



San Diego Gas & Electric
8335 Century Park Court
San Diego, CA 92123-1569

A  Sempra Energy utility®

November 7, 2014

Mr. Robert Zolezzi
City of San Diego
READ Asset Management Group
1200 Third Avenue, Suite 1700
San Diego, California 92101

RE: Site Address: Top of Cowles Mountain Trail, San Diego, California (the "Property")
 Site Name: Cowles Mountain Communication Center- Mission Trails Regional Park
 Agreement: Lease Agreement, dated April 1, 2003, (the "Lease") between the City of San
 Diego ("City") and the County of San Diego ("County") San Diego Gas &
 Electric Company, ("Lessee").

Dear Mr. Zolezzi,

As part of the continuous effort to upgrade the Smart Grid Communication System and data network for grid security and in conformance with WECC requirements, San Diego Gas & Electric Company (SDG&E) would like to perform the following additions and modifications to the site referenced above, as described in the attached City of San Diego permitted construction drawings approved by the City of San Diego Communications Department and the County of San Diego Sheriff's Regional Communication Services, as summarized below:

Antennas: Relocate, replace and install one (1) four foot (4') microwave dish and install two (2) new two foot six inch (2'6") microwave dishes together with remote radio units for all to be located at 15' ACL (4' Dish), 20' ACL and 20' ACL, together with new mounting structures, wave guides and cables on the existing equipment shelter building, and install two (2) five foot (5') omni whip antenna to be located on new or existing mounting structures at 34' Antenna Tip Height on the roof of the equipment shelter building, together with new waveguides and cable.

Equipment: No additional rack space required. Additional radios and other communication equipment will be placed in existing racks or their replacements.

Pursuant to Section 6.4, Improvements and Alterations of the Lease Agreement, "No improvements, structures, or installations shall be constructed on the Premises, and the Premises by not be altered by LESSEE (with the exception of equipment replacements or repairs) without prior written approval by the LANDLORD." In order to comply with such requirement, SDG&E requests the City Manager's consent and approval to complete the items described above pursuant to Section 7.3, LANDLORD Approval of the Lease Agreement, which provides that "The approval or consent of LANDLORD, wherever required in this Lease, shall mean the written approval or consent of the City Manager unless otherwise specified, without need for further resolution by the City Council or County Board of Supervisors."

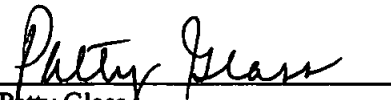
If all meets with your approval, please have the City Manager or his authorized representative sign below. By signing this letter, City is providing its consent and approval to allow SDG&E, its employees,

agents, representatives and contractors to perform the proposed modifications and additions described herein subject to obtaining any necessary permits.

Upon signature, please return to my attention at:

Patty Glass, Principal Real Estate Advisor
San Diego Gas & Electric Company
8335 Century Park Court, CP1-1D
San Diego, CA 92123

Sincerely,


Patty Glass

CITY OF SAN DIEGO ACKNOWLEDGEMENT AND CONSENT

By: 
Name: CORA ANN THOMPSON
Title: OWNER, RENOVATION ASSETS
Date: 11/12/14

PROJECT DESCRIPTION

THE SDGE GRID COMMUNICATIONS SYSTEMS PROGRAM IS A STRATEGIC PARTNERSHIP BETWEEN SDGE'S INFORMATION TECHNOLOGY AND ELECTRIC TRANSMISSION & DISTRIBUTION DIVISIONS TO BRING ADVANCED COMMUNICATION SERVICES TO ELECTRIC ASSETS IN SUPPORT OF SDGE'S "SMARTER" GRID INITIATIVES. THE IMPLEMENTATION OF THIS PROGRAM IS MISSION CRITICAL FOR SUSTAINING AND SECURING THE POWER GRID AND ITS INFRASTRUCTURE THROUGHOUT THE SAN DIEGO AREA. THE MICROWAVE BACKHAUL AND SCADA COMMUNICATION PROPOSED AS PART OF THE PROJECT SERVES TO MEET THE RELIABILITY REQUIREMENTS RECOMMENDED BY WECC. THIS PROGRAM IS AUTHORIZED UNDER A GRANT FROM THE UNITED STATES DEPARTMENT OF ENERGY (DOE) UNDER AWARD NUMBER DE-CE0000371. THE SDGE GRID COMMUNICATIONS SYSTEM PROGRAM HAS IMPLEMENTED AN ADVANCED WIRELESS COMMUNICATION SYSTEM THAT ALLOWS SDGE TO MONITOR, COMMUNICATE WITH, AND CONTROL TRANSMISSION AND DISTRIBUTION EQUIPMENT. THIS SYSTEM, KNOWN AS SCOS, WILL ACCELERATE THE DEPLOYMENT OF SMART GRID APPLICATIONS AND DEVICES. IT WILL CONNECT THOUSANDS OF SMART GRID ASSETS ACROSS 4,100 SQUARE MILES SERVING 3.4 MILLION PEOPLE IN THE SAN DIEGO AREA. ADDITIONALLY, IT WILL UPGRADE SDGE'S EXISTING DATA COMMUNICATIONS SYSTEMS TO SUPPORT SMART GRID FUNCTIONS NEVER ENVISIONED IN THE ORIGINAL DEVELOPMENT OF SDGE'S EXISTING COMMUNICATIONS SYSTEMS. AS A RESULT OF THIS PROGRAM, THE RESULTS OF THESE INSTALLATIONS WILL IMPROVE GRID SECURITY, LOWER ELECTRICITY COSTS, IMPROVE GRID RESILIENCY, AND SUPPORT FUTURE SMART GRID TECHNOLOGIES.

- INSTALL (1) 4' AND (2) 2.5' MICROWAVE DISHES TOGETHER WITH A REMOTE RADIO UNIT AT RAD CENTERS AS SHOWN ON THE EXISTING BUILDING WITH ACCOMPANYING NEW NAME GUIDE/CABLE RUNNING FROM THE NEW INSTALLATION TO THE EXISTING SDGE EQUIPMENT AREA FOR SDGE SMART GRID COMMUNICATION WIRE SYSTEM.
- INSTALL (2) 5' OWN ANTENNAS FOR SDGE SMART GRID SCADA COMMUNICATION.
- INSTALL RADIO EQUIPMENT IN EXISTING RACK SPACE IN THE EXISTING SDGE EQUIPMENT SPACE AREA.

SITE INFORMATION

APPLICANT: SAN DIEGO GAS & ELECTRIC (SDGE)
 SITE NAME: COWLES MOUNTAIN
 SITE ADDRESS: TOP OF COWLES MTH TRAIL
 LAND OWNER: CITY OF SAN DIEGO
 202 C STREET
 SAN DIEGO, CA 92101
 TOWER OWNER: CITY OF SAN DIEGO
 202 C STREET
 SAN DIEGO, CA 92101
 COUNTY: SAN DIEGO
 LATITUDE (NAD 83): 32° 48' 48.89" N
 32.8135833
 LONGITUDE (NAD 83): 117° 1' 56.48" W
 -117.0323611
 GROUND ELEVATION: 1506' AMSL
 ANTENNA TIP HEIGHT: 34'-0" AGL
 ZONING JURISDICTION: CITY OF SAN DIEGO
 ZONING DISTRICT: OPEN SPACE
 EXISTING PERMITS: YES
 PARCEL #: #371-070-10
 POWER COMPANY: SDGE
 TELEPHONE COMPANY: AT&T
 PROJECT VALUATION: \$45,000

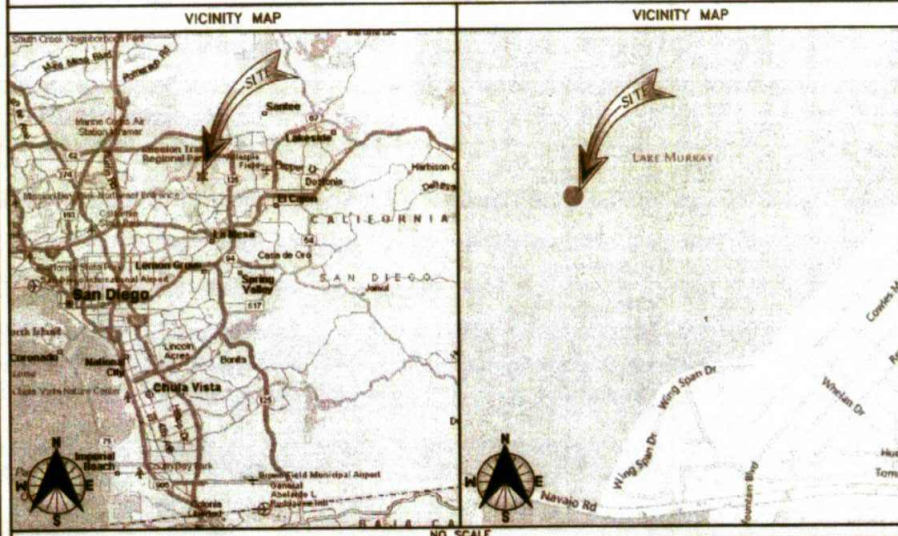
CONTACT INFORMATION

SITE CONTACT: ANTONIO NARANJO, SDGE
 (619) 280-4334
 ANARANJO@SDGEMUTILITIES.COM
 ALL ATOL, SDGE
 (619) 280-4303
 ATOL@SDGEMUTILITIES.COM
 PROJECT MANAGEMENT: BLACK & VEATCH CORPORATION
 10088 WILLOW CREEK RD, SUITE 110
 SAN DIEGO, CA 92131
 BAY SITE ACQUISITION CONTACT: MINDY E. HARTSTEIN
 HARTSTEIN@BV.COM
 (362) 228-8610
 BAY ENGINEER CONTACT: ANDREW JOHNSON
 JOHNSON@BV.COM
 (915) 456-7210
 BAY CONSTRUCTION MANAGER CONTACT: STEPHEN E. DUBREY
 DUBREY@BV.COM
 (915) 456-4967



COWLES MOUNTAIN SITE COMMUNICATION WORK PACKAGE

LOCATION MAPS



DRIVING DIRECTIONS

DIRECTIONS FROM SDGE OFFICE:

HEAD WEST ON CENTURY PARK CT TOWARD KEARNEY VILLA RD. TAKE RAMP ONTO CA-163 N. 1.3 MILES. TAKE THE EXIT ONTO CA-52 E. 8.2 MILES. TAKE THE CALIFORNIA 125 S. EXIT. 0.6 MILES. MERGE ONTO CA-125 S. 1.3 MILES. TAKE THE NAVAJO RD. EXIT. 0.7 MILES. TURN RIGHT ONTO NAVAJO RD. 1.1 MILES. TURN RIGHT ONTO COWLES MOUNTAIN BLVD. 330 FT. TAKE THE 1ST LEFT ONTO TOMMY DR. 407 FT. KEEP RIGHT TO CONTINUE ON TOMMY ST. 0.2 MILES. TURN RIGHT ONTO WING SPAN DR. 207 FT.

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV NO:
T-1	TITLE SHEET	3
T-2	SPECIAL INSPECTIONS	3
T-3	CONDITIONS OF APPROVAL	3
T-4	PHOTO SIMULATIONS	3
GN-1	LEGEND & ABBREVIATIONS	3
GN-2	GENERAL NOTES	3
GN-3	GENERAL NOTES	3
C-1	OVERALL SITE PLAN	3
C-1.1	SITE PLAN	3
C-2	ENLARGED SITE PLAN	3
C-3	EQUIPMENT LAYOUTS	3
C-4	ANTENNA & MICROWAVE SCHEDULES	3
C-5	SHEET NOT USED	3
C-6	MICROWAVE LAYOUTS	3
C-7	ANTENNA LAYOUTS	3
C-8	SITE ELEVATIONS	3
C-9	SITE ELEVATIONS	3
C-10	EQUIPMENT DETAILS	3
C-11	EQUIPMENT DETAILS	3
RF-1	TELECOMMUNICATION EQUIPMENT RACK	3
RF-2	TELECOMMUNICATION EQUIPMENT RACK	3
RF-3	TELECOMMUNICATION EQUIPMENT RACK	3
E-1	ELECTRICAL AC PLAN	3
E-2	ELECTRICAL DC ONE-LINE DIAGRAM	3
G-1	GROUNDING DETAILS	3
G-2	GROUNDING DETAILS	3
G-3	GROUNDING DETAILS	3
S-1	STRUCTURAL DETAILS	3
S-2	STRUCTURAL DETAILS	3
S-3	STRUCTURAL DETAILS	3

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

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

SDGE - UNDERGROUND SERVICE ALERT

CALL AT LEAST 2 DAYS IN ADVANCE



SDGE WILL MARK LOCATIONS OF BURIED UTILITY-OWNED GAS PIPELINES AND OTHER LINES, FREE OF CHARGE.
 ONLY USE HAND TOOLS
 TO DIG WITHIN 24" ON MARKED GAS LINES
 CALL 1-800-411-7343 IMMEDIATELY FOR PIPELINE DAMAGE.

DOE PROGRAM ACKNOWLEDGEMENT & DISCLAIMER

ACKNOWLEDGMENT: THIS MATERIAL IS BASED UPON WORK SUPPORTED BY THE DEPARTMENT OF ENERGY UNDER AWARD NUMBER DE-CE0000371.

DISCLAIMER: THIS REPORT WAS PREPARED AS AN ACCOUNT OF WORK SPONSORED BY AN AGENCY OF THE UNITED STATES GOVERNMENT. NEITHER THE UNITED STATES GOVERNMENT NOR ANY AGENCY THEREOF, NOR ANY OF THEIR EMPLOYEES, MAKES ANY WARRANTY, EXPRESS OR IMPLIED, OR ASSUMES ANY LEGAL LIABILITY OR RESPONSIBILITY FOR THE ACCURACY, COMPLETENESS, OR USEFULNESS OF ANY INFORMATION, APPARATUS, PRODUCT, OR PROCESS DISCLOSED, OR REPRESENTS THAT ITS USE WOULD NOT INFRINGE PRIVATELY OWNED RIGHTS. REFERENCE HEREIN TO ANY SPECIFIC COMMERCIAL PRODUCT, PROCESS, OR SERVICE BY TRADE NAME, TRADEMARK, MANUFACTURER, OR OTHERWISE DOES NOT NECESSARILY CONSTITUTE OR IMPLY ITS ENDORSEMENT, RECOMMENDATION, OR FAVORING BY THE UNITED STATES GOVERNMENT OR ANY AGENCY THEREOF. THE VIEWS AND OPINIONS OF AUTHORS EXPRESSED HEREIN DO NOT NECESSARILY STATE OR REFLECT THOSE OF THE UNITED STATES GOVERNMENT OR ANY AGENCY THEREOF.

APPLICABLE CODES

2013 CALIFORNIA BUILDING CODE
 2013 CALIFORNIA RESIDENTIAL CODE
 2013 CALIFORNIA TITLE 24
 2013 CALIFORNIA FIRE CODE
 2013 CALIFORNIA ENERGY CODE
 2013 CALIFORNIA PLUMBING CODE
 2013 CALIFORNIA MECHANICAL CODE
 2013 CALIFORNIA ELECTRICAL CODE
 TA-222-G CODE

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
 OVERLAND PARK, KANSAS 66210
 (913) 456-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MSG

REV	DATE	DESCRIPTION
1	10/17/14	POWERLINE COMMENTS
2	06/26/14	POWERLINE COMMENTS
3	06/26/14	ISSUED FOR POWERLINE



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

COWLES MOUNTAIN
 TOP OF COWLES MOUNTAIN TRAIL
 SAN DIEGO, CA 92119

SHEET TITLE
 TITLE SHEET

SHEET NUMBER

T-1

LIST OF SPECIAL INSPECTIONS

LIST OF ITEMS REQUIRING SPECIAL INSPECTIONS

- MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS AND ANCHORS (SEE STATEMENT OF SPECIAL INSPECTION)

NAME & LICENSE # OF SPECIAL INSPECTOR

GHOSTRIDER INC.
ROBERT LEE MONTSENGER, LICENSE # A.W.S. & I.C.C. & SAN DIEGO #728

SPECIAL INSPECTION NOTES

- THE SPECIAL INSPECTOR MUST BE CERTIFIED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.
- THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS, AND EQUIPMENTS.
- THE FABRICATOR MUST BE REGISTERED AND APPROVED BY THE CITY OF SAN DIEGO, DEVELOPMENT SERVICES FOR THE FABRICATION OF MEMBERS AND ASSEMBLIES ON THE PREMISES OF THE FABRICATOR'S SHOP.
- FABRICATOR SHALL SUBMIT AN APPLICATION TO PERFORM OFF-SITE FABRICATION TO THE INSPECTION SERVICES DIVISION FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION.
- FABRICATOR SHALL SUBMIT A 'CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION' TO THE INSPECTION SERVICES DIVISION PRIOR TO DIRECTION OF FABRICATED ITEMS AND ASSEMBLIES.
- A PROPERTY OWNER'S FINAL REPORT FORM FOR WORK REQUIRED TO HAVE SPECIAL INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS MUST BE COMPLETED BY THE PROPERTY OWNER, PROPERTY OWNER'S AGENT OF RECORD, ARCHITECT OF RECORD, OR ENGINEER OF RECORD AND SUBMITTED TO THE INSPECTION SERVICES DIVISION.
- THE SPECIAL INSPECTIONS IDENTIFIED ON PLANS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY A CITY'S BUILDING INSPECTOR.
- NOTICE TO THE APPLICANT/OWNER/OWNER'S AGENT/ARCHITECT OR ENGINEER OF RECORD: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.
- NOTICE TO THE CONTRACTOR/BUILDER/SUB-CONTRACTOR/OWNER-BUILDER: BY USING THIS PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION/INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE AND AWARE OF THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE CITY OF SAN DIEGO FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS, CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY THE CALIFORNIA CONSTRUCTION CODES.
- WHERE MATERIALS OR ASSEMBLIES ARE REQUIRED BY THE BUILDING CODE TO BE LABELED, SUCH MATERIALS AND ASSEMBLIES SHALL BE LABELED BY AN AGENCY APPROVED BY THE CITY OF SAN DIEGO IN ACCORDANCE WITH SECTION 1703. PRODUCTS AND MATERIALS TO BE LABELED SHALL BE TESTED, INSPECTED AND LABELED IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN SECTIONS 1703.5.1 THROUGH 1703.5.3, IDENTITY ON PLANS.

