

Advanced Inspection Class  
Illumination and Signal Systems  
WSDOT

# This Class Was Gary's Plan to Improve the Process



# Document Hierarchy

- 1) Addenda**
- 2) Proposal form**
- 3) Special provisions (White Pages)**
  - a. A list is included for all Standard Plan numbers that are applicable to that contract.**
- 4) Contract plans**
- 5) Amendments to standard specifications (Pink Pages)**
- 6) Standard specifications (8 - 20) (9 - 29)**
  - a. 8-20.1(1) “Regulations and Code” includes NEC.**
- 7) Standard plans (J)**

# CONTACTS

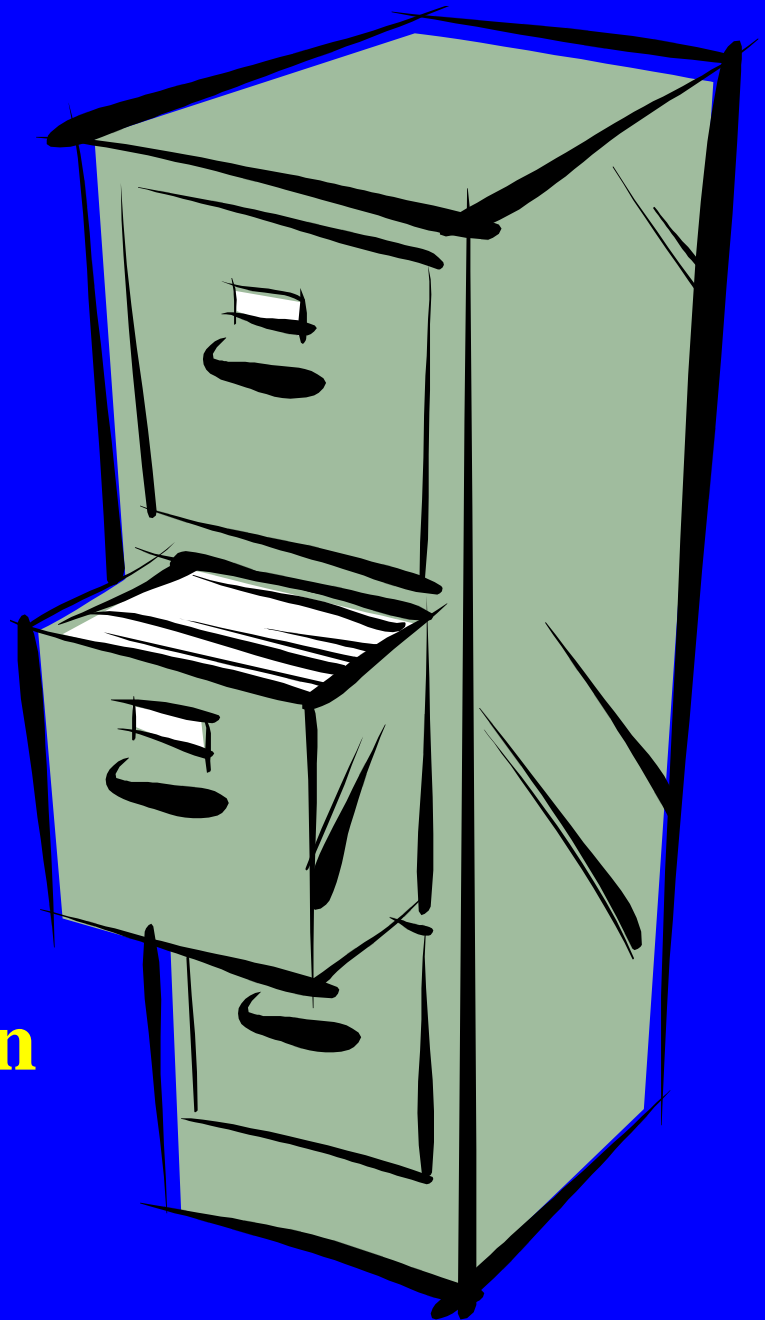
1. **Electrical Inspector**
2. **Maintenance / Signal Division / ITS**
3. **Regional Traffic Engineer**
4. **Fabrication Inspector**
5. **Headquarters Bridge and Materials Laboratory**
6. **Serving Utility, Vendors, Manufacturer's Representatives and Utility Engineer**

