



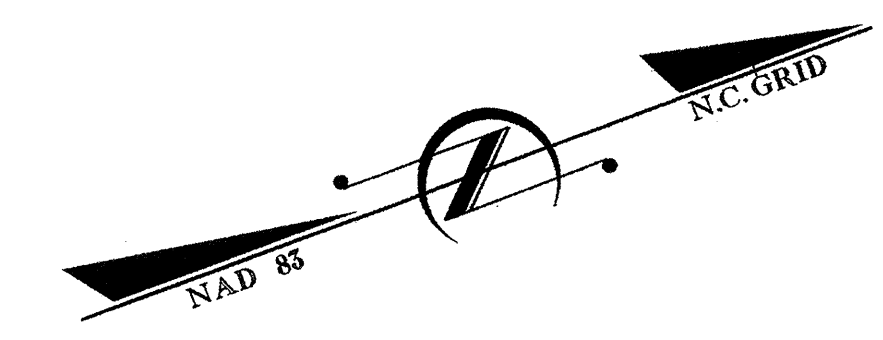
| | |
|-------------|-----------|
| Project No. | Sheet No. |
| R-2301A | Sig. 1 |

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

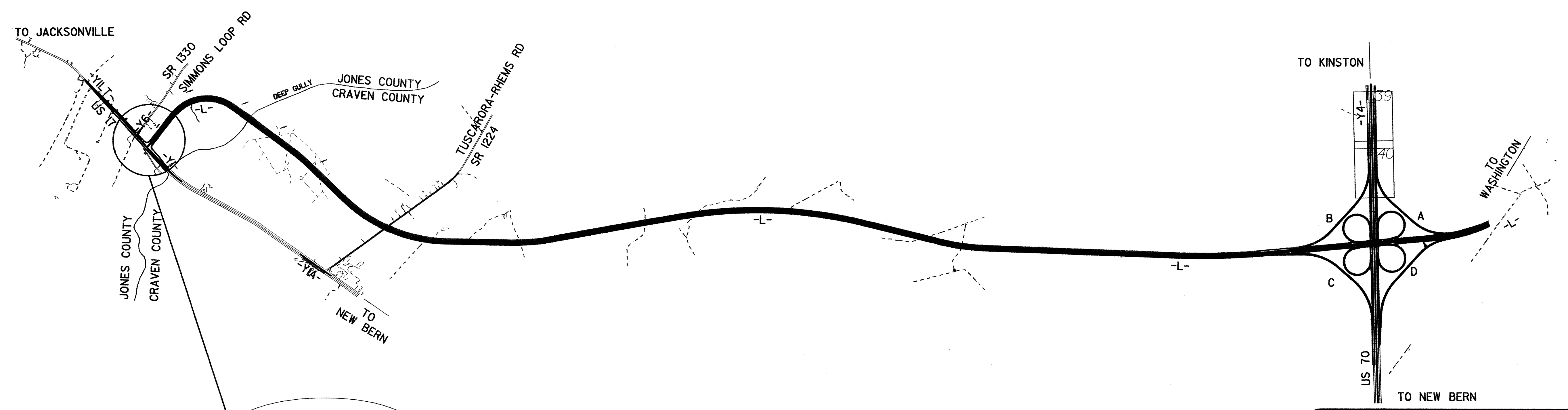
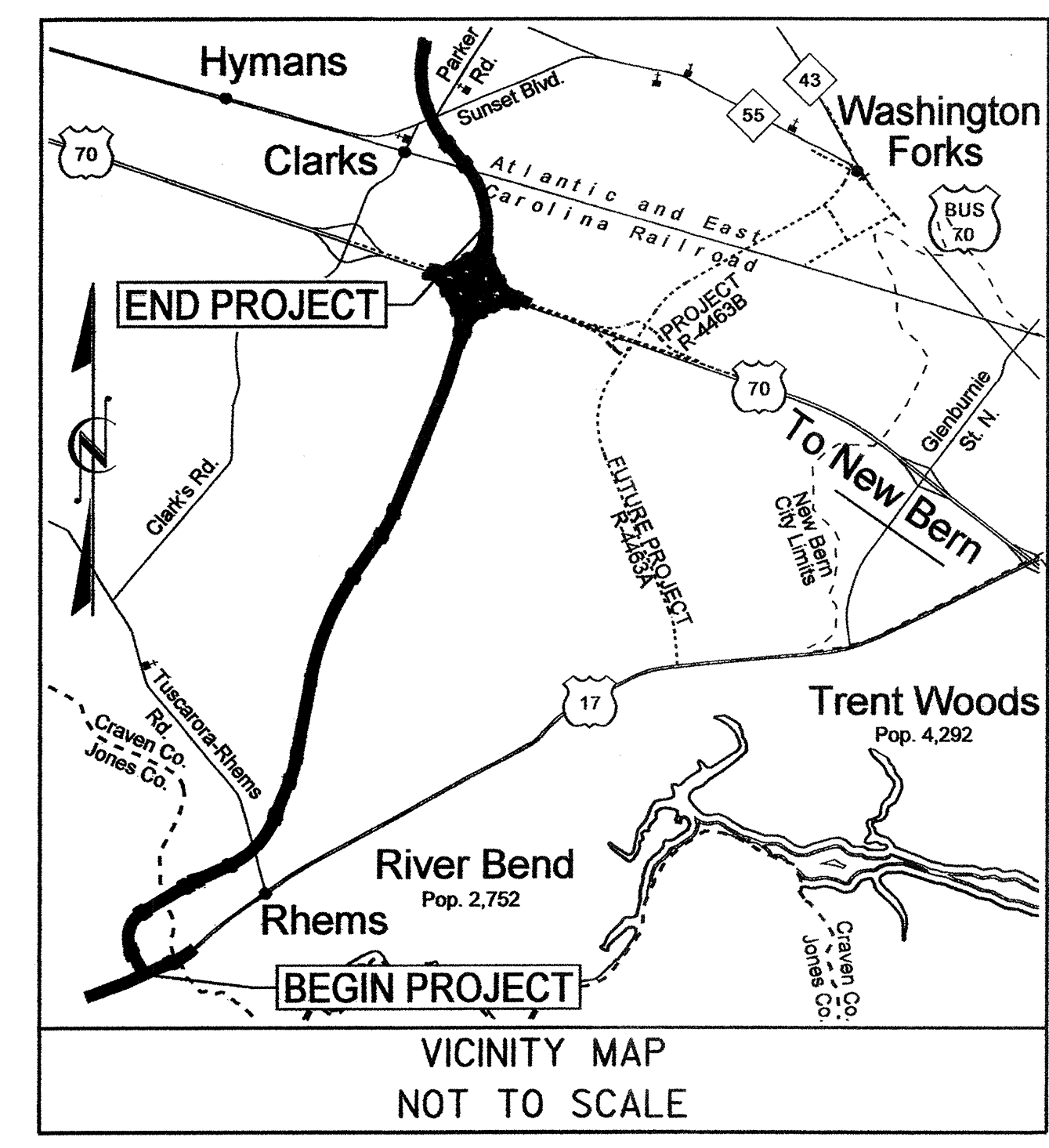
JONES & CRAVEN COUNTIES

LOCATION: US 17 NEW BERN BYPASS
FROM US 17 SOUTH OF NEW BERN TO US 70

TYPE OF WORK: TRAFFIC SIGNALS



TIP: R-2301A



Refer to Roadway Standard Drawings
NCDOT dated July 2006 and
"Standard Specifications for Roads
and Structures" dated July 2006.

| Index of Plans | | |
|----------------|-------------|---|
| Sheet # | Reference # | Location/Description |
| Sig. 1 | | Title Sheet |
| Sig. 2-3 | 02-0885 | US 17 Business (Trent Road) at US 17 (Bypass) |
| Sig. 4-9 | N/A | Standard Drawings for Metal Poles |
| Sig. 10-12 | N/A | Inductive Detection Loops Details |

INTELLIGENT TRANSPORTATION AND SIGNALS UNIT

Contacts:

Timothy J. Williams, PE - Signals & Geometrics Contracts Engineer
George C. Brown, PE - Signal Equipment Design Engineer

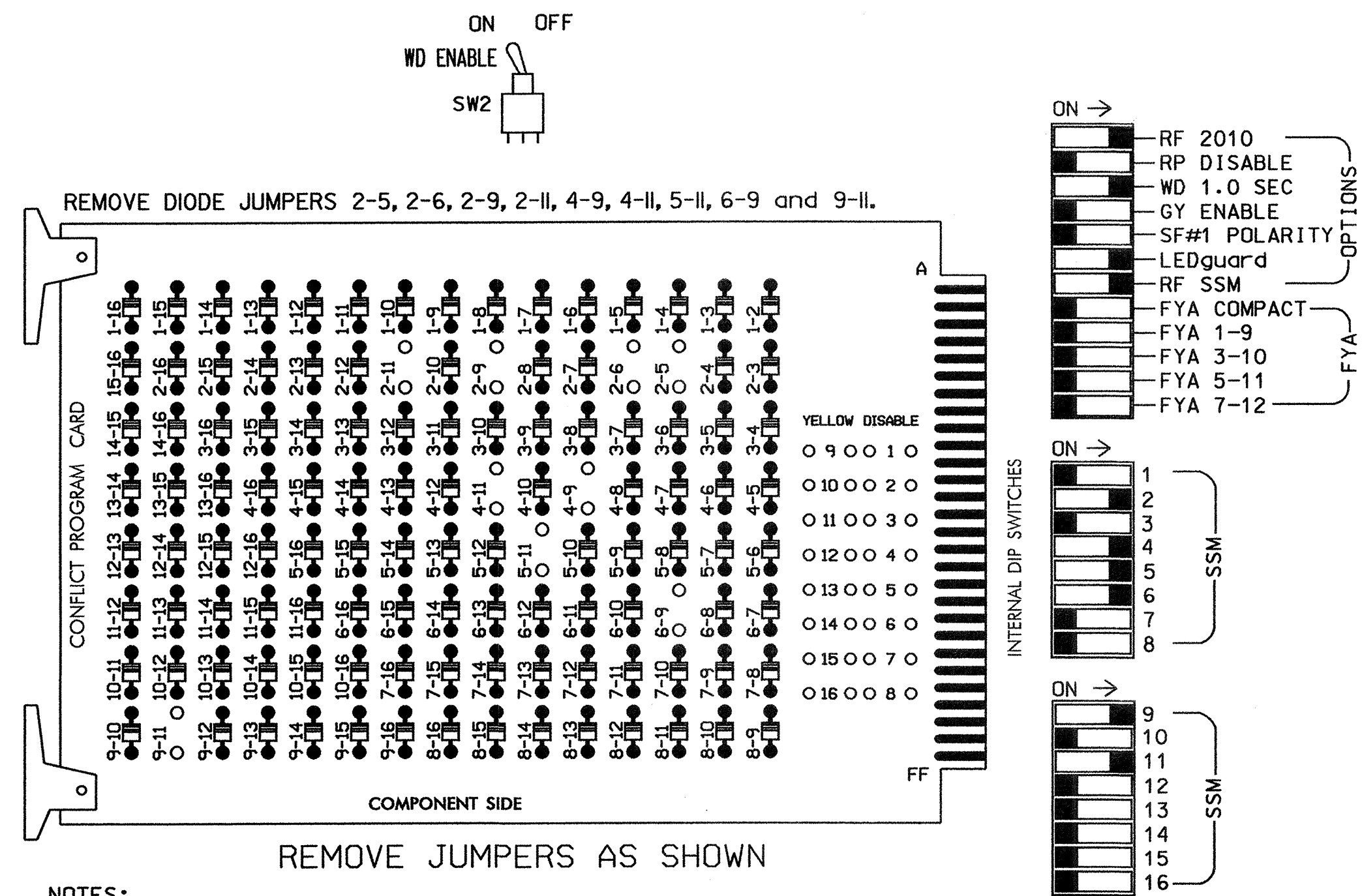
Prepared In the Office of:
DIVISION OF HIGHWAYS
TRAFFIC ENGINEERING AND SAFETY SYSTEMS
BRANCH

750 N. Greenfield Parkway, Garner, NC 27529

07-JUL-2008 17:36
s:\15_signals\workgroups\tip_projects\2301a\signals\design\titlesheet\tsheet.dgn

EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)



NOTES:

- Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
- Make sure jumpers SEL2-SEL5 are present on the monitor board.

- ### NOTES
- To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
 - Ensure that Red Enable is active at all times during normal operation. To prevent Red Failures on unused monitor channels, tie unused red monitor inputs 1,3,7,8, 10,12,13,14,15 & 16 to load switch AC+ per the cabinet manufacturer's instructions.
 - Program phases 2 and 6, on the controller unit, for Start Up In Green.
 - Enable Simultaneous Gap-Out, on the controller unit, for all phases.
 - Program phases 2 and 6, on the controller unit, for Variable Initial and Gap Reduction.

EQUIPMENT INFORMATION

CONTROLLER.....CONTRACTOR SUPPLIED 2070L
 CABINETCONTRACTOR SUPPLIED 332
 SOFTWAREECONOLITE OASIS
 CABINET MOUNT.....BASE
 OUTPUT FILE POSITIONS..18 (12-STD, 6-AUX)
 LOAD SWITCHES USED.....S2,S4,S5,S6,S9,S12
 PHASES USED.....2,4,5,6
 OVERLAP A.....4+6
 OVERLAP C.....4+5

SIGNAL HEAD HOOK-UP CHART

| LOAD SWITCH NO. | S1 | S2 | S2P | S3 | S4 | S4P | S5 | S6 | S6P | S7 | S8 | S8P | S9 | S10 | S11 | S12 | S13 | S14 |
|-----------------|----|-------|-------|----|-------|-------|-------|-------|-------|----|----|-------|-------|-----|-------|-------|------|-------|
| PHASE | 1 | 2 | 2 PED | 3 | 4 | 4 PED | 5 | 6 | 6 PED | 7 | 8 | 8 PED | OLA | OLB | SPARE | OLC* | OLD | SPARE |
| SIGNAL HEAD NO. | NU | 21,22 | NU | NU | 41,42 | NU | 51,52 | 61,62 | NU | NU | NU | NU | 63,64 | NU | NU | 43,44 | NU | NU |
| RED | | 128 | | | | | | 134 | | | | | | | | | | |
| YELLOW | | 129 | | | | | | 135 | | | | | | | | | | |
| GREEN | | 130 | | | | | | 136 | | | | | | | | | | |
| RED ARROW | | | | | 101 | | 131 | | | | | | A121 | | | | A114 | |
| YELLOW ARROW | | | | | 102 | | 132 | | | | | | A122 | | | | A115 | |
| GREEN ARROW | | | | | 103 | | 133 | | | | | | A123 | | | | A116 | |

NU = Not Used
 * Flash Note: Wire Overlap "C" to flash on Flasher unit #2, Circuit #2.

OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE: :12345678910111213141516
 VEH OVL PARENTS: : X X
 VEH OVL NOT VEH: :
 VEH OVL NOT PED: :
 VEH OVL GRN EXT: :
 STARTUP COLOR: _ RED _ YELLOW _ GREEN
 FLASH COLORS: _ RED _ YELLOW _ GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...Y
 GREEN EXTENSION (0-255 SEC).....0
 YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)....0

PRESS '+' TWICE

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE: :12345678910111213141516
 VEH OVL PARENTS: : XX
 VEH OVL NOT VEH: :
 VEH OVL NOT PED: :
 VEH OVL GRN EXT: :
 STARTUP COLOR: _ RED _ YELLOW _ GREEN
 FLASH COLORS: _ RED _ YELLOW _ GREEN
 SELECT VEHICLE OVERLAP OPTIONS: (Y/N)
 FLASH YELLOW IN CONTROLLER FLASH?...N
 GREEN EXTENSION (0-255 SEC).....0
 YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0
 RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
 OUTPUT AS PHASE # (0=NONE, 1-16)....0

OVERLAP PROGRAMMING COMPLETE

INPUT FILE POSITION LAYOUT

(front view)

| FILE | U | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| "I" | U | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 4 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | FS |
| | L | 2A | 2B | 2B | 2B | 2B | 4A | 2B | 2B | 2B | 2B | 2B | 2B | 2B | DC ISOLATOR |
| "J" | U | ∅ 5 | ∅ 5 | ∅ 6 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ∅ 2 | ST |
| | L | 5A | 5C | 6A | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | DC ISOLATOR |
| | | 5B | 5D | 6B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | 2B | |

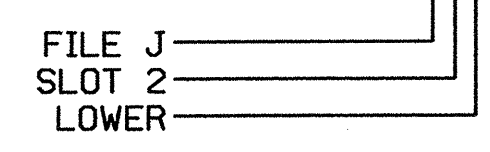
EX.: 1A, 2A, ETC. = LOOP NO.'S

FS = FLASH SENSE
 ST = STOP TIME

INPUT FILE CONNECTION & PROGRAMMING CHART

| LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | INPUT ASSIGNMENT NO. | DETECTOR NO. | NEMA PHASE | CALL | EXTEND | FULL TIME DELAY | STRETCH TIME | DELAY TIME |
|----------|---------------|-----------------|---------|----------------------|--------------|------------|------|--------|-----------------|--------------|------------|
| 2A | TB2-5,6 | I2U | 39 | 1 | 2 | 2 | Y | Y | | | |
| 2B | TB2-7,8 | I2L | 43 | 5 | 12 | 2 | Y | Y | | | |
| 4A | TB4-9,10 | I6U | 41 | 3 | 4 | 4 | Y | Y | | | |
| 4B | TB4-11,12 | I6L | 45 | 7 | 14 | 4 | Y | Y | | | |
| 5A | TB3-1,2 | J1U | 55 | 17 | 5 | 5 | Y | Y | | | |
| 5B | TB3-3,4 | J1L | 55 | 17 | 5 | 5 | Y | Y | | | |
| 5C | TB3-5,6 | J2U | 40 | 2 | 6 | 5 | Y | Y | | 20 | |
| 5D | TB3-7,8 | J2L | 44 | 6 | 16 | 5 | Y | Y | | 20 | |
| 6A | TB3-9,10 | J3U | 64 | 26 | 36 | 6 | Y | Y | | | |
| 6B | TB3-11,12 | J3L | 77 | 39 | 46 | 6 | Y | Y | | | |

INPUT FILE POSITION LEGEND: J2L



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 02-0885
 DESIGNED: May 2008
 SEALED: 06/30/08
 REVISED: N/A

New Installation

ELECTRICAL AND PROGRAMMING DETAILS FOR:
 Prepared in the Offices of:

 750 N. Greenfield Pkwy, Garner, NC 27529

US 17 Business (Trent Road) at US 17 (Bypass)
 Division 2 Jones County Near River Bend
 PLAN DATE: June 2008 REVIEWED BY: T. Saylor
 PREPARED BY: C. Strickland REVIEWED BY:
 REVISIONS INIT. DATE
 SIGNATURE: George C. Brown 7/2/08
 DATE: 7/2/08
 SIG. INVENTORY NO. 02-0885

SEAL

 GEORGE C. BROWN
 ENGINEER
 SEAL 022013

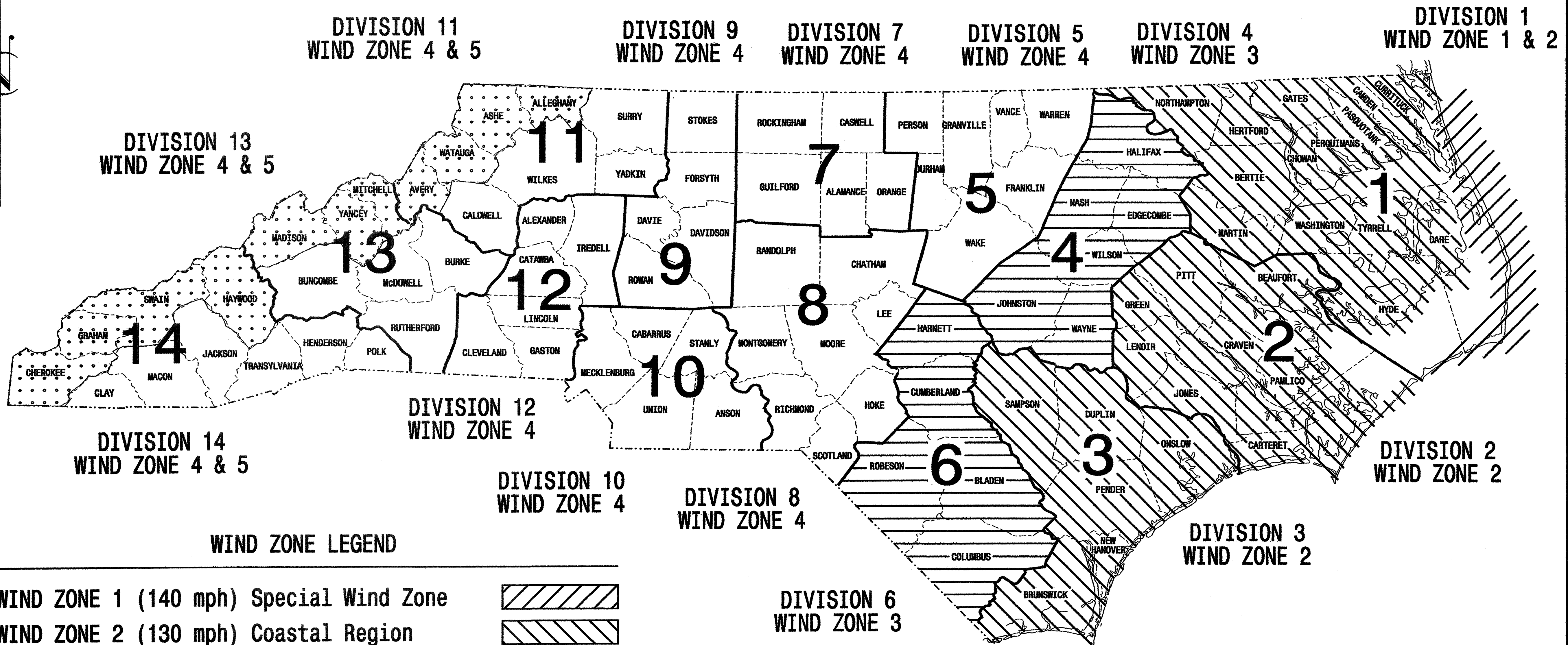
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NCDOT METAL POLE STANDARDS

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

| | | |
|-----------------|-------------|-----------|
| STATE | PROJECT NO. | SHEET NO. |
| N.C. | R-2301A | Sig. 4 |
| F. A. PROJ. NO. | | M 1 |
| PROJECT ID. NO. | | |

STANDARD DRAWINGS FOR METAL POLES

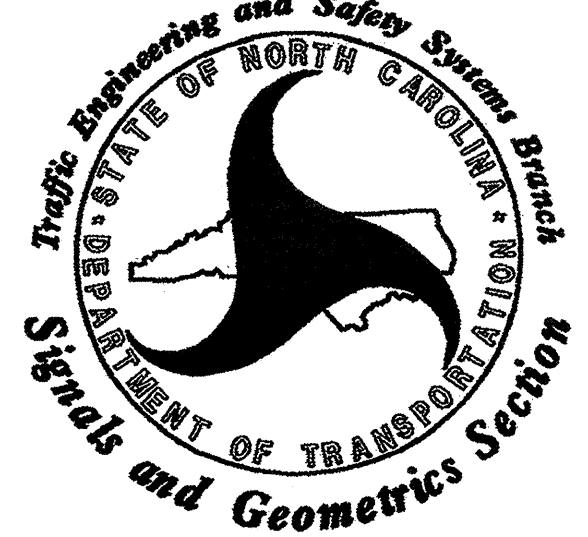


WIND ZONE LEGEND

| | |
|--|--|
| WIND ZONE 1 (140 mph) Special Wind Zone | |
| WIND ZONE 2 (130 mph) Coastal Region | |
| WIND ZONE 3 (110 mph) Eastern Region | |
| WIND ZONE 4 (90 mph) Central & Mtn. Region | |
| WIND ZONE 5 (120 mph) Special Wind Zone | |

<http://www.ncdot.org/doh/preconstruct/traffic/tmssu/ws/default.htm>

Prepared in the Offices of:



122 N. McDowell St., Raleigh, NC 27603

Designed in conformance with the 2002 Interim to the 4th Edition 2001

AASHTO

Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals

INDEX OF PLANS

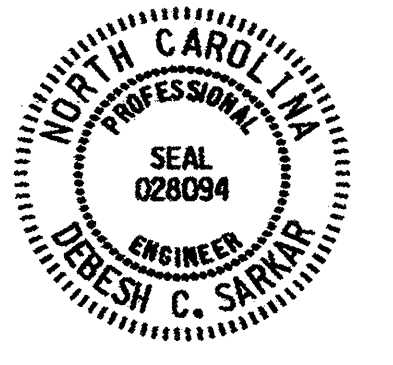
| DRAWING NUMBER | DESCRIPTION |
|----------------|--------------------------------------|
| M 1 | Title Sheet |
| M 2 | Fabrication Details - All Poles |
| M 3 | Fabrication Details - Strain Poles |
| M 4,5 | Fabrication Details - Mast Arm Poles |
| M 6 | Construction Details - Strain Poles |
| M 7 | Construction Details - Foundations |
| M 8 | Standard Strain Poles |

NCDOT CONTACTS:

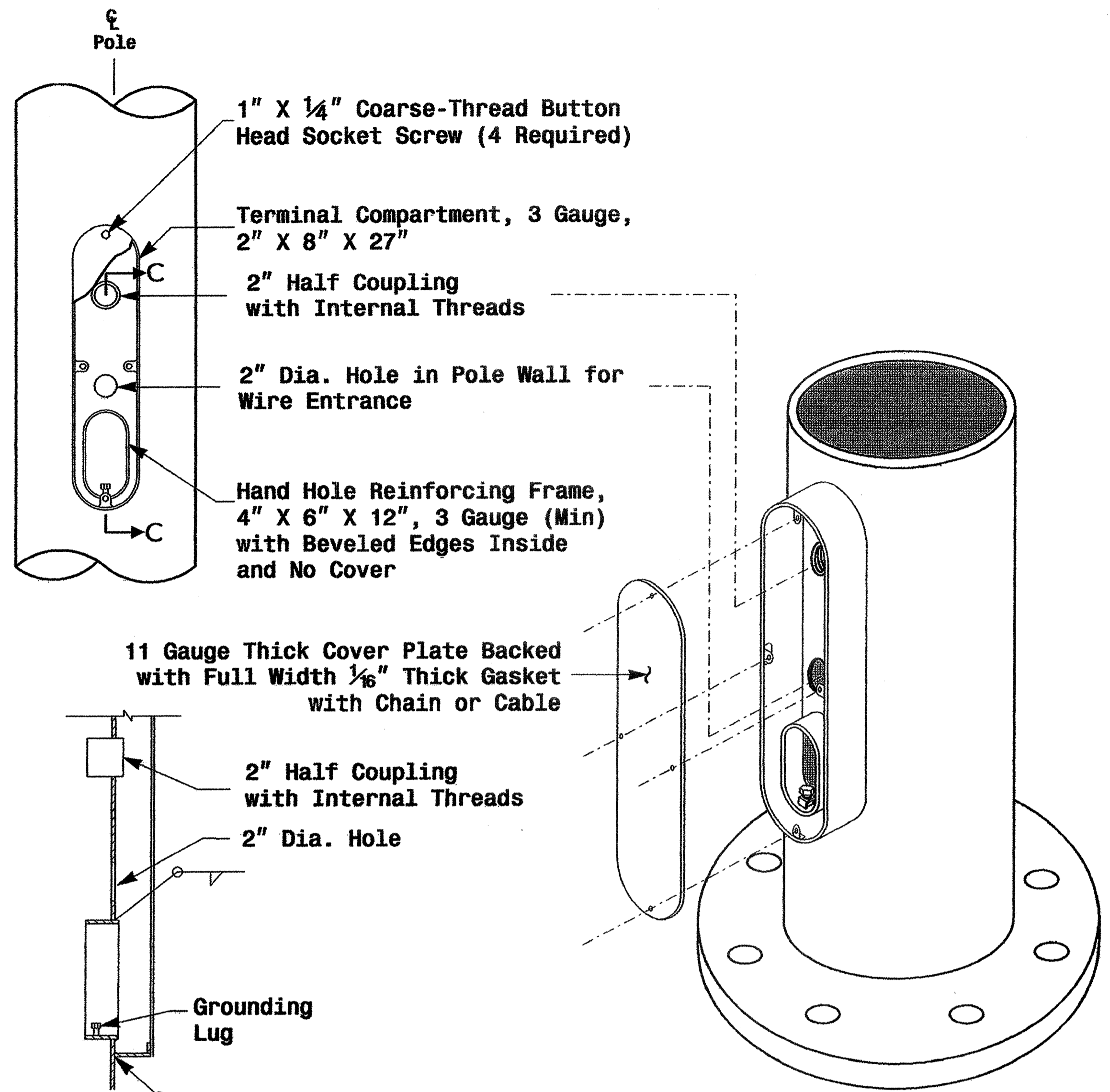
TRAFFIC ENGINEERING AND SAFETY SYSTEMS BRANCH

- G. A. Fuller, P.E. - State ITS and Signals Engineer
- R. E. Mullinax, P.E. - Signals and Geometrics Engineer
- P. L. Alexander, P.E. - Signals and Geometrics Special Projects Engineer
- D. C. Sarkar, P.E. - Signals and Geometrics Structural Engineer
- A. M. Esposito, P.E. - Signals and Geometrics Project Engineer
- C. F. Andrews, Jr. - Signals and Geometrics Project Engineer

