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**DEPARTMENT OF RESOURCE MANAGEMENT**



**SOLANO COUNTY**

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 Fairfield, CA 94533-6342  
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[www.solanocounty.com](http://www.solanocounty.com)

Planning Services Division

**SOLANO COUNTY ZONING ADMINISTRATOR**

**Staff Report  
 MU-15-05**

<b>Application No.</b> MU-15-05 <b>Project Planner:</b> Eric Wilberg, Associate Planner		<b>Meeting of</b> June 4, 2015 <b>Agenda Item No. 1</b>	
<b>Applicant</b> Light Squared c/o Judith Justice 4301 Hacienda Drive, Suite 410 Pleasanton, CA 94588		<b>Property Owner</b> Campbell Ranch c/o Buel Campbell 4975 Rio Dixon Road Dixon, CA 95620	
<b>Action Requested</b> Minor Use Permit application to co-locate wireless communications equipment on an existing 220 foot tall lattice. Equipment primarily includes one omni-directional antenna at the 205 ft. elevation, one approximate 9 sq. ft. cabinet, as well as a GPS unit and mount and feed lines to connect the equipment.			
<b>Property Information</b>			
Size: 320 acres		Location: 4813 Cook Lane	
APN: 0042-060-040			
Zoning: Exclusive Agriculture 'A-160'		Land Use: Outdoor recreation, wireless comm.	
General Plan: Agriculture		Ag. Contract: n/a	
Utilities: n/a		Access: Cook Lane, Rio Dixon Road	
<b>Adjacent General Plan Designation, Zoning District, and Existing Land Use</b>			
	<b>General Plan</b>	<b>Zoning</b>	<b>Land Use</b>
<b>North</b>	Agriculture	Exclusive Agriculture 'A-160'	Open space
<b>South</b>	Agriculture	Exclusive Agriculture 'A-160'	Open space
<b>East</b>	Agriculture	Exclusive Agriculture 'A-160'	Open space
<b>West</b>	Agriculture	Exclusive Agriculture 'A-160'	Open space
<b>Environmental Analysis</b> The project qualifies for a Categorical Exemption from the California Environmental Quality Act pursuant to CEQA Guidelines Section 15303, New Construction of Small Structures.			
<b>Motion to Approve</b> The Zoning Administrator does hereby ADOPT the attached resolution and APPROVE Minor Use Permit No. MU-15-05 based on the enumerated findings and subject to the recommended conditions of approval.			

## **SITE DESCRIPTION**

The subject property is situated along Rio Dixon Road, approximately 5 miles east of Travis Air Force Base and the City of Fairfield. The 320 acre property is relatively flat and is primarily developed with the Argyll Park off-road vehicle facility. The site is also developed with an existing 225 foot tall guyed microwave relay tower permitted via Use Permit U-85-06. The tower is located in the northwest corner of the property, just west of the existing race tracks, parking, and park facilities. The tower and existing telecommunications equipment is enclosed within approx. 1.66 acres by chain link fencing.

Access to the existing tower is provided by interior roadways connecting to Cook Lane, off Rio Dixon Road.

Agriculturally zoned properties of similar size, approximately 160 to 300 acres, surround the project site. The nearest residence is located on the subject property, 1,500 feet east of the telecommunications site.

## **PROJECT DESCRIPTION**

Light Squared proposes to add one omni-directional antenna at the 205 foot elevation on the existing telecommunications tower. Supporting equipment includes: one mount, two feed lines, one GPS unit, one outdoor cabinet on a 25 sq. ft. concrete pad, and one 7 inch ice bridge to provide a connection from the ground equipment to the antenna lines. All equipment is proposed within the existing 1.66 acre enclosed lease area.

## **ENVIRONMENTAL ANALYSIS**

The project qualifies for a Categorical Exemption from the California Environmental Quality Act pursuant to CEQA Guidelines Section 15303, New Construction of Small Structures. Class 3 consists of construction and location of limited numbers of new, small facilities or structures. The Guidelines indicate that land uses which do not involve the use of significant amounts of hazardous substances, and do not exceed 2,500 square feet in floor area qualify for this exemption. The project meets these standards.

## **LAND USE CONSISTENCY**

### *General Plan and Zoning*

The property is designated Agriculture by the Solano County General. As indicated on the General Plan land use consistency table (General Plan Table LU-7) the Exclusive Agriculture 'A-160' Zoning District is consistent with this designation. Pursuant to Section 28.81 of the County Zoning Regulations, a co-location of a Wireless Communication Facility is a permitted land use within this district.

Section 28.81(D) provides the general land use regulations for wireless facilities. The proposed co-location is allowed in this zoning district, requires issuance of a use permit, and would be required to obtain a building permit for construction of the project. The project does not require a height increase to the existing tower. All equipment would be located within the existing compound and does not require screening as the lease area is set back one-half mile from State Highway 113, a scenic corridor, situated amongst race tracks of the Argyll Park off-road facility. The applicant has also supplied a radio frequency (RF) site compliance report prepared by Sitesafe, Inc. on behalf of the applicant which demonstrates that the site is in compliance with Federal Communications Commission (FCC) Rules and Regulations for RF emissions. Lastly, the proposed cabinet housing related wireless communications equipment exceeds the accessory structure setback requirements of the A-160 zoning district.

## **RECOMMENDATION**

Staff recommends that the Zoning Administrator **ADOPT** the mandatory and suggested findings, and **APPROVE** Minor Use Permit No. MU-15-05, subject to the recommended conditions of approval.

#### **MINOR USE PERMIT MANDATORY FINDINGS**

1. **That the establishment, maintenance or operation of the use or building is in conformity to the General Plan for the County with regard to traffic circulation, population densities and distribution, and other aspects of the General Plan considered by the Zoning Administrator to be pertinent.**

The co-location of telecommunications equipment with an existing telecommunication facility is consistent with the goals, objectives and policies of the Solano County Zoning Ordinance and Solano County General Plan. The project as proposed by the applicant, along with the recommended conditions of approval are consistent with the General Plan.

2. **Adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.**

The site has existing electrical power. No domestic water and/or private septic systems are required for the unmanned facility. The site is accessed via Cook Land, off Rio Dixon Road.

3. **The subject use will not, under the circumstances of this particular case, constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.**

As proposed, the project qualifies for an exemption from the California Environmental Quality Act. In addition, the RF emissions report prepared for the project indicates that the facility would be compliance applicable Federal Communications Commission Rules and Regulations for RF emissions.

#### **ADDITIONAL FINDINGS**

4. The proposed facility complies will all applicable sub-sections of Wireless Communications Facilities, Zoning Regulations Section 28.81.

#### **CONDITIONS OF APPROVAL**

1. The permitted co-location of the wireless communications facility shall be established and operated in accord with the application materials and development plans for Minor Use Permit MU-15-05, submitted March 19, 2015 by Light Squared, and as approved by the Solano County Zoning Administrator.
2. The permittee shall take such measures as may be necessary or as may be required by the County to prevent offensive noise, lighting, dust or other impacts, which constitute a hazard or nuisance to surrounding properties.

3. No additional uses shall be established beyond those identified on the project plan without prior approval. No new or expanded buildings shall be constructed without prior approval of a minor revision to this use permit or approval of a new use permit.
4. The premises shall be maintained in a neat and orderly manner and kept free of accumulated debris or junk.
5. Failure to comply with any of the conditions of approval or limitation set forth in this permit shall be cause of the revocation of this permit.
6. All equipment associated with the wireless communication facility shall be removed within 90 days of the discontinuation of the use and the site shall be restored to its original pre-construction condition.
7. Prior to any construction or improvements taking place, a Building Permit Application shall first be submitted as per the 2013 California Building Code, or the latest edition enforced at the time of building permit application. "Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit."
8. The maximum potential volume of hazardous materials stored at the facility shall be calculated, and if required, the facility shall submit a hazardous materials business plan to Solano County Hazardous Material Section.
9. The co-located wireless communication facility is granted for a fixed term of ten (10) years and shall expire June 4, 2025. Upon expiration, issuance of a new land use permit is required should the facility continue to operate at this location.

Attachments:

- Exhibit A - Draft Resolution
- Exhibit B – Assessor's Parcel Map
- Exhibit C – Development Plans

**SOLANO COUNTY ZONING ADMINISTRATOR  
RESOLUTION NO. XX**

**WHEREAS**, the Solano County Zoning Administrator has considered Minor Use Permit Application No. MU-15-05 of **Light Squared** to co-locate wireless communications equipment on an existing 220 foot tall guyed tower located at 4813 Cook Lane, 5.5 miles east of the City of Fairfield in an "A-160" Exclusive Agricultural Zoning District, APN: 0042-060-040, and;

**WHEREAS**, said Zoning Administrator has reviewed the report of the Department of Resource Management and heard testimony relative to the subject application at the duly noticed public hearing held on June 4, 2015, and;

**WHEREAS**, after due consideration, the Zoning Administrator has made the following findings in regard to said proposal:

1. **That the establishment, maintenance or operation of the use or building is in conformity to the General Plan for the County with regard to traffic circulation, population densities and distribution, and other aspects of the General Plan considered by the Zoning Administrator to be pertinent.**

The co-location of telecommunications equipment with an existing telecommunication facility is consistent with the goals, objectives and policies of the Solano County Zoning Ordinance and Solano County General Plan. The project, as proposed by the applicant, along with the recommended conditions of approval are consistent with the General Plan.

2. **Adequate utilities, access roads, drainage and other necessary facilities have been or are being provided.**

The site has existing electrical power. No domestic water and/or private septic systems are required for the unmanned facility. The site is accessed via Cook Land, off Rio Dixon Road.

3. **The subject use will not, under the circumstances of this particular case, constitute a nuisance or be detrimental to the health, safety, peace, morals, comfort or general welfare of persons residing or working in or passing through the neighborhood of such proposed use or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.**

As proposed, the project qualifies for an exemption from the California Environmental Quality Act. In addition, the RF emissions report prepared for the project indicates that the facility would be compliance applicable Federal Communications Commission Rules and Regulations for RF emissions.

4. The proposed facility complies will all applicable sub-sections of Wireless Communications Facilities, Zoning Regulations Section 28.81.

**BE IT THEREFORE RESOLVED**, that the Zoning Administrator has approved Minor Use Permit Application No. MU-15-05 subject to the following recommended conditions of approval:

1. The permitted co-location of the wireless communications facility shall be established and operated in accord with the application materials and development plans for Minor Use Permit MU-15-05, submitted March 19, 2015 by Light Squared, and as approved by the Solano County Zoning Administrator.
2. The permittee shall take such measures as may be necessary or as may be required by the County to prevent offensive noise, lighting, dust or other impacts, which constitute a hazard or nuisance to surrounding properties.
3. No additional uses shall be established beyond those identified on the project plan without prior approval. No new or expanded buildings shall be constructed without prior approval of a minor revision to this use permit or approval of a new use permit.
4. The premises shall be maintained in a neat and orderly manner and kept free of accumulated debris or junk.
5. Failure to comply with any of the conditions of approval or limitation set forth in this permit shall be cause of the revocation of this permit.
6. All equipment associated with the wireless communication facility shall be removed within 90 days of the discontinuation of the use and the site shall be restored to its original pre-construction condition.
7. Prior to any construction or improvements taking place, a Building Permit Application shall first be submitted as per the 2013 California Building Code, or the latest edition enforced at the time of building permit application. "Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, demolish, or change the occupancy of a building or structure, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical or plumbing system, the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required permit."
8. The maximum potential volume of hazardous materials stored at the facility shall be calculated, and if required, the facility shall submit a hazardous materials business plan to Solano County Hazardous Material Section.
9. The co-located wireless communication facility is granted for a fixed term of ten (10) years and shall expire June 4, 2025. Upon expiration, issuance of a new land use permit is required should the facility continue to operate at this location.

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I hereby certify that the foregoing resolution was adopted at the regular meeting of the Solano County Zoning Administrator on June 4, 2015.

