



Victoria Masse  
Northeast Site Solutions  
5 Melrose Drive,  
Farmington CT 06032  
860-306-2326  
victoria@northeastsitesolutions.com

April 1, 2024

Members of the Siting Council  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RE: Notice of Exempt Modification  
3 Mechanic Street (aka 0 Mechanic Street), Darien CT 06820  
Latitude: 41.196250  
Longitude: -73.431941  
T-Mobile Site#: CT11290C\_L700 4x2

Dear Ms. Bachman:

T-Mobile currently maintains three (3) antennas at the 124-foot level of the existing 115-foot transmission pole at 3 Mechanic Street, Darien CT 06820. The electric transmission pole is owned by CL&P d/b/a Eversource. The property is owned by State of CT DOT. T-Mobile now intends to replace three (3) existing antennas with three (3) new 600/700/1900/2100 MHz. The new antennas would be installed at the 124-foot level of the tower on a new pipe mast. T-Mobile also intends to make the following modifications.

Planned Modifications

Remove:

NONE

Remove and Replace:

(3) Andrew SBNHH Antenna (Remove) - (3) RFS APXVAARR 600/700/1900/2100 MHz Antenna (Replace)

Install New:

(6) 1-1/4" Coax

Existing to Remain:

(3) Smart Bias Tees

(18) 1-1/4" Coax

This facility was originally approved by the CSC in Petition No. 420 dated July 15, 1999. The original approval indicates a structure height of 95' which conflicts with future exempt modification approvals reflecting the tower height as 115'. This was most likely in error and the tower height is 115'. Outside of the discrepancy, the proposed modification complies with the original approval. The top of the antennas were approved to be approximately 10-feet above the top of the tower. Please see the enclosed.

5 Melrose Drive, Farmington CT 06032



Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman Jon E. Zagrodzky for the Town of Darien, Kathleen Clarke Buch, CPFO Darien Town Hall as well as the property owner and the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

*Victoria Masse*

Victoria Masse  
Mobile: 860-306-2326  
Fax: 413-521-0558  
Office: 5 Melrose Drive, Farmington CT 06032  
Email: [victoria@northeastsitesolutions.com](mailto:victoria@northeastsitesolutions.com)



Attachments:

cc: The Honorable Jon E. Zagrodzky, First Selectman  
2 Renshaw Road  
Suite 202  
Darien, CT 06820

Kathleen Clarke Buch, CPFO Darien Town Hall  
2 Renshaw Rd, Room 202  
Darien, CT, 06820

CL&P d/b/a Eversource - as tower owner  
107 Selden Street  
Berlin, CT 06037

State of CT DOT - property owner  
2800 Berlin Turnpike  
Newington, CT 06111

# Exhibit A

## **Original Facility Approval**

Petition No. 420  
Omnipoint Communications  
Darien, CT  
Staff Report  
July 15, 1999

On July 7, 1999, Connecticut Siting Council (Council) member Edward S. Wilensky and Executive Director Joel M. Rinebold met with J. Brendan Sharkey, Mark Finley, Brian Ragazzino, and Cheatan Dhaduk of Omnipoint Communications, Inc. (Omnipoint) for a field review in the Town of Darien, Connecticut. Omnipoint is petitioning the Council for a determination that no Certificate of Environmental Compatibility and Public Need (Certificate) would be required for modifications to an existing Connecticut Light and Power Company (CL&P) electric transmission line facility in Darien. Omnipoint submits no Certificate would be required because the addition of three antennas and associated equipment would not have a substantial adverse environmental effect.

Omnipoint proposes to attach three PCS antennas to existing CL&P transmission line structure number 1068, located south of Mechanic Street in Darien, Connecticut. Access would be from Mechanic Street. A temporary staging area would be established adjacent to the transmission line structure in the right-of-way. The top of the antenna assembly would extend approximately 10 feet above the top of the existing 95-foot transmission line structure. The proposed antennas are 56 inches in length, 8 inches in width, and 2.75 inches in diameter, and weigh 18 lbs. The antennas would be placed on top of the existing tower structure and no compression post would be required. The communications equipment would be installed upon or eight-foot by 3.75-foot concrete slab, to be placed at the northeast corner of the tower base. Additional screening is recommended around the equipment cabinet at the base of the tower.

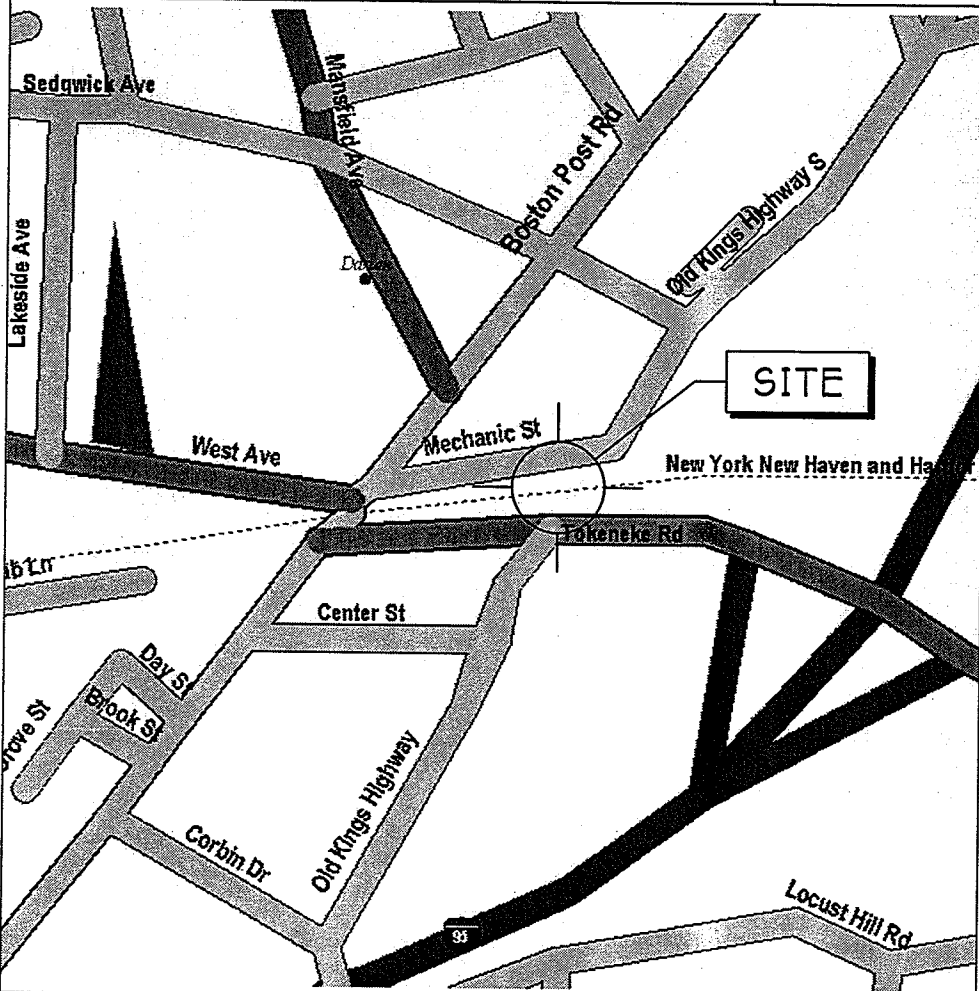
The total calculated radio frequency power density at the base of the tower would be  $0.0149 \text{ mw/cm}^2$ , which is 1.49 percent of the maximum permissible exposure for uncontrolled environments based on Federal Communications Commission (FCC) Bulletin 65, August 1997.

# CL&P POLE #1068 MECHANIC STREET DARIEN, CT

SEARCH AREA: **DARIEN / DOWNTOWN**

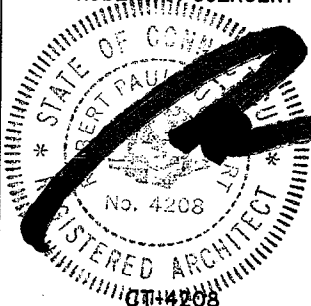
SITE I.D. #: **CT-11-290C**

LOT#:      BLOCK#:      ZONING DISTRICT:      MAP#:



DWG.:	TITLE:
A-1	SITE LAYOUT & KEY PLAN
A-2	EQUIPMENT PLAN
A-3	SOUTH ELEVATION
A-4	CABINET DETAIL
A-5	SUB-BASE DETAIL
A-6	EQUIPMENT ELEVATION
A-7	CABLE TRAY DETAIL
A-8	CABLE ROUTING ELEVATION
A-9	CABLE MOUNT ELEVATION
A-10	ANTENNA MOUNT DETAIL
A-11	ELECTRIC EQUIPMENT MOUNT
A-12	PLANTING DETAIL
A-13	FENCE DETAIL
A-14	GENERAL NOTES
A-15	GENERAL NOTES
A-16	GENERAL NOTES
A-17	CONCRETE NOTES
A-18	MATERIAL LIST
E-1	GENERAL INFORMATION
E-2	SERVICE PLAN
E-3	GROUNDING PLAN
E-4	RISER
E-5	GROUNDING DETAILS
E-6	GROUNDING DETAILS
E-7	GROUNDING DETAILS

ROBERT P. JUENGERT



**DIRECTIONS TO SITE:**

ROUTE 95 SOUTH TO EXIT 11. MAKE RIGHT ONTO BOSTON POST ROAD. GO ONE BLOCK TO A RIGHT ON MECHANIC STREET. SITE IS ON THE RIGHT JUST BEFORE THE SHARP CURVE IN THE ROAD (APPROXIMATELY 150 YARDS DOWN THE ROAD).

ARCNET PROJECT NO. **A99.506-833A**      P.C. **RVa**      DATE: **4/22/99**

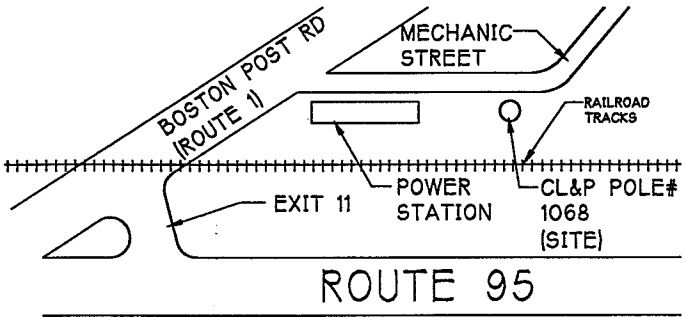


SITE LOCATION MAP

SCALE: NONE

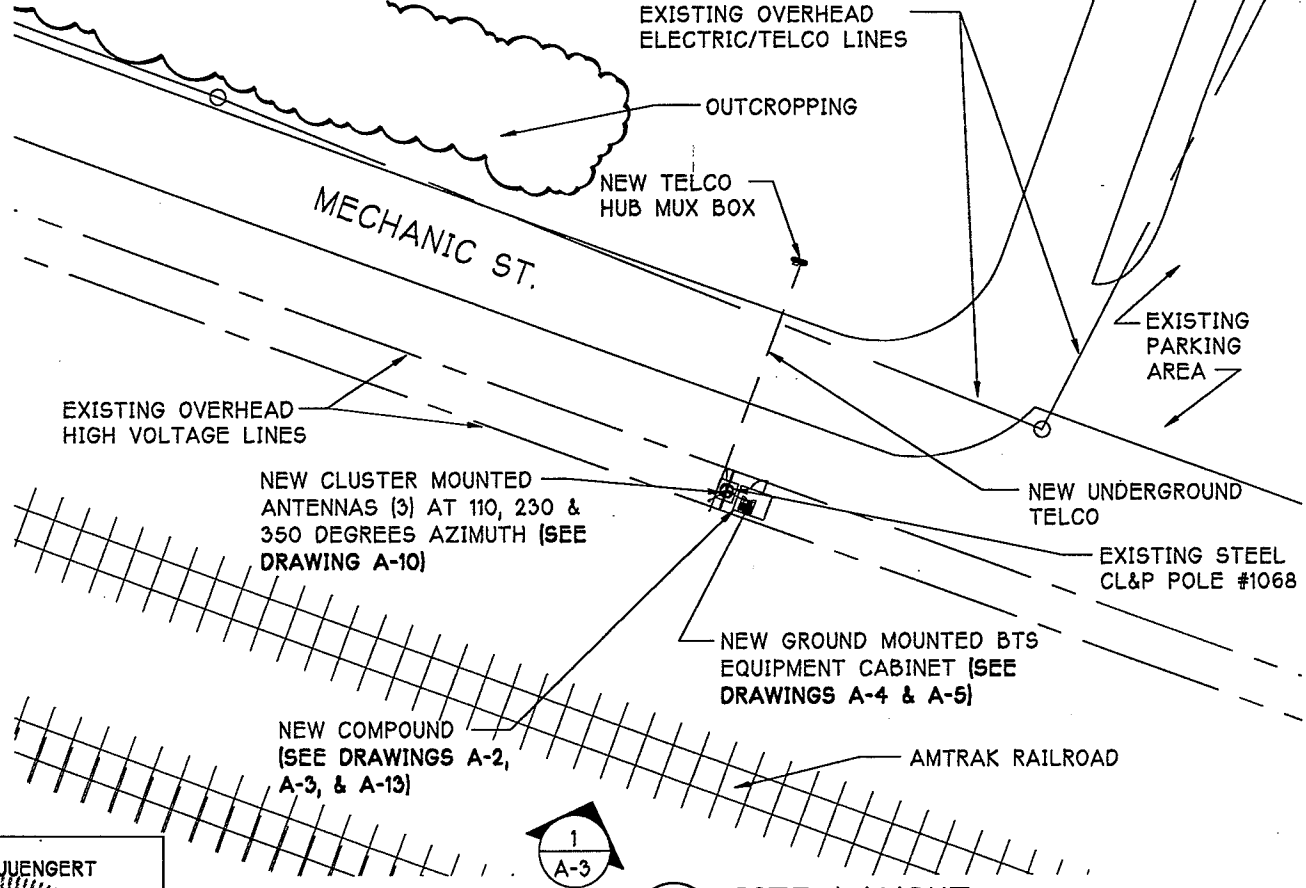


670 North Beers Street, Building 2, Holmdel, NJ 07733  
Tel: 732.739.3200      Fax: 732.739.0440

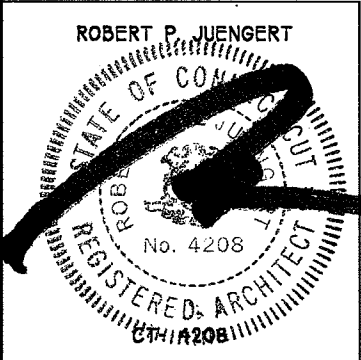


**NOTE:**  
 1.) FOR ITEMS SUPPLIED BY OTHERS SEE MATERIAL LIST. (DRAWING A-18)  
 2.) NORTH TO BE DETERMINED BY CIVIL ENGINEER

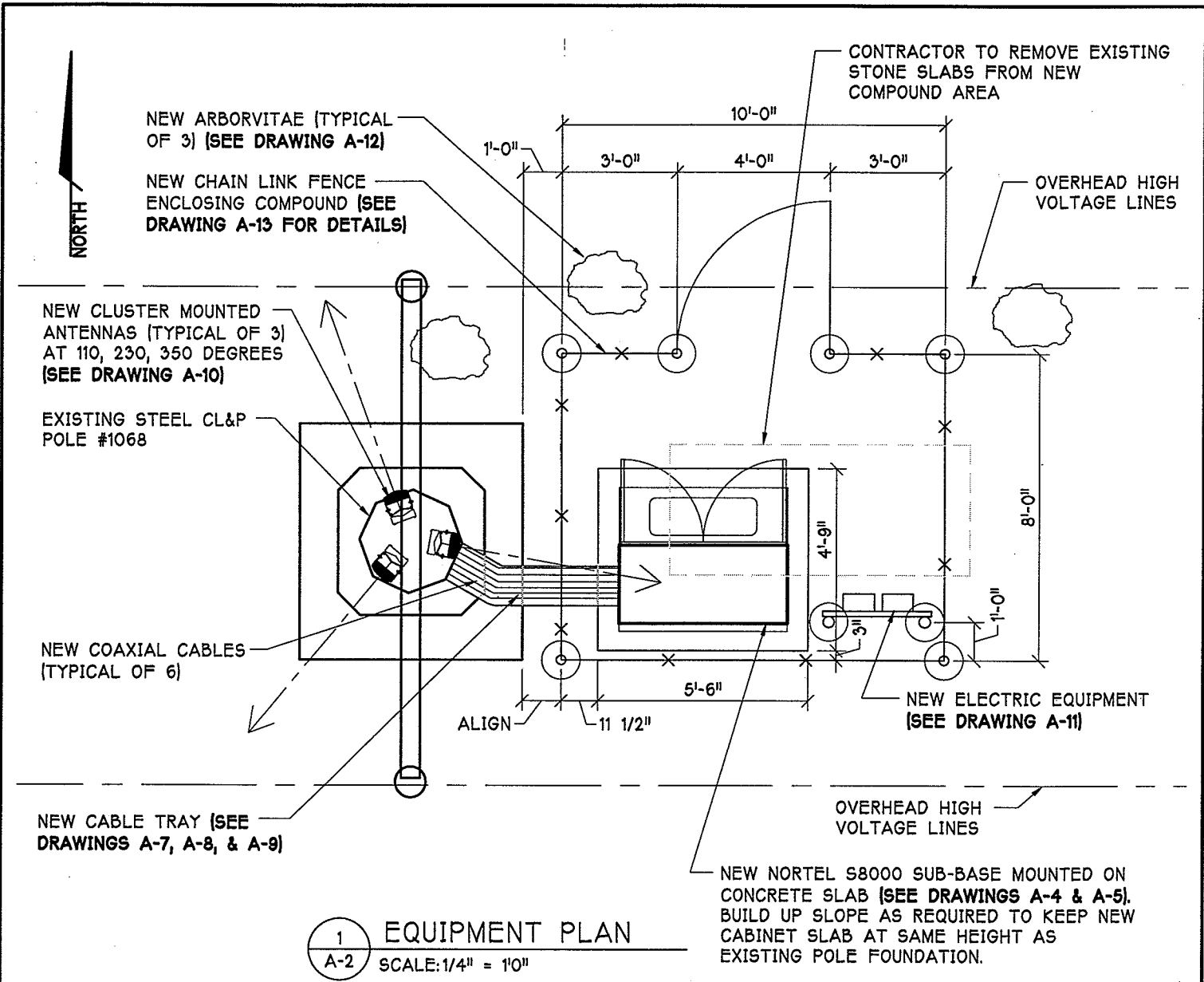
**2**  
**KEY PLAN**  
 A-1 SCALE: NOT TO SCALE



**1**  
**SITE LAYOUT**  
 A-1 SCALE: 1" = 60'

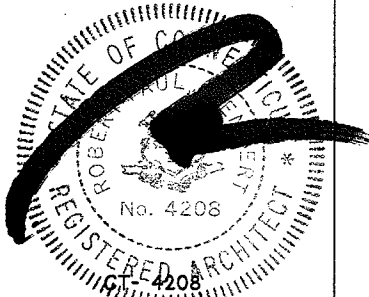


 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>SITE LAYOUT &amp; KEY PLAN</b>		Project: <b>CL&amp;P POLE #1068</b> Address: <b>MECHANIC STREET DARIEN, CT</b>		Revision No. Date: Drawing No. <b>A-1</b>
	Client: <b>OCS</b>		Search Area: <b>DARIEN / DOWNTOWN</b> Site ID No.: <b>CT-11-290C</b>		
P.C. <b>RVa</b>	P.C. Chkd.	Chkd. by	ARCNET Project No. <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/20/99</b>
Approved By:			CLIENT: _____ DATE: _____		



1 EQUIPMENT PLAN  
 A-2 SCALE: 1/4" = 1'0"

ROBERT P. JUENGERT



- NOTES:**
1. FOR A LIST OF ITEMS SUPPLIED BY OTHERS SEE MATERIAL LIST, DRAWING A-17
  2. CONTRACTOR TO LOCATE AND MARK-OUT ALL PUBLIC AND PRIVATE UNDERGROUND UTILITIES AND STRUCTURES THROUGH THE USE OF A LOCATING SERVICE PRIOR TO ANY EXCAVATION WORK. HAND DIG IN AREAS OF EXISTING UTILITIES AND/ OR STRUCTURES.
  3. TOWER HAS PASSED STRUCTURAL ANALYSIS FOR THE PROPOSED INSTALLATION.

**ARCNET ARCHITECTS, INC.**  
 670 North Beers Street, Building 2, Holmdel, NJ 07733  
 Tel: 732.739.3200 Fax: 732.739.0440

P.C. Chkd. by: **RVa** / **R/O**

ARCNET Project No. **A99.506.833A**

Drawing Title: **EQUIPMENT PLAN**

Client: **OCS**

Drawn: **CS** Date: **4/20/99**

Project: **CL&P POLE # 1068**

Address: **MECHANIC STREET DARIEN, CT**

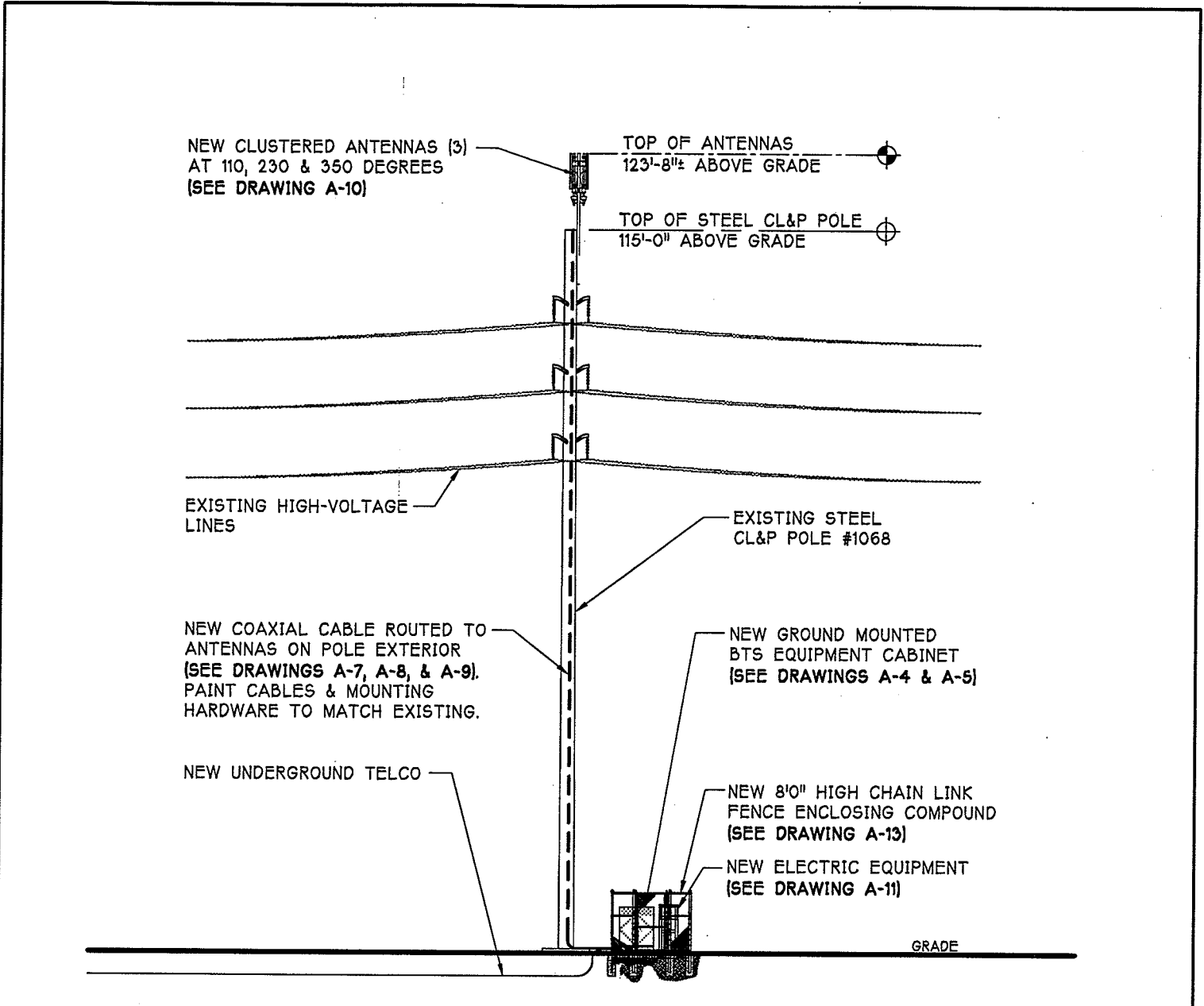
Search Area: **DARIEN / DOWNTOWN**

Site ID No.: **CT-11-290C**

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_

REV2Kba	7/16/99
REV1JMc	5/7/99
Revision No.	Date:
Drawing No. <b>A-2</b>	



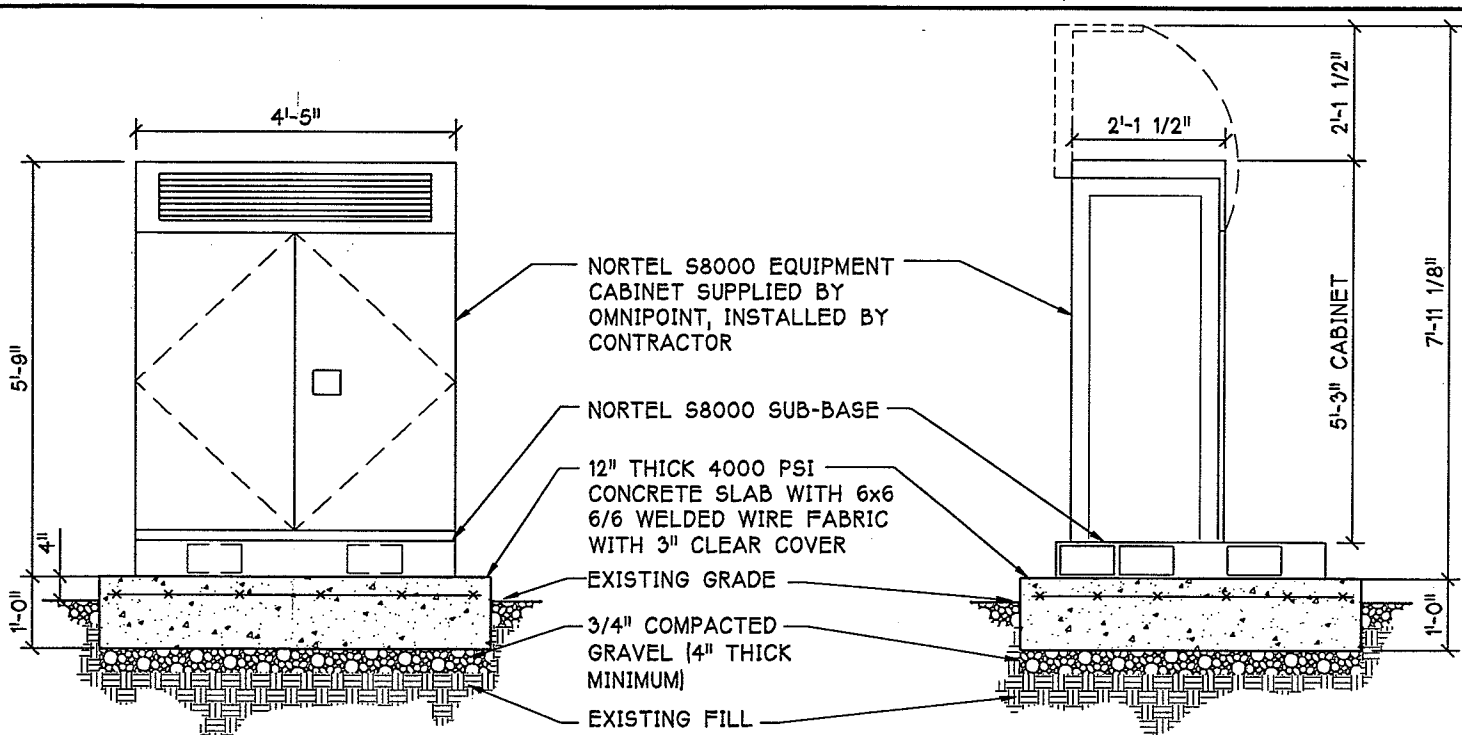


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1 SOUTH ELEVATION  
A-3 SCALE: 1" = 20'0"

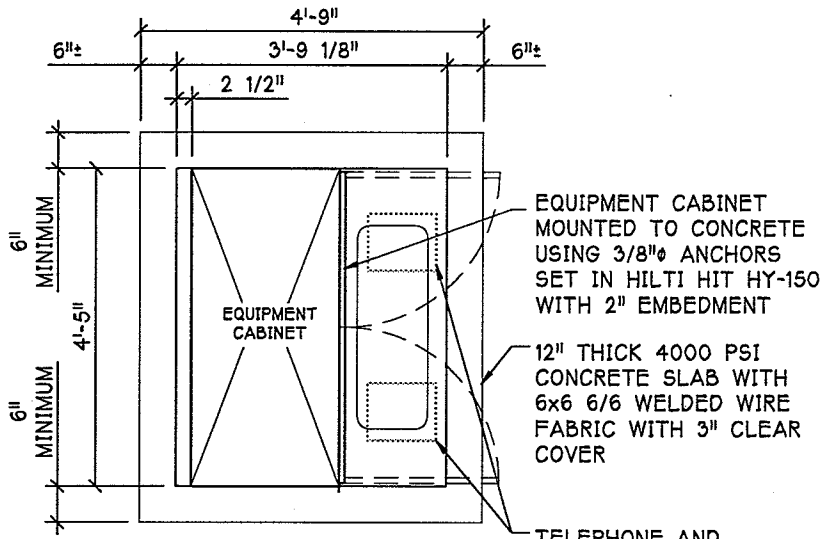
NOTE:  
CL&P TO REMOVE EXISTING VINES FROM POLE.

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>SOUTH ELEVATION</b>		Project: <b>CL&amp;P POLE # 1068</b>		
	Client: <b>OCS</b>		Address: <b>MECHANIC STREET DARIEN, CT</b>		
	ARCNET Project No. <b>A99.506.833A</b>		Search Area: <b>DARIEN / DOWNTOWN</b>		REVI(JMc) 5/7/99
	P.C.: <b>RVa</b>	P.C. Chkd.:	Drawn: <b>CS</b>	Site ID No.: <b>CT-11-290C</b>	Revision No. Date:
		Date: <b>4/20/99</b>	Approved By: CLIENT: _____	DATE: _____	Drawing No. <b>A-3</b>



1 FRONT VIEW  
A-4 SCALE: 1/2" = 1'-0"

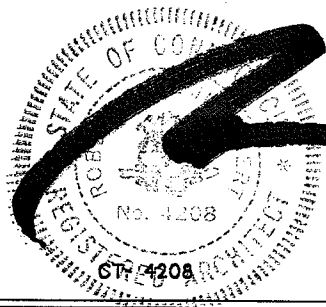
2 SIDE VIEW  
A-4 SCALE: 1/2" = 1'-0"



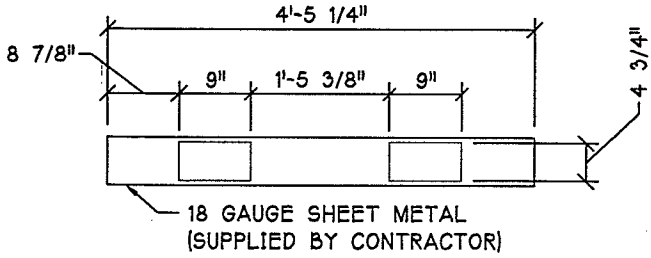
WEIGHT OF CABINET = 1065 lbs.  
WEIGHT OF BASE = 110 lbs.

3 CABINET DETAIL  
A-4 SCALE: 1/2" = 1'-0"

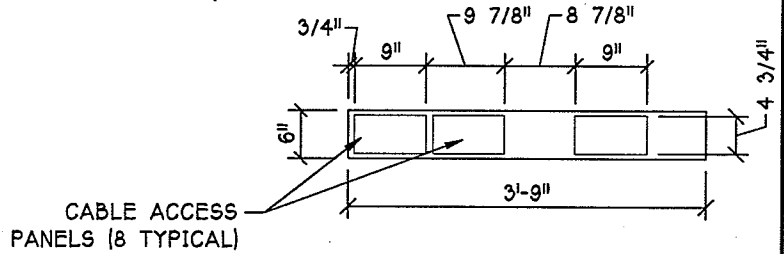
ROBERT P. JUENGERT



<p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>CABINET DETAIL</b>		Project: <b>CL&amp;P POLE #1068</b>		REVI(JMc) 5/7/99 Revision No. Date: Drawing No.
	Client:		Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C.: <b>RVa</b>	P.C. Chkd:	Chkd:	ARCNET Project No.: <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/20/99</b>
Approved By:			Approved By:		CLIENT: _____ DATE: _____



2 FRONT ELEVATION  
A-5 SCALE: 1/2" = 1'-0"

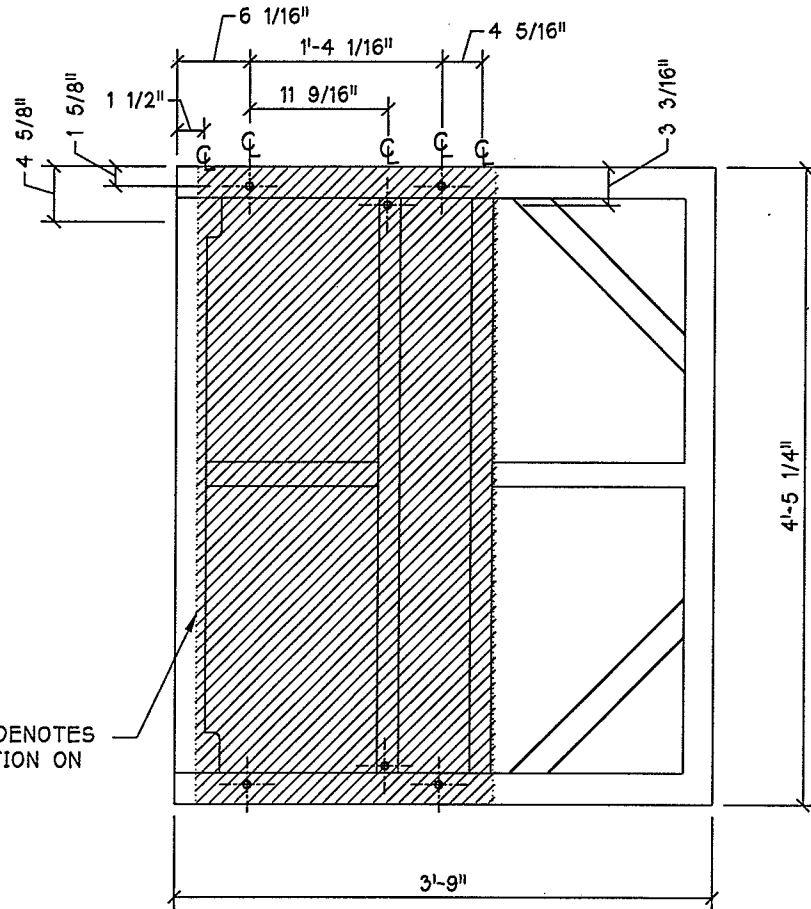


3 SIDE ELEVATION  
A-5 SCALE: 1/2" = 1'-0"

NOTES:  
1. \* CONTRACTOR TO VERIFY ALL BOLT LOCATIONS \* ALL HOLES 11/16" TYPICAL \* WEIGHT OF SUB BASE = 110 LBS.

2. IN INSTANCES WHERE THE BTS IS DUNNAGE OR WALL MOUNTED THE CONTRACTOR SHALL PROVIDE AN 18 GAUGE ALUMINUM CLOSURE PANEL 3'-9" X 4'-5". HELD IN PLACE WHEN SANDWICHED BETWEEN SUB-BASE AND GRATING. DRILL (2) WEEP HOLES AT EACH CORNER AND AT CENTER.

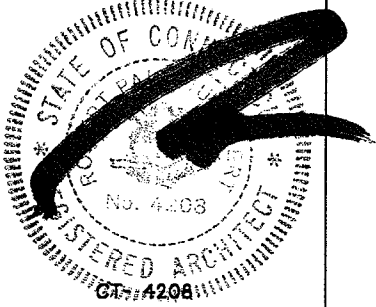
3. ALL SUB-BASES TO BE MOUNTED TO SUBSTRATE USING 1/2" HIGH STRENGTH BOLTS. WHERE MOUNTING TO CONCRETE USE HILTI HIT HY 150 SYSTEM WITH 3 1/2" EMBEDMENT. WHERE MOUNTING TO GRATING USE HIGH STRENGTH SADDLE CLIPS.



