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CROWN CASTLE  
 CROWN CASTLE  
 ONE PARK PLACE, STE. 300  
 DUBLIN, CA 94568

RECORD DRAWINGS ISSUE DATE: 11.01.22



Shift Companies, LLC  
 3334 N. 20TH ST.  
 PHOENIX, ARIZONA 85016  
 ph: 480.448.2000  
 fax: 480.264.0163

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11.22.21	1ST SUBMITTAL
01.07.22	2ND SUBMITTAL
01.28.22	3RD SUBMITTAL
07.11.22	RESUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
	09.28.22	PSE SUBMITTAL
	11.01.22	PSE SUBMITTAL

PROJECT NAME

MERCER ISLAND SMALL CELL - 5G UPGRADE

NODE NUMBER

MIV\_43

NODE ADDRESS

8215 SE 78th ST.,  
 MERCER ISLAND, WA  
 98040

HUB AREA

VZW MERCER ISLAND HUB

SHIFT JOB NUMBER

IN HOUSE

SHEET TITLE

TITLE SHEET

SHEET NUMBER

1 OF 7

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"

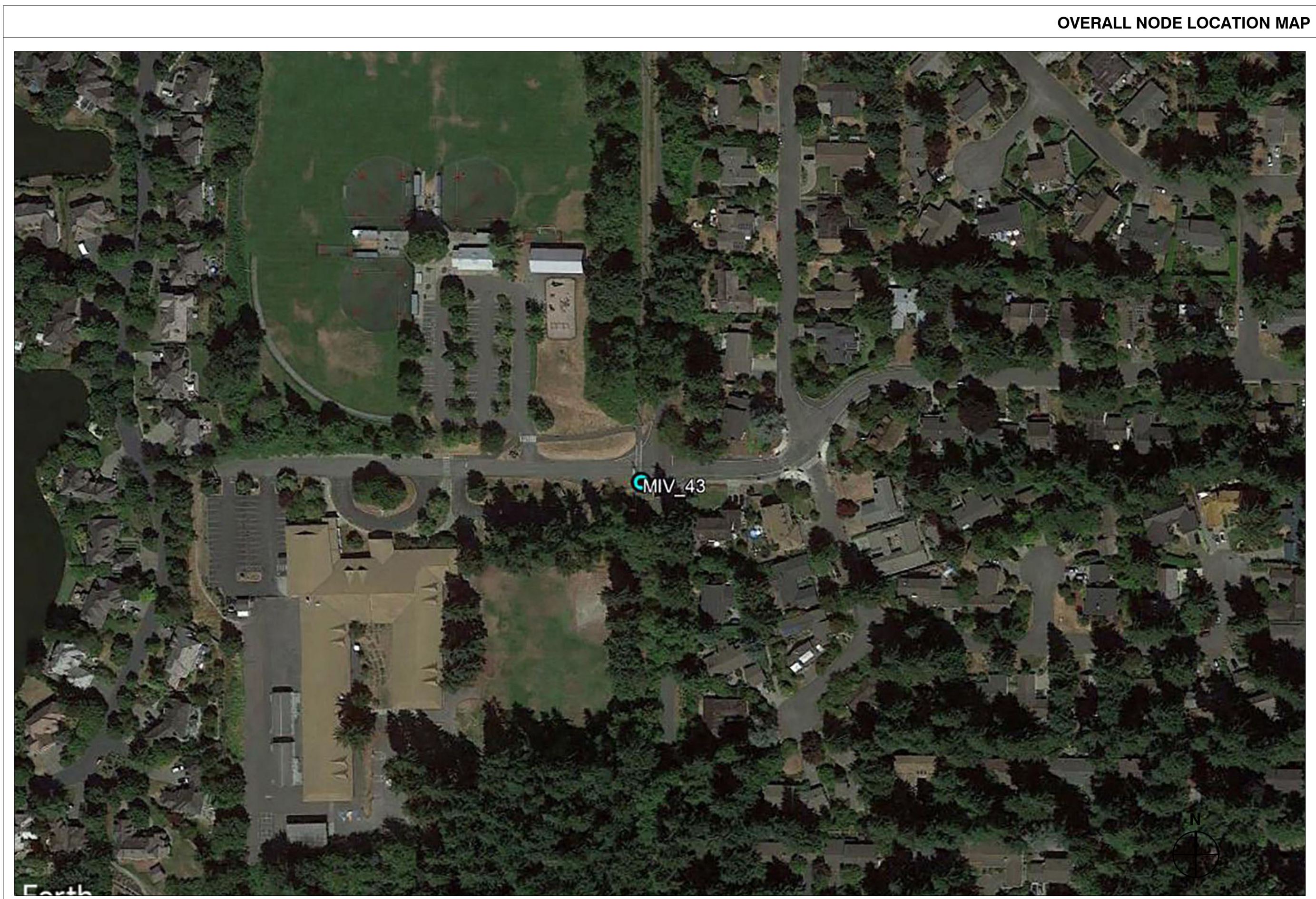
PLAN CHECK #

CASE #

PROJECT NAME: MERCER ISLAND SMALL CELL - 5G UPGRADE  
 PROJECT ADDRESS: 8215 SE 78th ST., MERCER ISLAND, WA 98040  
 PROJECT TYPE: NEW REPLACEMENT PSE WOOD UTILITY POLE  
 CUSTOMER NODE ID #: 448280  
 CROWN NODE ID #: MIV\_43  
 HUB NAME: VZW MERCER ISLAND HUB  
 CARRIER: VERIZON  
 COORDINATES: LAT: 47.532933, LONG: -122.227306  
 CROWN CASTLE BILLING / SCU#: 464893

PROJECT TEAM	
<b>ARCHITECT</b>	<b>OWNER INFO</b>
Company: SHIFT CONSULTING Address: 3334 N. 20TH ST. PHOENIX, AZ 85016 Phone Number: 480.448.2000 Fax Number: 480.264.0163 Contact: CHRIS MYERS	Company: CROWN CASTLE Address: 1505 WESTLAKE AVE. N., #800 SEATTLE, WA 98109 Phone Number: 253.302.9678 Fax Number: Contact: CHRIS KOCH

PROJECT SUMMARY	
<b>JURISDICTION:</b> MERCER ISLAND PUBLIC WORKS DEPT. 9601 SE 36TH STREET MERCER ISLAND, WA 98040 PH: 206.275.7608	<b>APPLICANT:</b> CROWN CASTLE 1505 WESTLAKE AVE. N., #800 SEATTLE, WA 98109
<b>HANDICAPPED REQUIREMENTS:</b> -FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.  -HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED.	<b>CODES:</b> 2018 INTERNATIONAL BUILDING CODE (IBC)  WASHINGTON CITIES ELECTRICAL CODE (WCEC)
	<b>PLUMBING REQUIREMENTS:</b> FACILITY HAS NO PLUMBING
	<b>POWER COMPANY:</b> PUGET SOUND ENERGY (PSE)



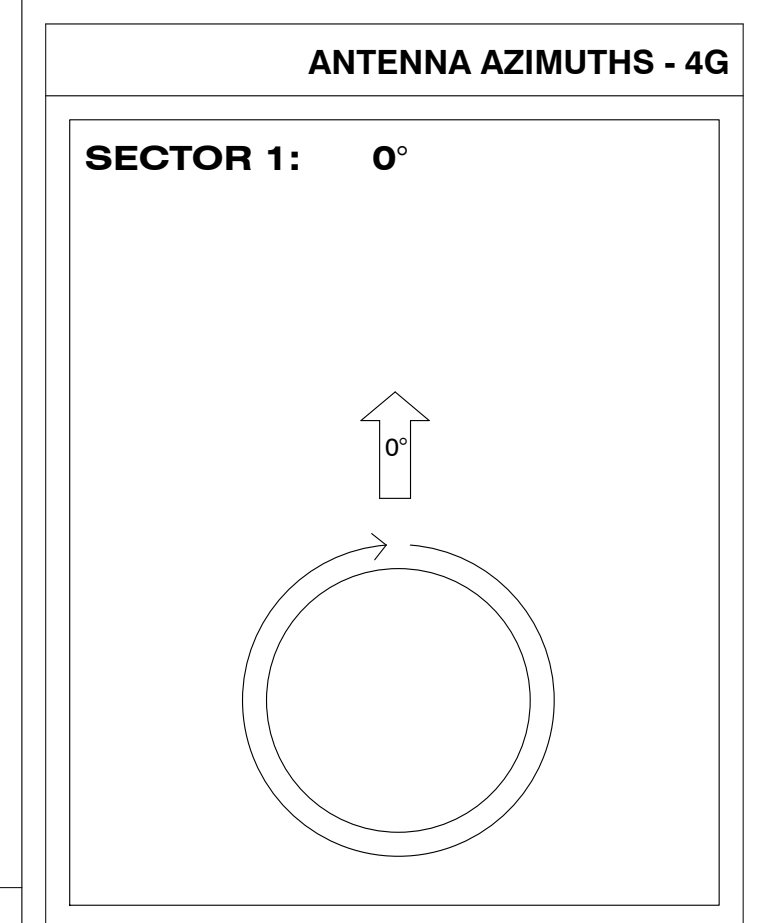
PROJECT DESCRIPTION
THIS PROJECT WILL CONSIST OF ADDING NEW POLE-TOP ANTENNA SHROUD, CONTAINING (1) 4G CANISTER ANTENNA TO NEW REPLACEMENT WOOD UTILITY POLE.  NEW POLE-MOUNTED EQUIPMENT: (1) 4G JMA WIRELESS CYL2Q24GR-1xyz ANTENNA

- RIGHT-OF-WAY USE PERMIT SHALL BE OBTAINED BY CONTRACTOR PRIOR TO COMMENCING WORK.
- ALL WORK TO BE CONDUCTED IN CITY RIGHT OF WAY, U.N.O.
- ALL DISTURBED LANDSCAPING SHALL BE REPLACED TO SIMILAR EXISTING CONDITION.
- ANY SIDEWALK CLOSURE SHALL BE COORDINATED WITH THE CITY AND PROPER SIGNAGE WILL BE PLACED.
- TEMPORARY LIGHTING WILL BE COORDINATED WITH CITY AND PROVIDED WHENEVER EXISTING LIGHTING IS REMOVED OR UNAVAILABLE AS REQUIRED.
- NO MATERIALS OR EQUIPMENT SHALL BE STORED ON PRIVATE PROPERTY OR BLOCK ACCESS TO PRIVATE PROPERTY.
- CLEANUP OF THE WORK AREA WILL BE COMPLETED EACH EVENING AND THE PROJECT AREA WILL BE RETURNED TO EXISTING CONDITION AT THE COMPLETION OF CONSTRUCTION AT EACH NODE LOCATION.
- ALL WORK TO COMPLY WITH OSHA AND CITY GUIDELINES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT THEIR COST, ANY AND ALL DAMAGED PAVEMENT, SIDEWALK, CURB AND GUTTER OUTSIDE THE PAY LIMIT, DAMAGE DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO THE REMOVAL AND REPLACEMENT OF NEWLY CRACKED, THE REMOVAL AND REPLACEMENT OF EXISTING CRACKS WHERE THE CRACKS HAVE BEEN ENLARGED DUE TO THE CONTRACTORS OPERATIONS, THE REMOVAL AND REPLACEMENT OF DEFORMED PAVEMENT, CURB AND GUTTER, SIDEWALK, ETC.. ALL SAW CUTS USED FOR THE REMOVAL OF THESE ITEMS SHALL BE PERPENDICULAR AND PARALLEL TO THE CENTERLINE CONTROLLING THAT ITEM, OR AT THE DISCRETION OF THE CITY INSPECTOR.

- CENTER LINE  
 --- PROPERTY LINE  
 --- RIGHT-OF-WAY  
 - F - F - FIBER  
 - G - G - GAS  
 - P - P - POWER  
 - S - S - SANITARY SEWER  
 - SD - SD - STORM DRAIN  
 - W - W - WATER  
 - P - P - LIGHT CIRCUIT POWER  
 - OHE - OHE - OVERHEAD POWER LINE

- REVISION  
 KEY NOTE  
 DETAIL REFERENCE  
 ELEVATION REFERENCE  
 SECTION REFERENCE  
 ELEVATION MARKER  
 PHOTOSIM REFERENCE  
 ANTENNA AZIMUTH

- EXISTING TREE  
 EXISTING BUSH / SHRUB
- TREE PROTECTION NOTES:**
- ALL EXISTING TREES TO REMAIN.
  - CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION FENCING AROUND (E) TREES TO PROTECT DURING R.O.W. CONSTRUCTION PERIOD WHEN APPLICABLE.
  - NO REMOVAL OF TREES ON PRIVATE PROPERTY WILL BE PERMITTED.
  - CONDUCT ALL WORK IN ACCORDANCE WITH BEST CONSTRUCTION PRACTICES TO RETAIN (E) TREES. FOR ADDITIONAL INFORMATION CALL CITY ARBORIST (206) 275-7713.



SUBJECT POLE: MIV\_43  
 GPS COORDINATES:  
 LAT: 47.532933  
 LONG: -122.227306  
 POLE TYPE: NEW REPLACEMENT PSE  
 WOOD UTILITY POLE  
 POLE ID #: 219760-165594  
 ANTENNA RAD CENTER (4G): 50' - 0" A.F.G.

SUBJECT POLE IS LOCATED IN:  
**MERCER ISLAND R.O.W.**

CALL TWO WORKING DAYS BEFORE YOU DIG: 1-800-424-5555

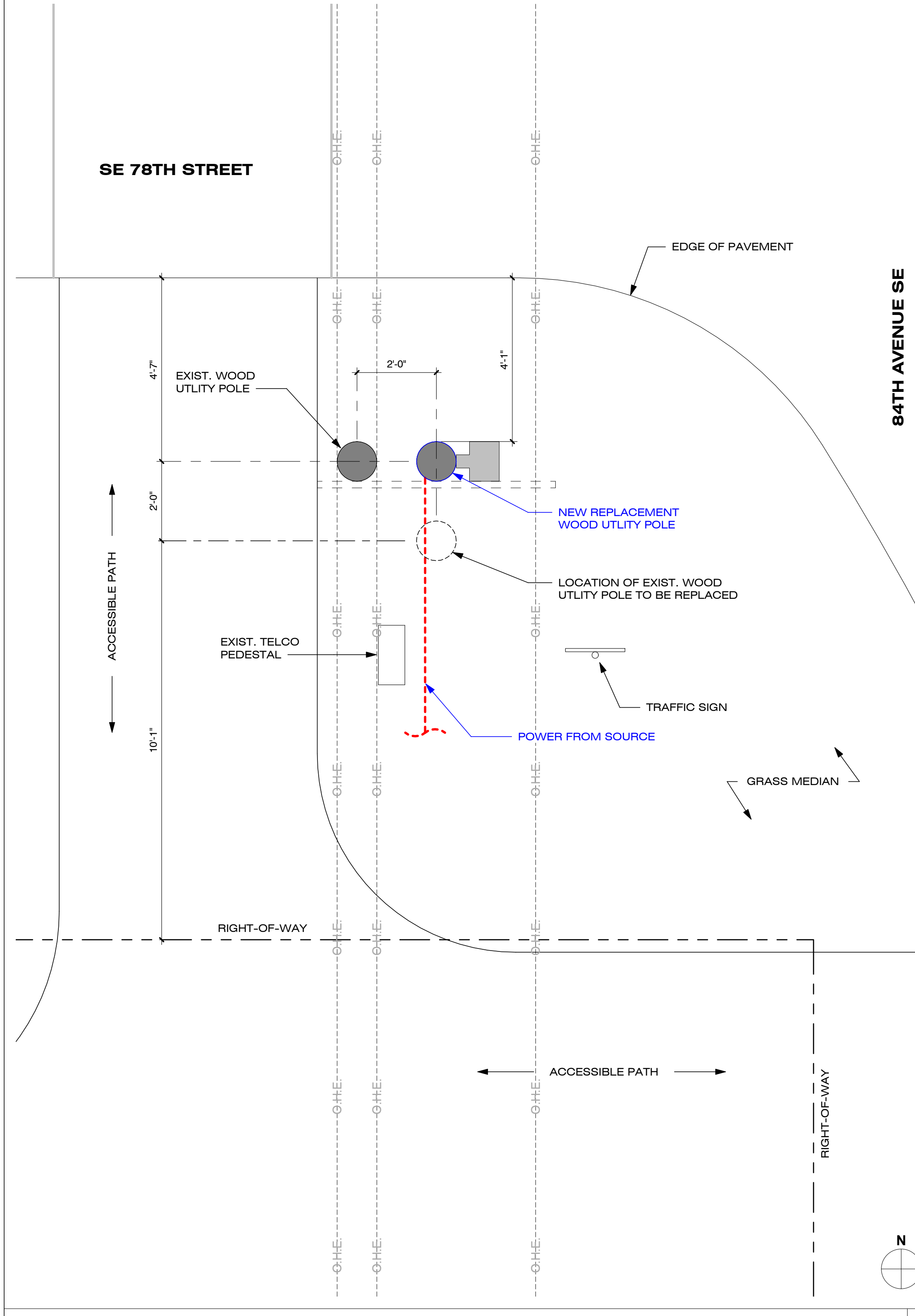
**CROWN CASTLE**  
 CROWN CASTLE  
 ONE PARK PLACE, STE. 300  
 DUBLIN, CA 94568

