Development Review Committee
1020 East Pioneer Road
Draper, UT 84020

STAFF REPORT
February 5, 2021

To: Jennifer Jastremsky, Zoning Administrator

Jennifer Jastremsky Digitally signed by Jennifer Jastremsky DN: C=US, E=jennifer.jastremsky@draperutah.gov, O=Planning Division, OU=Draper City, CN=Jennifer Jastremsky Date: 2021.02.22 09:27:30-07'00'

Approved Date

From: Travis Van Ekelenburg, Planner II
801-576-6522, travis.vanekelenburg@draper.ut.us

Re: **SL01115A Water Tank T-Mobile Anchor Modifications–Permitted Use Permit Request**

Application No.:	USE-1124-2020
Applicant:	Britton Knaphus, representing T-Mobile West LLC
Project Location:	Approximately 15025 S Traverse Ridge Road
Current Zoning:	RM (Multiple Family Residential) Zone
Acreage:	Approximately 5.065 Acres (Approximately 220,631 ft^2)
Request:	Request for approval of a Permitted Use Permit in the RM zone regarding an existing wireless facility equipment upgrade.

SUMMARY AND BACKGROUND

This application is a request for approval of a Permitted Use Permit for approximately 5.065 acres located on the south side of Traverse Ridge Road, at approximately 15025 Traverse Ridge Road (Exhibit B). The property is currently zoned RM. The property is owned by Draper City and is currently used as a Stealth Wireless Facility that is built as a water tank. The applicant is requesting that a Permitted Use Permit be approved to allow for an equipment upgrade on an existing Wireless Facility. The current application pertains to the existing Wireless Facility known as SL01115A.

This application is for an equipment upgrade on an existing wireless facility on Traverse Ridge Road is currently constructed as a stealth wireless facility (water tower). T-Mobile and Verizon Wireless are the two major carriers at the facility (Exhibit B). The site was approved in 2011 and equipment upgrades are a regular maintenance activity for wireless communication companies as technology changes and demand increases. The subject property is in the Suncrest Development Agreement area requirements and as such is reviewed against the 1999 Draper City Municipal Code (DCMC). The 1999 DCMC Section 9-3-240 addresses Wireless Facilities.

ANALYSIS

General Plan and Zoning. The Land Use Map of the General Plan calls for the Open Space/Parks land use designation for the subject property (Exhibit C). This category is characterized as follows:

Open Space and Parks

LAND USE DESCRIPTION	
CHARACTERISTICS	• Applies to natural areas that have the potential to be permanent open space • Efforts should continue to preserve mountainous areas, drainage and riparian areas with attractive indigenous vegetation • Areas designated as permanent natural open space should be placed within a conservation easement
LAND USE MIX	• City's established parks • Public/private golf courses • Greenbelts/linear parks • Large retention areas that have recreational potential • Natural area open space
COMPATIBLE ZONING	• Public Open Space (OS) • Agricultural (A2) • Agricultural (A5)
OTHER CRITERIA	• A variety of methods can be used to preserve these areas, including easements, dedications, and acquisition, some with the potential of having tax relief benefits

The property has been assigned the RM zoning classification (Exhibit D). According to the 1999 DCMC Section 9-4-030; the purpose of the RM zone is *"To provide areas for low-to-medium residential density with opportunity for varied housing styles and character, providing for a maximum density of up to twelve (12) units per acre for medium to high density residential unit projects subject to conditional-use permit procedures and conditions for this type of use and based on minimum development guidelines adopted by the City."* RM zoning abuts the subject property on the north, west and south; CR (Regional Commercial) is to the east.

Requested Modification. This is an equipment upgrade and there will be no change to the facility aesthetically in regard to height, footprint, etc. The antennas are inside the water tower and the ground equipment is in the fenced lease area. The proposed upgrades are antennas that are inside the stealth water tower and are not seen by the public; amplifiers and radio heads that are also inside the water tank screened from view. In regard to the ground equipment, all work will be in the enclosed fence area for the new battery cabinet and equipment cabinet. The proposal consists of the following changes:

- Remove 3 antenna
- Add 6 antenna
- Remove 6 TMA's (Amplifier)
- Add 6 RRU's (Radio Heads)
- Add 12 coax lines
- Add 3 fiber optic cables
- Add 2 new cabinets

Criteria For Approval. *Criteria For Approval*. The criteria for review and potential approval of a Permitted Use Permit request are found in Section 9-2-100 of the 1999 DCMC. This section depicts the standard of review and approval for complete applications:

Section 9-2-100. Types of Approval Processes.
Upon completion of the initial application process and classification by the Building Official/Zoning Administrator and its staff, the applicant would then be directed to one or more of the following approval processes which are provided for in this Title.

Section 9-2-102 Permitted Uses.
The applicant's intended building, use or occupancy may be permitted within the respective zone district under this Title and upon determination by the Building Official/Zoning Administrator a building, use, or occupancy permit may issue directly upon completion of the initial application process if authorized by the Council.

REVIEWS

Planning Division Review. The Draper City Planning Division has completed their review of the Permitted Use Permit submission. Comments from this division, if any, can be found in Exhibit A.

Engineering and Public Works Divisions Review. The Draper City Engineering and Public Works Divisions have completed their reviews of the Permitted Use Permit submission. Comments from these divisions, if any, can be found in Exhibit A.

Fire Division Review. The Draper City Fire Marshal has completed his review of the Permitted Use Permit submission. Comments from this division, if any, can be found in Exhibit A.

STAFF RECOMMENDATION

Staff finds that the application complies with the 1999 DCMC and recommends that the Zoning Administrator review the request and approve the application based on the findings listed below and the criteria for approval, as listed within the staff report.

The Conditions of approval are as follows:

1. The applicant shall obtain all applicable permits from Draper City Fire and the Building Division for this upgrade.

The findings for approval as are follows:

1. That the proposed changes will comply with the 1999 DCMC Section 9-3-240 Wireless Telecommunications Facilities and the Suncrest Development Agreement guidelines.
2. That the proposed changes will have no perceptible visual impact.

DEVELOPMENT REVIEW COMMITTEE ACKNOWLEDGEMENT

We, the undersigned, as duly appointed members of the Draper City Development Review Committee, do acknowledge that the application which provides the subject for this staff report has been reviewed by the Committee and has been found to be appropriate for review by the Draper City Planning Commission and/or City Council.

Brien Maxfield

Digitally signed by Brien Maxfield
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Draper City Public Works Department

Jennifer Jastremsky

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Draper City Planning Division

Don Buckley

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DN: C=US, E=don.buckley@draper.ut.us, O=Draper City Fire Department, OU=Fire Marshal, CN=Don Buckley
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Draper City Fire Department

Mike Barker

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Draper City Legal Counsel

Keith Collier

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Location: Home
Reason: I agree to the terms defined by the placement of my signature on this document
Contact Info: Keith Collier
Date: 2021.02.11 06:30:14-07'00'

Draper City Building Division

EXHIBIT A
DEPARTMENT REVIEWS

REVIEWS ARE NOT MEANT TO BE AN ALL INCLUSIVE LIST OF POSSIBLE COMMENTS OR CONDITIONS.

Planning Division Review.

1. No Comments.

Engineering and Public Works Divisions Review.

1. No Comments

Fire Division Review.

1. 2A-10BC Fire Extinguishers required. The extinguisher needs to be a serviceable type meaning metal head and metal neck. Extinguishers need to be located in a conspicuous location where they will be readily accessible and immediately available for use. Placed on every level of the home. If in cabinet or not the extinguisher or cabinet needs to be mounted so that the top is not more than five (5) feet above the floor.

2. Fire Department Access is required to be maintained. Vehicles cannot park in such a way to impede fire department or emergency vehicle access.

3. Hazardous Material Permit – A Draper City Fire Hazardous Material Permit may need to be obtained. This is for all new and existing installations.

Notes:

Plan approval or review shall not be construed to relieve from or lessen the responsibility of any person designing, owning, operating or controlling any building. Damages to persons or property caused by defects, fire, improper installation, or other emergency conditions that occur in or on the building property shall not hold the Draper City Fire Department as assuming any liability.

