### Illinois Tollway Base Sheet Revisions

#### Section M

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<th>Base Sheet Drawings</th>
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#### Pole Assembly (ITS)-Series 1000

- **M-ITS-1000**: Elevation Views Pole Mounted ITS Element Assembly  
  Changed disconnect switch to unfused.

- **M-ITS-1003**: ITS Concrete Service Pad (2 sheets)  
  New drawing with three types of service pads for ITS poles for flat and slope installation.

- **M-ITS-1004**: Cabinet Wiring Diagram - ITS Pole Mounted Enclosure (Solar Powered MVDS) (2 sheets)  
  New cabinet layout separating ITS enclosure and dedicated co-located solar generator/battery cabinet with four 6 V batteries.

#### Dynamic Message Sign (ITS)-Series 1100

- **M-ITS-1108**: DMIS Cabinet Wiring Diagram  
  Changed to Cisco 4000 series switch.  
  Changed IP Relay to DIN IV.

#### Cabinet Wiring (ITS)-Series 1200

- **M-ITS-1200** to **M-ITS-1217**: 18 ITS enclosure drawings replace old 56 ITS enclosure drawings for clarification.  
  Consolidated equipment configurations.  
  Standardized to scale equipment layout.  
  Changed to Cisco 4000 series switch.  
  Eliminated 24 VAC transformer and 24 VAC CCTV. Additional 24 VDC power supply.  
  Cat6 Ethernet surge protectors revised to PoE++ compatible models.

- **M-ITS-12018** to **M-ITS-1255**: New drawing showing RWIS grounding system with grounding cable.

#### Roadway Weather Information System (ITS)-Series 1300

- **M-ITS-1300**: RWIS Pole, Sensor Mounting Detail  
  Pole height changed to 50 feet as standard pole for ITS with 17.5 inch bolt circle.

- **M-ITS-1301**: RWIS Cabinet Wiring Diagram  
  Added IP Relay, Disconnected, for future use.

- **M-ITS-1303**: Typical RWIS Grounding Schematic  
  New drawing showing RWIS grounding system with grounding cable.

#### Solar Powered Generator (ITS)-Series 1400

- **M-ITS-1402**: Co-located solar generator cabinet redesigned as M-ITS-1004.

#### Tower Mounted CCTV (ITS)-Series 1500

- **M-ITS-1500**: Tower Mount Camera Details  
  Cameras shown at offset height to avoid view obstruction. Pole mounting arm revised to Axis Q6155-E IP camera.

- **M-ITS-1503**: Cabinet Wiring Diagram - Tower Mounted CCTV  
  Revised to show 24 VDC power supply, drawing drawn to scale.

#### Flashing Beacon (ITS)-Series 1700

- **M-ITS-1701**: Flashing Sign Beacon Installation Wiring Diagram  
  Revised to show full cabinet layout accommodating flasher beacon. Re-drawn to scale.  
  Added flashing beacon, new surge suppressor.

#### IPDC Facility (ITS)-Series 1800

- **M-ITS-1802**, **1803, 1805, 1806, 1809, 1810**:  
  IPDC Facility  
  Building modified to accommodate larger generator room door, door stoppers.  
  Additional exterior CCTV cameras.  
  Added bird deterrent.  
  Added exterior GFCI outlets.

- **M-ITS-1802**: Note 2: Seal door opening and protrusion/access against rodent and bugs. Note 3: Install removable stainless bollards per Illinois Tollway Maintenance.

- **M-ITS-1803**: Added 240 V service power outlet outside side wall.

#### Conduit Details at Integral Abutment Bridge (ITS)-Series 1900

- **M-ITS-1900**: Conduit Details at Integral Abutment Bridge with MSE Wall (Sheet 3)  
  Removed note stating concrete encasement to be placed monolithic with the approach slab.  
  Added 0.5” PJF at the back of the abutment and approach bent.  
  Added 0.75” PJF between the approach slab and encasement.  
  Added detail for deflection and expansion fittings at the encasement and pile bent.  
  Added detail for deflection fitting at encasement and abutment.

