



# Staff Report for Administrative Approval

Weber County Planning Division

## Synopsis

### Application Information

<b>Application Request:</b>	Consideration and action on a conditional use permit application for a new collocation on an existing wireless telecommunications facility.
<b>Type of Decision:</b>	Administrative
<b>Applicant:</b>	Verizon Wireless
<b>Authorized Agent:</b>	Craig Chagnon
<b>File Number:</b>	CUP# 2018-04

### Property Information

<b>Approximate Address:</b>	2449 W 4000 S, Roy
<b>Project Area:</b>	0.07 acres
<b>Zoning:</b>	M-1
<b>Existing Land Use:</b>	Cell tower
<b>Proposed Land Use:</b>	Cell tower equipment collocation
<b>Parcel ID:</b>	08-052-0016
<b>Township, Range, Section:</b>	Township 5 North, Range 2 West, Section 11

### Adjacent Land Use

<b>North:</b>	Residential	<b>South:</b>	Residential
<b>East:</b>	Residential	<b>West:</b>	Residential

### Staff Information

<b>Report Presenter:</b>	<b>Steve Burton</b> sburton@co.weber.ut.us 801-399-8766
<b>Report Reviewer:</b>	RK

## Applicable Ordinances

- Title 104, Chapter 22 Manufacturing Zone (M-1)
- Title 108, Chapter 1 Design Review
- Title 108, Chapter 4 Conditional Uses

## Summary and Background

The applicant is requesting approval of a conditional use permit for a new collocation of telecommunication equipment on the existing cell tower located at 2449 W 4000 S, Roy. The proposed collocation will not include any ground expansion or increased height of the existing site and tower. The list of all proposed new equipment is outlined in the conditional use application (Exhibit A).

Conditional use permits should be approved as long as any harmful impact is mitigated. The Uniform Land Use Code of Weber County, Utah (LUC) already specifies certain standards necessary for mitigation of harmful impact to which the proposal must adhere. The proposed application meets these standards. The following is staff's evaluation of the request.

## Analysis

**General Plan:** The proposed use conforms to the West Central Weber County General Plan ensuring that new manufacturing uses are within existing manufacturing zones.

**Zoning:** The subject property is located within the Manufacturing (M-1) zone. The intent of the M-1 zone can be further described in LUC §104-22-1 as follows:

*The purpose of the light manufacturing zone is to provide suitable areas that will accommodate the need for light intensity type manufacturing and its associated accessory uses, some of which may have an environmental impact requiring public review and regulation.*

The proposed use is conditionally allowed in the M-1 zone and has been reviewed as a "Public utility substation". The proposed new equipment will be located within the existing fenced equipment compound. The proposed new equipment will meet the following setback requirements of the M-1 Zone (104-22-4(3)):

*Minimum yard setbacks:*

*Front: 30 feet on streets of less than 80 feet in width; 50 feet on streets and highways of 80 feet or more in width*

*Side: None, except 20 feet where adjacent to a residential zone boundary and a side yard facing a street on a corner lot, and for single-family dwelling.*

*Rear: None, except 20 feet where building rears on a residential zone and 30 feet for single-family dwellings.*

Conditional Use Review: A review process has been outlined in LUC §108-4-3 to ensure compliance with the applicable ordinances and to mitigate anticipated detrimental effects. The following is an analysis of the application reviewed against the applicable conditional use standards:

- *Standards relating to safety for persons and property:* The application is for a collocation, not a new tower. Because the proposed collocation does not include any ground expansion or height increase, concerns of safety of persons and property are not anticipated.
- *Standards relating to infrastructure, amenities, and services:* The proposed collocation will enhance the telecommunications services that are provided in the area. The new equipment will be located on the existing cell tower site.
- *Standards relating to the environment:* Detrimental effects to the environment are being mitigated by the applicant choosing to collocate rather than propose a new tower.
- *Standards relating to the current qualities and characteristics of the surrounding area and compliance with the intent of the general plan:* The proposed site is an existing cell tower site. The proposed collocation includes equipment that is already on the site for other telecommunication companies and will not have detrimental effects on the surrounding area.

Design Review: The proposed conditional use mandates a design review as outlined in LUC §108-1 to ensure that the general design, layout and appearance of the building remains orderly and harmonious with the surrounding neighborhood. Certain areas of the design review are only applicable due to the nature of the request. As part of this review, the Planning Director shall consider the applicable matters based on the proposed conditional use and impose conditions to mitigate deficiencies where the plan is found deficient. The matters for consideration are as follows:

- *Considerations relating to traffic safety and traffic congestion.* Traffic safety and congestion are not anticipated given the nature of the request.
- *Considerations relating to landscaping.* 10% of the project area consists of existing deciduous trees and field grass, meeting the landscaping requirement.
- *Considerations relating to buildings and site layout.* The proposal does not include any buildings or site expansion. The proposed equipment will be located on the tower and within the existing fenced area.
- *Considerations relating to utility easements, drainage, and other engineering questions.* The applicant will need to adhere to all conditions of the Engineering Division including but not limited to storm water and surface water drainage, retention facilities, and site clean-up of the property. A condition has been made part of the Planning Division's recommendations to ensure that this standard is met.
- *Considerations relating to prior development concept plan approval associated with any rezoning agreement, planned commercial or manufacturing rezoning, or planned residential unit development approval.* The proposed site does not have any type of development agreement associated with the property; therefore considerations pertaining to this portion of the code are not applicable at this time.

Review Agencies: Prior to the commencement of work, the applicant will need to receive the approval from all applicable agencies for the water system improvements. A condition has been made part of the Planning Division’s recommendations to ensure that all conditions of the review agencies will be met.

## Summary of Planning Director Considerations

LUC §108-4-3(2)(7) states the following:

*De minimis revisions to a previously approved conditional use permit may be approved by the planning director provided it can be determined that the changes are slight, inconsequential, and not in violation of any substantive provision of this Code. The planning director's written approval of a de minimis revision shall be appended to the written decision of the planning commission. Revisions that are de minimis shall not require public notice.*

## Staff Recommendation

Staff recommends approval of file# CUP 2018-04, a conditional use permit for a new collocation of telecommunication equipment on the existing cell tower located at 2449 W 4000 S, Roy. This recommendation for approval is subject to all review agency requirements and is based on the following findings:

1. The project is considered a de minimis revision to a previously approved conditional use permit.
2. The proposed use conforms to the West Central Weber County General Plan.
3. The proposed use will provide the needed water sources to meet the demands of the Western Weber area.
4. The proposed use, if conditions are imposed, will not be detrimental to public health, safety, or welfare.
5. The proposed use, if conditions are imposed, will comply with applicable County ordinances.
6. The proposed use will not deteriorate the environment of the general area so as to negatively impact surrounding properties and uses.

## Administrative Approval

Administrative approval of the CUP 2018-04 is hereby granted based upon its compliance with the Weber County Land Use Code.

Date of Administrative Approval: \_\_\_\_\_.

\_\_\_\_\_  
Rick Grover  
Weber County Planning Director

## Exhibits

- A. Application
- B. Site Plan

## Map 1



# Weber County Conditional Use Permit Application

**Application submittals will be accepted by appointment only. (801) 399-8791. 2380 Washington Blvd. Suite 240, Ogden, UT 84401**

Date Submitted / Completed 07/05/2018	Fees (Office Use)	Receipt Number (Office Use)	File Number (Office Use)
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## Property Owner Contact Information

Name of Property Owner(s) Todd Potter		Mailing Address of Property Owner(s) 5863 SOUTH 2950 WEST ROY, UT 84067	
Phone (801) 731-8615	Fax		
Email Address (required) kwikcitymuffler@hotmail.com		Preferred Method of Written Correspondence <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Mail	

## Authorized Representative Contact Information

Name of Person Authorized to Represent the Property Owner(s) Craig Chagnon / Crown Castle / Lessee-Tower Owner		Mailing Address of Authorized Person 116 Inverness Drive East, Ste. 280 Englewood, CO 80112	
Phone 801-979-9077	Fax		
Email Address craig.chagnon@crowncastle.com		Preferred Method of Written Correspondence <input checked="" type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Mail	

## Property Information

Project Name Verizon New Collocation	Total Acreage 0.07	Current Zoning M-1
Approximate Address 2449 WEST 4000 SOUTH ROY, UT 84067	Land Serial Number(s) 08-052-0016	

**Proposed Use**  
Existing - Collocation on existing wireless telecommunications facility.

**Project Narrative**  
Verizon Wireless proposes a new collocation on an existing 130' monopole consisting of tower equipment and ground space. The installation fits within the existing fenced lease area of this wireless facility, so no ground expansion. The tower equipment will be located at the 96' centerline of this 130' monopole, so no increase in height. The proposed scope of work is as follows;

- Install (2) New Equipment Cabinets on Existing 10' x 16' Concrete Pad.
- Install (1) New 30 kw Backup Generator on Existing 10' x16' Concrete Pad.
- Install (1) Utility H-Frame Extension
- Install (6) New Panel Antennas, (6) new RRHs, & (2) New OVPs
- Install (2) new HI-CAP Hybrid Cables
- Install New Ice Bridge Extension
- Install (1) ILC Cabinet on Proposed H-Frame Extension

Verizon Wireless is the applicant and tenant of Crown Castle USA (STC Five LLC), tower owner/operator. The STC Five LLC lease agreement is with Todd Porter for ground space and rights that include the right to sublease and modify the site at any time without owner consent. Current lease is included with application.

**Basis for Issuance of Conditional Use Permit**

Reasonably anticipated detrimental effects of a proposed conditional use can be substantially mitigated by the proposal or by the imposition of reasonable conditions to achieve compliance with applicable standards. Examples of potential negative impacts are odor, vibration, light, dust, smoke, or noise.

The proposed installation of telecommunications equipment fits within the existing use at this site. The generator may cause noise at a minimal occurrence level. Generator is for backup purposes only and cycles at a regular and predetermined intervals.

That the proposed use will comply with the regulations and conditions specified in the Zoning Ordinance and other applicable agency standards for such use.

The existing telecommunications facility operates under, and is in compliance with, an existing conditional use permit. The proposed project shall operate and comply with any conditional use requirements.





VERIZON SITE NAME: SAL SLEET  
 CROWN CASTLE SITE NAME: KWIK CITY MUFFLER  
 CROWN CASTLE BU NUMBER: 880534  
 SITE ADDRESS: 2449 WEST 4000 SOUTH ROY, UT 84067  
 SITE TYPE: MONOPOLE TOWER

PLANS PREPARED FOR:  
**verizon**  
 180 WASHINGTON VALLEY ROAD  
 BEDMINSTER, NJ 07921

PLANS PREPARED BY:  
**INFINIGY**  
 FROM ZERO TO INFINIGY  
 the solutions are endless  
 1490 W. 121st. Ave., Suite 101  
 Westminster, CO 80234  
 Office # (303) 219-1178  
 Fax # (303) 242-8636  
 JOB NUMBER: TBD

MLA PARTNER:  
**CROWN CASTLE**

ENGINEERING LICENSE:

DRAWING NOTICE:  
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF VERIZON AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF VERIZON.

REVISIONS:			
DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	06/13/18	SF	A

