



**DESIGN SPECIFICATIONS:**

UTILIZE 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS WITH THE LATEST INTERIM.

DESIGN WIND VELOCITY 80 M.P.H. (APPENDIX C)  
DESIGNICE LOAD 3 P.S.F.  
FATIGUE CATEGORY 2  
DESIGN LIFE 50 YEARS

ENSURE ALL LOADS APPLIED TO ALL MEMBERS HAVE BEEN TAKEN INTO ACCOUNT FOR STRENGTH DESIGN, AND ALL WELDED STRUCTURAL DETAILS HAVE BEEN ANALYZED AGAINST FATIGUE. THE DESIGN ANALYSIS IS NOT LIMITED TO POLE, BUT OTHER COMPONENTS LIKE ACCESS DOOR, TENON LOWERING DEVICE, WINCH ASSEMBLY, BASE PLATE, POLE-TO-BASE CONNECTION, ANCHOR BOLTS EMBEDMENT, ETC., MUST ALSO BE CONSIDERED.

ENSURE MAXIMUM HORIZONTAL DEFLECTION AT THE TOP OF THE POLE COMPLETELY ASSEMBLED WITH CCTV CAMERA AND ALL FIXTURES ATTACHED DOES NOT EXCEED 2 INCHES FROM THE CENTER LINE DUE TO A 40 MPH (GUST FACTOR 1.3) WIND SPEED (APPENDIX C WIND PRESSURE FORMULA)

SUBMIT DETAIL PLANS AND DESIGN CALCULATIONS OF CAMERA STANDARD POLES WITH CAMERA SHOWING STRENGTH, FATIGUE AND DEFLECTION CHECKS. SHOW CAMERA ASSEMBLY WEIGHT, INCLUDING LOWERING DEVICE AND EFFECTIVE PROJECTED AREA (EPA). ENSURE THE DESIGN CALCULATIONS AND WORKING DRAWINGS ARE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.

**MATERIALS:**

ENSURE THE POLE MATERIAL CONFORMS TO ASTM SPECIFICATIONS A595 GRADE A (MIN. YIELD POINT 55 KSI) OR GRADE B (MIN. YIELD POINT 50 KSI) MATERIAL CONFORMS TO ASTM A53, GRADE B (MIN. YIELD POINT 35 KSI). THE POLE TAPER TO BE 0.14 IN/FT. MAX. TWO SEGMENTS MUST BE THE SAME MATERIAL AS AN ALTERNATE THE POLE 18 SIDED MIN. AND TENON MAY BE FORMED FROM STEEL CONFORMING TO ASTM A572 GRADE 55 OR GRADE 60. ALL OTHER STEEL CONFORMS TO ASTM SPECIFICATION A709 (AASHTO M270) GRADE 36 OR GRADE 50. ENSURE ALL POLES REGARDLESS OF THICKNESS AND ALL OTHER STEEL PLATES GREATER THAN 1/4" THICKNESS MEET THE AASHTO REQUIREMENTS FOR NOTCH TOUGHNESS (CHARPY TESTING) ZONE 2. GALVANIZE BOTH UNITS OF THE POLE AND TENON PER ASTM A123 AFTER FABRICATION.

PROCURE BOLTS/ANCHOR BOLTS, NUTS AND WASHERS AS A PACKAGE FROM THE MANUFACTURER.

ENSURE ANCHOR BOLT MATERIALS CONFORM TO ASTM F1554, GRADE 55. GALVANIZE THE ANCHOR BOLTS PER ASTM A153 CLASS C AFTER THREADING FOR THE FULL LENGTH OF THE BOLT, AS WELL AS NUTS AND WASHERS.

HIGH STRENGTH BOLTS, NUTS AND WASHERS TO BE GALVANIZED PER ASTM A153 CLASS C.

PROVIDE STAINLESS STEEL FASTENERS (INCLUDING BOLTS, NUTS AND WASHERS) CONFORMING TO CURRENT ASTM A320 GRADE B8 CLASS 2 (AISI TYPE 304) AND STRAIN HARDENED. ALTERNATE MATERIALS PROPOSED TO BE USED FOR FASTENERS MUST BE PRE-APPROVED SEPARATELY PRIOR TO SUBMISSION OF WORKING DRAWINGS.

