

Oakland City Planning Commission

Case nos. PLN18095 / PLN18094 / PLN18093

STAFF REPORT

August 1, 2018

Locations:	City street light poles in public right-of-way adjacent to: 1) Case no. PLN18095; 9720 Edes Ave (APN: 044 5007-007-01); Submitted: 2/14/18; Zoning: CN-3 Neighborhood Commercial Zone; General Plan: Neighborhood Center Mixed Use; Council District: 7 2) Case no. PLN18094; 1035 94th Ave (APN: 044 4986-019-00); Submitted: 2/14/18; Zoning: RM-1 Mixed Housing Type Residential Zone; General Plan: Mixed Housing Type Residential; Council District: 7 3) Case no. PLN18093; 569 High St @ Howard Street (APN: 033 2250-001-06); Submitted: 2/14/18; Zoning: D-CE-2 Central Estuary Commercial Zone (High Street Retail); Estuary Policy Plan: General Commercial 1; Council District: 5 <i>See map on reverse</i>
Proposal:	To consider requests for three (3) applications to install new "small cell site" Monopole Telecommunications Facilities on City light poles by attaching antenna and equipment.
Applicant / Phone Number:	James Singleton for Mobilitie (650) 814-0564
Owner:	City of Oakland
Planning Permits Required:	Major Conditional Use Permit and Regular Design Review with additional findings for Monopole Telecommunications Facility in or near a Residential Zone; Minor Variance for exceeding 1:1 height/setback to a residential lot line
Environmental Determination:	Exempt, Section 15301 of the State CEQA Guidelines: Existing Facilities; Exempt, Section 15302: Replacement or Reconstruction; Exempt, Section 15303: New Construction of Small Structures; Section 15183: Projects Consistent with a Community Plan, General Plan or Zoning
Historic Status:	Non-historic property
Action to be Taken:	Approve with Conditions
Finality of Decision:	<i>Appealable to City Council with 10 days</i>
For Further Information:	Contact case planner Aubrey Rose AICP at (510) 238-2071 or by email at arose@oaklandca.gov

EXECUTIVE SUMMARY

The applicant requests Planning Commission approval to establish three (3) small cell wireless telecommunication facility site on existing City street light poles located on the public right-of-way in residential and commercial districts. The project involves attaching one antenna within a shroud to the top of the pole and equipment mounted to the side of the pole, as described in the submitted plans, to enhance wireless services in those areas.

CITY OF OAKLAND PLANNING COMMISSION



Case Files: PLN18293, PLN18294, PLN18095
Applicant: James Singleton for Mobilitie
Addresses: 9720 Edes Ave, 1035 94th Ave, 569 High St
Zones: CN-3, RM-I, D-CE-2

Regular Design Review and a Major Conditional Use Permit decided by the Planning Commission, each with additional findings, are required for the installation of a new Monopole Telecommunications Facility. Additionally, Site # 2 requires a Minor Variance, for proximity to a residential property line. The proposed projects, antenna and associated equipment, would be similar to other facilities around the City. The proposed telecommunication facility is therefore sited at appropriate locations and would not significantly increase negative visual impacts to adjacent properties including residences. The project meets all the required findings for approval of these three (3) small cell sites.

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

City street light poles in public right-of-way (sidewalk) adjacent to:

Site # 1) Case no. PLN18095; 9720 Edes Avenue

A 30-foot tall City street light pole (non-decorative “cobrahead” style light; height measured at top of pole, not luminaire) located in public right-of-way (sidewalk, towards curb) near an industrial property with large canopy;

Site # 2) Case no. PLN18094; 1035 94th Avenue

A 29-6 street light pole in a residential district consisting of one-story single-family homes; and,

Site # 3) Case no. PLN18093; 569 High Street at Howard Street

A 25-foot tall street light pole near a full-service car wash business.

PROJECT DESCRIPTION

The sites are generally proposed for:

- Installation by top-mounting one omni-directional antenna within a shroud, mounted below top of pole to extend 4’-6” beyond top of pole;
- Installation of side-mounted 2’-11” tall equipment below the street light, above 16’-6” in height; and,
- Paint the proposed antennas and associated equipment to match the pole.

Following are site-specific proposals:

Site # 1) Case no. PLN18095; 9720 Edes Avenue: extension to total 34'-6" in height;

Site # 2) Case no. PLN18094; 1035 94th Avenue: extension to total 34-feet in height; and,

Site # 3) Case no. PLN18093; 569 High Street at Howard Street: extension to total 29'-6" in height.

No portion of the telecommunication facilities would be located at grade. The proposed antenna and associated equipment would not be accessible to the public.

SIMILAR CASES

Records show that the Planning Commission has approved numerous Monopole Telecommunications Facilities requiring Design Review and Conditional Use Permits including some Minor Variances throughout the City since at least 2016.

GENERAL PLAN ANALYSIS

Site # 1 is located in the Neighborhood Center Mixed Use area of the General Plan's Land Use and Transportation Element (LUTE). The intent of the area is: "to identify, create, maintain and enhance mixed use neighborhood commercial centers. These centers are typically characterized by smaller scale pedestrian-oriented, continuous street frontage with a mix of retail, housing, office, active open space, eating and drinking places, personal and business services, and small scaled educational, cultural, or entertainment uses." Site # 2 is in the Mixed Housing Type Residential area: "to create, maintain, and enhance residential areas typically located near the City's major arterials and characterized by a mix of single family homes, townhouses, small multi-unit buildings, and neighborhood businesses where appropriate." Site # 3 is in the Estuary Policy Plan's General Commercial 1 area; the intent of the area is to: "provide for the expansion of regional-serving retail and commercial uses that can benefit from freeway accessibility." The proposed telecommunication facilities would be mounted on existing City street light poles within the City of Oakland public right-of-way. The proposed unmanned wireless telecommunication facility would not adversely affect the characteristics of the neighborhood.

ZONING ANALYSIS

Site # 1 is located in the CN-3 Neighborhood Commercial Zone. Site # 2 is in the RM-1 Mixed Housing Type Residential Zone. Site # 3 is in D-CE-2 Central Estuary Commercial Zone (High Street Retail). Monopole Telecommunications Facilities on City light poles require a Conditional Use Permit and a Regular Design Review with additional findings; these permits are decided by the Planning Commission for sites located in or near to a residential zone. Additionally, Site # 2 requires a Minor Variance for proximity to a residential property line. New wireless telecommunications facilities may also be subject to a Site Alternatives Analysis, Site Design Alternatives Analysis, and a satisfactory radio-frequency (RF) emissions report. Staff analyzes the proposal in consideration of these requirements in the 'Key Issues and Impacts' section of this report. Additionally, attachment to City infrastructure requires review by the City's Real Estate Department, Electrical Division, and Information Technology Department. Given customers increasing reliance upon cellular service for phone and Wi-Fi, the proposal for a Monopole Telecommunications Facility that is not adjacent to a primary living space or historic structure conforms to this intent.

ENVIRONMENTAL DETERMINATION

The California Environmental Quality Act (CEQA) Guidelines list 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 City street light pole; Section 15302, replacement or reconstruction of existing utility systems and/or facilities; Section 15303, new construction or conversion of small structures, and Section 15183, projects consistent with the General Plan or Zoning.

KEY ISSUES AND IMPACTS

The proposal to establish a Monopole Telecommunications Facility is subject to the following Planning Code development standards, which are followed by staff's analysis in relation to this application:

17.128.080 Monopole Telecommunications Facilities.

A. General Development Standards for Monopole Telecommunications Facilities.

1. Applicant and owner shall allow other future wireless communications companies including public and quasi-public agencies using similar technology to collocate antenna equipment and facilities on the monopole unless specific technical or other constraints, subject to independent verification, at the applicant's expense, at the discretion of the City of Oakland Zoning Manager, prohibit said collocation. Applicant and other wireless carriers shall provide a mechanism for the construction and maintenance of shared facilities and infrastructure and shall provide for equitable sharing of cost in accordance with industry standards. Construction of future facilities shall not interrupt or interfere with the continuous operation of applicant's facilities.

The proposal involves use of an existing City of Oakland metal street light pole that would remain available for future collocation purposes as practicable.

2. The equipment shelter or cabinet must be concealed from public view or made compatible with the architecture of the surrounding structures or placed underground. The shelter or cabinet must be regularly maintained.

Recommended conditions of approval require painting and texturing the antenna and equipment to match the appearance of the metal pole. There is no equipment shelter or cabinet proposed; however, minimal equipment would be closely mounted onto the side of the metal pole.

3. When a monopole is in a Residential Zone or adjacent to a residential use, it must be set back from the nearest residential lot line a distance at least equal to its total height.

Site # 2 is adjacent to a residential use and this finding is not met by the proposal; a Minor Variance is, therefore, required. Findings to approve the Minor Variance can be made, as described in the Findings section of this report (Attachment A).

4. In all zones other than the D-CE-5, D-CE-6, IG, CIX-2, and IO Zones, the maximum height of Monopole Telecommunications Facilities and connecting appurtenances may be increased from the otherwise required maximum height to forty-five (45) feet upon the granting of a Conditional Use Permit (see Chapter 17.134 for the Conditional Use Permit Procedure).

This requirement does not apply. The subject property is not located in any of the described zoning districts. Nonetheless, the facility would not exceed the height of 34'-6".

5. In the D-CE-5, D-CE-6, CIX-2, and IO Zones, the maximum height of Monopole Telecommunications Facilities and connecting appurtenances may be increased from the otherwise required maximum height to eighty (80) feet upon the granting of a Conditional Use Permit (see Chapter 17.134 for the Conditional Use Permit Procedure).

This requirement does not apply. The subject property is not located in any of the described zoning districts. Nonetheless, the facility would not exceed the height of 34'-6".

6. In the IG Zone, the maximum height of Monopole Telecommunications Facilities and connecting appurtenances may reach a height of forty-five (45) feet. These facilities may reach a height of eighty (80) feet upon the granting of Regular Design Review approval (see Chapter 17.136 for the Design Review Procedure).

This requirement does not apply. The subject property is not located in the described zoning district. Nonetheless, the facility would not exceed the height of 34'-6".

7. The applicant shall submit written documentation demonstrating that the emissions from the proposed project are within the limits set by the Federal Communications Commission.

This standard is met by the proposal; a satisfactory emissions report has been submitted and is attached to this report (Attachments C-D-E).

8. Antennas may not extend more than fifteen (15) feet above their supporting structure.

The proposed antenna would project less than fifteen feet above the City light pole.

17.128.110 Site location preferences.

New wireless facilities shall generally be located on the following properties or facilities in 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 Nonresidential Zones (excluding all HBX Zones and the D-CE-3 and D-CE-4 Zones).**
- D. Existing commercial or industrial structures in Residential Zones, HBX Zones, or the DCE-3 or D-CE-4 Zones.**
- E. Other Nonresidential uses in Residential Zones, HBX Zones, or the D-CE-3 or D-CE-4 Zones.**
- F. Residential uses in Nonresidential 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 locating on an A, B or C ranked preference do not require a site alternatives analysis.

Facilities proposing to locate on a D through G ranked preference, inclusive, must submit a site alternatives analysis as part of the required application materials. A site alternatives analysis shall, at a minimum, consist of: a. The identification of all A, B and C ranked preference sites within one thousand (1,000) feet of the proposed location. If more than three (3) sites in each preference order exist, the three such closest to the proposed location shall be required. b. Written evidence indicating why each such identified alternative cannot be used. Such evidence shall be in sufficient detail that independent verification, at the applicant's expense, 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. refusal to lease, inability to provide utilities).

A site alternatives analysis is not required because the proposal conforms to 'B' as it would be located on a public facility (City light pole). Nonetheless, the applicant has submitted an analysis which is attached to this report (Attachments C-D-E).

17.128.120 Site design preferences.

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 or 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. A site design alternatives analysis shall, at a minimum, consist of: a. Written evidence indicating why each such 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).

The proposal most closely conforms to 'E' (monopole) and the applicant has submitted a satisfactory site design alternatives analysis (Attachments C-D-E).

17.128.130 Radio frequency emissions standards.

The applicant for all wireless facilities, including requests for modifications to existing facilities, shall submit the following verifications:

- a. With the initial application, a RF emissions report, prepared by a licensed professional engineer or other expert, indicating that the proposed site will operate within the current acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.**
- b. Prior to commencement of construction, a RF emissions report indicating the baseline RF emissions condition at the proposed site.**
- c. Prior to final building permit sign off, an RF emissions report indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.**

A satisfactory report is attached to this report (Attachments C-D-E).

Analysis


The proposed site design would not be situated on an historic or decorative pole or structure, would not create a view obstruction, and would not negatively impact a view from a primary living space such as a living room or bedroom window. For Site # 2, the proximity to a residential property line is justified as it precludes use or installation of a new site that might be set back but not conform to these other considerations. Staff, therefore, finds the proposal to provide an essential service with a least-intrusive possible design. Draft conditions of approval stipulate that the components be painted and textured to match the metal pole in appearance for camouflaging.

In conclusion, staff recommends approval subject to recommended Conditions of Approval.

RECOMMENDATIONS:

1. Affirm staff's environmental determination.
2. Approve the Major Conditional Use Permit, Regular Design Review and Minor Variance (Site # 2), subject to the attached Findings and Conditions of Approval.

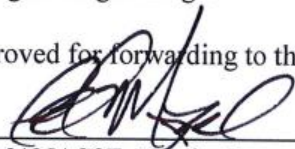
Prepared by:


AUBREY ROSE, AICP
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Reviewed by:


CATHERINE PAYNE
Acting Zoning Manager

Approved for forwarding to the Planning Commission:


ED MANASSE, Interim Deputy Director
Planning Bureau

ATTACHMENTS:

- A. Findings
- B. Conditions of Approval

Plans / Photo-Simulations / Site Analyses / RF Report / Proof of Posting:

- C. Site # 1: Case no. PLN18095; 9720 Edes Avenue
- D. Site # 2: Case no. PLN18094; 1035 94th Avenue
- E. Site # 3: Case no. PLN18093; 569 High Street @ Howard Street

ATTACHMENT A: FINDINGS

This proposal meets the required findings under General Use Permit Criteria (OMC Sec. 17.134.050), Conditional Use Permit Criteria for Monopole Facilities (OMC Sec. 17.136.040 (A)), Regular Design Review Criteria for Nonresidential Facilities (OMC Sec. 17.136.050(B)), Design Review Criteria for Monopole Telecommunications Facilities (OMC Sec. 17.128.070(B)), and Variance Procedure/Findings Required (OMC Sec. 17.148.050), as set forth below. Required findings are shown in **bold type**; explanations as to why these findings can be made are in normal type.

GENERAL USE PERMIT CRITERIA (OMC SEC. 17.134.050):

A. That the location, size, design, and operating characteristics of the proposed development will be compatible with and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage, and density; to the availability of civic facilities and utilities; to harmful effect, if any, upon desirable neighborhood character; to the generation of traffic and the capacity of surrounding streets; and to any other relevant impact of the development.

The proposal is to establish a Monopole Telecommunications Facility in or near a residential zone by attaching to an existing City light pole. Attachment to an existing structure with smallest possible components painted and texturized to match the pole will be the least intrusive design. The project will enhance existing service for merchants, shoppers, residents, and visitors in the area.

B. That the location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping, or civic environment, and will be as attractive as the nature of the use and its location and setting warrant.

Attachment to an existing structure with smallest possible components painted and texturized to match the pole will be the least intrusive design.

C. That the proposed development will enhance the successful operation of the surrounding area in its basic community functions, or will provide an essential service to the community or region.

The project will enhance existing service for merchants, shoppers, residents, and visitors in the area.

D. That the proposal conforms to all applicable design review criteria set forth in the design review procedure at Section 17.136.070.

The proposal conforms to Design Review findings which are included in that section of this attachment of Findings for Approval.

E. That the proposal conforms in all significant respects with the Oakland Comprehensive Plan and with any other applicable plan or development control map which has been adopted by the City Council.

Site # 1 is located in the Neighborhood Center Mixed Use area of the General Plan's Land Use and Transportation Element (LUTE). The intent of the area is: "to identify, create, maintain and enhance mixed use neighborhood commercial centers. These centers are typically characterized by smaller scale pedestrian-oriented, continuous street frontage with a mix of retail, housing, office, active open space, eating and drinking places, personal and business services, and small scaled educational, cultural, or entertainment uses." Site # 2 is in the Mixed Housing Type Residential area: "to create, maintain, and enhance residential areas typically located near the City's major arterials and characterized by a mix of single family homes, townhouses, small multi-unit buildings, and neighborhood businesses where appropriate." Site # 3 is in the Estuary Policy Plan's General Commercial 1 area; the intent of the area is to: "provide for the expansion of regional-serving retail and commercial uses that can benefit from freeway accessibility." The proposed telecommunication facilities would be mounted on existing City street light poles within the City of Oakland public right-of-way. The proposed unmanned wireless telecommunication facility would not adversely affect the characteristics of the neighborhood.

CONDITIONAL USE PERMIT CRITERIA FOR MONOPOLE FACILITIES (OMC SEC. 17.128.070(C))

1. The project must meet the special design review criteria listed in subsection B of this section.

The proposal conforms to Design Review findings which are included in that section of this attachment of Findings for Approval.

2. Monopoles should not be located any closer than one thousand five hundred (1,500) feet from existing monopoles unless technologically required or visually preferable.

Use of this pole precludes placement of a new pole with facility fronting an upper story residences at various viable sites in the surrounding area and is therefore "visually preferable."

3. The proposed project must not disrupt the overall community character.

Attachment to an existing structure with smallest possible components painted and texturized to match the pole will be the least intrusive design. The project will enhance existing service for merchants, shoppers, residents, and visitors in the area.

4. If a major conditional use permit is required, the Planning Director or the Planning Commission may request independent expert review regarding site location, collocation and facility configuration. Any party may request that the Planning Commission consider making such request for independent expert review.

a. If there is any objection to the appointment of an independent expert engineer, the applicant must notify the Planning Director within ten (10) days of the Commission request. The Commission will hear arguments regarding the need for the independent expert and the applicant's objection to having one appointed. The Commission will rule as to whether an independent expert should be appointed.

b. Should the Commission appoint an independent expert, the Commission will direct the Planning Director to pick an expert from a panel of licensed engineers, a list of which will be compiled, updated and maintained by the Planning Department.

c. No expert on the panel will be allowed to review any materials or investigate any application without first signing an agreement under penalty of perjury that the expert will keep confidential any and all information learned during the investigation of the application. No personnel currently employed by a telecommunication company are eligible for inclusion on the list.

- d. An applicant may elect to keep confidential any proprietary information during the expert's investigation. However, if an applicant does so elect to keep confidential various items of proprietary information, that applicant may not introduce the confidential proprietary information for the first time before the Commission in support of the application.
- e. The Commission shall require that the independent expert prepare the report in a timely fashion so that it will be available to the public prior to any public hearing on the application.
- f. Should the Commission appoint an independent expert, the expert's fees will be paid by the applicant through the application fee, imposed by the City.

A Major Conditional Use Permit is required and the Planning Director or Planning Commission may therefore independent expert review in addition to that which is attached to this report.

REGULAR DESIGN REVIEW CRITERIA FOR NON-RESIDENTIAL FACILITIES (OMC SEC. 17.136.050(B))

- 1. That the proposed design will create a building or set of buildings that are well related to the surrounding area in their setting, scale, bulk, height, materials, and textures:**

Attachment to an existing structure with smallest possible components painted and texturized to match the pole will be the least intrusive design.

- 2. That the proposed design will protect, preserve, or enhance desirable neighborhood characteristics;**

The proposal will not create a view obstruction, will not be directly adjacent to a residential facility's primary living space windows, and will not be located on an historic or decorative structure.

- 3. The project will provide a necessary function without negatively impacting surrounding opens pace and hillside residential properties.**

The proposal will enhance essential services in a residential or commercial district.

- 4. That the proposed design will be sensitive to the topography and landscape.**

The proposal will not be ground mounted.

- 5. That, if situated on a hill, the design and massing of the proposed building relates to the grade of the hill.**

This finding is inapplicable because the site is level.

- 6. 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.**

This finding is met by this proposal as described in a previous section of this attachment.

DESIGN REVIEW CRITERIA FOR MONOPOLE TELECOMMUNICATIONS FACILITIES (OMC SEC. 17.128.070(B))

- 1. Collocation is to be encouraged when it will decrease visual impact and collocation is to be discouraged when it will increase negative visual impact.**

The project does not involve collocation as it involves the establishment of a new telecommunications facility; however, the project should not preclude any future proposals for location at the site.

2. Monopoles should not be sited to create visual clutter or negatively affect specific views.

The Monopole Facility is sited on existing infrastructure where it will not create clutter or negatively affect specific views. The view of the City street light from the adjacent story residence should remain of the pole below the antenna and above the equipment.

3. Monopoles shall be screened from the public view wherever possible.

The Monopole Facility will be camouflaged and texturized to match the appearance of the existing light pole that will host it. The City street light is not located adjacent to a residential facility's window.

4. The equipment shelter or cabinet must be concealed from public view or made compatible with the architecture of the surrounding structures or placed underground. The shelter or cabinet must be regularly maintained.

Recommended conditions of approval require painting and texturing the antenna and equipment to match the appearance of the metal pole. There is no equipment shelter or cabinet proposed, however minimal equipment would be closely mounted on the side of the metal pole.

5. Site location and development shall preserve the preexisting character of the surrounding buildings and land uses and the zone district as much as possible. Wireless communication towers shall be integrated through location and design to blend in with the existing characteristics of the site to the extent practical. Existing on-site vegetation shall be preserved or improved, and disturbance of the existing topography shall be minimized, unless such disturbance would result in less visual impact of the site to the surrounding area.

The proposed Monopole Facility will be placed in an existing non-decorative City light pole. This enables the preservation of character in the area and will not pose a negative visual impact as the proposal will be camouflaged to match the pole. There is no adjacent vegetation or topography.

6. 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 minimal clearance to the facility will reduce or eliminate public access.

VARIANCE PROCEDURE/FINDINGS REQUIRED (OMC SEC. 17.148.050)

1. That strict compliance with the specified regulation would result in practical difficulty or unnecessary hardship inconsistent with the purposes of the zoning regulations, due to unique physical or topographic circumstances or conditions of design; or, as an alternative in the case of a minor variance, that such strict compliance would preclude an effective design solution improving livability, operational efficiency, or appearance.

For Site # 2, the project requires a Minor Variance. The proposal does not meet the following requirement:

When a monopole is in a Residential Zone or adjacent to a residential use, it must be set back from the nearest residential lot line a distance at least equal to its total height. (OMC Sec. 17.128.0809(A)(3))

The 29'-6" tall pole is set back the depth of the City sidewalk from a residential lot line. Under the project, the pole will be extended to 34-feet in height by attachment of a shrouded antenna at top. Strict compliance would preclude an effective design solution improving livability, operational efficiency, or appearance. The intent of the ordinance is to avoid the installation of a looming structure adjacent to a home and to avoid clutter. A code conforming alternative in this case might consist of a new structure measuring less than fifteen-feet in height including the attached telecommunications facility. The view of the City street light from the adjacent residence should be minimal, and other residences are set back further. The proposal will use an existing facility to enhance essential services with the least-intrusive design.

2. That strict compliance with the regulations would deprive the applicant of privileges enjoyed by owners of similarly zoned property; or, as an alternative in the case of a minor variance, that such strict compliance would preclude an effective design solution fulfilling the basic intent of the applicable regulation.

The intent of the ordinance is to avoid the installation of a looming structure adjacent to a home and to avoid clutter. A code conforming alternative in this case might consist of a new structure measuring less than fifteen-feet in height including the attached telecommunications facility. The view of the City street light from the adjacent residence should be minimal, and other residences are set back further. The proposal will use an existing facility to enhance essential services with the least-intrusive design. A code-conforming facility would add clutter and might create more obstruction to the view from an upper story residential unit.

3. That the variance, if granted, will not adversely affect the character, livability, or appropriate development of abutting properties or the surrounding area, and will not be detrimental to the public welfare or contrary to adopted plans or development policy.

The variance will eliminate the need to install an additional new pole.

4. That the variance will not constitute a grant of special privilege inconsistent with limitations imposed on similarly zoned properties or inconsistent with the purposes of the zoning regulations.

Other telecommunications facilities have been granted a similar variance.

5. That the elements of the proposal requiring the variance (e.g., elements such as buildings, walls, fences, driveways, garages and carports, etc.) conform with the regular design review criteria set forth in the design review procedure at Section 17.136.050

This finding is met by this proposal as described in a previous section of this attachment.

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

This finding is met by this proposal as described in a previous section of this attachment.

7. For proposals involving one (1) or two (2) residential dwelling units on a lot: That, if the variance would relax a regulation governing maximum height, minimum yards, maximum lot coverage or maximum floor area ratio, the proposal also conforms with at least one of the following additional criteria:

- a. The proposal when viewed in its entirety will not adversely impact abutting residences to the side, rear, or directly across the street with respect to solar access, view blockage and privacy to a degree greater than that which would be possible if the residence were built according to the applicable regulation and, for height variances, the proposal provides detailing, articulation or other design treatments that mitigate any bulk created by the additional height; or**
- b. Over sixty percent (60%) of the lots in the immediate vicinity are already developed and the proposal does not exceed the corresponding as-built condition on these lots and, for height variances, the proposal provides detailing, articulation or other design treatments that mitigate any bulk created by the additional height. The immediate context shall consist of the five (5) closest lots on each side of the project site plus the ten (10) closest lots on the opposite side of the street (see illustration I-4b); however, the Director of City Planning may make an alternative determination of immediate context based on specific site conditions. Such determination shall be in writing and included as part of any decision on any variance.**

This finding is non-applicable to the project; the proposal does not involve a house or duplex.

Attachment B: Conditions of Approval

1. Approved Use

The project shall be constructed and operated in accordance with the authorized use as described in the approved application materials, **staff report** and the approved plans **dated June 13 and 14, 2017 and submitted February 14, 2018**, as amended by the following conditions of approval and mitigation measures, if applicable (“Conditions of Approval” or “Conditions”).

Three (3) approvals to install new “small cell site” Monopole Telecommunications Facilities on an existing City street light pole in public right-of-way (sidewalk) by attaching an antenna within a shroud to the top of the pole and equipment mounted to the side of the pole adjacent to:

Site # 1: Case no. PLN18095; 9720 Edes Avenue (APN: 044 5007-007-01);

Site # 2: Case no. PLN18094; 1035 94th Avenue (APN: 044 4986-019-00); and,

Site # 3: Case no. PLN18093; 569 High Street @ Howard Street (APN: 033 2250-001-06)

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 calendar 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 Monitoring

The project applicant may be required to cover the full costs of independent third-party technical review and City monitoring and inspection, including without limitation, special inspector(s)/inspection(s) during times of extensive or specialized plan-check review or construction, and inspections of potential violations of the Conditions of Approval. The project applicant shall establish a deposit with the Bureau of Building, if directed by the Building Official, Director of City Planning, or designee, prior to the issuance of a construction-related permit and on an ongoing as-needed basis.

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. Construction Days/Hours

Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

- a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling 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.
- b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.

- c. No construction is allowed on Sunday or federal holidays.

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.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

PROJECT-SPECIFIC CONDITIONS

14. Emissions Report

Requirement: A RF emissions report shall be submitted to the Planning Bureau indicating that the site is actually operating within the acceptable thresholds as established by the Federal government or any such agency who may be subsequently authorized to establish such standards.

Requirement: Prior to a final inspection

When Required: Prior to final building permit inspection sign-off

Initial Approval: N/A

Monitoring/Inspection: N/A

15. Camouflage

Requirement: The antenna and equipment shall be painted, texturized, and maintained the same color and finish of the City light pole.

When Required: Prior to a final inspection

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

16. Operational

Requirement: 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.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

17. Graffiti Control

Requirement:

- a. During construction and operation of the project, the project applicant shall incorporate best management practices reasonably related to the control of graffiti and/or the mitigation of the impacts of graffiti. Such best management practices may include, without limitation:
- b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:
 - i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system.
 - ii. For galvanized poles, covering with new paint to match the color of the surrounding surface.
 - iii. Replace pole numbers.

