Illinois Tollway Base Sheet Revisions

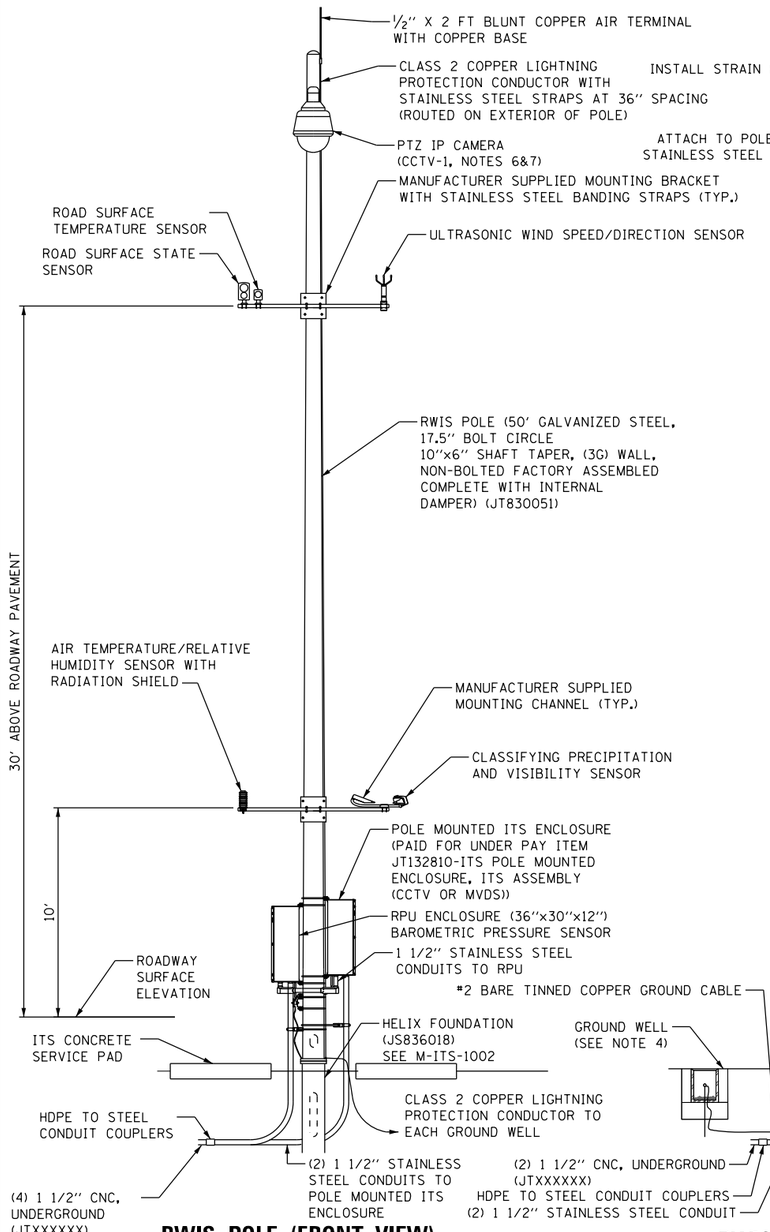
Section M	Base Sheet Drawings	
	Drawing	**Modification Summary** **Effective: 2020-03-01**
	Pole Assembly (ITS)-Series 1000	
	M-ITS-1000	**Elevation Views Pole Mounted ITS Element Assembly**
		Use 1 1/2" stainless conduits for power and fiber to ITS Enclosure instead of 2". Corrected the MVDS mounting height on elevation details Use 1 1/2" stainless conduit for ITS Disconnect switch
	M-ITS-1001	**General Notes Pole Mounted ITS Assembly**
		Note added on placement of battery enclosure
	M-ITS-1002	**ITS Standard Foundation**
		Note added to use 12 ft helix foundation for slopes over 1:6
	M-ITS-1003	**ITS Concrete Service Pad**
		Shows option for back-to-back mounted ITS enclosures.
	M-ITS-1004	**Cabinet Wiring Diagram - ITS Pole Mounted Enclosure (Solar Powered MVDS) (2 sheets)**
		Sheet 1: Revised layout to better accommodate future expansion.
	Dynamic Message Sign (ITS)-Series 1100	
	M-ITS-1100 to M- ITS-1108	**DMS**
		(Typical) Revised Type 1 nomenclature to Walk-in (Typical) Revised Type 2 nomenclature to Front Access
	M-ITS-1101	**DMS Type 1 Site Grounding Plan**
		Revised to show paved median structure
	M-ITS-1108	**DMS Cabinet Wiring Diagram**
		Clarified wiring diagram Updated switch model
	Cabinet Wiring (ITS)-Series 1200	
	M-ITS-1200 to M-ITS-1217	**Cabinet Wiring Diagrams**
		New Cat6 surge suppressor Axis T8061 for Axis PoE camera and Ditek for Cohu PoE camera Revised layout for Cisco 4000 switch, power supply, Cohu PoE injectors Revised 1214-1216 plan to remove Cisco switch Added Level 3 Cisco license (L-IE4000-RTU=) Modified gator patch model number
	Roadway Weather Information System (ITS)-Series 1300	
	M-ITS-1300	**RWIS Pole, Sensor Mounting Detail**
		General note to have manufacturer to supervise installation and commissioning Revised to show option for co-located CCTV camera and ITS enclosure Clarified the mounting height measured from pavement surface Installed new ITS Enclosure back to back to the RPU enclosure Add ITS Disconnect switch within 50 feet from primary pole Show RWIS cabinet configuration for the 3 electrical services
	M-ITS-1301	**RWIS Cabinet Wiring Diagram**
		Removed Cisco switch and gator patch from RPU enclosure
	M-ITS-1302	**Typical RWIS Site Installation Plan**
		Proposed location of temperature sensors are site specific, final position to be determined by the Engineer in consultation with manufacturer. Correct sensor beam position to be in the wheel track for primary and secondary pole. Power cable from primary pole to secondary pole not to be spliced
	M-ITS-1303	**RWIS Grounding Schematic**
		Corrections and additional detail to grounding diagram