# Materials Documents

- 1. Record of Materials**
- 2. RAM and QPL**
  - a. Preliminary Samples**
- 3. Catalog Cuts**
- 4. Shop Drawings**
- 5. Fabrication Inspection**
- 6. Plant Certifications and Mix design**
- 7. Review Salvaged, Abandoned, As Ordered**

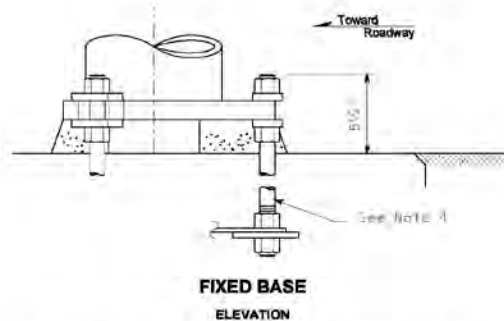
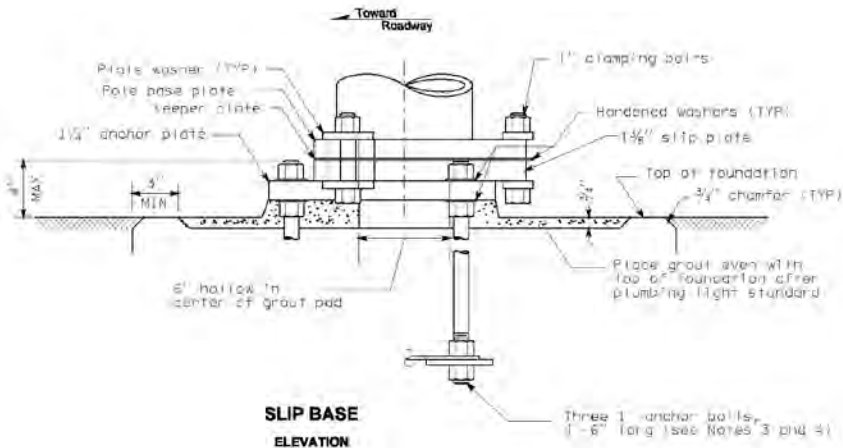
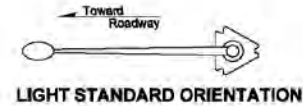
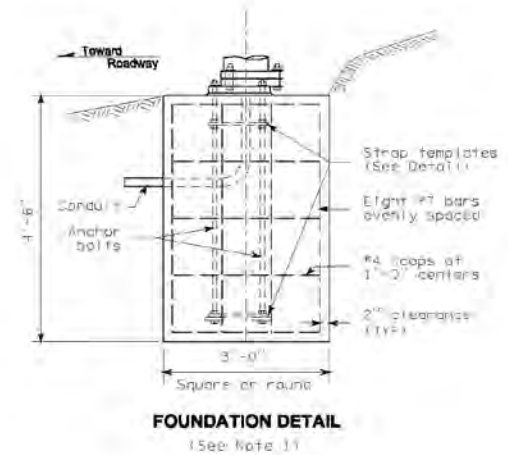
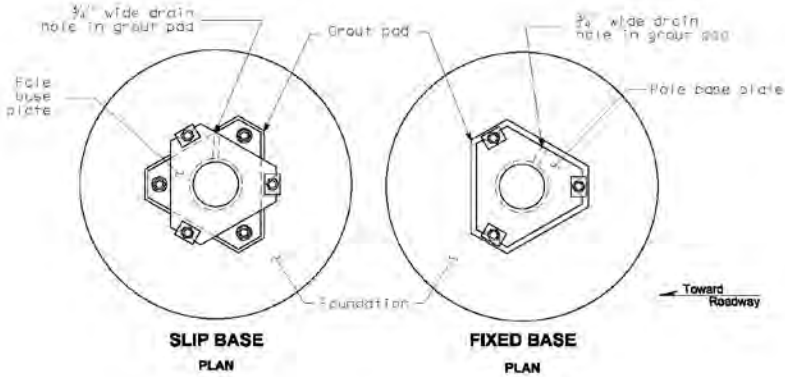
# **Contractor Submittals**

