



161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112

AT&T SITE NAME: BLACK FOREST CO
AT&T SITE ID: COL02237
AT&T PACE NUMBER: MRUTH042457
AT&T FA CODE: 15312482
NSB - (SELF-SUPPORT TOWER)
LTE 1C/2C/3C/4C/5G NR 1SR
USID: 295098



AMERICAN TOWER®

ATC SITE NAME: BLACK FOREST
ATC SITE NUMBER: 302460
SITE ADDRESS: 4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)



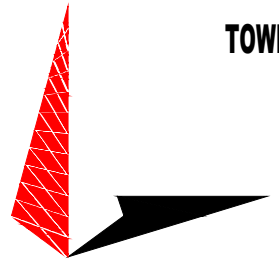
LOCATION MAP



161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112



AMERICAN TOWER®
19100 VON KARMAN AVE
SUITE 200
IRVINE, CA 92612



TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tepgroup.net

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BLACK FOREST

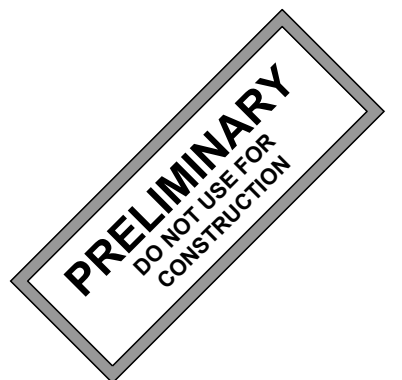
4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:



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 TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

REVISION:

C

TEP #:

85172.243629

*LATITUDE N 39° 4' 16.18" (39.07116°)
*LONGITUDE W 104° 44' 35.53" (-104.7432°)

*GROUND ELEV. (AMSL) = 7,625'±

*INFORMATION PROVIDED BY ATC

TOWER COORDINATES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- | | |
|---|--|
| 1. INTERNATIONAL BUILDING CODE (2015 EDITION) | 4. NATIONAL ELECTRIC CODE (2017 EDITION) |
| 2. INTERNATIONAL CODE COUNCIL | 5. LOCAL BUILDING CODE |
| 3. ANSI/TIA/EIA-222-H | 6. CITY/COUNTY ORDINANCES |

CODE COMPLIANCE

AT&T SITE NAME: BLACK FOREST CO
AT&T SITE ID: COL02237
FA: 15312482
PACE NUMBER: MRUTH042457
ATC SITE NAME: BLACK FOREST
ATC SITE NUMBER: 302460

PROJECT DESCRIPTION: COLLOCATION
TOWER TYPE: 170' SELF-SUPPORT TOWER
W/ 20' TOWER EXTENSION
JURISDICTION: EL PASO COUNTY
LEASE AREA: 300 SQ FT
CURRENT ZONING: RR-5

PROJECT INFORMATION

SITE CONSTRUCTION MANAGER:

NAME: AT&T
ADDRESS: 161 INVERNESS DR W, 2ND FLOOR
CITY, STATE, ZIP: ENGLEWOOD, CO 80112
CONTACT: REID POST
PHONE: (720) 838-4228

SITE APPLICANT:

NAME: AT&T
ADDRESS: 4393 S RIVERBOAT RD, 4TH FLOOR
CITY, STATE, ZIP: SALT LAKE CITY, UT 84123
CONTACT: JAN ROBINETTE
PHONE: (801) 201-4173

CIVIL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603
CONTACT: GRAHAM M. ANDRES, P.E.
PHONE: (919) 661-6351

ELECTRICAL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603
CONTACT: GRAHAM M. ANDRES, P.E.
PHONE: (919) 661-6351

PROPERTY OWNER:

NAME: AMERICAN TOWER ASSET SUB LLC
ADDRESS: 4590 HODGEN RD
CITY, STATE, ZIP: COLORADO SPRINGS, CO 80908

PROJECT TEAM

SHEET:

DESCRIPTION:

REV

T-1	TITLE SHEET	C
T-2	GENERAL NOTES	C
S-1	SITE SURVEY I	C
S-2	SITE SURVEY II	C
C-1	COMPOUND DETAIL	C
C-2	EQUIPMENT & ANTENNA LAYOUTS	C
C-3	EXISTING AND FINAL ELEVATIONS	C
C-4	EQUIPMENT DETAILS	C
C-5	EQUIPMENT DETAILS	C
C-6	WIC SHELTER DETAILS	C
C-7	GENERATOR DETAILS	C
C-8	FOUNDATION DETAILS	C
E-1	ELECTRICAL PANEL & GROUNDING PLANS	C
E-2	ONE-LINE DIAGRAM	C
E-3	DC SYSTEM DETAILS	C
E-4	FIBER ROUTING PLAN	C
G-1	GROUNDING DETAILS	C
G-2	GROUNDING DETAILS	C

SHEET INDEX

POWER COMPANY: MOUNTAIN VIEW ELECTRIC
CONTACT: CUSTOMER SERVICE
PHONE: (800) 388-9881
METER # NEAR SITE: 69 712 849

TELEPHONE COMPANY: CENTURY LINK
CONTACT: CUSTOMER SERVICE
PHONE: (800) 784-3414
PHONE # NEAR SITE: (719) 337-8124
PEDESTAL # NEAR SITE: UNKNOWN

UTILITY INFORMATION

DESIGN PACKAGE BASED ON RF DATA SHEET
RFDS NAME: COL02237
REVISION: V1.00
ISSUED: 9/21/20 5:35:48 P.M.
DATE UPDATED: 10/14/2020 3:55:55 P.M.

NUMBER OF SECTORS: 3
NUMBER OF ANTENNAS: 6
NUMBER OF TMAs: 0
NUMBER OF RRHs: 9
NUMBER OF DC SQUIDS: 3
NUMBER OF FIBER TRUNK CABLES: 3
NUMBER OF DC TRUNK CABLES: 6
NUMBER OF RF CABLES: 0

RFDS DATA

THE PURPOSE OF THIS PROJECT IS AS FOLLOWS:

TOWER SCOPE OF WORK:

- INSTALL (6) ANTENNAS
- INSTALL (9) RRHs
- INSTALL (3) SQUIDS
- INSTALL (3) FIBER TRUNKS
- INSTALL (6) DC TRUNKS
- INSTALL (1) CABLE LADDER
- INSTALL (1) TOWER EXTENSION

GROUND SCOPE OF WORK:

- INSTALL (1) W.I.C. SHELTER PAD
- INSTALL (1) GENERATOR PAD
- INSTALL (1) W.I.C. SHELTER
- INSTALL (1) GENERATOR
- INSTALL (1) H-FRAME
- INSTALL METER
- INSTALL DISCONNECT
- INSTALL FIBER BOX

NSB - 170' SELF-SUPPORT TOWER
LTE - 1C/2C/3C/4C/5G NR 1SR

SCOPE OF WORK

I-25 EXIT 161, GO EAST ON HWY 105, SOUTH ON HWY 83, EAST ON HODGEN ROAD TO SITE.

DRIVING DIRECTIONS

JURISDICTIONAL APPROVAL

DO NOT SCALE DRAWINGS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

GENERAL NOTES

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
- A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
- B. AC/TELCO INTERFACE BOX (PPC)
- C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
- D. TOWERS, MONOPOLES
- E. TOWER LIGHTING
- F. GENERATORS & LIQUID PROPANE TANK
- G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
- H. ANTENNAS (INSTALLED BY OTHERS)
- I. TRANSMISSION LINE
- J. TRANSMISSION LINE JUMPERS
- K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
- L. TRANSMISSION LINE GROUND KITS
- M. HANGERS
- N. HOISTING GRIPS
- O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/ITIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE AT&T REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH ##### AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.

24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY AT&T REP 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.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. AT&T FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. AT&T OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T OR THEIR ARCHITECT/ENGINEER.
- STRUCTURAL STEEL NOTES:
1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
- A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
- B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
- C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
- D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
- E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
- A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
- C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
- E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.

- F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
- G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
- H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.
- I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND AT&T PROJECT MANAGER IN WRITING

SPECIAL CONSTRUCTION
ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
- A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY AT&T UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
- B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND AT&T SPECIFICATIONS.
- C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
- D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
- E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
- F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
- G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPlice WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND 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 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY AT&T REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:
- PORTLAND CEMENT: ASTM C150, TYPE 2
- REINFORCEMENT: ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
- REINFORCEMENT BARS: ASTM A615, GRADE 60, DEFORMED
- NORMAL WEIGHT AGGREGATE:ASTM C33
- WATER: ASTM C 94/C 94M
- WELDED WIRE FABRIC: ASTM A185
- ADMIXTURES:
- WATER-REDUCING AGENT: ASTM C 494/C 494M, TYPE A
- AIR-ENTERING AGENT: ASTM C 260/C 260M
- SUPERPLASTICIZER: ASTM C494, TYPE F OR TYPE G
- RETARDING: ASTM C 494/C 494M, TYPE B
5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
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 APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND 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. FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
14. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
15. 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.
16. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
17. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
18. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
19. 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 THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
20. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
21. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
22. SLAB ON GROUND: COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.

ELECTRICAL NOTES:

1. ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.
2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF CONCORDIA. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.



AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:



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 TITLE:

GENERAL NOTES

SHEET NUMBER:

T-2

REVISION:

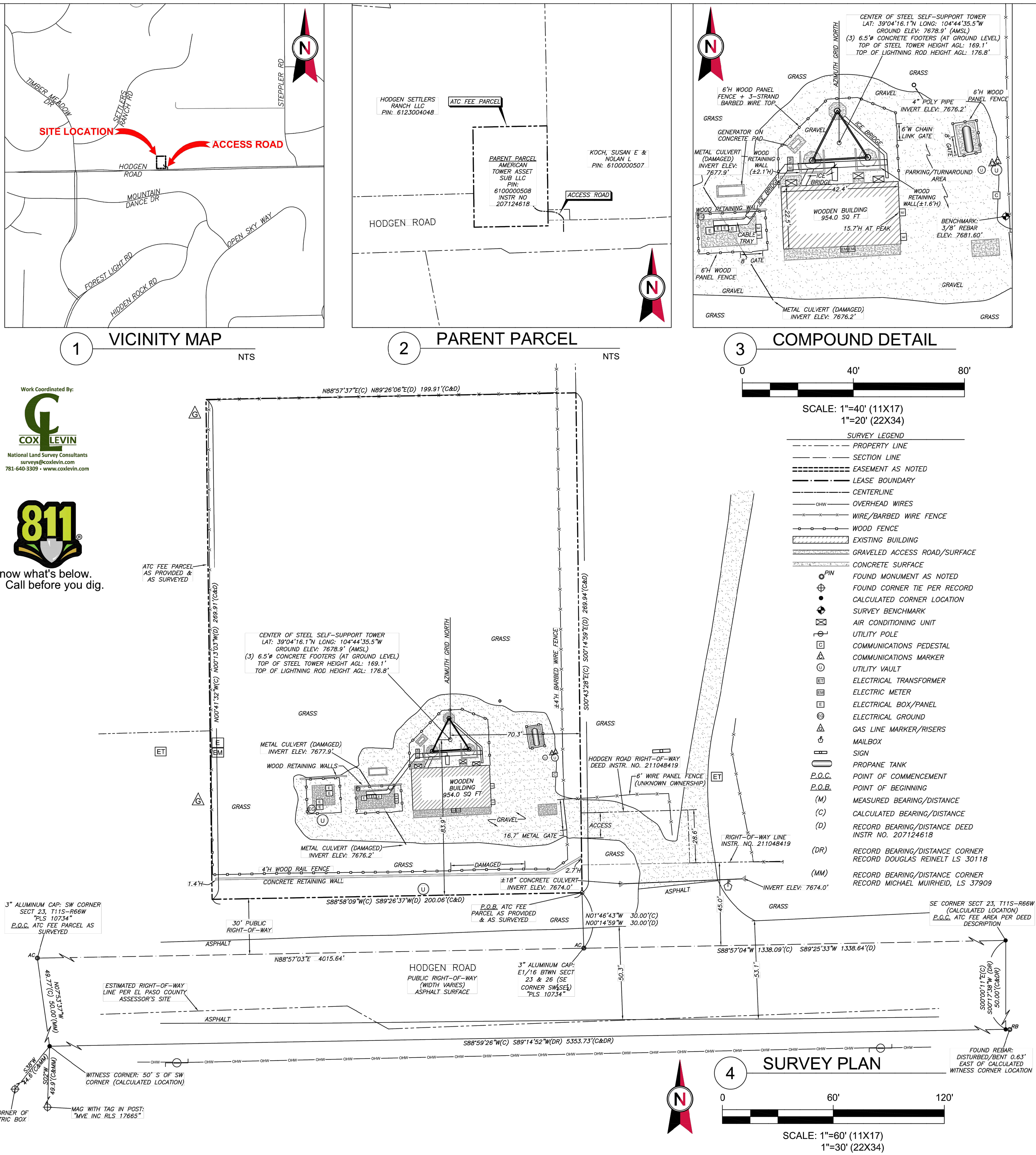
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


TEP #:

85172.243629

SHOWN BELOW WAS PROVIDED BY AMERICAN TOWER CORPORATION AND IS FOR REFERENCE ONLY.

PROJECT SUMMARY	SURVEYOR'S NOTES
<p>FIELD SURVEY DATE: 11/19/2020 SITE ADDRESS: 4590 HODGSON ROAD COLORADO SPRINGS, COLORADO 80908-3008</p> <p>PARENT PARCEL INFORMATION OWNER: AMERICAN TOWER ASSET SUB, LLC OWNER ADDRESS: P O BOX 723597 ATLANTA, GEORGIA 31139-0597 PIN ASSESSOR'S SCHEDULE NO: 1-6100005058 RECORDED AS INSTRUMENT NO. 207124618</p> <p>TOTAL AREAS: ATC FEE PARCEL AS PROVIDED: 53.861 SQ FT OR 1.23621 ACRES ATC FEE PARCEL AS SURVEYED: 53.869 29 SQ FT OR 1.2366 ACRES</p> <p>GEOGRAPHIC COORDINATES OF TOWER: LATITUDE: 39°04'16.11" N VERTICAL DATUM: NAVD 1988 ELEVATION: 7678.9' LONGITUDE: 104°44'35.5" W HORIZONTAL DATUM: NAD83</p> <p>BEARINGS AND COORDINATES ARE BASED ON COLORADO STATE PLANE AT GROUND, CENTRAL ZONE, FROM GPS OBSERVATION.</p> <p>FLOODPLAIN: PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.</p> <p>COMMUNITY PANEL NUMBER: 08041C03565 DATED: 12/07/2018</p> <p>ENCROACHMENT STATEMENT AT THE TIME OF THE SURVEY, NO VISIBLE ENCROACHMENTS WERE EVIDENT ON OR BEYOND THE ATC FEE PARCEL, AND THE ATC FEE PARCEL DID NOT ENCRoACH OUTSIDE THE DESCRIBED BOUNDARY.</p>	<p>1. THERE IS DIRECT ACCESS TO THE ATC FEE PARCEL FROM HODGSON ROAD, A PUBLIC RIGHT OF WAY; THEREFORE, AN ACCESS EASEMENT IS NOT NECESSARY.</p> <p>2. THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE ONLY.</p> <p>3. AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVABLE SURFACE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS.</p> <p>4. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SUBJECT PROPERTY BEING USED AS A SOLID WASTE DUMP, SLUMP OR SANITARY LANDFILL.</p> <p>5. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY RECENT CHANGES IN STREET RIGHT-OF-WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION.</p> <p>6. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF ANY RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.</p> <p>7. THIS SURVEY WAS PREPARED TO SHOW THE INTERESTS OF AMERICAN TOWER CORPORATION AND IMPROVEMENTS PROXIMAL TO SAID INTERESTS.</p> <p>8. ALL CALLS ARE MEASURED UNLESS OTHERWISE NOTED</p> <p>9. UNLESS OTHERWISE SPECIFIED, UTILITY POLES DID NOT IDENTIFY OWNERSHIP.</p> <p>10. AT THE TIME OF SURVEY, THERE WAS NO VISIBLE EVIDENCE OF UTILITIES CROSSING THE ATC FEE PARCEL OR PUBLIC RIGHT-OF-WAY SERVING THE ATC FEE PARCEL; THEREFORE, UNABLE TO PROVIDE AN AS SURVEYED UTILITY EASEMENT DESCRIPTION.</p>
<p>ZONING INFORMATION</p> <p>ZONING INFORMATION NOT PROVIDED AT TIME OF SURVEY.</p> <p>CONTACT: EL PASO COUNTY PLANNING AND DEVELOPMENT 2800 INTERNATIONAL CIRCL E, SUITE 110 COLORADO SPRINGS, COLORADO 80910 (719) 520-6300</p>	
<p>LEGAL DESCRIPTIONS</p> <p>ATC FEE PARCEL, AS PROVIDED (PER QUITCLAIM DEED RECORDED 08/26/2017 AS INSTRUMENT NO. 207124618): A PARCEL OF LAND BEING A PORTION OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 23, TOWNSHIP 11 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 23; THENCE SOUTH 89°26'33" WEST ALONG THE SOUTH LINE OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 23 A DISTANCE OF 1338.84 FEET TO THE SOUTHEAST CORNER OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 23; THENCE NORTH 00°14'59" WEST ALONG THE EAST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 23 A DISTANCE OF 30.00 FEET TO THE TRUE POINT OF BEGINNING; SAID POINT BEING ON THE NORTH RIGHT OF WAY LINE OF HODGSON ROAD AS DESCRIBED IN BOOK 571 AT PAGE 419 OF SAID EL PASO COUNTY RECORDS; THENCE SOUTH 89°29'37" WEST ALONG THE NORTH RIGHT OF WAY OF SAID HODGSON ROAD A DISTANCE OF 200.06 FEET; THENCE NORTH 00°13'03" WEST A DISTANCE OF 269.91 FEET; THENCE NORTH 89°20'00" EAST A DISTANCE OF 198.91 FEET TO A POINT ON THE EAST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 23; THENCE SOUTH 00°14'59" WEST ALONG THE EAST LINE OF THE SOUTHWEST ONE-QUARTER OF THE SOUTHEAST ONE-QUARTER OF SECTION 23 A DISTANCE OF 269.94 FEET TO THE TRUE POINT OF BEGINNING. CONTAINING 53,981 SQUARE FEET OR 1.2392 ACRES MORE OR LESS.</p> <p>ATC FEE PARCEL, AS SURVEYED: A PARCEL OF LAND WITHIN THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER (SW1/4 SE1/4) OF SECTION 23, TOWNSHIP 11 SOUTH, RANGE 66 WEST OF THE 6TH P.M. EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 23; THENCE N89°50'00" ALONG THE SOUTH LINE OF SAID SECTION 23, 4015.64 FEET TO THE SOUTHEAST CORNER OF SAID SW1/4 SE1/4; THENCE N01°46'42"W, 26.00 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY LINE FOR HODGSON ROAD AND THE POINT OF BEGINNING; THENCE S89°30'00"W ALONG SAID RIGHT-OF-WAY, 200.06 FEET; THENCE N00°14'32"W, 269.91 FEET; THENCE N89°50'00", 198.91 FEET; THENCE S00°43'59", 269.94 FEET TO THE POINT OF BEGINNING. CONTAINING A TOTAL CALCULATED AREA OF 53,890.29 SQUARE FEET OR 1.239 ACRES, MORE OR LESS.</p> <p>(NOTE: THE FEE PARCEL AS SURVEYED IS THE SAME AS THE PROVIDED, EXCEPT ITS POSITION HAS BEEN CALCULATED FROM THE FOUND MONUMENT AT THE SOUTHWEST CORNER OF SECTION 23, T11S-66W, RATHER THAN THE SOUTHEAST CORNER OF SAID SECTION. THE PARCEL HAS BEEN ROTATED COUNTER-CLOCKWISE 00°28'29" BASED ON OBSERVED BEARINGS ALONG THE SOUTH LINE OF SECTION 23. TOTAL AREA IS CALCULATED IN CAD.)</p>	
<p>NOTES CORRESPONDING TO TITLE COMMITMENT</p> <p>SURVEY PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE COMMITMENT.</p>	



<div></div> <div>AMERICAN TOWER ATC TOWER SERVICES, INC. 3500 REGENCY PARKWAY SUITE 100 CARY, NC 27518 PHONE: (919) 468-0112 FAX: (919) 466-5415</div>			
<p>THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.</p>			
<div> 0</div>	PRELIM	HH	11/30/2020
<div> 1</div>	CLIENT COMMENTS	HH	12/07/2020
<div> 2</div>			
<div>ATC SITE NUMBER: 302460</div> <div>ATC SITE NAME: BLACK FOREST</div> <div>SITE ADDRESS: 4590 HODGEN ROAD COLORADO SPRINGS, COLORADO 80908-3006</div>			
<p>SURVEY CERTIFICATE: THIS IS TO CERTIFY THAT ARROW SURVEY GROUP, INC., AT THE REQUEST AND FOR THE EXCLUSIVE USE OF AMERICAN TOWER CORP. AND NAME OF TITLE COMPANY, HAS PERFORMED THIS AS-BUILT SURVEY OF THE ATC LEASE AREA, FROM THE RECORD SOURCES AND ACTUAL FIELD SURVEY ON 11/19/2020 IN ACCORDANCE WITH THE MINIMUM STANDARDS OF PROPERTY BOUNDARY SURVEYS. ALL LINEAR AND ANGULAR VALUES SHOWN ARE BASED UPON DEED OR RECORD INFORMATION UNLESS OTHERWISE NOTED.</p> <p>DATE OF PLAT: <u>12/07/2020</u></p> <p>NAME: JASON D. LEVANEN CO LICENSE NO. 38159</p>			
<p>SURVEY LOGO:</p> <div> Survey Group, Inc. Sheridan, WY 82801 (307)751-7543</div>			
DRAWN BY:		HH	
APPROVED BY:		JL	
DATE DRAWN:		12/07/2020	
ATC JOB NO:		302460	
<div>AS-BUILT/TITLE & BOUNDARY PLAN</div>			
SHEET NUMBER:		REVISION:	
V-101		1	

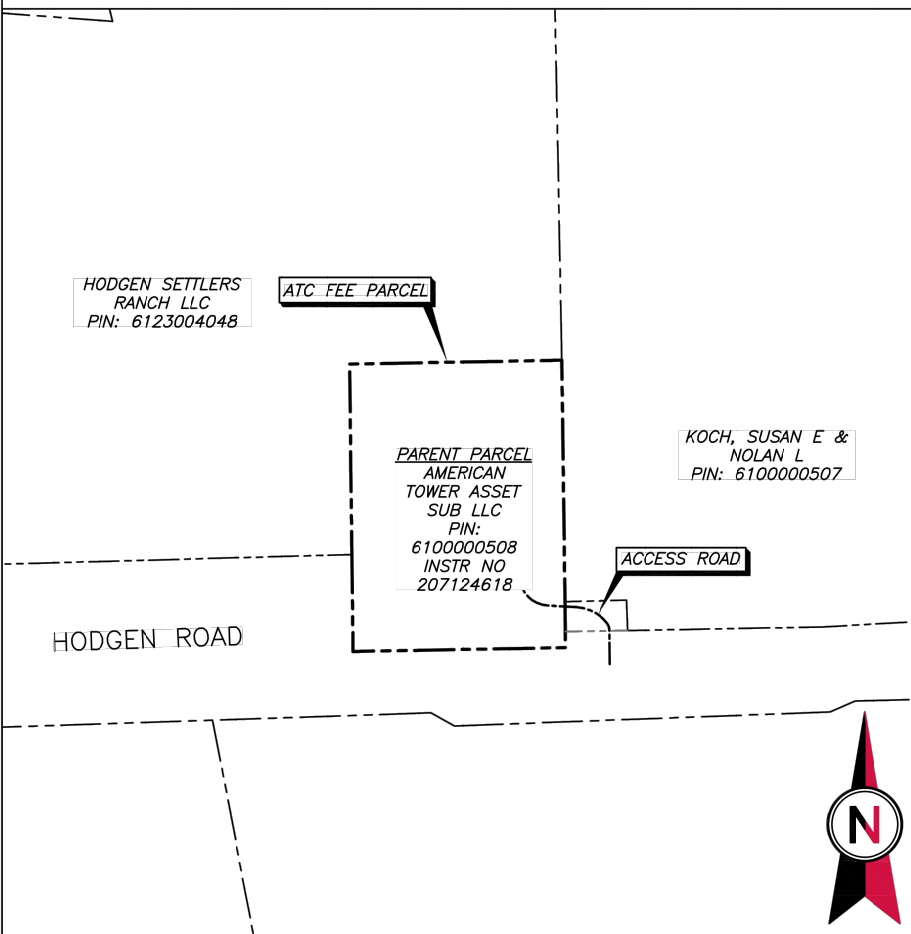
 <div style="display: inline-block; vertical-align: middle;"><h1 style="margin: 0;">AT&T</h1><p style="margin: 0;">161 INVERNESS DR W, 2ND FLOOR ENGLEWOOD, CO 80112</p></div>				
 <div style="display: inline-block; vertical-align: middle;"><p style="margin: 0;">AMERICAN TOWER®</p><p style="margin: 0;">19100 VON KARMAN AVE SUITE 200 IRVINE, CA 92612</p></div>				
 <div style="display: inline-block; vertical-align: middle;"><p style="margin: 0;">TOWER ENGINEERING PROFESSIONALS</p><p style="margin: 0;">4710 E ELWOOD ST, STE 9 PHOENIX, AZ 85040 OFFICE: (480) 285-0036 www.tepgroup.net</p></div>				
<p style="margin: 0;">AT&T SITE ID: COL02237</p> <p style="margin: 0;">AT&T FA CODE: 15312482</p> <p style="margin: 0;">AT&T PACE #: MRUTH042457</p> <p style="margin: 0;">ATC #: 302460</p> <p style="margin: 0;">BLACK FOREST</p> <p style="margin: 20px 0 0 0;">4590 HODGEN RD</p> <p style="margin: 0 0 0 0;">COLORADO SPRINGS, CO 80908</p> <p style="margin: 0 0 0 0;">(EL PASO COUNTY)</p> <p style="margin: 20px 0 0 0;">EXISTING 170'-0" W/ 20'</p> <p style="margin: 0 0 0 0;">EXTENSION</p> <p style="margin: 0 0 0 0;">SELF-SUPPORT TOWER</p> <p style="margin: 0 0 0 0;">NSB - LTE - 1C/2C/3C/4C/5G NR</p> <p style="margin: 0 0 0 0;">1SR</p>				
ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG
<p style="margin: 0;">SEAL:</p> <div style="text-align: center; margin: 20px 0;"></div>				
<p style="margin: 0; font-size: small;">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.</p>				
<p style="margin: 0;">SHEET TITLE:</p> <div style="text-align: center; padding: 10px;"><p style="margin: 0;">SITE SURVEY I</p></div>				
<p style="margin: 0;">SHEET NUMBER:</p> <div style="text-align: center; padding: 10px;"><p style="margin: 0;">S-1</p></div>		<p style="margin: 0;">REVISION:</p> <div style="text-align: center; padding: 10px;"><p style="margin: 0;">C</p></div>		
<p style="margin: 0;">TEP #: 85172.243629</p>				

