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| <p><b>MINNESOTA DEPARTMENT OF TRANSPORTATION</b></p> <p><b>DEVELOPED BY:</b> Design Standards</p> <p><b>ISSUED BY:</b> Office of Program Management and Technical Support,<br/>Design Support Section</p> | <p><b>TRANSMITTAL LETTER NO. (14-03)</b></p> <p><b>MANUAL:</b> Standard Plates</p> <p><b>DATED:</b> June 4, 2014</p> |
| <p><b>SUBJECT: Standard Plates 8112, 8117, 8127 and 8128</b></p>  |  |

The following Standard Plates have been updated upon the recommendation of the Office of Traffic, Safety & Technology.

8112 - Pedestal Foundation (Traffic Control Signals)  
8117 - Precast Concrete Hand Hole with Vehicle Load  
8127 - Light Foundation - Design E, Precast and Cast In-Place, 40' Pole or Less  
8128 - Light Foundation - Design H, Precast and Cast In-Place, 49' Pole

See the associated Summary of Change document for specifics.

**INSTRUCTIONS:**

- Record the transmittal letter number, date, and subject on the transmittal record sheet located in the front of the manual. The previous Transmittal Letter No. issued for this manual was 14-02 dated April 21, 2014.
- Remove from the Standard Plate manual:
  - Standard Plate Index, Sheets 1-4 of 4, Numerical Index of Standard Plates (April 16, 2014)
  - Standard Plate 8112G, Pedestal Foundation (Traffic Control Signals) (December 20, 2011)
  - Standard Plate 8117F, Sheets 1-2 of 2, Precast Concrete Hand Hole (or Pullbox) (Revised 3-22-2013)
  - Standard Plate 8127C, Sheets 1-2 of 2, Light Foundation - Design E, 40' Pole or Less (Revised 3-22-2013)
  - Standard Plate 8128C, Sheets 1-2 of 2, Light Foundation - Design H, 49' Pole (Revised 3-22-2013)
- Insert into the Standard Plate manual:
  - Standard Plate Index, Sheets 1-4 of 4, Numerical Index of Standard Plates (May 27, 2014)
  - Standard Plate 8112H, Pedestal Foundation (Traffic Control Signals) (June 2, 2014)
  - Standard Plate 8117G, Precast Concrete Handhole With Vehicle Load (June 2, 2014)
  - Standard Plate 8127D, Sheets 1-2 of 2, Light Foundation - Design E, Precast/Cast In-Place, 40' Pole or Less (May 27, 2014)
  - Standard Plate 8128D, Sheets 1-2 of 2, Light Foundation - Design H, Precast/Cast In-Place, 49' Pole (May 27, 2014)
- Current Standard Plates including Transmittal Letters are available on the web at:

<http://standardplates.dot.state.mn.us/stdplate.aspx>
- Direct any technical questions regarding this transmittal to Tim Brown, Design Standards Unit at (651) 366-4613.

*Michael Elle*

Michael Elle, P.E.  
Design Standards Engineer

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**Summary of Changes**  
**Standard Plate 8112H – Pedestal Foundation (Traffic Control Signals)**  
**Transmittal Letter No. (14-03)**

General:

1. Plate number incremented from 8112G to 8112H
2. General note modified from: “A fiber forming tube may be used in forming a round foundation” to: “A fiber forming tube may be used in accordance with 2565.3F..”
3. Note 3 partially modified from: “Conduit per spec. 3801 or 3803.” To: “Rigid steel conduit per spec 3801 or rigid PVC conduit per spec 3803.”
4. Note 2 modified to remove “X 18” MIN.” on the anchor rods.
5. New note added: *End bell fitting on conduit ends shall be included per spec. 2565.3D.*

Side Section Detail:

1. The Contractors Option of a square pedestal was removed from the dimension.
2. Ground Rod dimension added.

Top View Detail:

1. The square pedestal option was removed.

Anchor Rod Detail:

1. Anchor rod modified to galvanized full length.
  - a. “14” Min. Galvanized” label removed.
  - b. “Full Length Galvanized” label added.

**Summary of Changes**  
**Standard Plate 8117G – Precast Concrete Hand Hole with Vehicle Load**  
**Transmittal Letter No. (14-03)**

General:

1. Plate 8117F, Sheet 1 of 2, (Precast Concrete Hand Hole (or Pullbox) No Vehicle Load) is removed.
2. Plate 8117F, Sheet 2 of 2, (Precast Concrete Hand Hole (or Pullbox) With Vehicle Load) is renamed to 8117G (Sheet 1 of 1) (Precast Concrete Hand Hole With Vehicle Load)

Notes:

Note 2 has been modified: *PLACE 4' X 4' X 1' COURSE FILTER AGGREGATE, SPEC. 3149 UNDER FOOTING.*

The following general notes have been added:

- The entire assembly shall be listed and labeled in accordance with the latest version of ANSI/SCTE 77 for AASHTO H 20 deliberate vehicular traffic applications.
- Metal frame and cover shall be independently grounded in accordance with the National Electrical Code (NEC) 314.30.
- Excavations and backfilling shall be in accordance with 2451.
- F&I hand hole in accordance with 2565.3E.
- F&I conduits in accordance with 2565.3D.
- F&I end bell fittings on Rigid PVC conduit in accordance with 2565.3D.5b.
- Emboss “MnDOT Signals” on the cover for traffic signal control projects.
- Emboss “MnDOT Lighting” on the cover for roadway lighting projects.
- Emboss “MnDOT TMS” on the cover or ITS projects.

Type HD – Metal Frame and Cover Detail:

1. Some dimensions modified.

Precast Concrete Box Detail:

1. Metal Frame added/shown for clarity purposes.

**Summary of Changes**  
**Standard Plate 8127D**  
**Light Foundation– Design E Precast 40 Ft. Pole or Less,**  
**Light Foundation– Design E Cast In-Place 40 Ft. Pole or Less**  
**Transmittal Letter No. (14-03)**

General:

1. Plate number incremented from 8127C to 8127D.
2. Plate name changed from: *Light Foundation – Design E* to *Light Foundation – Design E Precast* (Sheet 1 of 2), and : *Light Foundation – Design E to Light Foundation Cast In-place* (Sheet 2 of 2).

Sheet 1 of 2

Notes

1. New general notes added: “Precast foundation facility must be in compliance with certified plant requirements of Spec. 3238.” and “Open end of conduits shall be sealed with an approved sealing compound”
2. Minor clarification/modifications on other general notes.
3. Note 4 modified to incorporate “below ground line”.

Plan Precast Foundation Detail

1. Detail clarified to show stub out with end bell, and showing coupling flush with sidewall of foundation.
2. “Light base” language replaced with “light pole base”.

Elevation Precast Foundation Detail

1. Detail clarified to show conduit end bells, stub out with end bells, and showing coupling flush with sidewall of foundation.
2. Ground line modified to be flush with foundation.

Anchor Rod Detail

1. Note 5 added to clarify washers and heavy hex nuts when aluminum poles are used.

Sheet 2 of 2

Notes

1. New general note added: “Open end of conduits shall be sealed with an approved sealing compound”
2. General note removed: “An alternate precast base manufactured at a facility.....with the Engineers approval.”
3. Minor clarification/modifications on other general notes.

Plan Detail

1. “Cast In Place” language removed from detail title.
2. Detail clarified to show end bell.
3. “Light base” language replaced with “light pole base”.

#### Elevation Cast In Place Foundation Detail

1. Detail clarified to show conduit end bells, and stub out with end bells.
2. Ground line modified to be flush with foundation.

#### Anchor Rod Detail

1. Note 4 added to clarify washers and heavy hex nuts when aluminum poles are used.

**Summary of Changes**  
**Standard Plate 8128D**  
**Light Foundation – Design H Precast 49 Ft. Pole**  
**Light Foundation – Design H Cast In-Place 49 Ft. Pole**  
**Transmittal Letter No. (14-03)**

General:

1. Plate number incremented from 8128C to 8128D.
2. Plate name change from: *Light Base – Design H – 49 Ft. Pole* to *Light Foundation – Design H – Precast 49 Ft. Pole* (Sheet 1 of 2) and to *Light Foundation – Design H –Cast In-Place 49 Ft. Pole* (Sheet 1 of 2).

