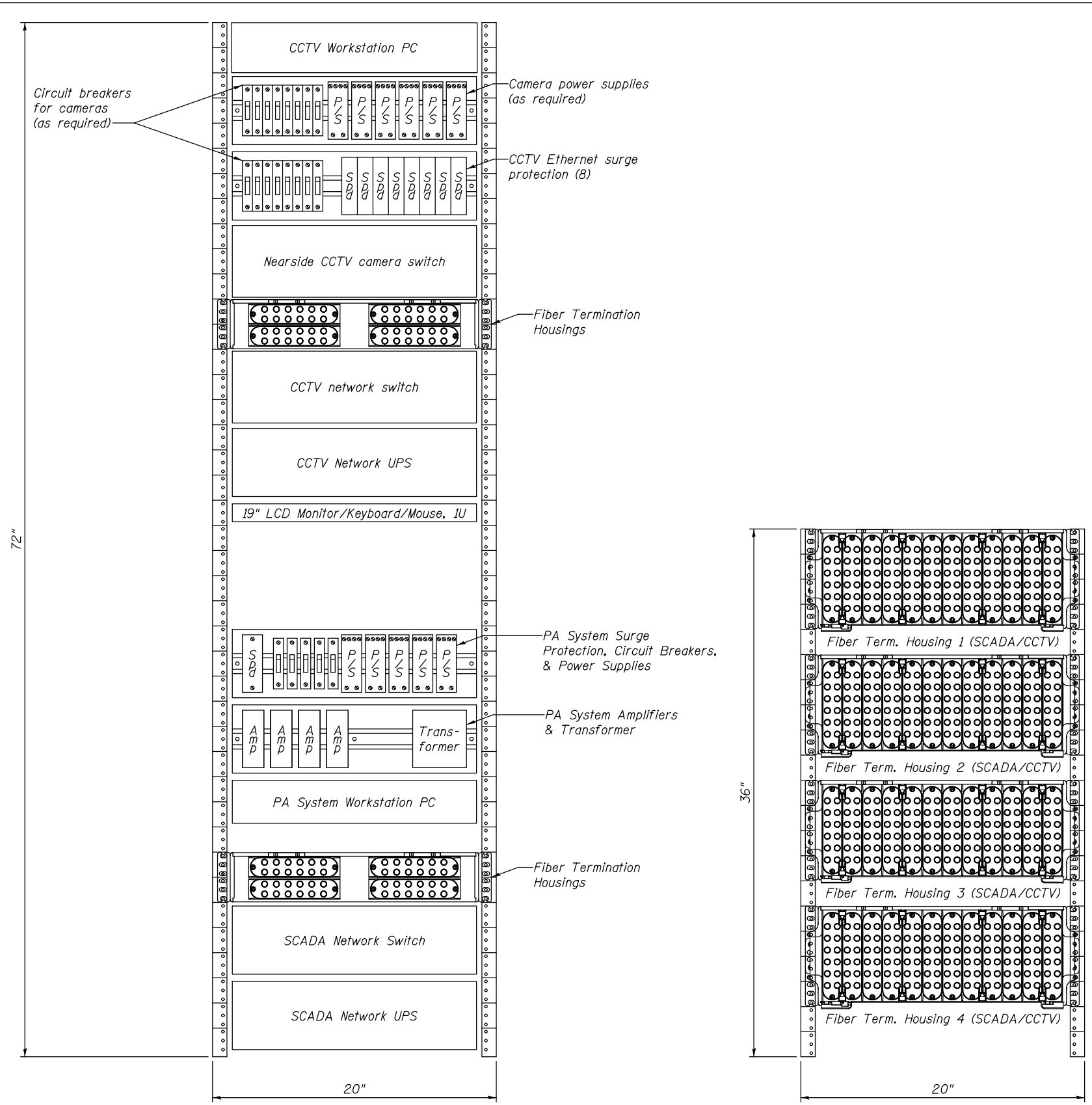
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**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - P.A. SPEAKER LAYOUT**

SHEET NO. 23 OF 39 SHEETS

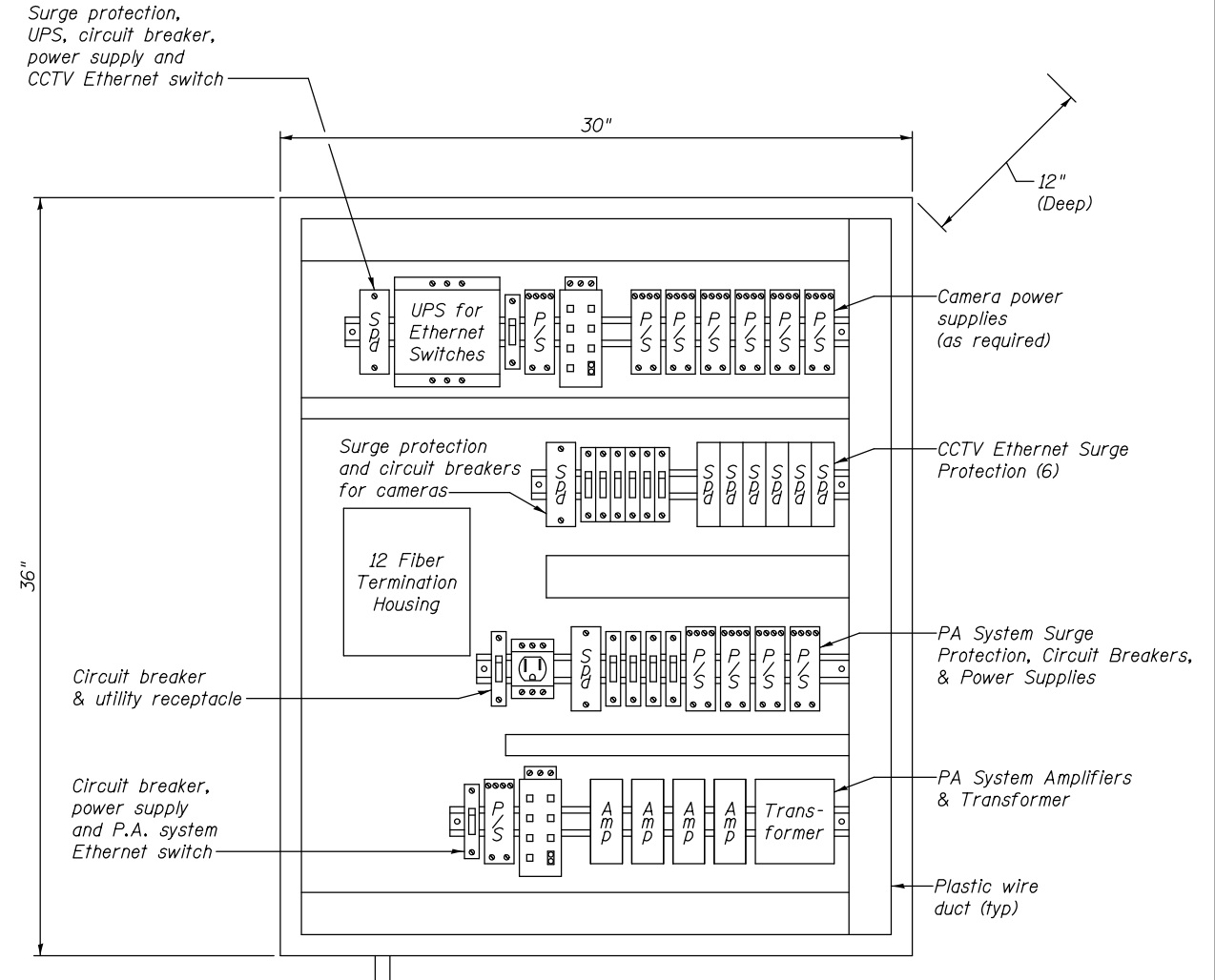
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607	2011-045-I	WILL	466	230
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-023



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 accommodate equipment serving all applicable systems.

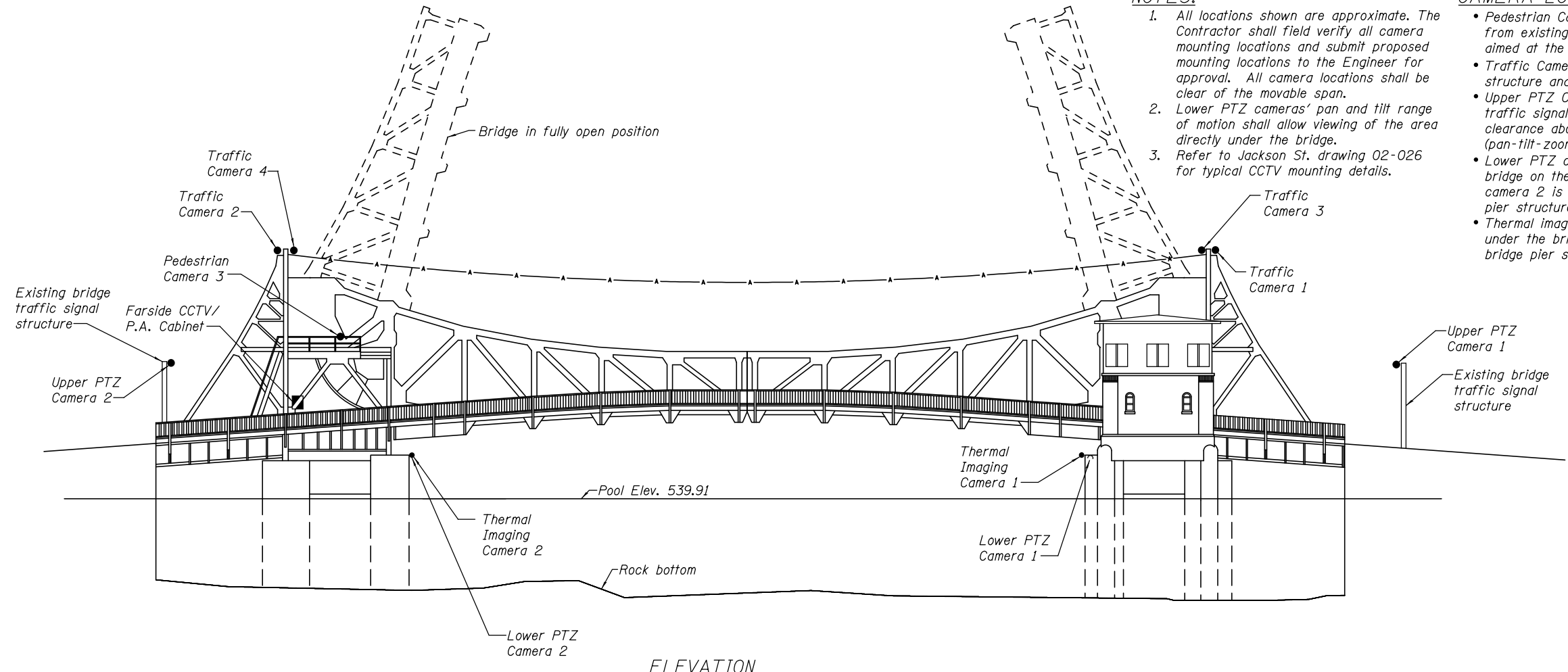


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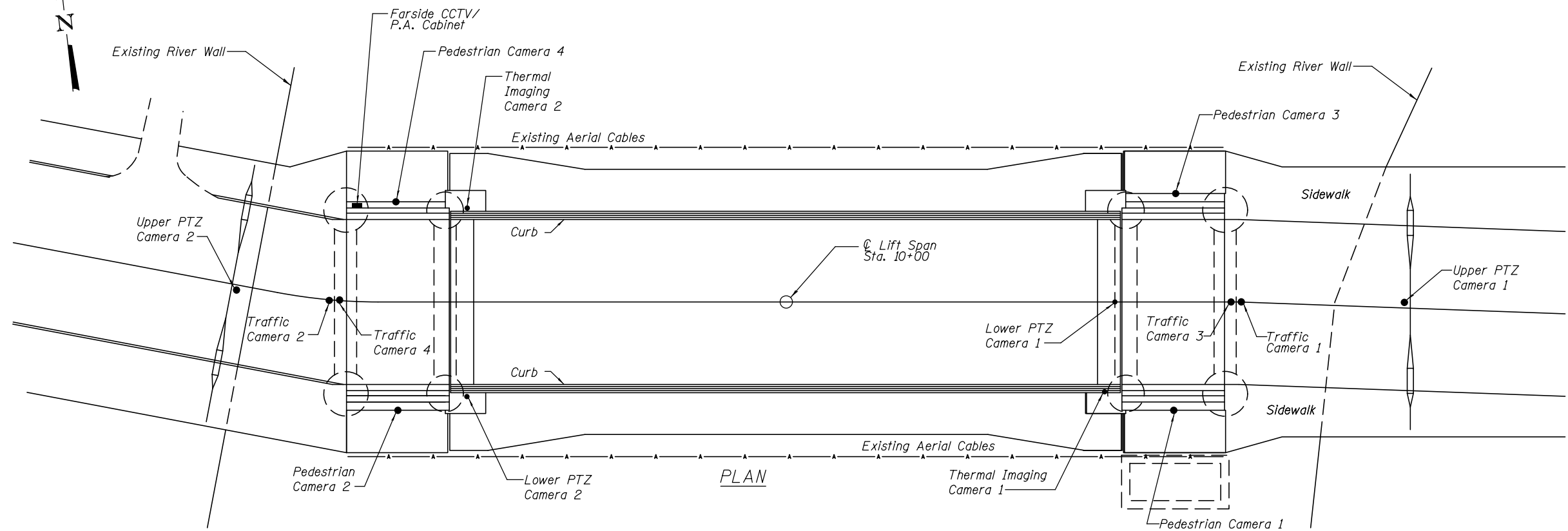
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - NETWORK CABINET DETAILS
SHEET NO. 24 OF 39 SHEETS

CASS, Drawing 03-024			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 231
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			



ELEVATION



PLAN

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. Refer to Jackson St. drawing 02-026 for typical CCTV mounting details.

CAMERA LOCATIONS AND DESCRIPTIONS

- Pedestrian Cameras 1-4 are located to be accessible from existing machinery access walkways and are aimed at the pedestrian sidewalks.
- Traffic Cameras 1-4 are located on top of the fixed span structure and are aimed at the traffic gates.
- Upper PTZ Cameras 1 & 2 are mounted to bridge traffic signal structure above roadway. Minimum clearance above roadway surface shall be 14'-0". (pan-tilt-zoom type cameras)
- Lower PTZ camera 1 is located under the bridge on the east pier structure. Lower PTZ camera 2 is located on the south west bridge pier structure.
- Thermal imaging cameras 1 and 2 are located under the bridge on the south east and north west bridge pier structure respectively.



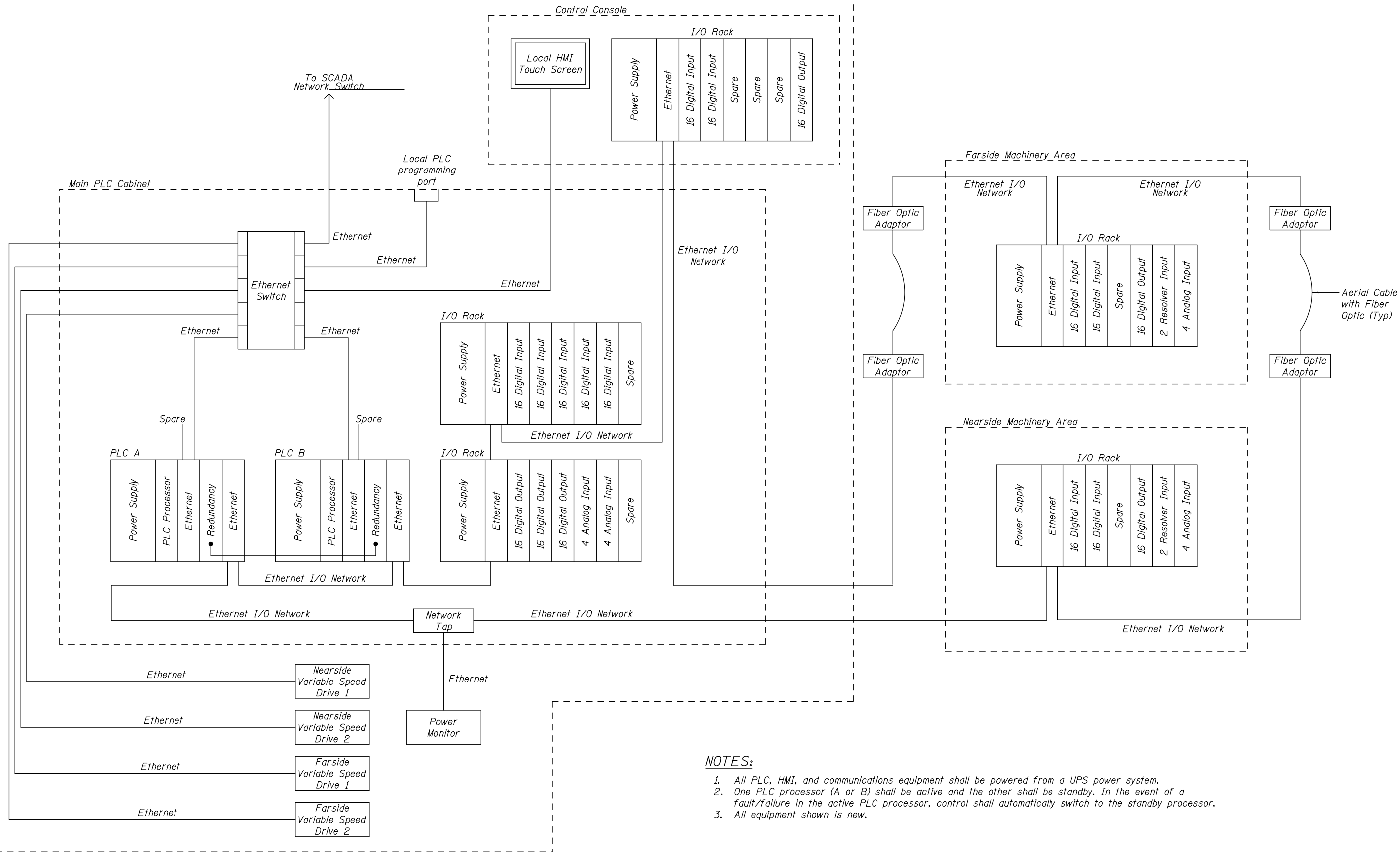
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CCTV PLAN AND ELEVATION
SHEET NO. 25 OF 39 SHEETS

CASS, Drawing 03-025				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	232
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

Bridge Operator House



- 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.



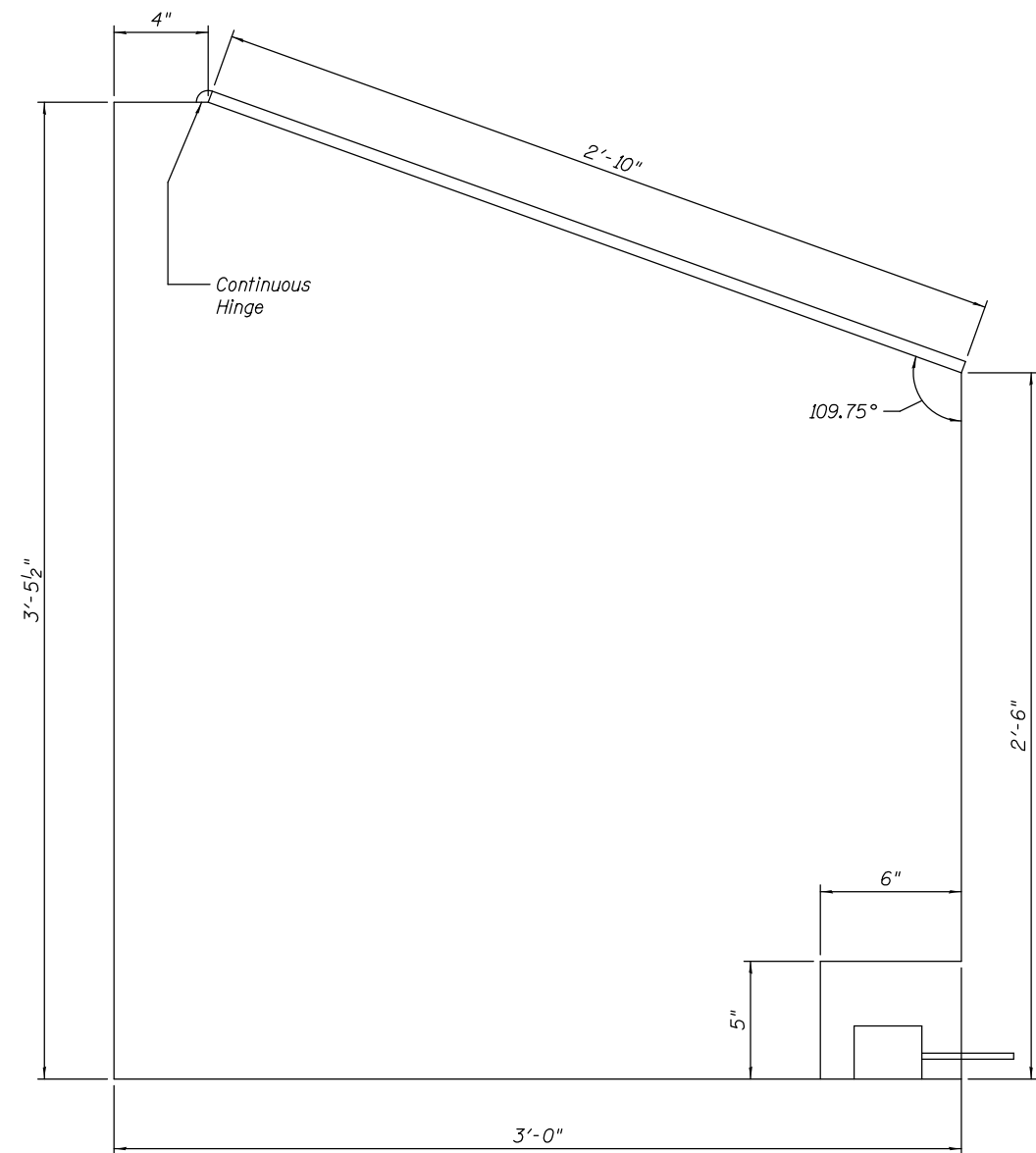
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	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

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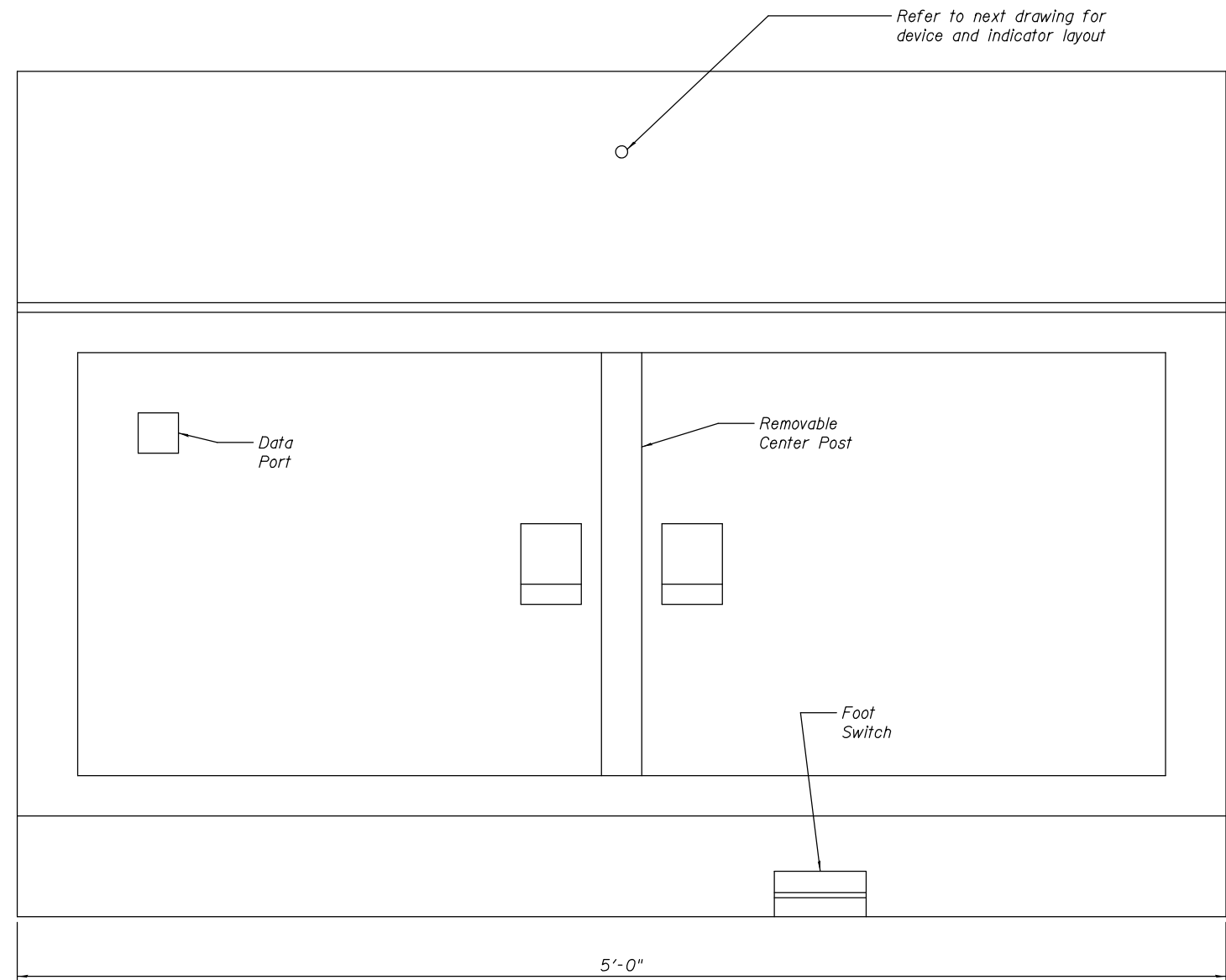
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - BRIDGE CONTROL DIAGRAM**

CASS, Drawing 03-026	
F.A.P. RTE.	SECTION
607	2011-045-I
COUNTY	WILL
TOTAL SHEETS	466
SHEET NO.	233
CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT	

SHEET NO. 26 OF 39 SHEETS



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 requirements.
2. Provide additional free standing tables for CCTV controller keyboard/joystick, marine 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, 1 1/2" minimum thickness with oil and moisture resistant 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".



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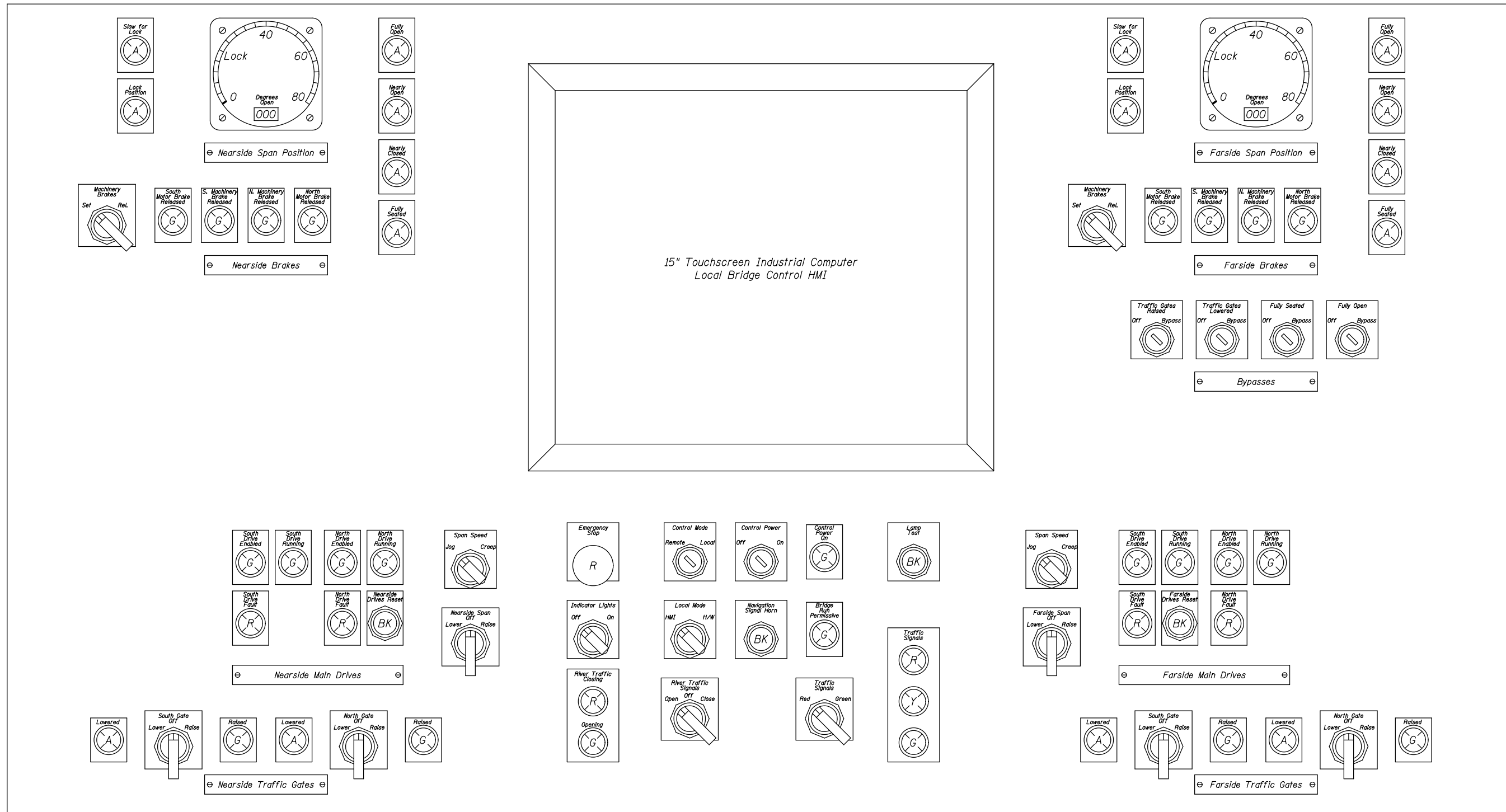
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - NEW BRIDGE CONTROL CONSOLE - 1**

SHEET NO. 27 OF 39 SHEETS

CASS, Drawing 03-027		TOTAL SHEETS		SHEET NO.	
F.A.P. RTE.	SECTION	COUNTY	466	234	
607	2011-045-I	WILL			
			CONTRACT NO. 60P55		
ILLINOIS FED. AID PROJECT					

5'-0"

2'-10"



15" Touchscreen Industrial Computer
Local Bridge Control HMI

CONTROL CONSOLE DEVICE AND INDICATOR LAYOUT



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STATE OF ILLINOIS
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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - NEW BRIDGE CONTROL CONSOLE - 2
SHEET NO. 28 OF 39 SHEETS

CASS, Drawing 03-028			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 235
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

GROUP 100 EQUIPMENT

<i>Item No.</i>	<i>Quantity</i>	<i>Item Name</i>	<i>Description</i>
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	N/A		
E105	4	100A Motor Disconnect Switch	Main drive motors
E106	8	30A Motor Disconnect Switch	Brake motors
E107	1	Transformer	Dry type transformer, 50 kVA, single phase
E108	1	120/240V Panelboard, 42 Circuit	Replacement panelboard with breakers and accessories
E109	2	120/240V Panelboard, 12 Circuit	Replacement panelboard with breakers and accessories

GROUP 200 EQUIPMENT

<i>Item No.</i>	<i>Quantity</i>	<i>Item Name</i>	<i>Description</i>
E201	4	Traffic Gate Warning Gong	For existing traffic gates
E202	2	Machinery Warning Horn/Light	Machinery area startup warning
E203	2	Outdoor Warning Horn	Operator house exterior warning
E204	N/A		
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	18	Magnetic Proximity Switch	Span fully seated and brake position sensing
E209	N/A		
E210	6	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.



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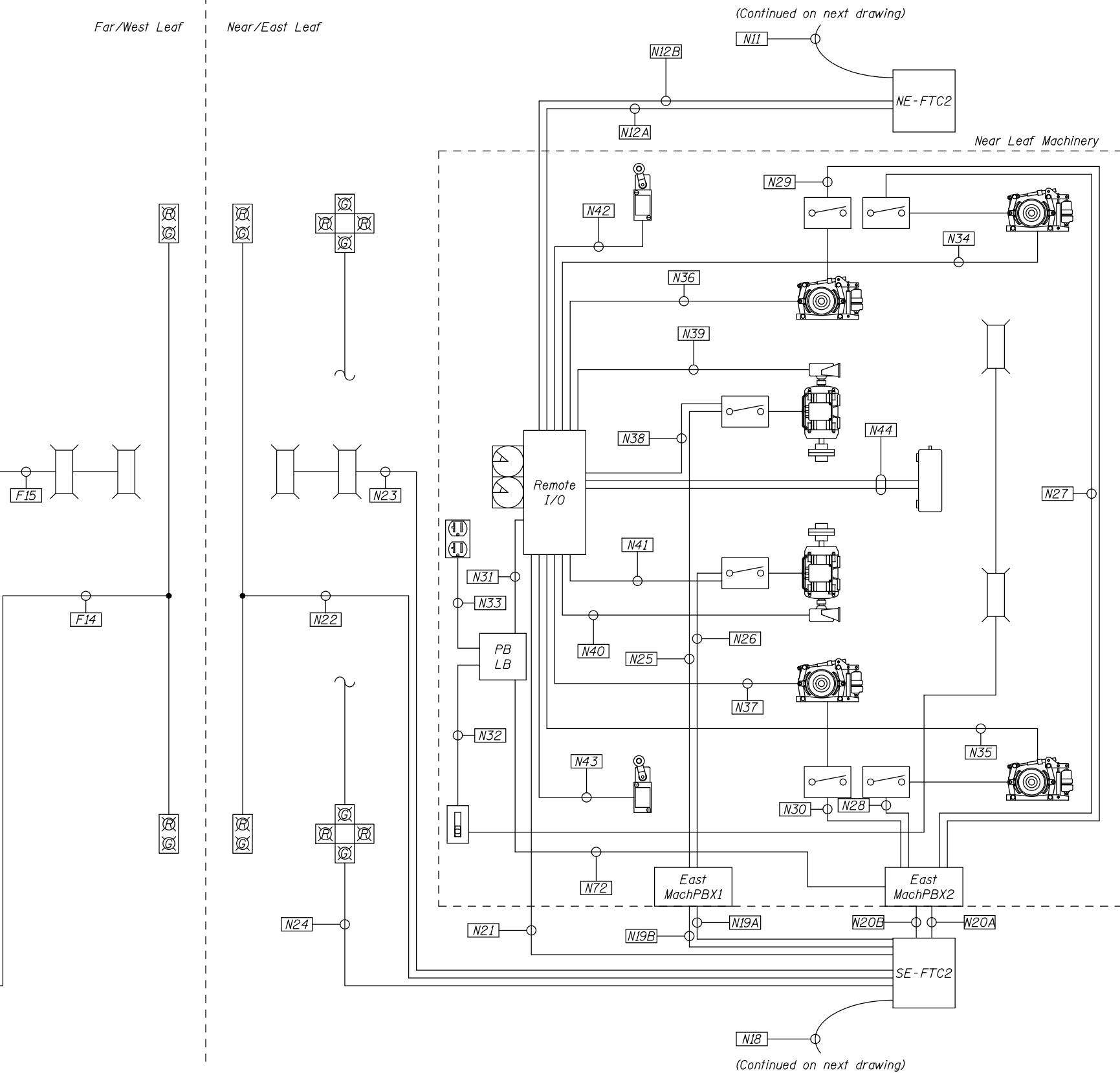
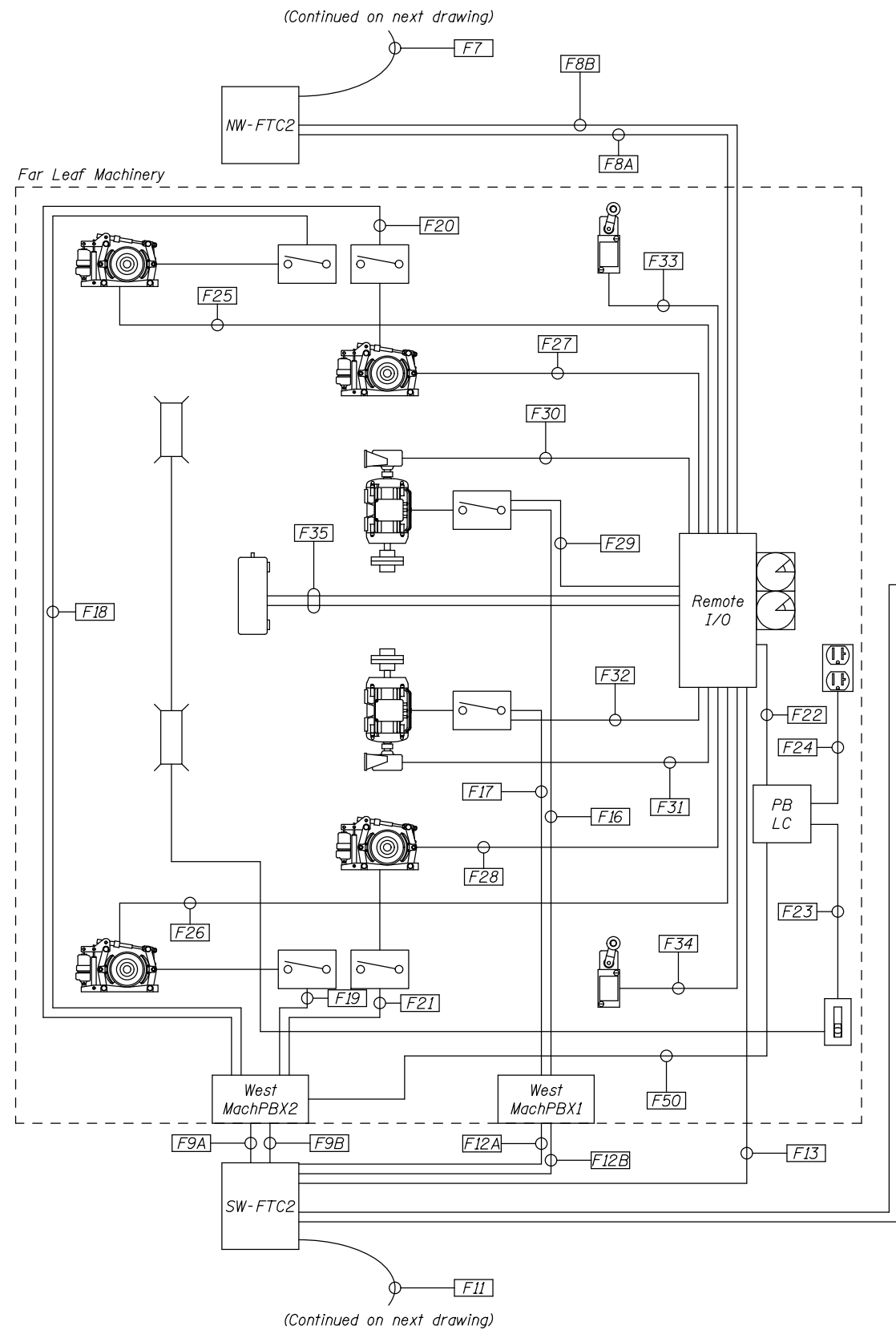
**STATE OF ILLINOIS
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**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET – ELECTRICAL EQUIPMENT SCHEDULE**

SHEET NO. 29 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	236
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-029



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.



