

Case File Number: PLN17089

July 5, 2017

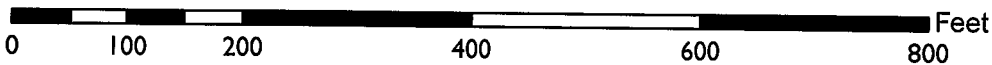
Location:	The public Right of Way adjacent to West Oakland Bart on Fifth Street at Center Street on a PG&E Utility /Telephone Pole (See map on reverse)
Assessor Parcel Numbers:	(004 -0071-003-00) nearest lot adjacent to the project site.
Proposal:	Installation of a wireless telecommunication facility on an existing 48' tall wooden utility pole located in the public right-of-way. The project involves the addition of one (1) canister antenna (23.5" long and 7.9" in diameter) at a height of 33' and two radio units (7.9" tall and 7.9" wide) 15'-6" and 20'-5" above ground.
Applicant:	On Air LLC for Verizon Wireless
Contact Person/ Phone Number:	Jay Gruendle of On Air LLC (707) 477-2782
Owner:	Pacific Gas & Electric (PG&E)
Case File Number:	PLN17089
Planning Permits Required:	Regular Design Review (non-residential) to install a wireless Macro Telecommunications Facility (17.136.050 (B)(2); Additional Findings for a Macro Facility (OMC Sec. 17.128.070(B)(C).
General Plan:	Community Commercial
Zoning:	S-15W Transit Oriented Development Zone
Environmental Determination:	Exempt, Section 15303 of the State CEQA Guidelines (small facilities or structures; installation of small new equipment and facilities in small structures), and that none of the exceptions to the exemption in CEQA Guidelines section 15300.2 are not triggered by the proposal. Exempt, Section 15183 of the State CEQA Guidelines; projects consistent with a community plan, general plan or zoning.
Historic Status:	No Historic Record – Utility Pole
City Council District:	3
Date Filed:	April 6, 2017
Finality of Decision:	Appealable to City Council within 10 Days
For Further Information:	Contact case planner Jose M. Herrera-Preza at (510) 238-3808 or jherrera@oaklandnet.com

SUMMARY

The project applicant (On Air LLC for Verizon Wireless) is proposing to install a wireless telecommunication facility on an existing 48' tall wooden PG&E utility pole located in the public right-of-way adjacent to West Oakland Bart on Fifth Street at Center Street. The project involves installation of one (1) canister antenna at 33' above the right-of-way and two radio units (7.9" tall and 7.9" wide) mounted at a height of 15'-6" and 20'-5" above the right-of-way.

Major Design Review is required for the installation of a new Macro Telecommunications on the public right-of-way within 100' from a residential zone. The proposed antenna and associated

CITY OF OAKLAND PLANNING COMMISSION



Case File: PLN17089

Applicant: On Air LLC for Verizon Wireless

Address: The Public Right-of-Way adjacent to West Oakland BART
near Fifth Street at Center Street

Zone: S-15W

equipment are compatible with the existing PG&E utility pole and typical of utility infrastructure normally found on these poles. The proposed antenna will be extended toward the street and painted a mesa brown color to blend with the site. As a result, the proposed telecommunication facility is in an appropriate location and would not significantly increase negative visual impacts to neighboring residential properties. The proposed project meets all the required findings for approval of this project.

TELECOMMUNICATIONS BACKGROUND

Limitations on Local Government Zoning Authority under the Telecommunications Act of 1996

Section 704 of the Telecommunications Act of 1996 (TCA) provides federal standards for the siting of "Personal Wireless Services Facilities." "Personal Wireless Services" include all commercial mobile services (including personal communications services (PCS), cellular radio mobile services, and paging); unlicensed wireless services; and common carrier wireless exchange access services. Under Section 704, local zoning authority over personal wireless services is preserved such that the FCC is prevented from preempting local land use decisions; however, local government zoning decisions are still restricted by several provisions of federal law. Specifically:

- Under Section 253 of the TCA, no state or local regulation or other legal requirement can prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.
- Further, Section 704 of the TCA imposes limitations on what local and state governments can do. Section 704 prohibits any state and local government action which unreasonably discriminates among personal wireless providers. Local governments must ensure that its wireless ordinance does not contain requirements in the form of regulatory terms or fees which may have the "effect" of prohibiting the placement, construction, or modification of personal wireless services.
- Section 704 also preempts any local zoning regulation purporting to regulate the placement, construction and modification of personal wireless service facilities on the basis, either directly or indirectly, on the environmental effects of radio frequency emissions (RF) of such facilities, which otherwise comply with Federal Communications Commission (FCC) standards in this regard. (See 47 U.S.C. Section 332(c)(7)(B)(iv) (1996)). This means that local authorities may not regulate the siting or construction of personal wireless facilities based on RF standards that are more stringent than those promulgated by the FCC.
- Section 704 mandates that local governments act upon personal wireless service facility siting applications to place, construct, or modify a facility within a reasonable time (See 47 U.S.C.332(c)(7)(B)(ii) and FCC Shot Clock ruling setting forth "reasonable time" standards for applications deemed complete).
- Section 704 also mandates that the FCC provide technical support to local governments in order to encourage them to make property, rights-of-way, and easements under their

jurisdiction available for the placement of new spectrum-based telecommunications services. This proceeding is currently at the comment stage.

For more information on the FCC's jurisdiction in this area, consult the following: Competition & Infrastructure Policy Division (CIPD) of the Wireless Telecommunications Bureau, main division number: (202) 418-1310. <https://www.fcc.gov/general/competition-infrastructure-policy-division-wireless-telecommunications-bureau>

PROPERTY DESCRIPTION

The utility pole is located south-east of the West Oakland BART surface parking lot on Fifth Street at the Center Street intersection. The existing 48' PG&E utility pole is in the public right-of-way on Fifth Street adjacent to an open surface parking lot serving the West Oakland BART station.

PROJECT DESCRIPTION

The applicant is proposing the following (Attachment A):

The applicant is proposing to install a telecommunication facility onto an existing PG&E utility pole located within in the public right-of-way (Attachment A). The project involves:

- Installation of one canister antenna measuring 23.5" long and 7.9" in diameter at a height of 33' above the right-of-way.
- Installation of two radio units (7.9" tall and 7.9" wide) mounted 15'-6" and 20'-5" above the right-of-way.
- Installation of a breaker box and smart meter mounted to the pole 11' above the right-of-way.
- Painting the proposed antennas and associated equipment mesa brown to match the pole and/or other utilities located on the pole.

No portion of the telecommunication facilities will be located on the ground. The proposed antenna and associated equipment will not be accessible to the public.

GENERAL PLAN ANALYSIS

The site is classified Community Commercial per the Oakland General Plan's Land Use and Transportation Element (LUTE). This classification is intended is to create, maintain and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers. The proposed unmanned wireless telecommunication facility, mounted on an existing utility pole, will not adversely affect and detract from the characteristics of the neighborhood.

ZONING ANALYSIS

The proposed telecommunication facility is located within the S-15W Transit Oriented Development Zone. The intent of the S-15W Zone is to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial, and mixed-use developments to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development; and encourage a safe and pleasant pedestrian environment near transit stations.

Section 17.136.040 and 17.128.070 of the City of Oakland Planning Code requires a Major Design Review permit for Macro Telecommunication facilities that are attached to utility poles in the S-15W Zone if the site is located within one hundred (100) feet of the boundary of any residential zone. Special findings are also required for Design Review approval to ensure that the facility is concealed to the greatest extent possible. The project design is discussed later in the "Key Issues and Impacts" section of this report and the required findings for Major Design Review are listed and included in staff's evaluation later in this report.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines lists the projects that qualify as categorical exemptions from environmental review. The proposed project is categorically exempt from the environmental review requirements pursuant to Section 15301; minor additions and alterations to an existing PG&E utility pole; Exempt, Section 15303 of the State CEQA Guidelines (small facilities or structures; installation of small new equipment and facilities in small structures), and that none of the exceptions to the exemption in CEQA Guidelines section 15300.2 are not triggered by the proposal. Exempt, Section 15183 of the State CEQA Guidelines; projects consistent with a community plan, general plan or zoning.

KEY ISSUES AND IMPACTS

Project Site

Section 17.128.110 of the City of Oakland Telecommunication Regulations requires that new wireless facilities shall generally be located on designated properties or facilities in the following ranked order of preference:

- A. Co-located on an existing structure or facility with existing wireless antennas.
- B. City owned properties or other public or quasi-public facilities.
- C. Existing commercial or industrial structures in non-residential zones (excluding all HBX Zones and the D-CE3 and D-C-4 Zones).
- D. Existing commercial or industrial structures in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.
- E. Other non-residential uses in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.
- F. Residential uses in non-residential zones (excluding all HBX Zones and the D-CE-3 and D-CE-4 Zones).
- G. Residential uses in residential zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.

Facilities sited on an A, B or C ranked preferences do not require a site alternatives analysis. Since the proposed project involves an existing utility pole and installation of new antenna and radio units within since the site is within 100' of a RM-2 zone, the proposed project meets preferences B, and a site alternatives analysis is not required.

Project Design

Section 17.128.120 of the City of Oakland Telecommunications Regulations requires that new wireless facilities shall generally be designed in the following order of preference:

- A. Building or structure mounted antennas completely concealed from view.
- B. Building or structure mounted antennas set back from roof edge, not visible from public right-of way.
- C. Building or structure mounted antennas below roof line (facade mount, pole mount) visible from public right-of-way, painted to match existing structure.
- D. Building or structure mounted antennas above roof line visible from public right of-way.
- E. Monopoles.
- F. Towers.

Facilities designed to meet an A and B ranked preference do not require a site design alternatives analysis. Facilities designed to meet a C through F ranked preference, inclusive, must submit a site design alternatives analysis as part of the required application materials. The site design alternatives analysis shall, at a minimum, consist of:

Written evidence indicating why each higher preference design alternative cannot be used. Such evidence shall be in sufficient detail that independent verification could be obtained if required by the City of Oakland Zoning Manager. Evidence should indicate if the reason an alternative was rejected was technical (e.g. incorrect height, interference from existing RF sources, inability to cover required area) or for other concerns (e.g. inability to provide utilities, construction or structural impediments).

Since the proposed project does not meet preference A and B, a site design alternatives analysis is required.

Alternative Design Analyses

On Air LLC submitted a statement discussing the alternative design analysis. The analysis evaluated whether the equipment could be placed underground and concealed from view. Unfortunately, this is not possible because there is insufficient right-of-way space for the necessary equipment access and the equipment may be compromised by water intrusion due to a lack of efficient drainage measures. The proposed design is a good option because the facility is located where a signal can be adequately propagated without obstruction, which could not have been the case if the antenna were located on a building and concealed.

Planning staff has reviewed the applicant's written evidence of alternative design analysis and determined that the site selected conforms to the telecommunication regulation requirements. Specifically, given the flat topography, streamlined equipment design, and location of the existing pole located on the corner near the intersection of streets adjacent to a major transit

center, the facility will blend in with the existing over-head utilities on the existing wooden pole. In addition, the proposed new antenna is will painted to match the pole thus serving as a screening method. Both the antenna and the radio units will be attached above head height, 15'-33' above the ground. Finally, the shroud and radio units will be painted mesa brown to match the other utilities or brown to match the pole.

Project Radio Frequency Emissions Standards

Section 17.128.130 of the City of Oakland Telecommunication Regulations requires that the applicant submit the following verifications including requests for modifications to existing facilities:

- a. The telecommunications regulations require that the applicant submit written documentation demonstrating that the emission from the proposed project are within the limits set by the Federal Communications Commission.
- b. Prior to final building permit sign off, an RF emissions report indicating that the site is operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

In the analysis prepared by Hammett & Edison, Inc. (Attachment C), the proposed project was evaluated for compliance with appropriate guidelines limiting human exposure to radio frequency electromagnetic fields. Per the report, the project will comply with the prevailing standards for limiting public exposure to radio frequency energy, and therefore, the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency that may be subsequently authorized to establish such standards. The RF emissions report, states that the proposed project will not cause a significant impact on the environment. Additionally, staff recommends that, prior to the final building permit sign off, the applicant submit a certified RF emissions report stating that the facility is operating within acceptable thresholds established by the regulatory federal agency.

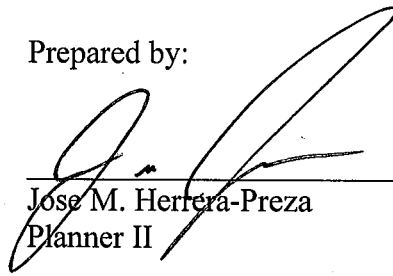
CONCLUSION

The proposed project meets all the required findings for approval. The proposal will provide an essential telecommunication service to the community and the City of Oakland at large. It will also be available to emergency services such as police, fire department and emergency response teams. Staff believes that the proposal is designed to meet the established zoning and telecommunication regulations and recommends supporting the Major Design Review application.

RECOMMENDATIONS:


1. Affirm staff's environmental determination
2. Approve Design Review application, subject to the attached findings and conditions of approval.

Prepared by:




Jose M. Herrera-Preza
Planner II

Reviewed by:



Scott Miller
Zoning Manager

Approved for forwarding to the
City Planning Commission



Darin Ranelletti, Interim Director
Planning and Building Department

ATTACHMENTS:

- A. Project Plans & Photo simulations
- B. Site & Design Alternative Analysis
- C. Hammett & Edison, Inc., Consulting Engineering RF Emissions Report

FINDINGS FOR APPROVAL

FINDINGS FOR APPROVAL:

This proposal meets all the required findings under Section 17.136.050.(B), of the Non-Residential Design Review criteria and all the required findings under Section 17.128.070(B), of the telecommunication facilities (Macro) Design Review criteria and as set forth below:

Required findings are shown in **bold** type; reasons your proposal satisfies them are shown in normal type.

17.136.050(B) – NONRESIDENTIAL DESIGN REVIEW CRITERIA:

1. That the proposal will help achieve or maintain a group of facilities which are well related to one another and which, when taken together, will result in a well-composed design, with consideration given to site, landscape, bulk, height, arrangement, texture, materials, colors, and appurtenances; the relation of these factors to other facilities in the vicinity; and the relation of the proposal to the total setting as seen from key points in the surrounding area. Only elements of design which have some significant relationship to outside appearance shall be considered, except as otherwise provided in Section 17.136.060;

The proposal is to install one telecommunication canister antenna on an existing wooden, PG&E utility pole 33' above ground with the associated equipment mounted to the pole at 15'-6" and 20'-6" high and above (breaker box and smart meter). Given the flat topography, slim equipment design, and proposal to paint the equipment, the facility will blend in with existing over-head utility lines and be typical of utility apparatus already located on the pole. In addition, the facility is located adjacent to the West Oakland BART open surface parking near lot and across the street from an industrial building. Finally, the proposed antennas and radio units will be located high up on the pole and oriented toward the street. Therefore, the proposal will have minimal visual impacts from public views.

2. That the proposed design will be of a quality and character which harmonizes with, and serves to protect the value of, private and public investments in the area;

The proposal improves wireless telecommunication service in the area around the West Oakland BART station. The facility will be camouflaged by the slim antenna canister and painted mesa brown to blend in with the surrounding area and have minimal impacts on public views. Service will also be available to emergency services such as police, fire department and emergency response teams.

3. That the proposed design conforms in all significant respects with the Oakland General Plan and with any applicable design review guidelines or criteria, district plan, or development control map which have been adopted by the Planning Commission or City Council.

The site is classified as Community Commercial per the Oakland General Plan's Land Use and Transportation Element (LUTE). This classification is intended to create, maintain and enhance areas suitable for a wide variety of commercial and institutional operations along the City's major corridors and in shopping districts or centers.

Section 17.128.120 of the City of Oakland Telecommunications Regulations describes the design criteria for wireless facilities. In general, these facilities should either be concealed from view or not visible from the public right of way. Since the project did not meet either ranked criteria, but did meet criteria C as described also in 17.128.120, an alternative site design study needed to be undertaken. The proposed antenna and associated related equipment are compatible with and typical of utility equipment on these poles, the proposed antenna will be extended toward street and painted to match either the pole or utilities. As result, the proposal is consistent telecommunication regulation requirements, in an appropriate location, and of an appropriate design that would not significantly increase negative visual impacts to adjacent neighboring residential properties

17.128.070(B) DESIGN REVIEW CRITERIA FOR MACRO FACILITIES

1. Antennas should be painted and/or textured to match the existing structure:

The proposed antenna and related equipment will be painted mesa brown to match the PG&E utility pole and blend with the surroundings.

2. Antennas mounted on architecturally significant structures or significant architectural details of the building should be covered by appropriate casings which are manufactured to match existing architectural features found on the building:

The proposed antenna and equipment will not be mounted onto an architecturally significant structure but onto an existing wooden utility pole like other poles in the City and block.

3. Where feasible, antennas can be placed directly above, below or incorporated with vertical design elements of a building to help in camouflaging:

The proposed antennas will be placed above, and vertically in line with, the proposed utility pole and painted to match pole or utility equipment to blend with the surroundings.

4. Equipment shelters or cabinets shall be screened from the public view by using landscaping, or materials and colors consistent with surrounding backdrop:

The proposed antenna will be mounted on an existing PG&E utility pole and painted mesa brown to match the utility pole. Thus, the facility will be camouflaged to blend-in with existing surrounding area. The facility will also be located approximately 15'-6" and 33' above ground to minimize visual impacts.

5. Equipment shelters or cabinets shall be consistent with the general character of the area.

The proposed equipment will be compatible with the existing PG&E pole and other utility equipment located on the pole.

6. For antennas attached to the roof, maintain a 1:1 ratio for equipment setback; screen the antennas to match existing air conditioning units, stairs, or elevator towers; avoid placing roof mounted antennas in direct line with significant view corridors.

N/A

7. That all reasonable means of reducing public access to the antennas and equipment has been made, including, but not limited to, placement in or on buildings or structures, fencing, anti-climbing measures and anti-tampering devices.

The one telecommunication canister antenna will be mounted on an existing, wooden, PG&E utility pole 33' above ground. The radio units will be located approximately 15'-6" and 20'-5" above ground, while the equipment above the breaker box and smart meter will be located 11' above the ground. None of the equipment will be accessible to the public due to its location.