EXHIBIT B
AERIAL MAP

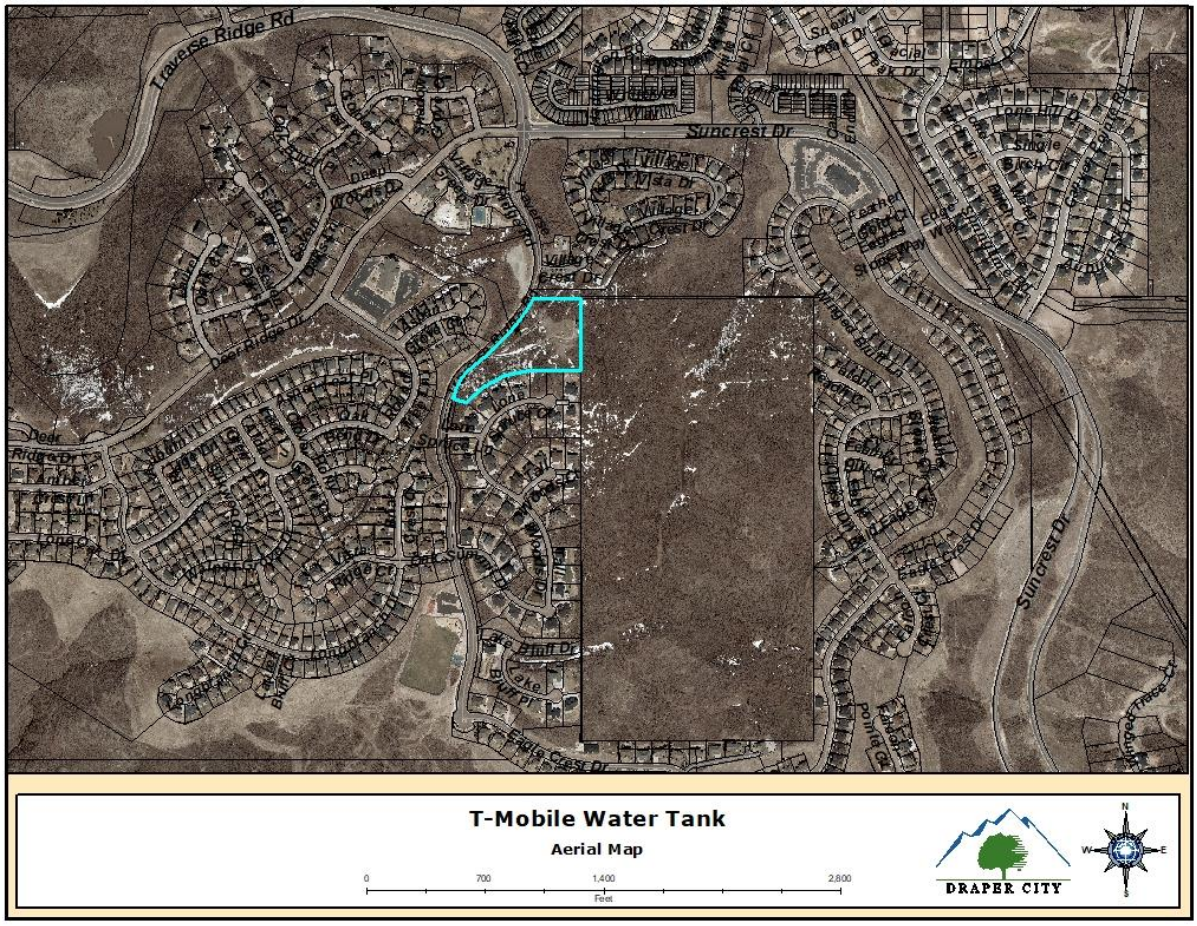


EXHIBIT C
LAND USE MAP

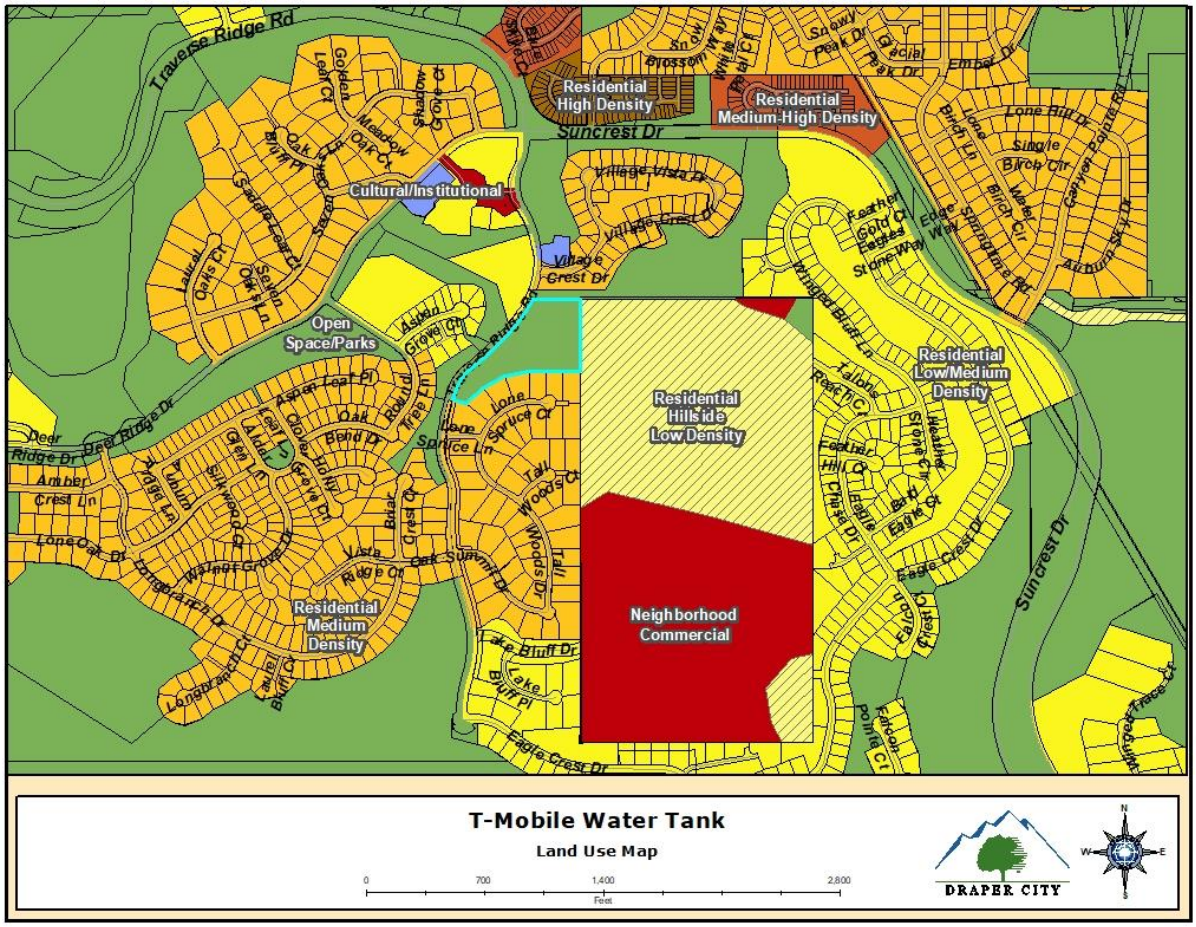


EXHIBIT D
ZONING MAP

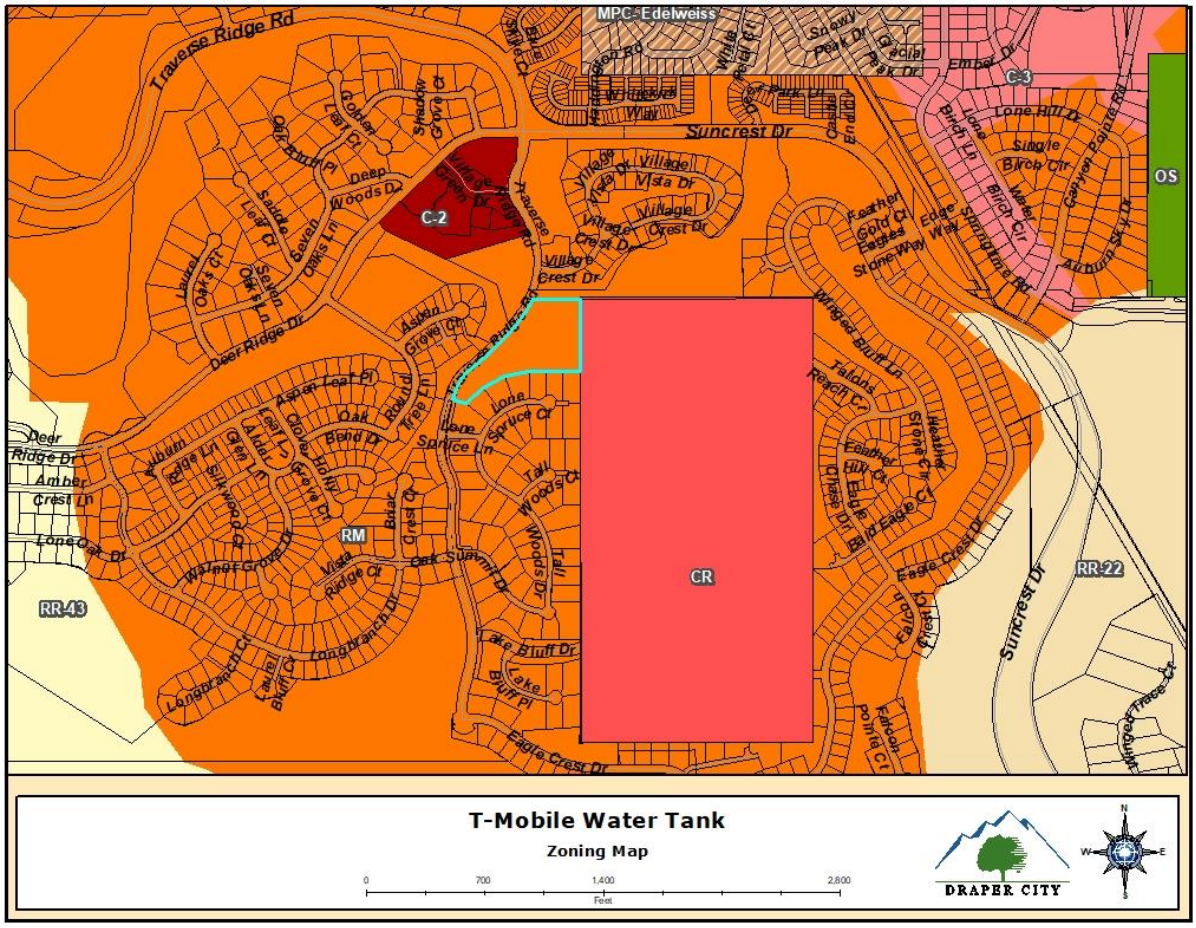


EXHIBIT E
DRAWINGS

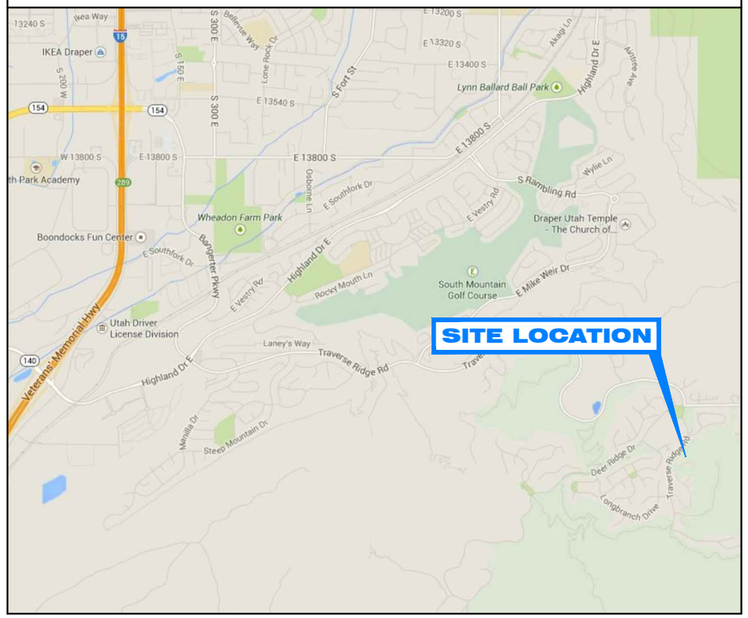
T-Mobile

SL01115A VERIZON SUNCREST WATER TANK

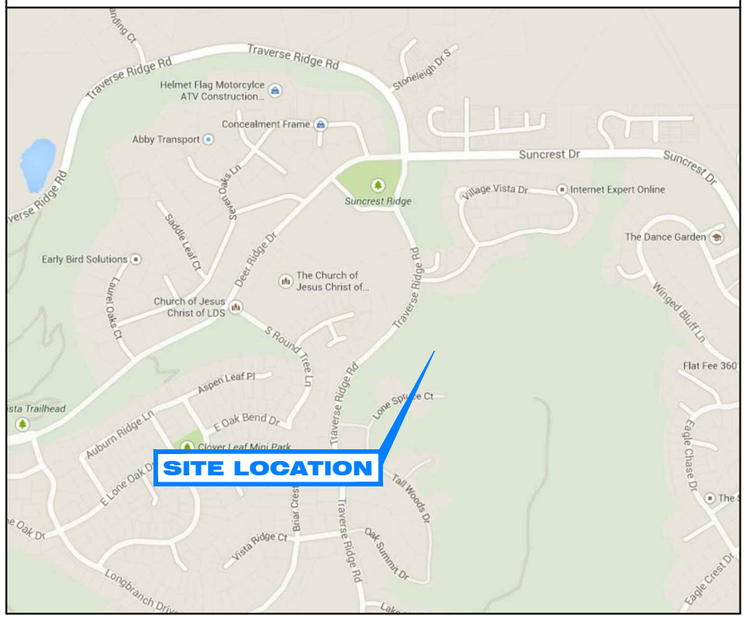
15025 S. TRANSVERSE RIDGE ROAD
DRAPER, UT 84020

PROJECT: ANCHOR

GENERAL LOCATION MAP



VICINITY MAP



SCOPE OF WORK

T-MOBILE IS PROPOSING TO REPLACE THREE (3) ANTENNA, ADD SIX (6) ANTENNA, REMOVE SIX (6) TMAS, ADD SIX (6) RRUs AND ADD THREE (3) 6X12 6AWG HCS FIBER CABLE.

FINAL CONFIGURATION: NINE (9) ANTENNAS, SIX (6) RRUs, TWELVE (12) COAX CABLES AND THREE (3) HCS FIBER CABLES.

T-MOBILE IS PROPOSING TO ADD ONE (1) 6160 EQUIPMENT ENCLOSURE CABINET WITH ONE (1) BB6648 AND ONE (1) BB6630, ONE (1) PSU 4813 VOLTAGE BOOSTER AND ADD ONE (1) B160 BATTERY CABINET TO GROUND EQUIPMENT.

DISCLOSURE:
NO SITE WALK WAS CONDUCTED FOR THESE DRAWINGS. DATA WAS PROVIDED BY T-MOBILE AND/OR OTHERS. CONTRACTOR TO VERIFY MATERIALS AND DESIGN PRIOR TO INSTALL.

APPROVALS

APPROVED BY	PRINT NAME	INITIALS	DATE
PROJECT MANAGER			
RF ENGINEER			
OPS MANAGER			
CONSTRUCTION			
LANDLORD			

CONTACT INFORMATION

PROPERTY OWNER
DRAPER CITY
1020 E PIONEER ROAD
DRAPER, UT 84020

SITE ACQUISITION FIRM
RAGE DEVELOPMENT LLC
2181 HUGO AVENUE
SALT LAKE CITY, UT 84117

NETWORK SYSTEMS OWNER
T-MOBILE
121 WEST ELECTION RD. STE. 330
DRAPER, UT 84020

A/E FIRM
SMITH HYATT ARCHITECTS
845 SOUTH MAIN STREET
BOUNTIFUL, UT 84010

T-Mobile

RAGE DEVELOPMENT LLC

SMITH HYATT ARCHITECTS
845 SOUTH MAIN, BOUNTIFUL, UTAH 84010
801-298-5777 FAX 801-298-1677

REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH
10-9-20

DATE: 10.8.2020
DRAWN BY: JRC (20110)
CHECKED BY: BRITTON KNAPHUS

REVISIONS

DATE	DESCRIPTION	INT.
10.8.20	CD's (Prelim)	JRC
10.9.20	CD's (Final)	JRC

SL01115A
VERIZON SUNCREST WATER TANK
15025 S. TRANSVERSE RIDGE ROAD
DRAPER, UT 84020

DRAWING TITLE:
TITLE SHEET

DRAWING NO.:
T1

GENERAL CONSTRUCTION NOTES

