

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-04	2006	22	45

STRUCTURAL GENERAL NOTES

1. General Specifications: Hawaii Department of Transportation, Standard Specifications for Road and Bridge Construction, 1994, together with Special Provisions prepared for this contract.

2. Design Specifications:

(A) AASHTO 2004 LRFD Bridge Design Specifications (Third Edition) and its subsequent interim specifications with interim supplements and modifications by the Highways Division, Department of Transportation, State of Hawaii.

(B) AASHTO 2001 Standard specifications for structural supports for Highway Signs, Luminaries and Traffic Signals (Fourth Edition) and its subsequent interim specifications with interim supplements and modifications by the Highways Division, Department of Transportation, State of Hawaii.

3. Loads:

(A) Wind Load: 105 mph. Value is a 3 second gust speed at 32.8 ft above ground for Exposure C category and is associated with an annual probability of 0.02 (50 year mean recurrence interval).

(B) Recurrence Interval of 50 Years.

(C) Fatigue importance factor, IF, Shall be based on fatigue Category I for traffic signal structures.

(D) Vortex shedding induced loads shall be considered for cantilevered mast arms and pole shafts that do not have tapers or have tapers of less than 0.14 in/ft.

(E) Traffic signal support structures shall be designed for a truck induced gust based on a truck speed of 20 MPH over the posted speed.

(F) Galloping and natural wind gust shall be considered for cantilever traffic signal structures.

4. Materials:

(A) All concrete strengths shall be as noted below:

Item No.	Structural Parts	Classes of Concrete	Specified Compressive Strength, f'c (28 Days)
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(1) Drilled shafts - 4500 PSI

(2) Except as noted otherwise, all others A 3000 PSI

All concrete with a 28 days compressive strenght of 4000 psi or greater shall have a maximum W/C Ratio of 0.45. The W/C Ratio for other class of concrete shall follow the Standard Specifications.

(B) All reinforcing steel shall be ASTM A615 Grade 60 unless otherwise noted.

(C) All structural steel shall be hot dip galvanized after fabrication, unless otherwise noted.

(D) All anchor bolts, washers and nuts shall be hot dip galvanized after fabrication, unless otherwise specified.

5. Reinforcement:

(A) The minimum covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:

(1) Concrete cast against and permanently exposed to earth = 3"

(2) All others unless otherwise noted = 2".

(B) Reinforcing bars shall be detailed in accordance with the latest edition of the design specification in note 2 unless otherwise noted.

(C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). In no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2".

(D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.

(E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.

6. Construction Notes:

(A) See Standard Specifications and Special Provisions.

(B) Except as otherwise noted, all vertical dimensions are measured plumb.

(C) The Contractor shall verify all site conditions and not rely upon these plans for stream location, etc. Conditions may differ from those shown.

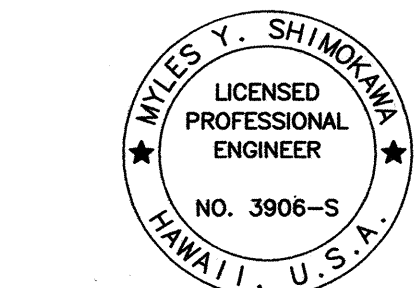
(D) The Contractor shall tone and verify the location of all utility lines and notify the respective owners before commencing with excavation, and any temporary piling or sheeting.

(E) For concrete finish see Standard Specifications and Special Provisions.

(F) Construction joints may be relocated or additional ones added subject to the approval of the Engineer.

(G) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4"x3/4".

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	
No.		

