



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.



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 Massee

Victoria Massee
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 5 Melrose Drive, Farmington CT 06032
Email: 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 Ragazzine, 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 mw/cm², which is 1.49 percent of the maximum permissible exposure for uncontrolled environments based on Federal Communications Commission (FCC) Bulletin 65, August 1997.

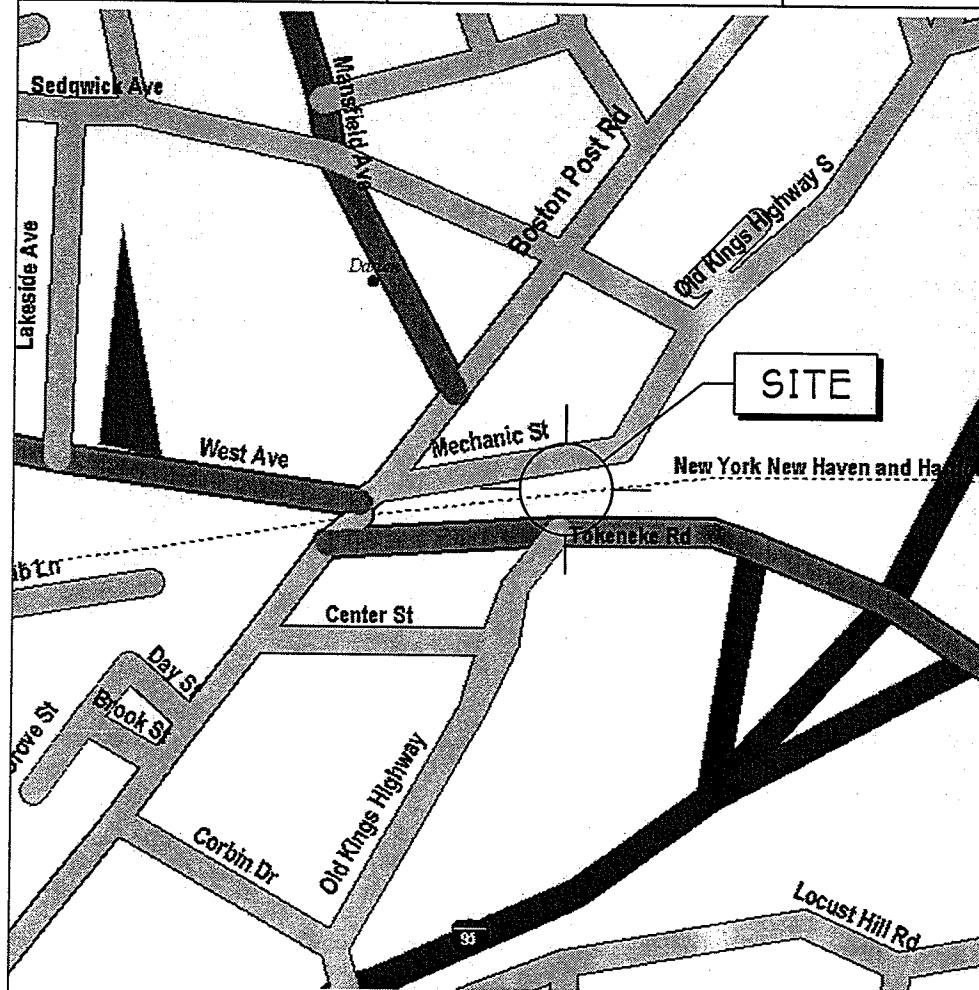
CL&P POLE #1068

MECHANIC STREET

DARIEN, CT

SEARCH AREA: **DARIEN / DOWNTOWN**
 SITE I.D. #: **CT-11-290C**

LOT#:	BLOCK#:	ZONING DISTRICT:	MAP#:
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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).

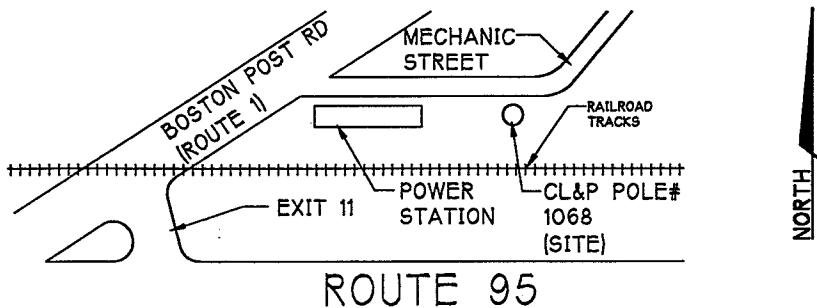
DWG.:	TITLE:
A-1	SITE LAYOUT & KEY PLAN
A-2	EQUIPMENT PLAN
A-3	SOUTH ELEVATION
A-4	CABINET DETAIL
A-5	SUB-BASE DETAIL
A-6	EQUIPMENT ELEVATION
A-7	CABLE TRAY DETAIL
A-8	CABLE ROUTING ELEVATION
A-9	CABLE MOUNT ELEVATION
A-10	ANTENNA MOUNT DETAIL
A-11	ELECTRIC EQUIPMENT MOUNT
A-12	PLANTING DETAIL
A-13	FENCE 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

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



SITE LOCATION MAP

SCALE:
NONE

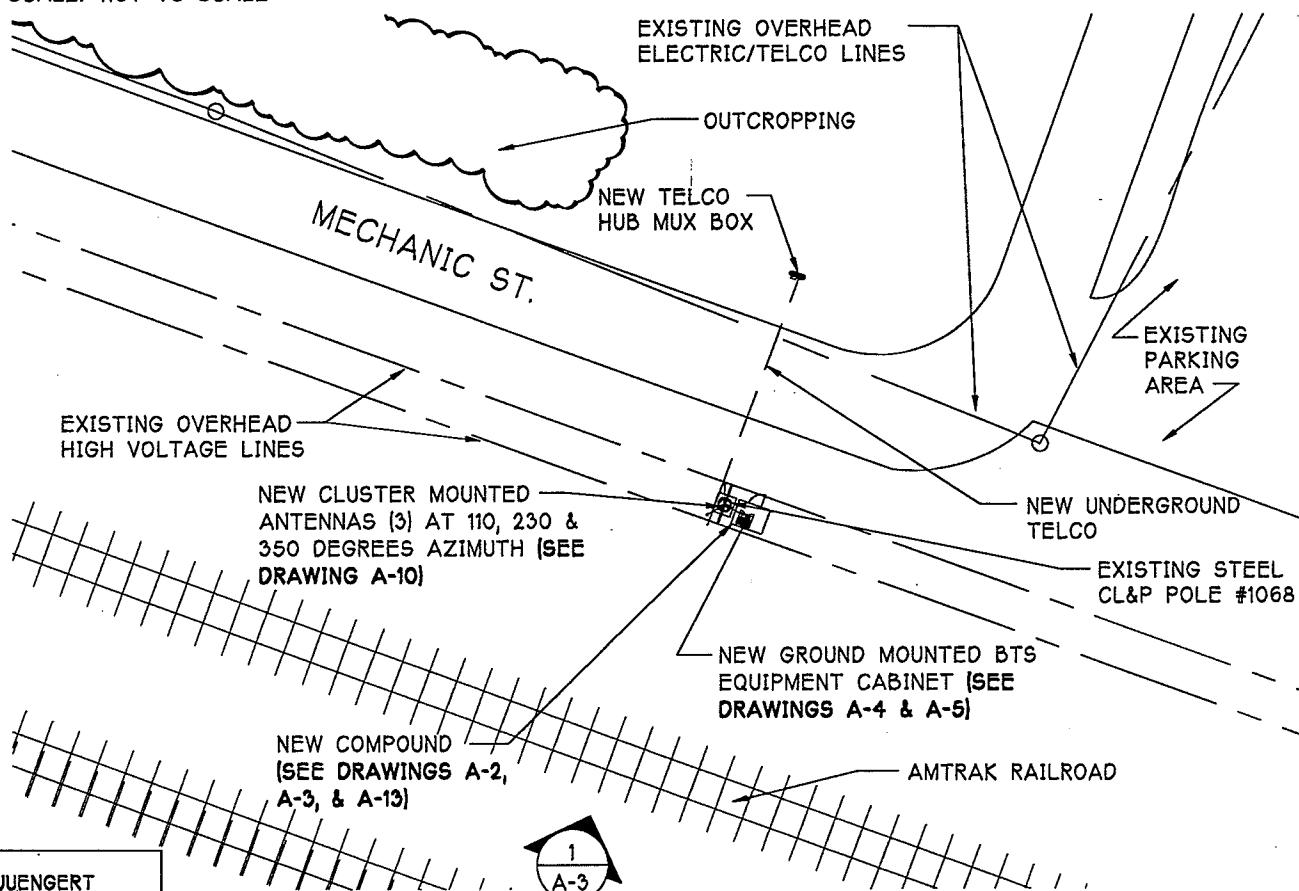


NOTE:
 1.) FOR ITEMS SUPPLIED BY OTHERS SEE MATERIAL LIST. (DRAWING A-18)
 2.) NORTH TO BE DETERMINED BY CIVIL ENGINEER

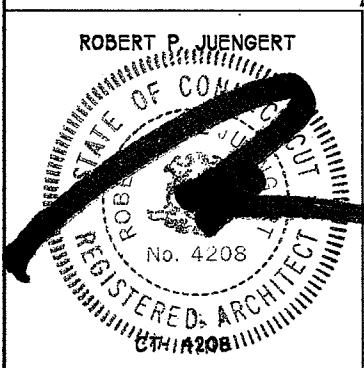
ROUTE 95

KEY PLAN

2 A-1 SCALE: NOT TO SCALE

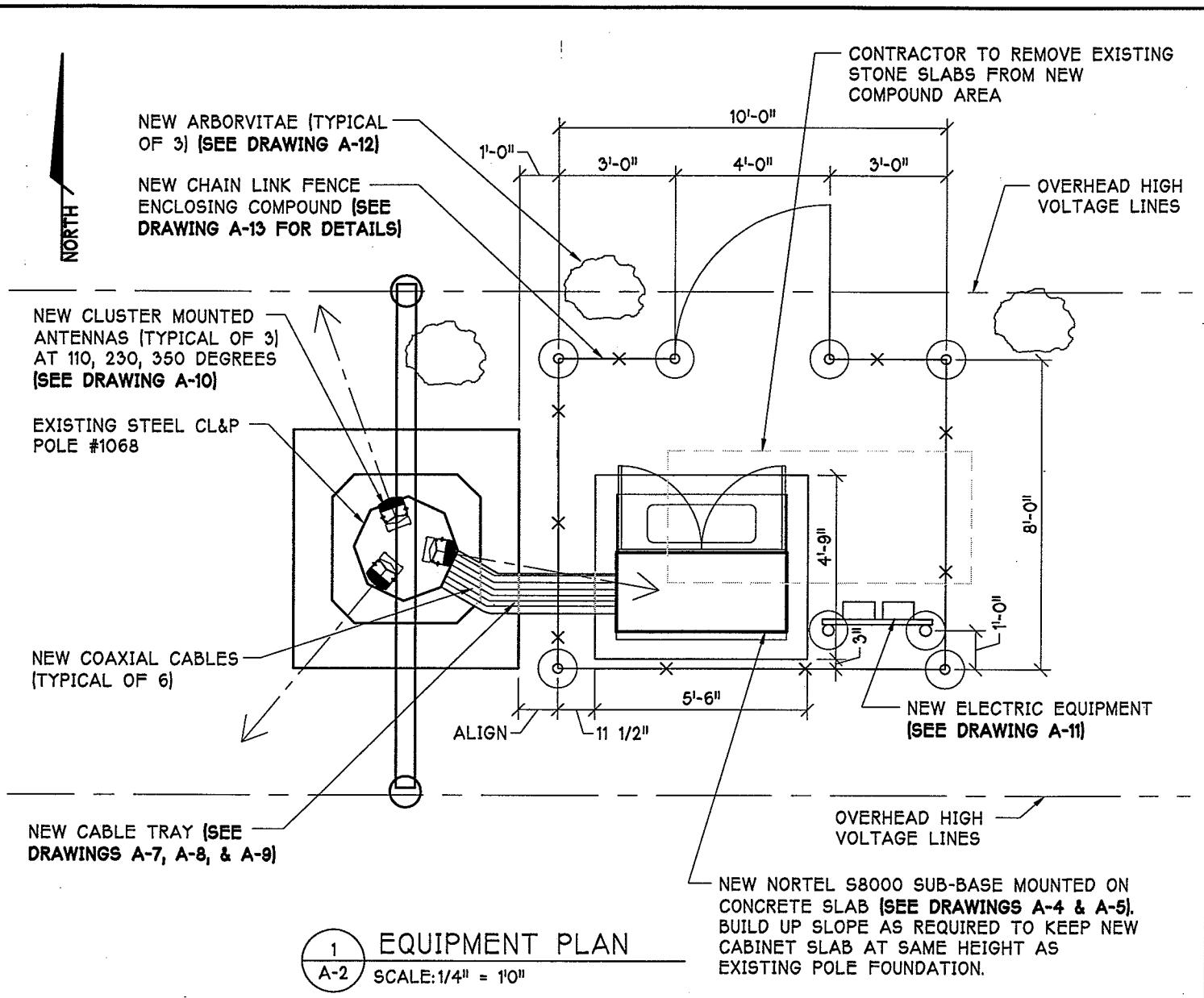


1
A-1 SITE LAYOUT
SCALE: 1" = 60'

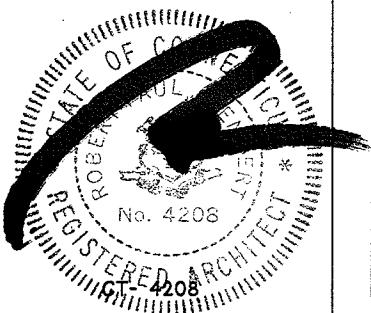


ARCNET
ARCHITECTS, INC.
670 North Beers Street, Building 2, Holmdel, NJ 07733
Tel: 732.739.3200 Fax: 732.739.0440

P.C. RVA	P.C. Chkd: C	Chkd By: C	Drawing Title: SITE LAYOUT & KEY PLAN	Project: CL&P POLE #1068	
Client: OCS			Address: MECHANIC STREET DARIEN, CT	Search Area: DARIEN / DOWNTOWN	
ARCNET Project No. A99.506.833A			Drawn: CS	Site ID No.: CT-11-290C	Revision No. Date:
Approved By: CLIENT: _____ DATE: _____					Drawing No. A-1



ROBERT P. JUENGERT



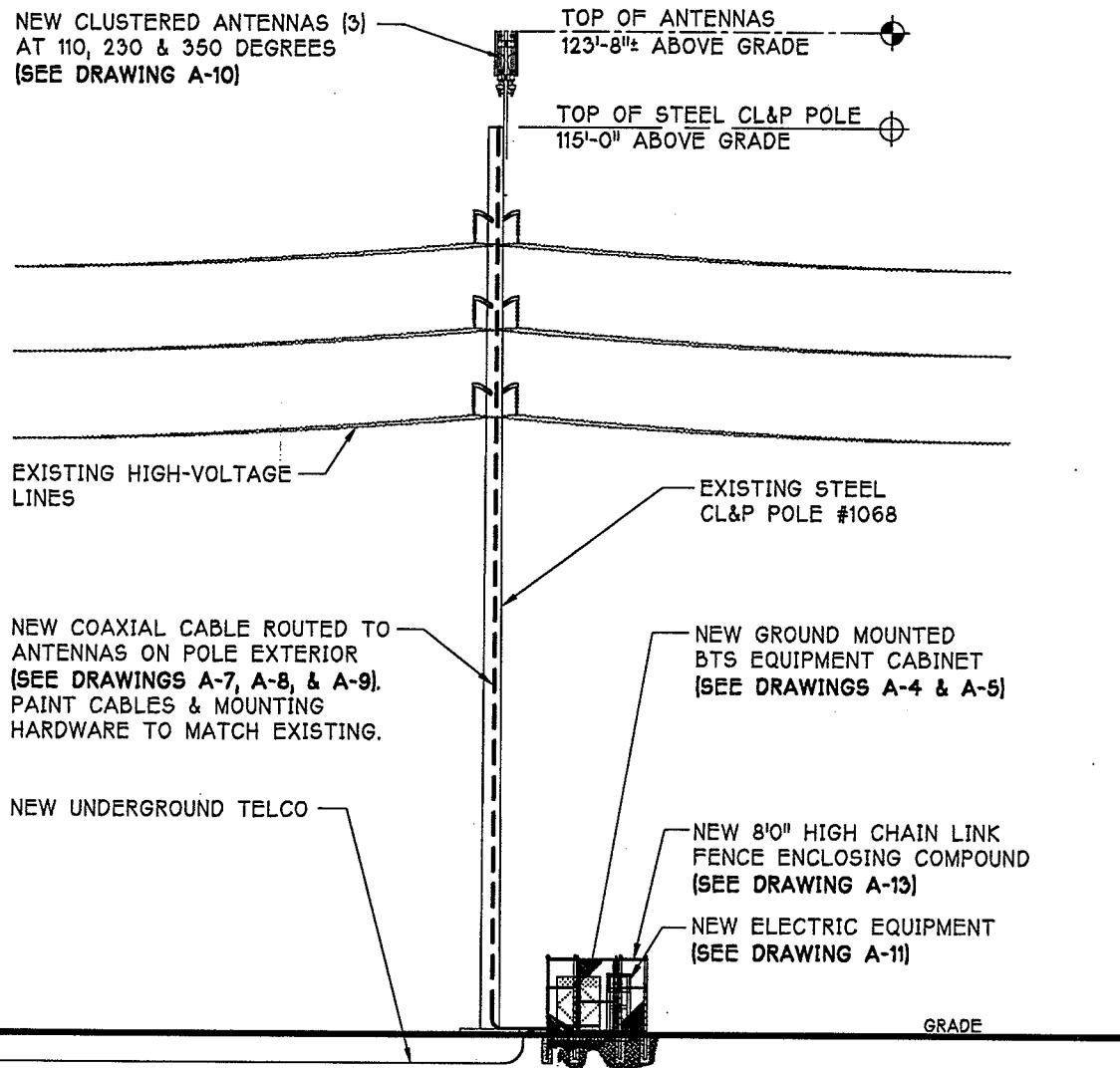
ARCNET
ARCHITECTS, INC.
670 North Beers Street, Building 2, Holmdel, NJ 07733
Tel: 732.739.3200 Fax: 732.739.0440

Drawing Title: EQUIPMENT PLAN
Client: **OCS**
ARCNET Project No. A99.506.833A Drawn: CS Date: 4/20/99

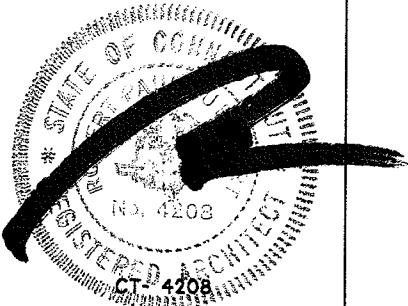
Project: CL&P POLE # 1068
Address: MECHANIC STREET
DARIEN, CT
Search Area: DARIEN / DOWNTOWN
Site ID No: CT-11-290C
Approved By: CLIENT: DATE:

REV2KBa	7/16/99
REV1(JMc)	5/7/99
Revision No.	Date:
Drawing No.	

A-2



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1
A-3

SOUTH ELEVATION

SCALE: 1" = 20'0"

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



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670 North Beers Street, Building 2, Holmdel, NJ 07733

Tel: 732.739.3200 Fax: 732.739.0440

P.C.

P.C. Chkd:

Chkd by:

Drawing Title:

SOUTH ELEVATION

Client:



ARCNET Project No.

A99.506.833A

Drawn:

CS

Date:

4/20/99

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

Address: MECHANIC STREET
DARIEN, CT

Search Area:

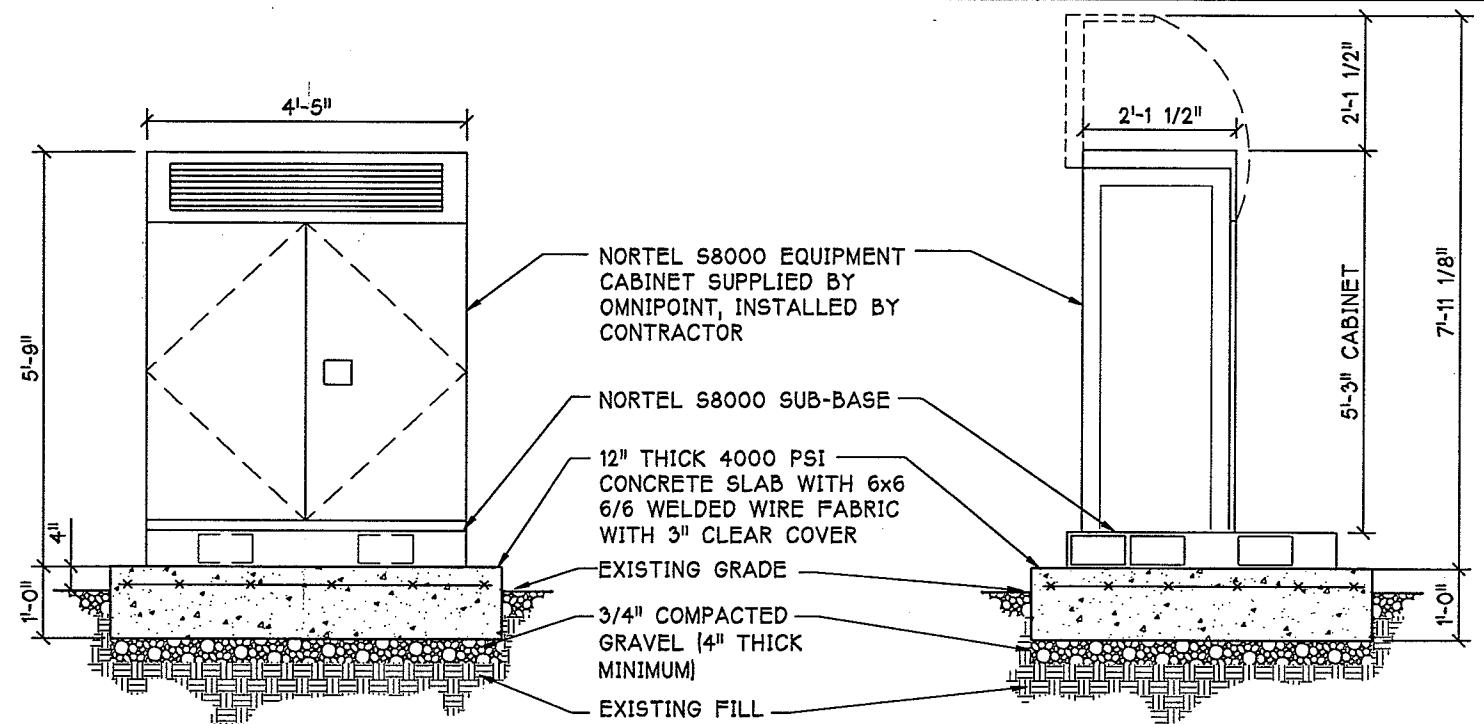
DARIEN / DOWNTOWN

Site ID No.:

CT-11-290C

REV(JMC)	5/7/99
Revision No.	Date:
Drawing No.:	

A-3

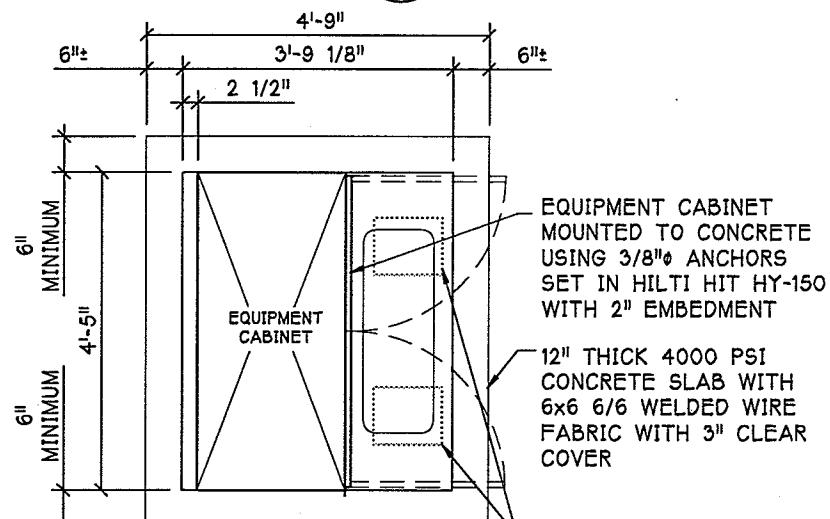


1
A-4 FRONT VIEW

SCALE: 1/2" = 1'-0"

2
A-4 SIDE VIEW

SCALE: 1/2" = 1'-0"

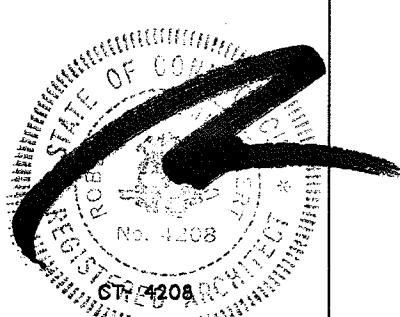


WEIGHT OF CABINET = 1065 lbs.
WEIGHT OF BASE = 110 lbs.