1. DRAWINGS WERE PREPARED FROM STANDARDIZED DETAILS DEVELOPED AND PROVIDED BY T-MOBILE WEST, LLC ("T-MOBILE"). STANDARDIZED DETAILS ARE TO BE CONFIRMED AND CORRELATED AT THE SITE BY THE CONTRACTOR. STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO, AND APPROVED BY, T-MOBILE PRIOR TO START OF WORK.

2. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAM PURPOSES ONLY. UNLESS OTHERWISE NOTED. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS.

3. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND AS DISCUSSED ON THE SITE WALK.

4. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF T-MOBILE VERBALLY AND IN WRITING.

5. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS.

6. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.

9. GENERAL CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS AND ADDENDA OR CLARIFICATIONS FOR USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

10. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.

11. CONTRACTOR TO SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHALL APPROVED MATERIALS IF APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.

12. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.

13. CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.

14. CONTRACTOR TO VERIFY LOCATION OF ALL BURIED UTILITIES PRIOR TO EXCAVATION.

15. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION, UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

16. CONTRACTOR SHALL KEEP GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, AND RUBBISH. CONTRACTOR SHALL REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY OR PREMISES. SITE SHALL BE LEFT IN CLEAN CONDITION DAILY AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

17. THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) T-MOBILE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO SUBMISSION OF CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED OTHERWISE.

18. THE CONTRACTOR SHALL PERFORM WORK DURING OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.

19. THE CONTRACTOR SHALL PROVIDE T-MOBILE CORPORATION PROPER INSURANCE CERTIFICATES NAMING T-MOBILE WEST, LLC AS ADDITIONAL INSURED, AND T-MOBILE WEST, LLC PROOF OF LICENSE(S) AND PL & PD INSURANCE.