- 1. Traffic Control Plan**
- 2. Pollution Control Plan**
- 3. Schedule**



# Foundations

- 8-20.4
- 9-29.6(5)



Details similar to this for base except where noted



**STEEL LIGHT STANDARD  
BASE DETAILS  
STANDARD PLAN J-1b**

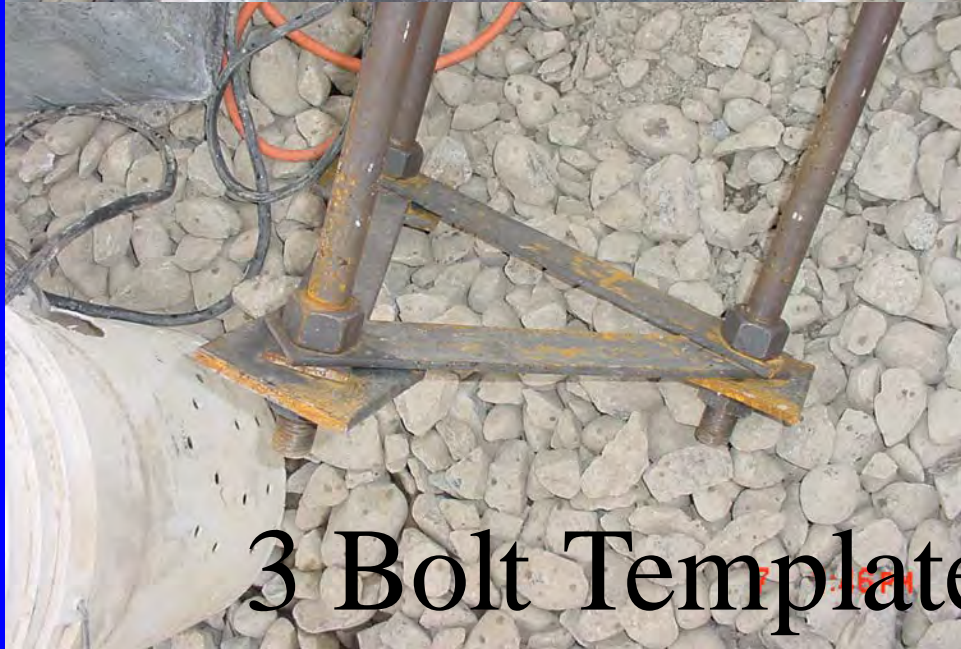
SHEET 1 OF 3 SHEETS

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE OF THE ORIGINAL, DESIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION. IS KEPT ON FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

10-98	REVISION	TWS	BY
DATE			

APPROVED FOR PUBLICATION  
**Clifford E. Mansfield** 10/08/99  
 DEPUTY STATE DESIGN ENGINEER DATE  
 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
 OLYMPIA, WASHINGTON

