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USA NORTH  
OF CENTRAL/NORTHERN CALIFORNIA  
AND NEVADA



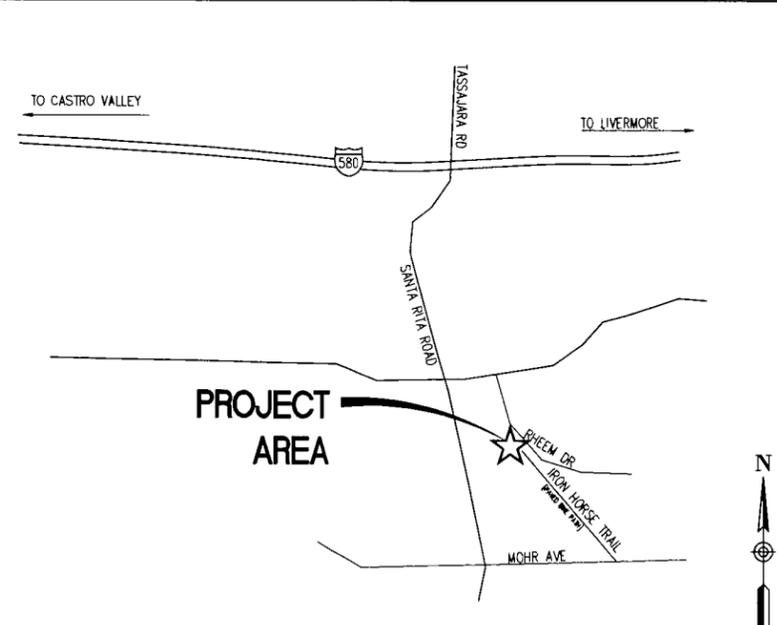
DIAL TOLL FREE  
1-800-227-2600

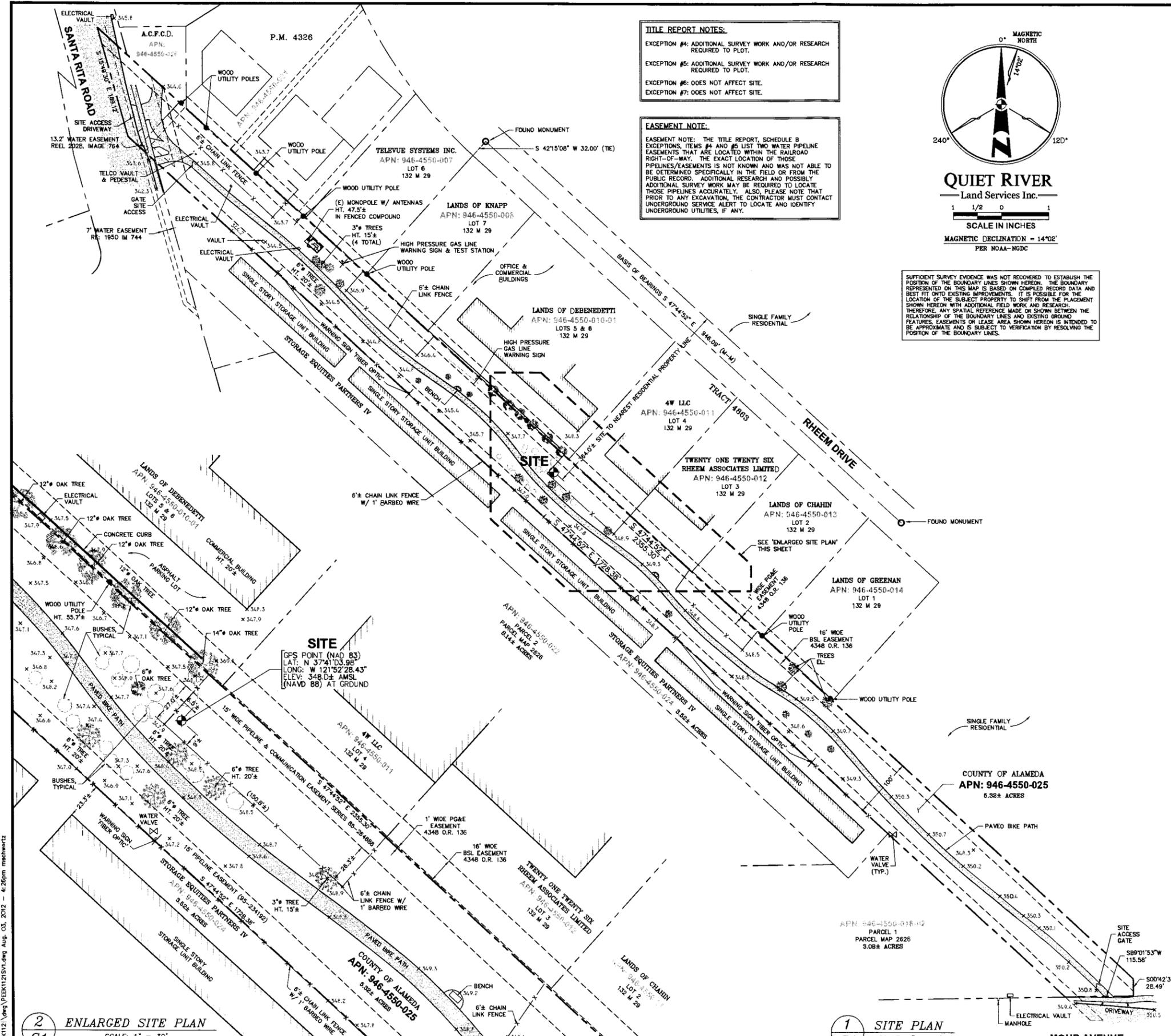
AT LEAST TWO WORKING  
DAYS BEFORE YOU DIG



**SITE NUMBER: CC4239**  
**SITE NAME: SANTA RITA RD. & IRON HORSE**  
**NORTH OF 2500 SANTA RITA ROAD**  
**PLEASANTON, CA 94566**

P11-0899

RF DATA SHEET	DIRECTIONS	PROJECT DESCRIPTION																																		
<p>DATE ISSUED: 06/20/12      REVISION: V1.3</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 70%;">DRAWING INDEX</th> <th style="width: 30%;">REV</th> </tr> </thead> <tbody> <tr><td>25736-635-AA-CC4239-T01</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-C1</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-A01</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-A02</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-A03</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-A04</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-A05</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-D01</td><td style="text-align: center;">2</td></tr> <tr><td>25736-635-AA-CC4239-L-1</td><td style="text-align: center;">0</td></tr> <tr><td>25736-635-AA-CC4239-L-2</td><td style="text-align: center;">0</td></tr> <tr><td>25736-635-AA-CC4239-L-3</td><td style="text-align: center;">0</td></tr> <tr><td>25736-635-AA-CC4239-L-4</td><td style="text-align: center;">0</td></tr> </tbody> </table>	DRAWING INDEX	REV	25736-635-AA-CC4239-T01	2	25736-635-AA-CC4239-C1	2	25736-635-AA-CC4239-A01	2	25736-635-AA-CC4239-A02	2	25736-635-AA-CC4239-A03	2	25736-635-AA-CC4239-A04	2	25736-635-AA-CC4239-A05	2	25736-635-AA-CC4239-D01	2	25736-635-AA-CC4239-L-1	0	25736-635-AA-CC4239-L-2	0	25736-635-AA-CC4239-L-3	0	25736-635-AA-CC4239-L-4	0	<p><b>DIRECTIONS FROM PLEASANTON, CA:</b></p> <ol style="list-style-type: none"> <li>START OUT GOING EAST ON ROSEWOOD DR TOWARD OLD SANTA RITA RD. 0.5 MI</li> <li>TAKE THE 2ND RIGHT ONTO SANTA RITA RD. SANTA RITA RD IS 0.4 MILES PAST OLD SANTA RITA RD. IF YOU ARE ON SANTA RITA RD AND REACH PIMLICO DR YOU'VE GONE ABOUT 0.3 MILES TOO FAR 1.2 MI</li> <li>MAKE A LEFT TURN AT MOHR AVE.</li> <li>PARK ON THE STREET AND WALK NORTH TO THE SITE USING A PAVE BIKE PATH (IRON HORSE TRAIL) NORTH OF MOHR AVE.</li> </ol>	<p>THIS IS AN APPLICATION FOR A NEW, UNMANNED AT&amp;T SERVICES FACILITY, CONSISTING OF THE INSTALLATION AND OPERATION OF ANTENNAS AND ASSOCIATED EQUIPMENT. AT&amp;T IS PROPOSING TO INSTALL INDOOR EQUIPMENT CABINETS AND RACKS INSIDE A NEW CA-APPROVED PREFABRICATED EQUIPMENT SHELTER ON CONCRETE PAD ENCLOSED BY AN EXISTING AND A NEW 6' HIGH CHAINLINK FENCE WITH PRIVACY SLATS TO MATCH EXISTING. A PORTION OF THE EXISTING CHAINLINK FENCE TO BE REMOVED AND REPLACED WITH A DOUBLE SWING ACCESS GATES WITH PRIVACY SLATS TO MATCH EXISTING. TWELVE (12) NEW PANEL ANTENNAS [TWO (2) RAD CENTERS], SIX (6) REMOTE RADIO UNITS [RRUS-11] AND ONE (1) SURGE PROTECTOR DOME UNIT ARE TO BE INSTALLED ON A NEW 55' HIGH MONOPINE. NEW EIGHTEEN (18) REMOTE RADIO UNITS [RRUW-01] AND THREE (3) SURGE PROTECTOR DOME UNITS ARE TO BE INSTALLED ON AN OUTDOOR SUPPORT RACK ON GROUND LEVEL. ONE (1) GPS ANTENNA IS TO BE INSTALLED ON THE ROOF OF NEW EQUIPMENT SHELTER.</p>								
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25736-635-AA-CC4239-T01	2																																			
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25736-635-AA-CC4239-A04	2																																			
25736-635-AA-CC4239-A05	2																																			
25736-635-AA-CC4239-D01	2																																			
25736-635-AA-CC4239-L-1	0																																			
25736-635-AA-CC4239-L-2	0																																			
25736-635-AA-CC4239-L-3	0																																			
25736-635-AA-CC4239-L-4	0																																			
	<b>VICINITY MAP</b>	<b>PROJECT INFORMATION</b>																																		
		<p>SITE ADDRESS: NORTH OF 2500 SANTA RITA ROAD PLEASANTON, CA 94566</p> <p>PROPERTY OWNER: COUNTY OF ALAMEDA 1221 OAK STREET #536 OAKLAND, CA 94612</p> <p>APPLICANT ADDRESS: AT&amp;T 4430 ROSEWOOD DRIVE, BLDG. #3, 2ND FLOOR PLEASANTON, CA 94588</p> <p>JURISDICTION: CITY OF PLEASANTON</p> <p>APN: 946-4550-025</p> <p>ZONING DISTRICT: ---</p> <p>LATITUDE: 37° 41' 3.98" N (NAD 83)</p> <p>LONGITUDE: 121° 52' 28.43" W (NAD 83)</p> <p>ELEVATION: ±348' AMSL</p> <p>HEIGHT OF STRUCTURE: ±55' AGL</p> <p>LEASE AREA: 20'-0" X 35'-0" (±70D SQ. FT.)</p> <p>CURRENT USE: ---</p> <p>PROPOSED USE: TELECOMMUNICATIONS FACILITY</p>																																		
<b>CODE COMPLIANCE</b>		<b>SITE QUALIFICATION PARTICIPANT</b>																																		
<p>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 CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <ol style="list-style-type: none"> <li>2010 CALIFORNIA ADMINISTRATIVE CODE</li> <li>2010 CALIFORNIA BUILDING CODE</li> <li>2010 CALIFORNIA ELECTRICAL CODE</li> <li>2010 CALIFORNIA MECHANICAL CODE</li> <li>2010 CALIFORNIA PLUMBING CODE</li> <li>2010 CALIFORNIA FIRE CODE</li> <li>ANY LOCAL BUILDING CODE AMENDMENTS TO THE ABOVE</li> <li>CITY/COUNTY ORDINANCES</li> </ol> <p>HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED IN ACCORDANCE WITH CALIFORNIA ADMINISTRATIVE STATE CODE PART 2, TITLE 24, CHAPTER 11B, SECTION 1103B.</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>NAME</th> <th>COMPANY</th> <th>CONTACT NUMBER</th> </tr> </thead> <tbody> <tr> <td><b>A/E</b></td> <td>SOHAIL A. SHAH (EOR) PAULO PUELIU</td> <td>PDC CORPORATION</td> <td>(925) 606-5868 (510) 385-5541</td> </tr> <tr> <td><b>SAC</b></td> <td>TOM JOHNSON</td> <td>TRILLIUM CONSULTING</td> <td>(714) 206-2879 M (925) 397-3009 F</td> </tr> <tr> <td><b>RF</b></td> <td>MUHAMMAD ASIF</td> <td>AT&amp;T</td> <td>(925) 468-3942</td> </tr> <tr> <td><b>ZONING</b></td> <td>TOM JOHNSON</td> <td>TRILLIUM CONSULTING</td> <td>(714) 206-2879 M (925) 397-3009 F</td> </tr> <tr> <td><b>LANALORO</b></td> <td>---</td> <td>COUNTY OF ALAMEDA</td> <td>---</td> </tr> <tr> <td><b>CONSTRUCTION</b></td> <td>C.E. RASK</td> <td>BECHTEL</td> <td>(925) 983-2320</td> </tr> </tbody> </table>		NAME	COMPANY	CONTACT NUMBER	<b>A/E</b>	SOHAIL A. SHAH (EOR) PAULO PUELIU	PDC CORPORATION	(925) 606-5868 (510) 385-5541	<b>SAC</b>	TOM JOHNSON	TRILLIUM CONSULTING	(714) 206-2879 M (925) 397-3009 F	<b>RF</b>	MUHAMMAD ASIF	AT&T	(925) 468-3942	<b>ZONING</b>	TOM JOHNSON	TRILLIUM CONSULTING	(714) 206-2879 M (925) 397-3009 F	<b>LANALORO</b>	---	COUNTY OF ALAMEDA	---	<b>CONSTRUCTION</b>	C.E. RASK	BECHTEL	(925) 983-2320						
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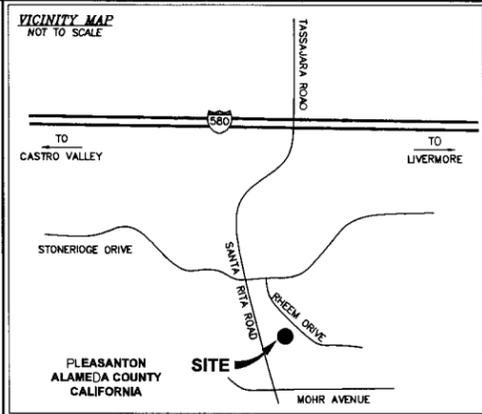


**TITLE REPORT NOTES:**  
 EXCEPTION #4: ADDITIONAL SURVEY WORK AND/OR RESEARCH REQUIRED TO PLOT.  
 EXCEPTION #5: ADDITIONAL SURVEY WORK AND/OR RESEARCH REQUIRED TO PLOT.  
 EXCEPTION #6: DOES NOT AFFECT SITE.  
 EXCEPTION #7: DOES NOT AFFECT SITE.

**EASEMENT NOTE:**  
 EASEMENT NOTE: THE TITLE REPORT, SCHEDULE B EXCEPTIONS, ITEMS #4 AND #5 LIST TWO WATER PIPELINE EASEMENTS THAT ARE LOCATED WITHIN THE RAILROAD RIGHT-OF-WAY. THE EXACT LOCATION OF THOSE PIPELINES/EASEMENTS IS NOT KNOWN AND WAS NOT ABLE TO BE DETERMINED SPECIFICALLY IN THE FIELD OR FROM THE PUBLIC RECORD. ADDITIONAL RESEARCH AND POSSIBLY ADDITIONAL SURVEY WORK MAY BE REQUIRED TO LOCATE THOSE PIPELINES ACCURATELY. ALSO, PLEASE NOTE THAT PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT UNDERGROUND SERVICE ALERT TO LOCATE AND IDENTIFY UNDERGROUND UTILITIES, IF ANY.



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.



DATE: 08/03/12  
 DRAWN BY: MAS  
 FILE NO.: PEEK1121

REVISIONS		
DATE	DESCRIPTION	INITIAL
08/30/11	90% ISSUE	MAS
11/7/11	100% COMPLETE	MAS
08/03/12	TITLE REPORT	MAS

**PROPERTY INFORMATION**  
 Owner: COUNTY OF ALAMEDA  
 Address: 1221 OAK STREET #536  
 OAKLAND, CA 94612  
 Site: SANTA RITA ROAD & IRONHORSE  
 Address: NORTH OF 2500 SANTA RITA ROAD  
 PLEASANTON, CA 94566  
 Assessor's Parcel Number: 946-4550-025  
 Height of Building/Tower: N/A  
 Title Report: TITLE REPORT FOR THIS PROPERTY WAS PROVIDED BY NORTH AMERICAN TITLE COMPANY, REPORT NO. 54606-1175437-12, DATED AS OF JULY 2, 2012.  
 \*SEE TITLE REPORT NOTES, THIS SHEET.  
 Legal Description: PROPERTY SITUATED IN THE CITY OF PLEASANTON, COUNTY OF ALAMEDA, STATE OF CALIFORNIA, AS GENERALLY SHOWN UPON THIS PLAN.