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**

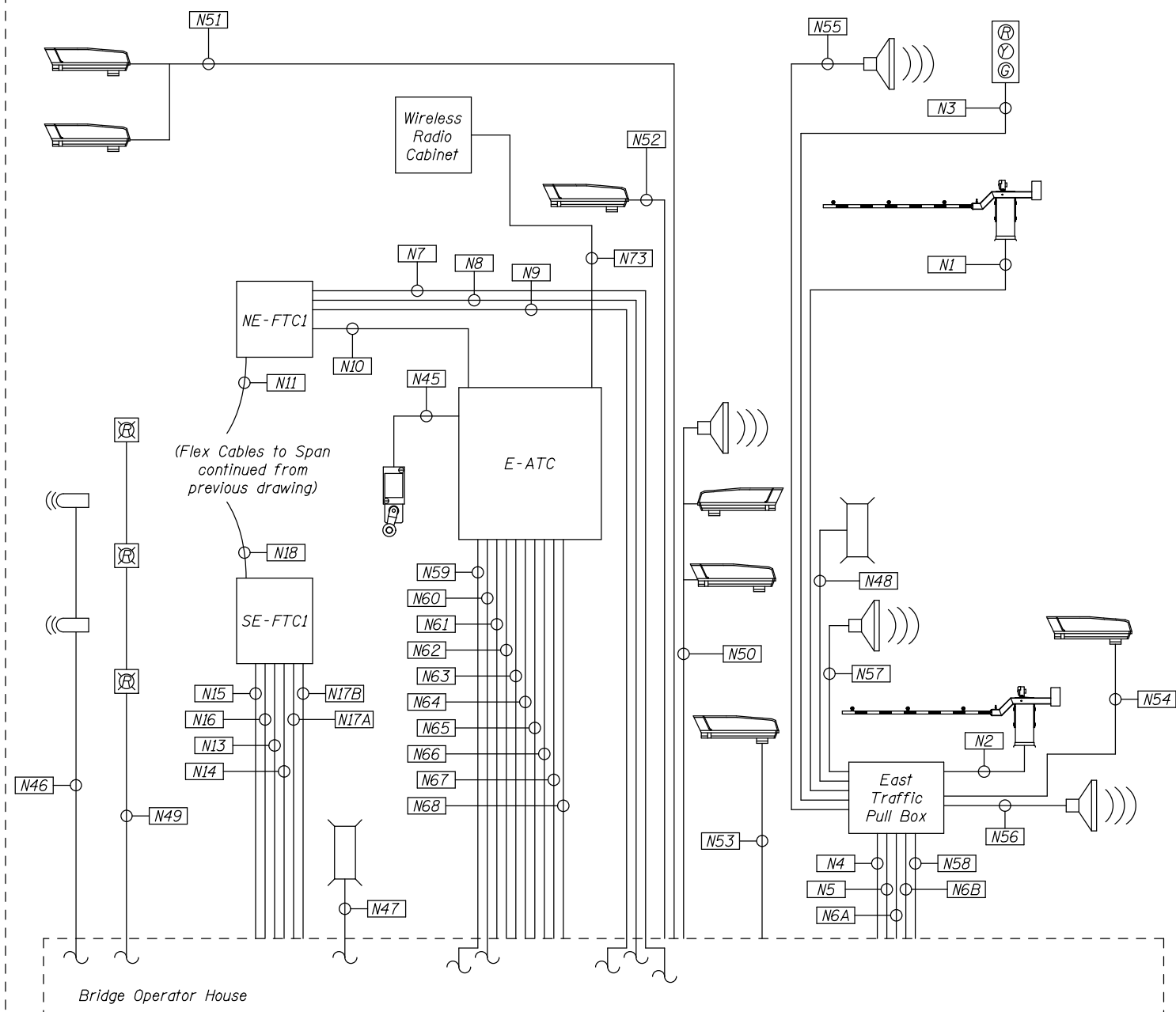
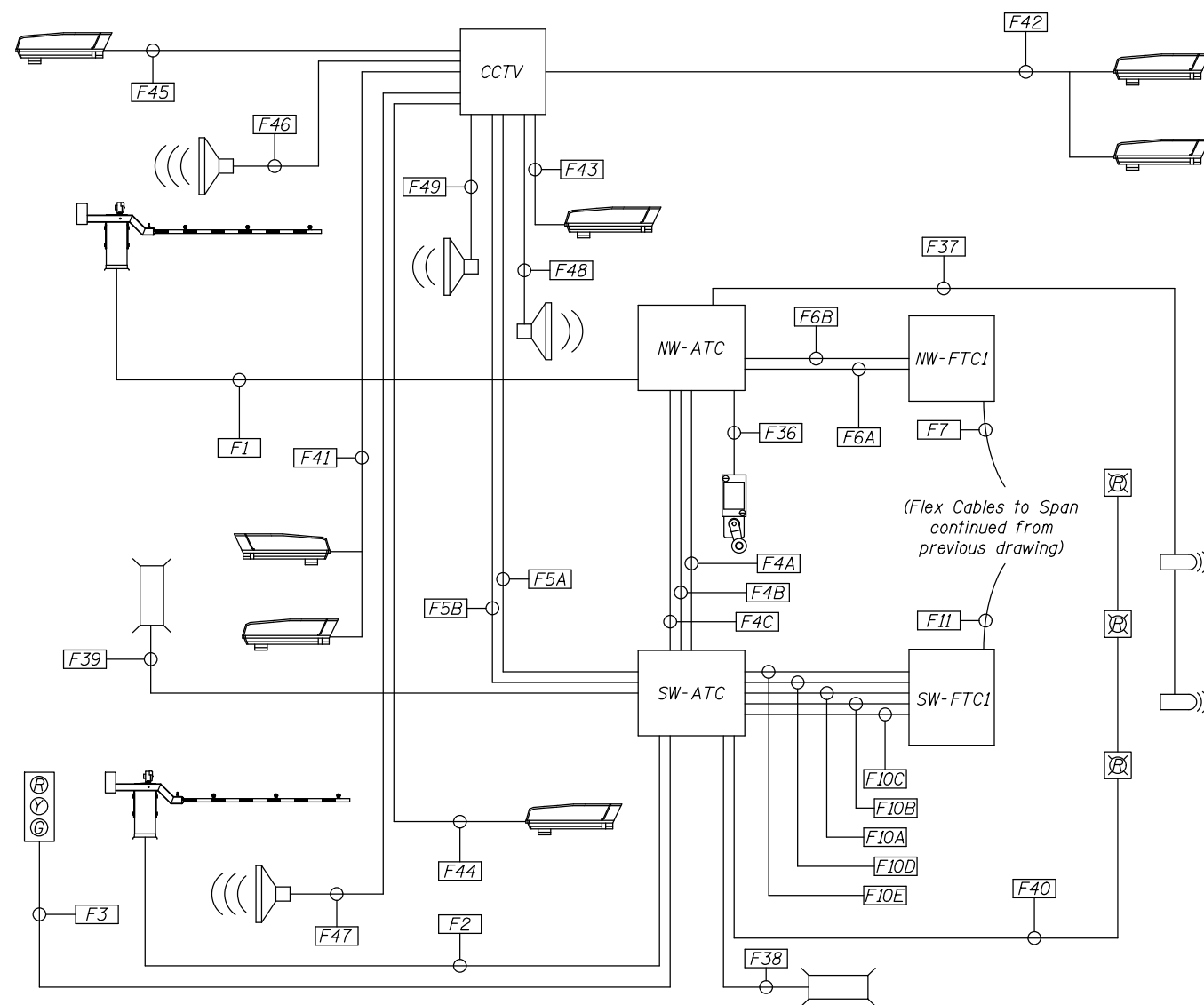
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CONDUIT DIAGRAM - 1**

SHEET NO. 30 OF 39 SHEETS

CASS, Drawing 03-030			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-1	WILL	466
			SHEET NO. 237
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

Far/West Leaf

Near/East Leaf



NOTES:

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



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**

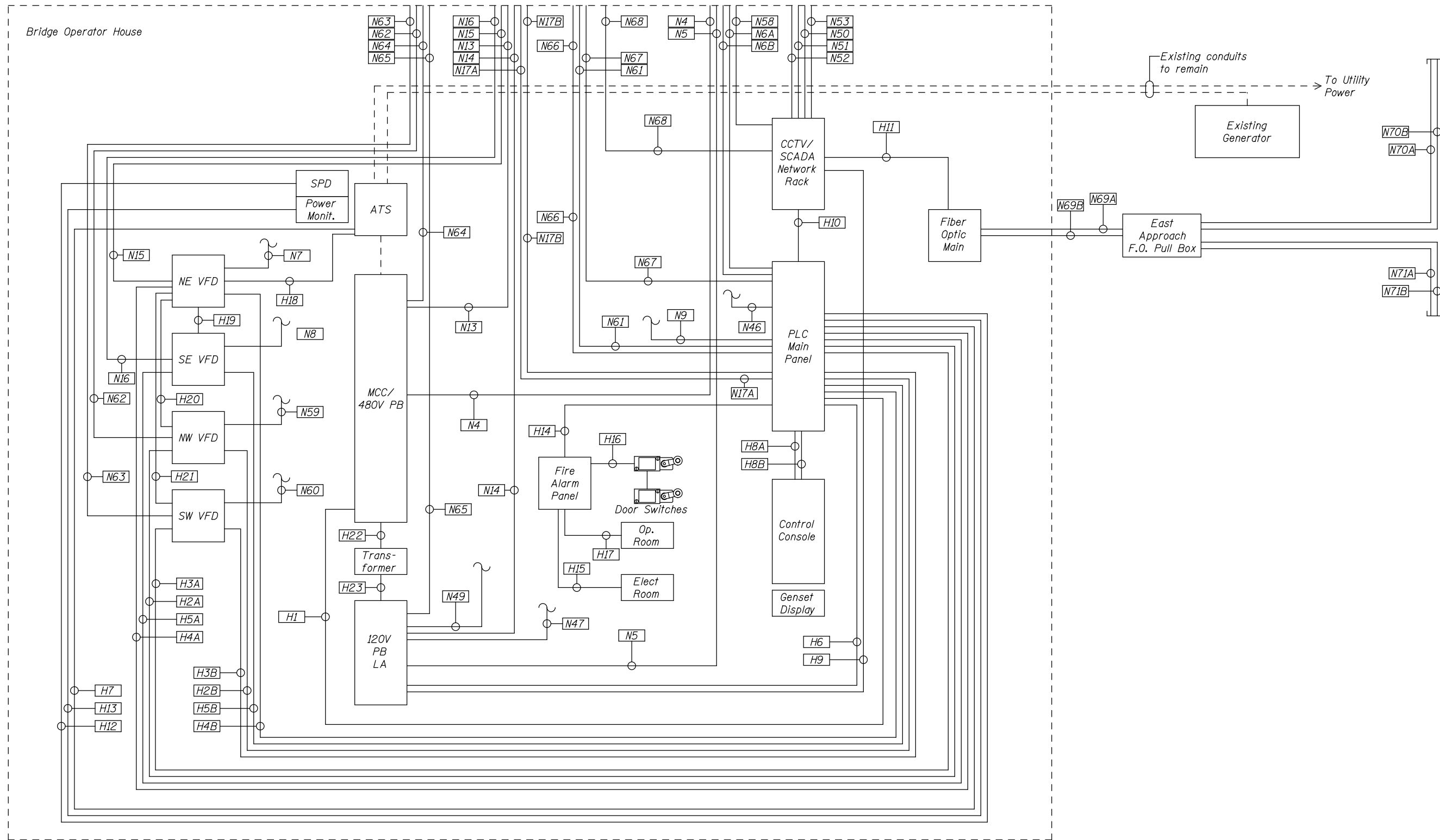
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CONDUIT DIAGRAM - 2**

SHEET NO. 31 OF 39 SHEETS

F.A.P. RTE.		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607		2011-045-1	WILL	466	238
CONTRACT NO. 60P55					

ILLINOIS FED. AID PROJECT

CASS, Drawing 03-031



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.



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
CASS STREET - CONDUIT DIAGRAM - 3**

SHEET NO. 32 OF 39 SHEETS

CASS, Drawing 03-032		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	239	CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT						

CASS STREET FARMSIDE CONDUIT SCHEDULE

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
	F1	NW Aerial Cables Terminal Cabinet	NW Traffic Gate	PVC RMC		2"	110	480 P 120 P SP 120 C SP GND
F2	SW Aerial Cables Terminal Cabinet	SW Traffic Gate	PVC RMC	2"	110	480 P 120 P SP 120 C SP GND	3 9 3 5 4 1	10AWG 10AWG 10AWG 12AWG 12AWG 10AWG
F3**	SW Aerial Cables Terminal Cabinet	SW Traffic Signal	PVC RMC	1"	110	120 P GND	4 1	10AWG 10AWG
F4A*	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1 1/2"	30	480 P 120 P SP 120 C	3 9 5 5	10AWG 10AWG 10AWG 12AWG
F4B*	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1 1/2"	30	SP GND	5 1	12AWG 12AWG
F4C	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1"	30	FO	1	12 Fiber
F5A	SW Aerial Cables Terminal Cabinet	Farside CCTV/P.A. Cabinet	RMC	1 1/2"	80	120P 120P SP GND	2 2 4 1	6AWG 10AWG 10AWG 6AWG
F5B	SW Aerial Cables Terminal Cabinet	Farside CCTV/P.A. Cabinet	RMC	1"	80	FO	2	12 Fiber
F6A	NW Aerial Cables Terminal Cabinet	NW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	120 C SP Instrum. SP GND	29 11 9 2 1	12AWG 12AWG 2-Pair 2-Pair 6AWG
F6B	NW Aerial Cables Terminal Cabinet	NW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1"	60	Ethernet	1	CAT-6
F7	NW Flexible Cable Terminal Cabinet 1 (fixed span)	NW Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	3"	20	120 C SP Instrum. SP GND Ethernet	29 11 9 2 1 1	12AWG 12AWG 2-Pair 2-Pair 6AWG CAT-6
F8A	NW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	2 1/2"	40	120 C SP Instrum. SP GND	29 11 9 2 1	12AWG 12AWG 2-Pair 2-Pair 6AWG
F8B	NW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
F9A	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 2	RMC	1 1/2"	35	480 P SP GND	12 5 1	10AWG 10AWG 2AWG
F9B	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 2	RMC	1 1/2"	35	240 P SP GND	3 2 1	4AWG 4AWG 6AWG
F10A	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	480 VFD	1	(3) 1AWG
F10B	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	480 VFD	1	(3) 1AWG
F10C	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1"	60	Ethernet	1	CAT-6
F10D	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1 1/2"	60	480 P SP GND	12 5 4	10AWG 10AWG 10AWG

CASS STREET FARMSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
	F10E	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC		1 1/2"	60	240 P 120 P SP GND GND
F11	SW Flexible Cable Terminal Cabinet 1 (fixed span)	SW Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	4"	20	480 VFD 480 P 240 P 120 P SP GND Ethernet	2 12 3 13 9 1 1	(3) 1AWG 10AWG 4AWG 10AWG 10AWG 2AWG CAT-6
F12A	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 1AWG
F12B	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 1AWG
F13	SW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
F14	SW Flexible Cable Terminal Cabinet 2 (movable span)	Center Span Navigation Lights	PVC RMC	3/4"	225	120 P GND	3 1	10AWG 10AWG
F15	SW Flexible Cable Terminal Cabinet 2 (movable span)	Farside Roadway Lights	RMC	3/4"	125	120 P GND	2 1	10AWG 10AWG
F16	West Machinery Pull Box 1	NW Motor Disconnect	RMC	2 1/2"	20	480 VFD	1	(3) 1AWG
F17	West Machinery Pull Box 1	SW Motor Disconnect	RMC	2 1/2"	15	480 VFD	1	(3) 1AWG
F18	West Machinery Pull Box 2	NW Machinery Brake Disconnect	RMC	3/4"	30	480 P GND	3 1	10AWG 10AWG
F19	West Machinery Pull Box 2	SW Machinery Brake Disconnect	RMC	3/4"	10	480 P GND	3 1	10AWG 10AWG
F20	West Machinery Pull Box 2	NW Motor Brake Disconnect	RMC	3/4"	30	480 P GND	3 1	10AWG 10AWG
F21	West Machinery Pull Box 2	SW Motor Brake Disconnect	RMC	3/4"	10	480 P GND	3 1	10AWG 10AWG
F22	LC Panelboard	West PLC I/O Cabinet	RMC	3/4"	5	120 P GND	6 3	10AWG 10AWG
F23*	LC Panelboard	Farside Machinery Room Lights	RMC	3/4"	45	120 P GND	2 1	10AWG 10AWG
F24*	LC Panelboard	Farside Machinery Room Receptacle	RMC	3/4"	20	120 P GND	2 1	10AWG 10AWG
F25	West PLC I/O Cabinet	NW Machinery Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
F26	West PLC I/O Cabinet	SW Machinery Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
F27	West PLC I/O Cabinet	NW Motor Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
F28	West PLC I/O Cabinet	SW Motor Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
F29	West PLC I/O Cabinet	NW Motor & Disconnect	RMC	3/4"	15	120 P 120 C GND	2 3 1	12AWG 12AWG 12AWG
F30	West PLC I/O Cabinet	NW Motor Encoder	RMC	1"	15	Instrum. GND	4 1	2-Pair 12AWG
F31	West PLC I/O Cabinet	SW Motor Encoder	RMC	1"	15	Instrum. GND	4 1	2-Pair 12AWG
F32	West PLC I/O Cabinet	SW Motor & Disconnect	RMC	3/4"	15	120 P 120 C GND	2 3 1	12AWG 12AWG 12AWG
F33	West PLC I/O Cabinet	NW Machinery Door Switch	RMC	3/4"	15	120 C GND	2 1	12AWG 12AWG
F34	West PLC I/O Cabinet	SW Machinery Door Switch	RMC	3/4"	15	120 C GND	2 1	12AWG 12AWG
F35	West PLC I/O Cabinet	SW Rotary Cam Limit Switch	RMC	1 1/2"	15	120 C Instrum. GND	9 1 1	12AWG 6-Pair 12AWG

NOTES:

- * Existing conduit (or partial section of conduit) shall be permitted to be reused by the Contractor.
- ** Existing concrete encased PVC coated conduit shall be replaced. Existing rigid metallic conduit on span shall be permitted to be reused by the Contractor.
- Fiber optic conduit bend radius shall be greater than minimum bend radius of fiber optic cable.
- Portions of conduits F1, F2, and F3 beyond the bridge approach structure will require the existing sidewalk to be sawcut and refinished.

CASS, Drawing 03-033



USER NAME =	DESIGNED - K.M. GABLE	REVISED	---
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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
CASS STREET - CONDUIT TABULATION - 1

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-1	WILL	466	240
CONTRACT NO. 60P55				

SHEET NO. 33 OF 39 SHEETS

ILLINOIS FED. AID PROJECT

CASS STREET FARSIDE CONDUIT SCHEDULE (CONTINUED)								
Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
F36	NW Aerial Cables Terminal Cabinet	West Fully Seated Limit Switch	RMC	¾"	30	120 C	2	12AWG
F37	NW Aerial Cables Terminal Cabinet	Farside Boat Detection	PVC RMC	¾"	135	12VDC	2	12AWG
F38	SW Aerial Cables Terminal Cabinet	West Fixed Structure Lights	RMC	¾"	75	GND	1	12AWG
F39	SW Aerial Cables Terminal Cabinet	West Approach Roadway Lights	RMC	¾"	40	120 P	2	10AWG
F40	SW Aerial Cables Terminal Cabinet	West Pier Navigation Lights	PVC RMC	¾"	195	GND	1	10AWG
F41	Farside CCTV/P.A. Cabinet	West Traffic Cameras	PVC RMC	1"	60	120 P	2	10AWG
F42	Farside CCTV/P.A. Cabinet	West Thermal and Lower PTZ Cameras	PVC RMC	1"	100	Power	4	12AWG
						Ethernet	2	CAT-6
						GND	2	12AWG
F43	Farside CCTV/P.A. Cabinet	NW Pedestrian Camera	RMC	¾"	40	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F44	Farside CCTV/P.A. Cabinet	SW Pedestrian Camera	RMC	¾"	110	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F45	Farside CCTV/P.A. Cabinet	West Upper PTZ Camera 2	RMC	¾"	190	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F46	Farside CCTV/P.A. Cabinet	NW Gate P.A. Speaker	PVC RMC	¾"	100	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F47	Farside CCTV/P.A. Cabinet	SW Gate P.A. Speaker	PVC RMC	¾"	150	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F48	Farside CCTV/P.A. Cabinet	NW Approach P.A. Speaker	PVC RMC	¾"	200	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F49	Farside CCTV/P.A. Cabinet	West One-Way P.A. Speakers	RMC	¾"	150	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F50	West Machinery Pull Box 2	LC Panelboard	RMC	1"	20	240 P	3	4AWG
						GND	1	6AWG

CASS STREET NEARSIDE CONDUIT SCHEDULE								
Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N1	East Approach Traffic Pull Box	NE Traffic Gate	PVC RMC	2"	85	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
N2	East Approach Traffic Pull Box	SE Traffic Gate	PVC RMC	2"	30	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
N3	East Approach Traffic Pull Box	NE Traffic Signal	PVC RMC	1"	85	GND	1	10AWG
						120 P	4	10AWG
						GND	1	10AWG
N4	East Approach Traffic Pull Box	MCC	RMC	1½"	50	480 P	6	10AWG
						SP	5	10AWG
						GND	1	2AWG
						GND	2	10AWG

CASS STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)								
Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N5	East Approach Traffic Pull Box	LP1 Panelboard	RMC	1½"	50	480 P	10	10AWG
						SP	2	10AWG
						GND	5	10AWG
N6A	East Approach Traffic Pull Box	PLC Main Panel	RMC	1½"	50	120 P	10	10AWG
						SP	5	10AWG
						GND	1	10AWG
N6B	East Approach Traffic Pull Box	PLC Main Panel	RMC	1"	50	120 C	15	12AWG
						GND	1	10AWG
N7	NE Flexible Cable Terminal Cabinet 1 (fixed span)	NE VFD Cabinet	RMC	1½"	115	120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
						SP	2	2-Pair
N8	NE Flexible Cable Terminal Cabinet 1 (fixed span)	SE VFD Cabinet	RMC	1½"	115	GND	1	6AWG
						120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
N9	NE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	2"	115	SP	2	2-Pair
						GND	1	6AWG
						120 C	23	12AWG
						SP	11	12AWG
N10	NE Flexible Cable Terminal Cabinet 1 (fixed span)	East Aerial Cables Terminal Cabinet	RMC	1"	60	Instrum.	1	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N11	NE Flexible Cable Terminal Cabinet 1 (fixed span)	NE Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	3"	20	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N12A	NE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	2½"	40	Ethernet	1	CAT-6
						120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
N12B	NE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	1"	40	SP	2	2-Pair
						GND	1	6AWG
						Ethernet	1	CAT-6
N13	SE Flexible Cable Terminal Cabinet 1 (fixed span)	MCC	RMC	1½"	55	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
N14	SE Flexible Cable Terminal Cabinet 1 (fixed span)	LA Panelboard	RMC	2½"	55	480 P	12	10AWG
						SP	5	10AWG
						GND	1	2AWG
						240 P	3	6AWG
						120 P	4	10AWG
N15	SE Flexible Cable Terminal Cabinet 1 (fixed span)	NE VFD Cabinet	RMC	2½"	55	480 VFD	1	(3) 1AWG
						SP	5	10AWG
						GND	1	2AWG
N16	SE Flexible Cable Terminal Cabinet 1 (fixed span)	SE VFD Cabinet	RMC	2½"	55	480 VFD	1	(3) 1AWG
						SP	5	10AWG
						GND	1	2AWG
N17A	SE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	1"	55	Ethernet	1	CAT-6
						120 P	3	10AWG
						SP	4	12AWG
N17B	SE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	¾"	55	GND	1	10AWG
						120 P	3	10AWG
						SP	4	12AWG
N18	SE Flexible Cable Terminal Cabinet 1 (fixed span)	SE Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	4"	20	480 VFD	2	(3) 1AWG
						480 P	12	10AWG
						240 P	3	6AWG
						120 P	4	10AWG
						SP	9	10AWG
						GND	1	2AWG

NOTES:

- * Existing conduit (or partial section of conduit) shall be permitted to be reused by the Contractor.
- Portions of conduit N1, N2, and N3 beyond the bridge approach structure will require the existing sidewalk to be sawcut and refinished.
- Conduit N3 typical to SE Traffic Signal and overhead traffic signal.



USER NAME =	DESIGNED - K.M. GABLE	REVISED -
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PLOT SCALE =	DRAWN - R.L. REED	REVISIONS -
PLOT DATE =	CHECKED - R.I. PETERS	REVISIONS -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CONDUIT TABULATION - 2**
SHEET NO. 34 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-1	WILL	466	241
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

CASS STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N19A	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 1AWG
N19B	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 1AWG
N20A	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 2	RMC	1 1/2"	35	480 P SP GND	12 5 4	10AWG 10AWG 10AWG
N20B	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 2	RMC	1 1/2"	35	240 P 120 P SP GND GND	3 4 5 1 5	6AWG 10AWG 10AWG 8AWG 10AWG
N21	SE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
N22	SE Flexible Cable Terminal Cabinet 2 (movable span)	Center Span Navigation Lights	PVC RMC	3/4"	225	120 P GND	3 1	10AWG 10AWG
N23	SE Flexible Cable Terminal Cabinet 2 (movable span)	Nearside Roadway Lights	RMC	3/4"	190	120 P GND	2 1	10AWG 10AWG
N24	SE Flexible Cable Terminal Cabinet 2 (movable span)	River Signals	RMC	3/4"	125	120 P GND	5 1	10AWG 10AWG
N25	East Machinery Pull Box 1	NE Motor Disconnect	RMC	2 1/2"	20	480 VFD	1	(3) 1AWG
N26	East Machinery Pull Box 1	SE Motor Disconnect	RMC	2 1/2"	15	480 VFD	1	(3) 1AWG
N27	East Machinery Pull Box 2	NE Machinery Brake Disconnect	RMC	3/4"	30	480 P GND	3 1	10AWG 10AWG
N28	East Machinery Pull Box 2	SE Machinery Brake Disconnect	RMC	3/4"	10	480 P GND	3 1	10AWG 10AWG
N29	East Machinery Pull Box 2	NE Motor Brake Disconnect	RMC	3/4"	30	480 P GND	3 1	10AWG 10AWG
N30	East Machinery Pull Box 2	SE Motor Brake Disconnect	RMC	3/4"	10	480 P GND	3 1	10AWG 10AWG
N31	LB Panelboard	East PLC I/O Cabinet	RMC	3/4"	5	120 P GND	6 3	10AWG 10AWG
N32*	LB Panelboard	Nearside Machinery Room Lights	RMC	3/4"	45	120 P GND	2 1	10AWG 10AWG
N33*	LB Panelboard	Nearside Machinery Room Receptacle	RMC	3/4"	20	120 P GND	2 1	10AWG 10AWG
N34	East PLC I/O Cabinet	NE Machinery Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
N35	East PLC I/O Cabinet	SE Machinery Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
N36	East PLC I/O Cabinet	NE Motor Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
N37	East PLC I/O Cabinet	SE Motor Brake	RMC	3/4"	15	120 C GND	4 1	12AWG 12AWG
N38	East PLC I/O Cabinet	NE Motor & Disconnect	RMC	3/4"	15	120 P 120 C GND	2 3 1	12AWG 12AWG 12AWG
N39	East PLC I/O Cabinet	NE Motor Encoder	RMC	1"	15	Instrum. GND	4 1	2-Pair 12AWG
N40	East PLC I/O Cabinet	SE Motor Encoder	RMC	1"	15	Instrum. GND	4 1	2-Pair 12AWG
N41	East PLC I/O Cabinet	SE Motor & Disconnect	RMC	3/4"	15	120 P 120 C GND	2 3 1	12AWG 12AWG 12AWG
N42	East PLC I/O Cabinet	NE Machinery Door Switch	RMC	3/4"	15	120 C GND	2 1	12AWG 12AWG
N43	East PLC I/O Cabinet	SE Machinery Door Switch	RMC	3/4"	15	120 C GND	2 1	12AWG 12AWG

CASS STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N44	East PLC I/O Cabinet	SE Rotary Cam Limit Switch	RMC	1 1/2"	15	120 C Instrum. GND	9 1 1	12AWG 6-Pair 12AWG
N45	East Aerial Cables Terminal Cabinet	East Fully Seated Limit Switch	RMC	3/4"	30	120 C GND	2 1	12AWG 12AWG
N46	PLC Main Panel	Nearside Boat Detection	PVC RMC	3/4"	90	12VDC GND	6 1	12AWG 12AWG
N47	LA Panelboard	East Fixed Structure Lights	RMC	3/4"	65	120 P GND	2 1	10AWG 10AWG
N48	East Approach Traffic Pull Box	East Approach Roadway Lights	RMC	3/4"	40	120 P GND	2 1	10AWG 10AWG
N49	LA Panelboard	East Pier Navigation Lights	PVC RMC	3/4"	95	120 P GND	2 1	10AWG 10AWG
N50	CCTV/SCADA Network Rack	East Traffic Cameras & One-way P.A. Speakers	RMC	1 1/2"	120	Power Ethernet Speaker GND	4 2 2 4	12AWG CAT-6 AUDIO 12AWG
N51	CCTV/SCADA Network Rack	East Thermal & Lower PTZ Cameras	PVC RMC	1"	100	Power Ethernet GND	4 2 2	12AWG CAT-6 12AWG
N52	CCTV/SCADA Network Rack	NE Pedestrian Camera	RMC	3/4"	110	Power Ethernet GND	2 1 1	12AWG CAT-6 12AWG
N53	CCTV/SCADA Network Rack	SE Pedestrian Camera	RMC	3/4"	40	Power Ethernet GND	2 1 1	12AWG CAT-6 12AWG
N54	East Approach Traffic Pull Box	East Upper PTZ Camera 1	PVC RMC	3/4"	100	Power Ethernet GND Speaker	2 1 1 2	12AWG CAT-6 12AWG AUDIO
N55	East Approach Traffic Pull Box	NE Gate P.A. Speaker	PVC RMC	3/4"	65	N/A GND Speaker	0 1 2	CAT-6 12AWG AUDIO
N56	East Approach Traffic Pull Box	SE Gate P.A. Speaker	PVC RMC	3/4"	15	N/A GND Speaker	0 1 2	CAT-6 12AWG AUDIO
N57	East Approach Traffic Pull Box	SE Approach P.A. Speaker	PVC RMC	3/4"	100	N/A GND Speaker	0 1 2	CAT-6 12AWG AUDIO
N58	CCTV/SCADA Network Rack	East Approach Traffic Pull Box	RMC	1 1/2"	40	Power Ethernet Speaker GND	2 1 6 4	12AWG CAT-6 AUDIO 12AWG
N59	East Aerial Cables Terminal Cabinet	NW VFD Cabinet	RMC	1 1/2"	150	120 C Instrum. SP GND	3 4 2 1	12AWG 2-Pair 2-Pair 6AWG
N60	East Aerial Cables Terminal Cabinet	SW VFD Cabinet	RMC	1 1/2"	150	120 C SP Instrum. SP GND	3 3 4 2 1	12AWG 12AWG 2-Pair 2-Pair 6AWG
N61	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	2 1/2"	150	120 C 120 C SP Instrum. SP GND	23 14 10 1 2 1	12AWG 12AWG 12AWG 2-Pair 2-Pair 6AWG
N62	East Aerial Cables Terminal Cabinet	NW VFD Cabinet	RMC	2 1/2"	150	480 VFD	1	(3) 1AWG
N63	East Aerial Cables Terminal Cabinet	SW VFD Cabinet	RMC	2 1/2"	150	480 VFD	1	(3) 1AWG
N64	East Aerial Cables Terminal Cabinet	MCC	RMC	1 1/2"	150	480 P SP GND	18 5 1	10AWG 10AWG 2AWG

NOTES:

- * Existing conduit (or partial section of conduit) shall be permitted to be reused by the Contractor.



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CONDUIT TABULATION - 3

SHEET NO. 35 OF 39 SHEETS

CASS, Drawing 03-035					
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
607	2011-045-I	WILL	466	242	
CONTRACT NO. 60P55					
ILLINOIS FED. AID PROJECT					

CASS STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)									
Run No.	Circuit Terminations		Conduit		Length of Run	Wire			
	To	From	Type	Size		Use	Count	Size	
N65	East Aerial Cables Terminal Cabinet	LA Panelboard	RMC	2"	150	240 P	3	4AWG	
						120 P	2	6AWG	
						120 P	12	10AWG	
						SP	5	10AWG	
						GND	1	2AWG	
N66	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	1 1/2"	150	120 P	3	10AWG	
						120 P	14	10AWG	
						SP	5	10AWG	
						GND	1	2AWG	
N67	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	1"	150	FO	1	12 Fiber	
N68	East Aerial Cables Terminal Cabinet	CCTV/SCADA Network Rack	RMC	1 1/2"	150	FO	2	12 Fiber	
						Ethernet	2	CAT-6	
N69A	Fiber Optic Interconnect Cabinet	East Approach Fiber Optic Pull Box	PVC RMC	2"	15	Empty (note 3)			
N69B	Fiber Optic Interconnect Cabinet	East Approach Fiber Optic Pull Box	PVC RMC	2"	15	Empty (note 3)			
N70A	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	25	Empty (note 3)			
N70B	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	25	Empty (note 3)			
N71A	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	25	Empty (note 3)			
N71B	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	25	Empty (note 3)			
N72	East Machinery Pull Box 2	LB Panelboard	RMC	1"	20	240 P	3	6AWG	
						GND	1	8AWG	
N73	East Aerial Cables Terminal Cabinet	Wireless Radio Cabinet	RMC	1 1/2"	15	120 P	4	10AWG	
						Ethernet	2	CAT-6	
						GND	2	10AWG	

CASS STREET OPERATOR HOUSE CONDUIT SCHEDULE									
Run No.	Circuit Terminations		Conduit		Length of Run	Wire			
	To	From	Type	Size		Use	Count	Size	
H1	MCC	PLC Main Panel	RMC	1 1/2"	15	120 C	16	12AWG	
H2A	NW VFD Cabinet	PLC Main Panel	RMC	1"	16	SP	5	12AWG	
						GND	1	12AWG	
H2B	NW VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG	
						GND	1	12AWG	
H3A	SW VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR	
						Ethernet	1	CAT-6	
H3B	SW VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG	
						GND	1	12AWG	
H4A	NE VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR	
						Ethernet	1	CAT-6	
H4B	NE VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG	
						GND	1	12AWG	
H5A	SE VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR	
						Ethernet	1	CAT-6	
H5B	SE VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG	
						GND	1	12AWG	
H6	LA Panelboard	PLC Main Panel	RMC	1 1/2"	24	120 P	12	10AWG	
						120 P	6	10AWG	
						SP	2	10AWG	
						GND	9	10AWG	

CASS STREET OPERATOR HOUSE CONDUIT SCHEDULE (CONTINUED)									
Run No.	Circuit Terminations		Conduit		Length of Run	Wire			
	To	From	Type	Size		Use	Count	Size	
H7	Auto Transfer Switch	PLC Main Panel	RMC	3/4"	15	120 C	5	12AWG	
H8A	Control Console	PLC Main Panel	RMC	2 1/2"	12	GND	1	12AWG	
						120 P	4	10AWG	
						120 C	60	12AWG	
						Instrum.	0	2-PAIR	
						Ethernet	0	CAT-6	
H8B	Control Console	PLC Main Panel	RMC	2 1/2"	12	GND	1	10AWG	
						120 C	60	12AWG	
						Instrum.	2	2-PAIR	
H9	LA Panelboard	CCTV/SCADA Network Rack	RMC	3/4"	25	Ethernet	3	CAT-6	
						GND	1	10AWG	
H10	CCTV/SCADA Network Rack	PLC Main Panel	RMC	1"	20	120 P	4	10AWG	
						GND	1	10AWG	
H11	CCTV/SCADA Network Rack	Fiber Optic Interconnect Cabinet	RMC	1"	18	120 C	3	12AWG	
						Ethernet	2	CAT-6	
H12	PLC Main Panel	SPD / BUS Monitor	RMC	3/4"	15	FO	2	12 Fiber	
						GND	2	12AWG	
H13	PLC Main Panel	Power Monitor	RMC	1"	15	Ethernet	1	CAT-6	
						120 C	4	12AWG	
H14	PLC Main Panel	Fire Alarm and Security System Control Panel	RMC	3/4"	40	GND	1	12AWG	
						120 C	9	12AWG	
H15	Fire Alarm and Security System Control Panel	Electrical Room Detectors	RMC	1"	25	GND	3	12AWG	
						120 C	6	12AWG	
H16	Fire Alarm and Security System Control Panel	Door Switches	RMC	3/4"	25	GND	2	12AWG	
						120 C	6	12AWG	
H17	Fire Alarm and Security System Control Panel	Operator Room Detectors	RMC	3/4"	50	GND	2	12AWG	
						120 C	6	12AWG	
H18	ATS	NE VFD Cabinet	RMC	3"	25	480 P	6	250	
						GND	1	3AWG	
H19	NE VFD Cabinet	SE VFD Cabinet	RMC	1 1/2"	6	480 P	3	2/0	
						GND	1	3AWG	
H20	NE VFD Cabinet	NW VFD Cabinet	RMC	1 1/2"	12	480 P	3	2/0	
						GND	1	3AWG	
H21	NE VFD Cabinet	SW VFD Cabinet	RMC	1 1/2"	18	480 P	3	2/0	
						GND	1	3AWG	
H22	MCC	Transformer	RMC	1 1/2"	20	480 P	2	3/0	
						GND	1	4AWG	
H23	Transformer	LA Panelboard	RMC	2"	15	480 P	3	3/0	
						GND	1	4AWG	

NOTES:

- * Existing conduit (or partial section of conduit) shall be permitted to be reused by the Contractor.
- Fiber optic conduit bend radius shall be greater than minimum bend radius of fiber optic cable.
- Provide and install empty conduit for future fiber connection under separate Fiber Optic Contract.

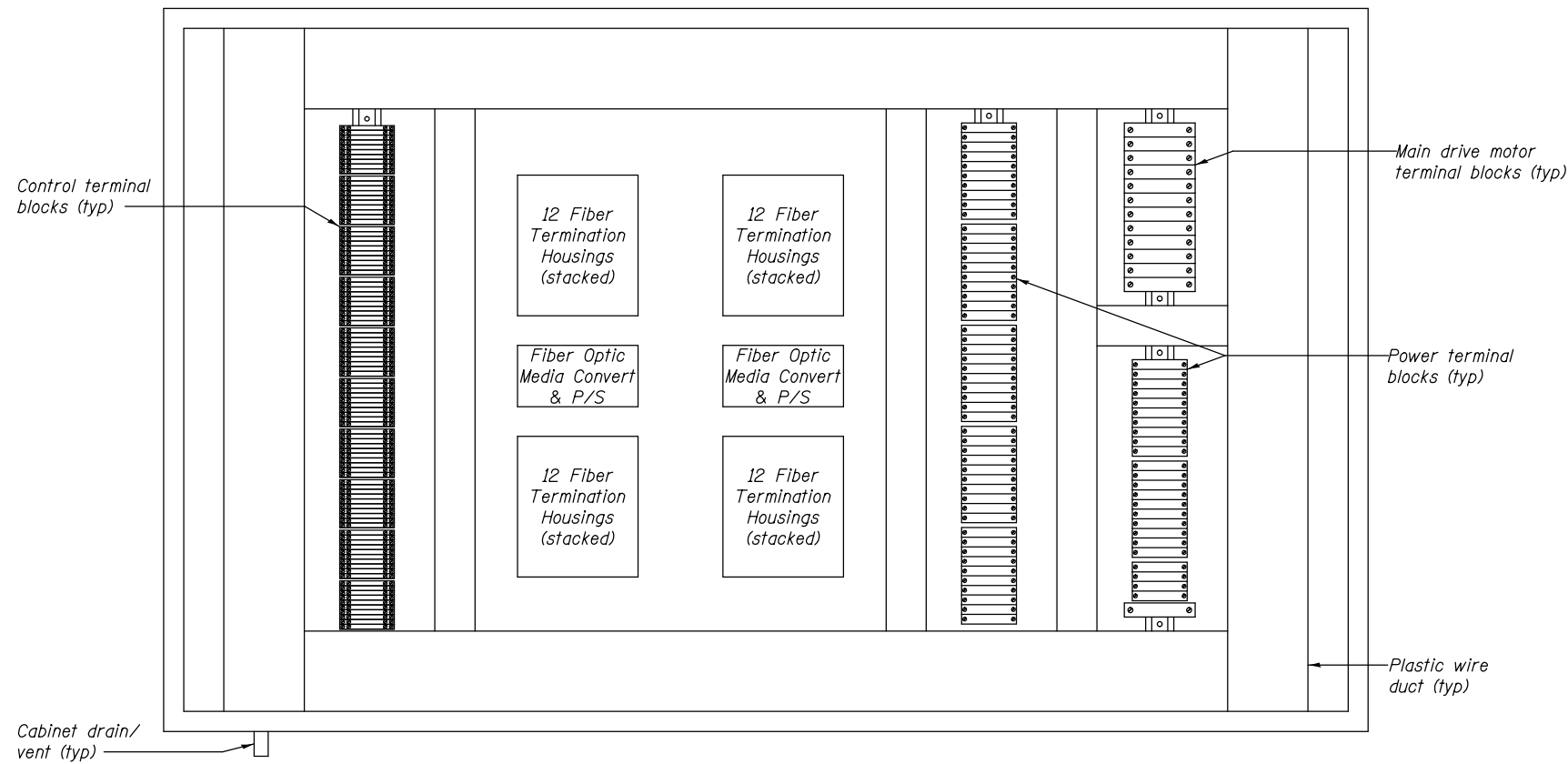


USER NAME =	DESIGNED - K.M. GABLE	REVISED -
	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

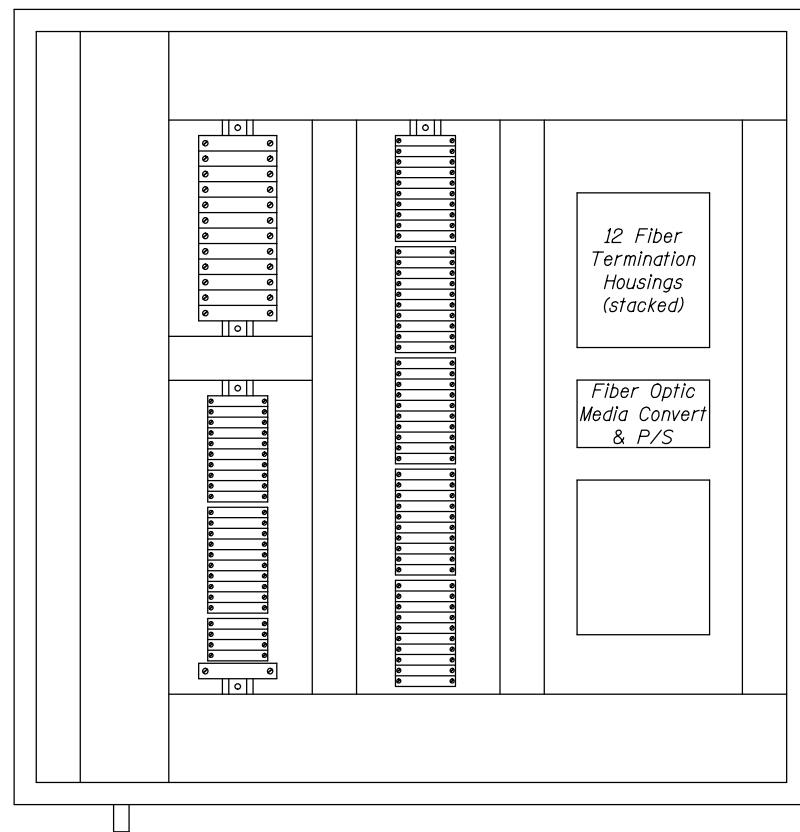
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - CONDUIT TABULATION - 4**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	243
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



NEARSIDE AERIAL CABLES TERMINAL CABINET LAYOUT, 36"H x 60"W x 12"D



FARSIDE AERIAL CABLES TERMINAL CABINET LAYOUTS, 36"H x 36"W x 12"D

PROPOSED AERIAL CONTROL AND COMMUNICATIONS CABLE		
Description	Quantity	Size/Type
Fiber Optic Communications, Local Bridge PLC and CCTV Networks	2	12 Fiber
Farside Motor Encoders	8	1 pair, shielded 12AWG
Farside Inclinator and Spares	7	1 pair, shielded 12AWG
Farside Traffic Gate Limit Switches	10	10 AWG
Farside Fully Seated Limit Switch	2	10 AWG
Farside Rotary Cam Limit Switch	9	10 AWG
Farside Brake Limit Switches	12	10 AWG
Farside Boat Detection	2	10 AWG
Motor Heater Control and Thermostat Contacts	8	10 AWG
Spare	17	10 AWG
Ground	1	6 AWG

PROPOSED AERIAL POWER & MAIN DRIVE CABLE		
Description	Quantity	Size/Type
Fiber Optic Communications, Local Bridge PLC and CCTV Networks	2	12 Fiber
Farside Main Drive Motor 1 - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Farside Main Drive Motor 2 - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Spare Farside Main Drive Motor - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Farside Motors (2 gates, 4 brakes)	18	10 AWG
120 VAC, Farside CCTV/PA	2	6 AWG
120 VAC Power Circuits	39	10 AWG
240 VAC Power	3	4 AWG
Spare	10	10 AWG
Spare	2	4 AWG
Ground	1	2 AWG

NOTES

1. Aerial cables content, cabinet sizes, and cabinet layouts shown are conceptual. The Contractor shall be responsible for determining the requirements of the aerial cable system necessary to support the Intergrated Bridge Controls System, the Bridge Control CCTV system, and all other related systems and components.
2. Refer to Special Provisions for additional requirements for aerial cables and cabinets.
3. Provide fiber optic termination housings as required to terminate aerial cable fiber optic cables associated with bridge local networks and to interconnect all associated bridge devices and networked components.



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
CASS STREET - AERIAL CABLE DETAILS
SHEET NO. 37 OF 39 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-1	WILL	466	244
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-037

BRIDGE CLOSED
XX MILES AHEAD
LOCAL TRAFFIC ONLY

BRIDGE
CLOSED

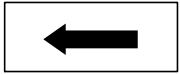
- ① R11-2 (48" x 30")
- ② R11-3a (60" x 30")

DETOUR

- ③ M4-8-2412
- ④ M1-40-2424



⑤ M6-3-2115



⑥L M6-1L-2115



⑥R M6-1R-2115

EAST

⑦E M3-2-2412

WEST

⑦W M3-4-2412



⑧R M5-1R-2115



⑧L M5-1L-2115



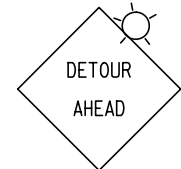
⑨R M4-10R (48"x18")



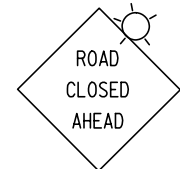
⑨L M4-10R (48"x18")

SIDEWALK
CLOSED

⑪ R11-1101



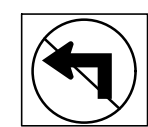
⑫ W20-2 (48" X 48")



⑬ W20-3 (48" X 48")

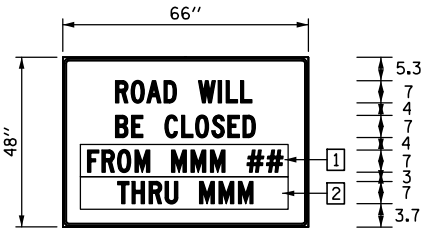
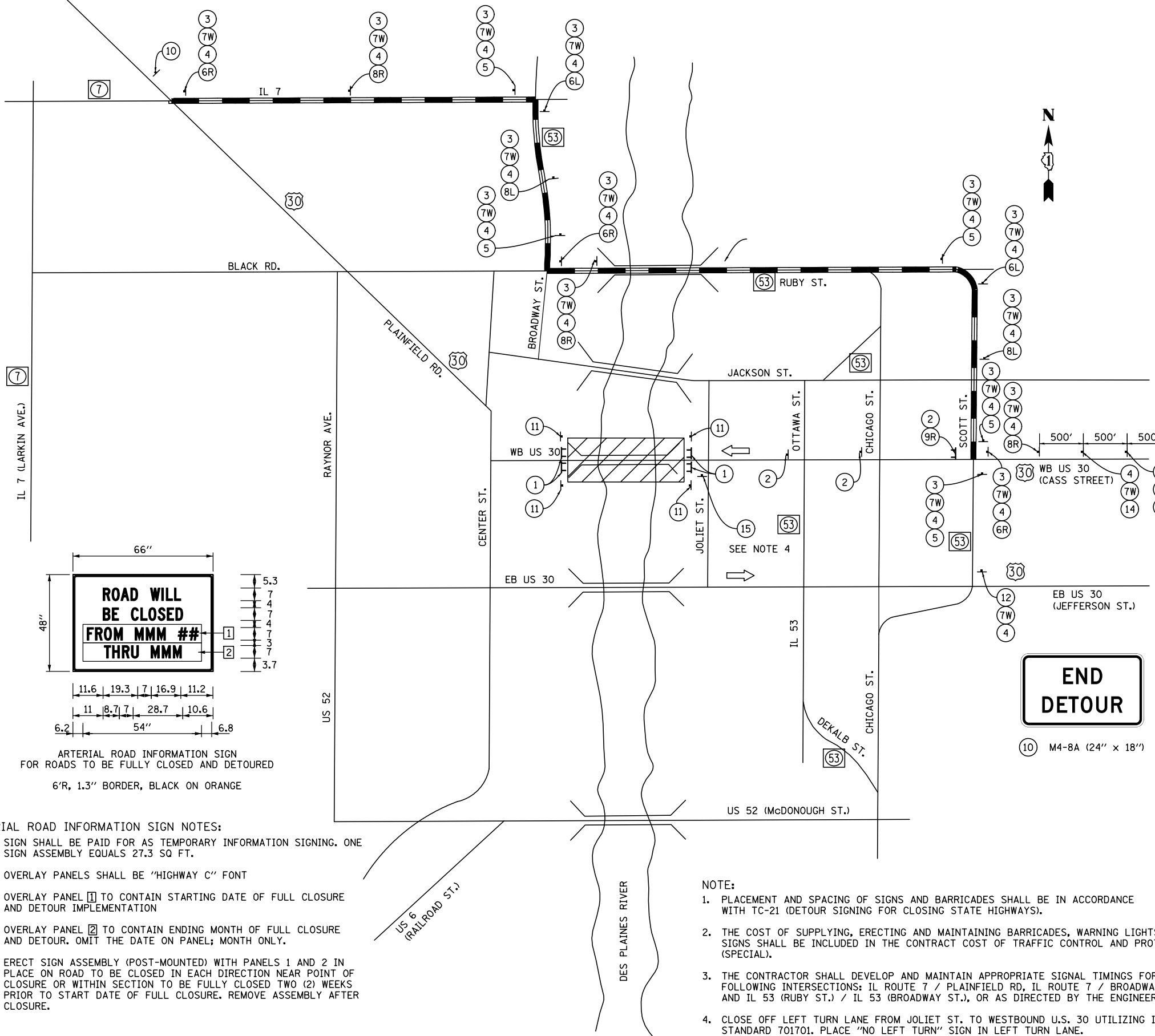


⑭ W20-3 (48" X 48")



⑮ R3-2 (24" X 24")

- LEGEND:
- DETOUR ROUTE
 - CONSTRUCTION ZONE
 - TYPE III BARRICADE
 - AMBER FLASHING LIGHT



ARTERIAL ROAD INFORMATION SIGN
FOR ROADS TO BE FULLY CLOSED AND DETOURED
6'R, 1.3" BORDER, BLACK ON ORANGE

ARTERIAL ROAD INFORMATION SIGN NOTES:

1. SIGN SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING. ONE SIGN ASSEMBLY EQUALS 27.3 SQ FT.
2. OVERLAY PANELS SHALL BE "HIGHWAY C" FONT
3. OVERLAY PANEL ① TO CONTAIN STARTING DATE OF FULL CLOSURE AND DETOUR IMPLEMENTATION
4. OVERLAY PANEL ② TO CONTAIN ENDING MONTH OF FULL CLOSURE AND DETOUR. OMIT THE DATE ON PANEL; MONTH ONLY.
5. ERECT SIGN ASSEMBLY (POST-MOUNTED) WITH PANELS 1 AND 2 IN PLACE ON ROAD TO BE CLOSED IN EACH DIRECTION NEAR POINT OF CLOSURE OR WITHIN SECTION TO BE FULLY CLOSED TWO (2) WEEKS PRIOR TO START DATE OF FULL CLOSURE. REMOVE ASSEMBLY AFTER CLOSURE.

