



Filed by:

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134 Flanders Rd., Suite 125, Westborough, MA 01581
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September 10, 2018

Melanie A. Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Request to Amend Previously Approved Tower Share Request TS-T-Mobile-029-180227 Issued 3/16/2018
382 Colebrook River Rd., Colebrook, CT 06021
41 59 31.5 N / -73 2 23.3 W
T-Mobile #: CTNH549B_NSD

Dear Ms. Bachman:

Please accept this letter as Request to Amend previously approved Tower Share Request TS-T-Mobile-029-180227, issued 3/16/2018.

For reference, please find a brief history of actions with regard to the matter:

- 2/26/18-SBA/TMO filed Application for Tower Share (*with propane based emergency backup generator*)
- 3/16/18-CSC Approval: TS-T-Mobile-029-180227
- 6/12/18-SBA/TMO submitted Request to Amend Previously Approved Tower Share Request (*to go from propane based generator to 25kw diesel generator*)
- 7/20/18-SBA received correspondence from the Council requesting 1) reason for change in generator size and fuel; and 2) provide monitoring, prevention and containment measures for potential spills associated with diesel-fueled generator
- 7/26/18-TS-T-Mobile-029-180613-SBA received Agenda from Council listing T-Mobile request to amend order for tower sharing
- 7/30/18-TS-T-Mobile-029-180227-SBA/TMO requested removal from 8/2/18 Agenda (TMO opting to go from 25kw to 15 kw generator and so prepping revised Request for Amended Approval)
- 7/30/18-TS-T-Mobile-029-180227-SBA received acknowledgment from Council re request to withdraw request to amend the approved tower share – amended tower share request no longer be pending before agency.



Listed below is T-Mobile's previously proposed and approved ground configuration. We ask that the noted changes please be considered for approval by the Council:

Ground:

- (1) ~~9'x13' concrete pad~~ [**Request to Amend** to substitute 10'x20' concrete pad]
- On Proposed Pad:*
- (1) ~~7.5 KW APU on 4'x4' pre-cast concrete pad~~ [**Request to Amend** to substitute Polar 15kw DC emergency backup generator with battery backup to be placed on proposed plinth secured to proposed pad]
- (1) ~~120 Gallon Stationary Vertical ASME Propane (LP) Storage Tank on 3'x3' pre-cast concrete pad and associated gas line~~ [**Request to Amend** / remove]
- (1) GPS Antenna (Ground Mount to Ice Bridge Post)
- (1) Ice Bridge
- (1) H-Frame
- (1) AAV Purcell Cabinet (on H-Frame)
- (1) PPC (on H-Frame)
- (1) RBS 6102 cabinet

Reason for Request / Change in Generator Size and Fuel

In an effort to further enhance network reliability, T-Mobile proposed, as part of its initial Tower Share Request, to install a propane-based backup generator. After further consideration, T-Mobile finds it prudent to proceed with a diesel-based backup generator, the Polar 15kw DC #8220-801-D-15-05. Their findings showed that the proposed location for the propane tank was not stable and would have required substantial reinforcement. Additionally, T-Mobile is currently in the middle of a National Hardening Project and there is no contingency for propane generators at tower sites.

The previously proposed generator measured 40.1" x 27" x 42" with a separate tank measuring 54" x 30". The proposed diesel generator measures 68" x 34" x 74". It will sit fully within the leased area of the compound and will not require additional space for the supplementary tank.

Polar's 15kw DC generator carries up to 60 hours of run time with an additional battery backup for a second layer of emergency support. It operates in temperatures from -10 to 122 degrees Fahrenheit and conditions with up to 100% humidity.

Monitoring, Prevention and Containment Measures

The proposed generator incorporates a built-in fuel tank as part of the unit, housing a UL 142 rated double wall 54 gallon fuel tank with a catch basin of five (5) gallons. It will be filled by a licensed fuel filling company. The Polar 15kw is fuel efficient, rodent and corrosion resistant, and carries low acoustic noise (<66 dBA @ 7 meters and that only when used in case of emergencies.) It further supports advanced, remote monitoring for diagnostics and control and is installed with a tank alarm system.

The proposed modification will remain within the existing, fenced-in compound. The new generator and tank will be surrounded by the existing security fence and gate and will be placed on a plinth secured to a proposed 10' x 20' concrete pad.



Additional safety specifications:

- Load tested to 12,000 lbs with less than 0.1" deflection
- Cabinet pullover force exceeds 150 MPH wind force
- Meets ANSI/SCTE-77 for flammability, UV exposure, water absorption, impact resistance, and chemical resistance
- Meets Telecordia GR-902 for chemical Resistance

Revised Construction Drawings and Full Spec Sheets referencing the above are attached herewith.

The revised ground configuration continues to meet all requirements for a Tower Share Request. The request remains technically, legally, environmentally, and economically feasible and meets public safety concerns per Connecticut General Statute Section 16-50aa.

The proposed collocation also continues to meet with all legal and technical requirements. Drawings showing the proposed revisions, and specification sheets as to the amended equipment, are attached. T-Mobile's proposed collocation presents no known material changes to environmental conditions from those as documented in the Council's original Findings of Fact and presents no known public safety concerns.

There is no environmental impact associated with the revised ground configuration, including, but not limited to, visibility, wetlands and water resources, air quality or noise.

T-Mobile's revised ground configuration:

- Will not have any significant adverse visual impact on the surrounding areas
- Does not affect or alter the existing site with regard to wetlands, water resources or air quality
- The generator would only be used in cases of emergency and would provide backup time of approximately 60 hours in time of need.
- The Town of Colebrook does not have any defined ordinance for decibel levels.

As noted in Council's Docket 296, Findings of Fact #79, there are three small fish ponds and a drainage swale west of the site, near to the property owner's residence. However, no wetlands are located near the site and the Polar 15kw is designed with state of the art containment measures as are outlined above.

The proposed work is not thought to have any substantial adverse environmental impact. Public Need for the additional coverage outweighs any minor environmental effects that would result from the construction, operation, and maintenance of the proposed collocation.

A Map of the Site Showing Nearest Wetlands, depicted in feet, is attached for reference.

An original and fifteen copies of this Tower Share Application are being submitted along with a \$625 filing fee per Conn. Gen. Stat. §4-189j; Regs., Conn. State Agencies §16-50v-1a. A copy of this Application and all attachments is being sent to:

- i. The Town of Colebrook's First Selectman, Thomas McKeon
- ii. The Town of Colebrook's Land Use Administrator and Zoning Enforcement Officer, Michael Halloran
- iii. The Property Owner, 382 Colebrook LLC
- iv. (Separate notice is not being sent to tower owner, as it belongs to SBA)



Please note, additionally: the planned modifications to the facility still fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification (generator and attached fuel tank) will remain entirely within the limits of the leased area. The modification therefore, will not require the extension of the site boundary.
3. The proposed modifications does not increase the noise levels at the boundary by six (6) decibels or more, or to levels that exceed state and local criteria, under normal conditions. Proposed modification is only used during emergency power failure.
4. The installation of a new generator and attached fuel tank will not change, in any way, radio frequency (RF) emissions at the facility.
5. The facility has received all municipal zoning approvals and building permits. (Regs., Conn. State Agencies Section 16-50j-72) and will not cause a significant change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation will be unaffected by the proposed modification.

T-Mobile respectfully submits for the Council's review and approval this request for Amendment to previously approved Tower Share.

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C
kpelletier@sbsite.com
Attachments

cc: Thomas McKeon, First Selectman / with attachments
562 Colebrook Road – P.O. Box 5 Colebrook, CT 06021
Michael Halloran, Land Use Administrator and Zoning Enforcement Officer / with attachments
562 Colebrook Road – P.O. Box 5 Colebrook, CT 06021
382 Colebrook LLC / with attachments
202 Hang Dog Lane, Wethersfield, CT 06109

ORIGIN ID:BBFA (508) 251-0720
KRI PELLETIER
SBA COMMUNICATIONS CORPORATION
134 ELIANDERS RD
SUITE 202
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 10SEP18
ACTWGT: 1.00 LB
CAD: 105843304IN/NET4040

BILL SENDER

TO THOMAS MCKEON- FIRST SELECTMAN

562 COLEBROOK ROAD

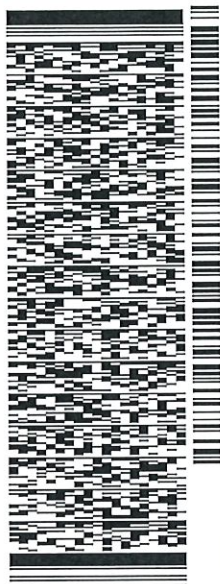
NORTH COLEBROOK CT 06021

(508) 251-0720 X 3804

REF: 10-56-92009-6089

PO:

DEPT:



TRK# 7731 7647 7037
0201

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SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

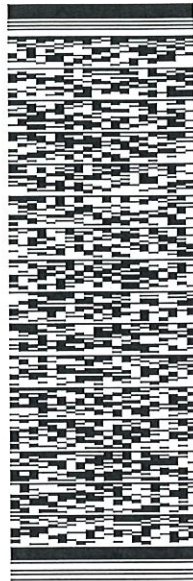
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ACTWGT: 1.00 LB
CAD: 105843304INET4040

BILL SENDER

TO MICHAEL HALLORAN
LAND USE ADMINISTRATOR AND ZONING
562 COLEBROOK ROAD

COLEBROOK CT 06021
(508) 251-0720 X.3804 REF: 105692009-6089
PO: DEPT:

552J11F78C/DCA5



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KRI PELLETIER
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 10SEP18
ACTWGT: 1.00 LB
CAD: 105843304INNET4040

BILL SENDER

TO 382 COLEBROOK LLC

202 HANG DOG LANE

WETHERSFIELD CT 06109

(508) 251-0720 X 3804

REF: 105692009-6089

NO:

DEPT:



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TRK# 7731 7652 8086
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Exhibit 1
Revised Construction Plans

SITE NAME: CTNH549B

382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

SITE NUMBER: CTNH549B

PROJECT: T-MOBILE L700

CONFIGURATION: 4SEC-6797DB3

T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
ANTENNA/TMA/RRU	
SECTOR A:	ACCESS NOT PERMITTED
SECTOR B:	ACCESS NOT PERMITTED
SECTOR C:	ACCESS NOT PERMITTED
SECTOR D:	ACCESS NOT PERMITTED
GPS/LMU:	UNRESTRICTED*
	(*CAUTION: OSHA-APPROVED PORTABLE 8' STEP-LADDER REQUIRED)
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE



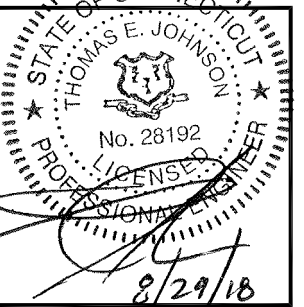
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581 TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 220-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
7	08/29/18	CONSTRUCTION REVISED	PN
6	05/22/18	CONSTRUCTION REVISED	TBD
5	04/09/18	CONSTRUCTION REVISED	PN
4	03/08/18	ISSUED FOR CONSTRUCTION	PN
3	03/01/18	ISSUED FOR CONSTRUCTION	PN
2	02/22/18	ISSUED FOR CONSTRUCTION	PN
1	02/15/18	ISSUED FOR CONSTRUCTION	PN
0	02/06/18	ISSUED FOR CONSTRUCTION	PN

SITE NUMBER:

CTNH549B

SITE NAME:

CTNH549B

SITE ADDRESS:

382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

SHEET TITLE

TITLE SHEET

SHEET NUMBER

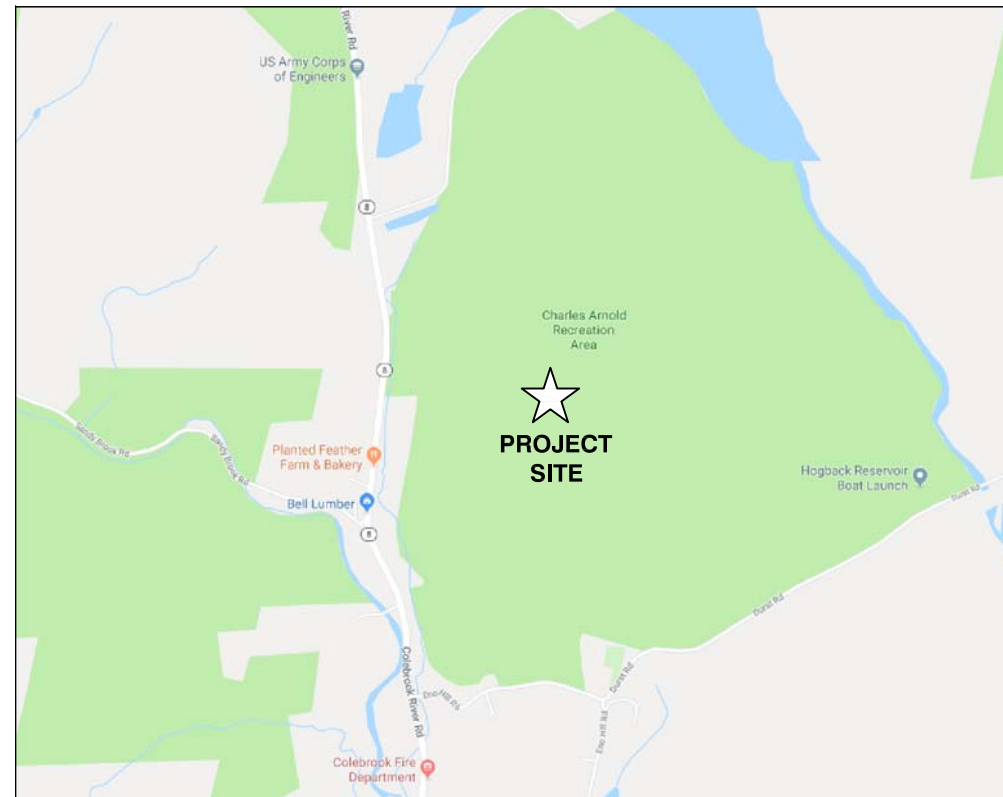
T-1

GENERAL NOTES

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE NORTHEAST, LLC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL CONSTRUCTION NOTES

- TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE TO FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE-BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.
- GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.
- PROTERRA DESIGN GROUP ASSUMES THAT THE MONOPOLE IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTION ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES.
- ANTENNA MOUNT INSTALLATION SHALL BE COMPLETED IN ACCORDANCE WITH THE ANTENNA MOUNT STRUCTURAL ANALYSIS, (MSA) PREPARED BY OTHERS PRIOR TO INSTALLING ANY RF EQUIPMENT SHOWN IN THESE PLANS.



PROJECT INFORMATION

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE COLLOCATION

ZONING JURISDICTION: TOWN OF COLEBROOK / CT SITING COUNCIL

SITE ADDRESS: 382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

LATITUDE: 41° 59' 31.50" N (FROM SBA RECORD)

LONGITUDE: 73° 02' 23.30" W (FROM SBA RECORD)

GROUND ELEVATION: 1150± AMSL (FROM SBA RECORD)

JURISDICTION: TOWN OF COLEBROOK / CT SITING COUNCIL

BUILDING CODE: 2016 CONNECTICUT STATE BUILDING CODE WITH AMENDMENTS

ELECTRICAL CODE: 2014 NATIONAL ELECTRICAL CODE AND AMENDMENTS

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

PROPERTY OWNER: N/F 382 COLEBROOK, LLC,
202 HANG DOG LANE
WETHERSFIELD, CT 06109

TOWER OWNER: SBA TOWERS II, LLC

SBA SITE ID: CT13613-A

SBA SITE NAME: JOHNSTON

SBA REGIONAL SITE MANAGER: STEPHEN ROTH
(860) 539-4920

APPROVALS

APPROVALS	DATE
PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
TOWER OWNER	DATE



DIG SAFE SYSTEM
(MA, ME, NH, RI, VT):
1-888-344-7233



CALL BEFORE YOU DIG
(CT): 1-800-922-4455

UNDERGROUND SERVICE ALERT

DRAWING INDEX

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GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER SURCIRTS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR – SBA COMMUNICATIONS CORP.
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL 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 CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (FY = 36 KSI) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (FY = 35 KSI). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), STEEL CONSTRUCTION MANUAL, 13TH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BTCW	BARE TINNED SOLID COPPER WIRE	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BGR	BURIED GROUND RING	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BTS	BASE TRANSCEIVER STATION	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
EXISTING	EXISTING OR (E)	PROPOSED	NEW OR (P)	TYP	TYPICAL
EGB	EQUIPMENT GROUND BAR	N.T.S.	NOT TO SCALE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	RAD	RADIATION CENTERLINE (ANTENNA)		
		REF	REFERENCE		

T-Mobile

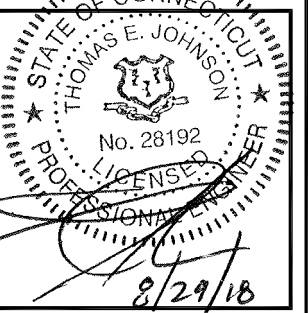
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581 TEL: (508) 251-0720

ProTerra
DESIGN GROUP, LLC

4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (401) 320-4918



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APPROVED BY: JMM/TEJ

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SITE NUMBER:

CTNH549B

SITE NAME:

CTNH549B

SITE ADDRESS:

382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1

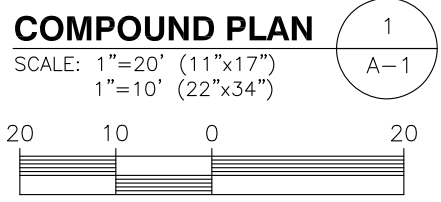
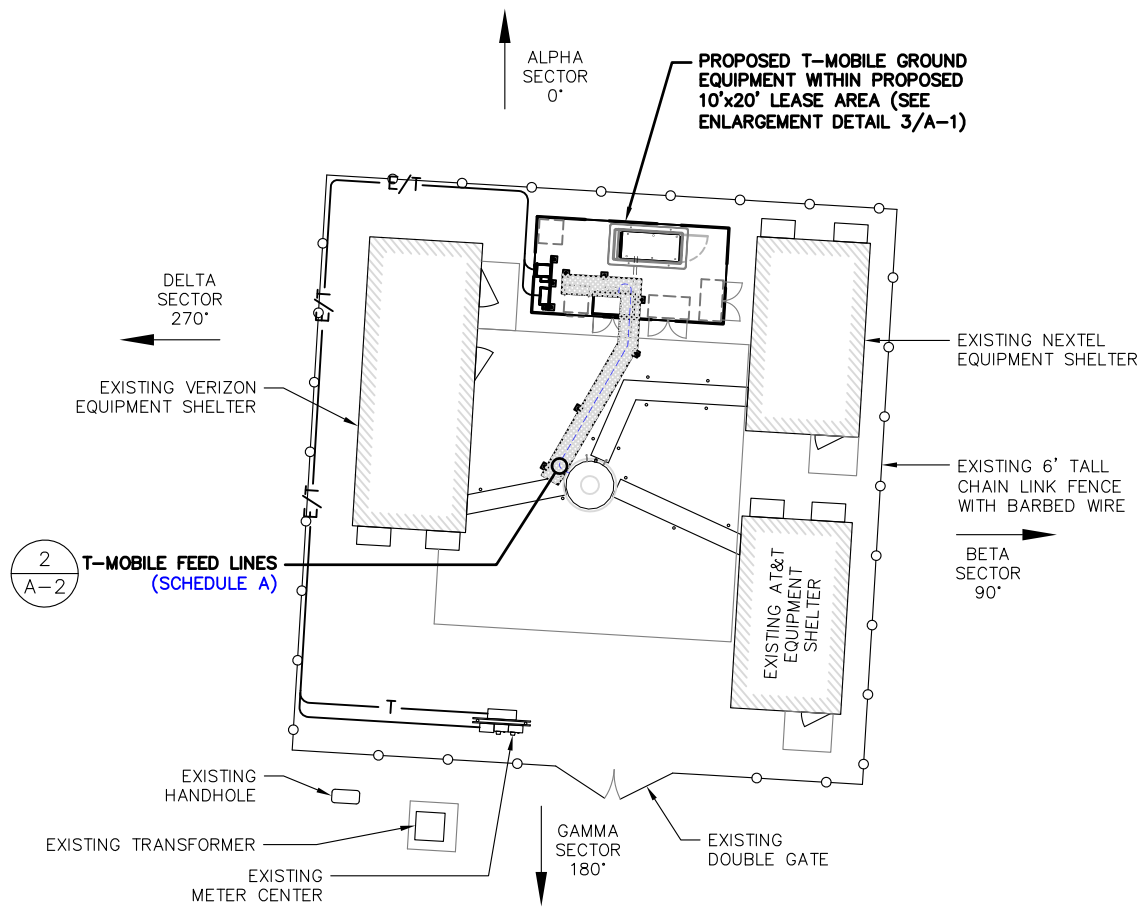
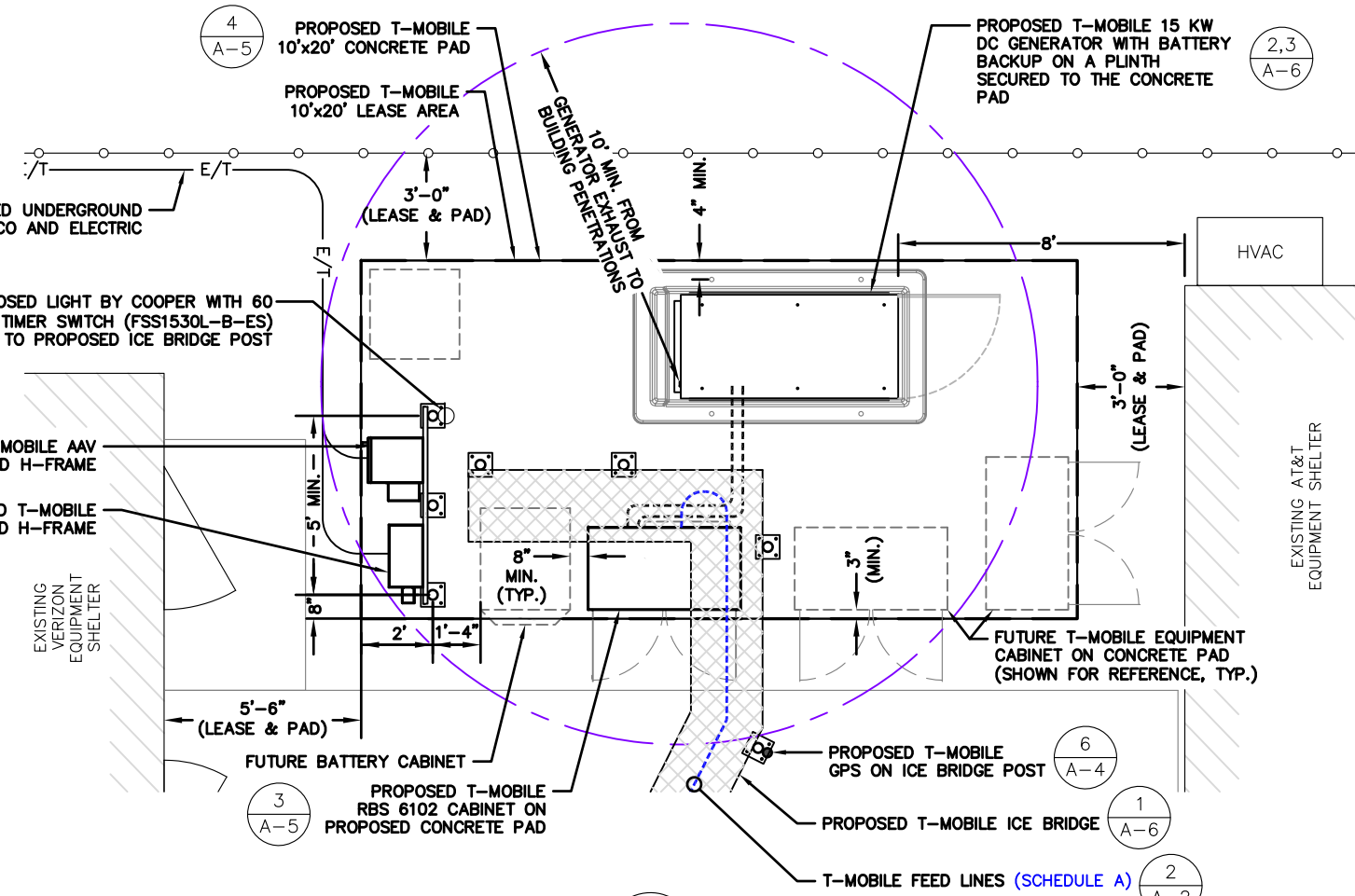


IMAGE SOURCE: PROTERRA 01/09/2018

PROPOSED EQUIPMENT AREA PHOTO DETAIL

SCALE: N.T.S.

2
A-1



GROUND EQUIPMENT LAYOUT PLAN

SCALE: 1"=5' (11"x17")
1"=2.5' (22"x34")

3
A-1

NOTE:
MAINTAIN 3' CLEAR IN FRONT OF ALL EQUIPMENT CABINET ACCESS DOORS OR PANELS PER NEC.

T-Mobile

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STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
LICENSED PROFESSIONAL ENGINEER

8/29/18

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

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SHEET TITLE
COMPOUND & ELEVATION PLAN

SHEET NUMBER
A-1

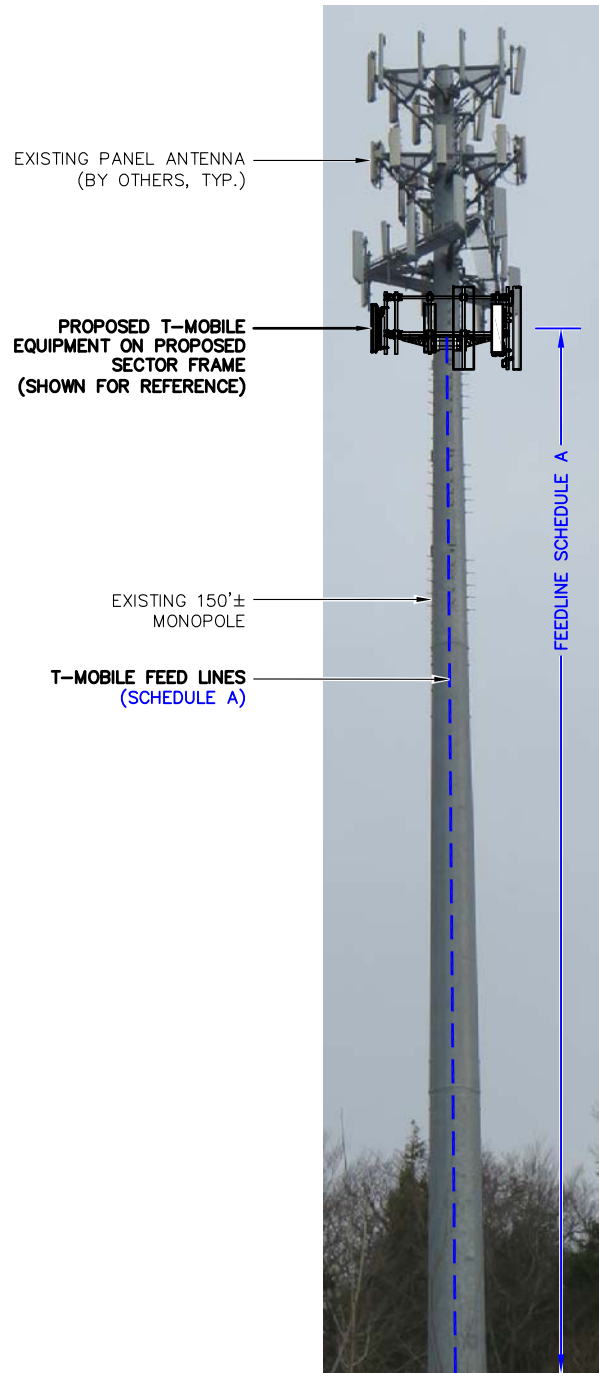
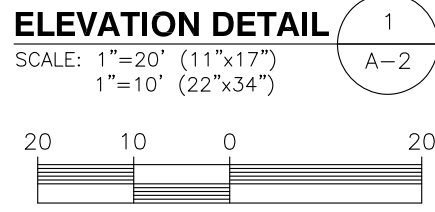
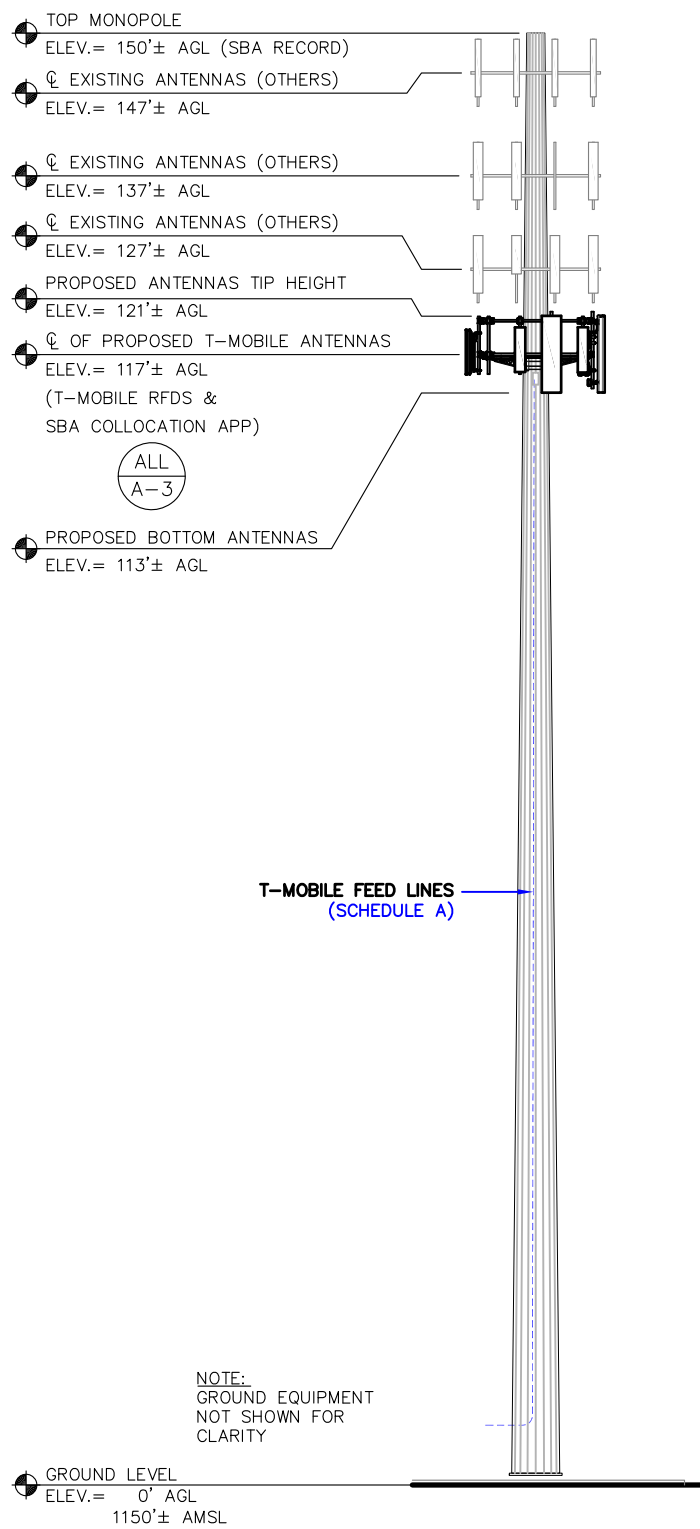


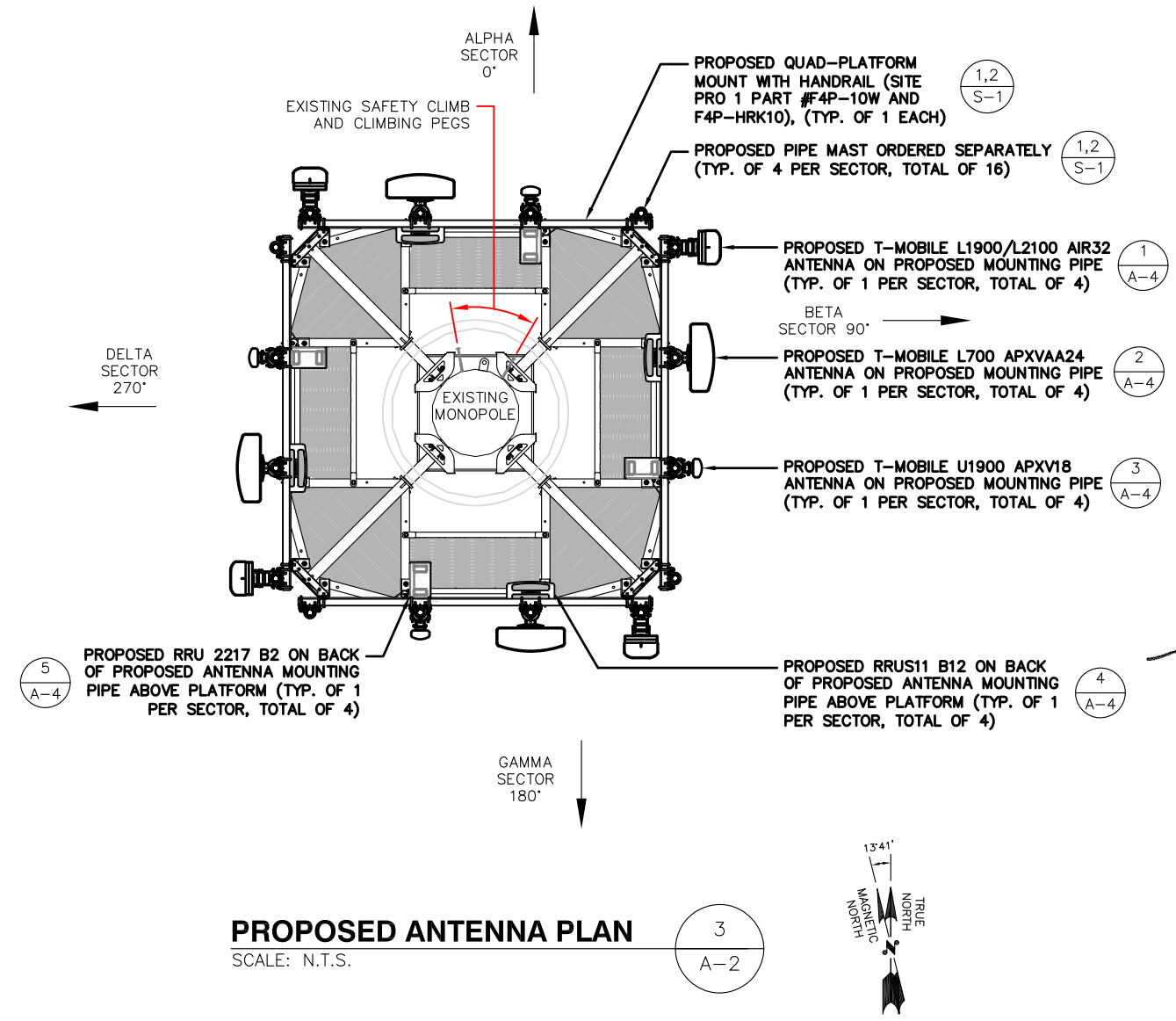
IMAGE SOURCE:
PROTERRA 01/09/2018

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	PROPOSED: (4) HYBRID TO 117' RAD;	UP MONOPOLE TOWER TO RAD

NOTE:
PROPOSED T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON COLOCATION APPLICATION. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

TOWER ELEVATION PHOTO DETAIL 2
A-2

SCALE: N.T.S.