SEAL

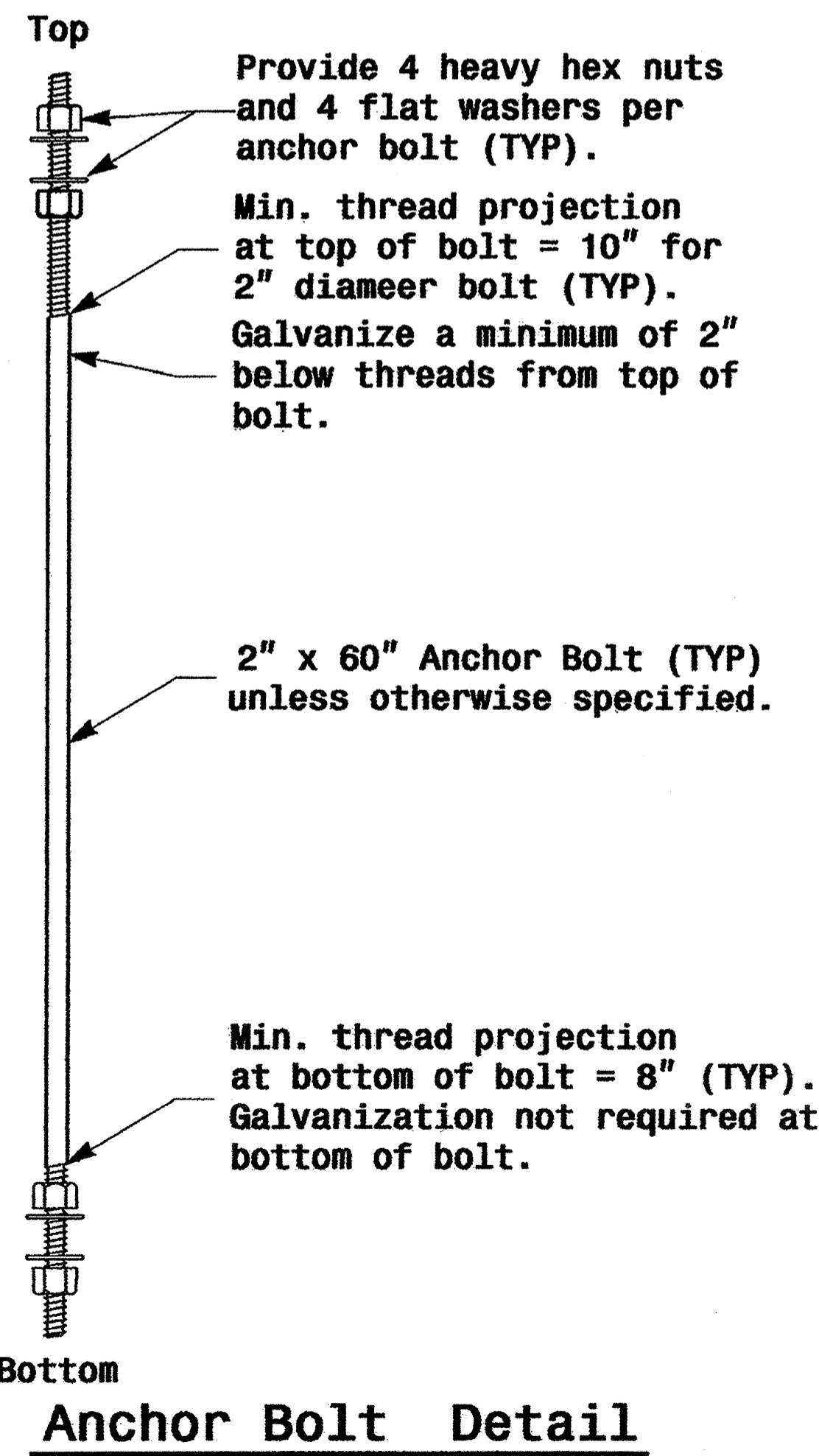
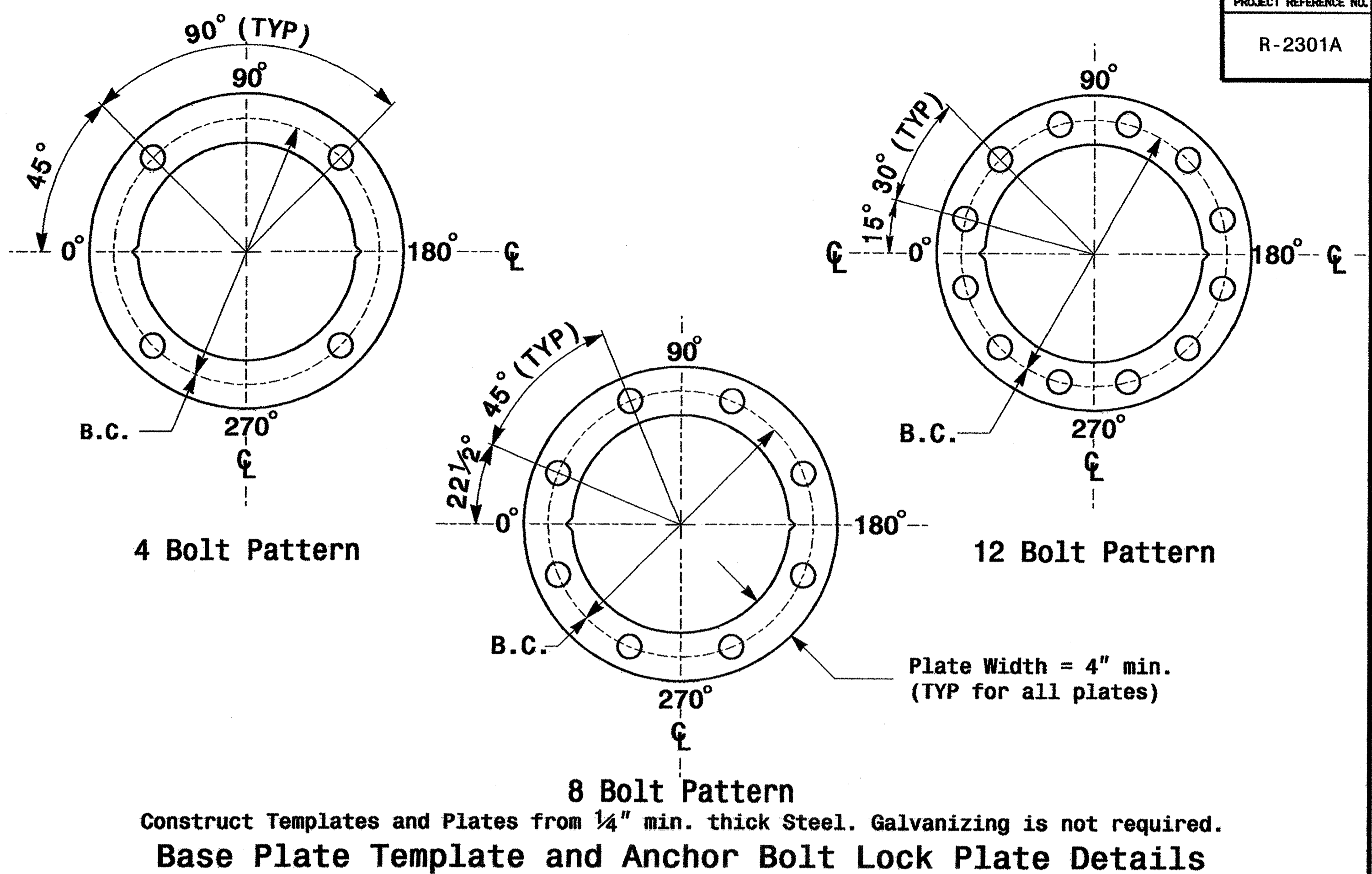


D. Sarkar 9.2.2005
SIGNATURE DATE

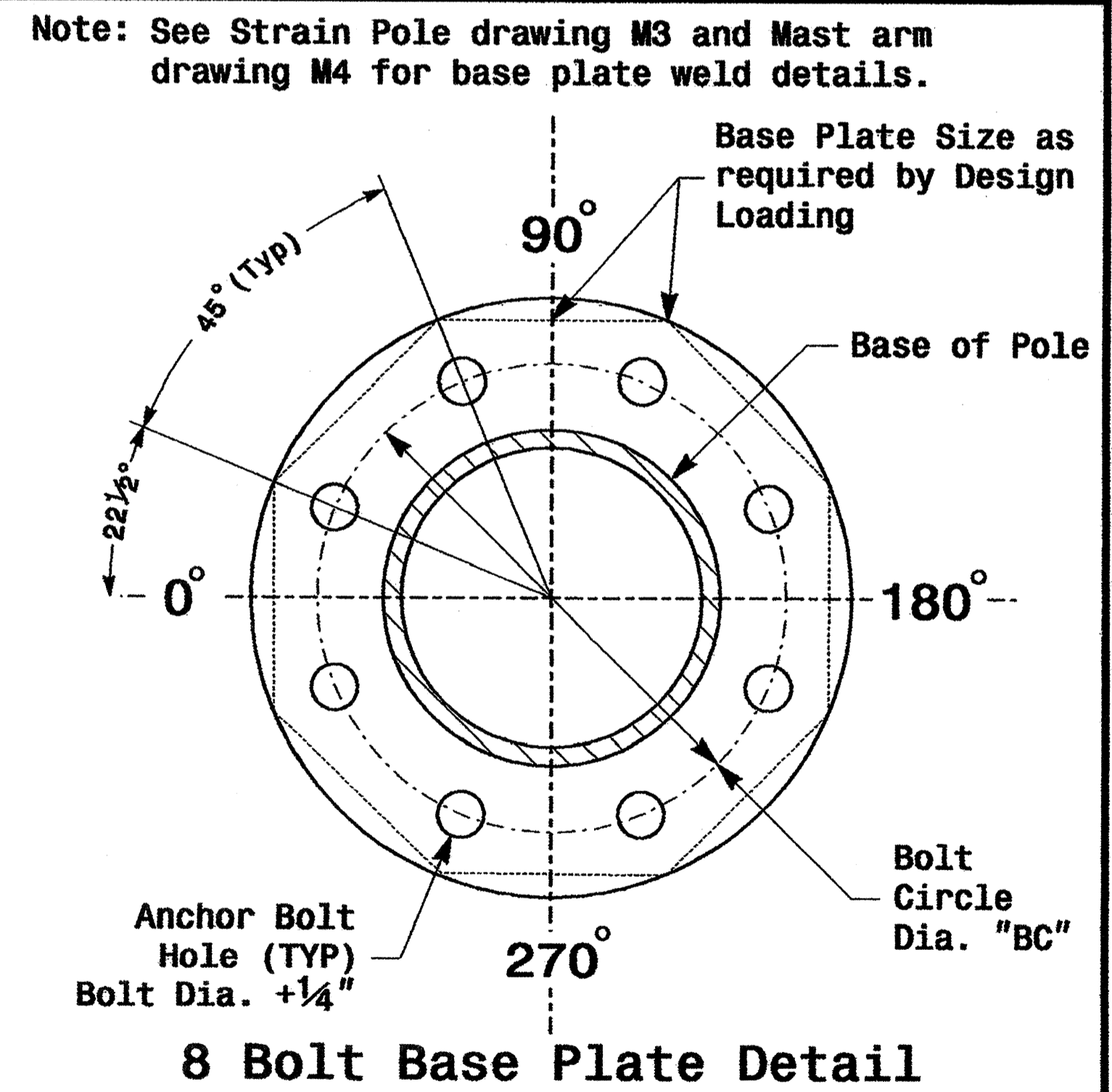


Section C-C Note: Unless otherwise specified, locate Terminal Compartment 1 foot above the pole base plate at 180 degrees on the pole's radial index.

Terminal Compartment Detail



Anchor Bolt Detail



8 Bolt Base Plate Detail

| | |
|--------------------------|------------------------|
| MFG _____ | MFG. DATE: MM/YY _____ |
| SHAFT D/T/L/Y _____ | |
| ARM-A D/T/L/Y _____ | |
| ARM-B D/T/L/Y _____ | |
| A.B. DIA./B.C./L/Y _____ | |
| NCDOT STANDARD _____ | |

Shaft I.D. Tag
(Provide on Strain Poles and Mast Arm Poles)

| | |
|-----------------------|------------------------|
| MFG _____ | MFG. DATE: MM/YY _____ |
| SECTION D/T/L/Y _____ | |
| NCDOT STANDARD _____ | |

Arm I.D. Tag
(Provide on each section of a multi-section mast arm)

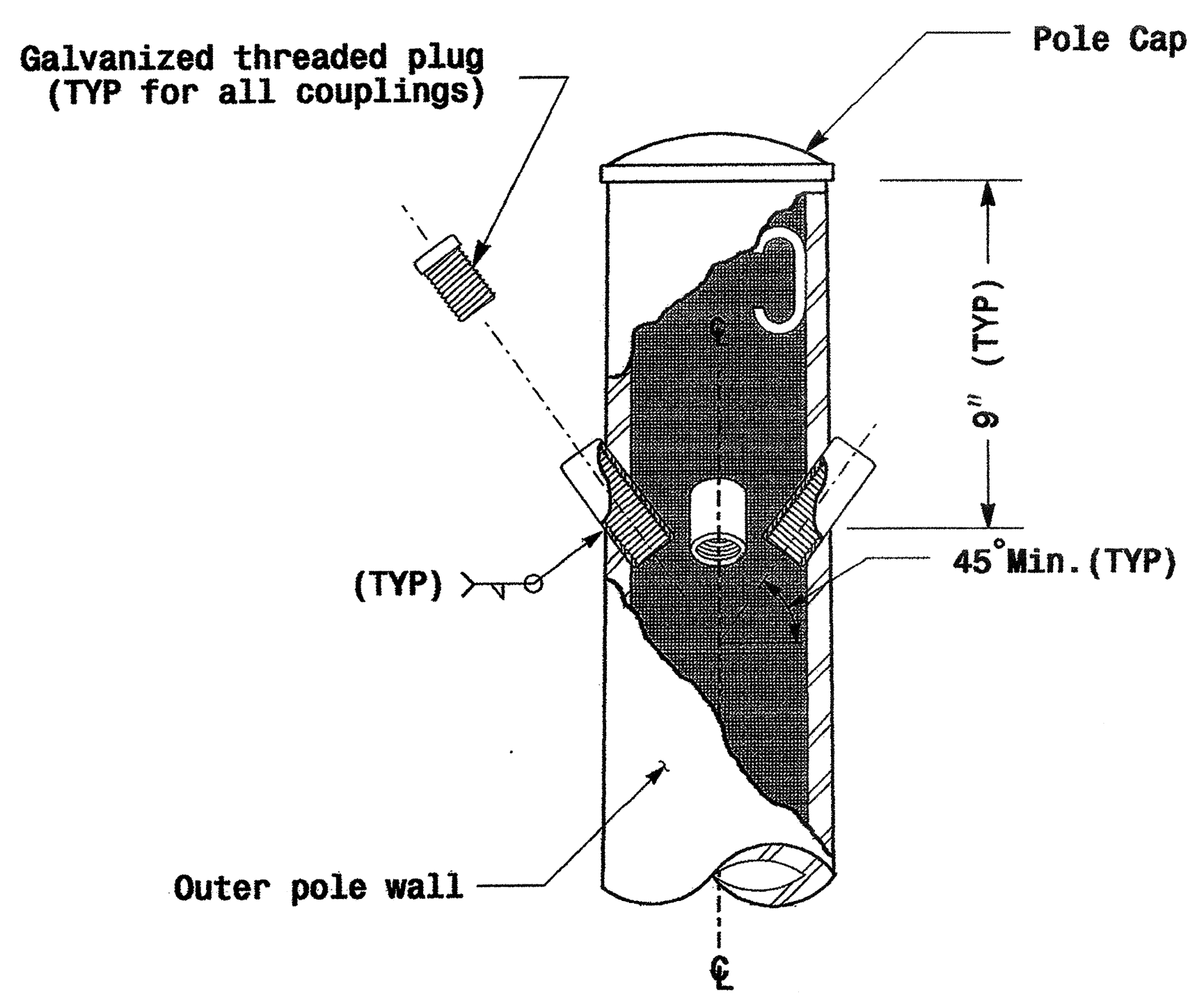
- Notes:
- 1) D= Diameter, T= Thickness, L= Length, Y= Yield Strength
 - 2) A.B. = Anchor Bolt
 - 3) B.C. = Bolt Circle of Anchor Bolts
 - 4) If Custom Design, use "NCDOT STANDARD" line for plan pole I.D.
 - 5) See drawing M4 for mounting positions of I.D. tags.