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT CONDITIONS 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 THESE CODES.

A. UTAH UNIFORM BUILDING STANDARD ACT RULES
B. 2018 INTERNATIONAL BUILDING CODE (IBC)
C. 2017 NATIONAL ELECTRIC CODE (NEC)
D. 2018 INTERNATIONAL BUILDING CODE (IBC)
E. 2018 INTERNATIONAL FIRE CODE (IFC)
F. 2018 INTERNATIONAL MECHANICAL CODE (IMC)
G. LOCAL BUILDING CODE
H. CITY OR COUNTY ORDINANCES

IMPORTANT NOTICE

THE EXISTING CONDITIONS REPRESENTED HEREIN ARE BASED ON VISUAL OBSERVATIONS AND INFORMATION PROVIDED BY OTHERS. A/E FIRM CANNOT GUARANTEE THE CORRECTNESS NOR THE COMPLETENESS OF THE EXISTING CONDITIONS SHOWN AND ASSUMES NO RESPONSIBILITY THEREOF. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AS REQUIRED FOR PROPER COMPLETION OF THE PROJECT.

T-Mobile

RAGE DEVELOPMENT LLC

SMITH HYATT ARCHITECTS
845 SOUTH MAIN, BOUNTIFUL, UTAH 84010
801-298-5777 FAX 801-298-1677

REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH
10-9-20

DATE: 10.8.2020
DRAWN BY: JRC (20110)
CHECKED BY: BRITTON KNAPHUS

REVISIONS

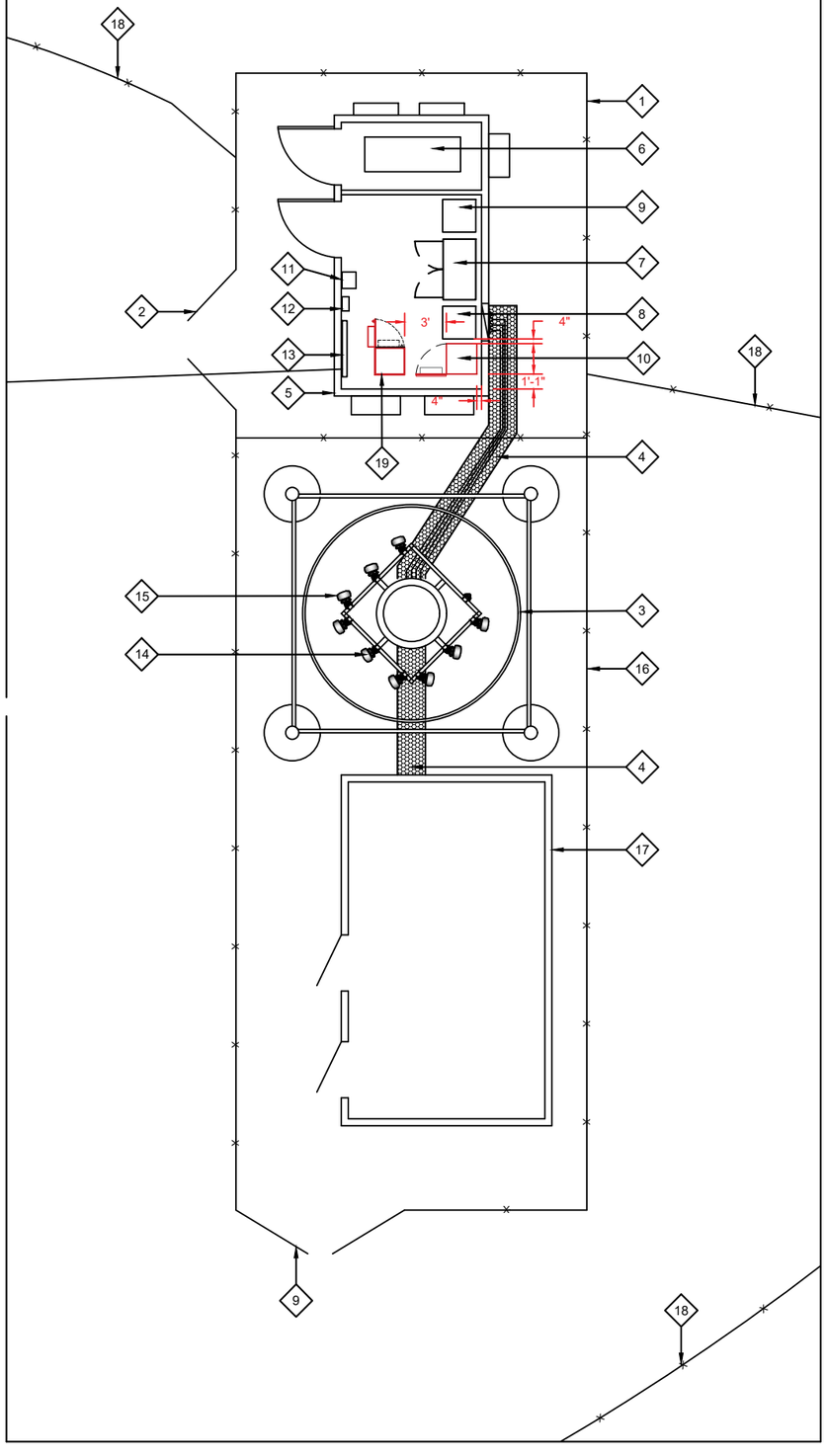
DATE	DESCRIPTION	INT.
10.8.20	CD's (Prelim)	JRC
10.9.20	CD's (Final)	JRC