New Sheet Retired Standard

Illinois Tollway Base Sheet Revisions

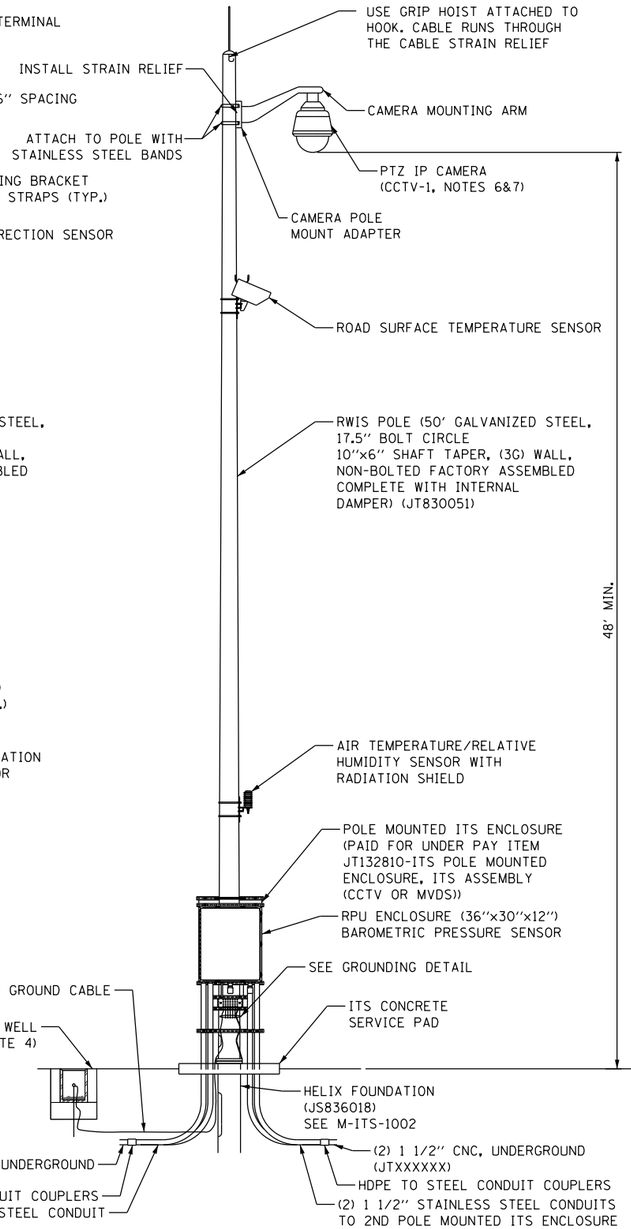
Section M	Base Sheet Drawings	
	Drawing	**Modification Summary** **Effective: 2020-03-01**
	Solar Powered Generator (ITS)-Series 1400	
	M-ITS-1400	**Solar Power Generator Details**
		Enclosure changed to Nema 4X
	Tower Mounted CCTV (ITS)-Series 1500	
	M-ITS-1500	**ITS Details Tower Mount Camera Details**
		Vertical distance between the two cameras is 24 in min. Both cameras to be installed on same side of the tower structure
	~~**M-ITS-1501**~~	**ITS Details Tower Mount Camera Details, 300' Cat6 or More**
		Retired
	M-ITS-1502	**ITS Details Tower Mount Camera Details, 300' Cat6 or Less**
		Vertical distance between the two cameras is 24 in min. Both cameras to be installed on same side of the tower structure
	M-ITS-1503	**Cabinet Wiring Diagram Tower Mounted CCTV ITS Assembly**
		New Cat6 surge suppressor model Revised layout of Cisco switch, power supply and Cohu PoE injector
	Weigh-in-Motion (ITS)-Series 1600	
	M-ITS-1600	**Weigh-In-Motion Cabinet and Foundation Details**
		Show two permanent antennas installed on top of WIM cabinet
	M-ITS-1603	**Weigh-In-Motion Detector Loop and Quartz Sensor Detail**
		Show parking area for one vehicle for annual calibration
	M-ITS-1607	**Weigh-In-Motion Height Detector**
		Added detail for overheight detector
	Flashing Sign Beacon (ITS)-Series 1700	
	M-ITS-1701	**Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV and Flashing Sign Beacon)**
		Update enclosure layout
	IPDC Facility (ITS)-Series 1800	
	M-ITS-1800	**IPDC Facility**
		No change
	Conduit Details at Integral Abutment Bridge (ITS)-Series 1900	
	M-ITS-1900	**Conduit Details at Integral Abutment Bridge with MSE Wall (Sheet 3)**
		No change
	100 FT. Monopole (ITS)-Series 2000	
	M-ITS-2000	**100 FT. Monopole Closed Circuit Television (CCTV) Camera Tower**
		Pole cap to use hex head screws Show revised grounding around service pad

