

**DOWNTOWN / URBAN  
MAST ARM TRAFFIC SIGNALS**

THE CITY OF MARYSVILLE SHALL BE THE SOLE ENTITY TO DETERMINE IF A TRAFFIC SIGNAL SHOULD BE DESIGNED TO URBAN OR DOWNTOWN STANDARDS.

**GENERAL**


1. SUPPORT POLES SHALL HAVE A TRUE AND CONTINUOUS TAPER. POLES HAVING A TAPERED EFFECT ACCOMPLISHED WITH THE USE OF REDUCERS SHALL NOT BE USED.
  - a. URBAN SUPPORT POLES AND ARMS SHALL HAVE A CIRCULAR CROSS SECTION. MULTI-SIDED OR FLUTED POLES SHALL NOT BE USED. ARMS SHALL BE STRAIGHT.
  - b. DOWNTOWN SUPPORT POLES SHALL HAVE 16 SHARP FLUTES. DOWNTOWN ARMS SHALL HAVE A CIRCULAR CROSS SECTION AND HAVE A 4' TO 5' CURVED UPSWEEP.
2. ARM LENGTHS FORTY FEET IN LENGTH OR LESS SHALL BE OF ONE PIECE CONSTRUCTION. ARMS MORE THAN FORTY FEET LONG MAY BE CONSTRUCTED IN NO MORE THAN TWO PIECES.
3. THE FORMED TOP OF THE FOUNDATION SHALL BE ORIENTED SQUARE TO AN ADJACENT SIDEWALK WHERE APPLICABLE. THE TOP OF THE FOUNDATION SHALL BE FLUSH WITH ANY ADJACENT SIDEWALK OR CONCRETE AREA. A MINIMUM OF TWO - 2" CONDUIT ELLS, USED OR UNUSED, SHALL BE INSTALLED IN EACH POLE FOUNDATION.
4. ALL SIGNAL CABLES SHALL BE RUN INSIDE THE POLES.
5. STAINLESS STEEL BANDING SHALL NOT BE USED ON MAST ARM TRAFFIC SIGNAL SUPPORTS.
6. FOR SIGNAL HEAD AND ATTACHMENT DETAILS SEE SHEET 2 OF 6.
7. THE WIRE ENTRANCE PART OF THE SIGNAL HEAD MAY BE ORIENTATED IN ANY DIRECTION TO KEEP THE CABLE DRIP LOOP FROM RUBBING ON THE SIGNAL HEAD. THE SIGNAL HEAD SHALL HANG LEVEL AND PLUMB.
8. PEDESTRIAN SIGNAL HEADS SHALL BE POLYCARBONATE, LED, COUNTDOWN. PEDESTRIAN SIGNAL HEADS SHALL BE MOUNTED ON TWO-HINGED TYPE BRACKETS WHICH ARE BOLTED TO THE POLE. ALL MOUNTING HARDWARE AND THE SIGNAL HEAD HOUSING SHALL BE COATED TO MATCH THE SIGNAL SUPPORTS.
9. THE EXTERIOR HOUSING OF THE PEDESTRIAN PUSHBUTTON HOUSING SHALL BE BLACK TO MATCH THE SIGNAL SUPPORTS. THE PUSHBUTTONS SHALL BE ADA COMPLIANT WITH VIBRATING ARROW AND AUDIBLE TONES AS APPROVED BY THE CITY OF MARYSVILLE. MOUNT THE CENTER OF THE PUSHBUTTON 42" ABOVE THE PEDESTRIAN PATHWAY SURFACE.
10. VEHICLE DETECTION SHALL BE ACCOMPLISHED VIA THE USE OF VIDEO DETECTION. VIDEO DETECTION HOUSING AND MOUNTING HARDWARE SHALL BE COATED TO MATCH THE SIGNAL SUPPORTS.
11. EMERGENCY VEHICLE PREEMPTION SHALL BE USED WHEN SPECIFIED BY THE CITY OF MARYSVILLE.