NOTE:

1. PLACEMENT AND SPACING OF SIGNS AND BARRICADES SHALL BE IN ACCORDANCE WITH TC-21 (DETOUR SIGNING FOR CLOSING STATE HIGHWAYS).
2. THE COST OF SUPPLYING, ERECTING AND MAINTAINING BARRICADES, WARNING LIGHTS AND SIGNS SHALL BE INCLUDED IN THE CONTRACT COST OF TRAFFIC CONTROL AND PROTECTION (SPECIAL).
3. THE CONTRACTOR SHALL DEVELOP AND MAINTAIN APPROPRIATE SIGNAL TIMINGS FOR THE FOLLOWING INTERSECTIONS: IL ROUTE 7 / PLAINFIELD RD, IL ROUTE 7 / BROADWAY ST., AND IL 53 (RUBY ST.) / IL 53 (BROADWAY ST.), OR AS DIRECTED BY THE ENGINEER.
4. CLOSE OFF LEFT TURN LANE FROM JOLIET ST. TO WESTBOUND U.S. 30 UTILIZING IDOT STANDARD 701701. PLACE "NO LEFT TURN" SIGN IN LEFT TURN LANE.



USER NAME =	DESIGNED - MGR	REVISED
	CHECKED - RAG	REVISED
PLOT SCALE =	DRAWN - MGR	REVISED
PLOT DATE =	CHECKED - T.P. LAVIN	REVISED




STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
CASS STREET - US 30 WB S.N. 099-0101 DETOUR ROUTE - 1
SHEET NO. 38 OF 39 SHEETS






F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	245
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT






ROUTE MARKERS

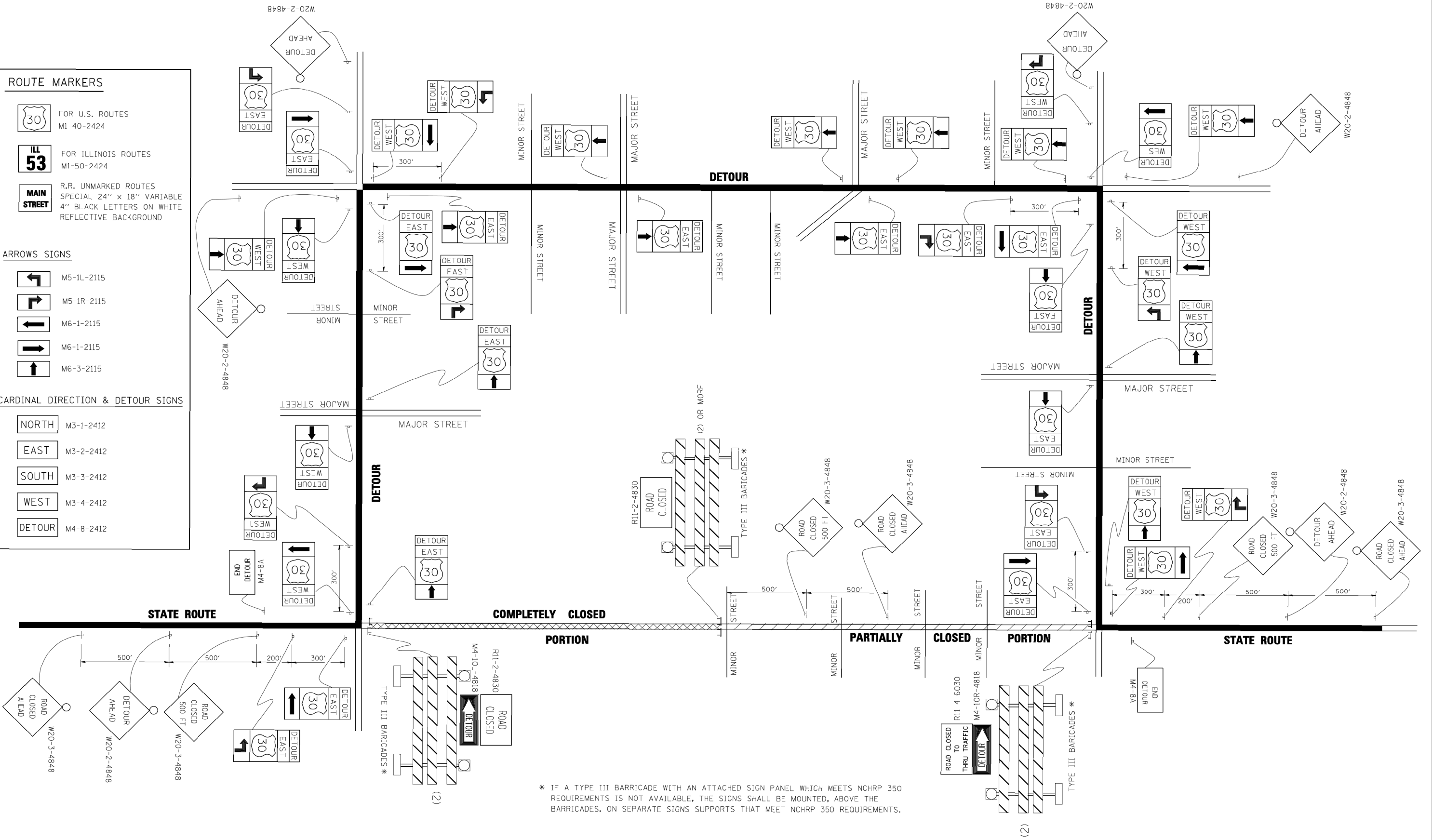
-  FOR U.S. ROUTES
M1-40-2424
-  FOR ILLINOIS ROUTES
M1-50-2424
-  R.R. UNMARKED ROUTES
SPECIAL 24" x 18" VARIABLE
4" BLACK LETTERS ON WHITE
REFLECTIVE BACKGROUND

ARROWS SIGNS

-  M5-1L-2115
-  M5-1R-2115
-  M6-1-2115
-  M6-1-2115
-  M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

-  NORTH M3-1-2412
-  EAST M3-2-2412
-  SOUTH M3-3-2412
-  WEST M3-4-2412
-  DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

IDOT DISTRICT 1 STANDARD TC-21



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

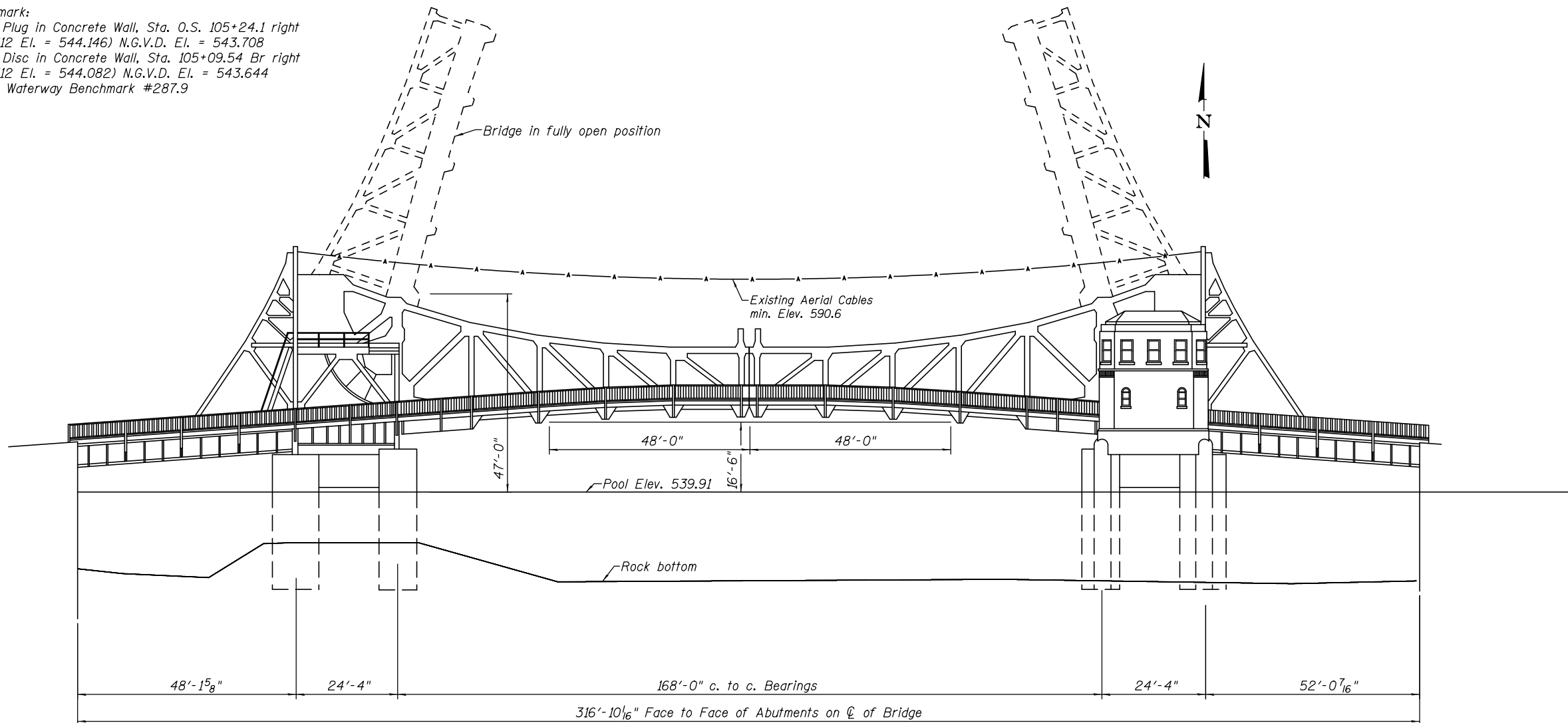
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
DETOUR SIGNING FOR CLOSING STATE HIGHWAYS**

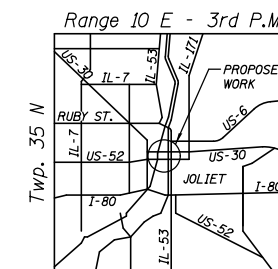
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-1	WILL	466	246
TC-21			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

CASS, Drawing 03-039

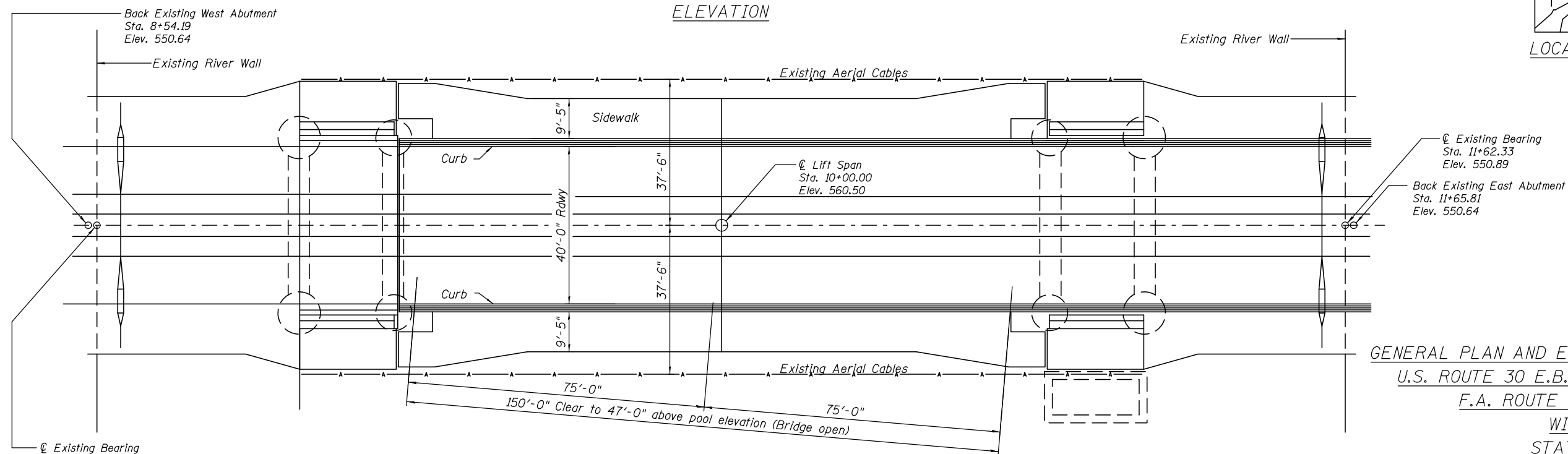
Benchmark:
 Brass Plug in Concrete Wall, Sta. 0.S. 105+24.1 right
 (MSL '12 El. = 544.146) N.G.V.D. El. = 543.708
 Brass Disc in Concrete Wall, Sta. 105+09.54 Br right
 (MSL '12 El. = 544.082) N.G.V.D. El. = 543.644
 Illinois Waterway Benchmark #287.9



ELEVATION



LOCATION SKETCH



PLAN

GENERAL PLAN AND ELEVATION JEFFERSON STREET
 U.S. ROUTE 30 E.B. OVER DES PLAINES RIVER
 F.A. ROUTE 607 SEC. 2011-045-1
 WILL COUNTY
 STATION 008.890
 STRUCTURE NO. 099-0166



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

SHEET NO. 1 OF 39 SHEETS

JEFFERSON, Drawing 04-001	
F.A. RTE.	SECTION
607	2011-045-1
COUNTY	TOTAL SHEETS
WILL	466
SHEET NO. 247	
CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT	

INDEX OF SHEETS

<u>SHEET</u>	<u>LOCAL SHEET</u>	<u>DESCRIPTION</u>
247	04-001	GENERAL PLAN AND ELEVATION
248	04-002	INDEX OF SHEETS
249	04-003	ELECTRICAL SCOPE PLAN AND ELEVATION
250 - 251	04-004 - 04-005	OPERATOR'S HOUSE DETAILS
252	04-006	NEARSIDE MACHINERY LAYOUT
253	04-007	FAR SIDE MACHINERY LAYOUT
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257	04-011	MCC LAYOUT
258	04-012	PANELBOARD SCHEDULE
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260	04-014	FIBER OPTIC INTERCONNECT CABINET
261	04-015	SCADA ONE-LINE
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263 - 267	04-017 - 04-021	CCTV CAMERA LAYOUTS
268	04-022	PUBLIC ADDRESS SPEAKER LAYOUT
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274	04-028	ELECTRICAL EQUIPMENT SCHEDULE
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278 - 281	04-032 - 04-035	CONDUIT TABULATIONS
282	04-036	AERIAL CABLE DETAILS
283 - 285	04-037 - 04-039	CONSTRUCTION DETOUR ROUTES

JEFFERSON, Drawing 04-002

	USER NAME =	DESIGNED - R.I. PETERS	REVISED _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION JEFFERSON STREET - INDEX OF SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE =	CHECKED - L.V. BORDEN	REVISED _____			607	2011-045-I	WILL	466	248
	PLOT DATE =	DRAWN - R.L. REED	REVISED _____			CONTRACT NO. 60P55				
				SHEET NO. 2 OF 39 SHEETS		ILLINOIS FED. AID PROJECT				

GENERAL STRUCTURE

- Remove wiring from existing conduit and install new wiring where applicable
- Provide and Install new wiring and conduit to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
 - Fixed Traffic Cameras
 - Antennas for Wireless Backup Network (See Wireless Backup Network Plans for details)
 - Aerial Terminal Cabinets

WEST APPROACH

- Provide and Install:
- PTZ Camera
 - P.A. system speakers and microphones
- Other:
- Conduit and junction boxes for connection to the Fiber Optic Network
 - Refurbish existing traffic gates

OPERATOR HOUSE EXTERIOR

- Provide and Install:
- Warning Horns
 - Marine Radio Antenna

OPERATOR'S ROOM

- Provide and Install:
- UPS equipment for CCTV and network equipment
 - PLC control console with HMI and hardwired relay back-up controls
 - PLC control panel
 - Network equipment to support:
 - PLC communication
 - CCTV system
 - P.A. system
 - Remote control

OPERATOR'S ROOM (CONT'D)

- Provide and Install:
- Power supplies and surge protection for cameras
 - Local CCTV system and monitors
 - Radios, power supplies, and surge protection for Wireless Back-up Radio System
 - Power supplies, surge protection, amplifiers, and transformers for P.A. system
 - Fire Alarm and Security System equipment
 - Marine Radio
 - New wiring to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
 - Fixed Traffic Cameras
 - Antennas for Wireless Backup Network (See Wireless Backup Network Plans for details)
 - Aerial Terminal Cabinet

EAST APPROACH

- Provide and Install:
- PTZ Camera
 - P.A. system speakers and microphones
- Other:
- Refurbish existing traffic gates

WEST PIER TOP

- Provide and Install:
- PTZ Camera
 - Thermal Imaging Camera
 - Boat Detection Sensors
- Replace:
- All conduit on pier

EAST PIER TOP

- Provide and Install:
- PTZ Camera
 - Thermal Imaging Camera
 - Boat Detection Sensors
- Replace:
- All conduit on pier

WEST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
 - Motor Encoders for existing Motors
 - Door Switches
 - Disconnect Switches for Machinery and Motor Brakes
 - Disconnect Switches for Main Drive Motors
 - Rotary Cam Limit Switch with resolver
 - Inclinometers
 - PLC I/O Rack, Cards, and related components
 - New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

NORTHWEST FIXED TOWER STRUCTURE (SIDEWALK ELEVATION)

- Provide and Install:
- Power supplies and surge protection for cameras
 - Power supplies, surge protection, amplifiers, and transformers for P.A. system

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

ELECTRICAL ROOM

- Remove:
- Existing relay logic control system
 - Existing Main Drives
- Provide and Install:
- Surge Protective Device for incoming Electrical Service
 - Power Monitor (interface to PLC for remote monitoring)
 - Drive control and communication interface with PLC
 - Intrusion detection
 - Access Control for entry
 - Variable Speed Drives

ELECTRICAL ROOM (CONT'D)

- Provide and Install:
- Braking Resistors
 - Transformer
 - Panelboard
 - Fire Alarm and Security System equipment
 - Fiber Optic Interconnect equipment
 - New wiring to Electrical equipment
- Other:
- Interface the existing Automatic Transfer Switch to PLC for remote monitoring



ELEVATION

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

EAST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
 - Motor Encoders for existing Motors
 - Door Switches
 - Disconnect Switches for Machinery and Motor Brakes
 - Disconnect Switches for Main Drive Motors
 - Rotary Cam Limit Switch with resolver
 - Inclinometers
 - PLC I/O Rack, Cards, and related components
 - New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

PLAN



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 -

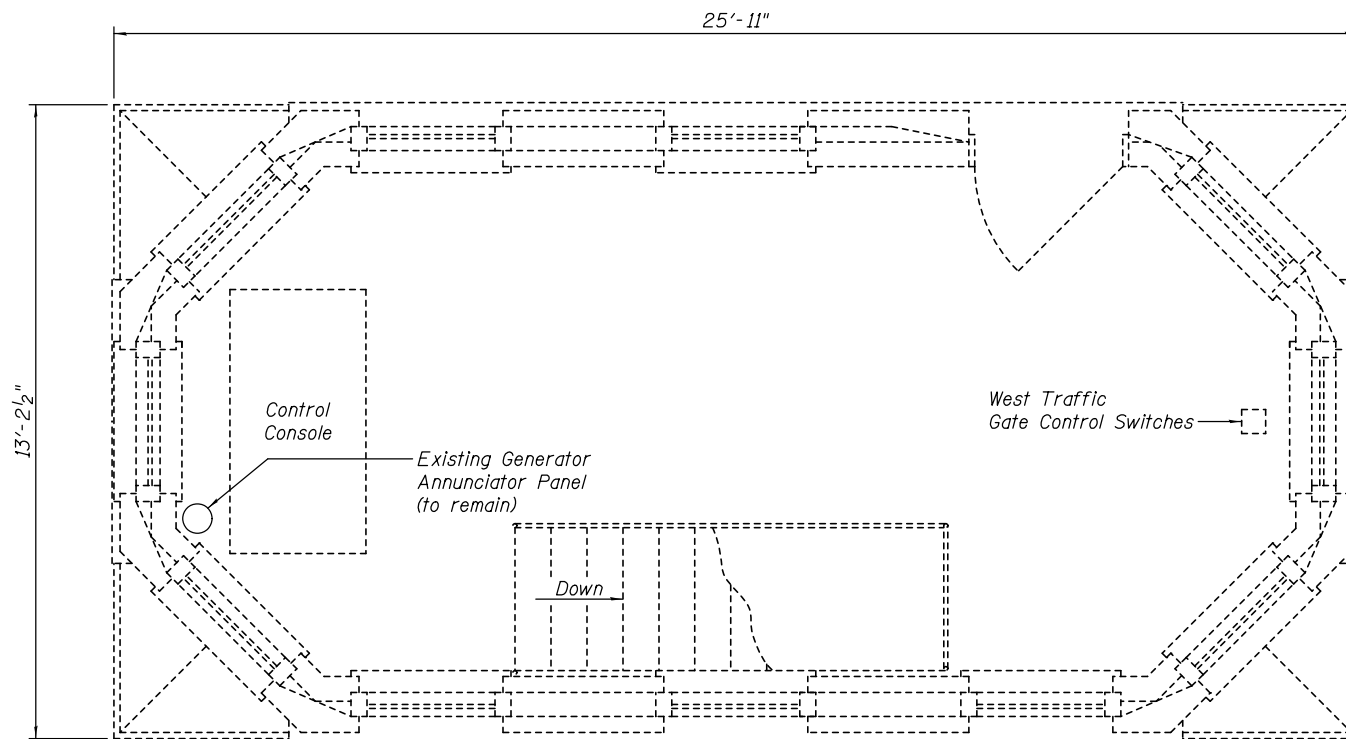
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET – ELECTRICAL SCOPE PLAN AND ELEVATION**

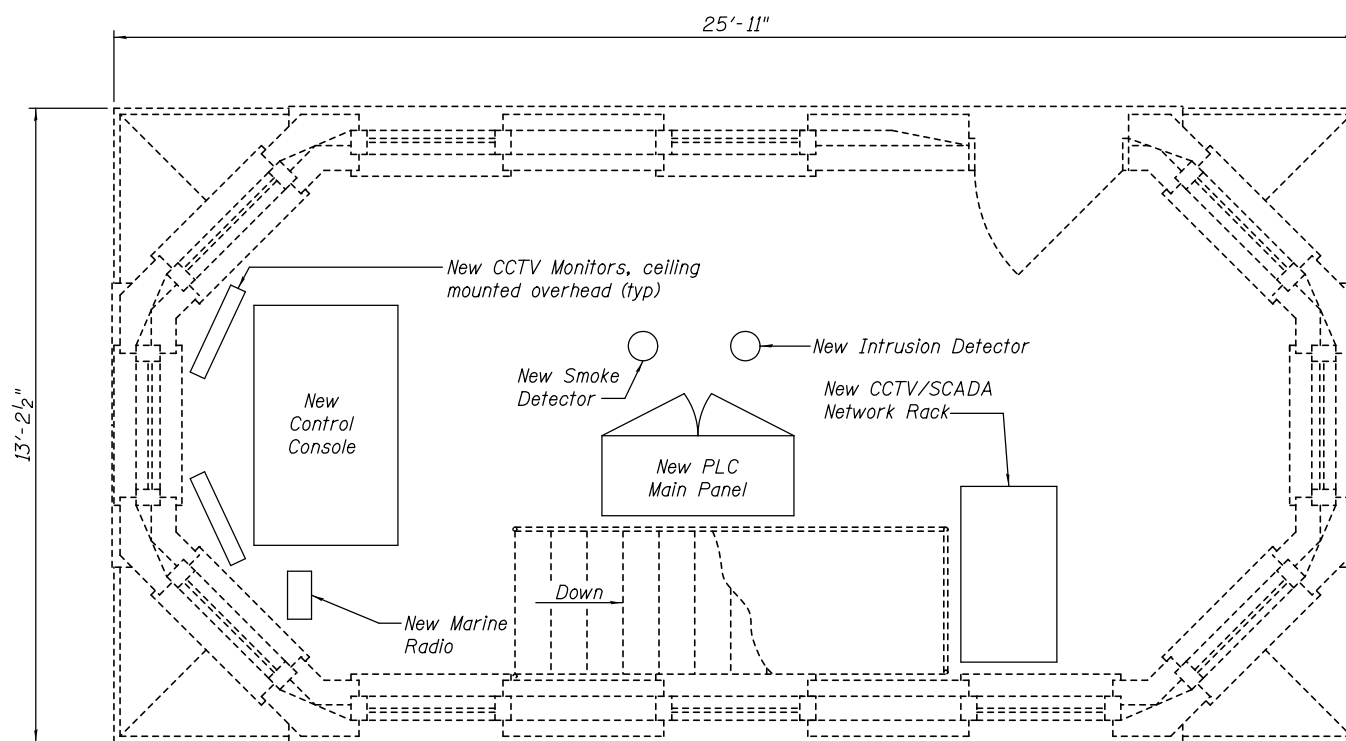
SHEET NO. 3 OF 39 SHEETS

JEFFERSON, Drawing 04-003			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 249
CONTRACT NO. 60P55			

ILLINOIS FED. AID PROJECT



PLAN
EXISTING OPERATOR'S ROOM FLOOR LAYOUT



PLAN
PROPOSED OPERATOR'S ROOM FLOOR LAYOUT



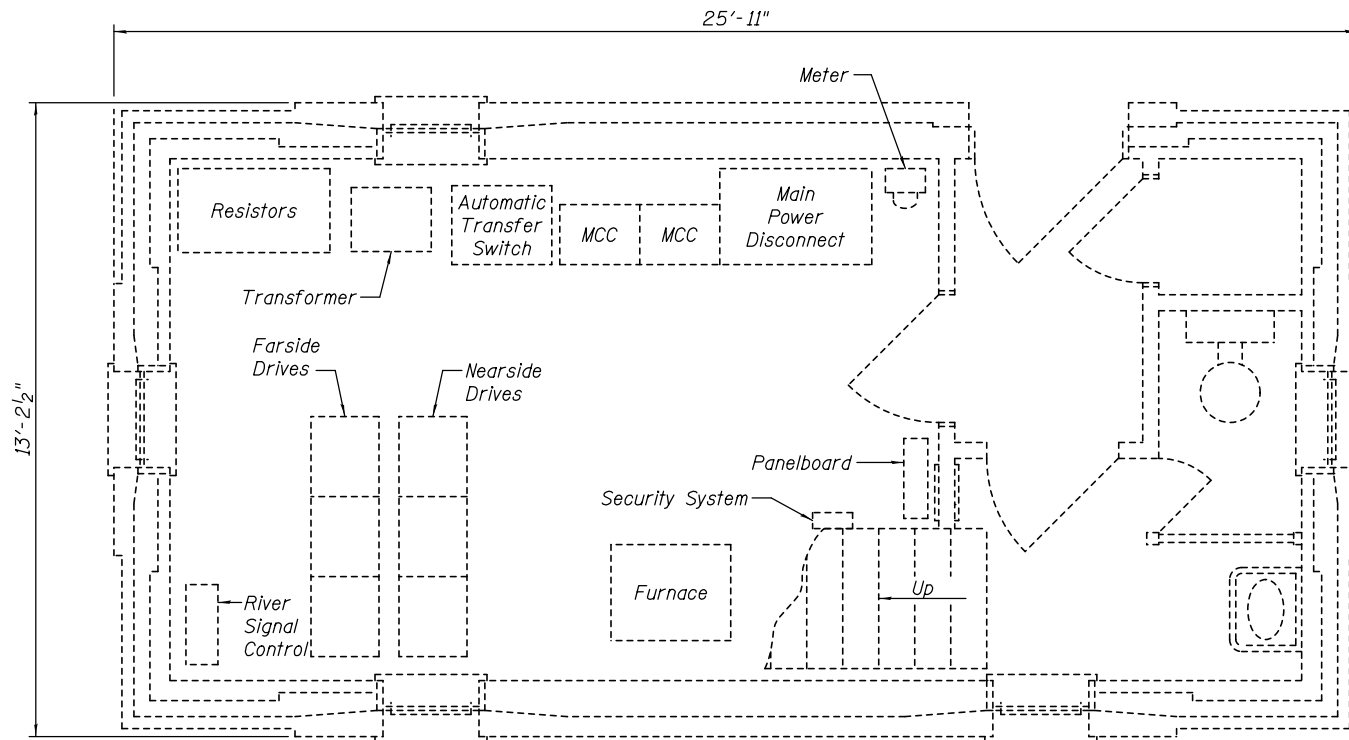
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PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
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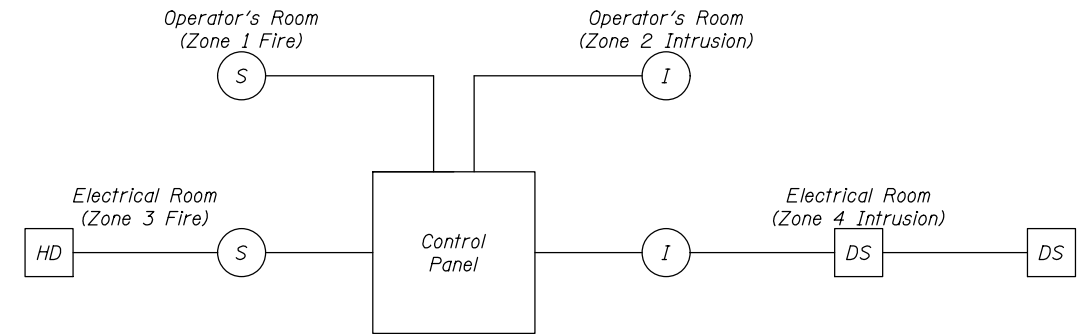
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - OPERATOR'S HOUSE DETAILS - 1

SHEET NO. 4 OF 39 SHEETS

JEFFERSON, Drawing 04-004				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	250
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				



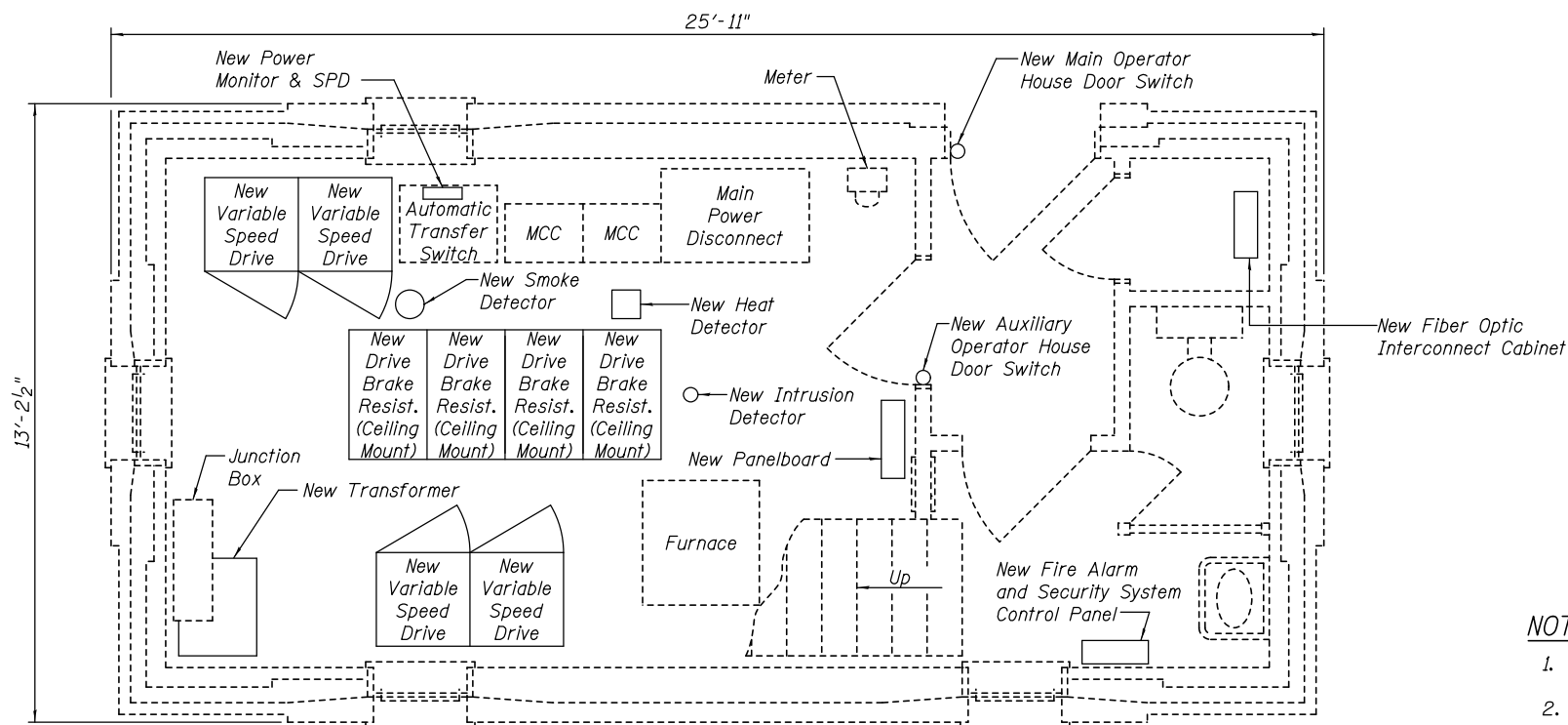
PLAN
EXISTING ELECTRICAL ROOM FLOOR LAYOUT



FIRE ALARM AND SECURITY SYSTEM

LEGEND

- (S) Smoke Detector
- (I) Intrusion Detector
- [HD] Heat Detector
- [DS] Door Switch



PLAN
PROPOSED ELECTRICAL ROOM FLOOR LAYOUT

NOTES:

1. Contractor is alerted to the fact that cabinets may need to be custom sized to fit available space in existing electrical rooms and to provide NEC working space around cabinets.
2. Items not labeled as new are intended to remain.



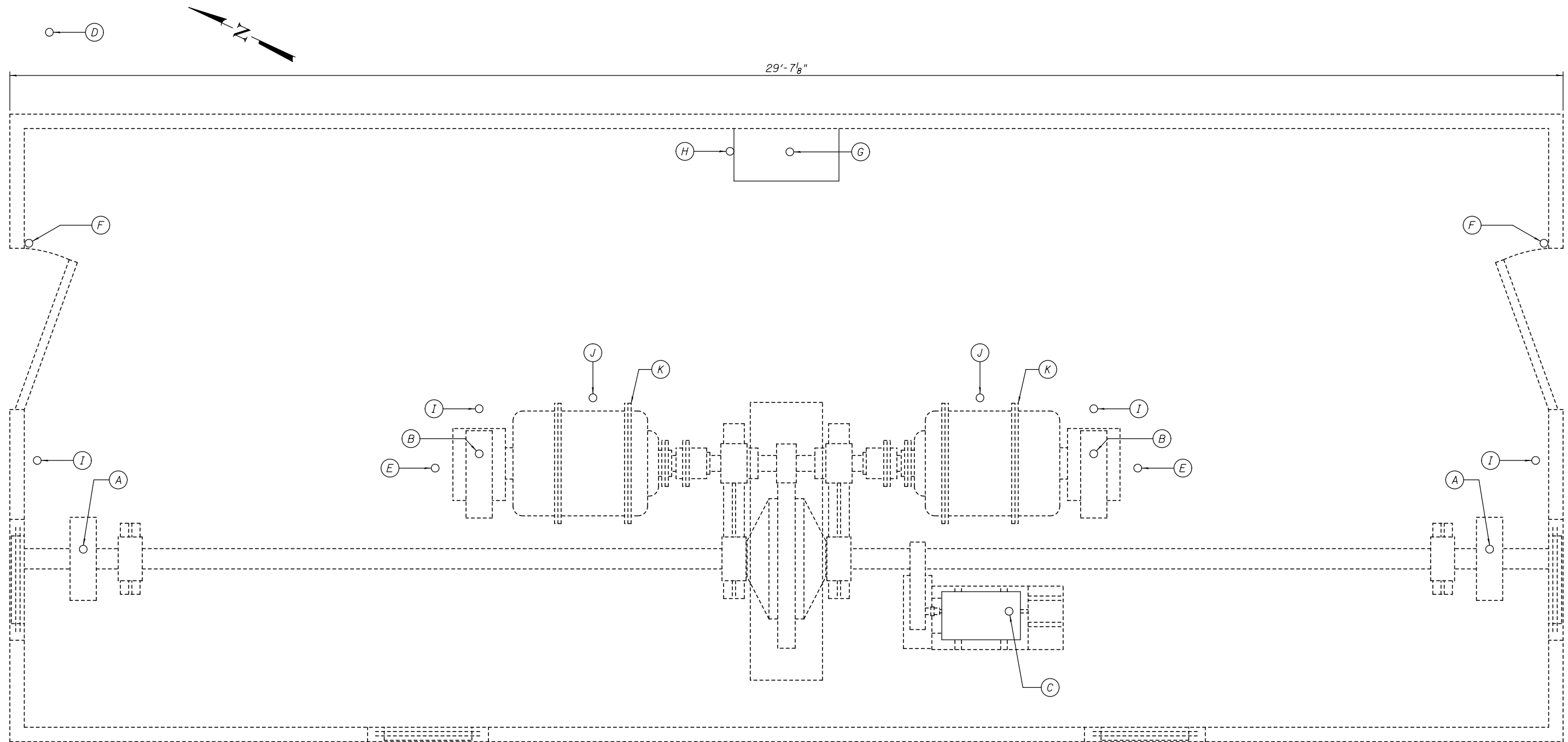
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PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - OPERATOR'S HOUSE DETAILS - 2

SHEET NO. 5 OF 39 SHEETS

JEFFERSON, Drawing 04-005				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	251
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



PLAN
JEFFERSON STREET EAST MACHINERY ENCLOSURE

- | | |
|---|---|
| <ul style="list-style-type: none"> (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208). (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208). (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206). (D) Provide and install new Fully Seated Limit Switch (on Span) (E208). (E) Provide and install new Motor Encoders for existing Motors. (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) (E207). | <ul style="list-style-type: none"> (I) Provide and install new brake disconnect switch (E106). (J) Provide and install new main drive motor disconnect switch (E105). (K) Remove, refurbish, and reinstall main drive motor. |
|---|---|



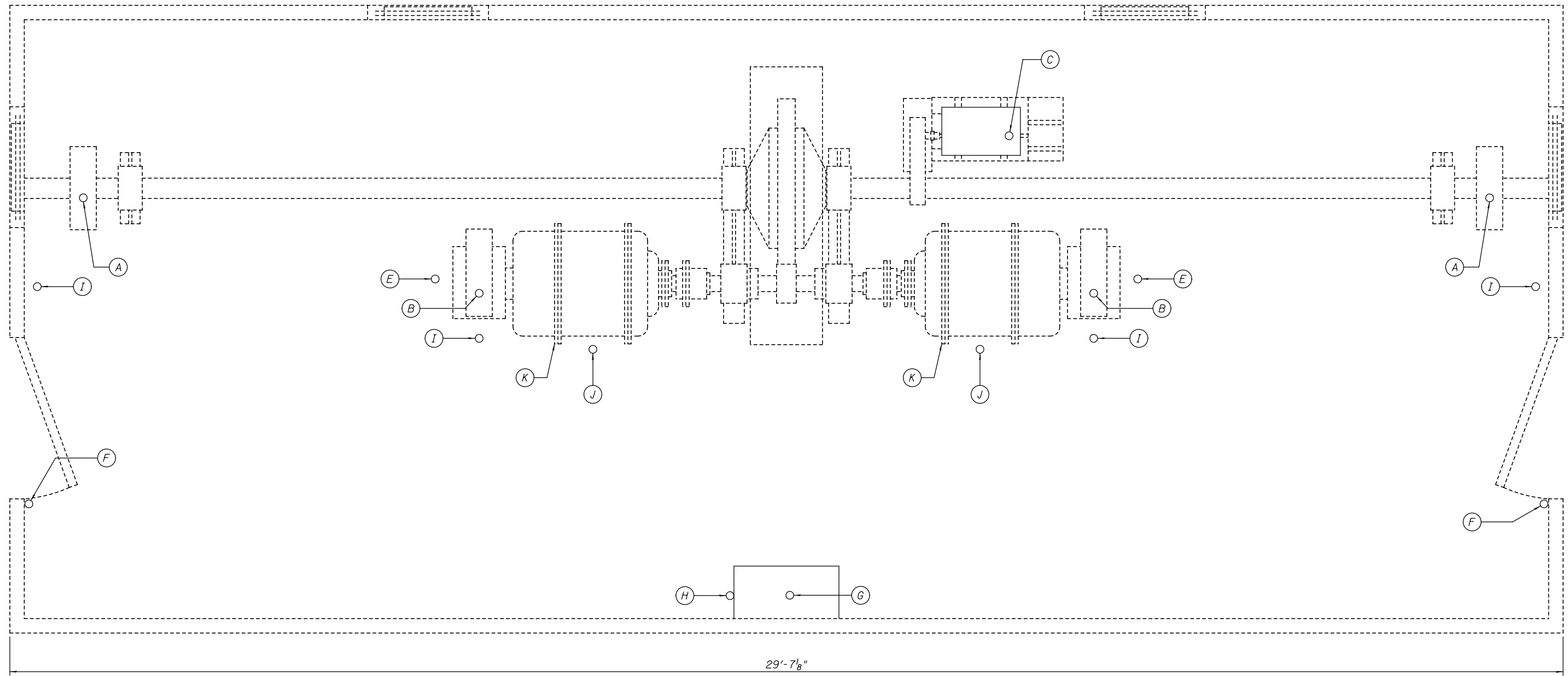
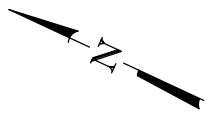
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PLOT SCALE =	DRAWN - R.L. REED	REVISED _____
PLOT DATE =	CHECKED - R.I. PETERS	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - NEAR SIDE MACHINERY LAYOUT**

SHEET NO. 6 OF 39 SHEETS

JEFFERSON, Drawing 04-006				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	252
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



PLAN
JEFFERSON STREET WEST MACHINERY ENCLOSURE

- (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208).
- (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208).
- (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206).
- (D) Provide and install new Fully Seated Limit Switch (on Span) (E208).
- (E) Provide and install new Motor Encoders for existing Motors.
- (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) (E207).
- (I) Provide and install new brake disconnect switch (E106).
- (J) Provide and install new main drive motor disconnect switch (E105).
- (K) Remove, refurbish, and reinstall main drive motor.

