SECTION 3: PROJECT DESCRIPTION

3.1 - Project Purpose and Need

The County of Riverside intends to implement a new public safety communication system to resolve radio coverage issues for public safety emergency responders. The County's fire and law enforcement agencies currently utilize approximately 20 communication sites to provide voice and data transmission capabilities during regular operation and emergency situations to assigned personnel in the field. As currently configured, the system provides coverage to only about 60 percent of the County and is at the end of its useful life. Population growth within the County, particularly in areas that have been traditionally only sparsely populated, necessitates the expansion of the coverage footprint. The current system is no longer adequate to meet the County's coverage and capacity needs. Additionally, due to increases in the County's radio usage, additional traffic-carrying capacity is required to meet the needs of emergency services personnel as they serve the public. The proposed PSEC project is the expansion and upgrade of the system's capabilities and its associated infrastructure. This upgraded and expanded system will allow public safety personnel to share information via voice and data on demand and in real time, indoors and outdoors, over all types of topography throughout the County.

3.2 - Project Objectives

The following objectives have been established for the PSEC project, and will serve as the basis for considering the associated environmental impacts.

1) Provide appropriate and adequate voice and data communication coverage to County emergency services personnel and their cooperators over at least 95 percent of the County's land area.

2) Allow for interoperability between providers in a manner that assures adequate communication capability during emergency incidents (which include wildfires, earthquakes, large-scale releases of hazardous substances and other natural or man-made disasters) that cross jurisdictional boundaries or require multiple-agency cooperation.

3) Provide a secure voice and data communication network that is not dependent upon commercial facilities for its operation.

4) Allow for co-location of facilities with other governmental agencies and jurisdictions.

5) Develop the system with as minimal impact to the environment as possible while still meeting coverage needs and project objectives.

6) Develop the system cost-effectively and in a manner that provides the highest value and public service to the County and its citizens.

7) Design and construct the proposed voice and data communication system to assure operational capability by December 2010.

3.3 - Project Background

Recognizing the need for an upgrade to the County's emergency services telecommunication network, the County issued a Request for Proposals (RFP) in April 2005. In January 2007, the County awarded the contract for the provision of the system to Motorola, Inc. Since the time of the awarding of the contract, Motorola has been working with County representatives to refine and finalize their proposed system design. This effort has utilized a multi-disciplinary team approach, and has included the efforts of radio specialists and electrical engineers, civil engineers, real property and acquisition specialists, County Fire and Sheriff Department representatives, environmental compliance specialists, and a variety of support staffs and specialist consultants.

3.3.1 - Site Candidate Selection Process

For most sites, candidate locations were chosen based on their ability to provide coverage to particular areas that had been identified as critical to meeting project objectives. Most sites began with several candidates that were identified as possible locations from which coverage objectives could be met. Over 150 candidate locations were identified and subject to detailed screening and evaluation, from which approximately 50 final sites were to ultimately be selected. Multiple candidates were identified to allow for design flexibility should it be determined after further investigation that a location was not suitable. Reasons for a candidate's lack of suitability and subsequent rejection could include lack of suitable radio coverage, undesirable environmental impacts, acquisition or access constraints, cost to develop, and other factors. Since these potential constraints could not be identified without further investigation, multiple candidates were identified for each site, with the understanding that many of the candidate locations would be dropped from consideration once a due-diligence investigation had been conducted. In this manner, the candidate that best met project objectives with the fewest constraints could be identified and ultimately selected.

3.3.2 - Environmental Constraints Analysis and System Design Process

As part of the due-diligence process noted above, the County also undertook an extensive environmental constraints analysis process at each of the candidate locations to determine what environmental effects could be anticipated should development occur. Over a period of approximately 12 months, environmental specialists visited each of the candidate locations to assess potential impacts. Assessment teams included a biologist, an archaeologist, and a project manager with overall expertise in a variety of environmental disciplines. In all, these assessment teams visited and assessed over 150 candidate locations. The team's findings were provided to the project design team on an ongoing basis. Together with input from other specialists (radio engineers, realty specialists, etc.), the project design team was able to consider all potential constraints that might be associated with a particular candidate location. Using this information, the team could identify the site location with the fewest constraints to best meet the requirements of the project. For additional

information on candidate locations and their reasons for rejection, please see Section 6, *Alternatives Analysis*, in this DEIR.

3.3.3 - Final Site Selection Process

Following the constraints analysis and design process described above, final site selection was undertaken using the information provided by all participants. The first priority for any selected site was the provision of adequate radio coverage. The physical properties and limitations of radio science and engineering tend to drive where facilities can be located while still meeting radio coverage objectives. Limitations imposed by terrain and other physical conditions influence what coverage can be achieved at a particular location. This fact is particularly applicable to emergency services communication systems. In non-emergency networks (cellular telephones, etc.), a lack of coverage in a certain area is an inconvenience, whereas in an emergency services system, a lack of coverage could directly impact the ability of a provider to meet mission objectives (i.e., protection of life and property). During the site selection process, many otherwise suitable sites were rejected because they could not provide adequate radio coverage to specific areas. Other sites were rejected on environmental grounds, or because they could not be feasibly acquired, accessed, or constructed. The end result of the site selection process are the proposed site locations presented and analyzed in this DEIR.

3.4 - Project Locations

Exhibit 3-1 provides a regional map with each proposed site location identified. The sites are grouped by geographic location. Table 3-1 provides specific information about each site. Besides the location and ownership of each site, the table also presents the general characteristics of each site, including tower height, type, and equipment shelter size. Additional information about each site, including detailed maps, aerial photographs, site photographs, and other information can be found in the individual site descriptions contained in Appendix A of this DEIR. Appendix A is split into several subsections covering each of the geographic groups illustrated in Exhibit 3-1.

3.5 - Project Characteristics

3.5.1 - Project Overview

Introduction

New Sites

The proposed project consists of the construction, operation, and maintenance of approximately 50 new telecommunication sites to augment the existing 20 sites throughout the County and in adjoining areas. The footprint for each new site will typically be 65 feet by 65 feet (4,225 square feet), or about half the size of a small residential subdivision lot. Each site will be composed of four principal components: 1) tower; 2) equipment shelter; 3) road access; and 4) electrical power provision. A drawing of a typical site's layout is provided as Exhibit 3-2, and additional information about each of these components is provided below.