**DESIGN CRITERIA**

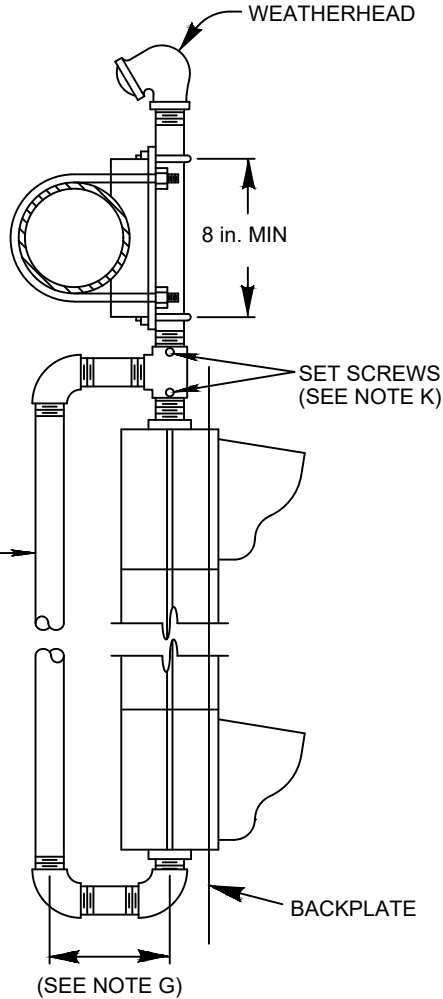
12. SIGNAL SUPPORT STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED BY THE SUPPLIER TO SUPPORT THE LOADS CAUSED BY THE SIGNS, SIGNALS, LUMINARIES, CAMERAS AND ANY OTHER EQUIPMENT SPECIFIED. THE USE OF STANDARD DESIGN DESIGNATIONS SUCH AS THOSE DESCRIBED ON THE OHIO DEPARTMENT OF TRANSPORTATION'S (ODOT) STANDARD CONSTRUCTION DRAWING TC-81.21(SIGNAL SUPPORTS), TC-83.20 (PEDESTAL SUPPORTS) AND ANY DETAILS PROVIDED WITHIN, ARE INTENDED TO PROMOTE UNIFORMITY OF DESIGN AND ARE NOT WARRANTED TO BE STRUCTURALLY ADEQUATE. TO THE MAXIMUM EXTENT PRACTICABLE, THE SUPPORT SHALL UTILIZE STANDARD ODOT ANCHOR BOLT SIZING AND SPACING AS DETAILED ON ODOT STANDARD CONSTRUCTION DRAWINGS TC-21.20, TC-81.21AND TC-83.20.

**FINISH**

13. ALL VISIBLE ELEMENTS OF THE SUPPORT, AND ANY OTHER PARTS REQUIRED TO BE COATED, SHALL BE GALVANIZED (IF APPLICABLE) AND THEN POWDER-COATED. THE TOP FINISH COAT OF PAINT SHALL BE SIMILAR TO:
  - FEDERAL SPECIFICATION 595-B COLOR #17038, BLACK.

Date: 1/1/20	Standard Construction Drawing	
	<b>TRAFFIC SIGNAL STANDARDS</b>	Drawing No.  <b>STR-18</b> Sheet 1 of 6

