

Transmittal No. 24-02
July 23, 2024

Standard Plates

Distribution: Electronic Distribution Recipients

Subject: Standard Plate 8125

The following standard plate is revised:

- 8125A Pole and Mast Arm Type TS – For Mast Arm Lengths 60' to 80' (Sheet 2 of 13)

See attached Summary of Changes documents for details.

Instructions:

1. Record this transmittal letter number, date and subject on the transmittal record sheet located in the front of the manual. The last Transmittal Letter was 24-01, dated March 20, 2024.
2. Remove from the manual:
 - Numerical Index of Standard Plates
 - Standard Plate 8125A (Sheet 2 of 13) (02-27-2024)
3. Insert into the manual:
 - Numerical Index of Standard Plates (06-10-2024)
 - Standard Plate 8125A (Sheet 2 of 13) (06-10-2024)
4. The *Standard Plates Manual* and associated Transmittal Letters are available online in PDF format at <https://standardplates.dot.state.mn.us/stdplate.aspx>
5. Direct any technical questions regarding this transmittal to Khamsai Yang, State Design Standards Engineer, at (612) 322-5601, or by email to DesignStandards.DOT@state.mn.us



Khamsai Yang, P.E.
State Design Standards Engineer
Office of Project Management and Technical Support

Summary of Changes

Standard Plate 8125A Sheet 2 of 13

Pole and Mast Arm Type TS – Pole Details for Mast Arm Lengths 60' to 80'

General

1. Section B-B showed an incorrect thickness for the base plate. Dimension corrected to 2½”.

Index

| <u>Series</u> | <u>Subject</u> |
|---------------|-----------------------------------|
| 1000 | Pavement |
| 3000 | Culverts and Appurtenances |
| 4000 | Sewer Appurtenances |
| 5000 | Erosion Control Structures |
| 7000 | Curb, Curb and Gutter, Sidewalk |
| 8000 | Barricades, Signals, Markers, Etc |
| 9000 | Miscellaneous |

| Plate Number | Subject | Approval Date | Revision Date |
|--|---|----------------------|----------------------|
| Series 1000: Pavement | | | |
| 1070N | Supplemental Pavement Reinforcement | 09-30-2022 | |
| 1103L | Typical Dowel Bar Assembly (2 Sheets) | 08-13-2020 | |
| 1210G | Concrete Pavement Adjacent to Railway Crossing | 04-14-2010 | 03-22-2013 |
| Series 3000: Culverts and Appurtenances | | | |
| 3000M | Reinforced Concrete Pipe (6 Sheets) | 03-05-2020 | |
| 3001B | Reinforced Concrete Reducer Pipe | 01-21-1983 | |
| 3002B | Reinforced Concrete Increaser Pipe | 01-21-1983 | |
| 3006H | Gasket Joint for R.C. Pipe (2 Sheets) | 03-05-2020 | |
| 3007F | Shear Reinforcement for Precast Drainage Structures | 03-05-2020 | |
| 3014L | Reinforced Concrete Pipe Arch (3 Sheets) | 09-14-2022 | |
| 3020H | Reinforced Precast Concrete Cattle Pass (60" & 72") | 04-09-2019 | |
| 3021B | 3 X 3 Precast Concrete Box Culvert (2 Sheets) | 09-30-2022 | |
| 3022C | Precast Concrete Safety Apron (3 Sheets) | 11-14-2000 | 03-22-2013 |
| 3040F | Corrugated Metal Pipe Culvert (Standard 2-2/3" X 1/2" Corrugation) | 01-29-1979 | 08-22-1996 |
| 3041E | Corrugated Metal Pipe (3" X 1" Corrugation) | 02-22-2021 | |
| 3050B | Design Data Structural Plant Structures (18" Corner Radius) | 10-01-1966 | |
| 3051B | Design Data Structural Plant Structures (31" Corner Radius) | 10-01-1966 | |
| 3065C | Connection Between Existing Culv. & New "C" Culv. Barrel (2 Sheets) | 11-13-1977 | |
| 3066A | C.M. Extension for Box Culvert | 10-01-1966 | |
| 3100G | Concrete Apron for Reinforced Concrete Pipe | 05-08-1985 | 10-16-2000 |
| 3110G | Concrete Apron for Reinforced Concrete Pipe-Arch | 05-08-1985 | 10-16-2000 |
| 3114H | Sectional Concrete Apron for Reinforced Concrete Pipe-Arch | 11-13-1986 | 03-22-2013 |
| 3122K | Metal Apron for C.M. Pipe-Arch Culvert | 11-13-1986 | |
| 3123J | Metal Apron for C.S. Pipe | 11-13-1986 | 05-03-1999 |

