

**ELECTRICAL NOTES:**

**B. CONDUIT & FITTINGS**

1. USE FACTORY APPLIED POLYURETHANE COATED HOT DIPPED GALVANIZED RIGID CONDUIT AND FITTINGS IN AREAS WHERE CONDUITS ARE EXPOSED TO WATER CONDITIONS, AND FOR ALL OUTDOOR INSTALLATIONS INCLUDING CONTROL AND COMMUNICATION SYSTEMS.
2. ALL CONDUIT SHALL BE RIGID GALVANIZED STEEL UNLESS OTHERWISE NOTED. CONDUITS SHALL NOT BE LESS THAN 3/4" WHERE EXPOSED, AND NOT LESS THAN 1" WHERE CONCEALED, CONCRETE-ENCASED, OR BURIED.
3. ALL CONDUIT CONNECTIONS SHALL BE WATERTIGHT AND ALL CONDUITS ENTERING ENCLOSURES SHALL BE PROVIDED WITH WATERTIGHT HUBS AND CONDUIT SEALING BUSHINGS THROUGHOUT. ALL OPENINGS FOR CONDUIT PENETRATIONS SHALL BE SLEEVED, AND SHALL BE WATERPROOFED AND FIRE PROOFED.
4. INSTALL MOGUL CONDULETS WHERE CONDUIT RUN EXCEEDS 180 FEET BETWEEN CABLE PULLING POINTS. CONDUIT RUNS BETWEEN ANY TWO PULL POINTS SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE RIGHT ANGLE BENDS. PROVIDE EXPANSION FITTINGS IN CONDUIT RUN WHERE IT CROSSES STRUCTURAL EXPANSION JOINT AND OR EVERY 300 FEET IN ALL EXPOSED CONDUIT RUNS.
5. WHERE STRUCTURAL OPENINGS ARE NOT AVAILABLE, SLEEVES SHALL BE INSTALLED AS REQUIRED TO PERMIT PASSAGE OF CONDUITS. AFTER INSTALLATION, ALL OPENINGS SHALL BE FILLED WITH 2 HOUR FIRE RATED COMPOUND AND WATERPROOFED TO MATCH THE SURROUNDING AREAS.
6. EXPOSED CONDUIT SUPPORTS MINIMUM SPACING, CENTER TO CENTER, SHALL BE NOT MORE THAN:  
 -- 7 1/2 FEET ON CONCRETE OR MASONRY, AS PERMITTED BY NEC FOR THE CONDUIT SIZE  
 -- 5 FEET ON STEEL STRUCTURES
7. WHEREVER A CONDUIT RUN MEETS AN OBSTRUCTION (DRAIN PIPE, VERTICAL PIPE, DRIP PAN, ETC.) CONDUIT SHALL BE OFFSET AS REQUIRED.
8. ALL SPARE DUCTS AND CONDUITS SHALL BE SEALED WITH HEAVY DUCT CAPS.
9. CHASE WALLS AND FLOORS AS REQUIRED AND APPROVED AND PATCH ALL OPENINGS, FLOOR CHASING OR HOLES WHICH HAVE BEEN CAUSED BY THE INSTALLATION AND REMOVAL OF THE EQUIPMENT.
10. THE NUMBER AND SIZES OF CONDUITS, BOXES, CABINETS, WIRES AND CABLES SHOWN ON THE CONTRACT PLANS SCHEMATIC LAYOUT DIAGRAMS AND SCHEDULES ARE THE MINIMUM PERMISSIBLE FOR THE POWER AND CONTROL CIRCUITS OF THE SYSTEMS SHOWN ON THESE CONTRACT PLANS. THE CONTRACTOR SHALL PROVIDE CONDUITS, CONDUCTORS AND CABLES OF SUFFICIENT NUMBER AND SIZE, INCLUDING SPARES, AS MAY BE REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE FINAL WIRING DIAGRAMS ON THE APPROVED WORKING DRAWINGS, AND IN COMPLIANCE WITH NEC AND ALL OTHER APPLICABLE CODES.
11. THE CONTRACTOR SHALL NUMBER AND TAG SPARE CONDUCTORS AS SUCH, AND SPARE CONDUCTORS SHALL BE SHOWN ON ALL SHOP AND RECORD DRAWINGS. THE SCHEMATIC CONDUIT DIAGRAMS ON THE CONTRACT PLANS AND ALL ASSOCIATED TABLES, SCHEDULES AND DETAILS DO NOT PURPORT TO SHOW ALL PULL AND TERMINAL BOXES, JUNCTION BOXES, MOUNTING HARDWARE AND SUPPORTS ASSOCIATED WITH THE COMPLETE AND FINAL INSTALLATION OF ALL ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL BOXES, SUPPORTS AND OTHER HARDWARE REQUIRED TO CONFORM TO THESE ITEMS' CONSTRUCTION AND INSTALLATION SPECIFICATIONS, IN COMPLIANCE WITH ALL APPLICABLE CODES AND NYCT DESIGN GUIDELINES.
12. FLEXIBLE CONDUIT SECTIONS, HARDWARE AND SUPPORTS REQUIRED FOR CONNECTIONS TO CCTV EQUIPMENT ARE NOT INDICATED ON THE CONTRACT PLANS.
13. THE SCHEMATIC CONDUIT DIAGRAMS DO NOT PURPORT TO SHOW THE EXACT PHYSICAL LAYOUT AND LOCATIONS OF THE EQUIPMENT OR OF THE ASSOCIATED CONDUIT, WIRING, BOXES AND OTHER HARDWARE, AND SHOULD NOT BE USED FOR SUCH PURPOSES AS SUBSTITUTES FOR WORKING OR INSTALLATION DRAWINGS. THE CONTRACTOR SHALL SUBMIT SUCH COMPLETE CONDUIT PHYSICAL LAYOUT DRAWINGS AS PART OF THE SHOP DRAWING SUBMITTAL PROCESS FOR THE ENGINEER'S APPROVAL PRIOR TO PERFORMING THE ACTUAL WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE TO PRODUCE AND SUBMIT FOR THE ENGINEER'S APPROVAL SUCH DRAWINGS AS SPECIFIED HEREIN AND UNDER OTHER RELATED NOTES AND SPECIFICATION SECTIONS.
14. FITTINGS, MOUNTING SUPPORTS, BRACKETS, ETC. ARE NOT SHOWN ON THE CONDUIT AND WIRING SCHEMATIC DIAGRAMS.

