

GENERAL

The following are to be used in conjunction with the Standard Specifications for Road, Bridge, and Municipal Construction by the Washington State Department of Transportation as adopted by the City of Longview.

CONCRETE STREET LIGHT FOUNDATION

All concrete foundations shall be the size and configuration shown on the plans, except where, in the judgment of the Engineer, unstable soil conditions require enlargement of the foundation. Before placing the concrete, the Contractor shall block out around any other underground utilities that lie in the excavated base so that the concrete will not adhere to the utility line. Concrete base shall class 4000 and be troweled, brushed, edged, and finished in a workmanlike manner. Concrete shall be promptly cleaned from anchor bolts and conduits after placement. Anchor bolts for all poles shall be arranged so that the pole's bracket arm is perpendicular to the centerline of the adjacent roadway right-of-way. Street lights may be installed after a compressive test of 2,400 psi has been achieved.

All poles shall be installed on leveling nuts secured to the anchor bolts and with locking nuts on the top of the base flange. The side of the pole shaft opposite the load shall be plumbed by adjusting the leveling nuts or as otherwise directed by the Engineer. The space between the concrete base and the bottom of the pole flange shall be filled with dry pack mortar to completely fill the space under the flange and around the conduits and be neatly troweled to the contour of the pole flange. A plastic drain hose (1/2 " diameter) shall be inserted through the mortar to provide drainage from the interior of the pole base and trimmed flush with the interior and exterior surface of the mortar. Dry pack mortar shall consist of a 1:3 mixture of cement and fine sand with just enough water so that the mixture will stick together on being molded into a ball by hand and will not exude free moisture when so pressed.

CONDUIT

All conduit shall be schedule 40 PVC except under driveways, and street crossings. These exceptions shall be rigid steel conduit and shall be a minimum of two inches in diameter. All elbows shall be rigid steel.

All underground conduit shall be installed a minimum of 24" below grade. In the driveway or roadway areas, electrical conduit should be installed by boring methods.

GROUNDING

All poles, metal conduits and cabinets in the same area covered by the same power service shall be made mechanically and electrically secure for a continuous grounding system in accordance with the Standard Specifications. Bonding jumpers shall be provided and installed by the Contractor in accordance with WSDOT Standard Plan J-9a to all #8 bare metal conduits in the junction box. Grounding of conduit and ground wire at the service point to the PUD service ground on the PUD power pole shall be accomplished as required under the National Electrical Code.

CATALOG CUTS

Prior to the beginning of construction, catalog cuts of the following items shall be submitted and approved by the City.

- 1. Street Light Standards
- 2. Luminaires
- 3. Junction Boxes
- 4. Wye and In-Line Connectors
- 5. Service Cabinet
- 6. In-Line Fuse Holders
- 7. Conduit
- 8. Wire.

CRITICAL INSPECTION POINTS

The illumination system will be inspected by the Traffic Department and Electrical Inspector.

The Electrical Inspector shall be responsible for inspecting all service related items.

The following are critical items that are to be inspected by the Traffic Inspector:

- 1. Conduit Depth: No trench shall be filled without the depth of conduit verified.
- 2. Pole Locations: The pole locations shall be approved by the traffic department prior to excavation of the pole bases.
- 3. Pole Bases: The pole bases shall be inspected and approved prior to pouring of the concrete.
- 4. Wiring: The wiring, splices, grounding and fusing shall be approved by the traffic inspector.



STREET LIGHTING - CONSTRUCTION NOTES

STANDARD PLAN: TR-010	CITY ENGINEER APPROVAL: Longview: C.B.
DATE: JAN 2017	

STREET LIGHT POLES:

All street light poles shall be those shown on standard plan TR-040 except in the following cases.

Street light poles in the cul-de-sac and street light poles on neighborhood streets deemed not to be neighborhood collectors by the City. Street light poles in those locations are shown on standard plans TR-030.

Street light poles shall not be located any closer than 7' from driveway or alley approach, unless approved by Traffic Engineer.

LOCATION OF STREET LIGHTS:

Street light poles are to be placed as close to property lines as possible. Final location of street light poles will be approved by the City.

TRENCHES:

Street lighting conduit shall be placed in its own separate trench. Whenever possible, the trench shall be located as close as possible to the street light bases.