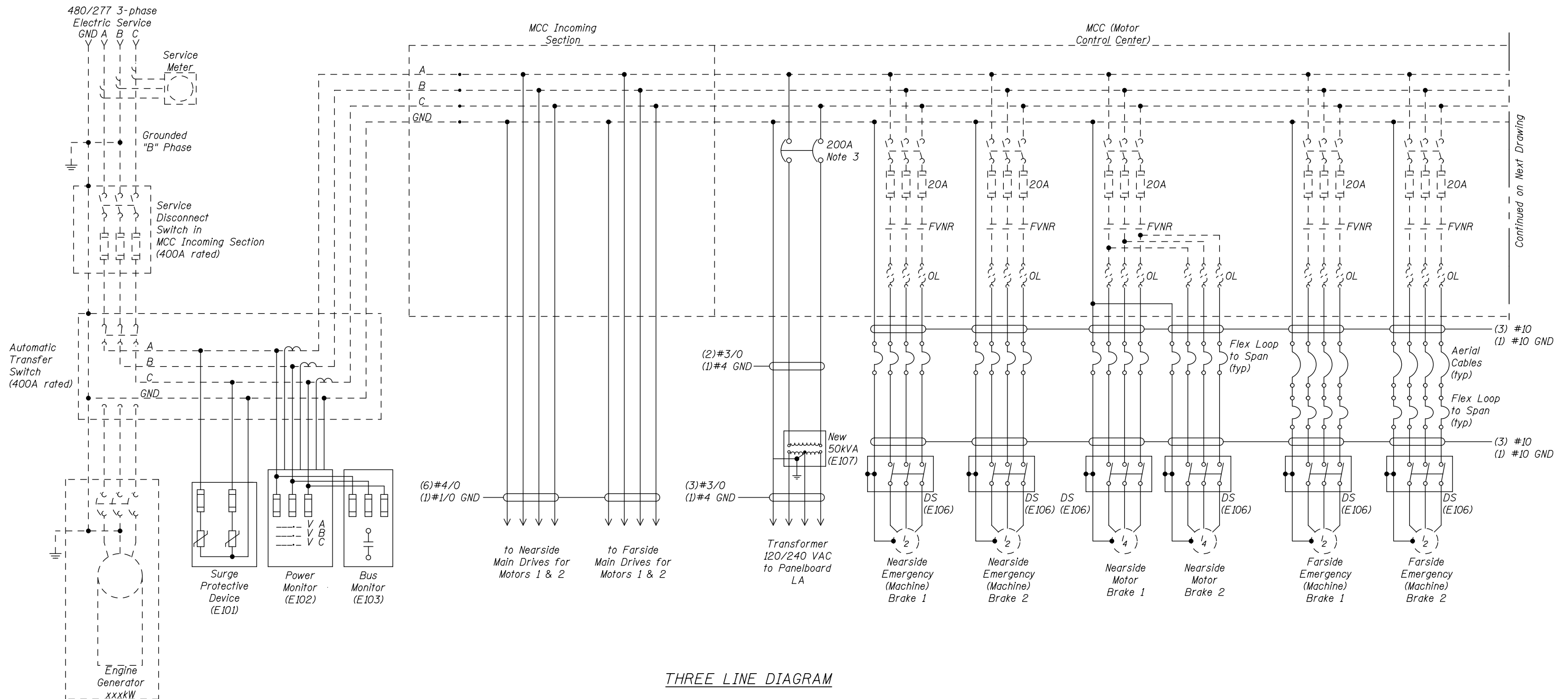


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	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - R.L. REED	REVISED	___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - FAR SIDE MACHINERY LAYOUT**

JEFFERSON, Drawing 04-007				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	253
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



THREE LINE DIAGRAM

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

NOTES:

1. The Contractor shall provide an appropriately sized Nema 12 electrical enclosure for the power monitor, bus monitor, and associated components.
2. The Contractor shall be responsible for sizing all breakers, fuses, and conductors according to equipment and NEC requirements.
3. Modify MCC buckets to provide new circuit breakers.

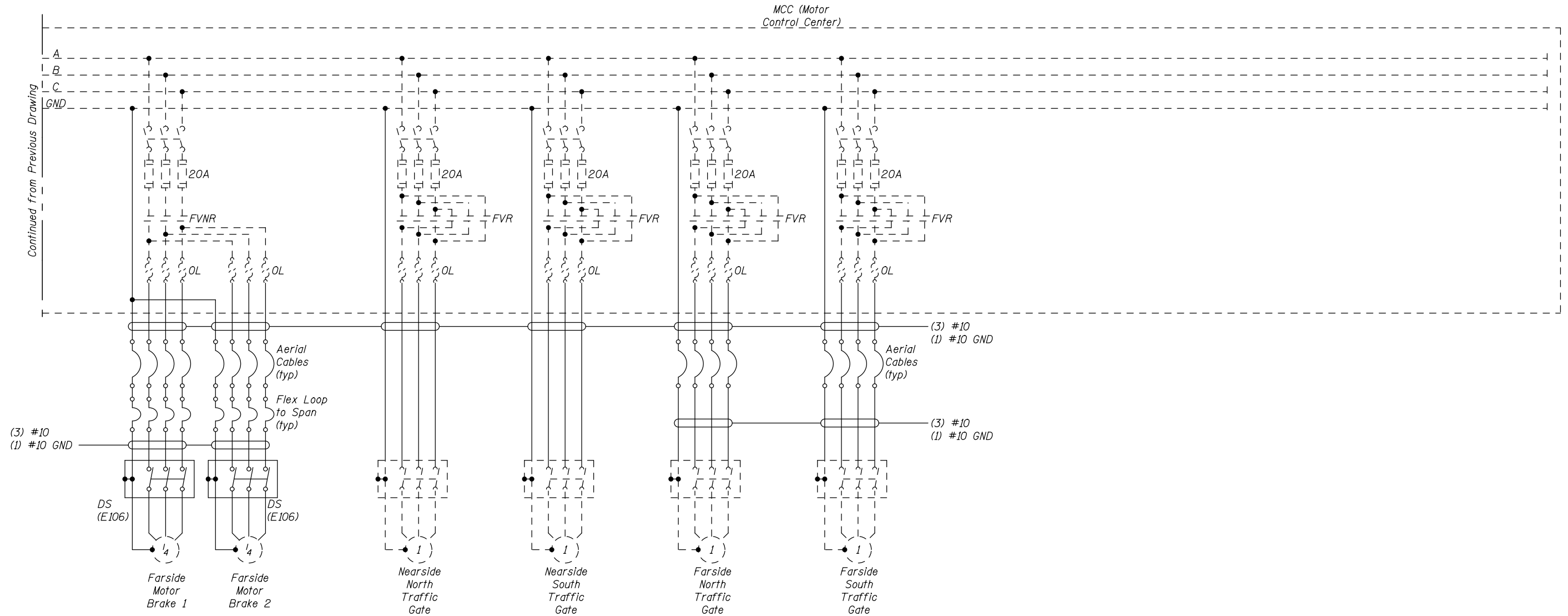


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PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
 LOCAL CENTRALIZED CONTROL AND OPERATION
 JEFFERSON STREET - THREE LINE DIAGRAM - 1

JEFFERSON, Drawing 04-008				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	254
CONTRACT NO. 60P55				



THREE LINE DIAGRAM

LEGEND

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

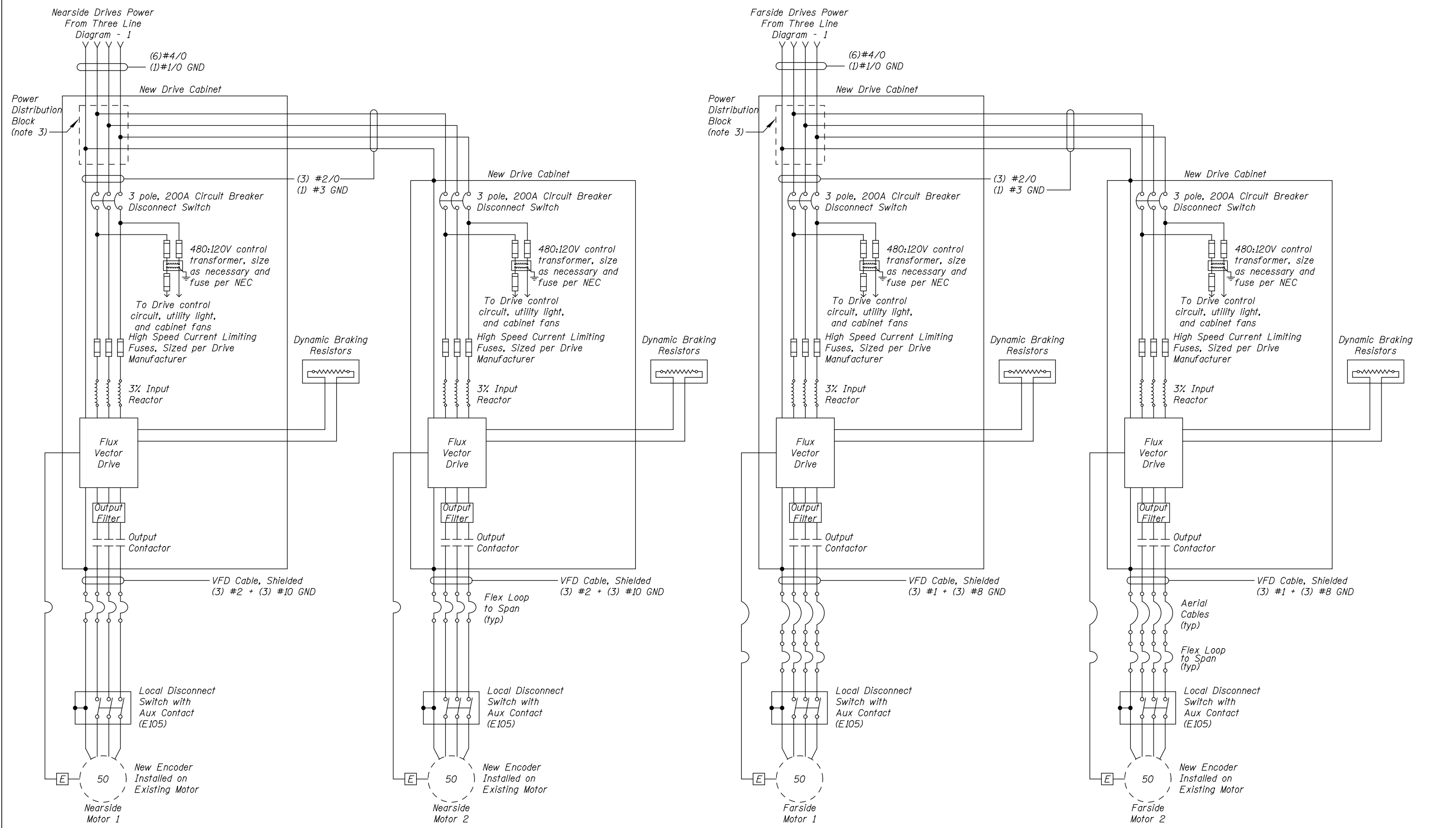


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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED	---
PLOT DATE =	CHECKED - K.M. GABLE	REVISED	---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - THREE LINE DIAGRAM - 2

JEFFERSON, Drawing 04-009				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	255
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 electrical rooms and to provide NEC working space around cabinets.
3. Provide power distribution blocks in new NE and NW VFD Cabinets to tap incoming feeder conductors.

LEGEND

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

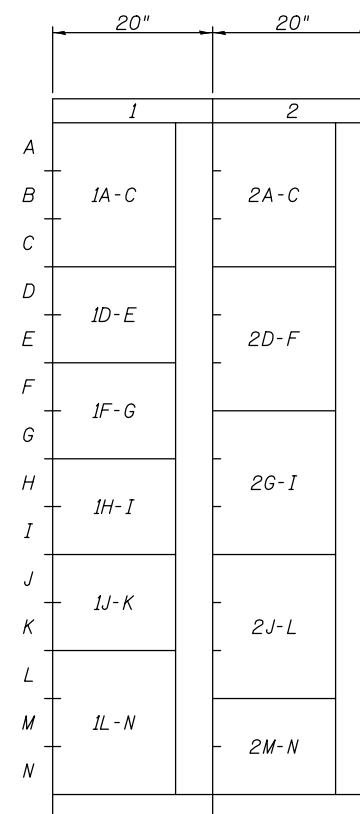


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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED _____
PLOT DATE =	CHECKED - K.M. GABLE	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - THREE LINE DIAGRAM - 3**

JEFFERSON, Drawing 04-010				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	256
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



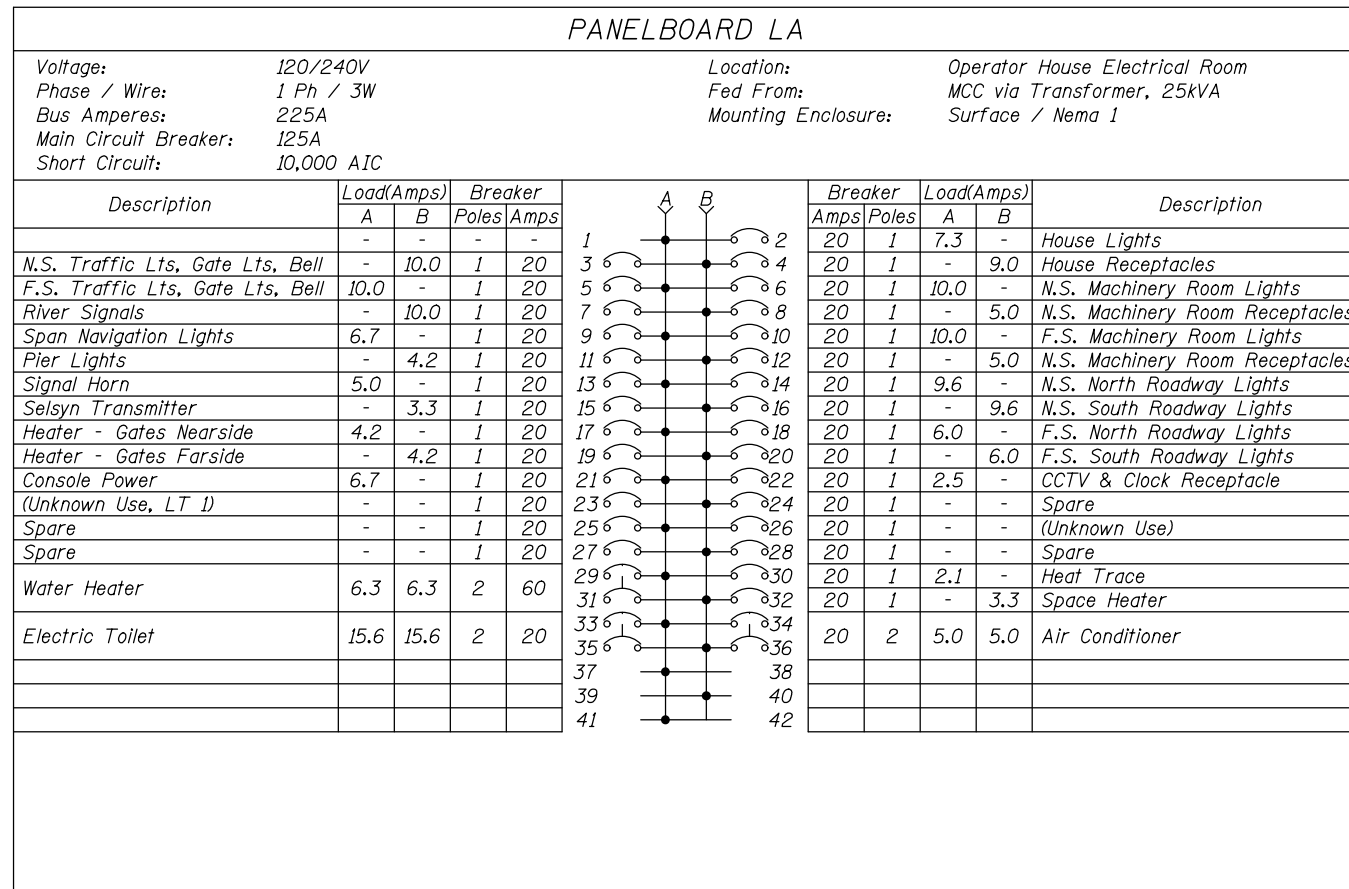
ELEVATION
EXISTING MOTOR CONTROL CENTER (MCC) LAYOUT
 Scale:None

MOTOR CONTROL CENTER DATA			
Voltage:		480V	
Phase / Wire:		3 Ph / 3W	
Bus Amperes:		600A Horizontal / 300A Vertical	
Manufacturer / Model:		Square D / Model 4, Class 8998	
Enclosure:		Nema Type 1	
Braced for:		25,000 Symmetrical Amps	
Unit Loc.	Description	Motor HP	Unit Type
1A-C	Nearside Motor Brakes 1 & 2	2 X 1/4	FVNR
1D-E	Nearside Emergency (Machine) Brake 1	1/2	FVNR
1F-G	Nearside Emergency (Machine) Brake 2	1/2	FVNR
1H-I	Farside Emergency (Machine) Brake 1	1/2	FVNR
1J-K	Farside Emergency (Machine) Brake 2	1/2	FVNR
1L-N	Farside North Traffic Gate	1	FVR
2A-C	Nearside North Traffic Gate	1	FVR
2D-F	Nearside South Traffic Gate	1	FVR
2G-I	Farside South Traffic Gate	1	FVR
2J-L	Farside Motor Brakes 1 & 2	2 X 1/4	FVNR
2M-N	25kVA Transformer Disconnect (Panelboard)	-	CB

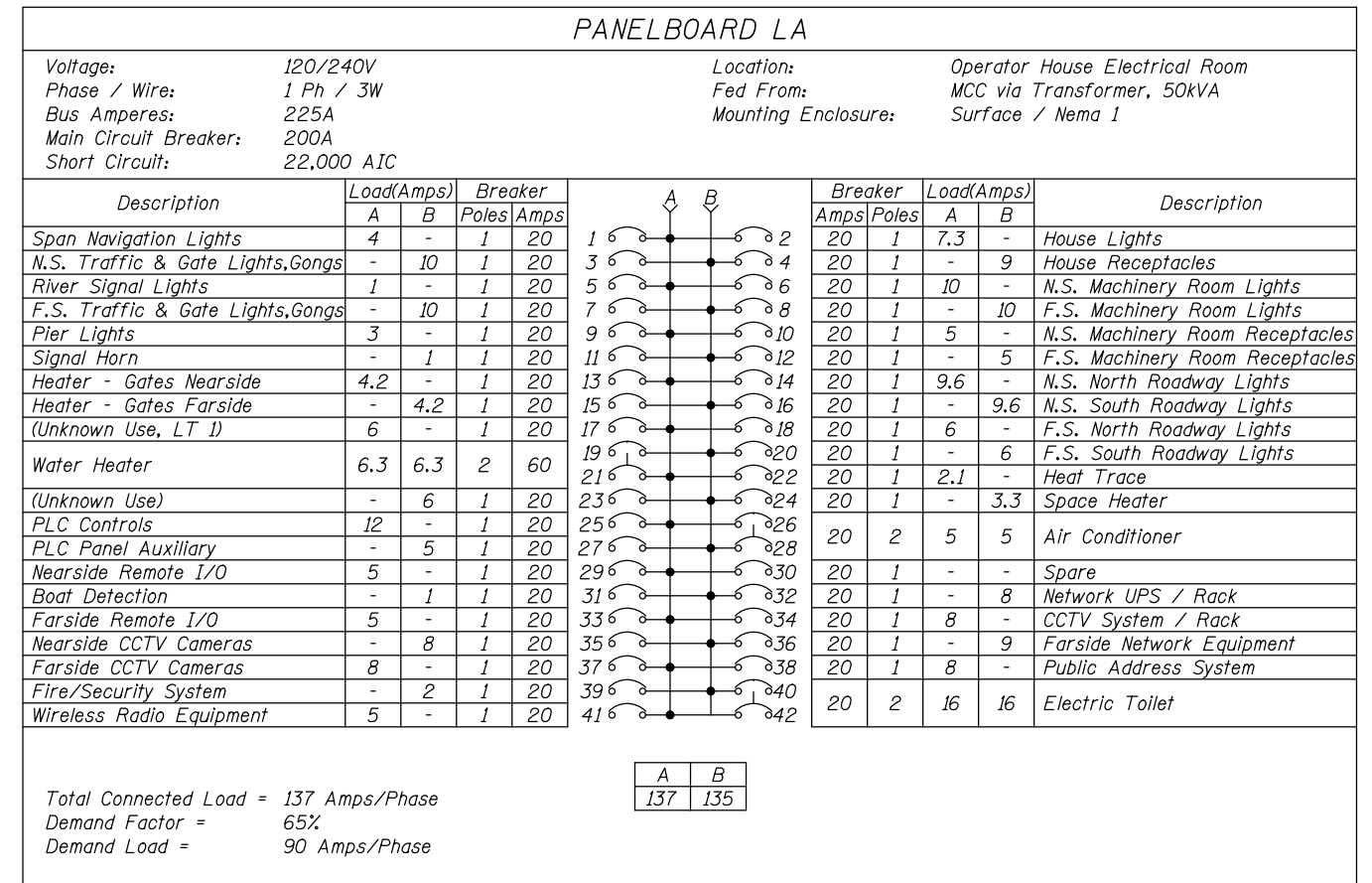
Unit Types:
 CB - Circuit Breaker Disconnect
 FD - Fused Disconnect
 FVNR - Full Voltage, Non Reversing Motor Starter
 FVR - Full Voltage, Reversing Motor Starter
 ML - Main Lugs
 SP - Space

NOTES:

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



EXISTING PANELBOARD LA SCHEDULE



PROPOSED PANELBOARD LA SCHEDULE (E108)

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Remove existing panelboard. Provide and install new panelboard.
3. The Contractor shall provide a neat typewritten or computer printed circuit legend with circuit descriptions.
4. Circuits shall be arranged as required to balance loading.
5. Power for PLC and Remote I/O racks shall utilize the same (A or B) phase.



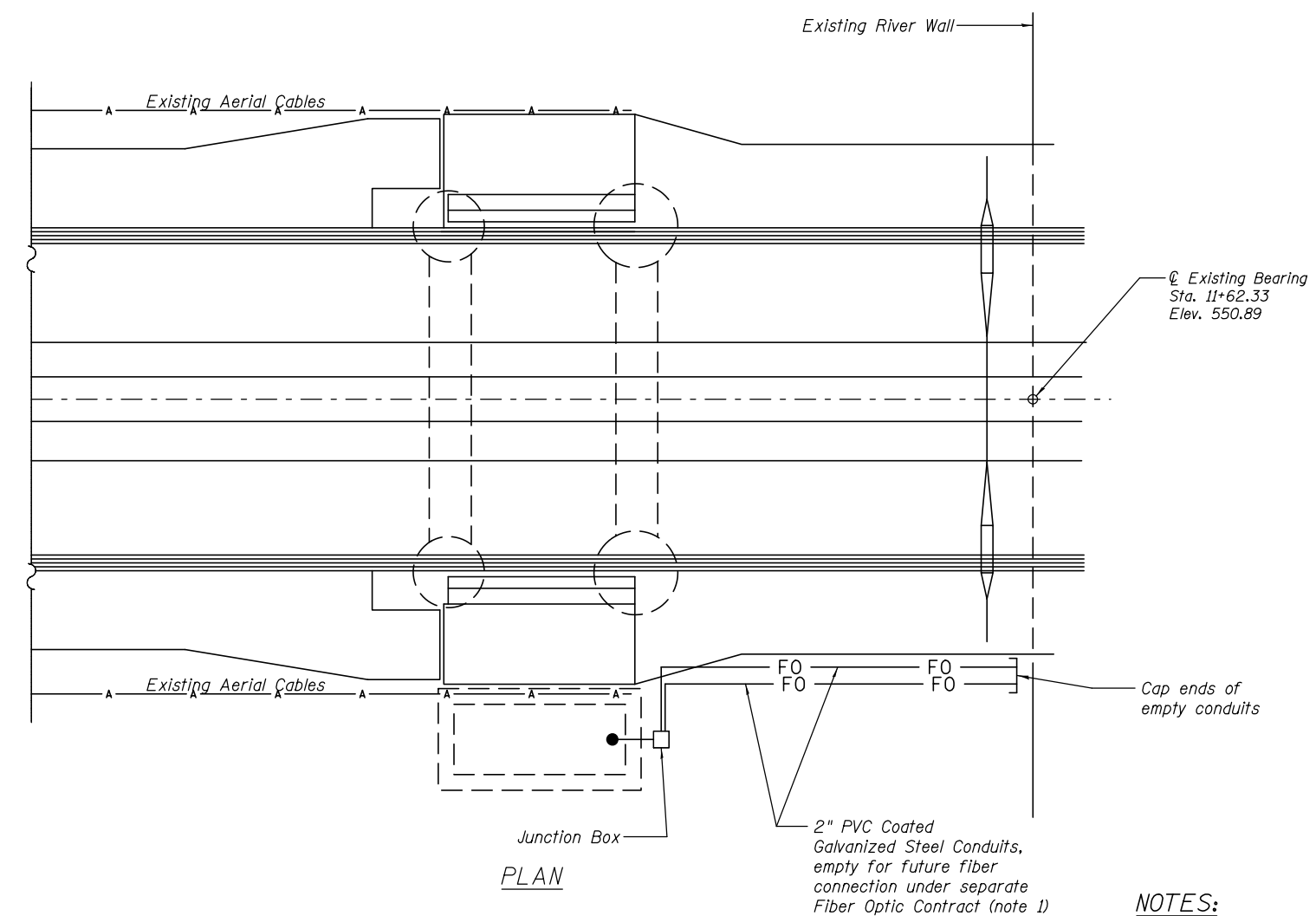
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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - PANELBOARD SCHEDULE**

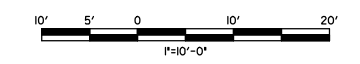
SHEET NO. 12 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	258
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



NOTES:

1. Refer to drawings 04-029 through 04-031 for Bridge Conduit Diagrams and 04-032 through 04-035 for Bridge Conduit 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.



JEFFERSON, Drawing 04-013

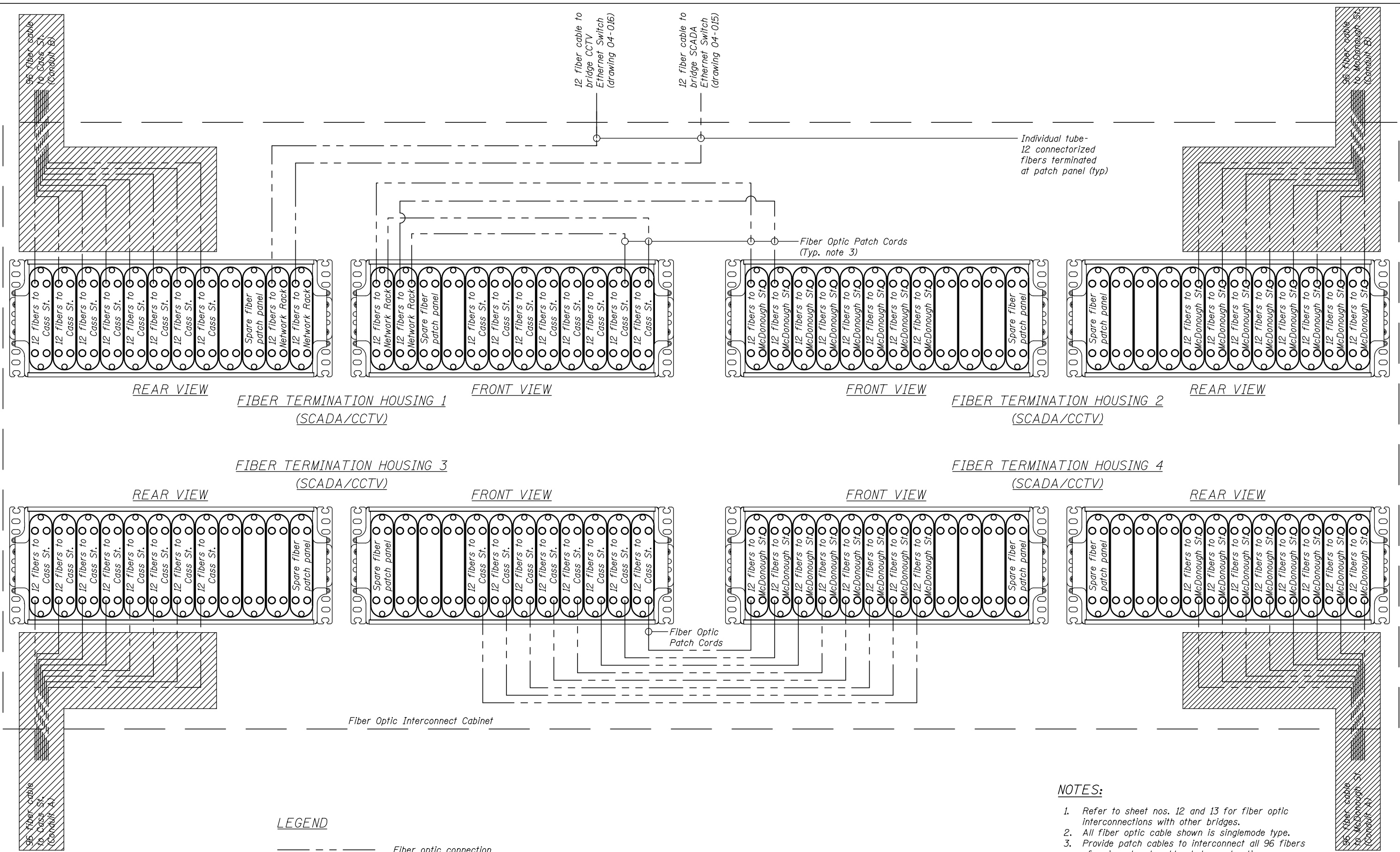


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PLOT DATE =	CHECKED - R.I. PETERS	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - FIBER OPTIC ROUTE TO OPERATOR HOUSE**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	259
CONTRACT NO. 60P55			ILLINOIS FED. AID PROJECT	



- 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.

LEGEND

----- Fiber optic connection

▨ Denotes to be installed under future separate Fiber Optic Contract

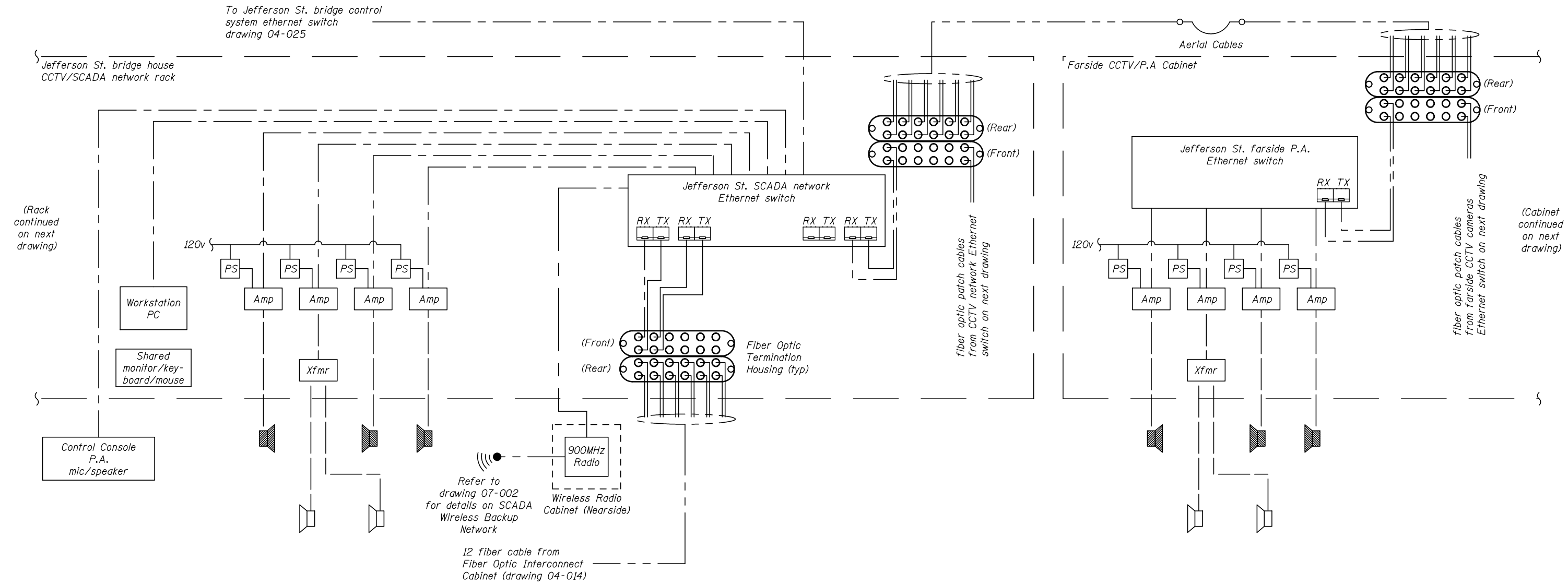


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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - FIBER OPTIC INTERCONNECT CABINET**

JEFFERSON, Drawing 04-014			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 260
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			



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	8	Amplifier power supply
5	8	Network speaker amplifier
6	2	One-way speaker transformer
7	6	Two-way outdoor speaker
8	4	One-way outdoor speaker
9	10	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*	3	2.4 GHz Ethernet Radio
4*	9	2.4 GHz Antenna with installation hardware & accessories
5	10	Antenna surge suppressor
6	4	Surge Protective Device
7	4	Circuit breaker
8	4	24VDC power supply/UPS
9	as req.	Accessories and installation hardware
10	2	Wireless Radio Cabinet

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 accessories and hardware

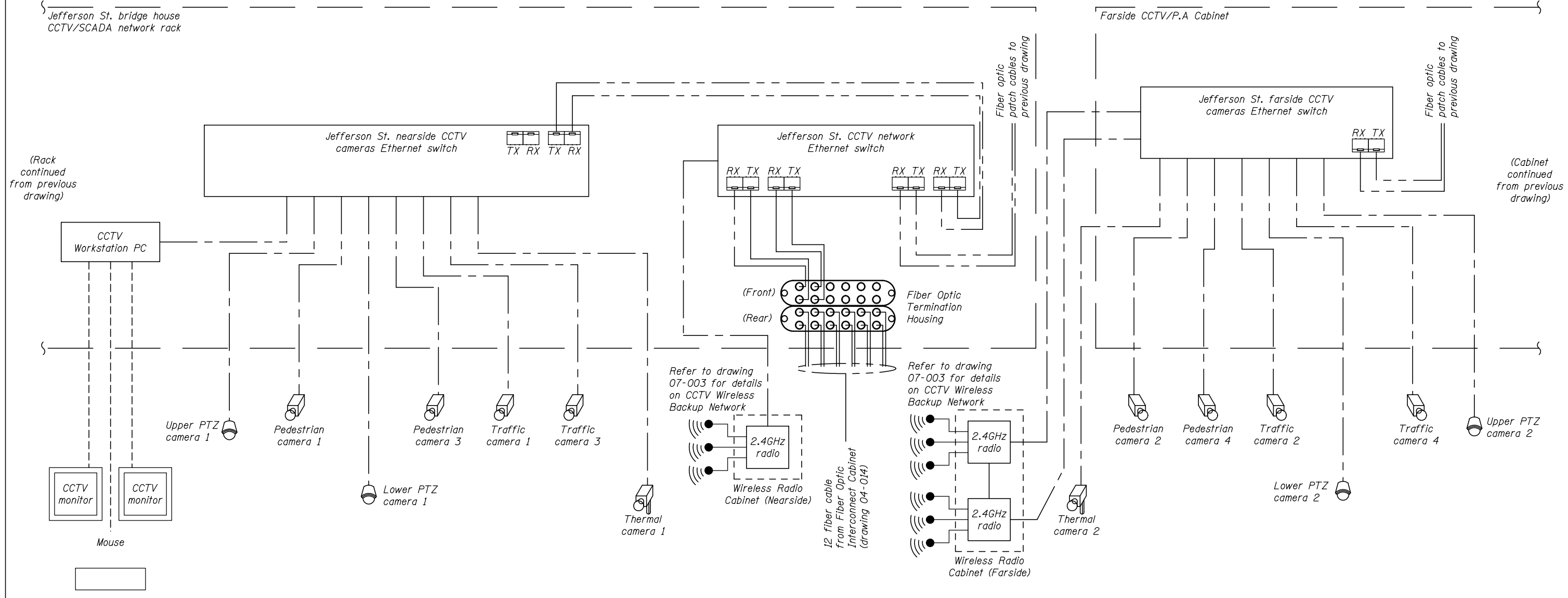
LEGEND

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

* Radios and antennas for CCTV wireless system, shown on drawing 04-016

NOTES:

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



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.



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
JEFFERSON STREET - CCTV ONE-LINE**

JEFFERSON, Drawing 04-016				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	262
CONTRACT NO. 60P55				

SHEET NO. 16 OF 39 SHEETS

ILLINOIS FED. AID PROJECT

JEFFERSON ST. PEDESTRIAN CAMERA 1	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-5°



JEFFERSON ST. PEDESTRIAN CAMERA 2	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-5°

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

JEFFERSON ST. PEDESTRIAN CAMERA 4	
Camera type	Fixed pedestrian
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	40 ft
Camera tilt (°)	-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.



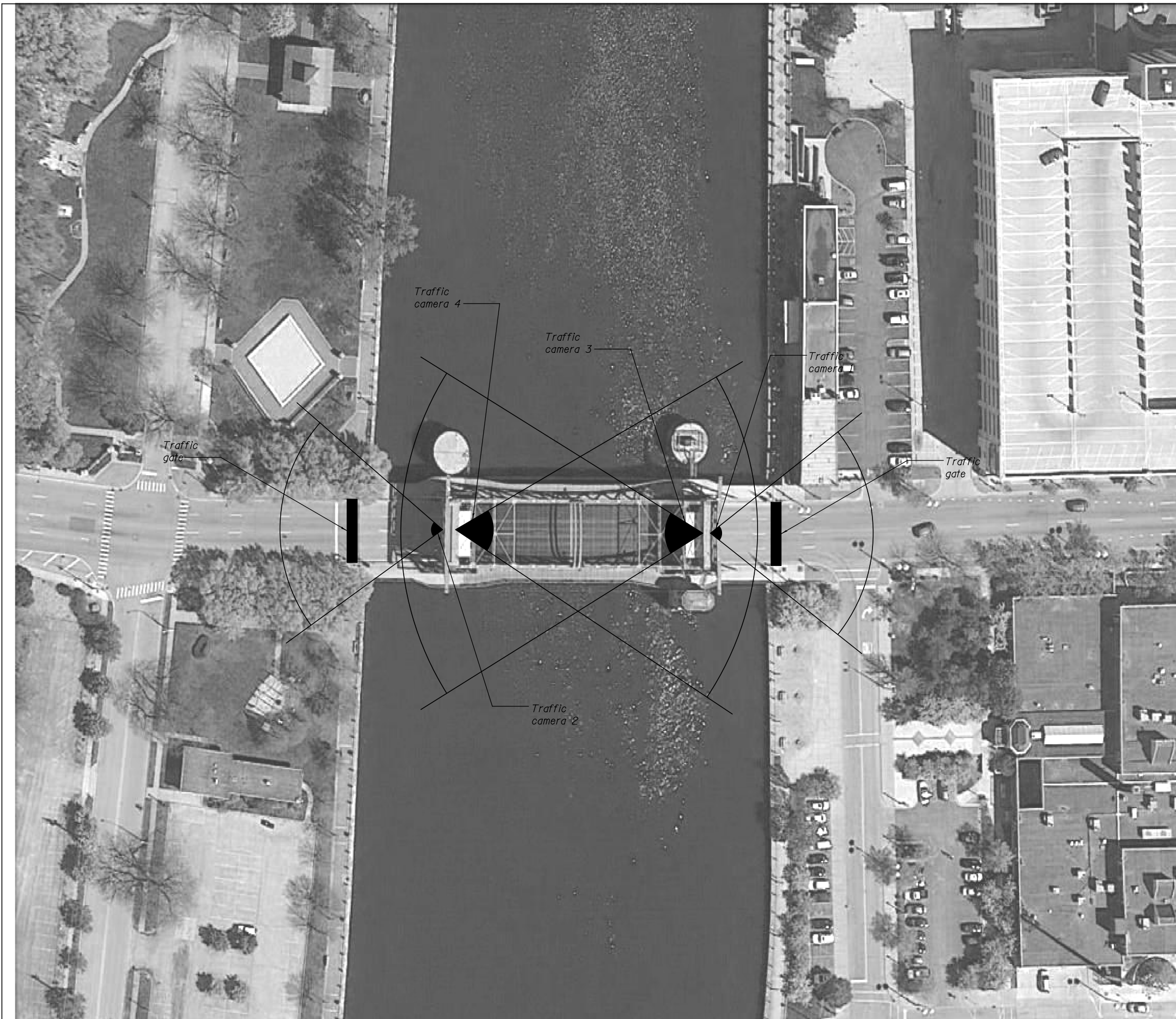
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PLOT SCALE =	DRAWN - R.L. REED	REVISED	___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - PEDESTRIAN CAMERA LAYOUT**

SHEET NO. 17 OF 39 SHEETS

JEFFERSON, Drawing 04-017				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	263
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



JEFFERSON ST. TRAFFIC CAMERA 1	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-35°

JEFFERSON ST. TRAFFIC CAMERA 2	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-35°

JEFFERSON ST. TRAFFIC CAMERA 3	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-25°

JEFFERSON ST. TRAFFIC CAMERA 4	
Camera type	Fixed traffic
Focal length (mm.)*	4.4-132mm (30x zoom)
Camera height (ft.)	60 ft
Camera tilt (°)	-25°

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.



USER NAME =	DESIGNED - K.M. GABLE	REVISED	___
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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
JEFFERSON STREET - TRAFFIC CAMERA LAYOUT
SHEET NO. 18 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	264
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

JEFFERSON, Drawing 04-018



JEFFERSON ST. UPPER PTZ CAMERA 1	
Camera type	Upper PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	27 ft
Camera tilt (°)	-90° to 5°

JEFFERSON ST. UPPER PTZ CAMERA 2	
Camera type	Upper PTZ
Focal length (mm.)	4.4-132mm (30x zoom)
Camera height (ft.)	27 ft
Camera tilt (°)	-90° to 5°



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.



USER NAME =	DESIGNED - K.M. GABLE	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
JEFFERSON STREET - UPPER PTZ CAMERA LAYOUT**

SHEET NO. 19 OF 39 SHEETS

JEFFERSON, Drawing 04-019				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	265
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

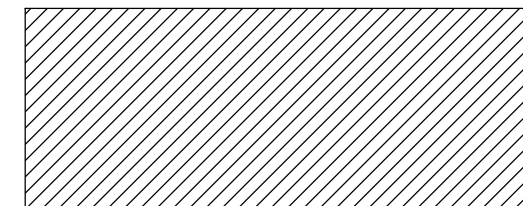


JEFFERSON ST. THERMAL CAMERA 1	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°

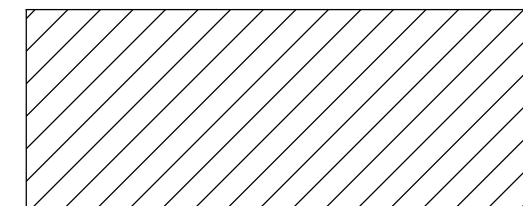
JEFFERSON ST. THERMAL CAMERA 2	
Camera type	Lower thermal (pan & tilt)
Focal length (mm.)	35 mm
Camera height (ft.)	9 ft
Camera tilt (°)	0°



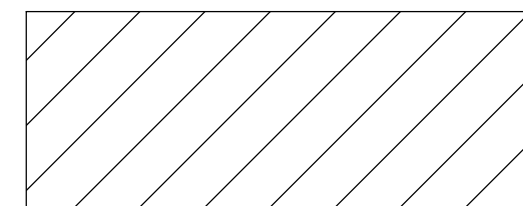
Camera height is based off of pool elevation (EL. +539.9). Location and camera height are approximate. See 'CCTV Plan and Elevation' drawings for mounting details. Camera positioning to be field adjusted at each location.



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)



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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
JEFFERSON STREET - THERMAL CAMERA LAYOUT

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	266
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



JEFFERSON ST. 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)

JEFFERSON ST. 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 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.