New Sheet ~~Retired Standard~~



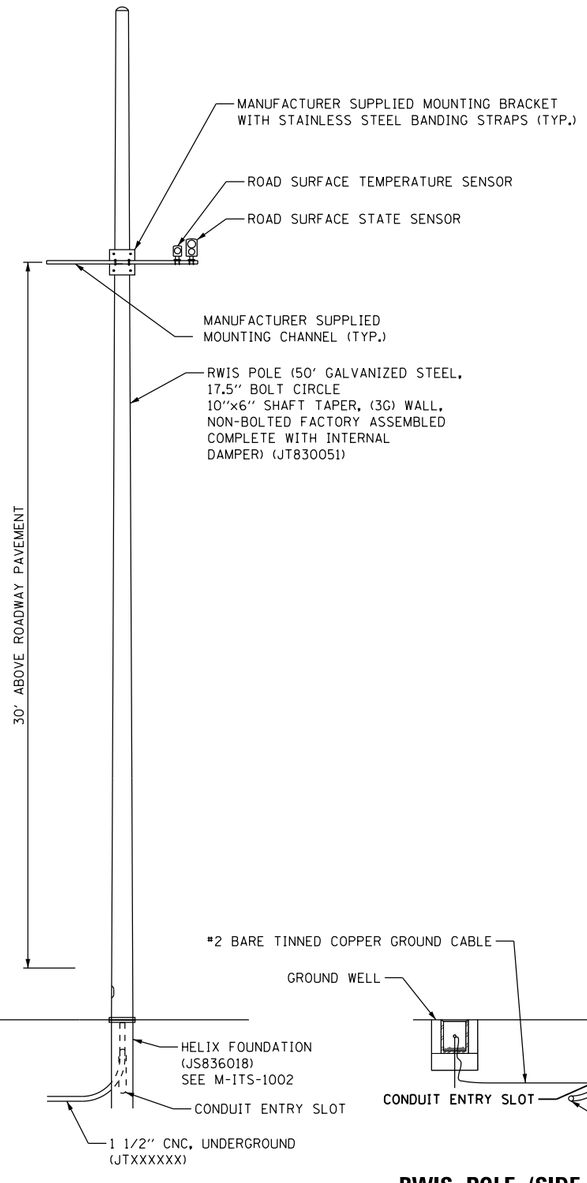
RWIS POLE (FRONT VIEW) – PRIMARY POLE

NOT TO SCALE



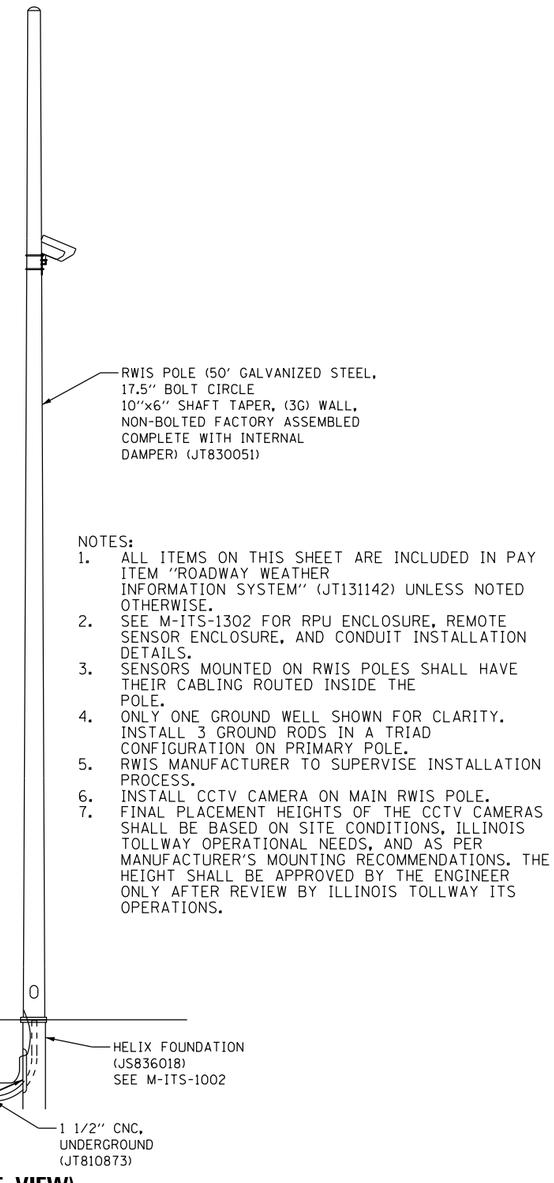
RWIS POLE (SIDE VIEW) – PRIMARY POLE

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 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.

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

ANY MODIFICATIONS TO THIS DRAWING MUST BE ILLUSTRATED WITH A CHANGE CLOUD AND THE ILLINOIS TOLLWAY MUST APPROVE OF ANY CHANGES PRIOR TO THE DRAWING BECOMING FINAL. CHANGES TO THE MASTER REFERENCE DRAWING ARE PROHIBITED.

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

DATE
3-01-2020

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.

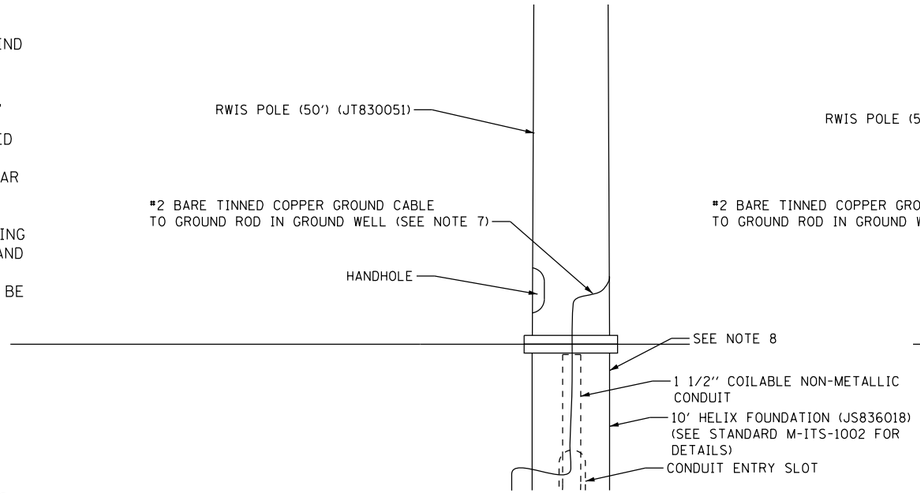
12. THIRTY DAYS PRIOR TO INSTALLING ANY SENSORS, THE CONTRACTOR SHALL COORDINATE DEVICE CONFIGURATION WITH THE ENGINEER.

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.