STANDARD CONDITIONS:

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, and the approved plans dated **January 31, 2017** and submitted on **April 6, 2017** as amended by the following conditions of approval and mitigation measures, if applicable (“Conditions of Approval” or “Conditions”).

2. Effective Date, Expiration, Extensions and Extinguishment

This Approval shall become effective immediately, unless the Approval is appealable, in which case the Approval shall become effective in ten calendar days unless an appeal is filed. Unless a different termination date is prescribed, this Approval shall expire **two years** from the Approval date, or from the date of the final decision in the event of an appeal, unless within such period all necessary permits for construction or alteration have been issued, or the authorized activities have commenced in the case of a permit not involving construction or alteration. Upon written request and payment of appropriate fees submitted no later than the expiration date of this Approval, the Director of City Planning or designee may grant a one-year extension of this date, with additional extensions subject to approval by the approving body. Expiration of any necessary building permit or other construction-related permit for this project may invalidate this Approval if said Approval has also expired. If litigation is filed challenging this Approval, or its implementation, then the time period stated above for obtaining necessary permits for construction or alteration and/or commencement of authorized activities is automatically extended for the duration of the litigation.

3. Compliance with Other Requirements

The project applicant shall comply with all other applicable federal, state, regional, and local laws/codes, requirements, regulations, and guidelines, including but not limited to those imposed by the City’s Bureau of Building, Fire Marshal, and Public Works Department. Compliance with other applicable requirements may require changes to the approved use and/or plans. These changes shall be processed in accordance with the procedures contained in Condition #4.

4. Minor and Major Changes

- a. Minor changes to the approved project, plans, Conditions, facilities, or use may be approved administratively by the Director of City Planning
- b. Major changes to the approved project, plans, Conditions, facilities, or use shall be reviewed by the Director of City Planning to determine whether such changes require submittal and approval of a revision to the Approval by the original approving body or a new independent permit/approval. Major revisions shall be reviewed in accordance with the procedures required for the original permit/approval. A new independent permit/approval shall be reviewed in accordance with the procedures required for the new permit/approval.

5. Compliance with Conditions of Approval

- a. The project applicant and property owner, including successors, (collectively referred to hereafter as the “project applicant” or “applicant”) shall be responsible for compliance with all the Conditions of Approval and any recommendations contained in any submitted and

approved technical report at his/her sole cost and expense, subject to review and approval by the City of Oakland.

- b. The City of Oakland reserves the right at any time during construction to require certification by a licensed professional at the project applicant's expense that the as-built project conforms to all applicable requirements, including but not limited to, approved maximum heights and minimum setbacks. Failure to construct the project in accordance with the Approval may result in remedial reconstruction, permit revocation, permit modification, stop work, permit suspension, or other corrective action.
- c. Violation of any term, Condition, or project description relating to the Approval is unlawful, prohibited, and a violation of the Oakland Municipal Code. The City of Oakland reserves the right to initiate civil and/or criminal enforcement and/or abatement proceedings, or after notice and public hearing, to revoke the Approval or alter these Conditions if it is found that there is violation of any of the Conditions or the provisions of the Planning Code or Municipal Code, or the project operates as or causes a public nuisance. This provision is not intended to, nor does it, limit in any manner whatsoever the ability of the City to take appropriate enforcement actions. The project applicant shall be responsible for paying fees in accordance with the City's Master Fee Schedule for inspections conducted by the City or a City-designated third-party to investigate alleged violations of the Approval or Conditions.

6. Signed Copy of the Approval/Conditions

A copy of the Approval letter and Conditions shall be signed by the project applicant, attached to each set of permit plans submitted to the appropriate City agency for the project, and made available for review at the project job site at all times.

7. Blight/Nuisances

The project site shall be kept in a blight/nuisance-free condition. Any existing blight or nuisance shall be abated within 60 days of approval, unless an earlier date is specified elsewhere.

8. Indemnification

- a. To the maximum extent permitted by law, the project applicant shall defend (with counsel acceptable to the City), indemnify, and hold harmless the City of Oakland, the Oakland City Council, the Oakland Redevelopment Successor Agency, the Oakland City Planning Commission, and their respective agents, officers, employees, and volunteers (hereafter collectively called "City") from any liability, damages, claim, judgment, loss (direct or indirect), action, causes of action, or proceeding (including legal costs, attorneys' fees, expert witness or consultant fees, City Attorney or staff time, expenses or costs) (collectively called "Action") against the City to attack, set aside, void or annul this Approval or implementation of this Approval. The City may elect, in its sole discretion, to participate in the defense of said Action and the project applicant shall reimburse the City for its reasonable legal costs and attorneys' fees.
- b. Within ten (10) calendar days of the filing of any Action as specified in subsection (a) above, the project applicant shall execute a Joint Defense Letter of Agreement with the City, acceptable to the Office of the City Attorney, which memorializes the above obligations. These obligations and the Joint Defense Letter of Agreement shall survive termination, extinguishment, or invalidation of the Approval. Failure to timely execute the Letter of

Agreement does not relieve the project applicant of any of the obligations contained in this Condition or other requirements or Conditions of Approval that may be imposed by the City.

9. Severability

The Approval would not have been granted but for the applicability and validity of each and every one of the specified Conditions, and if one or more of such Conditions is found to be invalid by a court of competent jurisdiction this Approval would not have been granted without requiring other valid Conditions consistent with achieving the same purpose and intent of such Approval.

10. Job Site Plans

Ongoing throughout demolition, grading, and/or construction

At least one (1) copy of the stamped approved plans, along with the Approval Letter and Conditions of Approval, shall be available for review at the job site at all times.

11. Special Inspector/Inspections, Independent Technical Review, Project Coordination and Management

Prior to issuance of a demolition, grading, and/or construction permit

The project applicant may be required to pay for on-call special inspector(s)/inspections as needed during the times of extensive or specialized plan check review, or construction. The project applicant may also be required to cover the full costs of independent technical and other types of peer review, monitoring and inspection, including without limitation, third party plan check fees, including inspections of violations of Conditions of Approval. The project applicant shall establish a deposit with the Building Services Division, as directed by the Building Official, Director of City Planning or designee.

12. Public Improvements

The project applicant shall obtain all necessary permits/approvals, such as encroachment permits, obstruction permits, curb/gutter/sidewalk permits, and public improvement (“p-job”) permits from the City for work in the public right-of-way, including but not limited to, streets, curbs, gutters, sidewalks, utilities, and fire hydrants. Prior to any work in the public right-of-way, the applicant shall submit plans for review and approval by the Bureau of Planning, the Bureau of Building, and other City departments as required. Public improvements shall be designed and installed to the satisfaction of the City.

13. Days/Hours of Construction Operation

Ongoing throughout demolition, grading, and/or construction

The project applicant shall require construction contractors to limit standard construction activities as follows:

- a) Construction activities are limited to between 7:00 AM and 7:00 PM Monday through Friday, except that pile driving and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. Monday through Friday.
- b) Any construction activity proposed to occur outside of the standard hours of 7:00 am to 7:00 pm Monday through Friday for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident’s preferences for whether the activity is acceptable if the

- overall duration of construction is shortened and such construction activities shall only be allowed with the prior written authorization of the Building Services Division.
- c) Construction activity shall not occur on Saturdays, with the following possible exceptions:
 - i. Prior to the building being enclosed, requests for Saturday construction for special activities (such as concrete pouring which may require more continuous amounts of time), shall be evaluated on a case by case basis, with criteria including the proximity of residential uses and a consideration of resident's preferences for whether the activity is acceptable if the overall duration of construction is shortened. Such construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division.
 - ii. After the building is enclosed, requests for Saturday construction activities shall only be allowed on Saturdays with the prior written authorization of the Building Services Division, and only then within the interior of the building with the doors and windows closed.
 - d) No extreme noise generating activities (greater than 90 dBA) shall be allowed on Saturdays, with no exceptions.
 - e) No construction activity shall take place on Sundays or Federal holidays.
 - f) Construction activities include but are not limited to: truck idling, moving equipment (including trucks, elevators, etc) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

14. Radio Frequency Emissions

Prior to the final building permit sign off.

The applicant shall submit a certified RF emissions report stating the facility is operating within the acceptable standards established by the regulatory Federal Communications Commission.

15. Camouflage

Requirement: The antenna shall be painted, texturized, and maintained matte silver, and the equipment and any other accessory items including cables matte brown, to better camouflage the facility to the utility pole and attached power line posts.

When Required: Prior to a final inspection

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Operational

Ongoing.

Noise levels from the activity, property, or any mechanical equipment on site shall comply with the performance standards of Section 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the Planning and Zoning Division and Building Services.

17. Possible District Undergrounding PG&E Pole

Ongoing

Should the PG &E utility pole be voluntarily removed for purposes of district undergrounding or otherwise, the telecommunications facility can only be re-established by

applying for and receiving approval of a new application to the Oakland Planning Department as required by the regulations.

Applicant Statement

I have read and accept responsibility for the Conditions of Approval. I agree to abide by and conform to the Conditions of Approval, as well as to all provisions of the Oakland Planning Code and Oakland Municipal Code pertaining to the project.

Name of Project Applicant

Signature of Project Applicant

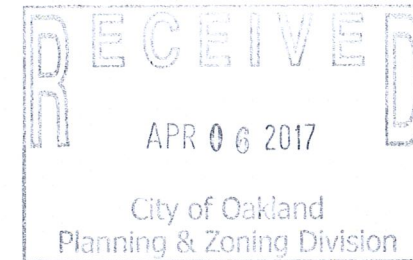
Date



WEST OAKLAND BART SC1

(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

JPA POLE #110110393
PEOPLESOFT LOCATION #277912



Attachment A



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction Drawings

Drawing Phase: _____

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

TITLE SHEET

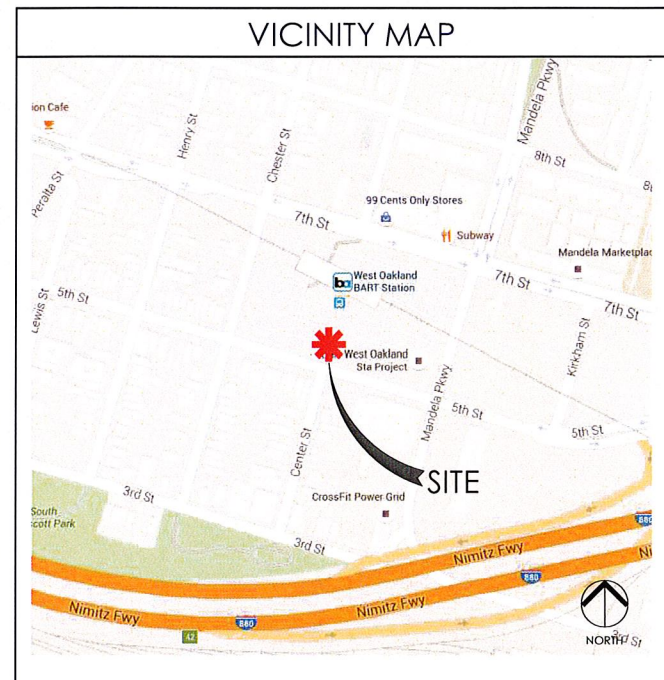
Sheet Title: _____

T.1

Sheet No.: _____

© Meridian Management LLC, 2016

SITE INFORMATION	
PSL #:	277912
OWNER:	PACIFIC GAS & ELECTRIC 245 MARKET STREET SAN FRANCISCO, CA 94110 CONTACT: MARK ANDERSON PHONE: 925.459.8052
APPLICANT:	VERIZON WIRELESS 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598
AGENT:	ON-AIR LLC 465 FIRST ST. WEST SUITE 101 SONOMA, CA 95476
APN ADJACENCY:	004-0071-003
SITE ADDRESS:	(NEAR) NORTH SIDE FIFTH STREET AT CENTER STREET OAKLAND, CA 94606
COUNTY:	ALAMEDA COUNTY
POLE COORDINATES:	37° 48' 15.01" N (NAD 83) 122° 17' 42.78" N (NAD 83)
GROUND ELEV:	12' AMSL
ZONING:	PUBLIC ROW
ZONING JURISDICTION:	CITY OF OAKLAND



PROJECT TEAM
ON AIR, LLC ON-AIR LLC 465 FIRST ST. WEST SUITE 101 SONOMA, CA 95476
SITE ACQUISITION MGR: JAY GRUENDLE MOBILE: (707) 477-2782 OFFICE: (707) 933-9633 EMAIL: jgruendle@gmail.com
CONSTRUCTION MANAGER: MOHAMMAD A. BASEER MOBILE: (510) 414-7075
ARCHITECT/ENGINEER PROJECT MANAGER: RODNEY BARNES MERIDIAN MANAGEMENT, INC. P.O. BOX 52 RIO VISTA, CA 94571 MOBILE: (707) 592-5924 EMAIL: rodney@meridian.management
CLIENT Verizon Wireless 2785 Mitchell Drive Bldg. 9 Walnut Creek, CA 94598

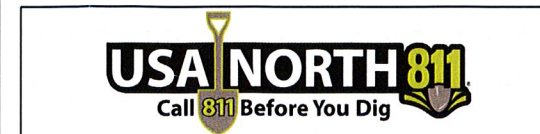
PROJECT DESCRIPTION
THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY FOR THE VERIZON WIRELESS NETWORK CONSISTING OF THE INSTALLATION AND OPERATION OF ANTENNAS AND ASSOCIATED EQUIPMENT ON AN EXISTING WOOD POLE IN THE PUBLIC RIGHT-OF-WAY.
SCOPE OF WORK
1. INSTALL (1) TELECOMMUNICATIONS EQUIPMENT CABINET, (2) RRUs, (ENCLOSED IN FRP EQUIPMENT COVER, (1) PANEL ANTENNA, (1) DISCONNECT SWITCH, AND (1) BUS BAR, (1) ELECTRICAL METER ON AN EXISTING WOOD POLE TO BE INSTALLED ON A GO95 COMPLIANT STANDOFF BRACKET. ALL EQUIPMENT ON POLE TO BE PAINTED SHERWIN WILLIAMS MESA BROWN.
2. UTILITY LINES BETWEEN EXISTING POINT OF CONNECTION AND POLE TO BE OVERHEAD.

DRAWING INDEX	
SHEET NO:	SHEET TITLE
T.1	TITLE SHEET
T.2	GENERAL NOTES, LEGENDS, AND ABBREVIATIONS
C.1	SITE SURVEY
A.1	OVERALL SITE PLAN
A.2	POLE PLAN ENLARGEMENTS, POLE SECTIONS
A.3	ELEVATIONS
A.4	ELEVATIONS
A.5	EQUIPMENT SPECIFICATIONS
A.6	EQUIPMENT SPECIFICATIONS
E.1	ELECTRICAL SPECS, NOTES, LEGENDS, AND ABBREVIATIONS
E.2	ELECTRICAL GROUNDING DIAGRAMS
E.3	ELECTRICAL SINGLE LINE DIAGRAM, AND DETAILS

CODE COMPLIANCE
CONSTRUCTION WORKS AND MATERIALS MUST COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY LOCAL JURISDICTION, INCLUDING BUT NOT LIMITED TO:
<ul style="list-style-type: none"> 2013 CALIFORNIA BUILDING CODE, TITLE 24 PART 2 2013 CALIFORNIA ADMINISTRATIVE CODE, TITLE 24 PART 1 2013 CALIFORNIA ELECTRICAL CODE, TITLE 24 PART 3 2013 CALIFORNIA MECHANICAL CODE, TITLE 24 PART 4 2013 CALIFORNIA PLUMBING CODE, TITLE 24 PART 5 2013 CALIFORNIA ENERGY CODE, TITLE 24 PART 6 2013 CALIFORNIA FIRE CODE, TITLE 24 PART 9 ANSI/TIA-222-G 2013 NFPA 101, LIFE SAFETY CODE 2013 NFPA 72, NATIONAL FIRE ALARM CODE 2013 NFPA 13, SPRINKLER CODE CITY/COUNTY ORDINANCES

DRIVING DIRECTIONS
DIRECTIONS FROM VERIZON WIRELESS RF MARKET OFFICE:
<ol style="list-style-type: none"> Depart Mitchell Dr toward N Wiget Ln Get on CA-24 W from Ygnacio Valley Rd Follow CA-24 W to 36th St in Oakland. Take the Interstate 580 W exit from CA-24 W Continue onto Grove Shafter Fwy Continue onto I-980W Take the 12th St exit Slight left onto Brush St Turn left onto Union St Take the 1st right onto 5th St Destination will be on the right
(Near) FIFTH STREET AT CENTER STREET OAKLAND, CA 94606

ACCESSIBILITY REQUIREMENTS
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA ADMINISTRATIVE STATE CODE PART 2, TITLE 24, CHAPTER 11B, SECTION 1103B.