NOTE:

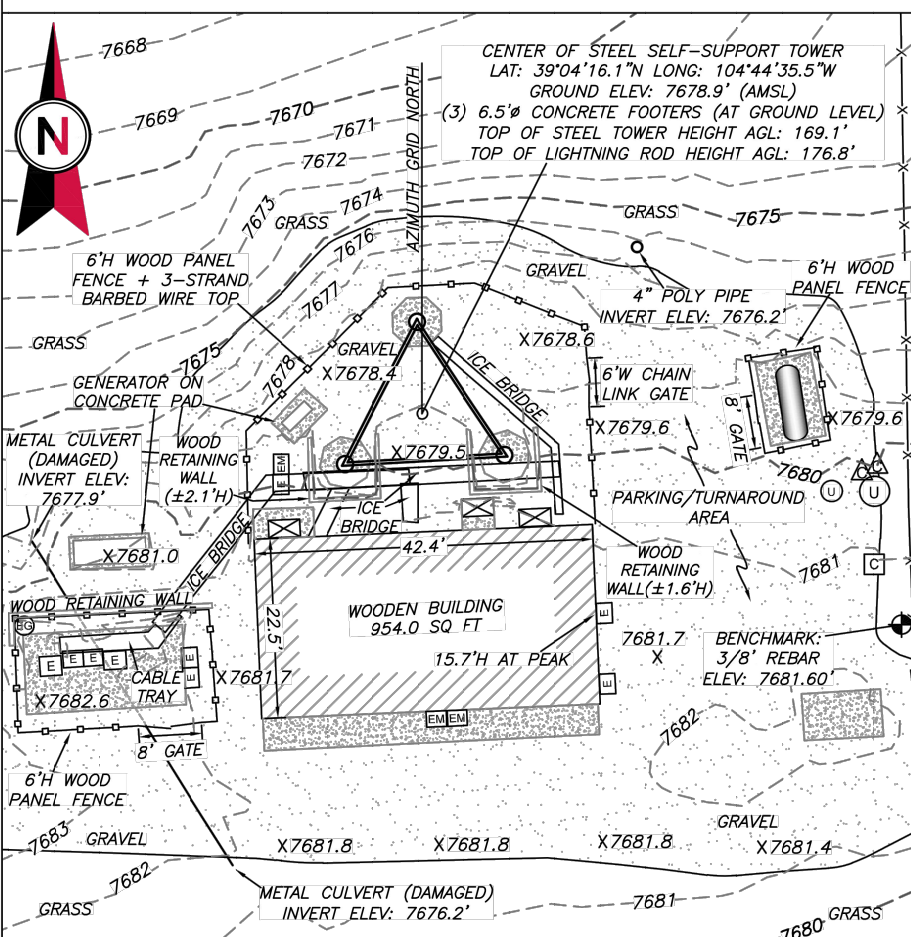
SHOWN BELOW WAS PROVIDED BY AMERICAN TOWER CORPORATION AND IS FOR REFERENCE ONLY.

PROJECT SUMMARY

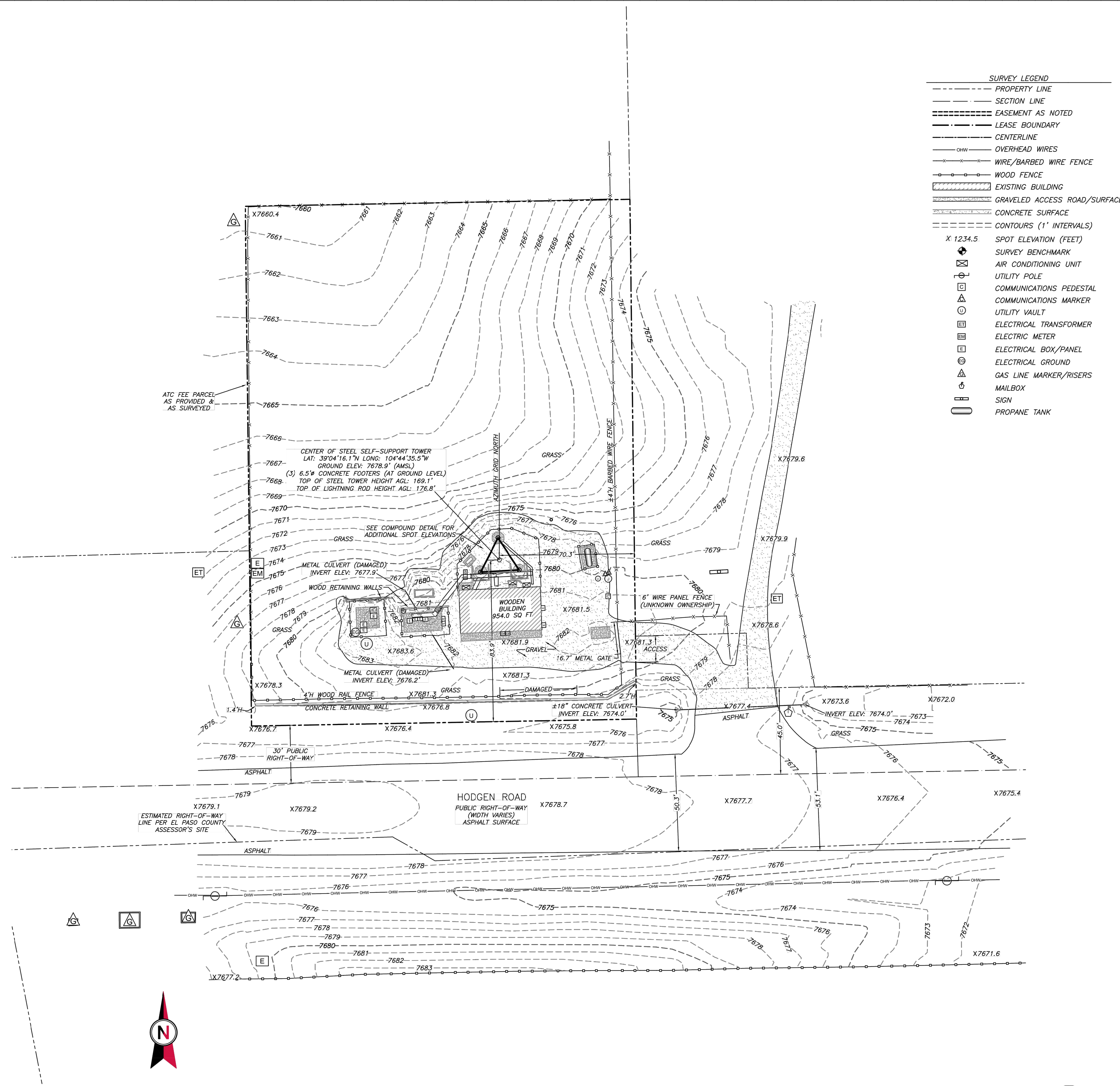
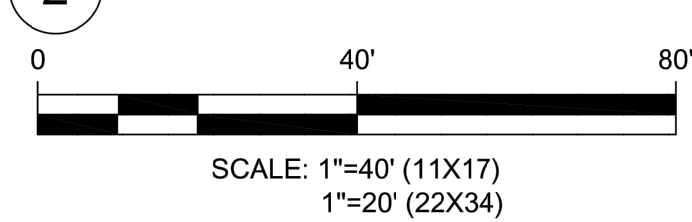
FIELD SURVEY DATE: 11/19/2020
SITE ADDRESS: 4590 HODGEN ROAD
COLORADO SPRINGS, COLORADO 80908-3008
PARENT PARCEL INFORMATION
OWNER: AMERICAN TOWER ASSET SUB, LLC
OWNER ADDRESS: P.O. BOX 72397
ATLANTA, GEORGIA 31139-0597
PIN (ASSESSOR SCHEDULE NO.): 6100000508
RECORDED AS INSTRUMENT NO. 207124618
TOTAL AREAS:
ATC FEE PARCEL AS PROVIDED: 53,861 SQ FT OR 1.2392 ACRES
ATC FEE PARCEL AS SURVEYED: 53,860.29 SQ FT OR 1.2391 ACRES
GEOGRAPHIC COORDINATES OF TOWER:
LATITUDE: 38°04'16.1" N LONGITUDE: 104°44'35.5" W
VERTICAL DATUM: NAVD 1988 HORIZONTAL DATUM: NAD83
GROUND ELEVATION: 7678.9'
BEARINGS AND COORDINATES ARE BASED ON COLORADO STATE PLANE AT GROUND, CENTRAL ZONE, FROM GPS OBSERVATION.
FLOODPLAIN:
PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.
COMMUNITY PANEL NUMBER: 68041C03050
DATED: 12/07/2016
ENCROACHMENT STATEMENT:
AT THE TIME OF THE SURVEY, NO VISIBLE ENCROACHMENTS WERE EVIDENT ONTO OR BEYOND THE ATC FEE PARCEL, AND THE ATC FEE PARCEL DID NOT ENCROACH OUTSIDE THE DESCRIBED BOUNDARY.



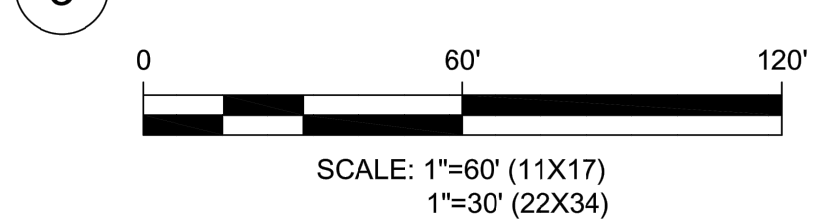
1 PARENT PARCEL



2 COMPOUND DETAIL



3 EXISTING CONDITIONS PLAN



- SURVEY LEGEND
- PROPERTY LINE
 - SECTION LINE
 - EASEMENT AS NOTED
 - LEASE BOUNDARY
 - CENTERLINE
 - OVERHEAD WIRES
 - WIRE/BARBED WIRE FENCE
 - WOOD FENCE
 - EXISTING BUILDING
 - GRAVELED ACCESS ROAD/SURFACE
 - CONCRETE SURFACE
 - CONTOURS (1' INTERVALS)
 - SPOT ELEVATION (FEET)
 - SURVEY BENCHMARK
 - AIR CONDITIONING UNIT
 - UTILITY POLE
 - COMMUNICATIONS PEDESTAL
 - COMMUNICATIONS MARKER
 - UTILITY VAULT
 - ELECTRICAL TRANSFORMER
 - ELECTRIC METER
 - ELECTRICAL BOX/PANEL
 - ELECTRICAL GROUND
 - GAS LINE MARKER/RISERS
 - MAILBOX
 - SIGN
 - PROPANE TANK

AMERICAN TOWER
ATC TOWER SERVICES, INC.
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
FAX: (919) 466-5415

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PRELIM	HH	11/30/2020
CLIENT COMMENTS	HH	12/07/2020

ATC SITE NUMBER:
302460
ATC SITE NAME:
BLACK FOREST
SITE ADDRESS:
4590 HODGEN ROAD
COLORADO SPRINGS, COLORADO
80908-3006

SURVEY CERTIFICATE:
THIS IS TO CERTIFY THAT ARROW SURVEY GROUP, INC., AT THE REQUEST AND FOR THE EXCLUSIVE USE OF AMERICAN TOWER CORP. AND NAME OF TITLE COMPANY, HAS PERFORMED THIS AS-BUILT SURVEY OF THE ATC LEASE AREA, FROM THE RECORD SOURCES AND ACTUAL FIELD SURVEY ON 11/19/2020 IN ACCORDANCE WITH THE MINIMUM STANDARDS OF PROPERTY BOUNDARY SURVEYS. ALL LINEAR AND ANGULAR VALUES SHOWN ARE BASED UPON DEED OR RECORD INFORMATION UNLESS OTHERWISE NOTED.

DATE OF PLAT: 12/07/2020
NAME: JASON D. LEVANEN
CO LICENSE NO. 38159

Arrow
Survey Group, Inc.
Sheridan, WY 82801 (307)751-7543

DRAWN BY:	HH
APPROVED BY:	JL
DATE DRAWN:	12/07/2020
ATC JOB NO:	302460

EXISTING CONDITIONS AND TOPOGRAPHIC PLAN

SHEET NUMBER:	REVISION:
V-102	1

AT&T
161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112

AMERICAN TOWER
19100 VON KARMAN AVE
SUITE 200
IRVINE, CA 92612

TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tepgroup.net

AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:

PRELIMINARY
DO NOT USE FOR CONSTRUCTION

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 TITLE:
SITE SURVEY II

SHEET NUMBER:
S-2

REVISION:
C

TEP #: 85172.243629

SITE SURVEY

NOTES:

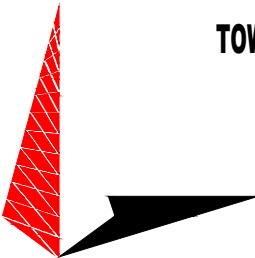
- THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
- ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE AT&T REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
- UTILITY COORDINATION PENDING.



161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112



AMERICAN TOWER®
19100 VON KARMAN AVE
SUITE 200
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ATC #: 302460
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COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:



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 TITLE:

COMPOUND DETAIL

SHEET NUMBER:

C-1

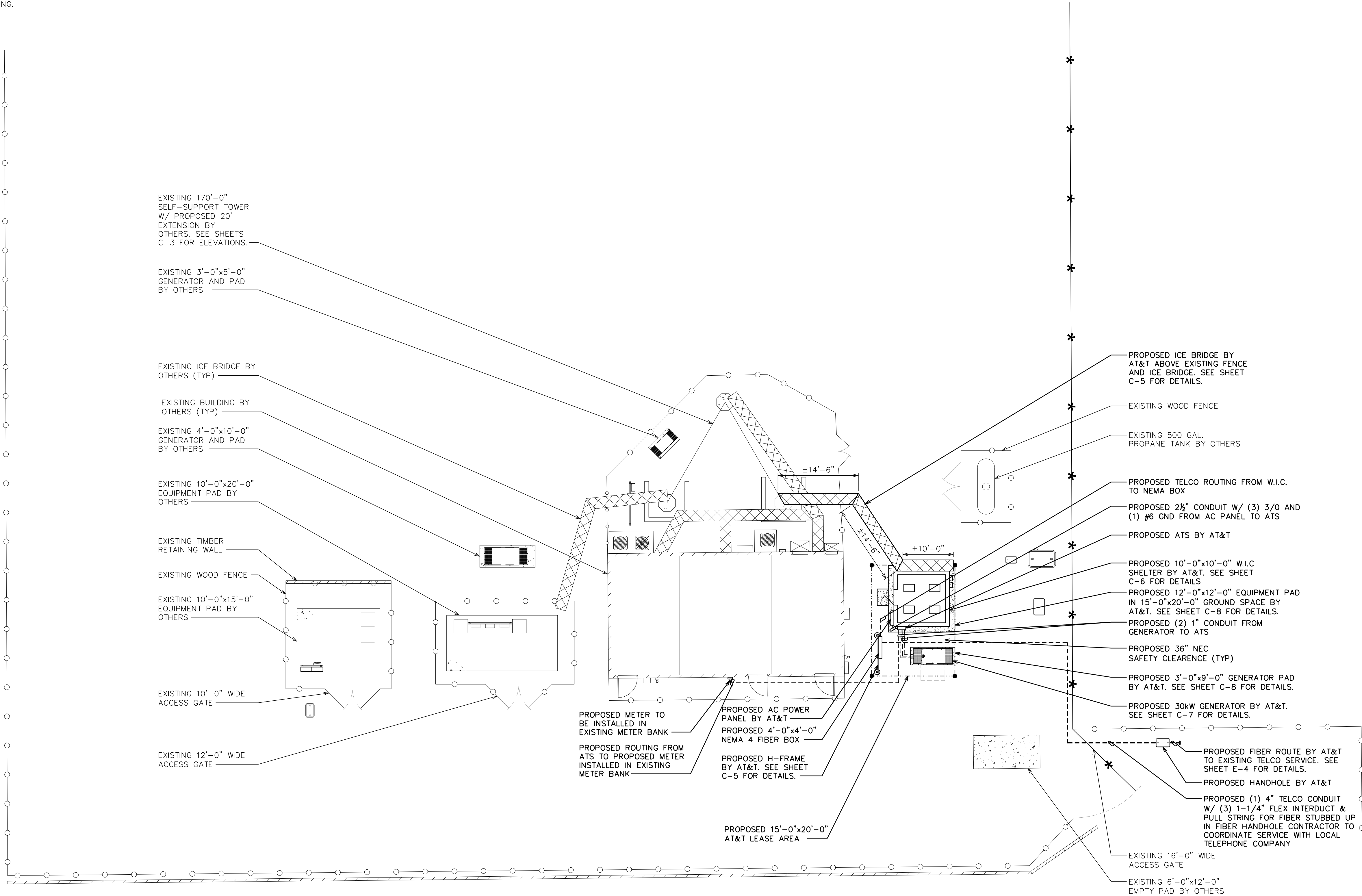
REVISION:

C

TEP #:

85172.243629

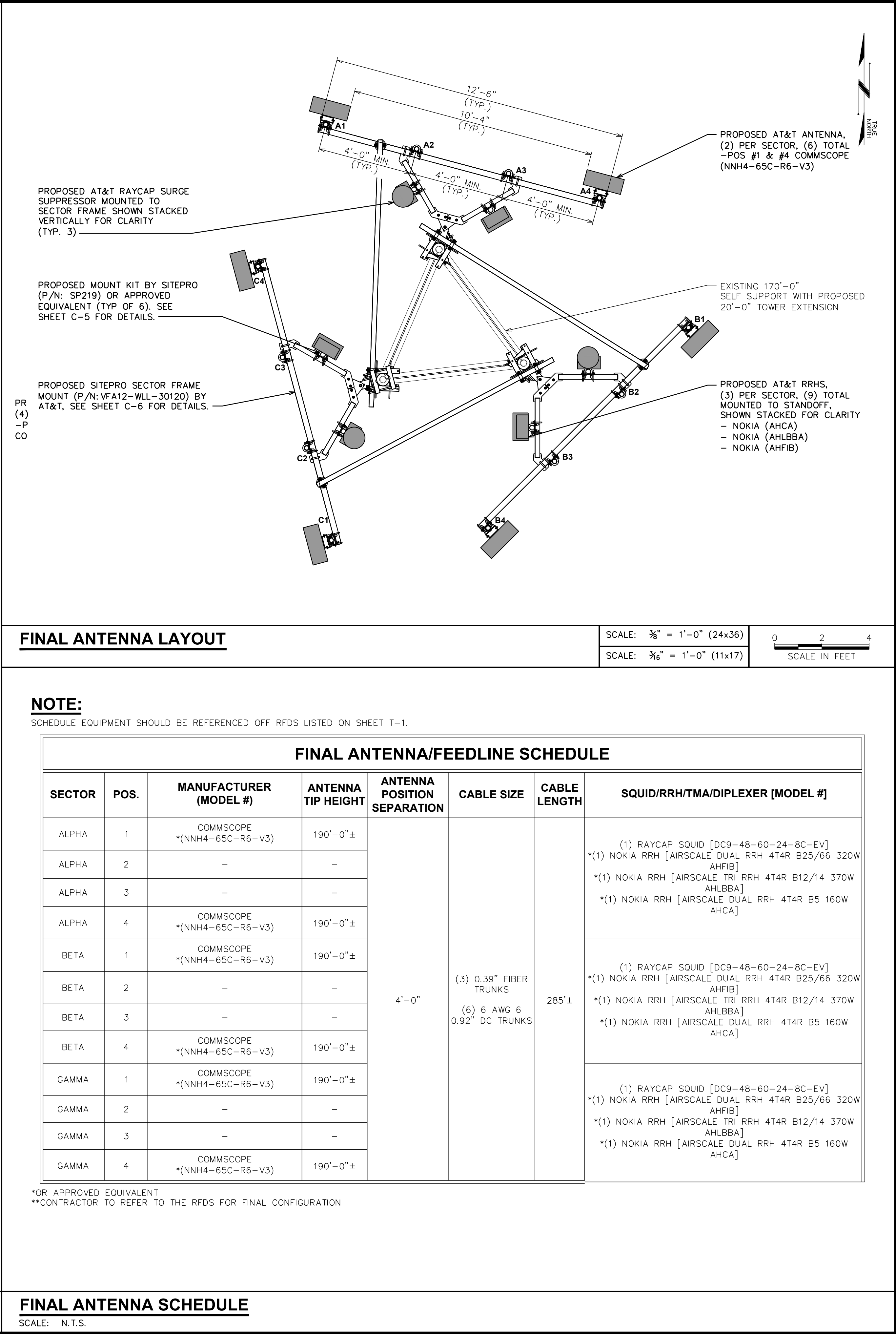
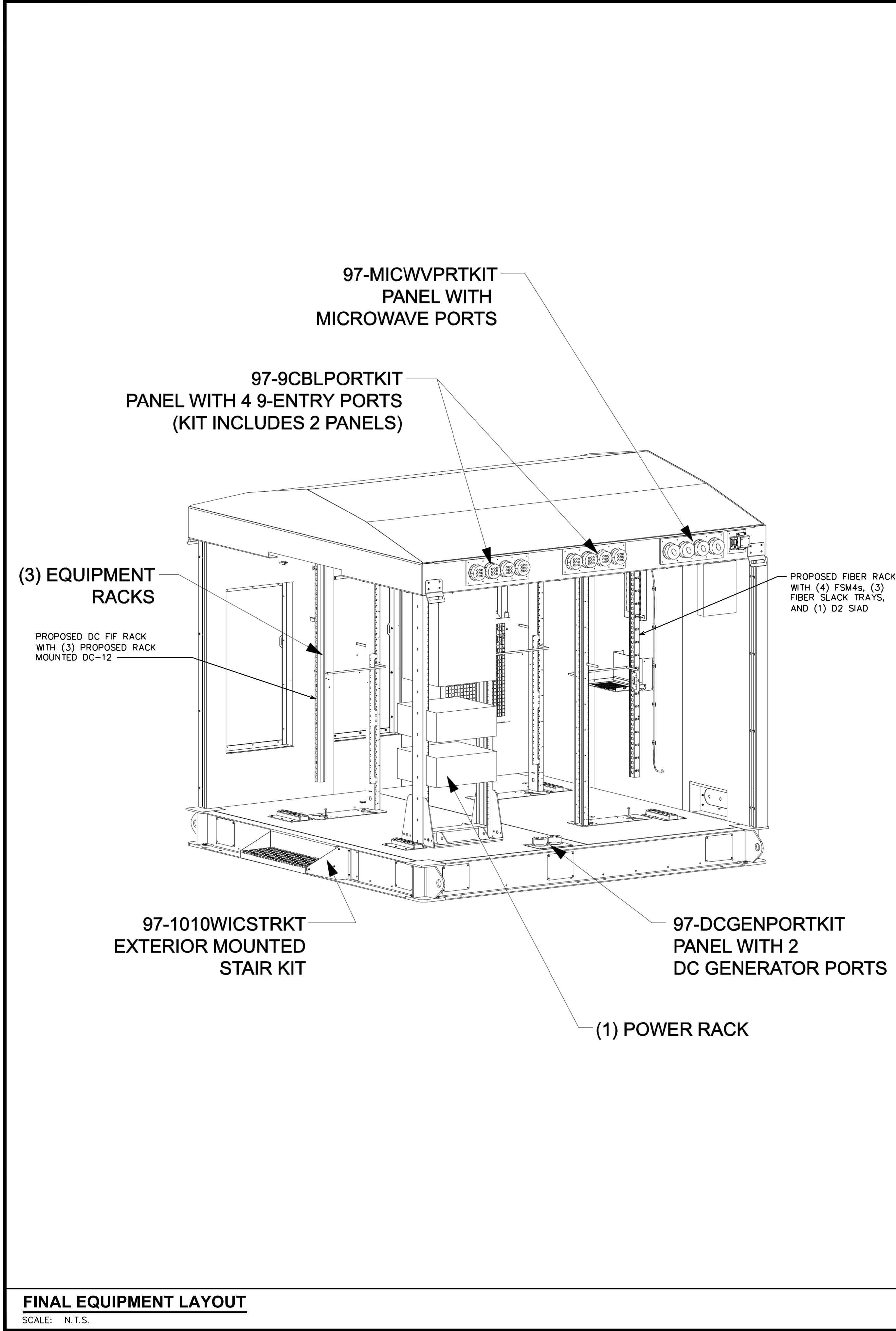
COMPOUND DETAIL