PROPOSED ANTENNA PLAN 3
A-2

SCALE: N.T.S.

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STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
LICENSED PROFESSIONAL ENGINEER
8/29/18

CHECKED BY: JMM/TEJ

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SITE ADDRESS:
382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

SHEET TITLE
ELEVATIONS AND
PROPOSED ANTENNA
PLAN

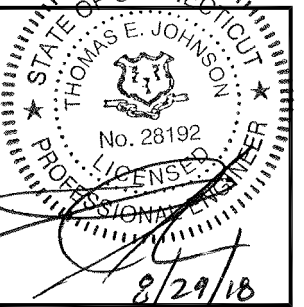
SHEET NUMBER
A-2



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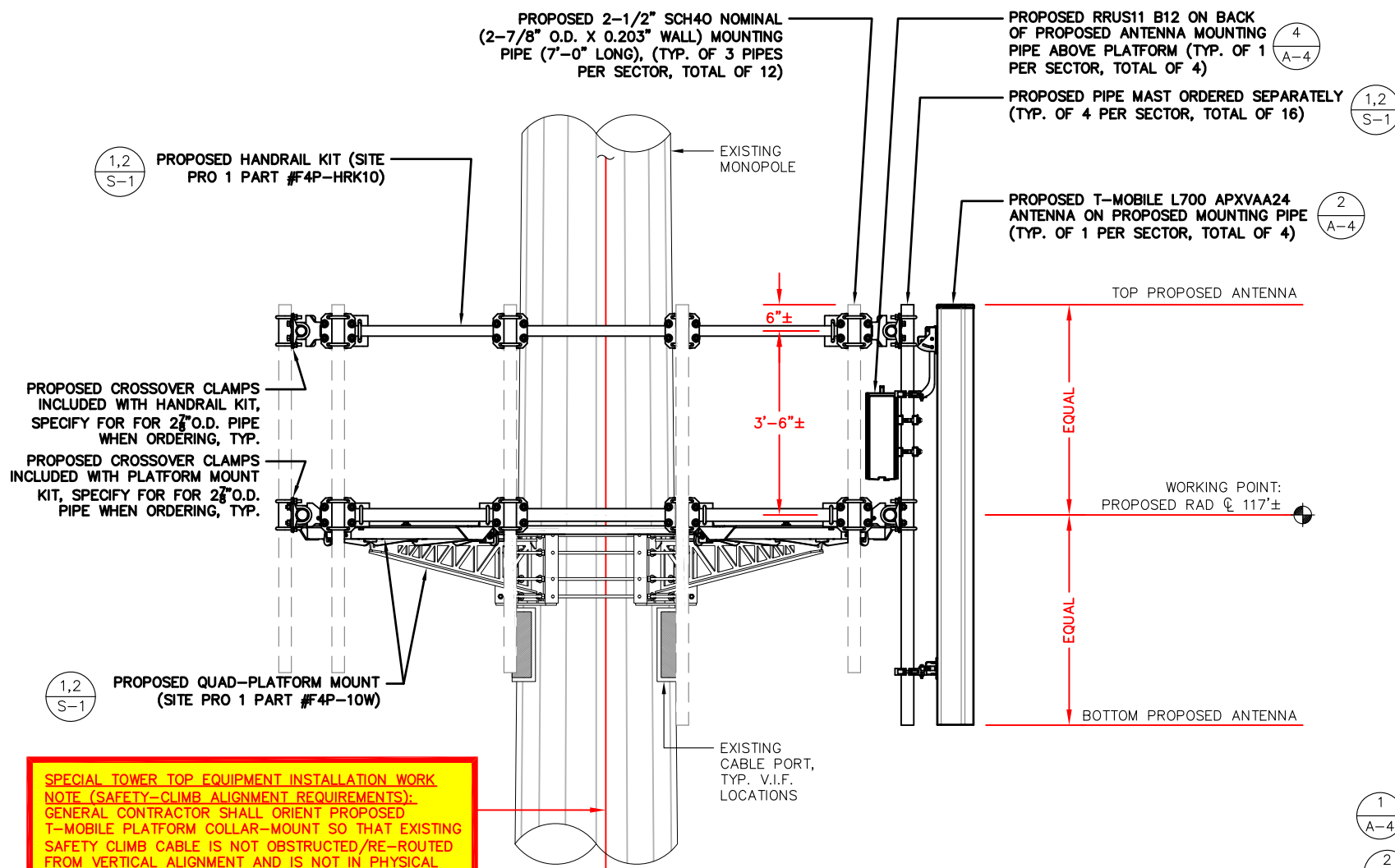
382 COLEBROOK RIVER ROAD
 COLEBROOK, CT 06021

SHEET TITLE

ANTENNA MOUNTING
 DETAILS

SHEET NUMBER

A-3

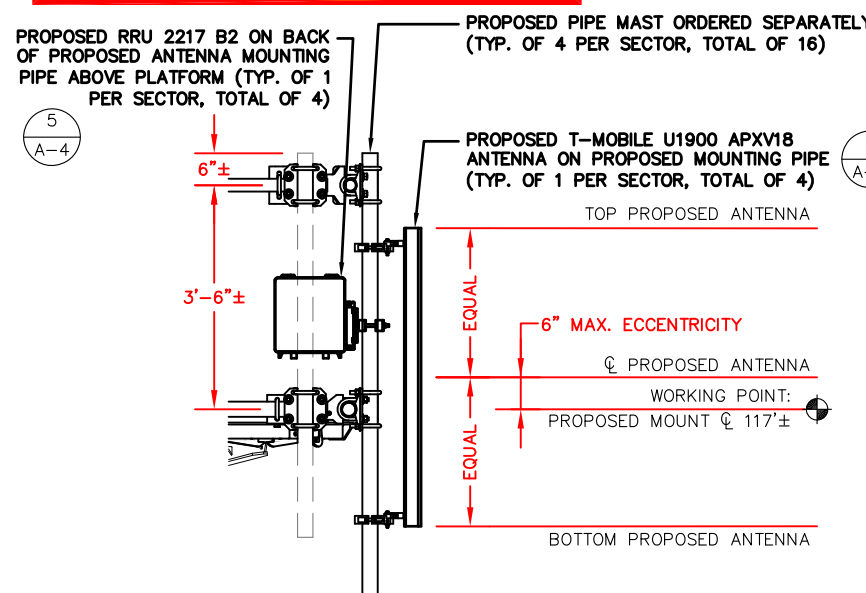


PROPOSED L700 APX ANTENNA AND PLATFORM MOUNTING DETAIL

SCALE: N.T.S.

1
A-3

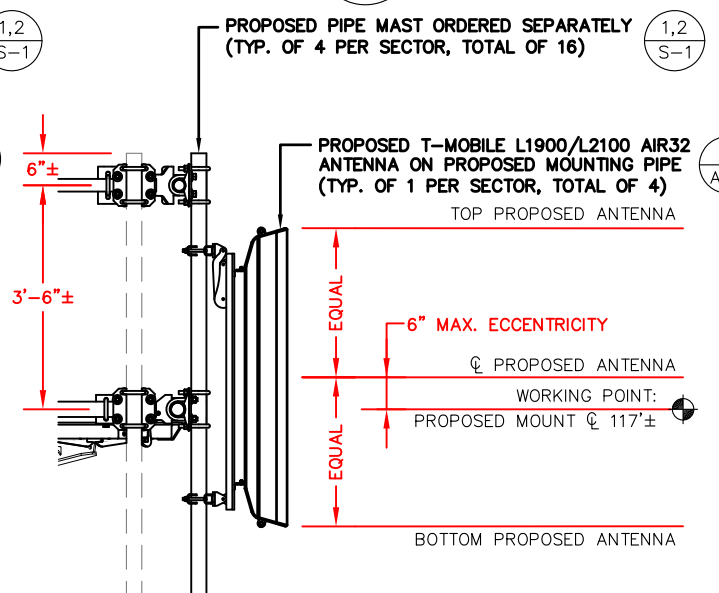
SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
 GENERAL CONTRACTOR SHALL ORIENT PROPOSED T-MOBILE PLATFORM COLLAR-MOUNT SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH PROPOSED COLLAR-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.



PROPOSED U1900 ANTENNA MOUNTING DETAIL

SCALE: N.T.S.

2
A-3



PROPOSED L1900/L2100 AIR32 ANTENNA MOUNTING DETAIL

SCALE: N.T.S.

3
A-3

- 1
A-4 PROPOSED T-MOBILE L1900/L2100 AIR32 ANTENNA ON PROPOSED MOUNTING PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 4)
- 2
A-4 PROPOSED T-MOBILE L700 APXVAA24 ANTENNA ON PROPOSED MOUNTING PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 4)
- 4
A-4 PROPOSED RRUS11 B12 ON BACK OF PROPOSED ANTENNA MOUNTING PIPE ABOVE PLATFORM (TYP. OF 1 PER SECTOR, TOTAL OF 4)
- 3
A-4 PROPOSED T-MOBILE U1900 APXV18 ANTENNA ON PROPOSED MOUNTING PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 4)
- 1,2
S-1 PROPOSED HANDRAIL KIT (SITE PRO 1 PART #F4P-HRK10)

- 1,2
S-1 PROPOSED QUAD-PLATFORM MOUNT (SITE PRO 1 PART #F4P-10W)
- 5
A-4 PROPOSED RRU 2217 B2 ON BACK OF PROPOSED ANTENNA MOUNTING PIPE ABOVE PLATFORM (TYP. OF 1 PER SECTOR, TOTAL OF 4)

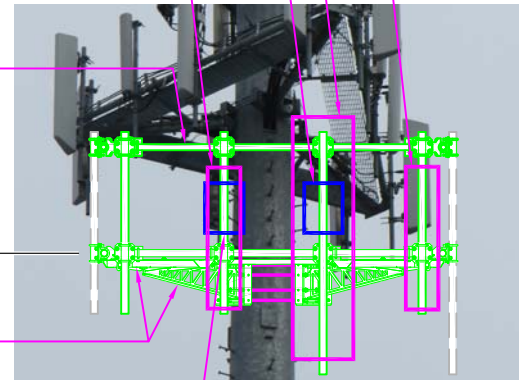


IMAGE SOURCE: PROTERRA 01/09/2018

NOTE: ONE SECTOR SHOWN FOR CLARITY

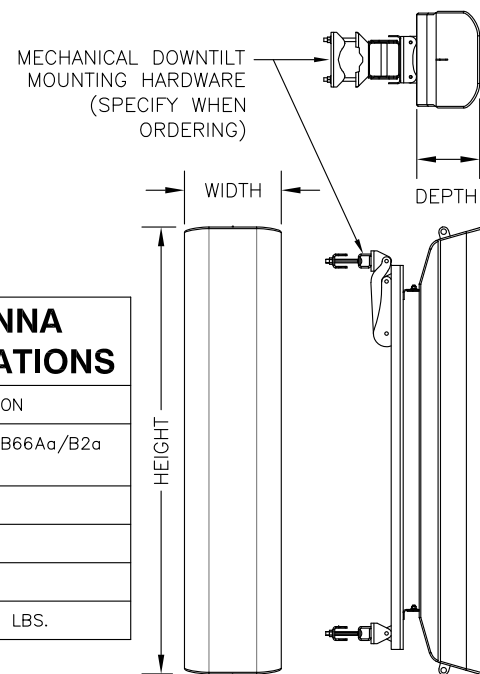
ANTENNA PHOTO DETAIL

SCALE: N.T.S.

4
A-3

AIR ANTENNA SPECIFICATIONS

MANUF.	ERICSSON
MODEL #	AIR32 B66Aa/B2a (Octa)
HEIGHT	56.6"
WIDTH	12.9"
DEPTH	8.7"
WEIGHT	132.2± LBS.



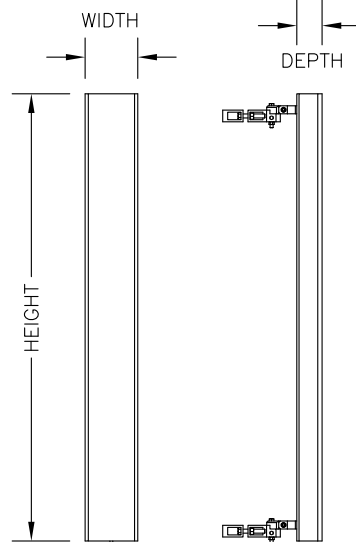
AIR32 ANTENNA DETAIL

SCALE: N.T.S.

1
A-4

U1900 ANTENNA SPECIFICATIONS

MANUF.	RFS
MODEL #	APXV18-206517S (Dual)
HEIGHT	76.0"
WIDTH	6.65"
DEPTH	3.15"
WEIGHT	12± LBS.



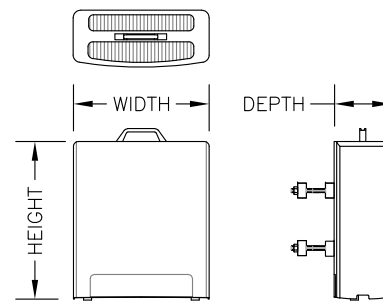
U1900 ANTENNA DETAIL

SCALE: N.T.S.

3
A-4

RRUS11 SPECIFICATIONS

MANUF.	ERICSSON
MODEL #	RRUS11 B12
HEIGHT	20.7"
WIDTH	17"
DEPTH	7"
WEIGHT	50.7± LBS.



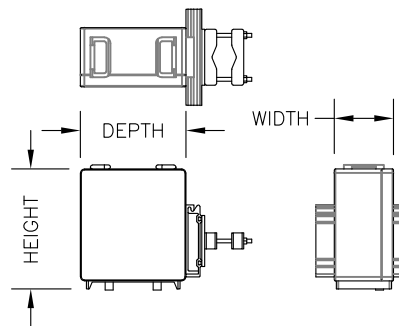
RRU DETAIL

SCALE: N.T.S.

4
A-4

2217 B2 SPECIFICATIONS

MANUF.	ERICSSON
MODEL #	2217 B2
HEIGHT	13.4"
WIDTH	11.5"
DEPTH	4.1"
WEIGHT	26.5± LBS.



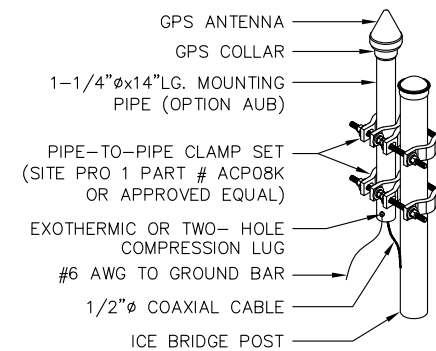
RRU DETAIL

SCALE: N.T.S.

5
A-4

GPS ANTENNA

MANUF.	NAIS
MODEL #	CCAH32ST03
HEIGHT	3.9"
WIDTH	3.5"



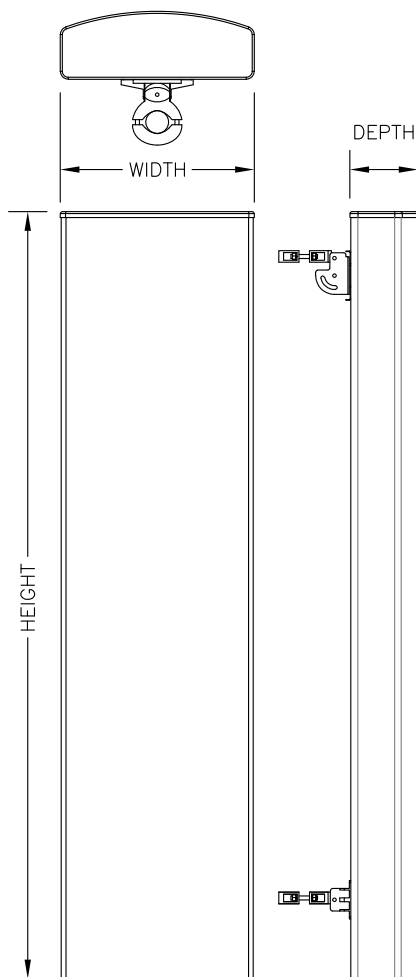
GPS DETAIL

SCALE: N.T.S.

