04-27-2018 LETTING ITEM 215

F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	34	1
	ILLINOIS	CONTRACT NO. 62F40		

D-91-290-17

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

F.A.I. ROUTE 90/94 (KENNEDY EXPRESSWAY)
SECTION: 2017-0181
PROJECT: NHPP- SJNL (176)
REVLAC PLC REPLACEMENT
COOK COUNTY

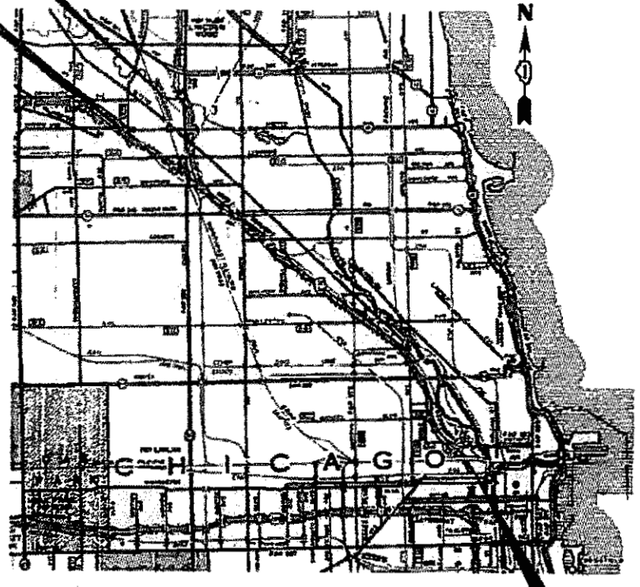
C-91-290-17

LOCATION OF SECTION INDICATED THUS: -

FOR INDEX OF SHEETS AND LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

END IMPROVEMENTS I-94
STA 465+00

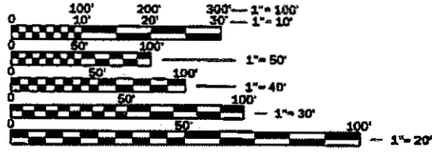
END IMPROVEMENTS I-90
LAWRENCE AVENUE



TOWNSHIP: CHICAGO

BEGIN IMPROVEMENTS I-90/94
W. LAKE ST

GROSS LENGTH = 51,600 FT. = 9.773 MILE
NET LENGTH = 28,800 FT. = 5.455 MILE



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

ELECTRICAL MAINTENANCE CONTRACTOR (EMC) MEADE ELECTRIC – TED TROYNER 1-708-588-2544
J.U.L.I.E. JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION 1-800-892-0123 OR 811 C.U.A.N. CHICAGO UTILITY ALERT NETWORK 1-312-744-7000

PROJECT ENGINEER: ROLAND TOMSONS
PROJECT MANAGER: MARK JENKINS

CONTRACT NO. 62F40

FUNCTIONAL CLASSIFICATION
INTERSTATE (URBAN)
2013 ADT = 280,000

ROBERT A. SWANSON 062-058809 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

10/5/17
ROBERT SWANSON, P.E. DATE
LICENSE NO.: 062-058809
EXPIRES: 11-30-2017
SHEETS: 1-29

KATELYN S. BOSACK 062-064491 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

10/5/17
KATELYN BOSACK P.E. DATE
LICENSE NO.: 062-064491
EXPIRES: 11-30-2017
SHEETS: 29-34

JACOBS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 14 Dec 2017
Anthony J Quigley
REGIONAL ENGINEER
Feb 2 2018
ENGINEER OF DESIGN AND ENVIRONMENT
Feb 2 18
DIRECTOR OF PROGRAM DEVELOPMENT

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

GENERAL NOTES:

1. THE BILL OF MATERIAL SHOWN IN THE PLANS LISTS THE MAJOR COMPONENTS NEEDED FOR THE PLC UPGRADE AT EACH LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL PARTS NEEDED FOR A COMPLETE WORKING SYSTEM.
2. FIELD TESTING OF THE ROADWAY DEVICES SHALL NOT BE PERFORMED DURING THE SNOW SEASON WHICH FALLS BETWEEN OCTOBER 31 AND APRIL 1.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL SUBMIT COMPLETE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.
4. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.
5. ALL FIELD TESTING WILL BE REQUIRED TO BE PERFORMED ON NIGHTS OR WEEKENDS AS PERMITTED BY TRAFFIC CONTROL.
6. THE CONTRACTOR SHALL SUBMIT ALL DAILY AND REVERSIBLE LANE CLOSURES REQUESTS VIA WWW.IDOTLCS.COM AT LEAST 24 HOURS IN ADVANCE OF ALL DAILY LANE, RAMP AND SHOULDER CLOSURES. IN THE EVENT THAT PERMISSION IS NOT AVAILABLE THROUGH THE WEBSITE, THE CONTRACTOR SHALL REQUEST AND GAIN THE APPROVAL FROM THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S EXPRESSWAY TRAFFIC OPERATIONS ENGINEER (847-705-4151)
7. DMS AND REVLAC OVERHEAD SIGNS WILL NOT REQUIRE ADDITIONAL SIGNS, SIGN COVERING OR TREATMENTS DURING TESTING. ALL EXISTING OVERHEAD SIGNS CAN REMAIN VISIBLE TO THE MOTORISTS DURING TESTING OF ALL NEW PLC UPGRADE EQUIPMENT.

MAINTENANCE OF TRAFFIC NOTES:

1. THE CONTRACTOR'S VEHICLES MUST ALWAYS MOVE WITH AND NOT AGAINST OR ACROSS THE FLOW OF TRAFFIC. THEY MUST ENTER OR LEAVE WORK AREAS IN A MANNER WHICH IS NOT HAZARDOUS TO TRAFFIC AND WILL NOT INTERFERE WITH NORMAL TRAFFIC. THE CONTRACTOR'S VEHICLES MUST NOT PARK OR STOP EXCEPT WITHIN DESIGNATED WORK AREAS. PERSONAL VEHICLES ARE NOT PERMITTED TO PARK WITHIN THE RIGHT-OF-WAY EXCEPT IN AREAS DESIGNATED BY THE ENGINEER.
2. THE NUMBER OF NIGHTS REQUIRED FOR EACH RAMP TO BE INDIVIDUALLY CLOSED IS PAID FOR UNDER 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION X'. THE NUMBER OF NIGHTS REQUIRED FOR ALL SIX RAMPS TO BE CLOSED SIMULTANEOUSLY WILL BE PAID FOR UNDER 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401 (SPECIAL).'
3. CONTRACTOR WILL BE REQUIRED TO REMOVE ALL TRAFFIC CONTROL DEVICES FROM THE IDOT RIGHT-OF-WAY AT THE END OF EACH WORKING NIGHT. STORING TRAFFIC CONTROL DEVICES ON TOP OF BARRIER WALL IS UNACCEPTABLE AND IS NOT ALLOWED.
4. THE FOLLOWING DISTRICT 1 STANDARDS SHALL BE APPLIED AT ALL SITES: TC-08, TC-17.
5. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.
6. THE CONTRACTOR SHALL CONTACT THE DISTRICT ONE EXPRESSWAY TRAFFIC CONTROL SUPERVISOR AT (847) 705-4155 A MINIMUM OF 3 BUSINESS DAYS BEFORE BEGINNING WORK.

IDOT HIGHWAY STANDARDS:

701106-02	OFF-ROAD OPERATIONS, >15' AWAY
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-11	LANE CLOSURE, FREEWAY/EXPRESSWAY
701428-01	TRAFFIC CONTROL SETUP & REMOVAL FREEWAY/EXPRESSWAY
701901-07	TRAFFIC CONTROL DEVICES

DISTRICT 1 STANDARDS:

TC-08	FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS
TC-17	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES

ABBREVIATIONS

A	AMPERE
ABBR	ABBREVIATIONS
AC	ALTERNATING CURRENT
AMP	AMPERE
AR	AS REQUIRED
AUX	AUXILIARY
AVE	AVENUE
BL	BLACK
BLDG	BUILDING
CB	CIRCUIT BREAKER
CPU	CONTROL PROCESSING UNIT
CR	CONTROL RELAY
DC	DIRECT CURRENT
DI	DIGITAL INPUT
DMS	DYNAMIC MESSAGE SIGN
DO	DIGITAL OUTPUT
DVD	DIGITAL VIDEO DRIVE
DWG	DRAWING
F	FUSE
G	GREEN
GND	GROUND
H	HOT
HMI	HUMAN MACHINE INTERFACE
HZ	HERTZ
IN	INPUT
I/O	INPUTS/OUTPUTS
IDOT	ILLINOIS DEPARTMENT OF TRANSPORTATION
LAN	LOCAL AREA NETWORK
LOC	LOCAL
MBYTES	MEGABYTES
MM	MULTI MODE
N	NEUTRAL
NTS	NOT TO SCALE
OL	OVERLOAD
OUT	OUTPUT
PB	PUSH BUTTON
PC	PLC CABINET
PL	PILOT LIGHT
PLC	PROGRAMMABLE LOGIC CONTROLLER
REM	REMOTE
REVLAC	REVERSIBLE LANE ACCESS CONTROL SYSTEM
RIO	REMOTE INPUT OUTPUT
SHT	SHEET
S/S	SELECTOR SWITCH
SM	SINGLE MODE
SUP	SUPPLY
TB	TERMINAL BLOCK
TERM	TERMINAL
TYP	TYPICAL
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VDT	VIDEO DISPLAY TERMINAL
WH	WHITE

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		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALES	CHECKED - MBS	REVISED -
$MODELNAMES	PLOT DATE = $DATES	DATE - 10/6/2017	REVISED -

$FILES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF DRAWINGS, HIGHWAY STANDARDS, AND GENERAL NOTES

SCALE: | SHEET 2 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	36	2
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 90% FEDERAL 10% STATE REVLAC 044 URBAN					
70104205	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 1	EACH	3	3					
70104210	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 2	EACH	3	3					
70104215	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 3	EACH	3	3					
70104220	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 4	EACH	3	3					
70104225	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 5	EACH	3	3					
70104230	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 6	EACH	3	3					
X7010237	CHANGEABLE MESSAGE SIGN, SPECIAL	CAL DAY	3	3					
X7010410	SPEED DISPLAY TRAILER	CAL MO	1	1					
X7010206	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401 (SPECIAL)	EACH	3	3					
X7015005	CHANGEABLE MESSAGE SIGN	CAL DAY	18	18					
X1400289	BUDGETARY ALLOWANCE FOR EMC SUPPORT SERVICES	LSUM	1	1					
X1400290	BUDGETARY ALLOWANCE FOR UPGRADE OF PLC CONTROLS	LSUM	1	1					
X1400291	REVLAC CONTROL SYSTEM PLC PROCESSOR HARDWARE UPGRADE, INSTALLATION	EACH	5	5					
X1400292	REVLAC CONTROL SYSTEM PLC PROCESSOR HARDWARE UPGRADE, MATERIAL	EACH	5	5					

* SPECIALTY ITEM

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		DRAWN - PA	REVISED -
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	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 3 OF 38 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	36	3
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE REVLAC 044 URBAN					
	X1400793	REVLAC CONTROL SYSTEM PLC PROCESSOR HARDWARE UPGRADE, SPARE PARTS	LSUM	1	1					
Ø	20076600	TRAINEES	HOUR	4000	4000					
Ø	20076604	TRAINEES - TRAINING PROGRAM GRADUATE	HOUR	4000	4000					

* SPECIALTY ITEM Ø 0042

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	PLOT DATE = $DATES	DATE - 10/9/2017	REVISED -	

SCALE: NONE | SHEET 4 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	36	4
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		

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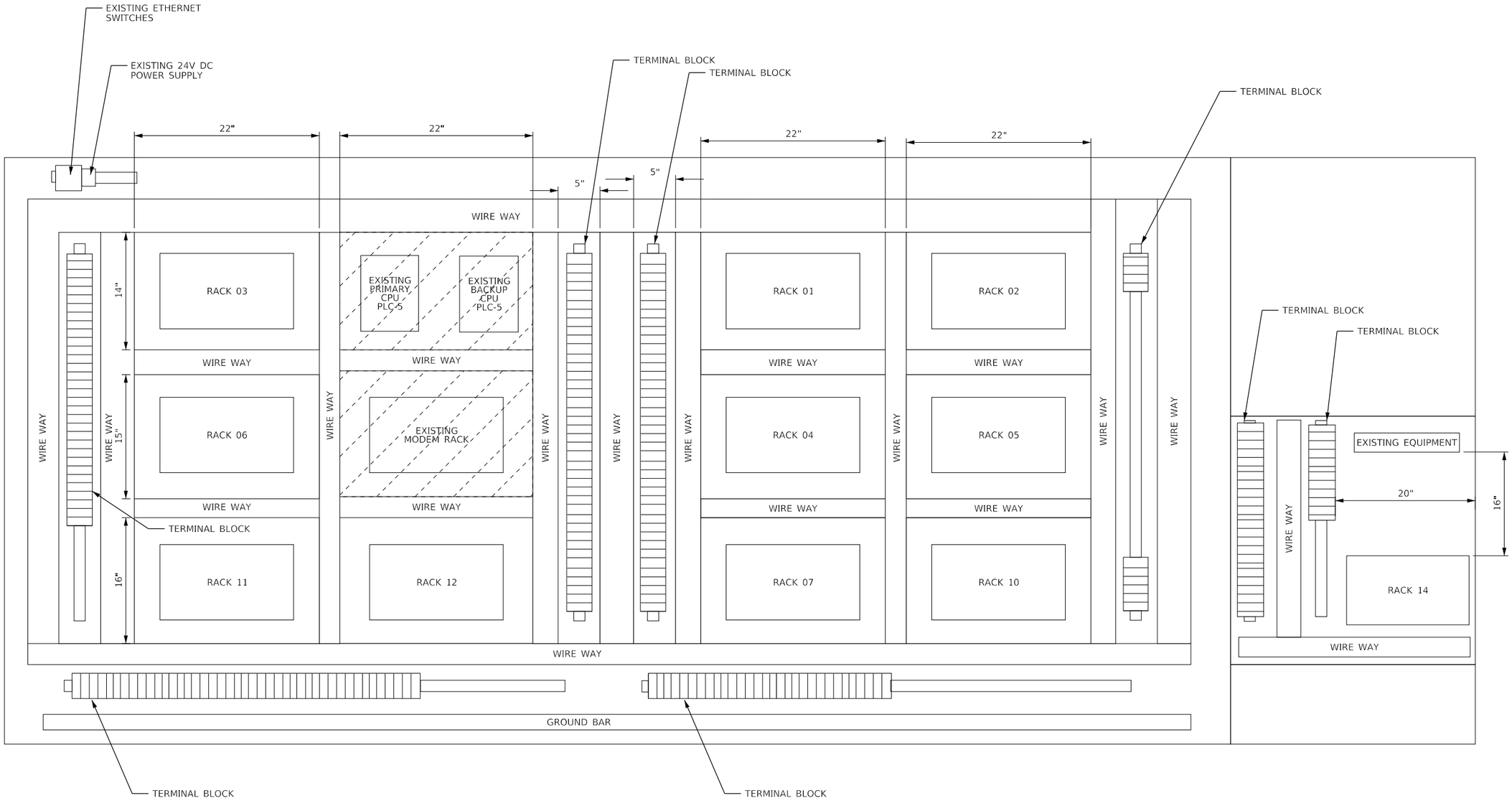


LEGEND

CROSSHATCHING INDICATES WIRE OR DEVICE TO BE REMOVED

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING MODEMS AND REPLACE THEM WITH NEW ETHERNET BASED MODEMS. REFER TO SHEET 13 BILL OF MATERIAL ITEM 12 FOR NEW MODEM DETAILS.
2. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
3. REFER TO SHEET 12 FOR NEW PANEL LAYOUT.
4. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

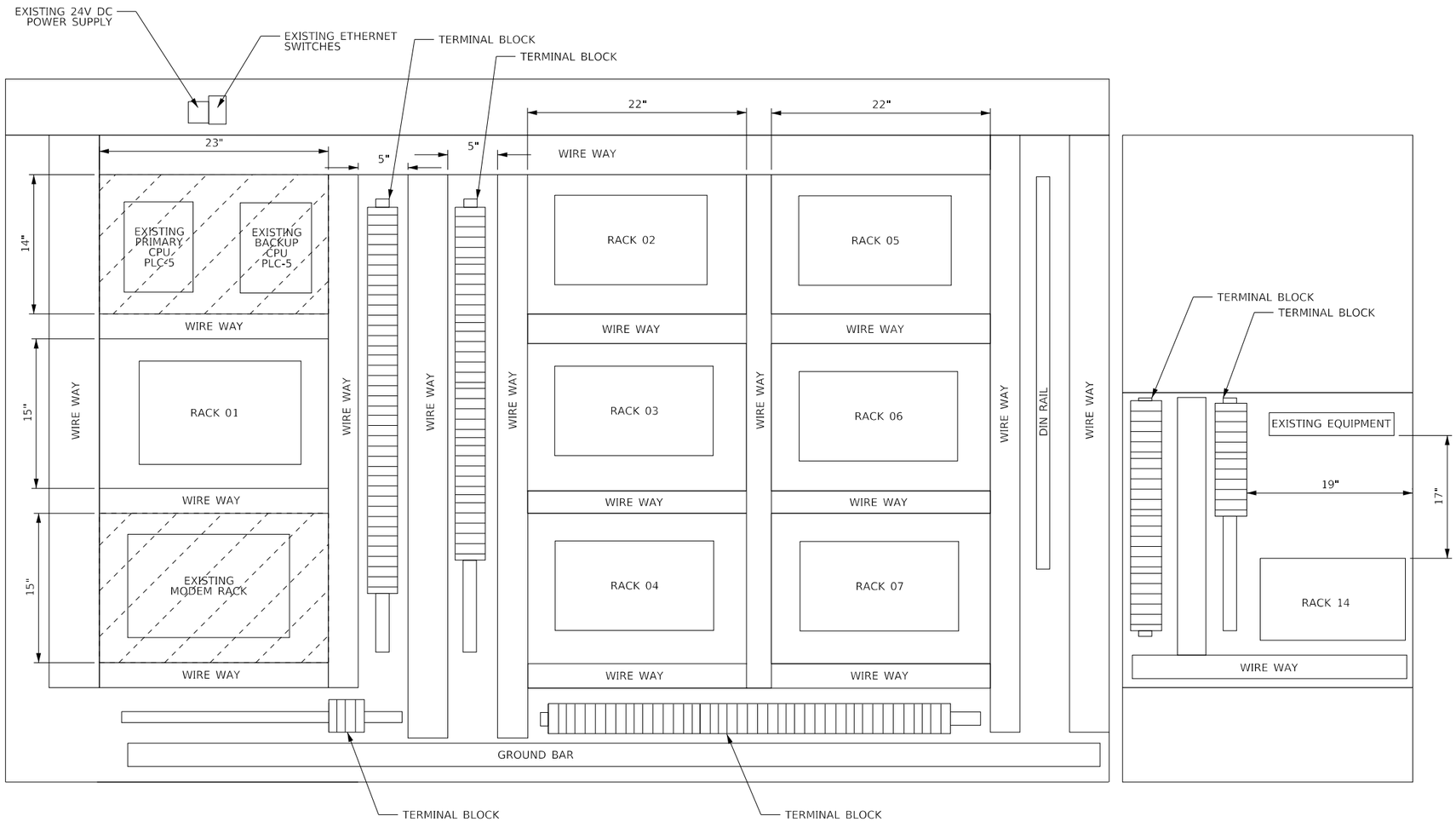
FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL PLANS -
BUILDING A PLC/VDT ENCLOSURE

SCALE: NTS | SHEET 5 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	5
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



LEGEND

CROSSHATCHING INDICATES WIRE OR DEVICE TO BE REMOVED

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING MODEMS AND REPLACE THEM WITH NEW WITH ETHERNET BASED MODEMS. REFER TO SHEET 16 BILL OF MATERIAL ITEM 12 FOR NEW MODEM DETAILS.
2. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
3. REFER TO SHEET 15 FOR NEW PANEL LAYOUT.
4. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	REMOVAL PLANS - BUILDING C PLC/VDT ENCLOSURE
		DRAWN - PA	REVISED -		
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	6
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

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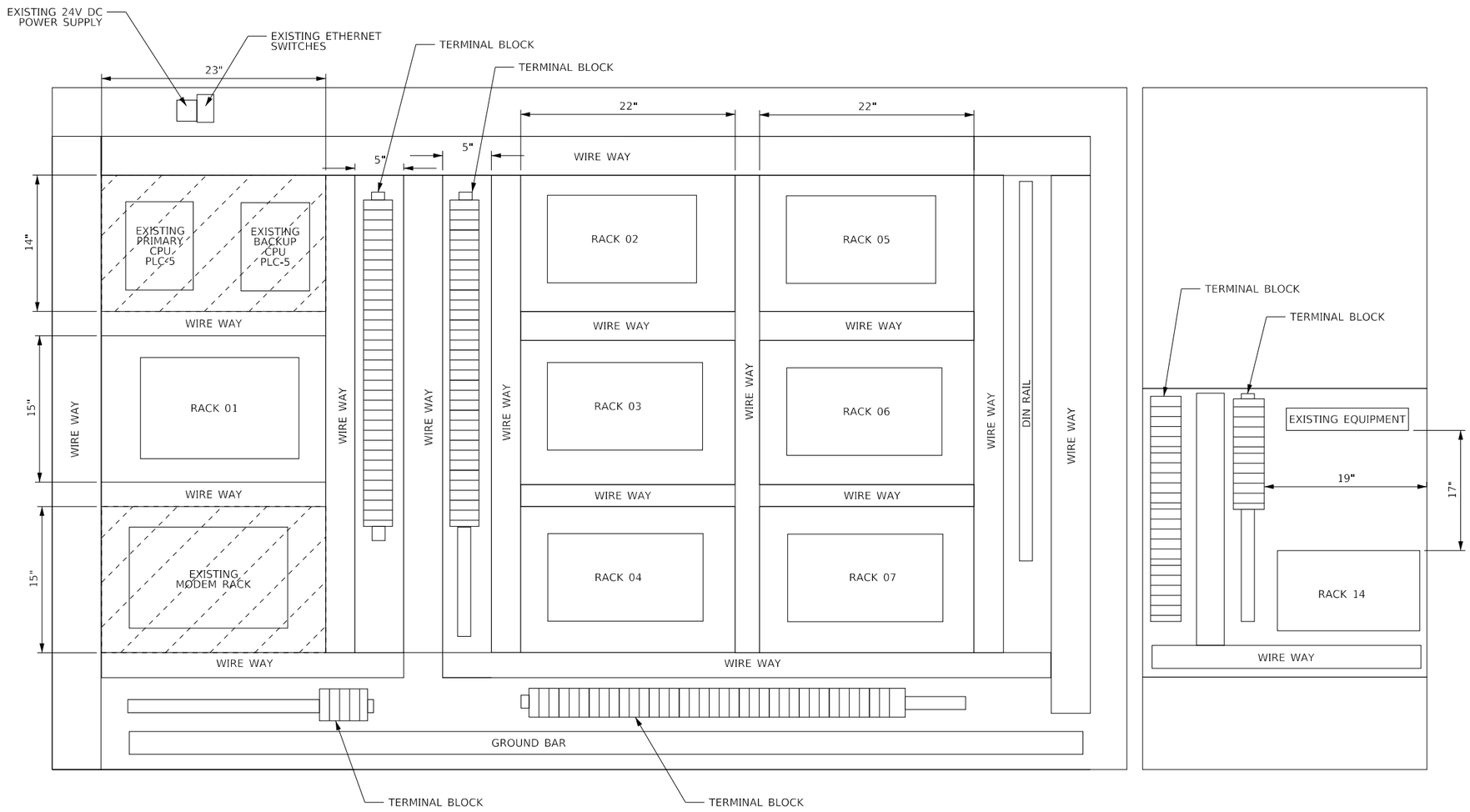