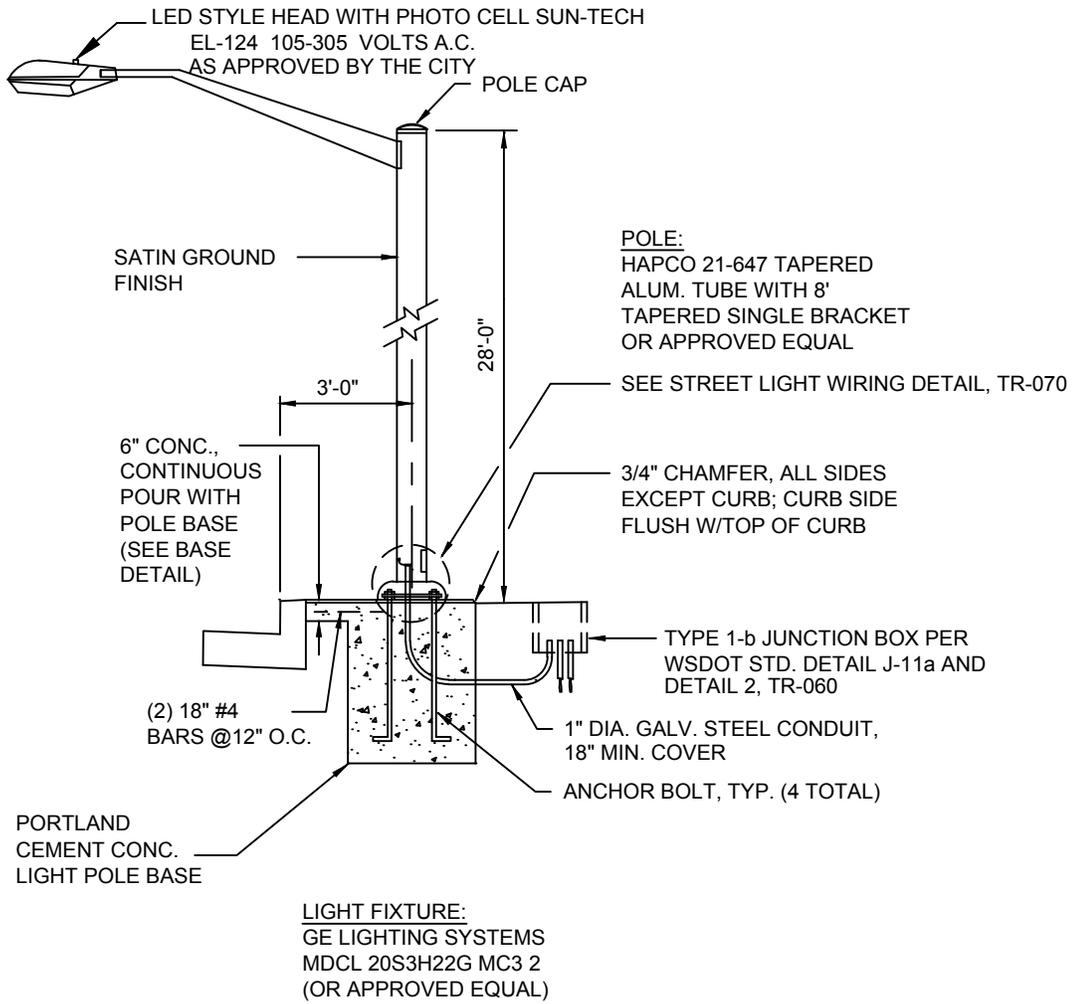
CONDUIT SIZE:

The minimum size of conduit traversing between junction box to street light base shall be 1 1/2" and rigid steel. The minimum size of all other conduit shall be 2" and shall comply to standard detail TR-020.

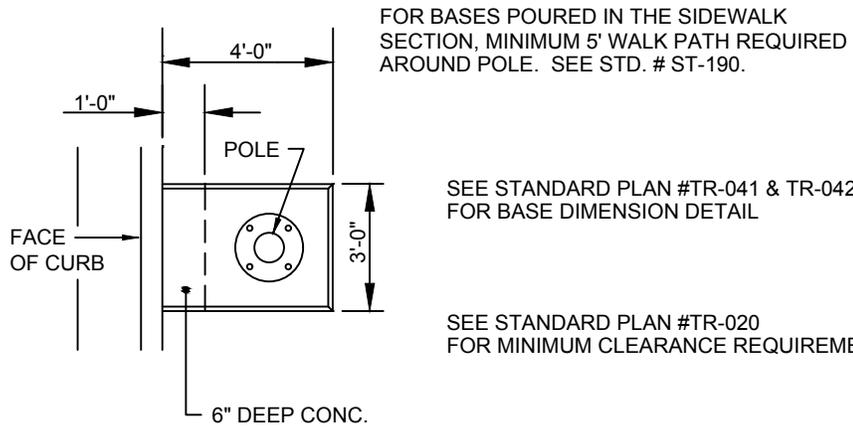
ILLUMINATION LEVELS:

The illumination levels shall comply with: ANSI/IES American National Standard Practice for Roadway Lighting, RP-08-00 (IESNA 2000)