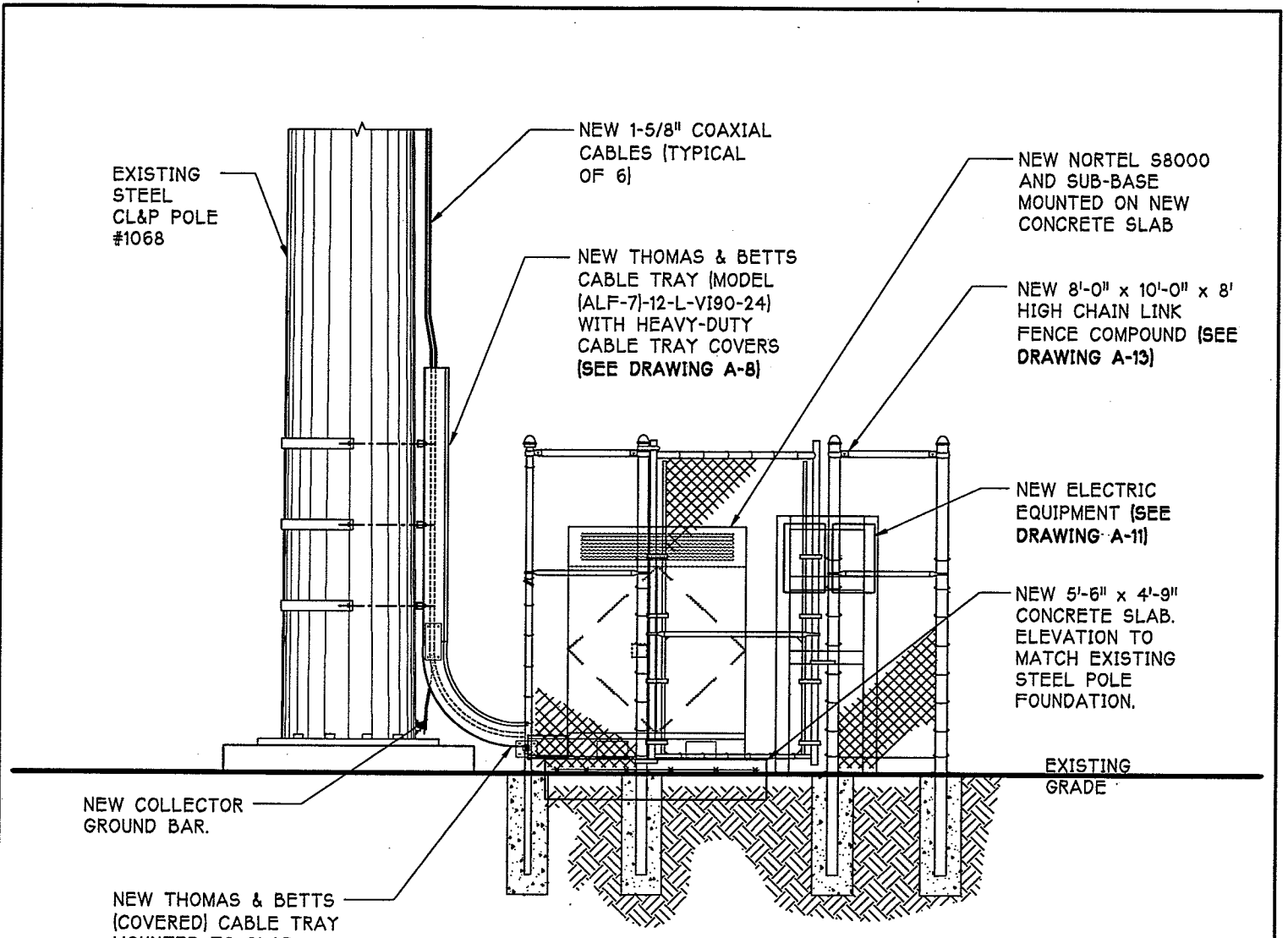
SHADED AREA DENOTES CABINET LOCATION ON SUB-BASE

1 SUB-BASE DETAIL  
A-5 SCALE: 1/2" = 1'-0"

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<p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>SUB-BASE DETAIL</b>		Project: <b>CL&amp;P POLE #1068</b>		Revision No.    Date:  Drawing No. <b>A-5</b>
	Client: 		Address: MECHANIC STREET DARIEN, CT		
P.C.: RVa	P.C. Chkd.: 	Client No.: ARCNET Project No. A99.506.833A	Drawn: CS	Date: 4/21/99	Search Area: DARIEN / DOWNTOWN
Approved By:			Site ID No.: CT-11-290C		DATE:

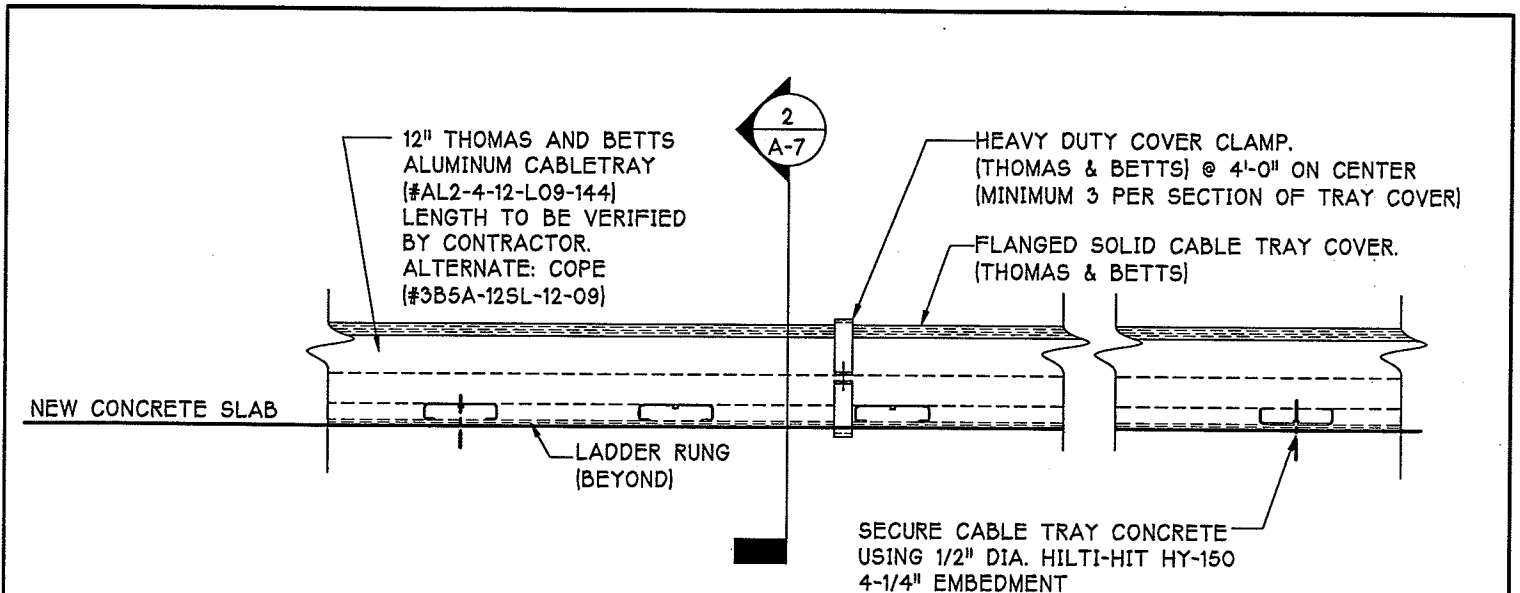


1 EQUIPMENT ELEVATION (FROM SOUTH)  
 A-6 SCALE: 1/4" = 1'-0"

ROBERT P. JUENGERT  
 STATE OF CONNECTICUT  
 REGISTERED ARCHITECT  
 NO. 4208  
 CT-4208

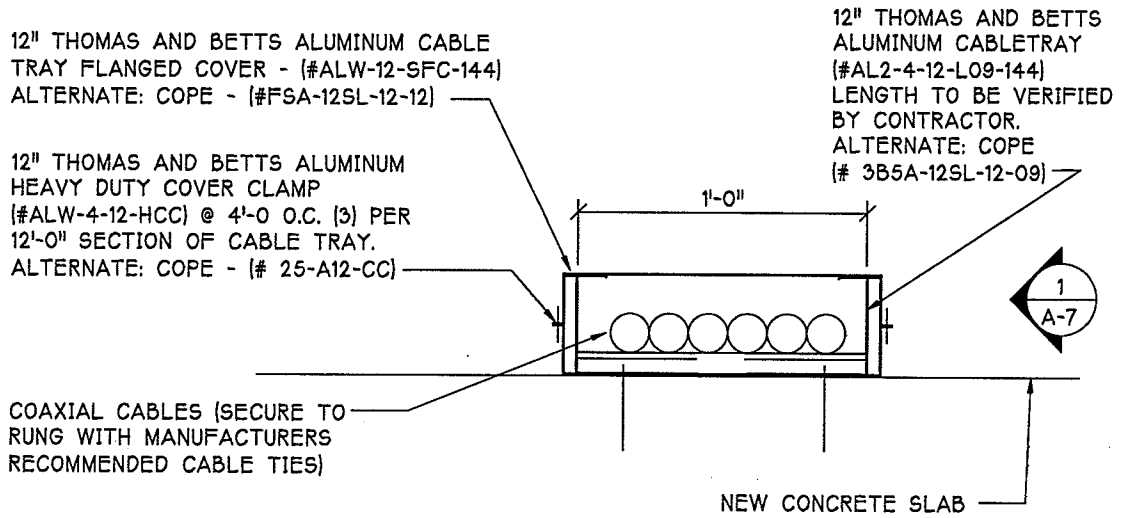
**NOTE:**  
 1.) CONTRACTOR TO VERIFY LENGTHS IN FIELD.  
 2.) BUSHES NOT SHOWN FOR CLARITY.

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>EQUIPMENT ELEVATION</b>		Project: <b>CL&amp;P POLE #1068</b>		REVI(JMc) 5/7/99 Revision No. Date: Drawing No. <b>A-6</b>
	Client: 		Address: MECHANIC STREET DARIEN, CT		
P.Cs: RVa P.C. Chkd: [Signature] Chkd. by: [Signature]	ARCNET Project No. <b>A99.506.833A</b>		Drawn: CS Date: 4/21/99	Search Area: DARIEN / DOWNTOWN Site ID No: CT-11-290C	
Approved By:			CLIENT: _____ DATE: _____		



NOTE:  
CONTRACTOR TO PAINT "DO NOT STEP OR STAND" ON TOP OF CABLE TRAY COVER IN 3" LETTERS (YELLOW) (SEE PAINT SPECIFICATIONS DRAWING A-15)

1 CABLE TRAY DETAIL  
A-7 SCALE: 1 1/2" = 1'-0"

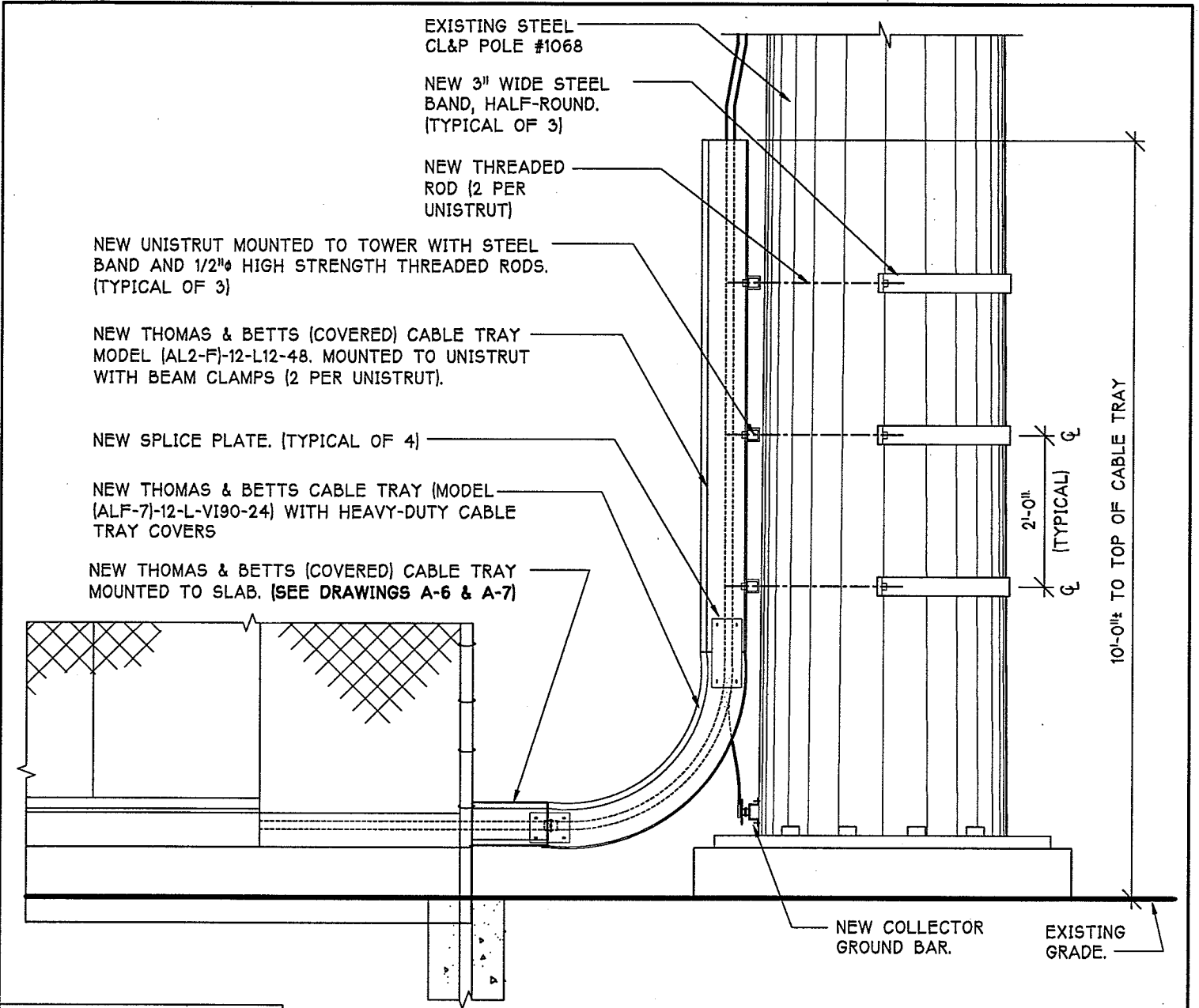


2 CABLE TRAY SECTION  
A-7 SCALE: 1 1/2" = 1'-0"

NOTE:  
ELEVATION OF NEW CONCRETE SLAB TO MATCH ELEVATION OF EXISTING STEEL POLE FOUNDATION

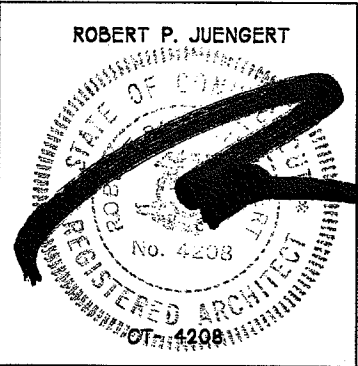
ROBERT P. JUENGERT

<p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>CABLE TRAY DETAIL</b>		Project: <b>CL&amp;P POLE #1068</b>		Revision No.    Date:  Drawing No. <b>A-7</b>
	Client:		Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C.: <b>RVa</b>	P.C. Chkd.:	Chkd.:	ARCNET Project No.: <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/21/99</b>
Approved By:			Site ID No.: <b>CT-11-290C</b>		CLIENT: _____ DATE: _____

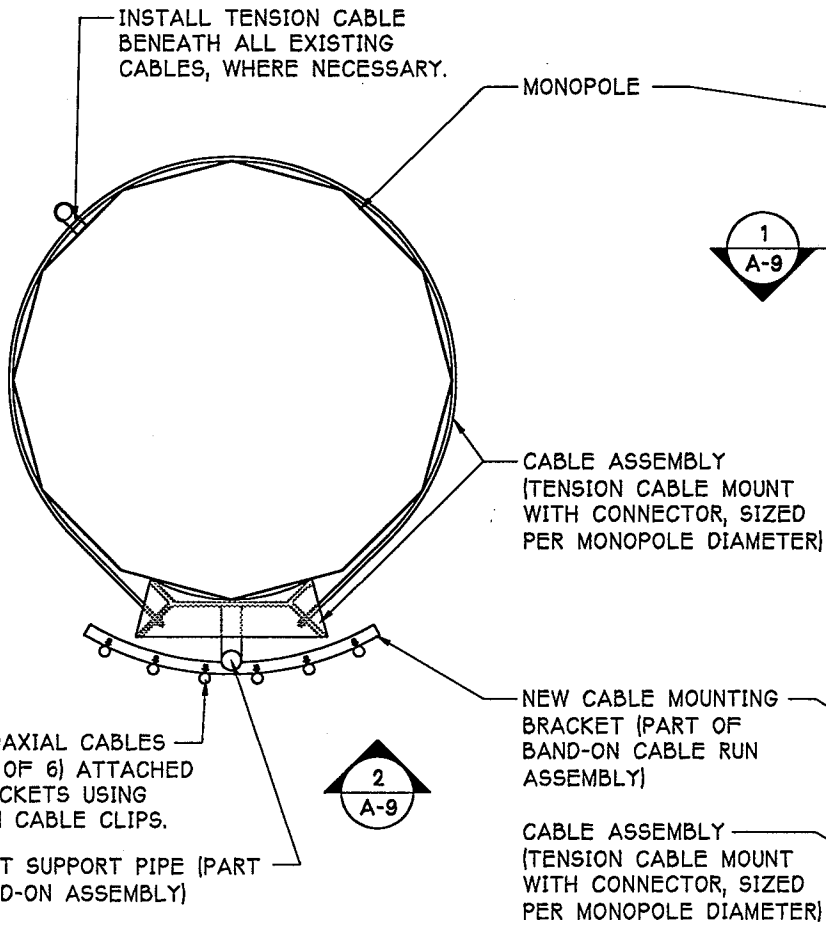


1 CABLE ROUTING ELEVATION  
 A-8 SCALE: 1/2" = 1'-0"

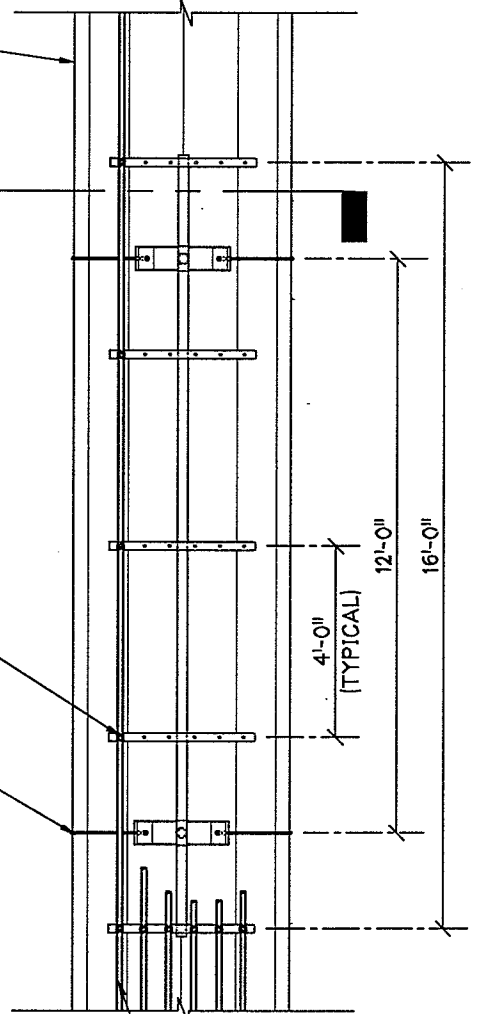
**NOTE:**  
 1.) CONTRACTOR TO VERIFY CABLE TRAY LENGTHS IN FIELD.  
 2.) TOP OF BTS PAD TO MATCH TOP OF EXISTING POLE FOUNDATION.



 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>CABLE ROUTING ELEVATION</b>		Project: <b>CL&amp;P POLE #1068</b>		Revision No.    Date: _____    _____
	Client: 		Address: MECHANIC STREET DARIEN, CT		
P.C.: RVa	P.C. Chkd: [Signature]	Chkd. By: [Signature]	ARCNET Project No. A99.506.833A	Drawn: CS	Date: 4/21/99
			Search Area: DARIEN / DOWNTOWN		Drawing No. <b>A-8</b>
			Site ID No.: CT-11-290C		
			Approved By: CLIENT: _____ DATE: _____		



**1 CABLE MOUNT PLAN**  
 A-9 SCALE: 1/2" = 1'-0"



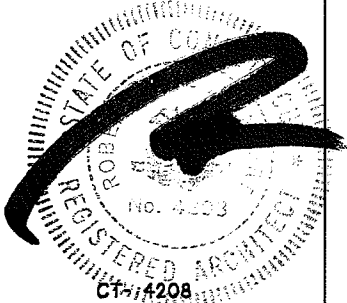
**2 CABLE MOUNT ELEVATION**  
 A-9 SCALE: 1/4" = 1'-0"

NEW COAXIAL CABLES (TOTAL OF 6) ATTACHED TO BRACKETS USING SNAP-IN CABLE CLIPS (BY CABLEWAVE).

**NOTES:**

1. DRAWINGS REPRESENT SIZE & SPACING OF BAND-ON CABLE RUN (PART WA10784, AND CABLE ASSEMBLY PER MONOPOLE SIZE, BY ENGINEERED ENDEAVORS, INC.).
2. ALL STEEL TO BE HOT-DIPPED GALVANIZED.
3. INSTALL BAND-ON CABLE RUN WITH CABLE ASSEMBLY PER MANUFACTURER'S SPECIFICATIONS.

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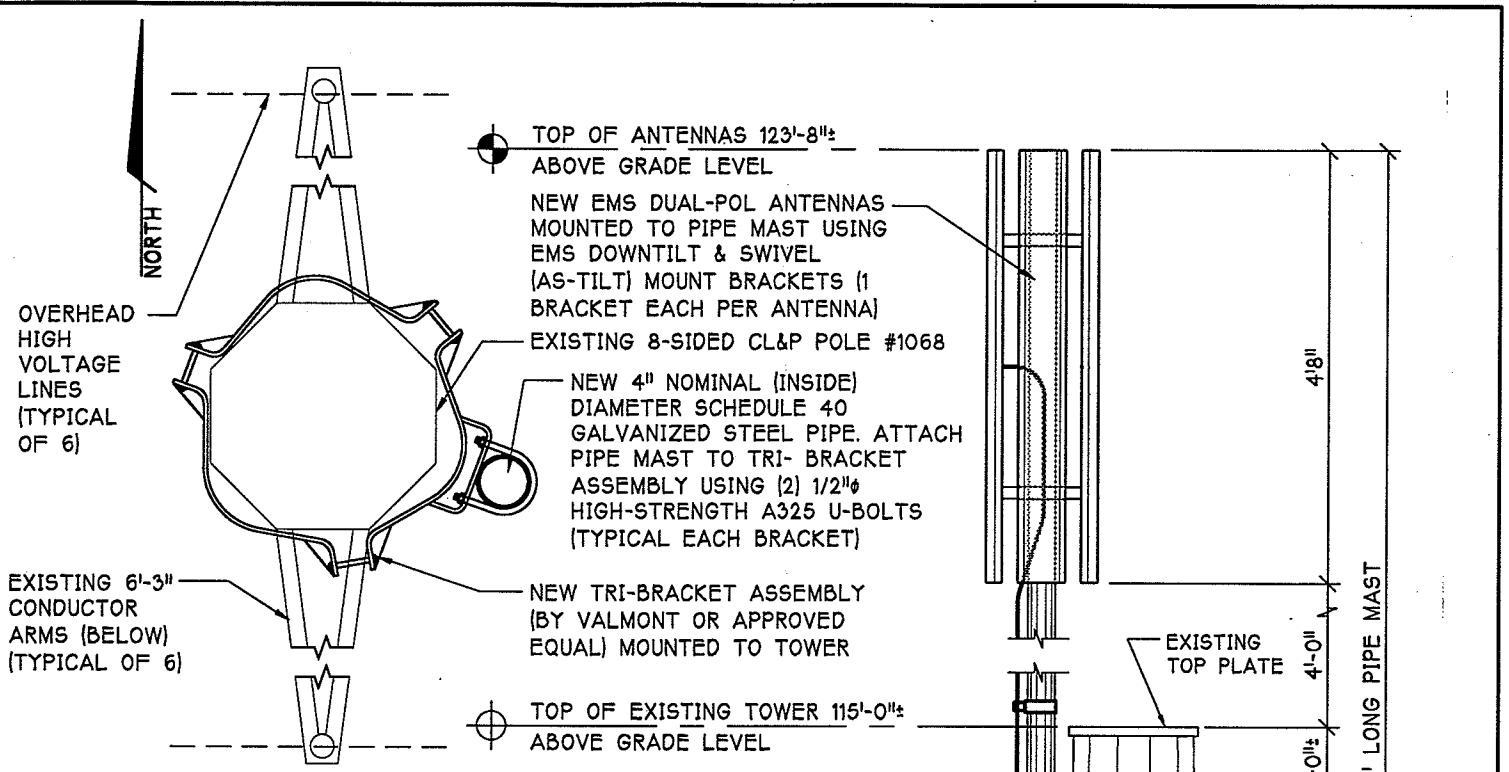


**ARCNET ARCHITECTS, INC.**  
 670 North Beers Street, Building 2, Holmdel, NJ 07733  
 Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title: **CABLE MOUNT ELEVATION**  
 Client: **OCS**  
 ARCNET Project No. **A99.506.833A** Drawn: **CS** Date: **4/21/99**

Project: **CL&P POLE #1068**  
 Address: **MECHANIC STREET DARIEN, CT**  
 Search Area: **DARIEN / DOWNTOWN**  
 Site ID No.: **CT-11-290C**  
 Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_

Revision No.	Date:
Drawing No. <b>A-9</b>	



**2 ANTENNA MOUNT SECTION**  
A-10 SCALE: 1/2" = 1'-0"

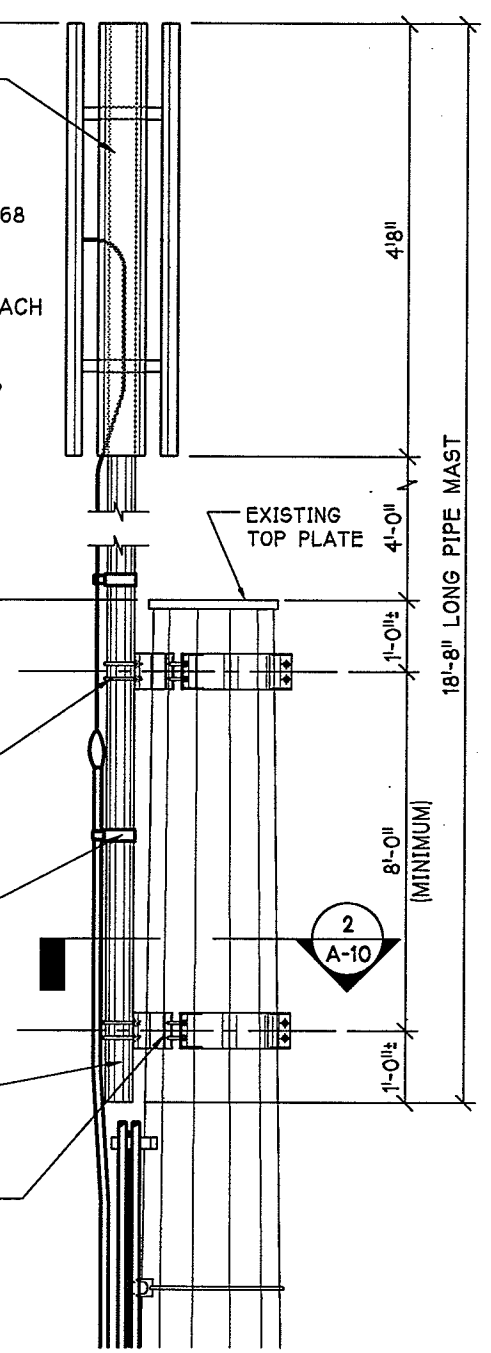
- NOTES:**
1. CONTRACTOR TO POSITION MAST TO LATERALLY AVOID CLIMBING RUNGS AND MONOPOLE TOP PLATE AS NECESSARY.
  2. VERIFY ALL TOWER DIMENSIONS IN FIELD PRIOR TO CONSTRUCTION.
  - 3.) EXISTING CLIMBING RINGS NOT DRAWN
  - 4.) NORTH TO BE DETERMINED BY CIVIL ENGINEER

ATTACH PIPE MAST TO TRI-BRACKET ASSEMBLY USING (2) 1/2" HIGH-STRENGTH A325 U-BOLTS (TYPICAL EACH BRACKET)

MOUNT NEW JUMPERS AND COAXIAL CABLES (ONE OF EACH SHOWN) TO PIPE MAST USING BUTTERFLY CLIPS AND ROUND-MEMBER ADAPTERS (BY CABLEWAVE)

NEW 4" NOMINAL (INSIDE) DIAMETER SCHEDULE 40 GALVANIZED STEEL PIPE

NEW TRI-BRACKET ASSEMBLY (BY VALMONT OR APPROVED EQUAL) MOUNTED TO TOWER (TYPICAL 2 PLACES - INSTALL PER MANUFACTURER'S SPECIFICATIONS)

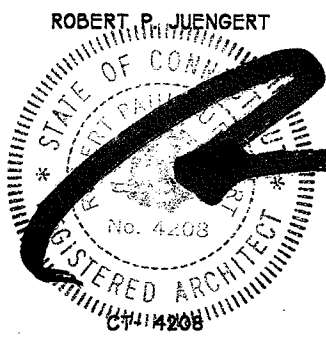
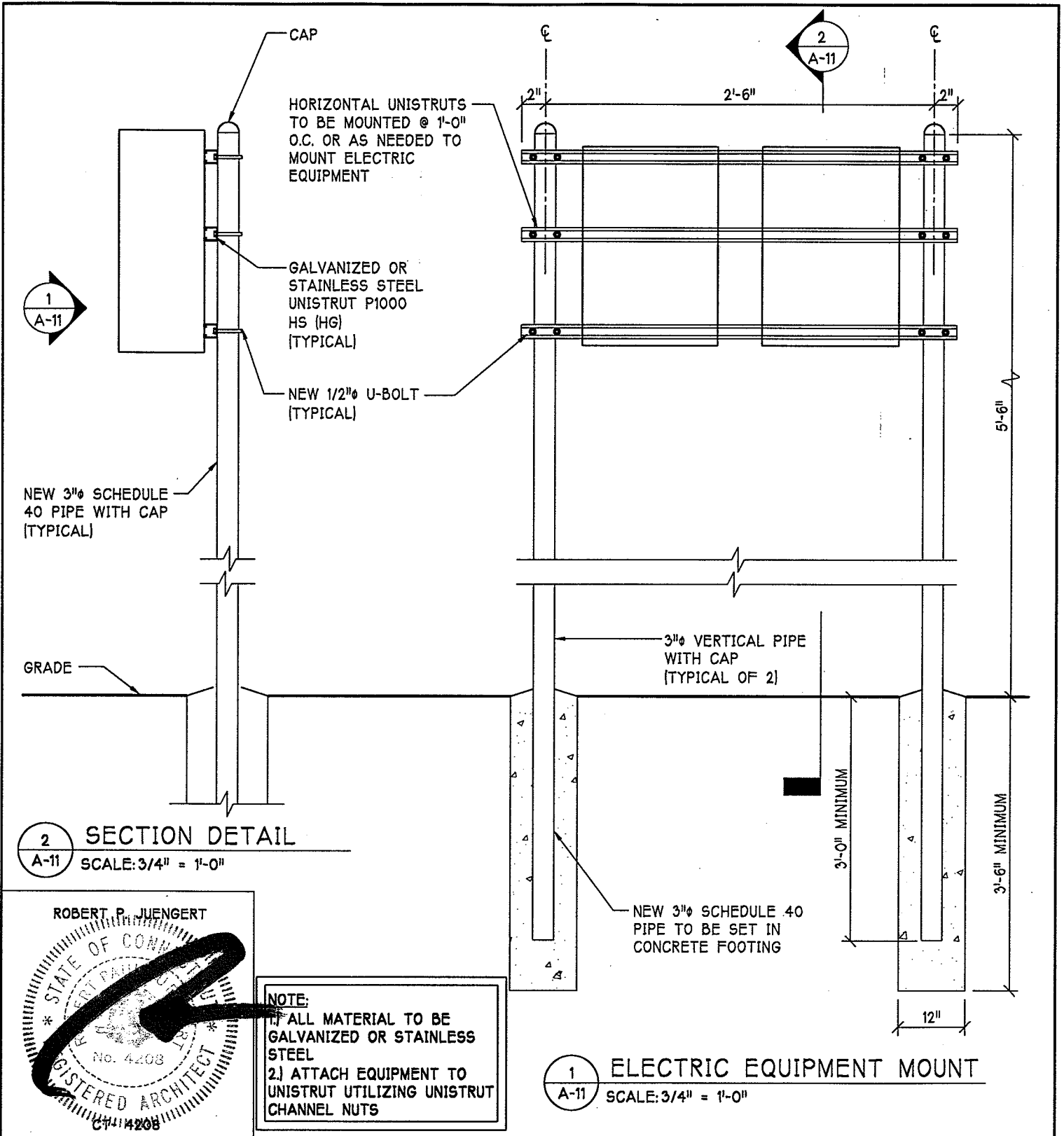


**1 ANTENNA MOUNT ELEVATION**  
A-10 SCALE: 3/8" = 1'-0"

ROBERT P. JUENGERT

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>ANTENNA MOUNT DETAIL</b>		Project: <b>CL&amp;P POLE #1088</b>		REVI(JMc) 5/7/99 Revision No. Date: Drawing No. <b>A-10</b>
	Client: <b>OCS</b>		Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C.: <b>RVa</b>	P.C. Chkd:	Chkd:	ARCNET Project No.: <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/21/99</b>
			Search Area: <b>DARIEN / DOWNTOWN</b>		Approved By:
			Site ID No.: <b>CT-11-290C</b>		CLIENT: _____ DATE: _____

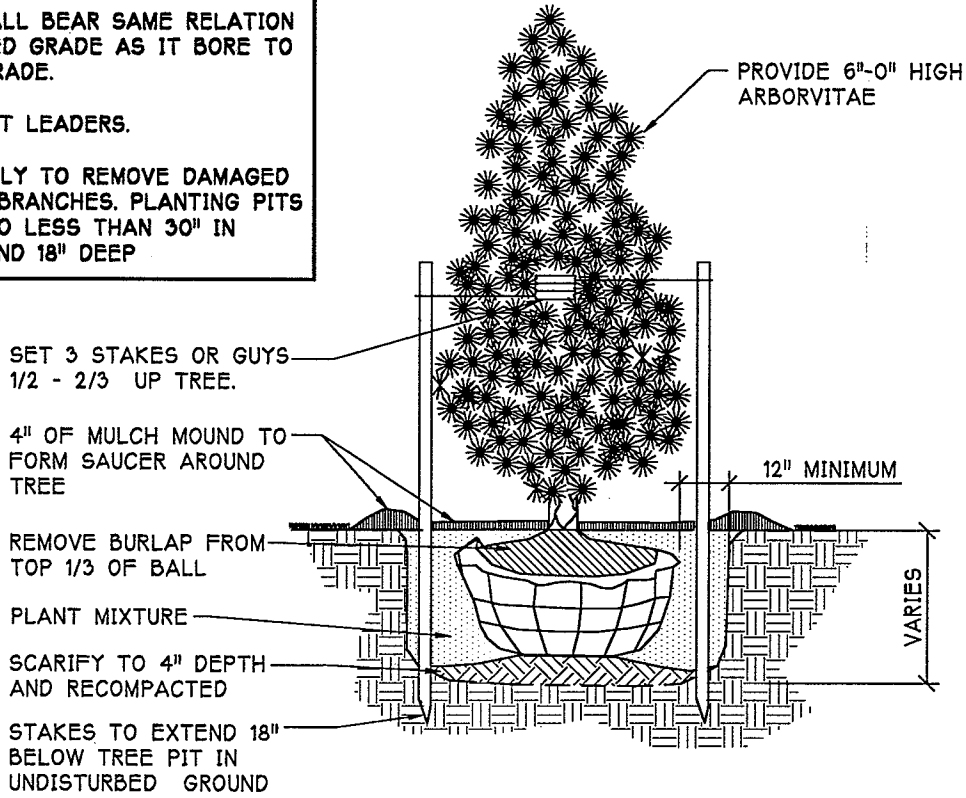




<p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>ELECTRIC EQUIPMENT MOUNT</b>		Project: <b>CL&amp;P POLE #1068</b>		REVI(JMc) 5/7/99 Revision No. Date: Drawing No.
	Client:		Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C. RVa	P.C. Chkd.	Chkd. by	ARCNET Project No. <b>A99.506.833A</b>	Search Area: <b>DARIEN / DOWNTOWN</b>	Drawing No. <b>A-11</b>
			Drawn: <b>CS</b>	Site ID No.: <b>CT-11-290C</b>	
			Date: <b>4/21/99</b>	Approved By: _____ DATE: _____	

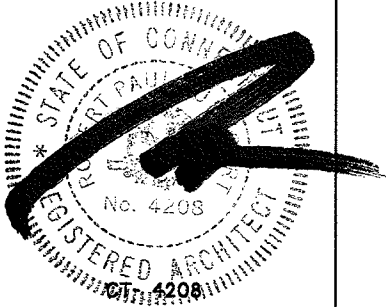
**NOTES:**

- 1) STAKE ALL EVERGREEN TREES
- 2) TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE.
- 3) NEVER CUT LEADERS.
- 4) PRUNE ONLY TO REMOVE DAMAGED OR BROKEN BRANCHES. PLANTING PITS SHALL BE NO LESS THAN 30" IN DIAMETER AND 18" DEEP



1 PLANTING DETAIL  
A-12 SCALE: 1/8" = 1'-0"

ROBERT P. JUENGERT



<p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>PLANTING DETAIL</b>		Project: <b>CL&amp;P POLE #1068</b>		Revision No.    Date:  Drawing No. <b>A-12</b>
	Client: <b>OCS</b>		Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C.: <b>RVa</b>	P.C. Child:	ARCNET Project No.: <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/21/99</b>	Search Area: <b>DARIEN / DOWNTOWN</b>
		Approved By: _____ DATE: _____		Site ID No.: <b>CT-11-290C</b>	

9 GAUGE TIE WIRES 12" ON CENTER  
(TYPICAL AT TOP & HORIZONTAL BRACE  
RAILS)

1" SCHEDULE 40 PIPE MID-RAIL BRACE  
(TYP. ALL GATES)

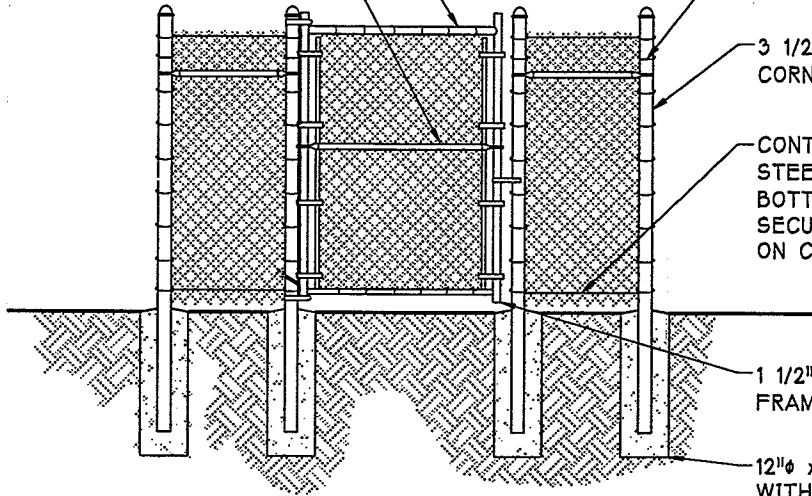
BEVELED TENSION BANDS 12 GAUGE  
PRESSED STEEL 12" ON CENTER (TYPICAL)

3 1/2" (INSIDE DIAMETER) SCHEDULE 40  
CORNER POST (TYPICAL)

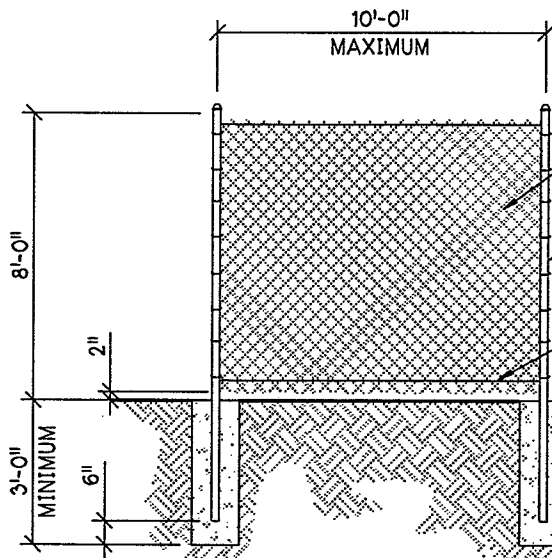
CONTINUOUS 6 GAUGE ALUMINUM COATED  
STEEL TENSION WIRE (TYPICAL TOP &  
BOTTOM). CHAIN LINK FABRIC TO BE  
SECURED WITH 9 GAUGE HOG RINGS 18"  
ON CENTER

1 1/2" (INNER DIAMETER) WELDED GATE  
FRAME (4'-0" WIDE GATE) (TYPICAL OF 2)

12" x 3'-0" DEEP POST FOOTING. FILL  
WITH 4000 PSI CONCRETE.



