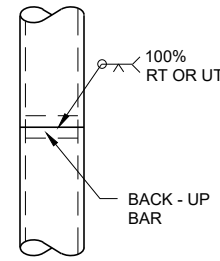
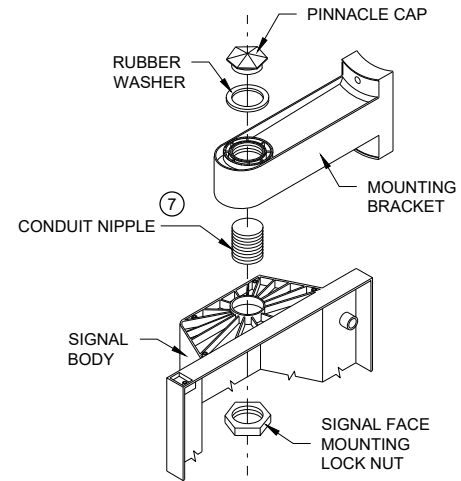


**SECTION A-A**  
(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)

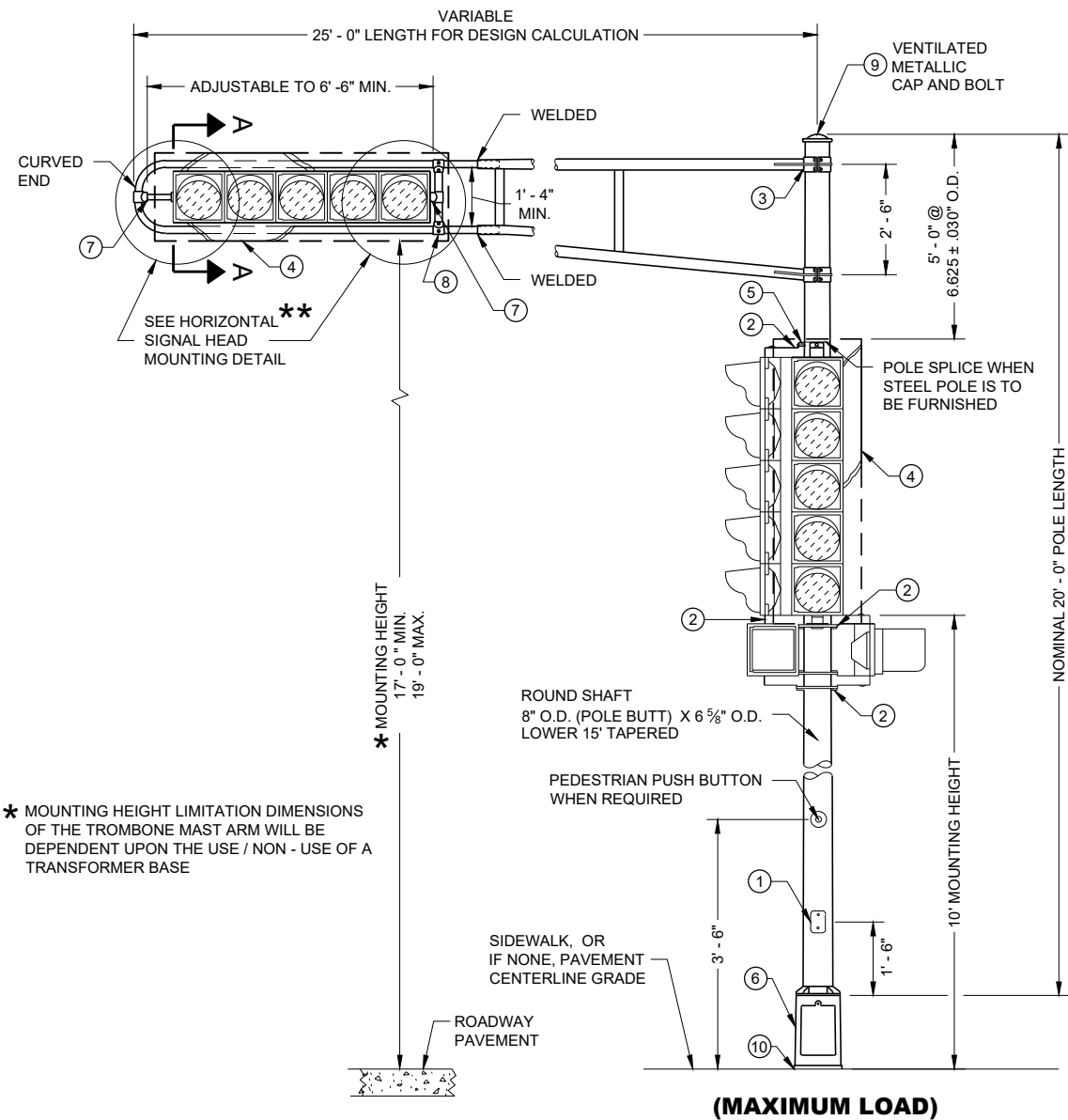
**FOR MANUFACTURERS USE ONLY**  
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.



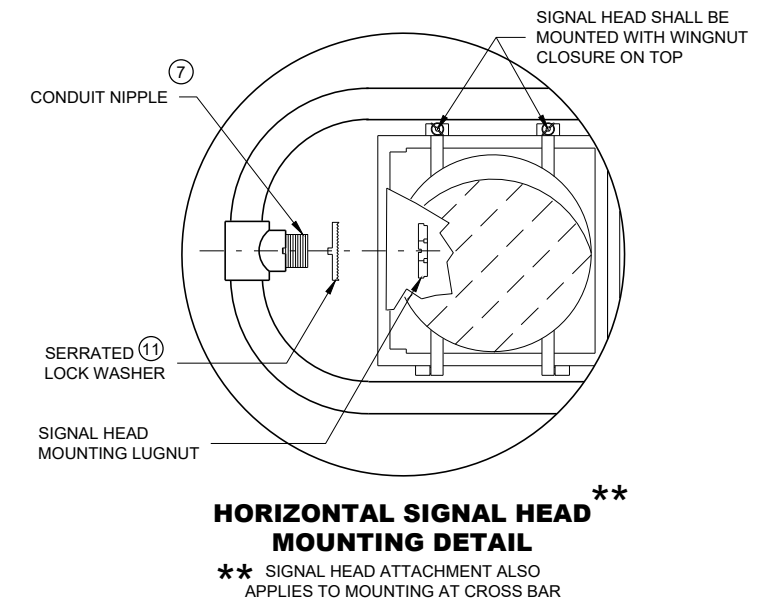
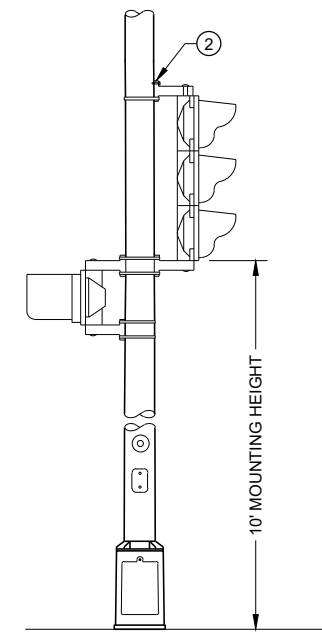
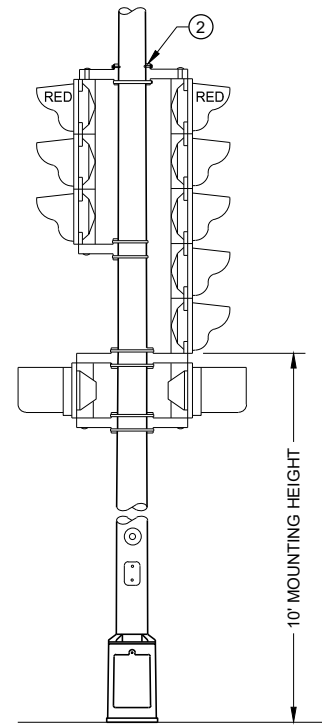
**POLE SPLICE DETAIL**



**SIGNAL FACE MOUNTING DETAIL (BANDED)**



**TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES**  
**TYPE 2 POLE MOUNTING CONFIGURATION**



**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.
- ⑧ VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUTS THE SLIDING TYPE.
- ⑨ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑩ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑪ USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

**POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

*Pole Mountings for Traffic Signals Type 2***References:**

[FDM15-5 Attachment 30.5](#) and [30.6](#) for conventional symbols  
[Standard Spec 657](#) Poles, Arms, Standards, and Bases  
[Standard Spec 658](#) Traffic Signals

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0102	Concrete Bases Type 2.....	EACH
655.0200 - 0299	Cable Traffic Signal (# of conductors) (AWG) .....	LF
657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle .....	EACH
657.0305	Poles Type 2.....	EACH
657.0560 - 0599	Trombone Arms (length) .....	EACH
658.0100 - 0199	Traffic Signal Face (section) (size) .....	EACH
658.0400 - 0499	Pedestrian Signal Face (inch).....	EACH
658.0500	Pedestrian Push Buttons.....	EACH
658.1100 - 1199	Programmable Traffic Signal Face (sections) (size).....	EACH
658.5070	Signal Mounting Hardware (location).....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Vendor
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Department

**Other SDDs associated with this drawing:**

<a href="#">SDD 9C2</a>	Concrete Bases, Types 1, 2, 5 and 6
<a href="#">SDD 9C3</a>	Transformer/Pedestal Bases
<a href="#">SDD 9E1</a>	Pole Mountings sheet "g".

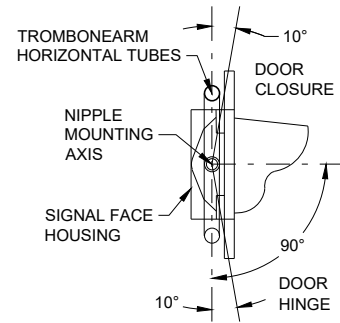
**Design Notes:**

NONE

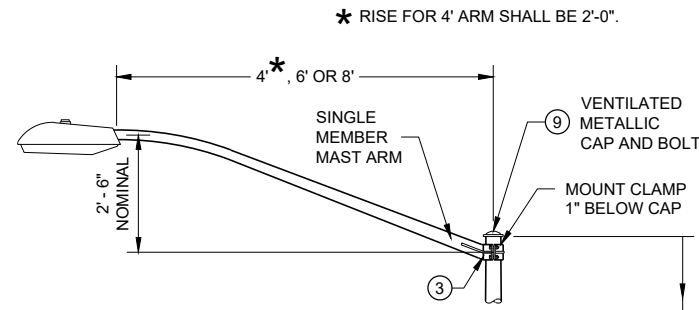
**Contact Person:**

Ahmet Demirbilek (414) 220-6801  
(414) 322-9606 (Mobile)

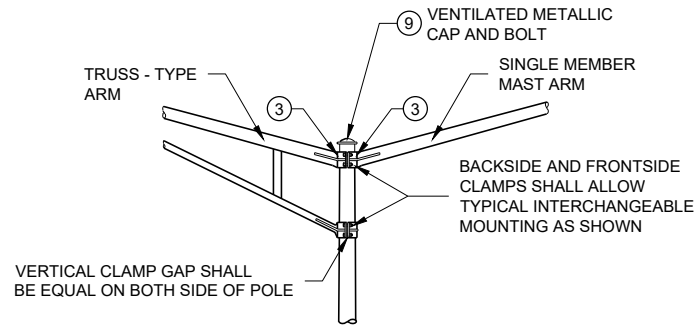
# SDD 09E01-b Pole Mountings for Traffic Signals and Lighting Units, Type 3 (Heavy Duty)



**SECTION A-A**



**INTERCHANGEABLE MOUNTING DETAIL**



**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

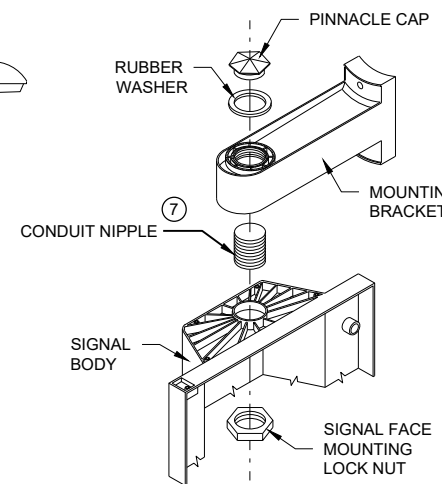
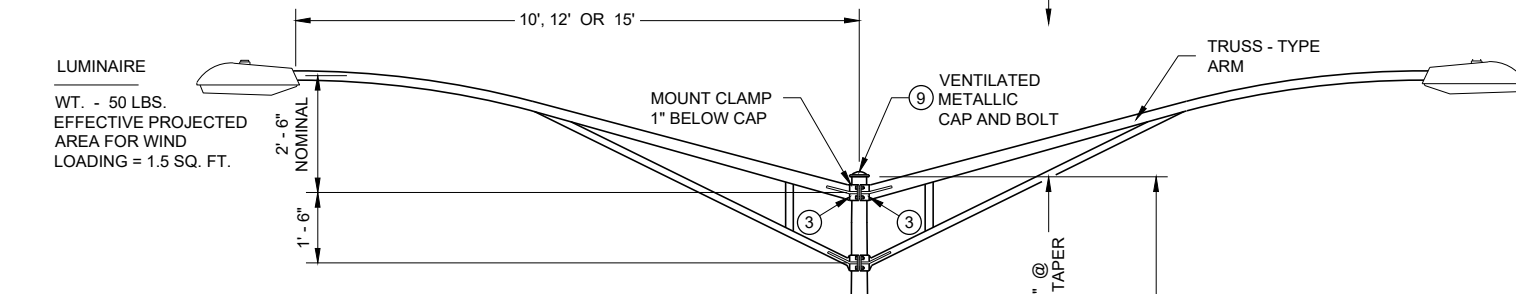
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

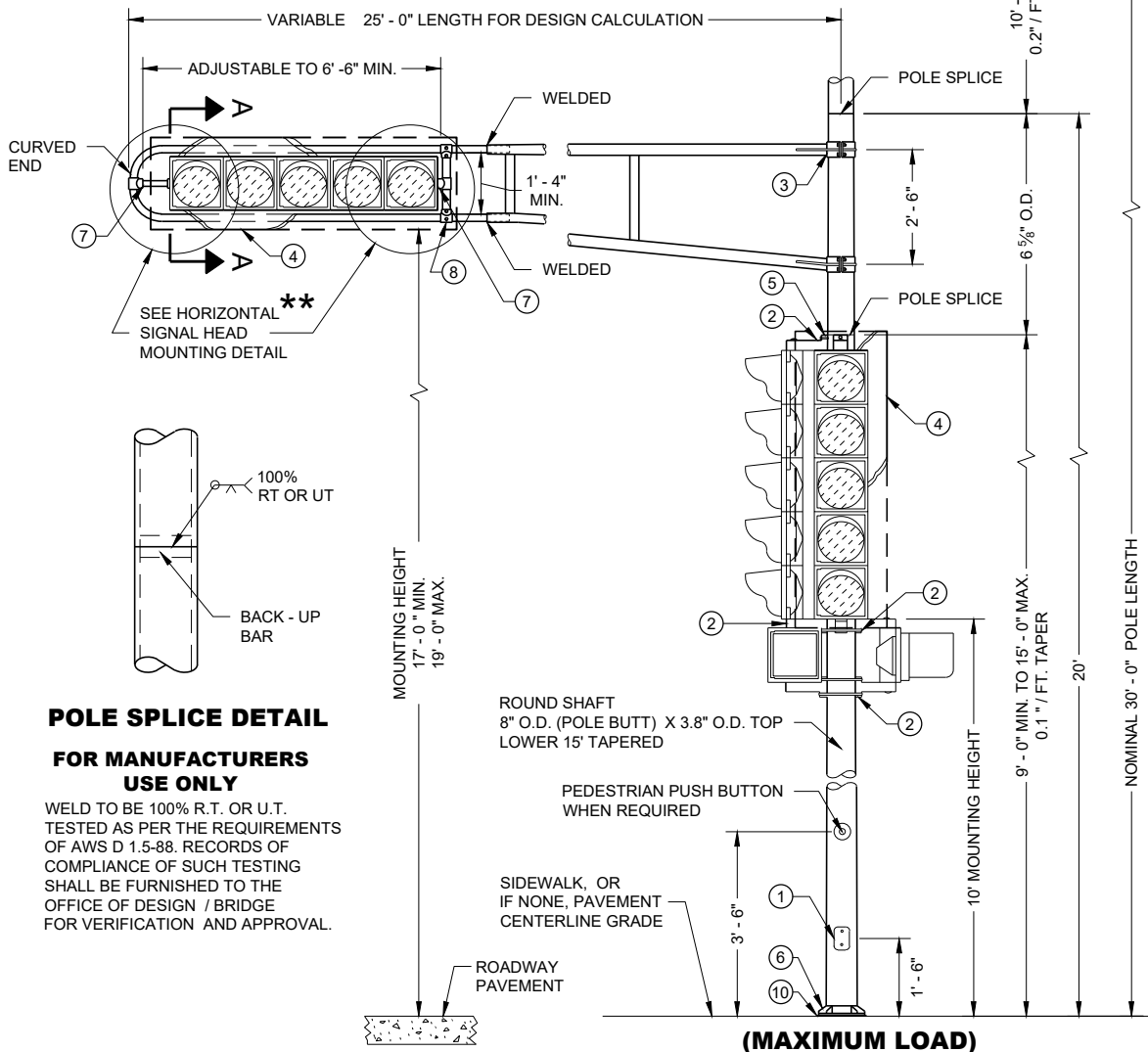
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/2" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 1/2" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED. UNDER MAX LOADING, TYPE 3 POLE SHALL BE MOUNTED DIRECTLY TO ITS CONCRETE BASE.
- ⑦ USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.
- ⑧ VERTICAL STRUT (ADJUSTABLE), ONE (1) SET SCREW (1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
- ⑨ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑩ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑪ USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