When Required: Ongoing

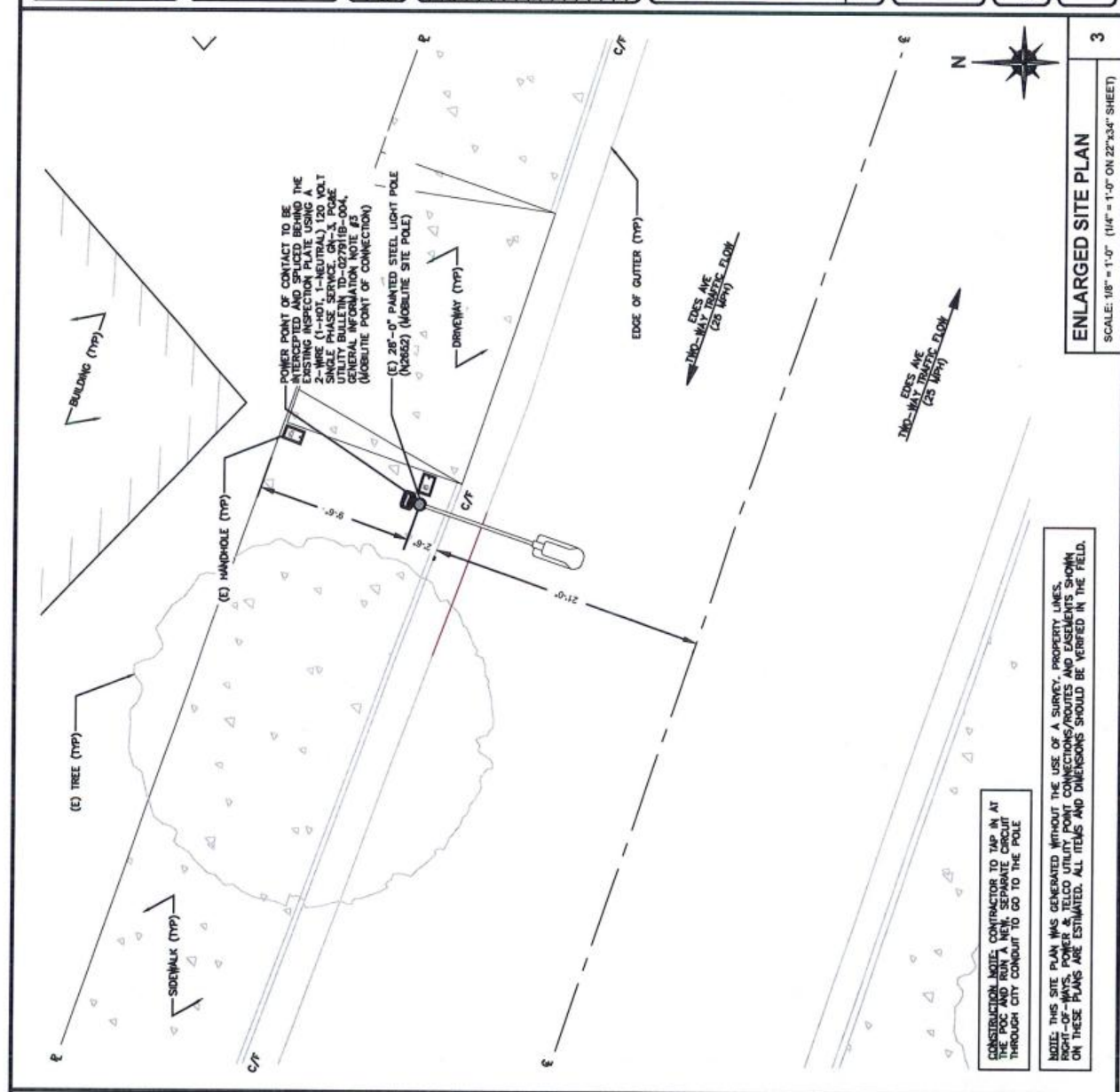
Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

ATTACHMENT C

Site # 1: Case no. PLN18095; 9720 Edes Avenue

Plans / Photo-Simulations / Site Analyses / RF Report / Proof of Posting





NOTE: THIS SITE PLAN WAS GENERATED WITHOUT THE USE OF A SURVEY. PROPERTY LINES, RIGHT-OF-WAYS, POWER & TELCO UTILITY POINT CONNECTIONS/ROUTES AND EASEMENTS SHOWN ON THESE PLANS ARE ESTIMATED. ALL ITEMS AND DIMENSIONS SHOULD BE VERIFIED IN THE FIELD.



441 CALLE AMADOR, STE E
SAN CLEMENTE, CA 95075
WWW.LEAF-CO-LLC.COM
PHONE: (949) 385-0100

MOBILUTIE ID:	SCAB011
DRAWN BY:	
CHECKED BY:	

[illegible]

IT IS A
PERSON, shall
SECTION OF A
CHIEF, TO A
THE

SF90XS0C7C
9CAB013219
OAKLAND, CA 94603
(E) 28'-0" STEEL LIGHT POLE

SHEET TITLE

POLE ELEVATIONS

SHEET NUMBER

EV-1



1. **What is the purpose of the study?**
 The purpose of the study is to determine the effect of the use of a computer-based system on the performance of a task.

2. **What are the research questions?**
 The research questions are: (a) What is the effect of the use of a computer-based system on the performance of a task? (b) What is the effect of the use of a computer-based system on the time taken to complete a task? (c) What is the effect of the use of a computer-based system on the error rate?

3. **What are the hypotheses?**
 The hypotheses are: (a) The use of a computer-based system will result in a significant improvement in the performance of a task. (b) The use of a computer-based system will result in a significant reduction in the time taken to complete a task. (c) The use of a computer-based system will result in a significant reduction in the error rate.

4. **What are the independent and dependent variables?**
 The independent variable is the use of a computer-based system. The dependent variables are the performance of a task, the time taken to complete a task, and the error rate.

5. **What are the experimental procedures?**
 The experimental procedures are: (a) Selection of participants. (b) Selection of tasks. (c) Selection of computer-based system. (d) Selection of control group. (e) Selection of experimental group. (f) Selection of dependent variables. (g) Selection of independent variable. (h) Selection of experimental design. (i) Selection of statistical analysis.

6. **What are the results?**
 The results are: (a) The use of a computer-based system resulted in a significant improvement in the performance of a task. (b) The use of a computer-based system resulted in a significant reduction in the time taken to complete a task. (c) The use of a computer-based system resulted in a significant reduction in the error rate.

7. **What are the conclusions?**
 The conclusions are: (a) The use of a computer-based system is effective in improving the performance of a task. (b) The use of a computer-based system is effective in reducing the time taken to complete a task. (c) The use of a computer-based system is effective in reducing the error rate.

8. **What are the limitations of the study?**
 The limitations of the study are: (a) The study was conducted in a laboratory setting. (b) The study was conducted with a small sample size. (c) The study was conducted with a single task. (d) The study was conducted with a single computer-based system. (e) The study was conducted with a single control group. (f) The study was conducted with a single experimental group. (g) The study was conducted with a single dependent variable. (h) The study was conducted with a single independent variable. (i) The study was conducted with a single experimental design. (j) The study was conducted with a single statistical analysis.

9. **What are the implications of the study?**
 The implications of the study are: (a) The use of a computer-based system is effective in improving the performance of a task. (b) The use of a computer-based system is effective in reducing the time taken to complete a task. (c) The use of a computer-based system is effective in reducing the error rate.

10. **What are the future research directions?**
 The future research directions are: (a) The study should be conducted in a real-world setting. (b) The study should be conducted with a larger sample size. (c) The study should be conducted with multiple tasks. (d) The study should be conducted with multiple computer-based systems. (e) The study should be conducted with multiple control groups. (f) The study should be conducted with multiple experimental groups. (g) The study should be conducted with multiple dependent variables. (h) The study should be conducted with multiple independent variables. (i) The study should be conducted with multiple experimental designs. (j) The study should be conducted with multiple statistical analyses.

NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. ALL BOLTS SHALL BE SECURED TO NUTS EVERY 36" OR LESS.
3. LIGHTNING RODS SHALL BE 1/2" DIA. GALV. STEEL.
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D698.
5. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT (15kN/m³)

POLE ELEVATIONS

POLE ELEVATIONS



NOTES:
1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS.
3. STRUCTURAL RODS SHALL BE INCLUDED AS REQUIRED.
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D898.
ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT (184N/m³)

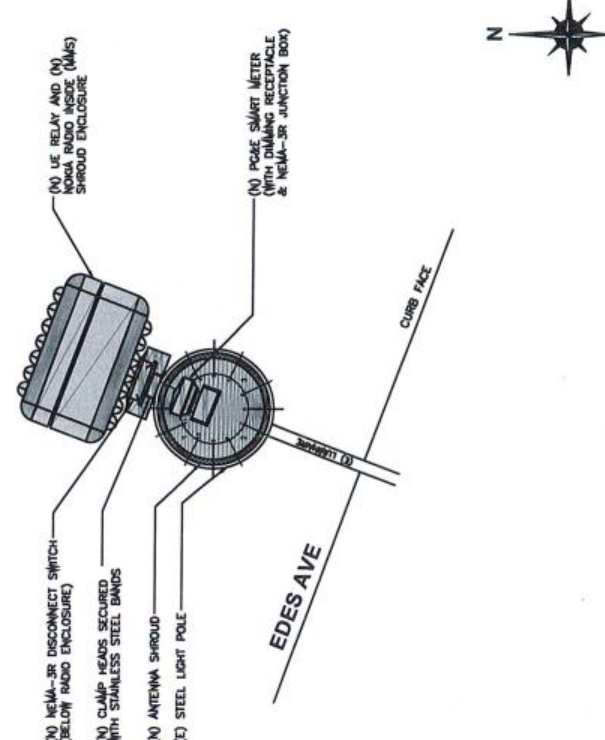
.. SICK TO BE NO LARGER THAN 3"x4"
.. SICK TO BE MOUNTED ON CURB SIDE

POLE ELEVATIONS

SCALE: 1" = 5'-0" (1" = 2'-6" ON 22"x34" SHEET)



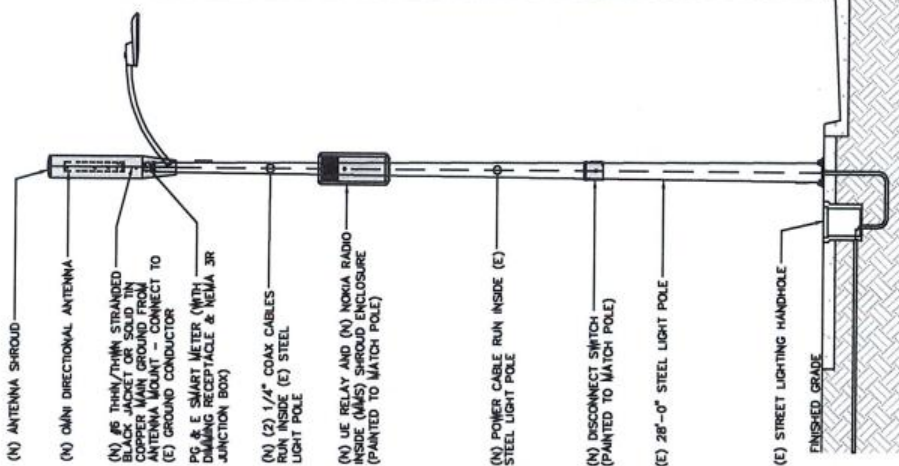
BILL OF MATERIALS	
	SCALE: NOT TO SCALE



RISER ORIENTATION DIAGRAM

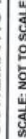
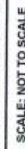
CABLEING NOTES:

- I) WOOD, CONCRETE AND EXISTING METALLIC POLES
A) FROM GRADE LINE TO 11' - 0" ABOVE GRADE,
ALL CABLES/CONDUCTORS EXCEPT GROUNDING
CABLES SHALL BE INSTALLED IN RIGID GALVANIZED
STEEL CONDUIT (RSC).
- II) GROUNDING CONDUCTORS IN EXPOSED
LOCATIONS MUST BE INSTALLED IN PVC.
B) IN EARTH, INSTALL PVC CONDUIT FOR
GROUNDING CONDUCTORS TO ELECTRICAL SERVICE TRANSITION
TO RIGID GALVANIZED STEEL CONDUIT.
- III) ABOVE 11' - 0" ALL CABLES (POWER,
ETHERNET, CABLE) MUST RUN IN PVC UTILITY
POLE RISER.
- IV) AT MAJOR EQUIPMENT, EXPOSED UTILITY
DUCTS IMMEDIATELY ADJACENT TO THE
EQUIPMENT, INSTALL CABLES IN THE
UTILITY POLE RISER CREATING CABLE DRIP
TRAYS THAT ARE FLAT AND LESS THAN THE CABLE
BENDING RADIUS.
- V) INSIDE THE UTILITY POLE RISER,
UTILIZE 5/8" COAX BLOCKS WITH LAG
SCREWS TO SUPPORT COAX, RADIO AND
CABLES TO WITHIN 12" OF THE EQUIPMENT
CABLES BEING SERVED AND ON INTERVALS NOT TO
EXCEED 6".
- VI) FOR UNDERGROUND HFC/PUBLIC BROADBAND,
INSTALL PVC CONDUIT TO THE EQUIPMENT,
SEAL AND ENTER THE UTILITY POLE RISER.
CONDUIT SHALL BE INSTALLED WITH A CABLE
TERMINATION FITTING.
- VII) TO SELECT CASES, SELECT CASES
LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT
(LFMC) MAY BE USED IN LENGTHS NOT TO
EXCEED 36" TO EXTEND THE ELECTRICAL
CONDUIT TO THE EQUIPMENT DISTRIBUTION BOX.
EXAMPLE: LIQUID-TIGHT FLEXIBLE METALLIC
POLE #/C DISTRIBUTION BOX ON OPPOSITE
SIDE OF POLE.
- VIII) NEW METALLIC POLES
A) PROVIDE METAL POLES WITH SUITABLE HANO
HOLES SUCH THAT HANO HOLES EXIST AT ALL
EQUIPMENT LOCATIONS.
C) WITH CLIENT APPROVAL, IN SELECT
CIRCUMSTANCES, IF CONDUIT CABLES MAY BE
"SUPERFLUOUS" IN LEU OF LDF-4,
IF WHERE POSSIBLE, INSTALL POLE BASE SUCH
THAT THE ELECTRICAL FIBER AND BROADBAND (IF
UNDERGROUND) CIRCUIT ENTER THE POLE
THROUGH THE POLE BASE. THE SELECTING
MEANS SEPARATE FROM THE AC DISTRIBUTION BOX
IS REQUIRED BY JURISDICTION OR UTILITY. WITH
APPROVAL, IN SELECT CASES LIQUID-TIGHT
FLEXIBLE METALLIC POLE #/C MAY BE USED
IN LENGTHS NOT TO EXCEED 36" TO EXTEND THE
ELECTRICAL SERVICE CONDUIT TO THE AC
DISTRIBUTION BOX.



TYPICAL PLUMBING DIAGRAM	1
	SCALE: NOT TO SCALE





[illegible]

1. "ROAD WORK AHEAD" AND THE "STOP" SIGNS ARE REQUIRED TO STOP TRAFFIC. THE FOLLOWING CONDITIONS ARE MET:
 - A. WORK OPERATIONS ARE GOING ON IN THE WORK AREA.
 - B. THERE ARE LESS THAN 100 FEET OF ROADWAY AHEAD OF THE WORK AREA.
 - C. NO SHORT OBSTRUCTIONS TO VEHICLES APPROACHING THE WORK AREA FOR A DISTANCE OF 100 FEET.
 - D. THERE ARE NO OBSTRUCTIONS TO VEHICLES IN THE WORK AREA.
 - E. THERE ARE NO HIGH-INTENSITY, ROTATING, FLASHING OSCILLATING, OR FLICKERING LIGHTS OPERATING IN THE WORK AREA.

ALL WORK AND MATERIALS SHALL COMPLY WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (MUTCD) 2016 EDITION. ALL STRINGS AND WARNINGS SHALL CONFORM TO THE STATE OF CALIFORNIA STANDARD PLANS INCLUDING STANDARD PLAN A-20, DETAILS.

THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.

ALL SIGNS SHALL BE REFLECTORIZED AND STANDARDIZED ON ALL 1/20-1/1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK AREA OVERNIGHT.

ALL SIGNS SHALL BE REFLECTORIZED AND STANDARDIZED ON ALL 1/20-1/1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK AREA OVERNIGHT.

ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE, IF USED DURING NIGHT-TIME HOURS.

THE CONTRACTOR SHALL MAINTAIN A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.

THE CONTRACTOR SHALL HAVE ALL SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.

CONSTRUCTION OPERATION SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS.

ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS, OR BARRICADES MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE SAFETY TO THE PUBLIC. ALL ADJUTING PROPERTY OWNERS SHALL BE NOTIFIED OF ANY LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.

MAYE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS, REMOVE BARRICADES ETC. FROM TRAVEL LANE.

ALL CONFLICTING LANES OR SIGNS DURING NON-WORKING HOURS SHALL BE RELAYED BY NET SAGROUSTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW TEMPORARY STRIPING. ALL SATISFYING RAISED PAVEMENT MARKERS SHALL BE REPAIRED OR REPLACED PRIOR TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.

DURATION NOTES

GENERAL NOTES



mobiletec
2665 RED HILL AVE, SUITE 200
COSTA MESA, CA 92626



LS ENGINEERING INC.
300 CALLE MANAGER, STE E
SAN JOSE, CA 95128
WWW.LENCC.COM
PHONE (408) 567-0192

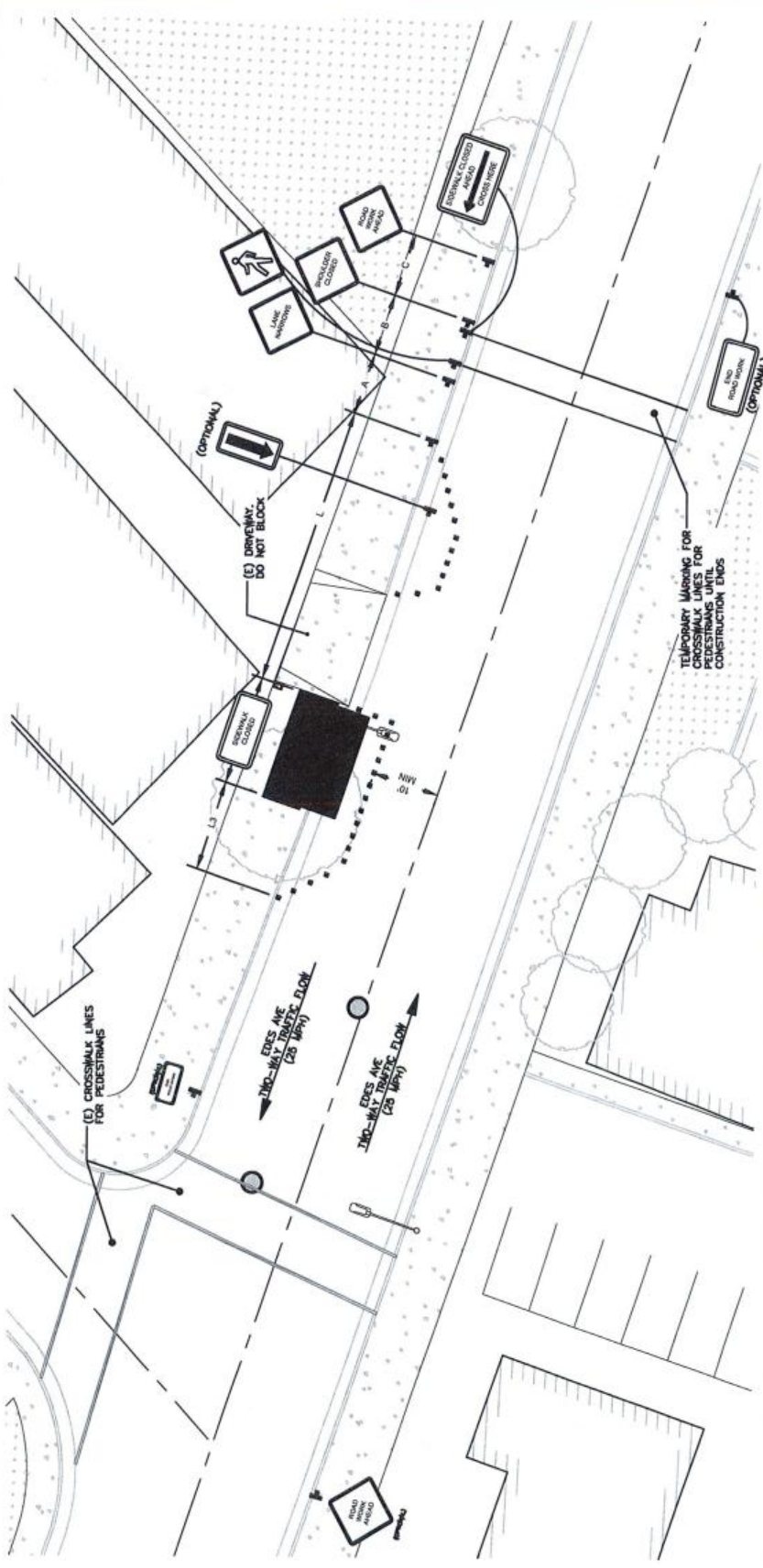
MOBILETEC ID: 9CAB073219
DRAWN BY: BY
CHECKED BY: CG
DATE: 05/05/2018
JOB: 100-100

PROJECT # U2314-043-181
REGISTERED PROFESSIONAL ENGINEER
JACOB S. PROCTOR
C70587
05/05/2018
CIVIL
STATE OF CALIFORNIA
EXPIRATION DATE: 05/05/2021
THIS SEAL IS VALID FOR THE STATE OF CALIFORNIA ONLY
IT IS NOT VALID FOR ANY OTHER JURISDICTION

SP90X50C7C
9CAB073219
OAKLAND, CA 94603
(E) 28" J" STEEL LIGHT POLE

SHEET TITLE
PEDESTRIAN/WORKER
SAFETY PLAN

SHEET NUMBER
TC-2



- PEDESTRIAN/WORKER SAFETY PLAN
- SCALE: NTS
- ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY AND LIMITED VISIBILITY. ADVANCE WARNING SIGNS SHALL BE PLACED AT THE BEGINNING OF THE ADVANCE WARNING DISTANCE. ADVANCE WARNING SIGNS SHALL BE PLACED AT THE BEGINNING OF THE ADVANCE WARNING DISTANCE. ADVANCE WARNING SIGNS SHALL BE PLACED AT THE BEGINNING OF THE ADVANCE WARNING DISTANCE.
 - TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.
 - CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON THE (E) TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
 - ALL (E) ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOTTABLE REFLECTORS WHICH CONFLICT WITH THE (N) TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED, OR RELOCATED.
 - TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO MATCH PRE-CONSTRUCTION CONDITION AFTER COMPLETION OF WORK.
 - CONTRACTOR SHALL CONTACT LOCAL AUTHORITY HAVING HIGHWAY JURISDICTION, AND PROVIDE ADDITIONAL "TAGMEN" OR POLICE SUPERVISION, IF REQUIRED.
 - ALL TEMPORARY TRAFFIC CONTROL SIGNS, LAYOUTS AND PROCEDURES SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, WHICHEVER IS MORE STRINGENT.
 - PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
 - TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) - PART VI "TEMPORARY TRAFFIC CONTROL", AND LOCAL JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS. SIGNS AND DEVICES SHALL BE APPROVED BY THE APPROPRIATE HIGHWAY AUTHORITY HAVING JURISDICTION.
 - ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON A MINIMUM 8% 1" V SLOPE PRIOR TO END OF EACH WORK DAY. OTHER EXCAVATED AREAS SHALL BE BACKFILLED TO BE IN ACCORDANCE WITH THE SET PRECAST CONCRETE PAVING AND CURBING CONSTRUCTION ENDS TEMPORARILY IN PLACE TO SHIELD VEHICULAR AND PEDESTRIAN TRAFFIC.
 - WHERE DICTATED BY LOCAL CONDITIONS, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN AND WORKER CROSSING LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND OSHA REQUIREMENTS.
 - CONSTRUCTION ZONE SPEED LIMIT IF REDUCED FROM POSTED LIMITS SHALL BE IN ACCORDANCE WITH MUTCD AND WILL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
 - THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD SPACE.
 - DRIVEWAYS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-1 SIGN (ROAD WORK AHEAD) AS A WARNING.
 - CONES MAY BE SUBSTITUTED FOR ORBES AND INSTALLED UPON THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION PROVIDED THEY COMPLY WITH MUTCD.
 - THE SPACING BETWEEN CONES, TUBULAR MARKERS, VERTICAL PANELS, OR OTHER DEVICES SHALL BE AT LEAST 10 FEET. THE SPACING BETWEEN CONES, TUBULAR MARKERS, VERTICAL PANELS, OR OTHER DEVICES SHALL BE AT LEAST 10 FEET. THE SPACING BETWEEN CONES, TUBULAR MARKERS, VERTICAL PANELS, OR OTHER DEVICES SHALL BE AT LEAST 10 FEET.
 - WHEN CHANNELIZATION DEVICES HAVE THE POTENTIAL OF LEADING VEHICULAR TRAFFIC OUT OF THE ANTICIPATED VEHICULAR TRAFFIC SPACE, THE CHANNELIZATION DEVICES SHOULD BE USED TO CHANNELIZE TRAFFIC INTO THE ANTICIPATED VEHICULAR TRAFFIC SPACE. WHEN CHANNELIZATION DEVICES HAVE THE POTENTIAL OF LEADING VEHICULAR TRAFFIC OUT OF THE ANTICIPATED VEHICULAR TRAFFIC SPACE, THE CHANNELIZATION DEVICES SHOULD BE USED TO CHANNELIZE TRAFFIC INTO THE ANTICIPATED VEHICULAR TRAFFIC SPACE.
 - TAPER LENGTHS ARE CALCULATED AS FOLLOWS:
W20-1 / 60 (40 MPH AND HIGHER) OR 12-15 (OVER 40 MPH).
WHERE W-OFFSET WIDTH (FT), S=TRAFFIC SPEED (MPH).

GENERAL CONSTRUCTION NOTES:
1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL BUILDING CODE, THE LATEST ADOPTED EDITION AND ALL OTHER APPLICABLE CODES AND ORDINANCES.

2. CONTRACTOR SHALL CONSTRUCT SITE IN ACCORDANCE WITH THESE DRAWINGS AND LATEST MOBILE CONSTRUCTION STANDARDS. THE SPECIFICATION IS THE BUILDING DOCUMENT AND ANY DISCREPANCIES BETWEEN THE SPECIFICATION AND THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR MOBILE CM PRIOR TO THE COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE WORK AND SHALL MAKE PROVISIONS FOR FAMILIARIZATION. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR MOBILE CM PRIOR TO THE COMMENCEMENT OF WORK. NO CONSTRUCTION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OF FIELD CONDITIONS.

4. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MAJOR DETAIL OF CONSTRUCTION. CONTRACTOR IS REQUIRED TO FURNISH AND INSTALL ANY/ALL WORK FOR COMPLETE AND FULLY FUNCTIONAL SYSTEM SUBJECT ONLY TO OWNER'S REVIEW. CONTRACTOR SHALL PROVIDE ANY/ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

5. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A GUIDE ONLY. UNLESS OTHERWISE NOTED, THE WORK SHALL BE CONSTRUCTED TO THE DIMENSIONS AND TOLERANCES SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR MOBILE CM PRIOR TO THE COMMENCEMENT OF WORK.

6. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS REQUIRED CLEARANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR MOBILE CM PRIOR TO THE COMMENCEMENT OF WORK.

7. DETAILS PROVIDED ARE FOR THE PURPOSE OF SHOWING DESIGN INTENT. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES, AS SHOWN, PRIOR TO PROCEEDING WITH CONSTRUCTION, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OR MOBILE CM PRIOR TO THE COMMENCEMENT OF WORK.

8. CONTRACTOR SHALL PAY FOR APPLICABLE PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO OBTAINING MATERIALS AND THE COMMENCEMENT OF WORK.

9. THE TERM "PROVIDE" INDICATES THAT THE CONTRACTOR SHALL FURNISH AND INSTALL.

10. CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING, AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.

11. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING ACCEPTED INDUSTRY-STANDARD SKILLS AND ATTENTION. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, COORDINATION AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT, UNLESS OTHERWISE NOTED.

12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.

13. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE MOBILE CM AND PROVIDE ALL ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.

15. CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.

16. CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT (E) SURFACES, EQUIPMENT, IMPROVEMENTS, PIPING ETC AND IMMEDIATE REPAIR TO NEW CONDITION, ANY DAMAGE THAT OCCURS DURING CONSTRUCTION AT THE SOLE COST OF THE CONTRACTOR.

17. IN DRILLING HOLES, OR CORING INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT

PLANS, PIPE RANS, ETC. MUST BE CLEARLY UNDERSTOOD THAT REINFORCING STEEL SHALL NOT BE DRILLED THROUGH. LOCATIONS OF REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE LOCATED BY THE CONTRACTOR USING APPROPRIATE METHODS AND EQUIPMENT PRIOR TO ANY DRILLING OR CORING OPERATIONS IN (E) CONCRETE.

18. CONTRACTOR SHALL REPAIR, TO NEW CONDITION, ALL (E) WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND IN WITH ADJACENT SURFACES.

19. CONTRACTOR SHALL SEAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES OR MATERIALS WITH ULL LISTED AND FIRE CODE APPROVED MATERIALS AND SYSTEMS THAT MEET OR EXCEED THE RATING OF THE ASSEMBLY IN WHICH THE NEW PENETRATION IS PLACED.

20. CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS, AND RUBBER. EQUIPMENT SHALL BE KEPT OFF THE WORK AREA. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS IN CLEAN CONDITION AND FREE FROM PAINT, OIL, GREASE, OR ANY OTHER SUBSTANCE THAT MAY BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.

21. MINIMUM BEND RADIUS OF ANTENNA CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURER'S RECOMMENDATIONS.

22. CONTRACTOR SHALL MAINTAIN DISTANCE TO (E) SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL ORDINANCES FOR EROSION AND SEDIMENT CONTROL. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION CONTROL MEASURES, RECORD-KEEPING, MONITORING, AND REPORTING TO THE OWNER AND REGULATORY AUTHORITIES.

23. ALL CONSTRUCTION WORK IS TO ADHERE TO APPLICANT'S INTEGRATED CONSTRUCTION STANDARDS UNLESS STATE OR LOCAL CODE IS MORE STRINGENT.

24. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO PERFORM THE CONSTRUCTION IN ACCORDANCE PER STATE BUILDING STANDARDS CODE AND CONSTRUCTION STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO OBTAINING MATERIALS AND THE COMMENCEMENT OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO OBTAINING MATERIALS AND THE COMMENCEMENT OF WORK.

25. ADEQUATE AND REQUIRED LIABILITY INSURANCE SHALL BE PROVIDED BY THE CONTRACTOR FOR PROTECTION AGAINST PUBLIC LOSS AND ANY/ALL PROPERTY DAMAGE FOR THE DURATION OF WORK.

26. CONTRACTOR SHALL GUARANTEE ANY/ALL MATERIALS AND WORK FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE. ANY CORRECTIVE WORK SHALL BE COMPLETED AT THE SOLE COST OF THE CONTRACTOR.

ELECTRICAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ANY/ALL ELECTRICAL WORK INDICATED, ANY/ALL APPLICABLE SPECIFICATIONS, IF ANY PROBLEMS ARE ENCOUNTERED BY COMPLYING WITH THESE REQUIREMENTS. CONTRACTOR SHALL NOTIFY MOBILE CM AS SOON AS POSSIBLE, AFTER THE DISCOVERY OF THE PROBLEM. CONTRACTOR SHALL PROCEED WITH THAT PORTION OF WORK, UNTIL THE MOBILE CM HAS DIRECTED THE CORRECTIVE ACTIONS TO BE TAKEN.

2. ELECTRICAL CONTRACTOR SHALL NOT THE JOB SITE AND FAMILIARIZE THEMSELVES WITH ANY/ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATION INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. ALL (E) CONDITIONS OF ELECTRICAL EQUIP., ETC. THAT ARE PART OF THE FINAL SYSTEM, SHALL BE VERIFIED BY THE CONTRACTOR, PRIOR TO THE COMMENCEMENT OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC, ALL CODES AND ORDINANCES OF THE LOCAL JURISDICTION, AND ANY OTHER APPLICABLE CODES AND ORDINANCES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, FEES, INSPECTIONS AND APPROVED SUBMITTALS PRIOR TO OBTAINING MATERIALS AND THE COMMENCEMENT OF WORK.

- A) UL - UNDERWRITERS LABORATORIES
- B) NEC - NATIONAL ELECTRICAL CODE
- C) NFPA - NATIONAL FIRE PROTECTION AGENCY
- D) OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT
- E) SBC - STANDARD BUILDING CODE
- F) NFPA - NATIONAL FIRE PROTECTION AGENCY
- G) ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
- H) IEEE - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
- I) ASTM - AMERICAN SOCIETY FOR TESTING MATERIALS

4. REFER TO SITE PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, AND CONFIRM WITH MOBILE CM ANY SIZES AND LOCATIONS WHEN NEEDED.

5. (E) SERVICES: CONTRACTOR SHALL NOT INTERRUPT (E) SERVICES WITHOUT WRITTEN PERMISSION OF THE OWNER.

6. CONTRACTOR SHALL CONFORM WITH LOCAL UTILITY COMPANY ANY/ALL REQUIREMENTS SUCH AS THE LUG SIZE RESTRICTIONS, CONDUIT ENTRY, SIZE OF TRANSFORMERS, SCHEDULED DOWNTIME FOR THE OWNERS' CONFIRMATION, ETC. ANY/ALL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE MOBILE CM, PRIOR TO BEGINNING ANY WORK.

7. MINIMUM WIRE SIZE SHALL BE #12 AWG, NOT INCLUDING CONTROL WIRING, UNLESS NOTED OTHERWISE. ALL CONDUCTORS SHALL BE COPPER WITH THIN INSULATION, UNLESS OTHERWISE NOTED.

8. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED NUTS IN WET/CLAMP LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.

9. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MAJOR DETAIL OF THE CONSTRUCTION. CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

10. ELECTRICAL SYSTEM SHALL BE AS COMPLETELY AND EFFECTIVELY GROUNDED, AS REQUIRED BY SPECIFICATIONS, SET FORTH BY APPLICANT.

11. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS, WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY INSULATED AND PROTECTED. ANY DEFECTS SHALL BE CORRECTED BY AN ELECTRICAL CONTRACTOR AT THE SOLE COST OF THE CONTRACTOR.

12. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION.

13. THE CORRECTION OF ANY DEFECTS SHALL BE COMPLETED BY THE CONTRACTOR WITHOUT ANY ADDITIONAL CHARGE AND SHALL INCLUDE THE REPLACEMENT OR THE REPAIR OF ANY OTHER PHASE OF THE INSTALLATION, WHICH MAY HAVE BEEN DAMAGED THEREIN.

14. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT, CONDUCTORS, PULL WHIPS, BOXES, COVER PLATES AND DEVICES FOR ALL OUTLETS AS INDICATED.

15. DITCHING AND BACK FILL: CONTRACTOR SHALL PROVIDE FOR ALL UNDERGROUND AND INSTALLED CONDUIT AND/OR CABLES INCLUDING EXCAVATION AND BACKFILLING AND COMPACTION, REFER TO NOTES AND REQUIREMENTS' EXCAVATION, AND BACKFILLING.

16. MATERIALS, PRODUCTS AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW AND SHALL APPEAR ON THE LIST OF ULL APPROVED ITEMS AND SHALL MEET OR EXCEED THE REQUIREMENTS OF THE NEC, NFPA AND IEEE.

17. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR MANUFACTURER'S CATALOG INFORMATION OF ANY/ALL EQUIPMENT AND ALL OTHER ELECTRICAL ITEMS FOR APPROVAL BY THE MOBILE CM PRIOR TO INSTALLATION.

18. ANY CUTTING OR PATCHING DEEMED NECESSARY FOR ELECTRICAL WORK IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY DAMAGE THAT OCCURS DURING CONSTRUCTION AT THE SOLE COST OF THE CONTRACTOR.

mobile
intelligent infrastructure
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COSTA MESA, CA 92626

L5 ENGINEERING INC.
ANALYST: JAMES W. WIRE
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MOBILE ID:	SCAB013219
DRAWN BY:	RY
CHECKED BY:	CO
DATE:	10/05/2018

VECTOR
PROFESSIONAL ENGINEER
JACOB S. PROCTOR
C70587
06/05/2018
CIVIL
STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER
EXPIRATION DATE: 06/05/2021

SP00X50C7C
SCAB013219
OAKLAND, CA 94603
(E) 28'-0" STEEL LIGHT POLE

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

11. ANY FILLS PLACED ON (E) SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO

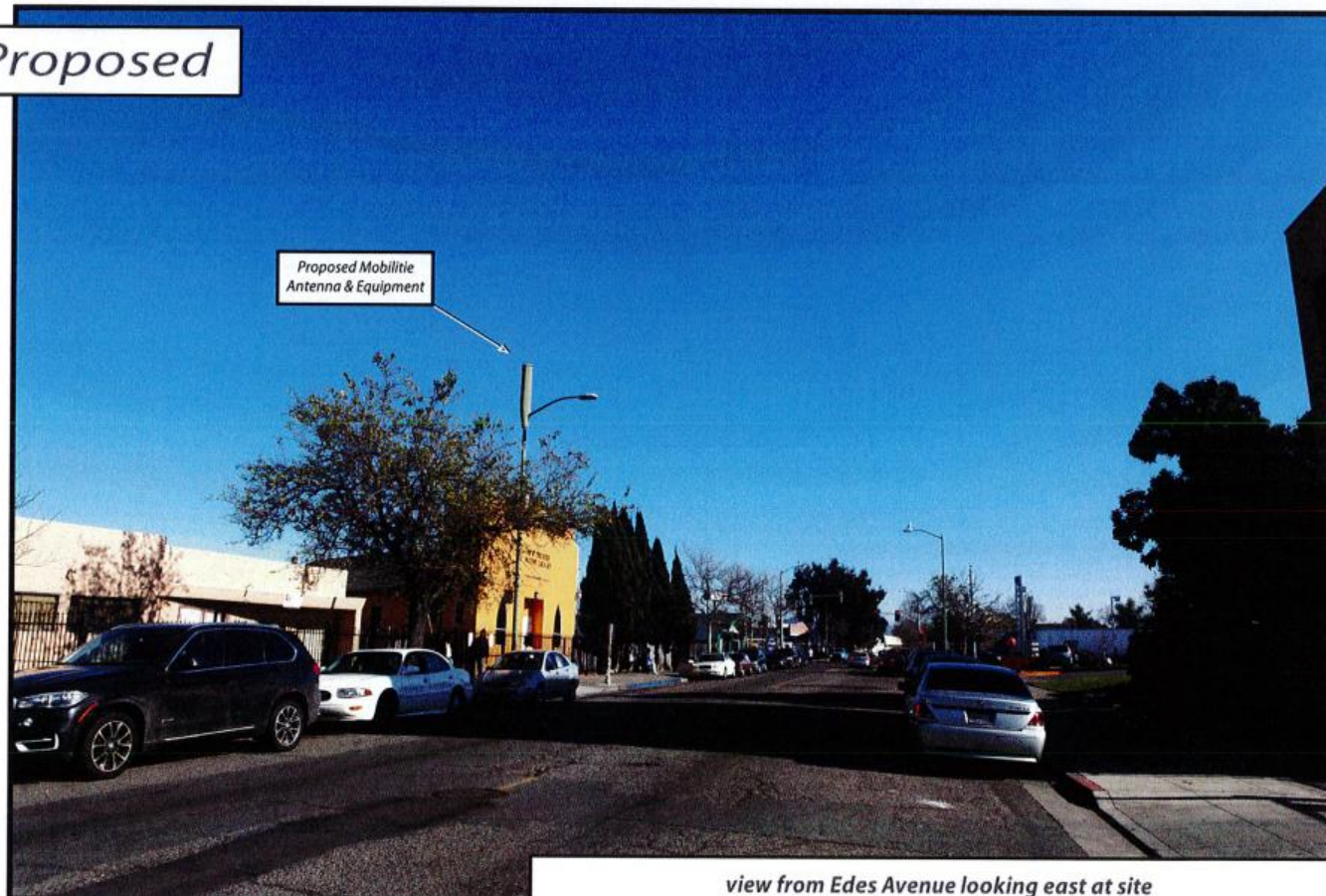
ONE (1) HOLE TAPPED COPPER COMPRESSION (LONG BARREL) FITTINGS.

1

Existing



Proposed



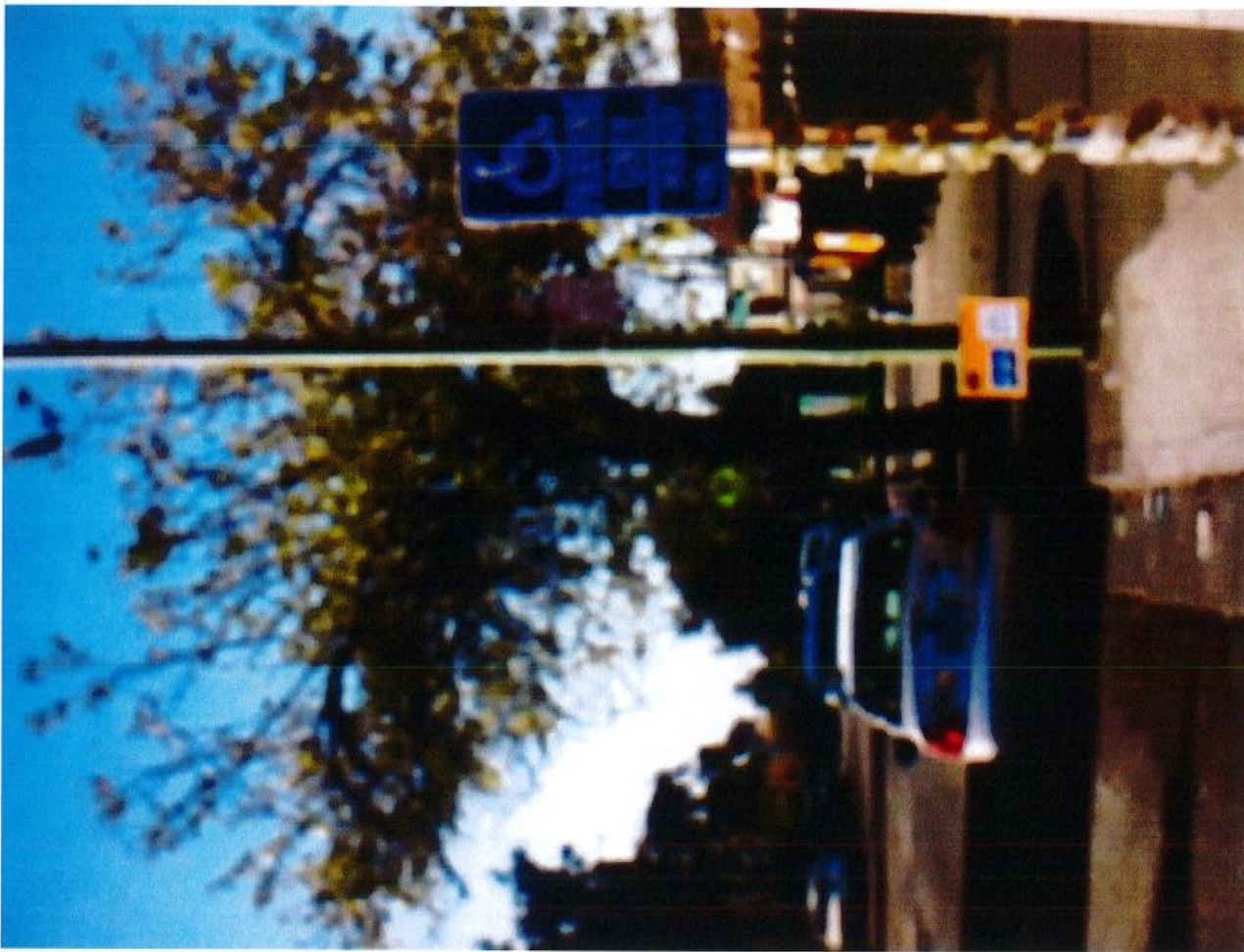
Proposed Mobilitie
Antenna & Equipment

view from Edes Avenue looking east at site

AdvanceSim 
Photo Simulation Solutions
Contact (925) 202-8507

mobilitie
Intelligent Infrastructure

9CAB013219 / SF90XS0C7C
Edes Avenue & 98th Avenue, Oakland, CA
Photosims Produced on 6-22-2017



Sent from my iPhone

On Jul 11, 2018, at 1:01 PM, James Singleton <jingleton@mobilitie.com> wrote:

James Singleton | Sr. Permitting Manager

[cid:image001.png@01D0FC3A.CCA80310]JSingleton@mobilitie.com

San Francisco, CA

650-814-0564 mobile

www.mobilitie.com<<http://www.mobilitie.com>>

FOLLOW US ON [cid:image003.jpg@01D1E7DE.1A89CED0]

<<https://www.linkedin.com/company/mobilitie/>> [cid:image005.jpg@01D1E7DE.1A89CED0]

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Alternative Site Analysis

Proposed Small Cell Wireless Facility

Applicant: Mobilitie, LLC

Site ID: 9CAB013219/SF90XS0C7C

Nearest Site Address: Public Right of Way near 9720 Edes Ave., Oakland, CA 94603

Latitude/Longitude: 37.73673, -122.184127

Mobilitie considered alternative sites on other street lights and utility poles in this area, but found them to not to be as desirable when taking into consideration coverage goals, constructability, geographic topography of the surrounding area, and potential visual impact in the surrounding area. The proposed location is desirable because of the limited obstructions in the area, allowing our antenna to effectively propagate a signal. Furthermore, the proposed location is the optimal solution for providing maximum coverage to the surrounding area identified. Additionally, by locating on an existing street light with equipment concealed, visual impact in the surrounding area is minimized.

Mobilitie is a privately held, CLEC (Competitive Local Exchange Carrier) regulated by the California Public Utilities Commission (CPUC) to provide telephone related services. By proposing this location on an existing street light in the public right of way, Mobilitie is proposing an appropriate co-location to existing infrastructure according to our rights under the CPUC.

The alternative locations that Mobilitie considered include, but are not limited to, the sites listed below:

Alternate B (37.737294, -122.183963) / Near 675 Nevada Street: This wooden utility pole located on Nevada Street, approximately 270 ft. north of our proposed facility. The geographical features surrounding the ornamental street light illustrates the difficulty our antennas would encounter in providing coverage. The overhang of the trees would prove technologically problematic for the antenna by interfering and degrading the facility's effectiveness. Furthermore, a facility here would be highly visible to the adjacent residential buildings where as our current proposal is not immediately adjacent to any residential buildings.

Alternate C (37.737349, -122.183213) / Near 9745 Walter Avenue: This wooden utility pole located on Nevada Street, approximately 270 ft. north of our proposed facility. Our wireless facility is not constructible on this utility pole because the pole is already overloaded with a cobra head light and multiple wooden cross-arms with associated utility lines. There is not enough climbing space on the pole for our facility. Furthermore, a facility here would be highly visible to the adjacent residential buildings where as our current proposal is not immediately adjacent to any residential buildings.

Radio Frequency- Electromagnetic Energy-EME Measurements & Compliance Report

Site ID: 9CAB013219
Site Name: 9CAB013219
Market/Region: California
Address: EDES AVE., E. OF NEVADA ST.,
OAKLAND, CA 94603
Latitude: 37.73673
Longitude: -122.184127
Site Type: Light Pole

Compliance Status:

Proposed equipment at the site is compliant with FCC guidelines for General Population environments

Prepared for:

Mobilitie, LLC
2220 University Drive,
Newport Beach, CA 92660

By
ATG LLC

Date:09/05/2017



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1 Executive Summary

Purpose of Report

ATG LLC's RF Engineering has conducted radio frequency electromagnetic energy (RF-EME) modeling for Mobilitie LLC's site 9CAB013929 located at EDES AVE., E. OF NEVADA ST OAKLAND, CA to determine RF-EME exposure levels from the carrier's proposed wireless communications equipment.

The Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) limits for general public and occupational exposures to RF-EME. This report summarizes the results of RF-EME modeling in relation to relevant FCC compliance standards for limiting human exposure to RF-EME. The details of FCC defined exposure limits are provided in Appendix A of this report.

Analysis results included in this report are based on drawings dated June 14th, 2017.

Statement of Compliance

Predictive modeling conducted using the original equipment manufacturers (OEMs) specifications for radio and antenna performance along with the supplied construction drawings dated June 14th, 2017, indicate there will be no exposure due to the carrier's proposed equipment on accessible ground-level walking surface at this site that exceeds the FCC's general public exposure limits.

Proposed equipment at the site is compliant with FCC guidelines for general population environments.

2 Maximum Permissible Exposure (MPE) Modeling Results for Proposed Site

The predictive modeling was conducted using the RoofView 5.0 suite of analysis tools. The modeling was conducted with the antennas operating at 100% capacity, all antenna channels transmitting simultaneously and the radio transmitters operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels would be during normal operations. The modeling calculations were made for an area 40'x 40' area with the equipment at the center.

Table 1: Maximum Permissible Exposure- Summary

Location	% of FCC General Public/Uncontrolled Exposure Limit	% of FCC Occupational/Controlled Exposure Limit	Power Density (mW/cm ²)	Compliance Status
6ft above ground level	2.1	0.42	0.021	Compliant

3 Antenna Inventory

The Antenna Inventory shows all transmitting antennas on the site (see Table 2). This inventory was used by ATG to perform the software modeling of RF emissions. The inventory conforms with the submitted construction drawings which identifies the proposed mounting location of each antenna at the site. The exposure level is calculated for a person of height 6ft standing right below the devices at ground level.

Table 2: Antenna Inventory

Antenna ID	Carrier/Operator	Antenna Type	Frequency (MHz)	Technology	ERP (W)	Gain dBd	Mfg.	Model	Aperture (ft.)	Transmitter count	Horizontal BeamWidth (deg)	Z (6 ft. above Ground)
1	Mobilitie	Omni	2496	LTE	172.58	6.35	Alpha Wireless	AW3477-S	2.56	2	360	25.3
2	Mobilitie	LTE Relay BH	2496	LTE	1.93	9.85	Airspan	iR460	1.1	1	35	10.5

The table below details the operating power and Effective Radiated Power (ERP) for each carrier and frequency used in the modeling.

Frequency (MHz)	Power per Transmitter (Watts)	# of Transmitters	ERP (watts)
2496 (Omni)	20	2	172.58
2496 (UE Relay)	0.2	1	1.93

4 Modeling Summary and Assumptions

4.1 General Model Assumptions

The modeling was conducted using the antenna and radio maximum power values, while operating at full power with 100% duty cycle.

The site has been modeled with these assumptions to calculate the maximum RF energy density. ATG believes this to be a worst case analysis, based on data supplied by the OEMs and client. If actual power density measurements were made, ATG believes the real time measurements would indicate levels below those shown in the report.

5 Preparer Certification

I, Preparer, state that:

- I am an employee of ATG LLC that provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed 100s of RF-EME exposure studies and reports for various carriers.
- I am aware of the potential hazards from RF-EME exposures that would be classified "occupational" or "general public" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have reviewed all the data related to the site and incorporated it into this study and Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

Ahmed Saadallah

Ahmed Saadallah (RF Engineer)

Appendix A

Federal Communications Commission (FCC) Requirements

This appendix summarizes the policies, guidelines and requirements that were adopted by the FCC on August 1, 1996, amending Part 1 of Title 47 of the Code of Federal Regulations, and further amended by action of the Commission on August 25, 1997 (see 47 CFR Sections 1.1307(b), 1.1310, 2.1091 and 2.1093, as amended). Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA), as described in 47 CFR Section 1.1311, if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency (RF) electromagnetic fields in excess of these limits.

The potential hazard associated with the RF electromagnetic fields is discussed in OET Bulletin No. 65. This document can be obtained on the FCC website. (https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

As per FCC guidelines there are two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment and not be made fully aware of the potential for exposure or cannot exercise control over their exposure.

The FCC's MPE limits for field strength and power density are given in Table 1 (and in 47 CFR § 1.1310) Figure 1 is a graphical representation of the limits for plane-wave (far-field) equivalent power density versus frequency. The FCC's limits are generally applicable to all facilities, operations and transmitters regulated by the Commission, and compliance is expected with the appropriate guidelines. The power density limits vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

f = frequency in MHz *Plane-wave equivalent power density

Table 1

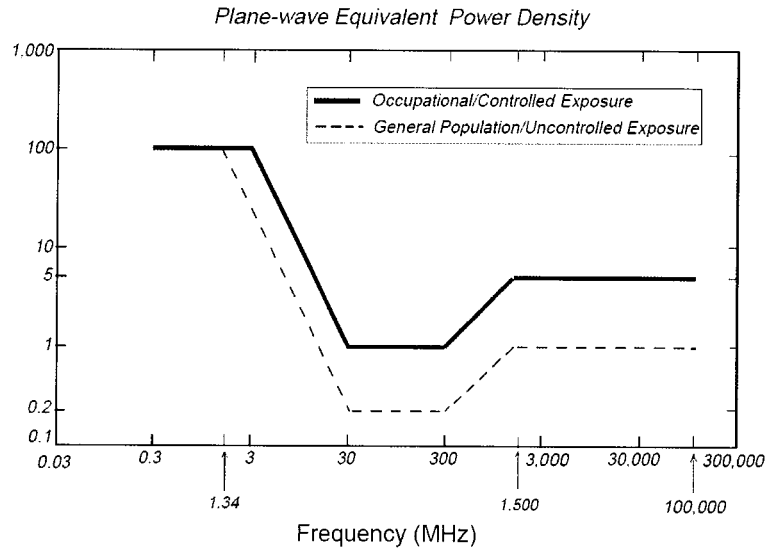


Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

FCC Compliance Requirement

In general, as specified in 47 C.F.R. 1.1307(b), as amended, when the FCC's guidelines are exceeded in an accessible area due to the emissions from multiple fixed transmitters the following policy applies. Actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitter's contribution to the RF environment at the non-complying area exceeds 5% of the exposure limit (that applies to their particular transmitter) in terms of power density or the square of the electric or magnetic field strength.

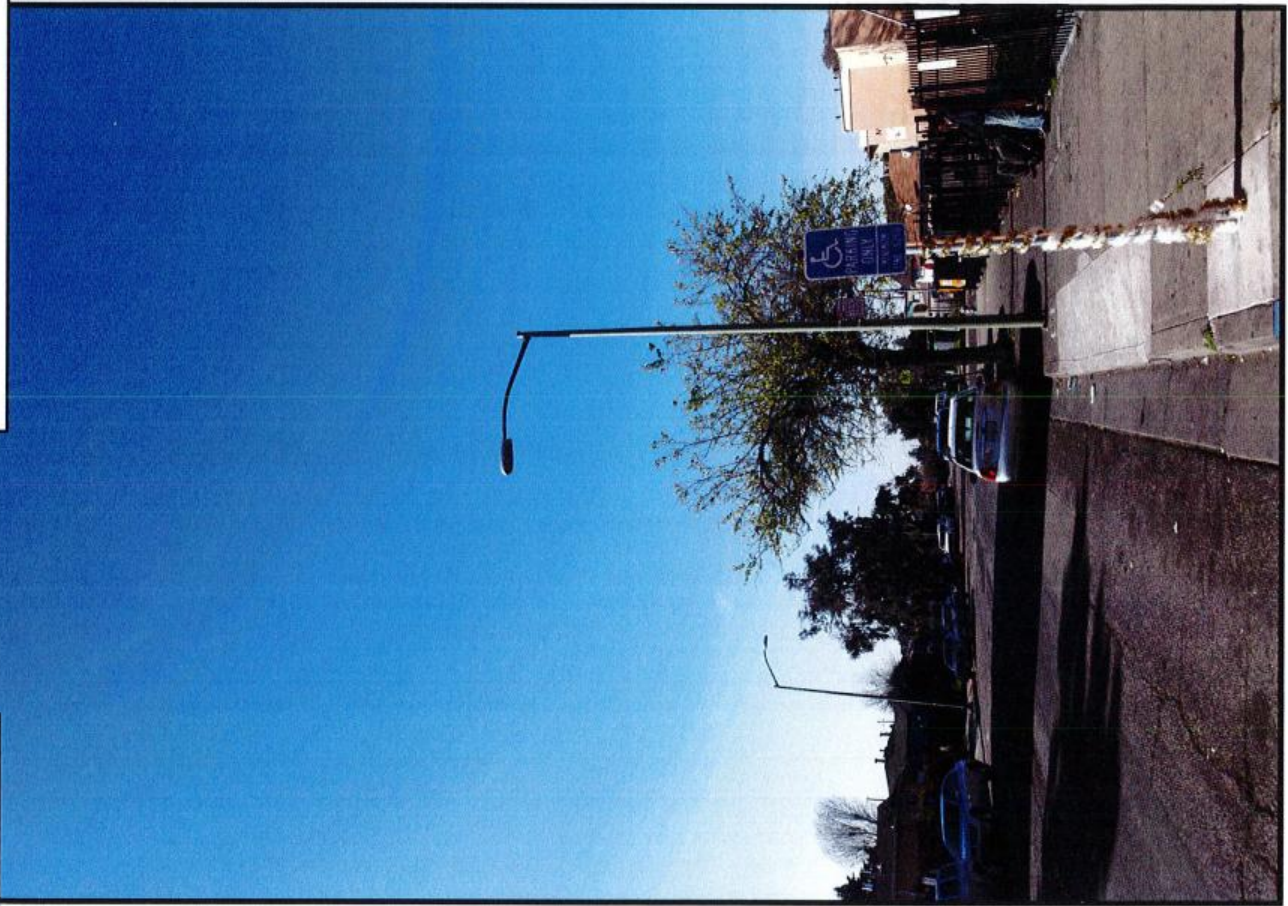
For non-compliant sites, Occupational Safety and Health Administration (OSHA) set recommendations to make the sites compliant. The document can be found in the link: https://www.osha.gov/dte/library/radiation/nir_stds_20021011/nir_stds_20021011.ppt

Appendix B

Glossary of Terms

1. *Electromagnetic Field (energy density)* – the electromagnetic energy contained in an infinitesimal volume divided by that volume.
2. *Exposure* – Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.
3. *General Population / Uncontrolled Exposure* – applies to human exposure to RF fields when the general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.
4. *Maximum Permissible Exposure (MPE)* – the rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.
5. *Occupational / Controlled Exposure* – applies to human exposure to RF fields when persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/controlled limits.
6. *Power Density (S)* – Power per unit area normal to the direction of propagation, usually expressed in units of watts per square meter (W/m^2) or, for convenience, units such as milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W/cm}^2$).