	ILLUMINATION SPECIFICATIONS	
	STANDARD PLAN: TR - 020	CITY ENGINEER APPROVAL: Longview: C.B.
	DATE: JAN 2017	



SECTION

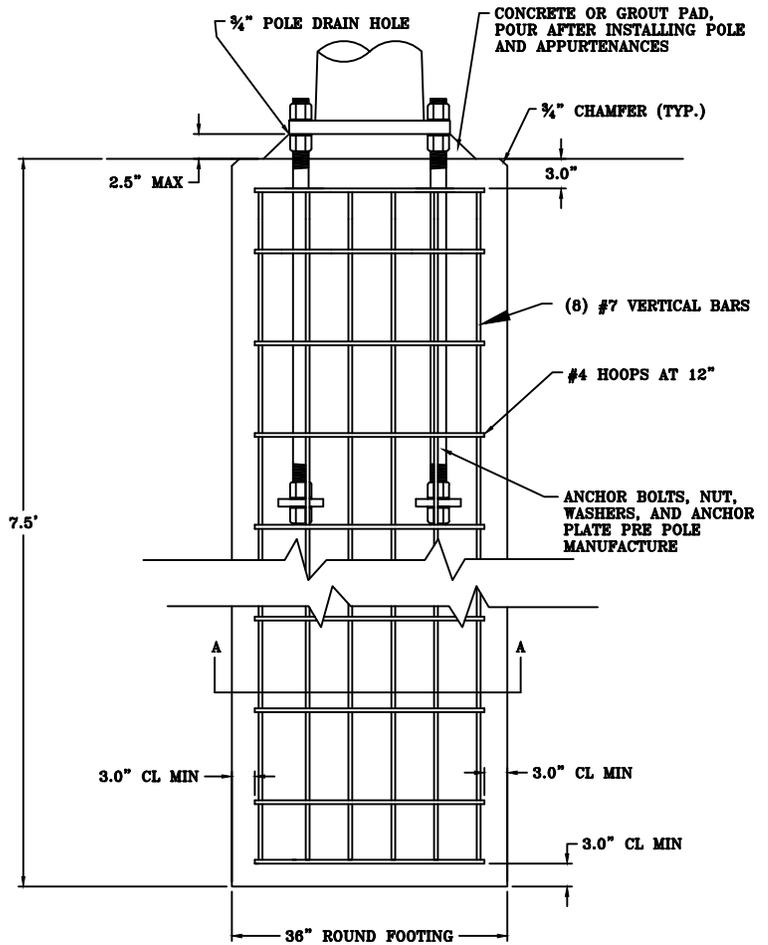


PLAN



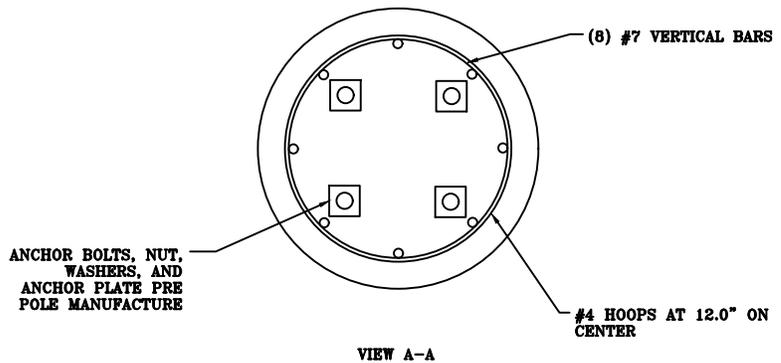
28' STREET LIGHT POLE

STANDARD PLAN: TR - 040	CITY ENGINEER APPROVAL: Longview: C.B.
DATE: JAN 2017	



NOTES:

1. VERTICAL STEEL BARS SHALL BE EQUALLY SPACED AROUND THE CIRCUMFERENCE OF THE FOOTING ALLOWING FOR A MINIMUM OF 3" OF CONCRETE COVER OVER THE TIES.
2. STEEL REINFORCING BAR SHALL CONFORM TO ASTM A615 GR 60.
3. MINIMUM CONCRETE STRENGTH, $f'_c = 3000$ PSI.
4. CONCRETES SHALL BE POURED AGAINST UNDISTURBED SOIL OR WELL COMPACTED MATERIAL. IF THE TOP LAYER OF SOIL IS DISTURBED IT SHALL BE DISCOUNTED AND THE FOOTING DEPTH SHALL BE INCREASED ACCORDINGLY.
5. DESIGNED FOR SOILS WITH A LATERAL BEARING PRESSURE OF 100 LBS/FT²/FT.
6. MAXIMUM BASE REACTIONS ARE:
 MOMENT = 34348 FT-LBS
 SHEAR = 1216 LBS



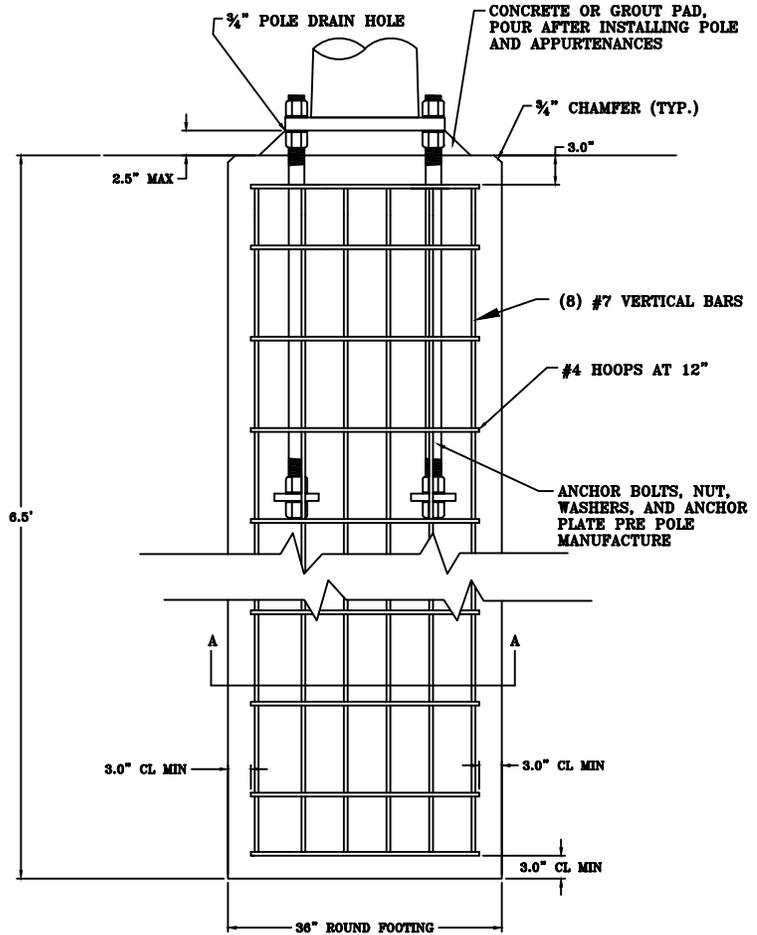
STREET LIGHT BASE (100 PSF)