VERIZON SITE NAME:  
**SAL SLEET**

CROWN CASTLE SITE NAME:  
**KWIK CITY MUFFLER**

CROWN CASTLE BU #:  
**880534**

SITE ADDRESS:  
**2449 WEST 4000 SOUTH ROY, UT 84067**

SHEET DESCRIPTION:  
**TITLE SHEET & PROJECT DATA**

SHEET NUMBER:  
**T-1**

SITE INFORMATION	AREA MAP	PROJECT DESCRIPTION	DRAWING INDEX																																																						
<p><b>APPLICANT:</b>                      VERIZON                      180 WASHINGTON VALLEY ROAD                      BEDMINSTER, NJ 07921  <b>CONTACT:</b>                      TBD  <b>TOWER OWNER:</b>                      CROWN CASTLE  <b>CROWN CASTLE PM:</b>                      GRANT STEINHAUSER                      (720) 450-3009  <b>LATITUDE (NAD83):</b>                      41° 11' 22.4" N                      41.189556°  <b>LONGITUDE (NAD83):</b>                      112° 2' 21.0" W                      -112.039167°  <b>COUNTY:</b>                      WEBER  <b>ZONING JURISDICTION:</b>                      TBD  <b>POWER COMPANY:</b>                      PACIFICORP                      (888) 221-7070  <b>TELCO PROVIDER:</b>                      TBD  <b>VERIZON WIRELESS CM:</b>                      BILLY WALDRIDGE                      (385) 707-7043</p>		<p>VERIZON PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATION FACILITY:</p> <ul style="list-style-type: none"> <li>INSTALL (2) NEW EQUIPMENT CABINETS ON EXISTING 10'x16' CONCRETE PAD</li> <li>INSTALL (1) NEW 30KW BACKUP GENERATOR ON EXISTING 10'x16' CONCRETE PAD</li> <li>INSTALL (1) UTILITY H-FRAME EXTENSION</li> <li>INSTALL (6) NEW PANEL ANTENNAS, (6) NEW RRHS, &amp; (2) NEW OVPS</li> <li>INSTALL (2) NEW HI-CAP HYBRID CABLES</li> <li>INSTALL NEW ICE BRIDGE EXTENSION</li> <li>INSTALL (1) ILC CABINET ON PROPOSED H-FRAME EXTENSION</li> </ul> <p>THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY VERIZON IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY VERIZON. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.</p>	<table border="1"> <thead> <tr> <th>SHEET NO:</th> <th>SHEET TITLE</th> <th>REV</th> </tr> </thead> <tbody> <tr> <td>T-1</td> <td>TITLE SHEET &amp; PROJECT DATA</td> <td>A</td> </tr> <tr> <td>SP-1</td> <td>VERIZON SPECIFICATIONS</td> <td>A</td> </tr> <tr> <td>A-1</td> <td>OVERALL SITE PLAN</td> <td>A</td> </tr> <tr> <td>A-2</td> <td>ENLARGED SITE PLAN</td> <td>A</td> </tr> <tr> <td>A-3</td> <td>COMPOUND PLAN</td> <td>A</td> </tr> <tr> <td>A-4</td> <td>PROPOSED TOWER ELEVATION</td> <td>A</td> </tr> <tr> <td>A-5</td> <td>ANTENNA LAYOUT &amp; LOADING CHART</td> <td>A</td> </tr> <tr> <td>A-6</td> <td>EQUIPMENT &amp; MOUNTING DETAILS</td> <td>A</td> </tr> <tr> <td>A-7</td> <td>EQUIPMENT &amp; MOUNTING DETAILS</td> <td>A</td> </tr> <tr> <td>A-8</td> <td>EQUIPMENT LAYOUT &amp; DETAILS</td> <td>A</td> </tr> <tr> <td>A-9</td> <td>GENERATOR SPECIFICATIONS</td> <td>A</td> </tr> <tr> <td>E-1</td> <td>OVERALL CONDUIT LAYOUT</td> <td>A</td> </tr> <tr> <td>E-2</td> <td>EQUIPMENT CONDUIT LAYOUT</td> <td>A</td> </tr> <tr> <td>E-3</td> <td>ELECTRICAL DETAILS</td> <td>A</td> </tr> <tr> <td>G-1</td> <td>GROUNDING PLANS</td> <td>A</td> </tr> <tr> <td>G-2</td> <td>GROUNDING DETAILS</td> <td>A</td> </tr> <tr> <td>G-3</td> <td>GROUNDING DETAILS</td> <td>A</td> </tr> </tbody> </table>	SHEET NO:	SHEET TITLE	REV	T-1	TITLE SHEET & PROJECT DATA	A	SP-1	VERIZON SPECIFICATIONS	A	A-1	OVERALL SITE PLAN	A	A-2	ENLARGED SITE PLAN	A	A-3	COMPOUND PLAN	A	A-4	PROPOSED TOWER ELEVATION	A	A-5	ANTENNA LAYOUT & LOADING CHART	A	A-6	EQUIPMENT & MOUNTING DETAILS	A	A-7	EQUIPMENT & MOUNTING DETAILS	A	A-8	EQUIPMENT LAYOUT & DETAILS	A	A-9	GENERATOR SPECIFICATIONS	A	E-1	OVERALL CONDUIT LAYOUT	A	E-2	EQUIPMENT CONDUIT LAYOUT	A	E-3	ELECTRICAL DETAILS	A	G-1	GROUNDING PLANS	A	G-2	GROUNDING DETAILS	A	G-3	GROUNDING DETAILS	A
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	<p><b>LOCATION MAP</b></p>	<p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL 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 THESE CODES.</p> <ol style="list-style-type: none"> <li>INTERNATIONAL BUILDING CODE (2015 IBC)</li> <li>TIA-EIA-222-G OR LATEST EDITION</li> <li>NFPA 780 - LIGHTNING PROTECTION CODE</li> <li>2017 NATIONAL ELECTRIC CODE OR LATEST EDITION</li> <li>ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS</li> <li>UT BUILDING CODE</li> <li>LOCAL BUILDING CODE</li> <li>CITY/COUNTY ORDINANCES</li> </ol>	<p><b>DRIVING DIRECTIONS</b></p> <p>FROM: SALT LAKE INTERNATIONAL AIRPORT</p> <ol style="list-style-type: none"> <li>HEAD NORTH ON N TERMINAL DR TOWARD 3800 W</li> <li>KEEP RIGHT TO CONTINUE ON TERMINAL DR</li> <li>USE THE LEFT 2 LANES TO TAKE THE I-80 E RAMP TO CITY CENTER/OGDEN/PROVO</li> <li>KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-80 E AND MERGE ONTO I-80 E</li> <li>USE THE RIGHT 2 LANES TO TAKE EXIST 117 TOWARD I-215 N/OGDEN</li> <li>MERGE ONTO I-215N</li> <li>MERGE ONTO I-15 N</li> <li>KEEP LEFT AT THE FORK TO STAY ON I-15 N, FOLLOW SIGNS FOR INTERSTATE 15 N/OGDEN</li> <li>TAKE EXIST 339 FOR UTAH 26/W RIVERDALE RD</li> <li>KEEP LEFT AT THE FORK TO CONTINUE TOWARD W RIVERDALE RD</li> <li>TURN LEFT ONTO W RIVERDALE RD</li> <li>KEEP LEFT TO STAY ON W RIVERDALE RD</li> <li>TURN RIGHT ONTO S 1900 W</li> <li>TURN LEFT ONTO 4000 S ST</li> <li>AT THE TRAFFIC CIRCLE, CONTINUE STRAIGHT TO STAY ON 4000 S ST</li> <li>AFTER APPROXIMATELY 0.5 MILES, DESTINATION SHOULD BE ON THE RIGHT</li> </ol>																																																						
		<p><b>LEGAL DESCRIPTION</b></p> <p>PART OF THE NORTHWEST QUARTER OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 2 WEST, SALT LAKE BASE &amp; MERIDIAN, U S SURVEY. BEGINNING AT A POINT ON THE SOUTH SIDE OF 4000 SOUTH STREET AND THE EAST RIGHT OF WAY LINE OF THE DENVER AND RIO GRAND RAILROAD, SAID POINT BEGINNING 917.20 FEET, NORTH 89D53'27" WEST AND SOUTH 34D21' WEST 39.92 FEET, FROM THE NORTH QUARTER CORNER OF SECTION 11, TOWNSHIP 5 NORTH, RANGE 2 WEST, RUNNING THENCE SOUTH 34D21' WEST 846.99 FEET ALONG THE EAST LINE OF SAID RIGHT OF WAY; THENCE SOUTH 55D39" EAST 164.49 FEET; THENCE NORTH 34D34'32" EAST 254.56 FEET; THENCE NORTH 37D20'04" EAST 160.74 FEET; THENCE NORTH 31D33'31" EAST 533.16 FEET; THENCE NORTH 89D53'27" WEST 178.82 FEET ALONG THE SOUTH BOUNDARY LINE OF 4000 SOUTH STREET TO THE POINT OF BEGINNING. TOGETHER WITH A RIGHT OF WAY FOR INGRESS AND EGRESS ACROSS THE NORTHWESTERLY 30 FEET.</p>																																																							





**GENERAL NOTES:**

LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES STRATIVE TASKS REQUIRED TO COMPLETE AND MAKE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS ED HEREIN, INCLUDING BUT NOT LIMITED TO THE

AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ONS. ALL NECESSARY PERMITS AND APPROVALS AND REQUIRED FEES AND CHARGES IN CONNECTION WITH OF THIS CONTRACT.

S-BUILT DRAWINGS, OPERATING AND MAINTENANCE DNS AND MANUALS.

ALL CUTTING, DRILLING, ROUGH AND FINISH OF EXISTING OR NEWLY INSTALLED CONSTRUCTION FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.

E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.

F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.

2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

**GENERAL REQUIREMENTS**

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.

2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.

3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.

4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.

5. GENERAL  
A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.

B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.

6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY  
A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.

B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.

C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.

D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.

E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

**GUARANTEE**

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

**CLEANING**

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.

2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

**COORDINATION AND SUPERVISION**

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILING OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

**SUBMITTALS**

1. AS-BUILT DRAWINGS:  
A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.

2. SERVICE MANUALS:  
A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT VERIZON AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.  
B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

**CUTTING AND PATCHING**

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.  
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

**TESTS, INSPECTION AND APPROVAL**

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.

2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

**SPECIAL REQUIREMENTS**

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.  
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULED AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

**GROUNDING**

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.  
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).

3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.  
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:  
A. GENERAL ELECTRIC COMPANY  
B. SQUARE-D

5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

**INSTALLATION**

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.  
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.  
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.  
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:  
A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.  
B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

**RACEWAYS**

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:  
A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.  
B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).  
C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.

ON THIS PROJECT.  
E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "VERIZON" OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.

F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.  
G. MINIMUM SIZE CONDUIT TO BE 3/4" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.

AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.  
J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.

K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

**RACEWAYS CONT'D**

L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILING OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.  
M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.  
N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.  
O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.  
P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

**WIRES AND CABLES**

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.  
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.  
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/ THHN INSULATION, EXCEPT AS NOTED.  
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.  
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.  
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.  
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.  
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

**WIRING DEVICES**

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.  
DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.  
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.  
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**CONTRACTS AND WARRANTIES**

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.  
2. SEE MASTER CONTRACTOR SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

**STORAGE**

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

**CLEANUP**

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.  
2. EXTERIOR  
A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.  
B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.  
C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.  
3. INTERIOR  
A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.  
B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.  
C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

**CHANGE ORDER PROCEDURE:**

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

**RELATED DOCUMENTS AND COORDINATION**

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

**SHOP DRAWINGS**

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.  
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

**PRODUCTS AND SUBSTITUTIONS**

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.  
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

**QUALITY ASSURANCE**

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

**ADMINISTRATION**

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.  
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.  
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).  
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.  
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.  
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.  
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.  
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

**INSURANCE AND BONDS**

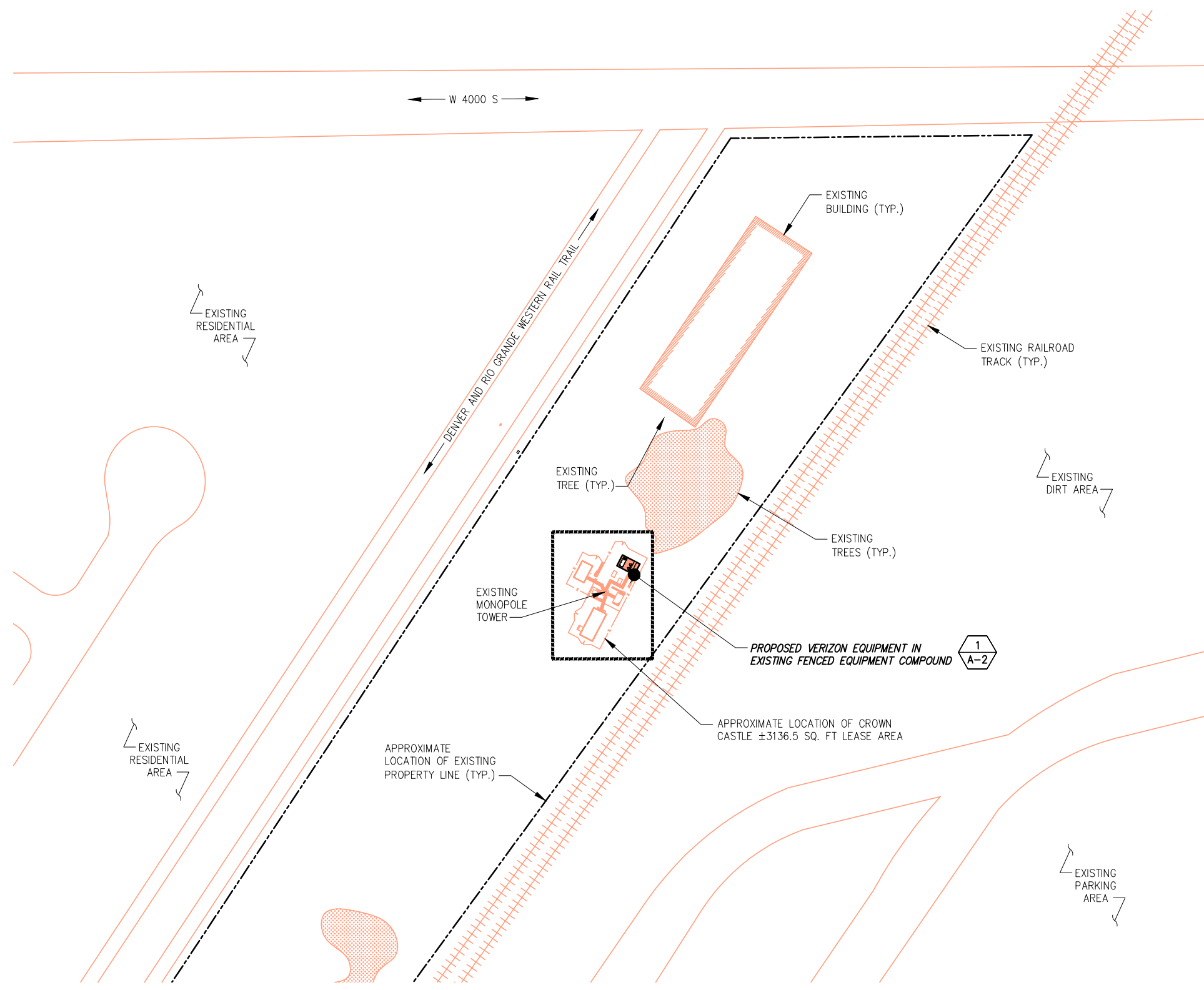
1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.  
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.  
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

**GENERAL NOTES:**

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.  
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH.  
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.  
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.  
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

ABBREVIATIONS	
ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR Ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	





PLANS PREPARED FOR:  
**verizon**  
 180 WASHINGTON VALLEY ROAD  
 BEDMINSTER, NJ 07921

PLANS PREPARED BY:  
**INFINIGY**  
 FROM ZERO TO INFINIGY  
 the solutions are endless  
 1490 W. 121st. Ave., Suite 101  
 Westminster, CO 80234  
 Office # (303) 219-1178  
 Fax # (303) 242-8636  
 JOB NUMBER: TBD

MLA PARTNER:  
**CROWN CASTLE**

ENGINEERING LICENSE:  
 \_\_\_\_\_

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REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW		06/13/18	SF	A

VERIZON SITE NAME:  
**SAL SLEET**

CROWN CASTLE SITE NAME:  
**KWIK CITY MUFFLER**

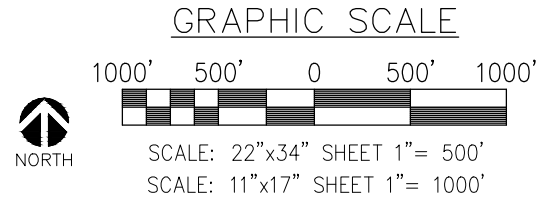
CROWN CASTLE BU #:  
**880534**

SITE ADDRESS:  
**2449 WEST 4000 SOUTH  
 ROY, UT 84067**

SHEET DESCRIPTION:  
**OVERALL SITE PLAN**

SHEET NUMBER:  
**A-1**

INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND IS NOT THE RESULT OF A FIELD SURVEY. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION.



DENVER AND RIO GRANDE WESTERN RAIL TRAIL

APN: 080520016

EXISTING BUILDING (TYP.)

EXISTING TREE (TYP.)

PROPOSED VERIZON EQUIPMENT ON EXISTING CONCRETE PAD IN EXISTING FENCED COMPOUND

1  
A-3

EXISTING MONOPOLE TOWER

EXISTING TRAIN TRACK

EXISTING DIRT AREA

APPROXIMATE LOCATION OF EXISTING PROPERTY LINE (TYP.)