Identification Tag Details

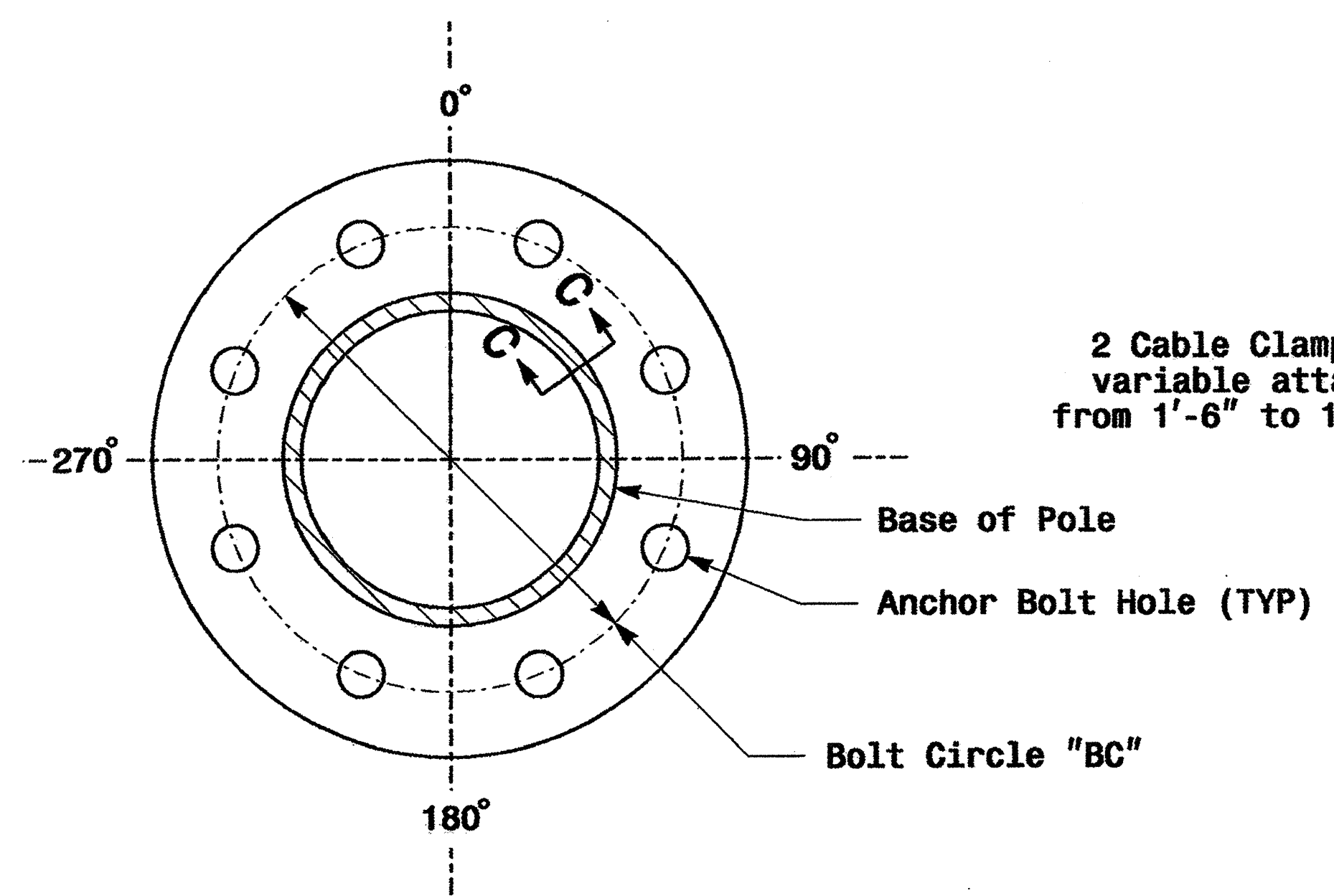
Fabrication Details - All Poles

01-SEP-2005 18:22 D:\2004 Metal Pole Strander\dwg\004 m2 thru m5.dgn

| | | | |
|--|--|---|--|
| | Typical Fabrication Details Common To All Metal Poles | | |
| | PLAN DATE: May 2005 PREPARED BY: P.L. Alexander REVISIONS: _____ | REVIEWED BY: C.F. Andrews REVIEWED BY: A.W. Esposito INIT. DATE | |

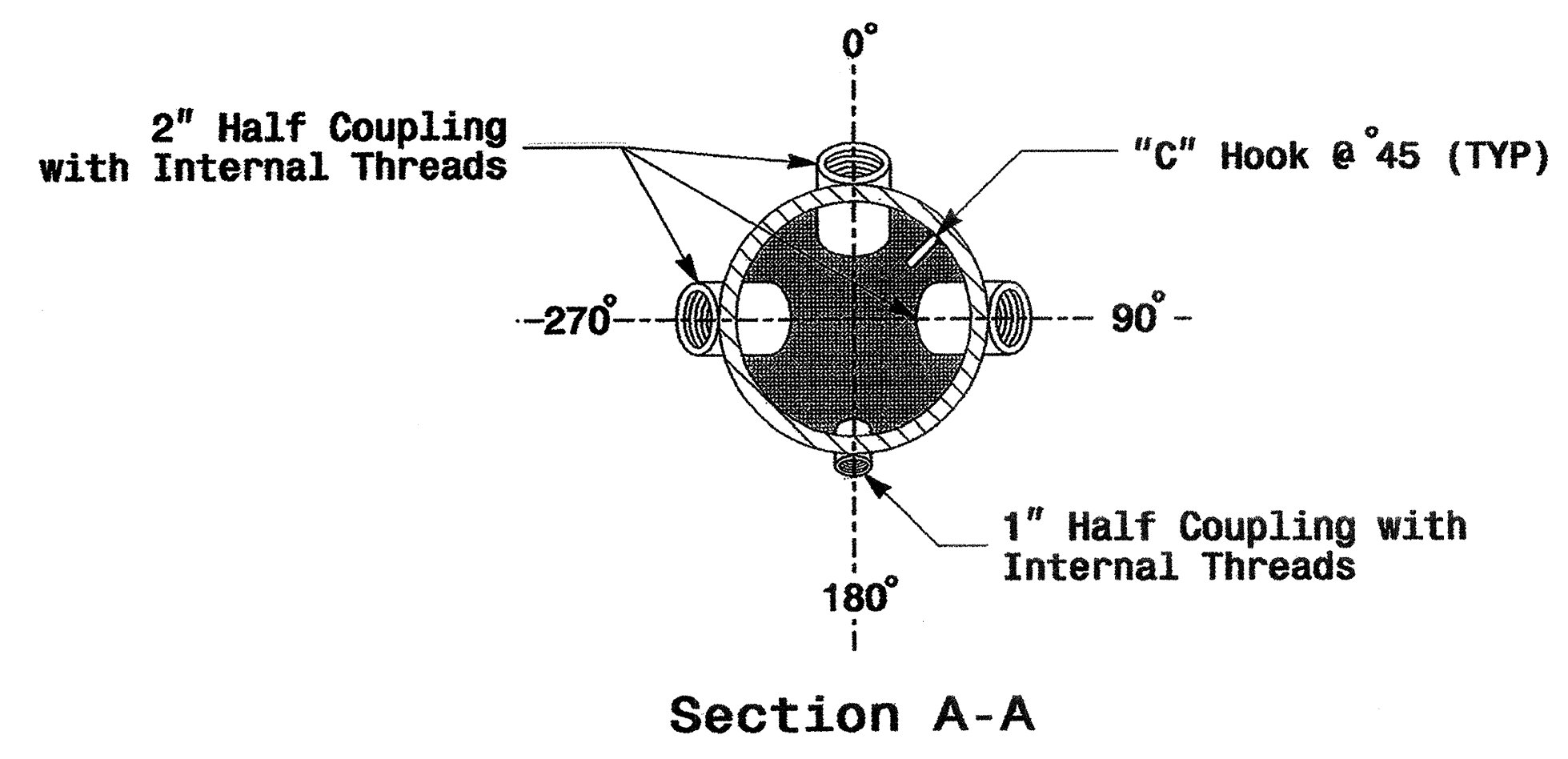
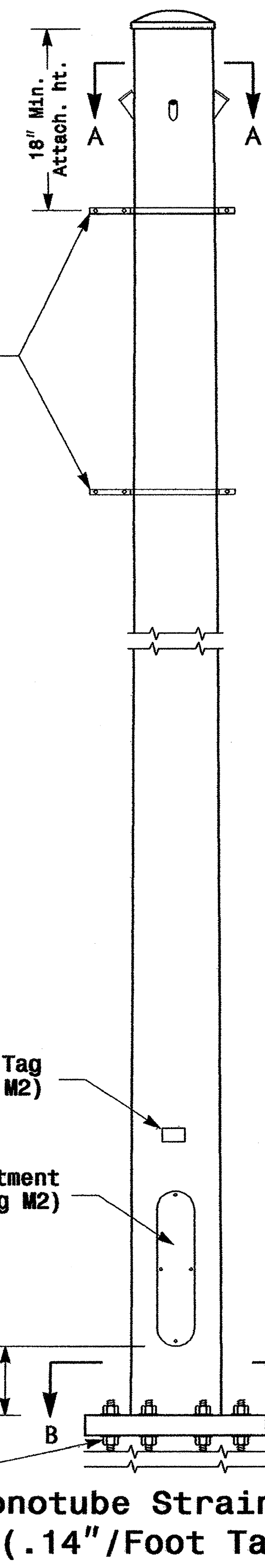


Cable Entrances at Top of Pole

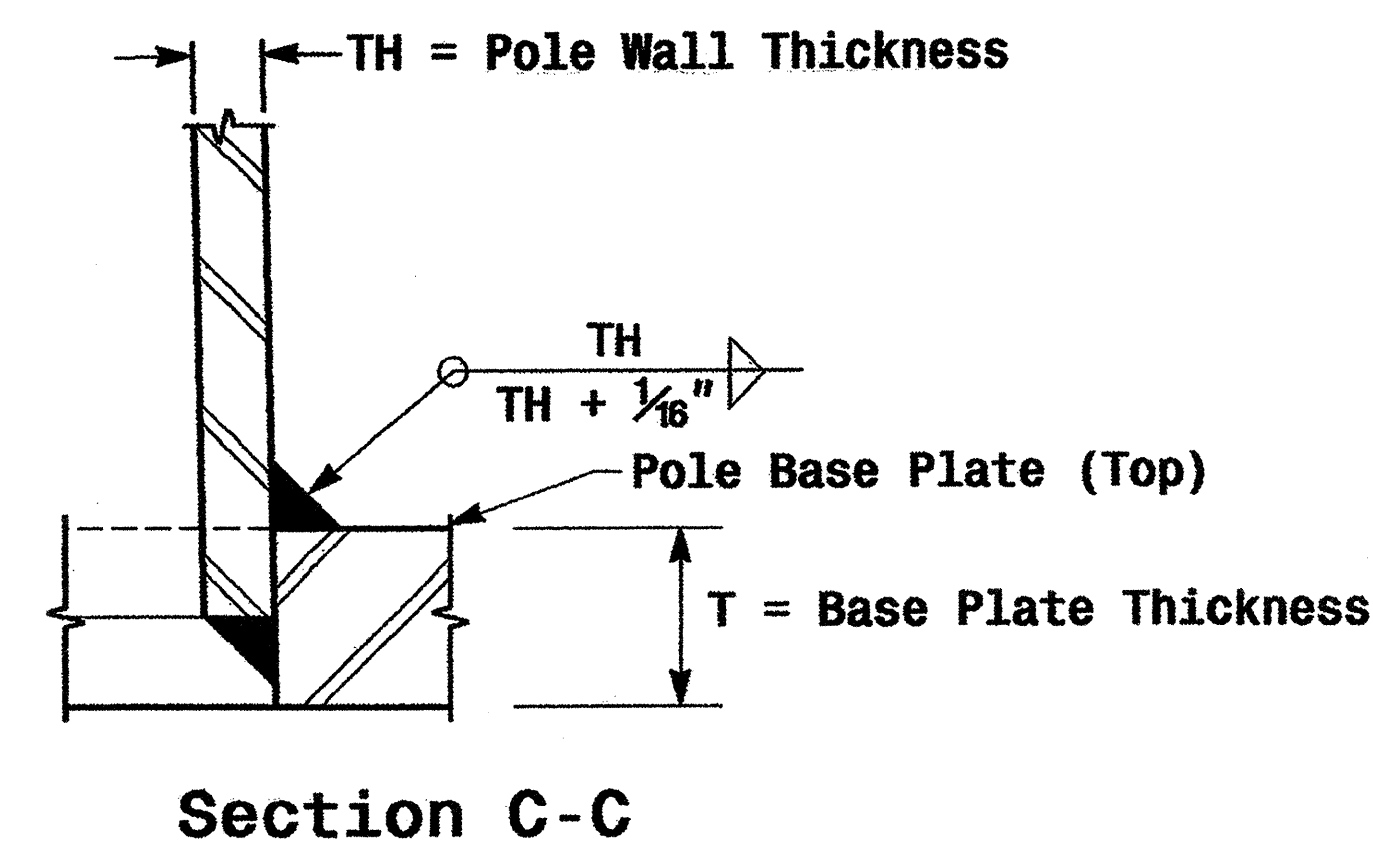


Section B-B
Pole Base Plate
(See drawing M2)

2 Cable Clamps designed for variable attachment heights from 1'-6" to 10' below the top of the pole.



Radial Orientation for Factory Installed Accessories at Top of Pole

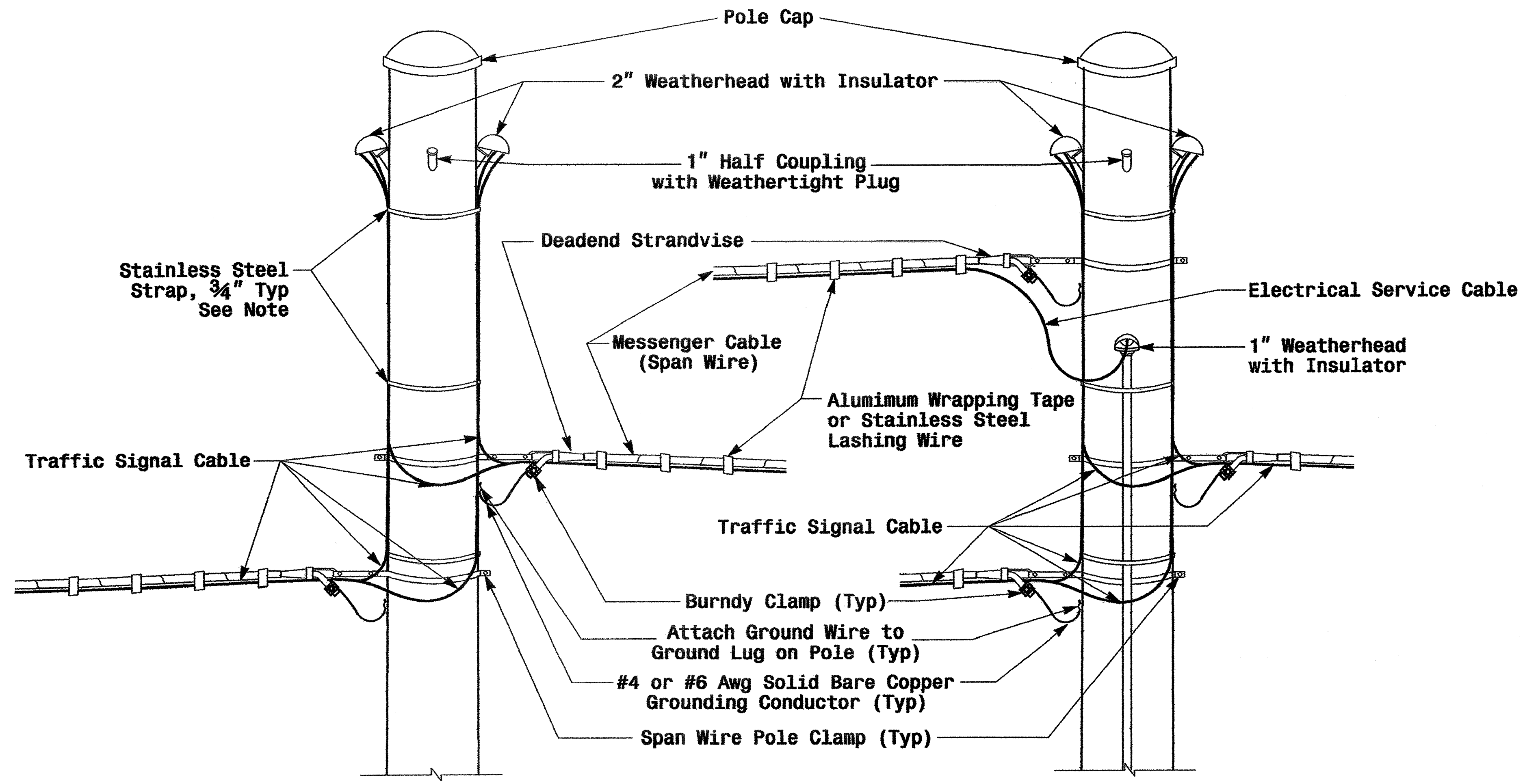


Socket Connection Weld Detail

Fabrication Details - Strain Poles

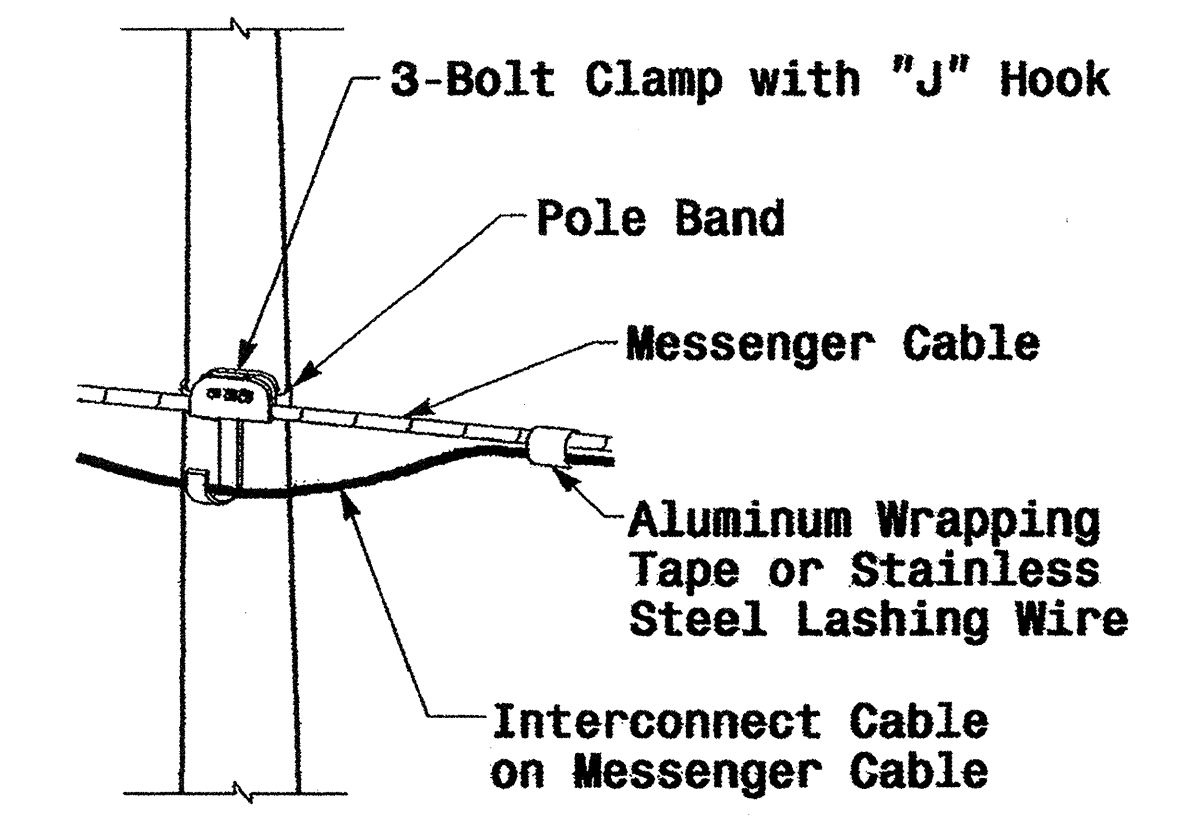
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| | | |
|---|---|---|
| | Typical Fabrication Details For Strain Poles | |
| | PLAN DATE: May 2005 PREPARED BY: P.L. Alexander | REVIEWED BY: C.F. Andrews REVIEWED BY: A.M. Esposito |
| SCALE: 0 NA NONE | REVISIONS: | INIT. DATE: |
| Signature: <i>D. Sarker</i> 9.2.2005 DATE: | | SIG. INVENTORY NO.: |