BILL EMLN, DIRECTOR  
RESOURCE MANAGEMENT

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Michael Yankovich  
Planning Program Manager

DRAFT

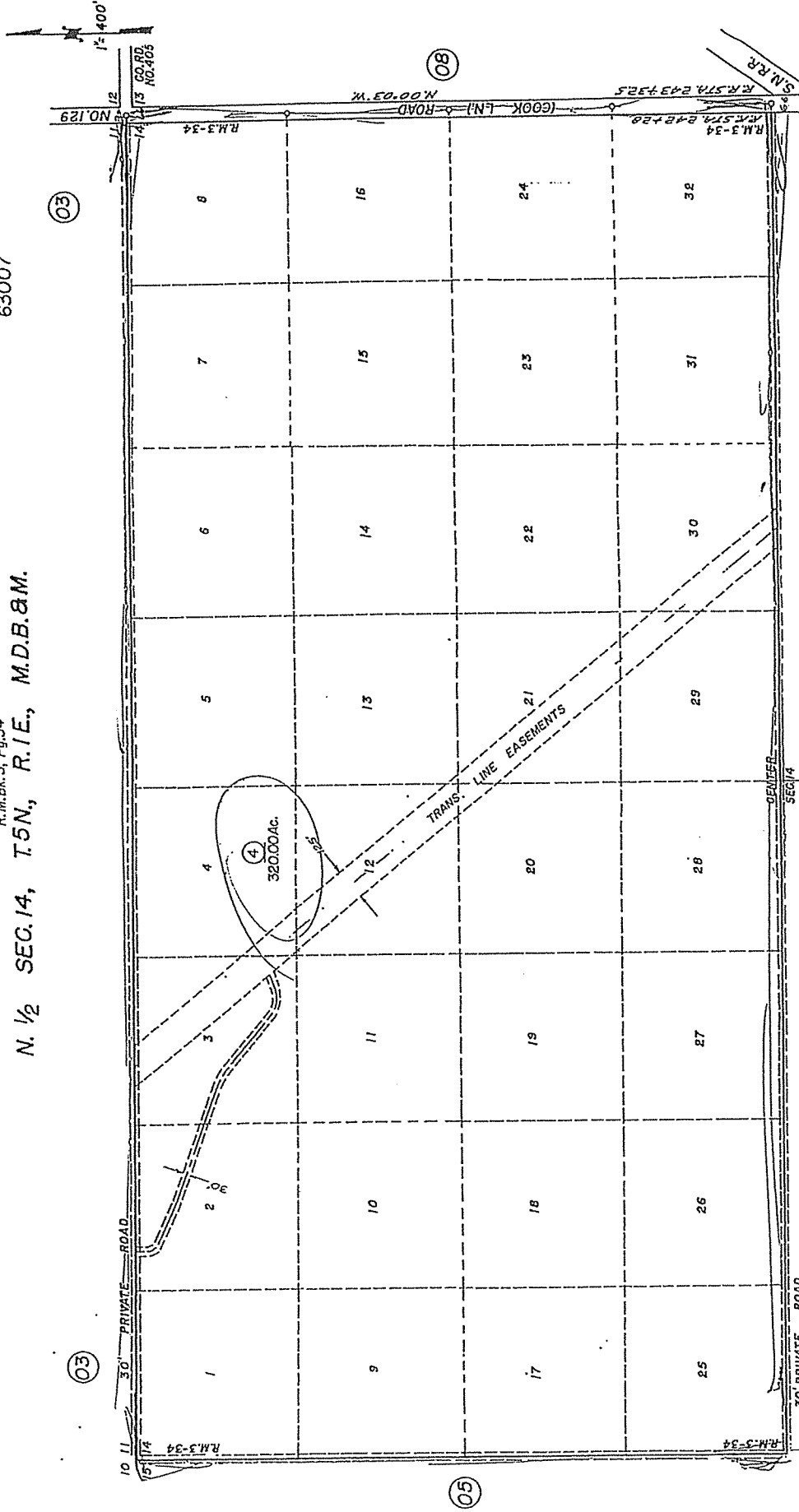




42-06

Tax Area Code  
63007

SOLANO TRACT NO. 2  
R.M. Bk. 3, Pg. 34  
N. 1/2 SEC. 14, T. 5N., R. 1E., M.D.B.&M.



REVISION	DATE	BY
SBE P/U Chg.	5-1-06	JS
060-4-ENSE	5-2-90	SS
SBE P/U	9-29-87	DI
060-01 Comb.	10-30-70	DEW

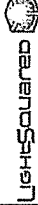
NOTE: Assessor's Block Numbers Shown in Ellipses  
Assessor's Parcel Numbers Shown in Circles

Assessor's Map Bk. 42 Pg. 06  
County of Solano, Calif.

06-07

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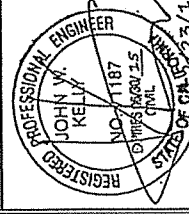




DOZIER  
BU # 839247  
4813 COOK LANE  
DIXON, CA 95620  
EXISTING GUYED TOWER

PROJECT NO:	84500.001	
CREATED BY:	SLAY	
ISSUED FOR:		
REV	DATE	DESCRIPTION
0	12/29/14	ISSUE FOR PERMITS
0	2/23/15	ISSUE FOR CONSTRUCTION

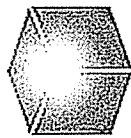
BAT ENGINEERING, INC.



REGISTERED PROFESSIONAL ENGINEER  
JOHN W. KELLY  
NO. 1187  
STATE OF CALIFORNIA  
EXPIRES 12/31/15

SHEET NUMBER: T-1  
REVISION: 0

CROWN CASTLE SITE NAME/BU NUMBER:  
**DOZIER/839247**  
LIGHTSQUARED SITE NAME/NUMBER:  
**NOCAL 4/TMUSCAN0004**

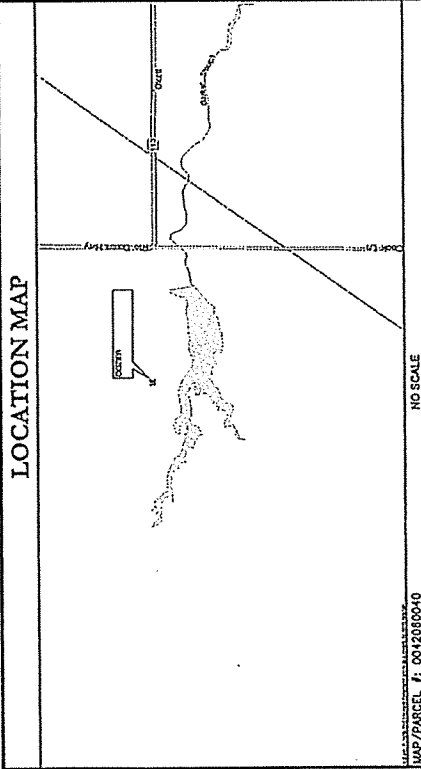


**LightSquared**

4813 COOK LANE  
DIXON, CA 95620

EXISTING 220'-0" GUYED TOWER

SHEET #	TITLE	DESCRIPTION	REV. #
T-1	TITLE SHEET		0
GH-1	GENERAL NOTES		0
GH-2	GENERAL NOTES		0
C-1	OVERALL SITE PLAN		0
C-1.1	COMPOUND LAYOUT		0
C-2	TOWER ELEVATION/ANTENNA LAYOUT		0
C-2.1	FEEDLINE LAYOUT		0
C-3	MOUNT SPECIFICATIONS/COAX LAYOUT		0
C-4	ANTENNA SPECIFICATIONS		0
C-5	GPS SPECIFICATIONS		0
C-6	FEEDLINE SPECIFICATIONS		0
C-7	HANGER AND STANDOFF SPECIFICATIONS		0
C-8	CABINET SPECIFICATIONS		0
C-9	A/C UNIT SPECIFICATIONS		0
C-10	CONCRETE PAD DETAILS		0
E-1	POWER/TELECO ROUTING DETAILS		0
G-1	GROUNDING PLAN AND DETAILS		0
G-2	GROUNDING DETAILS		0



DRAWING INDEX	
GH-1	GENERAL NOTES
GH-2	GENERAL NOTES
C-1	OVERALL SITE PLAN
C-1.1	COMPOUND LAYOUT
C-2	TOWER ELEVATION/ANTENNA LAYOUT
C-2.1	FEEDLINE LAYOUT
C-3	MOUNT SPECIFICATIONS/COAX LAYOUT
C-4	ANTENNA SPECIFICATIONS
C-5	GPS SPECIFICATIONS
C-6	FEEDLINE SPECIFICATIONS
C-7	HANGER AND STANDOFF SPECIFICATIONS
C-8	CABINET SPECIFICATIONS
C-9	A/C UNIT SPECIFICATIONS
C-10	CONCRETE PAD DETAILS
E-1	POWER/TELECO ROUTING DETAILS
G-1	GROUNDING PLAN AND DETAILS
G-2	GROUNDING DETAILS

**CODE COMPLIANCE**  
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES. PLANS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES:  
BUILDING/DWELLING IBC 2012  
MECHANICAL IBC 2012  
ELECTRICAL NEC 2011  
REFERENCE DOCUMENTS:  
STRUCTURAL ANALYSIS: PAUL J. FORD AND COMPANY  
DATED 12/4/2014

**DRIVING DIRECTIONS**  
DEPART HIGHWAY 99 ON LOCAL ROAD(S), TURN LEFT INTO BUSCH OR TURN RIGHT ONTO CHADBOURNE RD. TAKE RAMP (RIGHT) ONTO CA-12 TURN LEFT ONTO CA-113 (RD DIXON HWY). TURN LEFT ONTO LOCAL ROAD AND ARRIVE AT DOZIER.

**PROJECT SUMMARY**  
DOZIER  
4813 COOK LANE  
DIXON, CA 95620  
SOLANO COUNTY  
CROWN CASTLE SITE DENK  
CANNISBURG, PA 15317  
0042080040  
JULIE BERGER-PROJECT MANAGER  
(480) 735-6921  
TED CONGER-CONSTRUCTION MANAGER  
(925) 980-0098  
LIGHTSQUARED  
ONE POT SIX CORP  
10802 PARKRIDGE BLVD  
RESTON, VA 20191  
MIKE CAGNE  
(240) 508-8220

**DESIGN INFORMATION**  
A/E FIRM:  
BAT ENGINEERING, INC.  
ALPHARETTA, GA 30022  
CONTACT:  
CAROLINE BLOUNT, P.E.  
(918) 597-4630  
ELECTRIC PROVIDER:  
PACIFIC GAS & ELECTRIC CO.  
(800) 743-5000  
PROVIDER:  
AT&T  
(855) 637-9527

**PROJECT DESCRIPTION**  
SCOPE OF THIS PROJECT IS TO PROPOSE AN ANTENNA INSTALLATION ON AN EXISTING 220' GUYED TOWER. THE ANTENNA IS TO BE INSTALLED ON AN EXISTING 6'-0" STANDOFF MOUNT. THE ANTENNA IS TO BE INSTALLED ON THE EXISTING 6'-0" STANDOFF MOUNT. THE ANTENNA IS TO BE INSTALLED ON THE EXISTING 6'-0" STANDOFF MOUNT. THE ANTENNA IS TO BE INSTALLED ON THE EXISTING 6'-0" STANDOFF MOUNT.

CALL CALIFORNIA ONE CALL  
(800) 227-2600  
CALL 3 WORKING DAYS  
BEFORE YOU DIG!

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING IF ANY DISCREPANCIES ARE FOUND. THE ENGINEER SHALL BE RESPONSIBLE FOR SAME.

EXHIBIT C

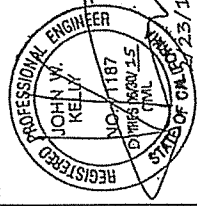


DOZIER  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO: 95562001  
 CHECKED BY: SLK

REV	DATE	BY	DESCRIPTION
1	12/20/14	SLK	PRELIMINARY REVIEW
0	7/23/13	SLK	CONSTRUCTION

BLT ENGINEERING, INC.



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS HE OR SHE IS LICENSED TO DO SO TO REPRODUCE OR TO ALTER THIS DOCUMENT.