LEGEND

CROSSHATCHING INDICATES WIRE OR DEVICE TO BE REMOVED

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING MODEMS AND REPLACE THEM WITH NEW ETHERNET BASED MODEMS. REFER TO SHEET 19 BILL OF MATERIAL ITEM 12 FOR NEW MODEM DETAILS.
2. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
3. REFER SHEET 18 FOR NEW PANEL LAYOUT.
4. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

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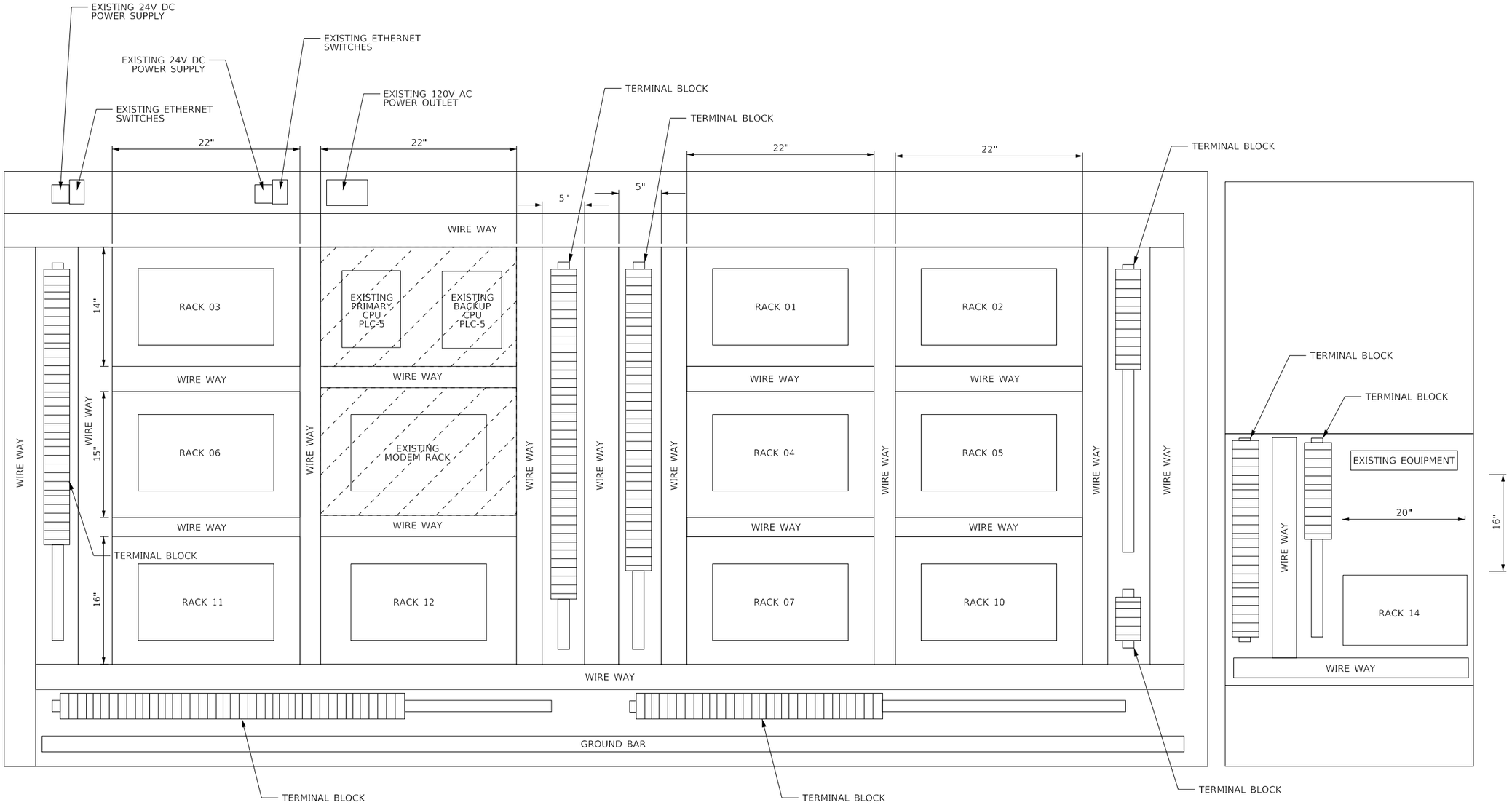
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL PLANS -
BUILDING D PLC/VDT ENCLOSURE

SCALE: NTS | SHEET 7 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	7
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



LEGEND

CROSSHATCHING INDICATES WIRE OR DEVICE TO BE REMOVED

NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING MODEMS AND REPLACE THEM WITH NEW ETHERNET BASED MODEM. REFER TO SHEET 22 BILL OF MATERIAL ITEM 12 FOR NEW MODEM DETAILS.
2. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
3. REFER SHEET 21 FOR NEW PANEL LAYOUT.
4. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
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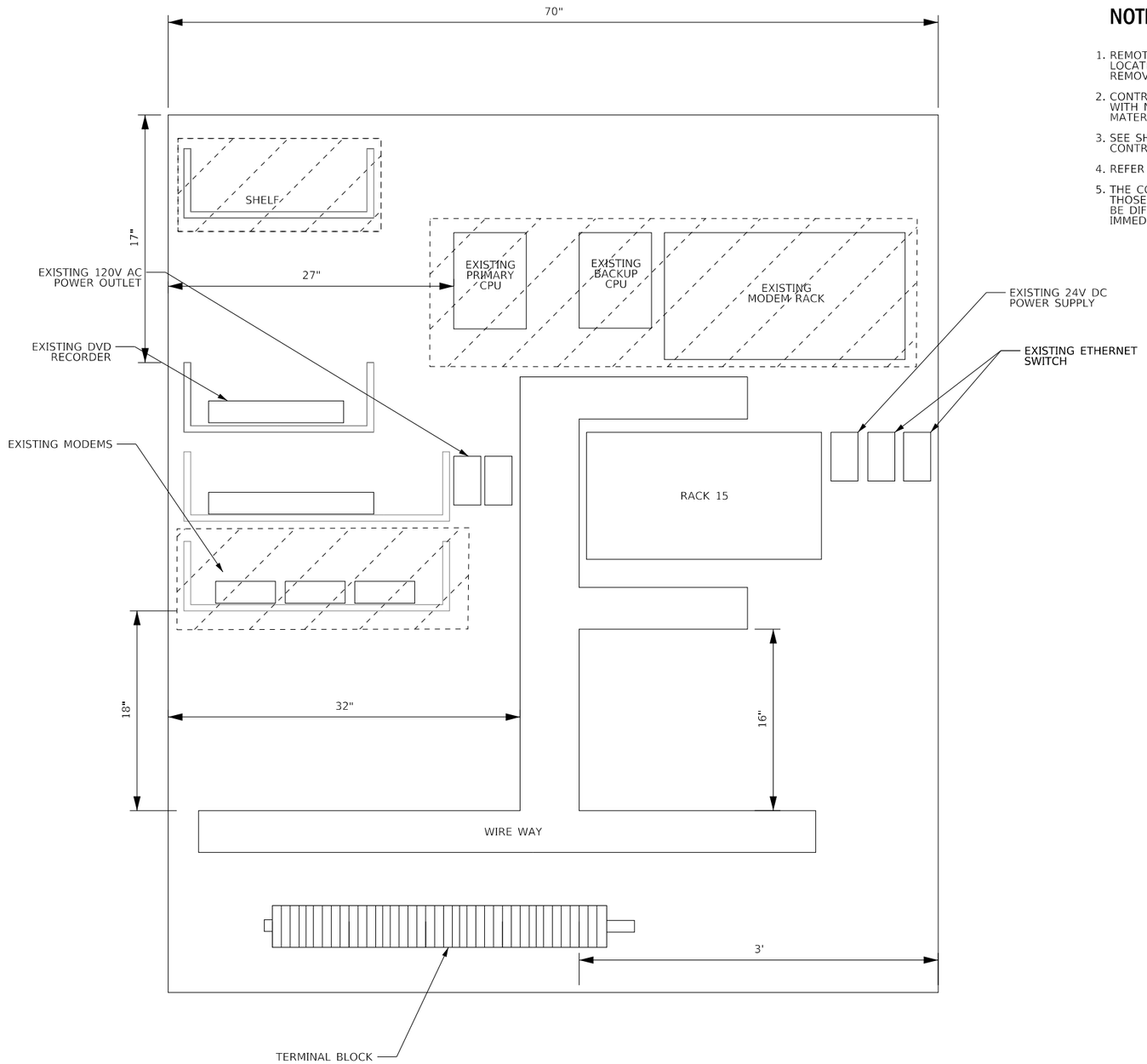
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL PLANS -
BUILDING E PLC/VDT ENCLOSURE

SCALE: NTS | SHEET 8 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	8
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. REMOTE I/O RACK 12 IS NOT SHOWN FOR CLARITY. THIS RACK IS LOCATED ON THE BOTTOM OF THE CABINET AND WILL NOT BE REMOVED.
2. CONTRACTOR SHALL REMOVE EXISTING MODEMS AND REPLACE THEM WITH NEW ETHERNET BASED MODEM. REFER TO SHEET 25 BILL OF MATERIAL ITEM 12 FOR NEW MODEM DETAILS.
3. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
4. REFER TO SHEET 24 FOR NEW PANEL LAYOUT.
5. THE CONTRACTOR SHALL VERIFY THAT EXISTING CONDITIONS MATCH THOSE SHOWN IN THE PLANS. IF EXISTING CONDITIONS ARE FOUND TO BE DIFFERENT THAN SHOWN IN THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING.

LEGEND

CROSSHATCHING INDICATES WIRE OR DEVICE TO BE REMOVED

$FILE$

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

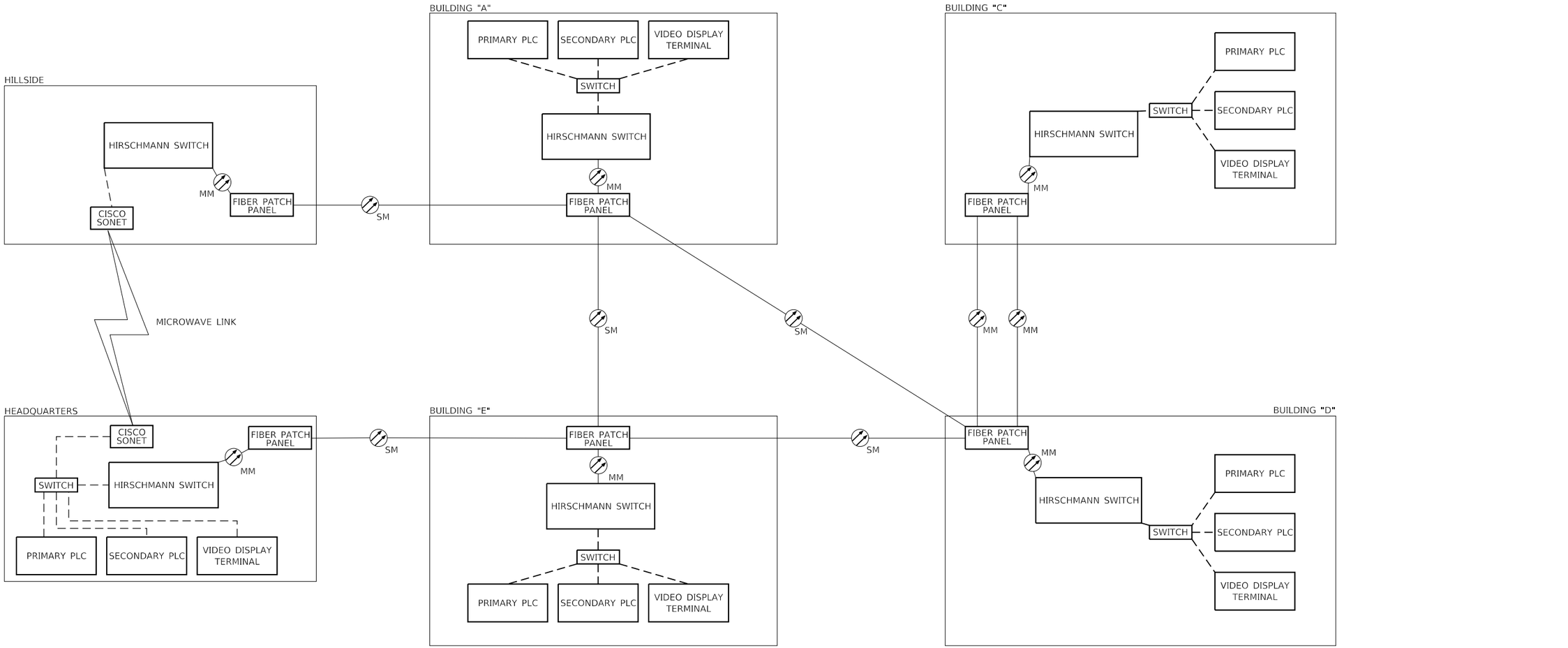
REMOVAL PLANS -
BUILDING HQ PLC/VDT ENCLOSURE

SCALE: NTS | SHEET 9 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	9
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

NOTES:

1. FIBER CONNECTING BUILDING "C" TO BUILDING "A" IS ROUTED VIA BUILDING "D".
2. ALL EQUIPMENT AND NETWORK CABLING SHOWN IN THIS SHEET IS EXISTING AND IS FOR CONTRACTOR REFERENCE ONLY.



LEGEND

- CAT-6 UNLESS NOTED OTHERWISE
- SM — SINGLE MODE FIBER PAIR
- MM — MULTI MODE FIBER PAIR

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		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING ETHERNET COMMUNICATION NETWORK LAYOUT

SCALE: | SHEET 10 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	10
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

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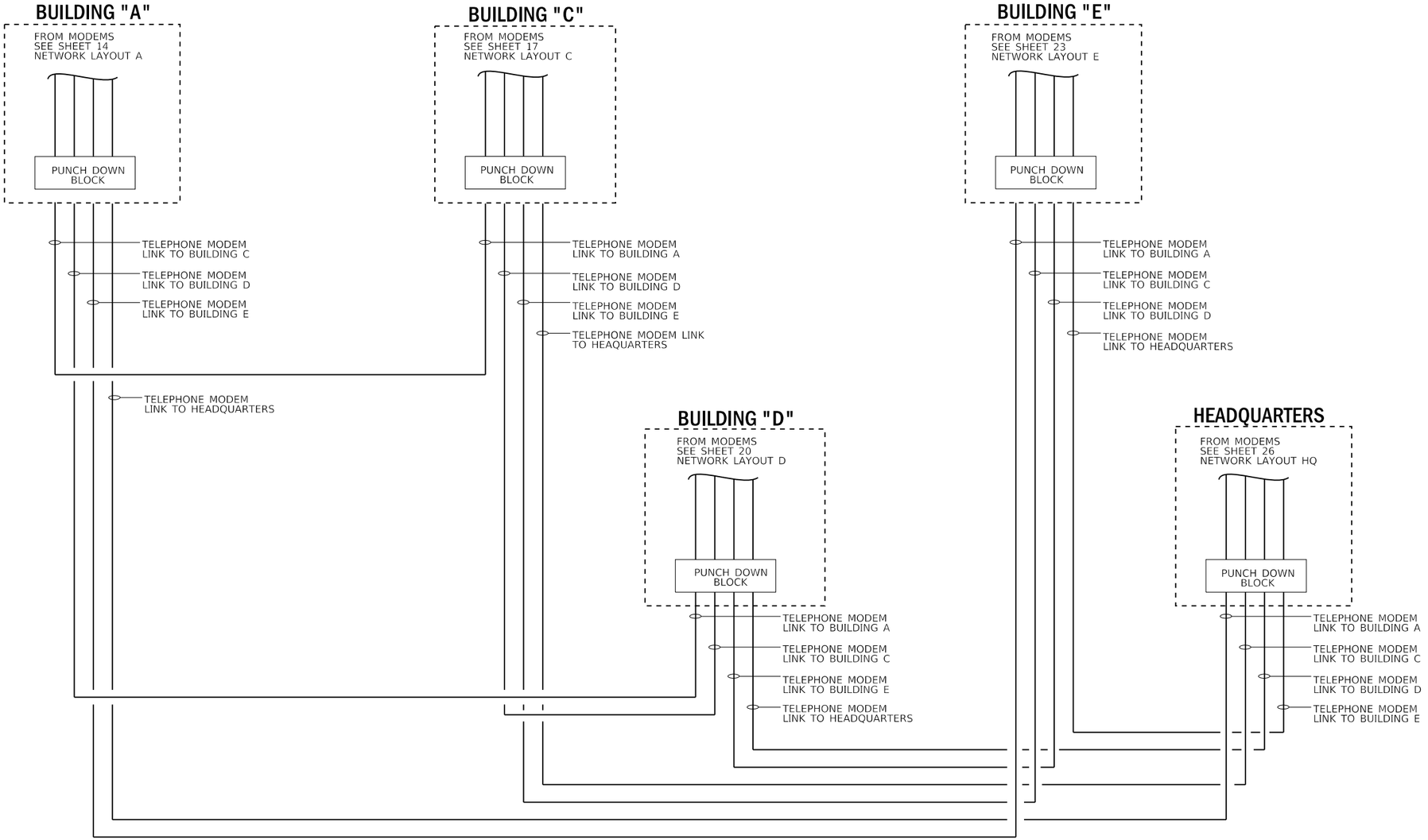

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	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING LEASED LINE COMMUNICATION NETWORK LAYOUT

SCALE: | SHEET 11 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	11
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

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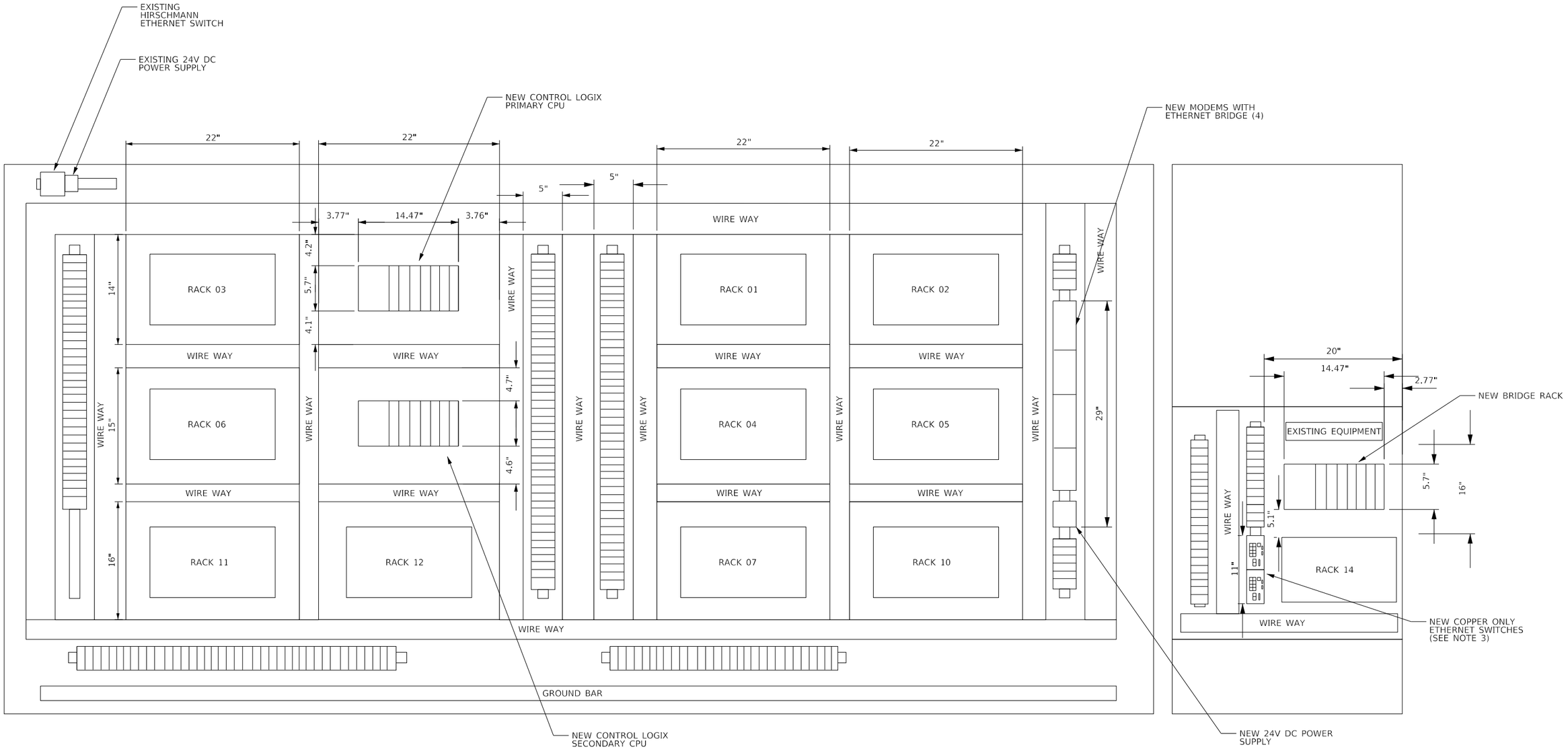