Upgrades to Existing County Communication Facilities

The approximately 20 existing County communication facilities will be upgraded, and in most situations, these upgrades will be minor in nature, such as the replacement of older antennas on existing towers with updated components that will be compatible with the new system. Other work at these upgrade sites will include replacement of electronic equipment inside existing equipment shelters. This work in minor in nature and can be exempted from further CEQA analysis under provisions relating to existing facilities contained in Sections 15300 to 15322 of the CEQA Guidelines.

Six of the existing County sites, however, will require more extensive replacement and upgrades to the existing facilities at the site. Several of the sites will require the construction of replacement towers and/or improvement to existing equipment shelters. The extent of the proposed work at these sites requires that they receive expanded CEQA analysis. Therefore, assessment of these sites is included in this DEIR. These sites are Big Maria, Box Springs, Elsinore Peak, Red Mountain, Santa Rosa Peak, and Whitewater.

Redundant Candidate Sites

Reviewers of the DEIR may notice that for two sites (Estelle Mountain and Margarita), two candidate locations are proposed. However, only one of the two candidates for each of these sites will ultimately be selected. At the time of publication of this DEIR, the final locations for these sites had not been determined. For this reason, both candidates for each site are evaluated in this DEIR.

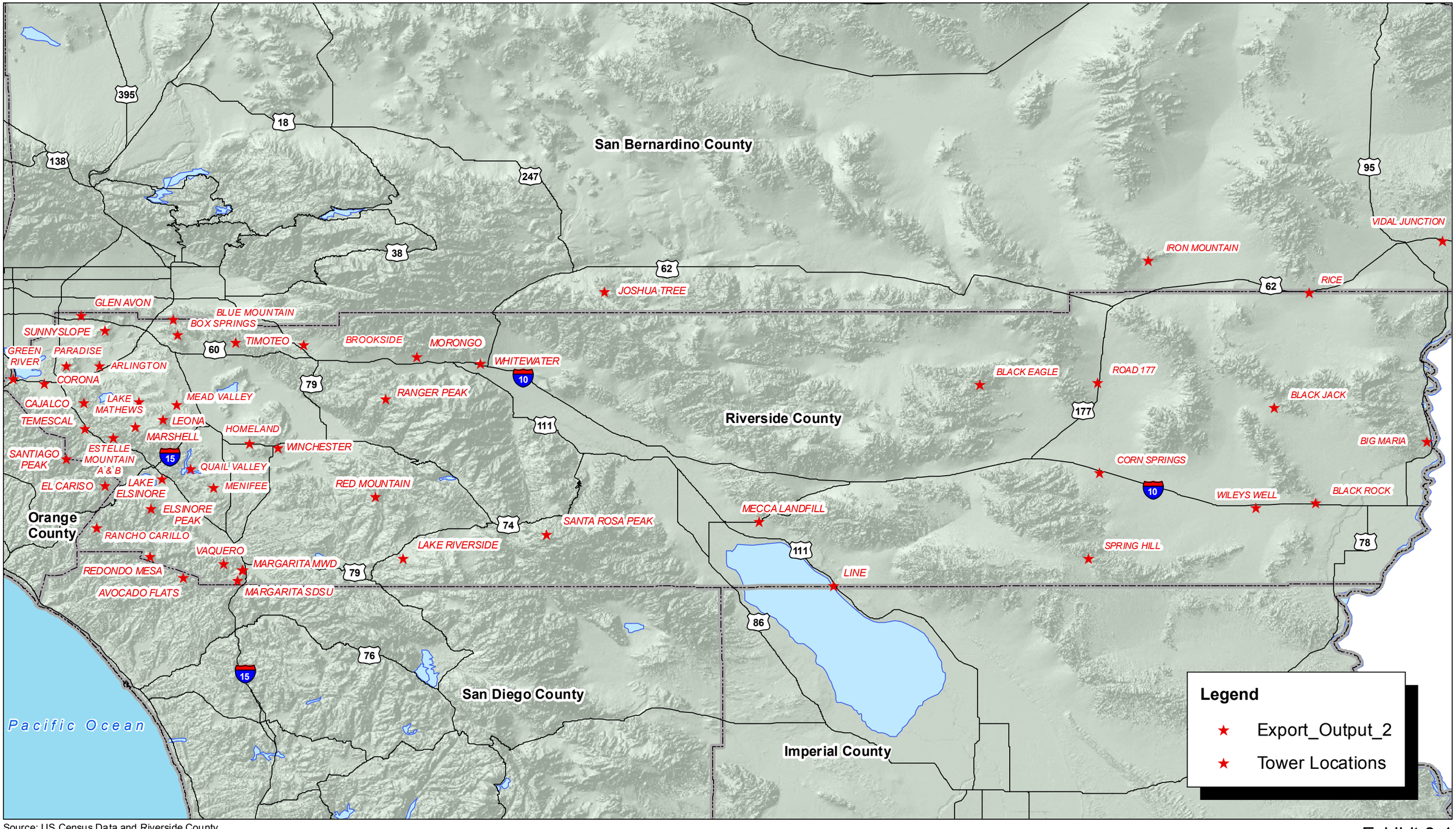
Collocation

Collocation is a significant component of the PSEC project. This means that other governmental users may maintain a presence at PSEC sites. Besides County users, other users could include other law enforcement and emergency service agencies, local governments, land management agencies, and other governmental organizations. Collocation allows for cost sharing between agencies, as well as ease of maintenance. More importantly, collocation reduces the number of individual communication sites that would otherwise be required if each agency were to construct their own separate facilities.

Collocation with non-governmental or commercial operators can create maintenance and security problems, since non-authorized individuals can gain access to vital public safety communication equipment if the equipment is located in the same space as a commercial user. For this reason, collocation at PSEC sites will only be available to other governmental organizations. Conversely, the County will not be collocating its equipment within facilities not under its direct control or under the control of an appropriate governmental entity.

Towers

Towers will be constructed using either a self-supporting, three-legged, lattice-type style or as a guy-line-supported lattice-type style. All of the proposed towers will be of the self-supporting type, with the exception of the Line site, which will be constructed using guy-lines for support.



