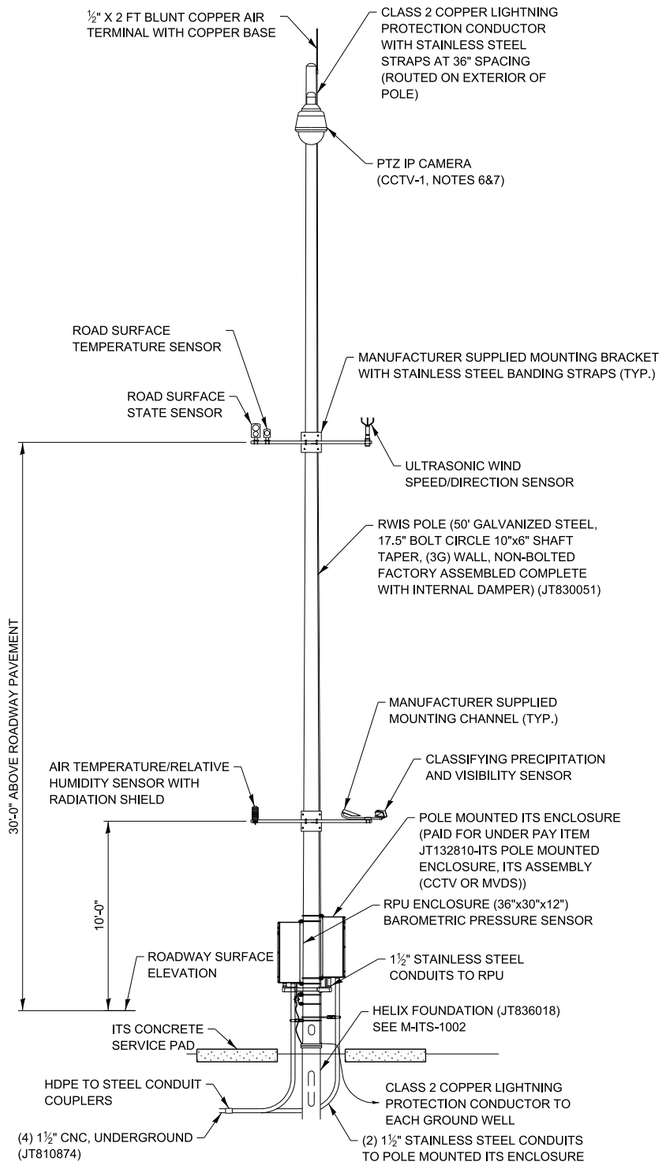
Illinois Tollway Base Sheet Revisions

Section M	Base Sheet Drawings	
	Drawing	**Modification Summary** **Effective: 03-01-2024**
	Roadway Weather Information System (ITS)-Series 1300	
	M-ITS-1300	**RWIS Pole, Sensor Mounting Detail**
	Sheet 1	Added a Note 10: Mounting height of the non intrusive temperature sensor on primary pole and on secondary pole is site specific and shall be per manufacturer installation manual.
	M-ITS-1301	**RWIS Cabinet Wiring Diagram**
	Sheet 1	Revised Note to Designer: If there is no CCTV in 400 feet from RWIS primary pole then install a CCTV and ITS enclosure.
		Added CB10B and TB1B identification on breaker assembly
		Relocated SFP 1 to port 1 and port 2 on the Gator Patch
		Relocated SFP 2 to port 7 and to port 8 on the Gator Patch
	Sheet 2	For Part M: removed reference to FP2000
		For Part N: removed reference to FP2000
		Removed reference to FP2000 and replaced by DRS511
	M-ITS-1302	**Typical RWIS Site Installation Plan**
	Sheet 1	Added a shade area where the RWIS Primary pole shall be installed and added dimensions to define the criteria where the RWIS pole should be installed. This to limit the non intrusive temperature sensor to meet the maximum 50 feet line of sight to the surface of the pavement.
	Sheet 2	Added a shade area where the RWIS Secondary pole shall be installed and added dimensions to define the criteria where the RWIS pole should be installed. This to limit the non intrusive temperature sensor to meet the maximum 50 feet line of sight to the surface of the pavement.