NOTES:

1. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
2. TEMPORARY 120VAC POWER REQUIRED DURING FIELD TESTING IS OBTAINED FROM A 120VAC POWER RECEPTACLE LOCAL TO THE BUILDING. NO EMERGENCY POWER REQUIRED DURING FIELD TESTING.
3. CONTRACTOR SHALL REFERENCE SHEET 13 FOR BILL OF MATERIALS AND POWER LADDER.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING A -
NEW PLC/VDT ENCLOSURE MODIFICATIONS

SCALE: | SHEET 12 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	12
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		

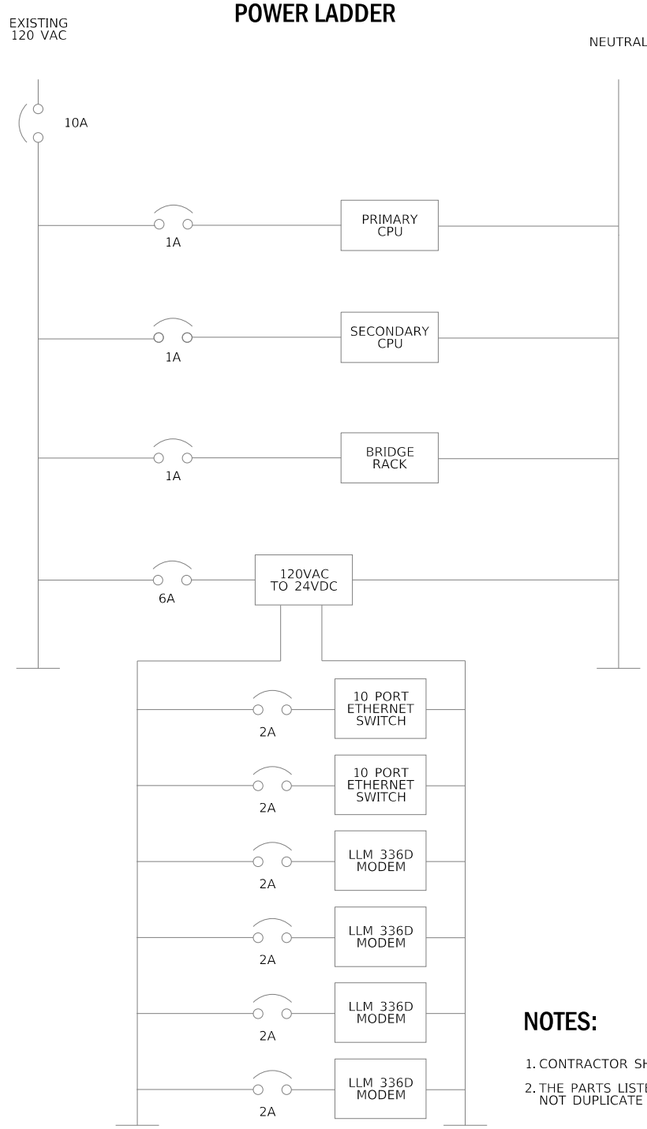
BILL OF MATERIAL - BUILDING A (SEE NOTE 1)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5570 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L74
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	5	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	2	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	EMPTY SLOT FILLER CARDS	ROCKWELL	8	1756-N2
9	GENERIC ASC II SERIAL COMMUNICATION MODULE	PROSOFT	1	MV156E-GSC
10	10 PORT ETHERNET SWITCH	STRATIX	2	1783-BMS10CL
11	SYNC CABLE	ROCKWELL	1	1756-RMC1
12	LEASED LINE MODEM WITH ETHERNET BRIDGE	MULOGIC	4	LLM-336D.ETH
13	120 VAC TO 24 VDC POWER SUPPLY	ROCKWELL	1	1606-XLE480EP
14	1A CIRCUIT BREAKER	ROCKWELL	3	1492-SP1B010
15	6A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B060
16	2A CIRCUIT BREAKER	ROCKWELL	6	1492-SP1B020
17	10A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B100

BILL OF MATERIAL- MISCELLANEOUS HARDWARE AND SPARE PARTS (SEE NOTE 2)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5575 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L75
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	1	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	1	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	SYNC CABLE	ROCKWELL	1	1756-RMC1

POWER LADDER



NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE PARTS SHOWN.
2. THE PARTS LISTED HERE ARE SPARES NEEDED FOR ALL BUILDINGS. DO NOT DUPLICATE FOR BUILDINGS C,D,E & HQ.

LEGEND

CIRCUIT BREAKER

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

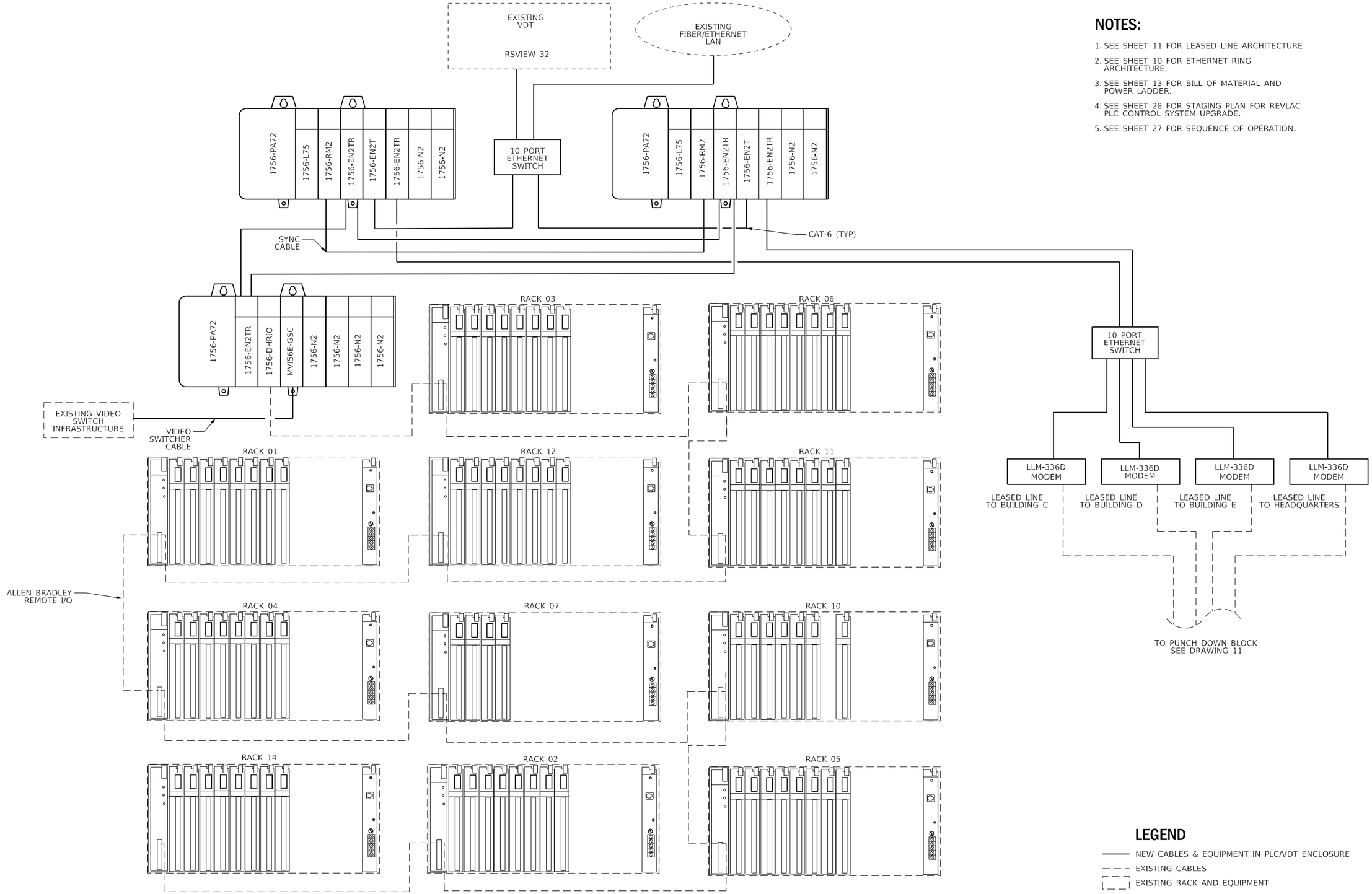
BUILDING A -
BILL OF MATERIAL AND POWER LADDER

SCALE: NONE | SHEET 13 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	13
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

NOTES:

1. SEE SHEET 11 FOR LEASED LINE ARCHITECTURE
2. SEE SHEET 10 FOR ETHERNET RING ARCHITECTURE.
3. SEE SHEET 13 FOR BILL OF MATERIAL AND POWER LADDER.
4. SEE SHEET 28 FOR STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
5. SEE SHEET 27 FOR SEQUENCE OF OPERATION.



LEGEND

- NEW CABLES & EQUIPMENT IN PLC/VDT ENCLOSURE
- EXISTING CABLES
- EXISTING RACK AND EQUIPMENT

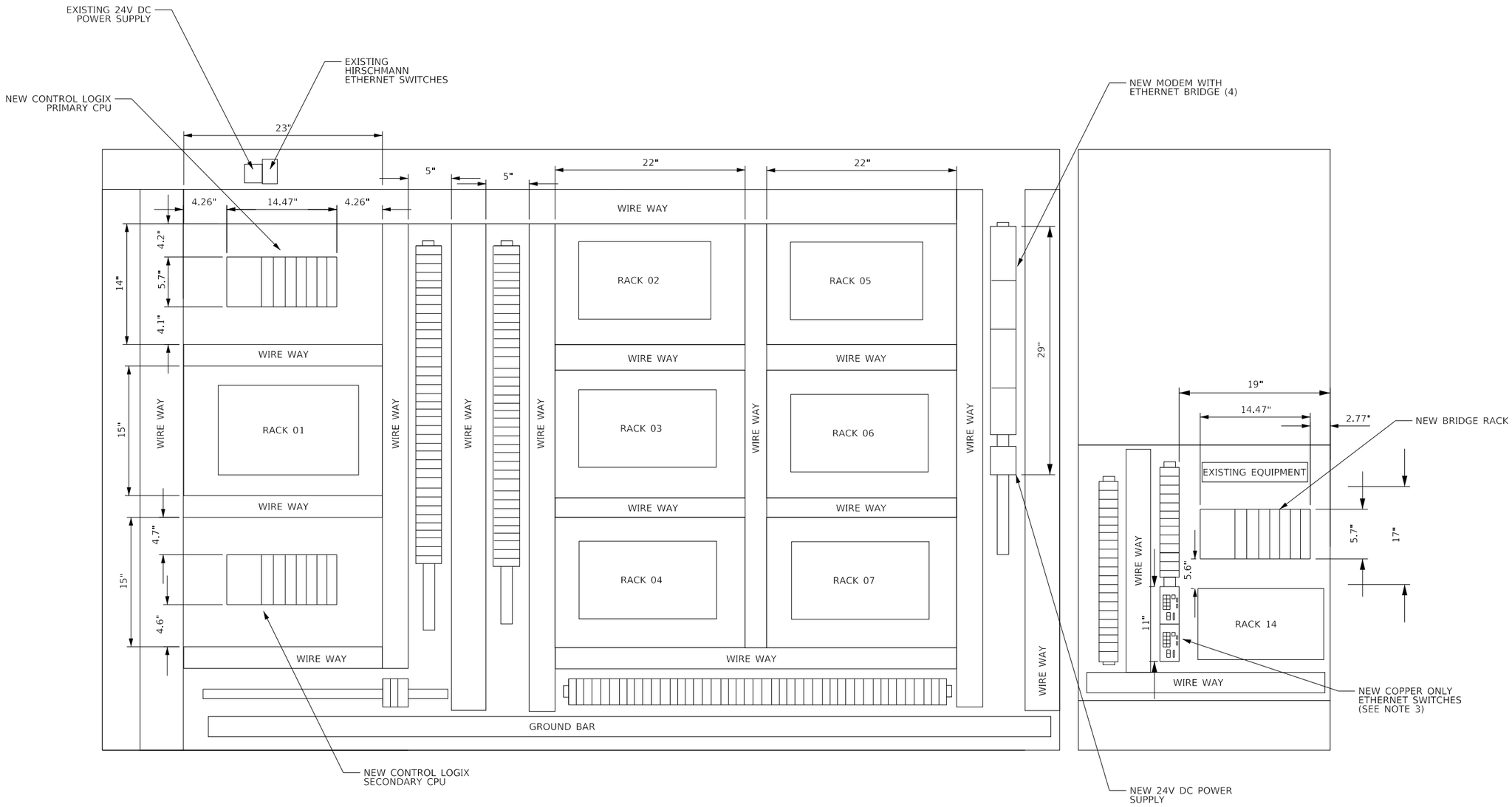
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING A -
NEW PLC-VDT NETWORK ARCHITECTURE

SCALE: NTS | SHEET 14 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	14
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
2. TEMPORARY 120VAC POWER REQUIRED DURING FIELD TESTING IS OBTAINED FROM A 120VAC POWER RECEPTACLE LOCAL TO THE BUILDING. NO EMERGENCY POWER REQUIRED DURING FIELD TESTING.
3. CONTRACTOR SHALL REFERENCE SHEET 16 FOR BILL OF MATERIALS AND POWER LADDER.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING C -
NEW PLC/VDT ENCLOSURE MODIFICATIONS

SCALE: NTS | SHEET 15 OF 36 SHEETS | STA. | TO STA.

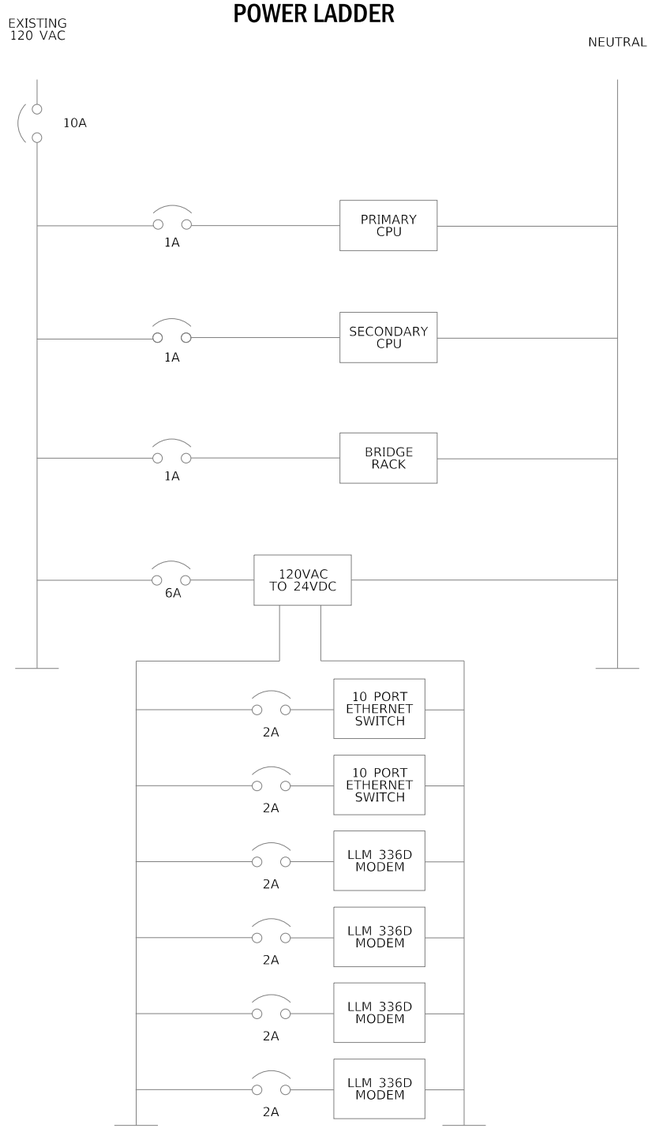
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	15
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

$FILE$

BILL OF MATERIAL - BUILDING C (SEE NOTE 1)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5570 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L74
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	5	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	2	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	EMPTY SLOT FILLER CARDS	ROCKWELL	8	1756-N2
9	GENERIC ASC II SERIAL COMMUNICATION MODULE	PROSOFT	1	MV156E-GSC
10	10 PORT ETHERNET SWITCH	STRATIX	2	1783-BMS10CL
11	SYNC CABLE	ROCKWELL	1	1756-RMC1
12	LEASED LINE MODEM WITH ETHERNET BRIDGE	MULOGIC	4	LLM-336D.ETH
13	120 VAC TO 24 VDC POWER SUPPLY	ROCKWELL	1	1606-XLE480EP
14	1A CIRCUIT BREAKER	ROCKWELL	3	1492-SP1B010
15	6A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B060
16	2A CIRCUIT BREAKER	ROCKWELL	6	1492-SP1B020
17	10A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B100

POWER LADDER



NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE PARTS SHOWN.

LEGEND

CIRCUIT BREAKER

$FILE$

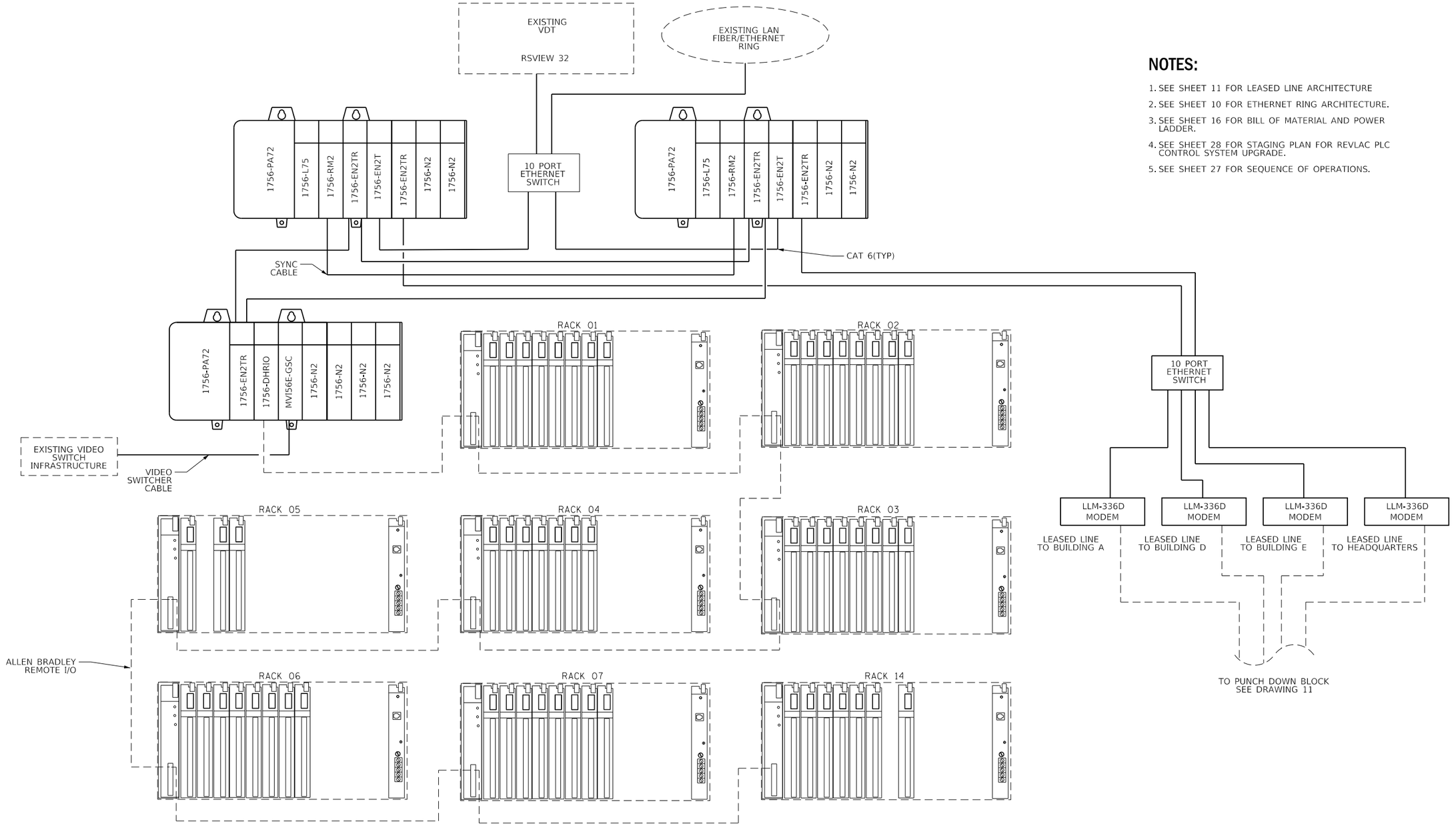
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING C -
BILL OF MATERIAL AND POWER LADDER

SCALE: NONE | SHEET 16 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	16
		CONTRACT NO. 62F40		
		ILLINOIS FED. AID PROJECT		



NOTES:

1. SEE SHEET 11 FOR LEASED LINE ARCHITECTURE
2. SEE SHEET 10 FOR ETHERNET RING ARCHITECTURE.
3. SEE SHEET 16 FOR BILL OF MATERIAL AND POWER LADDER.
4. SEE SHEET 28 FOR STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
5. SEE SHEET 27 FOR SEQUENCE OF OPERATIONS.