Sheet 1 of 2

Notes

1. New general notes added: “Precast foundation facility must be in compliance with certified plant requirements of Spec. 3238.” and “Open end of conduits shall be sealed with an approved sealing compound”
2. General noted removed: “Foundations may be augured.....forming will be required.”
3. Note 5 modified to incorporate “below ground line”.

Plan Detail

1. “Precast” language removed from detail title.
2. Detail clarified to show stub out with end bell, and showing coupling flush with sidewall of foundation.
3. “Light base” language replaced with “light pole base”.

Elevation – Precast Foundation Detail

1. Detail clarified to show conduit end bells, stub out with end bells, and showing coupling flush with sidewall of foundation.
2. Ground line modified to be flush with foundation.

Anchor Rod Detail

1. Note 6 added to clarify washers and heavy hex nuts when aluminum poles are used.

Sheet 2 of 2

Notes

1. New general note added: “Open end of conduits shall be sealed with an approved sealing compound”
2. Minor clarification/modifications on other general notes

Plan Detail

1. “Cast In Place” language removed from detail title.
2. Detail clarified to show end bells.
3. “Light base” language replaced with “light pole base”.

Elevation – Cast in Place Foundation Detail

1. Ground rod maximum projection dimension modified to 3”.
2. Detail clarified to show conduit end bells, stub out with end bells.
3. Ground line modified to be flush with foundation.

Anchor Rod Detail

2. Note 5 added to clarify washers and heavy hex nuts when aluminum poles are used.



# STANDARD PLATES

|   |             |
|---|-------------|
| BLANK .....                             | 0000 SERIES |
| PAVEMENT .....                          | 1000 SERIES |
| BLANK .....                             | 2000 SERIES |
| CULVERTS AND APPURTENANCES .....        | 3000 SERIES |
| SEWER APPURTENANCES .....               | 4000 SERIES |
| EROSION CONTROL STRUCTURES.....         | 5000 SERIES |
| BLANK .....                             | 6000 SERIES |
| CURB, CURB AND GUTTER, SIDEWALK.....    | 7000 SERIES |
| BARRICADES, SIGNALS, MARKERS, ETC. .... | 8000 SERIES |
| MISCELLANEOUS.....                      | 9000 SERIES |

**PLATE NO.**

**0000 SERIES—BLANK**

**1000 SERIES—PAVEMENT**

- 1070M Supplemental Pavement Reinforcement
- 1103K Typical Dowel Bar Assembly
- 1150R Concrete Header Joints
- 1210G Concrete Pavement Adjacent to Railway Crossing

**2000 SERIES—BLANK**

**3000 SERIES—CULVERTS AND APPURTENANCES**

- 3000L Reinforced Concrete Pipe (5 Sheets)
- 3001B Reinforced Concrete Reducer Pipe
- 3002B Reinforced Concrete Increaser Pipe
- 3006G Gasket Joint for R.C. Pipe (2 Sheets)
- 3007E Shear Reinforcement for Precast Drainage Structures
- 3014J Reinforced Concrete Pipe Arch (2 Sheets)
- 3020F Reinforced Precast Concrete Cattle Pass (60" & 72")
- 3022C Precast Concrete Safety Apron (3 Sheets)
- 3030A Precast Cattle Pass Transition Section
- 3031B Connection between Existing 4 Ft. X 6 Ft. Cattle Pass and New Precast Transition Section
- 3040F Corrugated Metal Pipe Culvert (Standard 2-2/3" x 1/2" Corrugation)
- 3041D Corrugated Metal Pipe (3" x 1" Corrugation)
- 3050B Design Data Structural Plate Structures (18" Corner Radius)
- 3051B Design Data Structural Plate Structures (31" Corner Radius)
- 3065C Connection between Existing Culv. & New "C" Culv. Barrel (2 Sheets)
- 3066A C.M. Extension for Box Culvert
- 3100G Concrete Apron for Reinforced Concrete Pipe
- 3110G Concrete Apron for Reinforced Concrete Pipe-Arch
- 3114H Sectional Concrete Apron for Reinforced Concrete Pipe-Arch
- 3122K Metal Apron for C.M. Pipe-Arch Culvert
- 3123J Metal Apron for C.S. Pipe
- 3124B Metal Apron Connection
- 3125A Inlet Protection for Metal Culverts (90" dia. to 96" dia.)
- 3126B Inlet Protection for Structural Plate Pipe (60" thru 96" dia. or span)
- 3127A Inlet Protection for Structural Plate Pipe (102" thru 180" dia. or span)

**PLATE NO.**

|       |   |
|-------|---|
| 3128H | Metal Safety Apron & Grate (2 Sheets)   |
| 3129A | Metal Apron for Corrugated Polyethylene Pipe (Use at Entrances and Driveways) |
| 3131C | Precast Concrete Headwall for Subsurface Drains                               |
| 3132A | Grate for 1:4 Precast Concrete Aprons   |
| 3133D | Riprap at RCP Outlets   |
| 3134D | Riprap at CSP Outlets   |
| 3135A | Hand-Placed Riprap at Precast Concrete Cattle Pass                            |
| 3136B | Slotted Vane Drain for P.V.C. Pipe  |
| 3137B | Slotted Drain for 12" thru 30" Dia. C.M. Pipe (Stackable)                     |
| 3138B | Slotted Drain for 12" thru 30" Dia. C.M. Pipe (Not Stackable)                 |
| 3139B | Riprap at Precast Concrete End Sections                                       |
| 3142A | Outlet Screen for C.M. & S.C. Pipes   |
| 3143C | Inspection Tees   |
| 3145G | Concrete Pipe or Precast Culvert Ties   |
| 3146C | Anti-Seepage Diaphragm (For CMP and CMP-A)                                    |
| 3148A | Safety Slope Metal End Section for Circular & Arched Pipes (2 Sheets)         |
| 3221C | Corrugated Steel Pipe Coupling Band (3 Sheets)                                |

**4000 SERIES--SEWER APPURTENANCES**

## Drainage Structure and Castings (4 Sheets)

- Structure and Casting Combinations
- Standard Casting Assemblies
- List of Castings
- List of Drainage Structures

|       |   |
|-------|---|
| 4000J | Manhole or Catch Basin (Masonry, Field Constructed) - Design A                        |
| 4002F | Manhole or Catch Basin (Masonry, Field Construction) - Design C                       |
| 4003B | 30" Precast Catch Basin – Design N  |
| 4005M | Manhole or Catch Basin Type A & B Cone Sections Precast - Design F                    |
| 4006L | Manhole or Catch Basin Precast - Designs G and H                                      |
| 4007C | Precast Mechanical Joint Sewer Manhole  |
| 4008E | Catch Basin (Sectional Concrete Pipe) - Design I                                      |
| 4009H | Manhole or Catch Basin (Sectional Concrete Pipe) - Design J                           |
| 4010H | Concrete Short Cone & Adjusting Ring (Sectional Concrete)                             |
| 4011E | Precast Concrete Base   |
| 4017C | Catch Basin (Concrete Pipe and Metal Pipe) - Designs PC and PM                        |
| 4018B | Manhole or Catch Basin (Reducer Cone Section Precast) Design D                        |
| 4020J | Manhole or Catch Basin (For Use With or Without Traffic Loads) (2 sheets)             |
| 4021F | Precast Curb Opening Catch Basin  |
| 4022A | Manhole or Catch Basin Cover (3 ft. X 2 ft. Opening)                                  |
| 4024A | 48" Dia. Precast Shallow Depth Catch Basin - Design SD                                |
| 4025B | Drop Inlets or Catch Basins - Design DI (Concrete & Metal)                            |
| 4026A | Concrete Encased Concrete Adjusting Rings   |
| 4101D | Ring Casting For Manhole or Catch Basin   |
| 4108F | Adjusting Rings for Catch Basins and Manholes   |
| 4110F | Cover Casting for Manhole (For Use in all Traffic Areas) – Casting No. 715 and 716    |
| 4125D | Catch Basin Frame Casting (For Square Grate) – Casting No. 806                        |
| 4126F | Catch Basin Frame Casting – Casting No. 801   |
| 4129G | Catch Basin Frame Casting (For Square Grate) - Casting No. 802A                       |
| 4132F | Catch Basin Frame Casting (For Square Grate) – Casting No. 805                        |
| 4133A | Curb Box Casting for Catch Basin - Casting No. 824                                    |
| 4134A | Curb Box Casting for Catch Basin (For Design B Curbs) - Casting No. 825               |
| 4140D | Special Grate Castings for Catch Basin (Convex and Concave) - Casting No. 720 and 721 |
| 4143E | Stool Grate & Concrete Frame (Median Drains) - Casting No. 731                        |
| 4149C | Grate Casting for Catch Basin - Casting No. 810                                       |

