

COLUMBIA RIVER GORGE COMMISSION DIRECTOR'S DECISION

CASE FILE: C19-0016

PROPOSAL: The Columbia River Gorge Commission has received an application for modifications to an existing communications facility including adding four remote radio units (RRUs), replacing four antennas with two panel antennas, replacing antenna mounts, removing four tower mounted amplifiers (TMAs) and replacing two cabinets.

APPLICANT: Amanda Nations, for T-Mobile & Crown Castle

LANDOWNER: Lee Strom

LOCATION: The subject parcel is 5.14 acres and located at 12 Crestview Lane, White Salmon, WA in the Northeast Quarter of the Northwest Quarter of Section 28, Township 3 North, Range 11 East, W.M., Klickitat County Tax Lot Number 03-11-28-5300-02/00.

LAND USE

DESIGNATION: The subject parcel is in the General Management Area and designated Small-Scale Agriculture

DECISION:

Based upon the following findings of fact, the land use application by Amanda Nations, for T-Mobile & Crown Castle, for modifications to an existing communications facility including removal of old equipment and installation of new equipment, is consistent with the standards of Section 6 and the purposes of the Columbia River Gorge National Scenic Area Act, P.L. 99-663, the Management Plan for the Columbia River Gorge National Scenic Area (Management Plan), and approvable under Commission Rule 350-81, and is hereby **APPROVED**.

CONDITIONS OF APPROVAL:

The following conditions of approval are given to ensure that the subject request is consistent with the standards of Section 6 and the purposes of P.L. 99-663, and the Management Plan and approvable under Commission Rule 350-81. Compliance with them is required. **This decision must be recorded in county deeds and records to ensure notice of the conditions to all successors in interest** (Management Plan, Review Uses Guideline 1, pg. II-96).

1. To ensure notice of the conditions to successors in interest, this Director's Decision, Staff Report for C19-0016, and an approved site plan shall be recorded in county deeds and records at the Klickitat County Auditor's Office. Once recorded, the applicants shall submit a copy of the recorded documents to the Executive Director.
2. This decision does not exempt the proposal from other non-Scenic Area rules and regulations. It is the applicant's responsibility to ensure the use complies with all other applicable federal, state, and county laws and to obtain necessary approvals, including utility easement approvals.

3. Any new land uses or structural development such as residences, garages, workshops, or other accessory structures, additions or alterations, or grading not included in the approved application or site plan will require a new application and review.
4. The development shall be constructed as shown on the approved project description, site plan and elevation drawings. Any changes shall be reviewed and approved by the Executive Director before the changes are implemented.
5. The new antennas, RRUs and all ancillary equipment shall be "Baker's Chocolate" (B71T204) by Sherwin Williams. Any changes to the final color selection and finish shall be submitted to and approved by the Gorge Commission staff prior to painting.
6. Outdoor lighting shall be directed downward and sited, hooded, and shielded such that it is not highly visible from Key Viewing Areas. Shielding and hooding materials shall be composed of non-reflective, opaque materials. Examples of acceptable and unacceptable lighting fixtures are included with this Decision.
7. If cultural resources are discovered during construction activities, all activities within 100 feet of the cultural resources shall immediately cease and the applicants shall notify the Gorge Commission within 24 hours of discovery and the State Physical Anthropologist, Dr. Guy Tasa at (360) 586-3534 or guy.tasa@dahp.wa.gov. The cultural resources shall remain as found and further disturbance is prohibited until permission is granted by the Executive Director of the Gorge Commission.
8. If human remains are discovered during construction activities, all activities shall cease immediately upon their discovery. Local law enforcement, the Executive Director and Indian Tribal governments shall be contacted immediately. Further disturbance is prohibited until permission is granted by the Executive Director of the Gorge Commission.
9. The applicant shall notify the Gorge Commission within 30 days of project completion to arrange for an inspection to confirm compliance with conditions of approval. Project completion means completion of all work on exteriors of structures (including painting).

DATED AND SIGNED THIS 5 day of December 2019 at White Salmon, Washington.



Krystyna U. Wolniakowski
Executive Director

EXPIRATION OF APPROVAL:

Commission Rule 350-81-044 governs the expiration of this Director's Decision.

This decision of the Executive Director becomes void on the 5 day of December 2021 unless construction has commenced in accordance with Commission Rule 350-81-044(4).

Commission Rule 350-81-044(4) specifies that commencement of construction means actual construction of the foundation or frame of the approved structure.

Construction must be completed within two years of the date that the applicant commenced construction. The date of the Executive Director's preconstruction inspection to confirm the location of proposed

structural development as required by this decision shall be considered the date the applicant commenced construction, unless the applicant demonstrates otherwise.

Once the applicant has commenced construction of one element in this decision, the applicant will need to complete all elements in this decision in accordance with Commission Rule 350-81-044. The Commission does not use different "commencement of construction" dates for different elements in this decision.

The applicant may request one 12-month extension of the time period to commence construction and one 12-month extension to complete construction in accordance with Commission Rule 350-81-044(6). The applicant must submit the request in writing prior to the expiration of the approval. If the applicant requests an extension of time to complete construction after commencing construction, the applicants shall specify the date construction commenced. The Executive Director may grant an extension upon determining that conditions, for which the applicants were not responsible, would prevent the applicants from commencing or completing the proposed development within the applicable time limitation. The Executive Director shall not grant an extension if the site characteristics and/or new information indicate that the proposed use may adversely affect the scenic, cultural, natural or recreation resources in the National Scenic Area.

APPEAL PROCESS:

The appeal period ends on the 4 day of January 2020.

The decision of the Executive Director is final unless the applicant or any other person who submitted comment files a Notice of Intent to Appeal and Petition with the Commission within thirty (30) days of the date of this decision. Information on the appeal process is available at the Commission office.

NOTES:

Any new land uses or structural development such as driveways, parking areas, garages, workshops, fences or other accessory structures; or additions or alterations not included in the approved application or site plan will require a new application and review. New cultivation also requires a new application and review.

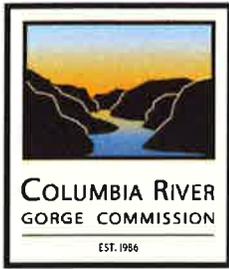
This decision does not address local, state, or federal requirements that may be applicable to the proposed development. The landowner is responsible for obtaining all applicable county, state, or federal permits required for the development.

cc:

Confederated Tribes and Bands of the Yakama Nation
Confederated Tribes of the Umatilla Indian Reservation
Christian Nauer, Confederated Tribes of Warm Springs Reservation of Oregon
Nez Perce Tribe
U.S. Forest Service National Scenic Area Office
Washington Department of Archaeology and Historic Preservation
Klickitat County Planning Department
Klickitat County Building Department
Klickitat County Public Works Department
Klickitat County Health Department
Klickitat County Assessor
Washington Natural Heritage Program
Washington Department of Fish and Wildlife
Steve McCoy, Friends of the Columbia Gorge

Attachments:

Staff Report for C19-0016
Approved site plan
Example sheet of acceptable & unacceptable light fixtures.



COLUMBIA RIVER GORGE COMMISSION STAFF REPORT

CASE FILE: C19-0016

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LAND USE

DESIGNATION: The subject parcel is in the General Management Area and designated Small-Scale Agriculture

COMMENTS FROM INDIVIDUALS/AGENCIES/GOVERNMENTS:

Notice of the subject request was mailed to property owners within 200 feet of the subject parcel and the following organizations/agencies/governments:

- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of Warm Springs Reservation of Oregon
- Nez Perce Tribe
- U.S. Forest Service National Scenic Area Office
- Washington Department of Archaeology and Historic Preservation
- Klickitat County Planning Department
- Klickitat County Building Department
- Klickitat County Public Works Department
- Klickitat County Health Department
- Klickitat County Assessor
- Skamania County
- Washington Natural Heritage Program
- Washington Department of Fish and Wildlife
- Friends of the Columbia Gorge

Written comments were received from Steve McCoy, Attorney for Friends of the Columbia River Gorge and Christian Nauer, Archeologist Confederated Tribes of the Warm Springs Reservation of Oregon.