ADMINISTRATIVE REQUIREMENTS
CONTRACTOR SHALL VERIFY ALL PLANS & (E) DIMENSIONS & 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 IF USING 11"x17" PLOT, DRAWINGS WILL BE HALF SCALE

GENERAL CONSTRUCTION NOTES

- PLANS ARE INTENDED TO BE DIAGRAMMATIC OUTLINE ONLY, UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL OBTAIN, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL CONTACT USA (UNDERGROUND SERVICE ALERT) AT (800) 227-2600, FOR UTILITY LOCATIONS, 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION, SITE WORK OR CONSTRUCTION.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE, OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CBC / UBC'S REQUIREMENTS REGARDING EARTHQUAKE RESISTANCE, FOR, BUT NOT LIMITED TO, PIPING, LIGHT FIXTURES, CEILING GRID, INTERIOR PARTITIONS, AND MECHANICAL EQUIPMENT, ALL WORK MUST COMPLY WITH LOCAL EARTHQUAKE CODES AND REGULATIONS.
- REPRESENTATIONS OF TRUE NORTH, OTHER THAN THOSE FOUND ON THE PLOT OF SURVEY DRAWINGS, SHALL NOT BE USED TO IDENTIFY OR ESTABLISH BEARING OF TRUE NORTH AT THE SITE. THE CONTRACTOR SHALL RELY SOLELY ON THE PLOT OF SURVEY DRAWING AND ANY SURVEYOR'S MARKINGS AT THE SITE FOR THE ESTABLISHMENT OF TRUE NORTH, AND SHALL NOTIFY THE ARCHITECT / ENGINEER PRIOR TO PROCEEDING WITH THE WORK IF ANY DISCREPANCY IS FOUND BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND THE TRUE NORTH ORIENTATION AS DEPICTED ON THE CIVIL SURVEY. THE CONTRACTOR SHALL ASSUME SOLE LIABILITY FOR ANY FAILURE TO NOTIFY THE ARCHITECT / ENGINEER.
- THE BUILDING DEPARTMENT ISSUING THE PERMITS SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK, OR AS OTHERWISE STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
- DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
- ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON THE PLAN HAVE BEEN PLOTTED FROM AVAILABLE RECORDS, THE ARCHITECT / ENGINEER AND THE OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR THE ACCURACY OF THE INFORMATION SHOWN ON THE PLANS, OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTORS SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
- CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, BOTH HORIZONTAL AND VERTICALLY, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT / ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT / ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
- ALL (N) AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
- ANY DRAIN AND/OR FIELD TILE ENCOUNTERED / DISTURBED DURING CONSTRUCTION SHALL BE RETURNED TO ITS ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON "AS-BUILT" DRAWINGS BY GENERAL CONTRACTOR, AND ISSUED TO THE ARCHITECT / ENGINEER AT COMPLETION OF PROJECT.
- ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
- INCLUDE MISC. ITEMS PER VERIZON WIRELESS SPECIFICATIONS

GENERAL NOTES FOR EXISTING CELL SITES

- 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.
 - SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
 - THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
 - SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
 - SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD (N) TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
 - SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- APPLICABLE CODES, REGULATIONS AND STANDARDS:**
- SUBCONTRACTOR'S 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.
 - SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
 - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES
 - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM (IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRICAL EQUIPMENT.
 - IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
 - TIA 607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS TELCORDIA GR-63 NETWORK ENCLASURE-BUILDING SYSTEM (NEBS); PHYSICAL PROTECTION TELCORDIA GR-347 CENTRAL OFFICE POWER WIRING TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS
 - ANY AND ALL OTHER LOCAL & STATE LAWS AND REGULATIONS
 - FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE SHALL GOVERN, WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL TRENCHING NOTES

- MAINTAIN 40" MINIMUM COVER FOR ALL ELECTRICAL CONDUITS.
- MAINTAIN 30" MINIMUM COVER FOR ALL TELECOMMUNICATIONS CONDUITS.
- MINIMUM 1" SAND SHADING BELOW CONDUITS, AND 6" COVERING ON TOP OF CONDUITS REQUIRED.
- ALL ELECTRICAL CONDUITS FROM POWER COMPANY FROM ANY POLE, TRANSFORMER OR OTHER LOCATIONS WILL BE SLURRY BACKFILLED.
- IN STREET SLURRY TO GRADE AND MILL DOWN 1-1/2" FOR AC CAP.
- IN DIRT SLURRY 18" FROM GRADE AND FILL 95% COMPACTION NATIVE SOIL FOR BALANCE
- WARNING TAPE TO BE PLACED IN TRENCH 12" ABOVE ALL CONDUITS AND #18 WARNING TAPE ABOVE RING.

GENERAL GROUNDING NOTES

- 5/8" x 8" ROD, CAD WELD BELOW GRADE
- GROUND TESTED AT 5 OHMS OR LESS
- #5 GROUND AND BOND WIRE.
- GROUPS 3" FROM POLE
- PLACE #10 GA WIRES FROM TESCO BREAKER TO PBMD OR STRONG BOX.
- WOOD HOLDING, STAPLED EVERY 3" AND AT EACH END.

GENERAL CONDUIT NOTES

- ALL CONDUITS WILL BE MANDREED AND EQUIPPED WITH 3/8" PULL ROPE.
- SCHEDULE 40 CONDUIT FOR UNDERGROUND USE.
- SCHEDULE 80 CONDUIT FOR RISER USE.
- 2" GALVANIZED STEEL CONDUIT FOR ANY CONDUIT UNDER 3'; STUB UP 10" THEN CONVERT TO SCHEDULE 80.
- CONDUIT 4" CONDUIT TO 3" AT BASE OF POLE.
- CONTRACTOR TO STUB UP POLE 10" w/ 3" POWER CONDUIT. POWER COMPANY TO CONVERT FROM 3" STUB SCHEDULE 80 TO 2"
- SCHEDULE 80 FROM TOP OF STUB UP.
- INSTALL STEPS PER PG&E REQUIREMENTS

TYPICAL R.O.W. POLE CONSTRUCTION NOTES

- CABLE NOT TO IMPEDE 15' CLEAR SPACE OFF POLE FACE.
- ALL CLIMB STEPS NEXT TO CONDUIT SHALL HAVE EXTENDED STEPS.
- NO BOLT THREADS TO PROTRUDE MORE THAN 1-1/2"
- ALL HOLES IN POLE LEFT FROM REARRANGEMENT OF CLIMB STEPS TO BE FILLED.
- 90° SHORT SWEEPS UNDER ANTENNA ARM. ALL CABLES MUST TRANSITION ON THE INSIDE OR BOTTOM OF THE ARM (NO CABLE ON TOP OF ARM).
- USE 90° CONNECTOR AT CABLE CONNECTION FOR OMNI DOWN ANTENNAS.
- USE CABLE CLAMPS TO SECURE CABLE TO ARMS, PLACE 2" VERIZON WIRELESS CABLE I.D. TAGS ON BOTH SIDES OF ARMS.
- USE 1/2" DIA. CABLE ON ANTENNAS UNLESS OTHERWISE SPECIFIED.
- PLACE GPS ON ARM OF SOUTHERN SKY EXPOSURE AT MINIMUM 6" FROM TRANSMIT ANTENNA WHICH IS 24" AWAY FROM CENTER OF POLE.
- FILL VOID AROUND CABLES AT CONDUIT OPENING WITH FOAM SEALANT TO PREVENT WATER INTRUSION.

GENERAL NOTES

(N) ANTENNA		GROUT OR PLASTER		TELCO RUN	
EXISTING ANTENNA		(E) BRICK		POWER/TELCO RUN	
GROUND ROD		(E) MASONRY		GROUNDING CONDUCTOR	
GROUND BUS BAR		CONCRETE		GROUNDING CONDUCTOR	
MECHANICAL GRND. CONN.		EARTH		GROUNDING CONDUCTOR	
GROUND ACCESS WELL		GRAVEL		CONDUIT UNDERGROUND	
ELECTRIC BOX		PLYWOOD		FUSE, SIZE AND TYPE AS INDICATED.	
TELEPHONE BOX		SAND		SAFETY SWITCH, 2P-240V-60A W/60A FUSES, NEMA 3R ENCLOSURE, SQ D CATALOG NO. H222NR8	
LIGHT POLE		WOOD CONT.		MANUAL TRANSFER SWITCH, 2P-240V-200A, NO FUSE, NEMA 3R ENCLOSURE	
FND. MONUMENT		WOOD BLOCKING		LIGHTING FIXTURE, FLUORESCENT, 10.94" x 4'-0", 2/40W, SURFACE MOUNTING TYPE, HUBBELL LIGHTING CATALOG #WSW2321	
SPOT ELEVATION		STEEL		LIGHTING FIXTURE, FLUORESCENT, 10.94" x 8'-0", 2/95W, SURFACE MOUNTING TYPE, HUBBELL LIGHTING CATALOG #TWSM2321	
SET POINT		CENTERLINE		LIGHTING FIXTURE, HIGH PRESSURE SODIUM, 1/70W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #NRG-307 OR 1/50W, HUBBELL LIGHTING CATALOG #NRG-121	
REVISION		PROPERTY/LEASE LINE		EXIT SIGN, THERMOPLASTIC LED, SINGLE FACE, UNIVERSAL MOUNTING, W/BATTERY PACK, HUBBELL LIGHTING CATALOG #PRB	
GRID REFERENCE		MATCH LINE		EMERGENCY LIGHTING, 2/50W, HUBBELL LIGHTING CATALOG #HE6-50-2-R91	
DETAIL REFERENCE		WORK POINT		LIGHTING FIXTURE, INCANDESCENT, 1/100W, WALL MOUNTING TYPE, HUBBELL LIGHTING CATALOG #BRH-100-06-1	
ELEVATION REFERENCE		GROUND CONDUCTOR		LIGHTING FIXTURE, HALOGEN, QUARTZ, 1/300W, HUBBELL LIGHTING CATALOG #QL-505	
SECTION REFERENCE		COAXIAL CABLE		LIGHTING FIXTURE, 1/175W, METAL HALIDE, HUBBELL CAT #MIC-0175H-336	
		OVERHEAD SERVICE CONDUCTORS		5/8" X 10'-0" ,CU. GND ROD 30' MIN. BELOW GRADE.	
		CHAIN LINK FENCING			
		OVERHEAD ELEPHONE/OVERHEAD POWER			
		OVERHEAD TELEPHONE LINE			
		OVERHEAD POWER LINE			
		POWER RUN			

LEGEND

ABBREVIATIONS

A	AMPERE	HT	HEIGHT															
A.B.	ANCHOR BOLT	ICGB.	ISOLATED COPPER GROUND BUS															
ABV	ABOVE	IN (")	INCHES															
ACCA	ANTENNA CABLE COVER ASSEMBLY	INT	INTERIOR															
ADDL	ADDITIONAL	LB (#)	POUNDS															
A.F.F.	ABOVE FINISHED FLOOR	L.B.	LAG BOLTS															
A.F.G.	ABOVE FINISHED GRADE	L.F.	LINEAR FEET (FOOT)															
A.I.C.	AMPERE INTERRUPTING CAPACITY	LG.	LENGTH															
ALUM.	ALUMINUM	L	LONGITUDINAL															
ALT.	ALTERNATE	LPS	LOW PRESSURE SODIUM															
ANT.	ANTENNA	LPS	MASONRY															
APPROX.	APPROXIMATELY	MAX.	MAXIMUM															
ARCH.	ARCHITECTURAL	MCB.	MACHINED BOLT															
AT	AMPERE TRIP	MECH.	MECHANICAL															
AWG.	AMERICAN WIRE GAUGE	MFR.	MANUFACTURER															
BATT.	BATTERY	MIN.	MINIMUM															
BD	BOARD	MISC.	MISCELLANEOUS															
BLDG.	BUILDING	MLO	MAIN LUGS ONLY															
BLK.	BLOCK	MTD.	MOUNTED															
BLKG.	BLOCKING	MTG.	MOUNTING															
BM	BEAM	MTL	METAL															
B.N.	BOUNDARY NAILING	MTS.	MANUAL TRANSFER SWITCH															
BR.	BRANCH	N	NEUTRAL															
BRKR.	CIRCUIT BREAKER	(N)	(N)															
BTCW.	BARE TINNED COPPER WIRE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.															
BTS	BASE TRANSMISSION SYSTEM	NO (#)	NUMBER															
B.O.F.	BOTTOM OF FOOTING	N.T.S.	NOT TO SCALE															
B/U	BACK-UP CABINET	OH	OVERHEAD															
C	CONDUIT	O.C.	ON CENTER															
CAB.	CABINET	OPNG.	OPENING															
CANT.	CANTILEVER(ED)	P	POLE															
CB	CIRCUIT BREAKER	P/C	PRECAST CONCRETE															
CAST I.P.	CAST IN PLACE	PCS	PERSONAL COMMUNICATION SERVICES															
CKT	CIRCUIT	PH	PHASE															
CLG.	CEILING	PLY.	PLYWOOD															
CLR.	CLEAR	PNLBD	PANELBOARD															
COL.	COLUMN	PPC	POWER PROTECTION CABINET															
CONC.	CONCRETE	PRC	PRIMARY RADIO CABINET															
CONN.	CONNECTION(OR)	PRB	PRIMARY															
CONSTR.	CONSTRUCTION	P.S.F.	POUNDS PER SQUARE FOOT															
CONT.	CONTINUOUS	P.S.I.	POUNDS PER SQUARE INCH															
d	PENNY (NAILS)	P.T.	PRESSURE TREATED															
DBL.	DOUBLE	PWR.	POWER (CABINET)															
DEPT.	DEPTH	QTY.	QUANTITY															
DEPT.	DEPARTMENT	RAD (R)	RADIUS															
DIAM.	DIAMETER	RCPT.	RECEPTACLE															
DIAG.	DIAGONAL	REF.	REFERENCE															
DIA.	DIMENSION	REF.	REFERENCE															
DWG.	DRAWING(S)	REF.	REFERENCE															
DWL.	DOWEL(S)	REQ.D.	REQUIRED															
E	EACH	RGS.	RIGID GALVANIZED STEEL															
EGR.	EMERGENCY GENERATOR RECEPTACLE	SAF.	SAFETY															
ELEVATION	ELEVATION	SCH.	SCHEDULE															
ELEC.	ELECTRICAL	SDBC	SOFT DRAWN BARE COPPER															
ELEV.	ELEVATOR	SEC.	SECONDARY															
EMT.	ELECTRICAL METALLIC TUBING	SHI.	SHEET															
EN.	EDGE NAIL	SHR.	SHRIMP															
ENCL.	ENCLOSURE	S.N.	SOLID NEUTRAL															
ENG.	ENGINEER	SPEC.	SPECIFICATION(S)															
EQ.	EQUAL	SQ.	SQUARE															
EXIST (E)	EXISTING	S.S.	STAINLESS STEEL															
EXP.	EXPANSION	STD.	STANDARD															
EXT.	EXTERIOR	STL.	STEEL															
FAB.	FABRICATION(OR)	STRUC.	STRUCTURAL															
FAC.	FACTOR	SURF.	SURFACE															
F.A.	FIRE ALARM	SW	SWITCH															
F.F.	FINISH FLOOR	TEL.	TELEPHONE															
F.G.	FINISH GRADE	TEMP.	TEMPORARY															
FIN.	FINISH	THK.	THICKNESS															
FLR.	FLOOR	T.N.	TOE NAIL															
FLUOR.	FLUORESCENT	T.O.A.	TOP OF ANTENNA															
FDN.	FOUNDATION	T.O.C.	TOP OF CURB															
F.O.C.	FACE OF CONCRETE	T.O.F.	TOP OF FOUNDATION															
F.O.M.	FACE OF MASONRY	T.O.P.	TOP OF PLATE (PARAPET)															
F.O.S.	FACE OF STUD	T.O.S.	TOP OF STEEL															
F.O.W.	FACE OF WALL	T.O.W.	TOP OF WALL															
F.F.	FINISH FLOOR	TYP.	TYPICAL															
F.F.	FINISH GRADE	U.G.	UNDER GROUND															
FT (F)	FOOT (FEET)	U.L.	UNDERWRITERS LABORATORY INC. UNLESS NOTED OTHERWISE															
FIG.	FOOTING	U.N.O.	UNLESS NOTED OTHERWISE															
FU	FUSE	VAC.	VOLT ALTERNATING CURRENT															
G	GROUND	V.I.F.	VERIFY IN FIELD															
GR.	GROWTH (CABINET)	W	WATT OR WIRE															
GA.	GAUGE	WD	WIDE(WIDTH)															
GEN.	GENERATOR	WJ	WITHOUT															
GI.	GALVANIZED	WO.	WOOD															
G.I.C.	GROUND FAULT CIRCUIT INTERRUPTER	W.P.	WEATHERPROOF															
GLB.	GLUE LAMINATED BEAM	WT.	WEIGHT															
GND	GROUND	XFR.	TRANSFER															
GPS	GLOBAL POSITIONING SYSTEM	XFHR	TRANSFORMER															
GRND.	GROUND	XLPE	HDBC	HARD DRAWN COPPER WIRE	C	CENTERLINE	HDR.	HEADER	E	PLATE, PROPERTY LINE	HGR.	HANGER			HPS	HIGH PRESSURE SODIUM		
HDBC	HARD DRAWN COPPER WIRE	C	CENTERLINE															
HDR.	HEADER	E	PLATE, PROPERTY LINE															
HGR.	HANGER																	
HPS	HIGH PRESSURE SODIUM																	



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction
Drawings

Drawing Phase:

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name:

Professional Seal:

It is a violation of law for any person,
unless they are acting under the direction
of a licensed Professional
Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.:

Date: 01/31/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

GENERAL NOTES, LEGENDS,
AND ABBREVIATIONS

Sheet Title:

T.2

Sheet No.:

©Meridian Management LLC, 2016



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction
Drawings
(E) LIGHT POLE
Drawing Phase: _____

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912
Site Name: _____

Professional Seal: _____

It is a violation of law for any person,
unless they are acting under the direction
of a licensed Professional
Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