**PLATE NO.**

- 4150C Grate Casting for All Pipe Drainage Structures
- 4151B Grate Casting for Catch Basin (Square Type) - Casting No. 811
- 4152C Catch Basin Grate Casting - Casting No. 814A
- 4153A Catch Basin Grate Casting - Casting No. 815
- 4154B Catch Basin Grate Casting - Casting No. 816
- 4160D Curb Box Casting for Catch Basin - Casting No. 823A and 833A
- 4161F Curb Box Casting for Catch Basin - Casting No. 821B, 822 and 831A
- 4180J Manhole or Catch Basin Step

**5000 SERIES--EROSION CONTROL STRUCTURES**

- 5010A Reinforced Concrete Pipe Energy Dissipater

**6000 SERIES -- Blank**

**7000 SERIES--CURB, CURB AND GUTTER, SIDEWALK**

- 7000E Integrant Curbs (Design B, Design V and Design D)
- 7020K Concrete Curb (Design B, Design V, Design S, Design DR and Design BR) (2 Sheets)
- 7035N Concrete Walk & Curb Returns at Entrances
- 7038A Detectable Warning Surface Truncated Domes
- 7065C Bituminous Curb
- 7100H Concrete Curb and Gutter (Design B and Design V)
- 7102J Concrete Curb and Gutter (Designs D, S, B4, B5 and D3) (2 Sheets)
- 7105C Concrete Median (Mountable Type)
- 7107I Entrance Nose (Urban Design)
- 7108G Exit Nose (Urban Design)
- 7109C Median Nose and Island (Undivided to Divided Roadway)
- 7111J Installation of Catch Basin Castings (Concrete Curb and Gutter)
- 7112C Installation & Reinforcement of Catch Basin & Manhole Castings (Concrete Integrant Curbs)
- 7113A Concrete Approach Nose Detail

**8000 SERIES -- BARRICADES, SIGNALS, MARKERS, ETC.**

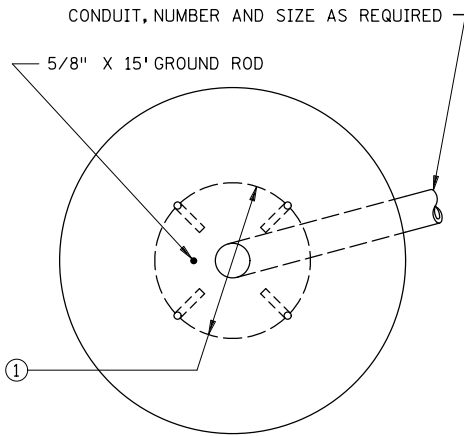
- 8000I Standard Barricades
- 8002G Permanent Barricade
- 8105B Equipment Pad A (Cast-in-Place or Precast)
- 8106B Equipment Pad B (Cast-in-Place or Precast)
- 8110E Traffic Signal Bracketing (Pole Mounted)
- 8111E Traffic Signal Bracketing (Pedestal Mounted) (3 Sheets)
- 8112G Pedestal Foundation (Traffic Control Signals)
- 8114A P.V.C. Handhole/Pullbox (No Vehicle Load) (2 Sheets)
- 8117G Precast Concrete HandHole With Vehicle Load
- 8118D Service Equipment & Pole Traffic Control Signals
- 8119C Ground Mounted Cabinet Foundation
- 8120P Pole Foundation (PA85)
- 8121H Transformer Base and Pole Base Plate (PA85, PA90 and PA100) (2 Sheets)
- 8122F Pedestal and Pedestal Base (For Traffic Control Signals Support) (2 Sheets)
- 8123G Pole and Mast Arm Luminaires and Traffic Lights Assembly (For All Pole Types) (2 Sheets)
- 8126K Pole Foundation (PA90 and PA100)
- 8127D Light Foundation - Design E, Precast/Cast-In-Place, 40 ft. Pole or Less (2 Sheets)
- 8128D Light Foundation - Design H, Precast/Cast-In-Place, 49 ft. Pole (2 Sheets)

**PLATE NO.**

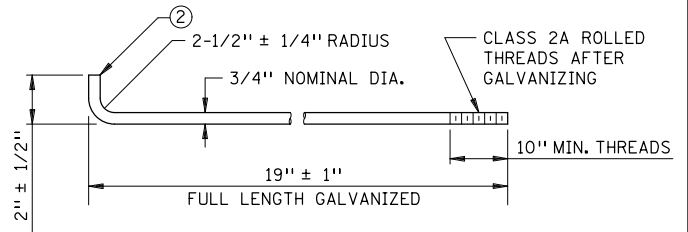
8129A Shim and Washer (Traffic Control Signals and Roadway Lighting)  
8130E Saw Cut Loop Detectors  
8132B Preformed Rigid PVC Conduit Loop Detector (3 Sheets)  
8133A Pole and Mast Arm - Type BA (9 Sheets)  
8134B Pole Foundation - Type BA (4 Sheets)  
8150C Installation of Culvert Markers  
8307S W-Beam Guardrail & End Anchorages (Installation with Wood Posts) (4 Sheets)  
8308A Reinforced Concrete Median Barrier Type F (Non-Glare Screen Type) Design 8308 (3 Sheets)  
8309A Reinforced Concrete Median Barrier Type F & Glare Screen Design 8309 (3 Sheets)  
8316C Post Seat for Anchorage on Footing or Box Culverts  
8318C Guardrail Anchorage Plate for Bridges and BCT'S  
8326D Flexible Plastic Glare Screen  
8329I Eccentric Loader Breakaway Cable Terminal (ELT) (4 Sheets)  
8330G 3-Cable Guardrail (With Wood Posts) (Assembly Details) (2 Sheets)  
8331B 3-Cable Guardrail (With Steel Posts) (3 Sheets)  
8332C Anchor Bolt Cluster for Light Poles  
8333B 3-Cable Guardrail Anchor (Anchor Details) (4 Sheets)  
8337C Temporary Portable Precast Concrete Barrier (Type "F") (3 Sheets)  
8338D W-Beam Guardrail & End Anchorages (Installation with Steel Posts) (4 Sheets)  
8339A 3-Cable (Steel Posts) to W Beam (Wood Posts) Guardrail Transition  
8340A 3-Cable (Steel Posts) to W Beam (Steel Posts) Guardrail Transition  
8342A High-Tension Cable Barrier Line Post Foundation Concrete Design  
8347A Portable Precast Concrete Barrier Anchors  
8350A Thrie Beam Anchorage Plate  
8400E Pipe Railing  
8401C At Grade Pipe Railing (Adjacent to Sidewalk)

**9000 SERIES--MISCELLANEOUS**

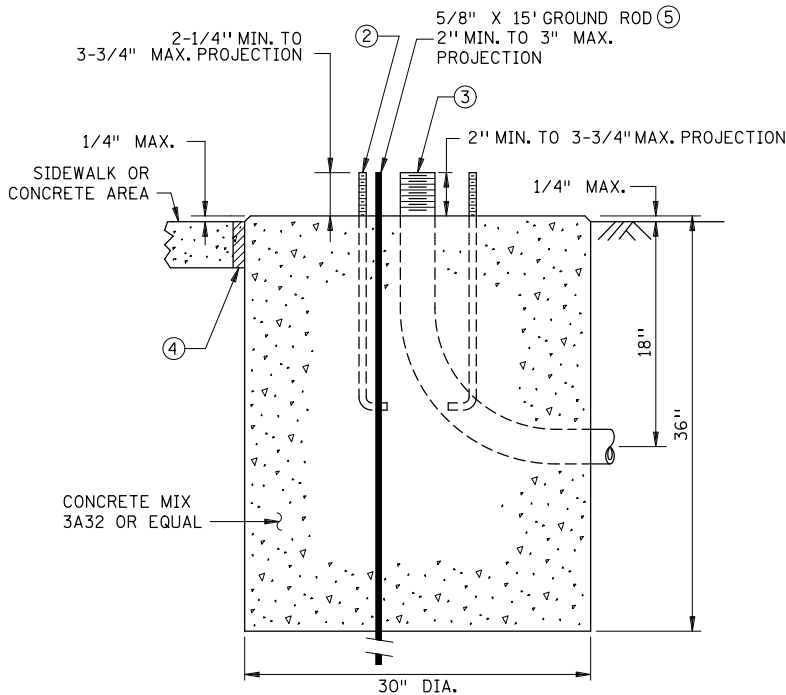
9000E Approaches and Entrances - Recommended Standards  
9101B Shaping and Sodding of Slopes at Box Culvert Ends  
9102E Turf Establishment Areas (At Pipe Culvert Ends)  
9303B Geodetic Survey Disks (Aluminum) (2 Sheets)  
9308A Survey Monument Cap (2 Sheets)  
9309G PLS (Public Land Survey) Monument (2 Sheets)  
9320G Woven Wire Fence (Wood Post)  
9321E Woven Wire Fence (Steel Post)  
9322K Chain Link Fence (2 Sheets)  
9323D Barbed Wire Fence (Wood Post)  
9324C Barbed Wire Fence (Steel Post)  
9350A Mailbox Support (Swing-Away Type)