| Plate Number | Subject | Approval Date | Revision Date |
|---|---|---------------|----------------------------|
| 3124B | Metal Apron Connection | 07-21-1983 | |
| 3125A | Inlet Protection for Metal Culverts (90" Dia. to 96" Dia.) | 11-12-1975 | 03-23-2013 |
| 3126B | Inlet Protection for Structural Plate (60" Thru 96" Dia. or Span) | 07-31-1980 | 03-22-2013 |
| 3127A | Inlet Protection for Structural Plate Pipe (102" Thru 108" Dia. or Span) | 11-12-1975 | 03-22-2013 |
| 3128H | Metal Safety Apron & Grate (2 Sheets) | 11-01-2000 | 03-12-2003 Sheet 1 of 2 |
| 3129A | Metal Apron for Corrugated Polyethylene Pipe (Use at Entrances and Driveways) | 02-26-1987 | |
| 3131C | Precast Concrete Headwall for Subsurface Drains | 08-20-2001 | 03-22-2013 |
| 3132A | Grate for 1:4 Precast Concrete Aprons | 12-18-1996 | 03-12-2003 |
| 3133D | Riprap at RCP Outlets | 12-09-2013 | |
| 3134D | Riprap at CSP Outlets | 12-09-2013 | |
| 3135A | Hand-Placed Riprap at Precast Concrete Cattle Pass | 10-01-1966 | |
| 3136B | Slotted Vane Drain for P.V.C. Pipe | 08-17-1998 | |
| 3137B | Slotted Drain for 12" Thru 30" Dia. C.M. Pipe (Stackable) | 05-22-2001 | |
| 3138B | Slotted Drain for 12" Thru 30" Dia. C.M. Pipe (Not Stackable) | 05-22-2001 | |
| 3139B | Riprap at Precast Concrete End Sections | 12-09-2013 | |
| 3142A | Outlet Screen for C.M. & S.C. Pipes | 10-01-1966 | |
| 3143C | Inspection Tees | 01-12-1978 | |
| 3145G | Concrete Pipe or Precast Box Culvert Ties | 09-14-2012 | |
| 3146C | Anti-Seepage Diaphragm (For CMP and CMP-A) | 04-30-1980 | |
| 3148A | Safety Slope Metal End Section for Circular & Arched Pipes (2 Sheets) | 11-20-1991 | 03-12-2003 03-22-2013 |
| 3221D | Corrugated Steel Pipe Coupling Band (3 Sheets) | 02-22-2021 | |
| Series 4000: Sewer Appurtenances | | | |
| Drainage Structures and Castings Document | | | |
| Reference Date: 09-19-2018 | | | |
| 4000J | Manhole or Catch Basin (Masonry, Field Construction) - Design A | 10-17-1994 | 08-22-1996 |
| 4002F | Manhole or Catch Basin (Masonry, Field Construction) - Design C | 10-17-1994 | 08-22-1996 |
| 4003B | 30" Precast Catch Basin - Design N | 03-14-1996 | 08-22-1996 |
| 4005M | Manhole or Catch Basin Type A & B Cone Sections Precast - Design F | 04-16-2014 | |
| 4006L | Manhole or Catch Basin Precast - Designs G and H | 07-31-1995 | 08-22-1996 |
| 4007C | Precast Mechanical Joint Sewer Manhole | 04-02-1979 | 07-22-1997 |
| 4008F | Catch Basin (Sectional Concrete Pipe) - Design I | 09-30-2022 | |
| 4009I | Manhole or Catch Basin (Sectional Concrete Pipe) - Design J | 09-30-2022 | |
| 4010I | Concrete Adjusting Rings | 09-30-2022 | |
| 4011E | Precast Concrete Base | 10-17-1994 | 03-22-2013 |
| 4017C | Catch Basin (Concrete Pipe and Metal Pipe) - Designs PC and PM | 10-01-1967 | 09-13-2016 |
| 4018A | Manhole or Catch Basin (Reducer Cone Section Precast) - Design D | 04-16-2014 | |
| 4020J | Manhole or Catch Basin (For Use With or Without Traffic Loads) (2 Sheets) | 11-22-2000 | 03-22-2013 10-29-2013 |