EXISTING DIRT AREA


NOTE:  
LOCATION OF PROPOSED UTILITIES WILL BE INSTALLED TO FOLLOW EXISTING AS STAKED DETERMINED ON SITE

PLANS PREPARED FOR:



180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:



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**KWIK CITY MUFFLER**

CROWN CASTLE BU #:  
**880534**

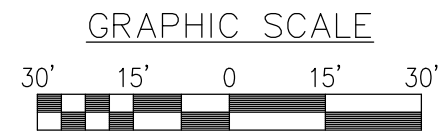
SITE ADDRESS:  
**2449 WEST 4000 SOUTH  
ROY, UT 84067**

SHEET DESCRIPTION:  
**ENLARGED SITE PLAN**

SHEET NUMBER:  
**A-2**

INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND IS NOT THE RESULT OF A FIELD SURVEY. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION

ENLARGED SITE PLAN



SCALE: 22"x34" SHEET 1"= 15'  
SCALE: 11"x17" SHEET 1"= 30'

SCALE: AS NOTED

1






INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNT FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

PLANS PREPARED FOR:



180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:



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VERIZON SITE NAME:

**SAL SLEET**

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**KWIK CITY MUFFLER**

CROWN CASTLE BU #:

**880534**

SITE ADDRESS:

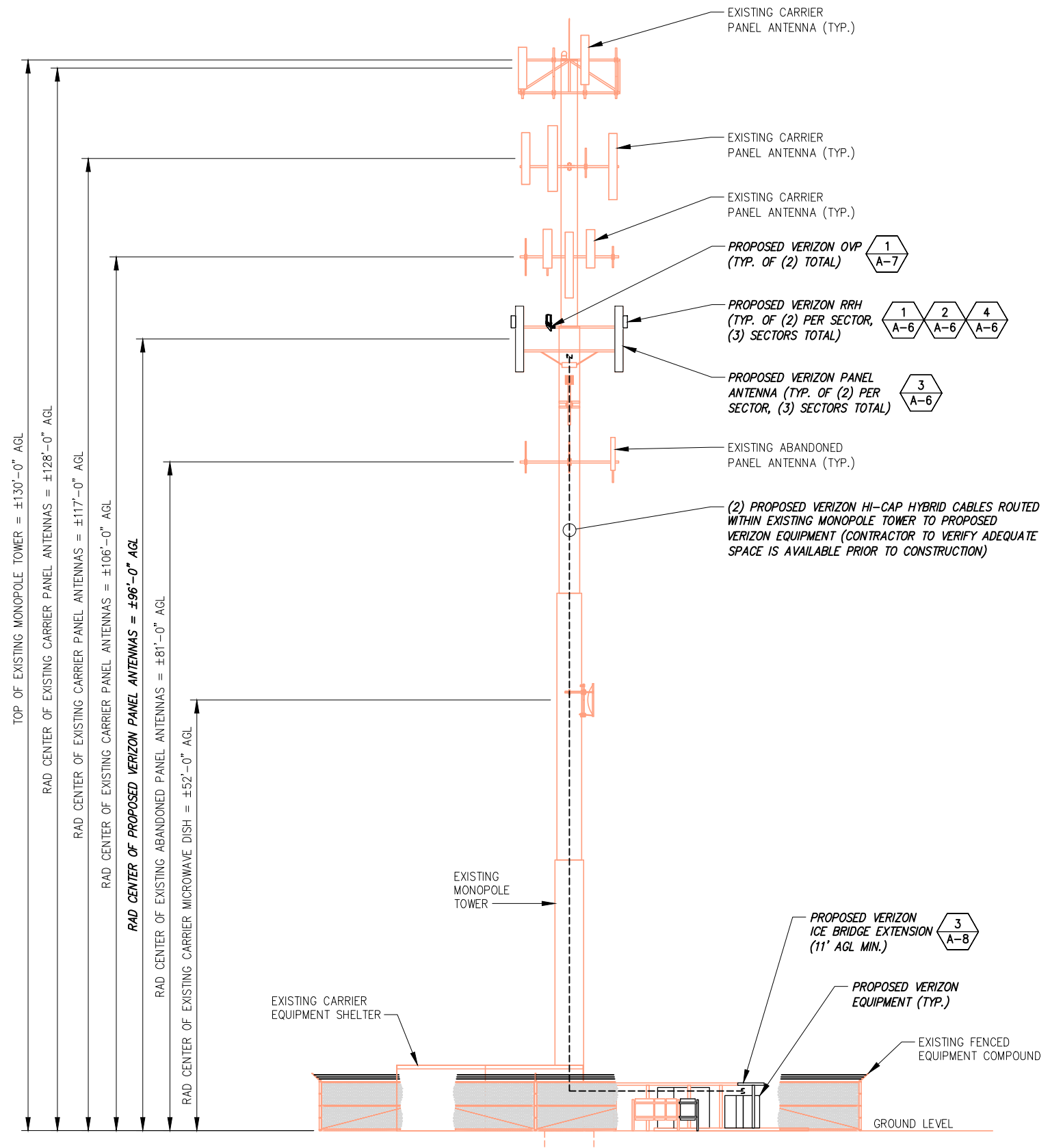
**2449 WEST 4000 SOUTH  
ROY, UT 84067**

SHEET DESCRIPTION:

**PROPOSED TOWER  
ELEVATION**

SHEET NUMBER:

**A-4**



PROPOSED TOWER ELEVATION

NO SCALE 1



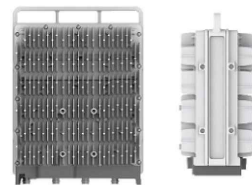
# 8843 DUAL BAND B66A

Target PRA: Jun 30



Band (B2 & B66A)  
 with three configuration options  
 4T4R in each band  
 and 4x80W for B66A  
 - Or 2x60W for B2 and 2x80W for B66A (2T4R in each band)

- > Full IBW in each band
- > Carrier BW:
  - 5, 10, 15, 20 MHz
- > LTE: Max 3 carriers per port (DL), max 3 carriers per port (UL)
- > CPRI Support:
  - 2.5; 4.9; 9.8; 10.1
- > -48 VDC 3-wire (2-wire with adapter)
  - Two DC power ports of 20A
- > AISG TMA & RET support via RS-485 or RF connectors
  - Bias-T only be supported on antenna port A and E.
- > Eight antenna connectors : 8 x 4.3-10 plus (f)
  - 4 ports dedicated to B2 and 4 ports dedicated to B66A
- > 2 external alarms
- > ~ 75 lb.
- > ~36L (14.96" x 13.19" x 11.1")
- > IP 65, -40 to +55°C



SW Baseline- 18.Q1  
 Supported on DUS41  
 and BB5216

Specification	Ericsson Radio 4449
Band(s)	LTE B13 (700 MHz) + LTE B5 (850 MHz)
Output power	(2) 2 x 40W
Power consumption	1439W
Power supply	-48 V <sub>DC</sub> or external (100-250)V <sub>AC</sub> power supply unit
Physical dimensions	18.0" (height) x 13.2" (width) x 9.4" (depth)
Weight	70.0 lbs
Connectors	4 x 4.3-10 female



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MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

REMOTE RADIO HEAD SPECIFICATIONS

NO SCALE

1

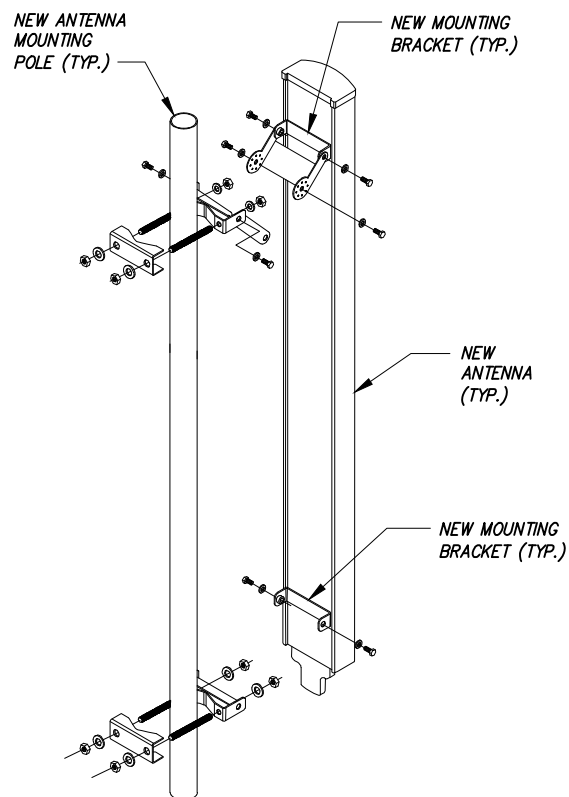
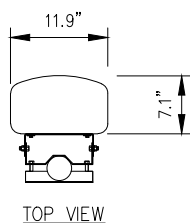
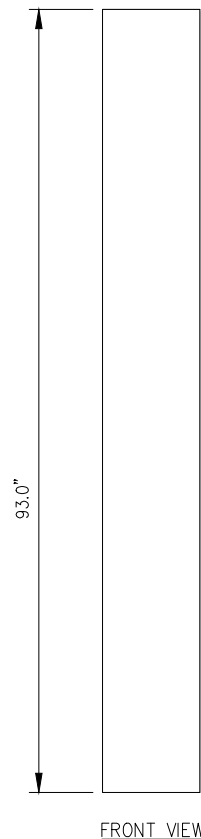
REMOTE RADIO HEAD SPECIFICATIONS

NO SCALE

2

COMMSCOPE PANEL ANTENNA

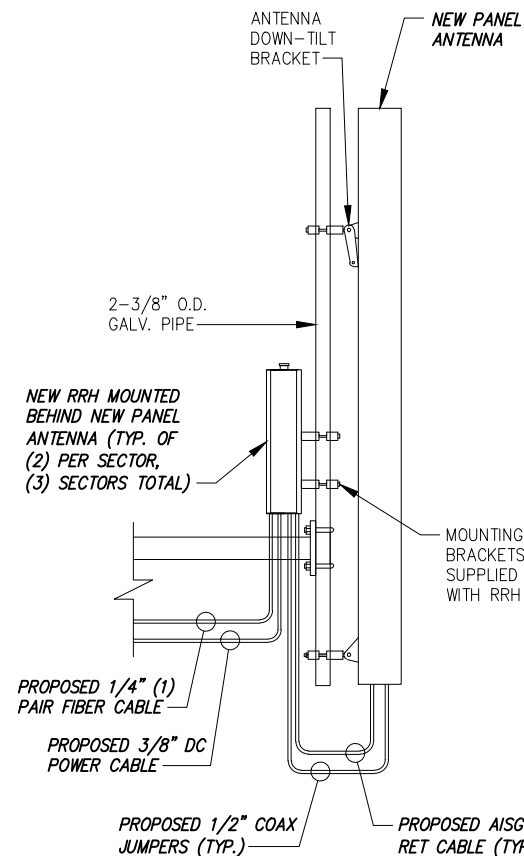
PART NUMBER: NHH-65C-R2B  
 DIMENSIONS (HxWxD): 96.0"x11.9"x7.1"  
 TOTAL WEIGHT: 51.6 lbs.



PANEL ANTENNA DETAIL

NO SCALE

3



PANEL ANTENNA & RRH MOUNTING DETAIL

NO SCALE

4

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CROWN CASTLE SITE NAME:  
**KWIK CITY MUFFLER**

CROWN CASTLE BU #:  
**880534**

SITE ADDRESS:  
**2449 WEST 4000 SOUTH ROY, UT 84067**

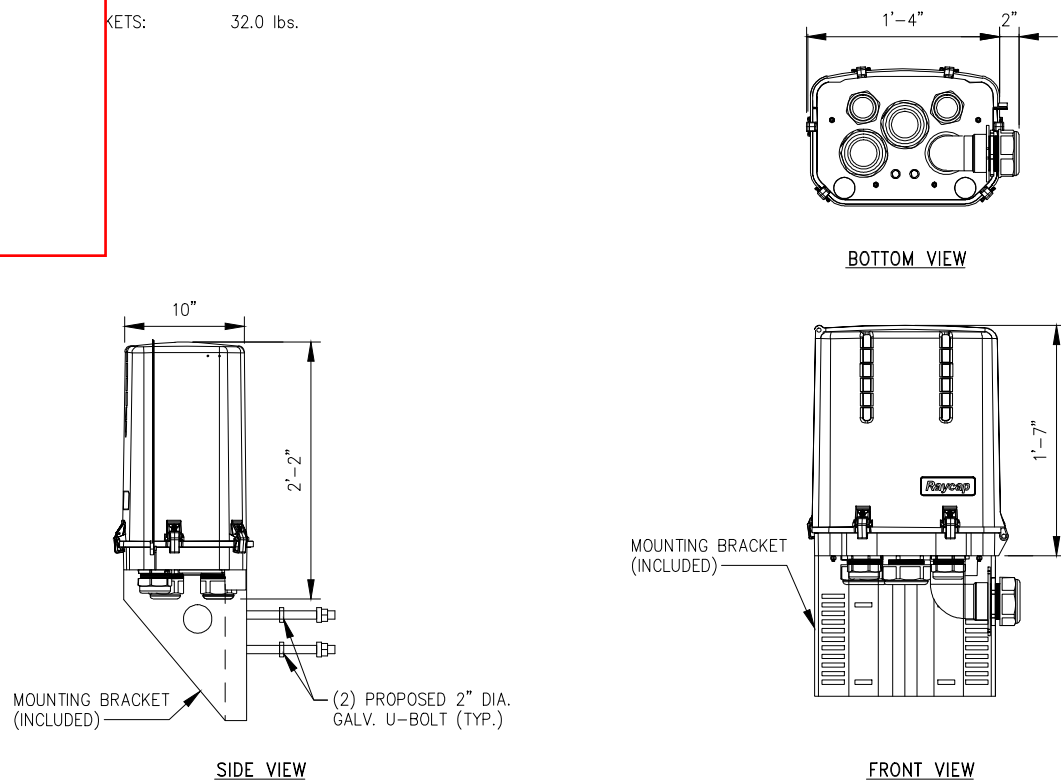
SHEET DESCRIPTION:  
**EQUIPMENT & MOUNTING DETAILS**

SHEET NUMBER:  
**A-6**



Exhibit B  
Page 9 of 17

6C-12AB-OZ  
16"x10"x19"  
WEIGHTS: 32.0 lbs.