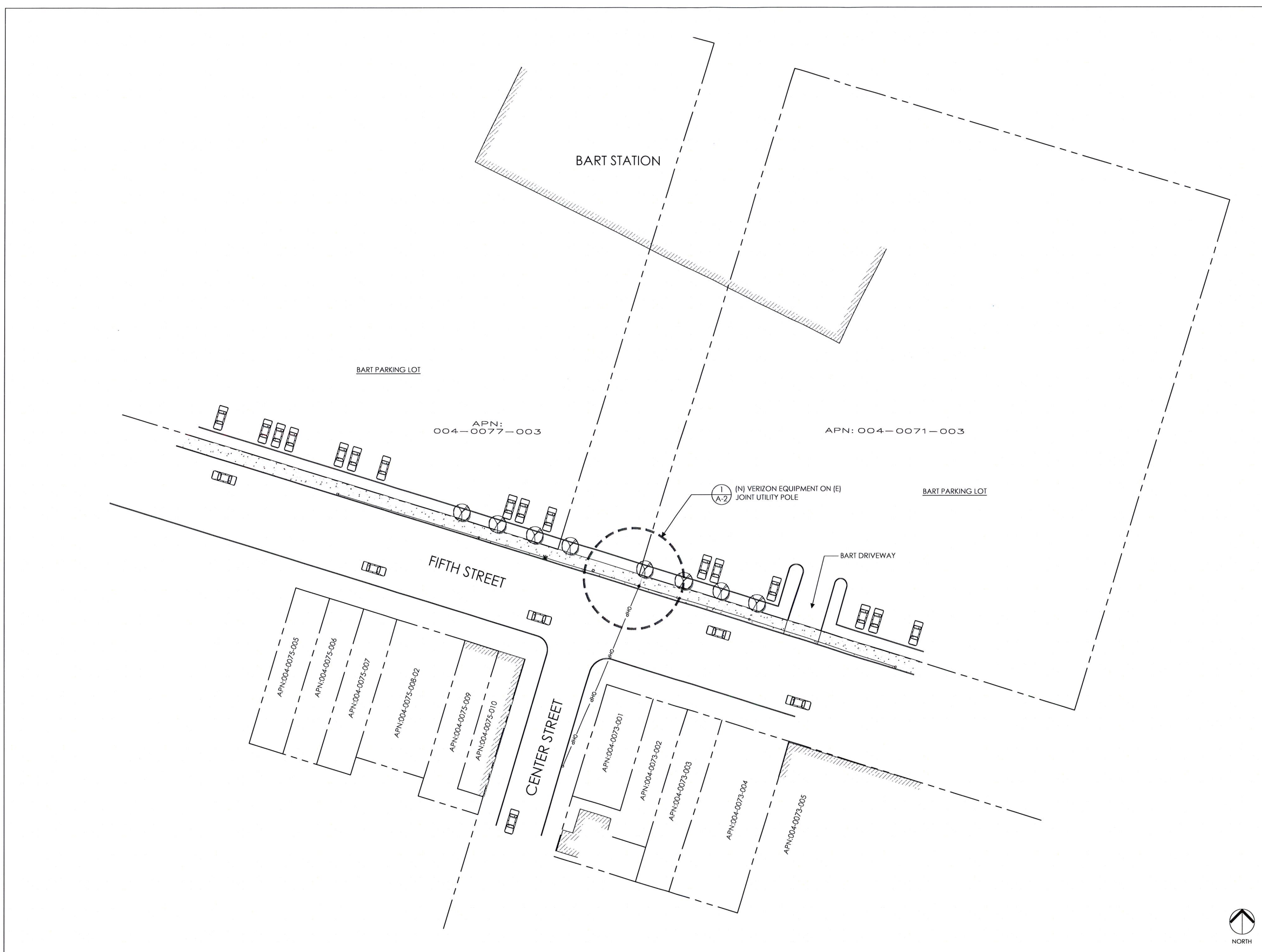
OVERALL SITE PLAN

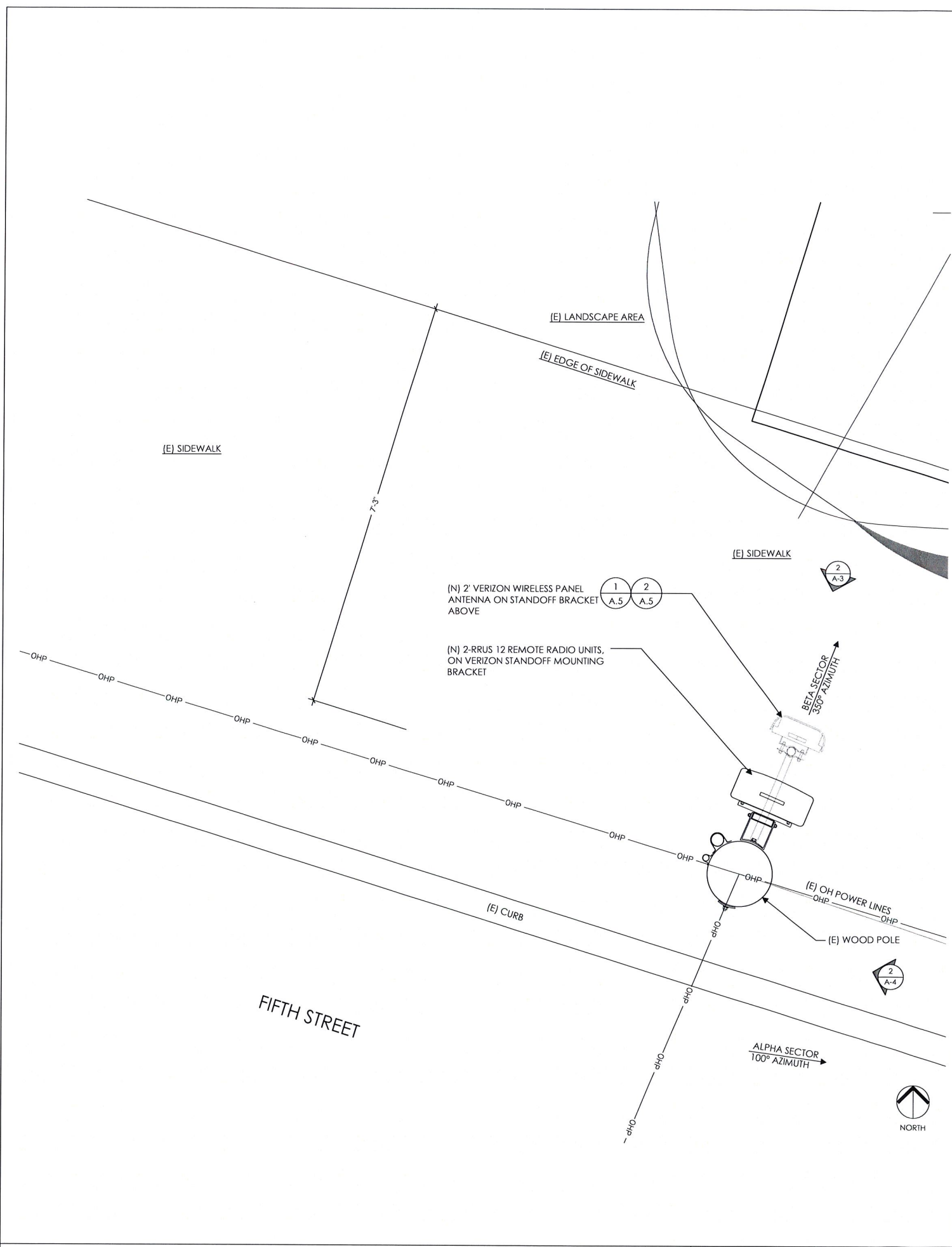
Sheet Title: _____

A.1

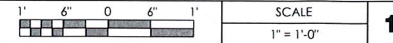
Sheet No.: _____

©Meridian Management LLC, 2016

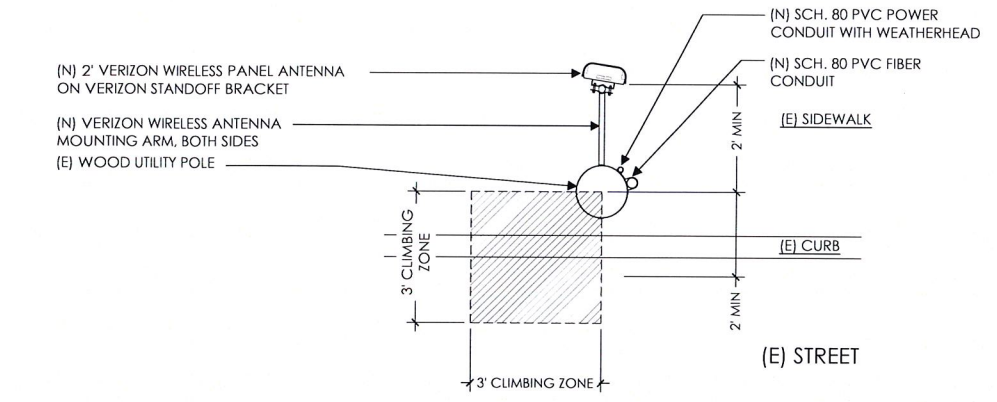




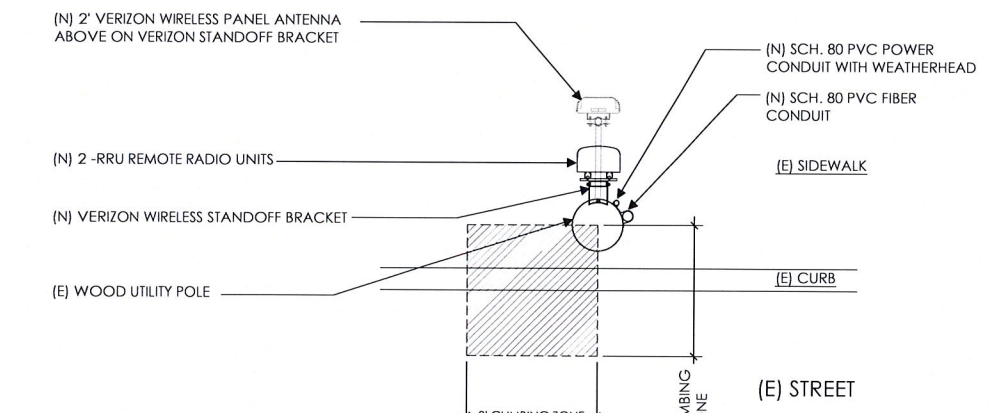
POLE PLAN ENLARGEMENTS



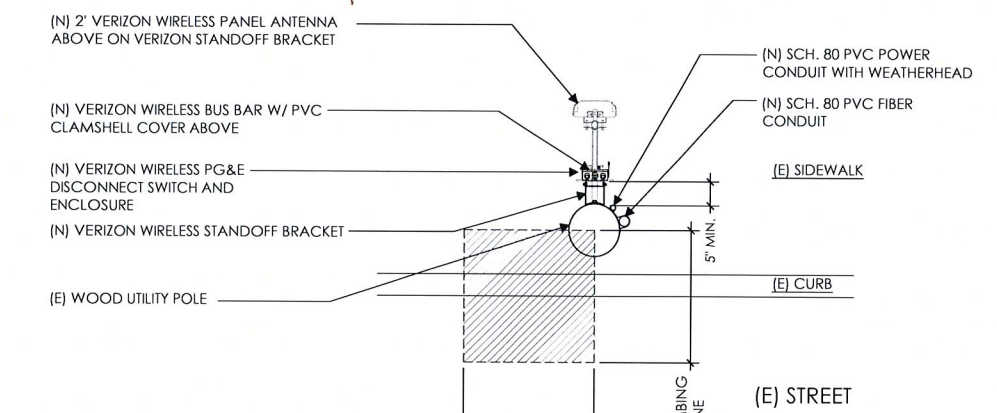
NOTE: ANTENNAS TO FACE BART STATION



SECTION A

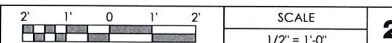


SECTION B



SECTION C

POLE SECTIONS



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction Drawings
(E) LIGHT POLE
Drawing Phase: _____

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912
Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

POLE PLAN ENLARGEMENTS, POLE SECTIONS

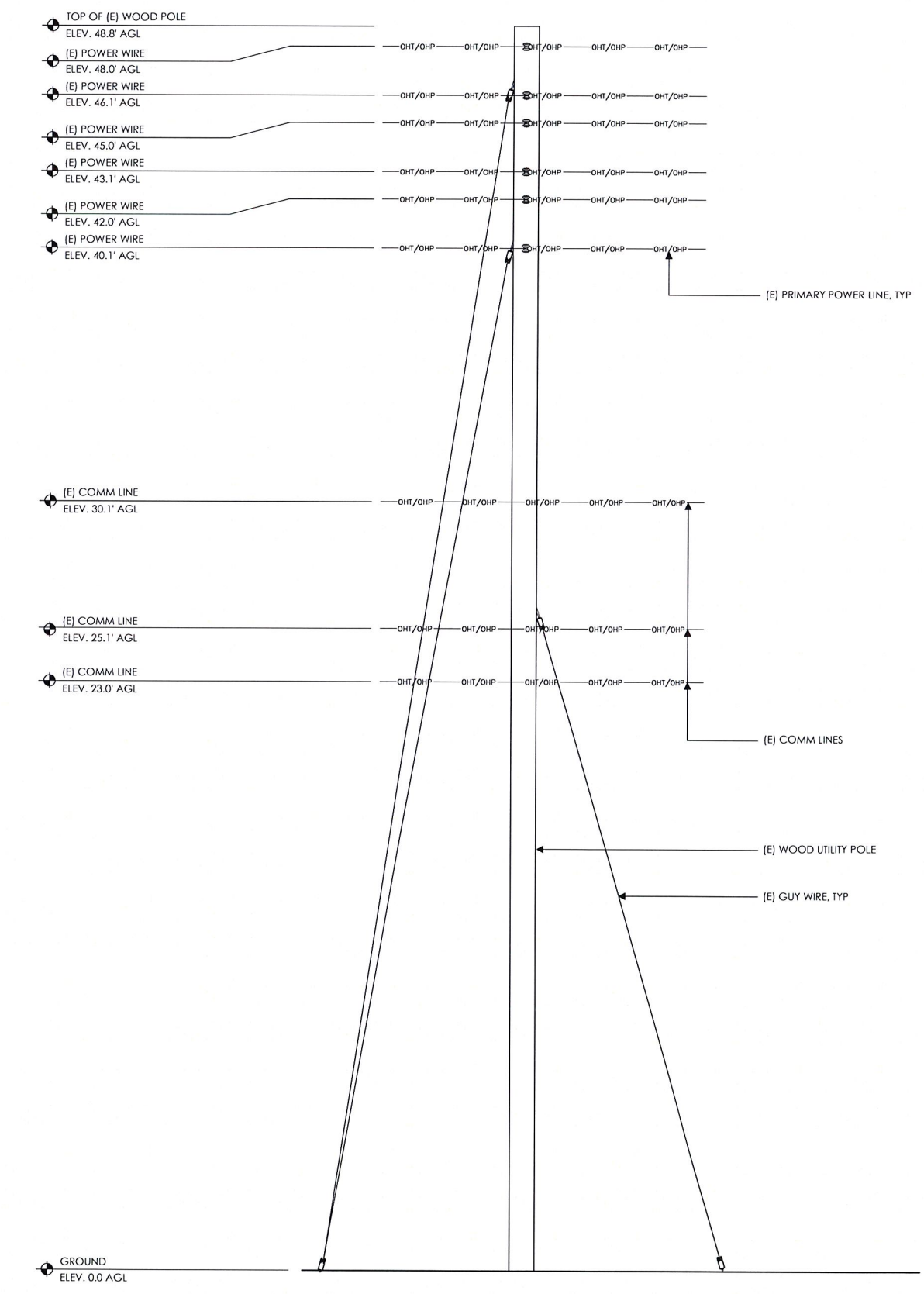
Sheet Title: _____

A.2

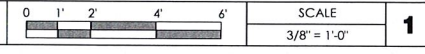
Sheet No.: _____

©Meridian Management LLC, 2016

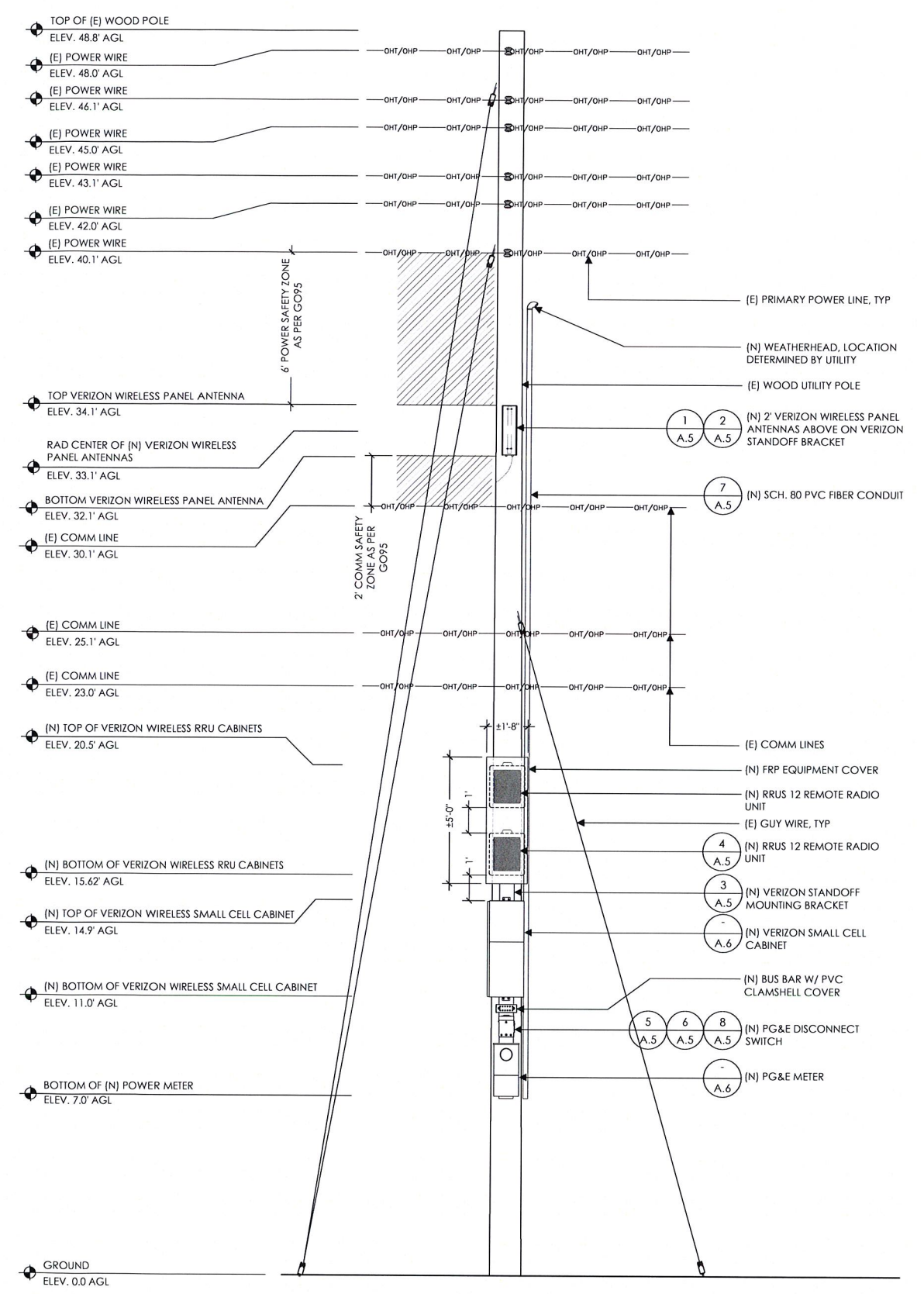
SCALE NOTE:
IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.