**RIGID MOUNTED SIGNAL HEAD**



BACKBRACING REQUIRED FOR ALL POLYCARBONATE SIGNALS WITH MORE THAN ONE SECTION

- A. LED VEHICULAR SIGNAL HEADS SHALL BE POLYCARBONATE AND BE PROVIDED WITH LOUVERED BACKPLATES.
- B. THE TOP AND BOTTOM OF THE SIGNAL HEAD SHALL HAVE AN OPENING TO ACCOMMODATE A STANDARD 1-1/2" PIPE BRACKET.
- C. EXCEPT FOR THE INTERIOR OF THE VISOR (FLAT BLACK) THE VEHICULAR SIGNAL HEADS AND BACKPLATES SHALL HAVE A FACTORY APPLIED BLACK FINISH TO MATCH THE SIGNAL SUPPORTS.
- D. SIGNAL HEAD CONDUIT BRACKETS AND CONDUIT FITTINGS SHALL BE GALVANIZED AND POWDER COATED TO MATCH THE MAST ARM STRUCTURE.
- E. ALL SIGNAL HEAD ASSEMBLIES SHALL BE INSTALLED IN A PLUMB POSITION AND PERPENDICULAR TO THE APPROACH LANE.
- F. THE MAST ARM CLAMP SHALL HAVE A MINIMUM STRENGTH AT YIELD TO SUPPORT A 200 POUND LOAD.
- G. A MINIMUM OF 17 INCHES IS REQUIRED FOR OPTICALLY PROGRAMMED SIGNAL HEADS AND A MINIMUM OF 6 INCHES FOR STANDARD SIGNAL HEADS.
- H. ALTERNATE RIGID SIGNAL HEAD MOUNTING DEVICES FOR MAST ARMS MAY BE APPROVED BY THE ENGINEER UPON DEMONSTRATION THAT THEY PROVIDE ADEQUATE RIGIDITY, EQUAL RANGE OF ADJUSTMENT AND CAN BE TIGHTENED SUFFICIENTLY TO PREVENT MOVEMENT AND LOOSENING UNDER VIBRATION.
- I. SIGNAL HEADS SHALL BE INSTALLED WITH A CLEARANCE ABOVE PAVEMENT ELEVATION AT THE CENTER OF THE ROADWAY OF 16 FEET MINIMUM, 18 FEET MAXIMUM. IT IS INTENDED THAT THIS CLEARANCE BE OBTAINED WITHOUT THE USE OF DROP PIPES, BUT RATHER BY THE CAREFUL SELECTION OF FOUNDATION HEIGHTS, ATTACHMENT HEIGHTS, ARM RISE, AND OTHER FACTORS DURING THE INSTALLATION. IF THE INSTALLATION CANNOT BE ADJUSTED TO THE PROPER CLEARANCE THE CONTRACTOR SHALL ADVISE THE CITY ENGINEER OF ALL SIGNALS WHICH EXCEED THE MAXIMUM. THE CITY ENGINEER WILL, DIRECT THE USE OF DROP PIPES OR WAIVE THE MAXIMUM CLEARANCE REQUIREMENT FOR EACH HEAD. IF DROP PIPES ARE NECESSARY, ADJUSTABLE SIGNAL HANGERS MAY BE USED.
- J. CABLE ENTRANCE OPENINGS ON DISCONNECT HANGERS SHALL RIGIDLY CLAMP CABLE TO PREVENT MOVEMENT OF THE CABLE WITHIN THE ENCLOSURE.
- K. SIGNAL HEAD ROTATION SHALL BE PREVENTED BY THE USE OF SERRATED RINGS, SET SCREWS OR OTHER POSITIVE DEVICES INCORPORATED IN THE SIGNAL HOUSING AND AT CRITICAL LOCATIONS IN THE SUPPORTING HARDWARE.
- L. ALL CONDUCTORS SHALL HAVE ADEQUATE CLEARANCE BETWEEN HANGERS, THIMBLES, BULLRINGS, ETC. IN ORDER TO AVOID DAMAGE FROM RUBBING.