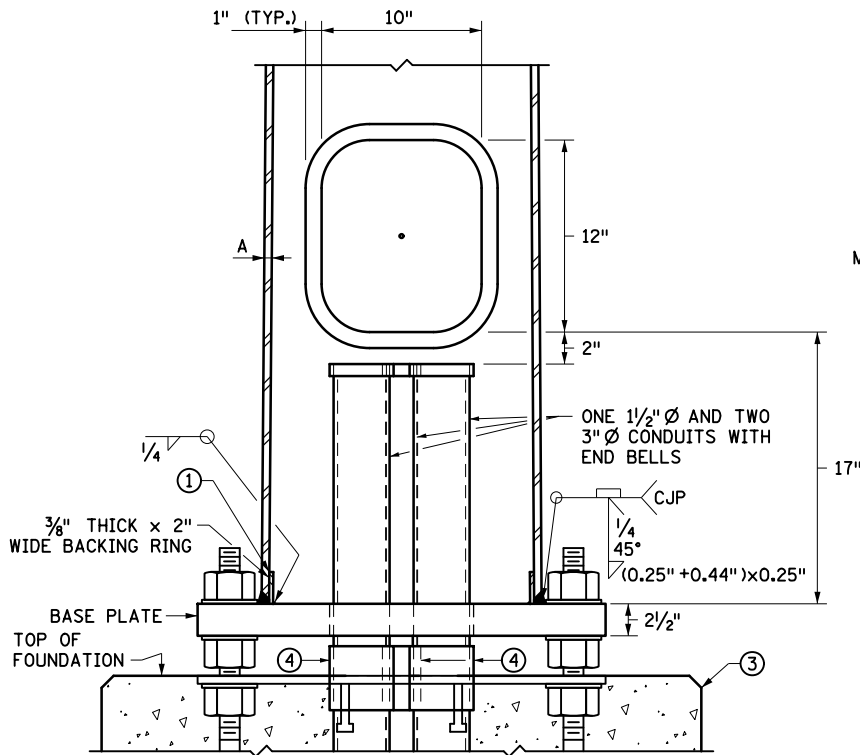
| Plate Number | Subject | Approval Date | Revision Date |
|---|---|---------------|----------------------------|
| 4021F | Precast Curb Opening Catch Basin | 07-06-2001 | 03-22-2013 |
| 4022A | Manhole or Catch Basin Cover (3 Ft. x 2 Ft. Opening) | 03-02-1998 | 03-22-2013 |
| 4024A | 48" Dia. Precast Shallow Depth Catch Basin - Design SD | 02-02-1997 | |
| 4025B | Drop Inlets or Catch Basins - Design DI (Concrete & Metal) | 10-01-1966 | 11-12-2013 |
| 4026B | Concrete Encased Concrete Adjusting Rings | 09-30-2022 | |
| 4101D | Ring Casting for Manhole or Catch Basin | 10-25-1996 | |
| 4108F | Adjusting Rings for Catch Basins and Manholes | 03-06-1991 | |
| 4110F | Cover Casting for Manhole (For Use In All Traffic Areas) – Casting No. 715 and 716 | 10-25-1996 | 09-13-2016 |
| 4125D | Catch Basin Frame Casting (For Square Grate) – Casting No. 806 | 03-08-1996 | |
| 4126F | Catch Basin Frame Casting – Casting NO. 801 | 04-05-1989 | |
| 4129G | Catch Basin Frame Casting (For Square Grate) - Casting No. 802a | 03-14-1996 | 03-22-2013 |
| 4132G | Catch Basin Frame Casting (For Square Grate) - Casting No. 805 | 09-13-2018 | |
| 4133A | Curb Box Casting for Catch Basin - Casting No. 824 | 03-08-1982 | |
| 4134A | Curb Box Casting for Catch Basin (For Design B Curbs)- Casting No. 825 | 04-13-1995 | 03-22-2013 |
| 4140D | Special Grate Castings for Catch Basin (Convex and Concave) - Casting No. 720 and 721 | 10-01-1966 | 09-13-2016 |
| 4143E | Stool Grate & Concrete Frame (Median Drains) - Casting No. 731 | 03-14-1996 | 03-22-2013 |