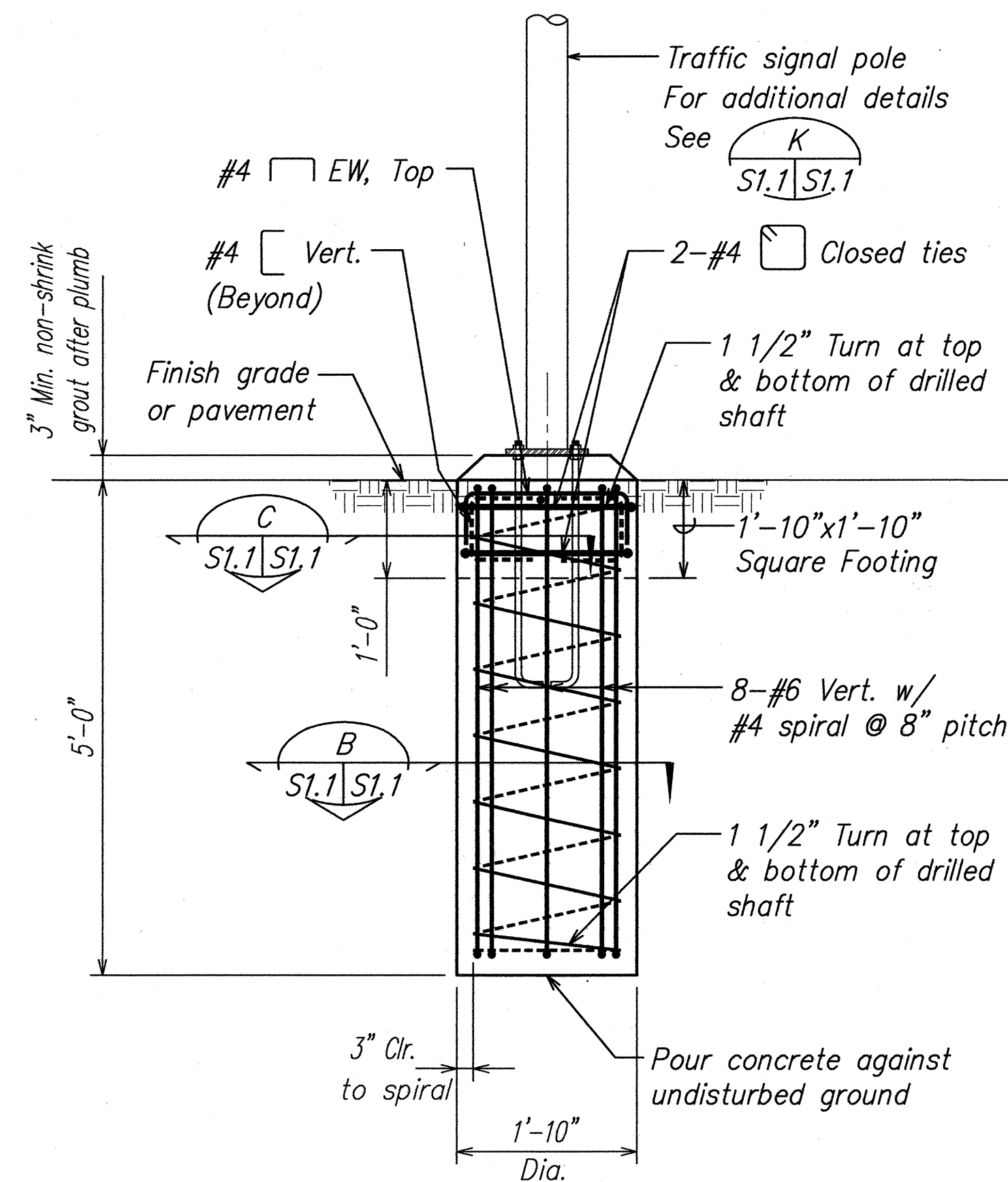


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

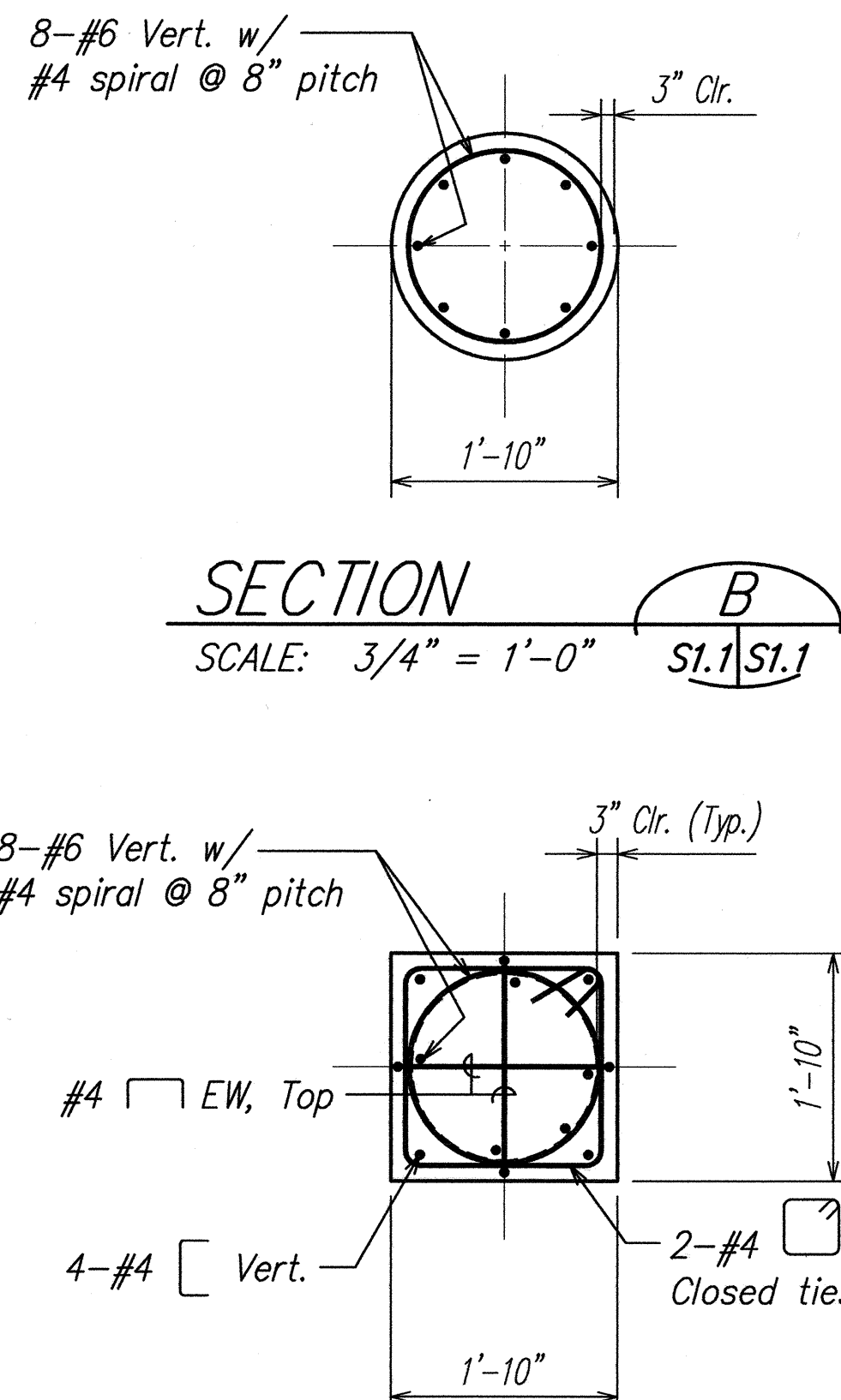
SIGNATURE: *Myles Y. Shimokawa* EXPIRATION DATE OF THE LICENSE: 30-08

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STRUCTURAL GENERAL NOTES
TRAFFIC OPERATIONAL IMPROVEMENTS AT VARIOUS INTERSECTIONS & ROADWAYS
PROJECT NO. HWY-0-04-04
NIMITZ HWY./PACIFIC ST. INTERSECTION IMPROVEMENTS
SCALE: None DATE: March 2006
SHEET No. S0.1 OF 2 SHEETS