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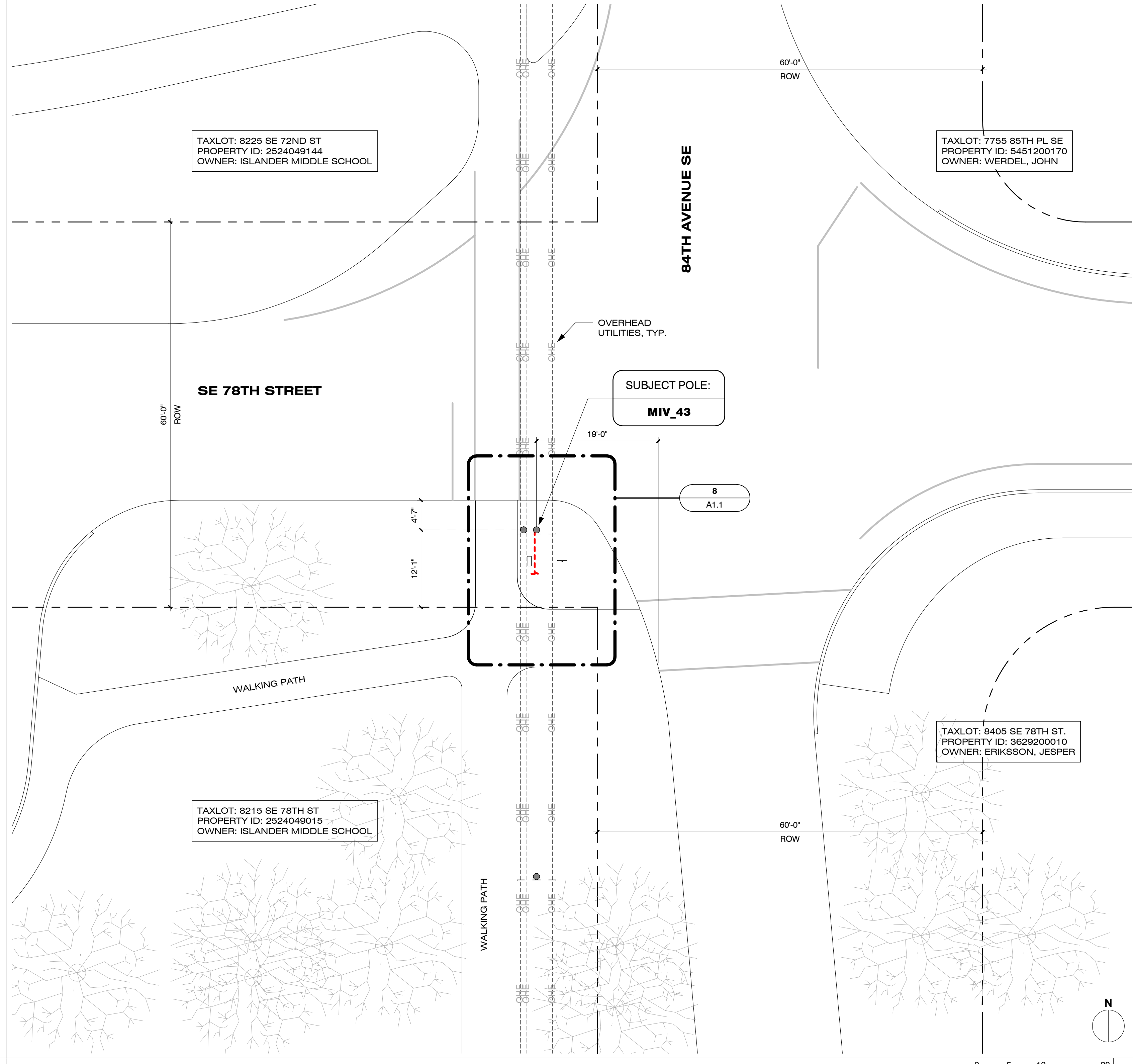
GENERAL PROJECT NOTES SCALE: NTS 1

ABBREVIATIONS AND SYMBOLS

SCALE: NTS 9



EQUIPMENT AND ANTENNA PLAN 1/2" = 1'-0" 8



OVERALL SITE PLAN 1" = 10'-0" 20

**SHIFT**

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 PHOENIX, ARIZONA 85016  
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**MERCER ISLAND SMALL CELL - 5G UPGRADE**

NODE NUMBER  
**MIV\_43**

NODE ADDRESS  
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 MERCER ISLAND, WA  
 98040**

HUB AREA  
**VZW MERCER ISLAND HUB**

SHIFT JOB NUMBER  
 --

IN HOUSE  
 DRAWN BY: RA  
 CHECKED BY: CM

SHEET TITLE  
**SITE PLAN**

SHEET NUMBER  
**A1.1**

PAGE  
**2 OF 7**

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"

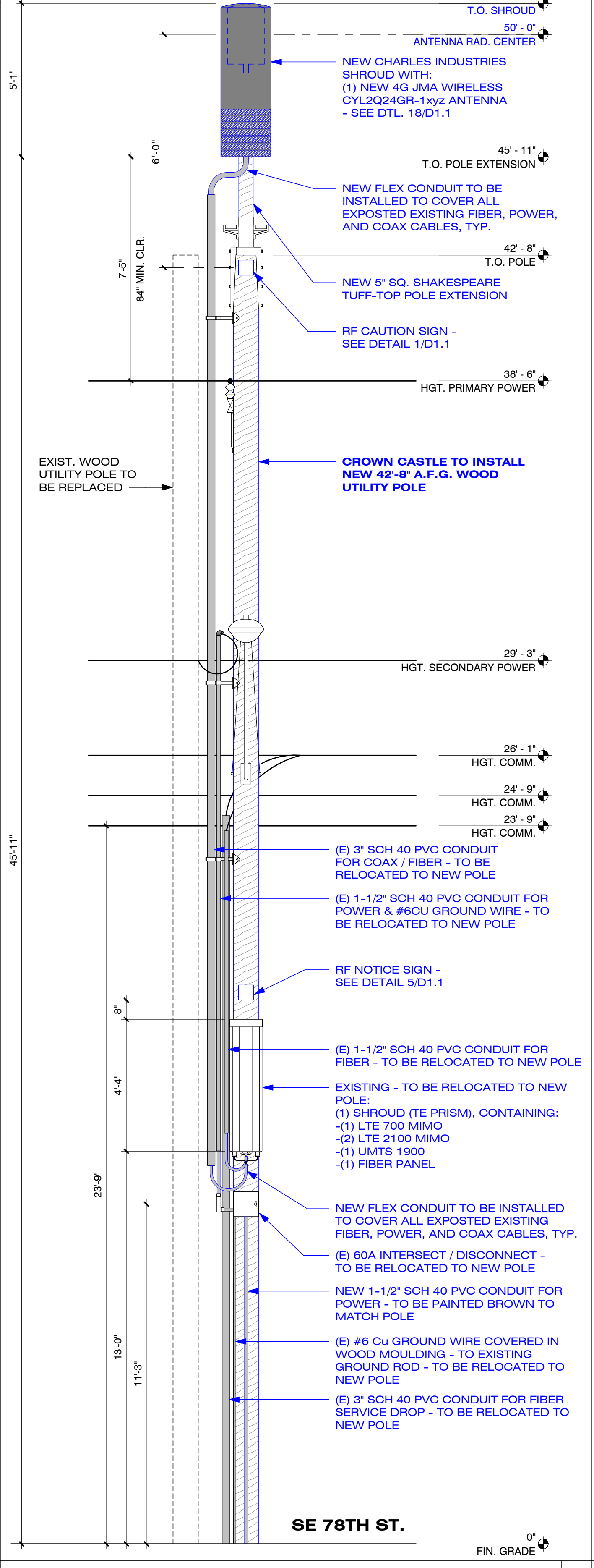
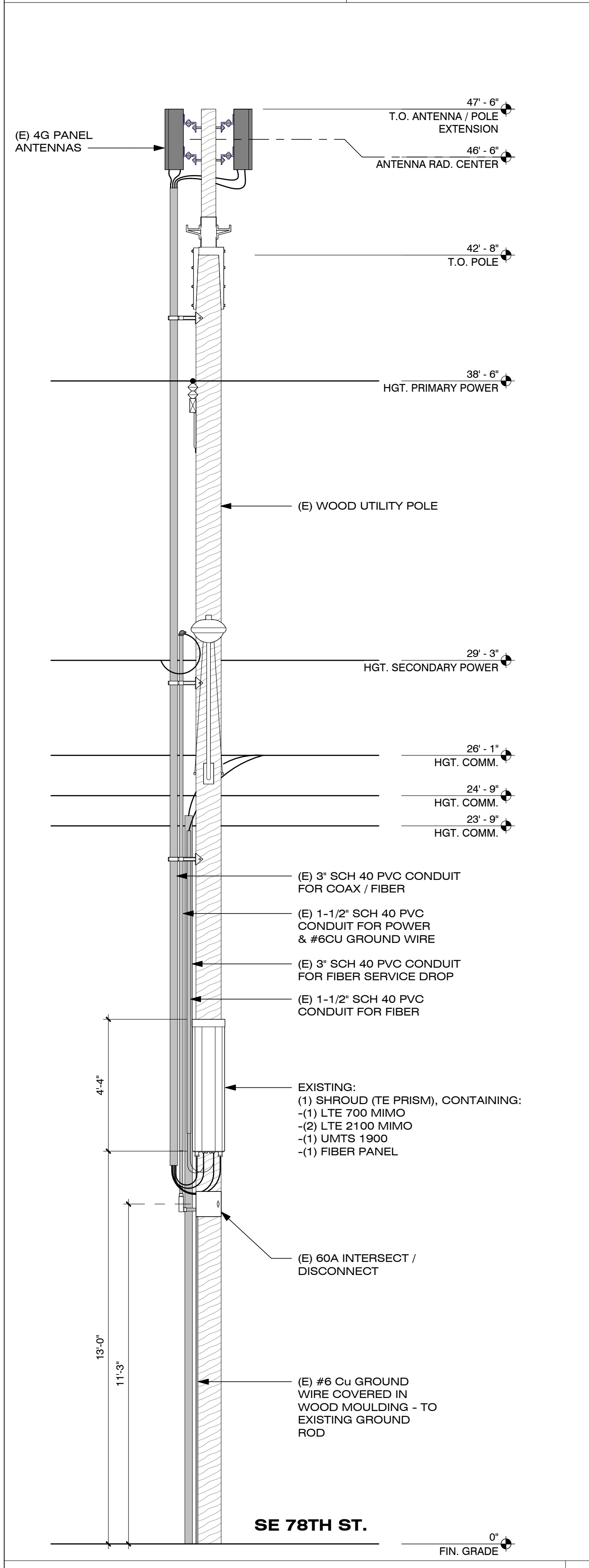
PLAN CHECK #  
 CASE #

**NEW POLE TYPE =** NEW REPLACEMENT PSE WOOD UTILITY POLE  
**NEW POLE CLASS =** 1  
**NEW POLE LENGTH =** 50'-0"  
**NEW POLE OWNER =** PSE

**NOTES:**  
 1. ALL VISIBLE EQUIPMENT WILL BE PERMANENTLY PAINTED TO MATCH THE APPROXIMATE COLOR OF THE POLE SURFACE. NEW METER PEDestal WILL BE PAINTED GREEN TONE TO MATCH NATURAL SURROUNDINGS.  
 2. 6" MAXIMUM STAND-OFF REQUIRED TO COMPLY WITH MICC ON ALL RISERS, NEW OR EXISTING.

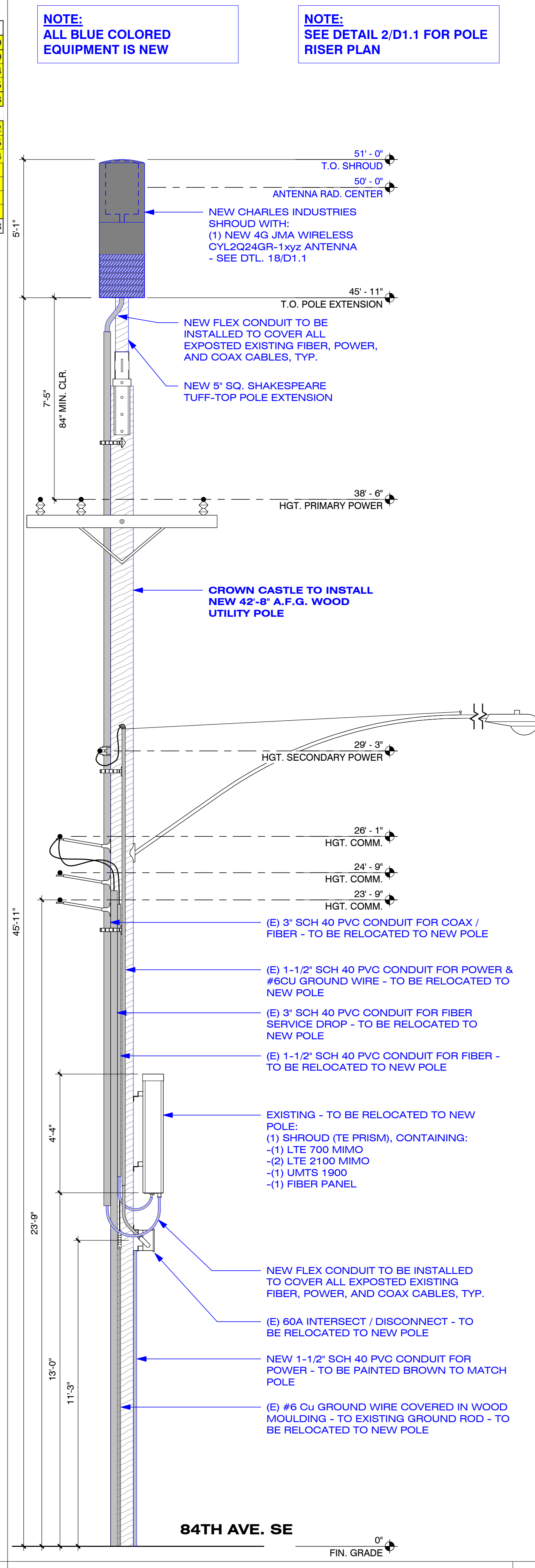
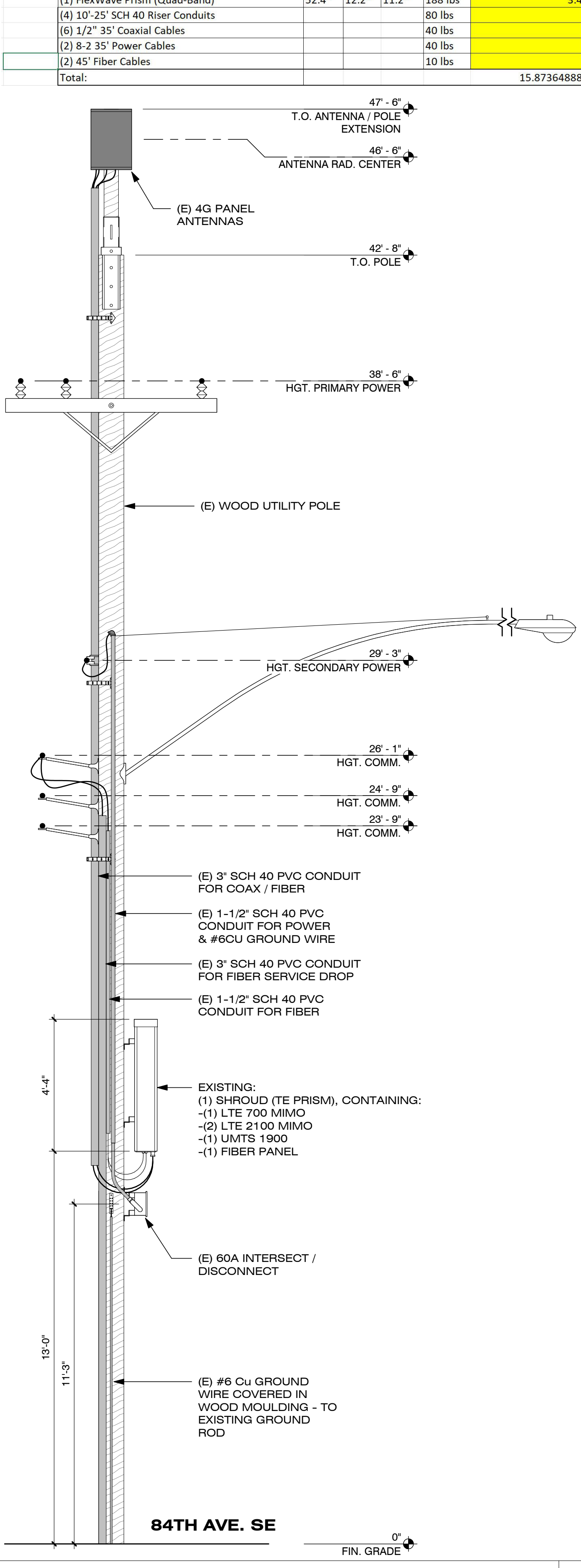
**NOTE:** ALL BLUE COLORED EQUIPMENT IS NEW

**NOTE:** SEE DETAIL 2/D1.1 FOR POLE RISER PLAN



**VOLUME CALCULATIONS**

Equipment	Height	Width	Depth	Weight	Volume
<b>Existing</b>					
(1) Amphenol HTXCWW63111414	23.2"	12"	7.1"	13 lbs	1.143888899
(1) Amphenol HTXCWW63111414	23.2"	12"	7.1"	13 lbs	1.143888899
(1) FlexWave Prism (Quad-Band)	52.4"	12.2"	11.2"	188 lbs	3.4
(1) PDC-12060-08 Power Disconnect	9"	9"	5.265"	5.5 lbs	0.246796875
<b>Total:</b>					<b>5.934574653</b>
<b>Proposed</b>					
Charles Pole Top Shroud	61"	21" diameter		266 lbs	12.226852
(1) PDC-12060-08 Power Disconnect	9"	9"	5.265"	5.5 lbs	0.246796875
(1) FlexWave Prism (Quad-Band)	52.4"	12.2"	11.2"	188 lbs	3.4
(4) 10'-25' SCH 40 Riser Conduits				80 lbs	
(6) 1/2" 35' Coaxial Cables				40 lbs	
(2) 8-2 35' Power Cables				40 lbs	
(2) 45' Fiber Cables				10 lbs	
<b>Total:</b>					<b>15.87364888</b>



POLE ELEVATION - EXISTING (LOOKING SOUTH) SCALE: 3/8" = 1'-0" 4

POLE ELEVATION - PROPOSED (LOOKING SOUTH) SCALE: 3/8" = 1'-0" 8

POLE ELEVATION - EXISTING (LOOKING EAST) SCALE: 3/8" = 1'-0" 12

POLE ELEVATION - PROPOSED (LOOKING EAST) SCALE: 3/8" = 1'-0" 20



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**NODE NUMBER**  
 MIV\_43

**NODE ADDRESS**  
 8215 SE 78th ST.,  
 MERCER ISLAND, WA  
 98040

**HUB AREA**  
 VZW MERCER ISLAND HUB

**SHIFT JOB NUMBER**  
 --

**IN HOUSE**  
 DRAWN BY: RA  
 CHECKED BY: CM

**SHEET TITLE**  
 POLE ELEVATIONS

**SHEET NUMBER**    **PAGE**

A1.2                      3 OF 7

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"

PLAN CHECK #                      CASE #



PHOTO SIMULATION - VIEW LOOKING **SOUTHWEST**  
ON SE 78TH STREET (EXISTING)

SCALE: N.T.S.