| 4149C | Grate Casting for Catch Basin - Casting No. 810 | 10-01-1966 | 01-21-1998 |
| 4150C | Grate Casting for All Pipe Drainage Structures | 02-06-1997 | |
| 4151B | Grate Casting for Catch Basin (Square Type) - Casting No. 811 | 10-01-1966 | |
| 4152C | Catch Basin Grate Casting - Casting No. 814a | 02-27-1991 | |
| 4153A | Catch Basin Grate Casting - Casting No. 815 | 10-05-1978 | |
| 4154B | Catch Basin Grate Casting - Casting No. 816 | 10-10-1979 | |
| 4155A | Ada Grate Inlet Casting - Casting No. 817 | 11-19-2018 | |
| 4160D | Curb Box Casting for Catch Basin - Casting No. 823a and 833a | 12-10-1982 | |
| 4161F | Curb Box Casting for Catch Basin - Casting No. 821b, 822 and 831a | 12-10-1982 | |
| 4180J | Manhole or Catch Basin Step | 12-30-1996 | |
| Series 5000: Erosion Control Structures | | | |
| 5010A | Reinforced Concrete Pipe Energy Dissipater | 11-02-1992 | |
| Series 7000: Curb, Curb and Gutter, Sidewalk | | | |
| 7000E | Integrant Curbs (Design B, Design V and Design D) | 9-13-1973 | |
| 7020K | Concrete Curb (Design B, Design V, Design S, Design DR and Design BR)(2 Sheets) | 07-25-2011 | 03-22-2013 Sheet 2 of 2 |
| 7038A | Detectable Warning Surface Truncated Domes | 08-23-2010 | 01-09-2020 |
| 7065C | Bituminous Curb | 10-01-1966 | |
| 7100H | Concrete Curb and Gutter (Design B and Design V) | 03-11-1994 | 02-28-2005 |
| 7102K | Concrete Curb and Gutter (Design D, Design S, and Design R) | 08-28-2017 | |
| 7105C | Concrete Median (Mountable Type) | 10-01-1966 | |
| 7107I | Entrance Nose (Urban Design) | 07-25-2011 | |
| 7108G | Exit Nose (Urban Design) | 07-25-2011 | |

