October 2, 2017

Prepared for:

Crown Castle
695 River Oaks Parkway
San Jose, CA 95134

Re: Noise Assessment Report for
Equipment Vault located in Santa Cruz, CA, High St. location

Glossary of Terms:

Sound Pressure Level (SPL): Ratio of one sound pressure to a reference pressure (Lref) of 0 dB at 20 uPa air pressure. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by 20 log (L/Lref).
A-weighted Sound Pressure Level (dBA): Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.
Minimum Sound Level (Lmin): Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.
Maximum Sound Level (Lmax): Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.
Equivalent sound level (Leq): the true equivalent sound level measured over the run time. Leq is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.
Day Night Sound Level (Ldn): Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB "Penalty" for night time noise. Typically Ldn's are measured using A weighting.
Community Noise Exposure Level (CNEL): The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.
Octave Band: An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.
One Third-Octave Band: A one third-octave band is defined as a frequency band whose upper band edge frequency is 1.26 times the lower band frequency.
Response Time (F,S,I): The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively. **Sound Transmission Class (STC):** is an integer rating of how well a building partition attenuates airborne sound. In the USA, it is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating figure very roughly reflects the decibel reduction in noise that an assembly can provide.

Noise Definitions:

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs and when and how often the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies.

The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as Leq represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The Community Noise Equivalent Level (CNEL) is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m.

These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder. Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiant in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas and vegetation. On the other hand, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance. The most effective noise reduction methods consist of controlling the noise at the source, absorbing and/or blocking the noise transmission with barriers. Any or all of these methods may be required to reduce noise levels to an acceptable level.

1.0 INTRODUCTION

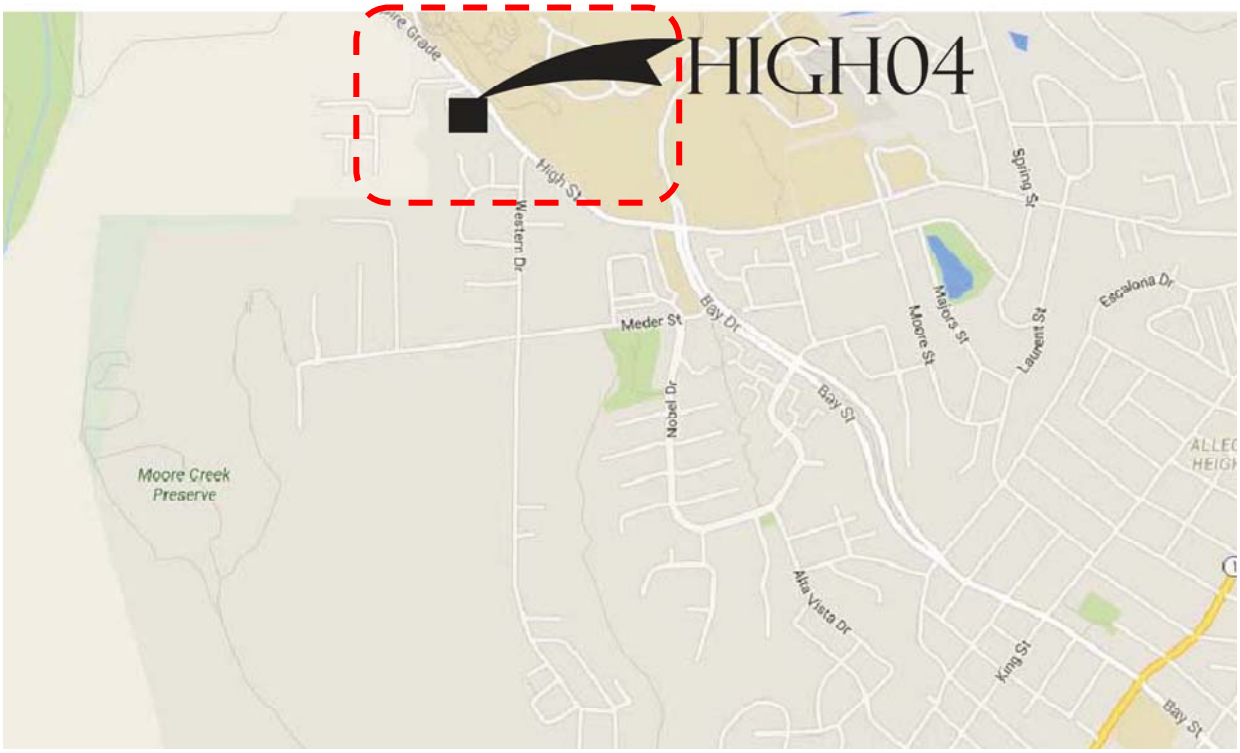


Figure 1 - Vicinity Map of Project Area, High St., Sta. Cruz

1.1 Environmental Settings and Existing Conditions:

This noise study has been completed to determine the noise impacts of an existing equipment vault located at High St., Santa Cruz, CA and to confirm compliance with the noise control standard of the city of Piedmont, CA. The scope of the proposed project is to install a new, similar vault that should be located in relation to any adjacent property line as determined by this field visit and some calculations.

The Santa Cruz noise data was obtained during a site visit on September 28, 2017, 3 pm. The weather was clear skies, light breezes, high 70s F temperature. There were four technicians and project managers working on finishing the electronics of this vault. See PDF sheets in the appendix for the project scope. The exhaust fan was triggered by use of a heat gun that simulated equipment heat build-up.

It seems unlikely that the equipment heat will ever build up to the point where the fan gets triggered. The underground vault has massive concrete walls that act as heat sinks, the vault doors are insulated and gasketed and ambient temperatures in coastal California towns such as Piedmont or Santa Cruz rarely spike to where an underground vault would trigger its exhaust fan. This professional opinion should be reviewed and certified by a qualified HVAC engineer should this become an important criterion for obtaining a permit.

	
View of vault looking north towards High St.	View into open vault

1.2 Noise Levels:

The following diagrams illustrate the noise levels that were found at the site: a) ambient traffic noise, mostly from High St. Tosca Ter. sees very little traffic, mostly residential, High St. traffic includes trucks, municipal and campus buses. High St. is two lanes and a center turn lane.

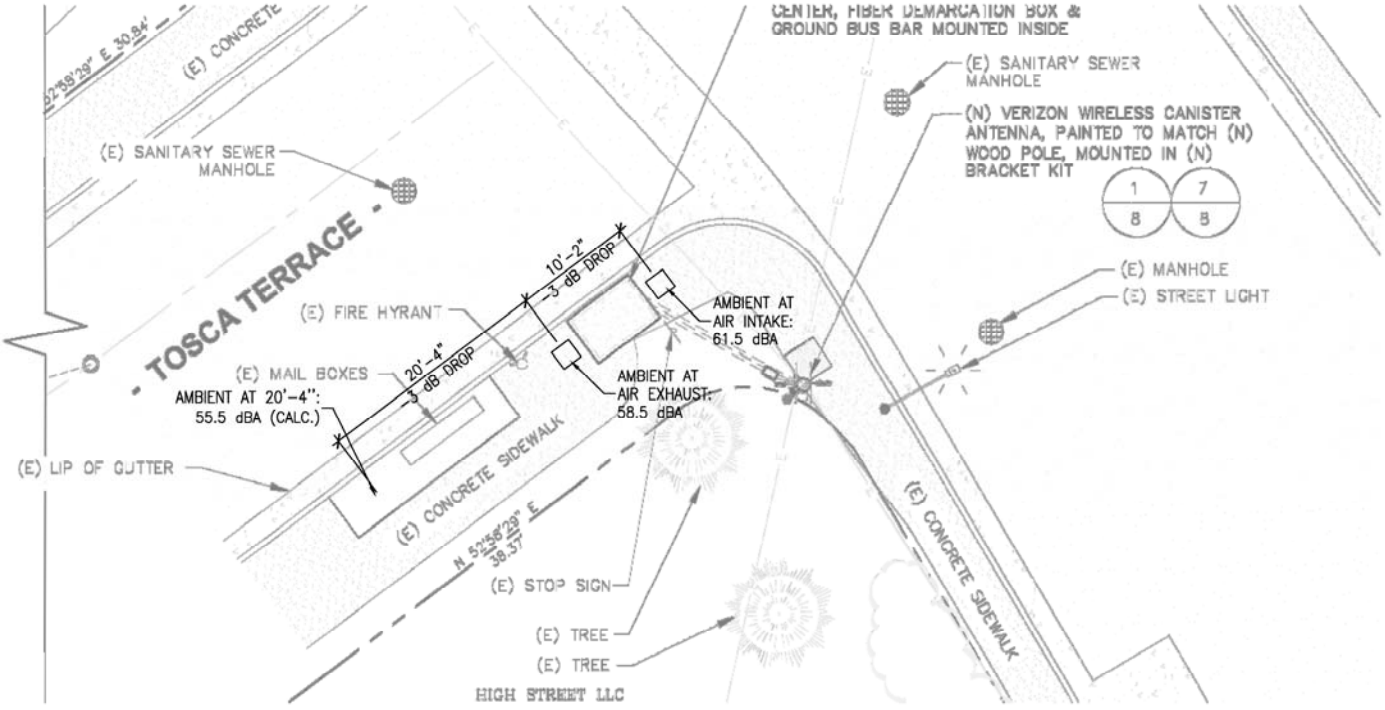


Figure 2 – Ambient Noise Levels

The ambient noise levels were measured and where noted, calculated on the basis of a -3 dB drop for each doubling of distance which is consistent with linear noise sources such as roads, see introduction.

After the thermostat was triggered with a heat gun and the vault doors closed, the following equipment noise levels were measured:

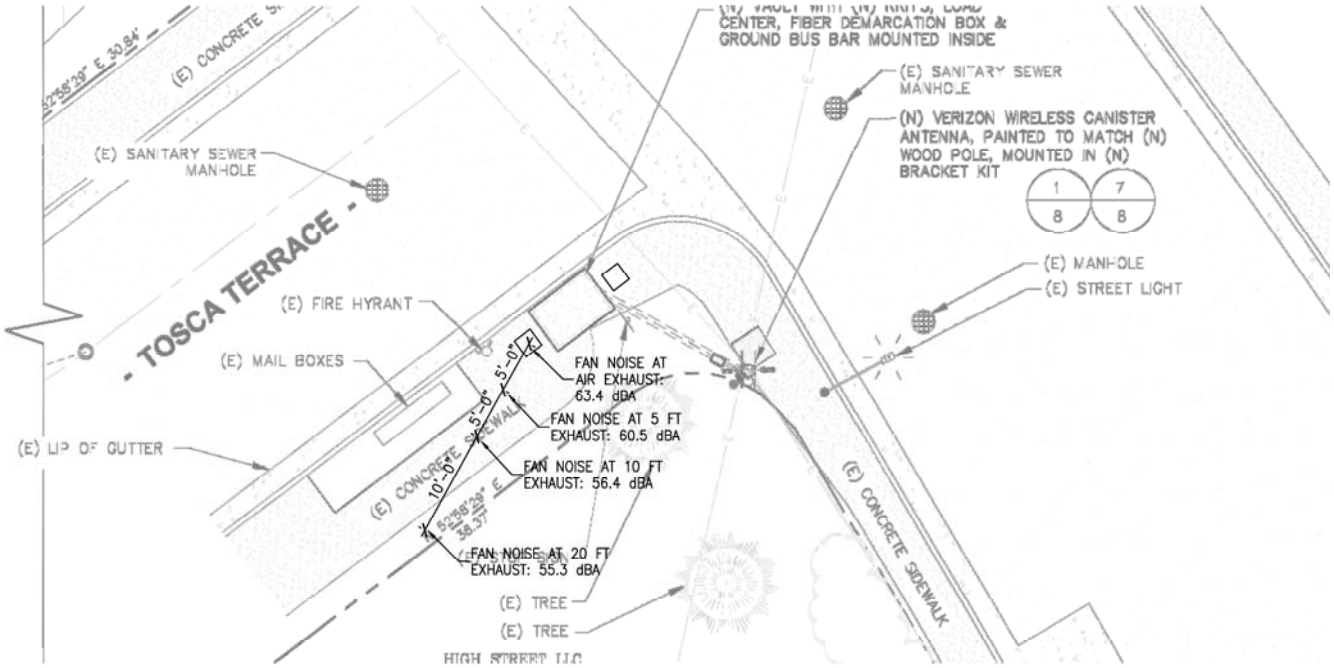


Figure 3 – Equipment Noise Levels

When comparing the ambient and the equipment noise level at 20 to 20.3 ft it becomes clear that the fan noise has completely receded into the ambient noise level:

dB(A)	@ Intake	@ Exhaust	@ 5 ft	@ 10 ft	@ 20 ft
Ambient Noise	61.5	58.5	-	-	55.5 (20'-4'') (calculated)
Equipment Noise	63.8	63.4	60.5	56.4	55.3

2.0 METHODOLOGY AND EQUIPMENT

2.1. Noise Calculations and Factors:

Noise from a point source such as equipment, will be reduced by the distance to the closest property lines at a rate of -6 dBA per doubling of distance.

The minimum distance to maintain, for a noise level of 50 dBA at the closest property line has been calculated to be 16.75 feet minimum.

Sound level L and Distance r	(formulas for calculating a distance R2 when L1, R1 and L2 are known)
$L_2 = L_1 - \lvert 20 \cdot \log\left(\frac{r_1}{r_2}\right) \rvert$ $\quad L_2 = L_1 - \lvert 10 \cdot \log\left(\frac{r_1}{r_2}\right)^2 \rvert$ $r_2 = r_1 \cdot 10^{\left(\frac{\lvert L_1 - L_2 \rvert}{20}\right)}$ $\quad r_1 = \frac{r_2}{10^{\left(\frac{\lvert L_1 - L_2 \rvert}{20}\right)}}$	

3.0 REGULATORY

3.1 Piedmont Noise Ordinance:

The noise levels were evaluated against the Piedmont, California - Code of Ordinances The Code's intent is to control unnecessary, excessive and annoying noise and vibration in the City of Piedmont and to prohibit such noise and vibration generated from or by all sources. It is also the intent of the City to maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the city where noise levels are above acceptable values. The maximum noise level, measured at the next adjacent property line, produced by a stationary source is 50 dBA.

Chapter 17, PLANNING AND LAND USE
…
ARTICLE 3. SPECIAL REGULATIONS
…
17.46 Wireless communication facilities

17.46.070 Standards.
A. Development Standards. …
B. Operation and Maintenance Standards
…
5. Noise. A wireless communication facility must be operated to minimize noise that is audible as provided in Chapter 5 of the City Code

Chapter 5
BUILDING CODE
ARTICLE I. GENERAL
…
§5.2 2013 Piedmont Residential Code – Amendments
…
5.2.28 Appendix K. Add a new Section AK103.2 – Mechanically Generated Noise Sources to read as follows: "Machines and other devices located on the exterior of structures which generate sounds perceptible outside the perimeters of the lot on which they are located shall be installed with such sound transmission control measures to adequately minimize or eliminate the transmission of the sound to a level not to exceed 50 decibels, A-weighted, beyond property perimeters. This section is directed to and includes, but is not limited to pool and spa filter systems, air conditioning units, and exterior mounted blowers for exhaust systems." (Ord. No. 548 N.S., 10/93, Ord. 607 N.S. 6/99; Ord. 634 N.S. 12/02, Ord. No. 696 N.S. 01/11, Ord. No. 713 N.S. 02/14)

§5.4 2013 Piedmont Building Code – Amendments
…
5.4.20 Add a new Section 1207.4– Mechanically Generated Noise Sources to read as follows: "Machines and other devices located on the exterior of structures which generate sounds perceptible outside the perimeters of the lot on which the machine or other device is located shall be installed with such sound transmission control measures to adequately minimize or eliminate the transmission of the sound to a level not to exceed 50 decibels, A-weighted, beyond property perimeters. This section is directed to and includes, but is not limited to, pool and spa filter systems, air conditioning units, and exterior mounted blowers for exhaust systems." (Ord. No. 548 N.S., 10/93, Ord. 607 N.S. 6/99; Ord. 634 N.S. 12/02, Ord. No. 696 N.S. 01/11, Ord. No. 713 N.S. 02/14)

3.2 The noise level for the proposed vault

Per section 2.1 of this document, any vault identical to the inspected one in Sta. Cruz, will have to maintain a minimum distance of 16.75 feet to the next adjacent property line to not exceed the code limit. In an urban setting this distance might be difficult to achieve or maintain. The noise emissions from the vault's exhaust fan could be further reduced (and the required minimum distance be decreased) by the following measures:

1. Insert a length of acoustically lined duct at the fan end and at the air intake end. Each foot length of this type duct will reduce noise levels by 3 to 5 dB.
2. Instead of an on/off thermostat, specify an electronic RPM control, at lower RPMs there will be less noise and the airflow might still be sufficient.
3. Specifiy a quieter in-line exhaust fan.
4. Line the vault walls and doors with Rockwool or ductliner.
5. Have an HVAC engineer investigate if forced air cooling is even necessary.

4.0 CONCLUSIONS

Based on the empirical data, manufacturer's equipment specifications, and distances to the property lines, it has been determined that the noise level at the nearest property boundary will be at or below 50 dBA, which is the stationary source noise limit at property lines per the noise standard of the city of Piedmont.

No noise impacts are anticipated and no additional mitigations are recommended at this time if the recommended minimum distance is maintained. Noise characteristics of the proposed equipment may vary from the Sta. Cruz installation and specification. Verification of compliance with the city of Piedmont noise regulations can be conducted, if needed, after the equipment is installed. If any additional sound attenuation is found to be necessary, absorptive surfaces or a retrofit enclosure can be specified at that time. It is not expected that any additional sound attenuation will be necessary for this project.

The proposed underground vault allows cell phone users to stay connected during an outage that could be caused by brownouts or blackouts or by disruptions to the grid as result of a natural disaster such as fire, storm or earthquake. The resiliency added to the community with the proposed cell phone equipment will help reuniting family members or calling for emergency services.

5.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the existing acoustical environment and acoustical impacts within and adjacent to the existing Telecommunications Facility in the community of Santa Cruz, CA.
This report was prepared by

W. David Seidel, AIA
Architect
Lic. C 27516

APPENDIX

Permit Application Documents for High St. Vault, prepared by Byers Engineering Company

W. DAVID SEIDEL, AIA
ARCHITECT

RESIDENTIAL / COMMERCIAL
DESIGN /PLANNING / CONSTRUCTION MANAGEMENT
SOUNDPROOFING / ACOUSTICS

1516 Lombard St. Suite 5
San Francisco CA 94123

Short Biography

David Seidel, AIA is the owner of "W. David Seidel, Architect"
His license no. CA C-27516 was issued by the State's Dept. of Consumer Affairs in 1998. David received his B.A. with honors in Architecture from the University of California at Berkeley in 1991.

His ongoing architecture projects are mostly of the commercial and the residential variety.
His office has been open for twelve years and has $150k in Annual Revenues.
David has 23 years of industry experience and possesses deep experience in design, bidding, permits and construction administration for projects large and small.

Before launching his office, David has worked at well-known S.F. architecture firms such as Gensler, Holey Associates, Flad and Associates and EHDD where he was responsible for leading teams of architects and consultants working on residential, commercial and institutional buildings.

Soundproofing & Acoustics Consulting

David has helped numerous architects, homeowners, renters, as well as seasoned engineers and facility managers, to achieve their acoustic or noise control goals.
David combines the following skills and experiences into in-depth expertise as an acoustics and soundproofing consultant:

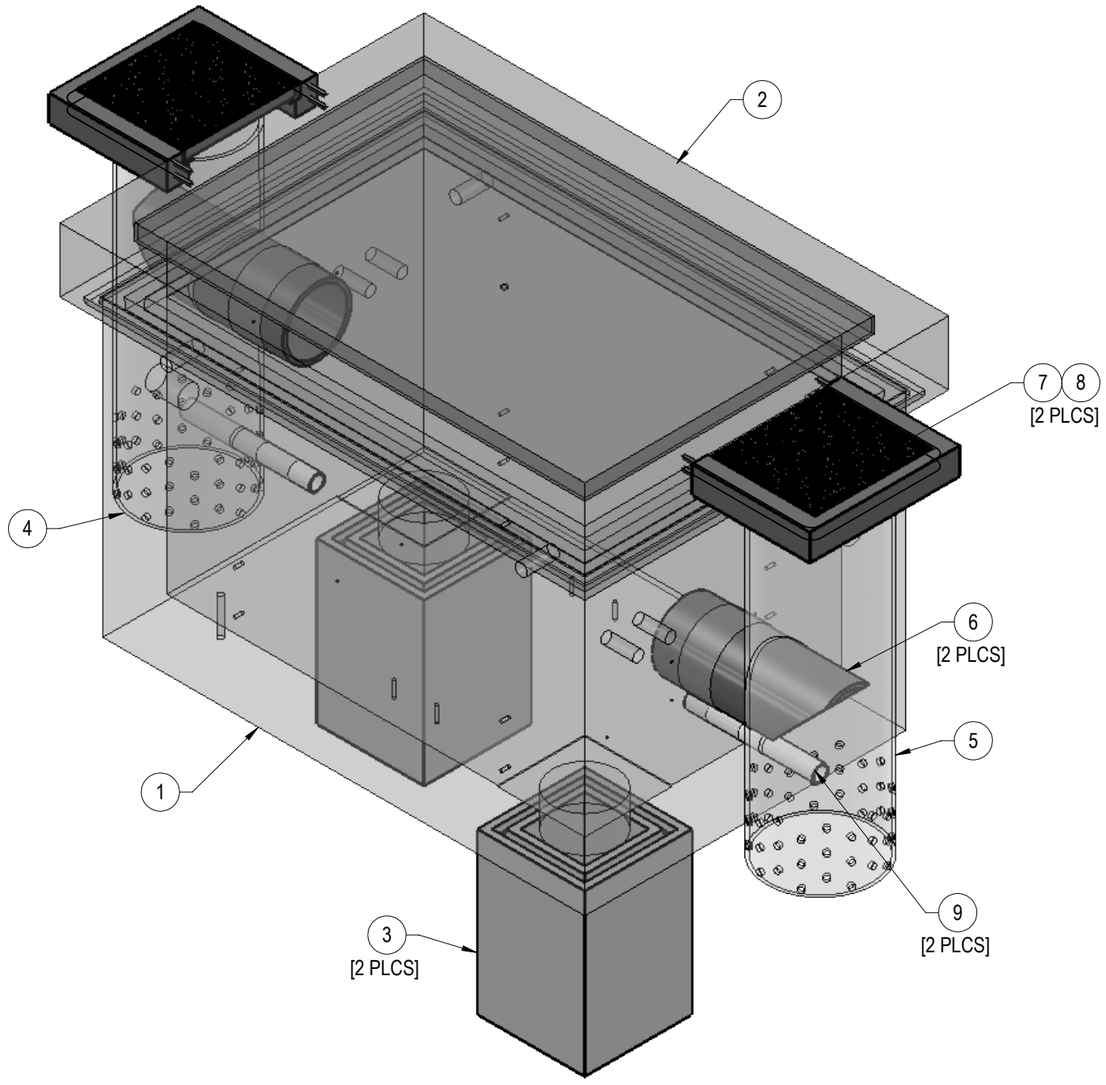
- 20 years experience as a licensed architect.
- Two years course work in sound engineering, T.U. Berlin, Germany
- Experience with both residential and commercial project types.
- Track record of successfully completed facilities.