STATEMENT OF SPECIAL INSPECTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS AND ANCHORS				
" INSPECTOR MUST VERIFY BURING ANCHOR INSTALLATION, ANCHOR TYPE & DIMENSIONS, CONCRETE TYPE & COMPRESSIVE STRENGTH, ANCHOR SPACING, EDGE DISTANCES, CONCRETE MEMBER THICKNESS, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS	-	X	ESR 1017	1705.1.1



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: M30

REV	DATE	DESCRIPTION
3	10/17/16	PERMITTING COMMENTS
2	06/26/16	PERMITTING COMMENTS
1	05/20/16	PERMITTING COMMENTS
0	05/20/16	SUBMIT FOR PERMITTING



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
SPECIAL INSPECTIONS

SHEET NUMBER

T-2

EXEMPT FROM ZONING



SAN DIEGO, CA



BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 436-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: M3G

2	10/17/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
1	06/26/14	PERMITTING COMMENTS
0	06/26/14	ORDER FOR PERMITTING
REV	DATE	DESCRIPTION

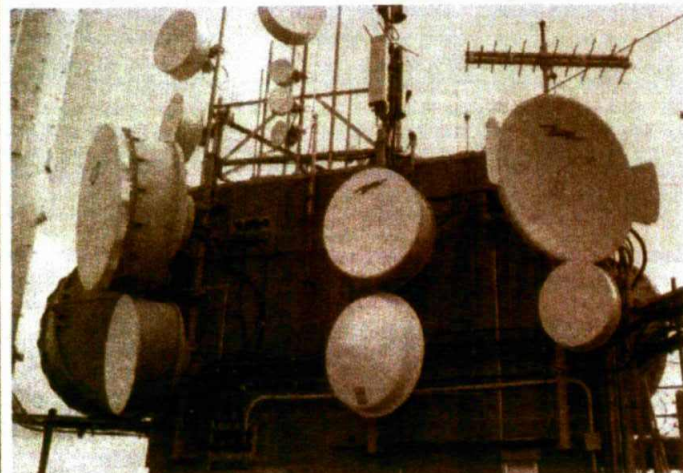


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
CONDITIONS OF APPROVAL

SHEET NUMBER
T-3

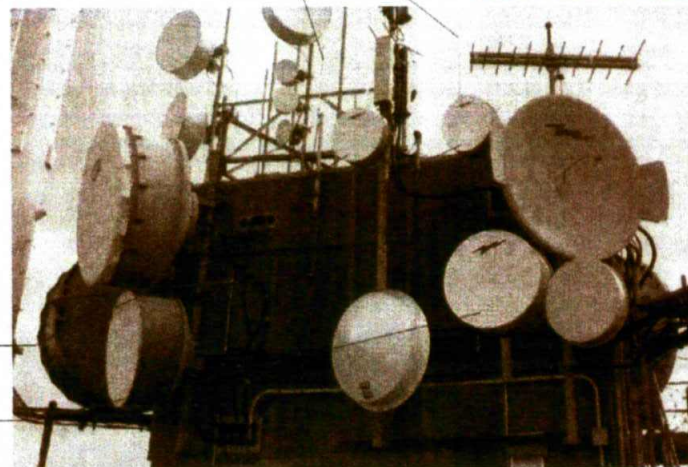


EXISTING VIEW 1 -
LOOKING EAST

EXISTING SITE

(2) PROPOSED 5'-0"
OMNI ANTENNAS

PHOTOGRAPHIC SIMULATION -
VIEW 1 - LOOKING EAST



PROPOSED NEW 2'-6"
MICROWAVE DISH

PROPOSED NEW 4'-0"
MICROWAVE DISH



BLACK & VEATCH CORPORATION - 10950 GRANDVIEW DRIVE - BUILDING 34 - OVERLAND PARK, KS 66210 - 913-458-2000

2/2



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MBG

REV	DATE	DESCRIPTION
0	05/26/14	ISSUED FOR PERMITTING
1	05/26/14	PERMITTING COMMENTS
2	05/26/14	PERMITTING COMMENTS
3	10/13/14	PERMITTING COMMENTS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
PHOTO SIMULATIONS

SHEET NUMBER

T-4

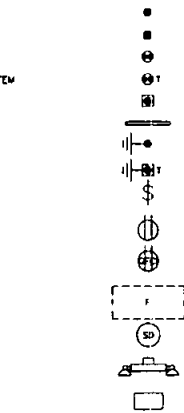
EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
EXOTHERMIC WITH INSPECTION SLEEVE
GROUNDING BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE
SINGLE POLE SWITCH

DUPLEX RECEPTACLE
DUPLEX GFCI RECEPTACLE

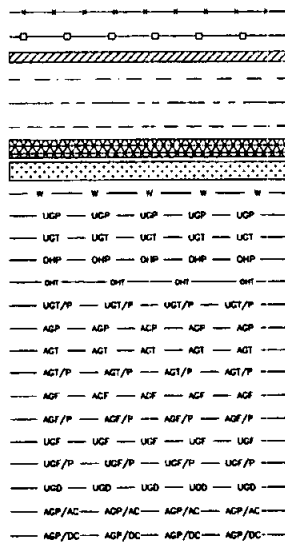
FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 4R-T8

SMOKE DETECTION (DC)

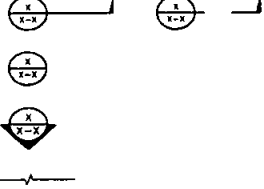
EMERGENCY LIGHTING (DC)
SECURITY LIGHT W/PHOTOCELL LITHONIA ALK
LED-1-25MA400/51K-SR4-120-PC-DOBTD



CHAINLINK FENCE
WOOD/WROUGHT IRON FENCE
WALL STRUCTURE
LEASE AREA
PROPERTY LINE (PL)
SETBACKS
KCF BRIDGE
CABLE TRAY
WATER LINE
UNDERGROUND POWER
UNDERGROUND TELCO
OVERHEAD POWER
OVERHEAD TELCO
UNDERGROUND TELCO/POWER
ABOVE GROUND POWER
ABOVE GROUND TELCO
ABOVE GROUND TELCO/POWER
ABOVE GROUND FIBER
ABOVE GROUND FIBER/POWER
UNDERGROUND FIBER
UNDERGROUND FIBER/POWER
UNDERGROUND DUCT
ABOVE GROUND POWER/AC
ABOVE GROUND POWER/DC



SECTION REFERENCE
DETAIL REFERENCE
ELEVATION REFERENCE
BREAKLINE



LEGEND

AB ANCHOR BOLT
ABV ABOVE
AC ALTERNATING CURRENT
ADDL ADDITIONAL
AFT ABOVE FINISHED FLOOR
AFG ABOVE FINISHED GRADE
AGL ABOVE GROUND LEVEL
AIC AMPERAGE INTERRUPTION CAPACITY
ALUM ALUMINUM
ALT ALTERNATE
ANT ANTENNA
APPROX APPROXIMATE
ARCH ARCHITECTURAL
ATS AUTOMATIC TRANSFER SWITCH
AWG AMERICAN WIRE GAUGE
BATT BATTERY
BLDG BUILDING
BLK BLOCK
BLKG BLOCKING
BM BEAM
BTC BARE TINNED COPPER CONDUCTOR
BOF BOTTOM OF FOOTING
CAB CABINET
CANT CANTILEVERED
CEC CALIFORNIA ELECTRIC CODE
CHG CHARGING
CLG CEILING
CLR CLEAR
COL COLUMN
COMM COMMON
CONC CONCRETE
CONSTR CONSTRUCTION
DBL DOUBLE
DC DIRECT CURRENT
DEPT DEPARTMENT
DFA DOUGLAS FIR
DF DIAMETER
DAG DIAGONAL
DIM DIMENSION
DWG DRAWING
DWL DOWEL
(E) EXISTING
EA EACH
EC ELECTRICAL CONDUCTOR
EL ELEVATION
ELEC ELECTRICAL
EMT ELECTRICAL METALLIC TUBING
ENG ENGINEER
EQ EQUAL
EXP EXPANSION
EXT EXTERIOR
FAB FABRICATION
FF FINISH FLOOR
FG FINISH GRADE
FF FACILITY INTERFACE FRAME
FIN FINISH(ED)
FLR FLOOR
FDM FOUNDATION
FOC FACE OF CONCRETE
FOM FACE OF MASONRY
FOS FACE OF STUD
FOW FACE OF WALL
FS FINISH SURFACE
FT FOOT
FTG FOOTING
GA GAUGE
GEN GENERATOR
GFCI GROUND FAULT CIRCUIT INTERRUPTER
GLB GLUE LAMINATED BEAM
GLV GALVANIZED
GPS GLOBAL POSITIONING SYSTEM

GND GROUND
GSM GLOBAL SYSTEM FOR MOBILE
HDR HEADER
HGR HANGER
HVAC HEAT/VENTILATION/AIR CONDITIONING
HT HEIGHT
GR INTERIOR GROUND RING
IN INCH
INT INTERIOR
LBS POUNDS(S)
LF LINEAR FEET
LTE LONG TERM EVOLUTION
MAS MASONRY
MAX MAXIMUM
MB MACHINE BOLT
MECH MECHANICAL
MFR MANUFACTURER
MGB MASTER GROUND BAR
MIN MINIMUM
MISC MISCELLANEOUS
MTL METAL
MTS MANUAL TRANSFER SWITCH
MW MICROWAVE
(N) NEW
NEC NATIONAL ELECTRICAL CODE
NO. NUMBER
NTS NOT TO SCALE
OC ON CENTER
OPNG OPENING
(P) PROPOSED
P/C PRECAST CONCRETE
PCS PERSONAL COMMUNICATION SERVICES
PCU PRIMARY CONTROL UNIT
PRC PRIMARY RADIO CABINET
PP POLARIZING PRESERVING
PSF POUNDS PER SQUARE FOOT
PSI POUNDS PER SQUARE INCH
PT PRESSURE TREATED
PWR POWER CABINET
QTY QUANTITY
RAD RADIUS
RECT RECTIFIER
REF REFERENCE
REINF REINFORCEMENT
REQ'D REQUIRED
RET REMOTE ELECTRIC TILT
RMC RIGID METALLIC CONDUIT
RRH REMOTE RADIO HEAD
RRU REMOTE RADIO UNIT
RWY RACEWAY
SCH SCHEDULE
SMT SHEET
SIAD SMART INTEGRATED DEVICE
SIM SIMILAR
SPEC SPECIFICATION
SQ SQUARE
SS STAINLESS STEEL
STD STANDARD
STL STEEL
STRUCT STRUCTURAL
TEMP TEMPORARY
THK THICKNESS
TMA TOWER MOUNTED AMPLIFIER
TN TOE NAIL
TOA TOP OF ANTENNA
TOC TOP OF CURB
TOF TOP OF FOUNDATION
TOP TOP OF PLATE (PARAPET)
TOS TOP OF STEEL
TOW TOP OF WALL

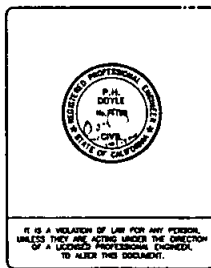
ABBREVIATIONS

TVSS TRANSIENT VOLTAGE SUPPRESSION SYSTEM
TYP TYPICAL
UG UNDERGROUND
UL UNDERWRITERS LABORATORY
UNO UNLESS NOTED OTHERWISE
UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VF VERIFIED IN FIELD
W WIDE
W/ WITH
WD WOOD
W.P. WORK POINT
WP WEATHERPROOF
WT WEIGHT



PROJECT NO. 182301
DRAWN BY: RAS
CHECKED BY: MDC

REV	DATE	DESCRIPTION
1	12/12/14	PERMITTING CHANGES
2	01/26/15	PERMITTING CHANGES
3	02/26/15	PERMITTING CHANGES
4	05/22/15	REVISED FOR FIELDTIME



COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
LEGEND
& ABBREVIATIONS

SHEET NUMBER
GN-1

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
GENERAL CONTRACTOR - OVERLAND CONTRACTING INC. (BAY)
SUBCONTRACTOR - CONTRACTOR (CONSTRUCTION)
OWNER - SDGE

2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND SDGE PROJECT SPECIFICATIONS.

3. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.

4. GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL VISIT THE SITE AND SHALL BECOME FAMILIAR WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND COMPROMISE THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

5. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.

9. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISPLINES

10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF 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 AND THE LOCAL JURISDICTION.

11. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAD PLUMBS AND TRUE AS INDICATED ON THE DRAWINGS.

12. SEAL ANY PENETRATION WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. SUBCONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.

13. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISHED SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.

14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. SUBCONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.

15. SUBCONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

16. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAYMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

17. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRAVEL AND SUBCONTRACTORS TO THE SITE AND/OR BUILDING.

19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

20. THE GENERAL CONTRACTOR SHALL MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDITION, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

21. THE GENERAL CONTRACTOR AND SUBCONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A-10-B-C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TREKING AND EXCAVATION.

23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.

24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADDED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.

25. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.

26. NO FILL OR EMBARMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBARMENT.

27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 90 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FILLABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.

28. ALL NECESSARY RUBBER, STAMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.

29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT RECORDS TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.

32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).

33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY SDGE TECHNICIANS.

34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

35. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.

36. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.

37. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISTS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

38. NO WHITE STROBE LIGHTS ARE PERMITTED LIGHTING IS REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

39. ALL COAXIAL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

PART 1 - GENERAL

1.1 GENERAL CONDITIONS:
A. CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE SUBCONTRACTOR'S FUNCTIONING, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION. NOT AFTER THE CONTRACT HAS BEEN AWARDED.

B. THE SUBCONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE OF THE WORK UNDER THIS SECTION.

C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2010 EDITION OF THE CALIFORNIA ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES. CONDUIT BENDS SHALL BE THE RADIOUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE 2010 EDITION OF CEC.

1.3 REFERENCES:

A. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS NOTED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THESE PUBLICATIONS.

1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
3. ICE (INSULATED CABLE ENGINEERS ASSOCIATION)
4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
7. UL (UNDERWRITERS LABORATORIES, INC.)

1.4 SCOPE OF WORK:

A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND BE OPERATIONAL.

B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE SUBCONTRACTOR.

C. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAMING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.

D. THE SUBCONTRACTOR SHALL FURNISH TO THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.

E. THE SUBCONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WORKING EQUIPMENT CONDITIONS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

PART 2 - PRODUCTS

2.1 GENERAL:

A. ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.

B. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.

C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE CALIFORNIA ELECTRICAL CODE.

D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:
1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THROUGH AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
2. LIGHTWEIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.

B. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE FROM TYPE GROUNDING BUSBARS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.

C. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

D. CONDUCTORS AND CABLE:
1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.
2. #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND #8 AWG AND LARGER CONDUCTORS

SHALL BE STRANDED

3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.

4. STRAIN-RELIEF SUPPORT GRIPS SHALL BE HUBBELL KELLENS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.

5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).

6. DISCONNECT SWITCHES

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR ENGINEERED APPROVED EQUAL.

D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

1. INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE. ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AND C3 EXOTHERMICALLY WELDED POTENTIAL PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE. KIT GROUNDING ROD TYPES K2-(1)CS OR K2-(1)CS, (1) 1/2" OR 20" AS AVAILABLE FROM MANUFACTURER, BUT NOT LESS THAN 8" MIN (REQUIRED PER DEC 253.52 A (3)).

2. GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "TREATMENT" HOLES, KIT MODEL #28-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMINATED NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS, D NUMBERS, AND THE ELECTRICAL POWER SOURCE.

3. BACKFILL MATERIAL SHALL BE LYONCHITE AND LYONCHITE GROUNDING GRAVEL.

E. SYSTEM GROUNDING:

1. ALL GROUNDING COMPONENTS SHALL BE THINNED AND GROUNDING CONDUCTOR SHALL BE #2 AND BARE, SOLID, TINNED, COPPER, ABOVE GROUND GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.

2. GROUNDING BUSSES SHALL BE BARE, THINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS W/8" SHALL BE FURNISHED AND INSTALLED BY THE SUBCONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.

3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHIELD.

4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.

5. GROUNE RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, W/8" WELDED TO CORE, 3/8"x1/2"-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.

6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH SPECIFICATIONS. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BOND AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

F. OTHER MATERIALS

1. THE SUBCONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.

2. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY DEC.

3. PANELS AND LOAD CENTERS:

1. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 - EXECUTION

3.1 GENERAL:

A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL HARM DURING INSTALLATION AND CONSTRUCTION PERIODS.

3.2 LABOR AND WORKMANSHIP:

A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WORKMEN, IN A NEAT AND WORKMAN-LIKE MANNER.

B. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE SUBCONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.

C. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

A. THE SUBCONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

A. CONDUIT:
1. ALL ELECTRICAL WORK SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4" INCH TRADE SIZE.
2. PROVIDE RIGID PVC SCHEDULE 40 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. ENT MAY BE INSTALLED FOR OUTDOOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
3. THE INSTALLATION OF SCHEDULE 40 PVC AND RMC CONDUITS SHALL BE 24 INCHES MINIMUM DEPTH. ALL 90 DEGREE BENDS SHALL BE RMC. EXPANSION JOINTS ARE REQUIRED ON ALL CONDUIT RISERS.