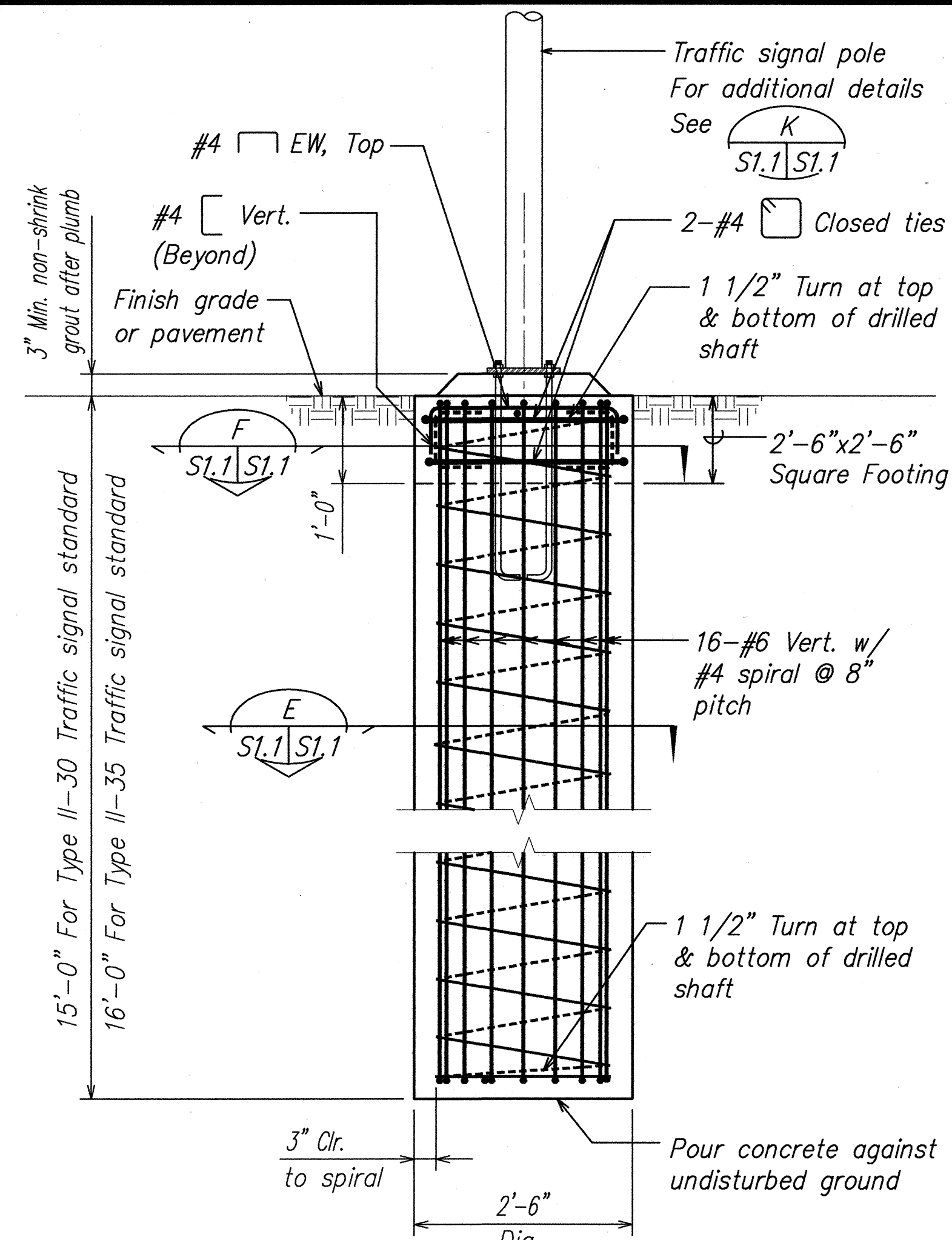
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-04	2006	23	45