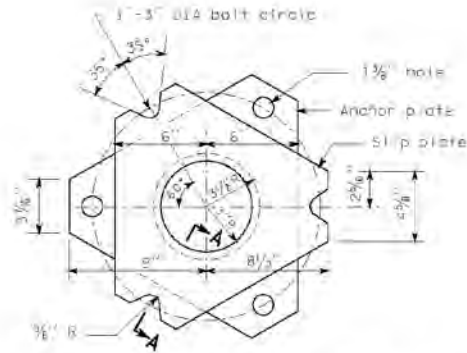




3 Bolt Template

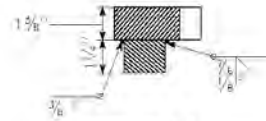
# J-1b 2 of 3

## Standard Plan J-1b

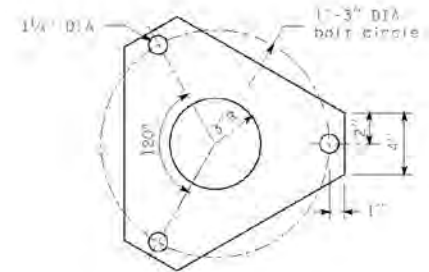


**SLIP/ANCHOR PLATES DETAIL**

Smooth finish top, bottom, and matched surfaces.

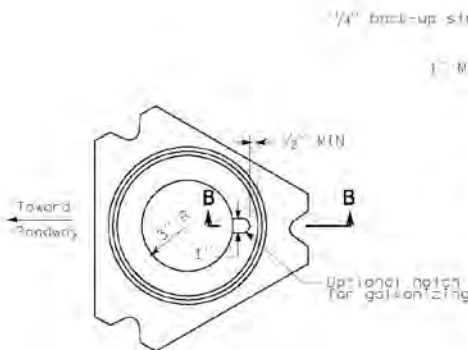


**SECTION A-A**



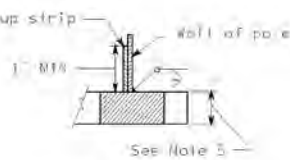
**KEEPER PLATE**

Place between pole base plate and slip plate on top of middle washers.

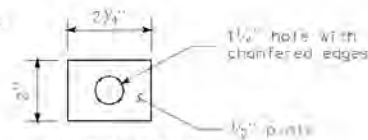


**POLE BASE PLATE**

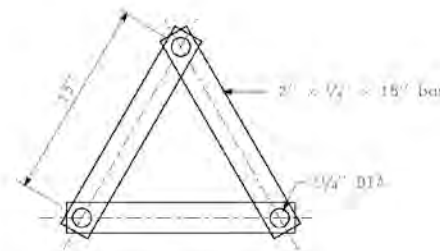
Smooth finish top, bottom, and matched surfaces.



**SECTION B-B**



**PLATE WASHER**



**STRAP TEMPLATE ASSEMBLY DETAIL**

Place over anchor bolts (See Note 4)



EXPIRES JUNE 29, 2000

**STEEL LIGHT STANDARD BASE DETAILS**

**STANDARD PLAN J-1b**

SHEET 2 OF 3 SHEETS

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CD-NR	REVISED SECTION B-B	1WS	DATE
DATE	REVISION	BY	
		Clifford E. Mansfield 10/08/99 DEPUTY STATE DESIGN ENGINEER	
		WASHINGTON STATE DEPARTMENT OF TRANSPORTATION OLYMPIA, WASHINGTON	