**FEMA FLOOD ZONE DESIGNATION** National Flood Insurance Program  
 County: ALAMEDA Effective Date: AUGUST 3, 2009  
 Community-Panel Number: 06001C-0336-G  
 The Flood Zone Designation for this site as plotted by scale is:  
 X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or drainage areas less than 1 square mile and areas protected by levees from 100 year flood.

**SURVEY DATA**  
 NAD 83 Datum:  
 Lat: N 37°41'03.98" Long: W 121°52'28.43"  
 Datum Base: NAD 83 Equipment Used: Topcon Hiperlite Receiver  
 (See Note 2)  
 Site Ground Elevation: 348.0± AMSL (NAVD 88) AT GPS SITE LOCATION  
 Basis of Elevations: GLOBAL POSITIONING SYSTEM (GPS) (SEE NOTE 2)  
 Basis of Bearings: MAP OF TRACT 5062 'AMARCO MEADOWS' FILED IN BOOK 136 AT PAGE 23 IN THE RECORDS OF ALAMEDA COUNTY, AND TWO FOUND MONUMENTS AS SHOWN.  
 Date of Field Survey: 09/22/2011

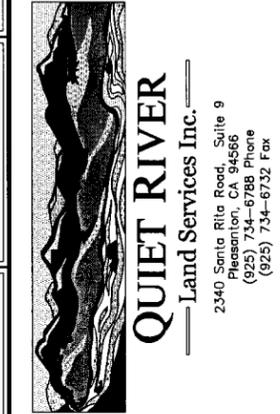
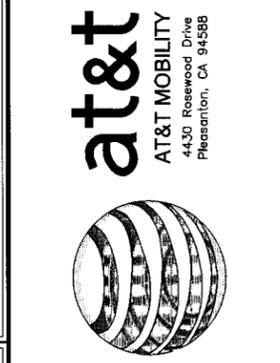
**NOTES**  
 1.) This is not a boundary survey. This is a specialized topographic map with property lines and easements being a graphic depiction of various information gathered from preliminary title reports, back-up documents of record, maps and available monuments found during the field survey. No property monuments were set. No title research was performed by Quiet River Land Services, Inc.  
 2.) The latitude, longitude and elevation shown hereon were derived from post-processed L-1/L-2 data collected using Novatel Global Positioning System (GPS) and a Topcon Hiperlite Receiver. Topcon specifications report decimal 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, added 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**  
 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 ±15 feet horizontally, and the ground elevation, reported in NAVD 88 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.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**LEGEND**

APN:	ASSESSOR'S PARCEL NUMBER	ASPHALT
CP:	CONTROL POINT	CONCRETE
EL:	ELEVATION	CONTROL POINT
FH:	FIRE HYDRANT	FOUND MONUMENT
FND:	FOUND	GPS POINT
HT:	HEIGHT	WATER VALVE
M-N:	MONUMENT TO MONUMENT	SPOT ELEVATION
(M-M):	MONUMENT TO MONUMENT	TEMPORARY BENCHMARK
P.O.B.:	POINT OF BEGINNING	
P.O.C.:	POINT OF COMMENCEMENT	
PP:	POWER POLE	
(TYP.):	TYPICAL	



EXISTING SITE CONDITIONS

**CC4239**  
 SANTA RITA ROAD & IRONHORSE  
 NORTH OF 2500 SANTA RITA RD.  
 PLEASANTON, CA 94566

**C1**  
 OF 1 SHEET

2 ENLARGED SITE PLAN  
 C1 SCALE: 1" = 30'

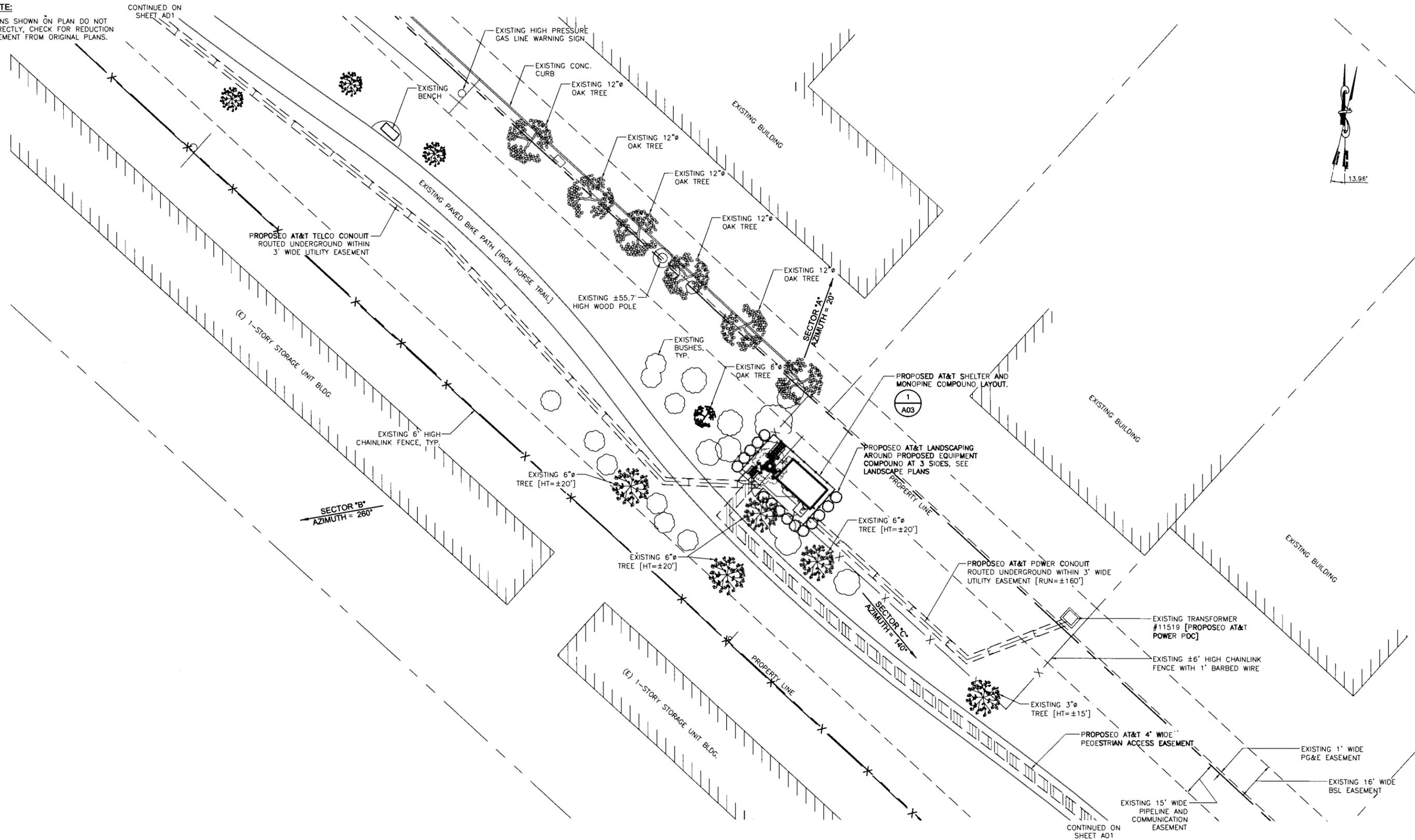
1 SITE PLAN  
 C1 SCALE: 1" = 80'

P:\PEEK1121\dwg\PEEK1121SV1.dwg Aug. 03, 2012 4:26pm mshahwartz



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IF DIMENSIONS SHOWN ON PLAN DO NOT SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.



**ENLARGED SITE PLAN**



1062 CONCANNON BLVD.  
LIVERMORE, CA 94550  
TEL: (925) 606-5868

**SANTA RITA RD. & IRON HORSE  
CC4239**  
NORTH OF 2500 SANTA RITA ROAD  
PLEASANTON, CA 94586



4430 ROSEWOOD DRIVE, BLDG. #3, 2ND FLOOR  
PLEASANTON, CA 94588

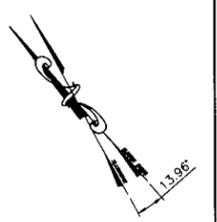
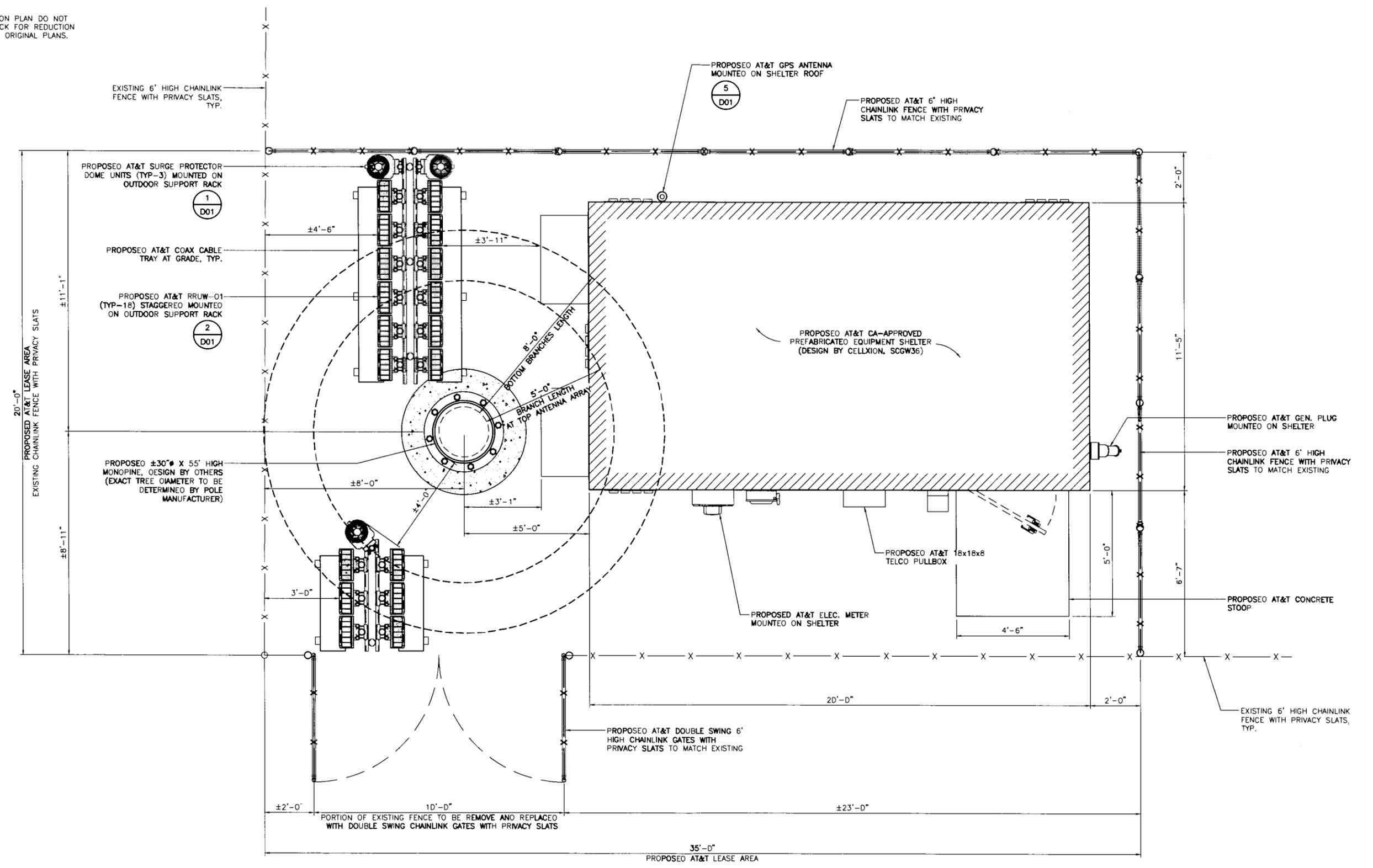
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SCALE: AS NOTED    DESIGNED BY:    DRAWN BY:

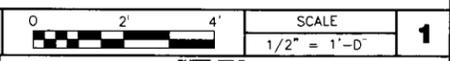
SHEET TITLE			
<b>ENLARGED SITE PLAN</b>			
JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	A02	2

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**SHELTER AND MONOPINE COMPOUND LAYOUT**



**SANTA RITA RD. & IRON HORSE  
CC4239**  
NORTH OF 2500 SANTA RITA ROAD  
PLEASANTON, CA 94566



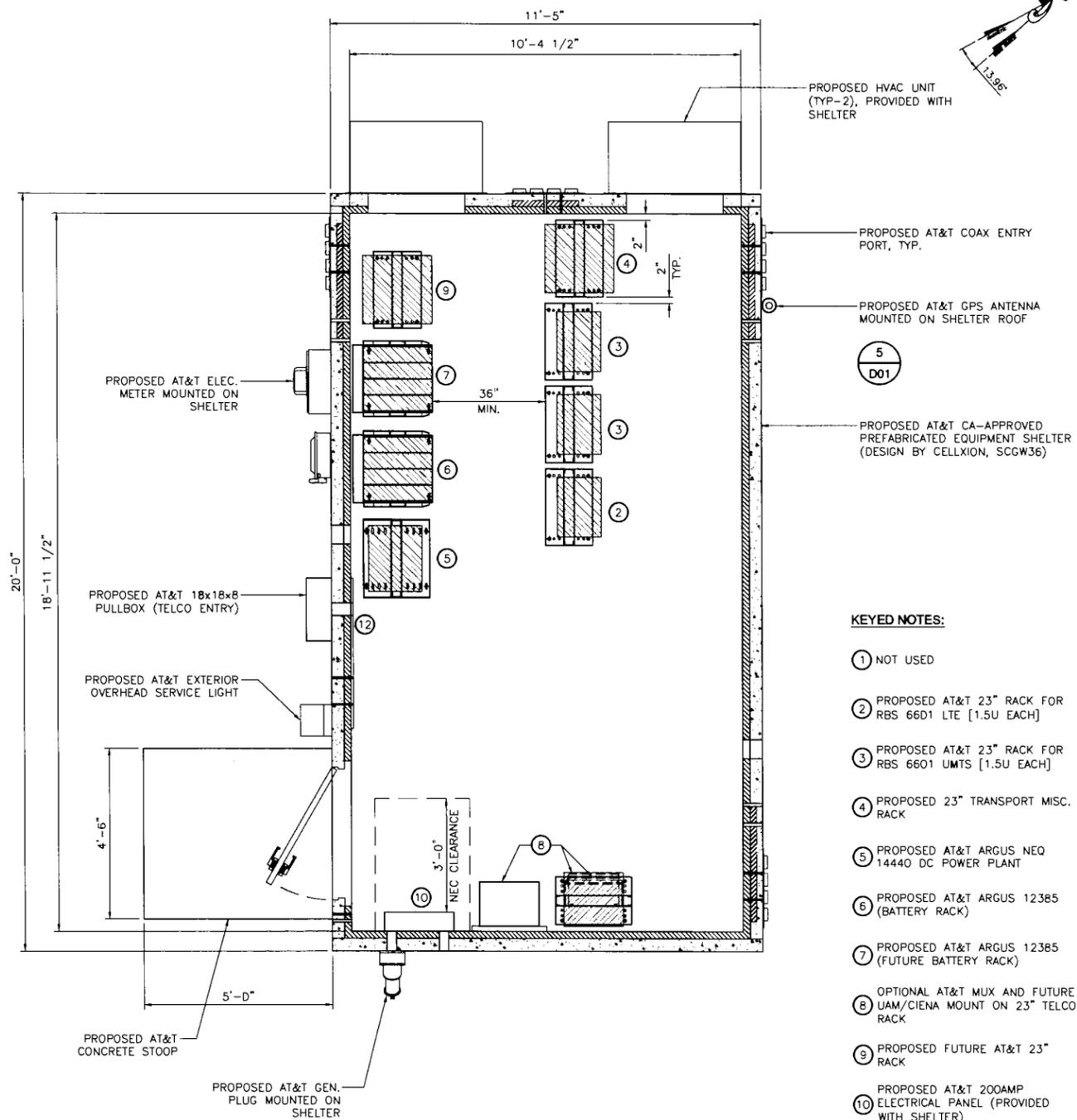
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SCALE: AS NOTED      DESIGNED BY:      DRAWN BY:

SHEET TITLE			
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**KEYED NOTES:**

