## Illinois Tollway Standard Drawing Revisions

### Section H  Base Sheet Drawings

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<th>Standard</th>
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<td>Light Standard Foundation</td>
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<td>Added new sheet showing single face barrier foundation detail.</td>
</tr>
<tr>
<td><strong>H2</strong></td>
<td>Light Standard Details</td>
</tr>
<tr>
<td></td>
<td>Removed bolt covers.</td>
</tr>
<tr>
<td></td>
<td>Callout crimping requirement for fuse holders.</td>
</tr>
<tr>
<td></td>
<td>Removed unused ground cable.</td>
</tr>
<tr>
<td></td>
<td>Added compression splice detail.</td>
</tr>
<tr>
<td><strong>H14</strong></td>
<td>Sign Luminaire Mounting Detail and Wiring Diagrams</td>
</tr>
<tr>
<td></td>
<td>Added note regarding surge protection device.</td>
</tr>
<tr>
<td><strong>H16</strong></td>
<td>Mast Arm Cable Assembly (Twin Mast Arm)</td>
</tr>
<tr>
<td></td>
<td>Revised mounting bracket detail to show common model.</td>
</tr>
<tr>
<td></td>
<td>Revised cable routing detail to prevent pinching.</td>
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<tr>
<td></td>
<td>Truss type arm shown with revised tag location.</td>
</tr>
<tr>
<td></td>
<td>Note to route cable outside polyethylene tube.</td>
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<tr>
<td></td>
<td>Note to form cable loops with proper orientation.</td>
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<tr>
<td></td>
<td>Note to minimize slack within luminaire.</td>
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<tr>
<td></td>
<td>Note to install continuous cable.</td>
</tr>
<tr>
<td><strong>H17</strong></td>
<td>Mast Arm Cable Assembly (Single Mast Arm)</td>
</tr>
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</tr>
<tr>
<td></td>
<td>Enlarged detail of steel plate attachment.</td>
</tr>
</tbody>
</table>
FOUNDATION LIGHT STANDARD REVISIONS

DATE REVISED HELIX FOUNDATION, NEW DETAIL "A", AND GRADED AREA MOVED MEDIAN BARRIER MOUNTED FOUNDATION DETAILS.

3-11-2015
3-31-2014
3-31-2016

ADDED HELIX FOUNDATION DEPTH INFORMATION.

30" DIAMETER
7'-0"
4"

MINIMUM 2'-9"
MINIMUM BURY 8'-0"

3" CLR.
3" CLR.

STANDARD H1-09

3-31-2017

REVISED MEDIAN FOUNDATION ANCHOR BOLTS.

6"

2-7-2012

APPROVED

CHIEF ENGINEERING OFFICER

INCREASED POLE SETBACK.

3-01-2018
3-01-2019
3-01-2020

REVISED CONCRETE BARRIER DETAILS.

REDUCED SETTING PLATE SIZE.

ADDED SINGLE FACE BARRIER DETAIL.

SHEET 1 OF 10

NOTES:

1. AT LOCATIONS NOT SHIELDED BY GUARDRAIL, THE LIGHT POLE FOUNDATION SHALL BE PLANT WITH SURROUNDING GRADES ON ALL SIDES. THE SURROUNDING AREA SHALL BE A LEVEL GRADED AREA CONSTRUCTED OF AGGREGATE SHOULDERS WITH FILTER FABRIC, TYPE B, 4".

2. PROVIDE SEEDING, POTASSIUM FERTILIZER, NUTRIENT, AND EROSION CONTROL PLANT AS REQUIRED.

3. THE TOP OF FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE ADJACENT TOP OF GUTTER OR WHEN ADJACENT TO MEDIAN BARRIER, AT THE SAME ELEVATION AS THE OUTSIDE EDGE OF MEDIAN BARRIER. INSTALL A MINIMUM 4" ALUMINUM FROM THE PAVED SHOULDER.

4. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

5. ALL GROUND MOUNTED LIGHT POLES SHALL BE PROVIDED WITH AN ACCEPTED FHWA BREAKAWAY BASE OR DEVICE PER THE ILLINOIS TOLLWAY EXPERIMENTAL SPECIFICATIONS SECTION 1070.

6. FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND CONDUCTOR SIZE SEE STANDARD H1.

7. ALL REINFORCEMENT BARS SHALL BE EPOXY COATED.

8. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.

9. FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS SHALL BE CENTERED AROUND THE MEDIAN BARRIER WALL CENTERLINE.

ELEVATION

LIGHT STANDARD FOUNDATION DETAILS - CONCRETE
(GROUND MOUNTED UNITS)

ANCHOR BOLT DETAIL

ANCHOR BOLT (TYP.)
1" DIA. HOT DIPPED GALVANIZED
EXOTHERMIC WELD
GROUNDING LUG
GROUND WIRE BOLTED TO POLE
1/C NO.2 BARE TINNED COPPER
ANCHOR BOLT DETAIL
6 x 1" DIA. HOT DIPPED GALVANIZED ANCHOR BOLTS
4 x 1" DIA. HOT DIPPED
CENTERLINE.
SHALL BE CENTERED AROUND THE MEDIAN BARRIER WALL
FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS
9.

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 1070.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

CONDUCTOR SPLICE SEE STANDARD H2.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

EXCLUDING AROUND THE MEDIAN BARRIER WALL CENTERLINE.

7.

DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

4.

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

4.

AND EROSION CONTROL PLANT AS REQUIRED.

2.

PROVIDE SEEDING, POTASSIUM FERTILIZER, NUTRIENT, AND EROSION
CONTROL PLANT AS REQUIRED.

2.

THE TOP OF FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE
ADJACENT TOP OF GUTTER OR WHEN ADJACENT TO MEDIAN
BARRIER, AT THE SAME ELEVATION AS THE OUTSIDE EDGE OF
MEDIAN BARRIER. INSTALL A MINIMUM 4" ALUMINUM FROM THE
PAVED SHOULDER.

3.

ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL
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THE TOP OF FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE
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MEDIAN BARRIER. INSTALL A MINIMUM 4" ALUMINUM FROM THE
PAVED SHOULDER.

3.

5.

FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS
SHALL BE CENTERED AROUND THE MEDIAN BARRIER WALL
CENTERLINE.

9.

CONSIDERING AROUND THE MEDIAN BARRIER WALL CENTERLINE.

7.

EXCLUDING AROUND THE MEDIAN BARRIER WALL CENTERLINE.

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ELEVATION

LIGHT STANDARD FOUNDATION DETAILS - CONCRETE
(GROUND MOUNTED UNITS)

ANCHOR BOLT DETAIL

ANCHOR BOLT (TYP.)
1" DIA. HOT DIPPED GALVANIZED
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FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS
9.

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 1070.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

CONDUCTOR SPLICE SEE STANDARD H2.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

EXCLUDING AROUND THE MEDIAN BARRIER WALL CENTERLINE.

7.

DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

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DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

4.

AND EROSION CONTROL PLANT AS REQUIRED.

2.

PROVIDE SEEDING, POTASSIUM FERTILIZER, NUTRIENT, AND EROSION
CONTROL PLANT AS REQUIRED.

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THE TOP OF FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE
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3.

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FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS
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CENTERLINE.

9.

ELEVATION

LIGHT STANDARD FOUNDATION DETAILS - CONCRETE
(GROUND MOUNTED UNITS)

ANCHOR BOLT DETAIL

ANCHOR BOLT (TYP.)
1" DIA. HOT DIPPED GALVANIZED
EXOTHERMIC WELD
GROUNDING LUG
GROUND WIRE BOLTED TO POLE
1/C NO.2 BARE TINNED COPPER
ANCHOR BOLT DETAIL
6 x 1" DIA. HOT DIPPED GALVANIZED ANCHOR BOLTS
4 x 1" DIA. HOT DIPPED
CENTERLINE.
SHALL BE CENTERED AROUND THE MEDIAN BARRIER WALL
FOR ALL MEDIAN BARRIER FOUNDATIONS, THE ANCHOR BOLTS
9.

ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 1070.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

CONDUCTOR SPLICE SEE STANDARD H2.

FOR DETAILS OF FUSE HOLDER, POLE BASE WIRING AND
CONDUCTOR SIZE SEE STANDARD H1.

6.