# Corrugated Tube/Wet Hole



# Luminaire Foundation

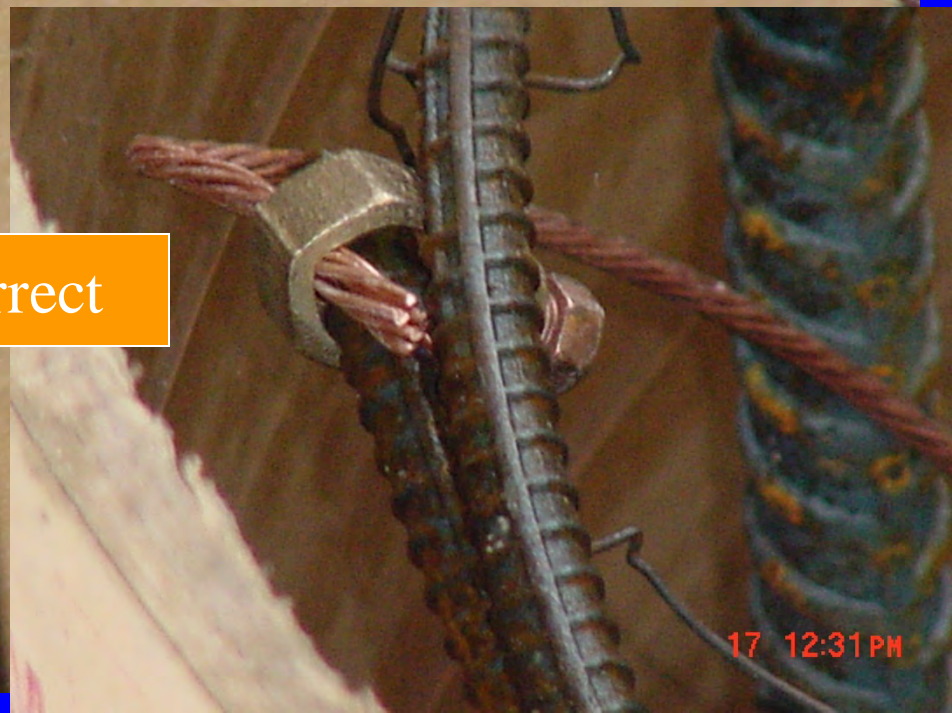


# Supplementary Ground

Wrong



Correct



# Styrofoam Form for Sump in Top of Base

6-02.3(17)N  
Page 385

Remember that forming  
Materials have to be  
Removed entirely.

Standard Plan J-1b





# Base Poured Styrofoam Removed

**Supplemental ground is the bare number 6 wire.**

17 10:54 AM

# Concrete Vibrator



5-05.3(7) and 6-02.3(9)





21



FEB 24 2005

# Luminaire Base / Barrier

# Bridge 'E1' Bolts



# Bridge El

Working Clearances at Hand Hole

NEC Table 110.26(A)(1)