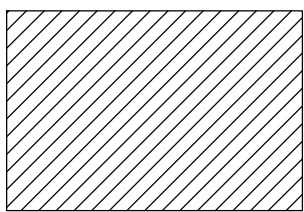
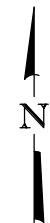
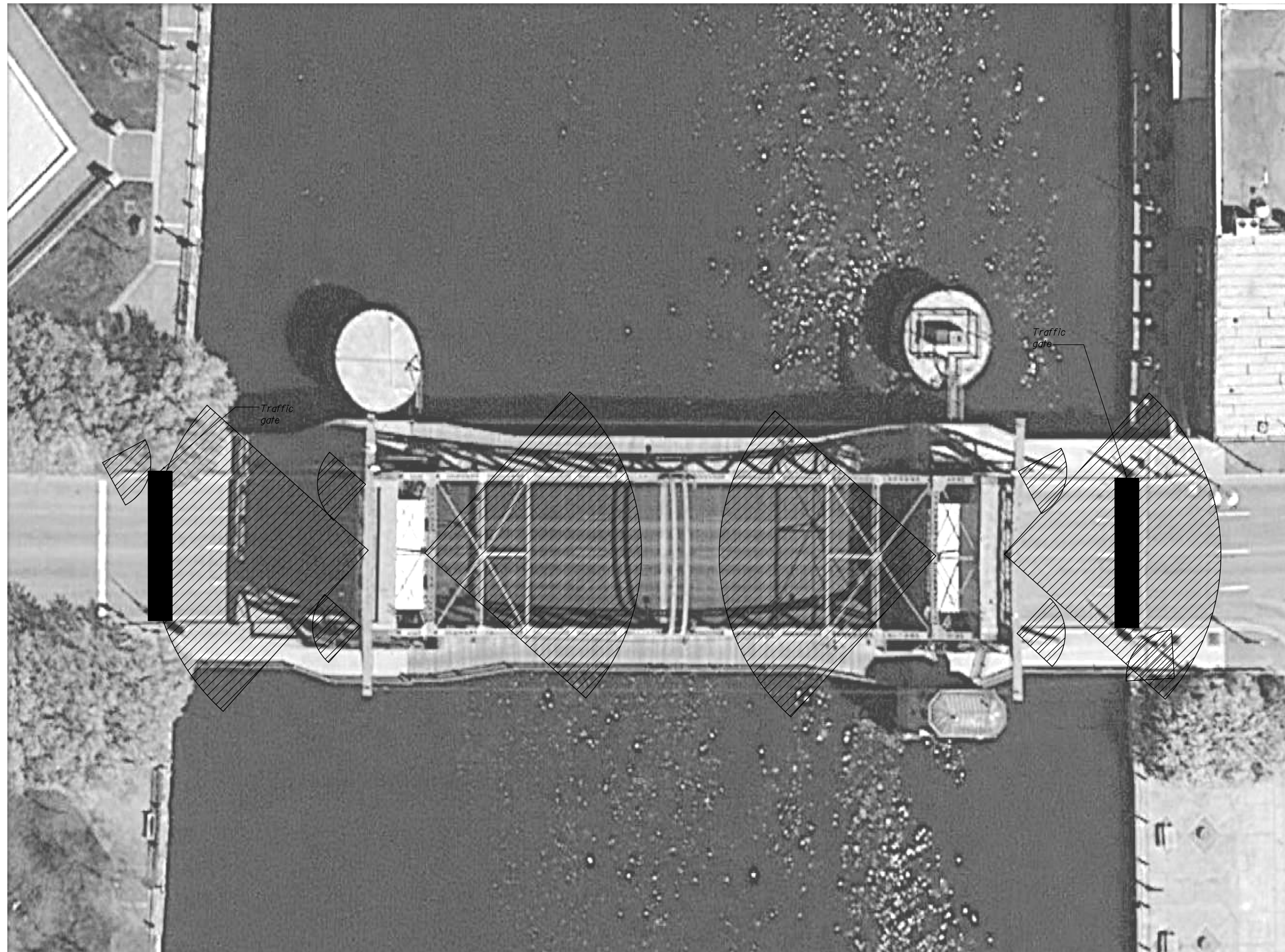
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PLOT SCALE =	DRAWN - R.L. REED	REVISED	___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

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DEPARTMENT OF TRANSPORTATION**

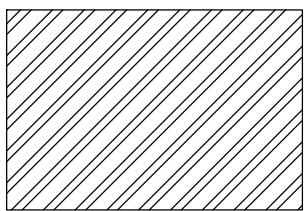
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - LOWER PTZ CAMERA LAYOUT**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	267
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

JEFFERSON, Drawing 04-021



90db audible
1-way speaker



2-way microphone range
2-way speaker



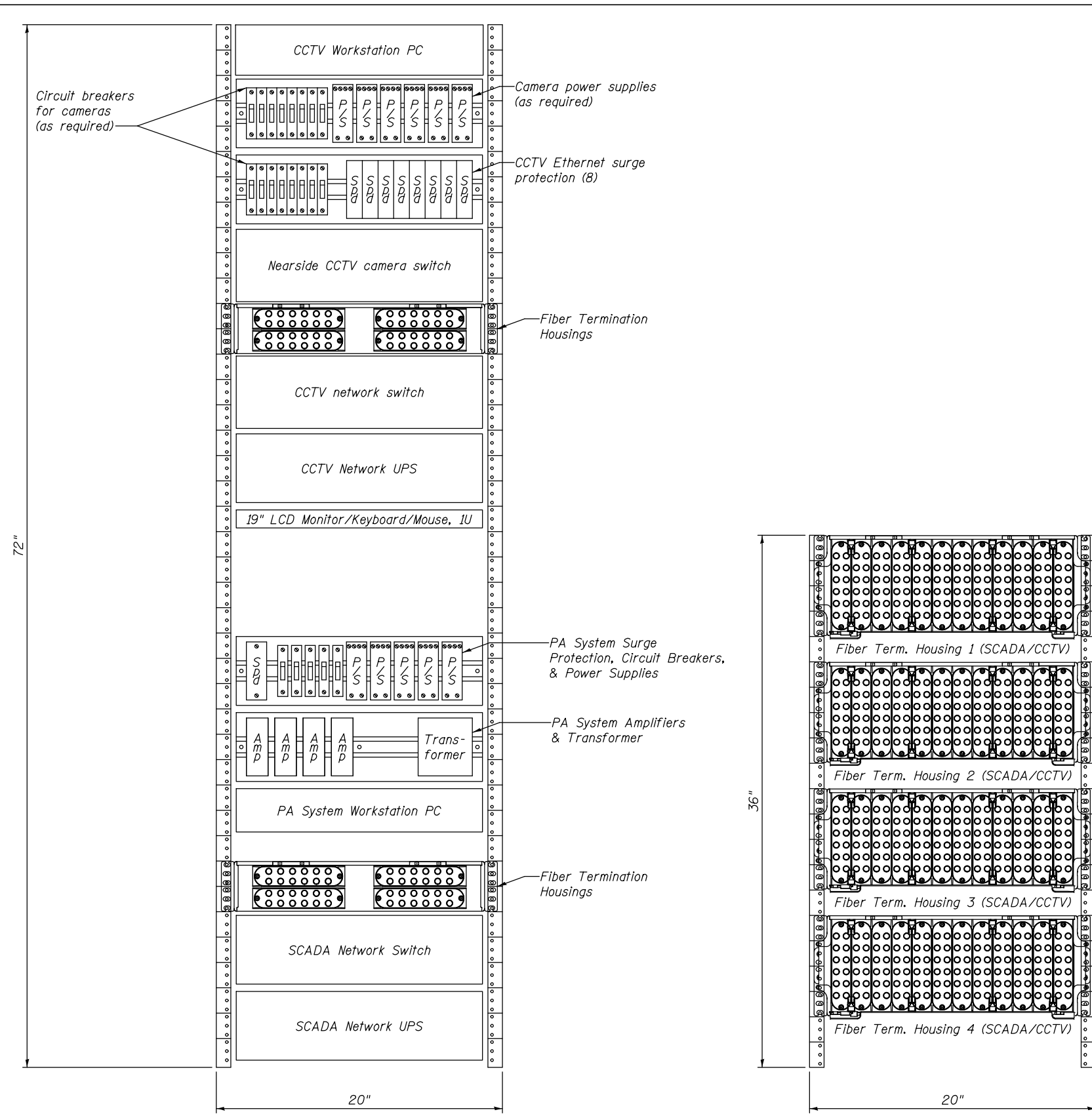
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PLOT SCALE =	DRAWN - R.L. REED	REVISED	---
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	---

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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - P.A. SPEAKER LAYOUT

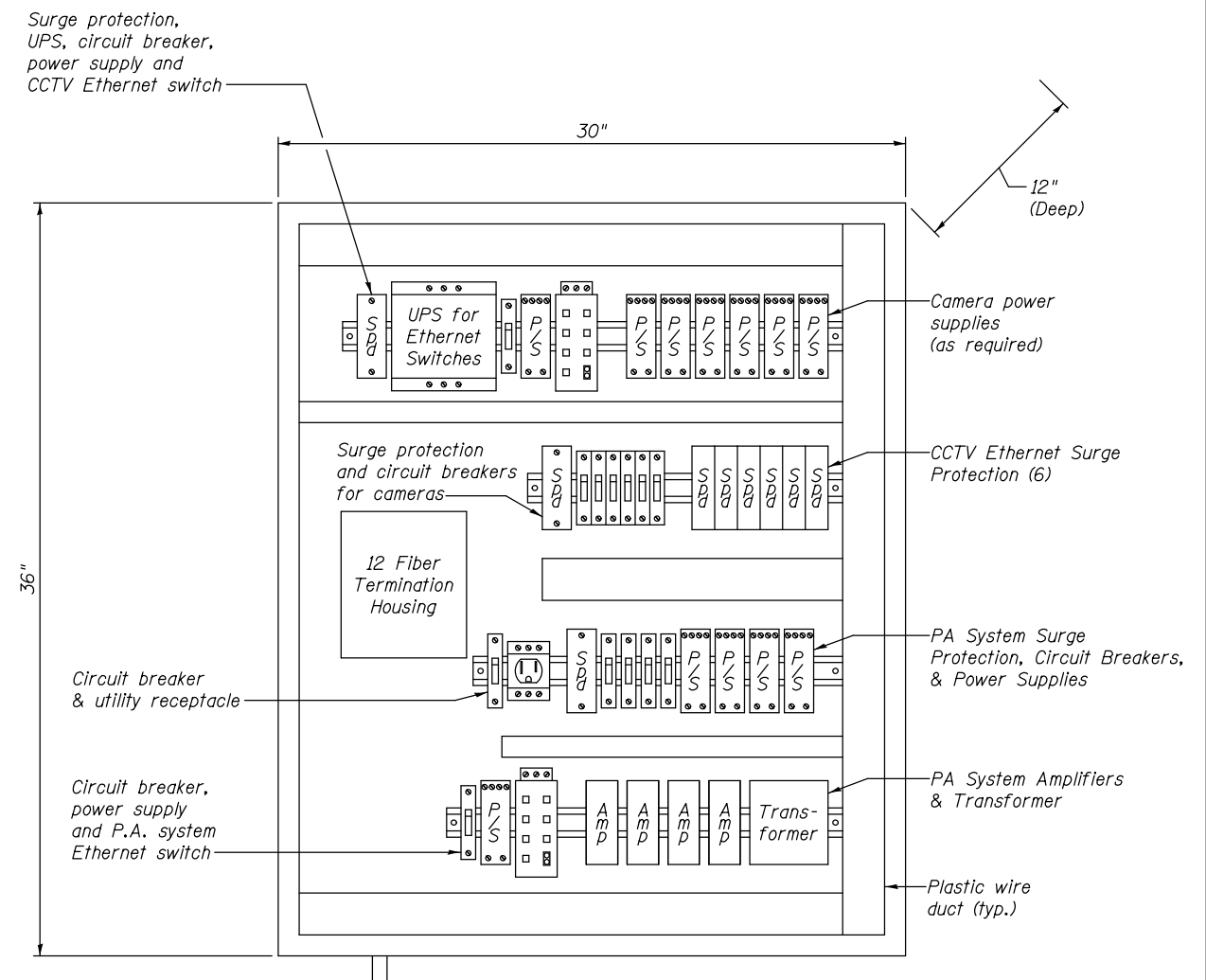
SHEET NO. 22 OF 39 SHEETS

JEFFERSON, Drawing 04-022			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 268
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 accommodate equipment serving all applicable systems.



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VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - NETWORK CABINET DETAILS
SHEET NO. 23 OF 39 SHEETS

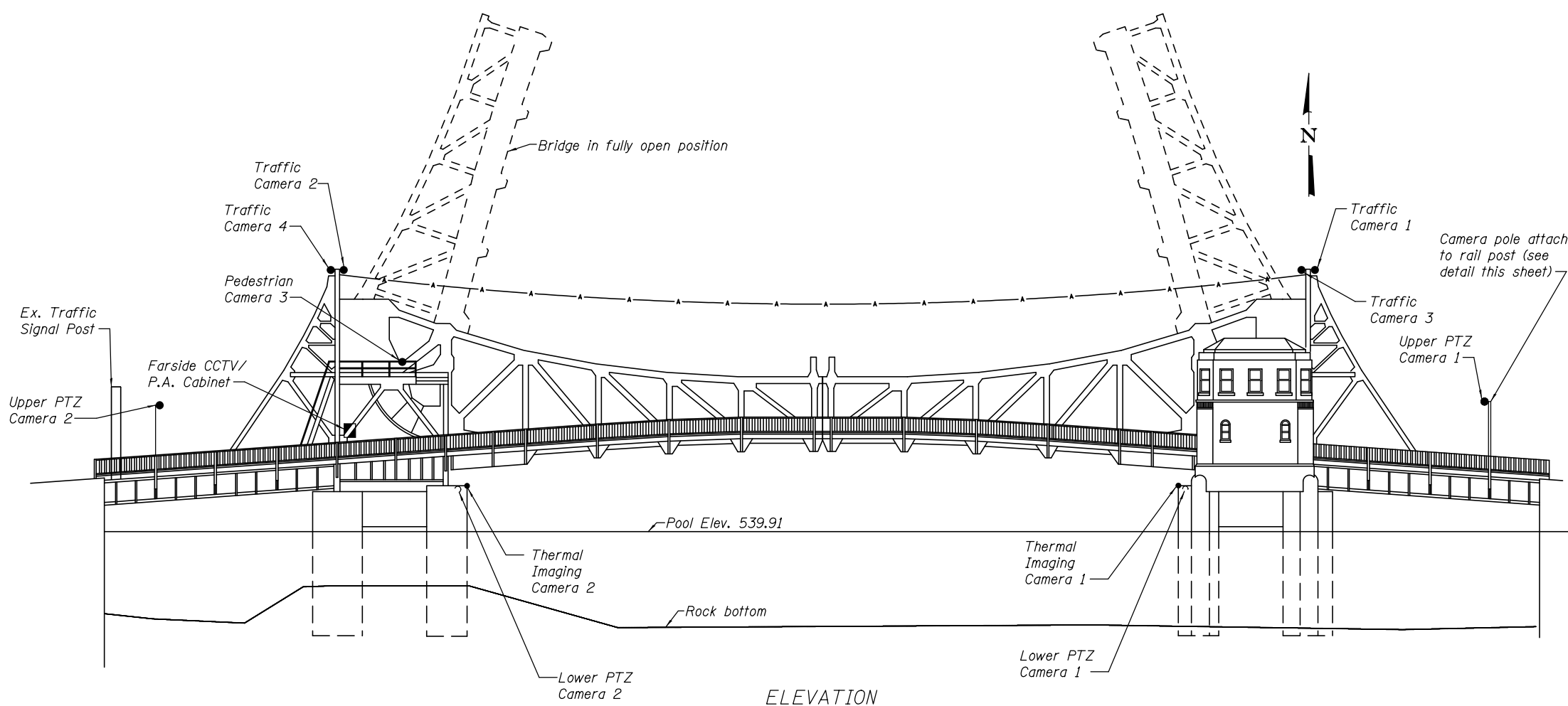
JEFFERSON, Drawing 04-023				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	269
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

CAMERA LOCATIONS AND DESCRIPTIONS

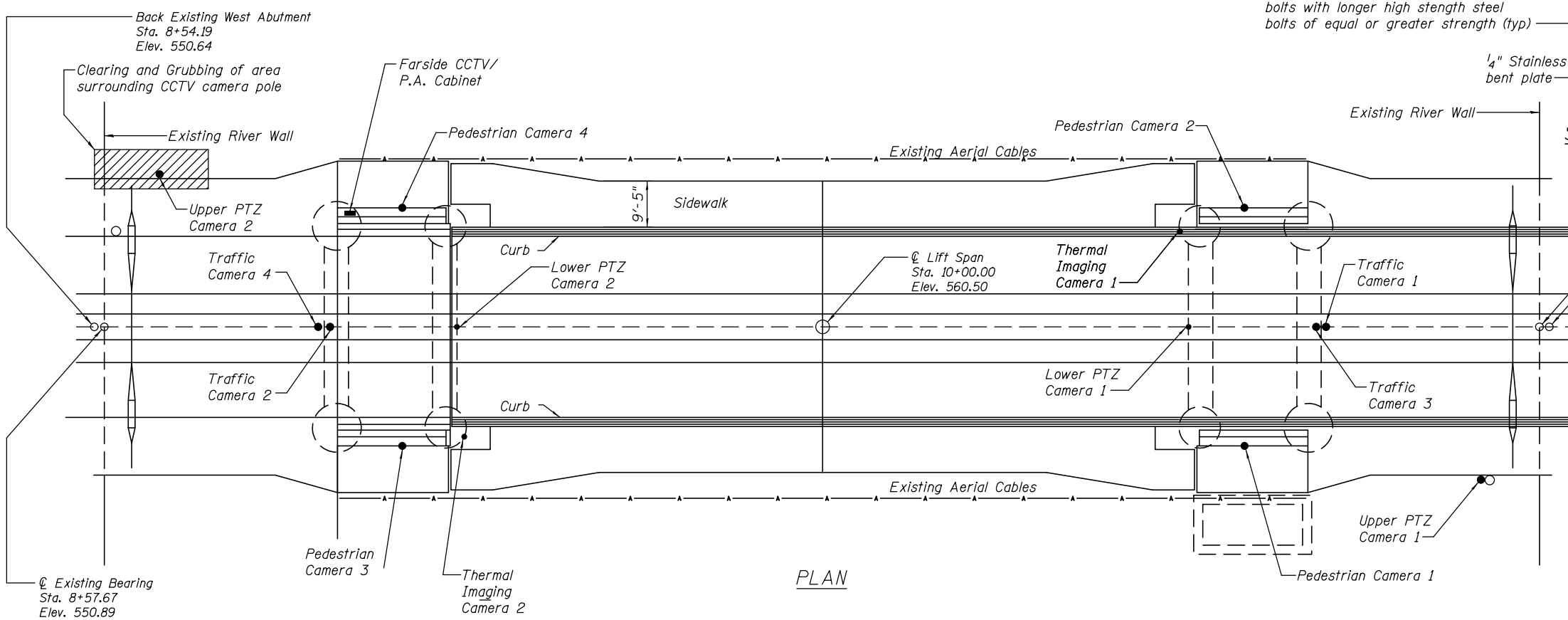
- Pedestrian Cameras 1-4 are located to be accessible from existing machinery access walkways and are aimed at the pedestrian sidewalks.
- Traffic Cameras 1-4 are located on top of the fixed span structure and are aimed at the traffic gates.
- Upper PTZ Cameras 1 and 2 are pole mounted to new pole attached to rail post. (pan-tilt-zoom type cameras)
- Lower PTZ cameras 1 and 2 are located under the bridge on the east and west pier structure respectively
- Thermal imaging cameras 1 and 2 are located under the bridge on the north east and south west bridge pier structure respectively.

NOTES:

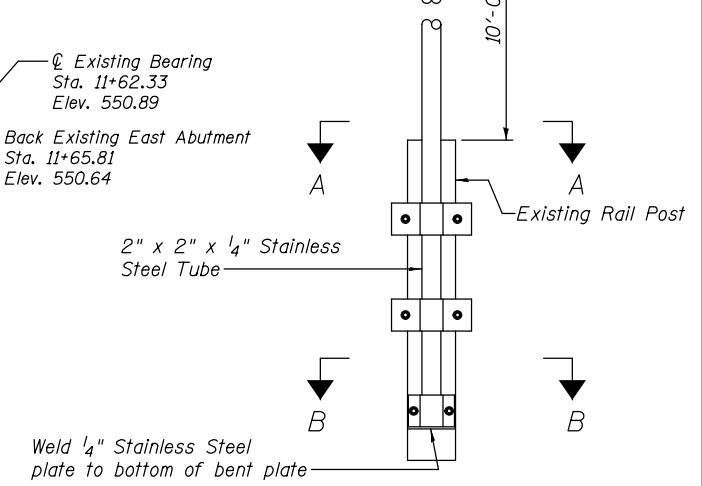
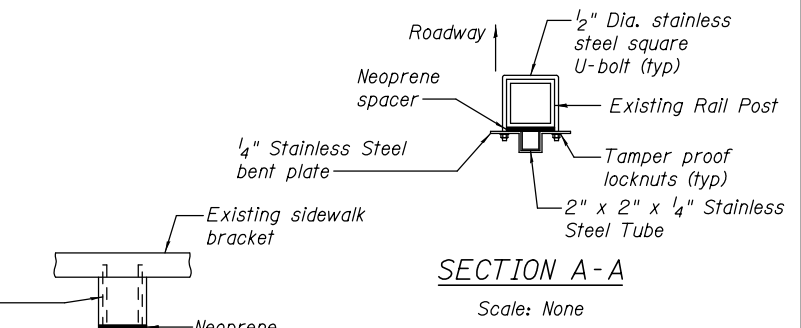
1. All locations shown are approximate. The Contractor shall field verify all camera mounting locations and submit proposed mounting locations to the Engineer for approval. All camera locations shall be clear of the movable span.
2. Lower PTZ cameras' pan and tilt range of motion shall allow viewing of the area directly under the bridge.
3. Refer to Jackson St. drawing 02-026 for typical CCTV mounting details.
4. The Contractor shall submit details for pole mounting to existing rail post, including all materials, to the Engineer for approval.



ELEVATION



PLAN



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DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - CCTV PLAN AND ELEVATION**

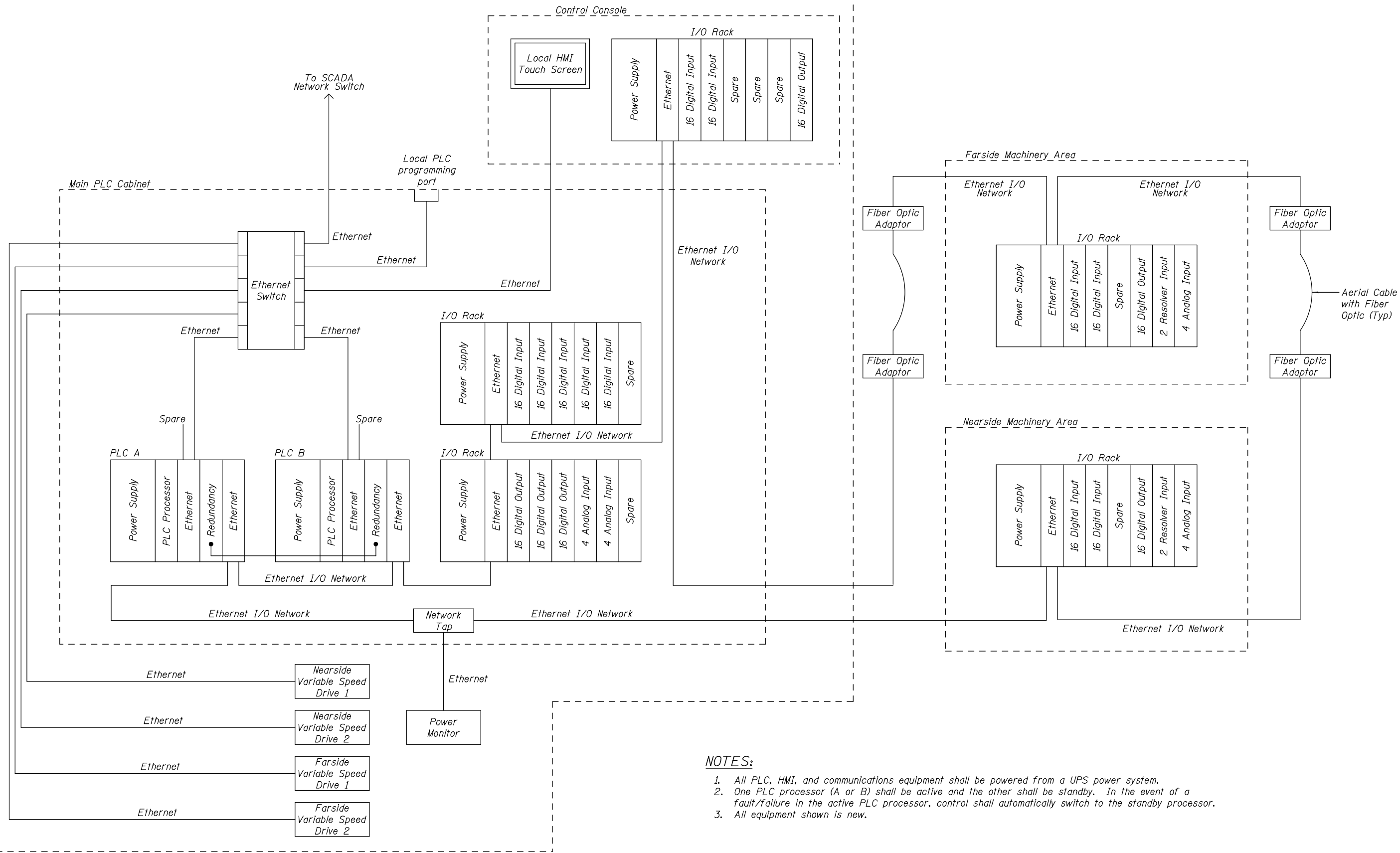
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-1	WILL	466	270
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT

JEFFERSON, Drawing 04-024

SHEET NO. 24 OF 39 SHEETS

Bridge Operator House



- 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.



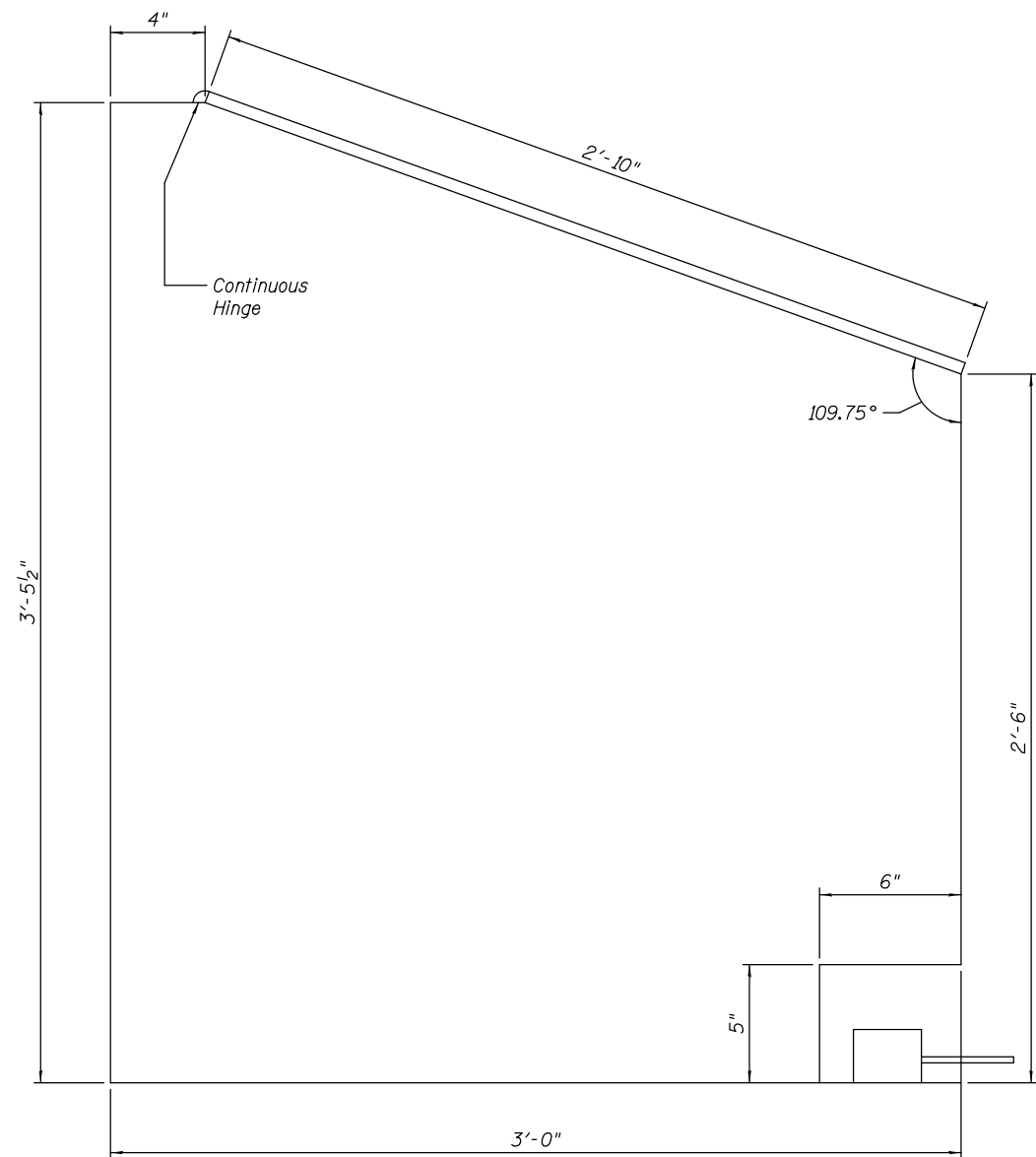
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	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

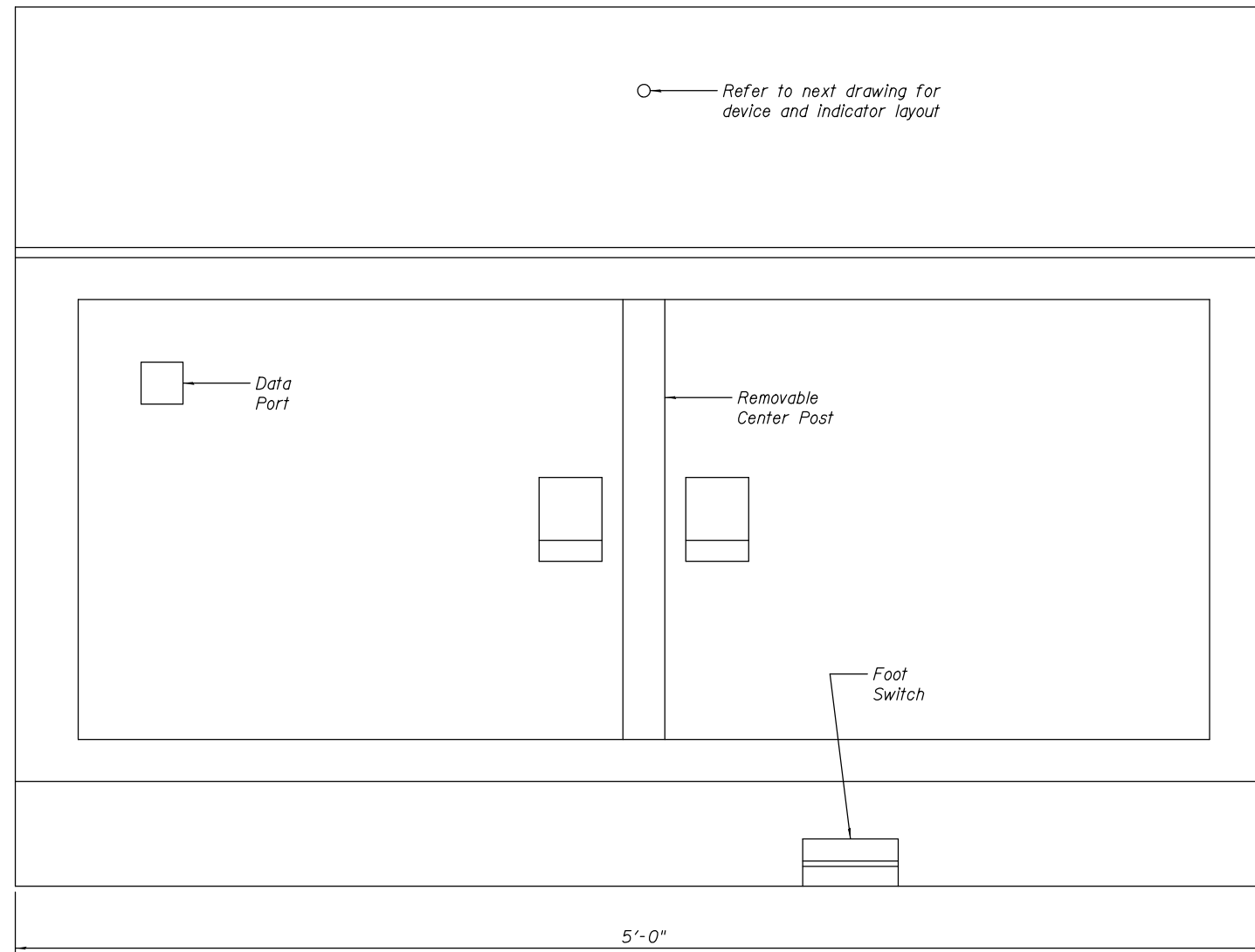
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - BRIDGE CONTROL DIAGRAM**

SHEET NO. 25 OF 39 SHEETS

JEFFERSON, Drawing 04-025				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	271
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 requirements.
2. Provide additional free standing tables for CCTV controller keyboard/joystick, marine 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, 1" minimum thickness with oil and moisture resistant 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".



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	---

**STATE OF ILLINOIS
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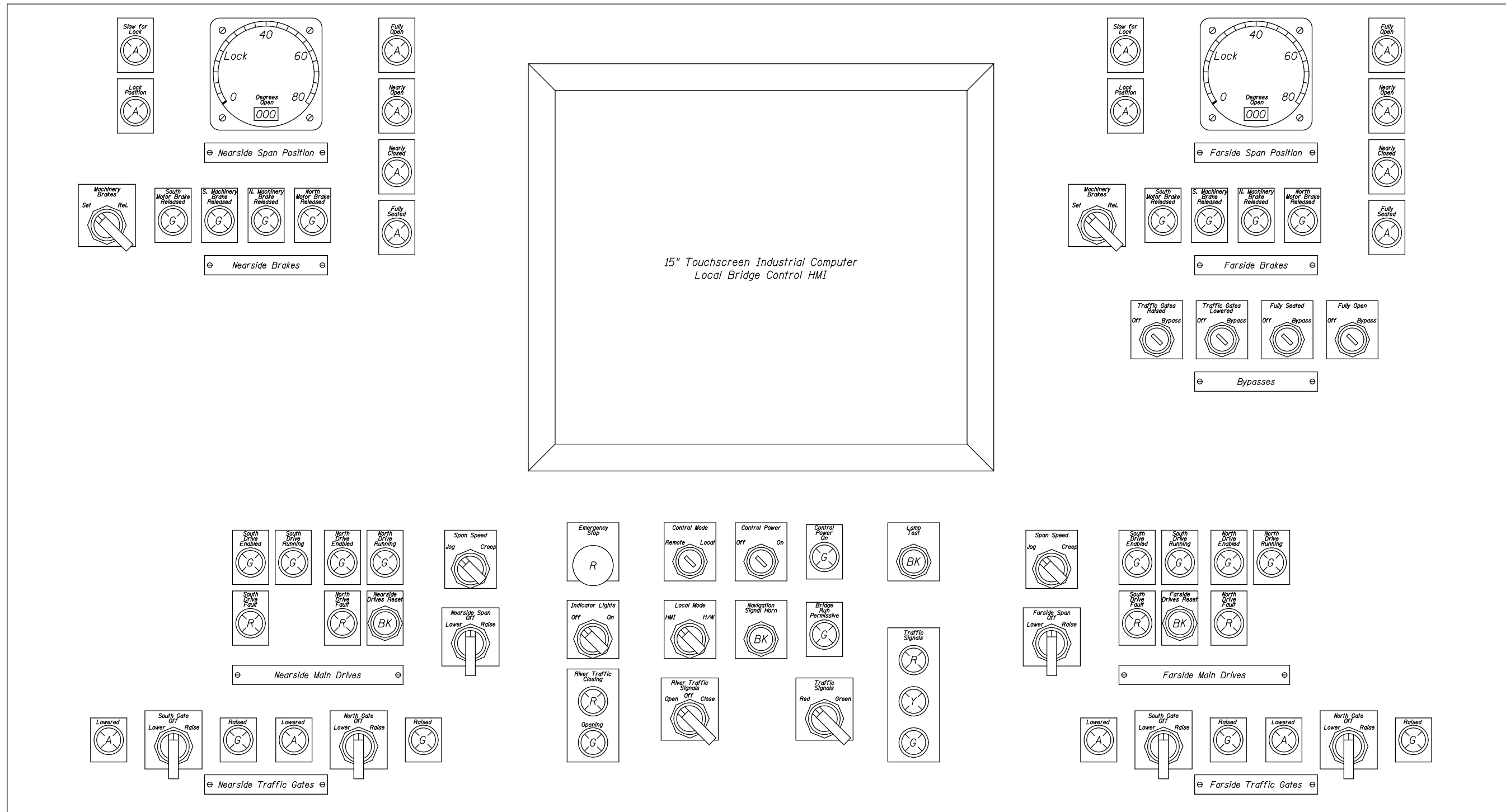
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - NEW BRIDGE CONTROL CONSOLE - 1**

SHEET NO. 26 OF 39 SHEETS

JEFFERSON, Drawing 04-026			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 272
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

5'-0"

2'-10"



CONTROL CONSOLE DEVICE AND INDICATOR LAYOUT



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
JEFFERSON STREET - NEW BRIDGE CONTROL CONSOLE - 2
SHEET NO. 27 OF 39 SHEETS

JEFFERSON, Drawing 04-027			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 273
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

GROUP 100 EQUIPMENT

<i>Item No.</i>	<i>Quantity</i>	<i>Item Name</i>	<i>Description</i>
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	N/A		
E105	4	100A Motor Disconnect Switch	Main drive motors
E106	8	30A Motor Disconnect Switch	Brake motors
E107	1	Transformer	Dry type transformer, 50 kVA, single phase
E108	1	120/240V Panelboard, 42 Circuit	Replacement panelboard with breakers and accessories

GROUP 200 EQUIPMENT

<i>Item No.</i>	<i>Quantity</i>	<i>Item Name</i>	<i>Description</i>
E201	4	Traffic Gate Warning Gong	For existing traffic gates
E202	2	Machinery Warning Horn/Light	Machinery area startup warning
E203	2	Outdoor Warning Horn	Operator house exterior warning
E204	N/A		
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	18	Magnetic Proximity Switch	Span fully seated and brake position sensing
E209	N/A		
E210	6	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.



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

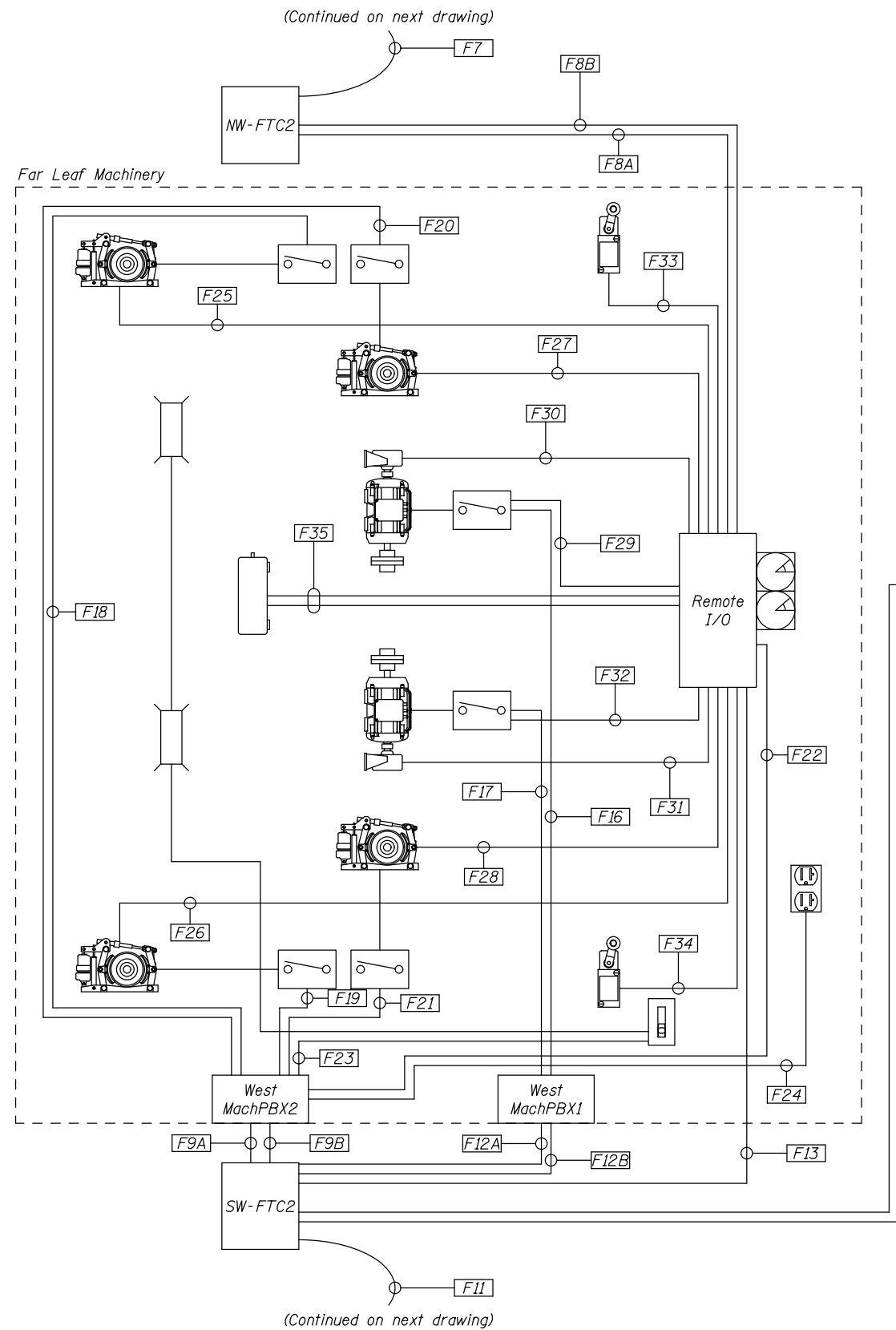
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET – ELECTRICAL EQUIPMENT SCHEDULE**

SHEET NO. 28 OF 39 SHEETS

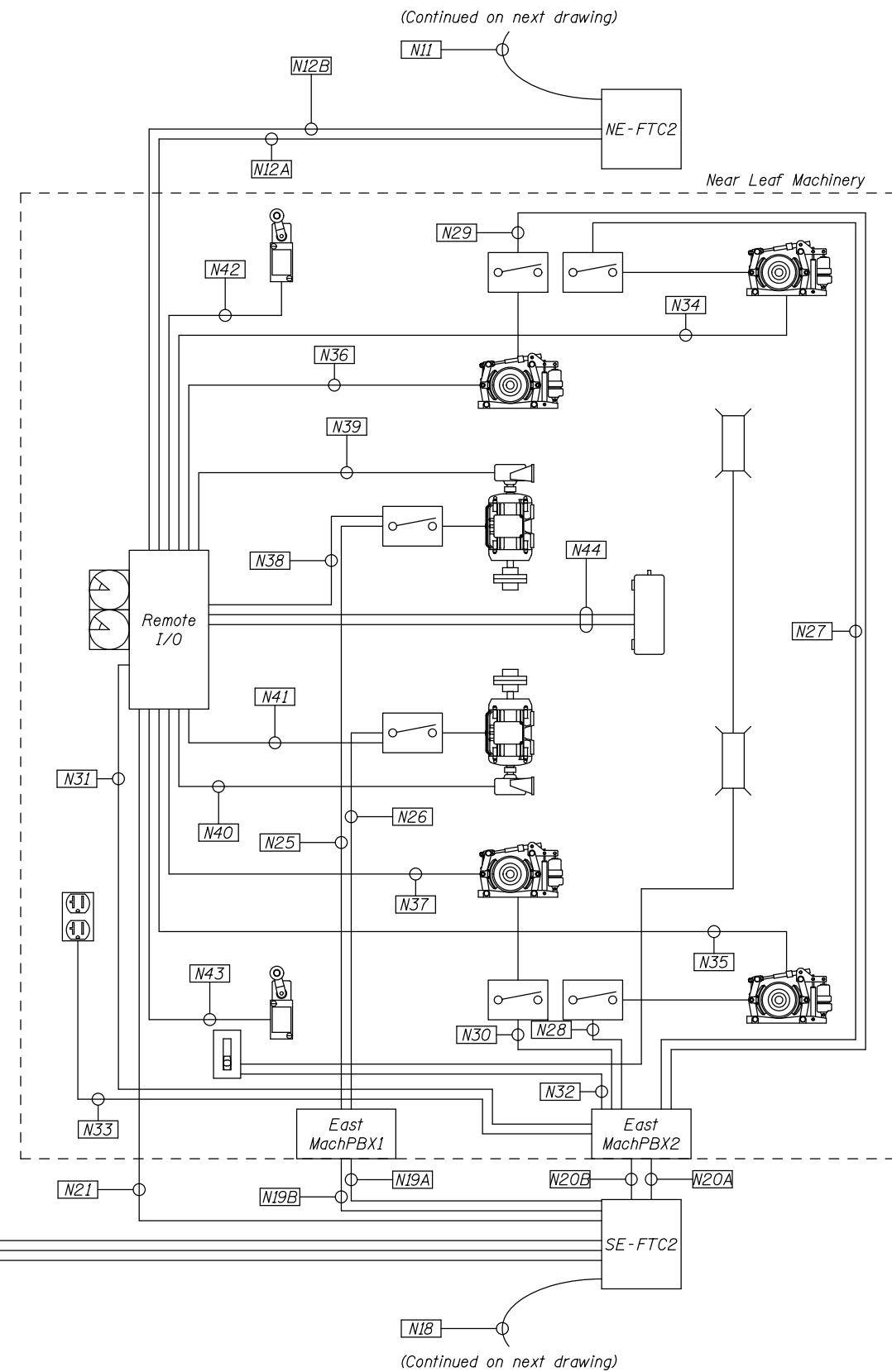
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0607	2011-045-I	WILL	466	274
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

JEFFERSON, Drawing 04-028



Far/West Leaf

Near/East Leaf



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.