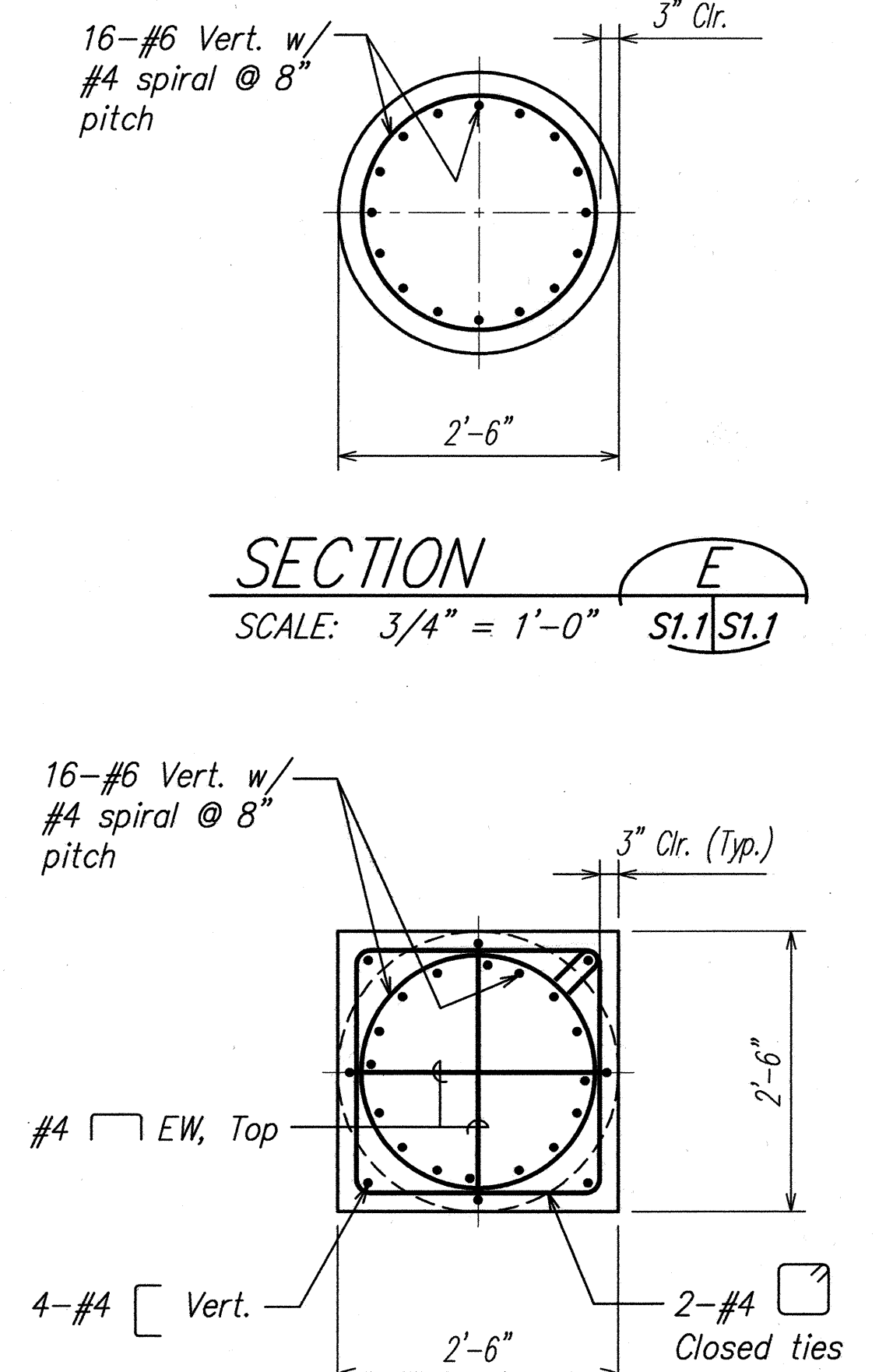
**TYPICAL TYPE I-10 TRAFFIC SIGNAL STANDARD FOUNDATION**  
SCALE: 3/4" = 1'-0"  
SECTION A S1.1/S1.1