FINDINGS OF FACT:

A. LAND USE

1. The subject parcel is in the General Management Area (GMA) and is designated Small-Scale Agriculture. The proposed project adds to an existing telecommunications facility on Burdoin Mountain, off Courtney Road, northeast of Bingen, WA. The land is not currently supporting any agricultural use. The communication facility is surrounded by a grove of Douglas fir trees and located near the southern boundary of the parcel. There is also a single-family dwelling in the south east corner of the property, separated from the communications tower by the grove of trees.
2. Amanda Nations has applied for modifications to an existing communications facility including adding four remote radio units (RRUs), replacing four antennas with two panel antennas, replacing antenna mounts, removing four tower mounted amplifiers (TMAs) and replacing two cabinets.
3. Commission Rule 350-81-182 allows uses listed in the "Expedited Review Process" (Commission Rule 350-81-050) on lands designated Small-Scale Agriculture in the GMA. Commission Rule 350-81-050(1)(r) allows:

(A) Modify existing aboveground and overhead utility facilities or, except in Agriculture-Special, develop new aboveground and overhead utility facilities including building and equipment foundations, poles, transformers, conduit, fencing, pumps, valves, pipes, and water meters,

(C) New antennas and associated support structures necessary for public service on existing wireless communication poles and towers other than those allowed outright, provided the size is the minimum necessary to provide the service.

Neither the Gorge Commission nor the Forest Service, nor Klickitat County have any record of a permit for the construction of the tower. However, in 1992, the U.S. Forest issued a National Scenic Area consistency determination that allowed a modification of the associated electronic site and the removal and replacement of the subject pole (see Forest Service Consistency Review File No. F92-0014-K-G-C24). The Commission cannot verify the date of construction of the tower or that the tower is an existing use having received all necessary approvals at the time of construction. Typically, in this situation, the Commission would have to review the entire tower for consistency with the National Scenic Area Land Use Ordinance; however, because the Forest Service issued a National Scenic Area consistency determination, the Commission will treat the tower as an existing use.

Modifications were made to the facility in Director's Decision's C16-0003 & C18-0008. This proposal replaces four antennas with two antennas of approximately the same size and at the same height, approximately 57 feet. The two new antennas proposed for the tower measure 95.9" x 25.2" x 9.3" and are comparable to the dimensions of the four antennas they replace. The RRUs proposed for the tower measure approximately 22.1" x 19.4" x 5.2" and are located between the new antennas and the tower at the same height as the antennas. The two new cabinets measure 61" x 30.3" x 30.3" and will be installed at ground level and replace equipment with similar dimensions. The applicant stated that the new equipment will support L600 technology upgrades for improved voice and data coverage and capacity, and that the proposed antennas and replacement RRUs are both the minimum and standard size to meet the objectives for this technology upgrade. The proposed development to modify an existing aboveground and overhead facility is eligible for expedited review, consistent with Commission Rule 350-81-050(1)(r)(C).

CONCLUSION:

The proposed development is an allowed expedited review use, subject to compliance with the guidelines in Commission Rule 350-81-052 that protect scenic, cultural, natural and recreation resource treaty rights.

B. SCENIC RESOURCES

1. Commission Rule 350-81-052(1)(a)(B) states:

Except signs, the colors of structures topographically visible from key viewing areas shall be dark earth-tones found at the specific site or the surrounding landscape. The specific colors or list of acceptable colors shall be included as a condition of approval. This guideline shall not apply to additions, which may match the color of existing buildings.

The development site is located off Burdoin Mountain at an approximate elevation of 2,244 feet. The tower is topographically visible in the middle ground (1 to 3 miles) and background (greater than 3 miles) from several Key Viewing Areas (KVAs) to the south, including: SR-14, the Columbia River, I-84, the Historic Columbia River Highway, Rowena and State Route 142; all of which are located at much lower elevations. The site is set back from the bluff, and as viewed from the KVAs, the crest of the bluff provides some topographic screening for the bottom of the tower and existing communications shelters.

The antenna will be mounted at 57 feet on the 65-foot tower, and because of its size and the distance from which it will be viewed, it is unlikely to be seen by the casual observer. Director's Decisions C16-0003 determined that dark earth tone will be required for the new antennas. The applicant has submitted a dark brown color sample, titled "Baker's Chocolate" (B71T204), by Sherman Williams. The site and the surrounding landscape have basalt rock ground cover and rock outcroppings. Basalt is a mottled dark brown and gray color. "Baker's Chocolate" is like these colors found at the site and in the surrounding landscape and is approved. A condition of approval will require the applicant to use this color or seek approval of a different color. As proposed by the applicant and with this condition in place, the development request is consistent with Commission Rule 350-81-052(1)(a)(B).

2. Commission Rule 350-81-052(1)(a)(C) states:

Except signs, structures topographically visible from key viewing areas shall use low or non-reflective building materials, including roofing, gutters, vents and chimneys.

A condition of approval is included in the Director's Decision to require a flat, low reflective finish consistent with Commission Rule 350-81-052(1)(a)(C).

3. Commission Rule 350-81-052(1)(a)(D) states:

Outdoor lights shall be directed downward and sited, hooded, and shielded such that they are not highly visible from key viewing areas. Shielding and hooding materials shall be composed of non-reflective, opaque materials.

One LED light on a timer is proposed at ground level. The application did not indicate whether the light fixture was compliant with this guideline. For that reason, examples of acceptable and unacceptable lighting fixtures are included with this Decision. A condition of approval is also included in the Director's Decision to ensure the outdoor lighting fixture complies with this guideline.

4. Commission Rule Commission Rule 350-81-052(1)(a)(F). states:

Structures within one-half mile of a key viewing area and topographically visible from the key viewing area shall be sited, screened and/or designed to achieve the applicable scenic standard (e.g., visual subordination, not visually evident).

The proposed development is located northeast of Bingen, Washington, more than a mile north of State Route 14. It is not located within one-half mile of any key viewing area. Commission Rule 350-81-052(1)(a)(F) is not applicable.

CONCLUSION:

The proposed development is consistent with the expedited review guidelines for scenic resources in Commission Rule 350-81-052.

B. CULTURAL RESOURCES

1. Commission Rule 350-81-052(1)(b) includes cultural resource protection provisions for uses eligible for the expedited review process. It states:

(A) The expedited development review process shall only be used to review proposed development that does not require a reconnaissance survey, pursuant to 350-81-54(1)(c)(A) or historic survey, pursuant to 350-81-540(1)(c)(B).

(B) The GMA guidelines that protect cultural resources and human remains discovered during construction [350-81-540(6) and (7)] shall be applied as conditions of approval for all development approved under the expedited development review process.

Chris Donnermeyer, Heritage Resources Program Manager for the Columbia River Gorge National Scenic Area, provided a cultural resources survey determination for the proposed development on August 6, 2019. Mr. Donnermeyer determined that the proposed development does not require a reconnaissance survey or historic survey pursuant to Commission Rules 350-81-540(1)(c)(A) and (B) because: (1) Proposed use would involve the modification, expansion, replacement, or reconstruction of existing buildings and structures; (2) does not occur within 500 feet of a known archaeological site; (3) would not alter the exterior architectural appearance of significant buildings and structures that are 50 years old or older; and (4) would not compromise features of the surrounding area that are important in defining the historic or architectural character of significant buildings or structures that are 50 years old or older.

CONCLUSION:

The proposed development is consistent with the expedited review guidelines for cultural resources in Commission Rule 350-81-052.

C. NATURAL RESOURCES

1. Commission Rule 350-81-052(1)(d) lists natural resource protection guidelines for expedited review uses. To qualify for the expedited review process, Commission Rule 350-81-052(1)(d)(A)(i) requires that new development is located outside buffer zones for wetlands, streams, rivers, ponds, and lakes, except for lot line adjustments or development located inside road, utility or railroad rights-of-way or easements that have been previously disturbed and regularly maintained.

There are no wetlands on the site. According to the Gorge Commission's resource inventories, the closest wetlands are located approximately .5 miles southwest of the project site. Pursuant to Commission Rule 350-81-560(7)(c), the maximum buffer for a wetland in the GMA is 150 feet. Intermittent streams originate 900 feet northwest from the communication site. Pursuant to Commission Rule 350-81-570(7), intermittent streams require a 50-foot buffer. The proposed development is located more than 150 feet from any wetland, and more than 50 feet from the ordinary high-water mark of any stream. The proposed development is located outside the buffer zones of wetlands, streams, rivers, ponds, or lakes. The proposed development is consistent with 350-81-052(1)(d)(A)(i).