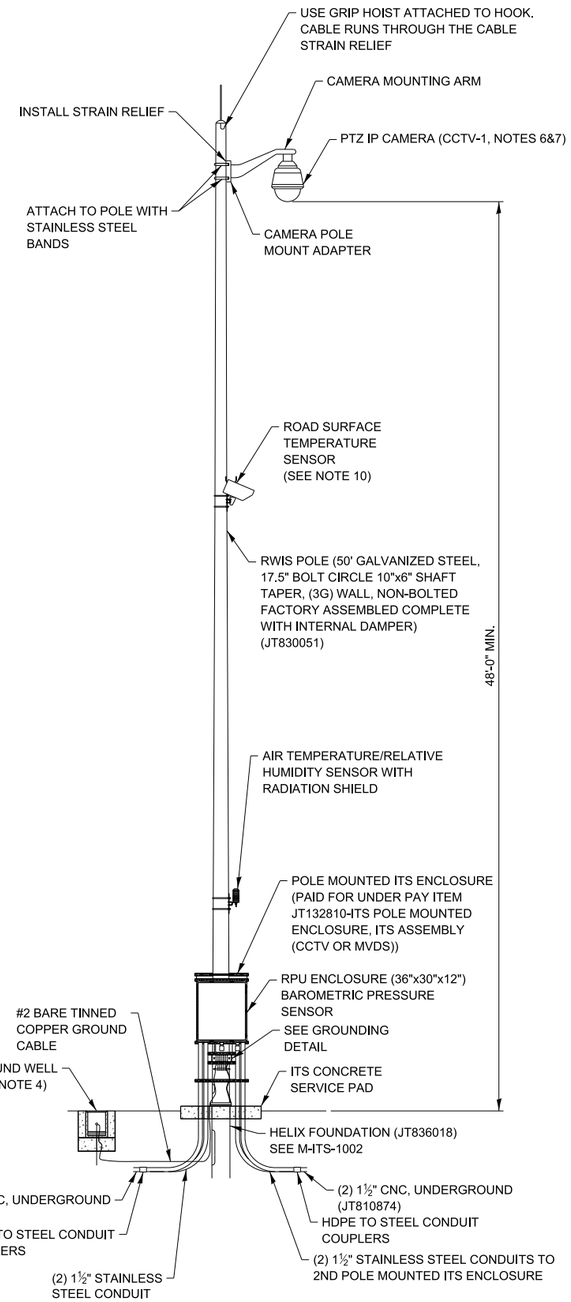
New Sheet

Retired Standard



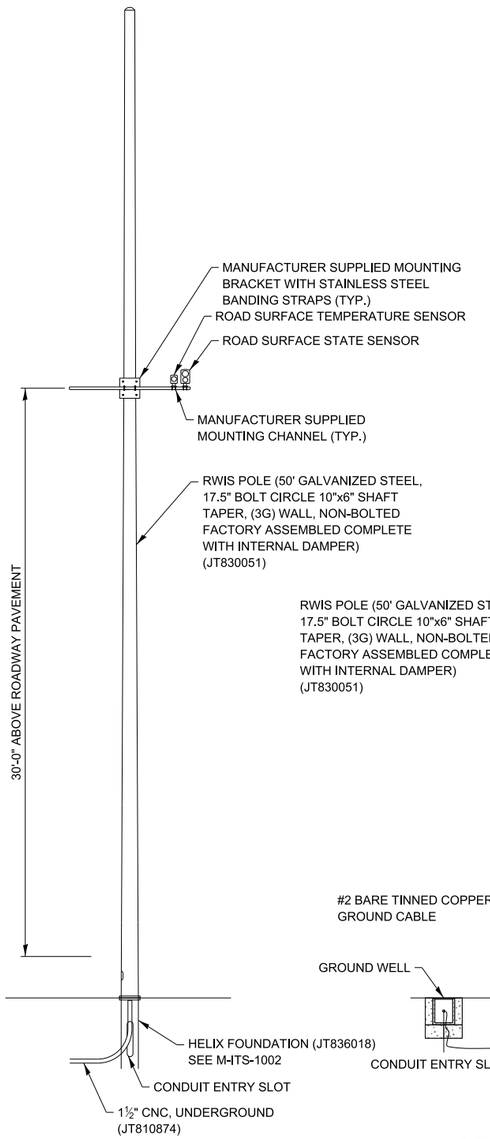
RWIS POLE (FRONT VIEW) - PRIMARY POLE

NOT TO SCALE



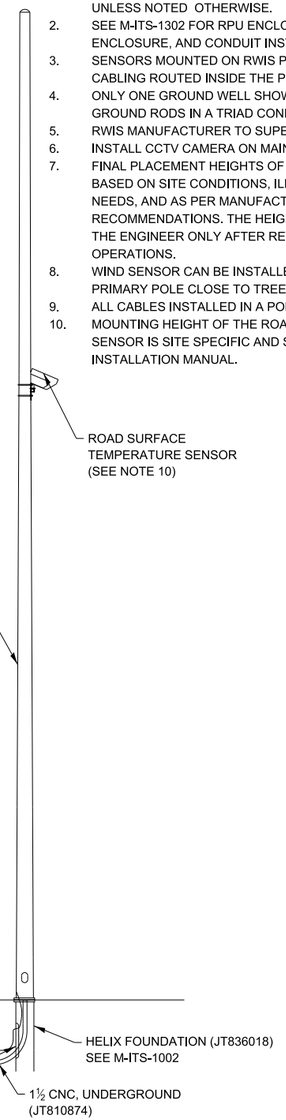
RWIS POLE (SIDE VIEW) - PRIMARY POLE

NOT TO SCALE



RWIS POLE (FRONT VIEW) - REMOTE SENSOR POLE

NOT TO SCALE



RWIS POLE (SIDE VIEW) - REMOTE SENSOR POLE

NOT TO SCALE

NOTES:

1. ALL ITEMS (EXCEPT FOR A ROADWAY CCTV AND ITS COMPONENTS THAT SHALL BE PAID SEPARATELY WHEN SUCH CCTV IS NEEDED) ON THIS SHEET ARE INCLUDED IN PAY ITEM "ROADWAY WEATHER INFORMATION SYSTEM" (JT131142) UNLESS NOTED OTHERWISE.
2. SEE M-ITS-1302 FOR RPU ENCLOSURE, REMOTE SENSOR ENCLOSURE, AND CONDUIT INSTALLATION DETAILS.
3. SENSORS MOUNTED ON RWIS POLES SHALL HAVE THEIR CABLING ROUTED INSIDE THE POLE.
4. ONLY ONE GROUND WELL SHOWN FOR CLARITY. INSTALL 3 GROUND RODS IN A TRIAD CONFIGURATION ON PRIMARY POLE.
5. RWIS MANUFACTURER TO SUPERVISE INSTALLATION PROCESS.
6. INSTALL CCTV CAMERA ON MAIN RWIS POLE.
7. FINAL PLACEMENT HEIGHTS OF THE CCTV CAMERAS SHALL BE BASED ON SITE CONDITIONS, ILLINOIS TOLLWAY OPERATIONAL NEEDS, AND AS PER MANUFACTURER'S MOUNTING RECOMMENDATIONS. THE HEIGHT SHALL BE APPROVED BY THE ENGINEER ONLY AFTER REVIEW BY ILLINOIS TOLLWAY ITS OPERATIONS.
8. WIND SENSOR CAN BE INSTALLED ON THE SECONDARY POLE IF PRIMARY POLE CLOSE TO TREE LINE.
9. ALL CABLES INSTALLED IN A POLE SHALL USE A GROMMET.
10. MOUNTING HEIGHT OF THE ROAD SURFACE TEMPERATURE SENSOR IS SITE SPECIFIC AND SHALL BE PER MANUFACTURER INSTALLATION MANUAL.

NOTE TO DESIGNER

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NOTE TO DESIGNER

THE FOUNDATION SHOWN HERE IS FOR SURFACES AT 6:1 OR FLATTER. THE DESIGNER SHALL USE THE FOUNDATION PAY ITEM JT836020 FOR FOUNDATION AT STEEPER SLOPES.

NOTE TO DESIGNER

IF THERE IS A ROADWAY CCTV CAMERA WITHIN 500' OF THE RWIS SITE THE DESIGNER SHALL REMOVE THE CCTV CAMERA FROM THESE BASE SHEETS AND ASSOCIATED NOTES 6 AND 7.

Illinois Tollway

RWIS POLE SENSOR MOUNTING DETAIL

VERSION:	STANDARD:	SHEET:
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GENERAL NOTES:

1. RWIS POLES SHIELDED BY GUARDRAIL SHALL BE LOCATED A MINIMUM OF 5' BEHIND THE GUARDRAIL POST. SEE ILLINOIS TOLLWAY GUARDRAIL STANDARD (SECTION C OF STANDARDS) FOR MORE INFORMATION. ALL OTHER POLES SHALL BE LOCATED OUTSIDE THE CLEAR ZONE. FINAL LOCATION TO BE APPROVED BY THE ENGINEER.

2. ANY GROUND CABLES ROUTED INSIDE THE ENCLOSURE SHALL BE GREEN INSULATED TYPE RHW CONDUCTORS. ANY GROUND CONDUCTORS THAT ARE BURIED SHALL BE BARE COPPER TINNED. ANY GROUND CONNECTED TO THE EXTERNAL GROUND BUSBAR SHALL BE EXOTHERMICALLY WELDED TO THE BUSBAR.

3. PROVIDE A 1½" STAINLESS STEEL CONDUIT NIPPLE WITH LB FITTING FOR ROUTING ITS ELEMENT CABLES INSIDE THE POLE TO THE EQUIPMENT ENCLOSURE. DRILL AND TAP POLE FOR THE CONDUIT NIPPLE. CABLE SLACK SHALL BE PULLED AND FASTENED WITHIN THE TOP OF THE POLE. PROPER CABLE STRAIN RELIEF SHALL BE INSTALLED AND APPROVED BY THE ENGINEER. ALL CABLE RUN INSIDE THE POLE SHALL NOT HANG BELOW THE TOP OF THE HANDHOLE COVER ON THE POLE.

4. ALL CONDUITS ENTERING THE ENCLOSURE SHALL BE SEALED. SEE "ITS POLE MOUNTED ENCLOSURE, ITS ASSEMBLY (CCTV OR MVDS)" SPECIAL PROVISION FOR MORE DETAIL FOR RODENT PROTECTION.

5. CONTRACTOR TO PROVIDE ALL POWER, COMMUNICATIONS AND GROUND WIRING REQUIRED FOR SYSTEM OPERATION.

6. ATTACH PVC SCH 80 CONDUIT TO ENCLOSURE FOR SUPPORT. USE METAL BUSHING WHEN CONNECTING PVC TO CABINET. USE GROMMETS AT BOTH ENDS OF CONDUIT TO SEAL CONDUIT TO PREVENT RODENTS AND INSECTS FROM ENTERING, BUT ALLOW GROUND CABLE TO RUN THROUGH BOTH ENDS.

7. GROUND RODS SHALL BE PLACED A MINIMUM OF 10' FROM THE FOUNDATION. A GROUND WELL SHALL BE INCLUDED TO PERMIT ACCESS TO THE GROUND ROD CONNECTION. CONNECTION TO THE GROUND BUSBAR AND THE GROUND ROD SHALL BE EXOTHERMICALLY WELDED.