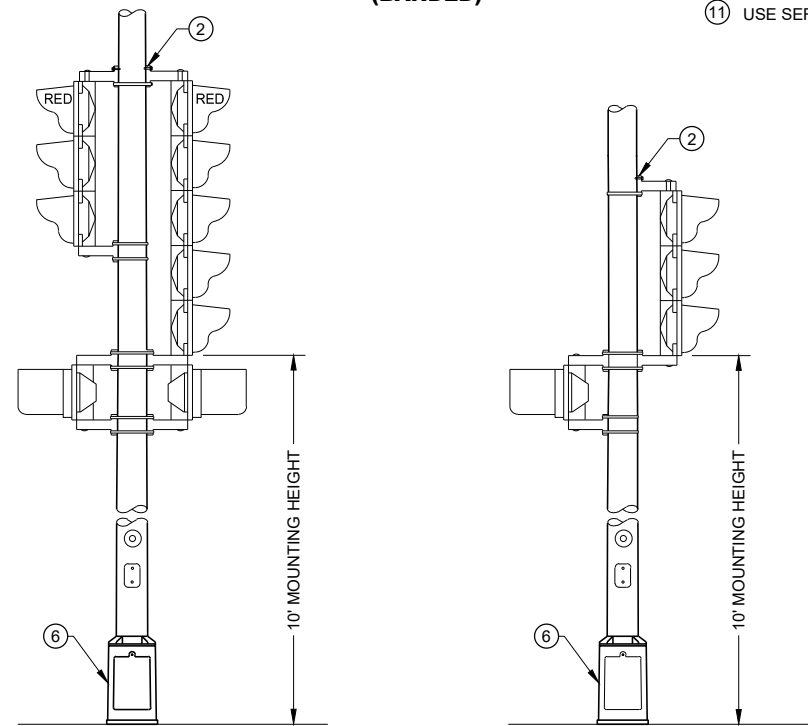


**SIGNAL FACE MOUNTING DETAIL (BANDED)**

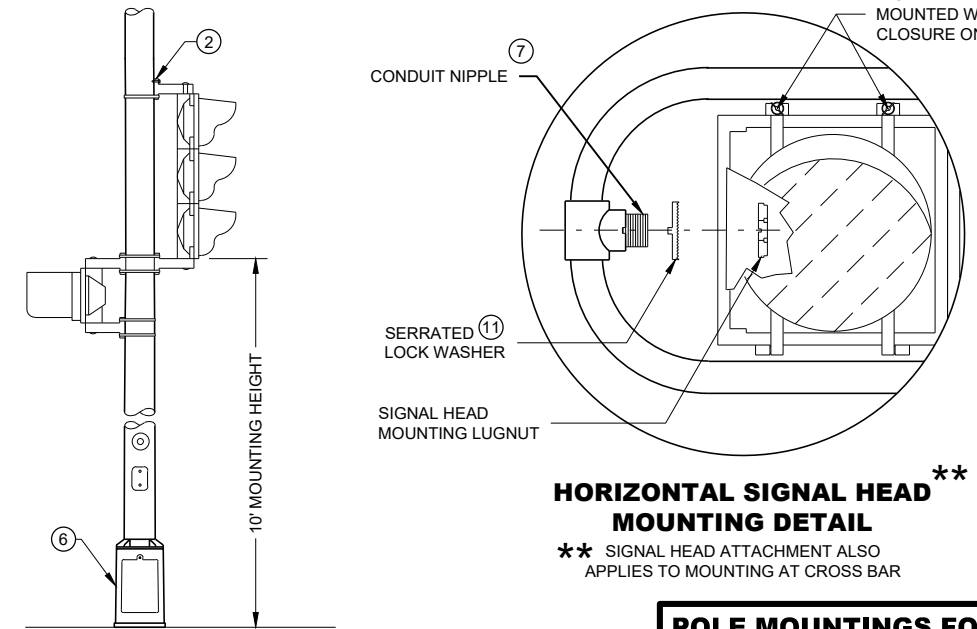


**POLE SPLICE DETAIL FOR MANUFACTURERS USE ONLY**

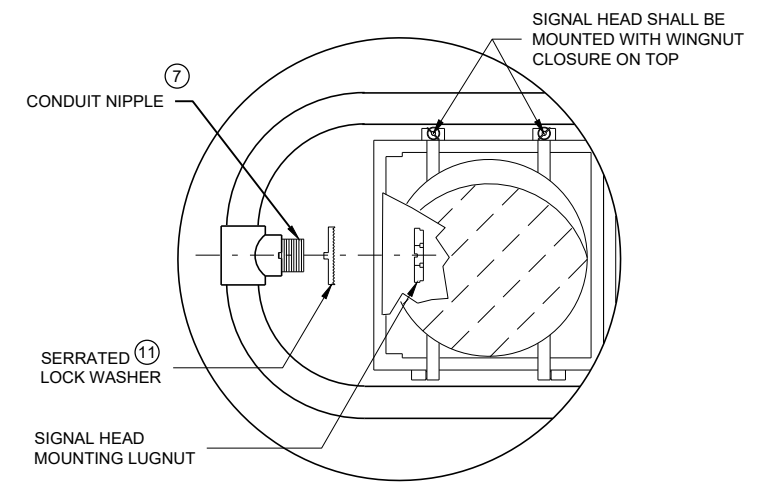
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN / BRIDGE FOR VERIFICATION AND APPROVAL.



**TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES**



**TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE**



**HORIZONTAL SIGNAL HEAD MOUNTING DETAIL**

\*\* SIGNAL HEAD ATTACHMENT ALSO APPLIES TO MOUNTING AT CROSS BAR

**POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS TYPE 3 (HEAVY DUTY)**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

**Pole Mountings for Traffic Signals and Lighting Units Type 3 (Heavy Duty)****References**

[FDM15-5 Attachment 30.5](#) and [30.6](#) for conventional symbols  
[Standard Spec 657](#) Poles, Arms, Standards, and Bases  
[Standard Spec 658](#) Traffic Signals  
[Standard Spec 659](#) Lighting

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0102	Concrete Bases Type 2.....	EACH
655.0200 - 0299	Cable Traffic Signal (# of conductors) (AWG) .....	LF
655.0610	Electrical Wire Lighting 12 AWG.....	LF
657.0310	Poles Type 3.....	EACH
657.0560 - 0599	Trombone Arms (length) .....	EACH
657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT.....	EACH
657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT.....	EACH
657.0704	Luminaire Arms Truss Type 4-Inch Clamp 10-FT.....	EACH
657.0709	Luminaire Arms Truss Type 4-Inch Clamp 12-FT.....	EACH
657.0714	Luminaire Arms Truss Type 4-Inch Clamp 15-FT.....	EACH
658.0100 - 0199	Traffic Signal Face (sections) (size).....	EACH
658.0400 - 0499	Pedestrian Signal Face (inch).....	EACH
658.0500	Pedestrian Push Buttons.....	EACH
658.1100 - 1199	Programmable Traffic Signal Face (sections) (size).....	EACH
658.5070	Signal Mounting Hardware (location).....	EACH
659.1100 - 1199	Luminaires Utility LED (Category).....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Vendor
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Department

**Other SDDs associated with this drawing:**

<a href="#">SDD 9C2</a>	Concrete Base, Types 1, 2, 5 and 6
<a href="#">SDD 9C3</a>	Transformer/Pedestal Bases
<a href="#">SDD 9E1</a>	Pole Mountings sheet "g"
<a href="#">SDD 9E3</a>	Non-Freeway Lighting Unit Pole Wiring

**Design Notes:**

Use 4-inch clamps.

**Contact Person:**

Ahmet Demirbilek (414) 220-6801  
(414) 322-9606 (Mobile)

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 4 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

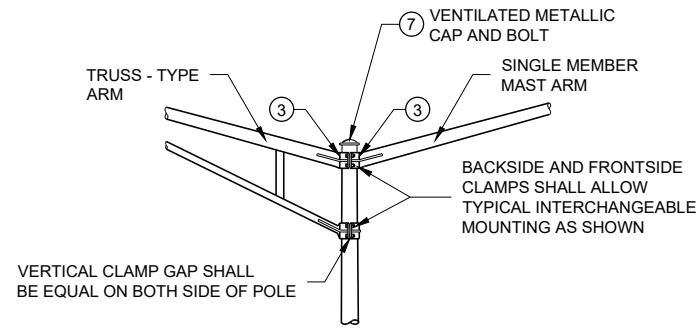
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

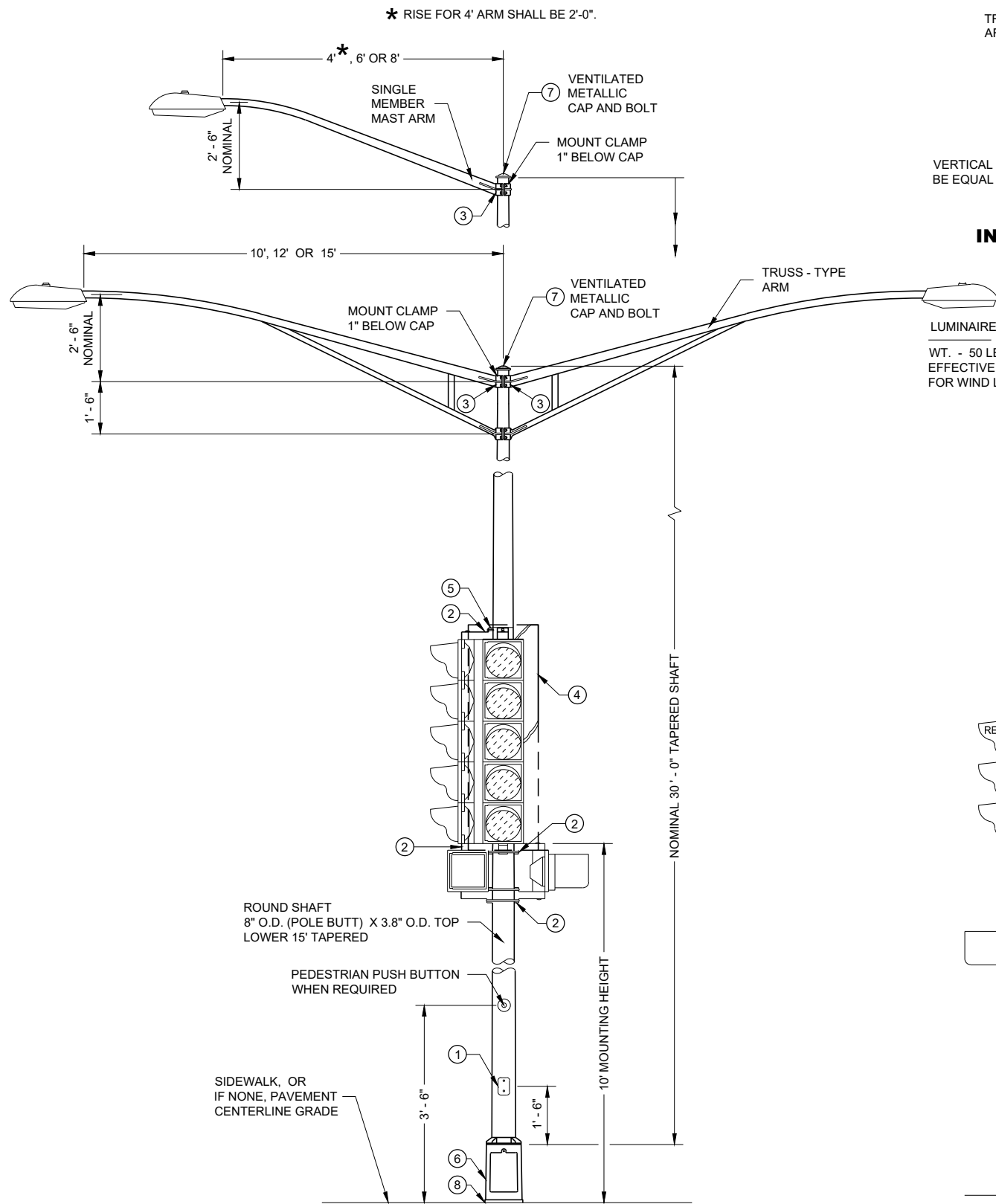
WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/2" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑧ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑨ USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.



## INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE  
WT. - 50 LBS.  
EFFECTIVE PROJECTED AREA  
FOR WIND LOADING = 1.5 SQ. FT.

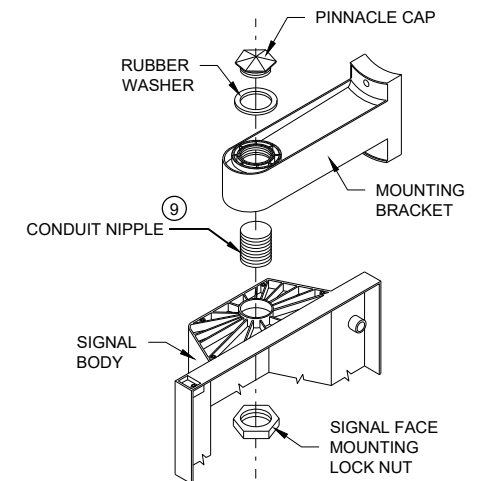


(MAXIMUM LOAD)

TYPICAL MOUNTING OF BACK TO BACK  
3 AND 5 SECTION SIGNAL FACES

TYPICAL MOUNTING OF 3 SECTION  
SIGNAL FACE

## TYPE 4 POLE MOUNTING CONFIGURATION



SIGNAL FACE MOUNTING DETAIL  
(BANDED)

**POLE MOUNTINGS FOR  
TRAFFIC SIGNALS AND  
LIGHTING UNITS, TYPE 4**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**Pole Mountings for Traffic Signals and Lighting Units Type 4**

**References:**

[FDM15-5 Attachment 30.5](#) and [30.6](#) for conventional symbols  
[Standard Spec 657](#) Poles, Arms, Standards, and Bases  
[Standard Spec 658](#) Traffic Signals  
[Standard Spec 659](#) Lighting