Source: US Census Data and Riverside County

Exhibit 3-1
Site Location Map

50 25 0
Miles

NORTH

Michael Brandman Associates

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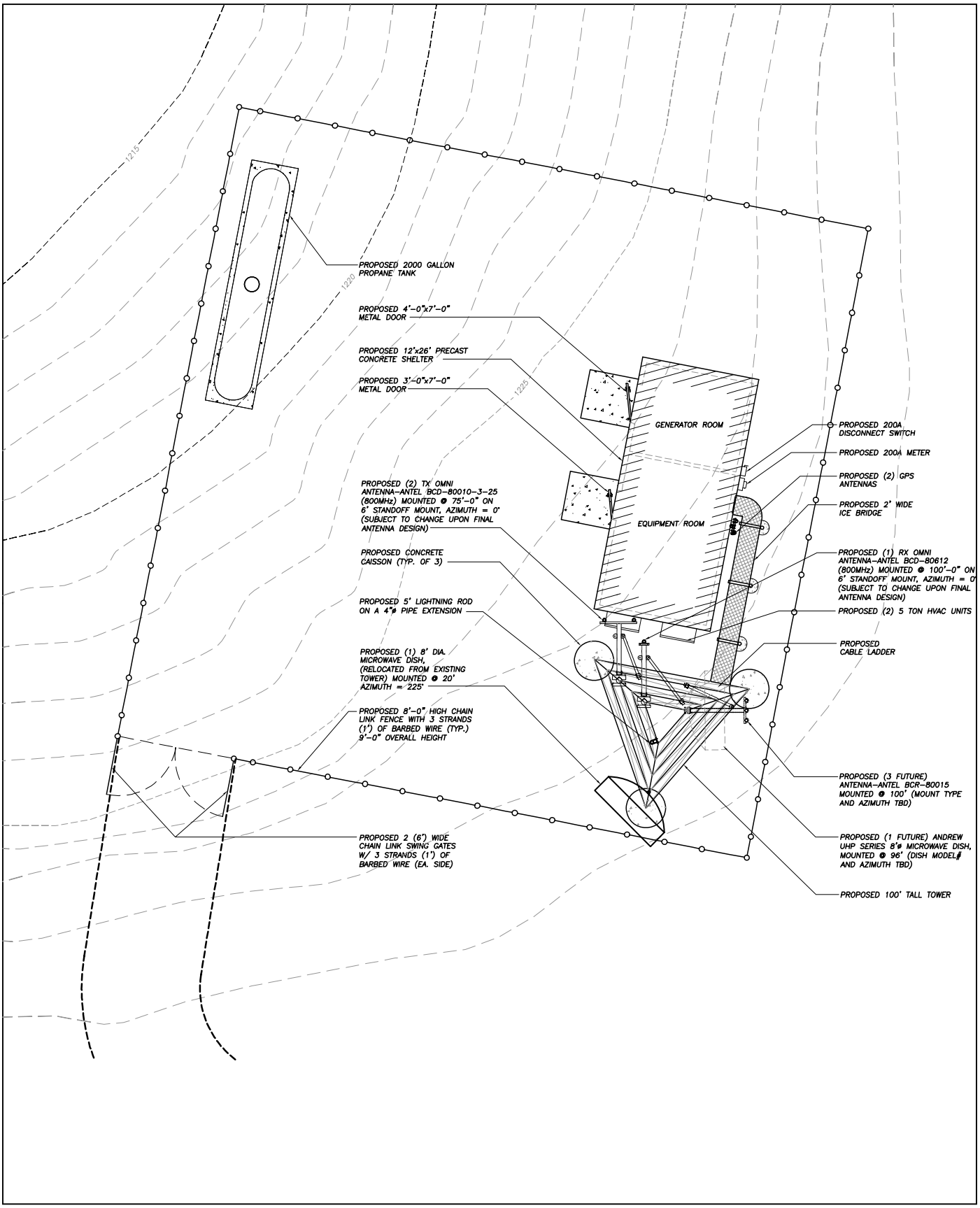
COUNTY OF RIVERSIDE• PSEC PROJECT



Source: MOTOROLA INC. 2008

NORTH

Michael Brandman Associates

Exhibit 3-2
Typical Site Layout

Table 3-1: Site Location Information

Site Name	Assessors Parcel Number (APN)[1]	Latitude[2]	Longitude[2]	Elevation (feet)[3]	Ownership[4]	USGS Quadrangle	Township/ Range/Section	Tower Height/Type (feet)[5]	Shelter Size/Type (feet)[6]
Arlington	145-120-002	33° 55' 04.2"	117° 27' 31.2"	746	County	Riverside West	3S 6W Sec. 12	80 SS	12 x 26 PF
Avocado Flats	101-280-20-00 (SDC)	33° 26' 57.2"	117° 16' 21.0"	1,426	BLM	Fallbrook	8S 4W Sec. 26	60 SS	12 x 26 PF
Big Maria	815-090-021	33° 45' 04.0"	114° 31' 27.1"	650	BLM	Big Maria Mts. SE	5S 23E Sec. 12	60 SS	24 x 26 PF
Black Eagle	701-370-008	33° 52' 33.2"	115° 31' 57.1"	1,668	PRV lease	Placer Canyon	3S 14E Sec. 29	80 SS	12 x 26 PF
Black Jack	809-190-002	33° 49' 34.7"	114° 51' 39.6"	980	BLM	Inca	4S 20E Sec. 15	60 SS	12 x 26 PF
Blue Mountain	1178-251-08 (SBC)	34° 01' 20.0"	117° 17' 46.5"	2,428	PRV lease	San Bernardino South	2S 4W Sec. 4	40 SS	12 x 26 BL
Box Springs	256-030-006	33° 57' 44.0"	117° 16' 51.2"	3,080	County	Riverside East	2S 4W Sec. 27	100 SS	12 x 34 PF
Brookside	407-170-010	33° 57' 48.7"	117° 00' 20.9"	2,584	County	El Casco	2S 1W Sec. 29	120 SS	12 x 26 PF
Cajalco	278-150-005	33° 50' 11.9"	117° 29' 34.3"	1,215	MWD lease	Lake Mathews	4S 6W Sec. 10	240 SS	12 x 26 PF
Corn Springs	810-181-001	33° 40' 53.0"	115° 14' 55.1"	723	BLM	Sidewinder Well	6S 17E Sec. 6	100 SS	12 x 34 PF
Corona	118-270-016	33° 52' 44.8"	117° 34' 48.0"	661	CNUSD lease	Corona North	3S 7W Sec. 25	80 SS	12 x 34 PF
El Cariso	125-120-12 (OC)	33° 38' 44.1"	117° 26' 39.0"	3,070	CNF	Alberhill	6S 5W Sec. 18	100 SS	12 x 26 PF
Elsinore Peak	382-090-004	33° 36' 08.2"	117° 20' 35.9"	3,557	CNF	Wildomar	6S 4W Sec. 31	120 SS	30 x 48 PF
Estelle Mountain (A)	391-040-005	33° 45' 37.5"	117° 26' 03.2"	2,220	BLM	Lake Mathews	5S 5W Sec. 6	100 SS	12 x 26 PF
Estelle Mountain (B)	391-040-005	33° 45' 41.0"	117° 26' 03.2"	2,280	BLM	Lake Mathews	5S 5W Sec. 6	100 SS	12 x 26 PF
Glen Avon	173-030-009	34° 01' 32.7"	117° 30' 11.0"	1,111	JCSD	Guasti	2S 6W Sec. 3	120 SS	12 x 26 PF
Green River	101-040-009	33° 53' 21.6"	117° 38' 58.7"	700	PRV purchase	Prado Dam	3S 7W Sec. 19	160 SS	12 x 26 PF

Table 3-1: Site Location Information (Cont.)