- ① NOT USED
- ② PROPOSED AT&T 23" RACK FOR RBS 6601 LTE [1.5U EACH]
- ③ PROPOSED AT&T 23" RACK FOR RBS 6601 UMS [1.5U EACH]
- ④ PROPOSED 23" TRANSPORT MISC. RACK
- ⑤ PROPOSED AT&T ARGUS NEQ 14440 DC POWER PLANT
- ⑥ PROPOSED AT&T ARGUS 12385 (BATTERY RACK)
- ⑦ PROPOSED AT&T ARGUS 12385 (FUTURE BATTERY RACK)
- ⑧ OPTIONAL AT&T MUX AND FUTURE UAM/CIENA MOUNT ON 23" TELCO RACK
- ⑨ PROPOSED FUTURE AT&T 23" RACK
- ⑩ PROPOSED AT&T 200AMP ELECTRICAL PANEL (PROVIDED WITH SHELTER)
- ⑪ NOT USED
- ⑫ PROPOSED AT&T TELCO BACKBOARD (48x48x3/4")

**EQUIPMENT LAYOUT**

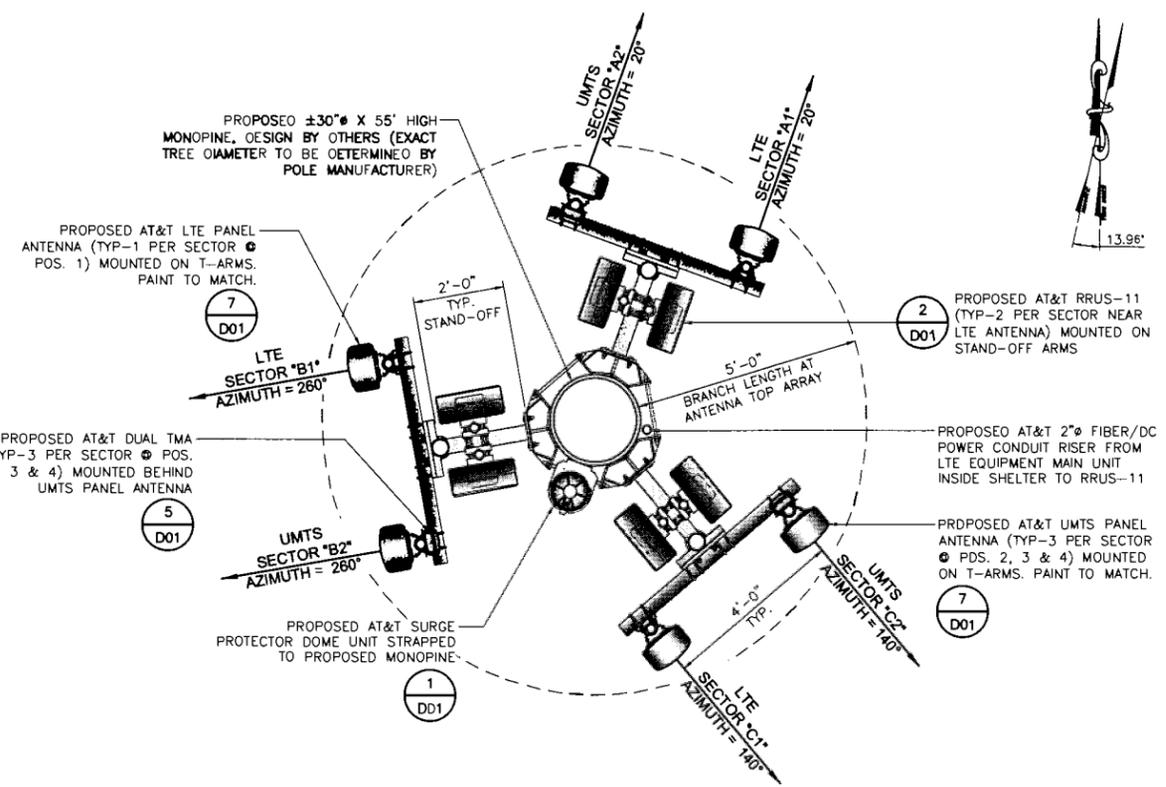


1062 CONCANNON BLVD.  
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TEL: (925) 606-5868

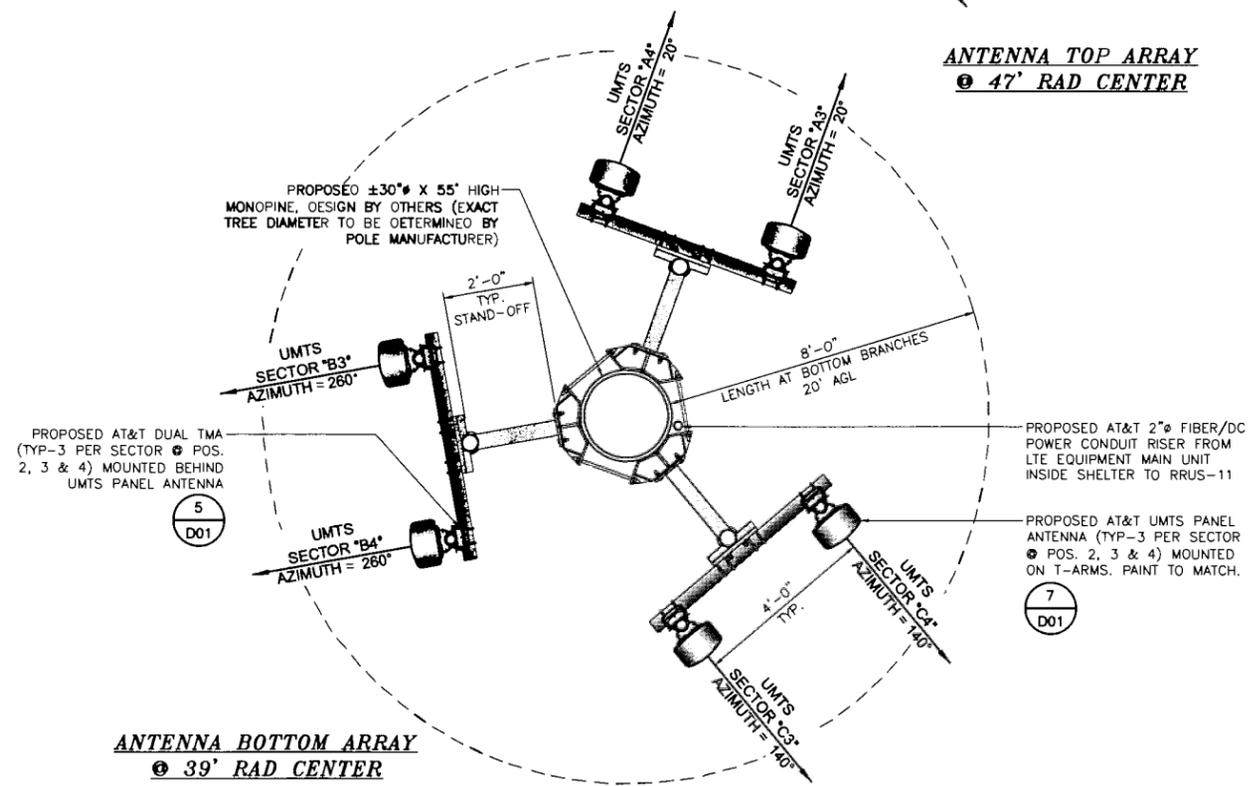
**SANTA RITA RD. & IRON HORSE  
CC4239**  
NORTH OF 2500 SANTA RITA ROAD  
PLEASANTON, CA 94566



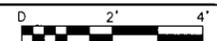
4430 ROSEWOOD DRIVE, BLDG. #3, 2ND FLOOR  
PLEASANTON, CA 94568



**ANTENNA TOP ARRAY  
④ 47' RAD CENTER**

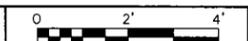


**ANTENNA BOTTOM ARRAY  
④ 39' RAD CENTER**



SCALE  
1/2" = 1'-0"

**1 ANTENNA PLANS**



SCALE  
1/2" = 1'-0"

**2**

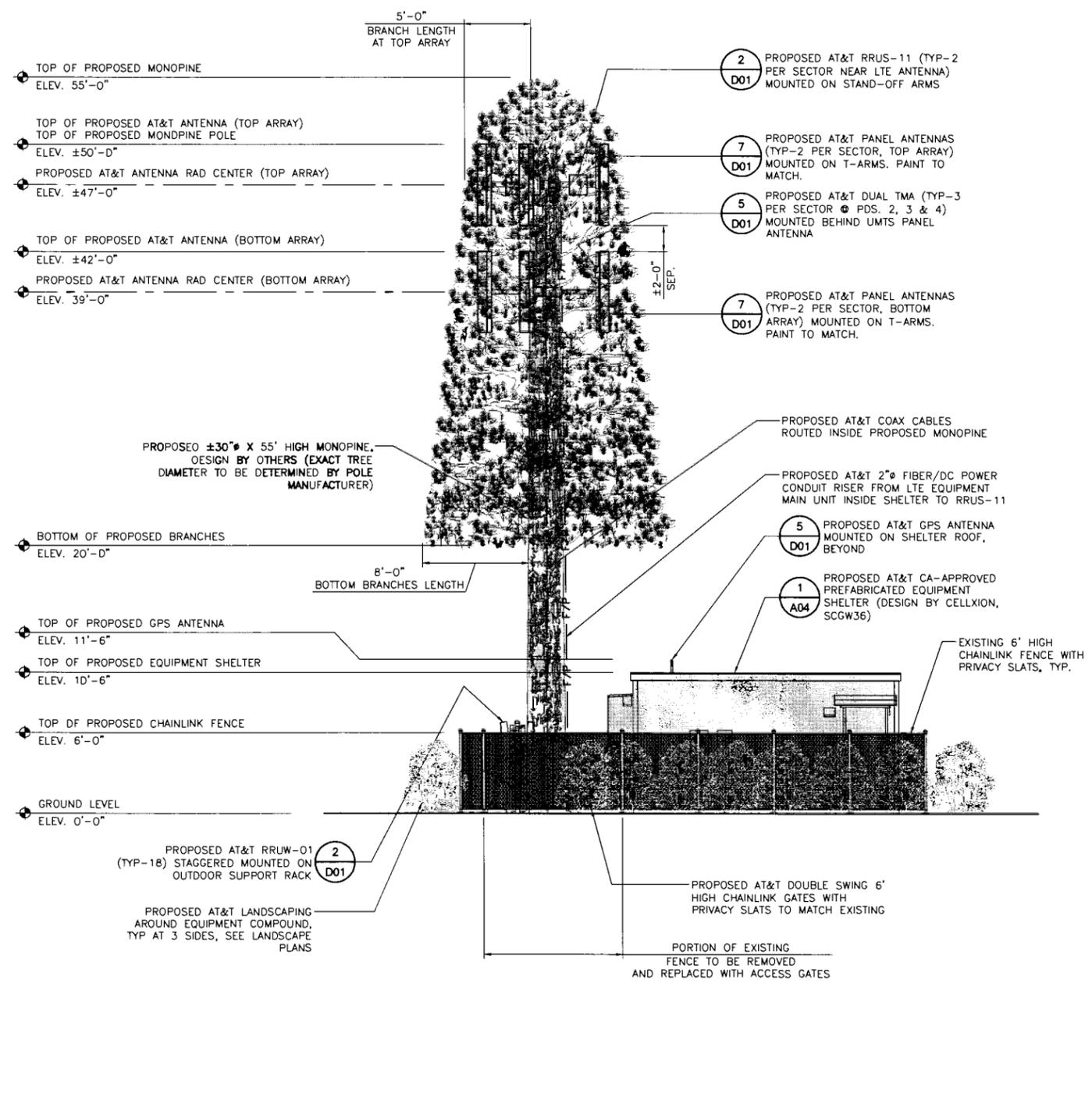
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0	07/11/12	ISSUED FOR ZONING APPROVAL	RSD	MI	SAS

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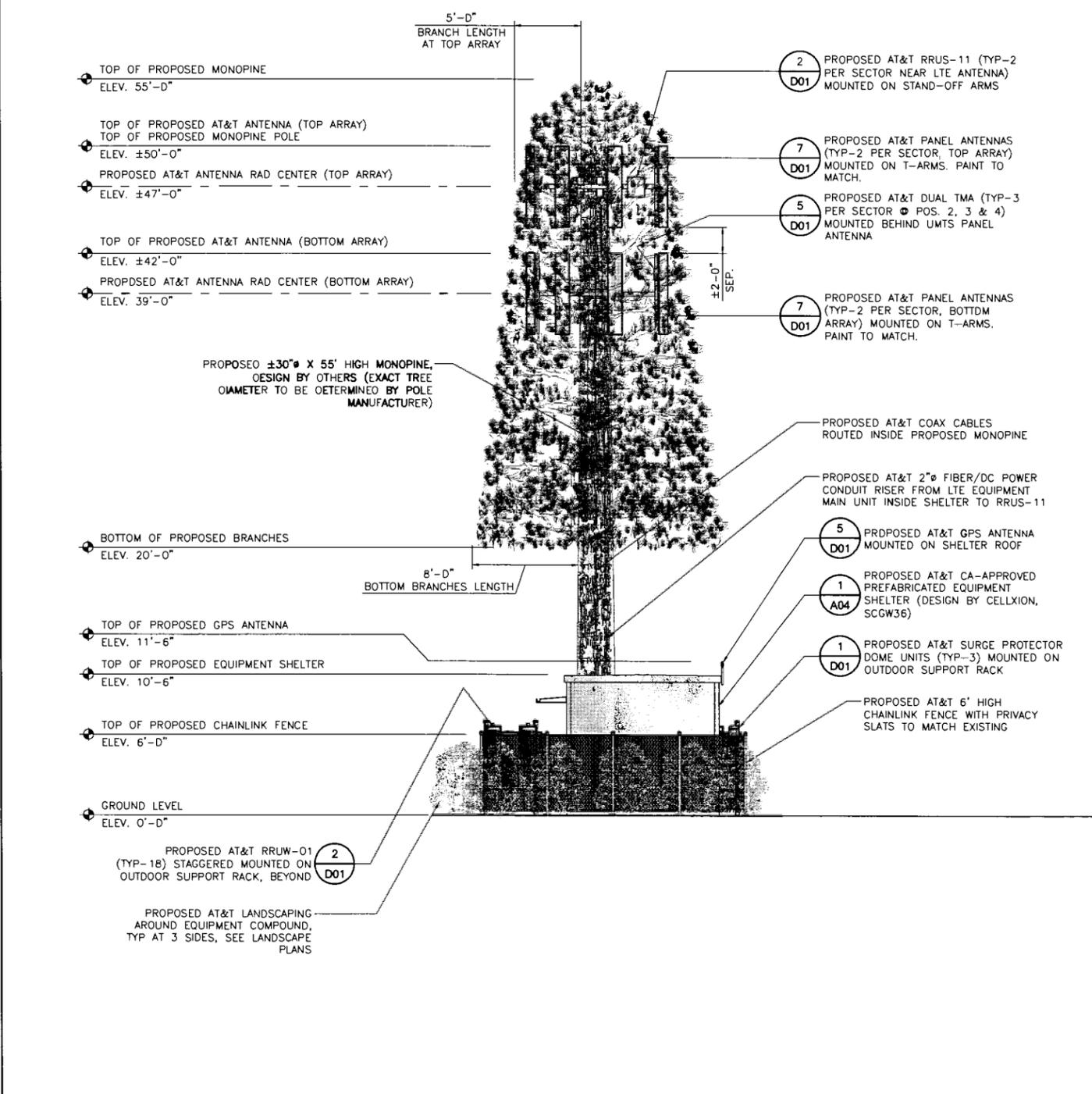
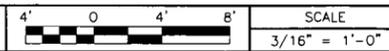
SHEET TITLE			
<b>EQUIPMENT LAYOUT AND ANTENNA PLANS</b>			
JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	A04	2

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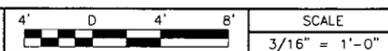
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**SOUTHWEST ELEVATION**

