### Illinois Tollway M-ITS Base Sheet Revisions

#### Section M Base Sheet Drawings

<table>
<thead>
<tr>
<th>Drawing</th>
<th>Modification Summary</th>
<th>Effective: 2021-03-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Sheet</td>
<td></td>
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<tr>
<td>Retired Standard</td>
<td></td>
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</tr>
</tbody>
</table>

#### Pole Assembly (ITS)-Series 1000

**M-ITS-1000** Elevation Views Pole Mounted ITS Element Assembly
- Sheet 1of3: Added title for one section detail; Added note on wires from solar panels to battery box then to ITS enclosure then Cables to ITS devices installed on the ITS pole
- Sheet 2of3: Added title for ITS Disconnect Switch Cast-in place
- Sheet 3of3: Added new assembly detail for ITS Disconnect Switch Pre-cast (simplified installation)

**M-ITS-1001** General Notes Pole Mounted ITS Element Assembly
- Added Note 22: Cables shall enter poles through a grommet. Grommet size shall be chosen so that the center hole forms a water tight seal around the cables

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

**M-ITS-1103** DMS Front Access-Cantilever Electrical Plan
- Revised assembly details for DMS Type 2 Cantilever pushed further away so the edge of the DMS clears Lane 1

**M-ITS-1104** DMS Front Access-Butterfly Electrical Plan
- Revised assembly details for DMS Butterfly Type 2 Front Access pushed further away to the edge of the DMS clears Lane 1

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

| M-ITS-1200: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-MVDS) |
| M-ITS-1201: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-MVDS) |
| M-ITS-1202: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (3-MVDS) |
| M-ITS-1203: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV camera) |
| M-ITS-1204: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV camera and 1-MVDS) |
| M-ITS-1205: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV camera and 2-MVDS) |
| M-ITS-1206: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV camera and 3-MVDS) |
| M-ITS-1207: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-CCTV cameras) |
| M-ITS-1208: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-CCTV cameras and 1-MVDS) |
| M-ITS-1209: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-CCTV cameras and 2-MVDS) |
| M-ITS-1210: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-CCTV cameras and 3-MVDS) |
| M-ITS-1211: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-MVDS) Solar Generator and FOC |
| M-ITS-1212: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (2-MVDS) Solar Generator and FOC |
| M-ITS-1213: Cabinet Layout and Wiring ITS Pole Mounted Enclosure (3-MVDS) Solar Generator and FOC |

- Revised to show the fiber optic conduit and power conduit interface with the ITS Enclosure for location and size
- Added Note 13: Fiber cable shall run straight down from the Gator patch through the left most conduit. Power cable shall be pulled through the conduit to the right of the fiber conduit. No slack shall be placed in the cabinet, slack shall be put in power and fiber optic handholes
- Revised layout to remove Cohu Surge Suppressor Part AS
- Revised details for Part V to remove dash line for DITEK surge suppressor
- Revised description for Item V to remove CoHu camera
- Revised Item AQ to remove reference to CoHu PoE power injector
- Revised Item AS for CoHu PoE injector not required anymore
- Revised Note 4: to say Not used

**M-ITS-1217** Cabinet Wiring Diagram in Pavement Detection System AP, PoE and Injector ITS Assembly
- Revised to show the fiber optic conduit and power conduit interface with the ITS Enclosure for location and size
- Added Note 13: Fiber cable shall run straight down from the Gator patch through the left most conduit. Power cable shall be pulled through the conduit to the right of the fiber conduit. No slack shall be placed in the cabinet, slack shall be put in power and fiber optic handholes
- Added Note to Designer: The DSE shall specify the Gator Patch length per site

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

<table>
<thead>
<tr>
<th>M-ITS-1300</th>
<th>RWIS Pole, Sensor Mounting Detail</th>
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<tbody>
<tr>
<td></td>
<td>Added Note 8: Wind sensor can be installed on the secondary pole if primary pole is close to tree line</td>
</tr>
<tr>
<td></td>
<td>Added Note 9: All cables installed in a pole shall use a grommet to connect to ITS device installed on the pole</td>
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</tbody>
</table>