RAYCAP OVP DETAIL

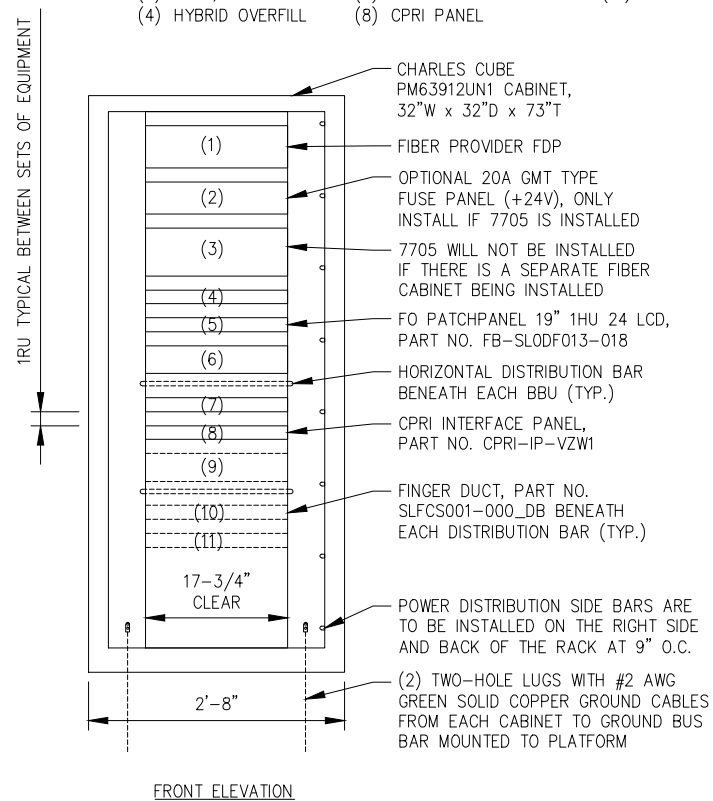
NO SCALE

1

NOTES:

- (1) CONTRACTOR IS TO INSTALL TWO 20 AMP BREAKERS IN THE PDF FRAME FEEDING THE A/B SIDES OF THE DUAL FEED FUSE PANEL, #6 CONDUCTOR, LABELED 'BBU RACK FUSE PANEL', +24v
- (2) TIE WRAPS ARE NOT TO BE USED FOR SUPPORT OF ANY CABLING, VZW REQUIRES WAXED NSTD305 STANDARDS
- (3) ALL EQUIPMENT RACKS ARE TO MEET VZW NSTD406 STANDARDS AND BE INSTALLED PER VZW NSTD305 STANDARDS
- (4) EACH EQUIPMENT RACK IS SUPPLIED WITH (4) SEISMIC ZONE 4 STEEL WEDGE ANCHORS (11/16"Ø) AND EACH RACK IS TO BE SECURED TO THE CONCRETE FLOOR USING THESE ANCHORS, EMBEDMENT DEPTH = 2/3 OF THE THICKNESS (4" FOR 6" SLAB, 2-5/8" FOR 4" SLAB, 2" FOR 3" SLAB) PER VZW NSTD305 STANDARDS
- (5) ALL CABLING IS TO BE INSTALLED ON THE INSIDE OF CABINET SUPPORT LEG AND ON INSIDE SEAL TIGHT CONDUITS THE CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING FIBER JUMPERS FROM THE FDP TO THE CPRI INTERFACE PANEL, THEN FROM THE CPRI INTERFACE PANEL TO THE BBU FOR THE RRHS. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING FIBER MANAGEMENT AS REQ'D IN ORDER TO COMPLETE THIS INSTALLATION

- LEGEND: (1) FDP (3RU) (5) HYBRID FDP (9) FUTURE BBU  
 (2) GMT PANEL (6) DUAL/TRI BAND BBU (10) FINGER DUCT  
 (3) 7705, OPTIONAL (7) FINGER DUCT (11) CPRI PANEL  
 (4) HYBRID OVERFILL (8) CPRI PANEL



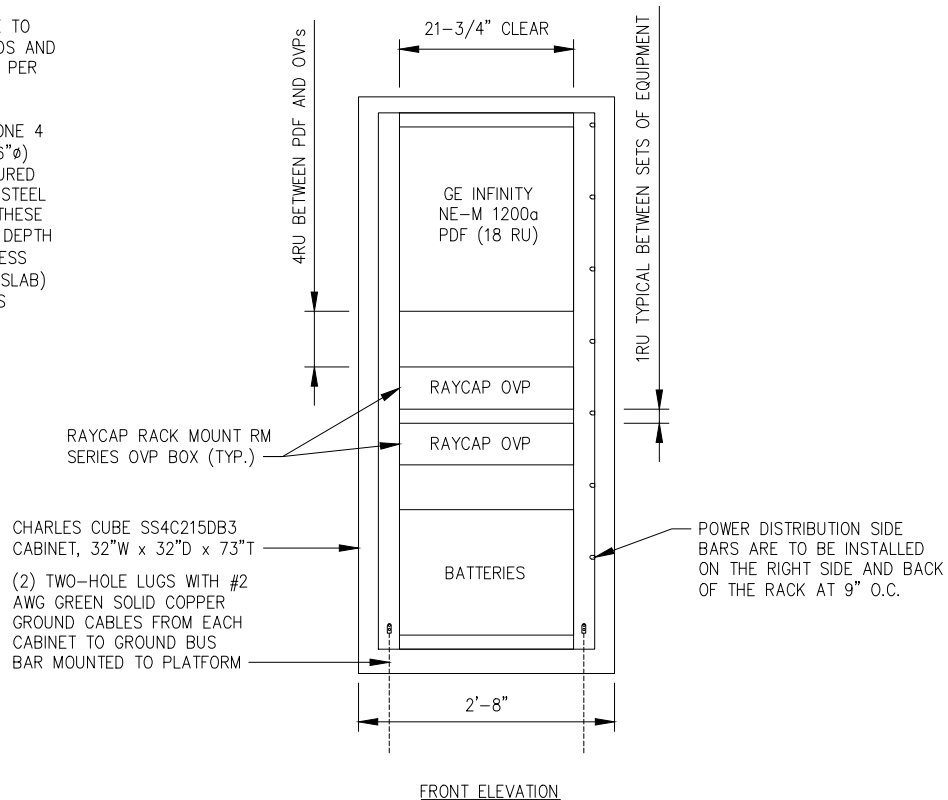
BBU CABINET DETAIL

NO SCALE

2

NOTES:

- (1) TIE WRAPS ARE NOT TO BE USED FOR SUPPORT OF ANY CABLING, VZW REQUIRES WAXED LACING
- (2) ALL EQUIPMENT CABINETS ARE TO MEET VZW NSTD406 STANDARDS AND BE INSTALLED AND GROUNDED PER VZW NSTD305 STANDARDS
- (3) EACH EQUIPMENT CABINET IS SUPPLIED WITH (4) SEISMIC ZONE 4 STEEL WEDGE ANCHORS (11/16"Ø) OR BOLTS AND IS TO BE SECURED TO THE CONCRETE FLOOR OR STEEL EQUIPMENT PLATFORM USING THESE ANCHORS/BOLTS, EMBEDMENT DEPTH = 2/3 OF THE FLOOR THICKNESS (4" FOR 6" SLAB, 2" FOR 3" SLAB) PER VZW NSTD305 STANDARDS

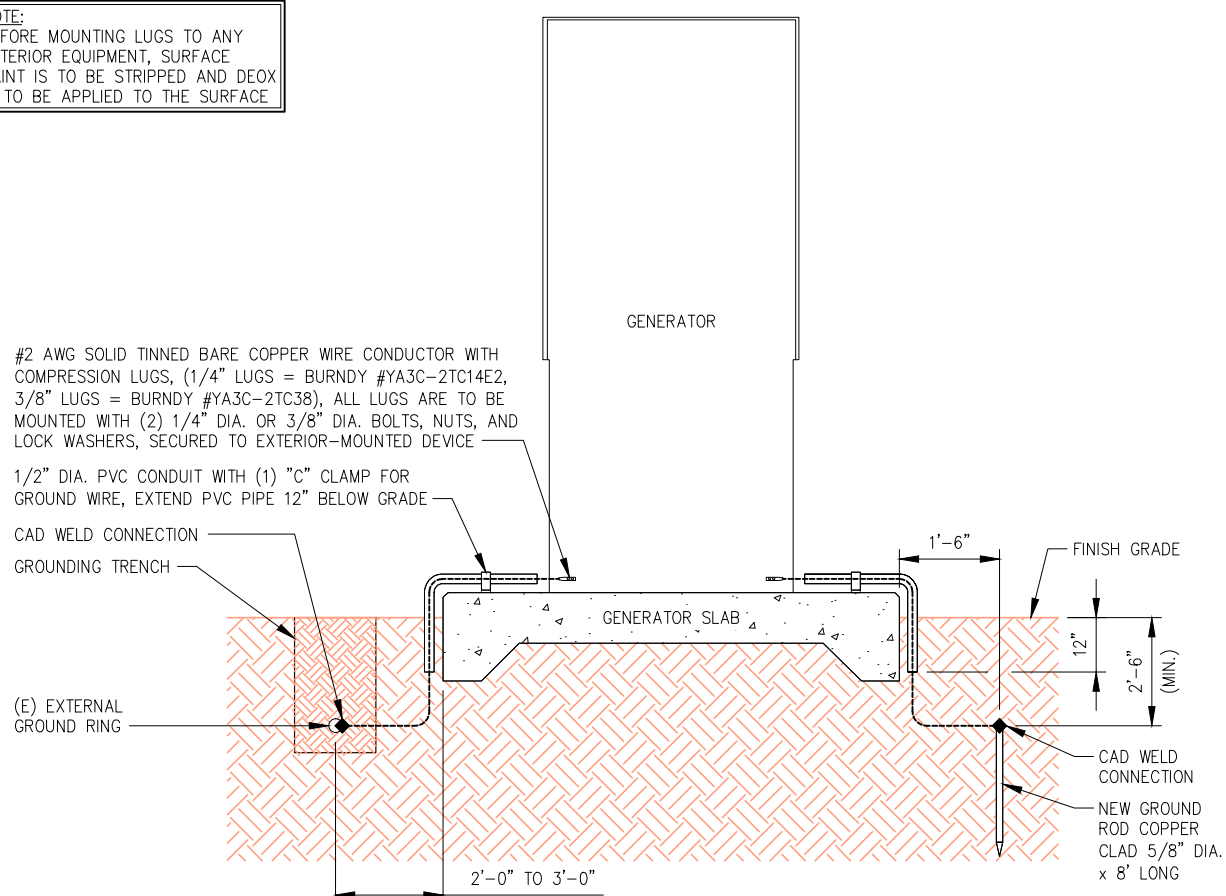


POWER DISTRIBUTION CABINET DETAIL

NO SCALE

3

NOTE: BEFORE MOUNTING LUGS TO ANY EXTERIOR EQUIPMENT, SURFACE PAINT IS TO BE STRIPPED AND DEOX IS TO BE APPLIED TO THE SURFACE



GENERATOR GROUNDING DETAIL (TYPICAL)

NO SCALE

4

PLANS PREPARED FOR:

180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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the solutions are endless

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Office # (303) 219-1178  
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JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

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ISSUED FOR REVIEW		06/13/18	SF	A

VERIZON SITE NAME:

SAL SLEET

CROWN CASTLE SITE NAME:

KWIK CITY MUFFLER

CROWN CASTLE BU #:

880534

SITE ADDRESS:

2449 WEST 4000 SOUTH  
ROY, UT 84067

SHEET DESCRIPTION:

EQUIPMENT & MOUNTING DETAILS

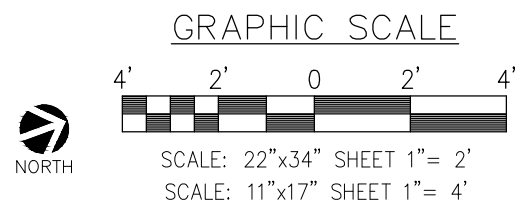
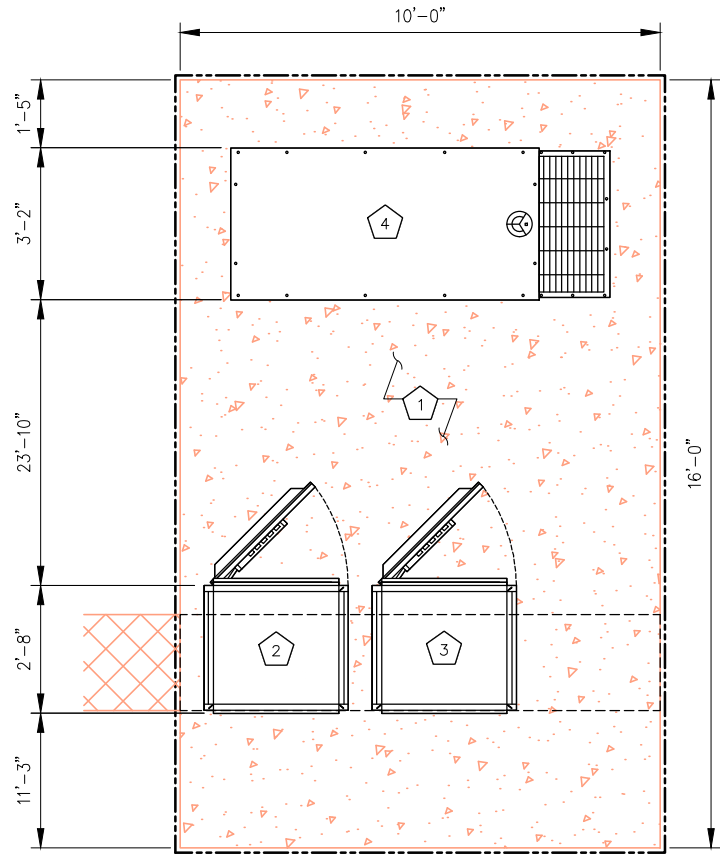
SHEET NUMBER:

A-7

**INSTALLATION NOTES:**

- CONCRETE PAD BY VERIZON
- VERIZON POWER CABINET
- VERIZON
- VERIZON 30KW BACKUP GENERATOR (SD030 OR APPROVED EQUAL)

NOTE:  
ICE BRIDGE NOT SHOWN FOR CLARITY.