NOT TO SCALE

Date: 1/1/20

Standard Construction Drawing

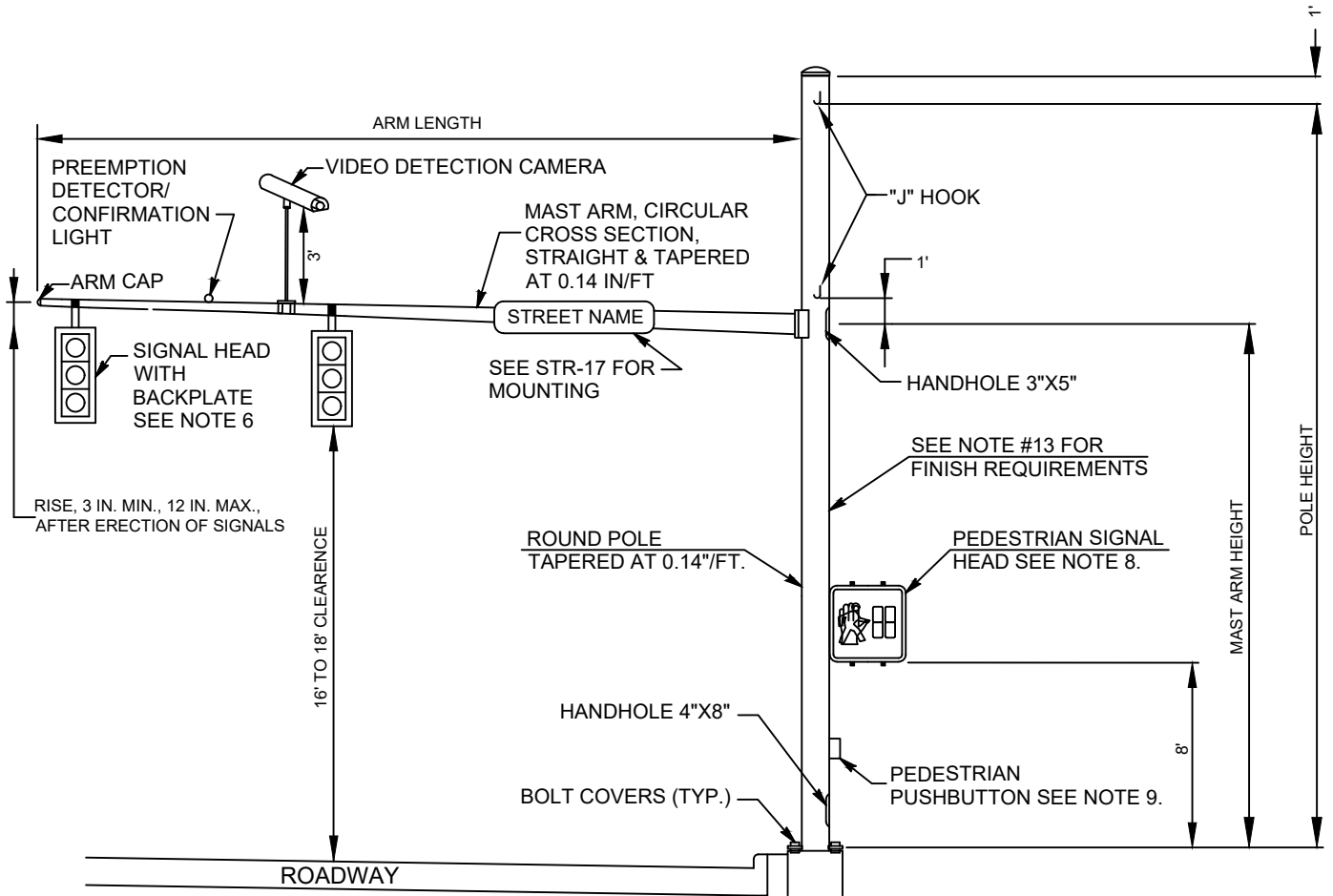


RIGID SIGNAL MOUNT

Drawing No.