SHEET NUMBER: GN-1  
 REVISION: 0

**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR- GENERAL CONTRACTOR (CONSTRUCTION)  
 SUBCONTRACTOR- GENERAL CONTRACTOR (CONSTRUCTION)  
 TOWER OWNER- CROWN CASTLE  
 OEM- ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO OBSERVE THE EXISTING CONDITIONS AND TO VERIFY THAT THE WORK CAN BE COMPLETED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR AND CROWN CASTLE.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. THE SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE EROSION CONTROL, MATERIALS, EQUIPMENT, APPROPRIATE ACCESS AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- \*MATERIALS LIST SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY THE CONTRACTOR. ITEMS NOT LISTED IN THE BILL OF MATERIALS AND MATERIAL LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES. GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND T1 DRAWINGS.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES, PAVEMENTS, CURBS, AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS CONDUIT, CABLES AND OTHER ITEMS REMOVED FROM THE CELL SITE. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

**ABBREVIATIONS AND SYMBOLS:**

SYMBOLS:	SYMBOLS:
[Symbol] ABOVE GRADE LEVEL	[Symbol] SOLID GROUND BUS BAR
[Symbol] BASE TRANSDUCER STATION	[Symbol] SOLID NEUTRAL BUS BAR
[Symbol] EXISTING	[Symbol] SUPPLEMENTAL GROUND CONDUCTOR
[Symbol] NOT TO SCALE	[Symbol] 2-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
[Symbol] RADIO FREQUENCY REFERENCE	[Symbol] SINGLE-POLE THERMAL-MAGNETIC CIRCUIT BREAKER
[Symbol] TYPICAL TO BE RESOLVED	[Symbol] CHEMICAL GROUND ROD
[Symbol] REQUIRED FOR ALL RINGS	[Symbol] TEST WELL
[Symbol] EQUIPMENT GROUND BAR	[Symbol] DISCONNECT SWITCH
[Symbol] MASTER GROUND BAR	[Symbol] METER
[Symbol] BASE COPPER WIRE	[Symbol] EXOTHERMIC WELD (CONWELD) (UNLESS OTHERWISE NOTED)
[Symbol] GEN	[Symbol] MECHANICAL WELD
[Symbol] INTERIOR GROUND RING (HALO)	[Symbol] GROUNDING WIRE
[Symbol] RADIO BASE STATION	

**STRUCTURAL STEEL NOTES:**

- ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A53 UNLESS OTHERWISE NOTED.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL BRACING MAY USE 5/8" ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEAR ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL. ALL DRILLING HOLES IN CONCRETE SHALL BE REINFORCED WITH APPROVED REBAR. ALL WORK SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

**CONCRETE AND REINFORCING STEEL NOTES:**

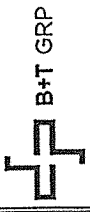
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 310, ACI 334, ASTM A181, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF.
- REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, BEFORCED UNLESS NOTED OTHERWISE. ALL CONCRETE SHALL BE COVERED TO FULLY ENCASED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
 CONCRETE CAST AGAINST EARTH.....3 IN.  
 CONCRETE EXPOSED TO EARTH OR WEATHER.....2 IN.  
 REBAR IN CONCRETE.....2 IN.  
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER.....1/2 IN.  
 GROUND.....3/4 IN.  
 SLAB AND WALLS.....1 1/2 IN.  
 BEAMS AND COLUMNS.....1 1/2 IN.
- A CHAPER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

**MASONRY NOTES:**

- HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N, TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F<sub>m</sub>) SHALL BE 1500 PSI.
- MORTAR SHALL MEET THE PROPERTIES SPECIFICATION OF A.S.T.M. C270 TYP. "B" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
- GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
- CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
- WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

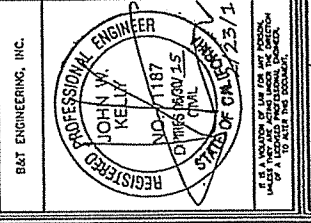
**SITE WORK GENERAL NOTES:**

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN PROTECTING OR BRACING FOR THE WORKING GROW. THIS WILL INCLUDE BUT NOT BE LIMITED TO (A) FALL PROTECTION (B) COMPANED SPACE (C) ELECTRICAL SAFETY (D) TRENCHING AND EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBERSH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BITS EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND, FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE WORK OR OTHERWISE PROTECTED, SHALL BE CROPPED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE SUBCONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND SHALL COORDINATE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- NO WORK TO COMMENCE PRIOR TO COMPANIES WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.



BU # 839247  
DOZIER  
483 COOK LANE  
DIXON, CA 95620  
EXISTING GUYED TOWER

ISSUED FOR:	5650/001		
PROJECT NO:	5650/001		
CHECKED BY:	SLM		
REV	DATE	BY	DESCRIPTION
A	12/20/14	SLM	PRELIMINARY REVIEW
B	2/27/15	SLM	CONSTRUCTION



B&T ENGINEERING, INC.  
REGISTERED PROFESSIONAL ENGINEER  
JOHN W. KELLY  
NO. 1187  
EXPIRES 06/30/15  
STATE OF CALIFORNIA  
I AM A MEMBER OF THE CALIFORNIA SOCIETY OF PROFESSIONAL ENGINEERS AND I AM NOT PROVIDING ENGINEERING SERVICES TO ANY OTHER CLIENT AT THE SAME TIME.

SHEET NUMBER DIVISION:  
GN-2 0

GREENFIELD GROUNDING NOTES:

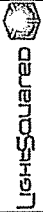
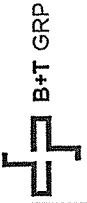
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GESS) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEC 1100 AND B1) FOR GROUND ELECTRODE SYSTEMS, THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH METAL CONDUITS, FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPOTENTIAL GROUNDING SYSTEM. GREEN INSULATED SUPPLEMENTAL EQUIPOTENTIAL GROUND WIRE, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BITS; #2 AWG SOLID THINNED COPPER FOR OUTDOOR BITS.
- CASH CASSETT FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPOTENTIAL GROUND WIRE, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BITS; #2 AWG SOLID THINNED COPPER FOR OUTDOOR BITS.
- CONNECTIONS TO THE GROUNDING BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUNDING BUS ARE PERMITTED.
- ALL EXTERIOR GROUNDING CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID THINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 20' BEHDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45' BEHDS CAN BE ADEQUATELY SUPPORTED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. HIGH PRESS CHIMPS.
- ALL GROUNDING CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES, AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1-#2 AWG TH-PLATED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE INSTALLED THROUGH SUCH OBJECTS, THE CONDUIT SHALL BE USED, WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL GROUNDING THAT TRANSPORTS FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 THINNED CMO-WELD TEMPERATURE POINT, THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

ELECTRICAL INSTALLATION NOTES (CONT.):

- EQUIPOTENTIAL BONDING, TERMINAL BOXES AND BULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL SHALL MEET OR EXCEED UL 20 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING, 3R OR BETTER PROTECTED (NP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (NP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND SAFETY GUARD AGAINST LIFE AND PROPERTY.
- INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW DISCONNECTED CIRCUIITS THAT ARE INSTALLED AHEAD TO TAKE A RETIRED WIRE THAT PULL CORD IS INSTALLED.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH ALL REQUIREMENTS OF THE NEC. HULL EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E. WIRES), GROUNDING AND TI CONDUCTOR AND CABLE PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, (OR EQUAL), THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR CONVENTION. WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL THE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THIN OR THIN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THIN OR THIN-2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THIN OR THIN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STALE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL), LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (167° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA UL 485/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND OR STRUCTURES AND SCHEDULE 80 PVC FOR ALL ELEVATIONS AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA UL 485/IEEE AND NEC.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PARALLEL TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STAPLES AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE. MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE. CONDUITS SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TIGHTLY SEaled WITH COPPER FINISH GRADE 10 TO 12 GAUGE METAL CONDUIT COUPLERS. CONDUITS SHALL BE LABELED WITH PLASTIC TAPE BY GALVANIZED VULNERABLE ROOF FLASHING ON INSIDE AND GALVANIZED WALLABLE ROOF FLASHING ON OUTSIDE AND INSIDE.



**DOZIER**  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

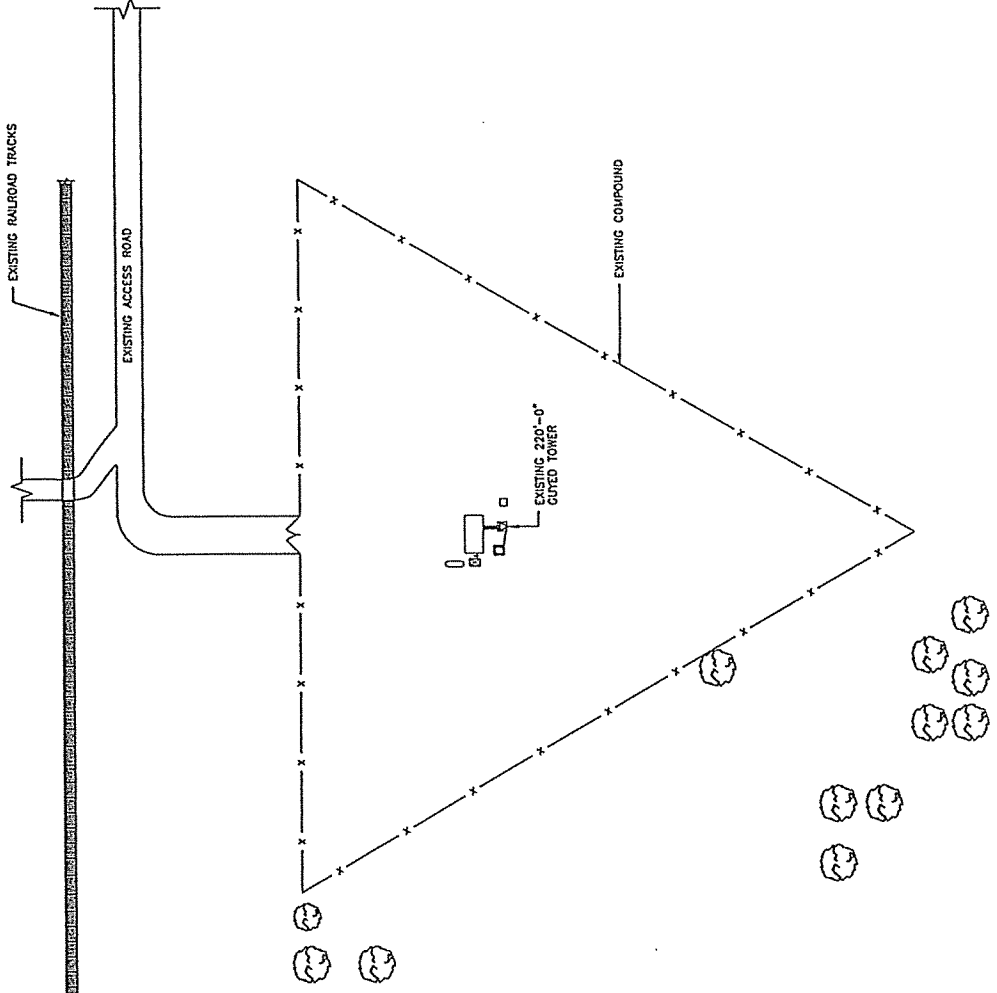
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CLIENT BY:	SEIN	
ISSUED FOR:		
REV	DATE	DESCRIPTION
A	12/27/14	ISSUE FOR PERMIT REVIEW
B	12/27/15	ISSUE FOR CONSTRUCTION

B&T ENGINEERING, INC.

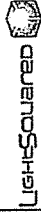
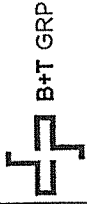
REGISTERED PROFESSIONAL ENGINEER  
 JOHN W. KELLY  
 NO. 1187  
 CIVIL ENGINEERING  
 STATE OF CALIFORNIA  
 EXPIRES 12/31/16

USE A LICENSE FOR THE STATE OF CALIFORNIA ONLY. THIS LICENSE IS NOT VALID FOR ANY OTHER STATE OR COUNTRY. SEE LICENSE FOR FULL TERMS AND CONDITIONS.