2. Commission Rule 350-81-052(1)(d)(B) contains expedited review guidelines to protect sensitive wildlife and sensitive plants. It requires eligible development to meet one of the following circumstances:

- (I) *The development is at least 1,000 feet from known sensitive wildlife areas or sites (excluding sensitive aquatic species, deer winter range, and turkey habitat) and known sensitive plants; or*
- (II) *The development does not disturb the ground or is inside road, utility or railroad rights-of-way or easements or other areas that have been previously disturbed and regularly maintained; or*
- (III) *For sensitive wildlife, the development is within 1,000 feet of known sensitive wildlife areas or sites (excluding sensitive aquatic species, deer winter range and turkey habitat), but an appropriate federal or state wildlife agency determines (1) the sensitive wildlife area or site is not active or (2) the proposed development would not compromise the integrity of the wildlife area or site or occur during the time of the year when wildlife species are sensitive to disturbance.*

For sensitive plants, the development is within 1,000 feet of known sensitive plants, but the Oregon or Washington Natural Heritage Program or a person with recognized expertise in botany or plant ecology hired by the applicant has determined that the development would be at least 200 feet from the sensitive plants

The Gorge Commission's sensitive wildlife inventory does not show any sensitive wildlife sites within 1,000 feet of the proposed development.

Thompson's broad-leaved lupine (*Lupinus latifolius* var. *thompsonianus*) is a listed sensitive plant and has been identified within 1,000 feet of the subject property. The proposed development will occur within a fenced area that has been previously disturbed and used and regularly maintained as a telecommunications site. Staff contacted Jasa Holt, Staff Biologist, with the Washington Natural Heritage Program, on October 22, 2019 and verified the development is at least 200 feet from the last known occurrence of any sensitive plant. The proposed addition is consistent with the natural resource protection measures in Commission Rule 350-81-052(1)(d)(B).

CONCLUSION:

The proposed development is consistent with the expedited review guidelines for scenic resources in Commission Rule 350-81-052.

E. RECREATION RESOURCES

1. Commission Rule 350-81-052(1)(c)(A) requires new development approved under the expedited review process to not detract from the use and enjoyment of recreation sites on adjacent parcels.

No established recreation sites exist on adjacent properties; therefore, this rule is not applicable.

CONCLUSION:

The proposed development is consistent with the recreation resource guidelines for expedited review in Commission Rule 350-81-052.

F. TREATY RIGHTS PROTECTIONS

1. Commission Rule 350-81-052(2) requires developments reviewed using the expedited review process to comply with the following treaty rights protection guidelines.

(a) Proposed developments shall not affect or modify any treaty or other rights of any Indian tribe.

(b) The expedited development review process shall cease and the proposed developments shall be reviewed using the full development review process if an Indian tribe submits substantive written comments during the comment period that identify the treaty rights that exist in the project vicinity and explain how they would be affected or modified by the proposed development.

No comments identifying treaty rights or concerns were received from Indian tribes during the comment period, and staff is not aware of any treaty rights that would be affected by the proposed development, which is an alteration to an existing development on a previously disturbed site. Given this information, the development does not affect or modify any treaty or other rights of any Indian tribe. Given this information, the proposed addition is consistent with Commission Rule 350-81-052(2).

CONCLUSION:

The proposed development is consistent with the treaty rights protection guidelines for expedited review uses in Commission Rule 350-81-052.

BG
FIND0016_19



APPROVED

AF 12/5/19

PO02423A_WHITE SALMON_L600_CD_CCI_07-11-2018

SITE NAME: WHITE SALMON

SITE NUMBER: PO02423A

CROWN CASTLE BU #: 829066, APP #: 439434

BURDOIN MOUNTAIN

WHITE SALMON, WA 98672



1505 WESTLAKE AVENUE NORTH SUITE 900
SEATTLE, WA 98109



1187 CALLE AVANZADO
SAN CLEMENTE CA 92673 (949) 361-9424

DRAWN BY: JAC
CHECKED BY: MM

REV	DATE	DESCRIPTION	BY
2	09/13/2019	100% CO'S FOR SUBMITTAL	CP
1	09/07/2018	100% CO'S FOR REVIEW	DAM
0	03/17/2018	90% CO'S FOR REVIEW	JAC



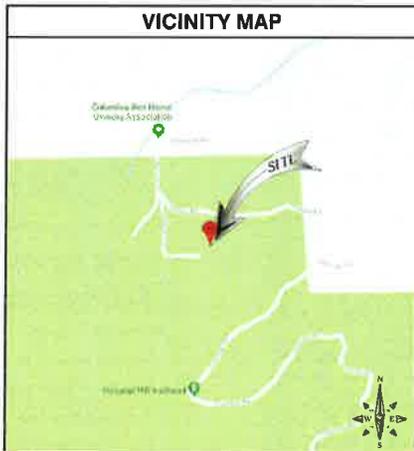
IF IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

CROWN CASTLE SITE ID: 829066
WHITE SALMON
BURDOIN MOUNTAIN
WHITE SALMON, WA 98672
MONOPOLE

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

SITE INFORMATION	
PROPERTY OWNER:	STORM LEE 9603 47TH AVE SW SEATTLE, WA 98148
TOWER OWNER:	CROWN CASTLE 5517 154TH AVE NE REDMOND, WA 98052
APPLICANT:	T-MOBILE
ADDRESS:	8960 ALDERWOOD RD PORTLAND, OR 97229
LAT/LONG TYPE:	NAD-83
LATITUDE:	45° 43' 18.980" N
LONGITUDE:	-121° 26' 18.26" W
ZONING JURISDICTION:	Klickitat County
ZONING CLASSIFICATION:	OS - OPEN SPACE
CURRENT USE:	UNMANNED TELECOMMUNICATIONS FACILITY
ASSessor'S PARCEL NO.:	031288300000
PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
TYPE OF CONSTRUCTION:	V-B
OCCUPANCY GROUP:	U-2
LEGAL DESCRIPTION:	TRACT 2 SP 79 24 IN WNW: 28-3-11



PROJECT DESCRIPTION	
T-MOBILE PROPOSES TO MODIFY AN EXISTING WIRELESS INSTALLATION. THE SCOPE WILL CONSIST OF THE FOLLOWING:	
• REMOVE	(4) EXISTING T-MOBILE PANEL ANTENNAS
• REMOVE	(4) EXISTING T-MOBILE TOWER
• REMOVE	(2) EXISTING T-MOBILE CHAIN MOUNTS
• REMOVE	(2) EXISTING T-MOBILE SECTOR FRAME MOUNTS
• REMOVE	(1) EXISTING T-MOBILE ULTRASTEEL CABINET
• REMOVE	(1) EXISTING T-MOBILE RADIO CHAIR @ EQUIPMENT LEVEL
• INSTALL	(2) NEW T-MOBILE PANEL ANTENNAS
• INSTALL	(1) NEW T-MOBILE SITE PRO UNW-AP MOUNTS
• INSTALL	(1) NEW T-MOBILE ABILIN @ ANTENNA LEVEL
• INSTALL	(2) NEW T-MOBILE HYBRID @ ANTENNA LEVEL
• INSTALL	(1) NEW T-MOBILE HYBRID LINE
• INSTALL	(2) NEW T-MOBILE COOP CABINET @ EQUIPMENT LEVEL
• INSTALL	(2) NEW T-MOBILE ASIA UNITS @ EQUIPMENT LEVEL
• INSTALL	(1) NEW T-MOBILE ASIA UNIT @ EQUIPMENT LEVEL
• INSTALL	(1) NEW T-MOBILE ASIA UNIT @ EQUIPMENT LEVEL
• INSTALL	(2) NEW T-MOBILE ASIA UNITS @ EQUIPMENT LEVEL
• INSTALL	(1) NEW T-MOBILE ASIA UNIT @ EQUIPMENT LEVEL
• INSTALL	(1) NEW T-MOBILE ASIA UNIT @ EQUIPMENT LEVEL
• INSTALL	(1) NEW T-MOBILE LED LIGHT W/ TRIMER SWITCH @ EQUIPMENT LEVEL
• NO NEW ELECTRICAL WORK OR BATTERIES ARE TO BE INSTALLED ON THIS PROJECT.	
• DESIGN PACKAGE BASED ON APP # 428434, DATED 08/10/2018, REV. 0 AND RFD'S # PO02423A_L600_2_2 DATED 06/10/2018, VERSION: 2.2	
• STRUCTURAL ANALYSES BY OTHERS	
• TOWER ANALYSES BY OTHERS	