4



PHOTO SIMULATION - VIEW LOOKING **SOUTHWEST**  
ON SE 78TH STREET (PROPOSED)

SCALE: N.T.S.

8



PHOTO SIMULATION - VIEW LOOKING **EAST**  
ON SE 78TH STREET (EXISTING)

SCALE: N.T.S.

16

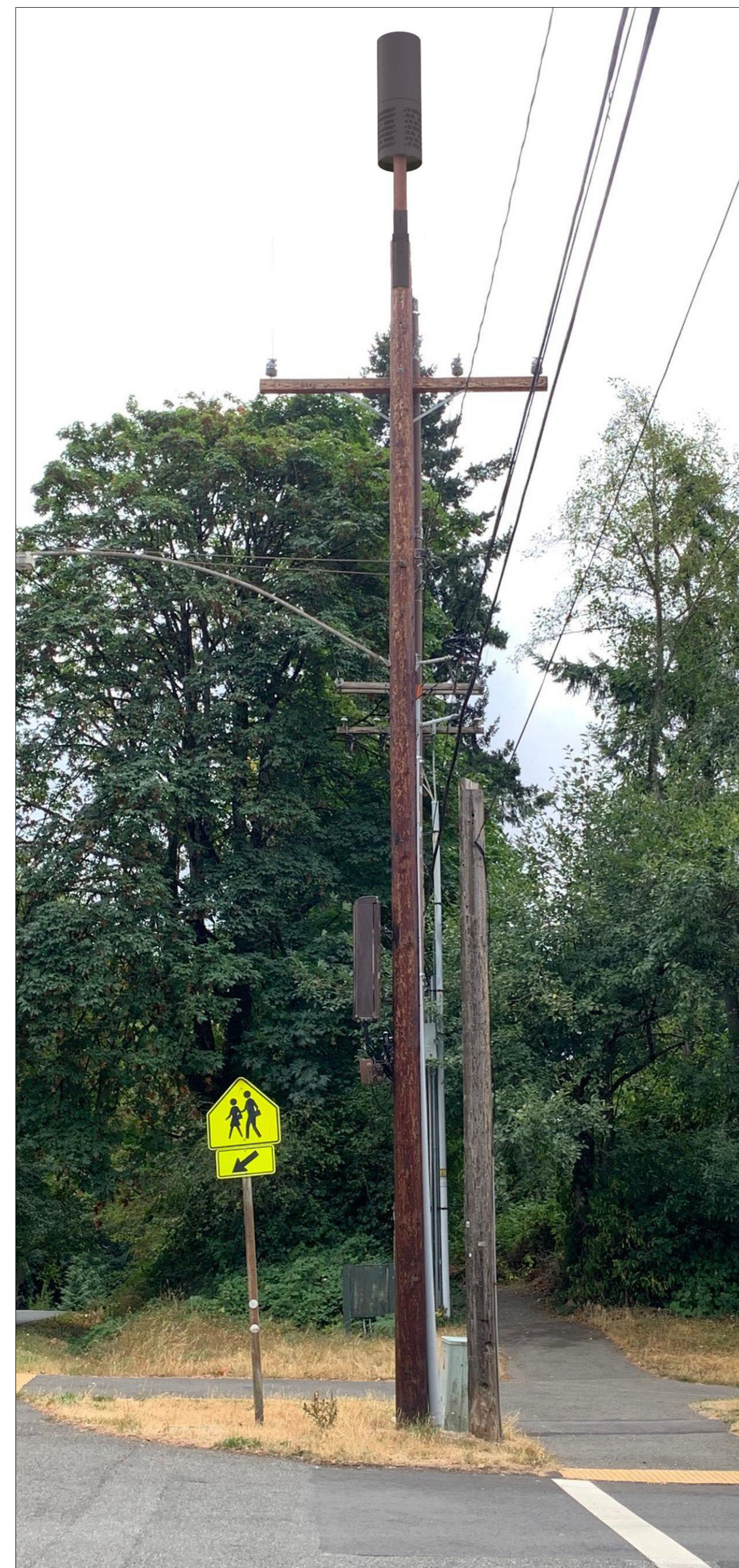


PHOTO SIMULATION - VIEW LOOKING **EAST**  
ON SE 78TH STREET (PROPOSED)

SCALE: N.T.S.

20



CROWN CASTLE  
CROWN CASTLE  
ONE PARK PLACE, STE. 300  
DUBLIN, CA 94568

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CHECKED BY: CM

SHEET TITLE

**PHOTO SIMULATIONS**

SHEET NUMBER

A1.4

PAGE

4 OF 7

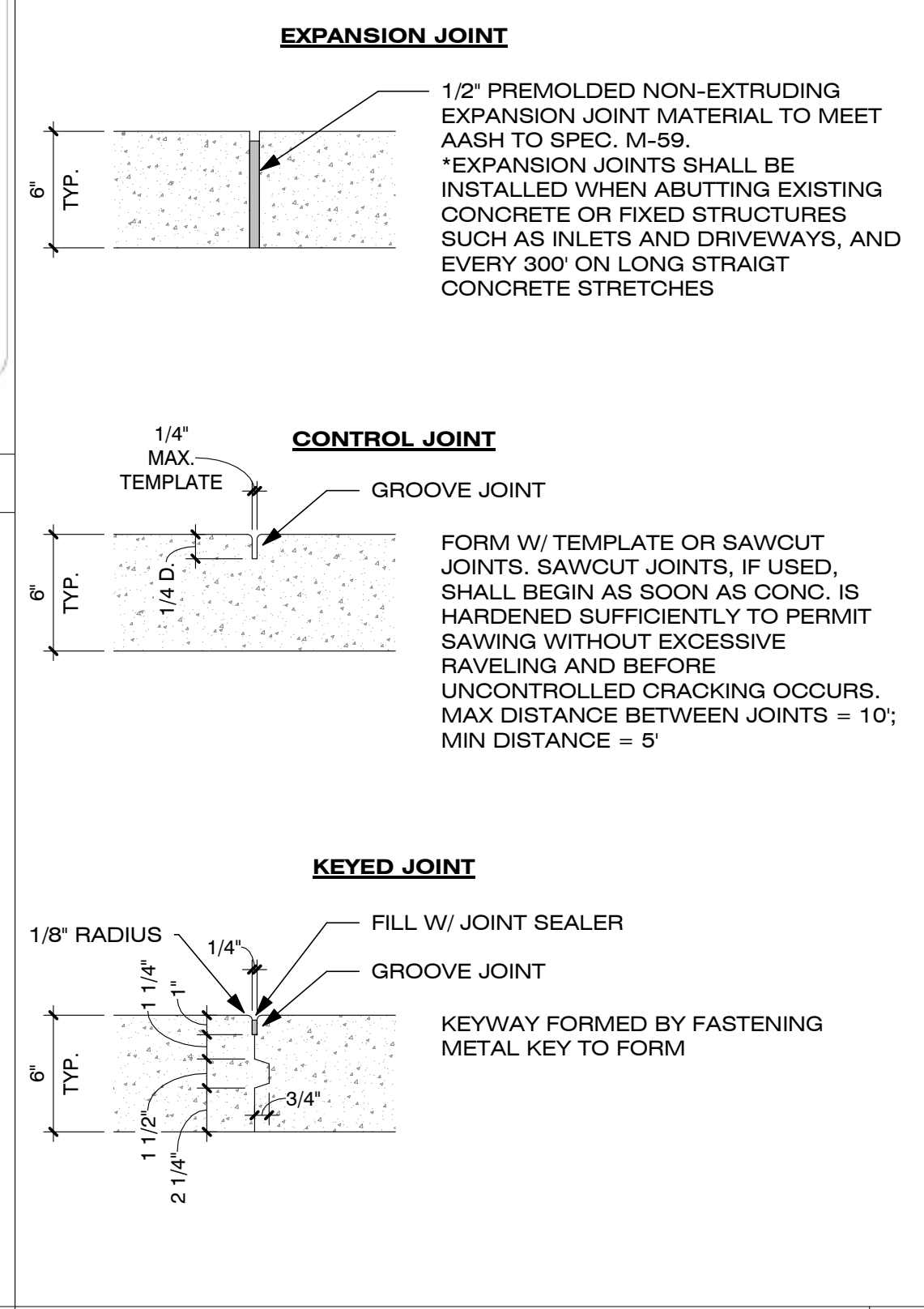
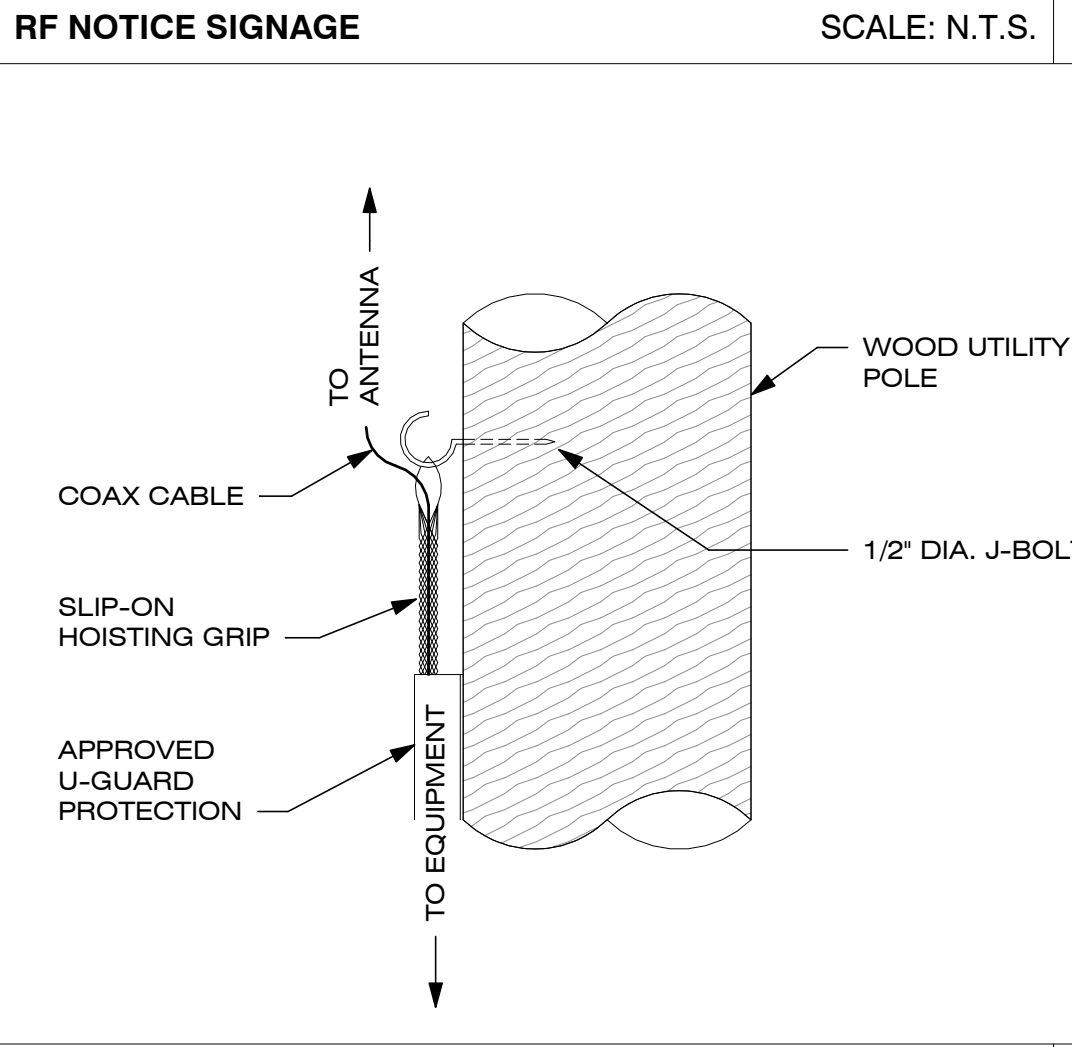
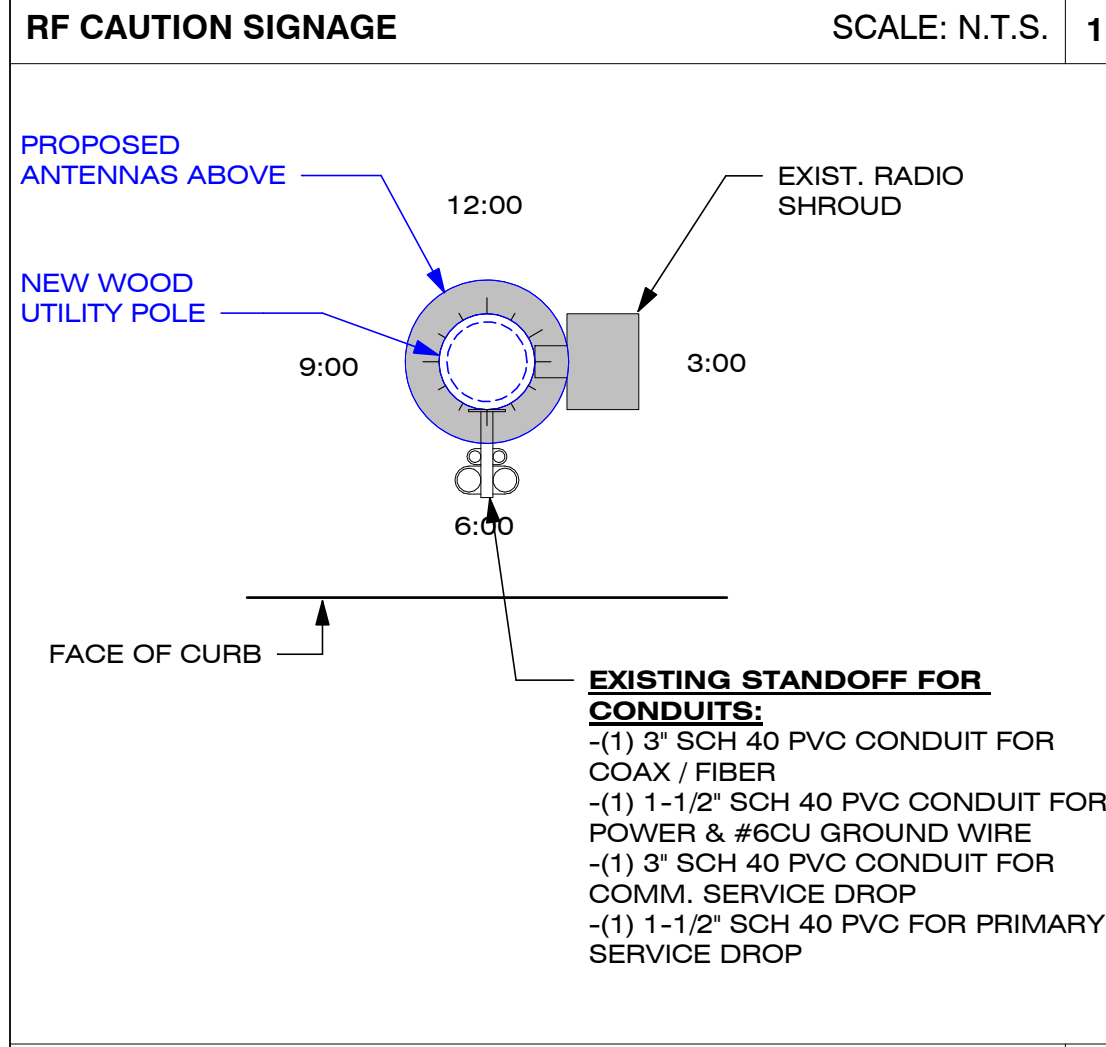
PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"