TOP VIEW



ANCHOR ROD DETAIL  
(SPEC. 3385 TYPE A)



SIDE SECTION

NOTES:

SIZE OF FOUNDATION MAY BE CHANGED IN THE PLANS OR SPECIAL PROVISIONS, OR IN THE FIELD AS DIRECTED BY THE ENGINEER.

A FIBER FORMING TUBE MAY BE USED IN ACCORDANCE WITH 2565.3F.

THE UPPER PART OF THE FOUNDATION SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER IN THE FIELD.

THE OPEN END OF ALL CONDUIT INTO THE FOUNDATION SHALL BE CAPPED UNTIL CABLES ARE PLACED.

ALL BACKFILLING AROUND THE FOUNDATION MUST BE IN ACCORDANCE WITH 2451.

ALL EXCAVATIONS MUST BE PROPERLY COMPACTED IN ACCORDANCE WITH 2451.

ANTI-SEIZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.

END BELL FITTINGS ON CONDUIT ENDS SHALL BE INCLUDED PER SPEC. 2565.3D.

- ① 4 ANCHOR RODS EQUALLY SPACED ON 12-3/4" BOLT CIRCLE POSITIONED SUCH THAT THE PEDESTAL BASE ACCESS DOOR IS CONVENIENTLY LOCATED ON THE SIDE AWAY FROM TRAFFIC (IF POSSIBLE).
- ② FOUR (4) 3/4" DIA. ANCHOR RODS, NUTS AND WASHERS PER SPEC. 3385 (TYPE A), OR APPROVED PEDESTAL MANUFACTURERS' EQUAL. THE WASHERS SHALL BE PER SPEC. 3832.2G3, EXCEPT THAT THE DIMENSIONS OF THE WASHERS SHALL BE ONE OF OPTIONS SHOWN ON STANDARD PLATE 8129.
- ③ RIGID STEEL CONDUIT PER SPEC. 3801 OR RIGID PVC CONDUIT PER SPEC. 3803. SIZE AND NUMBER AS REQUIRED IN PLANS OR SPECIAL PROVISIONS.
- ④ PREFORMED JOINT FILLER BETWEEN FOUNDATION AND SIDEWALK OR CONCRETE AREA
- ⑤ WHEN IN CONTACT WITH ROCK, GROUND RODS SHOULD BE PLACED AS SPECIFIED IN CURRENT NATIONAL ELECTRICAL CODE (NEC)

|                         |  |
|-------------------------|--|
| PLANS SYMBOL            |  |
| TRAFFIC SIGNAL PEDESTAL |  |

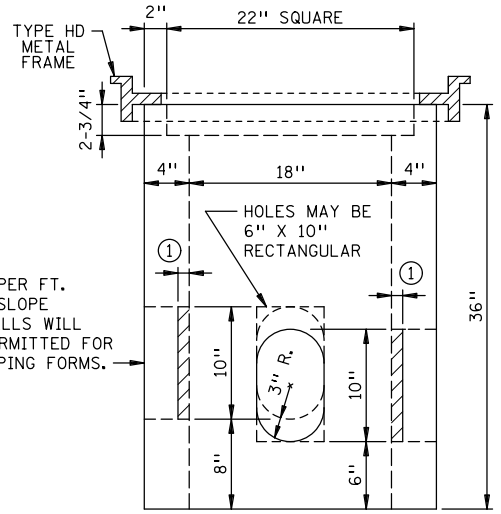
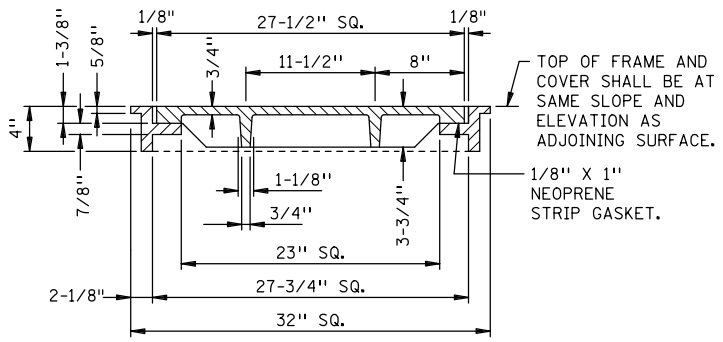
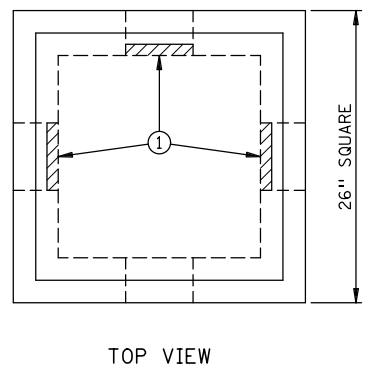
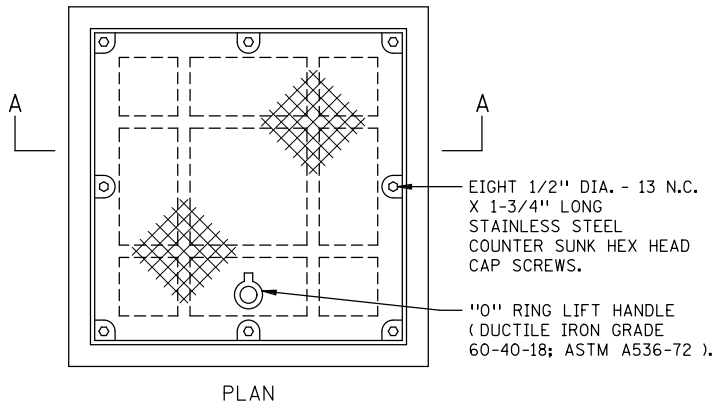
APPROVED          JUNE 2, 2014           
  
 STATE DESIGN ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**PEDESTAL FOUNDATION**  
 (TRAFFIC CONTROL SIGNALS)

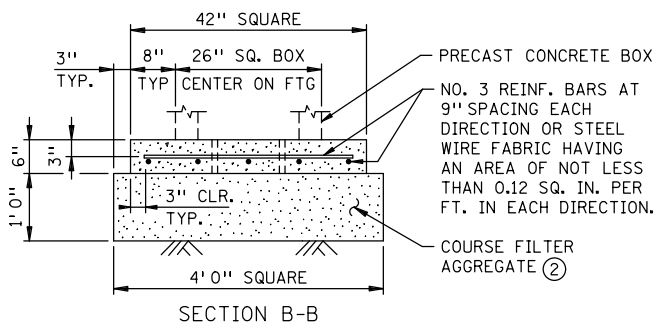
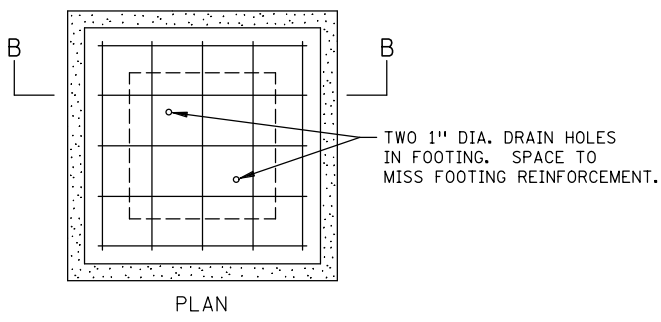
SPECIFICATION  
 REFERENCE  
 2461  
 2565