15. CONTRACTOR SHALL INSURE DURING ALL PHASES OF F.O. HANDLING AND INSTALLATION THAT THE BENDING RADIUS OF THE CABLE WILL BE GREATER THAN 20 TIMES THE CABLE DIAMETER.

**C. ELECTRIC POWER**

1. ALL SPARE DUCTS SHALL BE SEALED WITH HEAVY DUCT CAPS AT BOTH ENDS.
2. A FRAMEWORK OF KINDORF CHANNEL OR APPROVED EQUAL SHALL BE INSTALLED TO SUPPORT ENCLOSURES. KINDORF CHANNELS MOUNTED VERTICALLY ON THE WALL SHALL HAVE 3/4" SPACERS.
3. ALL REQUIRED CONDUIT, WIRE, CABLE, FITTINGS, BOXES, HARDWARE ETC. SHALL BE FURNISHED AND INSTALLED IN ORDER TO MAKE A COMPLETE ELECTRICAL SYSTEM READY FOR OPERATION. NO SPLICING OF WIRE AND CABLE IS ACCEPTABLE UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.

**D. ELECTRICAL DEMOLITION**

1. REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE ELECTRICAL LAYOUTS AND SCHEMES IN FULL COORDINATION WITH ALL OTHER DEMOLITION WORK. ALL EQUIPMENT WHICH IS NO LONGER REQUIRED SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY, AND REMOVED. WHEN REMOVING EMPTY CONDUITS, PATCH SURFACES BEHIND THEM ON THE WALLS, CEILINGS AND OTHER STRUCTURAL ELEMENTS THAT ARE TO REMAIN.
2. MAINTAIN SERVICE TO EXISTING EQUIPMENT THAT IS OPERATIONAL. PROVIDE COVERING AND PATCHING OF ALL OPENINGS CREATED BY ELECTRICAL EQUIPMENT REMOVALS, ON ALL WALLS, CEILINGS AND OTHER STRUCTURES TO REMAIN. THE REMAINING ELECTRICAL EQUIPMENT SHALL BE RECONNECTED AND RESTORED TO THEIR CURRENT FUNCTIONS AS PART OF THE ELECTRICAL SYSTEMS WORK.
3. NOTIFY IDOT AND THE FACILITY GENERAL MANAGER THRU THE ENGINEER AT THE APPROPRIATE TIME AND FOLLOWING THE APPROPRIATE PROCEDURES FOR THE PROJECTED DEMOLITION. EQUIPMENT PROTECTION AND CONSTRUCTION PHASING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AND AS AGREED WITH THE IDOT AND OTHER LOCAL AUTHORITIES. FOLLOW THE APPROVED DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE AS APPLICABLE TO ANY POWER SHUTDOWN.
4. CONTRACTOR SHALL SUBMIT ALL MATERIAL REMOVALS FOR REVIEW AND APPROVAL 30 DAYS PRIOR TO ANY DEMOLITION WORK. AT NO TIME THE CONTRACTOR SHALL PERFORM ANY DEMOLITION WORK, RELOCATION, REPAIR OR REROUTING OF EXISTING CABLES, CONDUITS, RACEWAYS, JUNCTION BOXES OR EQUIPMENT IN AN AREA WITHOUT THE ENGINEER'S APPROVAL FOR THE AREA AS CLEAR OF ANY HAZARDOUS MATERIALS.

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CCTV SYSTEM, I-90/4 TO CONGRESS PARKWAY  
 ELECTRICAL NOTES**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
389	2013-026-1	COOK	37	4
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			CONTRACT NO. 60W49	

SCALE: AS SHOWN SHEET NO. OF SHEETS STA. 353+46.00 TO STA. 382+50.00