8. A FLAT STEEL MESH PANEL ALONG WITH A COMMERCIALLY AVAILABLE HYDROPHOBIC LOW DENSITY COMPOSITE BACKFILL MATERIAL (KNOWN AS Q-SET 250) SHALL BE INSTALLED BETWEEN THE ANCHOR BASE AND THE POLE TO PREVENT THE ENTRY OF RODENTS INTO THE POLE. SEE SPECIAL PROVISIONS FOR MORE DETAILS.

9. BACKFILL PER ILLINOIS TOLLWAY STANDARD H1. BACKFILL SHALL BE TO THE TOP OF THE POLE BASE ON ALL SIDES.

10. ALL CABLING (INCLUDING CABLING INSIDE THE ENCLOSURE) SHALL BE OUTDOOR RATED.

11. INSTALL CONCRETE SERVICE PAD(S) 6 INCHES FROM THE POLE BASE ON THE SAME SIDE AS THE RPU AND ITS CABINET, IF PRESENT, CENTERED ON THE RPU AND/OR ITS ENCLOSURE.

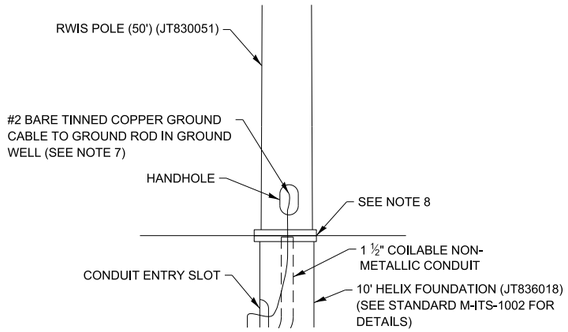
12. THIRTY DAYS PRIOR TO INSTALLING ANY SENSORS, THE CONTRACTOR SHALL COORDINATE DEVICE CONFIGURATION WITH THE ENGINEER.

13. THE DISCONNECT SWITCH, SUPPORT, AND ASSOCIATED CONDUIT SHALL BE INSTALLED FOR RWIS SITES WHERE THE UTILITY SERVICE INSTALLATION IS GREATER THAN 500 FEET FROM THE RPU ENCLOSURE OR LOCATED ON THE OPPOSITE SIDE OF THE ROADWAY FROM THE RPU ENCLOSURE.

14. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

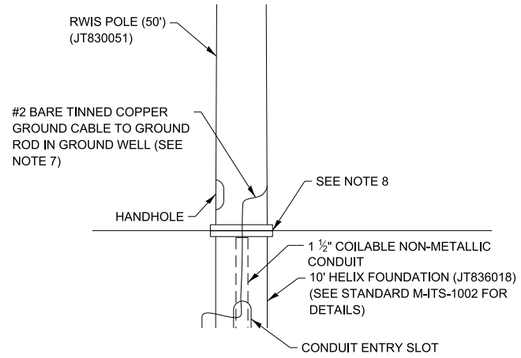
15. FINAL PLACEMENT HEIGHTS OF THE SENSORS SHALL BE BASED ON SITE CONDITIONS, ILLINOIS TOLLWAY OPERATIONAL NEEDS, AND AS PER MANUFACTURER'S MOUNTING RECOMMENDATIONS. THE HEIGHT SHALL BE APPROVED BY THE ENGINEER ONLY AFTER REVIEW BY ILLINOIS TOLLWAY ITS OPERATIONS.

16. THE CONTRACTOR SHALL ENGAGE THE RWIS MANUFACTURER TO BE PRESENT ON SITE DURING THE INSTALLATION AND COMMISSIONING OF ALL RWIS EQUIPMENT, INCLUDING RWIS PRIMARY AND SECONDARY POLES AND ALL RWIS SENSORS AND CABINET EQUIPMENT. THE SITE ACCEPTANCE MUST BE SIGNED BY THE RWIS MANUFACTURER PRIOR TO SITE ACCEPTANCE BY THE TOLLWAY/GEC ITS UNIT.



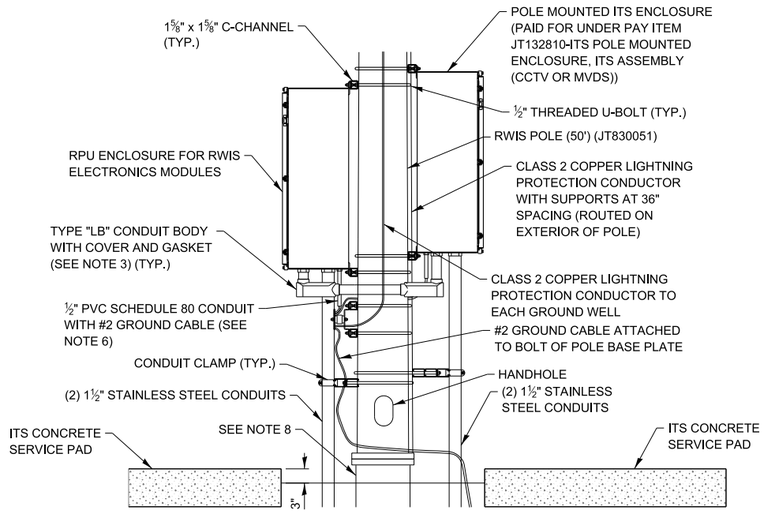
REMOTE SENSOR POLE - SIDE VIEW

NOT TO SCALE



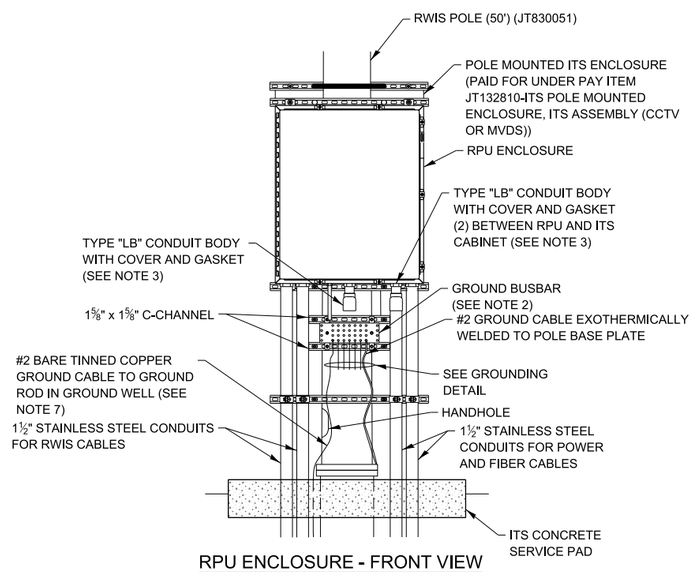
REMOTE SENSOR POLE - FRONT VIEW

NOT TO SCALE



RPU ENCLOSURE - SIDE VIEW

NOT TO SCALE



RPU ENCLOSURE - FRONT VIEW

NOT TO SCALE

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NOTE TO DESIGNER

FOR BRIDGE MOUNTING APPLICATIONS, THE DESIGNER SHALL DEVELOP STRUCTURAL FOUNDATION AND POLE MOUNTING DETAILS.