6
A-4

RFS ANTENNA SPECIFICATIONS

MANUF.	RFS
MODEL #	APXVAA24_43-U-A20
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	124.3± LBS.



APX ANTENNA DETAIL

SCALE: N.T.S.

2
A-4

ANTENNA CONFIGURATION

SECTOR	BAND	ANTENNA MODEL	ANTENNA RAD (SBA DATABASE)	AZIMUTH	DOWNTILT MECH. / ELEC.	RADIOS/TMAS	CABLE FEED LINES
ALPHA	L1900 L2100	ERICSSON - AIR32 KRD901146-1_B66A_B2A (OCTA)	117'±	0°	0° 2'	-	PROPOSED SHARED HYBRID CABLE TRUNK
	L700	RFS - APXVAA24_43-U-A20 (QUAD)	117'±	0°	0° 2'	PROPOSED (1) RRUS11 B12	PROPOSED SHARED HYBRID CABLE TRUNK
	U1900	RFS - APXV18-206517S-A20 (DUAL)	117'±	0°	0° 2'	PROPOSED (1) RADIO 2217 B2	PROPOSED SHARED HYBRID CABLE TRUNK
BETA	L1900 L2100	ERICSSON - AIR32 KRD901146-1_B66A_B2A (OCTA)	117'±	90°	0° 2'	-	PROPOSED SHARED HYBRID CABLE TRUNK
	L700	RFS - APXVAA24_43-U-A20 (QUAD)	117'±	90°	0° 2'	PROPOSED (1) RRUS11 B12	PROPOSED SHARED HYBRID CABLE TRUNK
	U1900	RFS - APXV18-206517S-A20 (DUAL)	117'±	90°	0° 2'	PROPOSED (1) RADIO 2217 B2	PROPOSED SHARED HYBRID CABLE TRUNK
	GAMMA	L1900 L2100	ERICSSON - AIR32 KRD901146-1_B66A_B2A (OCTA)	117'±	180°	0° 2'	-
L700		RFS - APXVAA24_43-U-A20 (QUAD)	117'±	180°	0° 2'	PROPOSED (1) RRUS11 B12	PROPOSED SHARED HYBRID CABLE TRUNK
U1900		RFS - APXV18-206517S-A20 (DUAL)	117'±	180°	0° 2'	PROPOSED (1) RADIO 2217 B2	PROPOSED SHARED HYBRID CABLE TRUNK
DELTA	L1900 L2100	ERICSSON - AIR32 KRD901146-1_B66A_B2A (OCTA)	117'±	270°	0° 2'	-	PROPOSED SHARED HYBRID CABLE TRUNK
	L700	RFS - APXVAA24_43-U-A20 (QUAD)	117'±	270°	0° 2'	PROPOSED (1) RRUS11 B12	PROPOSED SHARED HYBRID CABLE TRUNK
	U1900	RFS - APXV18-206517S-A20 (DUAL)	117'±	270°	0° 2'	PROPOSED (1) RADIO 2217 B2	PROPOSED SHARED HYBRID CABLE TRUNK

REFER TO FINAL RFDS FOR FINAL ANTENNA SETTINGS, CONFIGURATION, QUANTITIES AND RAN WIRING.



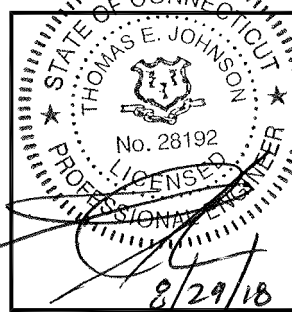
T-MOBILE NORTHEAST LLC
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SITE NUMBER:

CTNH549B

SITE NAME:

CTNH549B

SITE ADDRESS:

382 COLEBROOK RIVER ROAD
COLEBROOK, CT 06021

SHEET TITLE

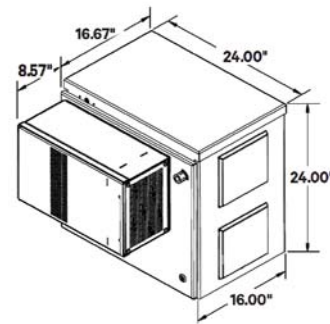
DETAILS

SHEET NUMBER

A-4

SSC SPECIFICATIONS

MANUF.	EMERSON
MODEL #	NXC2416
HEIGHT	24.0"
WIDTH	24.0"
DEPTH	16.67" (25.24 WITH HEAT EXCHANGER)
WEIGHT	64± LBS. (EMPTY) 100± LBS. (WITH 4 BATTERIES)



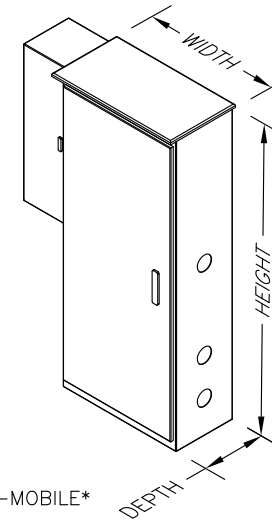
SITE SUPPORT CABINET (SSC)

SCALE: N.T.S.

1
A-5

PPC SPECIFICATIONS

MANUF.	DELTA
MODEL #	3799340400
HEIGHT	40"
WIDTH	20"
DEPTH	10"
WEIGHT	75± LBS.



TO BE PROVIDED BY T-MOBILE

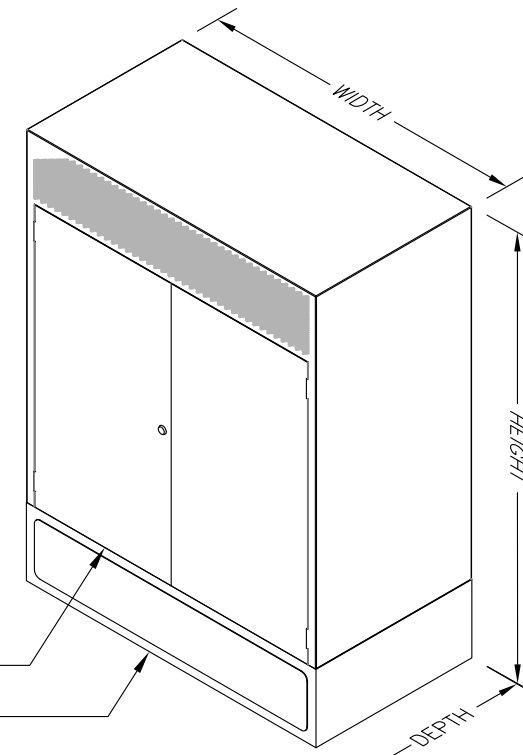
POWER PROTECTION CABINET (PPC)

SCALE: N.T.S.

2
A-5

RBS SPECIFICATIONS

MANUF.	ERICSSON
MODEL #	RBS 6102
HEIGHT	57.1"
WIDTH	51.2"
DEPTH	27.6"
WEIGHT	728± LBS. W/O BATTERIES
MAX WEIGHT	1850LBS



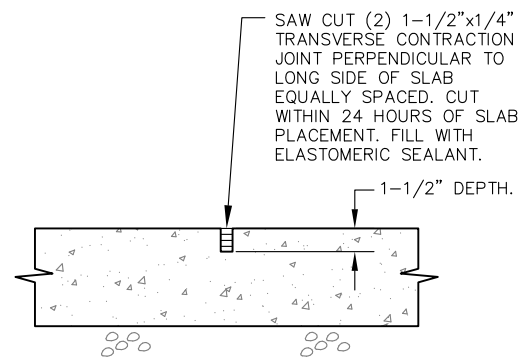
ATTACH RBS CABINET TO BASE FRAME PER MANUFACTURER'S GUIDELINES

RBS BASE FRAME (DIMENSIONS TBD). ANCHOR TO CONCRETE PAD WITH HILTI HDI 1/2" SS 303 DROP-IN ANCHORS (TYP. OF 8) OR EQUAL PER MANUFACTURER'S GUIDELINES

RBS 6102

SCALE: N.T.S.

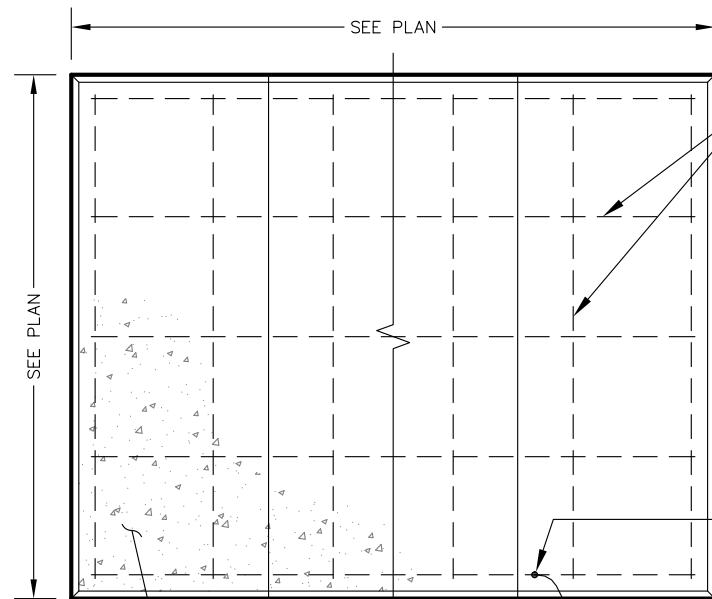
3
A-5



CONTRACTION JOINT

NOTES:

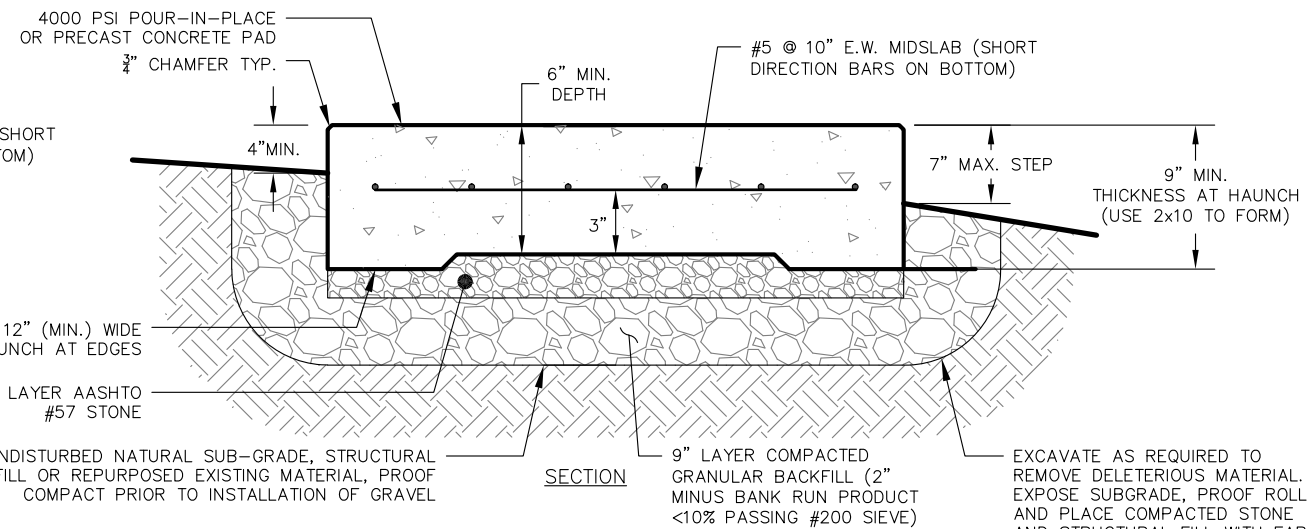
1. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED FILL. 95% COMPACTION.
2. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.
3. CONCRETE FORM WORK SHALL BE CONSTRUCTED USING MINIMUM 2"X12" NOMINAL SIZE LUMBER OR EQUAL. STRIP AND REMOVE UPON COMPLETION.
4. CONCRETE SHALL HAVE 4000PSI 28-DAY COMPRESSIVE STRENGTH WITH 5(±1)% AIR ENTRAINMENT, 3"-5" SLUMP AND BRISTLE BROOM FINISH.
5. ALL REBAR TO BE DEFORMED 60KSI ASTM A615 GRADE 60 U.O.N.



STIFF BRISTLE BROOM FINISH

PLAN

TO GROUND RING



SECTION

EXCAVATE AS REQUIRED TO REMOVE DELETERIOUS MATERIAL. EXPOSE SUBGRADE, PROOF ROLL, AND PLACE COMPACTED STONE AND STRUCTURAL FILL WITH FABRIC AS DIRECTED BY THE ENGINEER.

SAW CUT (2) EQUALLY SPACED 1-1/2"x1/4" TRANSVERSE CONTRACTION JOINT PERPENDICULAR TO LONG SIDE OF SLAB WITHIN 24 HOURS OF SLAB PLACEMENT. FILL WITH ELASTOMERIC SEALANT.

CONCRETE PAD

SCALE: N.T.S.

4
A-5



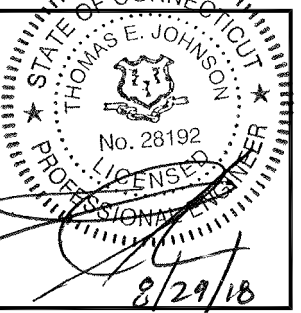
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SITE NUMBER:

CTNH549B

SITE NAME:

CTNH549B

SITE ADDRESS:

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SHEET TITLE

DETAILS

SHEET NUMBER

A-5



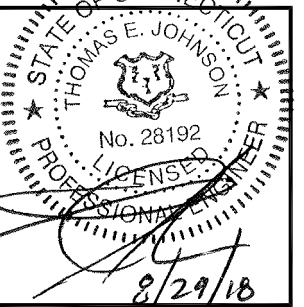
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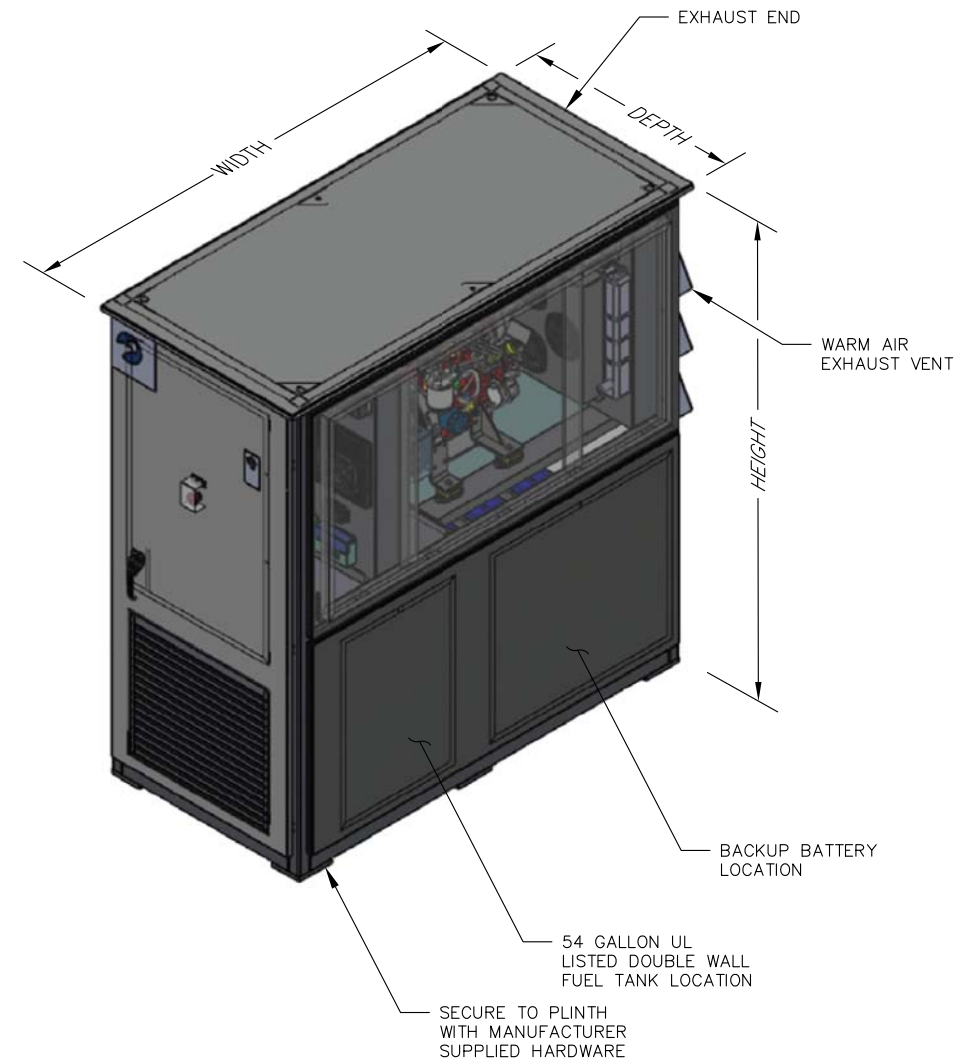
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SHEET TITLE

DETAILS

SHEET NUMBER

A-6



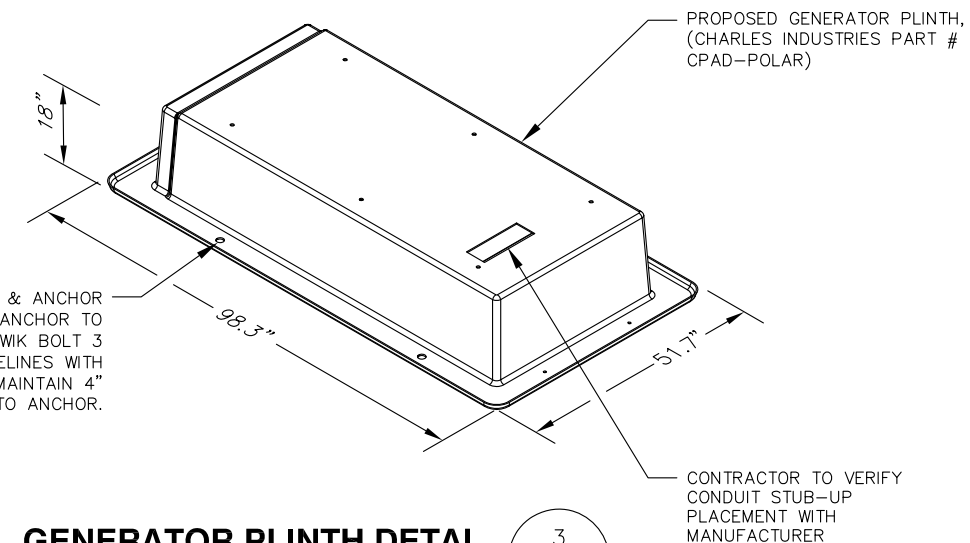
GENERATOR SPECIFICATIONS

MANUF.	POLAR POWER
MODEL #	8220-801-D-15-05 (15kW DC)
HEIGHT	74"
WIDTH	68"
DEPTH	34"
WEIGHT	NOT LISTED

GENERATOR DETAL

SCALE: N.T.S.