SCALE: 1" = 10' (24x36)


SCALE: 1" = 20' (11x17)

0 10 20
SCALE IN FEET

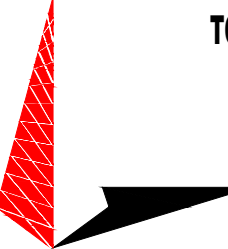




161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112



AMERICAN TOWER®
19100 VON KARMAN AVE
SUITE 200
IRVINE, CA 92612



TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tepgroup.net

AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

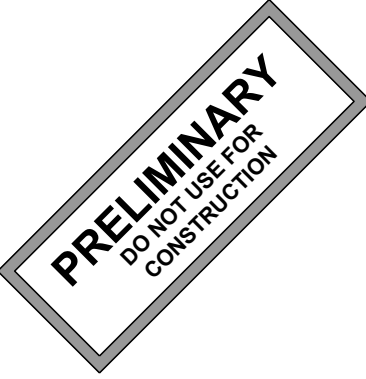
4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
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SEAL:



PRELIMINARY
DO NOT USE FOR
CONSTRUCTION

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SHEET TITLE:
**FINAL EQUIPMENT &
ANTENNA LAYOUTS**

SHEET NUMBER:
C-2

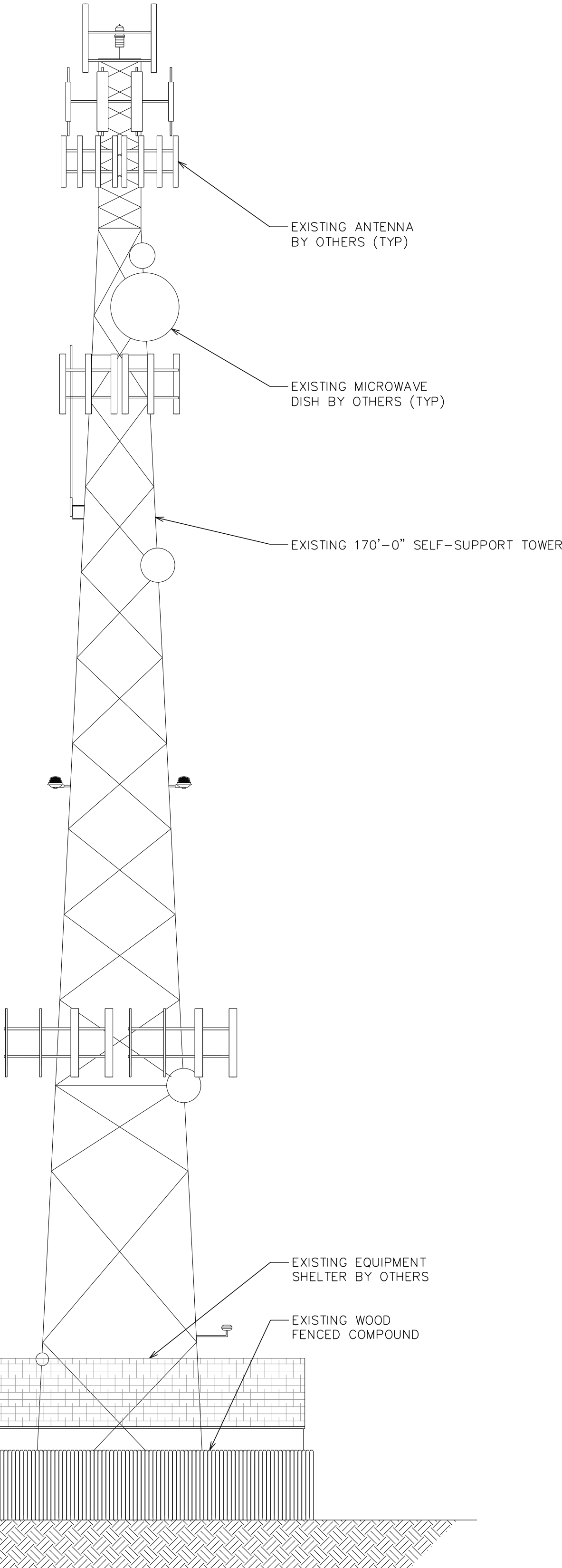
REVISION:
C

TEP #: 85172.243629

NOTE:

TOWER ELEVATION IS FOR SCHEMATIC PURPOSES ONLY. TEP DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO ANTENNA HEIGHTS, ANTENNA AZIMUTHS, AND MOUNT CONFIGURATIONS.

174'-0"±
T/APPERTENANCE
170'-0"±
T/TOWER

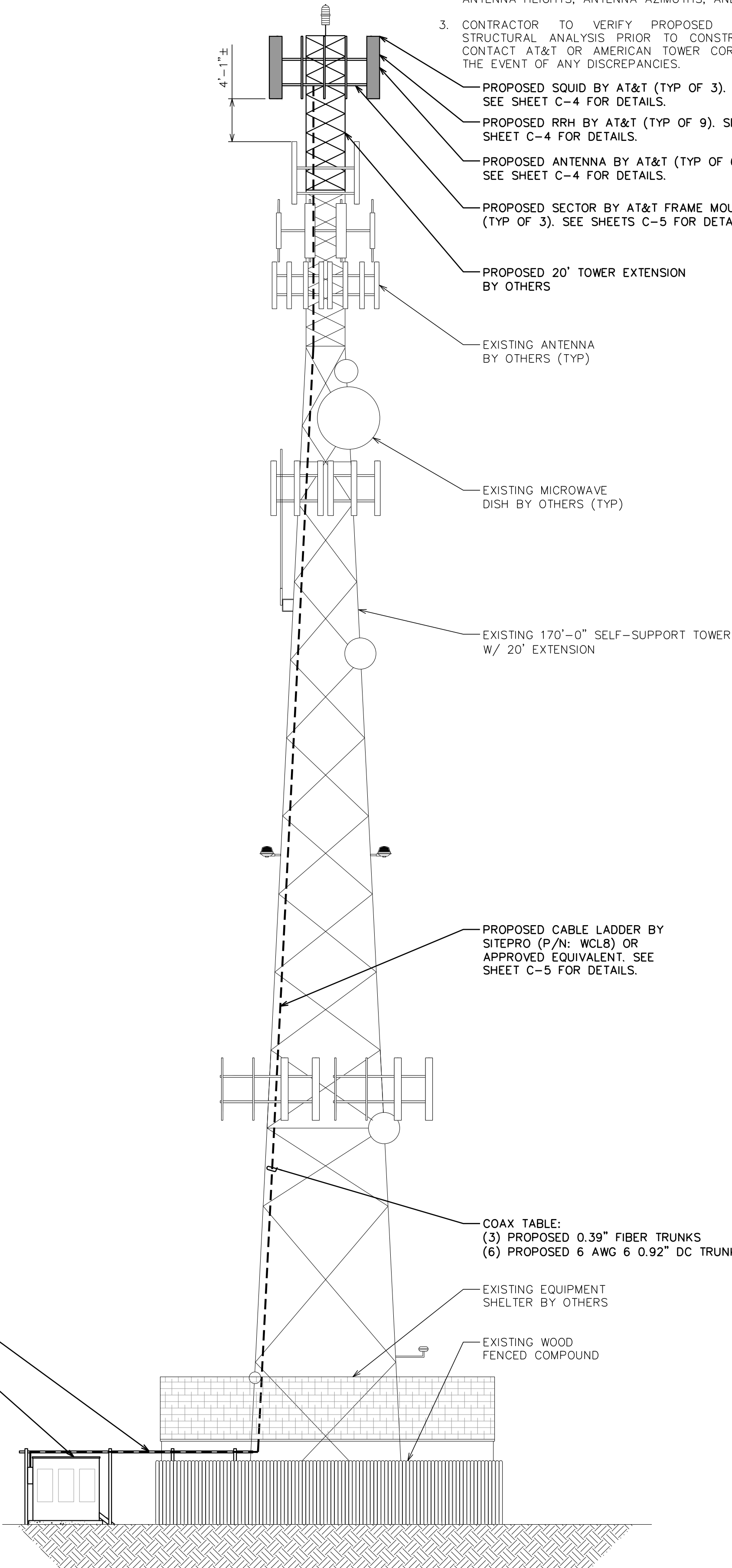
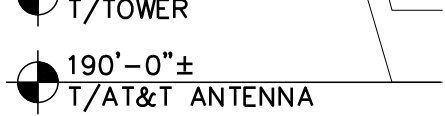


EXISTING TOWER ELEVATION

SCALE: 3/32" = 1'-0" (24x36)
SCALE: 3/64" = 1'-0" (11x17)



194'-0"±
T/APPERTENANCE
190'-0"±
T/TOWER
190'-0"±
T/AT&T ANTENNA



FINAL TOWER ELEVATION

SCALE: 3/32" = 1'-0" (24x36)
SCALE: 3/64" = 1'-0" (11x17)



NOTES:

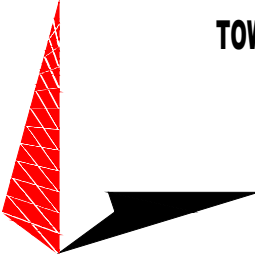
1. PROPOSED CABLES TO BE ROUTED PER SPECIFICATIONS OF PASSING STRUCTURAL ANALYSIS.
2. TOWER ELEVATION IS FOR SCHEMATIC PURPOSES ONLY. TEP DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO ANTENNA HEIGHTS, ANTENNA AZIMUTHS, AND MOUNT CONFIGURATIONS.
3. CONTRACTOR TO VERIFY PROPOSED LOADING WITH PASSING STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION. CONTRACTOR TO CONTACT AT&T OR AMERICAN TOWER CORPORATION IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES.



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OFFICE: (480) 285-0036
www.tepgroup.net

AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

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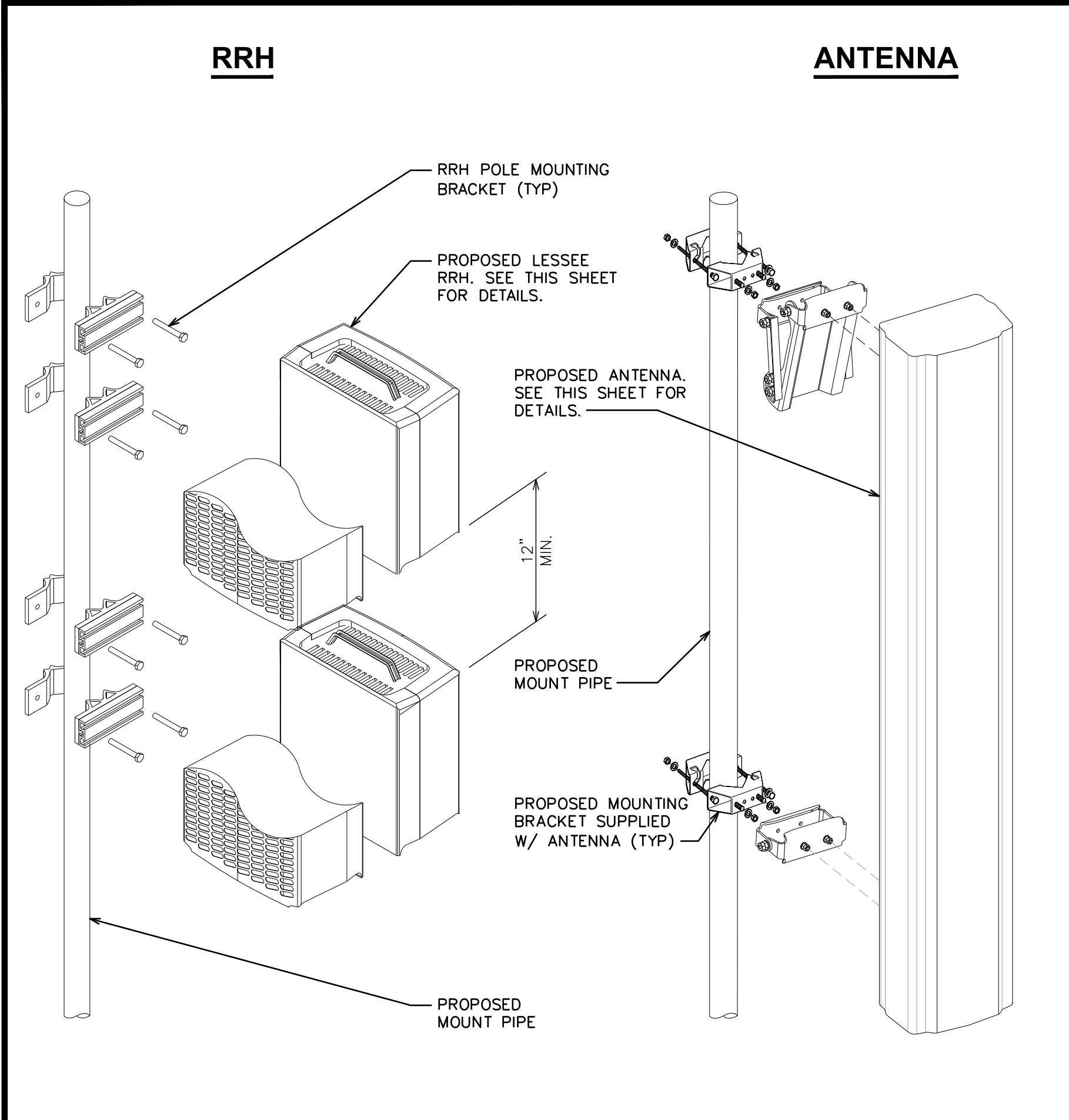
SHEET TITLE:
EXISTING AND
FINAL ELEVATIONS

SHEET NUMBER: REVISION:

C-3

C

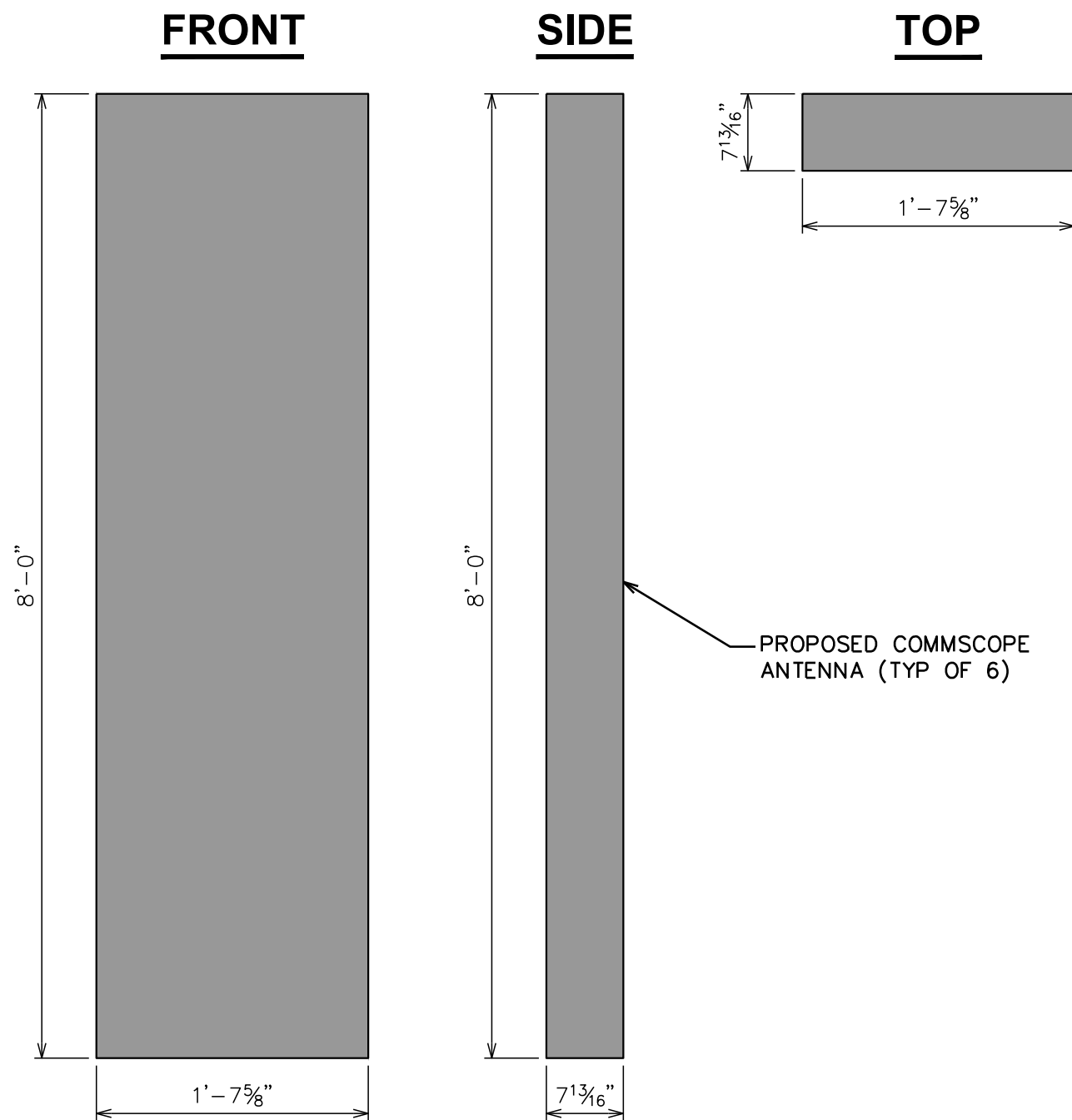
TEP #: 85172.243629



COMMSCOPE
NNH4-65C-R6-V3

DIMENSIONS, HxWxD: 96" x 19.6" x 7.8"

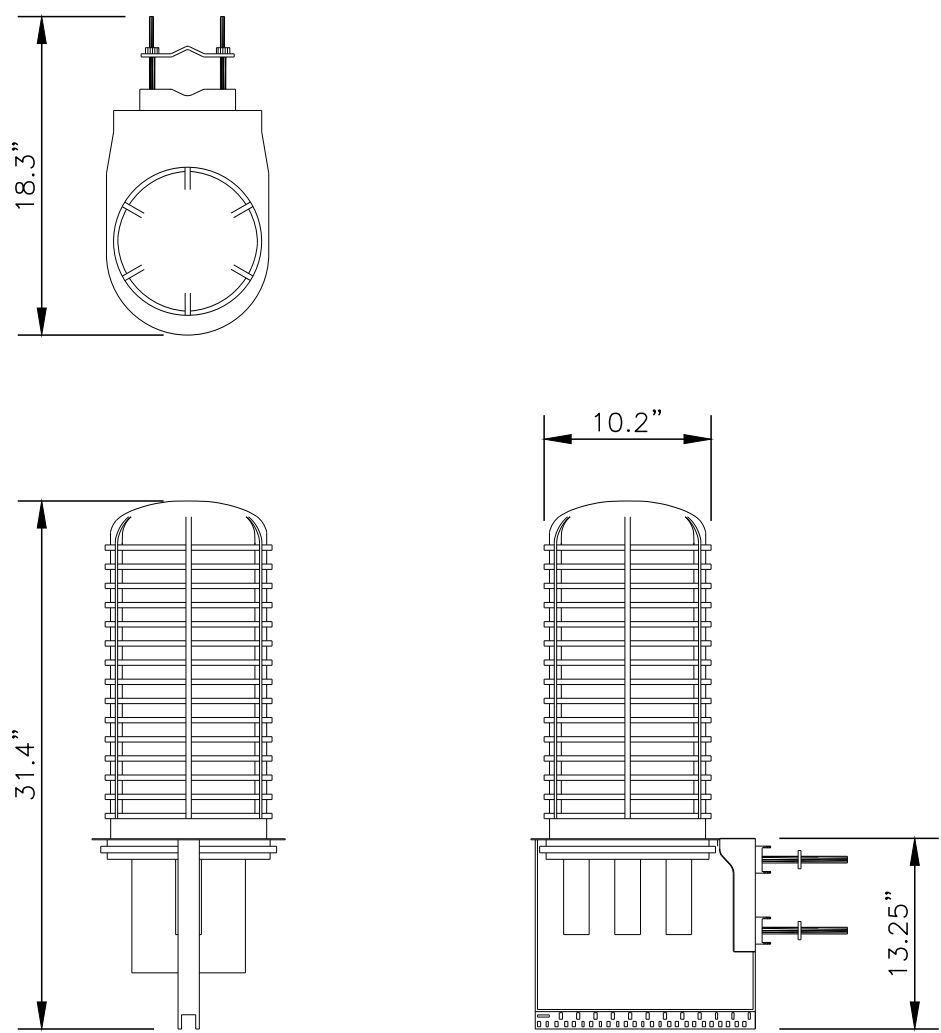
WEIGHT, W/O PRE-MOUNTED BRACKETS: 102.5 lbs



RAYCAP
DC9-48-60-24-8C-EV

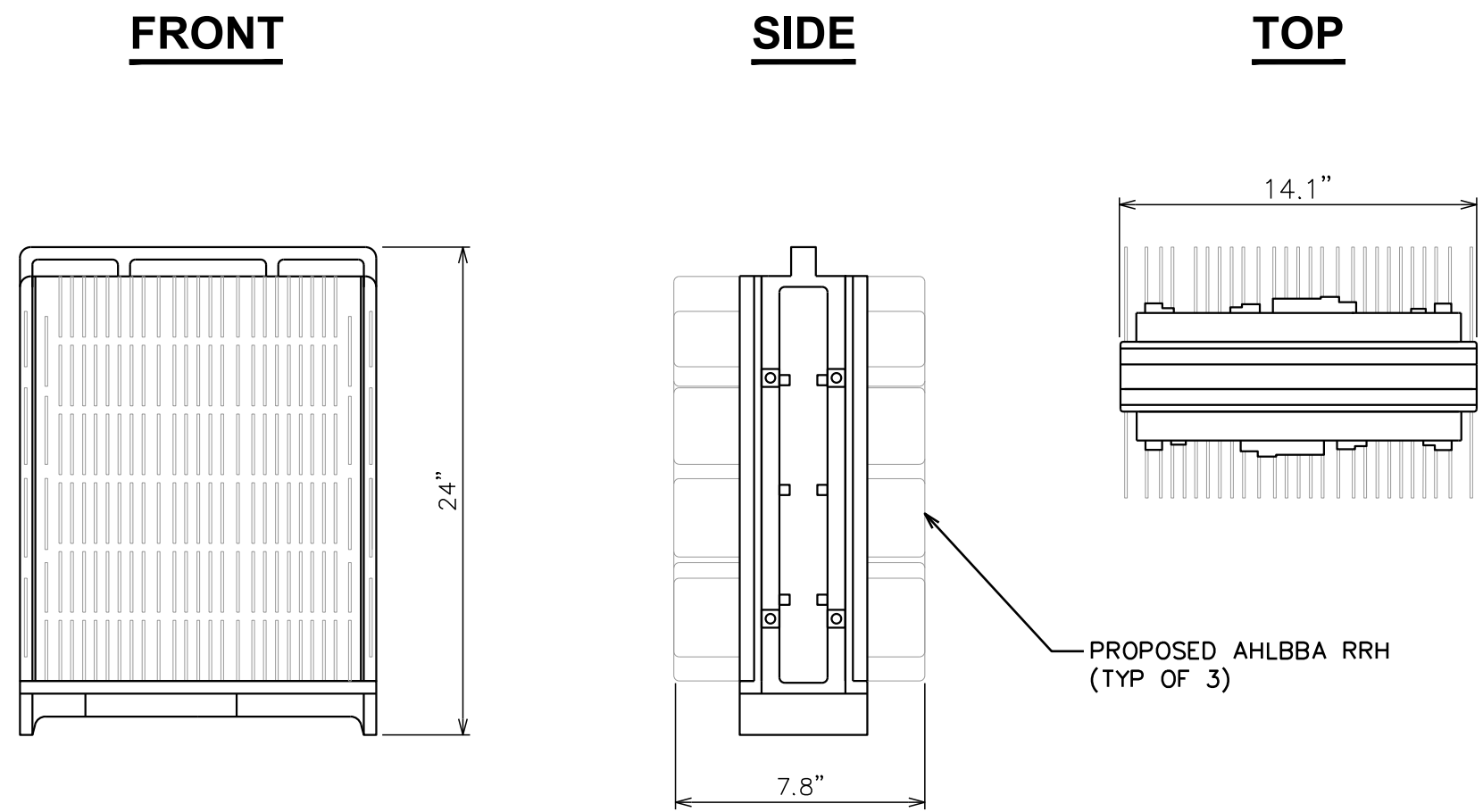
RAYCAP - DC9-48-60-24-8C-EV
SIZE: 31.4x18.3x10.2 IN.
WEIGHT: 16.0 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 400 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION



EQUIPMENT MOUNTING DETAIL

SCALE: N.T.S.