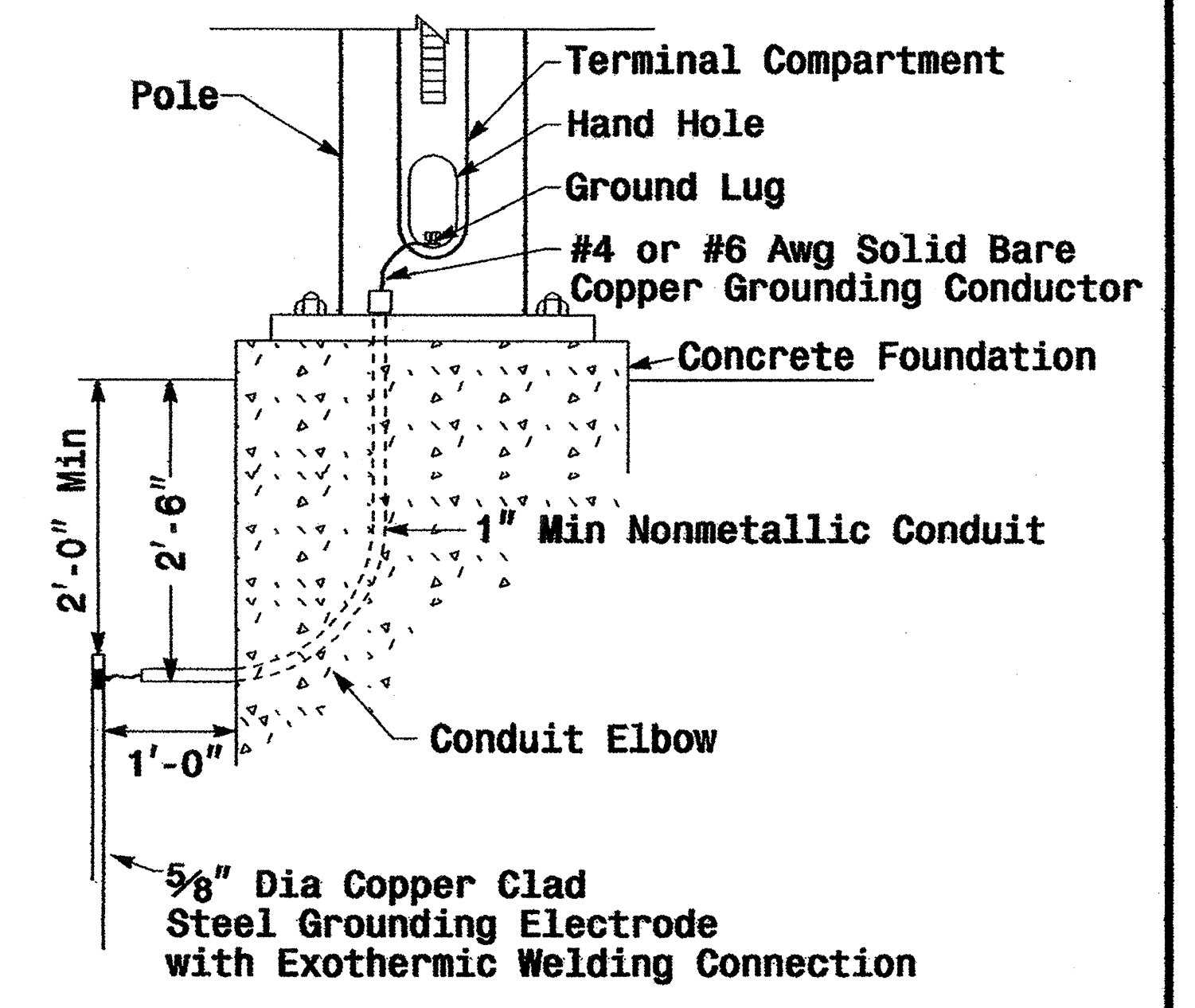


Note: Strap all signal cables to the side of the pole with 3/4" stainless steel straps when the distance between the spanwire attachment clamp and the weatherheads exceeds 36"

Strain Pole Attachments



Attachment of Cable to Intermediate Metal Pole



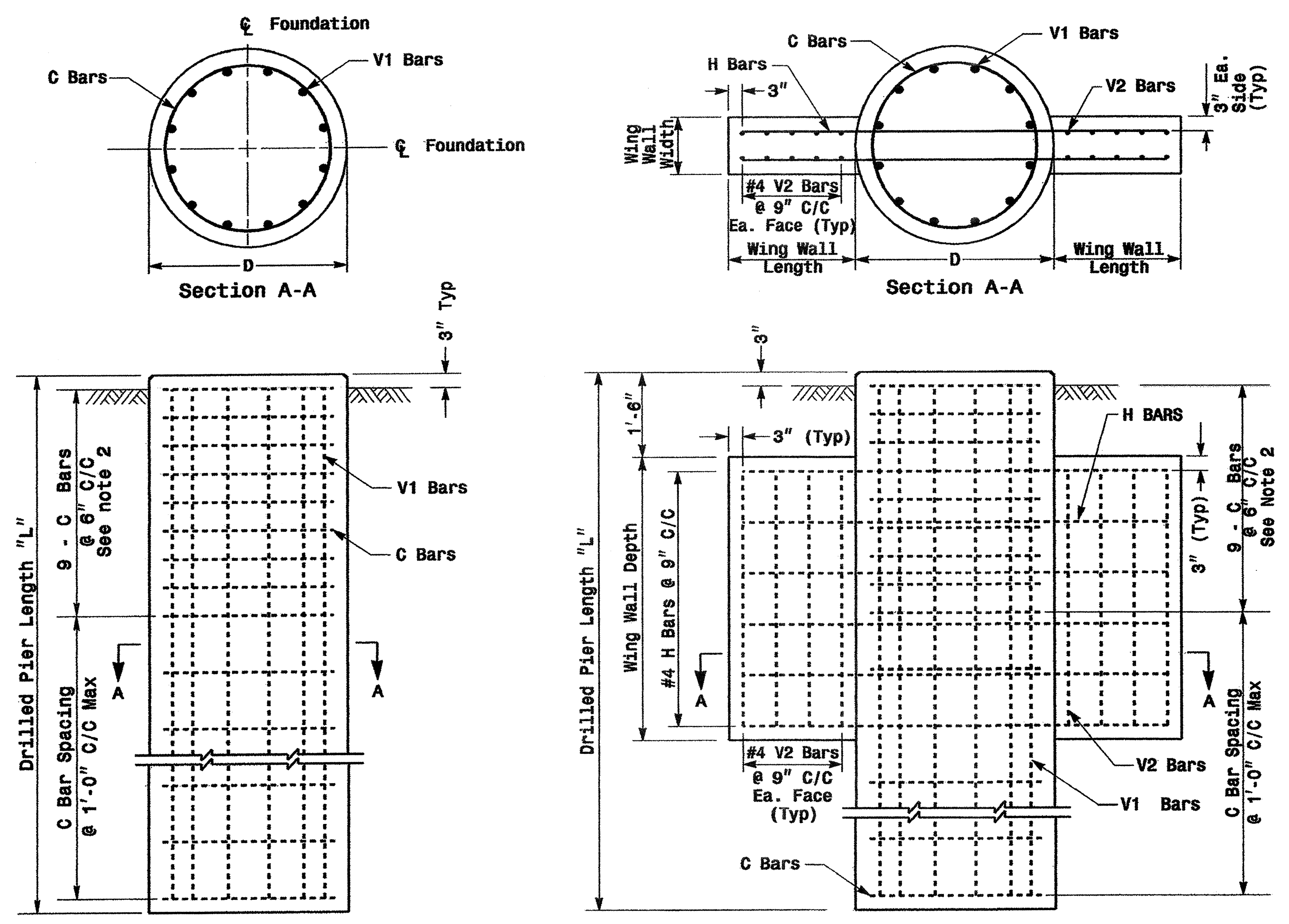
Metal Pole Grounding Detail

Construction Details - Strain Poles

01-SEP-2005 16:33 c:\win\lhw\lhw\groups\2004 metal pole standard\2004 mb.dgn

| | | | |
|------------|--|---|--|
| | Construction Details Strain Poles | | |
| | PLAN DATE: May 2005 PREPARED BY: C.F. ANDREWS | REVIEWED BY: P.L. ALEXANDER REVIEWED BY: D.C. SARKAR | |
| REVISIONS: | | INIT. DATE | SIGNATURE: <i>Milton I. Dean</i> DATE: 9-1-05 SIG. INVENTORY NO. |

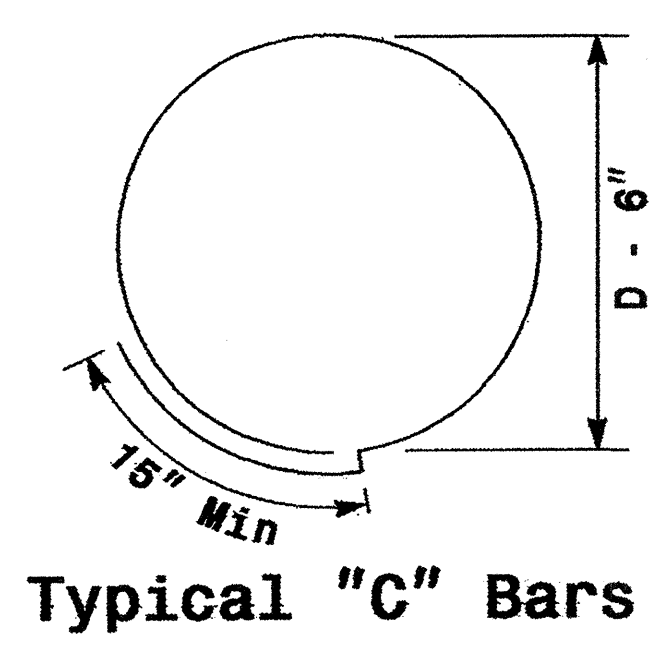
Reinforcing Steel Bars



REINFORCING STEEL TABLE FOR STANDARD DRILL PIER SHAFT (42" & 48" DIAMETER)

| Shaft Dia (in.) | Conc. Volume (cu. yds.) | Bar Name | No. | Size | Type | Length |
|-----------------|-------------------------|----------|-----|------|------|--------|
| 42" | .356 x L | V1 | 9 | #8 | STR. | ** |
| | | C | * | #4 | CIR. | 10'-9" |
| 48" | .465 x L | V1 | 12 | #8 | STR. | ** |
| | | C | * | #4 | CIR. | 12'-6" |

* See Note No. 1
** See Note No. 3



Typical "C" Bars

REINFORCING STEEL TABLE FOR STANDARD 42" and 48" DRILL PIER SHAFT WITH TYPE 1 AND TYPE 2 WING WALLS

| Wing Wall Type | Drill Pier Shaft Dia. (in.) | Reinforcing Steel | | | | |
|----------------|-----------------------------|-------------------|-----|------|------|--------|
| | | Bar Name | No. | Size | Type | Length |
| TYPE 1 | 42" | V1 | 9 | #8 | STR. | ** |
| | | V2 | 12 | #4 | STR. | 2'-6" |
| | | H | 8 | #4 | STR. | 6'-0" |
| | | C | * | #4 | CIR. | 10'-9" |
| TYPE 2 | 42" | V1 | 9 | #8 | STR. | ** |
| | | V2 | 16 | #4 | STR. | 4'-6" |
| | | H | 12 | #4 | STR. | 9'-0" |
| TYPE 2 | 48" | V1 | 12 | #8 | STR. | ** |
| | | V2 | 16 | #4 | STR. | 4'-6" |
| | | H | 12 | #4 | STR. | 9'-6" |
| | | C | * | #4 | CIR. | 12'-6" |

* See Note No. 1
** See Note No. 3

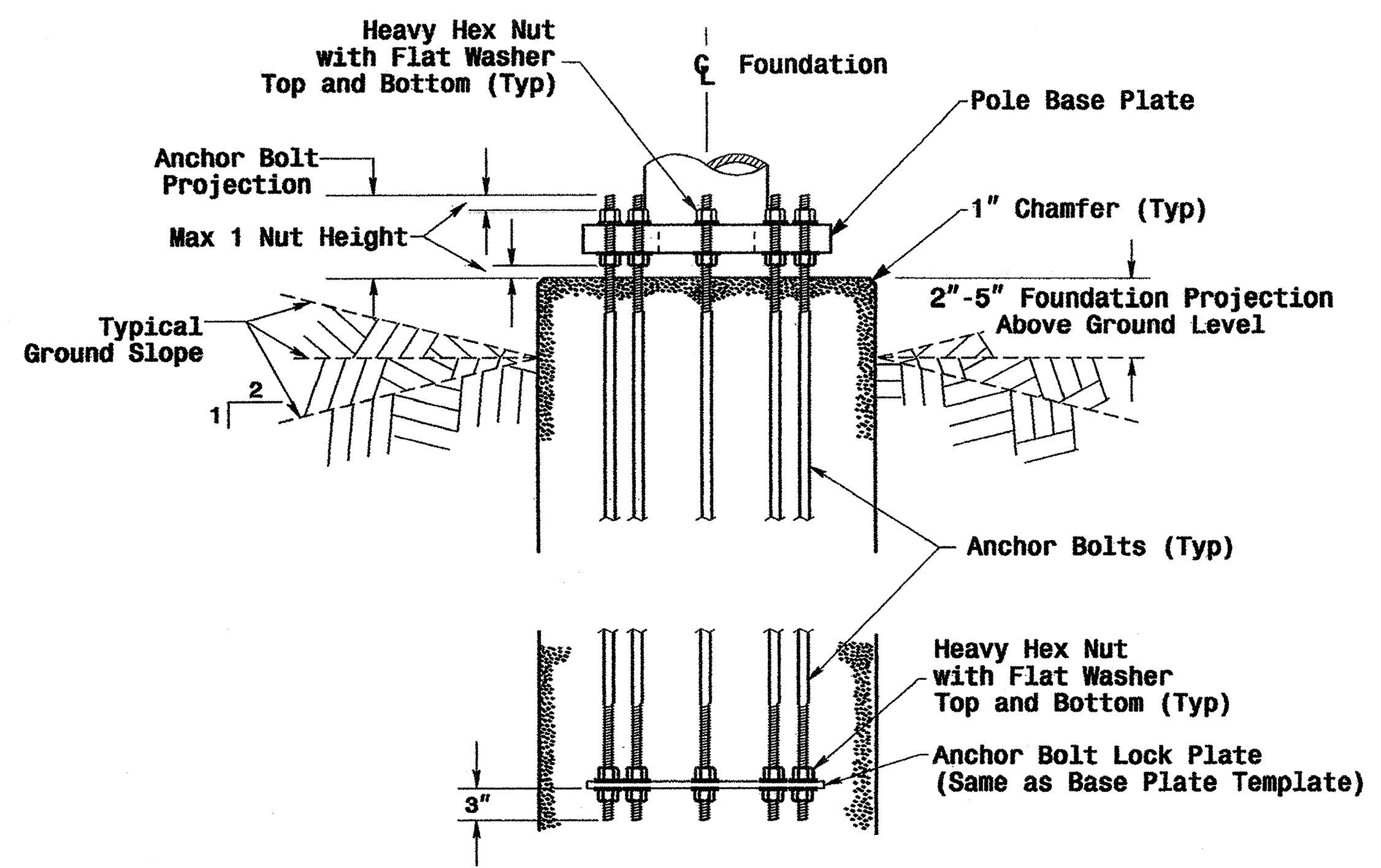
WING WALL DETAILS

| Wing Wall Type | Wing Wall Length (Ft.) | Wing Wall Width (Ft.) | Wing Wall Depth (Ft.) | Concrete Volume (Cu. Yds.) |
|----------------|------------------------|-----------------------|-----------------------|----------------------------|
| TYPE 1 | 1'-6" | 1'-0" | 3'-0" | .4 |
| TYPE 2 | 3'-0" | 1'-0" | 5'-0" | 1.2 |