2
A-6



GENERATOR PLINTH DETAL

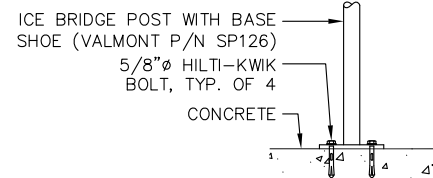
SCALE: N.T.S.

3
A-6

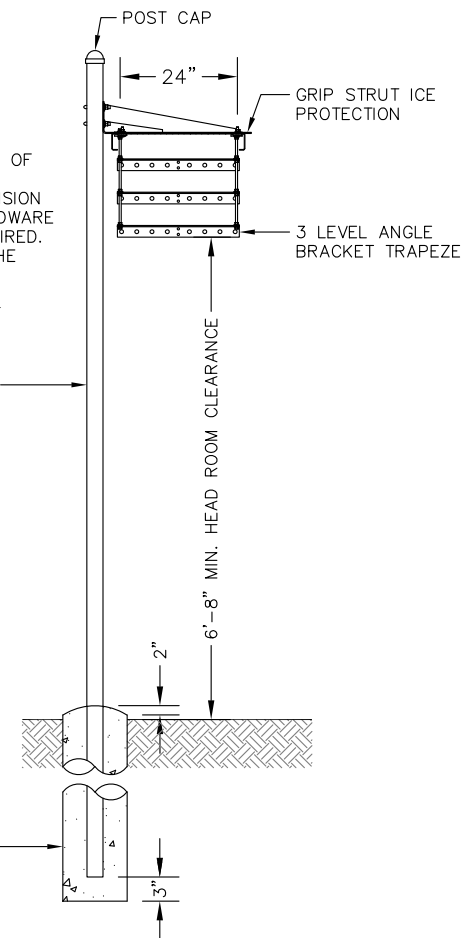
BASE FRAME (VERIFY BASE DIMENSIONS & ANCHOR LOCATIONS WITH MANUFACTURER). ANCHOR TO CONCRETE PAD WITH 3/8" HDG HILTI-KWIK BOLT 3 SIZED PER MANUFACTURER'S GUIDELINES WITH 3-1/2" MIN. EMBEDMENT, TYP. OF 4. MAINTAIN 4" MINIMUM EDGE DISTANCE FROM SLAB TO ANCHOR.

1. ALL COMPONENTS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. CONTRACTOR SHALL DETERMINE REQUIRED QUANTITY OF ALL ICE BRIDGE COMPONENTS
3. SNAP-IN HANGERS, SPLICE KITS, HINGE KITS, EXTENSION KITS, STIFFENERS, AND OTHER MISCELLANEOUS HARDWARE SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED.
4. ICE BRIDGE SHALL BE ROUTED TO ACCOMMODATE THE MINIMUM BENDING RADIUS OF THE COAXIAL CABLE.
5. ICE BRIDGE COMPONENTS SHOWN ARE SCHEMATIC. CONSULT MANUFACTURER FOR EXACT AND CURRENT SPECIFICATIONS.

ICE BRIDGE KIT (VALMONT P/N IB24D-A3 OR EQUAL) POSTS SPACED 8'-0" MAX.



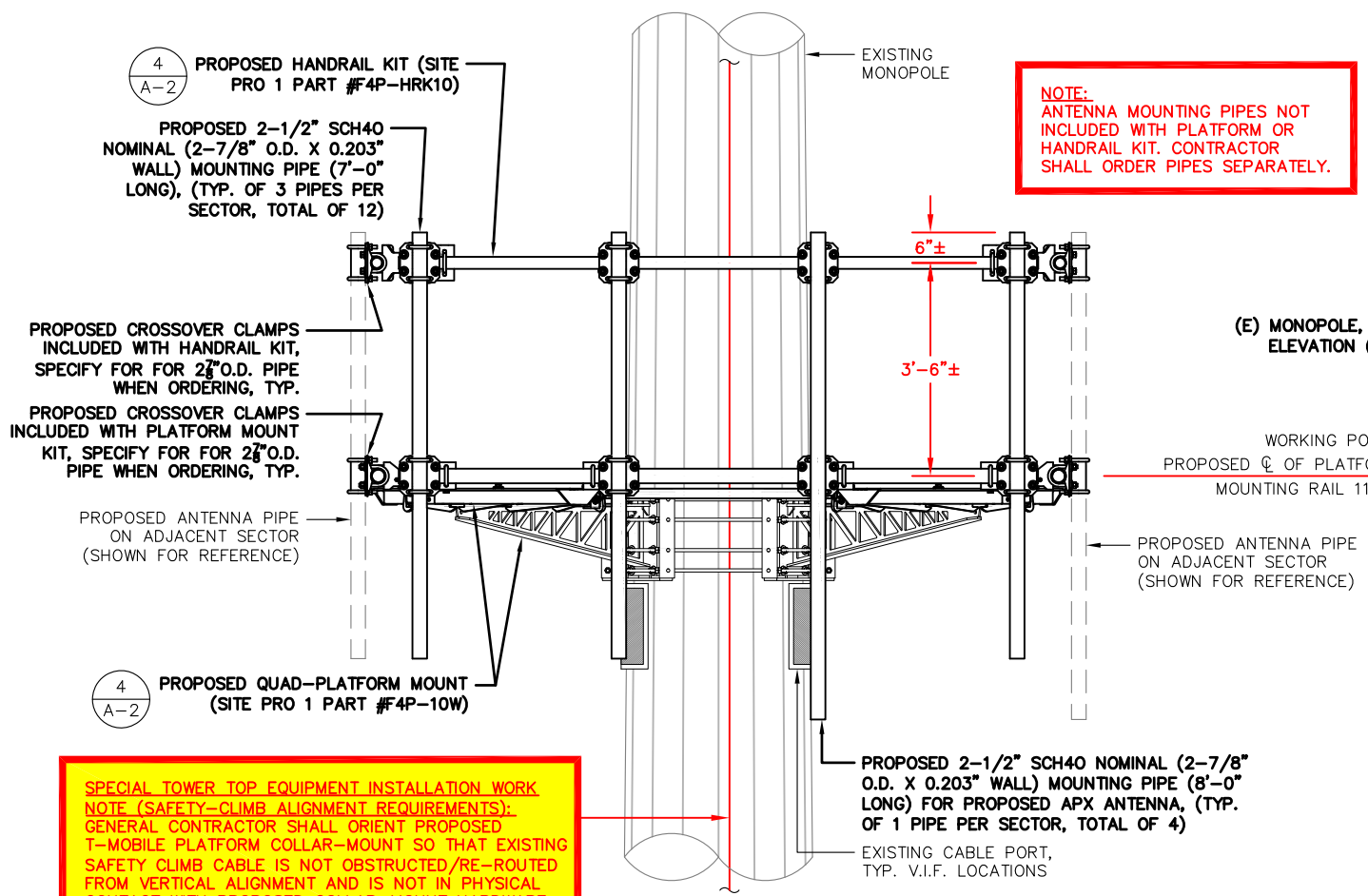
ALTERNATE ANCHORING DETAIL



ICE BRIDGE

SCALE: N.T.S.

1
A-6



PROPOSED PLATFORM MOUNTING DETAIL

SCALE: N.T.S.

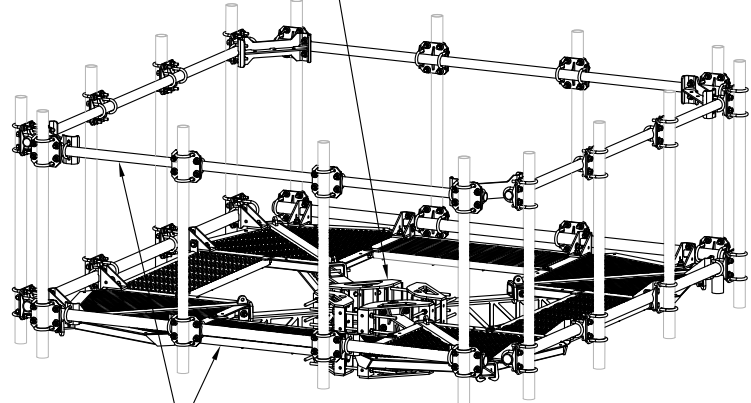
1
S-1

NOTE:
ANTENNA MOUNTING PIPES NOT INCLUDED WITH PLATFORM OR HANDRAIL KIT. CONTRACTOR SHALL ORDER PIPES SEPARATELY.

SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
GENERAL CONTRACTOR SHALL ORIENT PROPOSED T-MOBILE PLATFORM COLLAR-MOUNT SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH PROPOSED COLLAR-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

NOTE:
MOUNTING PIPES SHOWN FOR REFERENCE. REFER TO DETAILS S-1 FOR REQUIRED PIPE SIZES

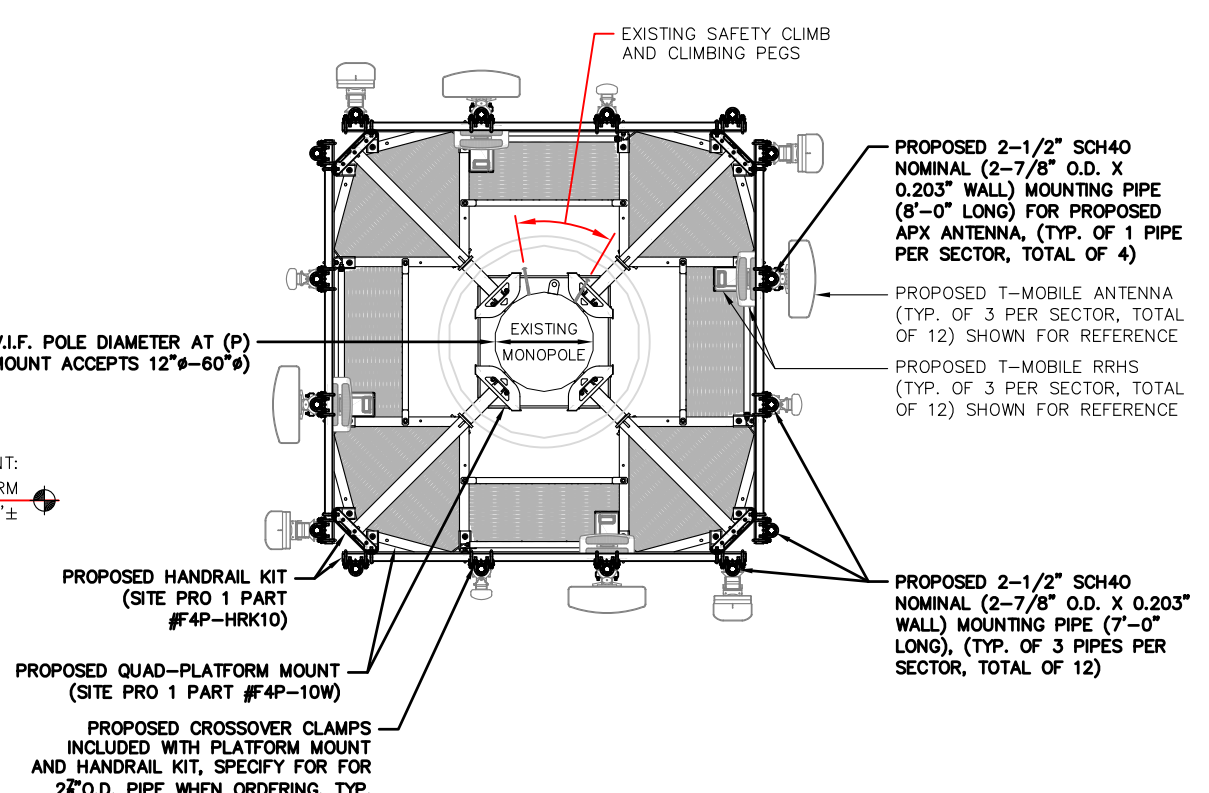
FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION. DO NOT OVER TORQUE (60-100 FT-LBS MAX ON COLLAR BOLTS), CONTRACTOR TO TAKE SPECIAL CARE AND ERECT IN PIECES OR PREPARE AN ENGINEERED LIFT PLAN FOR ERECTION. V.I.F. POLE DIAMETER AT (P) ELEVATION. (MOUNT ACCEPTS 12"-60"φ)



SECTOR FRAME DETAIL

SCALE: N.T.S.

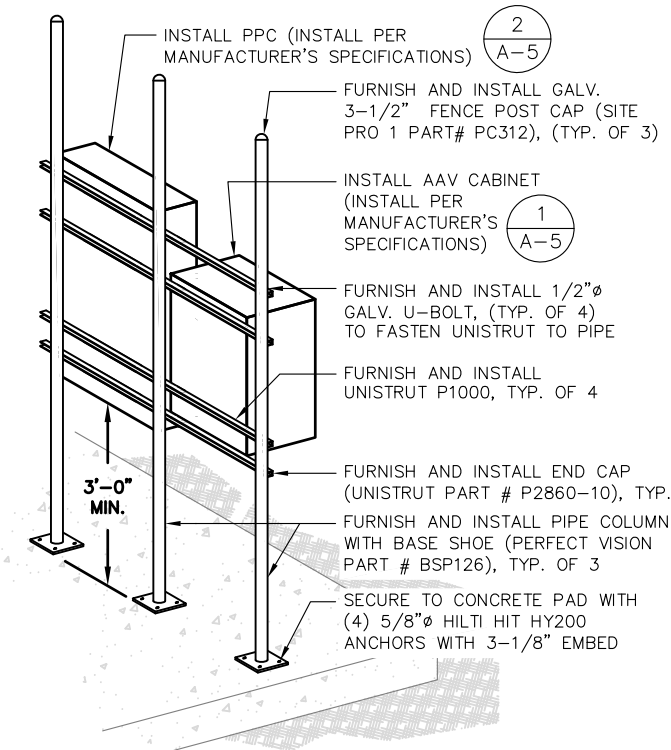
3
S-1



PROPOSED PLATFORM MOUNTING PLAN DETAIL

SCALE: N.T.S.

2
S-1



PPC AND TELCO CABINET H-FRAME MOUNTING DETAIL

SCALE: N.T.S.