STR-18

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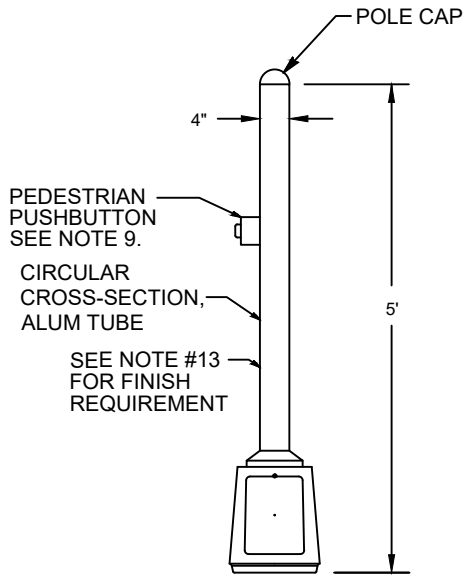
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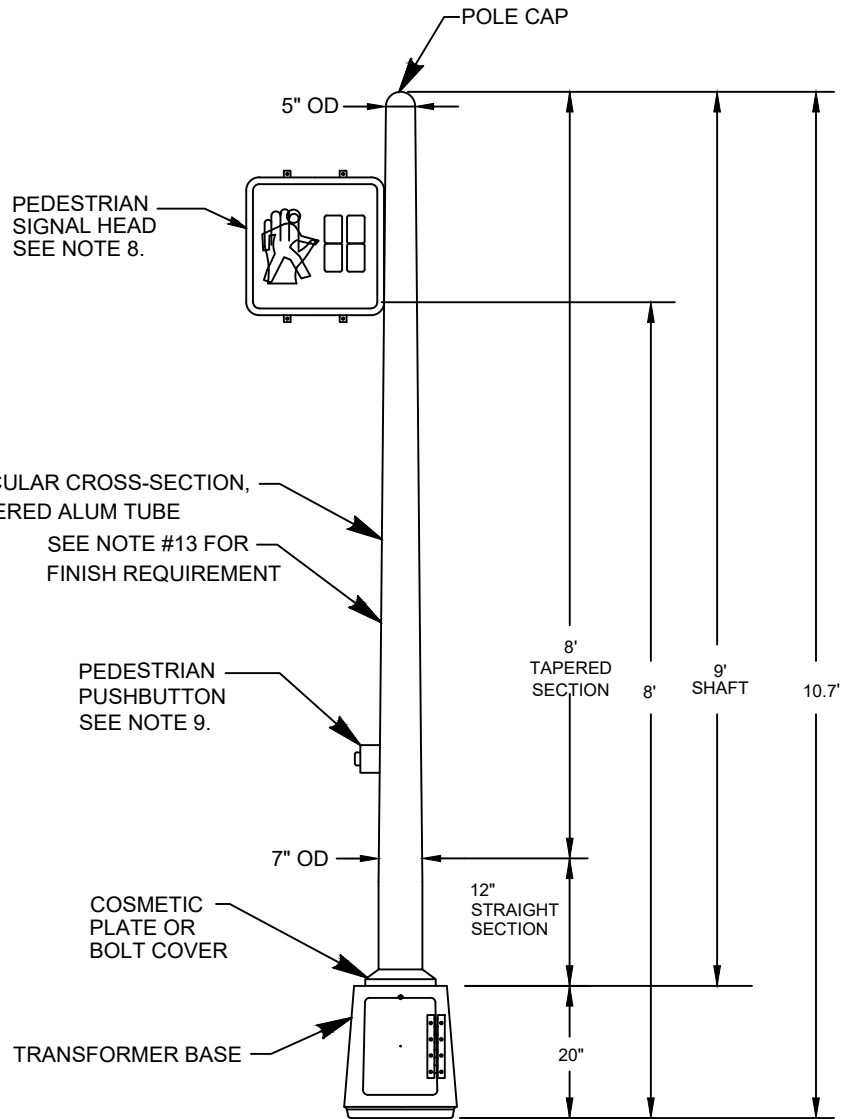
SINGLE ARM OVERHEAD  
SIGNAL SUPPORT

Drawing No.