SAN DIEGO, CA

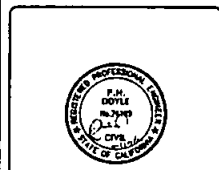


BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 456-2000

PROJECT NO: 162301
DRAWN BY: RAS
CHECKED BY: MBO

REV	DATE	DESCRIPTION
1	05/11/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
3	06/26/14	PERMITTING COMMENTS
4	06/26/14	PERMITTING COMMENTS
5	06/26/14	PERMITTING COMMENTS
6	06/26/14	PERMITTING COMMENTS
7	06/26/14	PERMITTING COMMENTS
8	06/26/14	PERMITTING COMMENTS
9	06/26/14	PERMITTING COMMENTS
10	06/26/14	PERMITTING COMMENTS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

- #### B. CONDUCTORS AND CABLE:

DESCRIPTION	200/240/120 SYSTEM
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN

DESCRIPTION	200/240/120 SYSTEM
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN

13. THE INSTALLATION OF CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEADING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
 14. DRIVE GROUND RODS UNTIL TOPS ARE A MINIMUM DISTANCE OF 36" DEPTH OR 8" BELOW FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
 15. IF COAX ON THE ICE BRIDGE IS MORE THAN 8 FT. FROM THE GROUNDING BAR AT THE BASE OF THE TOWER, THE SECOND GROUNDING BAR SHALL BE NEEDED AT THE END OF THE ICE BRIDGE, TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
 16. SUBCONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE SUBCONTRACTORS EXPENSE.
- 3.5 ACCEPTANCE TESTING:**
- A. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST RESULTS UPON COMPLETION.
 - B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, NON-COMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON-COMPLIANCE.
- C. TEST PROCEDURES:**
1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION BUT BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUND. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST RESULTS.
 2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
 3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
 4. PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 81-POINT TALK-OR-TAP METHOD. PROVIDE PRINTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.



NOTES:

1. THIS SITE PLAN HAS BEEN CREATED WITHOUT THE BENEFIT OF A SITE SURVEY AND SHOULD BE USED FOR CONCEPTUAL PURPOSES ONLY.
2. THE PASSING STRUCTURAL ANALYSIS FOR THE EXISTING ROOFTOP HAS BEEN COMPLETED BY BLACK & VEATCH ON MAY 2ND, 2014. BASED ON PASSING STRUCTURAL ANALYSIS, THE EXISTING BUILDING HAS SUFFICIENT STRUCTURAL CAPACITY TO SUPPORT THE EXISTING AND PROPOSED LOADS.



OVERALL SITE PLAN



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MBG

REV	DATE	DESCRIPTION
3	10/17/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
1	05/20/14	PERMITTING COMMENTS
0	05/20/14	ISSUED FOR PERMITTING



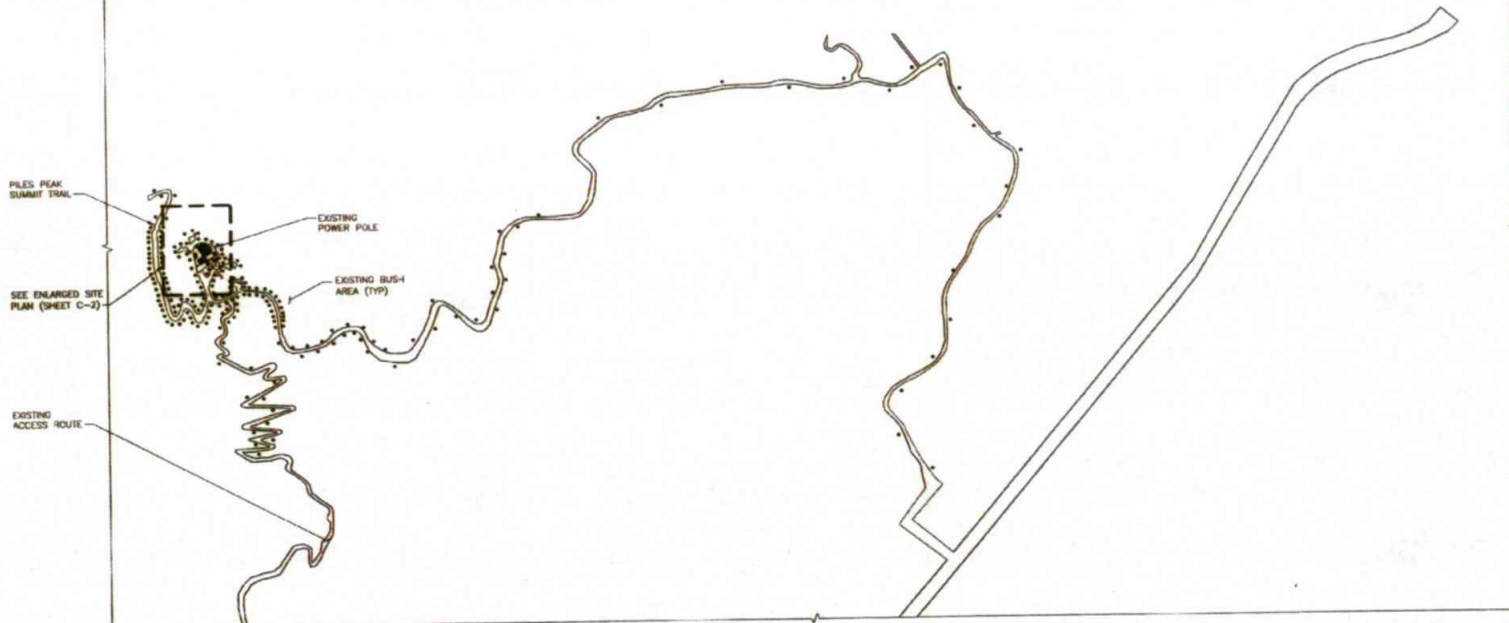
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
C-1

APPROVED
JUD. & CLERK OF COURT
JANUARY 1, 1900
H. H. F. [Signature]

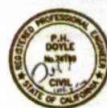
[illegible]

SITE PLAN



PROJECT NO:	182301
DRAWN BY:	RAS
CHECKED BY:	MBZ

REV	DATE	DESCRIPTION
0	05/20/14	ISSUED FOR PERMITTING
1	06/26/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
3	10/17/14	PERMITTING COMMENTS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

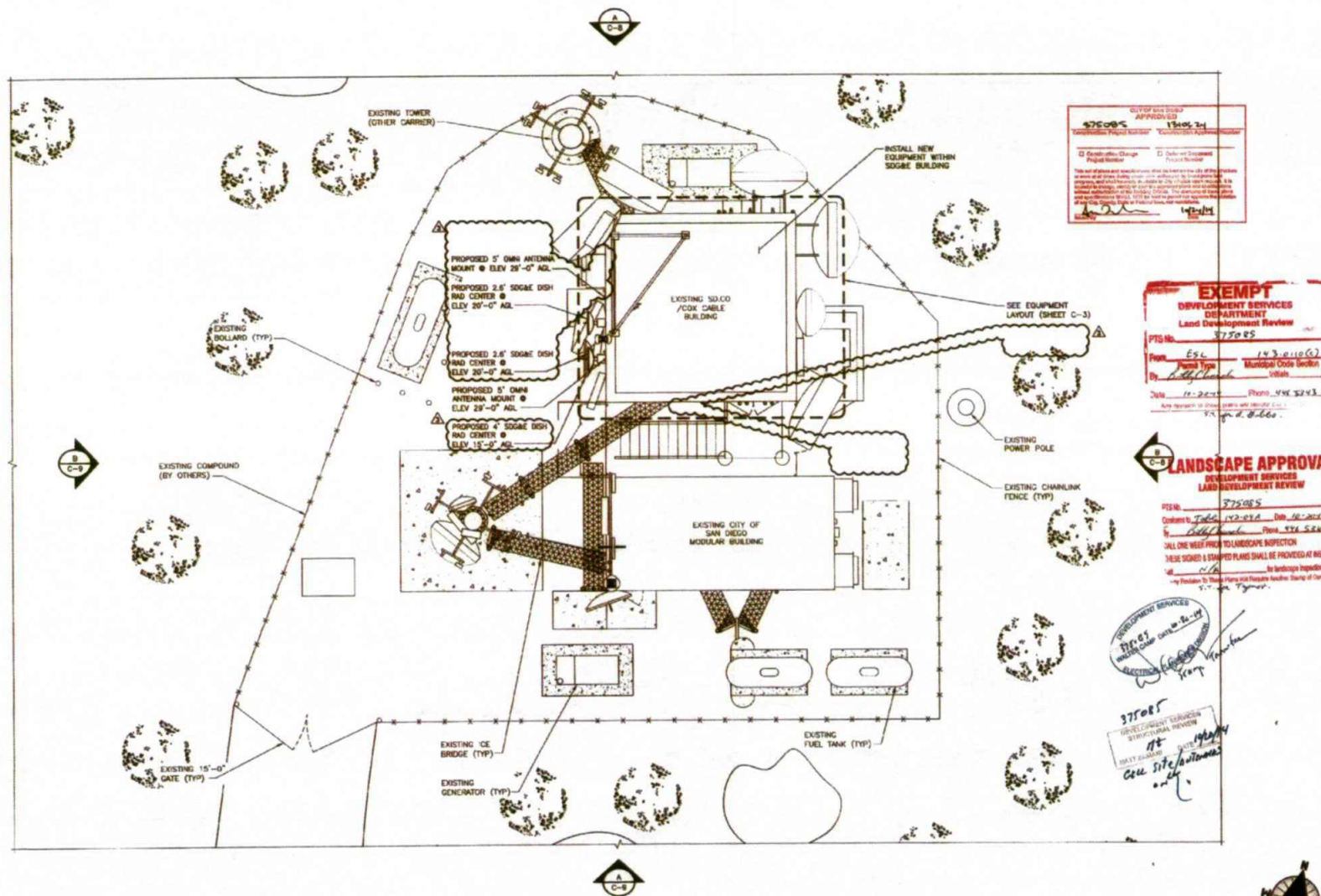
SHEET TITLE
SITE PLAN

SHEET NUMBER

C-1.1

NOTE:

1. THIS SITE PLAN HAS BEEN CREATED WITHOUT THE BENEFIT OF A SITE SURVEY AND SHOULD BE USED FOR CONCEPTUAL PURPOSES ONLY.



EXEMPT
DEVELOPMENT SERVICES
DEPARTMENT
Land Development Review
PTS No. 375085
Plan: 143-010-02
Project Type: Municipal Code Section: 143.010-02
Date: 11-28-14
Phone: 619.527.4313
Fax: 619.527.4314
City Engineer: [Signature]

LANDSCAPE APPROVAL
DEVELOPMENT SERVICES
DEPARTMENT
Land Development Review
PTS No. 375085
Comments to: [Signature] Date: 11-28-14
By: [Signature] Date: 11-28-14
Phone: 619.527.4313
Fax: 619.527.4314
City Engineer: [Signature]

375085
DEVELOPMENT SERVICES
DEPARTMENT
Land Development Review
DATE: 11-28-14
DESIGNED BY: [Signature]
CHECKED BY: [Signature]



PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MBO

REV	DATE	DESCRIPTION
3	10/11/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
1	06/26/14	PERMITTING COMMENTS
0	06/26/14	ISSUED FOR PERMITTING



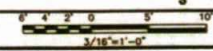
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

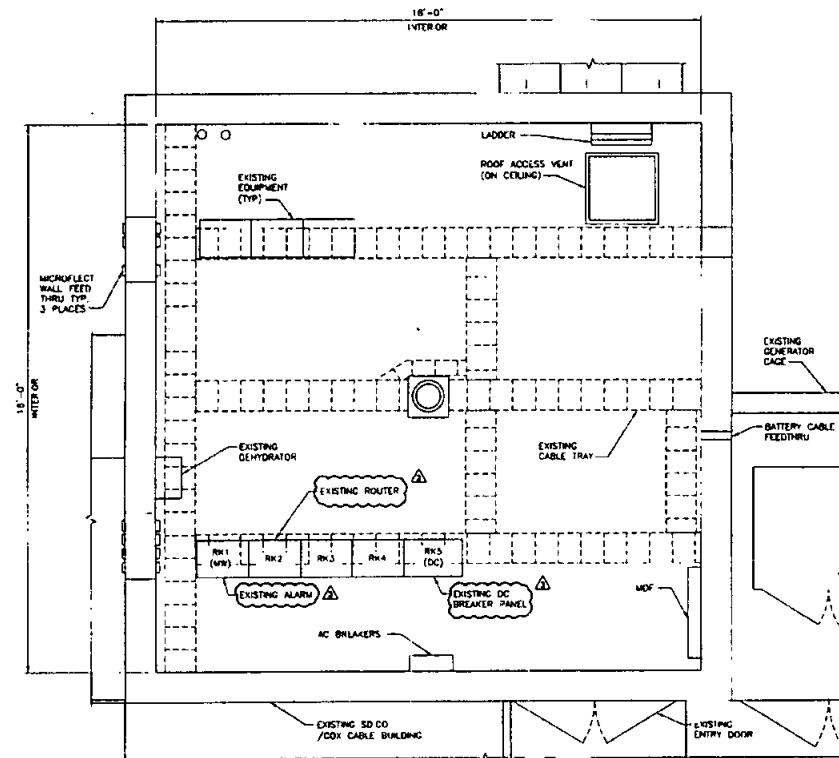
COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
ENLARGED SITE PLAN

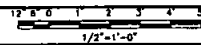
SHEET NUMBER
C-2

ENLARGED SITE PLAN





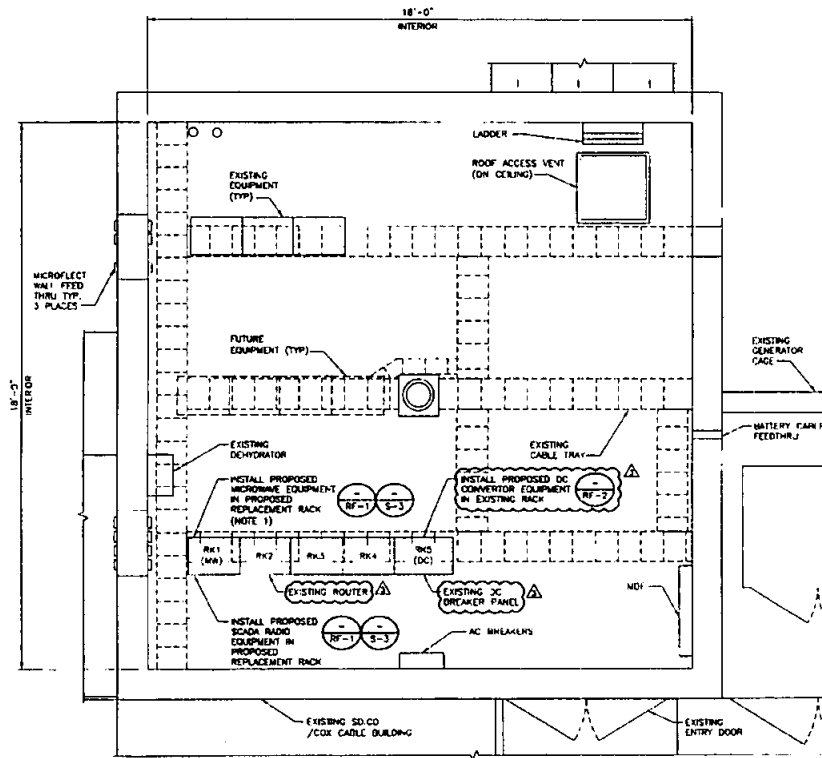
EXISTING EQUIPMENT LAYOUT



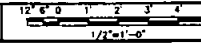
A

NOTE:

1. BUILDING TO REPLACE EXISTING RACK IN SPACE WITH NEW RACK. EXISTING LINK WILL NOT BE DECOMMISSIONED UNTIL NEW LINK IS FUNCTIONAL AND CIRCUITS ARE TRANSFERRED.



PROPOSED EQUIPMENT LAYOUT



B



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MEG

REV	DATE	DESCRIPTION
1	06/20/16	ISSUED FOR PERMITTING
2	06/20/16	PERMITTING COMMENTS
3	06/20/16	PERMITTING COMMENTS
4	06/20/16	PERMITTING COMMENTS
5	06/20/16	PERMITTING COMMENTS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
EQUIPMENT LAYOUTS

SHEET NUMBER

C-3



BLACK & VEATCH

10050 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 450-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MRG

REV	DATE	DESCRIPTION
1	10/17/14	FORWAVE COMMENTS
2	06/30/14	FORWAVE COMMENTS
3	06/30/14	FORWAVE COMMENTS
4	06/30/14	ISSUE FOR FORWAVE



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

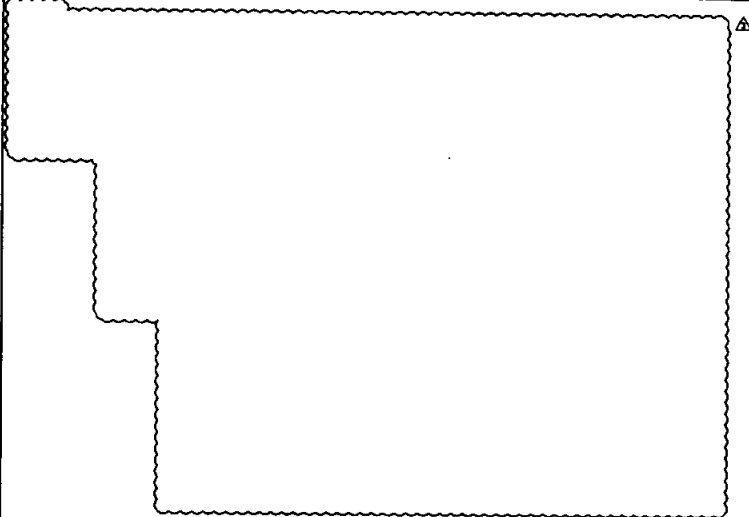
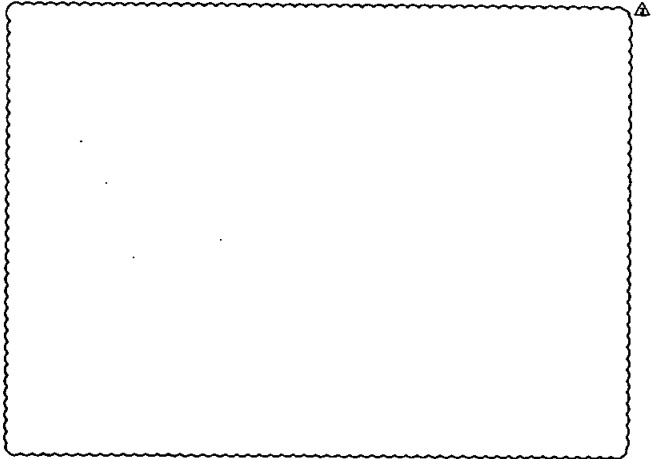
SHEET TITLE
**ANTENNA & MICROWAVE
SCHEDULES**