4
S-1

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STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
PROFESSIONAL ENGINEER
8/29/18

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

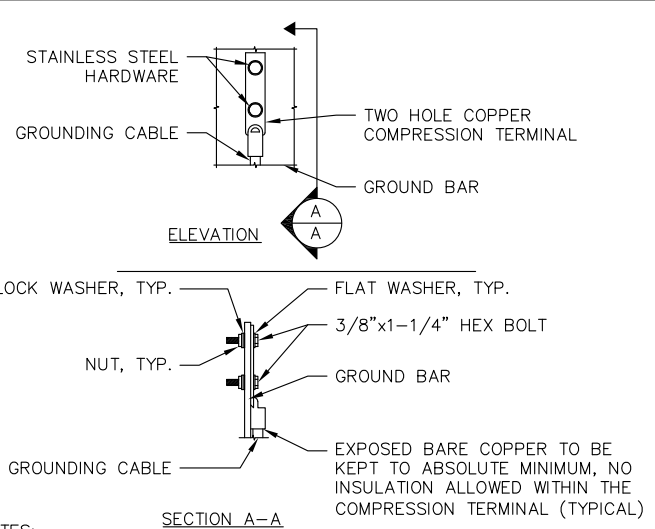
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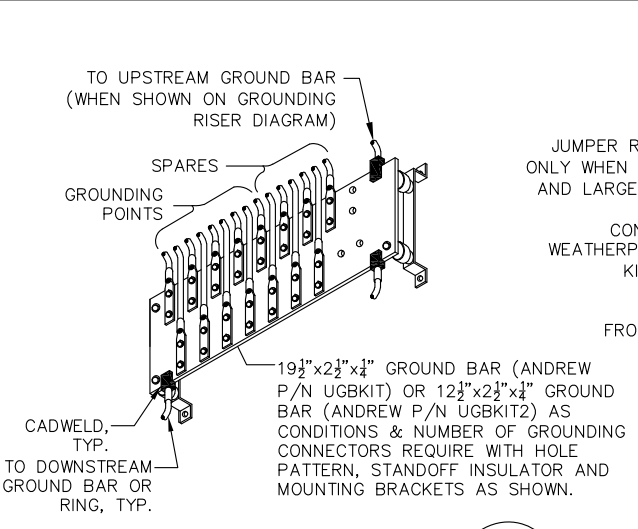
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SITE NAME:
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SITE ADDRESS:
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COLEBROOK, CT 06021

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STRUCTURAL DETAILS

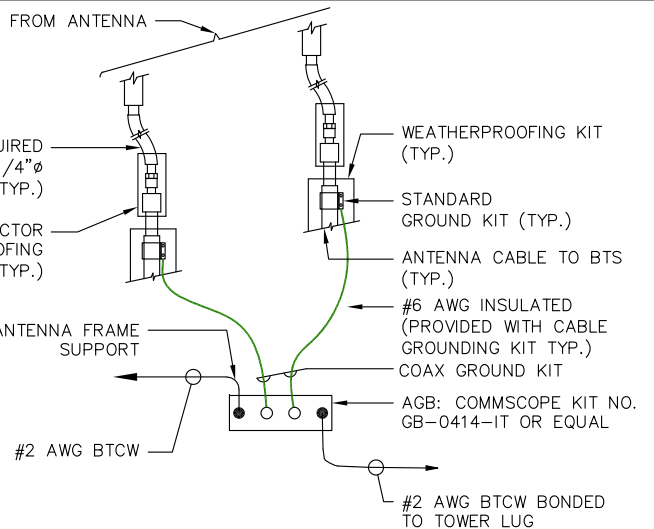
SHEET NUMBER
S-1



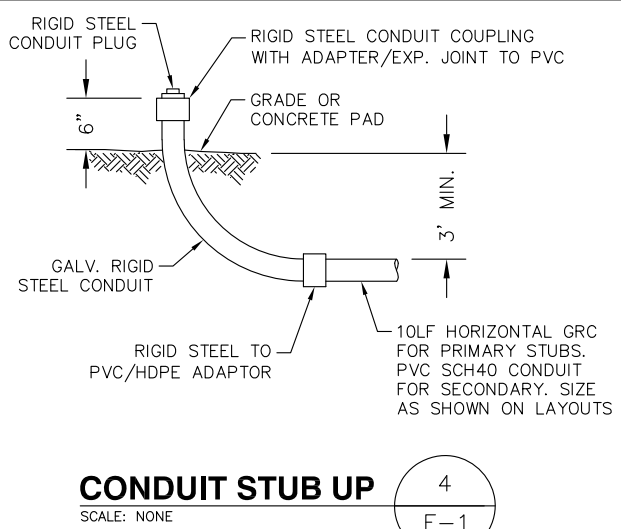
- NOTES:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.



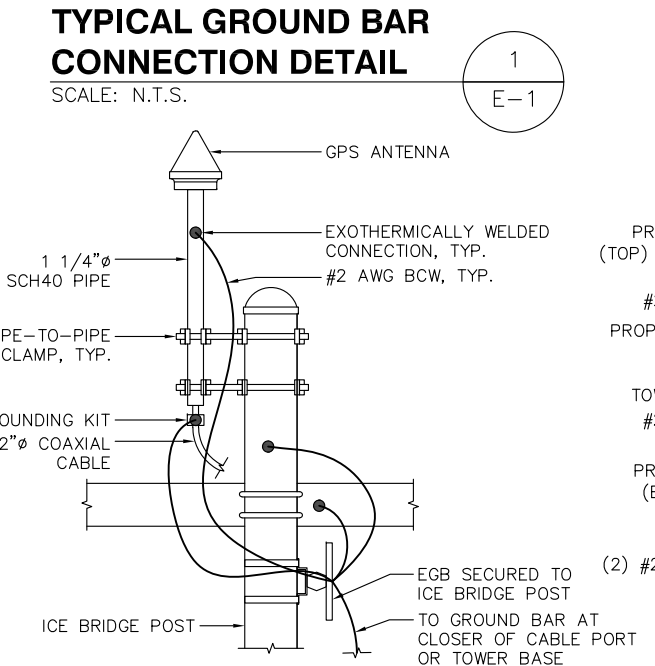
COAX GROUND BAR (MGB)
SCALE: NONE



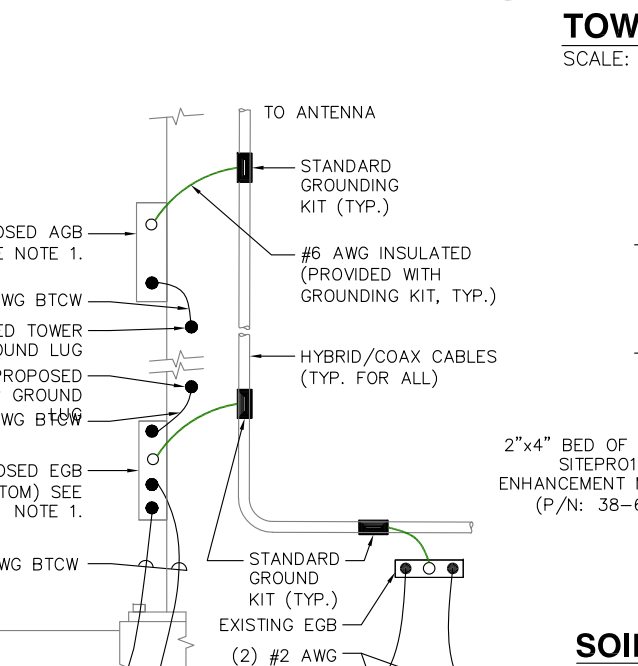
TOWER TOP CABLE GROUNDING DETAIL
SCALE: N.T.S.



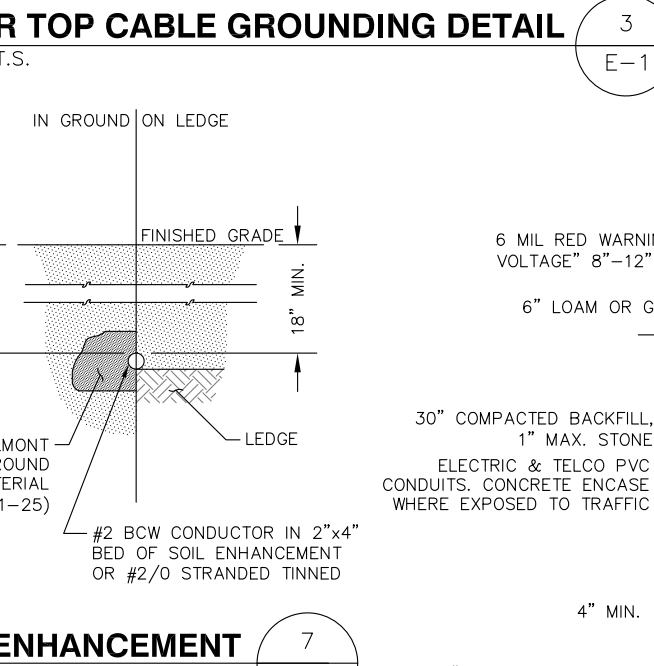
CONDUIT STUB UP
SCALE: NONE



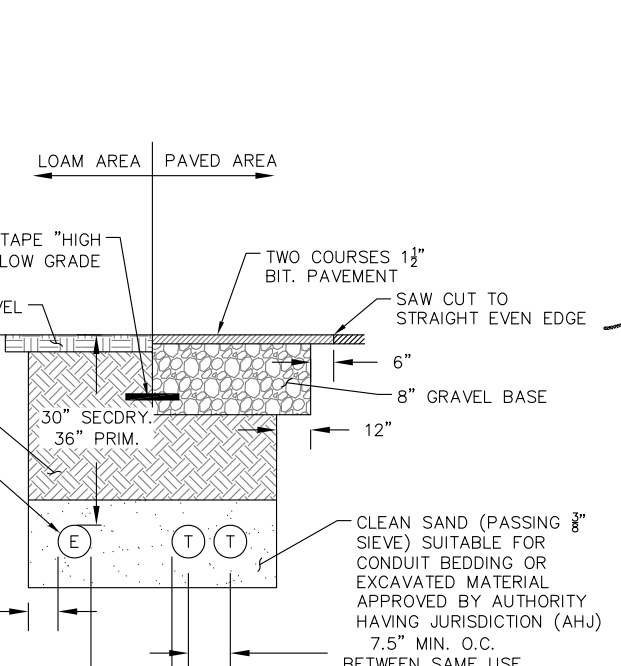
GPS ANTENNA GROUNDING DETAIL
SCALE: N.T.S.



TOWER BOTTOM CABLE GROUNDING DETAIL
SCALE: N.T.S.



SOIL ENHANCEMENT
SCALE: NONE



BURIED CONDUIT SECTION
SCALE: NONE

ELECTRICAL LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)
G	GROUND
⊕	GROUND
MGB	MASTER GROUND BAR
○●	MECHANICAL CONNECTION
○●	CADWELD CONNECTION
○●	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR
○●	GROUND COPPER WIRE, SIZE AS NOTED
—	EXPOSED WIRING
—	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)
○	5/8"x10" COPPER CLAD STAINLESS STEEL GROUND ROD
○●	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL & GROUNDING NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) 2014 AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION AS REQUIRED BY NEC.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROUNDER COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LYGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO WATER MAIN/GROUND RING.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

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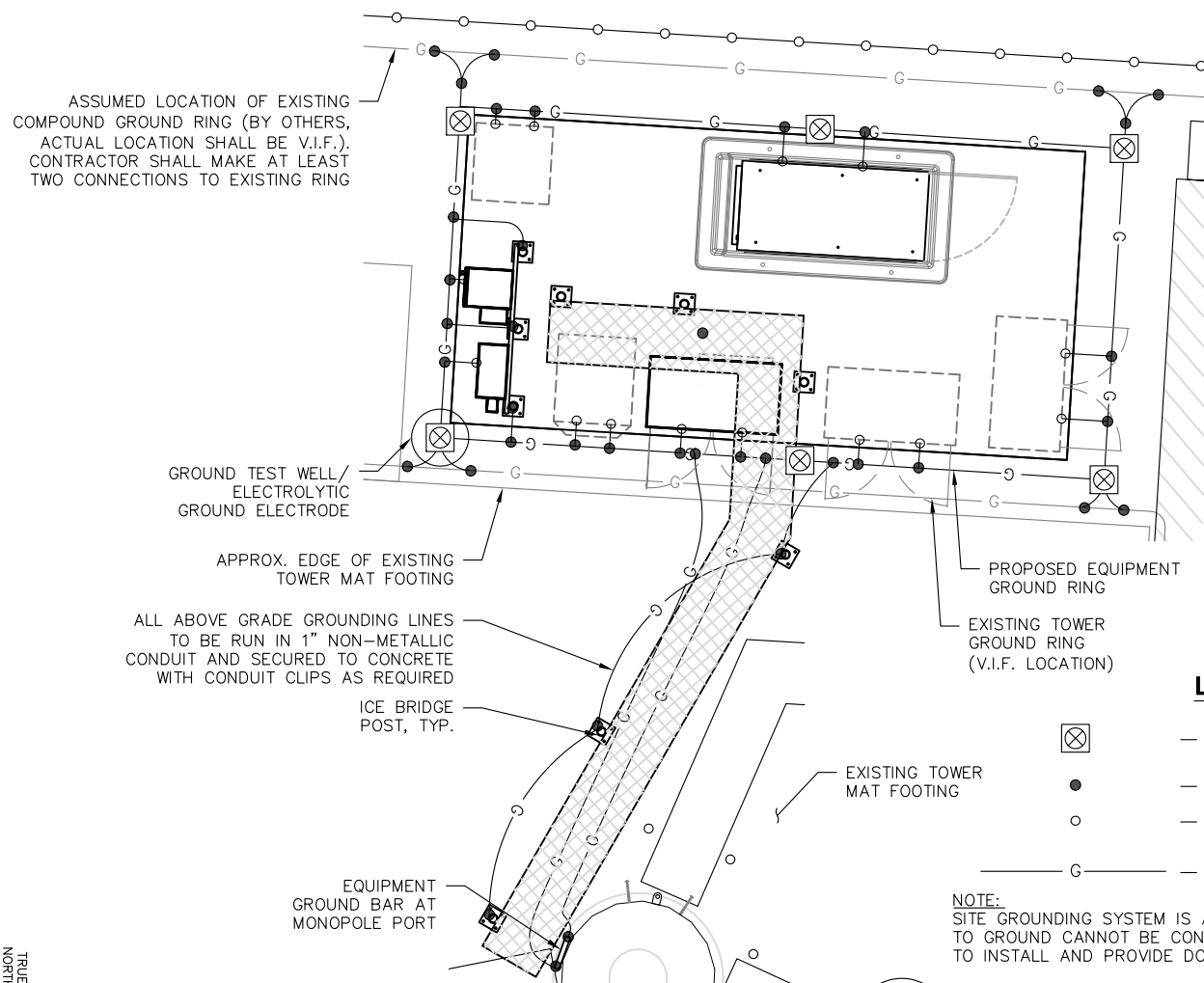
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SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1



GROUND EQUIPMENT GROUNDING SCHEMATIC

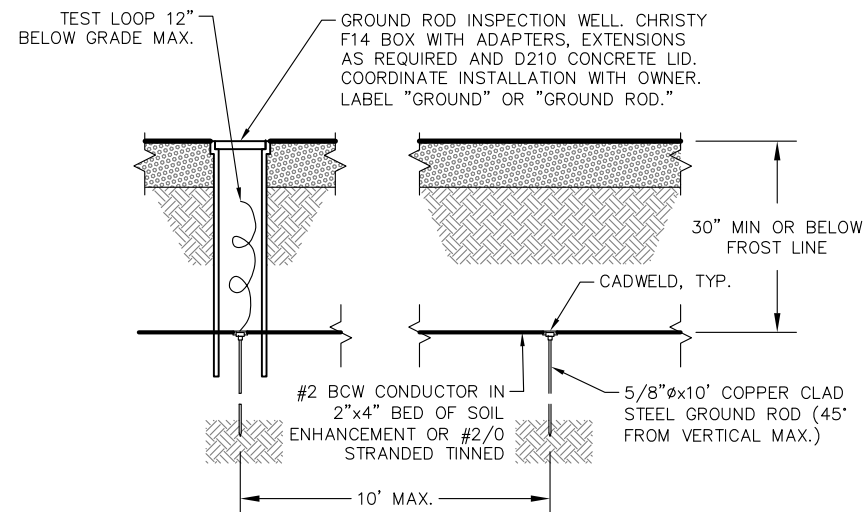
SCALE: 1"=6' (11"x17")
1"=3' (22"x34")

1
E-2

LEGEND

- ⊗ — 5/8"x10' COPPER CLAD STEEL GROUND ROD
- — EXOTHERMIC WELD
- — MECHANICAL LUG
- G — #2 BCW CONDUCTOR WITH 2"x4" BED OF SOIL ENHANCEMENT OR #2/0 STRANDED TINNED

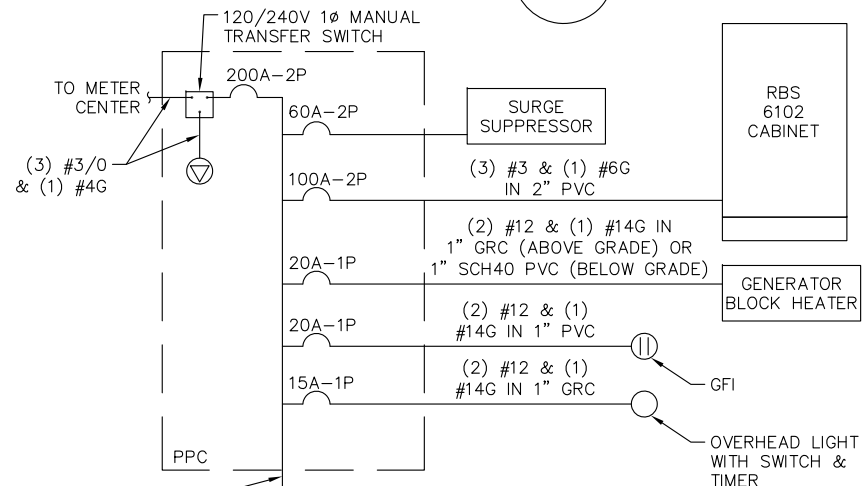
NOTE: SITE GROUNDING SYSTEM IS A BASIC DESIGN. THE ACTUAL RESISTANCE TO GROUND CANNOT BE CONFIRMED WITHOUT A FIELD TEST. CONTRACTOR TO INSTALL AND PROVIDE DOCUMENTATION AT CLOSEOUT.