Site Name	Assessors Parcel Number (APN)[1]	Latitude[2]	Longitude[2]	Elevation (feet)[3]	Ownership[4]	USGS Quadrangle	Township/ Range/Section	Tower Height/Type (feet)[5]	Shelter Size/Type (feet)[6]
Homeland	457-340-027	33° 44’ 50.0”	117° 07’ 39.3”	1,594	County	Romoland	5S 2W Sec. 7	100 SS	12 x 26 PF
Iron Mountain	0643-221-07 (SBC)	34° 09’ 03.9”	115° 08’ 27.1”	1,920	MWD lease	Iron Mtns.	1N 17E Sec. 26	80 SS	12 x 26 PF
Joshua Tree	0589-091-11 (SBC)	34° 04’ 52.9”	116° 20’ 34.4”	4,893	PRV lease	Joshua Tree South	1S 6E Sec. 15	150 SS	12 x 20 PF
Lake Elsinore	373-121-002 to 373-121-007	33° 40’ 04.0”	117° 19’ 07.5”	1,558	PRV purchase	Lake Elsinore	6S 4W Sec. 8	150 SS	12 x 26 PF
Lake Mathews	285-120-030	33° 50’ 19.3”	117° 22’ 10.9”	1,494	MWD lease	Steele Peak	4S 5W Sec. 11	160 SS	12 x 26 PF
Lake Riverside	580-140-014	33° 29’ 30.7”	116° 47’ 16.0”	3,693	PRV lease	Aguanga	8S 2E Sec. 9	80 SS	12 x 26 PF
Leona	321-190-005	33° 47’ 59.9”	117° 19’ 06.1”	2,262	County	Steele Peak	4S 4W Sec. 29	200 SS	12 x 26 PF
Line	733-270-015	33° 25’ 54.0”	115° 50’ 08.2”	-199	PRV purchase	Durmid	8S 11E Sec. 33	330 GL	12 x 34 PF
Margarita (MWD)	922-210-011	33° 28’ 46.7”	117° 08’ 46.2”	1,070	MWD lease	Temecula	8S 3W Sec. 13	75 SS	12 x 26 PF
Margarita (SDSU)	922-220-013	33° 27’ 58.1”	117° 08’ 30.5”	1,600	SDSU lease	Temecula	8S 3W Sec. 24	75 SS	12 x 26 BL
Marshell	289-230-023	33° 47’ 02.4”	117° 22’ 43.4”	2,309	PRV lease	Lake Mathews	4S 5W Sec. 35	80 SS	12 x 26 PF
Mead Valley	318-180-060	33° 49’ 56.7”	117° 17’ 14.3”	1,670	County	Steele Peak	4S 4W Sec. 10	120 SS	12 x 26 PF
Mecca Landfill	727-242-012	33° 34’ 19.2”	116° 00’ 01.7”	45	County	Mecca	7S 9E Sec. 12	160 SS	12 x 26 PF
Menifee	360-290-016	33° 38’ 57.3”	117° 12’ 19.9”	1,651	County	Romoland	3W 6S Sec. 16	100 SS	12 x 26 PF
Morongo	523-140-003	33° 55’ 37.2”	116° 45’ 13.6”	1,725	PRV purchase	Cabazon	3S 2E Sec. 11	80 SS	12 x 26 PF

Table 3-1: Site Location Information (Cont.)

Site Name	Assessors Parcel Number (APN)[1]	Latitude[2]	Longitude[2]	Elevation (feet)[3]	Ownership[4]	USGS Quadrangle	Township/ Range/Section	Tower Height/Type (feet)[5]	Shelter Size/Type (feet)[6]
Paradise	123-080-052	33° 55' 03.7"	117° 31' 53.5"	1,383	PRV purchase	Corona North	3S 6W Sec. 8	100 SS	12 x 26 BL
Quail Valley	351-111-002 and 351-111-003	33° 41' 23.9"	117° 15' 27.3"	1,609	PRV purchase	Lake Elsinore	5S 4W Sec. 35	60 SS	12 x 26 PF
Rancho Carrillo	901-030-007	33° 33' 35.0"	117° 27' 48.0"	2,490	CNF	Sitton Peak	7S 6W Sec.13	100 SS	12 x 26 PF
Ranger Peak	545-130-015	33° 50' 36.5"	116° 49' 30.6"	5,043	SBNF	Lake Fulmor	4S 1E Sec. 1	100 SS	12 x 34 PF
Red Mountain	569-050-013	33° 37' 46.1"	116° 50' 54.1"	4,507	SBNF	Blackburn Canyon	6S 1E Sec. 23	200 SS	12 x 37 BL
Redondo Mesa	932-060-052	33° 29' 46.5"	117° 20' 42.8"	2,784	RCWD	Fallbrook	8S 4W Sec. 7	100 SS	12 x 34 PF
Rice	801- 080- 003	34° 04' 45.2"	114° 47' 07.4"	916	BLM	Rice	1S 21E Sec. 21	200 SS	12 x 34 PF
Road 177	800-101-036	33° 52' 54.6"	115° 15' 07.7"	603	BLM	Coxcomb Mts.	3S 16E Sec. 25	100 SS	12 x 34 PF
Santa Rosa Peak	636-210-010	33° 32' 42.4"	116° 28' 09.9"	7,494	County	Toro Peak	7S 5E Sec. 21	80 SS	24 x 48 BL
Santiago Peak	290-170-012	33° 42' 41.9"	117° 31' 51.8"	5,601	CNF	Santiago Peak	5S 6W Sec. 29	60 SS	12 x 34 BL
Spring Hill	860-040-015	33° 29' 32.3"	115° 16' 22.3"	2,605	BLM	Augustine Pass	8S 16E Sec. 12	330 SS	12 x 34 BL
Sunnyslope	183-240-027	33° 59' 48.6"	117° 26' 42.7"	1,094	JCSD	Riverside West	2S 5W Sec. 18	100 SS	12 x 26 PF
Temescal	283-150-017	33° 46' 49.5"	117° 29' 26.5"	1,064	CNUSD	Lake Mathews	4S 6W Sec. 34	150 SS	12 x 34 PF
Timoteo	473-110-019	33° 58' 16.3"	117° 09' 34.5"	2,300	RCHCA	Sunnymead	2S 3W Sec. 26	100 SS	12 x 26 PF
Vaquero	939-110-002	33° 28' 51.1"	117° 11' 00"	1,955	RCWD	Temecula	8S 3W Sec. 15	120 SS	12 x 26 PF
Vidal Junction	0647-321-19 & 20 (SBC)	34° 11' 37.3"	114° 29' 20.3"	941	BLM	Parker NW	1N 24E Sec. 8	170 SS	12 x 34 PF
Whitewater	516-130-011	33° 55' 26.2"	116° 37' 01.1"	1,726	BLM	Desert Hot Springs	3S 3E Sec. 12	100 SS	12 x 34 BL