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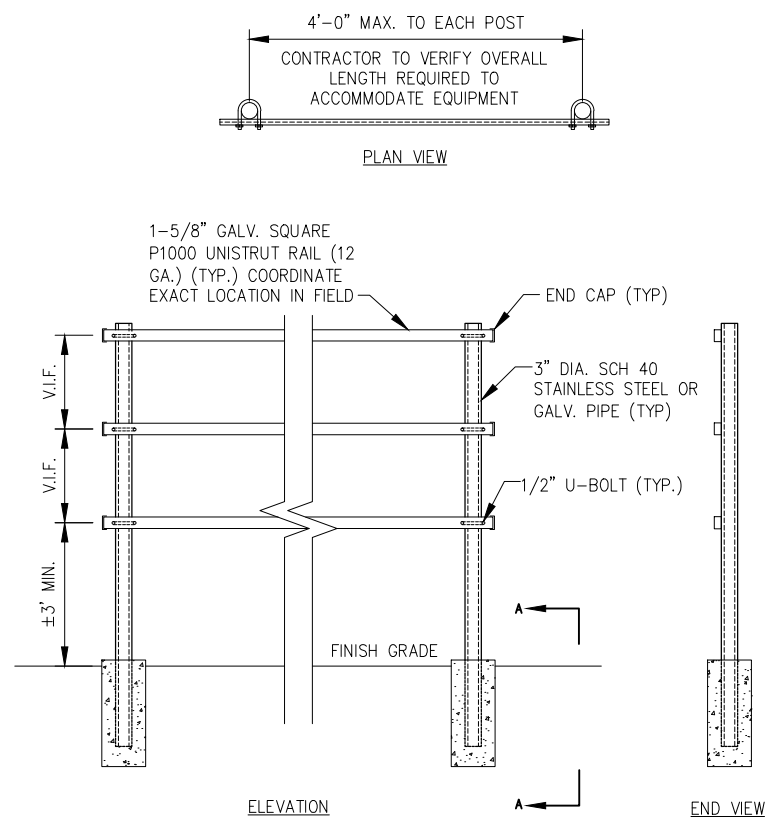
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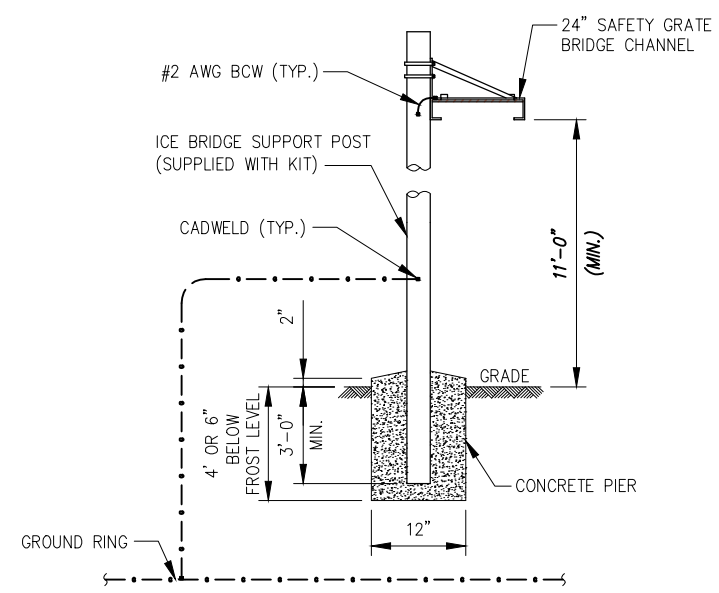
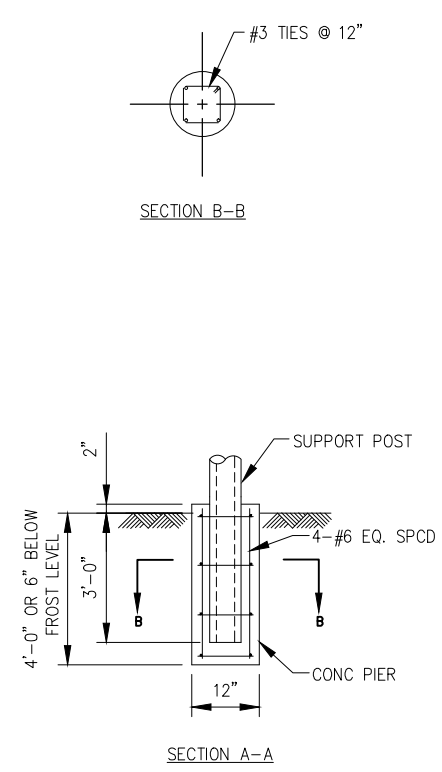
PLATFORM EQUIPMENT LAYOUT

SCALE: AS NOTED 1



H-FRAME FABRICATION DETAIL (TYPICAL)

NO SCALE 2



- NOTES:
- USE SITE PRO PARTS OR APPROVED EQUIVALENT.
  - SUPPORT POSTS SHALL BE LOCATED ON ALTERNATING SIDES OF ICE BRIDGE SPACED NO MORE THAN 6'-0".
  - ANY SPLICES OR CANTILEVERED SECTIONS OF THE ICE BRIDGE SHALL BE LOCATED WITHIN 2'-0" OF A SUPPORT POST.
  - CONTRACTOR SHALL PROVIDE ADEQUATE ICE BRIDGE TO COVER ALL EQUIPMENT CABINETS
  - CONCRETE SHALL BE 3000 PSI

TYPICAL ICE BRIDGE DETAILS

NO SCALE 3

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VERIZON SITE NAME: SAL SLEET

CROWN CASTLE SITE NAME: KWIK CITY MUFFLER

CROWN CASTLE BU #: 880534

SITE ADDRESS: 2449 WEST 4000 SOUTH ROY, UT 84067

SHEET DESCRIPTION: EQUIPMENT LAYOUT & DETAILS

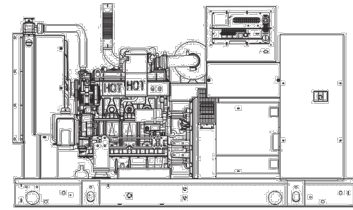
SHEET NUMBER: A-8

**DD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**TANDY POWER RATING**  
30 kW, 38 kVA, 60 Hz

**PRIME POWER RATING\***  
27 kW, 34 kVA, 60 Hz



\*Built in the USA using domestic and foreign parts  
\*\*EPA Certified Prime ratings are not available in the U.S. or its Territories.  
\*\*\*Certain options or customization may not hold certification valid.

**CODES AND STANDARDS**

Generac products are designed to the following standards:

UL2200, UL508, UL142, UL498

NFPA70, 99, 110, 37

NEC700, 701, 702, 708

ISO9001, 8528, 3046, 7637, Issues #2b, 4

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

**POWERING AHEAD**

For over 50 years, Generac has led the industry with 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's 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 chose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

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

**SD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**STANDARD FEATURES**

**ENGINE SYSTEM**

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer (enclosed only)
- Factory Filled Oil
- Radiator Duct Adapter (open set only)

**Fuel System**

- Fuel lockoff solenoid
- Primary fuel filter
- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene glycol antifreeze
- 120 VAC Coolant Heater

**Cooling System**

- UV/Ozone resistant hoses
- Factory installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene glycol antifreeze
- 120 VAC Coolant Heater

**Engine Electrical System**

- Battery charging alternator
- Battery cables
- Battery tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

**ALTERNATOR SYSTEM**

- UL2200 GEProtec™
- 12 leads (3-phase, non 600 V)
- Class H insulation material
- Vented rotor
- 2/3 pitch
- Skewed stator
- Auxiliary voltage regulator power winding
- Amortisseur winding
- Brushless Excitation
- Sealed Bearings
- Automated manufacturing (winding, insertion, loading, varnishing)
- Rotor dynamically spin balanced
- Full load capacity alternator
- Protective thermal switch

**GENERATOR SET**

- Internal Genset Vibration Isolation
- Separation of circuits - high/low voltage
- Separation of circuits - multiple breakers
- Stencor Heat Shield
- Wrapped Exhaust Piping
- Silencer housed in discharge hood (enclosed only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby rated Units)
- 1 Year Limited Warranty (Prime rated Units)
- Silencer mounted in the discharge hood (enclosed only)

**ENCLOSURE (IF SELECTED)**

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel fit off door hinges
- Stainless steel lockable handles
- Rhino Coat™ - Textured polyester powder coat

**TANKS (IF SELECTED)**

- UL 142
- Double wall
- Vents
- Sloped top
- Sloped bottom
- Factory pressure tested (2 psi)
- Rupture basin alarm
- Fuel level
- Check valve in supply and return lines
- Rhino Coat™ - Textured polyester powder coat
- Stainless hardware

**CONTROL SYSTEM**



**Control Panel**

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232C/485
- All-Phase Sensing DVR
- Full System Status
- Utility Monitoring
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)

**Power Factor**

- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- Date/Time Fault History (Event Log)
- Isosynchronous Governor Control
- Waterproof/Sealed Connectors
- 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**

- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

**Alarms**

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Low Fuel Pressure Alarm
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

**SD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**APPLICATION AND ENGINEERING DATA**

**ENGINE SPECIFICATIONS**

General	Generac	Cooling System	Closed Recovery
Male	Generac	Cooling System Type	Water Pump
EPA Emissions Compliance	Stationary Emergency	Water Pump	Pre-Lubed, Self Sealing
EPA Emissions Reference	See Emissions Data Sheet	Fan Type	Pusher
Cylinder #	4	Fan Speed (rpm)	2698
Type	In-Line	Fan Diameter mm (in)	560 (22)
Displacement - L (cu in)	2.4 (146.46)	Coolant Standard Wattage	1500
Bore - mm (in)	90 (3.54)	Coolant Heater Standard Voltage	120 VAC
Stroke - mm (in)	94 (3.70)	Fuel System	
Compression Ratio	21.3:1	Fuel Type	Ultra Low Sulfur Diesel Fuel
Intake Air Method	Turbocharged	Fuel Specifications	ASTM
Cylinder Head Type	Cast Iron	Fuel Filtration (microns)	5
Piston Type	Aluminum	Fuel Injection	Distribution Injection Pump
Engine Governing		Fuel Pump Type	Engine Driven Gear
Governor	Electronic Isochronous	Injector Type	Mechanical
Frequency Regulation (Steady State)	+/- 0.25%	Fuel Supply Line mm (in)	7.94 (0.31)
Lubrication System		Fuel Return Line mm (in)	7.94 (0.31)
Oil Pump Type	Gear	Engine Electrical System	
Oil Filter Type	Full Flow	System Voltage	12 VDC
Crankcase Capacity - L (qt)	6.2 (6.52)	Battery Charging Alternator	Std
		Battery Size	See Battery Index 01619/D05BY
		Battery Voltage	12 VDC
		Ground Polarity	Negative

**ALTERNATOR SPECIFICATIONS**

Standard Model	390	Standard Excitation	Synchronous
Poles	4	Bearings	Single Sealed Cartridge
Field Type	Revolving	Coupling	Direct, Flexible Disc
Insulation Class - Rotor	H	Load Capacity - Standby	100%
Insulation Class - Stator	H	Prototype Short Circuit Test	Yes
Total Harmonic Distortion	<5%	Voltage Regulator Type	Digital
Telephone Interference Factor (TIF)	<50	Number of Sensed Phases	All
		Regulation Accuracy (Steady State)	±0.25%

**SD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**OPERATING DATA**

**POWER RATINGS**

		Standby	
Single-Phase 120/240 VAC @0.8pf	30 kW	Amps: 125	
Three-Phase 120/240 VAC @0.8pf	30 kW	Amps: 104	
Three-Phase 277/480 VAC @0.8pf	30 kW	Amps: 90	
Three-Phase 346/600 VAC @0.8pf	30 kW	Amps: 46	

**STARTING CAPABILITIES (kVA)**

	480 VAC						208/240 VAC						
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	35	24	36	48	60	72	84	18	27	36	45	54	63
Upsize 1	40	27	41	54	68	81	95	20	31	41	51	61	71
Upsize 2	50	34	52	69	88	103	120	26	39	52	65	77	90

**FUEL CONSUMPTION RATES\***

	480 VAC			208/240 VAC		
Fuel Pump Lift - ft (m)	Percent Load	gph (lph)		gph (lph)		
3 (1)	25%	0.92 (3.5)		1.45 (5.5)		
	50%	1.45 (5.5)		2.14 (8.1)		
	75%	2.14 (8.1)		2.74 (10.4)		
	100%	2.74 (10.4)		3.43 (12.9)		
Total Fuel Pump Flow (Combustion + Return)						
4.5 gph						

**COOLING**

	Standby	
Coolant Flow per Minute	gpm (lpm)	10 (38)
Coolant System Capacity	gal (L)	2.8 (10.95)
Heat Rejection to Coolant	BTU/hr	111,000
Inlet Air	cfm (m3/hr)	4,500 (7647)
Max. Operating Radiator Air Temp	F (C)	122 (50)
Max. Ambient Temperature (before derate)	F (C)	104 (40)
Maximum Radiator Backpressure	In H <sub>2</sub> O	0.5

**COMBUSTION AIR REQUIREMENTS**

	Standby	
Flow at Rated Power	cfm (m3/min)	90 (2.55)

**ENGINE**

Rated Engine Speed	rpm	1800	Exhaust Flow (Rated Output)	cfm (m3/min)	230 (651)
Horsepower at Rated kW**	hp	48	Max. Backpressure (Post Silencer)	inHg (kPa)	1.5 (5.1)
Piston Speed	ft/min (m/min)	1110 (338)	Exhaust Temp (Rated Output)	F (C)	850 (454)
BMEP	psi	153	Exhaust Outlet Size (Open Set)	mm (in)	63.5 (2.5)

\*\* Refer to "Emissions Data Sheet" for maximum SFP for EPA and SCAGRD permitting purposes.  
Deration - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

**SD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**CONFIGURABLE OPTIONS**

**ENGINE SYSTEM**

- Oil Heater
- Industrial Exhaust Silencer

**Fuel System**

- Flexible fuel lines
- Primary fuel filter

**Engine Electrical System**

- 10A UL battery charger
- 2.5A UL battery charger
- Battery Warmer

**ALTERNATOR SYSTEM**

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical coating
- Permanent Magnet Excitation

**CIRCUIT BREAKER OPTIONS**

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

**GENERATOR SET**

- Gen-Link Communications Software (English Only)
- 8 Position Load Center
- 2 Year Extended Warranty
- 5 Year Warranty
- 5 Year Extended Warranty

**ENCLOSURE**

- Weather Protected
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Steel Enclosure
- Aluminum Enclosure
- 150 MPH Wind Kit
- 12 VDC Enclosure Lighting Kit
- 42/50°C Enclosure Lighting Kit
- Door Alarm Switch

**TANKS (Size on last page)**

- Electrical Fuel Level
- Mechanical Fuel Level
- 54 Gal (204.4 L) Usable Capacity
- 132 Gal (499.7 L) Usable Capacity
- 211 Gal (796.7 L) Usable Capacity
- 300 Gal (1135.6 L) Usable Capacity
- 8" Fill Extension
- 13" Fill Extension
- 19" Fill Extension

**CONTROL SYSTEM**

- 21-Light Remote Annunciator
- Remote Relay Panel (8 or 16)
- Oil Temperature Sender with Indication Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- Remote Communication - Modem
- Remote Communication - Ethernet
- 10A Run Relay
- Ground Fault Indication and Protection Functions