Illinois Tollway

RWIS POLE SENSOR MOUNTING DETAIL

VERSION:	STANDARD:	SHEET:
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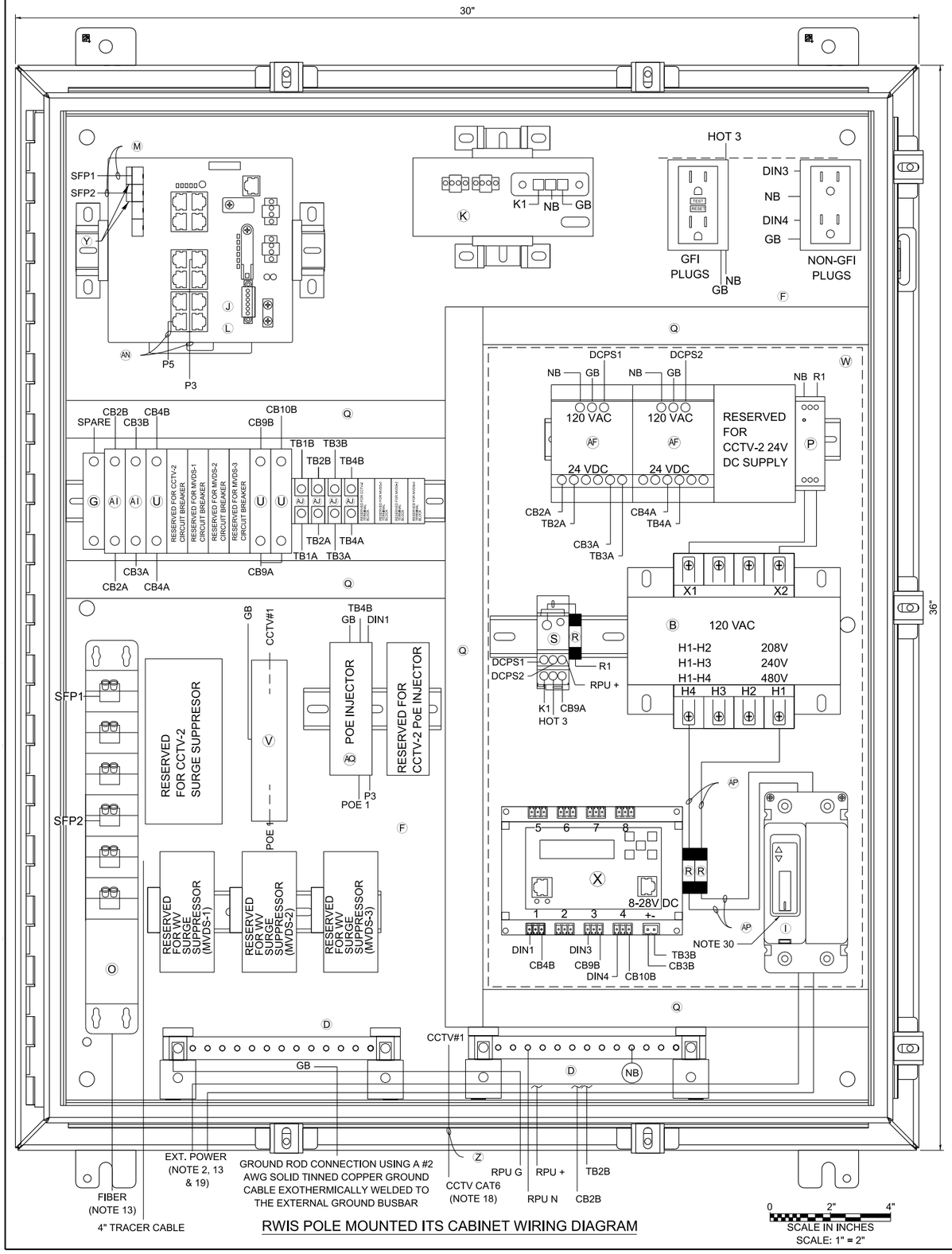

RWIS POLE MOUNTED ITS CABINET WIRING DIAGRAM

ITEM	DESCRIPTION
A	NOT USED FOR THIS SHEET APPLICATION
B	CONTROL POWER TRANSFORMER, 1000VA, 208/240/480-120VAC, 1PH, SQUARE D/CLASS 9070 - T1000 D95
C	NOT USED FOR THIS SHEET APPLICATION
D	TWO (2) GROUNDING BAR SYSTEM HOFFMAN/PGS2K. BONDED OR SEPARATED AS REQUIRED.
E	NEMA 4X STAINLESS STEEL, 36"H X 30"W X 12"D ENCLOSURE WITH 33"X27" PANEL, HOFFMAN/A36H3012SS6LP & A36P30
F	TWO DUPLEX 120V RECEPTACLES, ONE GFCI AND NON-GFI (SEE NOTE 9), HUBBELL/GFR5362 & BR20WR
G	24VDC, 1P, 15A CIRCUIT BREAKER, SCHNEIDER ELECTRIC/MGN61510
H	NOT USED FOR THIS SHEET APPLICATION
I	480V, 2P, 30A CIRCUIT BREAKER WITH TERMINAL SHIELD, EATON/HFD2030L & 625B229G07
J	NETWORK SWITCH CISCO IE-4000-8T4G-E
K	CISCO POWER SUPPLY, PWR-IE170W-PC-AC=
L	IP SERVICES LICENSE: L-IE4000-RTU=
M	NOT USED FOR THIS SHEET APPLICATION
N	NOT USED FOR THIS SHEET APPLICATION
O	SMF PATCH PANEL WITH LC CONNECTORS
P	120VAC SURGE SUPPRESSOR, MOUNTED ON DIN RAIL, COOPER CROUSE HINDS/MA15/D/1/SI OR APPROVED EQUAL
Q	PANDUIT WIRING DUCT (OR EQUIVALENT), PANDUIT/F1X2LG6 WITH COVER-C1LG6
R	10 AMP FUSE, GOULD (MERSEN)/ATM-10
S	SPLICE BLOCK, ALTECH/38041
T	NOT USED FOR THIS SHEET APPLICATION
U	5A CIRCUIT BREAKER, ALLEN BRADLEY/1492-SPM1B050
V	CAT6 PoE+ SURGE SUPPRESSOR: USE AXIS T8061 FOR AXIS PoE CAMERA.
W	CLEAR POLY METHYL METHACRYLATE (PMMA, PLEXIGLAS) SAFETY COVER ENCOMPASSING ITEMS AF, P, S, R, B, X, & I. (THE INSTALLER SHALL PERMANENTLY AFFIX A LABEL STATING "DANGER 480 VAC" OR "DANGER 240 VAC" OR "DANGER 120 VAC" FOR 120 VAC AS FIELD CONDITIONS WARRANT.)
X	POWER CONTROLLER, 8-CHANNEL DIN ETHERNET RELAY, DIGITAL LOGGERS/DIN 4
Y	(2) CISCO GLC-LX-SM-RGD = 1 GBPS SM SFP MODULES
Z	CATEGORY 6 CABLE, 23 AWG, OUTDOOR RATED CABLE BELDEN/7953A
AA	NOT USED FOR THIS SHEET APPLICATION
AB	NOT USED FOR THIS SHEET APPLICATION
AC	NOT USED FOR THIS SHEET APPLICATION
AD	NOT USED FOR THIS SHEET APPLICATION
AE	RS-232 / RS-485 TO ETHERNET CONVERTOR, WAVETRONIX - CLICK-301 OR ISS-MOXA P5150T, DK-35T
AF	AC/DC POWER SUPPLY, 24VDC WAVETRONIX - CLICK-204 OR ISS LAMBDA DSP100-24
AG	NOT USED FOR THIS SHEET APPLICATION
AH	NOT USED FOR THIS SHEET APPLICATION
AI	2A CIRCUIT BREAKER, ALLEN BRADLEY/1492-SPM1B020
AJ	TERMINAL BLOCK, ALLEN BRADLEY/1492-CD8
AK	NOT USED FOR THIS SHEET APPLICATION
AL	TRANSFORMER COVERS, SQUARE D/9070FSC2
AM	5-CONDUCTOR JUMPER (Tx, Rx, GND, RTS, CTS), RS-232 SERIAL COMMUNICATIONS (APPLICABLE TO ISS/MOXA)
AN	INDOOR/OUTDOOR RATED CAT6 (1000MBS, TEMPERATURE HARDENED) THESE ARE THE CAT6 CABLES ROUTED INSIDE CABINET
AO	MVDS CABLE
AP	#10 AWG
AQ	PoE INJECTOR AXIS T8144 24VDC (ONLY REQUIRED FOR PoE CAMERAS)
AR	T-BUS CONNECTOR (WAVETRONIX)
AS	NOT USED FOR THIS SHEET APPLICATION