**2** GATE AND CORNER DETAIL  
A-13 SCALE: NOT TO SCALE



9 GAUGE GALVANIZED (2" MESH)  
CHAIN LINK FENCE FABRIC

2 1/2" SCHEDULE 40 LINE POST  
WITH 7 1/2" 9 GAUGE STEEL  
WIRE SPACED 14" ON CENTER  
(TYPICAL ALL LINE POSTS)

CONTINUOUS 6 GAUGE ALUMINUM  
COATED STEEL TENSION WIRE  
(TYPICAL TOP & BOTTOM). CHAIN  
LINK FABRIC TO BE SECURED  
WITH 9 GAUGE HOG RINGS 18" ON  
CENTER

FINISHED GRADE OR EXISTING  
PAVED SURFACE OR CONCRETE  
SLAB WHERE OCCURS

12" x 3'-0" DEEP POST FOOTING  
(FILL WITH 4000 PSI CONCRETE)

**1** FENCE DETAIL  
A-13 SCALE: NOT TO SCALE

ROBERT P. JUENGERT



670 North Beers Street, Building 2, Holmdel, NJ 07733  
Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title:  
**FENCE DETAIL**

Client:  
**OCS**

ARCNET Project No.  
**A99.506.833A**

Drawn: **CS**  
Date: **4/21/99**

Project: **CL&P POLE #1088**

Address: **MECHANIC STREET  
DARIEN, CT**

Search Area:  
**DARIEN / DOWNTOWN**

Site ID No.:  
**CT-11-290C**

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
CLIENT: \_\_\_\_\_

Revision No. Date:

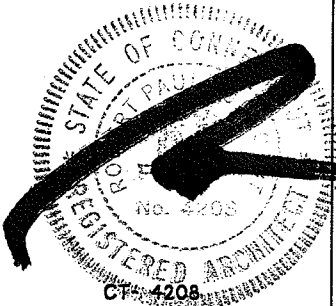
Drawing No.

**A-13**

**GENERAL NOTES:**

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL STATE AND LOCAL CODES AND ORDINANCES.
2. CONTRACTOR SHALL INSTALL ALL EQUIPMENT SUPPLIED BY OMNIPOINT AS NOTED ON THE MATERIAL LIST. ALL ITEMS NOT SPECIFIED IN THE MATERIAL LIST SHALL BE SUPPLIED & INSTALLED BY THE CONTRACTOR.
3. ALL EQUIPMENT SHALL BE INSTALLED PLUMB AND LEVEL.
4. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATION. STEEL SHALL CONFORM TO ASTM A-36. PIPE SHALL CONFORM TO ASTM A-501 OR ASTM A-53 (GRADE B)
5. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325, THREAD EXCLUDED FROM SHEAR PLANE.
6. ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH 2 COATS OF ZRC COLD GALVANIZING COMPOUND MANUFACTURED BY ZRC CHEMICAL PRODUCTS Co. QUINCY, MASS. OR USE THERMAL SPRAYING WITH PLATTZINC 85/15 AS MANUFACTURED BY PLATT BROTHERS & COMPANY WATERBURY, CT 1-800-752-8276.
7. ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED.
8. ALL GALVANIZED PIPE SIZES ARE NOMINAL DIAMETER. (INSIDE DIAMETER)
9. CONTRACTOR SHALL MEASURE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN FIELD. ANY UNUSUAL CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO THE PURCHASE, FABRICATION AND ERECTION OF ANY MATERIAL.
10. INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO THE OWNER, ARCHITECT, AND CONSTRUCTION MANAGER PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE APPROVAL FROM THE OWNER.
11. CONTRACTOR SHALL EXECUTE ALL WORK PREVENTING ANY DAMAGE TO EXISTING STRUCTURES, ESPECIALLY TO ROOF. ANY ROOF WORK INVOLVING ATTACHMENT, REMOVAL OF FINISH SURFACE OR PENETRATION SHALL BE PERFORMED TO PRESERVE EXISTING, ROOFING GUARANTEES AND WARRANTIES. ROOF SHALL BE RESTORED TO COMPLETE WATER TIGHTNESS WITH THE APPROVED MATERIAL AND BY A SUB CONTRACTOR PRE-APPROVED BY THE OWNER IN WRITING.
12. MASONRY PENETRATIONS SHOULD USE ROTARY ACTION ONLY.(NO HAMMERING ACTION.)
13. ALL PENETRATIONS TO BE PROPERLY FIRE-STOPPED WITH 3M F.S.195 WRAP STRIP FIRE-STOP AND CP25 NON-SHRINKING PUTTY FIRE BARRIER SEALANT. MAINTAIN FIRE RATING OF ALL PENETRATED SURFACES.
14. ALL MOUNTS TO WALLS TO BE SEALED AT TOP AND SIDES WITH DOW CORNING CLEAR SILICONE SEALANT OR APPROVED EQUAL. SILICONE APPLICATIONS ARE TO BE TOOLED TO MAINTAIN A FINISHED APPEARANCE.
15. CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE.
16. CONTRACTOR SHALL PROVIDE A 3/4" CHAMFER ON ALL CONCRETE SLABS.

ROBERT P. JUENGERT



 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>GENERAL NOTES</b>	Project: <b>CL&amp;P POLE #1068</b> Address: <b>MECHANIC STREET DARIEN, CT</b> Search Area: <b>DARIEN / DOWNTOWN</b> Site ID No.: <b>CT-11-290C</b>	
	Client: <b>OCS</b>	ARCNET Project No.: <b>A99.506.833A</b> Drawn: <b>CS</b> Date: <b>4/21/99</b>	Approved By: _____ DATE: _____ CLIENT: _____ DATE: _____
P.C.: <b>RVa</b> P.C. Chkd: _____ Chkd By: _____			

17. WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS, THE GENERAL CONTRACTOR SHALL PAINT ALL NEW ANTENNAS, SHROUD AND RELATED HARDWARE TO MATCH EXISTING CONDITIONS BELOW.  
 NOTE ALL PAINT TO BE SHERWIN WILLIAMS OR APPROVED EQUAL, UNLESS OTHERWISE SPECIFIED

**A. ANTENNA PAINT SPECIFICATIONS**

SURFACE PREPARATION:

REMOVE SURFACE CONTAMINATION USING ALCOHOL SOLVENT.

APPLICATION PROCEDURES

PAINTING TO BE DONE INDOORS.

1. APPLY ONE PRIMER COAT OF POLANE 2.8 PLUS FIL D61H75 PRIMER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. APPLY ONE TOP COAT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
  - a. FOR CELWAVE USE POLANE "HS 2.8 PLUS POLYURETHENE"
  - b. FOR EMS USE POLANE B OR POLANE T POLYURETHANE ENAMEL

**DO NOT USE THESE METAL BASED COLORS ON ANTENNAS:**  
 TURBINE ORANGE...DECIBEL ORANGE... BETA YELLOW... ULTRASONIC CHROME

**B. MOUNTING HARDWARE / CONDUIT PAINT SPECIFICATION**

SURFACE PREPARATION

REMOVE SURFACE CONTAMINATION USING ALCOHOL SOLVENT, ETHANOL. PROPANOL, ISOPROPANOL, OR BUTANOL. A TEN PERCENT SOLUTION OF METHYL ETHYL KETONE IN WATER CAN ALSO BE USED WHENEVER STUBBORN OIL OR GREASE IS ENCOUNTERED.

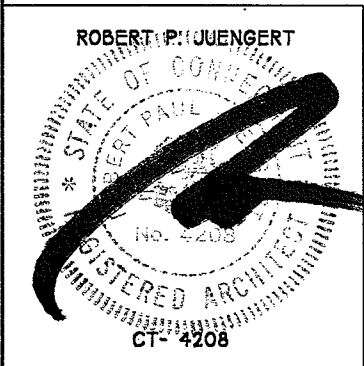
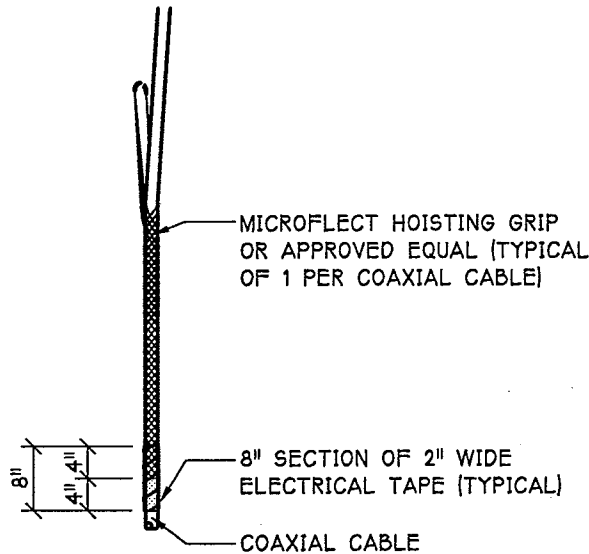
GALVANIZED SURFACES

ONE COAT OF PERMABOND - BONDING AGENT BY CORONADO PAINT CO. #100 - 10 DO NOT LET DRY IMMEDIATELY APPLY ONE COAT OF SHERWIN WILLIAMS S-W A100 FLAT LATEX HOUSE & TRIM, A6 SERIES. LET DRY AND APPLY SECOND COAT OF SHERWIN WILLIAMS S-W A100 FLAT LATEX HOUSE & TRIM, A6 SERIES [4 MILS WET, 1.3 MILS DRY PER COAT].

**C. BTS CLEARANCE LIMIT LINE DEMARCATION**

WHEN SPECIFIED ON CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL PAINT A CONTINUOUS 4" WIDE SAFETY LINE WITH CON-LUX ROAD PLEX #17 TRAFFIC YELLOW OR APPROVED EQUAL ON THE WALKING SURFACE ADJACENT TO CABINET TO DENOTE REQUIRED CLEARANCE LIMITS TO CABINET.

18. HOISTING GRIP TAPING DETAIL -



<p>670 North Beers Street, Building 2, Holmdel, NJ 07733                  Tel: 732.739.3200</p>	Drawing Title: <b>GENERAL NOTES</b>			Project: <b>CL&amp;P POLE #1068</b>		Revision No.    Date:  Drawing No.
	Client:			Address: <b>MECHANIC STREET DARIEN, CT</b>		
P.C.s: <b>RVd</b>	P.C. Chkd:	Chkd By:	ARCNET Project No.: <b>A99.506.833A</b>	Drawn: <b>CS</b>	Date: <b>4/21/99</b>	Search Area: <b>DARIEN / DOWNTOWN</b>
			Site ID No.: <b>CT-11-290C</b>		Approved By: _____ DATE: _____	
						<b>A-15</b>

## CONCRETE NOTES

### FOUNDATION

1. ALL FOOTINGS SHALL BEAR ON SOIL HAVING A MINIMUM SAFE BEARING CAPACITY OF 1.0 TONS PER SQUARE FOOT. SUBGRADE SHALL BE FREE FROM ALL LOOSE SOIL AND DEBRIS. CONFIRM IN FIELD PRIOR TO PLACING FOOTINGS.
2. ELEVATIONS GIVEN CORRESPOND TO THE COMPUTED BOTTOM OF FOOTINGS AND ARE MINIMUM DEPTHS. ADDITIONAL DEPTH MAY BE REQUIRED TO REACH GOOD BEARING. ALL OVER EXCAVATED MATERIALS SHALL BE REPLACED WITH 95% COMPACTED FILL, 3/4" CLEAN STONE, OR CONCRETE.
3. NO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND. AFTER FOOTINGS ARE PLACED THEY SHALL BE PROTECTED AGAINST FROST.
4. FILL AND BACK FILL MATERIAL SHALL BE FREE OF DELETERIOUS ORGANIC MATTER.

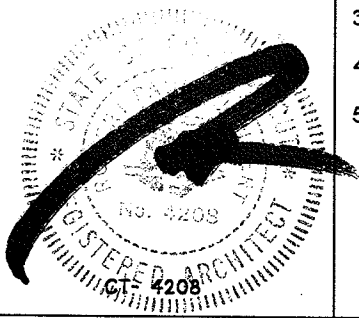
### CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE ACI BUILDING CODE.
2. ALL CONCRETE SHALL ATTAIN 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
3. READY MIX: COMPLY WITH ACI-301 AND ASTM C-94. ALL CONCRETE EXPOSED TO THE GROUND OR WEATHER SHALL BE AIR ENTRAINED.
4. COLD WEATHER CONCRETE POURING SHALL BE IN ACCORDANCE WITH ACI-306.
5. THROUGHOUT CONSTRUCTION THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT AND FREEZING TEMPERATURES.
6. EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE PROTECTED USING MOIST CURING OR A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED OR FINISHING OPERATIONS ARE COMPLETE. CARE SHALL BE EXERCISED SO AS NOT TO DAMAGE COATING.
7. APPLY NON-SLIP BROOM FINISH IMMEDIATELY AFTER TROWEL FINISHING.
8. CONTRACTOR TO COORDINATE REQUIREMENTS OF STRUCTURAL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS; INCLUDING ANY AND ALL PENETRATIONS SPECIFIED, PRIOR TO POURING CONCRETE.

### REINFORCING

1. ALL REINFORCING BAR DETAILS SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL.
2. WHERE REINFORCING IS CALLED OUT IN THE CONSTRUCTION DOCUMENTS IT SHALL BE 3" CLEAR COVER (MINIMUM UNLESS OTHERWISE NOTED)
3. ALL BARS SHALL BE ASTM A-615, GRADE 60
4. WELDED WIRE FABRIC SHALL BE ASTM A-185
5. WHERE CONTINUOUS BARS ARE CALLED FOR, THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. LAP SHALL BE 40 BAR DIAMETERS.

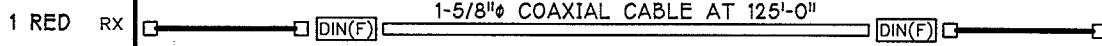
ROBERT P. JUENGERT



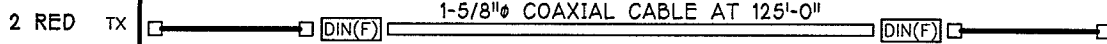
 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title:	Project:	
	<b>CONCRETE NOTES</b>	<b>CL&amp;P POLE #1088</b>	
	Client:	Address:	
		MECHANIC STREET DARIEN, CT	
	ARCNET Project No.	Search Area:	
	<b>A99.506.833A</b>	DARIEN / DOWNTOWN	
	Drawn:	Site ID No.:	
	<b>CS</b>	CT-11-290C	
	Date:	Approved By:	
	<b>4/21/99</b>	CLIENT: _____ DATE: _____	
P.C.:	P.C. Chkd.:	Chkd. by:	Drawing No.
<b>RVa</b>			<b>A-17</b>

NORTEL 98000  
EQUIPMENT  
CABINET

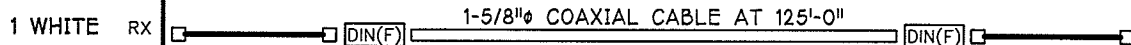
110° SECTOR



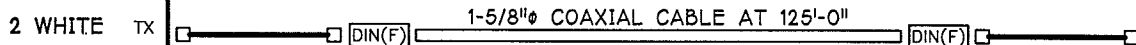
EMS DUAL-POL  
 RR90-17-02DP



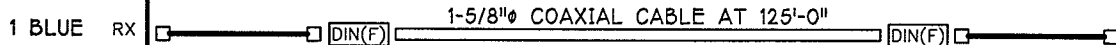
230° SECTOR



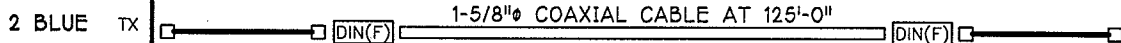
EMS DUAL-POL  
 RR90-17-02DP



350° SECTOR



EMS DUAL-POL  
 RR90-17-02DP



CONTRACTOR:

ADDRESS:

PHONE:

BILL of MATERIALS

No.	QTY.	DESCRIPTION	MANUFACT	PART#
1	1	NORTEL 98000 EQUIPMENT CABINET		
2	6	DIN(M) - DIN(M) 1/2"Øx6'-0" SUPERFLEX JUMPER		
3	6	DIN(M) - DIN(M) 1/2"Øx6'-0" JUMPER		
4	12	1-5/8"Ø DIN(F) CONNECTOR		
5	6	1-5/8"Ø COAXIAL CABLES (SEE DIAGRAM)		
6	3	DUAL-POL ANTENNA	EMS	RR90-17-02DP
7	3	DOWNTILT BRACKET	EMS	MTG-D10-20
8	12	1-5/8"Ø GROUNDING KITS		
9	12	1-5/8"Ø WEATHER-PROOFING KITS		

ROBERT P. JUENGERT



670 North Beers Street, Building 2, Holmdel, NJ 07733  
Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title:  
MATERIAL LIST



Client: A99.506.833A  
Drawn: CS  
Date: 4/21/99

Project: CL&P POLE #1068  
Address: MECHANIC STREET  
DARIEN, CT  
Search Area: DARIEN / DOWNTOWN  
Site ID No: CT-11-290C

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
CLIENT: \_\_\_\_\_

REV2KBa 7/16/99  
REV1JMc 5/7/99  
Revision No. Date:

Drawing No. A-18

This Drawing Is The Property Of DLB Associates, Consulting Engineers P.C. - Last Saved: N:\238\23885E01.DWG, 04/26/99 at 12:25 by DBozard

**DESIGN CRITERIA**

- ELECTRIC:** PROVIDE AND INSTALL A 208V OR 240V, 2P, 60A CIRCUIT FROM A RELIABLE SOURCE TO THE COMMUNICATION CABINET. THIS SOURCE SHALL BE LOCKED ON WITH A CB LOCK. THE CONTRACTOR SHALL PROVIDE (2) SPARE FUSES WHEREVER A FUSED DISCONNECT IS REQUIRED. THE CONTRACTOR SHALL VERIFY (BEFORE ANY CONSTRUCTION IS STARTED) THAT THE POWER SOURCE IS BETWEEN 208V AND 240V LINE TO LINE. IF IT IS NOT BETWEEN THE SPECIFIED VOLTAGE, THEN CALL DLB ASSOCIATES, INC. AT (732) 922-8375 AND ASK FOR MARK WORTHLEY. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH A BLACK PLASTIC TAG WITH WHITE LETTERS "OCS" ENGRAVED IN IT.
- UTILITY METER:** IF A UTILITY METER IS SPECIFIED ON THE DRAWINGS, IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ALL NECESSARY INSPECTIONS, CUT-IN CARDS, ETC., THAT ARE REQUIRED TO SET THE METER. THE CONTRACTOR SHALL MEET WITH THE UTILITY COMPANY TO VERIFY METER AND TAP LOCATION PRIOR TO INSTALLATION. DLB ASSOCIATES BEGINS THE PAPERWORK WITH THE VARIOUS UTILITY COMPANIES AND CAN PROVIDE THE ELECTRICAL DETAILERS NAME AND PHONE NUMBER. CONTACT DLB AT (732) 922-8375 AND ASK FOR MARIA DeVAUGHN FOR UTILITY RELATED QUESTIONS. IF TEMPORARY POWER IS REQUIRED, ALL NEC AND/OR LOCAL ELECTRIC CODES SHALL ADHERED TO. CONTACT OCS PRIOR TO MAKING AND TEMPORARY POWER CONNECTIONS.
- TELEPHONE:** PROVIDE A 1-1/2" CONDUIT (WITH DRAG LINE IN NY AND BELDEN CABLE #8768 IN NJ AND CT) FROM THE COMMUNICATION CABINET TO THE MAIN DEMARCATION POINT (USUALLY LOCATED IN THE BASEMENT). THE MAIN DEMARCATION POINT ALLOWS FOR THE LEAST AMOUNT OF NOISE AND THE MOST AMOUNT OF PROTECTION. FOR COST SAVINGS, A CLOSER DEMARCATION POINT MAY BE SPECIFIED IN MULTIPLE STORY BUILDINGS WITH THE APPROVAL OF THE TELEPHONE COMPANY. FOR NEW TELEPHONE SERVICES IN NJ, NY, & CT, PROVIDE A 4" CONDUIT WITH A DRAGLINE FROM THE SPECIFIED UTILITY POLE TO THE LOCATION OF THE NEW DEMARCATION POINT.
- CONDUIT ROUTING:** THE ROUTING OF THE CONDUIT SHALL BE SUCH THAT THE EASIEST AND MOST PRACTICAL METHODS ARE USED WITHOUT IMPACTING THE BUILDING OWNER AND THE AESTHETIC APPEAL OF THE BUILDING. BECAUSE THE WORK BEING DONE IS IN EXISTING STRUCTURES, IT IS IMPOSSIBLE TO SHOW EVERY JUNCTION BOX, LB, CONDUIT BEND, ETC. IN A TWO DIMENSIONAL PLAN. IT IS FOR THIS REASON THAT THE CONTRACTOR MUST VISIT THE SITE BEFORE ACCEPTING THE OFFER AND UNDERSTAND THE TRUE INSTALLATION OBSTACLES THAT ARE UNIQUE TO THAT BUILDING.

**WIRING METHODS**

- GENERAL:** ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED UNLESS NOTED OTHERWISE. IN UNFINISHED AREAS, SUCH AS BASEMENTS, MECHANICAL ROOMS, ELECTRICAL CLOSETS, ETC. WIRING SHALL BE ROUTED ON THE INTERIOR SURFACE. NO WIRING SHALL BE ROUTED ON THE OUTSIDE SURFACES OF THE BUILDING UNLESS SPECIFICALLY NOTED. ALL NEC AND LOCAL ELECTRIC CODES SHALL BE ADHERED TO. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED.
- BELOW GRADE (UNDERGROUND IN EARTH OR FILL):** ALL CONDUITS SHALL HAVE A MINIMUM BURIAL DEPTH OF 24". BRANCH CIRCUITS SHALL CONSIST OF PULLED CONDUCTORS IN DIRECT BURIED SCHEDULE 40 PVC CONDUITS. CONDUITS THAT ARE BURIED UNDER EARTH THAT HAVE HEAVY VEHICLE TRAFFIC OVER IT SHALL BE ENCASED IN CONCRETE. CONCRETE ENCASEMENT SHALL BE 3" MINIMUM ALL AROUND AND BETWEEN CONDUITS. ALL ELBOWS USED WITH PVC CONDUIT SHALL BE SCHEDULE 80 PVC. ALL CONDUIT INSTALLED ABOVE FINISHED GRADE SHALL BE SCHEDULE 80 PVC. PRIOR TO EXCAVATION, A UTILITY MARK OUT SHALL BE DONE TO LOCATE EXISTING UNDERGROUND UTILITIES. PICTURES SHALL BE TAKEN OF ALL UNDERGROUND WORK TO BE VIEWED AT THE PUNCHLIST.
- INDOORS (UNCLASSIFIED AREAS):** ALL FEEDERS SHALL CONSIST OF PULLED CONDUCTORS IN EMT. ALL BRANCH CIRCUITS SHALL CONSIST OF PULLED CONDUCTORS IN EMT., EXCEPT 15 AND 20 AMPERE 1 POLE LIGHTING RECEPTACLE, OR MISCELLANEOUS BRANCH CIRCUITS CONCEALED ABOVE SUSPENDED CEILINGS OR WITHIN DRY WALLS SHALL CONSIST OF TYPE MC METAL CLAD CABLE IF ALLOWED BY CODE. CONNECTIONS TO COMMUNICATION CABINET AND VIBRATING EQUIPMENT SHALL CONSIST OF PULLED CONDUCTORS IN FLEXIBLE METALLIC CONDUIT, MAXIMUM 6' IN LENGTH.
- OUTDOORS OR INDOORS CLASSIFIED 'DAMP' OR 'WET' LOCATIONS:** ALL FEEDERS AND BRANCH CIRCUITS SHALL CONSIST OF PULLED CONDUCTORS IN RGS OR RA CONDUIT. CONNECTIONS TO COMMUNICATION CABINET AND VIBRATING EQUIPMENT SHALL CONSIST OF PULLED CONDUCTORS IN LIQUID TIGHT FLEXIBLE STEEL CONDUIT, MAXIMUM 6' IN LENGTH.

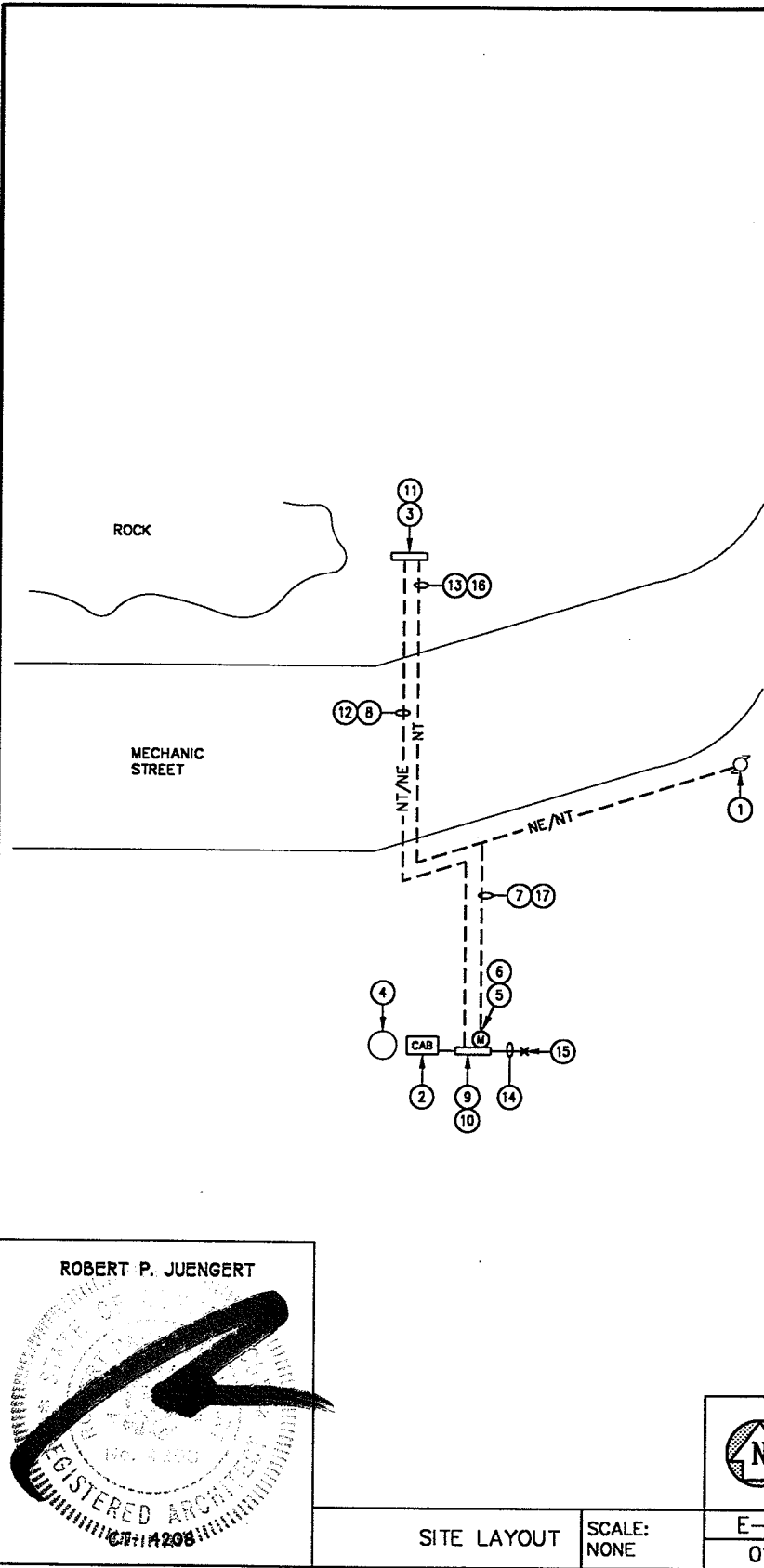
**SYMBOLS**

SYMBOLS		LEGEND		ABBREVIATIONS AND LABELS	
IDENTIFIER	DESCRIPTION	IDENTIFIER	DESCRIPTION	IDENTIFIER	DESCRIPTION
	SAFETY SWITCH		ELECTRICAL WIRING (TURNING UP)		EXISTING ELECTRIC
	PANEL BOARD		ELECTRICAL WIRING (TURNING DOWN)		NEW ELECTRIC
	ELECTRIC METER		ELECTRICAL WIRING (TURNING DOWN)		EXISTING TELEPHONE
	COMMUNICATIONS CABINET		NEW TELEPHONE		NEW UNDERGROUND TELEPHONE
	BACKBOARD		NEW UNDERGROUND ELECTRIC		EXISTING UNDERGROUND ELECTRIC
	RECEPTACLE		NEW UNDERGROUND TELEPHONE		EXISTING UNDERGROUND TELEPHONE
	NEW UTILITY POLE		PROPERTY LINE		
	EXISTING UTILITY POLE				
	MASTER GROUND BAR				
	INSULATED GROUND BAR				
	UNINSULATED GROUND BAR				

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>GENERAL INFORMATION</b>		Project: <b>CL&amp;P POLE # 1068</b>	
	Client: 		Address: MECHANIC STREET DARIEN, CT	
DLB ASSOCIATES, INC. Electrical / Mechanical Wanaonassa, NJ CT-PE 14722	P.C. <b>RVg</b>	P.C. Chkd. Gkd.	ARCNET Project No. <b>A99.506-833A</b>	Drawn: <b>MW</b>
			Date: <b>4/26/99</b>	Search Area: DARIEN / DOWNTOWN
			Site ID No: <b>CT-11-290C</b>	Approved By: CLIENT: _____ DATE: _____
				Revision No. Date: Drawing No. <b>E-1</b>



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**KEY NOTES** (Symbols ①, ②, Etc.)

1. PROPOSED TELCO DEMARCATION POINT.
2. NORTEL S8000 CABINET.
3. PAD MOUNTED TELCO EQUIPMENT.
4. EXISTING MONOPOLE.
5. NO TEMPORARY POWER AVAILABLE AT THIS SITE.
6. PROVIDE NEW 200A BYPASS UTILITY APPROVED METER SOCKET.
7. NEW ELECTRIC FEEDER ROUTED UNDERGROUND. PROVIDE (1) 3" CONDUIT WITH DRAG LINE FROM THE UTILITY POLE TO THE NEW METER. APPROXIMATE DISTANCE = 70'.
8. NEW ELECTRIC FEEDER ROUTED UNDERGROUND. PROVIDE A 3/4" CONDUIT WITH 2#12 & 1#12G FROM THE PANEL TO THE TELCO DEMARCATION. APPROXIMATE DISTANCE = 75'.
9. PROVIDE NEW 240/120V, 1 PHASE, 100A, WEATHERPROOF PANEL WITH A MINIMUM OF 12 SPACES AND A 100A MAIN CIRCUIT BREAKER. PROVIDE (1) 40A, 240V, 2 POLE, 1 PHASE AND (1) 20A, 120V, 1 POLE, 1 PHASE CIRCUIT BREAKER.
10. UNISTRUT-MOUNTED ELECTRIC EQUIPMENT. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING AND DETAIL 1/E-4.
11. PROVIDE 120V GFI RECEPTACLE INSIDE TELCO BOX.
12. NEW TELEPHONE SERVICE ROUTED UNDERGROUND. PROVIDE A 1-1/2" CONDUIT WITH 1(6) PAIR, #22 AWG INDIVIDUALLY SHIELDED, SOLID TINNED COPPER CONDUCTOR CABLE (BELDEN CABLE PART #8768). APPROXIMATE DISTANCE = 75'.
13. NEW TELEPHONE SERVICE ROUTED UNDERGROUND. PROVIDE A 4" CONDUIT WITH DRAG LINE. APPROXIMATE DISTANCE = 100'.
14. 2#2 SOLID TINNED COPPER GROUNDS. REMOVE PAINT AND OTHER FOREIGN MATTER IN ORDER TO ACHIEVE A GOOD BOND. APPROXIMATE DISTANCE = 10'.
15. ATTACH TO NEW GROUND RING.
16. TELEPHONE COMPANY TO PULL TELEPHONE LINES IN CONDUIT SUPPLIED BY CONTRACTOR.
17. POWER COMPANY TO PULL ELECTRIC LINES IN CONDUIT PROVIDED BY CONTRACTOR.

**NOTE:** THE CONTRACTOR MUST VERIFY TAP AND METER LOCATION WITH THE UTILITY COMPANY.

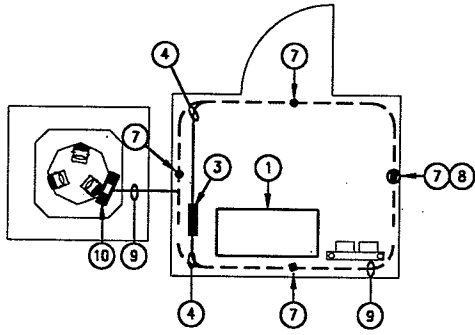
**WARNING:** THE TELCO DEMARC HAS NOT BEEN CONFIRMED BY THE TELEPHONE COMPANY.

**ROBERT P. JUENGERT**

E-2  
01

SITE LAYOUT SCALE: NONE

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>SERVICE PLAN</b>	Project: <b>CL&amp;P POLE # 1068</b>	
	Client: 	Address: <b>MECHANIC STREET DARIEN, CT</b>	Search Area: <b>DARIEN / DOWNTOWN</b>
DLB ASSOCIATES, INC. Electrical / Mechanical Wanamassa, NJ CT-PE 14722	P.C. Chkd.    Date:	ARCNET Project No. <b>A99.506-833A</b>	Drawn:    Date: <b>MW    4/26/99</b>
P.C.    Date:	Approved By: CLIENT: _____ DATE: _____	Site ID No.: <b>CT-11-290C</b>	Drawing No. <b>E-2</b>



**GENERAL NOTES**

1. WHERE ICE BRIDGES AND ICE SHIELDS ARE USED, BOND ALL POSTS VIA #2 SOLID TINNED WIRE TO THE GROUND RING.
2. FOR NEW FENCE INSTALLATIONS BOND ALL CORNER FENCE POSTS AND GATES.

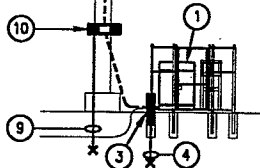
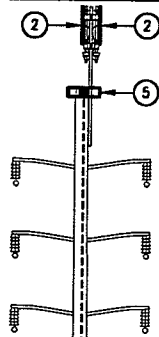
**KEY NOTES** (Symbols ①, ②, Etc.)

1. COMMUNICATIONS CABINET.
2. ANTENNA.
3. ALL COAXIAL CABLES SHALL BE GROUNDED AT THIS POINT VIA CABLE GROUND KITS TO GROUNDING BAR.
4. 2#2 SOLID TINNED COPPER GROUND. ATTACH TO GROUND ELECTRODE. REMOVE PAINT AND OTHER FOREIGN MATTER IN ORDER TO ACHIEVE A GOOD BOND.
5. ALL COAXIAL CABLES SHALL BE GROUNDED TO A GROUND BAR AT THIS POINT VIA CABLE GROUND KITS. NEWTON INSTRUMENT COMPANY OR EQUAL. THIS GROUND BAR SHALL BE LOCATED JUST BELOW THE POINT WHERE ALL CABLES COME TOGETHER AND DESCEND DOWN THE TOWER. THIS GROUND BAR SHALL BE ATTACHED DIRECTLY TO THE TOWER VIA BEAM CLAMP.
6. #2 SOLID TINNED COPPER CONDUCTOR RUN IN A CONTINUOUS LOOP A MINIMUM OF 30" BELOW GRADE. MAINTAIN A 24" CLEARANCE FROM CONCRETE PAD.
7. PROVIDE (4) 3/4" x 10' GROUND RODS. EVENLY SPACE AT A MINIMUM DISTANCE OF 10' BETWEEN RODS. CADWELD GROUND RODS TO GROUND RING.
8. PROVIDE A 8" TEST WELL FOR GROUND ROD. SEE DETAIL 2/E-7.
9. 2#2 SOLID TINNED COPPER CONDUCTOR FROM ISOLATING GROUND BAR TO GROUND RING.
10. ALL COAXIAL CABLES LEAVING THE COMMUNICATION CABINET SHALL BE GROUNDED AT THIS POINT VIA CABLE GROUND KITS. NEWTON INSTRUMENT COMPANY OR EQUAL. THIS GROUND BAR SHALL BE LOCATED AT THE POINT WHERE THE CABLES MAKE A NINETY DEGREE BEND OFF THE TOWER.



