T-MOBILE NORTHEAST LLC

SITE NAME: VAYH009 HAMPTON ROADS CONVENTION CENTER

1610 COLISEUM DRIVE
HAMPTON, VA 23666
CITY OF HAMPTON

Know what's **below.**
Call before you dig.

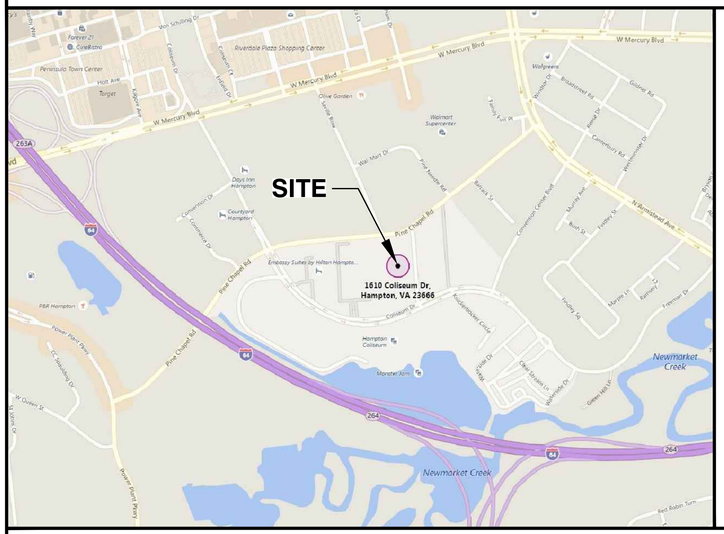
SITE INFORMATION

PROJECT DESCRIPTION:	PROPOSED TELECOMMUNICATIONS EQUIPMENT INSTALLED INSIDE BUILDING FOR DISTRIBUTED ANTENNA SYSTEM (DAS).
SITE ADDRESS:	1610 COLISEUM DRIVE HAMPTON, VA 23666
LATITUDE (NAD 83): LONGITUDE (NAD 83):	37° 02' 14.49" -76° 22' 57.33"
GROUND ELEVATION:	12.0' (AMSL)
JURISDICTION:	CITY OF HAMPTON
STRUCTURE TYPE:	CONVENTION CENTER

PROJECT TEAM

APPLICANT:	T-MOBILE NORTHEAST LLC 324 MADISON MEWS NORFOLK, VA 23510 OFFICE: (757) 453-6907 FAX: (757) 589-0904
PROJECT MANAGEMENT FIRM:	NETWORK BUILDING + CONSULTING, LLC. 4435 WATERFRONT DRIVE SUITE 100 GLEN ALLEN, VA 23060 (804) 548-4079
ENGINEERING FIRM:	NB+C ENGINEERING SERVICES, LLC. 4435 WATERFRONT DRIVE SUITE 100 GLEN ALLEN, VA 23060 (804) 548-4079 TSNARR@NBCLLC.COM

VICINITY MAP



DIRECTIONS

FROM 324 MADISON MEWS: DEPART MADISON MEWS TOWARD W FREEMASON ST. TURN RIGHT ONTO W FREEMASON ST. ROAD NAME CHANGES TO E FREEMASON ST. TURN RIGHT ONTO US-460 W ALT / ST PAUL'S BLVD. BEAR RIGHT ONTO ST PAUL'S BLVD. TURN LEFT ONTO E CITY HALL AVE. TAKE RAMP LEFT FOR VA-337 EAST TOWARD NAVAL BASE / VA BEACH. KEEP STRAIGHT ONTO VA-168 N / TIDEWATER DR. TAKE RAMP RIGHT FOR I-64 WEST TOWARD NAVAL BASE / TERMINAL BLVD. AT EXIT 265B, TAKE RAMP RIGHT FOR VA-134 WEST TOWARD HAMPTON COLISEUM / LA SALLE AVE / LANGLEY AFB. TURN BACK ON VA-134 S / N ARMISTEAD AVE. TURN RIGHT ONTO CONVENTION CENTER BLVD. TURN RIGHT ONTO COLISEUM DR. THE SITE WILL BE ON THE RIGHT.

CODE COMPLIANCE

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 CODES.

- 2012 INTERNATIONAL BUILDING CODE
- 2011 NATIONAL ELECTRICAL CODE
- 2009 NFPA 101, LIFE SAFETY CODE
- 2009 IFC
- AMERICAN CONCRETE INSTITUTE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION
- MANUAL OF STEEL CONSTRUCTION 13TH EDITION
- ANSI/TIA-222-G
- TIA 607
- INSTITUTE FOR ELECTRICAL & ELECTRONICS ENGINEER 81
- IEEE C2 NATIONAL ELECTRIC SAFETY CODE LATEST EDITION
- TELECORDIA GR-1275
- ANSI/T 311

DRAWING INDEX

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 24"X36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

APPROVAL BLOCK

		APPROVED	APPROVED AS NOTED	DISAPPROVED/ REVISE
PROPERTY OWNER	DATE	☐	☐	☐
SITE ACQUISITION	DATE	☐	☐	☐
CONSTRUCTION MANAGER	DATE	☐	☐	☐
ZONING	DATE	☐	☐	☐
RF ENGINEER	DATE	☐	☐	☐

ENGINEER

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

T-MOBILE NORTHEAST LLC
324 MADISON MEWS
NORFOLK, VA 23510
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DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	02/26/18	REVISED	TWD
0	10/23/17	PRELIMINARY	TWD

PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.

3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.

5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.

8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/TIA 222-G REQUIREMENTS.

9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.

10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.

11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.

12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.

13. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND OTHER APPURTENANCES.

14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.

15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.

16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.

17. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.

18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).

19. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.

20. BUILDING AND EQUIPMENT
    A. MAINTAIN AREAS FREE OF DEBRIS ACCUMULATION. KEEP WORK AREAS NEAT AND ORDERLY AS MUCH AS REASONABLY POSSIBLE.
    B. CONTRACTOR TO REMOVE ALL MATERIALS NOT RELATED TO THE FINISHED PRODUCT FROM THE SITE. DO NOT BURY ON SITE.

21. CONTRACTOR IS RESPONSIBLE FOR ALL ERECTION, BRACING AND SHORING OF EQUIPMENT OR MATERIALS UNTIL SUCH TIME IT IS PERMANENTLY SUPPORTED OR IS READY FOR REMOVAL DURING CONSTRUCTION.

22. SAFETY
    THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF ALL PERSONNEL BY ADEQUATELY PROTECTING THEM FROM CONSTRUCTION HAZARDS AND ACTIVITIES THROUGHOUT THE COURSE OF THIS WORK. ALL WORK AREAS SHALL BE PROPERLY MARKED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE BARRIERS, BARRICADES, SIGNAGE AND PROPERLY SECURE ALL WORK AREAS. COMMON AREAS, PUBLIC WAYS, AND/OR OTHER AREAS ACCESSIBLE TO NON-CONSTRUCTION PERSONNEL SHALL BE FREE OF HAZARDOUS CONDITIONS RESULTING FROM THIS PROJECT AT ALL TIMES. ANY UNSAFE CONDITION OBSERVED SHALL BE REPORTED IMMEDIATELY TO THE T-MOBILE REPRESENTATIVE.

23. EMERGENCIES, EVACUATION PROCEDURES, & JOB SITE ACCIDENTS
    IN THE EVENT OF A FACILITY EMERGENCY, THE CONTRACTOR SHALL ADHERE AND ASSIST IN THE COORDINATION OF THE FOLLOWING EMERGENCY PROCEDURES:

    A. ASSURE PERSONNEL SAFETY.
    B. ACCOUNT FOR ALL ON-SITE CONSTRUCTION PERSONNEL AND VISITORS.
    C. EVACUATE OR RECOVER.
    D. SUMMON ASSISTANCE.

    UPON RESTORATION OF ORDER, THE CONTRACTOR'S ON-SITE SUPERINTENDENT SHALL PROVIDE A WRITTEN REPORT DETAILING THE CAUSE OF, AND RECOVERY FROM, THE INCIDENT.

24. SITE SECURITY
    A VISITOR'S BADGE SHALL BE WORN BY ALL PERSONNEL AT ALL TIMES WHILE ON T-MOBILE PROPERTY, WITHOUT EXCEPTION. ALL FORCES SHALL SIGN IN AND OUT EACH DAY WITH THE T-MOBILE REPRESENTATIVE TO RECEIVE THE BADGE. AT THE DISCRETION OF THE T-MOBILE REPRESENTATIVE, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE DAILY SIGN-IN/OUT OF THE CONTRACTOR FORCES. A VALID DRIVER'S LICENSE OR STATE ID SHALL BE PRESENTED EVERY DAY IN ORDER TO OBTAIN THE BADGE. THE LISTING SHALL INCLUDE THE NAME AND BADGE NUMBER OF ALL PERSONNEL AND BE PROVIDED TO THE T-MOBILE REPRESENTATIVE ON THE FOLLOWING DAY, AND SHALL CLEARLY INDICATE THE COMPANY NAME, INDIVIDUAL'S NAME AND BADGE NUMBER OF ALL PERSONNEL ON THE SITE. FAILURE TO COMPLY WITH THESE SECURITY REQUIREMENTS MAY RESULT IN PERSONNEL BEING ESCORTED OFF THE SITE.

25. FINAL FIRESTOPPING
    ALL FIRESTOPPING SHALL BE PROVIDED BY A SINGLE CONTRACTOR FOR ALL TRADES USING A SINGLE MANUFACTURE'S PRODUCTS (3M OR HILTI). ALL PENETRATIONS IN FLOORS, ROOFS, OR FIRE-RATED PARTITIONS SHALL BE SEALED WITH AN APPROVED FIRE-PROTECTION MATERIAL IN A MANNER FULLY COMPLIANT WITH THE MANUFACTURER'S SPECIFICATIONS, AND RESULTING IN A UL-APPROVED ASSEMBLY. WHEN ALL WORK ASSOCIATED WITH THE PROJECT IS COMPLETED, THE ASSEMBLY SHALL HAVE AN ADHESIVE LABEL AFFIXED, AS RECOMMENDED BY THE MANUFACTURER. THIS LABEL SHALL BE SIGNED BY THE CONTRACTOR.

26. HAZARDOUS MATERIALS - CALL T-MOBILE ENVIRONMENTAL COMPLIANCE HOTLINE (800)
    IF THE CONTRACTOR UNCOVERS ON ENCOUNTERS ANY MATERIAL THAT IS BELIEVED TO BE HAZARDOUS IN NATURE (ASBESTOS, LEAD PAINT, SPILLED CHEMICALS, OR OTHERWISE), THE CONTRACTOR SHALL NOTIFY T-MOBILE IMMEDIATELY, AND SHALL NOT ABATE, REMOVE, SAMPLE, DISTURB, OR OTHERWISE HANDLE THE MATERIAL WITHOUT WRITTEN AUTHORIZATION FROM T-MOBILE. THE UNCONTROLLED RELEASE OF NAY SUCH SUBSTANCE SHALL ALSO BE REPORTED TO THE LOCAL FIRE DEPARTMENT BY THE CONTRACTOR. DISPOSAL OF ANY SUCH MATERIAL SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATION, AND DOCUMENTATION OF DISPOSAL SHALL BE PROVIDED BY THE CONTRACTOR TO THE T-MOBILE REPRESENTATIVE.

27. ASBESTOS - CONTAINING MATERIAL (ACM)
    THE CONTRACTOR SHALL NOT USE ANY MATERIAL THAT CONTAINS ASBESTOS (ACM) FOR ANY APPLICATION ON THIS PROJECT.

28. SITE SURVEY AND FIELD-ENCOUTERED OBSTACLES
    NEITHER THE A/E NOR T-MOBILE ARE GUARANTEEING THE ACCURACY OF THE INFORMATION DEPICTED IN THESE DOCUMENTS. THERE ARE NO IMPLIED WARRANTIES ASSOCIATED WITH THESE DOCUMENTS. CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO BIDDING THE WORK. ALL DRAWINGS ARE DIAGRAMMATIC AND MAY NOT SHOW ALL DETAILS REQUIRED TO CLEAR FIELD-ENCOUNTERED OBSTRUCTIONS. WHERE MINOR DEVIATIONS IN SYSTEMS ARE REQUIRED DURING CONSTRUCTION THE CONTRACTOR SHALL MAKE SUCH ACCOMMODATIONS AT NO ADDITIONAL COST TO T-MOBILE. THE CONTRACTOR SHALL ADVISE THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE BID AND PRIOR TO PERFORMING THE WORK.