STR-18  
Sheet 3 of 6



**5' PEDESTRIAN PEDESTAL URBAN**



**10.7' PEDESTRIAN PEDESTAL URBAN**

NOT TO SCALE

Date: 1/1/20

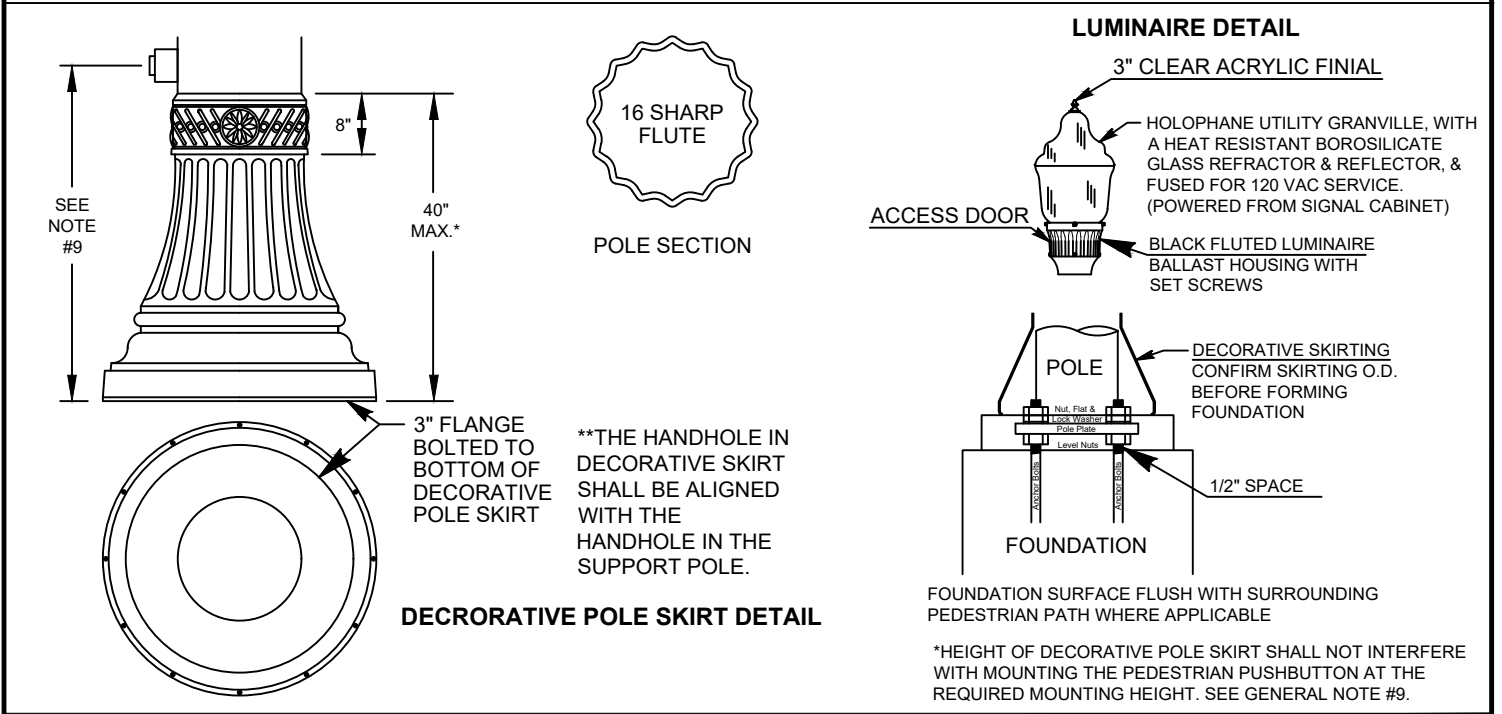