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|---|--|---------------|----------------------------|
| 7109C | Median Nose and Island (Undivided to Divided Roadway) | 04-18-1995 | 05-28-2003 |
| 7111J | Installation Of Catch Basin Castings (Concrete Curb and Gutter) | 04-23-1996 | 03-22-2013 |
| 7112C | Installation & Reinforcement Of Catch Basin & Manhole Castings (Concrete Integrant Curbs) | 04-23-1996 | 09-13-2016 |
| 7113A | Concrete Approach Nose Detail | 06-24-1993 | 05-28-2003 |
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| 8000K | Temporary Channelizers (3 Sheets) | 05-14-2021 | |
| 8106D | Equipment Pad B | 07-15-2015 | |
| 8107A | RLF Equipment Pad Foundation Layout | 12-16-2016 | |
| 8110E | Traffic Signal Bracketing (Pole Mounted) | 05-22-2009 | |
| 8111E | Traffic Signal Bracketing (Pedestal Mounted) (3 Sheets) | 05-22-2009 | |
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| 8117G | Precast Concrete Hand Hole With Vehicle Load | 06-02-2014 | |
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| 8122F | Pedestal and Pedestal Base (For Traffic Control Signals Support) (2 Sheets) | 12-20-2011 | |
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| 8132B | Preformed Rigid PVC Conduit Loop Detector - Layout Details, Lay-out Notes, Typical Installation (3 Sheets) | 11-20-2011 | |
| 8135A | Anchor Rod Assembly for Light Tower Foundation | 11-05-2019 | |
| 8150C | Installation Of Culvert Markers | 05-03-2004 | |
| 8307S | W-Beam Guardrail & End Anchorages (Installation With Wood Posts) (4 Sheets) | 03-23-2011 | |
| 8308C | Reinforced Concrete Median Barrier Type F (Non-Glare Screen Type)(4 Sheets) | 04-14-2020 | |
| 8309C | Reinforced Concrete Median Barrier Type F & Glare Screen (4 Sheets) | 04-14-2020 | |
| 8316C | Post Seat for Anchorage On Footing or Box Culverts | 12-08-1981 | 08-10-2099 |
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| 8326D | Flexible Plastic Glare Screen | 11-15-1984 | 04-28-1998 |
| 8330G | 3-Cable Guardrail (With Wood Posts) (2 Sheets) | 10-01-2002 | 06-04-2004 Sheet 2 of 2 |
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| Plate Number | Subject | Approval Date | Revision Date |
|-----------------------------------|--|---------------|---|
| 8332E | Anchor Rod Assembly for Light Foundation - Barrier | 04-14-2020 | |
| 8333B | 3-Cable Guardrail Anchor (4 Sheets) | 08-02-2002 | 03-22-2013 Sheet 1 01-05-2005 Sheets 2-4 |
| 8337D | Temporary Portable Precast Concrete Barrier - Type F (3 Sheets) | 05-14-2021 | |
| 8338D | W-Beam Guardrail & End Anchorages (Steel Posts) (4 Sheets) | 03-21-2011 | |
| 8339A | 3-Cable (Steel Posts) to W Beam (Wood Posts) Guardrail Transition | 11-01-2003 | |
| 8340A | 3-Cable (Steel Posts) to W Beam (Steel Posts) Guardrail Transition | 01-20-2006 | |
| 8342B | High-Tension Cable Barrier Line Post Foundation (Concrete Design) | 08-19-2015 | |
| 8343A | High-Tension Cable Barrier Line Post Foundation (Steel Design) | 08-19-2015 | 09-13-2016 |
| 8347B | Portable Precast Concrete Barrier Anchors | 05-15-2019 | |
| 8350A | Thrie Beam Anchorage Plate | 09-14-2012 | |
| 8352C | Thrie Beam Wedge Plate for F-Shape and J-Shape Barrier | 07-05-2022 | |
| 8354A | W-Beam End Section | 02-09-2023 | |
| 8355B | W-Beam Guardrail (2 Sheets) | 02-09-2023 | |
| 8356A | W-Beam to Thrie-Beam Transition Guardrail | 07-01-2019 | |
| 8357A | Thrie-Beam Guardrail | 07-01-2019 | |
| 8358A | Thrie-Beam Slotted Rail for Bullnose (2 Sheets) | 04-11-2021 | |
| 8360B | Guardrail Post Length Marking | 03-05-2020 | 07-05-2022 |
| 8361B | Guardrail Steel Post (3 Sheets) | 03-26-2021 | |
| 8362A | Universal Breakaway Steel Post (UBSP) (2 Sheets) | 04-11-2021 | |
| 8363A | Steel Post Trailing-End Anchor (5 Sheets) | 02-09-2023 | |
| 8365B | BCT Timber Post | 02-09-2023 | |
| 8366B | BCT Foundation Tube | 02-09-2023 | |
| 8368B | CRT Wood Post | 02-09-2023 | |
| 8369B | Guardrail Blockout (2 Sheets) | 02-09-2023 | |
| 8370B | Guardrail Anchor and Components (2 Sheets) | 02-09-2023 | |
| 8371A | Nose Cable - Bullnose Guardrail | 04-11-2021 | |
| 8380A | Trailing End Anchor Strut and Yoke | 02-09-2023 | |
| 8400F | Pipe Railing | 01-09-2019 | |
| Series 9000: Miscellaneous | | | |
| 9000E | Approaches and Entrances - Recommended Standards | 09-27-2012 | |
| 9101B | Shaping and Sodding of Slopes at Box Culvert Ends | 10-01-1966 | |
| 9303B | Geodetic Survey Disks (Aluminum) (2 Sheets) | 04-20-1995 | |
| 9304A | Geodetic Survey Disks (Removable Type Disk) | 10-14-2015 | |
| 9308A | Survey Monument Cap (2 Sheets) | 11-22-1978 | |
| 9309G | PLS (Public Land Survey) Monument (2 Sheets) | 11-16-1981 | |
| 9320G | Woven Wire Fence (Wood Post) | 12-30-1981 | |
| 9321F | Woven Wire Fence (Steel Post) | 02-28-2022 | |
| 9322K | Chain Link Fence (2 Sheets) | 10-21-2008 | 12-10-2008 Sheet 1 of 1 |
| 9323D | Barbed Wire Fence (Wood Post) | 12-30-1981 | |