LEGEND

- NEW CABLES & EQUIPMENT IN PLC/VDT ENCLOSURE
- EXISTING CABLES
- EXISTING RACK AND EQUIPMENT

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

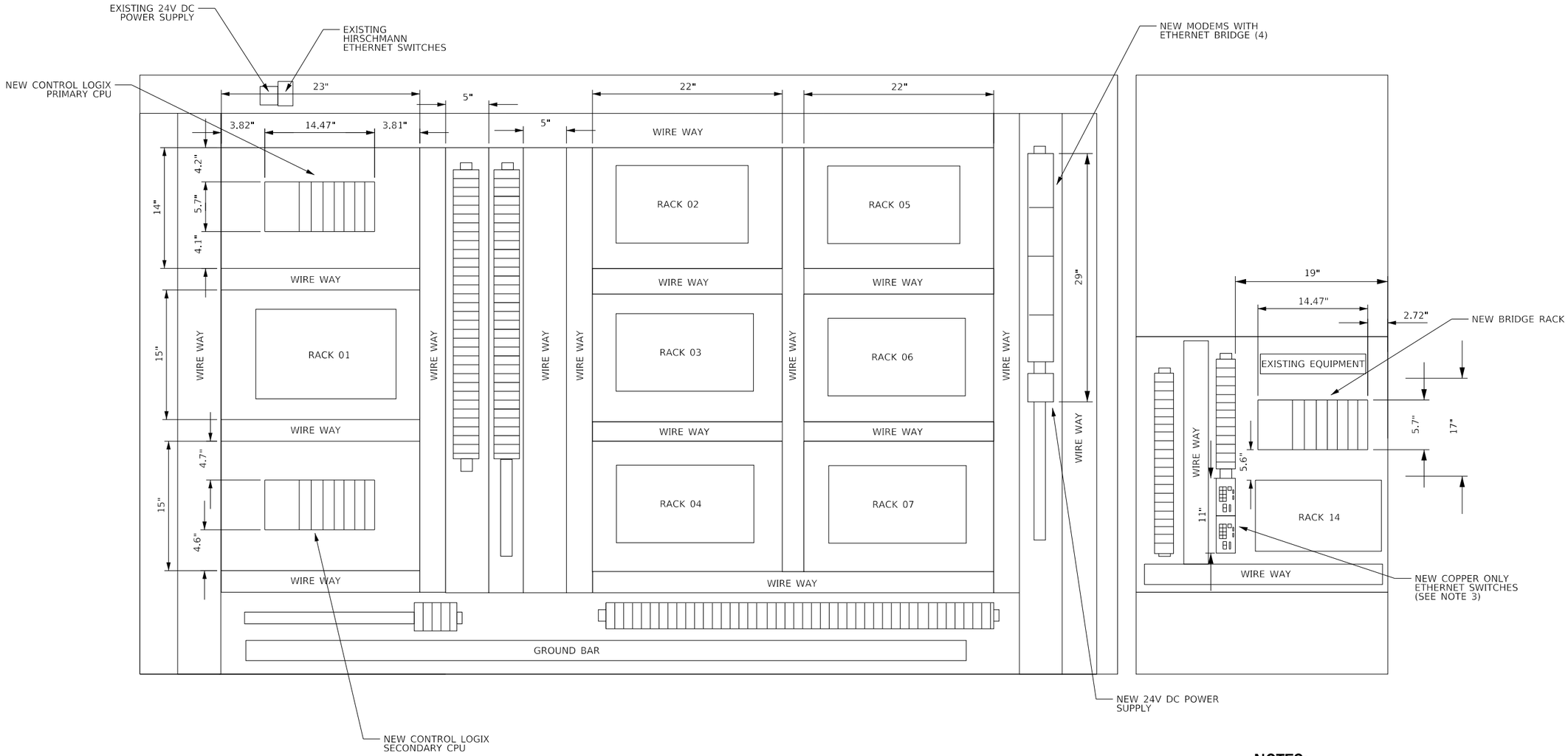
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING C -
NEW PLC/VDT NETWORK ARCHITECTURE

SCALE: NTS | SHEET 17 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	17
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

$FILE$



NOTES:

1. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
2. TEMPORARY 120VAC POWER REQUIRED DURING FIELD TESTING IS OBTAINED FROM A 120VAC POWER RECEPTACLE LOCAL TO THE BUILDING. NO EMERGENCY POWER REQUIRED DURING FIELD TESTING.
3. CONTRACTOR SHALL REFERENCE SHEET 19 FOR BILL OF MATERIALS AND POWER LADDER.

FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING D -
NEW PLC/VDT ENCLOSURE MODIFICATIONS

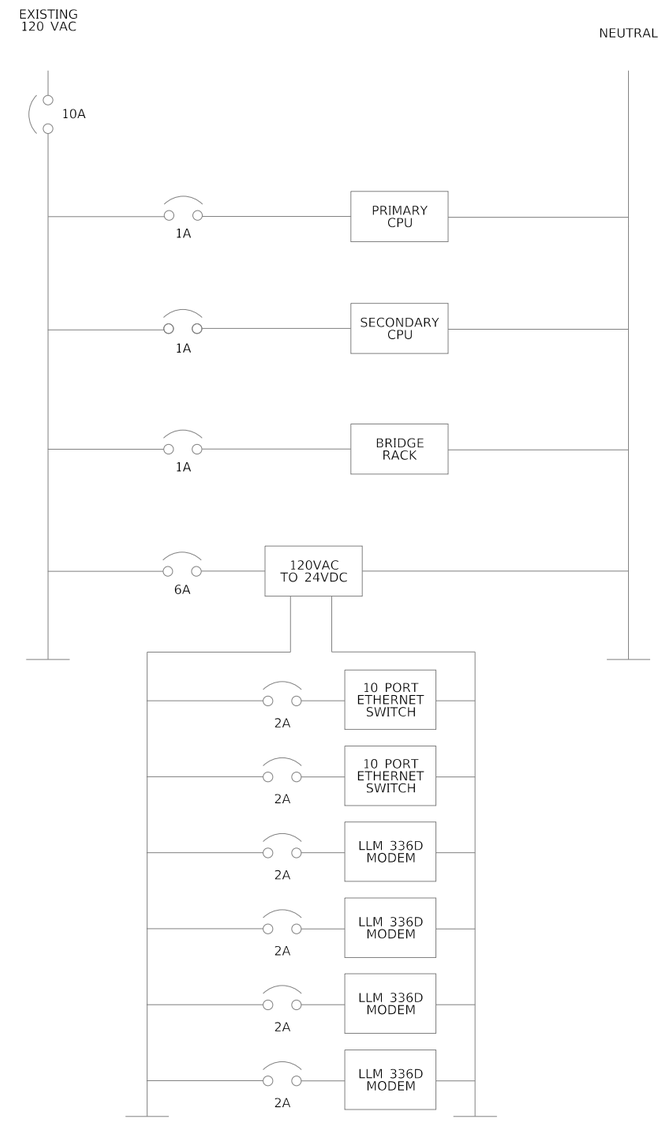
SCALE: NTS | SHEET 18 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	18
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

BILL OF MATERIAL - BUILDING D (SEE NOTE 1)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5570 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L74
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	5	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	2	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	EMPTY SLOT FILLER CARDS	ROCKWELL	8	1756-N2
9	GENERIC ASC II SERIAL COMMUNICATION MODULE	PROSOFT	1	MV156E-GSC
10	10 PORT ETHERNET SWITCH	STRATIX	2	1783-BMS10CL
11	SYNC CABLE	ROCKWELL	1	1756-RMC1
12	LEASED LINE MODEM WITH ETHERNET BRIDGE	MULOGIC	4	LLM-336D.ETH
13	120 VAC TO 24 VDC POWER SUPPLY	ROCKWELL	1	1606-XLE480EP
14	1A CIRCUIT BREAKER	ROCKWELL	3	1492-SP1B010
15	6A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B060
16	2A CIRCUIT BREAKER	ROCKWELL	6	1492-SP1B020
17	10A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B100

POWER LADDER



NOTES:

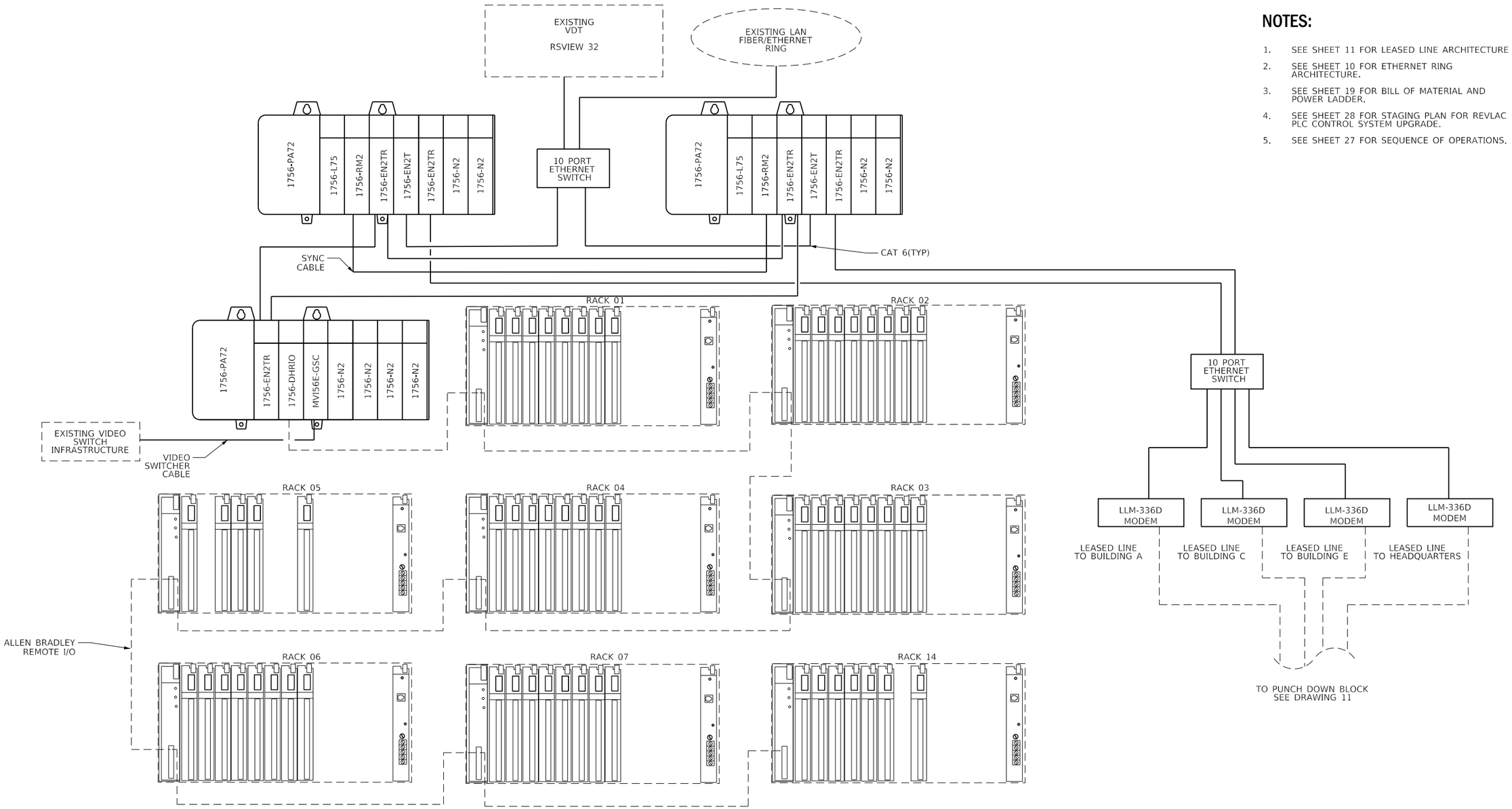
1. CONTRACTOR SHALL VERIFY AND COORDINATE PARTS SHOWN.

LEGEND

CIRCUIT BREAKER

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
$MODELNAME$	PLOT SCALE = $SCALE$	DRAWN - PA	REVISED -	BUILDING D - BILL OF MATERIAL AND POWER LADDER
	PLOT DATE = $DATE$	CHECKED - MBS	REVISED -	SCALE: NONE SHEET 19 OF 36 SHEETS STA. TO STA.
		DATE - 10/6/2017	REVISED -	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	19
		CONTRACT NO. 62F40		
		ILLINOIS FED. AID PROJECT		



NOTES:

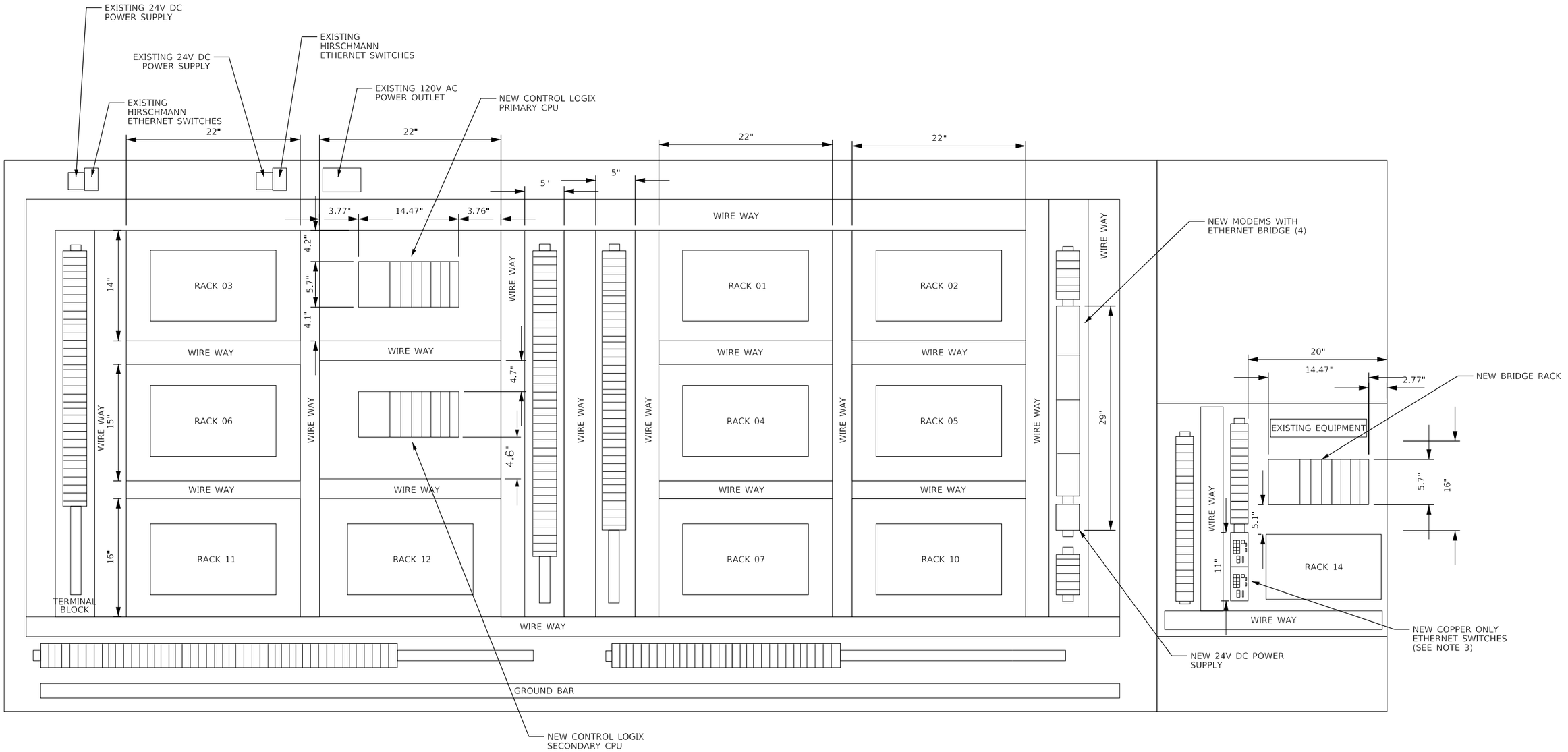
1. SEE SHEET 11 FOR LEASED LINE ARCHITECTURE
2. SEE SHEET 10 FOR ETHERNET RING ARCHITECTURE.
3. SEE SHEET 19 FOR BILL OF MATERIAL AND POWER LADDER.
4. SEE SHEET 28 FOR STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
5. SEE SHEET 27 FOR SEQUENCE OF OPERATIONS.

LEGEND

- NEW CABLES & EQUIPMENT IN PLC/VDT ENCLOSURE
- EXISTING CABLES
- EXISTING RACK AND EQUIPMENT

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUILDING D - NEW PLC/VDT NETWORK ARCHITECTURE
$MODELNAME$		DRAWN - PA	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -		
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -		SCALE: NTS SHEET 20 OF 36 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	20
		CONTRACT NO. 62F40		
		ILLINOIS FED. AID PROJECT		



NOTES:

1. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
2. TEMPORARY 120VAC POWER REQUIRED DURING FIELD TESTING IS OBTAINED FROM A 120VAC POWER RECEPTACLE LOCAL TO THE BUILDING. NO EMERGENCY POWER REQUIRED DURING FIELD TESTING.
3. CONTRACTOR SHALL REFERENCE SHEET 22 FOR BILL OF MATERIALS AND POWER LADDER.

FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUILDING E -
NEW PLC/VDT ENCLOSURE MODIFCATIONS

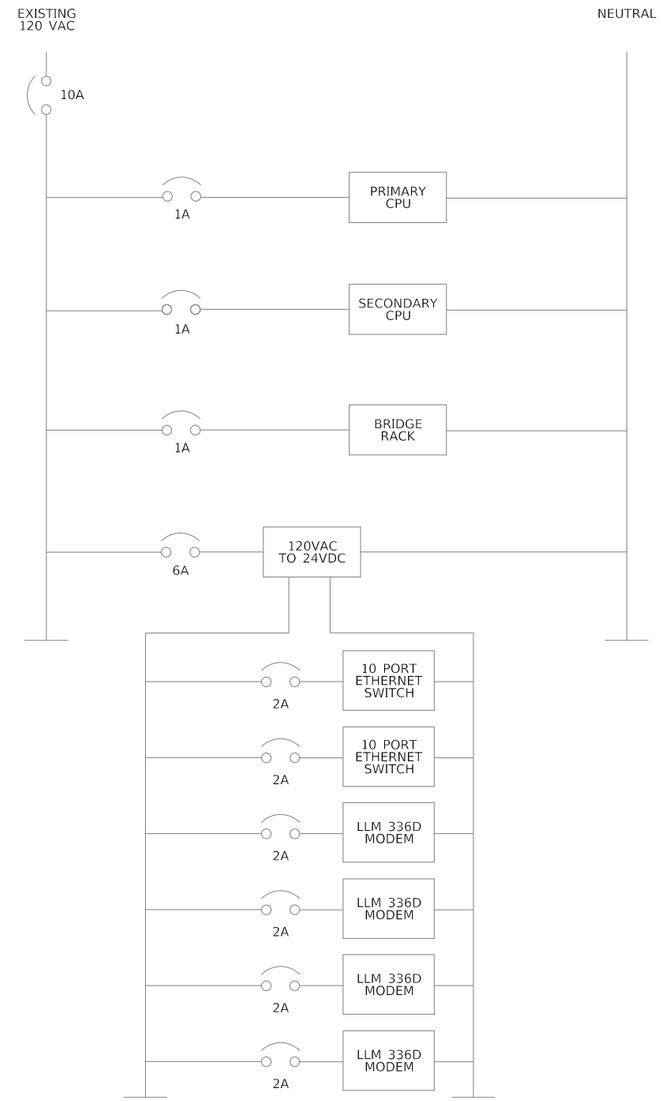
SCALE: NTS | SHEET 21 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	21
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

BILL OF MATERIAL - BUILDING E (SEE NOTE 1)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5570 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L74
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	5	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	2	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	EMPTY SLOT FILLER CARDS	ROCKWELL	8	1756-N2
9	GENERIC ASC II SERIAL COMMUNICATION MODULE	PROSOFT	1	MV156E-GSC
10	10 PORT ETHERNET SWITCH	STRATIX	2	1783-BMS10CL
11	SYNC CABLE	ROCKWELL	1	1756-RMC1
12	LEASED LINE MODEM WITH ETHERNET BRIDGE	MULOGIC	4	LLM-336D.ETH
13	120 VAC TO 24 VDC POWER SUPPLY	ROCKWELL	1	1606-XLE480EP
14	1A CIRCUIT BREAKER	ROCKWELL	3	1492-SP1B010
15	6A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B060
16	2A CIRCUIT BREAKER	ROCKWELL	6	1492-SP1B020
17	10A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B100

POWER LADDER



NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE PARTS SHOWN.