SITE PLAN SCALE: NONE

E-3  
01



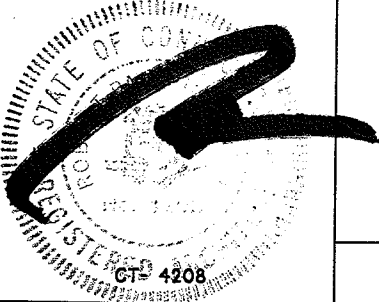
ELEVATION SCALE: NONE

E-3  
02

**LEGEND DESCRIPTION DETAIL NO.**

	MASTER GROUND BAR	1/E-5
	INSULATED GROUND BAR	1/E-5
	UNINSULATED GROUND BAR	1/E-7
	GROUND KIT(S)	E-6
	COAXIAL CABLES	NONE
	ANTENNA	1/E-7

ROBERT P. JUENGERT



Drawing Title: **GROUNDING PLAN**



Project: **CL&P POLE # 1068**

Address: **MECHANIC STREET DARIEN, CT**

Search Area: **DARIEN / DOWNTOWN**

Site ID No.: **CT-11-290C**

ARCNET Project No.: **A99.506-833A**

Drawn: **MW** Date: **4/26/99**

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_

Revision No. \_\_\_\_\_ Date: \_\_\_\_\_

Drawing No. **E-3**

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Tel: 732.739.3200 Fax: 732.739.0440

DLB ASSOCIATES, INC.  
Electrical / Mechanical  
Wanamassa, NJ CT-PE 14722

P.C.: **RVa**

P.C. Chkd: \_\_\_\_\_

Chkd by: \_\_\_\_\_

ARCNET Project No.: **A99.506-833A**

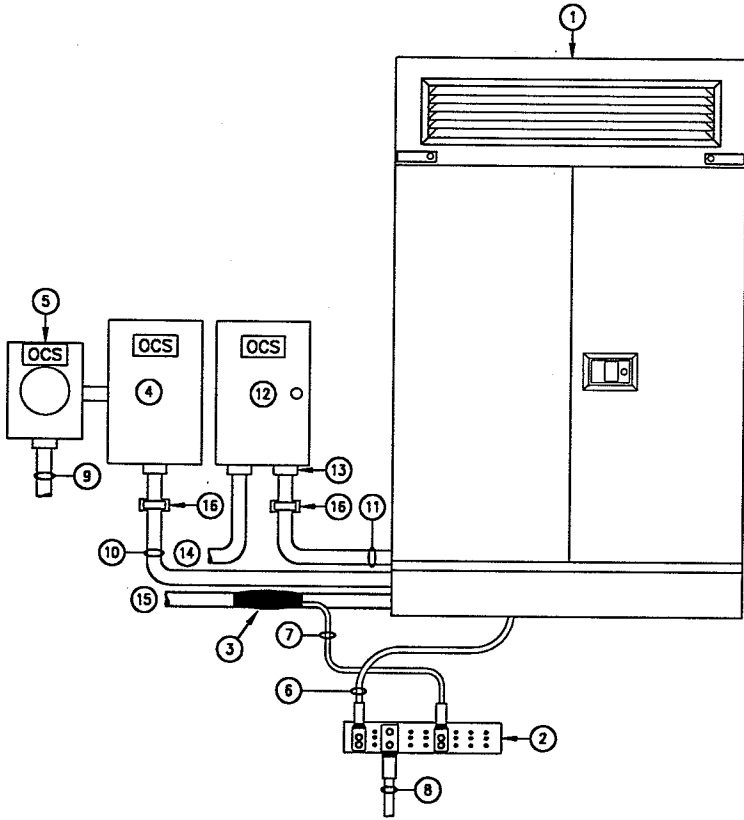
Drawn: **MW** Date: **4/26/99**

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_

Revision No. \_\_\_\_\_ Date: \_\_\_\_\_

Drawing No. **E-3**

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**KEY NOTES** (Symbols ①, ②, Etc.)

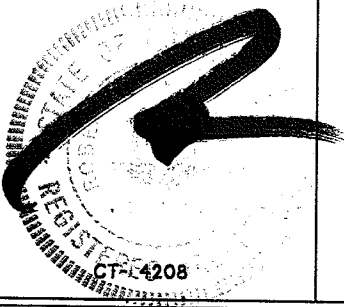
1. NORTEL S8000 CABINET.
2. FIELD LOCATED MASTER GROUND BAR (MGB). MGB SHALL BE LOCATED SUCH THAT ALL GROUNDING CONDUCTORS ATTACHED TO IT ARE COMING FROM ABOVE. (I.E. BOTTOM OF BTS DUNNAGE, SIDE OF CONCRETE PAD, ETC). SEE DETAIL 1/E-5.
3. COAXIAL CABLE GROUNDING KIT. SEE DRAWING E-3 FOR LOCATION OF THE KITS.
4. NEW SQUARE D 240/120V, 100A WITH A 100A MAIN CIRCUIT BREAKER, 1 PHASE, WEATHERPROOF PANEL. PROVIDE A 40A, 240V, 1 PHASE CIRCUIT BREAKER. LABEL WITH A BLACK PLASTIC TAG THAT HAS THE LETTERS "OCS" ENGRAVED IN IT.
5. NEW ELECTRIC METER. SEE DRAWING E-2 FOR ADDITIONAL INFORMATION.
6. 1#2 STRANDED, INSULATED GROUND WIRE FROM COMMUNICATION CABINET TO THE MGB.
7. INTEGRAL GROUND KIT CONDUCTOR WITH TWO HOLE LUG. ATTACH DIRECTLY TO THE MGB OR CONNECT TO A #2 SOLID TINNED COPPER GROUND WIRE VIA CTAP PANDUIT #2-4Q. CONNECT #2 SOLID TO THE MGB VIA LONG BARREL TWO HOLE LUG.
8. MAIN GROUND WIRE FROM THE MGB TO THE GROUND POINT. FOR CONTINUATION SEE DRAWING E-2.
9. CONDUIT FROM THE POWER SOURCE TO THE NEW METER AND NEW PANEL. FOR CONTINUATION SEE DRAWING E-2.
10. 1" SEALTIGHT FLEXIBLE CONDUIT WITH 3#6 & 1#10G FROM NEW PANEL TO THE COMMUNICATION CABINET TERMINATION POINT.
11. 1-1/2" SEALTIGHT FLEXIBLE CONDUIT FROM THE DEMARCATION BOX TO THE COMMUNICATION CABINET. PULL (1) 6 PAIR #22 AWG INDIVIDUALLY SHIELDED TINNED COPPER CONDUCTOR CABLE (BELDEN CABLE PART # 8768). LEAVE 5' OF SLACK WIRE AT BOTH ENDS OF CONDUIT FOR CONNECTIONS.
12. DEMARCATION BOX INSTALLED BY CONTRACTOR AND SUPPLIED BY OMNIPPOINT.
13. MYER'S HUB FOR ALL SIDE CONNECTIONS TO DISCONNECT SWITCH, DEMARCATION BOX, AND NORTEL SUB BASE.
14. CONDUIT WITH DRAG LINE FROM MAIN DEMARCATION SOURCE TO DEMARCATION BOX. FOR CONTINUATION SEE DRAWING E-2.
15. COAXIAL CABLES. REFER TO ARCHITECTURAL DRAWINGS FOR QUANTITY.
16. SINGLE HOLE CONDUIT SUPPORT WITH BACK STRAP.

NORTEL S8000 CABINET RISER

SCALE:  
NONE

E-4  
01

ROBERT P. JUENGERT



**ARCNET**  
ARCHITECTS, INC.

670 North Beers Street, Building 2, Holmdel, NJ 07733  
Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title:  
**RISER**

Client:  
**OCS**

Project: **CL&P POLE # 1068**

Address: **MECHANIC STREET  
DARIEN, CT**

Search Area:  
**DARIEN / DOWNTOWN**

Site ID No.:  
**CT-11-290C**

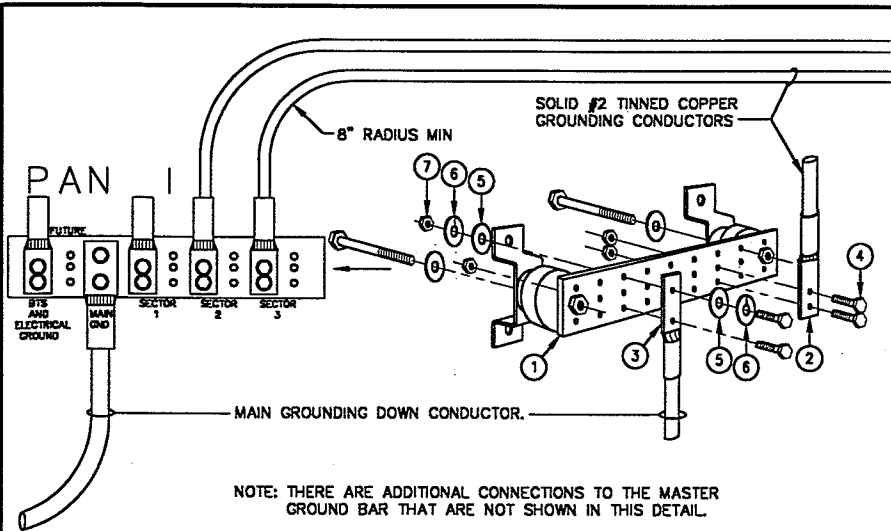
Revision No. Date:

Drawing No.

**E-4**

ARCNET Project No. **A99.506-833A**  
Drawn: **MW** Date: **4/26/99**

Approved By: \_\_\_\_\_ DATE: \_\_\_\_\_  
CLIENT: \_\_\_\_\_



NOTE: THERE ARE ADDITIONAL CONNECTIONS TO THE MASTER GROUND BAR THAT ARE NOT SHOWN IN THIS DETAIL.

GENERAL GROUNDING NOTES

1. ANTI OXIDANT COMPOUND SHALL BE APPLIED TO ALL GROUNDING CONNECTIONS (CTAPS, MAIN GND, MGB, ETC.)
2. THE CONNECTIONS TO THE MASTER GROUND BAR MUST FOLLOW THE PANI METHOD. SEE SPECIFICATIONS.
3. THE GROUND RUN SHALL FOLLOW A DOWNWARD PATH FROM THE ANTENNAS TO THE MASTER GROUND BAR.
4. ALL CONNECTIONS SHALL BE MADE WITH AN 8" RADIUS MINIMUM.
5. ANY GROUND WIRES, SOLID OR STRANDED, THAT PASS THROUGH CONDUIT, METALLIC SLEEVE, OR CABLE COVER, SHALL BE BONDED AT BOTH ENDS.
6. WHERE TRAY IS USED BOND ADJACENT TRAY WITH A #6 STRANDED JUMPER VIA TWO HOLE LUGS. BOND BOTH ENDS TO THE #2 SOLID TINNED WIRE.

MASTER GROUND BAR TERMINATION DETAIL

SCALE: NONE

E-5  
01

KEY NOTES (Symbols ①, ②, Etc.)

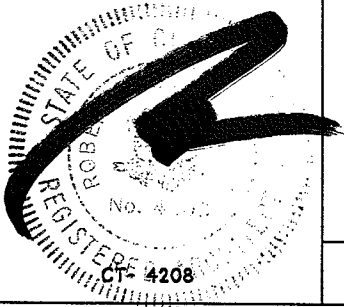
	SOLID #2 TINNED COPPER	GROUND KIT	#2/0 STRANDED (MAIN DOWN CONDUCTOR)	MASTER GROUND BAR	STRUCTURAL OR TOWER STEEL	MAIN GROUNDING ELECTRODE	GROUND ROD
SOLID #2 TINNED COPPER	B or C	B or C		A or C	A, C or D		C
GROUND KIT	B or C			A	A, C or D		
#2/0 STRANDED (MAIN DOWN CONDUCTOR)				A or C	A, C or D	A	C
MASTER GROUND BAR	A or C	A	A or C				
STRUCTURAL OR TOWER STEEL	A, C or D	A, C or D	A, C or D				
GROUND ROD	C		C				

TERMINATION TYPES:

- A 2-HOLE MECHANICAL LUG WITH HYDRAULICALLY COMPRESSED LONG BARREL.
- B DOUBLE BARREL COPPER HYDRAULICALLY COMPRESSED CONNECTOR.
- C CADWELD
- D BEAM CLAMP

1. ALL COAXIAL CABLES LEAVING THE COMMUNICATION CABINET SHALL BE GROUNDED AT THIS POINT VIA CABLE GROUND KITS. NEWTON INSTRUMENT COMPANY OR EQUAL. #B-6142 (GROUND BAR 20" X 4" X 1/4"), #3061-4 (INSULATORS), #3015-8 (5/8" LOCKWASHERS), #A-6056 (WALL MOUNTING BRACKETS), AND #3012-1 (5/8"-11 X 1" H.H.C.S. BOLTS).
2. HYDRAULICALLY COMPRESSED LONG BARREL 2-HOLE GROUNDING LUG FOR GROUNDING CONDUCTORS BETWEEN CABLE AND THE MASTER GROUND BAR TERMINAL. THOMAS & BETTS #54811BE OR EQUAL.
3. HYDRAULICALLY COMPRESSED LONG BARREL 2-HOLE GROUNDING LUG FOR THE MAIN GROUNDING DOWN CONDUCTOR BETWEEN THE MASTER GROUND BAR TERMINAL AND THE MAIN GROUNDING ELECTRODE. THOMAS & BETTS #54862BE OR EQUAL.
4. 3/8" STAINLESS STEEL DIAMETER BOLTS TO CONNECT GROUNDING LUG TO THE GROUND BAR (TYPICAL).
5. 3/8" STAINLESS STEEL DIAMETER FLAT WASHER (TYPICAL).
6. 3/8" STAINLESS STEEL DIAMETER LOCK WASHER (TYPICAL).
7. 3/8" HEX HEAD STAINLESS STEEL NUT (TYPICAL).

ROBERT P. JUENGERT



GROUNDING MATRIX

SCALE: NONE

E-5  
02



670 North Beers Street, Building 2, Holmdel, NJ 07733  
Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title: GROUNDING DETAILS

Client: OCS

Project: CL&P POLE # 1068

Address: MECHANIC STREET DARIEN, CT

Search Area: DARIEN / DOWNTOWN

Site ID No: CT-11-290C

Revision No. Date:

DLB ASSOCIATES, INC. Electrical / Mechanical Wanamassa, NJ CT-PE 14722

P.C. RVa

P.C. Chkd: [Signature]

ARCNET Project No. A99.506-833A

Drawn: MW Date: 4/26/99

Approved By: CLIENT: DATE:

Drawing No. E-5

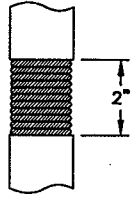


FIGURE 1 SCALE: NONE E-6  
01

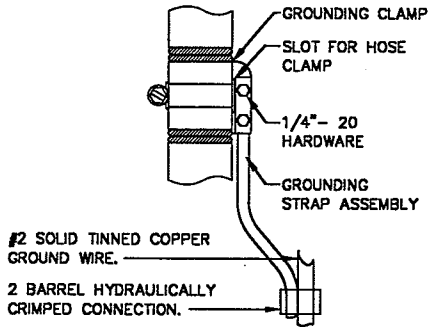


FIGURE 2 SCALE: NONE E-6  
02

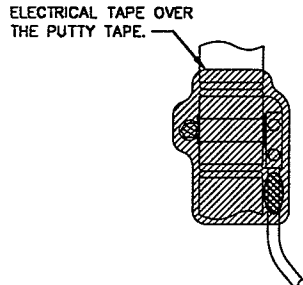
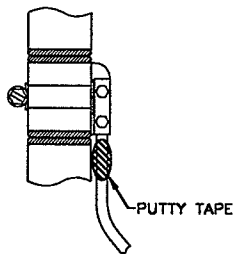


FIGURE 3 SCALE: NONE E-6  
03

FIGURE 4 SCALE: NONE E-6  
04

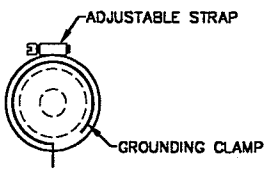
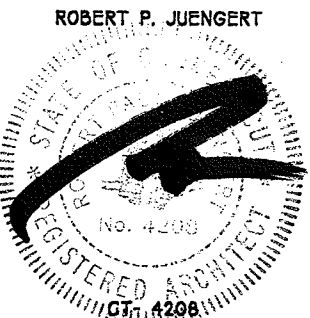


FIGURE 5 SCALE: NONE E-6  
05

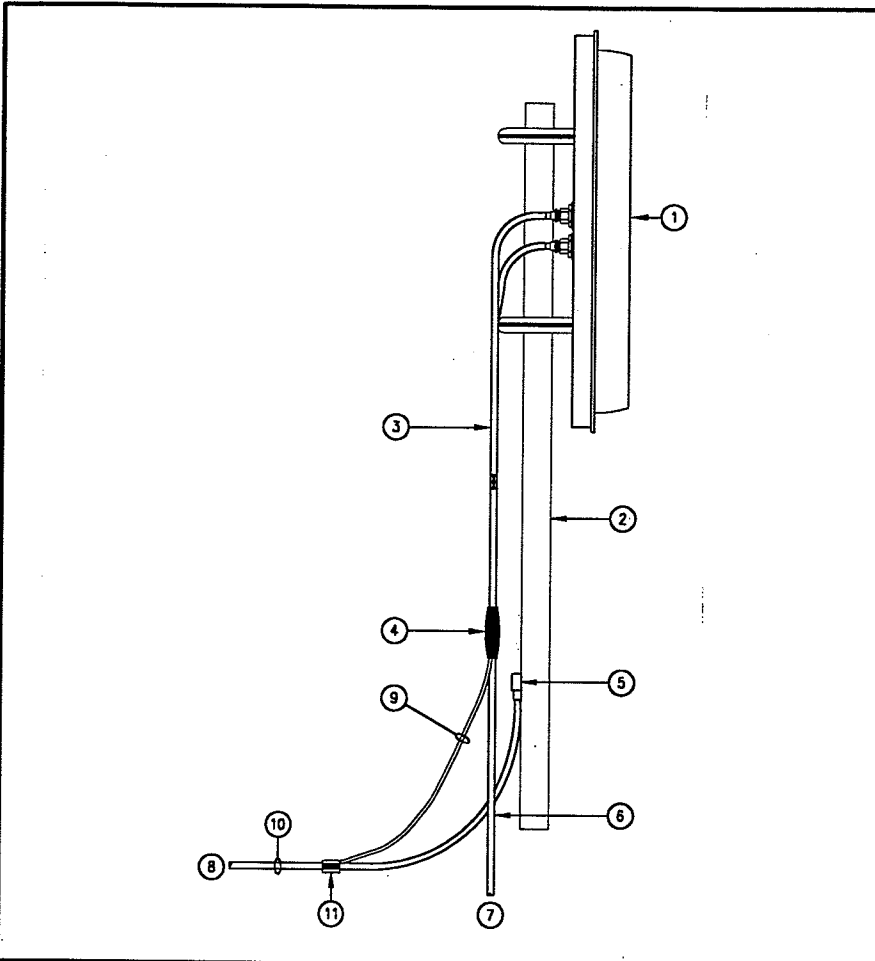
**INSTALLATION:**

1. CUT AND REMOVE A 2 INCH SECTION OF CABLE JACKET SHOWN IN FIGURE #1. USE CARE NOT TO GOUGE OR CRUSH THE CABLE.
2. CLEAN THE EXPOSED SURFACE OF THE OUTER CONDUCTOR WITH BRONZE OR STEEL WOOL UNTIL THE SURFACE IS CLEAN AND BRIGHT. ALSO CLEAN ONE INCH OF THE JACKET EACH SIDE OF THE CUT SURFACE WITH A CLEAN CLOTH.
3. WRAP THE COPPER GROUNDING CLAMP AROUND THE EXPOSED OUTER CONDUCTOR. SECURE THE GROUNDING CLAMP WITH THE STAINLESS STEEL HOSE CLAMP AS SHOWN IN FIGURE #2 AND #5.
4. ATTACH THE TWO HOLE GROUNDING LUG TO THE CABLE GROUNDING CLAMP WITH 1/4" - 20 HARDWARE. SEE FIGURE #2.
5. CLEAN THE SURFACE THOROUGHLY WHERE THE SINGLE HOLE GROUNDING LUG IS TO BE CONNECTED. THE GROUNDING SURFACE MUST BE CLEAN OF ANY PAINT, GREASE, RUST OR OXIDATION FOR A GOOD ELECTRICAL CONTACT. THE GROUNDING SURFACE SHOULD BE A METAL TOWER MEMBER OR DOWN CONDUCTOR LOCATED BELOW THE GROUNDING CLAMP. THE GROUNDING WIRE SHOULD BE RUN STRAIGHT DOWN - NO DRIP LOOP. SEE FIGURE #2.
6. BOLT THE GROUNDING LUG ONTO THE PREPARED SURFACE WITH A 3/8" - 16 HARDWARE. AFTER TIGHTENING, PAINT THE GROUNDING LUG AND SURROUNDING AREA WITH A ZINC BASED CORROSION CONTROL PAINT.
7. WRAP THE GROUNDING LUG AND WIRE AT THE CLAMP ASSEMBLY WITH SEVERAL TURNS OF PUTTY TAPE AS SHOWN IN FIGURE #3. FORM THE PUTTY BY HAND AROUND THE LUG. WRAP THE REMAINDER OF THE PUTTY AROUND THE ENTIRE GROUNDING CLAMP AND LUG, INCLUDING ONE INCH OF CABLE JACKET ON EACH SIDE OF THE CLAMP. FORM THE PUTTY AROUND THE GROUNDING CLAMP AND JACKET BY HAND TO ASSURE A WEATHERPROOF SEAL. SEE FIGURE #4. TO COMPLETE WEATHERPROOFING, APPLY ELECTRICAL TAPE OVER THE PUTTY COVERED CONNECTION. OVERLAP EACH TURN, STRETCHING THE TAPE SLIGHTLY WHILE APPLYING THE FIRST TWO LAYERS AND LIGHTLY WRAPPING THE LAST TWO LAYERS. COMPRESS THE WRAPPINGS WITH BOTH HANDS TO INSURE COMPLETE CONTACT WITH ALL LAYERS OF TAPE.

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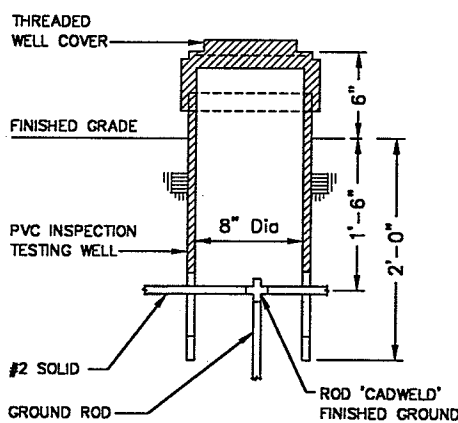
<p><b>ARCNET</b> ARCHITECTS, INC.</p> <p>670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440</p>	Drawing Title: <b>GROUNDING DETAILS</b>	Project: <b>CL&amp;P POLE # 1068</b>	
	Client: <b>OCS</b>	Address: <b>MECHANIC STREET DARIEN, CT</b>	
DLB ASSOCIATES, INC. Electrical / Mechanical Wanomassa, NJ CT-PE 14722 P.C. <b>RVa</b>	ARCNCT Project No. <b>A99.506-833A</b> Drawn: <b>MW</b> Date: <b>4/26/99</b>	Site ID No: <b>CT-11-290C</b> Approved By: _____ DATE: _____	Revision No. _____ Date: _____ Drawing No. <b>E-6</b>

This Drawing is the Property of DLB Associates, Consulting Engineers P.C. - Last Saved: N:\238\23885E07.DWG, 04/26/99 at 12:32 by DBozard



- KEY NOTES** (Symbols ①, ②, Etc.)
1. ANTENNA.
  2. MAST.
  3. ANTENNA JUMPER (TYPICAL FOR 2).
  4. REFER TO GROUNDING KIT DETAIL. DO NOT INSTALL ON BENDS (TYPICAL FOR 2).
  5. CADWELD TYPE "VS".
  6. ANTENNA COAXIAL CABLE (TYPICAL FOR 2).
  7. TO COMMUNICATION CABINET.
  8. TO COLLECTOR BAR.
  9. #6 INTEGRAL GROUND CONDUCTOR FROM GROUNDING KIT TO #2 SOLID.
  10. #2 SOLID TINNED COPPER GROUNDING CONDUCTOR 8" MINIMUM RADIUS.
  11. 2 BARREL HYDRAULICALLY COMPRESSED CONNECTION PANDUIT CATALOG # CTAP 2-4Q.

**ANTENNA GROUNDING** SCALE: NONE E-7 01



**TEST WELL DETAIL** SCALE: NONE E-7 02

**ROBERT P. JUENGERT**

 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440	Drawing Title: <b>GROUNDING DETAIL</b>		Project: <b>CL&amp;P POLE # 1088</b>		Address: <b>MECHANIC STREET DARIEN, CT</b> Search Area: <b>DARIEN / DOWNTOWN</b> Site ID No.: <b>CT-11-280C</b>
	Client: <b>OCS</b>		Drawn: <b>MW</b> Date: <b>4/26/99</b>		
DLB ASSOCIATES, INC. Electrical / Mechanical Wanamassa, NJ CT-PE 14722	P.C.: <b>RVa</b>	P.C. Chkd:	ARCNET Project No.: <b>A99.506-833A</b>	Approved By: _____ DATE: _____	Revision No. _____ Date: _____ Drawing No. <b>E-7</b>

# Exhibit B

## Property Card

PARID: 29241  
STATE OF CT DOT

MECHANIC STREET

**Parcel**

---

Map/Lot	71 9
Address	MECHANIC STREET
Unit	
Neighborhood	3050
Class	500
Land Use Code	901-STATE
Living Units	
Acres	.1
Zoning	CBD
Notes	TELECOM ANTENNAS & RELATED EQUIP ON CL&P POLE PERS PROP UPDATES 2010, AH, N.C.

**Owners**

---

Owner	Address	City	State	Zip
STATE OF CT DOT	2800 BERLIN TURNPIKE	NEWINGTON	CT	06111





**Property Information**

**Property ID** 29241  
**Location** MECHANIC STREET  
**Owner** STATE OF CT DOT



**MAP FOR REFERENCE ONLY**  
**NOT A LEGAL DOCUMENT**

Town of Darien, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 01/2023  
 Data updated 01/2023

Print map scale is approximate.  
 Critical layout or measurement  
 activities should not be done using  
 this resource.

# Exhibit C

## **Construction Drawings**



# WIRELESS COMMUNICATIONS FACILITY

## DARIEN/ DTWN + RT-1

### SITE ID: CT11290C

### 3 MECHANIC STREET DARIEN, CT 06820

#### GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "H" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2022 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
- CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
- BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE, WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
- ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS AND ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
- AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS, AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
- CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
- CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
- CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL, AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
- CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
- LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS, SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
- ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
- DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
- ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
- ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
- ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
- CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
- COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUITS AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND CONFIRMED WITH THE PROJECT MANAGER AND OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
- ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL CONTACT 'CALL BEFORE YOU DIG' AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
- CONTRACTOR SHALL COMPLY WITH THE OWNER'S ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.
- THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
- THE COUNTY/CITY/TOWN MUST BE NOTIFIED (2) WORKING DAYS PRIOR TO CONCEALMENT/BURIAL OF ANY SYSTEM OR MATERIAL THAT WILL PREVENT THE DIRECT INSPECTION OF MATERIALS, METHODS OR WORKMANSHIP. EXAMPLES OF THESE PROCESSES ARE BACKFILLING A GROUND RING OR TOWER FOUNDATION, POURING TOWER FOUNDATIONS, BURYING GROUND RODS, PLATES OR GRIDS, ETC. THE CONTRACTOR MAY PROCEED WITH THE SCHEDULED PROCESS (2) WORKING DAYS AFTER PROVIDING NOTICE UNLESS NOTIFIED OTHERWISE BY THE COUNTY/CITY/TOWN.
- PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF ENGINEER ON RECORD, PRIOR TO THE COMMENCEMENT OF ANY WORK.

#### SITE DIRECTIONS

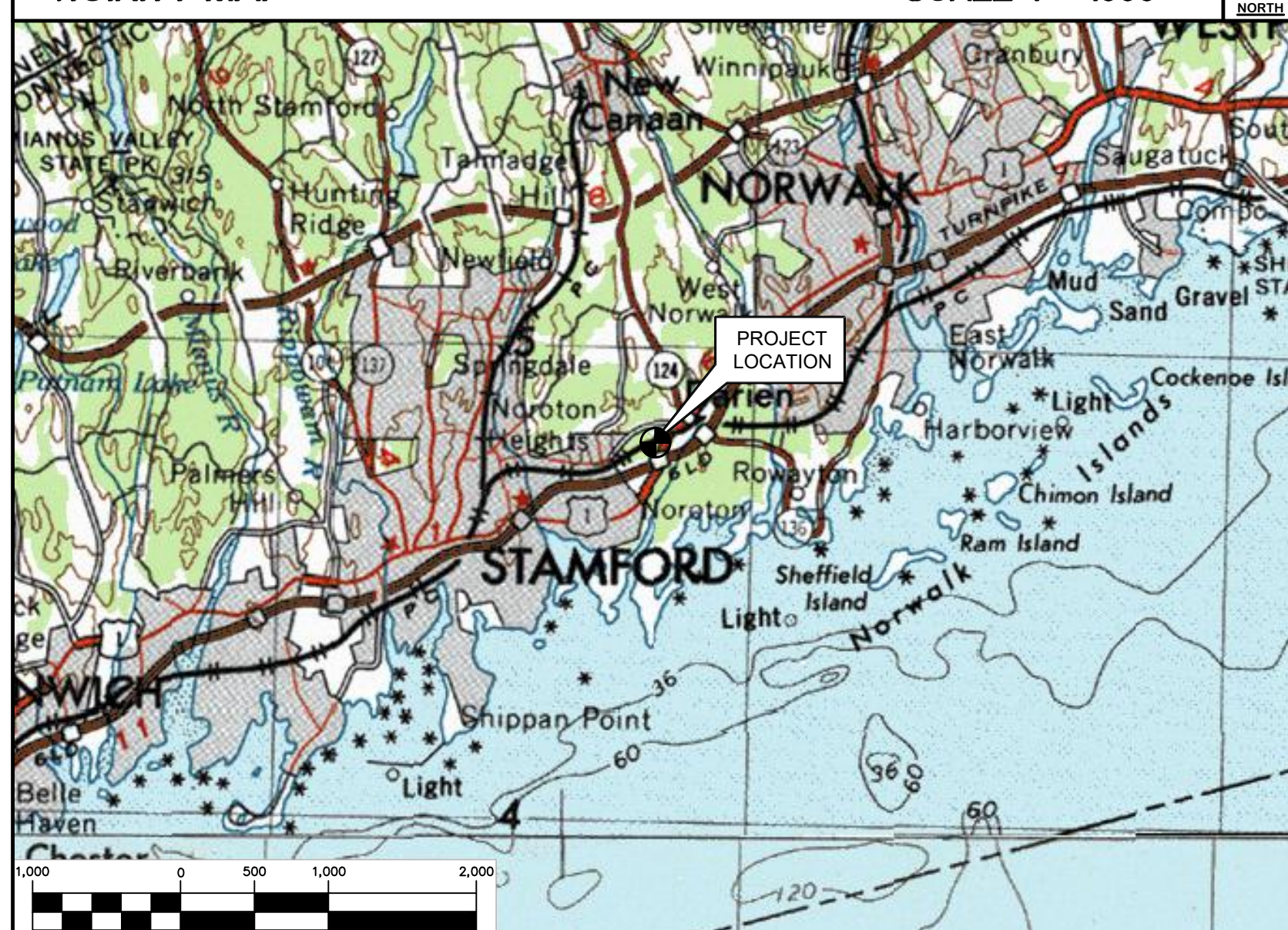
**FROM:** 35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002

**TO:** 3 MECHANIC STREET  
DARIEN, CT 06820

- HEAD NORTH ON GRIFFIN ROAD S. TOWARD HARTMAN RD. 0.21 MI.
- TAKE THE 2ND RIGHT ONTO DAY HILL RD. 0.14 MI.
- TAKE THE 1ST RIGHT ONTO BLUE HILLS AVENUE EXT/CT-187 1.89 MI.
- TURN LEFT ONTO CT-305/OLD WINDSOR RD. 2.32 MI.
- STAY STRAIGHT TO GO ONTO BLOOMFIELD AVE/CT-305. 0.01 MI.
- MERGE ONTO I-91 S TOWARD HARTFORD 45.80 MI.
- KEEP RIGHT TOWARD NY CITY 0.08 MI.
- MERGE ONTO I-95 S VIA THE EXIT ON THE LEFT TOWARD NY CITY 34.84 MI.
- TAKE THE US-1/POST RD EXIT, EXIT 13 0.12 MI.
- TURN RIGHT ONTO POST RD/ US-1 N 0.02 MI.
- MAKE A U-TURN ONTO POST RD/ US-1 S 1.04 MI.
- TURN SHARP LEFT ONTO MECHANIC ST. 0.01 MI.

#### VICINITY MAP

SCALE: 1" = 1000'



#### T-MOBILE RF CONFIGURATION

### 67D94B\_1DP+1QP+1OP

#### PROJECT SUMMARY

- THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
  - REMOVE (3) EXISTING PANEL ANTENNAS.
  - INSTALL (3) PROPOSED PANEL ANTENNAS.
  - REMOVE (3) EXISTING REMOTE RADIO UNITS FROM RACK AT GRADE.
  - INSTALL (3) PROPOSED REMOTE RADIO UNITS ON RACK AT GRADE.
  - INSTALL (6) COAX CABLES ROUTED FROM RRUS AT GRADE TO ANTENNAS ON TOWER.
  - RELOCATE (3) EXISTING BIAS TEES TO NEW PIPE MAST.
  - REPLACE EXISTING PIPE MAST. REFER TO S-1 FOR DETAILS.