3
A-4 CABINET DETAIL

SCALE: 1/2" = 1'-0"

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:
CABINET DETAIL

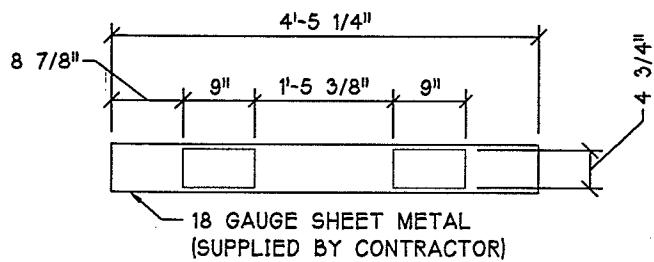
Client: **OCS**

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

Address: **MECHANIC STREET**
DARIEN, CT

Search Area:
DARIEN / DOWNTOWN
Site ID No.:
CT-11-290C

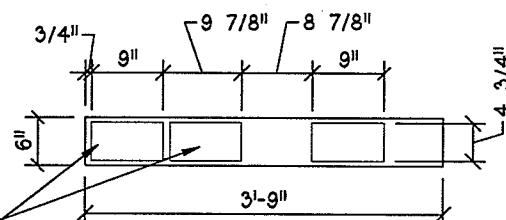
REV(JMc)	5/7/99
Revision No.	Date:
Drawing No.	
A-4	



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

SCALE: 1/2" = 1'-0"

CABLE ACCESS
PANELS (8 TYPICAL)



SIDE ELEVATION

SCALE: 1/2" = 1'-0"

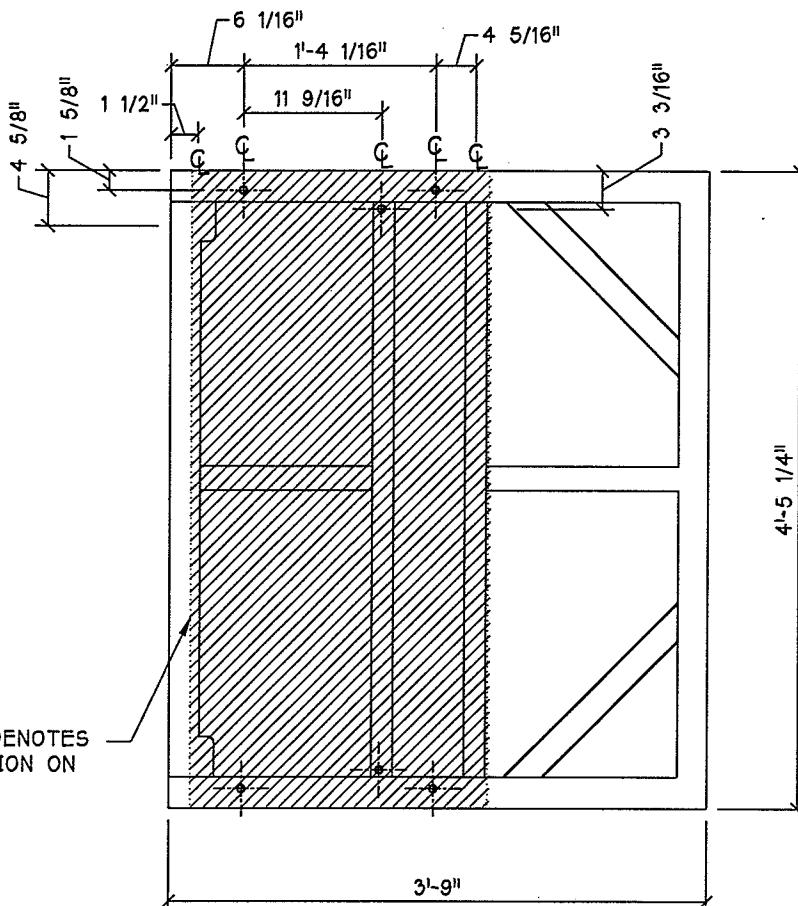
NOTES.

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 SANDWICHEDE BETWEEN SUB-BASE AND GRATING. DRILL (2) WEEP HOLES AT EACH CORNER AND AT CENTER.

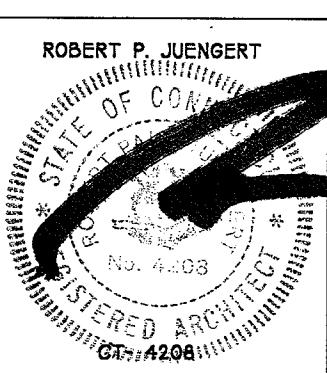
3. ALL SUB-BASES TO BE MOUNTED TO SUBSTRATE USING 1/2" HIGH STRENGTH BOLTS. WHERE MOUNTING TO CONCRETE USE HILTI HIT HY 150 SYSTEM WITH 3 1/2" EMBEDMENT. WHERE MOUNTING TO GRATING USE HIGH STRENGTH SADDLE CLIPS.

SHADED AREA DENOTES
CABINET LOCATION ON
SUB-BASE



SUB-BASE DETAIL

SCALE: 1/2" = 1'-0"



Drawing Title: **SUB-BASE DETAIL**

Client: OCS

Project: GI & P POLE #1068

Address: MECHANIC STREET
DARIEN CT

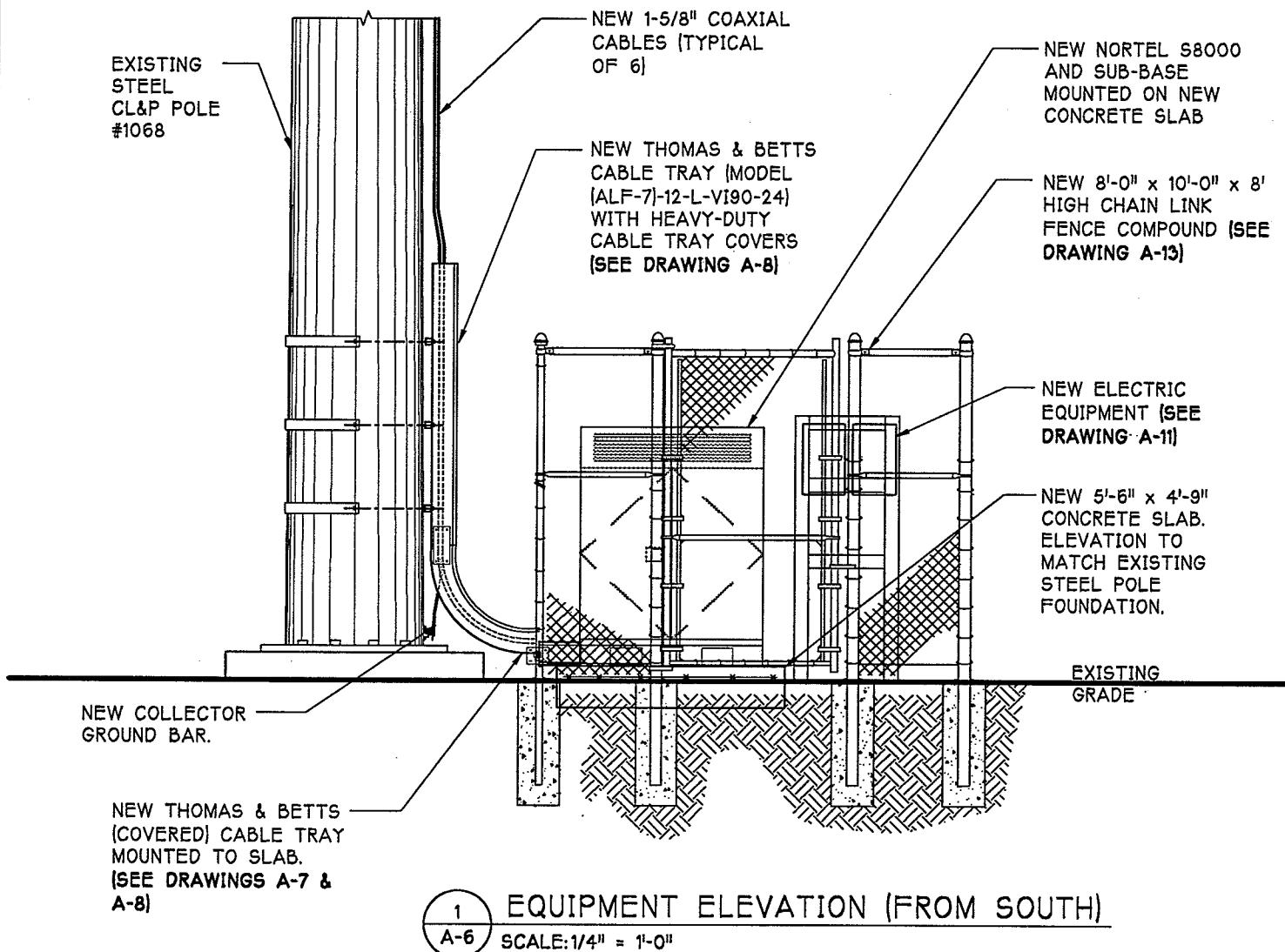
SEARCH AREA

DARIEN / DOWNTOWN

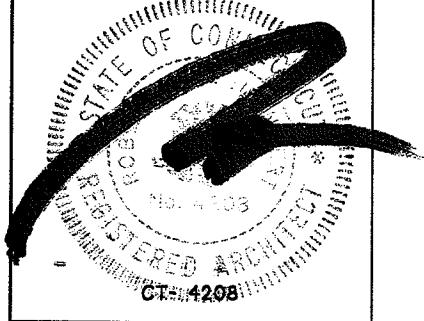
Site ID No.:

CT-11-290C

Revision No.	Date:
Drawing No.	
A-5	

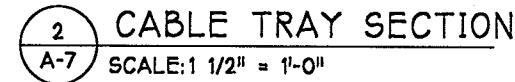
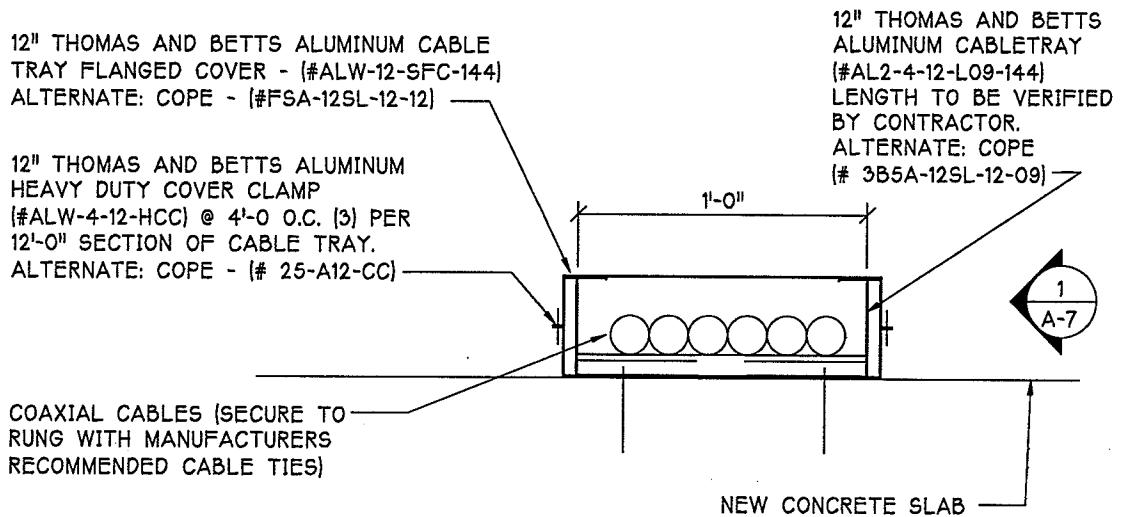
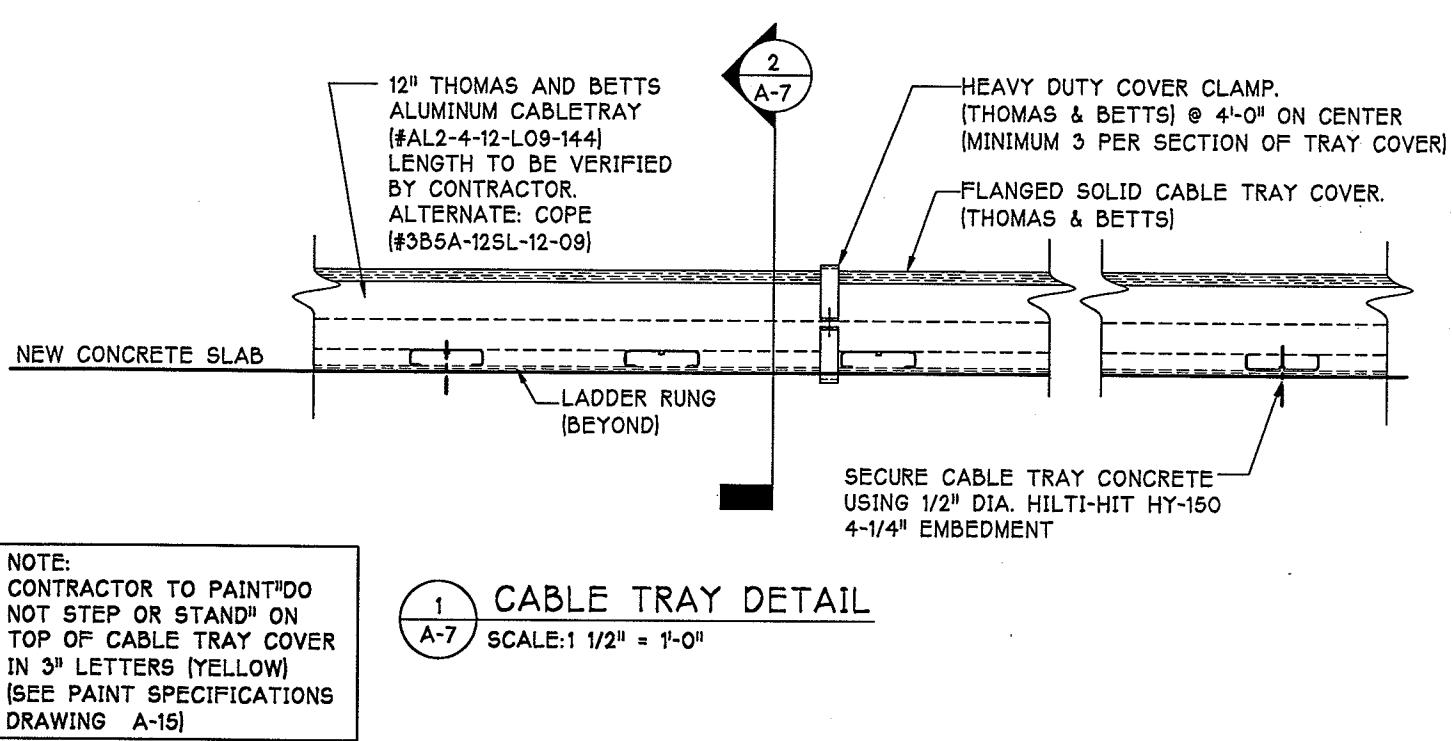


ROBERT P. JUENGERT



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

 ARCNET <small>ARCHITECTS, INC.</small>			Drawing Title: EQUIPMENT ELEVATION Client: OCS			Project: CL&P POLE #1068 Address: MECHANIC STREET DARIEN, CT Search Area: DARIEN / DOWNTOWN Site ID No.: CT-11-290C				
P.C.:	P.C. Chkd:	Chkd by:	ARCNET Project No.	Drawn:	Date:	Approved By:	Client:	DATE:	REV(JMC)	5/7/99
RVa			A99.506.833A	CS	4/21/99				Revision No.	Date:



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



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

Drawing Title:
CABLE TRAY DETAIL

Client:

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

Drawn: **CS**

Date: **4/21/99**

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

Address: **MECHANIC STREET**
DARIEN, CT

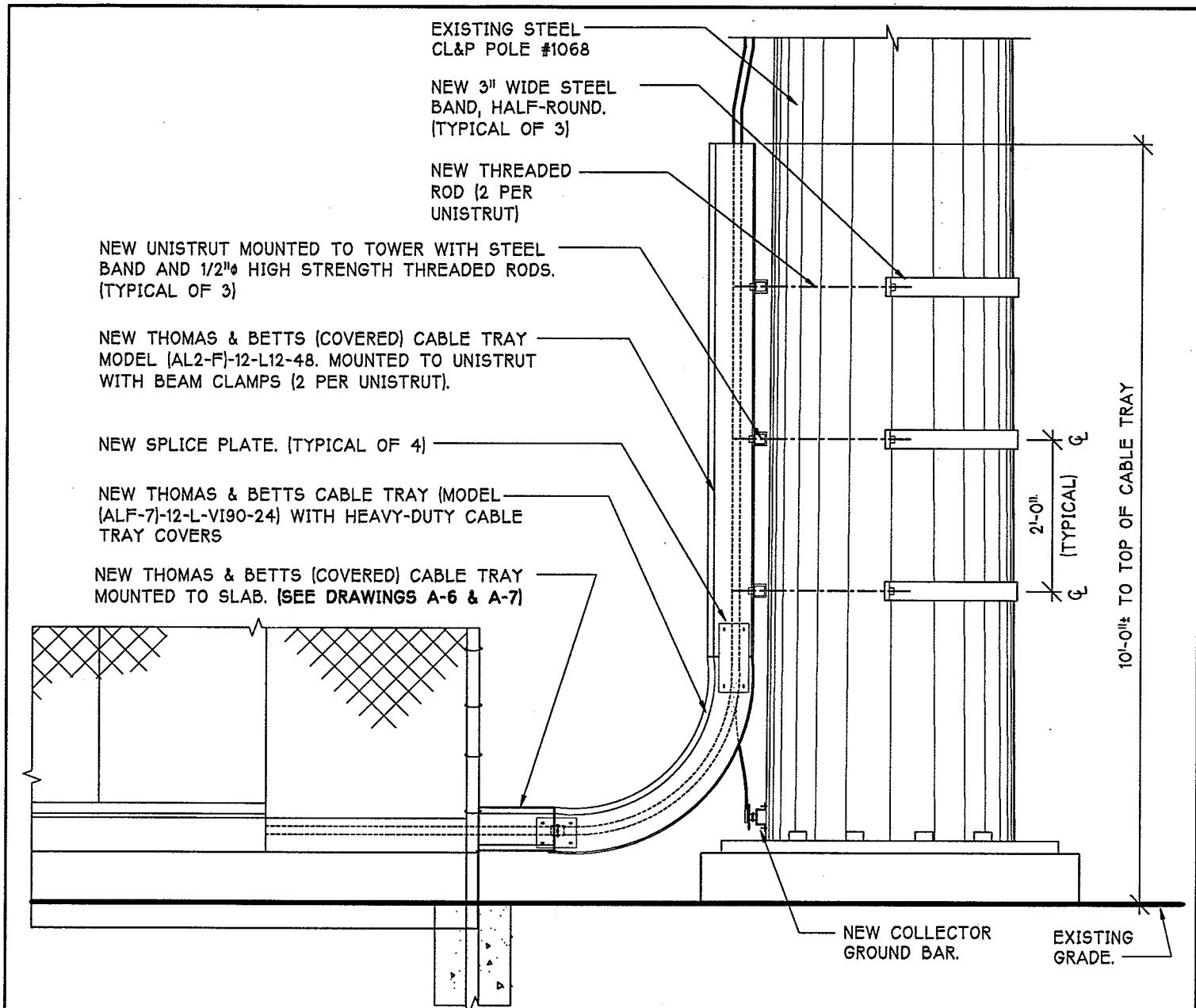
Search Area:
DARIEN / DOWNTOWN
Site ID No.: **CT-11-290C**

Approved By:
CLIENT: _____ DATE: _____

Revision No.	Date:

Drawing No.	Date:

A-7

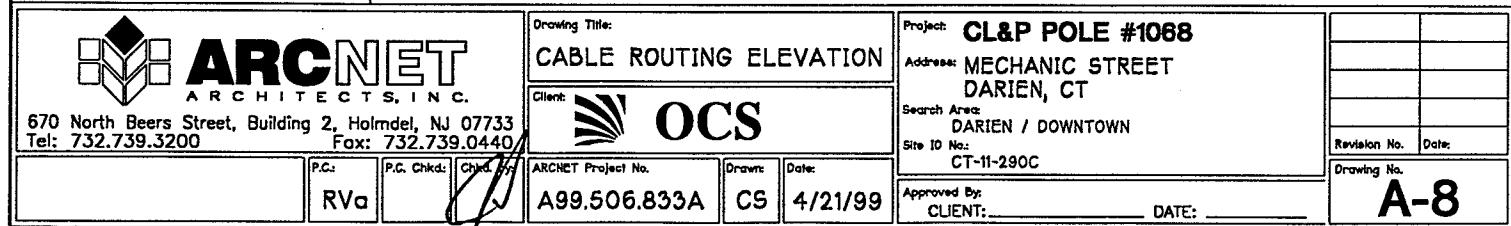
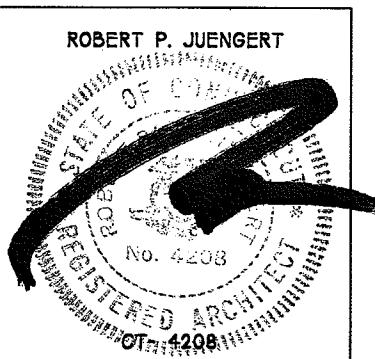


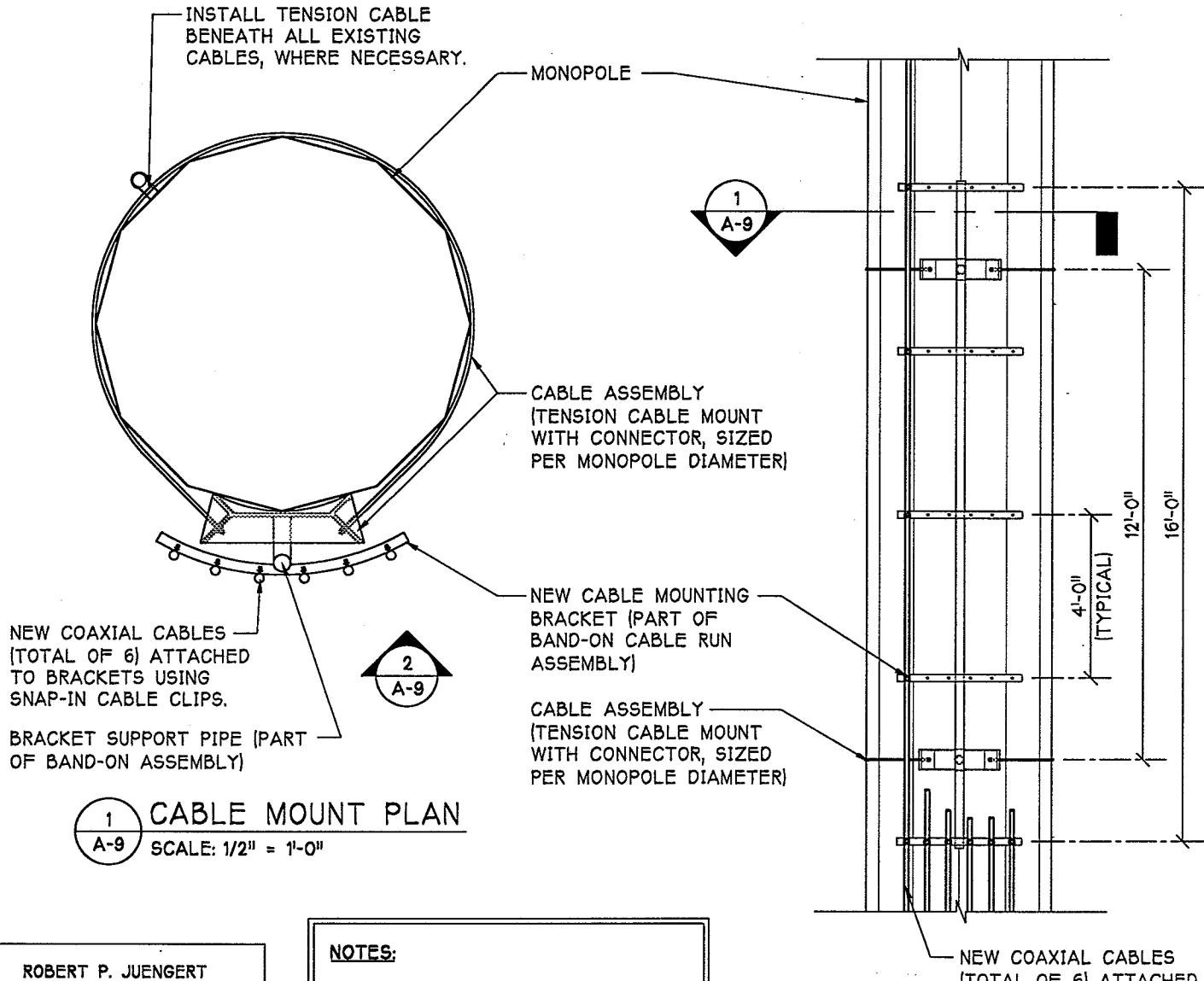
1 CABLE ROUTING ELEVATION
A-8 SCALE: 1/2" = 1'-0"

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.





