



Conceptual Telecommunications Facility

200 ft. Radius

1 inch = 100 Feet

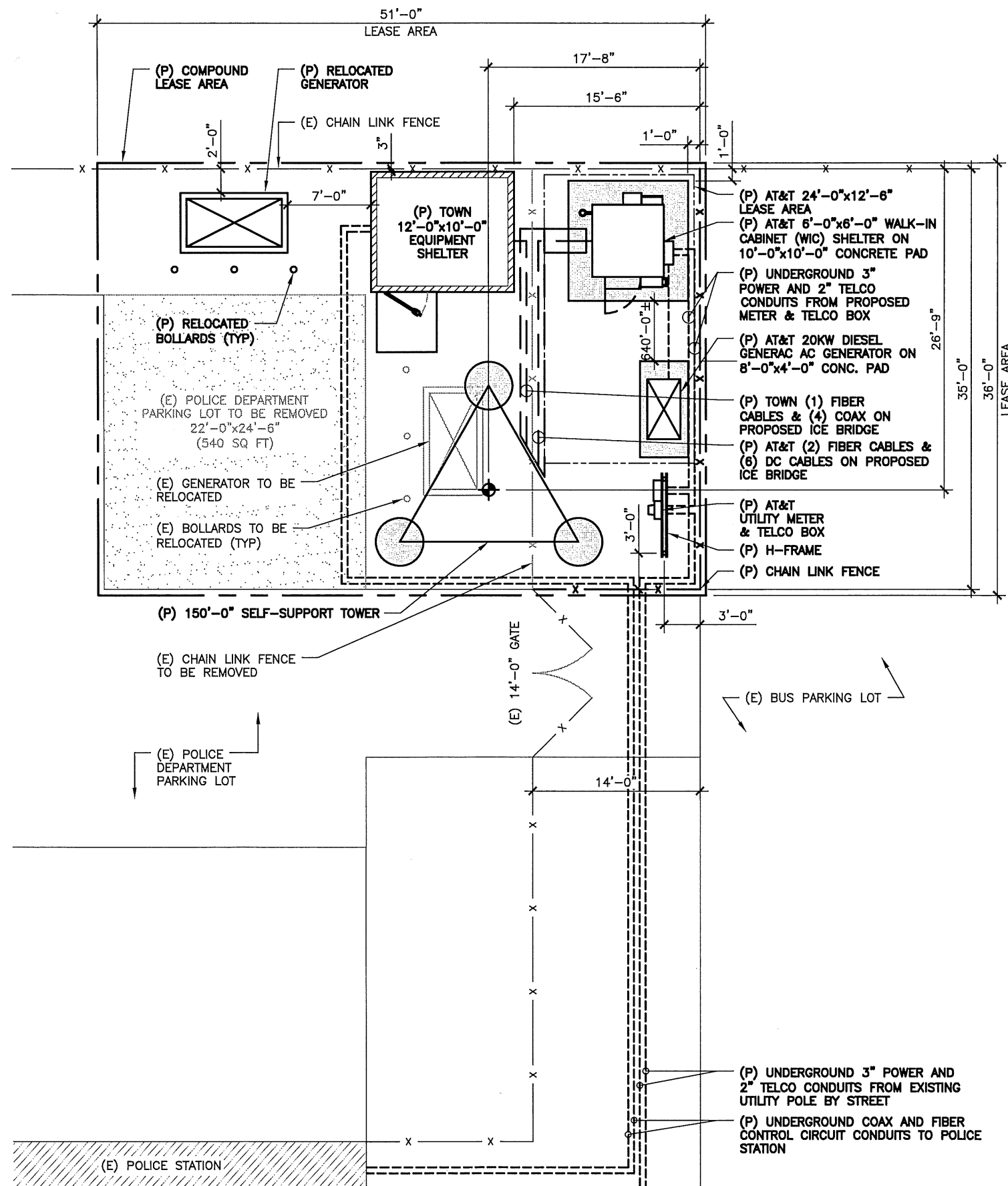


January 27, 2020

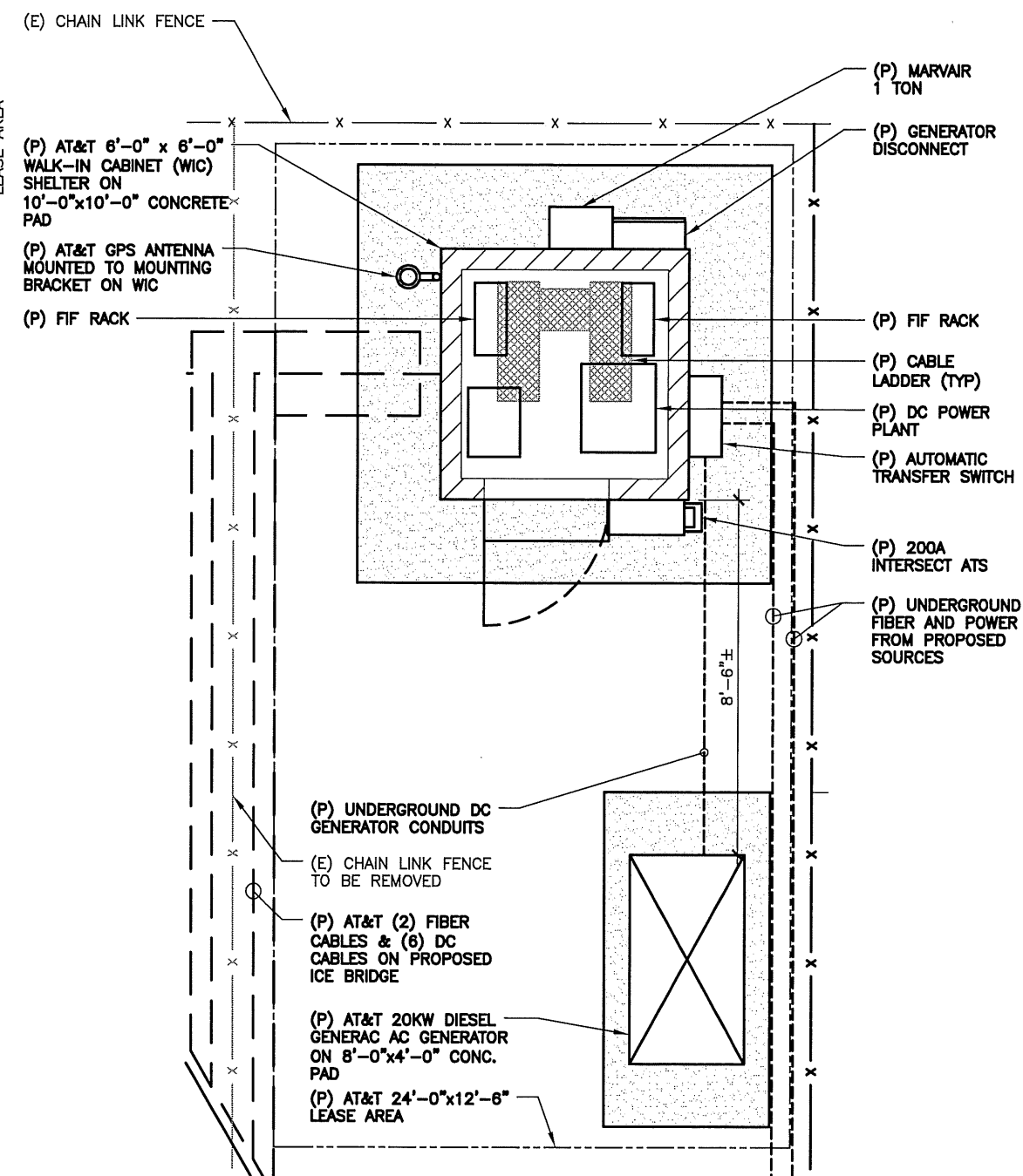


Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

132050_12676488_NH4146.dwg - Sheet LE-1 - User: ggrayes - Mar 05, 2019 - 4:05pm



1 OVERALL SITE PLAN
SCALE: 0' 1' 4' 8' 20'

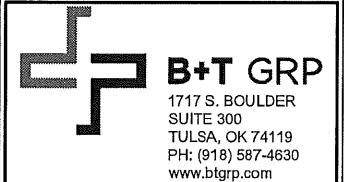


2 EQUIPMENT PLAN
SCALE: 0' 1' 2' 4' 10'



NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)



232172

NH4146

12676488

MILFORD POLICE DEPARTMENT

19 GARDEN ST
MILFORD, NH 03055

LATITUDE: 42.834430
LONGITUDE: -71.652612

PROJECT NO: 132050.002.01
CHECKED BY: RPS

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	2/28/19	JCO	LEASE EXHIBIT
B	3/5/19	JCO	LEASE EXHIBIT

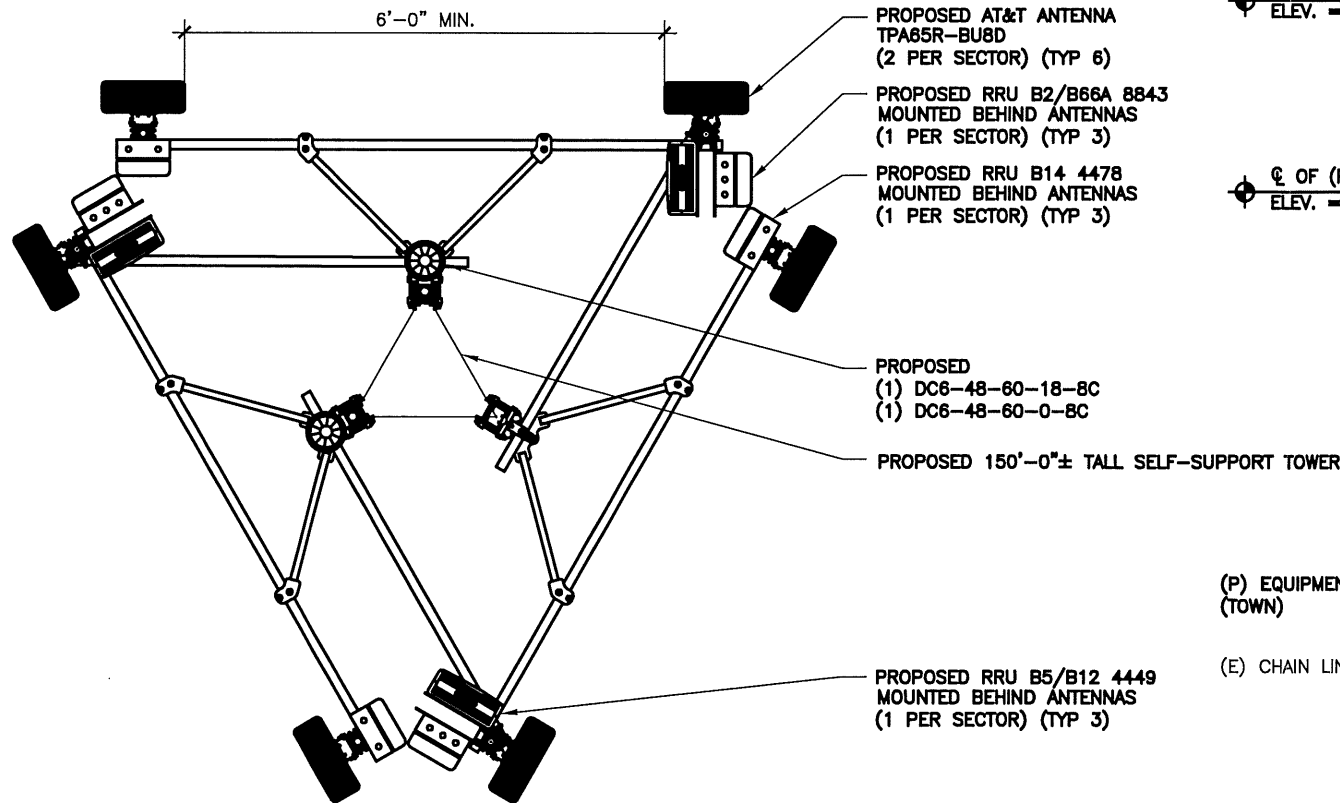
B&T ENGINEERING, INC.
2278
Expires 12/31/19