NOTES:

1. ALL POWER WIRING SHALL BE RHH/RHW WITH WIRE TERMINALS OR TINNED.
2. CONTRACTOR TO VERIFY CORRECT TRANSFORMER TAPS ARE USED BASED ON INCOMING POWER SOURCE.
3. ALL CABLES AND EQUIPMENT SHALL BE PROPERLY DRESSED AND LABELED. ALL CONDUITS SHALL BE PROPERLY PLUGGED WITH DUCT SEAL PUTTY (RAINBOW TECHNOLOGIES OR EQUIVALENT).
4. NOT USED FOR THIS SHEET APPLICATION.
5. EACH 120VAC OUTLET, PS OR TRANSFORMER (ITEM F, K, L, & AF) SHALL BE FED FROM A SEPARATE INPUT LINE.
6. THE DIN RAIL(S) FOR ITEMS J & K SHALL BE INSTALLED WITH THE CENTER LINE NO LESS THAN 5 INCHES FROM ANY OBSTACLE ABOVE AND NO LESS THAN 4 INCHES FROM ANY OBSTACLE BELOW. ALL DIN RAIL SHALL BE GROUNDED.
7. ALL CABLES INSTALLED WITHIN THE CABINET AND POLE SHALL BE OUTDOOR RATED.
8. WIFI COMMUNICATION SHALL BE DISABLED ON DIN ETHERNET RELAY.
9. THE GFI OUTLETS LOAD SHALL NOT BE CONNECTED TO ANY OTHER LOAD IN THE ENCLOSURE. THE 1900 QUAD BOX GFI'S ARE INTENDED TO BE UTILIZED FOR EXTERNAL EQUIPMENT ONLY. EACH OUTLETS TAB SHALL BE BROKEN SO THEY ARE INDEPENDENT.
10. ALL BREAKERS SHALL BE LABELED (E.G. CAMERA-AC, CAMERA-DC, DIN RELAY-AC, DIN RELAY-DC, CELL MODEM-AC ETC.).
11. NOT USED FOR THIS SHEET APPLICATION.
12. USE THE MOUNTING TABS ON THE IP RELAY UNIT TO MOUNT THE UNIT DIRECTLY TO THE BACK PLATE. REFER TO THE IP RELAY WIRING TABLE FOR WIRING DETAILS.
13. ALL CABLES SHALL ENTER THE ENCLOSURE FROM THE BOTTOM. ALL POWER AND COMMUNICATION CABLE SLACK SHALL BE PLACED IN THE HANDHOLE.
14. POWER FEED TO THE CISCO IE4000 SWITCH SHALL BE FROM THE 120VAC INPUT WHEN THE ENCLOSURE IS AC POWERED.
15. NOT USED FOR THIS SHEET APPLICATION.
16. IF A SOLAR GENERATOR IS CONNECTED, THEN ITEM P AND THE SECONDARY SIDE OF ITEM B SHALL BE CONNECTED UNTIL A FINAL AC CONNECTION IS MADE.
17. ITEM X IS USED TO CONTROL POWER TO THE CAMERAS AND DETECTORS. ALL 120VAC CONNECTIONS ON ITEM X SHALL BE PROTECTED.
18. CABLES TO BE ROUTED THROUGH POLE.
19. WHEN A 24VDC TO 120VAC POWER GENERATOR IS CONNECTED, THEN THE 480VAC TO 120VAC STEP DOWN TRANSFORMER IS BYPASSED.
20. NOT USED FOR THIS SHEET APPLICATION.
21. NOT USED FOR THIS SHEET APPLICATION.
22. DIN RAIL SHALL BE INSTALLED AS ILLUSTRATED ON DRAWING. DIN RAIL SHALL BE GROUNDED TO THE GROUND BUS.
23. BOND NEUTRAL AND GROUND BUSES TOGETHER. TIE THE ENCLOSURE INTO THE GROUND BUS.
24. ITEM W SHALL BE FORMED AND MOLDED TO FIT AROUND THE AREA DENOTED BY THE DASHED LINE. THE PLEXIGLASS SHALL BE MOUNTED TO THE BACKPLATE WITH SUFFICIENT AIR HOLES TO ALLOW HEAT TO ESCAPE THE AREA. THERE SHALL ALSO BE OPENINGS ON THE BOTTOM TO ALLOW CABLES TO BE PASSED FROM THE AC SECTION TO THE OTHER SECTIONS OF THE ENCLOSURE.
25. ITEM AL SHALL BE PLACED ON ITEM B.
26. ALL INTERNAL ENCLOSURE ROUTED AND TERMINATED CAT6 CABLE SHALL BE TEMPERATURE RATED.
27. ALL INTERNAL 24VAC, 120VAC (STARTING ON SECONDARY SIDE OF ITEM B) AND ANY DC VOLTAGE POWER FEEDS USE #16 AWG CABLE.
28. SPARE BREAKER RESERVED.
29. ALL CONDUIT EXITING THE BOTTOM OF THE CABINET SHALL BE INSTALL IN-LINE WITH THE EQUIPMENT IT IS CONNECTED TO. THE CABLES SHALL BE INSTALLED IN A NEAT AND PROFESSIONAL MANNER.
30. PROVIDE WINDOW IN PMMA SHIELD FOR ACCESS TO BREAKER. MOUNT BREAKER FLUSH WITH PMMA SHIELD USING MOUNTING BRACKET.

NOTE TO DESIGNER

DSE SHALL SPECIFY THE GATOR PATCH CABLE LENGTH PER SITE AND UPDATE ITEM (O) TO INCLUDE THIS LENGTH.

IF THERE IS NO CCTV IN 400 FEET FROM RWIS PRIMARY POLE THEN INSTALL A CCTV AND ITS ENCLOSURE.

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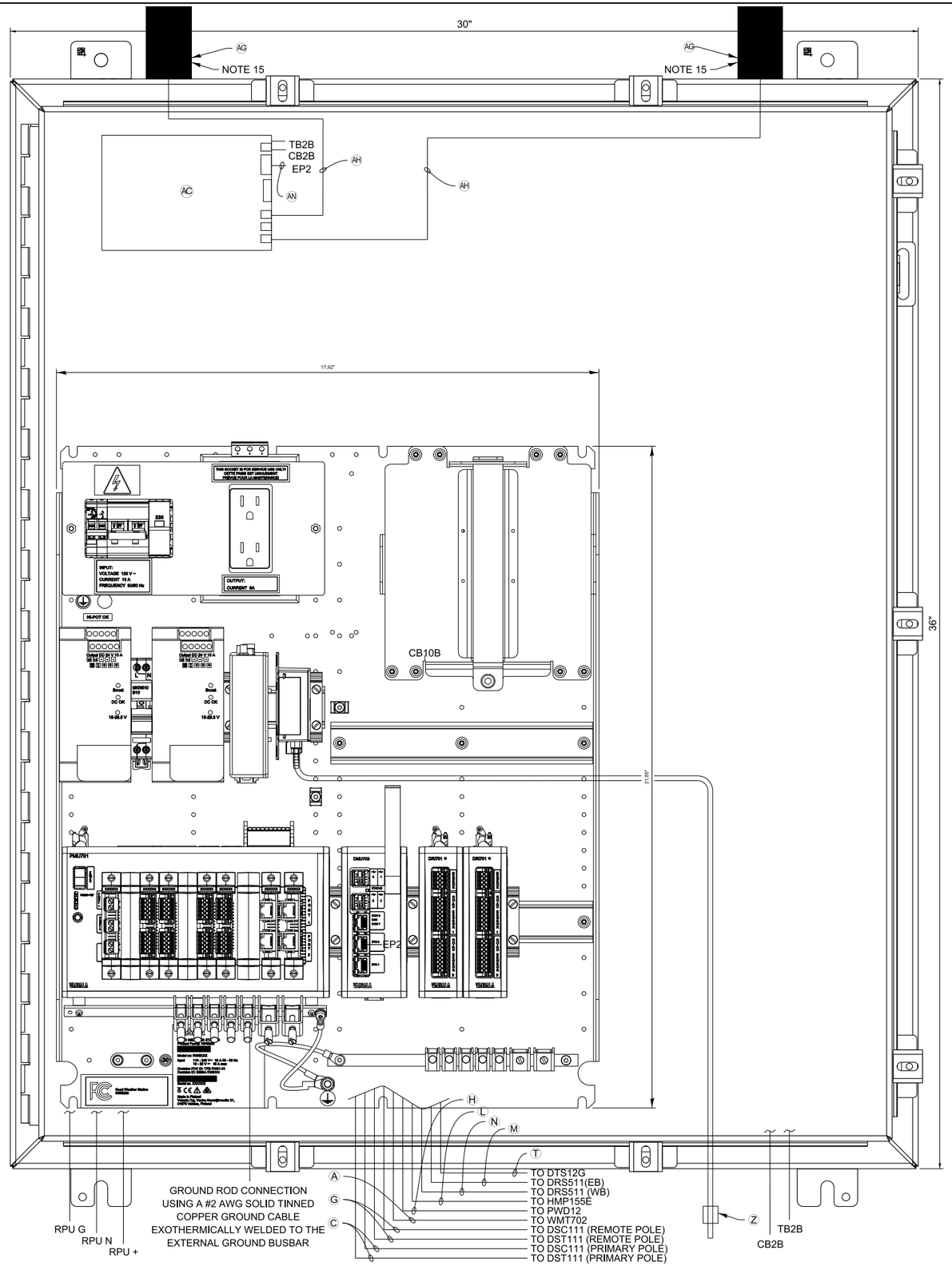
Illinois Tollway