**TANKS**

- Overflow Protection Valve
- UL2085 Tank
- ULC S-601 Tank
- Stainless Steel Tank
- Special Fuel Tanks (MDEO and FL DEP/STRAK, etc.)
- Vent Extensions

**ENGINEERED OPTIONS**

- Coolant heater ball valves
- Block Heaters
- Fluid containment pans

**ALTERNATOR SYSTEM**

- 3rd Breaker Systems

**CONTROL SYSTEM**

- Spare inputs (4) / outputs (4) - H Panel Only
- Battery Disconnect Switch

**RATING DEFINITIONS**

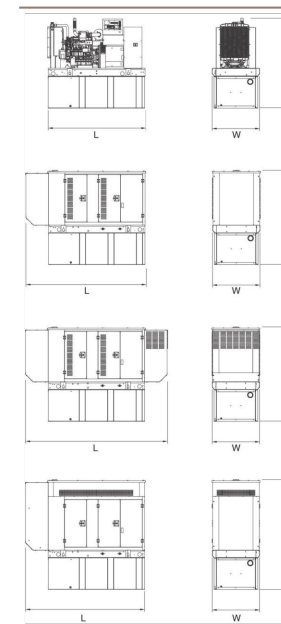
Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition

**SD030 | 2.4L | 30 kW**  
INDUSTRIAL DIESEL GENERATOR SET  
EPA Certified Stationary Emergency



**DIMENSIONS AND WEIGHTS\***



**OPEN SET**

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H (in mm)	WT lbs (kg) - Tank & Open Set
NO TANK	-	78 (1930.4) x 37.4 (949.9) x 42.2 (1072.1)	2060 (934)
19	54 (204.4)	78 (1930.4) x 37.4 (949.9) x 55.2 (1402.1)	2540 (1152)
48	132 (499.7)	78 (1930.4) x 37.4 (949.9) x 67.2 (1706.9)	2770 (1257)
77	211 (798.7)	78 (1930.4) x 37.4 (949.9) x 79.2 (2011.7)	2970 (1351)
109	300 (1135.6)	82.9 (2080) x 37.4 (949.9) x 82.7 (2105.6)	3042 (1380)

**STANDARD ENCLOSURE**

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H (in mm)	WT lbs (kg) - Enclosure Only
NO TANK	-	94.8 (2409.9) x 38 (965.2) x 49.5 (1256.1)	
19	54 (204.4)	94.8 (2409.9) x 38 (965.2) x 62.5 (1587.3)	191 (87)
48	132 (499.7)	94.8 (2409.9) x 38 (965.2) x 74.5 (1892.3)	302 (137)
77	211 (798.7)	94.8 (2409.9) x 38 (965.2) x 86.5 (2197.1)	
109	300 (1135.6)	94.8 (2409.9) x 38 (965.2) x 99 (2286)	

**LEVEL 1 ACOUSTIC ENCLOSURE**

RUN TIME HOURS	USABLE CAPACITY GAL (L)	L x W x H (in mm)	WT lbs (kg) - Enclosure Only
NO TANK	-	112.5 (2867.1) x 38 (965.2) x 49.5 (1256.1)	
19	54 (204.4)	112.5 (2867.1) x 38 (965.2) x 62.5 (1587.3)	455 (206)
48	132 (499.7)	112.5 (2867.1) x 38 (965.2) x 74.5 (1892.3)	455 (206)
77	211 (798.7)	112.5 (2867.1) x 38 (965.2) x 86.5 (2197.1)	288 (131)
109	300 (1135.6)	112.5 (2867.1) x 38 (965.2) x 99 (2286)	



**GENERAL NOTES:**

WORK SHALL BE IN ACCORDANCE WITH THE CODES OF THE NATIONAL ELECTRICAL CODE AND STATE CODES, LAWS, AND ORDINANCES.

ALL CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS INDICATED. SUPPLY UTILITY MARKING SHALL BE BELOW GRADE ALONG ENTIRE LENGTH OF CONDUITS.

ALL WIRING SHALL BE COPPER WITH THHN/THWN UNLESS INDICATED. CONTROL CONDUCTORS SHALL BE STRANDED, POWER CONDUCTORS SHALL BE SOLID FOR #10 AND STRANDED FOR ALL OTHER SIZES.

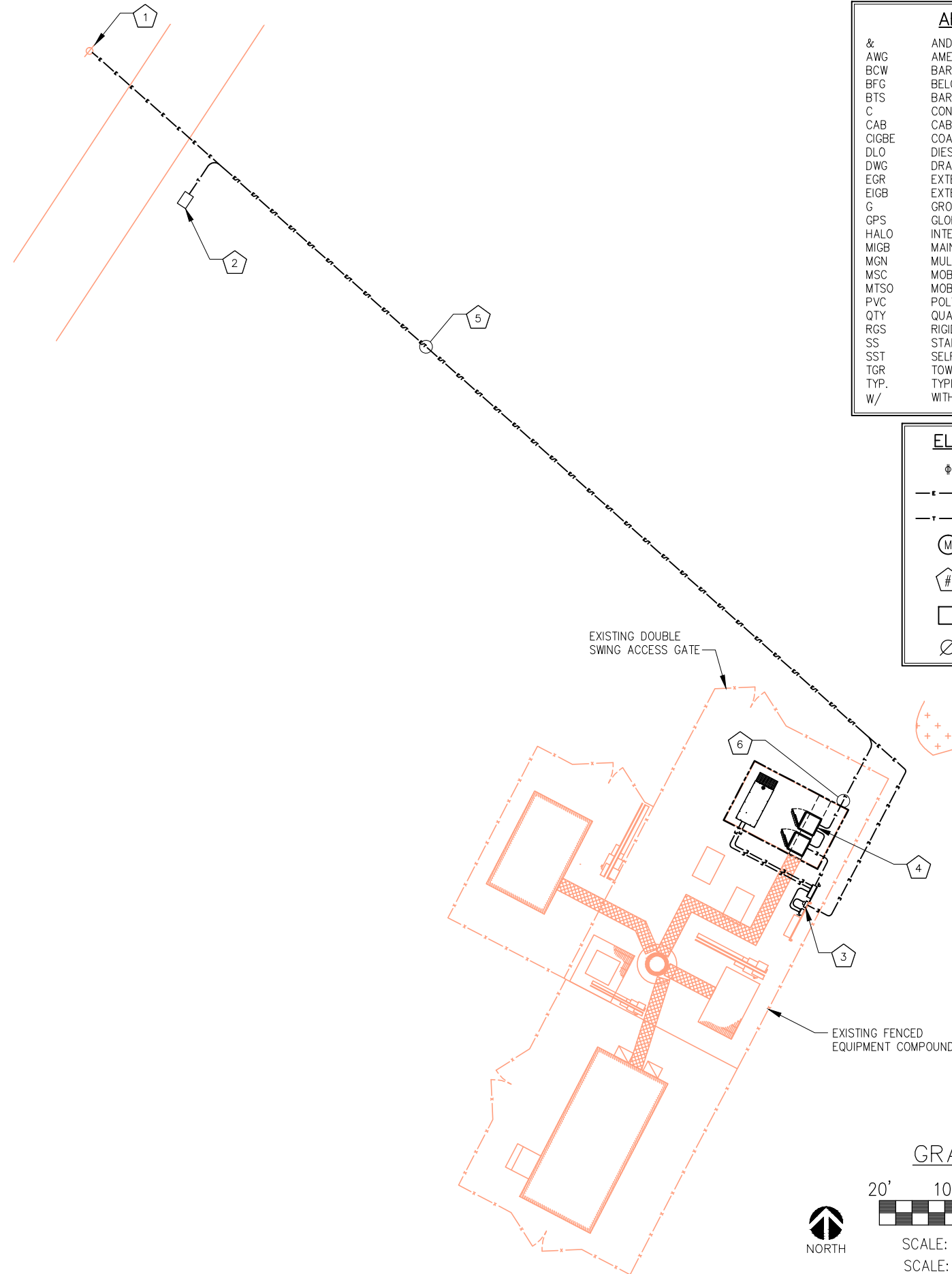
4. ELECTRICAL DRAWINGS ARE IN PART DIAGRAMMATIC. COORDINATE ELECTRICAL WORK WITH SITE CONDITIONS.
5. LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. IF CONFLICTS ARISE, CONTACT UTILITY COMPANY AND ENGINEER IMMEDIATELY.
6. ALL EXPOSED CONDUITS SHALL HAVE WEATHERPROOF CAPS, NOT DUCT TAPE.
7. PROVIDE 200 LB TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
8. PULL BOXES SHALL BE INSTALLED AS NEEDED PER NEC UTILITY REQUIREMENTS.

**CODED DRAWING NOTES:**

- ① EXISTING UTILITY POLE
- ② PROPOSED TRAFFIC-RATED FIBER VAULT (LOCATION TBD)
- ③ PROPOSED ELECTRIC METER IN EXISTING METER BANK
- ④ PROPOSED VERIZON BBU CABINET ON EXISTING 10'x16' CONCRETE PAD
- ⑤ FOR POWER - (1) 2" SCH. 40 PVC CONDUIT WITH (3) #3/0 AWG CU & (1) #4 GROUND FOR POWER FROM EXISTING UTILITY POLE TO PROPOSED ELECTRIC METER
- ⑥ FOR TELCO - (1) 4" GRC OR LIQUIDTIGHT CONDUIT FOR FIBER FROM PROPOSED FIBER VAULT (LOCATION TBD) TO PROPOSED VERIZON BBU CABINET (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)

NOTE:  
ICE BRIDGE NOT SHOWN FOR CLARITY.

NOTE:  
CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. COORDINATE LOCATION OF ALL PROPOSED DIGGING & UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

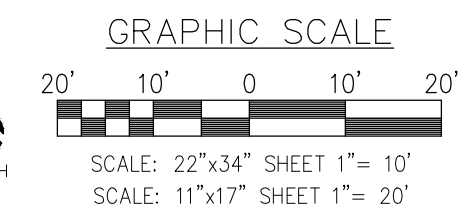


**ABBREVIATIONS:**

&	AND
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
BTS	BARE TINNED STRANDED
C	CONDUIT
CAB	CABINET
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
DLO	DIESEL LOCOMOTIVE CABLE
DWG	DRAWING
EGR	EXTERIOR GROUND RING
EIGB	EXTERIOR ISOLATED GROUND BAR
G	GROUND
GPS	GLOBAL POSITIONING SYSTEM
HALO	INTERIOR GROUND RING
MIGB	MAIN ISOLATED GROUND BAR
MGN	MULTI-GROUNDED NEUTRAL
MSC	MOBILE SWITCHING CENTER
MTSO	MOBILE TELEPHONE SWITCHING OFFICE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RGS	RIGID GALVANIZED STEEL
SS	STAINLESS STEEL
SST	SELF SUPPORT TOWER
TGR	TOWER GROUND RING
TYP.	TYPICAL
W/	WITH

**ELECTRICAL SYMBOLS:**

⊕	RECEPTACLE
—•—•—	BURIED POWER CONDUIT
—T—T—	BURIED TELCO CONDUIT
Ⓜ	ELECTRICAL METER
①	INDICATES CODED NUMBER
□	SAFETY SWITCH
⊙	UTILITY POLE



PLANS PREPARED FOR:

180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

FROM ZERO TO INFINIGY  
the solutions are endless

1490 W. 121st. Ave., Suite 101  
Westminster, CO 80234  
Office # (303) 219-1178  
Fax # (303) 242-8636  
JOB NUMBER: TBD

MLA PARTNER:

ENGINEERING LICENSE:

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	06/13/18	SF	A

VERIZON SITE NAME:  
**SAL SLEET**

CROWN CASTLE SITE NAME:  
**KWIK CITY MUFFLER**

CROWN CASTLE BU #:  
**880534**

SITE ADDRESS:  
**2449 WEST 4000 SOUTH  
ROY, UT 84067**

SHEET DESCRIPTION:  
**OVERALL CONDUIT  
LAYOUT**

SHEET NUMBER:  
**E-1**

Exhibit B  
 Page 13 of 17

**DIGGING NOTES:**

- 8 PROPOSED VERIZON BACKUP GENERATOR (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- 9 FOR POWER - (1) 2" SCH. 40 PVC CONDUIT WITH (3) #3/0 AWG CU FROM EXISTING UTILITY POLE (NOT SHOWN) TO PROPOSED VERIZON METER (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- 10 (1) 2" GRC OR LIQUIDTIGHT CONDUIT WITH (3) #3/0 AWG CU FROM PROPOSED VERIZON METER TO PROPOSED VERIZON DISCONNECT SWITCH (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- 11 (1) 2" GRC OR LIQUIDTIGHT CONDUIT WITH (3) #3/0 AWG CU & (1) #4 GROUND FROM PROPOSED VERIZON DISCONNECT SWITCH TO PROPOSED VERIZON ILC CABINET (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- 12 (1) 3/4" SCH. 40 PVC CONDUIT FOR ALARMS FROM PROPOSED VERIZON ILC CABINET TO PROPOSED VERIZON BACKUP GENERATOR (CONTRACTOR TO SUPPLY SIZE/QTY CONDUCTORS PER MANUFACTURER SPECIFICATIONS)
- 13 (1) 2" SCH. 40 PVC CONDUIT WITH (3) #3/0 AWG CU & (1) #4 GROUND FOR POWER FROM PROPOSED VERIZON ILC CABINET TO PROPOSED VERIZON BACKUP GENERATOR (CONTRACTOR TO SUPPLY SIZE/QTY CONDUCTORS PER MANUFACTURER SPECIFICATIONS)
- 14 (1) 2" GRC OR LIQUIDTIGHT CONDUIT FROM PROPOSED VERIZON ILC CABINET TO PROPOSED VERIZON POWER DISTRIBUTION CABINET (CONTRACTOR TO SUPPLY SIZE/QTY CONDUCTORS PER MANUFACTURER SPECIFICATIONS)
- 15 (1) 2" GRC OR LIQUIDTIGHT CONDUIT WITH (3) #3/0 AWG CU & (1) #4 GROUND FROM PROPOSED VERIZON POWER DISTRIBUTION CABINET TO PROPOSED VERIZON BBU CABINET
- 16 FOR TELCO - (1) 4" GRC OR LIQUIDTIGHT CONDUIT FROM PROPOSED TRAFFIC-RATED FIBER VAULT (NOT SHOWN) TO PROPOSED VERIZON BBU CABINET (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)