LEGEND

CIRCUIT BREAKER

FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - PA	REVISED -	
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -	
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -	

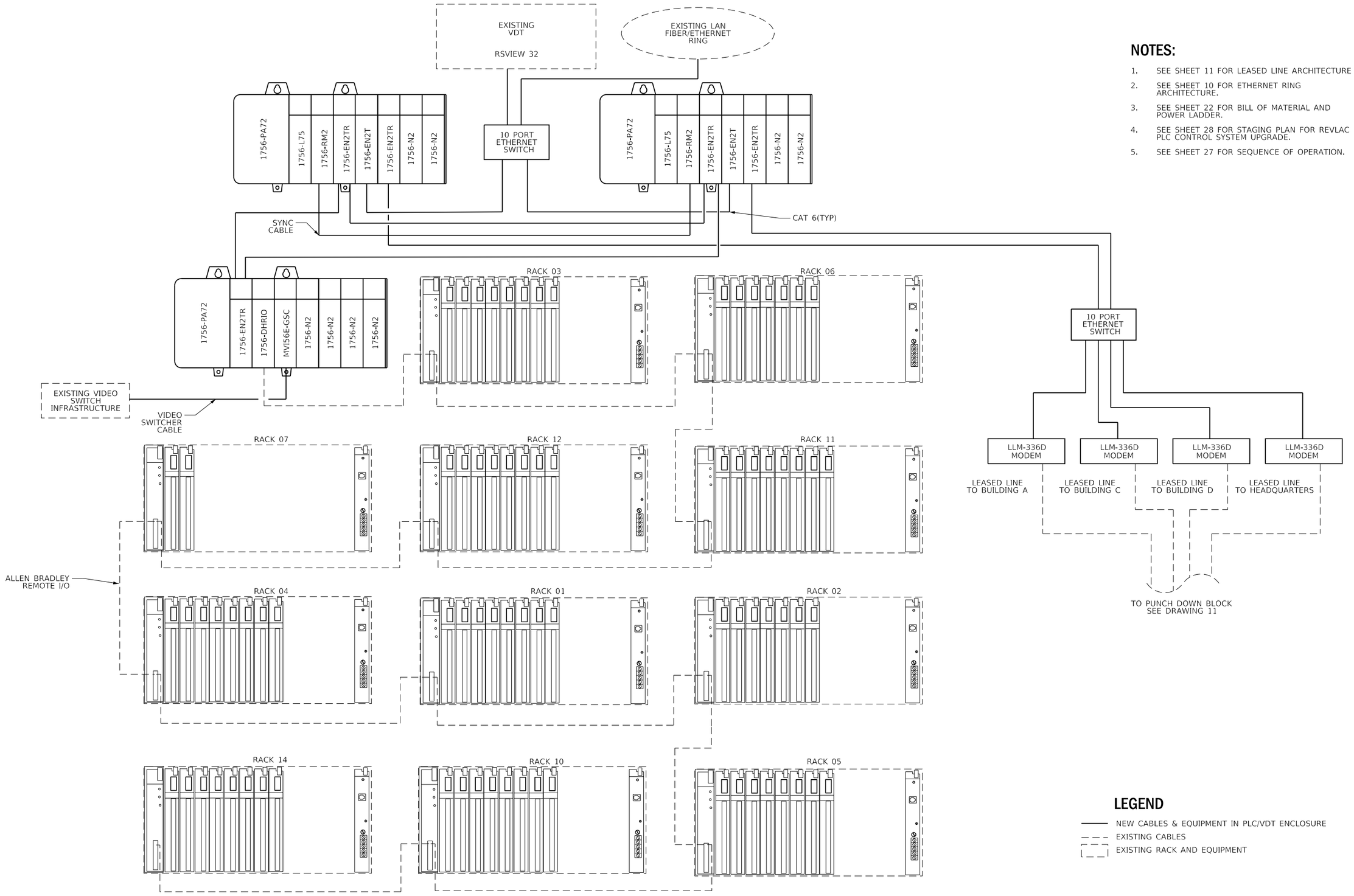
BUILDING E - BILL OF MATERIAL AND POWER LADDER

SCALE: NONE | SHEET 22 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	22
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

NOTES:

1. SEE SHEET 11 FOR LEASED LINE ARCHITECTURE
2. SEE SHEET 10 FOR ETHERNET RING ARCHITECTURE.
3. SEE SHEET 22 FOR BILL OF MATERIAL AND POWER LADDER.
4. SEE SHEET 28 FOR STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
5. SEE SHEET 27 FOR SEQUENCE OF OPERATION.

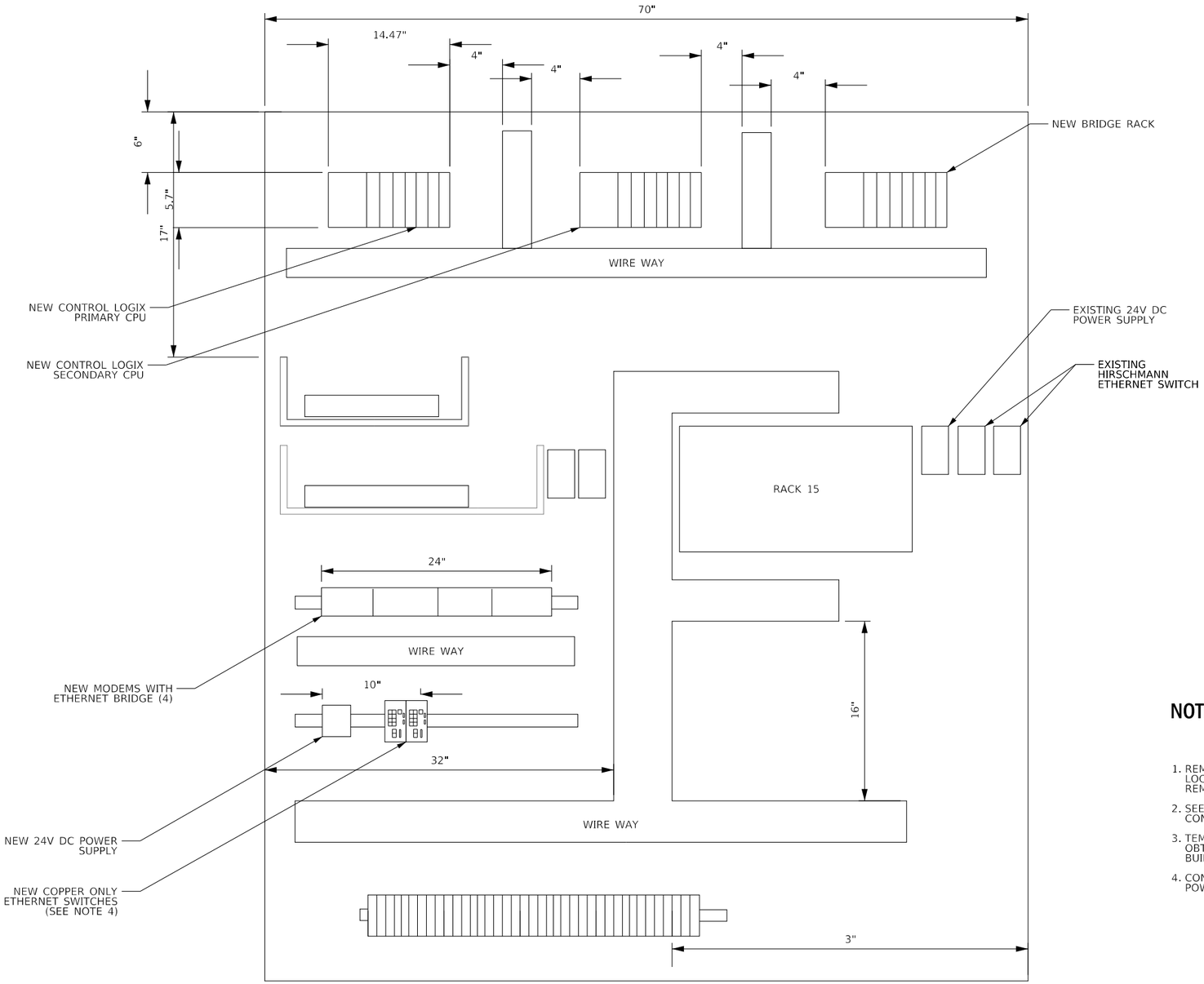


LEGEND

- NEW CABLES & EQUIPMENT IN PLC/VDT ENCLOSURE
- EXISTING CABLES
- EXISTING RACK AND EQUIPMENT

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUILDING E - NEW PLC/VDT NETWORK ARCHITECTURE	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - PA	REVISED -			90/94	2017-018I	COOK	36	23
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -					CONTRACT NO.		62F40
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -		SCALE: NTS SHEET 23 OF 36 SHEETS STA. TO STA.			ILLINOIS	FED. AID PROJECT	

$FILE$



NOTES:

1. REMOTE I/O RACK 12 IS NOT SHOWN FOR CLARITY. THIS RACK IS LOCATED ON THE BOTTOM OF THE CABINET AND WILL NOT BE REMOVED.
2. SEE SHEET 28 FOR SUGGESTED STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
3. TEMPORARY 120VAC POWER REQUIRED DURING FIELD TESTING IS OBTAINED FROM A 120VAC POWER RECEPTACLE LOCAL TO THE BUILDING. NO EMERGENCY POWER REQUIRED DURING FIELD TESTING.
4. CONTRACTOR SHALL REFERENCE SHEET 25 BILL OF MATERIALS AND POWER LADDER.

FILE NAME = $FILES$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HEADQUARTERS BUILDING -
NEW PLC/VDT ENCLOSURE MODIFCATIONS

SCALE: NTS | SHEET 24 OF 36 SHEETS | STA. | TO STA.

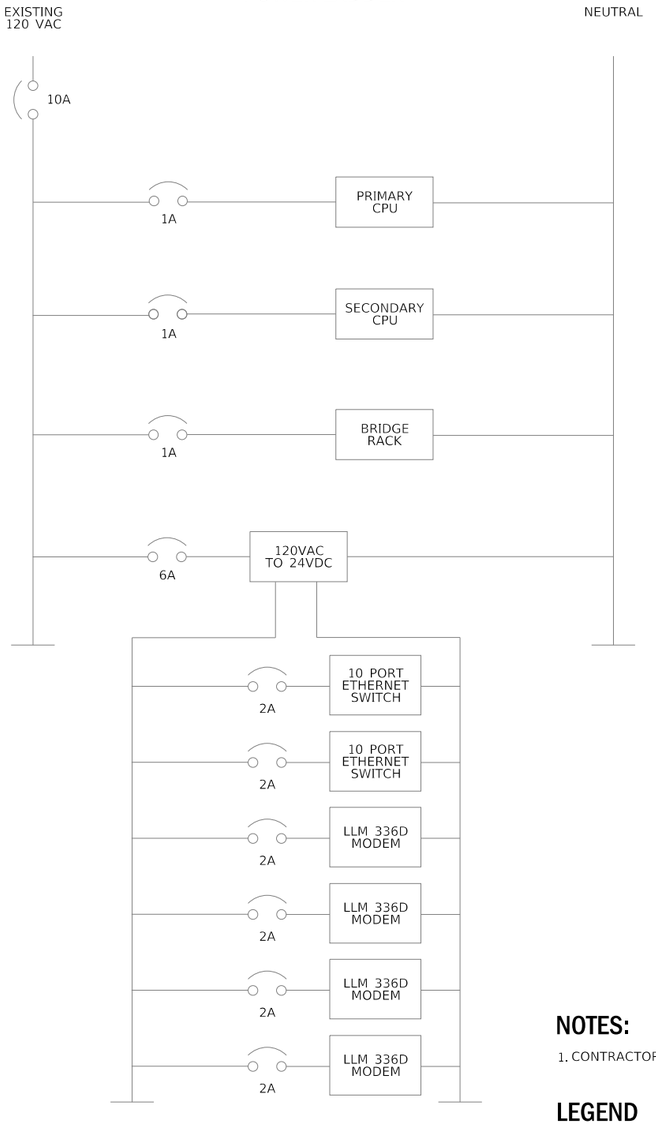
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	24
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		

$FILES

BILL OF MATERIAL - H.Q. (SEE NOTE 1)

ITEM	DESCRIPTION	MANUFACTURER	QUANTITY	CATALOG NUMBER
1	7 SLOT CONTROLLOGIX CHASSIS	ROCKWELL	3	1756-A7
2	CONTROLLOGIX, 85-265 VAC POWER SUPPLY (10AMP @5V)	ROCKWELL	3	1756-PA72
3	CONTROLLOGIX 5570 CONTROLLER WITH 32 MBYTES MEMORY	ROCKWELL	2	1756-L74
4	REDUNDANCY MODULE	ROCKWELL	2	1756-RM2
5	ETHERNET DUAL PORT 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS, UP TO 8AXIS), RING AND LINEAR TOPOLOGIES	ROCKWELL	5	1756-EN2TR
6	ETHERNET 10-100M INTERFACE MODULE (SUPPORTS 128 TCP/IP CONNECTIONS)	ROCKWELL	2	1756-EN2T
7	DH+/-RIO BRIDGE/SCANNER MODULE	ROCKWELL	1	1756-DHRIO
8	EMPTY SLOT FILLER CARDS	ROCKWELL	8	1756-N2
9	GENERIC ASC II SERIAL COMMUNICATION MODULE	PROSOFT	1	MV156E-GSC
10	10 PORT ETHERNET SWITCH	STRATIX	2	1783-BMS10CL
11	SYNC CABLE	ROCKWELL	1	1756-RMC1
12	LEASED LINE MODEM WITH ETHERNET BRIDGE	MULOGIC	4	LLM-336D,ETH
13	120 VAC TO 24 VDC POWER SUPPLY	ROCKWELL	1	1606-XLE480EP
14	1A CIRCUIT BREAKER	ROCKWELL	3	1492-SP1B010
15	6A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B060
16	2A CIRCUIT BREAKER	ROCKWELL	6	1492-SP1B020
17	10A CIRCUIT BREAKER	ROCKWELL	1	1492-SP1B100

POWER LADDER



NOTES:

1. CONTRACTOR SHALL VERIFY AND COORDINATE PARTS SHOWN.

LEGEND

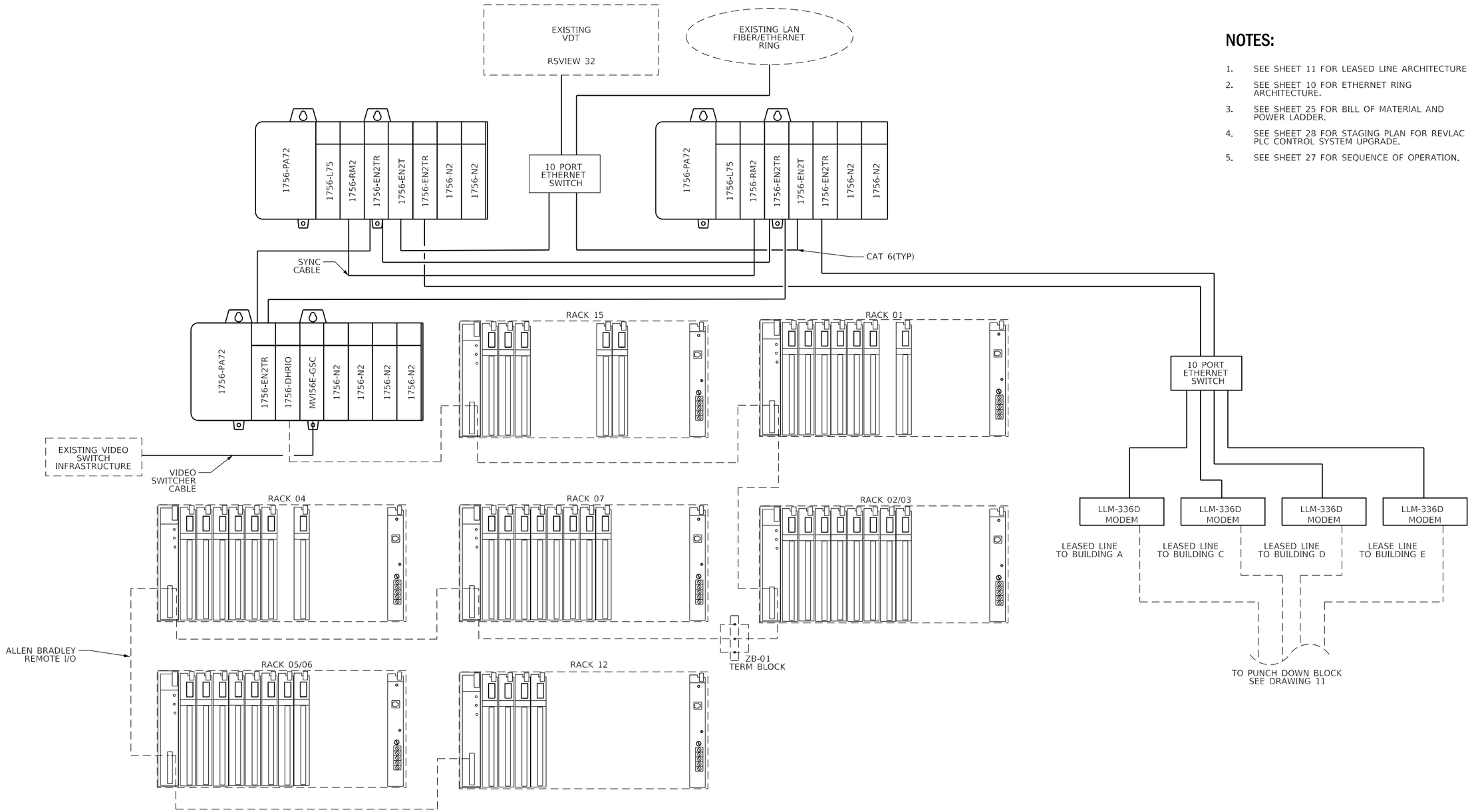
CIRCUIT BREAKER

FILE NAME = $FILE$ $MODELNAME$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN - PA	REVISED -	
	PLOT SCALE = $SCALE$	CHECKED - MBA	REVISED -	
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -	

HEADQUARTERS BUILDING - BILL OF MATERIAL AND POWER LADDER

SCALE: NONE | SHEET 25 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	25
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. SEE SHEET 11 FOR LEASED LINE ARCHITECTURE
2. SEE SHEET 10 FOR ETHERNET RING ARCHITECTURE.
3. SEE SHEET 25 FOR BILL OF MATERIAL AND POWER LADDER.
4. SEE SHEET 28 FOR STAGING PLAN FOR REVLAC PLC CONTROL SYSTEM UPGRADE.
5. SEE SHEET 27 FOR SEQUENCE OF OPERATION.

LEGEND

- NEW CABLES & EQUIPMENT IN PLC/VDT ENCLOSURE
- EXISTING CABLES
- EXISTING RACK AND EQUIPMENT

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HEADQUARTERS BUILDING -
NEW PLC/VDT NETWORK ARCHITECTURE

SCALE: NTS | SHEET 26 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	26
		CONTRACT NO.	62F40	
		ILLINOIS	FED. AID PROJECT	

1) AUTOMATIC OPERATION

i) EXTEND GATE (CLOSE RAMP)

a) BEGINNING STATE SWING GATE RETRACTED, RAMP OPEN

b) REQUIREMENTS FOR AUTOMATIC OPERATION:

a. SELECTOR SWITCH SS-00 "PLC CONTROL/OFF PLC CONTROL" (LOCATED IN THE REMOTE CONTROL BUILDING) IN "PLC CONTROL" POSITION

b. SELECTOR SWITCH SS-1 "REMOTE CONTROL/LOCAL MANUAL CONTROL" (LOCATED IN THE LOCAL SWING GATE CONTROL CABINET) IN "REMOTE CONTROL" POSITION

c. SELECTOR SWITCH SS-3 "ON/OFF" (LOCATED IN SWING GATE CONTROL CABINET) IN "ON" POSITION

d. "CRANK ARM OPEN LIMIT SWITCH" LS-1B CLOSED- PLC INPUT- CRANK ARM IN OPEN POSITION

e. "GATE RETRACTED LIMIT SWITCH" LS-3 CLOSED - PLC INPUT - GATE IN RETRACTED POSITION

f. SHEAR PIN DETECTOR PROXIMITY SWITCH" PRX-1 CLOSED- PLC INPUT- SHEAR PIN DETECTOR INTACT

g. MOTOR CIRCUIT PROTECTOR CB-1 AUX CONTACT OPEN, AND MOTOR OVERLOAD RELAY MOL AUX CONTACT OPEN - NO FAULT INPUT TO PLC

c) PLC POWER OUTPUT TO SWING GATE TERMINAL BLOCK #4, ENERGIZES DC RELAY CR-3 AND FLASHES CHEVRON SIGN ON AND OFF. (PLC PROGRAMMED LOGIC TURNS RELAY ON AND OFF).

d) PLC APPLIES POWER TO SWING GATE TERMINAL BLOCK #2, ENERGIZES DC RELAY CR-2. CR-2 CONTACT CLOSES AND ENERGIZES STARTING COIL MS-1 R.

e) THE MOTOR STARTS AND THE GATE ARM BEGINS MOVING FROM THE RETRACTED TO THE EXTENDED POSITION.

f) WHEN THE GATE MOVES 10 DEGREES FROM FULLY RETRACTED, LIMIT SWITCHES LS-3 AND LS-1B SIGNAL INPUTS TO THE PLC THAT THE GATE IS NO LONGER IN THE RETRACTED POSITION.

g) POWER IS CONTINUOUS TO RELAY CR-2, UNTIL LIMIT SWITCHES LS-4 AND LS-2B SIGNAL THE PLC THAT THE GATE IS IN THE EXTENDED POSITION, OR A PRE-SET TIME LIMIT IN THE PLC HAS EXPIRED. RELAY CR-3 IS DE-ENERGIZED AFTER ALL THE GATES ARE IN THE EXTENDED POSITION, TURNING THE CHEVRON SIGNS OFF.

ii) RETRACT GATE (OPEN RAMP)

a) BEGINNING STATE SWING GATE EXTENDED, RAMP CLOSED.

b) REQUIREMENTS FOR AUTOMATIC OPERATION:

a. SELECTOR SWITCH SS-00 "PLC CONTROL/OFF PLC CONTROL" (LOCATED IN THE REMOTE CONTROL BUILDING) IN "PLC CONTROL" POSITION:

b. SELECTOR SWITCH SS-1 "REMOTE CONTROL/LOCAL MANUAL CONTROL" (LOCATED IN THE LOCAL SWING GATE CONTROL CABINET) IN "REMOTE CONTROL" POSITION

c. SELECTOR SWITCH SS-3 "ON/OFF (LOCATED IN SWING GATE CONTROL CABINET) IN "ON" POSITION

d. "CRANK ARM CLOSED LIMIT SWITCH" LS-2B CLOSED- PLC INPUT- CRANK ARM CLOSED

e. "GATE EXTENDED LIMIT SWITCH" LS-4 CLOSED - PLC INPUT - GATE EXTENDED

f. "SHEAR PIN DETECTOR PROXIMITY SWITCH" PRX-1 CLOSED PLC INPUT- SHEAR PIN DETECTOR INTACT

g. MOTOR CIRCUIT PROTECTOR CB-1 AUX CONTACT OPEN AND MOTOR OVERLOAD RELAY MOL AUX CONTACT OPEN. - NO FAULT INPUT TO PLC

c) PLC APPLIES POWER TO SWING GATE TERMINAL BLOCK #1, ENERGIZES DC RELAY CR-1. CR-1 CONTACT CLOSES AND ENERGIZES STARTING COIL MS-1F.