PLAN CHECK #

CASE #

**CAUTION**  
 Keep Back        FT From  
 this Antenna. FCC RF Public  
 Exposure Limits May Be  
 Exceeded Within This Distance.  
 Call 888-632-0931 for Instructions.  
 Qualified Workers:  
 FCC Occupational Limits May Be  
 Exceeded Within This Distance.  
 Site ID # \_\_\_\_\_

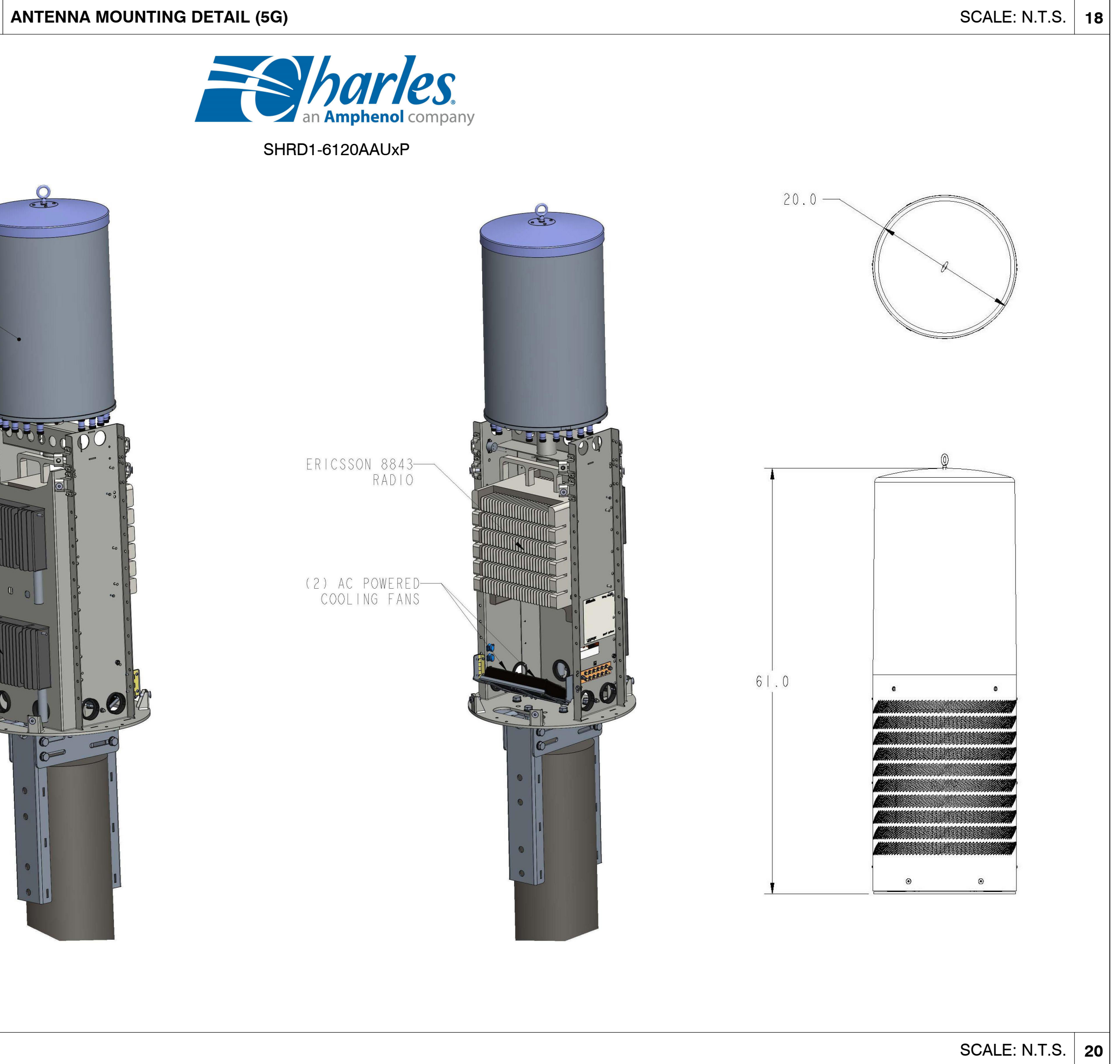
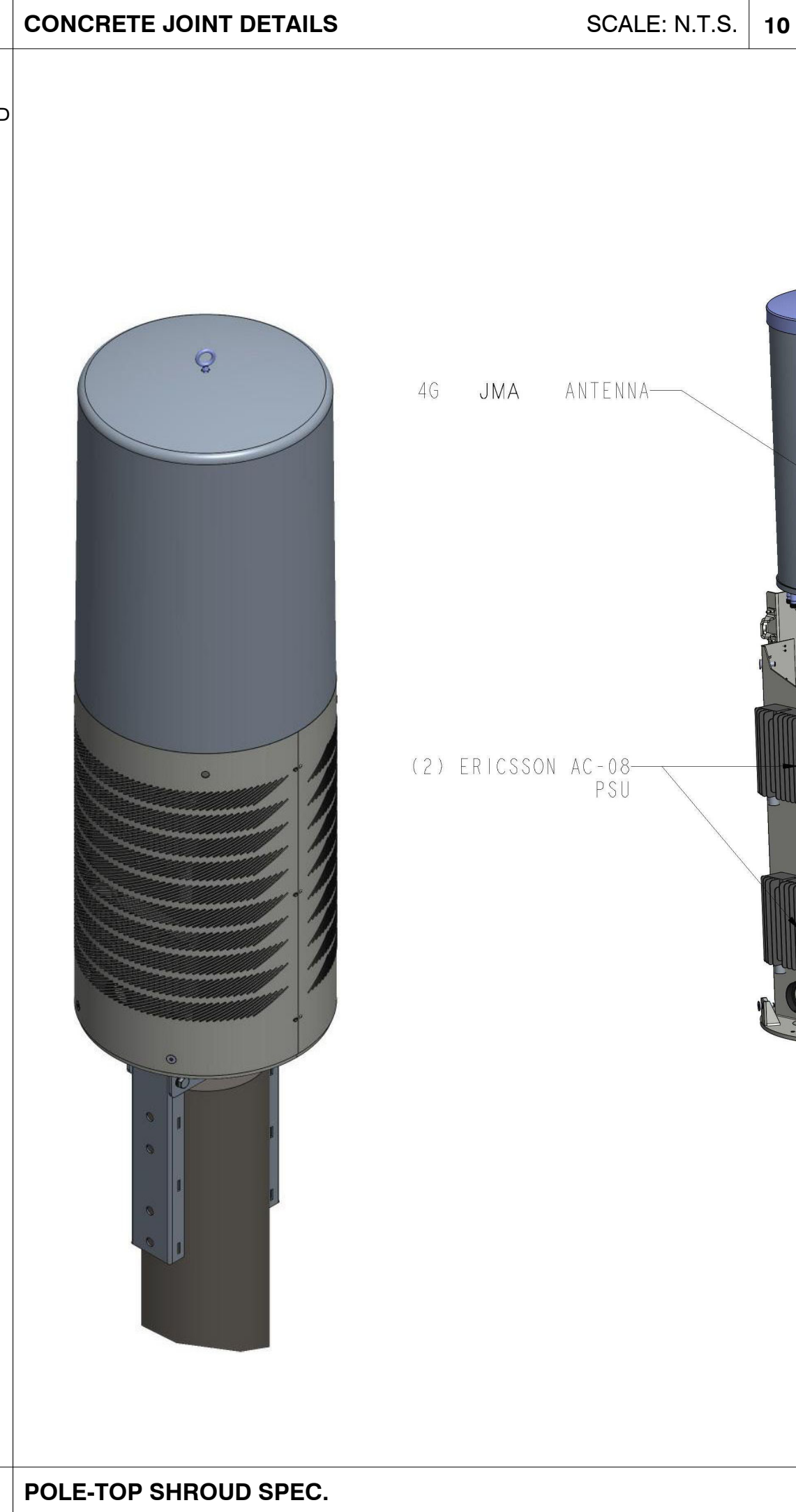
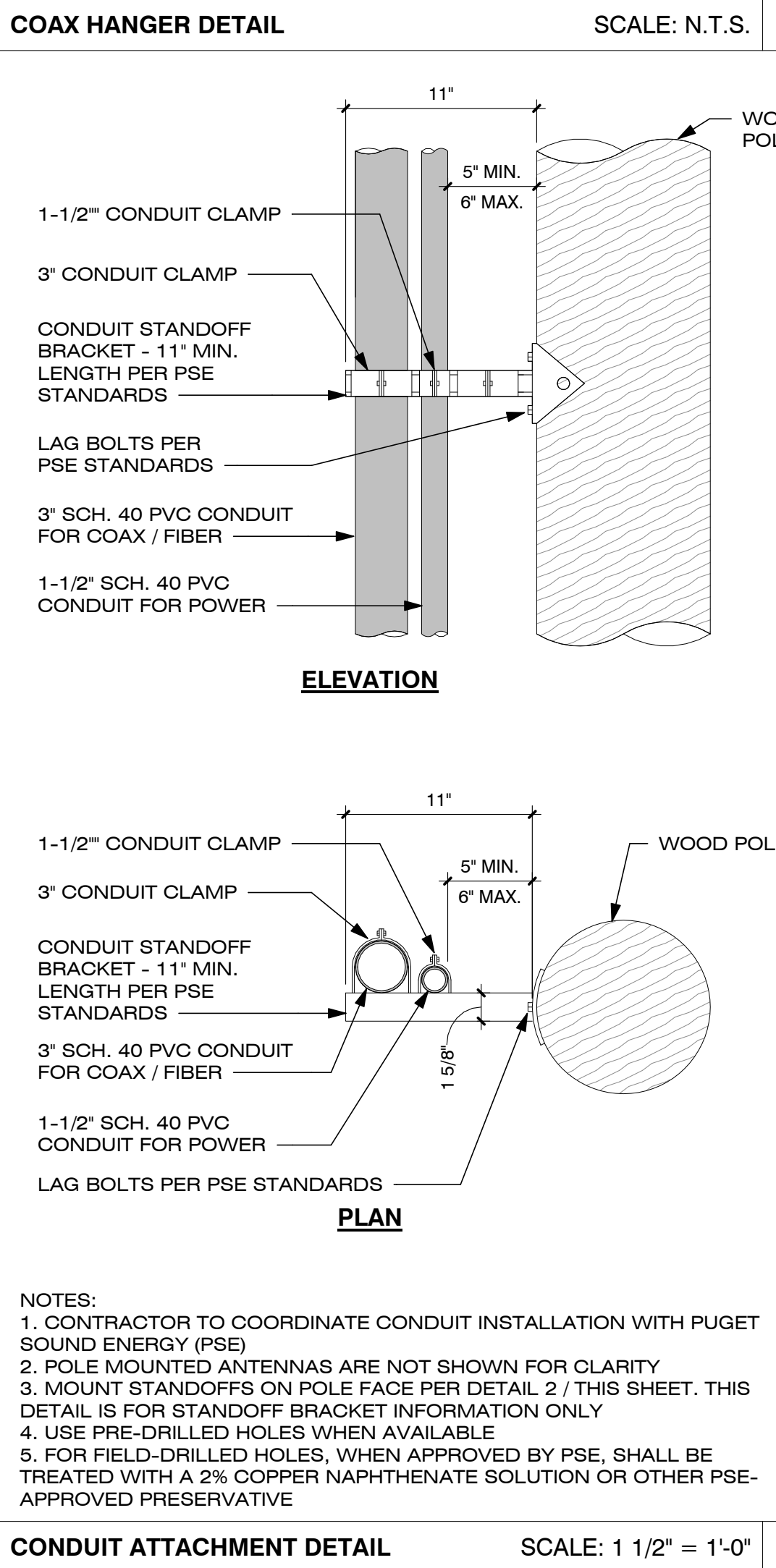
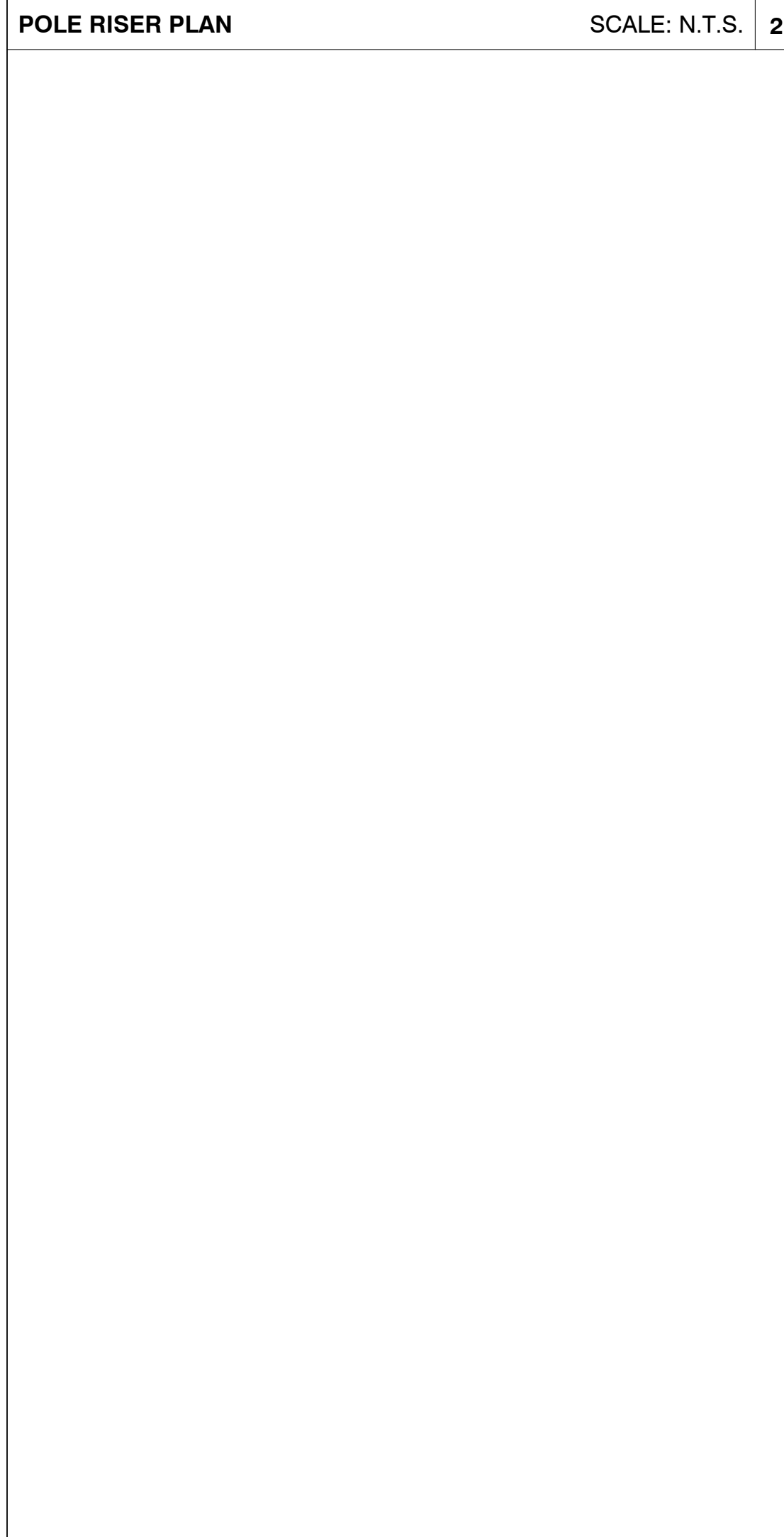
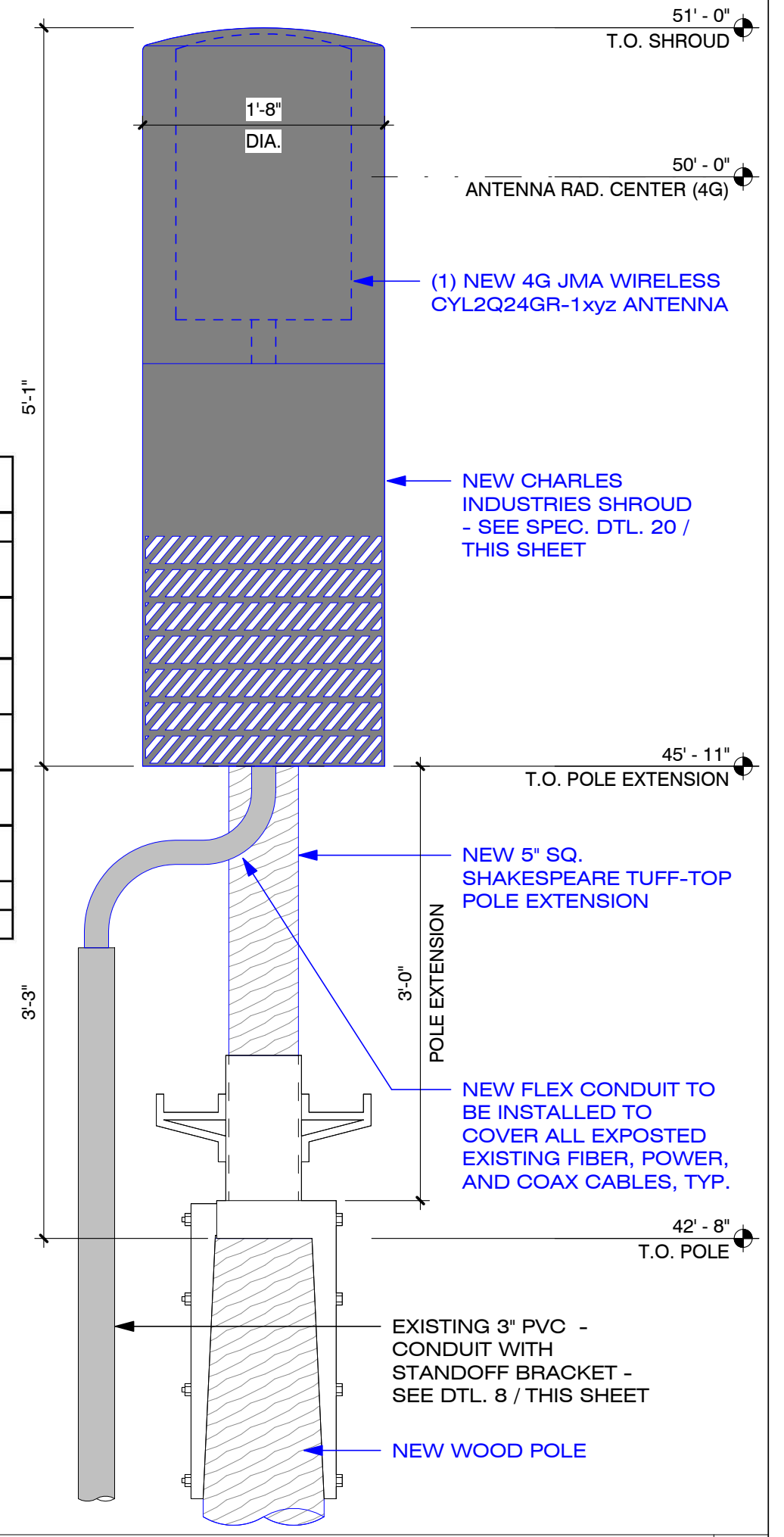
**NOTICE**  
**POLE WORKERS**  
 There is an antenna operation  
 high on this pole. Please follow  
 guidance on signs near the antenna or  
 call the number below.  
 Site ID # \_\_\_\_\_  
 CROWN CASTLE 888-632-0931 Rev. A