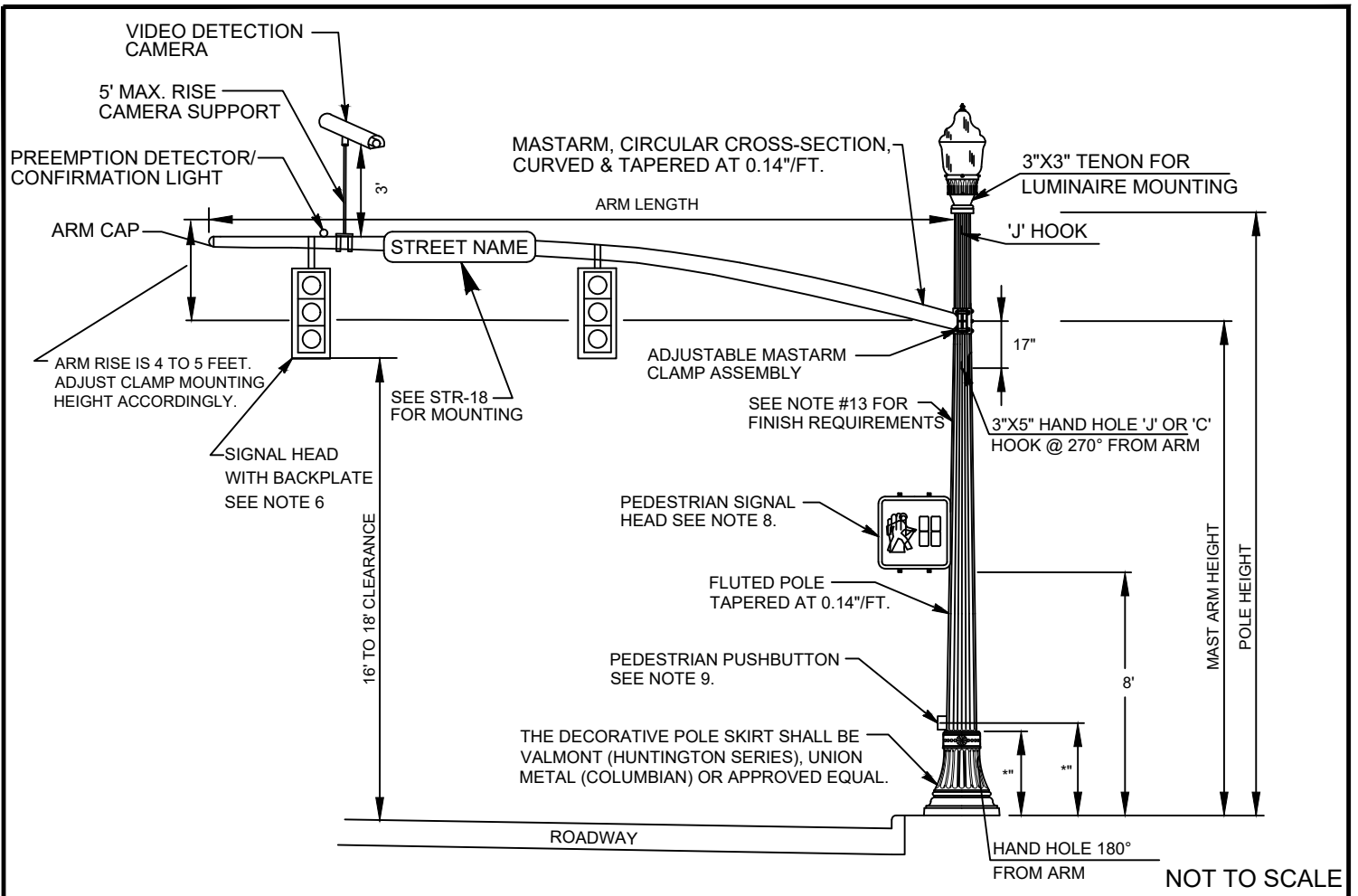
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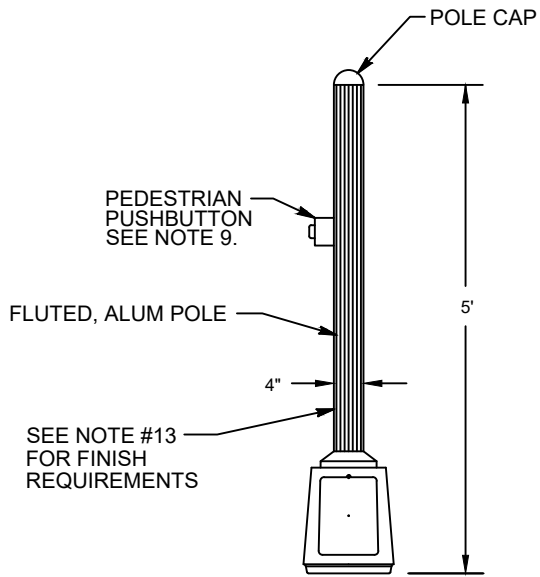
**PEDESTRIAN PEDESTALL URBAN**