SHEET NUMBER
C-4

PROPOSED MICROWAVE SCHEDULE (RAD CENTER AT 15'-0")						
SECTOR	POS	MICROWAVE		ODU		COAX LINE
		MODEL NO	TIP HEIGHT (FT)	MODEL NO	Quantity	SIZE
A	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
B	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
C	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
D	1	251	VH1P6-11W	17'-0"	ES00HP11 40M	2
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
TOTALS		1		2		2

PROPOSED MICROWAVE SCHEDULE (RAD CENTER AT 20'-0")						
SECTOR	POS	MICROWAVE		ODU		COAX LINE
		MODEL NO	TIP HEIGHT (FT)	MODEL NO	Quantity	SIZE
A	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
B	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
C	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
D	1	209	VH1P600-11-2GR	21'-3"	ES00HP11 40M	2
	2	275	VH1P600-11-2GR	21'-3"	ES00HP11 40M	2
	3	-	-	-	-	-
	4	-	-	-	-	-
TOTALS		2		4		4

PROPOSED ANTENNA SCHEDULE (MOUNT HEIGHT AT 25'-0")						
SECTOR	POS	ANTENNA		ODU		COAX LINE
		MODEL NO	TIP HEIGHT (FT)	MODEL NO	Quantity	SIZE
A	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
B	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
C	1	-	-	-	-	-
	2	-	-	-	-	-
	3	-	-	-	-	-
	4	-	-	-	-	-
D	1	DB586-Y	34'-0"	-	1	1/2"
	2	DB586-Y	34'-0"	-	1	1/2"
	3	-	-	-	-	-
	4	-	-	-	-	-
TOTALS		2		-		2



DETAIL NOT USED

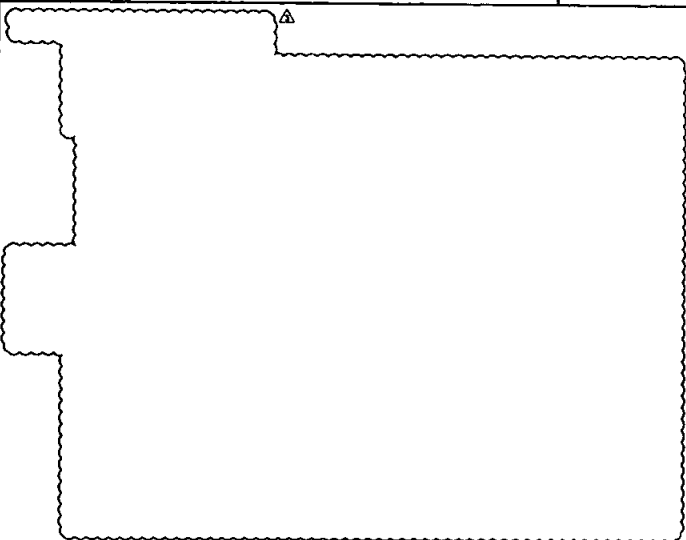
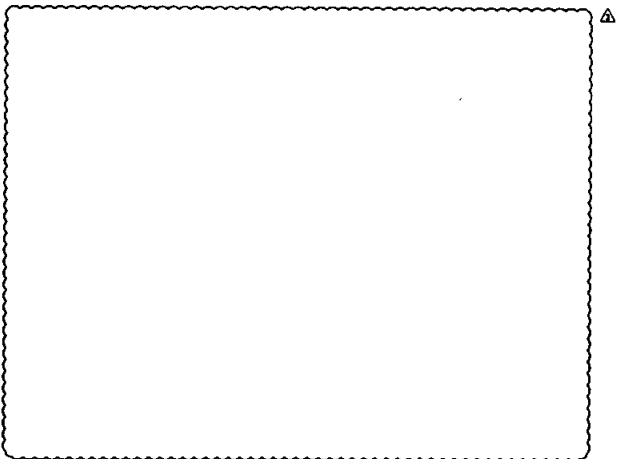
NO SCALE

A

DETAIL NOT USED

NO SCALE

B



DETAIL NOT USED

NO SCALE

C

DETAIL NOT USED

NO SCALE

D



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 436-2000

PROJECT NO: 182301
DRAWN BY: RLE
CHECKED BY: MEG

REV	DATE	DESCRIPTION
3	11/17/11	PLANNING COMMENTS
2	01/26/11	PLANNING COMMENTS
1	01/26/11	PLANNING COMMENTS
0	01/26/11	ISSUED FOR PLANNING



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
SHEET NOT USED

SHEET NUMBER

C-5



SAN DIEGO, CA



BLACK & VEATCH

10050 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 436-2000

PROJECT NO: 162301
DRAWN BY: RAS
CHECKED BY: MDJ

REV	DATE	DESCRIPTION
1	06/12/11	POWERTIME COMMENTS
2	06/28/11	POWERTIME COMMENTS
3	06/28/11	POWERTIME COMMENTS
4	06/28/11	ISSUED FOR POWERTIME



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

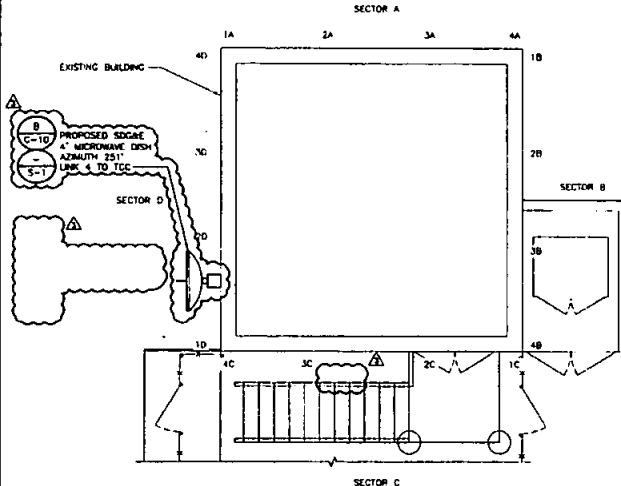
COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
MICROWAVE LAYOUTS

SHEET NUMBER

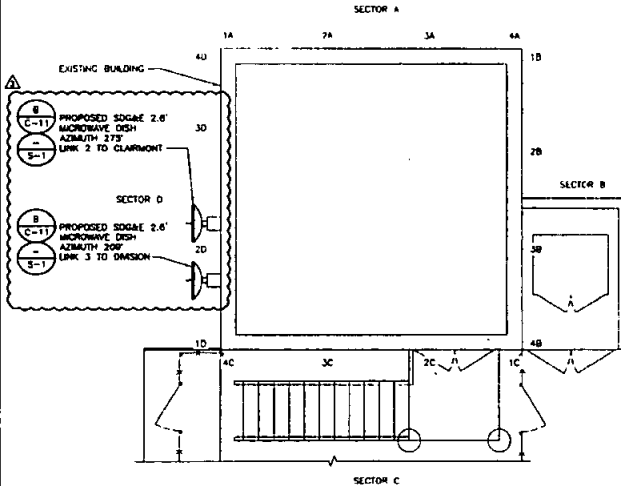
C-6

NOTE:
1. SEE SHEET C-4 FOR MICROWAVE SCHEDULE

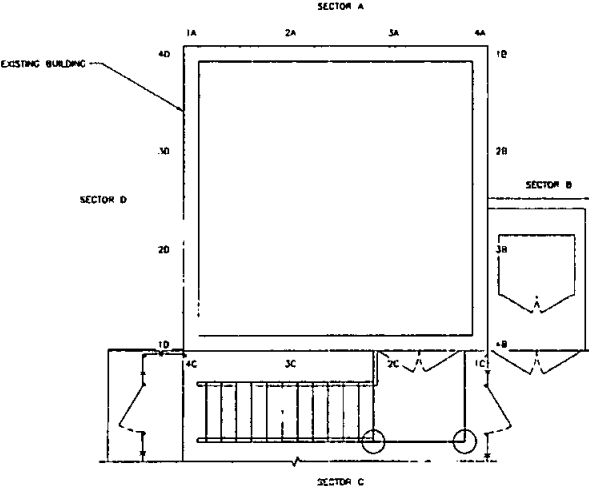


PROPOSED MICROWAVE LAYOUT (RAD CENTER AT 15'-0")

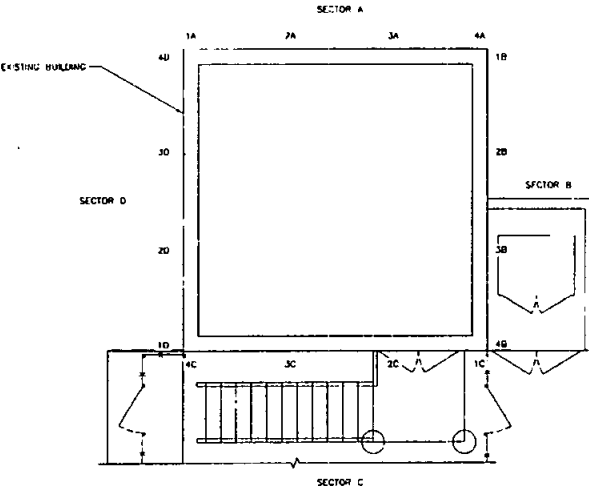
NOTE:
1. SEE SHEET C-4 FOR MICROWAVE SCHEDULE



PROPOSED MICROWAVE LAYOUT (RAD CENTER AT 20'-0")



EXISTING MICROWAVE LAYOUT (RAD CENTER AT 15'-0")



EXISTING MICROWAVE LAYOUT (RAD CENTER AT 20'-0")



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO. 182301
DRAWN BY: JCS
CHECKED BY: NDC

REV	DATE	DESCRIPTION
3	10/17/14	PERMITTING COMMENTS
2	04/26/14	PERMITTING COMMENTS
1	05/26/14	PERMITTING COMMENTS
0	06/30/14	ISSUED FOR PERMITTING



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

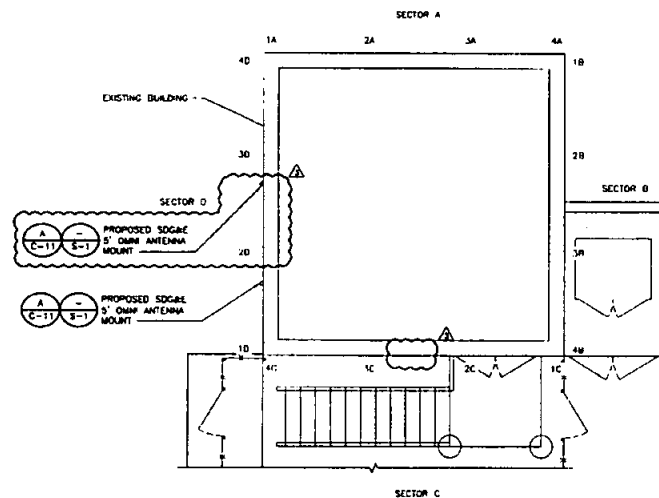
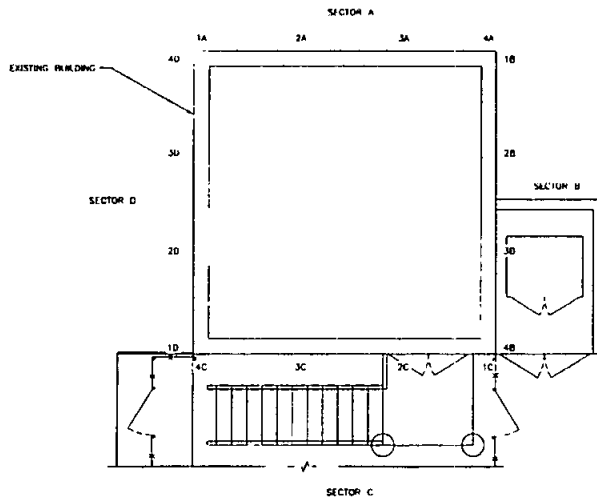
COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
ANTENNA LAYOUTS

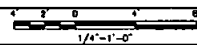
SHEET NUMBER

C-7

NOTE:
1. SEE SHEET C-4 FOR ANTENNA SCHEDULE.

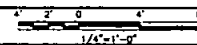


EXISTING ANTENNA LAYOUT (RAD. CENTER AT 29'-0")



A

PROPOSED ANTENNA LAYOUT (MOUNT HEIGHT AT 29'-0")



B



10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO:	182301
-------------	--------

DRAWN BY: **RAC**

CHECKED BY: MFG

3	10/17/14	PERMITTING CLARACTYS
2	06/26/14	PERMITTING COMMENTS
1	06/20/14	PERMITTING COMMENTS
8	03/20/14	SEALS FOR PERMITTING
REV	DATE	DESCRIPTION



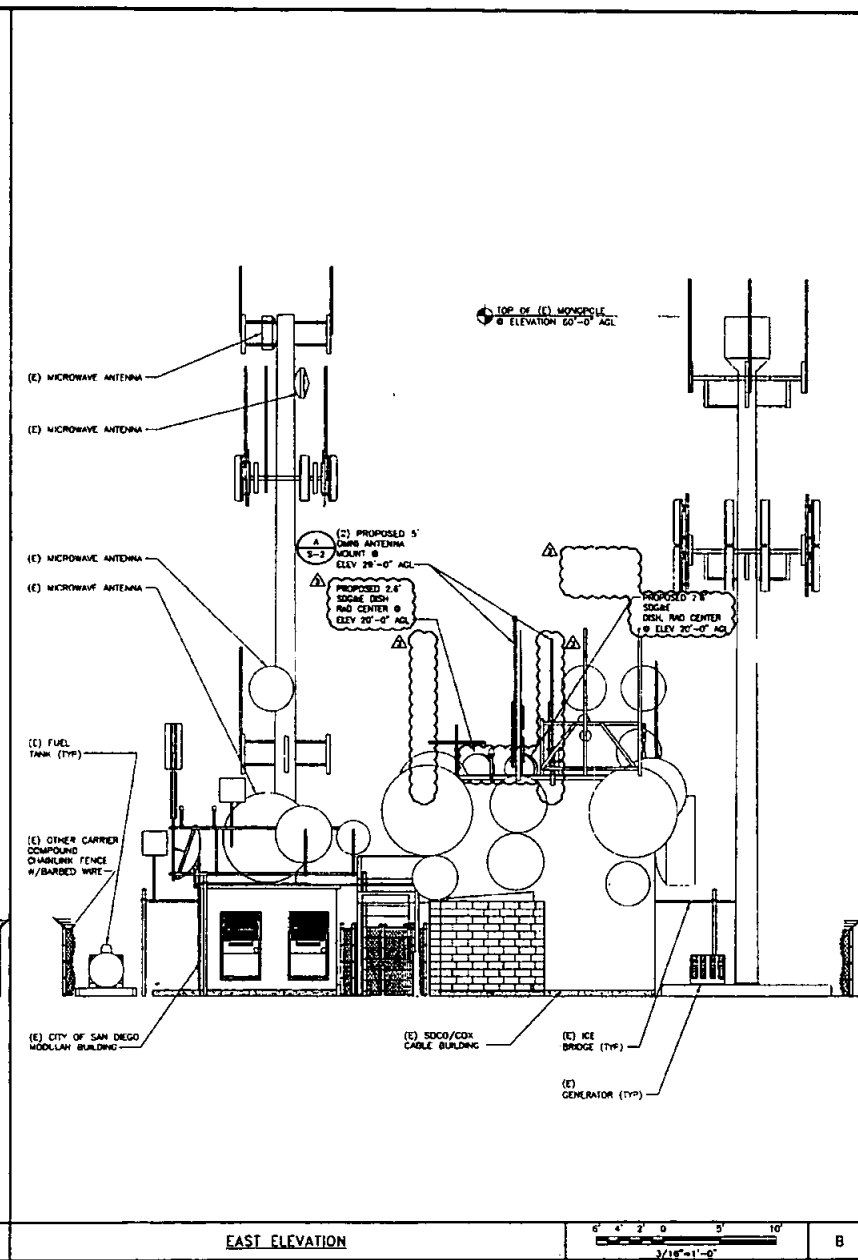
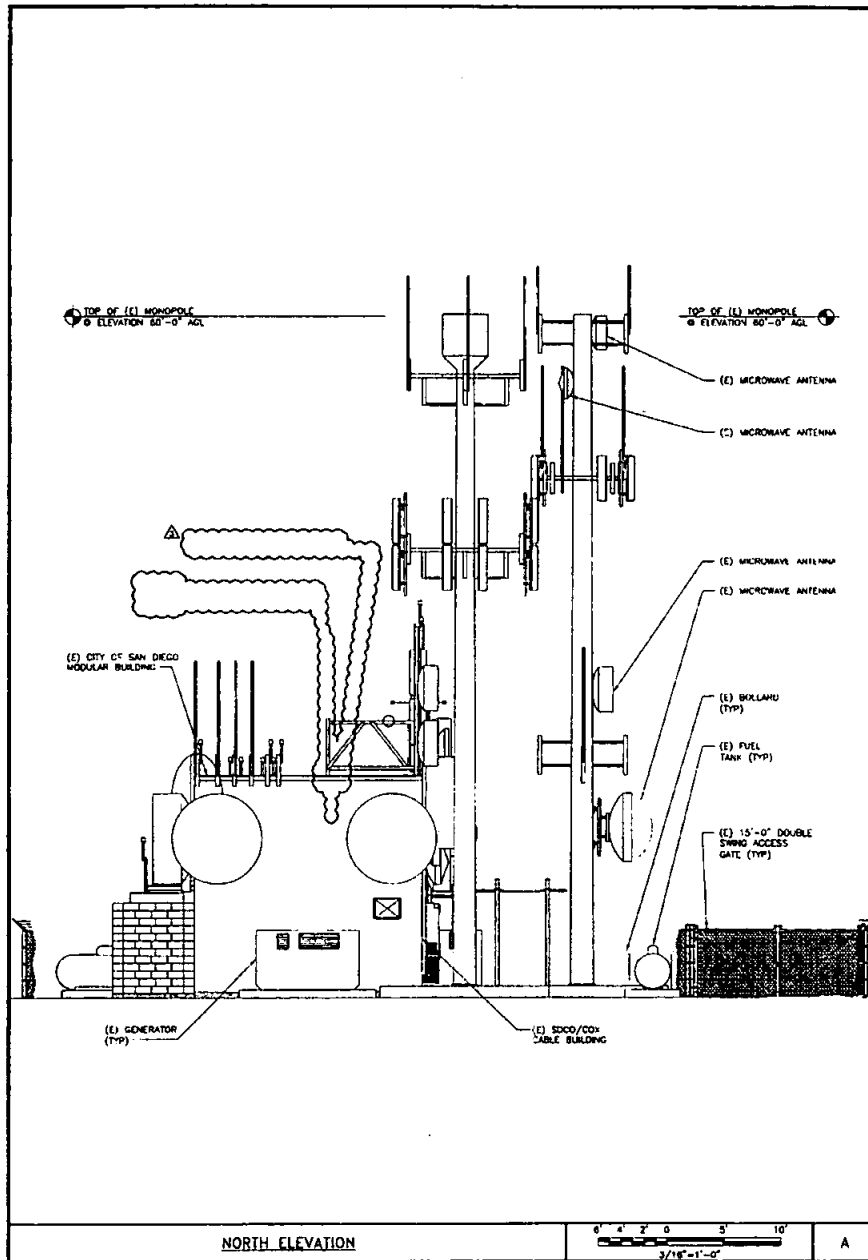
IT IS A VIOLATION OF LAW FOR ANY PERSON
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
SITE ELEVATIONS