EXCLUDING AROUND THE MEDIAN BARRIER WALL CENTERLINE.

7.

DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT (V:H).

4.

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

4.

AND EROSION CONTROL PLANT AS REQUIRED.

2.

PROVIDE SEEDING, POTASSIUM FERTILIZER, NUTRIENT, AND EROSION
CONTROL PLANT AS REQUIRED.

2.
BASE ATTACHMENT DETAIL

ISOMETRIC

1 ½" DIA. DRILLED HOLES

1½" DIA. HELIX 3° PITCH

10½" DIA. CENTER HOLE

1¼" DIA. x 10'-0" GROUND WIRE BOLTED TO POLE GROUNDING LUG

1/C NO.2 BARE TINNED COPPER - GROUND WIRE BOLTED TO POLE GROUNDING LUG

NOTES:

SEE SHEET 1 OF THIS SERIES FOR NOTES.

ELEVATION

LIGHT STANDARD FOUNDATION DETAILS - HELIX

(GROUND MOUNTED UNITS)

NOTES:

SEE SHEET 1 OF THIS SERIES FOR NOTES.
LIGHT STANDARD FOUNDATION DETAILS - MEDIAN BARRIER
(MODIFICATIONS FOR SLIPFORM POUR, 42" BARRIER)

NOTES:
1. SEE SHEET 1 OF THIS SERIES FOR NOTES.
2. PLUG TOP OF COUPLER WITH PLASTIC PLUG OR COVER WHILE PLACING CONCRETE.
LIGHT STANDARD FOUNDATION DETAILS - Grading W/ Foreslope (Ground Mounted Units)

- Edge of Paved Shoulder: 7'-0" varies
- Aggregate Shoulder: 4'-0"
- Edge of Paved Shoulder: 7'-0"
- Top of Foundation: As required to match existing grade
- Level Graded Area: See Note 1
- Topsoil Furnish and Place

NOTE: See Sheet 1 of this series for notes.
LIGHT STANDARD FOUNDATION DETAILS - GRADING W/ BACKSLOPE

(GROUND MOUNTED UNITS)

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.

LIGHT STANDARD FOUNDATION
ADJACENT TO GUTTER
Light Standard Foundation Details - Single Face Barrier

**Plan View**

- Light Pole Foundation (Roadway 44" Barrier)
- Each side of foundation top & bottom
- 1/2" anchor bolts 14 required on 10" bolt circle
- 4" PVC coupling (Typ.)
- 4" steel bars from top of foundation top & bottom
- 4" PVC Sch. 40 conduit (Typ.)
- 4" PVC coupling (Typ.)

**Notes:**

1. All bars shall be epoxy coated.
2. Concrete reinforcement shall anchor bolts and all other components of the light pole foundation are included in the cost of light pole foundation (roadway 44" barrier).

**Elevation**

- Light Pole Foundation
- Top of grounding electrode 12" below tops of anchor rods
- 4" PVC coupling (Typ.)
- 4" steel bars from roof face to footer (Typ.)
- 4" PVC Sch. 40 conduit elbow 180° radius (Typ.)

**Foundation Details**

- 4-1/2" x 8-1/2" anchor bolts (Typ.)
- Wood, cardboard or steel form (Typ.)
- 8-6" vertical bars (Typ.)
- See Section A-A

**Concrete Details**

- 40 PVC sleeve in 1" Sch.
- Electrodes
- Grounding (threading)
- Connected
- Required per base)

**Anchor Bolt Detail**

- 1/2" hot dipped galvanized steel
- See Section A-A

**Reinforcing Bar Schedule**

<table>
<thead>
<tr>
<th>Bar</th>
<th>No.</th>
<th>Size</th>
<th>Length</th>
<th>WT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>8</td>
<td>#4</td>
<td>12'-6&quot;</td>
<td>150</td>
</tr>
<tr>
<td>A2</td>
<td>8</td>
<td>#4</td>
<td>5'-2&quot;</td>
<td>28</td>
</tr>
<tr>
<td>A3</td>
<td>8</td>
<td>#4</td>
<td>5'-1&quot;</td>
<td>27</td>
</tr>
<tr>
<td>A4</td>
<td>8</td>
<td>#4</td>
<td>5'-0&quot;</td>
<td>27</td>
</tr>
</tbody>
</table>

**Section A-A**

- Elevation
- 1/2" hot dipped galvanized steel
- See Section A-A

**Section B-B**

- 1/2" hot dipped galvanized steel
- Equally spaced
Light Standard - Single Mast Arm

- Light Standard Details
  - Pole Base: Cast Aluminum Non-Breakaway Pole Base
  - Pole Length: As Specified on Plans
  - Pole Diameter: 6" Min.
  - Pole Wall Thickness: 0.312" Min.
  - Pole Shaft: 10" DIA, Tapered
  - Pole Material: Aluminum Alloy 6063-T6
  - Hardware (Typ.): Clamps with Stainless Steel Wrought Aluminum Alloy Clevis
  - Two-Piece, Four-Bolt Extruded Drainage Hole Gussets for Lateral Stability
  - Pole Wiring: In Pole to Luminaire, See Details This Series
  - Protective Device and Associated Wiring
  - Foundation Details, See Structural Plans

Light Standard - Twin Mast Arm

- Light Standard Details
  - Pole Base: Cast Aluminum Non-Breakaway Pole Base
  - Pole Length: As Specified on Plans
  - Pole Diameter: 6" Min.
  - Pole Wall Thickness: 0.312" Min.
  - Pole Shaft: 10" DIA, Tapered
  - Pole Material: Aluminum Alloy 6063-T6
  - Hardware (Typ.): Clamps with Stainless Steel Wrought Aluminum Alloy Clevis
  - Two-Piece, Four-Bolt Extruded Drainage Hole Gussets for Lateral Stability
  - Pole Wiring: In Pole to Luminaire, See Details This Series
  - Protective Device and Associated Wiring
  - Foundation Details, See Structural Plans

Notes:
1. All Light Standards, both New and Existing, are shown on plans with the sample descriptions shown on this sheet.
2. For Foundation Details, See Standard H2-08, Supplemental Specifications Section 1070.
3. Anchor bolts shall extend over the top of hex nuts and shall have sufficient thread exposed for lock nut tabs to make contact.
4. Washers between hex nuts and pole bases shall be of the proper size to accommodate the minimum diameter. Washers shall not be substituted for appropriate steel washers.
5. Circuit Number: Standard H2-08
6. Distribution Type: See Control System/Cutout Circuit Diagram

Light Standard Description - HPS Luminaires

- Station of Circuit:
  - STA. 0 + 20
  - Distribution Type:
  - C=Full Cutoff
  - S=Semi-Cutoff

Light Standard Description - LED Luminaires

- Station of Circuit:
  - STA. 0 + 20
  - Distribution Type: See Distribution Type as Specified on Plans

Light Standard - Single Mast Arm

- Pole Base: Cast Aluminum Non-Breakaway Pole Base
- Pole Diameter: 6" Min.
- Pole Wall Thickness: 0.312" Min.
- Pole Shaft: 10" DIA, Tapered
- Pole Material: Aluminum Alloy 6063-T6
- Hardware (Typ.): Clamps with Stainless Steel Wrought Aluminum Alloy Clevis
- Two-Piece, Four-Bolt Extruded Drainage Hole Gussets for Lateral Stability
- Pole Wiring: In Pole to Luminaire, See Details This Series
- Protective Device and Associated Wiring
- Foundation Details, See Structural Plans

Light Standard - Twin Mast Arm

- Pole Base: Cast Aluminum Non-Breakaway Pole Base
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- Pole Wiring: In Pole to Luminaire, See Details This Series
- Protective Device and Associated Wiring
- Foundation Details, See Structural Plans

Date: 3/31/2016

Approved by: [Signature]
LIGHT STANDARD MOUNTING DETAIL

GROUND MOUNTED UNITS

- 1" DIAMETER BOLT AS REQUIRED FOR APPLICATION (TYP. FOR 4)
- 1/2" O.D. X MIN. 1/2" WASHERS BOTH SIDES OF 3/8" X 1/2" X MIN. 1/8" ISOLATION WASHER
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- 1/2" ISOLATION PAD SIZED TO MOUNT POLE AND ISOLATION WASHER FOR BARRIER WALL MOUNTED UNITS
- HELIX FOUNDATION PLATE
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 3/8" DIAMETER ANCHOR BOLT (TYP. FOR 4)