**Shroud Configuration**

Shroud Size	61" High x 20" Diameter
Shroud Construction	Steel mast structure Aluminum radio shrouding
Shroud Color	Red character in P/N designates color: G = National Park Brown
Mounting Style	Pole Top Shroud has bottom plate with mounting holes to mount to top of Shakespeare extension
4G Radio Shroud	Mounting brackets for (1) Ericsson 8843 radio and (2) Ericsson AC-08 PSUs
4G Antenna Shroud	Mounting for 24"H JMA canister antenna FRP Composite Antenna Radome
Thermal	Vented Intake and Exhaust (Top and Bottom) (2) 120VAC powered fans
Bonding/Grounding	2 Row, 8 Position Ground bar in bottom of shroud
Cable Entrance	Open top and bottom for cables from the pole to the antenna

**NOTES:**  
 1. CONTRACTOR TO INSTALL WEATHERPROOF WRAP AT ALL CONNECTORS. WRAP TO BE APPROVED BY CROWN CASTLE.  
 2. COLOR CODE COAX CABLES PER CROWN CASTLE WIRING DIAGRAM.  
 3. ALL VISIBLE EQUIPMENT WILL BE PERMANENTLY PAINTED TO MATCH THE APPROXIMATE COLOR OF THE POLE SURFACE.



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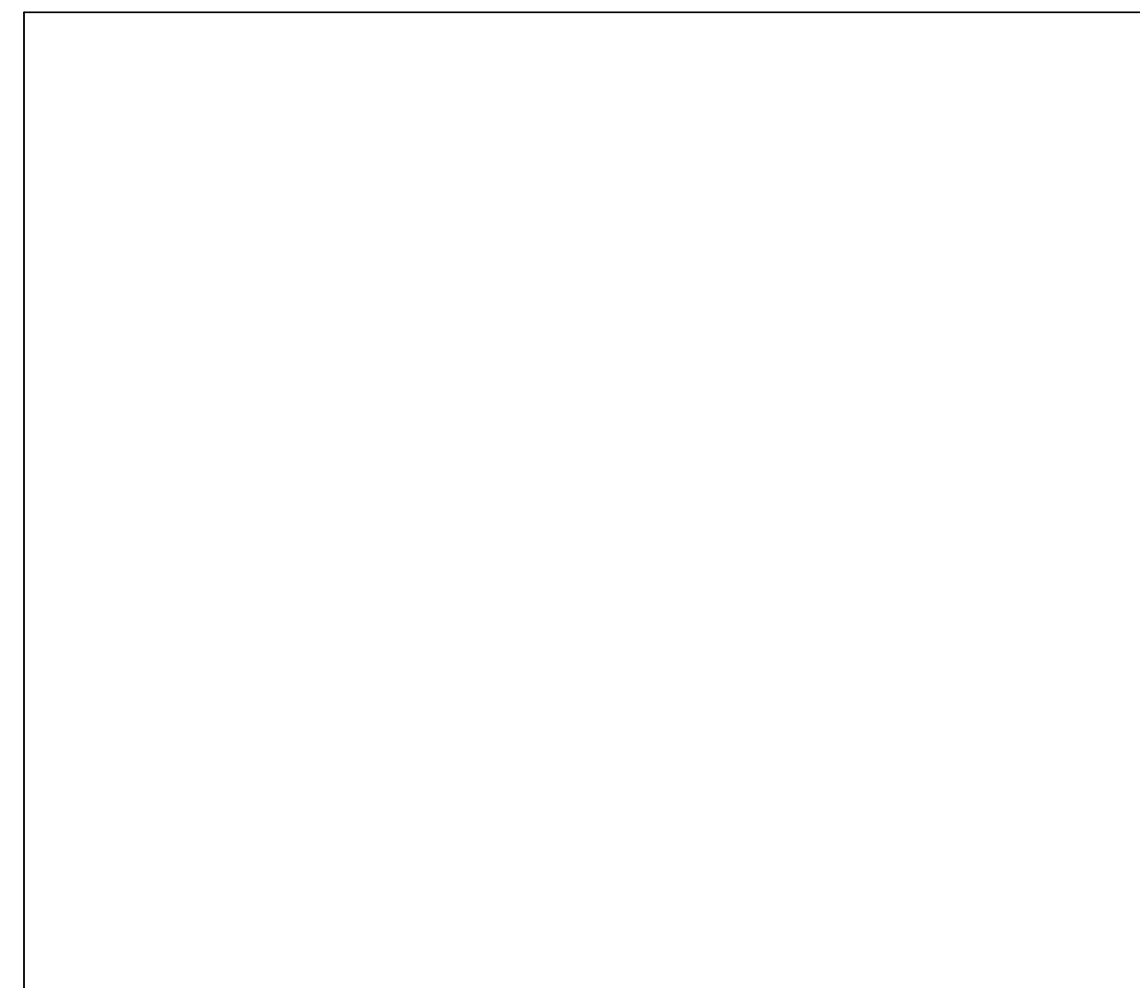
**SHIFT JOB NUMBER** IN HOUSE  
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 CHECKED BY: CM

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 CONSTRUCTION DETAILS

**SHEET NUMBER** **PAGE**  
 D1.1 5 OF 7

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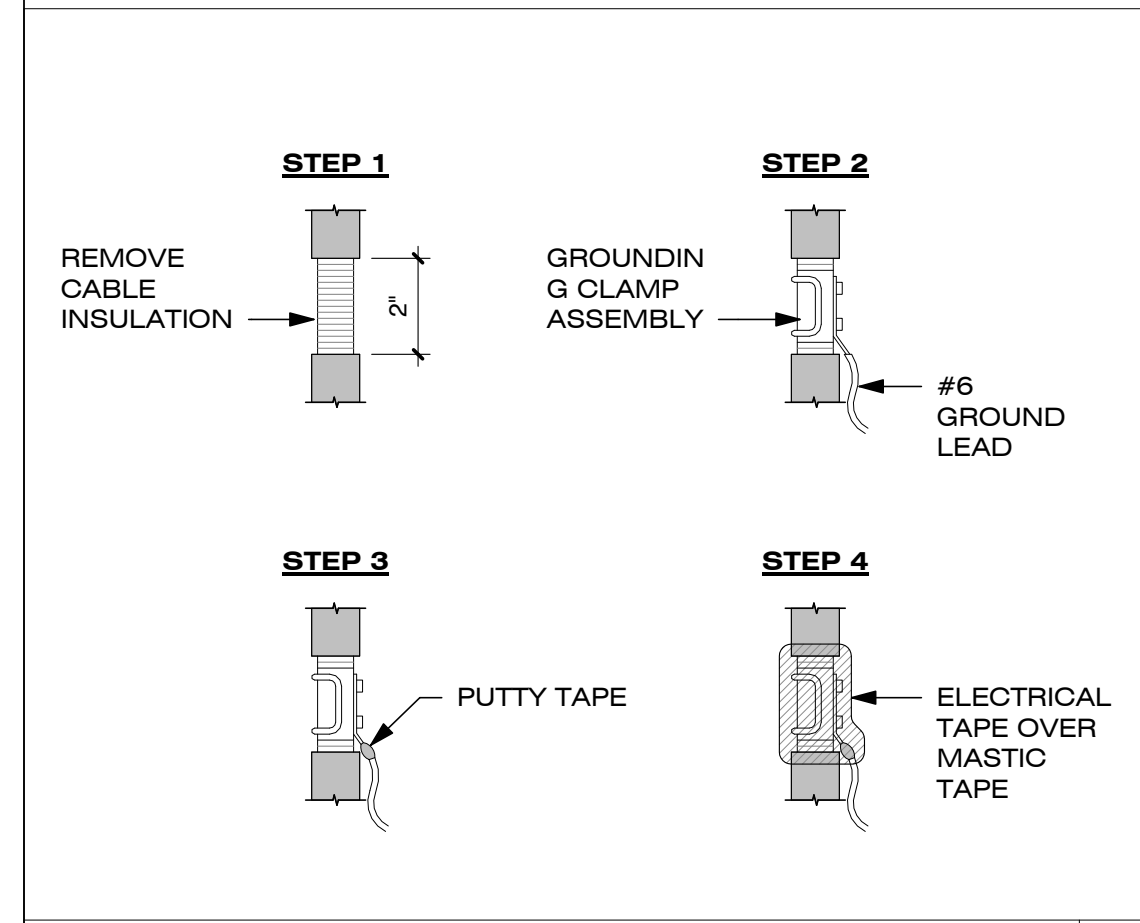
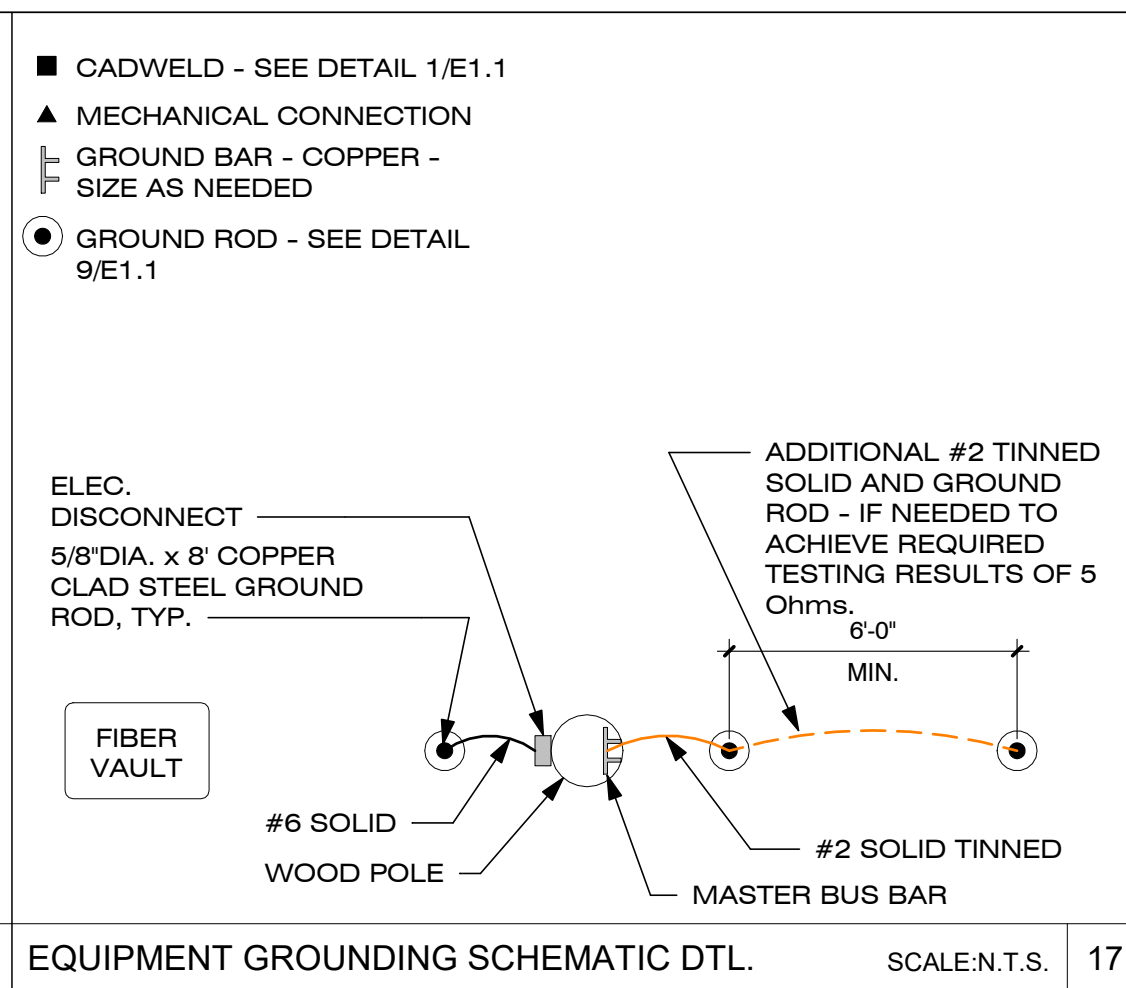
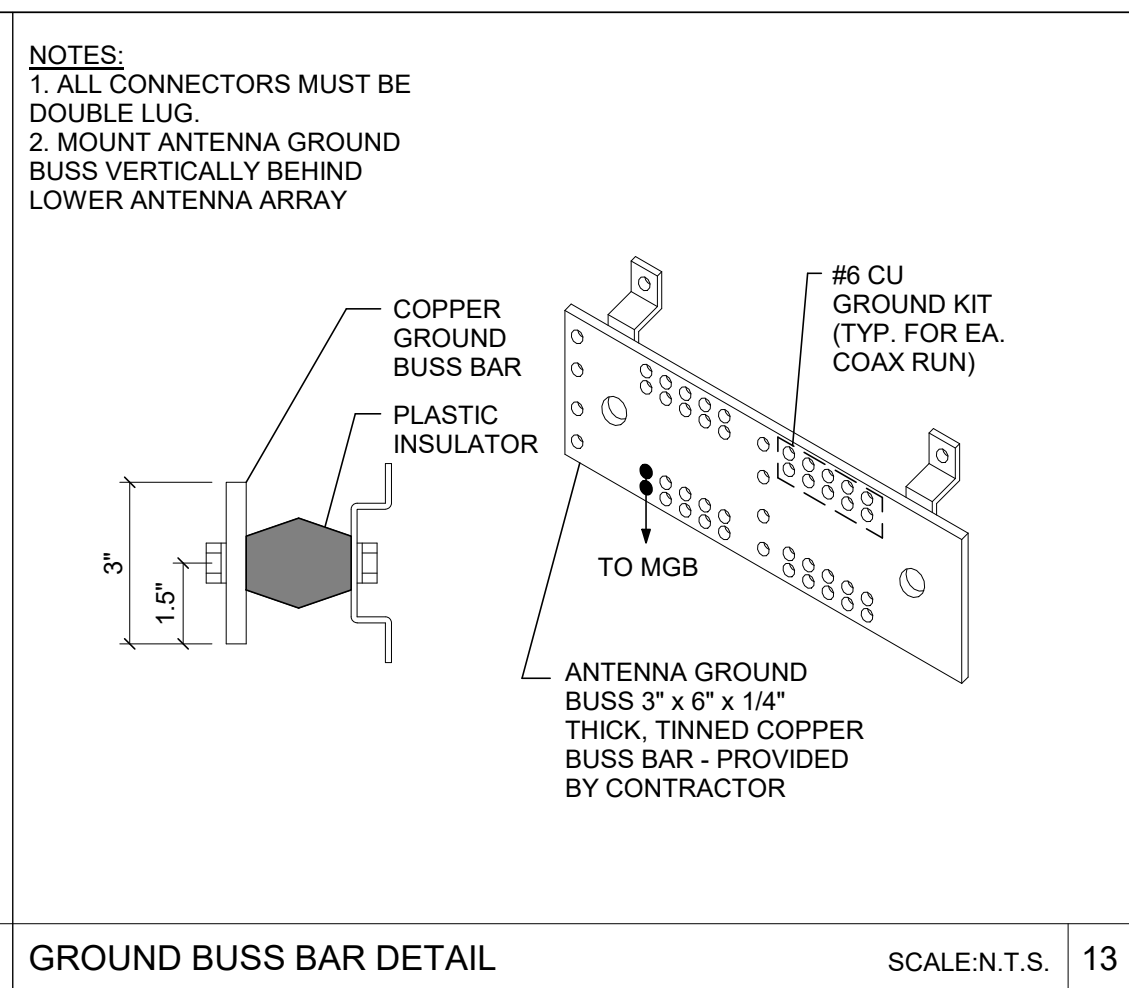
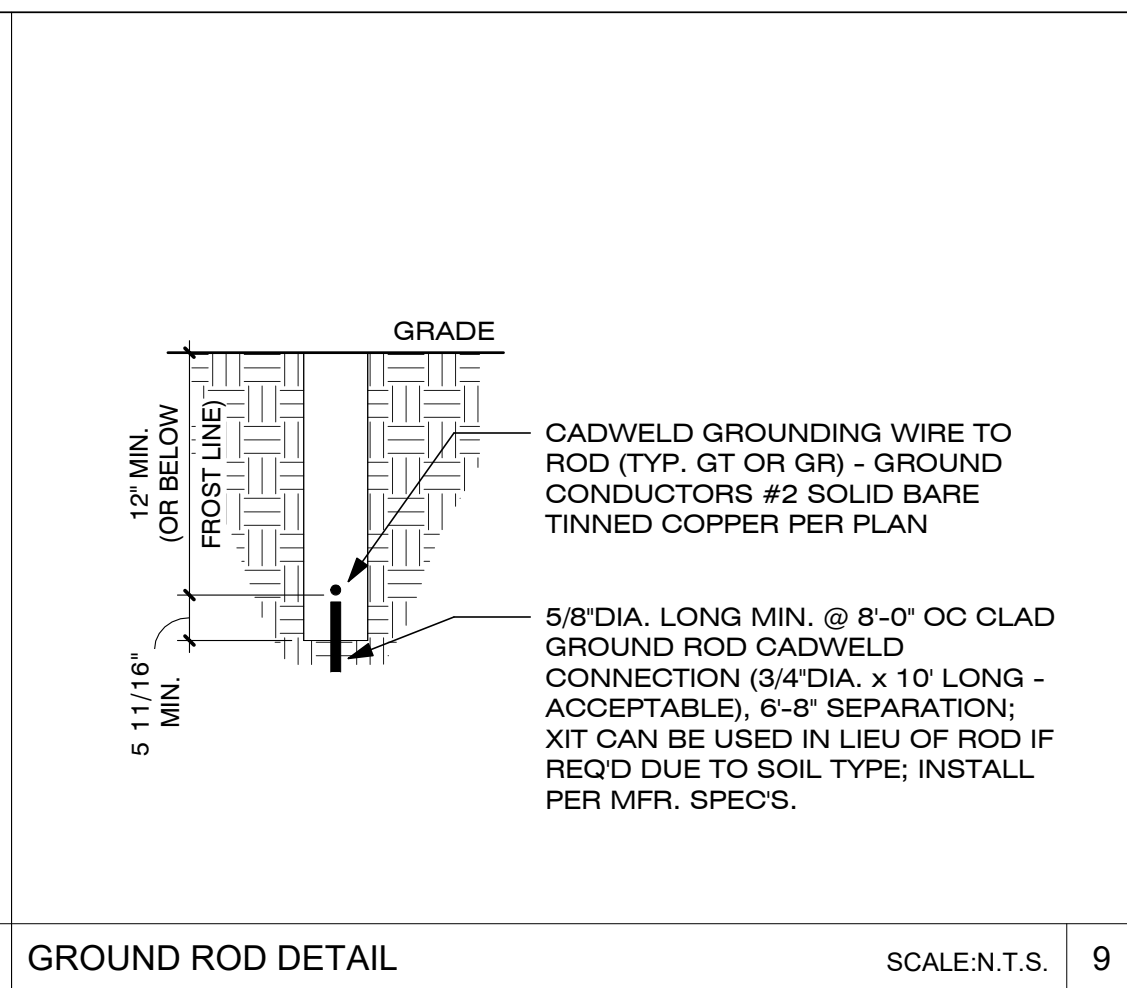
PLAN CHECK # \_\_\_\_\_  
 CASE # \_\_\_\_\_