Table 3-1: Site Location Information (Cont.)

Site Name	Assessors Parcel Number (APN)[1]	Latitude[2]	Longitude[2]	Elevation (feet)[3]	Ownership[4]	USGS Quadrangle	Township/ Range/Section	Tower Height/Type (feet)[5]	Shelter Size/Type (feet)[6]
Wileys Well	818-112-004	33° 36' 18.5"	114° 54' 09.3"	391	BLM	Hopkins Well	6S 20E Sec. 33	150 SS	12 x 26 PF
Winchester	465-050-019	33° 44' 10.0"	117° 03' 48.7"	2,031	PRV purchase	Winchester	5S 2W Sec. 14	140 SS	12 x 26 PF

Notes:
1 – Unless noted otherwise, all Assessor Parcel Numbers (APNs) are located within Riverside County (OC = Orange County; SBC = San Bernardino County; SDC = San Diego County
2 – All coordinates utilize NAD83 datum
3 – Elevation (in feet) above mean sea level
4 – See abbreviation list to right for explanation of ownership abbreviations
5 – All towers are anticipated to be three-legged, self-supporting towers (SS), with the exception of Line and Spring Hill, which will be supported by guy lines (GL).
6 – BL = Block construction; PF = Prefabricated construction

Abbreviations:
BLM = Bureau of Land Management
CNF = Cleveland National Forest
CNUSD = Corona-Norco Unified School District
EMWD = Eastern Municipal Water District
EVMWD = Elsinore Valley Municipal Water District
CSD = Jurupa Community Services District
MWD = Metropolitan Water District
PRV = Privately-owned
RCHCA = Riverside County Habitat Conservation Agency
RCWD = Rancho California Water District
SBC = San Bernardino County
SBNF = San Bernardino National Forest
SDC = San Diego County
SDSU = San Diego State University

The County has investigated the feasibility of providing stealth-type concealment treatments for the tower sites, and has come to the determination that the feasibility of these treatments for this project is unlikely. These treatments have been utilized extensively for cellular telephone towers, but the feasibility for two-way radio systems has not been established. Two-way systems utilize substantially different antennas that do not lend themselves well to placement in artificial tree-like structures. In addition, each tower in the PSEC project will utilize one or more microwave dishes, and it may not be possible to mount and adequately disguise these units on a stealth structure. The heights of many of the towers required for the PSEC project also place limitations on the use of stealth treatments, as treatments on towers over 85 feet in height are typically not feasible, both because of potential wind-loading concerns and also for aesthetic reasons. The County is investigating each of these issues in hopes of finding an adequate solution, but at this time, the final results of that investigation are unknown. For this reason, the DEIR will not present stealth treatments as mitigation, since the feasibility of adequate implementation remains uncertain.

Self-supporting Towers

Self-supporting towers will be used at nearly all of the locations. These towers will range from 40 feet to 330 feet in height. An architectural drawing and a photograph showing a typical self-supporting tower are provided as Exhibits 3-3 and 3-4. The structural members and bracing units of the towers will be constructed of galvanized steel with a silver-gray color tone. The towers will serve as the structures upon which the communication equipment will be mounted.

Each tower will be placed upon a concrete slab foundation, and could consist of either cast-in-place caissons or shallow foundations designed to carry axial loads and moments of force applied by wind and other factors on the tower itself. Towers, foundations, and all other structures on each site will be built to professional standards and appropriate building codes. Soil tests and other investigations will be performed at each site to determine the specific foundation requirements at each site. All towers and other structures will be subject to review by County engineers to ensure compliance with applicable standards and codes.

The communication equipment installed on each tower will vary depending on the specific coverage requirements for each site. Typical equipment will include several omni antennas, VHF antennas, microwave dishes, and lightning rods. A grounding system will also be installed.

FAA regulations require that any tower over 200 feet in height be fitted with an aviation warning light at its apex and/or an alternating red and white paint scheme on the tower structure. Final determination of the requirements for each tower are at the discretion of the FAA. Both the lighting and the paint schemes are intended to provide against potential hazards to aircraft that might be operating in the area. See Table 3-1 for a listing of proposed tower heights.

Guy-line Supported Towers

Guy-line supported towers will be built in the same manner and to the same specifications as self-supporting towers, but the height of these towers will require them to be supported by a series of guy-lines attached to the tower and then anchored to the ground. An architectural drawing and a photograph showing a typical guy-line tower are provided as Exhibits 3-5 and 3-6. Guy-line anchors will be cast concrete, and will typically be positioned approximately two-thirds the distance from the tower as the height of the tower. This distance could be lesser or greater depending on particular design or site constraints at the specific location. Three anchor points positioned around the tower are usually sufficient, but more anchor points could be required depending on site conditions and the height of the tower. Each anchor point would be enclosed within a chain link fence to deter trespass.