SOUTH ELEVATION - EXISTING



EQUIPMENT SYSTEM:
ALL NEW COMPONENTS TO BE SHOP-PAINT SHERWIN WILLIAMS MESA BROWN



SOUTH ELEVATION - PROPOSED



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name:

Professional Seal:

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.:

Date: 01/31/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

ELEVATIONS

Sheet Title:

A.3

Sheet No.:

© Meridian Management LLC, 2016

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction Drawings

Drawing Phase: _____

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

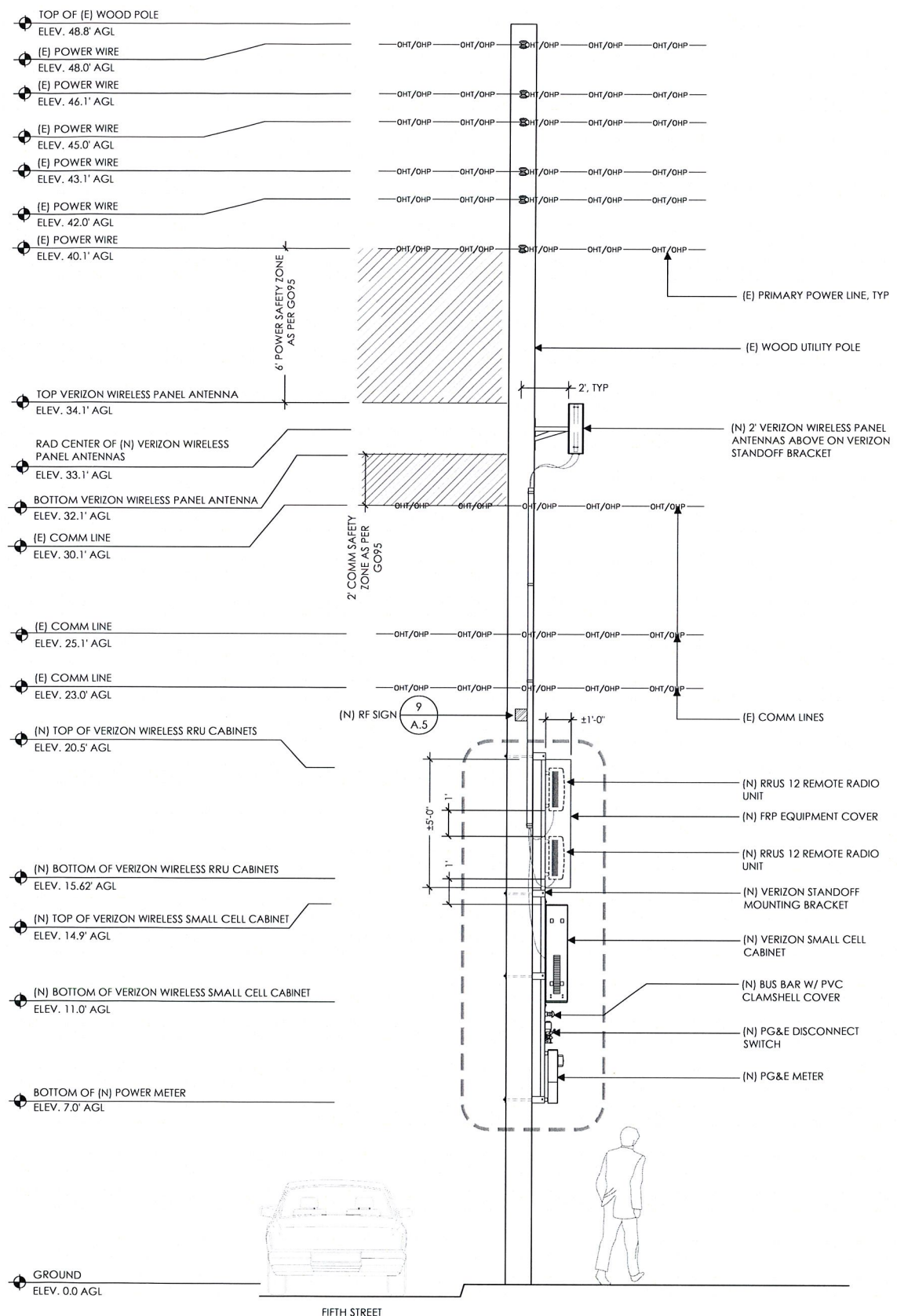
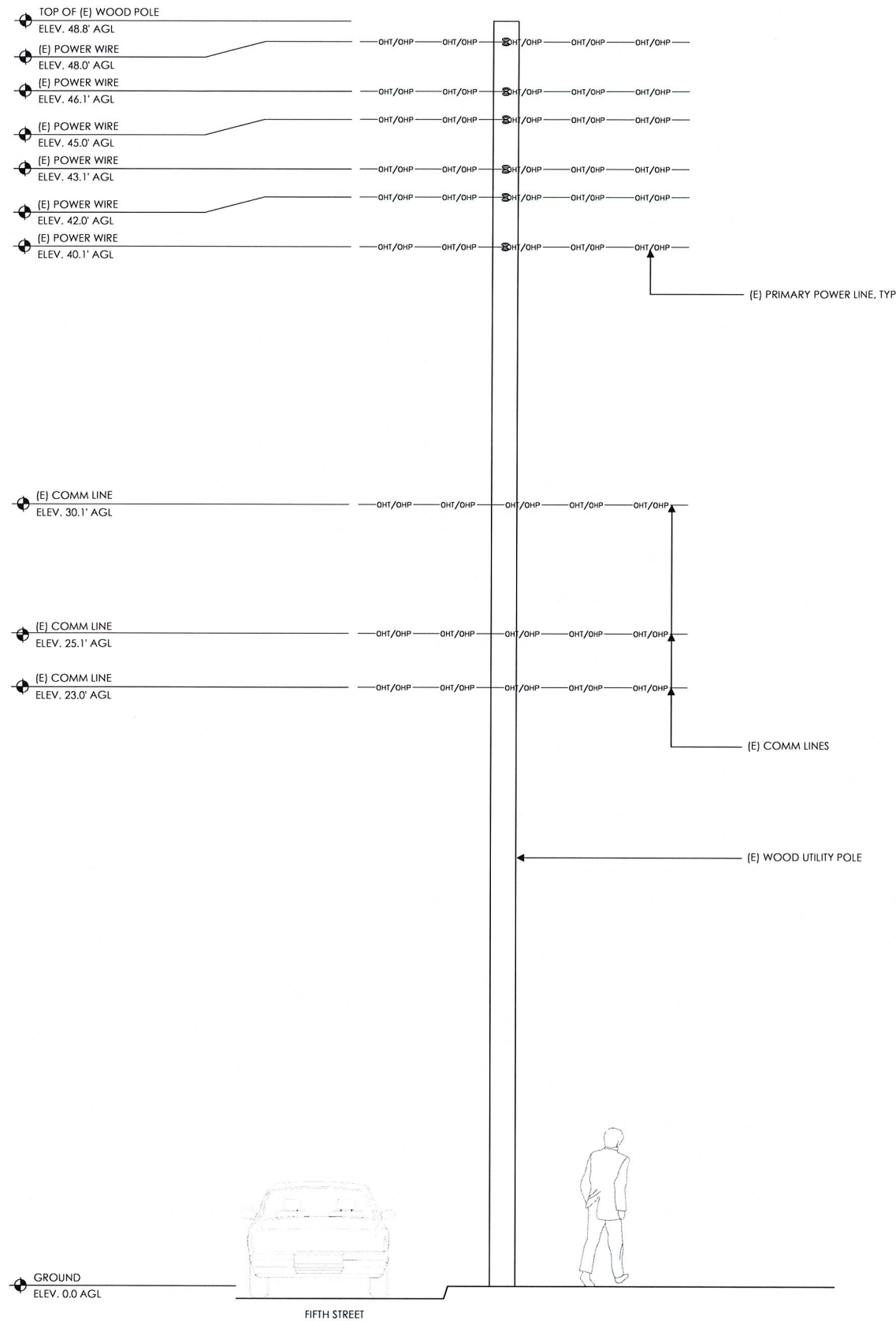
Designed By: JG Checked: RB

ELEVATIONS

Sheet Title: _____

A.4

Sheet No.: _____



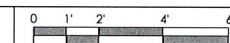
WEST ELEVATION - EXISTING



SCALE
3/8" = 1'-0"

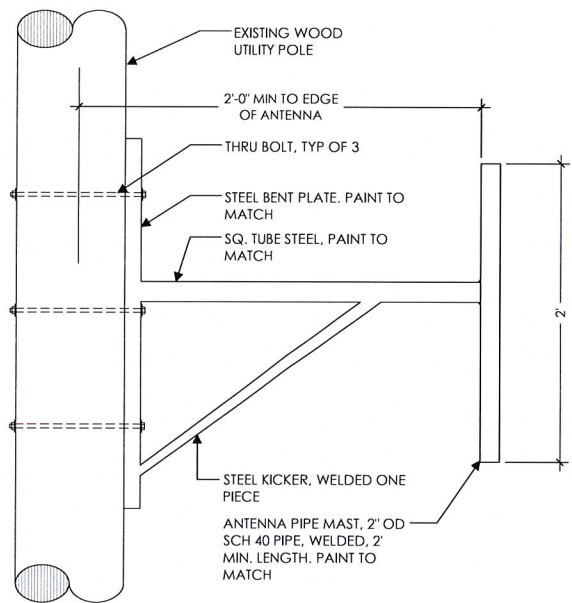
1

WEST ELEVATION - PROPOSED



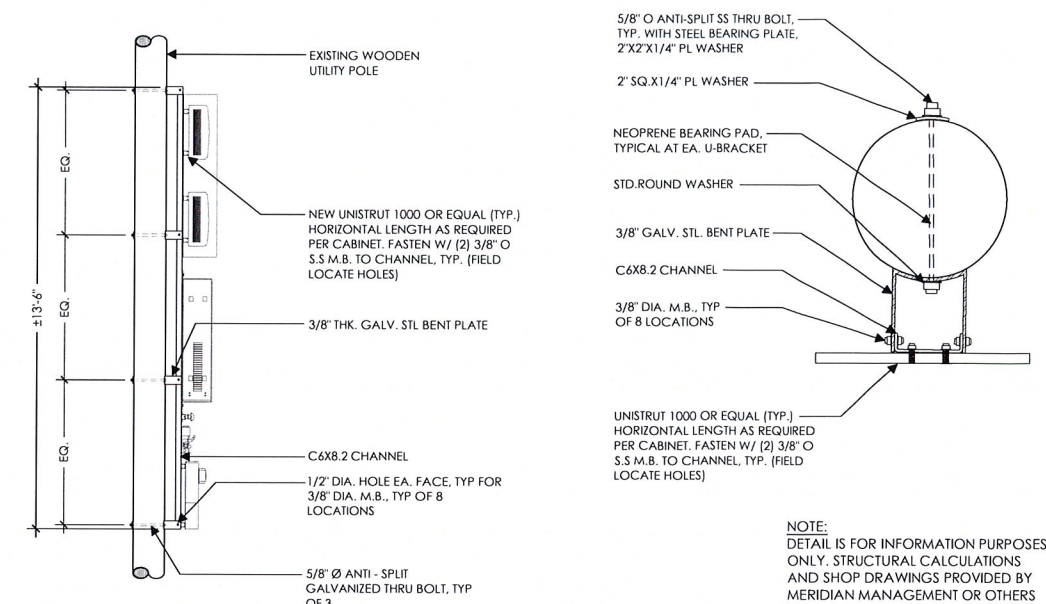
SCALE
3/8" = 1'-0"

2

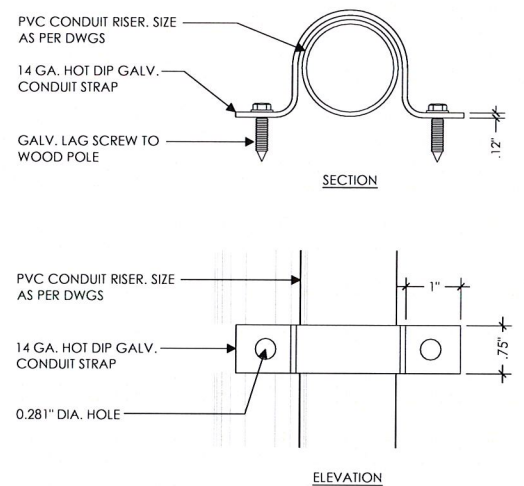


NOTE:
DETAIL IS FOR INFORMATION PURPOSES
ONLY. STRUCTURAL CALCULATIONS
AND SHOP DRAWINGS PROVIDED BY
MERIDIAN MANAGEMENT OR OTHERS

ANTENNA STANDOFF BRACKET 1



EQUIPMENT STANDOFF BRACKET 3



POLE CONDUIT STRAP 7

NEW GENERATION RADIO RRUS12

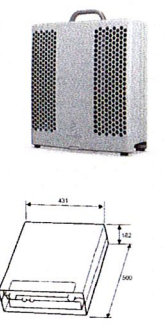
RRUS12 B4/AWS Q1-13
Up to 40 MHz IBW
Up to 2'60 W output power

Preliminary Dimensions / Weight

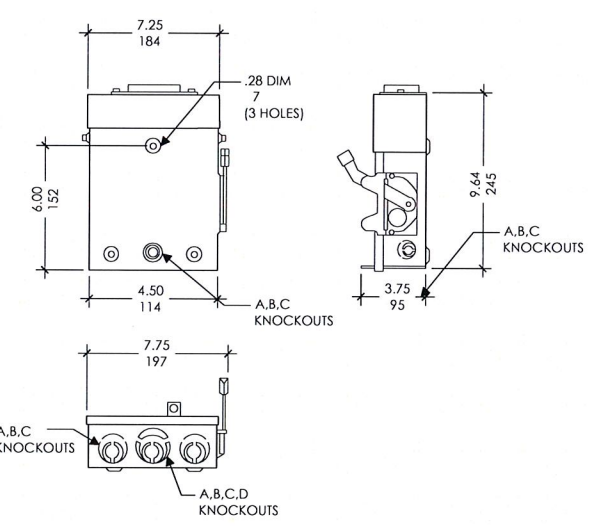
Product	Height [mm]	Width [mm]	Depth [mm]	Volume [liters]	Weight [kg]
RRUS 12 Bx type B including sun shield	483	470	186	38	26

RRUS11 Dimensions for comparison;

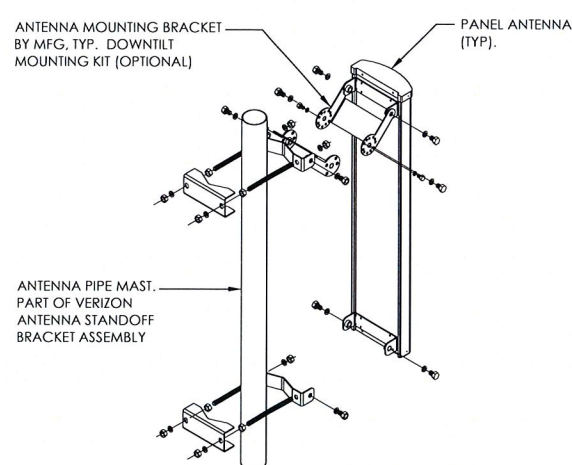
RRUS11 weight -> 23 kg



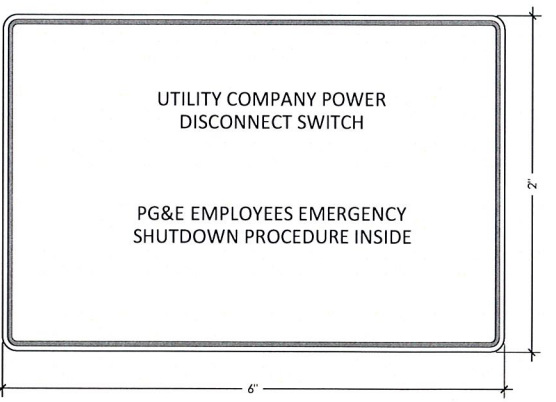
RRUS 12 4



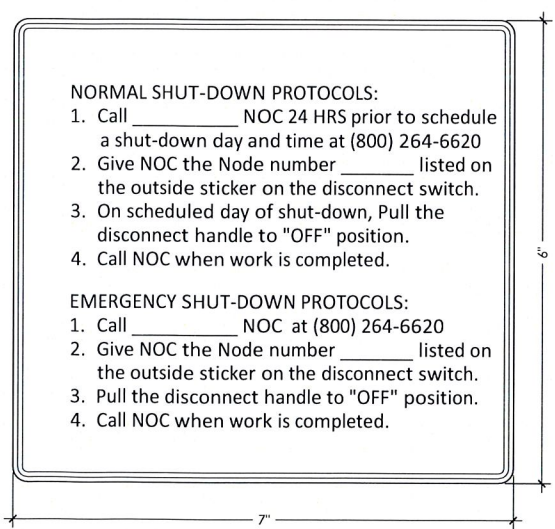
DISCONNECT ENCLOSURE 8



ANTENNA MOUNT 2



OUTDOOR DISCONNECT PLAQUE 5



INSIDE SHUTDOWN DISCONNECT SIGNAGE 6



RF SIGNAGE 9



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction Drawings

Drawing Phase: _____

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

Designed By: JG Checked: RB

EQUIPMENT SPECIFICATIONS

Sheet Title: _____

A.5

Sheet No.: _____

©Meridian Management LLC, 2016

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction Drawings

Drawing Phase: _____

WEST OAKLAND BART SC 1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: _____

