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STAFF REPORT

Date: September 7, 2023

To: TRPA Hearings Officer

From: Bridget K. Cornell, Associate Planner

Subject: Four Seasons Estates (Granlibakken) / AT&T Telecommunications Facility
725 Granlibakken Road, Tahoe City, Placer County, California
Assessor's Parcel Numbers (APNs): 095-510-049, 095-510-002 & 095-510-003
TRPA File No.: ERSP2021-1636

Proposed Action:

Hearings Officer action on the proposed project and related findings based on this staff summary and the draft permit (Attachment A).

Staff Recommendation:

Staff recommends the Hearings Officer make the required findings and approve the project subject to the special conditions in the draft permit.

Project Description:

The proposed project involves the construction of a new telecommunications facility on the Four Seasons Estates (aka Granlibakken Tahoe) property. The proposed improvements include the construction of four cellular panel-antennas mounted on the roof of two existing structures on the Granlibakken Tahoe resort property. The antennas will be mounted on the structures known as the "Deerwander building," the "Bearpaw Building." Three antennas will be installed on the Deerwander Building, and one antenna will be installed on the Bearpaw Building. The Main Lodge building will house the associated equipment. No exterior changes are proposed for the Main Lodge building. No increase in the overall building height is proposed. Associated equipment will be housed within an existing utility/IT room.

The three parcels affected by this project have been issued Best Management Practices Certificates (095-510-049: Certificate #9354, November 30, 2007; 095-510-002: Certificate #9308, November 30, 2007; and 095-510-03: Certificate #9309, November 30, 2007). BMPs will be adjusted as necessary to accommodate the project, and maintenance of existing BMPs will be required.

Cellular signal maps indicate the proposed antennas will allow cellular providers to fill in cellular phone coverage gaps in the area.

Site Description:

The antennas are proposed on the rooftops of existing structures within the Granlibakken Tahoe resort. The structures affected by this project are the "Deerwander Building," the "Bearpaw Building" and the "Main Lodge" building. No changes to height for any of the structures are proposed with this project. Land capability had not been verified for this property. All proposed changes are on the rooftop, and within the existing structures. No changes to land coverage are proposed.

The Granlibakken Tahoe resort is 74-acre property, comprised of a mix of tourist accommodation, recreation, and commercial facilities. The resort area is surrounded to the north, west and south by conservation areas, and to the east by residential development. The nearest residential development is approximately 800 feet from the closest proposed antenna.

Issues:

The proposed project involves a special use determination and therefore requires Hearings Officer review in accordance with Chapter 2, Subsection 2.2.2.a of the TRPA Code. All other issues are discussed in the following staff analysis:

Staff Analysis:

- A. Environmental Documentation: TRPA staff completed the Initial Environmental Checklist (IEC) and “Project Review Conformance Checklist and Article V(g) Findings” in accordance with Chapter 4, Subsection 4.3 of the TRPA Code of Ordinances. All responses contained on said checklists indicate compliance with the environmental threshold carrying capacities and TRPA staff recommends the Hearings Officer make a Finding of No Significant Effect. A copy of the completed checklists will be made available at the Hearings Officer hearing and at TRPA.
- B. Plan Area: The project is located within the Placer County Tahoe Basin Area Plan, Granlibakken Subdistrict, where transmission and receiving facilities require a “Conditional Use Permit (CUP), which is processed as a Special Use by the Tahoe Regional Planning Agency.
- C. Land Coverage: The project will not result in any changes to land coverage. The affected parcels have combined 21,114 square feet of excess land coverage, which will be mitigated pursuant to the Excess Land Coverage Mitigation Program (TRPA Code of Ordinances Section 30.6).
- D. Height: The proposed antennas will be installed along the side of the roof and will only extend above the roof ridge by a few inches. The additional height has been evaluated as a “structure other than building,” and can be permitted pursuant to Section 37.6.2 of the TRPA Code of Ordinances, subject to the Chapter 37 height findings below. The antennas will not make the existing structure more nonconforming.
- E. Location: The proposed antennas are intended to provide additional service coverage to the Granlibakken Tahoe Resort area. The geographic characteristics of the development isolate it from better coverage in the surrounding area. Unlike a large scale, macro project, where a single facility needs to cover a large area, the goal for a small wireless facility is extremely localized. The goal for this project is to cover Granlibakken Tahoe Resort. All buildings within the resort were investigated by an AT&T RF engineer. The proposed configuration is the best way to cover the resort given the large number of trees, the terrain, and the low height of other buildings on the property. The only other feasible alternative that would serve a similar purpose would be a much larger, more visible freestanding facility, which would create more ground disturbance. The proposed facility at the proposed location is the least intrusive means of filling the existing coverage gap.
- F. Scenic Quality: The proposed project is visible from within the Granlibakken Tahoe Resort (“Granlibakken,” Recreation Area #17). The proposed antennas will be installed along the side of the existing roofs and will be painted to match the structures’ existing earthtone colors. The scale, placement, design and colors will ensure the antennas are not visually obtrusive and blend with the surrounding environment to the greatest extent feasible. As a result, the facility will not result in an adverse impact to the applicable scenic quality threshold.

- G. Radio Frequency Emissions: Congress gave the Federal Communications Commission (“FCC”) “comprehensive powers” over radio communications, and the FCC has exercised “federal primacy” over the technical aspects of such communications. *See Cohen v. Apple, Inc.*, 497 F.Supp.3d 769, 774 and 781 (N.D. Cal. 2020). Congress determined that “it is in the national interest that uniform, consistent requirements, with adequate safeguards of the public health and safety” be established, and it tasked the FCC with adopting regulations for radio frequency (“RF”) emissions. *Id.* at 782; 47 C.F.R. §§ 1.1307(b), 1.1310, 2.1091, 2.1093. While Congress preserved traditional state and local zoning authority, it expressly prohibited states, or instrumentalities thereof, from regulating RF emissions based on health or environmental impacts:

No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions.

47 U.S.C. § 332(c)(7)(B)(iv). “Environmental effects” as used in this section includes both impacts on human health and the wider environment, including plants and wildlife. *See T-Mobile Northeast, LLC v. Town of Ramapo*, 701 F. Supp. 2d 446, 460 (S.D.N.Y. 2009) (includes human health concerns); *Jaeger v. Cellco Partnership*, 2010 WL 965730, * 10 (D. Conn. 2010) (“The plain meaning of the term ‘environmental effects’ incorporates adverse effects on all biological organisms”).

Thus, the proposed AT&T antennas are required to comply with the FCC limits on RF emissions, and any attempt under state law to impose other limits on RF emissions is preempted. This preemption applies to other federal and state claims as well. For example, the Federal District Court in the Northern District of California recently rejected claims that RF emissions violated the Americans with Disabilities Act, Federal Fair Housing Act, California Fair Employment and Housing Act, and associated tort claims, finding that the Telecommunications Act (TCA) and the FCC’s regulations preempted a city’s ability to regulate radio frequency emissions. *Wolf v. City of Millbrae*, 2021 WL 3727072 (N.D. Cal. Aug. 23, 2021).

As to TRPA, having been created by an interstate compact is a creature of federal law, the application of the TCA to its permitting process is not a matter of preemption. Rather, one must reconcile the intent of Congress in passing both the TCA and the Compact and give meaning to both statutes should there be any conflict in implementation. In furtherance of that standard, the agency position to date is this: TRPA will defer to the FCC regulations over general issues of human health and environmental impacts. However, TRPA could choose to regulate RF in the region should cellular facilities be proven to have a particular adverse effect on the unique environment of the Tahoe Region. TRPA has not received any such proof of adverse impacts of RF particular to Tahoe and therefore will not reexamine the determinations of the FCC.

Required Findings:

The following is a list of the required findings as set forth in Chapters 4, 21, 37 and 50 of the TRPA Code of Ordinances. Following each finding, agency staff has summarized the evidence on which the finding can be made.

1. Chapter 4 – Required Findings:
 - (a) The project is consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, Plan Area Statements and maps, the Code and other TRPA plans and programs.

The project is located within the Granlibakken Subdistrict of the Placer County Tahoe Basin Area Plan, where transmission and receiving facilities require a “Conditional Use Permit (CUP),” which is processed as a Special Use by TRPA. Policy PS-1.1 of the Regional Plan supports the upgrade and expansion of public service facilities consistent with the Land Use Element of the Regional Plan. There is no evidence showing the proposed project will have an adverse effect on the Land Use, Transportation, Conservation, Recreation, Scenic Quality, Public Service and Facilities, or Implementation sub-elements of the Regional Plan. The project, as conditioned, will not adversely affect the implementation of any applicable elements of the Regional Plan. The project is consistent with the Public Service and Facility Policies of the Placer County Tahoe Basin Area plan.

- (b) The project will not cause the environmental threshold carrying capacities to be exceeded.

TRPA staff has completed the “Article V(g) Findings” in accordance with Section 4.4.2 of the TRPA Code of Ordinances and incorporates the checklist into this analysis. All responses contained in the project findings indicate compliance with the environmental threshold carrying capacities. In addition, the applicant has completed an IEC, which is hereby incorporated into this analysis. Staff has concluded that the project will not have a significant effect on the environment. A copy of the completed checklist and IEC will be made available on the TRPA website, and through the Parcel Tracker.

- (c) Wherever federal, state, or local air and water quality standards applicable for the Region, whichever are strictest, must be attained and maintained pursuant to Article V(g) of the TPRA Compact, the project meets or exceeds such standards.

The project, as conditioned, will not have an adverse impact on applicable air and water quality standards for the Region. The project includes maintenance of the existing water quality best management practices and will not result in the generation of additional daily vehicle trip ends.

2. Chapter 21 – Special Use Findings:

- (a) The project, to which the use pertains, is of such a nature, scale, density, intensity and type to be an appropriate use for the parcel on which, and surrounding area in which, it will be located.

The nature of the proposed project is consistent with the public service uses permissible within the Area Plan and will provide an important site for wireless technology providers to improve service in the area. The proposed antennas will be mounted along existing roofs and will be painted to match the earthtone colors of the existing structures.

- (b) The project to which the use pertains, will not be injurious or disturbing to the health, safety, enjoyment of property, or general welfare of persons or property in the neighborhood, or general welfare of the region, and the applicant has taken reasonable steps to protect against any such injury and to protect the

land, water, and air resources of both the applicant's property and that of surrounding property owners.

The antennas will not contain lights or generate noise that could be visible or heard outside the immediate vicinity of the facility. The equipment will be housed within existing utility rooms.

At ground/street level, the proposed project will generate a power density that is approximately 0.35 percent of the Federal Communication Commissions (FCC's) general public limit.

Visual simulations were prepared for the project which demonstrate the telecommunication facilities will be partially visible within the Granlibakken Tahoe Resort. The antennas will be painted to match the existing earthen colors of the existing structures. The project will provide important wireless communication service in emergencies to protect public health, safety, and welfare.

The antennas will help improve public safety by increasing cellular reception for first responders in the area.

- (c) The project, to which the use pertains, will not change the character of the neighborhood or detrimentally affect or alter the purpose of the applicable planning area statement, community plan and specific or master plan, as the case may be.

The communication facility will improve wireless service in the area and will not change the character of the neighborhood. The proposed design will blend with the existing structures. The project is located within Granlibakken Subdistrict of the Placer County Tahoe Basin Area plan, where transmission and receiving facilities require a "Conditional Use Permit (CUP), which are processed by TRPA as a special use. Policy PS-1.1 of the Regional Plan supports the upgrade and expansion of public service facilities consistent with the Land Use Element of the Regional Plan.

3. Chapter 37 - Additional Height Findings:

- (a) The function of the structure requires greater maximum height than otherwise provided for in this chapter.

The proposed antennas will be located on the rooftop of two existing structures within the Granlibakken Tahoe Resort. Antennas require unobstructed locations to ensure they will be functional. The height and location of the proposed antennas ensure they will be functional.

- (b) The additional height is the minimum necessary to feasibly implement the project and there are no feasible alternatives requiring less additional height.

The height of the proposed antennas is the minimum necessary to enable proper function of the antennae by allowing the signals to be transmitted and received over the tops of surrounding structures and tree canopy, providing for adequate cellular service.

4. Chapter 50 – Additional Public Service Facility Findings:

(a) There is a need for the project.

Cellular coverage maps show service gaps in the area and existing facilities are not meeting service needs associated with increased wireless data needs. This project will provide additional facilities to meet service needs in the area. The additional facilities will provide improved wireless communication service in emergencies to help protect public health, safety, and welfare.

(b) The project with the Goals and Policies, applicable plan area statements, and Code.

See rationale in Chapter 4 findings, above.

(c) The project is consistent with the TRPA Environmental Improvement Program.

The project will not affect implementation of the EIP and will not cause TRPA's environmental thresholds to be exceeded. The design of the proposed project will blend with the existing building, which will ensure there are no significant impacts to applicable scenic resource thresholds.

(d) The project meets the findings adopted pursuant to Article V (g) of the Compact as set forth in Chapter 4: *Required Findings*, as they are applicable to the project's service capacity.

The project's service capacity is shown on wireless propagation maps submitted with the application and shows the areas to be served by the project.

Required Actions: Staff recommends that the Hearings Officer take the following actions:

- I. Approve the findings contained in this staff summary, and a finding of no significant environmental effect.
- II. Approve the project, based on the staff summary, and record evidence, subject to the conditions contained in the attached Draft TRPA Permit (Attachment A).

Contact Information: For questions regarding this project please contact Bridget Cornell, TRPA Permitting & Compliance Department, by telephone at (775) 589-5218 or via email to bcornell@trpa.gov.

Attachments:

- A. Draft Permit
- B. Project Plans and Scenic Simulations

Attachment A
Draft Permit

Draft
CONDITIONAL PERMIT
APN 095-510-049, 095-510-002 & 095-510-003
FILE NO. ERSP2021-1636

Excess Coverage Mitigation Fee (1): Amount \$ _____ Paid _____ Receipt No. _____

Security Posted (2): Amount \$ 5,000.00 Type: _____ Paid _____ Receipt No. _____

Security Administrative Fee (2): Amount \$ _____ Paid _____ Receipt No. _____

Notes:

- (1) See Special Condition 3.C., below.
- (2) See Special Condition 3.D., below.

Required plans determined to be in conformance with approval: Date: _____

TRPA ACKNOWLEDGEMENT: The permittee has complied with all pre-construction conditions of approval as of this date and is eligible for a county building permit:

TRPA Executive Director/Designee Date

SPECIAL CONDITIONS

1. This project authorizes the construction of a small wireless telecommunications facility affecting three parcels at the Granlibakken Tahoe resort. The affected parcels include APN 095-510-049 (“Deerwander Building”), APN 095-510-003 (“Bearpaw Building”), and APN 095-510-002 (“Main Lodge”). The project will consist of four small, roof-mounted antennas affixed to existing rooftops within the resort compound. No exterior changes are proposed for the Main Lodge building. All antennas will be mounted on the side edge of the roofs, painted to blend with the structures’ existing earthtone colors. Supporting equipment will be placed indoors within existing utility/IT rooms. All utilities will be run within existing conduits. No changes to land coverage or ground disturbance are proposed with this project. No trees are proposed for removal.

The three parcels affected by this project have been issued Best Management Practices Certificates (095-510-049: Certificate #9354, November 30, 2007; 095-510-002: Certificate #9308, November 30, 2007; and 095-510-03: Certificate #9309, November 30, 2007). BMPs will be adjusted as necessary to accommodate the project, and maintenance of existing BMPs will be required (see Special Condition 4, below).

Land Capability has not been verified for this property. Existing land coverage has been verified for the entire development (TRPA File #20020843STD). No changes to land coverage are proposed as a part of this project. Approval of this project does not verify land capability. Any future changes to land coverage will require the verification of land capability.

2. The Standard Conditions of Approval listed in Attachment Q shall apply to this permit.
3. Prior to permit acknowledgement, the following conditions of approval must be satisfied.

- A. Please provide an overall site plan of the entire Granlibakken development, identifying the three parcels affected by this project.
- B. Page A1 (Overall Site Plan):
- (1) Please include a land coverage table, summarizing the amount of existing land coverage on the property, and identifying the size of the affected parcels.
 - (2) Please include a note stating that the land capability will not be verified as a part of this project. No changes to land coverage are permitted with this project.
 - (3) Please identify a construction staging area with appropriate temporary Best Management Practices (BMPs).
- C. Pages A4.1 through A5.2 (Elevations):
- (1) Please show roof pitches of each roof plane for each affected structure.
 - (2) Identify the slope across each building site.
 - (3) Please show the allowed and proposed height calculation for each structure. Note: additional height resulting from the antennas will not be considered additional height for the structure.
 - (4) Please correctly label the structure's existing and proposed height. The height of a structure is measured to the highest point of the roof. Appurtenances that meet the criteria of TRPA Code Section 37.4.3.A do not count towards a structure's height. The proposed antenna is considered a "structure other than building," and will not count towards the structure's height.
 - (5) The permittee shall submit final proposed color samples for all visible project components for approval by TRPA staff.
- D. The affected property previously has approximately 21,114 square feet of unmitigated excess land coverage. The permittee shall mitigate a portion or all of the excess land coverage on this property by removing coverage within Hydrologic Transfer Area 8 – Tahoe City, or by submitting an excess coverage mitigation fee.