CONSTRUCTION DRAWING	
IF USING 1"X11" PLOT, DRAWINGS WILL BE HALF SCALE	

DRAWING INDEX	
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
GM-1	GENERAL NOTES
A-1	SITE PLAN & ENLARGED SITE PLAN
A-2	EQUIPMENT LAYOUT
A-3	ANTENNA LAYOUT
A-4	ELEVATIONS
D-1	DETAILS
D-2	DETAILS
Q-1	GROUNDING DETAILS
RF-1	CABLE LINE DIAGRAM

PROJECT TEAM	
CLIENT REPRESENTATIVE: CROWN CASTLE USA, INC. 1505 WESTLAKE AVENUE NORTH SUITE 900 SEATTLE, WA 98109 CONTACT: AMANDA NATIONS PH: (206) 336-2889 EMAIL: amanda.nations@crowncastle.com	ENGINEER: M SQUARED WIRELESS 1187 CALLE AVANZADO SAN CLEMENTE, CA 92673 CONTACT: MICHAEL MONTELEO PH: (949) 397-5624
SITE ACQUISITION CROWN CASTLE USA, INC. 1505 WESTLAKE AVENUE NORTH SUITE 900 SEATTLE, WA 98109 CONTACT: AMANDA NATIONS PH: (206) 336-2889 EMAIL: amanda.nations@crowncastle.com	PROJECT MANAGER: CROWN CASTLE USA, INC. 1505 WESTLAKE AVENUE NORTH SUITE 900 SEATTLE, WA 98109 CONTACT: KAREN JACKSON PH: (425) 732-6592 EMAIL: Karen.Jackson@crowncastle.com
	CONSTRUCTION MANAGER: CROWN CASTLE USA, INC. 1505 WESTLAKE AVENUE NORTH SUITE 900 SEATTLE, WA 98109 CONTACT: DAVID WATKINS PH: (206) 784-0230 EMAIL: David.Watkins@crowncastle.com

DRIVING DIRECTIONS	
DIRECTIONS FROM PORTLAND INTERNATIONAL AIRPORT:	
1. HEAD NORTHWEST ON NE AIRPORT WAY	
2. TURN RIGHT ONTO THE DILLER CATE 225 S BARRI TO INTERSTATE 5 BARFOOT/BALESALEM	
3. TAKE EXIT 84 FOR MT HOOD HWY. TOWARD CO. 35/WHITE SALMON GOVT. CAMP	
4. TURN LEFT ONTO BUTCHER BRIDGE NEXT HOOD HWY.	
5. CONTINUE ONTO HOOD RIVER BRIDGE.	
6. TURN LEFT ONTO WA-14 SW	
7. TURN RIGHT ONTO ROCKY GRAZE RD	
8. TURN LEFT ONTO E JEWETT BLVD	
9. TURN RIGHT ONTO W MAIN AVE	
10. SLIGHT RIGHT ONTO SPOKANE RD	
11. TURN RIGHT ONTO BATES RD	
12. TURN RIGHT ONTO TUNNEL RD	
13. TURN RIGHT ONTO NARVAH LN	
14. TURN RIGHT ONTO CRESTVIEW LN	
15. TURN LEFT ONTO GRIFF ROAD	
16. FOLLOW PATH TO DESTINATION	

GENERAL NOTES	
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRINKAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS NEW.	

ENGINEERING	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES:	
• 2015 INTERNATIONAL BUILDING CODE	• 2015 FIRE CODE
• CITY/COUNTY ORDINANCES	• 2015 PLUMBING CODE
• BUILDING OFFICIALS & CODE ADMINISTRATORS (BOCA)	• 2015 ELECTRICAL CODE
• 2015 MECHANICAL CODE	• LOCAL BUILDING CODE

DO NOT SCALE DRAWINGS

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

811 WASHINGTON
Know what's below.
Call before you dig.
Call THREE Working Days Before You Dig
811 / 800-424-5555
WASHINGTON811.COM

APPROVALS			
	PRINT NAME	SIGNATURE	DATE
PROJECT MANAGER:			
T-MOBILE RF ENGINEER:			
CONSTRUCTION MANAGER:			
SITE OWNER:			
T-MOBILE DEVELOPMENT MANAGER:			
T-MOBILE CONSTRUCTION MANAGER:			
T-MOBILE OPS MANAGER:			
T-MOBILE REGULATORY REVIEW:			
T-MOBILE PROJECT MANAGER:			

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHICH ENCOUNTERED BY THE WORK SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKERS BUT NOT BE LIMITED TO: FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, D) TREKING AND EXCAVATION.
3. ALL SITE WORK COMPLY WITH OSHA-310-1068 "INSTALLATION STANDARDS FOR CONSTRUCTION EQUIPMENT ON CROWN CASTLE TOWER SITE" AND LATEST VERSION OF 116 1019 STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITS SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE SITE EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND, FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADDED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION THROUGH CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. NOTICE TO PROCEED - NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. ALL CONSTRUCTION MEANS AND METHODS, INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE PROJECT STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA 1019 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA 1019 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A53 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (34" Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" Ø ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION WEDGE ANCHOR, SHALL BE PER MANUFACTURERS RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO HEAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL. WHEN DRILLING HOLES IN CONCRETE, SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURERS MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 338, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOLES SHALL BE STRENGTHENED.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 CONCRETE CAST AGAINST EARTH: 3 IN
 CONCRETE EXPOSED TO EARTH OR WEATHER: 4 IN AND LARGER
 3 IN AND SMALLER & W/W: 1 1/2 IN
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND: 3/4 IN
 SLAB WALLS: 3/4 IN
 BEAMS AND COLLARS: 1 1/2 IN
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A S.T.M. SPECIFICATION C90, GRADE N, TYPE 1, THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F_m) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYPE "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN BRANDED (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 CARRIER - FABRIKES
 TO BE OWNED - CROWN CASTLE
 OEM - ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR AND CROWN CASTLE.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "NOTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND NOTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFICALLY NOTED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTINGS OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE FOLLOWING GROUNDING AND TIE-OUT PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COPPER CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTI-LEAD REMOVAL SHALL BE REQUIRED TO THE FURNISHER OF REMOVAL FACILITY.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS NEC AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC, ILLI EXPO AND IORS ARE REGULATED BY CROWN CASTLE.
4. ALL CIRCUITS SHALL BE SECURED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLE END OF EVERY POWER, POWER PHASE CONDUCTOR (E.E., HOUSING) AND T1 CONDUIT AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (DM BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (E.G. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL THE WIRING SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL, TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUNDING IN TUBING OR CONDUIT IS ALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 60V, OIL RESISTANT THHN OR THWN-2 CLASS 3 STRANDED COPPER CABLE RATED FOR 90° C (WEI & DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED IN DOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 60V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION CLASS 3 STRANDED CABLE RATED FOR 90° C (WEI & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (165° F) AVAILABLE.
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSIFREE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (RNC), RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND CONDUIT STRAIGHTS AND SCHEDULE 80 PVC FOR ALL EMBOSSED AND ALL APPROVED BENDS, UNDER PVC CONDUITS.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED IN DOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIREWAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSIFREE AND NEC.

21. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A WIRING COVER, DESIGNED TO SWING OPEN DOWNWARDS. SHALL BE FANDED, TYPE 3 (OR EQUAL), AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRIPS AND HANGERS. EXPOSURE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE. MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BOGIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING SURF. ALL CONDUIT SHALL BE FINISHED TO LEAF FLUSH TO FINISH GRADE TO PREVENT CONCRETE PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIBBED CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSH ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKWAD ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL SHALL MEET OR EXCEED UL 30 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING. SHALL MEET OR EXCEED UL 54A AND NEMA OS 1 (OR RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2- AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "FANDED".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METEDED SCALE TAPE PULL CORN INSTALLED.