ROBERT P. JUENGERT



NOTES:

1. DRAWINGS REPRESENT SIZE & SPACING OF BAND-ON CABLE RUN (PART WA10784, AND CABLE ASSEMBLY PER MONPOLE 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.

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

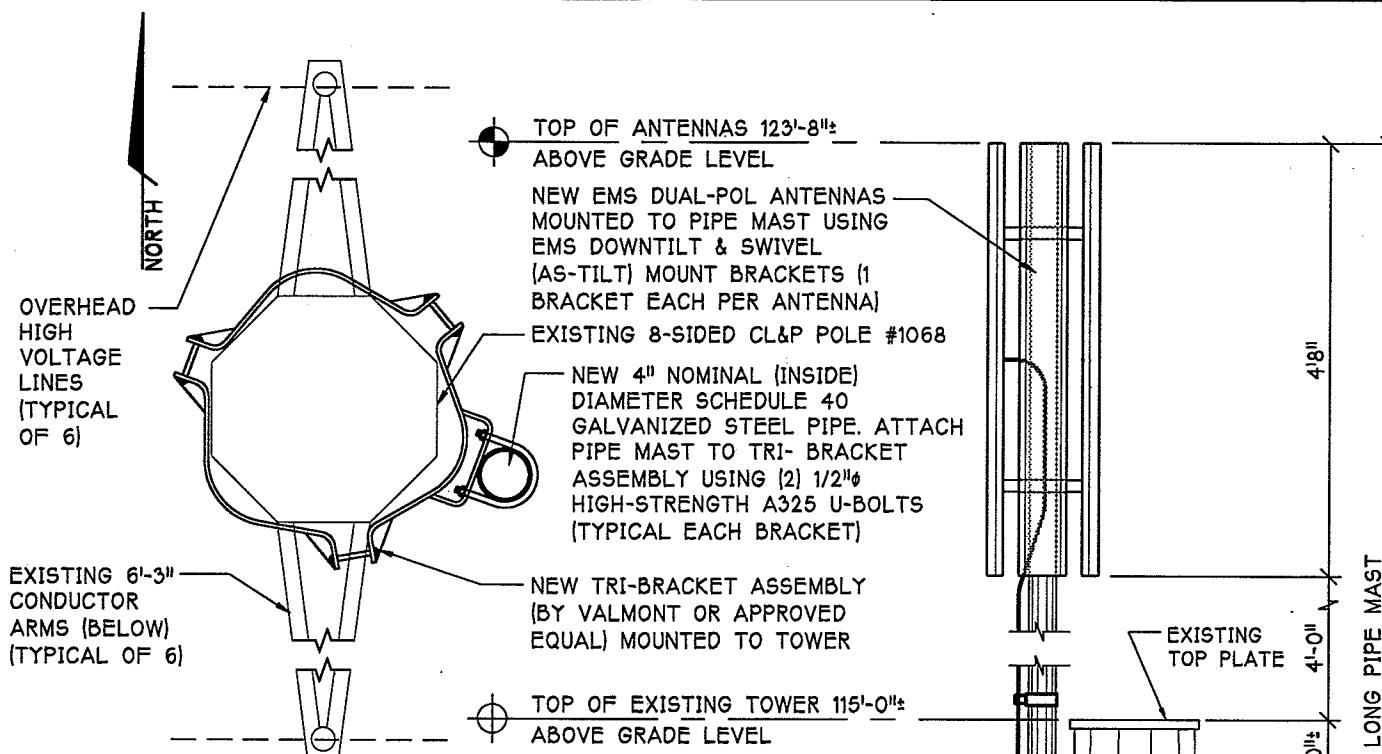
Address: **MECHANIC STREET
DARIEN, CT**

Search Area: **DARIEN / DOWNTOWN**

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

Revision No.	Date:
Drawing No.	
A-9	

ARCNET ARCHITECTS, INC.	Drawing Title: CABLE MOUNT ELEVATION
670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200	Client: OCS
P.C. RVa	P.C. Chkd: Chkd by: <i>[Signature]</i>
ARCNET Project No. A99.506.833A	Drawn: CS
	Date: 4/21/99



2 A-10 ANTENNA MOUNT SECTION

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

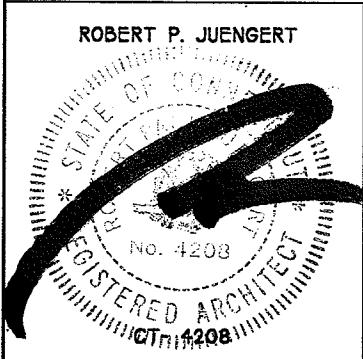
ATTACH PIPE MAST TO TRI-BRACKET ASSEMBLY USING (2) 1/2"Ø HIGH-STRENGTH A325 U-BOLTS (TYPICAL EACH BRACKET)

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

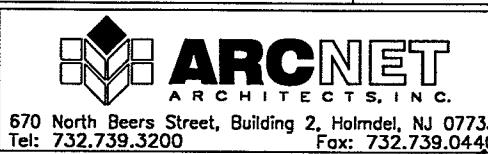
NEW TRI-BRACKET ASSEMBLY (BY VALMONT OR APPROVED EQUAL) MOUNTED TO TOWER (TYPICAL 2 PLACES - INSTALL PER MANUFACTURER'S SPECIFICATIONS)

ROBERT P. JUENGERT



1 A-10 ANTENNA MOUNT ELEVATION

SCALE: 3/8" = 1'-0"



Drawing Title:
ANTENNA MOUNT DETAIL

Client:



ARCNET Project No.

Drawn:

Date:

A99.506.833A

CS

4/21/99

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

Address: MECHANIC STREET
DARIEN, CT

Search Area:

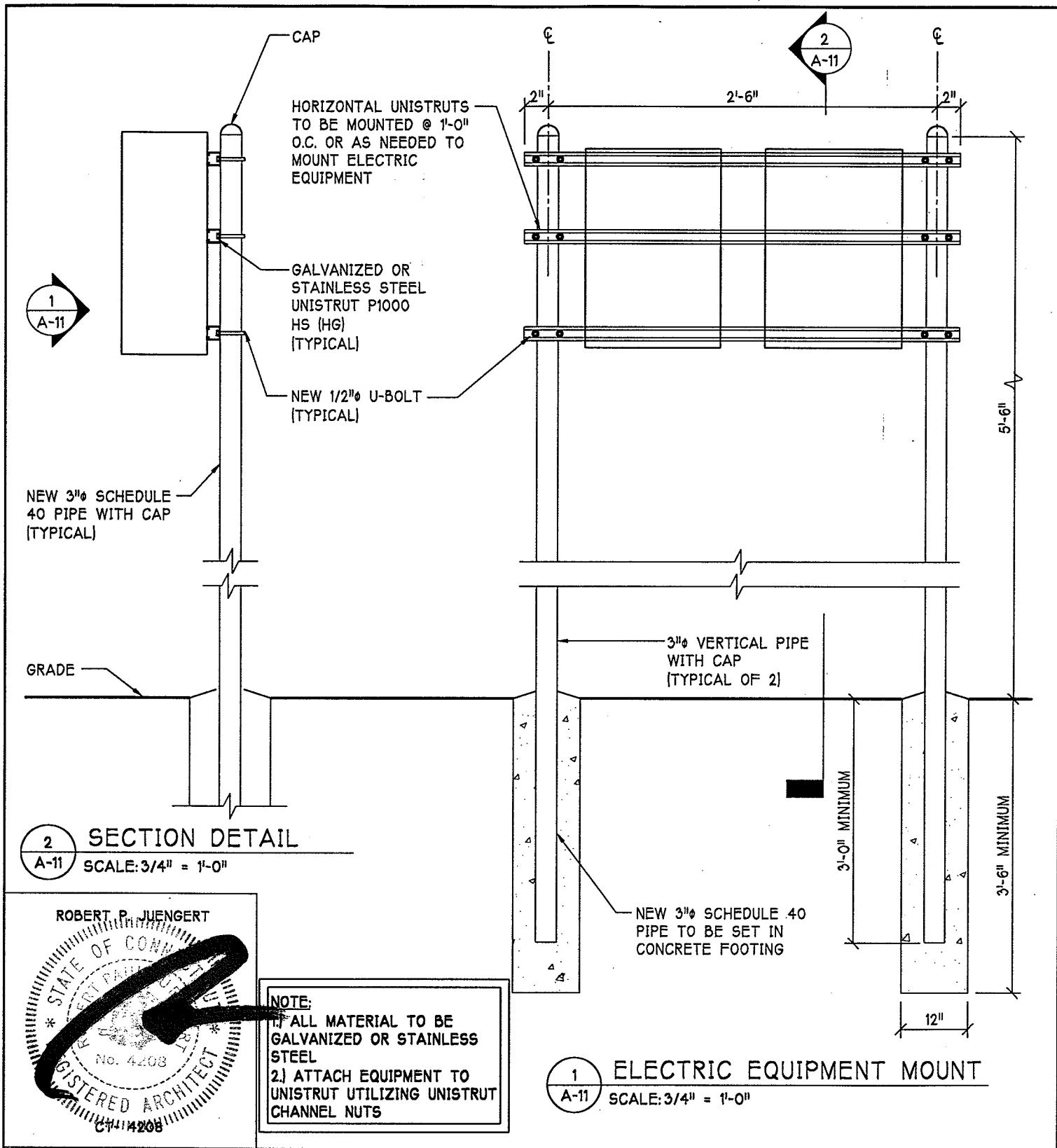
DARIEN / DOWNTOWN

Site ID No.:

CT-11-290C

REV(JMC)	5/7/99
Revision No.	Date:
Drawing No.	

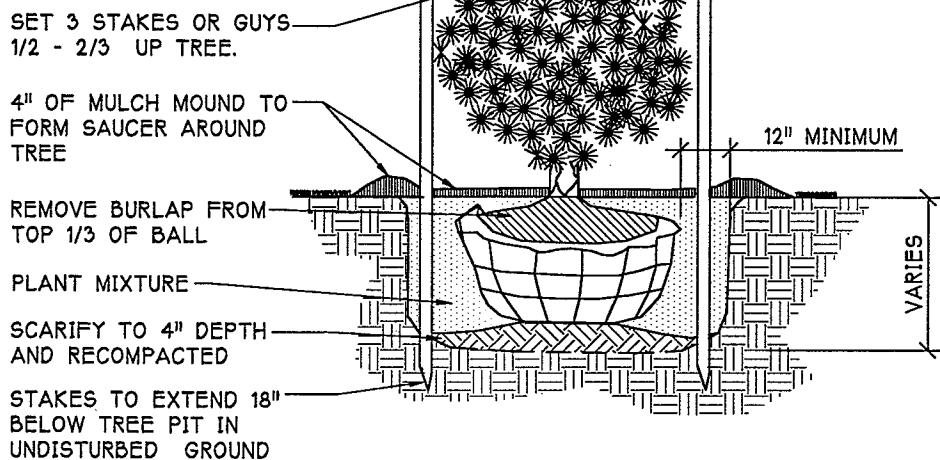
A-10



 ARCNET ARCHITECTS, INC.		Drawing Title: ELECTRIC EQUIPMENT MOUNT Client: OCS			
P.C. 670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200	P.C. Chkd: Fax: 732.739.0440	Chkd by:	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: CLIENT: DATE: A-11 REV1(JMc) 5/7/98 Revision No. Date: Drawing No.		

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

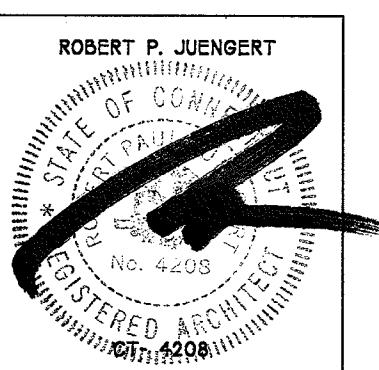


1 PLANTING DETAIL

A-12

SCALE: 1/8" = 1'-0"

ROBERT P. JUENGERT



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

Drawing Title:
PLANTING DETAIL

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. **A-12**

Approved By:
CLIENT: _____ DATE: _____

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

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

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

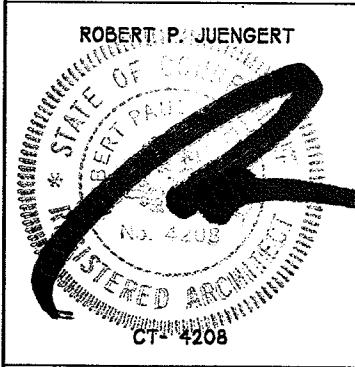
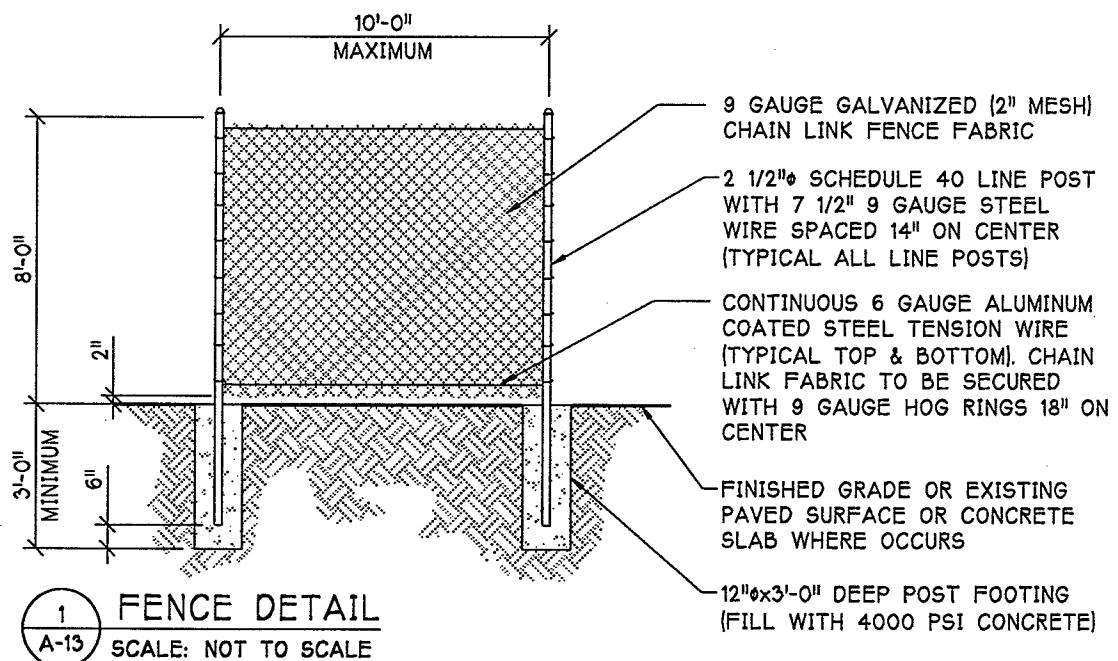
3 1/2"Ø (INSIDE DIAMETER) SCHEDULE 40 CORNER POST (TYPICAL)

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

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

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



ARCNET
ARCHITECTS, INC.
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 #1068**

Address: MECHANIC STREET

DARIEN, CT

Search Area:

DARIEN / DOWNTOWN

Site ID No.:

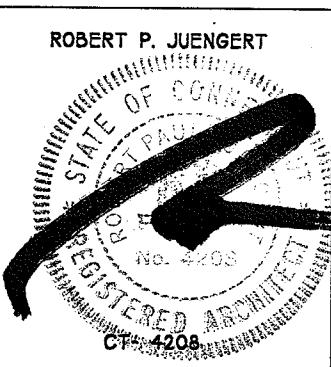
CT-11-290C

Approved By: CLIENT: DATE:

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 PLATZINC 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.



 ARCNET <small>ARCHITECTS, INC.</small>			Drawing Title: GENERAL NOTES				Project: CL&P POLE #1068			
			Client:	OCS			Address:	MECHANIC STREET DARIEN, CT		
670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440			Search Area:	DARIEN / DOWNTOWN			Revision No.:		Date:	
P.C.:	P.C. Chkd:	Chkd By:	ARCNET Project No.	Drawn:	Date:	Site ID No.:		Drawing No.:		
RVa			A99.506.833A	CS	4/21/99	CT-11-290C		A-14		
Approved By: CLIENT: _____ DATE: _____										

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, ISOPROPOANOL, OR BUTANOL. A TEN PERCENT SOLUTION OF METHYL ETHYL KETONE IN WATER CAN ALSO BE USED WHENEVER STUBBORN OIL OR GREASE IS ENCOUNTERED.

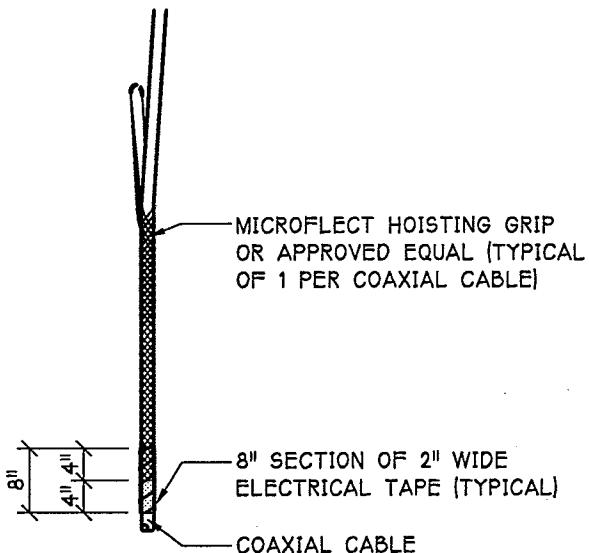
GALVANIZED SURFACES

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 DEMARCTION

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 -



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

 ARCNET ARCHITECTS, INC.			Drawing Title: GENERAL NOTES			Project: CL&P POLE #1068 Address: MECHANIC STREET DARIEN, CT Search Area: DARIEN / DOWNTOWN Site ID No: CT-11-290C				
 OCS			Client: OCS							
670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440			ARCNET Project No. A99.506.833A Drawn: CS Date: 4/21/99							
P.C. RVa			P.C. Chkd: 						Revision No. Date: Drawing No. A-15	
Approved By: CLIENT: _____ DATE: _____										

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% COMPAKTED 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.

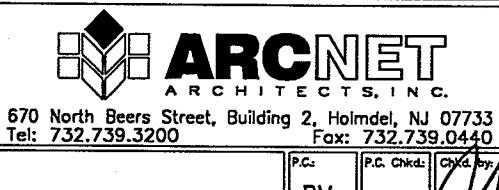
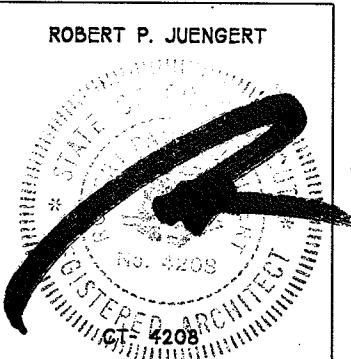
CAST-IN-PLACE CONCRETE

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



Drawing Title:	CONCRETE NOTES		
Client:	 OCS		
P.C.:	P.C. Chkd.:	Chkd. by:	ARCNET Project No.
RVa			A99.506.833A
Drawn:	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:	CLIENT: _____ DATE: _____

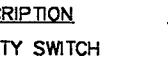
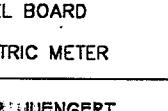
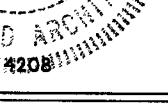
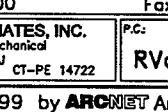
Revision No.	Date:
Drawing No.	
A-17	

DESIGN CRITERIA

1. **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.
 2. **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.
 3. **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 DEMARCATON POINT (USUALLY LOCATED IN THE BASEMENT). THE MAIN DEMARCATON POINT ALLOWS FOR THE LEAST AMOUNT OF NOISE AND THE MOST AMOUNT OF PROTECTION. FOR COST SAVINGS, A CLOSER DEMARCATON 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 DEMARCATON POINT.
 4. **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.

WRING METHODS

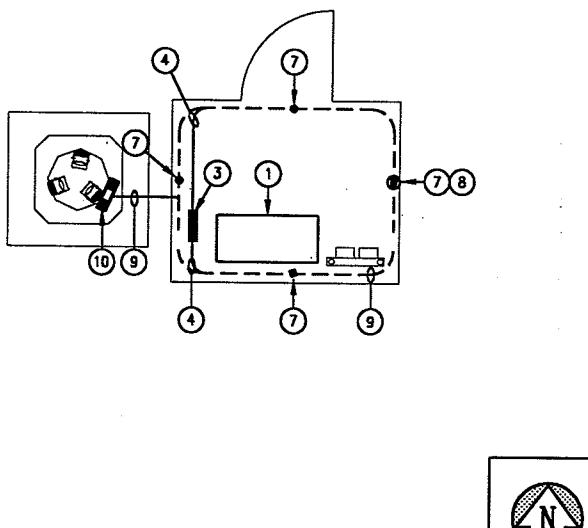
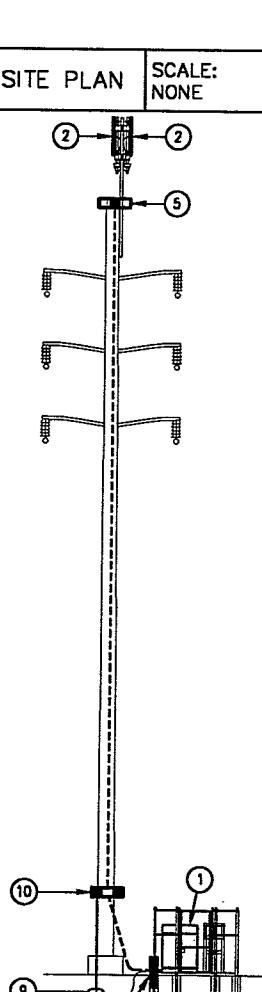
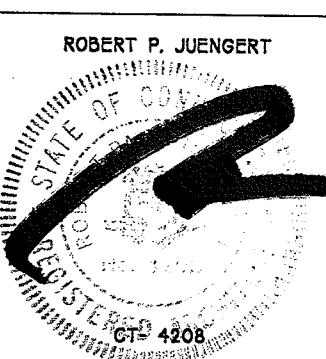
1. **GENERAL:** ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED UNLESS NOTED OTHERWISE. IN UNFINISHED AREAS, SUCH AS BASEMENTS, MECHANICAL ROOMS, ELECTRICAL CLOSETS, ETC. WIRING SHALL BE ROUTED ON THE INTERIOR SURFACE. NO WIRING SHALL BE ROUTED ON THE OUTSIDE SURFACES OF THE BUILDING UNLESS SPECIFICALLY NOTED. ALL NEC AND LOCAL ELECTRIC CODES SHALL BE ADHERED TO. ALL CONDUCTORS SHALL BE COPPER UNLESS OTHERWISE NOTED.
 2. **BELLOW 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.
 3. **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.
 4. **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.