SHEET NUMBER: **C-1**  
 DIVISION: **0**



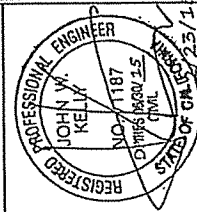
**1** OVERALL SITE PLAN  
 SCALE: 0' 20' 40' 80' 160'



**DOZIER**  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

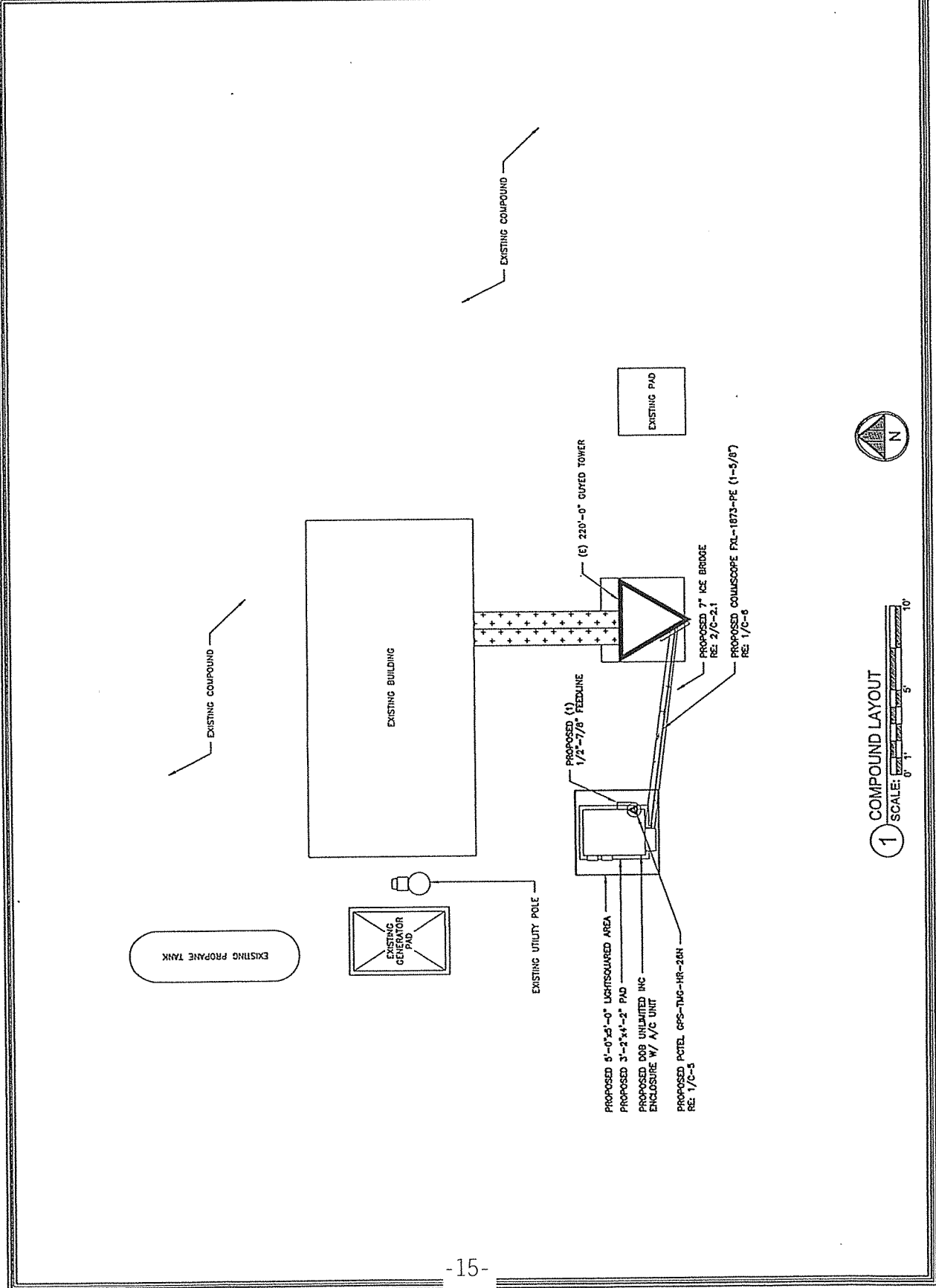
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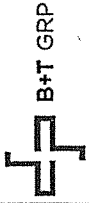
BAT ENGINEERING, INC.



IT IS A VIOLATION OF THE LAW FOR ANY PERSON TO SEAL OR RESEAL THIS DRAWING WITHOUT THE SIGNATURE OF THE REGISTERED PROFESSIONAL ENGINEER.

SHEET NUMBER: **C-1.1**  
 REVISIONS: **0**

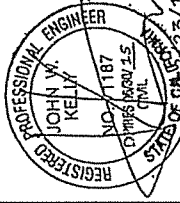




DOZIER  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO:	8466A01	
CHECKED BY:	SEM	
ISSUED FOR:		
REV	DATE	DESCRIPTION
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2	3/22/15	REV CONSTRUCTION

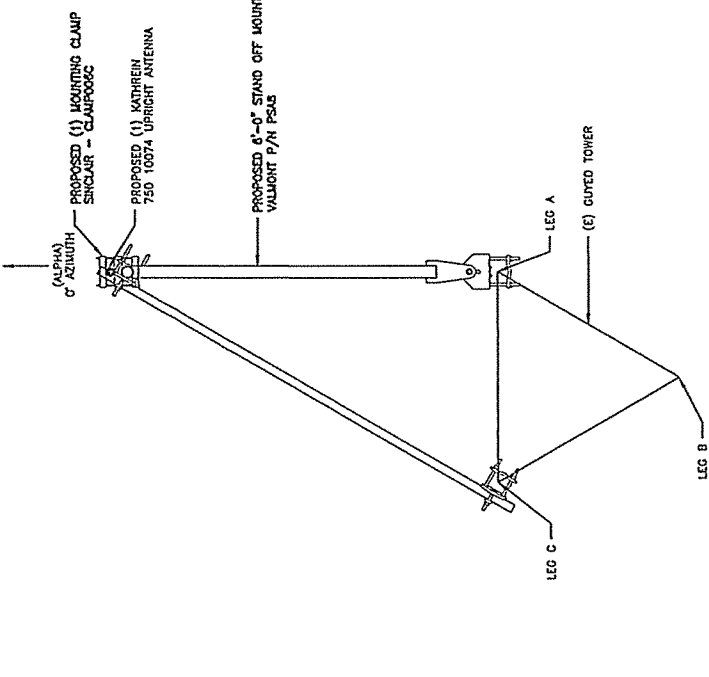
B&T ENGINEERING, INC.



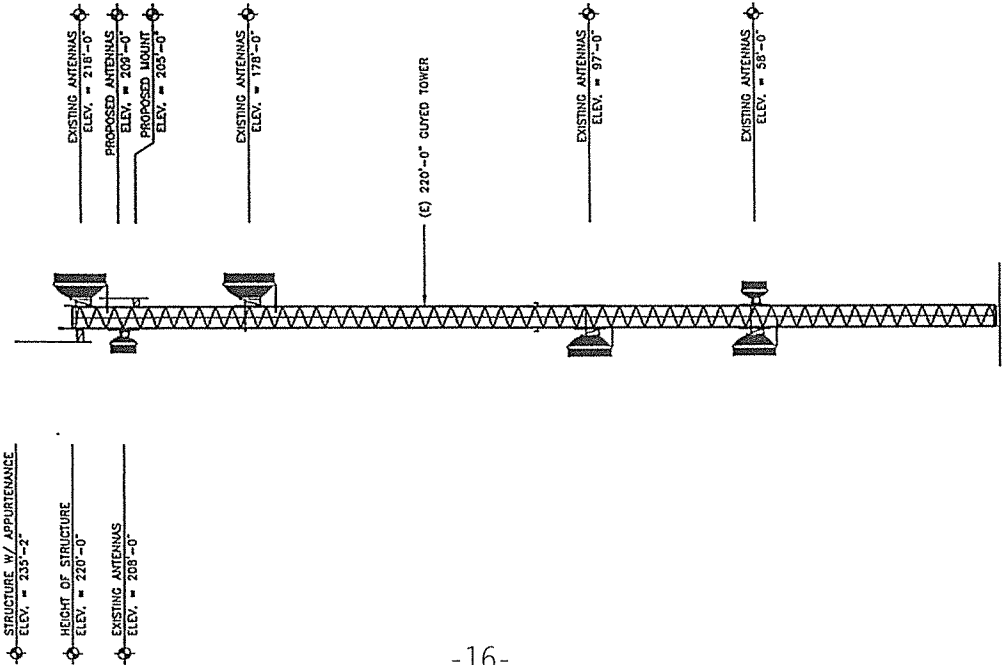
REGISTERED PROFESSIONAL ENGINEER  
 JOHN W. KELLY  
 CIVIL  
 LICENSE NO. 25171  
 STATE OF CALIFORNIA

U.S. AND STATE REGULATIONS FOR THE DESIGN OF A TOWER SHALL BE FOLLOWED.

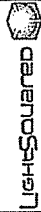
SHEET NUMBER: **C-2**  
 DIVISION: **0**



- ANTENNA NOTES:
1. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNA SHALL BE ADJUSTED TO MEET SYSTEM REQUIREMENTS
  2. CONTRACTOR SHALL VERIFY HEIGHT OF ANTENNA WITH LIGHTSQUARED REPRESENTATIVE
  3. ALL ANTENNA AZIMUTHS TO BE TAKEN FROM TRUE NORTH
  4. CROWN CASTLE HEIGHT VERIFICATION IS TO BE FROM BOTTOM OF TOWER STEEL TO CENTERLINE
  5. ALL INSTALLS WITHIN 10 FEET OF TOWER TOP REQUIRE FULL TAPE DROP COMPLETION PER FAYATONN CASTLE HEIGHT VERIFICATION PROCEDURE. THE MEASUREMENTS FOR HEIGHT VERIFICATION, THE MEASUREMENTS ARE TO INCLUDE THE REQUIRED PICTURES OF THE TAPE DROP MEASUREMENT AS WELL AS PICTURES OF THE TAPE MEASUREMENTS OF THE LIGHTS AND THE FAX REQUIRED PICTURE ACROSS THE SECTIONS WITH THE TOWER LIGHT AND CARRIERS ANTENNAS IN THE PICTURE AS PROOF THAT THE TOWER LIGHTS ARE NOT INSTALLED.







BU # 839247  
**DOZIER**  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

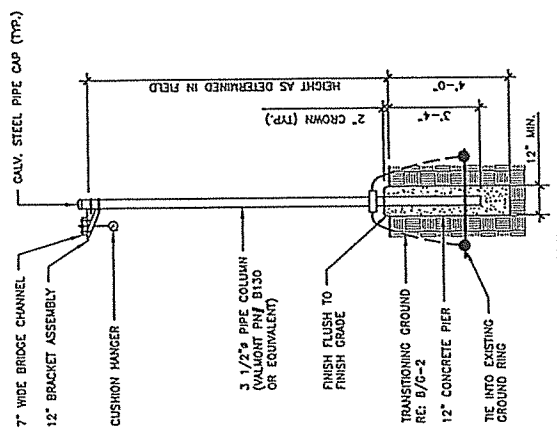
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O	7/27/15	SLM	CONSTRUCTION

B&T ENGINEERING, INC.

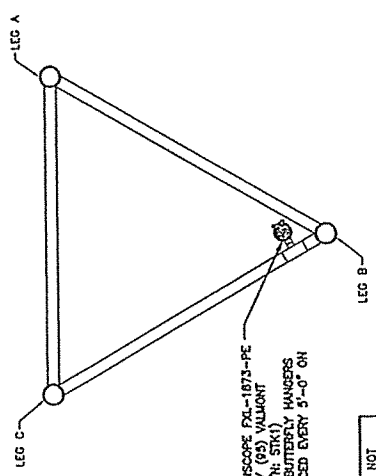
REGISTERED PROFESSIONAL ENGINEER  
 JOHN M. KELLY  
 NO. 1187  
 STATE OF CALIFORNIA  
 EXPIRES 2/5/17

IT IS HEREBY CERTIFIED THAT THE DESIGN, CALCULATIONS AND SPECIFICATIONS ON THIS DRAWING WERE PREPARED BY A LICENSED PROFESSIONAL ENGINEER.