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS INCLUDING TELECOMMUNICATION, RADIO LIGHTNING PROTECTION AND AC POWER (EESH) SHALL BE BUNDLED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE SUBCONTRACTOR SHALL PERFORM EEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 811) OR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE ENEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND LABELED WITH THE POWER CIRCUIT TO ITS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES. 6 AWG STRANDED COPPER OR LARGER FOR INDOOR USE; #2 AWG SOLID THINNE COPPER FOR OUTDOOR USE.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE BOULED UP OR STACKED TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID THINNE COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (ON INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONNECTIONS SHALL BE EXOTHERMIC BONDING OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTI-OXIDANT COMINGS (E.G. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 18 FT. OF MAIN GROUND WIRES WITH #4 AWG THIN PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTION, SUCH AS METALLIC CONDUIT, METAL SUPPORT CLIPS OR BRACKETS THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS. NONMETALLIC USE OF METAL CONDUIT IS UNALLOWABLE. E.G. NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODES. THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 THINNE SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK, (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
(E)	EXISTING
MIN	MINIMUM
W/W	TYPICAL
AWG	AMERICAN WIRE GAUGE
ULM	UL LISTED
RWS	RADIO BASE STATION
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING



DRAWN BY: JAC
CHECKED BY: MA

REV	DATE	DESCRIPTION	BY
2	06/18/2018	100% CDS FOR SUBMITTAL	CP
1	06/07/2018	100% CDS FOR REVIEW	DAM
0	07/11/2018	90% CDS FOR REVIEW	JAC

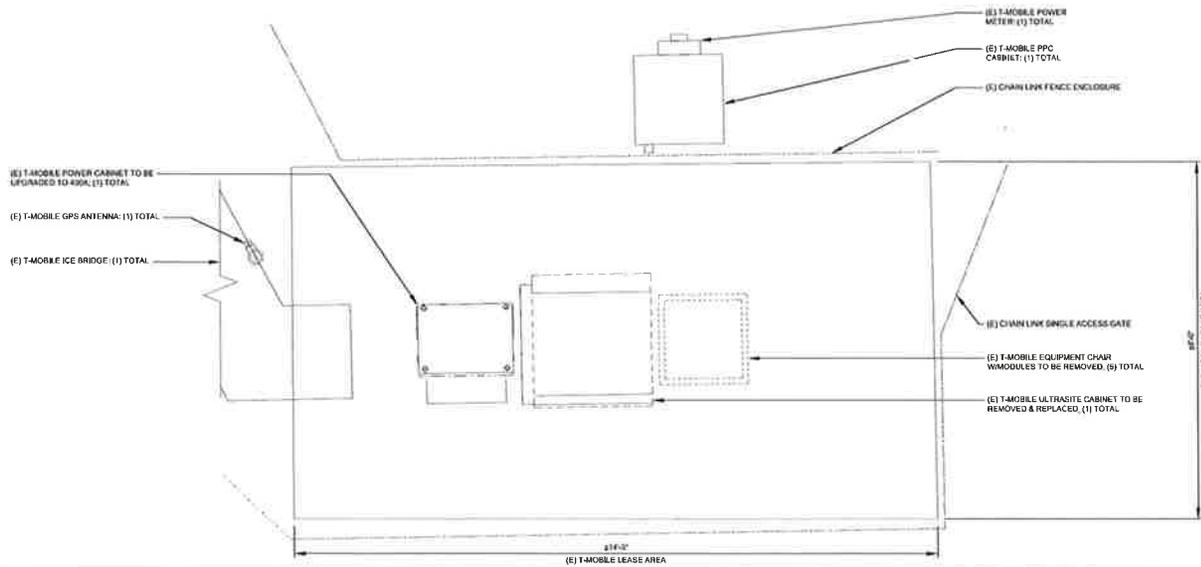


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS NOT AN ACTIVE LICENSEE UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

CROWN CASTLE SITE ID: 829066
WHITE SALMON
BURDON MOUNTAIN
WHITE SALMON, WA 98572
MONOPOLE

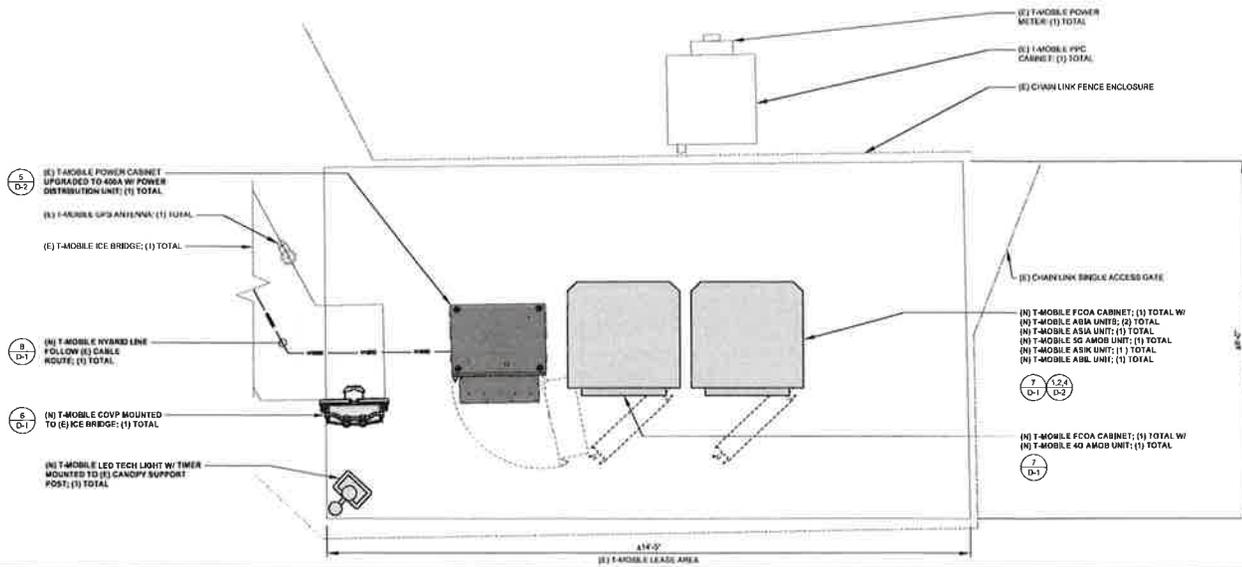
31CCT TITLE
GENERAL NOTES

SHEET NUMBER
GN-1



EXISTING EQUIPMENT LAYOUT

24"x36" SCALE: 3/4" = 1'-0"
 11"x17" SCALE: 3/8" = 1'-0"



NEW EQUIPMENT LAYOUT

24"x36" SCALE: 3/4" = 1'-0"
 11"x17" SCALE: 3/8" = 1'-0"



DRAWN BY: JAC
 CHECKED BY: MM

REV	DATE	DESCRIPTION	BY
2	06/13/2018	100% CDS FOR SUBMITTAL	CP
1	08/07/2018	100% CDS FOR REVIEW	BAMA
2	09/11/2018	90% CDS FOR REVIEW	JAC



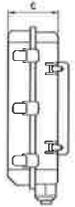
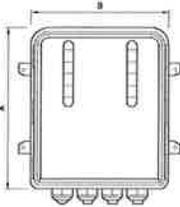
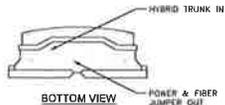
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

CROWN CASTLE SITE ID: 829066
 WHITE SALMON
 BURDOIN MOUNTAIN
 WHITE SALMON, WA 98672
 MONOPOLE

SHEET TITLE
EQUIPMENT LAYOUT

SHEET NUMBER
A-2

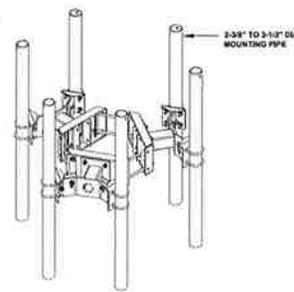
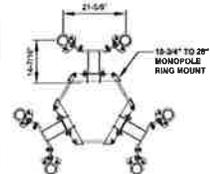
MANUFACTURER:	RAYCAP
MODEL NO.:	RNSNDC-7771-PF-48
DIMENSIONS:	TOTAL WEIGHT:
A 20.38"	
B 18.86"	±19 LBS
C 3.83"	