**GENERAL ELECTRICAL NOTES:**

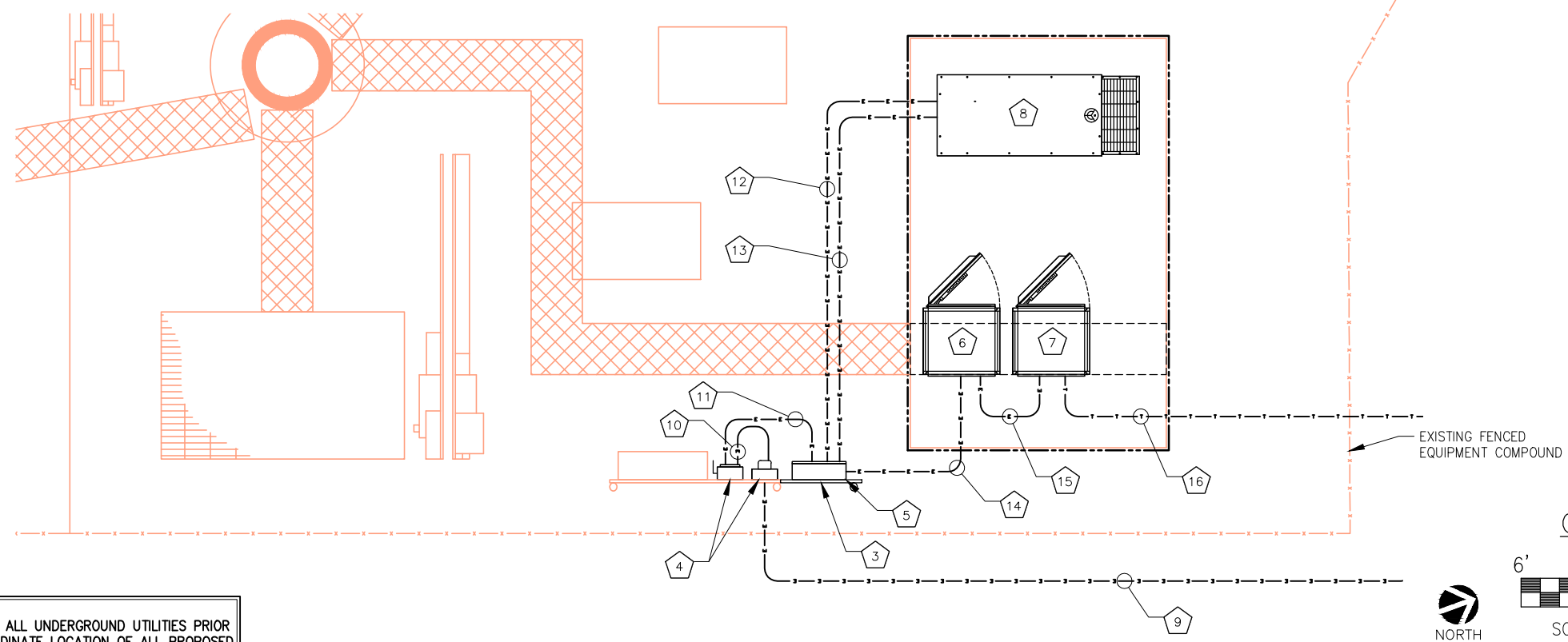
1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
2. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE INDICATED. SUPPLY UTILITY MARKING TAPE BURIED 12" BELOW GRADE ALONG ENTIRE LENGTH OF UNDERGROUND CONDUITS.
3. ALL CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. CONTROL CONDUCTORS SHALL BE STRANDED, POWER & LIGHTING CONDUCTORS SHALL BE SOLID FOR #10 & #12 CONDUCTORS AND STRANDED FOR ALL OTHER SIZES.
4. ELECTRICAL DRAWINGS ARE IN PART DIAGRAMMATIC. COORDINATE ELECTRICAL WORK WITH SITE CONDITIONS.
5. LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. IF CONFLICTS ARISE, CONTACT UTILITY COMPANY AND ENGINEER IMMEDIATELY.
6. ALL EXPOSED CONDUITS SHALL HAVE WEATHERPROOF CAPS, NOT DUCT TAPE.
7. PROVIDE 200 LB TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
8. PULL BOXES SHALL BE INSTALLED AS NEEDED PER NEC UTILITY REQUIREMENTS.

**ABBREVIATIONS:**

&	AND
AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
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**ELECTRICAL SYMBOLS:**

⊕	RECEPTACLE
—•—•—	BURIED POWER CONDUIT
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Ⓜ	ELECTRICAL METER
#	INDICATES CODED NUMBER
□	SAFETY SWITCH
⊘	UTILITY POLE



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**EQUIPMENT CONDUIT LAYOUT**

SCALE: AS NOTED 1

PLANS PREPARED FOR:

180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

FROM ZERO TO INFINIGY  
the solutions are endless

1490 W. 121st. Ave., Suite 101  
Westminster, CO 80234  
Office # (303) 219-1178  
Fax # (303) 242-8636  
JOB NUMBER: TBD

MLA PARTNER:

ENGINEERING LICENSE:

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CROWN CASTLE BU #:  
**880534**

SITE ADDRESS:  
**2449 WEST 4000 SOUTH  
ROY, UT 84067**

SHEET DESCRIPTION:  
**EQUIPMENT CONDUIT  
LAYOUT**

SHEET NUMBER:  
**E-2**

INSTALLER SHALL USE EUSERC/POWER COMPANY  
REQUIREMENTS & APPROVED BY POWER COMPANY

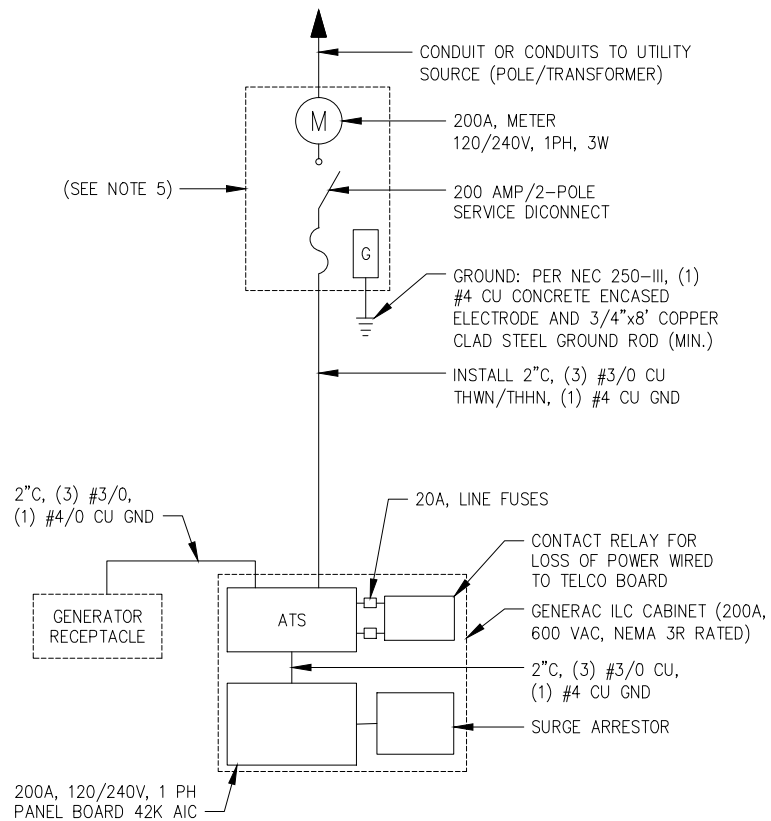
USE COPPER UNLESS OTHERWISE SPECIFIED.

COORDINATE WITH UTILITY COMPANY FOR  
MATERIALS REQUIREMENTS & CONSTRUCT TO  
SPECIFICATIONS ONLY.

FURNISH AND INSTALL CONDUITS, PULL WIRES,  
PROTECTIVE ENCASUREMENT OF CONDUITS,  
POLE RISER TRENCHING, BACK FILL,  
AND PAY ALL UTILITY FEES, & INCLUDE REQUIREMENTS IN SCOPE

(5) COMMERCIAL ELECTRICAL SERVICE COMBINATION METER AND MAIN  
DISCONNECT, 200A 120/240V, 1-PHASE, 3-WIRE, RING-TYPE, WITH  
TEST-PASS FACILITIES, 10K AIC, NEMA 3R ENCLOSURE

(6) THE DESIGN CRITERIA USED FOR THIS PROJECT WAS THE 2014 NEC



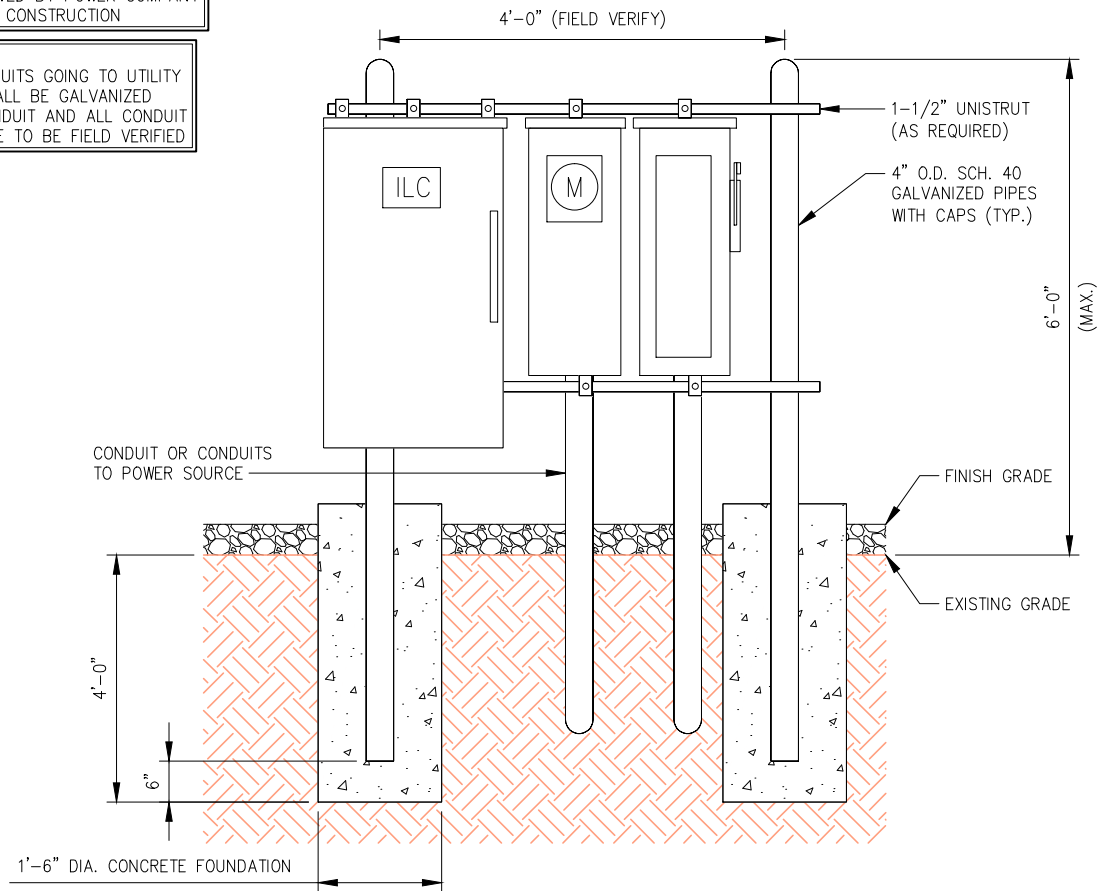
ELECTRICAL ONE LINE DIAGRAM (TYPICAL)

NO SCALE

1

NOTE:  
ALL SERVICE EQUIPMENT SHALL MEET POWER COMPANY REQUIREMENTS AND BE REVIEWED & APPROVED BY POWER COMPANY PRIOR TO CONSTRUCTION

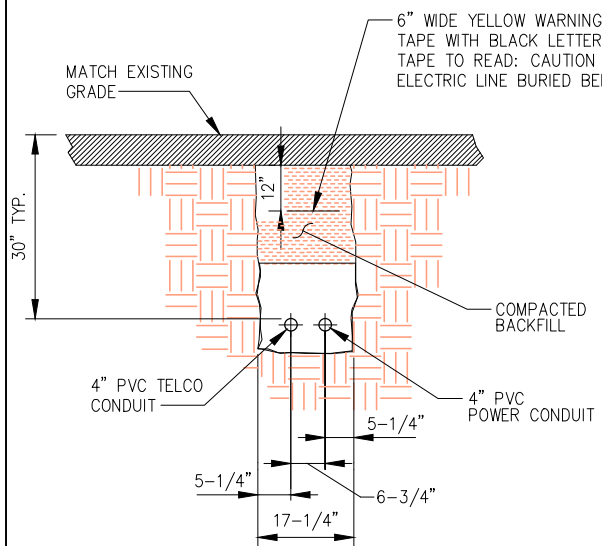
NOTE:  
ALL CONDUITS GOING TO UTILITY RACK SHALL BE GALVANIZED RIGID CONDUIT AND ALL CONDUIT SIZES ARE TO BE FIELD VERIFIED



UTILITY H-FRAME DETAIL (TYPICAL)

NO SCALE

2

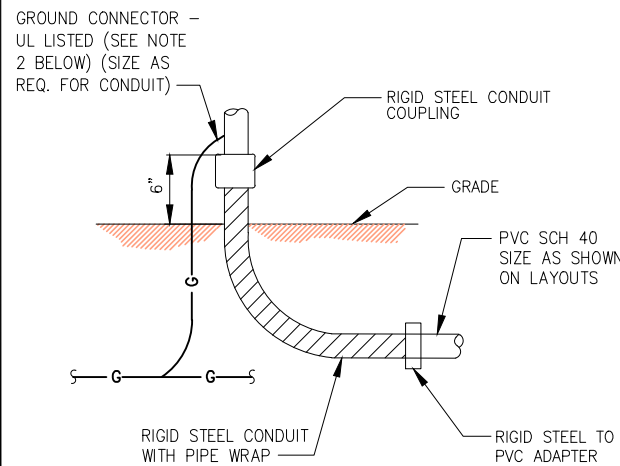


NOTE:  
NUMBER AND SIZE OF CONDUITS MAY VARY. SEE DWG E-1 FOR CONDUIT SIZE AND LOCATION. CONFIRM DIMENSIONS SHOWN WITH UTILITY COMPANY.

CONDUIT TRENCH DETAIL

NO SCALE

3



NOTES:  
1. ALL CONDUIT ABOVE GRADE MUST BE RIGID STEEL OR LIQUIDTIGHT.  
2. ALL NEW STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 G90 AFTER FABRICATION.  
3. FIELD ABRASIONS SHALL BE TOUCH UP PAINTED WITH ZINC RICH GALVANIZING REPAIR PAINT IN ACCORDANCE WITH ASTM A780.  
4. ALL EXPOSED ENDS OF CONDUITS SHALL HAVE WEATHER PROOF CAPS. DO NOT USE DUCT TAPE.  
5. PROVIDE 200LB. TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT. STUB CONDUITS INTO ENCLOSURE AND LABEL.