STANDARD PLAN:
TR-041

CITY ENGINEER APPROVAL:

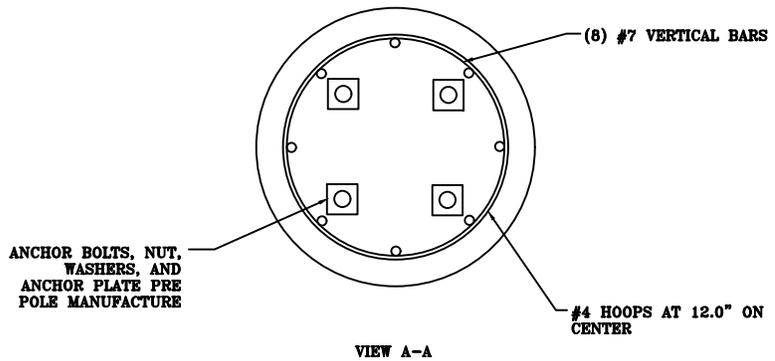
Longview: **C.B.**

DATE: **JAN 2017**



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5. DESIGNED FOR SOILS WITH A LATERAL BEARING PRESSURE OF 150 LBS/FT²/FT.
6. MAXIMUM BASE REACTIONS ARE:
 MOMENT = 34348 FT-LBS
 SHEAR = 1216 LBS



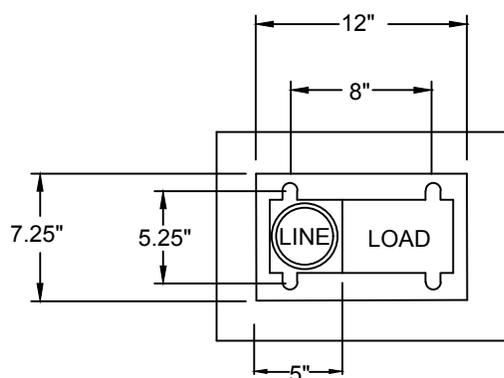
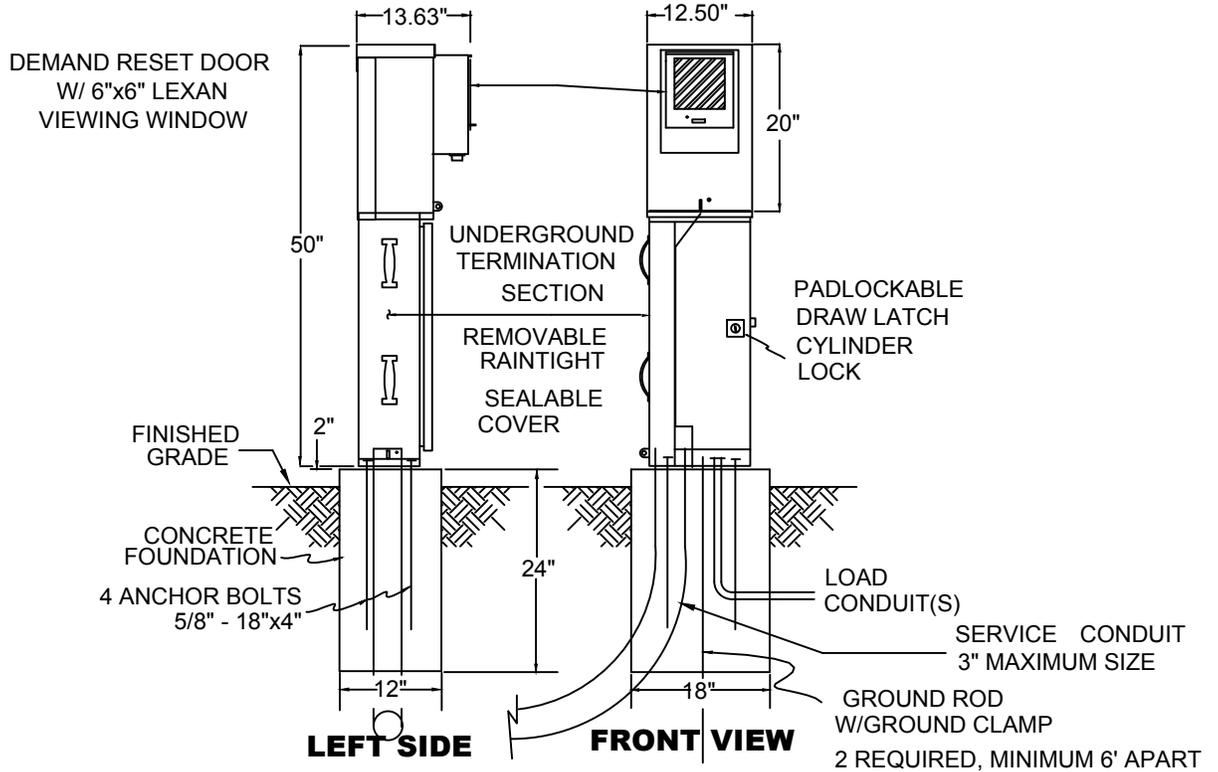
STREET LIGHT BASE (150 PSF)