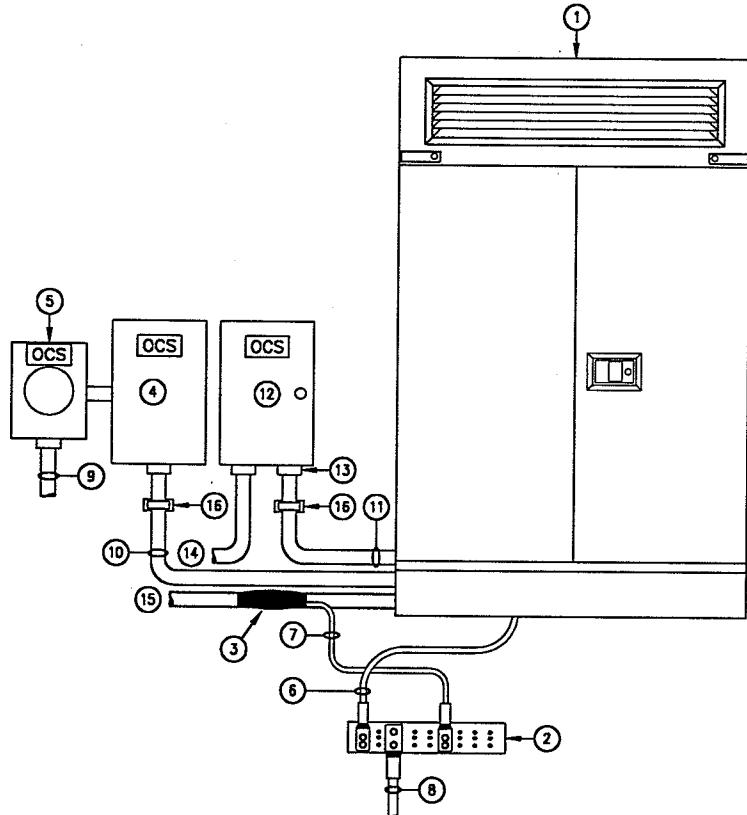
SYMBOLS		IDENTIFIER		DESCRIPTION		IDENTIFIER		DESCRIPTION		ABBREVIATIONS AND LABELS	
	SAFETY SWITCH			ELECTRICAL WIRING (TURNING UP)				NE	EXISTING ELECTRIC	AFF	ABOVE FINISHED FLOOR
	PANEL BOARD		CAB	ELECTRICAL WIRING (TURNING DOWN)				NE	NEW ELECTRIC	AFG	ABOVE FINISHED GRADE
	ELECTRIC METER			COMMUNICATIONS CABINET				T	EXISTING TELEPHONE	AWG	AMERICAN WIRE GAUGE
				BACKBOARD				NT	NEW TELEPHONE	C	CONDUIT
				RECEPTACLE				NE	NEW UNDERGROUND ELECTRIC	CB	CIRCUIT BREAKER
				NEW UTILITY POLE				E	EXISTING UNDERGROUND ELECTRIC	EMT	ELECTRICAL METALLIC TUBING
				EXISTING UTILITY POLE				NT	NEW UNDERGROUND TELEPHONE	GND	GROUND
				MASTER GROUND BAR				T	EXISTING UNDERGROUND TELEPHONE	MC	METAL CLAD CABLE
				INSULATED GROUND BAR				PL	PROPERTY LINE	MCB	MAIN CIRCUIT BREAKER
				UNINSULATED GROUND BAR						MDP	MAIN DISTRIBUTION PANEL
										MGB	MASTER GROUND BAR
										MLO	MAIN LUGS ONLY
										N	NEUTRAL
										NEC	NATIONAL ELECTRIC CODE
										PNL	PANEL
										PP	POWER PANEL
										PVC	POLYVINYL CHLORIDE
										RA	RIGID ALUMINUM
										RGS	RIGID GALVANIZED STEEL
										WP	WEATHER PROOF

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

		KEY NOTES (Symbols ①, ②, Etc.)							
		<ol style="list-style-type: none"> PROPOSED TELCO DEMARCATON POINT. NORTEL S8000 CABINET. PAD MOUNTED TELCO EQUIPMENT. EXISTING MONOPOLE. NO TEMPORARY POWER AVAILABLE AT THIS SITE. PROVIDE NEW 200A BYPASS UTILITY APPROVED METER SOCKET. NEW ELECTRIC FEEDER ROUTED UNDERGROUND. PROVIDE (1) 3" CONDUIT WITH DRAG LINE FROM THE UTILITY POLE TO THE NEW METER. APPROXIMATE DISTANCE = 70'. NEW ELECTRIC FEEDER ROUTED UNDERGROUND. PROVIDE A 3/4" CONDUIT WITH #2#12 & 1#12G FROM THE PANEL TO THE TELCO DEMARCATON. APPROXIMATE DISTANCE = 75'. 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. UNISTRUT-MOUNTED ELECTRIC EQUIPMENT. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING AND DETAIL 1/E-4. PROVIDE 120V GFI RECEPTACLE INSIDE TELCO BOX. 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'. NEW TELEPHONE SERVICE ROUTED UNDERGROUND. PROVIDE A 4" CONDUIT WITH DRAG LINE. APPROXIMATE DISTANCE = 100'. 2#2 SOLID TINNED COPPER GROUNDS. REMOVE PAINT AND OTHER FOREIGN MATTER IN ORDER TO ACHIEVE A GOOD BOND. APPROXIMATE DISTANCE = 10'. ATTACH TO NEW GROUND RING. TELEPHONE COMPANY TO PULL TELEPHONE LINES IN CONDUIT SUPPLIED BY CONTRACTOR. POWER COMPANY TO PULL ELECTRIC LINES IN CONDUIT PROVIDED BY CONTRACTOR. 							
		<div style="border: 1px solid black; padding: 5px; text-align: center;"> NOTE: THE CONTRACTOR MUST VERIFY TAP AND METER LOCATION WITH THE UTILITY COMPANY. </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> WARNING: THE TELCO DEMARC HAS NOT BEEN CONFIRMED BY THE TELEPHONE COMPANY. </div>							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 2px;">SITE LAYOUT</td> <td style="width: 50%; padding: 2px;">SCALE: NONE</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">E-2</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 2px;">01</td> </tr> </table>		SITE LAYOUT	SCALE: NONE	E-2		01			
SITE LAYOUT	SCALE: NONE								
E-2									
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ARCNET <small>ARCHITECTS, INC.</small>		Drawing Title: SERVICE PLAN		Project: CL&P POLE # 1068			
670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440		Client: OCS		Address: MECHANIC STREET DARIEN, CT			
DLB ASSOCIATES, INC. Electrical / Mechanical Wanamassa, NJ CT-PE 14722		P.C. RVa P.C. Chkd: C Chkd: C		Search Area: DARIEN / DOWNTOWN Site ID No.: CT-11-290C		Revision No. Date: Drawing No. E-2	
Approved By: CLIENT: 							

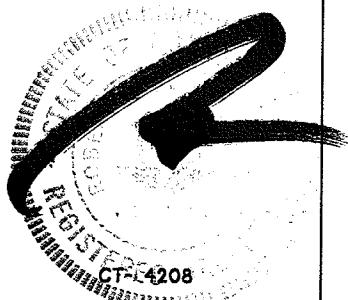
 <div style="text-align: center; margin-top: 10px;"> SITE PLAN SCALE: None E-3 01 </div> <div style="text-align: center; margin-top: 10px;">  <div style="margin-top: 10px;"> ELEVATION SCALE: None E-3 02 </div> <div style="margin-top: 20px;">  </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> GENERAL NOTES </div> <div style="list-style-type: none; padding-left: 0;"> <ol style="list-style-type: none"> 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. </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> KEY NOTES (Symbols ①, ②, Etc.) </div> <div style="list-style-type: none; padding-left: 0;"> <ol style="list-style-type: none"> 1. COMMUNICATIONS CABINET. 2. ANTENNA. 3. ALL COAXIAL CABLES SHALL BE GROUNDED AT THIS POINT VIA CABLE GROUND KITS TO GROUNDING BAR. 4. #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. </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> LEGEND </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> DESCRIPTION </div> <div style="width: 30%;"> DETAIL NO. </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> MASTER GROUND BAR </div> <div style="width: 30%; text-align: center;"> 1/E-5 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> INSULATED GROUND BAR </div> <div style="width: 30%; text-align: center;"> 1/E-5 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> UNINSULATED GROUND BAR </div> <div style="width: 30%; text-align: center;"> 1/E-7 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> GROUND KIT(S) </div> <div style="width: 30%; text-align: center;"> E-6 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> COAXIAL CABLES </div> <div style="width: 30%; text-align: center;"> NONE </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 30%; text-align: center;">  </div> <div style="width: 30%; text-align: center;"> ANTENNA </div> <div style="width: 30%; text-align: center;"> 1/E-7 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Drawing Title: GROUNDING PLAN </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Project: CL&P POLE # 1068 Address: MECHANIC STREET DARIEN, CT </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Client: OCS </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Search Area: DARIEN / DOWNTOWN Site ID No.: CT-11-290C </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Approved By: CLIENT: DATE: </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Revision No. Date: Drawing No. E-3 </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%; border: 1px solid black; padding: 5px;"> DLB ASSOCIATES, INC. Electrical / Mechanical Wanamassa, NJ CT-PE 14722 </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> P.C. Chkd: RVa Architect: ARCNET ARCNET Project No. A99.506-833A Drawn: MW Date: 4/26/99 </div> <div style="width: 30%; border: 1px solid black; padding: 5px;"> Approved By: CLIENT: DATE: </div> </div>
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NORTEL S8000 CABINET RISER

SCALE: E-4
NONE 01

ROBERT P. JUENGERT



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 DEMARCATON 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. DEMARCATON BOX INSTALLED BY CONTRACTOR AND SUPPLIED BY OMNIPOINT.
13. MYER'S HUB FOR ALL SIDE CONNECTIONS TO DISCONNECT SWITCH, DEMARCATON BOX, AND NORTEL SUB BASE.
14. CONDUIT WITH DRAG LINE FROM MAIN DEMARCATON SOURCE TO DEMARCATON BOX. FOR CONTINUATION SEE DRAWING E-2.
15. COAXIAL CABLES. REFER TO ARCHITECTURAL DRAWINGS FOR QUANTITY.
16. SINGLE HOLE CONDUIT SUPPORT WITH BACK STRAP.

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

P.C.: RVa

Date: / /

ARCNET Project No. A99.506-833A

Drawn: MW

Date: 4/26/99

Approved By: CLIENT: DATE: / /

Drawing No. E-4

Revision No. Date:

Search Area: DARIEN / DOWNTOWN

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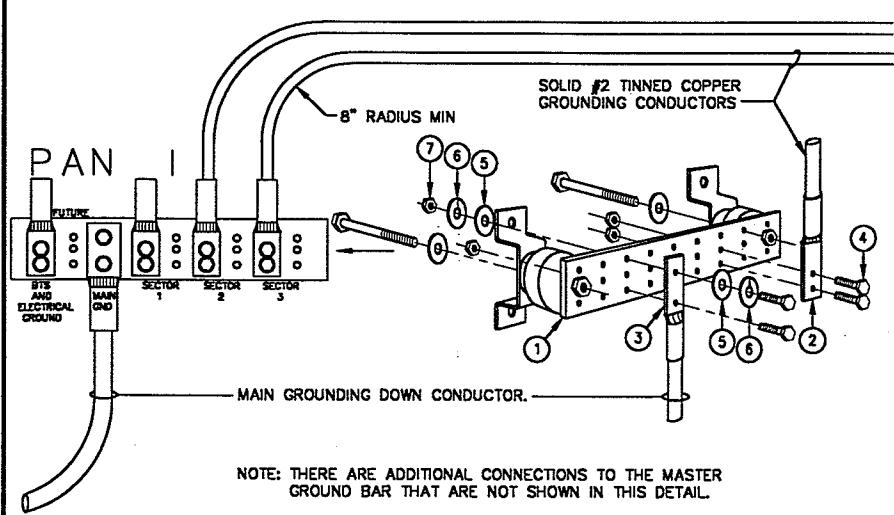
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NOTE: THERE ARE ADDITIONAL CONNECTIONS TO THE MASTER GROUND BAR THAT ARE NOT SHOWN IN THIS DETAIL.

MASTER GROUND BAR TERMINATION DETAIL

E-5

KEY NOTES (Symbols ①, ②, Etc.)

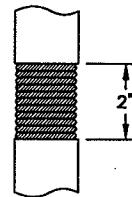
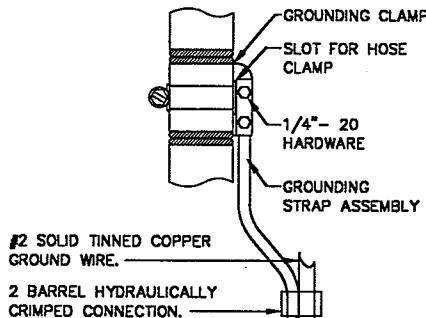
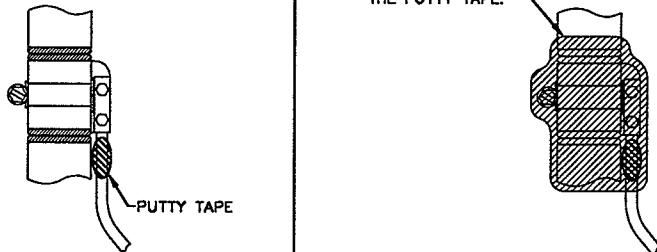
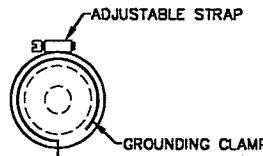
TERMINATION TYPES:

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

GROUNDING MATRIX	SCALE: NONE	E-5 02
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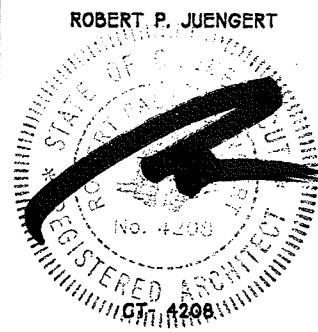
1. ALL COAXIAL CABLES LEAVING THE COMMUNICATION CABINET SHALL BE GROUNDED AT THIS POINT VIA CABLE GROUND KITS. NEWTON INSTRUMENT COMPANY OR EQUAL. #B-6142 (GROUND BAR 20" X 4" X 1/4"), #3061-4 (INSULATORS), #3015-8 (5/8" LOCKWASHERS), #A-6056 (WALL MOUNTING BRACKETS), AND #3012-1 (5/8"-11 X 1" H.H.C.S. 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).

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670 North Beers Street, Building 2, Holmdel, NJ 07733 Tel: 732.739.3200 Fax: 732.739.0440		Client:  OCS							
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					A99.506-833A	MW	4/26/99		
					Approved By:	CLIENT: _____ DATE: _____			Revision No. Date:
									Drawing No. E-5

FIGURE 1 | SCALE: NONE | E-6
01FIGURE 2 | SCALE: NONE | E-6
02FIGURE 3 | SCALE: NONE | E-6
03FIGURE 4 | SCALE: NONE | E-6
04FIGURE 5 | SCALE: NONE | E-6
05

INSTALLATION:

- CUT AND REMOVE A 2 INCH SECTION OF CABLE JACKET SHOWN IN FIGURE #1. USE CARE NOT TO GOUGE OR CRUSH THE CABLE.
- 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.
- 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.
- ATTACH THE TWO HOLE GROUNDING LUG TO THE CABLE GROUNDING CLAMP WITH 1/4" - 20 HARDWARE. SEE FIGURE #2.
- 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.
- 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.
- 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.



Drawing Title: GROUNDING DETAILS

Client:  OCS

Project: CL&P POLE # 1068

Address: MECHANIC STREET

DARIEN, CT

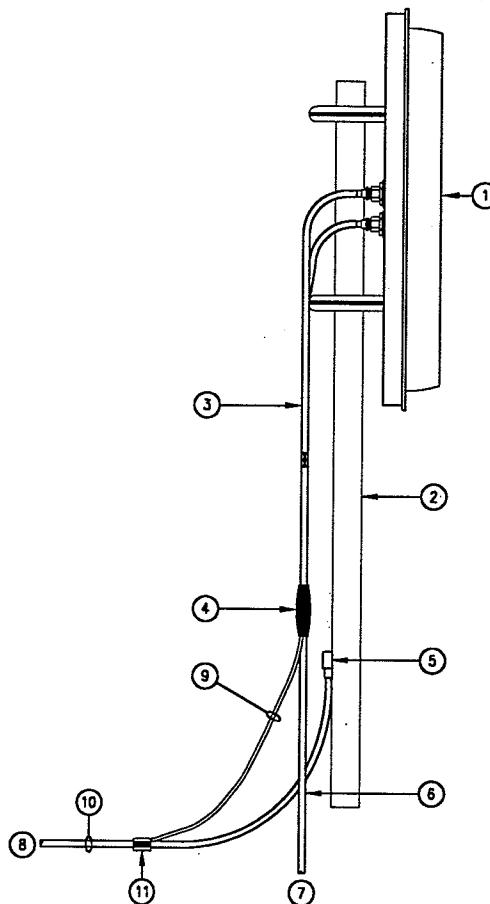
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Site ID No.: CT-11-290C

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Drawing No.	
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E-6	

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Tel: 732.739.3200			
Fax: 732.739.0440			
DLB ASSOCIATES, INC.	P.C.	P.C. Chkd:	Arch. Ed:
Electrical / Mechanical	RVa		
Wanomassa, NJ			
CT-PE 14722			

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



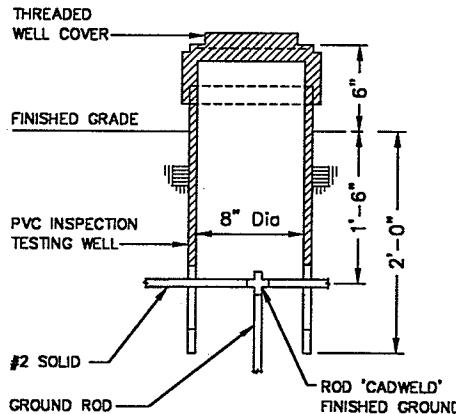
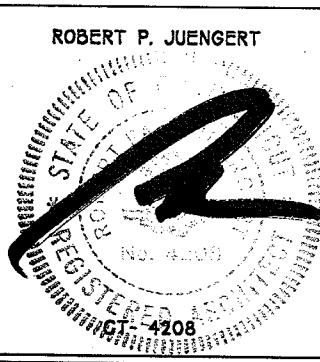
ANTENNA GROUNDING

SCALE:
NONE

E-7
01

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.

ROBERT P. JUENGERT



TEST WELL DETAIL

SCALE:
NONE

28

02



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ARCHITECTS, INC.

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Drawing Title:
GROUNDING DETAIL

100

1000

ARCNET Project No.

108

168

Drawn by: _____ Date: _____

Project: CL&P POLE # 1068

Address: MECHANIC STREET

DARIEN, CT

Search Area:

DARIEN / DOWN

CT-11-280C

Approved By:

CLIENT: _____

E-7

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

1. 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.
 2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
 3. 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.
 4. 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.
 5. 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.
 6. 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.
 7. 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.
 8. 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.
 9. 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.
 10. 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.
 11. 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.
 12. 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.
 13. 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.
 14. 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.
 15. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
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 17. 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.
 18. 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.
 19. 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.
 20. 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.
 21. 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.
 22. 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.
 23. 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.
 24. 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.
 25. THE COUNTY/CITY/TOWN MAY MAKE PERIODIC FIELD INSPECTIONS TO ENSURE COMPLIANCE WITH THE DESIGN PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS.
 26. 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.
 27. 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 34.64 MI.
 - TAKE THE US-1/POST RD EXIT, EXIT 13 0.12 MI.
 - 0. TURN RIGHT ONTO POST RD/ US-1 N 0.02 MI.
 - 1. MAKE A U-TURN ONTO POST RD/ US-1 S 1.04 MI.
 - 2. TURN SHARP LEFT ONTO MECHANIC ST. 0.01 MI.

VICINITY MAP

Map showing the Vicinity Map of the Stamford-Norwalk area. The map includes topographic features, roads, and water bodies. Key locations labeled include North Stamford, Hunting Ridge, Riverbank, Springdale, Noroton, Stamford, Norwalk, and various islands. A box labeled "PROJECT LOCATION" points to a specific location in Noroton. The map also shows contour lines and various road numbers such as 127, 104, 137, 124, 136, 36, 60, 120, and 4. A scale bar at the bottom indicates distances of 0, 500, 1,000, and 2,000. A north arrow is located in the top right corner.

T-MOBILE RF CONFIGURATION

67D94B 1DP+1QP+1OP

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
 - A. REMOVE (3) EXISTING PANEL ANTENNAS.
 - B. INSTALL (3) PROPOSED PANEL ANTENNAS.
 - C. REMOVE (3) EXISTING REMOTE RADIO UNITS FROM RACK AT GRADE.
 - D. INSTALL (3) PROPOSED REMOTE RADIO UNITS ON RACK AT GRADE.
 - E. INSTALL (6) COAX CABLES ROUTED FROM RRUs AT GRADE TO ANTENNAS ON TOWER.
 - F. RELOCATE (3) EXISTING BIAS TEEs TO NEW PIPE MAST.
 - G. 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**

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

T-MOBILE NORTHEAST LLC		WIRELESS COMMUNICATIONS FACILITY	
DARIEN/ DTWN + RT-1		SITE ID: CT11290C	
3 MECHANIC STREET		DARIEN, CT 06820	
CENTEK engineering <i>Centered on Solutions™</i>		  SS NORTHEAST SITE SOLUTIONS <small>Toronto Winter Development</small>	
DATE: 10/1/18 SCALE: AS NOTED JOB NO. 18058.58		(203) 488-0580 (203) 488-8587 Fax 63-2 North Branford Road Branford, CT 06405 www.CentekEng.com	
Sheet No. 1 of 6		1-1	
PROFESSIONAL ENGINEER SEAL			
			
ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYOUT ISSUED FOR CONSTRUCTION			
REV.	DATE	DRAWN BY	CHK'D BY
0	1/10/19	TJL	CAG
1	5/13/19	TJL	CAG
2	01/23/24	TJL	TJR

NOTES AND SPECIFICATIONS:

DESIGN BASIS:

- GOVERNING CODE: 2021 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2022 CONNECTICUT STATE BUILDING CODE.
- TIA-222-H, ASCE MANUAL NO. 48-19 - "DESIGN OF STEEL TRANSMISSION POLE STRUCTURES SECOND EDITION", NESC C2-2023 AND EVERSCREW.
- DESIGN CRITERIA
 - WIND LOAD: (ANTENNA MAST)
ULTIMATE DESIGN AND 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.

SITE NOTES

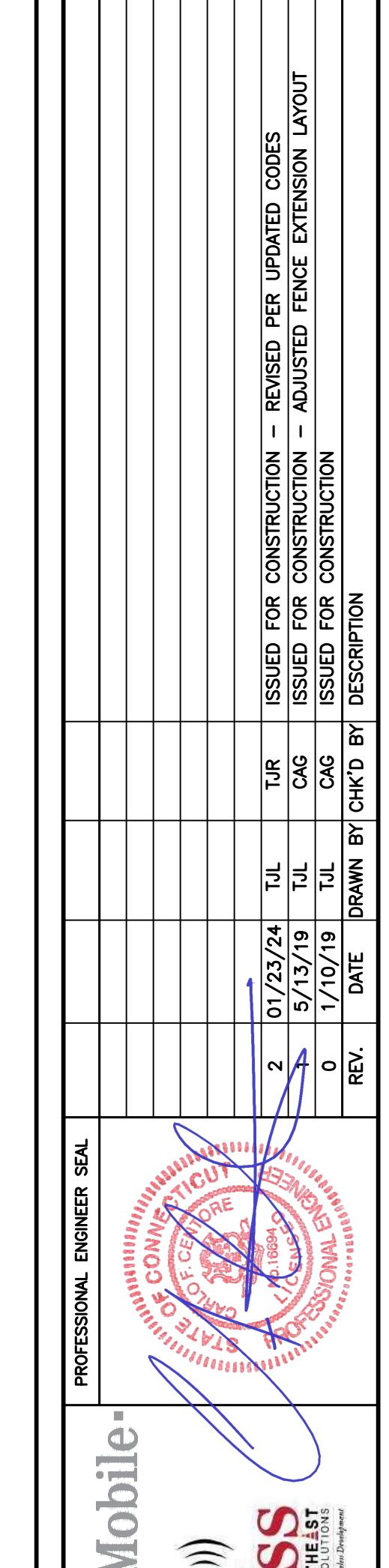
- THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- 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.

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STRUCTURAL STEEL

- ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
- STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
- STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
- STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
- STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
- PIPE---ASTM A53 (FY = 35 KSI)
- CONNECTION BOLTS---ASTM A325-N
- U-BOLTS---ASTM A36
- ANCHOR RODS---ASTM F 1554
- WELDING ELECTRODE---ASTM E 70XX
- 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.
- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
- PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
- FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
- INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
- AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
- 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.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
- 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.
- CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
- 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.
- LOCK WASHERS ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
- SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
- MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
- FABRICATE BEAMS WITH MILL CAMBER UP.
- 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.
- COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
- INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
- FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

	T-Mobile 	NSS 
	CENTEK <small>engineering</small> <small>Centek Solutions</small>	T-MOBILE NORTHEAST LLC <small>WIRELESS COMMUNICATIONS FACILITY</small> DARIEN/ DTWN + RT-1 SITE ID: CT11290C 3 MECHANIC STREET DARIEN, CT 06820
DATE: 10/1/18 SCALE: AS NOTED JOB NO. 18058.58		
DESIGN BASIS AND SITE NOTES		
N-1		
Sheet No. 2 of 6		

MODIFICATION INSPECTION REPORT REQUIREMENTS					
PRE-CONSTRUCTION		DURING CONSTRUCTION		POST-CONSTRUCTION	
SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM	SCHEDULED ITEM	REPORT ITEM
–	EOR MODIFICATION INSPECTION DRAWING	–	FOUNDATIONS	–	MODIFICATION INSPECTOR RECORD REDLINE DRAWING
X	EOR APPROVED STEEL SHOP DRAWINGS	–	EARTHWORK BACKFILL MATERIAL AND COMPACTION	–	POST-INSTALLED ANCHOR ROD PULL-OUT TEST
–	EOR APPROVED POST-INSTALLED ANCHOR MPII	–	REBAR AND FORMWORK GEOMETRY VERIFICATION	X	PHOTOGRAPHS
–	FABRICATION INSPECTION	–	CONCRETE TESTING	X	STEEL INSPECTION
–	FABRICATOR CERTIFIED WELDER INSPECTION	–	STEEL INSPECTION		
X	MATERIAL CERTIFICATIONS	–	POST INSTALLED ANCHOR ROD VERIFICATION		
		–	BASE PLATE GROUT VERIFICATION		
		–	CONTRACTOR'S CERTIFIED WELD INSPECTION		
		–	ON-SITE COLD GALVANIZED VERIFICATION		
		X	CONTRACTOR AS-BUILT REDLINE DRAWINGS		
		–	HOST BUILDING (BEARING WALL/PARAPET ETC.)		
			INTEGRITY VERIFICATION PRIOR TO ANY INSTALLATIONS		
		–	HOST BUILDING (ROOF OPENING)		
			FRAMING VERIFICATION PRIOR TO ANY INSTALLATIONS		
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 5. MPII – MANUFACTURER'S PRINTED INSTALLATION GUIDELINES					

MODIFICATION INSPECTION NOTES:

GENERAL

1. THE MODIFICATION INSPECTION IS A VISUAL INSPECTION OF STRUCTURAL MODIFICATIONS, TO INCLUDE A REVIEW AND COMPILED 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 CONCERN.
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 COMPILED & SUBMISSION OF THE MODIFICATION INSPECTION REPORT TO THE CLIENT AND THE EOR.