David is outfitted with all required equipment to perform field measurements and recordings of noise transmission and/or acoustical performance and character of spaces. The use of C.A.R.A. acoustic design software allows the modeling and fine-tuning of any type and size enclosed space.

David is registered as a LBE with the S.F. HRC, a copy of the certificate will be attached to the proposal.

More information and photographs of completed projects can be found at David's website:

http://www.wdavidseidel.com/Sound.htm



ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT.(lbs)
1	17126-1	4' x 6'- 6" x 4' CONCR. GND VAULT	1	9443.6
2	17126-2	1'-0" x 5'-8" x 8'-2" CONCR. W/ HATCH	1	3013.2
3	17126-3	1'-8" x 1'-8" x 2'-6""DRYWELL,	2	708.1
4	17126-4	20"O.D. x .593"w x 5'-0" LONG PVC, PIPE	1	96.3
5	17126-5	20"O.D. x .593"w x 5'-0" LONG PVC, PIPE	1	96.3
6	17126-9	12 3/4" x .687"w x 2'-6" x PVC, PIPE	2	37.9
7	17395-12	W-19-4 3/16"x2" x 1'-7 3/16" x 1'-9" CARBON STEEL, GRATING	2	47.2
8	17395-13	5" x 1'-10" x 2'-4" CONCR. VAULT RISER	2	317.2
9	17126-10	2 7/8" O.D. x .203"w x 2'-0" PVC, PIPE	2	1.5

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY SITE OR LAYOUT RESTRICTIONS, SITE CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WESTERN UTILITY TELECOM, INC. PRIOR TO BEGINNING PROJECT. ALL WORK SHALL BE PERFORMED USING ACCEPTED CONSTRUCTION PRACTICES.
2. NO FIELD MODIFICATIONS MAY BE MADE TO THE STRUCTURE WITHOUT THE EXPRESS WRITTEN CONSENT FROM THE ENGINEER OF RECORD. WESTERN UTILITY TELECOM, INC. AND ENGINEER OF RECORD ASSUME NO RESPONSIBILITY FOR THE STRUCTURE IF ALTERATIONS AND/OR ADDITIONS ARE MADE TO THE DESIGN AS SHOWN IN THESE DRAWINGS.
3. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODES, REGULATIONS, AND ORDINANCES AS WELL AS STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
4. THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK TO THE BEST OF HIS/HER ABILITY AND SKILL. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES, AND SEQUENCES, AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
5. THE CONTRACTOR SHALL VERIFY, COORDINATE, AND PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS, OR OTHER SUPPORTS FOR ALL ITEMS REQUIRING SAME, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, FORMWORK, ETC., AND SHALL CONFORM TO ALL NATIONAL, STATE, AND LOCAL ORDINANCES AND CODES IN ORDER TO SAFELY EXECUTE ALL STAGES OF WORK TO COMPLETE THIS PROJECT.
6. IT IS THE INTENT OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION OF THE STRUCTURE SHOWN.
7. CONTRACTOR ASSUMES RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES. THIS REQUIREMENT APPLIES CONTINUOUSLY, AND IS NOT LIMITED TO NORMAL WORKING HOURS.
8. CONTRACTOR TO HOLD ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN. THE CONTRACTOR IS FINANCIALLY RESPONSIBLE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK ON THIS PROJECT.

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	25JUL17	TR	AM

MANUFACTURER

WESTERN UTILITY / TELECOM, INC.
5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

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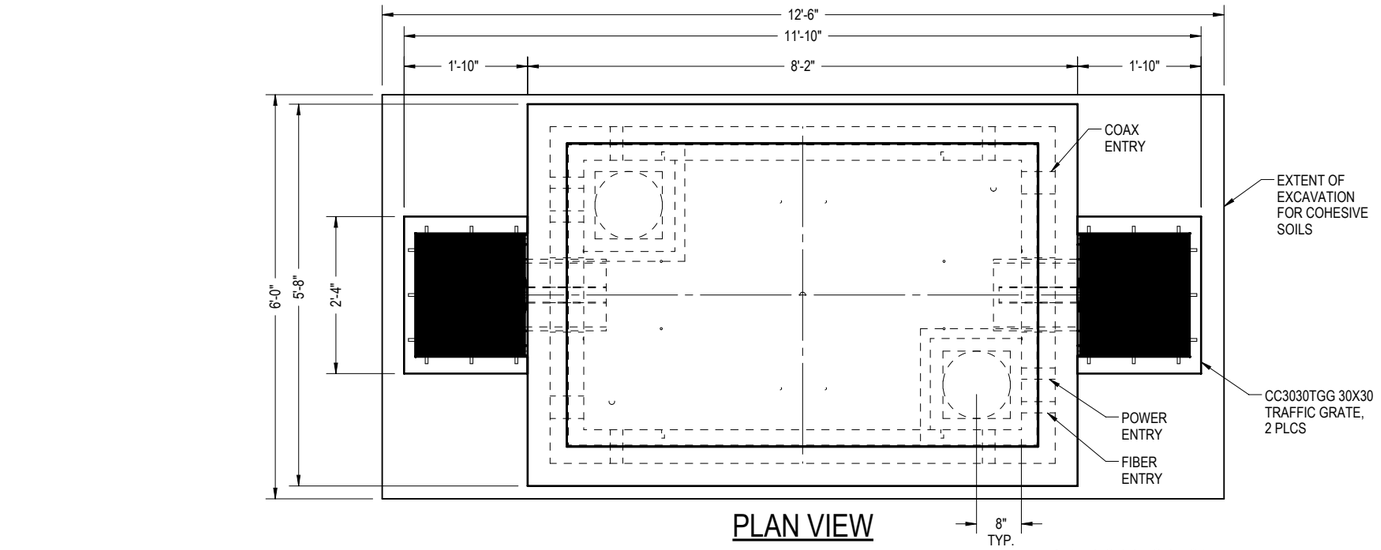
TITLE

GROUND VAULT RADIO ENCLOSURE

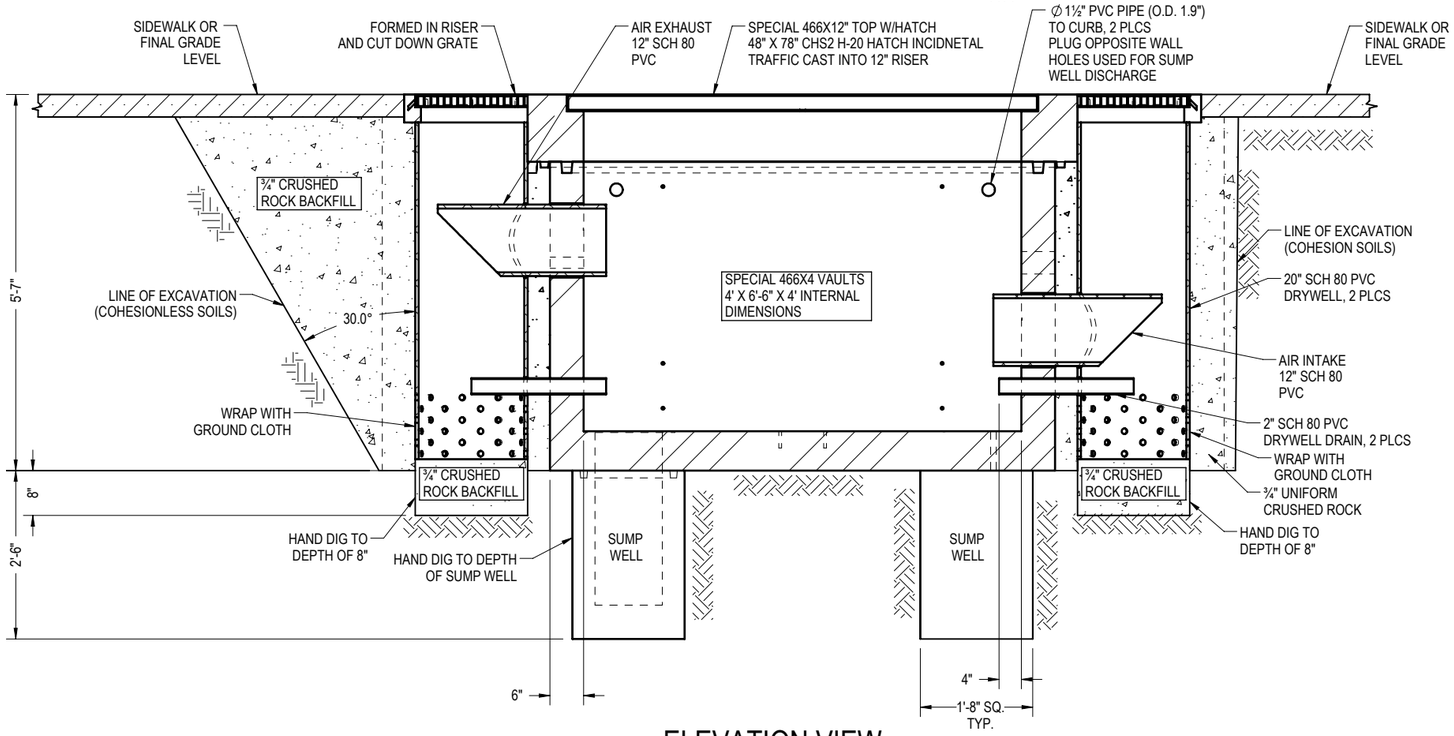
SANTA CRUZ, CA

CROWN CASTLE

PROJECT NUMBER	SHEET	DRAWING NUMBER
17-0395	S-1	ID-717



PLAN VIEW



ELEVATION VIEW

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	25JUL17	TR	AM

MANUFACTURER

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TITLE

GROUND VAULT RADIO ENCLOSURE

SANTA CRUZ, CA

CROWN CASTLE

PROJECT NUMBER	SHEET	DRAWING NUMBER
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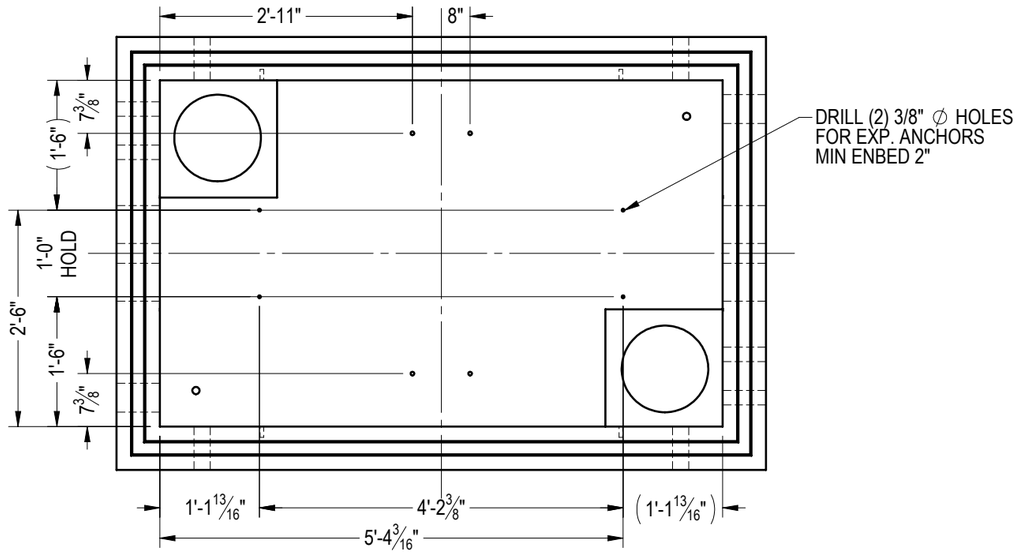
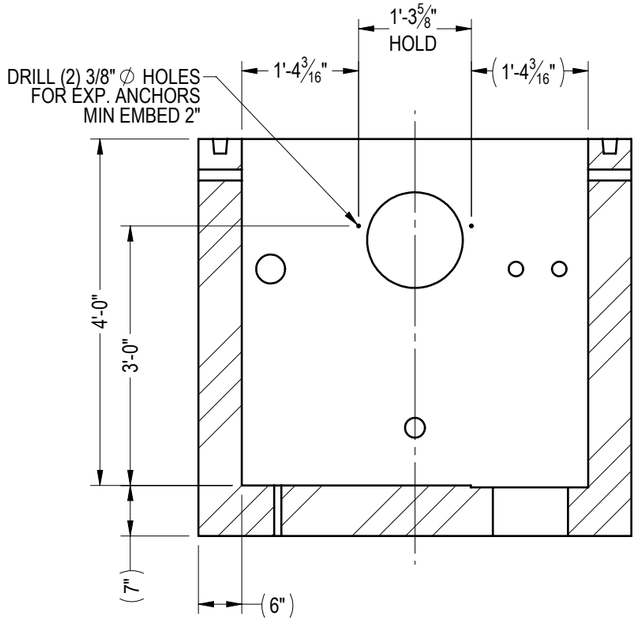
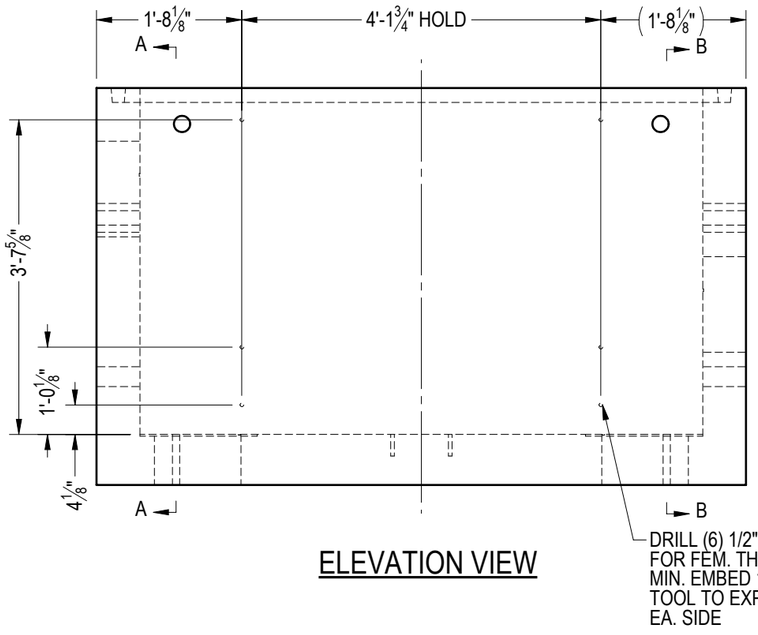


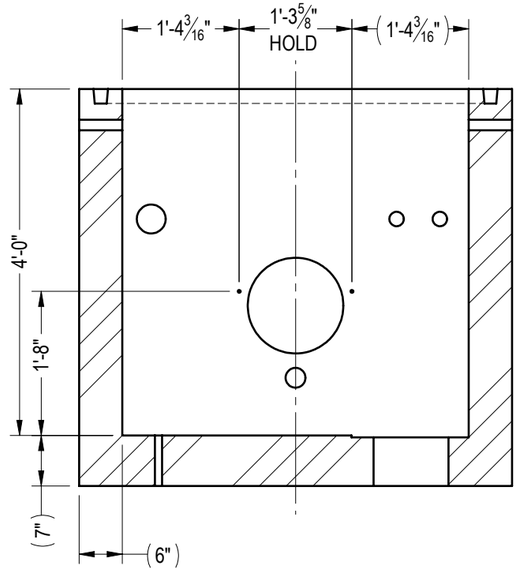
PLAN VIEW



SECTION A-A



ELEVATION VIEW



SECTION B-B

NOTES:
1. NOMINAL VAULT WALL THICKNESS 6-INCHES, FLOOR 7-INCHES.
2. SIZE HOLES APPROPRIATE FOR LOOSE (BUT SEALABLE) PIPE FITTING.