STANDARD PLAN:
TR-042
 DATE: **JAN 2017**

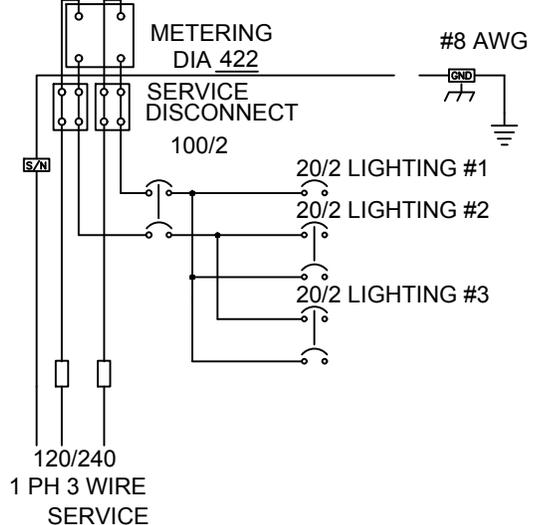
CITY ENGINEER APPROVAL:
 Longview: **C.B.**

METERING SECTION HOOD
FRONT-TOP & SIDES HINGED

METER SOCKET (100 AMP MIN.)
FACTORY WIRED FROM LINE LANDING
LUGS TO METER SOCKET IN A SEPERATE
WIREWAY



Base Detail
(NOT TO SCALE)



NOTE:
THE ABOVE IS AN EXAMPLE OF A TYPICAL
CIRCUIT FOR AN ILLUMINATION SYSTEM.
THE ILLUMINATION PLAN SHALL SHOW THE
ACTUAL CIRCUIT AND WILL BE REVIEWED
AND APPROVED BY THE CITY.

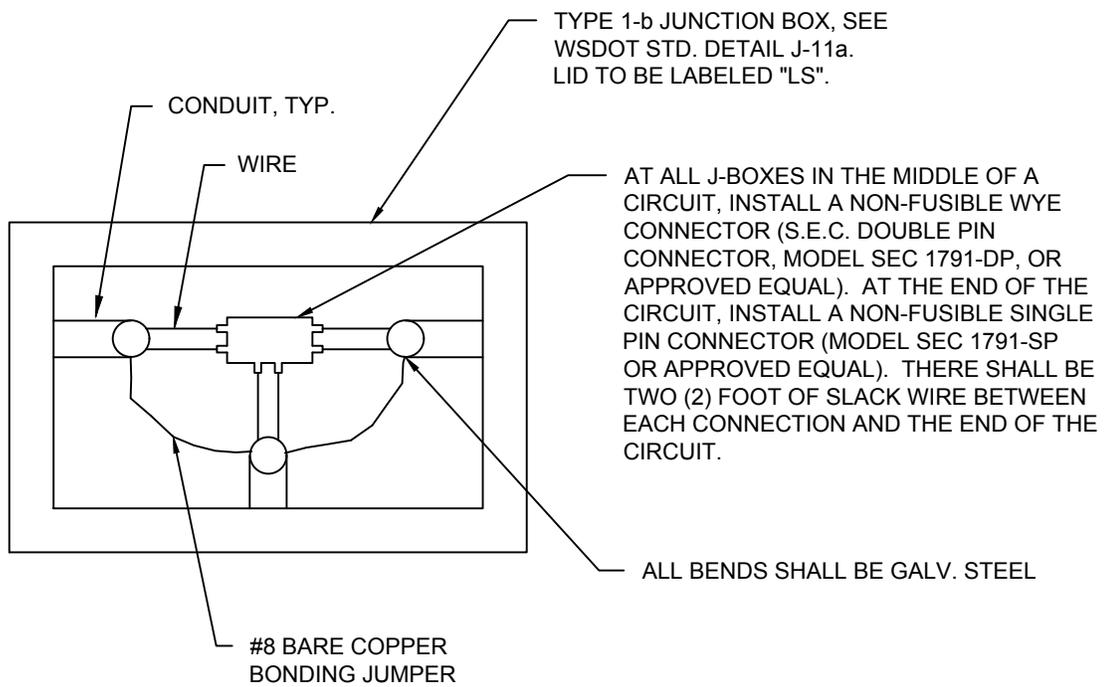
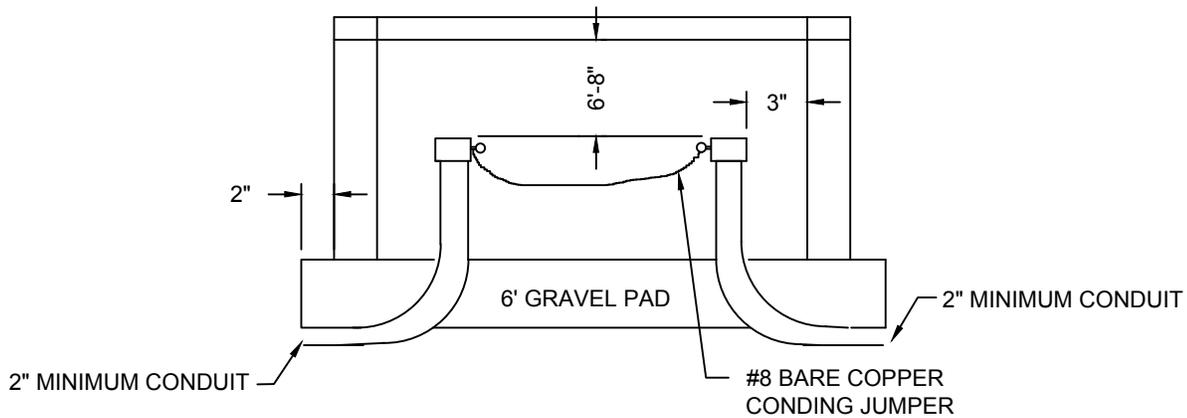
(TESCO 26-000 OR APPROVED EQUAL)



SERVICE CABINET

STANDARD PLAN:
TR - 050
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:
Longview: **C.B.**