**M-ITS-1302** Typical RWIS Site Installation Plan
- Added Note 5: Note to Designer: In the event the Primary and Secondary poles cannot be installed within the 40 foot maximum radius of the bridge deck, the DSE shall consult with the Tollway and GEC on an alternate placement solution
- Added Note 6: Note to Designer: Installation of the Primary and Secondary pole for bridge installation: pole to be installed near immediate entrance of the bridge so non-invasive laser temperature sensor can monitor bridge deck temperature and bridge approach temperature
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<tr>
<td>M-ITS-1400</td>
<td>Solar Power Generator (ITS)-Series 1400: Added Note to Designer: The simplified solar power arrangement shall only be used for a maximum of 3 MVDs. For all other arrangements use the 1400 Series</td>
</tr>
<tr>
<td>M-ITS-1500</td>
<td>ITS Details Tower Mount Camera Details: Added note to Designer: The 2 CCTV shall be placed on the leg facing the roadway with a clear field of view. Added Note 23: The CCTV cameras shall be mounted on the same tower leg with an Axis T94A01D pendant kit, or equivalent as approved by the engineer. There will be 24&quot; vertical spacing between the cameras.</td>
</tr>
<tr>
<td>M-ITS-1700</td>
<td>Flashing Sign Beacon Installation Breakaway Electrical Detail: Added details for power cable disconnect box Breakaway. Added details for the 4 flashing lights installed on the static sign with flashing sequence and light mounting details onto the sign. Added Note 1: see plans for required conductor sizes. Added Note 2: All three conductors shall be in one harness. Added Note 3: As an alternative to the conduit body on foundation, use thermoplastic junction boxes. Added Note 4: Slack in line side cable shall be provided in handhole. Added Note to Designer: If an existing ITS enclosure lies within the immediate proximity of the flashing sign then power can be connected to that enclosure, otherwise install a new ITS enclosure near the flashing sign.</td>
</tr>
<tr>
<td>M-ITS-1815</td>
<td>IPDC and Combination Plaza/IPDC Concrete Foundation: Added new sheet for IPDC and Combination Plaza/IPDC Concrete Foundation details.</td>
</tr>
<tr>
<td>M-ITS-1900</td>
<td>Conduit Details at Integral Abutment Bridge (ITS)-Series 1900: Added material type for ITS conduit attached to bridge: PVC coated steel or FRE conduit per plan.</td>
</tr>
<tr>
<td>M-ITS-2000</td>
<td>100 FT. Monopole (ITS)-Series 2000: 100 FT. Monopole Closed Circuit Television (CCTV) Camera Tower: Sheet 4 of 4: Added details to install the ITS Enclosure and ITS Disconnect Switch onto the concrete slab of 100 foot monotube.</td>
</tr>
<tr>
<td>M-ITS-2100</td>
<td>Video Power Junction Box Model A: 4 PoE CCTV arrangement: New drawing created to standardize Video Power Junction Box arrangement - Without Cisco switch when the box is installed and can use Cat 6 cables when distance is less than 300 feet from Plaza Communication room.</td>
</tr>
</tbody>
</table>
| M-ITS-2101 | Video Power Junction Box Model B: 4 PoE CCTV arrangement: New drawing created to standardize Video Power Junction Box arrangement - With Cisco 4000 switch when the box is installed at a distance greater than 300 feet from the Cisco switch in the Plaza Communication Room.
NOTES:
1. NOT APPLICABLE
2. ALL CONCRETE SHALL BE IDOT CLASS SI.
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.