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	26JUN17	TR	AM
A	ADDED DRILLED HOLES FOR NEW ACTUATOR	15AUG17	TR	AM

MANUFACTURER

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TITLE

GROUND VAULT RADIO ENCLOSURE

SANTA CRUZ, CA

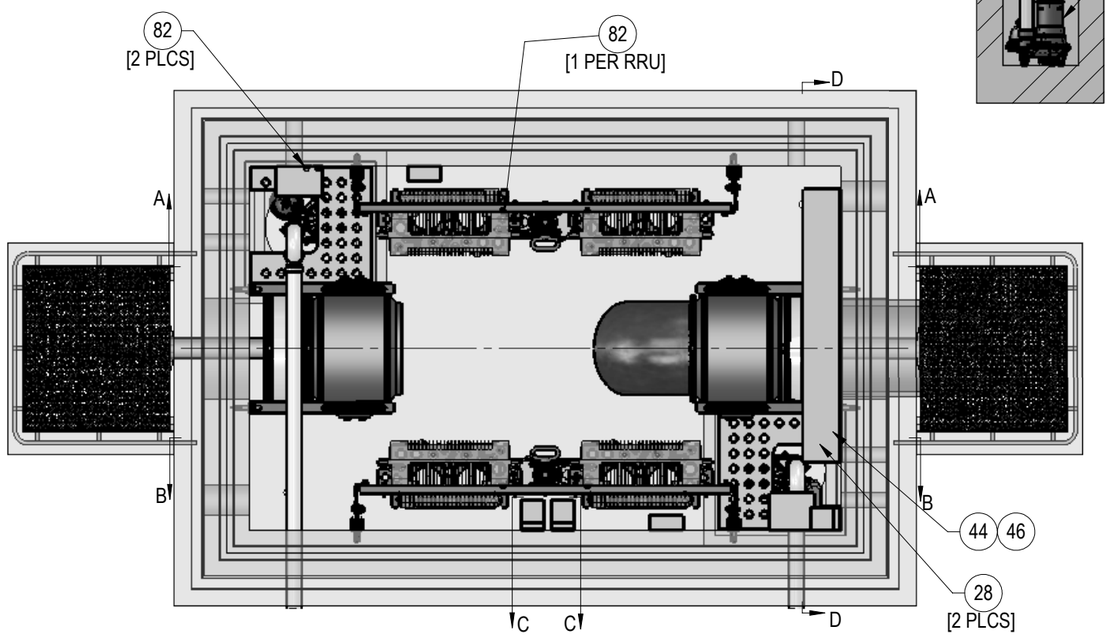
CROWN CASTLE

PROJECT NUMBER	SHEET	DRAWING NUMBER
17-0395	S-3	ID-717

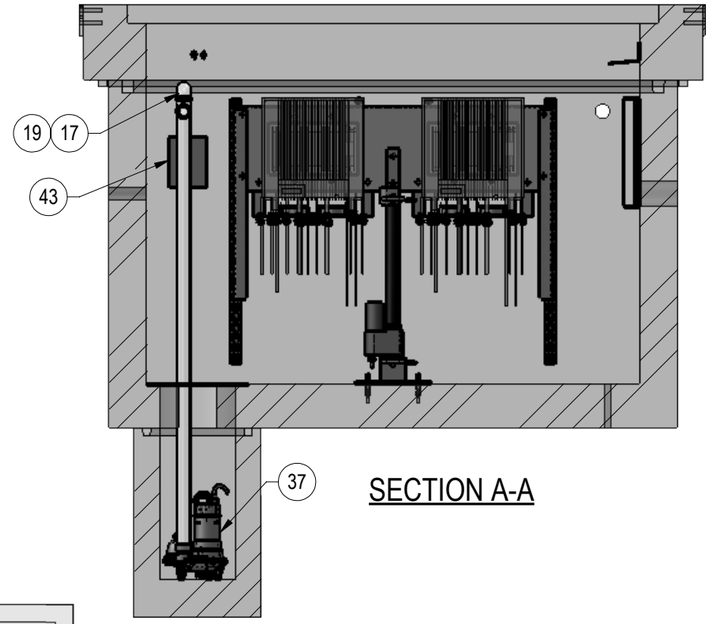
ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT.(lbs)
1	17395-17	8GA 7 7/8" x 6" 5052-H32, ALUMINUM PLATE	1	0.8
2	17395-16	8GA 8" x 3'-0" 5052-H32, ALUMINUM PLATE	1	5
3	PL-2349	11GA. x 1'- 13/16" x 4'-1 1/4" A569, MOUNT PLATE	2	5.7
4	PL-2380	11GA. x 4 3/8" x 11 3/4" , A569, FORMED PLATE	4	0.6
5	PL-2381	3/16" x 1 1/2" x 1'-11 11/16" A36, FORMED PLATE	4	0.5
6	PL-2572	11GA. x 1'-4" SQ. A569, PLATE	2	5.7
7	PL-2573	11GA. x 4 3/8" x 3'-5" , A569, FORMED PLATE	1	2.2
8	PL-2574	11GA. x 4 3/8" x 6'-1", A569, FORMED PLATE	1	4
9	PL-2604	11GA. x 1'- 9/16" x 1'-7", A569, FORMED PLATE	4	1.4
10	PL-2605	3/16" x 5 13/16" x 2'-6", A569, FORMED PLATE	2	2.4
11	PL-2606	3/16" x 5 13/16" x 2'-6", A569, FORMED PLATE	2	2.4
12	PL-2684	11GA. x 3" x 5 13/16" A569, SWITCH MOUNT	2	0.6
13	PL-2686	11GA. x 3" x 8 13/16" A569, TEMP. MOUNT	1	0.9
14	PL-2687	11GA. x 5 1/4" x 1'-9 15/16" A569, RMM MOUNT	1	4.1
15	PL-2852	PL 3/8" x 7 1/2" x 9" A36, MOUNTING BRACKET	2	3.5
16	WA-1353	3/8" x 4 3/8" x 1'-0" A36, MOUNTING BRACKET	2	8.7
17	ss-862	0.840" x 0.109"w x 1/2" 304/304L S.S., SPACER (MCMASTER-CARR P/N 44635K252)	8	0
18	94154	270° CONNECTOR, 1 1/2" SOCKET FEMALE, FOR PIPE DRAIN, WASTE & VENT(MCMASTER P/N 2389K83)	2	--
19	1.5C048	1.90" O.D. x .145" w x 4'-0" PVC, PIPE	1	0.8
20	1.5C072	1.90" O.D. x .145" w x 6'-0" PVC, PIPE	3	2.7
21	95204	1.5 FEMALE TO 1.5 THD'D PVC ADAPTOR	2	
22	94144	1/4" x 3 5/16" x 3 1/2" ASTM A1011 SS GR. 33, (P/N P2950S TROLLY)	8	1.32
23	94161	FKD-12 MIXED FLOW FAN	2	25
24	94164	120mm AC AXIAL FAN	8	0.8
25	94183	'PUMP CONTROLLER, ION ENDEAVOR, MODEL 100-20 Ion Endeavor Programmable Smart Sensing Sump Pump Controller (208/230V - Up To 12 Amps Total)	2	57
26	94186	LOAD CENTER P/N QO816L100RB (STUSSERSALEM.SHOPCED.COM)	1	10.6
27	94187	REMOTE RMM-800 SYSTEM, WESTELL	1	4.2
28	94189	GROUND BAR, SCHNEIDER ELECTRIC, P/N PK7GTA	1	0.2
29	94198	MINI IP-LINXS, E_W OUTDOOR BOX, FIBER BOX, TELECT. P/N 055-7972-0000	1	3.1
30	94203	DOOR SWITCH, WESTELL, 18-130-101	2	1.6
31	94204	WESTELL, SITE BUSS TEMP & HUMIDITY, PART # 560-000-416	1	2.8
32	94205	45-DEG DIVERTER	1	5.5
33	94207	3'-6", A36, P1000HS UNISTRUT	4	26
34	94155	1 1/2"Ø x 1"TALL, 5/16-18, VIBRATION MOUNT	8	--
35	94163	12" AC-DI x 12" CI-PLASTIC, COUPLING	2	5.6
36	94206	9/16" HY-GEAR 63-4 S.S. 300 2 1/2" - 14 1/2" BAND CLAMP(IDEAL TRIDON P/N 63004-0224)	5	0.2
37	94175	1/2"Ø SNAP ACTION S.S, DISC THERMOSTAT	6	0
38	94191	HYCO: LTF 13 BLACKw/3171 NUT P/N 3216	48	0.2
39	94192	HYCO: LTF 21 BLACKw/3175 NUT P/N 3222	8	0.4
40	94218	PA-17-20-850 LINEAR ACTUATOR	2	46
41	94219	POWER SUPPLY - 120-220 VAC - 12 VDC - 25A (MODEL# PS-11)	2	2.9
42	95324	AIRFLOW MONITOR PADDLE SWITCH (540-000440)	1	0
43	95325	ROUTER(A90-SFP1G-C10611)	1	0
44	95326	INSTALL HW FOR REMOTE FAMILY(RMX-INSTKIT)	1	0
45	95327	WATER-IN-FUEL SENSOR W/ NEMA4X CABLE GLA (WIFSENSOR)	1	0
46	97301	0.22 CALIBER YELLOW SINGLE SHOT POWDER LOADS(100-COUNT) (HOME DEPOT MODEL # 00607)	1	--
47	97302	1IN DRIVE PINS(100-PACK) (HOME DEPOT MODEL # 00759)	1	--
48	97304	WEATHERPROOF OUTLET BOX (MCMASATER CARR P/N 7219K28)	1	--
49	97305	WEATHERPROOF OUTLET COVER (MCMASTER-CARR P/N 7219K410)	1	--
50	97306	STRAIGHT-BLADE RECEPTACLE (MCMASTER-CARR P/N 7159K930)	2	--
51	94308	4' x 50' COMMERCIAL WEED CONTROL FABRIC WITH TYPAR TECHNOLOGY (model # 2528RT (HOME DEPOT)	1	0
52	94309	1.89" x 50YD HVAC FOIL TAPE MODEL # 1207792 (HOME DEPOT)	1	0
53	94156	ION STORM X-ONEi (iON X-ONEi - 1/2 HP Cast Iron Sewage Pump (2") w/ ION Digital Level Control M5000A4107)	2	18.7
54	46005	#8 LOCK WASHER, S.S.	32	0.01

ITEM #	PART #	DESCRIPTION	QTY.	UNIT WT.(lbs)
55	59001	#8-32 MACHINE SCREW NUT, S.S.	32	0.01
56	70440	#8-32 x 2" HEX MACHINE SCREW, S.S.	32	0.01
57	40007	5/16"Ø FLATWASHER, S.S.	8	0.01
58	41007	5/16"Ø LOCKWASHER, S.S.	16	0.004
59	59999	5/16"Ø HEX NUT, S.S.	16	0.01
60	70222	3/8"Ø x 3/4" SS FLGD BUTTON-HD SCKT CAP SCRW	12	0.01
61	91219	3/8"Ø x 3 3/4" REDHEAD ANCHOR ASSY., S.S.	12	0.3
62	91223	3/8" FEMALE CONCRETE ANCHOR, S.S.	12	
63	10020	1/2"Ø x 1 1/2" A325 BOLT/NUT/LW, GALV.	4	0.2
64	15470	1/2"Ø x 1 1/2" A307 FULLY THD'D BOLT/NUT/LW, GALV.	9	0.2
65	15460	1/2"Ø x 1 1/4" A307 FULLY THD'D BOLT/NUT/LW, GALV.	34	0.2
66	40020	1/2"Ø FLAT WASHER, GALV.	26	0.04
67	44005	1/2"Ø FLAT WASHER, NYLON	8	0.01
68	97320	HEX WASHER HEAD Ø¼" x 2¼" S.S. SCREW (MCMASTER-CARR P/N 90950A103)	1	0
69	95328	Ø¼" x 3 5/8" LOOP GRIP CLEVIS PIN (MCMASTER-CARR P/N 91594A310)	4	0.094
70	97321	¼" SCREW SIZE, .23"ID x .5" OD WEATHER-RESISTANT EPDM RUBBER WASHER (MCMASTER-CARR P/N 90130A029)	1	0
* 71	97322	ROLLER LEVEL SWITCH (GRAINGER ITEM # 3A095)	1	0
* 72	97323	BAB REMOTELY OPERATED BOLT-ON BREAKER 1P, 30A, PULSE(KSCDIRECT P/N CH BABRP1030)	1	0
* 73	97324	GROUND BUSS BAR KIT(COMMSCOPE P/N UGBKIT-0210)	1	0
		TOTAL WT.		15419.7

* ITEMS NOT SHOWN



PLAN VIEW



SECTION A-A

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	18AUG17	TR	AM

MANUFACTURER

WESTERN UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF WESTERN UTILITY TELECOM, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF WESTERN UTILITY TELECOM, INC. IS PROHIBITED

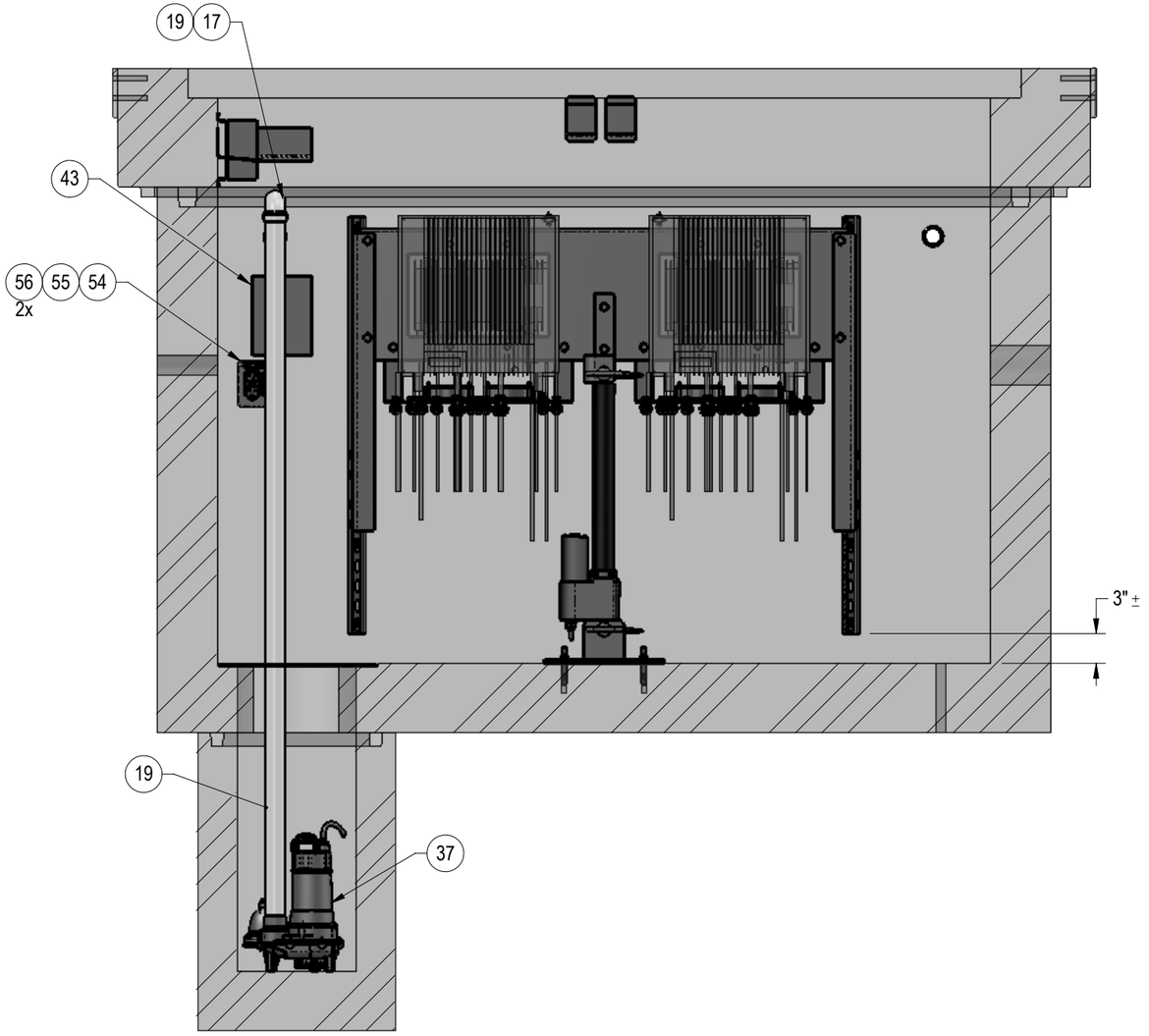
TITLE

GROUND VAULT RADIO ENCLOSURE

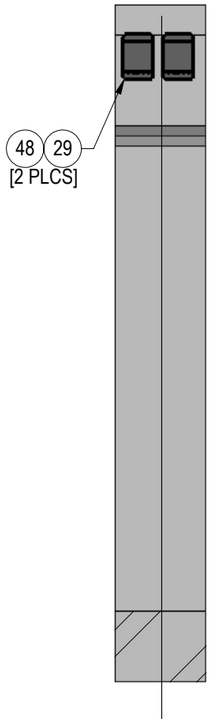
SANTA CRUZ, CA

CROWN CASTLE

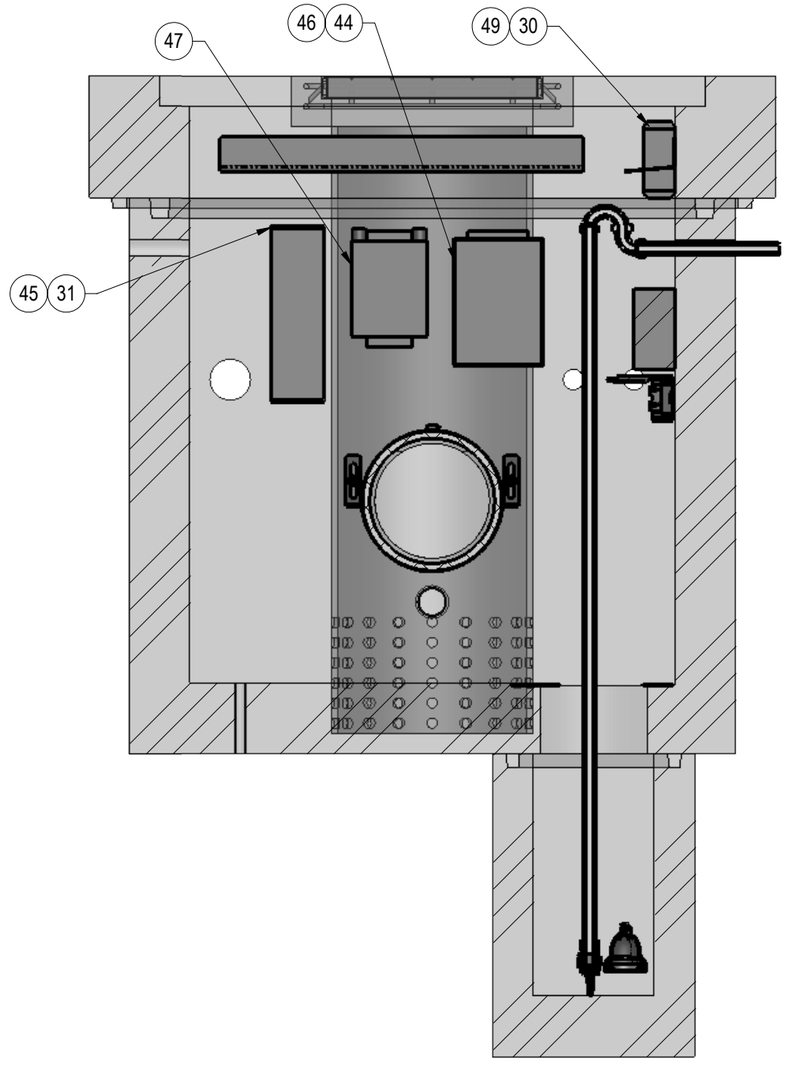
PROJECT NUMBER	SHEET	DRAWING NUMBER
17-0395	S-4	ID-717



SECTION B-B



SECTION C-C



SECTION D-D

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	18AUG17	TR	AM

MANUFACTURER

WESTERN UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
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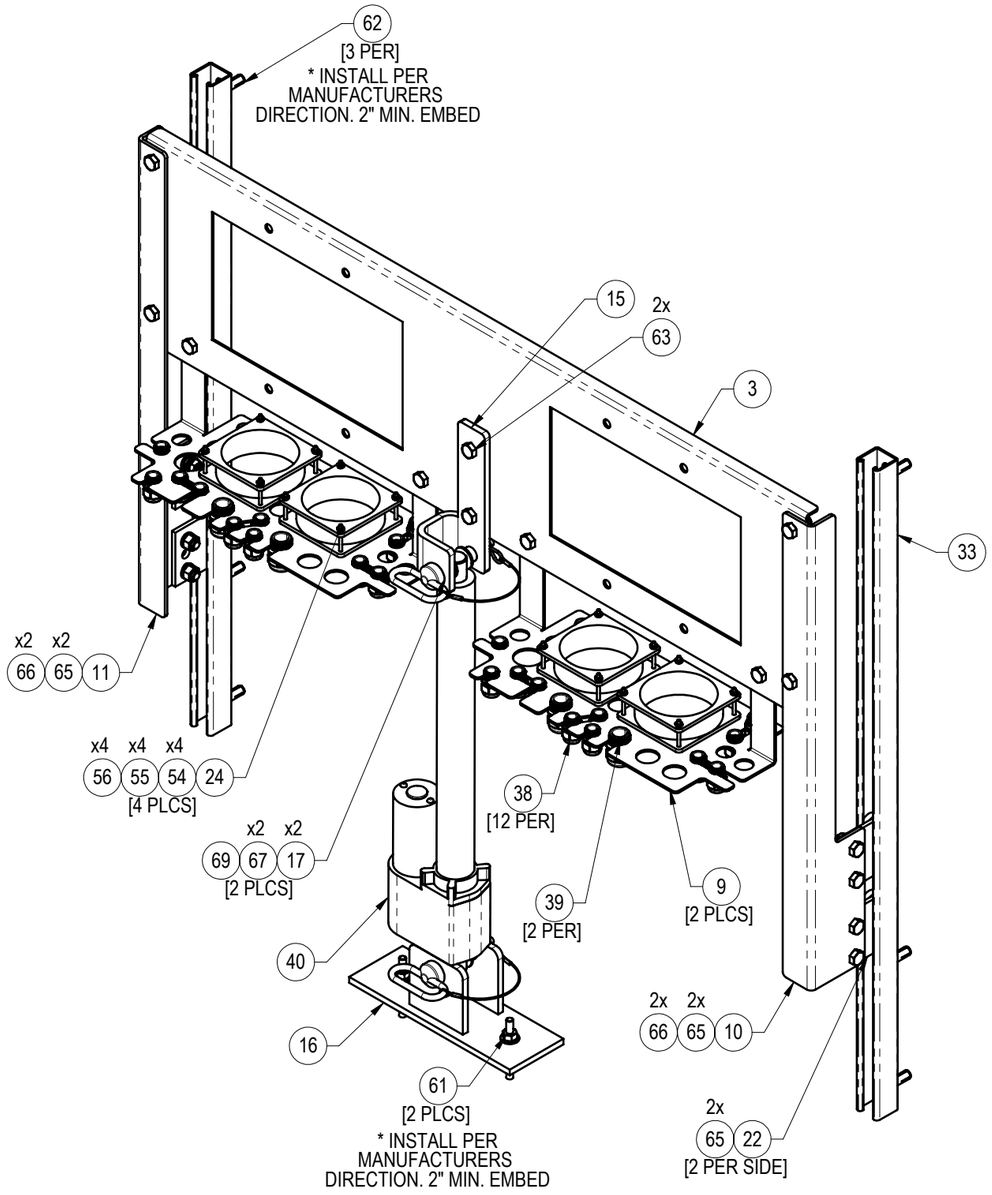
TITLE