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

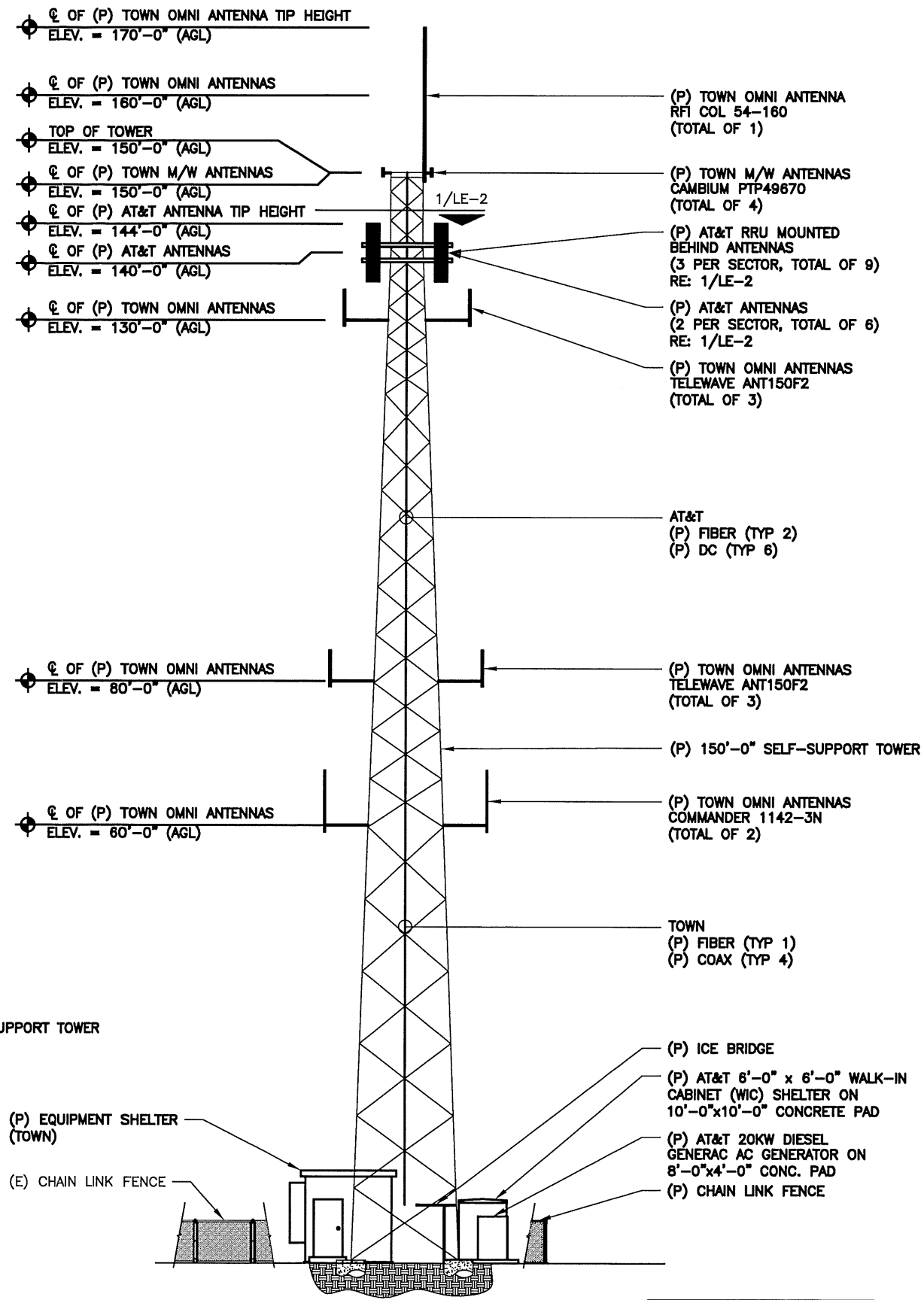
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: REVISION:
LE-1 A

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



1 FINAL ANTENNA ORIENTATION
SCALE: N.T.S.



2 NORTH PROPOSED ELEVATION
SCALE: 0' 1' 2' 4' 10'

NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.bgrp.com



232172
NH4146
12676488
**MILFORD POLICE
DEPARTMENT**
19 GARDEN ST
MILFORD, NH 03055
LATITUDE: 42.834430
LONGITUDE: -71.652612

PROJECT NO: 132050.002.01
CHECKED BY: RPS

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	2/28/19	JCO	LEASE EXHIBIT
B	3/5/19	JCO	LEASE EXHIBIT

B&T ENGINEERING, INC.
2278
Expires 12/31/19

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: **LE-2**
REVISION: **A**

PROJECT INFORMATION

TOWER TOP SOW:

INSTALL (9) NEW OMNI ANTENNAS. INSTALL (4) NEW MICROWAVES. INSTALL (3) NEW SECTOR MOUNTS.

POSITION ONE:

INSTALL (3) TPA65R-BU8D ANTENNAS. INSTALL (3) B14 4478 RADIOS.

POSITION THREE:

INSTALL (3) TPA65R-BU8D ANTENNAS. INSTALL (3) B5/B12 4449 RADIOS. INSTALL (3) B2/B66A 8843 RADIOS.

SURGE:

INSTALL (2) DC6-48-60-18-8C & (1) DC6-48-60-0-8C SQUIDS WITH (2) 18PAIR FIBER, (6) DC TRUNKS.

GROUND SOW:

RELOCATE (1) EXISTING GENERATOR. INSTALL (1) AT&T WALK-IN CABINET ON PROPOSED CONCRETE PAD.

INSTALL (1) TOWN EQUIPMENT SHELTER. INSTALL (1) GENERATOR. INSTALL (1) UTILITY H-FRAME W/ METER & TELCO BOX.

SITE ADDRESS:	19 GARDEN ST MILFORD, NH 03055
COUNTY:	HILLSBOROUGH
LATITUDE:	42.834430°
LONGITUDE:	-71.652612°
TOWER HEIGHT:	175'-0"
RAD CENTER:	145'-0"
TOWER OWNER:	TOWN OF MILFORD
AT&T CONSTRUCTION MGR:	BILL FURDOCK (315) 447-0746
CENTERLINE PROJECT MGR:	PETER LAMONTAGNE (508) 341-7854
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY



VICINITY MAP

A black and white vicinity map of the Milford Police Department area. The map shows a network of streets including N. River Rd, Mont Vernon St, Mill St, High St, and others. The Milford Police Department is marked with a star and labeled. Major roads like 101 and 101A are also shown. The map is titled 'VICINITY MAP' and includes a 'NO SCALE' note at the bottom.

NO SCALE

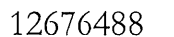
[illegible]

GENERAL NOTES

1. 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.
2. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING IF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
3. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

DRIVING DIRECTIONS

DEPART MANCHESTER-BOSTON REGIONAL AIRPORT ON AIRPORT RD. KEEP STRAIGHT ONTO RT-3A. TAKE RAMP ONTO I-293. ROAD NAME CHANGES TO RT-101. TURN LEFT ONTO RT-101. KEEP STRAIGHT ONTO RAMP. KEEP RIGHT TO STAY ON RAMP. BEAR RIGHT ONTO AMHERST ST. TURN LEFT TO STAY ON AMHERST ST. TURN LEFT ONTO RT-13. MERGE ONTO RT-101A. KEEP RIGHT ONTO RT-101A. BEAR RIGHT ONTO RT-101A THEN IMMEDIATELY TURN LEFT ONTO UNION ST. TURN RIGHT ONTO GARDEN ST AND ARRIVE AT MILFORD POLICE DEPARTMENT.



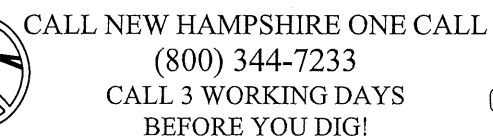
19 GARDEN ST
MILFORD, NH 03055

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

T-1	D
-----	---



132050_12676488_NH4146.dwg -- SheetGN-1 -- User: fperkins -- Jan 08, 2020 -- 9:47am

GROUNDING NOTES

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, & LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, & COMPLY WITH AT&T MOBILITY SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE 1888 DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, & ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, & SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ECT.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS, DRAINS, DRAIN PIPES, VENTS, ECT. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, & COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T MOBILITY CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICON SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, AT&T MOBILITY PROJECT CONSTRUCTION MANAGER, & LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS & SPECIFICATIONS FOR THIS PROJECT.
16. ALL ROOF WORK SHALL BE DONE BY A QUALIFIED & EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH & DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD & TAKE PRECAUTIONS TO MINIMIZE IMPACT & DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH AT&T MOBILITY WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. ANTENNAS & CABLES ARE TYPICALLY PROVIDED BY AT&T MOBILITY. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T MOBILITY PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY AT&T MOBILITY WIRELESS. ALL ITEMS NOT PROVIDED BY AT&T MOBILITY SHALL BE PROVIDED & INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY AT&T MOBILITY.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH AT&T MOBILITY PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY AT&T MOBILITY. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MOBILITY MUST BE OBTAINED, & PAID FOR, BY THE CONTRACTOR.
22. CONTRACTOR SHALL START UP HVAC UNITS & SYNCHRONIZE THE THERMOSTATS.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T MOBILITY SPECIFICATIONS & REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW & APPROVAL PRIOR TO FABRICATION.
25. UNLESS OTHERWISE NOTED AT&T MOBILITY SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, PDU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
26. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS & LOCATED ACCORDING TO AT&T MOBILITY SPECIFICATIONS, & AS SHOWN IN THESE PLANS.
27. THE CONTRACTOR SHALL SUPERVISE & DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES & PROCEDURES & FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
28. CONTRACTOR SHALL NOTIFY B+T GROUP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
29. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS & RECOMMENDATIONS & SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE & PPM & CONSTRUCTION DEVICES SUCH AS WELDING & FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ECT.

FOUNDATION NOTES:

1. FOUNDATION ARE SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED. THE SUB-GRADE SHALL BE ROLLED WITH 1-TON, VIBRATORY WALK BEHIND ROLLER AT A SPEED OF LESS THAN 2FPS, 6 PASSES MINIMUM TO PROVIDE UNYIELDING SURFACE.
2. STRUCTURAL FILL MATERIAL BENEATH SLABS-ON-GRADE SHALL CONSIST OF WELL-GRADED GRANULAR SOIL WITH LESS THAT 15% NON-PLASTIC FINES AND A MAXIMUM PARTICLE SIZE OF 4-INCHES. FILL SHOULD BE PLACED IN MAXIMUM LIFT HEIGHTS OF 4-INCHES TO 6-INCHES (LOOSE) AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY AT ±2% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST.
3. FOUNDATION SHALL BE LOCATED ON SOIL WITH A MINIMUM BEARING CAPACITY OF 3000 PSF (E.G., UNITED SOIL CLASSIFICATION SYSTEM [ASTM DESIGNATION D-2487] GROUP SYMBOLS: GW, GP, GM, GC, SW, SP, SM, SC). ENGINEER SHALL BE NOTIFIED IF SOIL BEARING CAPACITY IS LESS THAN 3000 PSF.
4. NO GEO-TECHNICAL REPORT OR BORING HAS BEEN COMPLETED FOR THIS PROJECT. CONTRACTOR SHALL VERIFY SOIL CONDITIONS AND NOTIFY CM & B+T GROUP ENGINEERS OF FINDINGS PRIOR TO CONSTRUCTION.

STRUCTURAL NOTES:

1. AS REQUIRED UNDER SECTION 15 OF THE TIA/EIA 222G - STANDARD, AT&T MOBILITY SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED NEW HAMPSHIRE STRUCTURAL ENGINEER CERTIFYING THAT THE EXISTING TOWER & ANY REQUIRED IMPROVEMENTS & REINFORCEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL EXISTING & PROPOSED ANTENNAS, SUPPORTS & APPURTENANCES & COMPLIES WITH THE CURRENT NEW HAMPSHIRE STATE BUILDING CODE & TIA/EIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS & REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS & APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.
2. FOR STRUCTURAL MODIFICATIONS REQUIRING FIELD WELDING; THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS & IMPLEMENTING ALL INDUSTRY STANDARDS FOR PROTECTION OF ALL EXISTING PROPERTY & PERSONNEL FOR DAMAGE OR HARM. ALL PROPERTY DAMAGED DURING CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE OWNER.

CONCRETE & REINFORCING STEEL NOTES:

1. DESIGN & CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", & ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
2. MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE & SUBMITTED TO ENGINEER PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (+/- 1.5%) WITH A MAXIMUM 4" SLUMP & HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT: ASTM C-150, TYPE II

REINFORCEMENT: ASTM A-185, PLAIN STEEL WELDED WIRE FABRIC

REINFORCEMENT BARS: ASTM A615, GRADE 60, DEFORMED

NORMAL WEIGHT AGGREGATE: ASTM C-33

WATER: DRINKABLE

ADMIXTURES: NON-CHLORIDE CONTAINING
5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS (UNLESS OTHERWISE NOTED):

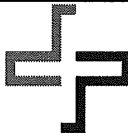
A. CONCRETE CAST AGAINST EARTH: 3"

B. ALL OTHER CONCRETE: 2"
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS & ALL OTHER EMBEDDED ITEMS & FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. DO NOT ALLOW REINFORCEMENT, CONCRETE OR SUB-BASE TO FREEZE DURING CONCRETE CURING & SETTING PERIOD, OR FOR A MINIMUM OF 3 DAYS AFTER PLACEMENT.
14. FOR COLD-WEATHER & HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES & RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ECT. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
15. CONCRETE SHALL BE RUBBED TO A ROUGH GROUT FINISH. PADS SHALL BE SEALED BY STEEL TROWEL.
16. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
17. REINFORCING BAR DEVELOPMENT LENGTHS, AS COMPUTED IN ACCORDANCE WITH ACI 318, FORM THE BASIS FOR BAR EMBEDMENT LENGTHS & BAR SPLICED LENGTHS SHOWN IN THE DRAWINGS. APPLY APPROPRIATE MODIFICATIONS FACTORS FOR TOP STEEL, BAR SPACING, COVER & THE LIKE.
18. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
19. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
20. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, & ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
21. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF HTE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 8 INCHES.
22. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
23. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE 16 GAUGE CONFORMING TO ASTM A82.
24. SLAB ON GROUND. COMPACT STRUCTURAL FILL TO 95% DENSITY & THEN PLACE 8" GRAVEL BENEATH SLAB.