To calculate the amount of excess coverage to be removed, use the following formula:

Estimated project construction cost multiplied by the fee percentage of 3.00% (as identified in Table 30.6.1-2 of Subsection 30.6.1.C.3. of the TRPA Code of Ordinances) divided by the mitigation factor of 8. If you choose this option, please revise your final site plans and land coverage calculations to account for the permanent coverage removal.

An excess land coverage mitigation fee may be paid in lieu of permanently retiring land coverage. The excess coverage mitigation fee shall be calculated as follows:

Coverage reduction square footage (as determined by formula above) multiplied by the coverage mitigation cost fee of \$8.50 per square foot for projects within Hydrologic Transfer Area 9 – Tahoe City. If you choose this option, please provide a construction cost estimate by your licensed contractor, architect, or engineer. In no case shall the mitigation fee be less than \$200.00

- E. The Security required under Standard Condition I.2 of Attachment Q shall be \$5,000.00. Security shall be released upon completion of the project, installation of permanent BMPs and satisfaction of all permit conditions. Please see Attachment J, Security Procedures, for appropriate methods of posting the security and the applicable security administration fee.
 - F. The permittee shall submit final plans to TRPA electronically, incorporating the changes outlined above.
4. Prior to security return, the applicant shall work with the property owner to demonstrate that existing BMPs are being maintained. This shall be documented in a BMP Maintenance Log (https://www.tahoebmp.org/Documents/BMPHandbook/Maintenance_Log_interactive_form.pdf) . TRPA staff is available to assist the property owner with this reporting requirement.
 5. All BMP details and specifications shall be consistent with the TRPA Handbook of Best Management Practices. All BMP handbook details and information sheets can be viewed and downloaded at <http://www.tahoebmp.org/BMPHandbookCh4.aspx>. If sub-surface infiltration facilities are proposed, it will be necessary to submit photo documentation of sub-surface infiltration systems prior to issuance of a BMP Certificate of Completion. The photographs shall clearly show that the infiltration systems have been installed as specified on TRPA approved plans.
 6. Prior to security release photos shall be provided to TRPA taken during the construction of any subsurface BMP's or of any trenching and backfilling with gravel.
 7. Temporary and permanent BMPs may be field fit by the Environmental Compliance Inspector where appropriate.
 8. All Best Management Practices shall be maintained in perpetuity to ensure effectiveness which may require BMPs to be periodically reinstalled or replaced.
 9. Existing natural features outside of the building site shall be retained and incorporated into the site design to the greatest extent feasible. The site shall be designed to avoid disturbance to rock outcrops and to minimize vegetation removal and maintain the natural slope of the project site.
 10. TRPA reserves the right to amend any portion of this permit or construction operation while in progress if it is determined that the project construction is causing significant adverse effects.
 11. To the maximum extent allowable by law, the Permittee agrees to indemnify, defend, and hold harmless TRPA, its Governing Board (including individual members), its Planning Commission (including individual members), its agents, and its employees (collectively, TRPA) from and against any and all suits, losses, damages, injuries, liabilities, and claims by any person (a) for any injury (including death) or damage to person or property or (b) to set aside, attack, void, modify, amend, or annul any actions of TRPA. The foregoing indemnity obligation applies, without limitation, to any and all suits, losses, damages, injuries, liabilities, and claims by any person from any cause whatsoever arising out of or in connection with either directly or indirectly, and in whole or in part

(1) the processing, conditioning, issuance, administrative appeal, or implementation of this permit; (2) any failure to comply with all applicable laws and regulations; or (3) the design, installation, or operation of any improvements, regardless of whether the actions or omissions are alleged to be caused by TRPA or Permittee.

Included within the Permittee's indemnity obligation set forth herein, the Permittee agrees to pay all fees of TRPA's attorneys and all other costs and expenses of defenses as they are incurred, including reimbursement of TRPA as necessary for any and all costs and/or fees incurred by TRPA for actions arising directly or indirectly from issuance or implementation of this permit. TRPA will have the sole and exclusive control (including the right to be represented by attorneys of TRPA's choosing) over the defense of any claims against TRPA and over their settlement, compromise or other disposition. Permittee shall also pay all costs, including attorneys' fees, incurred by TRPA to enforce this indemnification agreement. If any judgment is rendered against TRPA in any action subject to this indemnification, the Permittee shall, at its expense, satisfy and discharge the same.

END OF PERMIT

DRAFT

Attachment B
Project Plans and Scenic Simulations



at&t

GRANLIBAKKEN TAHOE

725 GRANLIBAKKEN RD.
TAHOE CITY, CA 95482

PROJECT REFERENCE NUMBERS

SITE I.D.: .
US I.D.: .
FA NO.: 15332991
ORACLE NO.: 3701A0W6KC
PACE NO.: MRSFR073062
PROGRAM: .

APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTORS' WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

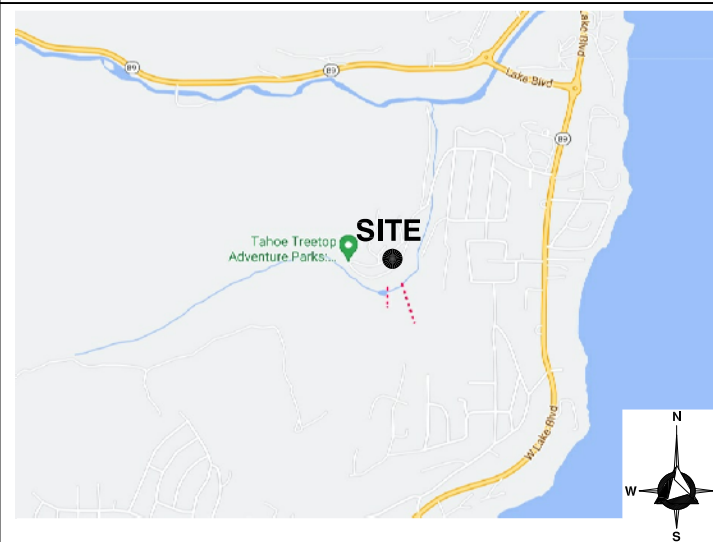
2019 CA ADMINISTRATIVE CODE
2019 CA BUILDING CODE
2019 CA ELECTRICAL CODE
2019 CA MECHANICAL CODE
2019 CA PLUMBING CODE
2019 CA FIRE CODE
2019 ENERGY CODE

SUBCONTRACTORS' WORK SHALL COMPLY WITH ALL LOCAL BUILDING CODES AND CITY/COUNTY ORDINANCES.

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY IS EXEMPT BASED ON ADA STANDARDS 203.5 AND CBC 11B-203.5 "MACHINERY SPACES."

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

VICINITY MAP



PROJECT TEAM

APPLICANT/LESSEE:

AT&T MOBILITY
2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821
CONTACT: CAROL MCCLOSKEY
PHONE: (916) 952-1466

OWNER:

TBD

SAQ/ZONING/PERMITTING:

COMPLETE WIRELESS CONSULTING
2009 V STREET
SACRAMENTO, CA 95818
CONTACT: KEVIN GALLAGHER
PHONE: (916) 764-2632

ARCHITECT:

DELTA GROUPS ENGINEERING
6800 KOLL CENTER PARKWAY,
SUITE 225
PLEASANTON, CA 94566
PHONE: (925) 468-0115

STRUCTURAL:

DELTA GROUPS ENGINEERING
6800 KOLL CENTER PARKWAY,
SUITE 225
PLEASANTON, CA 94566
PHONE: (925) 468-0115

CONSTRUCTION:

TOTAL ENVIRONMENTAL & POWER SYSTEMS, INC.
2500 BISSO LN. SUITE 500
CONCORD, CA 94520
CONTACT: TONY PACHAO
PHONE: (925) 681-2238

RF ENGINEER:

AT&T MOBILITY
2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821
CONTACT: BRETT LAWLESS
PHONE: (916) 716-9276

SITE DIRECTIONS

FROM AT&T MOBILITY OFFICES LOCATED AT 2700 WATT AVENUE IN SACRAMENTO, CA:

HEAD WEST TOWARD KINGS WAY. HEAD WEST TOWARD KINGS WAY. TURN LEFT TOWARD KINGS WAY. TURN RIGHT ONTO KINGS WAY. TURN RIGHT AT THE 1ST CROSS STREET ONTO WATT AVE. USE THE RIGHT LANE TO TAKE THE I-80 RAMP TO RENO. MERGE ONTO I-80BL. USE THE LEFT 3 LANES TO MERGE ONTO I-80 E TOWARD RENO. TAKE EXIT 185 FOR CA-89 S TOWARD LAKE TAHOE. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO CA-89 S. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO CA-89/LAKE BLVD. AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO W LAKE BLVD. TURN RIGHT ONTO GRANLIBAKKEN RD. DESTINATION WILL BE ON THE RIGHT.

PROJECT DESCRIPTION

SCOPE OF WORK:

THIS IS AN APPLICATION FOR A NEW, UNMANNED AT&T MOBILITY SERVICES FACILITY CONSISTING OF:

- THE INSTALLATION OF TELECOMMUNICATIONS EQUIPMENT WITHIN EXISTING WALL-MOUNTED EQUIPMENT RACK INSIDE EXISTING BUILDING & (1) GPS ANTENNA (MAIN LODGE).
- THE INSTALLATION OF TWO (1) OUTDOOR DIRECTIONAL ANTENNAS W/ (1) REMOTE RADIO UNIT - MOUNTED AT ROOFTOP OF EXISTING BUILDING (BEARPAW BUILDING).
- THE INSTALLATION OF TWO (3) OUTDOOR DIRECTIONAL ANTENNAS W/ (1) REMOTE RADIO UNIT - MOUNTED AT ROOFTOP OF EXISTING BUILDING (DEARWANDER BUILDING).
- THE INSTALLATION OF ASSOCIATED COMMUNICATIONS AND UTILITIES WIRING AS REQUIRED.

PROJECT INFORMATION

SITE ADDRESS:

725 GRANLIBAKKEN RD.
TAHOE CITY, CA 95482

A.P.N.:

095-510-049-000,
095-510-002-000,
095-510-003-000

PROPERTY OWNER:

TBD

JURISDICTION:

TBD

ZONE:

TBD

OCCUPANCY TYPE:

TBD

TYPE OF CONSTRUCTION:

TYPE V

LATITUDE (NAD83):

SECTOR 1 & 2: 39° 9' 25.02"N
SECTOR 3: 39° 9' 23.92"N
SECTOR 4: 39° 9' 22.85"N

LONGITUDE (NAD83):

SECTOR 1 & 2: 120° 9' 16.45"W
SECTOR 3: 120° 9' 16.89"W
SECTOR 4: 120° 9' 18.26"W

ELEVATION:

TBD

DRAWING INDEX

T1
T2

TITLE SHEET
GENERAL NOTES, LEGEND, & ABBREVIATIONS

A1
A2

OVERALL SITE PLAN
ENLARGED SITE PLAN, & ANTENNA LAYOUTS (DEARWANDER & BEARPAW BUILDINGS)

A3
A4.1
A4.2
A5.1
A5.2

EQUIPMENT PLAN (MAIN LODGE)
NORTH & EAST ELEVATIONS (DEARWANDER BUILDING)
SOUTH & WEST ELEVATIONS (DEARWANDER BUILDING)
EAST & SOUTH ELEVATIONS (BEARPAW BUILDING)
WEST ELEVATION (BEARPAW BUILDING)
GENERAL STRUCTURAL NOTES, & DETAILS
SIGNAGE, & ANTENNA EQUIPMENT SPECIFICATIONS
ANTENNA EQUIPMENT SPECIFICATIONS

E1
E2
E3

ELECTRICAL & TELEPHONE SPECIFICATIONS & UTILITIES NOTES
EQUIPMENT & ANTENNA GROUNDING PLANS
GENERAL GROUNDING NOTES, & GROUNDING DETAILS



2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821

GRANLIBAKKEN TAHOE
FA NO. 15332991

725 GRANLIBAKKEN RD.,
TAHOE CITY, CA 96145



**DELTA GROUPS
ENGINEERING, INC.**
CONSULTING ENGINEERS

6800 KOLL CENTER PARKWAY, SUITE 225
PLEASANTON, CA 94566
TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE

TITLE SHEET

SHEET

T1

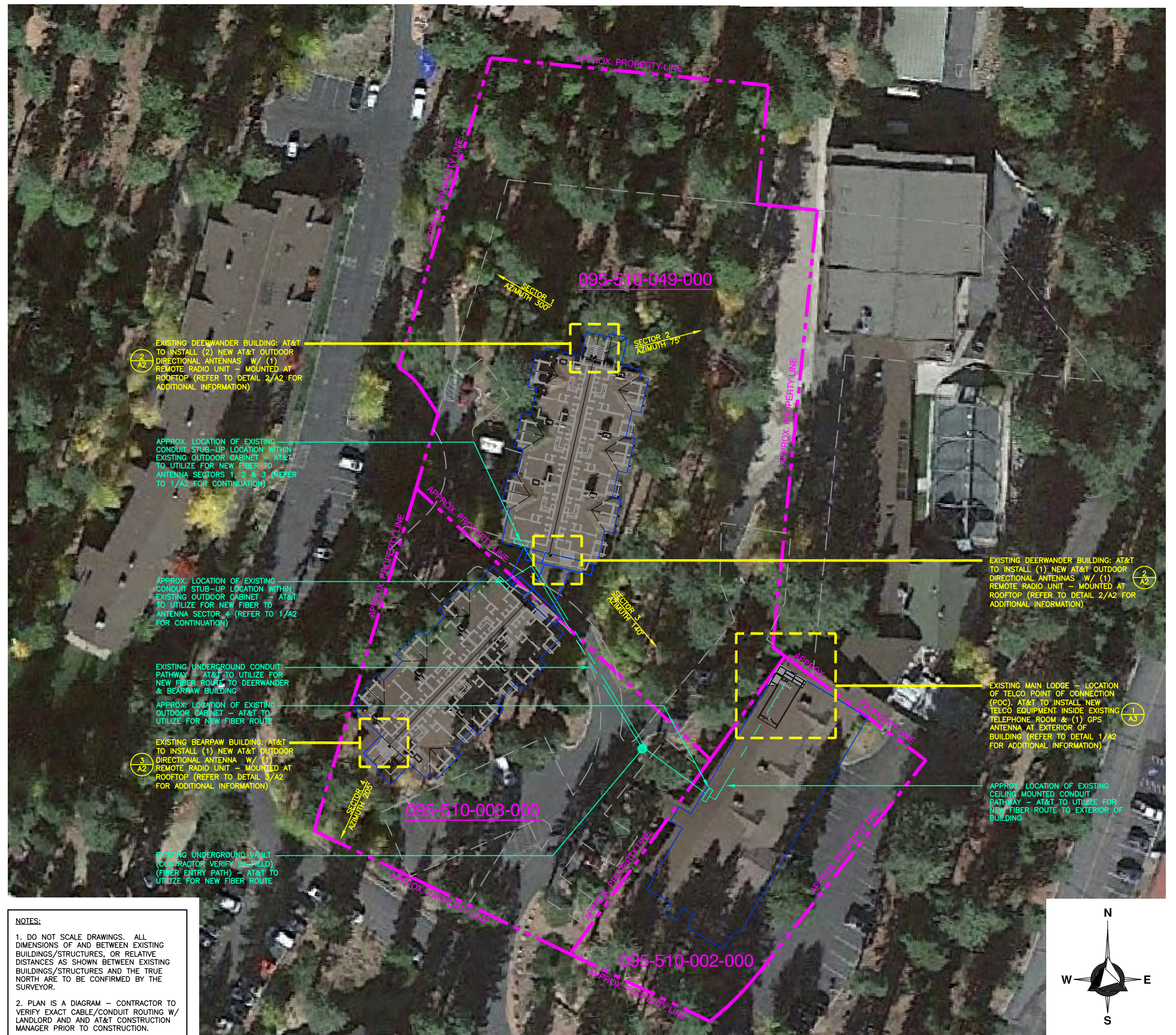
AGENDA ITEM NO. 10

DGE NO.

P21AT003

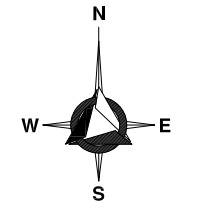
SITE NAME

GRANLIBAKKEN TAHOE



NOTES:

- DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.
- PLAN IS A DIAGRAM - CONTRACTOR TO VERIFY EXACT CABLE/CONDUIT ROUTING W/ LANDLORD AND AND AT&T CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.