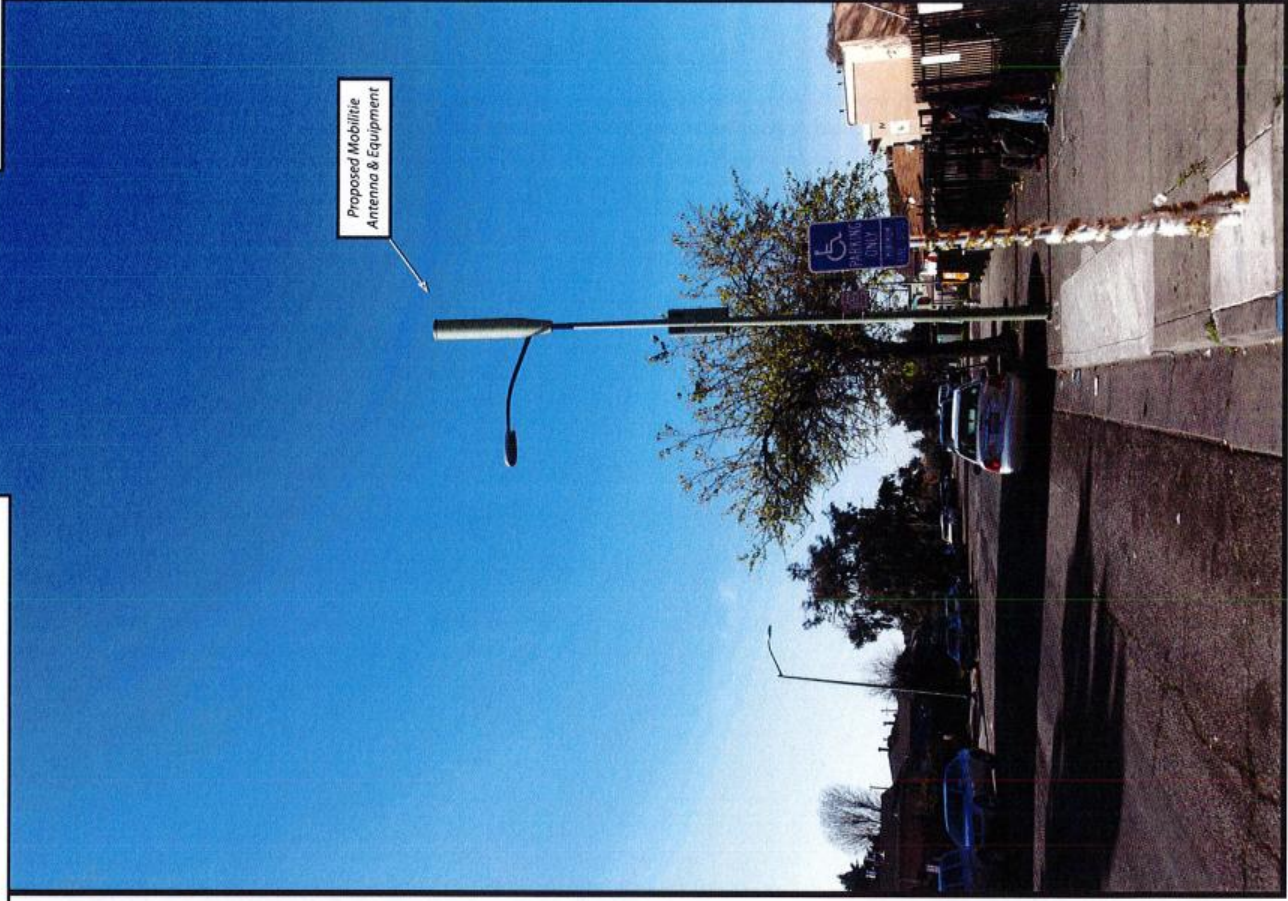
Existing



mobilitie
intelligent infrastructure

view from Edes Avenue looking west at site
9CAB013219 / SF90XS0C7C
Edes Avenue & 98th Avenue, Oakland, CA
Photosims Produced on 6-22-2017

Proposed



Proposed Mobilitie
Antenna & Equipment

ATTACHMENT D

Site # 2: Case no. PLN18094; 1035 94th Avenue

Plans / Photo-Simulations / Site Analyses / RF Report / Proof of Posting



intelligent infrastructure

SITE ID/CASCADE ID-CANDIDATE LETTER:

9CAB013755/SF90XS2G3A

LATITUDE/LONGITUDE:

37.74437900/-122.17888000

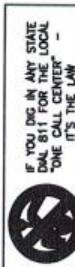
CROSS STREET:

94TH AVE & E ST

CITY, STATE, ZIP:

OAKLAND, CA 94603

(E) 28'-10" PAINTED STEEL LIGHT POLE



IF YOU DO IN ANY STATE
DIAL 811 FOR THE LOCAL
"ONE CALL CENTER" -
IT'S THE LAW

THE USER AGREES TO HOLD THE ENGINEER
HARMLESS FROM AND AGAINST ALL
CLAIMS, DAMAGES, LOSSES AND
EXPENSES, INCLUDING REASONABLE
ATTORNEY'S FEES, THAT MAY BE
INCURRED BY THE ENGINEER OR
ANY OTHER PARTY AS A RESULT OF
THE USER'S NEGLIGENCE OR
OTHER WILLFUL OR NEGLIGENT
ACTS OR OMISSIONS.

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A
MAINTENANCE PERSONNEL WILL BE REQUIRED FOR ROUTINE
MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY
DISTURBANCE OF EFFECT ON DRAINAGE; NO SANITARY SEWER
SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND
NO COMMERCIAL SIGNAGE IS (N).

SITE INFORMATION

SITE ID: 9CAB013755
CASCADE ID: SF90XS2G3A
LATITUDE: 37.74437900
LONGITUDE: -122.17888000
CROSS STREET: 94TH AVE & E ST
CITY, STATE, ZIP: OAKLAND, CA 94603
COUNTY: ALAMEDA
JURISDICTION: CITY OF OAKLAND
PROPERTY OWNER: PUBLIC RIGHT-OF-WAY
APPLICANT: MOBILITE, LLC AVENUE, STE. 200
2005 REDHILL
COSTA MESA, CA 92626
CONTACT: JAMES SINGLETON
PHONE: (909) 814-0864
EMAIL: JSINGLETON@MOBILITE.COM

ENGINEER

L3 ENGINEERING, INC.
944 CALLE ALAMAR, STE. E
OAKLAND, CA 94612
CARLOS GONZALEZ
(949) 216-8724

JACOB S. PROCTOR, P.E.
VECTOR STRUCTURAL ENGINEERS
1000 GALENA PARK BLVD
DUBLIN, CA 94568
(916) 980-1778

DO NOT SCALE DRAWINGS

CONTRACTORS SHALL VERIFY ALL PLANS, (E) DIMENSIONS & FIELD
CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE
ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE
PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



intelligent infrastructure

SITE ID/CASCADE ID-CANDIDATE LETTER:

9CAB013755/SF90XS2G3A

LATITUDE/LONGITUDE:

37.74437900/-122.17888000

CROSS STREET:

94TH AVE & E ST

CITY, STATE, ZIP:

OAKLAND, CA 94603

(E) 28'-10" PAINTED STEEL LIGHT POLE

PROJECT DESCRIPTION

END USER PROPOSES TO INSTALL EQUIPMENT ON AN (E)
STEEL LIGHT POLE WITH THE FOLLOWING SCOPE:
THE SCOPE WILL CONSIST OF THE FOLLOWING:
- INSTALL PROPOSED BACKHAUL TRANSPORT EQUIPMENT
ON AN (E) STEEL LIGHT POLE

CODES

2016 CALIFORNIA BUILDING CODE (2016 IBC)
2017 NATIONAL ELECTRICAL CODE
TM/EM-222-G-2 OR LATEST EDITION
LOCAL BUILDING/PLANNING CODE

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
SP-1	EXHIBIT PHOTO & SITE PLAN
SP-2	OVERALL SITE PLAN
EY-1	POLE ELEVATIONS
EY-2	POLE ELEVATIONS
PL-1	PLUMBING & RISER DIAGRAM
EQ-1	EQUIPMENT DETAILS
EQ-2	EQUIPMENT DETAILS
E-1	ELECTRICAL PLAN
E-2	ELECTRICAL DETAILS
G-1	GROUNDING DETAILS
TC-1	VEHICULAR TRAFFIC CONTROL PLAN
TC-2	PEDESTRIAN/WORKER SAFETY PLAN
GN-1	GENERAL NOTES
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES

LOCATION MAP

VICINITY MAP

REGIONAL MAP



MAP DATA © 2017 GOOGLE

MAP DATA © 2017 GOOGLE

L3 ENGINEERING, INC.



944 CALLE ALAMAR, STE. E
OAKLAND, CA 94612
PHONE: (949) 216-8724

MOBILITE ID: 9CAB013755
DRAWN BY: MA
CHECKED BY: CPO

DATE: 06/07/16

VECTOR PROJECT # 102314-053-182



REGISTERED PROFESSIONAL ENGINEER
JACOB S. PROCTOR
CIVIL
STATE OF CALIFORNIA
LICENSE NO. C70587
EXPIRATION DATE: 12/31/2017

SF90XS2G3A
9CAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

965 RED HILL AVE., SUITE 200
COSTA MESA, CA 92626

L5 ENGINEERING INC.



844 CALLE AMARILLO, STE E
SAN CLEMENTE, CA 92673
WWW.LEAF-CC-LLC.COM
PHONE: (949) 368-0712

MOBILITY ID:	9CAB013755
DRAWN BY:	MA
CHECKED BY:	CG

[illegible]

SF90XS2G3A
9CAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET TITLE
EXHIBIT PHOTO & SITE PLAN

SHEET NUMBER
SP-1

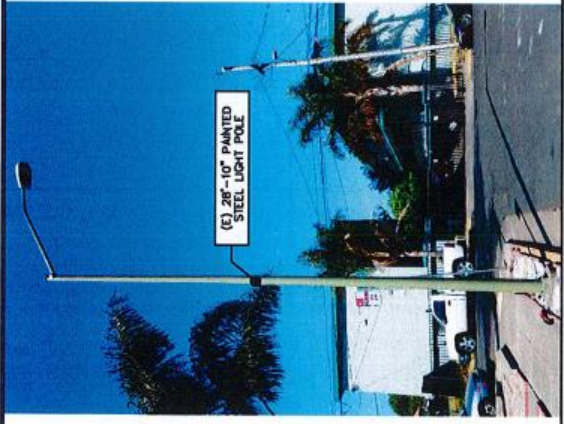
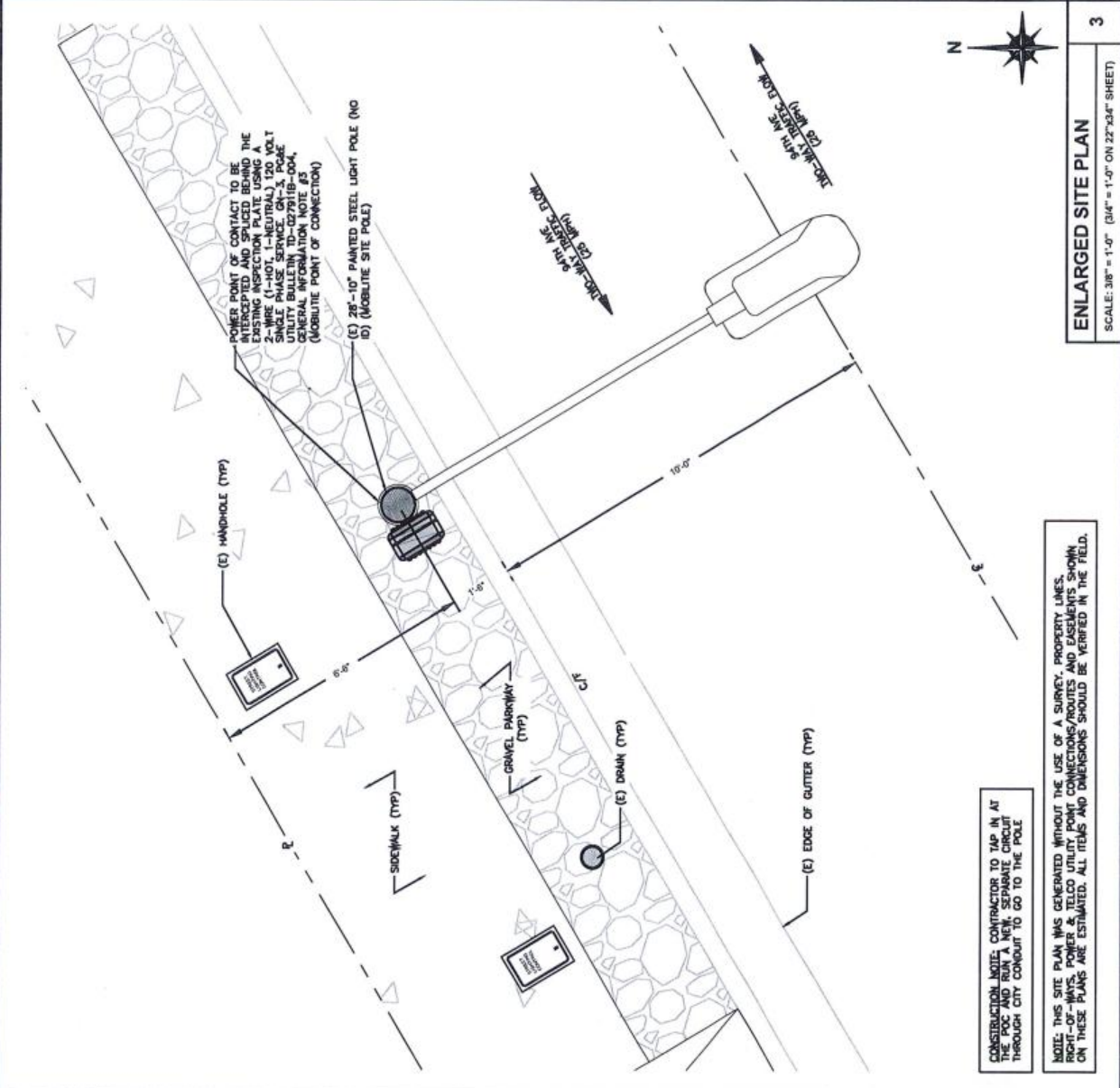


EXHIBIT PHOTO	1
SCALE: NOT TO SCALE	



2	AERIAL SITE LOCATION
	SCALE: NOT TO SCALE



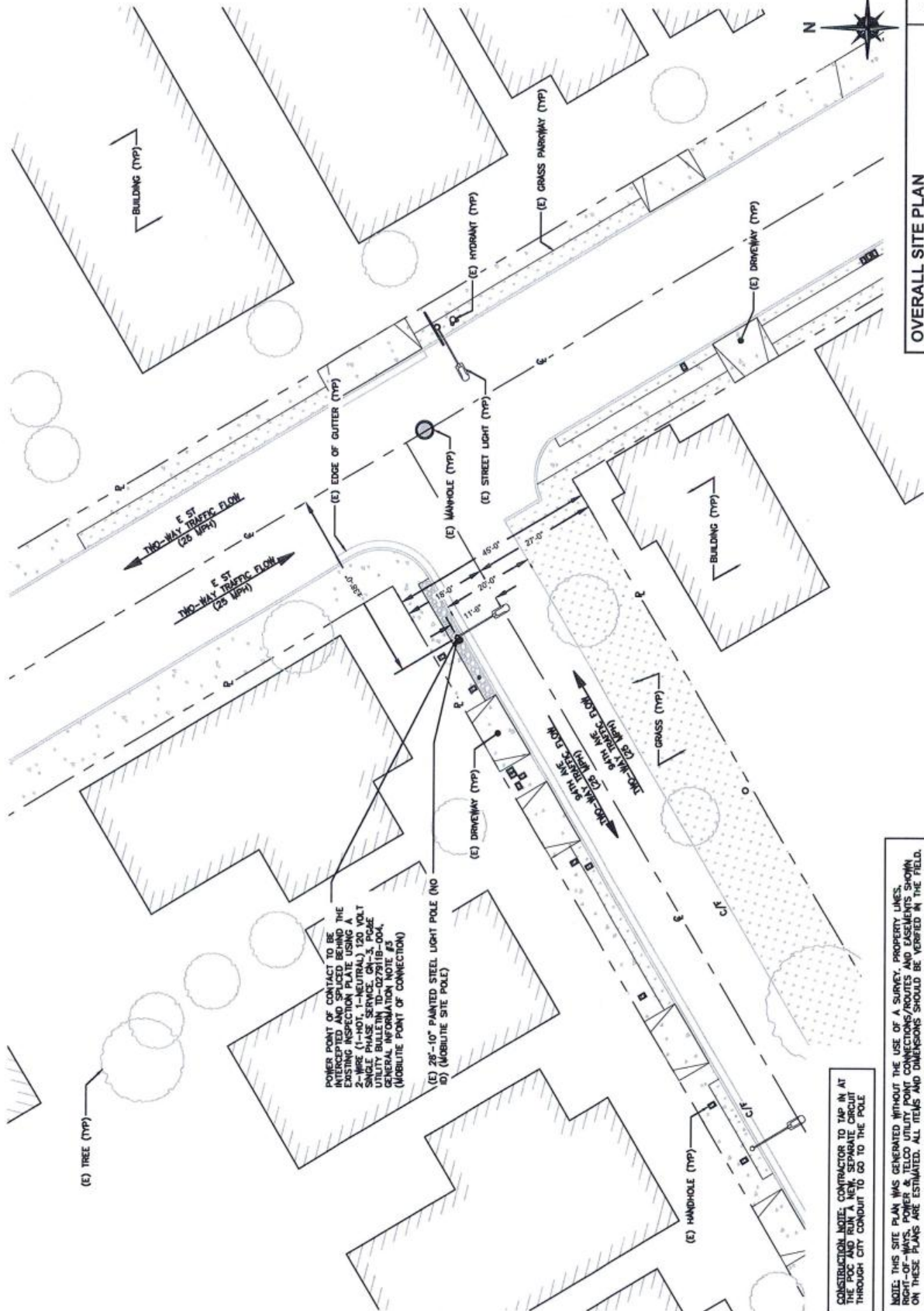
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DRAWN BY:	MA
CHECKED BY:	CO

[illegible]

SF90XS2G3A
9CAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
SP-2



OVERALL SITE PLAN

SCALE: 1" = 20'-0" (1" = 10'-0" ON 22"x34" SHEET)

CONSTRUCTION NOTE- CONTRACTOR TO TAP IN AT THE POC AND RUN A NEW, SEPARATE CIRCUIT THROUGH CITY CONDUIT TO GO TO THE POLE.

NOTE: THIS SITE PLAN WAS GENERATED WITHOUT THE USE OF A SURVEY, PROPERTY LINES, RIGHT-OF-WAYS, POWER & TELCO UTILITY POINT CONNECTIONS/ROUTES AND EASEMENTS SHOWN ON THESE PLANS ARE ESTIMATED. ALL ITEMS AND DIMENSIONS SHOULD BE VERIFIED IN THE FIELD.



NOTES:
1. HARDWARE SHALL BE STAINLESS STEEL.
2. ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS.
3. LIGHTNING RODS SHALL BE INCLUDED AS REQUIRED.
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D898.
ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT (16kN/m³)

POLE ELEVATIONS

SCALE: 1" = 5'-0" (1" = 2'-6" ON 22"x34" SHEET)



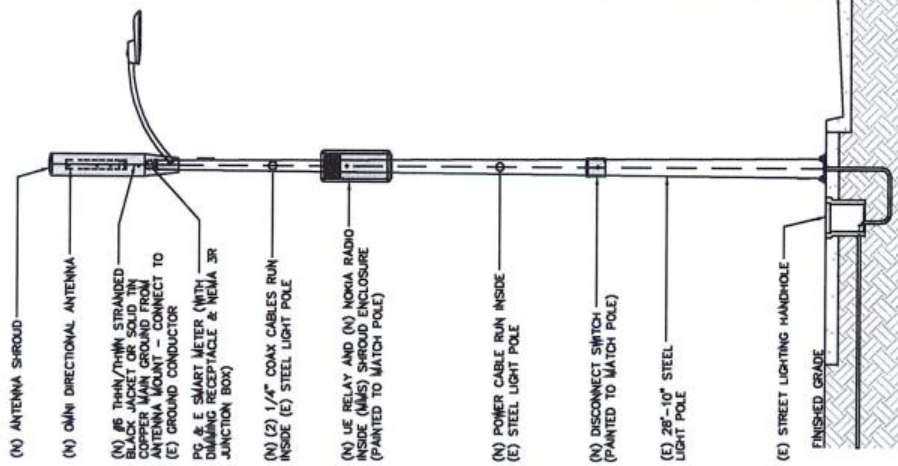
NOTES:
1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS.
3. LIGHTNING RODS SHALL BE INCLUDED AS REQUIRED.
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D898.
ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT (16kN/m³)

SCALE: 1" = 5'-0" (1" = 2'-6" ON 22"x34" SHEET)

NOTE:
CABLE DIAGRAM IS FOR CLARITY OF
CABLES AND ANY TERMINATION ONLY.
CONTRACTOR SHALL INSTALL CABLES
(E) STEEL POLE.
SEE ELEVATION DRAWING FOR EQUIPMENT
AND ANTENNA LOCATIONS.

NOTE:
REFER TO STRUCTURAL ANALYSIS
REPORT (SEPARATE DOCUMENT) FOR
ADDITIONAL STRUCTURAL INFORMATION.

CABLE NOTES:
A) WOOD, CONCRETE AND EXISTING METALLIC POLES
ALL CABLES/CONDUCTORS EXCEPT GROUNDING
CONDUCTOR MUST RUN IN RIGID GALVANIZED
STEEL CONDUIT (RGS)
GROUNDING CONDUCTORS IN EXPOSED
LOCATIONS SHALL BE IN RIGID GALVANIZED
STEEL CONDUIT (RGS)
B) IN EARTH INSTALL PVC CONDUIT FOR
BACKHAUL AND ELECTRICAL SERVICE TRANSITION
TO RGS AT GRADE LINE.
C) ABOVE 11'-0" ALL CABLES (POWER,
TELEPHONE, COAXIAL) MUST RUN IN PVC UTILITY
POLE RISER.
(1) AT MAJOR EQUIPMENT, EXTEND UTILITY
DUCT IMMEDIATELY ADJACENT TO THE
EQUIPMENT. INSTALL CABLES IN THE
DUCT IMMEDIATELY ADJACENT TO THE
EQUIPMENT. RIGID GALVANIZED STEEL
LOOPS NOT LESS THAN THE CABLE
BENDING RADIUS.
(2) INSIDE THE UTILITY POLE RISER,
UTILIZE 3/4" COAX BLOCKS WITH LAG
SCREWS TO SECURE COAXIAL CABLES TO
THE POLE. COAXIAL CABLES TO BE
CABLES TO WITHIN 12" OF THE EQUIPMENT
BEING SERVED AND ON INTERVALS NOT TO
EXCEED 6'.
(3) FOR UNDERGROUND HFC/PUBLIC BACKHAUL,
CABLES SHALL BE SECURED TO THE
POLE AND ENTER THE UTILITY POLE RISER
SEAL EXPOSED END OF CONDUIT WITH A CABLE
TERMINATION FITTING.
(4) BY APPROVAL IN SELECT CAGES
(LIFEC) MAY BE USED IN LENGTHS
EXCEED 36" TO EXTEND THE ELECTRICAL
SERVICE CONDUIT TO THE AC DISTRIBUTION BOX.
EXAMPLE: UTILITY-REQUIRED DISCONNECT ON
POLE N/ AC
SIDE OF POLE.
B) NEW METALLIC POLES
(1) PROCURE NEW POLES WITH SUITABLE HAND
HOLES SUCH THAT HAND HOLES EXIST AT ALL
EQUIPMENT LOCATIONS.
(2) WITH CLIENT APPROVAL IN SELECT
CAGES TO FACILITATE IMPROVED
APPEARANCE, 5" COAXIAL CABLES MAY BE
"SUPERFLEX" IN LIEU OF LDF-4.
(3) WHERE POSSIBLE, INSTALL POLE BASE SUCH
THAT THE ELECTRICAL FEED AND BACKHAUL (IF
THROUGH THE POLE BASE) A DISCONNECTING
MEANS SEPARATE FROM THE AC DISTRIBUTION BOX
IS REQUIRED BY JURISDICTION OR UTILITY. WITH
APPROVAL IN SELECT CAGES LIQUID-TIGHT
CONNECTIONS SHALL BE USED. THE
LENGTHS NOT TO EXCEED 36" TO EXTEND THE
ELECTRICAL SERVICE CONDUIT TO THE AC
DISTRIBUTION BOX.

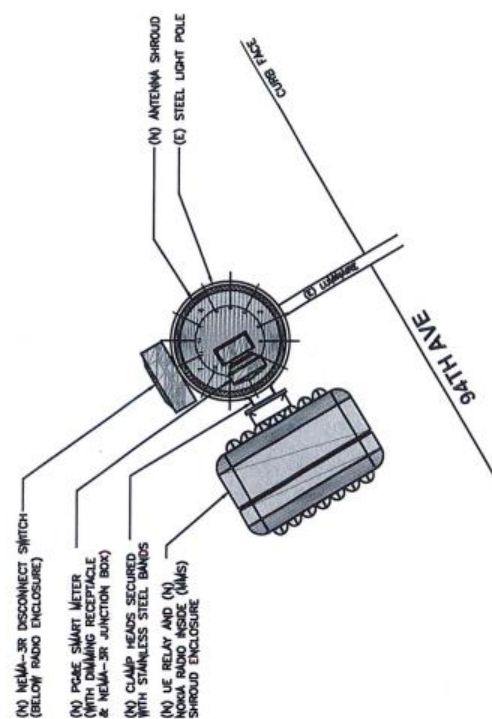


1
TYPICAL PLUMBING DIAGRAM
SCALE: NOT TO SCALE

EQUIPMENT CHART				
QTY	DESCRIPTION	MANUFACTURER	MODEL NUMBER	WEIGHT
1	ANTENNA SHROUD	ALPHA WIRELESS	AW5477-S	7 LBS
1	ANTENNA SHROUD	COMET	COMET-748	16.11 LBS
1	(MMS) SHROUD ENCLOSURE	ELITE	ELITE-300	1.3 LBS
1	UE RELAY	NOKIA	8460-S98-ST-1-P-D	8.3 LBS
1	RADIO	NOKIA	8460-S98-ST-1-P-D	24.84 LBS
3	FANS (2 SMALL; 1 LARGE)	TBD		2.78 LBS
1	SMART METER	POKE	M241490	2.67 x 4.5
1	RECEPTACLE	POKE		
1	UE RELAY	ALLEN-BRADLEY	598-B5633	4.53 x 2.56 x 2.17
1	UE RELAY	SEWIS	CM 521	9.9 x 8.8 x 4.5
1	DISCONNECT	POTEL	5997D-HR	.53 x 1.7
1	GPS ANTENNA			.57 LBS
1	TOTAL WEIGHT			77.48 LBS

ANTENNA AZIMUTH: N/A
UE RELAY AZIMUTH: 1/4

2
BILL OF MATERIALS
SCALE: NOT TO SCALE



3
RISER ORIENTATION DIAGRAM
SCALE: NOT TO SCALE



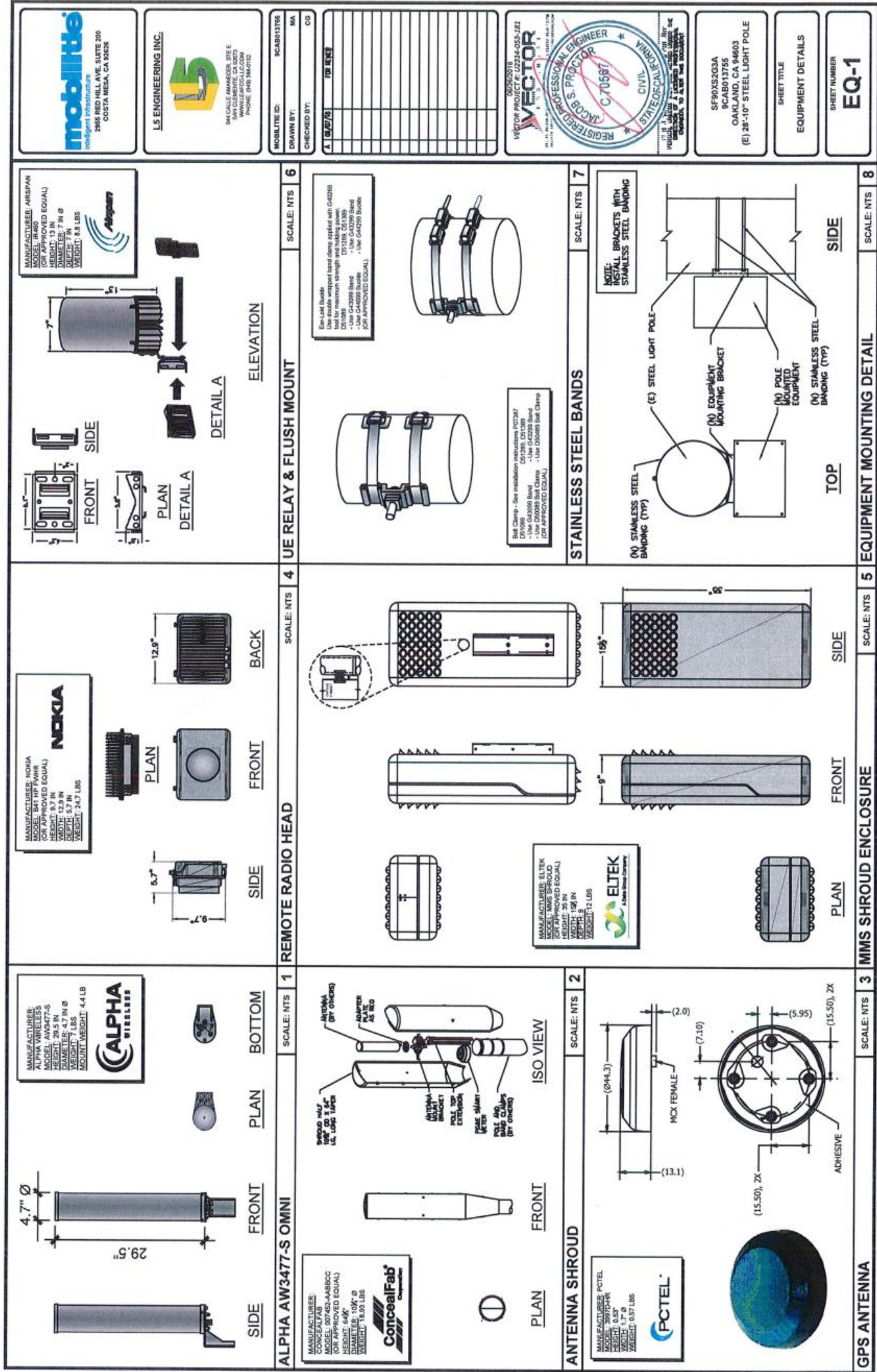
MOBILE ID:	SCAB013755
DRAWN BY:	BA
CHECKED BY:	CG
DATE:	10/02/08



SF90XS2G3A
SCAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET TITLE
PLUMBING &
RISER DIAGRAM

SHEET NUMBER
PL-1





2865 RED HILL AVE, SUITE 200
COSTA MESA, CA 92626

LS ENGINEERING INC.