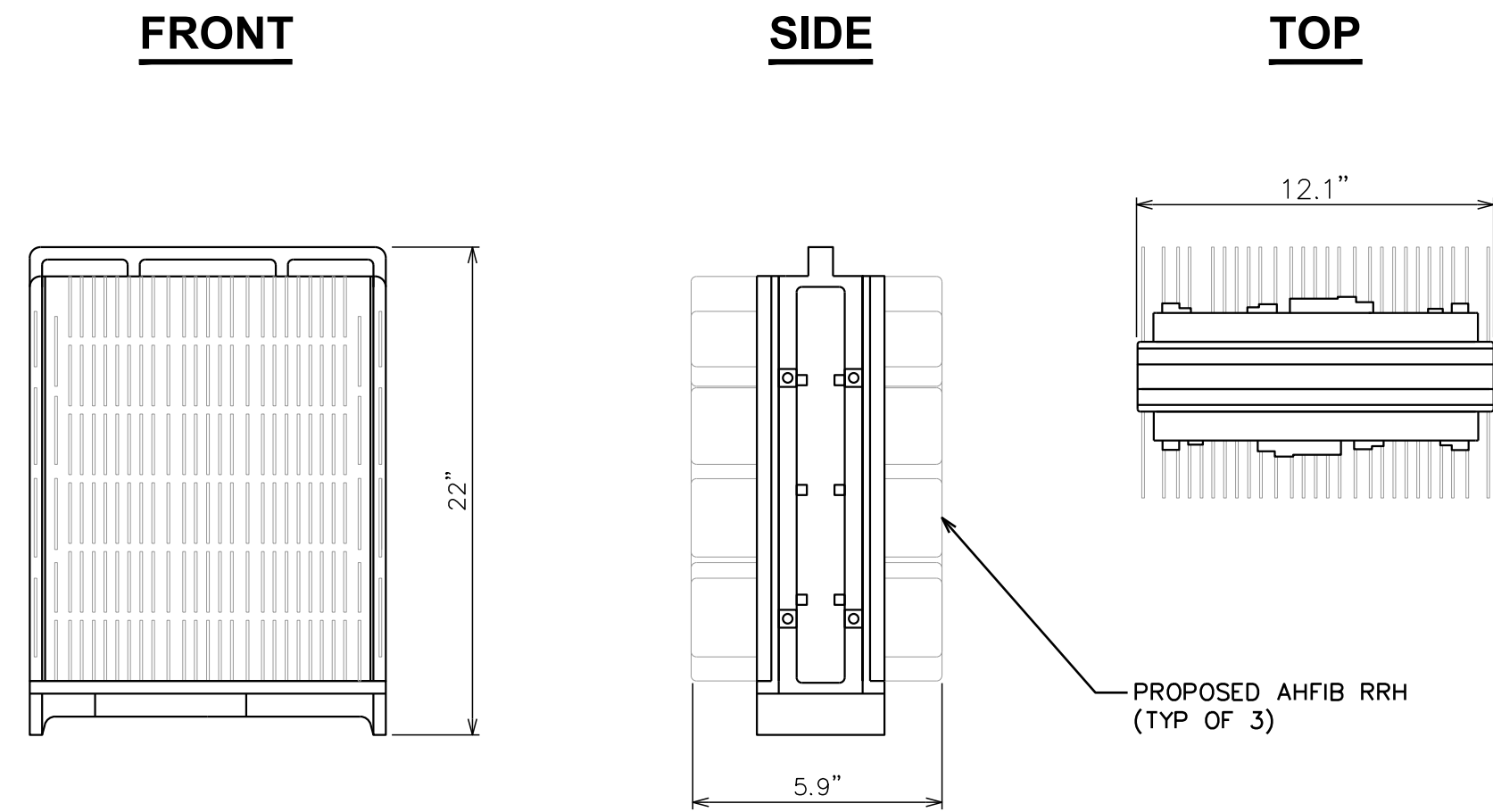


PROPOSED AHLBBA RRH DETAIL

SCALE: N.T.S.

PROPOSED COMMSCOPE ANTENNA DETAIL

SCALE: N.T.S.

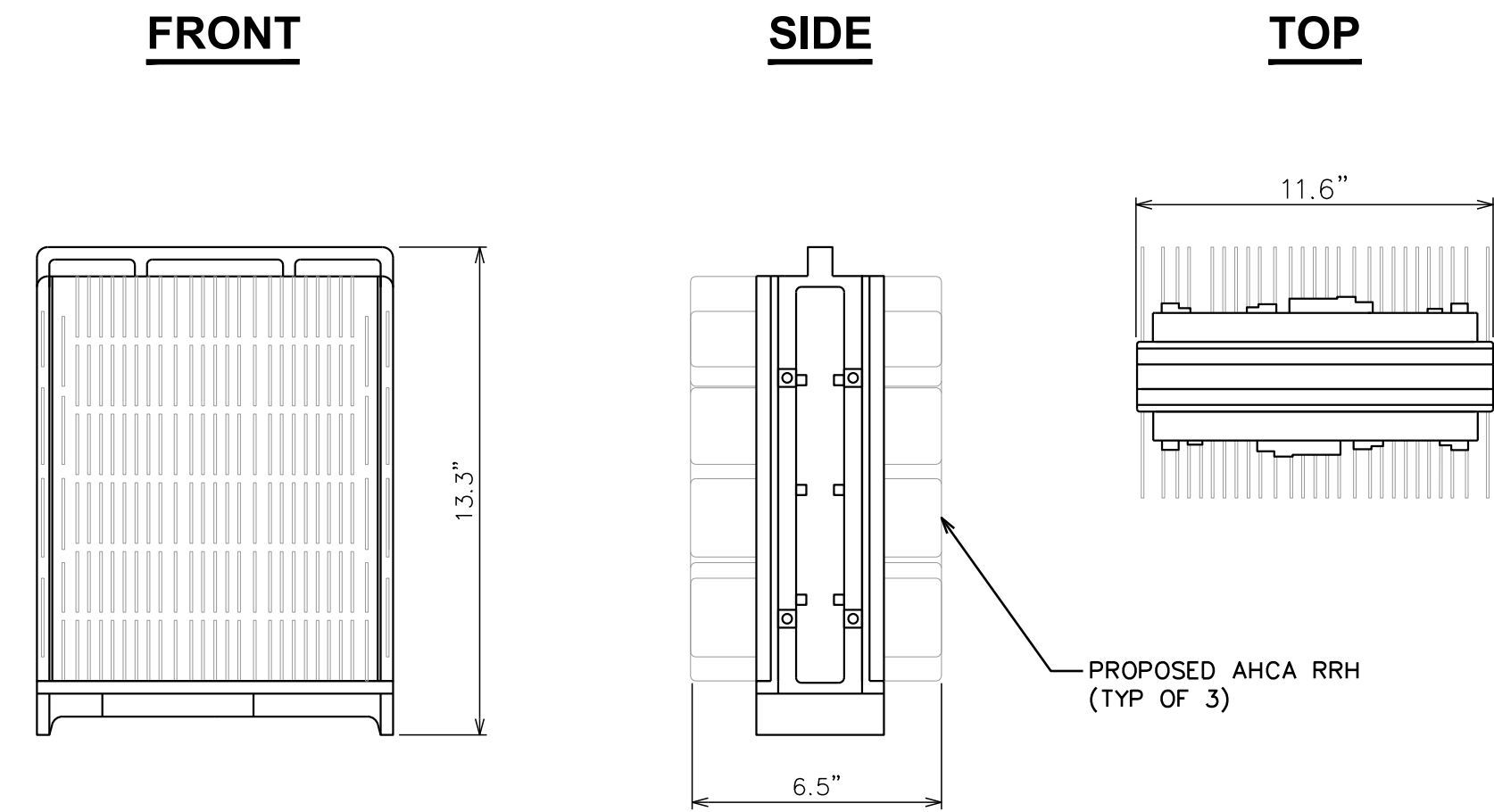


PROPOSED AHFIB RRH DETAIL

SCALE: N.T.S.

PROPOSED RAYCAP OVP DETAIL

SCALE: N.T.S.



PROPOSED AHCA RRH DETAIL

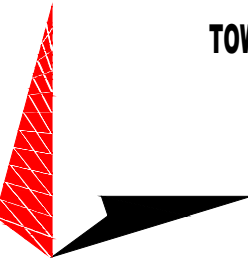
SCALE: N.T.S.



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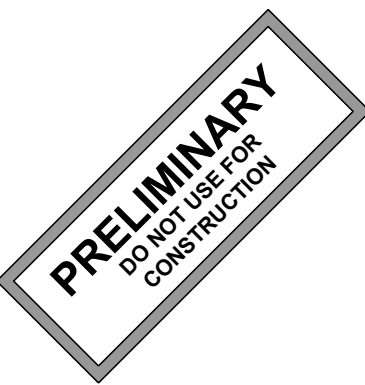
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SHEET TITLE:

EQUIPMENT DETAILS

SHEET NUMBER:


C-4

REVISION:

C

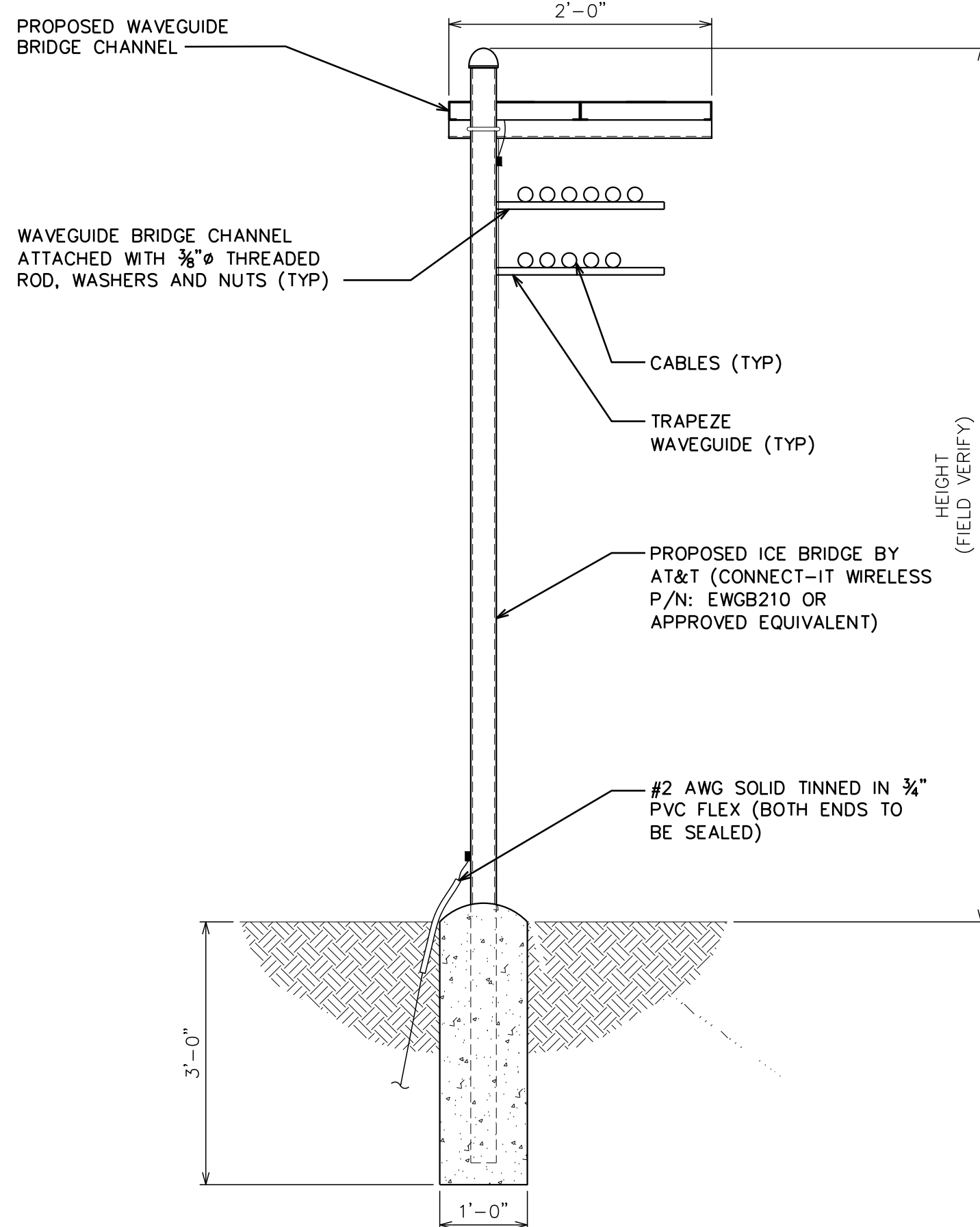
TEP #:

85172.243629

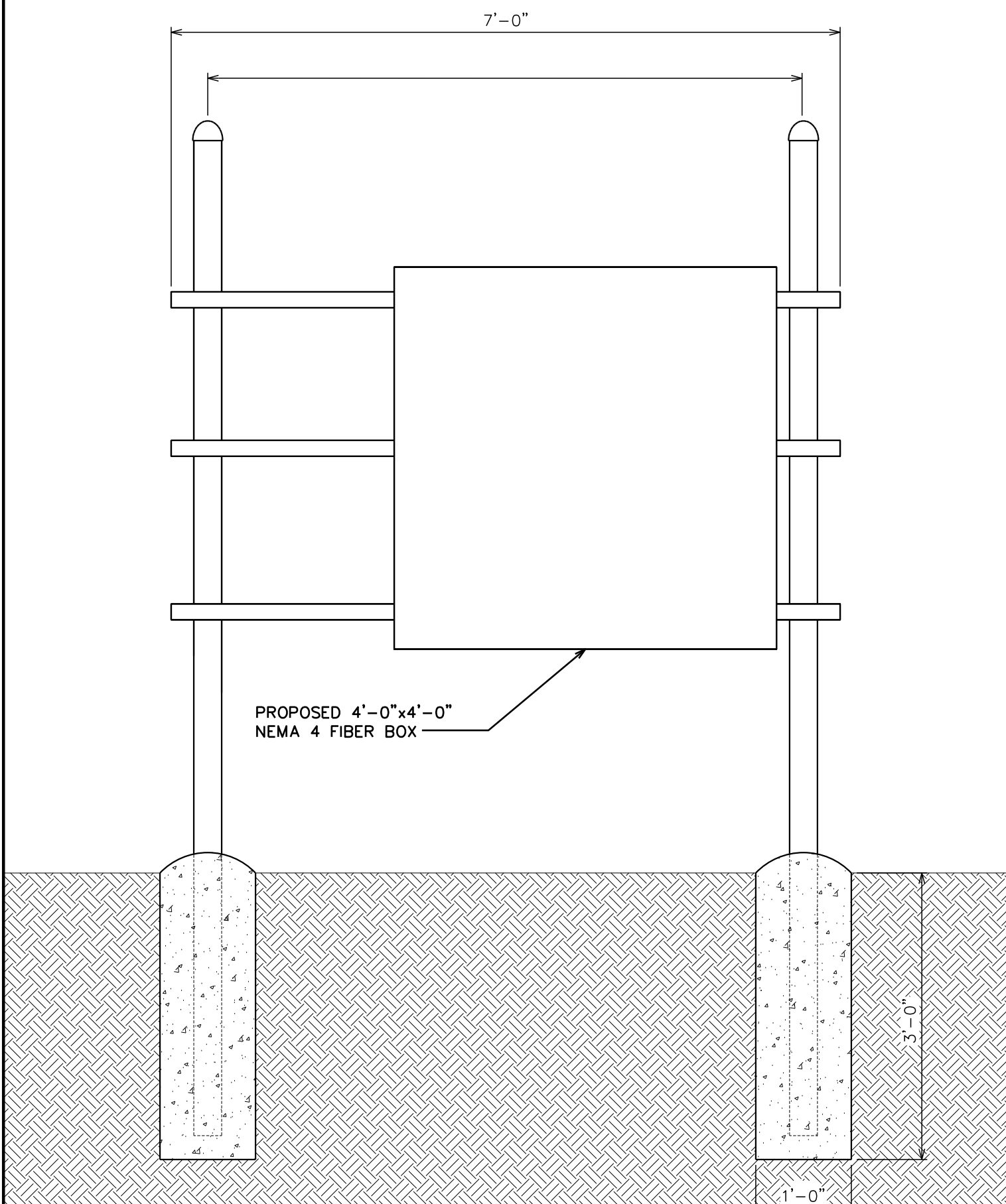
						TOLERANCE NOTES TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES (<i>± 0.030"</i>) DRILLED AND GAS CUT HOLES (<i>± 0.0007"</i>) - NO COING OF HOLES LASER CUT EDGES AND HOLES (<i>± 0.0107"</i>) - NO COING OF HOLES BENDS ARE <i>± 1/2</i> DEGREE ALL OTHER MACHINING (<i>± 0.0007"</i>) ALL OTHER ASSEMBLY (<i>± 0.0007"</i>)				<div>DESCRIPTION</div> 12" 6" HEAVY DUTY V-FRAME ASSEMBLY Support Frame: W/ 2 STIFF ARMS & MOUNT PIPES				<div>Location: New York, NY Atlanta, GA Los Angeles, CA Phoenix, AZ Salem, OR Dallas, TX</div>						
A UPDATED BICAM VERSION 1 TO BICAM VERSION 2						CPD	CSL	7/2/2018	PART NO.				VFA12-WLL-30120				1 OF 5			
REV	DESCRIPTION OF REVISIONS REVISION HISTORY					CPD	BY	DATE	CLASS / 87 02 CUSTOMER DRAWING USAGE CHECKED BY BMC 5/3/2018				DWG NO.				VFA12-WLL-30120			

DESCRIPTION		8 RUN CABLE LADDER		<div><div><div>SITE PRO</div><div>1</div></div><div>Engineering Support Team 1-888-753-7446</div></div> <div><div>Valmont</div><div>Valmont</div></div>		Locations: New York, NY Atlanta, GA Los Angeles, CA Phoenix, AZ Dallas, TX	
DRAWN BY CEK 1/17/2012	CPO NO.	DRAWING USAGE CUSTOMER	PART NO.	WCL8		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 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1421 1422 1423 1424 1425 1426 1427 1428 1429 1430 1431 1432 1433 1434 1435 1436 1437 1438 1439 1440 1441 1442 1443 1444 1445 1446 1447 1448 1449 1450 1451 1452 1453 1454 1455 1456 1457 1458 1459 1460 1461 1462 1463 1464 1465 1466 1467 1468 1469 1470 1471 1472 1473 1474 1475 1476 1477 1478 1479 1480 1481 1482 1483 1484 1485 1486 1487 1488 1489 1490 1491 1492 1493 1494 1495 1496 1497 1498 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529 1530 1531 1532 1533 1534 1535 1536 1537 1538 1539 1540 1541 1542 1543 1544 1545 1546 1547 1548 1549 1550 1551 1552 1553 1554 1555 1556 1557 1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1590 1591 1592 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616 1617 1618 1619 1620 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1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214	

SCALE: N.T.S.

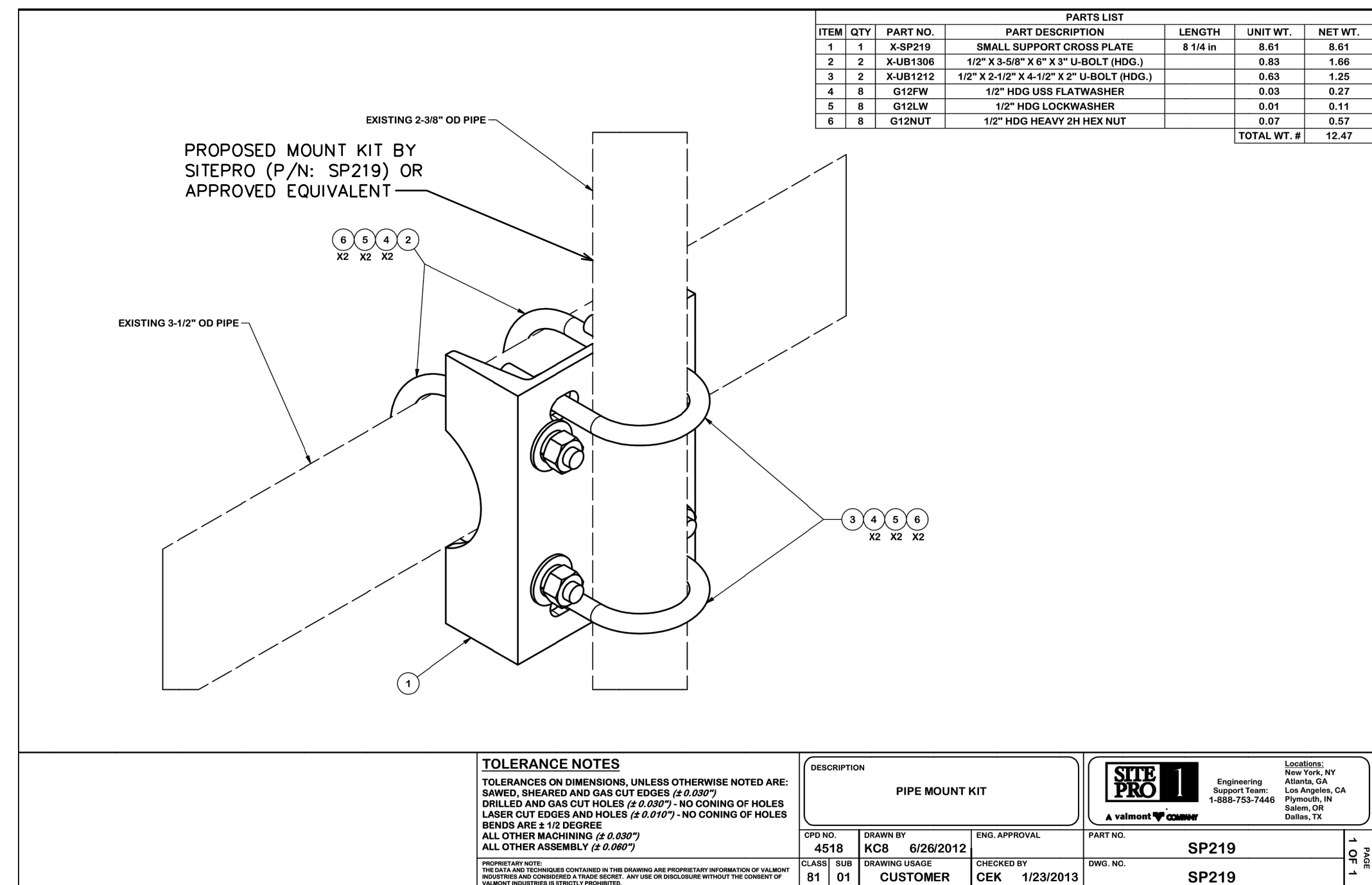


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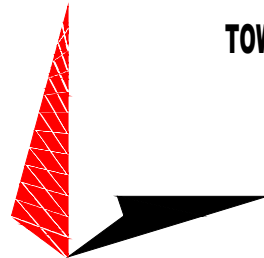
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TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tepgroup.net

AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

**EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR**

REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:



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TO ALTER THIS DOCUMENT.