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0102	Concrete Bases Type 2.....	EACH
655.0200 - 0299	Cable Traffic Signal (# of conductors) (AWG) .....	LF
655.0610	Electrical Wire Lighting 12 AWG.....	LF
657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle .....	EACH
657.0315	Poles Type 4.....	EACH
657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT.....	EACH
657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT.....	EACH
657.0704	Luminaire Arms Truss Type 4-Inch Clamp 10-FT.....	EACH
657.0709	Luminaire Arms Truss Type 4-Inch Clamp 12-FT.....	EACH
657.0714	Luminaire Arms Truss Type 4-Inch Clamp 15-FT.....	EACH
658.0100 - 0199	Traffic Signal Face (section) (size) .....	EACH
658.0400 - 0499	Pedestrian Signal Face (inch).....	EACH
658.0500	Pedestrian Push Buttons.....	EACH
658.1100 - 1199	Programmable Traffic Signal Face (sections) (size).....	EACH
658.5070	Signal Mounting Hardware (location).....	EACH
659.1100 - 1199	Luminaires Utility LED (Category).....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Vendor
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Department

**Other SDDs associated with this drawing:**

<a href="#">SDD 9C2</a>	Concrete Bases, Types 1, 2, 5 and 6.
<a href="#">SDD 9C3</a>	Transformer/Pedestal Bases
<a href="#">SDD 9E1</a>	Pole Mountings sheet "g".
<a href="#">SDD 9E3</a>	Non-Freeway Lighting Unit Pole Wiring

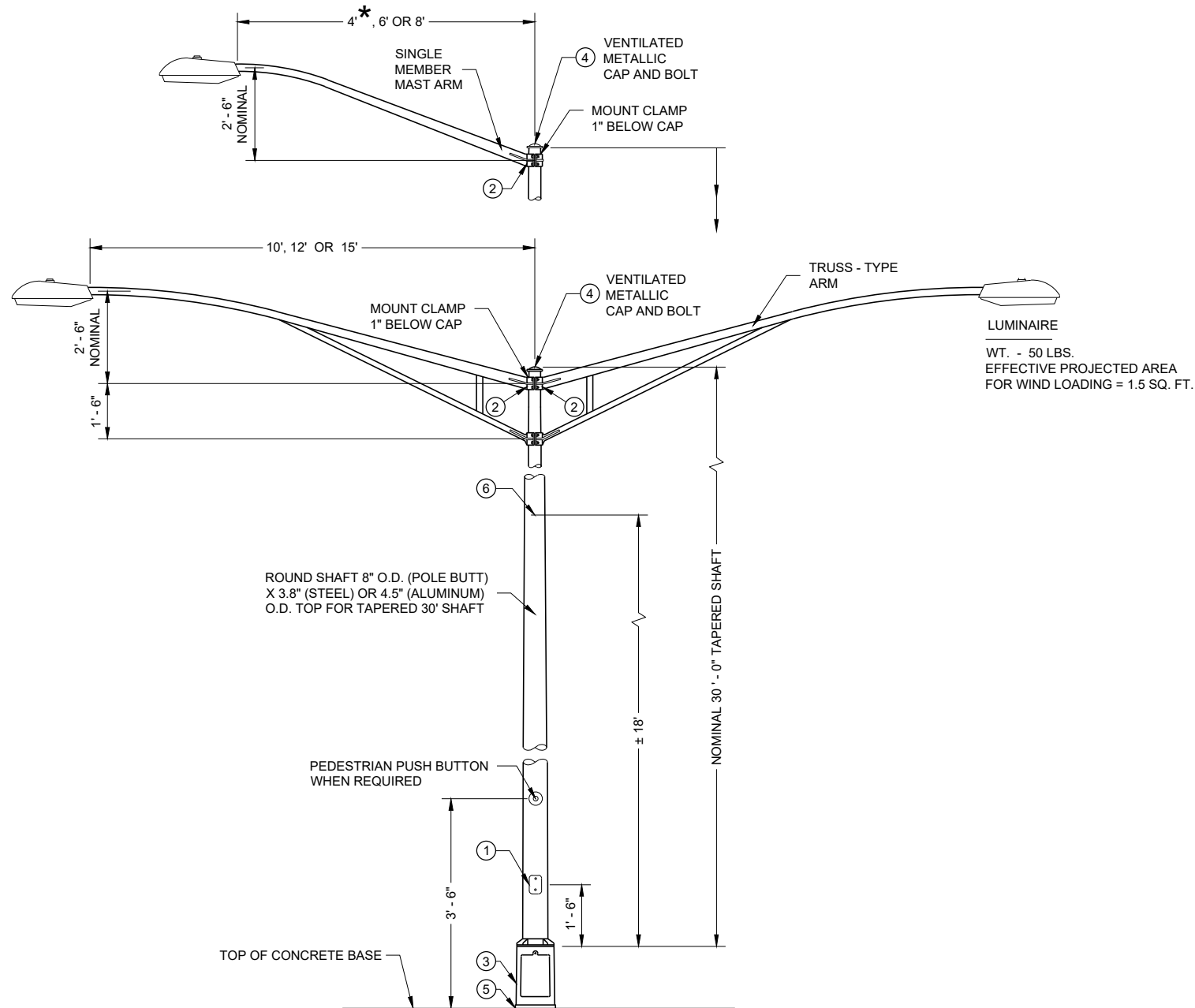
**Design Notes:**

Use 4-inch clamps.

**Contact Person:**

Ahmet Demirbilek (414) 220-6801  
 (414) 322-9606 (Mobile)

\* RISE FOR 4' ARM SHALL BE 2'-0".



**TYPE 5 POLE MOUNTING CONFIGURATION  
(MAXIMUM LOAD)  
LIGHTING ONLY**

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

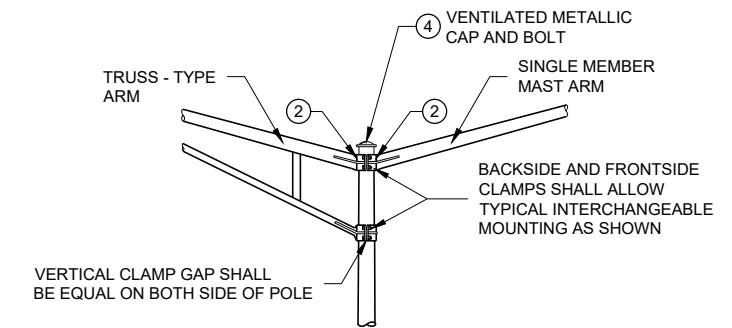
TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.

LUMINAIRE  
WT. - 50 LBS.  
EFFECTIVE PROJECTED AREA  
FOR WIND LOADING = 1.5 SQ. FT.



**INTERCHANGEABLE MOUNTING DETAIL**

**POLE MOUNTINGS FOR  
LIGHTING UNITS, TYPE 5  
( 30 FEET )**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

*Pole Mountings for Traffic Signals and Lighting Units Type 5 (30 feet)*

**References**

[FDM15-5 Attachment 30.5](#) and [30.6](#) for conventional symbols  
[Standard Spec 657](#) Poles, Arms, Standards, and Bases  
[Standard Spec 659](#) Lighting

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0105	Concrete Bases Type 5.....	EACH
655.0610	Electrical Wire Lighting 12 AWG.....	LF
657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle .....	EACH
657.0321	Poles Type 5-Steel.....	EACH
657.0322	Poles Type 5-Aluminum .....	EACH
657.0605	Luminaire Arms Single Member 4 1/2-Inch Clamp 4-FT.....	EACH
657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT.....	EACH
657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT.....	EACH
657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT.....	EACH
657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT.....	EACH
657.0704	Luminaire Arms Truss Type 4-Inch Clamp 10-FT.....	EACH
657.0705	Luminaire Arms Truss Type 4 1/2-Inch Clamp 10-FT.....	EACH
657.0709	Luminaire Arms Truss Type 4-Inch Clamp 12-FT.....	EACH
657.0710	Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT.....	EACH
657.0714	Luminaire Arms Truss Type 4-Inch Clamp 15-FT.....	EACH
657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT.....	EACH
659.1100 - 1199	Luminaires Utility LED (Category).....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Vendor
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Department
662.1024-1040.S	Ramp Closure Gates (size)

**Other SDDs associated with this drawing:**

<a href="#">SDD 9C2</a>	Concrete Bases, Types 1, 2, 5 and 6.
<a href="#">SDD 9C3</a>	Transformer/Pedestal Bases
<a href="#">SDD 9E1</a>	Pole Mountings sheet "g".
<a href="#">SDD 9E2</a>	Freeway Lighting Unit Pole Wiring
<a href="#">SDD 9E3</a>	Non-Freeway Lighting Unit Pole Wiring