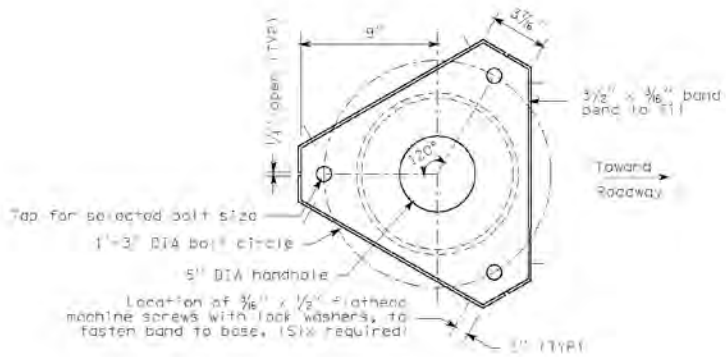
0 – 150 volts = 900mm clearance

151 – 600 volts = 1M clearance

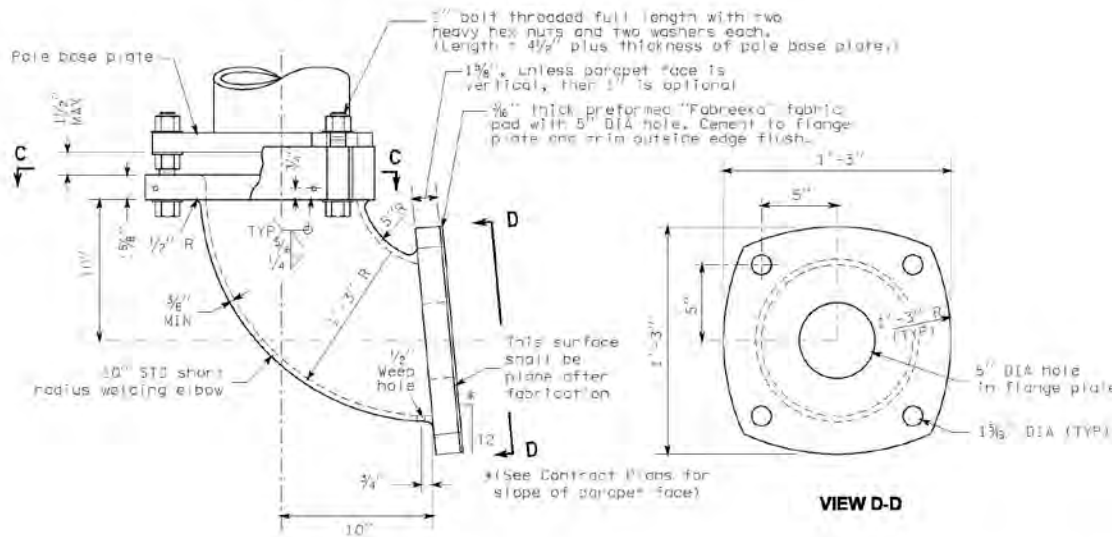


# J-1b 3 of 3

## Standard Plan J-1b



SECTION C-C



ELEVATION

LIGHTING BRACKET DETAIL

For light standards with single arm 12' or less and double arms 8' or less mounted on bridges or retaining walls.

### NOTES

1. See Standard Plan C-Rb for base plate and foundation requirements when light standards are mounted on concrete barrier.
2. Round and smooth all edges along wire-way to protect conductors. See Standard Plan J-1c for wiring details.
3. The top of the anchor rod shall be both threaded and galvanized a minimum of 12". The bottom of the anchor rod shall be threaded a minimum of 3". Galvanizing shall be in accordance with AASHTO M111 after threading. Hooked anchor bolts are not allowed.
4. Strap templates shall be held in place by nuts 6" from the top of the foundation, and at bottom of anchor bolts resting on 4" x 3/8" square washers.
5. Pole base plate for a slip base design shall be 1/4" AASHTO M223 or 345. Pole base plate for a fixed base design may be either 1/4" AASHTO M223 or 345 or 1/2" AASHTO M183.
6. Installation of a 50' pole with double mast arms on a slip base is not allowed.