SHEET NUMBER

C-8





BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 438-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MBG

REV	DATE	DESCRIPTION
1	06/26/14	ISSUE FOR PERMITTING
2	06/26/14	PERMITTING COMMENTS
3	06/26/14	PERMITTING COMMENTS
4	06/26/14	PERMITTING COMMENTS
5	06/26/14	PERMITTING COMMENTS
6	06/26/14	PERMITTING COMMENTS
7	06/26/14	PERMITTING COMMENTS
8	06/26/14	PERMITTING COMMENTS
9	06/26/14	PERMITTING COMMENTS
10	06/26/14	PERMITTING COMMENTS



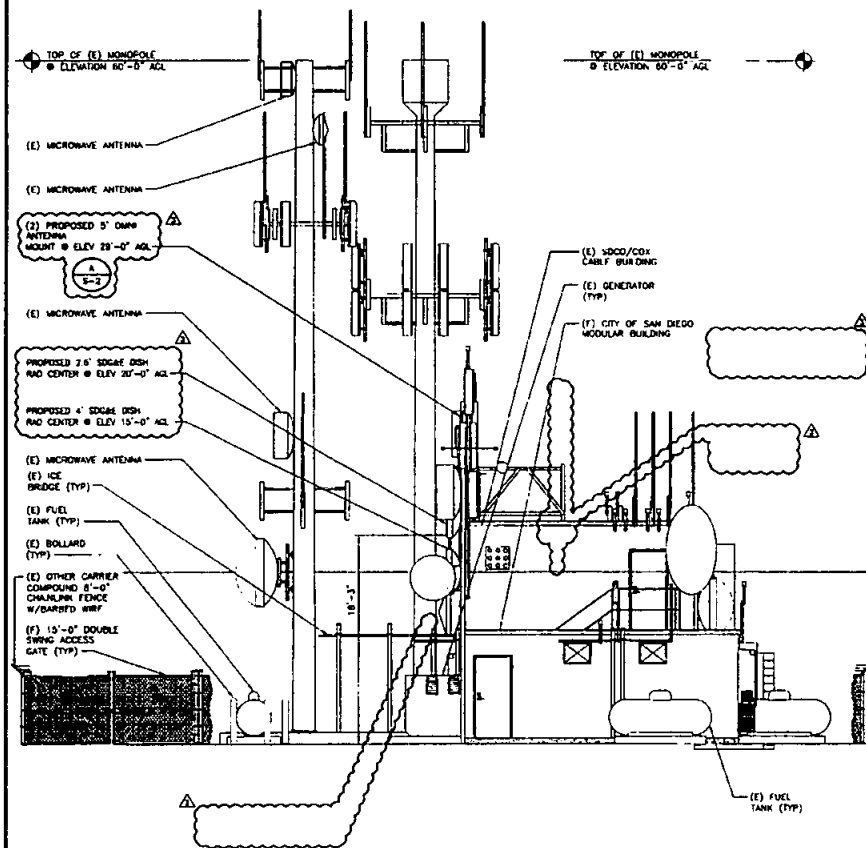
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

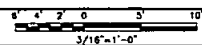
SHEET TITLE
SITE ELEVATIONS

SHEET NUMBER

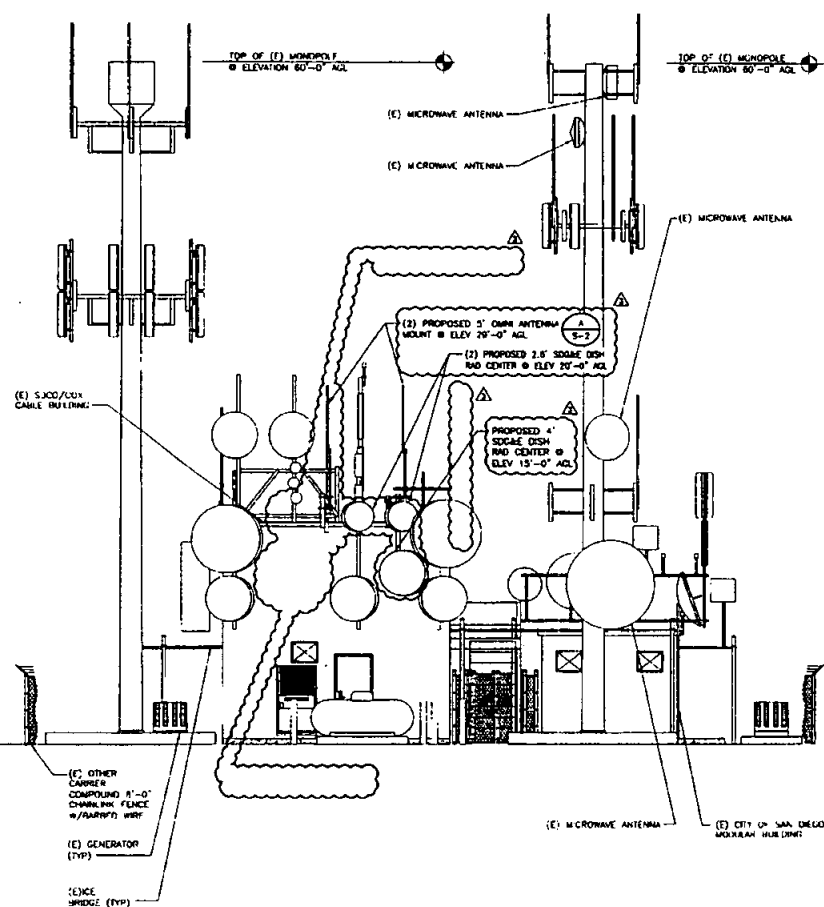
C-9



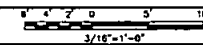
SOUTH ELEVATION



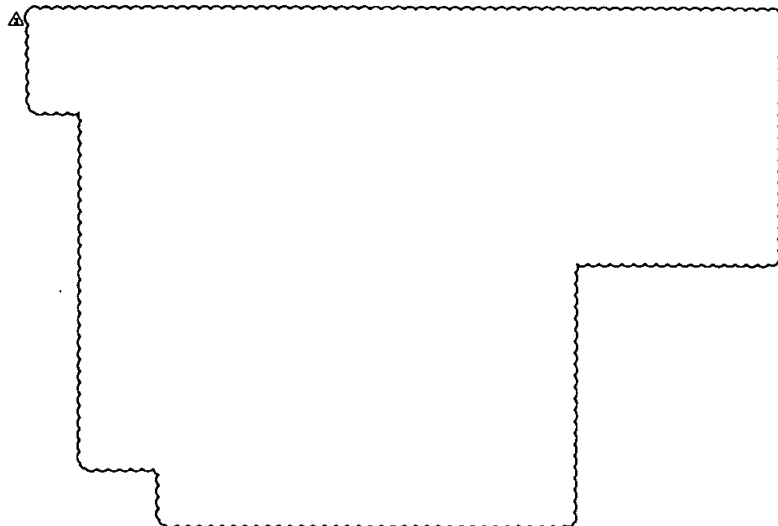
A



WEST ELEVATION



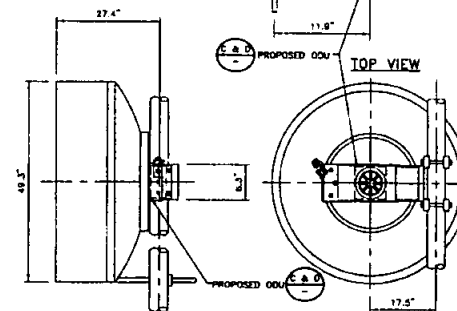
B



ANDREW ANTENNA VHLP4-11W

DIAMETER, NOMINAL: 1.2m (4ft)
 NET WEIGHT: 40kg (88lb)
 ANTENNA FINE ADJUSTMENT
 FINE AZIMUTH: $\pm 15^\circ$
 FINE ELEVATION: $\pm 15^\circ$

MICROWAVE STILT ARM AND
 ASSEMBLY KIT TO BE PROVIDED
 WITH MICROWAVE DISH



ELECTRICAL SPECIFICATIONS	
FREQUENCY BAND, GHz	10.125-11.7
BOTTOM BAND GAIN, dB	40.2
MID BAND GAIN, dB	40.7
TOP BAND GAIN, dB	41.0
BEAMWIDTH, DEGREES	1.5
FRONT/BACK, dB	66
XPD, dB	30
RETURN LOSS, dB	17.7

SIDE VIEW

REAR VIEW

DETAIL NOT USED

NO SCALE

A

PROPOSED VHLP4-11W SPECIFICATIONS

NO SCALE

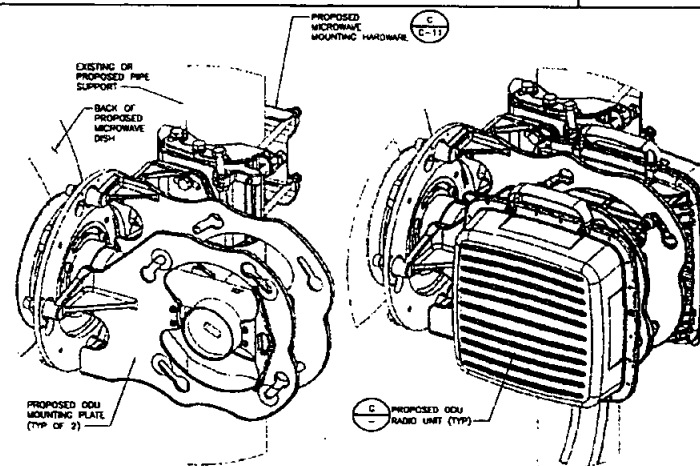
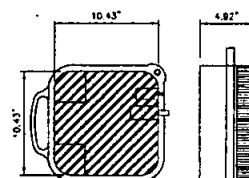
B

NOTE:

1. SEE SHEET RF-1 FOR ALL ODU CONFIGURATIONS.

AVIAT E600HP11 40M. OUTDOOR RADIO UNIT

RADIO DIMENSIONS: 28.5cm x 28.5cm x 12.5cm (10.43"x10.43"x4.92")
 RADIO NET WEIGHT: 5.0kg (11.02lbs)



ISOMETRIC VIEW

ISOMETRIC VIEW

ODU SPECIFICATIONS

NO SCALE

C

AVIAT ECLIPSE COUPLER MOUNT KIT 003

NO SCALE

D



BLACK & VEATCH

10950 GRANDVIEW DRIVE
 OVERLAND PARK, KANSAS 66210
 (913) 458-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MBO

REV	DATE	DESCRIPTION
1	10/12/11	POINTEING CONSULT
2	06/20/11	POINTEING CONSULT
3	06/20/11	POINTEING CONSULT
4	06/20/11	DESIGN FOR POINTEING
5	06/20/11	DESIGN FOR POINTEING



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

COWLES MOUNTAIN
 TOP OF COWLES MOUNTAIN TRAIL
 SAN DIEGO, CA 92119

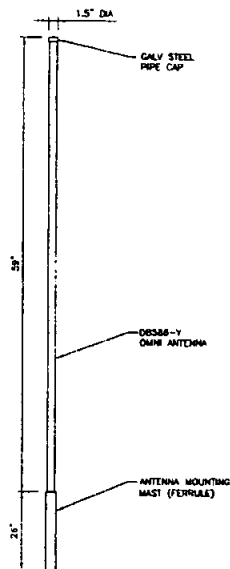
SHEET TITLE
 EQUIPMENT DETAILS

SHEET NUMBER

C-10

ANDREW DB586-Y

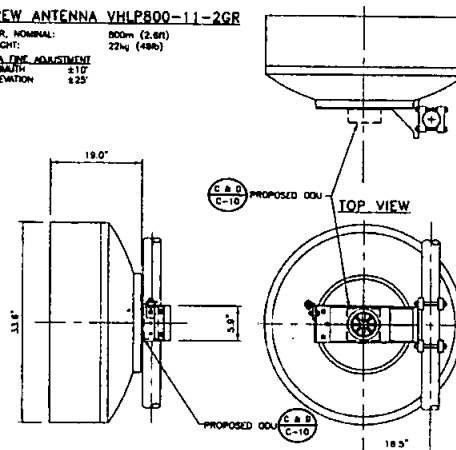
DIAMETER, NOMINAL: 30.1mm (1.2in)
 NET WEIGHT: 3.7kg (8.3lb)
 HEIGHT: 1408.8mm (55.9in)
 WIND SURVIVAL RATING: 125mph (201.2kph)



ELECTRICAL SPECIFICATIONS	
FREQUENCY RANGE, MHz	890-960
GAIN, dB	8.1
MAX INPUT POWER	400 WATTS

ANDREW ANTENNA VHLP800-11-2GR

DIAMETER, NOMINAL: 800mm (2.6ft)
 NET WEIGHT: 22kg (48lb)
 ANTENNA FINE ADJUSTMENT
 FINE AZIMUTH: ±10°
 FINE ELEVATION: ±25°

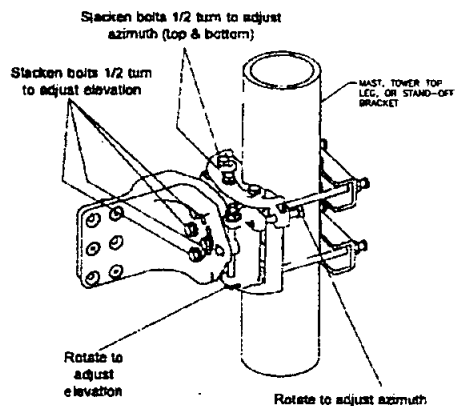


ELECTRICAL SPECIFICATIONS	
FREQUENCY BAND, GHz	10.7-11.7
BOTTOM BAND GAIN, dB	36.9
MID BAND GAIN, dB	37.4
TOP BAND GAIN, dB	38.3
BEAMWIDTH, DEGREES	2.2
FRONT/BACK, dB	59
VSWR, dB	30
RETURN LOSS, dB	17.7

PROPOSED DB586-Y SPECIFICATIONS

NO SCALE

A



ANDREW VALUELINE MICROWAVE MOUNT

NO SCALE

C

PROPOSED VHLP800-11-2GR SPECIFICATIONS

NO SCALE

B

DETAIL NOT USED

NO SCALE

D



BLACK & VEATCH

10950 GRANDVIEW DRIVE
 OVERLAND PARK, KANSAS 66210
 (913) 438-2000

PROJECT NO. 182301

DRAWN BY: RAS

CHECKED BY: MBC

REV	DATE	DESCRIPTION
3	10/17/14	FORWING COMMENTS
2	08/26/14	FORWING COMMENTS
1	05/26/14	FORWING COMMENTS
0	05/26/14	ISSUED FOR FORWING



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

COWLES MOUNTAIN
 TOP OF COWLES MOUNTAIN TRAIL
 SAN DIEGO, CA 92119

SHEET TITLE
 EQUIPMENT DETAILS

SHEET NUMBER

C-11



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MBC

REV	DATE	DESCRIPTION
1	10/17/14	PERMITTING LEADCHAS
2	06/26/14	PERMITTING TYPHOIDS
3	06/26/14	PERMITTING COMMENTS
4	06/26/14	REBUILT FOR 14 MONTHS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
**TELECOMMUNICATION
EQUIPMENT RACK**

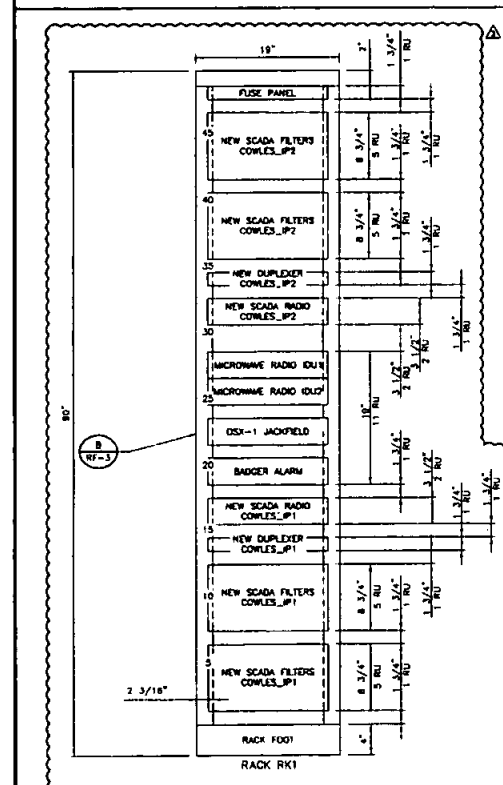
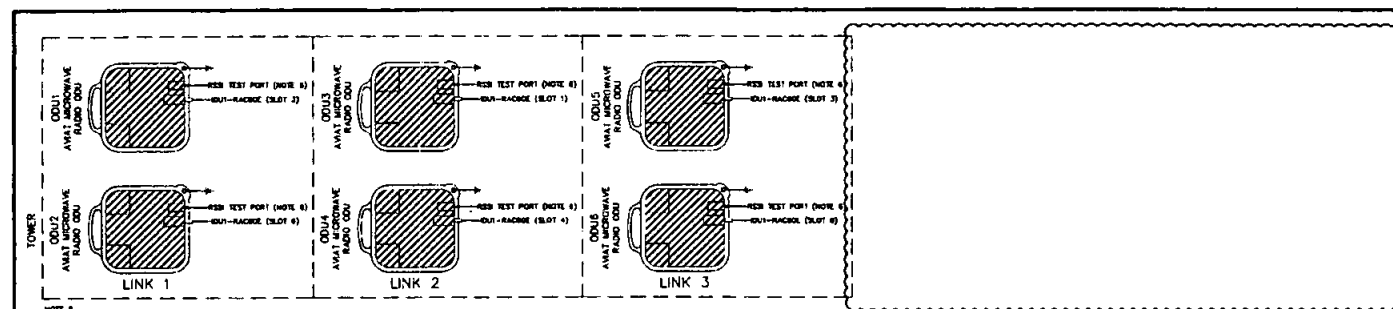
SHEET NUMBER