29. QUALITY OF WORK
    CONTRACTOR SHALL PERFORM AND INSTALL ALL COMPONENTS IN A PROFESSIONAL AND WORKMANLIKE MANNER. ALL FINISH WORK SHALL BE TRUE, LEVEL, AND PLUM. ALL JOINTS SHALL BE TIGHT AND CLEAN.

30. DRILLING AND CUTTING - FIRE PROTECTION SYSTEM AND DUST/WATER CONTROL
    T-MOBILE SHALL BE NOTIFIED BEFORE BEGINNING ANY DRILLING OR CUTTING OF CONCRETE, GYPSUM BOARD, OR OTHER DUST-PRODUCING MATERIALS. ALL EQUIPMENT IN AFFECTED AREAS SHALL BE PROTECTED TO THE SATISFACTION OF THE T-MOBILE REPRESENTATIVE. PRIOR TO ANY DUST-PRODUCING WORK, THE CONTRACTOR SHALL DISARM THE FIRE DETECTION SYSTEM(S) AND COVER ALL SMOKE DETECTORS WITHIN FIFTY (50) FEET OF THE WORK AREA AND ENSURE THAT THE SYSTEM IS RETURNED TO NORMAL OPERATION AT THE END OF EACH WORK DAY. ALL GAS SUPPRESSION DUMPED AS A RESULT OF THE CONTRACTOR NOT FOLLOWING THIS REQUIREMENT WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL SUCH WORK LOCATIONS SHALL BE APPROVED IN ADVANCE BY T-MOBILE. WHEN DRILLING OR CUTTING IS REQUIRED IN AN AREA WITH TELECOMMUNICATIONS EQUIPMENT INSTALLED, A HEPA VACUUM CLEANER SHALL BE EMPLOYED TO CONTAIN DUST AND PARTICULATE MATTER DURING THE OPERATION. ALL AREAS ABOVE THE CEILING SHALL BE VACUUMED CLEAN AFTER THE WORK IS COMPLETE. ALL VACUUM CLEANERS SHALL BE APPROVED FOR USE BY THE T-MOBILE REPRESENTATIVE. WHEN WET CORING, ALL PRECAUTIONS SHALL BE TAKEN TO CONFINE WATER TO WORK AREA.

31. FLOORING / FLOOR
    ALL CUTTING AND DRILLING OF ACCESS FLOOR SHALL OCCUR IN AREAS DESIGNATED BY THE T-MOBILE REPRESENTATIVE. FOR WORK REQUIRING THE REMOVAL OF FLOOR TILES, THE CONTRACTOR SHALL PROVIDE CONE BARRIERS AROUND ALL FLOOR OPENINGS FOR THE DURATION OF THESE ACTIVITIES. ADDITIONAL HAZARD LIGHTING SHALL ALSO BE PROVIDED, IF NECESSARY, THAT SUFFICIENTLY ILLUMINATES THE AREA AT ALL TIMES. THESE BARRIERS AND LIGHTING SHALL BE LEFT IN PLACE UNTIL THE PENETRATIONS ARE CLOSE FLUSH. REMOVAL OF FLOOR TILES AGAINST A WALL OR DOOR JAMB SHALL NOT BE DONE WITHOUT THE PERMISSION OF THE T-MOBILE REPRESENTATIVE. UPON COMPLETION OF THE PROJECT, ALL FLOOR AREAS SHALL BE COMPLETELY REMOVED CLEANED TO THE SATISFACTION OF THE T-MOBILE REPRESENTATIVE. ALL METAL SHAVINGS SHALL BE COMPLETELY REMOVED FROM THE TILE AND ALL SHARP OR ROUGH EDGES FILED SMOOTH. CUT/DRILLED FLOOR TILES SHALL HAVE THEIR EXPOSED CONCRETE AND METAL EDGES SEALED WITH TWO COATS OF CLEAR SPAY SEALANT PRIOR TO RE-INSTALLATION TO PREVENT FUTURE "CONCRETE DUSTING" AND CORROSION. SPAY SEALANT SHALL BE APPLIED IN THE DESIGNATED AREAS. ALL RAISED FLOOR CUTS MUST BE LINED WITH THE APPROPRIATE GROMMET OR PLASTIC TRIM TO ENSURE THAT NO ROUGH EDGES ARE EXPOSED.

32. ROOF WORK
    CUTTING, PATCHING, AND/OR REPAIR WORK PERFORMED ON ANY WARRANTED ROOFING SYSTEM SHALL BE COMPLETED BY AN APPROVED VENDOR IN A MANNER THAT MAINTAINS THE FULL EFFECT OF THE ROOF WARRANTY. T-MOBILE WILL PROVIDE THE NAME OF THE APPROVED VENDOR(S) FOR THIS FACILITY UPON REQUEST. THE ROOF SYSTEM SHALL BE SEALED AND WATERTIGHT AT THE END OF EACH WORKING DAY. THE CONTRACTOR SHALL REQUEST A DAILY INSPECTION PRIOR TO LEAVING THE SITE, AND ALL ROOF CLOSURES WILL BE INSPECTED AND APPROVED BY T-MOBILE PRIOR TO THE CONTRACTOR LEAVING THE SITE. THE CONTRACTOR WILL BE SUMMONED BACK TO THE SITE SHOULD THIS DIRECTIVE NOT BE FOLLOWED OR REPARATIONS WILL BE MADE AT THE CONTRACTORS EXPENSE. THE CONTRACTOR SHOULD EXPECT THAT PAINTING/COATING WORK INCORPORATING VOLATILE OR NOXIOUS APPLICATION SCHEDULES ARE SUBJECT TO APPROVAL BY T-MOBILE.

33. FINISHES
    ALL FINISHES AND MATERIAL TREATMENT (SUCH AS PAINT, FIREPROOFING, ROOFING MATERIALS OR ANY OTHER COATING) SHALL BE APPLIED ACCORDING TO MANUFACTURE'S RECOMMENDATIONS AND SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE PROTECTION FOR ALL AREAS WHERE PAINTING WILL OCCUR. THE AFFECTED AREA SHALL BE PROVIDED WITH ADEQUATE VENTILATION TO DISSIPATE FUMES. THE HOURS WHEN PAINTING MAY OCCUR SHALL BE COORDINATED WITH T-MOBILE PRIOR TO BEGINNING WORK. THE CONTRACTOR SHOULD EXPECT THAT PAINTING/COATING WORK INCORPORATING VOLATILE OR NOXIOUS PRODUCTS MAY BE ISOLATED TO NON-WORKING HOURS FOR GENERAL STAFF COMFORT. PROTECTIVE MEASURES AND APPLICATION SCHEDULES ARE SUBJECT TO APPROVAL BY T-MOBILE.

34. MATERIAL SAFETY AND DATA SHEETS (MSDS DOCUMENTATION)
    THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN ALL MSDS AND RELATED INFORMATION FOR ALL MATERIAL AND EQUIPMENT DELIVERED AND/OR STORED AT THE SITE. THE MSDS SHALL IDENTIFY THE LOCATION OF THE PRODUCT WITHIN THE FACILITY AND SHALL BE MADE AVAILABLE FOR REVIEW BY ANY PARTY FOR THE DURATION OF THE PROJECT. WALL-MOUNTED MSDS HOLDERS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE MSDS AND RELATED INFORMATION, INCLUDING ROOM NUMBER LOCATIONS, SHALL BE INCLUDE IN THE PROJECT MANUALS TO BE DELIVERED BEFORE FINAL APPLICATION FOR PAYMENT.

CONSTRUCTION NOTES & SITE WORK RULES

1. OWNER'S OPERATION:
   THE WORK IS TO BE PLANNED AND EXECUTED IN A MANNER WHICH WILL ASSURE CONTINUOUS AND UNINTERRUPTED SERVICE OF THE OWNER'S OPERATION. THE SMALLEST PARTICLES OF MOISTURE, DUST, OR OTHER FOREIGN MATERIAL CAN CAUSE INCALCULABLE DAMAGE TO THE OWNER'S EQUIPMENT. NO EFFORT SHALL BE SPARED BY THE CONTRACTOR IN PROTECTION MEASURES USED TO PREVENT DAMAGE FROM SUCH CONTAMINANTS.

2. TEMPORARY DUST PROTECTION WORK IN GENERAL AREAS (SEE A5XX FOR DETAILS):

   DUST PARTITION SHALL BE CONSTRUCTED OF MATERIALS AS DESCRIBED BELOW AND AS DETAILED ON THIS SHEET, AND SHALL BE PROVIDED WHERE SPECIFIED ON THE DEMOLITION PLAN AND IN ALL LOCATIONS NECESSARY, AND AS DIRECTED BY THE OWNER, OR AS REQUIRED FOR PROTECTION OF EXISTING ADJACENT FINISHED SURFACES. NEW CONSTRUCTION, TELEPHONE EQUIPMENT, FURNITURE, ETC. PARTITIONS AND ENCLOSURES SHALL BE ERECTED PRIOR TO DEMOLITION OR ALTERATION WORK AND SHALL BE REMOVED AS SOON AS THE WORK IS COMPLETE.

   A. MATERIALS:
   FIRE RETARDANT, ANTI STATIC VINYL SHEETS SHALL BE ONE OF THE FOLLOWING:
   a. "REBCO" AS MANUFACTURED BY RALPH E. BAKER CO. INC., SUBSIDIARY OF BAKER-MCSHANE PAPER & PACKAGING CO., 545 ARLINGTON AVE., EAST ORANGE, NEW JERSEY 07027, TELEPHONE (201) 672-6100.
   b. PLASTIC SHEETS AS MANUFACTURED BY GRIFFOLYN REEF INC., HOUSTON, TEXAS 77275-0250, TELEPHONE (713) 943-0070, 1-800-231-6074
   c. FLAME RETARDANT, ANTI-STATIC POLYETHYLENE FILM, PRODUCT NUMBER ST 30 FR-2011, AS MANUFACTURED BY STAR-TEX CORPORATION.

   B. PLASTIC PARTITIONS:
   a. DUST PARTITION SHALL EXTEND FROM FLOOR SLAB TO CEILING SLAB ABOVE.
   b. PROVIDE PERIMETER FRAMING COVERING THE FULL OPENING. THE FRAMING SHALL BE GASKETED, USING A 1" X 3" FLEXIBLE COMPRESSIVE NEOPRENE OR SIMILAR MATERIAL BETWEEN FRAMING AND ADJACENT CONSTRUCTION.
   c. OVERLAP JOINTS A MINIMUM OF 12 INCHES AND TAPE TO PROVIDE A DUST TIGHT ENCLOSURE.
   d. PLASTIC MATERIAL SHALL BE PROVIDED IN EXTRA LENGTH IN ALL CASES SO THAT EXCESS MATERIAL MAY REST ON THE FLOOR AND BE WEIGHTED DOWN WITH STUDS OR OTHER ACCEPTABLE MEANS TO ENSURE A DUST TIGHT ENCLOSURE IS MAINTAINED. IT MAY BE ADVANTAGEOUS TO PROVIDE CONSIDERABLE EXCESS MATERIAL SO THAT THE PARTITION MAY BE VARIED TO ALLOW ACCESS AROUND EXISTING EQUIPMENT, ITEMS REMAINING IN PLACE, NEW ITEMS BEING INSTALLED, ETC., WITHOUT DANGER OF MATERIAL SEPARATING FROM THE FLOOR.
   e. PARTITIONS SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES UNTIL REMOVAL.