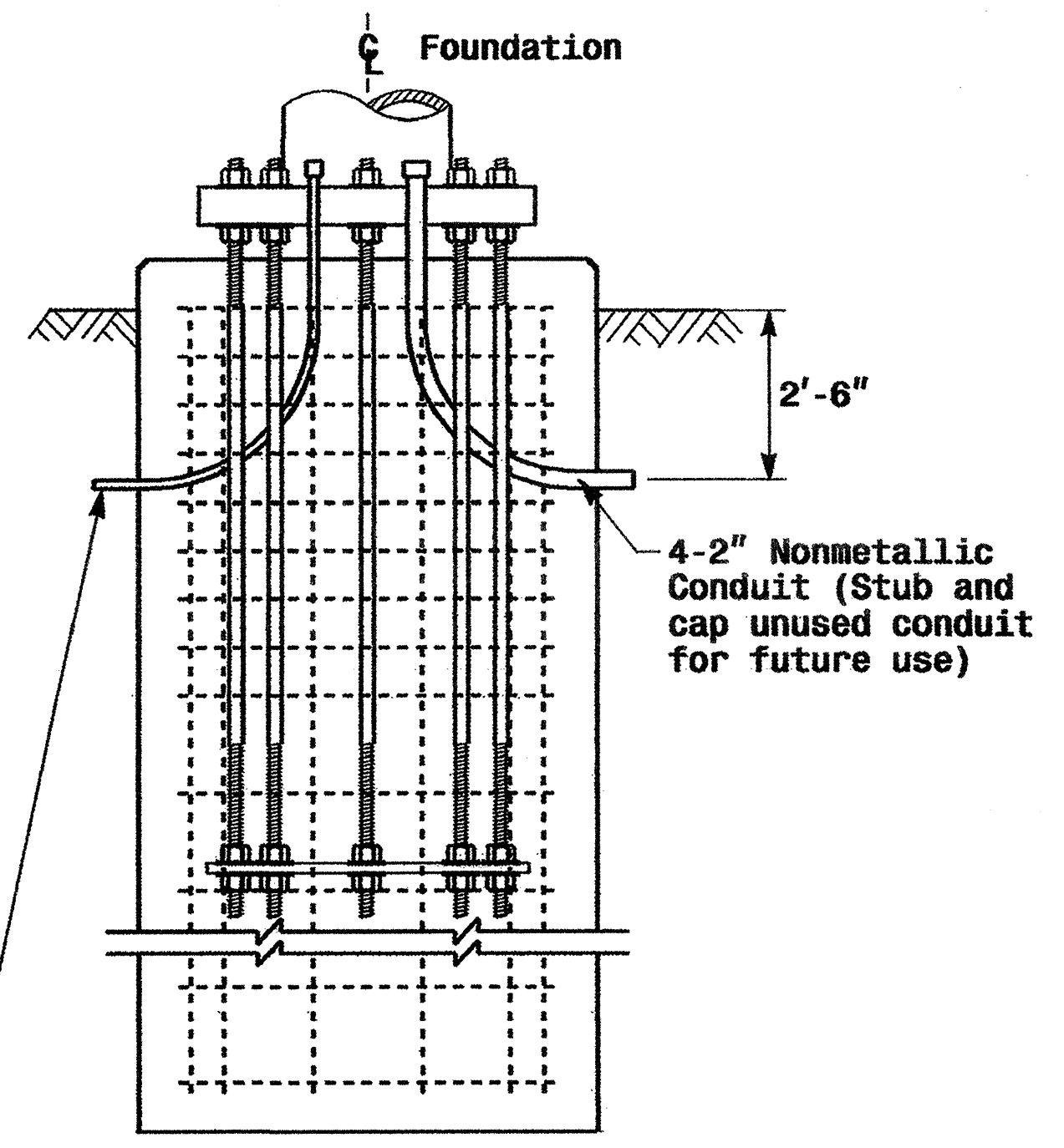
See Note No. 4

Typical Foundation Anchor Bolt Details

(Reinforcing Cage Not Shown for Clarity)



Typical Foundation Conduit Details



2-1" Nonmetallic Conduits for Electrical Service and Grounding Electrode Conductor

Notes

- The number of C-bars is based on foundation depth. For standard foundations, see sheet M 8.
- Circular tie reinforcing rings may be vertically adjusted by +/- 3" at a depth between 2'-0" and 3'-0" to facilitate the installation of electrical conduit entering in the cage.
- The length of V1-bars is based on foundation depth. For standard foundations, see sheet M 8.
- The quantities for steel and concrete shown in the Wing Wall Details Chart reflect the amount of material for 1 pair of wing walls (2 wing walls per drilled pier shaft.)

Construction Details - Foundations

01-SEP-2005 11:48 v:\p001185-un1\mwork\groups\2004 metal pole standard\2004 m7.dgn dol alexander

Prepared in the Office of: **STATE OF NORTH CAROLINA**

Construction Details Foundations

PLAN DATE: May 2005 REVIEWED BY: P.L. ALEXANDER
 PREPARED BY: G.F. ANDREWS REVIEWED BY: A.M. ESPOSITO

SCALE: NONE

REVISIONS: INIT. DATE

SIGNATURE: *D. Sagar* 9.2.2005
 SEAL: 028094
 DATE: 9.2.2005
 SIG. INVENTORY NO.

| | | STANDARD STRAIN POLES | | | | STANDARD FOUNDATIONS 42" Diameter Drilled Pier Length (L) - Feet | | | | | | |
|-------------|-------------|-----------------------|-------------------|---------------------|---------------------------------|---|--------------------|--------------------------|------------------|--------------------|----------------------|-------------------|
| | | Case No. | Pole Height (Ft.) | Base Plate BC (In.) | Moment at the Pole Base (ft-kp) | Clay | | | | Sand | | |
| | | | | | | Medium N-Value 4-8 | Stiff N-Value 9-15 | Very Stiff N-Value 16-30 | Hard N-Value >30 | Loose N-Value 4-10 | Medium N-Value 11-30 | Dense N-Value >30 |
| WIND ZONE 1 | LIGHT | S26L3 | 26 | 25 | 280 | 20.5 | 14.0 | 11.5 | 9.5 | 18.0 | 16.0 | 14.0 |
| | | S30L3 | 30 | 25 | 310 | 21.0 | 14.5 | 11.5 | 9.5 | 18.5 | 16.5 | 14.5 |
| | | S35L3 | 35 | 25 | 350 | 22.5 | 15.0 | 12.0 | 10.0 | 19.5 | 17.5 | 15.5 |
| | HEAVY | S30H3 | 30 | 29 | 450 | 25.5 | 16.5 | 13.0 | 11.0 | 21.0 | 18.5 | 16.5 |
| | | S35H3 | 35 | 29 | 540 | 26.0 | 17.0 | 13.5 | 11.5 | 22.0 | 19.5 | 17.0 |
| | WIND ZONE 2 | LIGHT | S26L2 | 26 | 23 | 250 | 19.5 | 13.5 | 11.0 | 9.0 | 18.0 | 15.5 |
| S30L2 | | | 30 | 23 | 290 | 20.0 | 14.0 | 11.5 | 9.5 | 18.5 | 16.0 | 14.0 |
| S35L2 | | | 35 | 23 | 315 | 21.0 | 14.5 | 11.5 | 9.5 | 19.0 | 16.5 | 14.5 |
| HEAVY | | S30H2 | 30 | 29 | 415 | 24.5 | 16.0 | 13.0 | 10.5 | 21.0 | 18.5 | 16.0 |
| | | S35H2 | 35 | 29 | 485 | 25.5 | 16.5 | 13.5 | 11.0 | 21.5 | 19.0 | 16.5 |
| WIND ZONE 3 | | LIGHT | S26L2 | 26 | 23 | 250 | 18.5 | 13.0 | 10.5 | 9.0 | 17.5 | 15.0 |
| | S30L2 | | 30 | 23 | 290 | 19.5 | 13.5 | 11.0 | 9.0 | 18.0 | 15.5 | 14.0 |
| | S35L2 | | 35 | 23 | 315 | 20.0 | 14.0 | 11.5 | 9.5 | 18.5 | 16.0 | 14.5 |
| | HEAVY | S30H2 | 30 | 29 | 415 | 23.0 | 15.5 | 12.5 | 10.0 | 20.5 | 17.5 | 16.0 |
| | | S35H2 | 35 | 29 | 485 | 24.0 | 16.0 | 13.0 | 10.5 | 21.0 | 18.0 | 16.5 |
| | WIND ZONE 4 | LIGHT | S26L1 | 26 | 22 | 195 | 18.0 | 13.0 | 10.5 | 9.0 | 16.5 | 14.5 |
| S30L1 | | | 30 | 22 | 225 | 18.5 | 13.0 | 10.5 | 9.0 | 17.0 | 15.0 | 13.5 |
| S35L1 | | | 35 | 22 | 255 | 19.0 | 13.5 | 11.0 | 9.0 | 17.5 | 15.5 | 14.0 |
| HEAVY | | S30H1 | 30 | 25 | 330 | 22.0 | 15.0 | 12.0 | 9.5 | 19.5 | 17.0 | 15.0 |
| | | S35H1 | 35 | 25 | 385 | 23.0 | 15.5 | 12.5 | 10.0 | 20.0 | 17.5 | 15.5 |
| WIND ZONE 5 | | LIGHT | S26L2 | 26 | 23 | 250 | 19.0 | 13.5 | 10.5 | 9.0 | 17.5 | 15.5 |
| | S30L2 | | 30 | 23 | 290 | 20.0 | 14.0 | 11.0 | 9.5 | 18.0 | 16.0 | 14.0 |
| | S35L2 | | 35 | 23 | 315 | 21.0 | 14.5 | 11.5 | 10.0 | 19.0 | 16.5 | 14.5 |
| | HEAVY | S30H2 | 30 | 29 | 415 | 23.5 | 15.5 | 12.5 | 10.5 | 21.0 | 18.0 | 16.0 |
| | | S35H2 | 35 | 29 | 485 | 25.0 | 16.5 | 13.0 | 11.0 | 21.5 | 18.5 | 16.5 |

Concrete Volume (cubic yards) = .356 X L

Fabrication Design Notes:

1. Values shown in "Moment at the Pole Base" column represents the minimum acceptable capacity allowable for design using a design CSR of 1.
2. Base plate thickness (T) is 2.0 inches.

Foundation Selection:

1. Perform a standard penetration test at each proposed foundation site to determine "N" value.
2. Select the appropriate wind zone from sheet M 1.
3. Select the soil type (Clay or Sand) that best describes the soil characteristics.
4. Get the appropriate pole case load number from the plans or from the Engineer.
5. Select the appropriate column in the chart based on soil type and "N" value. Select the appropriate row based on the pole load case. The foundation depth is the value where the column and the row intersect.

Standard Strain Poles

02-SEP-2005 12:42 v:\projects\unifw\krc\p04\2004 m8 std strain pole.dgn dol alexander

| | | |
|----------------------------|--|---|
| | Standard Strain Poles and Standard Foundations | |
| | PLAN DATE: May 2005 PREPARED BY: P.L. Alexander | REVIEWED BY: C.F. Andrews REVIEWED BY: A.M. Esposito |
| SCALE: 0 NA None | REVISIONS: _____ INIT.: _____ DATE: _____ | SIGNATURE: <i>D. Sarker</i> 9.2.2005 DATE: _____ |

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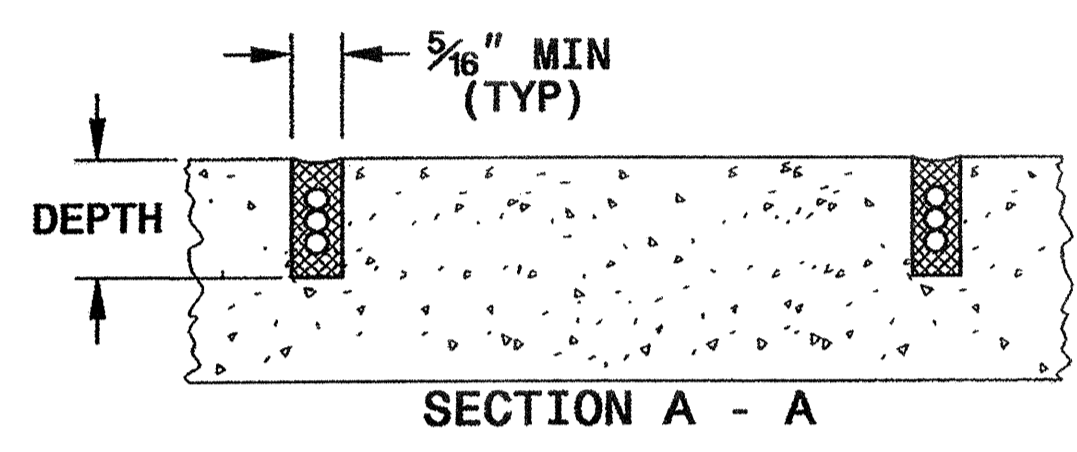
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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