RF-1

ODU CONFIGURATIONS

NO SCALE

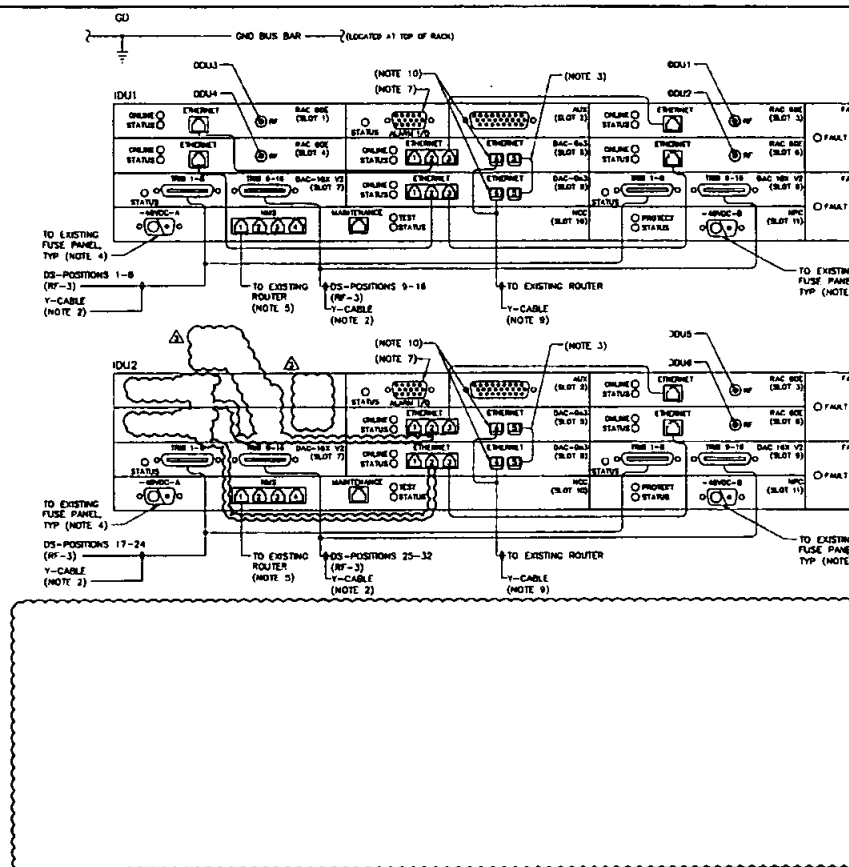
A



EXISTING TELECOM RACK
(FRONT VIEW)

NO SCALE

B



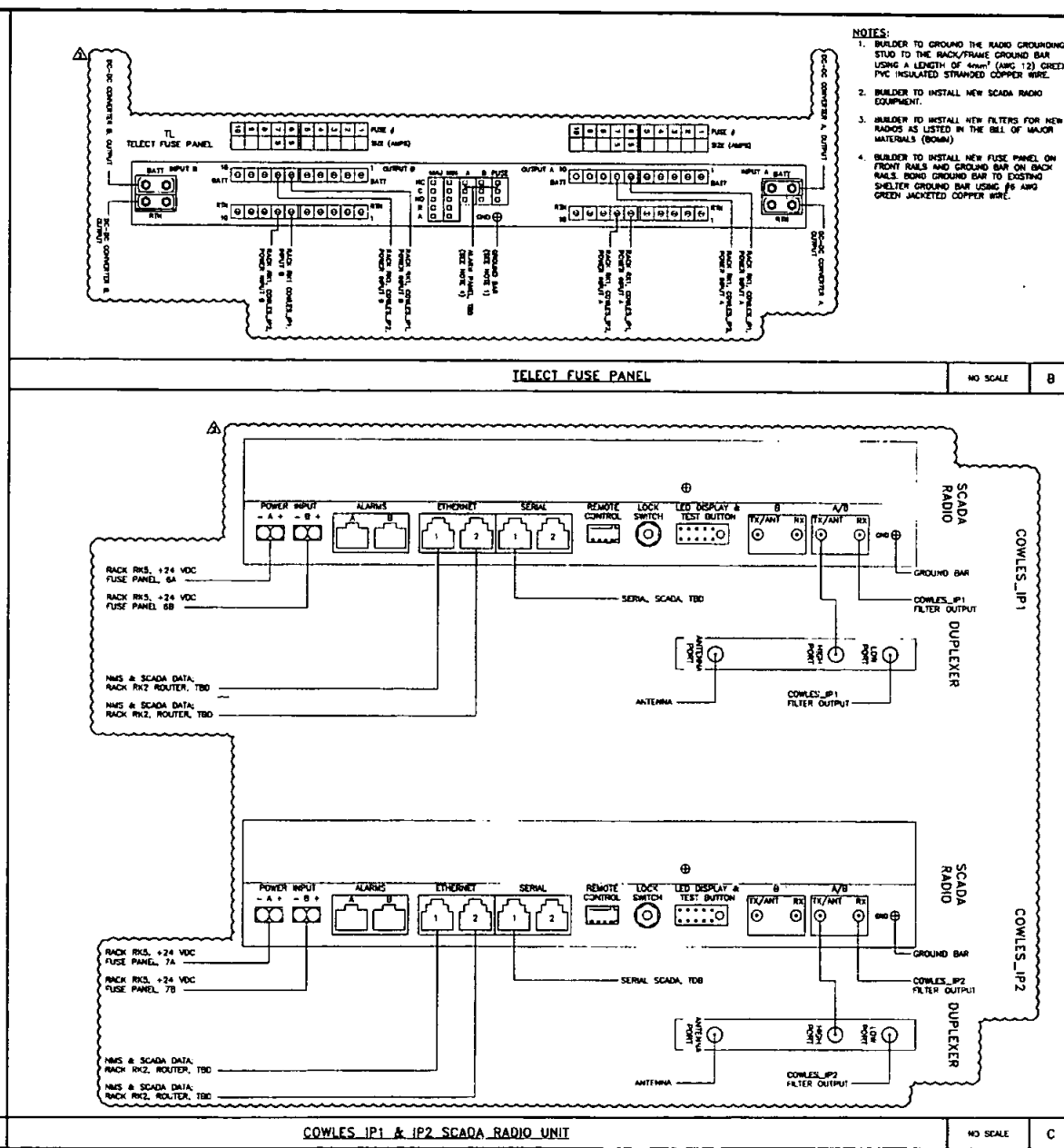
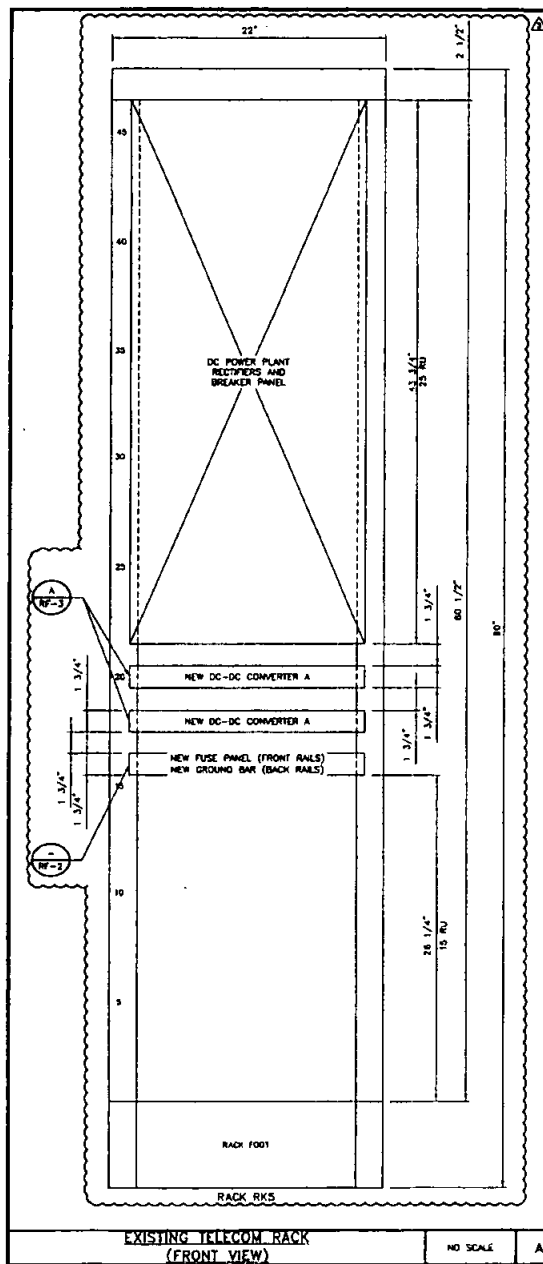
ODU1 & ODU2 - AVIAT MICROWAVE RADIO

NO SCALE

C

NOTES:

- GROUND THE ODU/ODU FROM THE GROUNDING STUD TO THE RACK/FRAME GROUND BAR USING A LENGTH OF 4 AWG (AND 12) GREEN PVC INSULATED STRANDED COPPER WIRE WITH A SUITABLE SIZED GROUND LUG AT THE GROUND BAR END (SUPPLIED BY THE INSTALLER). THE GROUNDING STUD ACCOMMODATES GROUND CABLES UP TO 18 AWG (AWG 8). THE STUD ALSO PROVIDES JACK PLUG CONNECTION FOR A WRIST STRAP.
- USE AVIAT Y-CABLE WHICH IS TERMINATED WITH TWO HEAT-SHRINK CONNECTORS ON ONE END AND STUBBED 24-INCH ON THE OTHER END.
- USE AVIAT 1-1 DAC PROTECTION CABLE WHICH INCLUDES SFP'S.
- FIELD TO DOCUMENT AS BUILT CONDITIONS. ODU TO USE 7.5A FUSE AND JACKFIELD TO USE 0.5A FUSE.
- MICROWAVE RADIO OUTDOOR UNITS (ODU) ARE LOCATED ON THE BUILDING.
- SECURE ROSS BNC WEATHERPROOF CAP ON ODU. FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE ODU.
- FIELD TO LOCATE SPARE ALARM TERMINAL BLOCK POSITIONS, WIRE EQUIPMENT ALARMS AND DOCUMENT AS BUILT CONDITIONS.
- BUILDER TO RELOCATE EXISTING BATTERY ALARM COLLECTION UPON REPLACEMENT OF EXISTING RACK WITH NEW RACK IN THIS DRAWING.
- USE AVIAT FIBER OPTIC Y-CABLE.
- INSTALL MULTIMODE SFP.
- BUILDER TO RELOCATE EXISTING BATTERY ALARM COLLECTION UPON REPLACEMENT OF EXISTING RACK WITH NEW RACK IN THIS DRAWING.



- NOTES:**
- BUILDER TO GROUND THE RADIO GROUNDING STUD TO THE RACK/FRAME GROUND BAR USING A LENGTH OF 4mm² (AWG 12) GREEN PVC INSULATED STRANDED COPPER WIRE.
 - BUILDER TO INSTALL NEW SCADA RADIO EQUIPMENT.
 - BUILDER TO INSTALL NEW FILTERS FOR NEW RADIOS AS LISTED IN THE BILL OF MATERIALS (BOM).
 - BUILDER TO INSTALL NEW FUSE PANEL ON FRONT RAILS AND GROUND BAR ON BACK RAILS FROM GROUND BAR TO EXISTING SHELTER GROUND BAR USING #6 AWG GREEN JACKETED COPPER WIRE.



SAN DIEGO, CA



BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 438-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: WBC

REV	DATE	DESCRIPTION
1	10/17/14	PERMITTING COMMENTS
2	06/26/14	PERMITTING COMMENTS
3	06/26/14	PERMITTING COMMENTS
4	06/26/14	DESIGNED FOR PERMITTING



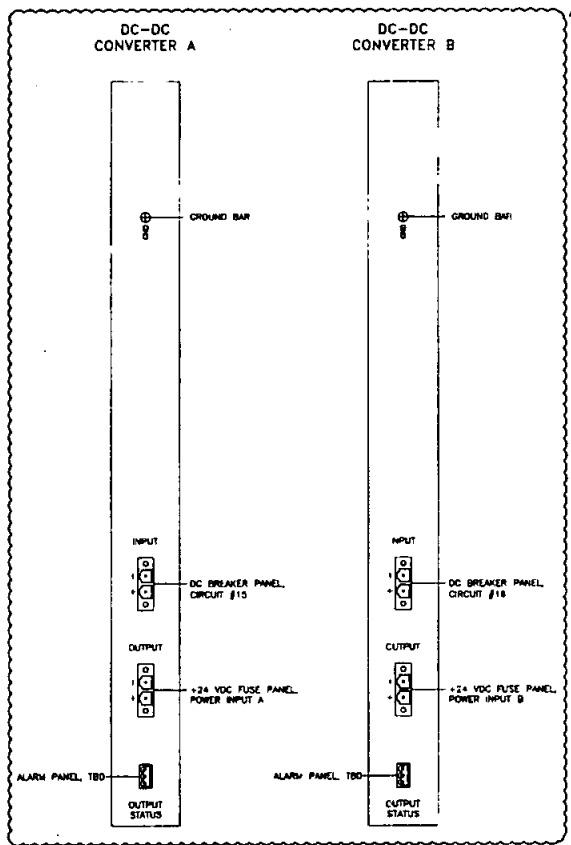
IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

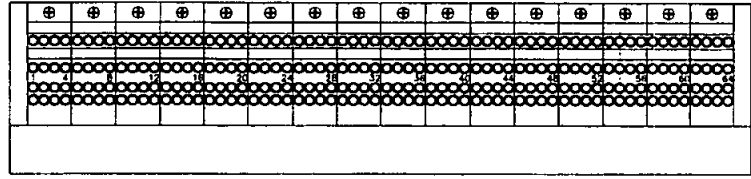
SHEET TITLE
TELECOMMUNICATION
EQUIPMENT RACK

SHEET NUMBER

RF-2



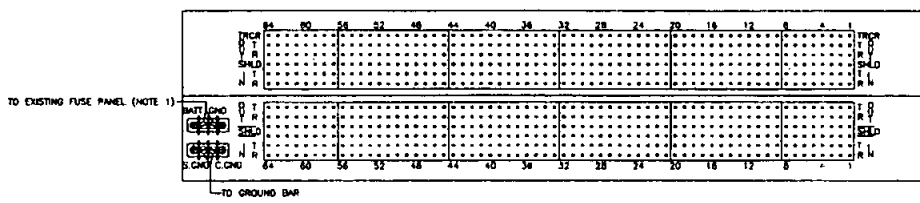
NOTE:
1. FIELD TO DOCUMENT AS-BUILT CONDITIONS.



DS - TELECOM DSX-1 JACKFIELD SHELF #1 (FRONT VIEW)

NO SCALE B

NOTE:
1. FIELD TO DOCUMENT AS-BUILT CONDITIONS.