GROUND ROD

SCALE: NONE

2
E-2



ONE LINE POWER SCHEMATIC

SCALE: N.T.S.

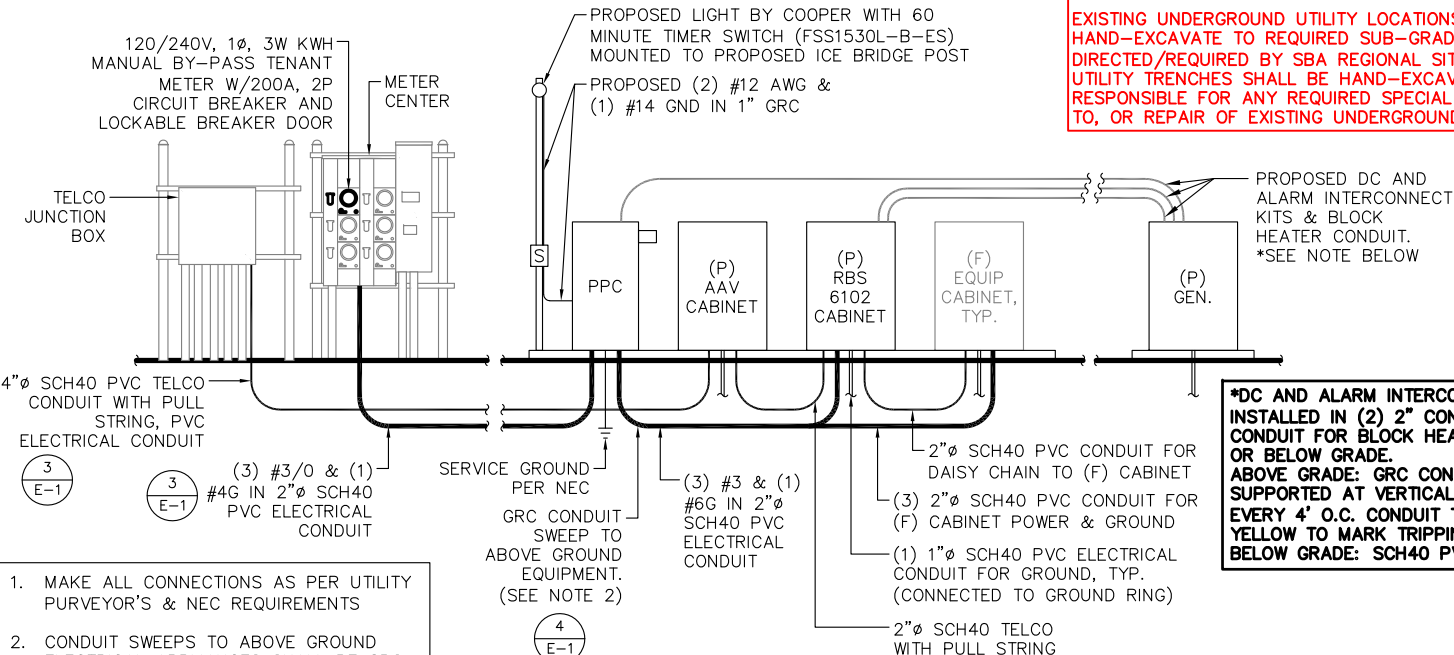
4
E-2

CONTRACTOR TO VERIFY THE POWER FEED & PHASE OF METER BANK PRIOR TO ORDERING OF EQUIPMENT

SPECIAL CONSTRUCTION WORK NOTE (HAND-DUG UTILITY TRENCH EXCAVATION REQUIRED):

EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH, SUFFICIENT TEST HOLES OR AS DIRECTED/REQUIRED BY SBA REGIONAL SITE MANAGER. ALL PROPOSED UNDERGROUND UTILITY TRENCHES SHALL BE HAND-EXCAVATE AS REQUIRED. GENERAL CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF, PHYSICAL DAMAGE TO, OR REPAIR OF EXISTING UNDERGROUND CONDUIT INCLUDING RESTORATION OF SERVICE.

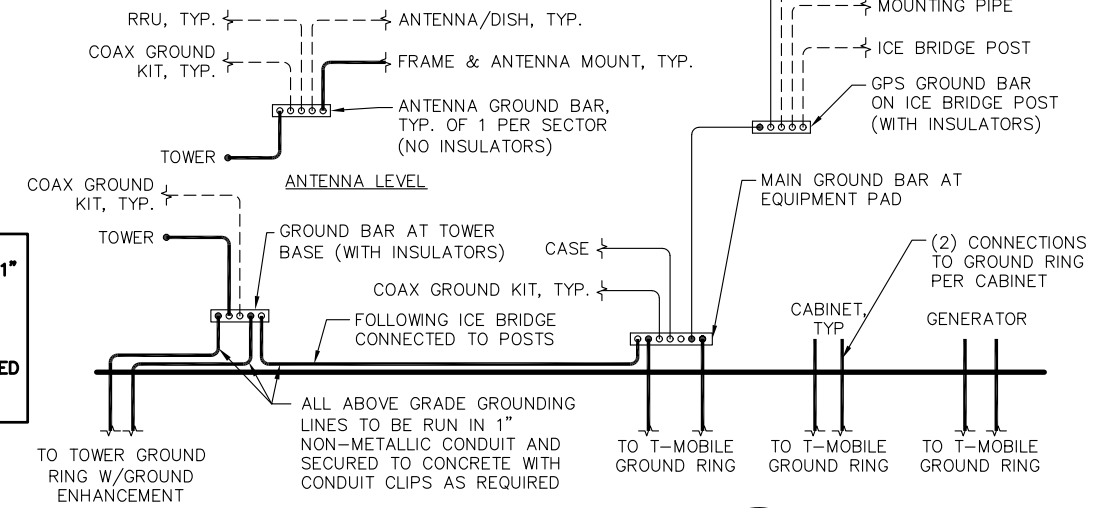
***DC AND ALARM INTERCONNECT KITS INSTALLED IN (2) 2" CONDUIT & (1) 1" CONDUIT FOR BLOCK HEATER ABOVE OR BELOW GRADE. ABOVE GRADE: GRC CONDUIT SUPPORTED AT VERTICAL BENDS AND EVERY 4' O.C. CONDUIT TO BE PAINTED YELLOW TO MARK TRIPPING HAZARD. BELOW GRADE: SCH40 PVC CONDUIT**



UTILITY RISER SCHEMATIC

SCALE: NONE

3
E-2



GROUNDING RISER DIAGRAM

SCALE: NONE

5
E-2

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ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-2

Exhibit 2
Polar 8220-801-D-15-05
15kw Diesel Specifications

CUTOVER APU/BATTERY REPLACEMENT PROGRAM 15 KW DC PART NUMBER 8220-801-D-15-05

All APUs include:

- 12 V starter battery
- 54 gal. UL142 rated double walled diesel tank with fuel level sensor
- Ethernet module with SNMP
- Powder coated aluminum enclosure
- V-belt driven radiator fan
- 5 Year Warranty

Options available:

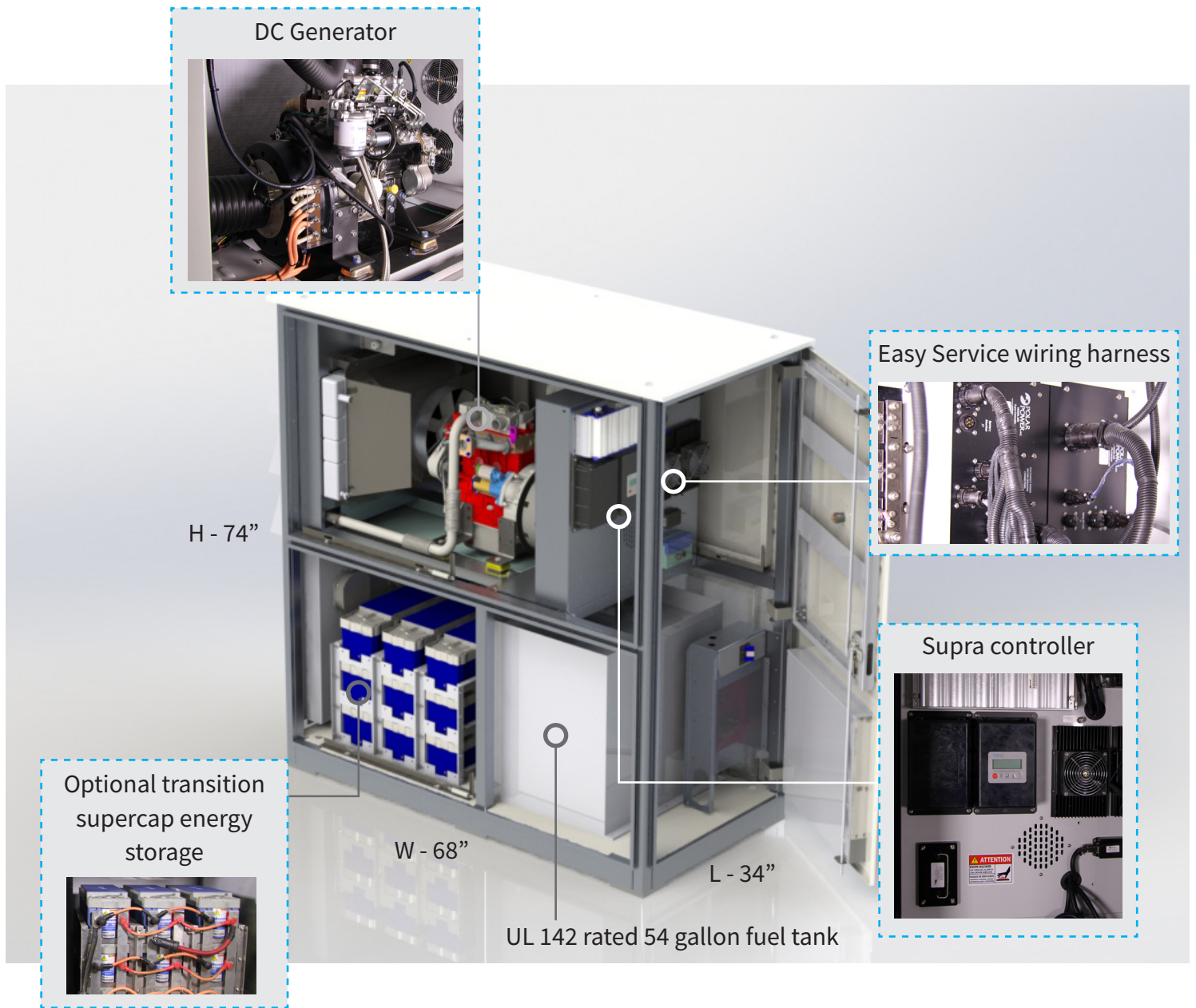
- Transitional supercap energy storage bank
- Electric radiator fans
- Level 2 sound enclosure
- 8-alarm relay board
- Oil refining kit



Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.



LOW MAINTENANCE.

LOW ACOUSTIC NOISE. <66 dBA @ 7 meters for diesel, and low vibration so as not to disturb the local residents or building landlords.

CORROSION RESISTANT. All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

FUEL EFFICIENT. Up to 85% fuel savings due to smaller engine displacement, high efficiency alternator, and variable speed operation.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines to prevent damage.

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. No transfer switches are required.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with SNMP.

SPECIFICATIONS PN 8220-801-D-15-05

Engine

Engine Model	Perkins 403F-11
Cylinders	3 In-line
Displacement (L)	1.1
Bore (in./mm)	3/77
Stroke (in./mm)	3.2/81
Intake Air System	Naturally Aspirated
Engine HP	18
Emissions	U.S. EPA Tier 4 Interim
Emissions Compliance	EPA and CARB Certified
Variable RPM	2300 to 2800

Engine lubrication system

Oil Filter Type	Full flow spin-on canister
Oil Capacity	4.4 L
Oil Pressure Switch	Yes
Oil Pressure Transducer	Optional

Fuel tank

UL Rated Capacity (gal/L)	54/204
Run Time (hrs)	50 to 60
Tank Alarms	Yes
Visual Gages	Yes
Catch Basin (gal/L)	5/19
Listings	UL 142 (double wall)

Fuel tank reserve time

Load (kW)	Reserve Time (hrs.)
3	99
6	72
9	56
10	55
11	48
12	46
13	44
14	40
15	38

Engine cooling system

Type	Pressurized Aluminum Radiator
Water Pump	Belt-driven, Pre-lubed, self-sealing
Fan Type	Belt -driven
Airflow CFM	1300
Fan Mode	Pusher
Temperature Sensor	Yes

Environmental

Operating Temperature (°C/°F)	-23 to 50 / -10 to 122
Operating Humidity %	100
Cold Start Aids	Glow Plugs

Optional: manifold heater available for temperatures < -10 °F

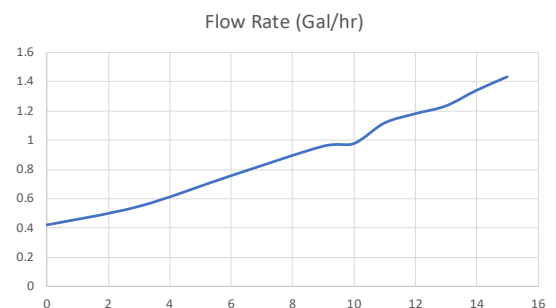
Power adjustment for conditions

Temperature Deration	1% derate for every 5.6 °C (10 °F) above 25 °C (77 °F)
Altitude Deration	3% derate for every 300 m (1000 ft) above 91 m (300 ft)

Diesel fuel system

Type	Diesel
Fuel Pump Type	Electrical
Injector Type	Mechanical
Fuel Filtering	Paper element

Diesel fuel consumption



Engine cooling

System coolant capacity (gal/L)	2.2/8.3
Maximum operation air temperature on radiator (°C/°F)	50/122
Maximum ambient temperature (°C/°F)	50/122

Exhaust

Exhaust flow at rated output (cfm/cmm)	110/3.11
Exhaust temperature at rated output (°C/°F)	400/752

Alternator

Alternator Model	8220
Type	Permanent Magnets, NdFeB
Weight (lb/kg)	46.5/21
Regulation Type	Variable engine speed
Stator	3 phase/32 poles
Overcurrent Protection (A)	15 kW - 500
Disconnect Means	Pull fuse block or Circuit breaker
Voltage Range (VDC)	44 to 62
Alternator Exhaust Flow (cfm/cmm)	130 to 180 / 3.68 to 5.1
MTBF (hr)	100,000+

Starter battery

Model	00-53-0007
Rating CCA	590
Rating CA	735
Rating RC	100
Voltage (VDC)	12
Weight (lb/kg)	33/15

Charger

Model	00-10-0015
Input Voltage (VDC)	28 to 60
Output Voltage (VDC)	14 to 14.4
Recharge time from 0 VDC (min)	10
Recharge time from 8 VDC (min)	2
Weight (lb/kg)	2.2/1

Enclosure

Model	88-25-0800
Type	Weather Protective
Materials	Powder coated aluminum
Door Hardware	Three Point with Padlock Hasp, and Removable Side Panels
Mounting	Secure Mounting Tabs
Dims.	L 34" x W 68" x H 74"

Optional: L2 option

Transition supercapacitor (optional)

Model	20-16-0003
Storage Rating (Farads)	130
Stored Energy (Wh)	57
Voltage (VDC)	56 to 62
Connected in parallel	up to 9
Weight (lb/kg)	39.7/18
Operating Temperature (°C/°F)	-40 to 40 / -40 to 104
Service Life (year)	10 to 15

Controller features

Controller Type.....	Supra Model 250
4-Line Plain Text OLED Display.....	Simple user interface for ease of operation
Engine Run Hours Indication.....	Standard
Programmable Start Delay.....	Standard
Run/Alarm/Maintenance Logs.....	Standard
Engine Start Sequence.....	Cyclic cranking: 5 sec on, 45 sec rest (3 attempts maximum)
Starter Battery Charger.....	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection.....	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown.....	Standard
Overcrank/Overspeed.....	Standard
Automatic High Engine Temperature Shutdown.....	Standard
Field Upgradeable Firmware.....	Standard
Glow Plug Delay	Automatic With Temperature
Engine Start Delay.....	Adjustable, Set at 60 sec
Return to Utility Delay.....	Adjustable, Set at 60 sec
Engine Cool-down.....	Adjustable, Set at 60 sec
Exerciser.....	Programmable