UNUSED . OVERALL SITE PLAN SCALE: NTS 1

at&t
 2700 WATT AVENUE, 3473-34
 SACRAMENTO, CA 95821

GRANLIBAKKEN TAHOE
 FA NO. 15332991
 725 GRANLIBAKKEN RD.,
 TAHOE CITY, CA 96145

DELTA GROUPS
ENGINEERING, INC.
 CONSULTING ENGINEERS
 6800 KOLL CENTER PARKWAY, SUITE 225
 PLEASANTON, CA 94566
 TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

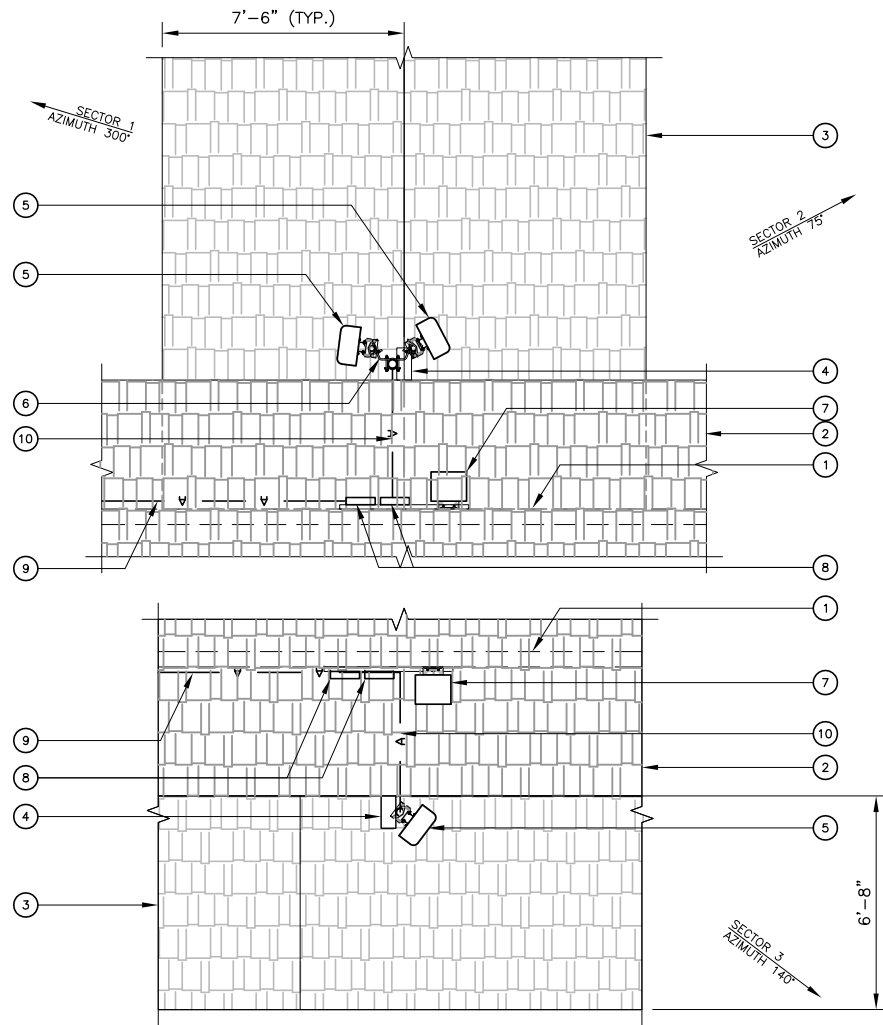
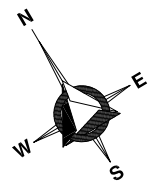
SHEET TITLE	
OVERALL SITE PLAN	
SHEET	DGE NO.
A1	P21AT003
SITE NAME	
AGENDA ITEM NO. 10 GRANLIBAKKEN TAHOE	

KEY NOTES:

- 1. EXISTING BUILDING EXTERIOR WALL (BELOW) - TYP.
- 2. EXISTING UPPER ROOFTOP
- 3. EXISTING LOWER ROOFTOP
- 4. EXISTING WOOD BEAM (TYP.)
- 5. NEW AT&T PANEL ANTENNA - TYP. (MANUF.: COI; MODEL: HPA-65R-BU-H4; SIZE: 48.3"(H)x14.4"(W)x7.3(D); WT.: 32.3 LBS.) PIPE MOUNTED TO EXISTING BUILDING PER MANUFACTURE SPECIFICATION (PAINT TO MATCH EXISTING BUILDING)
- 6. NEW DOUBLE ANTENNA PIPE CLAMP ASSEMBLY (MANUF.: SITEPRO1; MODEL: DAC; WT.: 24.75LBS.) - TYP. OF 2
- 7. NEW REMOTE RADIO UNIT (MANUF.: ERICSSON; MODEL: RRU8 8843; SZ.: 14.9"(H)x13.2"(W)x10.9"(D); WT.: 72LBS.) - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL
- 8. NEW PSU UNIT - TYP. OF 2 PER REMOTE (MANUF.: ERICSSON; MODEL: PSU AC08; SZ.: 10.8"(H)x7.1"(W)x2.7"(D); WT.: 13LBS.) - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL (15A CIRCUIT PER PSU NEEDED)
- 9. NEW POWER/GROUNDING/FIBER CONDUIT ROUTING ALONG EXISTING BUILDING WALL (REFER TO DETAIL 1/A2 FOR CONTINUATION)
- 10. NEW COAXIAL ANTENNA LINE ALONG EXISTING BUILDING LOWER ROOFTOP

NOTES:

- DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.
- ALL EXTERIOR ANTENNA EQUIPMENT & EXPOSED CONDUITS TO BE PAINTED TO MATCH EXISTING BUILDING (CONTRACTOR TO VERIFY IN-FIELD/LANDLORD)
- CONTRACTOR TO ENSURE TO USED NO LEAD-BASED PAINT PRODUCTS.



ANTENNA PLAN (DEARWANDER BUILDING)

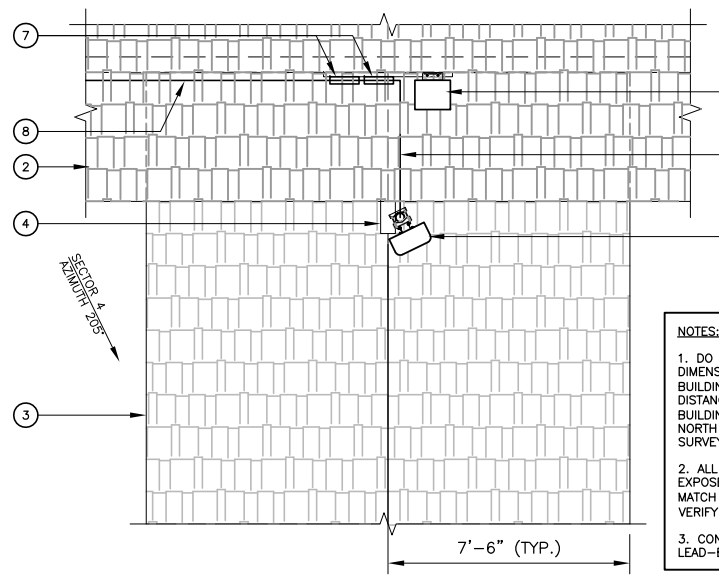
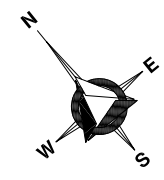
SCALE: 3/8 inch = 1 ft

KEY NOTES:

- 1. EXISTING BUILDING EXTERIOR WALL (BELOW) - TYP.
- 2. EXISTING UPPER ROOFTOP
- 3. EXISTING LOWER ROOFTOP
- 4. EXISTING WOOD BEAM (TYP.)
- 5. NEW AT&T PANEL ANTENNA - TYP. (MANUF.: COI; MODEL: HPA-65R-BU-H4; SIZE: 48.3"(H)x14.4"(W)x7.3(D); WT.: 32.3 LBS.) PIPE MOUNTED TO EXISTING BUILDING PER MANUFACTURE SPECIFICATION (PAINT TO MATCH EXISTING BUILDING)
- 6. NEW REMOTE RADIO UNIT (MANUF.: ERICSSON; MODEL: RRU8 8843; SZ.: 14.9"(H)x13.2"(W)x10.9"(D); WT.: 72LBS.) - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL
- 7. NEW PSU UNIT - TYP. OF 2 PER REMOTE (MANUF.: ERICSSON; MODEL: PSU AC08; SZ.: 10.8"(H)x7.1"(W)x2.7"(D); WT.: 13LBS.) - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL (POWER TO BE PROVIDED BY LANDLORD - 15A CIRCUIT PER PSU)
- 8. NEW POWER/GROUNDING/FIBER CONDUIT ROUTING ALONG EXISTING BUILDING WALL (REFER TO DETAIL 1/A2 FOR CONTINUATION)
- 9. NEW COAXIAL ANTENNA LINE ALONG EXISTING BUILDING LOWER ROOFTOP

NOTES:

- DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.
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ANTENNA PLAN (BEARPAW BUILDING)

SCALE: 3/8 inch = 1 ft



GRANLIBAKKEN TAHOE
FA NO. 15332991

725 GRANLIBAKKEN RD.,
TAHOE CITY, CA 96145

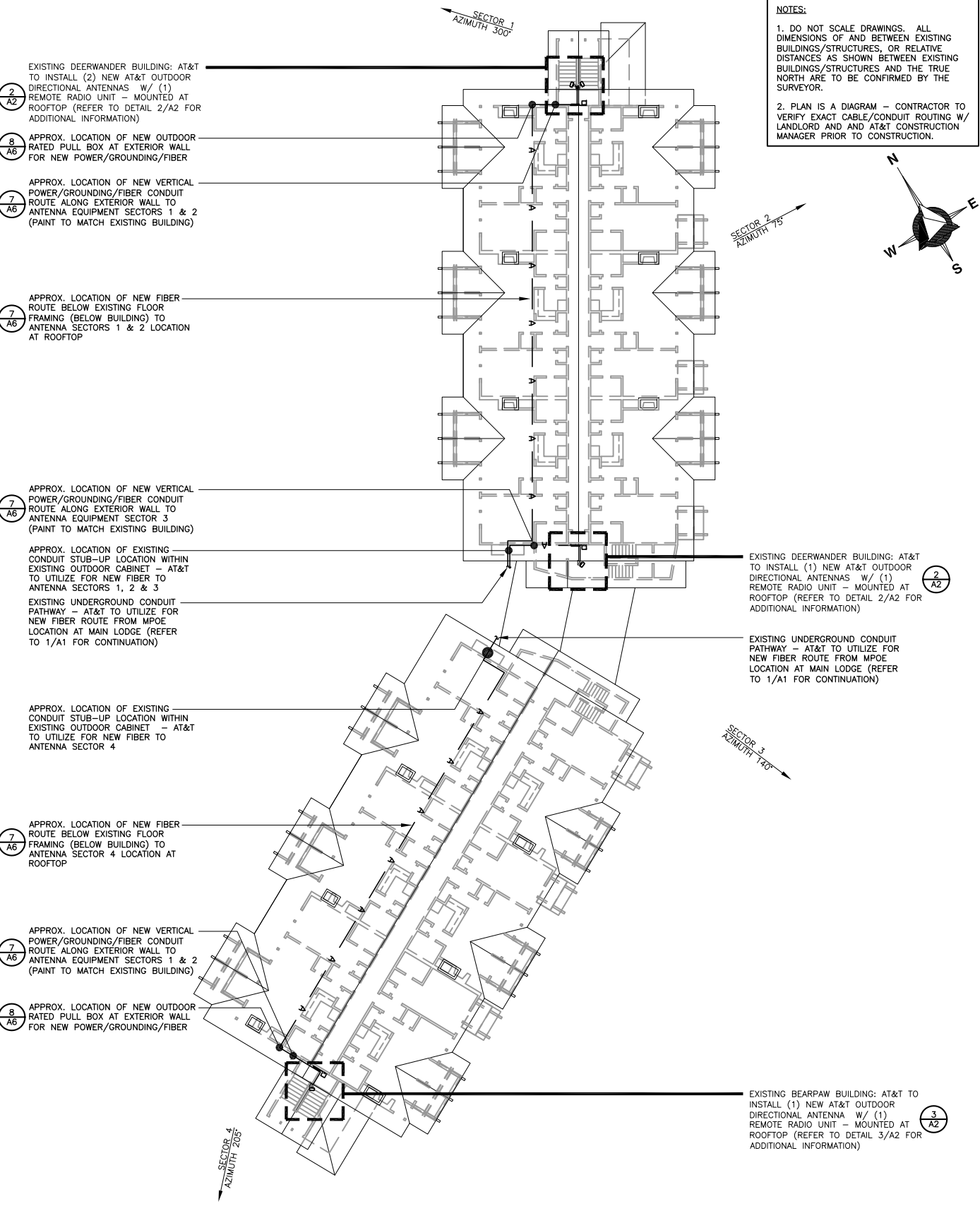
DELTA GROUPS
ENGINEERING, INC.
CONSULTING ENGINEERS

6800 KOLL CENTER PARKWAY, SUITE 225
PLEASANTON, CA 94566
TEL: (925) 468-0115 FAX: (925) 468-0355

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1	5/25/21	ISSUED FOR REVIEW	JK	.

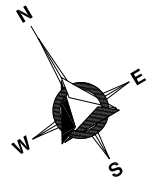
SCALE: 3/8 inch = 1 ft

SHEET TITLE	
ENLARGED SITE PLAN, & ANTENNA PLANS (DEARWANDER & BEARPAW)	
SHEET	DGE NO.
A2	P21AT003
AGENDA ITEM NO. 10	SITE NAME
	GRANLIBAKKEN TAHOE



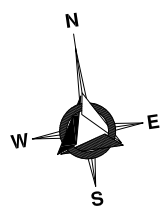
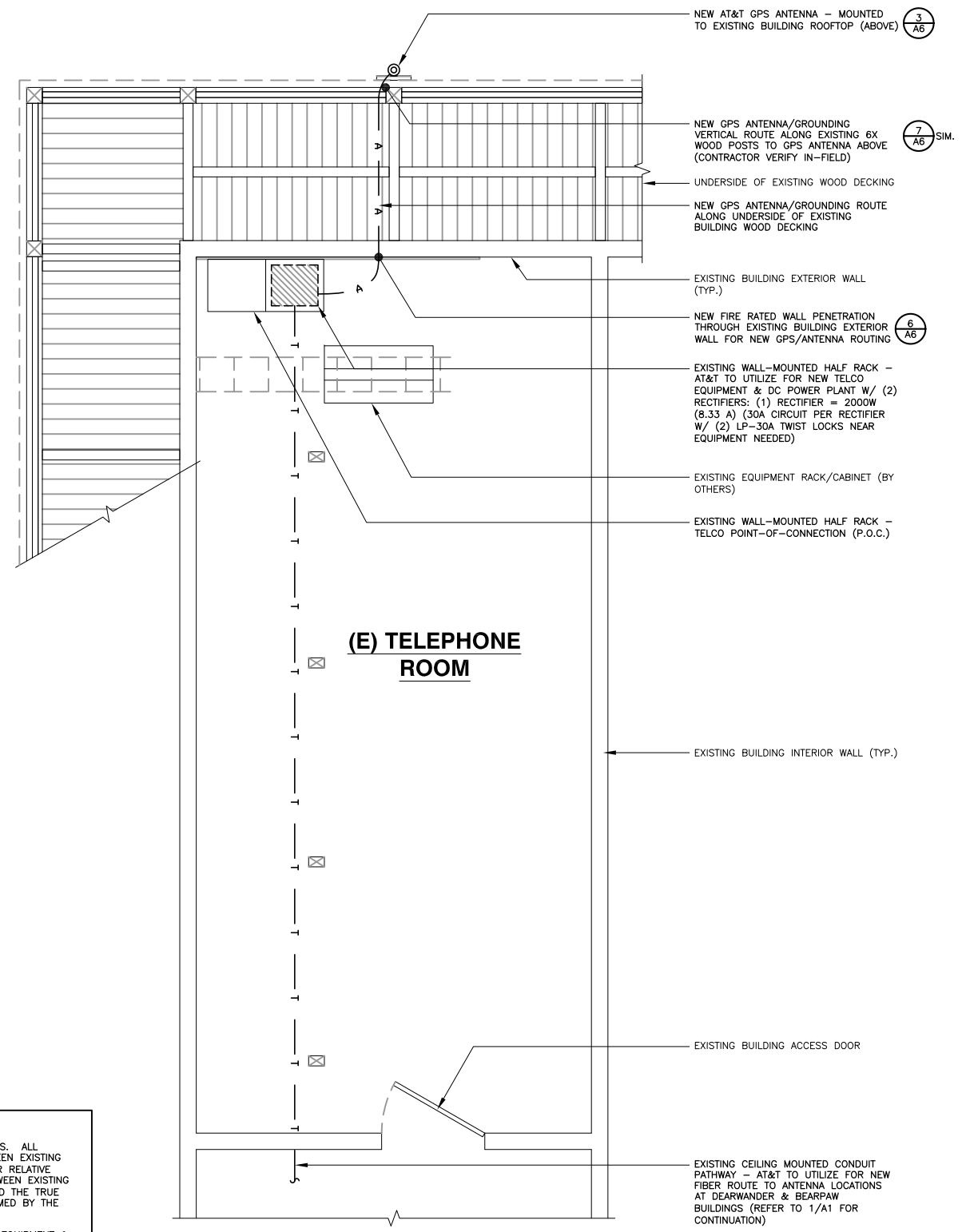
NOTES:

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- PLAN IS A DIAGRAM - CONTRACTOR TO VERIFY EXACT CABLE/CONDUIT ROUTING W/ LANDLORD AND AT&T CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.