STANDARD  
 PLATE  
 NO.  
 8112H

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TYPE HD - METAL FRAME AND COVER SPEC. 3321



1" HD" CONCRETE FOOTING

- NOTES:
- TYPE HD METAL FRAMES AND COVERS SHALL BE COATED WITH MANUFACTURER'S SHOP COAT OF ASPHALT PAINT.
  - AFTER HANDHOLE AND CONDUIT INSTALLATION, ALL INSIDE HANDHOLE SIDE WALLS SHALL BE MADE WATER TIGHT BY PATCHING WITH CONCRETE TO THE SATISFACTION OF THE ENGINEER.
  - FOOTING MAY BE PRECAST OR CAST-IN-PLACE.
  - METAL FRAME AND COVER SHALL BE INDEPENDENTLY GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) 314.30.
  - EXCAVATIONS AND BACKFILLING SHALL BE IN ACCORDANCE WITH 2451.
  - F&I HANDHOLE IN ACCORDANCE WITH 2565.3E.
  - F&I CONDUITS IN ACCORDANCE WITH 2565.3D.
  - F&I END BELL FITTINGS ON RIGID PVC CONDUIT IN ACCORDANCE WITH 2565.3D.
  - EMBOSS "MnDOT SIGNALS" ON THE COVER FOR TRAFFIC SIGNAL CONTROL PROJECTS.
  - EMBOSS "MnDOT LIGHTING" ON THE COVER FOR ROADWAY LIGHTING PROJECTS.
  - EMBOSS "MnDOT TMS" ON THE COVER FOR ITS PROJECTS.
  - ① 1" ± 1/4" CONCRETE ON INSIDE WALL OF ACCESS HOLES TO BE KNOCKED OUT AS NEEDED. A 3/4" HOLE IS PERMITTED IN KNOCKOUT WALLS FOR INSTALLATION.
  - ② PLACE 4' X 4' X 1' COARSE FILTER AGGREGATE, SPEC. 3149 UNDER FOOTING.

APPROVED          JUNE 2, 2014         

*Christina Ry*

STATE DESIGN ENGINEER

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION

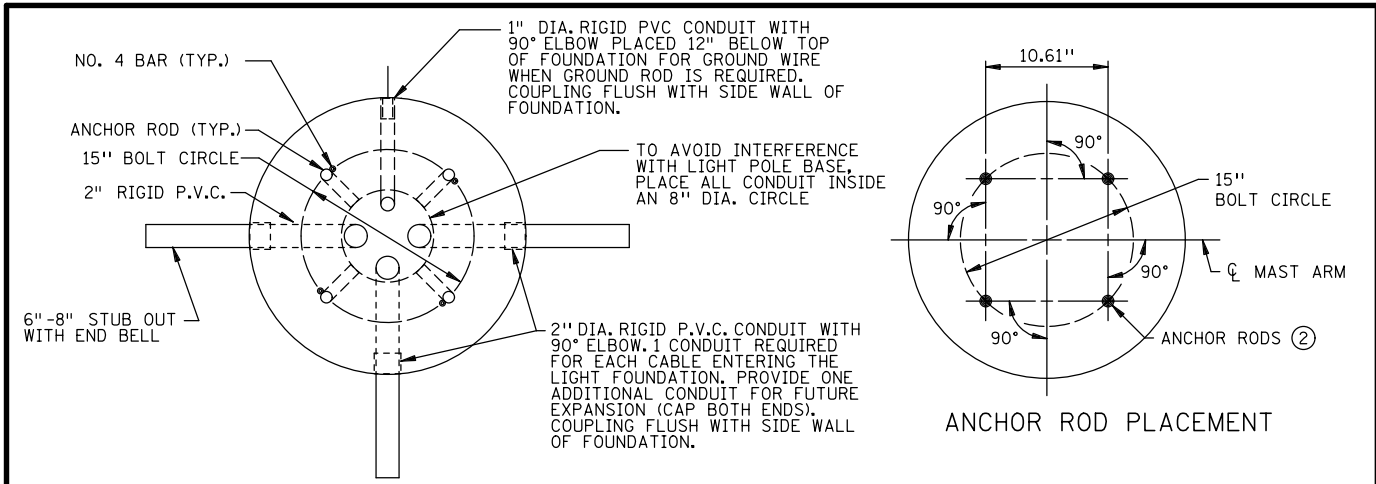
PRECAST CONCRETE HANDHOLE  
WITH VEHICLE LOAD

SPECIFICATION  
REFERENCE  
3622

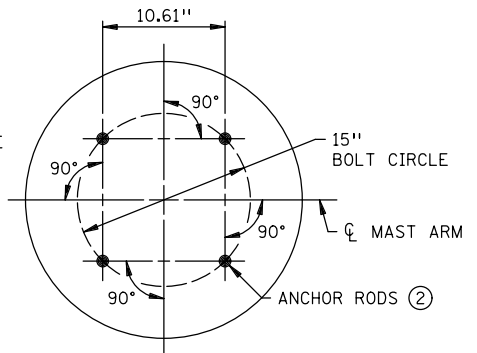
STANDARD  
PLATE  
NO.  
8117G

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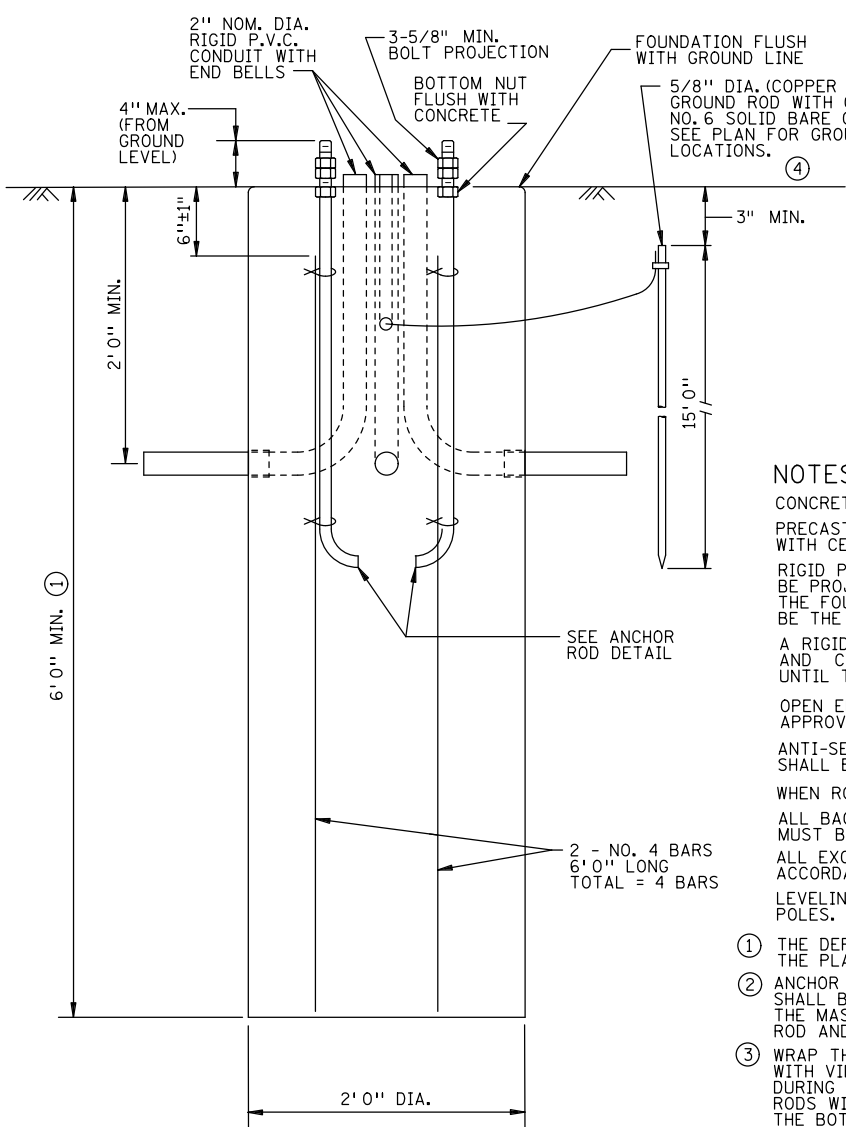