GENERAL CONTRACTOR (GC)

1. THE GC IS REQUIRED TO CONTACT THE MI 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 CONCERN.
2. THE GC IS RESPONSIBLE FOR COORDINATING AND SCHEDULING IN ADVANCE ALL REQUIRED INSPECTIONS AND TESTS WITH THE MI.

CORRECTION OF FAILING MODIFICATION INSPECTION

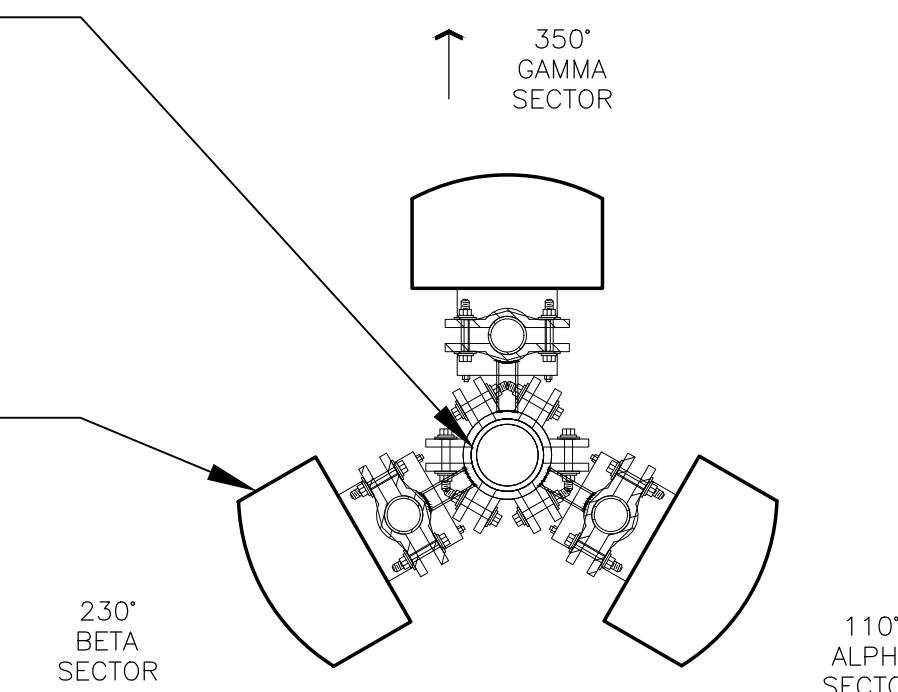
1. SHOULD THE STRUCTURAL MODIFICATION NOT COMPLY WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, THE GC SHALL WORK WITH THE MODIFICATION INSPECTOR IN A VIEABLE REMEDIATION PLAN AS FOLLOWS:
 - CORRECT ALL DEFICIENCIES TO COMPLY WITH THE CONTRACT DOCUMENTS AND COORDINATE WITH THE MI FOR A FOLLOW UP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

REQUIRED PHOTOGRAPHS

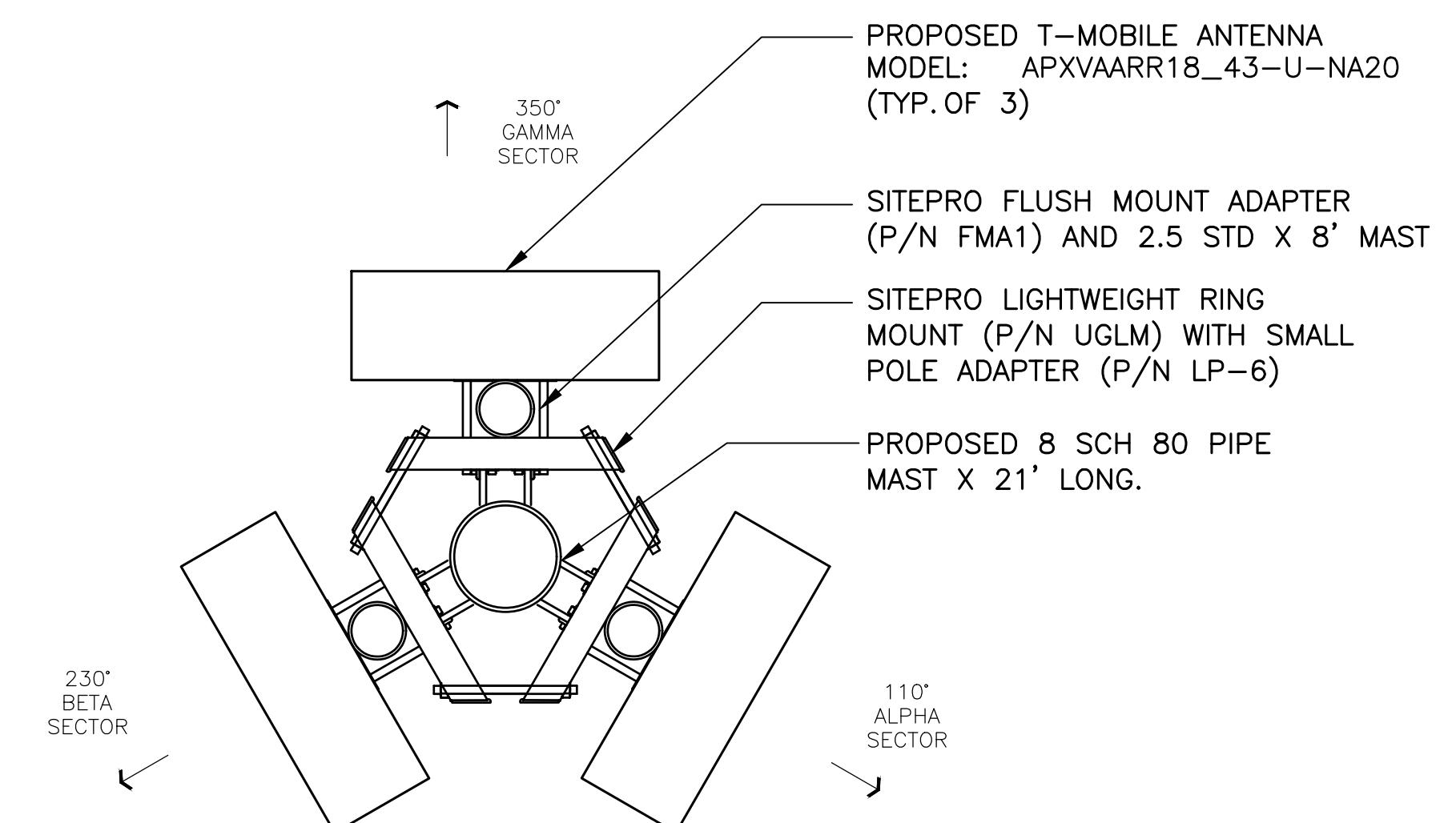
1. THE GC AND MI SHALL AT MINIMUM PHOTO DOCUMENT THE FOLLOWING FOR INCLUSION IN THE MODIFICATION INSPECTION REPORT:
 - PRE-CONSTRUCTION: GENERAL CONDITION OF THE SITE.
 - DURING CONSTRUCTION: RAW MATERIALS, CRITICAL DETAILS, WELD PREPARATION, BOLT INSTALLATION & TORQUE, FINAL INSTALLED CONDITION & SURFACE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

T-MOBILE NORTHEAST LLC		CENTEK engineering		T-Mobile	
WIRELESS COMMUNICATIONS FACILITY		Centek Eng Solutions		N-SS	
DARIEN/ DTWN + RT-1					
SITE ID: CT11290C					
3 MECHANIC STREET					
DARIEN, CT 06820					
DATE:	10/1/18	SCALE:	AS NOTED	JOB NO.	18058.58
SPECIAL INSPECTIONS					
N-2					
Sheet No. 3 of 6					

EXISTING T-MOBILE ANTENNA MAST
TO BE REMOVED AND REPLACED

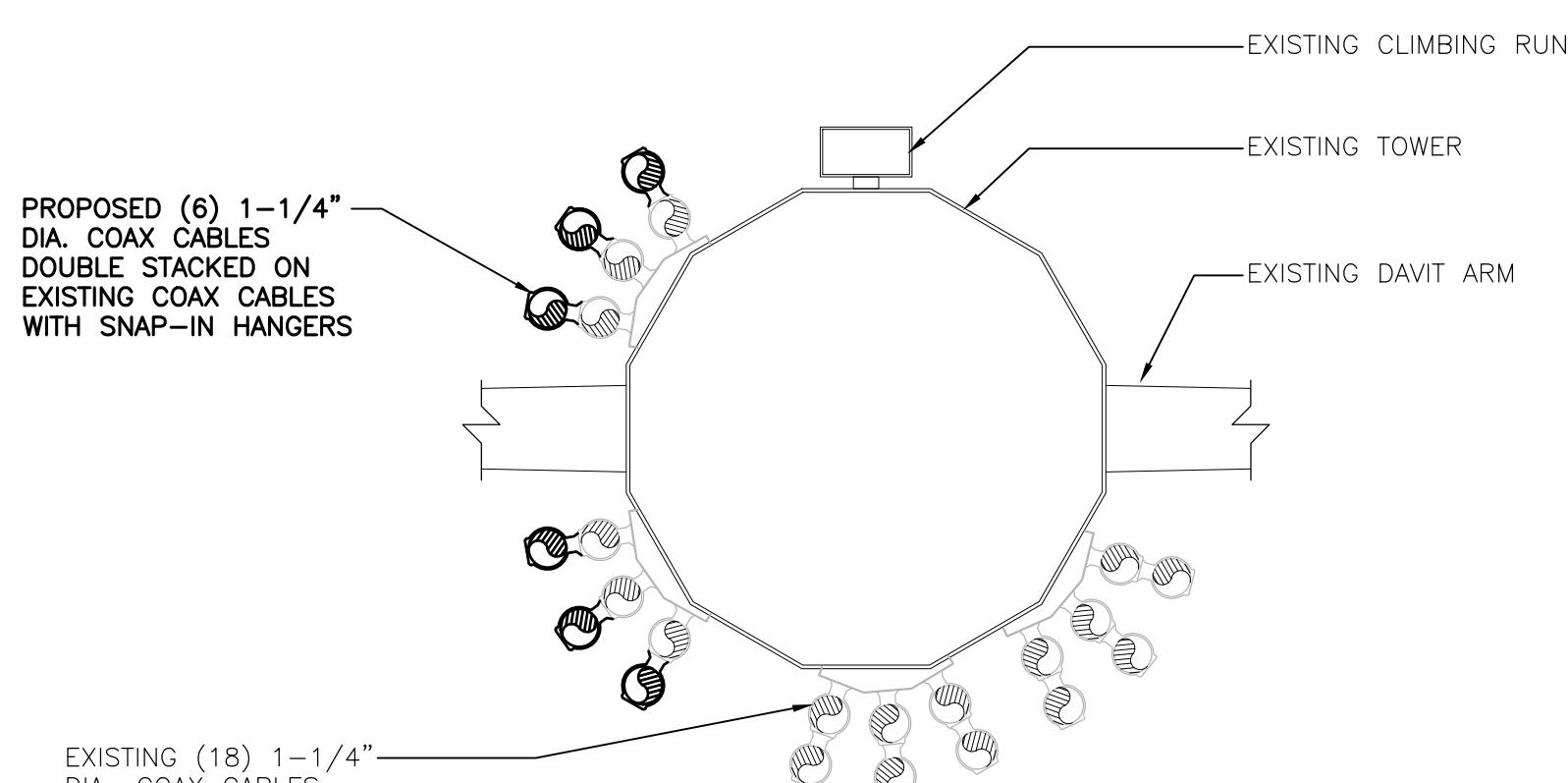


EXISTING T-MOBILE ANTENNA
MODEL: SBNHH-1D65A-SR
(TYP. OF 3)
TO BE REMOVED AND REPLACED



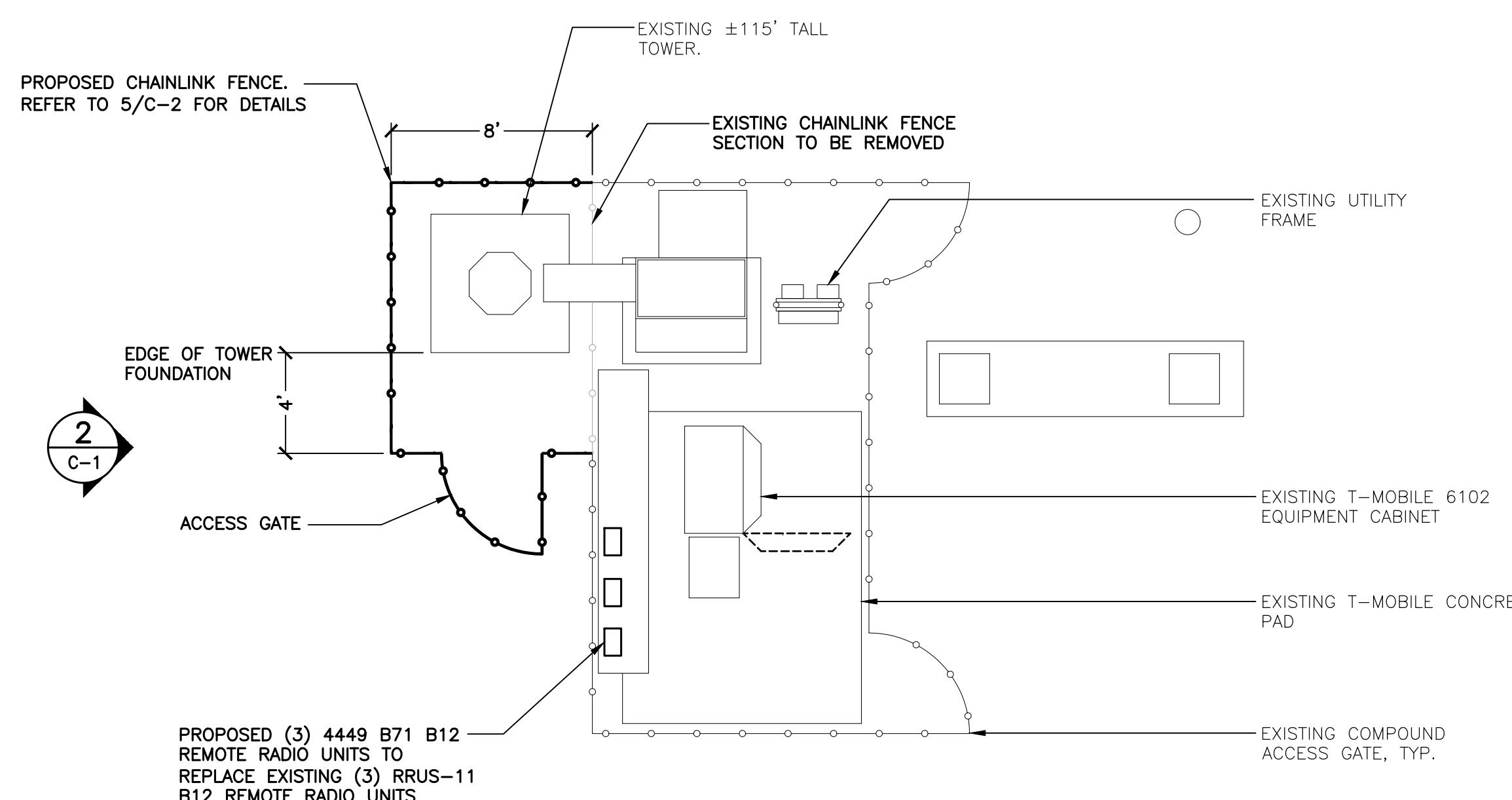
4 C-1 EXISTING ANTENNA MOUNTING CONFIGURATION 124' ELEVATION

TRUE NORTH



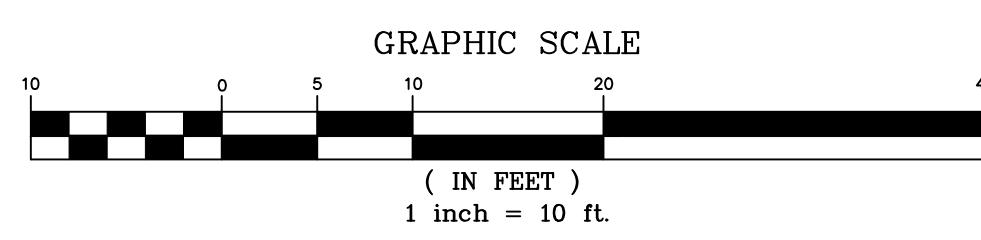
3 C-1 COAX CABLE PLAN

SCALE: NTS



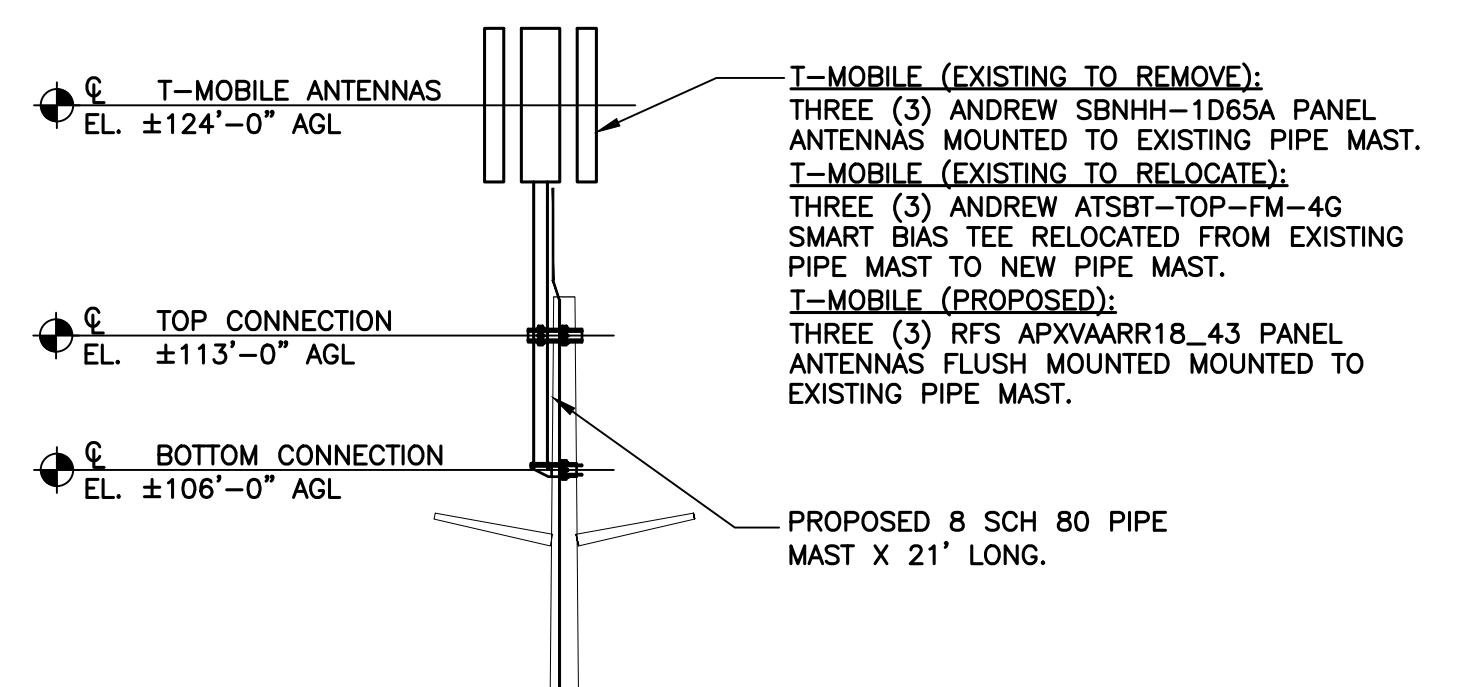
1 C-1 COMPOUND PLAN

TRUE NORTH



5 C-1 PROPOSED ANTENNA MOUNTING CONFIGURATION 124' ELEVATION

TRUE NORTH



PROPOSED 8 SCH 80 PIPE
MAST X 21' LONG.

STRUCTURAL NOTE:
REFER TO STRUCTURAL ANALYSIS
REPORT OF TOWER AND
FOUNDATION AS PREPARED BY
CENTEK ENGINEERING INC.,
DATED: 01/24/24
PROJECT NUMBER: 18058.58

EXISTING 115' TALL STEEL
POLE STRUCTURE NO. 1068

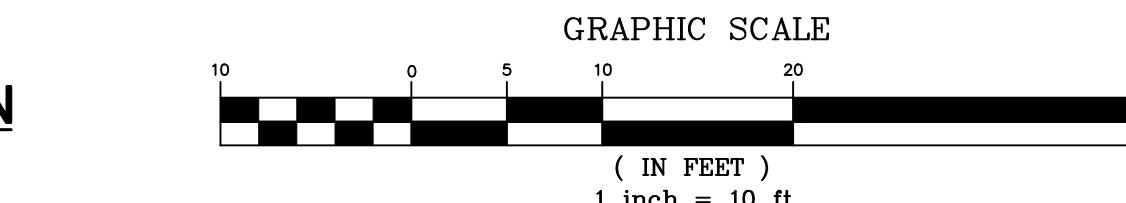
EXISTING (18) 1-1/4"
DIA. COAX CABLES

PROPOSED (6) 1-1/4"
DIA. COAX CABLES
MOUNTED TO EXISTING
UTILITY POLE SHAFT @
4'-0" o.c. VERTICAL MAX.

EXISTING T-MOBILE EQUIPMENT CABINET

EXISTING COMPOUND CHAIN LINK FENCE

2 C-1 TOWER ELEVATION



PROPOSED T-MOBILE ANTENNA
MODEL: APXVAARR18_43-U-NA20
(TYP. OF 3)

SITEPRO FLUSH MOUNT ADAPTER
(P/N FMA1) AND 2.5 STD X 8' MAST

SITEPRO LIGHTWEIGHT RING
MOUNT (P/N UGLM) WITH SMALL
POLE ADAPTER (P/N LP-6)

PROPOSED 8 SCH 80 PIPE
MAST X 21' LONG.