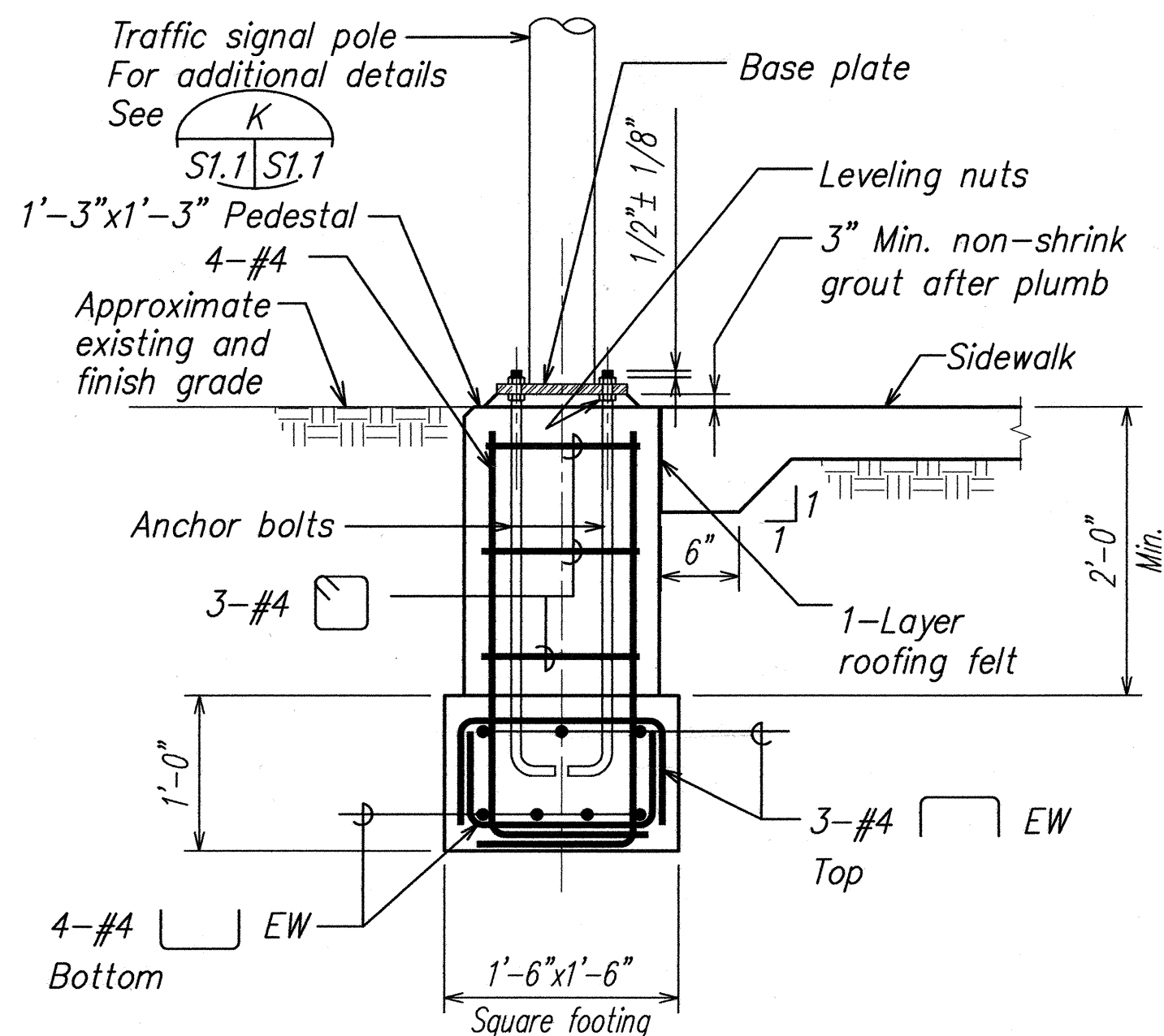
**SECTION C**  
SCALE: 3/4" = 1'-0"  
S1.1/S1.1