CODE SPECIFICATIONS:

1. ALL GENERAL WORK TO BE DONE IN ACCORDANCE WITH THE NEW HAMPSHIRE UNIFORM BUILDING & ENERGY CODE.
2. ALL ELECTRICAL WORK TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE 2017 (NEC 2017)
3. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
4. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
5. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

ABBREVIATIONS							
AGL	ABOVE GRADE LEVEL	(E)	EXISTING	MIN	MINIMUM	TBD	TO BE DETERMINED
AWG	AMERICAN WIRE GAUGE	EGB	EQUIPMENT GROUND BAR	(P)	PROPOSED	TBR	TO BE REMOVED
BBU	BATTERY BACKUP UNIT	EGR	EQUIPMENT GROUND RING	NTS	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
ETCW	BARE TINNED SOLID COPPER WIRE	EQ	EQUAL	RAD	RADIATION CENTER (ANTENNA)	TYP	TYPICAL
BGR	BURIED GROUND RING	GC	GENERAL CONTRACTOR	REF	REFERENCE	UG	UNDERGROUND
BTS	BASE TRANSCEIVER STATION	GRC	GALVANIZED RIGID CONDUIT	REQ	REQUIRED	VIF	VERIFY IN FIELD
		MGB	MASTER GROUND BAR	RF	RADIO FREQUENCY		



B+T GRP

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.bigrp.com



232172

12676488

MILFORD POLICE
DEPARTMENT

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO:	132050.001.01
CHECKED BY:	FWP

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

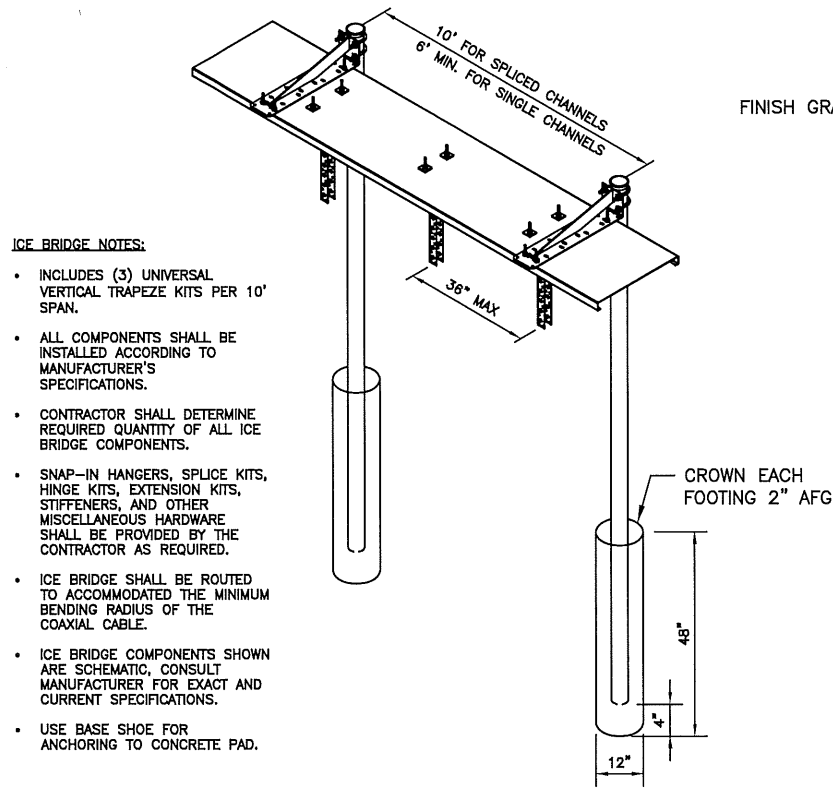
THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

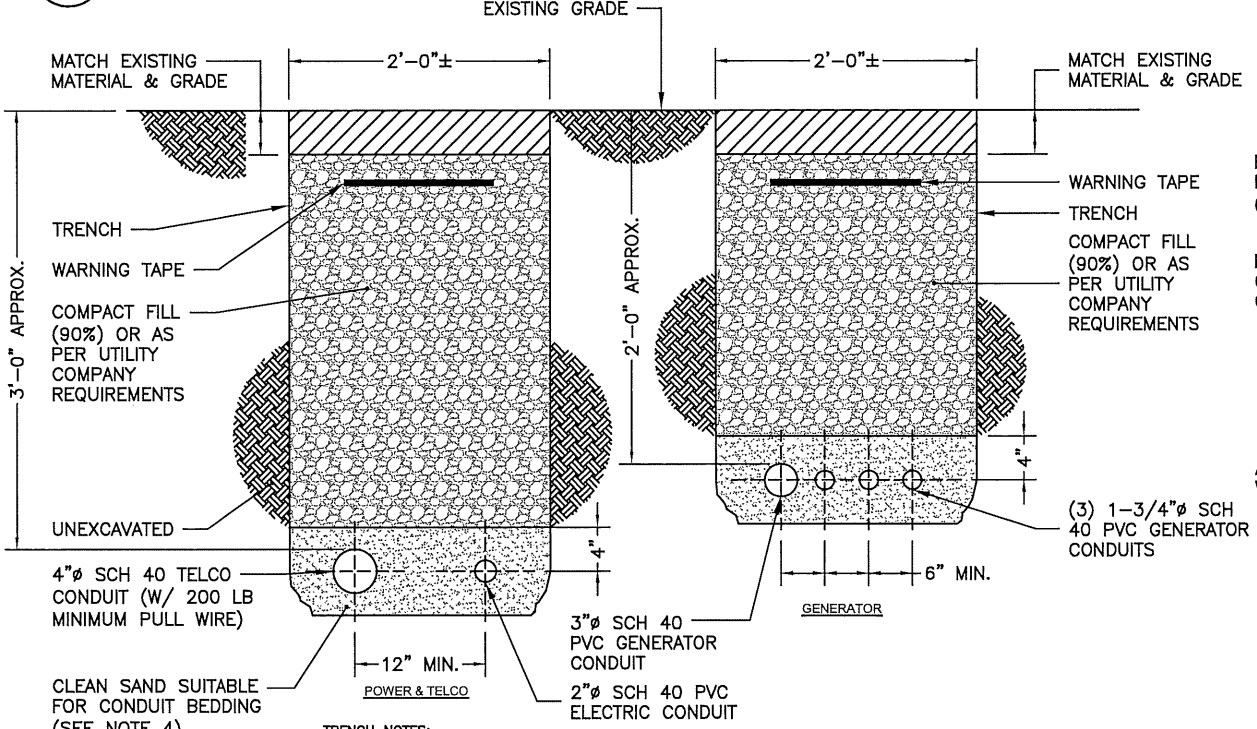
REVISION:

GN-1 | D



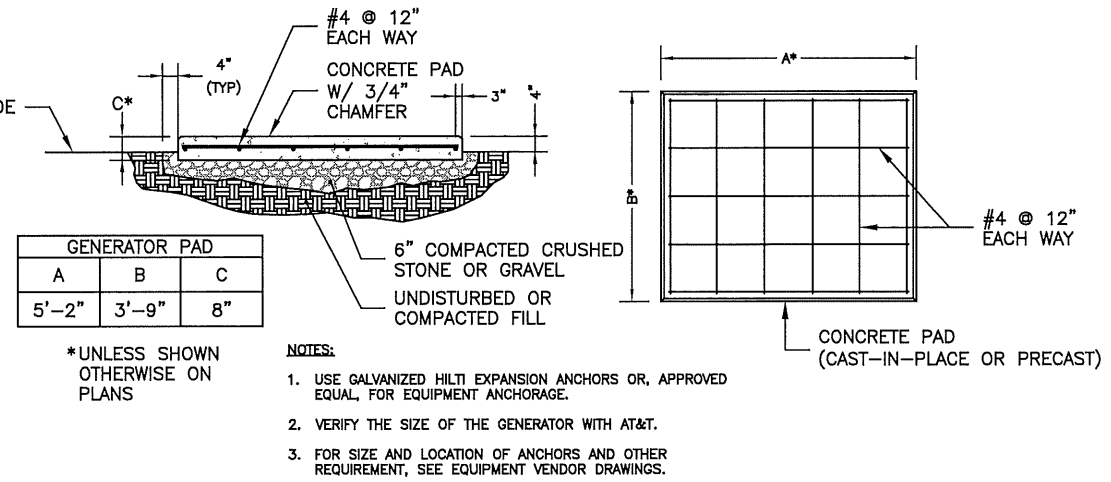
- ICE BRIDGE NOTES:**
- INCLUDES (3) UNIVERSAL TRAPEZE KITS PER 10' SPAN.
 - ALL COMPONENTS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
 - CONTRACTOR SHALL DETERMINE REQUIRED QUANTITY OF ALL ICE BRIDGE COMPONENTS.
 - SNAP-IN HANGERS, SPLICE KITS, HINGE KITS, EXTENSION KITS, STIFFENERS, AND OTHER MISCELLANEOUS HARDWARE SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED.
 - ICE BRIDGE SHALL BE ROUTED TO ACCOMMODATE THE MINIMUM BENDING RADIUS OF THE COAXIAL CABLE.
 - ICE BRIDGE COMPONENTS SHOWN ARE SCHEMATIC, CONSULT MANUFACTURER FOR EXACT AND CURRENT SPECIFICATIONS.
 - USE BASE SHOE FOR ANCHORING TO CONCRETE PAD.

1 2-POST ICE BRIDGE (SITE PRO P/N: IB24D-V)
SCALE: N.T.S.



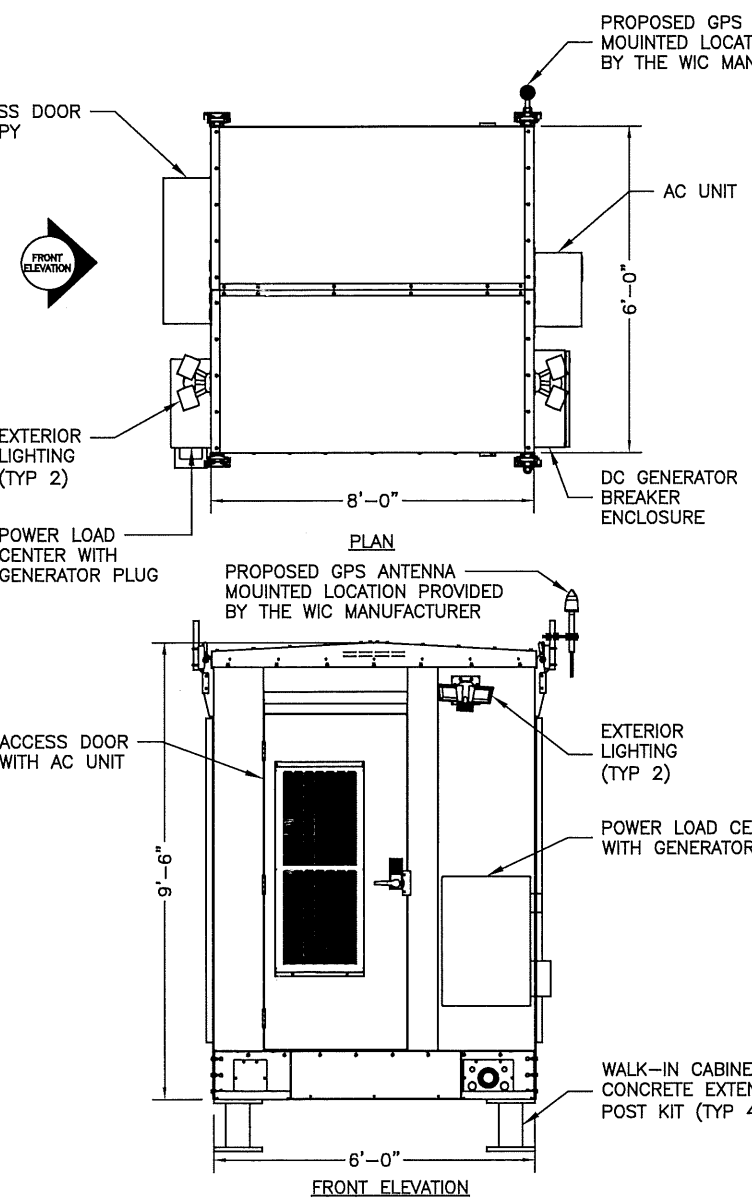
- TRENCH NOTES:**
1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
 2. IF NOT, PROVIDE CLEAN, COMPATIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
 3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAD DIG U/G TRENCHING.
 4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

4 BURIED CONDUIT TRENCH DETAIL
SCALE: N.T.S.



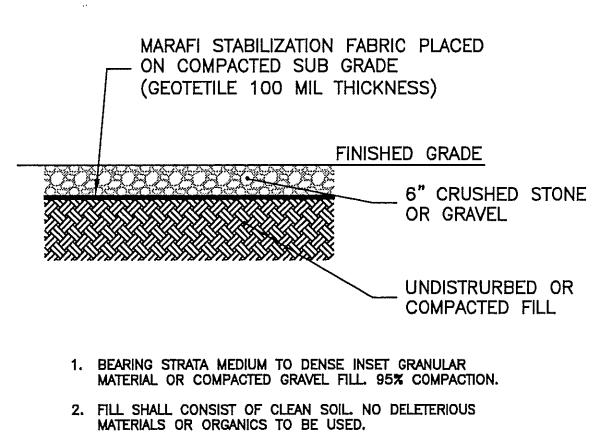
- NOTES:**
1. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
 2. VERIFY THE SIZE OF THE GENERATOR WITH AT&T.
 3. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

2 OUTDOOR PAD FOR MINOR EQUIPMENT
SCALE: N.T.S.



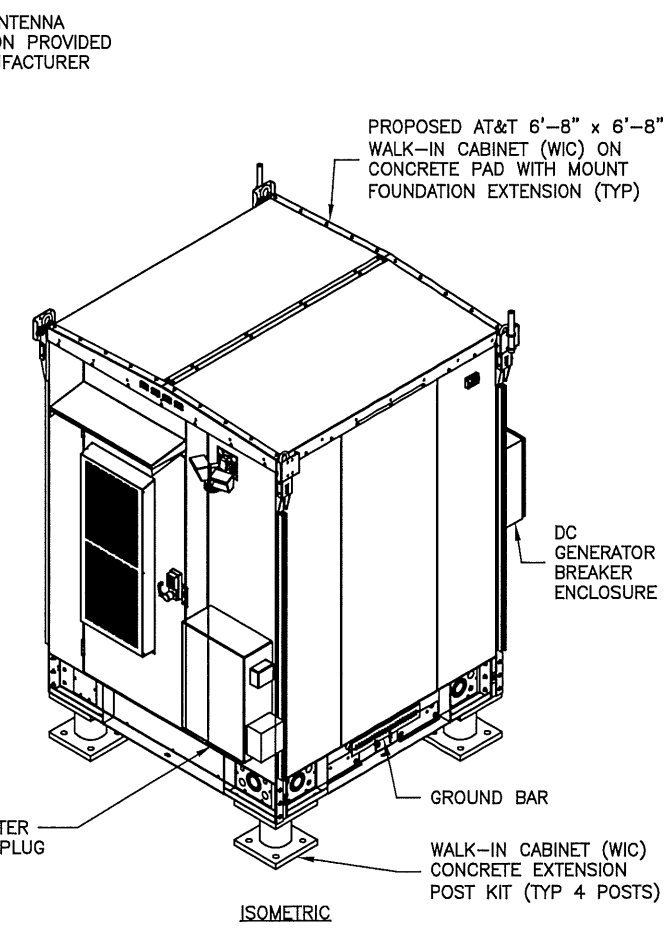
- WALK-IN CABINET NOTES:**
1. WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
 2. WIC COMES FULLY ASSEMBLED. CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATED WITH AT&T CM.
 3. CONTRACTOR SHALL MAINTAIN A MAXIMUM 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO POST INSTALLATION.