   C. PLYWOOD DUST PARTITIONS/ENCLOSURES:
   a. PROVIDE DUST PARTITION AS DESCRIBED BELOW AND AS SHOWN ON THE DRAWINGS.
   b. DUST PARTITION SHALL BE CONSTRUCTED OF 2X4 WOOD STUDS SPACED NOT MORE THAN 24" ON CENTER VERTICALLY, WITH CONTINUOUS TOP AND BOTTOM PLATES. PROVIDE INTERMEDIATE REINFORCING NECESSARY TO MAINTAIN A RIGID PARTITION FREE FROM MOVEMENT. DOUBLE STUD AT DOOR OPENINGS.
   c. APPLY PLASTIC SHEETS TO STUDS THE FULL LENGTH AND HEIGHT OF THE PARTITION. OVERLAP JOINTS AND TAPE TO PROVIDE AN AIRTIGHT ENCLOSURE. PARTITION SHALL THEN BE FACED WITH 1/2" FIRE RETARDANT PLYWOOD 8'-0" HIGH VERTICALLY. JOINTS SHALL OCCUR AT FRAMING. PROVIDE HORIZONTAL FRAMING WHERE NECESSARY TO COMPLY WITH THIS REQUIREMENT. TAPE ALL JOINTS.
   d. PROVIDE CELLULAR NEOPRENE OR SIMILAR COMPRESSIVE GASKET AT ALL PARTITION JUNCTIONS SUCH AS AT WALLS, COLUMNS, FLOOR, CEILING, ETC.
   e. PARTITION SHALL BE PROVIDED WITH DOORS AT OWNER APPROVED LOCATIONS AND AS REQUIRED FOR ACCESS OF EQUIPMENT AND DEBRIS. PROVIDE PROPER WOOD TRIM AND FULL CONTACT STOPS. GASKET THE HEAD AND JAMB WITH ADEQUATE HINGES AND EQUIP WITH LATCH SETS.
   f. TO MINIMIZE DISTURBANCE OF THE OWNER'S OPERATION, COMPONENTS FOR THE DUST PARTITION SHALL BE PRE-MEASURED AND PRECUT OUTSIDE THE BUILDING.
   g. PARTITION SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES UNTIL REMOVAL.
   h. WHERE REQUIRED, PROVIDE PLYWOOD DUST BARRIERS BOTH ATOP AND AROUND EQUIPMENT WHILE MAINTAINING ADEQUATE AIRFLOW TO THE SWITCH EQUIPMENT.

GENERAL CONSTRUCTION REQUIREMENTS

1. GENERAL REQUIREMENTS:
   THE FOLLOWING ARE GENERAL REQUIREMENTS THAT APPLY TO ALL CONSTRUCTION, ALTERATIONS, AND EQUIPMENT INSTALLATIONS:
   A. STAGING AREAS - SHALL BE LIMITED TO THE STORAGE, SHIPPING/RECEIVING, AND NON-CRITICAL EQUIPMENT SPACES.
   B. CUTTING AND WELDING ACTIVITIES (HOT WORK) - SHALL COMPLY WITH CH 9 OF NFPA 51B, REQUIRES A PERMIT, REQUIRES PREPARATION OF A MOP, MUST BE SUPERVISED, AND REQUIRES PORTABLE FIRE EXTINGUISHERS BE ON HAND.
   C. USE AND STORAGE OF COMBUSTIBLE MATERIALS - CONTRACTOR IS NOT PERMITTED TO STORE ANY COMBUSTIBLE MATERIALS FOR CONSTRUCTION WITHIN THE CRITICAL EQUIPMENT SPACES OF AN OCCUPIED AND OPERATING SWITCH BUILDING DURING CONSTRUCTION ACTIVITIES. ALL COMBUSTIBLE MATERIALS SHALL BE STORED IN STORAGE/SHIPPING/RECEIVING ROOMS, CONTRACTOR TRAILERS, AND CONTRACTOR STORAGE COMPARTMENTS.
   D. BUS BAR PROTECTION - PER NFPA 76, PROVISIONS SHALL BE PROVIDED TO PROTECT THE US BARS DURING CONSTRUCTION ACTIVITY IN THE AREA AROUND OR OVER LIVE BUS BARS.
   E. FIRE PREVENTION AWARENESS TRAINING FOR CONTRACTORS - ALL CONTRACTORS SHALL RECEIVE A GENERAL SAFETY AWARENESS BRIEFING PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES ON A LIVE SWITCH FACILITY IN ACCORDANCE WITH NFPA 76. THE OPERATIONS MANAGER OF THE FACILITY SHALL PROVIDE THIS BRIEFING.
   F. TEMPORARY ENCLOSURES - ONLY NONCOMBUSTIBLE PANELS, FLAME-RESISTANT TARPAULINS, OR APPROVED MATERIALS OF EQUIVALENT FIRE-RETARDANT CHARACTERISTICS ARE PERMITTED TO BE USED IN ANY CRITICAL EQUIPMENT SPACES DURING RENOVATION WORK. ANY OTHER FABRICS OR PLASTIC FILMS USED FOR PROTECTION OF EXISTING EQUIPMENT SHALL BE CERTIFIED AS CONFORMING TO THE REQUIREMENTS OF TEST METHOD #2 CONTAINED IN NFPA 701, STANDARD METHODS OF FIRE TEST FOR FLAME PROPAGATION OF TEXTILES AND FILMS.
   G. FIRE EXTINGUISHERS - CONTRACTOR SHALL PROVIDE TEMPORARY FIRE EXTINGUISHERS (MAX TRAVEL DISTANCE OF 50FT) IN ALL AREAS OF WORK. FIRE EXTINGUISHERS SHALL BE CLEAN AGENT TYPE IN AREAS OF CRITICAL EQUIPMENT PER NSTD388. TYPE ABC EXTINGUISHERS REQUIRED ELSEWHERE PER NFPA 10.
   H. WASTE DISPOSAL - ACCUMULATIONS OF COMBUSTIBLE WASTE MATERIAL, DUST, AND DEBRIS SHALL BE REMOVED FROM THE STRUCTURE AND ITS IMMEDIATE VICINITY AT THE END OF EACH WORK SHIFT OR MORE FREQUENTLY AS NECESSARY FOR SAFE OPERATIONS. MATERIALS SUSCEPTIBLE TO SPONTANEOUS IGNITION, SUCH AS OILY RAGS, SHALL BE STORED IN A LISTED DISPOSAL CONTAINER.

ENGINEER

NB+C™ TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

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T-MOBILE NORTHEAST LLC

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NORFOLK, VA 23510
OFFICE: (757) 453-6907
FAX: (757) 589-0904

SITE INFORMATION

VAYH009
HAMPTON ROADS
CONVENTION CENTER
1610 COLISEUM DRIVE
HAMPTON, VA 23666
CITY OF HAMPTON

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	02/26/18	REVISED	TWD
0	10/23/17	PRELIMINARY	TWD

PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

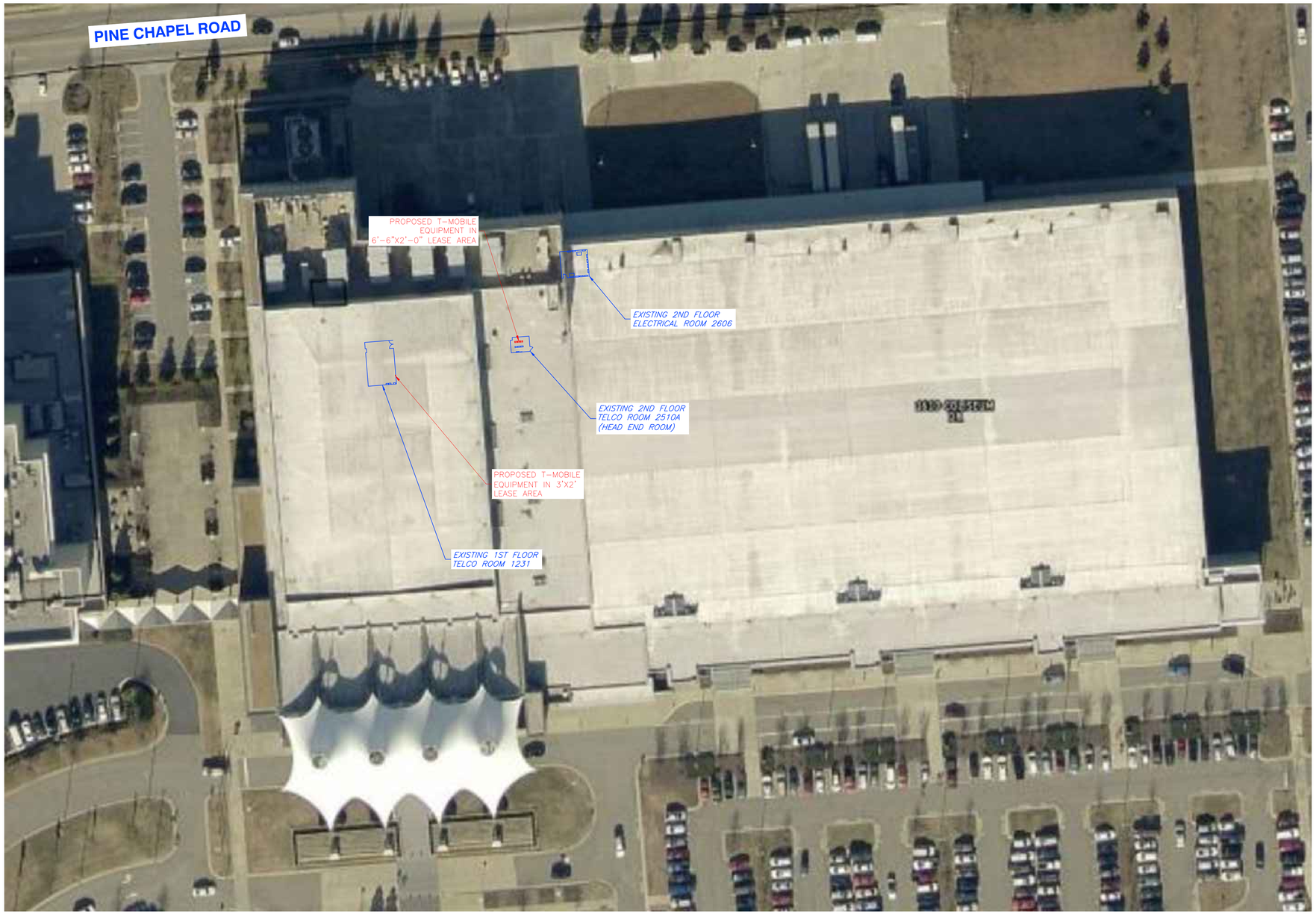
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

N-1

TRUE NORTH



1 / Z-1 SITE PLAN
SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 INCH = 40 FEET

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

T-MOBILE NORTHEAST LLC

324 MADISON MEWS
NORFOLK, VA 23510
OFFICE: (757) 453-6907
FAX: (757) 589-0904

SITE INFORMATION

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PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