FRONT VIEW

SIDE VIEW

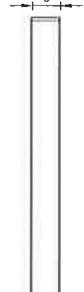
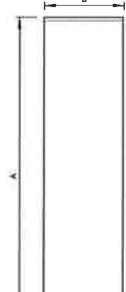
SITE PING
ANTENNA MOUNT MONOPOLE
(16-1/2" STANDOFF)



PLAN VIEW

ISO VIEW

MANUFACTURER:	COMMSCOPE	
MODEL NO.:	FFHH-65C-R3	
DIMENSIONS:	CONNECTOR TYPE:	TOTAL HEIGHT
A 85.9"	(8), 4, 3-10 FEMALE	
B 25.2"	CONNECTOR LOCATION	27.6 LBS
C 9.3"	BOTTOM	



TOP VIEW

FRONT VIEW

SIDE VIEW

RAYCAP COVP RNSNDC-7771-PF-48

24"x36" SCALE: NTS
11"x17" SCALE: NTS

6

STANDOFF BRACKET RING MOUNT

24"x36" SCALE: NTS
11"x17" SCALE: NTS

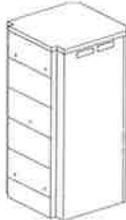
3

COMMSCOPE FFHH-65C-R3

24"x36" SCALE: NTS
11"x17" SCALE: NTS

1

FCOA CABINET	
HEIGHT (H)	81.0"
WIDTH (W)	30.3"
DEPTH (D)	30.3"
WEIGHT	134.0 LBS

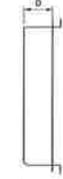
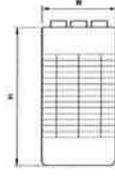


ORTHO VIEW

FRONT VIEW

SIDE VIEW

AIA DA RADIO MODULE	
HEIGHT (H)	22.1"
WIDTH (W)	13.2"
DEPTH (D)	7.5"
WEIGHT	83.9 LBS



FRONT VIEW

SIDE VIEW



TOP VIEW

FCOA CABINET

24"x36" SCALE: NTS
11"x17" SCALE: NTS

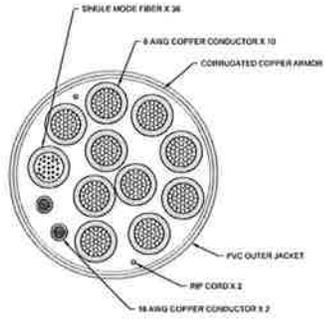
7

AHLOA

24"x36" SCALE: NTS
11"x17" SCALE: NTS

4

MANUFACTURER:	NOKIA
MODEL NO.:	AS493277Y01
OUTER DIAMETER (NOMINAL):	1.584"
OPERATING VOLTAGE:	800 V DC
RESISTANCE:	8.7 OHM
NOMINAL CABLE WEIGHT:	1.814 LBS/FT
MIN BENDING RADIUS:	19"IN

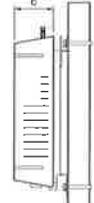


CROSS SECTION

MANUFACTURER:	NOKIA
MODEL NO.:	FLEXI RRII 478BY X (800) 18061710A
DIMENSIONS:	TOTAL WEIGHT:
A 22.1"	
B 18.4"	±55.1 LBS
C 5.2"	



FRONT VIEW



SIDE VIEW

ARMORED TRUNK HYBRID CABLE

24"x36" SCALE: NTS
11"x17" SCALE: NTS

8

NOKIA FXFC

24"x36" SCALE: NTS
11"x17" SCALE: NTS

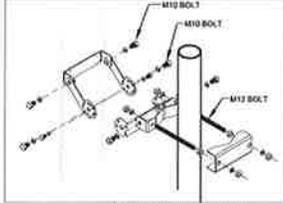
5

ANTENNA MOUNTING DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS

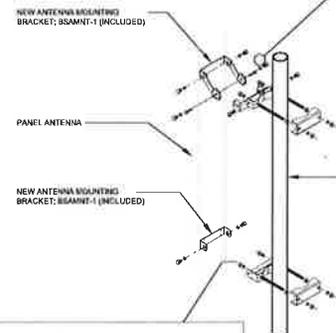
2

MAXIMUM TORQUE	
M10	124 IN (117 F.LBS)
M12	214 IN (217 F.LBS)
M12	206 IN (197 F.LBS)

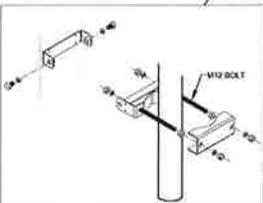


CRITICAL: FOR METAL INSTALLATION TO PIPE, DOWNTILT BRACKETS MUST BE CONFIGURED IN THE ASSEMBLY POSITION (FULLY COLLAPSED).

ATTENTION: INSERT M12 BOLTS AND M12 FLAT WASHERS INTO BRACKET WITH TABS PRIOR TO ATTACHING BRACKET TO ANTENNA.



3" STD. PIPE (3-1/2" O.D.) ANTENNA MOUNTING MAST, MIN 8'-0" L. (ATTACH TO EXISTING CROSSARM W/ SITE PING 1 PN SC4 CROSSOVER KIT)



MAXIMUM TORQUE	
M10	214 IN (217 F.LBS)
M12	206 IN (197 F.LBS)

T-Mobile
12920 SE 38TH ST
BELLEVUE, WA 98006

CROWN CASTLE
1555 WESTLAKE AVENUE NORTH, SUITE 800
SEATTLE, WA 98108

M SQUARE WIRELESS
1387 CALLE AVANZADO
SAN CLEMENTE CA 92673 (949) 361-0824

DRAWN BY: JAC
CHECKED BY: MM

REV	DATE	DESCRIPTION	BY
2	05/13/21	100% CDS FOR SUBMITTAL	CP
1	06/07/21	100% CDS FOR REVIEW	DAM
0	03/11/21	90% CDS FOR REVIEW	JAC

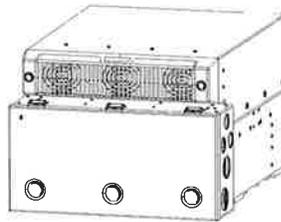
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

CROWN CASTLE SITE ID: 829066
WHITE SALMON
BURDOIN MOUNTAIN
WHITE SALMON, WA 98672
MONOPOLE

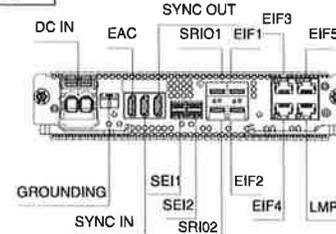
SHEET TITLE
DETAILS

SHEET NUMBER
D-1

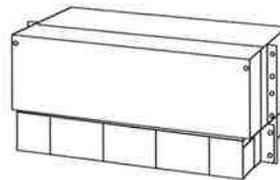
NOKIA AMOB	
HEIGHT (H)	13.2"
WIDTH (W)	17.0"
DEPTH (D)	22.0"
WEIGHT	60.7 lbs.



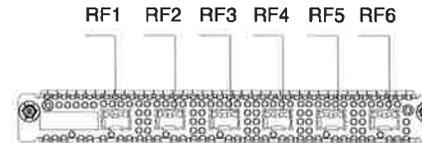
NOKIA ABIA	
HEIGHT (H)	1.7"
WIDTH (W)	14.2"
DEPTH (D)	0.5"
WEIGHT	4.8 lbs.



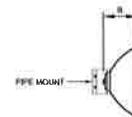
ALPHA E3 DCPP SPECIFICATIONS	
-48V	
400A	
5 RUL 23" RACK	
60.0 LBS	



NOKIA ASIA	
HEIGHT (H)	1.7"
WIDTH (W)	14.2"
DEPTH (D)	0.5"
WEIGHT	8.8 lbs.