SHEET TITLE:

EQUIPMENT DETAILS

SHEET NUMBER:

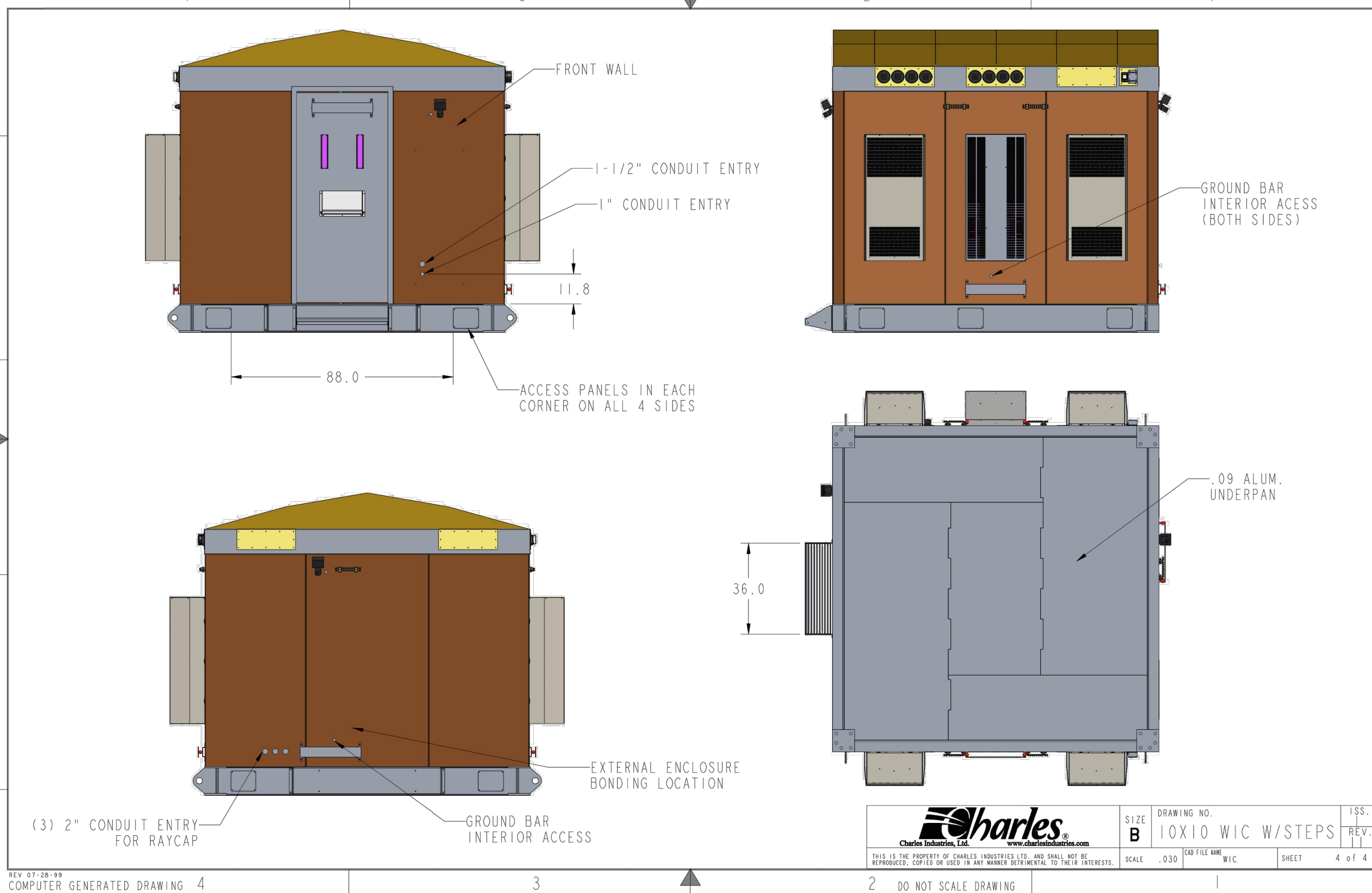
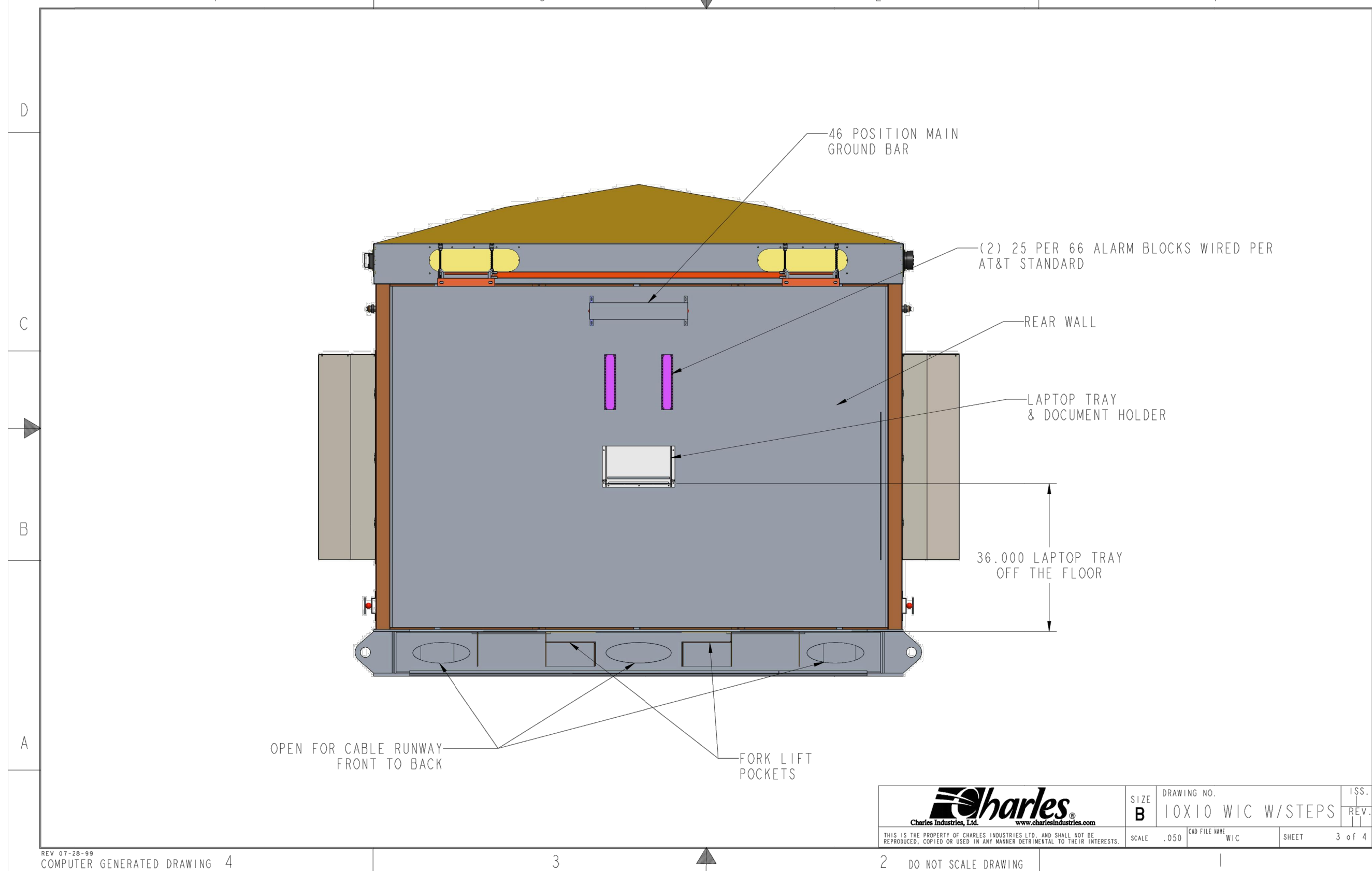
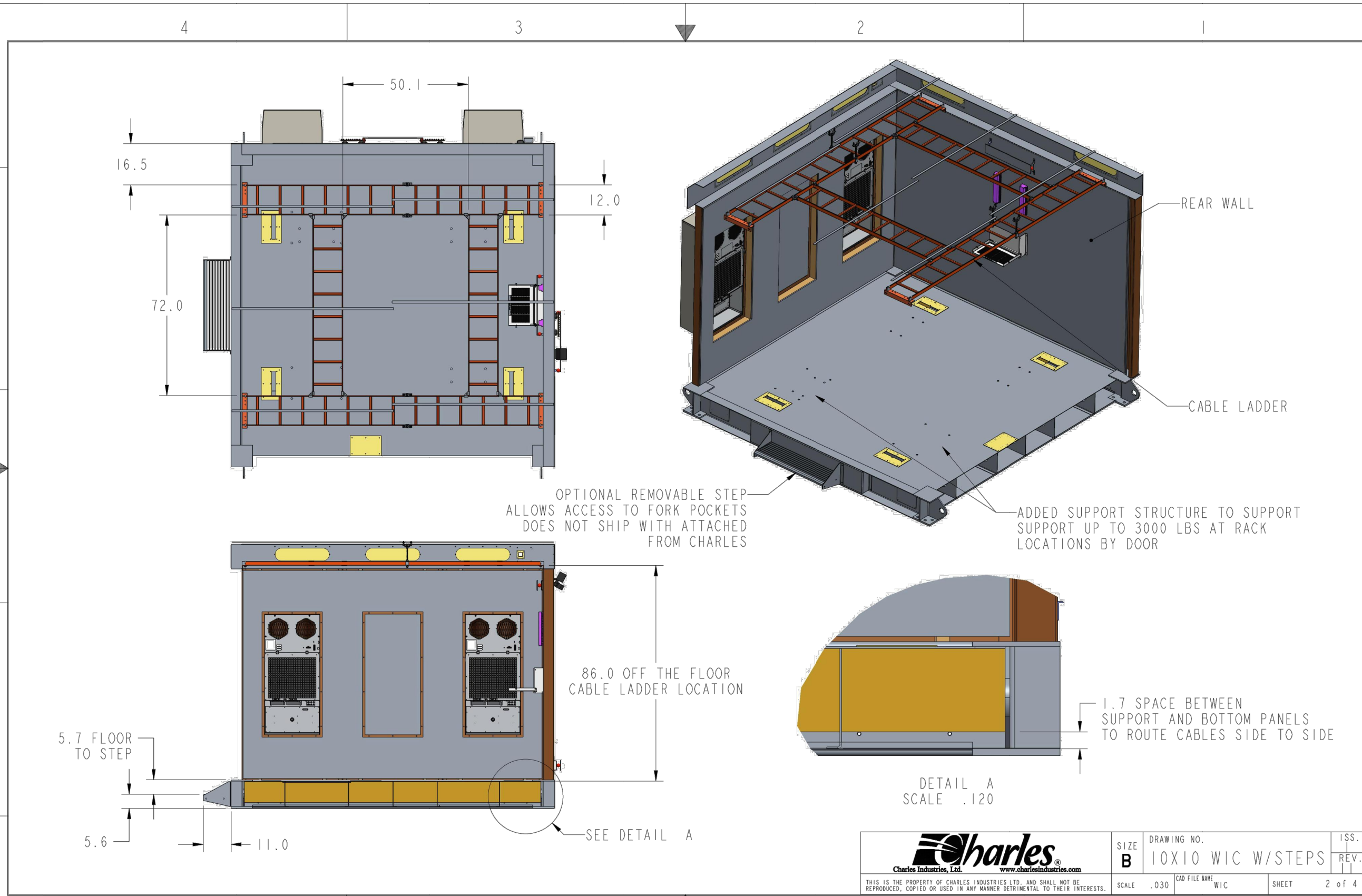
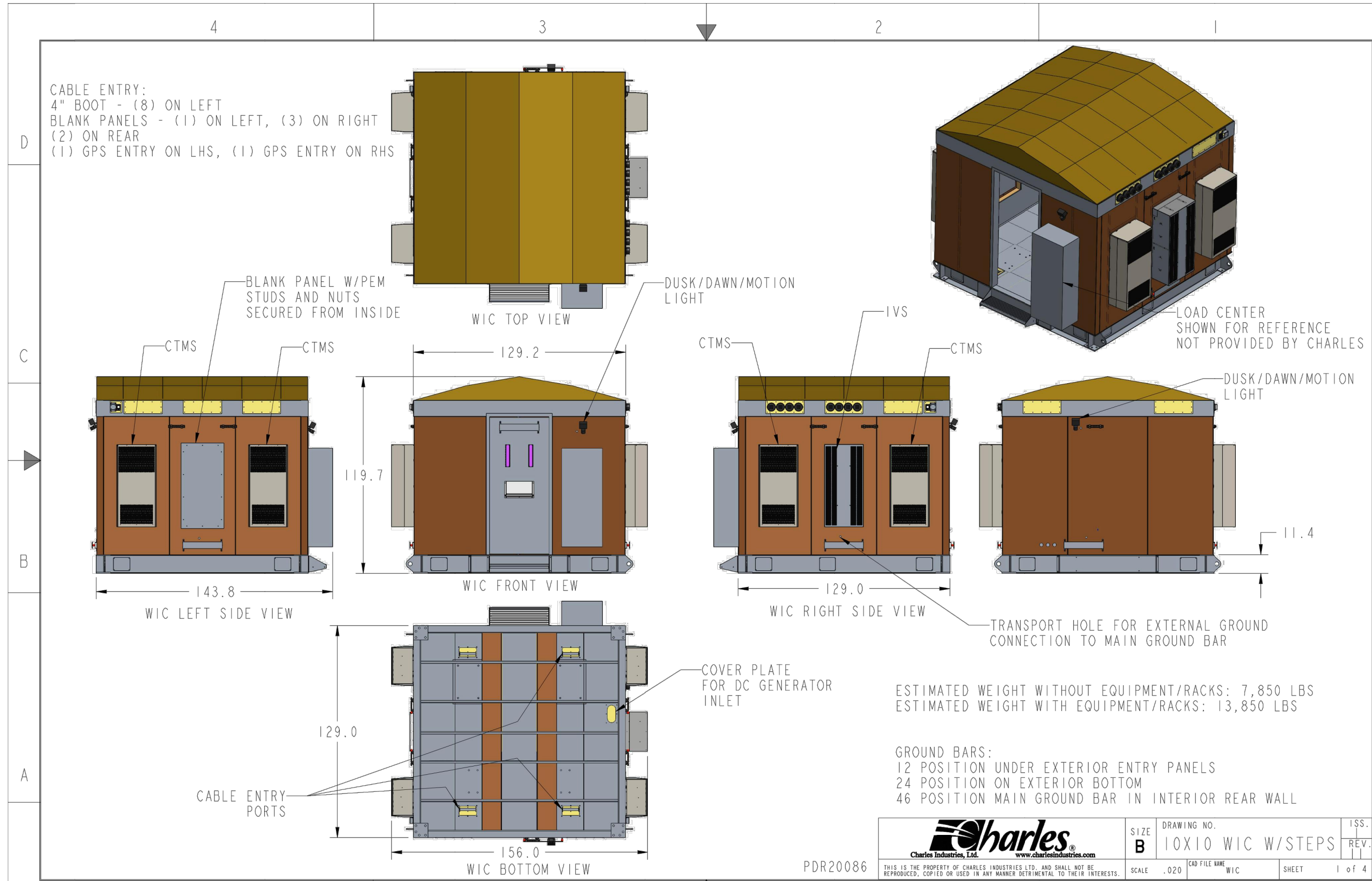
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REVISION:

C

TEP #:

85172.243629



AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
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SEAL:

PRELIMINARY
DO NOT USE FOR
CONSTRUCTION

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SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER: C-6
REVISION: C

TEP #: 85172.243629

WIC SHELTER DETAIL
SCALE: N.T.S

SD030 | 2.2L | 30 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

Standby Power Rating
30 kW, 38 kVA, 60 Hz

Prime Power Rating*
27 kW, 34 kVA, 60 Hz



Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

	UL2200, UL508, UL489, UL142
	CSA C22.2
	BS5514 and DIN 6271
	SAE J1349
	NFPA 37, 70, 99, 110
	NEC700, 701, 702, 708
	ISO 3046, 7637, 8528, 9001
	NEMA ICS10, MG1, 250, ICS6, AB1
	ANSI C62.41

Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

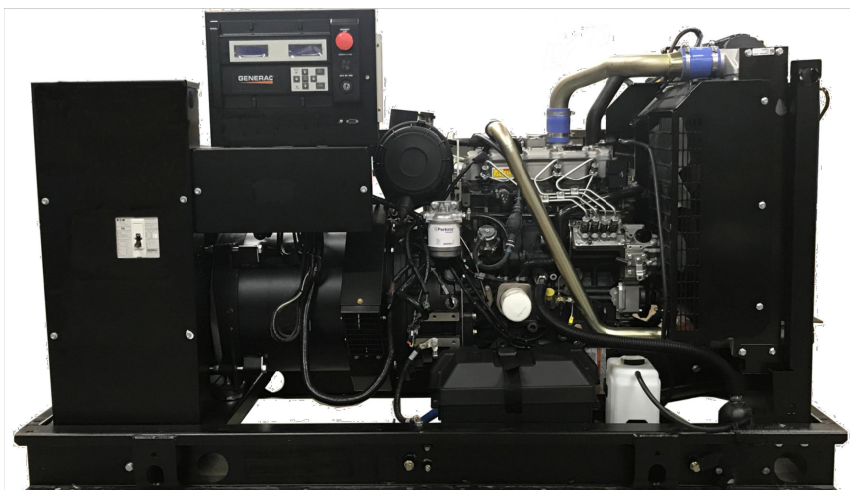


Image used for illustration purposes only

SD030 | 2.2L | 30 kW
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency

GENERAC INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Unit Only)
- Engine Coolant Heater

Fuel System

- Fuel Lockoff Solenoid
- Primary Fuel Filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Stainless Steel
- Brushless Excitation
- Sealed Bearing
- Rotor Dynamically Self-Balanced
- Stainless Steel Lift Off Door Hinges
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Unit Only)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High-Performance Sound-Absorbing Material (Sound Attenuation Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

FUEL TANKS (If Selected)

- UL 142ULC SS01
- Double Wall
- Normal and Emergency Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested
- Rupture Basin Alarm
- Fuel Level
- Check Valve in Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM



Digital H Control Panel- Dual 4x20 Display

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isynchronous Governor Control
- Waterproof/Sealed Connectors

ALTERNATOR SYSTEM

- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- Isynchronous Governor Control
- All Phase AC Voltage
- All Phase Currents

ENCLOSURE (If Selected)

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

Alarms and Warnings

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings: Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

SD030 | 2.2L | 30 kW
INDUSTRIAL DIESEL GENERATOR SET
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GENERAC INDUSTRIAL POWER

OPERATING DATA

POWER RATINGS

Standby		
Single-Phase 120/240 VAC @1.0pf	30 kW	Amps: 125
Three-Phase 120/208 VAC @0.8pf	30 kW	Amps: 104
Three-Phase 120/240 VAC @0.8pf	30 kW	Amps: 90
Three-Phase 277/480 VAC @0.8pf	30 kW	Amps: 45
Three-Phase 346/600 VAC @0.8pf	30 kW	Amps: 36

MOTOR STARTING CAPABILITIES (kW)

s/kVA vs. Voltage Dip	30%	200/240 VAC	30%
277/480 VAC	61	K0035124Y21	46
K0035124Y21	76	K0040124Y21	58
K0050124Y21	98	K0050124Y21	75

FUEL CONSUMPTION RATES*

Fuel Pump Lift- ft (m)		Diesel - gph (Lph)	
3 (1)	Percent Load	Standby	
	25%	1.0 (3.7)	
	50%	1.4 (5.2)	
	75%	2.0 (7.5)	
	100%	2.8 (10.5)	
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)		122 (50)	
16.6 (63)		See Bulletin No. 0196239SS01	

COOLING

Standby		
Coolant Flow	gpm (Lpm)	14.9 (56.2)
Coolant System Capacity	gal (L)	2.5 (9.5)
Heat Rejection to Coolant	BTU/hr (kW)	128,638 (136)
Inlet Air	scfm (m³/min)	2,800 (4,757)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)	°F (°C)	See Bulletin No. 0196239SS01
Maximum Radiator Backpressure	in H ₂ O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

Standby		
Flow at Rated Power scfm (m³/min)		
86 (2.5)		
ENGINE		
EXHAUST		
Rated Engine Speed	RPM	1,800
Minimum Power at Rated kW**	hp	49
Piston Speed	ft/min (m/min)	1,181 (360)
BMEP	psi (kPa)	159 (1,096)
Exhaust Flow (Rated Output)	scfm (m³/min)	296.6 (8.4)
Max. Allowable Backpressure (Post Turbocharger)	inHg (kPa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	892 (478)

** Refer to "Emissions Data Sheet" for maximum BHP for EPA and SCAQM permitting purposes.

Derate - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.

Standby - See Bulletin 018750SS38

Prime - See Bulletin 018751SS38

SD030 | 2.2L | 30 kW
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GENERAC INDUSTRIAL POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Oil Heater
- Critical Silencer (Open Set Only)
- Radiator Store Guard
- Level 1 Fan and Belt Guards (Open Set Only)

FUEL SYSTEM

- NPT Flexible Fuel Line

ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upgrading
- Air-Condensation Heater
- Tropical Coating
- Permanent Magnet Excitation

GENERATOR SET

- Extended Factory Testing
- 8 Position Load Center
- Pad Vibration Isolation

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Isolation Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Level 2 Sound Attenuation with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Alarm Switch
- Enclosure Heater
- Damper Alarm Contacts

WARRANTY (Standby Gensets Only)

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

CONTROL SYSTEM

- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indication and Alarms
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- 100 dB Alarm Horn
- Ground Fault Annunciation
- 120V EFCI and 240V Outlets
- Remote Communication - Modern
- 10A Engine Run Relay

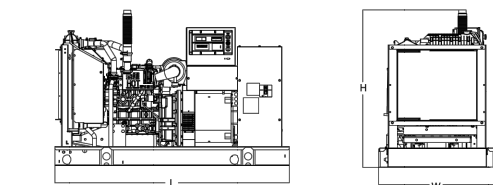
FUEL TANKS (Size On Last Page)

- 8 in. (203.2 mm) Fill Extension
- 13 in. (330.2 mm) Fill Extension
- 19 in. (482.6 mm) Fill Extension
- Overflow Protection Valve
- 5 Gallon Spill Box Return Hose
- 5 Gallon Spill Box
- Tank Risers
- Fuel Level Switch and Alarm
- 12" Vent System
- Fire Rated Stainless Steel Fuel Hose

SD030 | 2.2L | 30 kW
INDUSTRIAL DIESEL GENERATOR SET
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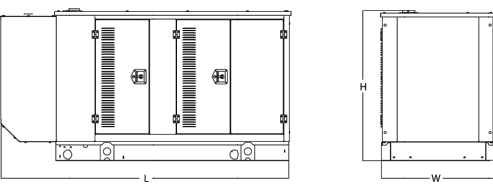
GENERAC INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



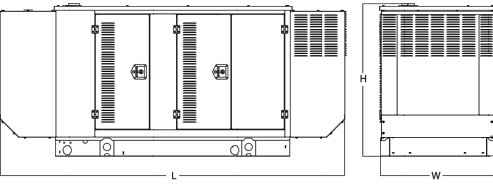
OPEN SET (Includes Exhaust Flex)

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	76.0 (1,930) x 37.4 (950) x 44.8 (1,138)	1,641 (745)
19	54 (204)	76.0 (1,930) x 37.4 (950) x 57.8 (1,468)	2,121 (963)
47	132 (501)	76.0 (1,930) x 37.4 (950) x 69.6 (1,773)	2,351 (1,067)
75	211 (799)	76.0 (1,930) x 37.4 (950) x 81.8 (2,078)	2,560 (1,162)
107	300 (1,136)	92.9 (2,360) x 37.4 (950) x 81.8 (2,078)	2,623 (1,190)



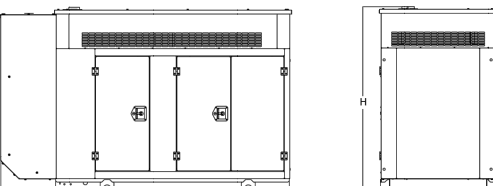
WEATHER PROTECTED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	372 (170)
19	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)	505 (230)
47	132 (501)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)	575 (260)
75	211 (799)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)	610 (276)
107	300 (1,136)	94.8 (2,409) x 38.0 (965) x 98.5 (2,491)	645 (293)



LEVEL 1 ACOUSTIC ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	112.5 (2,857) x 38.0 (965) x 49.5 (1,258)	505 (230)
19	54 (204)	112.5 (2,857) x 38.0 (965) x 62.5 (1,588)	610 (276)
47	132 (501)	112.5 (2,857) x 38.0 (965) x 74.5 (1,893)	645 (293)
75	211 (799)	112.5 (2,857) x 38.0 (965) x 86.5 (2,198)	670 (304)
107	300 (1,136)	112.5 (2,857) x 38.0 (965) x 98.5 (2,491)	695 (315)



LEVEL 2 ACOUSTIC ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	94.8 (2,407) x 38.0 (965) x 61.1 (1,551)	510 (232)
19	54 (204)	94.8 (2,407) x 38.0 (965) x 74.1 (1,881)	570 (258)
47	132 (501)	94.8 (2,407) x 38.0 (965) x 86.1 (2,186)	605 (274)
75	211 (799)	94.8 (2,407) x 38.0 (965) x 98.1 (2,491)	630 (286)
107	300 (1,136)	94.8 (2,407) x 38.0 (965) x 110.1 (2,796)	655 (297)

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

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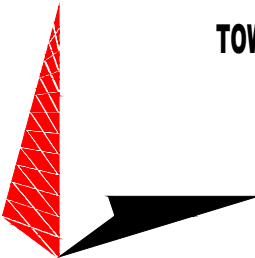
Part No. 10000024842
Rev. 8 08/27/18



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SHEET TITLE:

GENERATOR DETAILS

SHEET NUMBER:

C-7

REVISION:

C

TEP #:

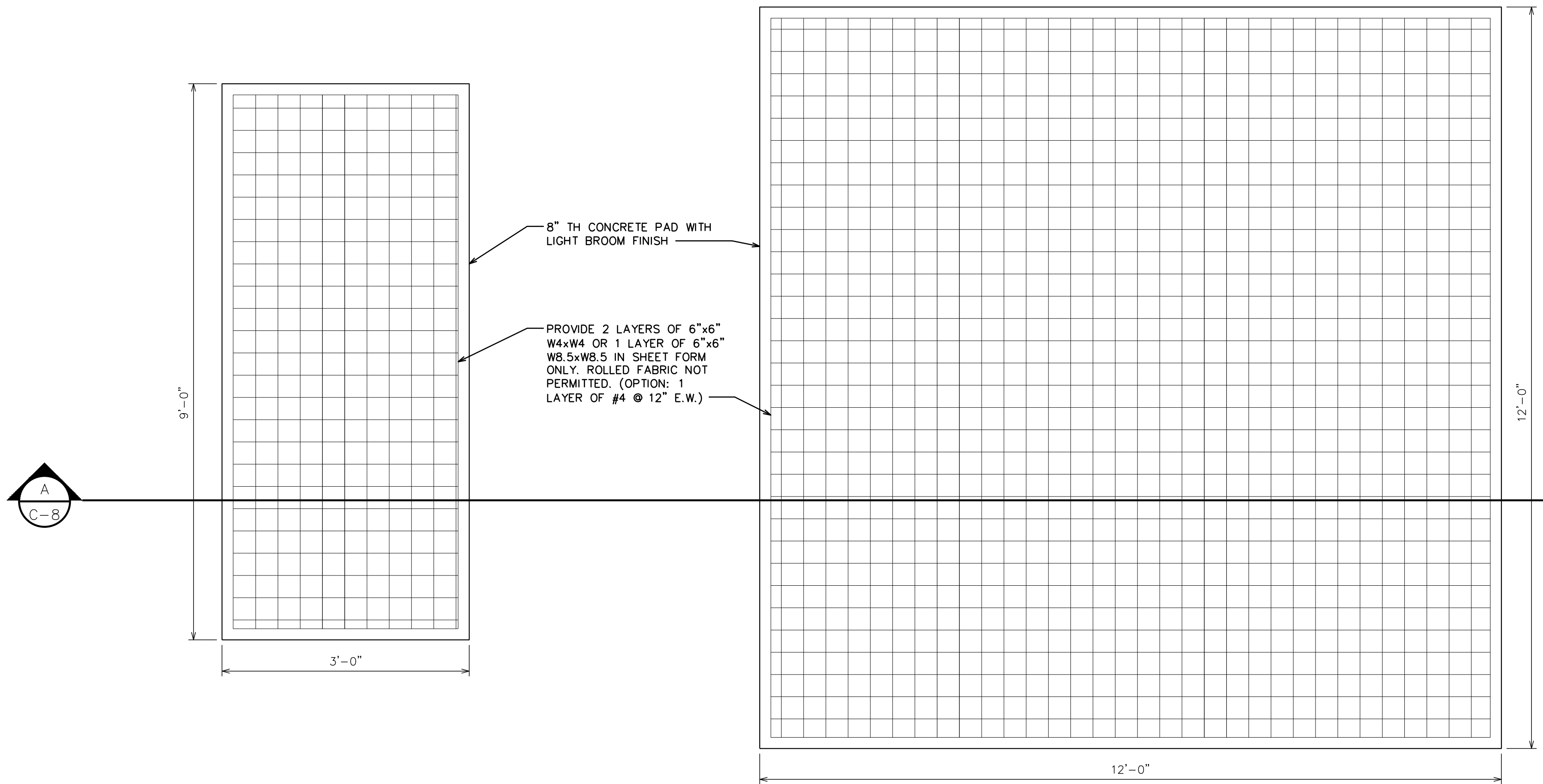
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SD030 2.2L 30kW GENERATOR DETAILS