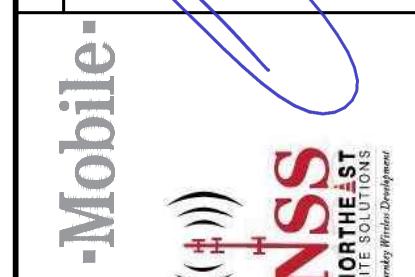
110° ALPHA SECTOR

230° BETA SECTOR

350° GAMMA SECTOR

110° ALPHA SECTOR

ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES
ADJUSTED FENCE EXTENSION LAYOUT
ISSUED FOR CONSTRUCTION
ISSUED FOR CONSTRUCTION
DRAWN BY CHKD BY DESCRIPTION



NSA
NORTH EAST
Solutions

Wireless Communications Facility

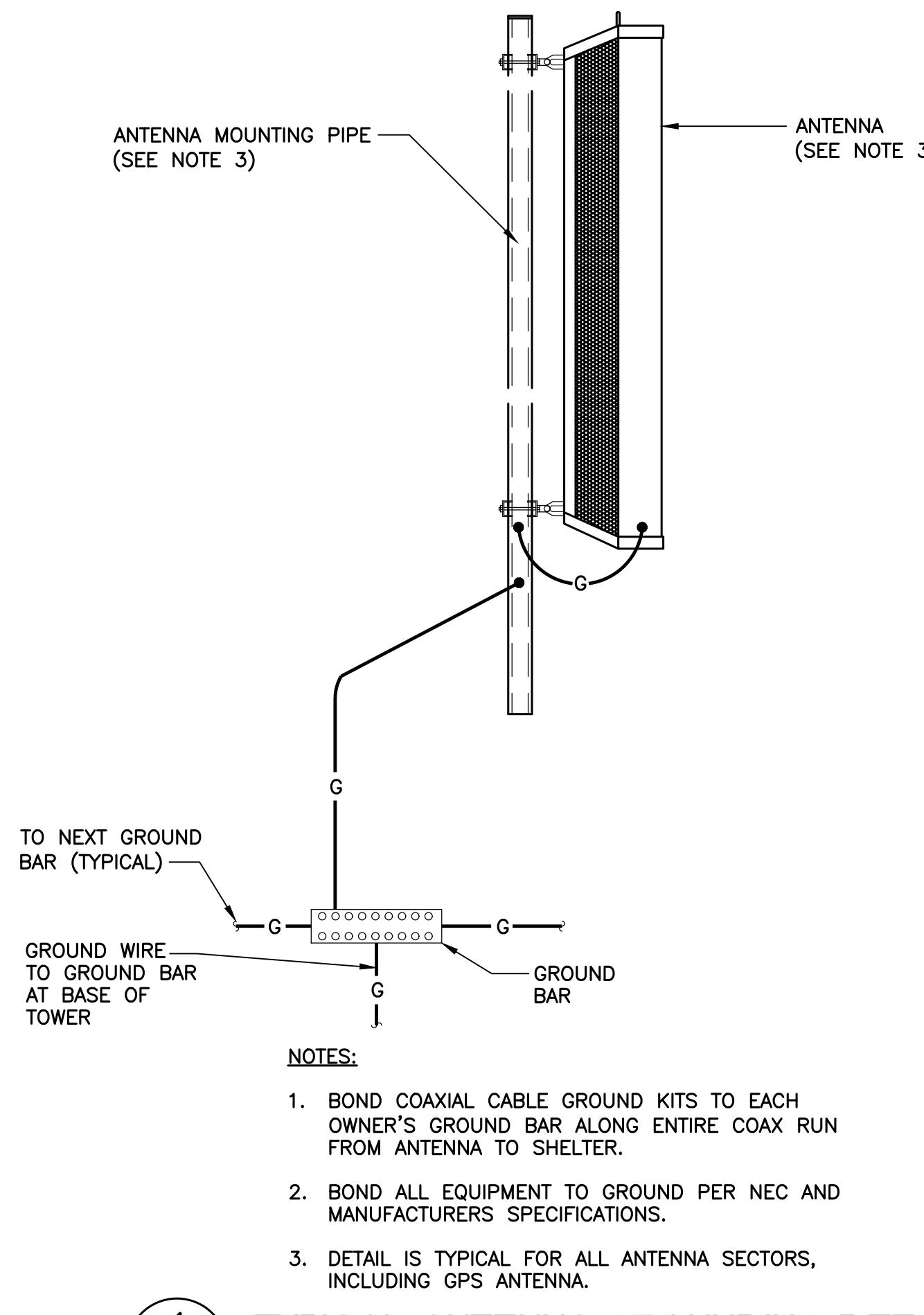
DARIEN/ DTWN + RT-1

SITE ID: CT11290C

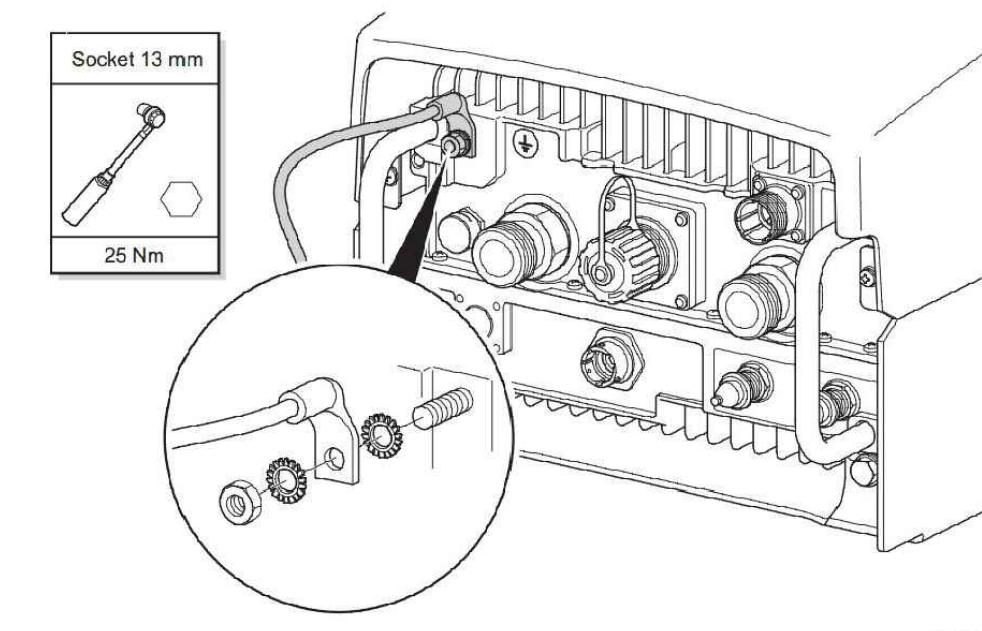
3 MECHANIC STREET

DARIEN, CT 06820

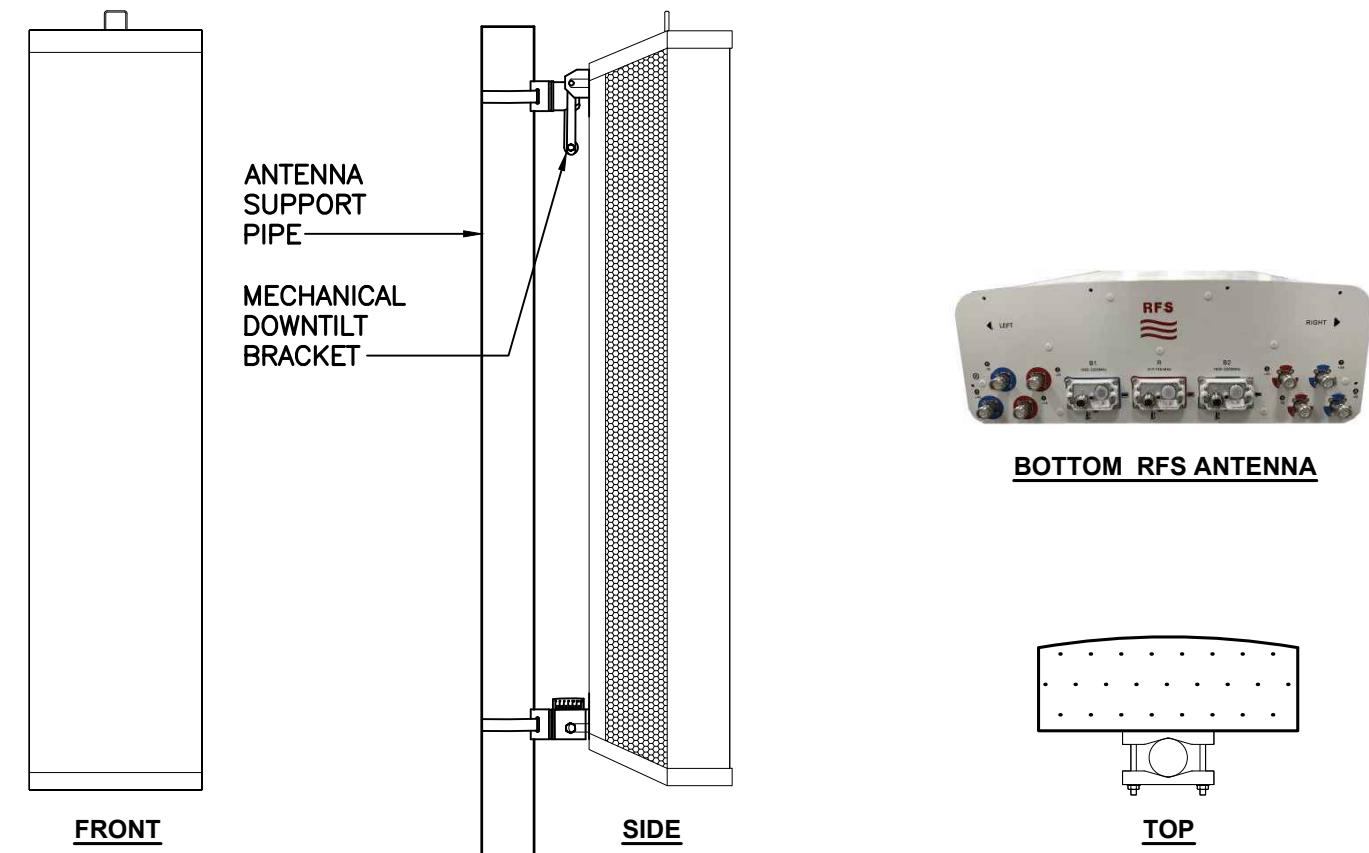
www.CentekEng.com



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



2 **TYPICAL RRU GROUNDING DETAIL**



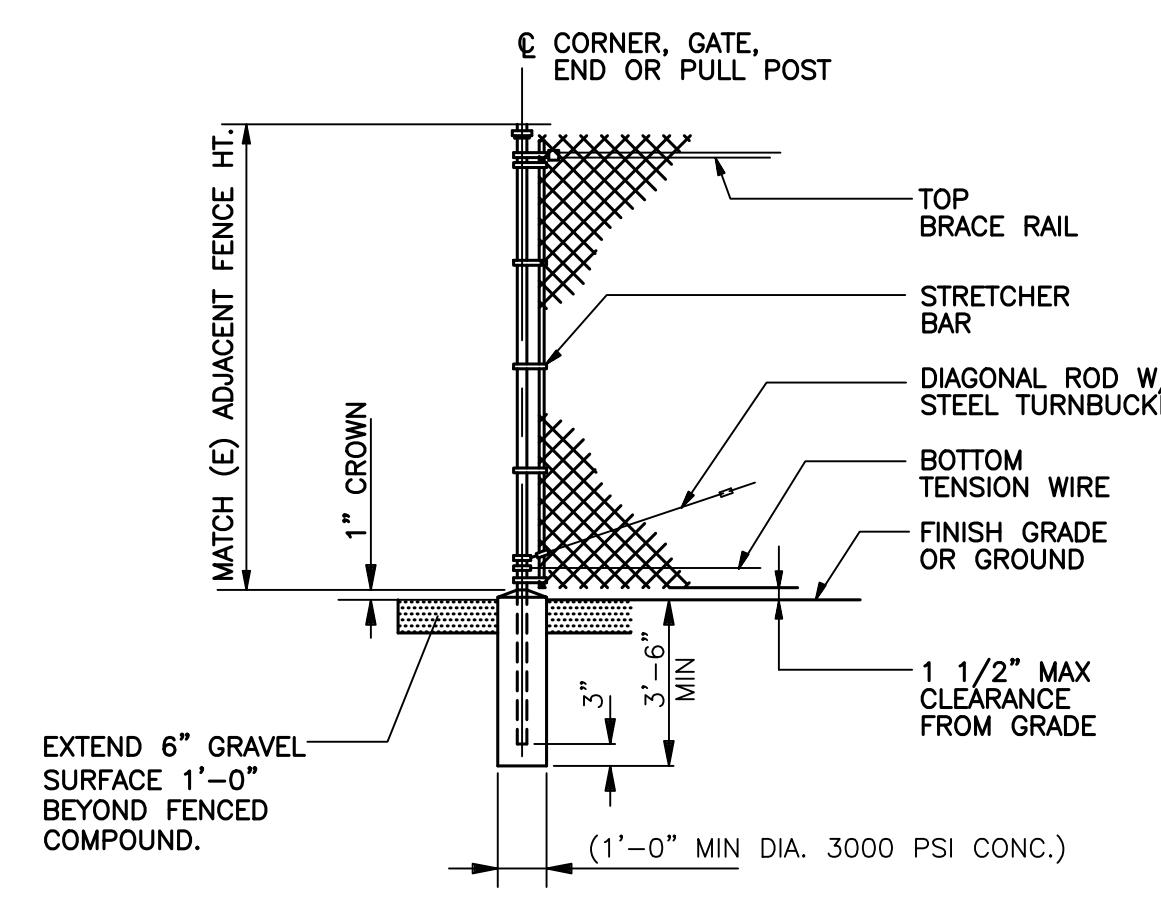
ALPHA/BETA/GAMMA ANTENNA					
EQUIPMENT		DIMENSIONS		WEIGHT	
MAKE:	RFS	72" L	x 24.0" W	x 8.5" D	154 LBS.
MODEL:	APXVAARR18_43-U-NA20				



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.
<u>NOTES:</u>				
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T-MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.				

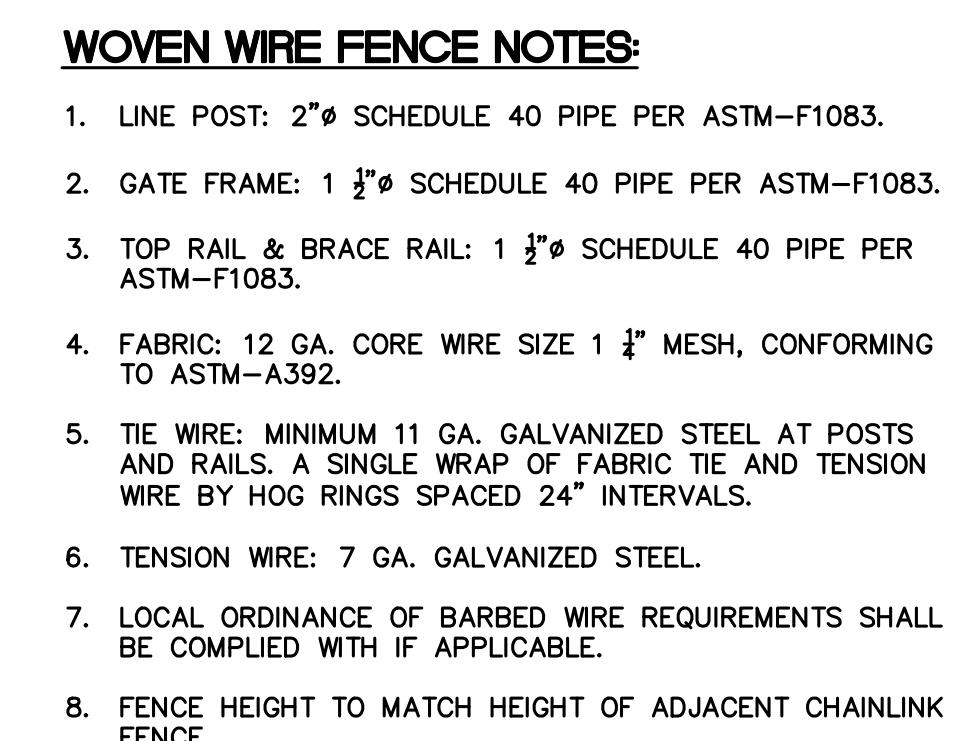
4 C-2 **PROPOSED RRU DETAIL**
SCALE: NOT TO SCALE



SECTION

5 WOVEN WIRE FENCE DETAIL

C-2 SCALE: NOT TO SCALE



T-MOBILE NORTHEAST LLC

WIRELESS COMMUNICATIONS FACILITY

DARIEN/ DTWN + RT-1

SITE ID: CT11290C

3 MECHANIC STREET

DARIEN CT 06820

CENTEK engineers
Centered on Solutions

(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405

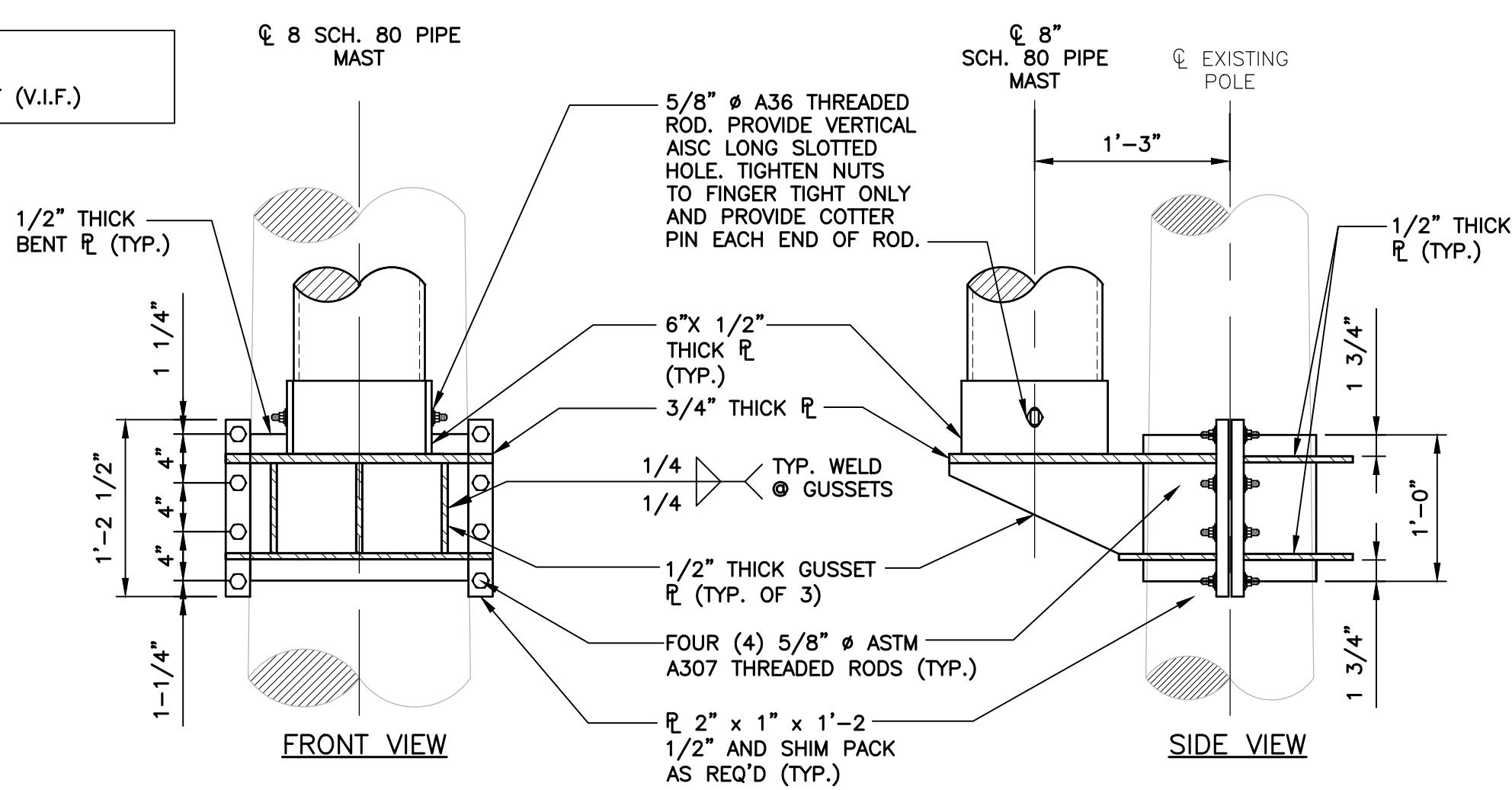
www.CentekEng.com

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

TYPICAL DETAILS

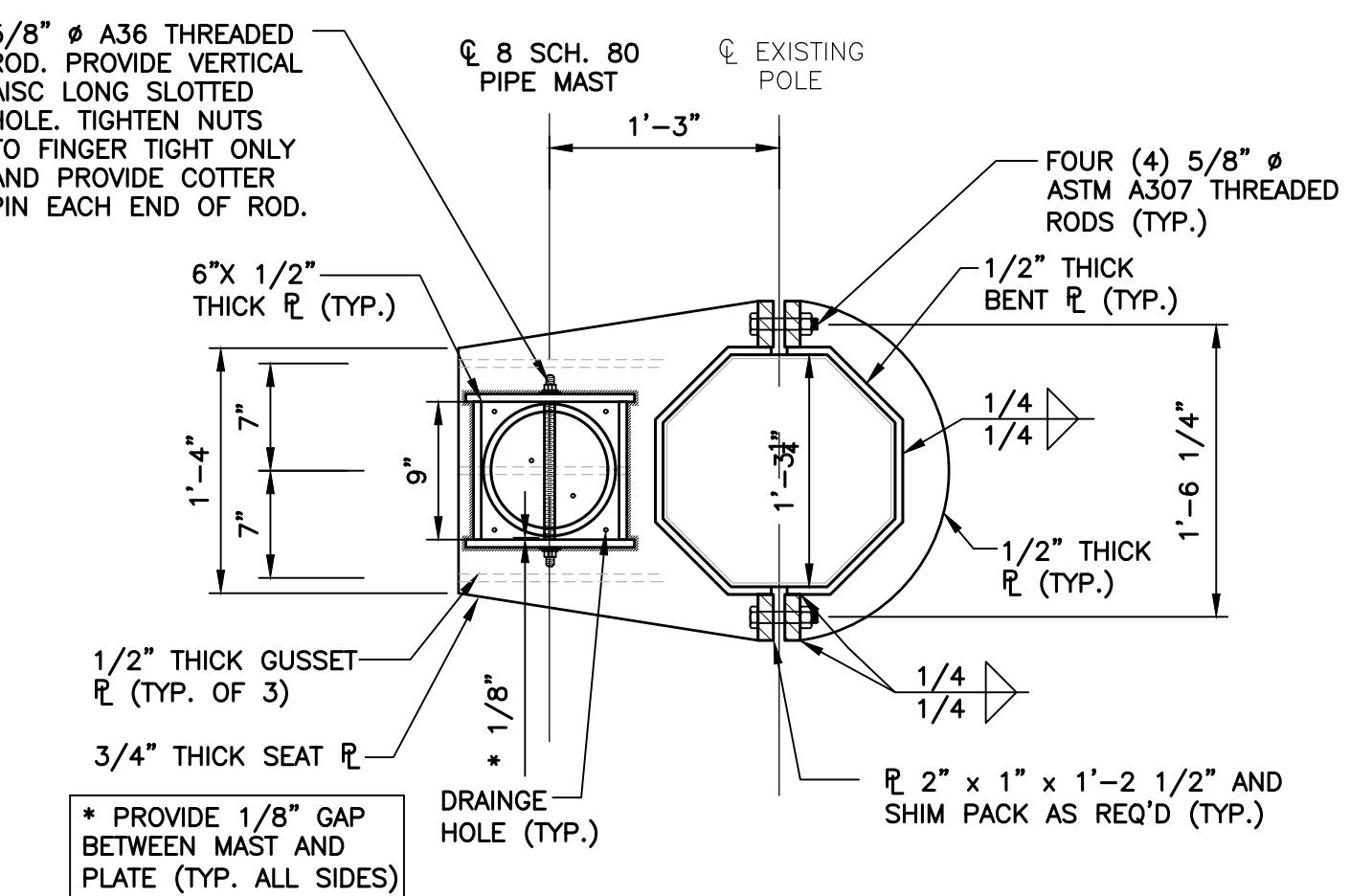
C-2

NOTE:



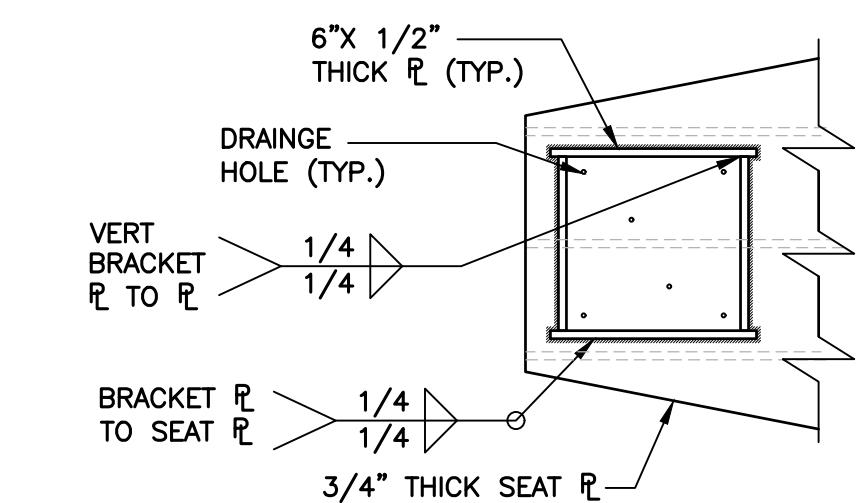
1 **S-1** **BOTTOM PCS BRACKET DETAIL** **SCALE: 1" = 1'-0"**

S-1 SCALE: 1" = 1'



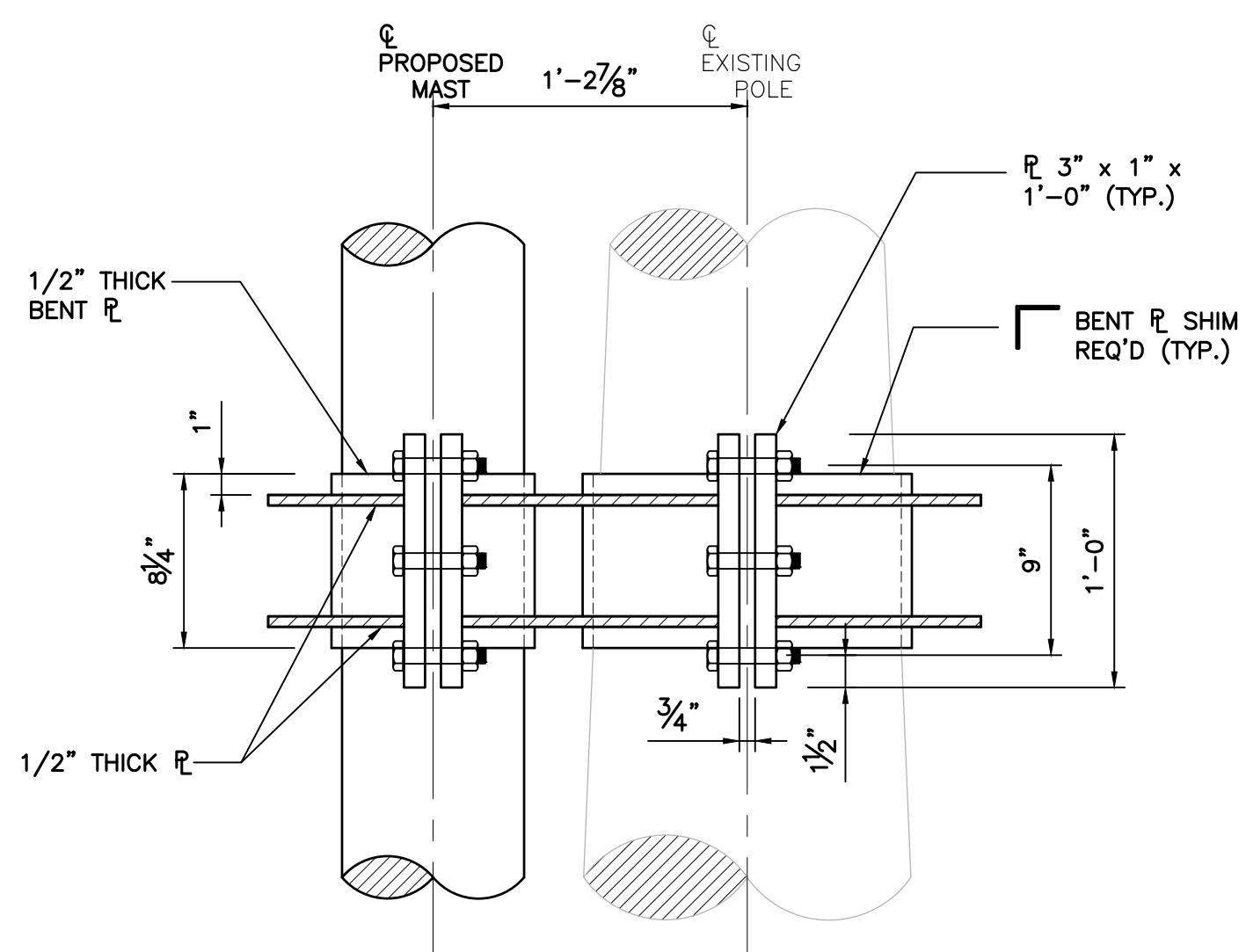
2 BOTTOM PCS BRACKET PLAN VIEW

S-1 SCALE: 1" = 1'-0"