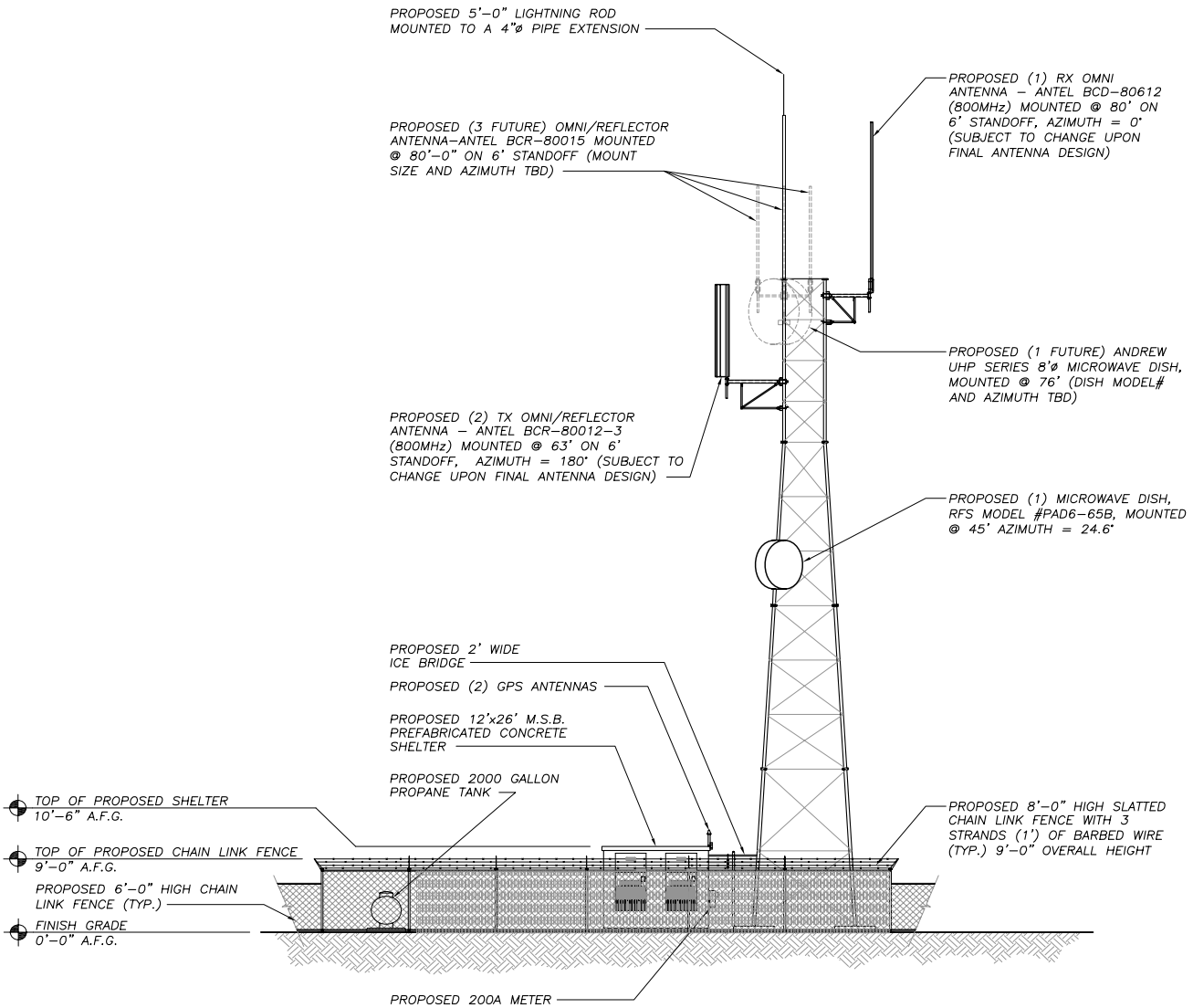
FAA regulations require that any tower over 200 feet in height be fitted with an aviation warning light at its apex and/or an alternating red and white paint scheme on the tower structure. Final determination of the requirements for each tower are at the discretion of the FAA. Both the lighting and the paint schemes are intended to provide against potential hazards to aircraft that might be operating in the area. See Table 3-1 for a listing of proposed tower heights.

Equipment Shelters and Supporting Components

Each site will include one or more equipment shelters to house interior communication equipment and supporting components. Most shelters will be prefabricated industry standard units that will be constructed offsite and brought in by truck. Several sites will require the onsite construction of concrete block buildings rather than the placement of prefabricated units. This is due to difficulty of access to some sites created by narrow, winding roads that make transport of a prefabricated shelter infeasible. See Table 3-1 for a listing of the shelter sizes and types proposed at each of the sites.

Shelters will be mounted or constructed on concrete foundations sized according to shelter dimensions and other design requirements. The structures will typically be divided into two compartments or rooms, with one room housing the communication equipment, and the other room housing a standby generator or a primary power generator, depending on the application (see discussion on generators, below). Besides the radio equipment and generator, the other principal component of the shelter will be an environmental control system for heating, ventilation, and air conditioning (HVAC) to keep the interior of the shelter within the temperature range required for the operation of the electronic communication equipment inside.

For ground-level infrastructure, the County will evaluate the aesthetic environment of each site and will offer visual treatments that can be implemented with respect to equipment shelters and fencing. Some of the solutions that may be offered are block walls, painted buildings, customized gates and fencing, and other features. These treatments will serve to lessen the visual impacts of the facilities at ground level.