SHOULDER GROUND AND STRUCTURAL PARAPET WALL MOUNTED UNITS

- 1" DIAMETER BOLT AS REQUIRED FOR APPLICATION (TYP. FOR 4)
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- 1/2" ISOLATION PAD SIZED TO MOUNT POLE AND ISOLATION WASHER FOR BARRIER WALL MOUNTED UNITS
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 1" DIAMETER ANCHOR BOLT (TYP. FOR 4)

LIGHT STANDARD MOUNTING DETAIL

BRIDGE MOUNTED UNITS

- 6" MINIMUM OVERLAP HELD WITH STAINLESS STEEL SCREEN WRAPPED AROUND NUTS AND ANCHOR BOLTS
- FHWA APPROVED BREAKAWAY DEVICE
- 2-7/8" O.D. x MIN. 7/8" WASHERS BOTH SIDES OF 3/8" X 3/4" X MIN. 1/8" ISOLATION WASHER
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- 1/2" ISOLATION PAD SIZED TO MOUNT POLE AND ISOLATION WASHER FOR BARRIER WALL MOUNTED UNITS
- HELIX FOUNDATION PLATE
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 1" DIAMETER ANCHOR BOLT (TYP. FOR 4)

NOTE:
- SEE DETAIL A
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- HELIX FOUNDATION PLATE
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 1" DIAMETER ANCHOR BOLT (TYP. FOR 4)

LIGHT STANDARD MOUNTING DETAIL

BARRIER WALL MOUNTED UNITS

- 1" DIAMETER BOLT AS REQUIRED FOR APPLICATION (TYP. FOR 4)
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- 1/2" ISOLATION PAD SIZED TO MOUNT POLE AND ISOLATION WASHER FOR BARRIER WALL MOUNTED UNITS
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 1" DIAMETER ANCHOR BOLT (TYP. FOR 4)

NOTE:
- SEE DETAIL A
- CAST ALUMINUM NON-BREAKAWAY POLE BASE W/ 15" O.D. BOLT CIRCLE.
- HELIX FOUNDATION PLATE
- HELIX FOUNDATION
- CONCRETE FOUNDATION
- 1" DIAMETER ANCHOR BOLT (TYP. FOR 4)
CONDUIT EMBEDDED IN BRIDGE PARAPET

NOTES:
1. FOR STRUCTURAL PARAPET FOUNDATION DETAILS, SEE STRUCTURAL PLANS.
2. THE END 4'-0" SECTION OF MINOR/WING WALLS SHALL BE KEPT FREE FROM ANY ATTACHMENTS TO AVOID CONFLICT FROM TRAFFIC BARRIER TERMINAL.
3. ALL CONDUIT, JUNCTION BOXES AND APPURTENANCES MOUNTED TO STRUCTURE SHALL BE OFFSET FROM THE FACE OF THE STRUCTURE A MINIMUM OF ONE (1) INCH BY MEANS OF A STAINLESS STEEL C-CHANNEL. C-CHANNEL SHALL BE SECURED TO BRIDGE PARAPET WITH 1/4" DIA. EXPANSION ANCHORS MIN. 6" LONG. EXPANSION ANCHORS SHALL BE HAD DIPPED GALVANIZED AFTER FABRICATION AND SHALL BE MADE BY PARABOLT, KWICK-BOLT OR WEJ-IT. CONDUIT SHALL BE SECURED WITH APPROVED CLAMPS A MINIMUM OF 6 INCHES FROM CENTER AND A MINIMUM OF 2 FEET FROM ANY CHANGE IN DIRECTION OR JUNCTION BOX.
5. EXPANSION/DEFLECTION JOINTS SHALL BE PROVIDED AT ALL BRIDGE EXPANSION JOINTS.
6. ALL CLAMPS AND HARDWARE FOR CONDUIT MOUNTING SHALL BE OF LIKE MATERIAL AS THE CONDUIT.
7. ALL EQUIPMENT SHALL BE DROPPED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.

A

SECTION A-A

CONCRETE BRIDGE PARAPET FOUNDATION PER STRUCTURAL PLANS

1/" DIA. SLIP- IN ANCHOR BOLTS, GALVANIZED TO TOP 12", PROVIDE 2 PLAST WASHERS, 1 REGULAR NUT, AND 1 LOCKNUT FOR EACH BOLT. ALL GALVANIZED (TYP. FOR 4)

2" DIA. SCH 40 PVC OR CNE CONDUIT

CONCRETE BRIDGE PARAPET FOUNDATION PER STRUCTURAL PLANS

2" DIA. SCH 40 PVC OR CNE CONDUIT

CONCRETE BRIDGE PARAPET FOUNDATION PER STRUCTURAL PLANS

1/" DIA. ANCHOR BOLTS, LENGTH AS REQUIRED GALVANIZED TO TOP 12". PROVIDE 2 PLAST WASHERS, 1 REGULAR NUT, AND 1 LOCKNUT FOR EACH BOLT. ALL GALVANIZED (TYP. FOR 4)

2" DIA. SCH 40 PVC OR CNE CONDUIT

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2" DIA. SCH 40 PVC OR CNE CONDUIT

CONCRETE BRIDGE PARAPET FOUNDATION PER STRUCTURAL PLANS

2" DIA. SCH 40 PVC OR CNE CONDUIT

CONCRETE BRIDGE PARAPET FOUNDATION PER STRUCTURAL PLANS
CONDUIT EMBEDDED IN BRIDGE PARAPET WALLS
(INTEGRAL/SEMI-INTEGRAL ABUTMENT WITH PARAPET ON APPROACH PAVEMENT)

CONDUIT EMBEDDED IN BRIDGE PARAPET WALLS
(JOINTED ABUTMENT WITH PARAPET ON APPROACH PAVEMENT)

NOTE:
- SEE SHEET 1 OF THIS SERIES FOR NOTES.
- PER PLANS
- TERMINAL TRAFFIC BARRIER
- STEEL CONDUIT ATTACHED
- 1" DIA. RIGID STAINLESS
- EMBEDDED IN BRIDGE STRUCTURE

CONDUIT EXPANSION/DEFLECTION FITTING
(SEE DETAIL THIS SHEET)
CONDUIT EXPANSION/DEFLECTION FITTING
COMBINATION EXPANSION/DEFLECTION FITTING
(SEE NOTES 4 & 5)
CONDUIT EMBEDDED IN BRIDGE PARAPET WALLS
(INTEGRAL/SEMI-INTEGRAL ABUTMENT WITH PARAPET ENDING ON BRIDGE DECK)

PLAN

SECTION A-A

ELEVATION

NOTE:
EMBEDDED IN STRUCTURE
OR CNC CONDUIT
2" DIA. SCH. 40 PVC
BRIDGE PARAPET
SIZED PER PLANS
JUNCTION BOX
STAINLESS STEEL
UNIT DUCT SIZE PER PLANS
UNIT DUCT INSTALLATION
SIZED TO ACCOMMODATE
STAINLESS STEEL RIGID CONDUIT
(3" DIA. MIN. X 10'-0" LENGTH)
UNIT DUCT IN CONDUIT TO STAINLESS
STEEL JUNCTION BOX

WING WALL
SIZED PER PLANS
JUNCTION BOX
STAINLESS STEEL
UNIT DUCT SIZE PER PLANS
UNIT DUCT INSTALLATION
SIZED TO ACCOMMODATE
STAINLESS STEEL RIGID CONDUIT
(3" DIA. MIN. X 10'-0" LENGTH)
UNIT DUCT IN CONDUIT TO STAINLESS
STEEL JUNCTION BOX