RWIS CABINET WIRING DIAGRAM

VERSION:	STANDARD:	SHEET:
2024-03	M-ITS-1301	1 OF 2



0 2" 4"
SCALE IN INCHES
SCALE: 1" = 2"

ITEM	DESCRIPTION
A	WMT700 CABLE, VAISALA 237890
B	NOT USED FOR THIS SHEET APPLICATION
C	DSC11/DST111 CABLE (PRIMARY POLE), VAISALA 216547
D	NOT USED FOR THIS SHEET APPLICATION
E	NEMA 4X STAINLESS STEEL, 36"H X 30"W X 12"D ENCLOSURE WITH 33"X27" PANEL, HOFFMAN/A36H3012SS6LP & A36P30
F	NOT USED FOR THIS SHEET APPLICATION
G	DSC11/DST111 CABLE (REMOTE POLE), VAISALA DR22174Z150M
H	PWD12 CABLE, VAISALA 217148
I	NOT USED FOR THIS SHEET APPLICATION
J	NOT USED FOR THIS SHEET APPLICATION
K	NOT USED FOR THIS SHEET APPLICATION
L	HMP155E CABLE, VAISALA 220497
M	TYPE IIA CABLE (EB SENSOR), VAISALA 76420300
N	TYPE IIA CABLE (WB SENSOR), VAISALA 76421500 (FOR SENSORS GREATER THAN 500' FROM RWIS ENCLOSURE USE TYPE V CABLE, VAISALA 76420500) NOT USED FOR THIS SHEET APPLICATION
O	NOT USED FOR THIS SHEET APPLICATION
P	NOT USED FOR THIS SHEET APPLICATION
Q	NOT USED FOR THIS SHEET APPLICATION
R	NOT USED FOR THIS SHEET APPLICATION
S	DTS210 CABLE (20 METERS), VAISALA
T	NOT USED FOR THIS SHEET APPLICATION
U	NOT USED FOR THIS SHEET APPLICATION
V	NOT USED FOR THIS SHEET APPLICATION
W	NOT USED FOR THIS SHEET APPLICATION
X	DMU703 CABLE, VAISALA 210267
Y	NOT USED FOR THIS SHEET APPLICATION
Z	PRESSURE PORT, VAISALA 16941DM
AA	NOT USED FOR THIS SHEET APPLICATION
AB	NOT USED FOR THIS SHEET APPLICATION
AC	CDMA MODEM ASSEMBLY (FOR VERIZON NETWORK)
AD	NOT USED FOR THIS SHEET APPLICATION
AE	NOT USED FOR THIS SHEET APPLICATION
AF	NOT USED FOR THIS SHEET APPLICATION
AG	WIRELESS MODEM ANTENNAS, PCTEL/BMLPVDB700/2500
AH	WIRELESS MODEM ANTENNA CABLE, WITH SMA CONNECTORS PCTEL/PROFLEX PLUS 195-RG58/U
AI	NOT USED FOR THIS SHEET APPLICATION
AJ	NOT USED FOR THIS SHEET APPLICATION
AK	NOT USED FOR THIS SHEET APPLICATION
AL	NOT USED FOR THIS SHEET APPLICATION
AM	NOT USED FOR THIS SHEET APPLICATION
AN	INDOOR/OUTDOOR RATED CAT6 (1000MBS, TEMPERATURE HARDENED) THESE ARE THE CAT6 CABLES ROUTED INSIDE CABINET

NOTES:

1. ALL POWER WIRING SHALL BE RHH/RHW WITH WIRE TERMINALS OR TINNED.
2. NOT USED FOR THIS SHEET APPLICATION.
3. ALL CABLES AND EQUIPMENT SHALL BE PROPERLY DRESSED AND LABELED. ALL CONDUITS SHALL BE PROPERLY PLUGGED WITH DUCT SEAL PUTTY (RAINBOW TECHNOLOGIES OR EQUIVALENT).
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11. NOT USED FOR THIS SHEET APPLICATION.
12. NOT USED FOR THIS SHEET APPLICATION.
13. ALL CABLES SHALL ENTER THE ENCLOSURE FROM THE BOTTOM. ALL POWER AND COMMUNICATION CABLE SLACK SHALL BE PLACED IN THE HANDHOLE.
14. NOT USED FOR THIS SHEET APPLICATION.
15. THE CELL MODEM ANTENNAS SHALL BE PROPERLY SEALED WITH HIGH DENSITY NEOPRENE GASKETS RATED FOR HIGH TEMPERATURE TO PREVENT WATER PENETRATION INTO THE CABINET.
16. NOT USED FOR THIS SHEET APPLICATION.
17. NOT USED FOR THIS SHEET APPLICATION.
18. NOT USED FOR THIS SHEET APPLICATION..
19. NOT USED FOR THIS SHEET APPLICATION.
20. NOT USED FOR THIS SHEET APPLICATION.
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23. BOND NEUTRAL AND GROUND BUSES TOGETHER, WHEN REQUIRED. TIE THE ENCLOSURE INTO THE GROUND BUS.
24. NOT USED FOR THIS SHEET APPLICATION.
25. NOT USED FOR THIS SHEET APPLICATION.
26. ALL INTERNAL ENCLOSURE ROUTED AND TERMINATED CAT6 CABLE SHALL BE TEMPERATURE RATED.
27. NOT USED FOR THIS SHEET APPLICATION..
28. NOT USED FOR THIS SHEET APPLICATION.
29. ALL CONDUIT EXITING THE BOTTOM OF THE CABINET SHALL BE INSTALLED IN-LINE WITH THE EQUIPMENT IT IS CONNECTED TO. THE CABLES SHALL BE INSTALLED IN A NEAT AND PROFESSIONAL MANNER.

NOTE TO DESIGNER

DSE SHALL SPECIFY THE GATOR PATCH CABLE LENGTH PER SITE AND UPDATE ITEM (O) TO INCLUDE THIS LENGTH.

NOTE TO DESIGNER

IF THERE IS NO CCTV IN 400 FEET FROM RWIS PRIMARY POLE THEN INSTALL A CCTV AND ITS ENCLOSURE.