544 CALLE AMARILLO, STE E
SAN JOSE, CA 95128
WWW.LES-ENGINEERING.COM
PHONE: (408) 386-0182

MOBILETEC ID: 9CAB013755
DRAWN BY: MA
CHECKED BY: CG
DATE: 08/27/10



VECTOR
CORPORATION
10000 N. CENTRAL EXPRESSWAY
SUITE 100, DALLAS, TEXAS 75243
PHONE: (972) 382-1770
FAX: (972) 382-1771

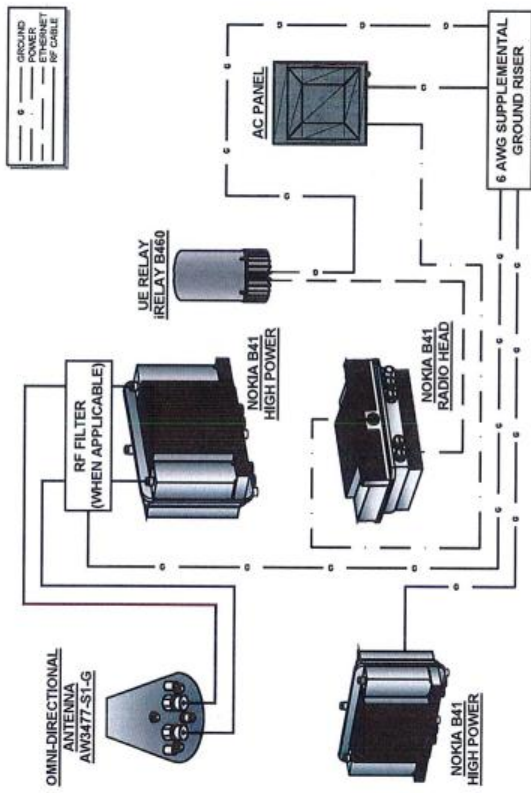
IT IS A VIOLATION OF THE LAW FOR ANY
PERSON TO REPRODUCE OR TRANSMIT
THIS DOCUMENT IN ANY MANNER
WITHOUT THE WRITTEN PERMISSION OF THE
OWNER. TO AVOID THIS VIOLATION

SF90XS2G3A
9CAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-1

NOKIA MM RADIO W/ UE RELAY



WIRING DIAGRAM

SCALE: NOT TO SCALE

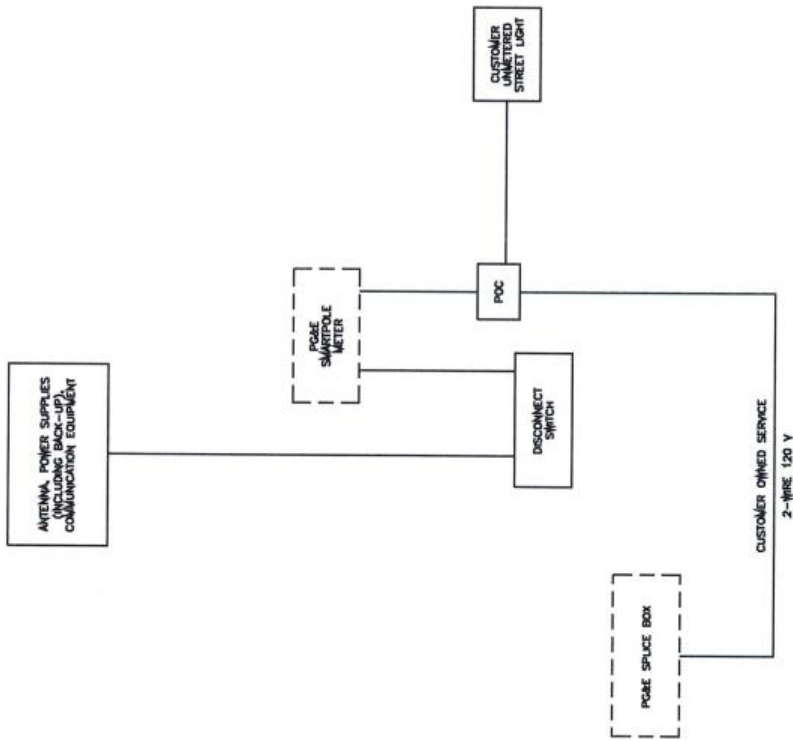
NOTES:

1. NOMINAL POWER IS CALCULATED AS 80% OF OEM DOCUMENTED MAXIMUM POWER
2. CALCULATIONS FOR UE W/ NOKIA DO NOT NEED TO INCLUDE THE POWER FOR THE UE ANTENNA AS IT IS INCLUDED IN THE MAX POWER FIGURE. CALCULATIONS FOR UE W/ AIRSPAN MUST INCLUDE UE AS IT IS NOT INCLUDED
3. RFA IS CALCULATED FROM THE CONSUMPTION VALUE ASSUMING A PF=1. MAXIMUM POWER WAS USED FOR RFA WHERE MAXIMUM WAS NOTED BY THE OEM THE QUOTED FIGURE WAS USED. WHERE AVERAGE/NOMINAL POWER WAS NOTED BY THE OEM MAXIMUM POWER WAS USED. WHERE AVERAGE/NOMINAL POWER WAS NOTED BY THE OEM MAXIMUM POWER WAS USED. WHERE AVERAGE/NOMINAL POWER WAS NOTED BY THE OEM MAXIMUM POWER WAS USED.
4. COST PER KIT PROVIDED BY BRIAN ROBINSON

NOKIA SCENARIO 3 B41 HIGH POWER RADIO AND UE BACKHAUL									
UNIT	SUB DESCRIPTION	MAX POWER (W)	NOMINAL POWER (W)	CONSUMPTION (W)	RFA	W/UE RFA	\$/YR	\$/MO	
FMH	B41 HIGH	360	N/A	0	0	0	0	0	
FMH	UE RELAY (B4160-SRB-S11-P-0)	N/A	N/A	0	0	0	0	0	
TOTAL		360	288	0	0	0	2022.88	\$276.51	\$27.04

ONE-LINE DIAGRAM

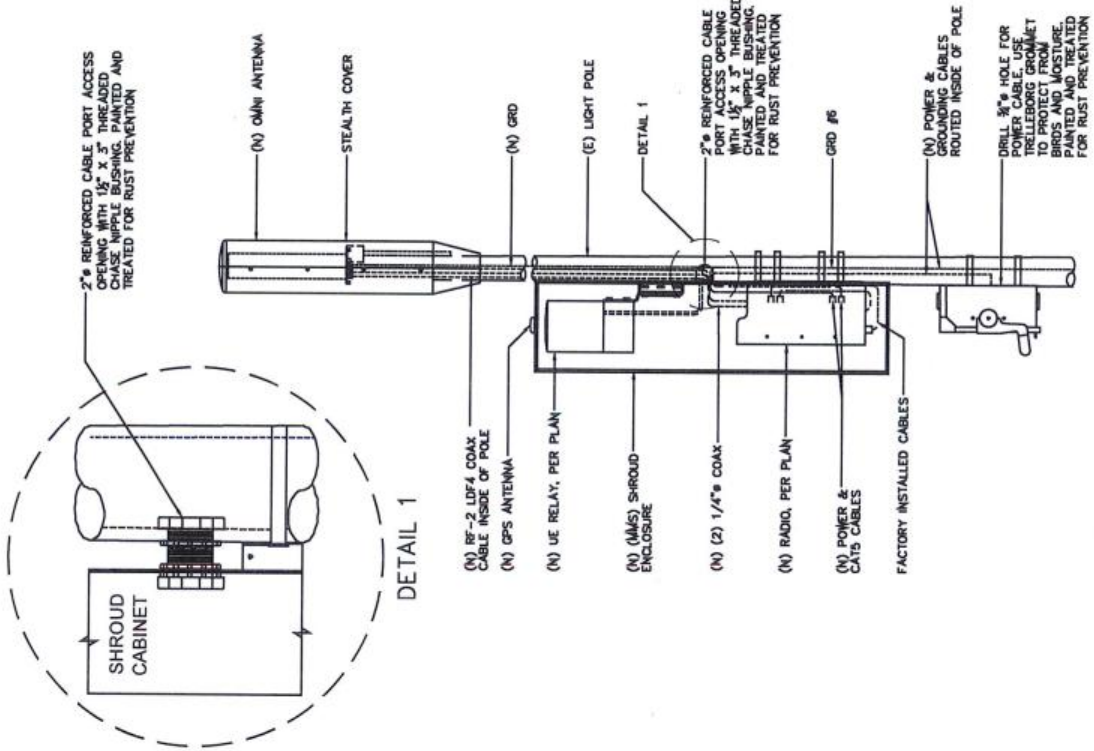
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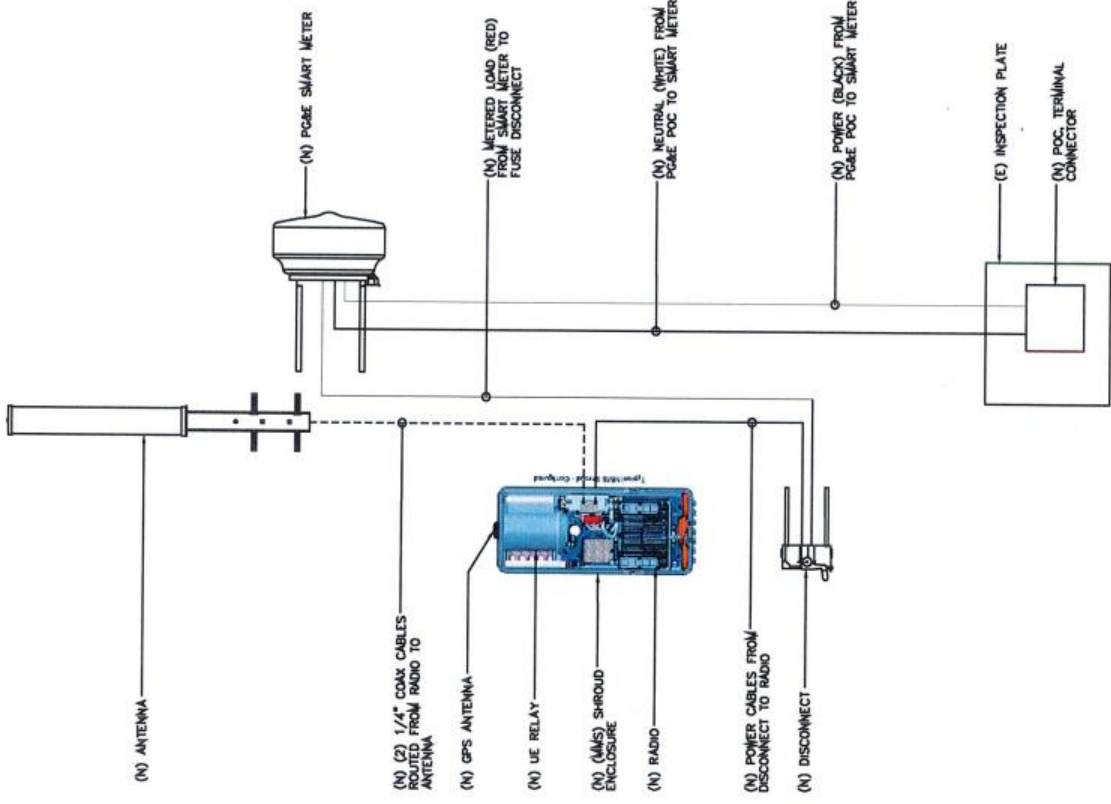
SEE CH-3, PG&E UTILITY BULLETIN TD-027811B-004,
FIGURE 6 - ONE LINE DIAGRAM



REV	DESCRIPTION
1	ISSUED



PORT HOLE DETAIL
SCALE: NOT TO SCALE



SCHEMATIC POWER FLOW
SCALE: NOT TO SCALE



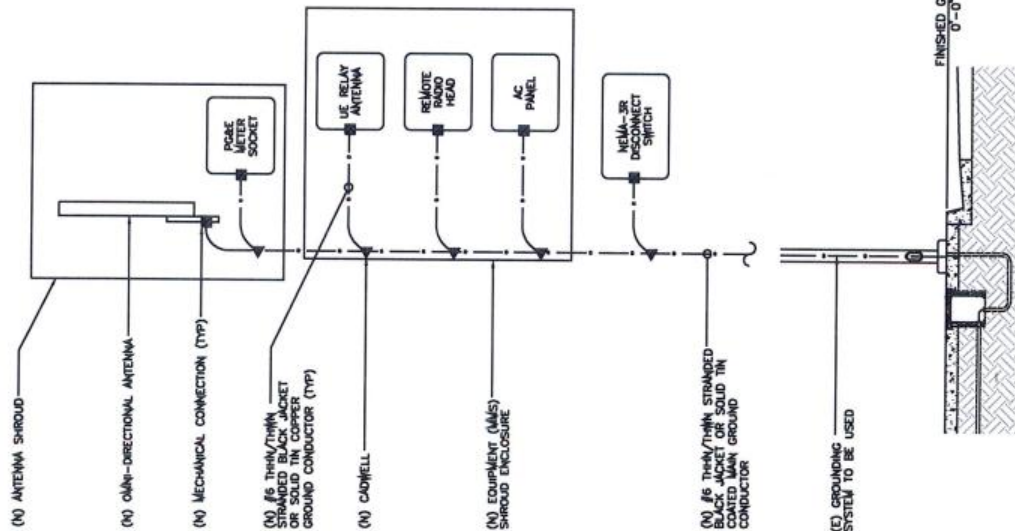
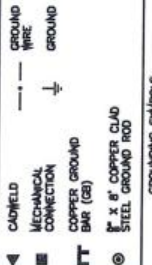
944 CALLE AMANEGER, STE E
SAN CLEMENTE, CA 92673
WWW.LEAF-CC-LLC.COM
PHONE: (949) 386-0192

APR 19 201	EN/12/20	Y
------------	----------	---

881 N. BAYVIEW BLVD., STE. 101
ANN ARBOR, MI 48106
PHONE (810) 938-1773
FAX (810) 938-1773

SF90XS2G3A
9CAB013755
OAKLAND, CA 94603
(E) 28'-10" STEEL LIGHT POLE

SHEET NUMBER
G-1

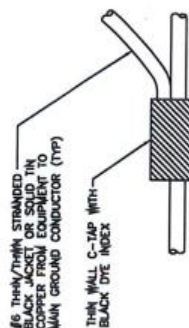


NOTE:

1. ALL RGS TO BE GROUNDED AT BOTH ENDS USING GROUNDING BUSHINGS.
2. GROUND WIRE TO BE RUN IN 1st SCHEDULE 40 PVC.
3. GROUNDING RISER FOR DIAGNOSTIC PURPOSES ONLY. SEE ELEVATION DRAWING FOR EQUIPMENT AND ANTENNA LOCATIONS.

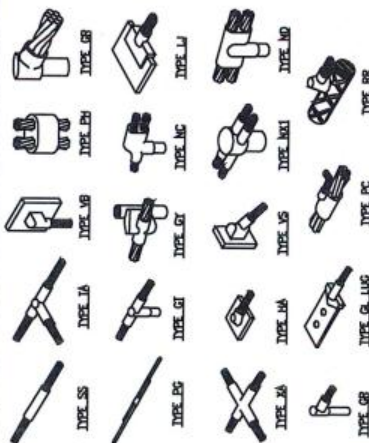
SCALE: NOT TO SCALE

3



NOTE:
CONTRACTOR TO SURROUND COMPLETED CONNECTION WITH HEAT-SHRINK TUBING TO ENSURE WEATHER PROOF CONNECTION

SCALE: NOT TO SCALE

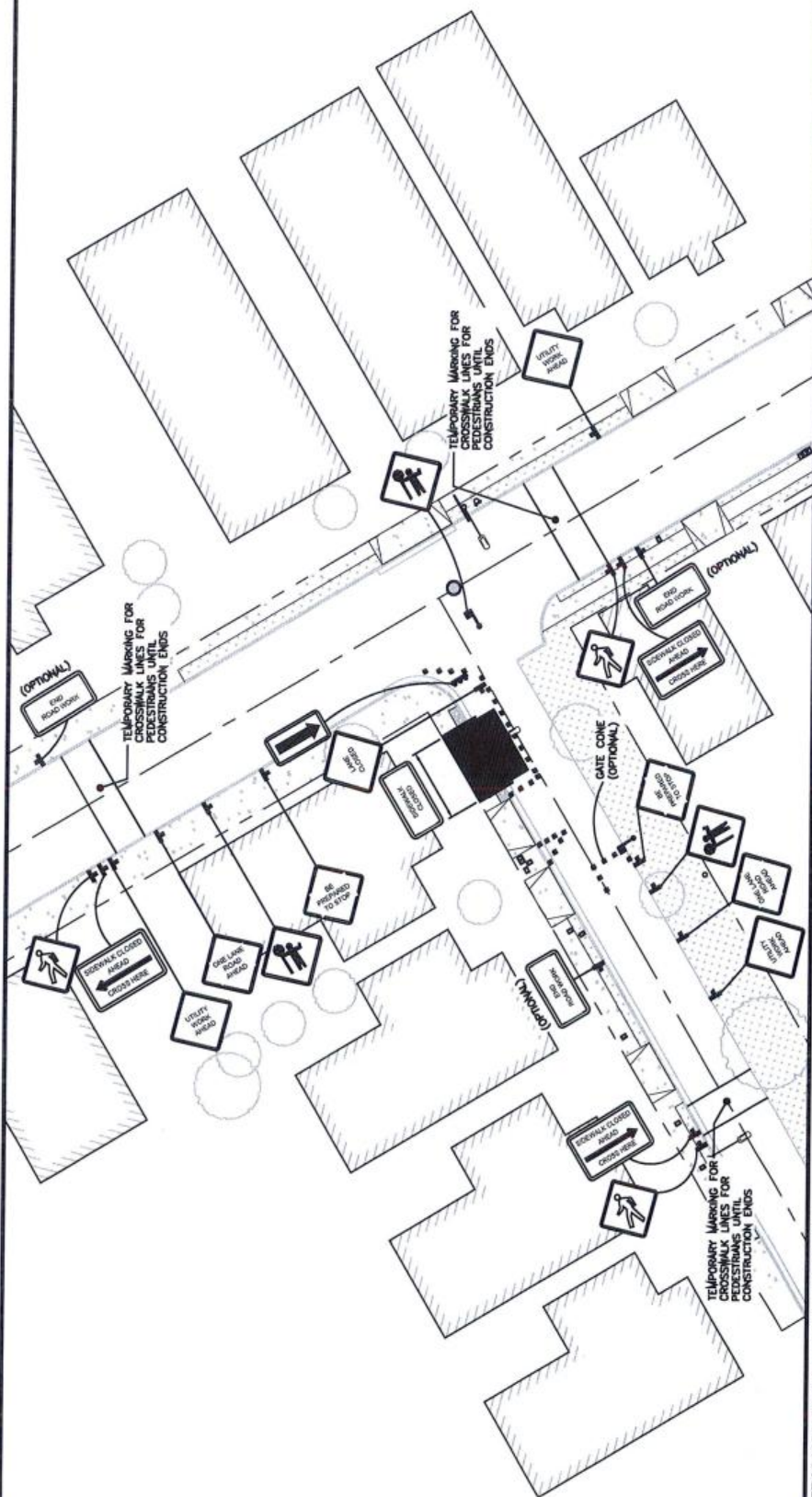


EXTERIOR UNIT BONDS: ALL METALLIC OBJECTS SHALL BE BONDED TO THE GROUND ROD
(ATT-TP-76416 7, 12.6)

GROUND ROD: UL LISTED COPPER CLAD STEEL GROUND ROD WITH MINIMUM DIAMETER OF 1/2" AND MINIMUM LENGTH OF 8'. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO A MINIMUM OF DEPTH OF 30" BELOW GRADE OR 6" BELOW FROST LINE. (ATT-TP-76416 1.4 / 2/2, 3, 10)

SCALE: NOT TO SCALE

2



PEDESTRIANWORKER SAFETY PLAN

- TRAFFIC CONTROL GENERAL NOTES:
1. ALL TEMPORARY TRAFFIC CONTROL, SIGNAGE, LAYOUTS AND PROCEDURES SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, WHOEVER IS MORE STRINGENT.
 2. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
 3. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED IN ACCORDANCE WITH THE MUTCD, LATEST EDITION, WHOEVER IS MORE STRINGENT. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
 4. SELECTION, PLACEMENT, MAINTENANCE, AND PROTECTION OF TRAFFIC, PEDESTRIANS, AND WORKERS SHALL BE IN ACCORDANCE WITH THE MUTCD, LATEST EDITION, WHOEVER IS MORE STRINGENT. PART VI "TEMPORARY TRAFFIC CONTROL" AND LOCAL JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS AND SHALL BE APPROVED BY THE APPROPRIATE HIGHWAY AUTHORITY HAVING JURISDICTION.
 5. ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY AND FOR ACTUAL TRAFFIC SPEEDS IF IN EXCESS OF POSTED SPEED LIMITS.
 6. TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.
 7. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON THE TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
 8. ALL (E) ROAD SIGNS, PAVEMENT MARKINGS AND/OR PAVEMENT REFLECTORS WHICH CONFLICT WITH THE (M) TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED, OR RELOCATED.
 9. ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO MATCH PRE-CONSTRUCTION CONDITION AFTER COMPLETION OF WORK.
 10. CONTRACTOR SHALL CONTACT LOCAL AUTHORITY HAVING HIGHWAY JURISDICTION AND PROVIDE ADDITIONAL "FLAGMEN" OR POLICE SUPERVISION, IF REQUIRED.
 11. WHERE DICTATED BY LOCAL CONDITIONS, THE CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCE IN ALL CROSSING LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND OSHA REQUIREMENTS.
 12. CONSTRUCTION ZONE SPEED LIMIT IF REDUCED FROM POSTED LIMITS SHALL BE IN ACCORDANCE WITH MUTCD AND SHALL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
 13. THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD SPACE.
 14. DRIVEWAYS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE BUFFER SPACE SHALL BE PROVIDED WITH AT LEAST ONE 120-1 SIGN (ROAD WORK AHEAD) AS A MINIMUM.
 15. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION PROVIDED THEY COMPLY WITH MUTCD.
 16. THE SPACING BETWEEN CONES, TUBULAR MARKERS, OR OTHER CHANNELIZATION DEVICES SHOULD NOT EXCEED A DISTANCE IN FEET OF 2.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TANGENT CHANNELIZATION.
 17. WHEN CHANNELIZATION DEVICES HAVE THE POTENTIAL OF LEADING VEHICULAR TRAFFIC OUT OF THE INTENDED TRAFFIC SPACE, THE CHANNELIZATION DEVICES SHOULD BE PLACED AT A DISTANCE IN FEET OF 2.0 TIMES THE SPEED LIMIT IN MPH BEYOND THE DOWNSTREAM END OF THE TRANSITION AREA.
 18. TAPER LENGTHS ARE CALCULATED AS FOLLOWS:
 $L = 2.5 \times S^2$
 WHERE L = TAPER LENGTH (FT), S = TRAFFIC SPEED (MPH).