JUNCTION BOX

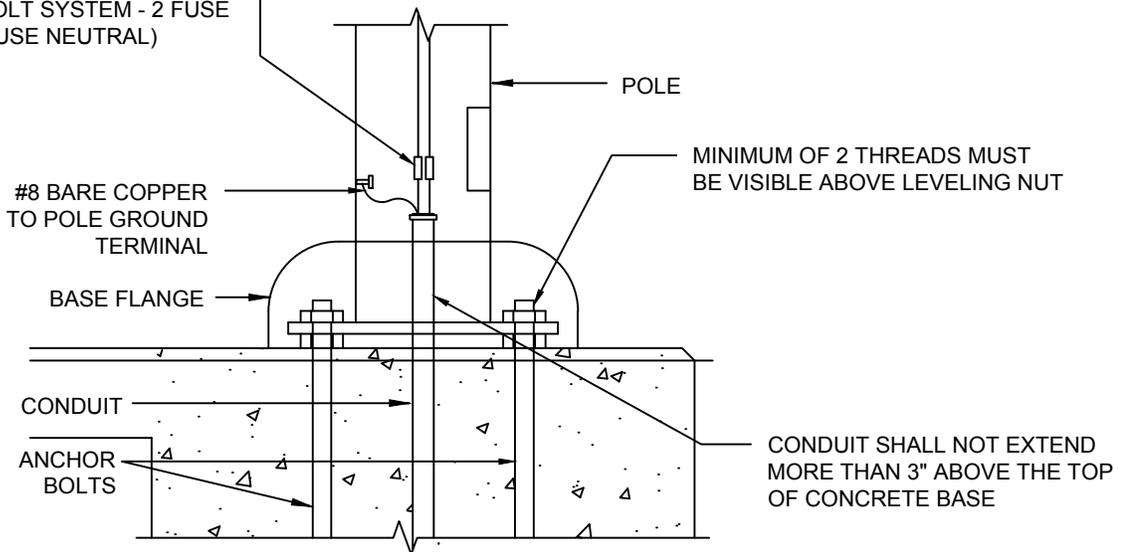
STANDARD PLAN:
TR - 060

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**

10 AMP FUSIBLE QUICK
DISCONNECT (TRON
IN-LINE FUSE HOLDER,
HEB- OR APPROVED EQUAL)
FOR 120 VOLT SYSTEM - 1 FUSE
FOR 240 VOLT SYSTEM - 2 FUSE
(DO NOT FUSE NEUTRAL)



STREET LIGHT WIRING

STANDARD PLAN:
TR - 070

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**

SIGNS:

All signing shall meet the most current version of the Manual on Traffic Control Devices (MUTCD) as amended by Chapter 468-95 WAC. The MUTCD is available electronically on the Internet and can be found at: <http://mutcd.fhwa.dot.gov/>.

Stop/Yield Signs: These signs shall be of High Intensity grade, installed on a minimum 0.080 gauge sign blank. Stop signing shall be a minimum of 30" in size with Yield signing a minimum of 36".

Speed Limit/No Parking Signs: These signs shall be as stated above, with Speed Limit signing a minimum of 24" x 30" in size and No Parking signing a minimum size of 12" x 18".

Street Name Signs: See Detail TR-100.

PAVEMENT MARKINGS:

All pavement markings shall meet the most current version of the Manual on Traffic Control Devices (MUTCD) as amended by Chapter 468-95 WAC. The MUTCD is available electronically on the Internet and can be found at: <http://mutcd.fhwa.dot.gov/>.

The Washington State Department of Transportation's (WSDOT) Standard Specifications and Standard Plans are referenced below. These documents are available electronically on the Internet and can be found at: <http://www.wsdot.wa.gov/design/standards/plansheets/>

Longitudinal Lines: Longitudinal lane lines shall be Liquid Cold Applied Methyl Methacrylate, per section 9-34.3(4) of the WSDOT's standard specifications and shall be profiled as per WSDOT's standard plan M-20.20-01.

Crosswalks: Crosswalks shall used may be installed with one of the following materials.

1. Liquid Hot Applied Thermoplastic - Section 9-34.3(1) of WSDOT standard specifications
2. Pre-formed Cold Applied Pre-formed Type - Section 9-34.3(3) of WSDOT standard specifications
3. Liquid Cold Applied Methyl Methacrylate - Section 9-34.3(4) of WSDOT standard specifications

Crosswalks shall be installed as shown per WSDOT's standard plan M-15.10-01. Final layout of the crosswalk shall be approved by the engineer prior to installation.

Stop Bars: Stopbars shall be installed with one of the following materials.

1. Liquid Hot Applied Thermoplastic - Section 9-34.3(1) of WSDOT standard specifications
2. Pre-formed Cold Applied Pre-formed Type - Section 9-34.3(3) of WSDOT standard specifications
3. Liquid Cold Applied Methyl Methacrylate - Section 9-34.3(4) of WSDOT standard specifications

Location of crosswalks is shown on WSDOT's standard plan M-15.10-01. Crosswalk lines to be a minimum of 9 feet in length. Stopbars shall be installed as shown per WSDOT's standard plan M-24.60-02.

Arrows: Traffic arrows shall be Pre-formed Fused Thermoplastic per section 9-34.3(2) of the WSDOT's standard specifications. Arrows shall conform with Figure 3B-24 (page 388)of the MUTCD. Standard arrow not elongated.



SIGNS & PAVEMENT MARKING - CONSTRUCTION NOTES

STANDARD PLAN: TR-075	CITY ENGINEER APPROVAL: C.B.
DATE: JAN 2017	Longview:

General Construction Notes (cont.)