SHIRT NUMBER: **C-2.1**  
 REVISION: **0**



**2** ICE BRIDGE DETAIL  
 SCALE: N.T.S.

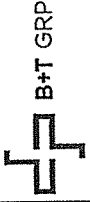


PROPOSED (1) COMASSCOPE FXL-1073-PE TO BE INSTALLED W/ (95) VALMONT STAND OFF KITS (P/N: STR1) AND (95) VALMONT BUTTERFLY VALVES (P/N: 105) SPACED EVERY 5'-0" ON CIRCUMFERENCE

EXISTING FEEDLINES NOT SHOWN FOR CLARITY OF THE PROPOSED INFORMATION

**1** PROPOSED FEEDLINE LAYOUT  
 SCALE: N.T.S.



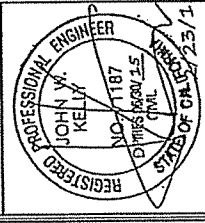


**DOZIER**  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO: 9466801  
 CHECKED BY: SLY

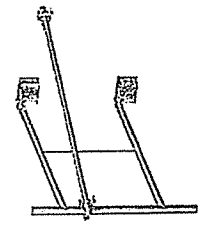
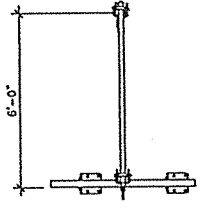
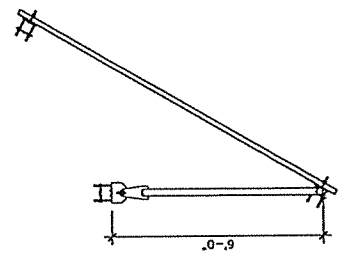
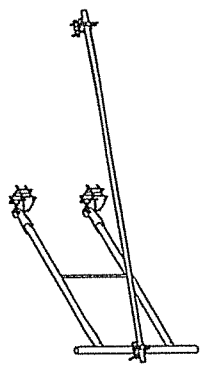
REV	DATE	BY	DESCRIPTION
A	12/20/14	DBR	PRELIMINARY REVIEW
B	2/23/15	SM	CONSTRUCTOR

B&T ENGINEERING, INC.



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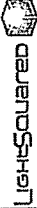
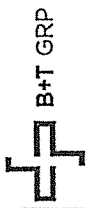
SHEET NUMBER: **C-3**  
 REVISION: **0**



- Stand-Off Mounts**
- Includes hardware to mount to round members 1-1/2" to 4-1/2". Large-Leg Adapter Kit available for legs 4-3/4" to 10-5/8". CD and 3" to 8" angles.
  - Accommodates leg slopes of 40:1 (1.43%), 10:1 (5.7%), or vertical.
  - Mount pivots for easy azimuth adjustment.
  - Stiff arm and hardware included.
  - Rated for 250 lb. live load.

Part #	VMI Part #	Description
PSA3	193109	3" Stand-Off Mount Kit
PSA6	195649	6" Stand-Off Mount Kit
LLEG-K	003422	Large-Leg Adapter Kit for 4-3/4" to 10-5/8" Diameter or 3" to 8" Angles

**1** PROPOSED VALMONT STANDOFF MOUNT SPECIFICATIONS  
 SCALE: N.T.S.

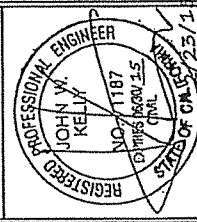


BU #: 839247  
**DOZIER**  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO: 96560.001  
 CHECKED BY: SLW

REV	DATE	DESCRIPTION
A	17/20/14	ISSUE FOR PRELIMINARY REVIEW
B	7/23/13	ISSUE FOR CONSTRUCTION

B&T ENGINEERING, INC.



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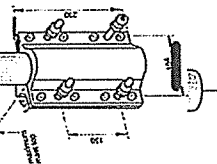
SHRHEET NUMBER: **C-4**  
 REVISION: **0**

**KATHREIN**  
 Antennen - Electronic  
 Preliminary Issue

**KATHREIN**  
 Antennen - Electronic  
 Preliminary Issue

Accessories (order separately)

Type No.	Description	Remarks	Weight approx.	Units per antenna
737 320	2 clamp	Mast: 84 - 122 mm diameter	2.0 kg	1
737 320	Stem-mounting bracket	Mast: 40 - 105 mm diameter	0.4 kg	1



**Mounting:** The antenna can be attached laterally at the top of a subular mast of 50 - 64 mm diameter with two U-bolt brackets supplied with the antenna (connecting cable run outside the mast).

**Material:** Radiator: Copper and brass. Radome: Fiberglass, colour: Grey. Base: Weather-proof aluminium. Mounting kit: screws and nuts: Stainless steel.

**Solid, reliable construction:** Omnidirectional antennas are also bracketed at exposed sites on the top of masts, so special attention has been paid to their mechanical construction. The acceptably stiff fiberglass tube with low tip deflection withstands wind velocities of up to 200 km/h.

**Excellant grounding:** From the solid metal tip right down to the base of the high girth antenna the grounding cross-section is 22 mm<sup>2</sup> copper or more, exceeding EN 50085-1.

**Environmental conditions:** Kathrein antennas are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4, 1 E. The antenna exceed this standard with regard to the following items:  
 - Low temperature: -40 °C  
 - High temperature (60%): +70 °C

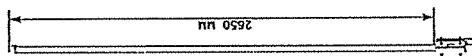
**Environmental tests:** Kathrein antennas have passed environmental tests as recommended in ETS 300 019-2-4. The longer more detailed test programme has been carried out on typical samples and modules. Extensive tests have been performed on typical samples and modules.

Please note:  
 As a result of more stringent legal regulations and judgements regarding product liability, we are obliged to point out certain risks that may arise when products are used under extraordinary operating conditions.

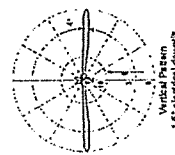
The mechanical design is based on the environmental conditions as stipulated in ETS 300 019-1-4, which include the static mechanical load imposed on an antenna by wind at maximum velocity. Excessive static mechanical loads, such as those caused by excessive support (overstress), may result in the breakage of an antenna or even cause it to fall to the ground. These facts must be considered during the site planning process.

The installation team must be properly qualified and also be familiar with the relevant national safety regulations. The details given in our data sheets have to be followed carefully when installing the antennas and accessories. The joints for the coupling (type of RF-connectors, recommended by the contractor manufacturer) must be checked.

Any previous datasheet issues have now become invalid.

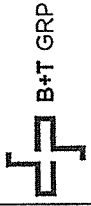


Type No.	750 10074
Frequency range	1870 - 1875 MHz
Polarization	Vertical
Gain	13 dBi
Impedance	1.5° stand 50 Ω
VSWR	≤ 1.2
Max. power	200 W (at 50 °C ambient temperature)



Mechanical specifications	7-18 female
Insert	8.92
Connector position	Bottom
Width	51 mm
Radiome diameter	100 ft (at 150 km/h)
Wind load	200 km/h
Max. wind velocity	2000 x 143 x 112 mm
Packing size	2650 mm
Height	

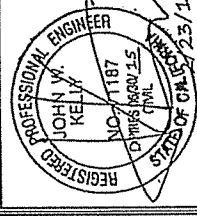
1 KATHREIN 750 10074 SPECIFICATIONS  
 SCALE: N.T.S.



DOZIER  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO:	94560401		
CHECKED BY:	SLM		
ISSUED FOR:			
REV	DATE	BY	DESCRIPTION
A	1/25/11	DMR	PRELIMINARY REVIEW
B	2/20/11	DMR	CONSTRUCTION

BAT ENGINEERING, INC.



USE A WORKING DRAWING FOR THE ERECTION OF A TOWER OR STRUCTURE UNDER THE PERMIT.

SHEET NUMBER: **C-5** DIVISION: **0**

**GPS/AVIATION SPECIAL PURPOSE ANTENNAS**  
**High Rejection GPS Timing Antennas**

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

The GPS-TMG-HR26s timing reference antennas feature a 26 dB amplifier and narrow band high rejection filters specifically designed to support long-lasting, trouble-free deployments in congested cell-site applications with severe interference around the GPS L1 frequency.

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

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

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

**Antenna Element Electrical Specifications**

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

**Mechanical Specifications**

Antenna Dimensions	Shipping Dimensions	Antenna Weight	Shipping Weight	Radome Color
5.0" H x 3.2" D (126 H x 81 mm)	7.5" L x 4.4" W x 3.3" D (190 L x 112 x 98 mm)	0.6 lbs (0.3 kg)	1.9 lbs (0.9 kg)	White

**Environmental Specifications**

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

**Mounting**

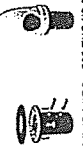
All mounting options fit pipes of 1"-1.45" (25 mm-37 mm) maximum diameter.

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

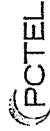
\*Special order. Please contact PCTEL Customer Service for ordering detail and additional mounting options



GPS-TMG-HR-26N



GPS-TMG-AWNT-R GPS-TMG-HR-26NCA

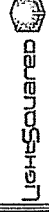


**Low Noise Amplifier Specifications**

Frequency Band (MHz)	1575.42 +/- 1.0 MHz
Amplifier Gain	26.5 dB +/- 2 dB
Nominal Impedance	50 ohms
Output VSWR	≤ 1.0:1
Noise Figure (including pre-selector)	5.4 dB @ 25°C (typ.)
Operating DC Voltage	3.3V - 12.0V (regulated)
Supply DC Voltage	24V
DC Current	± 40 mA @ 2V
Filtering	4-stage filtering including pre-selector
Out-of-band Rejection	3.65 dB @ 1033 MHz

**1 PCTEL GPS-TMG-HR-26N SPECIFICATIONS**

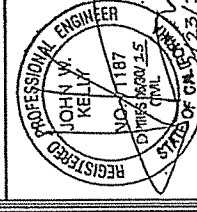
SCALE: N.T.S.



BU #: 839247  
**DOZIER**  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

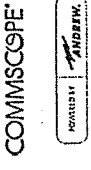
PROJECT NO:	9636001		
CHECKED BY:	SLM		
ISSUED FOR:			
REV	DATE	BY	DESCRIPTION
A	17/29/14	BM	PRELIMINARY REVIEW
B	7/23/15	SLM	CONSTRUCTION

B&T ENGINEERING, INC.