SL01115A
VERIZON SUNCREST WATER TANK
15025 S. TRANSVERSE RIDGE ROAD
DRAPER, UT 84020

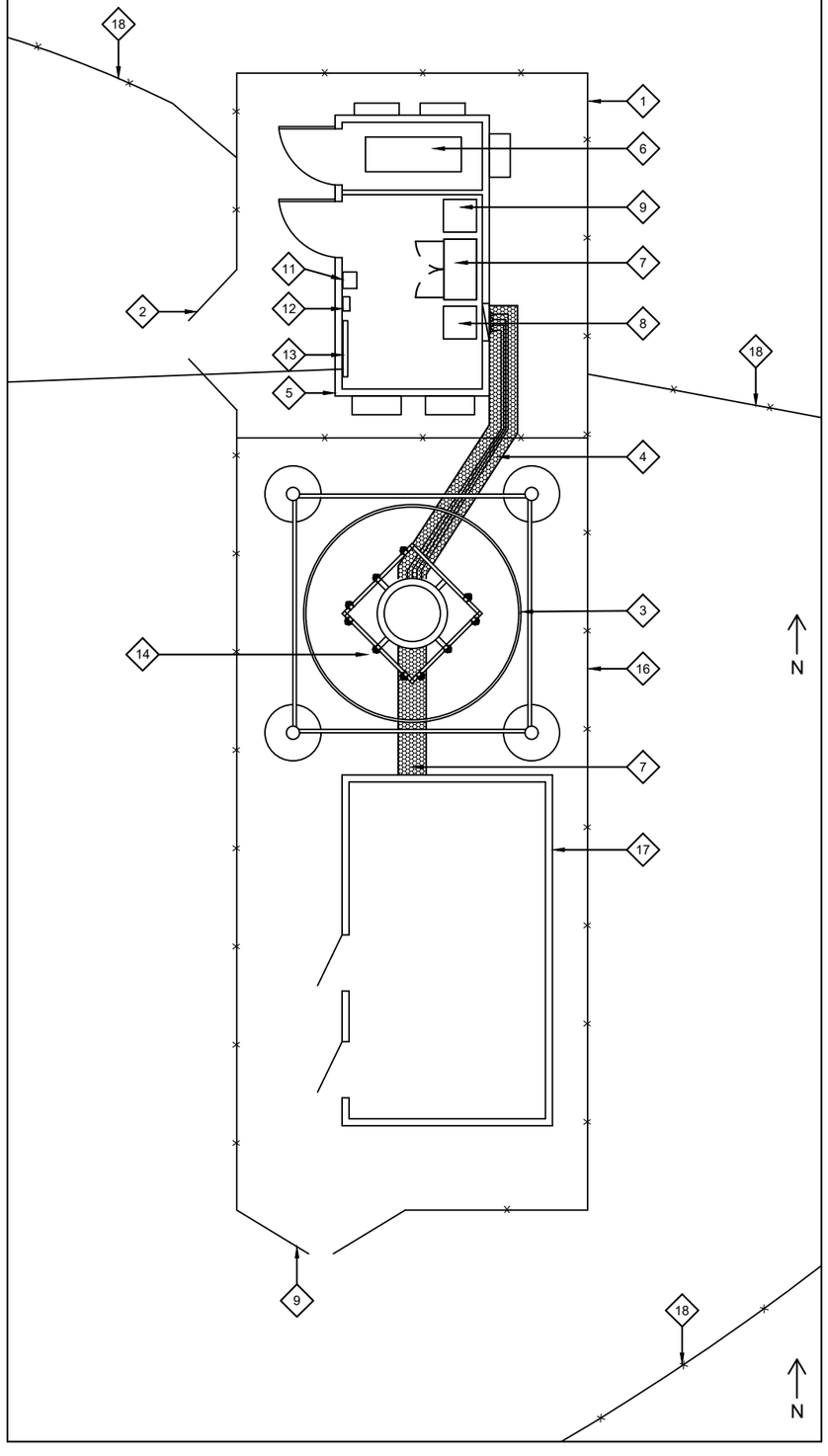
DRAWING TITLE: GENERAL NOTES

DRAWING NO.: N1

PROPOSED EQUIPMENT SITE PLAN



EXISTING EQUIPMENT SITE PLAN



KEY NOTES

1. EXISTING T-MOBILE COMPOUND AT GROUND LEVEL / PERIMETER FENCE
2. EXISTING ACCESS GATE
3. EXISTING STEALTH WATER TANK
4. EXISTING ICE BRIDGE
5. EXISTING TMO 11'x20' EQUIPMENT BUILDING
6. EXISTING TMO NORPRO 21KW GENERATOR
7. EXISTING TMO 6201 EQUIPMENT CABINET TO REMAIN
8. EXISTING SYSTEM DEMARCATION CABINET (DOGHOUSE)
9. EXISTING PBC6500 BATTERY CABINET TO REMAIN
10. PROPOSED NEW 6160 EQUIPMENT CABINET WITH ONE (1) BB 6648 AND ONE (1) BB 6630 UNITS
11. EXISTING TRANSFER SWITCH
12. EXISTING ELECTRICAL PANEL
13. EXISTINGFIBER DMARK BOARD
14. NOT USED
15. PROPOSED NEW/REPLACEMENT TMO ANTENNA, TYP. OF THREE (3) PER SECTOR
16. EXISTING VZW COMPOUND AT GROUND LEVEL / PERIMETER FENCE
17. EXISTING VZW EQUIPMENT BUILDING
18. EXISTING FENCE
19. PROPOSED NEW B160 BATTERY CABINET

SITE NOTES

1. T-MOBILE IS PROPOSING ADD ONE (1) 6160 EQUIPMENT ENCLOSURE CABINET WITH ONE (1) NEW BB6648, ONE (1) BB6630 AND ONE (1) PSU 4813 VOLTAGE BOOSTER.
2. T-MOBILE IS PROPOSING TO ADD B160 BATTERY CABINET.

T-Mobile

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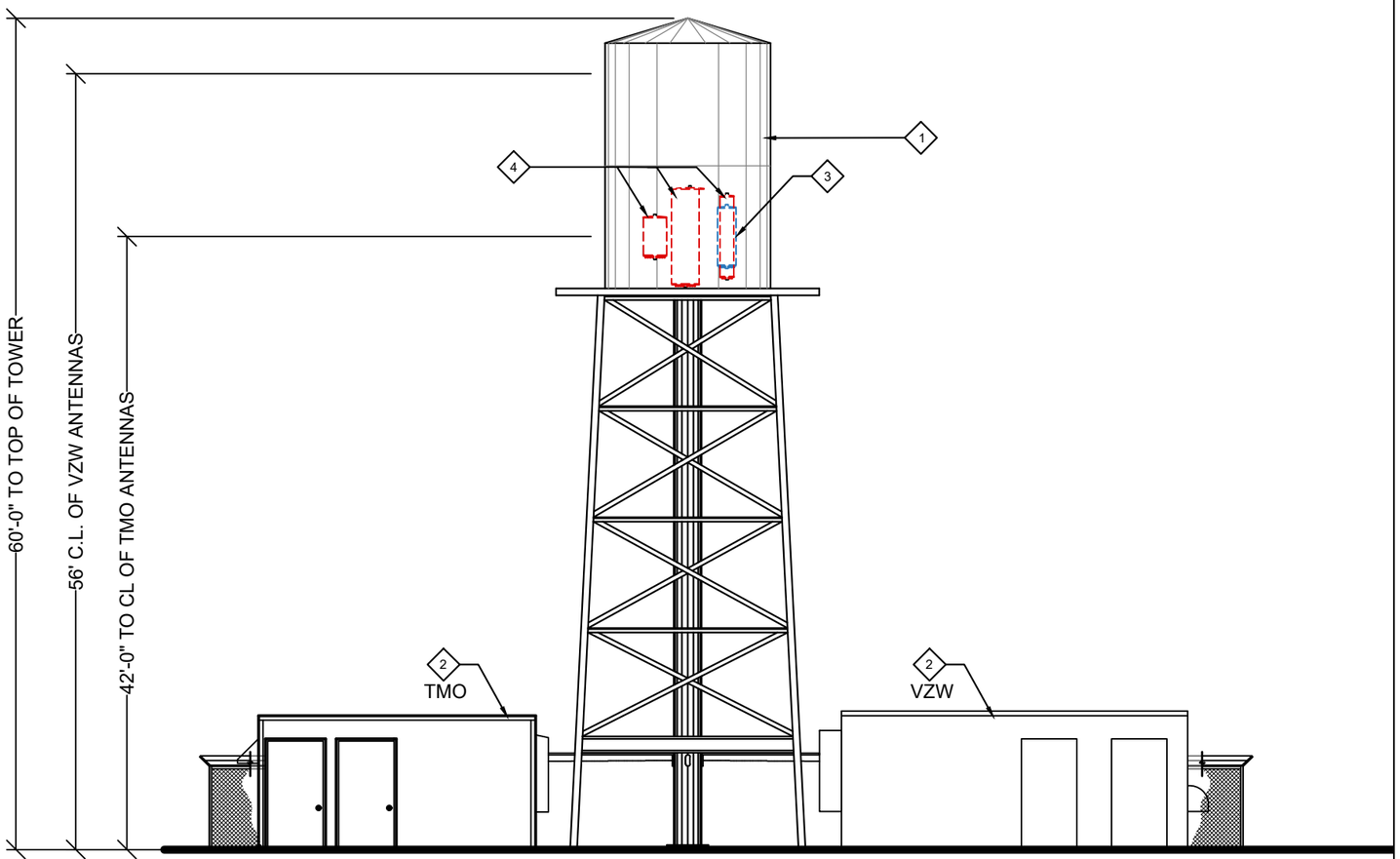
DRAWING TITLE: EQUIPMENT SITE PLAN

DRAWING NO.: A1

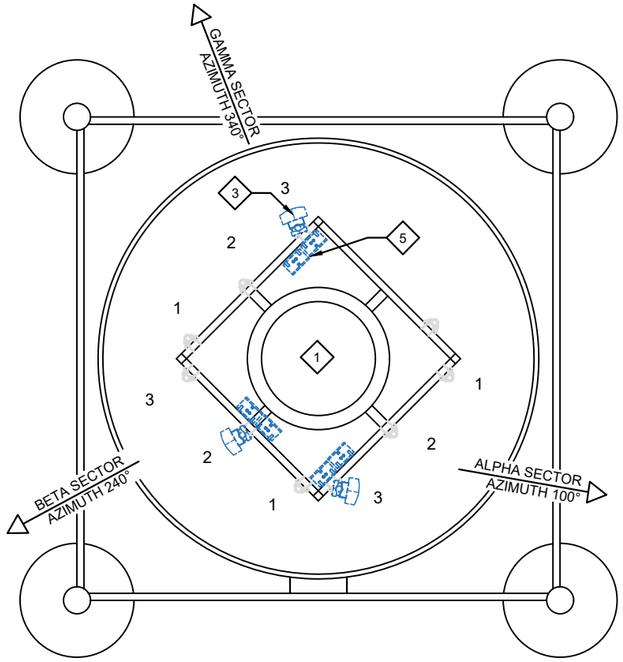
PROPOSED TOWER ELEVATION



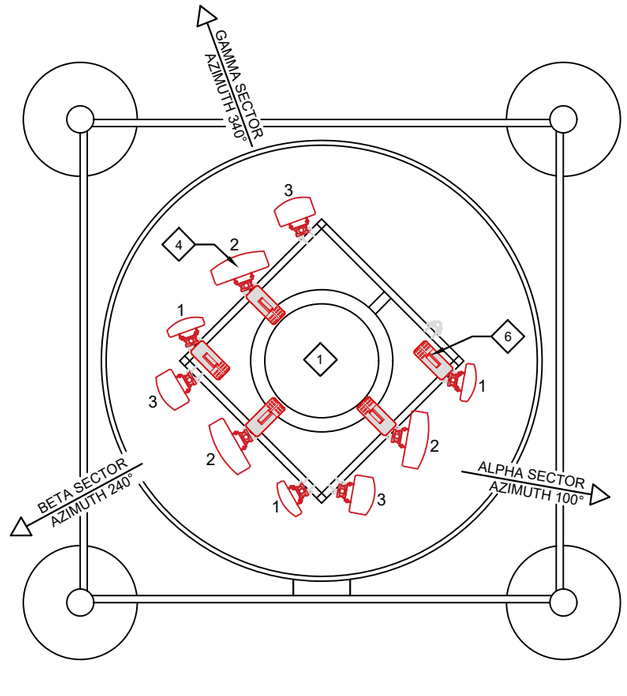
KEY NOTES

1. EXISTING 60' STEALTH WATER TANK
2. EXISTING EQUIPMENT SHELTER
3. EXISTING TMO ANTENNAS TO BE REPLACED REMAIN, TYP (1) PER SECTOR
4. PROPOSED NEW TMO ANTENNAS, TYPICAL OF THREE (3) PER SECTOR:
   ANTENNA 1 - RFS - APX17DWV-17DWV-S-E-A20 (Quad)
   ANTENNA 2 - RFS - APXVAALL24_43-U-NA20 (Octo)
   ANTENNA 3 - Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)
5. EXISTING TMAs TO BE REMOVED, TYPICAL OF TWO (2) PER SECTOR
6. PROPOSED NEW TMO RRUs, TYPICAL OF TWO (2) PER SECTOR