Source: MOTOROLA INC. 2008

Michael Brandman Associates

NORTH

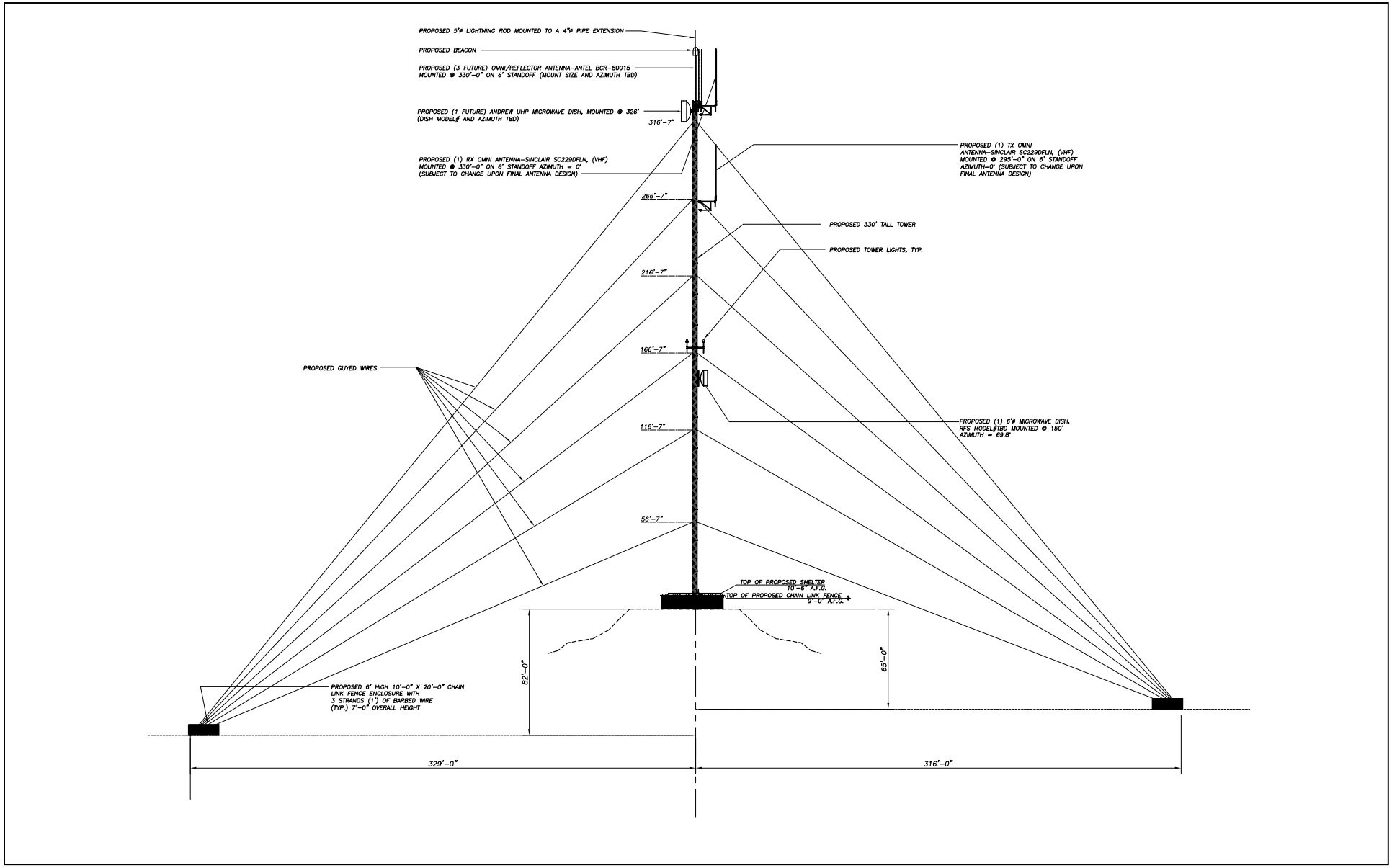
Exhibit 3-3
Typical Self-Supporting Tower Drawing

Source: MBA, 2008

Michael Brandman Associates

NORTH

Exhibit 3-4
Photograph of Typical Self-Supporting Tower Site



Source: MOTOROLA INC. 2008

NORTH

Michael Brandman Associates

Exhibit 3-5
Typical Guy-Line Supported Tower Drawing

Source: MBA, 2008

Michael Brandman Associates

NORTH

Exhibit 3-6
Photograph of Typical Guy-Line Supported Tower Site

Generators

Standby Generators

With the exception of two of the proposed sites (Santa Rosa Peak and Spring Hill), electrical power will be provided via commercial power, and generators at these sites will be for standby purposes only in the event of a commercial power failure. Standby generators will be powered by propane, and will typically be comprised of a 56 horsepower (HP) internal combustion engine power unit driving a single-phase 35 kilowatt (KW) generator. Generators will be mounted inside the shelter, and will include a muffler on the power units and appropriate sound proofing within the walls of the shelter to minimize noise. Propane fuel will be provided from a tank (or tanks) mounted outside the shelter on concrete slabs. The propane tank(s) will be sized in a manner to allow for a constant generator run time of up to 168 hours (1 week) in the event of a long-term power failure. The typical size needed to meet this requirement is 2,000 gallons.

Generator-Only Sites

Distance from commercial power will require that two sites (Santa Rosa Peak and Spring Hill) be powered exclusively by generator power. Santa Rosa Peak is an existing County site that will be upgraded with a new tower and shelter. It is anticipated that the existing diesel-powered generators will remain in place following the upgrades. The system at this site is composed of a dual generator system, with each generator operating for 1 week at a time and alternating between the two units. Diesel fuel is housed in two, 2,000-gallon concrete bunker-style aboveground fuel tanks within a spill containment area. Under normal operating conditions, fuel capacity is adequate to run the site for approximately six months between refills.

The Spring Hill site and any other new site that might be built requiring generator-only power will be propane-powered, and will likely utilize a dual generator system similar to that employed at Santa Rosa Peak.

The County has investigated the use of solar power to provide power to these sites, but has determined that the provision of solar power is not feasible. The size of the solar panel arrays that would be required to generate sufficient power would have to be very large, and would add significantly to the site footprint and the aesthetic impacts at the sites. The arrays would be vulnerable to vandalism and other damage, and would not guarantee the reliability that is required for a public safety communication system. For these reasons, the County is not proposing the use of solar power at these locations.

Fencing and Lighting

Each tower and shelter will be enclosed within a chain link fence 8-feet in height, with three strands of barbed wire on the top for a total height of 9 feet. A gate will provide access for persons and vehicles into the site. A security light will be mounted to the outside of each shelter. The light will be connected to a motion sensor that will turn the light on when movement is detected.

Energy Efficiency

Equipment shelters will be engineered and constructed to enhance the energy efficiency of each site. Shelters will utilize energy efficient lighting and lighting control systems. The primary use of electricity at each site will be for the air conditioning equipment that will be used to keep the interior of the shelters within the temperature range required for the operation of the electronic communication equipment inside. To minimize use of air conditioning, each shelter will be heavily insulated, especially the roofs, which will be of metal construction and painted white to maximize the reflection of heat created by sunlight. The air conditioning units will be industrial, high-efficiency, Title 24 compliant units that will not utilize either HCFC-22 or HCFC-142b as refrigerants. These compounds are a significant contributor to greenhouse gas emissions and the U.S. Environmental Protection Agency (EPA) will be phasing out their use in 2010.

Road Access

With the exception of the Paradise site, each of the proposed sites has a road leading directly to or immediately adjacent to the area where the tower and shelter will be located. Some of these roads are primitive and unimproved, and require a four-wheel-drive vehicle to access them. In these cases, appropriate improvements will need to be undertaken to make them accessible by construction and maintenance equipment. In cases where a road does not lead directly to the site and instead lies adjacent to the site, a short spur road will be required to be constructed to provide access to the site. All roads are anticipated to be dirt only, unless particular site conditions requiring some form of hardening or additional improvement. The lengths of these roadways will vary from site to site, but should not exceed 100 feet in length. For specific road information at a particular site, see the individual site descriptions located in Appendix A of this DEIR.