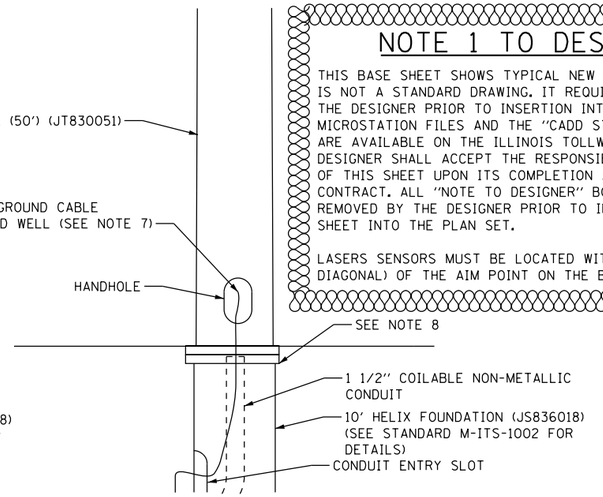
14. ALL SLOPE RATIOS ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

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 - FRONT VIEW



REMOTE SENSOR POLE - SIDE VIEW

NOTE 1 TO DESIGNER

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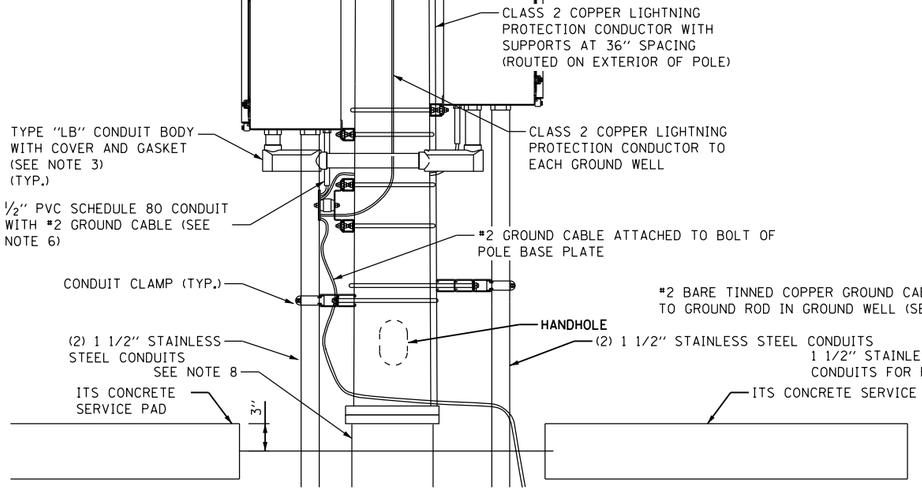
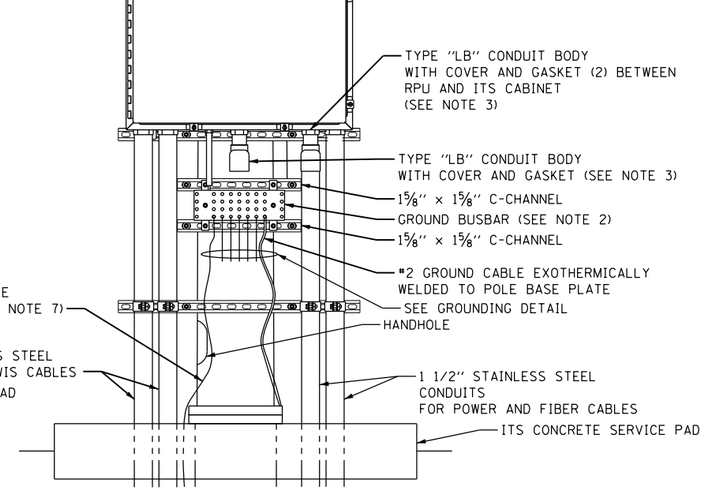
LASERS SENSORS MUST BE LOCATED WITHIN 50 FEET (ON DIAGONAL) OF THE AIM POINT ON THE BRIDGE DECK SURFACE.



RPU ENCLOSURE - SIDE VIEW



RPU ENCLOSURE - FRONT VIEW

NOTE 2 TO DESIGNER

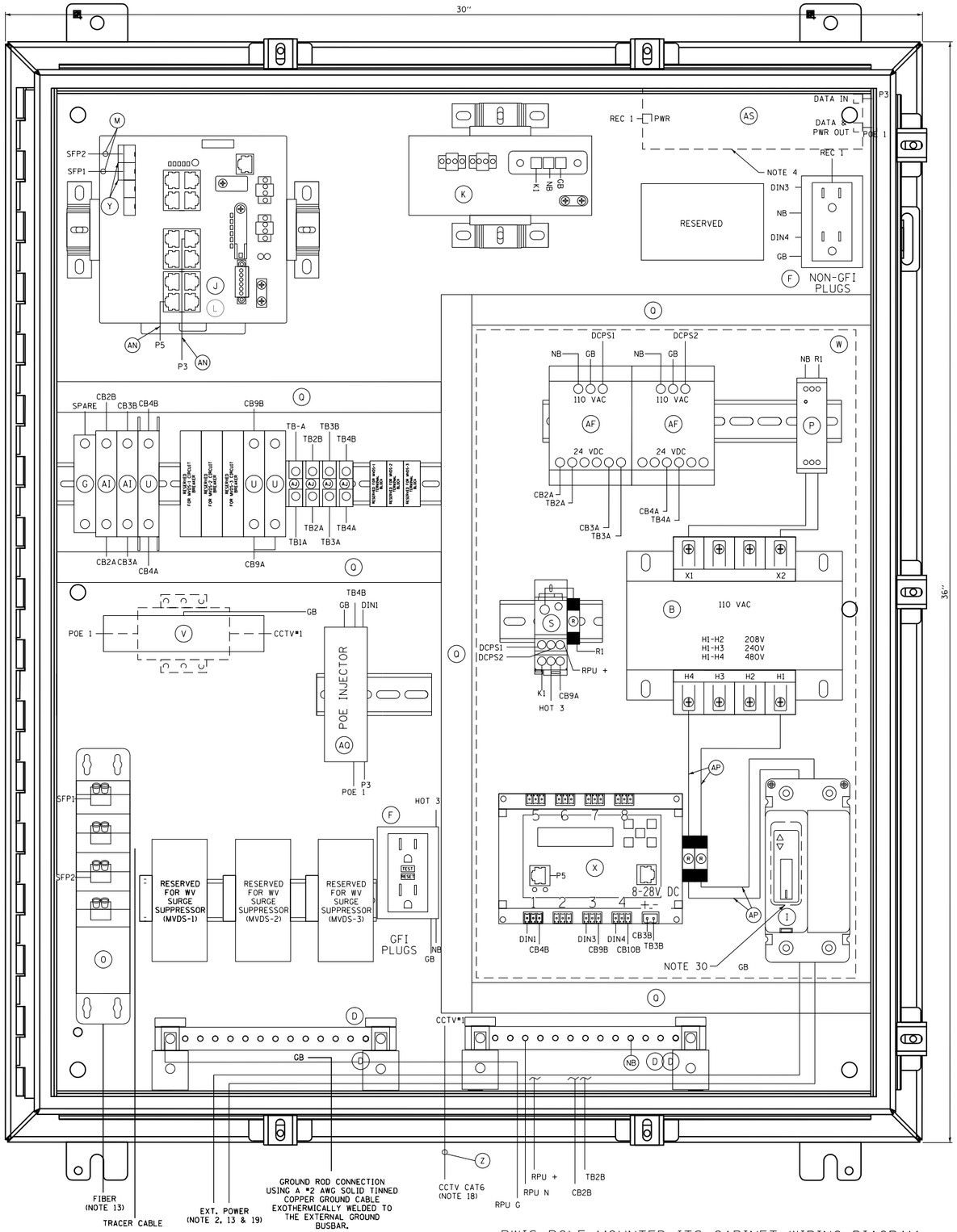
FOR BRIDGE MOUNTING APPLICATIONS, THE DESIGNER SHALL DEVELOP STRUCTURAL FOUNDATION AND POLE MOUNTING DETAILS.