GROUND VAULT RADIO ENCLOSURE

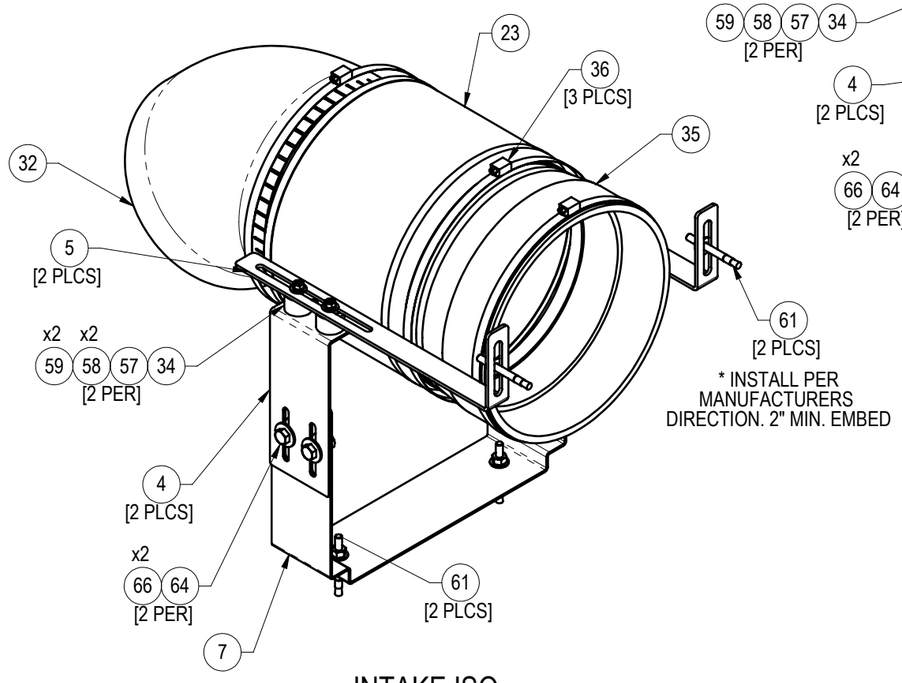
SANTA CRUZ, CA

CROWN CASTLE

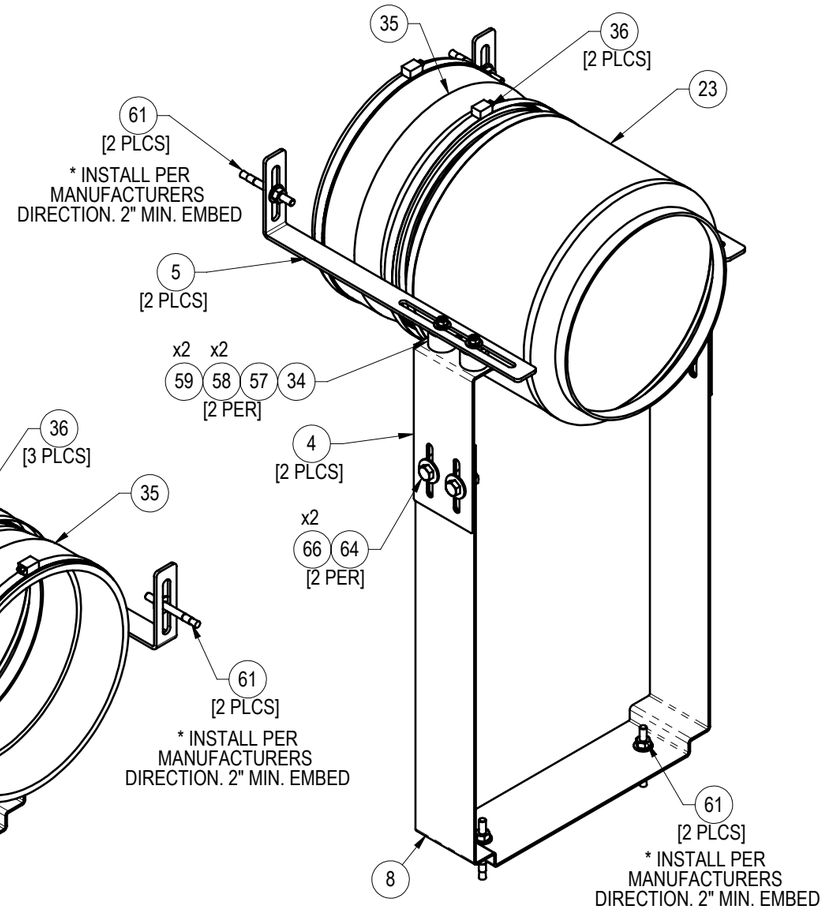
PROJECT NUMBER	SHEET	DRAWING NUMBER
17-0395	S-5	ID-717



RADIO MOUNT ISO



INTAKE ISO



EXHAUST ISO

REVISIONS

REV.	DESCRIPTION	DATE	DRW	CHK
-	INITIAL SUBMITTAL	18AUG17	TR	AM

MANUFACTURER

WESTERN UTILITY / TELECOM, INC.

5032 SALEM DALLAS HWY
SALEM, OR 97304
Ph: 503-587-0101 Fx: 503-316-1864
WesternUtilityTelecom.com

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TITLE

GROUND VAULT RADIO ENCLOSURE

SANTA CRUZ, CA

CROWN CASTLE

PROJECT NUMBER	SHEET	DRAWING NUMBER
17-0395	S-6	ID-717

X	GRID REFERENCE
X / X–X	DETAIL REFERENCE
X / X–X	ELEVATION REFERENCE
X / X–X	SECTION REFERENCE
	CENTERLINE
	PROPERTY/LEASE LINE
	MATCH LINE
	WORK POINT
	GROUND CONDUCTOR
T	TELEPHONE CONDUIT
E	ELECTRICAL CONDUIT
A	COAXIAL CABLE
O/H	OVERHEAD SERVICE CONDUCTORS
	GROUT OR PLASTER
	(E) BRICK
	(E) MASONRY
	CONCRETE
	EARTH
	GRAVEL
	PLYWOOD
	SAND
	WOOD CONTINUOUS
	WOOD BLOCKING
	STEEL
(N)	NEW
(E)	EXISTING
	NEW ANTENNA
	EXISTING ANTENNA
	GROUND ROD
	GROUND BUS BAR
	CADWELD
	MECHANICAL GRND. CONN.
	GROUND ACCESS WELL
E	ELECTRIC BOX
T	TELEPHONE BOX
	LIGHT POLE
	FND. MONUMENT
	SPOT ELEVATION
	SET POINT
	REVISION

FIELD SYMBOLOGY

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1) 2013 CALIFORNIA BUILDING CODE (CBC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2009 IBC
2) 2013 CALIFORNIA HISTORICAL BUILDING CODE (CHBC)
3) 2012 CALIFORNIA EXISTING BUILDING CODE (CEBC), BASED ON THE 2009 IEBC
4) 2013 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CGBSC)
5) 2012 CALIFORNIA FIRE CODE (CFC), BASED ON THE 2009 IFC, WITH CALIFORNIA AMENDMENTS
6) 2012 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2009 UMC
7) 2012 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2009 UPC
8) 2013 CALIFORNIA ELECTRICAL CODE (CEC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2011 NEC
9) 2013 CALIFORNIA ENERGY CODE (CEC)
10) ANSI / EIA–TIA–222–G
11) 2012 NFPA 101, LIFE SAFETY CODE
12) 2012 NFPA 72, NATIONAL FIRE ALARM CODE
13) 2012 NFPA 13, FIRE SPRINKLER CODE

CODE COMPLIANCE

CROWN CASTLE

HIGH ST. SANTA CRUZ CA-HIGH04

SHEET INDEX

THIS IS AN UNMANNED WIRELESS TELECOMMUNICATION FACILITY OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT ON AN (N) WOOD POLE IN THE PUBLIC RIGHT OF WAY.

1. REMOVE (E) WOOD POLE AND REPLACE WITH (N) 55' CLASS 3 WOOD POLE.
2. INSTALL (N) AMPHENOL CANISTER ANTENNA AT 47'–9" RAD CENTER ON (N) WOOD POLE.
3. INSTALL (N) (2) RRH INSIDE (N) VAULT.
4. INSTALL (N) FIBER DEMARCATION BOX INSIDE THE VAULT.
5. INSTALL (N) PG&E ELECTRICAL SMART METER PANEL ON (N) WOOD POLE.
6. INSTALL (N) EMERGENCY SHUTDOWN SWITCH ON (N) STANDOFF MOUNT ON (N) WOOD POLE.
7. INSTALL (N) (2) BUSS BAR IN (N) VAULT.
8. INSTALL (N) VAULT
9. INSTALL (2) 2" POWER/FIBER CONDUIT & (1) 4" COAX CONDUIT.
10. INSTALL (N) U–GUARD ON (N) POLE TO ACCOMMODATE 6 (N) RUNS OF COAX FROM BASE OF POLE TO BOTTOM OF ANTENNA BRACKET ON (N) POLE.
11. INSTALL (N) CLIMBING PEGS ON (N) POLE IN APPROPRIATE QUADRANTS.
12. INSTALL FCC COMPLIANCE SIGNAGE AS REQUIRED NEAR ANTENNAS.
13. ALL COMPONENTS TO BE PAINTED KELLY MOORE OXFORD BROWN OR APPROVED COLOR SCHEME.

PROJECT DESCRIPTION

COORDINATES	LATITUDE	36.97999	LONGITUDE	-122.059329

VICINITY MAP

OWNER:
CITY OF SANTA CRUZ
809 CENTER STREET
SANTA CRUZ, CA 95060

ZONING:
CITY OF SANTA CRUZ PLANNING DEPARTMENT
809 CENTER STREET #260
SANTA CRUZ, CA 95060
CONTACT: MIKE FERRY
PHONE: (831) 420–5100
EMAIL:

APN:
PUBLIC RIGHT OF WAY

APPLICANT:
CROWN CASTLE
695 RIVER OAKS PARKWAY
SAN JOSE, CA 95134
CONTACT: JOHN GRIFFITHS
PHONE: (707) 756–2030
EMAIL: john.griffiths@crowncastle.com

WIRELESS IMPLEMENTATION ENGINEER:
N/A

JURISDICTION:
CITY OF SANTA CRUZ

PROJECT SUMMARY

CROWN CASTLE CONTACTS:

PROJECT MANAGER:
JOHN GRIFFITHS
CROWN CASTLE
695 RIVER OAKS PARKWAY
SAN JOSE, CA 95134
PHONE: (707) 756–2030
EMAIL: john.griffiths@crowncastle.com

SITE ACQUISITION:
JASON OSBORNE
BEACON DEVELOPMENT, LLC
3 ROVINA LANE
PETALUMA, CA 94952
PHONE: (415) 559–2121
EMAIL: jason@beacondev.net

CONSTRUCTION MANAGER:
CROWN CASTLE
RICHARD STODDARD
695 RIVER OAKS PARKWAY
SAN JOSE, CA 95134
PHONE: (925) 765–5470
EMAIL: Richard.Stoddard@crowncastle.com

ENGINEERING COMPANY:
BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE STE. 104
PLEASANTON, CA 94588
CONTACT: CLIFTON BARNES
PH: (510) 536–1471
EMAIL: Clifton.Barnes@byers.com

STRUCTURAL ENGINEER:
BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE STE. 104
PLEASANTON, CA 94588
CONTACT: YONG–JOON KANG
PH: (657) 207–4860
EMAIL: yj.kang@byers.com

PROJECT TEAM

NAME:
CROWN CASTLE
695 RIVER OAKS PARKWAY
SAN JOSE, CA 95134

UTILITY COMPANY CONTACT INFO

CA: 1–800–227–2600
CALL BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
NV: 1800–227–2600

DIG ALERT

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
TITLE SHEET

STAMP:

CROWN CASTLE
Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:
BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:
CONSTRUCTION

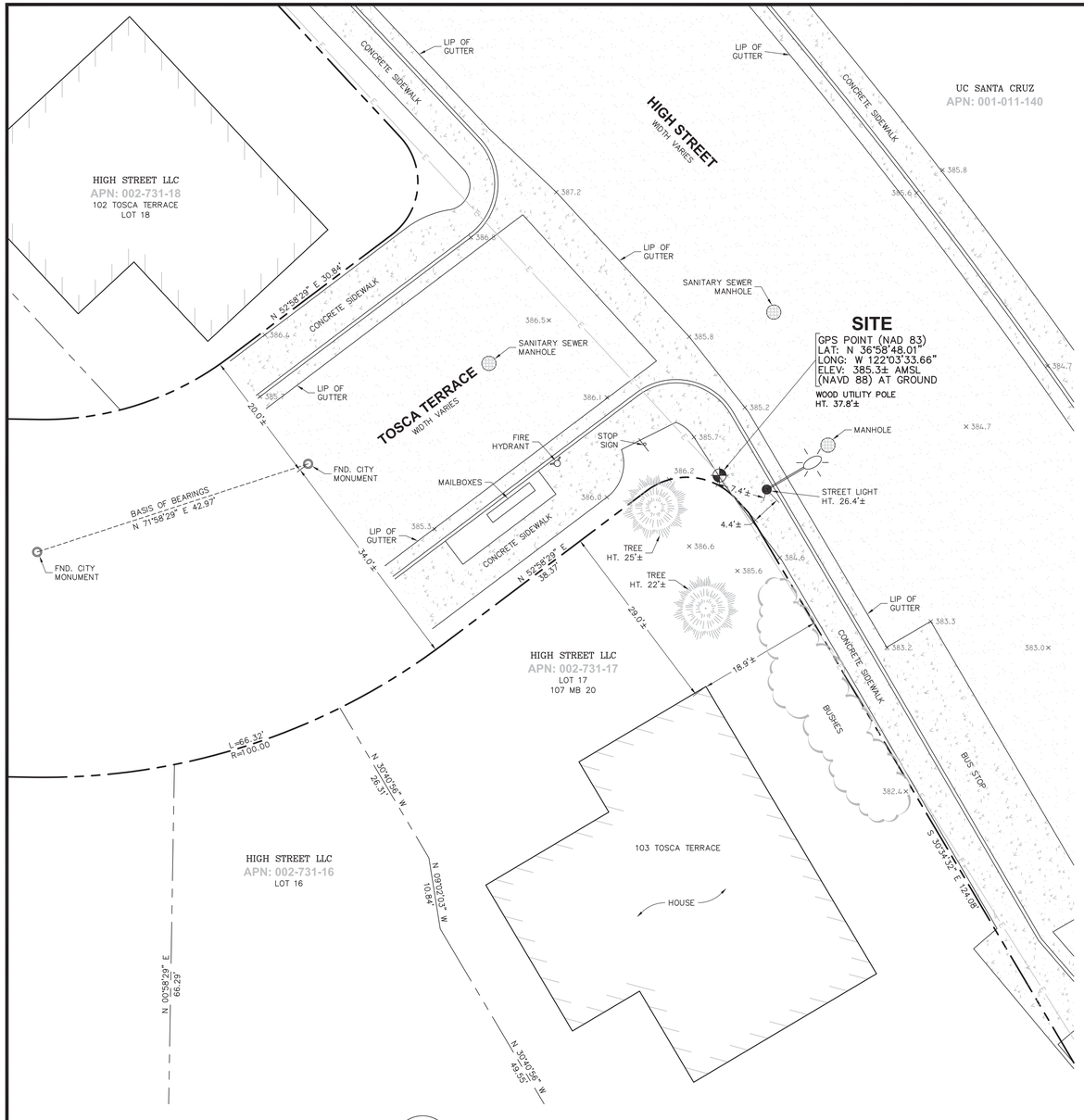
CROWN CASTLE PROJECT NO:
CA-HIGH04

REVISIONS:

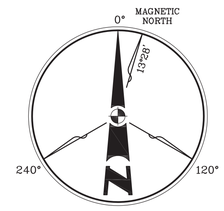
1	08–05–16	100% ISSUED FOR REVIEW	DRAFTER: RD	CHECKER: NHP
2	09–28–16	PG&E COMMENTS	DRAFTER: SG	CHECKER: RG
3	12–13–16	VAULT DESIGN	DRAFTER: SG	CHECKER: RC
4	01–17–17	CCI COMMENTS	DRAFTER: SG	CHECKER: RC
5	01–31–17	CCI COMMENTS	DRAFTER: SG	CHECKER: RC
			DRAFTER:	CHECKER:
			DRAFTER:	CHECKER:

SHEET NUMBER:
1 OF 14

T:\CROWN CASTLE INTL\Santa Cruz High St DAS\pole 94107 CAD Files\POLE 4\HIGH ST\HIGH04_1.dwg, 1, 1/31/2017 10:54:06 AM, sgeiger



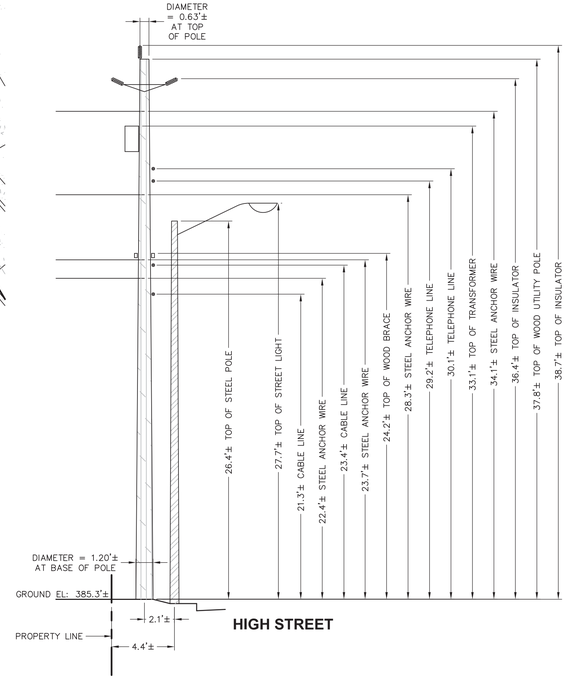
1 LS1 SITE PLAN
SCALE: 1" = 10'



QUIET RIVER
Land Services Inc.

1 1/2 0 1
SCALE IN INCHES

MAGNETIC DECLINATION = 13°28'
PER NOAA-NGDC

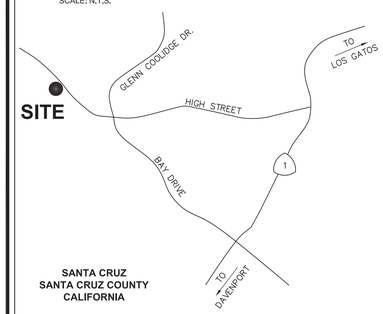


2 LS1 UTILITY POLE ELEVATION
SCALE: 1" = 5'

SUFFICIENT SURVEY EVIDENCE WAS NOT RECOVERED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON COMPILED RECORD DATA AND BEST FIT ONTO EXISTING IMPROVEMENTS. IT IS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO SHIFT FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE, ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA SHOWN HEREON IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY RESOLVING THE POSITION OF THE BOUNDARY LINES.

VICINITY MAP

SCALE: N.T.S.



SANTA CRUZ
SANTA CRUZ COUNTY
CALIFORNIA

SITE DATA

OWNER'S NAME: CITY OF SANTA CRUZ
OWNER'S ADDRESS: 809 CENER STREET
SANTA CRUZ, CA 95060

ASSESSOR'S PARCEL NUMBER(S): PUBLIC RIGHT-OF-WAY

NET AREA OF UNDERLYING PARCEL(S): N/A

NET AREA OF LEASE AREA: N/A

HEIGHT OF BUILDING/TOWER: 37.8'± A.G.L. TO TOP OF WOOD UTILITY POLE

SITE POLE LAT: N 36°58'48.01" LONG: 122°03'33.66" (NAD 83)

SITE GROUND ELEVATION: 385.3± AMSL (NAVD88) AT BASE OF SITE POLE

BASIS OF ELEVATIONS: GLOBAL POSITIONING SYSTEM (GPS). (SEE NOTE 2)

BASIS OF BEARINGS:
RECORD OF SURVEY MAP FILED FOR RECORD IN BOOK 107 OF MAPS, AT PAGE 20, FILED FOR RECORD IN THE COUNTY OF SANTA CRUZ, AND BEST FIT WITH EXISTING IMPROVEMENTS.

FEMA FLOOD ZONE DESIGNATION

County: SANTA CRUZ Effective Date: MAY 16, 2012
Community-Panel Number: 06087C-0331-E
The Flood Zone Designation for this site is:

ZONE X – Areas determined to be outside the 0.2% annual chance floodplain.

TITLE REPORT

NO TITLE REPORT FURNISHED. EXCEPTIONS TO TITLE AND RESERVATIONS THEREFROM COULD NOT BE DETERMINED. BOUNDARY INFORMATION SHOWN IS COMPILED FROM AVAILABLE RECORD DATA.

PROPERTY DESCRIPTION

PROPERTY SITUATED IN THE CITY OF SANTA CRUZ, COUNTY OF SANTA CRUZ, STATE OF CALIFORNIA.

PUBLIC RIGHT-OF-WAY

LEASE AREA LEGAL DESCRIPTION

N/A

LEGEND

APN:	ASSESSOR'S PARCEL NUMBER		ASPHALT
CP	CONTROL POINT		CONCRETE
EL.	ELEVATION		
FH	FIRE HYDRANT	△	CONTROL POINT
FND.	FOUND	○	FOUND MONUMENT
HT.	HEIGHT		
MON.	MONUMENT		GPS POINT
(M-M)	MONUMENT TO MONUMENT	P 15.3 / R 12.3	PARAPET/ROOF ELEVATIONS
P.O.B.	POINT OF BEGINNING		
P.O.C.	POINT OF COMMENCEMENT	× 250.0	SPOT ELEVATION
PP	POWER POLE		
(TYP.)	TYPICAL		TEMPORARY BENCHMARK

CROWN CASTLE

Crown Castle
1100 DEXTER AVE. SUITE 250
SEATTLE, WA 98109

REVISIONS

DATE	DESCRIPTION	INITIAL
12/14/15	90% ISSUE	MAS
01/04/16	100% ISSUE	RO
08/16/16	ADD STAMP & SIGNATURE	RO

PLANS PREPARED BY

QUIET RIVER
Land Services Inc.
11501 Dublin Boulevard, Suite 200
Dublin, CA 94568
(925) 734-6788 Phone

GENERAL NOTES

1.) This is not a boundary survey. This is a specialized topographic map with property lines and easements being a graphic depiction of various information gathered from preliminary title reports, back-up documents of record, maps and available monuments found during the field survey. No property monuments were set. No title research was performed by Quiet River Land Services, Inc.

2.) The latitude, longitude and elevation shown hereon was derived from post-processed L-1/L-2 data collected using Navstar Global Positioning System (GPS) and a Topcon Hiperlite Receiver. Topcon specifications report half-meter level accuracy (horizontally) when data is properly collected and processed. (Elevation = ±3.0 feet.)