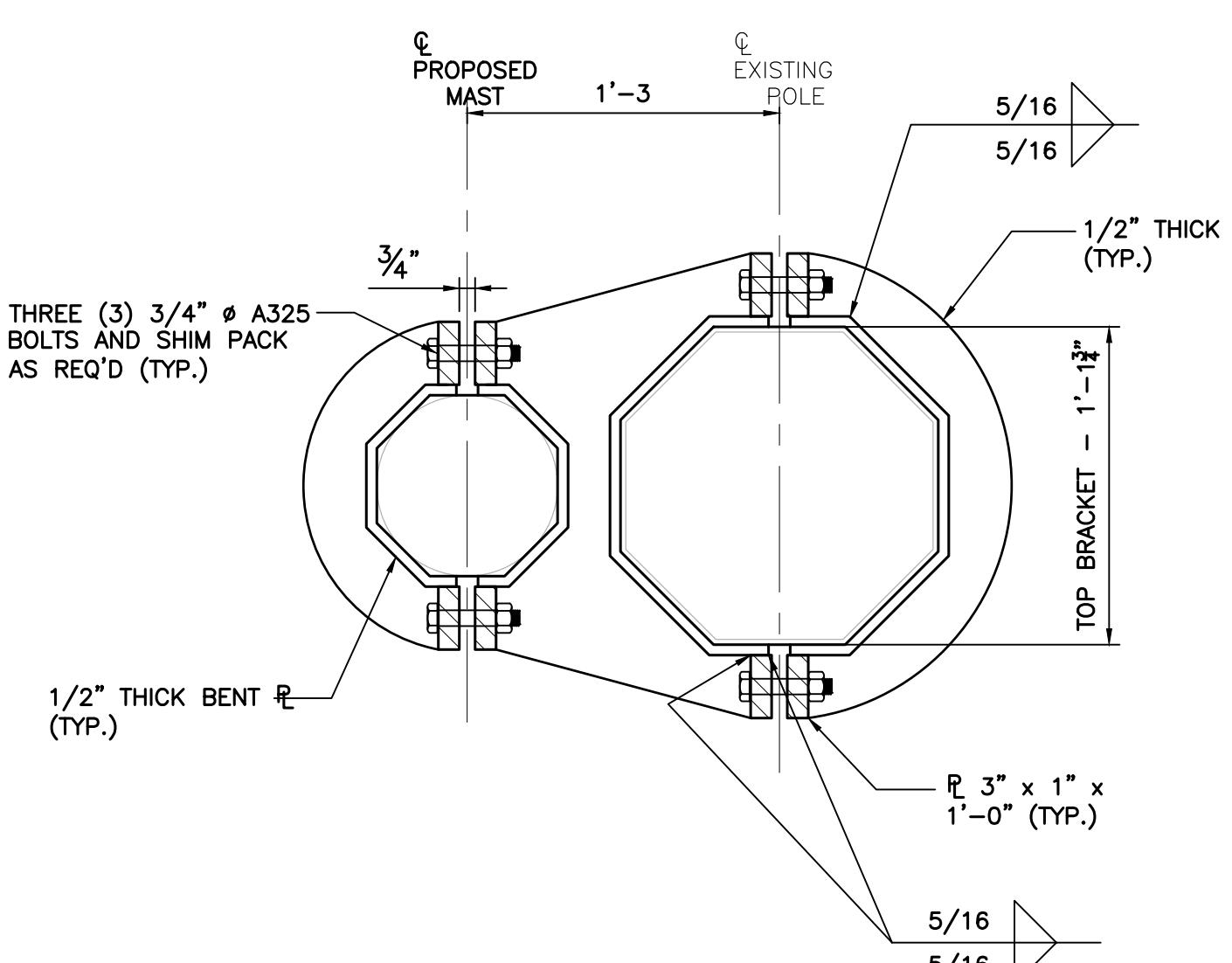
3 BRACKET ASSEMBLY DETAIL

S-1 SCALE: 1" = 1'-0"



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

S-1 SCALE: 1-1/2" = 1'-0"



5 TOP BRACKET PLAN VIEW

S-1 SCALE: 1-1/2" = 1'-0"

NOTE:

NOTE

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

PROFESSIONAL ENGINEER SEAL					
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION	
0	1/10/19	TJL	CAG	ISSUED FOR CONSTRUCTION	
1	5/13/19	TJL	CAG	ISSUED FOR CONSTRUCTION - ADJUSTED FENCE EXTENSION LAYO	
2	01/23/24	TJL	TJR	ISSUED FOR CONSTRUCTION - REVISED PER UPDATED CODES	



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

Sheet No. 6 of 6

Exhibit D

Structural Analysis Report

S t r u c t u r a l A n a l y s i s o f
A n t e n n a M a s t a n d T o w e r

T - M o b i l e S i t e R e f: C T 1 1 2 9 0 C

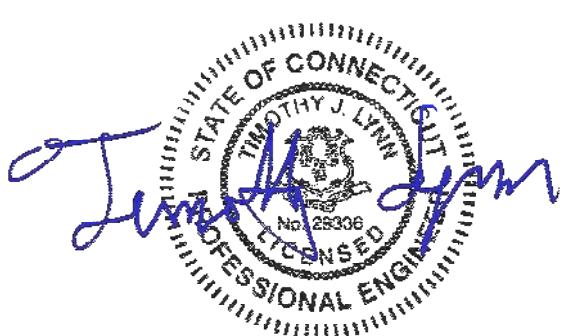
E v e r s o u r c e S t r u c t u r e N o . 1 0 6 8
1 1 5 ' E l e c t r i c T r a n s m i s s i o n P o l e

3 M e c h a n i c S t r e e t
D a r i e n , C T

C E N T E K P r o j e c t N o . 2 3 0 5 8 . 1 0

D a t e : J a n u a r y 2 4 , 2 0 2 4

M a x S t r e s s R a t i o = 9 7 %



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

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- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- DESIGN BASIS
- RESULTS
- CONCLUSION

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- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAMS
 - RISA 3-D
 - PLS POLE

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- MAST CONNECTION TO TOWER ANALYSIS

CENTEK Engineering, Inc.

Structural Analysis – 115-ft Pole # 1068

T-Mobile Antenna Upgrade – CT11290C

Darien, CT

January 24, 2024

SECTION 7 - NES/C/EVERSOURCE LOAD CALCULATIONS

- MAST WIND LOAD

SECTION 8 - MAST ANALYSIS PER NES/C/EVERSOURCE

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- COAX CABLE LOAD ON UTILITY POLE CALCULATION

- PLS REPORT

- ANCHOR BOLT AND BASEPLATE ANALYSIS

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- EQUIPMENT CUT SHEETS

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 14th 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.

Analyses

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.

Design Basis

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 ⁽¹⁾
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 ^(2022 CSBC Appendix-P)
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%	PASS
Connection	Shear	44.0%	PASS

▪ 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%	PASS

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%	PASS

▪ 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%	PASS

FOUNDATION:

The foundation was found to be within allowable limits.

Design Limit	Original Design Reaction	Proposed Reaction ⁽¹⁾	Result
Shear	29.5 kips	28.5 kips	PASS
Moment	2414.4 ft-kips	2397.4 ft-kips	PASS

| 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.

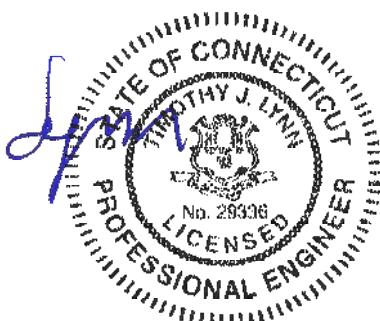
The analysis is based, in part on the information provided to this office by Eversource and T-Mobile. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

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

CENTEK 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⁽¹⁾**

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.*

PCS Mast

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:

ELECTRIC TRANSMISSION TOWER

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.

Eversource

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	NESC Heavy	Antenna Mount	TIA	TIA (0.75Wi)	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design		TIA		
		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			
High Wind Condition	NESC Extreme Wind	Conductors:	Conductor Loads Provided by ES								
		Antenna Mount	85	TIA	TIA	TIA	TIA, Section 3.1.1.1 disallowed for connection design		TIA		
		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		
NESC Extreme Ice with Wind Condition*		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								
		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) 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.

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



Job :

Description:

Spec. Number

Computed by

Checked by

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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	
NAME =	BITTERN	BITTERN	
Number of Conductors per phase	1		1
DIAMETER =	1272.000	1272.000	Number of Conductors per phase
WEIGHT =	45/7 ACSR	45/7 ACSR	
	1.345 in	1.345 in	
	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
WIND SPAN (ft) =	BACK:	210	AHEAD:	210
WEIGHT SPAN (ft) =	BACK:	217	AHEAD:	217



Job :

Description:

Spec. Number

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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
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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	
NAME =		LINNET	LINNET	
Number of Conductors per phase	1	336	336	1
DIAMETER =		26/7 ACSR	26/7 ACSR	Number of Conductors per phase
WEIGHT =		0.720 in	0.720 in	
		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
WIND SPAN (ft) =	BACK:	210	AHEAD:	210
WEIGHT SPAN (ft) =	BACK:	217	AHEAD:	217



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



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
CENTEK 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

PROFESSIONAL ENGINEER SEAL	
REV.	0
DATE	1/24/24
SCALE	AS SHOWN
JOB NO.	23058.10
CFCC	TUL
ISSUED FOR CONSTRUCTION	
DRAWN BY	
CHK'D BY	
DESCRIPTION	

PROFESSIONAL ENGINEER SEAL

CENTEK engineering
Centek Engg Solutions[®]
(203) 48-0590
(203) 48-5597 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEngg.com

T-MOBILE
PROPOSED ANTENNA MAST REPLACEMENT
CT11290C
EVERSOURCE STRUCTURE 1068
3 MECHANIC STREET
DARIEN, CT 06820

TITLE SHEET

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

T-1

SHEET NO.
T-1
Sheet No. 1 of 7

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.

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

PROFESSIONAL ENGINEER SEAL

CENTEK engineering

Centek on Solutions

(203) 48-0590

(203) 48-5597

632 North Bedford Road

Branford, CT 06405

www.CentekEng.com

T-MOBILE

PROPOSED ANTENNA MAST REPLACEMENT

CT11290C

EVERSOURCE STRUCTURE 1068

3 MECHANIC STREET

DANBURY, CT 06820

DATE: 1/24/24

SCALE: AS SHOWN

JOB NO. 23058.10

DESIGN BASIS
AND GENERAL
NOTES

SHEET NO.

N-1

Sheet No. 2

of 7

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 TABLET 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.

PROFESSIONAL ENGINEER'S SEAL

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

STRUCTURAL STEEL NOTES

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 COMPILEMENT 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 COMPILEMENT & 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

PROFESSIONAL ENGINEER SEAL

CENTEK engineering

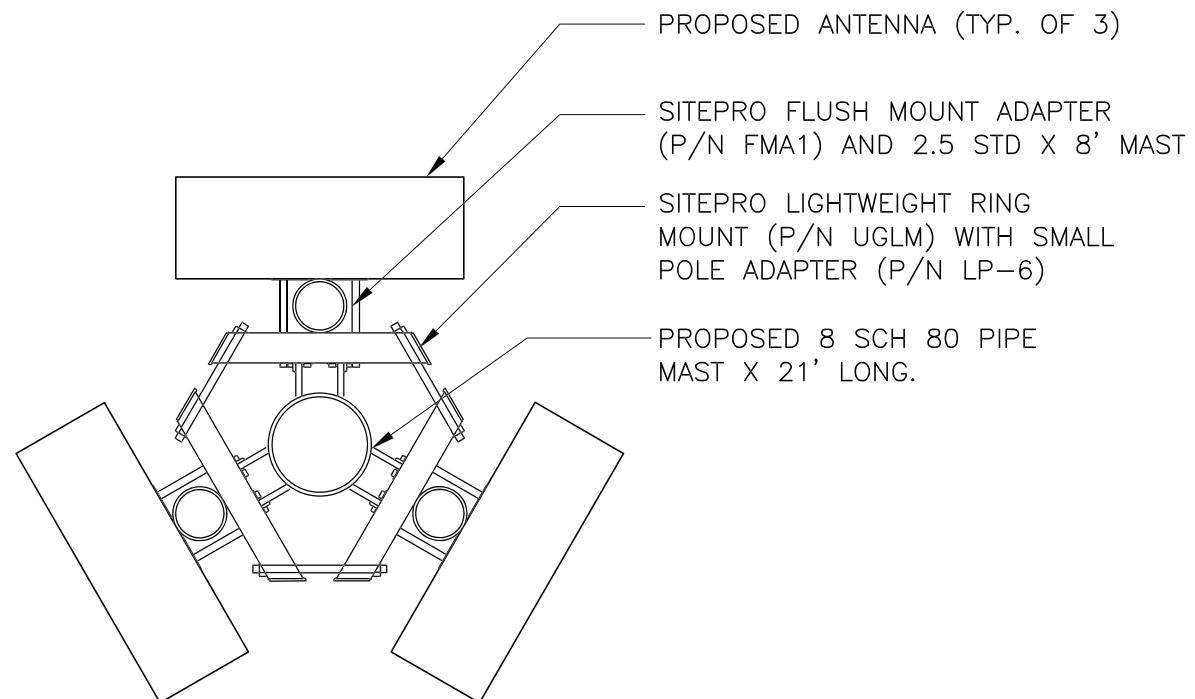
Centek Solutions[®]
(231) 48-0590
(231) 48-5597
632 North Birchtree Road
Brantford, ON N6A 0G5
www.CentekEng.com

T-MOBILE

PROPOSED ANTENNA MAST REPLACEMENT
CT11290C
EVERSOURCE STRUCTURE 1068
3 MECHANIC STREET
DAVENPORT, IA 528620
DATE: 1/24/24
SCALE: AS SHOWN
JOB NO. 23058.10

MODIFICATION
INSPECTION
REQUIREMENTS

SHEET NO.
MI-1
Sheet No. 4 of 7

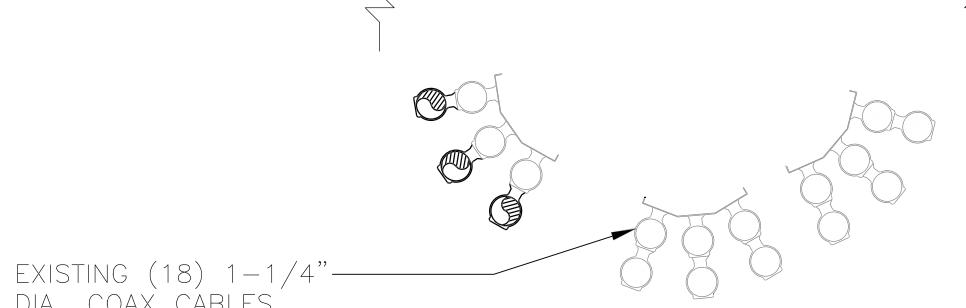


2
S-1

ANTENNA MOUNTING DETAIL

SCALE: $3/4'' = 1'-0''$

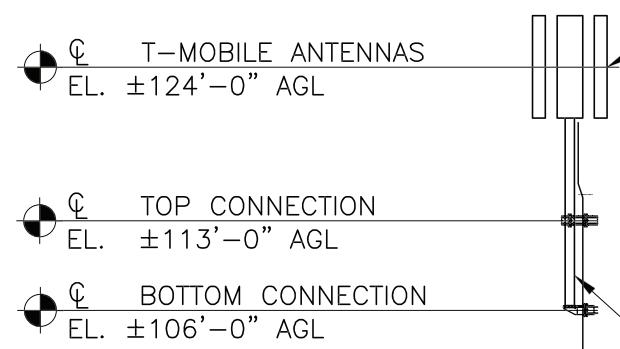
PROPOSED (6) 1-1/4''
DIA. COAX CABLES
DOUBLE STACKED ON
EXISTING COAX CABLES
WITH SNAP-IN HANGERS



3
S-1

COAX CABLE PLAN

SCALE: NTS



1
EL-1

TOWER + MAST ELEVATION

SCALE: NOT TO SCALE

T-MOBILE (EXISTING TO REMOVE):
THREE (3) ANDREW SBNHH-1D65A PANEL
ANTENNAS MOUNTED TO EXISTING PIPE MAST.

T-MOBILE (EXISTING TO RELOCATE):
THREE (3) ANDREW ATSBT-TOP-FM-4G
SMART BIAS TEE RELOCATED FROM EXISTING
PIPE MAST TO NEW PIPE MAST.

T-MOBILE (PROPOSED):
THREE (3) RFS APXVAARR18_43 PANEL
ANTENNAS FLUSH MOUNTED MOUNTED TO
EXISTING PIPE MAST.

PROPOSED 8 SCH 80 PIPE
MAST X 21' LONG.

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T-MOBILE

PROPOSED ANTENNA MAST REPLACEMENT
CT11290C
EVERSOURCE STRUCTURE 1068
3 MECHANIC STREET
DANBURY, CT 06820

DATE: 1/24/24

SCALE: AS SHOWN

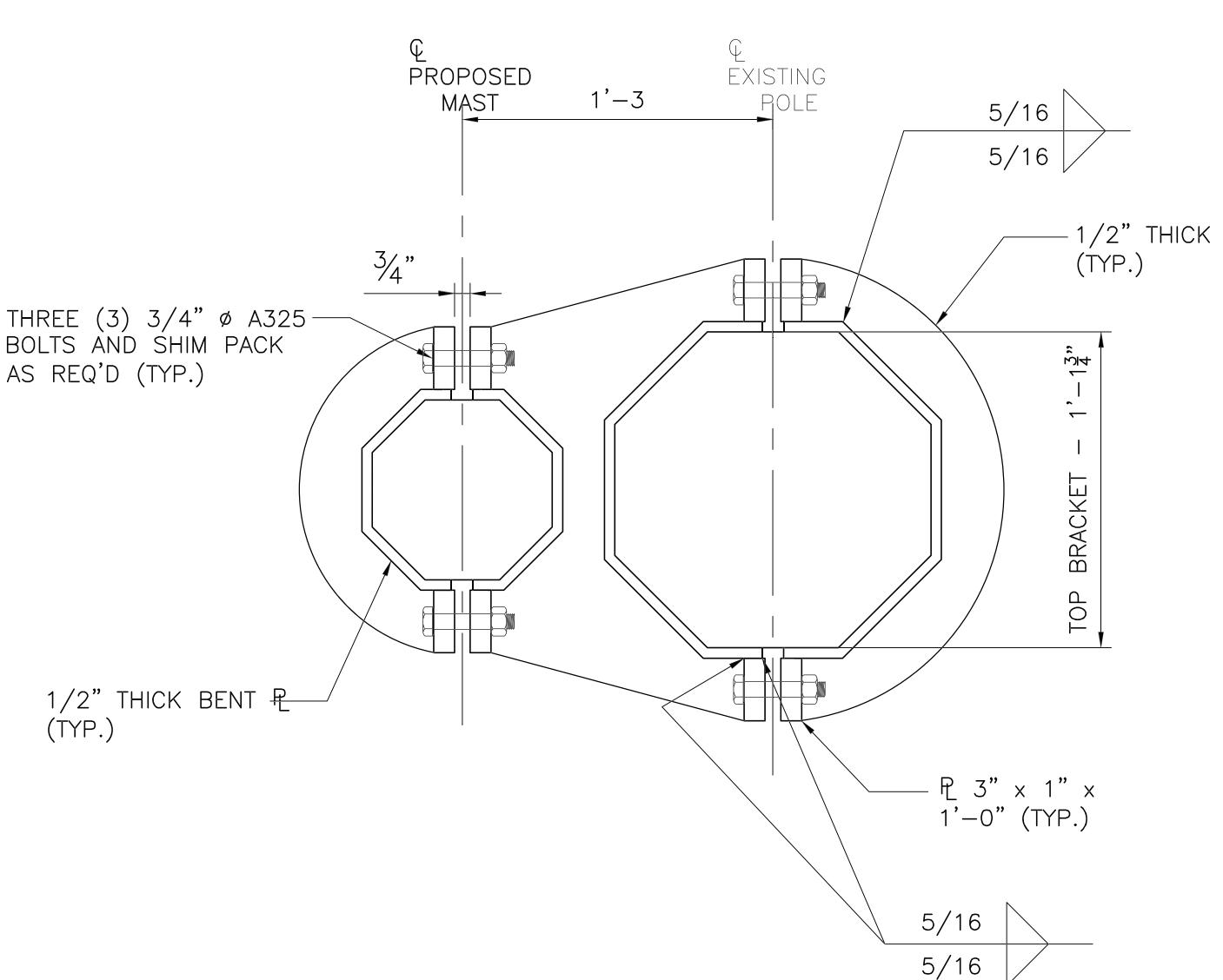
JOB NO. 23058.10

TOWER
ELEVATION AND
FEEDLINE PLAN

SHEET NO.