#### PROJECT INFORMATION

**SITE NAME:** DARIEN/ DTWN & RT-1  
**SITE ID:** CT11290C  
**SITE ADDRESS:** 3 MECHANIC STREET  
DARIEN, CT 06820  
**APPLICANT:** T-MOBILE NORTHEAST, LLC  
35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
**CONTACT PERSON:** MATT BANDLE (PROJECT MANAGER)  
NORTHEAST SITE SOLUTIONS  
(508) 642-8801  
**ENGINEER:** CENTEK ENGINEERING, INC.  
63-2 NORTH BRANFORD RD.  
BRANFORD, CT 06405  
**PROJECT COORDINATES:** LATITUDE: 41°-4'-39.25" N  
LONGITUDE: 73°-28'-3.29" W  
GROUND ELEVATION: 55± AMSL  
 SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

#### SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
N-1	DESIGN BASIS AND SITE NOTES	2
C-1	COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.	2
C-2	TYPICAL DETAILS	2
S-1	MAST DETAILS	2

PROFESSIONAL ENGINEER SEAL

**T-Mobile**

**NSS**  
NORTHEAST SITE SOLUTIONS  
From: Mike Thompson

**CENTEK engineering**  
Centek Solutions  
(203) 488-0580  
(203) 488-8587 Fax  
632 North Branford Road  
Branford, CT 06405  
www.CentekEng.com

**T-MOBILE NORTHEAST LLC**  
WIRELESS COMMUNICATIONS FACILITY  
DARIEN/ DTWN + RT-1  
SITE ID: CT11290C  
3 MECHANIC STREET  
DARIEN, CT 06820

DATE: 10/1/18  
SCALE: AS NOTED  
JOB NO. 18058.58

TITLE SHEET

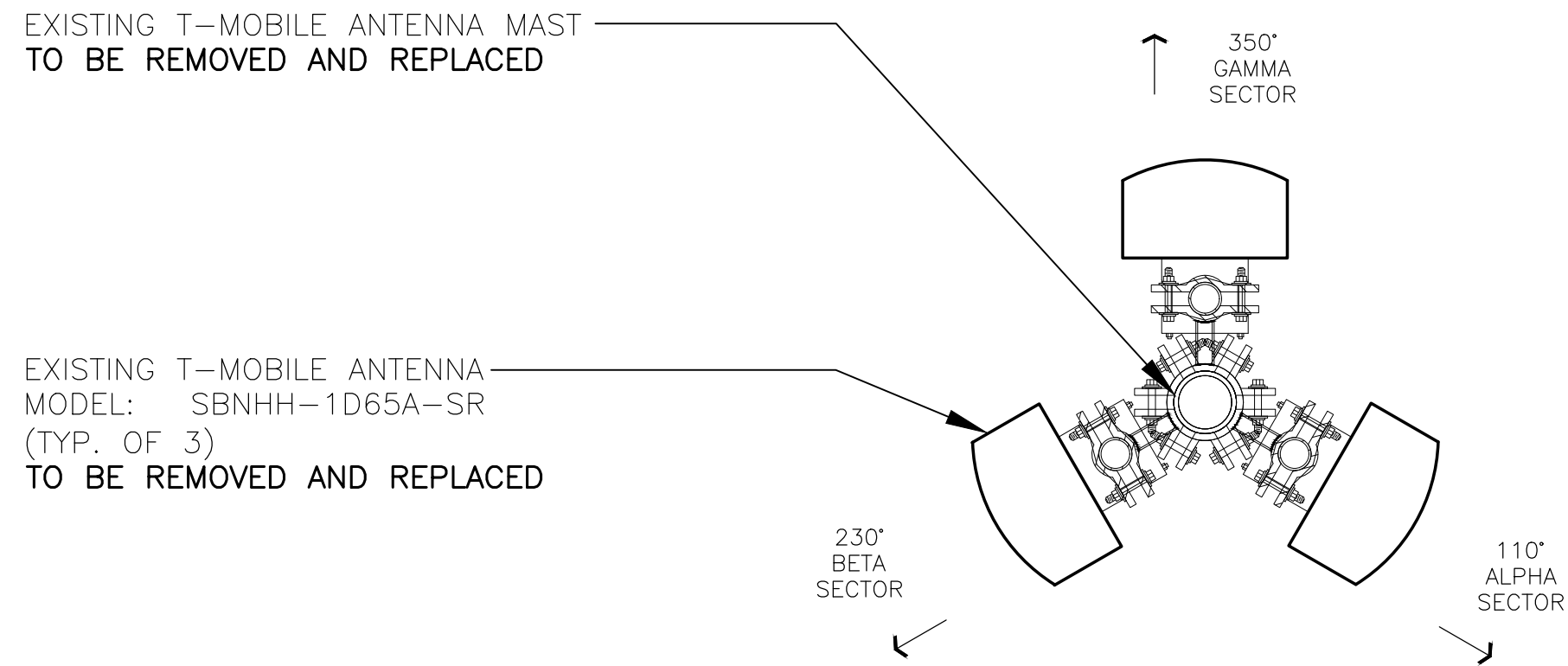
**T-1**

Sheet No. 1 of 6

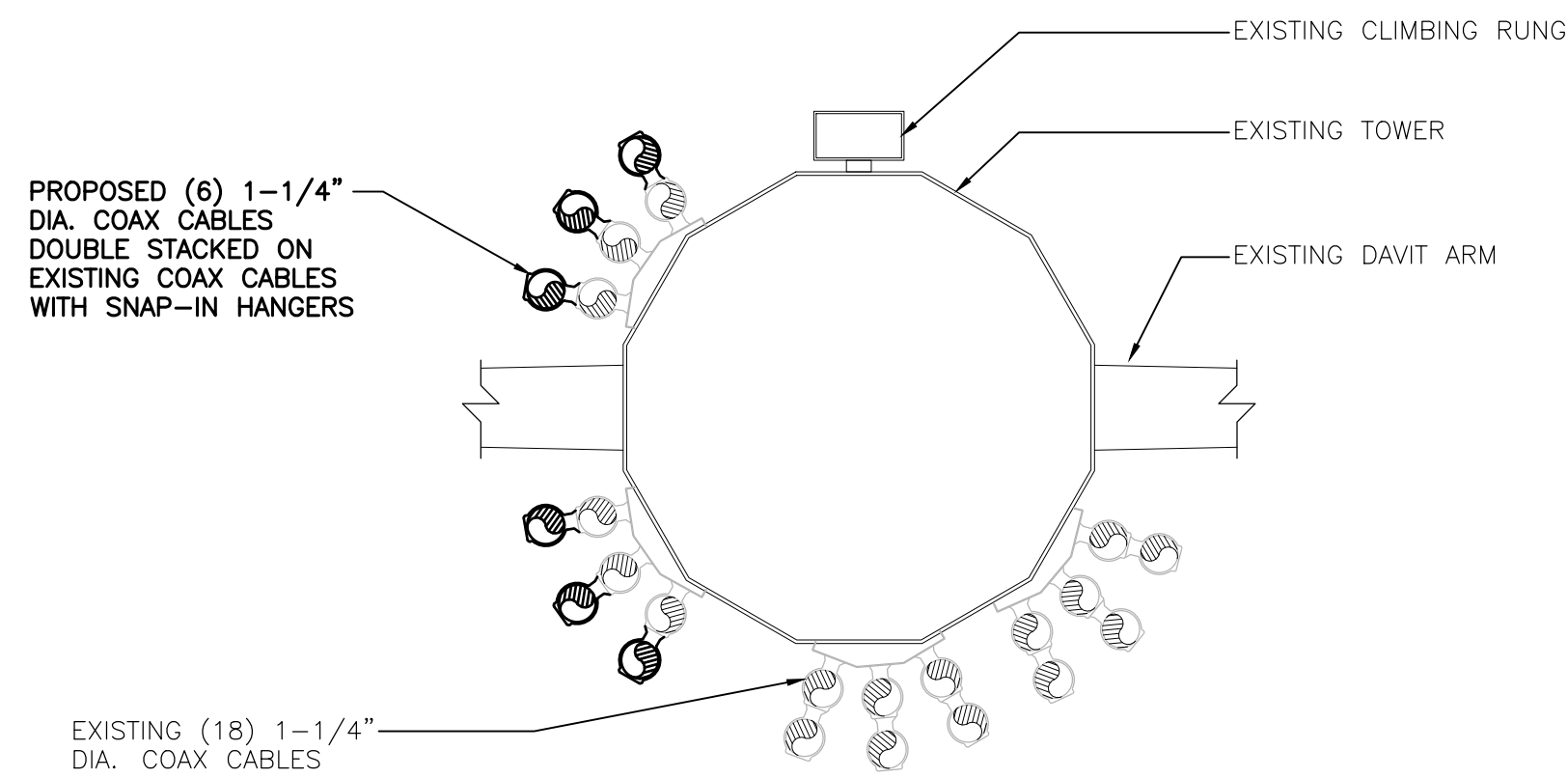
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2	01/23/24	TJR	TJR	ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES
1	07/17/19	CAG	CAG	ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYOUT
0	1/07/19	TJR	TJR	ISSUED FOR CONSTRUCTION



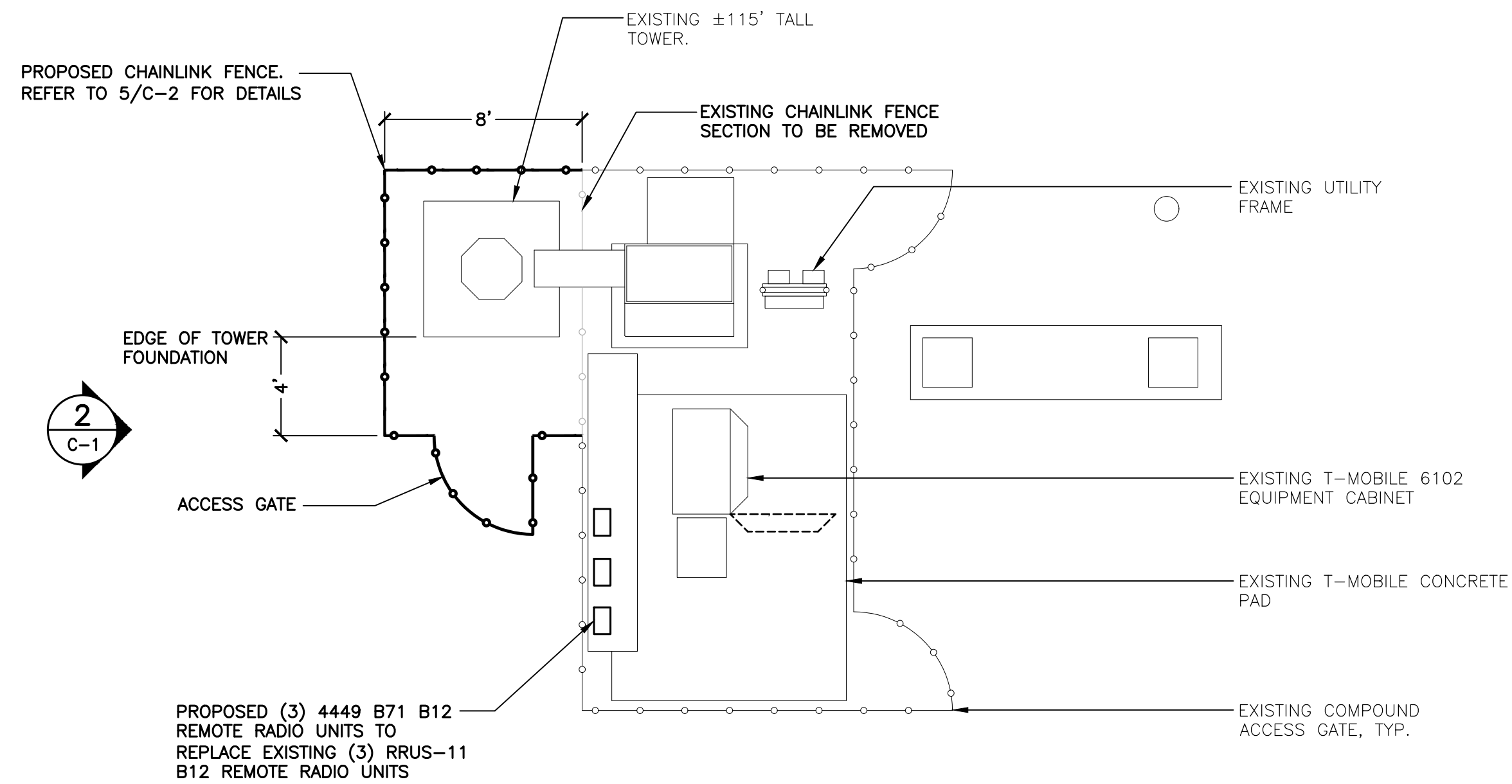




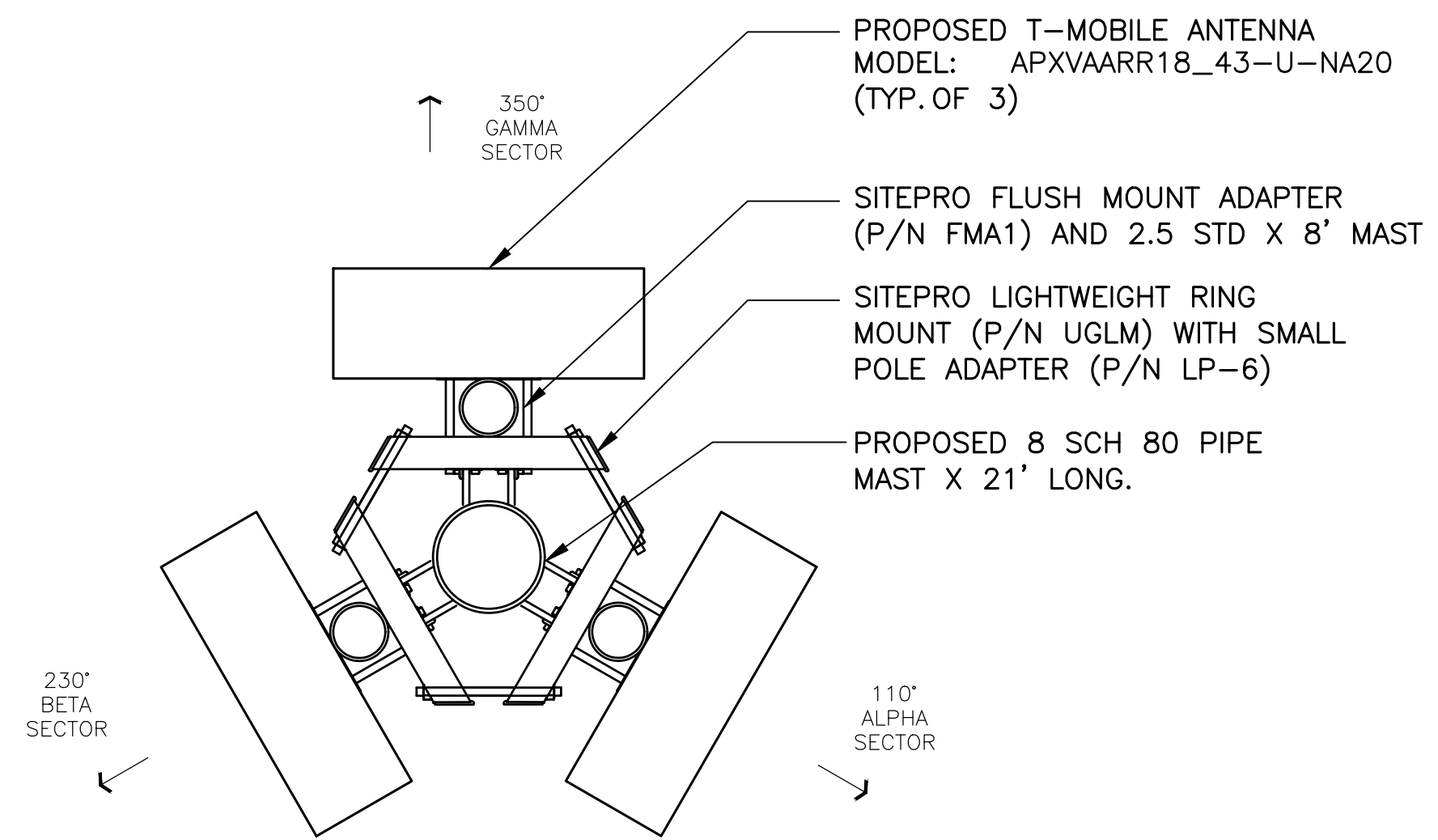
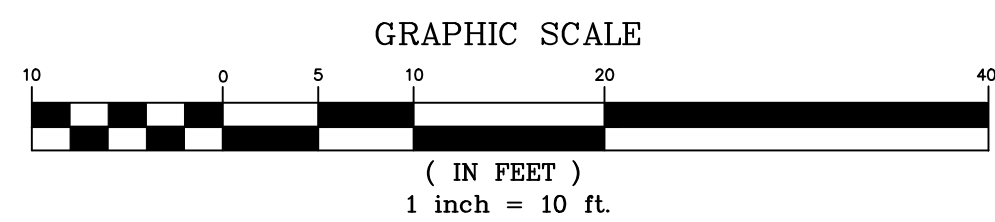
**4 EXISTING ANTENNA MOUNTING CONFIGURATION**  
C-1 SCALE: 1" = 1' 124' ELEVATION TRUE NORTH



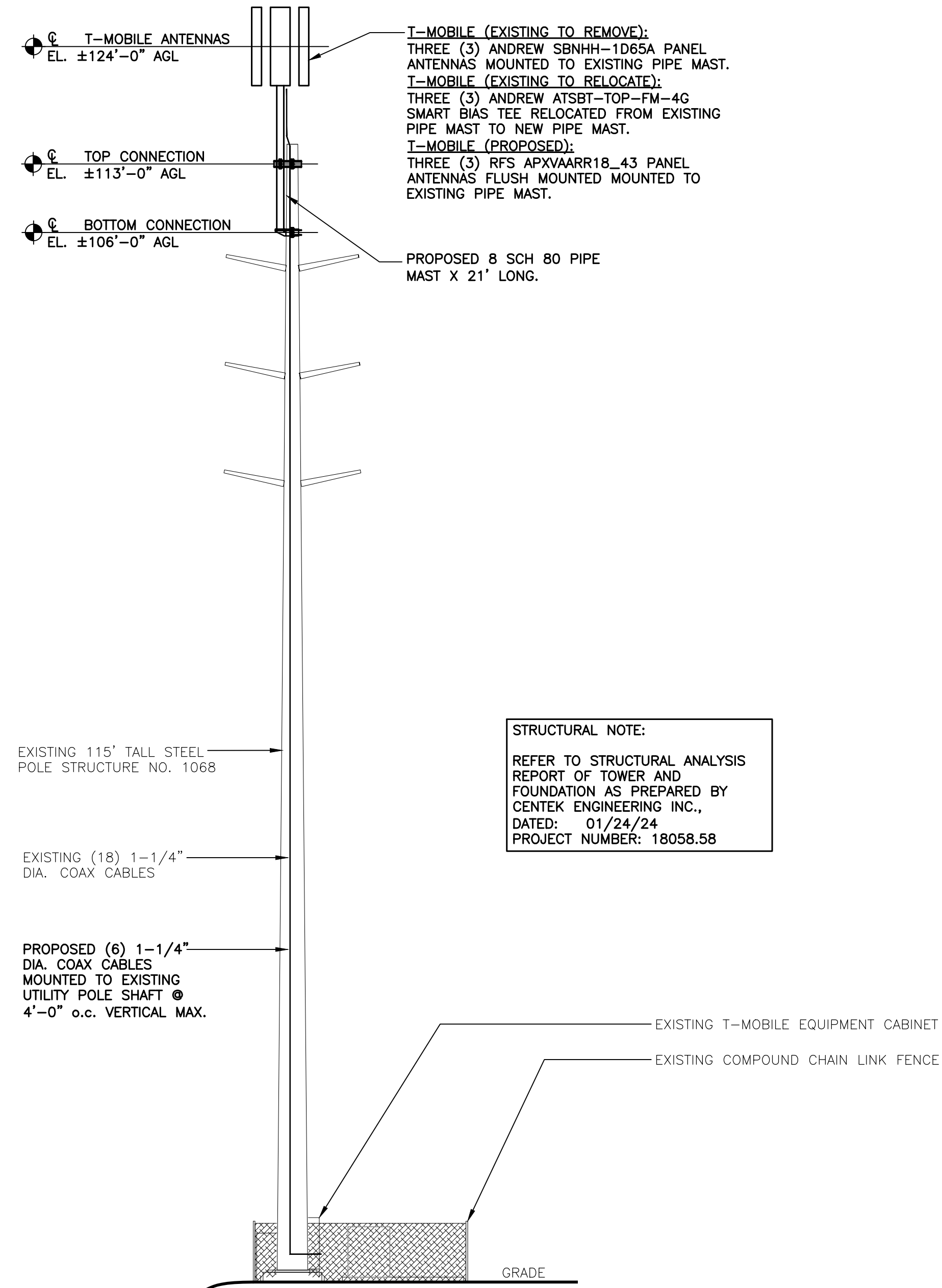
**3 COAX CABLE PLAN**  
C-1 SCALE: NTS



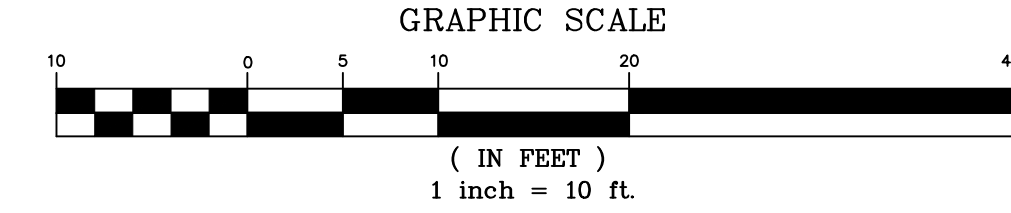
**1 COMPOUND PLAN**  
C-1 SCALE: 1" = 10' TRUE NORTH



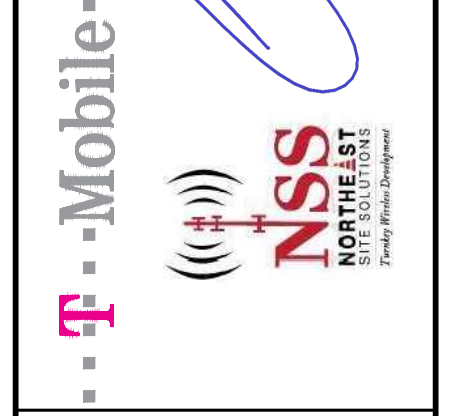
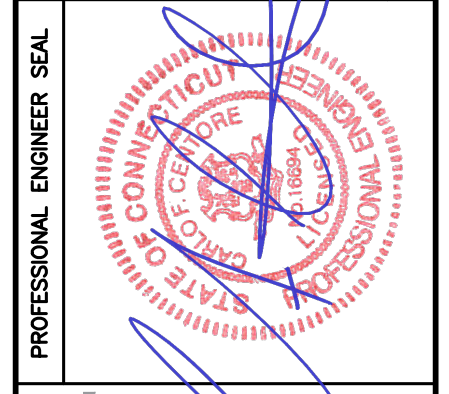
**5 PROPOSED ANTENNA MOUNTING CONFIGURATION**  
C-1 SCALE: 3/8" = 1' 124' ELEVATION TRUE NORTH



**2 TOWER ELEVATION**  
C-1 SCALE: 1" = 10'



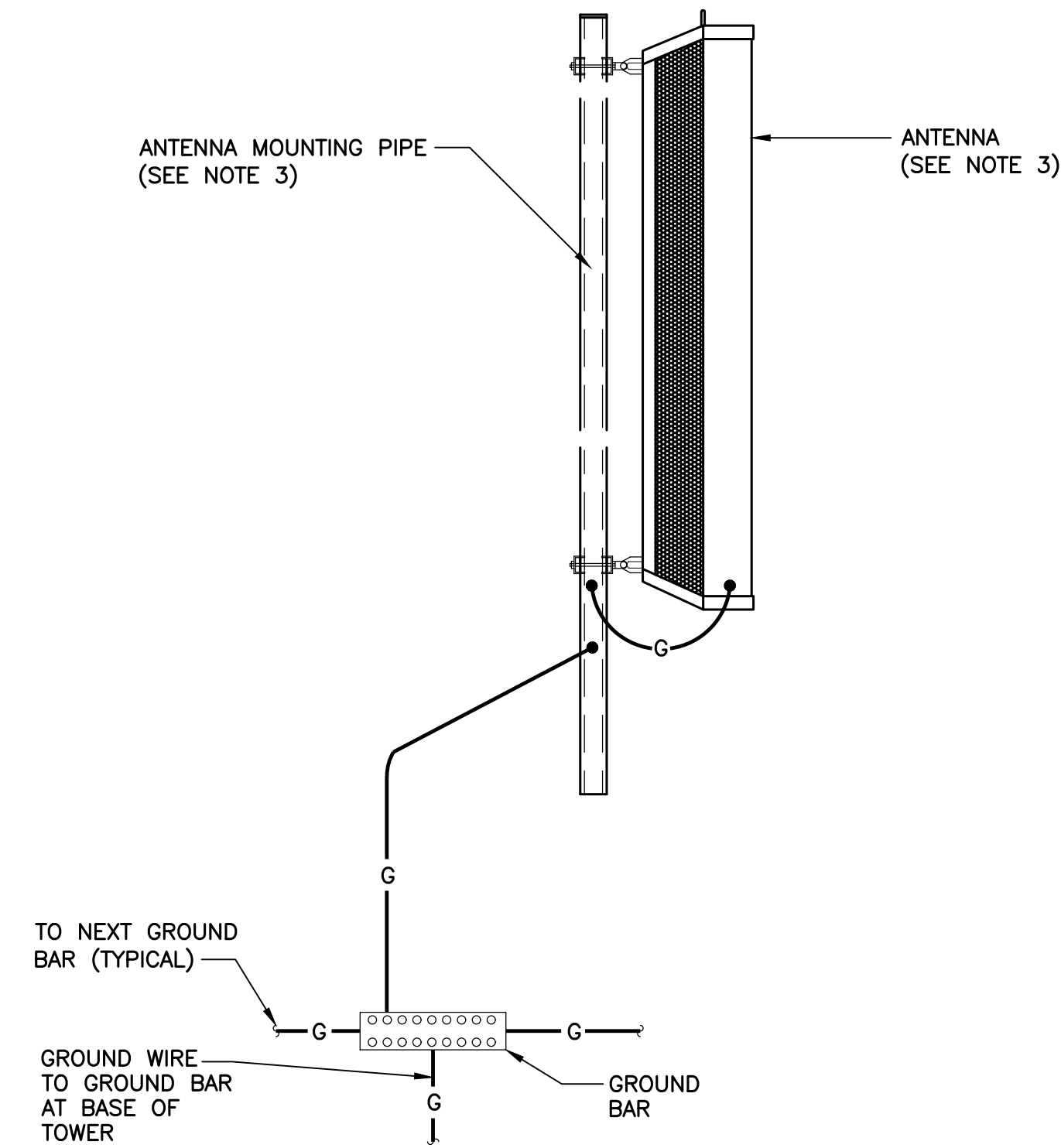
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
2	01/23/24	TJR	TLL	ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES
1	07/13/19	CAG	TLL	ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYOUT
0	1/20/19	CAG	TLL	ISSUED FOR CONSTRUCTION



**CEN TEK engineering**  
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**T-MOBILE NORTHEAST LLC**  
WIRELESS COMMUNICATIONS FACILITY  
**DARIEN/ DTWN + RT-1**  
**SITE ID: CT11290C**  
3 MECHANIC STREET  
DARIEN, CT 06820

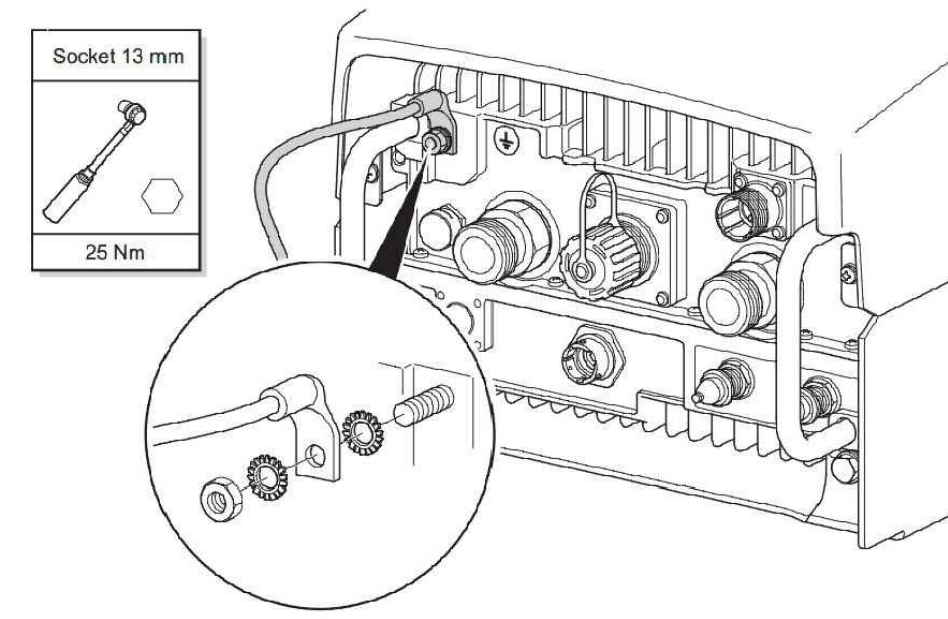
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SCALE: AS NOTED  
JOB NO. 18058.58  
**COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.**  
**C-1**  
Sheet No. 4 of 6



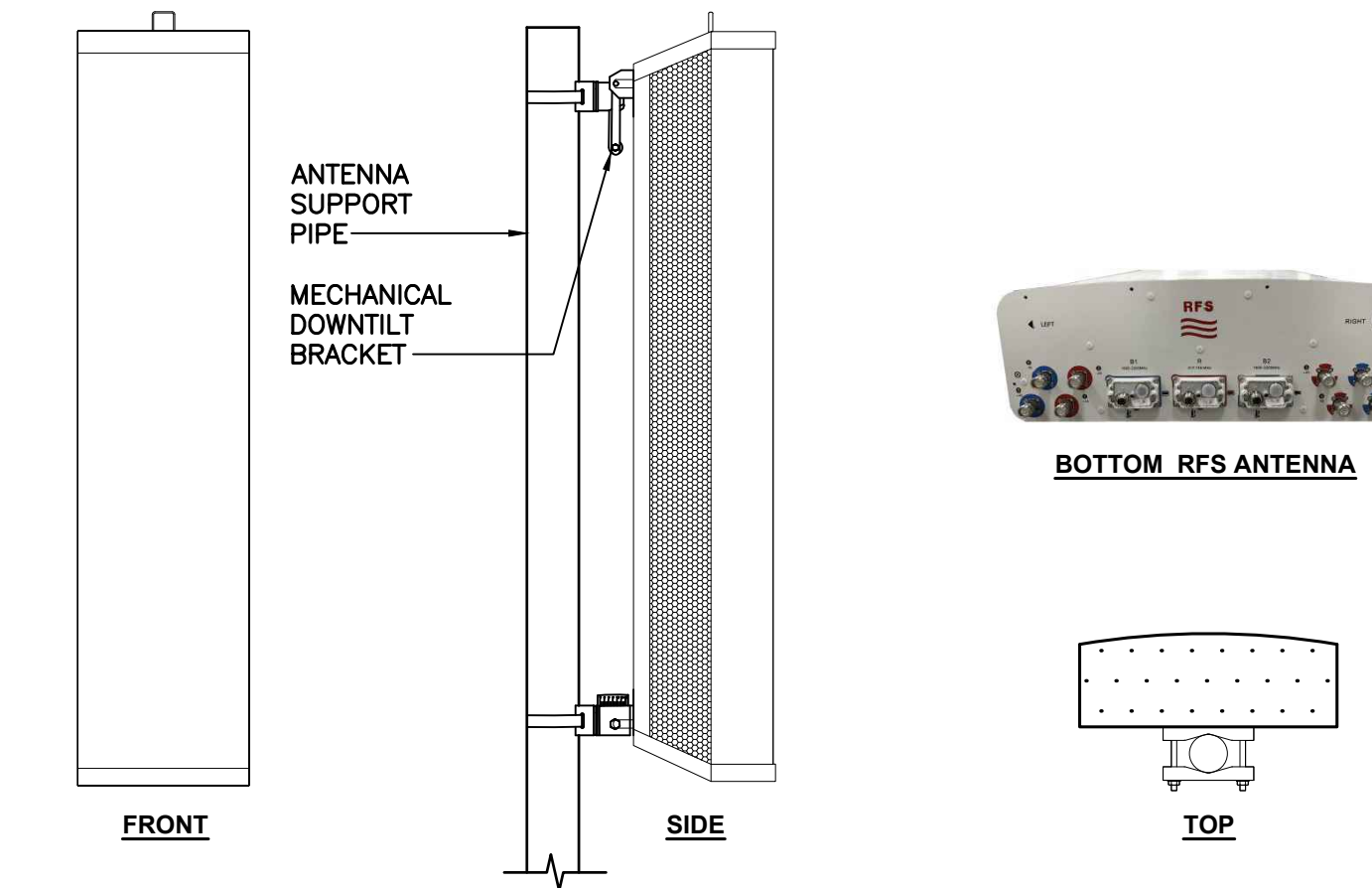
**NOTES:**

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

**1 TYPICAL ANTENNA GROUNDING DETAIL**  
C-2 SCALE: NOT TO SCALE



**2 TYPICAL RRU GROUNDING DETAIL**  
C-2 SCALE: NOT TO SCALE



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: RFS MODEL: APXVAARR18_43-U-NA20	72"L x 24.0"W x 8.5"D	154 LBS.

**3 PROPOSED ANTENNA DETAIL**  
C-2 SCALE: NOT TO SCALE

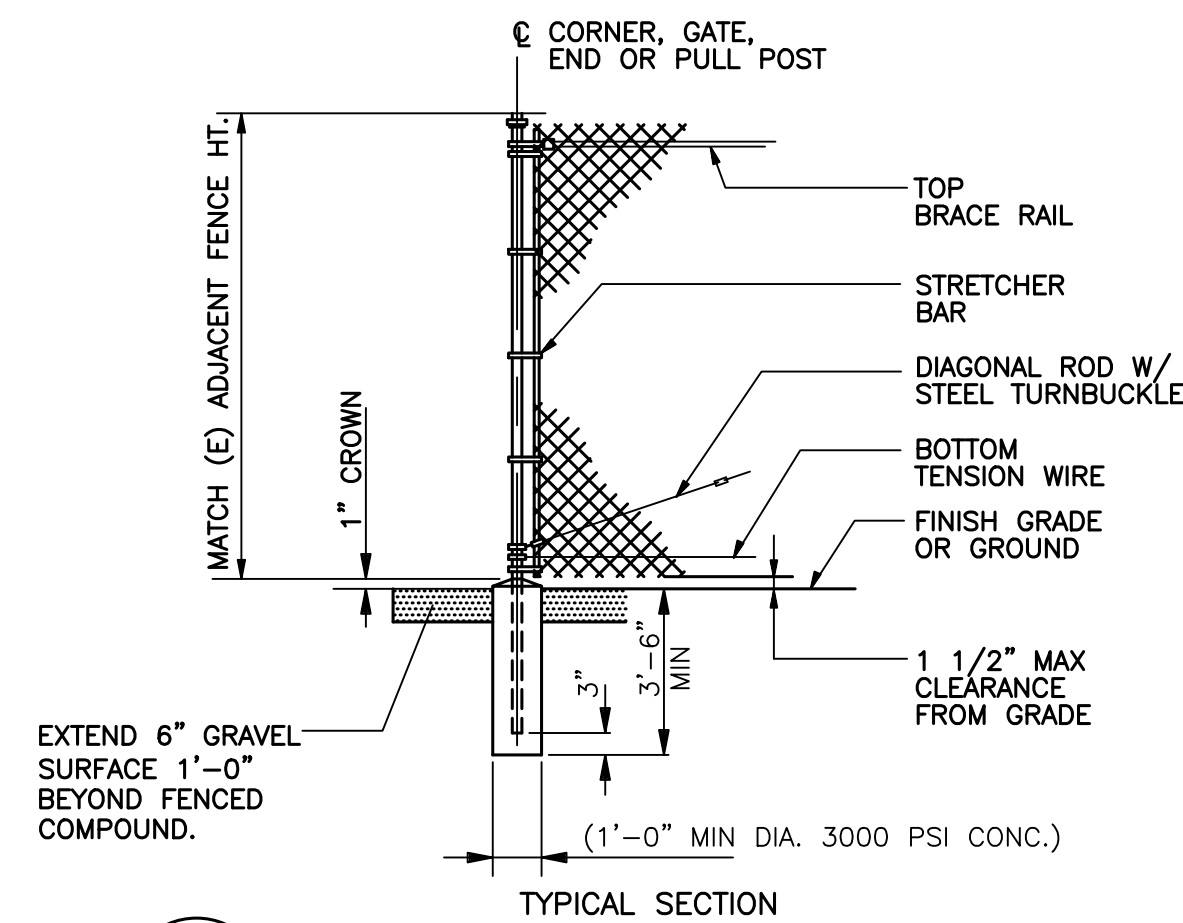


ISOMETRIC VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RADIO 4449 B71B12	14.9"L x 13.2"W x 10.4"D	74 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

**NOTES:**  
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T-MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.

**4 PROPOSED RRU DETAIL**  
C-2 SCALE: NOT TO SCALE

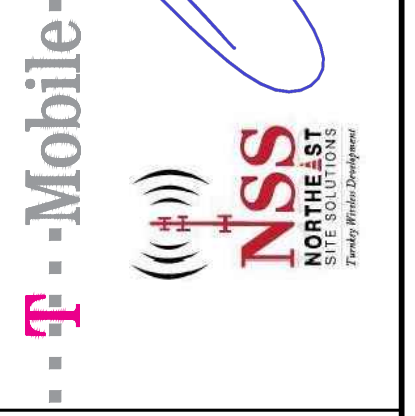
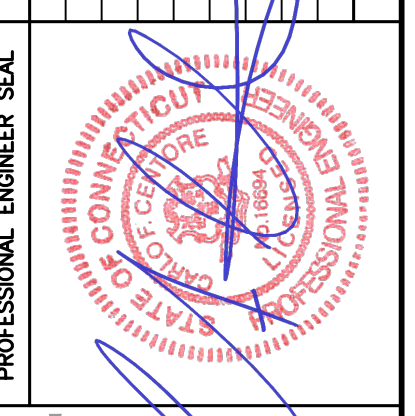


**5 WOVEN WIRE FENCE DETAIL**  
C-2 SCALE: NOT TO SCALE

**WOVEN WIRE FENCE NOTES:**

1. LINE POST: 2" SCHEDULE 40 PIPE PER ASTM-F1083.
2. GATE FRAME: 1 1/2" SCHEDULE 40 PIPE PER ASTM-F1083.
3. TOP RAIL & BRACE RAIL: 1 1/2" SCHEDULE 40 PIPE PER ASTM-F1083.
4. FABRIC: 12 GA. CORE WIRE SIZE 1 1/2" MESH, CONFORMING TO ASTM-A392.
5. TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL AT POSTS AND RAILS. A SINGLE WRAP OF FABRIC TIE AND TENSION WIRE BY HOG RINGS SPACED 24" INTERVALS.
6. TENSION WIRE: 7 GA. GALVANIZED STEEL.
7. LOCAL ORDINANCE OF BARBED WIRE REQUIREMENTS SHALL BE COMPLIED WITH IF APPLICABLE.
8. FENCE HEIGHT TO MATCH HEIGHT OF ADJACENT CHAINLINK FENCE.