3.) Unless otherwise noted, no underground utility locating service company was contacted prior to this map being prepared; therefore, there may be non-visible or obscure utilities existing on the property not shown on this map – so CALL BEFORE YOU DIG.

4.) Any electronic digital media provided by Quiet River Land Services, Inc. to our client is a courtesy and is not to be reproduced, distributed, sold, altered, revised, edited or amended without the express written consent of an Officer of Quiet River Land Services, Inc. Further, only the final stamped, signed and dated original "hard copy" version of our survey or map is considered to be our legally recognized product.

SURVEYOR'S STATEMENT

DATE OF FIELD SURVEY: 12/14/2015

I, the undersigned, a Registered Professional Land Surveyor licensed under the laws of the State of California do hereby state that the information, measurements, easements, record boundary lines, bearings and distances as shown hereon are based upon a field survey as dated above and upon items of public record and data contained in a title report, as referenced. Furthermore, the Latitude and Longitude coordinates are reported in NAD 83 Datum and are accurate to within ±20 feet horizontally, and the ground elevation, reported in NAVD 1988 Datum, is within ±3 feet vertically. The coordinate values and elevations are within the 1-A Accuracy Code designation as listed in the A.S.A.C. Information Sheet 91:003 and are accurate to the best of my knowledge and belief.

LICENSED LAND SURVEYOR
KEVIN M. McGUIRE
Exp. 12-31-16
No. 6437
STATE OF CALIFORNIA

8/16/16
SIGNATURE DATE

HIGH04

LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY AT 101 TOSCA TERRACE, SANTA CRUZ, CA 95060

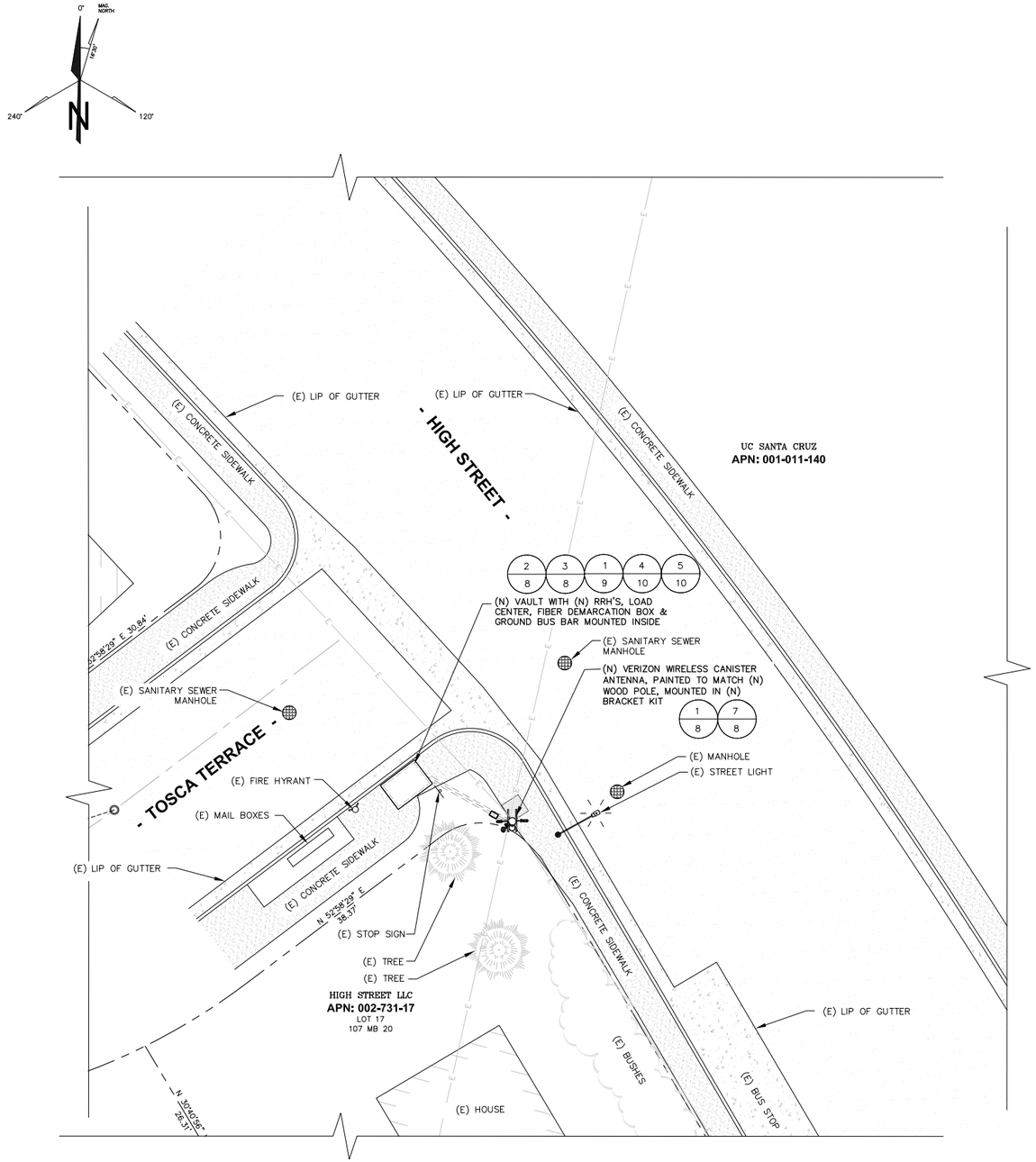
SANTA CRUZ COUNTY

LS1 OF 1 SHEET

REVISION 3

BYER1552

Y:\BYER1552\dwg\BYER1552.dwg Aug. 18, 2016 - 10:31am mschwartz



1 **OVERALL SITE PLAN**

SCALE: 1" = 10'-0"

0' 10' 20' 30'

NOTE:

FIBER P.O.C. (PROVIDED BY OTHERS)

2 **AERIAL VIEW**

SITE NAME:

HIGH ST. SANTA CRUZ

SITE INFORMATION:

NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

SITE PLAN

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:

CONSTRUCTION

CROWN CASTLE PROJECT NO:

CA-HIGH04

REVISIONS:

1	08-05-16	100% ISSUED FOR REVIEW	DRAFTER: RD CHECKER: NHP
2	09-28-16	PG&E COMMENTS	DRAFTER: SG CHECKER: RG
3	12-13-16	VAULT DESIGN	DRAFTER: SG CHECKER: RC
4	01-17-17	CCI COMMENTS	DRAFTER: SG CHECKER: RC
5	01-31-17	CCI COMMENTS	DRAFTER: SG CHECKER: RC
			DRAFTER: CHECKER:
			DRAFTER: CHECKER:

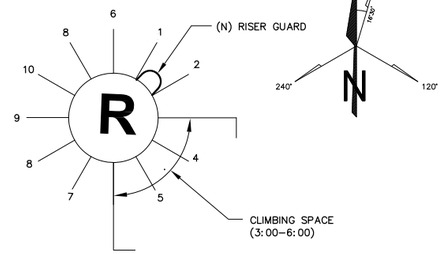
SHEET NUMBER:

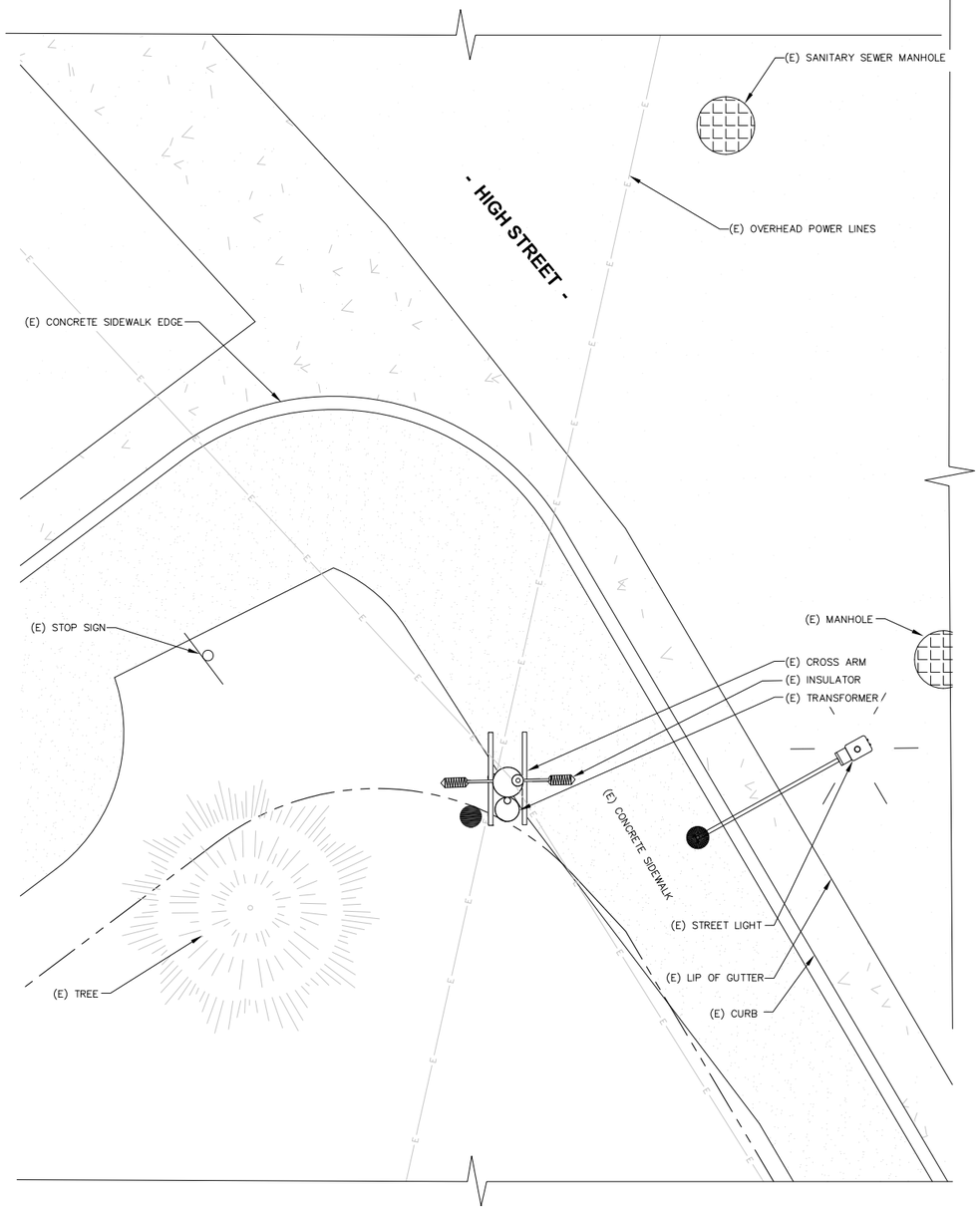
3 OF 14

T:\CROWN CASTLE INTL\Santa Cruz High St DAS\Pole #4\07 CAD Files\POLE #4\HIGH ST\HIGH04_3.dwg, 3, 1/31/2017 10:56:49 AM, spelger

1. REMOVE (E) WOOD POLE AND REPLACE WITH (N) 55' CLASS 3 WOOD POLE.
2. INSTALL (N) AMPHENOL CANISTER ANTENNA AT 47'-9" RAD CENTER ON (N) WOOD POLE.
3. INSTALL (N) (2) RRH INSIDE (N) VAULT.
4. INSTALL (N) FIBER DEMARCATION BOX INSIDE THE VAULT.
5. INSTALL (N) PG&E ELECTRICAL SMART METER PANEL ON (N) WOOD POLE.
6. INSTALL (N) EMERGENCY SHUTDOWN SWITCH ON (N) STANDOFF MOUNT ON (N) WOOD POLE.
7. INSTALL (N) (2) BUSS BAR AND IN (N) VAULT.
8. INSTALL (N) VAULT
9. INSTALL (2) 2" POWER/FIBER CONDUIT & (1) 4" COAX CONDUIT.
10. INSTALL (N) U-GUARD ON (N) POLE TO ACCOMMODATE 6 (N) RUNS OF COAX FROM BASE OF POLE TO BOTTOM OF ANTENNA BRACKET ON (N) POLE.
11. INSTALL (N) CLIMBING PEGS ON (N) POLE IN APPROPRIATE QUADRANTS.
12. INSTALL FCC COMPLIANCE SIGNAGE AS REQUIRED NEAR ANTENNAS.
13. ALL COMPONENTS TO BE PAINTED KELLY MOORE OXFORD BROWN OR APPROVED COLOR SCHEME.

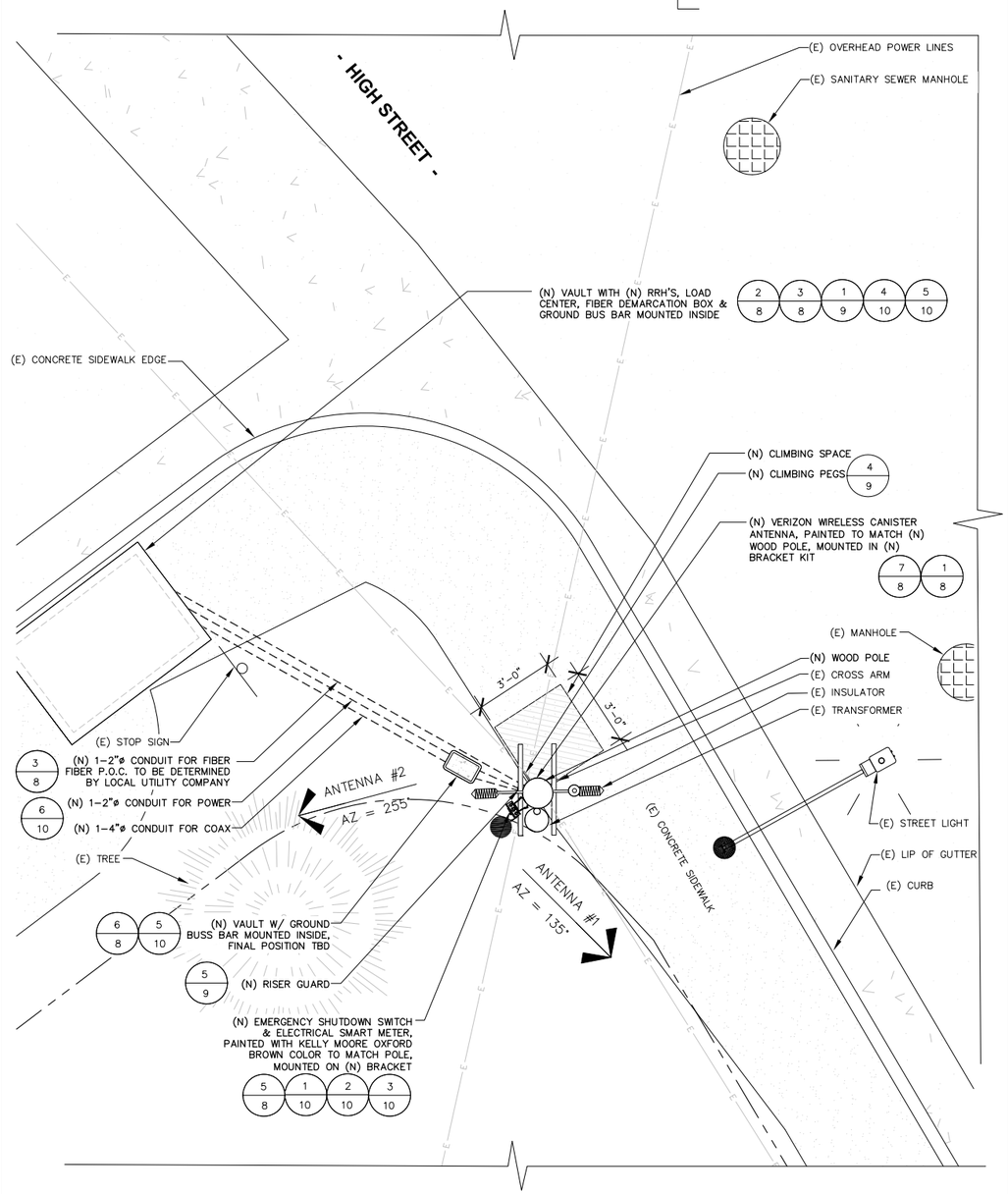
HIGH ST
6:00





2 EXISTING PROJECT AREA PLAN

SCALE: 3/8" = 1'-0"
0' 2' 4' 6' 8'



1 PROPOSED EQUIPMENT AND ANTENNA PLAN

SCALE: 3/8" = 1'-0"
0' 2' 4' 6' 8'

SITE NAME:
HIGH ST. SANTA CRUZ

SITE INFORMATION:
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101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
EQUIPMENT PLANS

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

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			DRAFTER: CHECKER:
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SHEET NUMBER:
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T:\CROWN CASTLE INT'L\Santa Cruz High St DAS\Pole 04\07 CAD Files\POLE 4\HIGH ST\HIGH04_4.dwg, 3, 1/31/2017 10:58:15 AM, sgeiger

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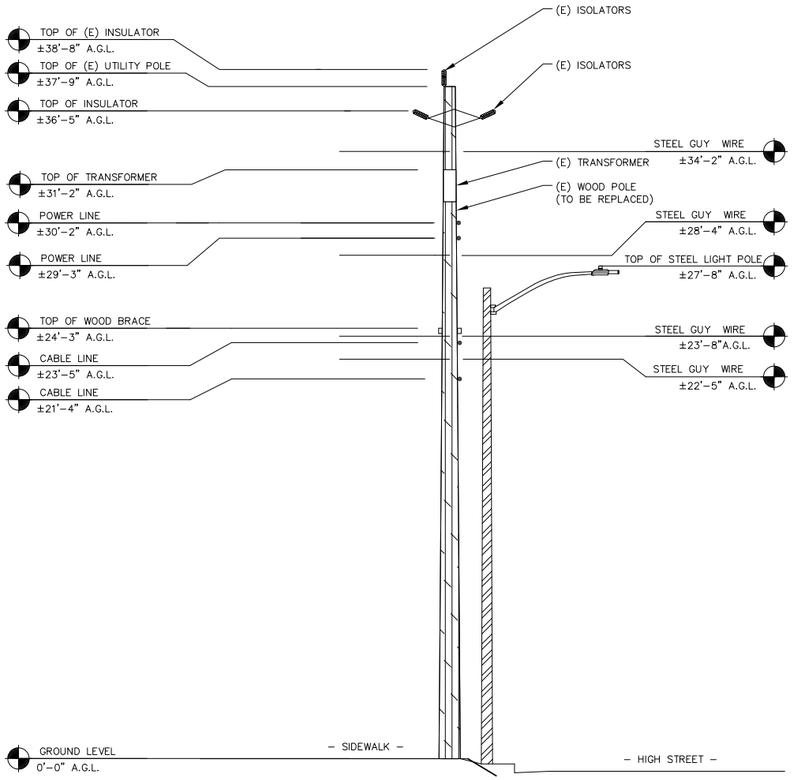
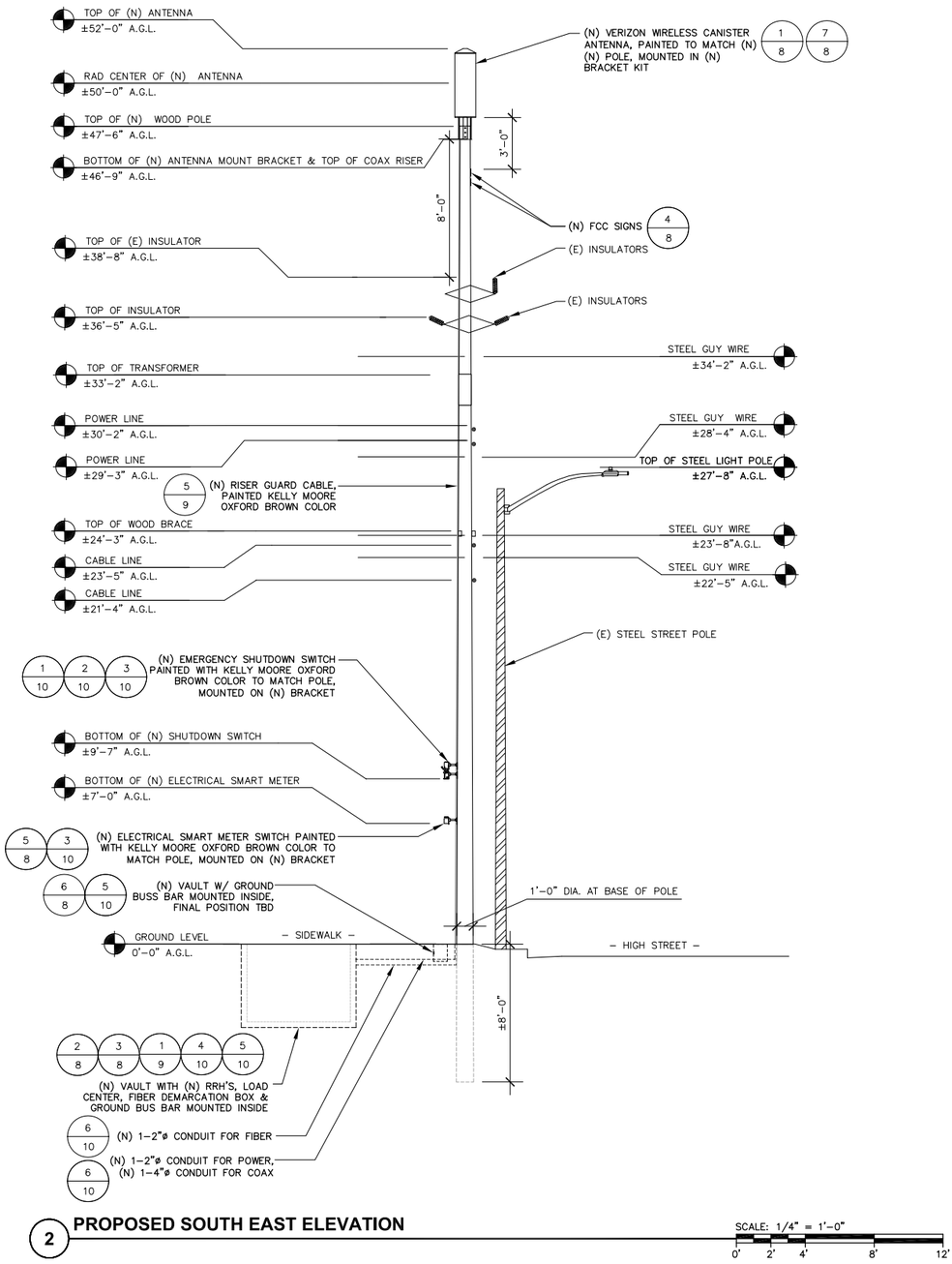