STRUCTURE
RIGID CONDUIT ATTACHED TO
2" DIA. STAINLESS STEEL
ON EITHER END TO REDUCE DISTANCE TO 6'-0" OR LESS
CONDUIT ATTACHED TO STRUCTURE AS REQUIRED ON EITHER END TO REDUCE DISTANCE TO 6'-0" OR LESS
(6'-0" MAX. LENGTH) PROVIDE ADDITIONAL RIGID CONDUIT
2" DIA. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
ATTACHED TO STRUCTURE AS REQUIRED ON EITHER END TO REDUCE DISTANCE TO 6'-0" OR LESS
ATTACHED TO STRUCTURE AS REQUIRED ON EITHER END (6'-0" MAX. LENGTH) PROVIDE ADDITIONAL RIGID CONDUIT
2" DIA. LIQUID-TIGHT FLEXIBLE NON-METALLIC CONDUIT
ATTACHED TO STRUCTURE AS REQUIRED ON EITHER END TO REDUCE DISTANCE TO 6'-0" OR LESS
ATTACHED TO STRUCTURE AS REQUIRED ON EITHER END (6'-0" MAX. LENGTH) PROVIDE ADDITIONAL RIGID CONDUIT

SEE SHEET 1 OF THIS SERIES FOR NOTES.
CONDUIT DETAILS

PLAN VIEW

ELEVATION OF TYPICAL WINGWALL CONDUIT TRANSITION

CONDUIT ATTACHED TO BRIDGE PARAPET

NOTE:
SEE SHEET 1 OF THIS SERIES FOR NOTES.
HEAVY-DUTY HANDHOLE DETAILS

1. HEAVY-DUTY HANDHOLE LOCATED IN UNPAVED AREAS AND NOT SHIELDED BY GUARDRAIL SHALL BE CONSTRUCTED WITH THE TOP FLUSH WITH THE ADJACENT SLOPE.

2. HEAVY-DUTY HANDHOLE SHALL BE CONSTRUCTED IN NON-PAVED AREAS. THE FRAME AND HINGED COVER SHALL BE EITHER NEENAH FOUNDRY R-6662-PS OR EAST JORDAN IRON WORKS EJ 8216 WITH WIRE OR APPROVED EQUAL. THE HINGED COVER SHALL BE PROVIDED WITH A LIFT ASSIST MECHANISM. THERE SHALL BE TWO SETS OF HINGES AND THE DESIGN SHALL ALLOW FOR THE COVER TO OPEN > 90 DEGREES. THE COVER SHALL BE PROVIDED WITH A MULTI OPEN SAFETY ARM THAT CATCHES TO PREVENT ADDITIONAL CLOSURE. THE COVER SHALL ALSO BE ABLE TO BE MADE FULLY REMOVABLE. THE FRAME COVER SHALL BE INSTALLED WITH THE RINGS TO THE SIDE FACING APPROACHING TRAFFIC.

3. AGGREGATE FOR FRENCH DRAIN SHALL BE PER ARTICLE 10 OF THE STANDARD SPECIFICATIONS.

4. 10 FEET OF EXTRA CABLE SHALL BE COILED IN EACH HANDHOLE.

5. ALL METALLIC COMPONENTS OF THE HANDHOLE SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 614, THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.


NOTES:

1. AGGREGATE FOR FRENCH DRAIN SHALL BE PER ARTICLE 10 OF THE STANDARD SPECIFICATIONS.

2. HEAVY-DUTY HANDHOLE SHOULDER LOCATED IN UNPAVED AREAS AND NOT SHIELDED BY GUARDRAIL SHALL BE CONSTRUCTED WITH THE TOP FLUSH WITH THE ADJACENT SLOPE.

3. HEAVY-DUTY HANDHOLE SHALL BE CONSTRUCTED IN NON-PAVED AREAS. THE FRAME AND HINGED COVER SHALL BE EITHER NEENAH FOUNDRY R-6662-PS OR EAST JORDAN IRON WORKS EJ 8216 WITH WIRE OR APPROVED EQUAL. THE HINGED COVER SHALL BE PROVIDED WITH A LIFT ASSIST MECHANISM. THERE SHALL BE TWO SETS OF HINGES AND THE DESIGN SHALL ALLOW FOR THE COVER TO OPEN > 90 DEGREES. THE COVER SHALL BE PROVIDED WITH A MULTI OPEN SAFETY ARM THAT CATCHES TO PREVENT ADDITIONAL CLOSURE. THE COVER SHALL ALSO BE ABLE TO BE MADE FULLY REMOVABLE. THE FRAME COVER SHALL BE INSTALLED WITH THE RINGS TO THE SIDE FACING APPROACHING TRAFFIC.

4. 10 FEET OF EXTRA CABLE SHALL BE COILED IN EACH HANDHOLE.

5. ALL METALLIC COMPONENTS OF THE HANDHOLE SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE ILLINOIS TOLLWAY SUPPLEMENTAL SPECIFICATIONS SECTION 614, THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.

**NOTES:**

1. Meter housing shall be mounted to back wall of control cabinet; provide a gate in row fence to allow utility access to read the meter.

2. Cables from meter housing shall pass through back wall of control cabinet.

3. Contractor must coordinate with Pedestal base supplier and furnish the necessary anchor rods.

4. Provide a 2½" conduit hub, 2½" nipple and 2½" to 3" conduit reducer fitting.

5. All equipment shall be grounded and bonded in accordance with the National Electrical Code and the National Electrical Safety Code.

---

**Material Furnished and Details of Construction Company Specifications**

- **Conductor Size:** As required by plans by Utility Co., 240/480V, 1PH, 3W.
- **Material:** Stainless Steel.
- **Service Pole and Pedestal Details**
  - **Steel:** Revised conduit to stainless steel.
  - **Conduit Depth:** Revised on 3-31-2016.
  - **Equipment Layouts:** Added on 3-31-2017.
  - **Typographical Corrections:** Applied.

---

**Utility Service Pole**

*Subject to Utility Company Approval*

- **Exothermic Weld:**
  - **Ground Rod, Conductor:** A clamp for grounding conduit on pole to be in accordance with utility requirements.
  - **Conduit Coupling:** From metallic to non-metallic conduit.
  - **Conduit Elbow:** Stainless steel 36" radius rigid.

- **Concrete Foundation:**
  - **Handhole:** 1" bevel, 3" above grade.
  - **Bolt ½" hex head.**
  - **Concrete Foundation:** 3" dia. schedule 40 PVC conduit, exothermic weld.

- **Electrical Equipment Mounting Panel Mounted to the Back of Cabinet:**
  - **Panel:** 2½" conduit hub, 2½" nipple and 2½" to 3" conduit reducer fitting.
  - **Cable from Meter Housing:** Through back wall of control cabinet.
  - **Anchor Rods:** Contractor must coordinate with Pedestal base supplier.

---

**Utility Pad Mounted Transformer**

*Subject to Utility Company Approval*

- **Foundation, Conduit and Transformer Sourcing:** By contractor in accordance with utility requirements.

---

**Service Pedestal with Meter Detail**

- **PVC Schedule 40 Conduit:**
  - **Conduit Size:** 3" dia.
  - **Conduit Elbow:** Stainless steel.

- **Secondary Service to Service:**
  - **Utility Service Pole or Pad Mounted Transformer:** Size of conductors per plans.

---

**Electrical Equipment Mounting Panel Mounted to the Back of Cabinet:**

- **Panel:** 2½" conduit hub, 2½" nipple and 2½" to 3" conduit reducer fitting.

---

**NOTES:**

1. Meter housing shall be mounted to back wall of control cabinet; provide a gate in row fence to allow utility access to read the meter.

2. Cables from meter housing shall pass through back wall of control cabinet.

3. Contractor must coordinate with Pedestal base supplier and furnish the necessary anchor rods.

4. Provide a 2½" conduit hub, 2½" nipple and 2½" to 3" conduit reducer fitting.

5. All equipment shall be grounded and bonded in accordance with the National Electrical Code and the National Electrical Safety Code.
ITEM DESCRIPTION

1. POWER DISTRIBUTION/TERMINAL BLOCK, WITH INGRESS PROTECTION RATING IP20.

2. SURGE PROTECTION DEVICE

3. CIRCUIT BREAKER, 200 AMPERES, 2-POLE, 600 VOLT RATED

4. GROUNDING AND/OR NEUTRAL BUS

5. CIRCUIT BREAKER, 30 AMPERES (OR AS REQUIRED BY CONTRACT PLANS), 2-POLE, 600 VOLT RATED

NOTES:
1. ELECTRIC SERVICE CONDUCTORS FROM METER HOUSING.
2. ELECTRIC SERVICE CONDUCTORS TO LIGHTING CONTROL CONSOLE. SIZE AS INDICATED ON THE PLANS.
3. SURGE PROTECTION DEVICE CONDUCTORS SIZE SHALL BE ACCORDING TO MANUFACTURER'S RECOMMENDATION.
4. ELECTRIC CONDUCTORS SHOWN WITH MINIMUM SIZES. LARGER SIZES SHALL BE USED AS REQUIRED OR AS SHOWN ON THE PLANS.
5. CABLES SHALL BE MINIMUM #4 AWG OR AS REQUIRED FOR CIRCUIT BREAKER.