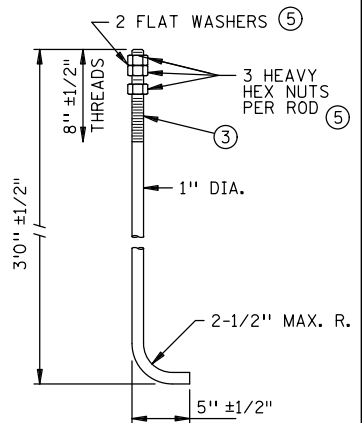
PLAN



ANCHOR ROD PLACEMENT



ELEVATION  
PRECAST FOUNDATION



ANCHOR ROD DETAIL  
4 REQUIRED (2)

NOTES:

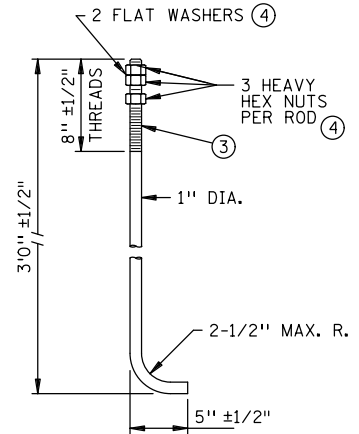
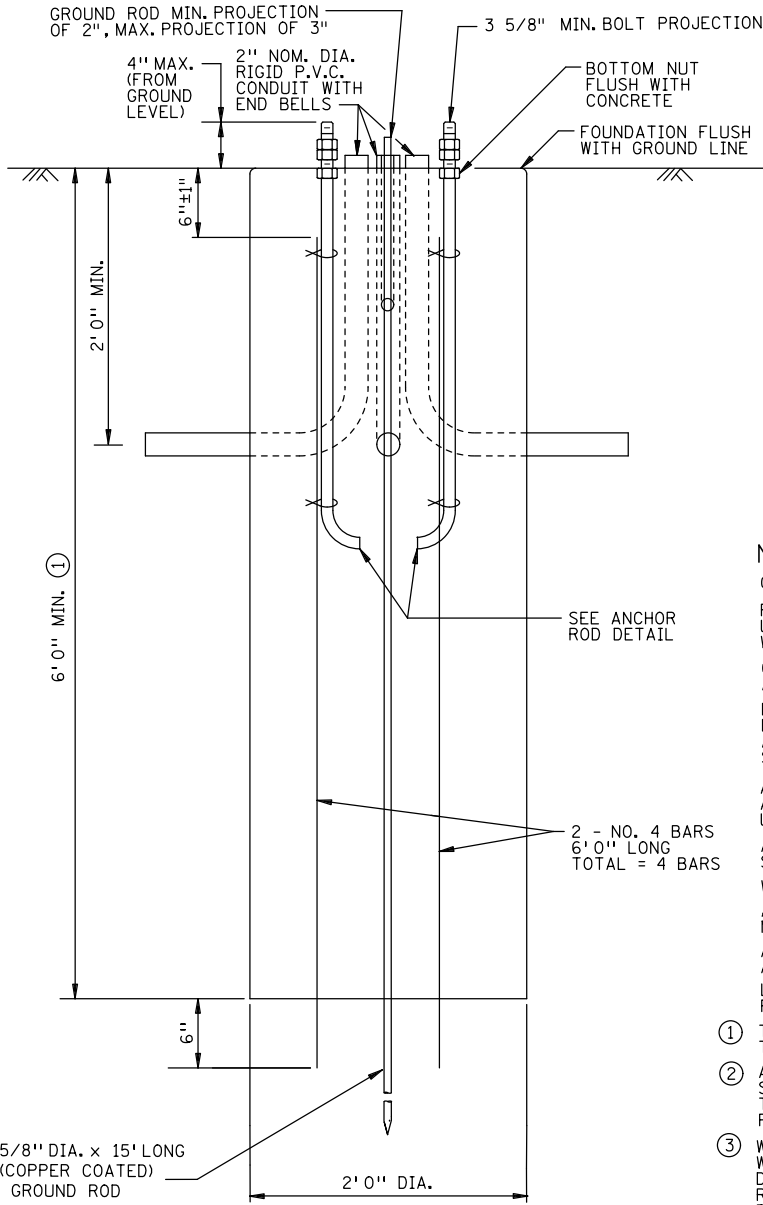
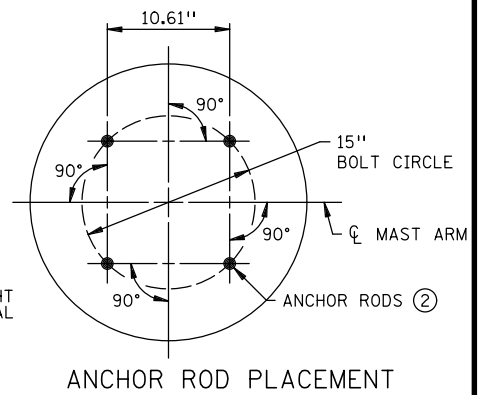
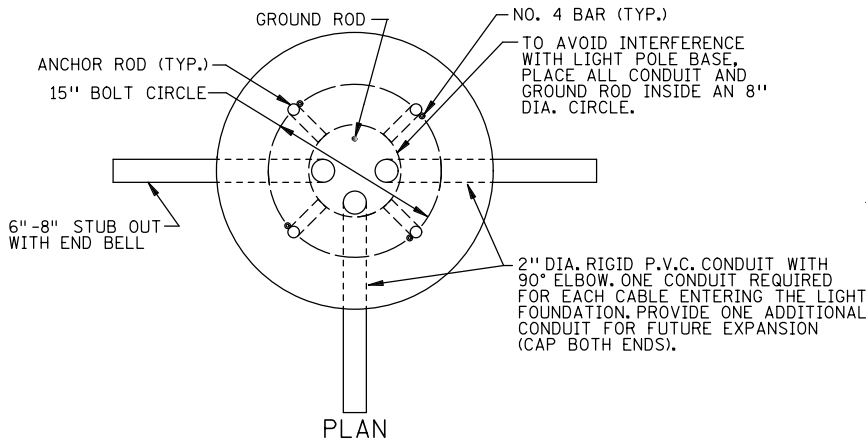
- CONCRETE SHALL BE MIX NO. 3Y43.
- PRECAST FOUNDATION FACILITY MUST BE IN COMPLIANCE WITH CERTIFIED PLANT REQUIREMENT OF SPEC. 3238.
- RIGID P.V.C. CONDUIT PER SPEC. 3803 WITH END BELLS SHALL BE PROJECTED A MINIMUM 1/4" TO MAXIMUM 1" ABOVE THE FOUNDATION BEFORE MORTAR IS PLACED AND SHALL BE THE SIZE AND NUMBER SHOWN IN THE PLAN.
- A RIGID TEMPLATE SHALL BE PROVIDED FOR ANCHOR ROD AND CONDUIT PLACEMENT AND SHALL BE LEFT IN PLACE UNTIL THE CONCRETE HAS SET.
- OPEN ENDS OF CONDUITS SHALL BE SEALED WITH AN APPROVED SEALING COMPOUND.
- ANTI-SEIZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.
- WHEN ROCK IS ENCOUNTERED, SEE PLAN DETAILS.
- ALL BACKFILLING AND EXCAVATION AROUND FOUNDATION MUST BE IN ACCORDANCE WITH 2451 AND 2545.3.
- ALL EXCAVATIONS MUST BE PROPERLY COMPACTED IN ACCORDANCE WITH 2451.
- LEVELING SHIMS SHALL BE USED WHEN PLACING ALUMINUM POLES. SEE STANDARD PLATE 8129.
- (1) THE DEPTH OF THE FOUNDATION MAY VARY IN THE PLANS OR SPECIAL PROVISIONS.
- (2) ANCHOR RODS, NUTS, AND WASHERS PER SPEC. 3385, TYPE A, SHALL BE PLACED AT RIGHT ANGLES TO THE DIRECTION OF THE MAST ARM. GALVANIZE THE TOP 1 FT. OF THE ANCHOR ROD AND NUTS PER SPEC. 3392.
- (3) WRAP THREADS OF ANCHOR RODS ABOVE THE BOTTOM NUT WITH VINYL ELECTRICAL TAPE TO AVOID CONTAMINATION DURING CONCRETE POURING. WRAP THREADS OF ANCHOR RODS WITH 3 LAYERS OF VINYL ELECTRICAL TAPE 2" BELOW THE BOTTOM NUTS.
- (4) GROUND ROD MUST BE ADDED 3" TO 6" DEEP BELOW GROUND LINE AND WITHIN 1' OF FOUNDATION.
- (5) USE 1 HOLDDOWN WASHER AND 2 HEAVY HEX NUTS PER ROD FOR ALUMINUM POLE INSTALLATION.