Other Pavement Markings: Other pavement markings shall used may be installed with one of the following materials.

1. Liquid Hot Applied Thermoplastic - Section 9-34.3(1) of WSDOT standard specifications
2. Pre-formed Cold Applied Pre-formed Type - Section 9-34.3(3)of WSDOT standard specifications
3. Liquid Cold Applied Methyl Methacrylate - Section 9-34.3(4) of WSDOT standard specifications

Other pavement marking shall be installed using the appropriate plan of Section M of WSDOT's standard plans.

BARRICADES:

All barricades shall comply with 6F.63 of the MUTCD with the additions below.

Type III Barricades: Type III barricades shall be made of material that is considered breakable (plastic, ½ " plywood, 1"X 8" or 12" pine or fir). Type III Barricades used to close a street shall have both right and left stripes and be accompanied with either a road closed or end of roadway sign.

RAISED PAVEMENT MARKINGS:

All raised pavement markings shall conform with sections 8-09 and 9-21 of the WSDOT standard specifications.



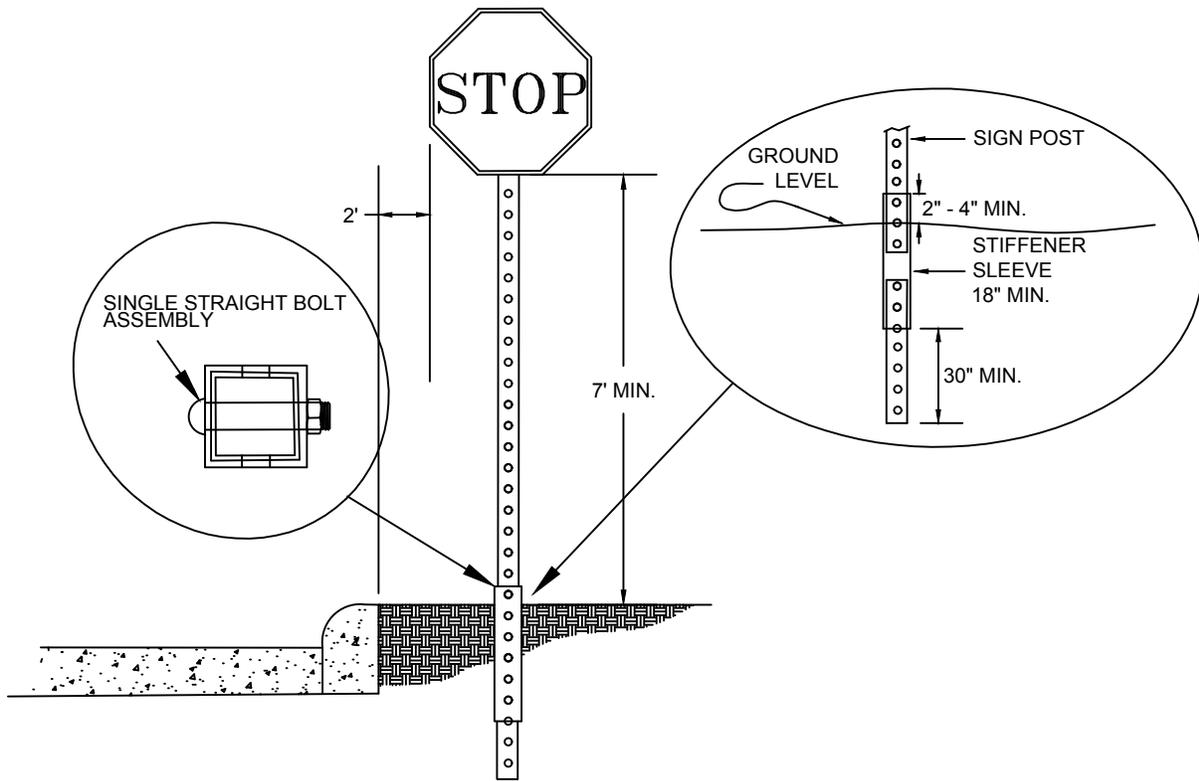
SIGNS & PAVEMENT MARKING - CONSTRUCTION NOTES

STANDARD PLAN:
TR-076

CITY ENGINEER APPROVAL:

Longview: **C.B.**

DATE: **JAN 2017**



UNISTRUT SIGN SUPPORT SYSTEM (OR APPROVED EQUAL)

SPECIFICATION:

MATERIAL:

TUBING IN GALVANIZED FINISH IS ROLLED FROM 12 GAUGE (.105") STRIP STEEL (STRUCTURAL QUALITY), ASTM SPEC. NO. A446, GRADE A.

SHAPE:

THE CROSS SECTION OF THE POST SHALL BE SQUARE TUBE FORMED OF 12 GAUGE (.105" U.S.S. GAUGE) STEEL, ROLLED TO SIZE AND WELDED IN THE CORNER.

FABRICATION:

THE FURNISHED MEMBERS SHALL BE STRAIGHT AND SHALL HAVE A SMOOTH UNIFORM FINISH. IT SHALL BE POSSIBLE TO TELESCOPE CONSECUTIVES SIZES OF TUBES FREELY WITH A MINIMUM AMOUNT OF PLAY. ALL HOLES AND CUT OFF ENDS SHALL BE FREE FROM BURS.