SERVICE PEDESTAL INTERIOR ELECTRIC EQUIPMENT LAYOUT & WIRING DIAGRAM

ROADWAY LIGHTING

ROADWAY ITS

SERVICE PEDESTAL INTERIOR ELECTRIC EQUIPMENT LAYOUT & WIRING DIAGRAM

EQUIPMENT LAYOUT & WIRING DIAGRAM

EQUIPMENT LAYOUT & WIRING DIAGRAM

SHEET 2 OF 2

Illinois Tollway

SERVICE POLE AND PEDESTAL DETAILS

STANDARD HS-05
NOTE 1
1. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
2. 2'-0" MINIMUM HEIGHT ABOVE GROUND.
3. NOT USED.
4. 50' PVC CONDUIT IN CONCRETE. SEE FOUNDATION DETAIL (STANDARD H7).
5. ENCLOSURE HOUSING 2' RARGE TINNED COPPER GROUND CABLE TO GROUND ROD.
6. TO SERVICE PEDESTAL AS INDICATED ON PLANS.
7. NOT USED.
8. CONTINUOUS STAINLESS STEEL PLATE.
9. 3-WIRE LATCH VOLTAGE TYPE HANDLE WITH MASTER KEYED CHICAGO CYLINDER LOCK CATALOG NO. 60.
10. SCREENED LOUVERS ON SIDES OF CABINET.
11. 10 GAUGE GALVANIZED STEEL EQUIPMENT MOUNTING PANEL (PAINTED WHITE).
12. REMOVABLE NO. 10 GAUGE 13" x 43" STAINLESS STEEL PLATE. DRILL PLATE AS REQUIRED FOR CONDUIT ENTRY.
13. CONTINUOUS STAINLESS STEEL CHANNEL 12 REQUIRED-FRONT AND BACK. EXTEND CHANNEL 3' BEYOND ENCLOSURE (CONTINUOUSLY WELD CHANNEL TO ENCLOSURE).
14. TOP SLOPED 1" TO REAR FOR DRAINAGE.
15. TOP SLOPED 1" TO REAR FOR DRAINAGE.
16. FOR WIRING DIAGRAM SEE SHEET 2 OF THIS SERIES.

ITEM DESCRIPTION
1. NOT USED.
2. SECONDARY SURGE ARRESTERS, 2 POLE, 600 VOLts.
3. MAIN PANELBOARD IN A NEMA 4 ENCLOSURE, 480/277 VOLT, 1 PHASE, 3 POLE, 2 POLE, 2 POLE MAIN CIRCUIT BREAKER 60,000 AMPERES, SYMMETRICAL, INTERMITTING CAPACITY WITH CIRCUIT BREAKERS PER SchECULE ON PLANS. DOOR HOLES FOR RIGHT SIDE.
4. LOAD CENTER, ELECTRICALLY HELD, 480 VOLT, 200 AMP, 2 POLE, 120 VOLT CONTROL AND 150 VOLT VOLTS CONTROL, WITH 200 VOLT, 15 AMP CONTROL LINE FUSE IN A NEMA 1 ENCLOSURE.
5. SECONDARY BREAKER, 15 AMP TRIP, 120 VOLT, SINGLE POLE, 60,000 AMPERES SYMMETRICAL, INTERMITTING CAPACITY IN A NEMA 1 ENCLOSURE.
6. STEP DOWN TRANSFORMER, 1500 VA, 480 VOLT PRIMARY, 120 VOLT SECONDARY, SINGLE PHASE, 60 HERTZ, DRY TYPE, NEMA 3R ENCLOSURE.
7. SINGLE POLE, 15 AMPERES FUSE IN A NEMA 3 ENCLOSURE WITH ITEM 8, RATED AT 120-277 VAC.
8. LAMP HOLDER 660W, 600V, MOUNTED ON A NEMA 1 ENCLOSURE (WITH ITEM 7), 3400 WATT, 120 VOLT, SINGLE PHASE, 60 HERTZ, DRY TYPE, NEMA 3R ENCLOSURE.
9. SERVICE SAFETY SWITCH, 200 AMP, 600 VOLT, NON-FUSED, NEMA 4X STAINLESS STEEL ENCLOSURE.
10. 200 WATT, 120 VOLT CABINET HEATER WITH INTEGRAL THERMOSTAT.
11. LIGHTING CONTACTOR, ELECTRICALLY HELD, 480 VOLT, 200 AMP, 2 POLE, 120 VOLT CONTROL, WITH 250 VOLT, 15 AMP CONTROL LINE FUSE IN A NEMA 1 ENCLOSURE.
12. PHOTO ELECTRIC CONTROL SWITCH WITH RECEPTACLE.
13. LAMP HOLDER 660W, 600V, MOUNTED ON A NEMA 1 ENCLOSURE (WITH ITEM 12), 3400 WATT, 120 VOLT, SINGLE PHASE, 60 HERTZ, DRY TYPE, NEMA 3R ENCLOSURE.
14. HAND-OFF-AUTO SELECTOR SWITCH WITH LEGEND PLATE. MOUNTED IN THE COVER OF ITEM 17.
15. 3"-0" x 10'-0" LONG GROUND ROD PLACED EXTERNAL TO THE FOUNDATION WITHIN COVER.
16. PHOTO ELECTRIC CONTROL SWITCH WITH RECEPTACLE.
17. CONTINUOUS STAINLESS STEEL ENCLOSURE WITH STEEL SHELF AND STAINLESS STEEL HARDWARE. ENCLOSURE SHALL COMPLY TO J.I.C. STANDARDS, WELDED CONSTRUCTION, CELLULAR NEOPRENE GASKETED DOORS, ALL SEAMS CONTINUOUSLY WELDED. NO CAUSE STAINLESS STEEL BODY. REMOVABLE STEEL STARTER MOUNTED PANEL FIXED TO THE BACK AND A FACTORY INSTALLED STEEL SHELF, THE ENCLOSURE SHALL HAVE CONTINUOUS STEEL DOORS MOUNTED MEETING THE CENTER, OVERLAPPED AND GASKETED, WITH NO CENTERPOST IN THE LIGHT SIDE.
18. CONTINUOUS STAINLESS STEEL ENCLOSURE WITH STEEL SHELF AND STAINLESS STEEL HARDWARE. ENCLOSURE SHALL COMPLY TO J.I.C. STANDARDS, WELDED CONSTRUCTION, CELLULAR NEOPRENE GASKETED DOORS, ALL SEAMS CONTINUOUSLY WELDED. NO CAUSE STAINLESS STEEL BODY. REMOVABLE STEEL MOUNTED PANEL FIXED TO THE BACK AND A FACTORY INSTALLED STEEL SHELF, THE ENCLOSURE SHALL HAVE CONTINUOUS STEEL DOORS MOUNTED MEETING THE CENTER, OVERLAPPED AND GASKETED, WITH NO CENTERPOST IN THE LIGHT SIDE.
19. CONTINUOUS STAINLESS STEEL ENCLOSURE WITH STEEL SHELF AND STAINLESS STEEL HARDWARE. ENCLOSURE SHALL COMPLY TO J.I.C. STANDARDS, WELDED CONSTRUCTION, CELLULAR NEOPRENE GASKETED DOORS, ALL SEAMS CONTINUOUSLY WELDED. NO CAUSE STAINLESS STEEL BODY. OPENED WITHIN EXTERIOR ENCLOSURE (ITEM 13) WITHOUT REMOVAL.
20. CONTINUOUS STAINLESS STEEL ENCLOSURE WITH STEEL SHELF AND STAINLESS STEEL HARDWARE. ENCLOSURE SHALL COMPLY TO J.I.C. STANDARDS, WELDED CONSTRUCTION, CELLULAR NEOPRENE GASKETED DOORS, ALL SEAMS CONTINUOUSLY WELDED. NO CAUSE STAINLESS STEEL BODY. OPENED WITHIN EXTERIOR ENCLOSURE (ITEM 13) WITHOUT REMOVAL.