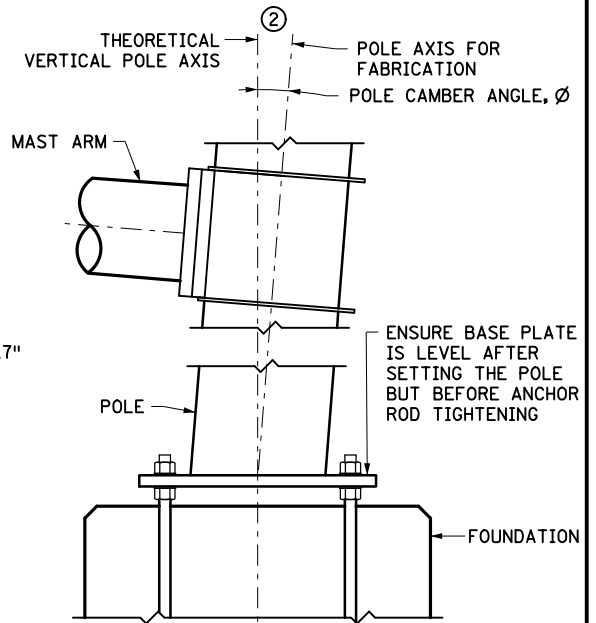
| Plate Number | Subject | Approval Date | Revision Date |
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| 9324C | Barbed Wire Fence (Steel Post) | 12-30-1981 | |
| 9350C | Mailbox Support - Swing-Away Type (3 Sheets) | 10-11-2023 | |