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

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

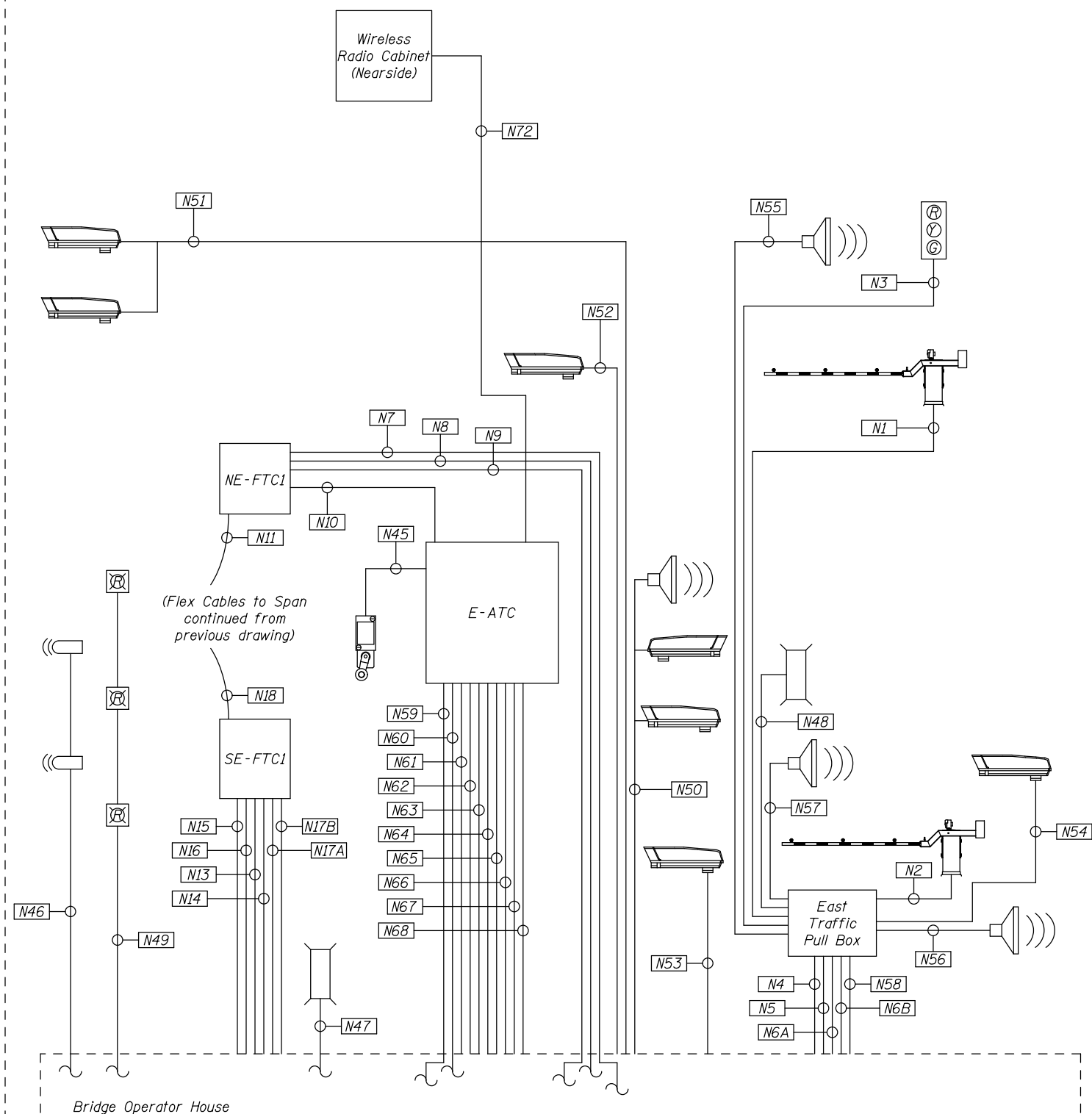
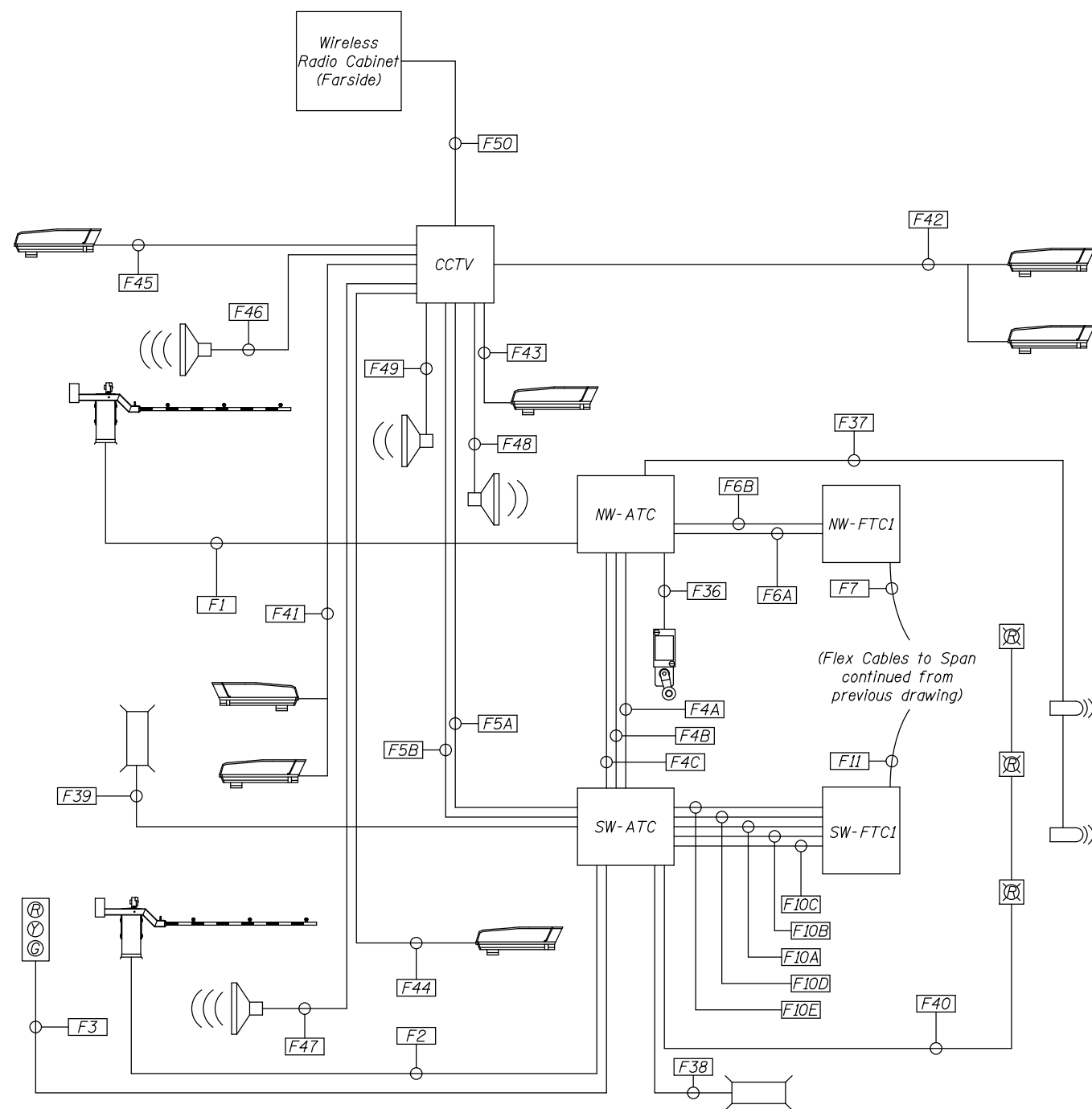
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - CONDUIT DIAGRAM - 1**

SHEET NO. 29 OF 39 SHEETS

JEFFERSON, Drawing 04-029			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
0607	2011-045-1	WILL	466
			SHEET NO. 275
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			

Far/West Leaf

Near/East Leaf



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.



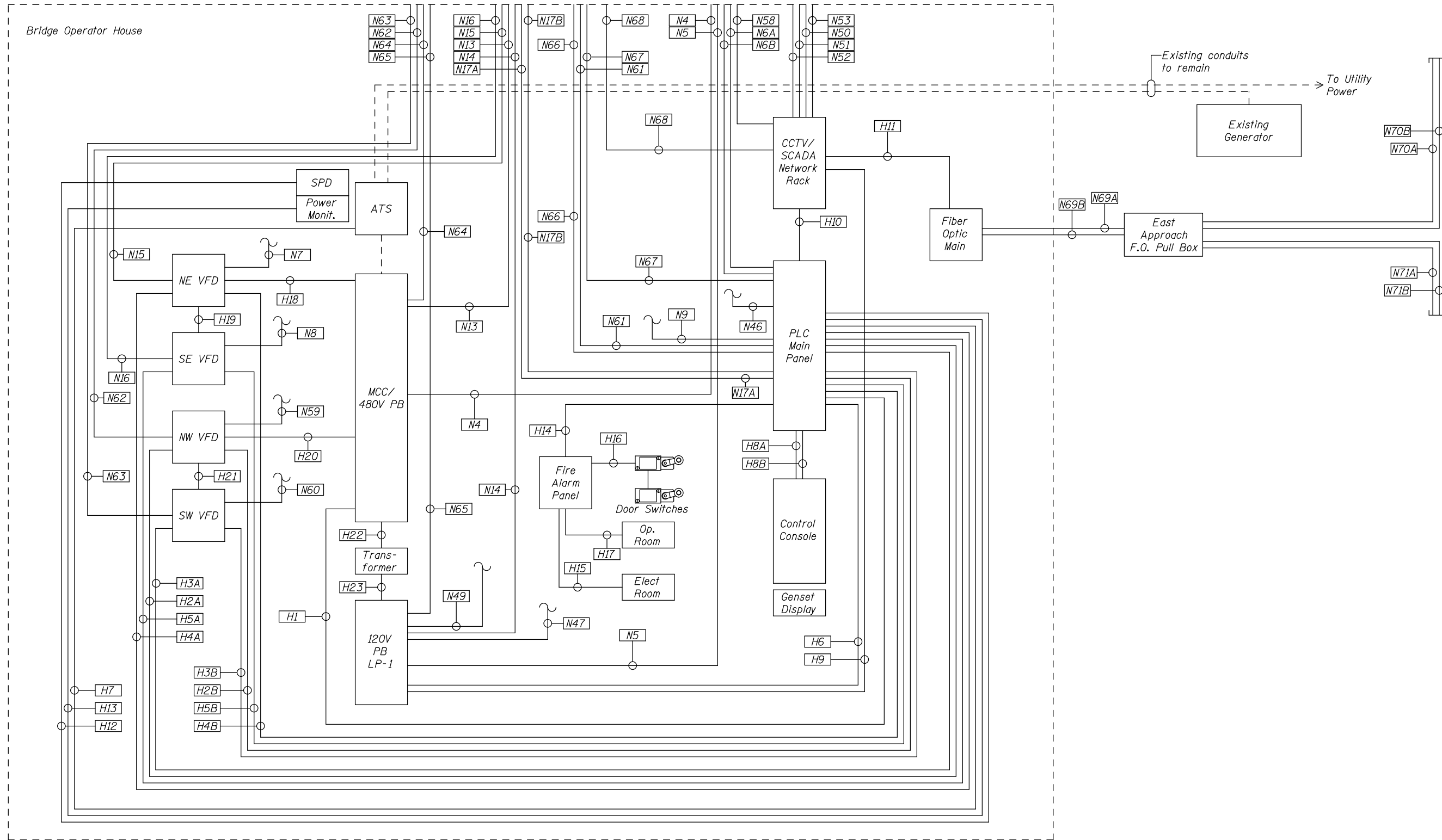
USER NAME =	DESIGNED - R.I. PETERS	REVISED -
	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - CONDUIT DIAGRAM - 2**

SHEET NO. 30 OF 39 SHEETS

JEFFERSON, Drawing 04-030				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0607	2011-045-1	WILL	466	276
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.



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
JEFFERSON STREET - CONDUIT DIAGRAM - 3**

SHEET NO. 31 OF 39 SHEETS

JEFFERSON, Drawing 04-031				
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0607	2011-045-I	WILL	466	277
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

JEFFERSON STREET FAR SIDE CONDUIT SCHEDULE								
Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
F1	NW Aerial Cables Terminal Cabinet	NW Traffic Gate	PVC RMC	2"	110	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
						GND	1	10AWG
F2	SW Aerial Cables Terminal Cabinet	SW Traffic Gate	PVC RMC	2"	110	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
						GND	1	10AWG
F3	SW Aerial Cables Terminal Cabinet	SW Traffic Signal	PVC RMC	1"	110	120 P	4	10AWG
						GND	1	10AWG
F4A	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1 1/2"	30	480 P	3	10AWG
						120 P	9	10AWG
						SP	5	10AWG
F4B	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1 1/2"	30	120 C	5	12AWG
						SP	5	12AWG
						GND	1	12AWG
F4C	NW Aerial Cables Terminal Cabinet	SW Aerial Cables Terminal Cabinet	RMC	1"	30	FO	1	12 Fiber
F5A	SW Aerial Cables Terminal Cabinet	Farside CCTV/P.A. Cabinet	RMC	1 1/2"	80	120P	2	6AWG
						120P	2	10AWG
						SP	4	10AWG
						GND	1	6AWG
F5B	SW Aerial Cables Terminal Cabinet	Farside CCTV/P.A. Cabinet	RMC	1"	80	FO	2	12 Fiber
F6A	NW Aerial Cables Terminal Cabinet	NW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
F6B	NW Aerial Cables Terminal Cabinet	NW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1"	60	Ethernet	1	CAT-6
F7	NW Flexible Cable Terminal Cabinet 1 (fixed span)	NW Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	3"	20	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
						Ethernet	1	CAT-6
F8A	NW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	2 1/2"	40	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
F8B	NW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
F9A	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 2	RMC	1 1/2"	35	480 P	12	10AWG
						SP	5	10AWG
						GND	1	2AWG
F9B	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 2	RMC	1 1/2"	35	120 P	12	10AWG
						SP	5	10AWG
						GND	1	10AWG
F10A	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	480 VFD	1	(3) 1AWG
F10B	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	2 1/2"	60	480 VFD	1	(3) 1AWG
F10C	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1"	60	Ethernet	1	CAT-6
F10D	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1 1/2"	60	480 P	12	10AWG
						SP	5	10AWG
						GND	4	10AWG

JEFFERSON STREET FAR SIDE CONDUIT SCHEDULE (CONTINUED)								
Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
F10E	SW Aerial Cables Terminal Cabinet	SW Flexible Cable Terminal Cabinet 1 (fixed span)	RMC	1 1/2"	60	120 P	10	10AWG
						SP	5	10AWG
						GND	5	10AWG
F11	SW Flexible Cable Terminal Cabinet 1 (fixed span)	SW Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	4"	20	480 VFD	2	(3) 1AWG
						480 P	12	10AWG
						120 P	15	10AWG
						SP	9	10AWG
						GND	1	2AWG
F12A	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD		(3) 1AWG
F12B	SW Flexible Cable Terminal Cabinet 2 (movable span)	West Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 1AWG
F13	SW Flexible Cable Terminal Cabinet 2 (movable span)	West PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
F14	SW Flexible Cable Terminal Cabinet 2 (movable span)	Center Span Navigation Lights	PVC RMC	3/4"	225	120 P	3	10AWG
						GND	1	10AWG
F15	SW Flexible Cable Terminal Cabinet 2 (movable span)	Farside Roadway Lights	RMC	3/4"	125	120 P	2	10AWG
						GND	1	10AWG
F16	West Machinery Pull Box 1	NW Motor Disconnect	RMC	2 1/2"	20	480 VFD	1	(3) 1AWG
F17	West Machinery Pull Box 1	SW Motor Disconnect	RMC	2 1/2"	15	480 VFD	1	(3) 1AWG
F18	West Machinery Pull Box 2	NW Machinery Brake Disconnect	RMC	3/4"	30	480 P	3	10AWG
						GND	1	10AWG
F19	West Machinery Pull Box 2	SW Machinery Brake Disconnect	RMC	3/4"	10	480 P	3	10AWG
						GND	1	10AWG
F20	West Machinery Pull Box 2	NW Motor Brake Disconnect	RMC	3/4"	30	480 P	3	10AWG
						GND	1	10AWG
F21	West Machinery Pull Box 2	SW Motor Brake Disconnect	RMC	3/4"	10	480 P	3	10AWG
						GND	1	10AWG
F22	West Machinery Pull Box 2	West PLC I/O Cabinet	RMC	3/4"	20	120 P	6	10AWG
						GND	3	10AWG
F23	West Machinery Pull Box 2	Farside Machinery Room Lights	RMC	3/4"	45	120 P	2	10AWG
						GND	1	10AWG
F24	West Machinery Pull Box 2	Farside Machinery Room Receptacle	RMC	3/4"	20	120 P	2	10AWG
						GND	1	10AWG
F25	West PLC I/O Cabinet	NW Machinery Brake	RMC	3/4"	15	120 C	4	12AWG
						GND	1	12AWG
F26	West PLC I/O Cabinet	SW Machinery Brake	RMC	3/4"	15	120 C	4	12AWG
						GND	1	12AWG
F27	West PLC I/O Cabinet	NW Motor Brake	RMC	3/4"	15	120 C	4	12AWG
						GND	1	12AWG
F28	West PLC I/O Cabinet	SW Motor Brake	RMC	3/4"	15	120 C	4	12AWG
						GND	1	12AWG
F29	West PLC I/O Cabinet	NW Motor & Disconnect	RMC	3/4"	15	120 P	2	12AWG
						120 C	3	12AWG
F30	West PLC I/O Cabinet	NW Motor Encoder	RMC	1"	15	Instrum.	4	2-Pair
						GND	1	12AWG
F31	West PLC I/O Cabinet	SW Motor Encoder	RMC	1"	15	Instrum.	4	2-Pair
						GND	1	12AWG
F32	West PLC I/O Cabinet	SW Motor & Disconnect	RMC	3/4"	15	120 P	2	12AWG
						120 C	3	12AWG
						GND	1	12AWG
F33	West PLC I/O Cabinet	NW Machinery Door Switch	RMC	3/4"	15	120 C	2	12AWG
						GND	1	12AWG
F34	West PLC I/O Cabinet	SW Machinery Door Switch	RMC	3/4"	15	120 C	2	12AWG
						GND	1	12AWG
F35	West PLC I/O Cabinet	SW Rotary Cam Limit Switch	RMC	1 1/2"	15	120 C	9	12AWG
						Instrum.	1	6-Pair
						GND	1	12AWG

- NOTES:
- Fiber optic conduit bend radius shall be greater than minimum bend radius of fiber optic cable.
 - Conduit F3 typical from NW Aerial Cables Terminal Cabinet to NW Traffic Signal.

JEFFERSON STREET FARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
F36	NW Aerial Cables Terminal Cabinet	West Fully Seated Limit Switch	RMC	3/4"	30	120 C	2	12AWG
F37	NW Aerial Cables Terminal Cabinet	Farside Boat Detection	PVC RMC	3/4"	135	GND	1	12AWG
						12VDC	2	12AWG
F38	SW Aerial Cables Terminal Cabinet	West Fixed Structure Lights	RMC	3/4"	75	120 P	2	10AWG
						GND	1	10AWG
F39	SW Aerial Cables Terminal Cabinet	West Approach Roadway Lights	RMC	3/4"	40	120 P	2	10AWG
						GND	1	10AWG
F40	SW Aerial Cables Terminal Cabinet	West Pier Navigation Lights	PVC RMC	3/4"	195	120 P	2	10AWG
						GND	1	10AWG
F41	Farside CCTV/P.A. Cabinet	West Traffic Cameras	PVC RMC	1"	60	Power	4	12AWG
						Ethernet	2	CAT-6
						GND	2	12AWG
F42	Farside CCTV/P.A. Cabinet	West Thermal and Lower PTZ Cameras	PVC RMC	1"	100	Power	4	12AWG
						Ethernet	2	CAT-6
						GND	2	12AWG
F43	Farside CCTV/P.A. Cabinet	NW Pedestrian Camera	RMC	3/4"	40	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F44	Farside CCTV/P.A. Cabinet	SW Pedestrian Camera	RMC	3/4"	110	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F45	Farside CCTV/P.A. Cabinet	West Upper PTZ Camera 2	RMC	3/4"	190	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
F46	Farside CCTV/P.A. Cabinet	NW Gate P.A. Speaker	PVC RMC	3/4"	100	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F47	Farside CCTV/P.A. Cabinet	SW Gate P.A. Speaker	PVC RMC	3/4"	150	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F48	Farside CCTV/P.A. Cabinet	NW Approach P.A. Speaker	PVC RMC	3/4"	200	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F49	Farside CCTV/P.A. Cabinet	West One-Way P.A. Speakers	RMC	3/4"	150	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
F50	Farside CCTV/P.A. Cabinet	Wireless Radio Cabinet (Farside)	RMC	1 1/2"	100	120 P	4	10AWG
						Ethernet	2	CAT-6
						GND	2	10AWG

JEFFERSON STREET NEARSIDE CONDUIT SCHEDULE

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N1	East Approach Traffic Pull Box	NE Traffic Gate	PVC RMC	2"	85	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
						GND	1	10AWG
N2	East Approach Traffic Pull Box	SE Traffic Gate	PVC RMC	2"	30	480 P	3	10AWG
						120 P	9	10AWG
						SP	3	10AWG
						120 C	5	12AWG
						SP	4	12AWG
N3	East Approach Traffic Pull Box	NE Traffic Signal	PVC RMC	1"	85	120 P	4	10AWG
						GND	1	10AWG
N4	East Approach Traffic Pull Box	MCC	RMC	1 1/2"	50	480 P	6	10AWG
						SP	5	10AWG
						GND	2	10AWG
N5	East Approach Traffic Pull Box	LA Panelboard	RMC	1 1/2"	50	480 P	10	10AWG
						SP	2	10AWG
						GND	5	10AWG
						GND	5	10AWG

JACKSON STREET NEARSIDE CONDUIT SCHEDULE

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N6A	East Approach Traffic Pull Box	PLC Main Panel	RMC	1 1/2"	50	120 P	10	10AWG
						SP	5	10AWG
						GND	1	10AWG
N6B	East Approach Traffic Pull Box	PLC Main Panel	RMC	1"	50	120 C	15	12AWG
N7	NE Flexible Cable Terminal Cabinet 1 (fixed span)	NE VFD Cabinet	RMC	1 1/2"	115	120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N8	NE Flexible Cable Terminal Cabinet 1 (fixed span)	SE VFD Cabinet	RMC	1 1/2"	115	120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N9	NE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	2"	115	120 C	23	12AWG
						SP	11	12AWG
						Instrum.	1	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N10	NE Flexible Cable Terminal Cabinet 1 (fixed span)	East Aerial Cables Terminal Cabinet	RMC	1"	60	Ethernet	1	CAT-6
N11	NE Flexible Cable Terminal Cabinet 1 (fixed span)	NE Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	3"	20	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
						SP	2	2-Pair
						GND	1	6AWG
N12A	NE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	2 1/2"	40	120 C	29	12AWG
						SP	11	12AWG
						Instrum.	9	2-Pair
N12B	NE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
						SP	11	12AWG
						Instrum.	9	2-Pair
N13	SE Flexible Cable Terminal Cabinet 1 (fixed span)	MCC	RMC	1 1/2"	55	480 P	12	10AWG
						SP	5	10AWG
						GND	1	2AWG
N14	SE Flexible Cable Terminal Cabinet 1 (fixed span)	LA Panelboard	RMC	2 1/2"	55	120 P	12	10AWG
						SP	5	10AWG
						GND	1	2AWG
N15	SE Flexible Cable Terminal Cabinet 1 (fixed span)	NE VFD Cabinet	RMC	2 1/2"	55	480 VFD	1	(3) 2AWG
N16	SE Flexible Cable Terminal Cabinet 1 (fixed span)	SE VFD Cabinet	RMC	2 1/2"	55	480 VFD	1	(3) 2AWG
N17A	SE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	1"	55	Ethernet	1	CAT-6
N17B	SE Flexible Cable Terminal Cabinet 1 (fixed span)	PLC Main Panel	RMC	3/4"	55	120 P	3	10AWG
						GND	1	10AWG
N18	SE Flexible Cable Terminal Cabinet 1 (fixed span)	SE Flexible Cable Terminal Cabinet 2 (movable span)	FLEX	4"	20	480 VFD	2	(3) 2AWG
						480 P	12	10AWG
						120 P	20	10AWG
						SP	9	10AWG
						GND	1	2AWG
N19A	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 1	RMC	2 1/2"	35	480 VFD	1	(3) 2AWG
						Ethernet	1	CAT-6

NOTES:

- Conduit N3 typical to SE Traffic Signal.



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - CONDUIT TABULATION - 2
SHEET NO. 33 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0607	2011-045-I	WILL	466	279
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				

JACKSON STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N19B	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 1	RMC	2½"	35	480 VFD	1	(3) 2AWG
N20A	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 2	RMC	1½"	35	480 P	12	10AWG
						SP	5	10AWG
						GND	4	10AWG
N20B	SE Flexible Cable Terminal Cabinet 2 (movable span)	East Machinery Pull Box 2	RMC	1½"	35	120 P	10	10AWG
						SP	5	10AWG
						GND	5	10AWG
N21	SE Flexible Cable Terminal Cabinet 2 (movable span)	East PLC I/O Cabinet	RMC	1"	40	Ethernet	1	CAT-6
N22	SE Flexible Cable Terminal Cabinet 2 (movable span)	Center Span Navigation Lights	PVC RMC	¾"	225	120 P	3	10AWG
						GND	1	10AWG
N23	SE Flexible Cable Terminal Cabinet 2 (movable span)	Nearside Roadway Lights	RMC	¾"	190	120 P	2	10AWG
						GND	1	10AWG
N24	SE Flexible Cable Terminal Cabinet 2 (movable span)	River Signals	RMC	¾"	125	120 P	5	10AWG
						GND	1	10AWG
N25	East Machinery Pull Box 1	NE Motor Disconnect	RMC	2½"	20	480 VFD	1	(3) 2AWG
N26	East Machinery Pull Box 1	SE Motor Disconnect	RMC	2½"	15	480 VFD	1	(3) 2AWG
N27	East Machinery Pull Box 2	NE Machinery Brake Disconnect	RMC	¾"	30	480 P	3	10AWG
						GND	1	10AWG
N28	East Machinery Pull Box 2	SE Machinery Brake Disconnect	RMC	¾"	10	480 P	3	10AWG
						GND	1	10AWG
N29	East Machinery Pull Box 2	NE Motor Brake Disconnect	RMC	¾"	30	480 P	3	10AWG
						GND	1	10AWG
N30	East Machinery Pull Box 2	SE Motor Brake Disconnect	RMC	¾"	10	480 P	3	10AWG
						GND	1	10AWG
N31	East Machinery Pull Box 2	East PLC I/O Cabinet	RMC	¾"	20	120 P	6	10AWG
						GND	3	10AWG
N32	East Machinery Pull Box 2	Nearside Machinery Room Lights	RMC	¾"	45	120 P	2	10AWG
						GND	1	10AWG
N33	East Machinery Pull Box 2	Nearside Machinery Room Receptacle	RMC	¾"	20	120 P	2	10AWG
						GND	1	10AWG
N34	East PLC I/O Cabinet	NE Machinery Brake	RMC	¾"	15	120 C	4	12AWG
						GND	1	12AWG
N35	East PLC I/O Cabinet	SE Machinery Brake	RMC	¾"	15	120 C	4	12AWG
						GND	1	12AWG
N36	East PLC I/O Cabinet	NE Motor Brake	RMC	¾"	15	120 C	4	12AWG
						GND	1	12AWG
N37	East PLC I/O Cabinet	SE Motor Brake	RMC	¾"	15	120 C	4	12AWG
						GND	1	12AWG
N38	East PLC I/O Cabinet	NE Motor & Disconnect	RMC	¾"	15	120 P	2	12AWG
						120 C	3	12AWG
N39	East PLC I/O Cabinet	NE Motor Encoder	RMC	1"	15	GND	1	12AWG
						Instrum.	4	2-Pair
N40	East PLC I/O Cabinet	SE Motor Encoder	RMC	1"	15	GND	1	12AWG
						Instrum.	4	2-Pair
N41	East PLC I/O Cabinet	SE Motor & Disconnect	RMC	¾"	15	120 P	2	12AWG
						120 C	3	12AWG
N42	East PLC I/O Cabinet	NE Machinery Door Switch	RMC	¾"	15	GND	1	12AWG
						120 C	2	12AWG
N43	East PLC I/O Cabinet	SE Machinery Door Switch	RMC	¾"	15	GND	1	12AWG
						120 C	9	12AWG
N44	East PLC I/O Cabinet	SE Rotary Cam Limit Switch	RMC	1½"	15	Instrum.	1	6-Pair
						GND	1	12AWG
N45	East Aerial Cables Terminal Cabinet	East Fully Seated Limit Switch	RMC	¾"	30	120 C	2	12AWG
						GND	1	12AWG

JACKSON STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N46	PLC Main Panel	Nearside Boat Detection	PVC RMC	¾"	90	12VDC	6	12AWG
						GND	1	12AWG
						120 P	2	10AWG
N47	LA Panelboard	East Fixed Structure Lights	RMC	¾"	65	GND	1	10AWG
						120 P	2	10AWG
N48	East Approach Traffic Pull Box	East Approach Roadway Lights	RMC	¾"	40	GND	1	10AWG
						120 P	2	10AWG
N49	LA Panelboard	East Pier Navigation Lights	PVC RMC	¾"	95	120 P	2	10AWG
						GND	1	10AWG
						Power	4	12AWG
N50	CCTV/SCADA Network Rack	East Traffic Cameras & One-way P.A. Speakers	RMC	1½"	120	Ethernet	2	CAT-6
						Speaker	2	AUDIO
						GND	4	12AWG
N51	CCTV/SCADA Network Rack	East Thermal & Lower PTZ Cameras	PVC RMC	1"	100	Power	4	12AWG
						Ethernet	2	CAT-6
						GND	2	12AWG
N52	CCTV/SCADA Network Rack	NE Pedestrian Camera	RMC	¾"	110	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
N53	CCTV/SCADA Network Rack	SE Pedestrian Camera	RMC	¾"	40	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
N54	East Approach Traffic Pull Box	East Upper PTZ Camera 1	PVC RMC	¾"	100	Power	2	12AWG
						Ethernet	1	CAT-6
						GND	1	12AWG
N55	East Approach Traffic Pull Box	NE Gate P.A. Speaker	PVC RMC	¾"	65	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
N56	East Approach Traffic Pull Box	SE Gate P.A. Speaker	PVC RMC	¾"	15	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
N57	East Approach Traffic Pull Box	SE Approach P.A. Speaker	PVC RMC	¾"	100	Speaker	2	AUDIO
						N/A	0	CAT-6
						GND	1	12AWG
N58	CCTV/SCADA Network Rack	East Approach Traffic Pull Box	RMC	1½"	40	Power	2	12AWG
						Ethernet	1	CAT-6
						Speaker	6	AUDIO
N59	East Aerial Cables Terminal Cabinet	NW VFD Cabinet	RMC	1½"	150	GND	4	12AWG
						120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
						SP	2	2-Pair
N60	East Aerial Cables Terminal Cabinet	SW VFD Cabinet	RMC	1½"	150	GND	1	6AWG
						120 C	3	12AWG
						SP	3	12AWG
						Instrum.	4	2-Pair
						SP	2	2-Pair
N61	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	2½"	150	GND	1	6AWG
						120 C	23	12AWG
						120 C	14	12AWG
						SP	10	12AWG
						Instrum.	1	2-Pair
N62	East Aerial Cables Terminal Cabinet	NW VFD Cabinet	RMC	2½"	150	480 VFD	1	(3) 1AWG
						120 C	1	12AWG
N63	East Aerial Cables Terminal Cabinet	SW VFD Cabinet	RMC	2½"	150	480 VFD	1	(3) 1AWG
						120 C	1	12AWG
N64	East Aerial Cables Terminal Cabinet	MCC	RMC	1½"	150	480 P	18	10AWG
						SP	5	10AWG
						GND	1	2AWG
N65	East Aerial Cables Terminal Cabinet	LA Panelboard	RMC	2"	150	120 P	2	6AWG
						120 P	22	10AWG
						SP	5	10AWG
						GND	1	2AWG



USER NAME =	DESIGNED - K.M. GABLE	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
JEFFERSON STREET - CONDUIT TABULATION - 3
SHEET NO. 34 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0607	2011-045-I	WILL	466	280
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

JACKSON STREET NEARSIDE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
N66	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	1/2"	150	120 P	3	10AWG
						120 P	14	10AWG
						SP	5	10AWG
						GND	1	2AWG
N67	East Aerial Cables Terminal Cabinet	PLC Main Panel	RMC	1"	150	FO	1	12 Fiber
N68	East Aerial Cables Terminal Cabinet	CCTV/SCADA Network Rack	RMC	1/2"	150	FO	2	12 Fiber
						Ethernet	2	CAT-6
N69A	Fiber Optic Interconnect Cabinet	East Approach Fiber Optic Pull Box	PVC RMC	2"	15	Empty (note 2)		
N69B	Fiber Optic Interconnect Cabinet	East Approach Fiber Optic Pull Box	PVC RMC	2"	15	Empty (note 2)		
N70A	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	55	Empty (note 2)		
N70B	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	55	Empty (note 2)		
N71A	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	55	Empty (note 2)		
N71B	East Approach Fiber Optic Pull Box	Cap end of empty conduit	PVC RMC	2"	55	Empty (note 2)		
N72	East Aerial Cables Terminal Cabinet	Wireless Radio Cabinet (Nearside)	RMC	1/2"	15	120 P	4	10AWG
						Ethernet	2	CAT-6
						GND	2	10AWG

JEFFERSON STREET OPERATOR HOUSE CONDUIT SCHEDULE

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
H1	MCC	PLC Main Panel	RMC	1/2"	15	120 C	16	12AWG
H2A	NW VFD Cabinet	PLC Main Panel	RMC	1"	16	SP	5	12AWG
						GND	1	12AWG
						120 C	14	12AWG
H2B	NW VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR
						Ethernet	1	CAT-6
H3A	SW VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG
						GND	1	12AWG
H3B	SW VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR
						Ethernet	1	CAT-6
H4A	NE VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG
						GND	1	12AWG
H4B	NE VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR
						Ethernet	1	CAT-6
H5A	SE VFD Cabinet	PLC Main Panel	RMC	1"	16	120 C	14	12AWG
						GND	1	12AWG
H5B	SE VFD Cabinet	PLC Main Panel	RMC	1"	16	Instrum.	2	2-PAIR
						Ethernet	1	CAT-6
H6	LA Panelboard	PLC Main Panel	RMC	1/2"	24	120 P	12	10AWG
						120 P	6	10AWG
						SP	2	10AWG
						GND	9	10AWG
H7	Auto Transfer Switch	PLC Main Panel	RMC	3/4"	15	120 C	5	12AWG
						GND	1	12AWG
H8A	Control Console	PLC Main Panel	RMC	2 1/2"	12	120 P	4	10AWG
						120 C	60	12AWG
						Instrum.	0	2-PAIR
						Ethernet	0	CAT-6
						GND	1	10AWG

JEFFERSON STREET OPERATOR HOUSE CONDUIT SCHEDULE (CONTINUED)

Run No.	Circuit Terminations		Conduit		Length of Run	Wire		
	To	From	Type	Size		Use	Count	Size
H8B	Control Console	PLC Main Panel	RMC	2 1/2"	12	120 C	60	12AWG
						Instrum.	2	2-PAIR
						Ethernet	3	CAT-6
						GND	1	10AWG
H9	LA Panelboard	CCTV/SCADA Network Rack	RMC	3/4"	25	120 P	4	10AWG
H10	CCTV/SCADA Network Rack	PLC Main Panel	RMC	1"	20	GND	1	10AWG
						120 C	3	12AWG
H11	CCTV/SCADA Network Rack	Fiber Optic Interconnect Cabinet	RMC	1"	18	Ethernet	2	CAT-6
						FO	2	12 Fiber
H12	PLC Main Panel	SPD / BUS Monitor	RMC	3/4"	15	120 C	4	12AWG
						GND	2	12AWG
H13	PLC Main Panel	Power Monitor	RMC	1"	15	Ethernet	1	CAT-6
H14	PLC Main Panel	Fire Alarm and Security System Control Panel	RMC	3/4"	40	120 C	4	12AWG
						GND	1	12AWG
H15	Fire Alarm and Security System Control Panel	Electrical Room Detectors	RMC	1"	25	120 C	9	12AWG
						GND	3	12AWG
H16	Fire Alarm and Security System Control Panel	Door Switches	RMC	3/4"	25	120 C	6	12AWG
						GND	2	12AWG
H17	Fire Alarm and Security System Control Panel	Operator Room Detectors	RMC	3/4"	50	120 C	6	12AWG
						GND	2	12AWG
H18	MCC	NE VFD Cabinet	RMC	3"	25	480 P	6	4/0
						GND	1	1/0
H19	NE VFD Cabinet	SE VFD Cabinet	RMC	1 1/2"	6	480 P	3	2/0
						GND	1	3AWG
H20	MCC	NW VFD Cabinet	RMC	3"	25	480 P	6	4/0
						GND	1	1/0
H21	NW VFD Cabinet	SW VFD Cabinet	RMC	1 1/2"	6	480 P	3	2/0
						GND	1	3AWG
H22	MCC	Transformer	RMC	1 1/2"	20	480 P	2	3/0
						GND	1	4AWG
H23	Transformer	LA Panelboard	RMC	2"	15	480 P	3	3/0
						GND	1	4AWG

NOTES:

1. Fiber optic conduit bend radius shall be greater than minimum bend radius of fiber optic cable.
2. Provide and install empty conduit for future fiber connection under separate Fiber Optic Contract.

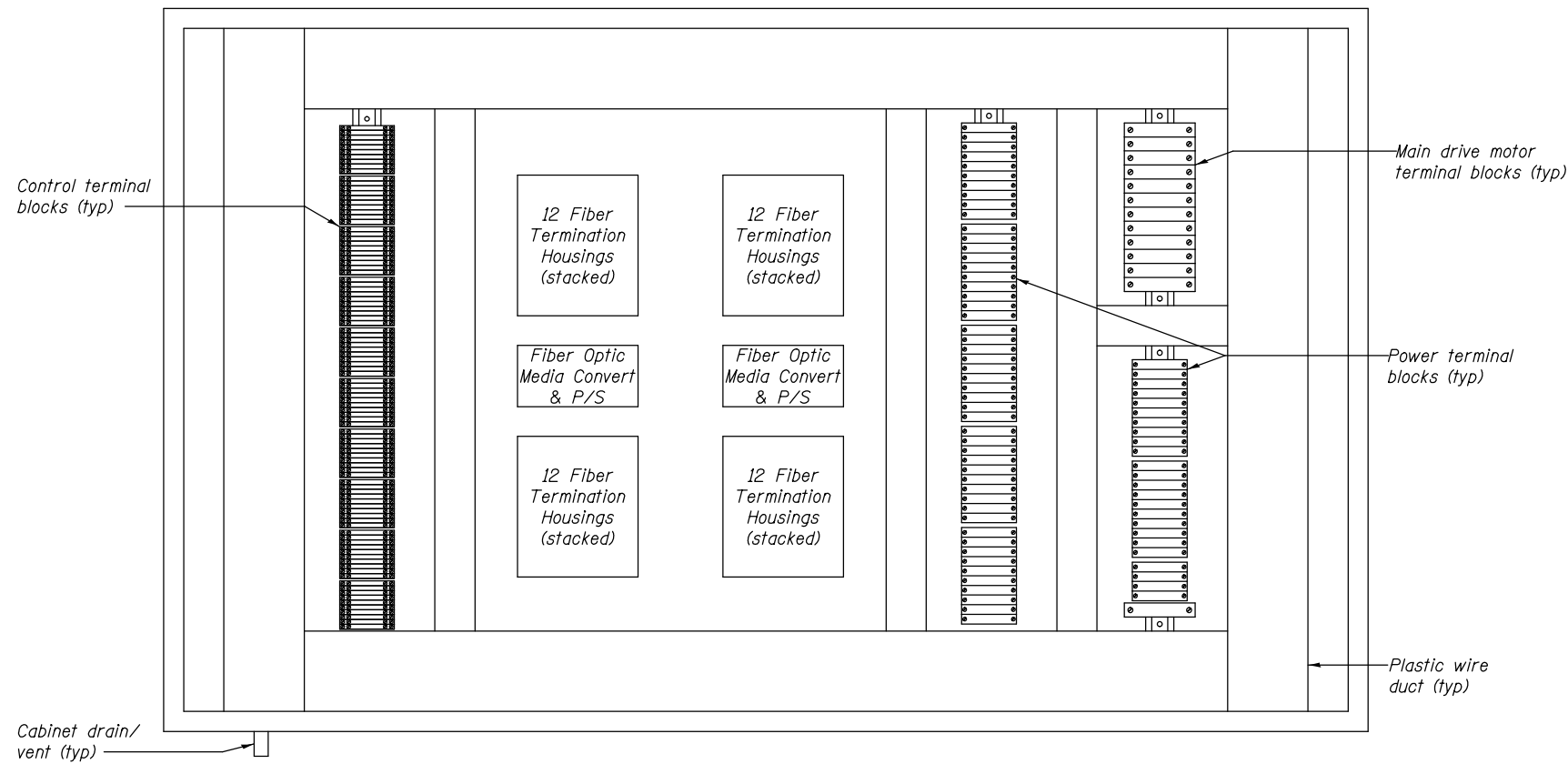


USER NAME =	DESIGNED - K.M. GABLE	REVISED -
PLOT SCALE =	CHECKED - L.V. BORDEN	REVISED -
PLOT DATE =	DRAWN - R.L. REED	REVISED -
	CHECKED - R.I. PETERS	REVISED -

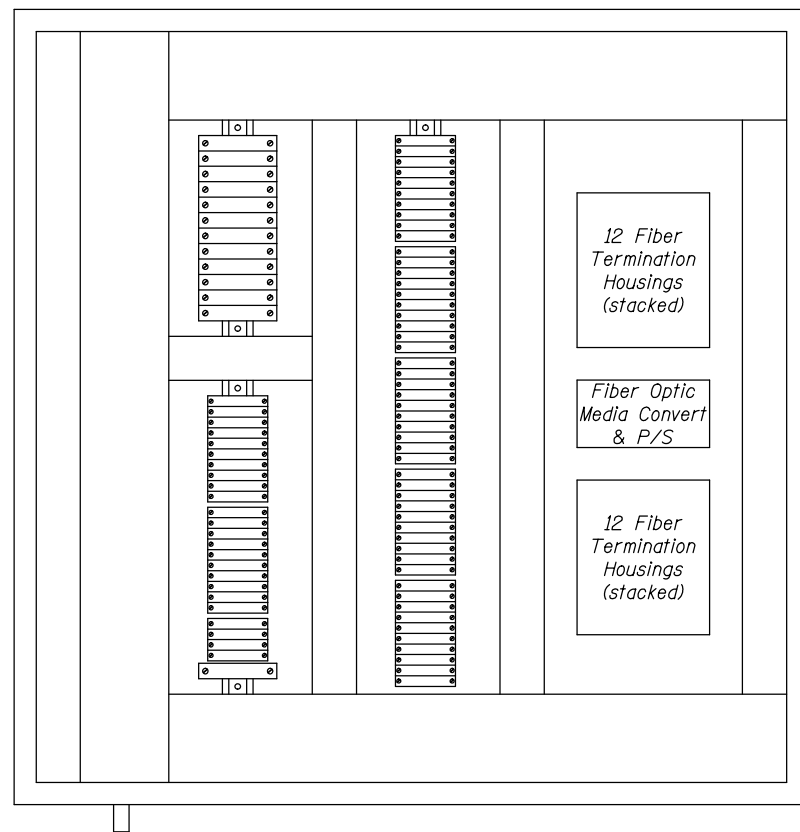
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - CONDUIT TABULATION - 4
SHEET NO. 35 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0607	2011-045-I	WILL	466	281
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				



NEARSIDE AERIAL CABLES TERMINAL CABINET LAYOUT, 36"H x 60"W x 12"D



FARSIDE AERIAL CABLES TERMINAL CABINET LAYOUTS, 36"H x 36"W x 12"D

PROPOSED AERIAL CONTROL AND COMMUNICATIONS CABLE		
Description	Quantity	Size/Type
Fiber Optic Communications, Local Bridge PLC and CCTV Networks	2	12 Fiber
Farside Motor Encoders	8	1 pair, shielded 12AWG
Farside Inclinator and Spares	7	1 pair, shielded 12AWG
Farside Traffic Gate Limit Switches	10	10 AWG
Farside Fully Seated Limit Switch	2	10 AWG
Farside Rotary Cam Limit Switch	9	10 AWG
Farside Brake Limit Switches	12	10 AWG
Farside Boat Detection	2	10 AWG
Motor Heater Control and Thermostat Contacts	8	10 AWG
Spare	17	10 AWG
Ground	1	6 AWG

PROPOSED AERIAL POWER & MAIN DRIVE CABLE		
Description	Quantity	Size/Type
Fiber Optic Communications, Local Bridge PLC and CCTV Networks	2	12 Fiber
Farside Main Drive Motor 1 - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Farside Main Drive Motor 2 - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Spare Farside Main Drive Motor - Shielded Symmetrical VFD Cable	1	(3) - 1AWG (3) - Ground
Farside Motors (2 gates, 4 brakes)	18	10 AWG
120 VAC, Farside CCTV/PA	2	6 AWG
120 VAC Power Circuits	39	10 AWG
240 VAC Power	3	4 AWG
Spare	10	10 AWG
Spare	2	4 AWG
Ground	1	2 AWG

NOTES

1. Aerial cables content, cabinet sizes, and cabinet layouts shown are conceptual. The Contractor shall be responsible for determining the requirements of the aerial cable system necessary to support the Intergrated Bridge Controls System, the Bridge Control CCTV system, and all other related systems and components.
2. Refer to Special Provisions for additional requirements for aerial cables and cabinets.
3. Provide fiber optic termination housings as required to terminate aerial cable fiber optic cables associated with bridge local networks and to interconnect all associated bridge devices and networked components.