M-ITS-1300
SHEET 2 OF 2

Illinois Tollway

RWIS POLE, SENSOR MOUNTING DETAIL

DATE
3-01-2020



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	NOT USED FOR THIS SHEET APPLICATION
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 SUPRESSOR: USE AXIS T8061 FOR AXIS PoE CAMERA AND USE DITEK DTK-MRJPOES FOR COHU 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	SENSOR SURGE SUPPRESSION, WAVETRONIX - CLICK-200 OR ISS ZONE BARRIER ZB2451O
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 P5150A, OK-35A
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	MVDS ASSEMBLY (NOT SHOWN), SEE SPECIAL PROVISIONS WAVETRONIX (SMART SENSOR HDSS-126) OR ISS (SX-300)
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, WAVETRONIX - WX-SS-706-60 OR ISS G4-CBL-60
AP	#10 AWG
AQ	PoE INJECTOR AXIS T8144 (ONLY REQUIRED FOR PoE CAMERAS)
AR	T-BUS CONNECTOR (WAVETRONIX)
AS	PoE INJECTOR COHU 7412007-003 (ONLY REQUIRED FOR PoE CAMERAS)

0 2" 4"
HORIZONTAL 1"=2" SCALES IN INCHES

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. SHEET SHOWS BOTH POE INJECTOR OPTIONS USING A 120VAC SUPPLY AND 24VDC SUPPLY. DEVICES REQUIRED FOR THE 120VAC SUPPLY ARE DENOTED WITH A DASHED LINE.
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 COMMUNCATION 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, WHEN REQUIRED. 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

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

NOTE TO DESIGNER

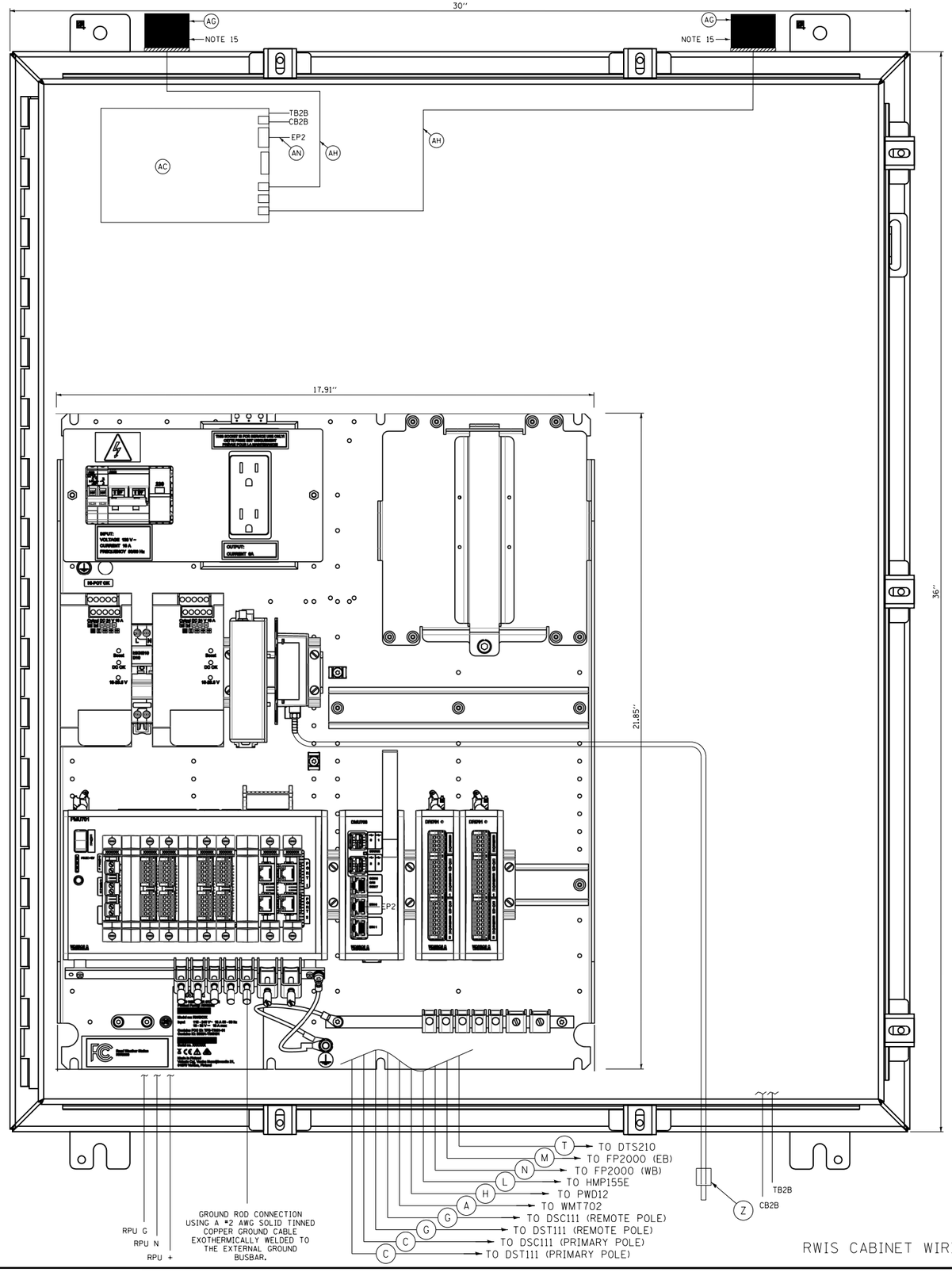
IF THERE IS NO CCTV CAMERA THE DESIGNER SHALL TURN OFF THE "CCTV - 1" LEVEL AND TURN ON THE "CCTV - 1 - RESERVED TEXT LEVEL" IN THE DISPLAY LEVEL MANAGER.