#### 100 FT. Monopole (ITS)-Series 2000

- **M-ITS-2000**: 100 FT. Monopole Closed Circuit Television (CCTV) Camera Tower  
  Sheet 4  
  Added sheet 4 of 4 showing hexagonal service pad.

- **New Sheet**:  
- **Retired Sheet**: 
DETAIL A - TYPICAL MOUNTING ATTACHMENT CONNECTION

NOTE:
1. CONTRACTOR MAY ELECT TO CONSTRUCT A SINGLE, MONOLITHIC FOUNDATION IN PLACE OF THE FOUNDATION SHOWN ON THIS SHEET. CONTRACTOR SHALL SUBMIT ALTERNATE FOUNDATION DESIGN TO ENGINEER PRIOR TO CONSTRUCTION.
2. ALL CONCRETE SHALL BE IDOT CLASS SL.
3. DISCONNECT SWITCH, POSTS, FOUNDATION, AND MOUNTING HARDWARE ARE INCLUDED IN PAY ITEM "ITS DISCONNECT SWITCH ASSEMBLY" (JT132814).
4. DETAILS SHOWN IN THIS DRAWING APPLY ONLY TO LOCATIONS WHERE A STANDALONE DISCONNECT SWITCH IS REQUIRED AT AN ITS POLE.

DISCONNECT SWITCH ON ELECTRICAL FRAME

SIDE VIEW

FRONT VIEW

GROUND WELL

SIDE VIEW

FRONT VIEW

DISCONNECT SWITCH IS REQUIRED AT AN ITS POLE.

DETAILS SHOWN IN THIS DRAWING APPLY ONLY TO LOCATIONS WHERE A STANDALONE DISCONNECT SWITCH IS REQUIRED AT AN ITS POLE.

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# Vertical and Horizontal Displacement

**GENERAL NOTES:**

1. ITS element poles should be located a minimum of 51 to a maximum of 500 feet from the edge of the roadway and shall be located outside the clear zone. Final location to be approved by the engineer.

2. Any ground cables routed inside the enclosure should be shielded. In addition, any ground cables connected to the enclosure shall be insulated and grounded. Any ground connected to the external ground busbar shall be shielded to the enclosure. Any shield or conduit shall be insulated and grounded to prevent rodents and insects from entering.

3. A CCTV video circuit with a terminal fitting for installing the element cables inside the pole to the equipment enclosure shall be utilized for the same side as the ITS enclosure, centered within the top of the pole. Properly labeled conduit shall be installed and approved by the engineer.

4. A CCTV element enclosure shall not hang below the top of the roadway above the pole.

5. All concrete enclosures shall be sealed. Use the pole-mounted enclosure as a means of special provisions for work setup and protection.

6. Conduit to provide all power, communications, and ground wiring required for system operation.

7. Attaching PVC conduit to pole for support, use metal rings when connecting PVC to cabinet. Use conduits at both ends of conduit to seal conduit but allow ground cable to run through both ends.

8. Ground rod shall be placed a minimum of 51 feet from the foundation. A ground wall shall be included to prevent access to the ground and connection connection to the ground connector and ground shall be capped.

9. A flat steel with pole, along with a commercially available rodent protection kit, shall be installed in the ground. The pole shall be driven into the ground using the rodent protection kit. The ground busbar and the ground rod shall be connected outside of the pole. See special provisions for more details.

10. Any ITS enclosure details will be updated for pile mounted applications. It cannot be utilized for tower mounted applications.

11. Conduit connections inside the enclosure is outdoor rated. Ground cable must be used in the enclosure. The ground cable shall be run through the enclosure, and the cable shall be capped.

12. The juncture shall be used to place the pole near the edge of the enclosure. The conduit shall provide a custom fit for the pole and take the pole and the juncture to the wall. The pole shall be sealed to the enclosure by a gasket and waterproofing agent.

13. This drawing is a multi-purpose diagram that includes the types of connections to a solar powered battery enclosure. It is drawn to scale and is a representation of this enclosure.

14. Construct a 4 ft. by 4 ft. concrete base on which the pole will be placed. The concrete base shall be located outside of the ITS enclosure. The pole shall be installed into the concrete base.