FOR ALL COAX WATERPROOFING INSTALLATIONS, SEE INSTALLATION INSTRUCTIONS FOR

**JMA WIRELESS "JMA WEATHER PROTECTION SYSTEM"**

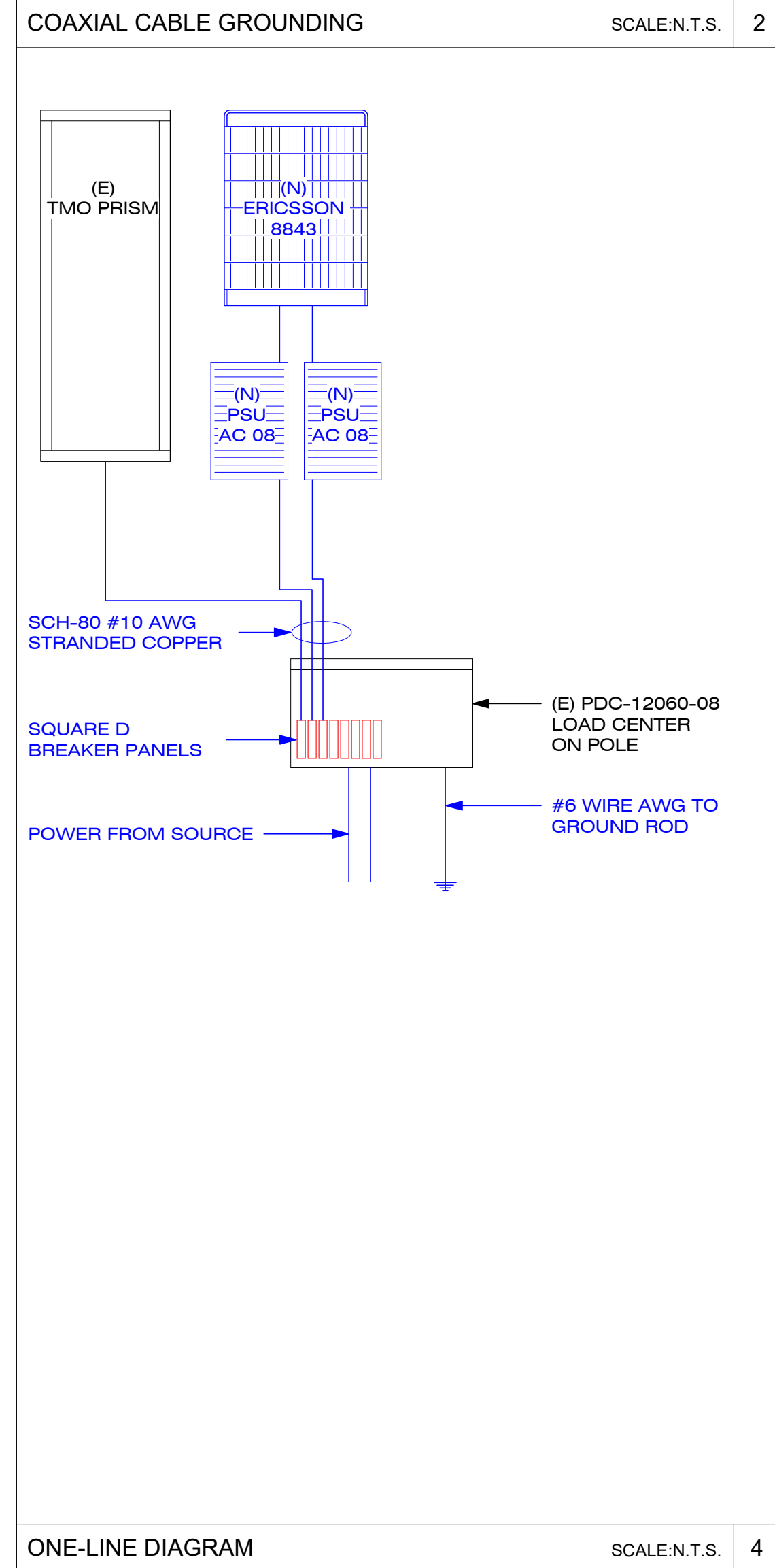
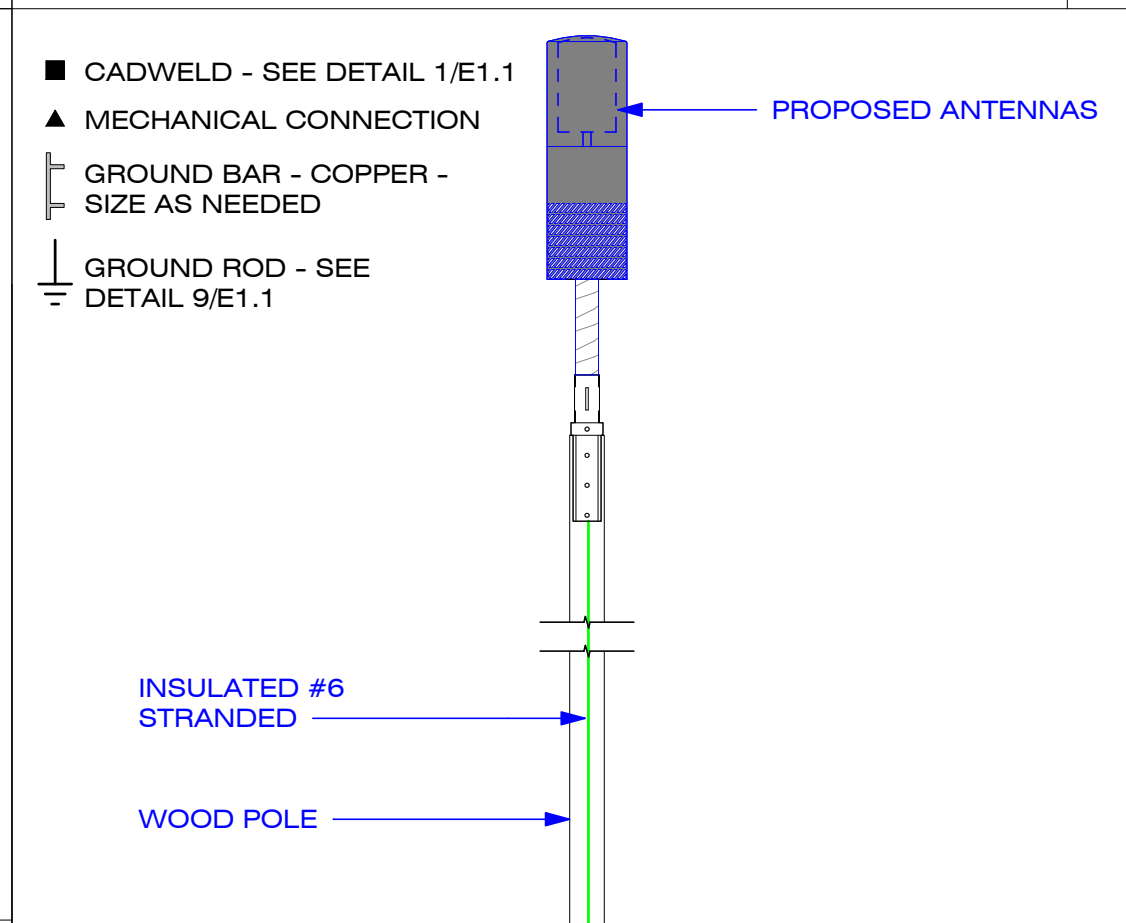
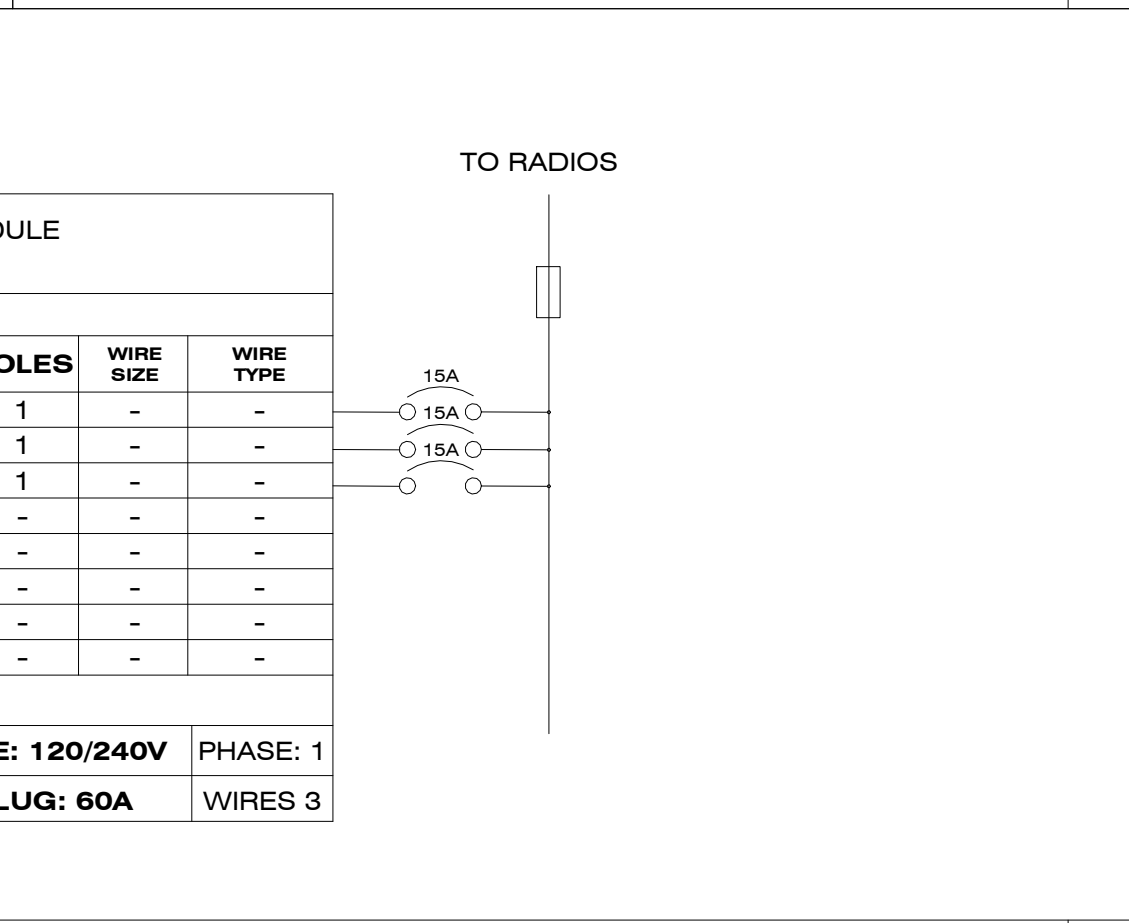
- 1) FOR 1/2" CONNECTIONS TO ANTENNA OR DEVICE
- 2) FOR 1/2" CONNECTIONS TO ANTENNA OR DEVICE USING WPS-DF-CUTTER
- 3) FOR WPS-N, 1/2" NM CONNECTOR TO PORT
- 4) FOR WPS-DRA, MALE TO PORT
- 5) FOR 1/4" CONNECTIONS TO ANTENNA OR DEVICE



1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL OTHER APPLICABLE LOCAL CODES.
2. CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL PERMIT FEES, AND SCHEDULE ALL REQUIRED INSPECTIONS. CONTRACTOR SHALL OBTAIN LOCAL POWER COMPANY APPROVAL AND COORDINATE SERVICE ENTRANCE REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND CONTACT PROJECT MANAGER WITH DISCREPANCIES FROM PLAN.
4. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL DESCRIBED ON THIS DRAWING, AND ALL ITEMS INCIDENTAL TO COMPLETING AND PRESENTING THIS PROJECT AS FULLY OPERATIONAL. ALL ELECTRICAL ITEMS SHALL BE ILL. APPROVED OR LISTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 CONDUIT (UNDERGROUND) AND IMC OR SCH 80 PVC CONDUIT ABOVE GROUND.
6. PROVIDE 2" OR 2 1/2" SCHEDULE 40 PVC UNDERGROUND CONDUIT WITH PULL WIRE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND APS JUNCTION BOX. CONTRACTOR SHALL DETERMINE REQUIRED NUMBER AND LOCATION OF JUNCTION BOXES PER UTILITY STANDARDS.
7. USE 1" SCHEDULE 40 PVC CONDUIT AND APPROPRIATE FITTINGS TO ENTER N3R LOAD CENTER.
8. CONTRACTOR TO NOTIFY ALL APPROPRIATE PARTIES PRIOR TO CONSTRUCTION AND SHALL PROVIDE AND MAINTAIN A TRAFFIC CONTROL PLAN PER NDOT REQUIREMENTS.
9. CONTRACTOR TO LOCATE ALL UTILITIES IN PROJECT AREA PRIOR TO CONSTRUCTION THROUGH BLUE STAKE.
10. CONTRACTOR TO LOCATE ALL UTILITIES CROSSING POINTS VIA APPROVED POT-HOLING METHODS AND NOTE ON PLAN SETS FOR AS-BUILT CLOSE OUT.
11. NOTE DEPTH AND LOCATIONS OF ALL INSTALLED UTILITIES ON AS-BUILT REDLINE DRAWINGS.
12. IF EXISTING IRRIGATION LINES ARE ENCOUNTERED, CONTRACTOR SHALL NOTIFY OWNER PRIOR TO DISTURBING OR MODIFYING.
13. CONTRACTOR SHALL NOT RELOCATE PROPOSED EQUIPMENT OR POLE LOCATIONS WITHOUT WRITTEN APPROVAL FROM CROWN CASTLE AND PROJECT ENGINEERS.
14. MATERIAL SUBSTITUTIONS ARE SUBJECT TO CROWN CASTLE AND ENGINEERING REVIEW PRIOR TO CONSTRUCTION.