MANUFACTURER:	RF3
MODEL NO.:	SM220MPT
DIMENSIONS:	TOTAL WEIGHT:
A: 17"	8.8 LBS
B: 8.2"	
C: -	



T-Mobile

12920 SE 30TH ST
BELLEVUE, WA 98006

CROWN CASTLE

1505 WESTLAKE AVENUE NORTH SUITE 800
SEATTLE, WA 98109

M SQUARE WIRELESS

1387 CALLE AVANZADO
SAN CLEMENTE, CA 92673 (949) 291-8834

DRAWN BY: JAC

CHECKED BY: MM

REV	DATE	DESCRIPTION	BY
2	05/12/2018	100% CDS FOR SUBMITTAL	CP
1	04/07/2018	100% CDS FOR REVIEW	DAM
0	02/11/2018	80% CDS FOR REVIEW	JAC



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CROWN CASTLE SITE ID: 829066
WHITE SALMON
BURDOIN MOUNTAIN
WHITE SALMON, WA 98672
MONOPOLE

SHEET TITLE
DETAILS

SHEET NUMBER
D-2

NOT USED

24"x36" SCALE: NTS
11"x17" SCALE: NTS

7

AMOB DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS

4

ABIA DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS

1

NOT USED

24"x36" SCALE: NTS
11"x17" SCALE: NTS

8

SFX31-3031 ALPHA E3 DCPP UPGRADE

24"x36" SCALE: NTS
11"x17" SCALE: NTS

5

ASIA DETAIL

24"x36" SCALE: NTS
11"x17" SCALE: NTS

2

NOT USED

24"x36" SCALE: NTS
11"x17" SCALE: NTS

9

NOT USED

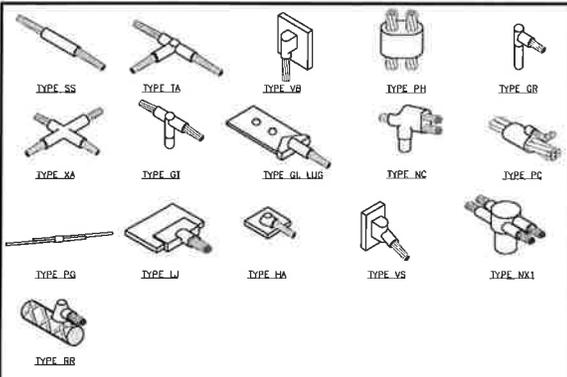
24"x36" SCALE: NTS
11"x17" SCALE: NTS

6

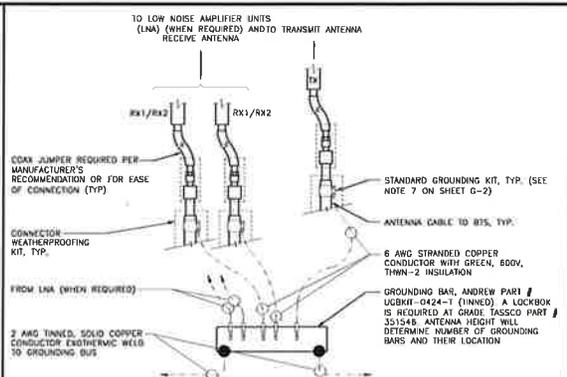
2' MICROWAVE ANTENNA

24"x36" SCALE: NTS
11"x17" SCALE: NTS

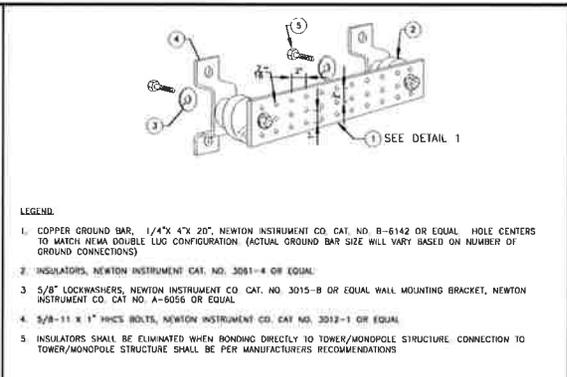
3



TYPICAL CADWELD TYPES 24"x36" SCALE: NTS 11"x17" SCALE: NTS 7



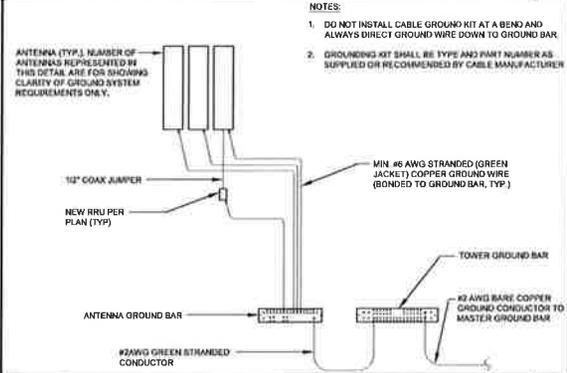
GROUNDING BAR CONNECTION 24"x36" SCALE: NTS 11"x17" SCALE: NTS 4



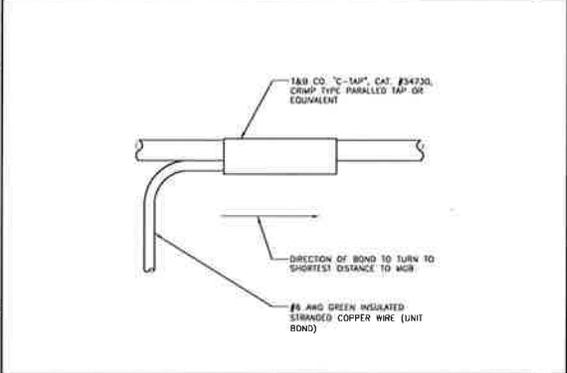
GROUNDING BAR DETAIL 24"x36" SCALE: NTS 11"x17" SCALE: NTS 1



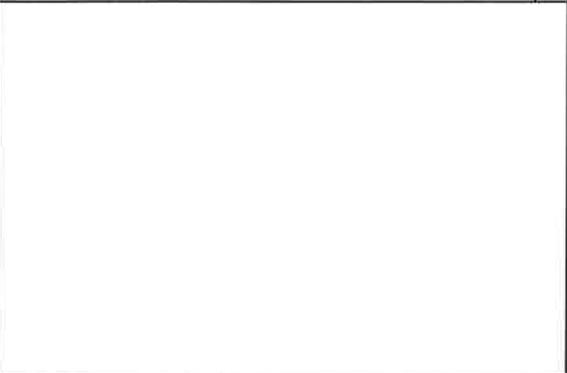
NOT USED 24"x36" SCALE: NTS 11"x17" SCALE: NTS 8



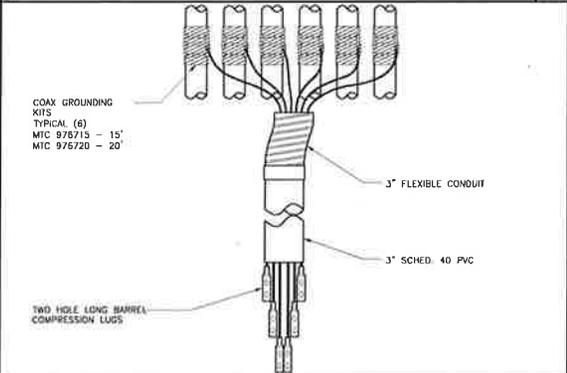
ANTENNA GROUNDING PLAN 24"x36" SCALE: NTS 11"x17" SCALE: NTS 5



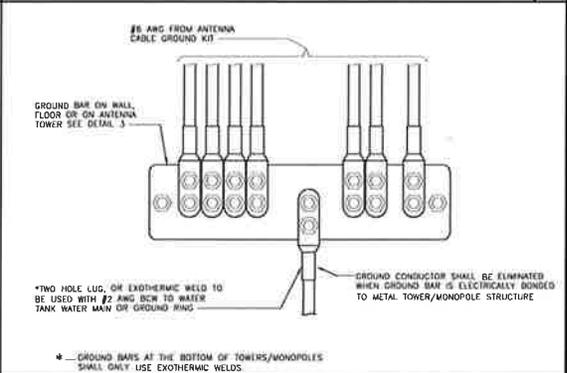
GROUNDING WIRE CONNECTION 24"x36" SCALE: NTS 11"x17" SCALE: NTS 2