15. Properly protect all new CCTV camera, MVDS, system, relay, or fiber optic system. The connector shall coordinate device with the enclosure.

16. The connector housing and associated conduit shall be installed for its length where the utility service installation is greater than one foot from the ITS site located on the opposite side of the roadway from the ITS site.

17. All slope values are expressed as units of vertical displacement to units of horizontal displacement.

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**CCTV NOTES:**

18. Vertical, horizontal, and diagonal measurements 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.

19. Pole-mounted units shall be based on site conditions. Refer to the manufacturer's installation guide for additional recommendations. The height shall be approved by the engineer.

20. The pole units are required for the following applications:

   A. CCTV data from a moving camera system application
   B. CCTV data from a static camera system application

21. The pole units may be utilized for multiple roadway sensing. When the second is utilized for other purposes, the design shall orient the pole units perpendicular to the roadway being monitored.

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**MVDS NOTES:**

22. Pole-mounted units shall be based on site conditions. Refer to the manufacturer's installation guide for additional recommendations. The height shall be approved by the engineer.

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**ENGINEER:**

1. The engineer shall be responsible for the design of this sheet. The designer shall accept the responsibility of the design of this sheet. The design shall be accepted by the engineer.

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**DESIGNER:**

2. The designer shall be responsible for the design of this sheet. The designer shall accept the responsibility of the design of this sheet. The design shall be accepted by the engineer.
BASE ATTACHMENT DETAIL
17½" BASE DIA.

ISOMETRIC

LEVELING PLATE

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 INTO THE PLAN SET.

NOTE TO DESIGNER

ALL NEW 50 FT. STEEL ITS POLES REQUIRE A 17½" DIA. BOLT CIRCLE. SHOULD A 15" DIA. BOLT CIRCLE BE REQUIRED, THE DTE SHALL REFER TO ILLINOIS TOLLWAY STANDARD DRAWING M-ITS-1002 (LIGHT STANDARD FOUNDATION).
**NOTES:**

1. **Type A Service Pad** shall be installed on slopes up to and including 1:6 (V:H).

2. **Type B Service Pad** shall be installed on slopes greater than 1:6 and less than or equal to 1:3.

3. **Type C Service Pad** shall be installed on slopes greater than 1:3 as shown on sheet M-ITS-1003 sheet 2 of 2.

4. **Concrete shall be Class 5X.**

5. **All exposed concrete edges shall have a 1" minimum chamfer.**

6. **Contractor shall take precautions to stabilize existing ITS poles and helix foundations** while excavating soil for installation of concrete service pads.

7. **Compacted soil shall be placed in levels with the service pad.** Contractor may use excavated soil from placing the ITS aggregate base for grouting purposes with approval of the Engineer. Seeding and erosion control shall be per the general notes on sheet GN-08.

8. **Soil excavated for the purpose of maintaining a stable working slope while installing the service pad shall be repositioned.Helix shall be earth-packed free from debris.** Crushers and rock wedging of any concrete shall be removed and any debris and excavated material is unsuitable for use as backfill. The Contractor shall keep a clean, natural sand. Fill material shall be delivered to the service pad installation and will not be paid separately. All backfill materials shall be compacted to the satisfaction of the Engineer.

9. **The top surface of soil disturbed by excavation for placing the service pad shall be seeded and protected with erosion control measures per the general notes on sheet GN-08.**

**CONCRETE SERVICE PAD DETAILS**

**NOT TO SCALE**

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**JITS CONCRETE SERVICE PAD**

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**ITS CONCRETE SERVICE PAD**

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**ITS ENCLOSURE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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**ITS POLE**

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NOTES:
1. Type C service pads shall be installed on grades up to and including 1:3.
2. Type B service pads shall be installed on grades greater than 1:3.
3. Type C service pads shall be installed on slopes greater than 1:3 as shown on sheet M-ITS-1003.
4. Concrete shall be not class B.
5. All exposed concrete edges shall have a 1" minimum chamfer.
6. Concrete shall be not excavated to remove existing concrete and allow for installation of concrete service pads.
7. Concrete shall be placed to be level from the concrete pad construction and the existing floor after placing the concrete.