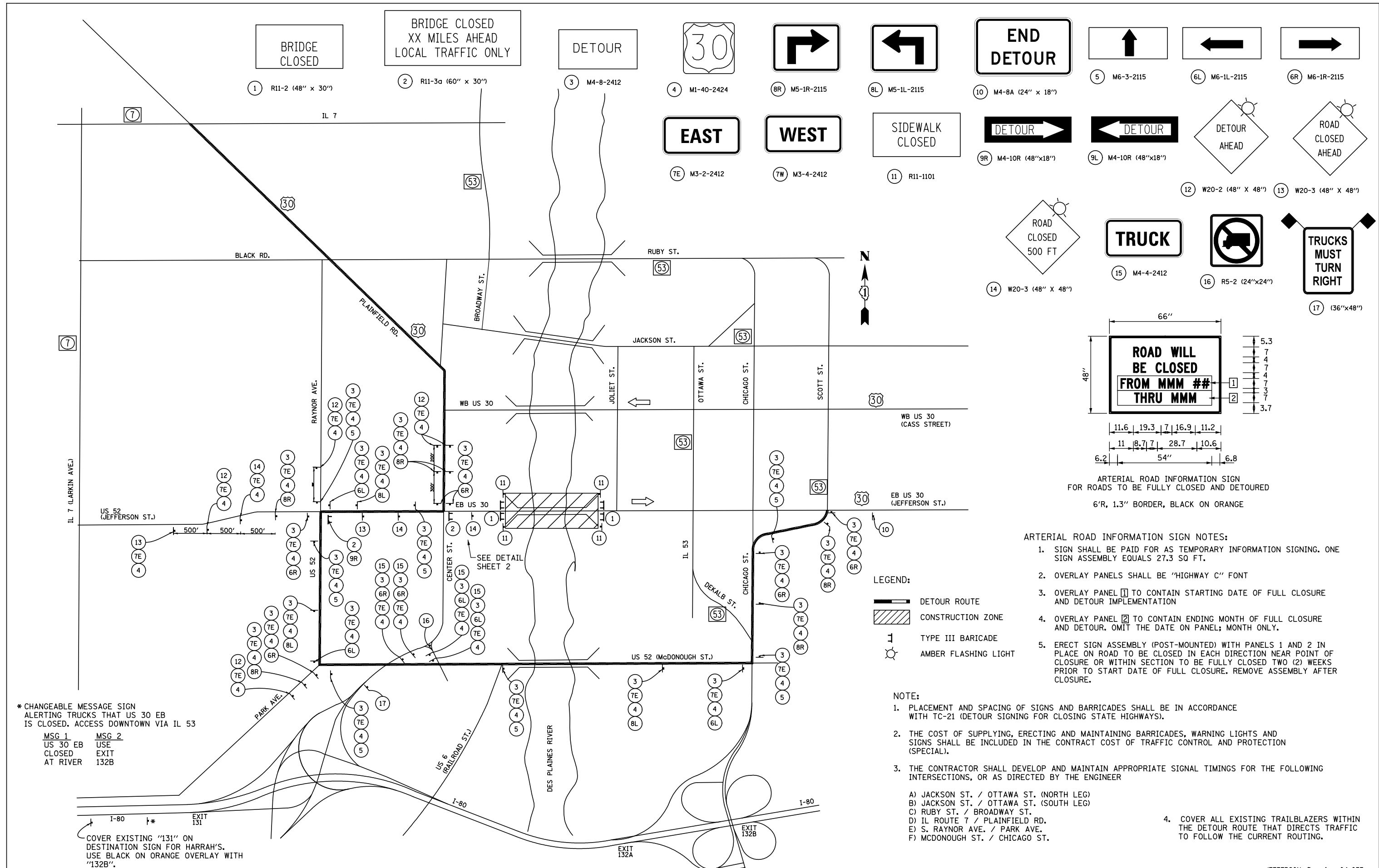


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	CHECKED - L.V. BORDEN	REVISED -
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - AERIAL CABLE DETAILS
SHEET NO. 36 OF 39 SHEETS

JEFFERSON, Drawing 04-036			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
607	2011-045-I	WILL	466
			SHEET NO. 282
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			



BRIDGE CLOSED (1) R11-2 (48" x 30")

BRIDGE CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY (2) R11-3a (60" x 30")

DETOUR (3) M4-8-2412

30 (4) M1-40-2424

EAST (7E) M3-2-2412

WEST (7W) M3-4-2412

SIDEWALK CLOSED (11) R11-1101

END DETOUR (10) M4-8A (24" x 18")

DETOUR (9R) M4-10R (48"x18")

DETOUR (9L) M4-10L (48"x18")

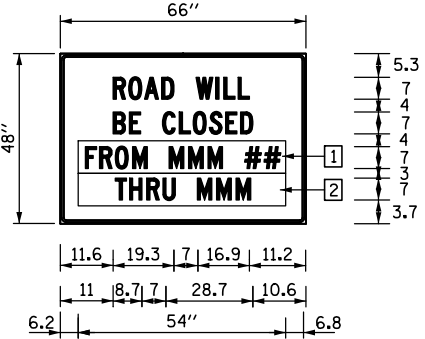
DETOUR AHEAD (12) W20-2 (48" X 48")

ROAD CLOSED AHEAD (13) W20-3 (48" X 48")

ROAD CLOSED 500 FT (14) W20-3 (48" X 48")

TRUCK (15) M4-4-2412

TRUCKS MUST TURN RIGHT (17) (36"x48")



ARTERIAL ROAD INFORMATION SIGN FOR ROADS TO BE FULLY CLOSED AND DETOURED
6'R, 1.3" BORDER, BLACK ON ORANGE

- ARTERIAL ROAD INFORMATION SIGN NOTES:**
- SIGN SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING. ONE SIGN ASSEMBLY EQUALS 27.3 SQ FT.
 - OVERLAY PANELS SHALL BE "HIGHWAY C" FONT
 - OVERLAY PANEL 1 TO CONTAIN STARTING DATE OF FULL CLOSURE AND DETOUR IMPLEMENTATION
 - OVERLAY PANEL 2 TO CONTAIN ENDING MONTH OF FULL CLOSURE AND DETOUR. OMIT THE DATE ON PANEL; MONTH ONLY.
 - ERECT SIGN ASSEMBLY (POST-MOUNTED) WITH PANELS 1 AND 2 IN PLACE ON ROAD TO BE CLOSED IN EACH DIRECTION NEAR POINT OF CLOSURE OR WITHIN SECTION TO BE FULLY CLOSED TWO (2) WEEKS PRIOR TO START DATE OF FULL CLOSURE. REMOVE ASSEMBLY AFTER CLOSURE.

- LEGEND:**
- DETOUR ROUTE
 - CONSTRUCTION ZONE
 - TYPE III BARRICADE
 - AMBER FLASHING LIGHT

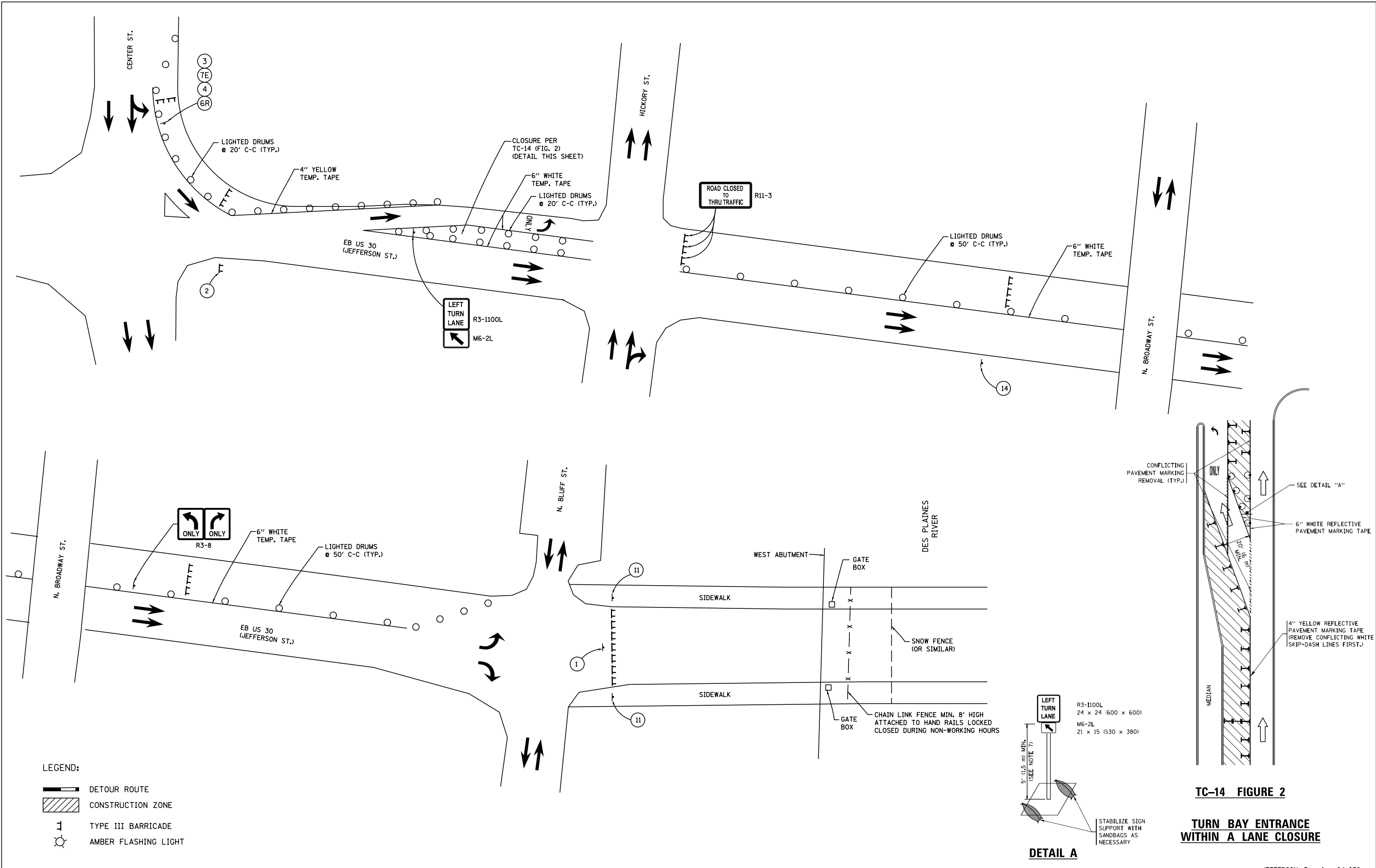
- NOTE:**
- PLACEMENT AND SPACING OF SIGNS AND BARRICADES SHALL BE IN ACCORDANCE WITH TC-21 (DETOUR SIGNING FOR CLOSING STATE HIGHWAYS).
 - THE COST OF SUPPLYING, ERECTING AND MAINTAINING BARRICADES, WARNING LIGHTS AND SIGNS SHALL BE INCLUDED IN THE CONTRACT COST OF TRAFFIC CONTROL AND PROTECTION (SPECIAL).
 - THE CONTRACTOR SHALL DEVELOP AND MAINTAIN APPROPRIATE SIGNAL TIMINGS FOR THE FOLLOWING INTERSECTIONS, OR AS DIRECTED BY THE ENGINEER
 - A) JACKSON ST. / OTTAWA ST. (NORTH LEG)
 - B) JACKSON ST. / OTTAWA ST. (SOUTH LEG)
 - C) RUBY ST. / BROADWAY ST.
 - D) IL ROUTE 7 / PLAINFIELD RD.
 - E) S. RAYNOR AVE. / PARK AVE.
 - F) MCDONOUGH ST. / CHICAGO ST.
 - COVER ALL EXISTING TRAILBLAZERS WITHIN THE DETOUR ROUTE THAT DIRECTS TRAFFIC TO FOLLOW THE CURRENT ROUTING.

* CHANGEABLE MESSAGE SIGN ALERTING TRUCKS THAT US 30 EB IS CLOSED. ACCESS DOWNTOWN VIA IL 53

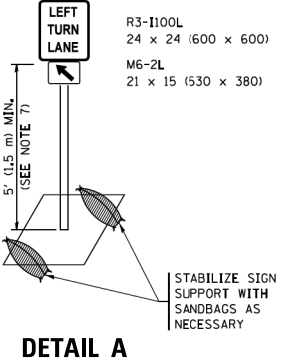
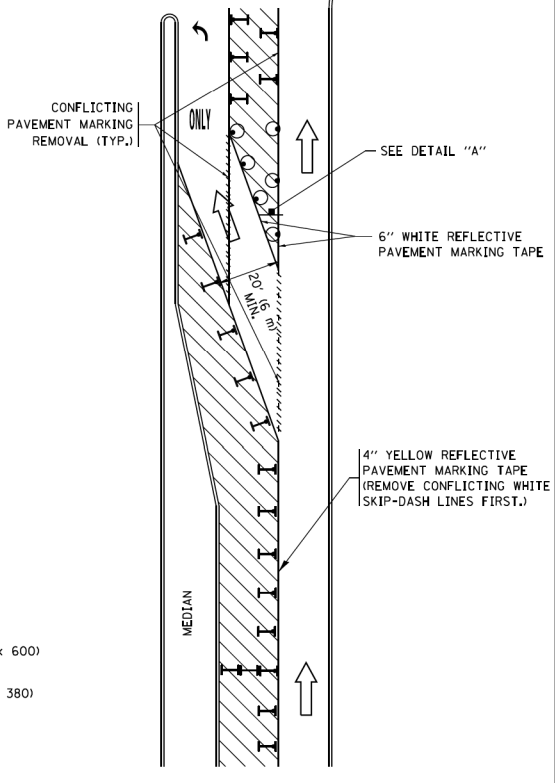
MSG 1 US 30 EB CLOSED AT RIVER

MSG 2 USE EXIT 132B

COVER EXISTING "131" ON DESTINATION SIGN FOR HARRAH'S. USE BLACK ON ORANGE OVERLAY WITH "132B".



- LEGEND:**
- DETOUR ROUTE
 - CONSTRUCTION ZONE
 - TYPE III BARRICADE
 - AMBER FLASHING LIGHT



TC-14 FIGURE 2
TURN BAY ENTRANCE
WITHIN A LANE CLOSURE



USER NAME =	DESIGNED - MGR	REVISED
	CHECKED - RAG	REVISED
PLOT SCALE =	DRAWN - MGR	REVISED
PLOT DATE =	CHECKED - T.P. LAVIN	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION




VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
JEFFERSON STREET - US 30 EB S.N. 099-0166 DETOUR ROUTE - 2
 SHEET NO. 38 OF 39 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
607	2011-045-I	WILL	466	284
CONTRACT NO. 60P55				






ILLINOIS FED. AID PROJECT

JEFFERSON, Drawing 04-038






ROUTE MARKERS

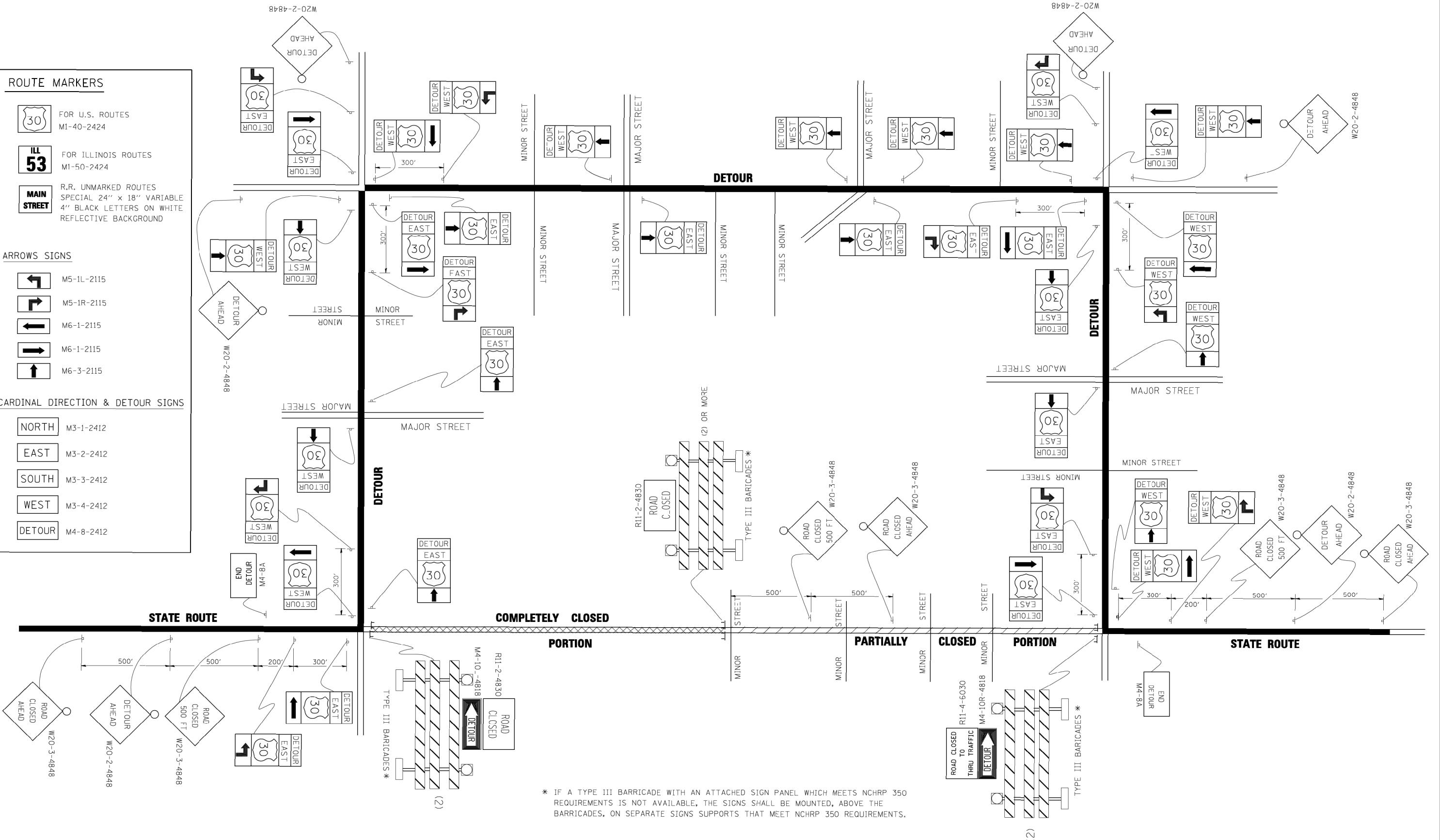
-  FOR U.S. ROUTES
M1-40-2424
-  FOR ILLINOIS ROUTES
M1-50-2424
-  R.R. UNMARKED ROUTES
SPECIAL 24" x 18" VARIABLE
4" BLACK LETTERS ON WHITE
REFLECTIVE BACKGROUND

ARROWS SIGNS

-  M5-1L-2115
-  M5-1R-2115
-  M6-1-2115
-  M6-1-2115
-  M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

-  NORTH M3-1-2412
-  EAST M3-2-2412
-  SOUTH M3-3-2412
-  WEST M3-4-2412
-  DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

IDOT DISTRICT 1 STANDARD TC-21



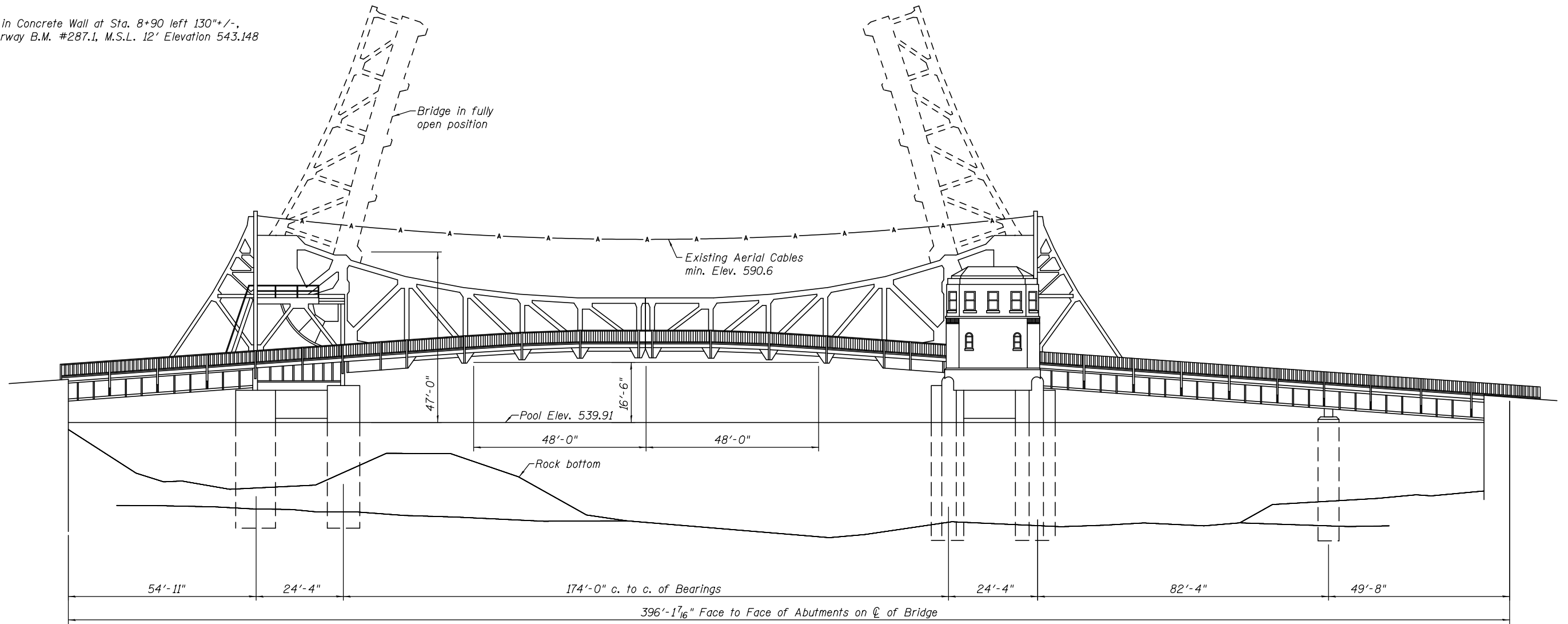
USER NAME =	DESIGNED -	REVISED
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PLOT SCALE =	DRAWN -	REVISED
PLOT DATE =	CHECKED -	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

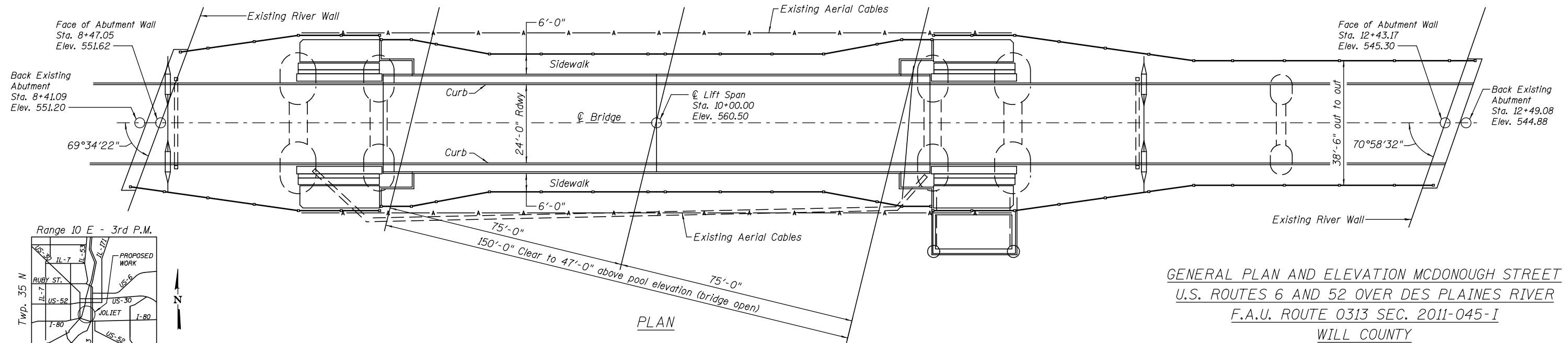
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
DETOUR SIGNING FOR CLOSING STATE HIGHWAYS**

JEFFERSON, Drawing 04-039	
F.A.P. RTE. 607	SECTION 2011-045-I
COUNTY WILL	TOTAL SHEETS 466
CONTRACT NO. 60P55	SHEET NO. 285
ILLINOIS FED. AID PROJECT	

Benchmark:
 Brass Disc in Concrete Wall at Sta. 8+90 left 130" +/-,
 Illinois Waterway B.M. #287.1, M.S.L. 12' Elevation 543.148



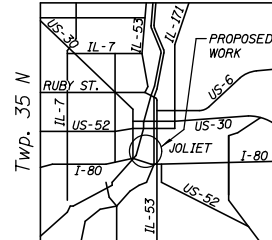
ELEVATION



PLAN

GENERAL PLAN AND ELEVATION McDONOUGH STREET
 U.S. ROUTES 6 AND 52 OVER DES PLAINES RIVER
 F.A.U. ROUTE 0313 SEC. 2011-045-I
 WILL COUNTY
 STATION 000.600
 STRUCTURE NO. 099-9904

Range 10 E - 3rd P.M.



LOCATION SKETCH



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

SHEET NO. 1 OF 40 SHEETS

McDONOUGH, Drawing 05-001			
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS
0313	2011-045-I	WILL	466
			SHEET NO. 286
CONTRACT NO. 60P55			

ILLINOIS FED. AID PROJECT

INDEX OF SHEETS

<u>SHEET</u>	<u>LOCAL SHEET</u>	<u>DESCRIPTION</u>
286	05-001	GENERAL PLAN AND ELEVATION
287	05-002	INDEX OF SHEETS
288	05-003	ELECTRICAL SCOPE PLAN AND ELEVATION
289 – 290	05-004 – 05-005	OPERATOR'S HOUSE DETAILS
291	05-006	NEAR SIDE MACHINERY LAYOUT
292	05-007	FAR SIDE MACHINERY LAYOUT
293 – 295	05-008 – 05-010	THREE LINE DIAGRAMS
296	05-011	MCC LAYOUT
297 – 298	05-012 – 05-013	PANELBOARD SCHEDULES
299	05-014	FIBER OPTIC ROUTE TO OPERATOR HOUSE
300	05-015	FIBER OPTIC INTERCONNECT CABINET
301	05-016	SCADA ONE-LINE
302	05-017	CCTV ONE-LINE
303 – 307	05-018 – 05-022	CCTV CAMERA LAYOUTS
308	05-023	PUBLIC ADDRESS SPEAKER LAYOUT
309	05-024	NETWORK CABINET DETAILS
310	05-025	CCTV PLAN AND ELEVATION
311	05-026	BRIDGE CONTROL DIAGRAM
312 – 313	05-027 – 05-028	NEW BRIDGE CONTROL CONSOLE
314	05-029	ELECTRICAL EQUIPMENT SCHEDULE
315 – 317	05-030 – 05-032	CONDUIT DIAGRAMS
318 – 321	05-033 – 05-036	CONDUIT TABULATIONS
322	05-037	AERIAL CABLE DETAILS
323	05-038	FIBER OPTIC OUTDOOR INTERCONNECT CABINET
324 – 325	05-039 – 05-040	CONSTRUCTION DETOUR ROUTES

McDONOUGH, Drawing 05-002

	USER NAME =	DESIGNED - R.I. PETERS	REVISED _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	VARIOUS MOVABLE BRIDGES LOCAL CENTRALIZED CONTROL AND OPERATION MCDONOUGH STREET - INDEX OF SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - L.V. BORDEN	REVISED _____			0313	2011-045-I	WILL	466	287
	PLOT SCALE =	DRAWN - R.L. REED	REVISED _____			CONTRACT NO. 60P55				
	PLOT DATE =	CHECKED - R.I. PETERS	REVISED _____	SHEET NO. 2 OF 40 SHEETS						
						ILLINOIS FED. AID PROJECT				

GENERAL STRUCTURE

- Remove wiring from existing conduit and install new wiring where applicable
- Provide and Install new wiring and conduit to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
 - Fixed Traffic Cameras
 - Aerial Terminal Cabinets
 - Antennas for Wireless Backup Network (See Wireless Backup Network Plans for details)

WEST APPROACH

- Provide and Install:
- PTZ Camera and camera pole
 - P.A. system speakers and microphones
 - Fiber Optic Splice Cabinet
- Other:
- Refurbish existing traffic gates

OPERATOR HOUSE EXTERIOR

- Provide and Install:
- Warning Horns
 - Marine Radio Antenna

OPERATOR'S ROOM

- Provide and Install:
- UPS equipment for CCTV and network equipment
 - PLC control console with HMI and hardwired relay back-up controls
 - Network equipment to support:
 - PLC communication
 - CCTV system
 - P.A. system
 - Remote control
 - Power supplies and surge protection for cameras

OPERATOR'S ROOM (CONT'D)

- Provide and Install:
- Local CCTV system and monitors
 - Radios, power supplies, and surge protection for Wireless Back-up Radio System
 - Power supplies, surge protection, amplifiers, and transformers for P.A. system
 - Fire Alarm and Security System equipment
 - Marine Radio
 - New wiring to Electrical equipment

TOP OF FIXED STRUCTURE

- Provide and Install:
- Fully Seated Limit Switch
 - Fixed Traffic Cameras
 - Antennas for Wireless Backup Network (See Wireless Backup Network Plans for details)
 - Aerial Terminal Cabinet

EAST APPROACH

- Provide and Install:
- PTZ Camera and camera pole
 - P.A. system speakers and microphones
- Other:
- Refurbish existing traffic gates

Provide and Install conduit, junction boxes, and Fiber Optic Outdoor Interconnect Cabinet for future fiber connection under separate Fiber Optic Contract

WEST PIER TOP

- Provide and Install:
- PTZ Camera
 - Thermal Imaging Camera
 - Boat Detection Sensors
- Replace:
- All conduit on pier

EAST PIER TOP

- Provide and Install:
- PTZ Camera
 - Thermal Imaging Camera
 - Boat Detection Sensors
- Replace:
- All conduit on pier

Provide and Install empty conduit and junction boxes for future fiber connection under separate Fiber Optic Contract

WEST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
 - Motor Encoders for existing Motors
 - Door Switches
 - Disconnect Switches for Machinery and Motor Brakes
 - Disconnect Switches for Main Drive Motors
 - Rotary Cam Limit Switch with resolver
 - Inclinometers
 - Panelboard
 - PLC I/O Rack, Cards, and related components
 - New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

NORTHWEST FIXED TOWER STRUCTURE (SIDEWALK ELEVATION)

- Provide and Install:
- Power supplies and surge protection for cameras
 - Power supplies, surge protection, amplifiers, and transformers for P.A. system
 - Radio equipment for repeater to Brandon Rd.

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

ELECTRICAL ROOM

- Remove:
- Existing relay logic control system
 - Existing Main Drives
- Provide and Install:
- Surge Protective Device for incoming Electrical Service
 - Power Monitor (interface to PLC for remote monitoring)
 - PLC control panel
 - Drive control and communication interface with PLC
 - Intrusion detection
 - Access Control for entry
 - Variable Speed Drives

ELECTRICAL ROOM (CONT'D)

- Provide and Install:
- Braking Resistors
 - Transformer
 - Panelboard
 - Fiber Optic Interconnect equipment
 - Fire Alarm and Security System equipment
 - New wiring to Electrical equipment
- Other:
- Interface the existing Automatic Transfer Switch to PLC for remote monitoring

ELEVATION

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

Provide and Install Fixed Pedestrian Cameras on Machinery Access Walkways

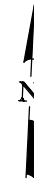
EAST MACHINERY ENCLOSURE

- Provide and Install:
- Limit Switches for existing Machinery and Motor Brakes
 - Motor Encoders for existing Motors
 - Door Switches
 - Disconnect Switches for Machinery and Motor Brakes
 - Disconnect Switches for Main Drive Motors
 - Rotary Cam Limit Switch with resolver
 - Inclinometers
 - Panelboard
 - PLC I/O Rack, Cards, and related components
 - New wiring to Electrical equipment
- Remove, Refurbish, and Reinstall Main Drive Motors

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

Provide and Install new fixed span terminal cabinet, movable span terminal cabinet, and flexible cable(s) to movable span

PLAN



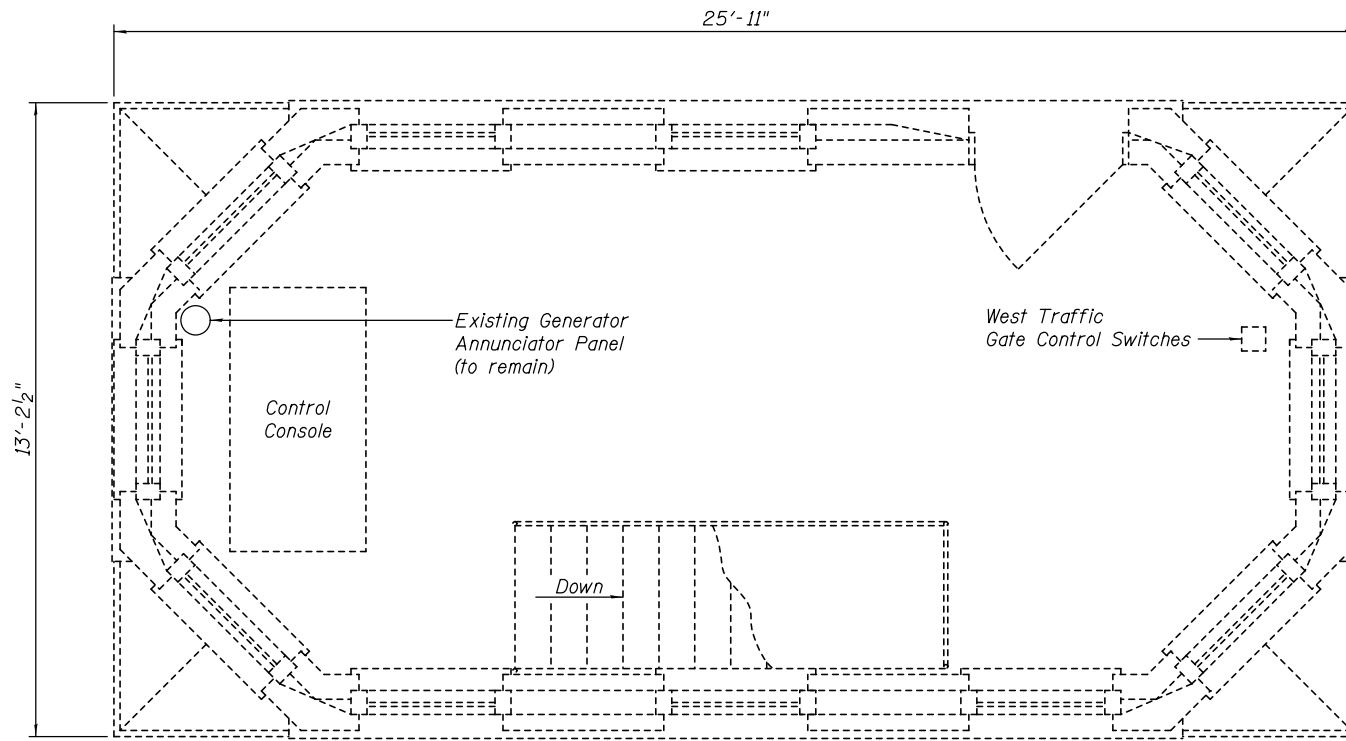
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	CHECKED - L.V. BORDEN	REVISED	___
PLOT SCALE =	DRAWN - K.M. GABLE	REVISED	___
PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

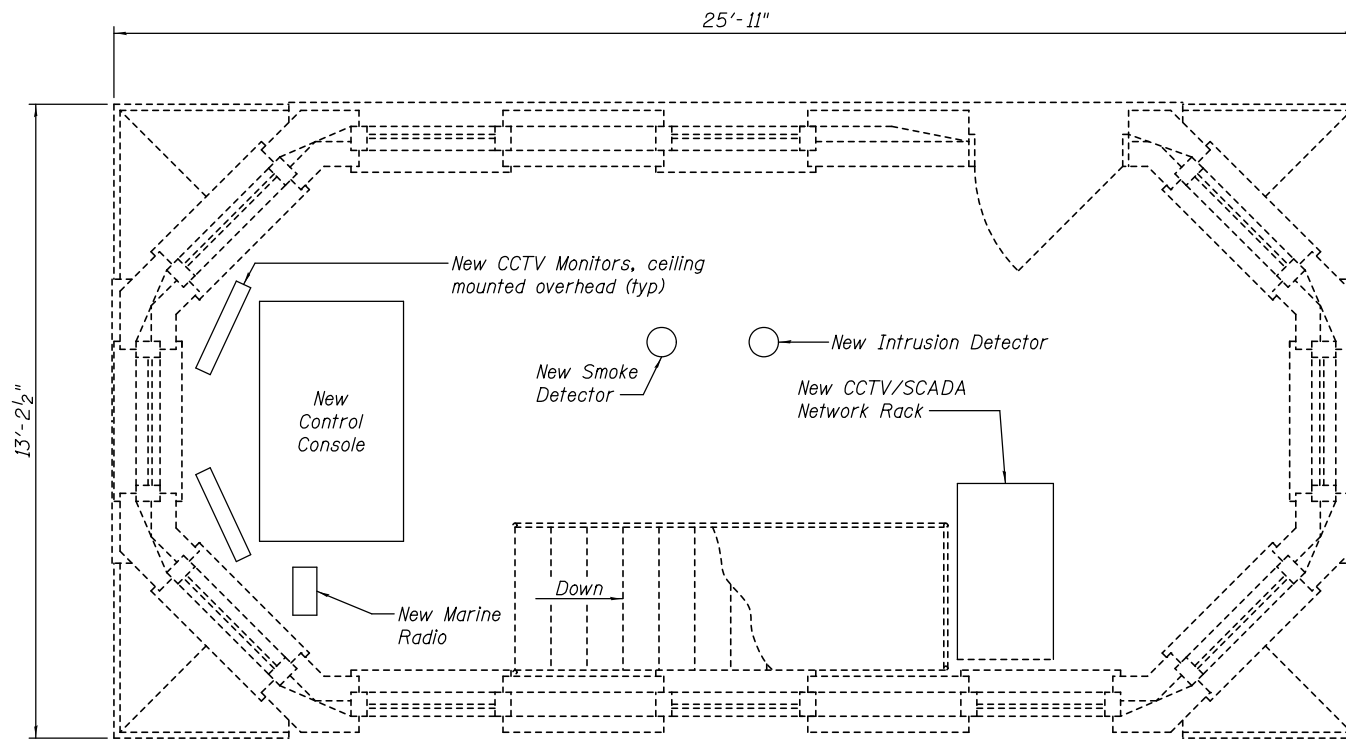
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - ELECTRICAL SCOPE PLAN AND ELEVATION**
SHEET NO. 3 OF 40 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	288
CONTRACT NO. 60P55				

McDONOUGH, Drawing 05-003



PLAN
EXISTING OPERATOR'S ROOM FLOOR LAYOUT



PLAN
PROPOSED OPERATOR'S ROOM FLOOR LAYOUT



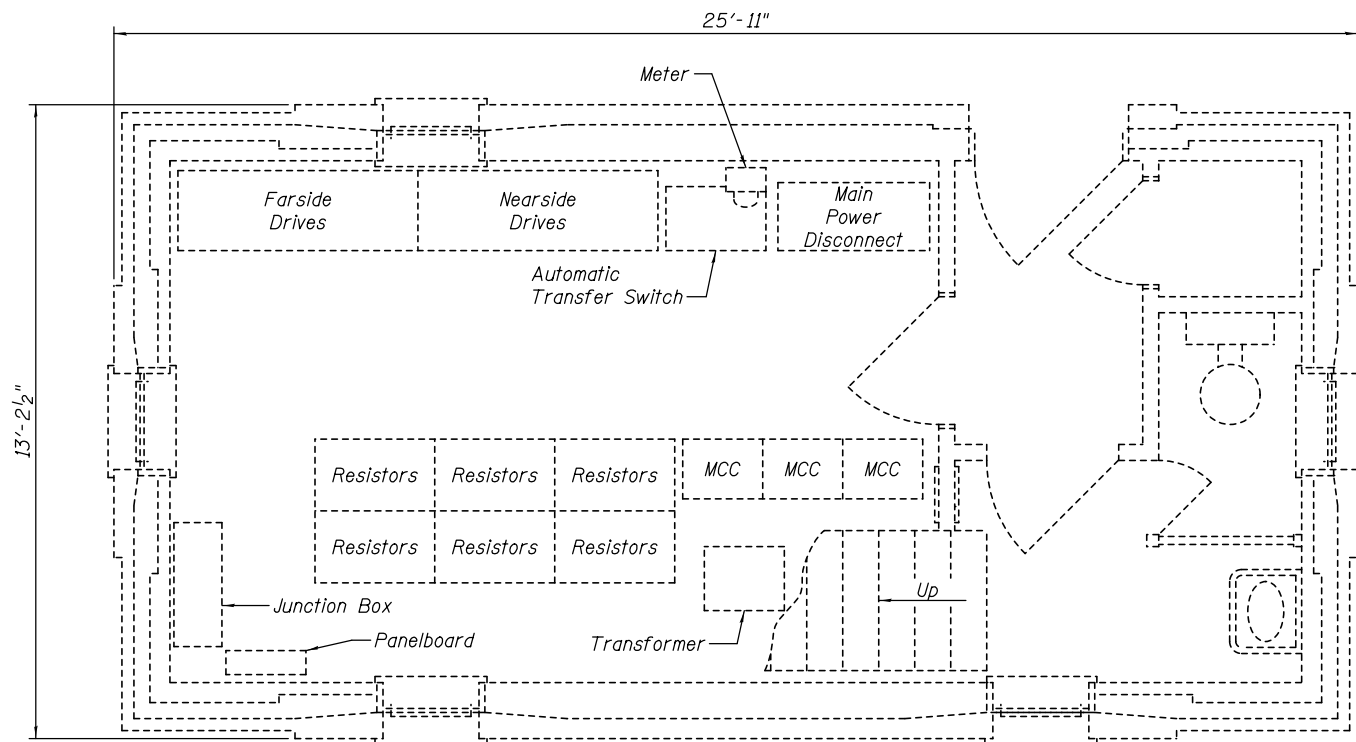
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PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

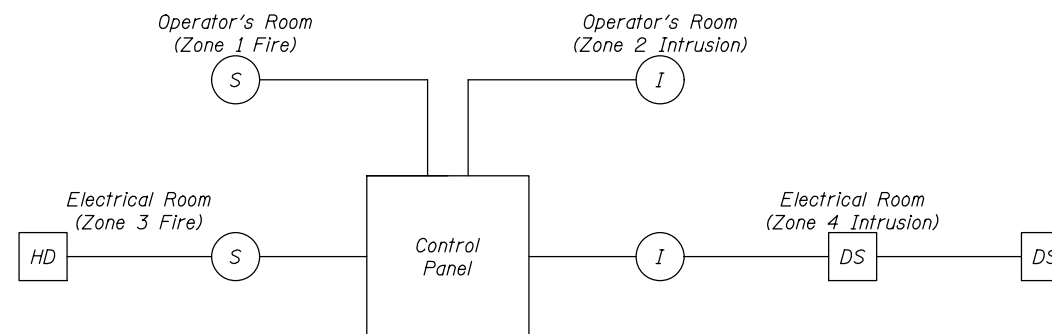
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - OPERATOR'S HOUSE DETAILS - 1

SHEET NO. 4 OF 40 SHEETS

McDONOUGH, Drawing 05-004				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	289
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