PANEL CIRCUIT AND LOAD SCHEDULE  
PDC-12060-08

LOAD						
DESCRIPTION	QTY.	UNIT	TRIP	POLES	WIRE SIZE	WIRE TYPE
1 TMO PRISM	1	1028	15A	1	-	-
2 RADIO 8843 PSU AC08	1	930	15A	1	-	-
3 RADIO 8843 PSU AC08	1		15A	1	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
<b>TOTAL NON-CONTINUOUS</b>		1958				
<b>TOTAL Kw</b>		1.958	<b>VOLTAGE: 120/240V</b>			
<b>TOTAL AMPS</b>		16.32	<b>MAIN LUG: 60A</b>		<b>WIRES 3</b>	



COAXIAL CABLE GROUNDING SCALE:N.T.S. 2

ELECTRICAL NOTES SCALE:NONE 6

PANEL SCHEDULE SCALE:N.T.S. 14

PART 2 - EXECUTION

2.1 EXECUTION

- Provide (1) main ground from the antenna mounting bracket at the top of the pole, to the main ground bus bar (TMGB) (location defined below). Main vertical ground shall consist of a # 2 solid bare copper cable. Said ground shall be protected by a PVC U-Guard to the top of the pole and stapled every 24" with corrosion resistant (dipped galvanized) staples.
- #2 solid bare copper cable is highly susceptible to theft and may be a bit excessive to run to top of pole. #2 tin coated is recommended by Ops. As it's cheaper and less likely to be stolen. Buss Bars may also be tin coated to make them less susceptible to theft.**
- Provide (1) main ground from the main ground bus bar (TMGB) (location defined below) to a ground rod at the pole base. Main ground vertical shall consist of a # 2 solid bare copper cable. Said ground shall be protected by a PVC U-Guard to the bottom of the pole and stapled every 24" with corrosion resistant (dipped galvanized) staples.
- Ground rod shall be 8" in depth minimum and copper clad.
- Ground rod shall be placed per NEC code with regards to depth and distance from wood pole.
- Ground rod shall be buried minimum of 30" below grade.
- # 2 ground shall be attached directly to the ground rod via Cad Weld.
- Main ground vertical shall be attached directly to a ground bus bar (TMGB) mounted to the face of the utility pole. Method of contact shall be 2 hole slotted lug (Brown) to the main ground bus (TMGB) on the left or top slot depending on the orientation of the TMGB.
- Main ground vertical to the Antenna mounting bracket shall be attached directly to the Antenna Bracket via a self-tapping bolt or screw. A washer must be added to the thru bolt or screw to avoid damage to the lug while maintaining a secure bond.
- TMGB shall be mounted above the Charles' cabinet below the RRH standoff, directly to the wood pole structure.
- All pole mounted devices, including but not limited to: (antenna mounts and antennas, mounting brackets, cabinets) shall be connected to the TMGB with a #6 copper stranded cable UV coated and green in color.
- All pole mounted devices, including but not limited to: (antenna mounts and antennas, mounting brackets, cabinets) shall be connected to the TMGB using compression type, 2 hole connector lugs.
  - Connector lugs must attach to the bus bar with two holes facing up and out with the bolt heads are on the back side of the bus bar.
  - Stacking of connector lugs is prohibited.
  - Placement of connector lugs on front and rear face of grounding bar is permitted.
  - Any modifications to the connector lugs is prohibited, including but not limited to grinding, cutting or bending.
  - Connector lugs must be placed with even spacing and must not come in contact with another connector lug.
  - Slotted side of the connector lug should be placed on the slotted side of the bus bar.
  - All connector lugs shall have two (2) compressions per lug.
  - All connector lugs must have NQ-OX applied to any sides which contact another metal to retard oxidation including and especially the conductor in the compression end.
  - All connector lugs must be properly sealed from weather with heat shrink.
  - All connector lugs must be attached using 3/8" hardware x 2 per each lug and in the following manner:
    - Flat Washer on the backside of the lug
    - Bolt thru the lug hole facing outward.
    - Flat Washer on the front side of the lug.
    - Lock Washer on the front side of the flat washer
    - Nut on the bolt, turned to "three threads showing at maximum torque"
- No mechanical connections are acceptable except in the event of mechanical fittings being a integral part of the product from the factory. ie: Charles cabinet # 6 ground lugs on each side of the cabinet.
- Excess welds on CadWelds must be ground off to a safe taper.
- All cad welds must be coated with Zinc-it or like product to prevent oxidation.
- All exposed metallic surfaces must be sprayed with a protective coating such as Zinc-it.
- All fittings exposed to environment must be sealed with shrink wrap.
- Exposed "shiners" conductors are prohibited if in excess of 1/16th of an inch.

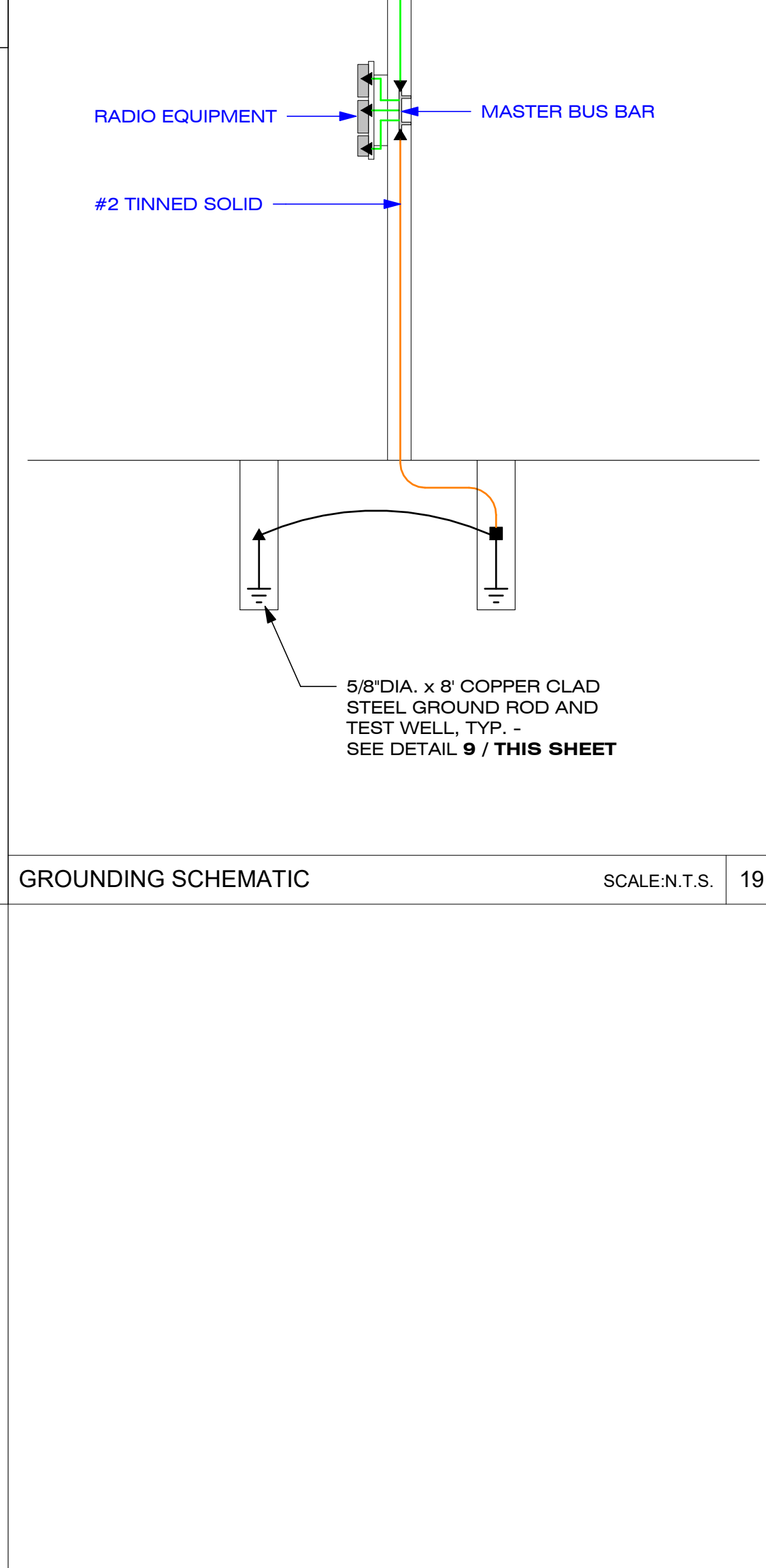
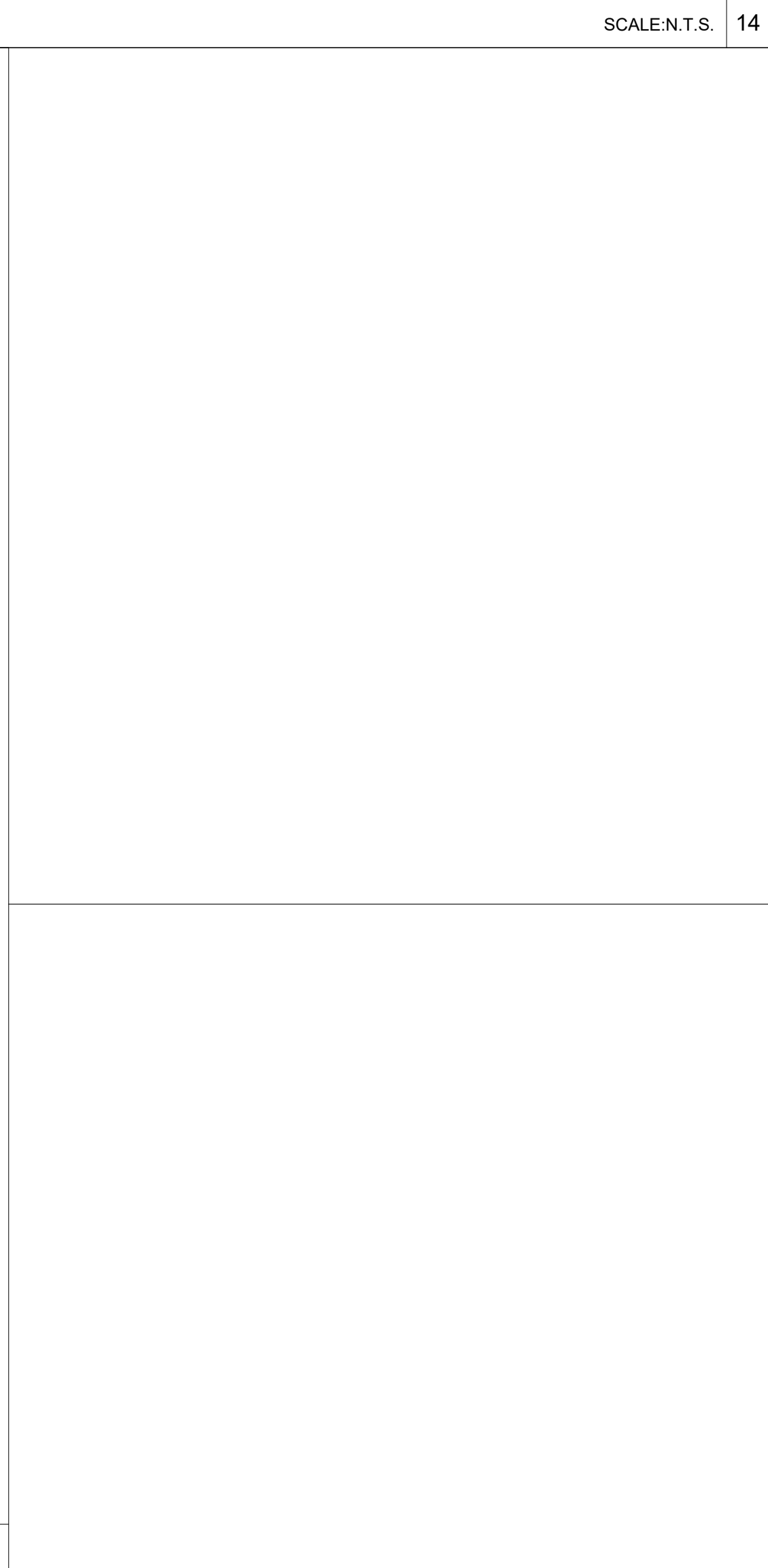
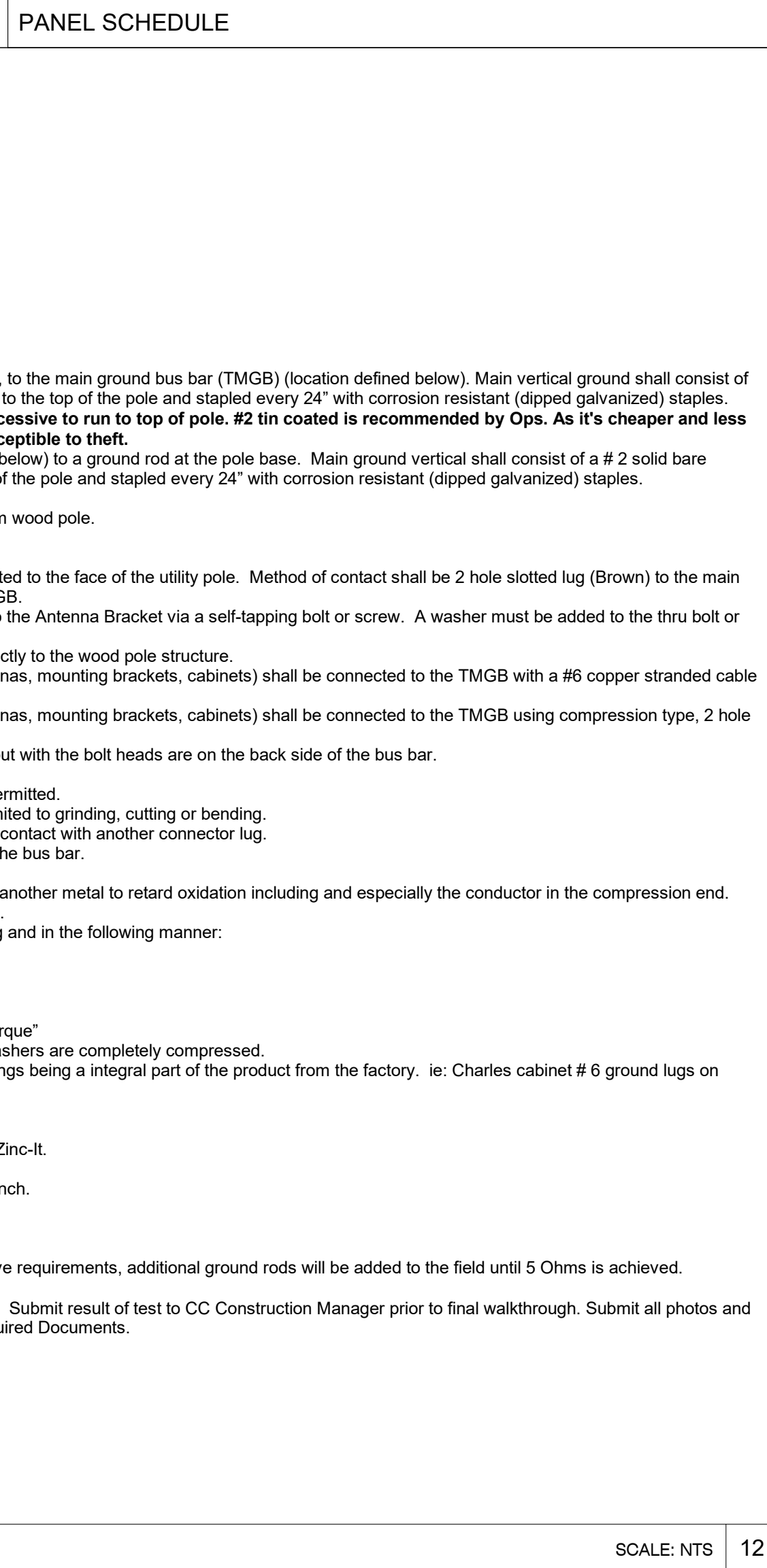
PART 3 - TESTING AND DOCUMENTATION

3.1 TESTING

- 5 Ohms to ground is required for acceptance. If 5 Ohms cannot be met with above requirements, additional ground rods will be added to the field until 5 Ohms is achieved.

3.2 DOCUMENTATION

- Photos of the tests are required as well as test results in formal document format. Submit result of test to CC Construction Manager prior to final walkthrough. Submit all photos and tests with closeout package per Section 017700 - Closeout Procedures and Required Documents.