SCALE: N.T.S

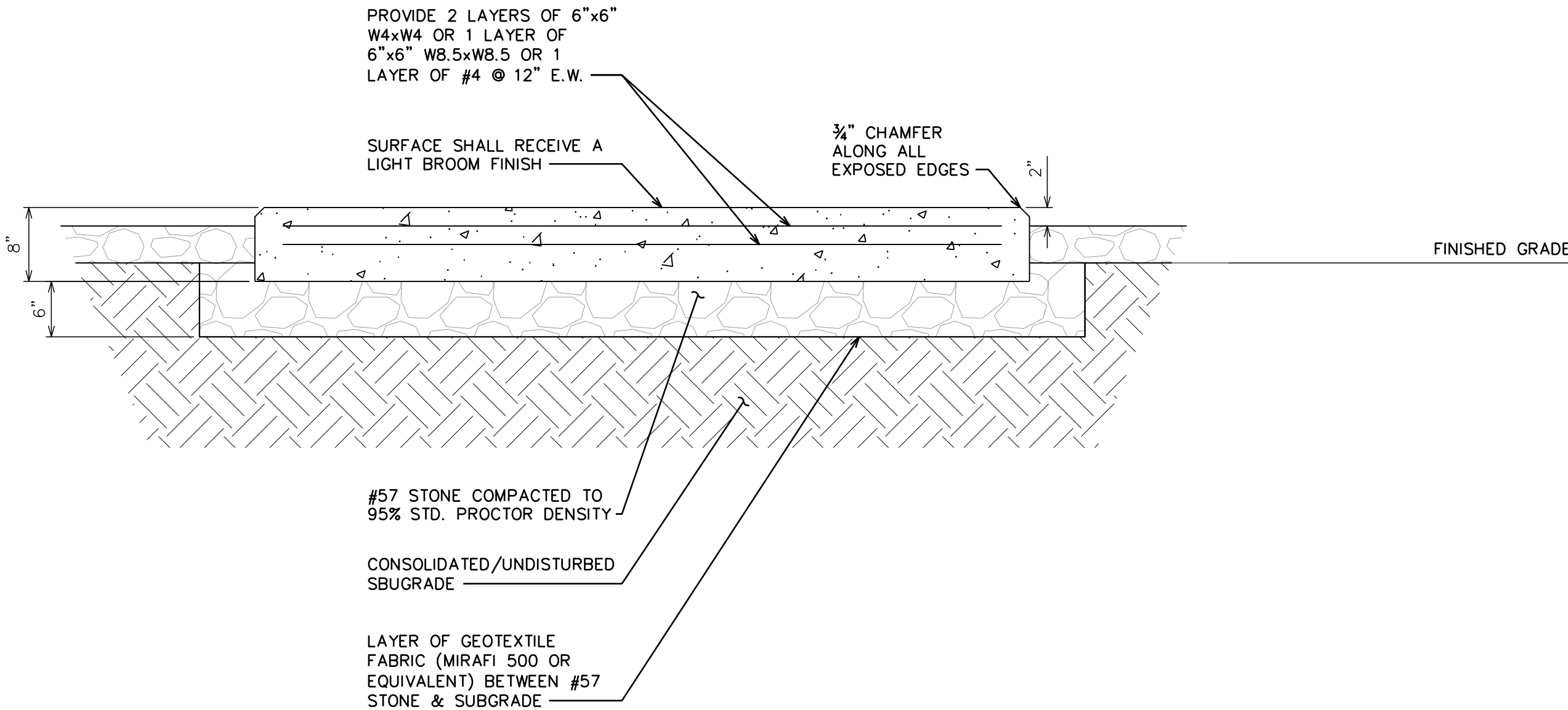
FOUNDATION NOTES:

1. FOUNDATION DESIGN BASED ON 2,000 PSF SOIL BEARING CAPACITY.
2. CONCRETE SHALL BE 4,000 PSI @ 28 DAYS.
3. REINFORCING STEEL Fy = 60,000 PSI.
4. ALL BACKFILL SHALL BE THOROUGHLY COMPACTED TO A MINIMUM OF 95% DENSITY USING THE MODIFIED PROCTER METHOD.
5. SURFACE OF FINISHED SLAB SHALL BE LEVEL AND FLAT WITH 1/4".
6. CONTRACTOR SHALL VERIFY WITH MANUFACTURER ACTUAL DIMENSIONS OF EQUIPMENT PRIOR TO LAYING OUT FOUNDATION.
7. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318-11.



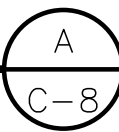
WIC SHELTER & GENERATOR FOUNDATION PLAN

SCALE: N.T.S



PAD SECTION

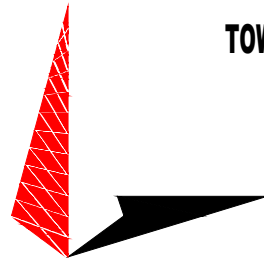
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SHEET TITLE:

FOUNDATION DETAILS

SHEET NUMBER:

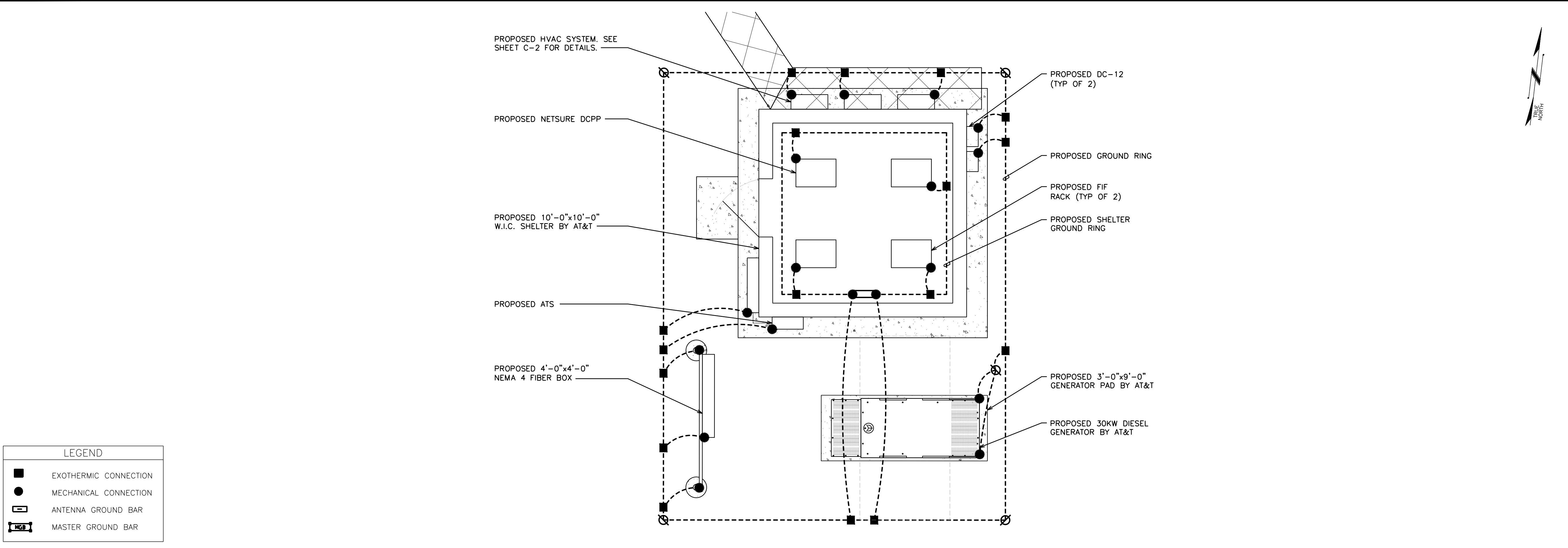
C-8

REVISION:

C

TEP #:

85172.243629



EQUIPMENT GROUNDING PLAN

SCALE: 3/8" = 1'-0" (24x36)
SCALE: 5/16" = 1'-0" (11x17)

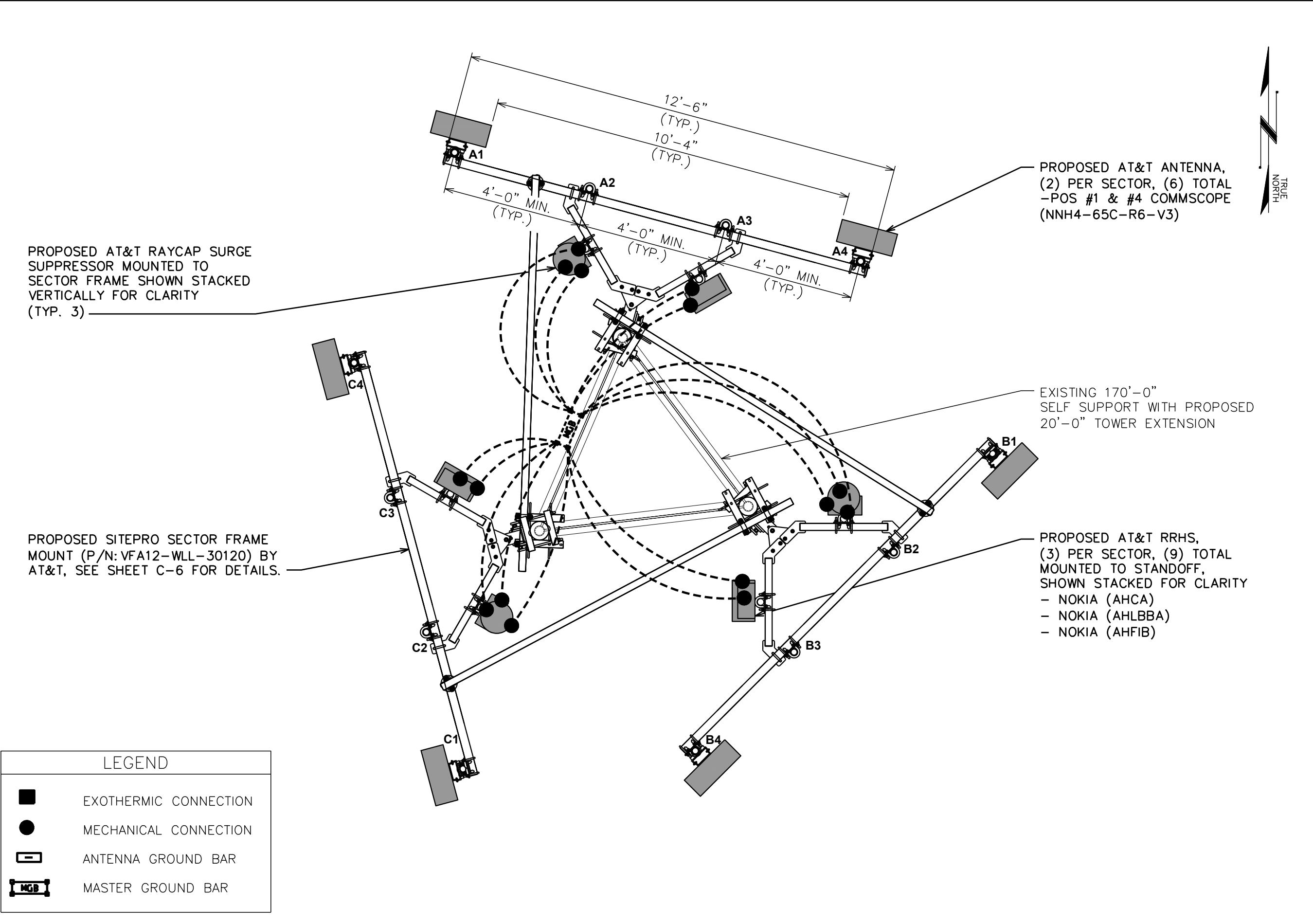
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SCALE IN FEET

NOTE:
PROPOSED PANEL SCHEDULE VALUES WERE CALCULATED BASED ON MAXIMUM PULL FROM EACH CONNECTED BREAKER. ACTUAL VALUES WILL VARY BASED ON SITE CONDITIONS.

PROPOSED PANEL SCHEDULE											
120/240 VOLTS 1 PHASE				3 WIRE SURFACE MOUNTED				225A, 2 POLE MAIN BREAKER			
NO.	LOAD SERVED	ØA VA	ØB VA	AMP/ POLE	L1	L2	AMP/ POLE	ØA VA	ØB VA	LOAD SERVED	NO.
1	RECTIFIERS #1 & #2	2880	—	30/2	5760	—	30/2	2880	—	RECTIFIERS #3 & 4	2
3		—	2880		—	5760		—	2880		4
5	RECTIFIERS #5 & 6	2880	—	30/2	2880	—	30/2	0	—	SPARE/OFF	6
7		—	2880		—	2880		—	0		8
9	SPARE/OFF	0	—	30/2	0	—	30/2	0	—	SPARE/OFF	10
11		—	0		—	0		—	0		12
13	SPARE/OFF	0	—	30/2	0	—	30/2	0	—	SPARE/OFF	14
15		—	0		—	0		—	0		16
17	SPARE/OFF	0	—	30/2	0	—	30/2	0	—	SPARE/OFF	18
19		—	0		—	0		—	0		20
21	SPARE/OFF	0	—	30/2	0	—	30/2	0	—	SPARE/OFF	22
23		—	0		—	0		—	0		24
25	AC UNIT #1	1920	—	20/1	1920	—	—	—	—	BLANK	26
27	BLANK	—	—	—	—	0	—	—	—	BLANK	28
29	BLANK	—	—	—	—	0	—	—	—	BLANK	30
31	BLANK	—	—	—	—	0	—	—	—	BLANK	32
33	BLANK	—	—	—	—	0	—	—	—	BLANK	34
35	BLANK	—	—	—	—	0	—	—	—	BLANK	36
37	BLANK	—	—	—	—	0	—	—	—	BLANK	38
39	BLANK	—	—	—	—	0	—	—	—	BLANK	40
PHASE TOTALS (VA)					10560	8640					
CURRENT PER PHASE (A)					88	72					
PEAK TOTAL (VA)					10560	88	PEAK TOTAL (A)				
125% DEMAND (VA)					13200	110	125% DEMAND (A)				

PROPOSED A/C PANEL

SCALE: N.T.S.



ANTENNA GROUNDING PLAN

SCALE: 3/8" = 1'-0" (24x36)
SCALE: 5/16" = 1'-0" (11x17)

0 2 4
SCALE IN FEET

161 INVERNESS DR W, 2ND FLOOR
ENGLEWOOD, CO 80112

AMERICAN TOWER®
19100 VON KARMAN AVE
SUITE 200
IRVINE, CA 92612

TOWER ENGINEERING PROFESSIONALS
4710 E ELWOOD ST, STE 9
PHOENIX, AZ 85040
OFFICE: (480) 285-0036
www.tepgroup.net

AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
A	11-23-20	RRG	PRELIMINARY	EGG
B	12-10-20	CBM	90% CONSTRUCTION	EGG
C	02-17-21	BCL	90% CONSTRUCTION	EGG

SEAL:

PRELIMINARY
DO NOT USE FOR
CONSTRUCTION

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SHEET TITLE:

ELECTRICAL PANEL &
GROUNDING PLANS

SHEET NUMBER:

E-1

REVISION:

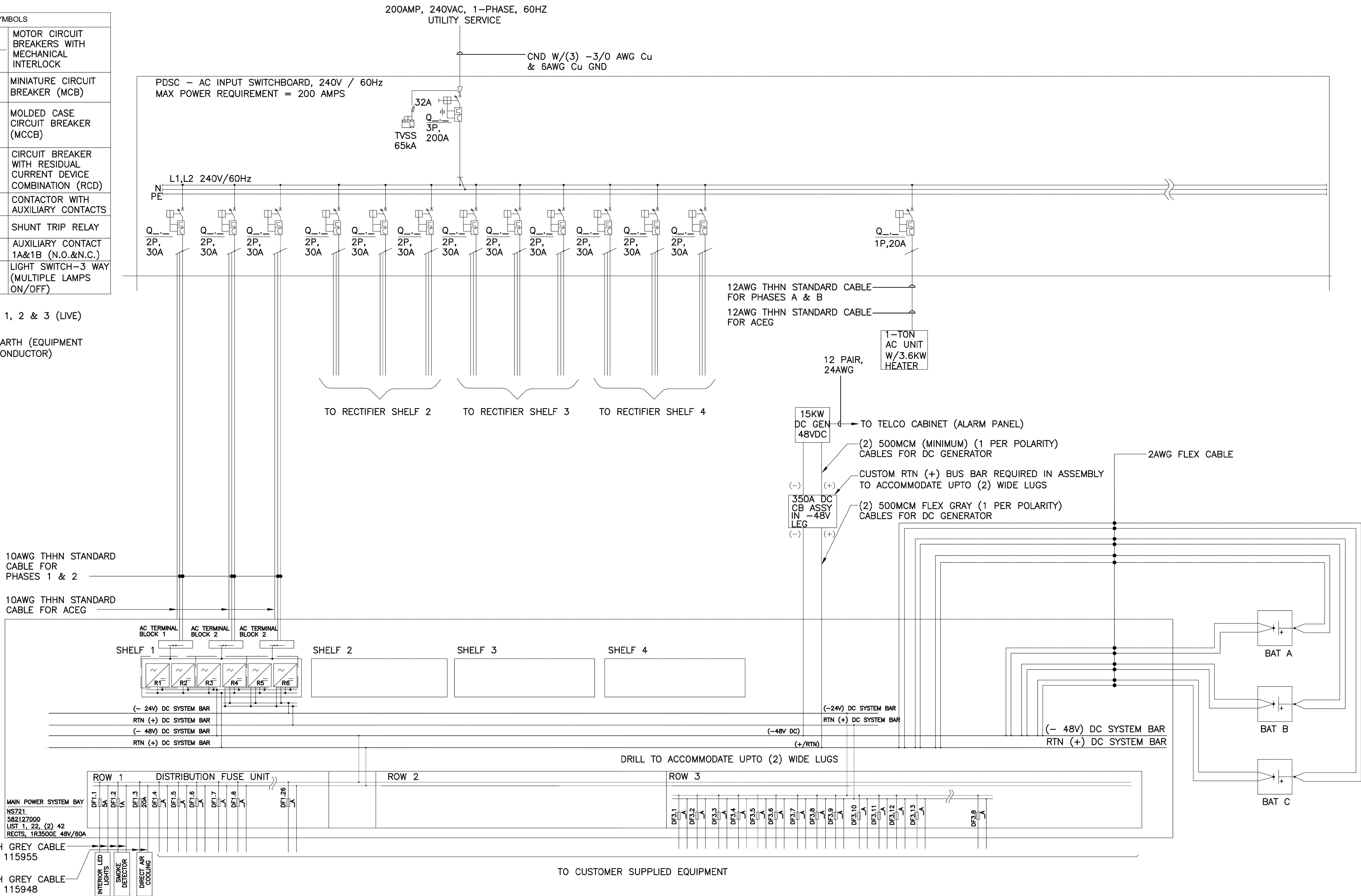
C

TEP #:

85172.243629

SYMBOLS	
	MOTOR CIRCUIT BREAKERS WITH MECHANICAL INTERLOCK
	MINIATURE CIRCUIT BREAKER (MCB)
	MOLDED CASE CIRCUIT BREAKER (MCCB)
	CIRCUIT BREAKER WITH RESIDUAL CURRENT DEVICE COMBINATION (RCD)
	CONTACTOR WITH AUXILIARY CONTACTS
	SHUNT TRIP RELAY
	AUXILIARY CONTACT 1A&1B (N.O.&N.C.)
	LIGHT SWITCH-3 WAY (MULTIPLE LAMPS ON/OFF)

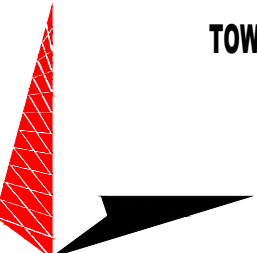
NOTE:
L1,L2,L3 - PHASES 1, 2 & 3 (LIVE)
N - NEUTRAL
PE - PROTECTIVE EARTH (EQUIPMENT GROUNDING CONDUCTOR)



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SHEET TITLE:

ONE-LINE DIAGRAM

SHEET NUMBER:

E-2

REVISION:

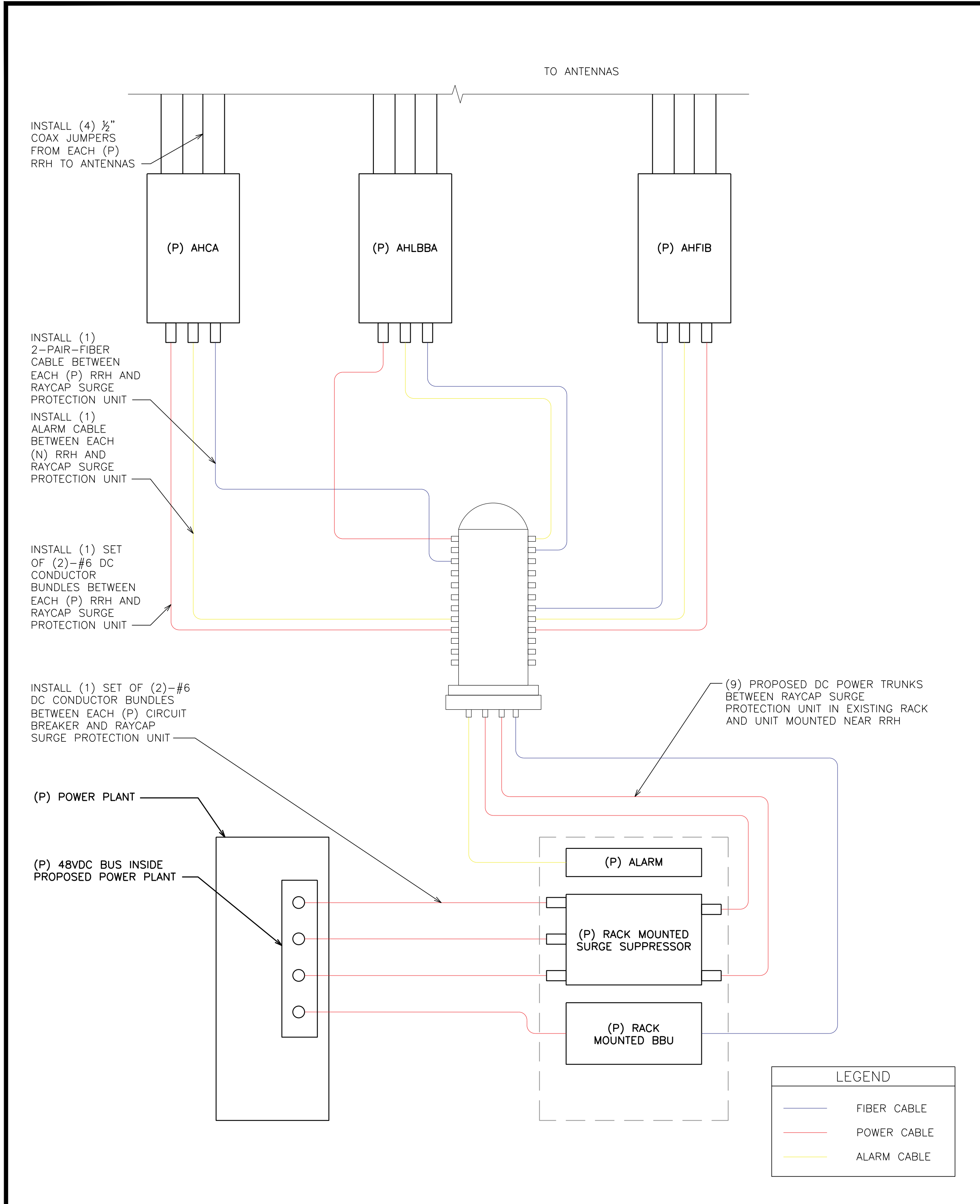
C

TEP #:

85172.243629

ELECTRICAL AC/DC SINGLE LINE DIAGRAM

SCALE: N.T.S.



DC AND FIBER SYSTEM SCHEMATIC

SCALE: N.T.S.