ENLARGED SITE PLAN

1



NOTES:

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- ALL EXTERIOR ANTENNA EQUIPMENT & EXPOSED CONDUITS TO BE PAINTED TO MATCH EXISTING BUILDING (CONTRACTOR TO VERIFY IN-FIELD/LANDLORD)
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UNUSED . EQUIPMENT PLAN (MAIN LODGE) SCALE: 3/8 inch = 1 ft 1

2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821

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DELTA GROUPS
ENGINEERING, INC.
CONSULTING ENGINEERS

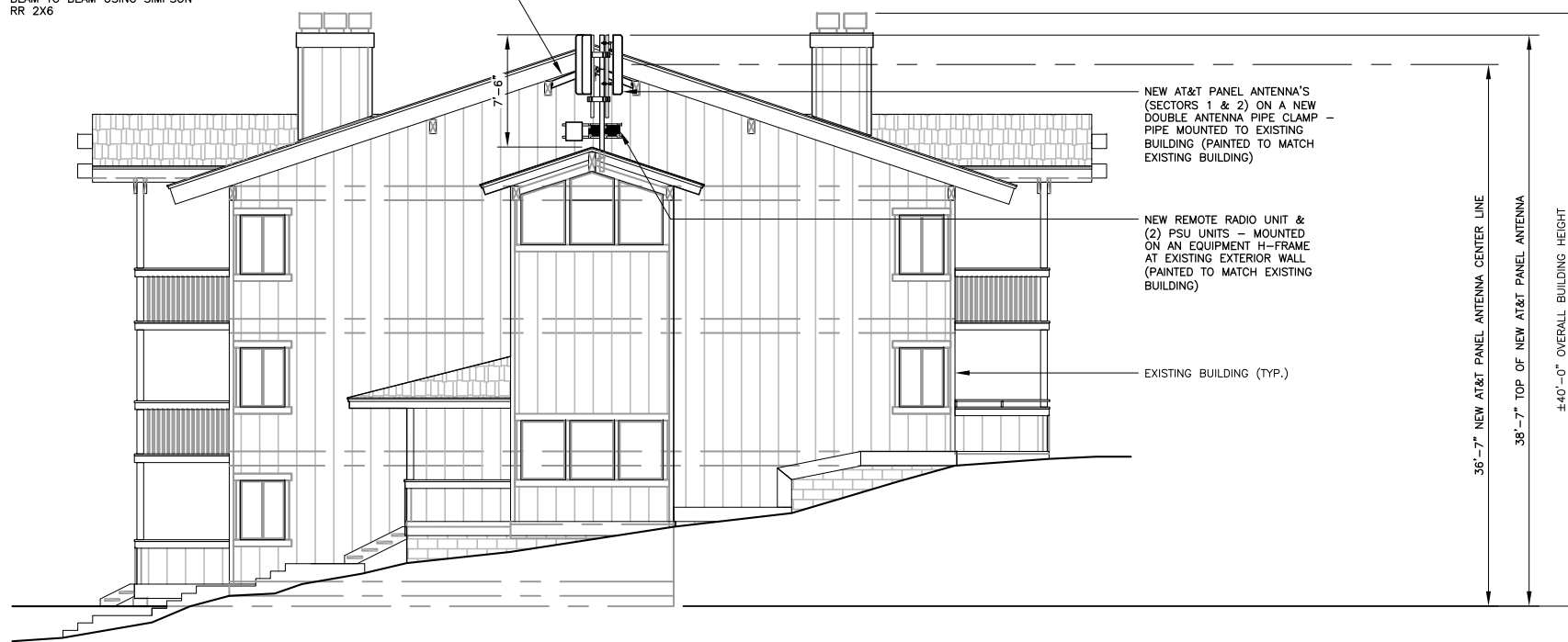
6800 KOLL CENTER PARKWAY, SUITE 225
PLEASANTON, CA 94566
TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE
EQUIPMENT PLAN (MAIN LODGE), & ANTENNA PLANS (DEARWANDER & BEARPAW)

SHEET	DGE NO.
A3	P21AT003
AGENDA ITEM NO. 1	SITE NAME
	GRANLIBAKKEN TAHOE

NEW 2X6 P.T.D.F. BLKG FROM BEAM TO BEAM USING SIMPSON RR 2X6



UNUSED

NORTH ELEVATION (DEERWANDER BUILDING)

SCALE: 3/16 inch = 1 ft



1



EAST ELEVATION (DEERWANDER BUILDING)

SCALE: 3/16 inch = 1 ft



2



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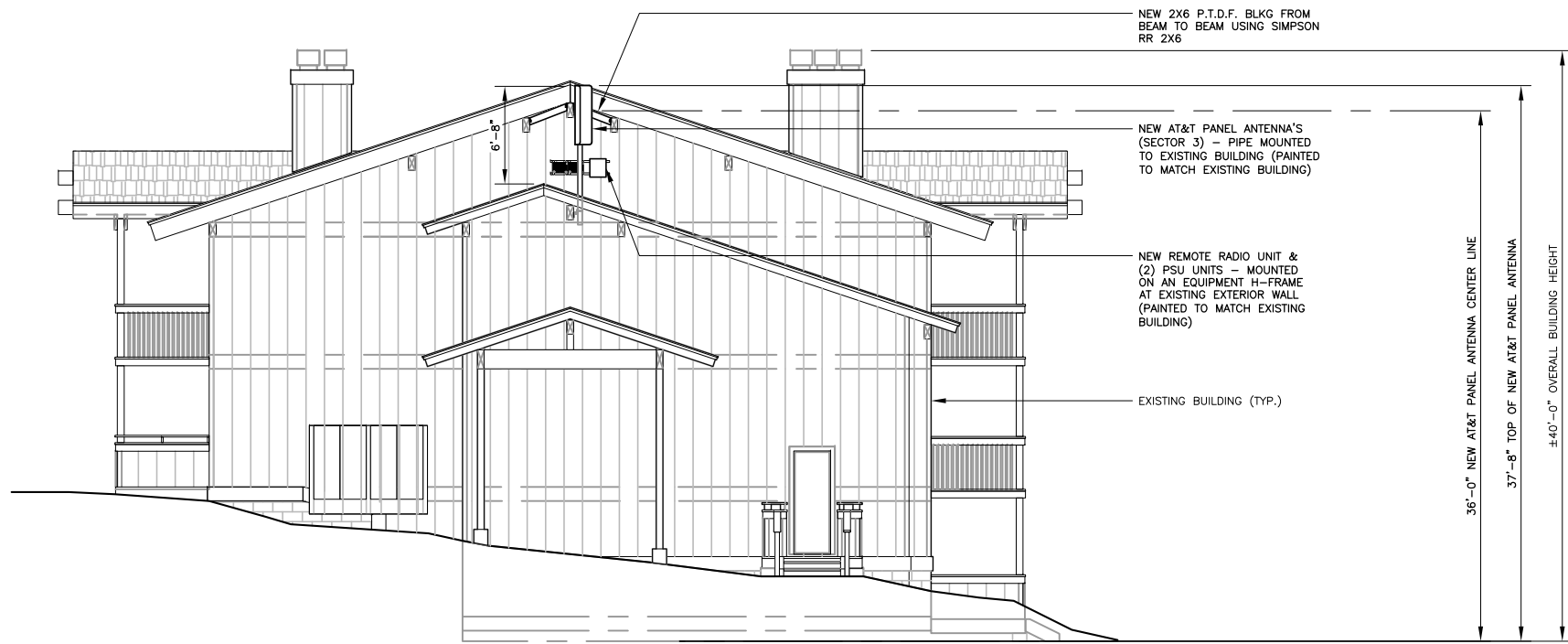


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REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	-

SHEET TITLE	
NORTH & EAST ELEVATIONS (DEERWANDER BUILDING)	
SHEET	DGE NO.
A4.1	P21AT003
AGENDA ITEM NO. 10	SITE NAME
	GRANLIBAKKEN TAHOE



UNUSED

SOUTH ELEVATION (DEERWANDER BUILDING)

SCALE:
3/16 inch = 1 ft



1

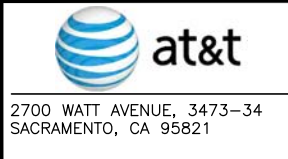


WEST ELEVATION (DEERWANDER BUILDING)

SCALE:
3/16 inch = 1 ft



2



GRANLIBAKKEN TAHOE
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TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
SOUTH & WEST ELEVATIONS (DEERWANDER BUILDING)	
SHEET	DGE NO.
A4.2	P21AT003
AGENDA ITEM NO. 10	SITE NAME
	GRANLIBAKKEN TAHOE

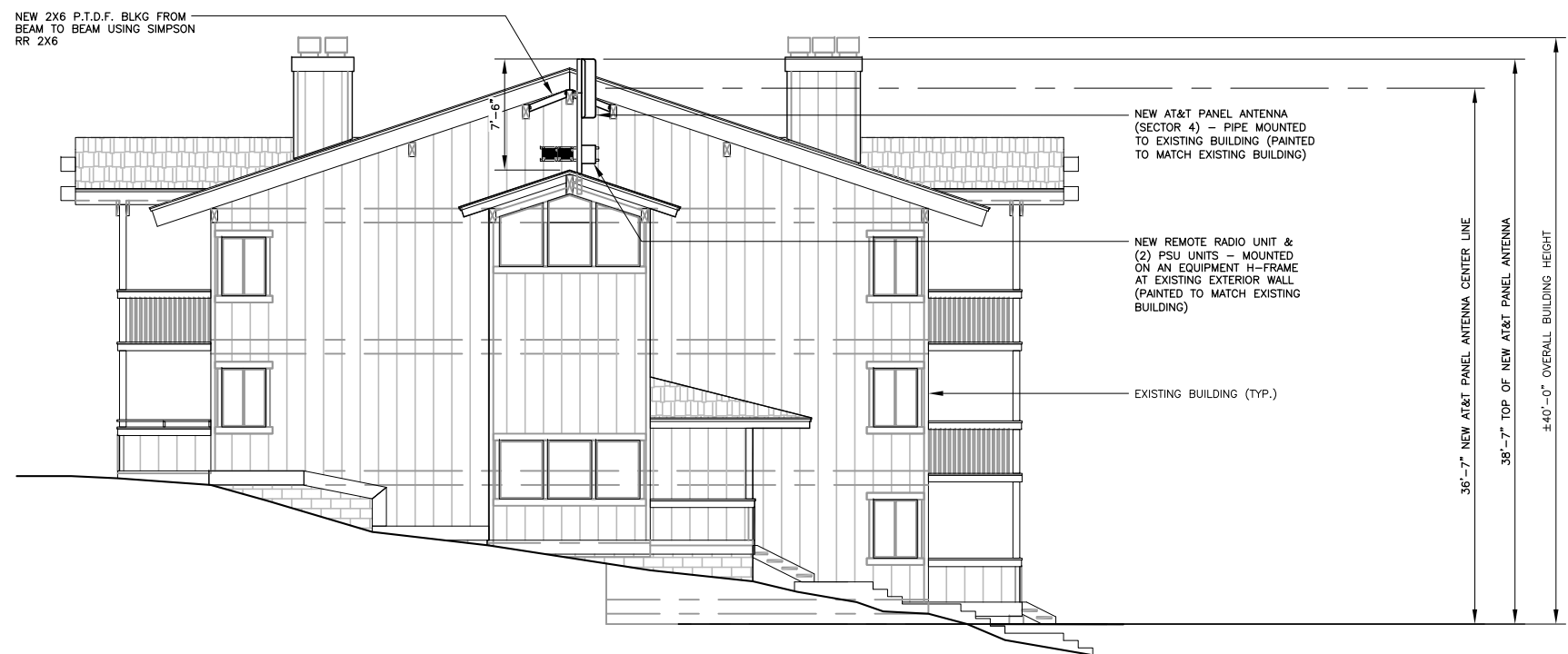


EAST ELEVATION (BEARPAW BUILDING)

SCALE: 3/16 inch = 1 ft



1



SOUTH ELEVATION (BEARPAW BUILDING)

SCALE: 3/16 inch = 1 ft



2

UNUSED



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SACRAMENTO, CA 95821

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TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
EAST & SOUTH ELEVATIONS (BEARPAW BUILDING)	
SHEET	DGE NO.
A5.1	P21AT003
AGENDA ITEM NO. 10	SITE NAME
	GRANLIBAKKEN TAHOE



WEST ELEVATION (BEARPAW BUILDING)

SCALE:
3/16 inch = 1 ft



1

UNUSED



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GRANLIBAKKEN TAHOE
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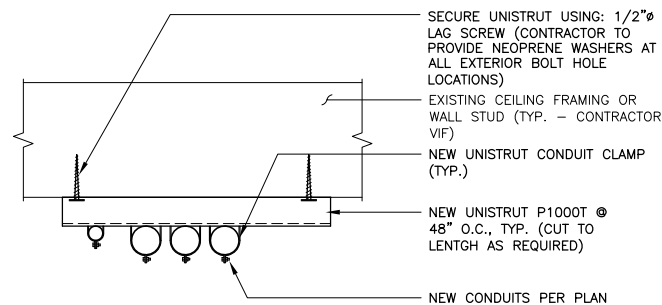


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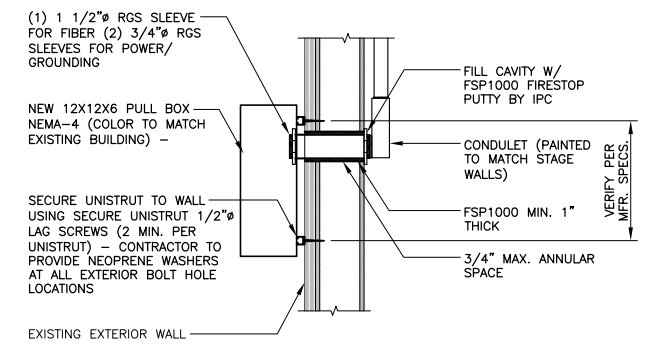
REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
WEST ELEVATION (BEARPAW BUILDING)	
SHEET	DGE NO.
A52	P21AT003
AGENDA ITEM NO. 1	SITE NAME
NO. 15332991	GRANLIBAKKEN TAHOE



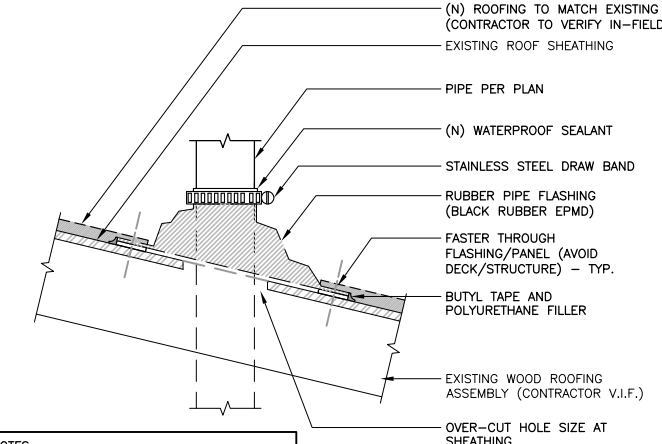
- NOTES:**
1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS.
 2. ALL EXPOSED CONDUITS TO BE PAINTED TO MATCH EXISTING BUILDING (CONTRACTOR TO VERIFY IN-FIELD/LANDLORD).
 3. CONTRACTOR TO VERIFY IN-FIELD/LANDLORD.
 4. CONTRACTOR TO ENSURE TO USED NO LEAD-BASED PAINT PRODUCTS.

TYPICAL CONDUIT ROUTING AT WALL/CEILING 7



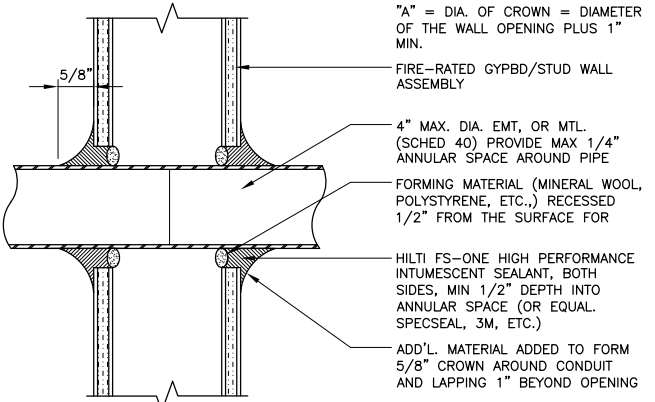
- NOTES:**
1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS.
 2. CONTRACTOR TO ENSURE TO USED NO LEAD-BASED PAINT PRODUCTS.

TYPICAL PULLBOX MOUNTING AT WALL 8



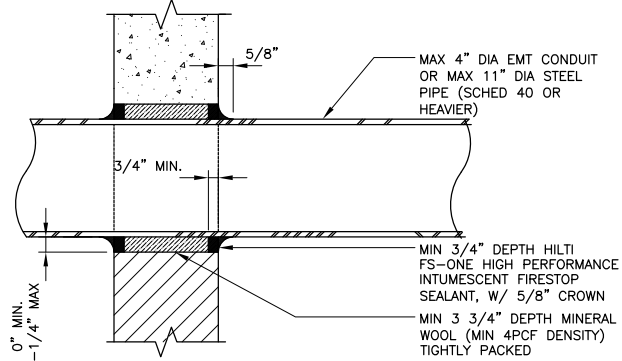
- NOTES:**
1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS.
 2. CONTRACTOR TO ENSURE WATERTIGHTNESS/WEATHERPROOFING AT ALL EXTERIOR PENETRATIONS AS REQUIRED PER STANDARD CODE COMPLIANCE.

