# Illinois Tollway Base Sheet Revisions

## Section M  
**Base Sheet Drawings**

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</tr>
</tbody>
</table>

### 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

### General Notes Pole Mounted ITS Assembly
- Note added on placement of battery enclosure

### ITS Standard Foundation
- Note added to use 12 ft helix foundation for slopes over 1:6

### ITS Concrete Service Pad
- Shows option for back-to-back mounted ITS enclosures

### 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**: DMS
  - **M-ITS-1101**: DMS Type 1 Site Grounding Plan
  - **M-ITS-1106**: DMS Cabinet Wiring Diagram

### Cabinet Wiring Diagrams
- **M-ITS-1200** to **M-ITS-1217**: 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 LV 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
  - Clarified the mounting height measured from pavement surface
  - Installed new ITS Enclosure back to back to the RPU enclosure
  - Show RWIS cabinet configuration for the 3 electrical services

### RWIS Cabinet Wiring Diagram
- **M-ITS-1301**: Removed Cisco switch and gator patch from RPU enclosure

### 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

### RWIS Grounding Schematic
- Corrections and additional detail to grounding diagram

<table>
<thead>
<tr>
<th>Insertion</th>
<th>Retired Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Sheet</td>
<td></td>
</tr>
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</table>
# Illinois Tollway Base Sheet Revisions

## Section M

### Base Sheet Drawings

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

- New Sheet
- Retired Standard
NOTE TO DESIGNER

This drawing sheet depicts a CCTV equipment mounting scheme for a tower. It is not intended to show a standard size or shape, and its purpose is to illustrate the concept for future implementation. The equipment shown includes a camera, a junction box, and conduit. The mounting height for the camera is to be determined by the designer based on the specific requirements of each installation.

The tower leg is shown with a 2"x1" adapter to allow for easier installation. The conduit runs are indicated to connect to the tower leg and to the camera housing. All connections should be sealed with tape as per Illinois Tollway Tower Crew instructions.

Enclosures are mounted to the tower leg and should be stainless steel. The tower cross member can be used for conduit runs. Star support brackets are also shown to secure the equipment in place. The tower leg is galvanized threaded rod with star support brackets.

General Notes:

1. Contractor is responsible for final attachment details based on the drawings and pre-installation meetings with Illinois Tollway.
2. Equipment mounting shall also meet requirements listed in special provisions.
3. Design loads shall be determined by the designer.
4. Antennas shall be supported using the tower's existing support system.
5. Mounting brackets for cameras shall be fastened to the tower using stainless steel hardware.
6. Communication equipment enclosure shall be mounted to the tower leg.
7. Camera mounting shall also meet requirements listed in special provisions.
8. Design loads shall be determined by the designer.
9. Antennas shall be supported using the tower's existing support system.
10. Mounting brackets for cameras shall be fastened to the tower using stainless steel hardware.
11. Communication equipment enclosure shall be mounted to the tower leg.
12. Camera mounting shall also meet requirements listed in special provisions.

Abbreviations:

JB = Junction Box
RGS = Rigid galvanized steel
TIA = Telecommunications Industry Association
ASCE = American Society of Civil Engineers
AISC = American Institute of Steel Construction
TWR = Tower
M-ITS-1500 = ITS Details

Date: TWR-10-0000

This drawing sheet is not intended to show a standard size or shape, and its purpose is to illustrate the concept for future implementation. The equipment shown includes a camera, a junction box, and conduit. The mounting height for the camera is to be determined by the designer based on the specific requirements of each installation.
ABBRévIATIONS:

DIA = DIAMETER
HOS = HIGH ORDER STEEL
NEMA = NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION
PLC = PREVENTIVE MAINTENANCE
GL = GROUND LUG

NOTES:

1. NOTES:

ABBREVIATIONS:

RADIO ROOM
ROOM
COMPUTER

30"x24" JUNCTION BOX

TOWER MOUNT CAMERA ASSEMBLY

AC POWER

UPS 120V

ETHERNET CABLES

TWO UNSHIELDED

SWITCH
EXISTING CISCO

USED FOR STRAIN RELIEVE ALONG WITH CONDULETS LINES AND 1" CAMERA CONDUIT KITS FOR TRANSMISSION FOR DETAILS ON CLAMP SEE TOWER MOUNT DETAILS

POWER CABLES

(2) 3/C #12 AWG

(2) CAT6 CABLES

1" CONDUIT

(TRANSMISSION LINE BRIDGE)

ICE BRIDGE
OR TOWER BUILDING
EXISTING PLAZA BUILDING

POWER CABLES

(2) 3/C #12 AWG

(2) CAT6 CABLES

1" C WITH LUG GROUND UNDERGROUND TO BUILDING

TO BUILDING

TO THE TOWER.