The Paradise site is located adjacent to an existing FAA communication facility, but due to the nature of the topography in the area will require construction of a new access road approximately 1,300 feet in length. The precise location of this alignment has not been determined. Before this site can be developed, additional survey and assessment work will be required along the finalized alignment to determine environmental impacts. Development of the access road will be required to abide by the mitigation and performance criteria established in this DEIR.

Two other sites (Spring Hill and Timoteo) have roadways leading to them, but these roads are in exceptionally poor condition and will require substantial improvement to make them useable. In the case of Timoteo there are three possible routes of access, and the final determination as to which route will be utilized has not been made. In both of these situations, development of the access roads will be required to abide by the mitigation and performance criteria established in this DEIR.

The Morongo site currently has a road leading to it, but that road meanders in and out of the County's proposed access easement, and will need to be straightened to avoid trespass. The precise location of this alignment has not been determined. Before this site can be fully developed, additional survey and assessment work will be required along the finalized alignment to determine environmental

impacts. Development of the access road will be required to abide by the mitigation and performance criteria established in this DEIR.

Commercial Electric Power Provision

It is anticipated that all but two of the proposed sites will be able to have commercial electrical power supplied to them. The two exceptions are the Santa Rosa Peak and Spring Hill sites (see the discussion on generators, above, for a description of how power will be provided to the these sites). Of the remaining sites, all but four sites (Black Eagle, Black Jack, Estelle Mountain, and Timoteo) have commercial power immediately adjacent, and provision of power to these sites will require a simple extension from existing sources. These short power runs will vary in length from 25 feet to 300 feet, and will be run either aboveground or belowground, depending upon site characteristics and the existing power delivery system in the area. For specific commercial power information at a particular site, see the individual site descriptions located in Appendix A of this EIR.

The Black Eagle, Black Jack, Estelle Mountain, and Timoteo sites all will require power to be brought in from some distance. Table 3-2, below, describes the specific power line requirements at each of these sites.

Table 3-2: Power Line Requirements

Site Name	Distance to Commercial Power*
Black Eagle	5 miles
Black Jack	7 miles
Estelle Mountain A & B	2.1 miles
Timoteo	2.5 miles

*Distance is calculated using the most likely route from an existing power source. Actual distances may vary depending upon the requirements of the electrical utility provider and access to available easements.
Source: GRD, Inc.

The specific routes for these power lines have not been determined. Two of the proposed sites (Black Jack and Estelle Mountain) are on lands under the jurisdiction of the BLM, and will require authorization from that agency for both construction of the sites themselves and the power lines. Before these power lines can be installed, additional survey and assessment work will be required along the finalized power alignment to determine environmental impacts. Development of the power lines will be required to abide by the mitigation and performance criteria established in this DEIR.

3.5.2 - Project Construction

Construction at each site will proceed in typical fashion, with site preparation and grading occurring first, followed by excavation for tower footings and shelter slabs. Depending on foundation design, auguring may be required for placement of caissons. Following placement of necessary foundations, the tower will be erected and the shelter and supporting components put in place. Prefabricated shelters will usually arrive on site with all of their internal components already installed. Sites

requiring concrete block shelters will be constructed onsite using standard construction methods. Sites that are practically accessible by concrete trucks will have premixed concrete delivered directly to the site. Sites that are remote or otherwise inaccessible by concrete trucks will require a batch concrete mixing station to be located onsite with water hauled in using water trucks.

Equipment to be used onsite will vary according to site characteristics and the type of work to be done, but equipment will likely be confined to that listed below in Table 3-3. All of the equipment listed in the table may not be necessary at each site, nor would it all be operating at the same time, but this list is presented as a worse case scenario.

Table 3-3: Construction Equipment

Equipment Type	Quantity	Horsepower
Drill Rig	1	291 hp
Tractors/Loaders/Backhoes	1	108 hp
Bulldozer	1	357 hp
Water Truck	1	189 hp
Cement/Mortar Mixers	2	10 hp
Crane	1	399 hp
Portable Generator	1	5 hp
Source: GRD, Inc., URBEMIS 2007.		

Each site is expected to take 60 to 120 days to construct. The actual time period will vary depending on difficulty of construction, the remoteness of the site, and other factors. The number of workers at each site on any given day during construction will typically vary from four to six.

3.5.3 - Project Operation

The facilities will operate 24 hours a day, 7 days a week for the life of the site. The electronic equipment housed in the shelters will be temperature controlled by wall-mounted HVAC units. During warmer periods of the year, the cooling units will periodically be in operation 24 hours a day. Security lighting will be installed outside of each shelter within the chain link enclosure (usually on the exterior wall of the shelter), and will be controlled by means of a motion sensor.

At sites equipped with standby generators, the generators will switch on automatically once per week and run for a period of 30 minutes. This is done to ensure proper lubrication within the units as well as to test the units for proper operation. Each unit will be equipped with a sensor to report the unit's operational status. In the event of a fault, a technician will be automatically dispatched to provide repairs.

At sites equipped with primary electrical source generators, these units will operate 24 hours a day, 7 days a week. The system at these sites will be composed of a dual generator system, with each

generator operating for 1 week at a time and alternating between the two units. The primary electrical draw at communication sites is usually not the electronic equipment, but rather the HVAC units required to maintain the electronics at a suitable temperature. The electrical current draw for air conditioning units in particular can be significant, and a constant supply of electricity is required. Thus, solar generation and/or battery storage of electricity is not sufficient to supply the site's power needs and 24/7 generator operation is necessary.

Refills of the fuel required to power both standby and primary power generators will require periodic visits by a fuel truck. Fuel levels are monitored by a remote system, and when the fuel supply has dropped below a certain level, a fuel truck is dispatched. For standby units operating under the weekly test regime, refills will occur approximately every 2 years. A power outage requiring prolonged generator operation would require visits that are more frequent. For sites where generator power is the sole source of electricity, fuel truck visits will occur approximately every 6 months.

Besides fuel truck visits, maintenance activities at the sites would consist of monthly visits by technicians associated with each of the organizations having equipment at the site. The PSEC project will not only provide facilities for the County's radio equipment, but it will also provide facilities for its cooperators. These could include other law enforcement and emergency service agencies, local governments, land management agencies, and other governmental organizations. Therefore, the number of maintenance visits to a given site could vary, depending on the number of users with equipment at the facility. Regardless, the amount of activity at any given site, once it is constructed and fully operational, is expected to be minimal.

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