5 WIC DETAIL
SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"



1. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED GRAVEL FILL. 95% COMPACTION.
2. FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.

3 GRAVEL YARD DETAIL
SCALE: N.T.S.



B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4830
www.btgrp.com

AT&T

CENTERLINE COMMUNICATIONS

232172
12676488
MILFORD POLICE DEPARTMENT
19 GARDEN ST
MILFORD, NH 03055

PROJECT NO:		132050.001.01	
CHECKED BY:		FWP	
ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:	REVISION:
C-2	D

B+T GRP

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4830
www.btgrp.com



232172

12676488

MILFORD POLICE
DEPARTMENT

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO:	132050.001.01
CHECKED BY:	FWP

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.

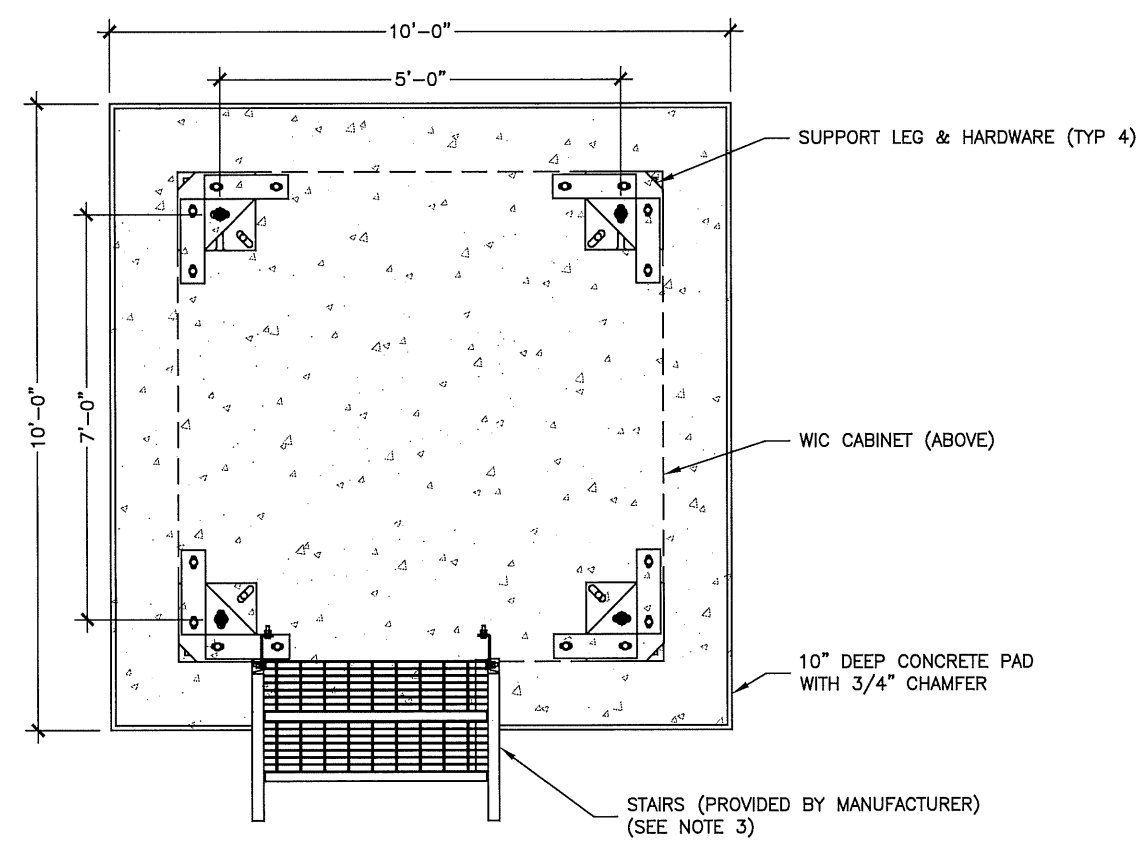
2278

Expires 12/31/20

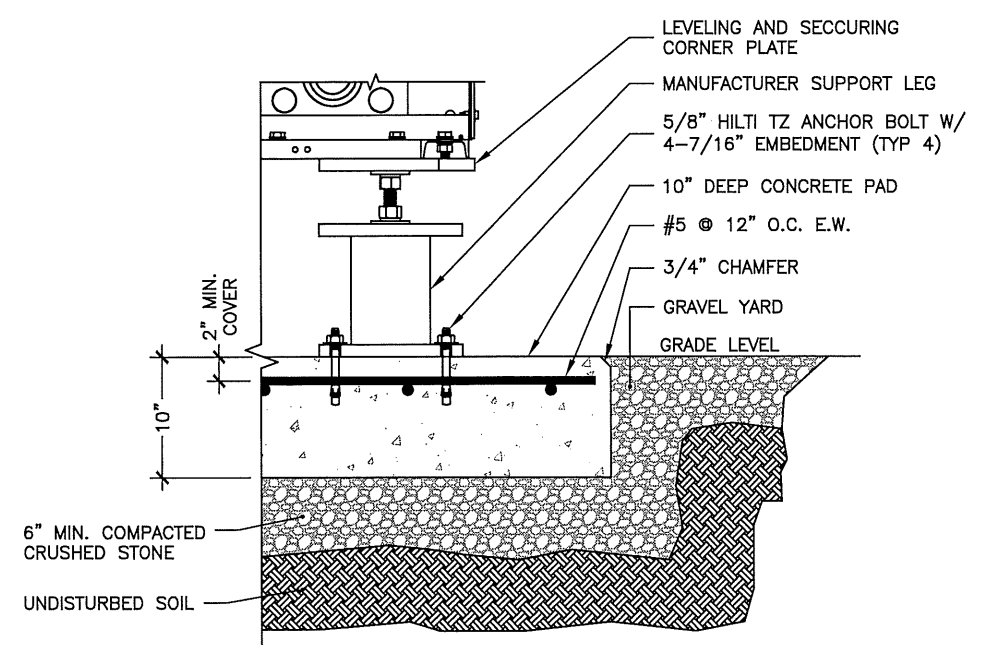
THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

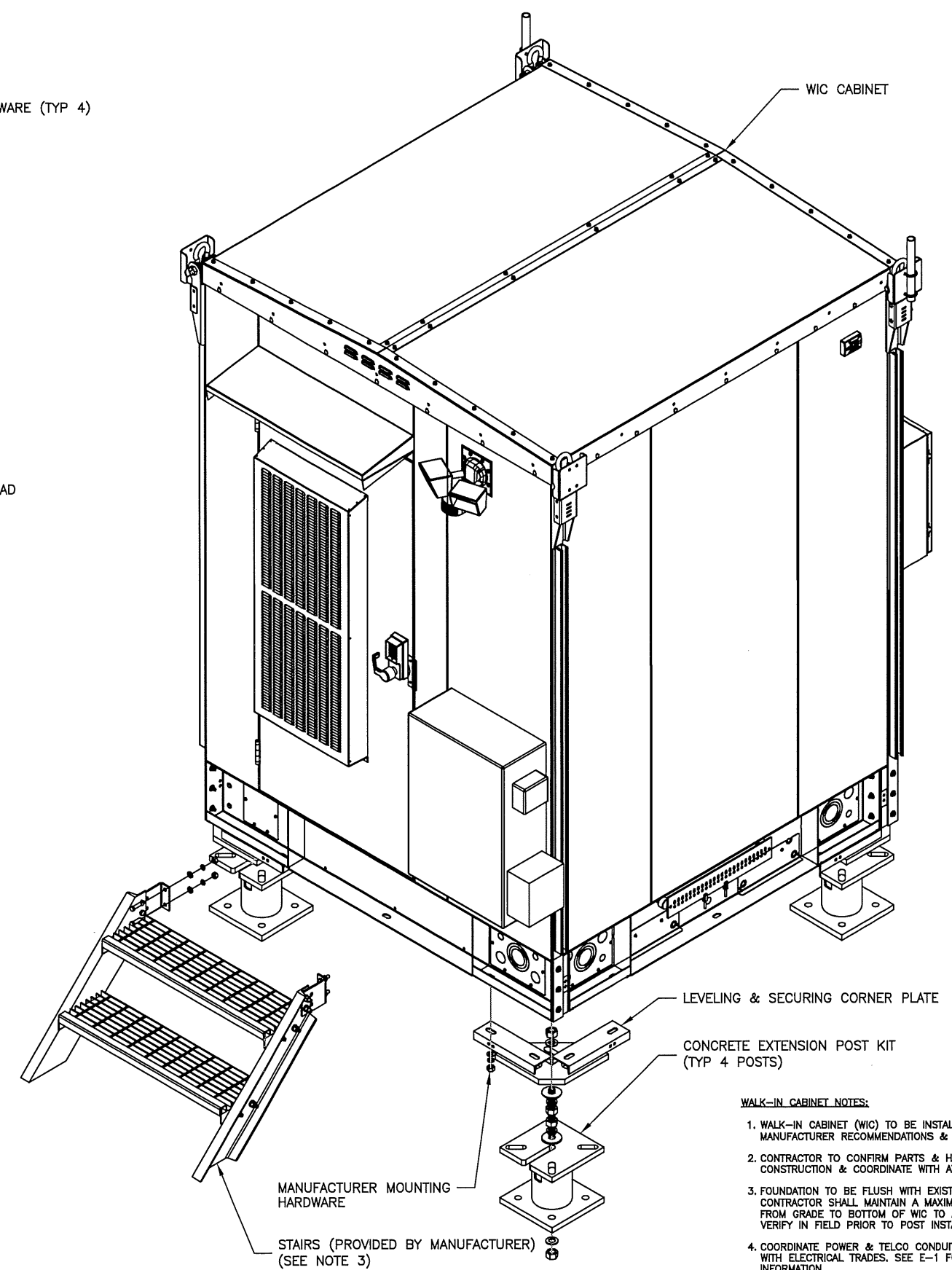
SHEET NUMBER:	REVISION:
C-3	D



1 WIC FOUNDATION DETAIL
SCALE: 3/8"=1' FOR 11"x17"
3/4"=1' FOR 22"x34"



2 WIC FOUNDATION DETAIL
SCALE: 3/4"=1' FOR 11"x17"
1 1/2"=1' FOR 22"x34"

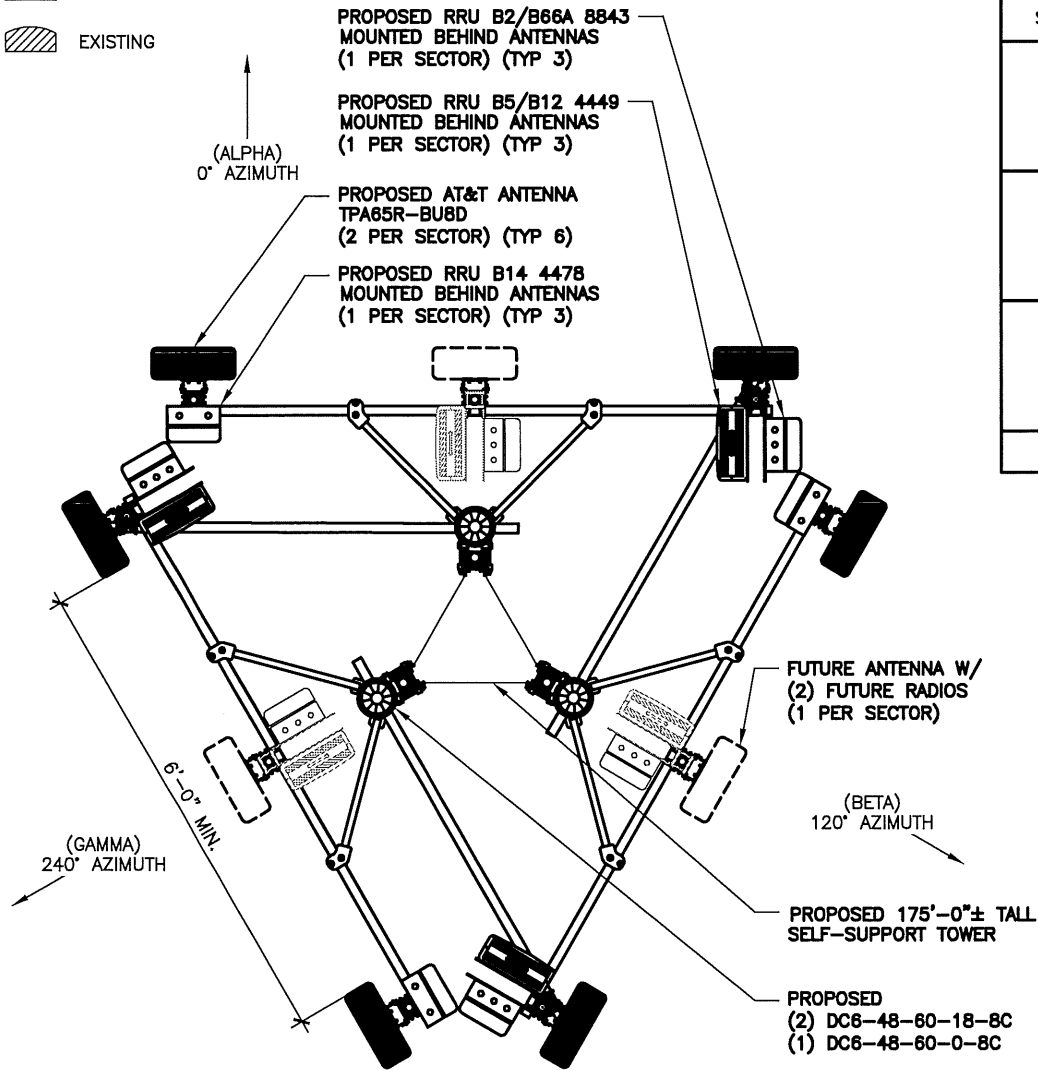


3 WIC ISOMETRIC
SCALE: N.T.S.

- WALK-IN CABINET NOTES:
- WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
 - CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATE WITH AT&T CM.
 - FOUNDATION TO BE FLUSH WITH EXISTING GRADE. CONTRACTOR SHALL MAINTAIN A MAXIMUM 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO POST INSTALLATION.
 - COORDINATE POWER & TELCO CONDUIT STUB-UP PLACEMENT WITH ELECTRICAL TRADES. SEE E-1 FOR ADDITIONAL INFORMATION.
 - PROVIDE WORKING HVAC AND ELECTRICAL WORKING SPACE CLEARANCES PER MANUFACTURER RECOMMENDATIONS & CODE REQUIREMENTS.
 - WIC DIMENSIONS: 6'-8"W x 6'-8"L x 9'-6" TALL (NO BASE)
WIC WEIGHT: 5500 LBS (EMPTY) 7500 LBS (FULLY INTEGRATED)
 - CONTRACTOR TO PROVIDE AND INSTALL SPECIFIED CONCRETE ANCHORS.