SCALE: NTS 1



mobile
2865 RED HILL AVE. SUITE 200
COSTA MESA, CA 92626



LS ENGINEERING INC.
344 CALLE MANABO, STE 200
SAN JOSE, COSTA RICA
WWW.LS-ENGINEERING.COM
PHONE: (506) 364-0102

MOBILITY ID:	9048713756
DRAWN BY:	BA
CHECKED BY:	CG
DATE:	12/07/18
TIME:	10:00



REGISTERED PROFESSIONAL ENGINEER
JACOB PROCTOR
C70567
CIVIL
STATE OF CALIFORNIA
EXPIRATION DATE: 12/31/2021

SP-90X52G3A 9048713755 OAKLAND, CA 94603 (E) 20-10" STEEL LIGHT POLE	SHEET TITLE GENERAL NOTES	SHEET NUMBER GN-2
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1. VERTICAL SHALL BE PROPERLY BENCHMARKED INTO THE (E) SLOPE AS DIRECTED BY A GEOTECHNICAL ENGINEER.
 2. CONTRACTOR SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO DEBRIS, PAPER, TRASH, WEEDS, BRUSH, EXCESS FILL, OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE BY THE GENERAL CONTRACTOR.
 3. ALL SEEDS AND GRASSES WHICH ARE NOT IN DIRECT CONTACT WITH THE APPROVED PAVEMENT SHALL BE PROTECTED BY THE GENERAL CONTRACTOR.
 4. ALL SITE WORK SHALL BE CAREFULLY SUPERVISED BY GENERAL CONTRACTOR WITH LOCAL UTILITY COMPANIES FULLY COORDINATED BY GENERAL CONTRACTOR COMPANIES HAVING JURISDICTION OVER THIS LOCATION.
- ENVIRONMENTAL NOTES:**
1. ALL WORK OPERATIONS SHALL BE DONE IN ACCORDANCE WITH ISSUED PERMITS. CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF FINES AND PROPER CLEAN UP FOR AREAS IN VIOLATION.
 2. CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION FOR PROTECTION OF ADJACENT PROPERTIES, ROADS, AND WATERWAYS. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN PLACE THROUGH FINAL ADDITIONAL INSPECTION & RELEASE OF SITE.
 3. CONTRACTOR SHALL INSTALL/CONSTRUCT ALL NECESSARY SEDIMENT/SILT TRAP(S) WITHIN THE LIMITS OF THE SITE DISTURBANCE PRIOR TO THE LOCAL JURISDICTION WITHIN THE LIMITS OF THE SITE DISTURBANCE.
 4. NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROPERTY. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROL OF EROSION. ADDITIONAL SEDIMENT CONTROL FENCING MAY BE REQUIRED IN ANY AREAS SUBJECT TO EROSION.
 5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON THE SITE AT ALL TIMES WITH SILT AND EROSION CONTROL MEASURES MAINTAINED ON PROPERTY AS A RESULT OF EROSION WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS AND ANY REPAIRS OF ALL SEDIMENT CONTROL MEASURES INCLUDING SEDIMENT REMOVAL AS NECESSARY.
 7. CLEARING OF VEGETATION AND TREE REMOVAL SHALL BE ONLY AS PERMITTED AND BE HELD TO A MINIMUM. ONLY TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED.
 8. FENCING AND MACHINERY AND/OR SODDING OF THE SITE WILL BE ACCOMPLISHED PRIOR TO THE START OF CONSTRUCTION. COMPLETION OF THE PROJECT FACILITIES AFFECTING LAND DISTURBANCE.
 9. CONTRACTOR SHALL PROVIDE ALL EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED BY LOCAL COUNTY AND STATE CODES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EMBANKMENTS FROM SOIL LOSS AND TO PREVENT ACCUMULATION OF SOIL AND SILT IN STREAMS AND DRAINAGE PATHS LEAVING THE PROPERTY. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT SUCH MEASURES AS SILT FENCES, STRAW BALE SEDIMENT BARRIERS, AND CHECK DAMS.
 10. RIP RAP OF SIZES INDICATED SHALL CONSIST OF CLEAN, HARD, SOUND, DURABLE, UNIFORM IN QUALITY STONE FREE OF ANY DETRIMENTAL QUANTITY OF SOFT, FRAGILE, THIN, ELONGATED OR LAMINATED PIECES, DISINTEGRATED MATERIAL, ORGANIC MATTER, OIL, ALKALI, OR OTHER DELETERIOUS SUBSTANCES.
 11. GC TO PLACE FILTER MATERIAL AT ALL CATCH BASINS ADJACENT TO EXISTING SEWER SYSTEM. SITE TO PREVENT SOLID WASTE CONTAMINATION FROM ENTERING SEWER SYSTEM.
13. ALL CRIMPED CONNECTIONS SHALL HAVE EMBOSSED MANUFACTURER'S DEMARK VISIBLE AT THE CRIMP (RESULTING FROM USE OF PROPER CRIMPING DEVICES) AND WEATHER-PROOFED WITH HEAT SHRINK.
 14. ALL CONNECTION HARDWARE SHALL BE TYPE 3-16 STAINLESS STEEL (NOT ATTRACTED TO MAGNETS).
 15. ELECTRICAL SERVICE EQUIPMENT GROUNDING SHALL COMPLY WITH NEC ARTICLE 250-82 AND SHALL BOND ALL (E) AND NEW GROUNDING ELECTRODES. NEW GROUNDING ELECTRODE SHALL INCLUDE BUT NOT LIMITED TO GROUND RODS.
- TESTING AND EQUIPMENT TURN UP REQUIREMENTS:**
1. RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT TESTING SHALL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION AND TO THOSE STANDARDS OF THE EQUIPMENT MANUFACTURER OR PROVIDED TO THE CONTRACTOR PRIOR TO TESTING.
 2. CONTRACTOR WILL USE THE APPROPRIATE CALIBRATED TESTING EQUIPMENT IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT THAT MEET INDUSTRY STANDARDS OF THE MANUFACTURER OR THOSE STANDARDS PROVIDED TO THE CONTRACTOR PRIOR TO TESTING.
 3. CONTRACTOR TO VERIFY AND RECORD ALL TEST RESULTS AND PROVIDE THESE RESULTS WITHIN THE FINAL CLOSE OUT PACKAGE.
 4. ALL PERSONNEL INVOLVED IN THE TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT SHALL BE TRAINED AND OR CERTIFIED IN THE PROPER TESTING OF RF CABLE, DATA CABLE, RADIO EQUIPMENT AND BACK HAUL EQUIPMENT.
 5. ALL TEST RESULTS SHALL BE THE STAMPED, RECORDED AND PRESENTED PRIOR TO ENERGIZING AND TURN UP OF ANY EQUIPMENT.
 6. GPS EQUIPMENT (WHEN REQUIRED) IS NOT TO BE TESTED OR ATTACHED TO ANY CABLE DURING TESTING, DOING SO WILL DAMAGE THE GPS UNIT.
 7. PRIOR TO TESTING IF THE CONTRACTOR HAS ANY QUESTIONS ABOUT THE TESTING PROCEDURES THEY ARE TO CALL AND OBTAIN ASSISTANCE FROM A QUALIFIED DESIGNATED TESTING REPRESENTATIVE.
 8. EQUIPMENT IS NOT TO BE ENERGIZED UNTIL ALL TESTING HAS BEEN COMPLETED, APPROVED AND THE APPROPRIATE AUTHORITY HAS BEEN NOTIFIED AND GIVEN APPROVAL TO ENERGIZE THE EQUIPMENT.
- SITE WORK NOTES:**
1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
 2. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-BUILT DRAWINGS BY CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
 3. ALL (E) UTILITIES, FACILITIES, CONDITIONS AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN FIELD VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUPPORT OR CORRECTNESS OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY THE LOCATION AND UTILITY METHODS OF REMOVING OR ADJUSTING (E) UTILITIES.
 4. CONTRACTOR SHALL VERIFY ALL (E) UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER OR MOBILELINE CM FOR RESOLUTION AND DISCREPANCY IS CHECKED AND CORRECTED BY THE CONTRACTOR. CONTRACTOR SHALL SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT THEIR OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL LOCAL UTILITY HOUSING NOT LINE, SUCH AS B1, FOR UTILITY LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
 5. ALL NEW AND (E) UTILITIES STRUCTURES ON SITE AND IN AREAS TO BE DESTROYED BY CONSTRUCTION SHALL BE REMOVED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK. ANY COST RELATED TO REMOVING (E) STRUCTURES SHALL BE BORNE SOLELY BY THE CONTRACTOR.
 6. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO (E) GRADES AT THE GRADING LIMITS.
 7. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC. SHALL BE PROPERLY LAD BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
 8. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 90% OF MAXIMUM STANDARD PROCTOR DRY DENSITY, UNLESS OTHERWISE NOTED.
 9. NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE GRADED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.
 10. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS' THICKNESS SHOULD NOT EXCEED 12" AND SHOULD BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.
 11. ANY FILLS PLACED ON (E) SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO
18. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
 20. DISCONNECT SWITCHES SHALL BE UL-RATED, NP, RATED HEAVY-DUTY, QUICK-MAKE AND QUICK-BREAK ENCLOSURES, AS REQUIRED BY EXPOSURE TYPE.
 21. ALL CONNECTIONS SHALL BE MADE WITH A PROTECTIVE COATING OF AN ANTI-OXIDATION COMPOUND KNOWN AS "NO-OXIDE" BY DEARBORNE CHEMICAL CO. COAT ALL WIRE SURFACES BEFORE CONNECTING. EXPOSED COPPER SURFACES, INCLUDING GROUND BARS, SHALL BE TREATED - NO SUBSTITUTIONS.
 22. TRAILWAYS CONDUIT SHALL BE SCHEDULE 80 PVC MEETING OR EXCEEDING NEMA 250-100 REQUIREMENTS. CONDUIT SHALL BE USED FOR SPARE AND EMPTY CONDUITS AND PROVIDE TWO SEPARATE PULL POINTS FOR EACH 2 FT. RADIUS. ALL CONDUIT BENDS SHALL BE A MINIMUM OF 2 FT. STEEL. ALL FITTINGS SHALL BE SUITABLE FOR USE WITH THREADED RIGID CONDUIT. COAT ALL THREADED WITH WHITE ZINC OR GOLD GALV.
 23. SUPPORT OF ALL ELECTRICAL WORK SHALL BE AS REQUIRED BY NEC.
 24. CONDUCTORS: CONTRACTOR SHALL USE 98% CONDUCTIVITY COPPER WITH TYPE SOLID CONDUCTORS INCLUDING NO. 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 30, 36, 42, 50, 56, 66, 75, 95, 110, 133, 150, 175, 210, 250, 300, 350, 400, 500, 600, 700, 800, 900, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8000, 8500, 9000, 9500, 10000, 11000, 12000, 13000, 14000, 15000, 16000, 17000, 18000, 19000, 20000, 21000, 22000, 23000, 24000, 25000, 26000, 27000, 28000, 29000, 30000, 31000, 32000, 33000, 34000, 35000, 36000, 37000, 38000, 39000, 40000, 41000, 42000, 43000, 44000, 45000, 46000, 47000, 48000, 49000, 50000, 51000, 52000, 53000, 54000, 55000, 56000, 57000, 58000, 59000, 60000, 61000, 62000, 63000, 64000, 65000, 66000, 67000, 68000, 69000, 70000, 71000, 72000, 73000, 74000, 75000, 76000, 77000, 78000, 79000, 80000, 81000, 82000, 83000, 84000, 85000, 86000, 87000, 88000, 89000, 90000, 91000, 92000, 93000, 94000, 95000, 96000, 97000, 98000, 99000, 100000.
 25. CONNECTORS FOR POWER CONDUCTORS: CONTRACTOR SHALL USE PRESSURE TIGHT INSULATED TEST-ON CONNECTORS FOR NO. 10 AND SMALLER. USE SOLDERLESS MECHANICAL TERMINAL LUGS FOR NO. 8 AND LARGER.
 26. SERVICE: AS SPECIFIED ON THE DRAWINGS. OWNER OR OWNER'S AGENT WILL APPLY FOR POWER. ALL PROVISIONS FOR TEMPORARY POWER WILL BE OBTAINED BY THE CONTRACTOR.
 27. TELEPHONE OR FIBER SERVICE: CONTRACTOR SHALL PROVIDE EMPTY CONDUITS WITH FULL STINGS AS INDICATED ON DRAWINGS.
 28. ELECTRICAL AND TELCO/FIBER RACEWAYS TO BE BURIED A MINIMUM DEPTH OF 30", UNLESS OTHERWISE NOTED.
 29. CONTRACTOR SHALL PLACE 6" WIDE DETECTABLE WARNING TAPE AT A DEPTH OF 6" BELOW GROUND AND DIRECTLY ABOVE ELECTRICAL AND TELCO SERVICE CONDUITS. CAUTIONS TAPE TO READ "CAUTION BURIED ELECTRIC" OR "BURIED TELCO/CM".
 30. ALL BOLTS SHALL BE 3-16 STAINLESS STEEL.
 31. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS WITH ONLY TYPEWRITTEN DIRECTORIES. ALL ELECTRICAL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- GROUNDING NOTES:**
1. ALL HARDWARE SHALL BE 3-16 STAINLESS STEEL, INCLUDING LOCK WASHERS, NUTS, WASHERS, AND ANTI-OXIDANT COMPOUND, AS SPECIFIED, BEFORE MATING. ALL HARDWARE SHALL BE STAINLESS STEEL 1/8" DIAMETER OR LARGER.
 2. FOR GROUND BOND TO STEEL ONLY: INSERT A CABLEM PLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
 3. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.
 4. ALL ELECTRICAL AND GROUNDING AT THE POLE SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 700 (LATEST EDITION), AND MANUFACTURER.
 5. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
 6. GROUND ALL ANTENNA BASES, FRAMES, CABLE RAILS, AND OTHER METALLIC COMPONENTS USING #6 GROUND WIRES. FOLLOW ANTENNA AND BTS MANUFACTURER'S PRACTICES FOR GROUNDING REQUIREMENTS.
 7. ALL GROUND CONNECTIONS SHALL BE #6 AWG UNLESS OTHERWISE NOTED. ALL CONDUCTORS TO BE USED SHALL BE TYPE 98% CONDUCTIVITY COPPER WITH TYPE SOLID CONDUCTORS INCLUDING NO. 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 30, 36, 42, 50, 56, 66, 75, 95, 110, 133, 150, 175, 210, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000.
 8. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE TO OBTAIN MINIMUM PROVIDE SUPPLEMENTARY GROUNDING BOND TO THE SOURCE. THE SOURCE CHAINS RADIATING GROUNDING AND OTHER OPTIONAL TESTING WILL BE WITNESSED BY THE MOBILELINE CM.
 9. NOTIFY ARCHITECT/ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
 10. ALL HORIZONTAL RUN GROUNDING CONDUCTORS SHALL BE INSTALLED A MINIMUM OF 30" BELOW GRADE/ 6" BELOW FROST-LINE IN TRENCH, UNLESS OTHERWISE NOTED. BACK FILL SHALL BE COMPACTED AS REQUIRED BY ARCHITECT/ENGINEER.
 11. ALL GROUND CONDUCTORS SHALL BE RUN AS STRAIGHT AND SHORT AS POSSIBLE, WITH A MINIMUM 12" BENDING RADIUS NOT LESS THAN 90 DEGREES.
 12. ACCEPTABLE CONNECTIONS FOR GROUNDING SYSTEM SHALL BE:
 - A. BURIED, HY-GRADE UL LISTED CONNECTORS FOR OUTDOOR USE OR AS APPROVED BY APPLICANT PROJECT MANAGER.
 - B. COLDWELD, EXOTHERMIC WELDS (WELDED CONNECTIONS).
 - C. ONE (1) HOLE THINWED COPPER COMPRESSION (LONG BARREL) FITTINGS.

14. FOR SERVICE CONNECTIONS TO STEEL POLES THAT ARE NOT ON AN LS-2 RATE, OR IF THE REQUIREMENTS IN THIS DOCUMENT CANNOT BE MET, THEN THE PG&E APPROVED METHOD OF PROVIDING SERVICE TO A PAD-MOUNTED METERING PEDestal SHOULD BE USED.

[illegible]

Alternative Site Analysis

Proposed Small Cell Wireless Facility

Applicant: Mobilitie, LLC

Site ID: 9CAB013755/SF90XS2G3A

Nearest Site Address: Public Right of Way near 1035 94TH St., Oakland, CA 94603

Latitude/Longitude: 37.744379, -122.17888

Mobilitie considered alternative sites on other street lights and utility poles in this area, but found them to not to be as desirable when taking into consideration coverage goals, constructability, geographic topography of the surrounding area, and potential visual impact in the surrounding area. The proposed location is desirable because of the limited obstructions in the area, allowing our antenna to effectively propagate a signal. Furthermore, the proposed location is the optimal solution for providing maximum coverage to the surrounding area identified. Additionally, by locating on an existing street light with equipment concealed, visual impact in the surrounding area is minimized.

Mobilitie is a privately held, CLEC (Competitive Local Exchange Carrier) regulated by the California Public Utilities Commission (CPUC) to provide telephone related services. By proposing this location on an existing street light in the public right of way, Mobilitie is proposing an appropriate co-location to existing infrastructure according to our rights under the CPUC.

The alternative locations that Mobilitie considered include, but are not limited to, the sites listed below:

Alternate B (37.744672, -122.178896) / Near 9329 E Street: This wooden utility pole is located approximately 96 ft. north of our proposal. The existence of a power riser running up this pole precludes it from being used there because there is not enough usable space on the pole for our facility.

Alternate C (37.743862, -122.178268) / Near 9449 E Street: This wooden utility pole is located approximately 96 ft. southeast of our proposal. The existence of a power riser running up this pole precludes it from being used there because there is not enough usable space on the pole for our facility.

Radio Frequency- Electromagnetic Energy-EME Measurements & Compliance Report

Site ID: 9CAB013755
Site Name: 9CAB013755
Market/Region: California
Address: 94TH AVE., W. OF E ST.OAKLAND, CA 94603
Latitude: 37.744379
Longitude: -122.17888
Site Type: Light Pole

Compliance Status:

Proposed equipment at the site is compliant with FCC guidelines for General Population environments

Prepared for:

Mobilitie, LLC
2220 University Drive,
Newport Beach, CA 92660

By
ATG LLC

Date:09/06/2017

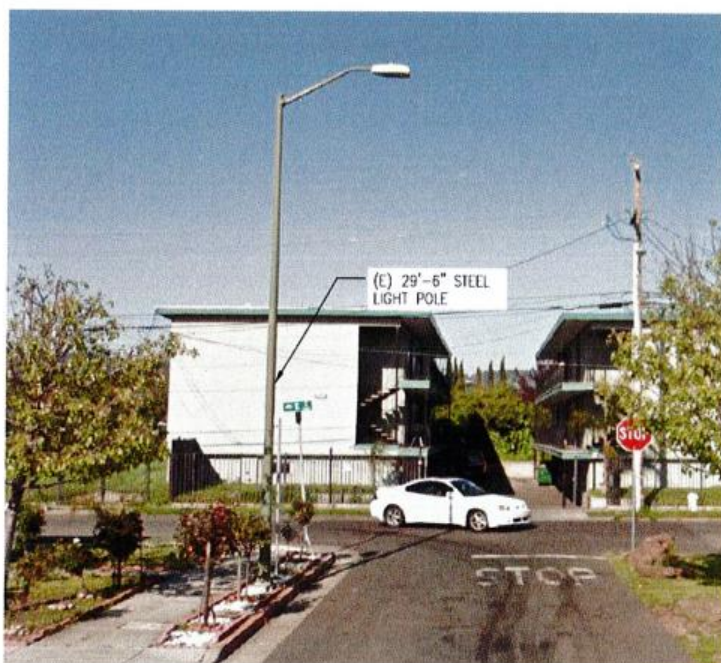


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1 Executive Summary

Purpose of Report

ATG LLC's RF Engineering has conducted radio frequency electromagnetic energy (RF-EME) modeling for Mobilitie LLC's site 9CAB013755 located at 94TH AVE., W. OF E ST. OAKLAND, CA to determine RF-EME exposure levels from the carrier's proposed wireless communications equipment.

The Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) limits for general public and occupational exposures to RF-EME. This report summarizes the results of RF-EME modeling in relation to relevant FCC compliance standards for limiting human exposure to RF-EME. The details of FCC defined exposure limits are provided in Appendix A of this report.

Analysis results included in this report are based on drawings dated June 13th, 2017.

Statement of Compliance

Predictive modeling conducted using the original equipment manufacturers (OEMs) specifications for radio and antenna performance along with the supplied construction drawings dated June 13th, 2017, indicate there will be no exposure due to the carrier's proposed equipment on accessible ground-level walking surface at this site that exceeds the FCC's general public exposure limits.

Proposed equipment at the site is compliant with FCC guidelines for general population environments.

2 Maximum Permissible Exposure (MPE) Modeling Results for Proposed Site

The predictive modeling was conducted using the RoofView 5.0 suite of analysis tools. The modeling was conducted with the antennas operating at 100% capacity, all antenna channels transmitting simultaneously and the radio transmitters operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels would be during normal operations. The modeling calculations were made for an area 40' x 40' area with the equipment at the center.

Table 1: Maximum Permissible Exposure- Summary

Location	% of FCC General Public/Uncontrolled Exposure Limit	% of FCC Occupational/Controlled Exposure Limit	Power Density (mW/cm ²)	Compliance Status
6ft above ground level	2.1	0.42	0.021	Compliant

3 Antenna Inventory

The Antenna Inventory shows all transmitting antennas on the site (see Table 2). This inventory was used by ATG to perform the software modeling of RF emissions. The inventory conforms with the submitted construction drawings which identifies the proposed mounting location of each antenna at the site. The exposure level is calculated for a person of height 6ft standing right below the devices at ground level.

Table 2: Antenna Inventory

Antenna ID	Carrier/Operator	Antenna Type	Frequency (MHz)	Technology	ERP (W)	Gain dBd	Mfg.	Model	Aperture (ft.)	Transmitter count	Horizontal BeamWidth (deg)	Z (6 ft. above Ground)
1	Mobilitie	Omni	2496	LTE	172.58	6.35	Alpha Wireless	AW3477-S	2.56	2	360	24.8
2	Mobilitie	LTE Relay BH	2496	LTE	1.93	9.85	Airspan	iR460	1.1	1	35	10.5

The table below details the operating power and Effective Radiated Power (ERP) for each carrier and frequency used in the modeling.

Frequency (MHz)	Power per Transmitter (Watts)	# of Transmitters	ERP (watts)
2496 (Omni)	20	2	172.58
2496 (UE Relay)	0.2	1	1.93

4 Modeling Summary and Assumptions

4.1 General Model Assumptions

The modeling was conducted using the antenna and radio maximum power values, while operating at full power with 100% duty cycle.

The site has been modeled with these assumptions to calculate the maximum RF energy density. ATG believes this to be a worst case analysis, based on data supplied by the OEMs and client. If actual power density measurements were made, ATG believes the real time measurements would indicate levels below those shown in the report.

5 Preparer Certification

I, Preparer, state that:

- I am an employee of ATG LLC that provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed 100s of RF-EME exposure studies and reports for various carriers.
- I am aware of the potential hazards from RF-EME exposures that would be classified "occupational" or "general public" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have reviewed all the data related to the site and incorporated it into this study and Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

Ahmed Saadallah

Ahmed Saadallah (RF Engineer)

Appendix A

Federal Communications Commission (FCC) Requirements

This appendix summarizes the policies, guidelines and requirements that were adopted by the FCC on August 1, 1996, amending Part 1 of Title 47 of the Code of Federal Regulations, and further amended by action of the Commission on August 25, 1997 (see 47 CFR Sections 1.1307(b), 1.1310, 2.1091 and 2.1093, as amended). Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA), as described in 47 CFR Section 1.1311, if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency (RF) electromagnetic fields in excess of these limits.

The potential hazard associated with the RF electromagnetic fields is discussed in OET Bulletin No. 65. This document can be obtained on the FCC website, (https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

As per FCC guidelines there are two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment and not be made fully aware of the potential for exposure or cannot exercise control over their exposure.

The FCC's MPE limits for field strength and power density are given in Table 1 (and in 47 CFR § 1.1310) Figure 1 is a graphical representation of the limits for plane-wave (far-field) equivalent power density versus frequency. The FCC's limits are generally applicable to all facilities, operations and transmitters regulated by the Commission, and compliance is expected with the appropriate guidelines. The power density limits vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

f = frequency in MHz *Plane-wave equivalent power density

Table 1

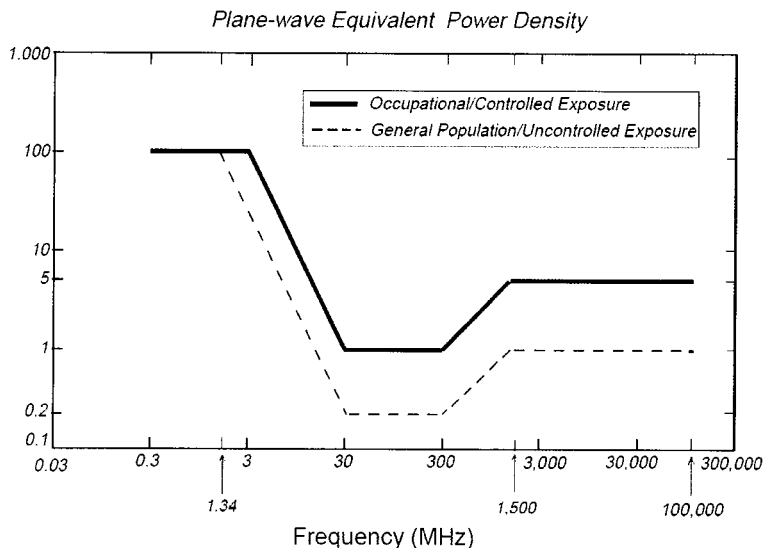


Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

FCC Compliance Requirement

In general, as specified in 47 C.F.R. 1.1307(b), as amended, when the FCC's guidelines are exceeded in an accessible area due to the emissions from multiple fixed transmitters the following policy applies. Actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitter's contribution to the RF environment at the non-complying area exceeds 5% of the exposure limit (that applies to their particular transmitter) in terms of power density or the square of the electric or magnetic field strength.

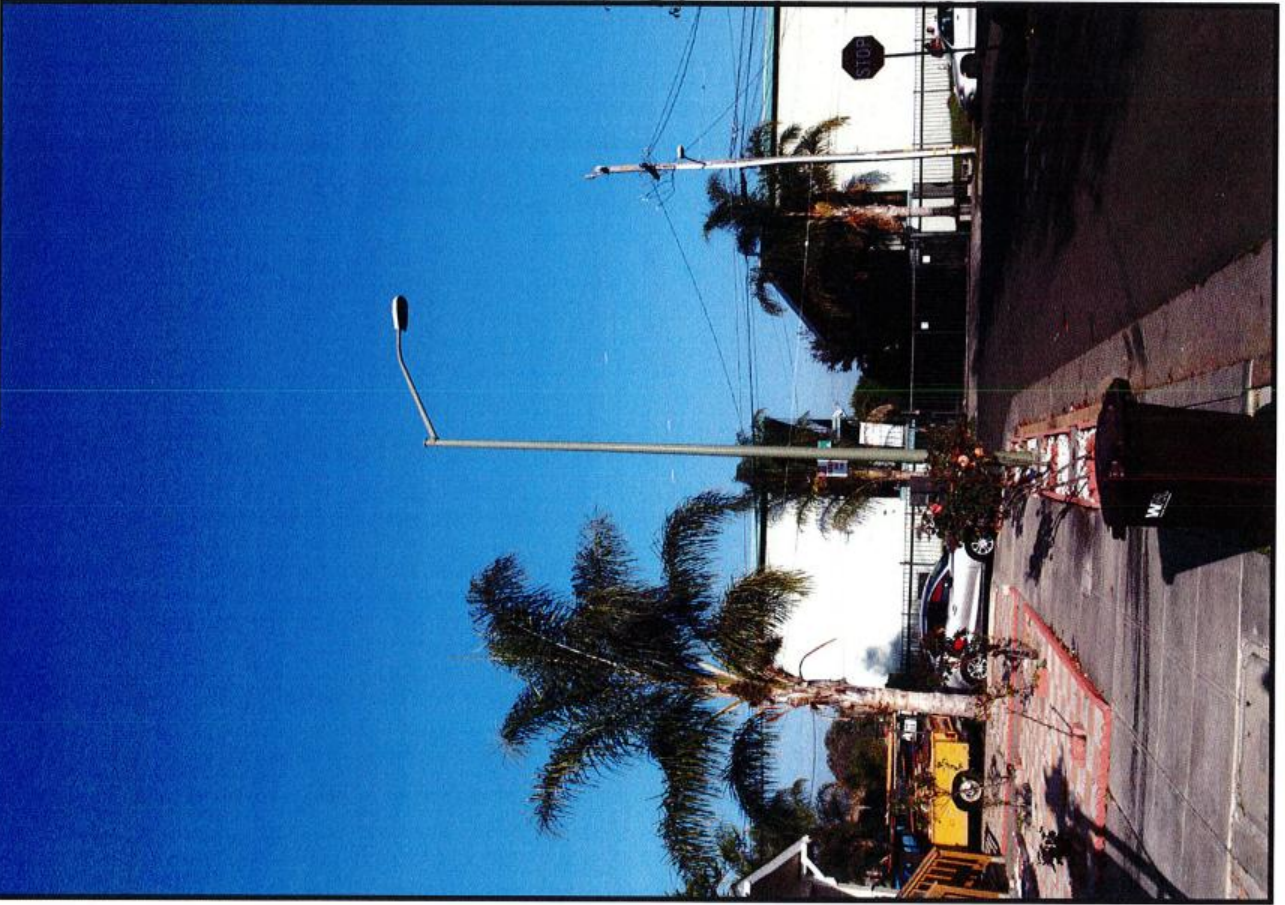
For non-compliant sites, Occupational Safety and Health Administration (OSHA) set recommendations to make the sites compliant. The document can be found in the link: https://www.osha.gov/dte/library/radiation/nir_stds_20021011/nir_stds_20021011.ppt

Appendix B

Glossary of Terms

1. *Electromagnetic Field (energy density)* – the electromagnetic energy contained in an infinitesimal volume divided by that volume.
2. *Exposure* – Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.
3. *General Population / Uncontrolled Exposure* – applies to human exposure to RF fields when the general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.
4. *Maximum Permissible Exposure (MPE)* – the rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.
5. *Occupational / Controlled Exposure* – applies to human exposure to RF fields when persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/controlled limits.
6. *Power Density (S)* – Power per unit area normal to the direction of propagation, usually expressed in units of watts per square meter (W/m^2) or, for convenience, units such as milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W/cm}^2$).

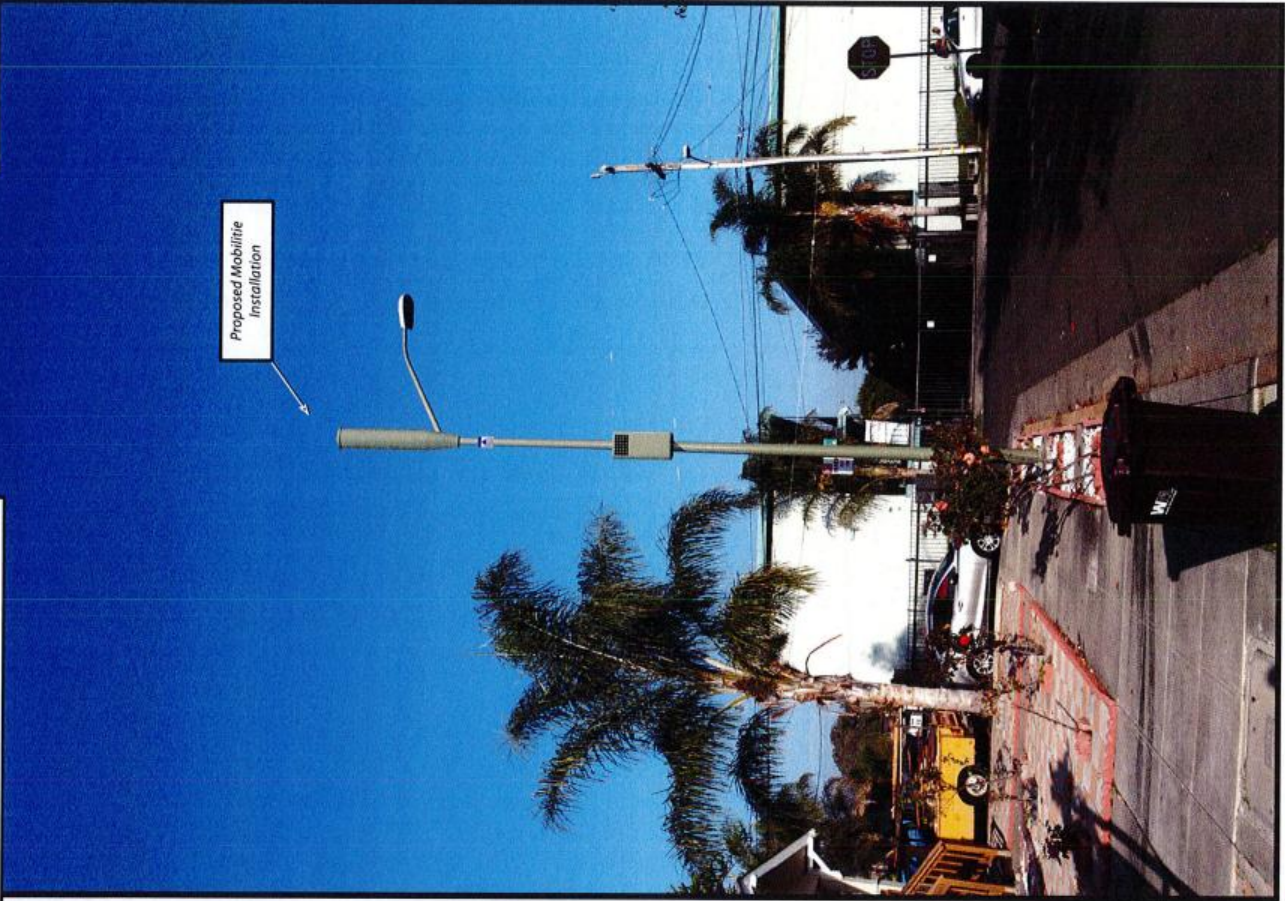
Existing



mobilitie
intelligent infrastructure

view from 94th Avenue looking northeast at site
9CAB013755/SF90XS2G3A
94th Avenue & E Street, Oakland, CA
Photosims Produced on 6-23-2017

Proposed



Proposed Mobilitie
Installation

view from 94th Avenue looking west at site





Sent from my iPhone

On Jul 11, 2018, at 1:12 PM, James Singleton <jsingleton@mobilitie.com> wrote:

FYI

James Singleton | Sr. Permitting Manager

[cid:image001.png@01D0FC3A.CCA80310]JSingleton@mobilitie.com

San Francisco, CA

650-814-0564 mobile

www.mobilitie.com<<http://www.mobilitie.com>>

FOLLOW US ON [cid:image003.jpg@01D1E7DE.1A89CED0]

<<https://www.linkedin.com/company/mobilitie/>> [cid:image005.jpg@01D1E7DE.1A89CED0]

<<https://twitter.com/mobilitie>>

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ATTACHMENT E

Site # 3: Case no. PLN18093

569 High Street @ Howard Street



intelligent infrastructure

SITE ID/CASCADE ID-CANDIDATE LETTER:

9CAB013427/SF90XS0Y5C

LATITUDE/LONGITUDE:

37.767900/-122.222322

CROSS STREET:

HOWARD ST & ALAMEDA AVE

CITY, STATE, ZIP:

OAKLAND, CA 94601

(E) 28'-6" GALVANIZED STEEL LIGHT POLE



GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A WARNING SIGN SHALL BE PLACED AT THE SITE. THE USER SHALL MAINTAIN THE PROJECT AND SHALL BE RESPONSIBLE FOR ANY DISTURBANCE OF EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SEWAGE IS IN.