EXISTING ANTENNA LAYOUT



PROPOSED ANTENNA LAYOUT



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DRAWING TITLE: TOWER ELEVATION AND PLAN

DRAWING NO.: A-2

EXISTING ANTENNA SCHEDULE

	ALPHA SECTOR	BETA SECTOR	GAMMA SECTOR
AZIMUTH ANTENNA MODEL ANTENNA POSITION ANTENNA RAD CENTER	100° CMA-BDHH/6519/E0-8/TB06 (Quad) 3 42'-0"	240° CMA-BDHH/6519/E0-8/TB06 (Quad) 2 42'-0"	340° CMA-BDHH/6519/E0-8/TB06 (Quad) 3 42'-0"
COAX CABLE	7/8" Coax - 60 ft. (x12)		
TMAs	GENERIC TWIN STYLE 1A-PCS (3), GENERIC STYLE 1B-AWS (3)		

NEW/PROPOSED ANTENNA SCHEDULE

	ALPHA SECTOR	BETA SECTOR	GAMMA SECTOR
AZIMUTH ANTENNA MODEL ANTENNA POSITION ANTENNA RAD CENTER MECH. TILT - ELEC. TILT	100° **RFS - APX17DWV-17DWV-S-E-A20 (Quad)** 1 42'-0" 2 - 4/4	240° **RFS - APX17DWV-17DWV-S-E-A20 (Quad)** 1 42'-0" 2 - 4/4	340° **RFS - APX17DWV-17DWV-S-E-A20 (Quad)** 1 42'-0" 2 - 4/4
AZIMUTH ANTENNA MODEL ANTENNA POSITION ANTENNA RAD CENTER MECH. TILT - ELEC. TILT	100° **RFS - APXVAALL24_43-U-NA20 (Octo)** 2 42'-0" 2 - 4/4	240° **RFS - APXVAALL24_43-U-NA20 (Octo)** 2 42'-0" 2 - 4/4	340° **RFS - APXVAALL24_43-U-NA20 (Octo)** 2 42'-0" 2 - 4/4
AZIMUTH ANTENNA MODEL ANTENNA POSITION ANTENNA RAD CENTER MECH. TILT - ELEC. TILT	100° **AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)** 3 42'-0" 2 - 4/4	240° **AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)** 3 42'-0" 2 - 4/4	340° **AIR6449 B41 (ACTIVE ANTENNA - MASSIVE MIMO)** 3 42'-0" 2 - 4/4
COAX CABLE	7/8" Coax - 60 ft. (x12)		
HYBRID CABLE SYSTEM	**ERICSSON 6x12 HCS 6AWG 30m (x3), PSU 4813 VOLTAGE BOOSTER**		
RRUs	**4415 B66A (3), 4424 B25 (3)**		
FIBER JUMPER CABLE	**FIBER JUMPER - 10' (x24)**		
JUMPER SUREFLEX	**JUMPER 10' SUREFLEX 4.3-10 TO 4.3-10 (x24)**		

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REGISTERED PROFESSIONAL ARCHITECT
No. 117557
Thomas G. Smith
STATE OF UTAH
10-9-20

DATE: 10.8.2020
DRAWN BY: JRC (20110)
CHECKED BY: BRITTON KNAPHUS

REVISIONS

DATE	DESCRIPTION	INT.
10.8.20	CD's (Prelim)	JRC
10.9.20	CD's (Final)	JRC

SL01115A
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DRAPER, UT 84020

DRAWING TITLE: **EQUIPMENT DETAIL**

DRAWING NO.: A3

VOLTAGE BOOSTER DETAIL

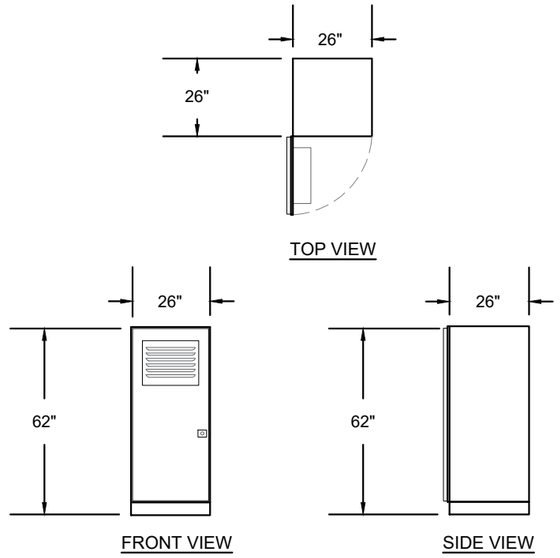
ERICSSON
PSU 48 13 VOLTAGE BOOSTER

WEIGHT:	17.2 lbs
DIMENSIONS (H x W x D):	1.7" x 19" x 14.3"

PROPOSED NEW (1)

CABINET DETAIL 1

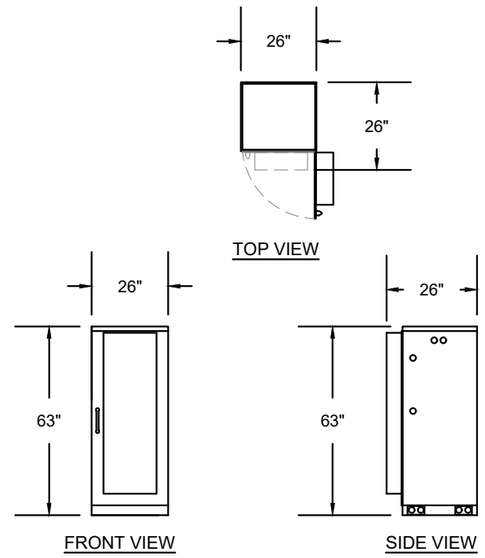
ERICSSON 6160



PROPOSED NEW CABINET (1)