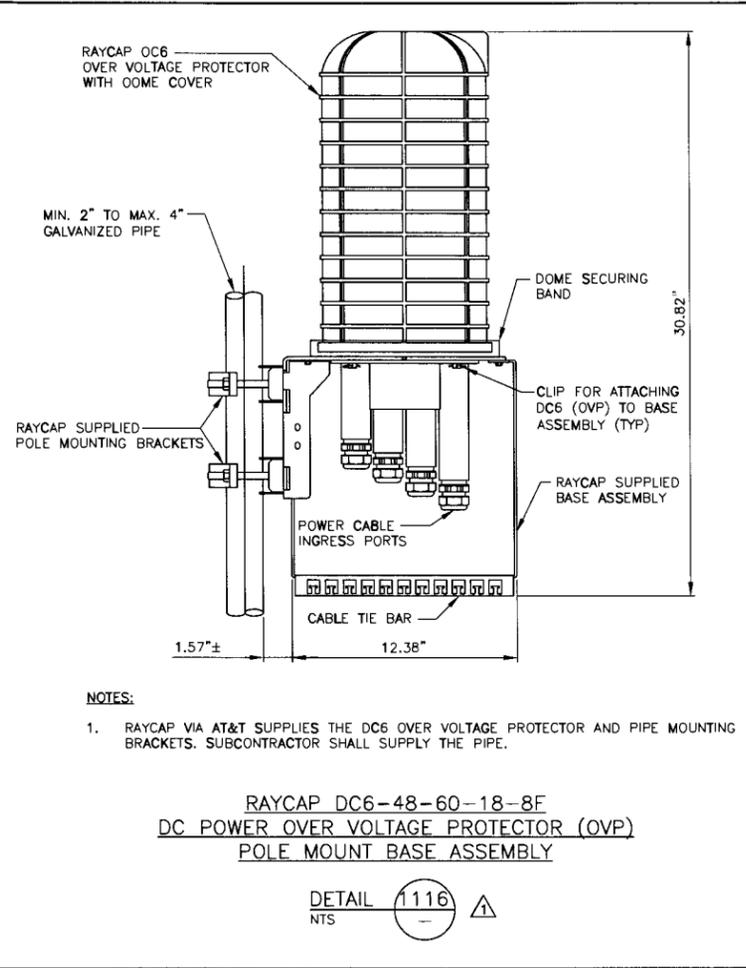


**NORTHWEST ELEVATION**



 1062 CONCANNON BLVD. LIVERMORE, CA 94550 TEL: (925) 606-5868	<b>SANTA RITA RD. &amp; IRON HORSE</b> <b>CC4239</b> NORTH OF 2500 SANTA RITA ROAD PLEASANTON, CA 94566	 443D ROSEWOOD DRIVE, BLDG. #3, 2ND FLOOR PLEASANTON, CA 94588	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>REVISIONS</th> <th>BY</th> <th>CHK</th> <th>APP'D</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>11/19/12</td> <td>ISSUED FOR ZONING REVIEW</td> <td>MIF</td> <td>MI</td> <td>SAS</td> </tr> <tr> <td>1</td> <td>09/25/12</td> <td>ISSUED FOR ZONING REVIEW</td> <td>MIF</td> <td>MI</td> <td>SAS</td> </tr> <tr> <td>0</td> <td>07/11/12</td> <td>ISSUED FOR ZONING APPROVAL</td> <td>RSD</td> <td>MI</td> <td>SAS</td> </tr> </tbody> </table>	NO.	DATE	REVISIONS	BY	CHK	APP'D	2	11/19/12	ISSUED FOR ZONING REVIEW	MIF	MI	SAS	1	09/25/12	ISSUED FOR ZONING REVIEW	MIF	MI	SAS	0	07/11/12	ISSUED FOR ZONING APPROVAL	RSD	MI	SAS	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">SHEET TITLE</td> </tr> <tr> <td colspan="4" style="text-align: center;"><b>ELEVATIONS</b></td> </tr> <tr> <td style="text-align: center;">JOB NUMBER</td> <td style="text-align: center;">DRAWING NUMBER</td> <td style="text-align: center;">SHEET NO.</td> <td style="text-align: center;">REV</td> </tr> <tr> <td style="text-align: center;">25736-635-AA</td> <td style="text-align: center;">CC4239</td> <td style="text-align: center;">A05</td> <td style="text-align: center;">2</td> </tr> </table>	SHEET TITLE				<b>ELEVATIONS</b>				JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV	25736-635-AA	CC4239	A05	2
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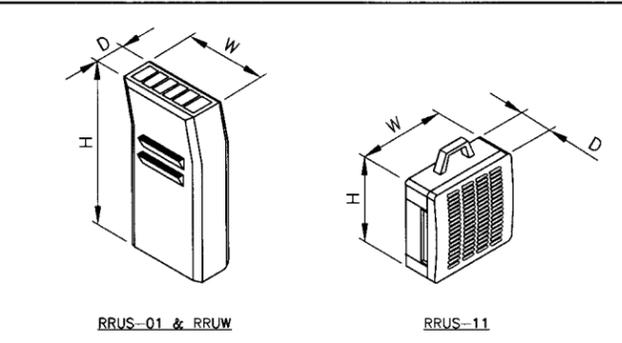
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**NOTES:**  
 1. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

RAYCAP DC6-48-60-18-8F  
 DC POWER OVER VOLTAGE PROTECTOR (OVP)  
 POLE MOUNT BASE ASSEMBLY

DETAIL 1116  
 NTS



**SIZE AND WEIGHT TABLE**

RRH	WIDTH	DEPTH	HEIGHT	WEIGHT W/O BRACKET
RRUS-01 /RRUW WITHOUT SOLAR SHIELD	13.8"	4.4"	23.6"	39 LBS
RRUS-01 /RRUW WITH SOLAR SHIELD	15.1"	6.7"	25.0"	44 LBS
RRUS11 (700 MHz) WITHOUT SOLAR SHIELD	16.3"	5.8"	16.3"	44 LBS
RRUS11 (700 MHz) WITH SOLAR SHIELD	17.8"	7.2"	17.3"	49 LBS
RRUS11 (AWS 1700/2100 MHz) WITHOUT SOLAR SHIELD	16.3"	5.8"	16.3"	50 LBS
RRUS11 (AWS 1700/2100 MHz) WITH SOLAR SHIELD	17.8"	7.2"	17.3"	55 LBS

ERICSSON  
 REMOTE RADIO UNIT  
 (RRU)

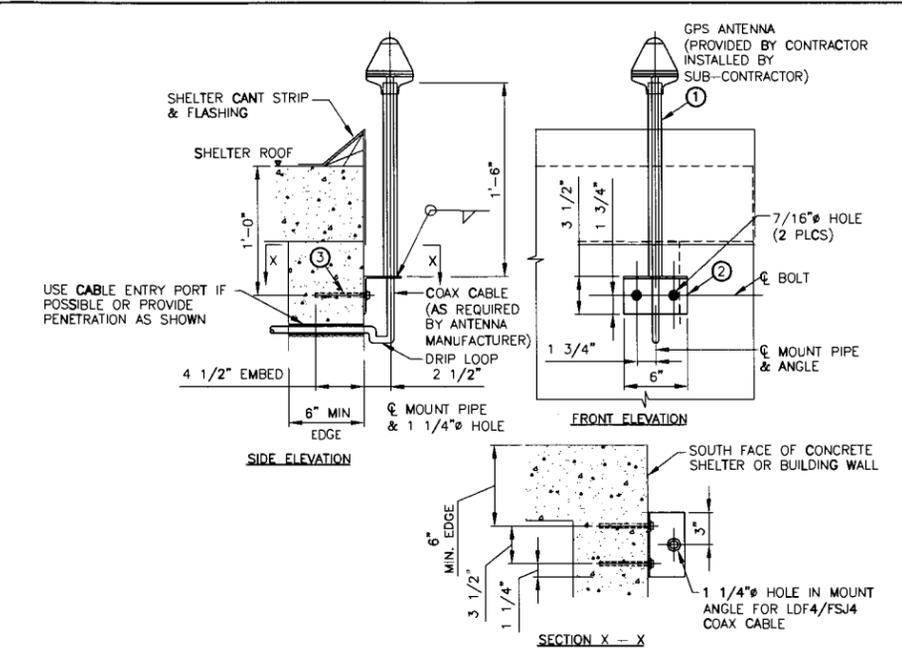
DETAIL 1131  
 NTS

**DC SURGE PROTECTION** 1

**RRU DETAIL** 2

**NOT USED** 3

**NOT USED** 4



**BILL OF MATERIALS**

ITEM#	DESCRIPTION	QUANTITY (each)
①	1 1/2" O.D. x 1'-6" LG. GALV STEEL PIPE	1
②	L 3 1/2 x 3 1/2 x 1/4 x 0'-6" LG. GALV STEEL MOUNT ANGLE	1
③	HILTI KB TZ 3/8" W/ 4 1/2" MIN. EMB. (GALVANIZED) EXPANSION BOLTS	2

**NOTES:**  
 1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.  
 2. ALL GPS ANTENNA LOCATIONS **MUST BE** ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.

E911 - GPS ANTENNA  
 WALL MOUNTING DETAIL FOR NEW BUILD

DETAIL 1324  
 NTS

**GPS ANTENNA DETAIL** 5

**NOT USED** 6

**NOT USED** 7

**ANTENNA AND COAX CABLE SCHEDULE**

BAND	FREQUENCIES, MHZ	POLARIZATION	RET	L, IN	W, IN	D, IN	WEIGHT, LB
DUAL	698-2180	DUAL	ATM200-0D2	72.7	11.9	7.1	47.4

**NOTES:**  
 1. ALL MATERIALS ON THE ABOVE TABLE SHALL BE PROVIDED BY THE AT&T WIRELESS TO THE CONTRACTOR FOR INSTALLATION.  
 2. CONTRACTOR SHALL AS-BUILT CABLE LENGTHS AND PROVIDE ANTENNA SERIAL NUMBERS ON RED-LINED DRAWINGS.  
 3. COAX GROUND KITS, COAX WEATHER PROOFING, SNAP-IN HANGER CLAMPS AND HOISTING GRIPS SHALL BE PROVIDED BY THE AT&T WIRELESS TO THE CONTRACTOR FOR INSTALLATION.  
 4. CONTRACTOR MUST ALSO INSTALL THE COAXIAL CABLES FOR THE FUTURE ANTENNAS.  
 5. CONTRACTOR TO REFER TO B.O.M. AND RF BUILD SHEET FOR NUMBER AND TYPE OF ANTENNA(S) TO INSTALL.

**PDC CORPORATION**

1062 CONCANNON BLVD  
 LIVERMORE, CA 94550  
 TEL: (925) 606-5868

**SANTA RITA RD. & IRON HORSE**  
**CC4239**  
 NORTH OF 2500 SANTA RITA ROAD  
 PLEASANTON, CA 94566

**at&t**

443D ROSEWOOD DRIVE, BLDG. #3, 2ND FLOOR  
 PLEASANTON, CA 94588

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SCALE: AS NOTED      DESIGNED BY:      DRAWN BY:

**SHEET TITLE**

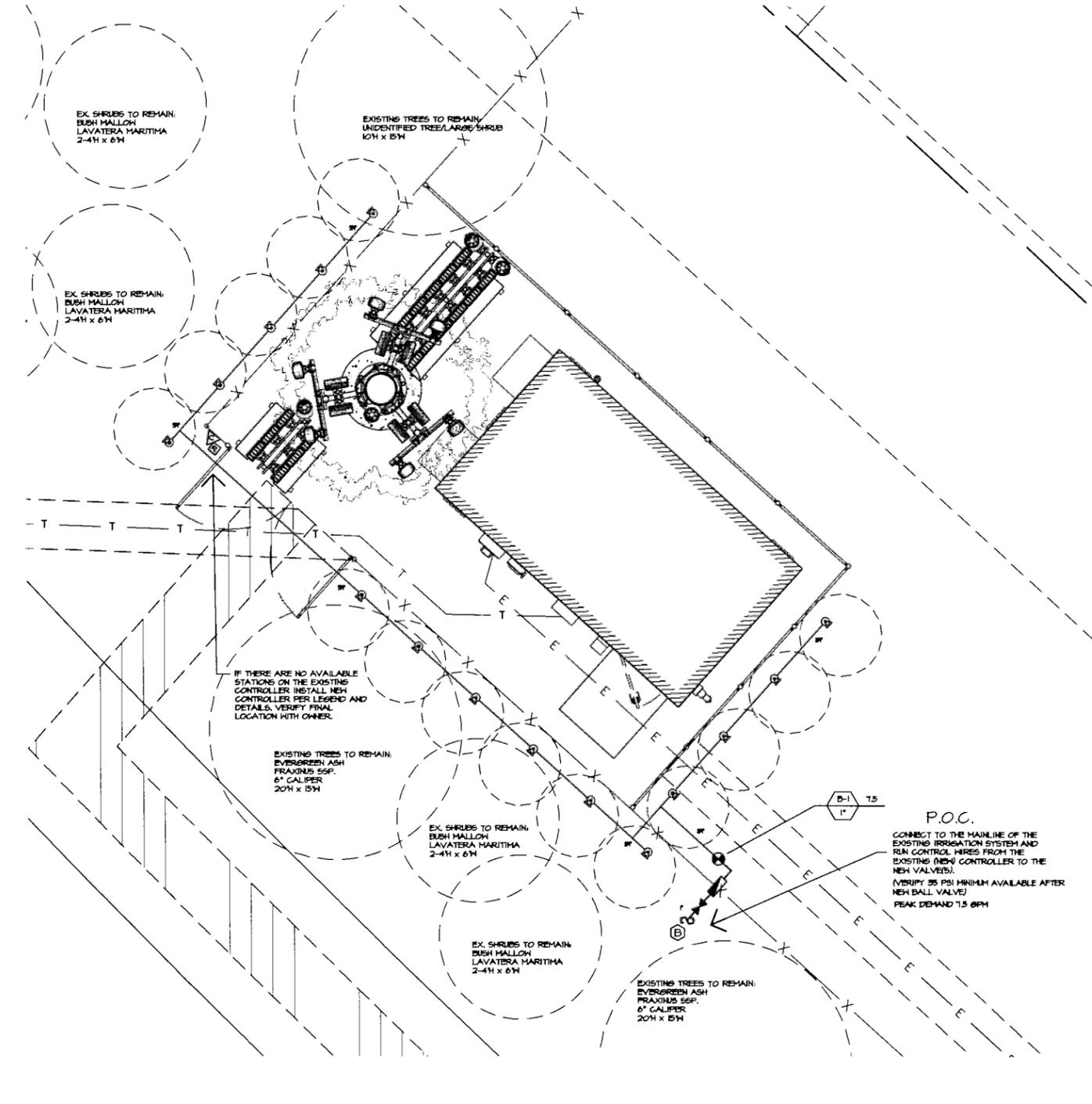
**DETAILS**

JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	D01	2

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**EQUIPMENT LEGEND**

SYMBOL	DESCRIPTION	REVISION	DETAIL
[M]	EXISTING WATER METER AND SERVICE LINE (VERIFY SIZES AND FUNCTION IN THE FIELD)		—
[Symbol]	NECO MODEL T18 BRASS PRESSURE TYPE BACKFLOW PREVENTER-12" ABOVE HIGHEST OUTLET. USE 1/2" BRASS ONLY IF EXISTING SYSTEM HAS NONE OR IS INOPERABLE.		C
[Symbol]	NECO T800A BALL VALVE (LINE SIZE)		B
[Symbol]	WILKENS YSER WYE STRAINER (LINESIZE)		—
[Symbol]	WILKENS #500 PRESSURE REGULATOR (LINESIZE). INSTALL ONLY IF EXISTING STATIC PRESSURE IS GREATER THAN 80 P.S.I.		—
[Symbol]	RAIN BIRD ESP-CP SERIES REMOTE CONTROL VALVE. INSTALL IN SHRUB BEDS WHEREVER POSSIBLE IN RECTANGULAR VALVE BOX AT RIGHT ANGLES TO HARDSCAPE.		D
[Symbol]	RAINBIRD ESP-SHT CONTROLLER (4 STATION) IN OUTDOOR LOCKING HALL MOUNT BOX. INSTALL INCLUDED WEATHER STATION ON FASCIA BOARD OR CONTROLLER BOX/PEDESTAL. SENSOR TO HAVE CLEAR VIEW OF SKY.		A
[Symbol]	PVC WATER PIPE CL 315 (MAINLINE 2" AND LARGER)		—
[Symbol]	PVC WATER PIPE SCH. 40 (MAINLINE 1-1/2" AND SMALLER)		—
[Symbol]	PVC WATER PIPE CL 200 3/4"-1-1/2" (LATERALS)		—
[Symbol]	PVC PIPESLEEVE SCH. 40 - 2" MIN. OR 2X DIA. OF PIPE OR WIRE BUNDLE. INSTALL UNDER ALL STREET OR DRIVE CROSSINGS.		—

**SPRINKLER HEADS**

SYMBOL	DESCRIPTION	REVISION	PSI	RADIUS	FIELD	DETAIL
[Symbol]	5 SERIES STREAM BUBBLER SPRINKLER					
[Symbol]	RAIN BIRD M306-50-B 6" POP-UP SPRAY	30		50 5 FT.	1.05 IN/HR	B

ANTI-DRAIN CHECK VALVES (ADV) SHALL BE INSTALLED AT ANY WATER OUTLET SUPPLYING LOW HEAD DRAINAGE - USE RAINBIRD SAMS FOR POP-UPS - USE HUNTER HGV 50H-50P OR VALCON V5000 SERIES AT RISERS.