M-ITS-1301
SHEET 1 OF 2

Illinois Tollway

RWIS CABINET WIRING DIAGRAM

DATE
3-01-2020



RWIS CABINET WIRING DIAGRAM

0 2" 4"
HORIZONTAL 1"=2" SCALES IN INCHES

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	FP2000 TYPE IIA CABLE (EB SENSOR), VAISALA 76420300
N	FP2000 TYPE IIA CABLE (WB SENSOR), VAISALA 76421500 (FOR SENSORS GREATER THAN 500' FROM RWIS ENCLOSURE USE TYPE V CABLE, VAISALA 76420500)
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	NOT USED FOR THIS SHEET APPLICATION
T	DTS210 CABLE (20 METERS), VAISALA
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).
4. NOT USED FOR THIS SHEET APPLICATION
5. NOT USED FOR THIS SHEET APPLICATION
6. NOT USED FOR THIS SHEET APPLICATION
7. NOT USED FOR THIS SHEET APPLICATION
8. NOT USED FOR THIS SHEET APPLICATION
9. NOT USED FOR THIS SHEET APPLICATION
10. NOT USED FOR THIS SHEET APPLICATION
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 TEMPERATRURE 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
21. NOT USED FOR THIS SHEET APPLICATION
22. NOT USED FOR THIS SHEET APPLICATION
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 INSTALL IN-LINE WITH THE EQUIPMENT IT IS CONNECTED TO. THE CABLES SHALL BE INSTALLED IN A NEAT AND PROFESSIONAL MANNER.

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CADD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER SHALL ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED PRIOR TO INSERTION OF THE DRAWING INTO THE PLAN SET.