NOTE TO DESIGNER

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Illinois Tollway

RWIS CABINET WIRING DIAGRAM

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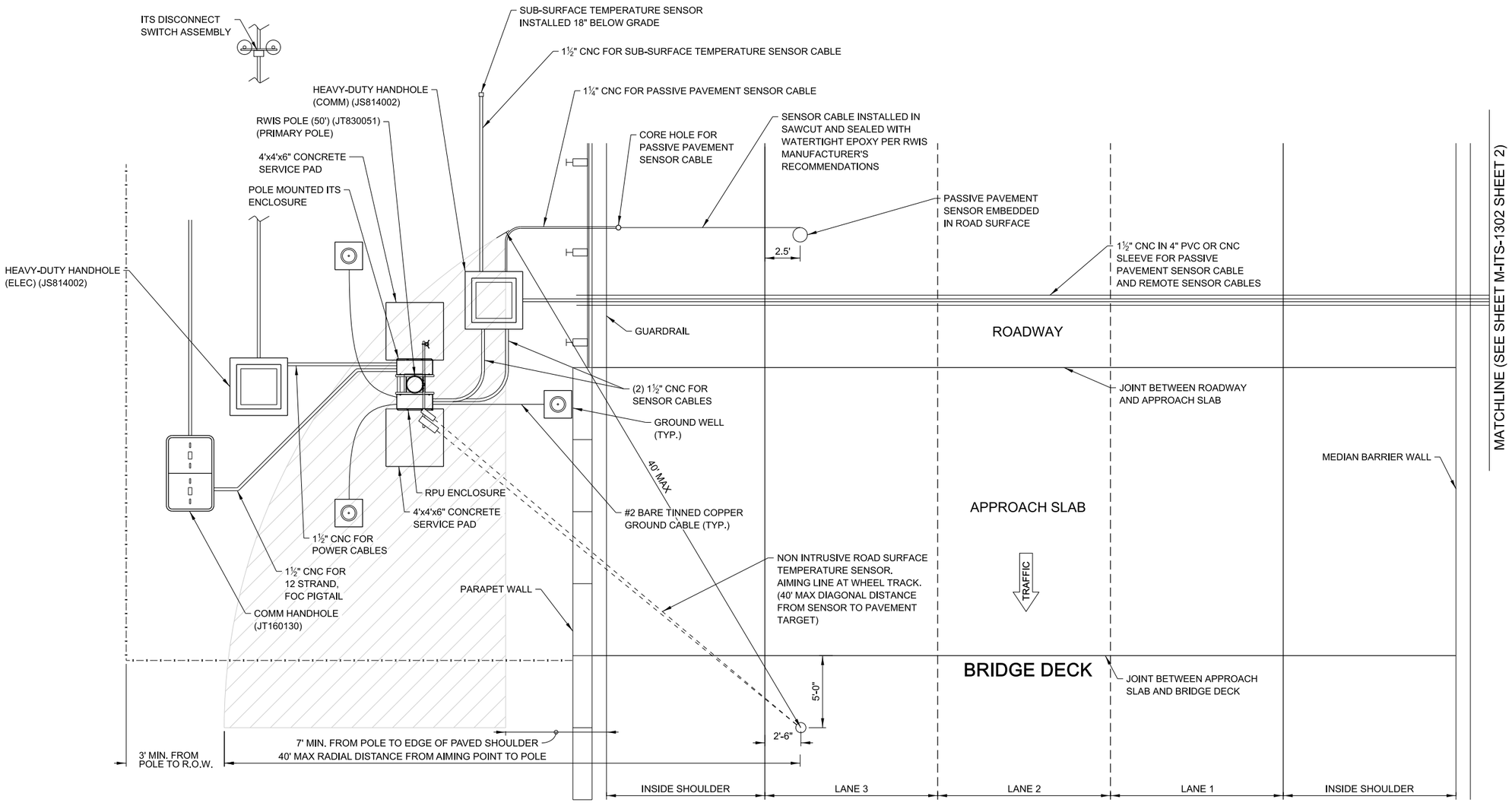

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NOTE 1 TO DESIGNER

LASERS SENSORS MUST BE LOCATED WITHIN 50 FEET (ON DIAGONAL) OF THE AIM POINT ON THE BRIDGE DECK SURFACE.

NOTE 2 TO DESIGNER

THE DESIGNER SHALL COMPLETE THE COMPONENT REQUIREMENTS TABLE AS REQUIRED TO INDICATE WHICH COMPONENTS ARE TO BE INSTALLED ON EACH POLE MOUNTED ITS ASSEMBLY. DESIGNER TO EXPAND CHART AS NECESSARY.

NOTE 3 TO DESIGNER

ENSURE THE DIRECTION OF TRAFFIC FLOW AND THE ORIENTATION OF THE BRIDGE DECK AND THE ROADWAY PAVEMENT ARE CORRECT FOR THE PROJECT SPECIFIC SITE. ENSURE THE NON-INTRUSIVE SENSORS POINT TO THE BRIDGE DECK AND THAT THE IN-PAVEMENT SENSOR IS IN THE ROADWAY PAVEMENT. ENSURE THE SLOPE ON THE BRIDGE SHOULDER ALLOWS THE POLE TO BE PLACED WITHIN 40 FEET HORIZONTAL OF THE BRIDGE DECK.

NOTE 4 TO DESIGNER

DSE TO ENSURE THE RWIS POLE IS LOCATED WITHIN SENSORS MAXIMUM DISTANCE (HATCHED AREA).

NOTE 5 TO DESIGNER

IN THE EVENT THE PRIMARY POLE AND SECONDARY POLES CANNOT BE INSTALLED WITHIN THE 40 FOOT MAXIMUM RADIUS OF THE BRIDGE DECK, THE DESIGNER SHALL CONSULT WITH THE ILLINOIS TOLLWAY AND GEC ON AN ALTERNATE PLACEMENT SOLUTION.

NOTE 6 TO DESIGNER

INSTALLATION OF THE PRIMARY POLE AND SECONDARY POLE FOR BRIDGE INSTALLATION: POLES TO BE INSTALLED NEAR IMMEDIATE ENTRANCE OF THE BRIDGE SO THE NON-INVASIVE LASER TEMPERATURE SENSOR CAN MONITOR BRIDGE DECK TEMPERATURE AND ALSO THE BRIDGE APPROACH OR DEPARTURE.