132050_12676488_NH4146.dwg - Sheet: C-3 - User: fperkins - Jan 09, 2020 - 9:47am

LEGEND:



NOTES:

- NORTH ARROW SHOWN AS APPROXIMATE.
- ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ECT. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS & MANUFACTURER SPECIFICATIONS.
- ALL SPACING REQUIREMENTS FOR PROPOSED MOUNTS SHALL BE CONFIRMED & SHALL NOT IMPEDE CLIMBING PEGS, TIE OFF FEATURES, OR OTHER EXISTING SAFETY FEATURES. ALL MOUNTS SHALL MAINTAIN EXISTING/PROPOSED MANUFACTURER REQUIREMENTS & SHALL NOT EXCEED THE TOP OF THE TOWER OR INTERFERE WITH OTHER RAD CENTERS.
- ANTENNA SEPARATION REQUIREMENTS:
 - 3'-0" SEPARATION REQUIRED BETWEEN EDGES OF ALL LTE ANTENNAS.
 - 6'-0" SEPARATION REQUIRED BETWEEN EDGES OF LTE BC & DE ANTENNAS.
- ALL PROPOSED REMOTE UNITS TO BE MOUNTED A MINIMUM OF 8" FROM REAR OF ANTENNA.

2 FINAL ANTENNA ORIENTATION
SCALE: N.T.S.



FINAL EQUIPMENT CONFIGURATION

SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	RRH/RRU	SIZE (INCHES) (LxWxD)	SURGE	FIBER	DC
ALPHA	LTE 700 LTE AWS	TPA65R-BU8DA-K	96"x21"x7.8"	140'-0"	0	B14 4478	18.1"x13.4"x8.26"	DC6	(1)	(2)
	FUTURE	FUTURE	-	-	0	(2) FUTURE	-	-	-	-
BETA	LTE 700 LTE AWS	TPA65R-BU8DA-K	96"x21"x7.8"	140'-0"	120°	B5/B12 4449 B2/B66A 8843	17.9"x13.1"x8.26" 14.9"x13.2"x11.1"	(2) DC6	(1)	(4)
	FUTURE	FUTURE	-	-	0	(2) FUTURE	-	-	-	-
GAMMA	LTE 700 LTE AWS	TPA65R-BU8DA-K	96"x21"x7.8"	140'-0"	240°	B5/B12 4449 B2/B66A 8843	17.9"x13.1"x8.26" 14.9"x13.2"x11.1"	(2) DC6	(1)	(4)
	FUTURE	FUTURE	-	-	0	(2) FUTURE	-	-	-	-

*RF SCHEDULE BASED ON RFDS VERSION 1.00 DATED 1/8/19. CONTRACTOR TO VERIFY FINAL ANTENNA DESIGN WITH AT&T C.M. PRIOR TO CONSTRUCTION.

1 FINAL ANTENNA CONFIGURATION
SCALE: N.T.S.

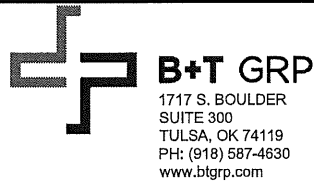
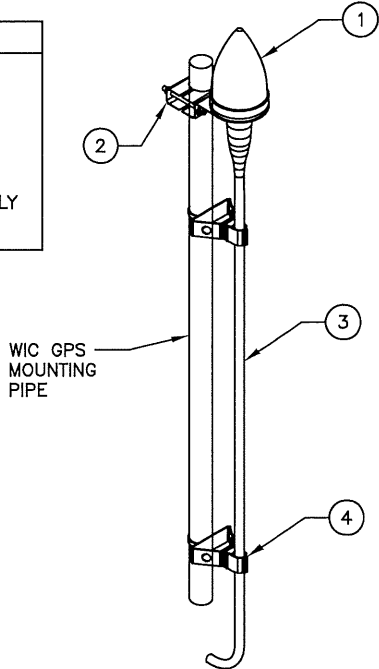
B.O.M.

- GPS ANTENNA
- L BRACKET MOUNT KIT
- COAXIAL CABLE
- STAINLESS STEEL BUTTERFLY KIT & STAND OFF MOUNT

NOTES:

- SEE DETAIL 3, SHEET C-3 FOR MOUNTING LOCATION.
- WEATHER SEAL AROUND MOUNT WITH SILICONE SEALANT.
- INSTALL GPS, COAX, AND MOUNT PER MANUFACTURERS RECOMMENDATIONS.
- TIE MOUNT INTO GROUNDING SYSTEM.
- WEATHER SEAL CONNECTORS PER AT&T STANDARDS.

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



232172

12676488

MILFORD POLICE
DEPARTMENT

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO: 132050.001.01
CHECKED BY: FWP

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: REVISION:

C-4

D



232172

12676488

**MILFORD POLICE
DEPARTMENT**

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO: 132050.001.01
CHECKED BY: FWP

ISSUED FOR:

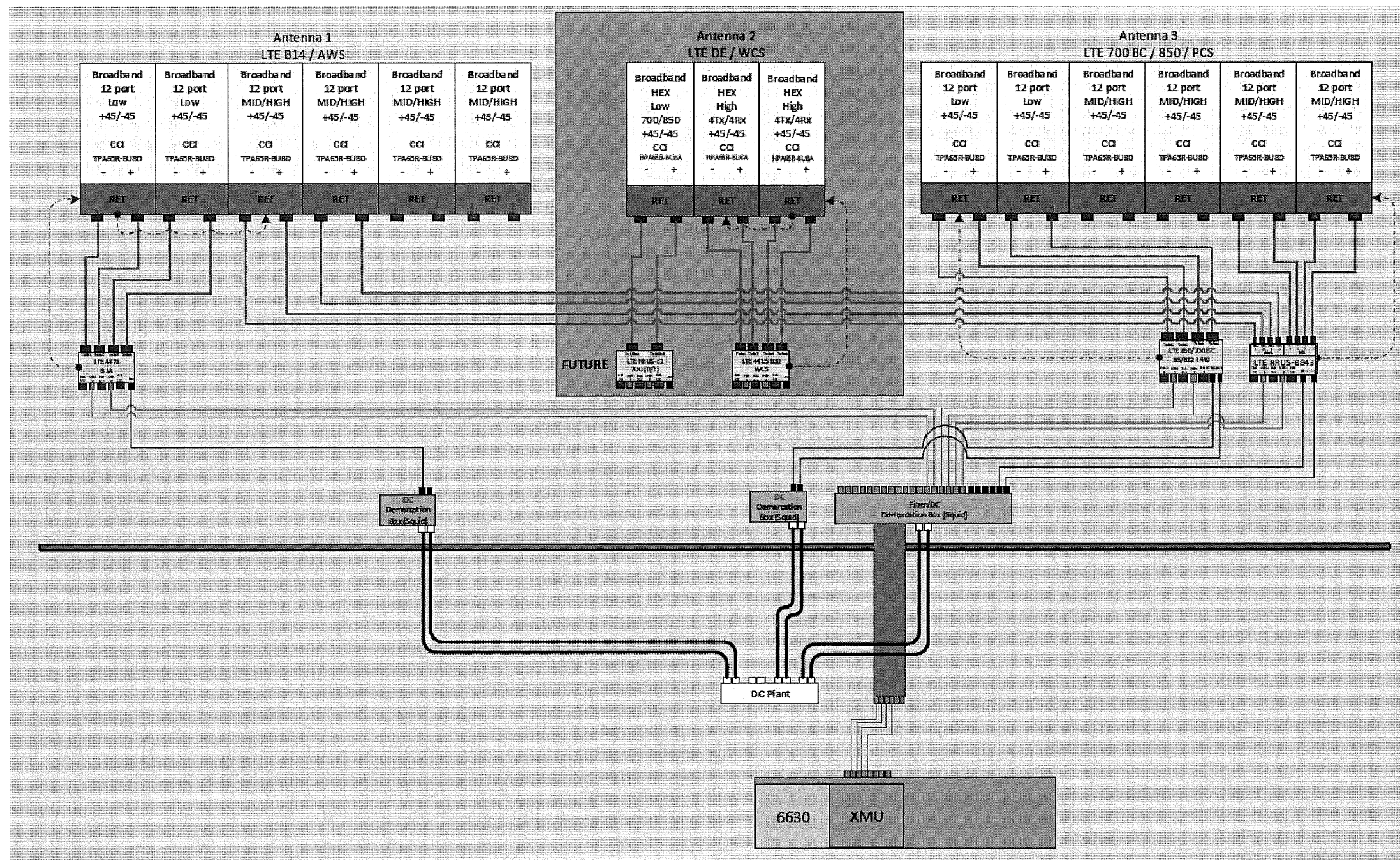
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

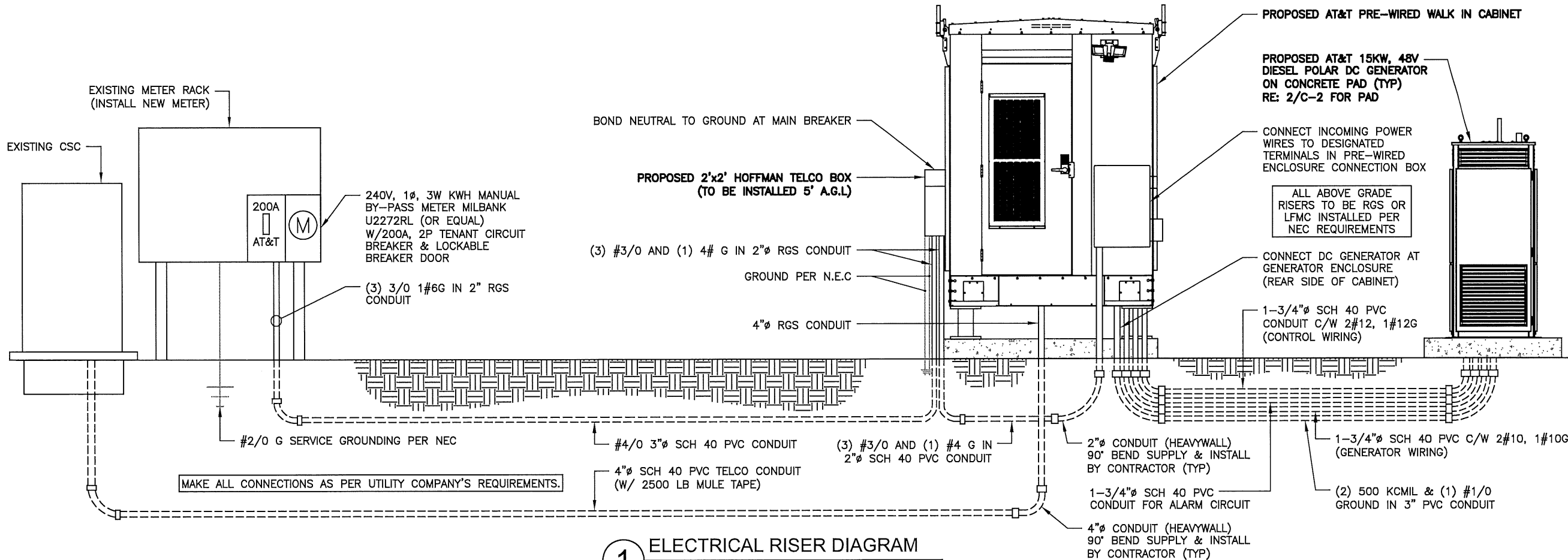
SHEET NUMBER: **RF-1** REVISION: **D**



1 PLUMBING DIAGRAM
SCALE: N.T.S.

NOTES:

- EQUIPMENT PLUMBING DIAGRAM PER RFDS
VERSION 1.00 DATED 1/8/19.
- CONTRACTOR TO VERIFY FINAL EQUIPMENT
CONFIGURATION & SEPARATIONS WITH
AT&T PRIOR TO CONSTRUCTION.