NOT USED 24"x36" SCALE: NTS 11"x17" SCALE: NTS 9



COAX GROUND KIT 24"x36" SCALE: NTS 11"x17" SCALE: NTS 6



WIRE TO GROUND BAR CONNECTION 24"x36" SCALE: NTS 11"x17" SCALE: NTS 3

T-Mobile
12920 RE 20TH ST
BELLEVUE, WA 98006

CROWN CASTLE
1505 WESTLAKE AVENUE NORTH SUITE 900
SEATTLE, WA 98108

M SQUARED WIRELESS
1387 CALLE AVANEA 300
SAN CLEMENTE CA 92673 (949) 321-0824

DRAWN BY: JAC
CHECKED BY: MM

REV	DATE	DESCRIPTION	BY
1	05/13/2019	100% CDS FOR SUBMITTAL	JAC
2	05/27/2019	100% CDS FOR REVIEW	MM
3	05/14/2018	90% CDS FOR REVIEW	JAC

LOUIS A. WILSON
PROFESSIONAL ENGINEER

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CROWN CASTLE SITE ID: B28066
WHITE SALMON
BURDWIN MOUNTAIN
WHITE SALMON, WA 98672
MONOPOLE

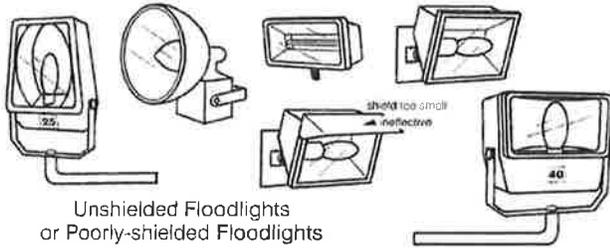
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-1

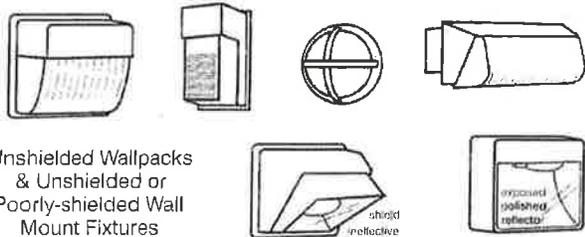
Examples of Acceptable / Unacceptable Lighting Fixtures

Unacceptable / Discouraged

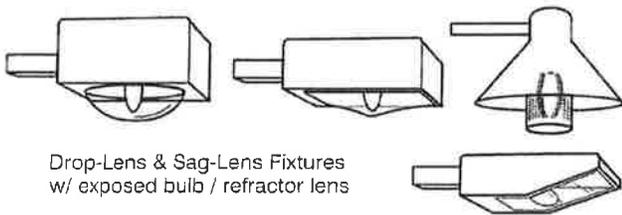
Fixtures that produce glare and light trespass



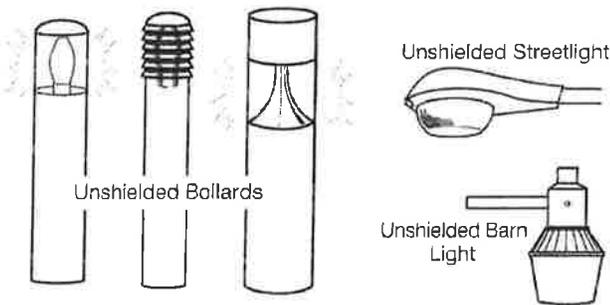
Unshielded Floodlights or Poorly-shielded Floodlights



Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures



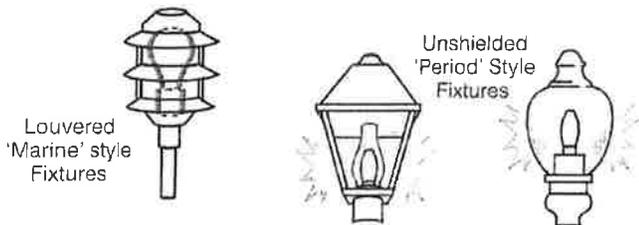
Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens



Unshielded Bollards

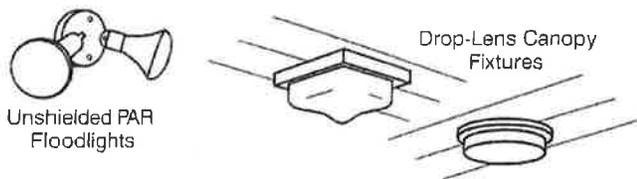
Unshielded Streetlight

Unshielded Barn Light



Louvered 'Marine' style Fixtures

Unshielded 'Period' Style Fixtures

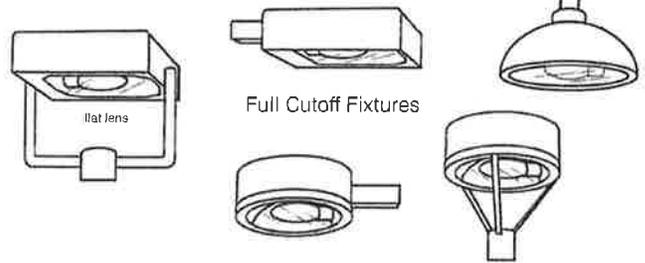


Unshielded PAR Floodlights

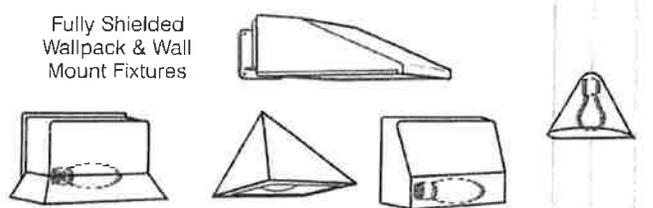
Drop-Lens Canopy Fixtures

Acceptable

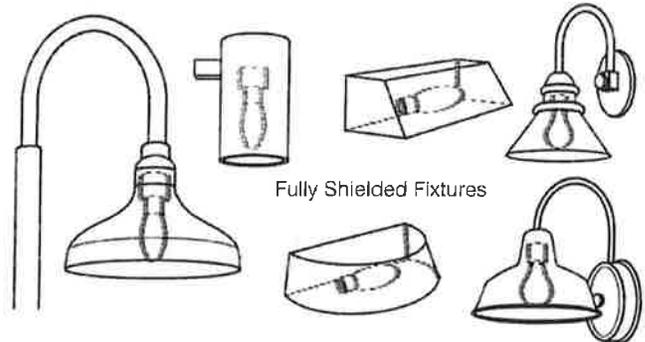
Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



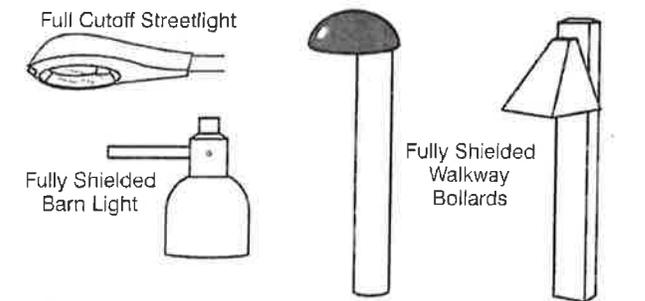
Full Cutoff Fixtures



Fully Shielded Wallpack & Wall Mount Fixtures



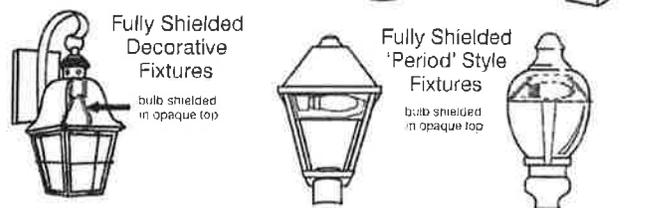
Fully Shielded Fixtures



Full Cutoff Streetlight

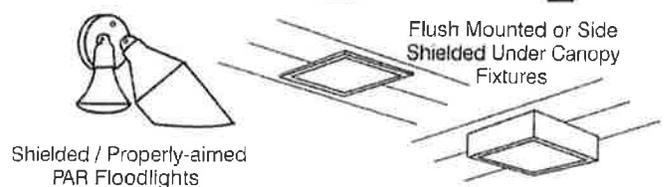
Fully Shielded Barn Light

Fully Shielded Walkway Bollards



Fully Shielded Decorative Fixtures

Fully Shielded 'Period' Style Fixtures



Shielded / Properly-aimed PAR Floodlights

Flush Mounted or Side Shielded Under Canopy Fixtures

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