DETAIL A - TYPICAL MOUNTING ATTACHMENT CONNECTION

120/240/480V DISCONNECT SWITCH
NEUTRAL, NEW OR STAINLESS STEEL UNEARTHED
1½ x 1½ C-CHANNEL (TYP)

1½ STAINLESS STEEL CONDUIT TO ITS ENCLOSURE
2½ PVC COATED GALVANIZED STEEL CONDUIT TYPICAL STRUCTURAL SUPPORT

12" DIA. CONCRETE FOUNDATION

EXISTING GRADE

STAINLESS STEEL CONDUIT RISING TYP
2½ PVC COATED GALVANIZED STEEL OR STAINLESS STEEL CONDUIT TYPICAL STRUCTURAL SUPPORT

1½" THREADED U-BOLT (TYP)
1½" x 1½ C-CHANNEL (TYP)

GROUNDING WIRE TINNED COPPER #2 STRANDED BARE

GROUND WELL UNFUSED HEAVY-DUTY, NEMA 4X STAINLESS STEEL 120/240/480V DISCONNECT SWITCH

(2) 1½" STAINLESS STEEL CONDUIT TO ITS ENCLOSURE
1½" STANDARD RIGID GALVANIZED STEEL OR STAINLESS STEEL CONDUIT TYPICAL STRUCTURAL SUPPORT

(2) 1½" COILABLE NON-METALLIC CONDUIT TO POWER SERVICE METER

VIEW ASSOCIATED WITH "ITS DISCONNECT SWITCH CAST-IN-PLACE ASSEMBLY" (JT132814)
DETAIL A - TYPICAL MOUNTING ATTACHMENT CONNECTION

NOTES:

1. NOT APPLICABLE.

2. ALL CONCRETE SHALL BE IDOT CLASS SI.

3. DISCONNECT SWITCH POST, 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.

16" DIA. CONCRETE FOUNDATION

ITS DISCONNECT SWITCH PRE-CAST ASSEMBLY
FRONT VIEW

ITS DISCONNECT SWITCH PRE-CAST ASSEMBLY
SIDE VIEW
GENERAL NOTES:

1.правляется, что проход под каркасом должен быть шириной не менее 27" в минимальное место. В случае необходимости, проход под каркасом может быть увеличен до 36".

2. В узловой точке, где проход под каркасом уменьшается до 36", должен быть установлен патрубок с резиновой перегородкой, чтобы обеспечить герметичность.

3. Все кабели, включая заземляющий, должны быть установлены в защитный обоймы, расположенные по всему высоту столба.

4. Погружение столба должно быть выполнено с использованием специального оборудования, включая сверление и установку штырей.

5. Порядок выполнения работ должен быть согласован с инженером.

CCTV NOTES:

1. Все камеры идентифицированы по месту установки. Камеры должны быть установлены на расстоянии не менее 500 футов от перекрестка и центра дороги.

2. В случае установки камеры в зоне расположения сети, они должны быть установлены на расстоянии не менее 20 футов от перекрестка и центра дороги.

3. Камеры должны быть установлены в соответствии с указаниями производителя.

4. Кабели, идущие к камере, должны быть уложены в защитные обоймы, расположенные по всему высоту столба.

5. Заземляющий кабель должен быть подключен к заземлителю, установленному на расстоянии не менее 10 футов от основания столба.

NOTE 1 TO DESIGNER

Special provisions and conditions for this drawing shall be as follows:

1. This drawing is not to scale and may not represent actual dimensions.

2. Any changes or modifications to this drawing must be approved by the Illinois Tollway Operations Department.

3. All components shown are not necessarily to scale and may not represent actual dimensions.

4. The Illinois Tollway Operations Department reserves the right to make any changes or modifications to this drawing at any time.

5. This drawing is intended for use in the design of new construction projects only.

6. Any questions or concerns regarding this drawing should be directed to the Illinois Tollway Operations Department.
BASE ATTACHMENT DETAIL
17½" BASE DIA.

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 of the sheet 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 designer shall reference Illinois Tollway standard drawing M-ITS-1002 helix standard foundation.