DEPARTMENT OF TRANSPORTATION
NOTES:
1. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
2. TO SERVICE PEDESTAL 480/240V, 3 PHASE, 3 WIRE, GROUNDED. SEE STANDARD H6.
3. ITEM NUMBERS REFER TO EQUIPMENT LIST ON SHEET 1 OF THIS SERIES.
4. PROVIDE CIRCUIT BREAKERS PER SCHEDULE ON THE CONTRACT PLANS IN Accordance with the NATIONAL ELECTRICAL CODE.
5. FOR INTERIOR EQUIPMENT LAYOUT SEE SHEET 1 OF THIS SERIES.

CONTROL CONSOLE DETAILS
(EXTerior INSTALLATION)


**NOTES:**

1. Exposed concrete edges shall have 1/2" x 45° chamfers except where shown otherwise. Chamfers on vertical edges shall be continued a minimum of one foot below finished ground level.

2. All reinforcement bars shall be epoxy coated (E) and shall conform to the requirements of AASHTO M-31 (ASTM A615), Grade 60 Deformed Bars.


4. Reinforcement bar bending dimensions are out to out.

5. Cover from the face of concrete to face of reinforcement bars shall be 3" for all surfaces unless otherwise shown.

6. For clarity, control console and railings are not shown in plan view.

7. All equipment shall be grounded and bonded in accordance with the National Electrical Code and the National Electrical Safety Code.

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**BILL OF MATERIAL**

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**REINFORCEMENT BARS SCHEDULE**

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**REINFORCED CONCRETE FOUNDATIONS**

- **LEVEL FINISHED GRADE**
  - 3' 0" x 10'-0"
  - Ground Rod

- **EXTERIOR CONDUIT**
  - 3" Schedule 40 PVC
  - Coupling

- **SERVICE CONDUIT**
  - 3" Schedule 40 PVC
  - See Plans for Direction of Run
INTERIOR EQUIPMENT LAYOUT

SERVICE ENTRANCE DETAIL
NOTES:
1. TO UTILITY SERVICE, 480/240V, 1 PHASE, 3 WIRE, GROUNDED. WHEN A METER HOUSING IS REQUIRED FEED FROM PAD MOUNTED UTILITY TRANSFORMER WITHIN ILLINOIS TOLLWAY RIGHT-OF-WAY.
2. TO SERVICE PEEDEH, 480/240V, 1 PHASE, 3 WIRE, GROUNDED. SEE STANDARD H5.
3. ITEM NUMBERS REFER TO EQUIPMENT LIST ON SHEET 1 OF THIS SERIES.
4. PROVIDE CIRCUIT BREAKERS PER SCHEDULE ON THE CONTRACT PLANS (MINIMUM OF 12).
5. FOR INTERIOR EQUIPMENT LAYOUT SEE SHEET 1 OF THIS SERIES.
6. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
NOTES:

1. **USE OF THIS STANDARD DETAIL IS LIMITED TO THE INSTALLATION OF LIGHT EMITTING DIODE LUMINAIRES ONLY. FOR INSTALLATION OF OTHER LIGHT SOURCE TYPES, REFER TO PLAN DETAILS.**

2. **LIQUID-TIGHT FLEXIBLE CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN, PROVIDE SUFFICIENT LENGTH OF LIQUID-TIGHT FLEXIBLE CONDUIT AS REQUIRED CONDUIT AS REQUIRED TO THE MAXIMUM LENGTH OF LIQUID-TIGHT DOES NOT EXCEED 6'-0", LIQUID-TIGHT FLEXIBLE CONDUIT.**

3. **PROVIDE TWO (2) POLAR 30A, 240 VOLT CIRCUIT BREAKERS (EATON OR ALTERNATE) OR APPROVED EQUIVALENT, TWO (2) OF SOURCE PROTECTION DEVICES (IN ACCORDANCE WITH ARTICLE 1065 OF THE NATIONAL ELECTRICAL CODE) AND SUFFICIENT 30 AMPERE, 600 VOLT TERMINAL BLOCKS TO SPLIT 480 VOLT WIRING FROM CIRCUIT BREAKER TO TWO (2) NO. 10 WIRES FOR EACH LUMINAIRES.**

4. **ARMS OR BEAMS SHALL BE 5'-0" NO. 12 WITH 1/C NO. 10 C Din Holes OR AS INDICATED ON THE PLANS TERMINATING AT EACH LUMINAIRE. SEE PLANS FOR REARING WIRING REQUIREMENTS.**

5. **THE CONTRACTOR SHALL PROVIDE EXPANSION/DEFLECTION FITTINGS (O-Z/GEDNEY TYPE AND WHERE CONDUCTORS CROSS STRUCTURE EXPANSION JOINTS.**

6. **IN NEW BRIDGE DECKS, PROVIDE STAINLESS STEEL SINGLE BAR PLATED LOOP INSERTS CAST IN THE DECKS FOR Š" DIAMETER STAINLESS STEEL THREADED RODS. IN EXISTING BRIDGE DECKS, PROVIDE STAINLESS STEEL EXPANSION TYPE ANCHORS FOR 6" DIAMETER STAINLESS STEEL THREADED RODS. EXPANSION TYPE ANCHORS SHALL HAVE A MINIMUM OF 500 POUNDS CAPACITY EACH.**

7. **NOT USED.**

8. **ALL ITEMS MOUNTED TO BRIDGE PIER SHALL BE DETECTED FROM THE STRUCTURE, A MINIMUM OF ONE (1) INCH FROM USE OF STAINLESS STEEL C-CHANNEL.**


10. **DETAILS SHOWN ARE FOR UNDERPASS LIGHTING INSTALLATIONS PER FROM THE MEDIAN BARREL WILL FOR INSTALLATIONS PER FROM A BRIDGE ALIGNMENT, REFER TO THE PLAN DETAILS.**

11. **UNDERPASS LUMINAIRES SUSPENDED FROM BRIDGE DECKS SHALL BE INSTALLED CENTERED BETWEEN THE BRIDGE BEAMS. THE LUMINAIRES SHALL BE LOCATED SUCH THAT IT IS SET BACK A MINIMUM OF 1 FOOT FROM THE OUTSIDE EDGE OF THE BRIDGE PIER, WITH THE TOP OF THE LUMINAIRE MOUNTING PLATE A MAXIMUM OF 1 INCH FROM THE BOTTOM OF THE BRIDGE BEAM. IN NO CASE SHALL ANY PORTION OF THE MOUNTED LUMINAIRE ON SUPPORTING HARDWARE BE LOWER THAN 14'-6" WHEN MEASURED TO THE OUTSIDE EDGE OF THE ADJACENT SHOULDER PAVEMENT.**

12. **IN NO INSTANCE SHALL ANY UNDERPASS LUMINAIRE OR ANY OTHER ELECTRICAL EQUIPMENT BE INSTALLED BELOW THE ELECTRICAL CIRCUIT TO THE TOP OF THE BRIDGE BEAM OR SUPPORTING HARDWARE. ANY UNDERPASS LUMINAIRE MOUNTED TO THE MEDIAN PIER AT WHICH CASE THE MINIMUM HEIGHT SHALL BE 16'-0" MEASURED TO THE LOWEST PORTION OF THE LUMINAIRE OR SUPPORTING HARDWARE.**

13. **LUMINAIRE MOUNTING PLATE FOR LUMINAIRES SUSPENDED FROM BRIDGE DECKS SHALL BE OF THE DIMENSIONS NECESSARY AND FIELD DRILLED TO ACCOMPANY THE SPECIFIC LUMINAIRE PROVIDER AND ASSOCIATED LUMINAIRE MOUNTED ASSEMBLY.**

14. **SEE PLANS FOR UNDERPASS LUMINAIRE LOCATIONS AND MOUNTING HEIGHS.**

15. **SEE STRUCTURAL DRAWINGS FOR SPECIFIC STRUCTURE DETAILS.**

16. **ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.**

---

**UNDERPASS LIGHTING (MEDIAN PIER MOUNTED LUMINAIRE & FEEDER INSTALLATION)**
SECTION A-A

MEDIAN PIER JUNCTION BOX MOUNTING PLATE DETAIL

UNDERPASS LIGHTING
(MEDIAN PIER MOUNTED LUMINAIRE & FEEDER INSTALLATION)

NOTE:
FOR NOTES SEE SHEET 1 OF THIS SERIES.