REV.	DATE	BY	CHK'D BY	DESCRIPTION
2	01/23/24	TJR		ISSUED FOR CONSTRUCTION - REUSED PER UPDATED CODES
1	07/17/19	CAG		ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYOUT
0	1/07/19	TJR		ISSUED FOR CONSTRUCTION



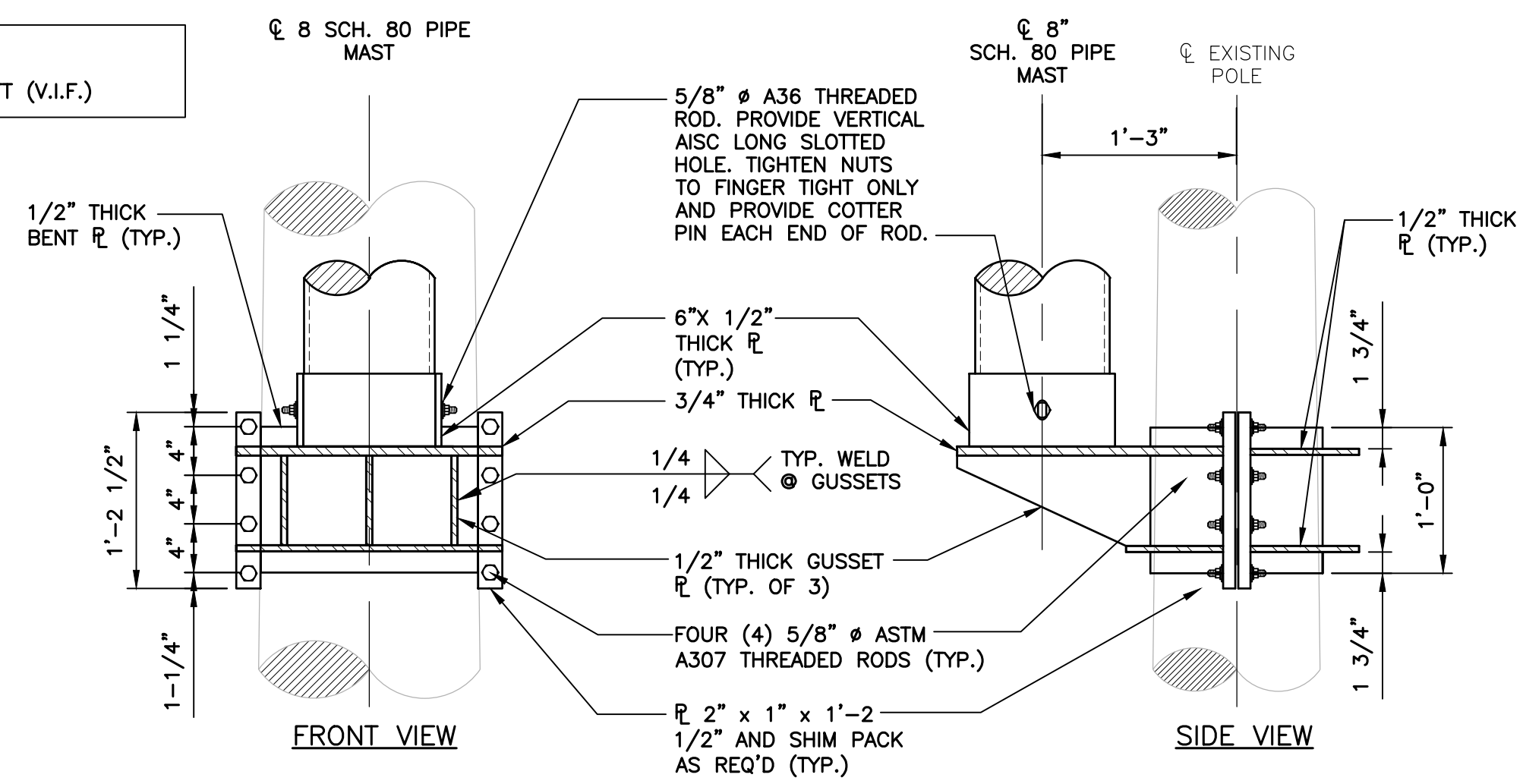
**CEN TEK** engineering  
Center on Solutions  
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**T-MOBILE NORTHEAST LLC**  
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**SITE ID: CT11290C**  
3 MECHANIC STREET  
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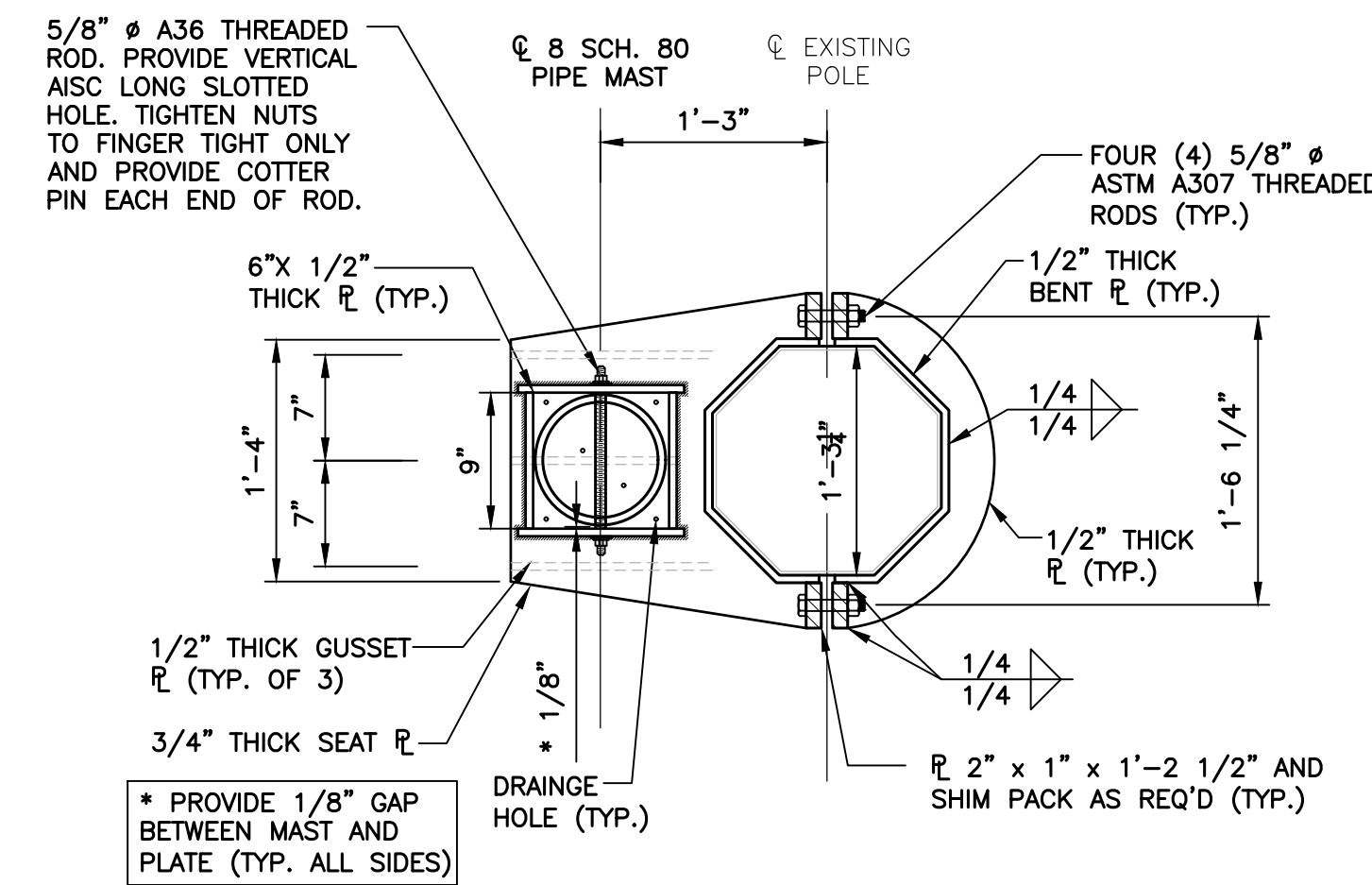
DATE: 10/1/18  
SCALE: AS NOTED  
JOB NO. 18058.58

TYPICAL DETAILS

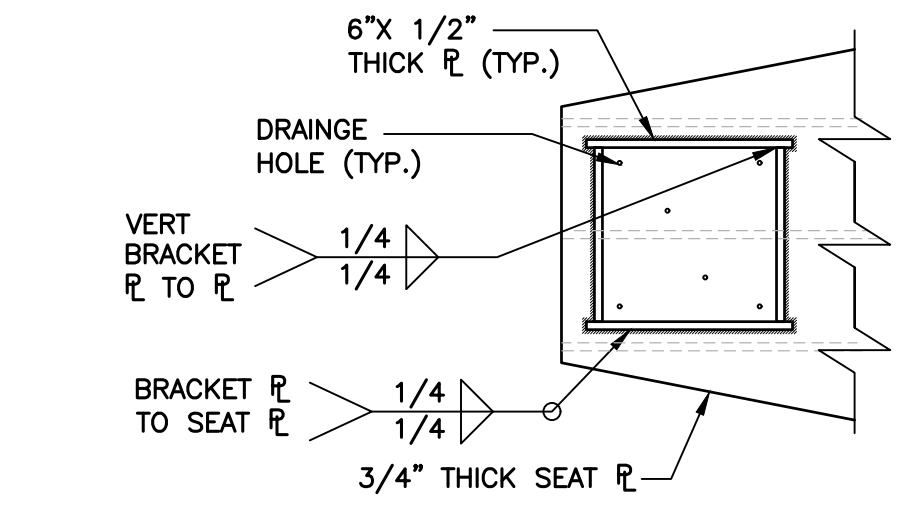
**NOTE:**  
1. POLE TAPER = 0.2099"/FT (V.I.F.)



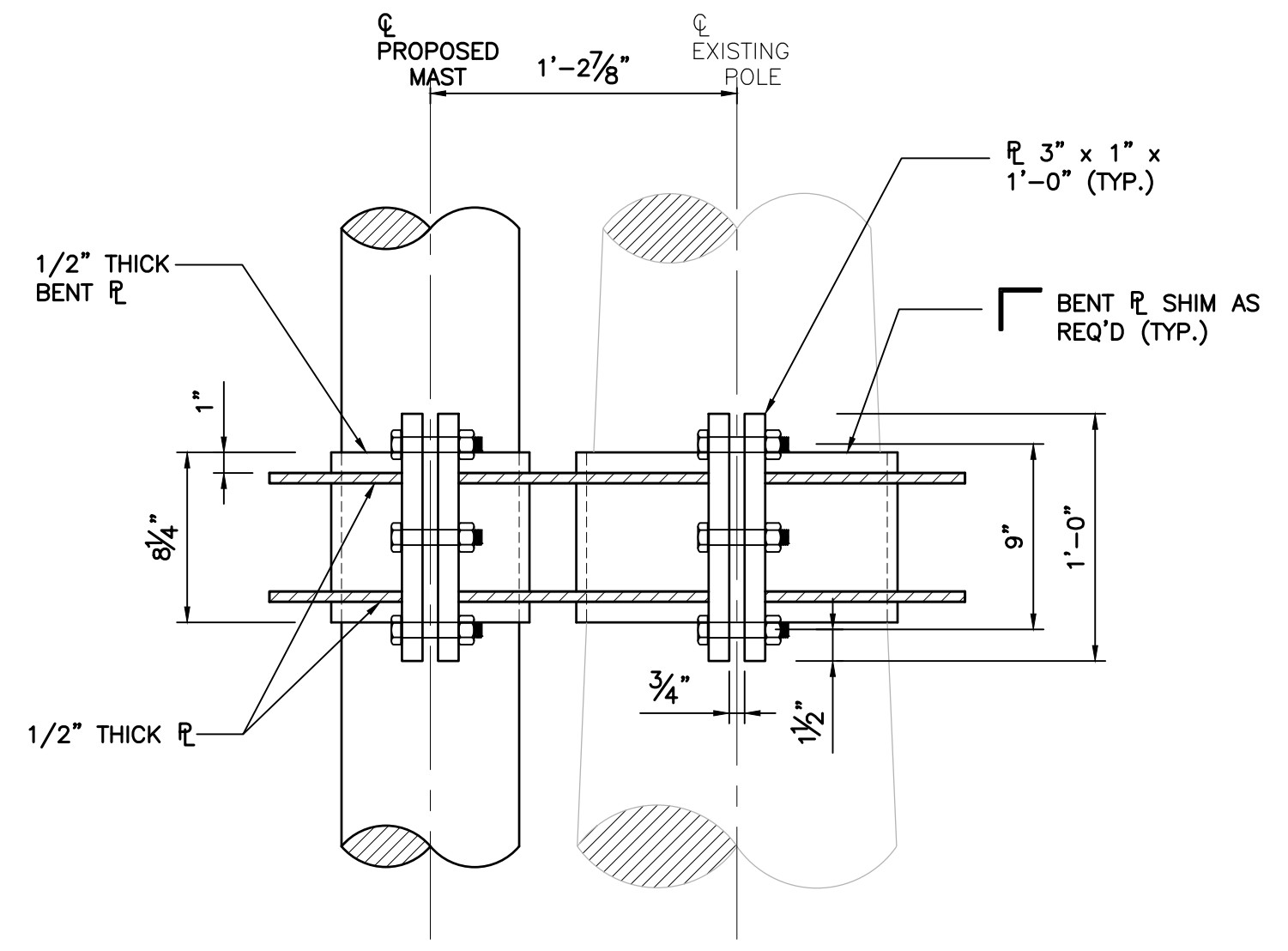
**1 BOTTOM PCS BRACKET DETAIL**  
SCALE: 1" = 1'-0"



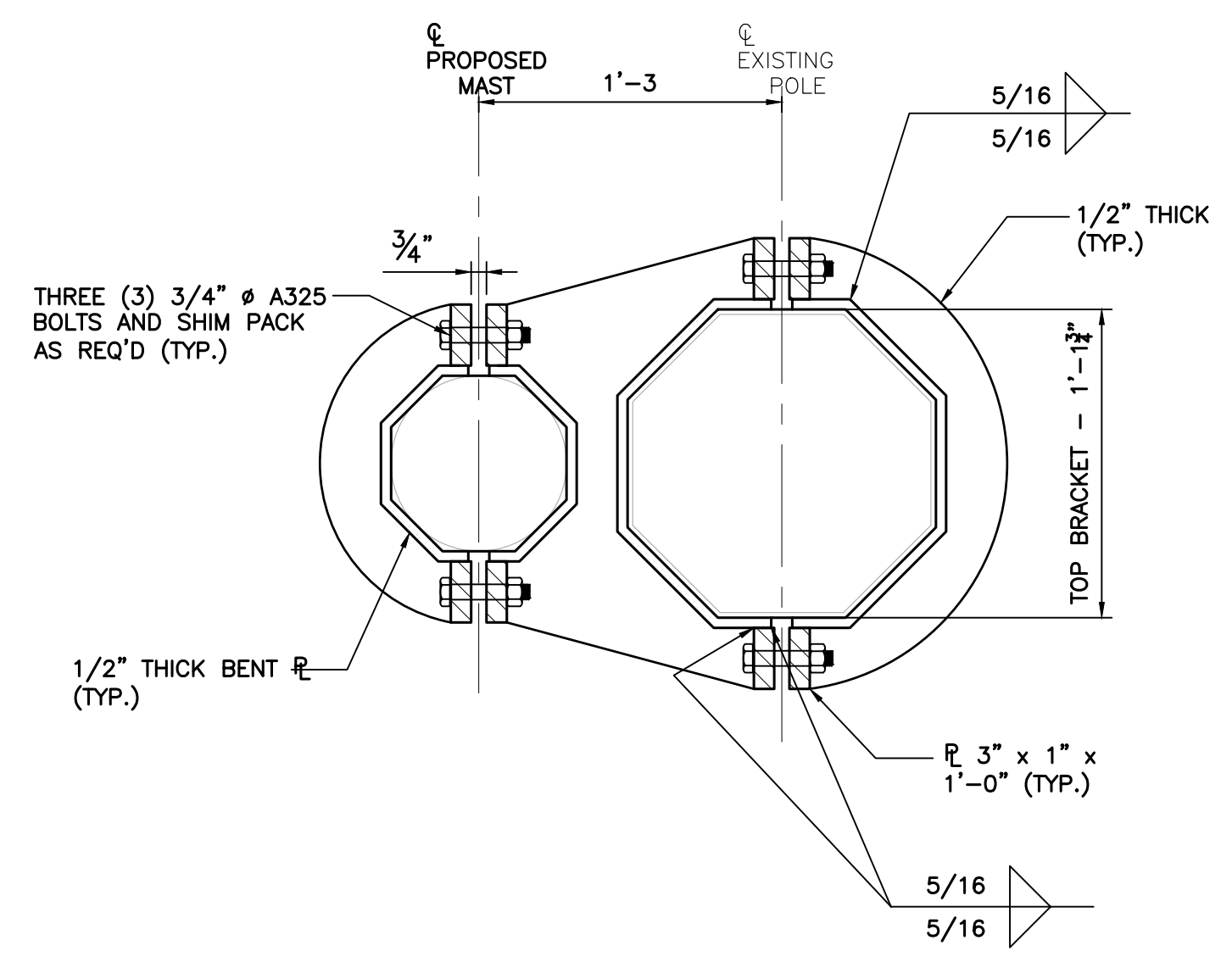
**2 BOTTOM PCS BRACKET PLAN VIEW**  
SCALE: 1" = 1'-0"



**3 BRACKET ASSEMBLY DETAIL**  
SCALE: 1" = 1'-0"



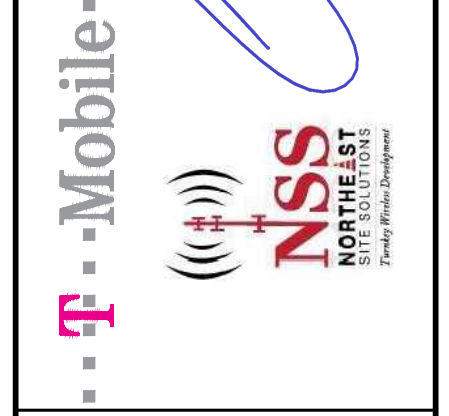
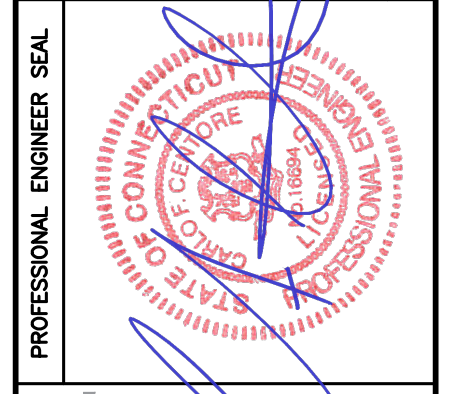
**4 TOP BRACKET DETAIL**  
SCALE: 1-1/2" = 1'-0"



**5 TOP BRACKET PLAN VIEW**  
SCALE: 1-1/2" = 1'-0"

**NOTE:**  
1. POLE TAPER = 0.2099"/FT (V.I.F.)

REV.	DATE	BY	CHK'D BY	DESCRIPTION
2	01/23/24	TJR		ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES
1	07/17/18	CAG		ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYOUT
0	1/20/18	TJR		ISSUED FOR CONSTRUCTION



**T-MOBILE NORTHEAST LLC**  
WIRELESS COMMUNICATIONS FACILITY  
**DARIEN/ DTWN + RT-1**  
**SITE ID: CT11290C**  
3 MECHANIC STREET  
DARIEN, CT 06820

**DATE:** 10/1/18  
**SCALE:** AS NOTED  
**JOB NO.** 18058.58

**MAST DETAILS**

**S-1**

Sheet No. 6 of 6



# Exhibit D

## **Structural Analysis Report**

**Structural Analysis of  
Antenna Mast and Tower**

*T-Mobile Site Ref: CT11290C*

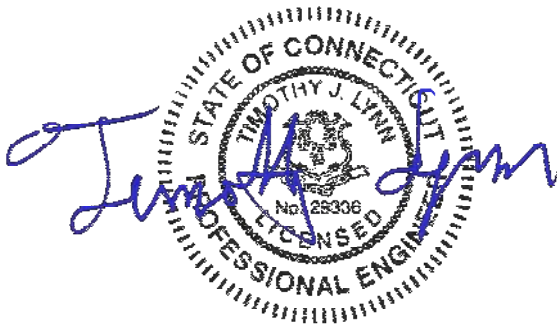
*Eversource Structure No. 1068  
115' Electric Transmission Pole*

*3 Mechanic Street  
Darien, CT*

*CEN TEK Project No. 23058.10*

*Date: January 24, 2024*

*Max Stress Ratio = 97%*



**Prepared for:**  
T-Mobile USA  
35 Griffin Road  
Bloomfield, CT 06002

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- ANALYSIS
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- RESULTS
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## Introduction

The purpose of this report is to analyze the existing mast and 115' utility pole located at 3 Mechanic Street in Darien, CT for the proposed antenna and equipment upgrade by T-Mobile.

The existing/proposed loads consist of the following:

- **T-MOBILE (Existing to Remain):**  
**Coax Cables:** Eighteen (18) 1-1/4"  $\varnothing$  coax cables running on the outside of the tower as indicated in section 4 of this report.
- **T-MOBILE (Existing to Relocate):**  
**Antennas:** Three (3) Andrew ATSBT-TOP-FM-4G Smart Bias Tees mounted relocated from existing pipe mast to new pipe mast.
- **T-MOBILE (Existing to be Removed):**  
**Antennas:** Three (3) Andrew SBNHH-1D65A panel antennas mounted on a mast with a RAD center elevation of 120-ft above tower base plate.
- **T-MOBILE (Proposed):**  
**Antennas:** Three (3) RFS APXVAARR18\_43 panel antennas mounted on a proposed mast with a RAD center elevation of 124-ft above tower base plate.  
**Coax Cables:** Six (6) 1-1/4"  $\varnothing$  coax cables running on the outside of the tower as indicated in section 4 of this report.

## Primary assumptions used in the analysis

- Design steel stresses are defined by AISC-LRFD 14<sup>th</sup> edition for design of the antenna Mast and antenna supporting elements.
- ASCE Manual No. 48-19, "Design of Steel Transmission Pole Structures", defines allowable steel stresses for evaluation of the utility pole.
- All utility pole members are adequately protected to prevent corrosion of steel members.
- All proposed antenna mounts are modeled as listed above.
- Pipe mast will be properly installed and maintained.
- No residual stresses exist due to incorrect pole erection.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds conform to the requirements of AWS D1.1.
- Pipe mast and utility pole will be in plumb condition.
- Utility pole was properly installed and maintained and all members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
- Any deviation from the analyzed loading will require a new analysis for verification of structural adequacy.

## A n a l y s i s

The proposed replacement mast consisting of a 8-in x 21.0-ft long SCH. 80 pipe (O.D. = 8.625") connected at two (2) points to the existing tower was analyzed for its ability to resist loads prescribed by the TIA-222H standard. Section 5 of this report details these gravity and lateral wind loads. NESC prescribed loads were also applied to the mast in order to obtain reactions needed for analyzing the utility pole structure. These loads are developed in Section 7 of this report. Load cases and combinations used in RISA-3D for TIA-222-H loading and for NESC/NU loading are listed in report Sections 6 and 8, respectively.

Structural analysis of the existing utility tower structure was completed using the current version of PLS-Pole computer program licensed to CENTEK Engineering, Inc.

## D e s i g n B a s i s

Our analysis was performed in accordance with TIA-222-H, ASCE 48-19, "Design of Steel Transmission Pole Structures", NESC C2-2023 and Northeast Utilities Design Criteria.

### ▪ UTILITY POLE ANALYSIS

The purpose of this analysis is to determine the adequacy of the existing utility pole to support the proposed antenna loads. The loading and design requirements were analyzed in accordance with the Eversource Design Criteria Table, NESC C2-2023 ~ Construction Grade B, and ASCE 48-19.

Load cases considered:

#### Load Case 1: NESC Heavy Wind

Wind Pressure.....	4.0 psf
Radial Ice Thickness.....	0.5"
Vertical Overload Capacity Factor.....	1.50
Wind Overload Capacity Factor.....	2.50
Wire Tension Overload Capacity Factor.....	1.65

#### Load Case 2: NESC Extreme Wind

Wind Speed.....	110 mph <sup>(1)</sup>
Radial Ice Thickness.....	0"

### ▪ MAST ASSEMBLY ANALYSIS

Mast, appurtenances and connections to the utility tower were analyzed and designed in accordance with TIA-222-H and AISC standards.

Load cases considered:

#### Load Case 1:

Wind Speed.....	130 mph <sup>(2022 CSBC Appendix-P)</sup>
Radial Ice Thickness.....	0"

#### Load Case 2:

Wind Pressure.....	50 mph wind pressure
Radial Ice Thickness.....	1.0"

## Results

- ANTENNA MAST

The proposed replacement antenna mast was determined to be structurally **adequate**.

Component	Design Limit	Stress Ratio (percentage of capacity)	Result
8" Pipe	Bending	48.7%	<b>PASS</b>
Connection	Shear	44.0%	<b>PASS</b>

- UTILITY POLE

This analysis finds that the subject utility pole is adequate to support the proposed antenna mast and related appurtenances. The pole stresses meet the requirements set forth by the ASCE Manual No. 48-19, "Design of Steel Transmission Pole Structures", for the applied NESC Heavy and Hi-Wind load cases. The detailed analysis results are provided in Section 6 of this report. The analysis results are summarized as follows:

A maximum usage of **97.34%** occurs in the utility pole under the **NESC 250C** loading condition.

### POLE SECTION:

The utility pole was found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (% of capacity)	Result
Section 4	0.00' -157.08' (AGL)	97.34%	<b>PASS</b>

### BASE PLATE:

The base plate was found to be within allowable limits from the PLS output.

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Base Plate	Bending	93.04%	<b>PASS</b>

- FOUNDATION AND ANCHORS

The existing foundation consists of a 6-ft diameter x 18-ft long reinforced concrete caisson. The base of the tower is connected to the foundation by means of (12) 2.25"Ø, ASTM A432 Grade 60 anchor bolts embedded into the concrete foundation structure.

### BASE REACTIONS:

From PLS-Pole analysis of utility pole based on NESC/Eversource prescribed loads.

Load Case	Shear	Axial	Moment
NESC Heavy Wind	17.66 kips	47.37 kips	1619.48 ft-kips
NESC Extreme Wind	25.88 kips	24.74 kips	2179.35 ft-kips

Note 1 – 10% increase to be applied to tower base reactions for foundation verification per OTRM 051

**ANCHOR BOLTS:**

The anchor bolts were found to be within allowable limits.

Tower Component	Design Limit	Stress Ratio (% of capacity)	Result
Anchor Bolts	Tension	47.5%	<b>PASS</b>

**FOUNDATION:**

The foundation was found to be within allowable limits.

Design Limit	Original Design Reaction	Proposed Reaction <sup>(1)</sup>	Result
Shear	29.5 kips	28.5 kips	<b>PASS</b>
Moment	2414.4 ft-kips	2397.4 ft-kips	<b>PASS</b>

| Note 1: 10% increase to PLS base reactions used in foundation analysis per OTRM 051.

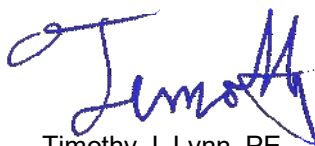
**Conclusion**

This analysis shows that the subject utility tower **and proposed replacement antenna mast are adequate** to support the proposed equipment upgrade.

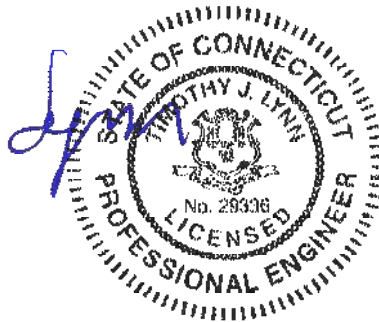
The analysis is based, in part on the information provided to this office by Eversource and T-Mobile. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE  
 Structural Engineer





STANDARD CONDITIONS FOR FURNISHING OF  
PROFESSIONAL ENGINEERING SERVICES ON  
EXISTING STRUCTURES

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of CENTEK engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to CENTEK engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222.
- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. CENTEK engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

## GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM ~ PLS-POLE

PLS-POLE provides all of the capabilities a structural engineer requires to design transmission, substation or communications structures. It does so using a simple easy to use graphical interface that rests upon our time tested finite element engine. Regardless of whether you want to model a simple wood pole or a guyed steel X-Frame; PLS-POLE can handle the job simply, reliably and efficiently.

### Modeling Features:

- Structures are made of standard reusable components that are available in libraries. You can easily create your own libraries or get them from a manufacturer
- Structure models are built interactively using interactive menus and graphical commands
- Automatic generation of underlying finite element model of structure
- Steel poles can have circular, 4, 6, 8, 12, 16, or 18-sided, regular, elliptical or user input cross sections (flat-to-flat or tip-to-tip orientations)
- Steel and concrete poles can be selected from standard sizes available from manufacturers
- Automatic pole class selection
- Cross brace position optimizer
- Capability to specify pole ground line rotations
- Capability to model foundation displacements
- Can optionally model foundation stiffness
- Guys are easily handled (modeled as exact cable elements in nonlinear analysis)
- Powerful graphics module (members color-coded by stress usage)
- Graphical selection of joints and components allows graphical editing and checking
- Poles can be shown as lines, wire frames or can be rendered as 3-d polygon surfaces

### Analysis Features:

- Automatic distribution of loads in 2-part suspension insulators (v-strings, horizontal vees, etc.)
- Design checks for ASCE, ANSI/TIA/EIA 222 (Revisions F and G) or other requirements
- Automatic calculation of dead and wind loads
- Automated loading on structure (wind, ice and drag coefficients) according to:
  - ASCE 74-1991
  - NESC 2002
  - NESC 2007
  - IEC 60826:2003
  - EN50341-1:2001 (CENELEC)
  - EN50341-3-9:2001 (UK NNA)
  - EN50341-3-17:2001 (Portugal NNA)
  - ESAA C(b)1-2003 (Australia)
  - TPNZ (New Zealand)
  - REE (Spain)
  - EIA/TIA 222-F
  - ANSI/TIA 222-G
  - CSA S37-01
- Automated microwave antenna loading as per EIA/TIA 222-F and ANSI/TIA 222-G
- Detects buckling by nonlinear analysis

**CEN TEK** Engineering, Inc.  
Structural Analysis – 115-ft Pole # 1068  
T-Mobile Antenna Upgrade – CT11290C  
Darien, CT  
January 24, 2024

Results Features:

- Detects buckling by nonlinear analysis
- Easy to interpret text, spreadsheet and graphics design summaries
- Automatic determination of allowable wind and weight spans
- Automatic determination of interaction diagrams between allowable wind and weight spans
- Automatic tracking of part numbers and costs

*Criteria for Design of PCS Facilities On or  
Extending Above Metal Electric Transmission  
Towers & Analysis of Transmission Towers  
Supporting PCS Masts* <sup>(1)</sup>

*Introduction*

This criteria is the result from an evaluation of the methods and loadings specified by the separate standards, which are used in designing telecommunications towers and electric transmission towers. That evaluation is detailed elsewhere, but in summary; the methods and loadings are significantly different. This criteria specifies the manner in which the appropriate standard is used to design PCS facilities including masts and brackets (hereafter referred to as “masts”), and to evaluate the electric transmission towers to support PCS masts. The intent is to achieve an equivalent level of safety and security under the extreme design conditions expected in Connecticut and Massachusetts.

ANSI Standard TIA-222-H covering the design of telecommunications structures specifies LRFD design approach. This approach applies the loads from extreme weather loading conditions, and designs the structure so that it does not exceed code defined percentage of failure strength.

ANSI Standard C2-2023 (National Electrical Safety Code) covering the design of electric transmission metal structures is based upon an ultimate strength/yield stress design approach. This approach applies a multiplier (overload capacity factor) to the loads possible from extreme weather loading conditions, and designs the structure so that it does not exceed its ultimate strength (yield stress).

Each standard defines the details of how loads are to be calculated differently. Most of the Eversource effort in “unifying” both codes was to establish what level of strength each approach would provide, and then increasing the appropriate elements of each to achieve a similar level of security under extreme weather loadings.

Two extreme weather conditions are considered. The first is an extreme wind condition (hurricane) based upon a 1700-year recurrence for TIA-22-H risk category III and a 100-year recurrence for NESC Grade B. The second is a winter condition combining wind and ice loadings.

The following sections describe the design criteria for any PCS mast extending above the top of an electric transmission tower, and the analysis criteria for evaluating the loads on the transmission tower from such a mast from the lower portions of such a mast, and loads on the pre-existing electric lower portions of such a mast, and loads on the pre-existing electric transmission tower and the conductors it supports.

| Note 1: Prepared from documentation provide from Northeast Utilities.

## *P C S M a s t*

The PCS facility (mast, external cable/trays, including the initial and any planned future support platforms, antennas, etc. extending the full height above the top level of the electric transmission structure) shall be designed in accordance with the provisions of TIA 222-H:

## *E L E C T R I C T R A N S M I S S I O N T O W E R*

The electric transmission tower shall be analyzed using yield stress theory in accordance with the attached table titled “Eversource Design Criteria”. This specifies uniform loadings (different from the TIA loadings) on the each of the following components of the installed facility:

- PCS mast for its total height above ground level, including the initial and planned future support platforms, antennas, etc. above the top of an electric transmission structure.
- Conductors are related devices and hardware.
- Electric transmission structure. The loads from the PCS facility and from the electric conductors shall be applied to the structure at conductor and PCS mast attachment points, where those load transfer to the tower.

The uniform loadings and factors specified for the above components in the table are based upon the National Electrical Safety Code 2023 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to TIA and its loads and factors with the exceptions noted above. (Note that the NESC does not require the projected wind surfaces of structures and equipment to be increased by the ice covering.)

In the event that the electric transmission tower is not sufficient to support the additional loadings of the PCS mast, reinforcement will be necessary to upgrade the strength of the overstressed members.

Overhead Transmission Standards

Attachment A  
Eversource Design Criteria

		Attachment A ES Design Criteria	Basic Wind Speed	Pressure	Height Factor	Gust Factor	Load or Stress Factor	Force Coef. - Shape Factor
			V (MPH)	Q (PSF)	Kz	Gh		
Ice Condition	TIA/EIA	Antenna Mount	TIA	TIA (0.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESCH Heavy	Tower/Pole Analysis with antennas extending above top of Tower/Pole (Yield Stress)	----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole (on two faces)	----	4	1	1	2.5	1.6 Flat Surfaces 1.3 Round Surfaces
	Conductors:		Conductor Loads Provided by ES					
High Wind Condition	TIA/EIA	Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design	TIA
	NESCH Extreme Wind	Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250C: Extreme Wind Loading Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
	Conductors:		Conductor Loads Provided by ES					
NESCH Extreme Ice with Wind Condition*		Tower/Pole Analysis with antennas extending above top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load 1.25 x Gust Response Factor Apply a 1.25 x Gust Response Factor to all telecommunication equipment projected above top of tower/pole and apply a 1.0 x Gust Response Factor to the tower/pole structure					1.6 Flat Surfaces 1.3 Round Surfaces
		Tower/Pole Analysis with antennas below top of Tower/Pole	For wind speed use OTRM 060 Map 1, Rule 250D: Extreme Ice with Wind Loading 4 PSF Wind Load Height above ground is based on overall height to top of tower/pole					1.6 Flat Surfaces 1.3 Round Surfaces
	Conductors:		Conductor Loads Provided by ES					

\*Only for structures installed after 2007

Communication Antennas on Transmission Structures

Eversource Approved by: CPS (CT/WMA) JCC (NH/EMA)	Design	OTRM 059	Rev. 1 11/19/2018
		Page 8 of 10	

**Overhead Transmission Standards**

determined from NESC applied loading conditions (not TIA Loads) on the structure and mount as specified below, and shall include the wireless communication mast and antenna loads per NESC criteria)

The strength reduction factor obtained from the field investigation shall be applied to the members or connections that are showing signs of deterioration from their original condition. With the written approval of Eversource Transmission Line Engineering on a case by case the existing structures may be analyzed initially using the current NESC code, then it is permitted to use the original design code with the original conductor load should the existing tower fail the current NESC code.

The structure shall be analyzed using yield stress theory in accordance with Attachment A, "Eversource Design Criteria." This specifies uniform loadings (different from the TIA loadings) on each of the following components of the installed facility:

- a) Wireless communication mast for its total height above ground level, including the initial and any planned future equipment (Support Platforms, Antennas, TMA's etc.) above the top of an electric transmission structure.
- b) Conductors and related devices and hardware (wire loads will be provided by Eversource).
- c) Electric Transmission Structure

- i) The loads from the wireless communication equipment components based on NESC and Eversource Criteria in Attachment A, and from the electric conductors shall be applied to the structure at conductor and wireless communication mast attachment points, where those loads transfer to the tower. ii)
- ii) Shape Factor Multiplier:

NESC Structure Shape	Cd
Polyround (for polygonal steel poles)	1.3
Flat	1.6
Open Lattice	3.2
Pole with Coaxial Cable	See Below Table

- iii) When Coaxial Cables are mounted alongside the pole structure, the shape multiplier shall be:

Mount Type	Cable Cd	Pole Cd
Coaxial Cables on outside periphery (One layer)	1.45	1.45
Coaxial Cables mounted on stand offs	1.6	1.6

- d) The uniform loadings and factors specified for the above components in Attachment A, "Eversource Design Criteria" are based upon the National Electric Safety Code 2007 Edition Extreme Wind (Rule 250C) and Combined Ice and Wind (Rule 250B-Heavy) Loadings. These provide equivalent loadings compared to the TIA and its loads and factors with the exceptions noted above.