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SHEET NUMBER: **C-6** REVISION: **0**



## Product Specifications



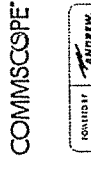
**COMMSCOPE**  
 Note: Values typical, unless otherwise stated  
 Operational band is 100-2700 MHz | Formula/calculated operational band is 100-2500 MHz

**Standard Conditions**  
 Attenuation, Ambient Temperature: 20 °C | 68 °F  
 Average Power, Ambient Temperature: 40 °C | 104 °F  
 Average Power, Inner Conductor Temperature: 100 °C | 212 °F

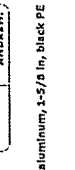
**Return Loss/VSWR**  
 Frequency Band: 680-950 MHz | VSWR: 1.13  
 1700-2000 MHz | VSWR: 1.13  
 2300-2500 MHz | VSWR: 1.13

Attenuation	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Average Power (kW)
0.5	0.02	0.06	248.75
1.5	0.073	0.222	175.58
2	0.085	0.256	143.18
10	0.191	0.589	123.06
20	0.272	0.833	54.83
30	0.335	0.988	35.48
40	0.388	1.133	25.74
60	0.557	1.579	23.98
80	0.628	1.819	17.85
100	0.654	1.919	16.68
108	0.654	1.919	16.02
150	0.779	2.327	13.45
174	0.843	2.477	12.45
200	0.907	2.627	11.53
300	1.132	3.345	9.26
400	1.325	4.04	7.90
450	1.415	4.31	7.40
500	1.5	4.57	6.98
512	1.52	4.63	6.90
600	1.662	5.05	6.36
800	1.956	5.85	5.78
824	1.989	6.006	5.56
884	2.084	6.235	5.27
960	2.172	6.462	5.03
1000	2.234	6.675	4.82
1250	2.528	7.77	4.11
1500	2.833	8.859	3.72

Frequency (MHz)	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Return Loss (dB)
1700	3.037	0.926	3.45
1800	3.143	0.950	3.33
2000	3.348	1.021	3.13
2100	3.449	1.051	3.04
2200	3.547	1.081	2.97
2300	3.645	1.110	2.92
2400	3.743	1.139	2.87
2500	3.841	1.168	2.83
2700	4.021	1.226	2.61



## Product Specifications



**FXL1873**  
 HELJAX® Flexible Coaxial Cable, smoothwall aluminum, 1-5/8 in. black PE jacket

**Construction Materials**  
 Jacket Material: PE  
 Outer Conductor Material: Smoothwall aluminum  
 Dielectric Material: Foam PE  
 Flexibility: Flexible  
 Inner Conductor Material: Copper  
 Jacket Color: Black

**Dimensions**  
 Nominal Size: 1-5/8 in.  
 Cable Weight: 0.67 lb/ft | 1.00 kg/m  
 Diameter Outer Jacket: 50.292 mm | 1.980 in.  
 Inner Conductor OD: 0.3029 in. | 10.000 mm  
 Outer Conductor OD: 1.073 in. | 47.600 mm

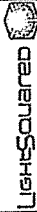
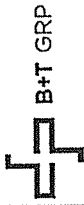
**Electrical Specifications**  
 Cable Impedance: 50 ohm ±1 ohm  
 Capacitance: 23.0 pF/ft | 75.4 pF/m  
 dc Resistance, Inner Conductor: 0.370 ohms/ft | 1.210 ohms/km  
 dc Resistance, Outer Conductor: 0.170 ohms/ft | 0.560 ohms/km  
 dc Test Voltage: 5000 V  
 Inductance: 0.184 µH/m | 0.559 µH/ft  
 Insulation Resistance: 10000 Mohms/km  
 Jacket Spark Test Voltage (rms): 1000 V  
 Operating Frequency Band: 100 - 2700 MHz  
 Peak Power: 315.0 kW  
 Velocity: 88%

**Environmental Specifications**  
 Installation Temperature: -40 °C to +60 °C (-40 °F to +140 °F)  
 Operating Temperature: -50 °C to +70 °C (-58 °F to +158 °F)  
 Storage Temperature: -55 °C to +80 °C (-67 °F to +176 °F)

**General Specifications**  
 Brand: HELJAX®

**Mechanical Specifications**  
 Bending Moment: 149.1 Nm | 110.0 ft·lb  
 Flat Plate Crush Strength: 220.0 lb/in | 3.9 kg/mm  
 Minimum Band Radius: 444.50 mm | 17.50 in  
 Number of Bands, minimum: 15  
 Tensile Strength: 660 kg | 1500 lb

1 COMMSCOPE FXL-1873 SPECIFICATIONS  
 SCALE: N.T.S.

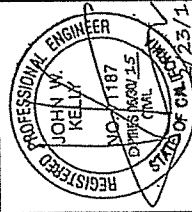


BU #: 839247  
**DOZIER**  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO.: 9560.001  
 CHECKED BY: SLY

REV	DATE	BY	DESCRIPTION
A	17/20/14	BM	PRELIMINARY REVIEW
B	7/23/13	SM	CONSTRUCTION

B&T ENGINEERING, INC.



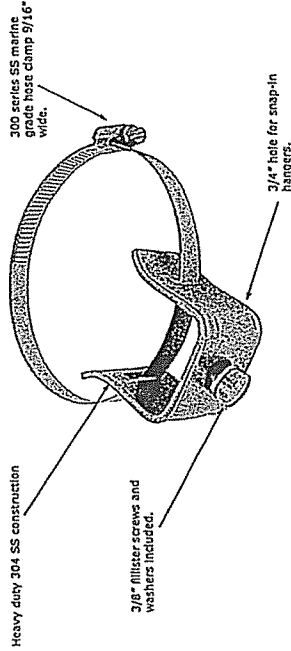
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SHEET NUMBER: **C-7**  
 REVISION: **0**



A valmont COMPANY

### Tower Standoff Kits



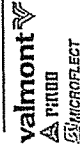
**Features:** 3/4" mounting holes for snap-in hangers. Slotted filler screws with lockwashers included. Wide operating range.

**Construction:** Constructed from high grade 304 stainless steel for maximum corrosion protection. Part is tumbled and cleaned to remove burrs and oil.

**Design Criteria:** Can be used outdoors or indoors.

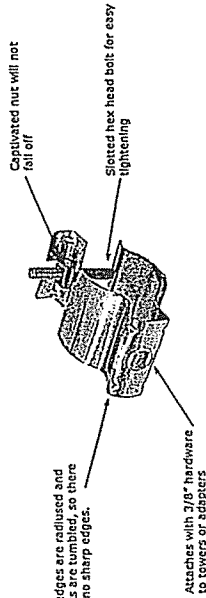
Part #	Leg Size	U of M	Weight
STK1	3/4" - 1-1/2"	10 pack	2.90 lb.
STK2	1-1/2" - 3"	10 pack	3.25 lb.
STK3	3" - 4"	10 pack	3.85 lb.
STK4	3" - 6"	10 pack	4.90 lb.

New York, NY 609-435-7781  
 Los Angeles, CA 609-435-7781  
 Atlanta, GA 609-001-0000  
 Plymouth, IN 609-753-7448  
 Dallas, TX 609-609-5151  
 Salem, OR 609-609-0101



A valmont COMPANY

### Butterfly Hangers



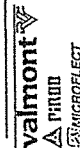
**Features:** Allows cable attachment by using 3/8" hardware (not included). Will not loosen over time. Hex head bolt is also slotted for use with a screw driver. Fits corrugated and smooth wall cables.

**Construction:** Constructed from high grade 304 stainless steel for maximum corrosion protection. Part is tumbled and cleaned to remove burrs and oil.

**Design Criteria:** Can be used outdoors or indoors.

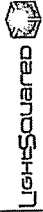
Part #	Cable Size	U of M	Weight/10 pk
BUG78	7/8"	10 pack	1 lb.
BUG114	1-1/4"	10 pack	1 lb.
BUG158	1-5/8"	10 pack	1 lb.
BUG214	2-1/4"	10 pack	1.8 lb.

New York, NY 609-435-7781  
 Los Angeles, CA 609-435-7781  
 Atlanta, GA 609-001-0000  
 Plymouth, IN 609-753-7448  
 Dallas, TX 609-609-5151  
 Salem, OR 609-609-0101



1 VALMONT HANGER AND STAND OFF/SPECIFICATIONS

SCALE: N.T.S.



DOZIER  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

PROJECT NO:	4860001	
CHECKED BY:	SLT	
ISSUED FOR:		
REV	DATE	DESCRIPTION
A	12/29/14	BUR PRELIMINARY REVIEW
B	3/22/15	SUB CONSTRUCTION

B&T ENGINEERING, INC.

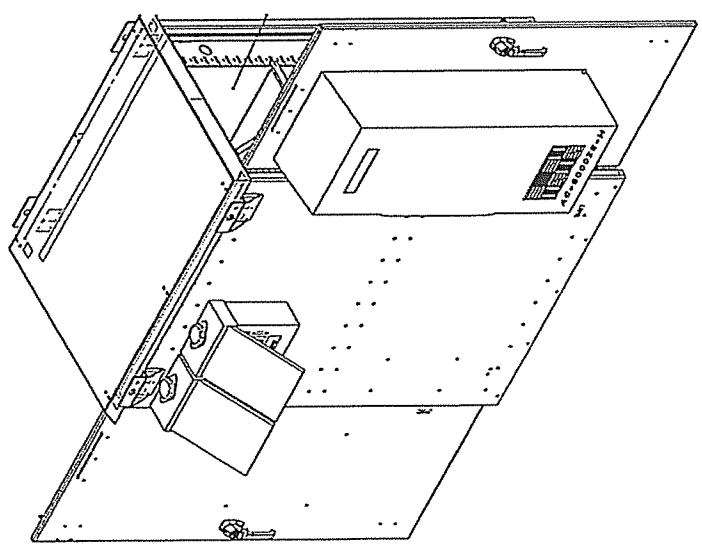
REGISTERED PROFESSIONAL ENGINEER  
 JOHN W. KELLY  
 NO. 1187  
 STATE OF CALIFORNIA  
 EXPIRES 2/23/15

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SHEET NUMBER: C-8  
 REVISION: 0

**PROPOSED CABINET DESCRIPTION:**

- 62" H X 29.5" W X 42" D OUTDOOR ENCLOSURE.
- POWDER COATED WHITE, NEMA 4 POINT LOCKING HANDLES AND 6AWG DOUBLE-LUG GROUND CABLES; FRONT AND REAR DOORS.
- FRONT AND REAR DOORS WITH 18" RADIUS REAR DOOR.
- FRONT AND REAR SET OF EN STANDARD 19" STANDARD RACK RAILS WITH RU MARKERS, TAPPED FOR 10-32 HARDWARE.
- (1) 32,000 BTU, 220V, PROGRAMMABLE AIR CONDITIONER WITH ETHERNET CAPABLE REMOTE CONTROL UNIT AND 400 WATTS OF HEAT, MOUNTED ON THE BACK DOOR.
- (1) 12" COPPER GROUND BAR ON INSULATORS; 1 FOR EQUIPMENT GROUND, 1 FOR CASE GROUND.
- (1) 100AMP MAIN BREAKER AC DISTRIBUTION PANEL, USE SQUARE D 2 8-SPACE PANELS, 1 POPULATED 110V 450 OUTLET, 1 POPULATED GFI DUPLEX OUTLET, 1 IEC C-13 FLANGED INLET ON ITS OWN 20AMP BREAKER AND ASSOCIATED WIRING.
- (1) 110V SMOKE DETECTOR, CEILING MOUNTED.
- (1) IN-LINE 110V SURGE SUPPRESSOR
- (1) 110V 2-POLE MAGNETIC DOOR ALARM SWITCHES
- (1) 110V 2-POLE MAGNETIC DOOR ALARM SWITCHES
- (1) SET OF 2-POLE MAGNETIC DOOR ALARM SWITCHES
- (2) 110V FLOURESCENT LIGHT BARS MOUNTED ABOVE FRONT & REAR DOORS
- (1) SETS OF I-HOOKS MOUNTED TO EACH CORNER
- (1) DUAL WAVE-GUIDE ENTRY PORT



1 PROPOSED DDB UNLIMITED CABINET W/ AC UNIT  
 SCALE: N.T.S.





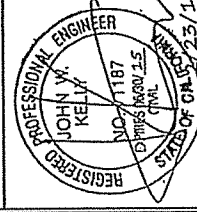


DOZIER  
BU # 839247  
4813 COOK LANE  
DIXON, CA 95620  
EXISTING GUYED TOWER

PROJECT NO: 84660A01  
CHECKED BY: SLN

ISSUED FOR:	DATE	DESCRIPTION
1	12/11/11	PROPOSED WORK
2	2/27/13	REV CONSTRUCTION

BAT ENGINEERING, INC.