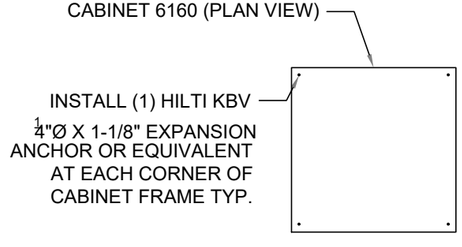
CABINET DETAIL 2

ERICSSON B160

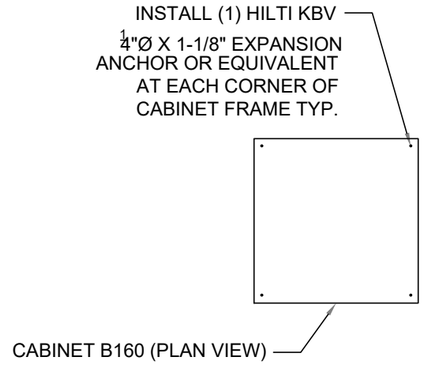


PROPOSED NEW BATTERY CABINET

CABINET ANCHORING DETAIL 1



CABINET ANCHORING DETAIL 2



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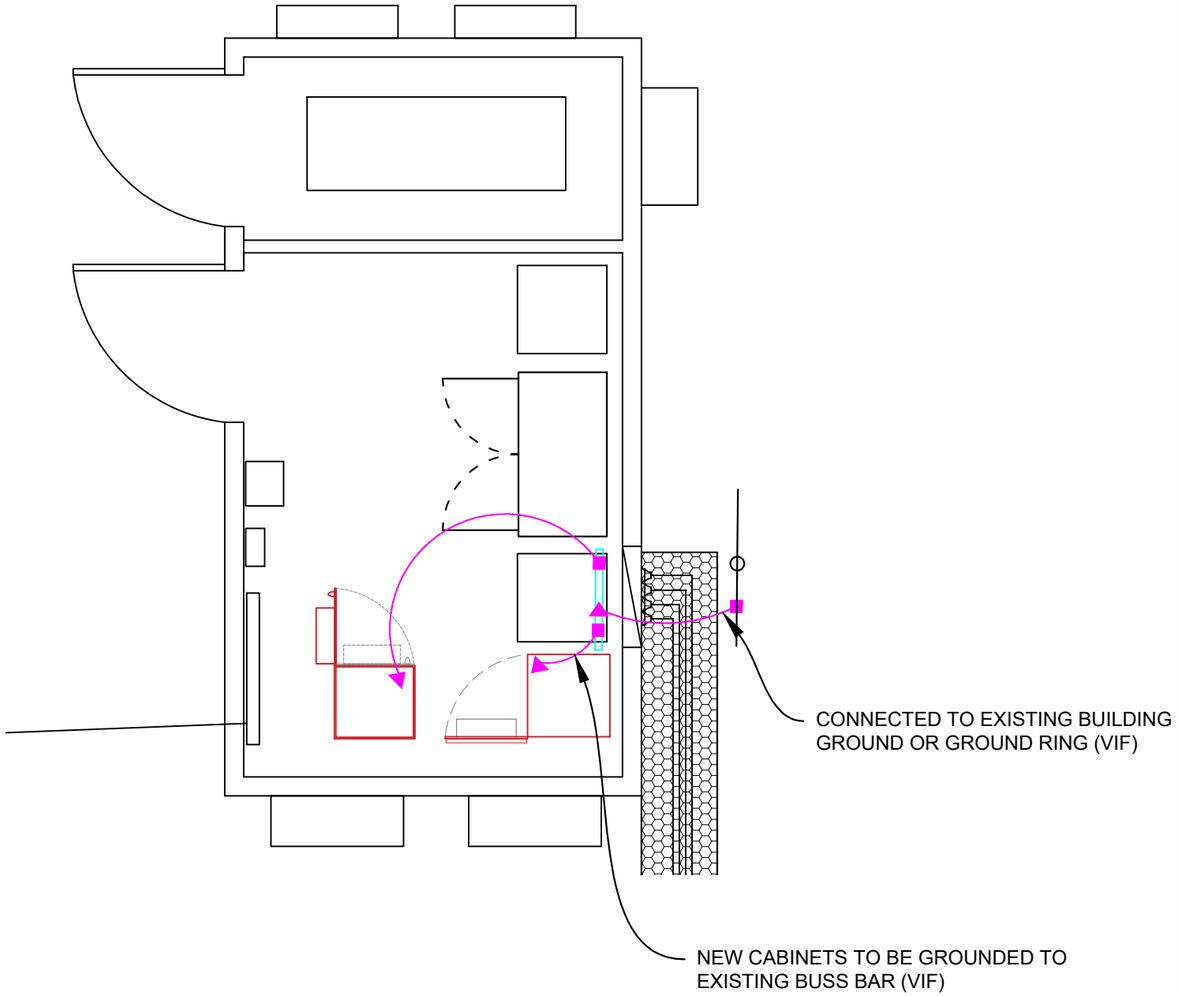
DRAWING NO.: A4

GROUNDING PLAN



NOTE: TYPICAL GROUNDING PLAN SHOWN. CONTRACTOR TO TIE ANY NEW EQUIPMENT INTO EXISTING GROUNDING PLAN AT A MINIMUM OF TWO CONNECTIONS

GROUNDING NOTES

1. ALL SAFETY GROUNDING OF THE ELECTRICAL EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT REVISION OF NEC.
2. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL INSTALLATION AND SITE CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS. IF SITE SOIL CONDITIONS ARE CORROSIVE, USE OF A LARGER MAIN GROUND RING CONDUCTOR MAY BE NECESSARY.
3. GROUND ALL ANTENNA BASES, FRAMES, CABLE RUNS, AND OTHER METALLIC COMPONENTS USING GROUND WIRES AND CONNECT TO SURFACE MOUNTED BUS BARS. FOLLOW ANTENNA AND BTS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND COAX SHIELD AT BOTH ENDS AND EXIT FROM TOWER OR MONOPOLE USING MANUFACTURERS PRACTICES.
4. ALL GROUND CONNECTIONS SHALL BE CADWELD. ALL WIRES SHALL BE COPPER THHN/THWN. ALL GROUND WIRE SHALL BE SOLID COPPER WITH GREEN INSULATED WIRE ABOVE GROUND.
5. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE TO A MAXIMUM OF 5 OHMS. IF GROUND TEST DID NOT ACHIEVE THE MAXIMUM 5 OHMS, CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUNDING TO OHM MAX REQUIREMENT. GROUNDING AND OTHER OPERATIONAL TESTING WILL BE WITNESSED BY A T-MOBILE REPRESENTATIVE.
6. ELECTRICAL CONTRACTOR TO PROVIDE DETAILED DESIGN OF GROUNDING SYSTEM, AND RECEIVE APPROVAL OF DESIGN BY AN AUTHORIZED T-MOBILE REPRESENTATIVE, PRIOR TO INSTALLATION OF GROUNDING SYSTEM.
7. NOTIFY T-MOBILE IF THERE ARE ANY DIFFICULTIES INSTALLING GROUND SYSTEM DUE TO SITE SOIL CONDITIONS.
8. IF SURGE SUPPRESSER IS AN EXTERIOR MOUNT, RUN A #2 THHN GROUND WIRE IN A 1" SCHED. 40 PVC CONDUIT TO SIDE SPLICE CADWELD AT GROUND RING. HEAT RADIUS CONDUIT TO PRODUCE LARGE RADIUS BENDS. STRAP TO SLAB AT A MINIMUM OF TWO POINTS.
9. ALL GROUNDING WIRE RUNS AND CONNECTIONS, BOTH ABOVE AND BELOW GRADE, SHALL BE LOCATED INSIDE OF THE LEASE AREA.
10. TIE NEW GROUNDING INTO EXISTING GROUND GRID IN AT LEAST TWO LOCATIONS.
11. THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO T-MOBILE SERVICES IS STRICTLY PROHIBITED.

SYMBOL KEY

- ⬠ MECHANICAL CONNECTION
- ○ COPPER GROUND ROD
- △ CADWELD CONNECTION
- □ GROUND BAR
- ⊗ INSPECTION WELL

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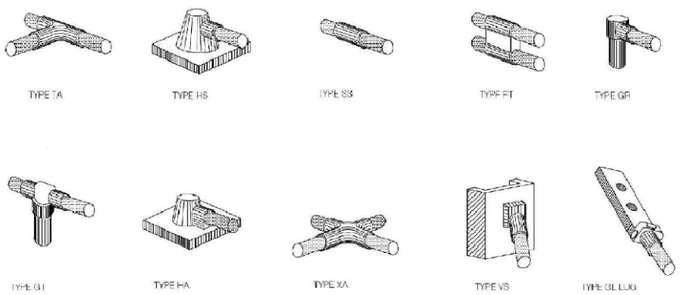
DRAWING TITLE: **EQUIPMENT DETAIL**