**NOTES FOR MODIFYING EXISTING SYSTEMS**

THIS PROJECT IS A MODIFICATION OF AN EXISTING SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING SITE CONDITIONS AND EQUIPMENT RELATED TO THIS SYSTEM. THIS VERIFICATION SHALL INCLUDE, BUT IS NOT LIMITED TO, THE EXISTING PRESSURE AND FLOW AVAILABLE, THE MAINLINE SIZE AND LOCATION, THE EXISTENCE, LOCATION AND FUNCTION OF VALVES, MASTER VALVES, BACKFLOW AND CONTROLLER. CONTRACTOR SHALL NOTIFY THE O.A.R. (OWNER'S AUTHORIZED REPRESENTATIVE) IMMEDIATELY OF ANY DISCREPANCIES AND/OR CONFLICTS BETWEEN THE FIELD VERIFICATION AND THE DRAWINGS.

WATER MUST BE PROVIDED TO ALL PLANT MATERIAL DURING AND AFTER CONSTRUCTION. THE TYPE AND AMOUNT OF WATER APPLIED SHALL MAINTAIN THE VEGETATION IN A HEALTHY, DISEASE RESISTANT CONDITION.

THE CONTRACTOR SHALL CUT, CAP AND OR DIVERT IRRIGATION LINES PRIOR TO SITE DEMOLITION OR EXCAVATION IN ORDER TO PRESERVE WATERING TO THE REMAINING SITE AREAS DURING AND AFTER CONSTRUCTION.

THE CONTRACTOR SHALL ADD NEW HEADS TO MATCH THE EXISTING SYSTEM AND ADJUST/RELOCATE EXISTING SPRINKLER HEADS TO ACCOMMODATE THE PROPOSED INSTALLATION AND INSURE 100% COVERAGE FOR THE EXISTING AND NEW PLANTINGS. NEW HEADS MAY BE ADDED IN THE FOLLOWING WAYS:

- (A) CONNECT TO AN EXISTING LATERAL LINE\* PROVIDING SIMILAR WATERING REQUIREMENTS AS THE PLANT MATERIAL, PROPOSED AND ADD NEW HEADS TO MATCH THE EXISTING HEADS, OR THE HEADS THAT HAVE BEEN REMOVED.
- (B) CONNECT TO THE PRESSURE MAINLINE\* OF THE EXISTING IRRIGATION SYSTEM AFTER THE EXISTING BACKFLOW DEVICE AND RUN A CONTROL WIRE FROM THE EXISTING CONTROLLER TO THE NEW VALVES. ONLY POSSIBLE IF THERE ARE AVAILABLE STATIONS ON THE EXISTING CONTROLLER OR ADDITIONAL STATION MODULES CAN BE ADDED.
- (C) CONNECT TO THE EXISTING IRRIGATION WATER SOURCE OR MAINLINE\* AND PROVIDE A NEW BACKFLOW DEVICE AND AUTOMATIC CONTROLLER TO CONTROL THE NEW VALVES AND SPRINKLER HEADS.

\*DO NOT EXCEED THE MAXIMUM GALLONS PER MINUTE AN EXISTING PIPE CAN PROVIDE (FLOW VELOCITY SHALL NOT BE GREATER THAN 5 FEET PER SECOND).

THE CONTRACTOR SHALL VERIFY IF THE EXISTING SYSTEM USES A MASTER VALVE - ANY NEW VALVES MUST BE CONNECTED BY PIPE TO THE MASTER VALVE AND CONTROLLER.

**IRRIGATION PLAN**

**PDC CORPORATION**  
  
 1062 CONCANNON BLVD.  
 LIVERMORE, CA 94550  
 TEL: (925) 606-5868

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SCALE: AS NOTED    DESIGNED BY:    DRAWN BY:

4" 0 2" 4"    SCALE    1  
 1/4" = 1'-0"

**IRRIGATION PLAN**

JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	L-1	0



6

5

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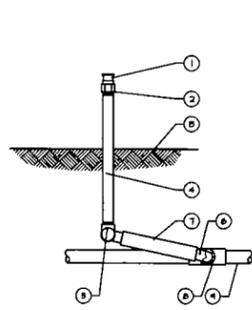
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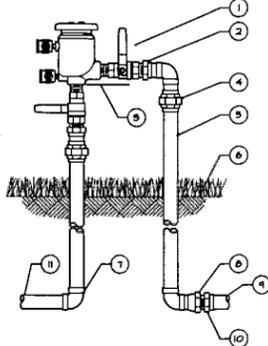
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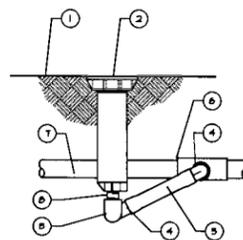
1. NOZZLE
2. PLASTIC SHRUB ADAPTER
3. FINISH GRADE/TOP OF MULCH
4. UV RADIATION RESISTANT PVC SCH 40 NIPPLE (LENGTH AS REQUIRED)
5. PVC SCH 40 ELL
6. 1/2-INCH MALE NPT INLET
7. PRE-ASSEMBLED SHIM JOINT WITH TWO POLY ELLS (THREAD 1/2 INCH) AND 6" OF POLY TURNING SIZE PER SPRINKLER INLET
8. PVC SCH 40 TEE OR ELL
9. PVC LATERAL PIPE



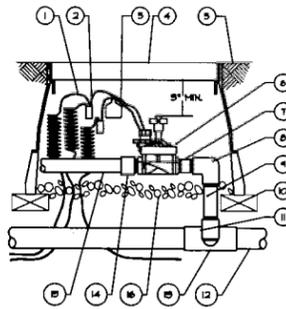
1. PRESSURE VACUUM BREAKER
2. COPPER MALE ADAPTER (1 OF 3)
3. MIN. OF 12-INCHES ABOVE HIGHEST POINT OF DISCHARGE
4. COPPER UNION (1 OF 2)
5. COPPER PIPE (1 TYPE/VAL)
6. FINISH GRADE
7. COPPER 90° ELL (1 OF 2)
8. COPPER FEMALE ADAPTER
9. IRRIGATION MAINLINE PIPE
10. COPPER MALE ADAPTER
11. COPPER PIPE FROM POINT-OF-CONNECTION

NOTE:  
1. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

(F) RISER WITH SPRAY OR BUBBLER (G) PRESSURE VACUUM BREAKER

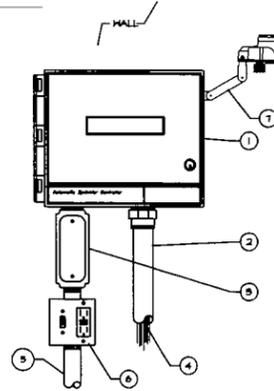


1. FINISH GRADE/TOP OF MULCH
2. POP-UP SPRAY SPRINKLER
3. PVC SCH 40 ELL
4. HANLIX STREET ELL
5. PRE-ASSEMBLED SHIM JOINT WITH TWO POLY ELLS (THREAD 1/2 INCH) AND 6" OF POLY TURNING SIZE PER SPRINKLER INLET
6. PVC SCH 40 TEE OR ELL
7. PVC LATERAL PIPE
8. SCH 80 RISER, LENGTH AS REQ. FOR SHIM ASSEMBLY TO REMAIN NEAR HORIZONTAL SIZE PER SPRINKLER INLET



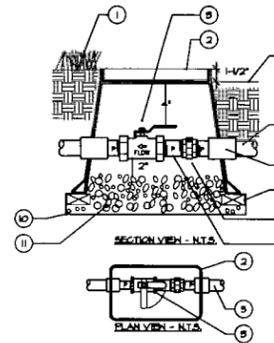
1. 3/4-INCH LINEAR LENGTH OF WIRE COILED
2. WATER PROOF CONNECTION (1 OF 2)
3. ID TAG
4. VALVE BOX WITH COVER, 12-INCH SIZE
5. FINISH GRADE/TOP OF MULCH
6. REMOTE CONTROL VALVE
7. PVC SCH 80 NIPPLE (CLOSE)
8. PVC SCH 40 ELL
9. BRICK (1 OF 4)
10. SCH 80 NIPPLE (2-INCH LENGTH, HORIZONTAL AND SCH 40 ELL)
11. PVC MAINLINE PIPE
12. PVC SCH 40 TEE OR ELL
13. PVC SCH 40 MALE ADAPTER
14. PVC LATERAL PIPE
15. 3/4-INCH MINIMUM DEPTH OF 3/4-INCH HOOKED GRAVEL

(H) POP-UP SPRAY (I) REMOTE CONTROL VALVE



1. CONTROLLER, INDOOR/OUTDOOR WALL MOUNT IN LOCKING WEATHERPROOF CABINET
2. 1/2-INCH PVC SCH 40 CONDUIT AND FITTINGS
3. JUNCTION BOX
4. WIRE TO REMOTE CONTROL VALVE
5. 1/2-INCH PVC SCH 40 CONDUIT TO POWER SUPPLY
6. POWER SUPPLY AND RECEPTACLE
7. RAIN SENSOR, MOUNT TO CABINET PER INSTALLATION INSTRUCTIONS, REFER TO IRRIG. SPECS.

(A) WALL MOUNT CONTROLLER



1. FINISHED GRADE IN TURF AREAS
2. PLASTIC RECTANGULAR VALVE BOX WITH 1/2" DOWN COVER, USE STAINLESS BOLT, NUT AND WASHER. BOX TO BE PLACED AT RIGHT ANGLE TO HARDSCAPE EDGE. HEAT BRAND "TM" ONTO LID.
3. BALL VALVE, SEE LEGEND
4. FINISHED GRADE IN SHRUB AREAS
5. PRESSURE SUPPLY LINE DEPTH AS PER SPECS.
6. SCH 80 PVC COUPLING AND TEE, NIPPLES
7. BRICK SUPPORTS 4 REQ. PER BOX
8. SCH 80 PVC UNION
9. SCH 80 PVC NIPPLES
10. LANDSCAPE FABRIC, HEAP UP AND OVER BOX HOLES
11. 3/4" ROCK, 5 CUBIC FT.

NOTE:  
BOX TO BE INSTALLED AS TO ALLOW FOR PROPER OPERATION OF BALL VALVE. INSTALL AT RIGHT ANGLE TO HARDSCAPE EDGE. INSTALL VALVE OFF-CENTER IN BOX. INSTALL VALVE BOX EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.

(B) ISOLATION VALVE

**CONTINUED**

**VII. SUBMITTALS**

UPON COMPLETION THE CONTRACTOR SHALL FURNISH THE OWNER WITH A COMPLETE SET OF REPRODUCIBLE "AS-BUILT" DRAWINGS. THESE "AS-BUILT" DRAWINGS SHALL SHOW THE LOCATION OF ALL POINTS OF CONNECTION, VALVES, CROSSINGS, GRACK COUPLERS AND OTHER MAINLINE COMPONENTS DIMENSIONED ACCURATELY FROM THE (2) PERMANENT SITE OBJECTS. IN ADDITION THE CONTRACTOR SHALL FURNISH THE (2) CONTROLLER CHARTS SHOWING EACH VALVE'S COVERAGE AREA COLOR CODED TO THE CORRESPONDING CONTROLLER STATION.

THE CONTRACTOR MUST ALSO FURNISH THE (2) SETS EACH OF THE FOLLOWING: ANY SPECIAL VALVE OR SPRINKLER ADJUSTMENT TOOLS, KEYS FOR THE CONTROLLER, INSTALLED, GRACK COUPLER KEYS AND ANY OPERATION MANUALS FOR THE EQUIPMENT INSTALLED.

**IX. GUARANTEE**

THE CONTRACTOR'S WORK SHALL BE FULLY GUARANTEED FOR ONE (1) FULL YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. ANY DEFECTIVE MATERIALS OR POOR WORKMANSHIP SHALL BE REPLACED OR CORRECTED AT NO COST TO THE OWNER.

**X. MAINTENANCE**

A QUALIFIED SUPERVISOR SHALL BE RESPONSIBLE FOR OPERATING THE IRRIGATION SYSTEMS, ADJUSTING THE CONTROLLERS AND OBSERVING THE EFFECTIVENESS OF THE IRRIGATION SYSTEM. CHART ALL CONTROLLER PROGRAMS, RECORDING DATE, TIME, LENGTH OF WATERING FOR EACH STATION, RESET CONTROLLER AT LEAST MONTHLY TO ACCOUNT FOR SEASONAL VARIATIONS.

INSPECT AND ADJUST THE ENTIRE IRRIGATION SYSTEM WEEKLY DURING APRIL THRU OCTOBER AND BI-MONTHLY FOR THE REST OF THE YEAR. CHECK FOR LEAKS, WET AND DRY SPOTS, USE A MOISTURE SENSING DEVICE TO EVALUATE ACTUAL SOIL MOISTURE. OBSERVE NOZZLES FOR PROPER PATTERN AND PRESSURE.

**IRRIGATION SPECS.**

**I. GENERAL CONDITIONS**

THE CONTRACTOR SHALL FIELD VERIFY THE EXISTING WATER PRESSURE (P.S.U.) AND AVAILABLE FLOW (G.P.M.) PRIOR TO CONSTRUCTION. NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE (O.A.R.) IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE ACTUAL PRESSURE AND FLOW AVAILABLE WITH THOSE SHOWN IN THESE DRAWINGS.

THIS DESIGN IS DIAGNOSTIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. DO NOT HESITATE TO INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT THERE ARE UNUSUAL OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREAS SIZE AND LAYOUT THAT WERE NOT CONSIDERED IN THE ORIGINAL DESIGN. NOTIFY THE O.A.R. OF SUCH OBSTRUCTIONS AND DIFFERENCES IMMEDIATELY.

IN THE EVENT THAT THE NOTIFICATIONS REQUIRED BY THESE NOTES ARE NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY REVISION NECESSARY.

**II. QUALITY ASSURANCE AND REQUIREMENTS**

THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR, FAMILIAR WITH THE TYPE OF WORK AND THE CONTRACT DOCUMENTS, ON SITE AT ALL TIMES DURING INSTALLATION OF THE WORK AND PRIMARY MAINTENANCE.

ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

**III. MATERIALS/INSTALLATION**

THE MAINLINE PIPE SHALL BE INSTALLED AND ROUTED TO AVOID UNDESIRABLE OBSTACLES BELOW GRADE. TREE LOCATIONS TAKE PRIORITY OVER IRRIGATION PIPING. STAKE TREE LOCATIONS PRIOR TO TRENCHING.

THE AUTOMATIC CONTROLLER AND THE BACKFLOW DEVICE SHALL BE FACTORY ASSEMBLED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FINAL LOCATION OF THE AUTOMATIC CONTROLLER AND THE BACKFLOW DEVICE SHALL BE APPROVED BY THE O.A.R. PRIOR TO INSTALLATION.

THE 120 VOLT ELECTRICAL CONNECTION FOR THE CONTROLLER SHALL BE FURNISHED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE ROUTE OF THE ELECTRICAL SERVICE TO THE CONTROLLER. JUNCTION BOX SHALL BE INSTALLED BY A LICENSED ELECTRICIAN. THE IRRIGATION CONTRACTOR SHALL MAKE THE FINAL CONNECTIONS TO THE AUTOMATIC CONTROLLERS FROM THE PROVIDED JUNCTION BOX.

ALL WIRES FROM THE CONTROLLER TO THE AUTOMATIC VALVES SHALL BE COPPER, DIRECT BURIAL, MINIMUM #14 GAUGE. INSTALL IN THE SAME TRENCH AS THE MAINLINE WHERE POSSIBLE. CONTROL WIRES TO BE WHITE IN COLOR. CONTROL WIRES TO BE A DIFFERENT COLOR FOR EACH CONTROL LINE. BUNDLE AND TAPE WIRES A MINIMUM OF TEN (10) FEET ON CENTER.

THE CONTRACTOR SHALL RUN THREE (3) SPARE WIRES AND ONE (1) COMMON WIRE FROM THE CONTROLLER TO EACH END OF THE MAIN LINE FOR FUTURE USE. EXTEND THE WIRES AN EXTRA TEN (10) FEET, MAKE A COIL AND PLACE IN A RECTANGULAR PULL BOX. LABEL THE LID "SP".

ALL MAINLINE PIPING AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES. MAINLINE SLEEVE SIZE SHALL BE A MINIMUM OF THREE (3) TIMES THE DIAMETER OF THE PIPE TO BE SLEEVED. SLEEVE SIZE SHALL BE A MINIMUM OF THREE (3) TIMES THE DIAMETER OF THE PIPE TO BE SLEEVED. SIZE WIRE SLEEVES SO THAT WIRES ARE NOT BOUND IN PIPE. MINIMUM COVERAGE FOR SLEEVES SHALL BE THIRTY FOUR (34) INCHES FOR SLEEVED LATERAL LINES, THIRTY (30) INCHES FOR 1/2 VOLT WIRES IN CONDUIT AND THIRTY SIX (36) INCHES FOR SLEEVED MAINLINE AND/OR CONTROL WIRES.