APPROVED MAY 27, 2014  
  
 STATE DESIGN ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**LIGHT FOUNDATION - DESIGN E  
 PRECAST**  
 40 FT. POLE OR LESS

SPECIFICATION  
 REFERENCE  
 2545

STANDARD  
 PLATE  
 NO.  
**8127D**  
 1 OF 2



4 REQUIRED ②

**NOTES:**

- CONCRETE SHALL BE MIX NO. 3Y43.
- FOUNDATIONS MAY BE CONSTRUCTED IN AUGERED HOLES UNLESS THE NATURAL SOILS WILL NOT STAND OPEN, IN WHICH CASE FORMING WILL BE REQUIRED.
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- ④ USE 1 HOLDDOWN WASHER AND 2 HEAVY HEX NUTS PER ROD FOR ALUMINUM POLE INSTALLATION.

APPROVED MAY 27, 2014

*Christina Ky*

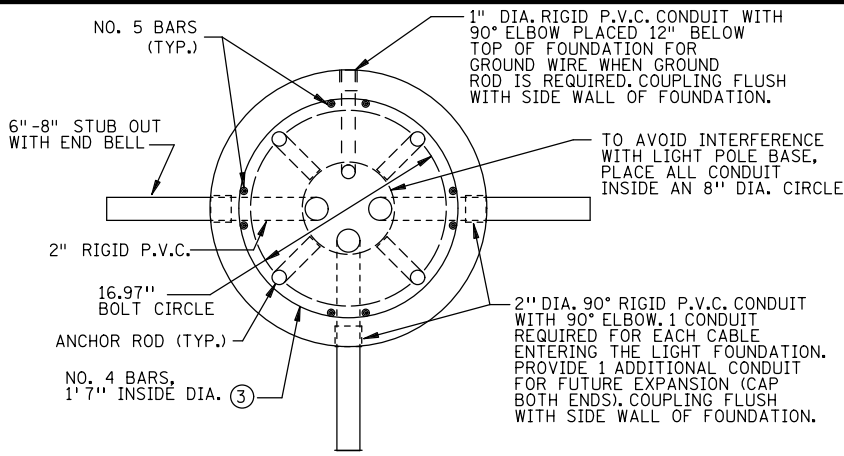
STATE DESIGN ENGINEER

STATE OF MINNESOTA  
DEPARTMENT OF TRANSPORTATION

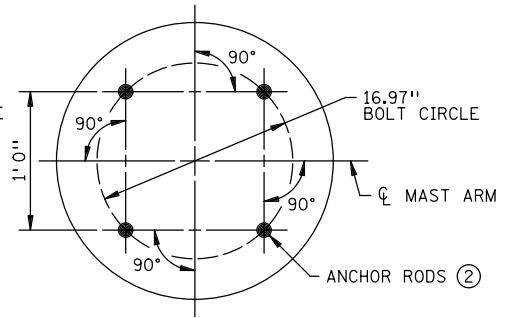
**LIGHT FOUNDATION - DESIGN E**  
**CAST IN-PLACE**  
40 FT. POLE OR LESS

SPECIFICATION  
REFERENCE  
2545

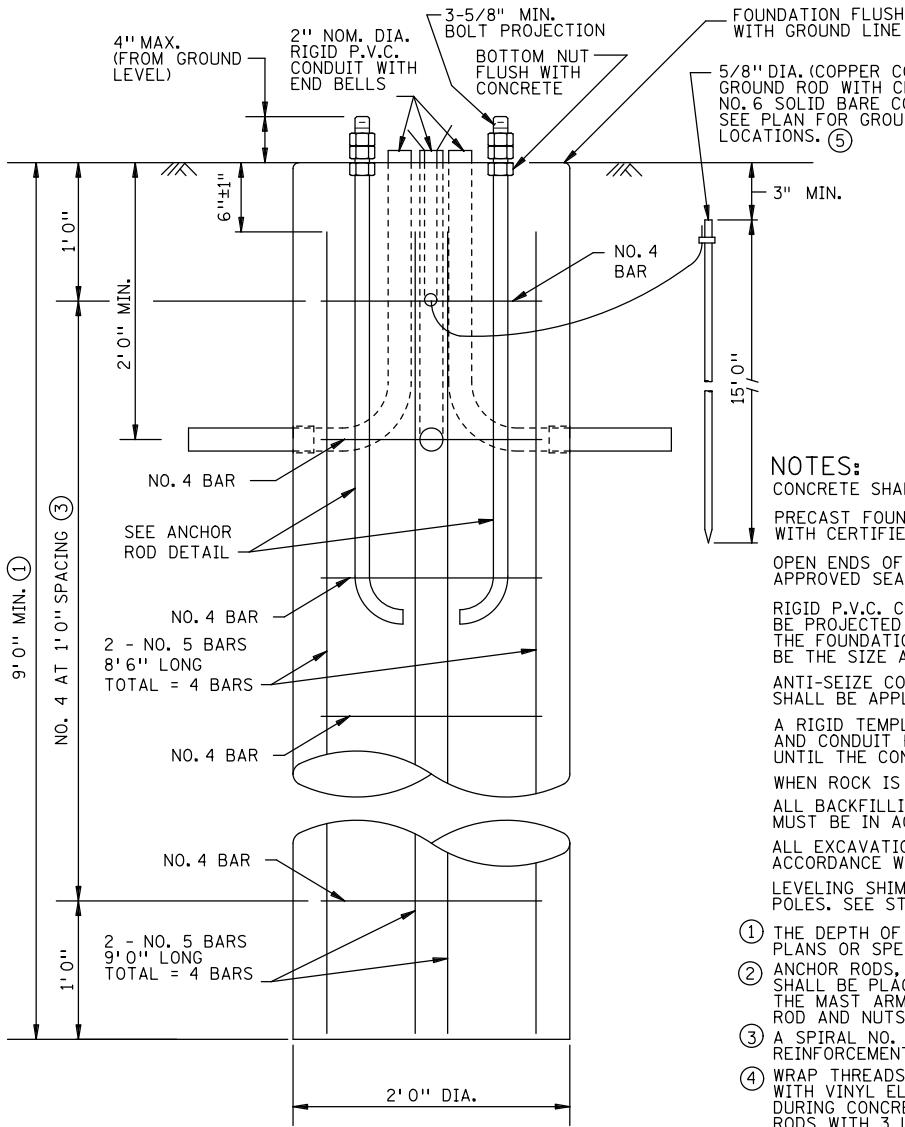
STANDARD  
PLATE  
NO.  
**8127D**  
2 OF 2



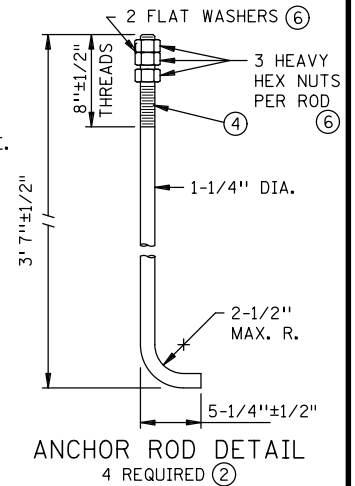
PLAN



ANCHOR ROD PLACEMENT



ELEVATION  
PRECAST FOUNDATION



ANCHOR ROD DETAIL  
4 REQUIRED (2)