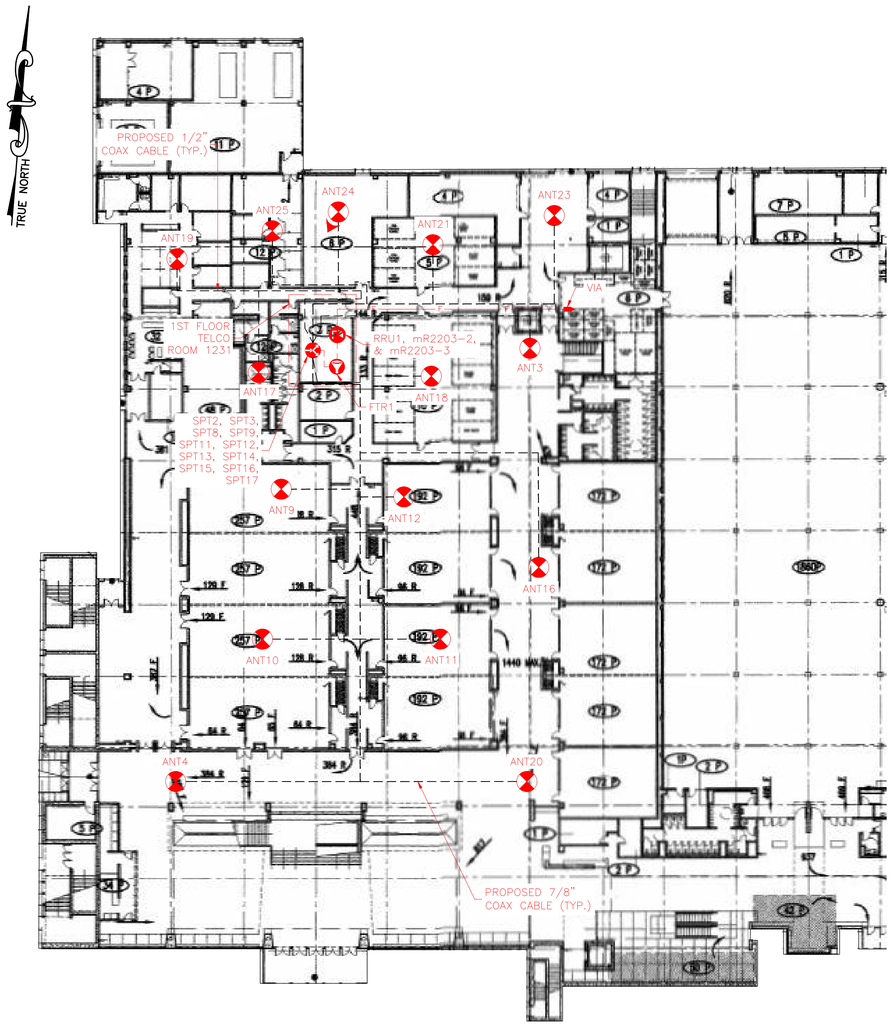
SHEET TITLE

SITE PLAN

SHEET NUMBER

Z-1

NOTE:
PROPOSED EQUIPMENT AND UTILITIES ARE SUBJECT TO CHANGE DEPENDING ON FINAL RF DESIGN



1 O-1 1ST FLOOR RF DESIGN & ANTENNA LAYOUT
SCALE: 1"=30'

GRAPHIC SCALE
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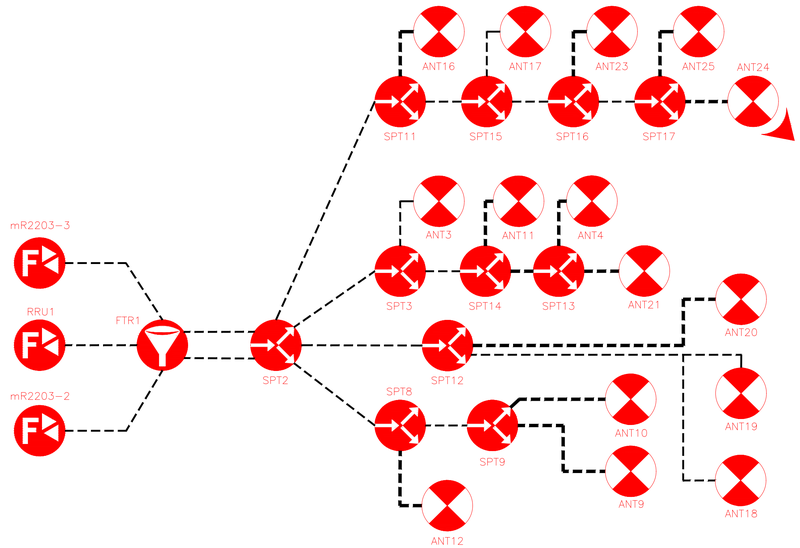
(IN FEET)
1 INCH = 30 FEET



2 O-1 1ST FLOOR LINE DRAWING
NTS

LEGEND							
PROPOSED OMNI ANTENNA	PROPOSED DIRECTIONAL ANTENNA	PROPOSED SPLITTER	PROPOSED VIA	PROPOSED REMOTE	PROPOSED FILTER	PROPOSED 1/2" COAXIAL CABLE	PROPOSED 7/8" COAXIAL CABLE

3 O-1 SYMBOL LEGEND
NTS

ENGINEER

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ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

1ST FLOOR RF DESIGN & ANTENNA LAYOUT

SHEET NUMBER

O-1

NOTE:
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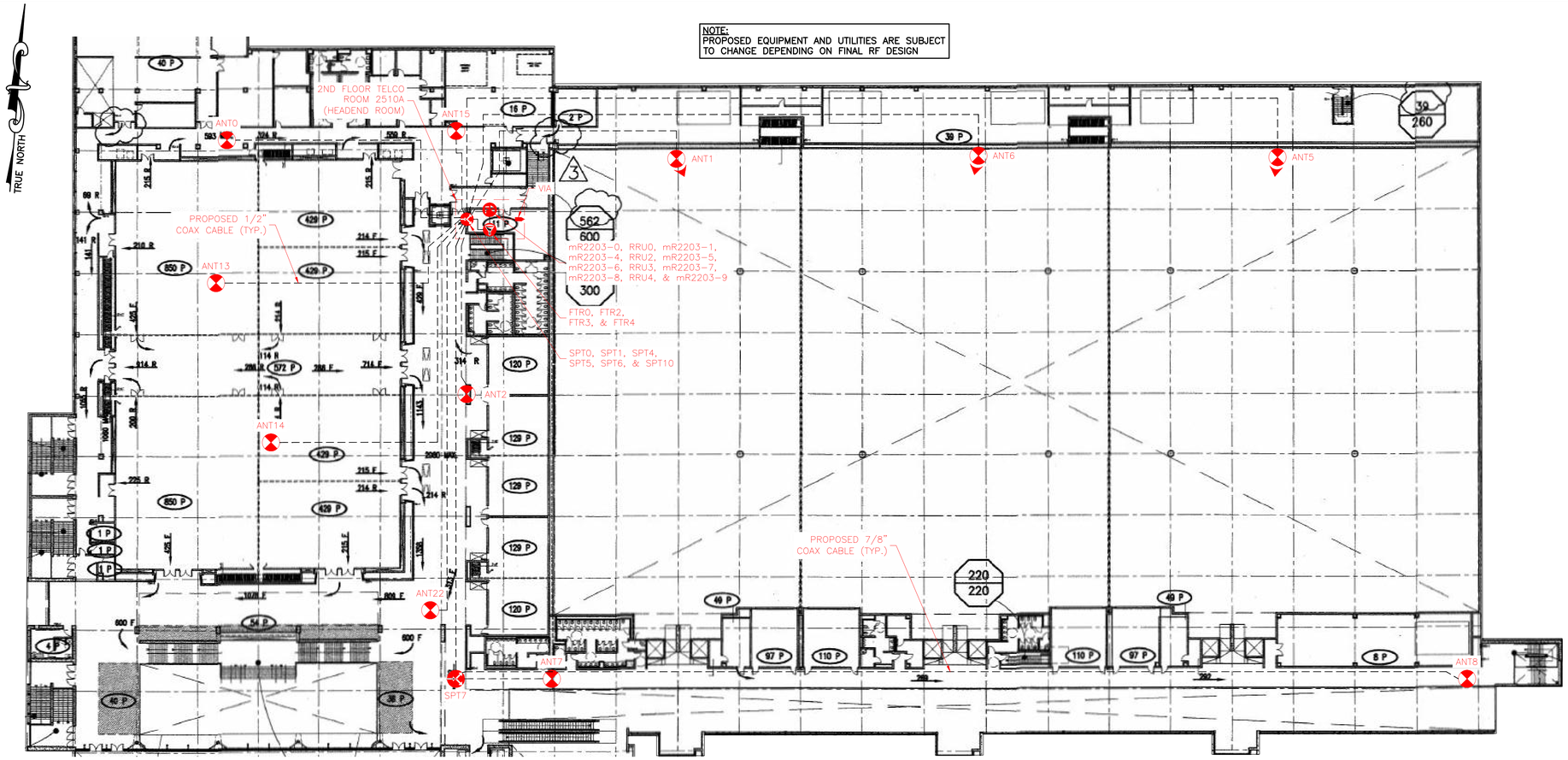

1 O-2 **2ND FLOOR RF DESIGN & ANTENNA LAYOUT**
SCALE: 1"=30'

GRAPHIC SCALE
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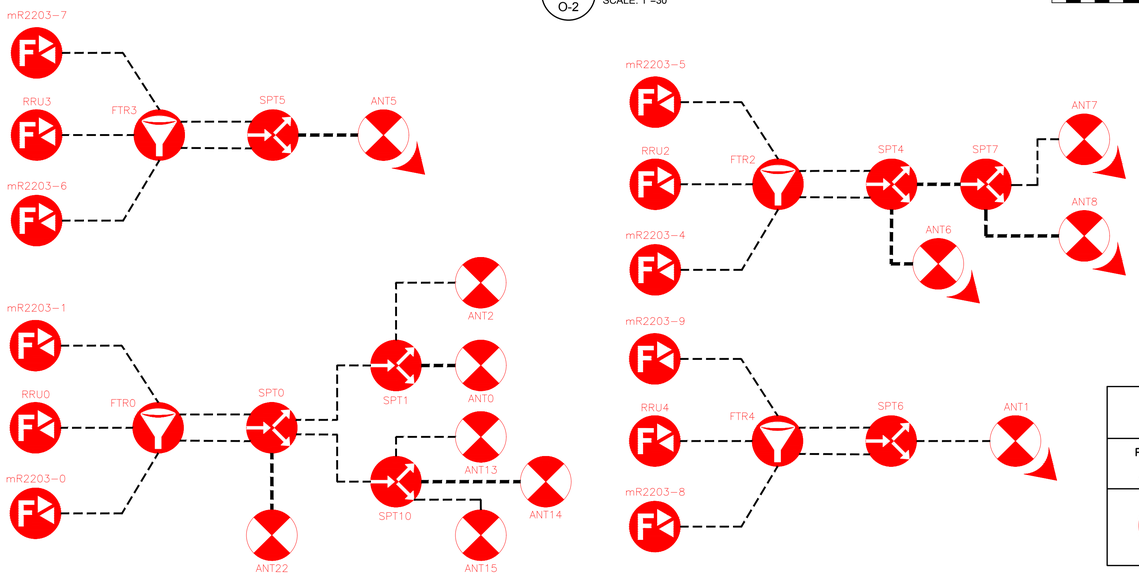
(IN FEET)
1 INCH = 30 FEET



2 O-2 **2ND FLOOR LINE DRAWING**
NTS

LEGEND							
PROPOSED OMNI ANTENNA	PROPOSED DIRECTIONAL ANTENNA	PROPOSED SPLITTER	PROPOSED VIA	PROPOSED REMOTE	PROPOSED FILTER	PROPOSED 1/2" COAXIAL CABLE	PROPOSED 7/8" COAXIAL CABLE

3 O-2 **SYMBOL LEGEND**
NTS

ENGINEER

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

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PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

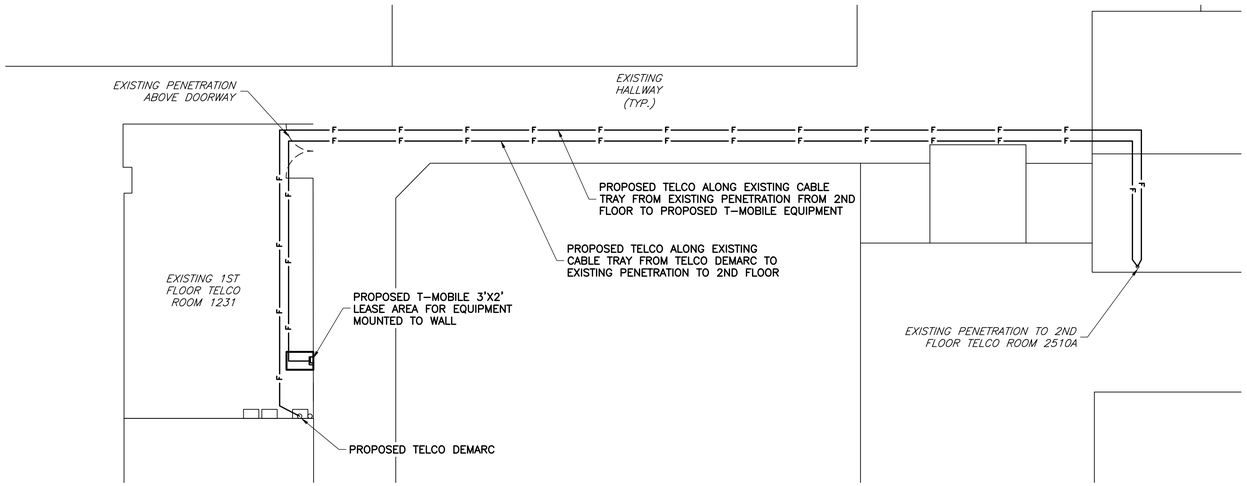
2ND FLOOR RF DESIGN & ANTENNA LAYOUT

SHEET NUMBER

O-2

TRUE NORTH

NOTE:
PROPOSED EQUIPMENT AND UTILITIES ARE SUBJECT TO CHANGE DEPENDING ON FINAL RF DESIGN



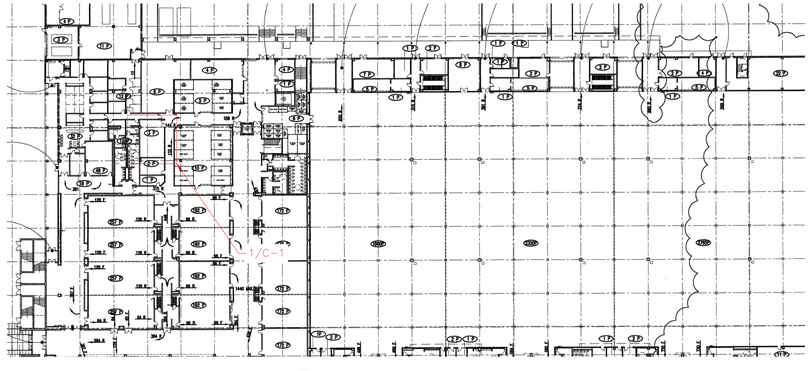
1 / C-1 **1ST FLOOR PLAN**
SCALE: 1"=8'