NOTE TO DESIGNER

12 ft. steel helix foundations to be used for slopes greater than 1:6. Designer shall provide a table to be included on the plans which indicates location, depth of foundation, and any other information deemed necessary for contractor to install proper foundation.
NOTES:
1. Type A Service Pads shall be installed on slopes up to and including 1:6.
2. Type B Service Pads shall be installed on slopes greater than 1:6 and less than or equal to 1:3.
3. Type C Service Pads 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 C.
5. All exposed concrete edges shall have a 1" minimum chamfer.
6. Contractor shall make provisions to stabilize existing ITS poles and Helix foundations while excavating soil for installation of Concrete Service Pads.
7. Compacted soil shall be placed to be level with the Service Pad.
8. Soil excavated for the purpose of maintaining a stable working slope while installing the Service Pad shall be replaced. Historic soil shall be earth-packed free from debris, stones, and roots. Seedings and/or seed strips shall be placed on the slope to encourage native vegetation to grow. The contractor shall use a clean, natural sand. All backfill materials shall be compacted to the satisfaction of the Engineer.
9. Concrete shall be placed to be level with the Service Pad installation and will not be paid for separately. All backfill materials shall be compacted to the satisfaction of the Engineer.
10. Type C Service Pads shall be installed on slopes greater than 1:3 as shown on Sheet M-ITS-1003 Sheet 2 of 2.

CONCRETE SERVICE PAD DETAILS

NOTE TO DESIGNER

This sheet shows typical new construction for ITS only. It is not a standard drawing. It is the responsibility of the Contractor to develop and submit the appropriate plans and specifications to the Engineer for review. The Contractor is responsible for the accuracy of the design and construction. The Engineer reserves the right to accept or reject all or any portion of the work shown on this sheet.
CONCRETE SERVICE PAD, TYPE C

ELEVATION VIEW

SECTION A-A

NOT TO SCALE

NOTE TO DESIGNER

This base sheet shows typical, nonconstruction details. It is not a standard drawing, at
ITSD's discretion, to be used to provide assistance to contractors. The instructions, notes,
and symbols in this sheet are not intended for construction purposes. The details shown
are general guidelines and are not intended to replace the specifications and drawings on
the project. The contractor shall follow the specifications and drawings on the project.

ELEVATION VIEW

PLAN VIEW

SECTION B-B

NOT TO SCALE

CONCRETE SERVICE PAD, TYPE C

ITSD POLICY

1. All exposed concrete edges shall have a 12" minimum chamfer.
2. Concrete shall be designed to accommodate existing ITS poles and
   other drainage hole requirements for ITS installation of concrete service pads.
3. Concrete shall be placed to be level with the existing ITS pole.
4. Elongated holes shall be detailed to accommodate grade changes.
5. Existing grade shall be compacted to the satisfaction of the engineer.
6. Installation and backfill materials shall not be paid for separately.
7. Substitution of backfill shall be incidental to the service pad.
8. Clean, natural sand shall be used as backfill.
9. Replacement of eroded soil shall be paid for using standard materials.

NOTES

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are general guidelines and are not intended to replace the specifications and drawings on
the project. The contractor shall follow the specifications and drawings on the project.
NOTE TO DESIGNER

1. All cable slack shall be placed in the pole.
2. All cables shall be run in the equipment cabinet prior to insertion into the pole.
3. All equipment shall be properly dressed and labeled. All electrical connections shall be made by a qualified electrician.
4. All cables shall be securely fastened to the pole, ensuring proper tensioning and strain relief.
5. All equipment shall be properly grounded, ensuring compliance with the manufacturer's guidelines.
6. All cables shall be properly labeled, ensuring easy identification and maintenance.
7. All cables shall be properly terminated, ensuring proper connection and reliability.
8. All equipment shall be properly secured, ensuring stability and safety.
9. All equipment shall be properly tested, ensuring proper functioning.
10. All equipment shall be properly maintained, ensuring continued reliability.

NOTE

This sheet shows typical new construction but it is not a standard sheet. It includes a variety of equipment and connections, including solar panels, batteries, wiring, and control systems. The equipment shown is not a complete system, but rather a collection of components and connections that are typically used in solar powered MVDS (Multi-Variable Digital Systems).