d) THE MOTOR STARTS AND THE GATE ARM BEGINS MOVING FROM THE EXTENDED TO THE RETRACTED POSITION.

e) WHEN THE GATE MOVES 10 DEGREES FROM FULLY EXTENDED, LIMIT SWITCHES LS-4 AND LS-2B SIGNAL INPUTS TO PLC THAT THE GATE IS NO LONGER IN THE EXTENDED POSITION.

f) POWER IS CONTINUOUS TO RELAY CR-1, UNTIL LIMIT SWITCHES LS-3 AND LS-1B SIGNAL THE PLC THAT THE GATE IS IN THE RETRACTED POSITION, OR A PRE-SET TIME LIMIT IN THE PLC HAS EXPIRED. RELAY CR-1 IS THEN DE-ENERGIZED, TURNING THE MOTOR OFF.

iii) RAISE BARRIER

a) BEGINNING STATE BARRIER LOWERED, RAMP CLOSED

b) REQUIREMENTS FOR AUTOMATIC OPERATION:

a. SELECTOR SWITCH SS-00 "PLC CONTROL/OFF PLC CONTROL" (LOCATED IN THE REMOTE CONTROL BUILDING) IN "PLC CONTROL" POSITION.

b. SELECTOR SWITCH SS-1 "CONTROL MODE SELECTOR SWITCH" (LOCATED IN BARRIER LOCAL CONTROL CABINET) IN "REMOTE CONTROL" POSITION.

c. SELECTOR SWITCH SS-3 "125 VDC CONTROL POWER SWITCH" (LOCATED IN BARRIER LOCAL CONTROL CABINET) IN "ON" POSITION.

d. LEFT LOWER BARRIER LIMIT SWITCH LS-3B - PLC INPUT - BARRIER LOWERED LEFT.

e. RIGHT LOWER BARRIER LIMIT SWITCH LS-4B - PLC INPUT - BARRIER LOWERED RIGHT.

f. BARRIER CRASH DETECTOR LIMIT SWITCH LS-10- PLC INPUT- BARRIER CRASH DETECTOR INTACT (LEFT).

g. BARRIER CRASH DETECTOR LIMIT SWITCH LS-11 - PLC INPUT- BARRIER CRASH DETECTOR INTACT (RIGHT).

h. MOTOR CIRCUIT BREAKER CB-1 AUX. AND MOTOR OVERLOAD RELAY MOL AUX. CONTACT OPEN - NO FAULT INPUT TO THE PLC.

i. WARNING LIGHT CONTROL RELAY CR-3 - PLC OUTPUT ENERGIZED, LANE USE CONTROL SIGN ON.

j. CHAIN BREAK DETECTOR LIMIT SWITCHES LS-8 AND LS-9 ARE CLOSED.

c) PLC APPLIES POWER VIA TERMINAL #1, ENERGIZING DC "RAISE" RELAY CR-1. CR-1 CONTACT CLOSES ENERGIZING STARTING COIL MS-1R (IF LS-5 OVER-TRAVEL LIMIT SWITCH IS NOT OPEN).

d) THE MOTOR STARTS, AND THE BARRIER BEGINS MOVING FROM THE LOWERED POSITION TO THE RAISED POSITION.

e) AS THE BARRIER MOVES UP, LIMIT SWITCHES LS-3B AND LS-4B SIGNAL INPUTS TO THE PLC THAT THE BARRIER IS NO LONGER IN THE LOWERED POSITION.

f) POWER IS CONTINUOUS TO RELAY CR-1, UNTIL LIMIT SWITCHES LS-1 AND LS-2 SIGNAL THE PLC THAT THE BARRIER HAS FULLY RAISED.

(NOTE: BOTH LS-1A AND LS-2A WILL AUTOMATICALLY STOP THE DRIVE MOTOR BY DROPPING OUT RELAY MS-1R - BARRIER IS FULLY RAISED.)

g) THEN THE NORMALLY CLOSED (N.C.) MS-1R AUXILIARY CONTACT, IN TIMER T1 CIRCUIT, CLOSES.

h) TIMER T1 NORMALLY OPEN TIMED TO OPEN (N.O.T.O.) CONTACT, IN THE MOTOR BRAKE CONTACTOR MB CIRCUIT CLOSES, AND CONTACTOR MB ENERGIZES.

i) THEN MOTOR BRAKE MB CONTACT CLOSES, AND THE MOTOR BRAKE IS APPLIED.

j) AFTER 5 SECONDS TIMER T1 CONTACT OPENS, AND CONTACTOR MB DE-ENERGIZES, RELEASING THE BRAKE.

k) WHEN THE BARRIER IS FULLY RAISED, THE PLC THEN DE-ENERGIZES RELAY CR-3, TURNING THE LANE USE CONTROL SIGN OFF.

l) BARRIER IS NOW IN THE RAISED POSITION.

iv) LOWER BARRIER

a) BEGINNING STATE- BARRIER RAISED, LANE OPEN.

b) REQUIREMENTS FOR AUTOMATIC OPERATION:

a. SELECTOR SWITCH SS-00 "PLC CONTROL/OFF PLC CONTROL" (LOCATED IN THE REMOTE CONTROL BUILDING) IN "PLC CONTROL" POSITION.

b. SELECTOR SWITCH SS-1 "CONTROL MODE SELECTOR SWITCH" (LOCATED IN BARRIER LOCAL CONTROL CABINET) IN REMOTE CONTROL" POSITION.

c. SELECTOR SWITCH SS-3 "125 VDC CONTROL POWER SWITCH" (LOCATED IN BARRIER LOCAL CONTROL CABINET) IN "ON" POSITION.

d. LEFT UPPER BARRIER LIMIT SWITCH LS-1B PLC INPUT - BARRIER RAISED LEFT.

e. RIGHT UPPER BARRIER LIMIT SWITCH LS-2B PLC INPUT - BARRIER RAISED RIGHT.

f. MOTOR CIRCUIT BREAKER CB-1 AUX. AND MOTOR OVERLOAD RELAY MOL AUX. CONTACT OPEN- NO FAULT INPUT TO THE PLC.

g. CHAIN BREAK DETECT LIMIT SWITCHES LS-8, LS-9, ARE CLOSED.

c) THE PLC ENERGIZES WARNING SIGN RELAY CR-3, TURNING THE LANE USE CONTROL SIGN ON.

d) PLC APPLIES POWER VIA TERMINAL #2, ENERGIZING DC "LOWER" RELAY CR-2. CR-2 CONTACT CLOSES ENERGIZING STARTING COIL MS-1L (IF LS-7 OVER-TRAVEL LIMIT SWITCH IS NOT OPEN).

e) THE MOTOR STARTS, AND THE BARRIER BEGINS MOVING FROM THE RAISED POSITION TO THE LOWERED POSITION.

f) AS THE BARRIER MOVES DOWN, LIMIT SWITCHES LS-1B AND LS-2B SIGNAL INPUTS TO THE PLC THAT THE BARRIER IS NO LONGER IN THE RAISED POSITION.

g) THE BARRIER CONTINUES LOWERING UNTIL LIMIT SWITCHES LS-3B AND LS-4B, SIGNAL THE PLC THAT THE BARRIER HAS FULLY LOWERED.

(NOTE: BOTH LS-3A AND LS-4A WILL AUTOMATICALLY STOP THE DRIVE MOTOR BY DROPPING OUT RELAY MS-1L - BARRIER IS FULLY LOWERED.)

h) THEN THE NORMALLY CLOSED (N.C.) MS-1L AUXILIARY CONTACT, IN TIMER T1 CIRCUIT, CLOSES.

i) TIMER T1 NORMALLY OPEN TIMED TO OPEN (N.O.T.O.) CONTACT, IN THE MOTOR BRAKE CONTACTOR MB CIRCUIT CLOSES, AND CONTACTOR MB ENERGIZES.

j) THEN MOTOR BRAKE MB CONTACT CLOSES, AND THE MOTOR BRAKE IS APPLIED.

k) AFTER 3 SECONDS TIMER T1 CONTACT OPENS, AND CONTACTOR MB DE-ENERGIZES, RELEASING THE BRAKE.

l) BARRIER IS NOW IN THE LOWERED POSITION.

v) OPEN STATE

a) BEGINNING STATE - LANES "CLOSE STATE" GOING TO "OPEN STATE"

b) REQUIREMENTS FOR AUTOMATIC OPERATION:

a. "PLC MODE" SELECTOR SWITCH SS-1 IN "PLC CONTROL" MODE.

b. "CONTROL MODE" SELECTOR SWITCH SS-2 IN "REMOTE" MODE.

c. "CLOSE STATE" LIMIT SWITCH 1LS-5 INDICATES "CLOSE STATE" FACE POSITION.

d. MOTOR OVERLOADS AUXILIARY CONTACTS *MOL OPEN - NO TRIP INPUT TO PLC.

c) PLC OUTPUT ENERGIZES "OPEN STATE" RELAY CR3 FOR APPROXIMATELY 2 SECONDS.

d) "OPEN STATE" NORMALLY OPEN (N.O.) CR3 CONTACT CLOSED AND ENERGIZES "OPEN STATE" TIMER *T1.

e) TIMER *T1 SEALS-IN THROUGH ITS OWN INSTANTANEOUS NORMALLY OPEN (N.O.) AND NORMALLY CLOSED TIMED TO OPEN (N.C.T.O.) CONTACT.

f) THEN THE SECOND NORMALLY OPEN (N.O.) *T1 CONTACT CLOSES AND LATCHES THE "OPEN STATE" MAGNETIC *CR4 RELAY.

g) TIMER *T1 TIMES OUT (5 SECONDS), LEAVING THE *CR4 RELAY IN THE LATCHED POSITION.

h) THE AUXILIARY NORMALLY OPEN (N.O.) *CR4 CONTACT CLOSES AND ENERGIZES THE MOTOR STARTER COIL *MC1. THE NORMALLY OPEN (N.O.) *MC1 CONTACT THEN SETS MOTOR BRAKE RELEASE TIMER *T4.

i) AS SOON AS THE MOTOR MOVES THE ROTOR, THE "CLOSE STATE" LIMIT SWITCH *LS-5 OPENS, DISCONNECTING THE INPUT SIGNAL TO THE PLC.

2)	MONITORING AND CONTROL POINTS
i)	GATES
DI	GATE START/STOP - 1 IN REMOTE
DI	GATE CIRCUIT BREAKER/ MOTOR OVERLOAD TRIP
DI	GATE RETRACTED LS7
DI	GATE RETRACTED LS1A
DI	GATE EXTENDED LS8
DI	GATE EXTENDED LS2A
DI	GATE SHEER PIN DETECTOR
DI	GATE HAND CRANK INSERTED
DI	GATE MOTOR AUX CONTACT
DO	GATE RETRACT SIGNAL
DO	GATE EXTEND SIGNAL
DO	GATE FLASHING CHEVRON
ii)	BARRIERS
DI	BARRIER SS-1 IN REMOTE POSITION
DI	BARRIER CIRCUIT BREAKER/ MOTOR OVERLOAD TRIP
DI	BARRIER RAISED (LEFT) LS1
DI	BARRIER RAISED (RIGHT) LS2
DI	BARRIER LOWERED (LEFT) LS3
DI	BARRIER LOWERED (RIGHT) LS4
DI	BARRIER CRASH DETECTOR
DI	BARRIER RAISED COIL AUX CONTACT
DI	BARRIER LOWER COIL AUX CONTACT
DI	BARRIER LOCAL RAISE SELECTOR SWITCH
DI	BARRIER LOCAL LOWER SELECTOR SWITCH
DO	BARRIER RAISE SIGNAL
DO	BARRIER LOWER SIGNAL
iii)	ROADSIDE PANELS
DI	ROADSIDE PANEL START
DI	ROADSIDE PANEL E-STOP
DI	ROADSIDE PANEL OUTBOUND ONTARIO RAMP ARMED
DI	ROADSIDE PANEL REMOTE ARMED
DI	ROADSIDE PANEL OPEN
DI	ROADSIDE PANEL ICE SENSOR OVERRIDE
DI	ROADSIDE PANEL DOOR ACCESS SWITCH
DI	ROADSIDE PANEL CLOSE
DO	ROADSIDE PANEL OUTBOUND RAMP ARMED INDICATION
DO	ROADSIDE PANEL PROCEED INDICATION
DO	ROADSIDE PANEL WARNING

$FILE$

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -
		DRAWN - PA	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEQUENCE OF OPERATION - REVLAC CONTROL SYSTEM

SCALE: NONE | SHEET 27 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	27
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			

SUGGESTED PHASING PLAN OF REVLAC PLC/HMI CONTROL SYSTEM

(I) PREREQUISITES FOR PHASED UPGRADE OF THE REVLAC PLC-5 SYSTEM:

1. THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE PHASING PLAN (FOR THE PHASED UPGRADE OF THE REVLAC PLC CONTROL SYSTEM) INCLUDING A DETAILED PROJECT SCHEDULE FOR APPROVAL BY THE ENGINEER PRIOR TO PERFORMING ANY UPGRADE OF THE REVLAC PLC CONTROL SYSTEM.

2. THE CONTRACTOR SHALL PROVIDE A FORMAL RAMP CLOSURE REQUEST TO THE DEPARTMENT ONE WEEK PRIOR TO FIELD WORK INCLUDING REMOVAL/INSTALLATION OF EQUIPMENT AND THE INDIVIDUAL BUILDING/INTEGRATED FIELD TEST. THE RAMP CLOSURE REQUEST WILL DETAIL THE SCOPE OF WORK BEING UNDERTAKEN BY THE CONTRACTOR, ALONG WITH POTENTIAL OPERATIONAL IMPACT/RISKS ON THE REVLAC CONTROL SYSTEM DURING THE RAMP CLOSURE AND STEPS TAKEN BY THE CONTRACTOR TO MITIGATE POTENTIAL OPERATIONAL IMPACT/RISKS.

(II) REVLAC PLC CONTROL SYSTEM UPGRADE PHASING PLAN:

1. CONTRACTOR SHALL PROCURE THE HARDWARE LISTED IN THE CONTRACT DOCUMENTS NEEDED FOR THE UPGRADE OF THE FIVE BUILDING PLCS. THIS HARDWARE SHALL THEN BE SHIPPED BY THE CONTRACTOR TO ESP FOR CONFIGURATION AND PROGRAMMING.

2. ESP SHALL ENSURE THE CONTROL LOGIX HARDWARE (PROCESSOR RACKS AND BRIDGE RACK) IS LOADED WITH COMPATIBLE REDUNDANCY BUNDLE FIRMWARE AT THE SHOP FOR BUILDINGS A, C, D, E AND HQ.

3. ESP SHALL SUBMIT DETAILED TESTING PROCEDURES FOR APPROVAL TO THE ENGINEER PRIOR TO ALL PHASES OF TESTING LISTED BELOW.

4. ESP SHALL PROVIDE NO LESS THAN SIX WEEKS ADVANCE NOTIFICATION FOR ALL PHASES OF TESTING AND SHALL CONFIRM THE TEST DATE NO LESS THAN 14 DAYS PRIOR TO THE TEST DATE. ESP SHALL VERIFY WITH THE DEPARTMENT IF THE DEPARTMENT OR THEIR REPRESENTATIVE WILL WITNESS THE TEST PHASES OR IF ESP SHALL PROVIDE CERTIFIED TEST RESULTS TO THE ENGINEER FOR APPROVAL.

(III) SHOP TEST

A. INDIVIDUAL BUILDING SHOP TEST: (AT ESP FACILITY)

1. THE PROGRAMMING EFFORT FOR THIS TEST SHALL INCLUDE CODE FOR A SIMULATOR TO PROVIDE FEEDBACK FROM THE ROADWAY DEVICES TO BE USED DURING SHOP TESTING. ONCE THE CONFIGURATION AND PROGRAMMING IS COMPLETE, ESP WILL TEST EACH BUILDING PLC PROGRAMMING SEQUENCE ON AN INDIVIDUAL BASIS AT ESP FACILITIES.

2. AT THE SUCCESSFUL CONCLUSION OF THE INDIVIDUAL BUILDING SHOP TESTS AND TEST RESULTS HAVE BEEN APPROVED BY THE ENGINEER, ESP SHALL SHIP THE CONTROL LOGIX HARDWARE AND THE SIMULATOR TO THE CONTRACTOR FOR THE INTEGRATED SHOP TEST.

B. INTEGRATED SHOP TEST: (AT CONTRACTOR FACILITY)

1. THE CONTRACTOR SHALL HOST AND PROVIDE ALL NECESSARY SUPPORT TO ESP FOR THE INTEGRATED SHOP TEST. THIS INCLUDES PROVIDING SPACE, NECCESARY TEMPORARY EQUIPMENT/POWER FOR THE TEST, AND ADEQUATE OFF STREET PARKING.

2. ESP SHALL PERFORM A DOCUMENTED INTEGRATED SHOP TEST WITH THE CONTROL LOGIX HARDWARE AND SIMULATE THE NEW PROGRAMMING SEQUENCE WITH THE RSVIEW VDT APPLICATION (WITH UPDATED DRIVER, TAGS, ALARMING AND SCREENS) FOR BUILDINGS A, C, D, E AND HQ AS DETAILED IN THE SPECIFICATIONS. THIS TEST SHALL INCLUDE SIMULATION OF THE PROGRAMMING SEQUENCE FOR THE NEW BUILDING (A, C, D, E AND HQ) PLC WITH LOCAL REMOTE I/O, AND ALL THE INTER PROCESSOR COMMUNICATION BETWEEN THE BUILDING PLCS OVER THE ETHERNET NETWORK.

3. ALL REVLAC CONTROL SYSTEM FUNCTIONS SHALL BE DEMONSTRATED IN THIS TEST. RAMP DEVICES SHALL BE SIMULATED AND FAILURE MODES TESTED. THIS PHASE OF TESTING SHALL DEMONSTRATE THE LOGGING OF ALARMS, FAILURES, AND EVENTS BY THE PLCS ON THE VARIOUS CONTROL, DISPLAY, AND TERMINAL DEVICES. COMMANDS SHALL BE SIMULATED FROM THE SYSTEM CONTROL PANELS, THE ROADSIDE CONTROL PANELS, THE SWITCHES AND PUSH BUTTONS ON THE PLC ENCLOSURES AND THE CATTRON CONTROLLER. THE COMMANDS SENT SHALL INCLUDE NORMAL RAMP TRANSITIONS AND ABNORMAL RAMP / DEVICE TRANSITIONS.

4. AT THE SUCCESSFUL COMPLETION OF THE INTEGRATED SHOP TEST AND AFTER TEST RESULT DOCUMENTS HAVE BEEN APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL SHIP THE HARDWARE TO EACH SITE. THE CONTRACTOR SHALL INSTALL THE HARDWARE IN A TEMPORARY MANNER AS DESCRIBED BELOW.

(IV) FIELD TEST

A. INDIVIDUAL BUILDING FIELD TEST (BUILDING A):
(NOTE, STEPS 1-6 SHALL BE REPEATED FOR BUILDINGS C, D, E AND HQ BY THE CONTRACTOR, ONE BUILDING AT A TIME)

1. THE CONTRACTOR SHALL MOUNT THE PLC HARDWARE IN A TEMPORARY LOCATION CONSISTING OF THE NEW CONTROL LOGIX RACKS, BRIDGE RACK, 10 PORT ETHERNET SWITCH AND AN ENGINEERING WORK STATION WITH BUILDING A RSV IEW 32 VDT APPLICATION PROGRAM (UPDATED DRIVER TAGS, ALARMING AND SCREENS) IN FRONT OF THE EXISTING PLC/VDT ENCLOSURE IN BUILDING A. A TEMPORARY SOURCE OF 120VAC POWER IN BUILDING A SHALL USED TO PROVIDE POWER TO THE TEST BENCH EQUIPMENT.

2. ESP SHALL ISOLATE BUILDING A FROM THE REVLAC CONTROL SYSTEM BY POWERING DOWN THE EXISTING PLC-5 PRIMARY RACK, SECONDARY RACK, DB-MODULE IN THE REMOTE I/O RACK, MODEM RACK, THE BLACK BOX MODEMS AND DEACTIVATE THE EXISTING RSVIEW 32 APPLICATION IN THE BUILDING A PLC/VDT ENCLOSURE. A REMOTE I/O BLUE CABLE CONNECTION SHALL BE MADE BETWEEN TEST BENCH BRIDGE RACK AND THE EXISTING REMOTE I/O IN THE PLC/VDT ENCLOSURE. THE NECESSARY TEST BENCH ETHERNET CONNECTIONS ARE MADE BETWEEN THE CONTROL LOGIX PROCESSOR RACKS, BRIDGE RACKS AND THE RSVIEW 32 VDT WORKSTATION THROUGH THE 10 PORT ETHERNET SWITCH.

3. THE TEST BENCH EQUIPMENT SHALL BE POWERED UP AND ESP SHALL TEST THE PLC SEQUENCE AND VDT APPLICATION FOR BUILDING A. ONLY THE PLC SEQUENCE RELATED TO LOCAL REMOTE I/O IN BUILDING A SHALL BE TESTED. TESTING OF THE INTER-PLC COMMUNICATION BETWEEN THE BUILDINGS ACROSS THE FIBER/ETHERNET OR LEASED LINE MODEM NETWORK WILL NOT BE DONE AT THIS TIME. COMMUNICATION NETWORK DIAGNOSTICS SCREENS/ALARMS PORTION OF THE BUILDING A VDT AND REMOTE ACCESS TO OTHER BUILDING VDT'S WILL ALSO NOT BE TESTED AT THIS TIME.