PIPE FLASHING AT ROOFTOP 9



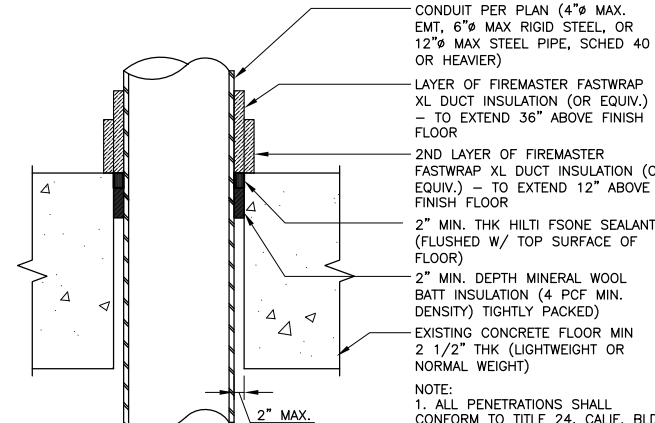
- NOTE:**
- CONTRACTOR SHALL FOLLOW MFR'S (HILTI, OR EQUAL) SPECS & INSTALLATION MANUAL. SUBMIT MFR'S LITERATURE FOR OTHER PRODUCT TO BE CONSIDERED FOR EQUAL.)

(A) FRAMED WALL PENETRATION



- NOTE:**
- CONTRACTOR SHALL FOLLOW MFR'S (HILTI, OR EQUAL) SPECS & INSTALLATION MANUAL. SUBMIT MFR'S LITERATURE FOR OTHER PRODUCT TO BE CONSIDERED FOR EQUAL.)

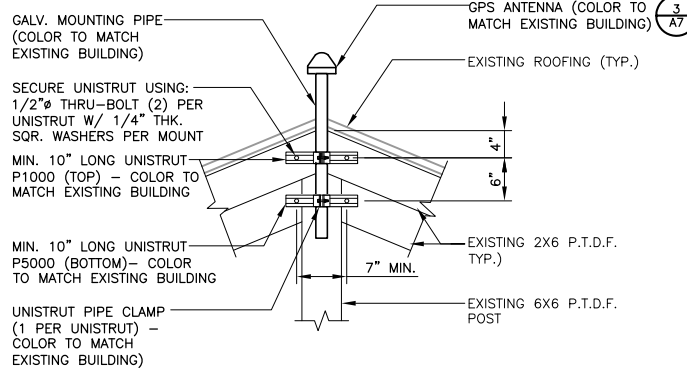
(B) CMU CONC WALL PENETRATION



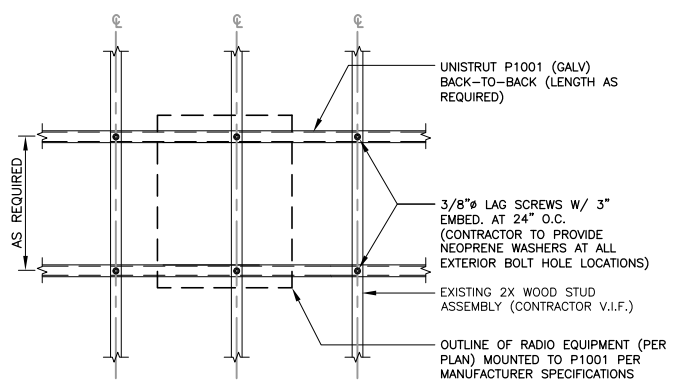
- NOTE:**
1. ALL PENETRATIONS SHALL CONFORM TO TITLE 24, CALIF. BLDG. CODE, SECTION 714.
 2. PENETRATIONS THRU WALLS SHALL COMPLY WITH T24, CBC SECTION 709.6. F RATING - NOT LESS THAN THE REQ'D RATING OF THE WALL PENETRATED.
 3. PENETRATIONS THRU FLOORS/CEILINGS SHALL COMPLY WITH T24, CBC SECTION 710.2 F & T RATING - NOT LESS THAN 1 HR, NOR LESS THAN THE REQ'D RATING OF THE FLOOR/CEILING PENETRATED.
 4. CONTRACTOR TO ENSURE WATER-TIGHTNESS AT ALL WALL AND FLOOR PENETRATIONS.

(C) CONCRETE FLOOR PENETRATION

TYPICAL CONDUIT PENETRATION 6

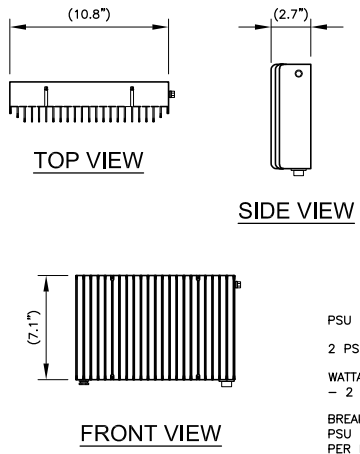


GPS ANTENNA MOUNTING 3



- NOTES:**
1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS.
 2. ALL EXPOSED CONDUITS TO BE PAINTED TO MATCH EXISTING BUILDING (CONTRACTOR TO VERIFY IN-FIELD/LANDLORD).
 3. CONTRACTOR TO VERIFY IN-FIELD/LANDLORD.
 4. CONTRACTOR TO ENSURE TO USED NO LEAD-BASED PAINT PRODUCTS.

TYPICAL EQUIPMENT MOUNTING AT WALL 4



- PSU MAX WEIGHT: 13.0 LBS
- 2 PSU'S PER ERICSSON 8843
- WATTAGE - 760W PER PSU (6.3A) - 2 PSU'S PER REMOTE LOCATION
- BREAKER SIZE - 16A MIN. PER PSU (TOTAL OF 2 CIRCUITS NEEDED PER REMOTE LOCATION)

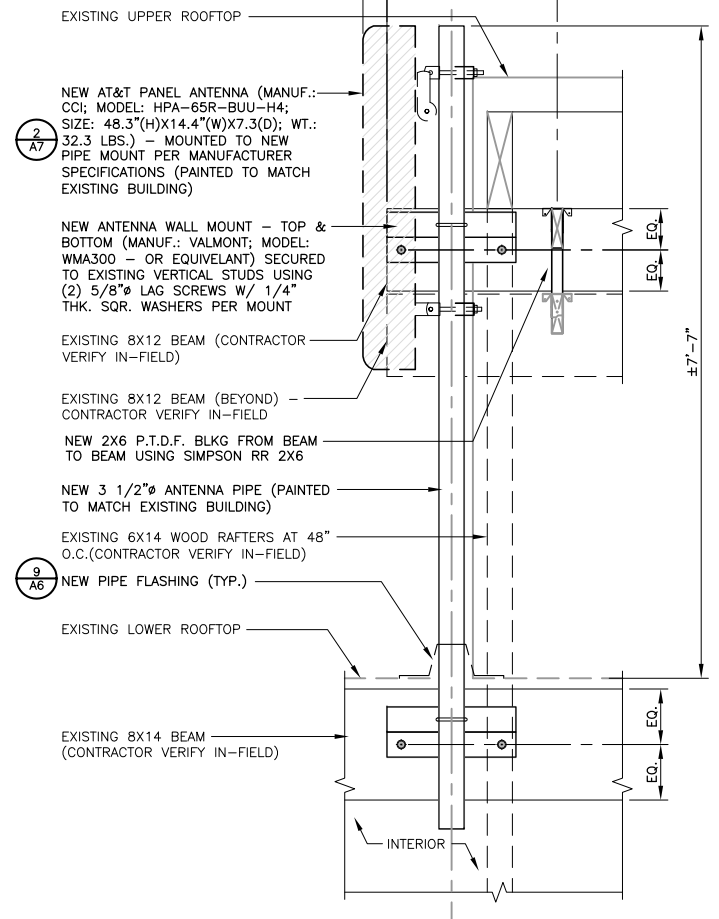
PSU AC08 UNIT 5

GENERAL NOTES:

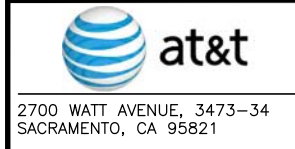
1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE ARCHITECT/ENGINEER, AND PROJECT MANAGER, IN WRITING, SHOULD ANY DISCREPANCIES BE FOUND PRIOR TO PROCEEDING WITH WORK.
2. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETE STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND THE EXISTING STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, ETC. VISITS BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OF THESE ITEMS.
3. ALL WORK NOT DETAILED OR NOTED SHALL BE CONSTRUCTED IN ACCORDANCE WITH OTHER SIMILAR WORK AND TYPICAL DETAILS SHOWN ON THE DRAWINGS. DIMENSIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. NO PIPES OR DUCTS SHALL BE PLACED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE ARCHITECT.
4. ALL WORK PERFORMED ON PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES INCLUDING OSHA AND STATE SAFETY ORDERS. THE GENERAL CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL, AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.

GENERAL STRUCTURAL NOTES 1

- NOTES:**
1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS
 2. CONTRACTOR TO ENSURE WATERTIGHTNESS/WEATHERPROOFING AT ALL EXTERIOR PENETRATIONS AS REQUIRED PER STANDARD CODE COMPLIANCE
 3. ALL EXTERIOR ANTENNA EQUIPMENT TO BE PAINTED TO MATCH EXISTING BUILDING (CONTRACTOR TO VERIFY IN-FIELD/LANDLORD)
 4. CONTRACTOR TO ENSURE TO USED NO LEAD-BASED PAINT PRODUCTS.



ANTENNA MOUNTING 2



GRANLIBAKKEN TAHOE
FA NO. 15332991

725 GRANLIBAKKEN RD.,
TAHOE CITY, CA 96145



REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
GENERAL STRUCTURAL NOTES, & DETAILS	
SHEET	DGE NO.
A6	P21AT003
AGENDA ITEM NO. 10	SITE NAME
NO. 10	GRANLIBAKKEN TAHOE

GPS/AVIATION SPECIAL PURPOSE ANTENNAS
High Rejection GPS Timing Antennas

GPS-TMG-HR-26N, High Rejection 26dB With Enhanced Narrow Band Filtering

The GPS-TMG-HR-26 timing reference antennas feature a 26 dB amplifier and narrow band high rejection filtering specifically designed to support long-lasting, trouble-free deployments in congested cell-site applications with severe interference around the GPS L1 frequency.

The proprietary quadrifilar helix design, coupled with multi-stage filtering provides superior out-of-band rejection and lower elevation pattern performance than traditional patch antennas.

The unique radome shape sheds water and ice, while eliminating problems associated with bird perching. The antenna may be purchased by itself or with pipe mounting hardware. Custom models or site kits options are also available. The antenna label and collar mount are color coded red for differentiation purposes.

This antenna is made of materials that fully comply with provisions stipulated by EU directives RoHS 2002/95/EC.



GPS-TMG-HR-26N



GPS-TMG-MNT-R GPS-TMG-HR-26MCA

Antenna Element Electrical Specifications

Frequency Band	Antenna Gain	Nominal Impedance	VSWR	Polarization	Connector
1575.42 +/- 10 MHz	3.5 dBi	50 ohms	≤1.5:1	Right hand circular	H, female (see bottom feed)

Mechanical Specifications

Antenna Dimensions	Shipping Dimensions	Antenna Weight	Shipping Weight	Radome Color
5.0" H x 3.2" D (126 H x 81 mm)	7.5" L x 4.4" W x 3.8" D (190 L x 112 x 96 mm)	0.6 lbs (0.3 kg)	1.9 lbs (0.9 kg)	White

Environmental Specifications

Temperature Range	Humidity
-40 C to +85 C	95%

Mounting

All mounting options fit pipes of 1"-1.45" (25 mm-37 mm) maximum diameter.

Model	Options
GPS-TMG-HR-26H	Antenna Only. Does not include mounting hardware.
GPS-TMG-HR-26MCA	Includes red powder coated collar mount (GPS-TMG-MNT-R)

*Special order. Please contact PCTEL Customer Service for ordering detail and additional mounting options

PCTEL, Inc. WEB: www.antenna-pctel.com

PCTEL

Low Noise Amplifier Specifications

Frequency Band (MHz):	1575.42 +/- 1.2 MHz
Amplifier Gain:	26.5 dB +/- 1 dB
Nominal Impedance:	50 ohms
Output VSWR:	< 2.0:1
Noise Figure (including pre-selector):	+4.0 dB @ -25 C (typ.) +4.5 dB @ -25 C (max.)
Operating DC Voltage:	1.3 - 10.0 V (regulated)
Survival DC Voltage:	24V
DC Current:	< 40 mA @ 5V
Filtering:	4-stage filtering including pre-selector
Out-of-Band Rejection:	+15 dB @ 1575 MHz +45 dB @ 1625 MHz



DATA SHEET

Antennas MultiPort Series

HexPort Multi-Band Antenna HPA-65R-BUJ-H4



Overview

- Four foot (1.2 m) six port antenna with a 65° azimuth beamwidth covering 698-894 MHz and 1710-2340 MHz
- Four high band and two low band ports including the WCS band in a single antenna
- Sharp elevation beamwidth aids in network planning
- Optimal elevation sidelobe performance
- Enhanced array spacing ensures optimal MIMO performance
- Exceeds minimum PIM performance requirements
- Multi-network solution in one radome with six ports
- Reduces tower load and increases space for tower mounted remote radio heads
- Multi-band design improves site radio resource management
- Field replaceable, integrated A/SG 2.0 compliant Remote Electrical Tilt (RET) system with independent tilt control for each paired port

The CCI HexPort multi-band array is a six port antenna with full Wireless Communication Service (WCS) band coverage. With four high band ports covering 1710-2340 MHz and two low band ports covering 698-894 MHz, this four foot (1.2 m) CCI HexPort provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) in the high band. The HexPort allows separate tilt control for each pair of ports enabling maximum flexibility in network deployment.

CCI has engineered its antennas using new and innovative design techniques to provide optimal sidelobe performance, sharp elevation beams, and high front to back ratio. Multiple shippings can now be connected to a single antenna, reducing tower load, lease expense, deployment time and installation cost. CCI antennas are designed and produced to ISO 9001:2008 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the high band and 2x2 MIMO for the low band
- Increase capacity without adding antennas
- Deploy WCS band without increasing antenna count
- Costly current, and next-generation basestation technologies on the same antenna

www.cciproducts.com EXTENDING WIRELESS PERFORMANCE



SPECIFICATIONS

HexPort Multi-Band Antenna HPA-65R-BUJ-H4

Electrical	2 x Low Band Ports for 698-894 MHz		4 x High Band Ports for 1710-2340 MHz			
	Frequency Range	Gain	698-894 MHz	1552-1960 MHz	1710-1760/2110-2160 MHz	2325-2340 MHz
Frequency Range	698-894 MHz	14.1 dBi	14.1 dBi	15.4 dBi	15.0 dBi	16.7 dBi
Gain	15.4 dBi	14.1 dBi	15.4 dBi	15.0 dBi	16.7 dBi	16.5 dBi
Azimuth Beamwidth (-5dB)	65°	65°	65°	65°	65°	58°
Elevation Beamwidth (-5dB)	15.0°	16.0°	8.9°	10.0°	7.8°	6.9°
Electrical DownTilt	0° to 10°	0° to 10°	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobe (1st Upper)	< -20 dB	< -20 dB	< -19 dB	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB
Front-to-Back Ratio over 20°	> 20 dB	> 27 dB	> 20 dB	> 20 dB	> 20 dB	> 20 dB
Cross-Polar Discrimination (at Peak)	> 25 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination (at 60°)	> 15 dB	> 13 dB	> 17 dB	> 17 dB	> 17 dB	> 17 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	< -150 dBc	< -150 dBc	< -150 dBc	< -150 dBc	< -150 dBc	< -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