GRAPHIC SCALE

8 0 4 8 16 32

(IN FEET)
1 INCH = 8 FEET

TRUE NORTH



2 / C-1 **BUILDING KEY PLAN**
SCALE: NTS

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
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GLEN ALLEN, VA 23060
804-548-4079

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PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

1ST FLOOR PLAN

SHEET NUMBER

C-1

NOTE:
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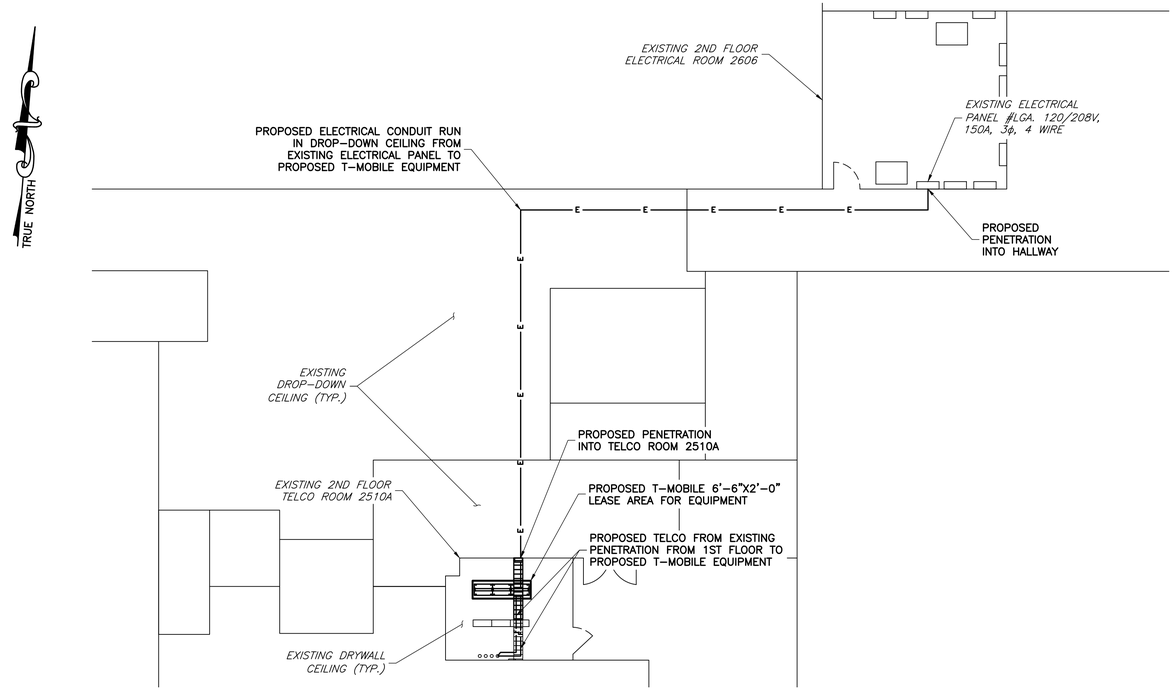
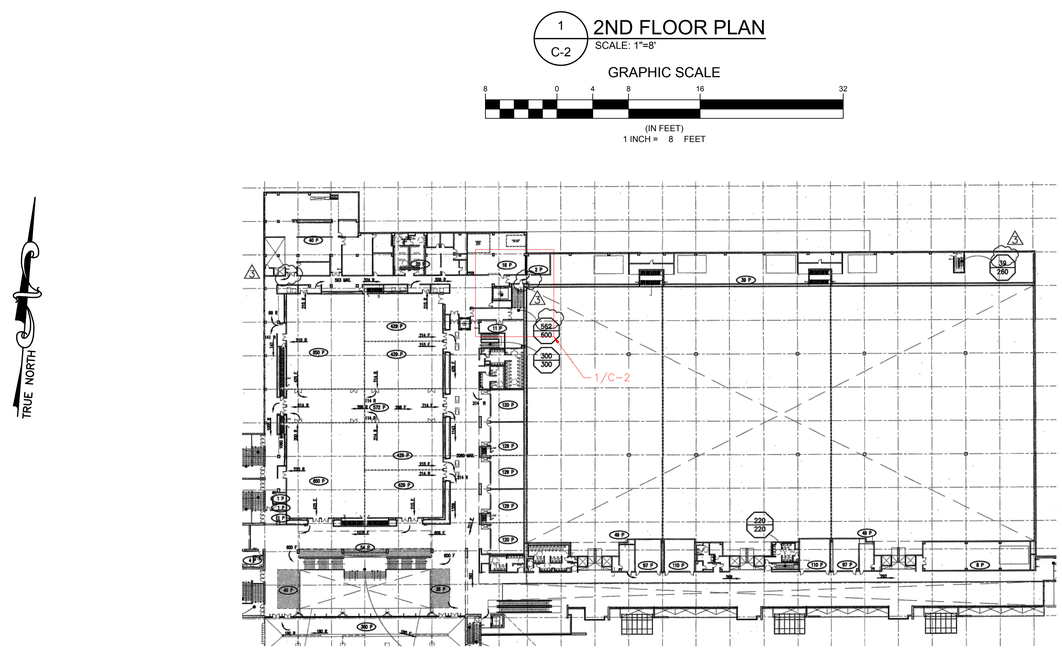


1 / C-2 **2ND FLOOR PLAN**
SCALE: 1"=8'

GRAPHIC SCALE

8 0 4 8 16 32

(IN FEET)
1 INCH = 8 FEET



2 / C-2 **BUILDING KEY PLAN**
SCALE: NTS

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

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PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

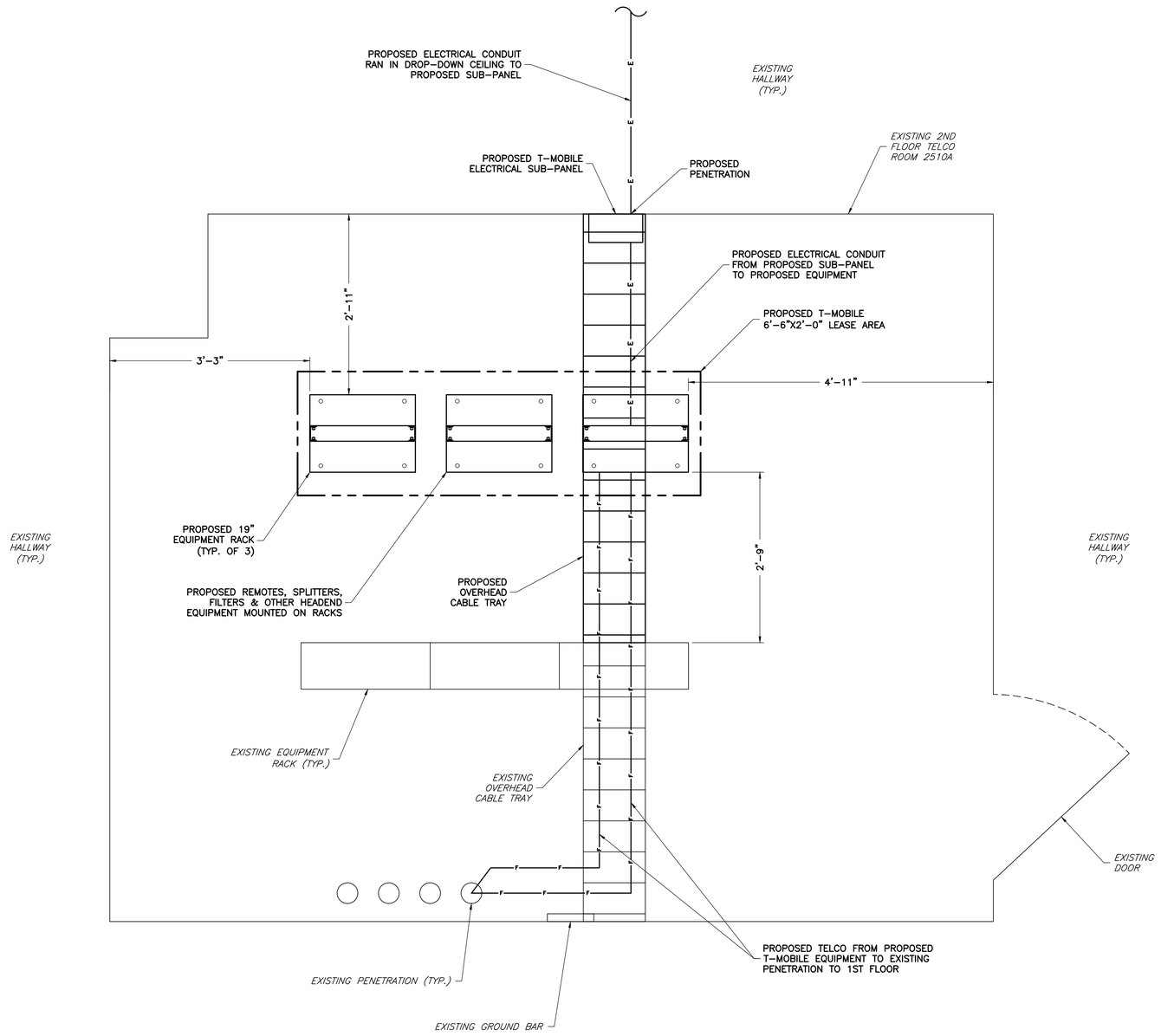
2ND FLOOR PLAN

SHEET NUMBER

C-2

TRUE NORTH

NOTE:
PROPOSED EQUIPMENT AND UTILITIES ARE SUBJECT TO CHANGE DEPENDING ON FINAL RF DESIGN



1 / C-3 HEADEND PLAN
SCALE: 1"=1'

GRAPHIC SCALE

1 0 0.5 1 2 4

(IN FEET)
1 INCH = 1 FEET

ENGINEER

NB+C ENGINEERING SERVICES, LLC.
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PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

HEADEND PLAN

SHEET NUMBER

C-3

GALTRONICS
WE'RE MAKING WAVES™
A KRYLON TECHNOLOGIES COMPANY

Broadband In-Building SISO Antenna [694-6000MHz]

PEAR™ S4935i w/ Pigtail

Description:
- Broadband ceiling mount omni antenna covering 694-6000MHz.
- SISO IDAS and Small Cell applications requiring ceiling mounted omni antennas.

694-6000MHz Omni Antenna

Electrical Specifications										
Frequency Band [MHz]	694-790	790-960	1695-1780	1780-1990	1990-2180	2305-2360	2360-2700	2700-3200	3200-5100	5100-6000
Input Connector Type	1x N-Type(F) DIN or 4.3-10(F) DIN w/ pigtail (17", 43cm)									
VSWR/Return Loss	<1.5:1 / 14.0 dB								< 2.0:1 / 9.5 dB	< 2.2:1 / 8.5 dB
Impedance	50 Ω									
Polarization	Vertical									
Horizontal Beamwidth	Omni (360°)									
Max. Gain	**2.5 dBi**	**3.5 dBi**	**6.2 dBi**	**6.2 dBi**	**6.8 dBi**	**6.9 dBi**	**6.9 dBi**	**6.0 dBi**	**6.2 dBi**	**7.1 dBi**
Avg. Gain	2.2 dBi	2.6 dBi	5.7 dBi	5.7 dBi	6.5 dBi	6.1 dBi	6.1 dBi	5.6 dBi	5.3 dBi	6.3 dBi
Max Power / Port	50 Watts at ambient temperature 77°F (25°C)									
PIM @ 2x43 dBm	<-153 dBc									

Mechanical Specifications	
Operating Temperature	-40° to 158°F (-40° to +70°C)
Antenna Weight	1.65 lbs (750 g)
Antenna Diameter	13.2" (335 mm)
Antenna Height	4.9" (124 mm)
Radome Material	PC / ABS
Flamibility rating	UL 94-V0
Approved for Use in Plenum Spaces	Listed & Tested by Intertek / ETL
RoHS	Compliant
Radome Color	RAL 9016 (white)*
Ingress Protection	Indoor
Shipping Dimensions - L x W x D	16.7"x15.1"x10.4" / 425x385x265mm
Shipping Weight (Gross Weight)	5.73 lbs (2.6 kg)

* Radome can be painted with recommended paint "Krylon fusion for plastic"

Release Date: January 03, 2017 Revision: 5.0 RFD04935

Matting Male Connector Torque:
N-Type: 26.6 in-lb (3 Nm)
4.3-10: 44.3 in-lb (5 Nm)

1 / A-1 PEAR S4935i OMNI ANTENNA
NTS

GALTRONICS
A KRYLON TECHNOLOGIES COMPANY

Outdoor and / or Indoor Directional MIMO Antenna, 698-2700 MHz

PEAR™ M5277i

Outdoor/In-Building Directional Antenna

[MIMO 698-960 / 1695-2700 MHz]

Bottom Mounted Connector Version

Rear Mounted Connector Version

Description:
Directional MIMO antenna for outdoor and in-building applications such as DAS. The antenna is dual polarized supporting MIMO for 698-960 MHz and 1695-2700 MHz.