GALVANIZED FINISH:

ALL POSTS SHALL BE WEATHER PROTECTED BY GALVANIZING. POSTS SHALL BE FORMED FROM HOT-ROLLED STEEL STRIP WHICH HAS BEEN ZINC COATED, CONFORMING TO ASTM SPECIFICATION A525 COATING DESIGNATION G90 (PREVIOUS COATING CLASS 1.25 COMMERCIAL).

INSTALLATION OF NEWSIGN POST VIA CORE HOLE IN EXISTING SIDEWALK SHALL REQUIRE A MINIMUM 6" DEPTH OF GROUT PLUG.

ALL REGULATORY SIGNS SHALL BE HIGH INTENSITY GRADE. ALL OTHER SIGNS SHALL BE ENGINEER GRADE.

ALL SIGNS SHALL MEET MUTCD STANDARDS.

THE SIZE OF THE SIGNS SHALL MEET CITY STANDARDS.



SIGN INSTALLATION

STANDARD PLAN:
TR - 080

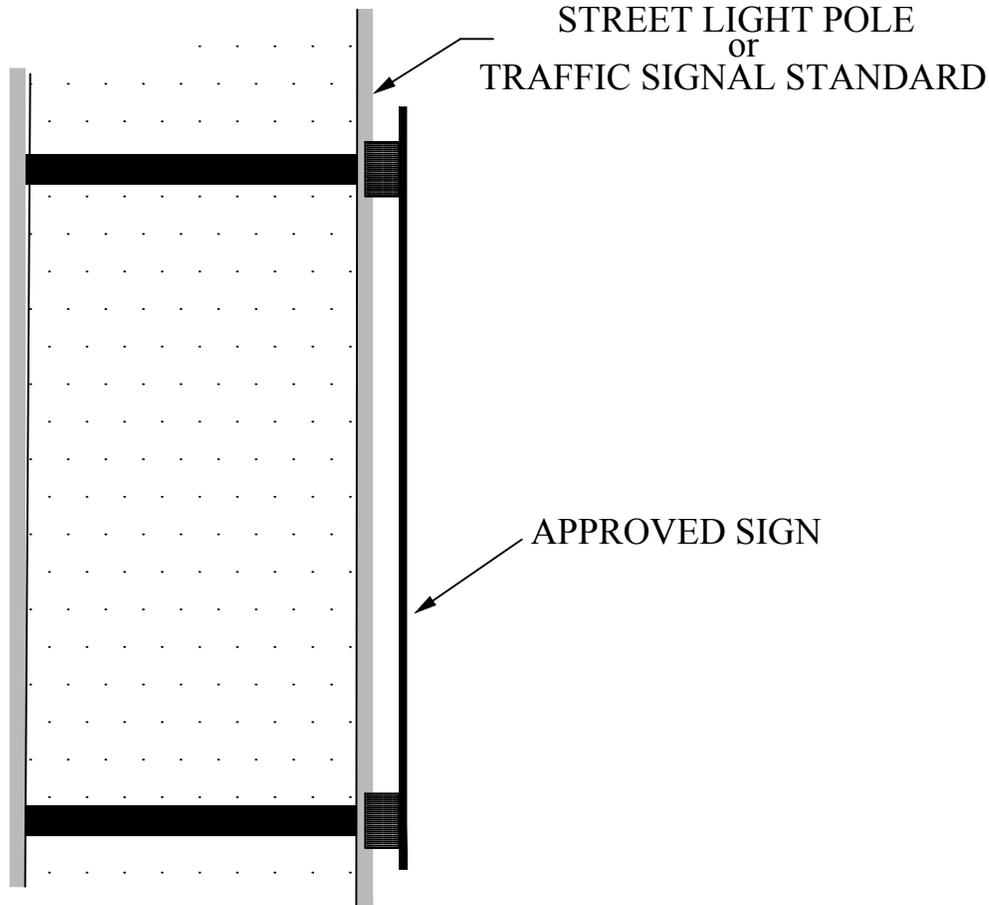
DATE: **JAN 2017**

CITY ENGINEER APPROVAL:

Longview: **C.B.**

Sign Banding Detail

Traffic Signal Standards and Aluminum Street Light Pole Applications



Banding brackets and clips shall be stainless steel BRAND-IT brand.

Banding shall be $\frac{3}{4}$ " wide x 0.030 thickness, #C20699 Valustrap

Clips shall be #C15699 Valuclips

Bracket shall be flared leg with bolt and washer, #D021 Brack-Its.

For street light installation, 9" street name signs shall use #1010 arm cantilever bracket or approved equal



STREET LIGHT AND SIGNAL POLE SIGN BANDING

STANDARD PLAN:
TR - 095

CITY ENGINEER APPROVAL:

Longview: **C. B.**

DATE: **JAN 2017**



STREET NAME SIGNS SHALL CONSIST OF MIN. 24" TO MAX. 36" BULB EXTRUDED BLANK THE SIZE OF STREET NAMING SIGN WILL DEPEND ON THE LENGTH OF THE STREET NAME.

SHEETING SHALL BE HIGH INTENSITY GRADE.

LETTERING SHALL BE WHITE AND HIGH INTENSITY OR BETTER.

STREET NAMES SHALL BE 6" IN HEIGHT.

PREFIXES AND SUFFIXES ARE 4" IN HEIGHT.

MOUNTING HARDWARE SHALL MEET THE INSTALLATION NEEDS AND A CATALOG CUT SHEET SHALL BE PROVIDED PRIOR TO INSTALLATION.



STREET NAME SIGN

STANDARD PLAN: TR - 100	CITY ENGINEER APPROVAL: Longview: C.B.
DATE: JAN 2017	