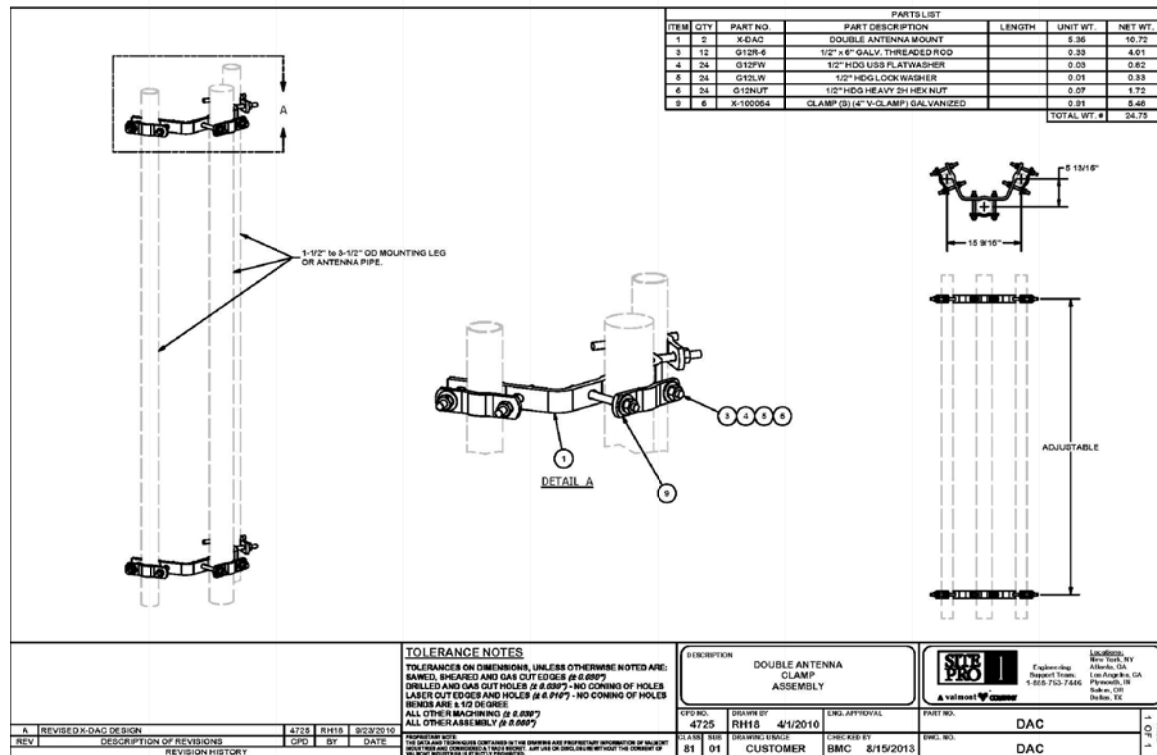
Dimensions (LxWxD)	48.3x14.4x7.3 in (1228x366x85 mm)
Survival Wind Speed	< 150 mph (241 kph)
Front Wind Load	153 lbs (69.3 kg) @ 100 mph (161 kph)
Side Wind Load	85 lbs (38.5 kg) @ 100 mph (161 kph)
Equivalent Flat Plate Area	6.0 m² (10.6 m²)
Weight	27.3 lbs (12.4 kg)
RET System Weight	5.0 lbs (2.3 kg)
Connector	6 x 7-15 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

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UNUSED

GPS ANTENNA SPEC SHEETS

3



DOUBLE ANTENNA PIPE CLAMP

4

OMNI DIRECTIONAL ANTENNA SPEC SHEETS

2

SIGNAGE

1



GRANLIBAKKEN TAHOE
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REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
SIGNAGE, & ANTENNA EQUIPMENT SPECIFICATIONS	
SHEET	DGE NO.
A7	P21AT003
AGENDA ITEM NO. 10	SITE NAME
	GRANLIBAKKEN TAHOE

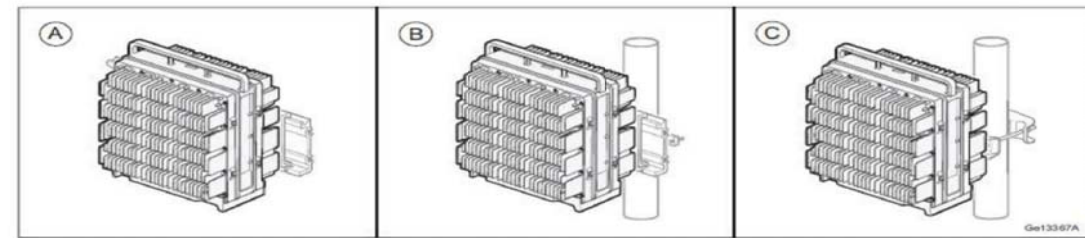
RRUS 8843 B2, B66A

- › B2, B66A
 - B2 TX=1930 - 1990 MHz, B66A TX=2110 - 2180 MHz
 - B2 RX = 1850 - 1910 MHz, B66A RX = 1710 - 1780 MHz
- › CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. **Install 2 SFP7s and connect 2 fiber pair to the RRUS 8843 during initial install.** 2nd CPRI is reserved for 5G NR deployment later. Do not connect SFP7 to DUL20.
- › Only use Ericsson supplied and approved SFP7s **RDH10265/25**.
 - Install 2 SFP RDH 10265/3 for CPRI length 1.4 km - 10 km
 - Install SFP7 (pair): RDH 102 70/1 and RDH- 102 70/2 (bi-directional SFP7 for CPRI length > 10 km)
- › 2 external alarm inputs
- › Max wind load @ **50m/sec = 260 N**
- › Breaker size = **2x30A**, DC Power Consumption = **1520 W**(for dimensioning). **Both DC power connections must be connected and operational for the radio to operate. Each DC Feed must support 1100W individually for cable size, voltage drop engineering. A single DC trunk cable that can handle 1520W and #10AWG Y DC splitter cable from the surge suppressor to the 2 DC power connections can be used with a single 40A breaker.**
- › **40 mm** horizontal separation required between radios mounted side by side
- › **200mm** separation required from antenna backplane to radio
- › **400mm** vertical outdoor/indoor separation required between 2 radios
- › **500mm** vertical separation below antenna
- › **200mm** horizontal separation between radio and side edge of antenna
- › Min, Max DC cable size from squid to radio = **10,8 AWG**
 - Adapter is required for 2-wire connection
 - Shielded DC cable is required
- › Ground cable size = **2AWG**
- › Dimensions (incl. handles, feet and sunshield, w/o fan unit)
 - Height: 14.9" (380 mm)
 - Width: 13.2" (335 mm)
 - Depth: 10.9" (277 mm)
- › Weight, excl. mounting hardware = **72 lbs (32.6 kg)**



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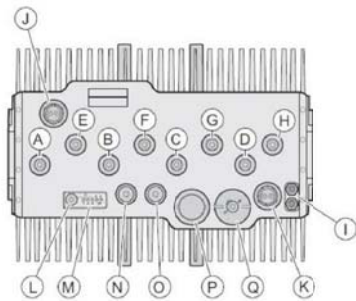
RRUS 8843 MOUNTING OPTIONS



Installation Method	Description
A	Wall installation
B	Pole installation
C	Pole installation with single pole clamp

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RRUS 8843 B2, B66A CONNECTION INTERFACES



- 4 TX / 4RX Mode Configured Band
RF Ports A,B,C,D Band 2 (PCS)
RF Ports E,F,G,H Band 66A (AWS)
- 2 TX / 2 RX Configuration Band
RF Ports A,D Band 2 (PCS)
RF Ports E,H Band 66A (AWS)

Position	Description	Marking	Connector Types	Cable Types
A	Antenna A ⁽¹⁾	A	4.3-10 Plus	
B	Antenna B	B		
C	Antenna C	C		
D	Antenna D	D		
E	Antenna E ⁽¹⁾	E		
F	Antenna F	F		
G	Antenna G	G		
H	Antenna H	H		
I	Grounding		2 x M8 bolt	
Position	Description	Marking	Connector Types	Cable Types
J	+48 V DC power supply	+48 V	Power connector	
K	-48 V DC power supply	-48 V		
L	Maintenance station			
M	Optical indicators			
N	External alarm and fan unit power supply and control	GN-1, GN-2	Mini DFR connector, 14 pin	
O	ALU (used for a Hot 1 unit for example)	ALU		
P	Optical cable 1	OP-1		
Q	Optical cable 2	OP-2	LC (on SFP) with adapter for FPLC/D	

CPRI, RET/AISG port, and ALD port caps have lanyards attached to the radio. DC and RF ports have protective caps to be removed when DC, RF connected to radio.

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REMOTE RADIO UNIT SPEC SHEETS



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REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
ANTENNA EQUIPMENT SPECIFICATIONS	
SHEET	DGE NO.
A8	P21AT003
AGENDA ITEM NO.	SITE NAME
NO. 15332991	TAHOE

1. ALL WORK AND MATERIAL SHALL BE IN COMPLETE COMPLIANCE WITH THE LATEST EDITION OF THE N.E.C. AND ALL REGULATIONS, LAWS, SAFETY ORDERS, ORDINANCES OR CODES. IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

2. THE SEISMIC BRACING AND ANCHORAGE OF ELECTRICAL CONDUITS AND WIREWAYS SHALL BE IN ACCORDANCE WITH THE UNIFORM BUILDING CODE, CHAPTER 23 AND "GUIDELINE FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS," PUBLISHED BY SMACNA AND FPIC, OR THE SUPERSTRUT-SEISMIC RESTRAINTS SYSTEM, OR THE KIN-LINE SEISMIC RESTRAINT SYSTEM.

3. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY WHERE (UL) DOES NOT HAVE LISTING. CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY. IN ADDITION, THE MATERIALS, EQUIPMENT, AND INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES AND REGULATIONS:

- AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- AMERICAN STANDARD ASSOCIATION (ASA)
- NATIONAL FIRE PROTECTION AGENCY (NFPA)
- AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
- NATIONAL ELECTRICAL CODE (NEC)
- INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
- ALL LOCAL CODES HAVING JURISDICTION

4. THE CONTRACTOR SHALL VISIT THE SITE, INCLUDING ALL AREAS INDICATED ON THE DRAWINGS, AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AS WELL AS THE ELECTRICAL AND GROUNDING REQUIREMENTS OF THIS PROJECT. BY SUBMITTING A BID, HE ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.

5. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS AND SPECIFICATIONS AS WELL AS THE LATEST EDITION OF ANY DESIGN SPECIFICATIONS. HE SHALL CHECK THE DRAWINGS OF THE OTHER TRADES AND SHALL CAREFULLY READ THE ENTIRE SPECIFICATIONS AND DETERMINE HIS RESPONSIBILITIES. FAILURE TO DO SO SHALL NOT RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY OF DOING THE WORK IN COMPLETE ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

6. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER AND THE ARCHITECT/ENGINEER IN WRITING PRIOR TO SUBMITTING A BID. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL SUBJECT TO THE INTERPRETATION OF THE PROJECT MANAGER AT NO ADDITIONAL COST.

7. THE CONTRACTOR SHALL OBTAIN AND KEEP UP-TO-DATE A COMPLETE RECORD SET OF DRAWINGS. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE PROJECT MANAGER, AND ALL CHANGES AS NOTED ON THE RECORD SET OF DRAWINGS SHALL BE INCORPORATED THEREON BY THE CONTRACTOR WITH RED INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER.

8. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER, WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE PROJECT MANAGER AND THE PROPERTY OWNER 14 DAYS PRIOR TO THE OUTAGE. ANY OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID. WORK IN EXISTING SWITCHBOARDS OR PANELBOARDS SHALL BE COORDINATED WITH THE PROJECT MANAGER AND THE BUILDING OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.

9. SHOP DRAWINGS SHALL BE SUBMITTED FOR ITEMS INDICATED ON PLANS. SHOP DRAWINGS SHALL INCLUDE ALL DATA WITH CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS AND MANUFACTURER'S BROCHURES.

10. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND THE DRAWINGS HAVE BEEN FULLY COMPLETED, THE PROJECT MANAGER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF THOSE REPRESENTATIVES. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE PROJECT MANAGER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

11. THE CONTRACTOR SHALL FURNISH ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION.

12. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTION TO EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. REVIEW THE DRAWINGS OF OTHER TRADES AND LOCATION OF EQUIPMENT.

13. EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS OR STRUCTURAL STEEL MEMBERS, SHALL BE DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING, AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR, OR CEILING.

14. UTILITY PENETRATIONS OF ANY KIND IN FIRE AND SMOKE PARTITIONS AND CEILING ASSEMBLIES, SHALL BE FIRESTOPPED AND SEALED WITH AN APPROVED MATERIAL SECURELY INSTALLED.

15. CONNECTIONS TO VIBRATING EQUIPMENT AND SEISMIC SEPARATIONS:
LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS AND IN AREAS EXPOSED TO WEATHER, DAMP LOCATIONS, CONNECTIONS TO TRANSFORMER ENCLOSURES, AND FINAL CONNECTIONS TO MOTORS.

PROVIDE A SEPARATE INSULATED GROUNDING CONDUCTOR IN FLEXIBLE CONDUIT RUNS. MAXIMUM LENGTH SHALL BE SIX FEET UNLESS OTHERWISE NOTED.

16. ROUTE EXPOSED AND CONCEALED CONDUIT PARALLEL AND PERPENDICULAR TO WALL AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAWCUTTING, TRENCHING, BACKFILLING, COMPACTING AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK. ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION AND COORDINATION WITH ALL PROPERTY OWNERS, UTILITIES, AND APPROPRIATE "DIG ALERT" UNDERGROUND MARKING AGENCIES AND COMPANIES. THE CONTRACTOR SHALL ALWAYS USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED DURING THE COURSE OF HIS WORK.

18. WHENEVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, CIRCUIT BREAKERS, GROUND FAULT PROTECTION SYSTEMS, ETC. (ALL MATERIALS), ARISES ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE PROJECT MANAGER AND THE ARCHITECT/ENGINEER.

19. STRAIGHT FEEDER, BRANCH CIRCUIT, AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT WEATHER PROOF PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR PER THE LATEST EDITION OF THE DESIGN SPECIFICATIONS, WHICHEVER IS MOST RESTRICTIVE. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

20. MAXIMUM NUMBER OF CONDUCTORS IN OUTLET SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

21. IDENTIFICATION NAME PLATES SHALL BE MICARTA 1/8 INCH THICK AND OF APPROVED SIZE WITH BEVELED EDGES AND ENGRAVED WHITE LETTERS A MINIMUM OF 1/4 INCH HIGH ON BLACK BACKGROUND. NAMEPLATES SHALL BE PROVIDED ALL CIRCUITS IN THE SERVICE DISTRIBUTION AND POWER DISTRIBUTION SWITCH BOARDS OR PANEL BOARDS, DISCONNECTING SWITCHES, TRANSFORMERS, TERMINAL CABINETS, TELEPHONE CABINETS, ETC. ALL NAMEPLATES SHALL BE ATTACHED WITH SCREWS. PULL BOXES, JUNCTION BOXES, AND DEVICE BOXES SHALL BE MARKED WITH A PERMANENT MARKER.

22. THE EXACT LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE PLANS AND DETAILS, PRIOR TO INSTALLATION.

23. DRAWINGS ARE DIAGRAMMATIC ONLY. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL, OR MECHANICAL ITEMS OR FEATURES.

24. RIGID GALVANIZED STEEL CONDUIT SHALL BE FULL WEIGHT THREADED TYPE. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN WALLS OR CEILING SPACES WHERE NOT SUBJECT TO MECHANICAL DAMAGE. DIRECT BURIED PVC SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB OR BELOW GRADE AND SHALL BE CONCRETE ENCASED UNLESS NOTED OTHERWISE. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED IN ALL CONDUIT RUNS. PROVIDE CONDUIT SUPPORTS NOT TO EXCEED 8'-0". PROVIDE 3-PC CONNECTORS FOR SECONDARY GROWTH PATH OF SURFACE MOUNTED EMT.

25. RIGID STEEL CONDUIT FITTINGS INCLUDING COUPLINGS, LOCKOUTS, NIPPLES, ETC. SHALL BE THREADED AND THOROUGHLY GALVANIZED EXCEPT WHERE AN ADAPTER IS NEEDED TO CONNECT TO PVC. ELECTRICAL METALLIC TUBING (EMT) CONDUIT FITTINGS SHALL BE STEEL, RAINTIGHT THREADLESS COMPRESSION TYPE. DIE CAST, SET SCREW, OR INDENTED TYPES ARE NOT ACCEPTABLE. SET SCREW TYPE IS NOT ACCEPTABLE.

26. ALL TELCO CONDUIT INSTALLATIONS AND OTHER EMPTY CONDUIT RUNS AND STUBS SHALL INCLUDE A YELLOW 3/8" POLYPROPYLENE PULL STRING.

27. ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM SIZE, TYPE THHN/THWN THERMOPLASTIC, 600 VOLT, 75 DEGREES CELSIUS WET AND 90 DEGREES CELSIUS DRY AND UL LISTED UNLESS NOTED OTHERWISE. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. UNLESS SPECIFICALLY NOTED TO THE CONTRARY. ALL WIRE CONNECTORS SHALL BE CRIMP COMPRESSION TYPE BY "THOMAS AND BETT" OR APPROVED EQUIVALENT, INSTALLED AND INSULATED PER THE MANUFACTURER'S RECOMMENDATIONS. ALL WIRE ENDS SHALL BE MARKED FOR EASY IDENTIFICATION AND TRACING.

28. JUNCTION AND PULL BOXES: FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE, DRAWN STEEL, KNOCKOUT TYPE WITH REMOVABLE MACHINE SCREW SECURED COVERS. FOR OUTSIDE, DAMP, OR SURFACE LOCATIONS, BOXES SHALL BE HEAVY CAST ALUMINUM OR CAST IRON WITH REMOVABLE, GASKETS, NON-FERROUS MACHINE SCREW SECURED COVERS. BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUIT ENTERING THE BOX AND EQUIPPED WITH PLASTER EXTENSION RINGS WHERE REQUIRED. BOXES SHALL BE LABELED TO INDICATE PANEL AND CIRCUIT NUMBER, OR TYPE OF SIGNAL OR COMMUNICATIONS SYSTEM.