DRAWING NO.: E1

TYPICAL GROUNDING DETAIL

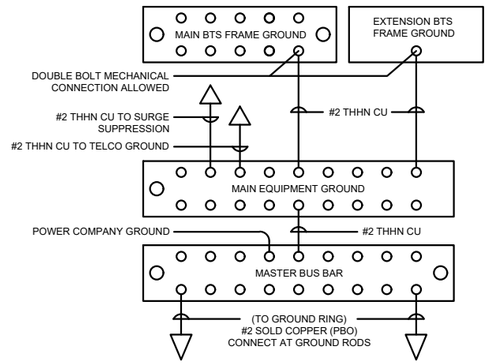
1



NOTE: CADWELD "TYPES" SHOWN ARE EXAMPLES - CONSULT WITH PROJECT MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT

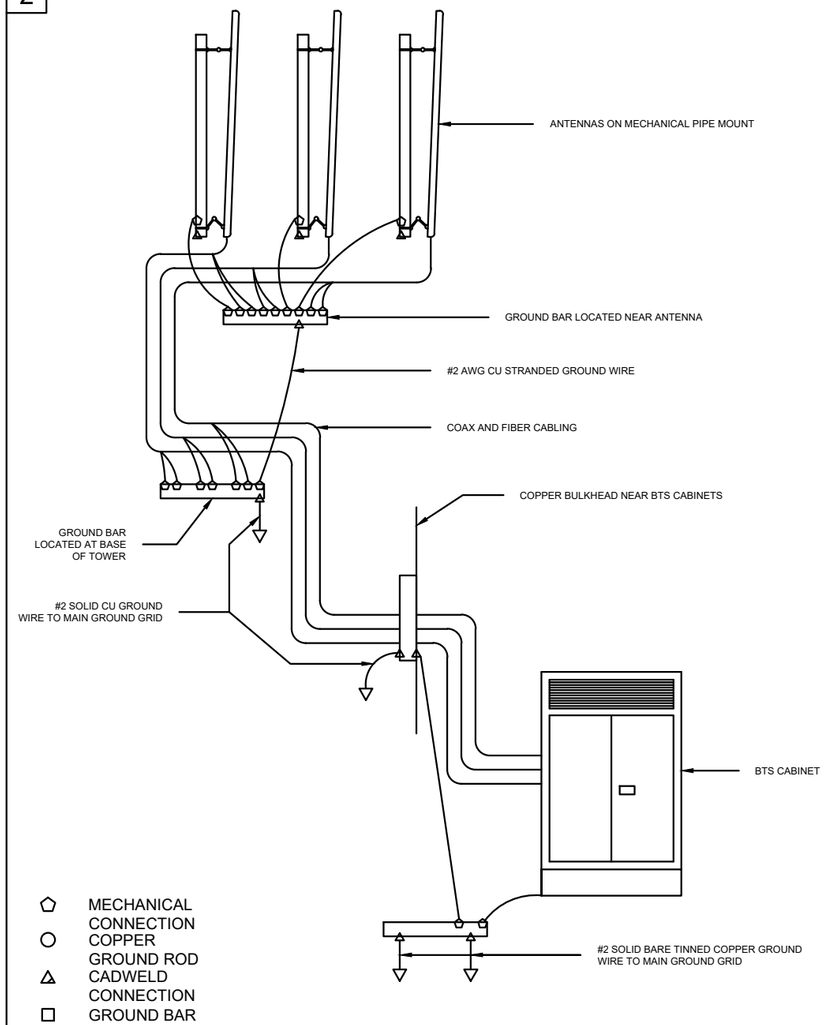
CADWELD DETAILS

3



GROUNDING SCHEMATIC

2



ANTENNA GROUNDING DIAGRAM

TYPICAL GROUNDING SYSTEM NOTES

1. TOWER RADIAL GROUND:
   #2 SOLID COPPER WIRE CADWELDED (OR FASTENER APPROVED BY PROJECT MANAGER) TO TOWER BASE. EXTEND WIRE 30' MINIMUM IN SWEEPING CONFIGURATION AT A MINIMUM DEPTH OF 24". ALL GROUND RODS TO BE 8' COPPER OR COPPER CLAD. FIRST GROUND RODS FROM TOWER ARE TO BE PLACED 10' EQUAL DISTANCE (BETWEEN ROD CENTERS) AND A MINIMUM OF EVERY 10' ALONG TOTAL LENGTH. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

2. TOWER EQUIPMENT RING GROUND INTERCONNECT:
   ONLY ONE CONNECTION OF THIS TYPE FOR EACH TOWER. SAME CONSTRUCTION AS NOTE 1 ABOVE EXCEPT THE TERMINATION AT THE GROUNDING RING MUST BE THREE-WAY CONNECTED. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

3. EQUIPMENT BUILDING RING GROUND:
   ALWAYS OBSERVE THE TURN DIRECTIONS SHOWN WHEN PLACING BENDS OR CONNECTIONS. USE #2 SOLID COPPER WIRE PLACED WITHIN 3' (+/- 6") FROM EDGE OF BUILDING CONCRETE FOUNDATION AT A MINIMUM DEPTH OF 24". ALL CONNECTIONS TO GROUND RING ARE TO BE CADWELDED. ALL GROUND RODS TO BE 10' COPPER OR COPPER CLAD AND PLACED 10' EQUAL DISTANCE (BETWEEN ROD CENTERS) AND A MINIMUM OF EVERY 10' ALONG TOTAL LENGTH. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

4. SINGLE POINT GROUND BAR (COAX BULKHEAD):
   ALWAYS OBSERVE THE DIRECTIONS SHOWN WHEN PLACING BENDS OR CONNECTIONS TO GROUND RING. USE TWO #2 SOLID COPPER WIRE OR TWO 3" COPPER RIBBONS ATTACHED ON OPPOSITE ENDS OF BAR OR BULKHEAD EXTENDING DIRECTLY TO GROUND. ALL WIRE CONNECTIONS TO GROUND RING ARE TO BE CADWELDED, RIBBONS MAY BE ATTACHED TO GROUND RING WITH A "LISTED" PRESSURE CONNECTION WITH APPROVAL OF CONSTRUCTION MANAGER. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

5. EQUIPMENT SHELTER INNER BONDING RING:
   #2 SOLID COPPER WIRE CADWELDED (TO INNER BONDING RING AT A LOCATION EITHER ABOVE THE SOIL LINE OR JUST INSIDE INTERIOR OF BUILDING. ALWAYS USE PVC (NONMETALLIC) SLEEVES WHEN ENTERING THE STRUCTURE. THIS TYPE OF BOND IS REQUIRED AT EACH OUTSIDE CORNER AND AT DISTANCES NOT TO EXCEED 50' ALONG ANY STRAIGHT WALL. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

6. FENCE EQUALIZATION BOND:
   #2 SOLID COPPER WIRE CADWELDED TO BUILDING RING GROUND AND ATTACHED TO EACH INSIDE OR OUTSIDE CORNER FENCE POST AND/OR GATE POST WITH A "LISTED" WIRE CLAMP. PLACE AT A MINIMUM 12" DEPTH (SEE NOTE 11 BELOW FOR CROSSING CLEARANCES). IF METALLIC POST IS NOT SET IN CEMENT, PLACE AN ADDITIONAL 8' GROUND ROD AT POST LOCATION.

7. GATE EQUALIZATION BOND:
   #2 SOLID COPPER WIRE CADWELDED TO FENCE EQUALIZATION WIRE AND ATTACHED TO EACH GATE POST WITH A "LISTED" WIRE CLAMP. IF METALLIC POST IS NOT SET IN CEMENT, PLACE AN ADDITIONAL 10' GROUND ROD AT EACH POST LOCATION.

8. POWER / TELEPHONE TRENCH:
   UTILITIES CAN EITHER BE PLACED IN SAME TRENCH (NESC RANDOM SEPARATION) OR IN SEPARATE TRENCH AT A 36" DEPTH. ALWAYS PLACE THESE FACILITIES BELOW WHILE MAINTAINING A 36" HORIZONTAL SEPARATION AND A 12" VERTICAL SEPARATION FROM ANY RADIAL OR RING GROUND SYSTEMS IN, ON, OR ADJACENT TO THE RADIO SITE.

9. POWER / TELEPHONE ENTRANCE:
   THE BUILDING RING GROUND MEETS OR EXCEEDS THE NEC ARTICLE 250 UTILITY PROTECTION GROUND. THEREFORE, INFORM LOCAL INSPECTOR THAT ADDITIONAL GROUND RODS ARE NOT REQUIRED. ALL UTILITY GROUNDS MAY BE ATTACHED TO THE #2 SOLID COPPER WIRE DETAILED IN NOTE 10 BELOW. IF LOCAL POWER COMPANY CODES REQUIRE AN ADDITIONAL GROUND ROD, BOND THE TWO FACILITIES TOGETHER AT THIS LOCATION.

10. UTILITY GROUNDING ELECTRODE BOND:
    USE #2 SOLID COPPER WIRE PLACED WITHIN 3' OF UTILITY ENTRANCE AT DEMARCATION CABINET ENTRY PORT. ALL CONNECTIONS TO GROUND RING ARE TO BE CADWELDED. CONNECTION TO DEMARCATION CABINET ENTRY PORT TO BE WITH A "LISTED" CONNECTION. ALL BENDS MUST MAINTAIN A MINIMUM 12" RADIUS.

11. RADIAL GROUND / FENCE BOND CROSSINGS:
    WHEREVER PRACTICAL, TO REDUCE MAGNETIC COUPLING, THESE FACILITIES MUST CROSS AT A 90 DEGREE ANGLE WHILE MAINTAINING 18" VERTICAL SEPARATION.

12. COAX GROUNDING KITS:
    USE INDIVIDUAL "LISTED" GROUNDING KITS FOR EACH COAX CABLE. BOND TO TOWER BONDING BUSS BAR WITH #2 THHN SOLID COPPER WIRE WITH 2 HOLE CRIMPED CONNECTIONS.

13. GROUNDING BUSS BAR KIT:
    THE GROUNDING BUSS BAR AND ATTACHMENT KIT MUST BE DIRECTLY BOLTED TO THE TOWER STRUCTURE WITHOUT ELECTRICAL INSULATORS.

14. ICE BRIDE BONDING:
    THE ICE BRIDGE SHOULD NOT BE BONDED TO THE TOWER STRUCTURE. IT SHOULD ONLY BE BONDED AT ONE END TO THE ENTRANCE BULKHEAD (SINGLE POINT GROUND BAR). USE #2 THHN SOLID COPPER WIRE WITH 2 HOLE CRIMPED CONNECTIONS.

15. RADIO BAY TO COAX BULKHEAD BOND:
    THIS IS THE ONLY CABINET TO GROUND BOND WIRE ATTACHED TO THE RADIO BAY. USE #2 THHN SOLID COPPER WIRE WITH 2 HOLE CRIMPED CONNECTIONS OR A 3" COPPER STRAP.

16. RADIO BAY ISOLATION KIT:
    CONTACT RADIO EQUIPMENT SUPPLIER FOR SPECIFICATION AND INSTALLATION PROCEDURES.

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