STANDARD HS-01

ILLINOIS TOLLEWAY
BRIDGE MOUNTED SIGN LIGHTING (BRIDGE PIER MOUNTED FEEDER INSTALLATION)

NOTES:
1. FOR SIGN STRUCTURE INSTALLATION DETAILS SEE SHEET 3 OF 3 IN THIS SERIES.
2. FOR SIGN LUMINARIE INSTALLATION AND WIRING AND FOR INSTALLATION OF CONDUIT IN FIXTURE SUPPORT CHANNEL, SEE STANDARD H10-04.
3. FOR TYPICAL SIGN CONTROL PANEL DETAILS SEE SHEET 2 OF 3 IN THIS SERIES.
4. DETAILS ShOWN ON THIS SHEET ARE WITHOUT FLASHING BEACON. INSTALLATION OF FLASHING BEACON REQUIRES ADDITIONAL WORK AS SHOWN ON TYPICAL SIGN CONTROL PANEL DETAIL SHEET 2 OF 3 IN THIS SERIES.
5. LUMINARIE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN THE SIGN IS TO BE ILLUMINATED. MAINLINE TOLL PLAZA APPROACH SIGNS SHALL BE ILLUMINATED. DESIGNER TO DETERMINE REQUIREMENTS FOR ILLUMINATING ALL OTHER SIGNS BASED ON ROADWAY GEOMETRY.
6. PROVIDE 12" FLASHING BEACON ONLY WHERE INDICATED ON PLANS. FLASHING BEACON TO BE ATTACHED TO SUPPORT WITH STAINLESS STEEL SCREWS AND NEOPRENE SPACERS. DRILLED SCREW HOLES TO BE SEALED WATER-TIGHT.
7. SEE STRUCTURAL DRAWINGS FOR DETAILS OF SIGN SUPPORTS AND FIXTURE SUPPORT CHANNELS.
8. CONDUITS, CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES ATTACHED TO STEEL STRUCTURAL SUPPORTS SHALL BE PVC COATED ALUMINUM, PVC COATED GALVANIZED STEEL CONDUITS, CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES SHALL BE UTILIZED WHERE ATTACHED TO STEEL STRUCTURAL SUPPORTS OR WHERE ATTACHED TO CONCRETE STRUCTURES UNLESS NOTED OTHERWISE. METAL TO METAL JOINTS BETWEEN DISSIMILAR METALS SHALL BE COATED WITH AN APPROVED THREAD LUBRICANT.
9. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
**BRIDGE MOUNTED SIGN LIGHTING**  
**LUMINARIE MOUNTING & CONDUIT DETAILS**

**SECTION A-A**  
(Steel Bridge shown)

**SECTION B-B**  
(Concrete Bridge shown)

**NOTES:**
- See Sheet 1 of this series for notes.
- See Note 6 for flashing beacon.
- See Note 7 for luminaires not shown for clarity.

**TYPICAL FRONT ELEVATION WITH FLASHING BEACON**  
(Luminaires not shown for clarity)

**TYPICAL FRONT ELEVATION WITHOUT FLASHING BEACON**  
(Luminaires not shown for clarity)
NOTES:
1. A GROUND WIRE NO. 12 AWG WILL BE RUN FROM THE GROUNDING BUSHING COVERED SUPPORT TO THE GROUNDING BUSHING IN THE JUNCTION BOX.
2. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
3. CONDUITS, CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES ATTACHED TO ALUMINUM STRUCTURAL SUPPORTS SHALL BE PVC COATED. ALUMINUM PVC COATED GALVANIZED STEEL CONDUITS, CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES SHALL BE UTILIZED WHERE ATTACHED TO STEEL STRUCTURAL SUPPORTS OR WHEN ATTACHED TO STEEL SURFACE MOUNTED SUPPORTS OR MOUNTING PLATE.
4. LUMINAIRE SUPPORT MEMBERS TO BE INSTALLED ONLY WHEN THE SIGN IS TO BE ILLUMINATED. MINIMUM WALL PLATE APPROACH SIGNS SHALL BE ILLUMINATED.
5. SEE STRUCTURAL DRAWINGS FOR DETAILS OF SIGN SUPPORTS AND FIXTURE SUPPORT CHANNELS.
6. FOR SIGN LUMINAIRE INSTALLATION AND WIRING AND FOR INSTALLATION OF CONDUIT IN FIXTURE SUPPORT CHANNEL, SEE STANDARD H4.
7. ALL STEEL TO BE HOT DIPPED GALVANIZED AFTER WELDING PER STANDARD H14.
8. PROVIDE NO. 12 FLASHING BUSHING EACH PLAIN FOR INLAY TOLLYWAY SUPPLEMENTARY SPECIFICATION SECTION 734.
9. PROVIDE FOR SIGN LUMINAIRE INSTALLATION AND WIRING AND FOR INSTALLATION OF CONDUIT IN FIXTURE SUPPORT CHANNEL, SEE STANDARD H4.
10. PROVIDE NO. 12 FLASHING BUSHING EACH PLAIN FOR INLAY TOLLYWAY SUPPLEMENTARY SPECIFICATION SECTION 734.

ILINOIS TOLLWAY SUPPLEMENTAL SPECIFICATION SECTION 733.
ALL STEEL TO BE HOT DIPPED GALVANIZED AFTER WELDING PER ILLINOIS TOLLWAY SUPPLEMENTARY SPECIFICATION SECTION 733.

ILINOIS TOLLWAY SUPPLEMENTAL SPECIFICATION SECTION 734.
ALL STEEL TO BE HOT DIPPED GALVANIZED AFTER WELDING PER ILLINOIS TOLLWAY SUPPLEMENTARY SPECIFICATION SECTION 734.

CANTILEVER STRUCTURE SIGN LIGHTING DETAILS
STANDARD H12-04
**SIGN LUMINAIRE INSTALLATION**

**TYPICAL SIDE ELEVATION**

**SECTION A-A**

(Control equipment not shown for clarity)

(For typical wiring diagram see Standard H4)

**NOTES:**

1. Use #1/2" alternating steel angle bar at various locations as required.
2. Use #1/2" alternating steel angle bar at various locations as required.
3. Use #1/2" alternating steel angle bar at various locations as required.
4. Use #1/2" alternating steel angle bar at various locations as required.
5. Use #1/2" alternating steel angle bar at various locations as required.

**LEGEND:**

- 1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.

**TYPICAL SIGN CONTROL PANEL DETAIL**

(For typical wiring diagram see Standard H4)

**NOTES:**

1. Use #1/2" alternating steel angle bar at various locations as required.
2. Use #1/2" alternating steel angle bar at various locations as required.
3. Use #1/2" alternating steel angle bar at various locations as required.
4. Use #1/2" alternating steel angle bar at various locations as required.
5. Use #1/2" alternating steel angle bar at various locations as required.

**LEGEND:**

- 1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
- Use #1/2" alternating steel angle bar at various locations as required.
NOTES:
1. SEE STRUCTURAL DRAWINGS FOR DETAILS OF SIGN SUPPORTS AND FIXTURE SUPPORT CHANNELS.
2. CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES ATTACHED TO ALUMINUM STRUCTURAL SUPPORTS SHALL BE PVC COATED. ALUMINUM PVC COATED GALVANIZED STEEL CONDUITS, CONDUIT FITTINGS, CLAMPS, AND APPURTENANCES SHALL BE UTILIZED WHERE ATTACHED TO STEEL STRUCTURAL SUPPORTS OR WHERE ATTACHED TO CONCRETE STRUCTURES UNLESS NOTED OTHERWISE HEREIN. JUNCTION BOXES, TERMINAL BLOCKS, AND JOINTS BETWEEN DISSIMILAR METALS SHALL BE COATED WITH AN APPROVED THREAD LUBRICANT.
3. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE.
4. INSTALL SURGE PROTECTION DEVICE IN ACCORDANCE WITH ARTICLE 1065 OF THE SUPPLEMENTAL SPECIFICATIONS.