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

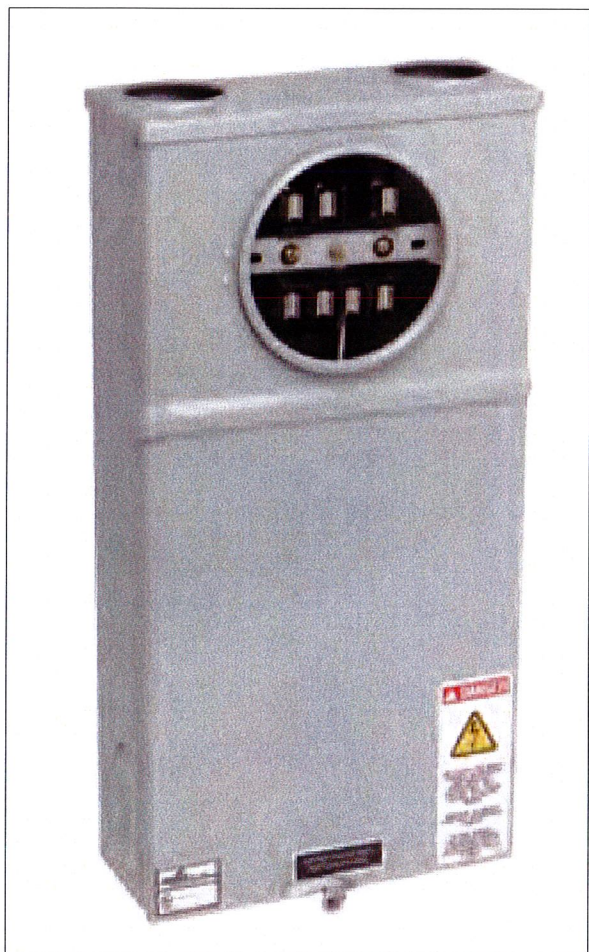
Designed By: JG Checked: RB

EQUIPMENT SPECIFICATIONS

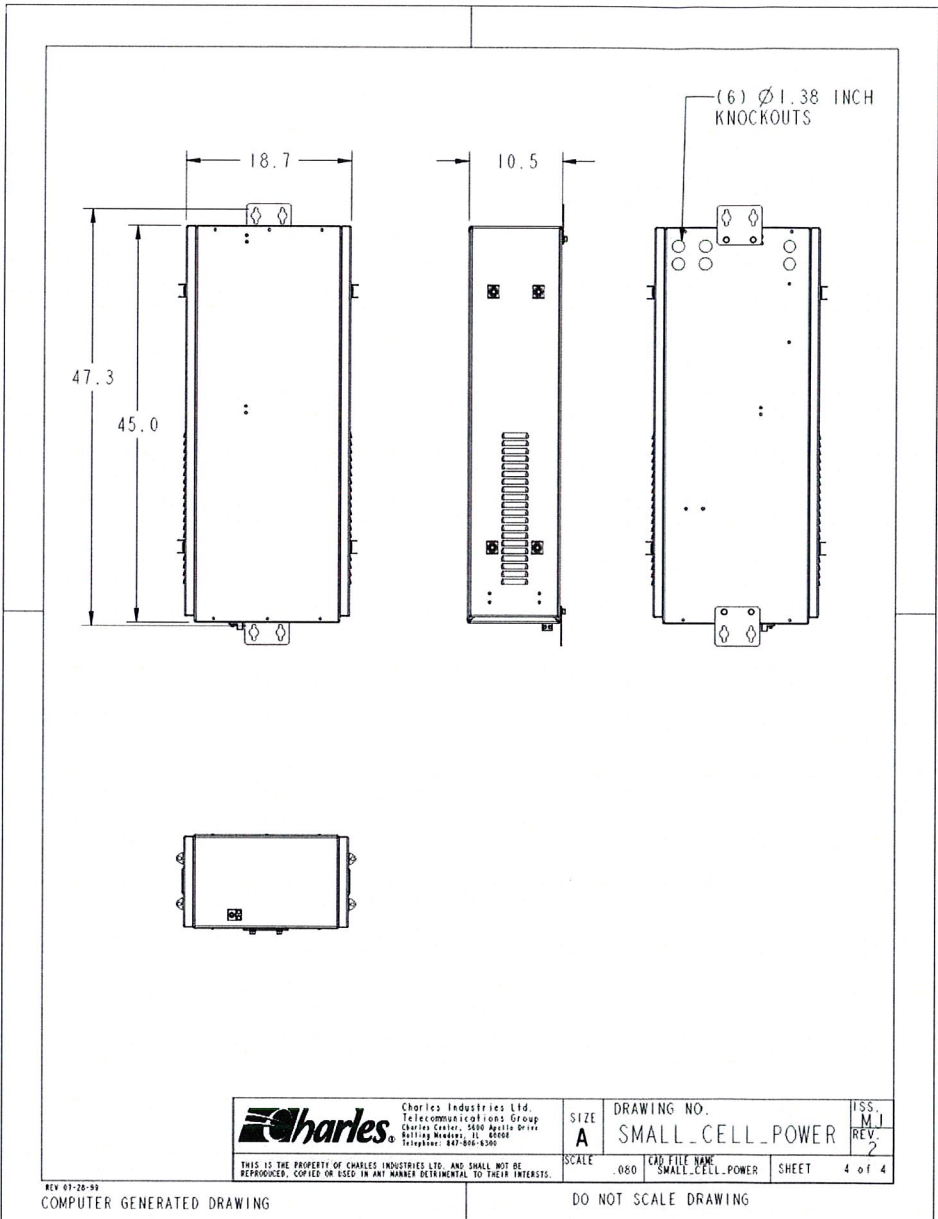
Sheet Title: _____

A.6

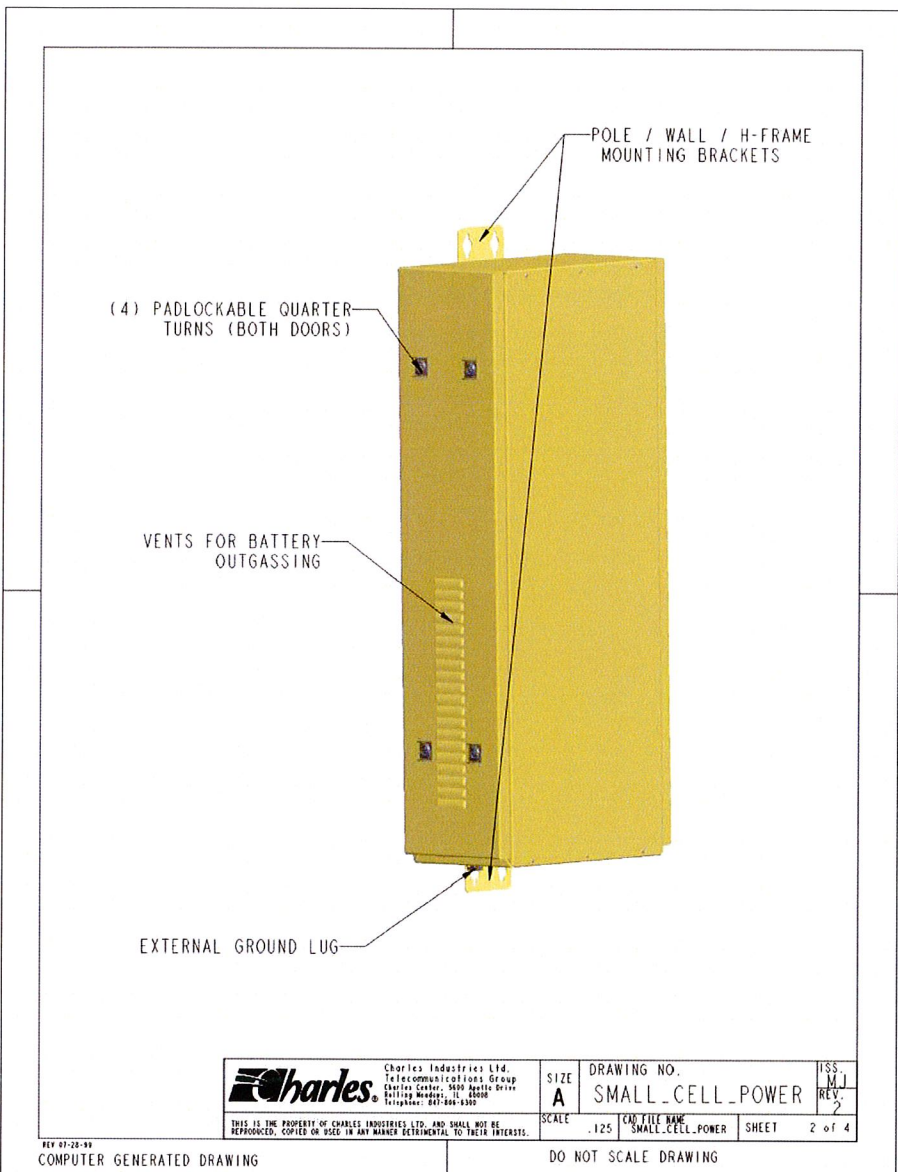
Sheet No.: _____



SERVICE METER



SMALL CELL CABINET



SMALL CELL CABINET

1. GENERAL REQUIREMENTS

- A. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES. NOTHING IN THESE PLANS OR SPECIFICATIONS SHALL BE CONSTRUED AS TO PERMIT WORK NOT CONFORMING TO THE MOST STRINGENT OF THESE CODES. SHOULD CHANGES BE NECESSARY IN THE DRAWINGS OR SPECIFICATIONS TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING AND CEASE WORK ON PARTS OF THE CONTRACT WHICH ARE AFFECTED.
B. THE CONTRACTOR SHALL MAKE A SITE VISIT PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY ALL EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES. THE CONTRACTOR ASSUMES ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS PROVISION.
C. THE EXTENT OF THE WORK IS INDICATED BY THE DRAWINGS, SCHEDULES, AND SPECIFICATIONS AND IS SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND SUPPLIES NECESSARY FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF ALL ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR SUCCESSFUL OPERATION OF ALL SYSTEMS.
D. THE CONTRACTOR SHALL PREPARE A BID FOR A COMPLETE AND OPERATIONAL SYSTEM, WHICH INCLUDES THE COST FOR MATERIAL AND LABOR.
E. WORKMANSHIP AND NEAT APPEARANCE SHALL BE AS IMPORTANT AS THE OPERATION. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE IN A MANNER ACCEPTABLE TO OWNER AND ARCHITECT/ENGINEER.
F. COMPLETE THE ENTIRE INSTALLATION AS SOON AS THE PROGRESS OF THE WORK WILL PERMIT. ARRANGE ANY OUTAGE OF SERVICE WITH THE OWNER AND BUILDING MANAGER IN ADVANCE. MINIMIZE DOWNTIME ON THE BUILDING ELECTRICAL SYSTEM.
G. THE ENTIRE ELECTRICAL SYSTEM INSTALLED UNDER THIS CONTRACT SHALL BE DELIVERED IN PROPER WORKING ORDER. REPLACE, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTIVE MATERIAL AND EQUIPMENT WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
H. ANY ERROR, OMISSION OR DESIGN DISCREPANCY ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR CLARIFICATION OR CORRECTION BEFORE CONSTRUCTION.
I. "PROVIDE": INDICATES THAT ALL ITEMS ARE TO BE FURNISHED, INSTALLED AND CONNECTED IN PLACE.
J. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS AND PAY ALL REQUIRED FEES.

2. EQUIPMENT LOCATION

- A. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE DESIRED LOCATIONS OR ARRANGEMENTS OF CONDUIT RUNS, OUTLETS, EQUIPMENT, ETC., AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE WORK SO AS TO SECURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF STRUCTURE CONDITIONS ENCOUNTERED.
B. IN THE EVENT CHANGES IN THE INDICATED LOCATIONS OR ARRANGEMENTS ARE NECESSARY, DUE TO FIELD CONDITIONS IN THE BUILDING CONSTRUCTION OR REARRANGEMENT OF FURNISHINGS OR EQUIPMENT, SUCH CHANGES SHALL BE MADE WITHOUT COST, PROVIDING THE CHANGE IS ORDERED BEFORE THE CONDUIT RUNS, ETC., AND WORK DIRECTLY CONNECTED TO THE SAME IS INSTALLED AND NO EXTRA MATERIALS ARE REQUIRED.
C. LIGHTING FIXTURES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS ONLY. COORDINATE THE FIXTURE LOCATION WITH MECHANICAL EQUIPMENT TO AVOID INTERFERENCE.
D. COORDINATE THE WORK OF THIS SECTION WITH THAT OF ALL OTHER TRADES. WHERE CONFLICTS OCCUR, CONSULT WITH THE RESPECTIVE CONTRACTOR AND COME TO AGREEMENT AS TO CHANGES NECESSARY. OBTAIN WRITTEN ACCEPTANCE FROM ARCHITECT/ENGINEER FOR THE PROPOSED CHANGES BEFORE PROCEEDING.

3. SHOP DRAWINGS

- A. SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL WITHIN 35 DAYS OF AWARD OF CONTRACT. SHOP DRAWINGS SHALL BE SUBMITTED IN A COMPLETE BOUND MANUAL INCLUDING LIGHT FIXTURES, SERVICE METERING, TRANSFER SWITCH, PANELBOARD, AND DISCONNECT SWITCHES. THE CONTRACTOR SHALL VERIFY DIMENSIONS OF EQUIPMENT TO INSURE THAT THEY FIT IN THE DESIGNATED AREA AND COMPLY WITH REQUIREMENTS OF ALL APPLICABLE CODES FOR REQUIRED WORKING CLEARANCES ABOUT ELECTRICAL EQUIPMENT PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. DEPARTURE FROM THE ABOVE WILL RESULT IN RE-SUBMITTAL AND DELAYS.

4. SUBSTITUTIONS

- A. NO SUBSTITUTIONS ARE ALLOWED.

5. TESTS

- A. BEFORE FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL INSURE THAT ALL EQUIPMENT, SYSTEMS, FIXTURES, ETC., ARE WORKING SATISFACTORILY AND TO THE INTENT OF THE DRAWINGS.

6. PERMITS

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING OUT AND PAYING FOR ALL THE REQUIRED PERMITS, INSPECTION AND EXAMINATION WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

7. GROUNDING

- A. THE CONTRACTOR SHALL PROVIDE A COMPLETE, AND APPROVED GROUNDING SYSTEM INCLUDING ELECTRODES, ELECTRODE CONDUCTOR, BONDING CONDUCTORS, AND EQUIPMENT CONDUCTORS AS REQUIRED BY ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
B. CONDUITS CONNECTED TO EQUIPMENT AND DEVICES SHALL BE METALLICALLY JOINED TOGETHER TO PROVIDE EFFECTIVE ELECTRICAL CONTINUITY.
C. FEEDERS AND BRANCH CIRCUIT WIRING INSTALLED IN A NONMETALLIC CONDUIT SHALL INCLUDE A CODE SIZED GROUNDING CONDUCTOR HAVING GREEN INSULATION. THE GROUNDING CONDUCTOR SHALL BE PROPERLY CONNECTED AT BOTH ENDS TO MAINTAIN ELECTRICAL CONTINUITY.
D. REFER TO GROUND BUS DETAILS. PROVIDE NEW GROUND SYSTEM COMPLETE WITH CONDUCTORS, GROUND ROD AND DESCRIBED TERMINATIONS.
E. ALL GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2 UNLESS NOTED OTHERWISE.
F. ALL NON-DIRECT BURIED TELEPHONE EQUIPMENT GROUND CONDUCTORS SHALL BE #2 STRANDED, THHN (GREEN) INSULATION.
G. ALL GROUND CONNECTIONS SHALL BE MADE WITH "HYGROUND" COMPRESSION SYSTEM BURNDY CONNECTORS EXCEPT WHERE NOTED OTHERWISE.
H. PAINT AT ALL GROUND CONNECTIONS SHALL BE REMOVED.
I. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FUTURE INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. SUBMIT TEST REPORTS AND FURNISH TO VERIZON ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".

8. UTILITY SERVICE

- A. TELEPHONE AND ELECTRICAL METERING FACILITIES SHALL CONFORM TO THE REQUIREMENTS OF THE SERVING UTILITY COMPANIES. CONTRACTOR SHALL VERIFY SERVICE LOCATIONS AND REQUIREMENTS. SERVICE INFORMATION WILL BE FURNISHED BY THE SERVING UTILITIES.
B. CONFORM TO ALL REQUIREMENTS OF THE SERVING UTILITY COMPANIES.

9. PRODUCTS

- A. ALL MATERIALS SHALL BE NEW, CONFORMING WITH THE NEC, ANSI, NEMA, AND THEY SHALL BE U.L. LISTED AND LABELED.
B. CONDUIT:
1. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
2. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL FITTINGS SHALL BE COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
3. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
4. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILING OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ARCHITECT PRIOR TO INSTALLING.
5. ALL UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 (UNLESS NOTED OTHERWISE) AT A MINIMUM DEPTH OF 24" BELOW GRADE.
6. ALL CONDUIT ONLY (C.O.) SHALL HAVE PULL ROPE.
7. CONDUITS RUN ON ROOFS SHALL BE INSTALLED ON 4 X 4 RED WOOD SLEEPERS, 6'-0" ON CENTER, SET IN NON-HARDENING MASTIC.

- C. ALL WIRE AND CABLE SHALL BE COPPER, 600 VOLT, #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID, CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED, TYPE THHN INSULATION USED UNLESS CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO WEATHER, IN WHICH CASE TYPE THWN INSULATION SHALL BE USED.
D. PROVIDE GALVANIZED COATED STEEL BOXES AND ACCESSORIES SIZED PER CODE TO ACCOMMODATE ALL DEVICES AND WIRING.
E. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE WITH WHITE FINISH (UNLESS NOTED BY ARCHITECT/ENGINEER), 20 AMP, 125 VOLT, THREE WIRE GROUNDING TYPE, NEMA 5-20R. MOUNT RECEPTACLE AT +12" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED ON DRAWINGS OR IN DETAILS. WEATHERPROOF RECEPTACLES SHALL BE GROUND FAULT INTERRUPTER TYPE WITH SIERRA #WPD-8 LIFT COVERPLATES.
F. TOGGLE SWITCHES SHALL BE 20 AMP, 120 VOLT AC, SPECIFICATION GRADE WHITE (UNLESS NOTED OTHERWISE) FINISH. MOUNT SWITCHES AT +48" ABOVE FINISHED FLOOR.
G. PANELBOARDS SHALL BE DEAD FRONT SAFETY TYPE WITH ANTI-BURN SOLDERLESS COMPRESSION APPROVED FOR COPPER CONDUCTORS, COPPER BUS BARS, FULL SIZED NEUTRAL BUS, GROUND BUS AND EQUIPPED WITH QUICK-MAKE QUICK-BREAK BOLT-IN TYPE THERMAL MAGNETIC CIRCUIT BREAKERS. MOUNT TOP OF THE PANELBOARDS AT 6'-3" ABOVE FINISHED FLOOR. PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY.
H. ALL CIRCUIT BREAKERS, MAGNETIC STARTERS AND OTHER ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.
I. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" ROUND AND 10' LONG. COPPERWELD OR APPROVED EQUAL.