4. THE BUILDING A PLC SEQUENCE SHALL BE FULLY TESTED FROM FOUR LOCATIONS:

   a. THE SYSTEM CONTROL PANEL LOCATED IN THE BUILDING
   b. THE CATTRON UNIT
   c. THE SELECTOR SWITCHES AND PUSH BUTTONS ON THE FRONT OF THE PLC / VDT ENCLOSURE
   d. THE SELECTOR SWITCHES LOCATED IN EQUIPMENT INSTALLED ON THE ROADWAY

5. ESP SHALL RESTORE THE BUILDING A PLC-5 AND THE EXISTING VDT SYSTEM TO ITS ORIGINAL STATE AT THE END OF EACH DAY OF THIS PHASE OF TESTING.

6. AT THE SUCCESSFUL COMPLETION OF THE INDIVIDUAL BUILDING FIELD TESTS AND AFTER TEST RESULT DOCUMENTS HAVE BEEN APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL BEGIN THE INTEGRATED FIELD TESTS.

B. INTEGRATED FIELD TEST (COMPLETE REVLAC CONTROL SYSTEM COMMISSIONING):

1. THE CONTRACTOR SHALL POWER DOWN THE EXISTING PLC-5 PRIMARY, SECONDARY RACKS, DB-MODULE IN THE REMOTE I/O RACK, MODEM RACK THE BLACK BOX MODEMS FOR EACH BUILDING. A REMOTE I/O BLUE CABLE CONNECTION SHALL BE MADE BETWEEN THE NEW BRIDGE RACK AND THE EXISTING REMOTE I/O IN THE PLC/VDT ENCLOSURE IN EACH BUILDING. THE NECESSARY ETHERNET CONNECTIONS SHALL BE MADE BETWEEN THE CONTROL LOGIX PROCESSOR RACKS, BRIDGE RACKS AND THE RSVIEW 32 VDT WORKSTATION THROUGH THE 10 PORT ETHERNET SWITCH. APPROPRIATE ETHERNET CONNECTIONS SHALL BE MADE BETWEEN THE EQUIPMENT AND THE FIBER/ETHERNET LEASED LINE MODEM INFRASTRUCTURE. THE EXISTING RSVIEW 32 VDT APPLICATION PROGRAM SHALL BE DEACTIVATED FROM THE VDT COMPUTER IN EACH BUILDING PLC/VDT ENCLOSURE. THE RSVIEW 32 VDT APPLICATION PROGRAM (UPDATED DRIVER TAGS, ALARMING AND SCREENS) SHALL BE LOADED ONTO THE VDT COMPUTER IN EACH BUILDING PLC/VDT ENCLOSURE. THE UPDATED RSVIEW 32 APPLICATION PROGRAM SHALL THEN BE ACTIVATED IN EACH BUILDING (INCLUDING REMOTE ACCESS CAPABILITY ACROSS BUILDING VDT USING VNC SOFTWARE). ANY INTERFACE BETWEEN THE VIDEO SWITCH INFRASTRUCTURE AND THE TEST BENCH IN EACH BUILDING MUST BE MADE BY THE CONTRACTOR. ALL FIVE BUILDINGS SHALL BE DONE SIMULTANEOUSLY IN ORDER TO MAXIMIZE THE TIME AVAILABLE FOR TESTING.

2. THE NEW EQUIPMENT SHALL BE POWERED UP AND A COMPREHENSIVE INTEGRATED FIELD TEST OF THE CONTROL LOGIX BASED REVLAC CONTROL SYSTEM SHALL BE PERFORMED BY ESP IN ACCORDANCE WITH THE APPROVED TEST PLANS.

3. ESP SHALL RESTORE THE PLC-5 AND THE EXISTING VDT SYSTEM (FOR EACH BUILDING) TO ITS ORIGINAL STATE AT THE END OF EACH DAY FOR THIS PHASE OF THE TEST. ALL FIVE BUILDINGS SHALL BE DONE SIMULTANEOUSLY IN ORDER TO MAXIMIZE THE TIME AVAILABLE FOR TESTING.

4. AT THE SUCCESSFUL COMPLETION OF THE INDIVIDUAL BUILDING FIELD TESTS AND AFTER TEST RESULT DOCUMENTS HAVE BEEN APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL BEGIN THE INTEGRATED FIELD TESTS.

(V) SIXTY DAY OBSERVATION PERIOD:

1. AT THE SUCCESSFUL CONCLUSION OF THE INTERGRATED FIELD TEST, A SIXTY DAY OBSERVATION PERIOD WILL BEGIN. THE FIRST THIRTY DAYS OF THIS PERIOD, THE NEW CONTROL LOGIX RACKS AND BRIDGE RACKS SHALL REMAIN INSTALLED IN THEIR TEMPORARY LOCATION. THE CONTRACTOR SHALL CONNECT THE NEW CONTROL LOGIX PLCS AS DESCRIBED IN STEP 1 OF THE INTEGRATED FIELD TEST.

2. UPON SUCCESSFUL OPERATION OF THE REVLAC CONTROL SYSTEM OF THIS INITIAL PERIOD OF THIRTY DAYS WITH THE NEW CONTROL LOGIX PLC HARDWARE/PROGRAMMING SEQUENCES.THE CONTRACTOR SHALL PERFORM REMOVAL OF THE PLC-5 INFRASTRUCTURES IN EACH OF THE BUILDING PLC/VDT ENCLOSURES SIMULTANEOUSLY IN ACCORDANCE WITH SHEETS 5, 6, 7, 8 AND 9. THE BUILDING ENCLOSURES SHALL BE DE-ENERGIZED DURING THE REMOVAL PHASE.

3. THE CONTROL LOGIX EQUIPMENT, ETHERNET SWITCHES AND THE ETHERNET BASED MODEMS SHALL BE INSTALLED IN EACH OF THE BUILDING PLC/VDT ENCLOSURES IN ACCORDANCE WITH THE POWER LADDER SHEETS 13, 16, 19, 22 AND 25. ALSO INSTALLATION SHALL BE PERFORMED TO COMPLY WITH NEW BUILDING PLC/VDT ENCLOSURE SHEETS 12, 15, 18, 21 AND 24. THE BUILDING ENCLOSURES SHALL BE DE-ENERGIZED DURING THE INSTALLATION PHASE.

4. THE RSVIEW 32 VDT APPLICATION PROGRAM (UPDATED DRIVER TAGS, ALARMING AND SCREENS) SHALL BE LOADED AND ACTIVATED ON THE VDT COMPUTER IN EACH BUILDING PLC/VDT ENCLOSURE (INTEGRATED FIELD TEST APPROVED VERSION OF THE APPLICATION PROGRAM).

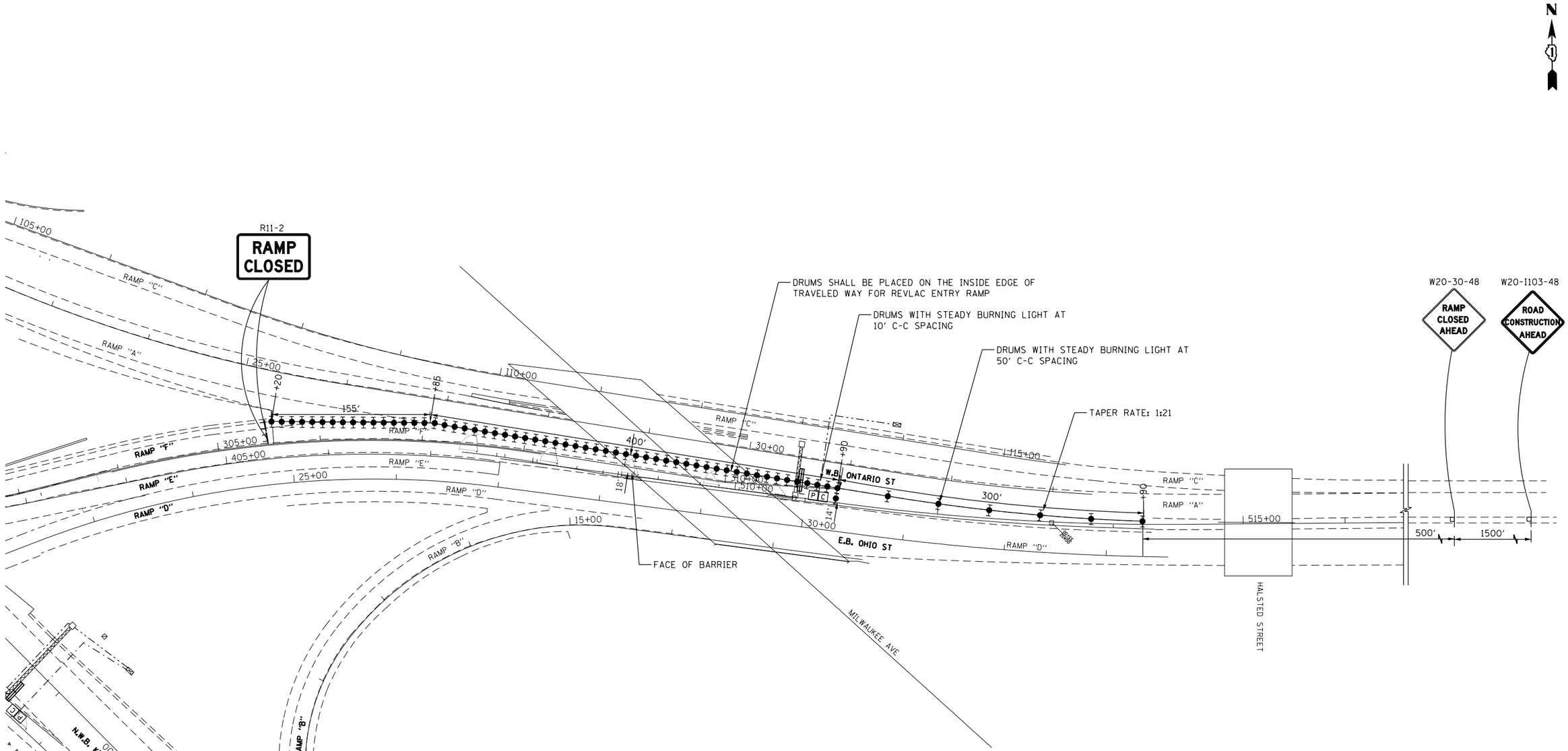
5. THE CONTRACTOR SHALL MAKE APPROPRIATE NETWORK CONNECTIONS/ CONFIGURATION IN ACCORDANCE WITH SHEETS 10, 11, 14, 17, 20, 23 AND 26.

6. ALL BUILDING PLC/HMI ENCLOSURES SHALL BE POWERED UP WITH UPDATED CONTROL LOGIX PLC HARDWARE AND INTEGRATED FIELD TEST APPROVED PLC SEQUENCES AND RSVIEW 32 VDT APPLICATION PROGRAM. REMOVAL OF EXISTING EQUIPMENT AND INSTALLATION OF NEW EQUIPMENT IN ALL FIVE BUILDINGS SHALL BE DONE SIMULTANEOUSLY IN ONE NIGHT (8 HOURS). THE CONTRACTOR SHALL STAFF THE JOB ACCORDINGLY.

NOTE: ANY ISSUE IDENTIFIED BY THE DEPARTMENT DURING THE 60 DAY OBSERVATION PERIOD IN EITHER THE NEW CONTROL LOGIX HARDWARE OR SOFTWARE, WILL REQUIRE FOR EVERY ONE (1) DAY THE CONTRACTOR IS REQUIRED TO MITIGATE/FIX A PROBLEM, AND ADDITIONAL ONE (1) DAY WILL BE ADDED TO THE 60-DAY PERIOD.

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - RJR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGING PLAN - REVLAC PLC CONTROL SYSTEM UPGRADE
		DRAWN - PA	REVISED -		
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - MBS	REVISED -		
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -		SCALE: SHEET 28 OF 36 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	28
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE OUTBOUND ONTARIO STREET RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 1'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

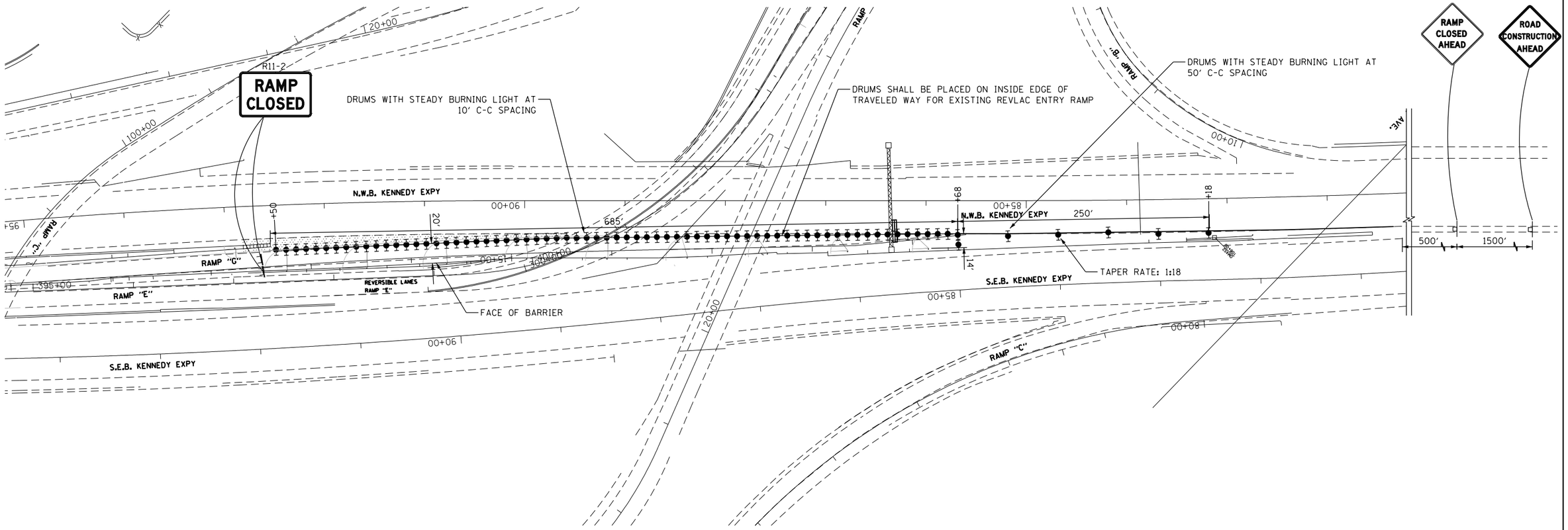
FILE NAME = $FILE$S	USER NAME = $USER$S	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
	PLOT SCALE = $SCALE$S	CHECKED - MMK	REVISED -
$MODELNAME$S	PLOT DATE = $DATE$S	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 1- OUTBOUND ONTARIO, OO

SCALE: 1" = 50' | SHEET 29 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	29
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE OUTBOUND KENNEDY MAINLINE RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 2'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

$FILE$

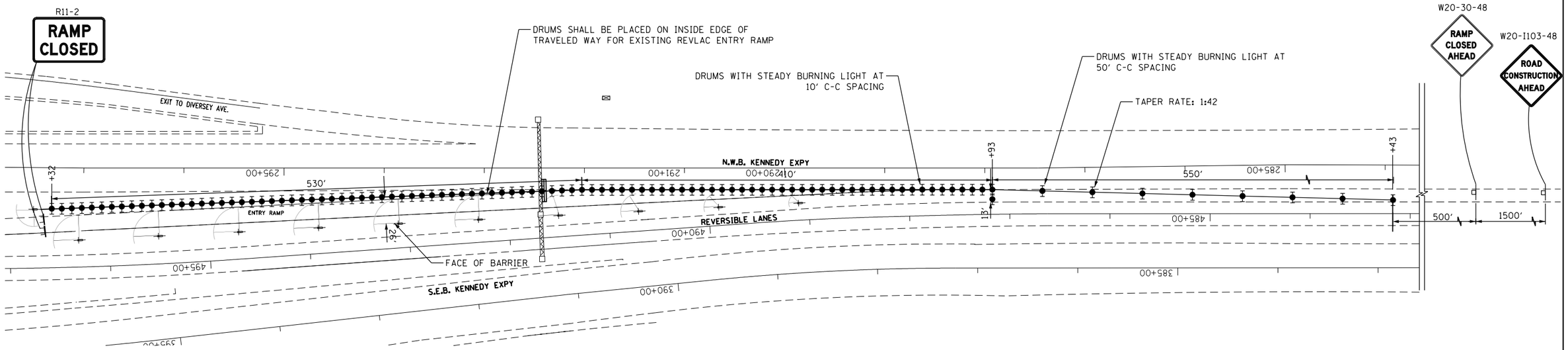
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MMK	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 2 - OUTBOUND MAINLINE, OM

SCALE: 1" = 50' | SHEET 30 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	30
		CONTRACT NO. 62F40		
	ILLINOIS FED. AID PROJECT			



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE OUTBOUND SLIP RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 3'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

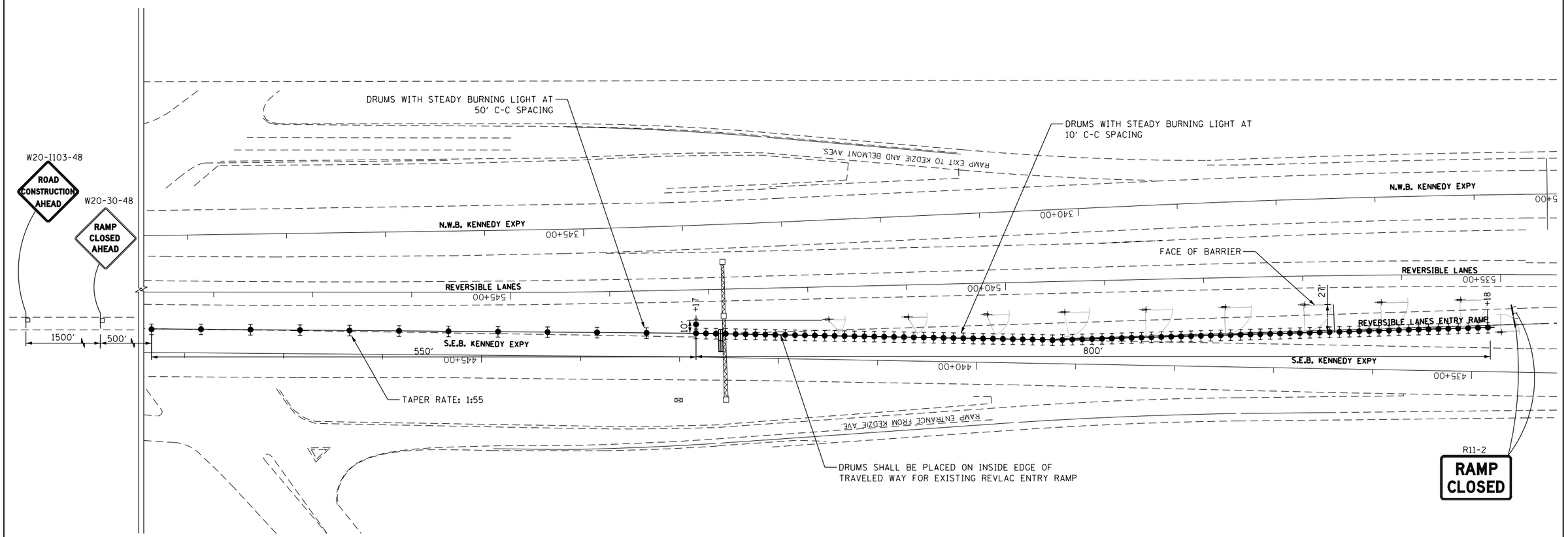
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - MMK	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 3 - OUTBOUND SLIP RAMP, OS

SCALE: 1" = 50' | SHEET 31 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	31
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE INBOUND SLIP RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 4'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

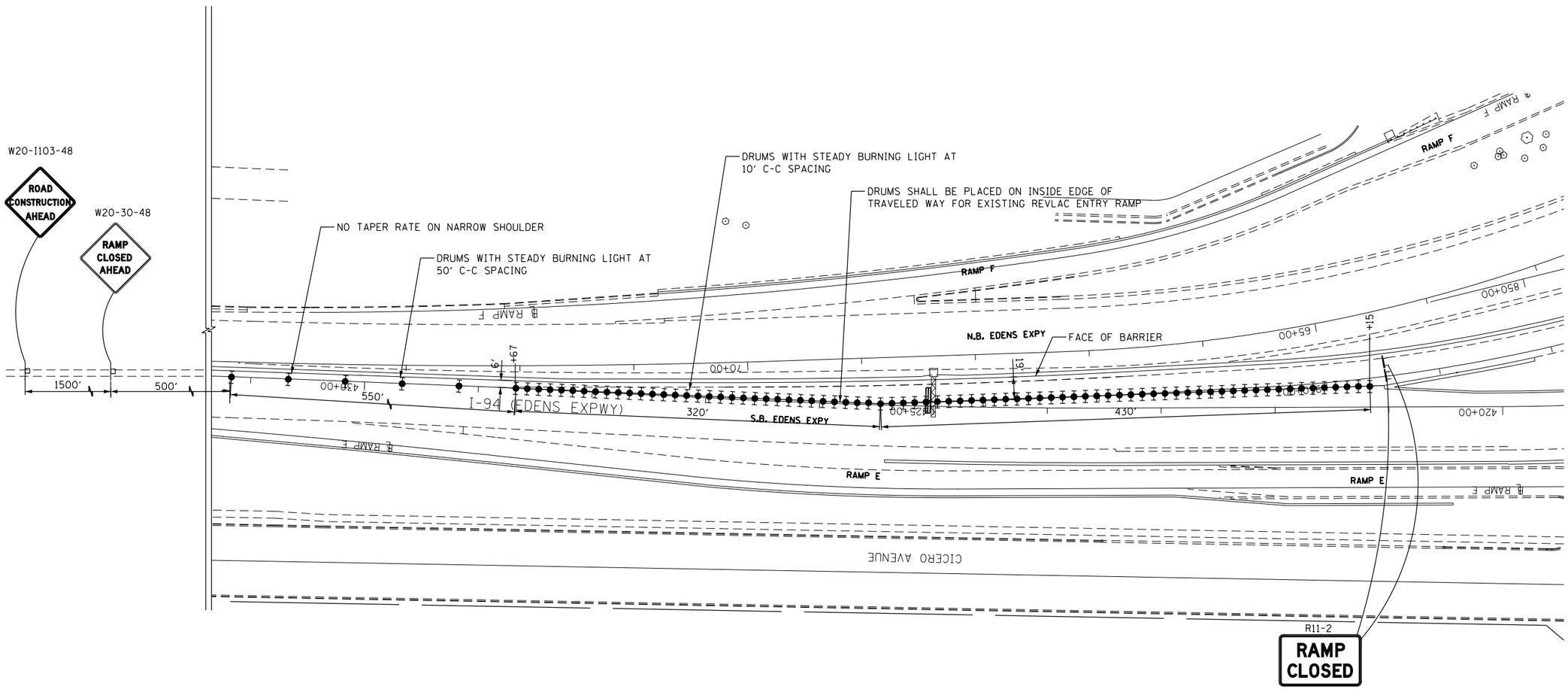
FILE NAME = $FILE$S	USER NAME = $USER$S	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
	PLOT SCALE = $SCALE$S	CHECKED - MMK	REVISED -
$MODELNAME$S	PLOT DATE = $DATE$S	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 4 - INBOUND SLIP RAMP, IS