**Design Notes:**

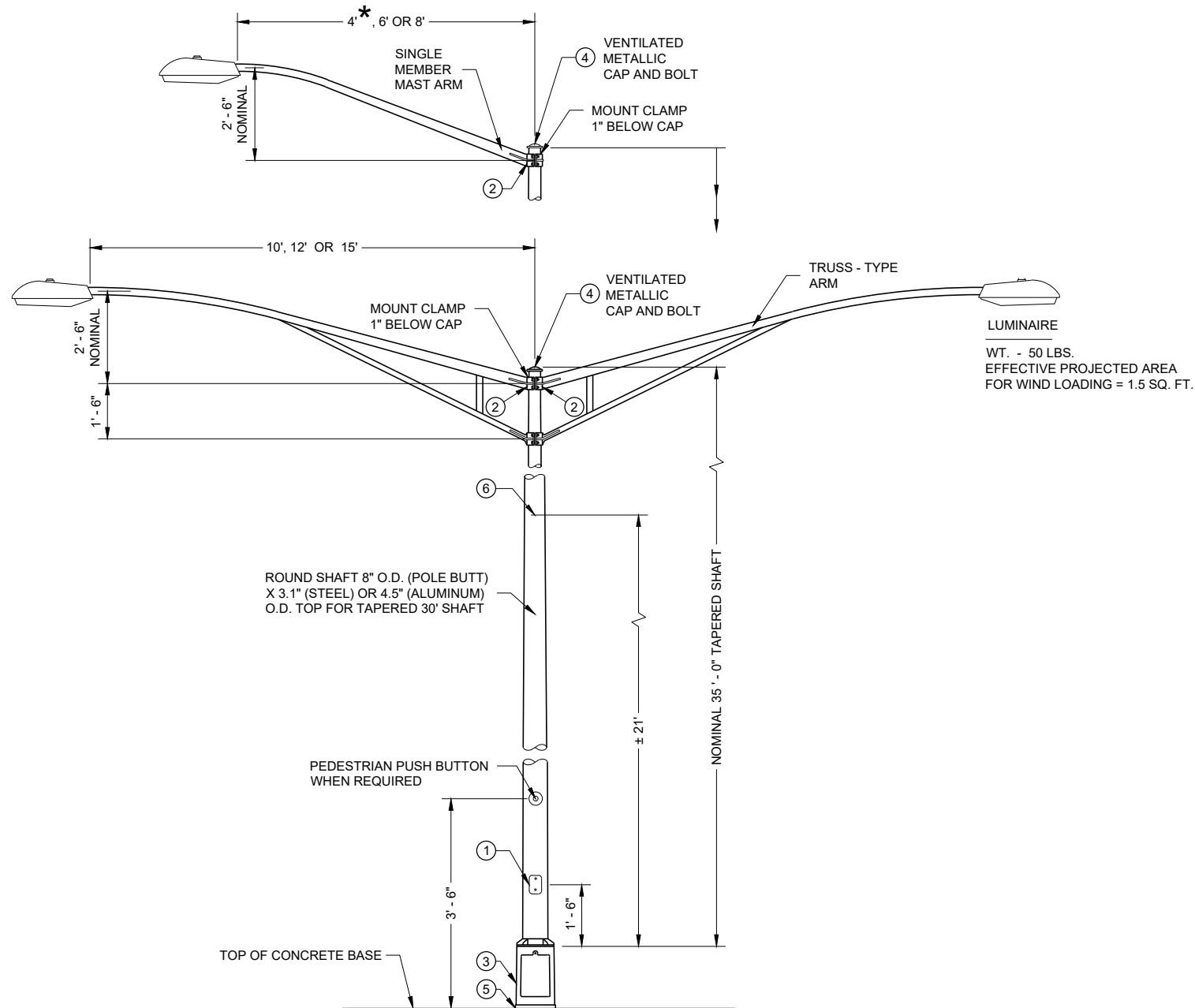
- Use 4-inch clamps with steel poles.
- Use 4 1/2-inch clamps with aluminum poles.
- Ramp closure gates with steel poles.

**Contact Person:**

Ahmet Demirbilek (414) 220-6801  
(414) 322-9606 (Mobile)



\* RISE FOR 4' ARM SHALL BE 2'-0".



**TYPE 6 POLE MOUNTING CONFIGURATION  
(MAXIMUM LOAD)  
LIGHTING ONLY**

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 6 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 6 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

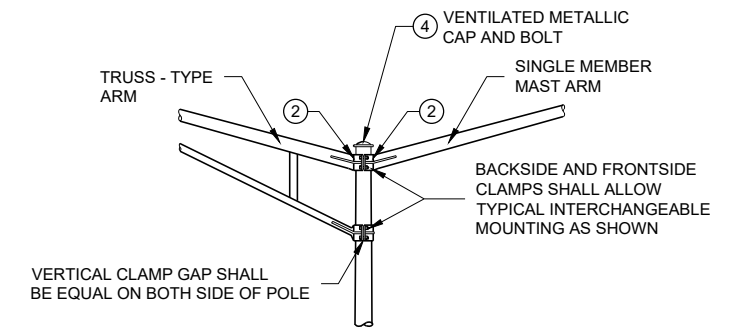
TYPE 6 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.219".

TYPE 6 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



**INTERCHANGEABLE MOUNTING DETAIL**

**POLE MOUNTINGS FOR  
LIGHTING UNITS, TYPE 6  
( 35 FEET )**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

*Pole Mountings for Traffic Signals and Lighting Units Type 6 (35 feet)***References:**[Standard Spec 657](#) Poles, Arms, Standards, and Bases[Standard Spec 659](#) Lighting**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0106	Concrete Bases Type 6.....	EACH
655.0610	Electrical Wire Lighting 12 AWG.....	LF
657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle .....	EACH
657.0326	Poles Type 6-Steel.....	EACH
657.0327	Poles Type 6-Aluminum .....	EACH
657.0605	Luminaire Arms Single Member 4 1/2-Inch Clamp 4-FT.....	EACH
657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT.....	EACH
657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT.....	EACH
657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT.....	EACH
657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT.....	EACH
657.0704	Luminaire Arms Truss Type 4-Inch Clamp 10-FT.....	EACH
657.0705	Luminaire Arms Truss Type 4 1/2-Inch Clamp 10-FT.....	EACH
657.0709	Luminaire Arms Truss Type 4-Inch Clamp 12-FT.....	EACH
657.0710	Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT.....	EACH
657.0714	Luminaire Arms Truss Type 4-Inch Clamp 15-FT.....	EACH
657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT.....	EACH
659.1100 - 1199	Luminaires Utility LED (Category).....	EACH

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Vendor
659.XXXX.S	Lamp, Ballast, LED, Switch Disposal by Department

**Other SDDs associated with this drawing:**

<a href="#">SDD 9C2</a>	Concrete Base, Type 1, 2, 5 and 6
<a href="#">SDD 9C3</a>	Transformer/Pedestal Bases
<a href="#">SDD 9E1</a>	Pole Mountings sheet "g".
<a href="#">SDD 9E2</a>	Freeway Lighting Unit Pole Wiring
<a href="#">SDD 9E3</a>	Non-Freeway Lighting Unit Pole Wiring

**Design Notes:**

Use 4-inch clamps with steel poles.