Drawing No.

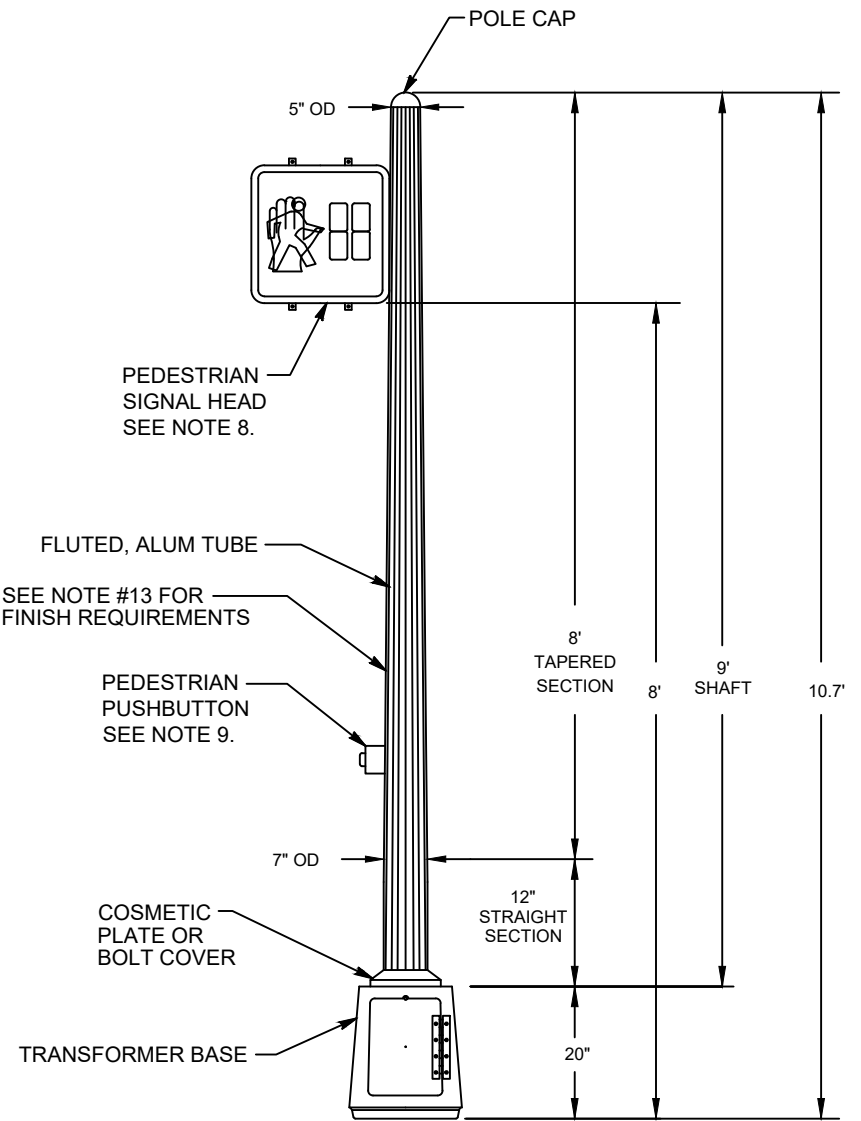
**STR-18**  
Sheet 4 of 6



Date: 1/1/20	Standard Construction Drawing	
	SIGNAL SUPPORT DOWNTOWN	Drawing No. <b>STR-18</b> Sheet 5 of 6



**5' PEDESTRIAN PEDESTAL DOWNTOWN**



**10.7' PEDESTRIAN PEDESTAL DOWNTOWN**

NOT TO SCALE

Date: 1/1/20

Standard Construction Drawing



**PEDESTRIAN PEDESTAL DOWNTOWN**

Drawing No.

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