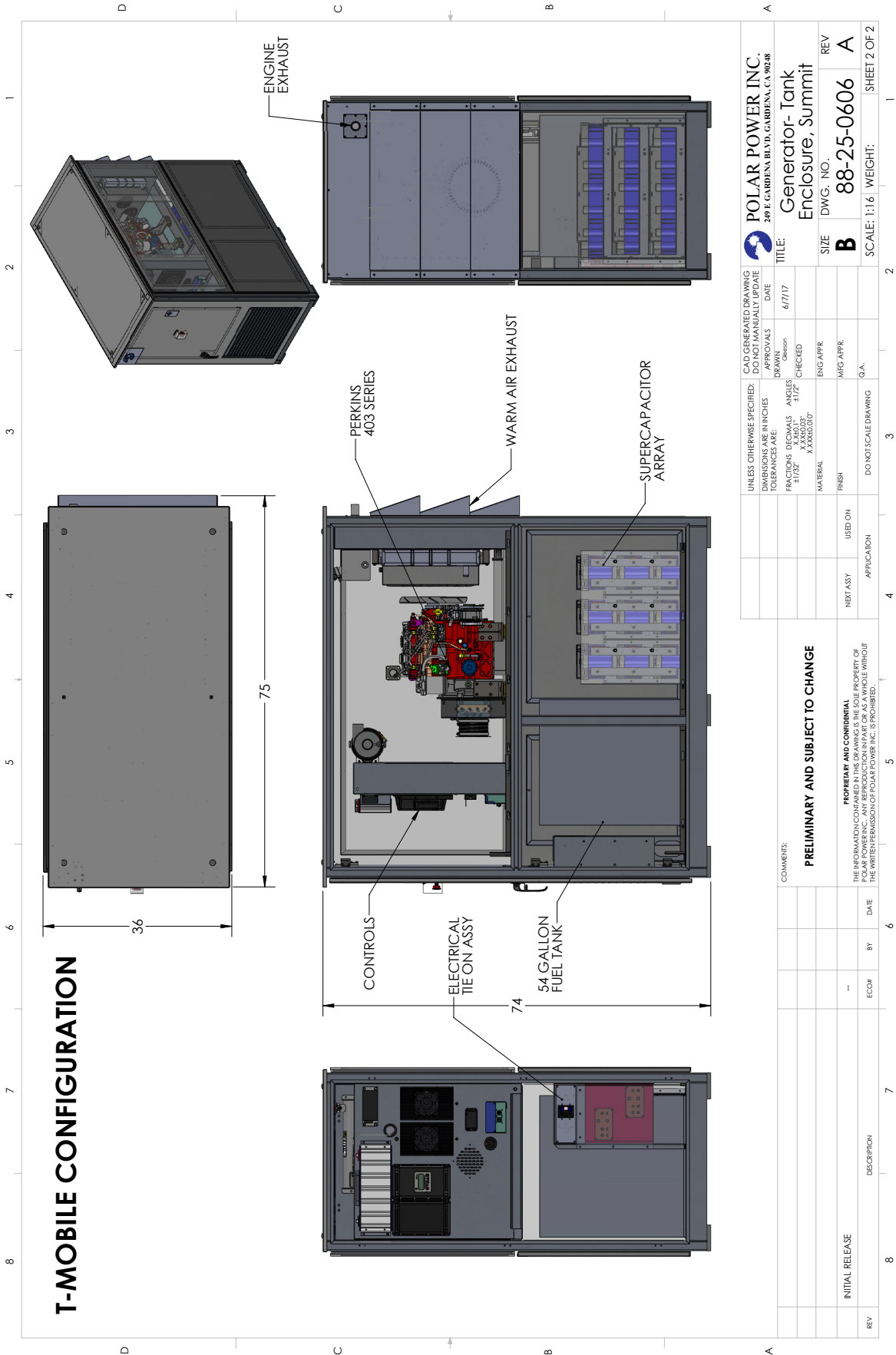
Monitoring

Alarm monitoring and remote control through Ethernet.

Contact closure alarm board (optional)

Shutdown Alarm.....	Optional
Warning Alarm.....	Optional
Engine Run.....	Optional
Low Diesel Fuel Level.....	Optional
Diesel Fuel Leak.....	Optional
E-Stop Depressed.....	Optional
Fuel Level Over 90%.....	Optional

DRAWING FOR PN 8220-801-D-15-05



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CAD GENERATED DRAWING DO NOT MANUALLY UPDATE	
FRACTIONS DECIMALS ANGLES 1/16 0.0625 31/64	MATERIAL	DATE	APPROVALS
1/32 0.03125 1/16	FINISH	6/7/17	6/7/17
XXX/1000	USED ON		
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INITIAL RELEASE	DESCRIPTION	BY	DATE
REV			

POLAR POWER INC.
249 E. GARDENA BLVD., GARDENA, CA 90248

TITLE: Generator - Tank Enclosure, Summit

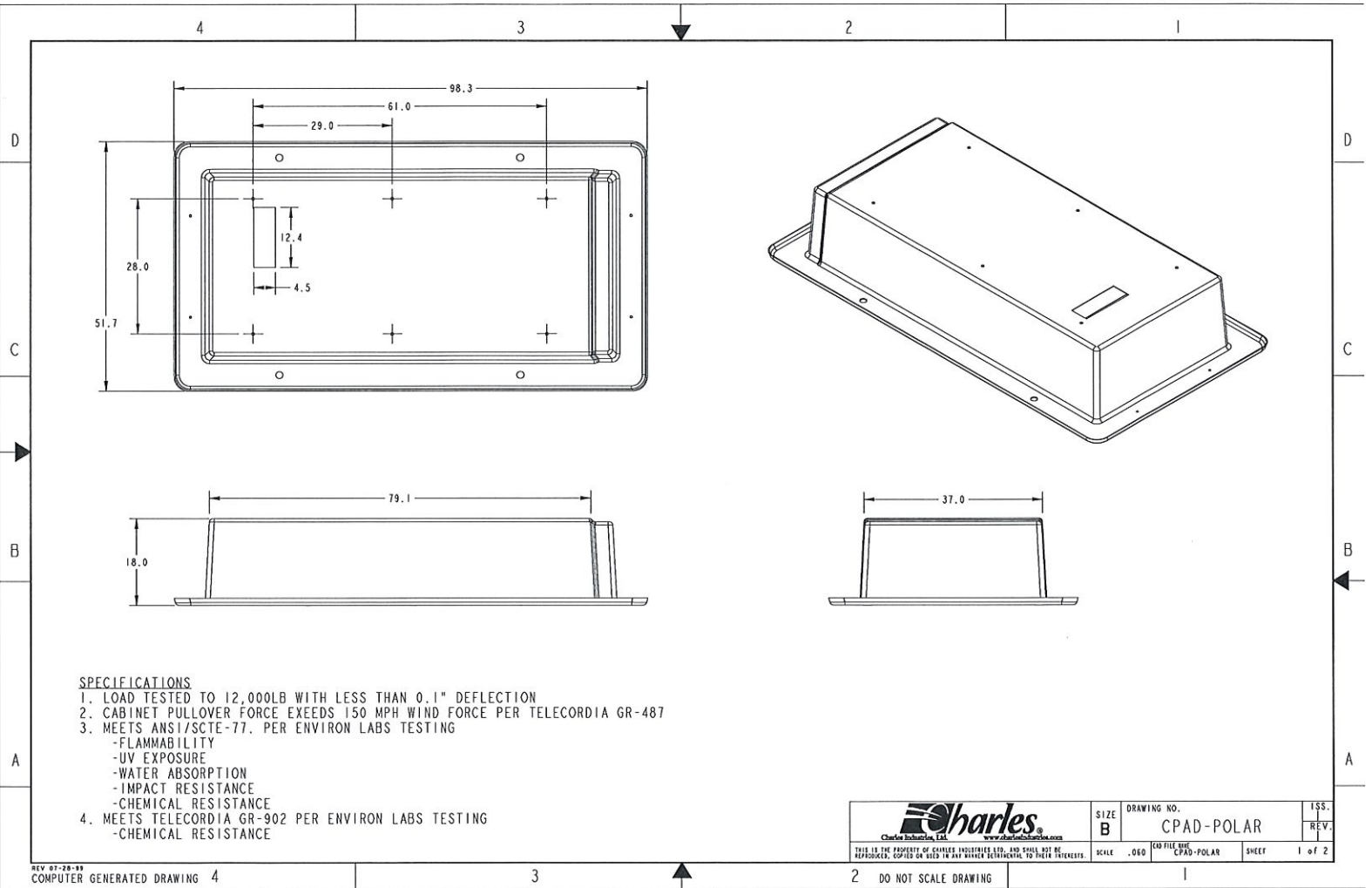
SIZE: DWG. NO. **B** 88-25-0606

REV: **A**

SCALE: 1:16 **WEIGHT:** SHEET 2 OF 2




249 E. Gardena Blvd., Gardena, CA 90248
Tel.: +1(310)8309153 • Fax: +1(310)7192385
info@polarpowerinc.com • www.polarpower.com



SPECIFICATIONS

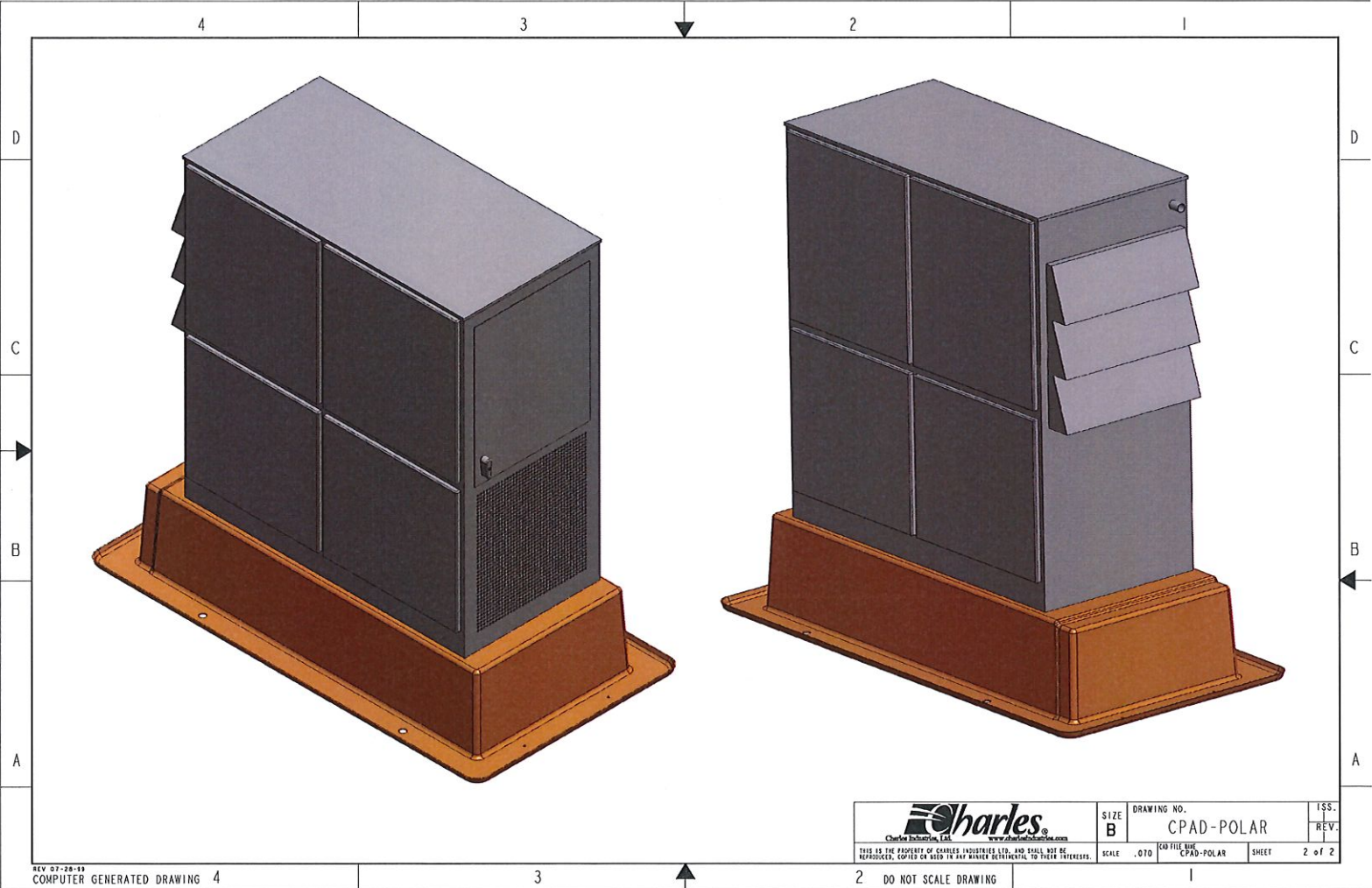
1. LOAD TESTED TO 12,000LB WITH LESS THAN 0.1" DEFLECTION
2. CABINET PULLOVER FORCE EXCEEDS 150 MPH WIND FORCE PER TELECORDIA GR-487
3. MEETS ANSI/SCTE-77. PER ENVIRON LABS TESTING
 - FLAMMABILITY
 - UV EXPOSURE
 - WATER ABSORPTION
 - IMPACT RESISTANCE
 - CHEMICAL RESISTANCE
4. MEETS TELECORDIA GR-902 PER ENVIRON LABS TESTING
 - CHEMICAL RESISTANCE


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		.06D	1 of 2

REV 07-28-99
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2 DO NOT SCALE DRAWING

1



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		.070	2 of 2
		CPAD-POLAR	

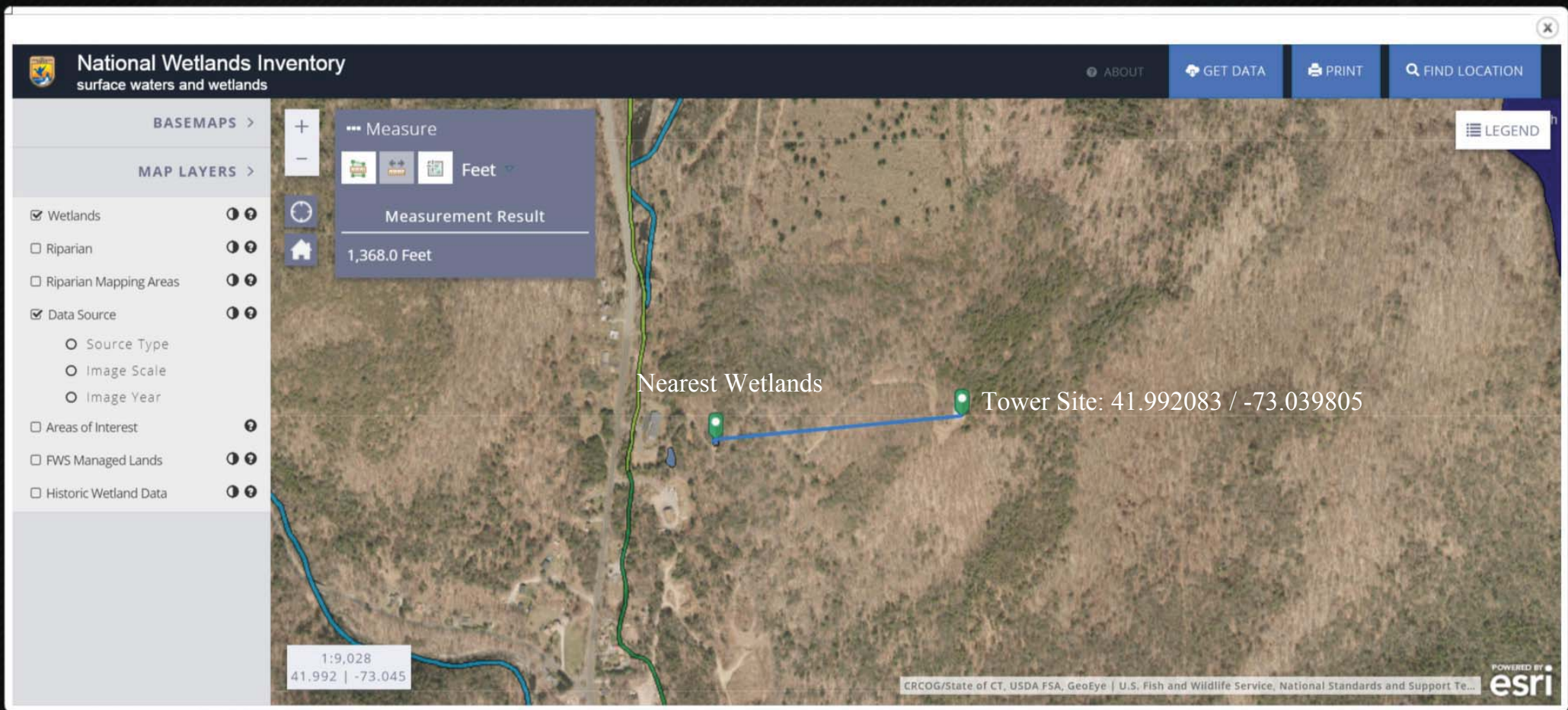
REV 07-28-99
COMPUTER GENERATED DRAWING 4

2 DO NOT SCALE DRAWING


1

Exhibit 3
Map Showing Nearest Wetlands

Proximity of 382 Colebrook River Road, Colebrook CT to Nearest Wetlands



<https://www.fws.gov/wetlands/Data/Mapper.html>

T-Mobile Site Number: CTNH549B	SBA Site Number: CT13613-A	T - Mobile Northeast LLC 35 Griffen Rd. Bloomfield CT 06002	
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