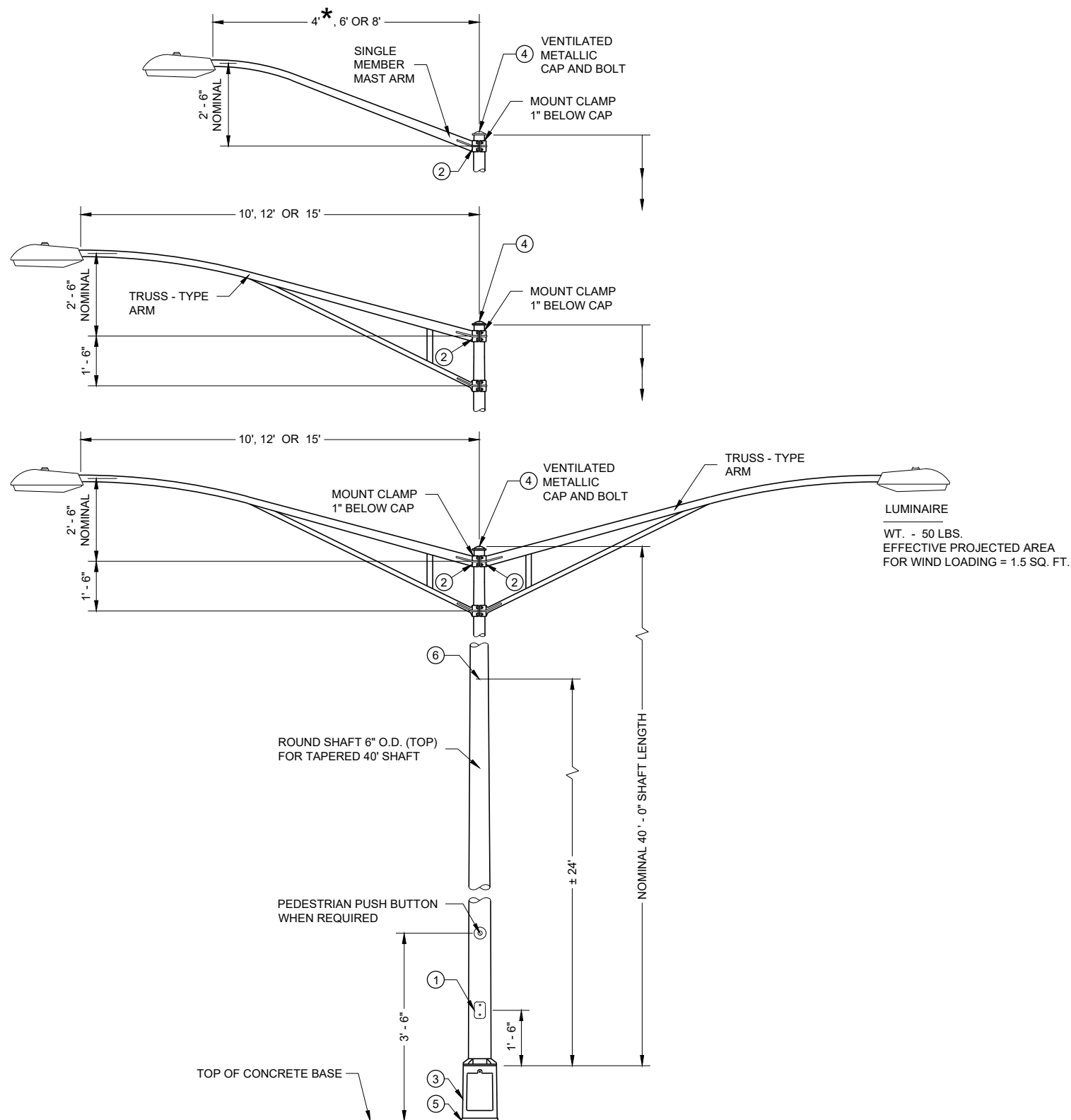
Use 4 1/2-inch clamps with aluminum poles.

**Contact Person:**

Ahmet Demirbilek (414) 220-6801

(414) 322-9606 (Mobile)

\* RISE FOR 4' ARM SHALL BE 2'-0".



**TYPE 17 POLE MOUNTING CONFIGURATION  
(MAXIMUM LOAD)  
LIGHTING ONLY**

## GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL LUMINAIRE POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 17 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

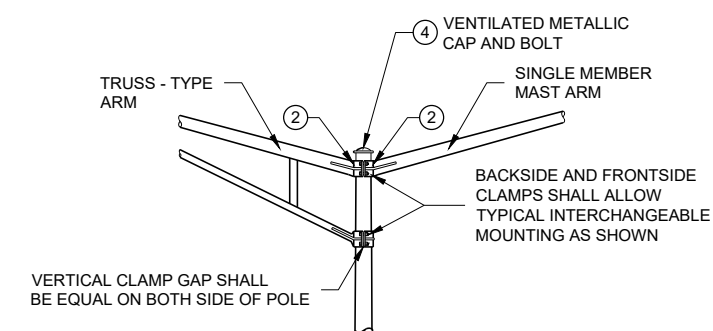
TYPE 17 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SHOE BASE SHALL BE SLOTTED TO ACCEPT A 15" BOLT CIRCLE (14" X 16" SLOT) USING 1" ANCHOR RODS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM FHWA APPROVED TRANSFORMER BASE WHEN REQUIRED, SHALL HAVE AN ULTIMATE STATIC LOAD STRENGTH OF AT LEAST 40,000 FT. - LBS.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBELL - TYPE VIBRATION DAMPER.



**INTERCHANGEABLE MOUNTING DETAIL**

**POLE MOUNTINGS FOR  
LIGHTING UNITS, TYPE 17  
( 40 FEET )**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

Pole Mountings for Lighting Unit, Type 17 (40 feet)

References:

- [Standard Spec 657](#) Poles, Arms, Standards, and Bases
- [Standard Spec 659](#) Lighting

Bid items associated with this drawing:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
654.0107	Concrete Bases Type 7.....	EACH
655.0610	Electrical Wire Lighting 12 AWG.....	LF
657.0210	Transformer Bases Breakaway 15-17 Inch Bolt Circle .....	EACH
657.0336	Poles Type 17-Steel.....	EACH
657.0337	Poles Type 17-Aluminum .....	EACH
657.0620	Luminaire Arms Single Member 6-Inch Clamp 4-FT.....	EACH
657.0625	Luminaire Arms Single Member 6-Inch Clamp 6-FT.....	EACH
657.0630	Luminaire Arms Single Member 6-Inch Clamp 8-FT.....	EACH
657.0635	Luminaire Arms Single Member 6-Inch Clamp 10-FT.....	EACH
657.0640	Luminaire Arms Single Member 6-Inch Clamp 15-FT.....	EACH
657.0720	Luminaire Arms Truss Type 6-Inch Clamp 20-FT.....	EACH
657.0725	Luminaire Arms Truss Type 6-Inch Clamp 15-FT.....	EACH
657.0730	Luminaire Arms Truss Type 6-Inch Clamp 12-FT.....	EACH
657.0735	Luminaire Arms Truss Type 6-Inch Clamp 10-FT.....	EACH
659.1100 - 1199	Luminaires Utility LED (Category).....	EACH

Standardized Special Provisions associated with this drawing:

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

Other SDDs associated with this drawing:

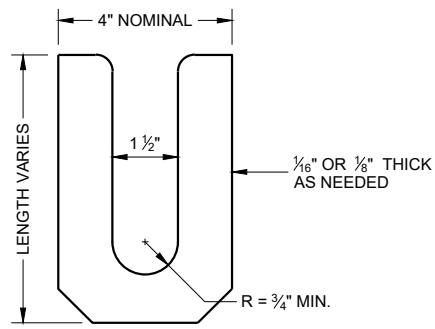
- [SDD 9C8](#) Concrete Base, Type 7
- [SDD 9C10](#) Transformer Base for 15-Inch Bolt Circle
- [SDD 9E1](#) Pole Mountings sheet "g".
- [SDD 9E2](#) Freeway Lighting Unit Pole Wiring
- [SDD 9E3](#) Non-Freeway Lighting Unit Pole Wiring

Design Notes:

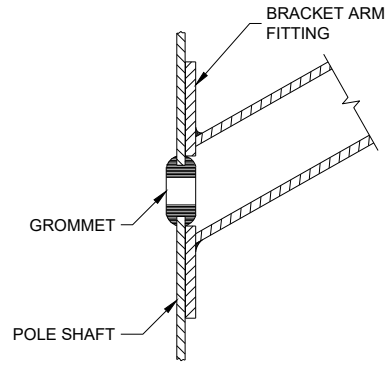
NONE

Contact Person:

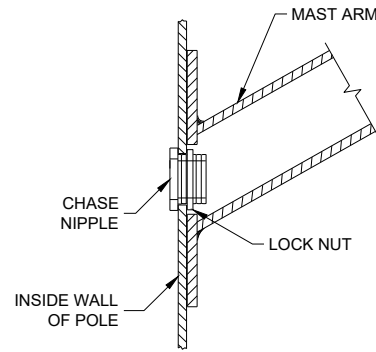
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 (414) 322-9606 (Mobile)