SITE INFORMATION

SITE ID:	9CAB013427
CASCADE ID:	SF90XS0Y5C
LATITUDE:	37.767900
LONGITUDE:	-122.222322
CROSS STREET:	HOWARD ST & ALAMEDA AVE
CITY, STATE, ZIP:	OAKLAND, CA 94601
COUNTY:	ALAMEDA
JURISDICTION:	CITY OF OAKLAND
PROPERTY OWNER:	PUBLIC RIGHT-OF-WAY
APPLICANT:	MOBILITE LLC 2065 REDHILL AVENUE, STE. 200 COSTA MESA, CA 92626 CONTACT: JAMES SINGLETON PHONE: (909) 814-0884 EMAIL: JSINGLETON@MOBILITE.COM

ENGINEER

LS ENGINEERING, INC.
JACOB S. PROCTOR, P.E.
VECTOR STRUCTURAL ENGINEERS
544 CALLE ANAHEIM, STE. E
SAN CLEMENTE, CA 92673
CARLOS GONZALEZ
DRAFTER, UTM 84020
(949) 218-8724
(909) 990-1775

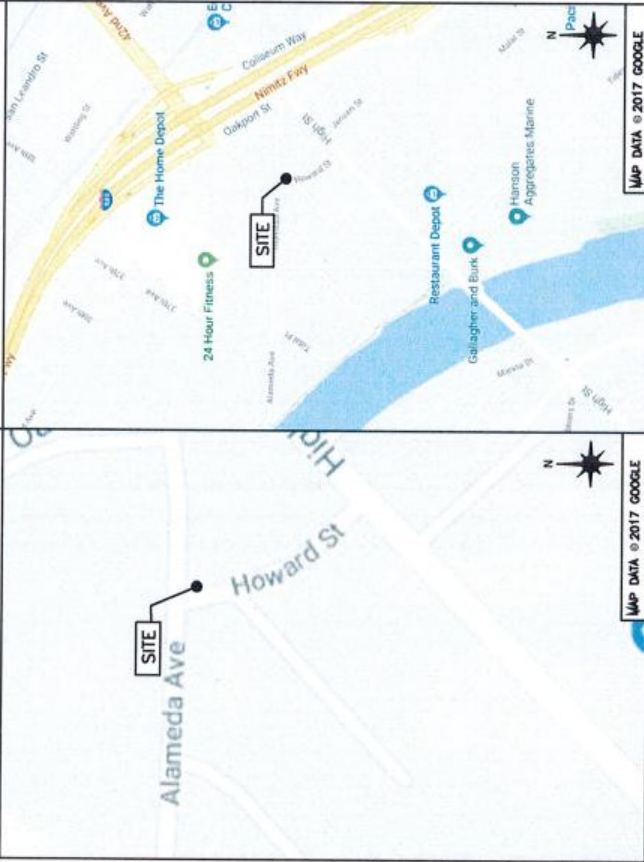
DO NOT SCALE DRAWINGS

CONTRACTORS SHALL VERIFY ALL PLANS, ELEVATIONS, & FIELD CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

LOCATION MAP

VICINITY MAP

REGIONAL MAP



PROJECT DESCRIPTION

END USER PROPOSES TO INSTALL EQUIPMENT ON AN (E) STEEL LIGHT POLE. THE SCOPE WILL CONSIST OF THE FOLLOWING:
- INSTALL PROPOSED BACKHAUL TRANSPORT EQUIPMENT ON AN (E) STEEL LIGHT POLE

CODES

2016 CALIFORNIA BUILDING CODE (2016 BC)
2017 NATIONAL ELECTRICAL CODE
TIA/EIA-222-C-2 OR LATEST EDITION
LOCAL BUILDING/PLANNING CODE

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
SP-1	EXHIBIT PHOTO & SITE PLAN
SP-2	OVERALL SITE PLAN
EY-1	POLE ELEVATIONS
EY-2	POLE ELEVATIONS
PL-1	PLUMBING & ROOF DIAGRAM
EQ-1	EQUIPMENT DETAILS
EQ-2	EQUIPMENT DETAILS
E-1	ELECTRICAL DETAILS
E-2	ELECTRICAL PLAN
G-1	GROUNDING DETAILS
TC-1	VEHICULAR TRAFFIC CONTROL PLAN
TC-2	PEDESTRIAN/WORKER SAFETY PLAN
GN-1	GENERAL NOTES
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES



LS ENGINEERING, INC.



544 CALLE ANAHEIM, STE. E
SAN CLEMENTE, CA 92673
CARLOS GONZALEZ
DRAFTER, UTM 84020
PHONE: (949) 218-8724

MOBILITE ID: 9CAB013427
DRAWN BY: JH
CHECKED BY: CG

DATE: 06/07/16

VECTOR PROJECT # 12314-056-121
REGISTERED PROFESSIONAL ENGINEER
JACOB S. PROCTOR
C70567
STATE OF CALIFORNIA
CIVIL
MOBILITE ID: 9CAB013427
DATE: 06/07/16



SF90XS0Y5C
9CAB013427
OAKLAND, CA 94601
(E) 28'-6" STEEL LIGHT POLE

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

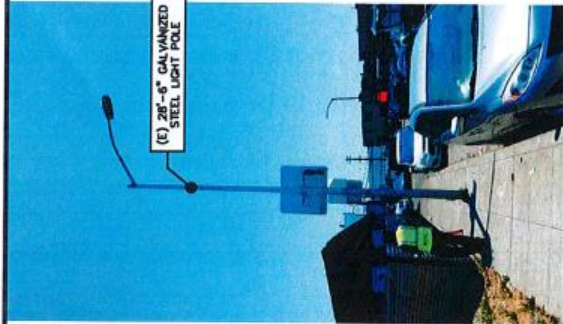


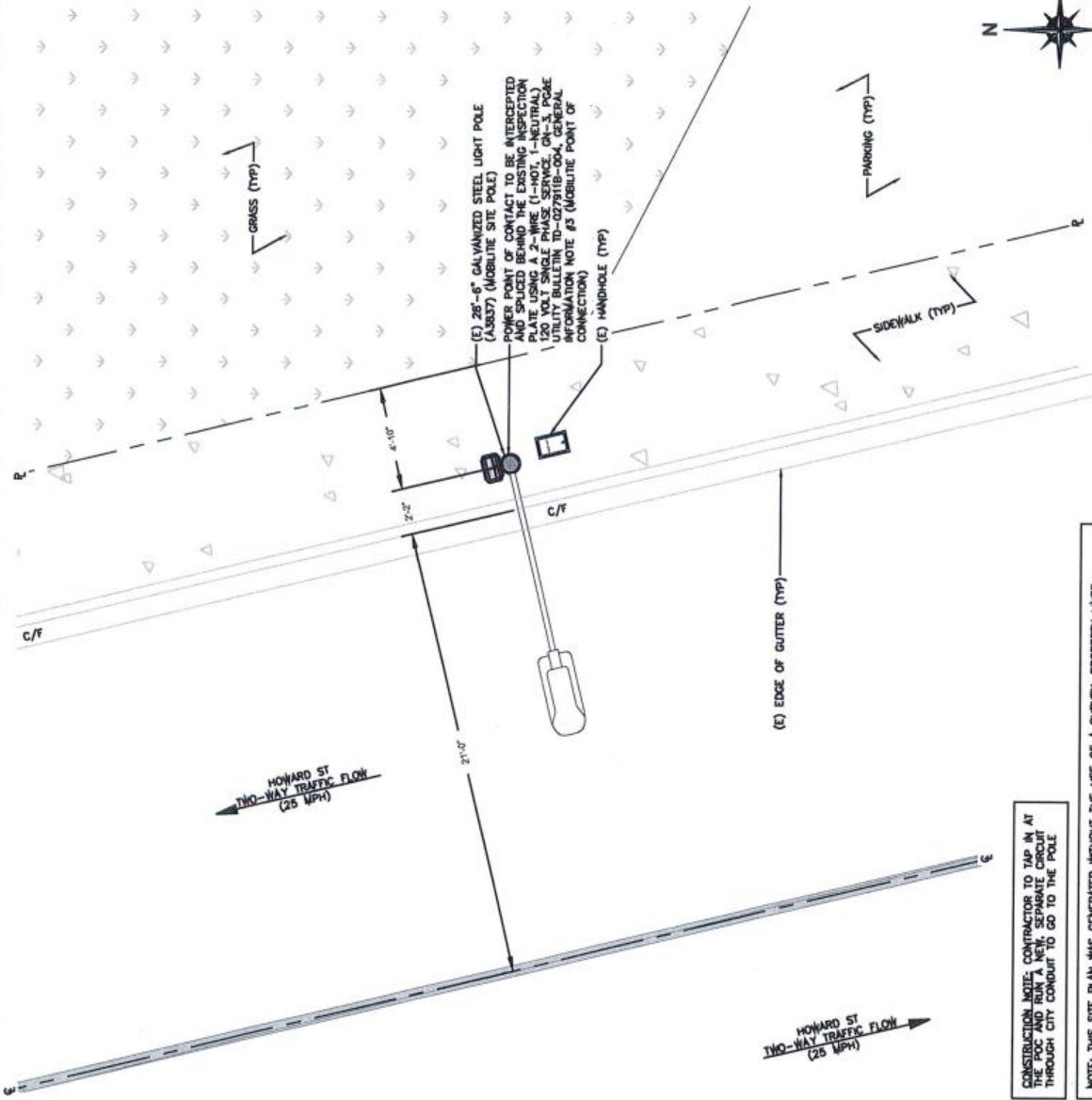
EXHIBIT PHOTO

SCALE: NOT TO SCALE



AERIAL SITE LOCATION

SCALE: NOT TO SCALE



ENLARGED SITE PLAN

SCALE: 3/16" = 1'-0" (3/8" = 1'-0" ON 22"x34" SHEET)

mobile
infrastructure

2865 RED HILL AVE, SUITE 200
COSTA MESA, CA 92626

LS ENGINEERING INC.

300 CALIFORNIA STREET
SAN FRANCISCO, CA 94104
WWW.LES-ENGINEERING.COM
PHONE: (415) 398-1234

MOBILE ID: SCAB013427
DRAWN BY: HSI
CHECKED BY: CS

VECTOR PROJECT # 102314 056-181

REGISTERED PROFESSIONAL ENGINEER
JACOB S. PROCTOR
C70567
STATE OF CALIFORNIA
CIVIL

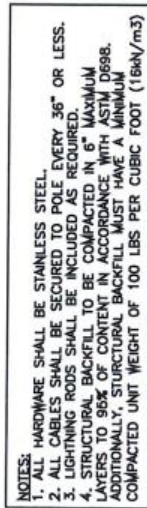
SF90X50V5C
SCAB013427
OAKLAND, CA 94601
(E) 28'-6" STEEL LIGHT POLE

SHEET TITLE
EXHIBIT PHOTO & SITE PLAN

SHEET NUMBER
SP-1



NOTE: THIS SITE PLAN WAS GENERATED WITHOUT THE USE OF A SURVEY. PROPERTY LINES, RIGHT-OF-WAYS, POWER & TELCO UTILITY POINT CONNECTIONS/ROUTES AND EASEMENTS SHOWN ON THESE PLANS ARE ESTIMATED. ALL FEET AND DIMENSIONS SHOULD BE VERIFIED IN THE FIELD.





NOTES:
1. ALL HARDWARE SHALL BE STAINLESS STEEL.
2. ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS.
3. UNIFORM RODS SHALL BE INCLUDED AS REQUIRED.
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D598. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 LBS PER CUBIC FOOT (16kN/m³)

SCALE: 1" = 5'-0" (1" = 2'-6" ON 22" x 34" SHEET)

NOTE: CABLE ROUTING IS FOR CLARITY OF CABLE ROUTE AND TERMINATION ONLY. CONTRACTOR SHALL INSTALL CABLES WITH MINIMAL VISUAL IMPACT ON (E) STEEL POLE. SEE ELEVATION DRAWINGS FOR EQUIPMENT AND ANTENNA LOCATIONS.

NOTE: REFER TO STRUCTURAL ANALYSIS REPORT (SEPARATE DOCUMENT) FOR ADDITIONAL STRUCTURAL INFORMATION.

CABLEING NOTES:

A) WOOD, CONCRETE AND EXISTING METALLIC POLES: ALL CABLES/CONDUCTORS EXCEPT GROUNDING CONDUCTOR MUST RUN IN RIGID GALVANIZED STEEL CONDUIT (RSC).

B) NEW METALLIC POLES:

(1) FROM GRADE LINE TO 11'-0" ABOVE GRADE, ALL CABLES/CONDUCTORS EXCEPT GROUNDING CONDUCTOR MUST RUN IN RIGID GALVANIZED STEEL CONDUIT (RSC).

(2) INSIDE THE UTILITY POLE RISER, UTILIZE 3/4" COAX BLOCS WITH LAG BOLTS TO SECURE COAX CABLES TO THE POLE. COAX CABLES MUST BE INSTALLED WITHIN 12" OF THE EQUIPMENT BEING SERVED AND ON INTERVALS NOT TO EXCEED 6".

(3) FOR UNDERGROUND RSC/PUBLIC BACHAUL, ROUTE COAX CABLES TO THE UTILITY POLE RISER AND ENTER THE UTILITY POLE RISER SEAL EXPOSED END OF CONDUIT WITH A CABLE TERMINATION FITTING.

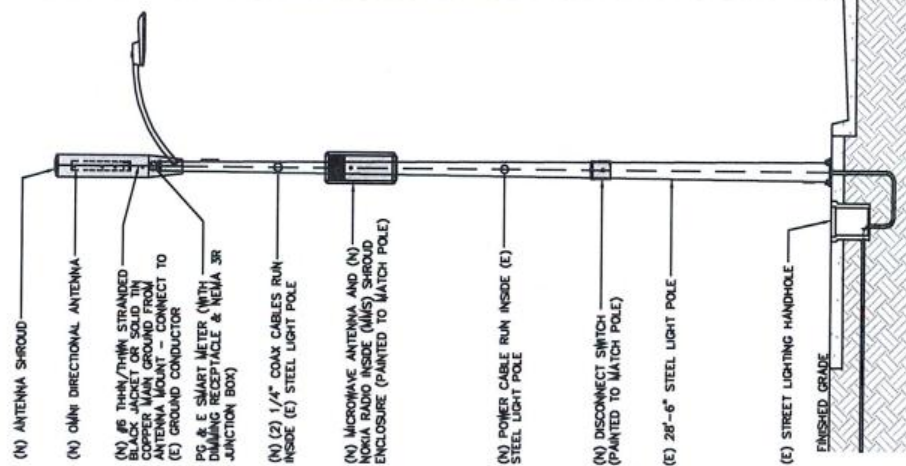
(4) FOR AIR-TERMINAL SELECT CASES (LUT-4), COAX CABLES MUST BE USED IN LENGTHS NOT TO EXCEED 36" TO EXTEND THE ELECTRICAL SERVICE CONDUIT TO THE AC DISTRIBUTION BOX. ALL UTILITY-REQUIRED DISCONNECT ON POLE 3/4" AC DISTRIBUTION BOX ON OPPOSITE SIDE OF POLE.

(5) NEW METALLIC POLES:

(1) PROCURE NEW POLES WITH SUITABLE HAND HOLES AND HOLES EXIST AT ALL EQUIPMENT LOCATIONS.

(2) WITH CLIENT APPROVAL IN SELECT CASES TO FACILITATE APPROVED "SUPERFLEX" IN LIEU OF LUT-4.

(3) WHERE POSSIBLE, INSTALL POLE BASE SUCH THAT THE ELECTRICAL SERVICE CONDUIT (IF UNDERGROUND) CIRCUIT ENTER THE POLE MEANS SEPARATE FROM THE AC DISTRIBUTION BOX AS REQUIRED BY JURISDICTION OR UTILITY. FLEXIBLE METALLIC CONDUIT (LUT-4) MAY BE USED IN LENGTHS NOT TO EXCEED 36" TO EXTEND THE ELECTRICAL SERVICE CONDUIT TO THE AC DISTRIBUTION BOX.

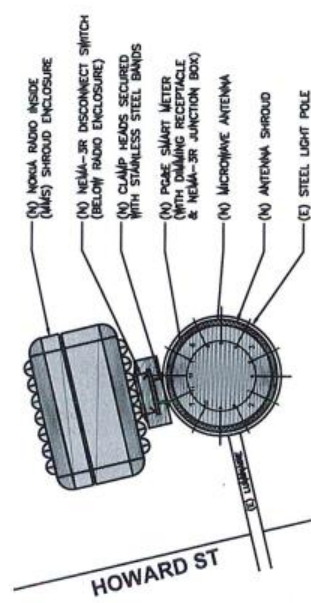


TYPICAL PLUMBING DIAGRAM
SCALE: NOT TO SCALE

QTY	DESCRIPTION	MANUFACTURER	MODEL NUMBER	DIMENSIONS (HxWxD)	WEIGHT
1	ANTENNA SHROUD	ALPHA WIRELESS	ORION-1400	29.5" x 4.7"	7 LBS
1	(MMS) SHROUD ENCLOSURE	ELITEK	MMS SHROUD	29.5" x 4.7"	80 LBS
1	MICROWAVE ANTENNA	FASTBACK	IBR-1500	10.23" x 2.87" x 3.5"	13.5 LBS
3	FANS (2 SMALL; 1 LARGE)	NOKIA	B41 FTHR HIGH POWER	7.7" x 12.0" x 6.5"	24.84 LBS
1	SMART METER	TBD	M241480	2.67" x 4.5"	2.78 LBS
1	RECEPTACLE	POE	698-85533	4.63" x 2.68" x 2.17"	0.60 LBS
1	NEMA-3P-3R DISCONNECT	ALLEN BRADLEY	997D-VAR	9.9" x 8.8" x 4.5"	5 LBS
1	GPS ANTENNA	PCTEL	3897D-VAR	.53" x 1.7"	.57 LBS
1	TOTAL WEIGHT				141.57 LBS

ANTENNA AZIMUTH: N/A
MICROWAVE AZIMUTH: 8

BILL OF MATERIALS
SCALE: NOT TO SCALE



RISER ORIENTATION DIAGRAM
SCALE: NOT TO SCALE



PROJECT ID: SCAB013427
DRAWN BY: N/A
CHECKED BY: CDS
DATE: 06/07/16

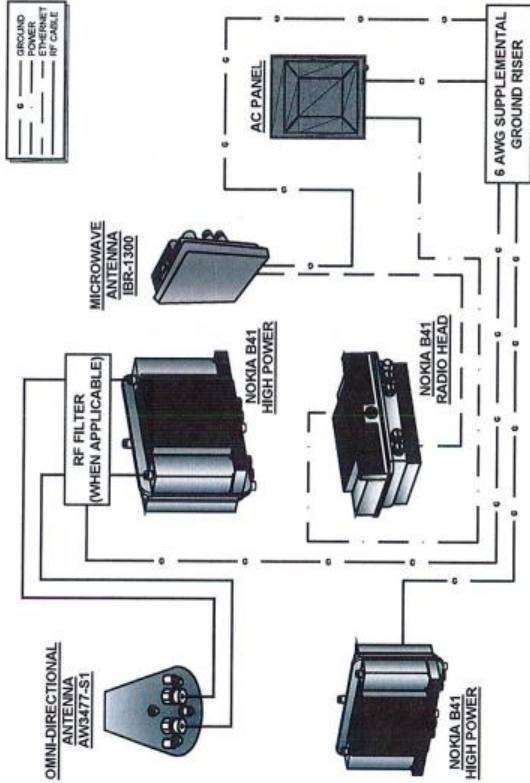


SF90X50V5C
SCAB013427
OAKLAND, CA 94601
(E) 28'-6" STEEL LIGHT POLE

SHEET TITLE
PLUMBING &
RISER DIAGRAM
SHEET NUMBER
PL-1



NOKIA MM RADIO W/ UE RELAY



WIRING DIAGRAM

SCALE: NOT TO SCALE

NOTES:

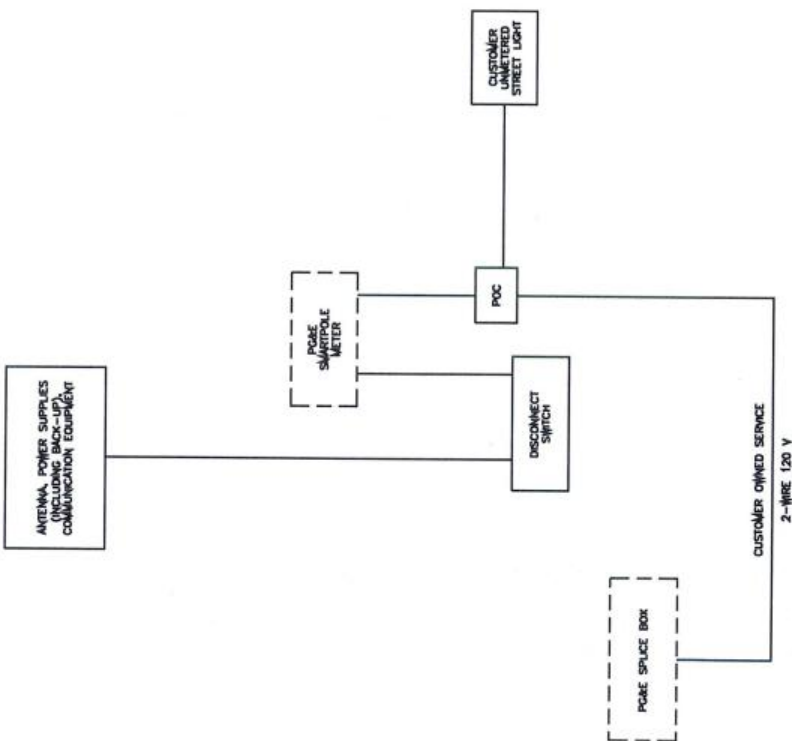
1. NOMINAL POWER IS CALCULATED AS 80% OF OEM DOCUMENTED MAXIMUM POWER
2. CALCULATIONS FOR UE W/ NOKIA DO NOT INCLUDE THE POWER FOR THE UE ANTENNA AS IT IS INCLUDED IN THE MAX POWER FIGURE. CALCULATIONS FOR UE W/ AIRSPAN MUST INCLUDE UE AS IT IS NOT INCLUDED
3. MAX IS CALCULATED FROM THE CONSUMPTION VALUE ASSUMING A PF=1. MAXIMUM POWER WAS USED FOR RAL WHERE MAXIMUM POWER WAS CALCULATED BY INCREASING AVERAGE/NOMINAL POWER BY A FACTOR OF 50%
4. COST PER KW PROVIDED BY BRIAN KODMAN

NOKIA SCENARIO 3 B41 HIGH POWER RADIO AND UE BUCKHORN

UNIT	SUB DESCRIPTION	MAX POWER (W)	AVERAGE POWER (W)	CONSUMPTION (W)	1400 POC	1400 POC	1400 POC	1400 POC
FWHR	B41 HIGH	360	288	N/A	0.35	2622.86	\$276.51	\$13.04
MICROWAVE ANTENNA	IBR-1300	N/A	N/A	N/A	0	0	N/A	N/A
TOTAL		360	288	N/A	0.35	2622.86	\$276.51	\$13.04

LOAD CALCULATIONS

SCALE: NOT TO SCALE



ONE-LINE DIAGRAM

SCALE: NOT TO SCALE



544 CALLE AMANNEDER, STE E
SAN CLEMENTE, CA 95073
WWW.LEAF-CO-LLC.COM
PHONE: (949) 399-0187

MOBILITY ID:	9CAB013427
DRAWN BY:	KCH
CHECKED BY:	CG

FLYING 201	EN/EN/90	Y
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IT IS A WARNING OF THE LIE FOR ANY PERSON, WHETHER THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR NOT, WHO DOES NOT:

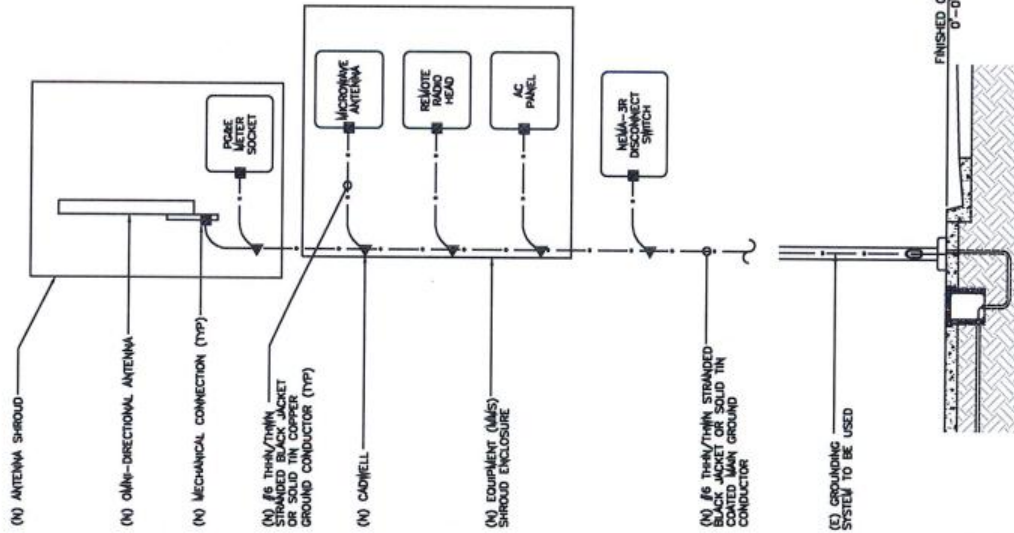
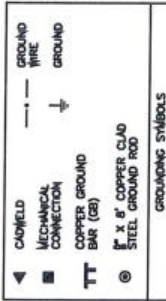
SF90X50Y5C
9CAB013427
OAKLAND, CA 94601
(E) 28'-6" STEEL LIGHT POLE

SHEET TWO

GROUNDING DETAILS

SHEET NUMBER

G-1



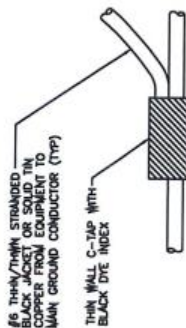
NOTE:

1. ALL RGS TO BE GROUNDED AT BOTH ENDS USING GROUNING BUSHINGS.
2. GROUND WIRE TO BE RUN IN 1" SCHEDULE 40 PVC.
3. GROUNING RISER FOR DIAGNOSTIC PURPOSES ONLY. SEE ELEVATION DRAWING FOR EQUIPMENT AND ANTENNA LOCATIONS.

GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

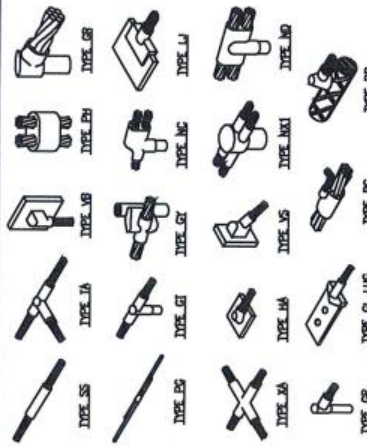
5



NOTE:
CONTRACTOR TO SURROUND COMPLETED CONNECTION WITH HEAT-SHRINK TUBING TO ENSURE WEATHER PROOF CONNECTION

C-TAP DETAIL

SCALE: NOT TO SCALE



GROUNDING BONDS: ALL BONDS ARE TO BE MADE WITH #2 AWG STRANGED COPPER IN GREEN INSULATION (ATT-TP-76416 7, 6.7)

EXTERIOR UNIT BONDS: ALL METALLIC OBJECTS SHALL BE BONDED TO THE GROUND ROD (A17-TP-76416 7, 12.6)

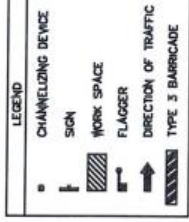
GROUND RODS: UL LISTED COPPER CLAD STEEL GROUND ROD WITH MINIMUM DIAMETER OF 1/2" AND MINIMUM LENGTH OF 8'. ALL GROUND RODS MAY BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO A MINIMUM OF DEPTH OF 30" BELOW GRADE OR 6' BELOW FROST LINE. (ATT-TP-76416 1.4 / 2/2, 3, 10)

WELD CONNECTION DETAILS

SCALE: NOT TO SCALE



1. "ROAD WORK AHEAD" AND THE "BE PREPARED TO STOP" SIGNS MAY BE OMITTED IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
 - A. SPEED LIMIT IS 45 MPH OR LESS
 - B. SPEED LIMIT IS 45 MPH OR LESS
 - C. NO SIGHT OBSTRUCTIONS TO VEHICLES APPROACHING THE WORK AREA FOR A DISTANCE EQUAL TO THE BUFFER SPACE VEHICLES IN THE WORK AREA HAVE HIGH-INTENSITY, ROTATING, FLASHING, OR FLUORESCENT STROBE LIGHTS OPERATING
 - D. ROADWAY HAS BEEN CONSIDERED



DURATION NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (MUTCD) 2016 EDITION.
2. ALL SIGNS AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA STANDARD PLANS AND SPECIFICATIONS, INCLUDING STANDARD PLAN A-20, DETAILS.
3. THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
4. FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS, ON ALL TYPE III BARRICADES GUARDING THE WORK AREA OVERNIGHT.
5. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
6. ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED UPRIGHT IN THE INDICATED POSITION AT ALL TIMES. DELINEATORS SHALL BE PLACED IN SUCH A MANNER AS TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE, IF USED DURING NIGHT-TIME HOURS.
7. THE CONTRACTOR SHALL MAINTAIN ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL HAVE ALL SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
9. THE CONTRACTOR SHALL CONDUCT SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ADJUTING PROPERTY OWNERS.
10. ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS, OR BARRICADES MAY BE REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL ADDITIONAL TRAFFIC CONTROLS TO ASSURE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
11. EXACT LOCATION AND TYPE OF ALL TRAFFIC CONTROLS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
12. WORKER BEACONS SHALL BE USED TO MARK WORK AREAS DURING NON-WORKING HOURS. REMOVE BARRICADES ETC. FROM TRAFFIC LANE.
13. REMOVE OR TURN OFF SIGNS DURING NON-WORK HOURS.
14. ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKING SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO THE CONSTRUCTION OF NEW MARKING. ALL CONFLICTING EXISTING PAVEMENT MARKERS SHALL BE REPAIRED OR REPAVED. THE REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.