**CROWN CASTLE**  
CROWN CASTLE  
ONE PARK PLACE, STE. 300  
DUBLIN, CA 94568

RECORD DRAWINGS ISSUE DATE: 11.01.22

**Shift Companies, LLC**  
3334 N. 20TH ST.  
PHOENIX, ARIZONA 85016  
ph: 480.448.2000  
fax: 480.264.0163

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RELEASE	
DATE	SUBMITTAL
11.22.21	1ST SUBMITTAL
01.07.22	2ND SUBMITTAL
01.28.22	3RD SUBMITTAL
07.11.22	RESUBMITTAL

REVISIONS		
NO.	DATE	COMMENT
09.28.22		PSE SUBMITTAL
11.01.22		PSE SUBMITTAL

PROJECT NAME: **MERCER ISLAND SMALL CELL - 5G UPGRADE**

NODE NUMBER: **MIV\_43**

NODE ADDRESS: **8215 SE 78th St., MERCER ISLAND, WA 98040**

HUB AREA: **VZW MERCER ISLAND HUB**

SHIFT JOB NUMBER: **--** IN HOUSE: **RA**

DRAWN BY: **RA**  
CHECKED BY: **CM**

SHEET TITLE: **ELECTRICAL DETAILS**

SHEET NUMBER	PAGE
D1.2	6 OF 7

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"



# Fronthaul 6587

**Technical specification for Fronthaul 6587**

**SERVICES PER PORT** (Up to 18 client ports are supported)

**CPRI service types:**

- CPRI Option 1 (61.44 Mbit/s)
- CPRI Option 2 (1,228.8 Mbit/s)
- CPRI Option 3 (6,451.2 Mbit/s)
- CPRI Option 4 (3,872.8 Mbit/s)
- CPRI Option 5 (6,915.2 Mbit/s)
- CPRI Option 6 (6,144.8 Mbit/s)
- CPRI Option 7 (6,888.8 Mbit/s)
- CPRI Option 8 (18,117.6 Mbit/s)

**eCPRI service types:**

- eCPRI (18,312.5 Mbit/s)

**OBSAI service types:**

- OBSAI 1x (768.8 Mbit/s)
- OBSAI 2x (1,536.8 Mbit/s)
- OBSAI 4x (3,072.8 Mbit/s)
- OBSAI 8x (6,144.8 Mbit/s)

**Ethernet service types:**

- G6E (1,225.8 Mbit/s)
- 10G6E (18,312.5 Mbit/s)

**MECHANICAL / ENVIRONMENTAL**

System components:

- IP68 WDM Filter; IP68 Passive enclosure for up to 4x G6E optical filters
- OAD-S-S: Indoor/Outdoor 6-ch x 388 GHz OAD SPW Unit - Variant A to H
- OAD-S-E: Indoor/Outdoor 38-ch x 388 GHz OAD SPW Unit - Variants 18 and H8
- OAD-1-C: Indoor/Outdoor 2-ch x 388 GHz CWDM SPW OAD Unit - Variant 1 to 4
- OAD-1-E: Indoor/Outdoor 8-ch x 388 GHz CWDM SPW OAD Unit
- SP-2-S-2: Indoor/Outdoor 2x2 Optical Power Splitter/Coupler Unit
- SP-2-S-4: Indoor/Outdoor 2x4 Optical Power Splitter/Coupler Unit
- BRD-S-S: Indoor/Outdoor 8-band SPW New/OldUnit
- OCF-1: Indoor/Outdoor G-PON Coexistence Optical Filter Unit

Dimension (H x W x D): 234x384x99 mm  
Weight: 12.4 kg  
Operating temperature: -40°C to +65°C

**STANDARDS AND SPECIFICATIONS**

Environmental (ENV): EN 300 019-2-1, EN 300 019-2-2, EN 300 019-2-4  
Safety: EN/IEC 60825-2, EN/IEC 60950-1 (applicable parts)  
International Protection: IP68

FRONTHAUL SPEC. SCALE: N.T.S. | 10

**JMA WIRELESS**  
**CYL2Q24GR-1xyz**  
**NWAV™ Cylinder Antenna**

**24-port cylinder antenna 698-4200 MHz:**  
**4 ports 698-960, 12 ports 1695-2690 MHz, and 8 ports 3400-4200 MHz**

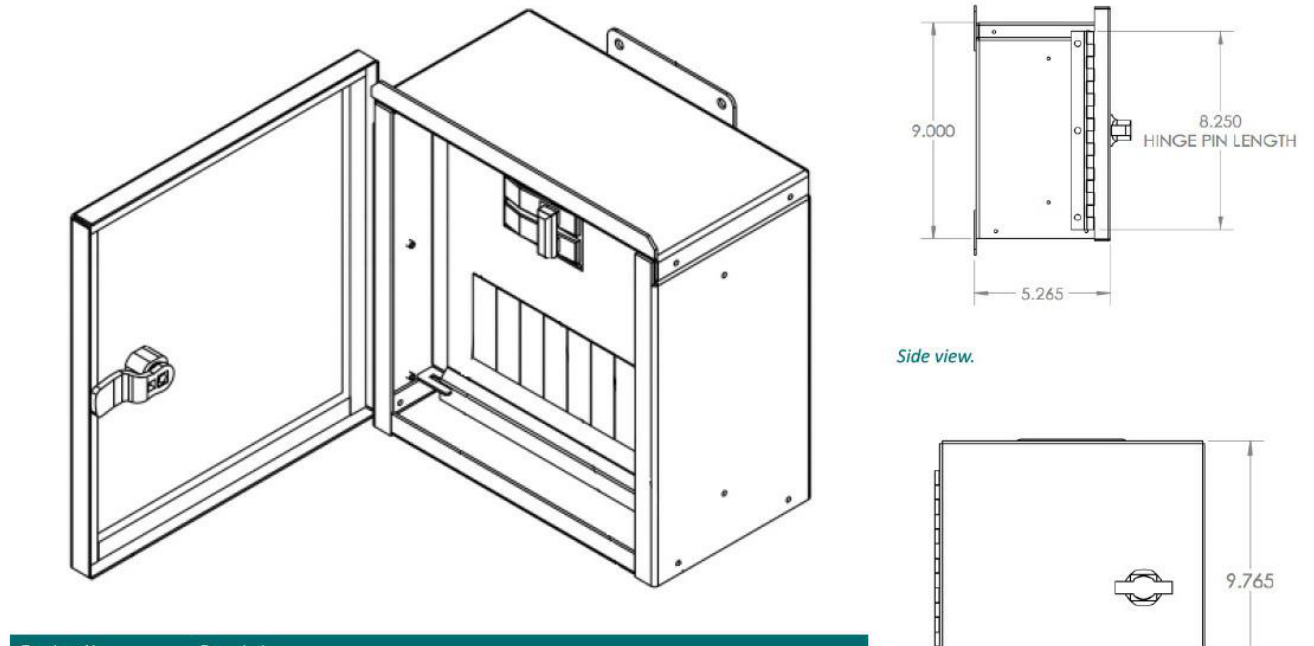
- Small Cell Omni antenna with integrated GPS unit
- Supports multi-carrier deployments with 4x4 MIMO capability with all bands
- Excellent cross-polar discrimination for enhanced MIMO performance
- Center-mounted lift ring for easy installations
- Future-proof design to support up to 4200 MHz for C-Band spectrum
- Optimal 3400-4200 MHz gain to realize EIRP limit

	GPS band	Low band	Mid band	CBRS/C-band
Frequency bands, MHz	1575.42	(2x) 696-960	(6x) 1695-2700	(4x) 3400-4200
Array	--	R1 R2 Y1 Y2 Y3 Y4 Y5 Y6 P1 P2 P3 P4		
Connector	1 PORT	4 PORTS	12 PORTS	8 PORTS
Polarization	RH CIR.	XPOL	XPOL	XPOL
Horizontal beam-width (HBW), degrees <sup>1</sup>	--	360	360	360
Electrical downtilt (EDT), degrees <sup>1</sup>	--	0	2, 4, 6	0
Configuration	Omni antenna with integrated GPS unit			
Connector type	(24x) 4.3-10 female and (1x) N-type female for GPS			
Dimensions, in. (mm)	24.0/ 14.6 (609.6/ 370.8)			
Radome color	Gray (Pantone 420C), Brown (Pantone 476C), or Black (RAL 9011)			
Maximum composite power, watts (all ports)	1000			

**Mechanical specifications**

Dimensions height/diameter, inches (mm)	24.0/ 14.6 (609.6/ 370.8)
Antenna volume (cubic feet)	2.32
No. of RF input ports, connector type, and location	24 x 4.3-10 RF, 1 x N-type GPS female, bottom
RF connector torque	98 lbf-in (10.85 N-m or 8 lbf-ft)
Net antenna weight, lb (kg)	36 (16.32)
Rated wind survival speed, mph (km/h)	150 (241)
Frontal wind loading @ 160 km/h, lbf (N)	30 (133)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	1.17/0.69

ANTENNA SPEC. (4G) SCALE: N.T.S. | 14



**General Data**  
Suitable for use as service entrance  
Enclosures dimensions (H x W x D)  
97" x 9" x 5.265"  
10" H with mounting tabs, door front is 9.765"

**Weight**  
Approximately 5.5 lbs

**UL Certification**  
-UL 67 Panelboards  
-File #E88098

**Electrical Specifications**  
-120/240 V  
-Single phase  
-60 A maximum  
-SCCR: 10,000 RMS

**Enclosure**  
Rating: NEMA 3R  
Composition: Aluminum  
Powder coat paint: -UL Pantone (Cod Gray)  
-Other Pantones May Be Requested  
Door: -Single twist latch  
-Pad-lockable

**Panelboard**  
Type: -Square D, QO Series  
-1 or 2 poles, 15-30 A  
Circuit breaker positions: 8 circuits

**Product No** | **Description**

| PDC-12060-08 | 120/240 V, 60 A (max), UL NEMA 3R |

ELECT. DISCONNECT SPEC. SCALE: N.T.S. | 18



CROWN CASTLE  
CROWN CASTLE  
ONE PARK PLACE, STE. 300  
DUBLIN, CA 94568

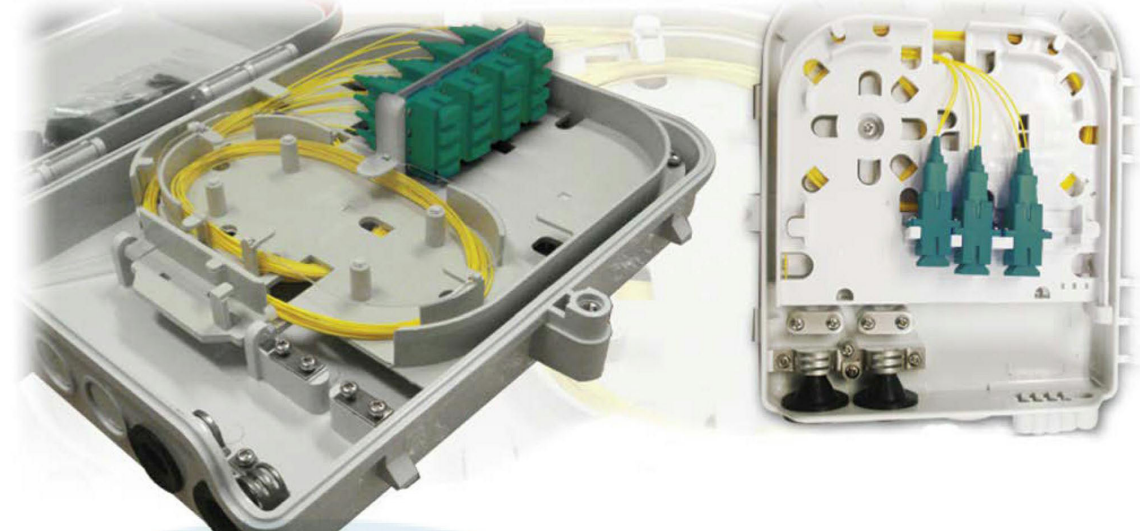
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Shift Companies, LLC  
3334 N. 20TH ST.  
PHOENIX, ARIZONA 85016  
ph: 480.448.2000  
fax: 480.264.0163

**Fiber Optix**  
**Termination Panel**  
Indoor/Outdoor Wall Mount



- Features**
- Compact size
  - Locking available on front panel
  - Bottom cable entry
  - Sealed for moisture and dust resistance
  - Accommodates standard SC connector and adapter types
  - Compact interconnect and splice housing for up to 16 optical fibers
- Applications**
- Telecommunication Networks
  - CATV Networks
  - Data Communication Networks
  - Instrumentation
  - Local Area Networks

**Information**

Item	8 Port	16 Port
Dimensions	7.12" L x 8.15" W x 1.78" D	8.86" L x 11.89" W x 2.8" D
Weight	2.0 lbs.	2.9 lbs.
Cable Input Capacity	Max. 2 Ports (Max. Dia: 0.47")	Max. 2 Ports (Max. Dia: 0.47")
Cable Output Capacity	Max. 8 Ports (Max. Dia: 0.12")	Max. 16 Ports (Max. Dia: 0.12")
Max. Capacity	8 Core	16 Core
Operation Temperature	-40° - +85°C	-40° - +85°C
Tensile Strength	4412.99 N	4412.99 N
Impact Strength	77lbs. cm/cm (normal temp.) 22 lbs. cm/cm (-30°C)	77lbs. cm/cm (normal temp.) 22 lbs. cm/cm (-30°C)
Flexural Strength	4412.99 N	4412.99 N

www.FiberOptix.com  
Delivering Tomorrow's Cutting Solutions Today.  
14450 Chambers Rd, Tustin CA 92780  
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HQ - P. 1016

FIBER TERMINATION PANEL SPEC. SCALE: N.T.S. | 8

**COMMSCOPE**

**FlexWave Prism**  
Flexible Outdoor Wireless Coverage and Capacity



- Remote Unit Environmental Specifications**
- Outside Ambient**
- Temp Rating: -40° C to +50° C (-40° F to +122° F)
  - Storage Temperature: -40° C to +70° C (-40° F to +158° F)
  - Humidity: 10% to 90% non-condensing
  - Lightning Protection: 20kA IEC 1000-45 8/30 µs Waveform
- Remote Unit**
- Enclosure: IP-65, (Fan IP-55)
  - Mounting: Wall, Pole, Inside Pole, and Vault
  - Cooling: Fan (external only)
  - Optical Connectors: Sealed HMFOC (Multi-fiber connector - 8 fiber) or pass-through

**Dimensions**

	Dimensions (H x W x D)			Weight (Chassis Only)	Weight (With RF Modules)	Volume
Quad-Band	52.4"	12.2"	11.2"	116 lbs.	188 lbs.	3.40 cubic ft
	133.10 cm	30.99 cm	28.45 cm	53 kg	85 kg	.096 cubic M

- Host Unit**
- Mounting: 19-inch rack
  - Dimensions (H x W x D): 5.25" x 19" x 8.43" (13.34 cm x 48.26 cm x 21.41 cm) (3 RU)
  - Weight: <25 Pounds (<11 kg)
- Remote Unit Power Requirements**
- Power Supply: 100-240 VAC, 50-60 Hz; 48 VDC (OPTIONAL); Yes (optional external UPS)
  - Battery Backup:
  - Host Unit Power Requirements
  - Power Source: 21 to 60 VDC
  - Element Management
  - Embedded EMS: Yes
  - SNMP Based Management: Yes

Note: Unless noted otherwise specifications are typical and subject to change. Fully Populated.

EXISTING EQUIPMENT SHROUD SPEC. SCALE: N.T.S. | 16

**RADIO 8843 - B2 + B66A**  
4TX 4RX PER BAND

- 8 antenna ports, 4TX/4RX for 2 bands with separate RF ports
- Up to 320W RF Power shared between 2 bands
  - Examples:
    - 4x40W on each band or
    - 4x20W on B2 and 4x60W on Band 66A
    - 2x60W on Band 2 and 2x60W on Band 66A
- Carrier Capacity:
  - Up to 24 carrier and up to 60+70 MHz OBW for LTE
  - 2x 10Gbps CPRI
- Size and Weight:

Radio 8843 - B2 & B66A	Height	Width	Depth	Weight
no protruding items	15 in (380 mm)	13.2 in (335 mm)	11.1 in (282 mm)	75 lbs (34.02 kg)
with protruding items	18 in (455 mm)	13.2 in (335 mm)	11.1 in (282 mm)	75 lbs (34.02 kg)

**Power Consumption**

Power Consumption (W)	Low Load (~10%)	Busy hour Load (~52%)	Max Load (100%)
Radio 8843 (B2&B66A)	560	930	1439

Radio 8843 - B2 & B66A  
Portrait Mount Only

RADIO SPEC. SCALE: N.T.S. | 20

**RELEASE**

DATE	SUBMITTAL
11.22.21	1ST SUBMITTAL
01.07.22	2ND SUBMITTAL
01.28.22	3RD SUBMITTAL
07.11.22	RESUBMITTAL

**REVISIONS**

NO.	DATE	COMMENT
09.28.22		PSE SUBMITTAL
11.01.22		PSE SUBMITTAL

**PROJECT NAME**

**MERCER ISLAND SMALL CELL - 5G UPGRADE**

**NODE NUMBER**  
**MIV\_43**

**NODE ADDRESS**

**8215 SE 78th St.,  
MERCER ISLAND, WA  
98040**

**HUB AREA**

**VZW MERCER ISLAND HUB**

**SHIFT JOB NUMBER** | **IN HOUSE**

--- | DRAWN BY: RA  
CHECKED BY: CM

**SHEET TITLE**

**EQUIPMENT SPECIFICATIONS**

**SHEET NUMBER** | **PAGE**

**D1.3** | **7 OF 7**

PLOT SCALE: 1:1 @ 24"x36"; 1:2 @ 11"x17"