29. ALL OUTDOOR ELECTRICAL DEVICES OR EQUIPMENT SHALL BE OF WEATHERPROOF TYPE.

30. ALL EQUIPMENT, MONOPOLE, FRAME, CABLE TRAY AND ANTENNA GROUND WIRE CONNECTIONS TO GROUND BUSSES SHALL BE MADE WITH CRIMP TYPE COMPRESSION CONNECTIONS TO CONNECTORS (MINIMUM 2 HOLE LUGS WITH FULL BOLTING). BUSS SHALL BE PRE-DRILLED TO ACCOMMODATE ALL CONNECTORS.

31. ALL GROUNDING SHALL BE PER N.E.C. SECTION 250 AND 810 AND THE GROUNDING REQUIREMENTS OF THESE DRAWINGS.

32. ALL GROUND WIRE CONNECTIONS BETWEEN GROUND BUSSES AND OTHER GROUND BUSSES AND GROUND RODS SHALL BE CADWELD.

33. ALL METALLIC GROUND WIRE CONDUIT SHALL BE GROUNDED TO THE GROUND WIRE USING SET SCREW CONNECTIONS AT CONDUIT END CAPS AND CRIMP CONNECTIONS AT WIRE.

34. COAT ALL BOLTED LUG & BUSS GROUND CONTACT SURFACES WITH KIPR-SHIELD, NO-OX, OR EQUAL PRIOR TO ATTACHMENT.

35. MAIN CIRCUIT BREAKER SHALL BE RATED FOR STANDARD A.I.C. RATING HIGHER THAN INCOMING A.I.C.

36. ALL EQUIPMENT SHALL BE U.L. LISTED.

37. ALL EQUIPMENT SHALL BE BRACED FOR STANDARD A.I.C. RATING HIGHER THAN INCOMING FROM UTILITY COMPANY.

38. ALL CORING CLEARANCES SHALL BE FIELD VERIFIED AND ALL CONDUIT ROUTING SHALL BE COORDINATED WITH PROPERTY OWNERS REPRESENTATIVE.

39. ALL CONNECTIONS TO EXISTING MAIN SWITCHGEAR INCLUDING "BUS-TAPS" AND/OR "HOT-TAPS" REQUIRE CERTIFICATION AND APPROVAL. FABRICATION AND CERTIFICATION SHALL BE FURNISHED BY A CONTRACTOR APPROVED BY THE APPLICABLE UTILITY.

40. CONTRACTOR SHALL COORDINATE WORK WITH UTILITY COMPANIES FOR FINAL AND EXACT WORK AND MATERIAL REQUIREMENTS, CONSTRUCT TO UTILITY COMPANIES ENGINEERING PLANS AND SPECIFICATIONS ONLY.

41. ALL BROCHURES, OPERATION MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE PROJECT MANAGER AT THE COMPLETION OF WORK.

42. SWITCHES AND RECEPTACLES AS SPECIFIED ON FLOOR PLANS.

1. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE POINT OF CONNECTION, CONDUIT ROUTE, INSTALLATION DETAILS AND SPECIFIC PROJECT PARAMETERS WITH THE LOCAL TELEPHONE COMPANY SINGLE POINT OF CONTACT (SPOC) PRIOR TO BEGINNING ANY WORK IN THE FIELD.

2. THE PROJECT ADDRESS AND ANY SPECIFIC UNIT NUMBER MUST BE PROVIDED TO THE LOCAL TELEPHONE COMPANY SPOC MINIMUM 1 WEEK PRIOR TO FINAL INSPECTION TO AVOID DELAY IN INSTALLATION OF SERVICE.

3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND FACILITIES AS SHOWN AND DETAILED ON THE PLANS AS REQUIRED FOR T1 SERVICE AND A SINGLE POTS LINE TO THE BTS FACILITY.

4. THE TELEPHONE TERMINAL BACKBOARD SHALL BE 30"x8"-0"x5/8" THICK FIRE RATED PLYWOOD SANDED AND PAINTED WITH FIRE RATED PAINT. MOUNT BACKBOARD BOTTOM AT 6" A.F.F. PROVIDE MINIMUM 12" CLEARANCE FROM POWER ON THE SAME WALL AND 42" MINIMUM CLEARANCE FROM ADJOINING OR OPPOSITE WALLS. VERIFY WIDTH.

5. CONDUIT SPECIFICATIONS SHALL BE AS FOLLOWS:
a. GENERAL: ALL TELEPHONE SERVICE CONDUIT SHALL RUN FROM POLE, VAULT, PULL-BOX, MANHOLE OR OTHER POINT OF CONNECTION ESTABLISHED BY THE LOCAL TELEPHONE COMPANY SPOC AND SHALL RUN CONTINUOUS TO AN EDGE OF THE TELEPHONE TERMINAL BACKBOARD.

b. UNDERGROUND CONDUIT AND BENS SHALL BE MINIMUM 4" DIAMETER SCHEDULE 40 PVC. TRENCH DEPTH SHALL PROVIDE FOR MINIMUM 24" COVER OVER CONDUIT. CONDUIT RUN SHALL BE NO MORE THAN 200 FEET IN LENGTH OR HAVE NO MORE THAN (2) 90° BENDS (OR EQUIVALENT) BETWEEN PULL BOXES.

c. ABOVE GROUND CONDUIT AND CONDUIT INSIDE BUILDINGS SHALL BE EMT WITH FITTINGS AS NOTED IN ELECTRICAL NOTES. PROVIDE A UL APPROVED 18" HIGH x 10" DEEP WEATHER RESISTANT NEMA 3R RATED PULL BOX ON ALL ABOVE GRADE CONDUIT RUNS AT INTERVALS NOT TO EXCEED 100 FEET OR (2) 90° BENDS (OR EQUIVALENT).

d. OVERHEAD EXTERIOR FEEDS SHALL BE 4" DIAMETER RIGID GALVANIZED CONDUIT WITH A WEATHERHEAD OF A TYPE AND AT A HEIGHT APPROVED BY LOCAL TELEPHONE COMPANY SPOC (MINIMUM 20 FEET ABOVE FINISHED GRADE).

6. A 1-1/4" DIAMETER ORANGE INTER-DUCT SHALL BE PROVIDED IN ALL TELEPHONE SERVICE CONDUIT.

7. A MINIMUM 3/8" YELLOW POLYPROPYLENE PULL ROPE SHALL BE INCLUDED IN EVERY INTER-DUCT WITH A SEPARATE 3/8" YELLOW POLYPROPYLENE PULL ROPE INSIDE THE CONDUIT, NOT INSIDE THE INTER-DUCT.

8. THE ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABILITY OR SHALL PROVIDE A NEW 120V POWER SOURCE MINIMUM 12" FROM TELEPHONE TERMINAL BACKBOARD.

9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A #6 SOLID INSULATED COPPER GROUND WIRE FROM A GROUND SOURCE APPROVED BY THE LOCAL TELEPHONE COMPANY SPOC MINIMUM STANDARD SOURCE SHALL BE A 5/8" DIAMETER x 8'-0" LONG COPPER CLAD STEEL GROUND ROD.

10. ALL WIRING SHALL BE DONE BY THE LOCAL TELEPHONE COMPANY UNLESS OTHERWISE NOTED.

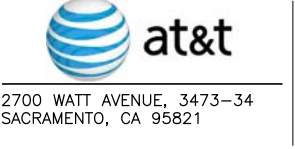
11. ALL TELEPHONE CONDUIT SHALL BE LABELED AT DESIGNATED TELEPHONE COMPANY.

TELEPHONE SPECIFICATIONS **1**

1. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASUREMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.
3. UTILITY CONTACTS FOR THIS PROJECT SHALL BE AS FOLLOWS:

POWER:	TELEPHONE:
TBD	TBD
.	.
.	.
CONTACT NAME	CONTACT NAME
CONTACT NUMBER	CONTACT NUMBER

ELECTRICAL SPECIFICATIONS **3** **UTILITIES NOTES** **2**



GRANLIBAKKEN TAHOE
FA NO. 15332991

725 GRANLIBAKKEN RD.,
TAHOE CITY, CA 96145

DELTA GROUPS
ENGINEERING, INC.
CONSULTING ENGINEERS

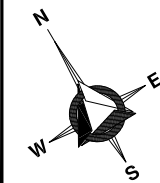
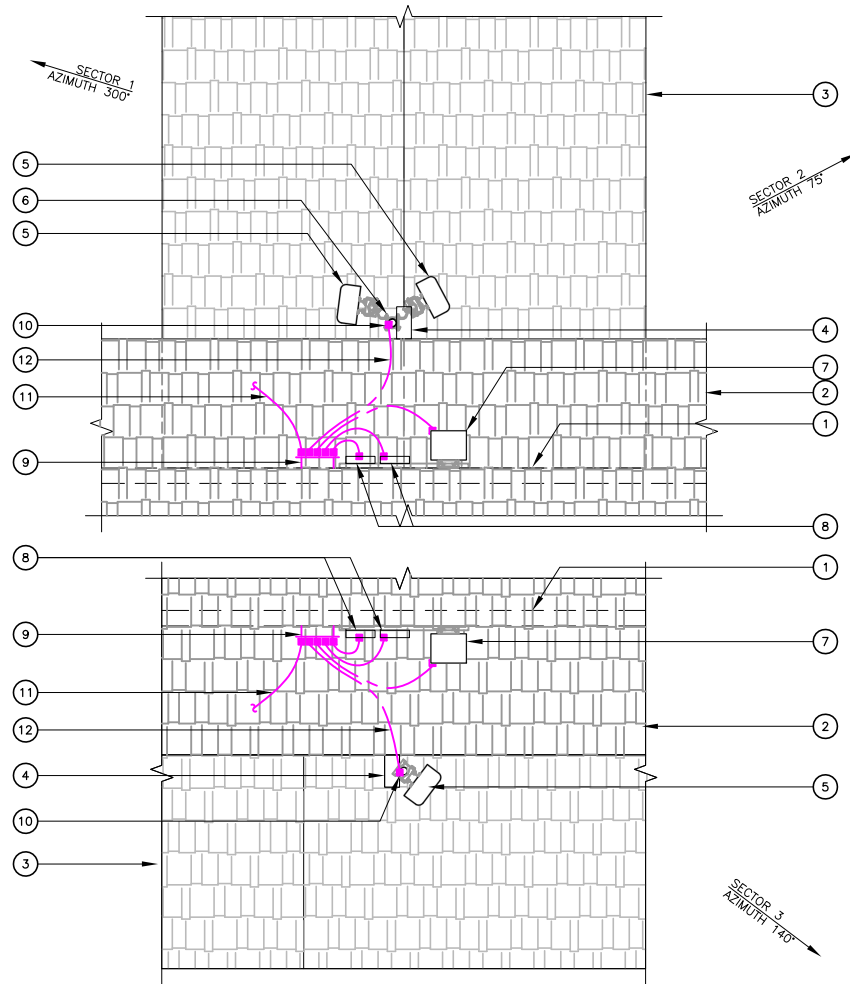
6800 KOLL CENTER PARKWAY, SUITE 225
PLEASANTON, CA 94566
TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
ELECTRICAL & TELEPHONE SPECIFICATIONS & UTILITIES NOTES	
SHEET	DGE NO.
E1	P21AT003
AGENDA ITEM NO.	SITE NAME
NO. 15332991	TAHOE

KEY NOTES:

- ① EXISTING BUILDING EXTERIOR WALL (BELOW) - TYP.
- ② EXISTING UPPER ROOFTOP
- ③ EXISTING LOWER ROOFTOP
- ④ EXISTING WOOD BEAM (TYP.)
- NEW AT&T PANEL ANTENNA - PIPE MOUNTED TO EXISTING BUILDING PER MANUFACTURE SPECIFICATION (PAINT TO MATCH EXISTING BUILDING)
- ⑤ NEW DOUBLE ANTENNA PIPE CLAMP ASSEMBLY
- ⑥ NEW REMOTE RADIO UNIT - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL
- NEW PSU UNIT - TYP. OF 2 PER REMOTE - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL. (15A CIRCUIT PER PSU NEEDED)
- ⑦ NEW EQUIPMENT BUS BAR
- ⑧ NEW MECHANICAL CONNECTION (TYP.)
- NEW #2 GREEN STRANDED INSULATED GROUND WIRE - TIE TO EXISTING BUILDING GROUNDING SYSTEM OR COLD WATER PIPE (CONTRACTOR TO VERIFY IN-FIELD)
- ⑨ NEW #2 GREEN STRANDED INSULATED GROUND WIRE - TIE TO BUS BAR



ANTENNA PLAN (DEARWANDER BUILDING)

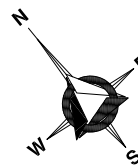
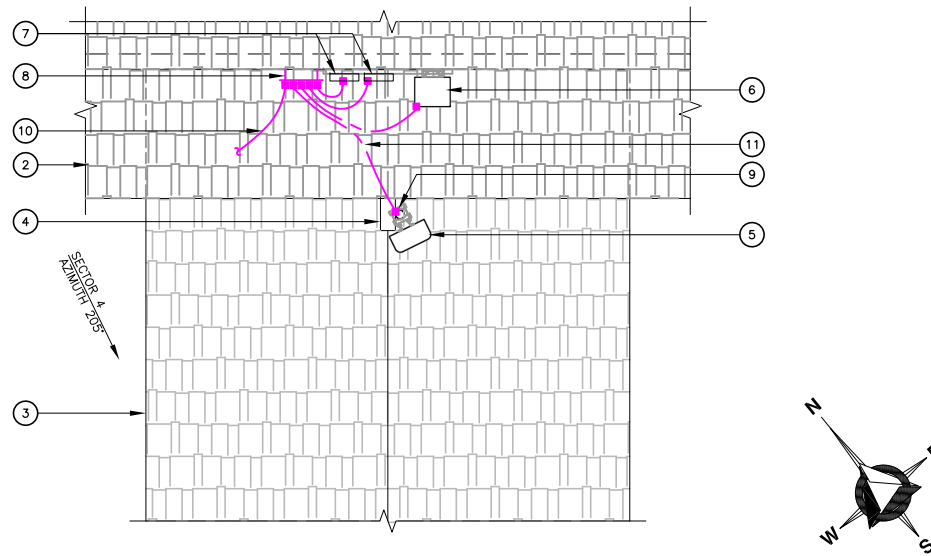
SCALE: 3/8 inch = 1 ft



2

KEY NOTES:

- ① EXISTING BUILDING EXTERIOR WALL (BELOW) - TYP.
- ② EXISTING UPPER ROOFTOP
- ③ EXISTING LOWER ROOFTOP
- ④ EXISTING WOOD BEAM (TYP.)
- NEW AT&T PANEL ANTENNA - PIPE MOUNTED TO EXISTING BUILDING PER MANUFACTURE SPECIFICATION (PAINT TO MATCH EXISTING BUILDING)
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- NEW PSU UNIT - TYP. OF 2 PER REMOTE - MOUNTED ON AN EQUIPMENT H-FRAME AT EXISTING EXTERIOR WALL. (15A CIRCUIT PER PSU NEEDED)
- ⑥ NEW EQUIPMENT BUS BAR
- ⑦ NEW MECHANICAL CONNECTION (TYP.)
- NEW #2 GREEN STRANDED INSULATED GROUND WIRE - TIE TO EXISTING BUILDING GROUNDING SYSTEM OR COLD WATER PIPE (CONTRACTOR TO VERIFY IN-FIELD)
- ⑧ NEW #2 GREEN STRANDED INSULATED GROUND WIRE - TIE TO BUS BAR



ANTENNA PLAN (BEARPAW BUILDING)

SCALE: 3/8 inch = 1 ft



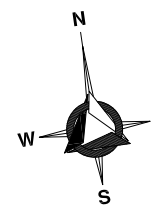
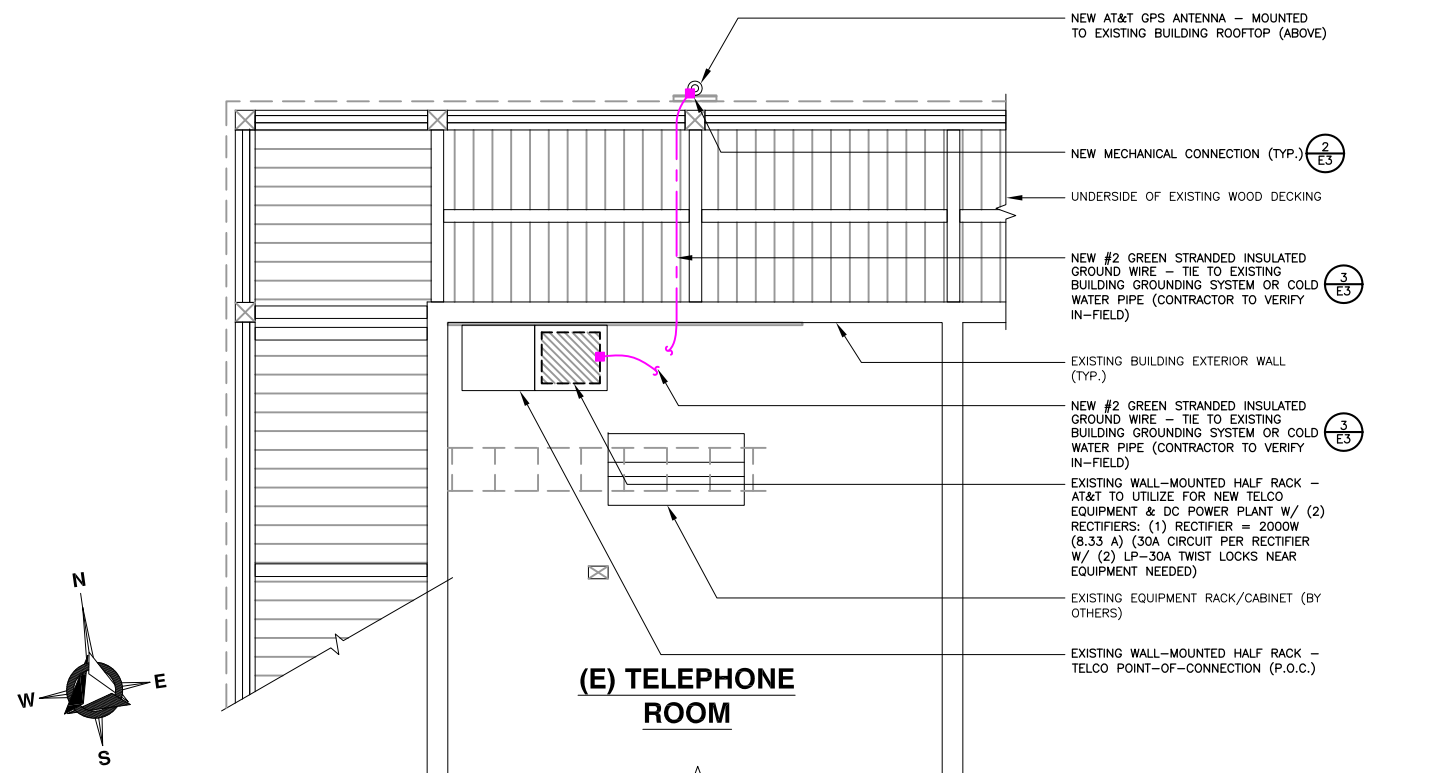
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EQUIPMENT GROUNDING PLAN (MAIN LODGE)