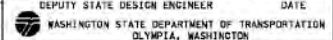


### STEEL LIGHT STANDARD BASE DETAILS STANDARD PLAN J-1b

SHEET 3 OF 3 SHEETS

APPROVED FOR PUBLICATION

Clifford E. Mansfield 10/08/99  
DEPUTY STATE DESIGN ENGINEER DATE

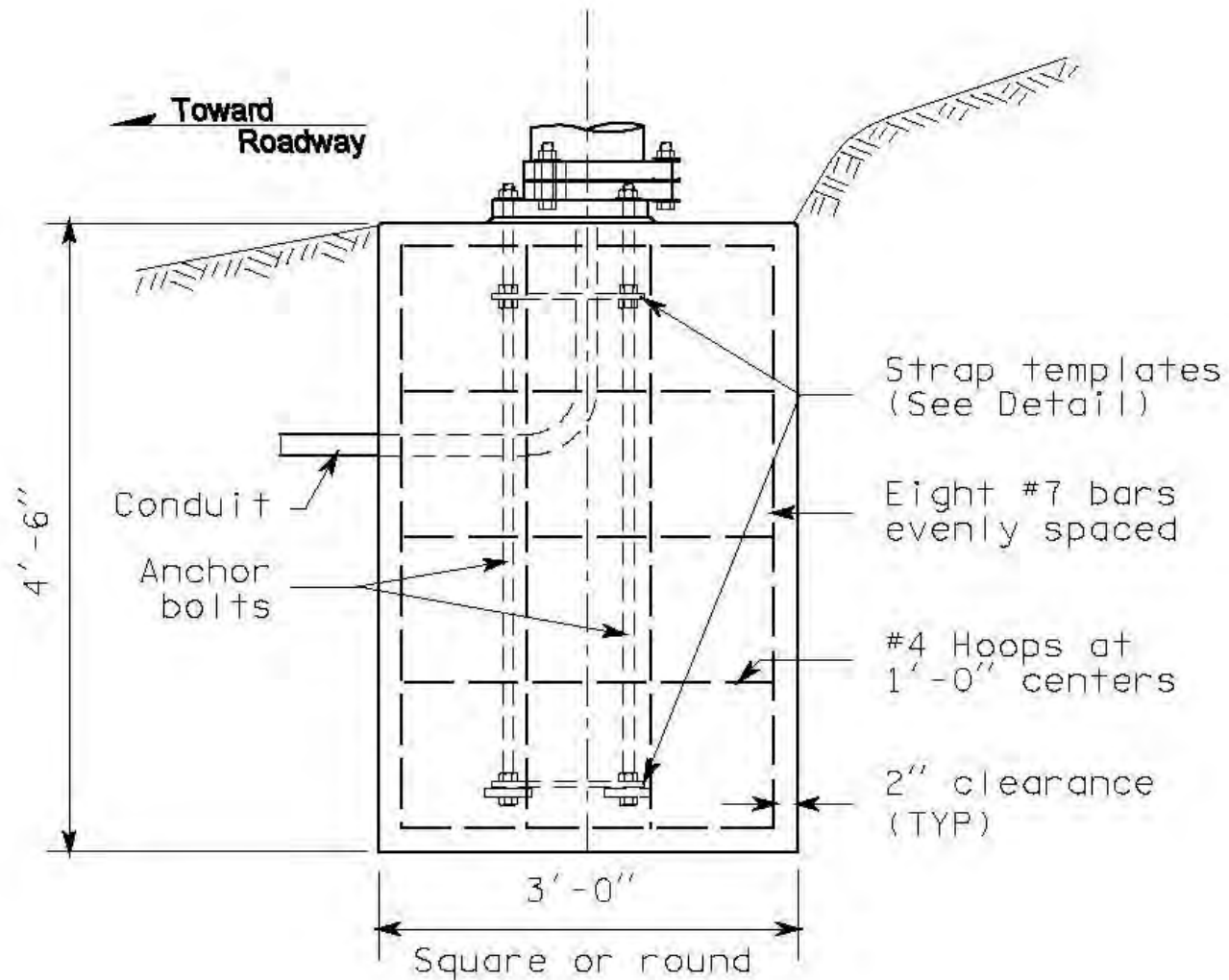


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10/98	REVISED NOTES 1, 2 & 4-5; ADDED NOTE 6.	TMS
DATE	REVISION	BY

# Light Base (Slip Base)





### FOUNDATION DETAIL

(See Note 1)

# Extend a Base



16 11:21 AM



High Mast Shaft and Top Form





High Mast Bolts and Top Cage

# Drilling a Sign Base



# Augured Hole



# Rebar Cage and Bolts



# Check the Grade



# Ready for the First Pour





6-02.3(6)  
P 336

Use a Tremie for Deep Pours

# Another Tremie





# Strain Pole Bolts & Bottom Nut



12 8:27 AM



# 43 Foot Deep Signal Base

18 2:06 PM



18 2:06 PM



18 12:39 PM



18 12:43 PM



# Set Up Deep Base



# Pouring Deep Base



# Set up to Pour Pad Foundations



1 12:51 PM

# Steel Couplings at Foundation Surface



# Pad Foundation for Multiple Cabinets



6 11:33 AM

# Steel Coupling Flush With Surface

- Each cabinet should have a drain tube
- A supplemental ground should be connected to the rebar and routed the Transformer Cabinet Ground



DEC 21 2004



# No Steel Coupling Poor Placement



DEC 22 2004

Spare Conduits  
Need Coupling  
Flush With  
Surface and Steel  
Plug



DEC 22 2004



DEC 22 2004

Keep Ground Tile Far Enough in That  
the Corners Will Not Break off



DEC 22 2004

# Removal of Forms

- 6-02.3(17)N
- Forms shall be removed whether above or below ground level.

6-02.3(17)N

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