10. INSTALLATION

- A. PROVIDE SUPPORTING DEVICES FOR ALL ELECTRICAL EQUIPMENT, FIXTURES, BOXES, PANEL, ETC., SUPPORT LUMINAIRES FROM UNDERSIDE OF STRUCTURAL CEILING. EQUIPMENT SHALL BE BRACED TO WITHSTAND HORIZONTAL FORCES IN ACCORDANCE WITH STATE AND LOCAL CODE REQUIREMENTS. PROVIDE PRIOR ALIGNMENT AND LEVELING OF ALL DEVICES AND FIXTURES.
B. CUTTING, PATCHING, CHASES, OPENINGS: PROVIDE LAYOUT IN ADVANCE TO ELIMINATE UNNECESSARY CUTTING OR DRILLING OF WALLS, FLOORS CEILINGS, AND ROOFS. ANY DAMAGE TO BUILDING STRUCTURE OR EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR. OBTAIN PERMISSION FROM THE ARCHITECT/ENGINEER BEFORE CORING.
C. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
D. LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
E. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE REQUIREMENTS OF THE C.B.C.

11. PROJECT CLOSEOUT

- A. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
B. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS AND CIRCUITS.
C. ALL BROCHURES, OPERATING MANUALS, CATALOG, SHOP DRAWINGS, ETC., SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

- 1. SERVICE POWER SHALL BE 100A, 1Ø, 3W, 120/208 OR 120/240V.
2. UTILITY RECEPTACLE IS A GFCI DUPLEX OUTLET INSTALLED IN THE DEADFRONT OF PFC.
3. NOT USED
4. PROVIDE A MIN. 36" WORK CLEARANCE IN FRONT OF PANELS/SERVICE EQUIP.
5. ALL BREAKERS IN THE ELEC. PANEL ARE RATED 10,000 RMS SYMMETRICAL AMPS, 240V MAX. 75° C.
6. ALL WIRING SHALL BE COPPER 75° C U.N.O.
7. CONDUIT REQUIREMENTS (TYP., U.N.O.): UNDERGROUND: PVC (SCHED 40 OR 80) INDOOR: EMT (RGS IN TRAFFIC AREAS) OUTDOOR (ABOVE GRADE): RGS.
8. APPLETON EMERGENCY GENERATOR PLUG AT 36" A.F.F. CONTRACTOR TO VERIFY EXACT LOCATION WITH LANDLORD AND UTILITY COORDINATOR.
9. PLACE "TRUE TAPE" AND PULL ROPE IN THE CONDUITS AS REQUIRED.

Table with 7 columns: Abbreviation, Description, ELEC, ELECTRICAL, MFR, MANUFACTURER, SAF, SAFETY. Rows include items like ACCA, AIC, APPROX, AT, AWG, BATT, BD, BR, BRKR, BTGW, BTS, C, CAB, CB, CKT, CONT, DEM, [E], EGR.

Table with 3 columns: Symbol, Description, Notes. Includes symbols for OVERHEAD TELEPHONE/OVERHEAD POWER, OVERHEAD TELEPHONE LINE, OVERHEAD POWER LINE, POWER RUN, TELCO RUN, POWER/TELCO RUN, GROUNDING CONDUCTOR, GROUNDING CONDUCTOR, CONDUIT UNDERGROUND, FUSE, SAFETY SWITCH, MANUAL TRANSFER SWITCH, and POLE MOUNTED XFMR.



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

WEST OAKLAND BART SC I (NEAR) NORTH SIDE FIFTH STREET AT CENTER STREET OAKLAND, CA 94606

PSL# 277912

Site Name:

Professional Seal:

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Table with 3 columns: Rev., Date, Description. Shows revision history for construction drawings.

Project No.: V-12-CA2039

Date: 01/31/17 Job No.:

Scale: AS SHOWN CAD File:

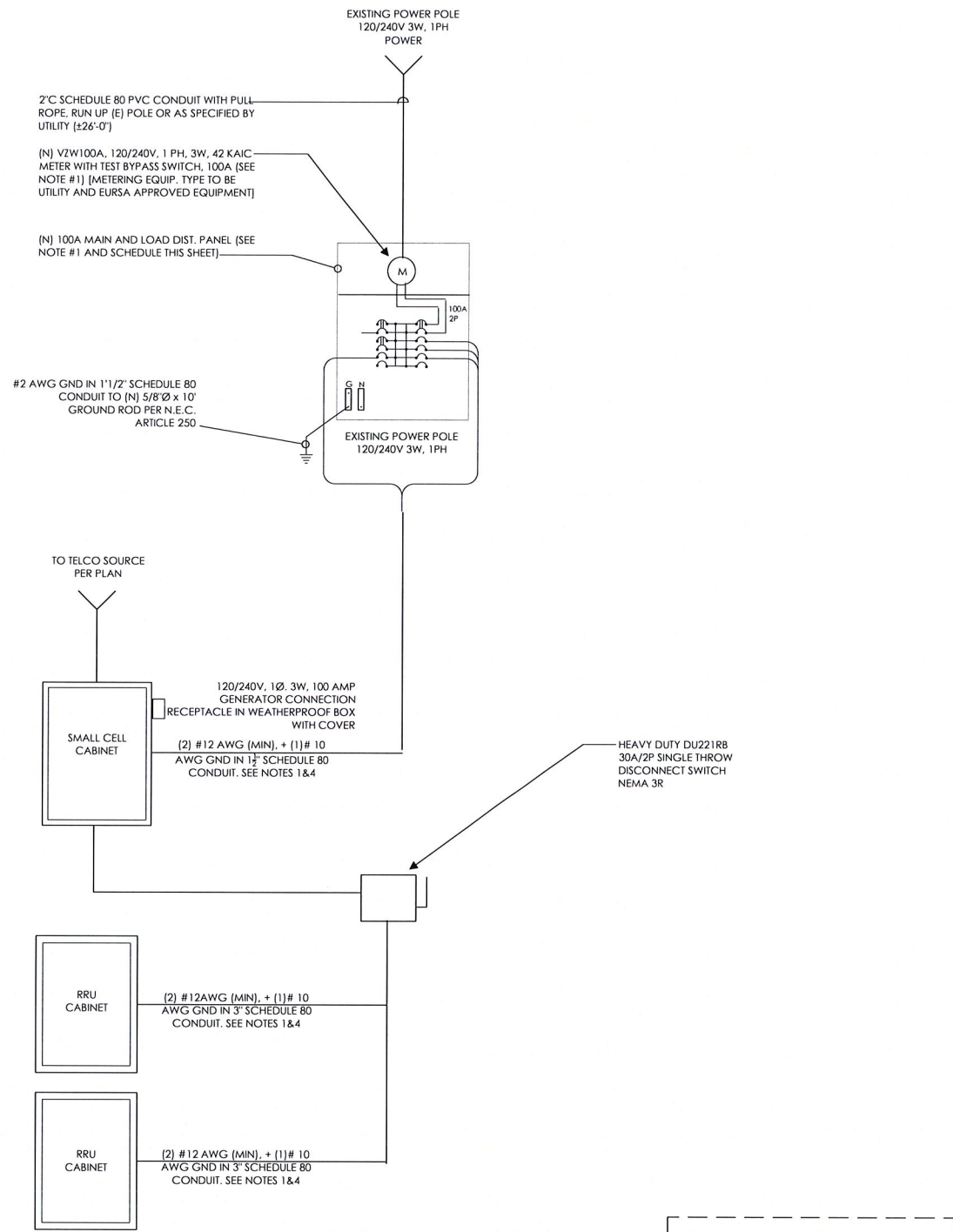
Designed By: JG Checked: RB

ELECTRICAL SPECIFICATIONS, NOTES, LEGEND, ABBREVIATIONS

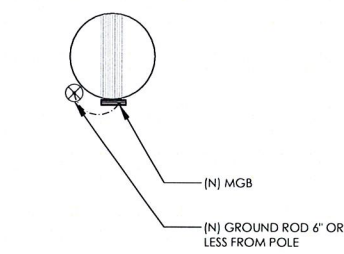
Sheet Title:

E.1

Sheet No.:



SINGLE LINE DIAGRAM



GROUNDING PLAN

LOAD CALCULATIONS - VERIZON WIRELESS

EXISTING LOAD: 0 AMPS
 NEW LOAD: 6.67 AMPS MAX.
 NEW TOTAL LOAD: 6.67 AMPS MAX.

POWER AND TELCO DESIGN IS BASED ON INITIAL SITE VISIT.

CONTRACTOR SHALL OBTAIN CURRENT UTILITY COORDINATOR PLANS PRIOR TO START OF CONSTRUCTION.

AVAILABLE FAULT CURRENT PER UTILITY.

NOTE: CONTRACTOR TO CHECK WITH UTILITY TO ENSURE ELEC. METER IS BRACED FOR ACTUAL FAULT CURRENT.

POWER AND TELCO NOTES:

- POWER AND TELCO POINTS OF CONNECTION AND ANY EASEMENTS ARE PRELIMINARY AND SUBJECT TO CHANGE BY THE UTILITY COMPANIES.
- CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK/MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY ENGINEERING PLANS AND SPECIFICATIONS ONLY WHERE APPLICABLE PER PROJECT SCOPE OF WORK.
- CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, PULL WIRES, CABLE PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT, TRANSFORMER PAD, BARRIERS, POLE RISER TRENCHING, BACK FILL AND UTILITY FEES, AND INCLUDE REQUIREMENTS IN SCOPE.
- CONTRACTOR SHALL LABEL ALL MAIN DISCONNECT SWITCHES AS REQUIRED BY CODE.

NOTES:

- SUBCONTRACTOR SHALL PROVIDE METER WITH DIST. PANEL AND BREAKERS FOR POWER TO THE BTS UNITS AND THE BTS/UTILITY CABINET.
- ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
- SUBCONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE ENTRANCE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.
- FIELD ROUTE CONDUIT TO CABINETS AS REQUIRED.
- MAXIMUM ONE WAY CIRCUIT RUN NOT TO EXCEED 75 FEET.

GENERAL ELECTRICAL NOTES:

- PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.
- THE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ADOPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE 24, ALL OTHER APPLICABLE CODES AND ORDINANCES & THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT & WIRING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS LABORATORY (UL) OR AN APPROVED TESTING LABORATORY, PAYMENT FOR ALL INSPECTION FEES AND PERMITS ARE PART OF THIS CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS & EQUIPMENT FOR THE ENTIRE INSTALLATION & UNIT COMPLETION OF WORK, ERECT & MAINTAIN APPROVED & SUITABLE BARRIERS, PROTECTIVE DEVICES & WARNING SIGNS, BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE AND/OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS & WARNINGS.
- COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
- ALL SAW CUTTING, TRENCHING, BACK FILLING & PATCHING SHALL BE PART OF THIS CONTRACT.
- FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION & PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY, VERIFY LOCATION FOR FACILITIES & DETAILS WITH POWER UTILITY, IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS & SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DWGS ISSUED & SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.
- ALL WIRING SHALL BE COPPER. INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE "THWN" CONDUCTORS LARGER AND #6 AWG MAY BE TYPE "THWN" OR "TWN".
- PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
- UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, S/DUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A 5 OHM OR LESS GROUNDING PATH, ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT.

1. MOUNT PER MANUFACTURER'S RECOMMENDATIONS.
 2. E.C. SHALL MODIFY BRANCH CIRCUIT ARRANGEMENT AS SHOWN IN THE PANEL SCHEDULE
 ** 3. MAIN ACB INSTALLED BY MANUFACTURER

TO 100 AMP METER SOCKET **

PANEL CIRCUIT & LOAD SCHEDULE											
DESCRIPTION	DIAMETER	TYPE	LOAD PER PHASE (VA)			LOADS	NEUTRAL	POLES	WIRE SIZE	A.I.C.	WIRE TYPE
			A	B	C						
1								20	2	2	10,000
3								20	2	2	10,000
5								20	2	2	10,000
7								20	2	2	10,000
9											
SUBTOTAL CONTINUOUS											
SUBTOTAL NON CONTINUOUS											
VOLTAGE: 120 / 240			CYCLE: 60			PHASE: 1			WIRES: 3		
NEUTRAL: 100 AMPS			MAIN BREAKER: 100 AMPS			A.I.C.: 10,000			TRIP:		
MAIN LUGS: 100 AMPS			MAIN COPPER BUS: 125 AMPS								
MANS: TOP, BOTTOM											

SERVICE DESIGNATION: PP														
LOCATION: N/A														
WIRE TYPE	A.I.C.	WIRE SIZE	POLES	NEUTRAL	LOADS	NEUTRAL	POLES	WIRE SIZE	A.I.C.	LOAD PER PHASE (VA)			DESCRIPTION	
										A	B	C		
THWN	10,000	12	2	20						804			1	SMALL CELL CABINET
THWN	10,000	12	2	20						804			4	BLANK
THWN	10,000	12	2	20						804			8	BLANK
THWN	10,000	12	2	20						804			10	SPARE
SUBTOTAL CONTINUOUS										804	804		0	TOTAL KVA CONTINUOUS x 1.25
SUBTOTAL NON CONTINUOUS													1.60	TOTAL KVA NON CONTINUOUS
TOTAL KVA												1.60		
TOTAL AMPS												6.67		

PANEL SCHEDULE -- PANEL " PP "



Verizon Wireless
 2785 Mitchell Drive, Suite 9
 Walnut Creek, CA 94598

Client: _____



Project Architect: _____



Site Agent: _____

100% Construction
 Drawings

Drawing Phase: _____

WEST OAKLAND BART SC1
 (NEAR) NORTH SIDE FIFTH STREET
 AT CENTER STREET
 OAKLAND, CA 94606

PSL# 277912

Site Name: _____

Professional Seal: _____

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwgs 90%
02	01/09/17	Constr. Dwgs 100%
03	01/13/17	Constr. Dwgs 100%
04	01/31/17	Constr. Dwgs 100%