Electrical Specifications		
Frequency Band	698-960 MHz	1695-2700 MHz
Polarization	Vertical / Horizontal	Dual slant 45° (±45°)
Input Connector Type	2x N-Type or 2x 4.3-10 DIN or 2x 4.1-9.5 DIN Connector (F) with cable (12"/30cm length)	
Impedance	50 Ω	
VSWR / Return Loss	<2.0:1 / 9.5 dB	<1.8:1 / 10.9 dB
Isolation between ports (typ.)	-25 dB	
Max. Gain	5.9 dBi	9.5 dBi
Avg. Gain	4.7 dBi	8.2 dBi
PIM @ 2x 43 dBm	4.3-10 DIN <-153 dBc N-Type / 4.1-9.5 DIN <-150 dBc	
Horizontal Beamwidth	~90°	~65°
Vertical Beamwidth	~110°	~65°
Input Power	50 W at ambient temperature of 122° F (25° C)	

Mechanical Specifications	
Operating Temperature	-40° to 158 °F (-40° to +70°C)
Environmental Conditions	Outdoor* / Indoor
Antenna Weight	2.1 lbs (950g)
Radome Dimensions (H x W x D)	10.2" x 8.0" x 2.5" (259 x 203 x 65mm)
Flammability Rating	UL 94-V0
Outdoor Ingress Protection	IP65*
RoHS	Compliant
Radome Color	RAL 9016 (white)**
Cable	Plenum Rated
Approved for use in Plenum Space	Listed & Tested by Intertek / ETL
Shipping Dimensions (Bottom Connector Version)	15.7" x 10.6" x 5.3" / 400 x 270 x 135mm
Shipping Weight (Bottom Connector Version)	3.7 lbs (1.7 Kg)

Release Date: 4. November 2015 Revision: E Patent Pending

* IP65 rating only for antenna versions with bottom mounted connector. ** Radome can be painted with recommended paint "Krylon fusion for plastic".

2 / A-1 PEAR M5277i DIRECTIONAL ANTENNA
NTS

Technical Specifications Radio 2203

FREQUENCY BANDS	
Bands:	3GPP Bands B1 (W/L), B3 (L), B3C (W/L), B8 (W/L), B66A (W/L), B5 (W/L), B2/B25 (W/L), B12 (L), B13 (L) and B7 (L)
HW CAPACITY	
Carrier capacity WCDMA:	Up to 4 carriers
Carrier capacity LTE:	Up to 40 MHz
IBW:	B1, B3 and B66A 45 MHz. B2/B25 and B7 40 MHz. B3C, B8, B5, B12 and B13 Full band
MIMO:	Yes, 2T/2R
Output power:	Up to 2 x 5 W
INTERFACE SPECIFICATIONS	
Antenna Ports:	2 x 4.3-10 (f)
CPRI:	2 x 2.5/5/10 Gbps (exchangeable SFP modules)
Optical indicators	6
External alarms	2
Field ground	1
MECHANICAL SPECIFICATIONS	
W x H x D:	200 mm x 200 mm x 100 mm, including mounting bracket and esthetic front cover
Weight:	< 4.5 kg
Volume:	4 l
Mounting:	Wall and pole mount
ELECTRICAL SPECIFCATIONS	
Power Supply:	-48 VDC or 100 - 250 VAC
ENVIRONMENTAL SPECIFICATIONS	
Normal operating temp.:	-40 °C to +55 °C (cold start at -40 °C)
Relative Humidity	5 - 100%
Environment:	Outdoor class with IP65

3 / A-1 ERICSSON mR2203 RADIO
NTS

TECHNICAL SPECIFICATIONS mRRUS 12

FREQUENCY BANDS MRRUS, WCDMA, LTE FDD:	3GPP Bands B1 (W/L), B2 (W/L), B3 (W/L), B4 (W/L), B7 (L), B12 (L), B13 (L)
HW CAPACITY:	Carrier capacity WCDMA: 4 Carrier capacity LTE: 1 x 20 MHz FDD IBW: Up to 25 MHz MIMO: Yes, 2T2R Output power: Up to 2 x 5W
INTERFACE SPECIFICATIONS:	Power supply: AC or DC, 2-Wire Antenna Ports: 2 x N-type insert-receiver External Alarm: 2 CPRI: 2 x 5,0 Gbps CPRI (Changeable SFPs) Maintenance button 5 x optical indicators Field Ground
MECHANICAL SPECIFICATIONS:	WxDxH: 265 mm x 140 mm x 460 mm with solar shield, handle and feet WxDxH: 240 mm x 121 mm x 380 mm without solar shield, handle and feet Volume and weight: 11 litres and 10 kg Mounting: Wall and pole mount with optional kit
POWER SPECIFICATIONS AC:	Nominal voltage: 100 to 250 VAC Voltage variation: 85 to 275 VAC
POWER SPECIFICATIONS DC:	Nominal voltage: -48 VDC Voltage variation: -58,5 to -38,0 VDC
ENVIRONMENTAL SPECIFICATIONS:	Environment: Outdoor class with IP55 Operating temp: -40 - +55 °C (cold start at -40 °C)

HW CAPACITY:

Technical specification	High bands 2300-2690 MHz	High bands 1710-2170MHz	Low bands 698-787MHz
Gain	5 dBi	6 dBi	6 dBi
0dBi beam with:			
Horizontal plane	130°	140°	130°
Vertical plane	120°	120°	130°
3dB beam width:			
Horizontal plane	100°	100°	90°
Vertical plane	80°	90°	90°

4 / A-1 ERICSSON mRRUS12 RADIO
NTS

ENGINEER

NB+C TOTALLY COMMITTED.™
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
GLEN ALLEN, VA 23060
804-548-4079

APPLICANT

T-Mobile
T-MOBILE NORTHEAST LLC

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PROFESSIONAL STAMP

PRELIMINARY

ENGINEER

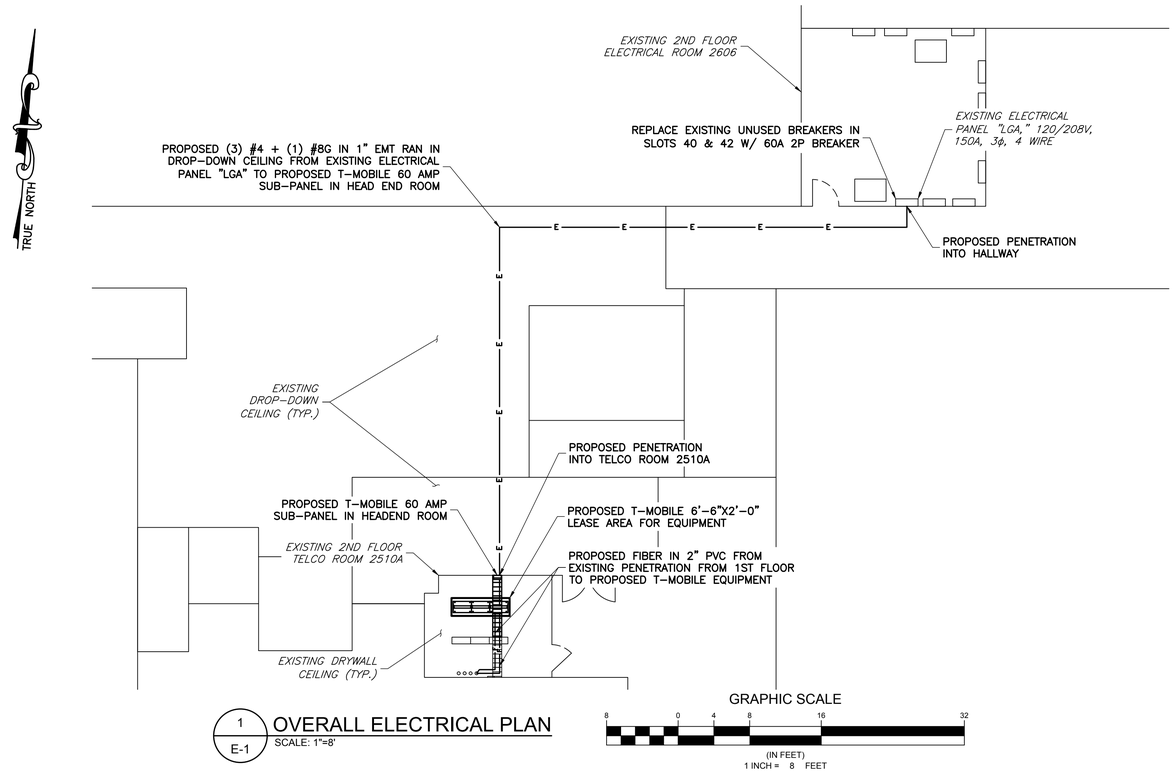
TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

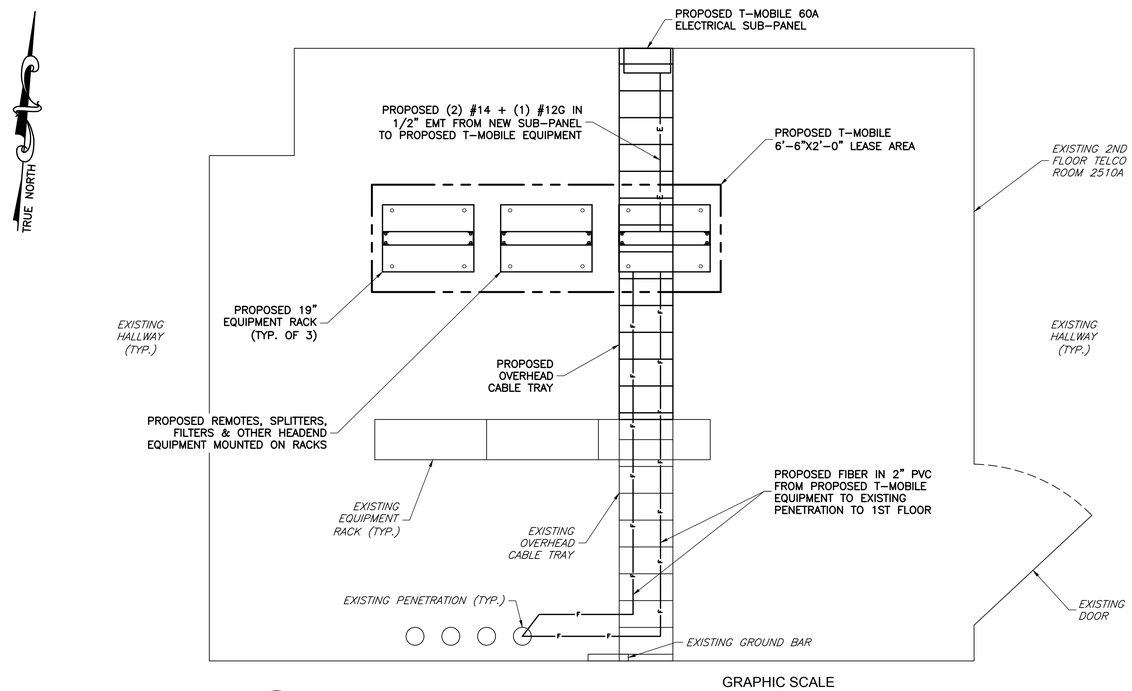
EQUIPMENT DATA SHEETS

SHEET NUMBER

A-1



1 / E-1 OVERALL ELECTRICAL PLAN
SCALE: 1"=8'



2 / E-1 HEAD END ELECTRICAL PLAN
SCALE: 3/4"=1'

ENGINEER

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
4435 WATERFRONT DRIVE, SUITE 100
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PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

ELECTRICAL PLAN

SHEET NUMBER

E-1

ARCHITECTURAL NOTES:

1. MAKE SUCH EXPLORATIONS AND PROBES AS ARE NECESSARY TO ASCERTAIN ANY REQUIRED PROTECTIVE MEASURES BEFORE PROCEEDING WITH ALTERATIONS AND REMOVALS. GIVE PARTICULAR ATTENTION TO, AND PROVIDE, SHORING AND BRACING REQUIREMENTS SO AS TO PREVENT ANY DAMAGE TO EXISTING CONSTRUCTION. PROVIDE ADEQUATE FIRE PROTECTION IN ACCORDANCE WITH LOCAL FIRE DEPARTMENT REQUIREMENTS.