ALL CONCRETE TO BE "CLASS B" AS DEFINED IN THE NJDOT STANDARD SPECIFICATIONS.

**NOTES:**

1. ENSURE STEEL POLE CONSISTS OF A MAXIMUM OF TWO STEEL SECTIONS. THE LOWER SECTION TO BE A MIN. OF 40 FT. AND MAXIMUM OF 50' LONG WITH A MIN. THICKNESS OF 1/2" WITH ONLY ONE LONGITUDINAL SEAM WELD. IF THE POLE DIA. IS GREATER THAN 24 INCHES, TWO LONGITUDINAL SEAM WELDS WILL BE PERMITTED. EITHER SLIP JOINTS OR FULL PENETRATION WELD JOINTS ARE ACCEPTABLE. SEE SLIP JOINT AND FULL PENETRATION DETAILS. LAMINATE TUBES ARE NOT PERMITTED. SEE TYPICAL LONGITUDINAL SEAM WELD DETAIL.
2. ENSURE THAT THE POLE DIAMETER IS SUFFICIENT TO ACCOMMODATE THE WINCH / MOTOR ASSEMBLY COMPLETELY INSIDE THE POLE.
3. PROVIDE NEOPRENE DOOR GASKET CEMENTED TO DOOR.
4. PROVIDE A GALVANIZED SCREEN, WRAPPED AROUND THE BASE OF POLE.
5. ENSURE THE GALVANIZED SCREEN HAS NO MORE THAN 1/2" OPENINGS AND IS HELD TOGETHER WITH STAINLESS STEEL NUT, BOLT AND FLAT WASHER.
6. DO NOT GROUT UNDER THE POLE.
7. PROVIDE ONE (1) LEVELING HEX NUT, TWO (2) HOLD DOWN HEX NUTS AND TWO (2) FLAT WASHERS PER ANCHOR BOLT. (SEE SKETCH A) DETERMINE THE PROPER LENGTH OF THE ANCHOR BOLT FOR PROJECTION AND EMBEDMENT. THE CLEARANCE BETWEEN THE TOP OF THE FOUNDATION AND THE BOTTOM OF THE LEVELING NUT NOT TO EXCEED 1/2". THE PROJECTION LENGTH TO BE A MINIMUM OF 9".
8. ENSURE WELDING CONFORMS TO THE ANSI/AWS D1.1 STRUCTURAL WELDING CODE WITH NJDOT AMENDMENTS IN NJDOT STANDARD SPECIFICATIONS. ENSURE WELDING INSPECTION AND FULL PENETRATION WELD NONDESTRUCTIVE TESTING CONFORM TO AWS D1.1 UNLESS OTHERWISE SPECIFIED.
9. LOCATE TOP CENTER AND BOTTOM ELECTRICAL CABLE GUIDES WITHIN THE POLE AND ALIGN WITH EACH OTHER. POSITION THE BOTTOM CABLE GUIDE 2 INCHES BELOW THE BOTTOM OF THE ACCESS DOOR AND THE TOP CABLE GUIDE 1 INCH DIRECTLY BELOW THE TOP OF TENON. POSITION TWO PARKING STANDS A MAXIMUM OF 2 1/2" INCHES BELOW THE TOP OF THE ACCESS DOOR AND LOCATED AT 90° AND 270° FROM THE ACCESS DOOR. ENSURE EACH CABLE GUIDE IS 3/4" WIRE EYE BOLT HAVING 1" INTERNAL DIA. FOR WIRE TIE OFF.
10. ENSURE THE TIGHTENING PROCEDURE FOR ANCHOR BOLTS CONFORMS WITH SECTION 6.9 OF THE 2005 FHWA GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

NOT TO SCALE

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NEW JERSEY DEPARTMENT OF TRANSPORTATION

**ITS DETAILS**

CAMERA SURVEILLANCE SYSTEM  
CAMERA STANDARD TYPE A & B

SHEET 1 OF 3