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

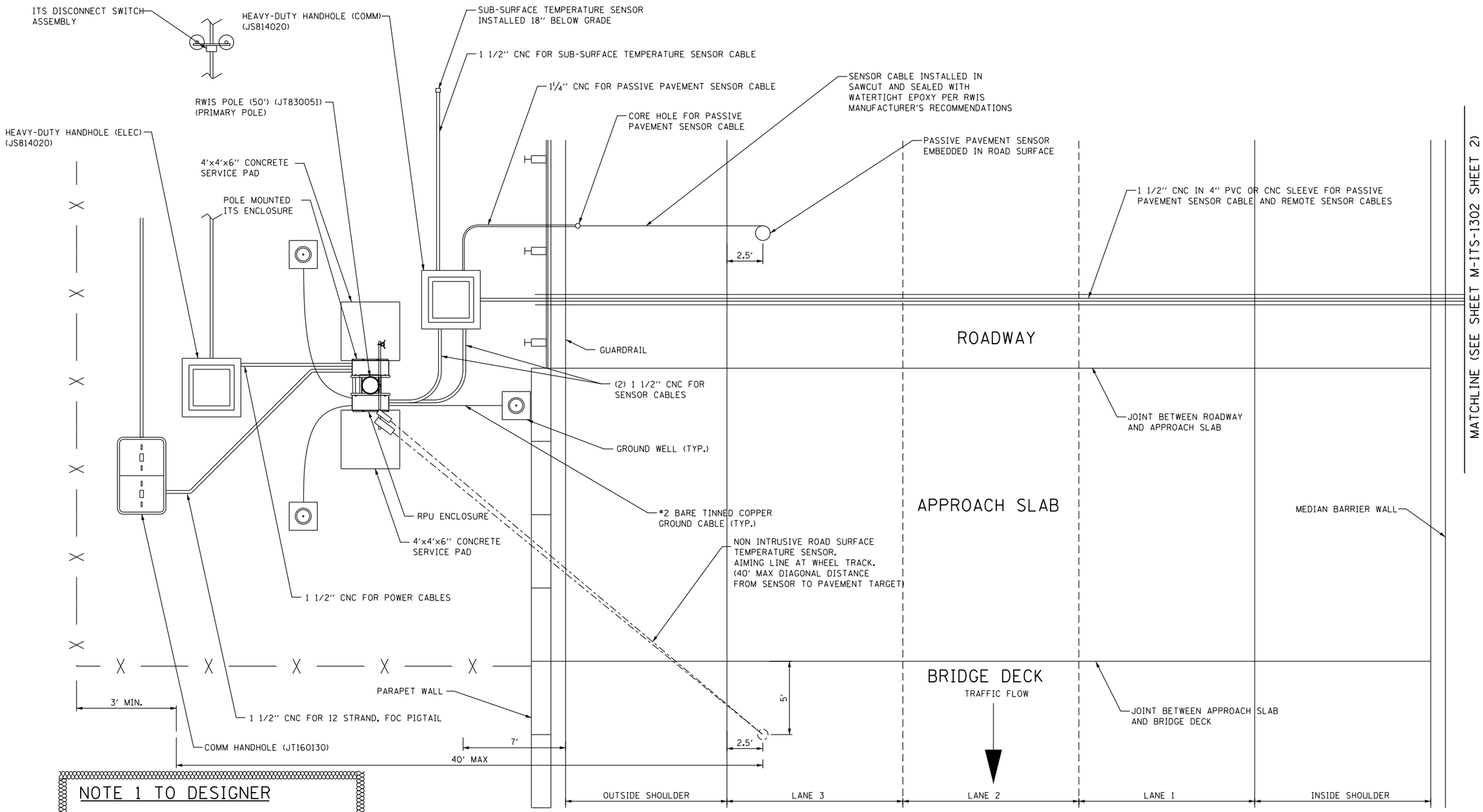
NOTE TO DESIGNER

IF THERE IS NO CCTV CAMERA THE DESIGNER SHALL TURN OFF THE "CCTV - 1" LEVEL AND TURN ON THE "CCTV - 1 - RESERVED TEXT LEVEL" IN THE DISPLAY LEVEL MANAGER.

Illinois Tollway

RWIS CABINET WIRING DIAGRAM

DATE
3-01-2020



NOTE 1 TO DESIGNER

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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

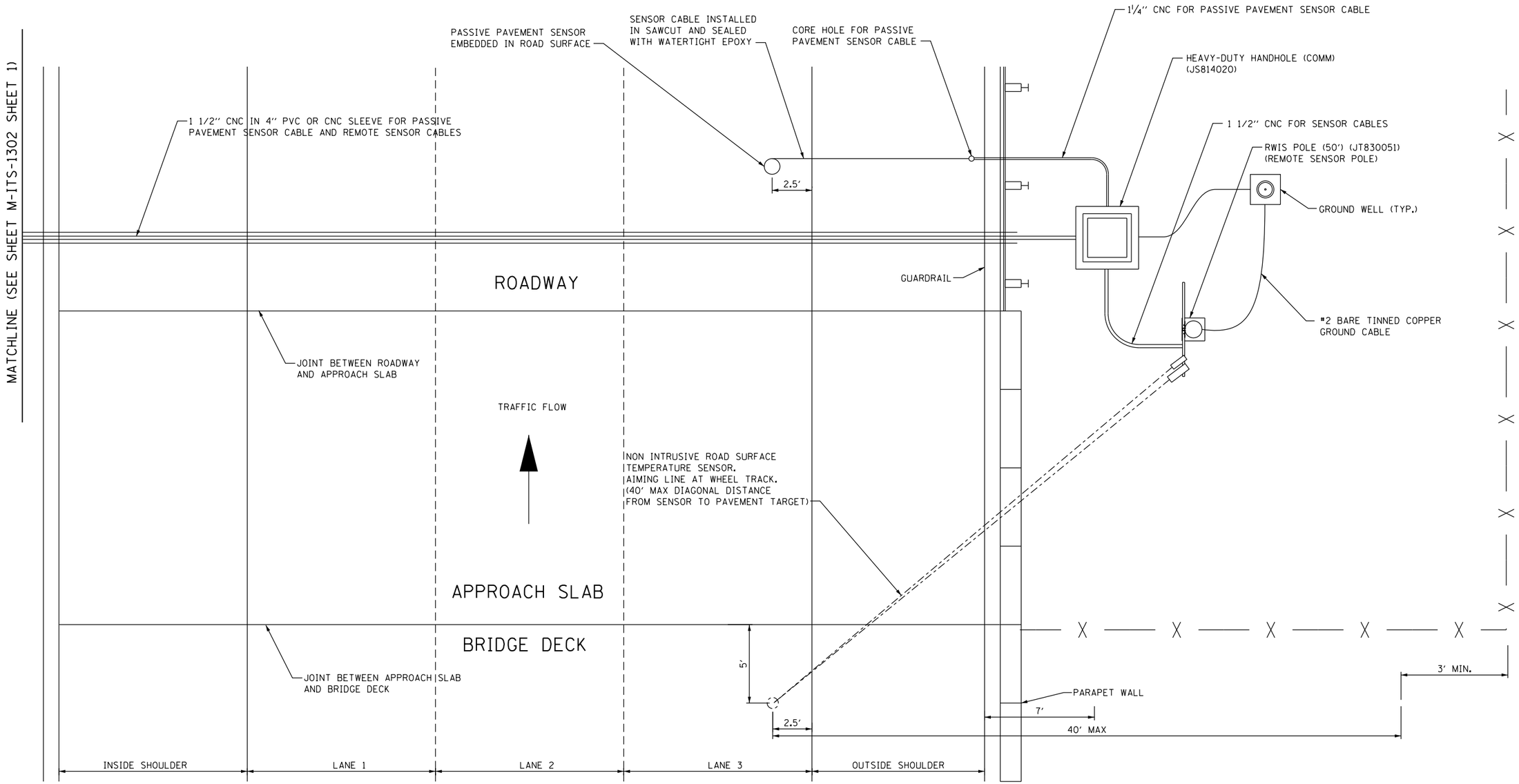
DSE TO ENSURE THE THE RWIS POLE IS LOCATED WITHIN SENSORS MAXIMUM DISTANCE (HATCHED AREA).