GENERAL NOTES

TEMPORARY TRAFFIC CONTROL PLAN DIMENSION GUIDELINES

Device	Length	Width	Height	Weight	Material
Channelizing Device	48"	24"	36"	150 lbs	Plastic
Sign	48"	24"	36"	150 lbs	Aluminum
Work Space	48"	24"	36"	150 lbs	Plastic
Flagger	48"	24"	36"	150 lbs	Plastic
Direction of Traffic	48"	24"	36"	150 lbs	Plastic
Type 3 Barricade	48"	24"	36"	150 lbs	Plastic

DIMENSION GUIDELINE

VEHICULAR TRAFFIC CONTROL PLAN

SCALE: NOT TO SCALE

mobile
Infrastructure
2565 RED HILL AVE, SUITE 200
COSTA MESA, CA 92626

LS ENGINEERING INC.
340 CALLE MANABEEN, STE E
WALLEN COLLEGE
PHONE: (415) 384-0182

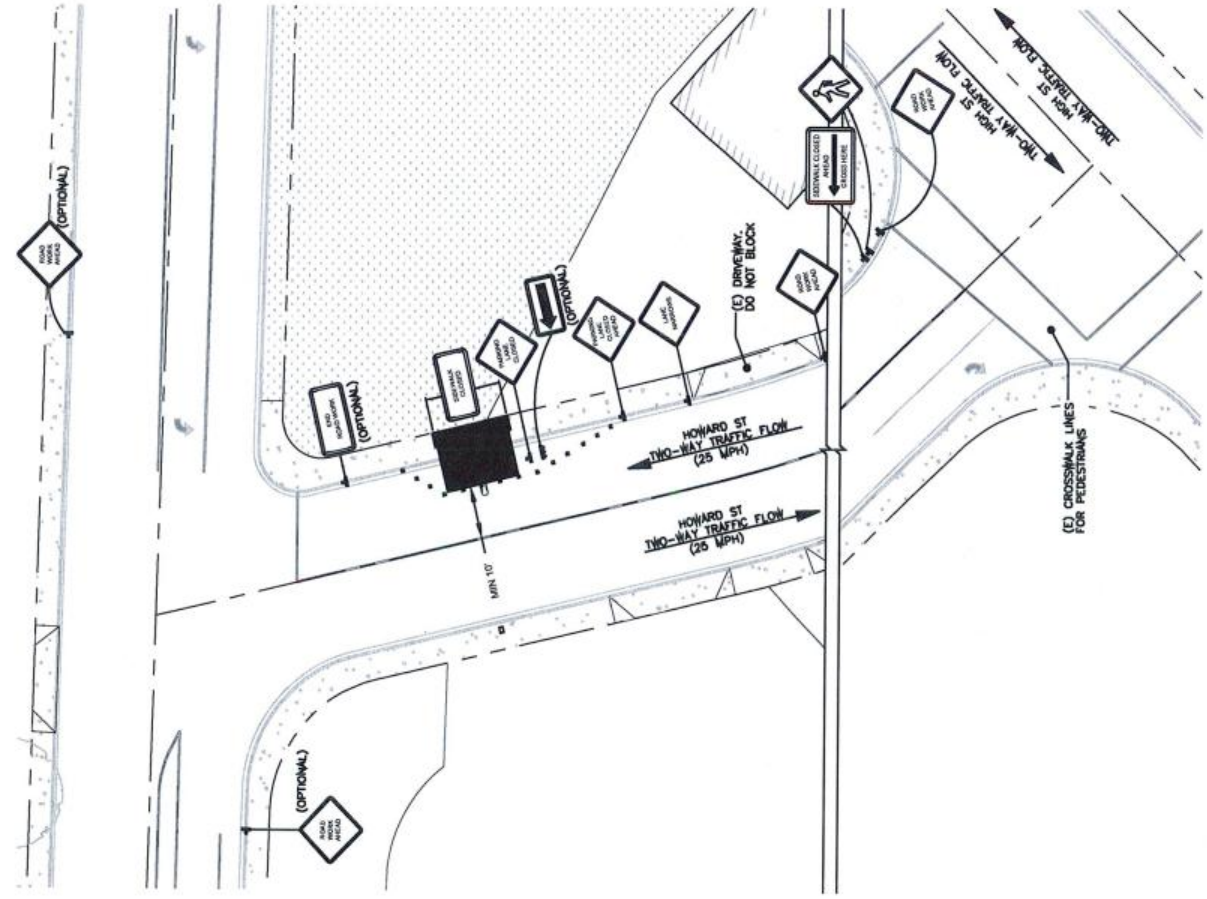
MOBILITE ID: 9048713427
DRAWN BY: RH
CHECKED BY: CS
DATE: 1/9/2018

VECTOR PROJECT R-12314-056-181
REGISTERED PROFESSIONAL ENGINEER
JACOB S. PROCTOR
C70567
STATE OF CALIFORNIA
CIVIL
IT IS A CONDITION OF THIS LICENSE THAT THE ENGINEER BE A MEMBER OF A PROFESSIONAL SOCIETY OF ENGINEERS, TO WHOM THIS LICENSE IS ISSUED.

SF90X50VSC
9048713427
OAKLAND, CA 94611
(E) 28'-0" STEEL LIGHT POLE

SHEET TITLE
VEHICULAR TRAFFIC CONTROL PLAN

SHEET NUMBER
TC-1



TRAFFIC CONTROL GENERAL NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL, SIGNALAGE, LAYOUTS AND PROCEDURES SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, WHICHEVER IS MORE STRINGENT.
2. PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
3. TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
4. SELECTION, PLACEMENT, MAINTENANCE, AND PROTECTION OF TRAFFIC, PEDESTRIANS, AND WORKERS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) - PART VI TEMPORARY TRAFFIC CONTROL, AND LOCAL JURISDICTIONAL REQUIREMENTS. ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED AND SPECIFICATIONS, AND SHALL BE APPROVED BY THE APPROPRIATE HIGHWAY AUTHORITY HAVING JURISDICTION.
5. ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED TO ADJUST FOR REDUCED VISIBILITY DUE TO ADVERSE WEATHER AND VERTICAL CURVATURE OF THE ROADWAY AND FOR ACTUAL TRAFFIC SPEEDS IF IN EXCESS OF POSTED SPEED LIMITS.
6. TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.
7. CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON THE (E) TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
8. ALL (E) ROAD SIGNS, PAVEMENT MARKINGS AND/OR FLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE (M) TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED, OR RELOCATED. ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO MATCH PRE-CONSTRUCTION CONDITION AFTER COMPLETION OF WORK.
9. CONTRACTOR SHALL CONTACT LOCAL AUTHORITY HAVING HIGHWAY JURISDICTION AND PROVIDE ADDITIONAL "FLAGMEN" OR POLICE SUPERVISION, IF REQUIRED.
10. ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON A MINIMUM 8% 1 V SLOPE PRIOR TO END OF EACH WORK DAY. OTHER EXCAVATED AREAS WITHIN THE PROJECT ZONE SHALL BE BACKFILLED OR SET PRECAST CONCRETE CURB BARRIERS TO BE REMOVED TEMPORARILY IN PLACE TO SHIELD VEHICULAR AND PEDESTRIAN TRAFFIC.
11. WHERE DICTATED BY LOCAL CONDITIONS, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN AND WORKER CROSSING LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND OSHA REQUIREMENTS.
12. CONSTRUCTION ZONE SPEED LIMIT IF REDUCED FROM POSTED LIMITS SHALL BE IN ACCORDANCE WITH MUTCD AND SHALL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
13. THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD SPACE.
14. DRIVEWAYS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE 160-1 SIGN (ROAD AHEAD) AS A WARNING.
15. CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION PROVIDED THEY COMPLY WITH MUTCD.
16. THE SPACING BETWEEN CONES, TUBULAR MARKERS, VERTICAL PANELS, DRUMS, AND BARRICADES SHOULD NOT EXCEED A DISTANCE IN FEET TO 1.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TANGENT CHANNELIZATION.
17. WHEN CHANNELIZATION DEVICES HAVE THE POTENTIAL OF LEADING VEHICULAR TRAFFIC OUT OF THE INTENDED VEHICULAR TRAFFIC SPACE, THE CHANNELIZATION DEVICES SHOULD BE EXTENDED A DISTANCE IN FEET OF 2.0 TIMES THE SPEED LIMIT IN MPH BEYOND THE DOWNSTREAM END OF THE TRANSITION AREA.
18. TAPER LENGTHS ARE CALCULATED AS FOLLOWS:
 $L = W \cdot S^2 / 60$ (40 MPH AND HIGHER) OR $L = W \cdot S^2 / 40$ (MPH),
 WHERE W=OFFSET WIDTH (FT), S=TRAFFIC SPEED (MPH).



MOBILETTE ID:	90ABP1427
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DATE:	10/27/18
TIME:	10:00 AM



SF90X5075C
 9CAB013427
 OAKLAND, CA 94601
 (E) 28'-6" STEEL LIGHT POLE

SHEET TITLE
 PEDESTRIAN/WORKER
 SAFETY PLAN

SHEET NUMBER
 TC-2

PEDESTRIAN/WORKER SAFETY PLAN

SCALE: NOT TO SCALE

1. ANY FILLS PLACED ON (E) SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.

B. CANNELLED, EXOTHERMIC WELDS (WELDED CONNECTIONS).
C. ONE (1) HOLE THINWALL COPPER COMPRESSION (LONG BARREL) FITTINGS.

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Alternative Site Analysis

Proposed Small Cell Wireless Facility

Applicant: Mobilitie, LLC

Site ID: 9CAB013427/SF90XS0Y5C

Nearest Site Address: Public Right of Way near 569 Howard St., Oakland, CA 94601

Latitude/Longitude: 37.7679, -122.222322

Mobilitie considered alternative sites on other street lights and utility poles in this area, but found them to not to be as desirable when taking into consideration coverage goals, constructability, geographic topography of the surrounding area, and potential visual impact in the surrounding area. The proposed location is desirable because of the limited obstructions in the area, allowing our antenna to effectively propagate a signal. Furthermore, the proposed location is the optimal solution for providing maximum coverage to the surrounding area identified. Additionally, by locating on an existing street light with equipment concealed, visual impact in the surrounding area is minimized.

Mobilitie is a privately held, CLEC (Competitive Local Exchange Carrier) regulated by the California Public Utilities Commission (CPUC) to provide telephone related services. By proposing this location on an existing street light in the public right of way, Mobilitie is proposing an appropriate co-location to existing infrastructure according to our rights under the CPUC.

The alternative locations that Mobilitie considered include, but are not limited to, the sites listed below:

Alternate 1 (37.768180, -122.222901) / At the intersection of Alameda and Howard Street: This wooden utility pole is located just west of our proposal. The existence of a power riser running up this pole precludes it from being used there because there is not enough usable space on the pole for our facility.

Alternate 2 (37.767388, -122.221555) / Near 572 High Street: This wooden utility pole is located approximately 280 ft. southwest of our proposal. The existence of a power riser running up this pole precludes it from being used there because there is not enough usable space on the pole for our facility.

Radio Frequency- Electromagnetic Energy-EME Measurements & Compliance Report

Site ID: 9CAB013427
Site Name: 9CAB013427
Market/Region: California
Address: HOWARD ST., S. OF ALAMEDA AVE.
OAKLAND, CA 94601
Latitude: 37.7679
Longitude: -122.222322
Site Type: Light Pole

Compliance Status:

Proposed equipment at the site is compliant with FCC guidelines for General Population environments

Prepared for:

Mobilitie, LLC
2220 University Drive,
Newport Beach, CA 92660

By
ATG LLC

Date:09/06/2017



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1 Executive Summary

Purpose of Report

ATG LLC's RF Engineering has conducted radio frequency electromagnetic energy (RF-EME) modeling for Mobilitie LLC's site 9CAB013427 located at HOWARD ST., S. OF ALAMEDA AVE. OAKLAND, CA to determine RF-EME exposure levels from the carrier's proposed wireless communications equipment.

The Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) limits for general public and occupational exposures to RF-EME. This report summarizes the results of RF-EME modeling in relation to relevant FCC compliance standards for limiting human exposure to RF-EME. The details of FCC defined exposure limits are provided in Appendix A of this report.

Analysis results included in this report are based on drawings dated June 14th, 2017.

Statement of Compliance

Predictive modeling conducted using the original equipment manufacturers (OEMs) specifications for radio and antenna performance along with the supplied construction drawings dated June 14th, 2017, indicate there will be no exposure due to the carrier's proposed equipment on accessible ground-level walking surface at this site that exceeds the FCC's general public exposure limits.

Proposed equipment at the site is compliant with FCC guidelines for general population environments.

2 Maximum Permissible Exposure (MPE) Modeling Results for Proposed Site

The predictive modeling was conducted using the RoofView 5.0 suite of analysis tools. The modeling was conducted with the antennas operating at 100% capacity, all antenna channels transmitting simultaneously and the radio transmitters operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels would be during normal operations. The modeling calculations were made for an area 40'x 40' area with the equipment at the center.

Table 1: Maximum Permissible Exposure- Summary

Location	% of FCC General Public/Uncontrolled Exposure Limit	% of FCC Occupational/Controlled Exposure Limit	Power Density (mW/cm ²)	Compliance Status
6ft above ground level	2.9	0.58	0.029	Compliant

3 Antenna Inventory

The Antenna Inventory shows all transmitting antennas on the site (see Table 2). This inventory was used by ATG to perform the software modeling of RF emissions. The inventory conforms with the submitted construction drawings which identifies the proposed mounting location of each antenna at the site. The exposure level is calculated for a person of height 6ft standing right below the devices at ground level.

Table 2: Antenna Inventory

Antenna ID	Carrier/Operator	Antenna Type	Frequency (MHz)	Technology	ERP (W)	Gain dBd	Mfg.	Model	Aperture (ft.)	Transmitter count	Horizontal BeamWidth (deg)	Z (6 ft. above Ground)
1	Mobilitie	Omni	2496	LTE	172.58	6.35	Alpha Wireless	AW3477-S	2.56	2	360	20.3
2	Mobilitie	LTE Relay BH	2496	LTE	1.93	9.85	Airspan	iR460	1.1	1	35	10.5

The table below details the operating power and Effective Radiated Power (ERP) for each carrier and frequency used in the modeling.

Frequency (MHz)	Power per Transmitter (Watts)	# of Transmitters	ERP (watts)
2496 (Omni)	20	2	172.58
2496 (UE Relay)	0.2	1	1.93

4 Modeling Summary and Assumptions

4.1 General Model Assumptions

The modeling was conducted using the antenna and radio maximum power values, while operating at full power with 100% duty cycle.

The site has been modeled with these assumptions to calculate the maximum RF energy density. ATG believes this to be a worst case analysis, based on data supplied by the OEMs and client. If actual power density measurements were made, ATG believes the real time measurements would indicate levels below those shown in the report.

5 Preparer Certification

I, Preparer, state that:

- I am an employee of ATG LLC that provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed 100s of RF-EME exposure studies and reports for various carriers.
- I am aware of the potential hazards from RF-EME exposures that would be classified "occupational" or "general public" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have reviewed all the data related to the site and incorporated it into this study and Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

Ahmed Saadallah

Ahmed Saadallah (RF Engineer)

Appendix A

Federal Communications Commission (FCC) Requirements

This appendix summarizes the policies, guidelines and requirements that were adopted by the FCC on August 1, 1996, amending Part 1 of Title 47 of the Code of Federal Regulations, and further amended by action of the Commission on August 25, 1997 (see 47 CFR Sections 1.1307(b), 1.1310, 2.1091 and 2.1093, as amended). Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA), as described in 47 CFR Section 1.1311, if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency (RF) electromagnetic fields in excess of these limits.

The potential hazard associated with the RF electromagnetic fields is discussed in OET Bulletin No. 65. This document can be obtained on the FCC website. (https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf)

As per FCC guidelines there are two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment and not be made fully aware of the potential for exposure or cannot exercise control over their exposure.

The FCC's MPE limits for field strength and power density are given in Table 1 (and in 47 CFR § 1.1310) Figure 1 is a graphical representation of the limits for plane-wave (far-field) equivalent power density versus frequency. The FCC's limits are generally applicable to all facilities, operations and transmitters regulated by the Commission, and compliance is expected with the appropriate guidelines. The power density limits vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

f = frequency in MHz *Plane-wave equivalent power density

Table 1

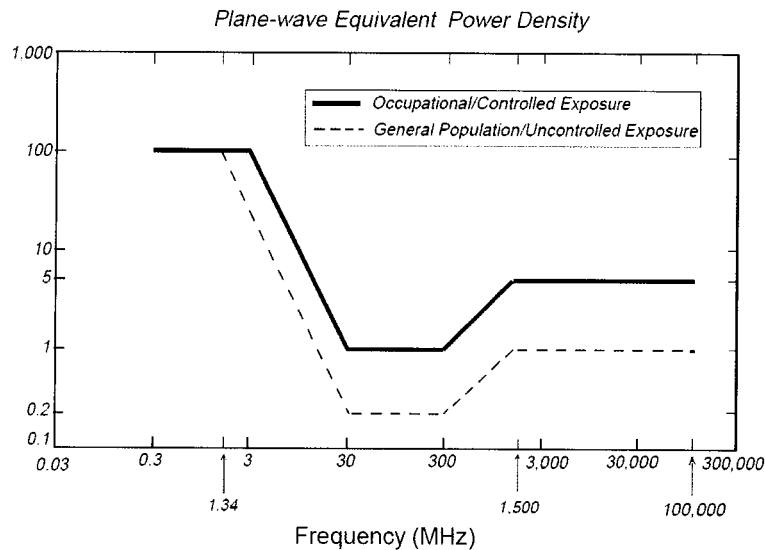


Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

FCC Compliance Requirement

In general, as specified in 47 C.F.R. 1.1307(b), as amended, when the FCC's guidelines are exceeded in an accessible area due to the emissions from multiple fixed transmitters the following policy applies. Actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitter's contribution to the RF environment at the non-complying area exceeds 5% of the exposure limit (that applies to their particular transmitter) in terms of power density or the square of the electric or magnetic field strength.

For non-compliant sites, Occupational Safety and Health Administration (OSHA) set recommendations to make the sites compliant. The document can be found in the link: https://www.osha.gov/dte/library/radiation/nir_stds_20021011/nir_stds_20021011.ppt

Appendix B

Glossary of Terms

1. *Electromagnetic Field (energy density)* – the electromagnetic energy contained in an infinitesimal volume divided by that volume.
2. *Exposure* – Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.
3. *General Population / Uncontrolled Exposure* – applies to human exposure to RF fields when the general public is exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.
4. *Maximum Permissible Exposure (MPE)* – the rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with an acceptable safety factor.
5. *Occupational / Controlled Exposure* – applies to human exposure to RF fields when persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/controlled limits.
6. *Power Density (S)* – Power per unit area normal to the direction of propagation, usually expressed in units of watts per square meter (W/m^2) or, for convenience, units such as milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W/cm}^2$).

RoofView Export File

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Existing

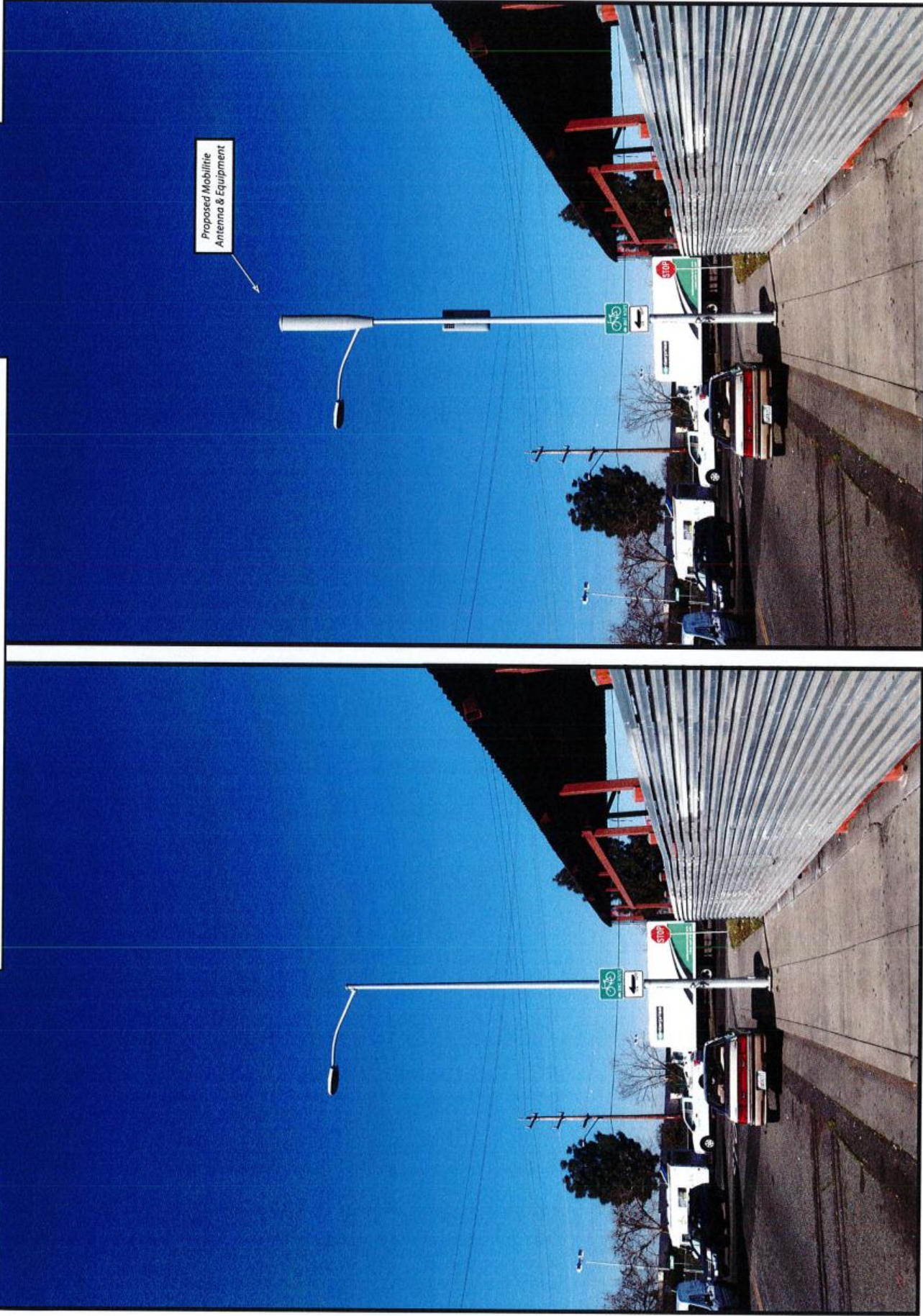


view from Howard Street looking north at site

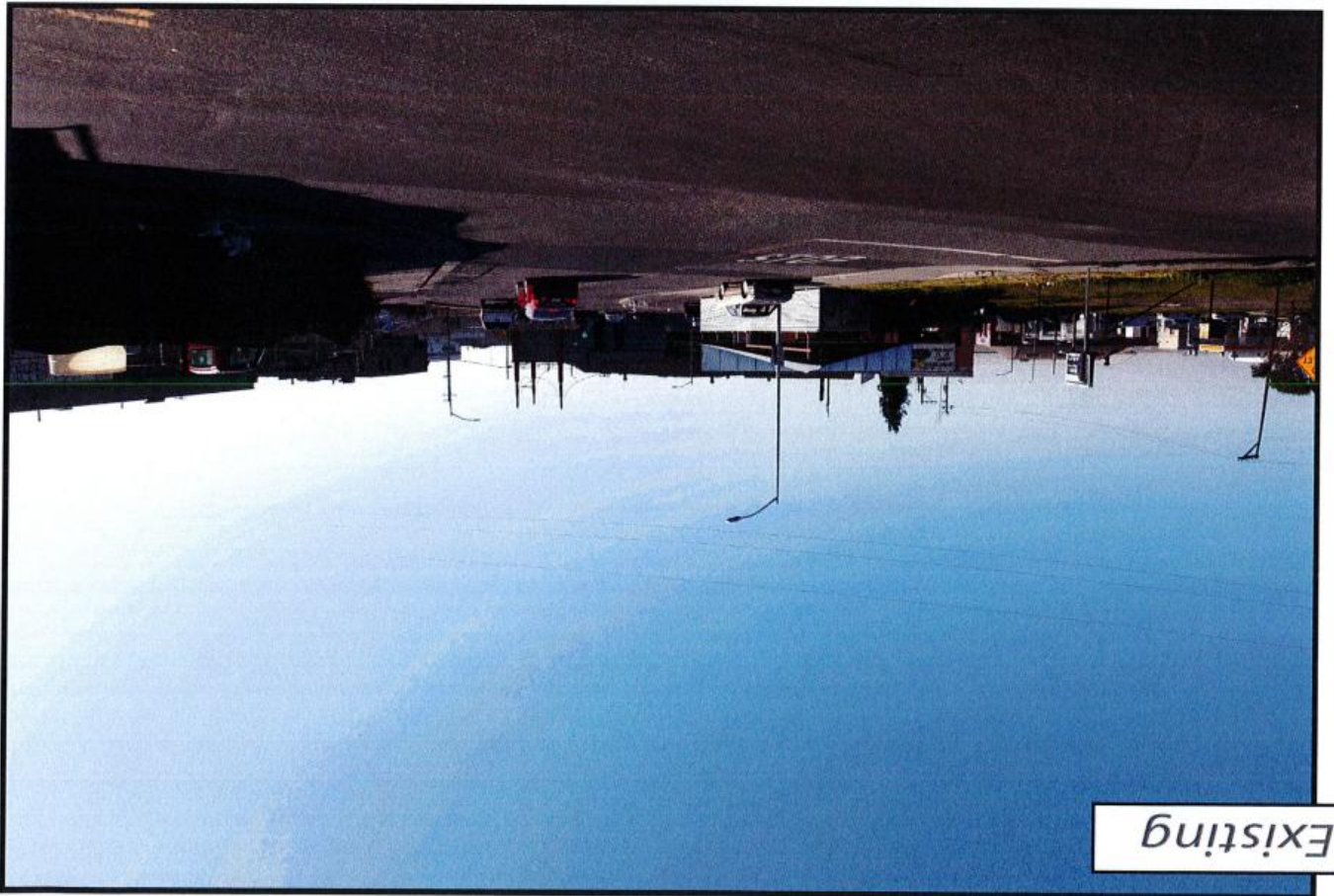
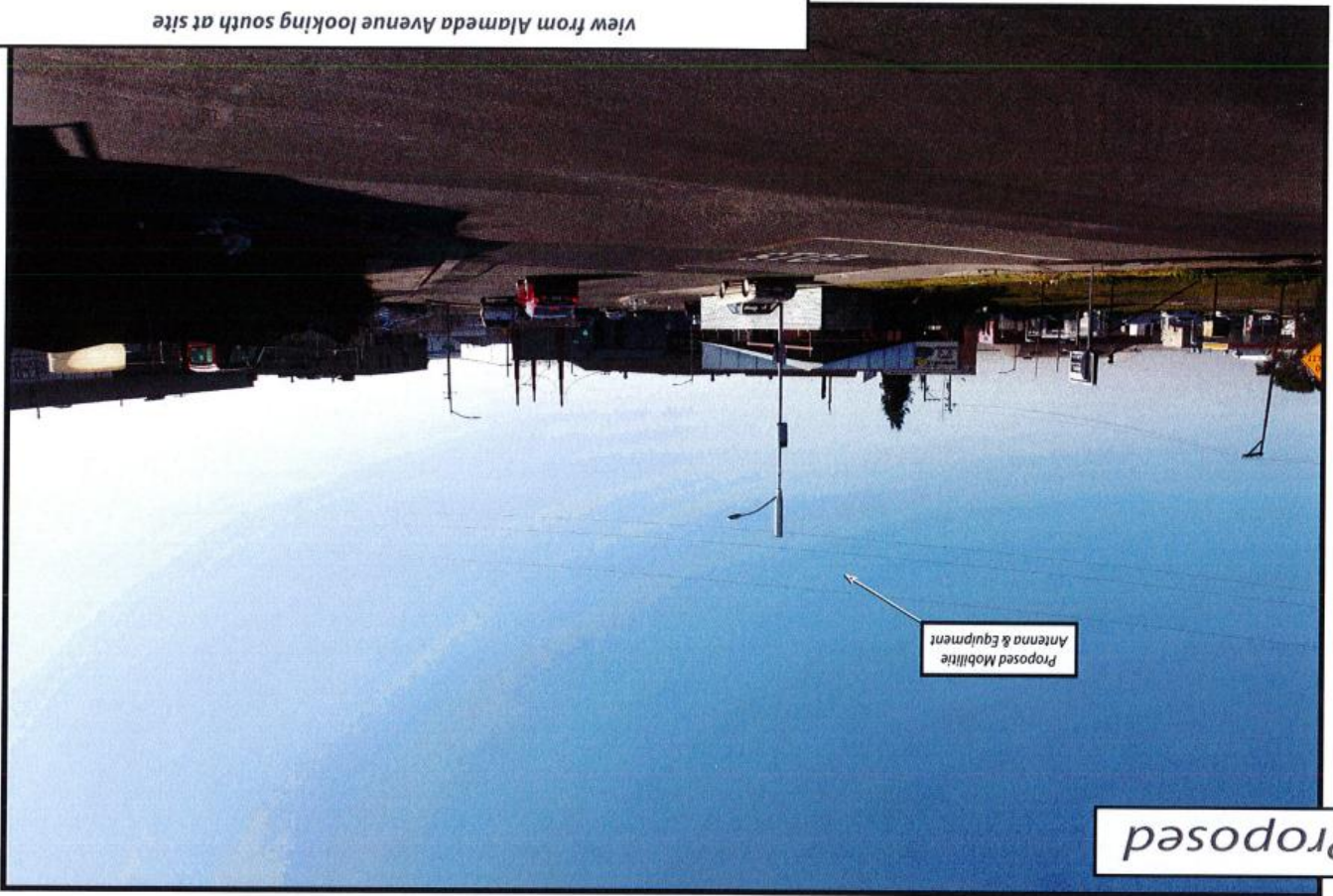
9CAB013427 / SF90XS0Y5C
Howard Street & Alameda Avenue, Oakland, CA
Photosims Produced on 6-22-2017

Proposed

Proposed Mobilitie
Antenna & Equipment



view from Alameda Avenue looking south at site



Rose, Aubrey

From: James Singleton <jsingleton@mobilitie.com>
Sent: Wednesday, July 11, 2018 6:07 PM
To: Rose, Aubrey
Subject: Re: PLN18093 - 569 High Street

Installed signage