**NOTES:**

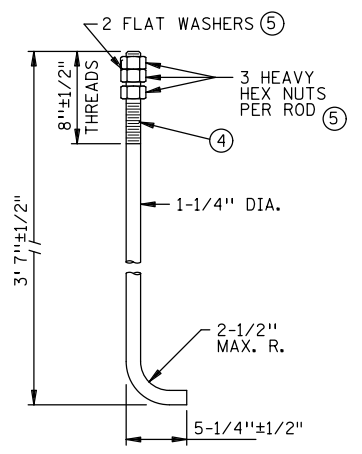
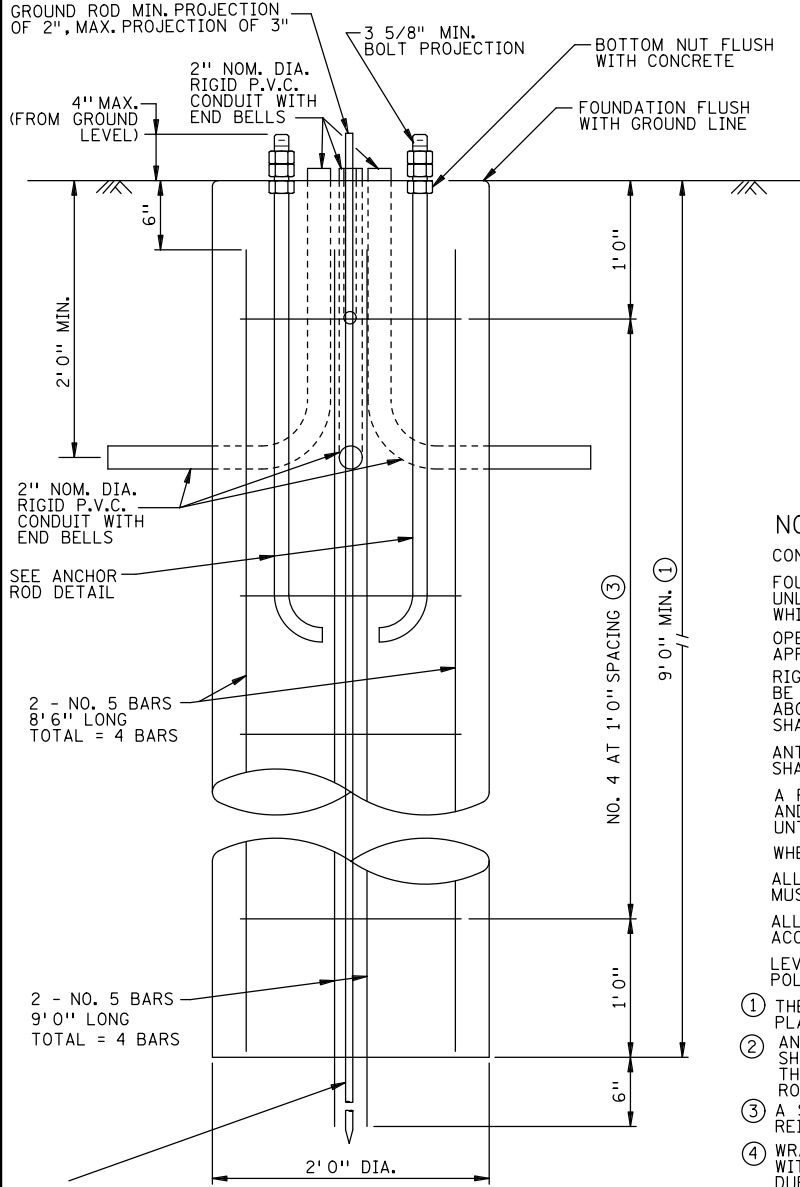
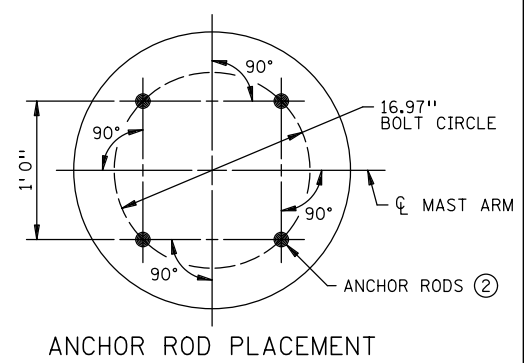
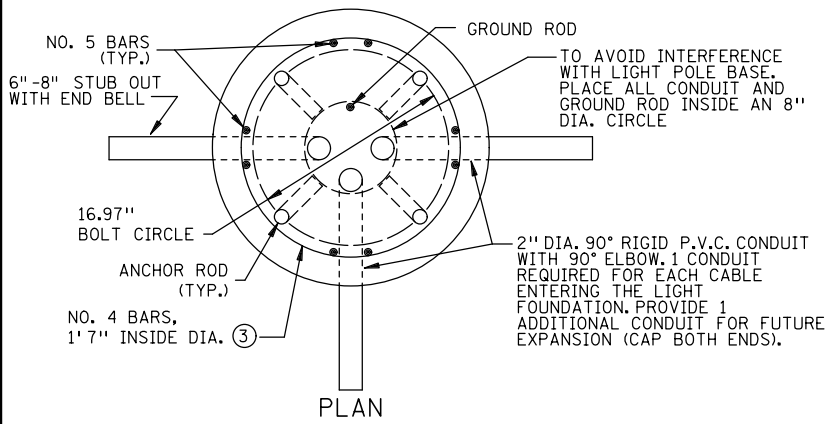
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- ANTI-SEIZE COMPOUND THAT MEETS MIL-PRF-907E SPEC. SHALL BE APPLIED WITH A BRUSH TO ALL THREADS.
- A RIGID TEMPLATE SHALL BE PROVIDED FOR ANCHOR ROD AND CONDUIT PLACEMENT AND SHALL BE LEFT IN PLACE UNTIL THE CONCRETE HAS SET.
- WHEN ROCK IS ENCOUNTERED, SEE PLAN DETAILS.
- ALL BACKFILLING AND EXCAVATION AROUND THE FOUNDATION MUST BE IN ACCORDANCE WITH 2451 AND 2545.3.
- ALL EXCAVATIONS MUST BE PROPERLY COMPACTED IN ACCORDANCE WITH 2451.
- LEVELING SHIMS SHALL BE USED WHEN PLACING ALUMINUM POLES. SEE STANDARD PLATE 8129.
- (1) THE DEPTH OF THE FOUNDATION MAY VARY IN THE PLANS OR SPECIAL PROVISIONS.
- (2) ANCHOR RODS, NUTS, AND WASHERS PER SPEC. 3385, TYPE A, SHALL BE PLACED AT RIGHT ANGLES TO THE DIRECTION OF THE MAST ARM GALVANIZE THE TOP 1 FT. OF THE ANCHOR ROD AND NUTS PER SPEC. 3392.
- (3) A SPIRAL NO. 4 BAR MAY BE USED AS AN ALTERNATE REINFORCEMENT.
- (4) WRAP THREADS OF ANCHOR RODS ABOVE THE BOTTOM NUT WITH VINYL ELECTRICAL TAPE TO AVOID CONTAMINATION DURING CONCRETE POURING. WRAP THREADS OF ANCHOR RODS WITH 3 LAYERS OF VINYL ELECTRICAL TAPE 2" BELOW THE BOTTOM NUTS.
- (5) GROUND ROD MUST BE ADDED 3" TO 6" DEEP BELOW GROUND LINE AND WITHIN 1' OF FOUNDATION.
- (6) USE 1 HOLDDOWN WASHER AND 2 HEAVY HEX NUTS PER ROD FOR ALUMINUM POLE INSTALLATION.

APPROVED MAY 27, 2014  
  
 STATE DESIGN ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**LIGHT FOUNDATION - DESIGN H**  
 PRECAST  
 49 FT. POLE

SPECIFICATION  
 REFERENCE  
 2545

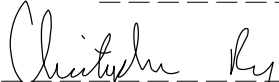
STANDARD  
 PLATE  
 NO.  
**8128D**  
 1 OF 2



ELEVATION  
CAST-IN-PLACE FOUNDATION

ANCHOR ROD DETAILS  
4 REQUIRED (2)

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  - (5) USE 1 FLAT WASHER AND 2 HEAVY HEX NUTS PER ROD FOR ALUMINUM POLE INSTALLATION.

APPROVED MAY 27, 2014  
  
 STATE DESIGN ENGINEER

STATE OF MINNESOTA  
 DEPARTMENT OF TRANSPORTATION  
**LIGHT FOUNDATION - DESIGN H**  
 CAST IN-PLACE  
 49 FT. POLE

SPECIFICATION  
 REFERENCE  
 2545

STANDARD  
 PLATE  
 NO.  
**8128D**  
 2 OF 2