U.S. A LICENSED PROFESSIONAL ENGINEER  
IN THE STATE OF CALIFORNIA

SHEET NUMBER: 18 (REVISION)  
**C-10 0**

**GENERAL:**

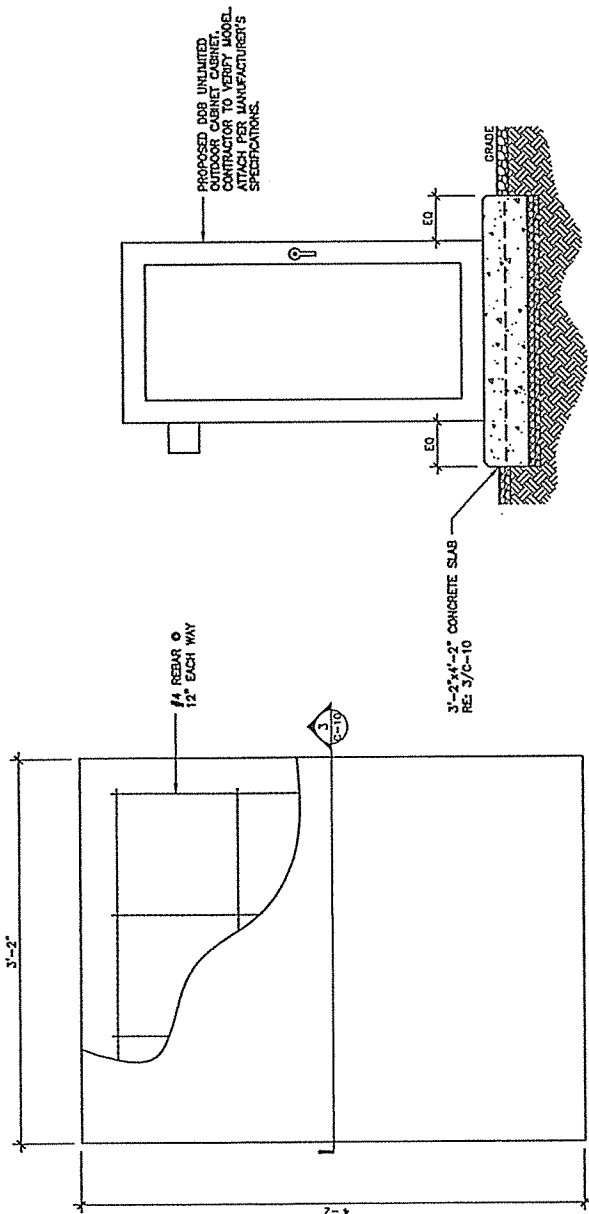
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE MODEL CODE LATEST EDITION AS WELL AS LOCAL REGULATIONS.
2. IF ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS AND OR CONDITIONS SPECIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER AND SHALL NOT PROCEED WITH ANY WORK THAT WOULD BE AFFECTED.
3. ALL REINFORCING BARS SHALL BE TIED WITH TIE WIRE AT ALL REINFORCING BAR INTERSECTIONS. THE CONTRACTOR SHALL SUPPORT THE REINFORCING BAR MAT WITH CONTINUOUS STEEL CHAIRS SPACED NO MORE THAN FOUR FEET O.C.

**FOUNDATION NOTES:**

1. THE CONTRACTOR SHALL EXCAVATE TO VIRGIN SOIL UNDER THE PROPOSED LOCATION OF THE NEW FOUNDATION.
2. ALL WATER SHALL BE REMOVED FROM THE BOTTOM OF THE EXCAVATION BEFORE COMPACTING FILL AND PLACING CONCRETE.
3. THE REINFORCED CONCRETE SLAB SHALL BE PLACED ON A 6 MIL THICK POLYETHYLENE VAPOR BARRIER OVER A LAYER OF SAND OR SUBGRADE. THE POLYETHYLENE VAPOR BARRIER SHALL BE SEAMED TOGETHER WITH OVERLAPPING JOINTS. JOINTS SHALL BE REINFORCED WITH FRAGILES, ASPHALT, CONCRETE BOULDER, ETC.) WITHIN THE SLAB AREA AND EXCAVATION SHALL BE REMOVED FROM THE SITE.
4. THE CONTRACTOR SHALL EMPLOY ALL NECESSARY MEASURES TO MAINTAIN THE STRUCTURAL INTEGRITY OF ADJACENT STRUCTURES DURING EXCAVATION AND CONSTRUCTION OF FOUNDATIONS.

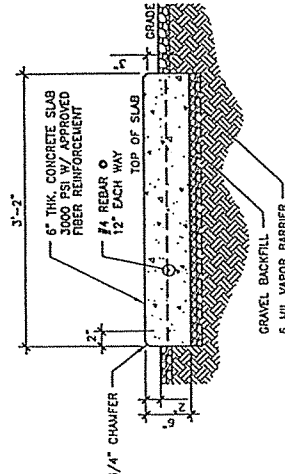
**CONCRETE NOTES:**

1. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE ACI DETAILING MANUAL SP-88 (LATEST REVISION).
2. CONCRETE CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, ACI 318".
3. CAST-IN-PLACE CONCRETE SHALL BE NORMAL WEIGHT AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
4. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615. USE CLASS B LAP SPACES.
5. THE CONCRETE SLAB SHALL BE POURED LEVEL WITH A TOLERANCE OF 1/8" OVER 10'-0" IN ALL DIRECTIONS.

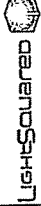


1 FOUNDATION PLAN  
SCALE: N.T.S.

2 EQUIPMENT CABINET ELEVATION  
SCALE: N.T.S.



3 CONCRETE SLAB DETAIL  
SCALE: N.T.S.



DOZIER  
BU #: 839247  
4813 COOK LANE  
DIXON, CA 95620  
EXISTING GUYED TOWER

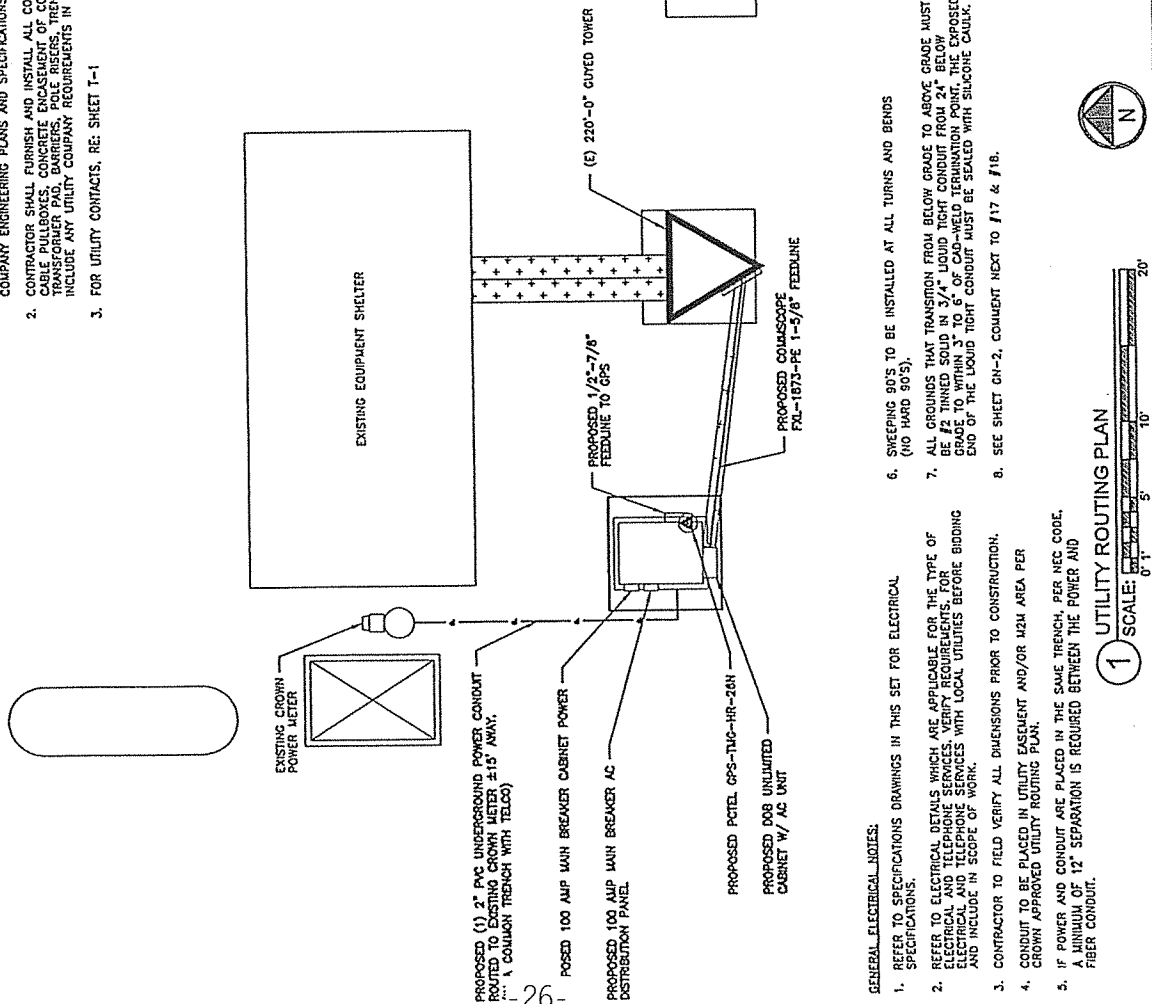
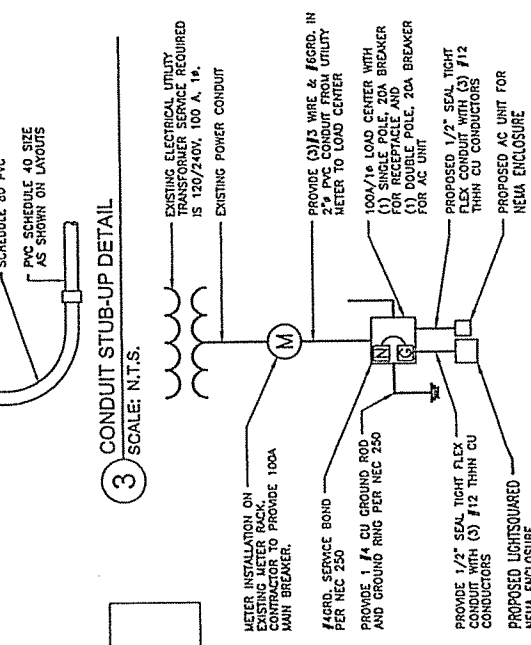
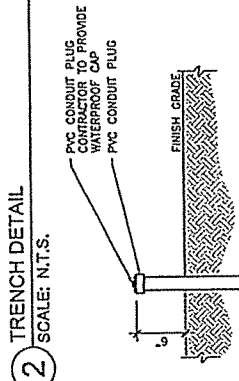
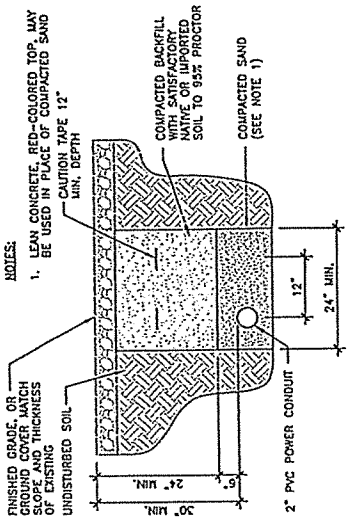
PROJECT NO.	8456001	
CHECKED BY	SJL	
ISSUED FOR:		
REV	DATE	DESCRIPTION
1	11/29/14	INIT PRELIMINARY REVIEW
2	7/22/15	3RD CONSTRUCTION

BAT ENGINEERING, INC.

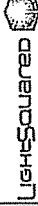
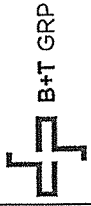
IT IS A VIOLATION OF LAW FOR ANY PERSON TO REPRODUCE OR TRANSMIT THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF BAT ENGINEERING, INC.

SHEET NUMBER: E-1  
REVISION: 0

- POWER & TELEPHONE GENERAL NOTES:**
- CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY.
  - CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL WIRES, AND ALL OTHER MATERIALS AND EQUIPMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL AND INCLUDE ANY UTILITY COMPANY REQUIREMENTS IN SCOPE OF WORK.
  - FOR UTILITY CONTACTS, SEE SHEET T-1



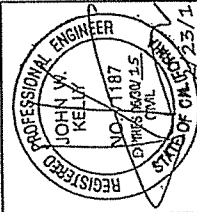
- GENERAL ELECTRICAL NOTES:**
- REFER TO SPECIFICATIONS DRAWINGS IN THIS SET FOR ELECTRICAL SPECIFICATIONS.
  - REFER TO ELECTRICAL DETAILS WHICH ARE APPLICABLE FOR THE TYPE OF ELECTRICAL AND TELEPHONE SERVICES. VERIFY REQUIREMENTS, FOR ELECTRICAL AND TELEPHONE SERVICES WITH LOCAL UTILITIES BEFORE BIDDING AND INCLUDE IN SCOPE OF WORK.
  - CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
  - CONDUIT TO BE PLACED IN UTILITY EASEMENT AND/OR 42M AREA PER CHOWN APPROVED UTILITY ROUTING PLAN.
  - IF POWER AND CONDUIT ARE PLACED IN THE SAME TRENCH, PER NEC CODE, A MINIMUM OF 12" SEPARATION IS REQUIRED BETWEEN THE POWER AND FIBER CONDUIT.
  - SHEEPING ROVS TO BE INSTALLED AT ALL TURNS AND BENDS (NO HARD 90'S).
  - ALL GROUNDS THAT TRANSMIT FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF GROUND LEVEL. ALL EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE GULF.
  - SEE SHEET ON-2, COMMENT NEXT TO #17 & #18.