ALL LATERAL LINE PIPING UNDER PAVING NOT SLEEVED, SHALL BE PVC SCHEDULE 40 AND SHALL BE INSTALLED PRIOR TO PAVING.

DWG TRENCHES STRAIGHT AND SUPPORT PIPE CONTINUOUSLY ON BOTTOM. TRENCH MUST BE FREE OF ROCKS, DEBRIS OR ANY SHARP OBJECTS. SHAKE PLASTIC PIPE IN TRENCH MINIMUM COVERAGE FOR MAINLINE SIZES 1/2" AND SMALLER IS EIGHTEEN (18) INCHES, FOR SIZES 3/4" AND LARGER COVERAGE IS THIRTY FOUR (34) INCHES. FOR LATERAL LINES TWELVE (12) INCHES. 1/2 VOLT WIRE TRENCH THIRTY (30) INCHES AND LOW VOLTAGE CONTROL WIRE THIRTY (30) INCHES MINIMUM OR THE SAME DEPTH AS THE MAINLINE. DO NOT INSTALL ANY PIPE OR WIRES DIRECTLY OVER ANOTHER.

BALL VALVES, GATE VALVES, REMOTE CONTROL VALVES (EXCEPT FOR ANTI-SIPHON TYPE) AND GRACK COUPLERS SHALL BE INSTALLED IN BELOW GRADE LOCKABLE BOXES. MANUFACTURED BY AFTER OR CANNON. USE ROUND BOXES FOR GATE VALVE, BALL VALVES AND GRACK COUPLERS AND RECTANGULAR BOXES FOR REMOTE CONTROL VALVES. VALVE BOX LIDS SHALL BE GREEN COLOR, LABELED "VM", "GV", "RCV" OR "RCV" WITH CONTROLLER STATION NUMBER.

SET VALVE BOXES ONE (1) INCH ABOVE FINISH GRADE. SET VALVES AT SUFFICIENT DEPTH TO PROVIDE APPROPRIATE CLEARANCE BETWEEN THE COVER AND THE VALVE. INSTALL IRRIGATION EQUIPMENT SO THE VALVE BOXES FIT WITHOUT CUTTING THE WALLS OF THE VALVE BOXES. CUT VALVE BOXES SHALL BE REPLACED AT NO COST TO THE OWNER.

THE CONTRACTOR SHALL LOCATE ALL VALVES IN SHRUB AREAS, UNLESS DIRECTED OTHERWISE BY THE O.A.R.

ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE. INSTALL ALL SPRINKLERS ON RISERS TWELVE (12) INCHES AWAY FROM WALLS AND STRUCTURES.

ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN SHRUB AND BUSH/COVER AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEAD IS ONE (1) INCH ABOVE FINISH GRADE.

ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN TURF AREAS SHALL BE INSTALLED SO THAT THE TOP OF THE SPRINKLER HEAD IS FLUSH WITH ADJACENT PAVING.

AFTER RECEIVING NOTIFICATION BY THE O.A.R., THE CONTRACTOR, WITHIN TEN (10) DAYS SHALL ADJUST ALL LAWN HEADS SO THAT THE TOP OF THE SPRINKLER HEAD IS ONE QUARTER (1/4) INCH ABOVE FINISH GRADE.

INSTALL ANTI DRAIN VALVES TO ELIMINATE LOW HEAD DRAINAGE. ANTI DRAIN VALVE (ADV) UNITS MAY NOT BE REQUIRED ON ALL HEADS. PRIOR TO INSTALLATION CONTRACTOR SHALL VERIFY WITH SITE GRADES IF THERE IS AN ELEVATION DIFFERENCE OF TWO (2) FEET OR MORE BETWEEN THE HIGHEST AND LOWEST SPRINKLER HEAD ON A SYSTEM. INSTALL THE ADV WHERE NECESSARY.

ALL SOLVENT WELD PVC PRESSURE LINES AND FITTINGS MUST RECEIVE PROPER BEFORE SOLVENT WELDING.

**V. ADJUSTING AND TESTING THE SYSTEM**

AFTER PIPELINE ASSEMBLY THE CONTRACTOR SHALL THOROUGHLY FLUSH THE SYSTEM WITH OPEN ENDS ALL CAPPED. PRESSURE TEST FOR FOUR (4) HOURS AT 150 PSI.

AFTER COVERAGE AND PRESSURE TESTING THE CONTRACTOR SHALL INSTALL ALL TERMINAL FITTINGS AND PERFORM A COVERAGE TEST.

THE CONTRACTOR SHALL ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM COVERAGE AND TO PREVENT OVERSPRAY. THIS SHALL INCLUDE THE USE OF VARIABLE ARC NOZZLES (V.A.N.) AND PRESSURE COMPENSATING SCREENS (P.C.S.). THE SELECTION OF THE BEST DROPEZ OF ARC TO FIT THE SITE AND THROTTLING OF THE FLOW CONTROL AT EACH VALVE TO FIND THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.

THE ENTIRE SYSTEM SHALL BE IN FULL AUTOMATIC OPERATION FOR ONE SEVEN (7) DAYS PRIOR TO ANY PLANTING.



**IRRIGATION DETAILS AND SPECS.**

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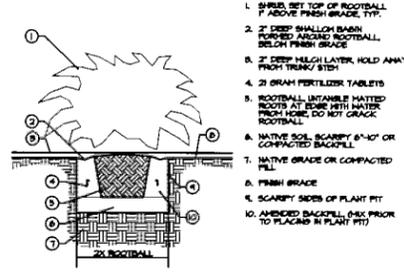
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	07/11/12	ISSUED FOR ZONING APPROVAL	RSO	MI	SAS
A	07/02/12	ISSUED FOR ZD REVIEW	RSO	MI	SAS

SCALE: AS NOTED    DESIGNED BY:    DRAWN BY:

SHEET TITLE			
IRRIGATION DETAILS			
JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	L-3	0

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**SCALE NOTE:**  
 DIMENSIONS SHOWN ON PLAN OR IN SECTION SHALL BE USED TO SCALE CORRECTLY, CHECK FOR REDUCTION OR ENLARGEMENT FROM ORIGINAL PLANS.



(H) SHRUB PLANTING

1. SPRING SET TOP OF ROOTBALL 7" ABOVE FINISH GRADE, TYP.
2. 2" DEEP SHALLOW BASIN PERFORMED AROUND ROOTBALL, BELOW FINISH GRADE.
3. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
4. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
5. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
6. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
7. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
8. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
9. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.
10. 2" DEEP MESH LAYER, HOLD AWAY FROM TRUNK STEM.

**PLANTING SPECS.**

**I. GENERAL**  
 THESE DRAWINGS ARE DIAGNOSTIC, SHOWING INTENDED LOCATIONS AND RELATIONSHIPS OF PLANTING ELEMENTS. FINAL SITE CONDITIONS ALTERED DURING CONSTRUCTION MAY REQUIRE ADJUSTMENTS TO THE LAYOUT.  
 THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL, TESTED AND INSPECTED PRIOR TO PLANTING.  
 ANY SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT OR O.A.R. PRIOR TO PURCHASE AND INSTALLATION.

**II. PLANT MATERIALS/QUALITY ASSURANCE**  
 THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR, FAMILIAR WITH THE TYPE OF WORK AND THE CONTRACT DOCUMENTS, ON SITE AT ALL TIMES DURING INSTALLATION OF THE WORK AND PRIMARY MAINTENANCE.  
 ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL BY THE OWNER'S AUTHORIZED REPRESENTATIVE (O.A.R.). THE CONTRACTOR SHALL SUBMIT A LIST OF AVAILABILITY FOR ALL BOXED TREES THIRTY (30) DAYS BEFORE SCHEDULED PLANTING FOR APPROVAL AT THE DISCRETION OF THE O.A.R.  
 CONTRACTOR IS RESPONSIBLE FOR FURNISHING PLANT MATERIAL FREE OF PESTS OR DISEASES AND NORMAL IN FORM FOR THE SPECIES AND DESIGN CALLED FOR IN THE PLANS. ONLY AS MANY PLANTS AS CAN BE PLANTED AND WATERED THAT SAME DAY SHALL BE DISTRIBUTED IN A PLANTING AREA.  
 THE CONTRACTOR SHALL NOT INSTALL PLANT MATERIAL THAT IS MILDED OR HAS A DAMAGED ROOT BALL.  
 CONTRACTOR SHALL NOT INSTALL TREES WITHIN TEN (10) FEET OF ROTATORS/IMPACT HEADS OR WITHIN THREE (3) FEET OF STRAIGHT SPRAY HEADS.  
 ALL TREES WITHIN A SPECIES SHALL HAVE MATCHING FORM, SIZE AND TEXTURAL DENSITY.  
 SOIL AMENDMENT AND BACKFILL MIX AS DESCRIBED HEREIN ARE FOR DECORATIVE PURPOSES ONLY. SPECIFIC AMENDMENTS AND FERTILIZER WILL BE SELECTED AND SPECIFIED AFTER SOIL TESTING IS COMPLETE AND SOILS SAMPLES CAN BE TESTED. AMENDMENT AND FERTILIZER AMOUNT AND TYPE SHALL BE AS RECOMMENDED IN THE AGRONOMIC SOILS REPORT.

**III. WEED ABATEMENT**  
 WEED ABATEMENT SHALL BEGIN AFTER ROUGH GRADING. CONTRACTOR TO IRRIGATE PLANTING AREA FOR THREE (3) WEEKS OR UNTIL SUFFICIENT WEED SEEDS HAVE GERMINATED. AFTER WHICH A CONTACT HERBICIDE IS APPLIED BY A LICENSED PEST CONTROL APPLICATOR. IRRIGATION IS STOPPED FOR FORTY-EIGHT (48) HOURS. THE DEAD WEEDS ARE THEN REMOVED AND AFTER SUCH TIME AS NECESSARY FOR THE HERBICIDE TO DISAPPEAR, PLANTING MAY BEGIN.

**IV. SOIL PREPARATION**  
 NO SOIL PREPARATION SHALL BE DONE UNTIL ROUGH GRADING HAS BEEN APPROVED BY THE O.A.R.  
 CROSS RIP ALL PLANTING AREAS TO DEPTH OF TWELVE (12) INCHES AND UNIFORMLY BLEND THE FOLLOWING AMENDMENTS INTO THE TOP SIX (6) INCHES AS PART OF THE FINISH GRADING WORK:  
 FIVE THOUSAND (5000) POUNDS PER ACRE  
 TWO HUNDRED (200) POUNDS 'NRO-POWER PLUS'  
 SIX (6) CUBIC YARDS NITROGEN STABILIZED ORGANIC AMENDMENT  
 TWO HUNDRED (200) POUNDS AGRICULTURAL GYPSUM

**V. FINISHED GRADING**  
 AFTER ROUGH GRADING, WEED ABATEMENT AND SOIL PREPARATION ALL PLANTING AREAS SHALL BE SMOOTHLY GRADED. THE GRADE SHALL BE UNIFORM AND SMOOTH WITH NO ABRUPT CHANGE OF SURFACE.  
 GRADING SHALL PROVIDE FOR NATURAL DRAINAGE WITHOUT LOW SPOTS. FLOW LINES SHALL BE ACCURATELY SET BY INSTRUMENT AT TWO (2) PERCENT MINIMUM SLOPE.  
 CONTRACTOR SHALL REMOVE FROM PLANTING AREAS ALL DEBRIS, WEEDS AND ROCK LARGER THAN ONE (1) INCH IN DIAMETER FROM THE TOP SIX (6) INCHES OF SOIL AND DISPOSED OFF-SITE.

**VI. INSTALLATION**  
 THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL. TREES INSTALLED AND A COVERAGE TEST COMPLETED PRIOR TO ANY CONTAINER OR GROUND COVER MATERIAL INSTALLATION.  
 EXCAVATION FOR PLANTING SHALL INCLUDE THE STOCKPILE OR TOPSOIL FROM WITHIN AREAS TO BE EXCAVATED FOR TRENCHES, TREE HOLES, PLANT PITS AND BEDS. ALL EXCAVATED PLANTING HOLES SHALL HAVE VERTICAL, SCARIFIED SIDES, THREE (3) TIMES THE SIZE OF THE DIAMETER AND SIX (6) INCHES DEEPER THAN THE ROOTBALL.  
 BACKFILL SOIL REGENERATED FROM THE EXCAVATIONS AND NOT USED AS BACKFILL OR IN ESTABLISHING FINAL GRADES SHALL BE REMOVED FROM THE SITE.  
 INSPECT ROOTBALL AND GENTLY LOOSEN OR INTANGIBLE MATTED ROOTS, DO NOT CRACK ROOTBALL. REPLACE ANY PLANTS WITH ROOTS BRIDGING THE ROOTBALL.  
 THE CROWN AREA OF TREES AND SHRUBS SHALL BE 2" HIGHER AFTER SETTLING, THAN ADJACENT FINISH GRADE.  
 THE APPROVED BACKFILL FOR PLANT PITS SHALL CONSIST OF THE FOLLOWING MIX. PLANT PITS SHALL BE FILLED TO THE REQUIRED GRADE AND THOROUGHLY SETTLED BY WATER APPLICATION AND TAMPING.  
 FIVE CUBIC YARDS OF FINE UNIFORMLY BLENDED  
 SIX (6) PARTS BY VOLUME CHASTE SOIL OF NON SODIC, LOW BORON CONTENT  
 SANDY TEXTURED TOP SOIL  
 FOUR (4) PARTS BY VOLUME NITROGEN STABILIZED ORGANIC AMENDMENT  
 TWENTY (20) POUNDS 'NRO-POWER PLUS'  
 TWENTY (20) POUNDS AGRICULTURAL GYPSUM  
 BACKFILL PIT HALFWAY THEN PLACE 'NRO-POWER' SEVEN (7) GRAM OR 'AGRIFORM' TWENTY ONE (21) GRAM SLOW RELEASE PLANTING TABLETS SPREAD EVENLY AROUND ROOTBALL. THE NUMBER OF TABLETS PER PLANT SHALL BE PER THE MANUFACTURER'S INSTRUCTIONS.  
 PROVIDE A DEPRESSION WATER BASIN AS WIDE AS THE ROOT BALL, FOR EACH PLANT. WATER AGAIN THOROUGHLY.  
 UNITE VINES AND REMOVE ALL STAKES AND TRELLISES THEN SECURELY FASTEN AND TRAIN AGAINST WHATEVER STRUCTURE NEXT TO WHICH THEY ARE PLANTED. TREES MUST BE STAKED AND/OR GUYED AT THE TIME OF PLANTING.  
 LAY SOIL WITHIN TWO (2) DAYS OF DELIVERY AND DO NOT STORE IN HOT SUN SET IN A STRIPPERD PATTERN OR PRE-IRRIGATED HOPE GROUND AND SET PROPERLY AGAINST OTHER SOIL PIECES. WATER THOROUGHLY AFTER PLANTING.  
 UNLESS NOTED OTHERWISE, CONTRACTOR SHALL PLANT GROUND COVERS IN STRAIGHT ROWS, EVENLY SPACED IN A TRIANGULAR PATTERN AT THE INTERVALS LISTED IN THE DRAWINGS.  
 AFTER ALL PLANTING IS COMPLETED, TOP DRESS ALL LANDSCAPED AREAS EXCLUDING TURF WITH A 2" LAYER OF SABLE GROUND SHREDDED BARK MULCH. THIS LAYER IS IN ADDITION TO SOIL AMENDMENT MATERIALS.  
 UNLESS DIRECTED OTHERWISE BY THE O.A.R., PRUNE ONLY TO REMOVE DEAD OR BROKEN BRANCHES AND SUCKER GROWTH.

**IX. GUARANTEE**  
 CONTRACTOR SHALL PROVIDE A NINETY (90) DAY GUARANTEE FOR ALL PLANTS EXCLUDING TREES WHICH SHALL BE GUARANTEED FOR ONE (1) FULL YEAR. DURING THE GUARANTEE PERIOD THE CONTRACTOR SHALL REPLACE IN A TIMELY MANNER ANY PLANTS THAT ARE UNHEALTHY, PERMANENTLY DEAD, THE GUARANTEE SHALL NOT INCLUDE DAMAGE TO GROUND COVER FROM EXCESSIVE RAIN RUN-OFF AND EXTREME WINDS. SUCH 'NATURAL' DAMAGE SHALL BE REPAIRED FOR THE AND MATERIALS.

**X. MAINTENANCE**  
 CONTRACTOR SHALL INCLUDE IN THEIR BID FOR A 90 DAY MAINTENANCE PERIOD AFTER FINAL LANDSCAPE ACCEPTANCE BY THE OWNER. THIS MAINTENANCE SHALL INCLUDE, BUT IS NOT LIMITED TO, KEEPING ALL AREAS WEED FREE, WATERED, PEST AND DISEASE FREE AND ANY OTHER WORK NECESSARY FOR HEALTHY, VIGOROUS PLANT GROWTH AND APPEARANCE.