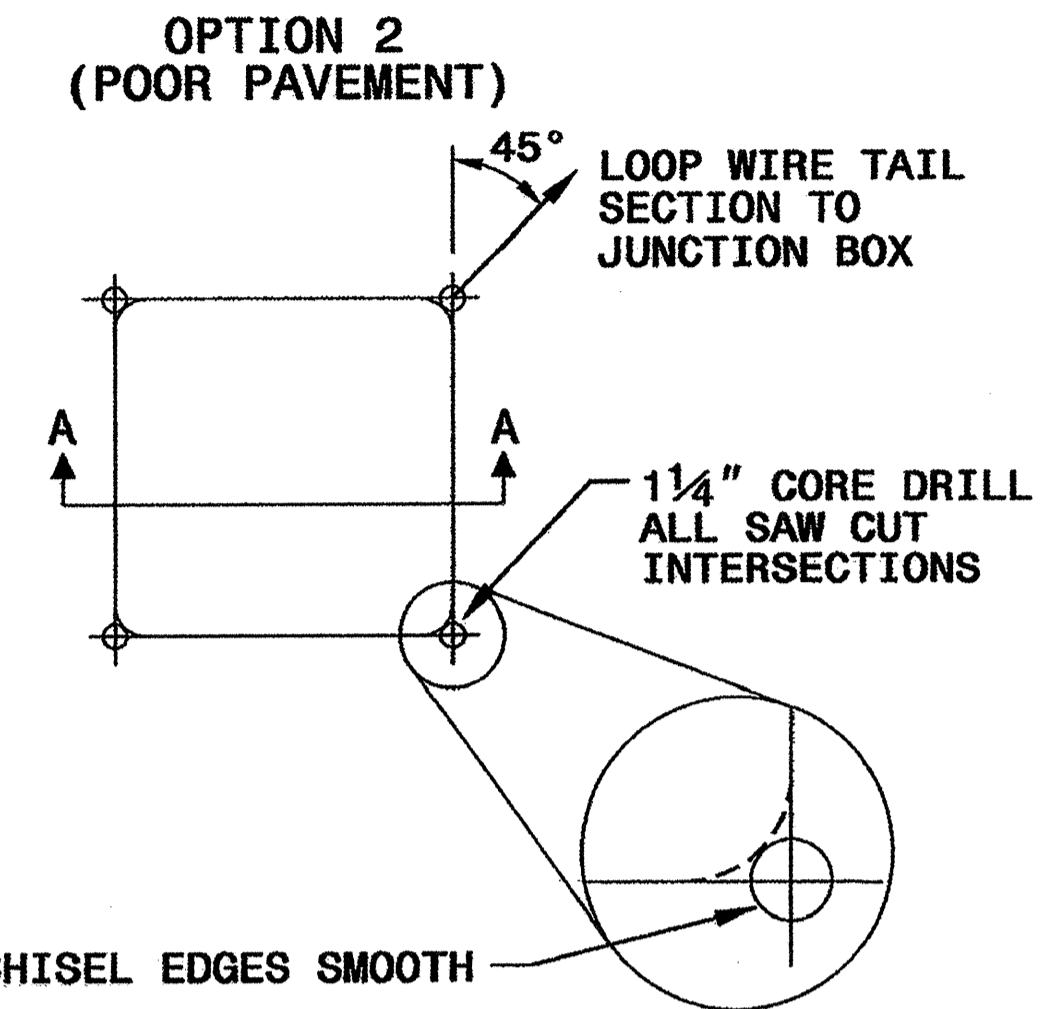
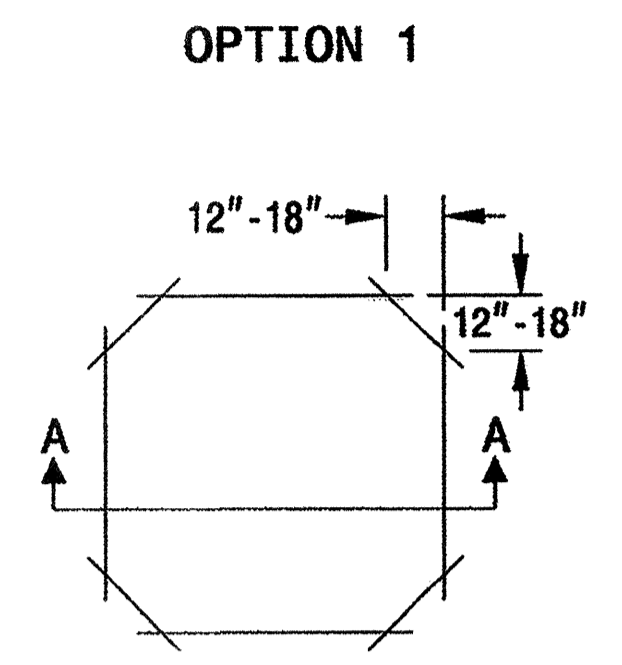
SAW SLOT DEPTH CHART

| DEPTH (IN) | NO. OF WIRE TURNS | | | | | |
|------------|-------------------|-----|-----|-----|-----|--|
| | 2 | 3 | 4 | 5 | 6 | |
| CONCRETE | 2.0 | 2.0 | 2.5 | 2.5 | 3.0 | |
| ASPHALT | 2.0 | 2.5 | 3.0 | 3.0 | 3.0 | |

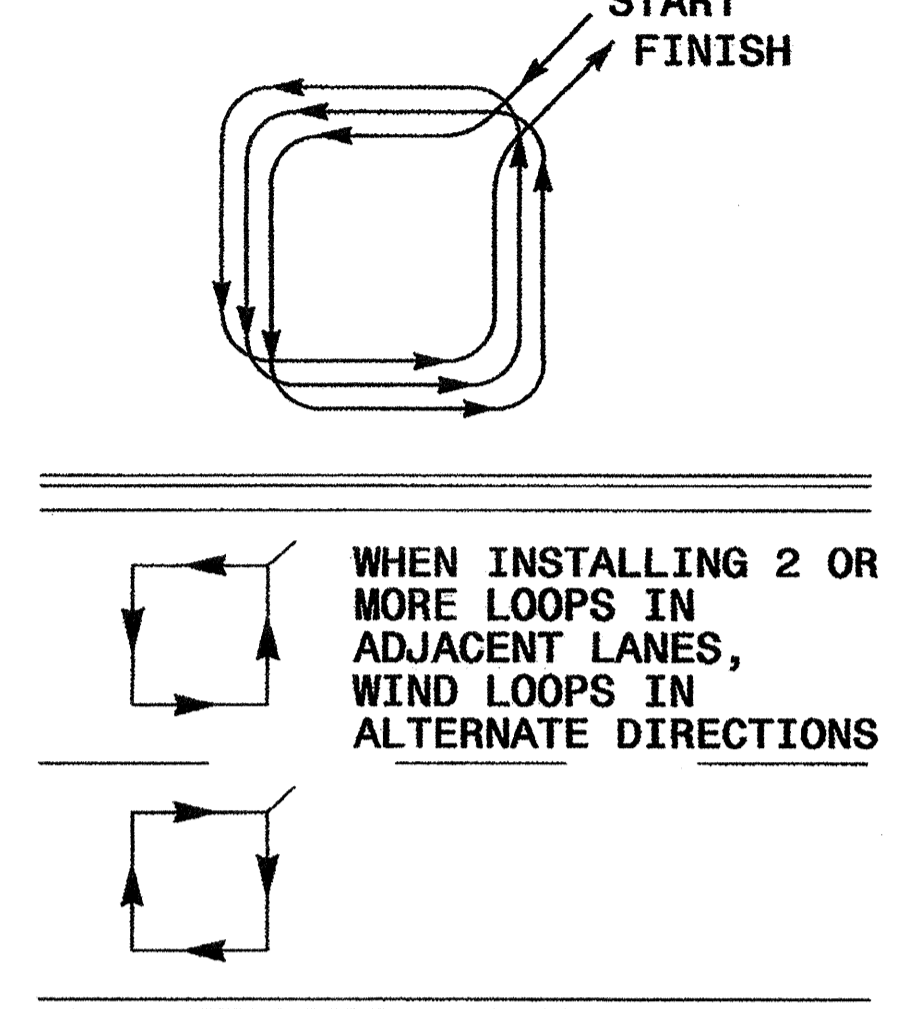


CONVENTIONAL 4-SIDED LOOP

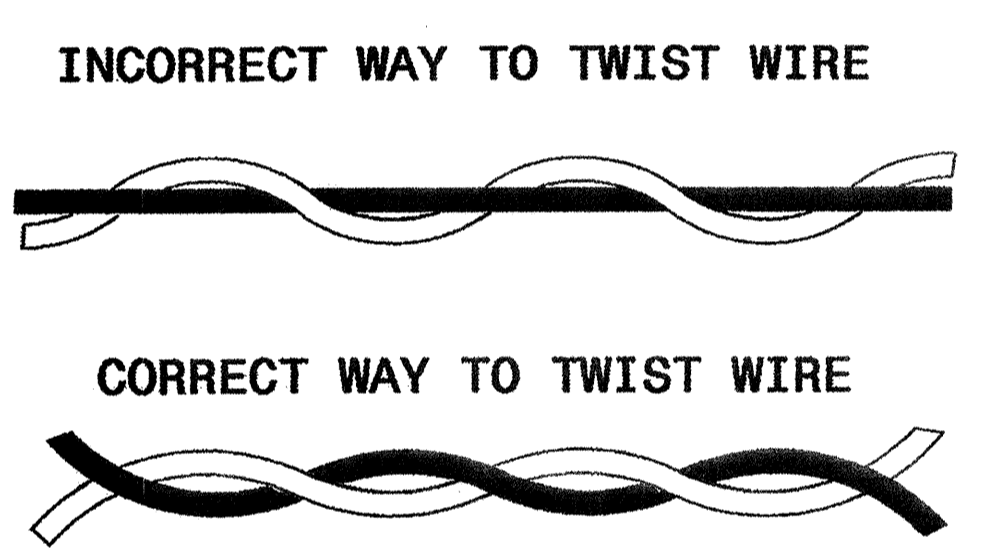
SAW CUT OPTIONS



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

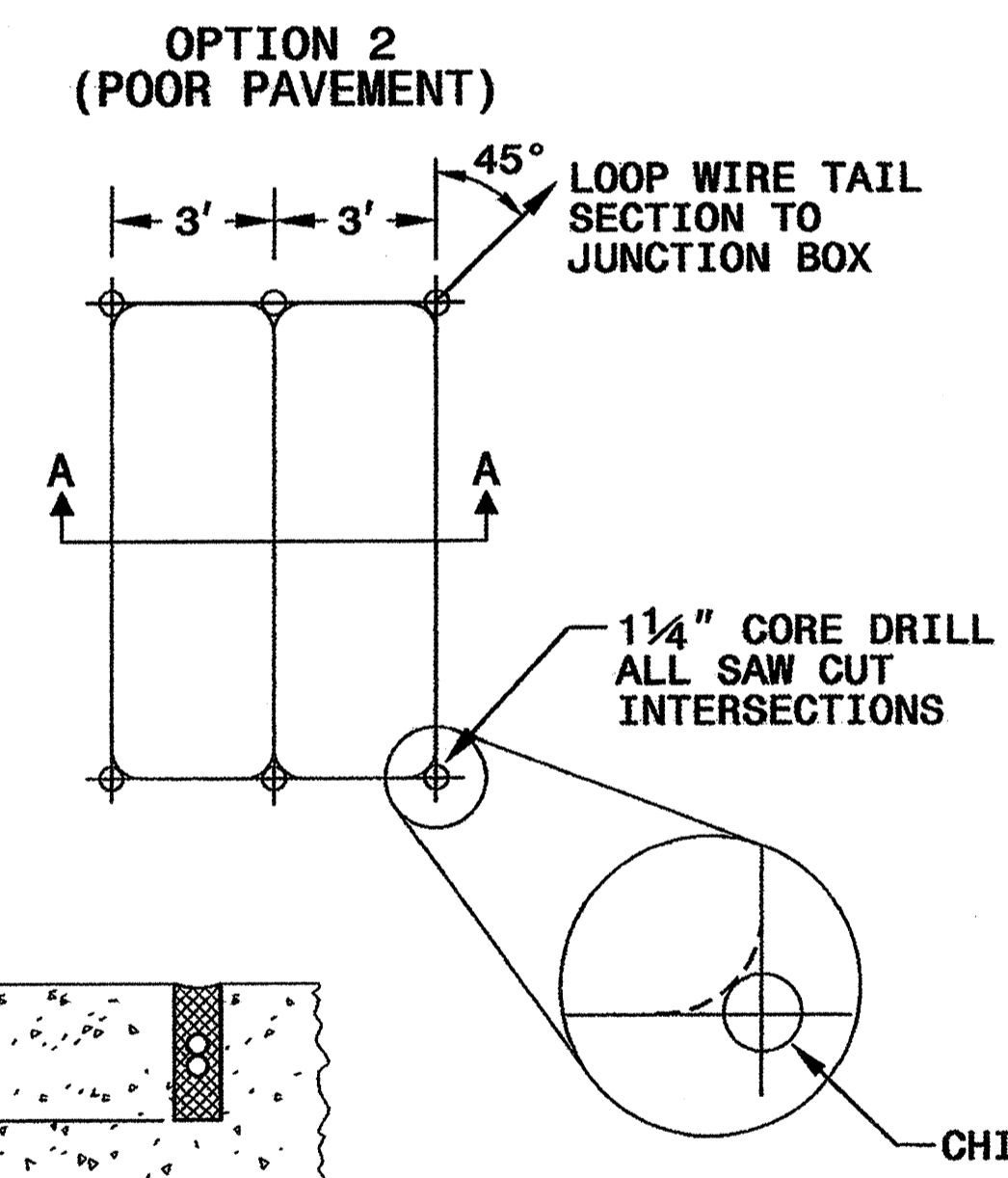
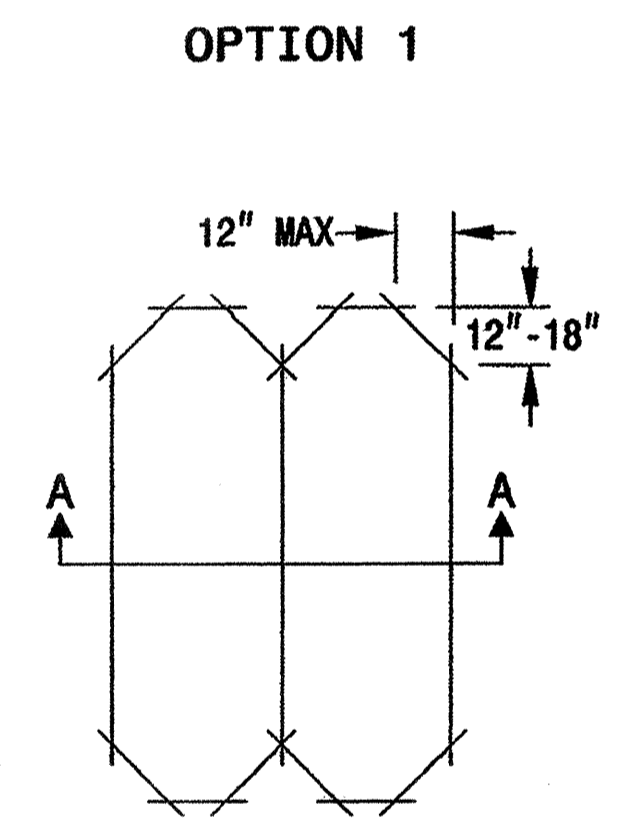


NOTES

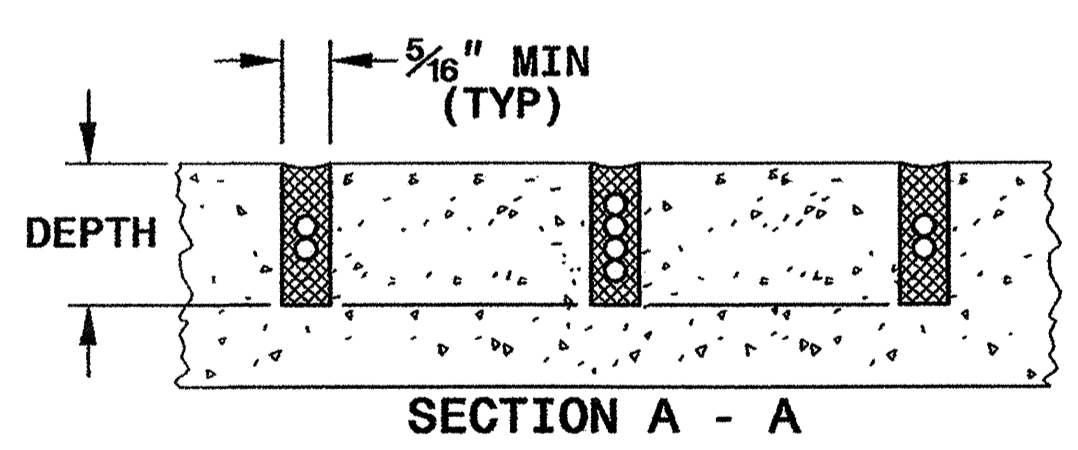
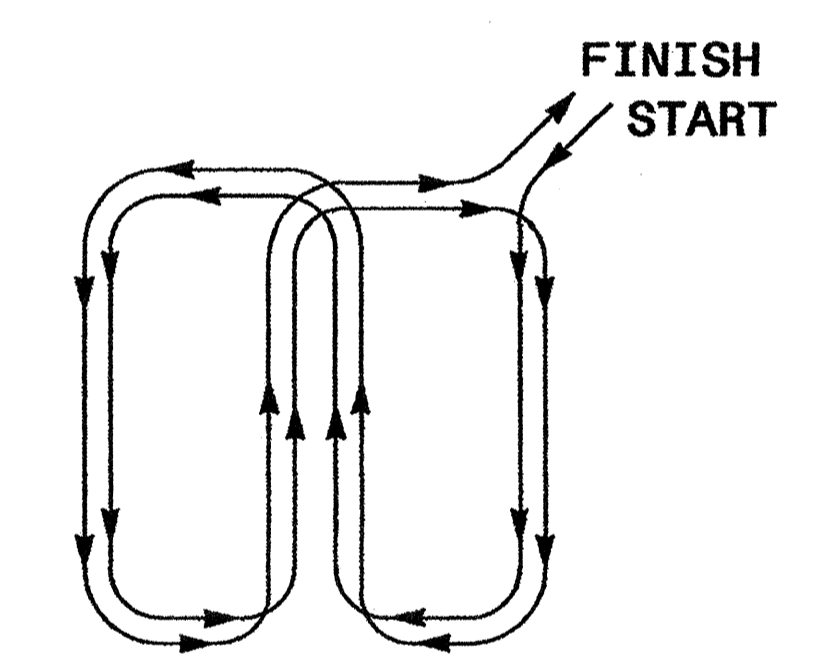
1. OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
2. MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
3. WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
4. LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