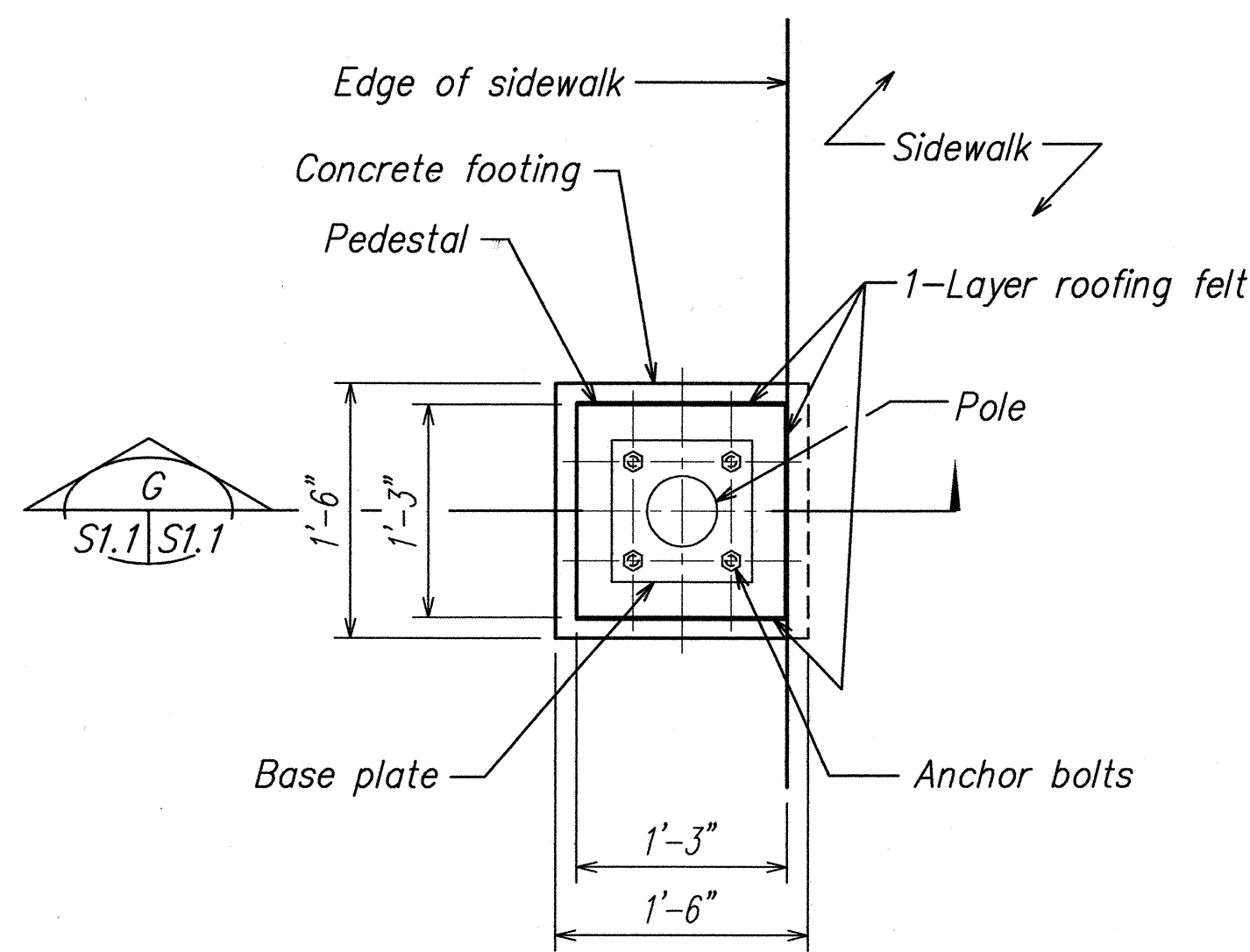
**TYPICAL TYPE II-30 AND TYPE II-35 TRAFFIC SIGNAL STANDARD FOUNDATION**  
SCALE: 3/4" = 1'-0"  
SECTION D S1.1/S1.1