CONNECT TOWER BASE ENCLOSURE TO THE TOWER VIA #6 GROUND CABLE CADWELD 14.

TRANSITION ENCLOSURE.

LOOP A MINIMUM OF 3FT OF POWER CABLE AND CAT 6 INSIDE TOWER BASE 13.

CAMERAS. ENCLOSURE MUST MOUNT TO TOWER AT TWO POINTS.

CAMERA TRANSITION NEMA 3R ENCLOSURE IS USED TO TRANSITION TO THE 2 12.

EXTENDERS AND TRANSITION FROM (2) CONDUITS TO (1) CONDUIT UP TO THE CAMERAS.

TOWER BASE TRANSITION NEMA 3R ENCLOSURE SHALL BE USED TO HOUSE ETHERNET 11.

AWG CABLES AND WILL TRANSITION NEAR THE CAMERA TO 3/C #16 AWG CABLE.

WILL REQUIRE 24V AC POWER. THE 24V AC POWER WILL BE ROUTED THRU 3/C #12 HD IP CAMERA WILL USE A SINGLE CAT6 CABLE TO EACH CAMERA. EACH CAMERA 10.

SEE VIDEO POWER JUNCTION BOX DETAIL ON SHEET M-ITS-1255.

ALL BOM PARTS ARE TO BE CONSIDERED "OR EQUIVALENT".

limitations OF CAT6 OR LESS

TOWER MOUNT Camera Assembly

NOT TO SCALE

TOWER BASE TRANSITION NEMA 3R ENCLOSURE

NOT TO SCALE

POWER JUNCTION BOX

SEE TOWER MOUNT DETAILS

2" RGS CONDUIT WITH 1/2" CAT6 CABLE (BELDEN 7953A) AND 1/2" RGS POWER CABLE (Belden 3102A)

CORE HOLE INTO BUILDING TO RUN CONDUIT (DO NOT USE TRANSMISSION LINE PORT CONDUIT TO BE RUN UNDERGROUND FOR CAT 6 ETHERNET CABLE AND POWER CABLES 7.

INSTRUCTIONS

ALL CONNECTIONS SHALL BE SEALED WITH TAPE PER ILLINOIS TOLLWAY TOWER CREW 6.

CAMERA TO THE CISCO SWITCH.

SYSTEM OPERATION INCLUDING ETHERNET CONNECTIONS FROM THE CONTRACTOR TO PROVIDE ALL POWER AND GROUND WIRING REQUIRED FOR 4.

SHALL BE SOLID COPPER TINNED.

INSULATED TYPE RHW CONDUCTORS. ANY GROUND CONDUCTORS THAT ARE BURIED 3.

CAMERAS TO THE CISCO SWITCH.

CAMERAS MUST BE GROUNDED IN HOUSING.

THE CAMERA HOUSING. THIS WILL PREVENT ANY MOISTURE ENTERING THE CONTRACTOR TO SEAL CONDUIT WITH ELECTRICAL PUTTY AS IT ENTERS 5.

HOLES.

CORES SHALL BE STRIPPED, STRIMPS, OR OTHER MATERIALS AS DETERMINED BY THE DESIGNER. ALL HOLES, DRILLINGS, ETC., SHOWN ON THIS SHEET ARE NOT TO SCALE. 8.

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT DESIGNER COMPLETED TO THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES SHALL BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

HOUSING OF CABLES AND POWER CABLES TO PARA TOWER BUILDING SHALL BE SHOWN FOR EACH INSTALLATION OCCURRING. EFFECTS OF ACTUAL CONDITIONS, INSTALLATION AND ROUTING OF EQUIPMENT AND CABLES SHALL BE SHOWN IN PLAN VIEW FORM AS WELL AS DESCRIBE THE LOCATION AND POSITION OF ALL MOUNTING, WALL MOUNT AND TABLE MOUNT WITH THEIR 9.

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