1 ELECTRICAL RISER DIAGRAM
SCALE: N.T.S.

GENERAL ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY & LOCAL CODES, O.S.H.A., NEC, NFPA #70, AT&T MOBILITY SPECIFICATIONS, & THE SPECIFICATIONS DETAILED IN THESE PLANS.
- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS & WORK TO BE PERFORMED UNDER THIS CONTRACT.
- CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TEST, & EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT & THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT, & DISCREPANCIES.
- THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE. CONTRACTOR SHALL ENSURE THAT ACCESS TO EQUIPMENT IS MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS & ALL APPLICABLE CODES.
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX, ECT., IN COMPLIANCE WITH OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA).
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ECT., FOR A COMPLETE & PROPERLY OPERATIVE SYSTEM, ENERGIZED THROUGHOUT & AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS & EQUIPMENT SHALL BE NEW & IN PERFECT CONDITION WHEN INSTALLED & SHALL BE OF THE BEST GRADE & OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED & APPROVED BY UNDERWRITER'S LABORATORY & SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, IEEE, & NFPA.
- ALL CONDUIT INSTALLED MAY BE SURFACE MOUNDED UNLESS OTHERWISE NOTED
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF THE JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- ALL "CONDUIT ONLY" (C.O) INSTALLATIONS SHALL HAVE A 3/8" PULL WIRE OR ROPE.
- CONTRACTOR SHALL PROVIDE AT&T MOBILITY MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, & CIRCUITS.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ECT. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
- POWER WIRE & CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS. CONDUCTORS #10 AWG & SMALLER SHALL BE SOLID.
- ALL CONDUCTORS LARGER THAN #10 AWG SHALL BE STRANDED COPPER WITHIN 600V

- INSULATION, UNLESS NOTED OTHERWISE
- ALL MATING SURFACES OF GROUND CONNECTIONS SHALL BE CLEANED SMOOTH & COATED WITH ANTIOXIDANT PRIOR TO ATTACHMENT.
 - ALL GROUND CONNECTIONS BELOW GRADE MUST BE EXOTHERMICALLY WELDED (CADWELD OR APPROVED EQUAL)
 - ALL EXTERIOR GROUNDING CONDUCTORS SHALL BE #2 AWG SOLID TINNED BARE COPPER WIRE UNLESS NOTED OTHERWISE.
 - ALL CIRCUIT BREAKERS, FUSES, & ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, & A MINIMUM OF 10,000 A.I.C. COORDINATE SHORT CIRCUIT REQUIREMENTS WITH LOCAL UTILITY COMPANY.
 - CONTRACTOR SHALL PATCH, REPAIR, & PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
 - IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, M PIPE RUNS, ECT., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
 - LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN &, THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS & EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
 - PENETRATIONS IN FIRE RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH ALL APPLICABLE CODES.
 - ALL MATERIALS SHALL BE U.L. LISTED.
 - CONDUIT:
 - RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR & SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR, RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED RAPPED WITH HUNTS WRAP PROCESS NO. 3.
 - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
 - FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL & MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE GROUND WIRE.
 - CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ENGINEER PRIOR TO INSTALLING.
 - ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
 - CONTRACTOR SHALL COORDINATE THE ELECTRICAL SERVICE WITH AT&T MOBILITY & LOCAL UTILITY.
 - THE ENTIRE ELECTRICAL SERVICE WITH AT&T MOBILITY & LOCAL UTILITY.

- GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FURTHER INSTRUCTIONS ON METHODS FOR REDUCING THE RESISTANCE VALUE. CONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER ALL TEST REPORTS & ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK"
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, & FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER.
- ALL EXPOSED GROUND WIRES ROUTED ALONG THE SIDE OF EQUIPMENT SHELTERS OR ROUTED OVER CONCRETE FOUNDATIONS OR OTHER EXISTING STRUCTURES SHALL BE INSTALLED IN PROPERLY ANCHORED 3/4" (MIN.) PVC CONDUIT.
- CONTRACTOR SHALL NOT DISTURB EXISTING GROUNDING SYSTEM. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST.
- ALL ELEMENTS OF ICE BRIDGE & AT&T MOBILITY UTILITY BACKBOARD MUST BE BONDED & JUMPERED TO GROUNDING COMPONENTS OF THESE SYSTEMS.
- ALL INTERIOR CABLES & WIRING SHALL BE NEATLY ROUTED IN OVERHEAD LADDER RACK & FASTENED TO LADDER RACK.
- UTILITY WILL SUPPLY METER. COORDINATE WITH UTILITY FOR METER TYPE AND INTERCONNECTION.
- ALL EXISTING UNDERGROUND LINES ON SITE TO BE LOCATED PRIOR TO CONSTRUCTION. CALL DIGSAFE 1-888-DIG-SAFE OR 811 PRIOR TO CONSTRUCTION.
- SEAL ALL SERVICE ENTRANCES INTO SHELTER FOLLOWING INSTALLATION.
- COORDINATE WITH LOCAL TELEPHONE COMPANY FOR ALL ROUTING & DESIGN.
- CONTRACTOR TO VERIFY CONTROL WIRING SIZE WITH GENERATOR MANUFACTURER PRIOR TO CONSTRUCTION.

ELECTRICAL & TELEPHONE CONTACTS

POWER COMPANY: EMERA NEW HAMPSHIRE	TELEPHONE COMPANY: PENDING AT&T ASSIGNMENT
PHONE NUMBER: (207) 973-2000	PHONE NUMBER: TBD

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.blgrp.com



232172

12676488

**MILFORD POLICE
DEPARTMENT**

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO: 132050.001.01
CHECKED BY: FWP

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/8/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

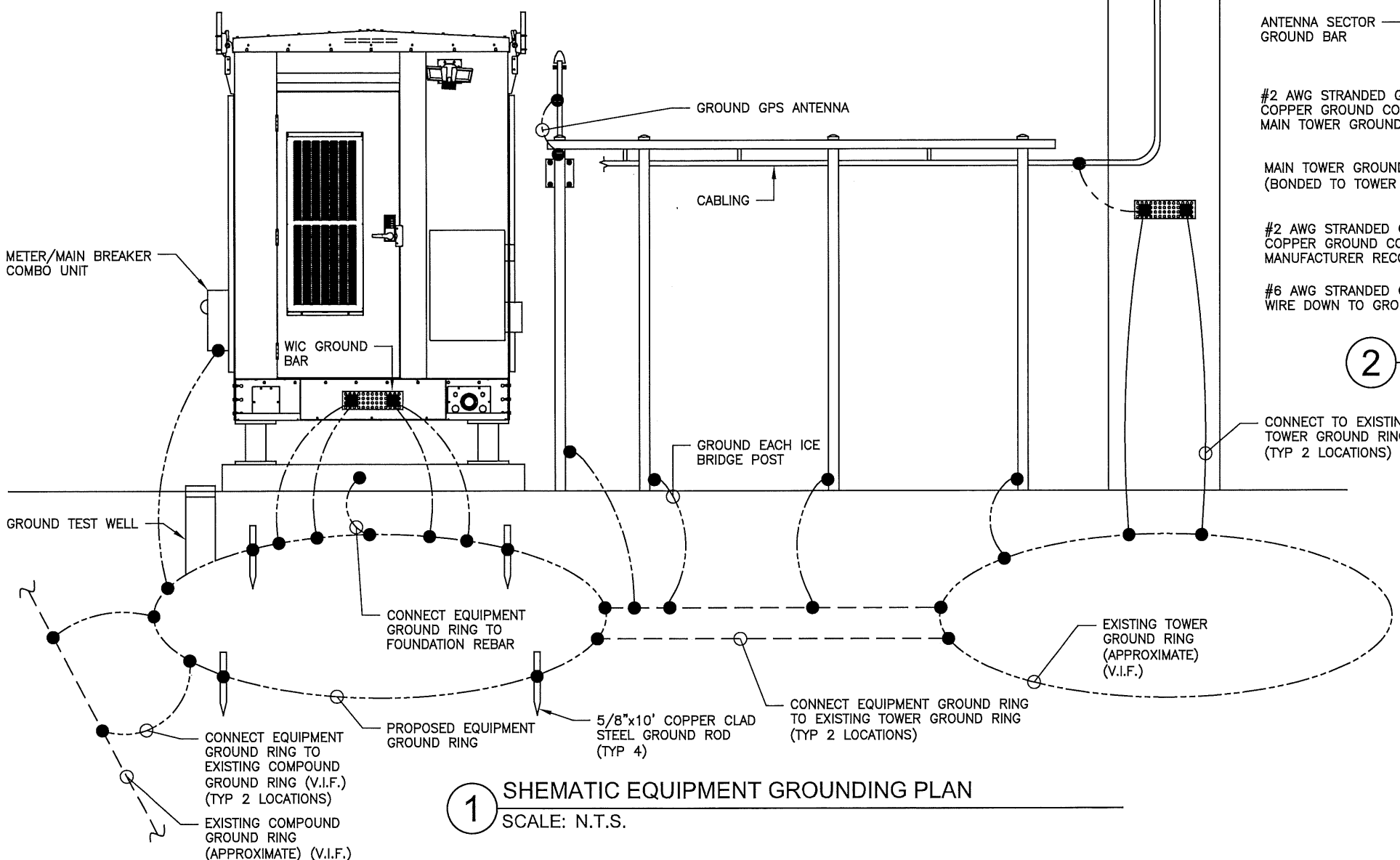
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: REVISION:

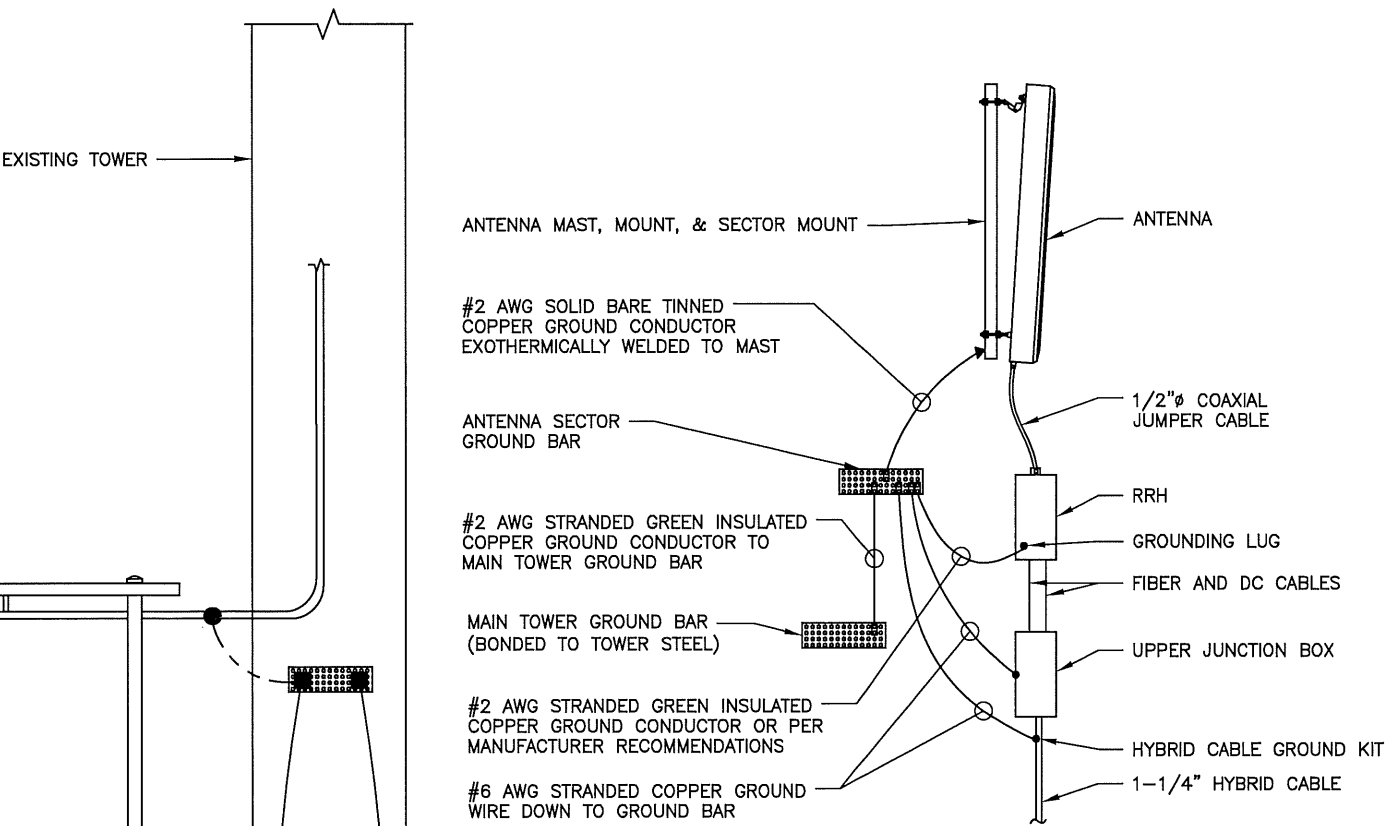
G-1 D

GROUNDING LEGEND

- GROUND BAR
- GROUND COPPER WIRE, SIZE AS NOTED
- MECHANICAL GROUND CONNECTION
- 5/8"x10' COPPER CLAD STEEL GROUND ROD
- EXOTHERMIC (CADWELD) CONNECTION
- GROUND TEST WELL
- EXISTING GROUND RING (V.I.F.)