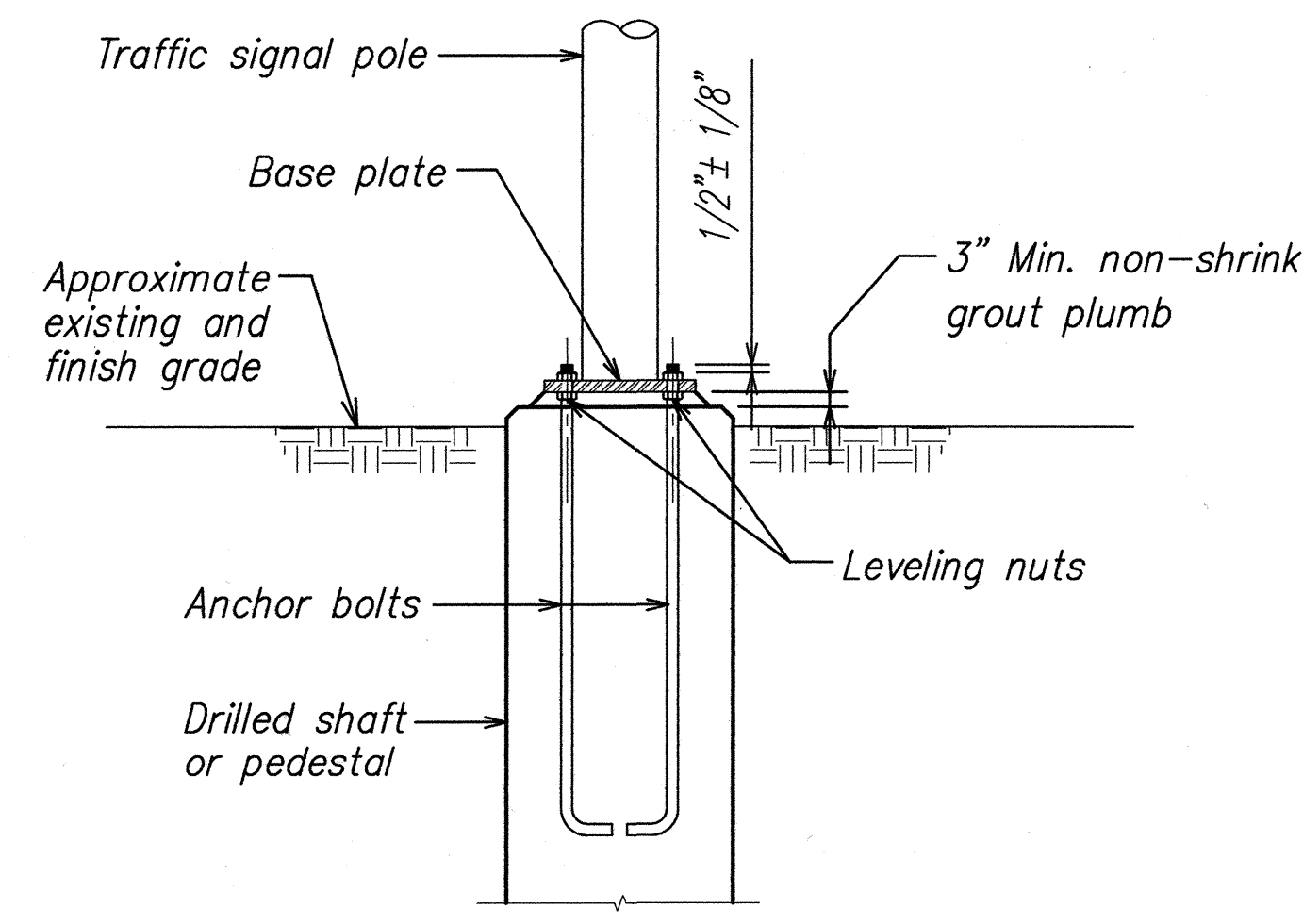
**SECTION F**  
SCALE: 3/4" = 1'-0"  
S1.1/S1.1



**TYPICAL TYPE I-3.7 TRAFFIC SIGNAL STANDARD FOUNDATION**  
SCALE: 1" = 1'-0"  
SECTION G S1.1/S1.1

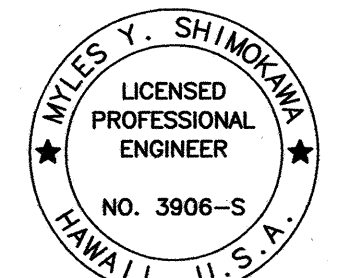


**POLE FOUNDATION PLAN**  
SCALE: 1" = 1'-0"  
SECTION H S1.1/S1.1



**TYPICAL POLE DETAIL K**  
SCALE: 1" = 1'-0"  
S1.1/S1.1

- Notes:**
- When any portion of the sidewalk panel (From joint to joint) is demolished, the entire panel shall be removed and replaced.
  - Sidewalk and curb shall be restored to its original condition. The minimum sidewalk reinforcing shall be 6x6-W1.4xW1.4 welded wire fabric.
  - The cost for excavation, backfill, demolition of sidewalk and curb, and restoration of sidewalk, curb and reinforcing shall all be considered incidental to the pole foundation.
  - See electrical drawings for additional details.
  - Follow traffic signal pole manufacturer's recommendations for anchor bolts, base plate and traffic signal poles.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
SIGNATURE: [Signature] EXPIRATION DATE OF THE LICENSE: 1-30-08

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL SIGNAL LIGHT POLE FOUNDATION**

TRAFFIC OPERATIONAL IMPROVEMENTS  
AT VARIOUS INTERSECTIONS & ROADWAYS  
PROJECT NO. HWY-0-04-04  
NIMITZ HWY./PACIFIC ST. INTERSECTION IMPROVEMENTS  
SCALE: As Noted DATE: March 2006

**SHEET No. S1.1 OF 2 SHEETS**

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DATE	DRAWN BY
DATE	DESIGNED BY
DATE	CHECKED BY