<b>Communication Antennas on Transmission Structures</b>			
<b>Eversource</b> Approved by: CPS (CT/WMA) JCC (NH/EMA)	<b>Design</b>	<b>OTRM 059</b>	<b>Rev. 1</b> <b>11/19/2018</b>
		<b>Page 3 of 10</b>	

Job :  
Description:

Spec. Number  
Computed by  
Checked by

Page of  
Sheet of  
Date 5/26/09  
Date

**INPUT DATA**

TOWER ID: 1068

Structure Height (ft) : 115

Wind Zone : Central CT (green)

Wind Speed : 110 mph

Tower Type :  Suspension  
 Strain

Extreme Wind Model : PCS Addition

**Shield Wire Properties:**

	BACK	AHEAD
NAME =	OPGW-012	OPGW-012
DESCRIPTION =	2-Groove	2-Groove
STRANDING =	12 #8 FOCAS	12 #8 FOCAS
DIAMETER =	0.635 in	0.635 in
WEIGHT =	0.563 lb/ft	0.563 lb/ft

**Conductor Properties:**

		BACK	AHEAD		
Number of Conductors per phase	NAME =	BITTERN	BITTERN	1	Number of Conductors per phase
	1272.000	1272.000			
	45/7 ACSR	45/7 ACSR			
	DIAMETER = 1.345 in	1.345 in			
	WEIGHT = 1.432 lb/ft	1.432 lb/ft			

Insulator Weight = 200 lbs

Broken Wire Side = AHEAD SPAN

**Horizontal Line Tensions:**

	BACK		AHEAD	
	Shield	Conductor	Shield	Conductor
NESC HEAVY =	3,800	10,000	3,800	10,000
EXTREME WIND =	2,500	6,751	2,500	6,751
LONG. WIND =	na	na	na	na
250D COMBINED =	na	na	na	na
NESC W/O OLF =	na	na	na	na
60 DEG F NO WIND =	1,319	4,289	1,319	4,289

**Line Geometry:**

					SUM
LINE ANGLE (deg) =	BACK:	2	AHEAD:	2	3
WIND SPAN (ft) =	BACK:	210	AHEAD:	210	420
WEIGHT SPAN (ft) =	BACK:	217	AHEAD:	217	434





Job :  
Description:

Spec. Number  
Computed by  
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Page of  
Sheet of  
Date 5/26/09  
Date

**WIRE LOADING AT ATTACHMENTS**

TOWER ID: 

1068
------

Wind Span = 

420 ft
--------

  
 Weight Span = 

434 ft
--------

  
 Total Angle = 

3 degrees
-----------

Broken Wire Span = 

AHEAD SPAN
------------

  
 Type of Insulator Attachment = 

SUSPENSION
------------

**1. NESC RULE 250B Heavy Loading:**

	INTACT CONDITION			BROKEN WIRE CONDITION		
	Horizontal	Longitudinal	Vertical	Horizontal	Longitudinal	Vertical
Shield Wire =	901 lb	0 lb	826 lb	450 lb	4,369 lb	413 lb
Conductor =	1,685 lb	0 lb	2,279 lb	842 lb	11,496 lb	1,140 lb

**2. NESC RULE 250C Transverse Extreme Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	828 lb	0 lb	244 lb
Conductor =	1,830 lb	0 lb	1,021 lb

**3. NESC RULE 250C Longitudinal Extreme Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	244 lb
Conductor =	#VALUE!	#VALUE!	1,021 lb

**4. NESC RULE 250D Extreme Ice & Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	1,127 lb
Conductor =	#VALUE!	#VALUE!	2,287 lb

**5. NESC RULE 250B w/o OLF's**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	551 lb
Conductor =	#VALUE!	#VALUE!	1,519 lb

**6. 60 Deg. F, No Wind**

	Horizontal	Longitudinal	Vertical
Shield Wire =	69 lb	0 lb	244 lb
Conductor =	225 lb	0 lb	1,021 lb

**7. Construction**

	Horizontal	Longitudinal	Vertical
Shield Wire =	104 lb	0 lb	367 lb
Conductor =	337 lb	0 lb	1,532 lb

**NOTE: All loads include required overload factors (OLF's).**



Job :  
Description:

Spec. Number  
Computed by  
Checked by

Page of  
Sheet of  
Date 5/26/09  
Date

**INPUT DATA**

TOWER ID: 1068

Structure Height (ft) : 115

Wind Zone : Central CT (green)

Wind Speed : 110 mph

Tower Type :  Suspension  
 Strain

Extreme Wind Model : PCS Addition

**Shield Wire Properties:**

	BACK	AHEAD
NAME =	OPGW-012	OPGW-012
DESCRIPTION =	2-Groove	2-Groove
STRANDING =	12 #8 FOCAS	12 #8 FOCAS
DIAMETER =	0.635 in	0.635 in
WEIGHT =	0.563 lb/ft	0.563 lb/ft

**Conductor Properties:**

		BACK	AHEAD		
Number of Conductors per phase	NAME =	LINNET	LINNET	1	Number of Conductors per phase
	336	336			
	26/7 ACSR	26/7 ACSR			
	DIAMETER =	0.720 in	0.720 in		
	WEIGHT =	0.462 lb/ft	0.462 lb/ft		

Insulator Weight = 200 lbs

Broken Wire Side = AHEAD SPAN

**Horizontal Line Tensions:**

	BACK		AHEAD	
	Shield	Conductor	Shield	Conductor
NESC HEAVY =	3,800	5,000	3,800	5,000
EXTREME WIND =	2,500	3,464	2,500	3,464
LONG. WIND =	na	na	na	na
250D COMBINED =	na	na	na	na
NESC W/O OLF =	na	na	na	na
60 DEG F NO WIND =	1,319	1,943	1,319	1,943

**Line Geometry:**

					SUM
LINE ANGLE (deg) =	BACK:	2	AHEAD:	2	3
WIND SPAN (ft) =	BACK:	210	AHEAD:	210	420
WEIGHT SPAN (ft) =	BACK:	217	AHEAD:	217	434



Job :  
Description:

Spec. Number  
Computed by  
Checked by

Page of  
Sheet of  
Date 5/26/09  
Date

**WIRE LOADING AT ATTACHMENTS**

TOWER ID: 

1068
------

Wind Span = 

420 ft
--------

  
Weight Span = 

434 ft
--------

  
Total Angle = 

3 degrees
-----------

Broken Wire Span = 

AHEAD SPAN
------------

  
Type of Insulator Attachment = 

SUSPENSION
------------

**1. NESC RULE 250B Heavy Loading:**

	INTACT CONDITION			BROKEN WIRE CONDITION		
	Horizontal	Longitudinal	Vertical	Horizontal	Longitudinal	Vertical
Shield Wire =	901 lb	0 lb	826 lb	450 lb	4,369 lb	413 lb
Conductor =	1,034 lb	0 lb	1,395 lb	517 lb	5,748 lb	697 lb

**2. NESC RULE 250C Transverse Extreme Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	828 lb	0 lb	244 lb
Conductor =	972 lb	0 lb	601 lb

**3. NESC RULE 250C Longitudinal Extreme Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	244 lb
Conductor =	#VALUE!	#VALUE!	601 lb

**4. NESC RULE 250D Extreme Ice & Wind Loading:**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	1,127 lb
Conductor =	#VALUE!	#VALUE!	1,529 lb

**5. NESC RULE 250B w/o OLF's**

	Horizontal	Longitudinal	Vertical
Shield Wire =	#VALUE!	#VALUE!	551 lb
Conductor =	#VALUE!	#VALUE!	930 lb

**6. 60 Deg. F. No Wind**

	Horizontal	Longitudinal	Vertical
Shield Wire =	69 lb	0 lb	244 lb
Conductor =	102 lb	0 lb	601 lb

**7. Construction**

	Horizontal	Longitudinal	Vertical
Shield Wire =	104 lb	0 lb	367 lb
Conductor =	153 lb	0 lb	901 lb

**NOTE: All loads include required overload factors (OLF's).**

# ANTENNA MAST DESIGN

## STRUCT. NO. 1068

### 3 MECHANIC STREET

### DARIEN, CT 06820



VICINITY MAP



### PROJECT SUMMARY

SITE ADDRESS: 3 MECHANIC STREET  
DARIEN, CT 06820

PROJECT COORDINATES: LAT: 41°-04'-39.25N  
LON: 73°-28'-03.29W  
ELEV:±55' AMSL

EVERSOURCE STRUCT NO: 1068

EVERSOURCE CONTACT: MASIE HARTT  
860.728.4862

T-MOBILE SITE REF.: CT11290C

T-MOBILE CONTACT: DAN REID  
203.592.8291

ANTENNA CL HEIGHT: 124'-0"

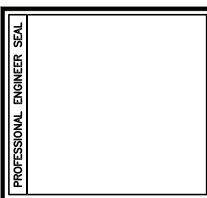
ENGINEER OF RECORD: CENTEK ENGINEERING, INC.  
63-2 NORTH BRANFORD ROAD  
BRANFORD, CT 06405

CEN TEK CONTACT: TIMOTHY J LYNN, PE  
203.433.7507

### SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	DESIGN BASIS & GENERAL NOTES	0
N-2	STRUCTURAL STEEL NOTES	0
MI-1	MODIFICATION INSPECTION REQUIREMENTS	0
S-1	TOWER ELEVATION & FEEDLINE PLAN	0
S-2	TOP CONNECTION DETAILS	0
S-3	BOTTOM CONNECTION DETAILS	0

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T-MOBILE  
PROPOSED ANTENNA MAST REPLACEMENT

**CT11290C**

EVERSOURCE STRUCTURE 1068

3 MECHANIC STREET  
DARIEN, CT 06820

DATE: 1/24/24  
SCALE: AS SHOWN  
JOB NO. 23058.10

TITLE SHEET

SHEET NO.  
**T-1**  
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## DESIGN BASIS

1. GOVERNING CODE: 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CT STATE BUILDING CODE.
2. TIA-222-H, ASCE MANUAL NO. 48-19 - "DESIGN OF STEEL TRANSMISSION POLE STRUCTURES SECOND EDITION", NESC C2-2023 AND EVERSOURCE DESIGN CRITERIA.
3. DESIGN CRITERIA

### WIND LOAD: (ANTENNA MAST)

ULTIMATE DESIGN WIND SPEED (V) = 130 MPH (2022 CSBC: APPENDIX 'P')

### WIND LOAD: (UTILITY POLE & FOUNDATION)

BASIC WIND SPEED (V) = 110 MPH (3-SECOND GUST) BASED ON NESC C2-2023, SECTION 25 RULE 250C.

## GENERAL NOTES

1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., FOR T-MOBILE, DATED 1/24/24.
2. TOWER GEOMETRY AND STRUCTURE MEMBER SIZES WERE OBTAINED FROM THE TOWER DESIGN DRAWINGS PREPARED BY UNIVERSAL POLE BRACKET CORP.; SHOP ORDER T-6291 DATED MAY 17, 1967.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GOVERNING BUILDING CODE.
4. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS SCOPE OF WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
5. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK. THIS INCLUDES VERIFYING ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA. CONTRACTOR SHALL TAKE FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF ALL FINISHED WORK.
6. PCS MAST INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF TRANSMISSION STRUCTURES. ALL SAFETY PROCEDURES, RIGGING AND ERECTION METHODS SHALL BE STANDARD TO THE INDUSTRY AND IN COMPLIANCE WITH OSHA.
7. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.
8. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
9. NO DRILLING WELDING OR TAPING IS PERMITTED ON CL&P OWNED EQUIPMENT.
- 10.

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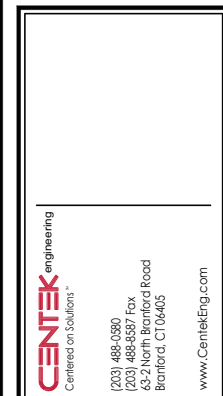
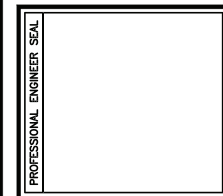
DESIGN BASIS  
AND GENERAL  
NOTES

SHEET NO.  
**N-1**  
Sheet No. 2 of 2

## STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD).
2. MATERIAL SPECIFICATIONS
  - A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
  - B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI).
  - C. STRUCTURAL STEEL (TOWER REINF. SOLID ROUND BAR)---ASTM A572\_GR50 (50 KSI)
  - D. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
  - E. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
  - F. PIPE---ASTM A53 GRADE B (FY = 35 KSI)
3. FASTENER SPECIFICATIONS
  - A. CONNECTION BOLTS---ASTM A325-N, UNLESS OTHERWISE SCHEDULED.
  - B. U-BOLTS---ASTM A307
  - C. ANCHOR RODS---ASTM F1554
  - D. WELDING ELECTRODES---ASTM E70XX FOR A36 & A572\_GR50 STEELS, ASTM E80XX FOR A572\_GR65 STEEL.
  - E. BLIND BOLTS---AS1252 PROPERTY CLASS 8.8 (FU=120 KSI).
4. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
5. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
6. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
7. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
8. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
9. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
10. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
11. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
12. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES APPEARANCE AND QUALITY OF WELDS, AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING THE SCHEDULED ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION" 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
13. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
14. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
15. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
16. ALL BOLTS SHALL BE INSTALLED PER THE REQUIREMENTS OF AISC 14TH EDITION & RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS".
17. ALL BOLTS SHALL BE INSTALLED AS SNUG-TIGHT CONNECTIONS UNLESS OTHERWISE INDICATED. CONNECTIONS SPECIFIED AS PRETENSIONED OR SLIP-CRITICAL SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THAT GIVEN IN TABLE J3.1 OF AISC 14TH EDITION.
18. LOCK WASHER ARE NOT PERMITTED FOR A325 BOLTED STEEL ASSEMBLIES.
19. LOAD INDICATOR WASHERS SHALL BE UTILIZED ON ALL PRETENSIONED OR SLIP-CRITICAL CONNECTIONS.
20. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
21. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
22. FABRICATE BEAMS WITH MILL CAMBER UP.
23. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
24. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.

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STRUCTURAL STEEL NOTES

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**N-2**  
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# MODIFICATION INSPECTION REPORT REQUIREMENTS

PRE-CONSTRUCTION		DURING CONSTRUCTION		POST-CONSTRUCTION	
SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM
X	EOR MODIFICATION INSPECTION DRAWING	-	FOUNDATIONS	X	MODIFICATION INSPECTOR RECORD REDLINE DRAWING
X	EOR APPROVED SHOP DRAWINGS	-	EARTHWORK: BACKFILL MATERIAL & COMPACTION	-	POST-INSTALLED ANCHOR ROD PULL-OUT TEST
-	EOR APPROVED POST-INSTALLED ANCHOR MPII	-	REBAR & FORMWORK GEOMETRY VERIFICATION	X	PHOTOGRAPHS
-	FABRICATION INSPECTION	-	CONCRETE TESTING		
-	FABRICATOR CERTIFIED WELDER INSPECTION	X	STEEL INSPECTION		
X	MATERIAL CERTIFICATIONS	-	POST INSTALLED ANCHOR ROD VERIFICATION		
		-	BASE PLATE GROUT VERIFICATION		
		-	CONTRACTOR'S CERTIFIED WELD INSPECTION		
		X	ON-SITE COLD GALVANIZING VERIFICATION		
		X	CONTRACTOR AS-BUILT REDLINE DRAWINGS		

- NOTES:**
1. REFER TO MODIFICATION INSPECTION NOTES FOR ADDITIONAL REQUIREMENTS
  2. "X" DENOTES DOCUMENT REQUIRED FOR INCLUSION IN MODIFICATION INSPECTION FINAL REPORT.
  3. "-" DENOTES DOCUMENT NOT REQUIRED FOR INCLUSION IN MODIFICATION INSPECTION FINAL REPORT.
  4. EOR - ENGINEER OF RECORD
  4. MPII - "MANUFACTURER'S PRINTED INSTALLATION GUIDELINES"

## GENERAL

1. THE MODIFICATION INSPECTION IS A VISUAL INSPECTION OF STRUCTURAL MODIFICATIONS, TO INCLUDE A REVIEW AND COMPILATION OF SPECIFIED SUBMITTALS AND CONSTRUCTION INSPECTIONS, AS AN ASSURANCE OF COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS PREPARED UNDER THE DIRECTION OF THE ENGINEER OF RECORD (EOR).
2. THE MODIFICATION INSPECTION IS TO CONFIRM INSTALLATION CONFIGURATION AND GENERAL WORKMANSHIP AND IS NOT A REVIEW OF THE MODIFICATION DESIGN. OWNERSHIP OF THE MODIFICATION DESIGN EFFECTIVENESS AND INTENT RESIDES WITH THE ENGINEER OF RECORD.
3. TO ENSURE COMPLIANCE WITH THE MODIFICATION INSPECTION REQUIREMENTS THE GENERAL CONTRACTOR (GC) AND THE MODIFICATION INSPECTOR (MI) COMMENCE COMMUNICATION UPON AUTHORIZATION TO PROCEED BY THE CLIENT. EACH PARTY SHALL BE PROACTIVE IN CONTACTING THE OTHER. THE EOR SHALL BE CONTACTED IF SPECIFIC GC/MI CONTACT INFORMATION IS NOT MADE AVAILABLE.
4. THE GC SHALL PROVIDE THE MI WITH A MINIMUM OF 5 BUSINESS DAYS NOTICE OF IMPENDING INSPECTIONS.
5. WHEN POSSIBLE, THE GC AND MI SHALL BE ON SITE DURING THE MODIFICATION INSPECTION TO HAVE ANY NOTED DEFICIENCIES ADDRESSED DURING THE INITIAL MODIFICATION INSPECTION.

## MODIFICATION INSPECTOR (MI)

1. THE MI SHALL CONTACT THE GC UPON AUTHORIZATION BY THE CLIENT TO:
  - REVIEW THE MODIFICATION INSPECTION REPORT REQUIREMENTS.
  - WORK WITH THE GC IN DEVELOPMENT OF A SCHEDULE FOR ON-SITE INSPECTIONS.
  - DISCUSS CRITICAL INSPECTIONS AND PROJECT CONCERNS.
2. THE MI IS RESPONSIBLE FOR COLLECTION OF ALL INSPECTION AND TEST REPORTS, REVIEWING REPORTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING ON-SITE INSPECTIONS AND COMPILATION & SUBMISSION OF THE MODIFICATION INSPECTION REPORT TO THE CLIENT AND THE EOR.

## GENERAL CONTRACTOR (GC)

1. THE GC IS REQUIRED TO CONTACT THE GC UPON AUTHORIZATION TO PROCEED WITH CONSTRUCTION BY THE CLIENT TO:
  - REVIEW THE MODIFICATION INSPECTION REPORT REQUIREMENTS.
  - WORK WITH THE MI IN DEVELOPMENT OF A SCHEDULE FOR ON-SITE INSPECTIONS.
  - DISCUSS CRITICAL INSPECTIONS AND PROJECT CONCERNS.
2. THE GC IS RESPONSIBLE FOR COORDINATING AND SCHEDULING IN ADVANCE ALL REQUIRED INSPECTIONS AND TESTS WITH THE MI.

## CORRECTION OF FAILING MODIFICATION INSPECTION

1. SHOULD THE STRUCTURAL MODIFICATION NOT COMPLY WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, THE GC SHALL WORK WITH THE MODIFICATION INSPECTOR IN A VIABLE REMEDIATION PLAN AS FOLLOWS:
  - CORRECT ALL DEFICIENCIES TO COMPLY WITH THE CONTRACT DOCUMENTS AND COORDINATE WITH THE MI FOR A FOLLOW UP INSPECTION.
  - WITH CLIENT AUTHORIZATION, THE GC MAY WORK WITH THE EOR TO REANALYZE THE MODIFICATION USING THE AS-BUILT CONDITION.

## REQUIRED PHOTOGRAPHS

1. THE GC AND MI SHALL AT MINIMUM PHOTO DOCUMENT THE FOLLOWING FOR INCLUSION IN THE MODIFICATION INSPECTION REPORT:
  - PRE-CONSTRUCTION: GENERAL CONDITION OF THE SITE.
  - DURING CONSTRUCTION: RAW MATERIALS, CRITICAL DETAILS, WELD PREPARATION, BOLT INSTALLATION & TORQUE, FINAL INSTALLED CONDITION & SURFACE COATING REPAIRS.
  - POST-CONSTRUCTION: FINAL CONDITION OF THE SITE

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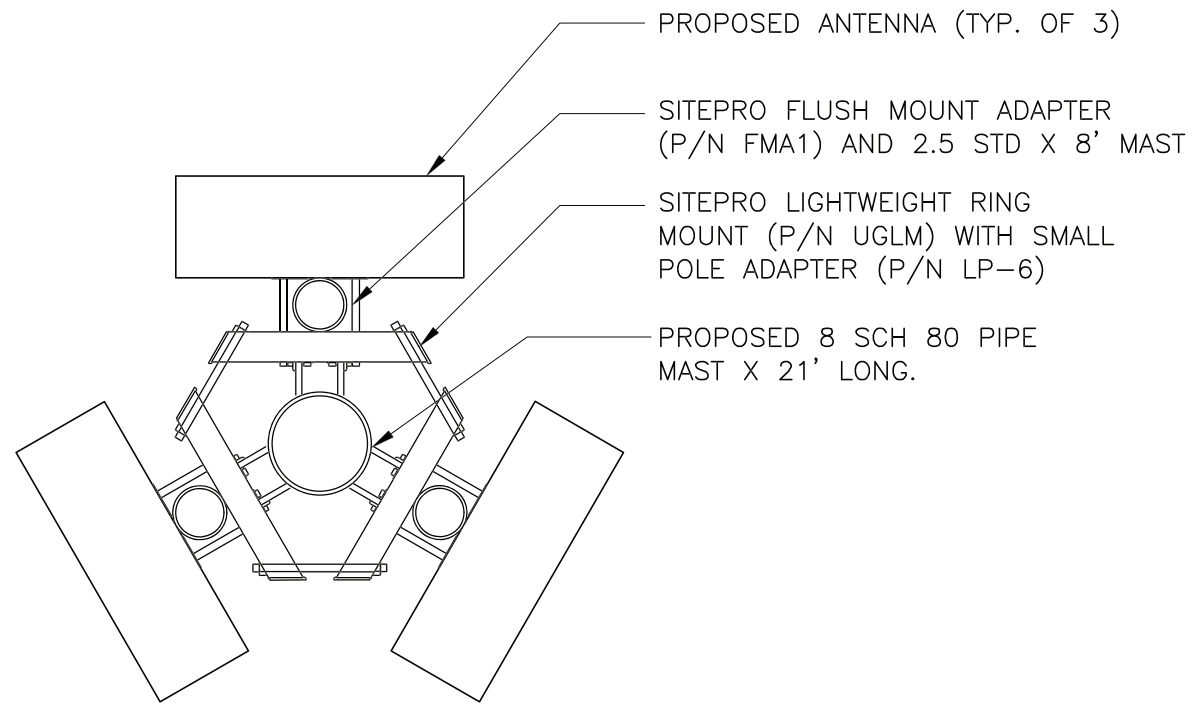
EVERSOURCE STRUCTURE 1068

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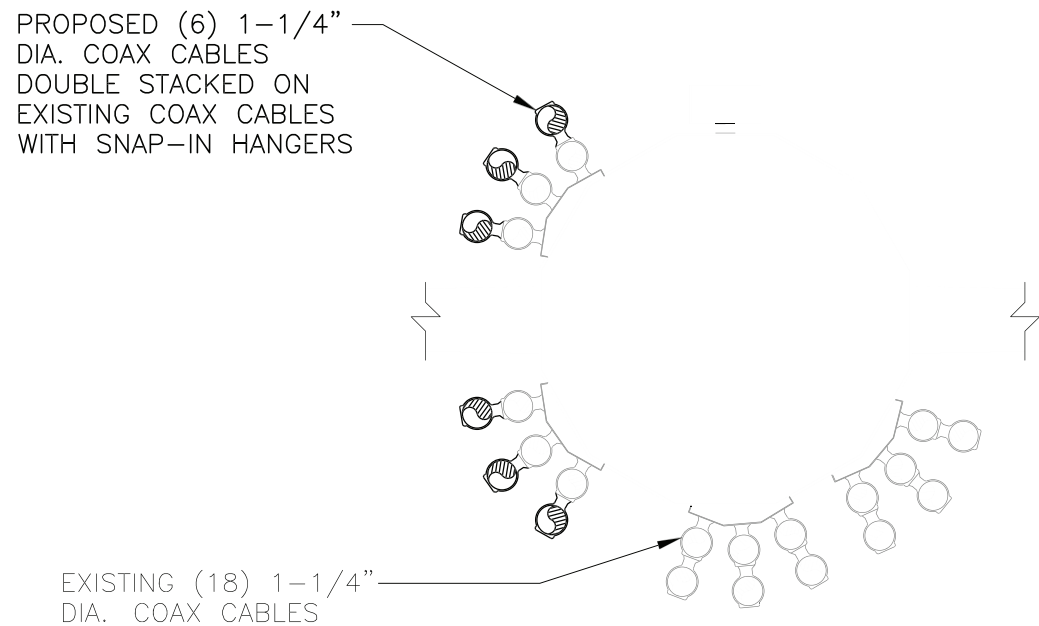
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**MODIFICATION  
INSPECTION  
REQUIREMENTS**

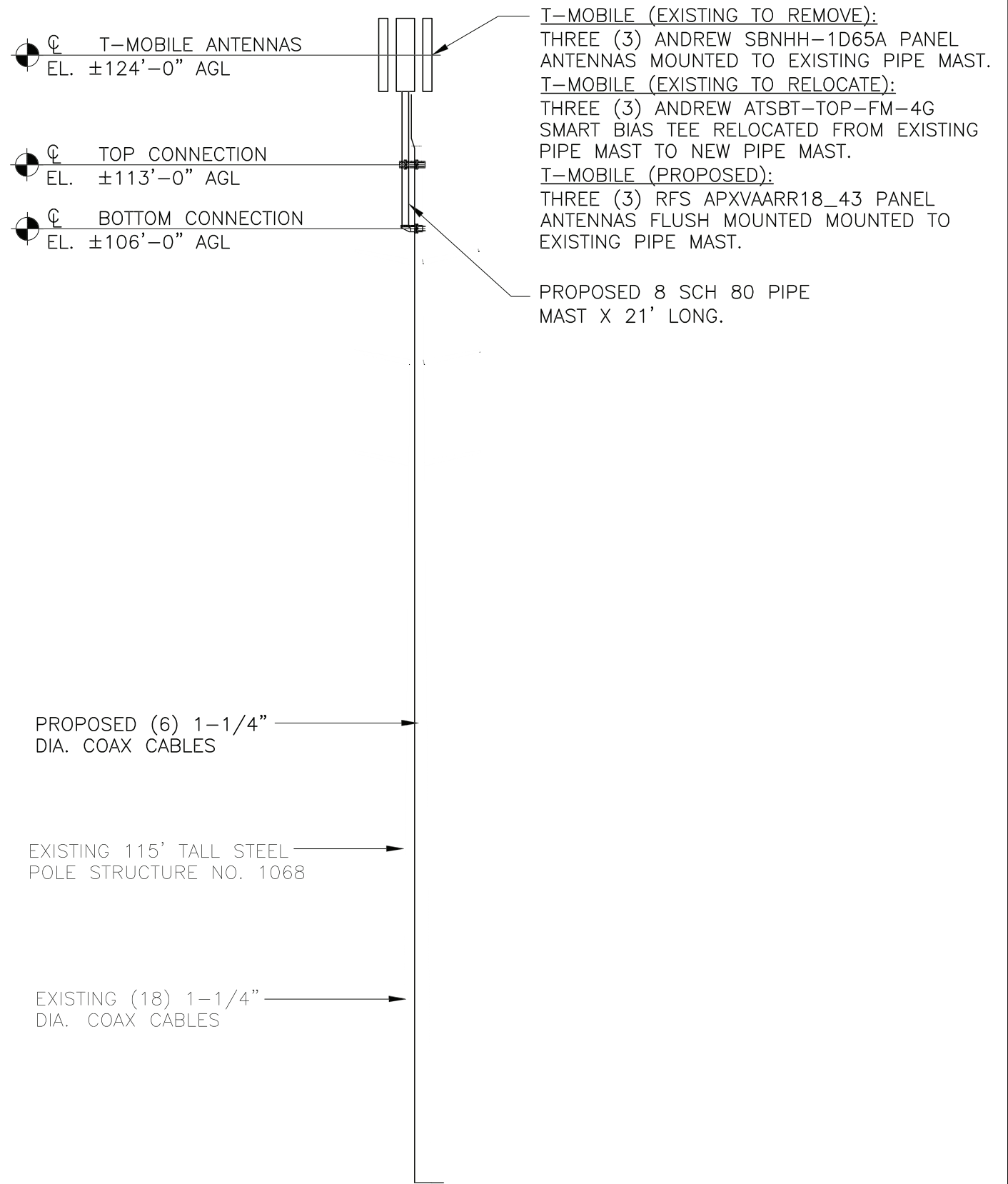
SHEET NO.  
**MI-1**  
Sheet No. 1 of 2



**2** ANTENNA MOUNTING DETAIL  
S-1 SCALE: 3/4" = 1'-0"



**3** COAX CABLE PLAN  
S-1 SCALE: NTS



**1** TOWER + MAST ELEVATION  
EL-1 SCALE: NOT TO SCALE

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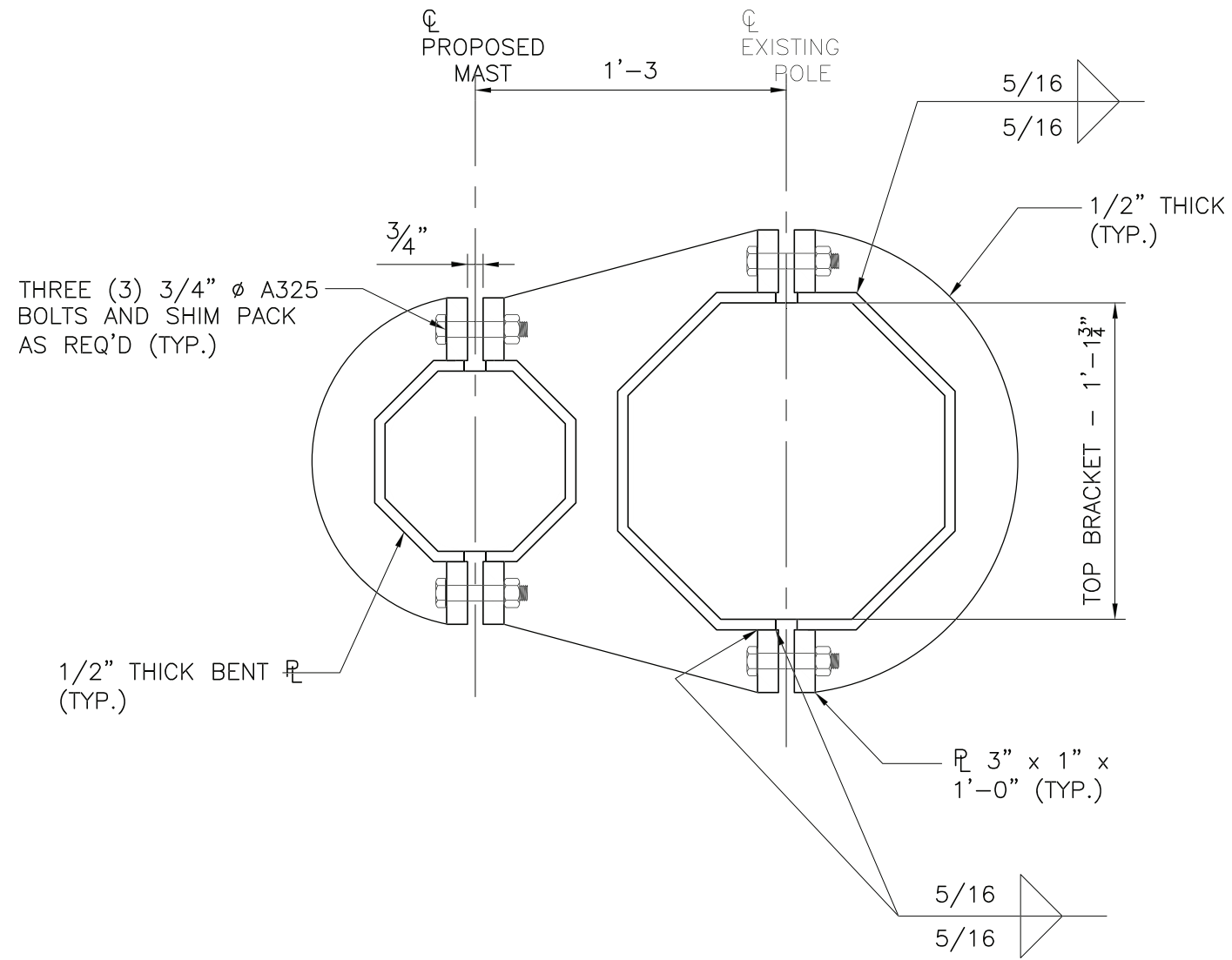
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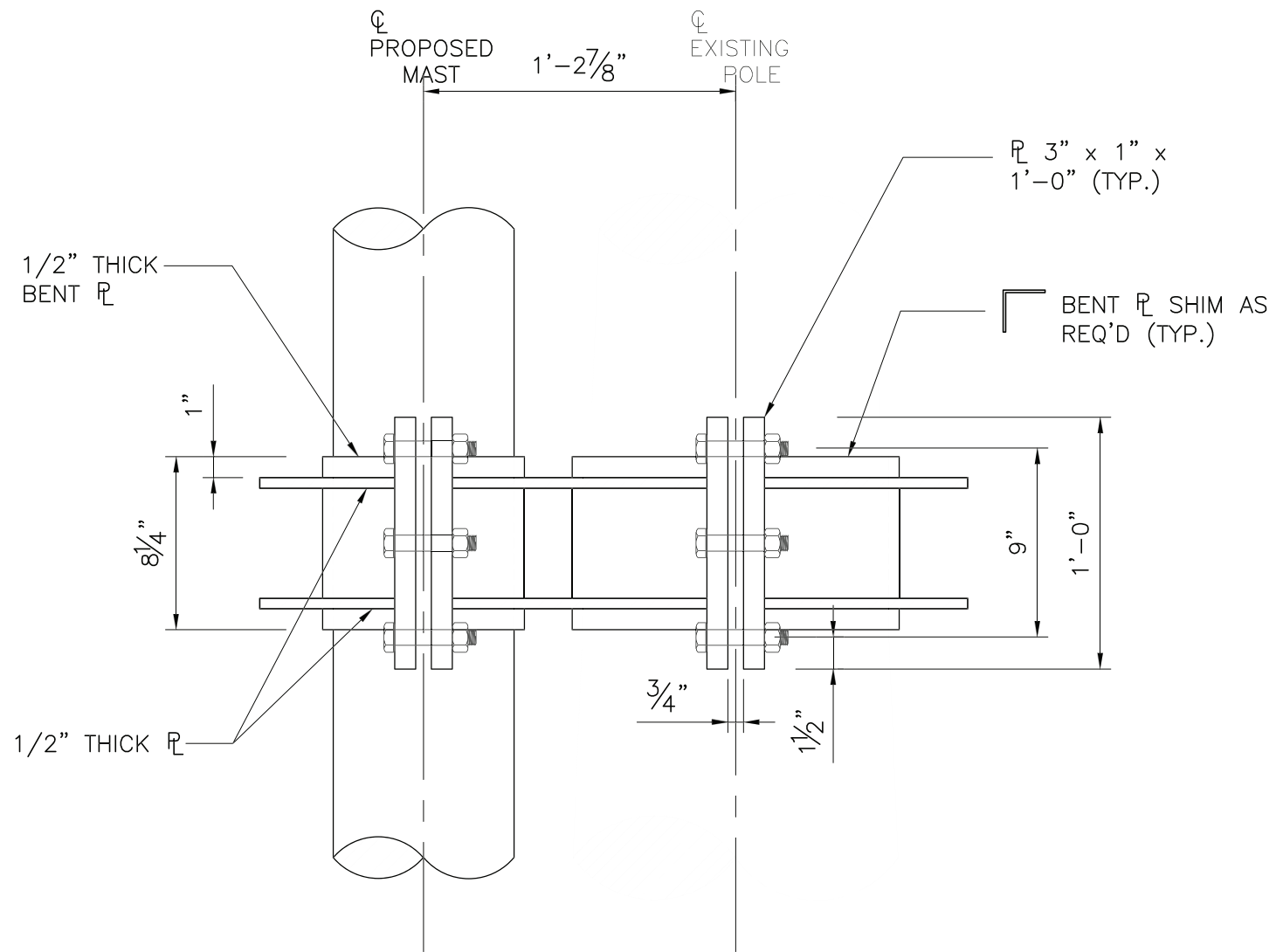
TOWER  
ELEVATION AND  
FEEDLINE PLAN

SHEET NO.  
**S-1**  
Sheet No. 5 of 7





2 TOP BRACKET PLAN VIEW  
S-2 SCALE: 1-1/2" = 1'-0"



1 TOP BRACKET DETAIL  
S-2 SCALE: 1-1/2" = 1'-0"

NOTE:  
1. POLE TAPER = 0.2099"/FT (V.I.F.)

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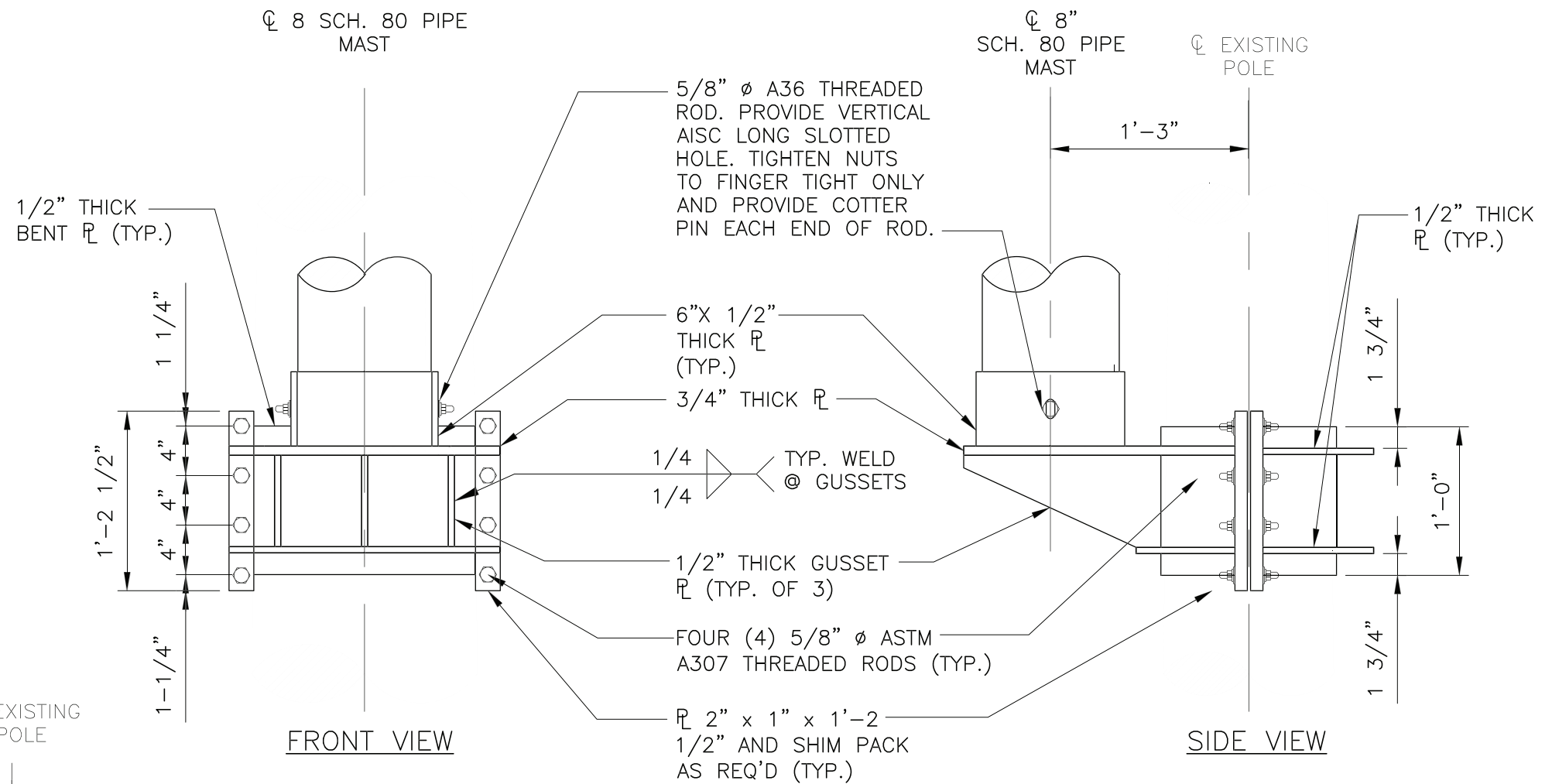
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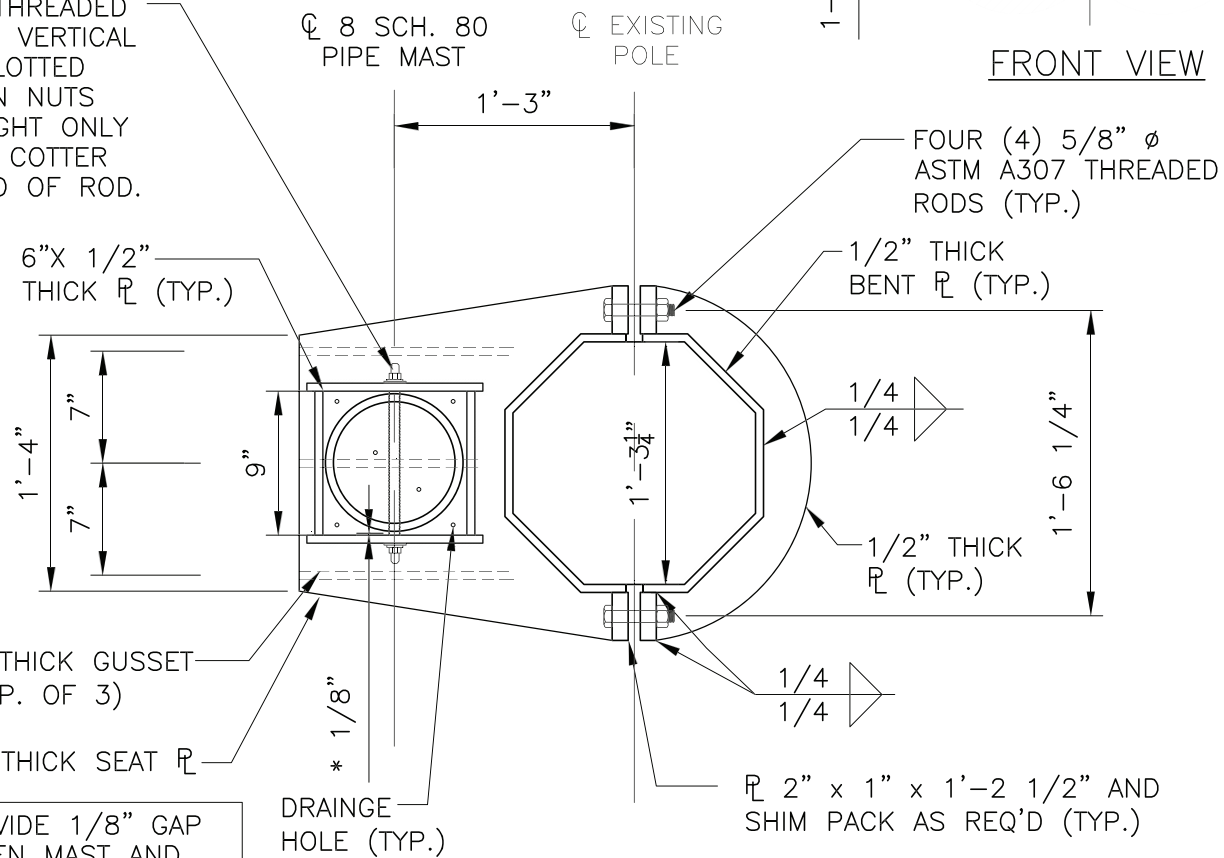
TOP CONNECTION DETAILS

SHEET NO.  
**S-2**  
Sheet No. 2 of 2

**NOTE:**  
1. POLE TAPER = 0.2099"/FT (V.I.F.)



5/8"  $\phi$  A36 THREADED ROD. PROVIDE VERTICAL AISC LONG SLOTTED HOLE. TIGHTEN NUTS TO FINGER TIGHT ONLY AND PROVIDE COTTER PIN EACH END OF ROD.