**LEVELING SHIM**  
SHALL BE ALUMINUM



**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**



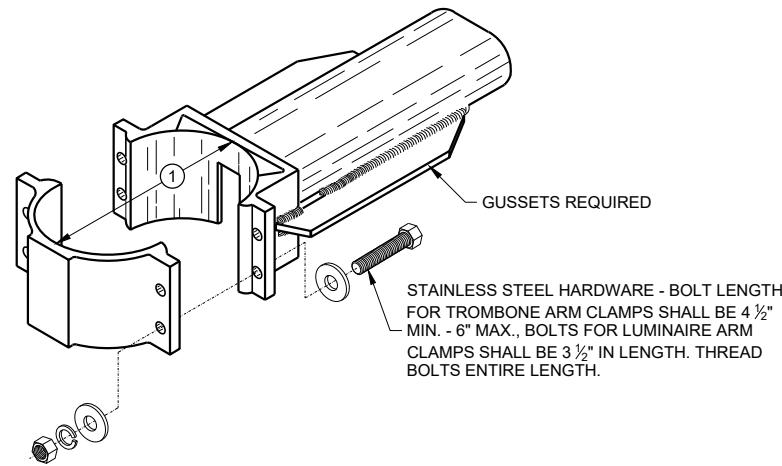
**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

## GENERAL NOTES

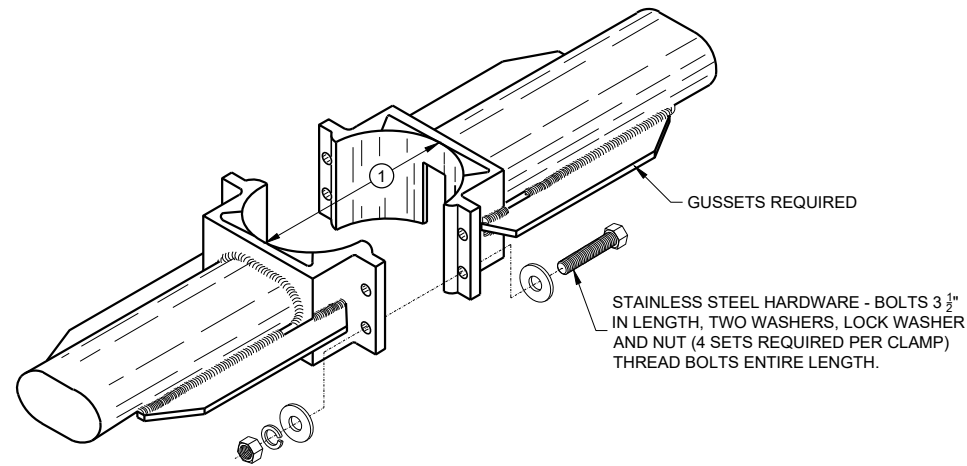
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ① 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ② INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ③ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ④ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

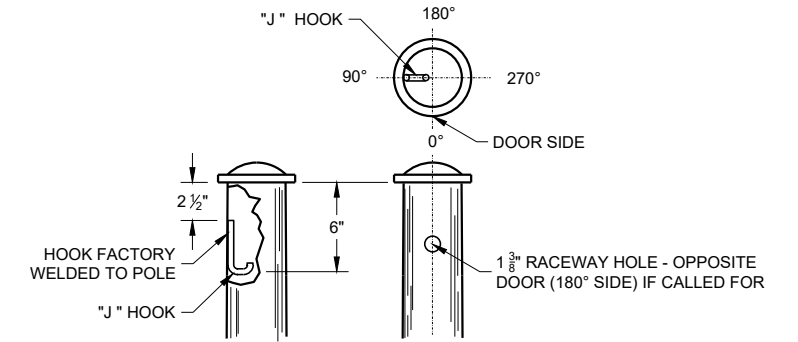
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



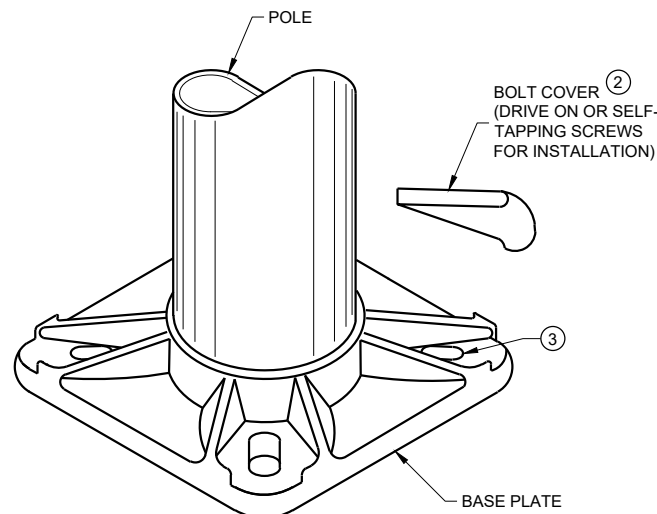
**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



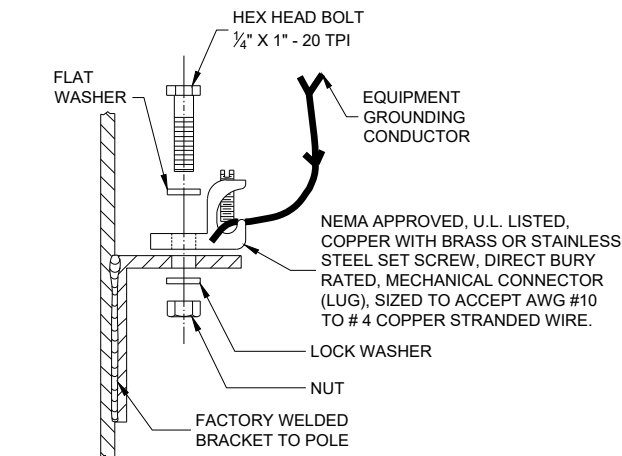
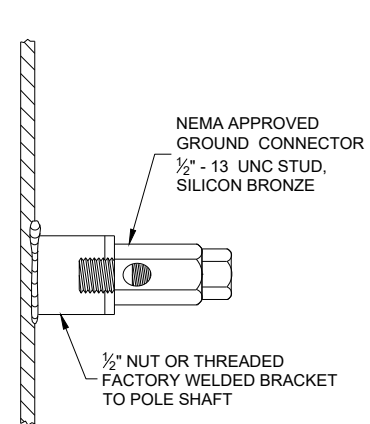
**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**



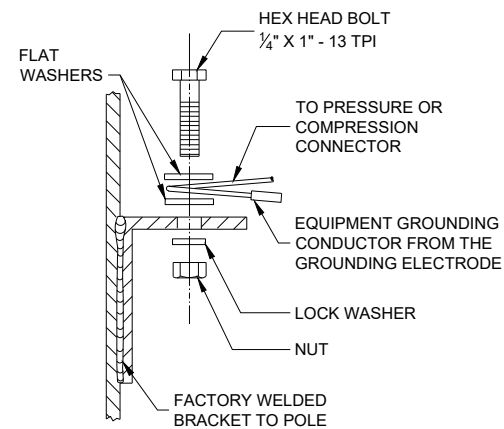
**TYPICAL "J" HOOK LOCATION**



**BASE PLATE**



**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



## HARDWARE DETAILS FOR POLE MOUNTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL ENGINEER

FHWA

*Hardware Details for Pole Mountings***References:**

[Standard Spec 657](#) - Poles, Arms, Standards, and Bases

**Bid items associated with this drawing:**

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
NONE		

**Standardized Special Provisions associated with this drawing:**

<u>STSP NUMBER</u>	<u>TITLE</u>
NONE	

**Other SDDs associated with this drawing:**

[SDD 9E1](#) Pole Mountings, sheets "a", "b", "c", "d", "e" and "f"

**Design Notes:**

This drawing is required when SDD 9e1 sheets "a", "b", "c", "d", "e", or "f" is called for in the plans.

**Contact Person:**

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