Illinois Tollway

TYPICAL RWIS SITE INSTALLATION PLAN

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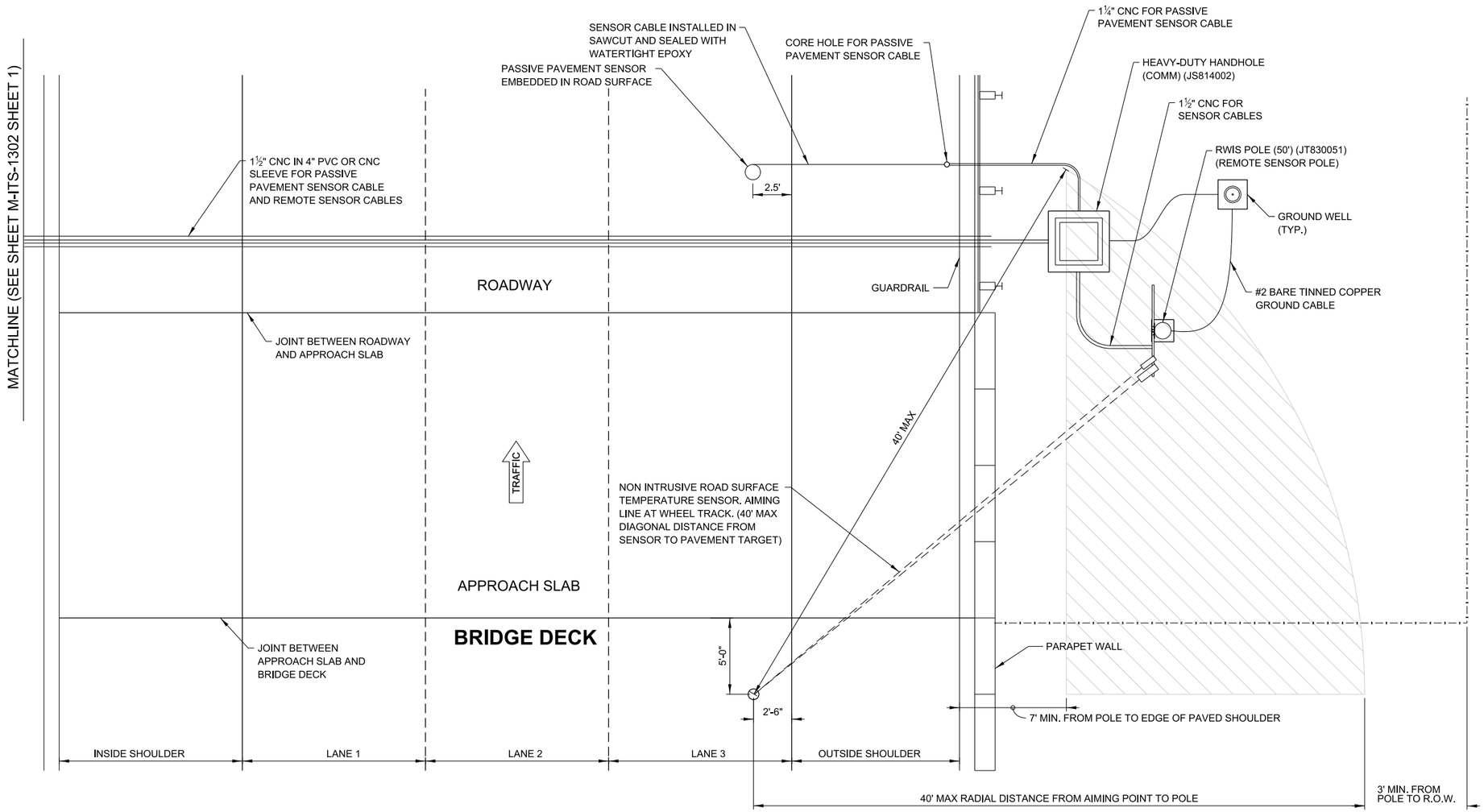

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Illinois Tollway

TYPICAL RWIS SITE INSTALLATION PLAN

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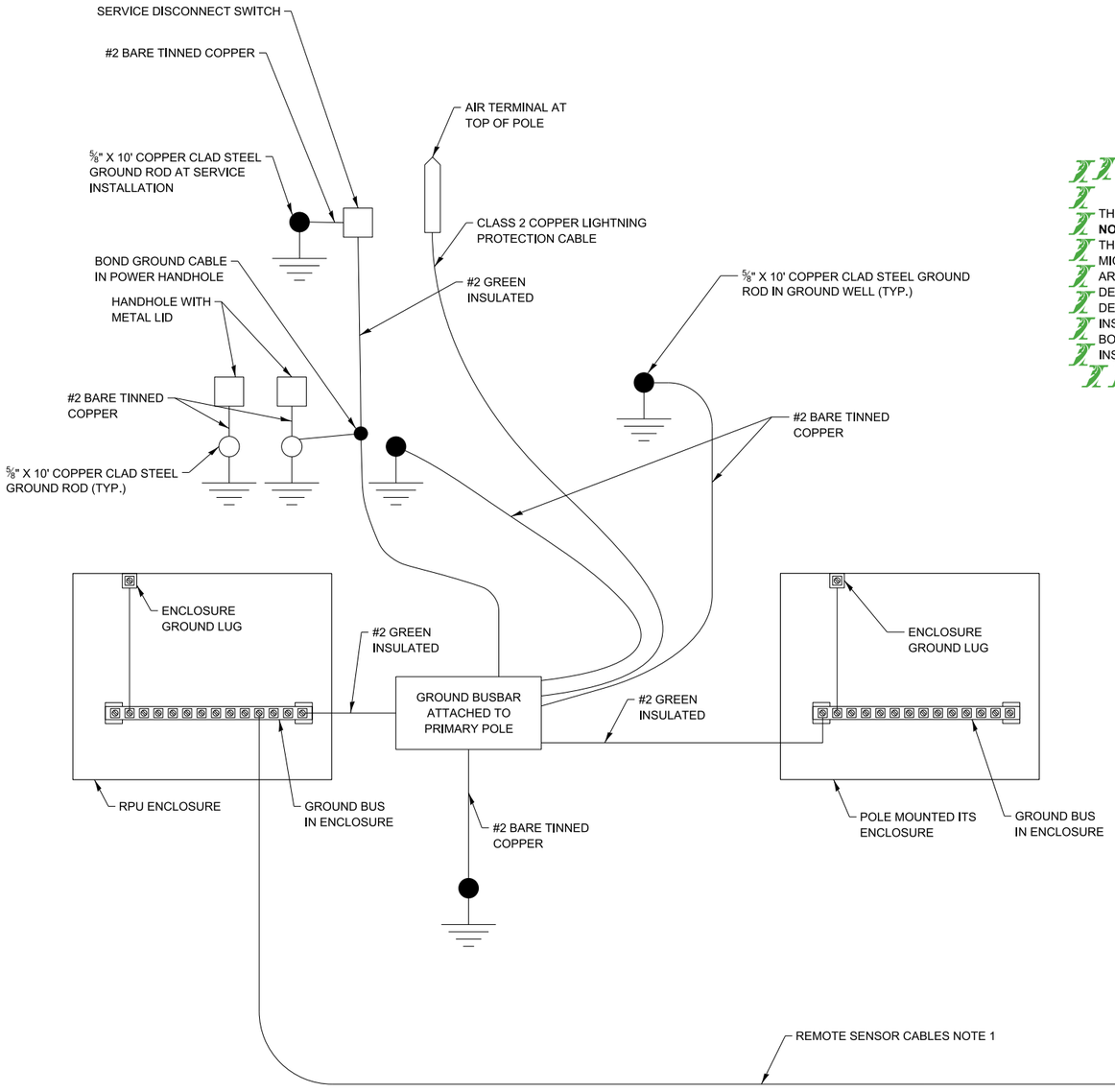

RPU POLE

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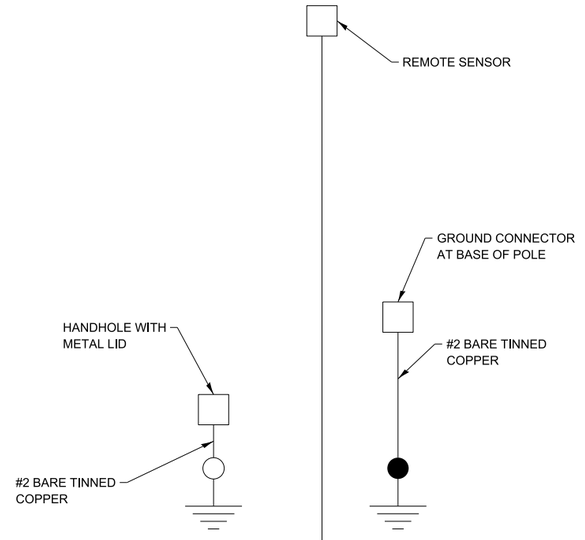

REMOTE POLE

NOTES:

1. CONTRACTOR SHALL INSTALL A CONTINUOUS RUN FOR THE POWER AND COMMUNICATION CABLE BETWEEN THE PRIMARY RWIS AND SECONDARY REMOTE POLE. NO SPLICING WILL BE ALLOWED. INSTALL 40 FEET OF SLACK IN THE POWER HANDHOLE BETWEEN THE TWO POLES.

Illinois Tollway

TYPICAL RWIS GROUNDING SCHEMATIC

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