QUADRUPOLE LOOP

SAW CUT OPTIONS



LOOP WINDING METHOD



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

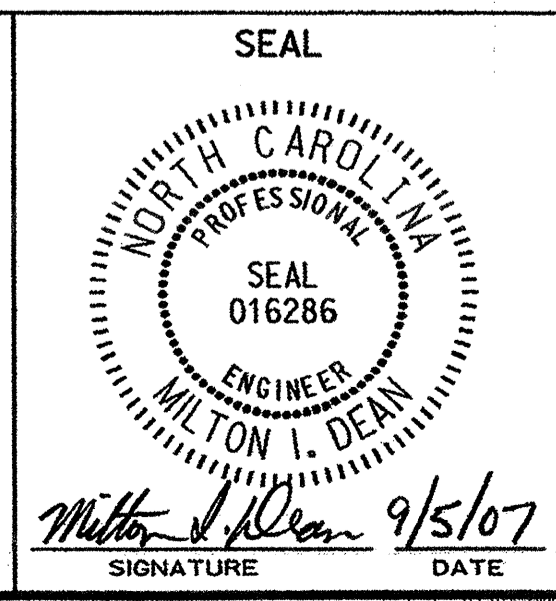
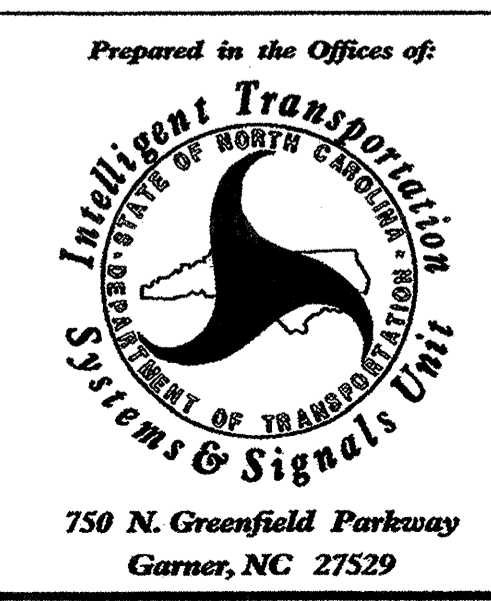
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5-07

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title



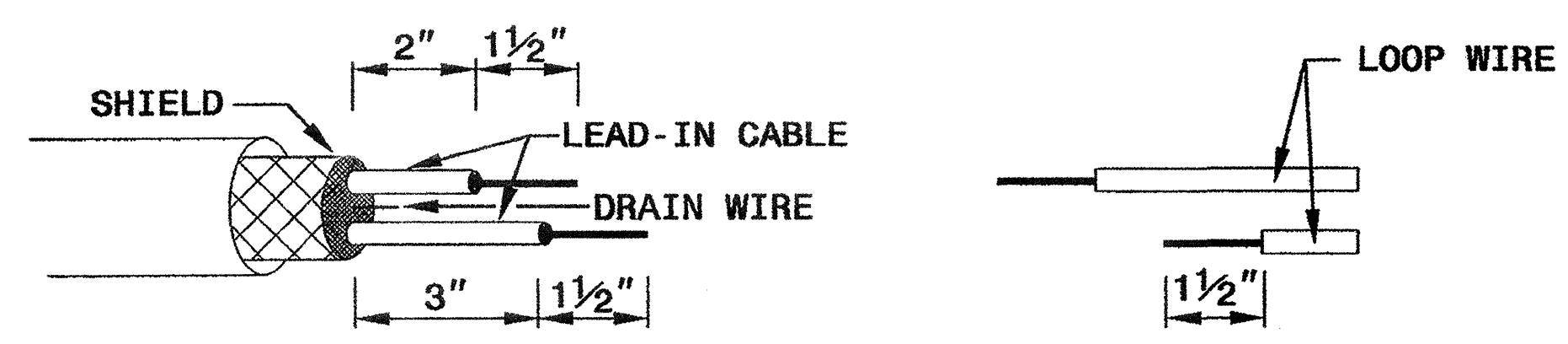
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5-07

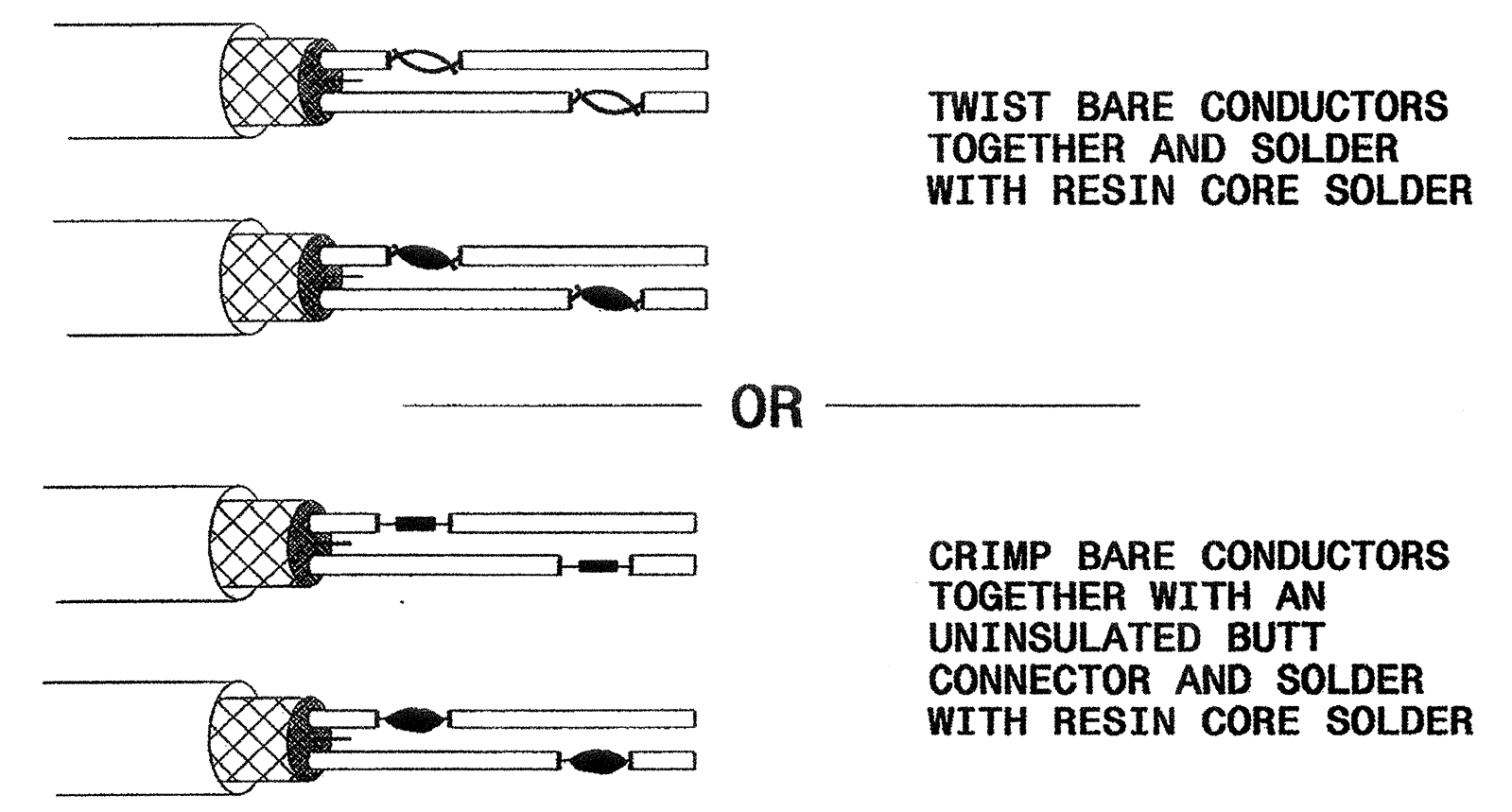
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

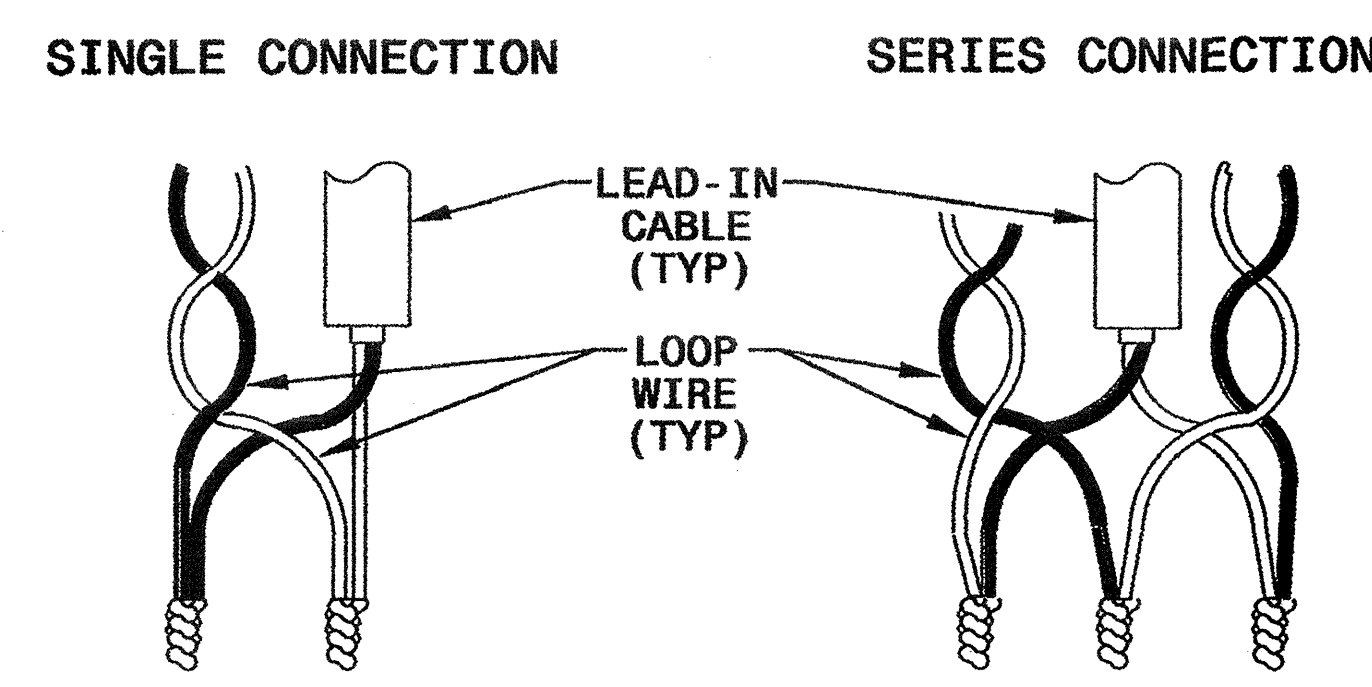


STEP 2. CONNECT AND SOLDER

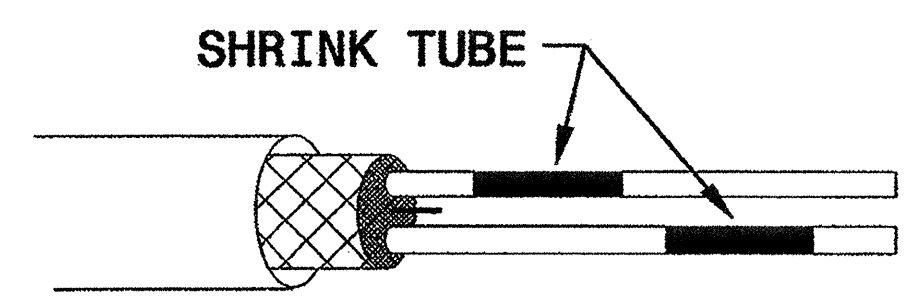


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

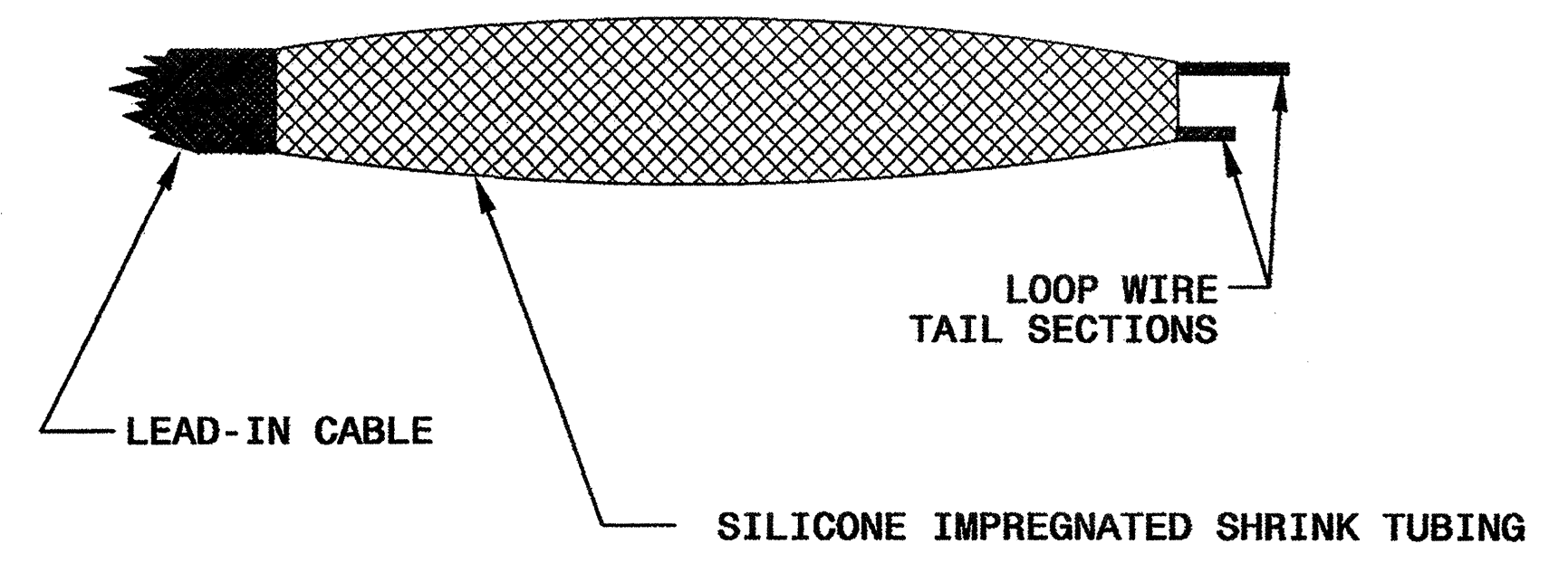
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



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ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

ENGINEER
MILTON I. DEAN

Milton I. Dean 9/5/07
SIGNATURE DATE

05-SEP-2007 14:01
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