S-1

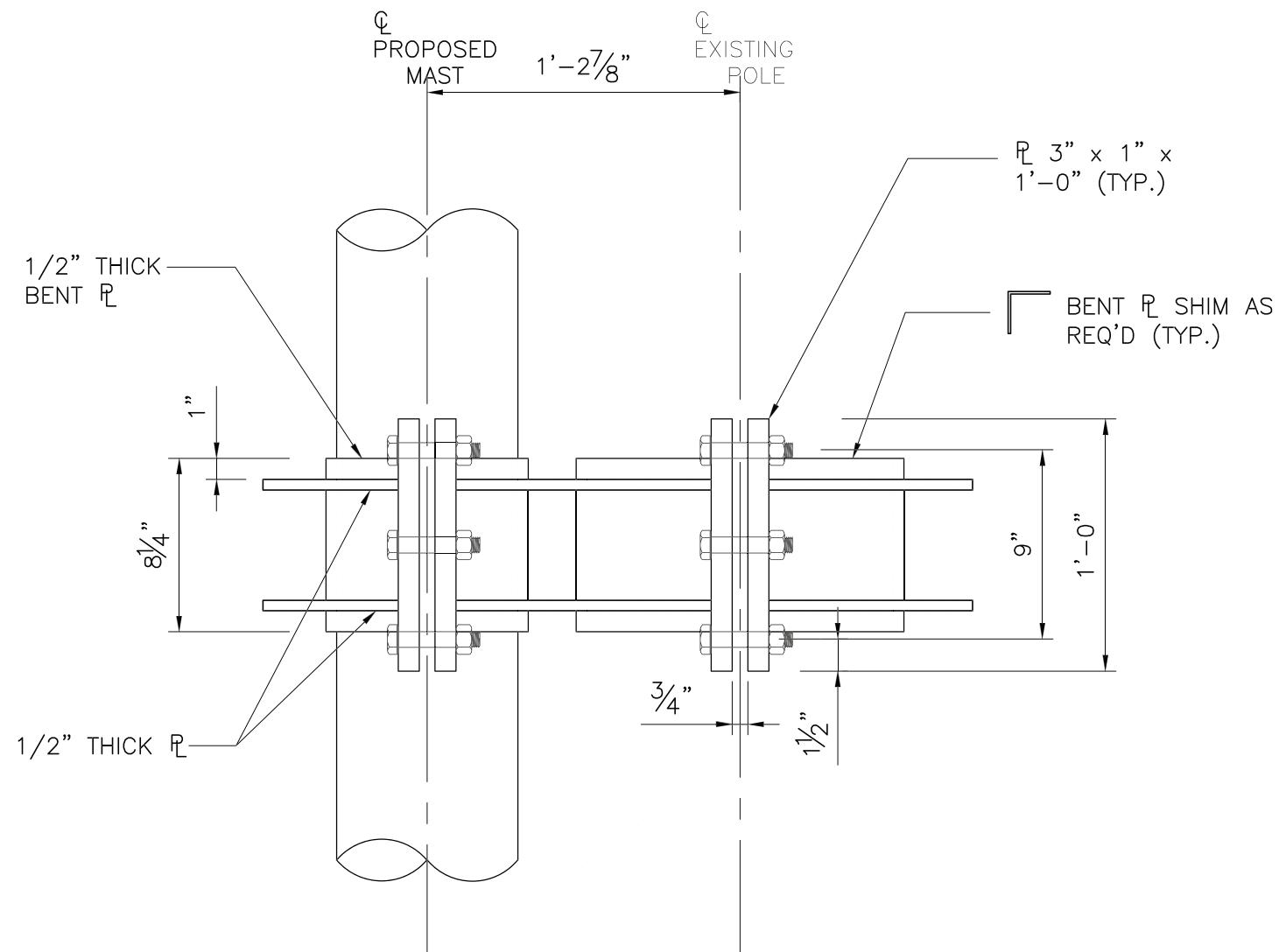
Sheet No. 5 of 7



2
S-2

TOP BRACKET PLAN VIEW

SCALE: 1-1/2" = 1'-0"



1
S-2

TOP BRACKET DETAIL

SCALE: 1-1/2" = 1'-0"

NOTE:

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

T-MOBILE
PROPOSED ANTENNA MAST REPLACEMENT
CT11290C
EVERSOURCE STRUCTURE 1068
3 MECHANIC STREET
DANBURY, CT 06820

TOP
CONNECTION
DETAILS

S-2

Sheet No. 6 of 7

0 1/24/24 REV. DATE DRAWN BY CFC ISSUED FOR CONSTRUCTION

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

Site ID: CT11290C
Status: Draft
Version: 6
Project Type: L700_CMP4 - 4x2
Approved: Not approved
Approved By: Not approved
Last Modified: 12/18/2023 10:12:43 AM
Last Modified By: Ryan.MonteDeRamos@T-Mobile.com

Site Name: Darien/ Dtown & Rt-1
Site Class: Utility Lattice Tower
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Northeast Utilities

Latitude: 41.07757
Longitude: -73.467581
Address: 3 Mechanic Street
City, State: Darien, CT
Region: NORTHEAST

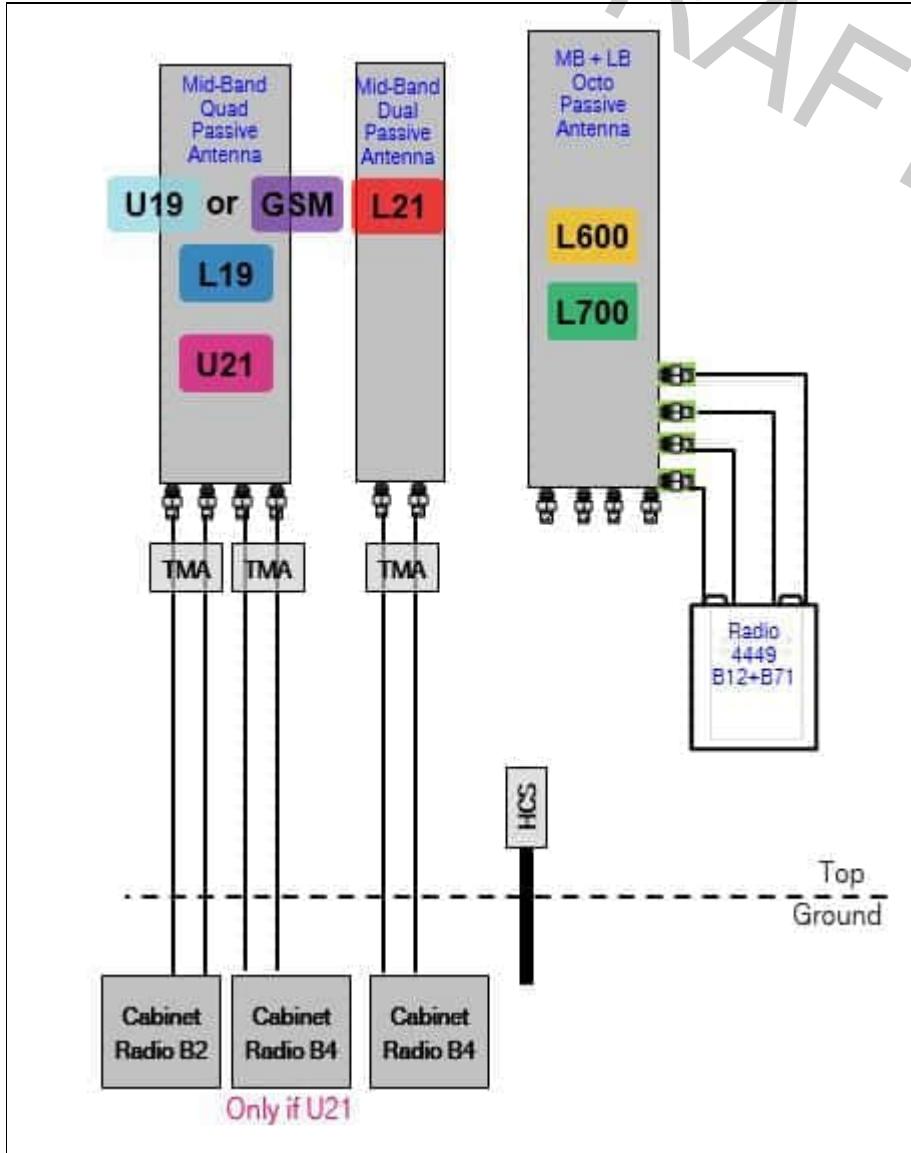
RAN Template: 67D94B Outdoor	AL Template: 67D94B_1DP+1QP+1OP			
Sector Count: 3	Antenna Count: 3	Coax Line Count: 24	TMA Count: 0	RRU Count: 3

Section 2 - Existing Template Images

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

Section 3 - Proposed Template Images

67D94B_1DP+1QP+1OP.JPG



Notes:

Section 4 - Siteplan Images

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

RAN Template: 67D94B Outdoor	A&L Template: 67D94B_1DP+1QP+1OP
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Section 5 - RAN Equipment

Existing RAN Equipment

Template: 794DB Outdoor (evolved from 4B)

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

Proposed RAN Equipment

Template: 67D94B Outdoor

Enclosure	1	2
Enclosure Type	RBS 6102	Ancillary Equipment (Ericsson)
Radio	RUS01 B2 (x3) L1900 G1900 RUS01 B2 (x3) L1900 U2100 (DECOMMISSIONED) RUS01 B4 (x3) L2100	
Baseband	BB 6630 L1900 L2100 DUG20 G1900 DUW30 U2100 (DECOMMISSIONED)	RP 6651 N600 L600 L700
Multiplexer	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)
TMAs			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		

Unconnected Equipment:

Scope of Work:

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

Sector 1 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAALL18_43-U-NA20 (Octo)			
Azimuth	110			
M. Tilt	0			
Height (ft)	120			
Ports	P1	P2	P3	P4
Active Tech	L700 L600 N600	L700 L600 N600	G1900 L1900	L2100
Dark Tech				
Restricted Tech				
Decomm. Tech				U2100
E. Tilt				
Cables	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)
TMAs				
Diplexer / Combiners				
Radio	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)			
Unconnected Equipment:				
Scope of Work:				
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 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)
TMAs			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		

Unconnected Equipment:

Scope of Work:

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RAN Template: 67D94B Outdoor	A&L Template: 67D94B_1DP+1QP+1OP
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Sector 2 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAALL18_43-U-NA20 (Octo)			
Azimuth	230			
M. Tilt	0			
Height (ft)	120			
Ports	P1	P2	P3	P4
Active Tech	L600 L700 N600	L600 L700 N600	G1900 L1900	L2100
Dark Tech				
Restricted Tech				
Decomm. Tech				U2100
E. Tilt				
Cables	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)
TMAs				
Diplexer / Combiners				
Radio	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)			
Unconnected Equipment:				
Scope of Work:				
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
---------------------------------	-------------------------------------

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)
TMAs			
Diplexer / Combiners			
Radio			
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)		

Unconnected Equipment:

Scope of Work:

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

Sector 3 (Proposed) view from behind				
Coverage Type	A - Outdoor Macro			
Antenna	1			
Antenna Model	RFS - APXVAALL18_43-U-NA20 (Octo)			
Azimuth	350			
M. Tilt	0			
Height (ft)	120			
Ports	P1	P2	P3	P4
Active Tech	N600 L700 L600	N600 L700 L600	G1900 L1900	L2100
Dark Tech				
Restricted Tech				
Decomm. Tech				U2100
E. Tilt				
Cables	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)
TMAs				
Diplexer / Combiners				
Radio	Radio 4480 B71+B85 (At Cabinet)	Radio 4480 B71+B85 (At Cabinet)		
Sector Equipment	Andrew Smart Bias T (Ericsson) (At Antenna)			
Unconnected Equipment:				
Scope of Work:				
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

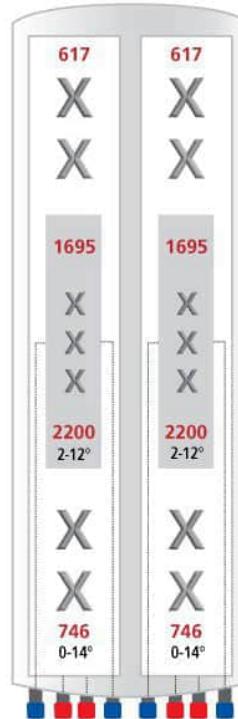
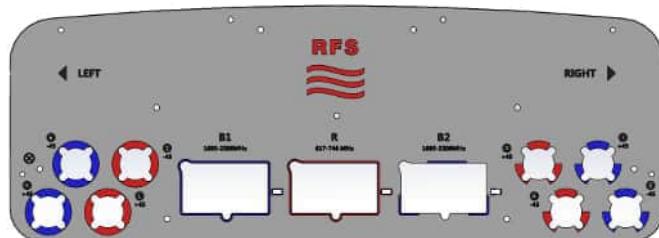
Impedance	Ohm	50.0
Polarization	Deg	±45°

MECHANICAL SPECIFICATIONS

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

TESTING AND ENVIRONMENTAL

Temperature Range	°C (°F)	-40 to 60 (-40 to 140)
Lightning protection		IEC 61000-4-5
Survival/Rated Wind Velocity	km/h	240 (150)
Wind Load @Rated Wind Front	N	1072.0
Wind Load @Rated Wind Side	N	326.0
Wind Load @Rated Wind Rear	N	1160.0
Environmental		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

Product Specifications

COMMSCOPE®

ATSBT-TOP-FM-4G

POWERED BY



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

Agency	Classification
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 . Dtwn & 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 . Dtwn & 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



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%							2.33
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%							2.33
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%							2.33

Table 3: T-MOBILE Emissions Levels



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.

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

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 %
Site Total:	2.33 %

Table 5: Site MPE Summary



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%
							Total: 2.33 %

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:	COMPLIANT

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 Gelinas 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,

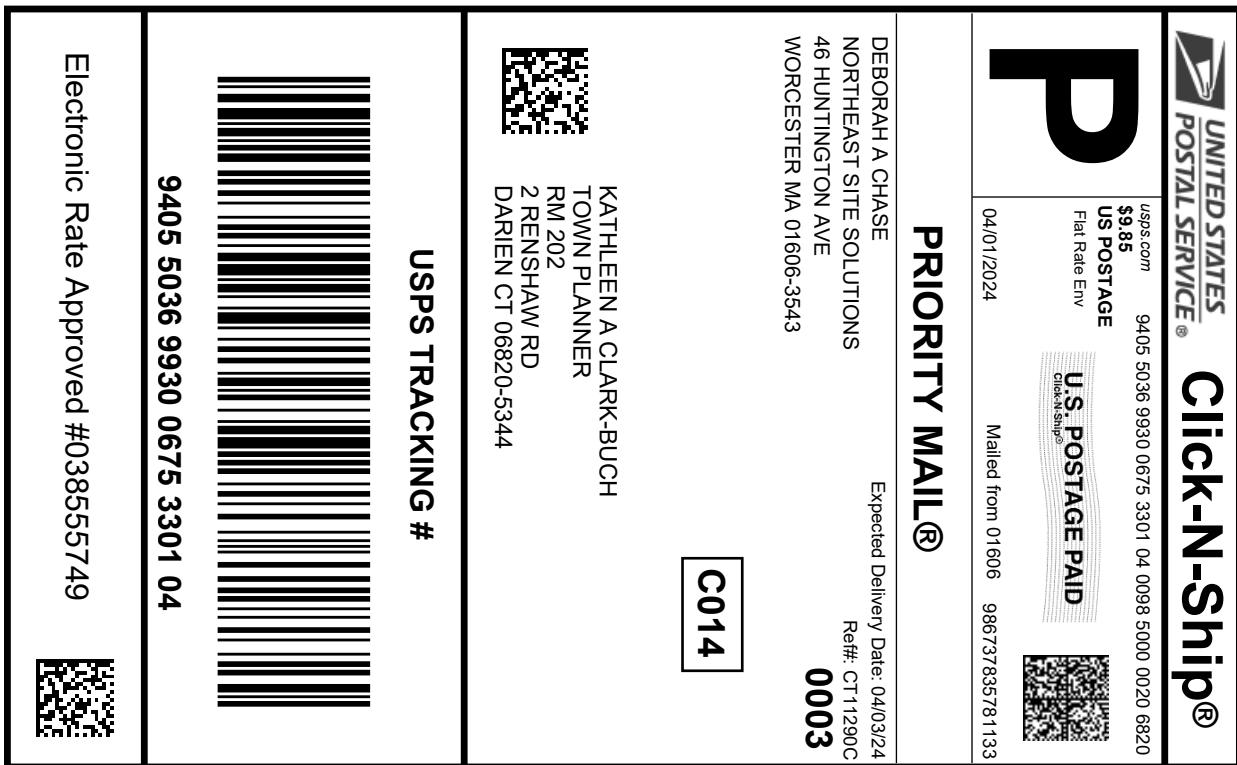
Masie Hartt

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



Cut on dotted line.

Instructions

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USPS TRACKING #:
9405 5036 9930 0675 3301 04

Trans. #: 601367344
Print Date: 04/01/2024
Ship Date: 04/01/2024
Expected Delivery Date: 04/03/2024

Priority Mail® Postage: **\$9.85**
Total: **\$9.85**

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

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

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

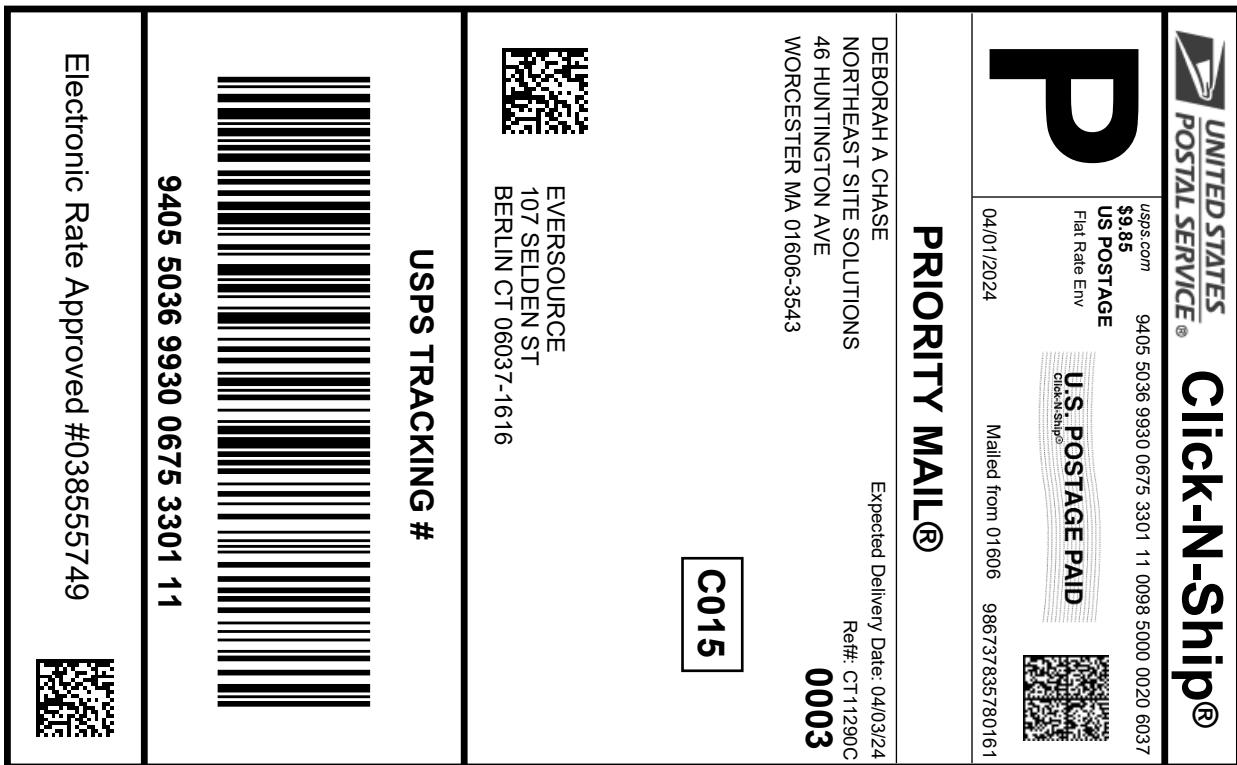


Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com

Electronic Rate Approved #038555749

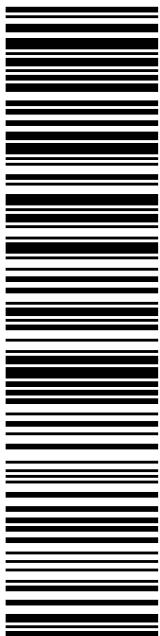
9405 5036 9930 0675 3301 04



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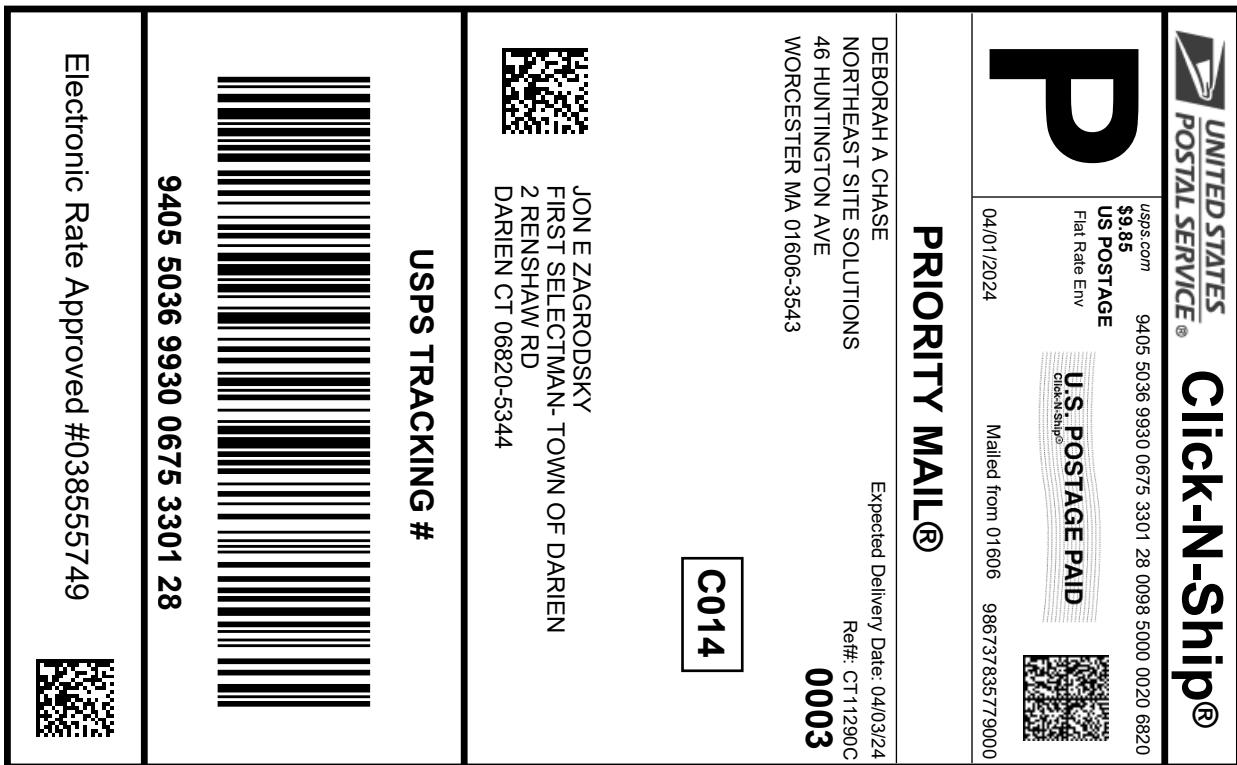
Trans. #: 601367344
Print Date: 04/01/2024
Ship Date: 04/01/2024
Expected Delivery Date: 04/03/2024

Priority Mail® Postage: **\$9.85**
Total: **\$9.85**

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

To: EVERSOURCE
107 SELDEN ST
BERLIN CT 06037-1616

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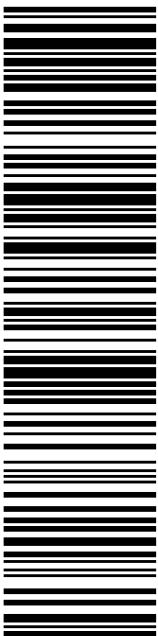


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USPS TRACKING # :
9405 5036 9930 0675 3301 28

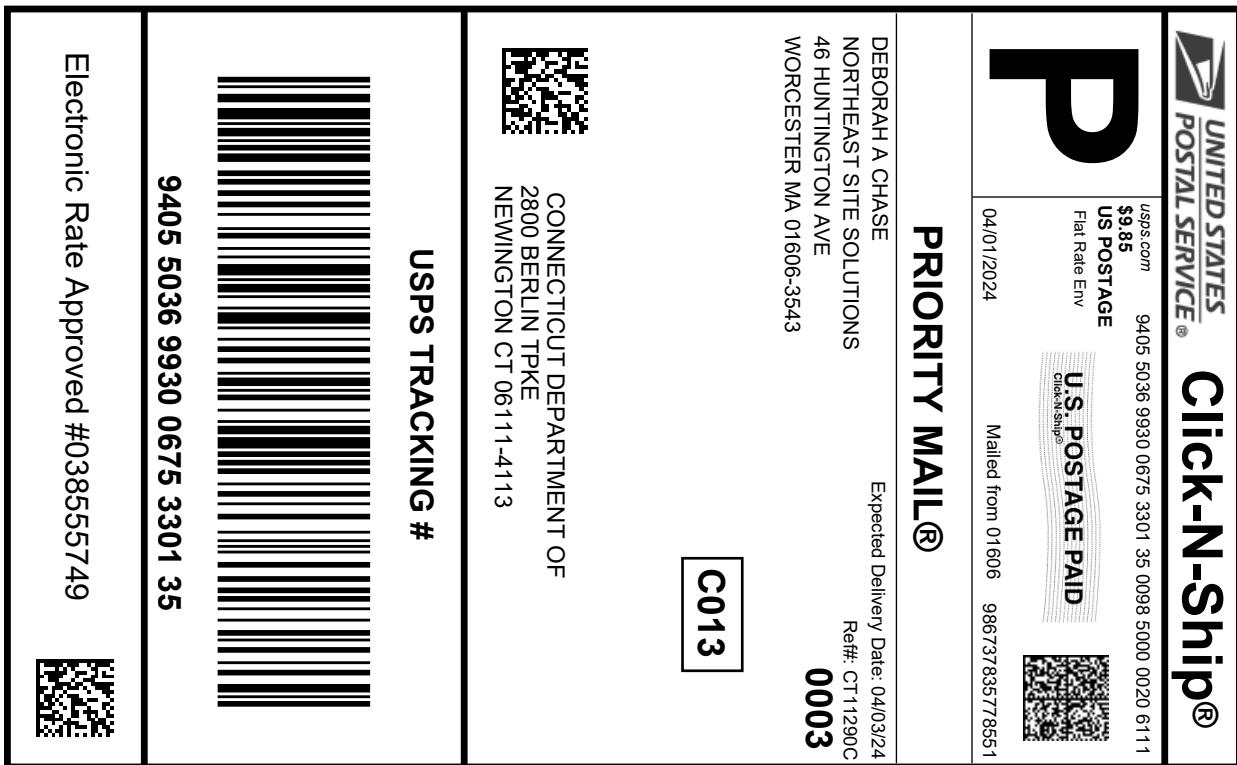
Trans. #: 601367344
Print Date: 04/01/2024
Ship Date: 04/01/2024
Expected Delivery Date: 04/03/2024

Priority Mail® Postage: **\$9.85**
Total: **\$9.85**

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

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

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5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #:
9405 5036 9930 0675 3301 35

Trans. #: 601367344
Print Date: 04/01/2024
Ship Date: 04/01/2024
Expected Delivery Date: 04/03/2024

Priority Mail® Postage: **\$9.85**
Total: **\$9.85**

From: DEBORAH A CHASE
NORTHEAST SITE SOLUTIONS
46 HUNTINGTON AVE
WORCESTER MA 01606-3543
To: CONNECTICUT DEPARTMENT OF TRANSPORTATION
2800 BERLIN TPKE
NEWINGTON CT 06111-4113

Ref#: CT11290C

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Electronic Rate Approved #038555749

9405 5036 9930 0675 3301 35

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

Grand Total: \$0.00

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to get the latest status. Standard Message
and Data rates may apply. You may also
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