2. PERFORM ALL ALTERATIONS WORK TO THE EXTENT INDICATED TO ACCOMMODATE THE NEW WORK. CUT OUT EMBEDDED ANCHORAGE AND ATTACHMENT ITEMS AS REQUIRED TO PROPERLY PROVIDE FOR PATCHING AND INSTALLATION OF THE RESPECTIVE FINISHES. WHERE EXISTING EQUIPMENT AND FIXTURES ARE INDICATED TO BE USED, REPAIR SUCH EQUIPMENT AND FIXTURES AND REFINISH TO PUT INTO PERFECT WORKING ORDER.

3. DO NOT CUT, WELD TO, DRILL, REMOVE OR OTHERWISE ALTER ANY STRUCTURAL MEMBER, WHETHER NEW OR EXISTING, WITHOUT THE WRITTEN CONSENT OF OWNER, UNLESS SUCH CONDITION IS INDICATED IN DETAIL ON THE DRAWINGS AND REINFORCING OF MEMBERS AFFECTED OR NEW MEMBERS TO COMPENSATE FOR SUCH CUTTING, DRILLING, REMOVALS OR OTHER ALTERATION ARE INDICATED.

4. PATCHING WORK SHALL BE PERFORMED BY TRADESMEN EXPERIENCED WITH THE MATERIAL TO BE PATCHED. IN EXISTING AREAS OR ROOMS WHERE FINISHES ARE CUT FOR ACCESS; WHERE PARTITIONS ARE REMOVED; WHERE NEW PARTITIONS ARE ADDED; OR WHERE CEILINGS ARE REMOVED; PATCH, EXTEND OR BUILD WITH NEW MATERIALS MATCHING EXISTING IN SIZE, KIND, STYLE, MAKE, QUALITY, FUNCTION, WORKMANSHIP, METHOD OF INSTALLATION, AND SURFACE FINISH, WITH EXISTING WORK, AND SHALL BE INDISTINGUISHABLE FROM EXISTING. IF THE WALL OR CEILING IS PAINTED, THE FINAL 2 COATS OF PAINT SHALL BE APPLIED TO THE ENTIRE WALL OR CEILING, CORNER TO CORNER.

5. JOINT SEALANTS:
   INTERIOR SEALANTS: "AC20 ACRYLIC LATEX CAULK" PECORA CORP.

6. PAINTS AND COATINGS:

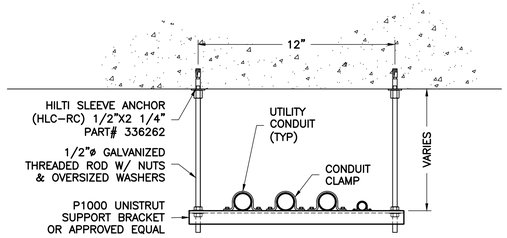
A. PREPARE SURFACES TO RECEIVE PAINT; DENTS, CRACKS, HOLLOW PLACES, OPEN JOINTS AND OTHER IRREGULARITIES SHALL BE MADE FLUSH WITH ADJOINING SURFACES WITH A FILLER SUITABLE FOR THE PURPOSE AND, AFTER SETTING, SANDED TO A SMOOTH, FINISH; THOROUGHLY CLEAN OF GRIME, GREASE, DIRT, LOOSE MATERIAL AND OTHER SUBSTANCES THAT MAY INTERFERE WITH PROPER ADHESION OF PAINT. PAINT DRY SURFACES ONLY. DO NOT ADULTERATE READY-MIXED MATERIALS. APPLY ALL PAINT MATERIALS IN ACCORDANCE WITH THE PAINT MANUFACTURER'S WRITTEN INSTRUCTIONS. THE PRODUCTS NAMED IN THE PAINT BELOW ARE ALL AS MANUFACTURED BY THE SHERWIN WILLIAMS COMPANY AND ARE USED IN ORDER TO ESTABLISH THE PROJECT PAINT QUALITY REQUIREMENTS.

B. PAINTING SYSTEMS:

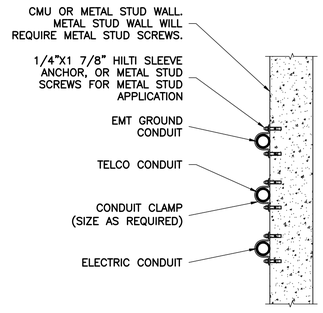
7. METALS: KEM KROMIK METAL PRIMER B50N2/B50W1 AND TWO COATS PROMAR 200 SEMIGLOSS B31W200 SERIES.

8. MASONRY: PROMAR BLOCK FILLER B25W25 AND TWO COATS PROMAR 200 SEMIGLOSS B31W200 SERIES.

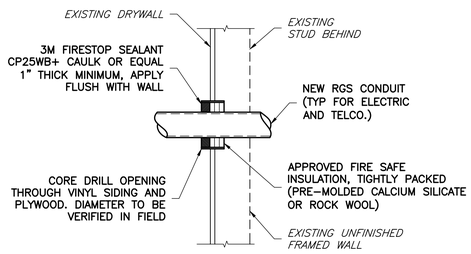
9. WALLBOARD: PROMAR 200 LATEX WALL PRIMER B28W200 AND TWO COATS PROMAR 200 EGGSHELL B20W200.



1 / E-2 UTILITY CONDUIT SUPPORT SECTION
NTS



2 / E-2 CONDUIT MOUNTING DETAIL
NTS



3 / E-2 FRAMED WALL PENETRATION DETAIL
NTS

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SITE INFORMATION

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CITY OF HAMPTON

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PRELIMINARY

ENGINEER

TRENT T. SNARR, P.E.
VA PROFESSIONAL ENGINEER LIC. #49978

SHEET TITLE

CONSTRUCTION DETAILS & NOTES

SHEET NUMBER

E-2

ELECTRICAL NOTES

1. SUBMITTAL OF BID INDICATES THAT THE CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATIONS, OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO ORDERING OF ANY EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. VERIFY HEIGHTS WITH PROJECT MANAGER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE.
5. CONTRACTOR SHALL COORDINATE ALL WORK BETWEEN TRADES AND ALL OTHER SCHEDULING AND PROVISIONARY CIRCUMSTANCES SURROUNDING THE PROJECT.
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR COMPLETE AND FUNCTIONALLY OPERATING SYSTEMS ENERGIZED AND READY FOR USE THROUGHOUT AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. ELECTRICAL MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION OVER THE CONSTRUCTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU. ALL MATERIALS AND EQUIPMENT SHALL BE APPROVED FOR THEIR INTENDED USE AND LOCATION.
8. ALL WORK SHALL COMPLY WITH ALL APPLICABLE GOVERNING STATE, COUNTY AND CITY CODES AND OSHA, NFPA, NEC & ASHRAE REQUIREMENTS.
9. ENTIRE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE. ALL WORK, MATERIAL AND EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. PROPERLY SEAL ALL PENETRATIONS. PROVIDE UL LISTED FIRE–STOPS WHERE PENETRATIONS ARE MADE THROUGH FIRE–RATED ASSEMBLIES. WATER–TIGHT USING SILICONE SEALANT.
11. DELIVER ALL BROCHURES, OPERATING MANUALS, CATALOGS AND SHOP DRAWINGS TO THE PROJECT MANAGER AT JOB COMPLETION. PROVIDE MAINTENANCE MANUALS FOR MECHANICAL EQUIPMENT. AFFIX MAINTENANCE LABELS TO MECHANICAL EQUIPMENT.
12. ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG., UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE TYPE THHW, RATED IN ACCORDANCE WITH NEC 110–14(C).
13. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM INTERRUPTING CURRENT TO WHICH THEY MAY BE SUBJECTED.
14. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE; ARTICLES 250 & 810 AND THE UTILITY COMPANY STANDARDS.
15. CONDUIT:
    - A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND 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 WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
    - B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    - C. LIQUID–TIGHT FLEXIBLE METAL CONDUIT SHALL BE U.L. LISTED AND SHALL BE USED AT FINAL CONNECTIONS TO MECHANICAL EQUIPMENT & RECTIFIERS AND WHERE PERMITTED BY CODE. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL CONTAIN A FULL–SIZE GROUND CONDUCTOR.
    - D. CONDUIT RUNS SHALL BE SURFACE MOUNTED ON CEILINGS OR WALLS UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL RUN PARALLEL OR PERPENDICULAR TO WALLS, FLOOR, CEILING, OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH THE PROJECT MANAGER PRIOR TO INSTALLING.
    - E. PVC CONDUIT MAY BE PROVIDED ONLY WHERE SHOWN, OR IN UNDERGROUND INSTALLATIONS. PROVIDE UV–RESISTANT CONDUIT WHERE EXPOSED TO THE ATMOSPHERE. PROVIDE GROUND CONDUCTOR IN ALL PVC RUNS; EXCEPT WHERE PERMITTED BY CODE TO OMIT.
17. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. BACKGROUND SHALL BE BLACK WITH WHITE LETTERS; EXCEPT AS REQUIRED BY CODE TO FOLLOW A DIFFERENT SCHEME.
18. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
19. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION. LEGALLY DISPOSE OF ALL REMOVED, UNUSED AND EXCESS MATERIAL GENERATED BY THE WORK OF THIS CONTRACT. DELIVER ITEMS INDICATED ON THE DRAWINGS TO THE OWNER IN GOOD CONDITION. OBTAIN SIGNED RECEIPT UPON DELIVERY.
20. COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY THE CONTRACTOR.
21. VERIFY ALL EXISTING CIRCUITRY PRIOR TO REMOVAL AND NEW WORK. MAINTAIN POWER TO ALL OTHER AREAS & CIRCUITS NOT SCHEDULED FOR REMOVAL.
22. RED LINED AS–BUILT PLANS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER.
23. INDOOR CONDUCTORS SHALL BE INSTALLED IN EMT UNLESS NOTED OTHERWISE. OUTDOOR CONDUCTORS SHALL BE INSTALLED IN RIGID GALVANIZED STEEL CONDUIT UNLESS NOTED OTHERWISE.
24. SEAL AROUND PENETRATIONS RESULTING FROM CONDUIT ROUTING WITH FIRE–STOPPING FOAM SEALANT HAVING A UL–LISTED RATING OF 2 HOURS. HAMMER–DRILLING IS NOT PERMITTED. CORE–DRILLING TO BE COORDINATED WITH BUILDING OWNER'S REPRESENTATIVE.