**GENERAL NOTES**

- A. THE LANDSCAPE ARCHITECT WILL INTERPRET THE MEANING OF ANY PART OF THE PLANS AND SPECIFICATIONS ABOUT WHICH ANY MISUNDERSTANDING MAY ARISE, AND HIS DECISION SHALL BE FINAL.
- B. THE CONTRACTOR SHALL OBTAIN CLARIFICATION TO QUESTIONS RELATIVE TO THE DRAWING BEFORE SUBMITTING A BID.
- C. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.
- D. THE CONTRACTOR SHALL OBTAIN NECESSARY CALIFORNIA STATE CONTRACTORS LICENSE OR CERTIFICATE FOR TYPE OF WORK LISTED, BEG AS C-21.
- E. THE CONTRACTOR SHALL CARRY ALL NECESSARY COMPENSATION AND LIABILITY INSURANCE TO COVER HIS WORK AND WORK TO FULLY PROTECT THE OWNER FROM ANY POSSIBLE SUIT OR LITIGATION.
- F. THE CONTRACTOR SHALL MAINTAIN A QUALIFIED SUPERVISOR, FAMILIAR WITH THE TYPE OF WORK AND THE CONTRACT DOCUMENTS, ON SITE AT ALL TIMES DURING INSTALLATION OF THE WORK AND PRIMARY MAINTENANCE.
- G. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PERMITS AND LICENSES AND ASSURE THAT ALL WORK TO BE PERFORMED MEETS OR EXCEEDS ALL APPLICABLE CODES AND ORDINANCES OF PRIVATE OR GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE PROJECT.
- H. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL REPAIR OR REPLACE ALL ITEMS DAMAGED BY HIS WORK AT NO EXPENSE TO THE OWNER. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES AND LATERAL LINES THROUGH WALLS, UNDER ROADWAYS, DRIVES AND PAVING, ETC.
- I. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, OF BRANDS AND TYPES SHOWN AND DESCRIBED IN THESE DRAWINGS.
- J. THE CONTRACTOR SHALL EXERCISE CARE IN HANDLING, LOADING, UNLOADING AND STORING ALL EQUIPMENT AND MATERIALS. ALL MATERIALS AND EQUIPMENT THAT IS DAMAGED WILL BE DISCARDED, EVEN IF INSTALLED, AND SHALL BE REPAIRED OR REPLACED AT THE DISCRETION OF THE OWNER'S AUTHORIZED REPRESENTATIVE (O.A.R.) AT NO EXPENSE TO THE OWNER.
- K. THE CONTRACTOR SHALL PROTECT ALL PLANTING AREAS FROM EXCESSIVE COMPACTION FROM TRUCKING MATERIALS AND EQUIPMENT TO AND WITHIN THE SITE.
- L. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL THEFTS OR DAMAGE TO MATERIALS ONCE DELIVERED TO JOB SITE.
- M. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN SUB-CONTRACTORS AS REQUIRED TO ACCOMPLISH ALL CONSTRUCTION OPERATIONS. ALL PERMITS, CONDUIT, SLEEVES, ETC. SHALL BE IN PLACE PRIOR TO INSTALLATION OF CONSTRUCTION ITEMS.
- N. ALL PROGRESS INSPECTIONS SHALL BE COMPLETED BEFORE SUCCEEDING WORK IS STARTED. ANY WORK COVERED UP BEFORE REQUIRED INSPECTIONS ARE COMPLETED WILL BE EXPOSED FOR REVIEW AT THE CONTRACTOR'S EXPENSE.
- O. CLEANUP SHALL BE DONE AS EACH PORTION OF THE WORK PROGRESSES. REFUSE AND EXCESS DIRT SHALL BE REMOVED FROM THE SITE. ALL WALKS AND PAVING SHALL BE BROOMED AND ANY DAMAGE OCCURRING TO THE WORK OF OTHERS SHALL BE REPAIRED TO ORIGINAL CONDITION.
- P. REFER TO THE SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION.
- Q. THE CONTRACTOR'S WORK SHALL BE FULLY GUARANTEED FOR ONE (1) FULL YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. ANY DEFECTIVE MATERIALS OR POOR WORKMANSHIP SHALL BE REPLACED OR CORRECTED AT NO COST TO THE OWNER.
- R. UNLESS NOTED OTHERWISE ALL STRUCTURAL IMPROVEMENTS SHALL BE INSTALLED PRIOR TO IRRIGATION AND PLANTING OPERATIONS.
- S. IN THE CASE WHERE EXTRA WORK OR CHANGES WILL RESULT IN ANY INCREASED COSTS OVER THE CONTRACT FEE, THE CONTRACTOR SHALL FIRST RECEIVE THE OWNER'S EXPRESSED WRITTEN APPROVAL FOR SUCH ADDITIONAL FUNDS PRIOR TO PURCHASING MATERIALS OR DOING THE WORKMANSHIP.

**PLANTING DETAILS AND SPECS.**

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4430 ROSEWOOD DRIVE, BLOC. #3, 2ND FLOOR  
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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	07/11/12	ISSUED FOR ZONING APPROVAL	RSO	MI	SAS
A	07/02/12	ISSUED FOR ZD REVIEW	RSO	MI	SAS

SCALE: AS NOTED      DESIGNED BY:      DRAWN BY:

**PLANTING PLAN**

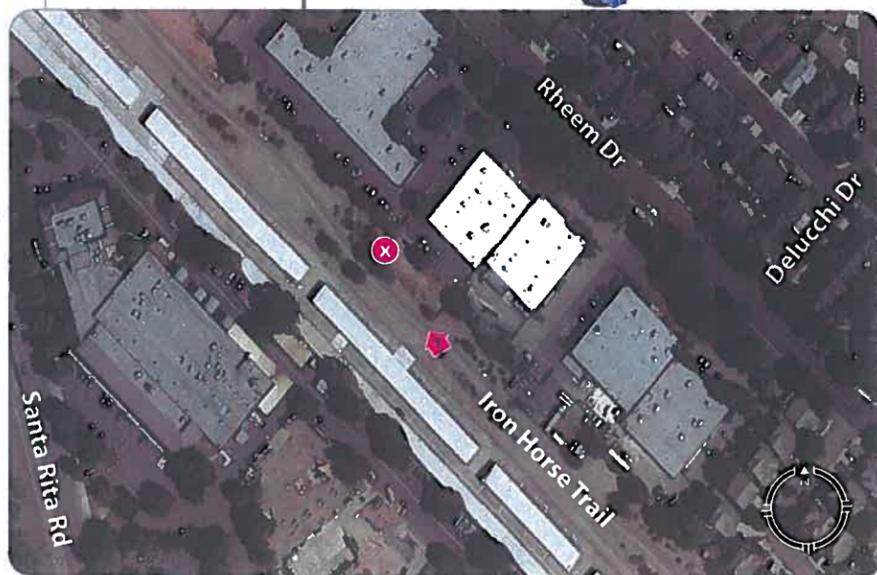
JOB NUMBER	DRAWING NUMBER	SHEET NO.	REV
25736-635-AA	CC4239	L-4	0





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LOCATION



View from the Southeast to the Northwest

EXISTING



PROPOSED



Completed January 10, 2013

**CC4239**  
**Santa Rita Road & Iron Horse**  
North of 2500 Santa Rita Road  
Pleasanton, CA 94566

**VIEW 1**

**APPLICANT**

at&t Mobility  
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**BLUE WATER DESIGN**

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Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

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**PROPOSED**



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**CC4239**  
**Santa Rita Road & Iron Horse**  
 North of 2500 Santa Rita Road  
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**VIEW 2**

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 4430 Rosewood Drive  
 Pleasanton, CA 94588

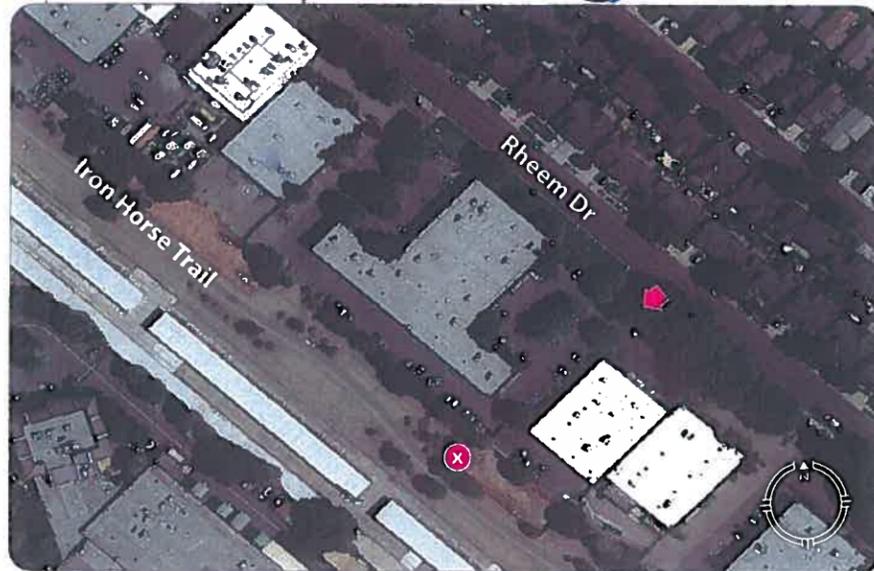
**CONTACT**  
 Trillium Telecom Services  
 Tom Johnson  
 5912 Bolsa Ave., Suite 202  
 Huntington Beach, CA 92649  
 p 714.799.2000



**BLUE WATER DESIGN**  
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[michelle@bluewater-design.net](mailto:michelle@bluewater-design.net)  
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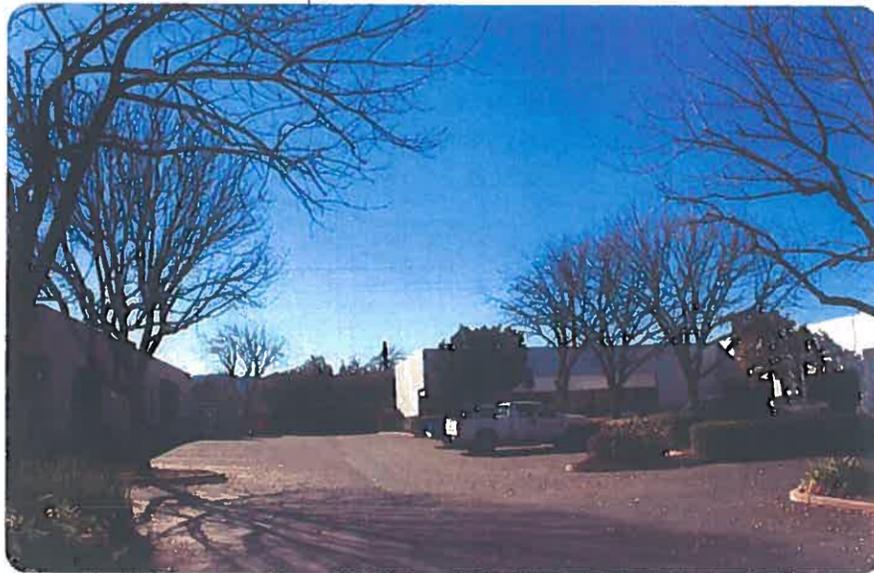
Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

**LOCATION**

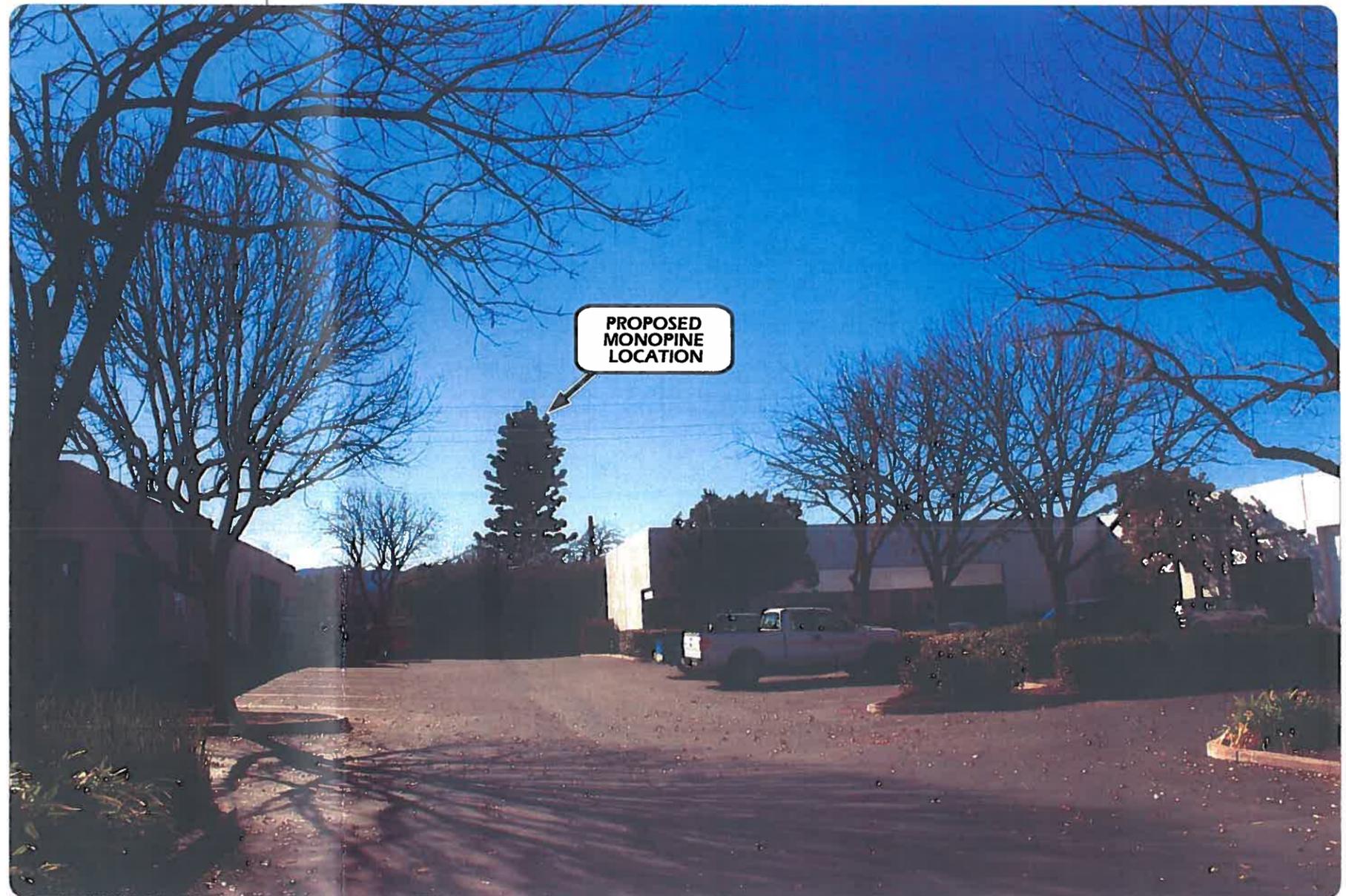


View from the Northeast to the Southwest

**EXISTING**



**PROPOSED**



Completed January 31, 2013

**CC4239**  
**Santa Rita Road & Iron Horse**  
 North of 2500 Santa Rita Road  
 Pleasanton CA 94566

**VIEW 1**

**APPLICANT**

at&t Mobility  
 4430 Rosewood Drive  
 Pleasanton, CA 94588

**CONTACT**

Trillium Telecom Services  
 Tom Johnson  
 5912 Bolsa Ave., Suite 202  
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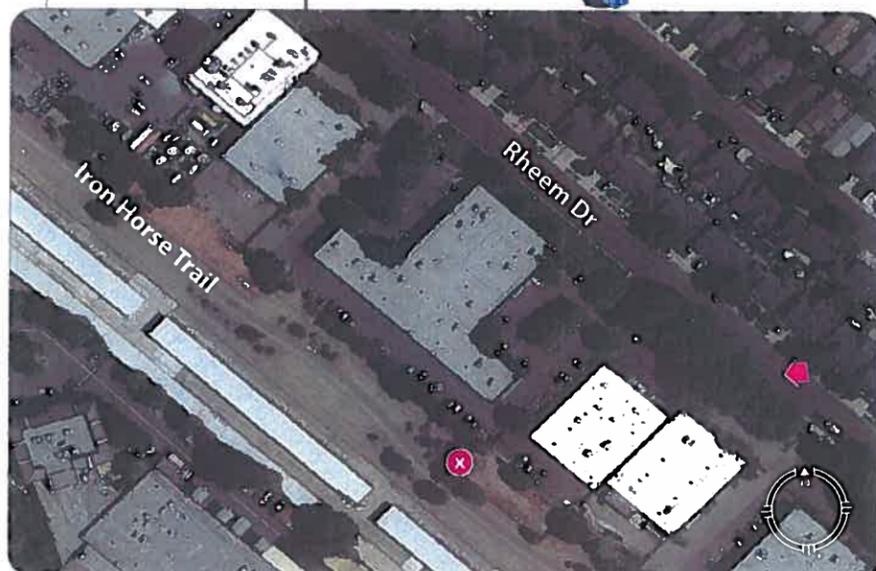
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 p 714.473.2942  
 f 949.271.2560