1 **EXISTING SOUTHEAST ELEVATION**

SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 12'



2 **PROPOSED SOUTH EAST ELEVATION**

SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 12'

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HIGH ST. SANTA CRUZ

SITE INFORMATION:

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101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

SOUTH ELEVATIONS

STAMP:

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5	01-31-17	CCI COMMENTS	DRAFTER: SG CHECKER: RC
			DRAFTER: CHECKER:
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SHEET NUMBER:

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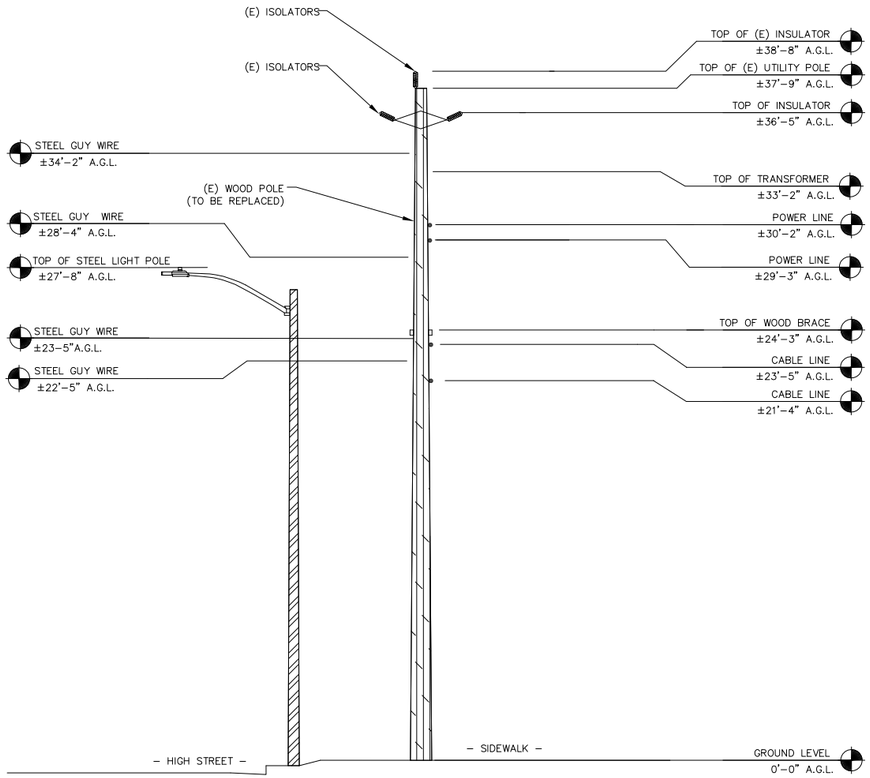
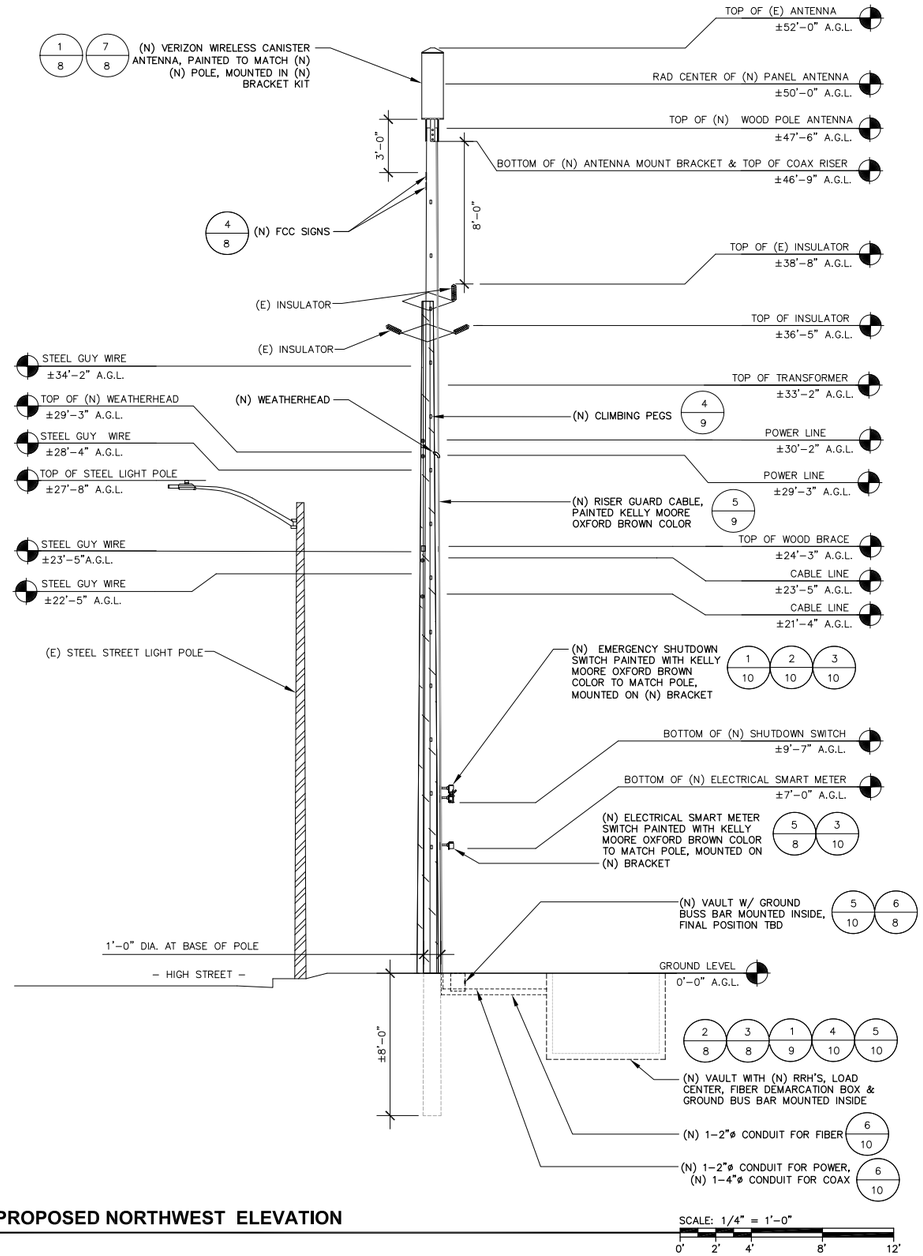


1 EXISTING NORTHWEST ELEVATION

SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 12'



2 PROPOSED NORTHWEST ELEVATION

SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 12'

SITE NAME:

HIGH ST.
SANTA CRUZ

SITE INFORMATION:

NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

NORTHEAST ELEVATIONS

STAMP:

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5	01-31-17	CCI COMMENTS	DRAFTER: SG	CHECKER: RC
			DRAFTER:	CHECKER:
			DRAFTER:	CHECKER:

SHEET NUMBER:

6 OF 14

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EXISTING POLE LOCATION
LOOKING NORTHWEST

EXISTING POLE LOCATION
LOOKING SOUTHWEST

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:

NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

SITE LOCATION PHOTOS

STAMP:

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			DRAFTER: CHECKER:
			DRAFTER: CHECKER:

SHEET NUMBER:

7 OF 14

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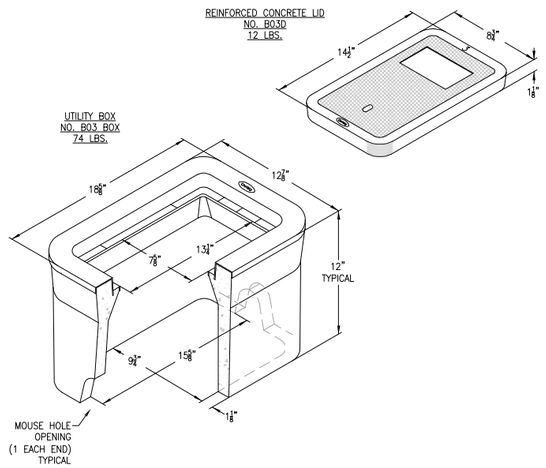
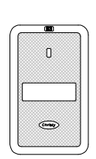
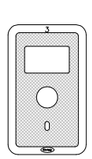


A HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS AND WEIGHT SHOWN.

OLDCASTLE ORDERING CODE	ITEM	APPROX. SHIPPING WEIGHT	DESCRIPTION
B03BOX	BOX	74 LBS.	B03 UTILITY BOX (9-3/4" X 15-5/8") - 28 PER PALLET
B03C	LID	13 LBS.	CAST IRON LID
B03D	LID	12 LBS.	REINFORCED CONCRETE LID
B03TL	LID	15 LBS.	CAST IRON LID WITH LOCK
BUTLK	KEY	1 LBS.	UNIVERSAL TL KEY FOR CAST IRON LIDS WITH LOCK
B03-61D	COVER	14 LBS.	STEEL CHECKER PLATE COVER
B03SL	SLAB	22 LBS.	REINFORCED CONCRETE SLAB (12-1/8" X 18-5/8")
GALVANIZING AVAILABLE ON ALL STEEL COVERS			

- ETCHED POLYPROPYLENE FACE
- FACE ANCHORED IN CONCRETE
- ULTRA-VIOLET INHIBITOR
- EXCEEDS ASTM-D1693 STANDARDS FOR ENVIRONMENTAL STRESS CRACKING RESISTANCE

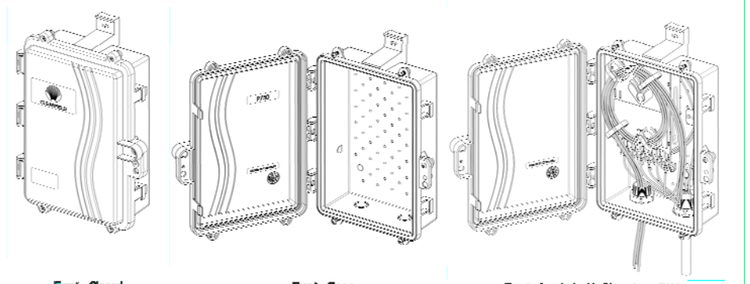

B03C


B03P


B03-61D

B03 UTILITY BOX 9-3/4" X 15-5/8" DETAIL

SCALE: N.T.S | 6


Front - Closed

Front - Open

Front - Loaded with Clearview xPAK (xPAK not included)

Dimensions

	Width	Length	Depth
External	9"	12"	4"
Internal	6"	9"	2.25"

FIBER DEMARCATION BOX DETAIL

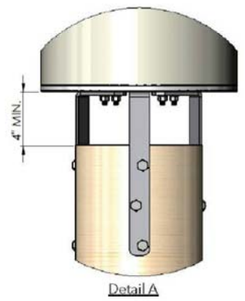
SCALE: N.T.S | 3

WB3X-MKS-01

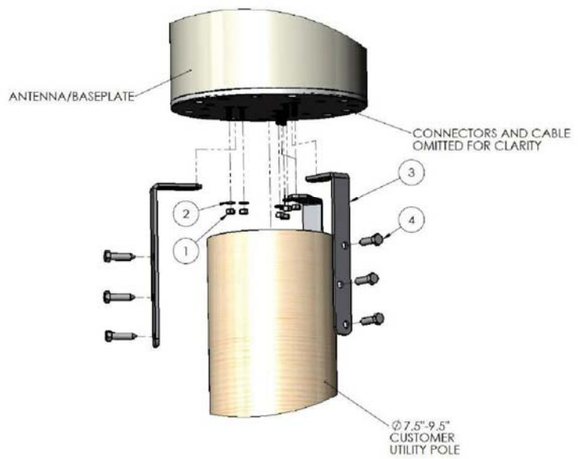
Utility Pole Mounting Kit for Cylindrical Antennas

Mounting Instructions	
Step 1	Attach pole mount brackets (Item 3) to antenna/base plate using fasteners (Items 1 and 2). Tighten to 15 N-m (11 ft-lb).
Step 2	Attach pole mount brackets (Item 3)/antenna assembly to customer utility pole using lag screws (Item 4).
Step 3	Make all electrical connections weatherproof with self-amalgamating tape.

Parts List	Description	Quantity
Item 1	Nut Hex, 3/8-16 HDG	6
Item 2	Lock Washer 3/8 HDG	6
Item 3	Pole Mount Bracket	3
Item 4	Galvanized Hex Lag Screw (1/2 x 2" Long)	9
Mechanical Characteristics		
Weight	2.7 kg (6 lbs)	

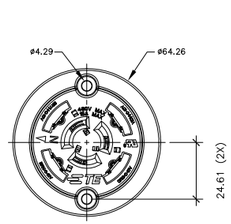


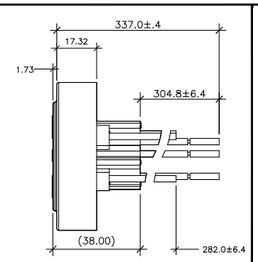
Detail A



ANTENNA MOUNTING DETAIL

SCALE: N.T.S | 7



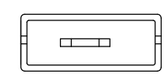


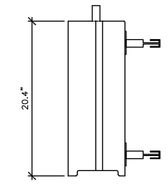

DIMMING RECEPTACLE (3-WIRE)


TESCO METER

ANSI C136,41 DIMMIMG RECEPTACLE DETAIL

SCALE: N.T.S | 5





MANUFACTURER: ERICSSON
MODEL: RRUS12
HEIGHT: 20.4 in
WIDTH: 18.5 in
DEPTH: 7.5 in
WEIGHT: 50.0 lbs

GSM, WCDMA & LTE
UP TO 40 MHZ IBW
UP TO 20 MHZ LTE (ABW)
UP TO 4 CARRIERS WCDMA OR LTE
UP TO 2X60W FOR RRUS 12
2.5 GBIT/ CPRI
6 EXTERNAL ALARMS
50 YEARS MTBF FOR RRUS-12
DC SUPPY (AC AS AN OPTION)
DIMENSIONS: HxWxD= 20.4"x18.5"x7.5"
(INCLUDING SUN SHIELD AND HANDLE)
WEIGHTS: 50LBS, EXCLUDING MOUNTING HARDWARE

RRUS-12 DETAIL

SCALE: N.T.S | 2

NOTE:
(N) SIGNS TO BE PLACED 3'-0"BELOW ANTENNA

CAUTION

THE RADIO FREQUENCY (RF) EMISSIONS AT THIS SITE HAVE BEEN EVALUATED FOR POTENTIAL RF EXPOSURE TO PERSONNEL WHO MAY NEED TO WORK NEAR THESE ANTENNAS.

RF EXPOSURE AT 5 AND 3 FEET OR CLOSER TO THE FACE OF THE ANTENNA MAY EXCEED THE FCC PUBLIC AND OCCUPATIONAL EXPOSURE LIMITS RESPECTIVELY. OBEY ALL SITE RF SAFETY GUIDELINES. ONLY QUALIFIED WORKERS THAT HAVE RF SAFETY TRAINING MAY WORK NEAR THIS 5 FOOT EXCLUSION ZONE. ANYONE NEEDING TO WORK INSIDE THE EXCLUSION ZONE SHOULD CALL CROWN CASTLE TO 1888-632-0931 FOR INSTRUCTIONS PRIOR TO COMMENCING WORK. REFER TO SITE LOCATION AS

	WWW.CROWNCASTLE.COM
FOR LEASE INFORMATION:	877-486-9377
FOR EMERGENCY 24 HOUR SERVICE:	888-632-0931
SYSTEM NAME:	HIGH ST.
HUB BUSINESS UNIT NUMBER:	VZW_HIGH04
NODE BUSINESS UNIT NUMBER:	VZW_HIGH04
SITE ADDRESS:	101 TOSCA TERRACE, SANTA CRUZ, CA

FCC SIGNS

SCALE: N.T.S | 4

MANUFACTURER: AMPHENOL
MODEL #: CUUT070X12Fxyz0
FREQUENCY RANGE: 696-960 MHz
1695-2700 MHz
DIMENSIONS: 48"h x 14.6"ø
WEIGHT: 42.0 LBS
STANDARD MOUNTING HARDWARE:

CONNECTORS: 18; 4.1-9.5 OR 4.3-10 OR 7-16 DIN FEMALE / BOTTOM

CUUT070X12Fxyz0 ANTENNA DETAIL

SCALE: N.T.S | 1

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
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STAMP:

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SAN JOSE, CA 95134

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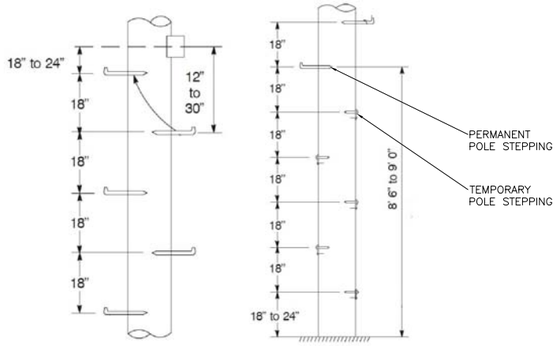
8 OF 14

T:\CROWN CASTLE INTL\Santa Cruz High St DAS\Pole #4\07 CAD Files\POLE 4\HIGH ST\HIGH04_B.dwg, 8, 1/31/2017 11:02:15 AM, spelger



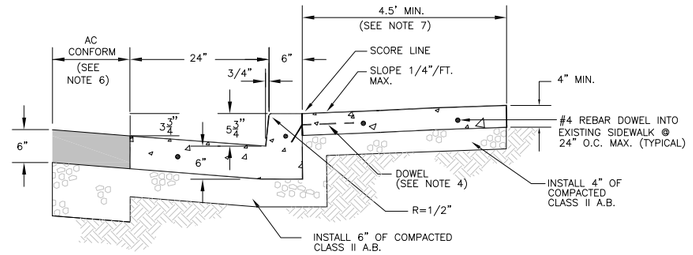
STEP; POLE 5/8 X 10 INCH GALVANIZED

HARDWARE 506125
ARRIS ITEM: 002971

WEIGHT: 0.900 LBS. / EA
http://www.arrisistore.com/product.php?pid=002971

DESCRIPTION:
POLE STEPS ARE USED ON WOOD POLES WHERE FREQUENT ACCESS TO POLE MOUNTED EQUIPMENT IS REQUIRED. FLAT DRIVING SURFACE AND SHARP POINT EASE INSTALLATION. FETTER-DRIVE THREAD PERMITS REMOVAL WITH A WRENCH. HOT-DIP GALVANIZED FOR CORROSION RESISTANCE. NOTCHED MARK ON STEP INDICATES PROPER DRIVING DEPTH. WEIGHT PER 100: 99 LBS.

CLIMBING PEG DETAIL — SCALE: N.T.S — 4



NOTES:

1. ALL CONCRETE TO BE SIX SACK, CLASS "A" PLANT MIXED PCC.
2. COMPACT SUBBASE SOIL TO 95% RELATIVE COMPACTION AT OPTIMUM MOISTURE CONTENT TO A DEPTH OF 6".
3. STANDARD CURB, GUTTER AND SIDEWALK SHALL BE A MONOLITHIC POUR UNLESS CURB AND GUTTER ARE EXISTING.
4. IF ANY CURB, GUTTER OR SIDEWALK ARE EXISTING, DOWEL INTO EXISTING CONCRETE EVERY24". USE 18" LONG #4 DOWELS, INSERT 4" INTO CURB. BEND DOWEL AT BACK OF CURB AS SHOWN.
5. SCORE SIDEWALK EVERY 4 FT. PLACE EXPANSION JOINTS EVERY 60 FEET WITH DEEP JOINTS EVERY 12 FT.
6. WIDTH OF A.C. CONFORM SHALL BE A MINIMUM OF 2 FEET. A.C. CONFORM SHALL BE A MINIMUM OF 6" THICK ON TOP OF 6" OF CLASS II A.B.
7. CITY ENGINEER MAY REQUIRE MODIFICATIONS OF MINIMUM WIDTH TO CONFORM TO SURROUNDING NEIGHBORHOOD.

CITY OF SANTA CRUZ GUTTER,CURB AND SIDEWALK STANDARD DETAIL — SCALE: N.T.S — 2

GUARDS & STRAPS, CABLE

Protect telephone and power lines where circuits lead from underground to overhead. Guards are 14-gauge hot dip galvanized steel, formed into "U" shape. Straps are made from hot dip galvanized flat steel, shaped to fit the guards.