DS - TELECOM DSX-1 JACKFIELD SHELF #1 (REAR VIEW)

NO SCALE C

DSX-1 CROSS CONNECT TABLE - SHELF #1				
EQUIPMENT (REAR)		JUMPER (FRONT)		
MODULE POSITION	EQUIPMENT (RF-1)	CIRCUIT	X-CONNECT RACK/SHELF	X-CONNECT EQUIPMENT (RF-XXX)
1	OUT-SLOT 7/9-TRIM 1			
2	OUT-SLOT 7/9-TRIM 2			
3	OUT-SLOT 7/9-TRIM 3			
4	OUT-SLOT 7/9-TRIM 4			
5	OUT-SLOT 7/9-TRIM 5			
6	OUT-SLOT 7/9-TRIM 6			
7	OUT-SLOT 7/9-TRIM 7			
8	OUT-SLOT 7/9-TRIM 8			
9	OUT-SLOT 7/9-TRIM 9			
10	OUT-SLOT 7/9-TRIM 10			
11	OUT-SLOT 7/9-TRIM 11			
12	OUT-SLOT 7/9-TRIM 12			
13	OUT-SLOT 7/9-TRIM 13			
14	OUT-SLOT 7/9-TRIM 14			
15	OUT-SLOT 7/9-TRIM 15			
16	OUT-SLOT 7/9-TRIM 16			

DSX-1 CROSS CONNECT TABLE - SHELF #1				
EQUIPMENT (REAR)		JUMPER (FRONT)		
MODULE POSITION	EQUIPMENT (RF-1)	CIRCUIT	X-CONNECT RACK/SHELF	X-CONNECT EQUIPMENT (RF-XXX)
17	OUT-SLOT 7/9-TRIM 1			
18	OUT-SLOT 7/9-TRIM 2			
19	OUT-SLOT 7/9-TRIM 3			
20	OUT-SLOT 7/9-TRIM 4			
21	OUT-SLOT 7/9-TRIM 5			
22	OUT-SLOT 7/9-TRIM 6			
23	OUT-SLOT 7/9-TRIM 7			
24	OUT-SLOT 7/9-TRIM 8			
25	OUT-SLOT 7/9-TRIM 9			
26	OUT-SLOT 7/9-TRIM 10			
27	OUT-SLOT 7/9-TRIM 11			
28	OUT-SLOT 7/9-TRIM 12			
29	OUT-SLOT 7/9-TRIM 13			
30	OUT-SLOT 7/9-TRIM 14			
31	OUT-SLOT 7/9-TRIM 15			
32	OUT-SLOT 7/9-TRIM 16			

DSX-1 CROSS CONNECT TABLE - SHELF #1

NO SCALE D



PROJECT NO. 182301
DRAWN BY: RAS
CHECKED BY: MBG

REV	DATE	DESCRIPTION
1	10/17/14	PERMITTING SIGNATURE
2	10/20/14	PERMITTING SIGNATURE
3	10/20/14	PERMITTING SIGNATURE
4	10/20/14	SUBMIT FOR PERMITTING



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

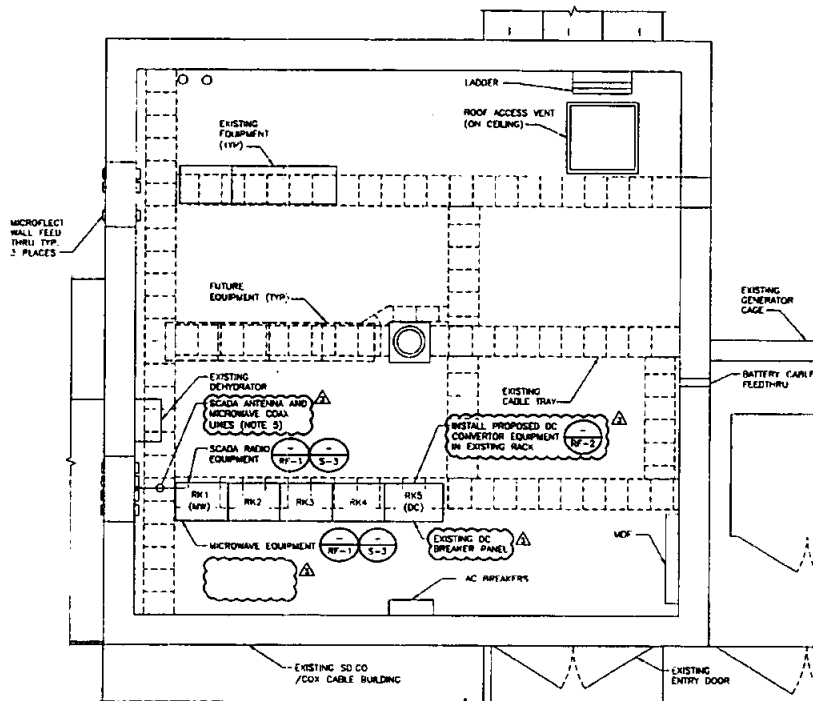
COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
TELECOMMUNICATION
EQUIPMENT RACK

SHEET NUMBER
RF-3

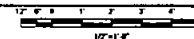
DC-DC CONVERTER A & B

NO SCALE A



NO NEW AC POWER REQUIRED FOR THIS SITE

ELECTRICAL PLAN - AC ONLY



OVERHEAD POWER — OHP — OHP — OHP — OHP
 UNDERGROUND POWER — UGP — UGP — UGP — UGP
 UNDERGROUND DUCT — UGD — UGD — UGD — UGD
 ABOVE GROUND POWER — AGP — AGP — AGP — AGP
 ABOVE GROUND POWER/AC — AGP/AC — AGP/AC — AGP/AC
 ABOVE GROUND POWER/DC — AGP/DC — AGP/DC — AGP/DC
 ABOVE GROUND FIBER — AGF — AGF — AGF — AGF
 ABOVE GROUND FIBER/POWER — AGF/P — AGF/P — AGF/P
 UNDERGROUND FIBER — UGF — UGF — UGF — UGF
 UNDERGROUND FIBER/POWER — UGF/P — UGF/P — UGF/P

LEGEND

AC ALTERNATING CURRENT
 ATS AUTOMATIC TRANSFER SWITCH
 AWG AMERICAN WIRE GAUGE
 BTC BARE TINNED COPPER CONDUCTOR
 BATT BATTERY
 CEC CALIFORNIA ELECTRICAL CODE (2010)
 CHD CHARGING
 COMM COMMON
 DC DIRECT CURRENT
 DIA DIAMETER
 DRWG DRAWING
 EC ELECTRICAL CONDUCTOR
 EMT ELECTRICAL METALLIC TUBING
 F/F FACILITY INTERFACE FRAME
 GEN GENERATOR
 GPS GLOBAL POSITIONING SYSTEM
 HVAC HEAT/VENTILATION/AIR CONDITIONING
 IGR INTERIOR GROUNDING RING (HOLD)
 MGB MASTER GROUNDING BAR
 MIN MINIMUM
 M/P MICROPHONE
 MTS MAIN TRANSFER SWITCH
 ON ON CENTER
 PP POLARIZING PRESERVING
 PCU PRIMARY CONTROL UNIT
 PDU PROTOCOL DATA UNIT
 RECT RECTIFIER
 RMC RIGID METALLIC CONDUIT
 RHM REMOTE RADIO HEAD
 RWY ROADWAY
 SMD SMART INTEGRATED ACCESS DEVICE
 TVSS TRANSIENT VOLTAGE SUPPRESSION SYSTEM
 TYP TYPICAL
 UPS UNINTERRUPTIBLE POWER SOURCE

ABBREVIATIONS

- THESE ELECTRICAL PLANS ARE SUPPLEMENTARY TO CIVIL ENGINEERING ACTIVITIES, AS DEFINED BY CAL. BUS. & PROF. CODE 86731. THEREFORE, IN ACCORDANCE WITH CAL. BUS. & PROF. CODE 86737.2, THESE PLANS HAVE BEEN PREPARED UNDER THE RESPONSIBLE CHARGE OF THE CAL. LICENSED AND REGISTERED CIVIL ENGINEER WHOSE SEAL AND SIGNATURE APPEAR ON PLANS.
- THE CONDUIT ROUTING ARE DIAGRAMMATICALLY SHOWN ON THE PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
- ALL ELECTRICAL EQUIPMENT AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED UNIMAGED NAMEPLATES, INDICATING THE CIRCUITS ORIGIN AND ALL EQUIPMENT IDENTIFICATIONS.
- WHEN TYPE "TC-ER" CABLE IS UTILIZED IN THE ELECTRICAL SYSTEM, TYPE "TC-ER" CABLE SHALL BE INSTALLED WITHIN A CABLE TRAY SYSTEM, CONDUIT SYSTEMS OR A COMBINATION OF BOTH AND SHALL BE ELECTRICALLY CONTINUOUS. ALL RACEWAYS SHALL BE APPROVED FOR THEIR PURPOSE.
- BUILDER TO INSTALL (2) NEW SCADA ANTENNA COAX LINES IN CABLE TRAY. BUILDER TO INSTALL NEW SURGE PROTECTIVE DEVICES ON ANTENNA COAX LINES WITHIN 2 FEET OF BUILDING ENTRY.



BLACK & VEATCH

10850 GRANDVIEW DRIVE
 OVERLAND PARK, KANSAS 66210
 (913) 436-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MBU

REV	DATE	DESCRIPTION
3	10/17/14	PERMITTING / COMMENTS
2	06/26/14	PERMITTING / COMMENTS
1	06/26/14	PERMITTING / COMMENTS
0	06/26/14	ISSUED FOR PERMITTING



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

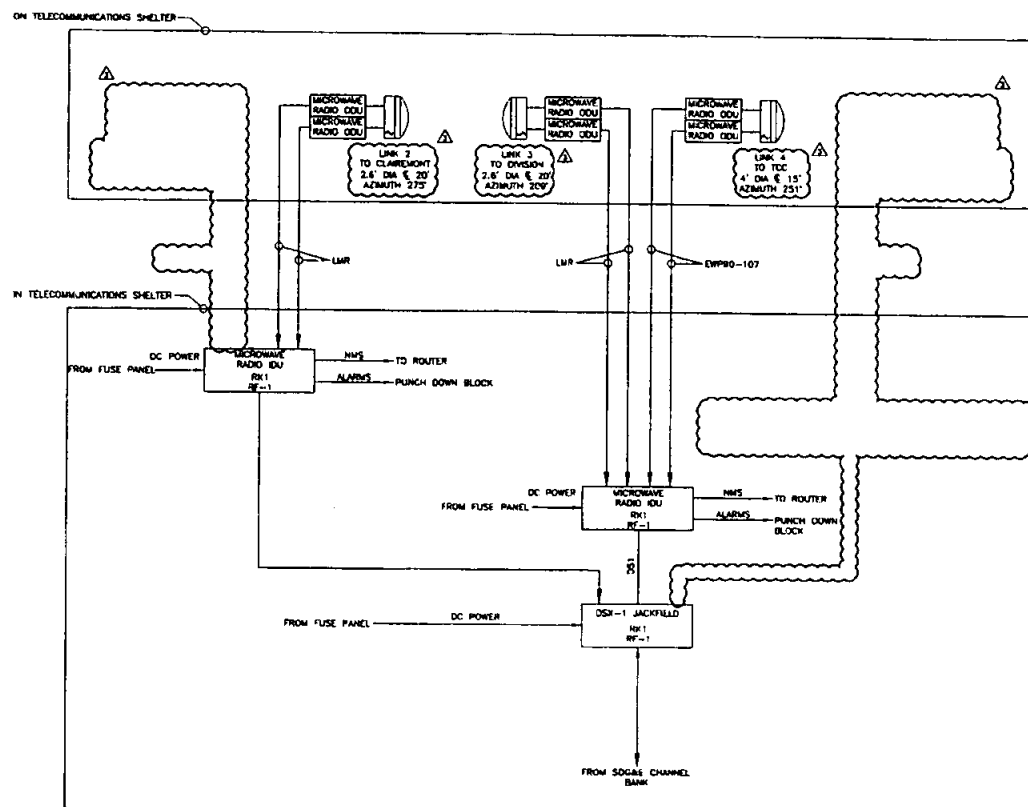
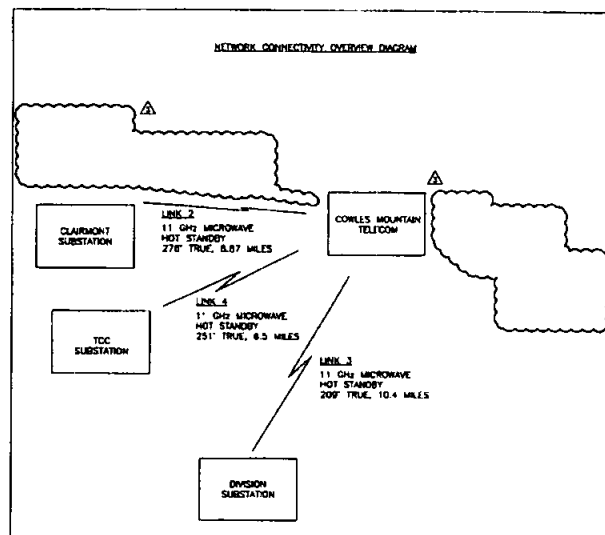
COWLES MOUNTAIN
 TOP OF COWLES MOUNTAIN TRAIL
 SAN DIEGO, CA 92119

SHEET TITLE
ELECTRICAL AC PLAN

SHEET NUMBER

E-1

NOTES



ELECTRICAL DC ONE-LINE DIAGRAM

NO SCALE



SAN DIEGO, CA



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 102301

DRAWN BY: RAS

CHECKED BY: MBG

3	06/17/98				FORMATING COUNCILS
2	06/28/98				FORMATING DOCUMENTS
1	06/30/98				FORMATING NUMBERS
0	06/30/98				ISSUES FOR FORMATING
REV	DATE				DESCRIPTION



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

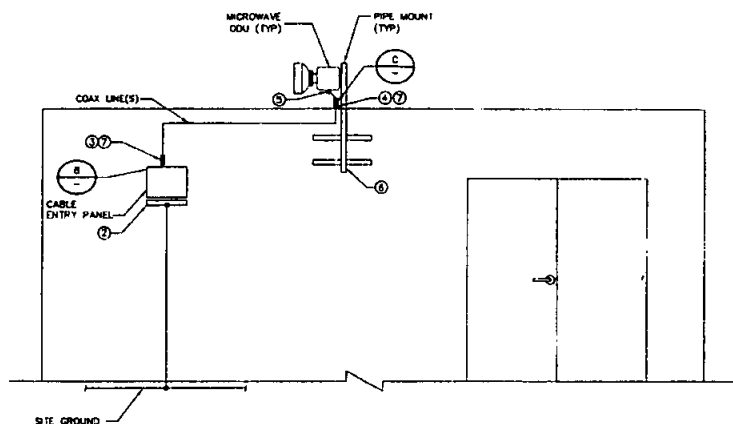
SHEET TITLE

ELECTRICAL DC
ONE-LINE DIAGRAM

SHEET NUMBER
E-2

KEYED NOTES:

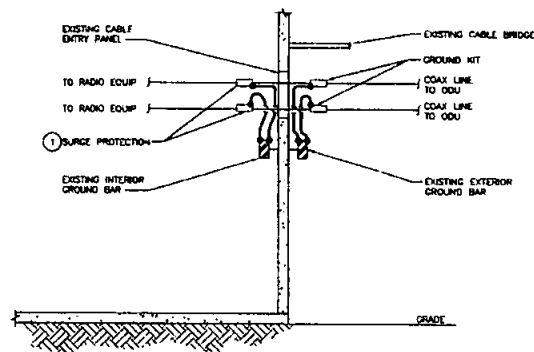
- ① PROVIDE AND INSTALL INSULATED # 12 AWG GREEN GROUNDING CONDUCTOR FROM SURGE PROTECTOR TO GROUND BAR
- ② EXISTING GROUND BAR
- ③ GROUND KIT TO BE INSTALLED ABOVE GROUND BAR AS SHOWN
- ④ GROUND KIT BONDED TO PIPE MOUNT
- ⑤ ODU GROUND LUG CONNECTION. USE ODU SUPPLIED GROUND KIT.
- ⑥ BUILDER TO DETERMINE NEW PIPE MOUNT INSTALLATION CONFIGURATION. PIP MOUNT GROUND BAR
- ⑦ COAX LINE GROUNDING KIT(S).



TYPICAL GROUNDING ELEVATION DETAIL

NO SCALE

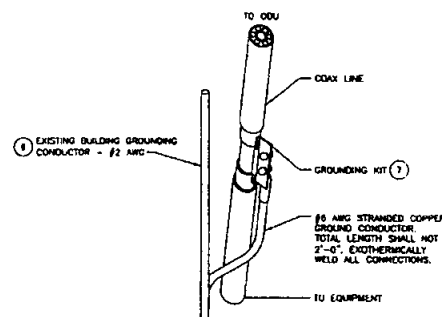
A



TYPICAL BUILDING ENTRY GROUNDING DETAIL

NO SCALE

B



TYPICAL GROUNDING KIT DETAIL

NO SCALE

C



PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MEG

REV	DATE	DESCRIPTION
1	18/12/14	PERMITTING COORDINATE
2	06/26/14	PERMITTING COORDINATE
3	06/26/14	PERMITTING COORDINATE
4	06/26/14	ISSUED FOR PERMITTING



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

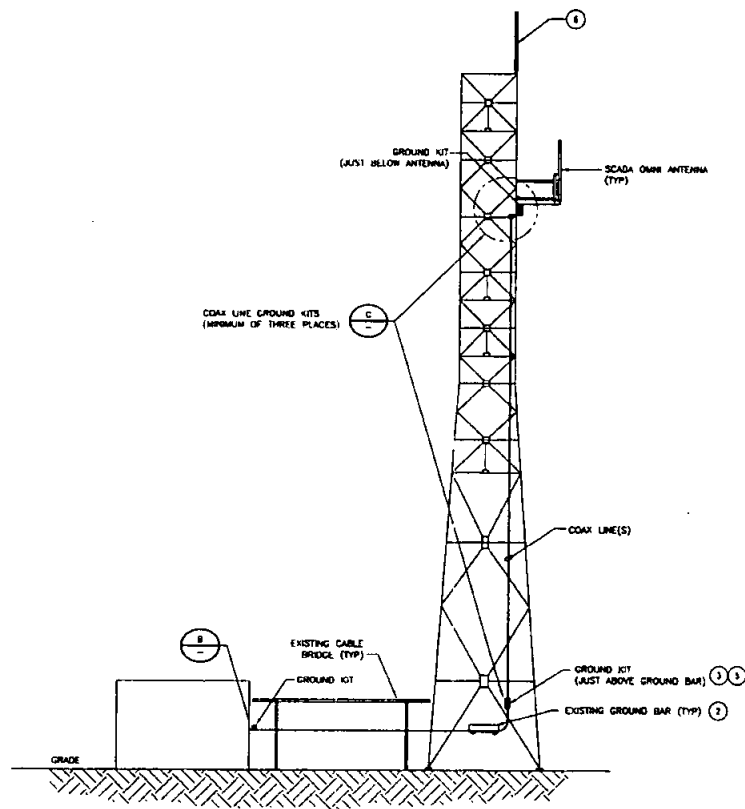
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-1

KEYED NOTES:

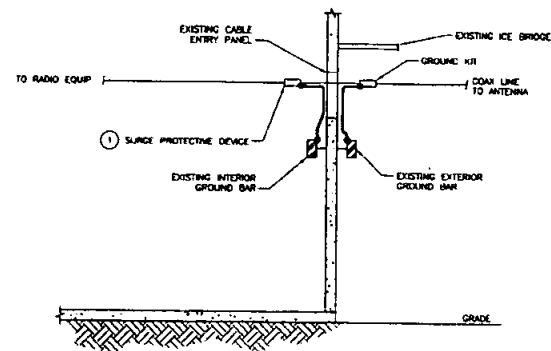
1. PROVIDE AND INSTALL INSULATED 8 AWG GREEN GROUNDING CONDUCTOR FROM SURGE PROTECTOR TO GROUND BAR.
2. EXISTING GROUND BAR.
3. GROUND KIT TO BE INSTALLED ABOVE GROUND BAR AS SHOWN.
4. TOWER GROUNDING CONDUCTOR, RUNS INSIDE FULL LENGTH OF TOWER BOND TO EACH TOWER SECTION.
5. COAX LINE GROUNDING KIT(S).
6. EXISTING LIGHTNING ROD.