DOZIER  
 BU #: 839247  
 4813 COOK LANE  
 DIXON, CA 95620  
 EXISTING GUYED TOWER

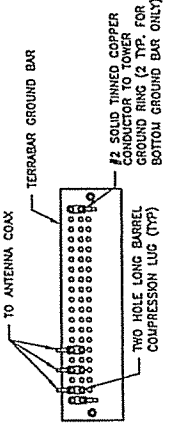
PROJECT NO:	94560 001	
CHECKED BY:	SELT	
ISSUED FOR:		
REV	DATE	DESCRIPTION
1	12/26/14	REV. PRODUCTION REVISED
2	07/23/15	REV. CONSTRUCTION

BAT ENGINEERING, INC.



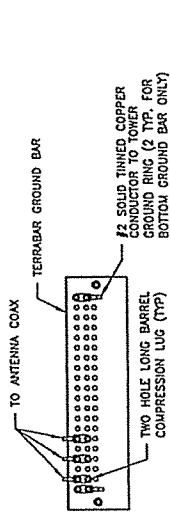
U.S. A LICENSEE IN THE STATE OF CALIFORNIA  
 BY A LICENSED PROFESSIONAL ENGINEER  
 UP AFTER THE DEADLINE

SHEET NUMBER: G-1  
 DIVISION: 0



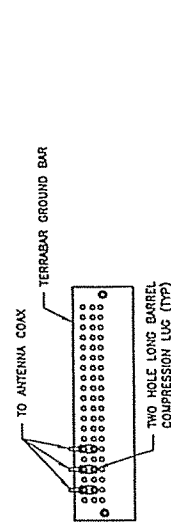
- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
  2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
  3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

1 SHELTER GROUND BAR DETAIL  
 SCALE: N.T.S.



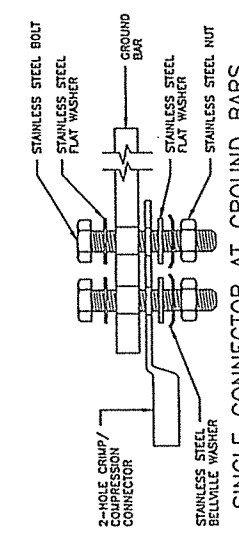
- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
  2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
  3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.
  4. INSTALL GROUND BARS AT 75 FT. INTERVAL MAXIMUM.

2 TOWER GROUND BAR DETAIL  
 SCALE: N.T.S.

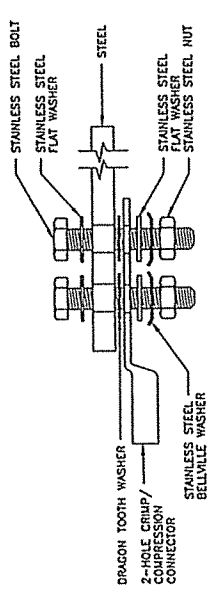


- NOTES:
1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
  2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
  3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

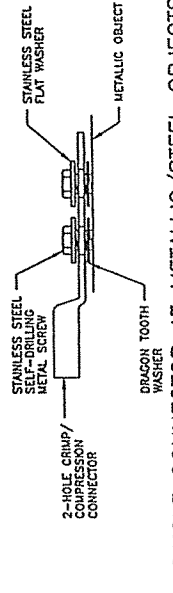
3 ANTENNA GROUND BAR DETAIL  
 SCALE: N.T.S.



4 SINGLE CONNECTOR AT GROUND BARS



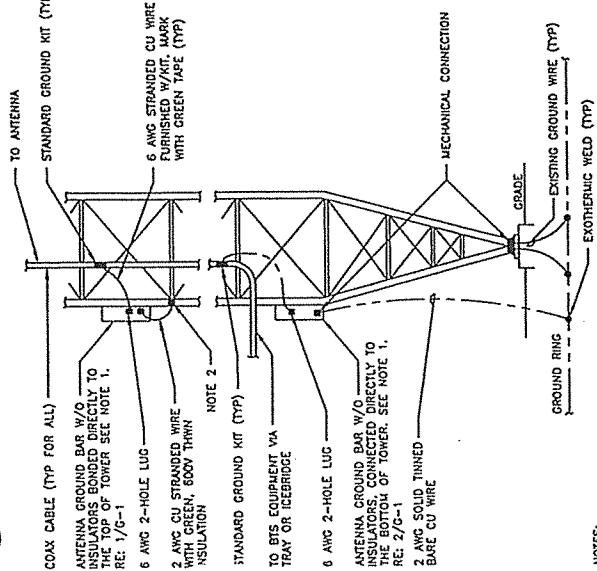
5 SINGLE CONNECTOR AT STEEL OBJECTS



6 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS  
 SCALE: N.T.S.



7 GROUND ROD DETAIL  
 SCALE: N.T.S.



- NOTES:
1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION, PROVIDE AS REQUIRED.
  2. ALL MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
  3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. THE GROUNDING SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM 8 FEET TO 10 FEET.

8 TYPICAL ANTENNA CABLE GROUNDING  
 SCALE: N.T.S.

ISSUED FOR:	SLAT	
PROJECT NO:	84560.001	
CHECKED BY:		
REV	DATE	DESCRIPTION
0	12/27/14	DATA PRELIMINARY REVIEW
1	3/22/15	DATA CORRECTIONS

REGISTERED PROFESSIONAL ENGINEER  
JOHN W. KELLY  
NO. 1187  
EXPIRES 12/31/15  
STATE OF CALIFORNIA

BAT ENGINEERING, INC.

SHEET NUMBER: **G-2** OF 0

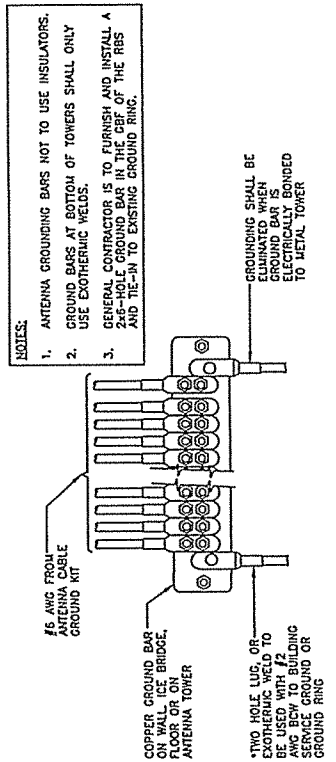
REVISION:

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	Y46C-21C38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	Y43C-21C38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	Y42C-21C38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	Y42B-2N	1/2" - 16 NC S 2 BOLT

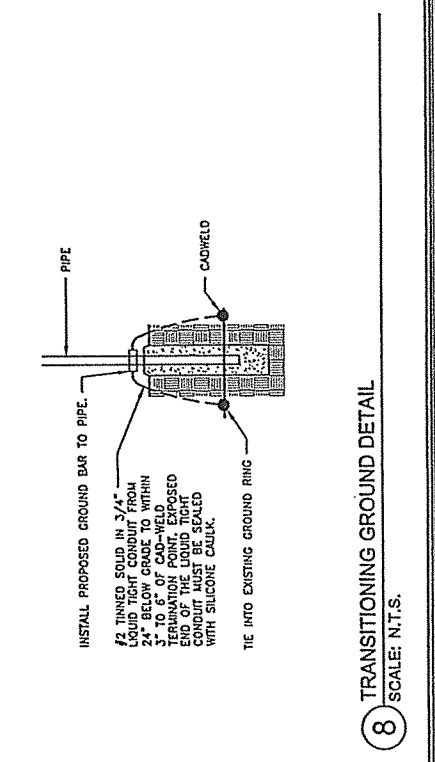
**NOTES:**

- ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL TYPE 316. ALL AT WASHERS SHALL BE STAINLESS STEEL TYPE 316. ALL AT WASHERS SHALL BE STAINLESS STEEL TYPE 316. ALL AT WASHERS SHALL BE STAINLESS STEEL TYPE 316. ALL AT WASHERS SHALL BE STAINLESS STEEL TYPE 316.
- COPPER SHIELD, ANTiOX. CR NO-OX OR EQUIVALENT SHALL BE PLACED WHERE ALL DISSIMILAR METALS CONNECT.
- ALL LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

**2 MECHANICAL LUG CONNECTION**  
SCALE: N.T.S.



**5 GROUNDWIRE INSTALLATION**  
SCALE: N.T.S.



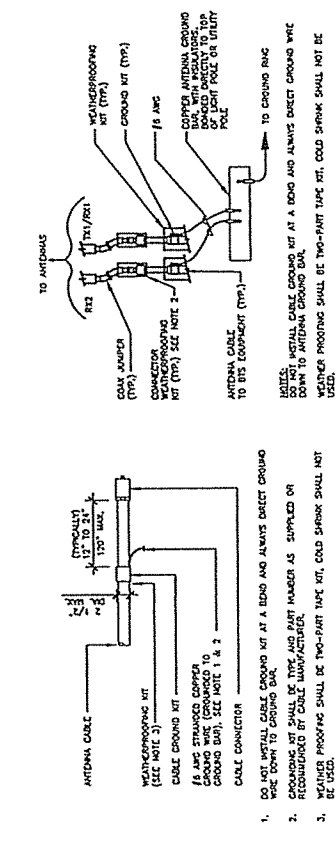
**8 TRANSITIONING GROUND DETAIL**  
SCALE: N.T.S.

**NOTE:**

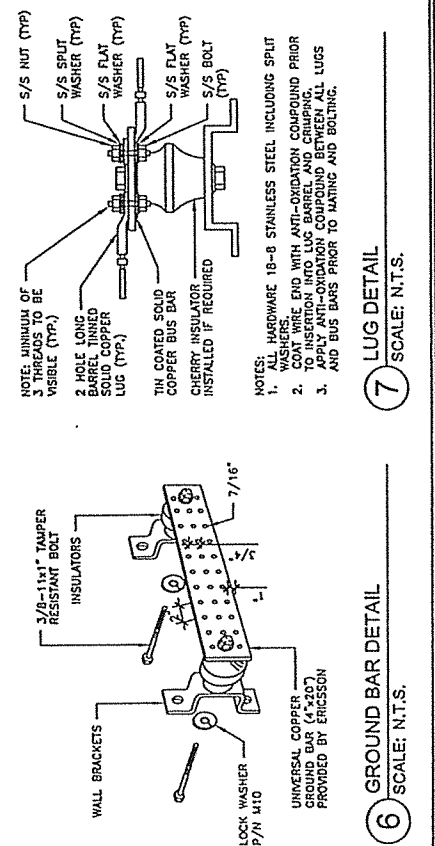
ERICSSON TOWER TYPES SHOWN HERE ARE EXAMPLES. CONSULT WITH PROJECT MANAGER FOR SPECIFIC MODELS TO BE USED FOR THIS PROJECT.

TYPE 1HS	TYPE 2=1A=2	TYPE 3A	TYPE 3B	TYPE 3C	TYPE 3D	TYPE 3E	TYPE 3F	TYPE 3G
TYPE 4A	TYPE 4B	TYPE 4C	TYPE 4D	TYPE 4E	TYPE 4F	TYPE 4G	TYPE 4H	TYPE 4I

**1 CADWELD GROUNDING CONNECTIONS**  
SCALE: N.T.S.



**3 CABLE GROUND KIT CONNECTION**  
SCALE: N.T.S.



**6 GROUND BAR DETAIL**  
SCALE: N.T.S.