M-ITS-1302

Illinois Tollway

TYPICAL RWIS SITE INSTALLATION PLAN (SHEET 1 OF 2)

DATE
3-01-2020



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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

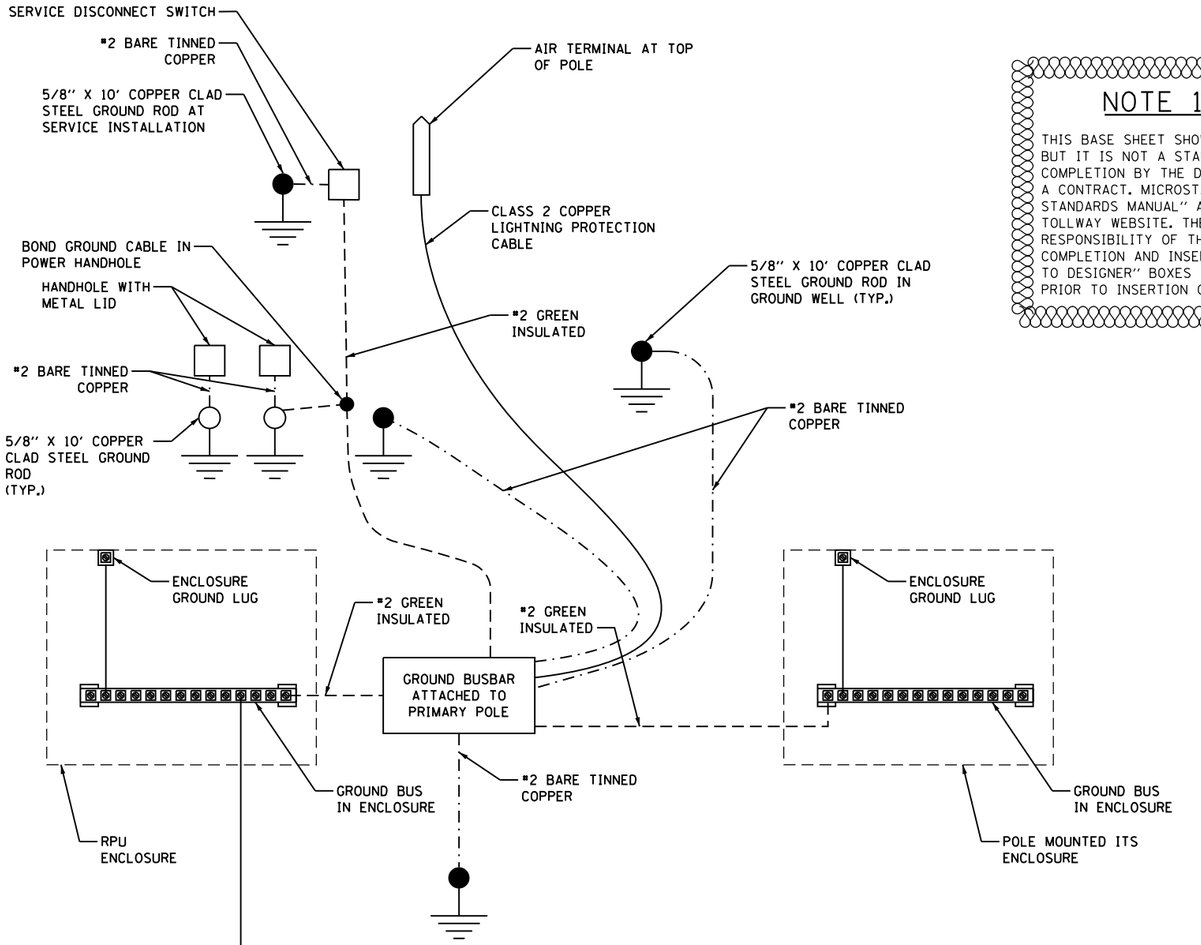
DSE TO ENSURE THE THE RWIS POLE IS LOCATED WITHIN SENSORS MAXIMUM DISTANCE (HATCHED AREA).

M-ITS-1302

Illinois Tollway

TYPICAL RWIS SITE INSTALLATION PLAN (SHEET 2 OF 2)

DATE
3-01-2020



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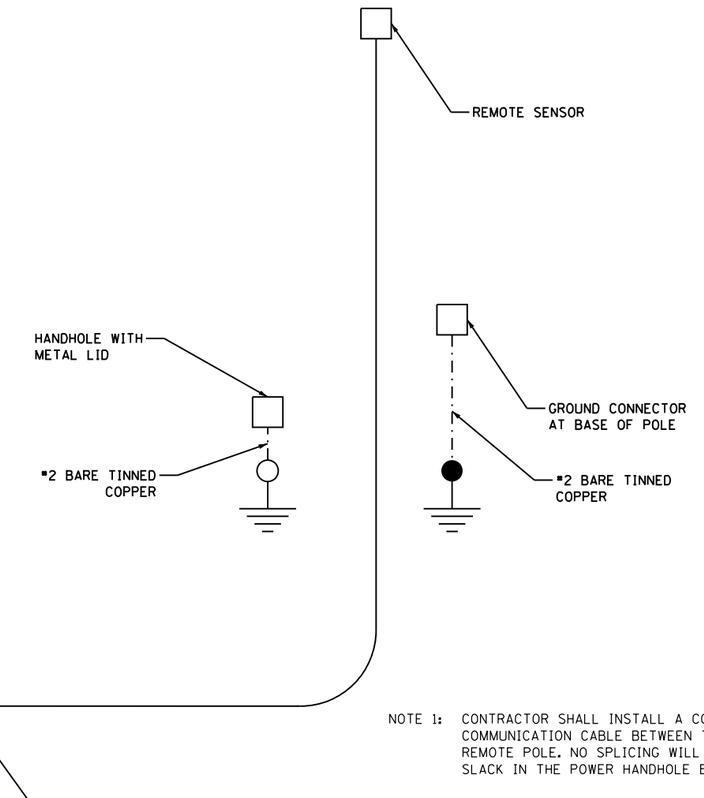

NOTE 1: CONTRACTOR SHALL INSTALL A CONTINUOUS RUN FOR THE POWER AND COMMUNICATION CABLE BETWEEN THE PRIMARY RWIS AND SECONDARY REMOTE POLE. NO SPLICING WILL BE ALLOWED. INSTALL 40 FEET OF SLACK IN THE POWER HANDHOLE BETWEEN THE TWO POLES.

RPU POLE

REMOTE POLE

M-ITS-1303
SHEET 1 OF 1

Illinois Tollway

TYPICAL RWIS GROUNDING SCHEMATIC

DATE
3-01-2020