| POLE TYPE | MAST ARM LENGTH | POLE CAMBER ANGLE \emptyset |
|--------------------------------|------------------|----------------------------------|
| TS60, TS65, TS70 TS75, TS80 | 60' 0" TO 80' 0" | 0°30'00.0" |



SECTION B-B

FOUNDATION REINFORCEMENT NOT SHOWN FOR CLARITY

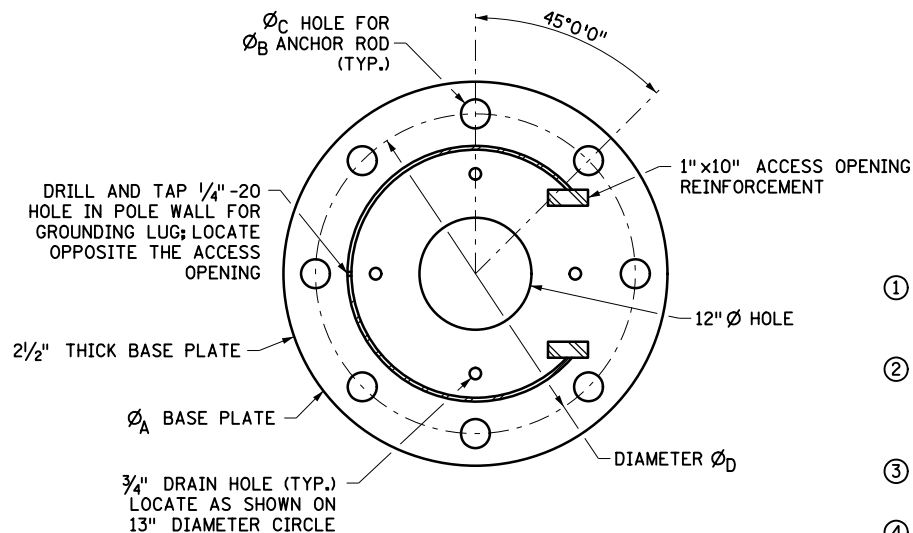


SCHEMATIC OF POLE ALIGNMENT

NOT TO SCALE

| POLE TYPE | POLE WALL THICKNESS A |
|-----------|--------------------------|
| TS60 | 0.25" |
| TS65 | 0.3125" |
| TS70 | 0.3125" |
| TS75 | 0.3125" |
| TS80 | 0.3125" |

| POLE TYPE | BASE PLATE DIAMETER \emptyset_A | ANCHOR ROD DIAMETER \emptyset_B | DIAMETER OF ANCHOR ROD HOLE \emptyset_C | ANCHOR ROD PLACEMENT DIAMETER \emptyset_D |
|-----------|--------------------------------------|--------------------------------------|--|--|
| TS60 | 37" | 1 1/2" | 1 5/8" | 29" |
| TS65 | 37" | 1 3/4" | 1 7/8" | 29" |
| TS70 | 39" | 2" | 2 1/8" | 31" |
| TS75 | 41" | 2" | 2 1/8" | 33" |
| TS80 | 41" | 2 1/4" | 2 3/8" | 33" |



SECTION A-A

NOTES:

- ① FIELD-APPLIED 100% SILICONE CAULK (EXTERIOR USAGE) AT TOP OF BACKING RING ALONG ENTIRE CIRCUMFERENCE.
- ② POLE ROTATION IS ABOUT A HORIZONTAL AXIS ORIENTED PERPENDICULAR TO MAST ARM AXIS. SENSE OF ROTATION IS SUCH THAT TIP OF MAST ARM WILL BE RAISED.
- ③ SEE STANDARD PLAN 5-297.861 FOR PVC CONDUIT AND COUPLING INSTALLATION REQUIREMENTS.
- ④ PVC COUPLING.

APPROVED 02-27-2024

Rom S...
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

POLE AND MAST ARM TYPE TS

POLE DETAILS
FOR MAST ARM LENGTHS 60' TO 80'

SPECIFICATION
REFERENCE

2565

REVISED
06-10-2024 K.Y.

STANDARD
PLATE
NO.

8125A

2 OF 13