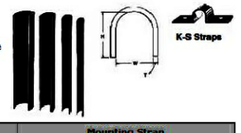
Cable Guards				Mounting Straps			
Catalog Number	Inside Dia.	Length	Approx. Ship Wt. per Each	Mounting Strap Catalog Number – Order Separately	Mounting Hole Dia.	Steel Size	Approx. Ship Wt. per Each
C2030452*	3/4"	5'	2.76 lbs.	C2030455	9/32"	3/32" x 3/4"	0.66 lbs.
C2030450*		8'	4.80 lbs.				
6531*	1-1/8"	5'	4.80 lbs.	6538*		1/8" x 3/4"	0.13 lbs.
653112*		8'	5.60 lbs.				
6532*	2-3/16"	5'	8.60 lbs.	6539*			0.24 lbs.
6533*		8'	12.60 lbs.				
6534T*	3 3/16"	5'	15.25 lbs.	6540*	11/32"	3/16" x 1"	0.64 lbs.
6535*		8'	18.00 lbs.				
C2030451*	3-11/16"	8'	22.69 lbs.	C2030456			0.69 lbs.

Click on Catalog Number to view sales drawing

* CAO 6789 Specification

GUARDS, PLASTIC MOLDING

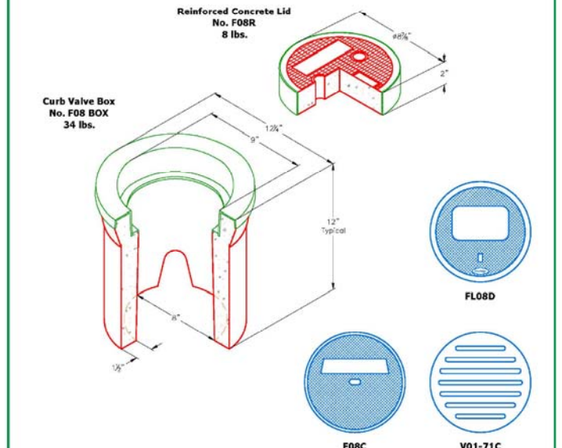
KOVER-GARD® molding protects surface ground wires, lead wires and conductors. Flame retardant and easy to install. Makes wood or metal molding obsolete.



Cable Guards					Mounting Strap			
Catalog Number	Inside Dia.	Length	Thickness	Approx. Ship Wt. per Each	Mounting Strap Catalog Number – Order Separately	Mounting Hole Dia.	Material Size	Approx. Ship Wt. per Each
96KG12	1/2"	96"	1/16"	0.48 lbs.	KS12	1/8"	1/16" x 5/8"	.006 lbs.
96KG34	3/4"			0.76 lbs.	N/A			
96KG1	1"		5/64"	0.96 lbs.	N/A			

RISER GUARD DETAIL — SCALE: N.T.S — 5

- Etched polypropylene face
- Face anchored in concrete
- Ultra-violet inhibitor
- Exceeds ASTM-D1693 Standards for Environmental Stress Cracking Resistance



A high density reinforced concrete box with non-settling shoulders positioned to maintain grade and facilitate back filling. Approximate dimensions and weight shown.

Oldcastle Ordering Code	Item	Approx. Shipping Weight	Description
F08BOX	BOX	34 lbs.	F08 Curb Valve Box (8" I.D. x 12" High) – 48 per pallet
F08R	LID	8 lbs.	Reinforced Concrete Lid with Plastic Ring
F08C	LID	8 lbs.	Cast Iron Lid
FL08D	LID	2 lbs.	Fibrelyte Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Grate ADA Compliant

Oldcastle Precast® Enclosure Solutions
Phone: (800) 486-7070 Fax: (800) 486-6804
Copyright© 2011 Oldcastle Precast Inc.

F08 BOX
FILE NAME: F08_ISO
ISSUE DATE: January, 2011
www.oldcastleprecast.com

F08 CURB VALVE BOX
8" I.D. x 12"
Christy

NOTE :
"TEST WELL FOR GROUNDING RESISTIVITY TESTING"

F08 BOX GROUND INSPECTION WELL DETAIL — SCALE: N.T.S — 3

Product Data Sheet

QO612L100RB

Load Center , 100A, Fixed - Factory installed main lugs, 120/240VAC

SQUARE D by Schneider Electric

List Price $143.00 USD

Availability **Stock Item: This item is normally stocked in our distribution facility.**

Technical Characteristics

Ampere Rating	100A
Maximum Single Pole Circuits	12
Application	Designed to meet residential, commercial and industrial requirements to protect electrical systems, equipment and people.
Approvals	UL Listed
Cover Type	Surface
Bus Material	Tin Plated Aluminum
Enclosure Type	Outdoor/Raintproof
Box Number	3R
Enclosure Rating	NEMA 3R
Grounding Bar	Order separately
Short Circuit Current Rating	10kA
Main Type	Fixed - Factory installed main lugs
Voltage Rating	120/240VAC
Wire Size	#8 to 1 AWG(Al/Cu)
Maximum Tandem Circuit Breakers	6
Phase	1-Phase
Wiring Configuration	3-Wire
Depth	4.27 Inches
Height	12.95 Inches
Width	8.88 Inches
Spaces	6

Notes: 70A (max) branch circuit breaker and 70A (max) back fed main circuit breaker.

Shipping and Ordering

Category	00101 - Load Centers, 1 Phase, NEMA1 & 3R, 2 - 0 Circuit, Type QO
Discount Schedule	DE3A
GTIN	00785901785590
Package Quantity	1
Weight	9.69 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

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Schneider Electric

QO612L100RB LOAD CENTER DETAIL — SCALE: N.T.S — 1

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
POWER PEDESTAL DETAILS

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:
CONSTRUCTION

CROWN CASTLE PROJECT NO:
CA-HIGH04

REVISIONS:

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4	01-17-17	CCI COMMENTS	DRAFTER: SG / CHECKER: RC
5	01-31-17	CCI COMMENTS	DRAFTER: SG / CHECKER: RC
			DRAFTER: / CHECKER:
			DRAFTER: / CHECKER:

SHEET NUMBER:
9 OF 14

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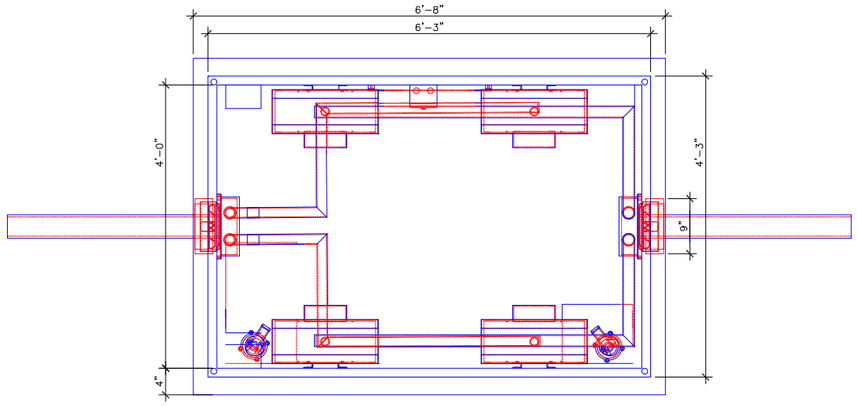
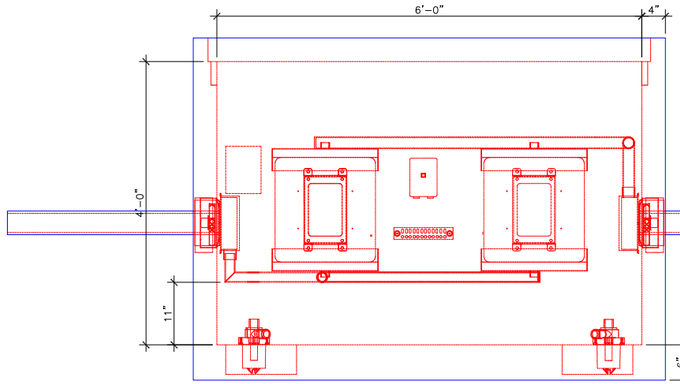
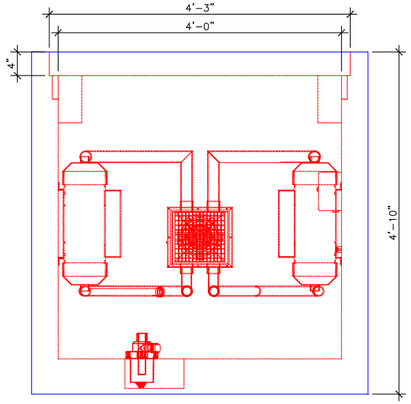
RED HIDDEN LINES — REPRESENTS ANY LINE OF AN OBJECT THAT IS HIDDEN FROM VIEW.
BLUE SOLID LINES — REPRESENTS ANY LINE OF AN OBJECT THAT IS VISIBLE IN A PARTICULAR VIEW.
BLACK HIDDEN LINES — REPRESENTS ITEMS THAT ARE "NOT" INCLUDED IN KIT.





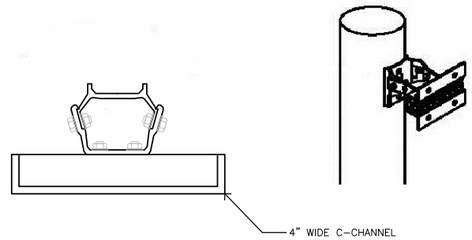


VAULT DETAIL

SCALE: N.T.S — 4

ALUMA-FORM BRACKET SYSTEM
AVAILABLE FROM ACE SUPPLY
CAM-P-DUY-3ACE
ALUMA-FORM INC.
(901) 362-0100

6B-CSO-8-SURGE

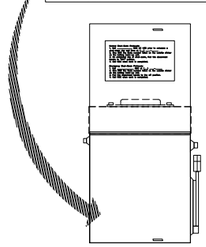


TYPICAL EQUIPMENT STANDOFF DETAIL

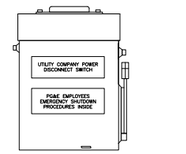
SCALE: N.T.S — 3

Normal Shut-Down Protocols:
1. Call _____ NOC 24 HRS prior to schedule a shut-down day and time at (800) 264-6620.
2. Give NOC the Node number listed on the outside sticker on the battery back-up unit.
3. On scheduled day of shut-down, Pull the disconnect handle to "OFF" position.
4. Call NOC when work is completed.

Emergency Shut-Down Protocols:
1. Call _____ NOC at (800)264-6620.
2. Give NOC the Node number listed on the outside sticker on the battery back-up unit.
3. Pull the disconnect handle to the off position.
4. Call NOC when work is completed.



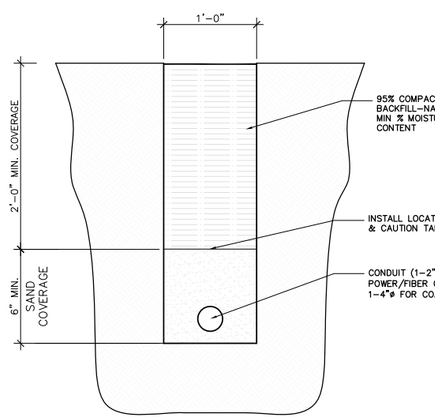
INSIDE PANEL DOOR SHOWING
SHUT DOWN PROTOCOL ON 6"X7" LABEL



OUTSIDE PANEL DOOR SHOWING
DISCONNECT SWITCH ID ON 2"X6" PLAQUE

SHUTDOWN DISCONNECT BOX DETAIL

SCALE: N.T.S — 2

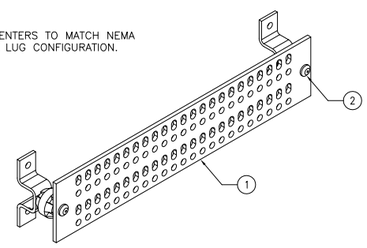


POWER/COAX TRENCH DETAIL

SCALE: N.T.S — 6

NOTE:

HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.



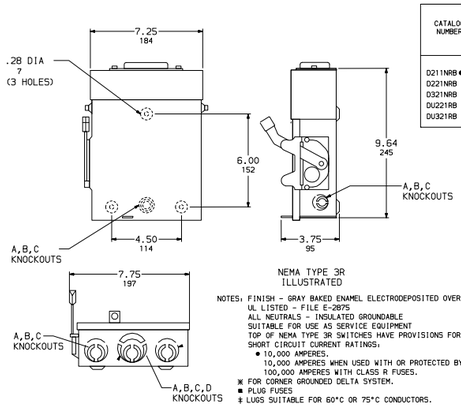
1- UNIVERSAL TINNED COPPER BUSS BAR WITH HARDWARE: BY ANDREW CORPORATION

UGBKIT-0420-T : 1/4"x4"x20" (SHOWN)
UGBKIT-0412-T : 1/4"x4"x12"
UGBKIT-0210-T : 1/4"x2"x10"
GB-HKU : MOUNTING HARDWARE KIT

2- ANDREW #MTC9674KEY TAMPER RESISTANT BUSS BAR BOLT KIT

GROUND BAR DETAIL (UGBKT-0210-T)

SCALE: N.T.S — 5



NEMA TYPE 3R
ILLUSTRATED

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG.	HORSEPOWER RATINGS 120VAC STD. 1Ø	120VAC MAX. 1Ø	240VAC STD. 1Ø	240VAC STD. 3Ø	240VAC MAX. 1Ø	240VAC MAX. 3Ø
D211NRB●■	240VAC	A	1/2	2	1 1/2	-	3	-
D221NRB	240VAC	A	-	-	1 1/2	3※	3	7 1/2※
D321NRB	240VAC	B	-	-	1 1/2	3	3	7 1/2
DU221RB	240VAC	C	-	-	-	-	3	-
DU321RB	240VAC	D	-	-	-	-	3	7 1/2

WIRING DIAGRAMS

FUSIBLE	NOT FUSIBLE
A (S/N)	C
B (S/N)	D

DUAL DIMENSIONS: INCHES MILLIMETERS

TERMINAL LUGS‡			
AMPERES	MAX. WIRE	MIN. WIRE	TYPE
30	# 6 AWG	# 12 AWG	AL
	# 6 AWG	# 14 AWG	CU

KNOCKOUTS				
SYMBOL	A	B	C	D
CONDUIT SIZE	.5¢	.75	1	1.25§

NOTES: FINISH - GRAY BAKED ENAMEL ELECTRODEPOSITED OVER CLEANED PHOSPHATIZED STEEL.
UL LISTED - FILE E-2875
ALL NEUTRALS - INSULATED GROUNDABLE
SUITABLE FOR USE AS SERVICE EQUIPMENT
TOP OF NEMA TYPE 3R SWITCHES HAVE PROVISIONS FOR MAXIMUM 2 1/2" BOLT-ON HUB.
SHORT CIRCUIT CURRENT RATINGS:
● 10,000 AMPERES.
10,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS H OR K FUSES.
100,000 AMPERES WITH CLASS R FUSES.
※ FOR CORNER GROUNDED DELTA SYSTEM.
■ PLUG FUSES
‡ LUGS SUITABLE FOR 60°C OR 75°C CONDUCTORS.

GENERAL DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
30 AMPERE
ENCLOSURE - NEMA TYPE 3R RAINPROOF

SQUARE D COMPANY
DWG. NO. 1852

SHUTDOWN DISCONNECT SWITCH

SCALE: N.T.S — 1

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
EQUIPMENT DETAILS

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:
CONSTRUCTION

CROWN CASTLE PROJECT NO:
CA-HIGH04

REVISIONS:

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2	09-28-16	PG&E COMMENTS	DRAFTER: SG / CHECKER: RG
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4	01-17-17	CCI COMMENTS	DRAFTER: SG / CHECKER: RC
5	01-31-17	CCI COMMENTS	DRAFTER: SG / CHECKER: RC
			DRAFTER: / CHECKER:
			DRAFTER: / CHECKER:

SHEET NUMBER:
10 OF 14

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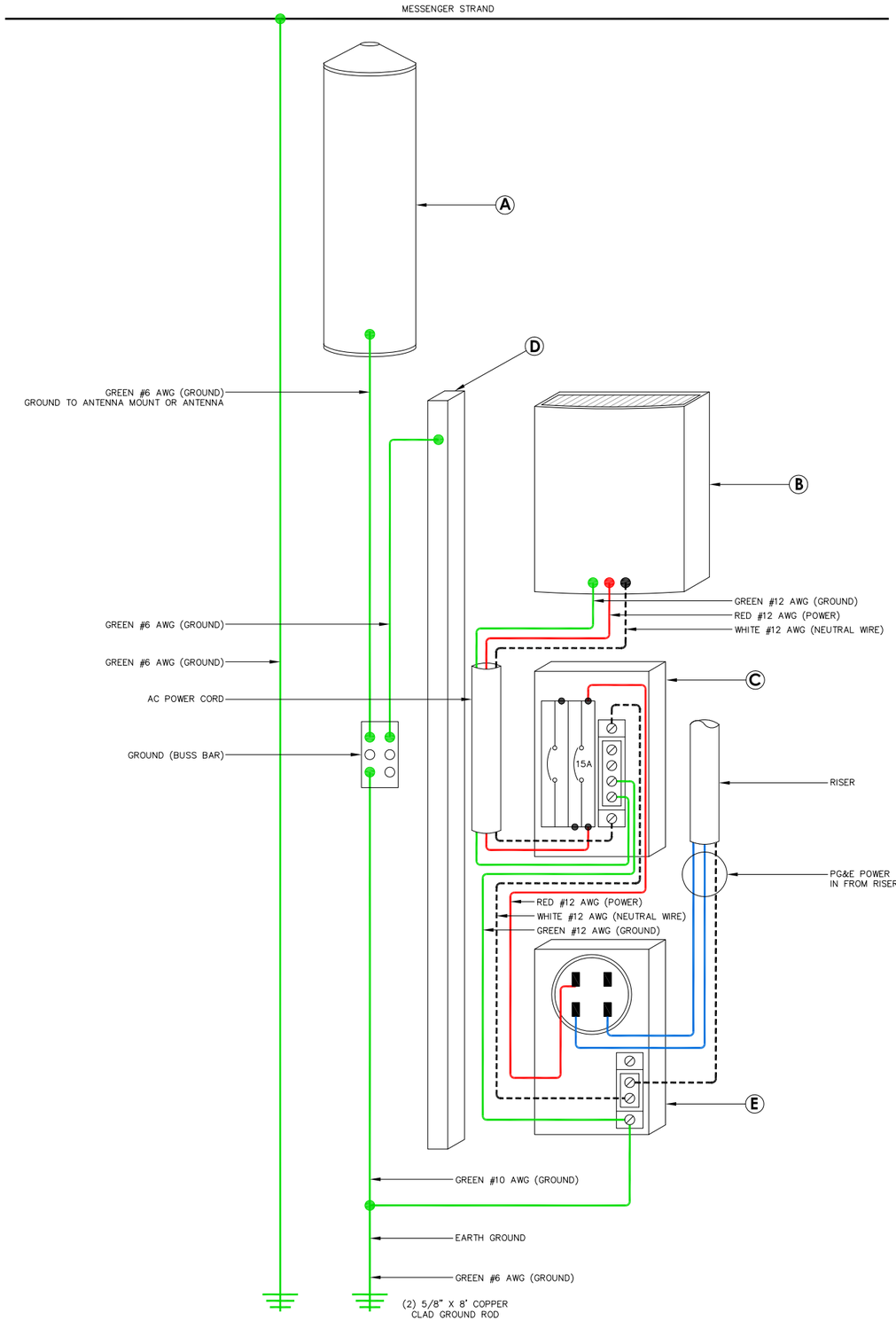

INSTRUCTIONS FOR DE-ENERGIZING THE SITE:

1. CALL CARRIER OPERATIONS CENTER 1800 XXX-XXXX
2. IDENTIFY RF DISCONNECTION BOX
3. OPEN RF DISCONNECTION BOX
4. OPEN COVER FOR RF DISCONNECT BREAKER
5. TURN RF DISCONNECT BREAKER TO THE OFF POSITION TO DE-ENERGIZE NODE
6. TO CONFIRM THAT THE SITE HAS BEEN DE-ENERGIZED, PG&E CREW/TECHNICIAN CAN REMOVE THE SINGLE SCREW ON THE BOTTOM RIGHT COVER OF THE RF DISCONNECT BREAKER AND REMOVE THE COVER TO EXPOSE THE SOURCE AND LOAD TERMINALS ON THE SWITCH AND THEN CHECK FOR NO POTENTIAL BETWEEN THE LOAD TERMINAL AND GROUND TO VERIFY THAT NO RF SIGNAL CAN BE GENERATED
7. NOTIFY CARRIER OPERATIONS CENTER THAT WORK IS COMPLETE

COLOR KEY	
RED (POWER)	
GREEN (GROUND)	
BLUE (PG&E POWER)	
BLACK / DASHED (NEUTRAL)	

EQUIPMENT KEY	
A	ANTENNA AND MOUNTING BRACKET
B	RADIO UNIT
C	RF DISCONNECT BOX
D	POLE MOUNTING CHANNEL
E	METER SOCKET

SHUTDOWN PROCEDURE

SCALE: N.T.S

2

SITE NAME:

HIGH ST. SANTA CRUZ

SITE INFORMATION:

NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

SHUTDOWN PROCEDURE

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:

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			DRAFTER:	CHECKER:
			DRAFTER:	CHECKER:

SHEET NUMBER:

11 OF 14

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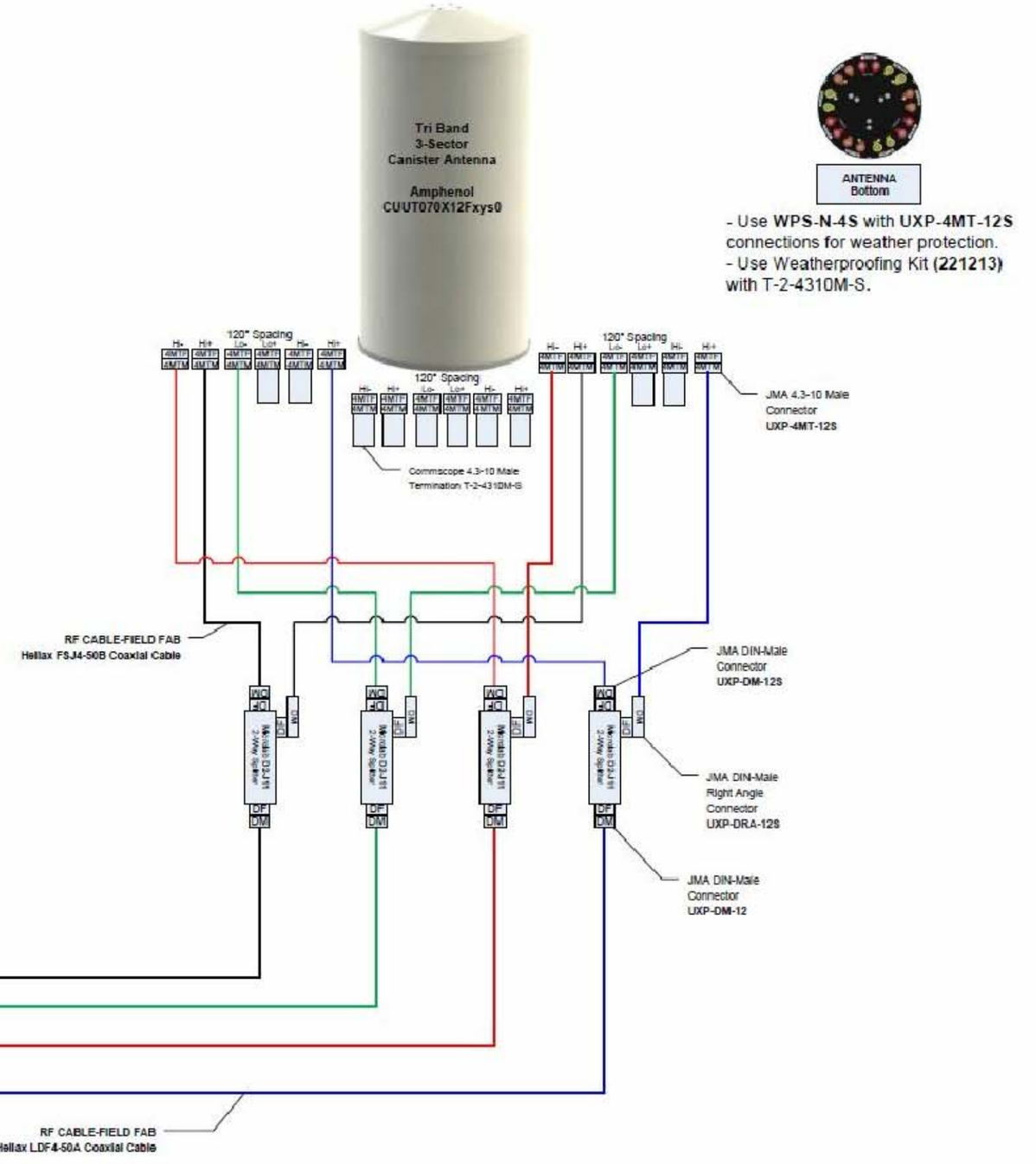
CROWN CASTLE



Customer:	Verizon
Location:	Santa Cruz High St.
CCI Engineer:	Jesus Garcia
Date:	03/10/16
Rev:	03

Verizon Santa Cruz High St. Node Wiring Diagram
2-Panel 7 Nodes

WIRING DIAGRAM

SCALE: N.T.S

2

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
RF INFORMATION & WIRING DIAGRAM

STAMP:

CROWN CASTLE

Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:

BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

ISSUED FOR:
CONSTRUCTION

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5	01-31-17	CCI COMMENTS	DRAFTER: SG / CHECKER: RC
			DRAFTER: / CHECKER:
			DRAFTER: / CHECKER:

SHEET NUMBER:
12 OF 14

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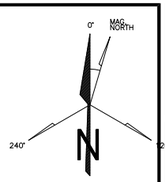
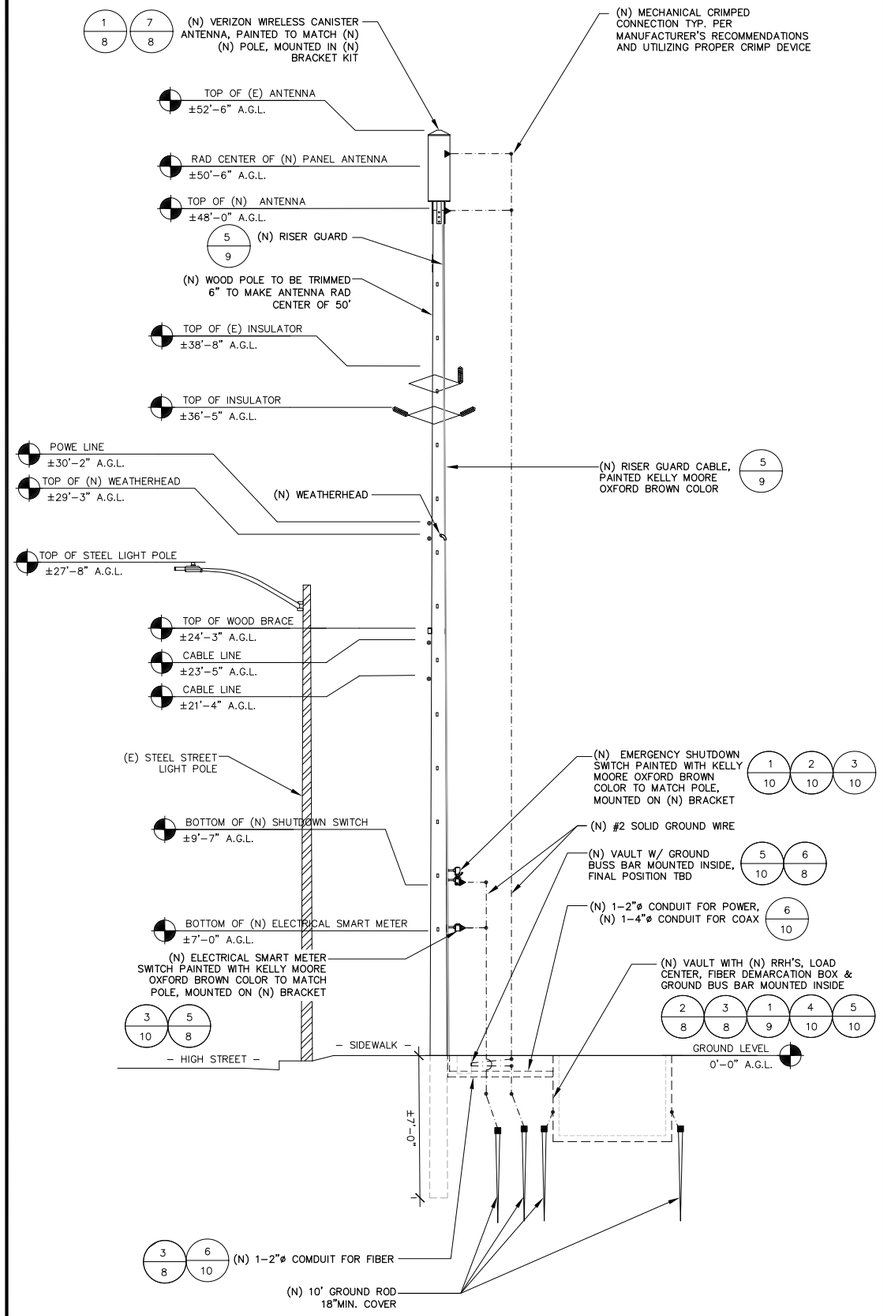
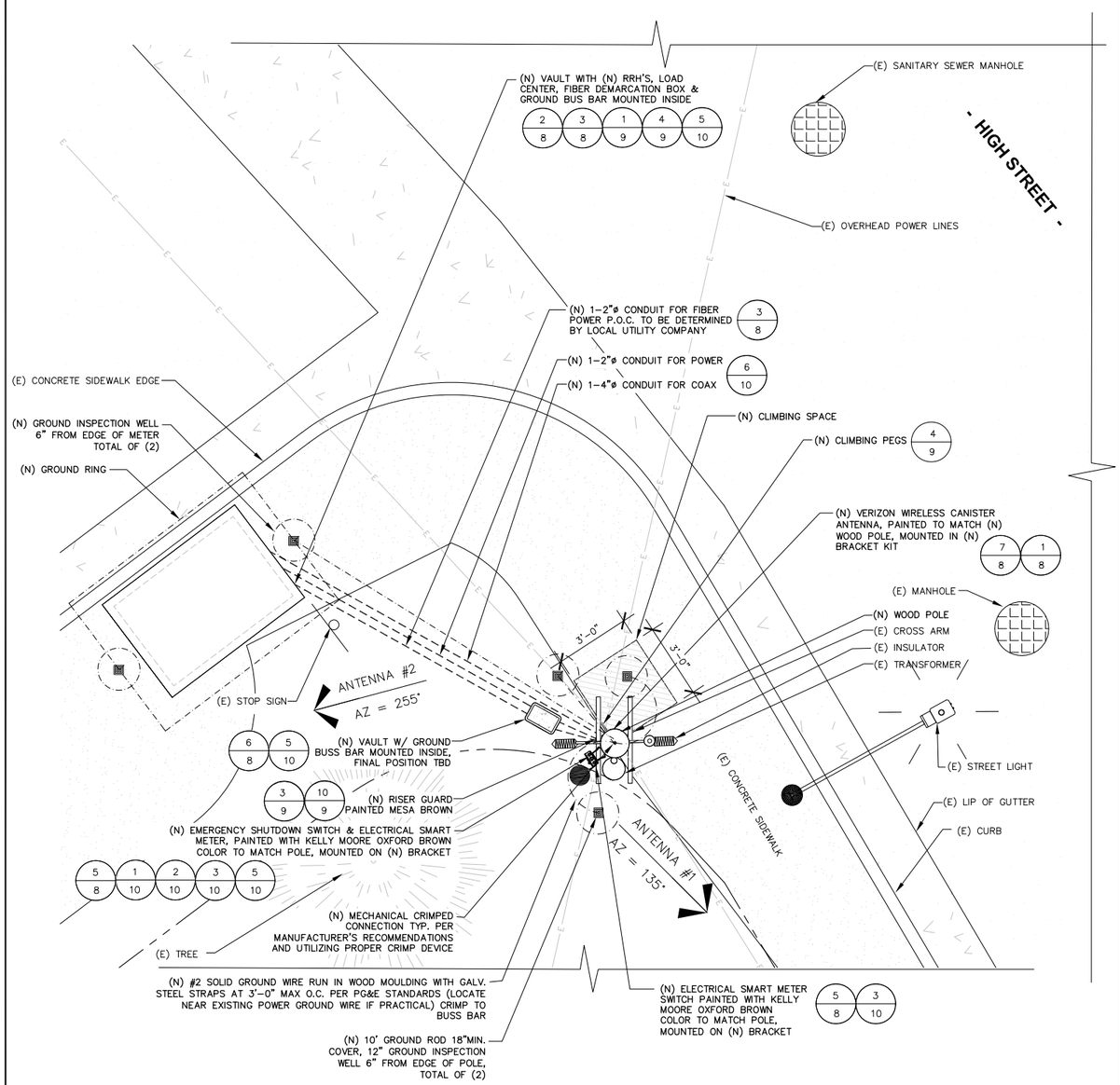
1. REMOVE (E) WOOD POLE AND REPLACE WITH (N) 55' CLASS 3 WOOD POLE.
2. INSTALL (N) AMPHENOL CANISTER ANTENNA AT 47'-9" RAD CENTER ON (N) WOOD POLE.
3. INSTALL (N) (2) RRH INSIDE (N) VAULT.
4. INSTALL (N) FIBER DEMARCATION BOX INSIDE THE VAULT.
5. INSTALL (N) PG&E ELECTRICAL SMART METER PANEL ON (N) WOOD POLE.
6. INSTALL (N) EMERGENCY SHUTDOWN SWITCH ON (N) STANDOFF MOUNT ON (N) WOOD POLE.
7. INSTALL (N) (2) BUSS BAR AND IN (N) VAULT.
8. INSTALL (N) VAULT
9. INSTALL (2) 2" POWER/FIBER CONDUIT & (1) 4" COAX CONDUIT.
10. INSTALL (N) U-GUARD ON (N) POLE TO ACCOMMODATE 6 (N) RUNS OF COAX FROM BASE OF POLE TO BOTTOM OF ANTENNA BRACKET ON (N) POLE.
11. INSTALL (N) CLIMBING PEGS ON (N) POLE IN APPROPRIATE QUADRANTS.
12. INSTALL FCC COMPLIANCE SIGNAGE AS REQUIRED NEAR ANTENNAS.
13. ALL COMPONENTS TO BE PAINTED KELLY MOORE OXFORD BROWN OR APPROVED COLOR SCHEME.





1 POLE GROUNDING DIAGRAM

SCALE: 3/8" = 1'-0"
0' 2' 4' 6' 8'



2 GROUNDING PLAN

SCALE: 3/8" = 1'-0"
0' 2' 4' 6' 8'

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SITE NAME:
HIGH ST. SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:
GROUNDING DETAILS

STAMP:

CROWN CASTLE
Crown Castle
695 RIVER OAKS PARKWAY,
SAN JOSE, CA 95134

PLANS PREPARED BY:
BYERS ENGINEERING COMPANY
4780 CHABOT DRIVE, SUITE 104
PLEASANTON, CA 94588
Phone: (925) 398-6000

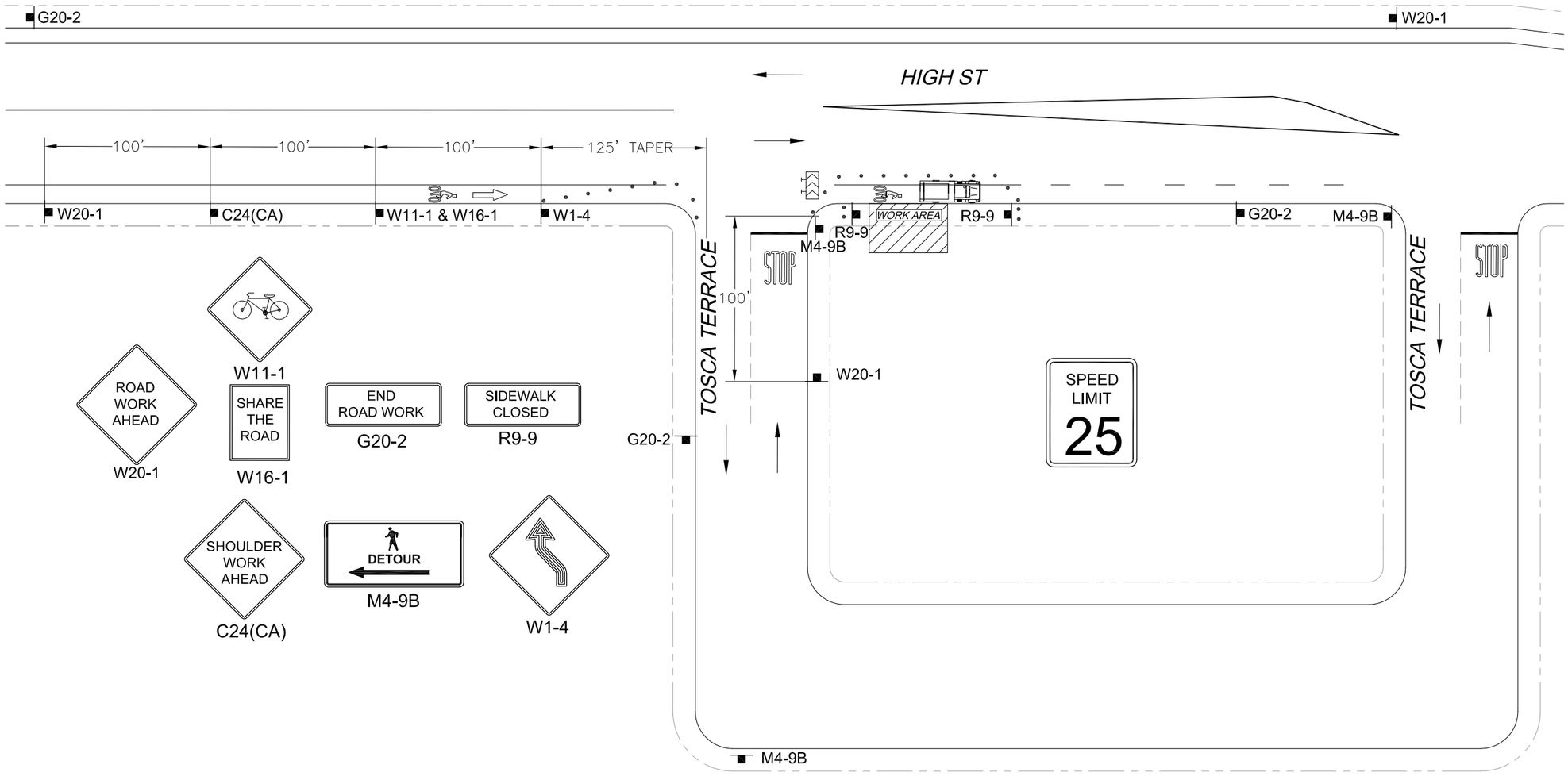
ISSUED FOR:
CONSTRUCTION

CROWN CASTLE PROJECT NO:
CA-HIGH04

REVISIONS:

1	08-05-16	100% ISSUED FOR REVIEW	DRAFTER:	RD
			CHECKER:	NHP
2	09-28-16	PG&E COMMENTS	DRAFTER:	SG
			CHECKER:	RG
3	12-13-16	VAULT DESIGN	DRAFTER:	SG
			CHECKER:	RC
4	01-17-17	CCI COMMENTS	DRAFTER:	SG
			CHECKER:	RC
5	01-31-17	CCI COMMENTS	DRAFTER:	SG
			CHECKER:	RC
			DRAFTER:	
			CHECKER:	
			DRAFTER:	
			CHECKER:	

SHEET NUMBER:
13 OF 14



LEGEND

- TYPE III BARRICADE W/SIGN
- TYPE II BARRICADE W/O SIGN
- CHANNELIZING DEVICE
- TRAFFIC CONE WITH CLIP ON SIGN
- SIGN
- (S) SIGNALIZED INTERSECTION
- ARROW PANEL (FLASHING ARROW) (WHERE REQUIRED)
- HIGH LEVEL WARNING DEVICE (FLAGTREE) (OPTIONAL)
- FLAGGER
- TANS TOW AWAY NO STOPPING ___ TO ___ (SHOW HOURS)
- TANSAT TOW AWAY NO STOPPING ANY TIME
- WORK ZONE (ACTIVITY AREA) LIMITS
- DIRECTION OF TRAFFIC (NOT PAVEMENT MARKING)
- (A) ROADWAY DESIGNATION (A THROUGH D)

1 TRAFFIC CONTROL PLAN FOR HIGH ST AND TOSCA TERRACE SANTA CRUZ, CA

TABLE A - FROM THE 2014 CALIFORNIA MUTCD

POSTED SPEED LIMIT - MPH	MERGING TAPER LENGTH "L" - FEET	DELIINEATOR SPACING D- FEET TAPER	TANGENT	SIGN SPACING ADVANCE OF TAPER & BETWEEN SIGNS - FEET
25	125	25	50	100
30	180	30	60	250
35	245	35	70	250
40	320	40	80	250
45	540	45	90	350
50	600	50	100	350
55+	1000	55	110	350

GENERAL TRAFFIC CONTROL NOTES

TRAFFIC SHALL CONFORM TO THE 2014 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE 2012 WATCH HANDBOOK.

NO LANE CLOSURES PERMITTED BEFORE 9:30A AND AFTER 3:30P

ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES

ONE LANE OF TRAFFIC IN EACH DIRECTION AND ALL HIGH VOLUME TURNING LANES SHALL BE MAINTAINED AT ALL TIMES ON ALL STREETS AT A MINIMUM LANE WIDTH OF 10 FEET.

ANY CONFLICTING SIGNS, STRIPING AND PAVEMENT MARKINGS SHALL BE REMOVED OR COVERED BEFORE TRAFFIC CONTROL IS IN PLACE. ANY SIGN, STRIPING OR PAVEMENT MARKING REMOVED OR COVERED SHALL BE REPLACED WHEN TRAFFIC CONTROL IS NO LONGER NECESSARY.

SAFE PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES.

NOT TO SCALE

MAINTAIN DRIVEWAY ACCESS AT ALL TIME

SITE NAME:
HIGH ST.
SANTA CRUZ

SITE INFORMATION:
NODE # CA-HIGH04
101 TOSCA TERRACE
SANTA CRUZ , CA

SHEET TITLE:

STAMP:

CROWN CASTLE

Crown Castle
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14 OF 14

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