UNDERGROUND CONDUIT STUB-UP

NO SCALE

4

PLANS PREPARED FOR:



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BEDMINSTER, NJ 07921

PLANS PREPARED BY:



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CROWN CASTLE SITE NAME:

KWIK CITY MUFFLER

CROWN CASTLE BU #:

880534

SITE ADDRESS:

2449 WEST 4000 SOUTH  
ROY, UT 84067

SHEET DESCRIPTION:

ELECTRICAL DETAILS

SHEET NUMBER:

E-3



**GROUNDING NOTES:**

- 1. ON BURIED EQUIPMENT GROUND RING WITH #2 SOLID TINNED BCW
- 2. ON EQUIPMENT GROUND BAR NEAR EQUIPMENT (TYP. OF (2))
- 3. ON POWER DISTRIBUTION EQUIPMENT GROUND RING PER MANUFACTURER'S SPECIFICATIONS
- 4. ON BBU CABINET TO BE GROUNDED PER MANUFACTURER'S SPECIFICATIONS
- 5. ON ILC CABINET TO BE GROUNDED PER MANUFACTURER'S SPECIFICATIONS
- 6. PROPOSED H-FRAME EXTENSION TO BE GROUNDED PER MANUFACTURER'S SPECIFICATIONS
- 7. EXISTING TOWER GROUND RING
- 8. BOND PROPOSED EQUIPMENT GROUND BAR TO NEW VERIZON BURIED EQUIPMENT GROUND RING WITH #2 SOLID TINNED BCW. (TYP. OF (2) PLACES PER GROUND BAR)
- 9. BOND PROPOSED ICE BRIDGE TO NEW VERIZON BURIED EQUIPMENT GROUND RING WITH #2 SOLID TINNED BCW. (TYP.)
- 10. PROPOSED VERIZON TOWER BASE CIGBE (TYP. OF (1))
- 11. BOND PROPOSED VERIZON TOWER BASE CIGBE TO PROPOSED EQUIPMENT GROUND BAR WITH #2 SOLID TINNED BCW. (CONTRACTOR TO VERIFY)
- 12. BOND PROPOSED VERIZON TOWER TOP CIGBE (NOT SHOWN) TO PROPOSED TOWER BASE CIGBE WITH #2 SOLID TINNED BCW. (CONTRACTOR TO VERIFY)
- 13. BOND PROPOSED VERIZON BURIED EQUIPMENT GROUND RING TO EXISTING COMPOUND GROUNDING SYSTEM WITH #2 SOLID TINNED BCW. (TYP. OF (2) PLACES) (CONTRACTOR TO VERIFY)
- 14. BOND TOWER BASE CIGBE TO EXISTING TOWER GROUND RING WITH #2 SOLID TINNED BCW. (CONTRACTOR TO VERIFY)

BOND PROPOSED VERIZON PANEL ANTENNA TO PROPOSED VERIZON SECTOR CIGBE PER MANUFACTURER'S SPECIFICATIONS (TYP.)

BOND PROPOSED VERIZON RRH TO PROPOSED VERIZON SECTOR CIGBE PER MANUFACTURER'S SPECIFICATIONS (TYP.)

BOND PROPOSED VERIZON OVP TO PROPOSED VERIZON SECTOR CIGBE PER MANUFACTURER'S SPECIFICATIONS (TYP.)

BOND PROPOSED VERIZON SECTOR CIGBE TO EXISTING TOWER TOP CIGBE (TYP.) (CONTRACTOR TO VERIFY)

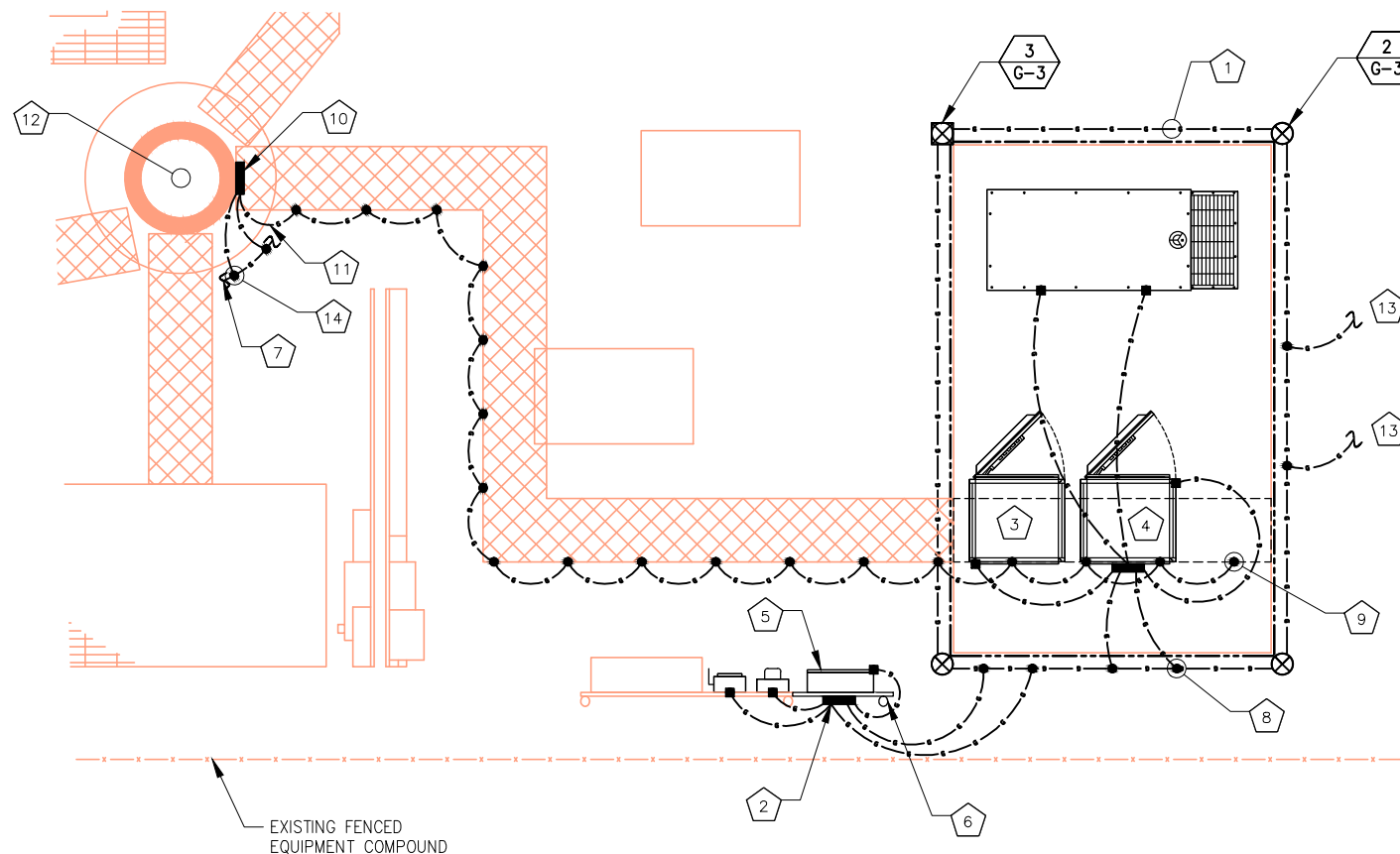
BOND PROPOSED VERIZON TOWER TOP CIGBE TO EXISTING TOWER BASE CIGBE (CONTRACTOR TO VERIFY)

TYPICAL ANTENNA GROUNDING PLAN  
(NOT TO SCALE)



**GENERAL GROUNDING NOTES:**

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
  - #2 BARE TINNED SOLID COPPER CONDUCTOR: EXOTHERMIC WELD TO RODS OR GROUND RING
  - LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT EXOTHERMIC WELD AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. CONTRACTOR TO INSTALL GROUNDING IN CLOSE PROXIMITY TO EQUIPMENT PLATFORM OR PAD.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'-0" (MAX. 15'-0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250-30.

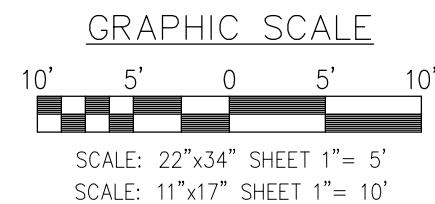


TYPICAL SITE GROUNDING PLAN

NOTE:  
CONTRACTOR TO GROUND  
EXISTING ICE BRIDGE TO  
CROWN CASTLE SPECIFICATIONS

**GROUNDING SYMBOLS:**

	GROUND ROD
	ACCESS WELL
	GROUND ROD WITH ACCESS
	COMPRESSION TYPE CONNECTION
	EXOTHERMIC WELD TYPE CONNECTION
	#2/0 BTS COPPER CONDUCTOR BURIED GROUND CABLE
	INDICATES CODED NOTE



180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921



FROM ZERO TO INFINIGY

the solutions are endless

1490 W. 121st. Ave., Suite 101  
Westminster, CO 80234  
Office # (303) 219-1178  
Fax # (303) 242-8636  
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DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	06/13/18	SF	A

SAL SLEET

KWIK CITY MUFFLER

880534

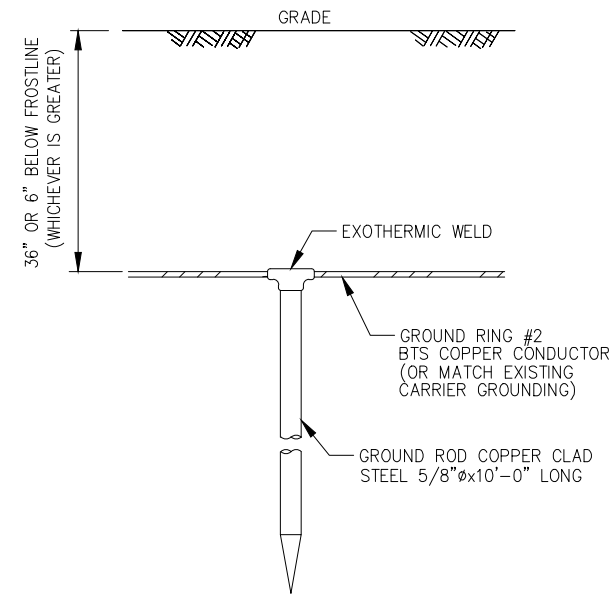
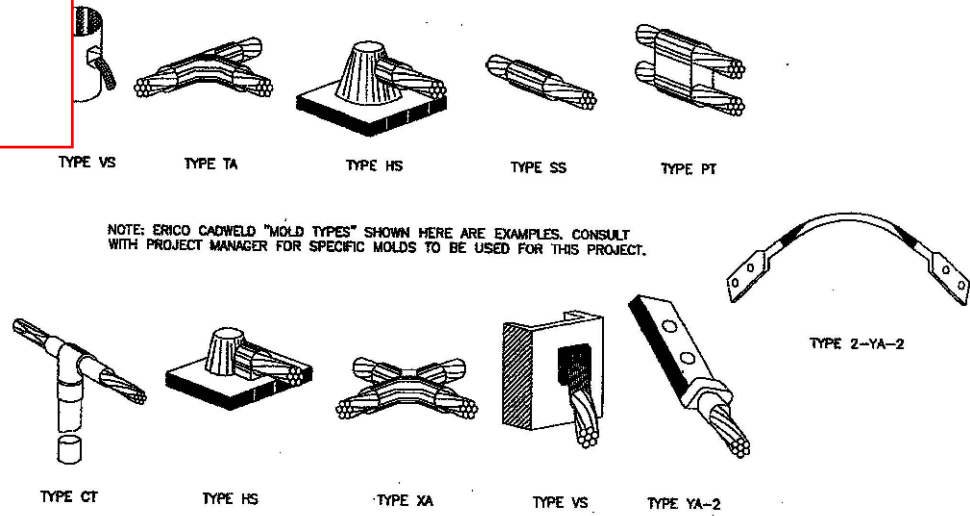
2449 WEST 4000 SOUTH  
ROY, UT 84067

GROUNDING PLANS

G-1



Exhibit B  
Page 17 of 17



TYPICAL EQUIPMENT GROUND CONNECTIONS

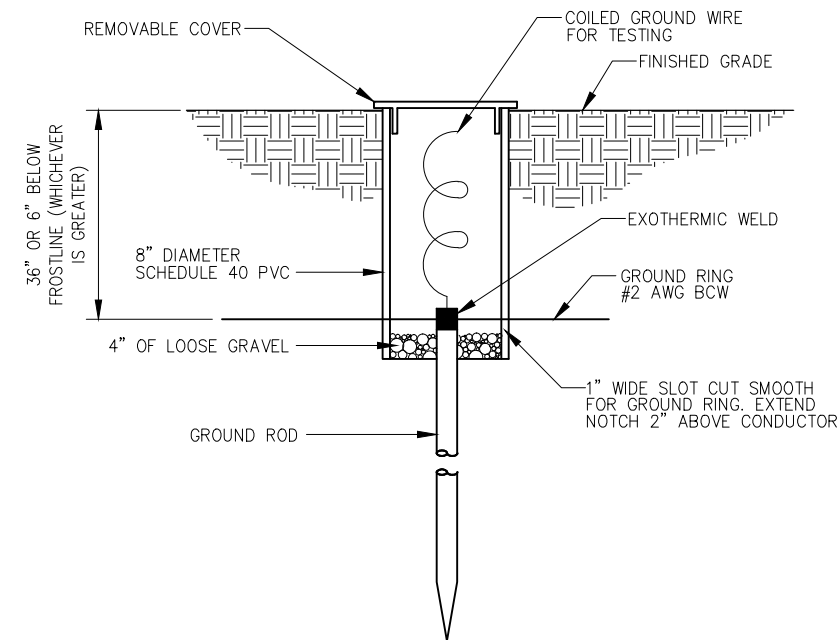
NO SCALE

1

TYPICAL GROUND ROD

NO SCALE

2



TYPICAL INSPECTION SLEEVE

NO SCALE

3

DETAIL NOT USED

NO SCALE

4

PLANS PREPARED FOR:

180 WASHINGTON VALLEY ROAD  
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	06/13/18	SF	A

VERIZON SITE NAME:

SAL SLEET

CROWN CASTLE SITE NAME:

KWIK CITY MUFFLER

CROWN CASTLE BU #:

880534

SITE ADDRESS:

2449 WEST 4000 SOUTH  
ROY, UT 84067

SHEET DESCRIPTION:

GROUNDING DETAILS

SHEET NUMBER:

G-3