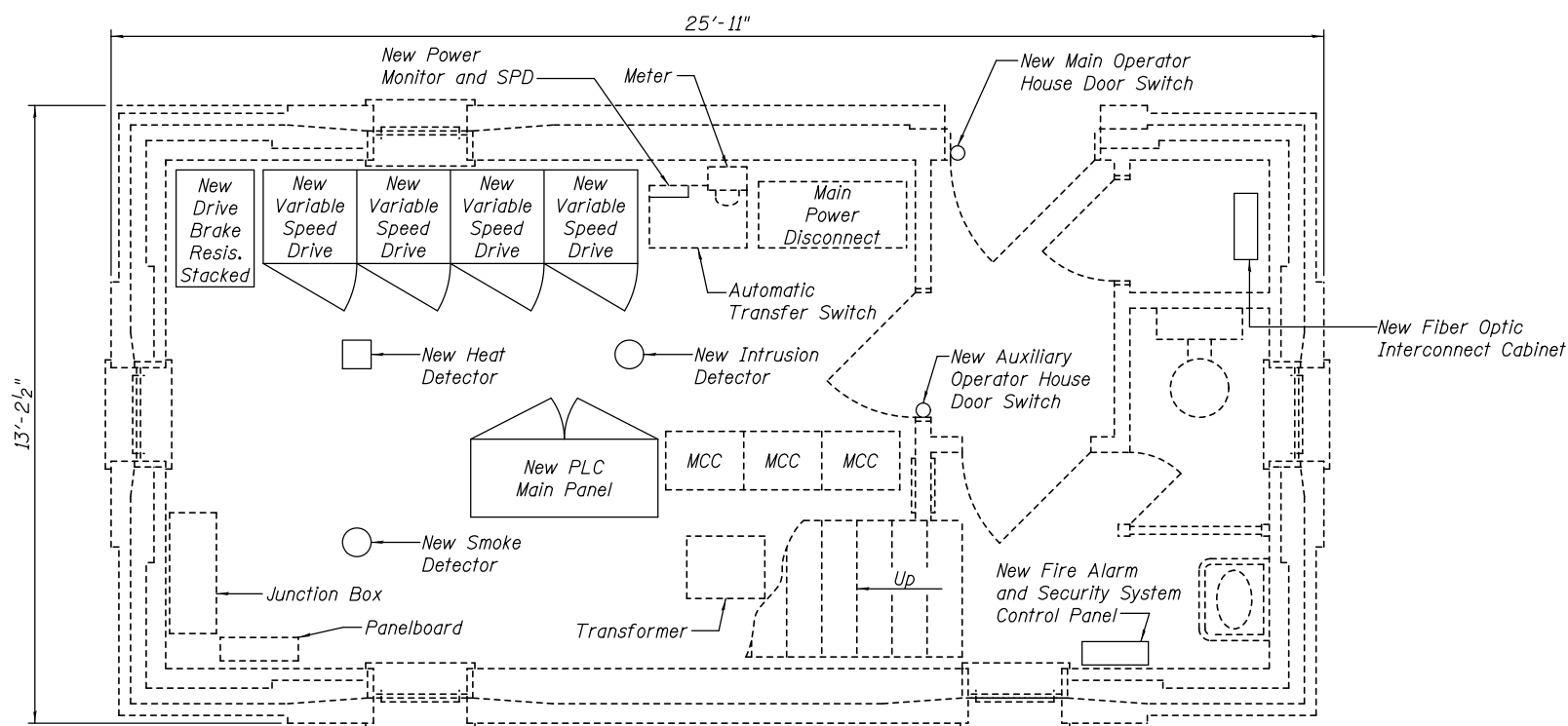
PLAN
EXISTING ELECTRICAL ROOM FLOOR LAYOUT



FIRE ALARM AND SECURITY SYSTEM

LEGEND

- (S) Smoke Detector
- (I) Intrusion Detector
- [HD] Heat Detector
- [DS] Door Switch



PLAN
PROPOSED ELECTRICAL ROOM FLOOR LAYOUT

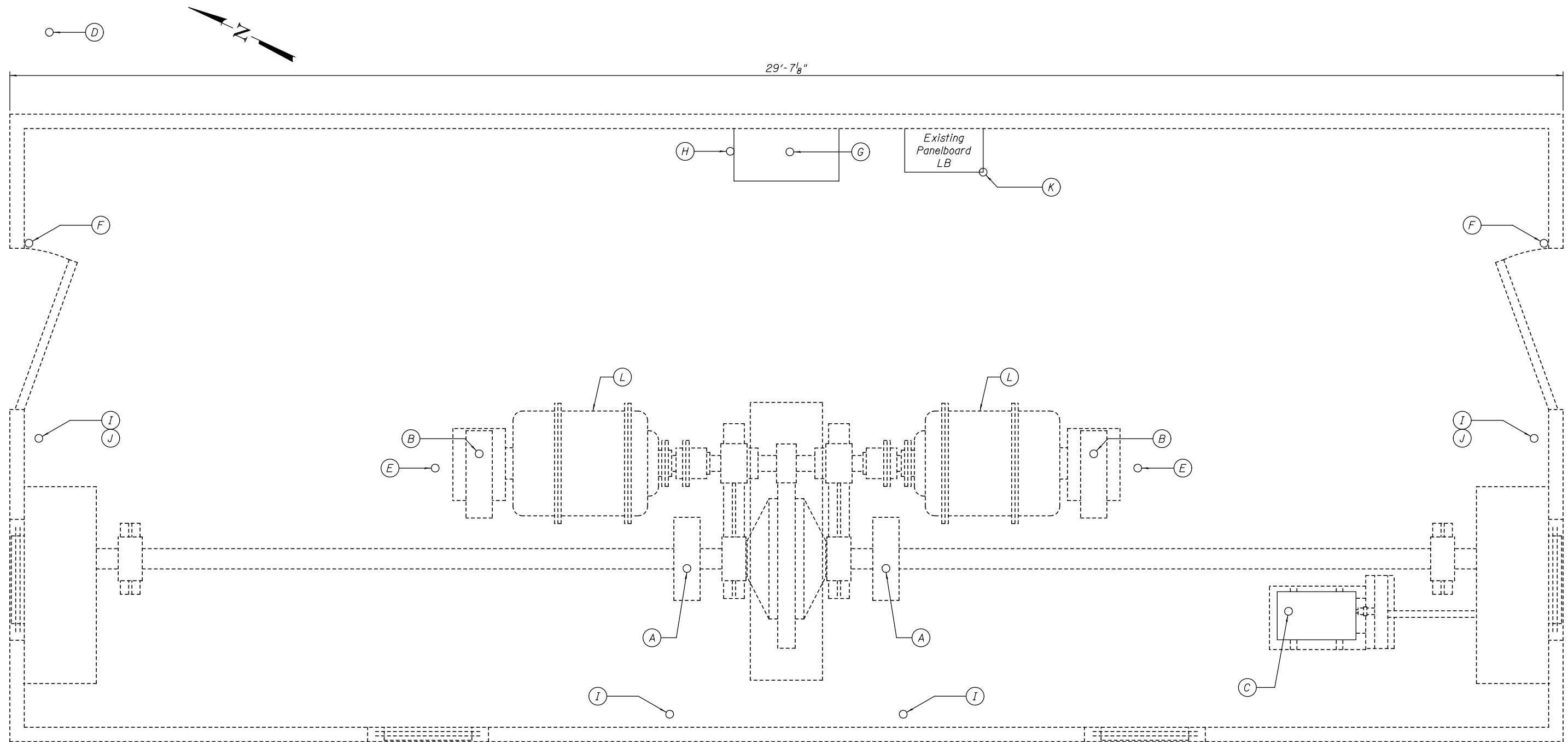


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PLOT SCALE =	DRAWN - R.L. REED	REVISED -
PLOT DATE =	CHECKED - R.I. PETERS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - OPERATOR'S HOUSE DETAILS - 2
SHEET NO. 5 OF 40 SHEETS

McDONOUGH, Drawing 05-005				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	290
CONTRACT NO. 60P55				
ILLINOIS FED. AID PROJECT				



PLAN
MCDONOUGH STREET EAST MACHINERY ENCLOSURE

- | | |
|--|---|
| <ul style="list-style-type: none"> (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208). (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208). (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206). (D) Provide and install new Fully Seated Limit Switch (on Span) (E208). (E) Provide and install new Motor Encoders for existing Motors. (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) (E207). (I) Provide and install new brake disconnect switch (E106). | <ul style="list-style-type: none"> (J) Provide and install new main drive motor disconnect switch (E105). (K) Remove existing Panelboard and install new Panelboard (E109). (L) Remove, refurbish, and reinstall main drive motor. |
|--|---|



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED -	

**STATE OF ILLINOIS
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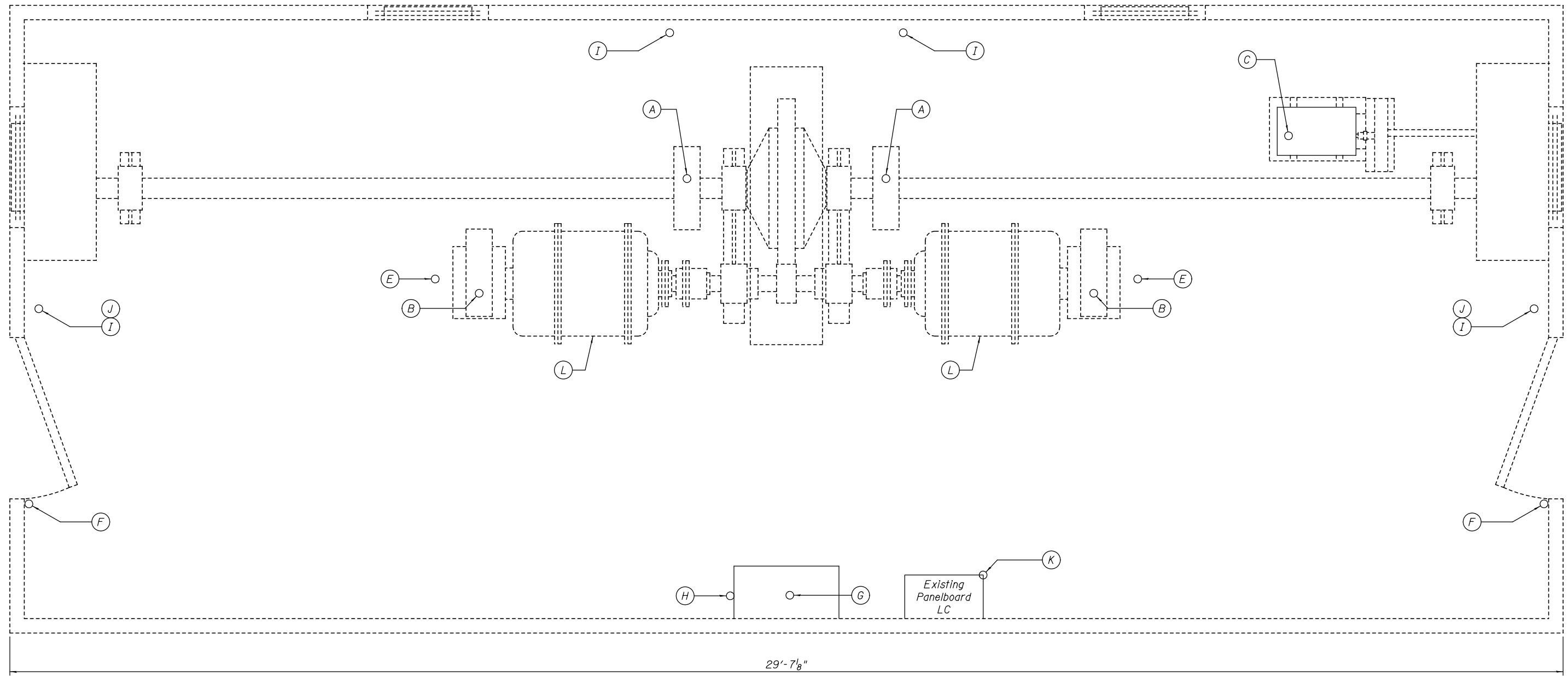
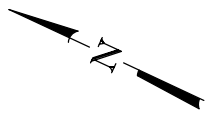
**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - NEAR SIDE MACHINERY ROOM LAYOUT**

SHEET NO. 6 OF 40 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	291
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT

McDONOUGH, Drawing 05-006



PLAN
MCDONOUGH STREET WEST MACHINERY ENCLOSURE

- (A) Provide and install new brake set and brake released Limit Switches for existing Machinery Brakes (E208).
- (B) Provide and install new brake set and brake released Limit Switches for existing Motor Brakes (E208).
- (C) Provide and install new Span Position Rotary Cam Limit Switch and Resolver (E206).
- (D) Provide and install new Fully Seated Limit Switch (on Span) (E208).
- (E) Provide and install new Motor Encoders for existing Motors.
- (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) (E207).
- (I) Provide and install new brake disconnect switch (E106).
- (J) Provide and install new main drive motor disconnect switch (E105).
- (K) Remove existing Panelboard and install new Panelboard (E109).
- (L) Remove, refurbish, and reinstall main drive motor.



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PLOT DATE =	CHECKED - R.I. PETERS	REVISED	___

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DEPARTMENT OF TRANSPORTATION

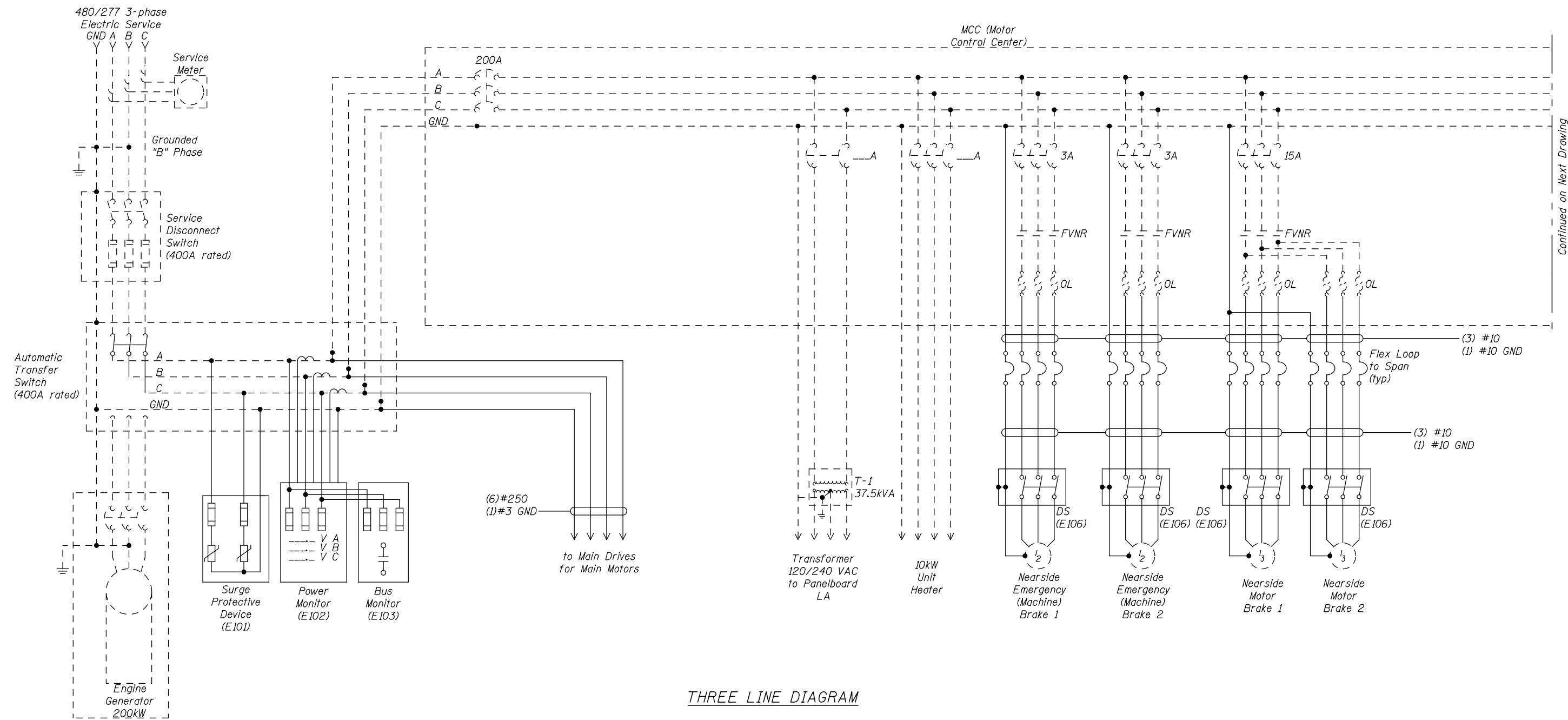
VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET – FARMSIDE MACHINERY ROOM LAYOUT

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	292
CONTRACT NO. 60P55				

SHEET NO. 7 OF 40 SHEETS

ILLINOIS FED. AID PROJECT

McDONOUGH, Drawing 05-007



Continued on Next Drawing

THREE LINE DIAGRAM

LEGEND

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

NOTES:

1. The Contractor shall provide an appropriately sized Nema 12 electrical enclosure for the power monitor, bus monitor, and associated components.
2. The Contractor shall be responsible for sizing all breakers, fuses, and conductors according to equipment and NEC requirements.



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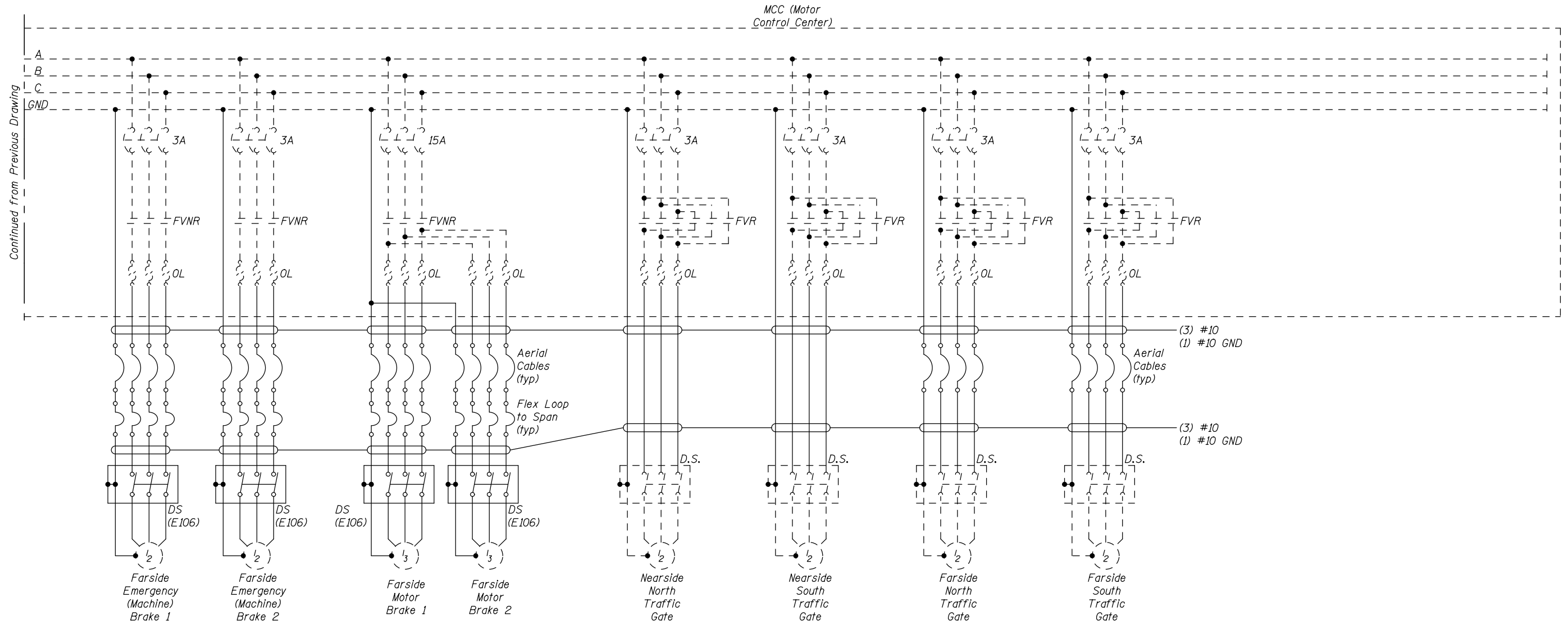
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - THREE LINE DIAGRAM - 1**

SHEET NO. 8 OF 40 SHEETS

McDONOUGH, Drawing 05-008				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	293
CONTRACT NO. 60P55				

ILLINOIS FED. AID PROJECT



THREE LINE DIAGRAM

LEGEND

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

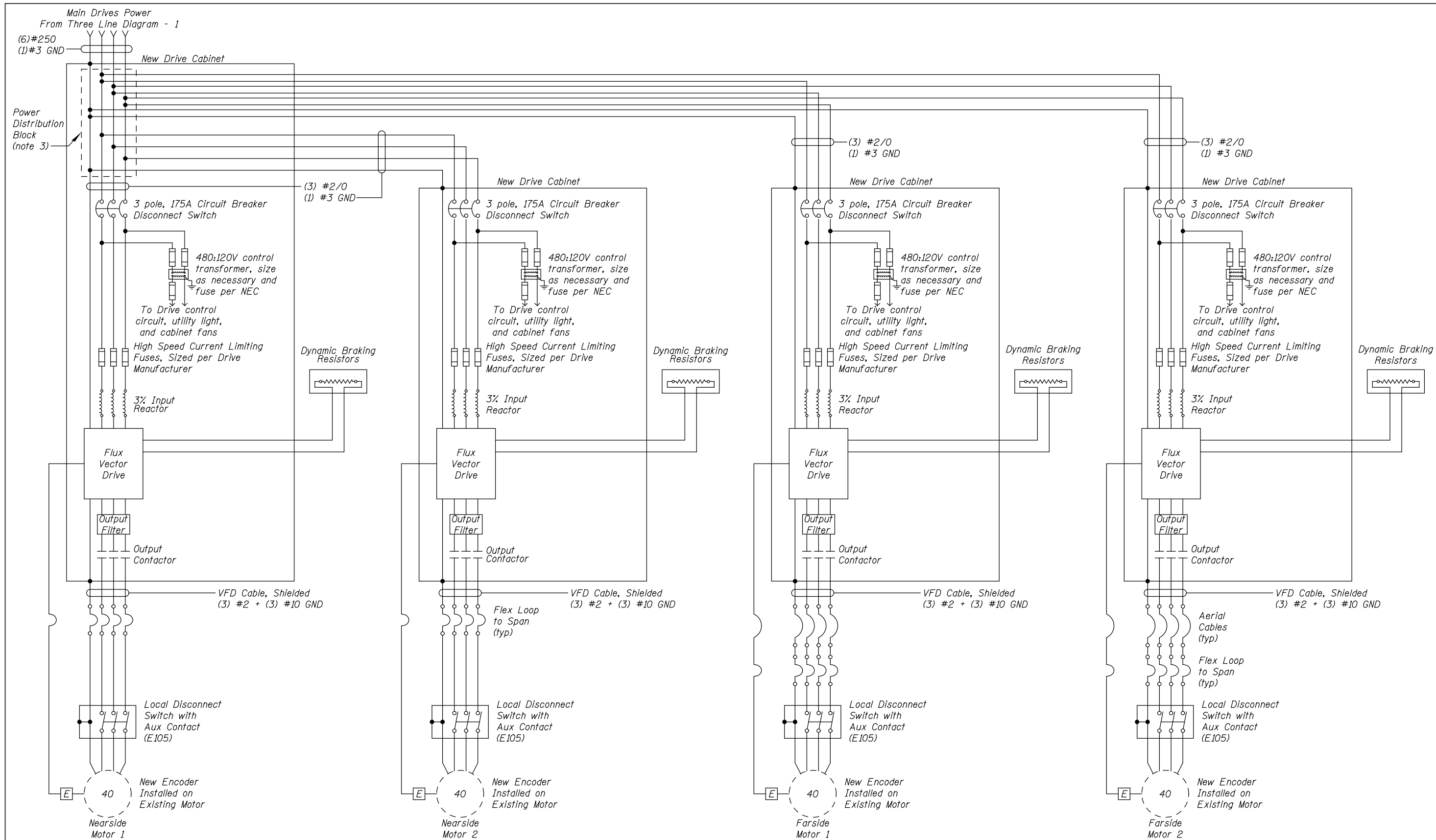


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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED -
PLOT DATE =	CHECKED - K.M. GABLE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - THREE LINE DIAGRAM - 2
SHEET NO. 9 OF 40 SHEETS

McDONOUGH, Drawing 05-009				
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	294
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 electrical rooms and to provide NEC working space around cabinets.
3. Provide power distribution block in NE VFD cabinet to tap incoming feeder conductors to each main drive.

LEGEND

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

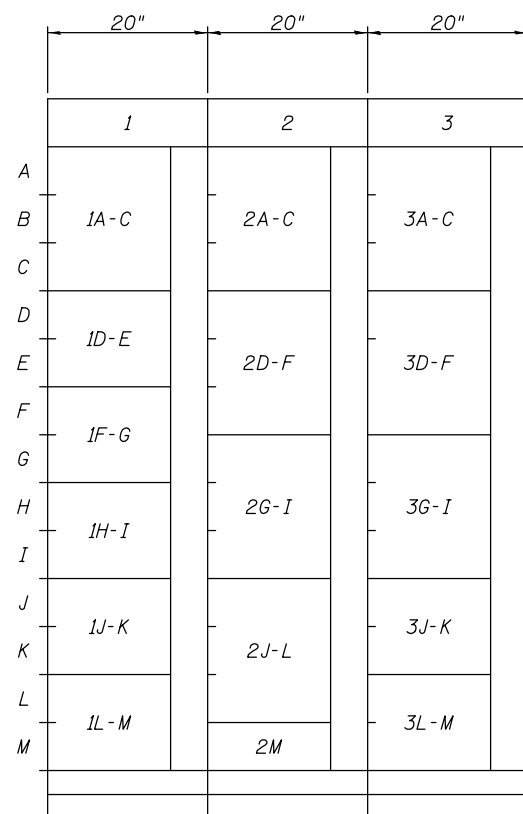


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PLOT SCALE =	DRAWN - R.I. PETERS	REVISED _____
PLOT DATE =	CHECKED - K.M. GABLE	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - THREE LINE DIAGRAM - 3**

McDONOUGH, Drawing 05-010		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	0313	2011-045-I	WILL	466	295	
						CONTRACT NO. 60P55



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 4, Class 8998	
Enclosure:		Nema Type 1	
Braced for:		25,000 Symmetrical Amps	
Unit Loc.	Description	Motor HP	Unit Type
1A-C	Incoming Main Breaker, 200A	-	CB
1D-E	Farside Emergency (Machine) Brake 2	1/2	FVNR
1F-G	Farside Emergency (Machine) Brake 1	1/2	FVNR
1H-I	Nearside Emergency (Machine) Brake 2	1/2	FVNR
1J-K	Nearside Emergency (Machine) Brake 1	1/2	FVNR
1L-M	Space	-	SP
2A-C	Farside Motor Brakes 1 & 2	2 X 1/3	FVNR
2D-F	Nearside Motor Brakes 1 & 2	2 X 1/3	FVNR
2G-I	Nearside Off (South) Traffic Gate	1/2	FVR
2J-L	Nearside On (North) Traffic Gate	1/2	FVR
2M	Space	-	SP
3A-C	Farside On (South) Traffic Gate	1/2	FVR
3D-F	Farside Off (North) Traffic Gate	1/2	FVR
3G-I	L - 50kVA Transformer Disconnect (Panelboard)	-	CB
	R - 10kW Unit Heater (Electrical Room)	-	CB
3J-K	Space	-	SP
3L-M	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:

- The Contractor shall field verify all MCC loads served.



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - MCC LAYOUT

SHEET NO. 11 OF 40 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	296
			CONTRACT NO. 60P55	
ILLINOIS FED. AID PROJECT				

PANELBOARD LA											
Voltage: 120/240V				Location: Operator House Electrical Room				Fed From: MCC via Transformer, 37.5kVA			
Phase / Wire: 1 Ph / 3W				Mounting Enclosure: Surface / Nema 1				Manufacturer: Square-D, Type NQOB			
Bus Amperes: 225A				Main Circuit Breaker: 200A				Short Circuit: 10,000 AIC			
Description	Load(Amps)		Breaker		A	B	Breaker	Load(Amps)		Description	
	A	B	Poles	Amps				Amps	Poles		A
Spare	-	-	1	20	1	6	20	1	-	Traffic Lights	
Traffic Lights	-	-	1	20	3	6	20	1	-	River Signal Lights	
Thermostat Upstairs	-	-	1	20	5	6	20	1	-	Receptacles	
Generator Block Heater	-	-	1	40	7	6	20	1	-	Building Lights	
Heater - Gate F.S.	-	-	1	20	9	6	20	1	-	Heater - Gate N.S. (Outside Lt.)	
Heater - Gate F.S.	-	-	1	20	11	6	20	1	-	Heater - Gate N.S.	
Receptacles	-	-	1	20	13	6	30	1	-	Control Console	
Receptacles	-	-	1	20	15	6	20	1	-	Receptacle	
"K" Fixture (Roadway Light)	-	-	1	20	17	6	20	1	-	Receptacle	
"G" Fixture	-	-	1	20	19	6	20	1	-	CCTV Power	
Pier Lights	-	-	1	20	21	6	20	1	-	Spare	
Spare	-	-	1	20	23	6	20	2	-	Water Heater (Single Phase)	
Receptacles	-	-	1	20	25	6	30	2	-	Panelboard LB (Nearside Mach.)	
Upstairs Heater	-	-	2	40	29	6	30	2	-	Panelboard LC (Farside Mach.)	
Upstairs Heater (Contactor)	-	-	2	40	33	6	20	2	16	16	Electric Toilet
Upstairs Heater (Contactor)	-	-	2	40	37	6	20	2	-	Air Conditioner	

EXISTING PANELBOARD LA SCHEDULE

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Rearrange circuits and provide new breakers as shown in panelboard LA.
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 or B) phase where fed from the same power source.

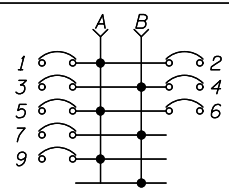
PANELBOARD LA											
Voltage: 120/240V				Location: Operator House Electrical Room				Fed From: MCC via Transformer, 37.5kVA			
Phase / Wire: 1 Ph / 3W				Mounting Enclosure: Surface / Nema 1				Manufacturer: Square-D, Type NQOB			
Bus Amperes: 225A				Main Circuit Breaker: 200A				Short Circuit: 10,000 AIC			
Description	Load(Amps)		Breaker		A	B	Breaker	Load(Amps)		Description	
	A	B	Poles	Amps				Amps	Poles		A
Signal (Warning) Horn	1	-	1	20	1	6	20	1	6	-	F.S. Traffic & Gate Lights, Gongs
N.S. Traffic & Gate Lights, Gongs	-	6	1	20	3	6	20	1	-	1	River Signal Lights
Thermostat Upstairs	5	-	1	20	5	6	20	1	6	-	Receptacles
Generator Block Heater	-	25	1	40	7	6	20	1	-	5	Building Lights
Heaters - Farside Traff. Gates	4	-	1	20	9	6	20	1	4	-	Heater - Gate N.S. (Outside Lt.)
Farside Network Equipment	-	6	1	20	11	6	20	1	-	2	Heater - Gate N.S.
Receptacles	6	-	1	20	13	6	30	1	12	-	PLC Controls
Receptacles	-	6	1	20	15	6	20	1	-	6	Receptacle
"K" Fixture (Roadway Light)	10	-	1	20	17	6	20	1	8	-	Receptacle / Fire/Secur. Sys.
"G" Fixture	-	10	1	20	19	6	20	1	-	8	CCTV System / Rack
Pier and Span Navigation Lights	6	-	1	20	21	6	20	1	5	-	PLC Panel Auxiliary
Public Address System	-	8	1	20	23	6	20	1	-	8	Network UPS / Rack
Boat Detection/Nearside Wireless	6	-	1	20	25	6	20	1	8	-	Farside CCTV Cameras
Receptacles	-	6	1	20	27	6	30	2	10	8	Panelboard LB (Nearside Mach.)
Upstairs Heater	20	20	2	40	29	6	30	2	10	9	Panelboard LC (Farside Mach.)
Upstairs Heater (Contactor)	20	20	2	40	33	6	20	2	16	16	Electric Toilet
Upstairs Heater (Contactor)	-	-	2	40	37	6	20	2	-	-	Air Conditioner
Nearside CCTV Cameras	8	-	1	20	41	6	20	2	-	-	

Total Connected Load = 171 Amps/Phase
Demand Factor = 65%
Demand Load = 112 Amps/Phase

A	B
171	170

PROPOSED PANELBOARD LA SCHEDULE (EXISTING PANELBOARD WITH NEW CIRCUITS)

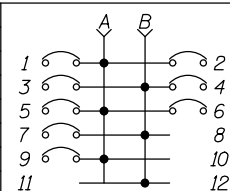
PANELBOARD LB									
Voltage:		120/240V		Location:		Nearside Machinery Area			
Phase / Wire:		1 Ph / 3W		Fed From:		Panelboard LA, Circuit 12			
Bus Amperes:		100A		Mounting Enclosure:		Surface / Nema 1			
Main Circuit Breaker:		N/A							
Short Circuit:		10,000 AIC							
Description	Load(Amps)		Breaker		Breaker	Load(Amps)		Description	
	A	B	Poles	Amps		Amps	Poles		A
Receptacles	-	-	1	20	20	1	-	-	Spare
Lighting	-	-	1	20	20	1	-	-	Spare
Spare	-	-	1	20	20	1	-	-	Spare
North Motor Heater	-	-	1	20					
South Motor Heater	-	-	1	20					



Breaker	Load(Amps)		Description
	Amps	Poles	
20	1	-	Spare
20	1	-	Spare
20	1	-	Spare

EXISTING PANELBOARD LB SCHEDULE

PANELBOARD LB									
Voltage:		120/240V		Location:		Nearside Machinery Area			
Phase / Wire:		1 Ph / 3W		Fed From:		Panelboard LA, Circuit 12			
Bus Amperes:		100A		Mounting Enclosure:		Surface / In Nema 4X S.S. enclosure			
Main Circuit Breaker:		N/A							
Short Circuit:		10,000 AIC							
Description	Load(Amps)		Breaker		Breaker	Load(Amps)		Description	
	A	B	Poles	Amps		Amps	Poles		A
Receptacles	6	-	1	20	20	1	2	-	Nearside Remote I/O
Lighting	-	3	1	20	20	1	-	3	Nearside Remote I/O Auxiliary
North Motor Heater	2	-	1	20					
South Motor Heater	-	2	1	20					
Spare	-	-	1	20					



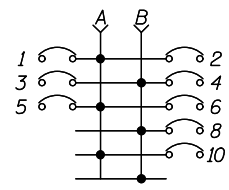
Breaker	Load(Amps)		Description	
	Amps	Poles		
20	1	2	Nearside Remote I/O	
20	1	-	3	Nearside Remote I/O Auxiliary
20	1	-	-	Spare

A	B
10	8

Total Connected Load = 10 Amps/Phase
Demand Factor = 65%
Demand Load = 7 Amps/Phase

PROPOSED PANELBOARD LB SCHEDULE (E109)

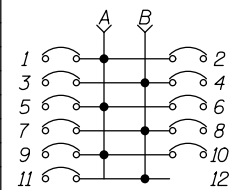
PANELBOARD LC									
Voltage:		120/240V		Location:		Farside Machinery Area			
Phase / Wire:		1 Ph / 3W		Fed From:		Panelboard LA, Circuit 12			
Bus Amperes:		100A		Mounting Enclosure:		Surface / Nema 1			
Main Circuit Breaker:		N/A							
Short Circuit:		10,000 AIC							
Description	Load(Amps)		Breaker		Breaker	Load(Amps)		Description	
	A	B	Poles	Amps		Amps	Poles		A
Lighting	-	-	1	20	20	1	-	-	Spare
Lighting	-	-	1	20	20	1	-	-	Spare
Receptacles	-	-	1	20	20	1	-	-	Spare
					20	1	-	-	North Motor Heater
					20	1	-	-	South Motor Heater



Breaker	Load(Amps)		Description
	Amps	Poles	
20	1	-	Spare
20	1	-	Spare
20	1	-	Spare
20	1	-	North Motor Heater
20	1	-	South Motor Heater

EXISTING PANELBOARD LC SCHEDULE

PANELBOARD LC									
Voltage:		120/240V		Location:		Farside Machinery Area			
Phase / Wire:		1 Ph / 3W		Fed From:		Panelboard LA, Circuit 12			
Bus Amperes:		100A		Mounting Enclosure:		Surface / In Nema 4X S.S. enclosure			
Main Circuit Breaker:		N/A							
Short Circuit:		10,000 AIC							
Description	Load(Amps)		Breaker		Breaker	Load(Amps)		Description	
	A	B	Poles	Amps		Amps	Poles		A
Receptacles	6	-	1	20	20	1	2	-	Farside Remote I/O
Lighting	-	2	1	20	20	1	-	3	Farside Remote I/O Auxiliary
Lighting	2	-	1	20					
North Motor Heater	-	2	1	20					
Spare	-	-	1	20					
Spare	-	-	1	15					



Breaker	Load(Amps)		Description	
	Amps	Poles		
20	1	2	Farside Remote I/O	
20	1	-	3	Farside Remote I/O Auxiliary
20	1	-	-	Spare
20	1	-	2	South Motor Heater
20	1	-	-	Spare

A	B
10	9

Total Connected Load = 10 Amps/Phase
Demand Factor = 65%
Demand Load = 7

PROPOSED PANELBOARD LC SCHEDULE (E109)

NOTES:

1. The Contractor shall field verify all existing circuits before starting work.
2. Remove existing panelboards LB & LC. Provide and install new panelboards LB & LC.
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 or B) phase where fed from the same power source.

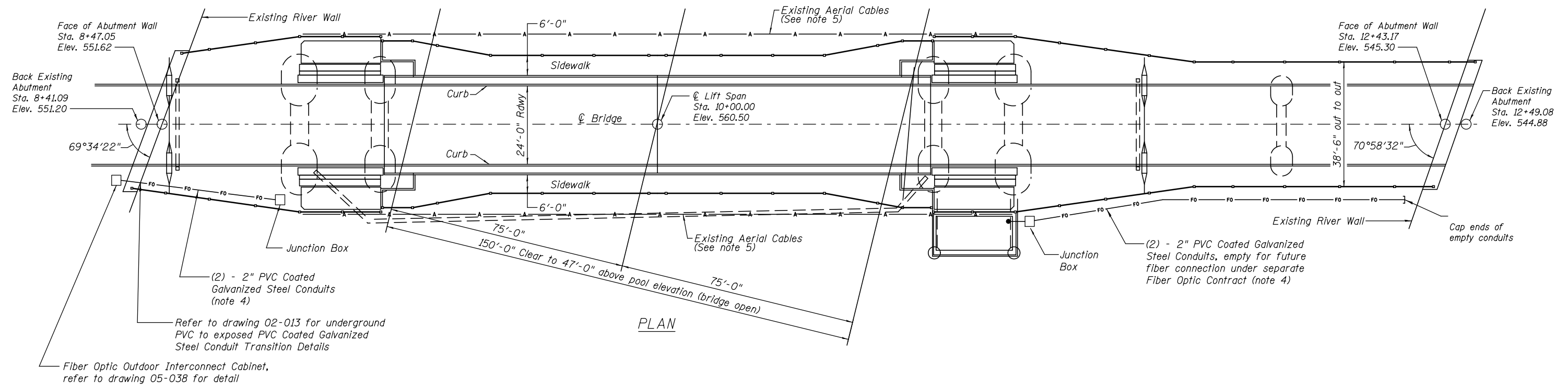


USER NAME =	DESIGNED - R.I. PETERS	REVISED _____
	CHECKED - L.V. BORDEN	REVISED _____
PLOT SCALE =	DRAWN - R.I. PETERS	REVISED _____
PLOT DATE =	CHECKED - K.M. GABLE	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - PANELBOARD SCHEDULE - 2**

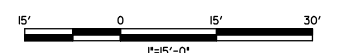
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	298
CONTRACT NO. 60P55				



PLAN

NOTES:

1. The Contractor shall not cut, drill, or weld Bridge Structural Members without approval by the Engineer.
2. Provide conduit expansion/deflection fittings at all structural expansion joints and at locations subject to structural movement.
3. Refer to drawing 02-095 for typical details on mounting conduits to structure.
4. Refer to drawings 05-030 through 05-032 for Bridge Conduit Diagrams and 05-033 through 05-036 for bridge Conduit Tabulations.
5. Refer to drawing 05-037 for Aerial Cable Details.



McDONOUGH, Drawing 05-014



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	___

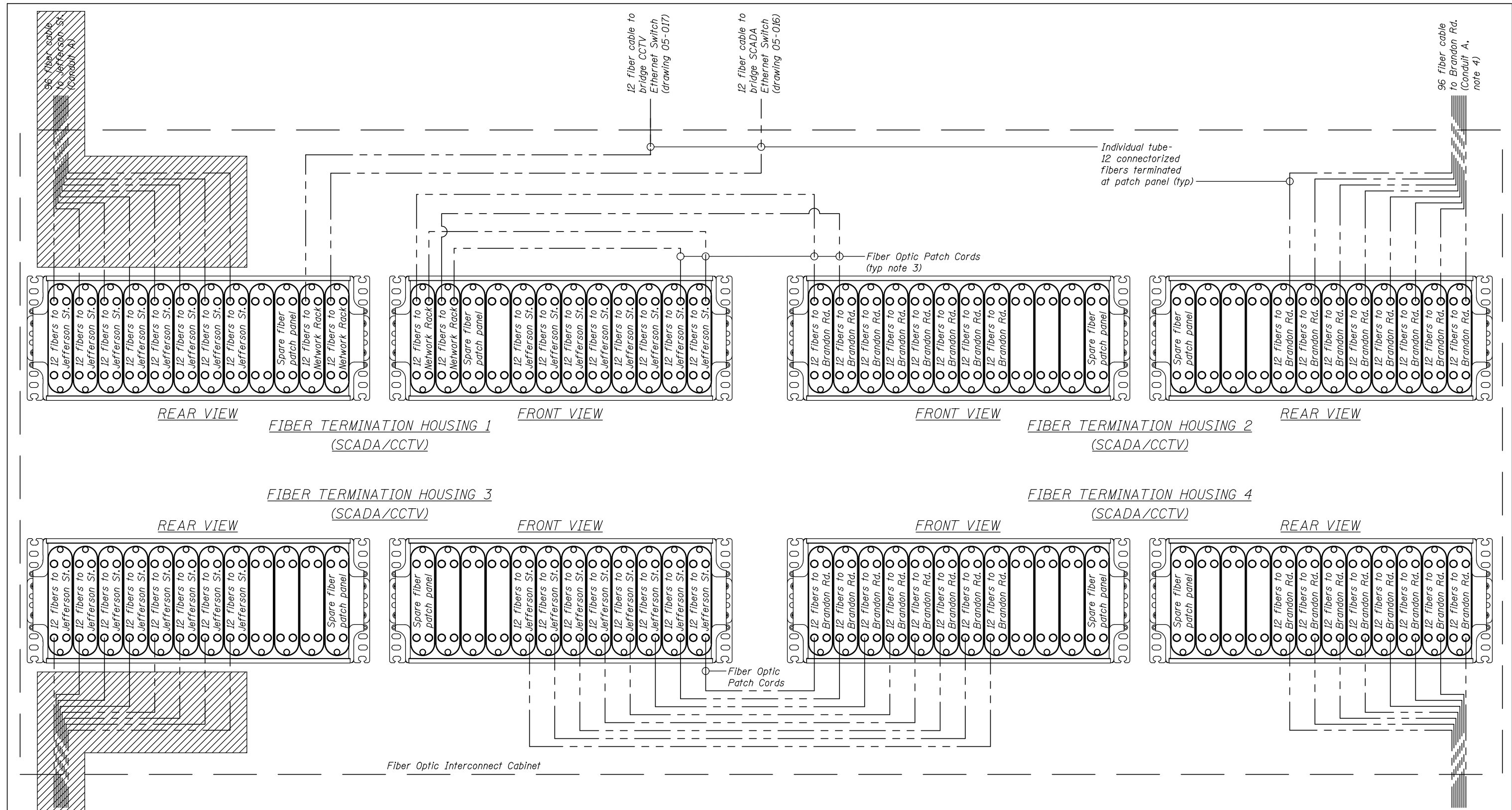
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**VARIOUS MOVABLE BRIDGES
LOCAL CENTRALIZED CONTROL AND OPERATION
MCDONOUGH STREET - FIBER OPTIC ROUTE TO OPERATOR HOUSE**

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0313	2011-045-I	WILL	466	299
CONTRACT NO. 60P55				

SHEET NO. 14 OF 40 SHEETS

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.
 4. Terminate fiber in Fiber Optic Outdoor Interconnect Cabinet, refer to drawing 05-038 for details.

96 fiber cable to Brandon Rd. (Conduit B, note 4)



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
MCDONOUGH STREET - FIBER OPTIC INTERCONNECT CABINET**

McDONOUGH, Drawing 05-015			
F.A.U. RT.E.	SECTION	COUNTY	TOTAL SHEETS
0313	2011-045-I	WILL	466
			SHEET NO. 300
CONTRACT NO. 60P55			
ILLINOIS FED. AID PROJECT			