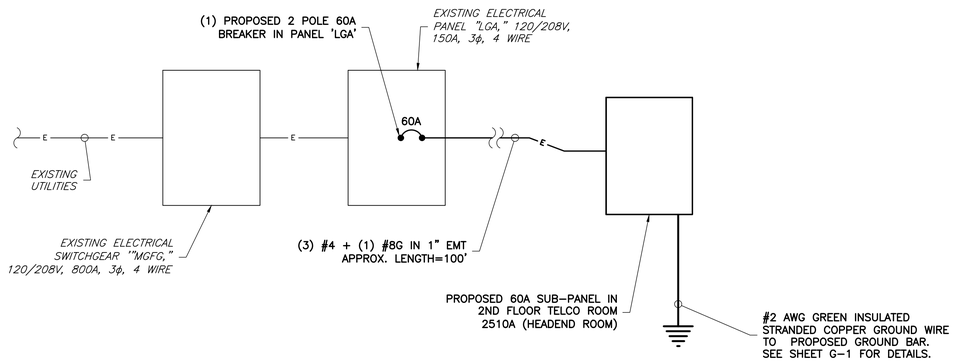
PANEL SCHEDULE "A"

VOLTS: 120/208 WIRE: 3 RMS: HIGHER THAN INCOMING FAULT NEUTRAL BAR: YES BRANCH CB: 10 NEMA TYPE: 1 MFR: TBD
PHASE: 1 AMP: 60 MAIN CB AMP: 60 GROUND BAR: YES KEY LOCK: NO MOUNTING: SURFACE

WATTS A	WATTS B	CIRCUIT DESCRIPTION	CONDUCTOR	POLES	BRK	CKT	CKT	BRK	POLES	CONDUCTOR	CIRCUIT DESCRIPTION	WATTS A	WATTS B
1000		RECTIFIER	(2)#14+(1)#12G	2	20	1	2	–	2	–	SPARE	–	
	1000					3	4						–
–		SPARE	–	2	–	5	6	–	2	–	SPARE	–	
	–					7	8						–
–		SPARE	–	1	–	9	10	–	1	–	SPARE	–	–
1000	1000	← TOTAL									TOTAL →	–	–

LOAD DESCRIPTION	CONNECTED LOAD	DEMAND FACTOR	DEMAND LOAD	TOTAL CONNECTED LOAD BY PHASE
LIGHTS	0	1.25	0	PHASE A WATTS = 1000
EQUIPMENT	2000	1.25	2500	PHASE B WATTS = 1000
RECEPTACLES	0	1.00	0	–
MISC	0	1.00	0	TOTAL CONNECTED LOAD KvA = 2.0
HVAC	0	1.00	0	TOTAL DEMAND LOADING KvA = 2.5
TOTAL	2000		2500	TOTAL PANEL CAPACITY KvA = 12.5

1 / E-3 PANEL SCHEDULE
NTS



2 / E-3 POWER DIAGRAM
NTS

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SHEET TITLE

ELECTRICAL PANEL SCHEDULE, DIAGRAM & NOTES

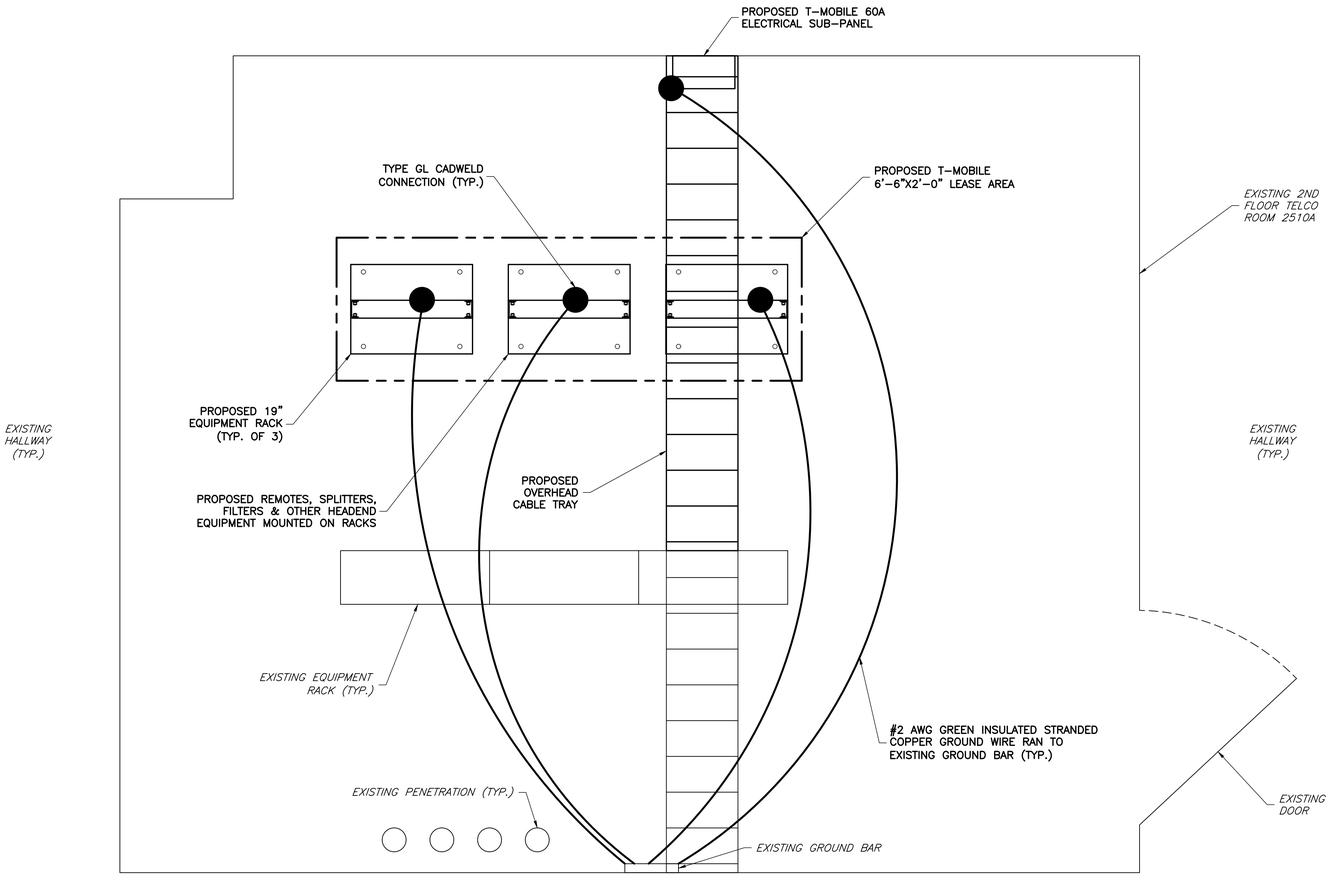
SHEET NUMBER

E-3

GROUNDING NOTES:

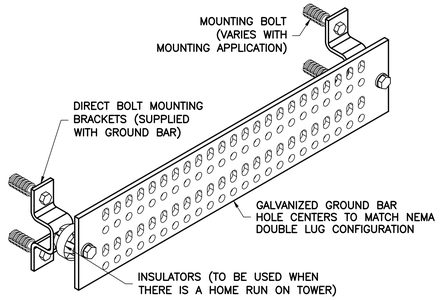
1. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
2. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
3. ALL WIRES SHALL BE AWG THHN/THWN COPPER UNLESS NOTED OTHERWISE.
4. GROUNDING CONNECTIONS TO GROUND RODS, GROUND RING WIRE, TOWER BASE AND FENCE POSTS SHALL BE EXOTHERMIC ("CADWELDS") UNLESS NOTED OTHERWISE. CLEAN SURFACES TO SHINY METAL WHERE GROUND WIRES ARE CADWELDED TO GALVANIZED SURFACES, SPRAY CADWELD WITH GALVANIZING PAINT.
5. GROUNDING CONNECTIONS TO GROUND BARS ARE TO BE TWO-HOLE BRASS MECHANICAL CONNECTORS WITH STAINLESS STEEL HARDWARE (INCLUDING SCREW SET) CLEAN GROUND BAR TO SHINY METAL. AFTER MECHANICAL CONNECTION, TREAT WITH PROTECTIVE ANTIOXIDANT COATING.
6. GROUND COAXIAL CABLE SHIELDS AT BOTH ENDS WITH MANUFACTURER'S GROUNDING KITS.
7. ROUTE GROUNDING CONDUCTORS THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
8. INSTALL #2 AWG GREEN-INSULATED STRANDED WIRE FOR ABOVE GRADE GROUNDING AND #2 TINNED SOLID COPPER WIRE FOR BELOW GRADE GROUNDING UNLESS OTHERWISE NOTED.
9. REFER TO GROUNDING PLAN FOR GROUND BAR LOCATIONS. GROUNDING CONNECTIONS SHALL BE EXOTHERMIC TYPE ("CADWELDS") TO ANTENNA MOUNTS AND GROUND RING. REMAINING GROUNDING CONNECTIONS SHALL BE COMPRESSION FITTINGS. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO-HOLE LUGS.
10. THE GROUND ELECTRODE SYSTEM SHALL CONSIST OF DRIVEN GROUND RODS POSITION ACCORDING TO GROUNDING PLAN. THE GROUND RODS SHALL BE 5/8"X10'-0" COPPER CLAD STEEL INTERCONNECTED WITH #2 TINNED SOLID COPPER WIRE BURIED 36" BELOW GRADE. BURY GROUND RODS A MAXIMUM OF 15' APART, AND A MINIMUM OF 8' APART.
11. IF ROCK IS ENCOUNTERED GROUND RODS SHALL BE PLACED AT AN OBLIQUE ANGLE NOT TO EXCEED 45'.
12. EXOTHERMIC WELDS SHALL BE MADE IN ACCORDANCE WITH ERICO PRODUCTS BULLETIN A-AT.
13. CONSTRUCTION OF GROUND RING AND CONNECTIONS TO EXISTING GROUND RING SYSTEM SHALL BE DOCUMENTED WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PROVIDE PHOTOS TO THE CONSTRUCTION MANAGER.
14. ALL GROUND LEADS EXCEPT THOSE TO THE EQUIPMENT ARE TO BE #2 TINNED SOLID COPPER WIRE. ALL EXTERIOR GROUND BARS TINNED COPPER.
15. PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETTS KOPR-SHIELD (TM OF JET LUBE INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
16. ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT IMPEDANCE DOES NOT EXCEED FIVE OHMS TO GROUND BY MEANS OF "FALL OF POTENTIAL TEST". TEST SHALL BE WITNESSED BY A T-MOBILE REPRESENTATIVE, AND RECORDED ON THE "GROUND RESISTANCE TEST" FORM.
17. WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN 3/4" PVC SLEEVE, FROM 1' BELOW GRADE AND SEAL TOP WITH SILICONE MATERIAL.
18. PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
19. ANY SITE WHERE THE EQUIPMENT (BTS, CABLE BRIDGE, PPC, GENERATOR, ETC.) IS LOCATED WITHIN 6 FEET OF METAL FENCING, THE GROUND RING SHALL BE BONDED TO THE NEAREST FENCE POST USING (3) RUNS OF #2 BARE TINNED COPPER WIRE.

TRUE NORTH



1 / G-1 HEADEND GROUNDING PLAN
SCALE: 1"=1'

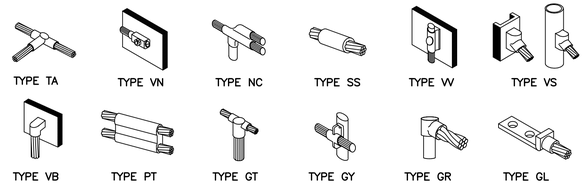
GRAPHIC SCALE
1 0 0.5 1 2 4
(IN FEET)
1 INCH = 1 FEET



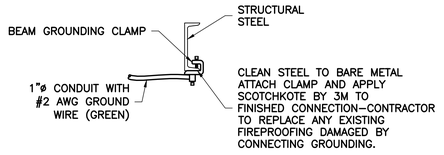
GROUND BAR SCHEDULE

TYPE	QTY	MANUFACTURER	PART NO.	REMARKS
MGB	1	ITS	GB12	OR EQUAL
CBG	1	ITS	GB24	OR EQUAL

2 / G-1 GROUND BAR DETAIL
NTS



3 / G-1 CADWELD GROUNDING CONNECTION DETAILS
NTS



4 / G-1 GROUND AT BUILDING STEEL
NTS

GROUNDING LEGEND

▩	COAXIAL CABLE SHIELD GROUND KIT CONNECTION
■	COMPRESSION FITTING CONNECTION
●	EXOTHERMIC WELD CONNECTION
◉	5/8"X10' COPPER-CLAD STEEL GROUND ROD
◉	5/8"X10' COPPER-CLAD STEEL GROUND ROD WITH INSPECTION WELL
———	PROPOSED GROUND WIRING
- - - - - -	EXISTING GROUND WIRING
▭	TINNED COPPER GROUND BAR 1/4"X4"X12" OR 1/4"X4"X20"
CGB	COLLECTOR GROUND BAR
MGB	MAIN GROUND BAR

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SHEET TITLE

GROUNDING PLAN, DETAILS & NOTES

SHEET NUMBER

G-1