SIGN WIRING DIAGRAM

FLASHING BEACON WIRING DIAGRAM

LUMINAIRE SUPPORT DETAIL

NO SCALE

ILLINOIS TOLLWAY

DATE
2-07-2012

REVISIONS
1. STANDARD H4-04
NOTES:
1. Pole cap to be removed and luminaire LED to be opened for placement of the cable assembly and put back in place. New cap screws shall be used.
2. The breaking strength of the assembled cable shall be 1,700 pounds minimum. Allow for 9" to 12" slack in the cable.
3. Aluminum tag with pole identification numbers as per special provisions.
4. Contractor shall route cable within luminaire in such a way that it does not become pinched between the mast arm and mounting bracket.
5. Cable loops shall be closed such that each end of the cable passes through clips in opposing directions.
6. Minimize slack within luminaire.

LIGHT STANDARD - TRUSS ARM
(TWIN TRUSS ARM SHOWN, TWIN MAST ARM SIMILAR)

DETAIL A
N.T.S.

CABLE TO BE Routed UNDER EXISTING MOUNTING BRACKETS AND ENCOMPASSING AT LEAST 2 BOLTS

DETAIL A
N.T.S.

STAINLESS STEEL CABLE CLIPS (TYP.) (SEE NOTE 5)

BOTTOM VIEW
N.T.S.

CABLE TO BE Routed UNDER EXISTING PLATE AND ENCOMPASSING AT LEAST 2 BOLTS

EXISTING MOUNTING BRACKET BOLTED TO LUMINAIRE HOUSING

STAINLESS STEEL CABLE CLIPS (TYP.) (SEE NOTE 5)

ALUMINUM ALLOY POLE CAP TO BE REMOVED AND LUMINAIRE LED TO BE OPENED FOR PLACEMENT OF THE CABLE ASSEMBLY AND PUT BACK IN PLACE. NEW CAP SCREWS SHALL BE USED.

THE BREAKING STRENGTH OF THE ASSEMBLED CABLE SHALL BE 1,700 POUNDS MINIMUM. ALLOW FOR 9" TO 12" SLACK IN THE CABLE.

ALUMINUM TAG WITH POLE IDENTIFICATION NUMBERS AS PER SPECIAL PROVISIONS.

CONTRACTOR SHALL ROUTE CABLE WITHIN LUMINAIRE IN SUCH A WAY THAT IT DOES NOT BECOME PINCHED BETWEEN THE MAST ARM AND MOUNTING BRACKET.

CABLE LOOPS SHALL BE CLOSED SUCH THAT EACH END OF THE CABLE PASSES THROUGH CLIPS IN OPPOSING DIRECTIONS.

MINIMIZE SLACK WITHIN LUMINAIRE.
LIGHT STANDARD - TRUSS ARM
(SINGLE TRUSS ARM SHOWN, SINGLE MAST ARM SIMILAR)

DETAIL A
N.T.S.

DETAIL B
(BRACKET CLAMPS OMITTED FOR CLARITY)
N.T.S.

NOTES:
1. POLE CAP TO BE REMOVED AND LUMINAIRE LED TO BE
   OPENED FOR PLACEMENT OF THE CABLE ASSEMBLY AND
   PLT BACK IN PLACE. NEW CAP SCREWS SHALL BE USED.
2. THE BREAKING STRENGTH OF THE ASSEMBLED CABLE
   SHALL BE 1,700 POUNDS MINIMUM. ALLOW FOR 9" TO 12"
   SLACK IN THE CABLE.
3. ALUMINUM TAG WITH POLE IDENTIFICATION NUMBERS AS
   PER SPECIAL PROVISIONS.
4. CONTRACTOR SHALL ROUTE CABLE WITHIN LUMINAIRE IN
   SUCH A MANNER THAT IT DOES NOT BECOME PINCHED
   BETWEEN THE MAST ARM AND MOUNTING BRACKETS.
5. CABLE LOOPS SHALL BE CLOSED SUCH THAT EACH END OF
   THE CABLE PASSES THROUGH CLIPS IN OPPOSING
   DIRECTIONS.
6. MINIMIZE SLACK WITHIN LUMINAIRE.
7. ALL PLATE EDGES SHALL BE SMOOTH.

CABLE TO BE ROUTED UNDER EXISTING MOUNTING BRACKETS AND
ENCOMPASSING AT LEAST 2 BOLTS

EXISTING MOUNTING BRACKETS TO SECURE
LUMINAIRE HOUSING TO MAST ARM

DETAIL A
N.T.S.

DETAIL B
(BRACKET CLAMPS OMITTED FOR CLARITY)
N.T.S.

PLATE ATTACHMENT DETAIL

STAINLESS STEEL
CABLE CLIPS (TYP.)

ALUMINUM ALLOY
POLE CAP SECURED TO POLE WITH THREE
1/4" HEX HEAD SCREWS
(SEE NOTE 2)

STAINLESS STEEL
ROUTE STEEL CABLE OUTSIDE
POLYETHYLENE TUBE
4"22/32" STAINLESS STEEL
PLATE TYPE 304 OR 316 WITH
7/16" HOLE MILE (SEE NOTE 7)

CABLE CLIPS (TYP.)
STAINLESS STEEL
FOR CLARITY)
(SEE NOTE 5)

CABLE CLIPS (TYP.)
STAINLESS STEEL
(SEE NOTE 3)

ALUMINUM ALLOY (TYP.)
TRUSS ARM, 6063-T6
TAPERED ELLIPTICAL
WALL THICKNESS

CABLE TO BE ROUTED UNDER EXISTING MOUNTING BRACKETS AND
ENCOMPASSING AT LEAST 2 BOLTS

EXISTING MOUNTING BRACKETS TO SECURE
LUMINAIRE HOUSING TO MAST ARM

DETAIL A
N.T.S.

CABLE TO BE ROUTED UNDER EXISTING
PLATE AND ENCOMPASSING AT LEAST
2 BOLTS

EXISTING MOUNTING BRACKET
ROTTED TO LUMINAIRE HOUSING

BOTTOM VIEW
N.T.S.

WALL THICKNESS
TAPERED TO 6" DIA. X 0.312"
POLE SHAFT, 10" DIA. SHAFT
ALUMINUM ALLOY 6063-T6

CABLE CLIPS (TYP.)
STAINLESS STEEL
(SEE NOTE 3)

ALUMINUM TAG (TYP.)
(SEE NOTE 1)

ALUMINUM ALLOY
POLE CAP SECURED TO POLE WITH THREE
1/4" HEX HEAD SCREWS
(SEE NOTE 2)

STAINLESS STEEL
ROUTE STEEL CABLE OUTSIDE
POLYETHYLENE TUBE
4"22/32" STAINLESS STEEL
PLATE TYPE 304 OR 316 WITH
7/16" HOLE MILE (SEE NOTE 7)

CABLE CLIPS (TYP.)
STAINLESS STEEL
FOR CLARITY)
(SEE NOTE 5)

CABLE CLIPS (TYP.)
STAINLESS STEEL
(SEE NOTE 3)

ALUMINUM ALLOY (TYP.)
TRUSS ARM, 6063-T6
TAPERED ELLIPTICAL
WALL THICKNESS

CABLE TO BE ROUTED UNDER EXISTING MOUNTING BRACKETS AND
ENCOMPASSING AT LEAST 2 BOLTS

EXISTING MOUNTING BRACKETS TO SECURE
LUMINAIRE HOUSING TO MAST ARM

DETAIL A
N.T.S.

CABLE TO BE ROUTED UNDER EXISTING
PLATE AND ENCOMPASSING AT LEAST
2 BOLTS

EXISTING MOUNTING BRACKET
ROTTED TO LUMINAIRE HOUSING

BOTTOM VIEW
N.T.S.
NOTES:

1. For details of fuse holders, pole base, wiring and conductor splice see Standard H2.

2. All reinforcement bars shall be epoxy coated.

3. All equipment shall be grounded and bonded in accordance with the National Electrical Code and the National Electrical Safety Code.

4. Pole shall be anchored and wired per detail for "Pedestal Wall Mounted Units" on light standard details (standard H2).

ELEVATION

PLAN

ANCHOR BOLT DETAIL

ILLINOIS TOLLWAY