PDF

JUMPER

DC-6

TRUNK

SQUID

JUMPER

RRH

RRH

RRH

CABLE LENGTH TABLE

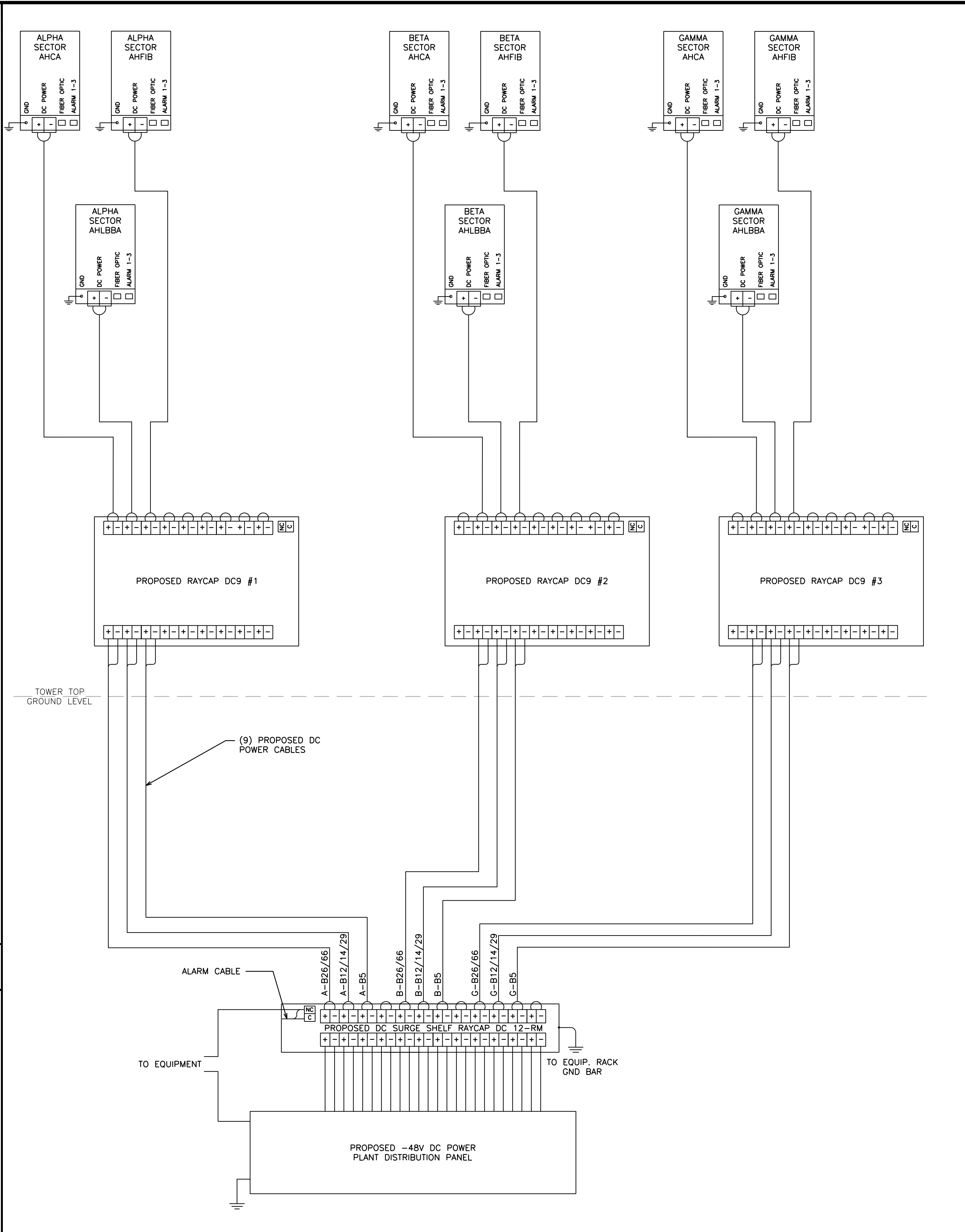
SECTOR	PDF	DISTANCE & CABLE TYPE		DC-6	DISTANCE & CABLE TYPE		SQUID	DISTANCE & CABLE TYPE		RRH	TOTAL CABLE LENGTH	FINAL VOLTAGE
ALPHA		20'	#6 AWG		285'	(2) #6 AWG		15'	#6 AWG		320'	38.1
BETA		20'	#6 AWG		285'	(2) #6 AWG		15'	#6 AWG		320'	38.1
GAMMA		20'	#6 AWG		285'	(2) #6 AWG		15'	#6 AWG		320'	38.1

CABLE COUNT

QTY	CABLE TYPE
3	FIBER TRUNK
6	DC TRUNKS

LTE CONDUCTOR SIZES

SCALE: N.T.S.



DC WIRING DIAGRAM

SCALE: N.T.S.

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SEAL:

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SHEET TITLE:

DC SYSTEM DETAILS

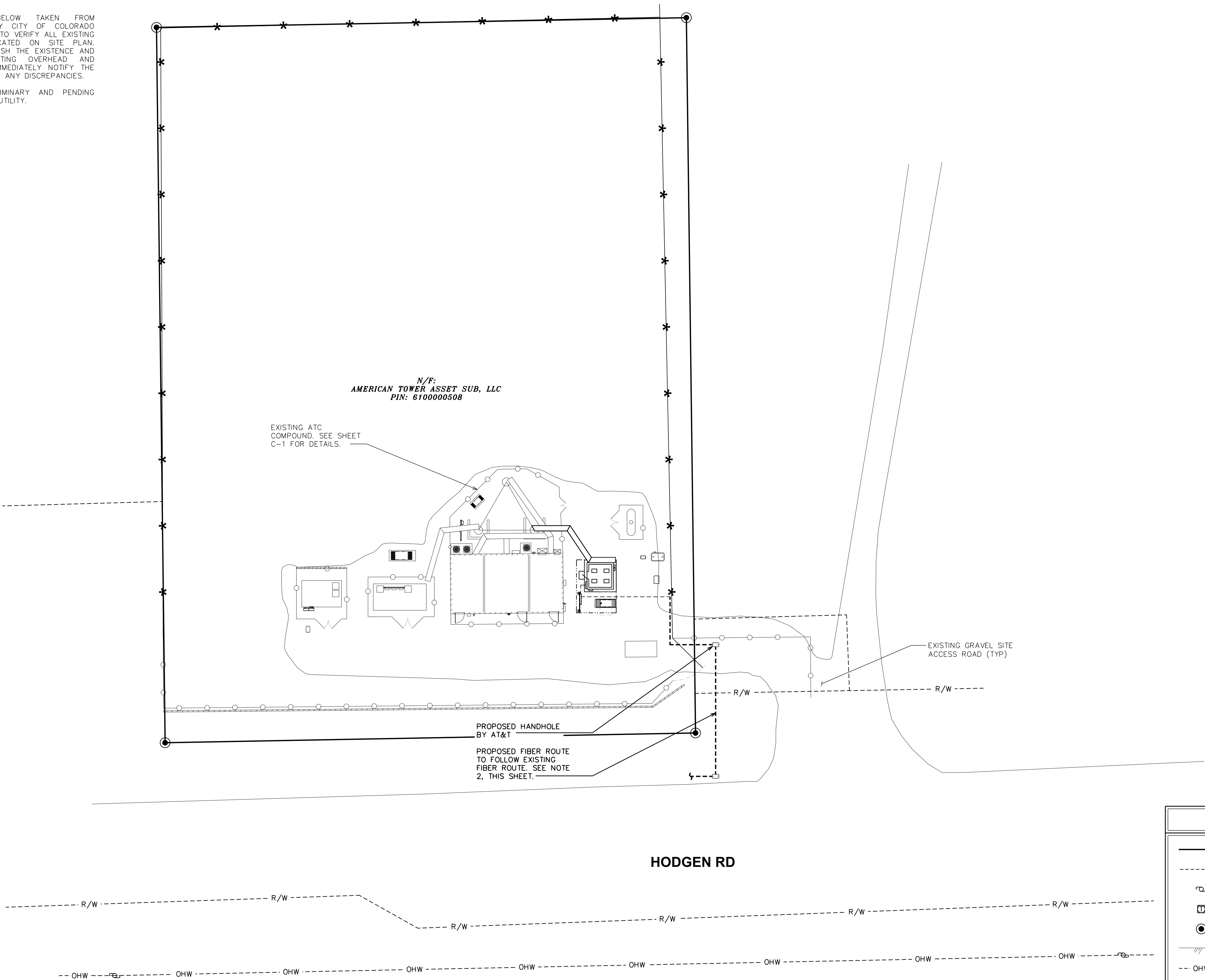
SHEET NUMBER: E-3

REVISION: C

TEP #: 85172.243629

NOTES:

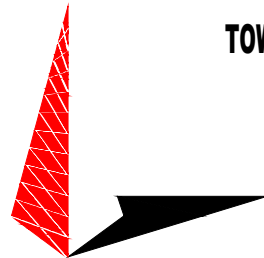
1. SITE PLAN SHOWN BELOW TAKEN FROM INFORMATION PROVIDED BY CITY OF COLORADO SPRINGS GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. UTILITY ROUTING IS PRELIMINARY AND PENDING COORDINATION WITH LOCAL UTILITY.



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SHEET TITLE:

FIBER ROUTING PLAN

SHEET NUMBER:

E-4

REVISION:

C

TEP #:

85172.243629

FIBER ROUTING PLAN

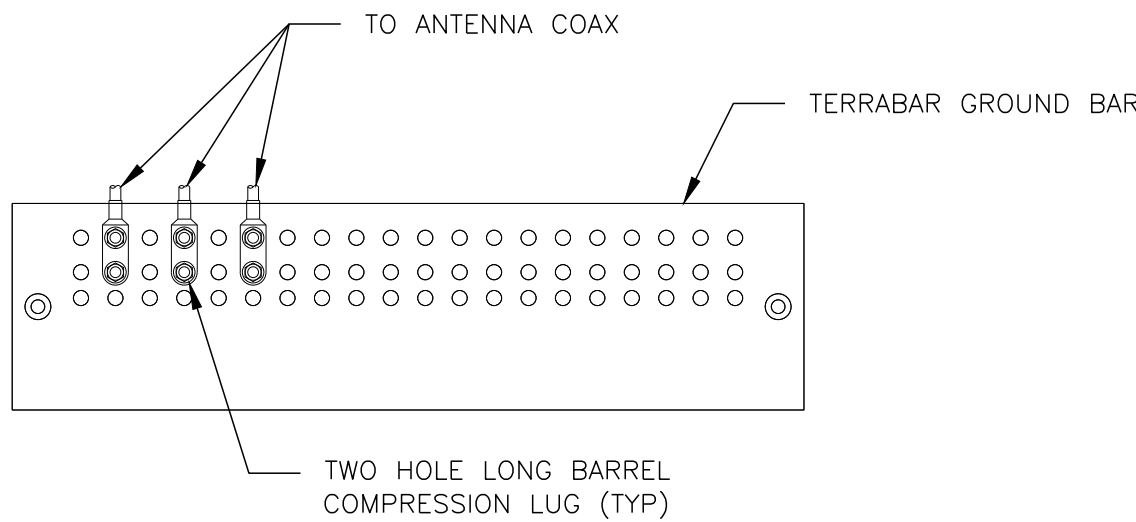
SCALE: 1" = 20'

SCALE: 1" = 20' (24x36)

SCALE: 1" = 40' (11x17)

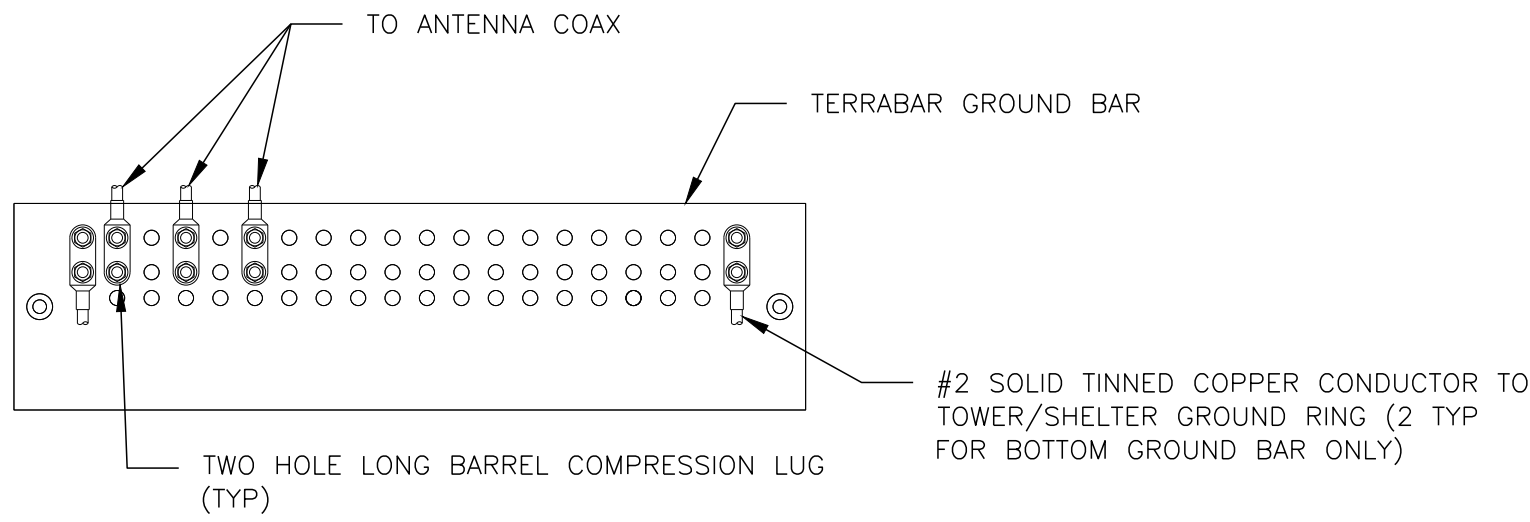
0 20 40
SCALE IN FEET

- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
 2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

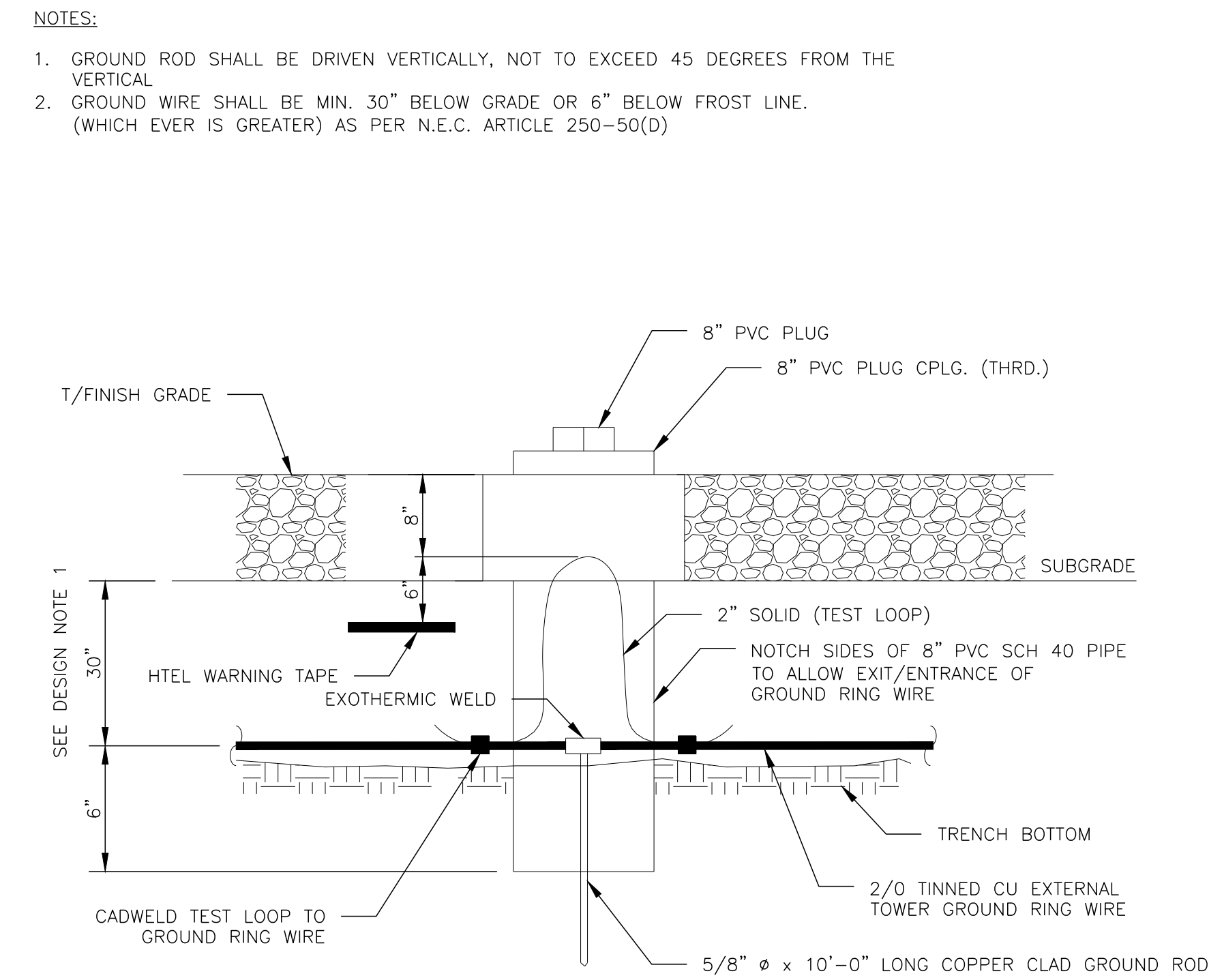


ANTENNA GROUND BAR DETAIL
SCALE: N.T.S.

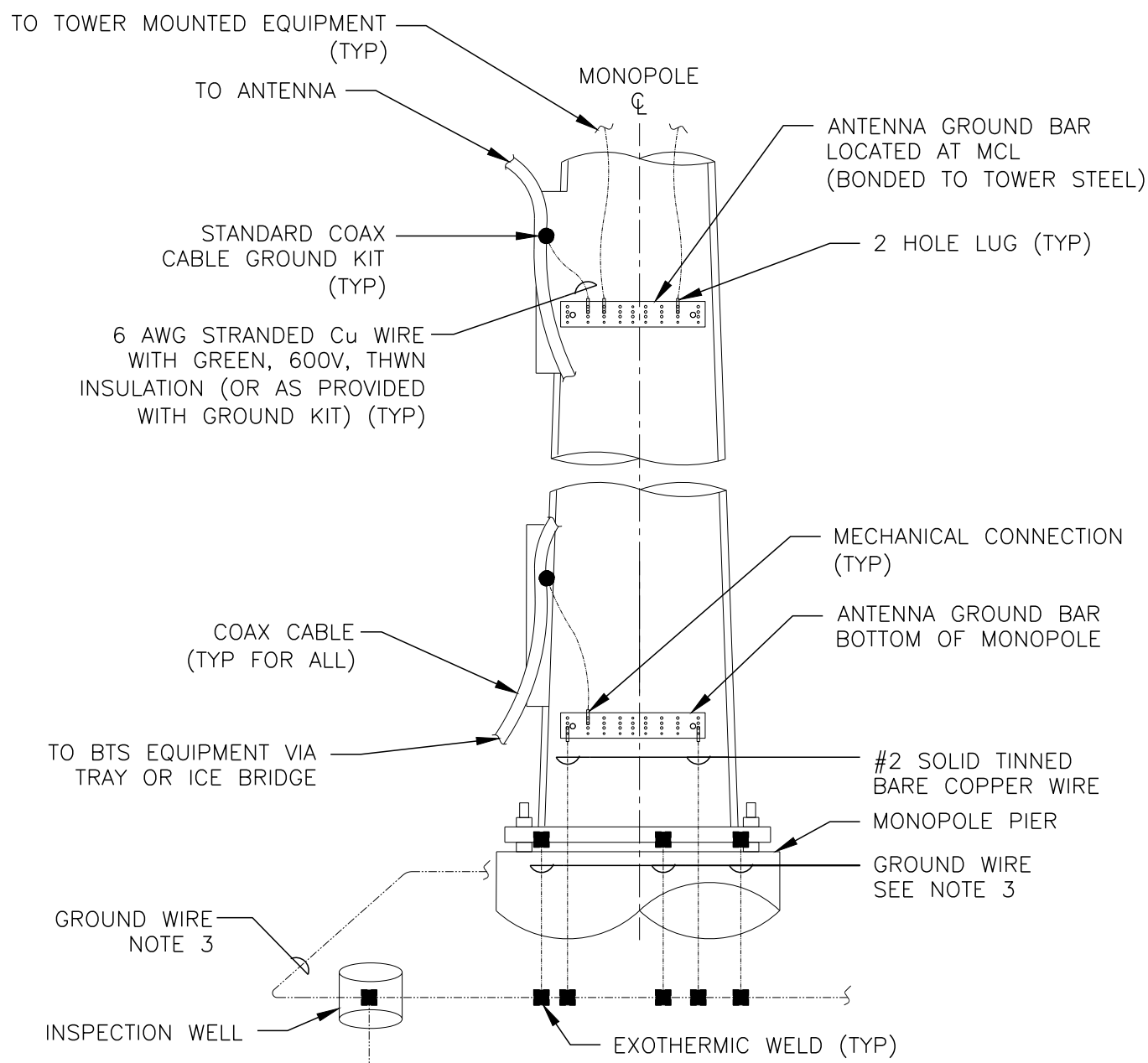
- NOTES:
1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
 2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
 3. INSTALL GROUND BARS AT 75 FT. INTERVAL MAXIMUM.
 4. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.



TOWER/SHELTER GROUND BAR DETAIL
SCALE: N.T.S.

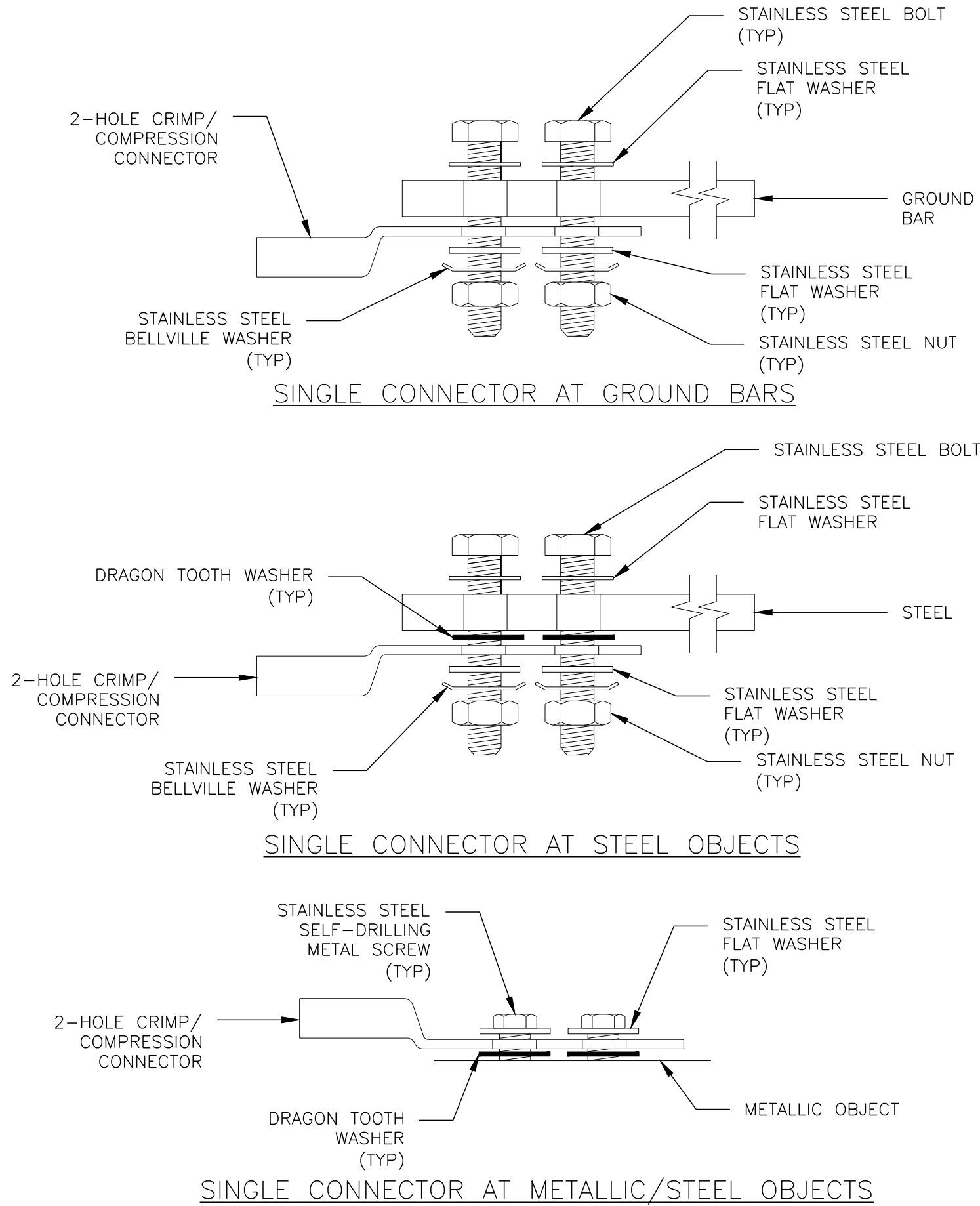


TEST WELL DETAIL
SCALE: N.T.S.