2

**BOTTOM PCS BRACKET PLAN VIEW**

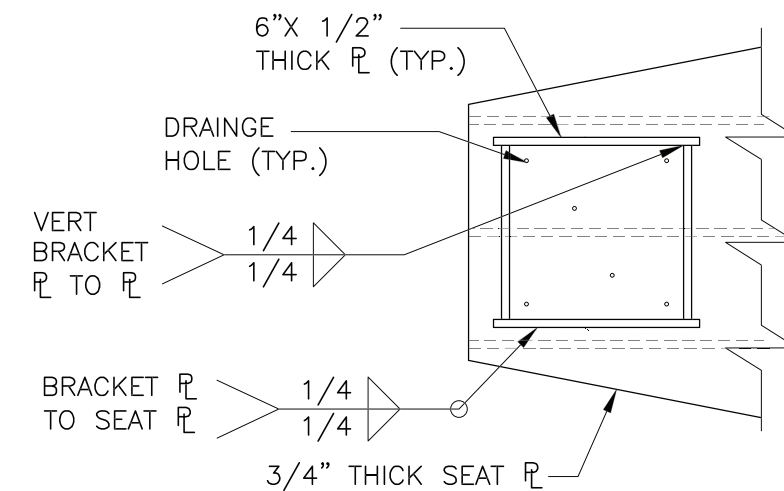
S-3

SCALE: 1" = 1'-0"

1  
S-3

**BOTTOM PCS BRACKET DETAIL**

SCALE: 1" = 1'-0"



3

**BRACKET ASSEMBLY DETAIL**

S-3

SCALE: 1" = 1'-0"

REV.	DATE	BY	CHKD.	DESCRIPTION
0	1/24/24	TUL	CFC	ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

**CENITEK** engineering  
 Centered on Solutions™  
 (203) 486-0980  
 (203) 486-8897 Fax  
 822 North Broad Road  
 Branford, CT 06405  
 www.CenitekEng.com

**T-MOBILE**  
 PROPOSED ANTENNA MAST REPLACEMENT  
**CT11290C**  
 EVERSOURCE STRUCTURE 1068  
 3 MECHANIC STREET  
 DARIEN, CT 06820  
 DATE: 1/24/24  
 SCALE: AS SHOWN  
 JOB NO. 23058.10

BOTTOM CONNECTION DETAILS

SHEET NO.  
**S-3**  
 Sheet No. 3 of 3

<b>RAN Template:</b> 67D94B Outdoor	<b>A&amp;L Template:</b> 67D94B_1DP+1QP+1OP
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**Section 1 - Site Information**

<b>Site ID:</b> CT11290C	<b>Site Name:</b> Darien/ Dtnw & Rt-1	<b>Latitude:</b> 41.07757
<b>Status:</b> Draft	<b>Site Class:</b> Utility Lattice Tower	<b>Longitude:</b> -73.467581
<b>Version:</b> 6	<b>Site Type:</b> Structure Non Building	<b>Address:</b> 3 Mechanic Street
<b>Project Type:</b> L700_CMP4 - 4x2	<b>Plan Year:</b> 2021	<b>City, State:</b> Darien, CT
<b>Approved:</b> Not approved	<b>Market:</b> CONNECTICUT CT	<b>Region:</b> NORTHEAST
<b>Approved By:</b> Not approved	<b>Vendor:</b> Ericsson	
<b>Last Modified:</b> 12/18/2023 10:12:43 AM	<b>Landlord:</b> Northeast Utilities	
<b>Last Modified By:</b> Ryan.MonteDeRamos@T-Mobile.com		

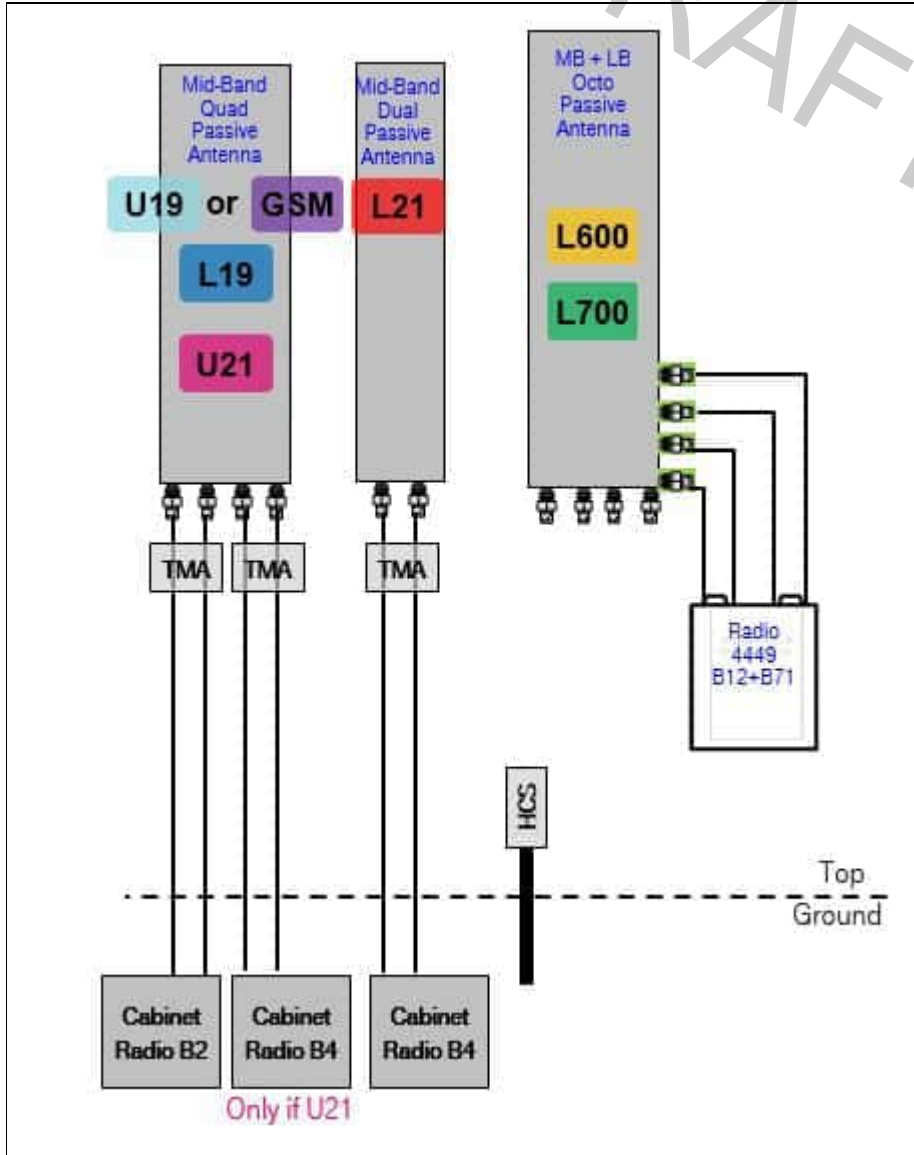
<b>RAN Template:</b> 67D94B Outdoor		<b>AL Template:</b> 67D94B_1DP+1QP+1OP		
<b>Sector Count:</b> 3	<b>Antenna Count:</b> 3	<b>Coax Line Count:</b> 24	<b>TMA Count:</b> 0	<b>RRU Count:</b> 3

**Section 2 - Existing Template Images**

----- This section is intentionally blank. -----

Section 3 - Proposed Template Images

67D94B\_1DP+1QP+1OP.JPG



Notes:

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Section 4 - Siteplan Images

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DRAFT

<b>RAN Template:</b> 67D94B Outdoor	<b>A&amp;L Template:</b> 67D94B_1DP+1QP+1OP
--	--

Section 5 - RAN Equipment

**Existing RAN Equipment**

Template: 794DB Outdoor (evolved from 4B)

Enclosure	1	2
<b>Enclosure Type</b>	Ground Mount (Ericsson)	RBS 6102
<b>Radio</b>	RRUS11 B12 (x3) L700	RUS01 B2 (x3) L1900 G1900 RUS01 B2 (x3) L1900 RUS01 B4 (x3) U2100 (DECOMMISSIONED) RUS01 B4 (x3) L2100
<b>Baseband</b>		BB 6630 L700 L1900 L2100 DUG20 G1900 DUW30 U2100 (DECOMMISSIONED)

**Proposed RAN Equipment**

Template: 67D94B Outdoor

Enclosure	1	2
<b>Enclosure Type</b>	RBS 6102	Ancillary Equipment (Ericsson)
<b>Radio</b>	RUS01 B2 (x3) L1900 G1900 RUS01 B2 (x3) L1900 RUS01 B4 (x3) U2100 (DECOMMISSIONED) RUS01 B4 (x3) L2100	
<b>Baseband</b>	BB 6630 L1900 L2100 DUG20 G1900 DUW30 U2100 (DECOMMISSIONED) RP 6651 N600 L600 L700	
<b>Multiplexer</b>	XMU	

**RAN Scope of Work:**

RF NOTES:  
12/18/2023 - Please confirm the rad ctr, in the old CD, it shows that rad is 124'

RAN Template: 67D94B Outdoor	A&L Template: 67D94B_1DP+1QP+1OP
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Section 6 - A&L Equipment

Existing Template:  
Proposed Template: 67D94B\_1DP+1QP+1OP

Sector 1 (Existing) view from behind

Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	Andrew - SBNHH-1D65A-SR (Hex)		
Azimuth	110		
M. Tilt	0		
Height (ft)	120		
Ports	P1	P2	P3
Active Tech	L700	L1900 G1900	L2100
Dark Tech			
Restricted Tech			
Decomm. Tech			U2100
E. Tilt	2	2	2
Cables	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)
TMA's			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		
Unconnected Equipment:			
Scope of Work:			

<b>RAN Template:</b> 67D94B Outdoor	<b>A&amp;L Template:</b> 67D94B_1DP+1QP+1OP
--	--

**Print Name:** Standard (1)  
**PORs:** L700\_CMP4 - 4x2

Sector 1 (Proposed) view from behind				
<b>Coverage Type</b>	A - Outdoor Macro			
<b>Antenna</b>	1			
<b>Antenna Model</b>	RFS - APXVAALL18_43-U-NA20 (Octo)			
<b>Azimuth</b>	110			
<b>M. Tilt</b>	0			
<b>Height (ft)</b>	120			
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>
<b>Active Tech</b>	L700 L600 N600	L700 L600 N600	G1900 L1900	L2100
<b>Dark Tech</b>				
<b>Restricted Tech</b>				
<b>Decomm. Tech</b>				U2100
<b>E. Tilt</b>				
<b>Cables</b>	1-1/4" Coax - 120 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 120 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 120 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 120 ft. (x2) Coax Jumper (x2)
<b>TMAs</b>				
<b>Diplexer / Combiners</b>				
<b>Radio</b>	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
<b>Sector Equipment</b>	Andrew Smart Bias T (Ericsson) (At Antenna)			
<b>Unconnected Equipment:</b>				
<b>Scope of Work:</b>				
Adding 6 - 1 1/4" coax lines Use Bias-T for Low Band RETs as appropriate.				
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.				



RAN Template: 67D94B Outdoor	A&L Template: 67D94B_1DP+1QP+1OP
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Print Name: Standard (1)  
PORs: L700\_CMP4 - 4x2

Sector 2 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	Andrew - SBNHH-1D65A-SR (Hex)		
Azimuth	230		
M. Tilt	0		
Height (ft)	120		
Ports	P1	P2	P3
Active Tech	L700	L1900 G1900	L2100
Dark Tech			
Restricted Tech			
Decomm. Tech			U2100
E. Tilt	2	2	2
Cables	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)
TMA's			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		
<b>Unconnected Equipment:</b>			
<b>Scope of Work:</b>			

<b>RAN Template:</b> 67D94B Outdoor	<b>A&amp;L Template:</b> 67D94B_1DP+1QP+1OP
--	--

Sector 2 (Proposed) view from behind				
<b>Coverage Type</b>	A - Outdoor Macro			
<b>Antenna</b>	1			
<b>Antenna Model</b>	RFS - APXVAALL18_43-U-NA20 (Octo)			
<b>Azimuth</b>	230			
<b>M. Tilt</b>	0			
<b>Height (ft)</b>	120			
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>
<b>Active Tech</b>	L600 L700 N600	L600 L700 N600	G1900 L1900	L2100
<b>Dark Tech</b>				
<b>Restricted Tech</b>				
<b>Decomm. Tech</b>				U2100
<b>E. Tilt</b>				
<b>Cables</b>	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)
<b>TMAs</b>				
<b>Diplexer / Combiners</b>				
<b>Radio</b>	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
<b>Sector Equipment</b>	Andrew Smart Bias T (Ericsson) (At Antenna)			
<b>Unconnected Equipment:</b>				
<b>Scope of Work:</b>				
Adding 6 - 1 1/4" coax lines Use Bias-T for Low Band RETs as appropriate.				
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.				

RAN Template: 67D94B Outdoor	A&L Template: 67D94B_1DP+1QP+1OP
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Sector 3 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		
Antenna Model	Andrew - SBNHH-1D65A-SR (Hex)		
Azimuth	350		
M. Tilt	0		
Height (ft)	120		
Ports	P1	P2	P3
Active Tech	L700	L1900 G1900	L2100
Dark Tech			
Restricted Tech			
Decomm. Tech			U2100
E. Tilt	2	2	2
Cables	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)	1-1/4" Coax - 143 ft.(At Antenna) (x2)
TMA's			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		
<b>Unconnected Equipment:</b>			
<b>Scope of Work:</b>			

<b>RAN Template:</b> 67D94B Outdoor	<b>A&amp;L Template:</b> 67D94B_1DP+1QP+1OP
--	--

**Print Name:** Standard (1)  
**PORs:** L700\_CMP4 - 4x2

Sector 3 (Proposed) view from behind				
<b>Coverage Type</b>	A - Outdoor Macro			
<b>Antenna</b>	1			
<b>Antenna Model</b>	RFS - APXVAALL18_43-U-NA20 (Octo)			
<b>Azimuth</b>	350			
<b>M. Tilt</b>	0			
<b>Height (ft)</b>	120			
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>
<b>Active Tech</b>	N600 L700 L600	N600 L700 L600	G1900 L1900	L2100
<b>Dark Tech</b>				
<b>Restricted Tech</b>				
<b>Decomm. Tech</b>				U2100
<b>E. Tilt</b>				
<b>Cables</b>	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)	1-1/4" Coax - 143 ft. (x2) Coax Jumper (x2)
<b>TMAs</b>				
<b>Diplexer / Combiners</b>				
<b>Radio</b>	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
<b>Sector Equipment</b>	Andrew Smart Bias T (Ericsson) (At Antenna)			
<b>Unconnected Equipment:</b>				
<b>Scope of Work:</b>				
Adding 6 - 1 1/4" coax lines Use Bias-T for Low Band RETs as appropriate.				
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.				



**Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 14.9/14.5/18.6/18.6 dBi, 1.8m (6ft), VET, RET, 0-14°/0-14°/2-12°/2-12°**

**FEATURES / BENEFITS**

This antenna provides a 8 Port multi-band flexible platform for advanced use for flexible use in deployment scenarios for encompassing 600MHz, 700MHz, AWS & PCS applications.



- ➔ 24 Inch Width For Easier Zoning
- ➔ Field Replaceable (Integrated) AISG RET platform for reduced environmental exposure and long lasting quality
- ➔ Superior elevation pattern performance across the entire electrical down tilt range
- ➔ Includes three AISG RET motors - Includes 0.5m AISG jumper for optional daisy chain of two high band RET motors for one single AISG point of high band tilt control.
- ➔ Low band arrays driven by a single RET motor

**Technical Features**

**LOW BAND LEFT ARRAY (617-746 MHZ) [R1]**

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	14.1 +/- .3	14.5 +/- .4
Horizontal Beamwidth @3dB	Deg	66.1+/-4.3	63.1+/-2.3
Vertical Beamwidth @3dB	Deg	14.2+/-0.8	13.0+/-0.5
Electrical Downtilt Range	Deg	0-14	
Upper Side Lobe Suppression 0 to +20	dB	20.5	21.4
Front-to-Back, at +/-30°, Copolar	dB	22.4	21.8
Cross Polar Discrimination (XPD) @ Boresight	dB	21.4	20.1
Cross Polar Discrimination (XPD) @ +/-60	dB	5.2	3.5
3rd Order PIM 2 x 43dBm	dBc	-153	
VSWR	-	1.5:1	
Cross Polar Isolation	dB	25	
Maximum Effective Power per Port	Watt	250	

**LOW BAND RIGHT ARRAY (617-746 MHZ) [R2]**

Frequency Band	MHz	617-698	698-746
Gain Over All Tilts	dBi	13.8 +/- .3	14.1 +/- .4
Horizontal Beamwidth @3dB	Deg	66.5+/-4.9	63.3+/-2.2
Vertical Beamwidth @3dB	Deg	14.2+/-0.8	12.9+/-0.6
Electrical Downtilt Range	Deg	0-14	
Upper Side Lobe Suppression 0 to +20	dB	20.3	21.3
Front-to-Back, at +/-30°, Copolar	dB	22.4	21.4
Cross Polar Discrimination (XPD) @ Boresight	dB	20.2	19.7
Cross Polar Discrimination (XPD) @ +/-60	dB	4.5	1.7
3rd Order PIM 2 x 43dBm	dBc	-153	
VSWR	-	1.5:1	
Cross Polar Isolation	dB	25	
Maximum Effective Power per Port	Watt	250	



**Dual Slant Polarized Quad Band (8 Port) Antenna, 617-746/617-746/1695-2200/1695-2200MHz, 65deg, 14.9/14.5/18.6/18.6 dBi, 1.8m (6ft), VET, RET, 0-14°/0-14°/2-12°/2-12°**

**ELECTRICAL SPECIFICATIONS**

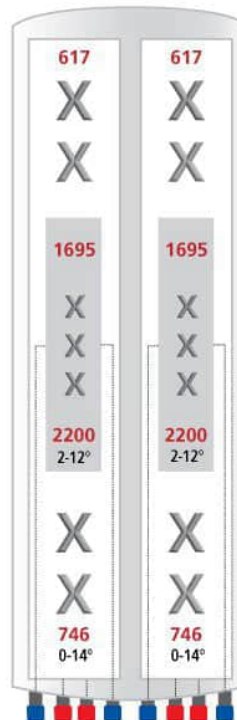
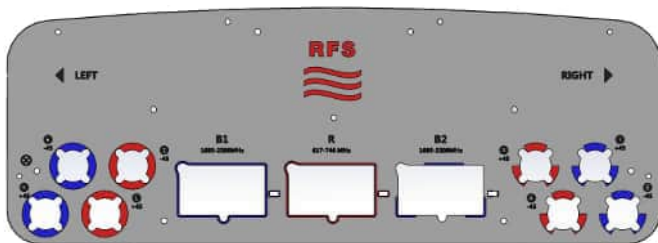
<b>Impedance</b>	Ohm	50.0
<b>Polarization</b>	Deg	±45°

**MECHANICAL SPECIFICATIONS**

<b>Dimensions - H x W x D</b>	mm (in)	1829 x 609 x 215 (72 x 24 x 8.5)
<b>Weight (Antenna Only)</b>	kg (lb)	48 (106)
<b>Weight (Mounting Hardware only)</b>	kg (lb)	11.5 (25.3)
<b>Packing size- HxWxD</b>	mm (in)	1980 x 735 x 375 (77.9 x 28.9 x 14.8)
<b>Shipping Weight</b>	kg (lb)	70 (154)
<b>Connector type</b>		8 x 4.3-10 female at bottom + 6 AISG connectors (3 male, 3 female)
<b>Adjustment mechanism</b>		Integrated RET solution AISG compliant (Field Replaceable) + Manual Override + External Tilt Indicator
<b>Mounting Hardware Material</b>		Galvanized steel
<b>Radome Material / Color</b>		Fiber Glass / Light Grey RAL7035

**TESTING AND ENVIRONMENTAL**

<b>Temperature Range</b>	°C (°F)	-40 to 60 (-40 to 140)
<b>Lightning protection</b>		IEC 61000-4-5
<b>Survival/Rated Wind Velocity</b>	km/h	240 (150)
<b>Wind Load @Rated Wind Front</b>	N	1072.0
<b>Wind Load @Rated Wind Side</b>	N	326.0
<b>Wind Load @Rated Wind Rear</b>	N	1160.0
<b>Environmental</b>		ETSI 300-019-2-4 Class 4.1E





## ATSBT-TOP-FM-4G

### Teletilt® Top Smart Bias Tee

- Injects AISG power and control signals onto a coaxial cable line
- Reduces cable and site lease costs by eliminating the need for AISG home run cables
- AISG 1.1 and 2.0 compliant
- Operates at 10-30 Vdc
- Weatherproof AISG connectors
- Intuitive schematics simplify and ensure proper installation
- Enhanced lightning protection plus grounding stud for additional surge protection
- 7-16 DIN female connector (BTS)
- 7-16 DIN male connector (ANT)

## General Specifications

Smart Bias Tee Type	10-30 V Top
Brand	Teletilt®
Operating Frequency Band	694 – 2690 MHz

## Electrical Specifications

EU Certification	CE
Protocol	AISG 1.1   AISG 2.0
Antenna Interface Signal	dc Blocked   RF
BTS Interface Signal	AISG data   dc   RF
Interface Protocol Signal	Data   dc
Voltage Range	10-30 Vdc
VSWR   Return Loss	1.17:1   22 dB, typical
Power Consumption, maximum	0.6 W
RF Power, maximum	250 W @ 1850 MHz 500 W @ 850 MHz
Impedance	50 ohm
Insertion Loss, typical	0.1 dB
3rd Order IMD	-158.0 dBc (relative to carrier)
3rd Order IMD Test Method	Two +43 dBm carriers
Electromagnetic Compatibility (EMC)	CFR 47 Part 15, Subpart B, Class B   EN 55022, Class B   ICES-003 Issue 4 CAN/CSA-CEI/IEC CISPR 22:02

## Mechanical Specifications

Antenna Interface	7-16 DIN Male
BTS Interface	7-16 DIN Female
AISG Input Connector	8-pin DIN Female
Color	Silver
Grounding Lug Thread Size	M8
Material Type	Aluminum
Lightning Surge Capability	5 times @ -3 kA 5 times @ 3 kA

ATSBT-TOP-FM-4G



Lightning Surge Capability Test Method IEC 61000-4-5, Level X  
Lightning Surge Capability Waveform 1.2/50 voltage and 8/20 current combination waveform

## Environmental Specifications

Ingress Protection Test Method IEC 60529:2001, IP66  
Operating Temperature -40 °C to +70 °C (-40 °F to +158 °F)

## Interface Port Drawing



## Dimensions

Width	94.0 mm   3.7 in
Depth	50.0 mm   2.0 in
Height	143.00 mm   5.63 in
Net Weight	0.8 kg   1.8 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
RoHS 2011/65/EU	Compliant by Exemption



# Exhibit E

## **Mount Analysis**

Same as Structural Analysis

# Exhibit F

## **Power Density/RF Emissions Report**



FOX HILL TELECOM

## Radio Frequency Emissions Analysis Report

# T Mobile™

Site ID: CT11290C

Darien . Dtwm & Rt-1  
3 Mechanic Street  
Darien, CT 06820

April 1, 2024

Fox Hill Telecom Project Number: 240087

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	2.33 %



April 1, 2024

T-MOBILE  
Attn: RF Manager  
35 Griffin Road South  
Bloomfield, CT 06009

## Emissions Analysis for Site: **CT11290C – Darien . Dtwm & Rt-1**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **3 Mechanic Street, Darien, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report the percentage of MPE rather than power density.



FOX HILL TELECOM

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.



## CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **3 Mechanic Street, Darien, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4 \text{ ERP}}{R^2}$$

S = Power Density (in  $\mu\text{w}/\text{cm}^2$ )

ERP = Effective Radiated Power from antenna (watts)

R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.



For each T-Mobile sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	4	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	35
GSM	1900 MHz (PCS)	2	10
LTE	2100 MHz (AWS)	4	60

*Table 1: Channel Data Table*



# FOX HILL TELECOM

The following T-Mobile antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAARR18 43-C-NA20	124
B	1	RFS APXVAARR18 43-C-NA20	124
C	1	RFS APXVAARR18 43-C-NA20	124

*Table 2: Antenna Data*

All calculations were done with respect to uncontrolled / general population threshold limits.





## RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAARR18 43-C-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	16	620	23,363.75	2.33
Sector A Composite MPE%							<b>2.33</b>
Antenna B1	RFS APXVAARR18 43-C-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	16	620	23,363.75	2.33
Sector B Composite MPE%							<b>2.33</b>
Antenna C1	RFS APXVAARR18 43-C-NA20	600 MHz / 700 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	13.65 / 13.85 / 16.65 / 16.95	6	200	3,989.90	2.33
Sector C Composite MPE%							<b>2.33</b>

*Table 3: T-MOBILE Emissions Levels*



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The Following table (*table 4*) shows all additional identified carriers on site and their emissions contribution estimates, along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three T-Mobile sectors have the same configuration yielding the same results for all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite estimated MPE value for the site.

<b>Site Composite MPE%</b>	
<b>Carrier</b>	<b>MPE%</b>
T-MOBILE – Max Per Sector Value	<b>2.33 %</b>
No Additional Carriers Located at This Site	NA
<b>Site Total MPE %:</b>	<b>2.33 %</b>

*Table 4: All Carrier MPE Contributions*

T-MOBILE Sector A Total:	2.33 %
T-MOBILE Sector B Total:	2.33 %
T-MOBILE Sector C Total:	2.33 %
<b>Site Total:</b>	<b>2.33 %</b>

*Table 5: Site MPE Summary*



# FOX HILL TELECOM

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three T-Mobile sectors have the same configuration yielding the same results for all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	4	926.96	124	4.12	600 MHz	400	1.03%
T-Mobile 700 MHz LTE	2	485.32	124	1.03	700 MHz	467	0.22%
T-Mobile 1900 MHz (PCS) LTE	4	1,849.52	124	4.10	1900 MHz (PCS)	1000	0.41%
T-Mobile 1900 MHz (PCS) GSM	2	462.38	124	0.50	1900 MHz (PCS)	1000	0.05%
T-Mobile 2100 MHz (AWS) LTE	4	2,972.70	124	6.20	2100 MHz (AWS)	1000	0.62%
						<b>Total:</b>	<b>2.33 %</b>

Table 6: T-MOBILE Maximum Sector MPE Power Values



## Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-MOBILE facility as well as the site composite emissions estimates value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-MOBILE Sector	Power Density Value (%)
Sector A:	2.33 %
Sector B:	2.33 %
Sector C:	2.33 %
T-MOBILE Maximum Total (per sector):	2.33 %
Site Total:	2.33 %
Site Compliance Status:	<b>COMPLIANT</b>

The estimated composite MPE value for this site assuming all carriers present is **2.33 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite estimated values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan  
Principal RF Engineer  
**Fox Hill Telecom, Inc**  
Worcester, MA 01609  
(978)660-3998

# Exhibit G

## **Letter of Authorization**



56 Prospect Street,  
Hartford, CT 06103

P.O. Box 270  
Hartford, CT 06141-0270  
(860) 665-5000

March 26, 2024

Mr. Dan Reid  
Northeast Site Solutions  
420 Main St,  
Sturbridge, MA 01566

RE: T-Mobile Antenna Site CT-11290C, Mechanic St, Darien CT, Eversource Structure 1068  
Dear Mr. Reid:

Based on our reviews of the site drawings, the structural analysis and foundation review provided by Centek Engineering, along with a third party review performed by Paul J. Ford and Company, we accept the proposed modification.

Please work with Christopher Gelinias of Eversource Real Estate to process the site lease amendment. Please do not hesitate to contact us with questions or concerns. Christopher can be contacted at 860-665-2008, and I can be contacted at (860) 728-4862.

Sincerely,


*Masie Hartt*

Masie Hartt  
Transmission Line Engineering

Ref: 2024-0124 - CT11290C Structural Analysis Rev0 (23058.10)  
2024-0222\_23058.10 CT11290C - Rev3 CDs (S&S)

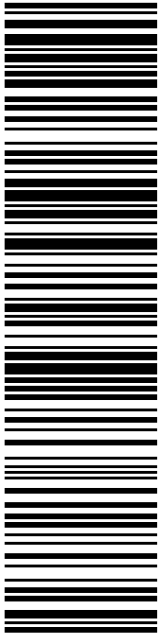
# Exhibit H

## Recipient Mailings



KATHLEEN A CLARK-BUCH  
TOWN PLANNER  
RM 202  
2 RENSRAW RD  
DARIEN CT 06820-5344

**USPS TRACKING #**



**9405 5036 9930 0675 3301 04**

**P**

usps.com 9405 5036 9930 0675 3301 04 0098 5000 0020 6820  
**US POSTAGE \$9.85**  
 Flat Rate Envoy

**U.S. POSTAGE PAID**  
 Click-N-Ship®

Mailed from 01606 986737835781133

**PRIORITY MAIL®**


Expected Delivery Date: 04/03/24 Ref#: CT11290C

**0003**

**C014**

DEBORAH A CHASE  
NORTHEAST SITE SOLUTIONS  
46 HUNTINGTON AVE  
WORCESTER MA 01606-3543

Electronic Rate Approved #038555749



✂ ————— Cut on dotted line. —————

### Instructions

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3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, **DO NOT TAPE OVER BARCODE.** Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
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**9405 5036 9930 0675 3301 04**

Trans. #: 601367344	Priority Mail® Postage: <b>\$9.85</b>
Print Date: 04/01/2024	Total: <b>\$9.85</b>
Ship Date: 04/01/2024	
Expected Delivery Date: 04/03/2024	


**From:** DEBORAH A CHASE Ref#: CT11290C  
 NORTHEAST SITE SOLUTIONS  
 46 HUNTINGTON AVE  
 WORCESTER MA 01606-3543

**To:** KATHLEEN A CLARK-BUCH  
 TOWN PLANNER  
 RM 202  
 2 RENSRAW RD  
 DARIEN CT 06820-5344

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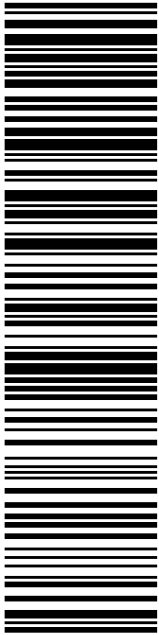

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EVERSOURCE  
107 SELDEN ST  
BERLIN CT 06037-1616

**USPS TRACKING #**



**9405 5036 9930 0675 3301 11**

**P**

usps.com 9405 5036 9930 0675 3301 11 0098 5000 0020 6037  
**US POSTAGE**  
 Flat Rate Envoy

U.S. POSTAGE PAID  
Click-N-Ship®

Mailed from 01606 986737835780161


**PRIORITY MAIL®**

DEBORAH A CHASE  
NORTHEAST SITE SOLUTIONS  
46 HUNTINGTON AVE  
WORCESTER MA 01606-3543

Expected Delivery Date: 04/03/24  
 Ref#: CT11290C  
**0003**

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Trans. #: 601367344	Priority Mail® Postage: <b>\$9.85</b>
Print Date: 04/01/2024	Total: <b>\$9.85</b>
Ship Date: 04/01/2024	
Expected Delivery Date: 04/03/2024	


**From:** DEBORAH A CHASE      Ref#: CT11290C  
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 46 HUNTINGTON AVE  
 WORCESTER MA 01606-3543

**To:** EVERSOURCE  
 107 SELDEN ST  
 BERLIN CT 06037-1616

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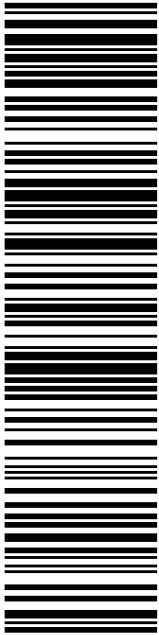


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JON E ZAGRODSKY  
FIRST SELECTMAN- TOWN OF DARIEN  
2 RENSRAW RD  
DARIEN CT 06820-5344

**USPS TRACKING #**




**9405 5036 9930 0675 3301 28**

DEBORAH A CHASE  
NORTHEAST SITE SOLUTIONS  
46 HUNTINGTON AVE  
WORCESTER MA 01606-3543

**PRIORITY MAIL®**

Expected Delivery Date: 04/03/24  
Ref#: CT11290C  
**0003**


**C014**



**Click-N-Ship®**

usps.com 9405 5036 9930 0675 3301 28 0098 5000 0020 6820  
**US POSTAGE** Flat Rate Envoy  
**U.S. POSTAGE PAID** Click-N-Ship®  
 Mailed from 01606 986737835779000  
 04/01/2024

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Trans. #: 601367344	Priority Mail® Postage: <b>\$9.85</b>
Print Date: 04/01/2024	Total: <b>\$9.85</b>
Ship Date: 04/01/2024	
Expected Delivery Date: 04/03/2024	


**From:** DEBORAH A CHASE Ref#: CT11290C  
 NORTHEAST SITE SOLUTIONS  
 46 HUNTINGTON AVE  
 WORCESTER MA 01606-3543

**To:** JON E ZAGRODSKY  
 FIRST SELECTMAN- TOWN OF DARIEN  
 2 RENSRAW RD  
 DARIEN CT 06820-5344

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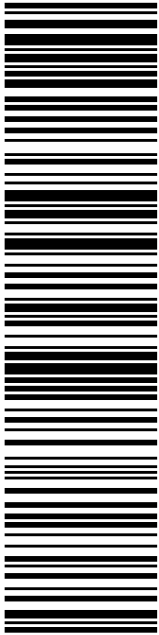


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CONNECTICUT DEPARTMENT OF  
2800 BERLIN TPKE  
NEWINGTON CT 06111-4113

**USPS TRACKING #**



**9405 5036 9930 0675 3301 35**

**P**

usps.com 9405 5036 9930 0675 3301 35 0098 5000 0020 6111  
**US POSTAGE**  
 Flat Rate Envoy

U.S. POSTAGE PAID  
Click-N-Ship®

04/01/2024 Mailed from 01606 986737835778551


**PRIORITY MAIL®**

DEBORAH A CHASE  
NORTHEAST SITE SOLUTIONS  
46 HUNTINGTON AVE  
WORCESTER MA 01606-3543

Expected Delivery Date: 04/03/24  
Ref#: CT11290C  
**0003**

**C013**

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**USPS TRACKING # :**  
**9405 5036 9930 0675 3301 35**

Trans. #: 601367344	Priority Mail® Postage: <b>\$9.85</b>
Print Date: 04/01/2024	Total: <b>\$9.85</b>
Ship Date: 04/01/2024	
Expected Delivery Date: 04/03/2024	

**From:** DEBORAH A CHASE      Ref#: CT11290C  
 NORTHEAST SITE SOLUTIONS  
 46 HUNTINGTON AVE  
 WORCESTER MA 01606-3543

**To:** CONNECTICUT DEPARTMENT OF TRANSPORTATION  
 2800 BERLIN TPKE  
 NEWINGTON CT 06111-4113

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CT 11290



LINCOLN MALL  
560 LINCOLN ST STE 8  
WORCESTER, MA 01605-1925  
(800)275-8777

04/02/2024 08:35 AM

Product	Qty	Unit Price	Price
Prepaid Mail Newington, CT 06111 Weight: 1 lb 0.80 oz Acceptance Date: Tue 04/02/2024 Tracking #: 9405 5036 9930 0675 3301 35	1		\$0.00
Prepaid Mail Darien, CT 06820 Weight: 1 lb 1.00 oz Acceptance Date: Tue 04/02/2024 Tracking #: 9405 5036 9930 0675 3301 04	1		\$0.00
Prepaid Mail Berlin, CT 06037 Weight: 1 lb 0.80 oz Acceptance Date: Tue 04/02/2024 Tracking #: 9405 5036 9930 0675 3301 11	1		\$0.00
Prepaid Mail Darien, CT 06820 Weight: 1 lb 0.90 oz Acceptance Date: Tue 04/02/2024 Tracking #: 9405 5036 9930 0675 3301 28	1		\$0.00
Grand Total:			\$0.00

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