TYPICAL ANTENNA COAX LINE GROUNDING ELEVATION DETAIL

NO SCALE

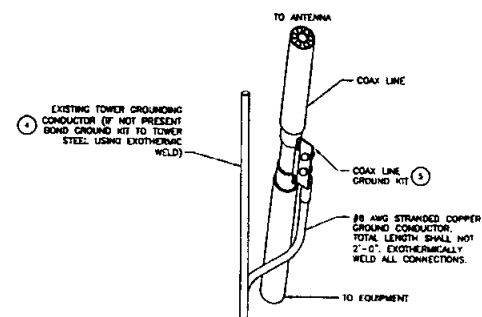
A



TYPICAL BUILDING ENTRY GROUNDING DETAIL

NO SCALE

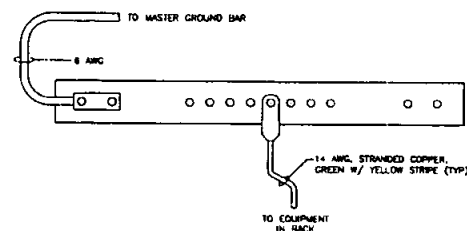
B



TYPICAL COAX LINE GROUND KIT

NO SCALE

C



TYPICAL EQUIPMENT RACK GROUND BAR

NO SCALE

D

SDGE

SAN DIEGO, CA



BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 436-2000

PROJECT NO: 162301

DRAWN BY: RAS

CHECKED BY: KTHC

REV	DATE	DESCRIPTION
1	10/17/14	PERMITTING PLACED
2	06/26/14	PERMITTING COMMENTS
3	06/26/14	PERMITTING COMMENTS
4	06/26/14	ISSUED FOR PERMITTING



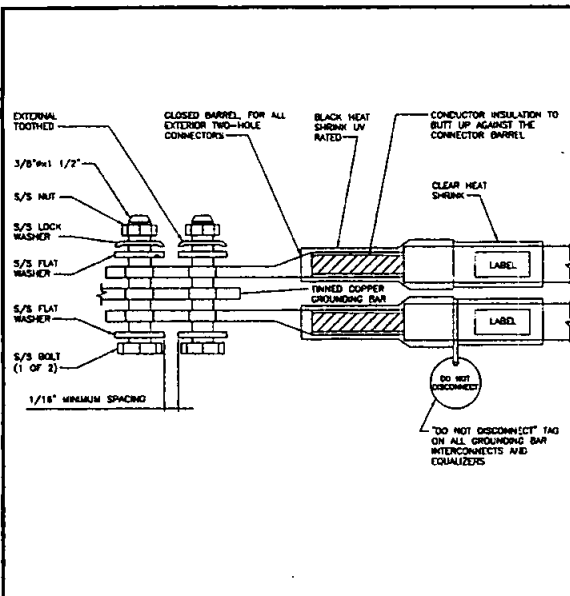
IT IS A VIOLATION OF LAW FOR ANY PERSON
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

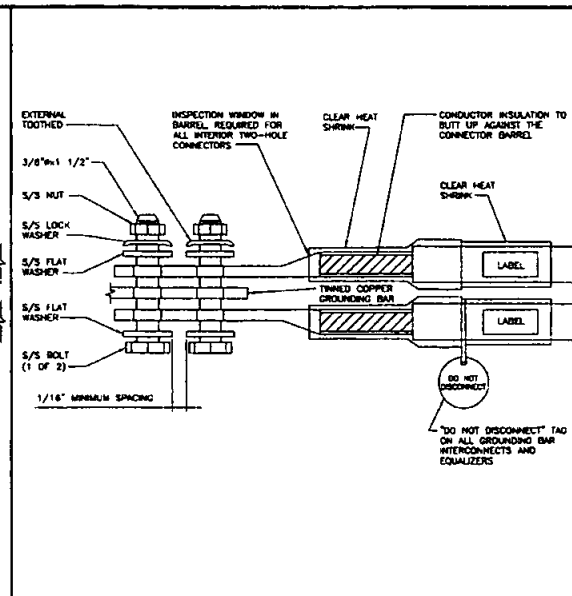
G-2



EXTERIOR TWO HOLE LUG DETAIL

NO SCALE

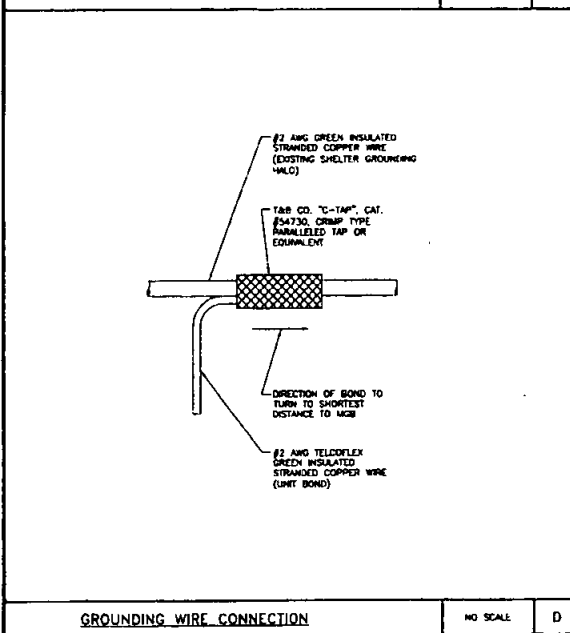
A



INTERIOR TWO HOLE LUG DETAIL

NO SCALE

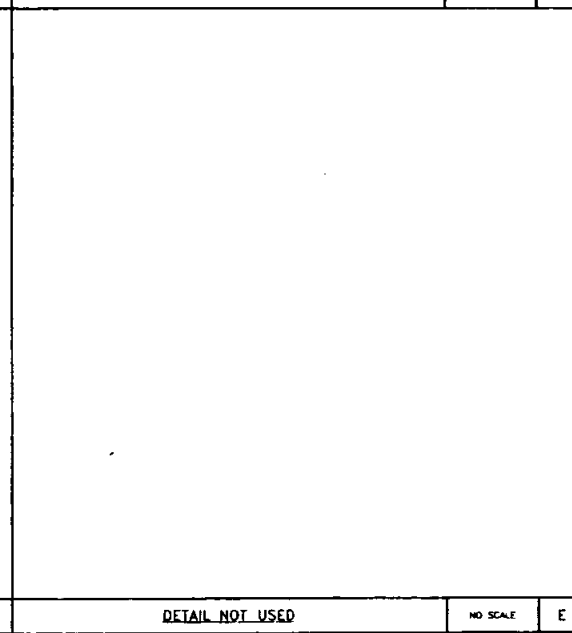
B



GROUNDING WIRE CONNECTION

NO SCALE

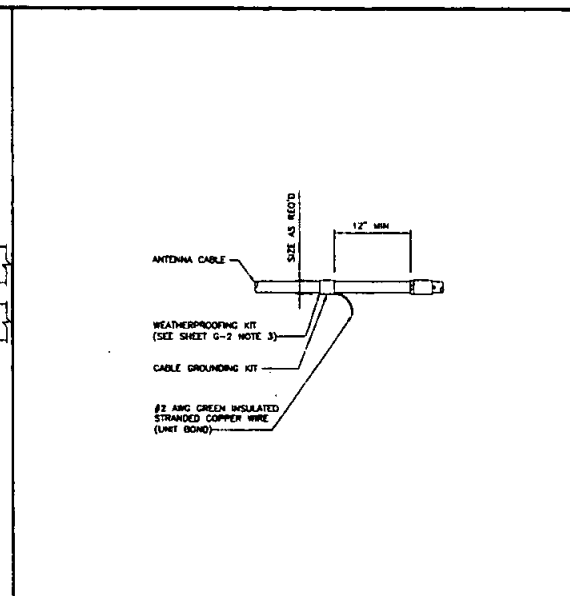
D



DETAIL NOT USED

NO SCALE

E



CABLE GROUNDING KIT TO ANTENNA CABLE

NO SCALE

C

1. EXOTHERMIC WELD #2 AWG BARE THINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUND BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "T") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY. INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BARS AS REQUIRED, PROVIDING 500 AMPERE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHIMMERS).

NOTES

NO SCALE

F



PROJECT NO: 182301
DRAWN BY: TAS
CHECKED BY: MEC

REV	DATE	DESCRIPTION
1	10/17/14	PERMITS COMMENTS
2	08/29/14	PERMITS COMMENTS
3	08/29/14	PERMITS COMMENTS
4	08/29/14	ISSUES FOR PERMITS



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3



SAN DIEGO, CA



BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 438-2000

PROJECT NO: 182301
DRAWN BY: RAS
CHECKED BY: MFG

REV	DATE	DESCRIPTION
2	10/17/14	POWERTIME COMMENTS
2	06/26/14	POWERTIME COMMENTS
1	06/26/14	POWERTIME COMMENTS
0	06/26/14	ISSUED FOR POWERTIME



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

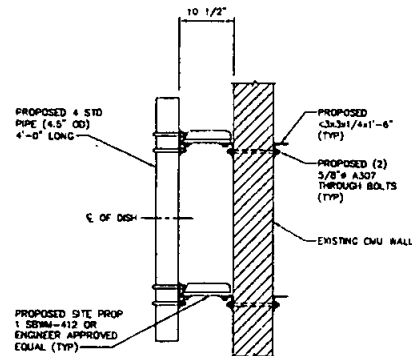
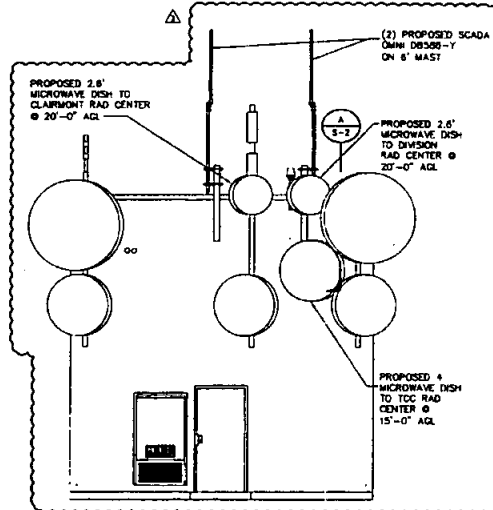
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

S-1

- STRUCTURAL COMPONENTS OF THIS PROJECT SITE/FACILITY ARE NOT TO BE ALTERED BY THIS CONSTRUCTION PROJECT UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR TO SUPPLY ALL NECESSARY CONNECTING HARDWARE.
- ALL CONNECTIONS SHALL USE ASTM A153 GALVANIZED A325-X BOLTS UNLESS NOTED OTHERWISE. NUTS AND LOCKING DEVICES. "X" INDICATES BEARING-TYPE CONNECTION "SHUG TIGHT FIT" WITH THREADS EXCLUDED FROM SHEAR PLANE.
- U-BOLTS SHALL BE A307 UNLESS NOTED OTHERWISE.
- STRUCTURAL BOLTS SPACING AND EDGE DISTANCE SHALL MEET 2010 AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS REQUIREMENTS UNLESS NOTED OTHERWISE.
- ALL STRUCTURAL STEEL ROLLED SHAPES AND PLATES SHALL CONFORM TO ASTM A123 GALVANIZED UNLESS OTHERWISE NOTED.
- ALL WIDE FLANGE SHAPES SHALL BE A992, 50 KSI.
- ALL PIPE SHAPES SHALL BE A53 GRADE B, 35 KSI.
- ALL HSS SHAPES SHALL BE A500 GRADE B, 42 KSI.
- ALL ANGLE AND CHANNEL SHAPES SHALL BE A36, 36 KSI.
- ALL WELDS TO BE COMPLETED PER AWS D1.1 STANDARDS USING E70XX RODS.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING WELDING OPERATIONS OF GALVANIZED MATERIALS ACCORDING TO AWS B2.1-1-011.
- CONTRACTOR SHALL HAVE ALL WELDING INSPECTED BY THIRD PARTY CERTIFIED WELDING INSPECTOR AND SUBMIT THE REPORT TO BUILDING OWNER.

MAXIMUM OPERATING WEIGHT FOR THE MICROWAVES AND OMNI ANTENNAS IS 50lbs.



WEST ELEVATION OF SHELTER

NO SCALE

A

SECTION

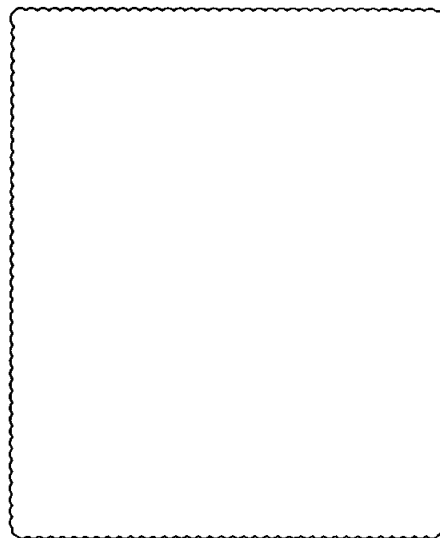
NO SCALE

B

NOTES

NO SCALE

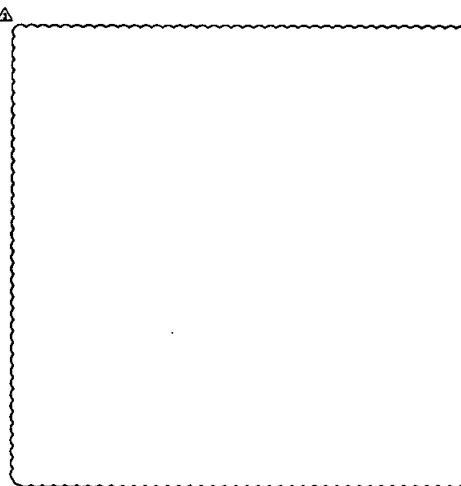
C



DETAIL NOT USED

NO SCALE

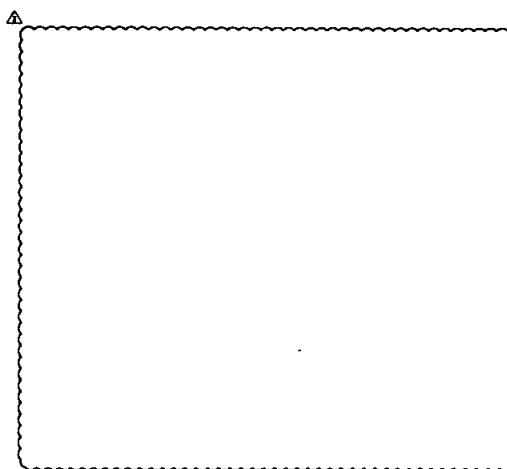
D



DETAIL NOT USED

NO SCALE

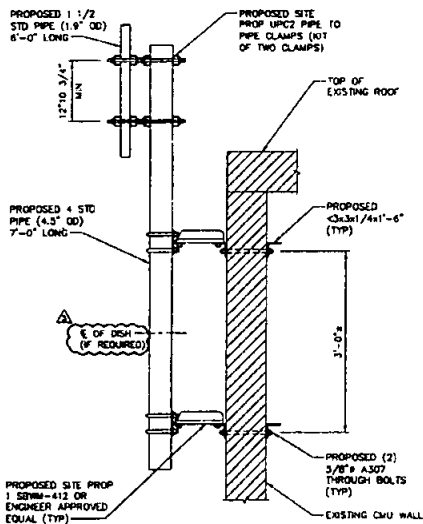
E



DETAIL NOT USED

NO SCALE

F



MAXIMUM OPERATING WEIGHT FOR THE
MICROWAVES AND OMNI ANTENNAS IS 50lbs. ^Δ

SECTION

NO SCALE

A

NOTE

NO SCALE

B

DETAIL NOT USED

NO SCALE

C

DETAIL NOT USED

NO SCALE

D

DETAIL NOT USED

NO SCALE

E

DETAIL NOT USED

NO SCALE

F



SAN DIEGO, CA



BLACK & VEATCH

10850 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301

DRAWN BY: RAS

CHECKED BY: MSG

REV	DATE	DESCRIPTION
1	10/17/14	FORWITTING COMMENTS
2	06/26/14	FORWITTING COMMENTS
3	06/26/14	FORWITTING COMMENTS
4	06/26/14	ISSUED FOR FORWITTING



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

S-2



SAN DIEGO, CA



BLACK & VEATCH

10050 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

PROJECT NO: 182301

DRAWN BY: HAS

CHECKED BY: MBG

REV	DATE	DESCRIPTION
1	10/17/14	PERMITTING COMMENTS
2	04/29/14	PERMITTING COMMENTS
3	05/26/14	PERMITTING COMMENTS
4	05/26/14	ISSUES FOR PERMITTING



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

COWLES MOUNTAIN
TOP OF COWLES MOUNTAIN TRAIL
SAN DIEGO, CA 92119

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

S-3

DIMENSION	19" RACK
C	18.00"
D	20.31"

(4) 1/2" X MULTI KWIK BOLT 1/2" STAINLESS ANCHOR IN CONCRETE. SPECIAL INSPECTION REQUIRED 2-1/2" EMBEDMENT

PROPOSED TELECOM REPLACEMENT RACK BASE 1/2" THICK PLATE

RACK ANCHOR BOLT PATTERN DETAIL

NO SCALE

B

PROPOSED TELECOMMUNICATIONS REPLACEMENT RACK

CHATEAUX 48553-100 UNIVERSAL EQUIPMENT RACK WITH OPEN FLOOR MOUNT. TWO POST RACK - GRAY COLOR

(4) 1/2" X MULTI KWIK BOLT 1/2" STAINLESS ANCHOR IN CONCRETE. SPECIAL INSPECTION REQUIRED 2-1/2" EMBEDMENT

EXISTING CONCRETE FLOOR

NOTES

1. PROPOSED REPLACEMENT RACK LOCATION IS APPROXIMATE AND IN RELATION TO EXISTING STRUCTURES. CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS, CLEARANCES, CONNECTIONS, ETC. AND SHALL VERIFY EQUIPMENT MOUNTING DIMENSIONS PER MANUFACTURER'S DRAWINGS, PRIOR TO INSTALLATION.
2. RACKS SHALL BE ANCHORED TO EXISTING CONCRETE FLOOR USING (4) 1/2" X MULTI KWIK BOLT 1/2" STAINLESS ANCHOR IN CONCRETE. SPECIAL INSPECTION REQUIRED 2-1/2" EMBEDMENT.
3. CABLE LADDER NOT SHOWN FOR CLARITY.

PLAN VIEW CONCRETE FLOOR

NO SCALE

A

ELEVATION CONCRETE FLOOR

NO SCALE

C