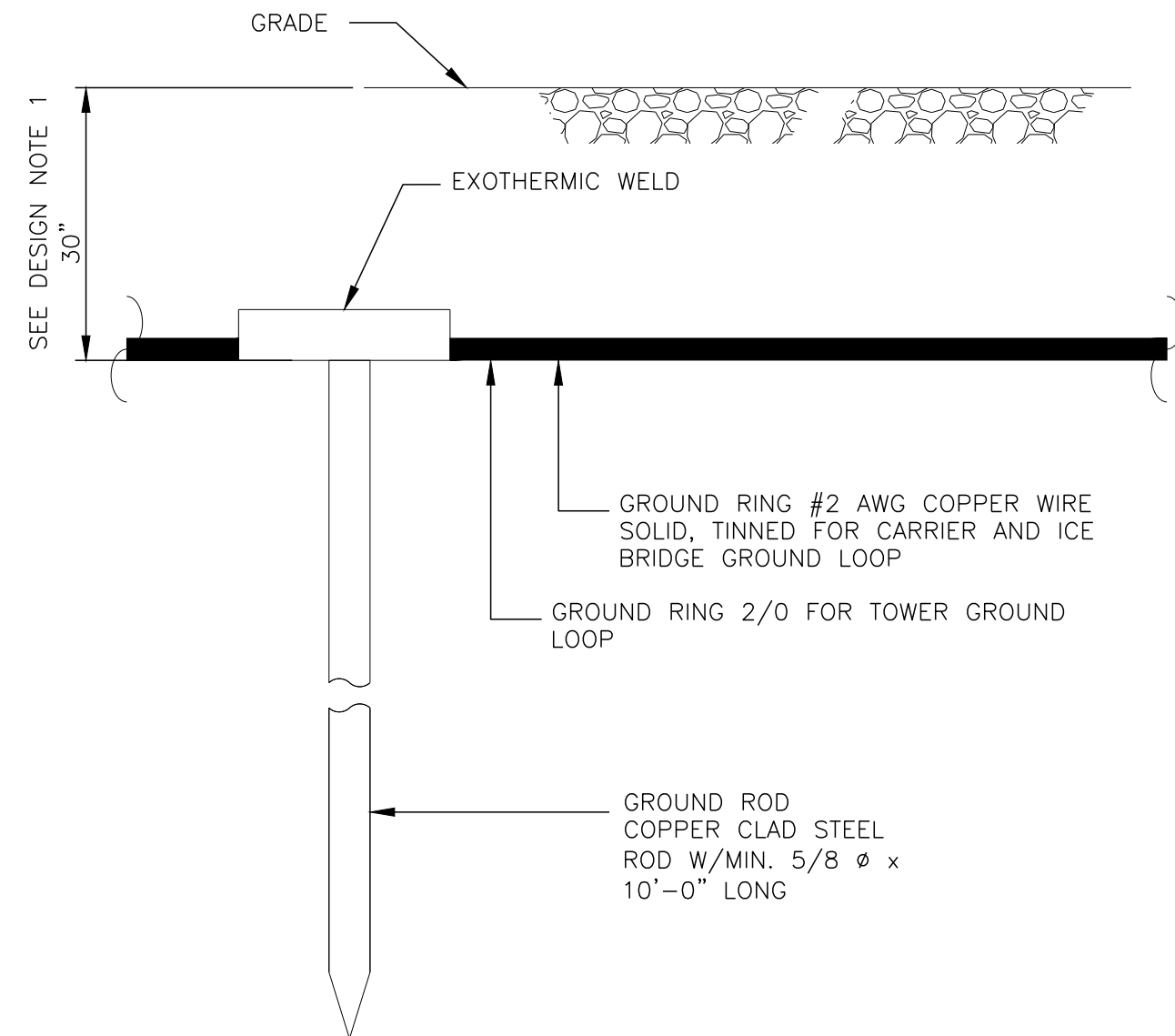


- NOTES:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF MONOPOLE, ANTENNA LOCATION AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET IN/ON THE POLE SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
 2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
 3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222 AND NFPA 780. FOR TOWERS BEING BUILT TO REV G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE 2/0 AWG. STRANDED IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM 8 FEET TO 10 FEET.

TYPICAL ANTENNA CABLE GROUNDING
SCALE: N.T.S.

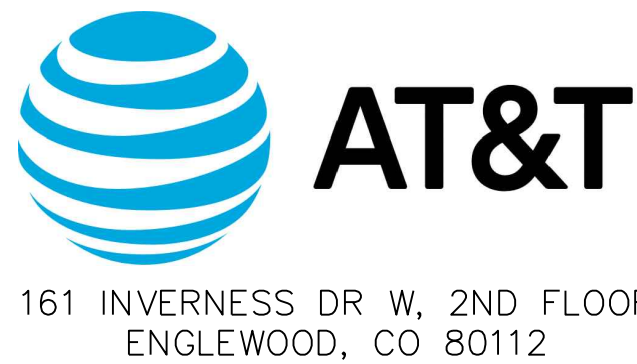


HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: N.T.S.



- NOTES:
1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
 2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

GROUND ROD
SCALE: N.T.S.



AT&T SITE ID: COL02237
AT&T FA CODE: 15312482
AT&T PACE #: MRUTH042457
ATC #: 302460
BLACK FOREST

4590 HODGEN RD
COLORADO SPRINGS, CO 80908
(EL PASO COUNTY)

EXISTING 170'-0" W/ 20'
EXTENSION
SELF-SUPPORT TOWER
NSB - LTE - 1C/2C/3C/4C/5G NR
1SR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	QA
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SEAL:



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SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

G-1

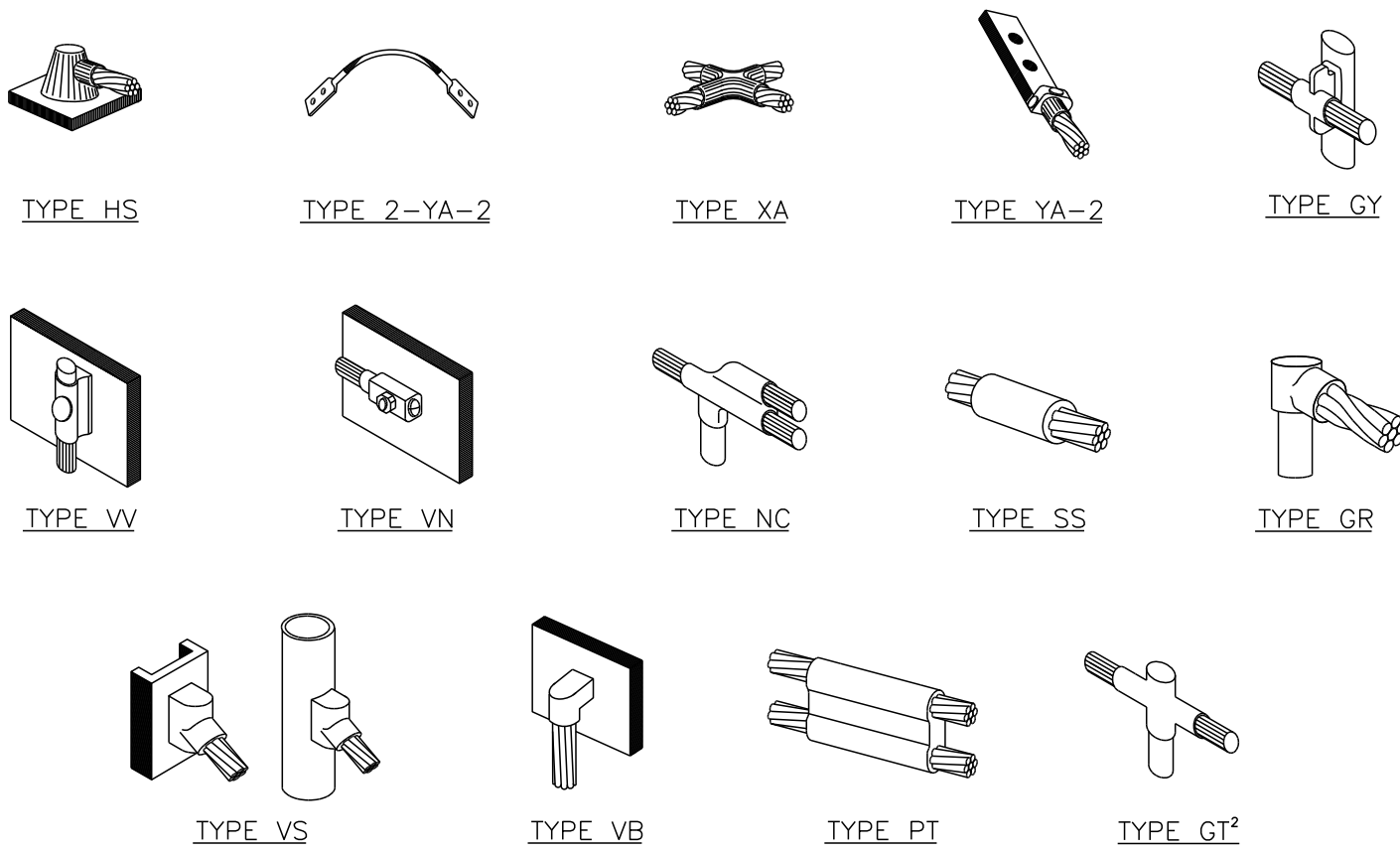
REVISION:

C

TEP #:

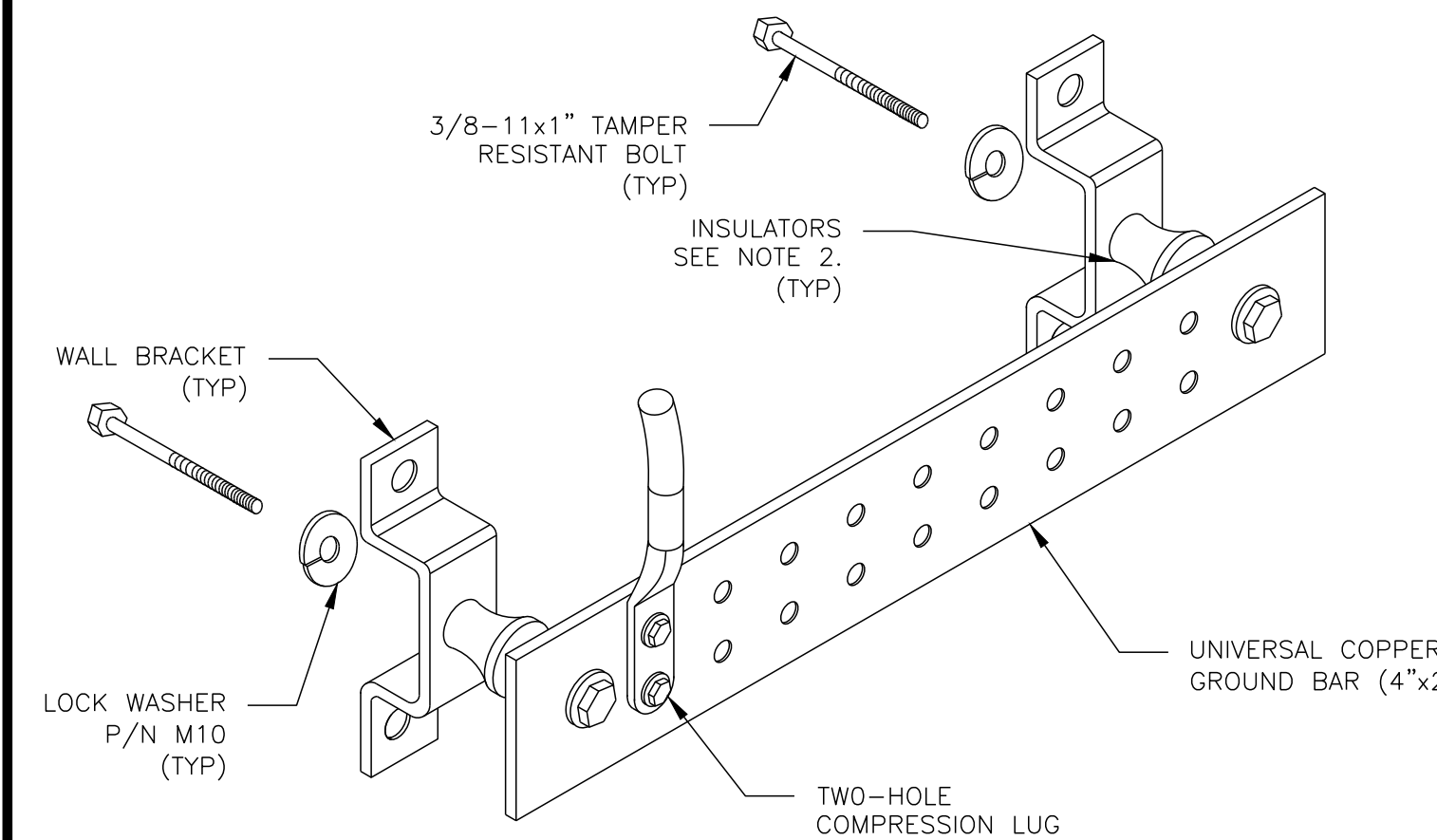
85172.243629

- NOTE:
1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
 2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

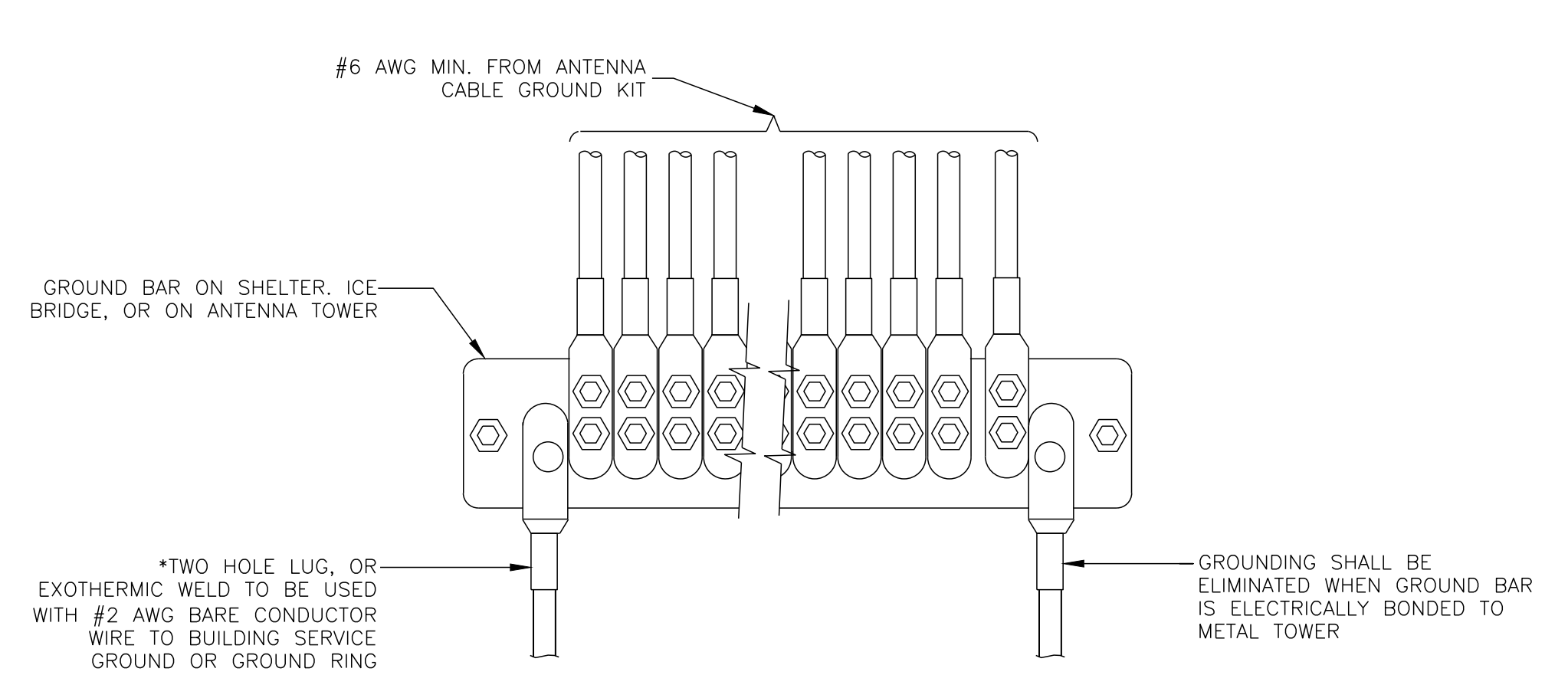


CADWELD GROUNDING CONNECTIONS
SCALE: N.T.S.

- NOTES:
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY GAS-STO-10091, NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
 2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.



GROUND BAR DETAIL
SCALE: N.T.S.

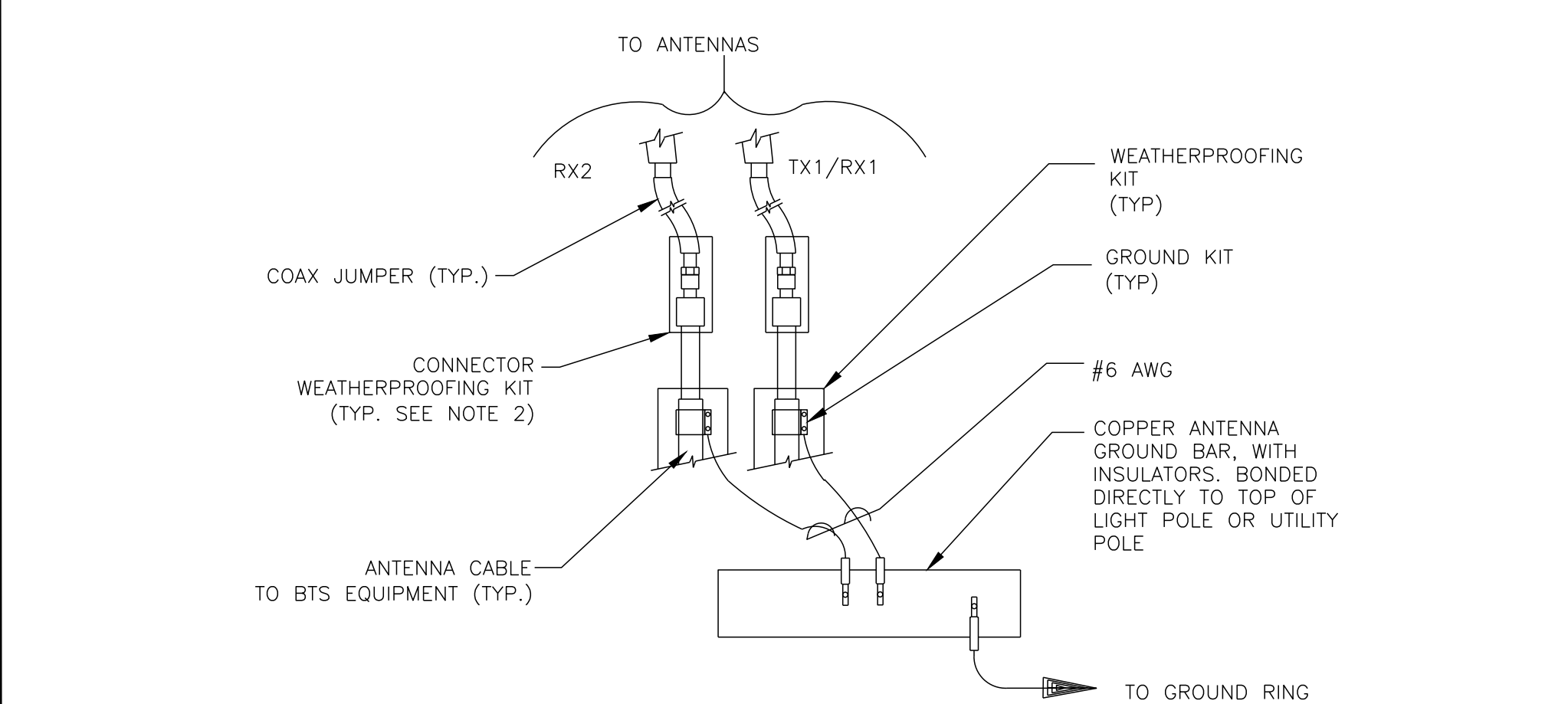


GROUNDWIRE INSTALLATION
SCALE: N.T.S.

- NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.
-

CABLE GROUND KIT CONNECTION
SCALE: N.T.S.

- NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

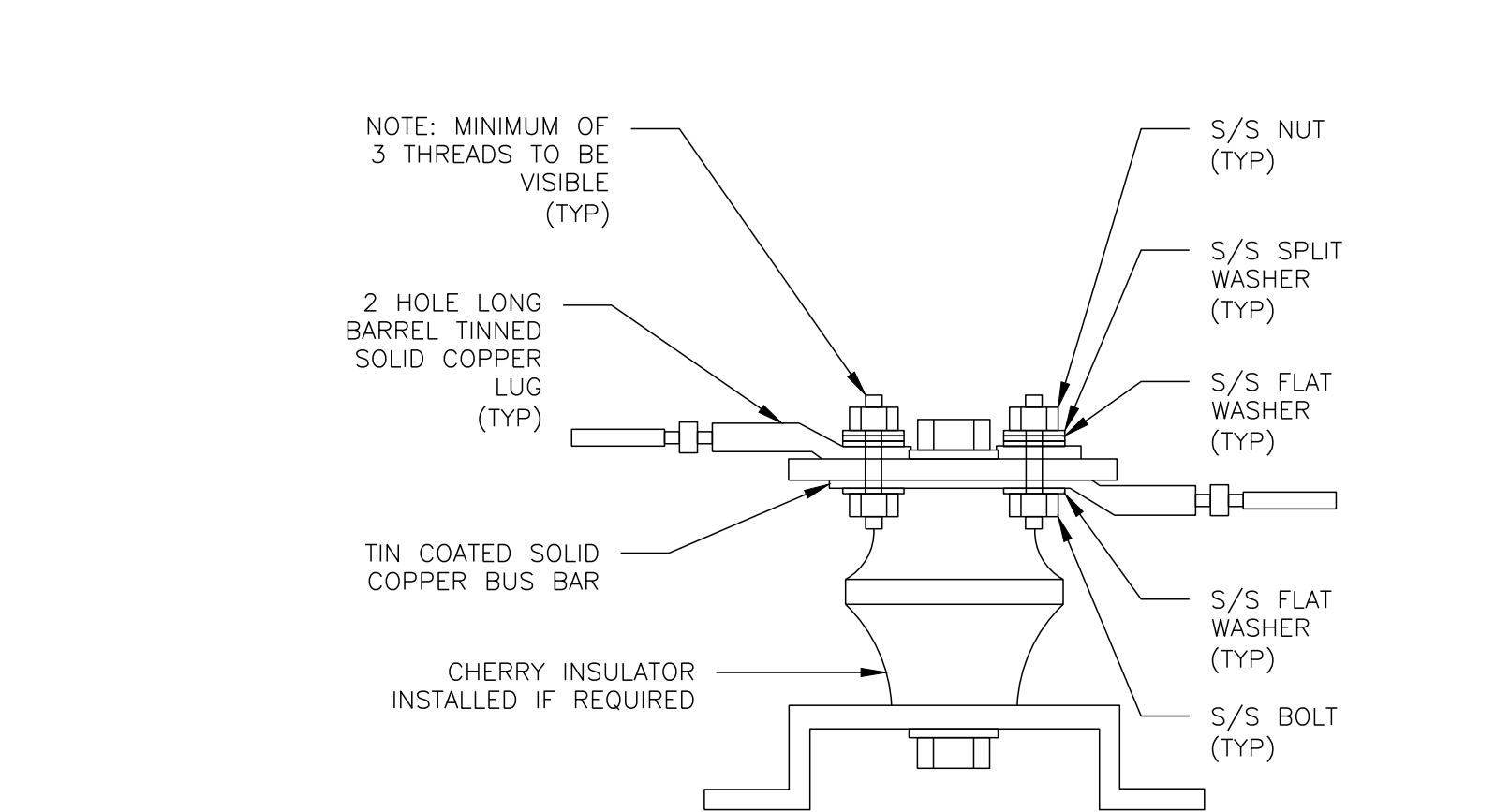


GROUND CABLE CONNECTION
SCALE: N.T.S.

- NOTES:
1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE (BOLTS, NUTS, LOCK WASHERS) SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT

MECHANICAL LUG CONNECTION
SCALE: N.T.S.



LUG DETAIL
SCALE: N.T.S.

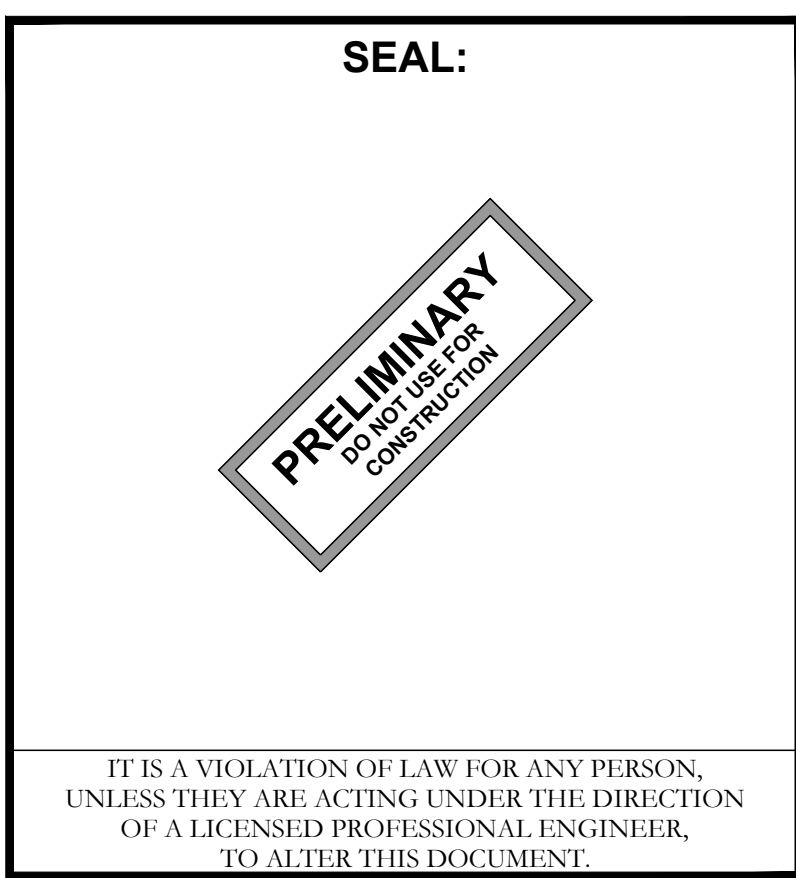


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SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
G-2

REVISION:
C

TEP #: 85172.243629