Project No.: V-12-CA2039

Date: 01/31/17 Job No.: _____

Scale: AS SHOWN CAD File: _____

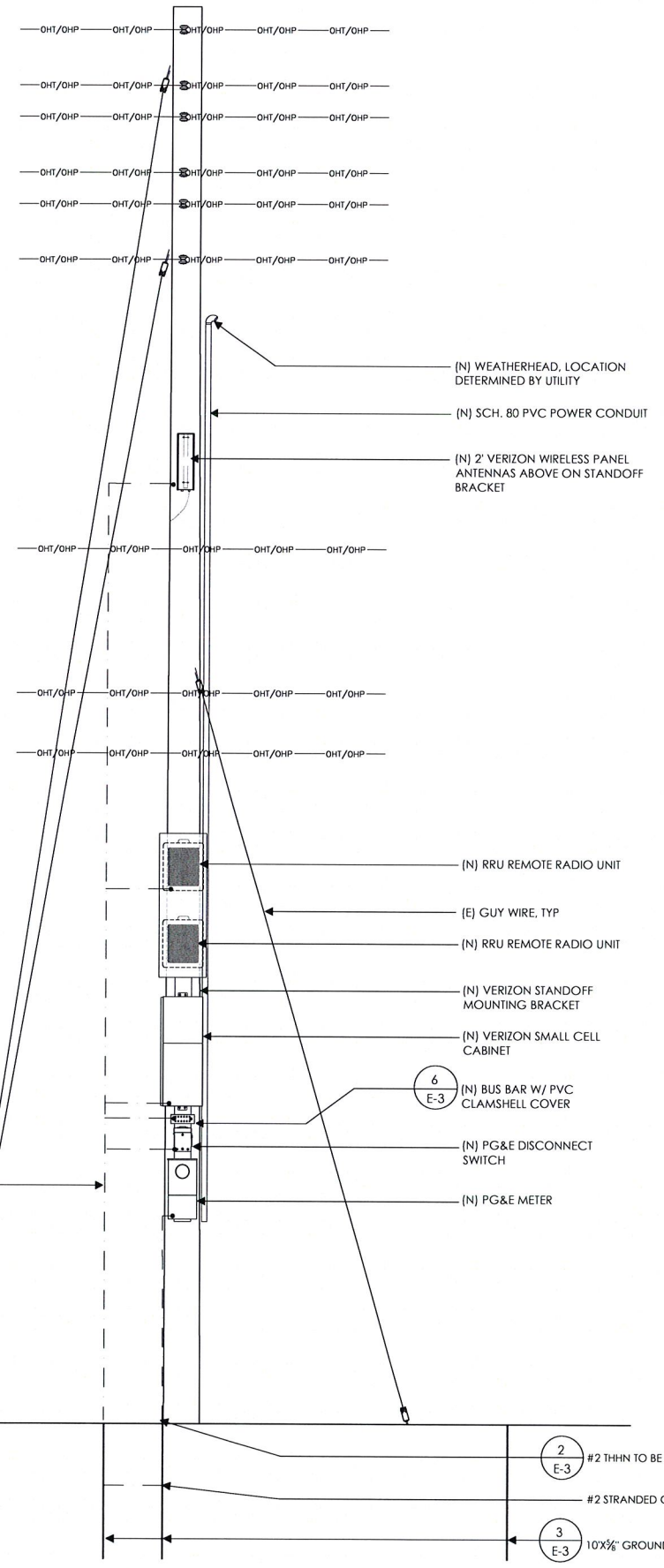
Designed By: JG Checked: RB

SINGLE LINE DIAGRAM
 BUSS DIAGRAM
 PANEL SCHEDULE

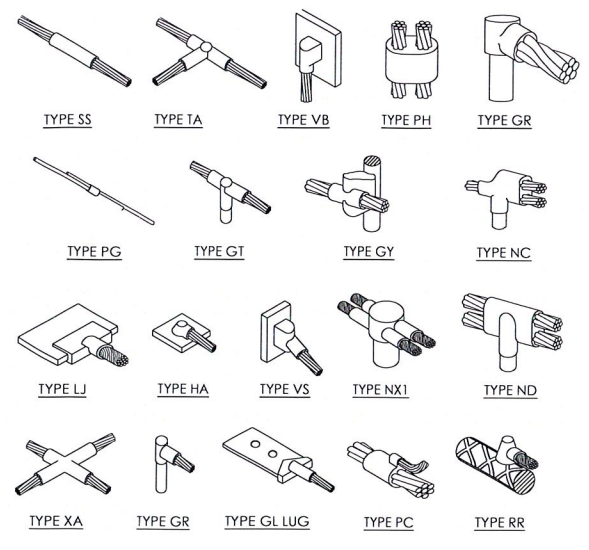
Sheet Title: _____

E.2

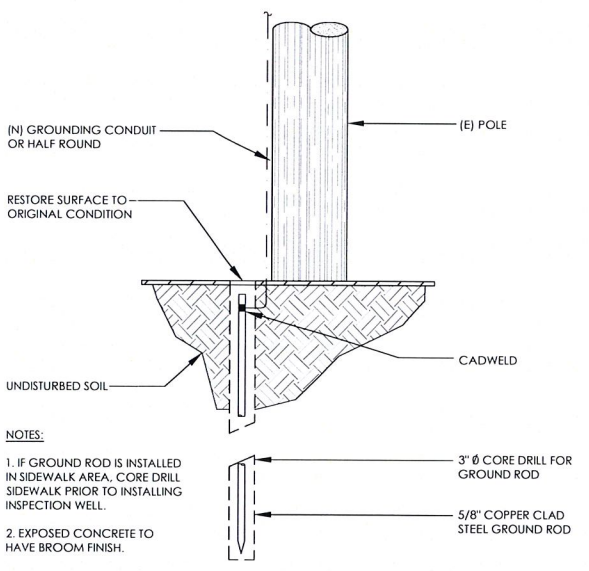
Sheet No.: _____



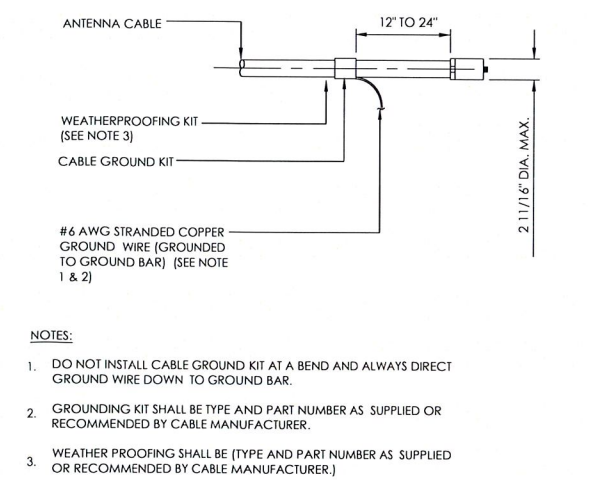
POLE GROUNDING RISER DIAGRAM (TYP.)



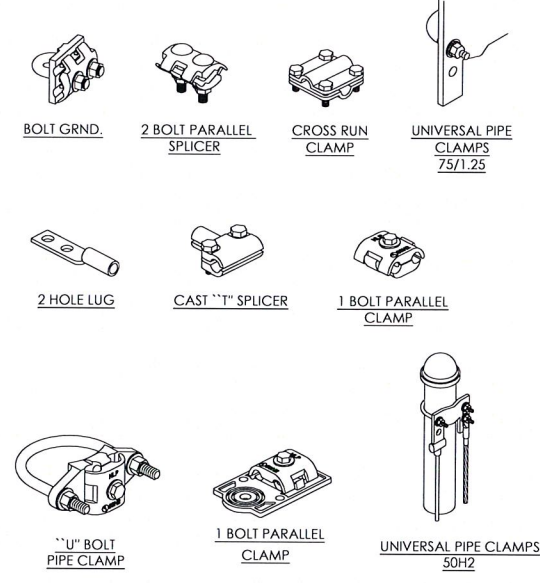
EXOTHERMIC WELD CONNECTION



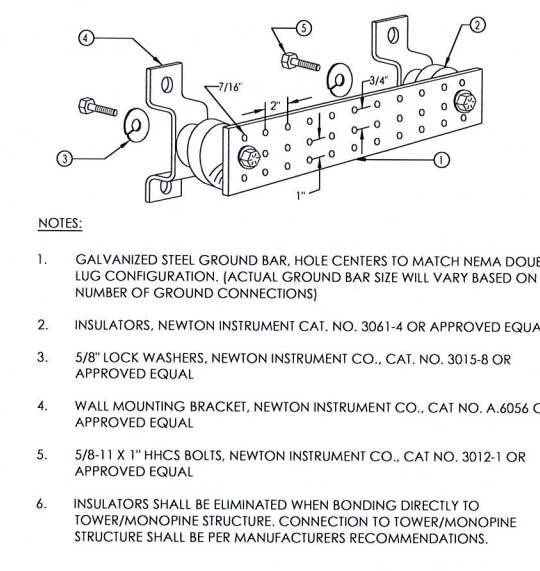
POLE GROUNDING ROD



CONN. OF CABLE GND KIT TO ANT.



MECHANICAL CONNECTION



BUS BAR

NOT USED



Verizon Wireless
2785 Mitchell Drive, Suite 9
Walnut Creek, CA 94598

Client:



Project Architect:



Site Agent:

100% Construction Drawings

Drawing Phase:

WEST OAKLAND BART SC1
(NEAR) NORTH SIDE FIFTH STREET
AT CENTER STREET
OAKLAND, CA 94606

PSL# 277912

Site Name:

Professional Seal:

It is a violation of law for any person, unless they are acting under the direction of a licensed Professional Architect/Engineer, to alter this document.

Rev.	Date	Description
01	09/07/16	Constr. Dwg 90%
02	01/09/17	Constr. Dwg 100%
03	01/13/17	Constr. Dwg 100%
04	01/31/17	Constr. Dwg 100%

Project No.: V-12-CA2039

Date: 01/31/17 Job No.:

Scale: AS SHOWN CAD File:

Designed By: JG Checked: RB

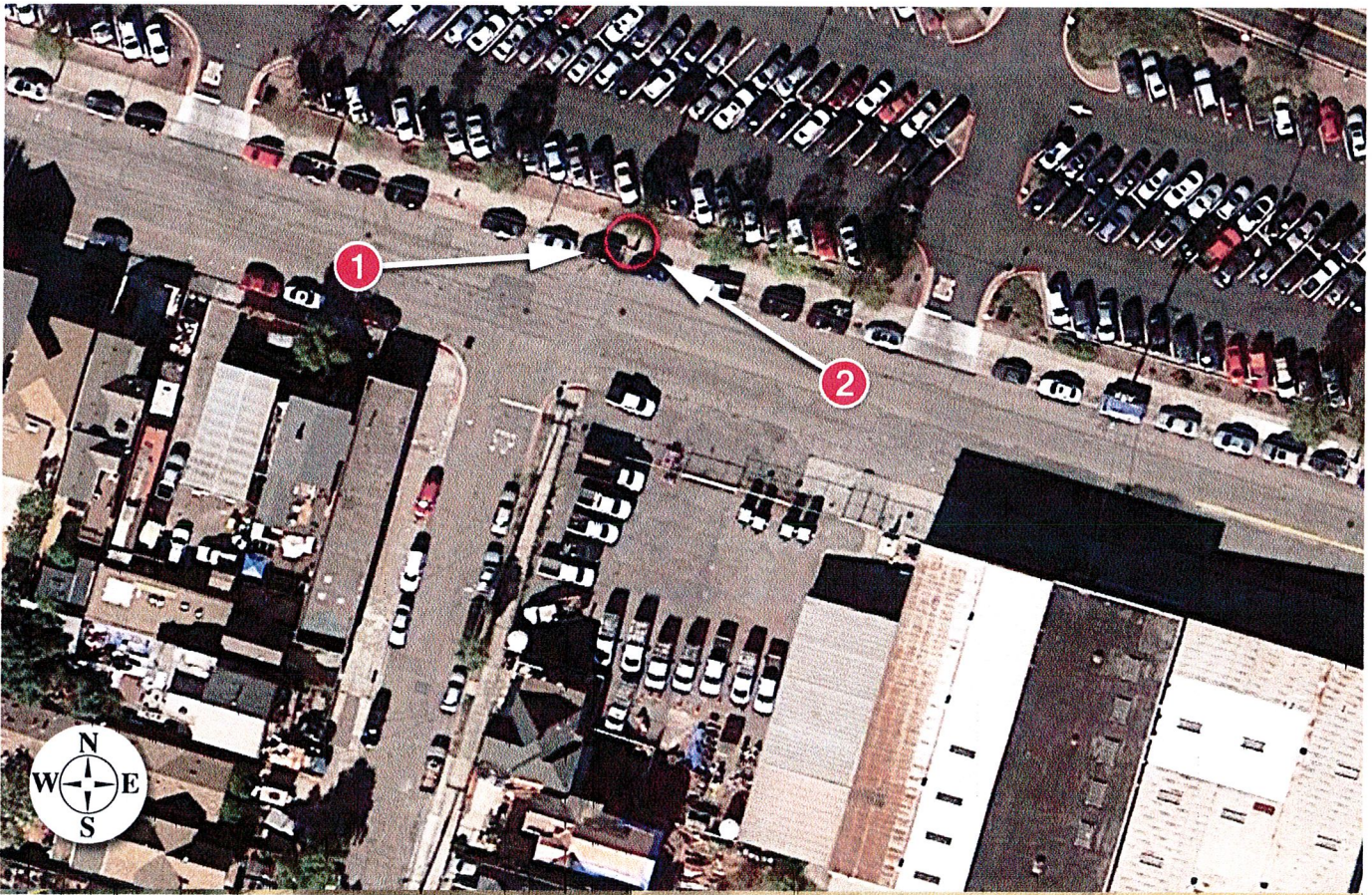
ELECTRICAL DETAILS

Sheet Title:

E.3

Sheet No.:

© Meridian Management LLC, 2016





Existing



proposed antenna

Proposed



West Oakland BART SC1 Site # 277912

Looking East from Fifth Street

2/21/17

(Near) North Side Fifth Street at Center Street
Oakland, CA

View #1

Applied Imagination 510 914-0500



Existing



proposed antenna

Proposed



West Oakland BART SC1 Site # 277912

Looking West from Fifth Street

2/21/17

(Near) North Side Fifth Street at Center Street
Oakland, CA

View #2

Applied Imagination 510 914-0500

PROJECT DESCRIPTION

The proposed location for this new unmanned Verizon Wireless ("VZW") small cell facility is an existing 48.8' tall wood utility pole in the public right-of-way – on the north side of the Fifth Street/Center Street intersection.

VZW proposes to install equipment on this utility pole consisting of one (1) 2-foot panel antenna, two (2) remote radio units, one (1) equipment cabinet, one (1) disconnect switch and one (1) PG&E electrical meter.

The panel antenna will be mounted at 33.1' above ground level using a 2-foot standoff bracket. The remote radio units will be mounted between 15.62' and 20.5' and will be enclosed inside an FRP equipment cover. The bottom of the electrical meter will be 7' above ground level with the disconnect switch just above.

All equipment will be placed on the north (sidewalk) side of the pole. No equipment will be placed on the ground.

The primary objective for this site is to provide increased capacity and coverage to the West Oakland BART station and adjacent parking lot.

DESIGN

On October 3, 2016, a pre-application was submitted to the City of Oakland Planning & Zoning Division. A response was received on November 30, 2016. The City's two primary concerns were: (1) the elimination of ground-mounted equipment and (2) a singular screen/shroud for equipment mounted on the pole.

Taking those comments under consideration, we revised our design to eliminate the proposed ground-mounted equipment cabinet. We are also proposing to install an FRP cover over the pole-mounted remote radio units to help mitigate the appearance of visual clutter on the pole. This design, in this location, represents the least intrusive option for deployment in this area.

Herrera, Jose

From: Jay Gruendle <jayrobgru@me.com>
Sent: Tuesday, June 06, 2017 10:02 AM
To: Herrera, Jose
Subject: Case File No. PLN17089 - Response To Incomplete Letter dated 5/4/17

Jose -

We are in receipt of your letter dated May 4, 2017 regarding Case File No. PLN17089. Below are my responses.

1. Screening Design. Incorporate a singular screening element to consolidate all equipment on the pole.

RESPONSE: I know you brought this up during the pre-application review and we did try to incorporate one screening element for all pole mounted equipment. However, the manner in which the radios need to be placed on the pole created wind loading issues when we tried to install a singular "box" around everything. As a compromise, we are proposing a screen box around the radios that will mitigate much of the visual impact. The subject pole is also near an existing tree which has the added benefit of natural screening.

2. Photo Sims - Revised sims showing the equipment screened.

RESPONSE: See above.

3. Site Alternative Analysis

RESPONSE: Since the primary coverage objective here is the BART station and parking lot, we focused our attention on the north side of Fifth Street (closest to the station). The subject pole is centrally located along Fifth Street and provides the best propagation for the intended coverage area. Poles to the west and east would likely work but could potentially limit the signal strength in any given direction based on their proximity to the center of the parking lot. The design on any alternative poles would be exactly the same. Our subject pole also has the added benefit of being located near a tree which mitigates some of the visual impacts from the pole-mounted equipment. There are a few city-owned light poles that were considered, but Verizon does not have rights to those. Finally, because Verizon Wireless maintains a state mandated right as a telephone corporation to place its facilities in the public right-of-way, the City cannot require Verizon Wireless to locate its facilities outside of the right-of-way.

Please let me know how we can get this project on an agenda.

Thanks!

Jay Gruendle
On Air LLC for Verizon Wireless
465 First Street West, Suite 101
Sonoma, CA 95476
(707) 477-2782 Mobile

**Verizon Wireless • Proposed Base Station (Site No. 277912 “West Oakland Bart SC1”)
Fifth Street and Center Street • Oakland, California**

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 277912 “West Oakland Bart SC1”) proposed to be located at Fifth Street and Center Street in Oakland, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

Verizon proposes to install a directional panel antenna on an existing utility pole sited along Fifth Street, at its intersection with Center Street, in Oakland. The proposed operation will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5–80 GHz	5.00 mW/cm ²	1.00 mW/cm ²
WiFi (and unlicensed uses)	2–6	5.00	1.00
BRS (Broadband Radio)	2,600 MHz	5.00	1.00
WCS (Wireless Communication)	2,300	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the

**Verizon Wireless • Proposed Base Station (Site No. 277912 “West Oakland Bart SC1”)
Fifth Street and Center Street • Oakland, California**

antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including construction drawings by On Air, LLC, dated January 31, 2017, it is proposed to install one Andrew Model HBXX-6513DS-VTM directional panel antenna on the existing 49-foot utility pole sited on the north side of Fifth Street, at its intersection with Center Street, in Oakland. The antenna would employ no downtilt, would be mounted at an effective height of about 33 feet above ground, and would be oriented toward 350°T. The maximum effective radiated power in any direction would be 3,890 watts, representing simultaneous operation at 2,010 watts for AWS and 1,880 watts for PCS service. There are reported no other wireless telecommunications base stations at the site or nearby.

Study Results

For a person anywhere at ground, the maximum RF exposure level due to the proposed Verizon operation is calculated to be 0.013 mW/cm², which is 1.3% of the applicable public exposure limit. The maximum calculated level at any nearby building* is 3.2% of the public exposure limit. The maximum calculated level at the top-floor elevation of any nearby residence† is 0.63% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

* Including the West Oakland rail station located at least 200 feet away, based on photographs from Google Maps.

† Located at least 120 feet away, based on photographs from Google Maps.



**Verizon Wireless • Proposed Base Station (Site No. 277912 "West Oakland Bart SC1")
Fifth Street and Center Street • Oakland, California**

Recommended Mitigation Measures

Due to its mounting location and height, the Verizon antenna would not be accessible to unauthorized persons, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, it is recommended that appropriate RF safety training, to include review of personal monitor use and lockout/tagout procedures, be provided to all authorized personnel who have access to the antenna, including employees and contractors of Verizon and of the property owner. No access within 11 feet directly in front of the Verizon antenna itself, such as might occur during certain maintenance activities, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. It is recommended that explanatory signs[‡] be posted at the antenna or on the pole below the antenna, readily visible from any angle of approach to persons who might need to work within that distance.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that operation of the base station proposed by Verizon Wireless at Fifth Street and Center Street in Oakland, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations. Training authorized personnel and posting explanatory signs are recommended to establish compliance with occupational exposure limits.

[‡] Signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (e.g., a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required. Signage may also need to comply with the requirements of California Public Utilities Commission General Order No. 95.



Verizon Wireless • Proposed Base Station (Site No. 277912 "West Oakland Bart SC1")
Fifth Street and Center Street • Oakland, California

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2017. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



William F. Hammett
William F. Hammett, P.E.

707/996-5200

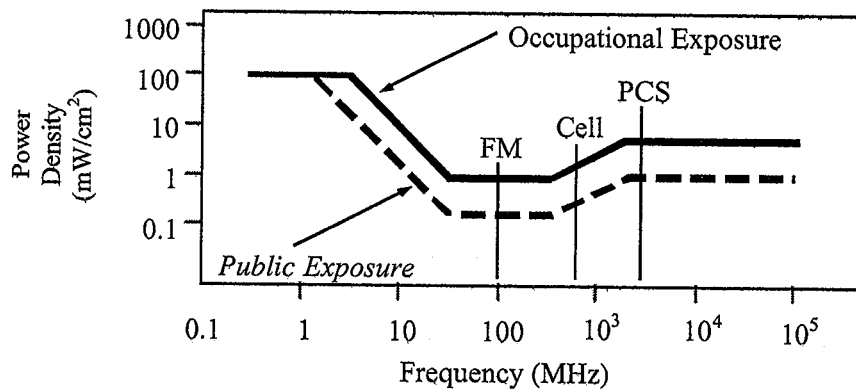
February 16, 2017

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.



HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

FCC Guidelines
Figure 1

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm²,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm²,

- where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
 P_{net} = net power input to the antenna, in watts,
 D = distance from antenna, in meters,
 h = aperture height of the antenna, in meters, and
 η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}, \text{ in mW/cm}^2,$$

- where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.