SCALE: 1" = 50' | SHEET 32 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	32
		CONTRACT NO. 62F40		
	ILLINOIS	FED. AID PROJECT		



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE INBOUND EDENS RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 5'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

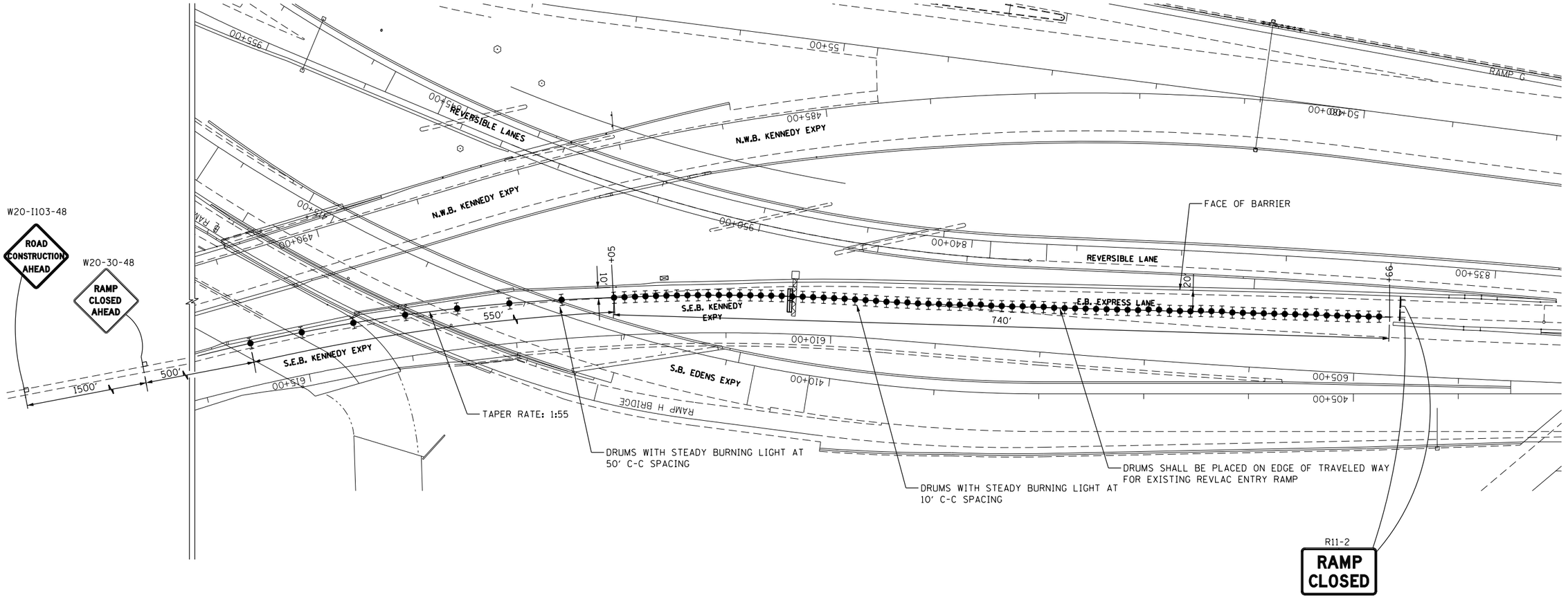
FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - MMK	REVISED -
$MODELNAME$	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 5 - INBOUND EDENS, IE

SCALE: 1" = 50' | SHEET 33 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	33
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	



NOTES

1. ALL MOT CLOSURES SHALL BE IN ACCORDANCE WITH THE STANDARDS LISTED ON SHEET NO. 2
2. ALL CLOSURES ARE TO OCCUR WITHIN THE TIMES SPECIFICED IN THE KEEPING THE EXPRESSWAY OPEN TO TRAFFIC SPECIAL PROVISION.
3. NO WORK AREA IS IDENTIFIED. ALL WORK OCCURING WILL BE TESTING OF REVLAC EQUIPMENT.
4. THE CLOSURE SHOWN ON THIS SHEET APPLIES TO THE INBOUND KENNEDY WEST LEG RAMP AND WILL BE PAID FOR AS 'TRAFFIC CONTROL AND PROTECTION, STANDARD 701401, LOCATION 6'.

LEGEND

- DRUM WITH STEADY BURN UNI-DIRECTIONAL LIGHT
- SIGN LOCATION
- TYPE III BARRICADE WITH 2 FLASHING LIGHTS

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - KSB	REVISED -
		DRAWN - KSB	REVISED -
$MODELNAME$	PLOT SCALE = $SCALE$	CHECKED - MMK	REVISED -
	PLOT DATE = $DATE$	DATE - 10/6/2017	REVISED -

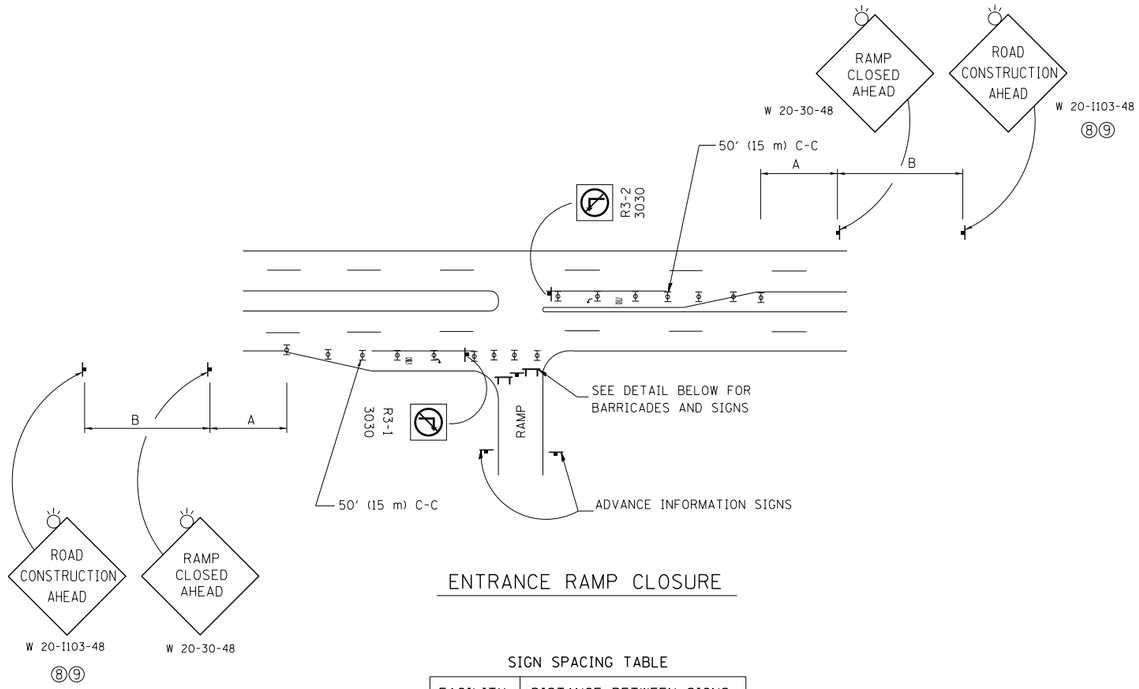
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - ENTRY RAMP CLOSURE
LOCATION 6 - INBOUND WEST LEG, IW

SCALE: 1" = 50' | SHEET 34 OF 36 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-018I	COOK	36	34
		CONTRACT NO. 62F40		
		ILLINOIS	FED. AID PROJECT	

$FILES

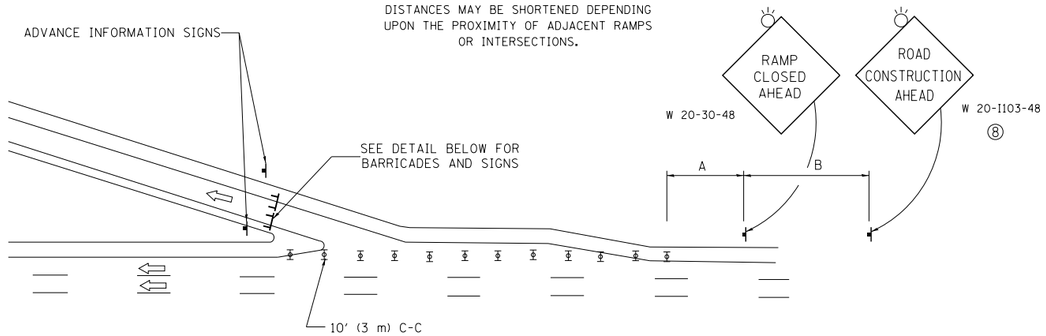


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL 55 MPH	500' (150 m)	500' (150 m)
ARTERIAL 50-45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	200' (60 m)	200' (60 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

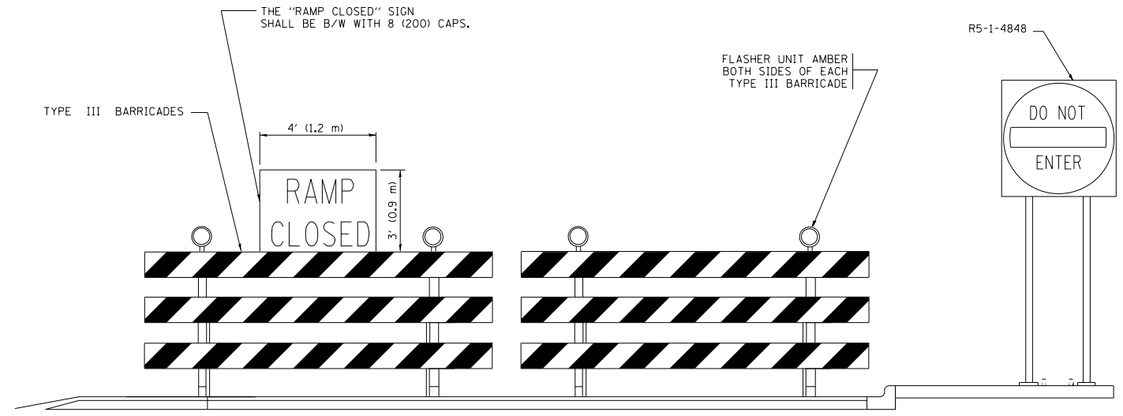


EXIT RAMP CLOSURE

SYMBOLS

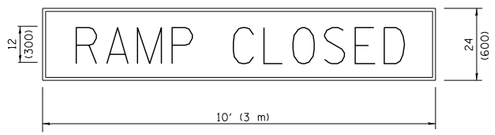
TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH 2 FLASHING LIGHTS



DETAIL FOR REQUIRED BARRICADES & SIGNS

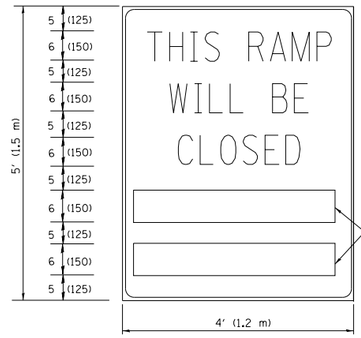
RAMP CLOSURE ADVANCE WARNING SIGN



BLACK LEGEND ON ORANGE BACKGROUND MOUNTED DIAGONALLY
E MOD FONT
1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR EXIT RAMPS THAT WILL BE CLOSED FOR MORE THAN FOUR (4) CONSECUTIVE DAYS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



BLACK LEGEND ON WHITE BACKGROUND

½ (12) BORDER

E MOD FONT

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

THESE SIGNS SHALL BE FABRICATED AND PAID FOR ACCORDING TO THE TEMPORARY INFORMATION SIGNING SPECIAL PROVISION

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES, PRECEEDED BY A W20-7 FLAGGER WARNING SIGN.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED WHEN THE RAMP IS CLOSED FOR MORE THAN FOUR (4) DAYS.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED FOUR (4) DAYS IN LENGTH
8. ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
9. ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS SHALL BE INSTALLED ON THE LEFT SIDE OF TRAFFIC IF THE MEDIAN IS MORE THAN 10 FT WIDE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = c:\pw_work\pwidot\footemj\d0108315\tc08.dgn	USER NAME = footemj	DESIGNED - DWS	REVISED - JAF 02-06
		DRAWN -	REVISED - SPB 01-07
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - SPB 12-09
	PLOT DATE = 7/8/2013	DATE - 02-83	REVISED - MD 06-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

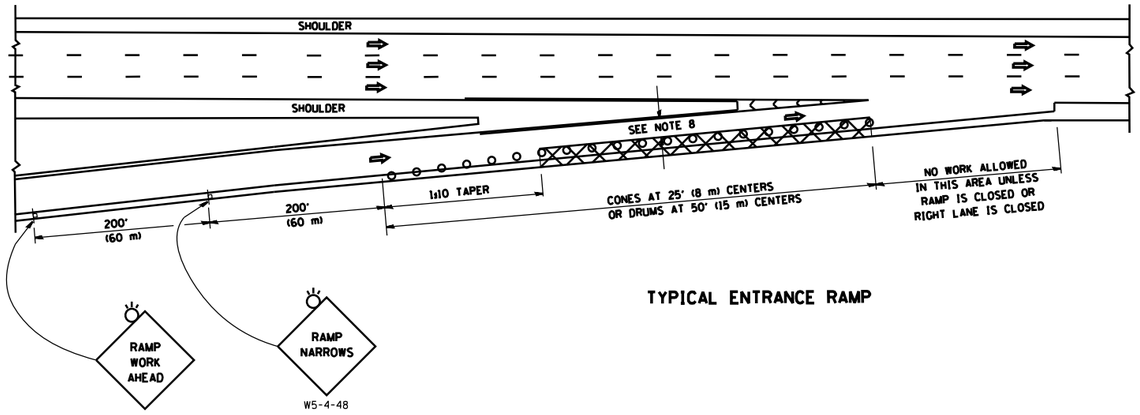
ENTRANCE AND EXIT RAMP CLOSURE DETAILS

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

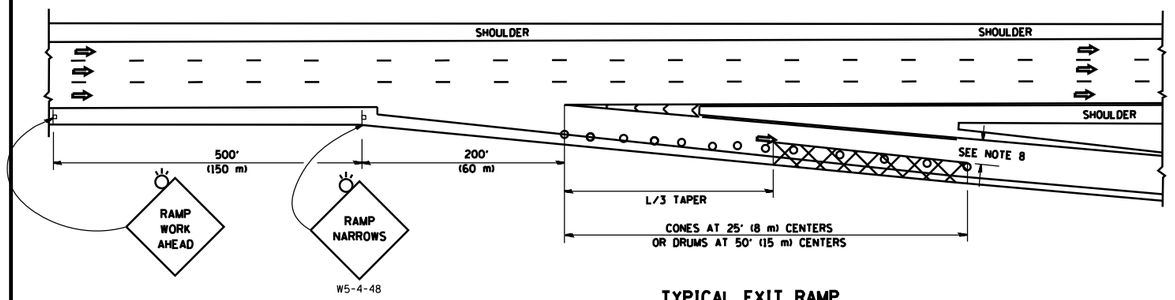
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	36	35
	TC-08	CONTRACT NO. 62F40		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

tc08.dgn 7/8/2013 7:18:03 AM User: footemj

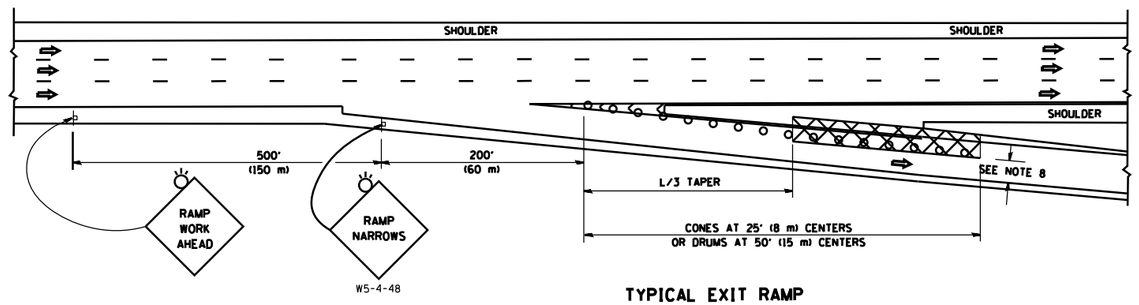
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP

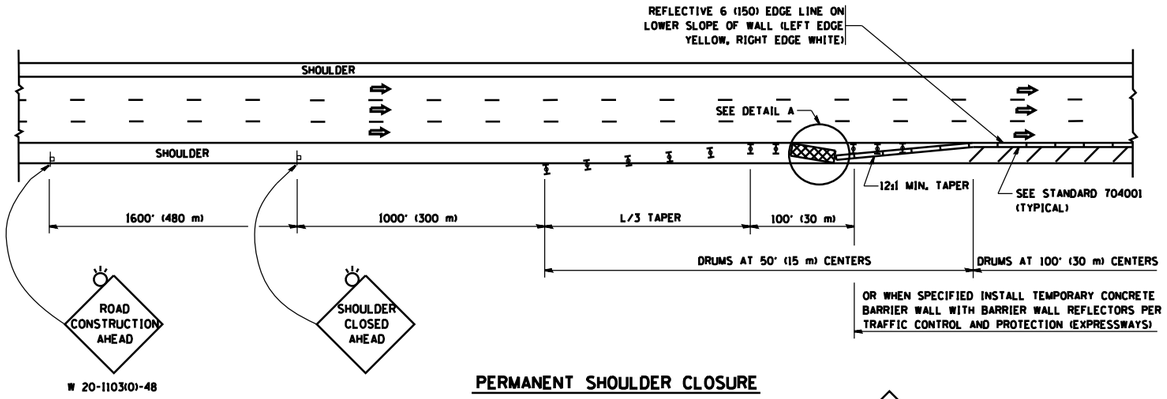


TYPICAL EXIT RAMP

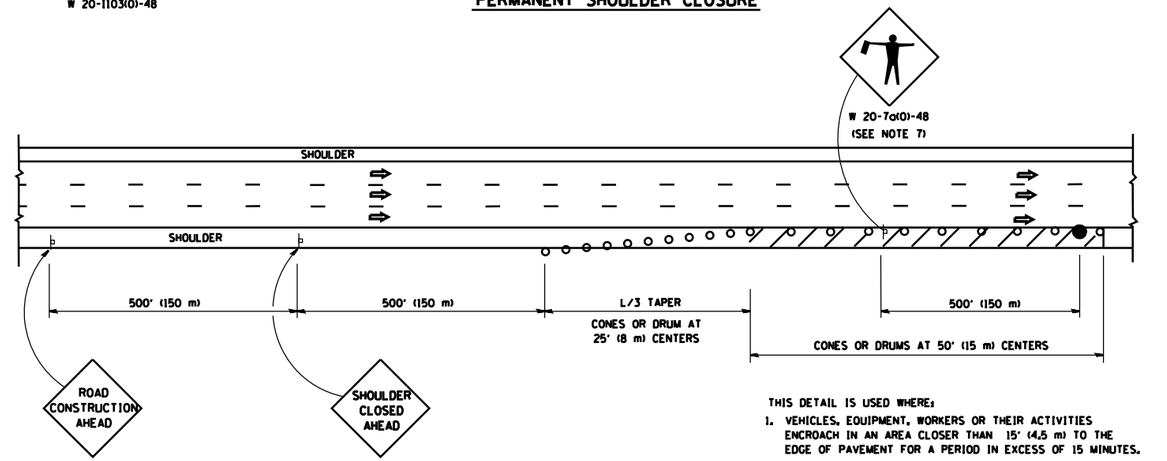


TYPICAL EXIT RAMP

SHOULDER CLOSURE DETAILS



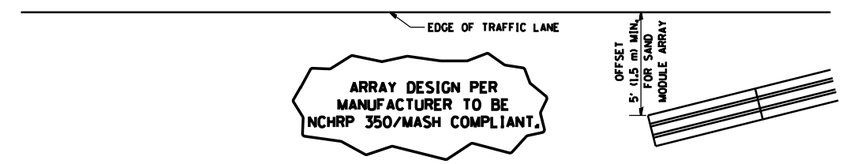
PERMANENT SHOULDER CLOSURE



THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.

DAYTIME SHOULDER CLOSURE



DETAIL "A"
IMPACT ATTENTUATOR, TEMPORARY
(SEE NOTE 5)

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE OR DRUM WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE
- IMPACT ATTENUATOR OF TYPE AND TEST LEVEL SPECIFIED

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(WXS)	L=(WXS)

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350/MASH.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.
8. 12' MIN. WIDTH TANGENT SECTION
   16' MIN. WIDTH CURVE SECTION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = c:\pw_work\pwidot\leysa\d0108315\tc17.dgn	USER NAME = leysa	DESIGNED -	REVISED - J.A.F. 12-06	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES
		DRAWN - D.W.S.	REVISED - S.P.B. 01-07		
	PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - S.P.B. 12-09		
	PLOT DATE = 4/17/2014	DATE - 11-96	REVISED - M.D. 06-13		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2017-0181	COOK	36	36
	TC-17	CONTRACT NO. 62F40		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		