SCALE: 3/8 inch = 1 ft



1



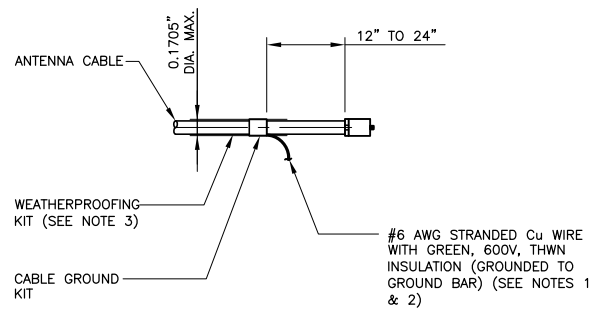
GRANLIBAKKEN TAHOE
FA NO. 15332991

725 GRANLIBAKKEN RD.,
TAHOE CITY, CA 96145

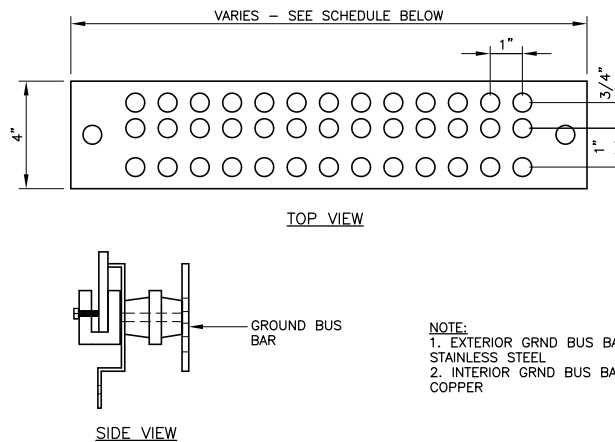
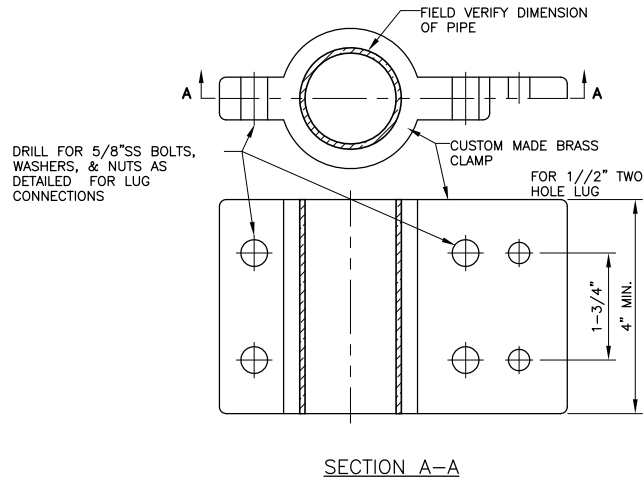


REV.	DATE	DESCRIPTION	BY	CHK
1	5/25/21	ISSUED FOR REVIEW	JK	-

SHEET TITLE	
LOWERY STUDENT CENTER & CVPA BLDG. EQUIPMENT & ANTENNA GROUNDING PLANS	
SHEET	DGE NO.
E2	P21AT003
AGENDA ITEM NO.	SITE NAME
NO. 15	GRANLIBAKKEN TAHOE



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



1. PROVIDE A COMPLETE GROUNDING SYSTEM PER NATIONAL ELECTRICAL CODE ARTICLE 250 AND EQUIPMENT MANUFACTURER'S REQUIREMENTS. USE THESE DRAWINGS AS MINIMUM GUIDELINE TO IMPLEMENT CARRIER AND EQUIPMENT CABINET MANUFACTURER SPECIFICATIONS.
2. ALL DETAILS ARE SHOWN IN GENERAL TERMS, ACTUAL GROUNDING INSTALLATION AND MOUNTING MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
3. ALL GROUNDING CONDUCTORS SHALL BE COPPER.
4. ALL GROUNDING WIRE BELOW GRADE SHALL BE BARE #2 TINNED SOLID COPPER WIRE BURIED @ 18" MINIMUM. ALL CONDUIT BELOW GRADE SHALL BE PVC SCHEDULE 80.
5. ALL GROUND WIRE ABOVE GRADE IS STRANDED COPPER (UNO). SIZE AS SHOWN ON PLANS.
6. USE MINIMUM #2/0 AWG COPPER CONDUCTORS FOR COMMUNICATION SERVICE GROUNDING CONDUCTORS.
7. ALL GROUND CONNECTIONS SHALL BE LISTED FOR THE PURPOSED INTENDED.
8. ALL LUGS SHALL BE 2-HOLE LONG-BARREL SOLID COPPER BURNDY THOMAS & BETTS OR EQUAL.
9. MINIMUM BEND RADIUS FOR GROUNDING CONDUCTORS #2 AND LARGER SHALL BE 12", 8" MINIMUM RADIUS FOR SMALL CONDUCTORS.
10. ALL CONNECTIONS AT BELOW GRADE APPLICATIONS SHALL BE CADWELD.
11. ALL IRREVERSIBLE COMPRESSION TYPE CONNECTORS SHALL BE INSTALLED USING A 12 TON HYDRAULIC PRESS MINIMUM.
12. INSTALL GROUNDING AND BONDING CONDUCTORS WITH SUFFICIENT SLACK TO AVOID BREAKING DUE TO SETTLEMENT AND MOVEMENTS OF CONDUCTORS AT ATTACHED POINTS.
13. COAT ALL BOLTED LUG & BUS GROUND CONTACT SURFACES WITH KOPR-SHEILD, NO-OX, OR PRIOR TO ATTACHMENT.
14. GROUNDING RODS SHALL BE 5/8" DIAMETER x10'-0" LONG COPPER CLAD STEEL.
15. WHERE MULTIPLE GROUND RODS ARE INSTALLED, THEY SHALL NOT BE LESS THAN 10 FEET NOR MORE THAN 16 FEET APART UNLESS APPROVED BY THE CARRIER REPRESENTATIVE, OR CONSTRUCTION MANAGER.
16. DRIVEN GROUND RODS SHALL BE USED EXCEPT WHERE SPECIFIC SITE CONDITIONS PRESENT DIFFICULTY, IN WHICH CASE A ELECTROLYTIC (CHEMICAL) ROD SYSTEMS MAY BE USED, SUCH AS MANUFACTURED BY LYNCOLE KIT GROUNDING SYSTEM OR EQUAL.
17. CONTRACTOR SHALL TEST GROUND RESISTANCE AT "MGB" TO VERIFY THAT RESISTANCE SHALL NOT EXCEED 5 OHMS AND SHALL SUBMIT AN INDEPENDENT TESTING REPORT TO AT&T'S REPRESENTATIVE, OR CONSTRUCTION MANAGER INDICATING RESISTANCE VALUE OBTAINED. CONTRACTOR SHALL PROVIDE GROUNDING SYSTEM AS PART OF ITS BID, AS REQUIRED TO ATTAIN A 5 OHM VALUE OR LESS.
18. TESTING: PERFORM FULL FALL OF POTENTIAL TEST PER EEE STANDARD NO. 81: SECTION 9.04 ON THE MAIN GROUNDING REQUIREMENTS.
19. FINAL GROUND TEST SHALL BE MADE IN PRESENCE OF THE CARRIER REPRESENTATIVE, OR CONSTRUCTION MANAGER.

GROUNDING KIT

7

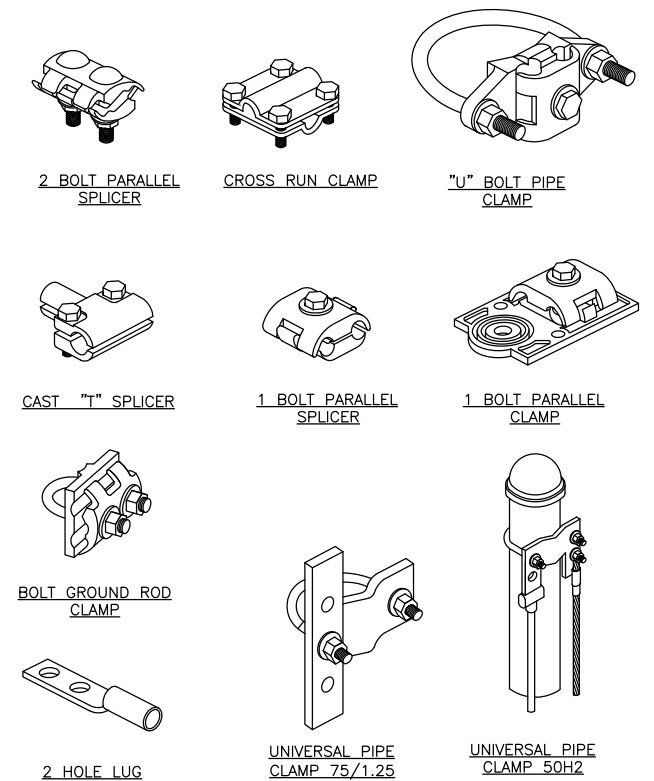
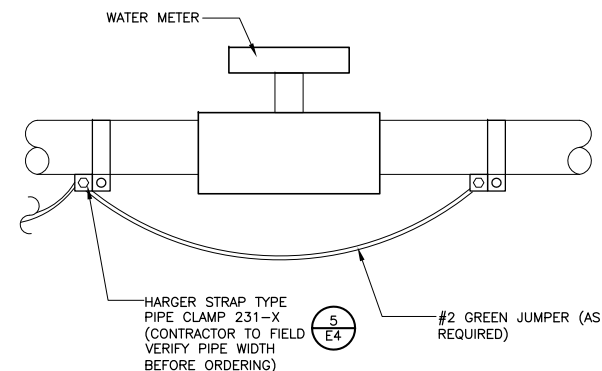
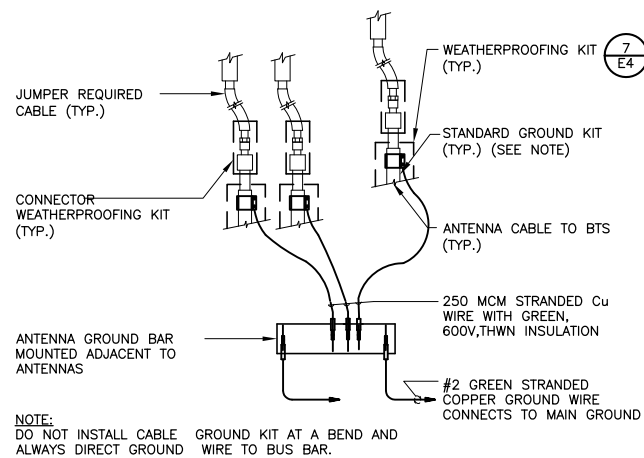
GROUNDING PIPE CLAMP

5

EQUIPMENT BUS BAR

3

GENERAL GROUNDING NOTES



UNUSED

ANTENNA GROUNDING

6

GROUND TO COLD WATER PIPE

4

MECHANICAL CONNECTIONS

2



GRANLIBAKKEN TAHOE
FA NO. 15332991

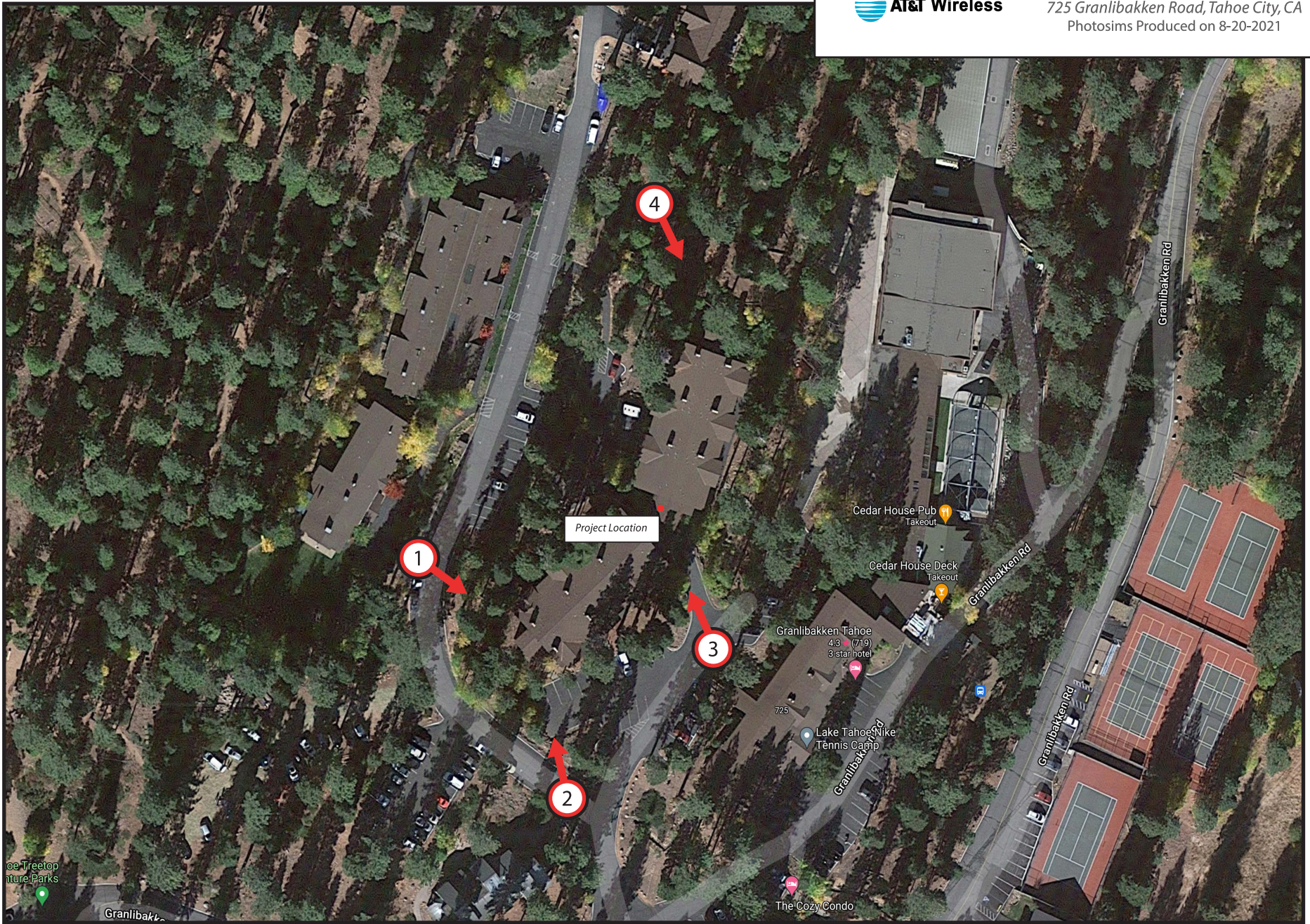
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SHEET TITLE	
GENERAL GROUNDING NOTES, AND GROUNDING DETAILS	
SHEET	DGE NO.
E3	P21AT003
AGENDA ITEM NO. 10	SITE NAME
NO. 15332991	TAHOE



Existing



Proposed



view from road adjacent to Granlibakken Road looking southeast at site

Existing



Proposed



view from road adjacent to Granlibakken Road looking northwest at site

Existing



Proposed



Proposed AT&T Installation

view from road adjacent to Granlibakken Road looking northwest at site

Existing



Proposed



view from trail adjacent to Granlibakken Road looking southeast at site