1 SHEMATIC EQUIPMENT GROUNDING PLAN
SCALE: N.T.S.



2 TYPICAL ANTENNA & RRH GROUNDING DETAIL
SCALE: N.T.S.

GROUNDING GENERAL NOTES:

- ALL DOWN CONDUCTORS & THE GROUNDING RING CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. ALL CONNECTIONS TO GROUNDING RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE AT A MINIMUM DEPTH BELOW GRADE OF 30" OR TO LEDGE. MINIMUM BEND RADIUS SHALL BE 8". CONDUCTOR SHALL BE AT LEAST 24" FROM ANY FOUNDATION, UNLESS OTHERWISE NOTED.
- GROUND RODS SHALL BE 5/8" DIAMETER COPPER CLAD, HARGER, T&B, ERICO, OR EQUIVALENT. TOP OF ROD SHALL BE A MINIMUM OF 30" BELOW GRADE. IF LEDGE IS ENCOUNTERED, INSTALL GROUND ROD AT AN ANGLE. ELECTRICAL METER GROUND ROD EXCEPTED.
- WHERE MECHANICAL CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE, CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND RING.
- INSTALL GROUNDING KITS AT ANTENNA CENTERLINE, & TOWER EXIT POINTS. GROUND HYBRID/COAX LINES. EXOTHERMICALLY WELD #2 DOWN CONDUCTOR TO PLATES, RUN DOWN TOWER, & TIE INTO GROUNDING SYSTEM.
- ALL GROUNDING WORK SHALL COMPLY WITH THE U.S. CELLULAR STANDARDS. FOLLOWING COMPLETION OF WORK, GROUND SYSTEM MUST BE TESTED & SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS SUBMIT AN INDEPENDENT "FALL POTENTIAL" TESTING REPORT.
- CONTRACTOR SHALL HAD-DIG IN AREAS AROUND EXISTING UTILITIES.
- NOTIFY CONSTRUCTION ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
- GROUNDING RING IS SHOWN AS SCHEMATIC ONLY. IT IS DESIGNED WITHOUT BENEFIT OF RESISTIVELY TESTING & DOES NOT NECESSARILY REPRESENT A GROUNDING SYSTEM TO MEET ANY SPECIFIC GROUND RESISTANCE.
- PRIOR TO POURING CONCRETE, ALL REBAR LOCATED NEAR THE BOTTOM OF THE FOUNDATION SHALL BE BONDED TOGETHER TO FORM A SINGLE GROUNDING ELECTRODE, BY STEEL TIES OF OTHER EFFECTIVE MEANS APPROVED BY N.E.C. & STRUCTURAL ENGINEER, & BONDED TO THE GROUND RING AS DETAILED IN THESE PLANS (INSPECTION MAY BE REQUIRED PRIOR TO POURING CONCRETE & MUST BE COORDINATED BY CONTRACTOR).
- IN ACCORDANCE WITH N.E.C. REQUIREMENTS, ALL GROUNDING ELECTRODES PRESENT ON SITE SHALL BE BONDED TOGETHER (REFERENCE N.E.C. ARTICLE 250.50).

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.blgrp.com



232172
12676488
**MILFORD POLICE
DEPARTMENT**
19 GARDEN ST
MILFORD, NH 03055

PROJECT NO: 132050.001.01
CHECKED BY: FWP

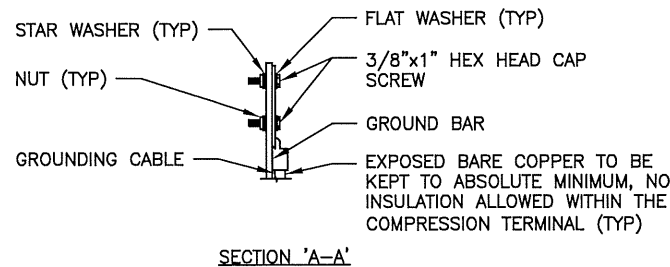
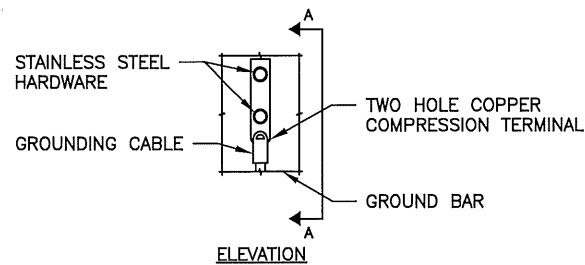
ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

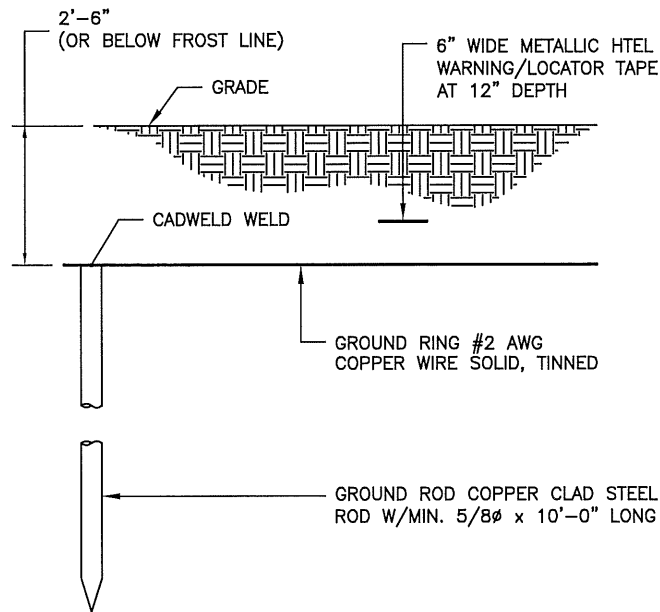
SHEET NUMBER: **G-2** REVISION: **D**



- NOTES:
- DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL

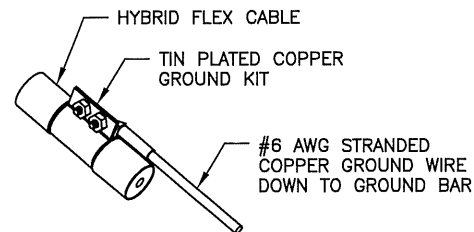
1 SCALE: N.T.S.



- NOTE:
- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL

GROUNDING ROD

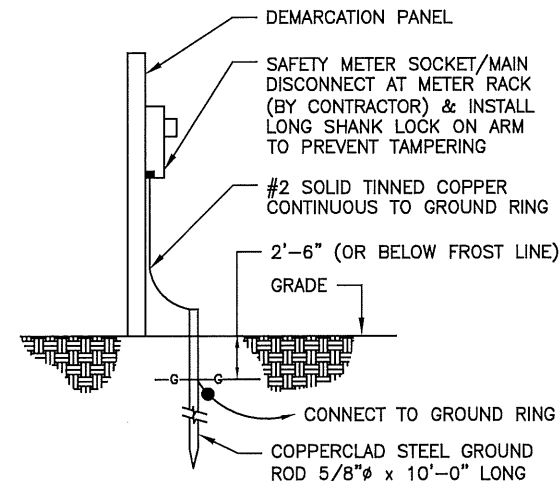
2 SCALE: N.T.S.



- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 - GROUNDING KIT LOCATION & QUANTITY PER USCC SPECIFICATIONS.
 - WEATHER PROOFING SHALL BE PER CARRIER REQUIREMENTS.

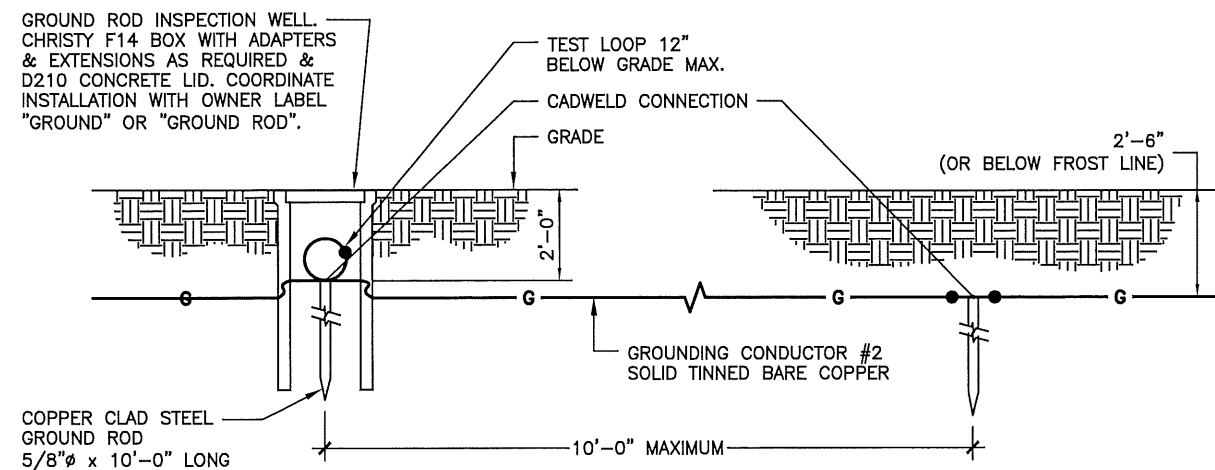
HYBRID FLEX GROUNDING DETAIL

3 SCALE: N.T.S.



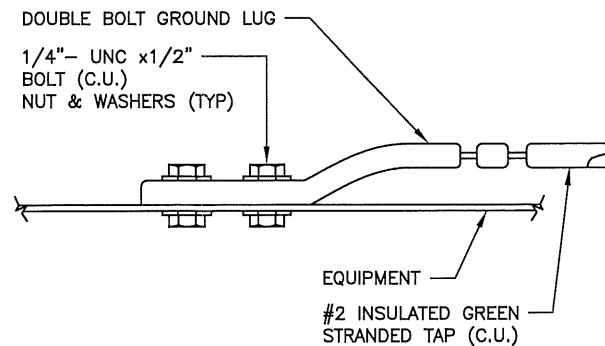
METER SOCKET GROUNDING

4 SCALE: N.T.S.



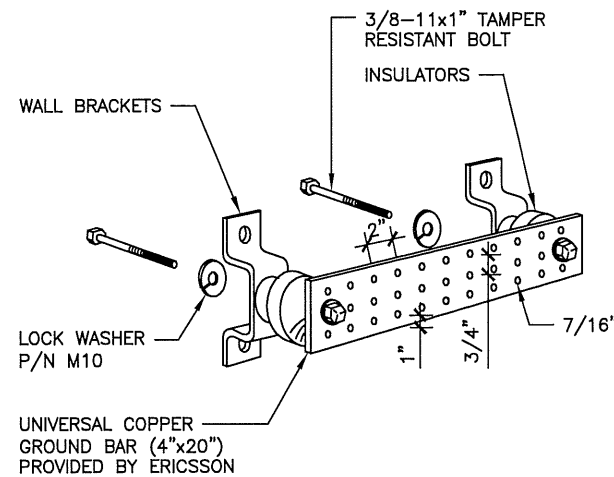
GROUND TEST WELL

5 SCALE: N.T.S.



GROUND BAR DETAIL

6 SCALE: N.T.S.



- NOTES:
- TO BE USED FOR SECTOR GROUNDING ONLY. SEE DETAIL 7, THIS SHEET, FOR GROUNDING AT GRADE.
 - PROVIDE MOUNTING HARDWARE & FIELD LOCATE BASED ON SITE CONDITIONS.

GROUND BAR DETAIL

7 SCALE: N.T.S.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



232172

12676488

MILFORD POLICE DEPARTMENT

19 GARDEN ST
MILFORD, NH 03055

PROJECT NO: 132050.001.01
CHECKED BY: FWP

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	9/17/19	MTJ	PRELIMINARY REVIEW
B	10/24/19	MTJ	PRELIMINARY REVIEW
C	10/25/19	STH	PRELIMINARY REVIEW
D	1/9/20	MTJ	PRELIMINARY REVIEW

B&T ENGINEERING, INC.
2278
Expires 12/31/20

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

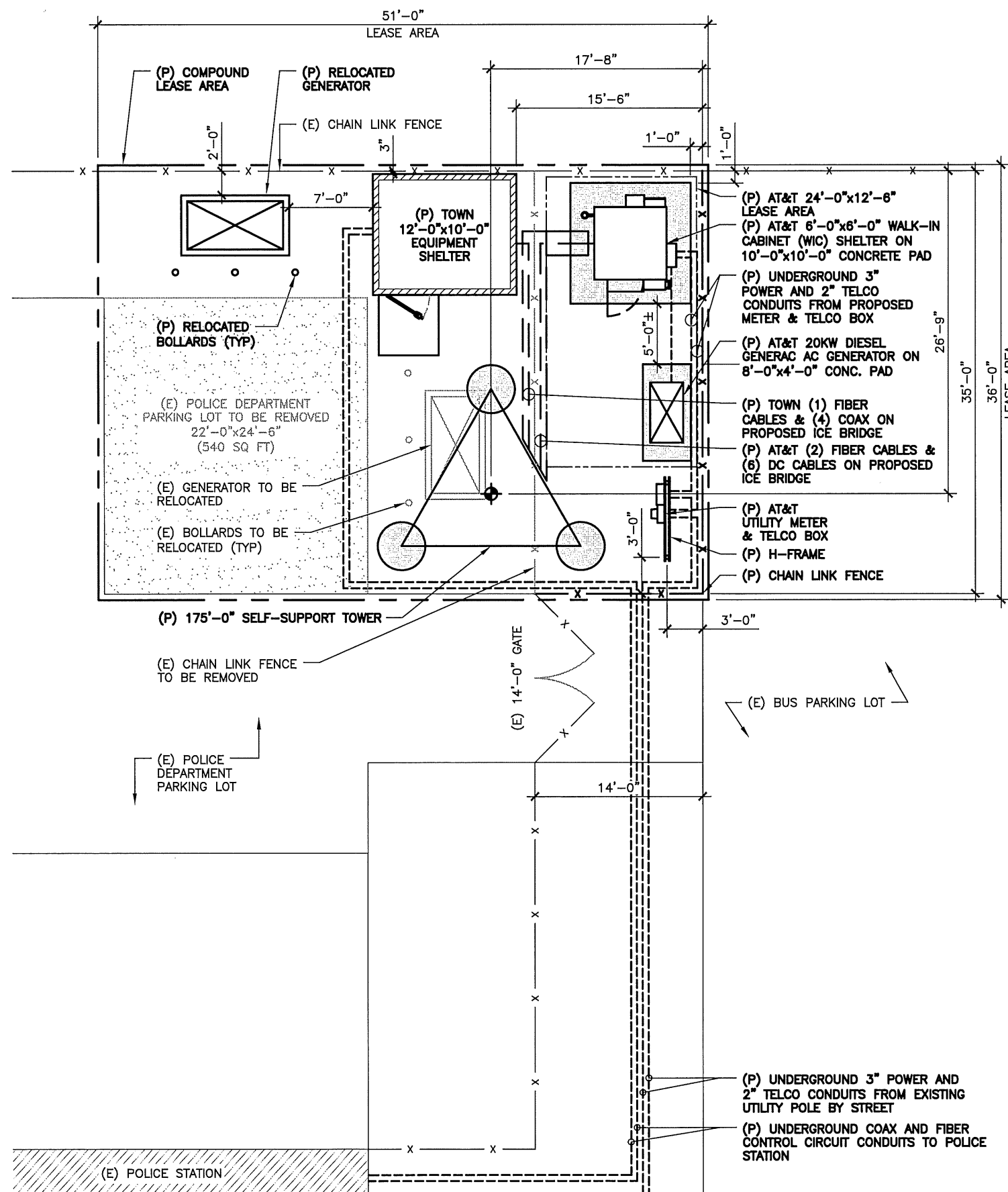
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: REVISION:

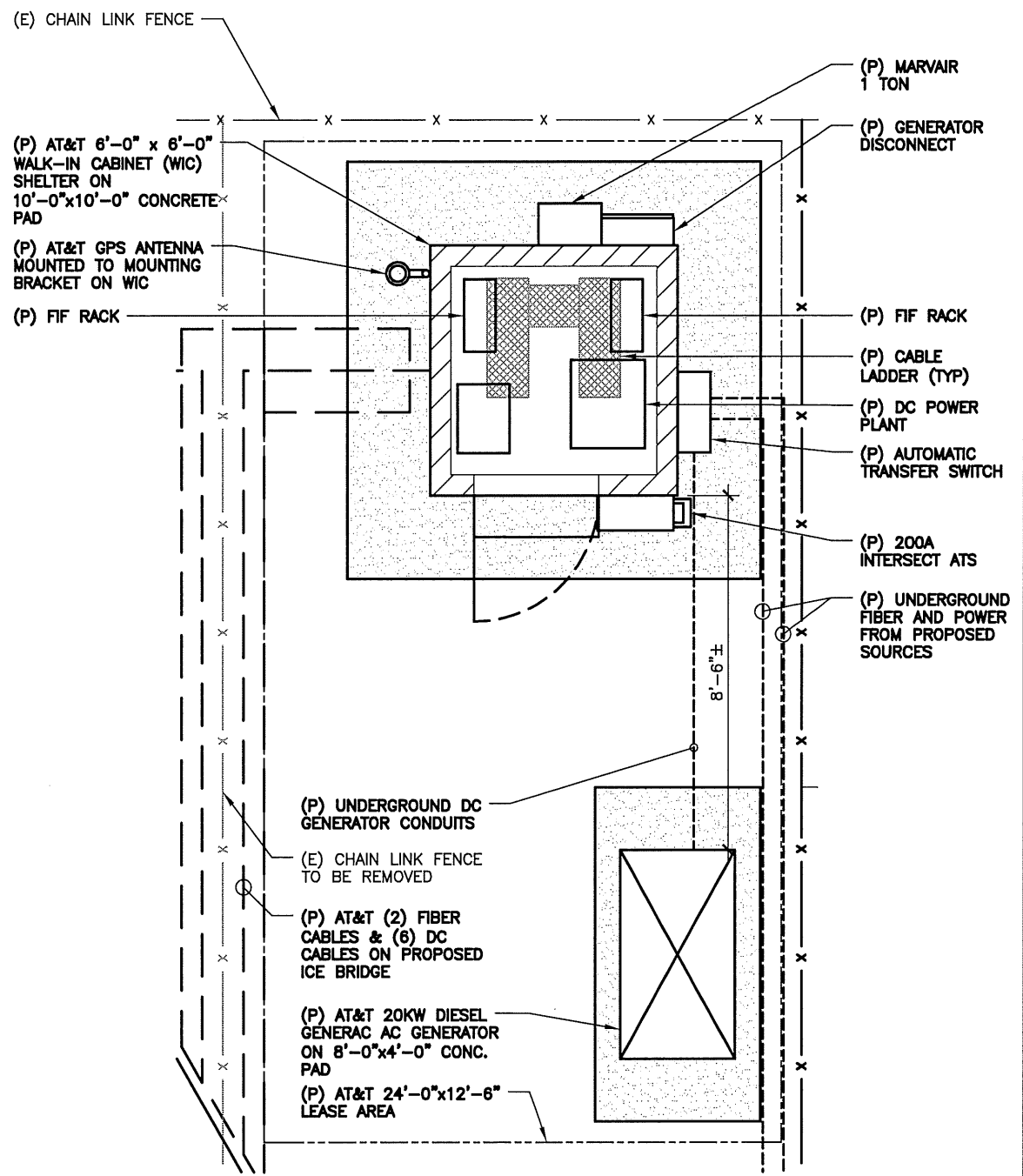
G-3

D

132050_12876488_NH4146.dwg - SheetLE-1 - User: parkins - Jan 09, 2020 - 9:47am



1 OVERALL SITE PLAN
SCALE: 0' 1' 4' 8' 20'



2 EQUIPMENT PLAN
SCALE: 0' 1' 2' 4' 10'



NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4830
www.btgrp.com

AT&T

CENTERLINE COMMUNICATIONS

232172
NH4146
12676488
MILFORD POLICE DEPARTMENT
19 GARDEN ST
MILFORD, NH 03055
LATITUDE: 42.834430
LONGITUDE: -71.652612

PROJECT NO: 132050.002.01
CHECKED BY: RPS

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	2/28/19	JCO	LEASE EXHIBIT
B	3/5/19	JCO	LEASE EXHIBIT

B&T ENGINEERING, INC.
2278
Expires 12/31/19

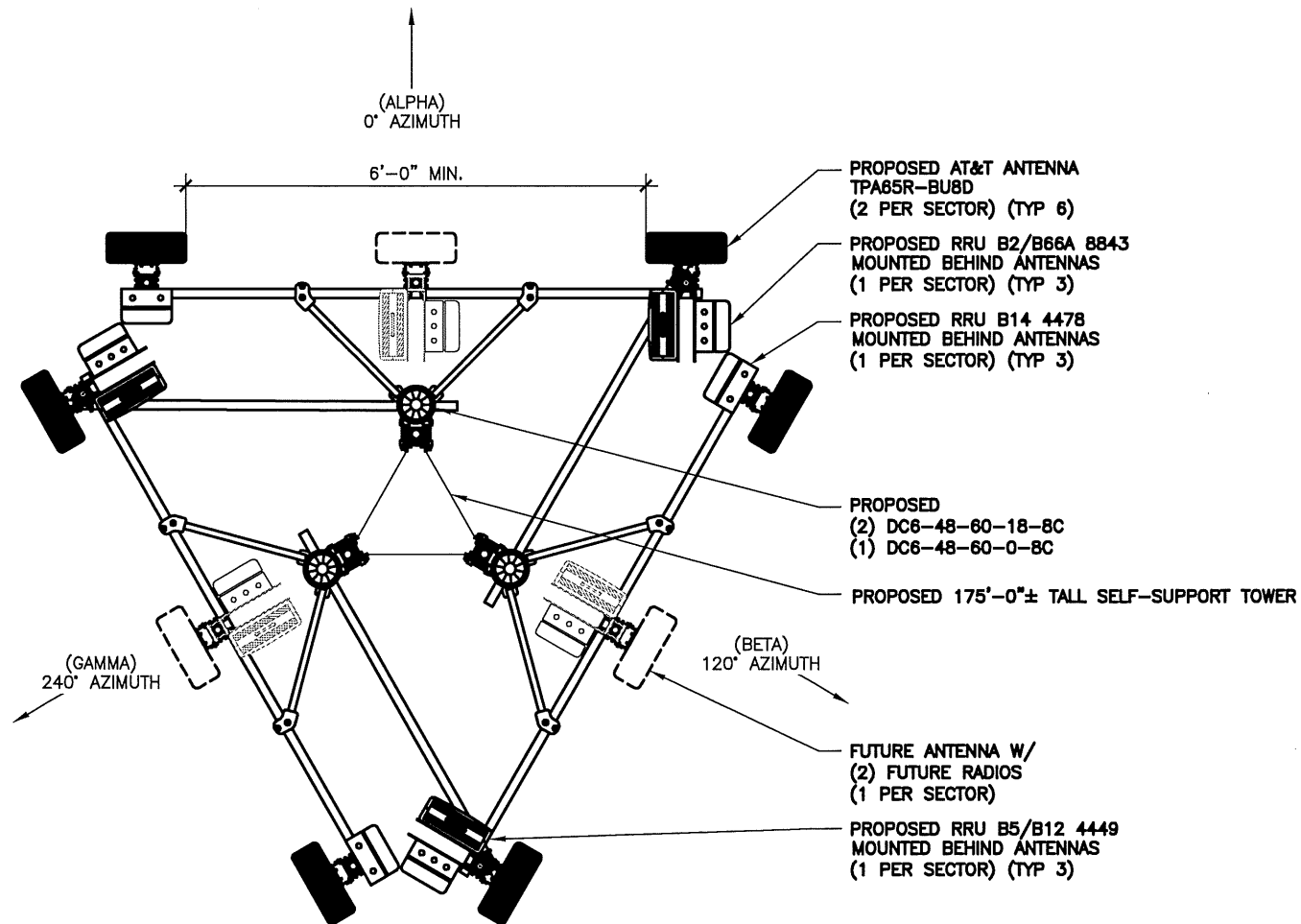
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

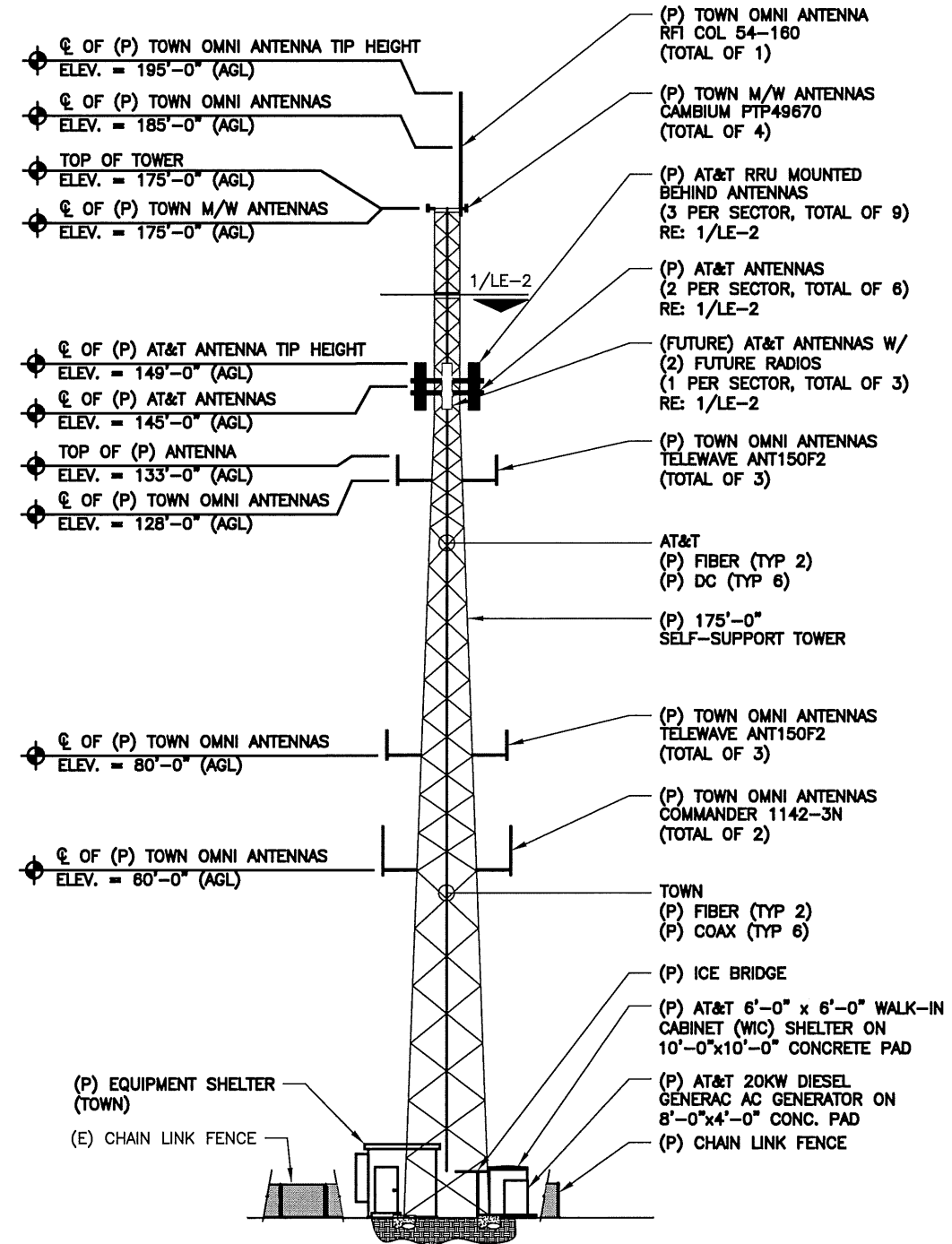
SHEET NUMBER:	REVISION:
LE-1	D

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



1 FINAL ANTENNA ORIENTATION
SCALE: N.T.S.



2 NORTH PROPOSED ELEVATION
SCALE: 1"=30'

NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



232172

NH4146

12676488

**MILFORD POLICE
DEPARTMENT**

19 GARDEN ST
MILFORD, NH 03055

LATITUDE: 42.834430
LONGITUDE: -71.652612

PROJECT NO: 132050.002.01
CHECKED BY: RPS

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	2/28/19	JCO	LEASE EXHIBIT
B	3/5/19	JCO	LEASE EXHIBIT

B&T ENGINEERING, INC.
2278
Expires 12/31/19

**THIS DOCUMENT IS
PRELIMINARY IN
NATURE AND IS NOT
A FINAL, SIGNED
AND SEALED
DOCUMENT**

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER: **LE-2** REVISION: **D**