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**LOCATION**

Microsoft® Virtual Earth™

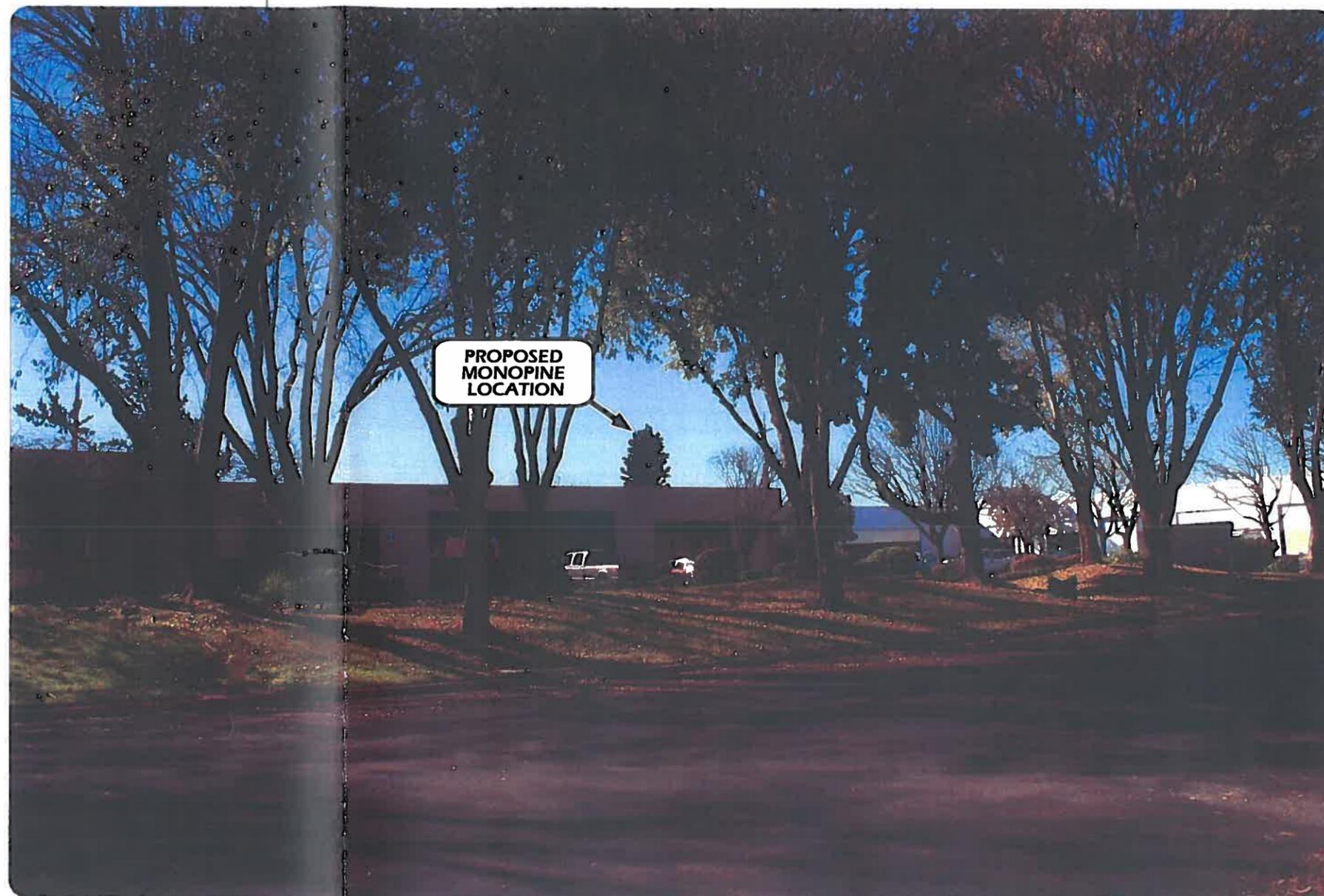


View from the Northeast to the Southwest

**EXISTING**



**PROPOSED**



Completed January 31, 2013

**CC4239**  
**Santa Rita Road & Iron Horse**  
North of 2500 Santa Rita Road  
Pleasanton, CA 94566

**VIEW 2**

**APPLICANT**  
at&t Mobility  
4430 Rosewood Drive  
Pleasanton, CA 94588

**CONTACT**  
Trillium Telecom Services  
Tom Johnson  
5912 Bolsa Ave., Suite 202  
Huntington Beach, CA 92649  
p 714.799.2000

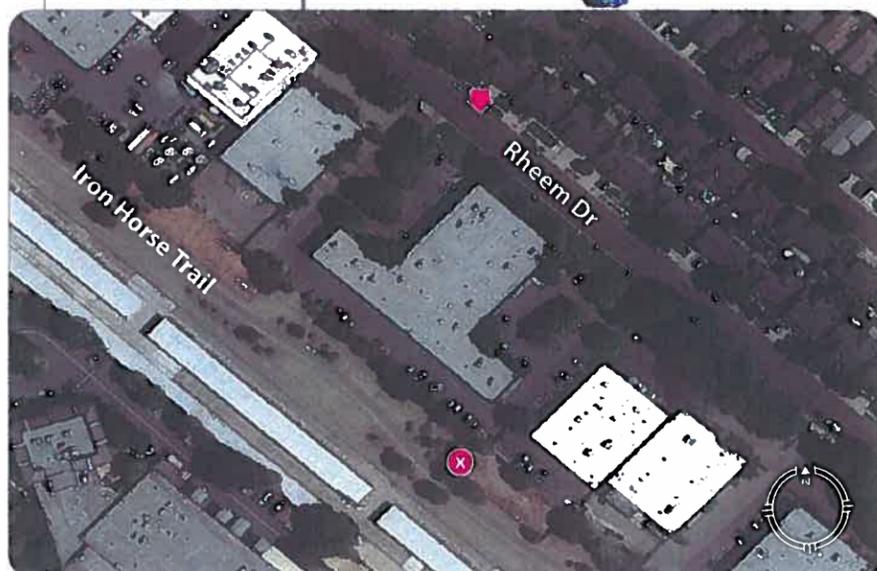


**BLUE WATER DESIGN**  
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p 714.473.2942  
f 949.271.2560

Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

**LOCATION**

Microsoft® Virtual Earth™



View from the North to the South

**EXISTING**



**PROPOSED**



Completed January 31, 2013

**CC4239**  
**Santa Rita Road & Iron Horse**  
North of 2500 Santa Rita Road  
Pleasanton, CA 94566

**VIEW 3**

**APPLICANT**

at&t Mobility  
4430 Rosewood Drive  
Pleasanton, CA 94588

**CONTACT**

Trillium Telecom Services  
Tom Johnson  
5912 Bolsa Ave., Suite 202  
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**BLUE WATER DESIGN**

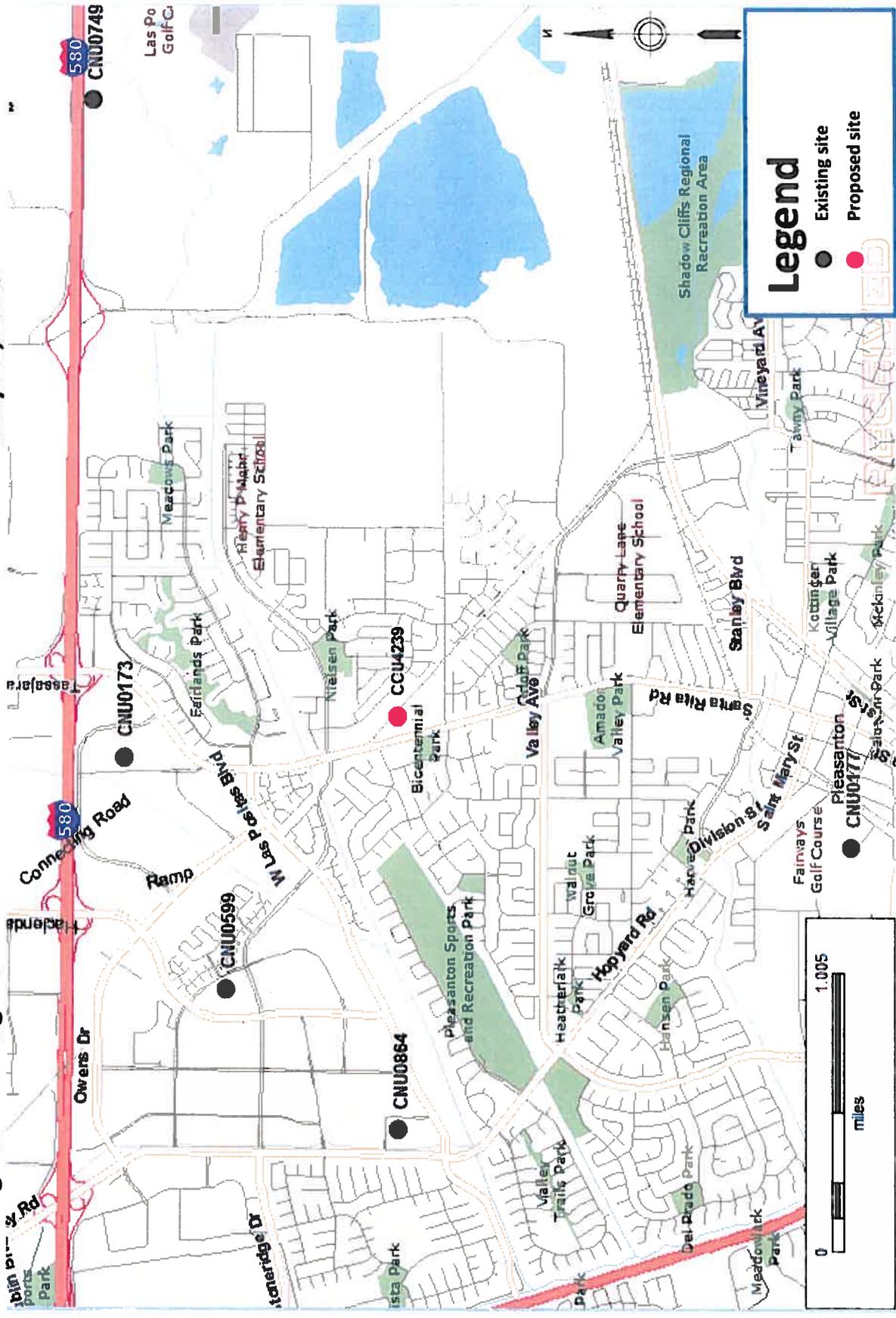
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Photo simulation accuracy is based on information provided to Blue Water Design by the applicant.

May 20, 2013

Existing Surrounding Sites

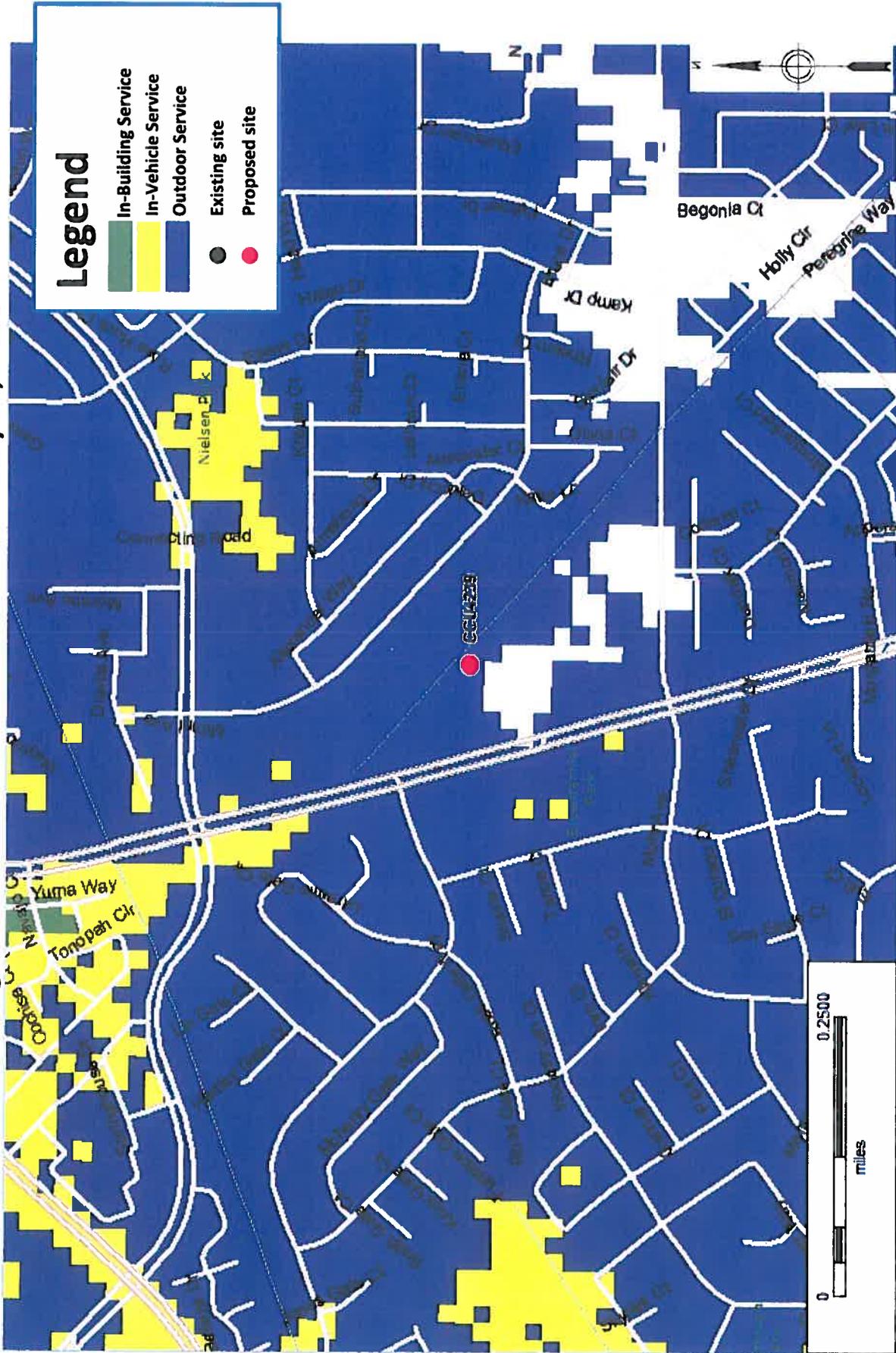


P11-089g  
(AT&T)

MAY 20 2013  
CITY OF PLEASANTON  
PLANNING DIVISION

**Existing 850 UMTS Coverage**

**May 20, 2013**







**AT&T Mobility • Proposed Base Station (Site No. CC4239)  
2500 Santa Rita Road • Pleasanton, California**

**Statement of Hammett & Edison, Inc., Consulting Engineers**

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of AT&T Mobility, a personal wireless telecommunications carrier, to evaluate the base station (Site No. CC4239) proposed to be located near 2500 Santa Rita Road in Pleasanton, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

**Executive Summary**

AT&T proposes to install directional panel antennas on a tall pole to be sited along the Iron Horse Regional Trail in Pleasanton. The proposed operation will, together with the existing base stations nearby, comply with the FCC guidelines limiting public exposure to RF energy.

**Prevailing Exposure Standards**

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service	Frequency Band	Occupational Limit	Public Limit
Microwave (Point-to-Point)	5,000–80,000 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
BRS (Broadband Radio)	2,600	5.00	1.00
AWS (Advanced Wireless)	2,100	5.00	1.00
PCS (Personal Communication)	1,950	5.00	1.00
Cellular	870	2.90	0.58
SMR (Specialized Mobile Radio)	855	2.85	0.57
700 MHz	700	2.40	0.48
[most restrictive frequency range]	30–300	1.00	0.20

**General Facility Requirements**

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some

47      4

**AT&T Mobility • Proposed Base Station (Site No. CC4239)  
2500 Santa Rita Road • Pleasanton, California**

height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

**Computer Modeling Method**

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

**Site and Facility Description**

Based upon information provided by AT&T, including zoning drawings by PDC Corporation, dated September 25, 2012, it is proposed to install twelve Andrew Model SBNH-1D6565B directional panel antennas on a new 55-foot steel pole, configured to resemble a pine tree, to be sited along the Iron Horse Regional Trail, east of Santa Rita Road, in Pleasanton. The antennas would be mounted with up to 8° downtilt at effective heights of about 39 and 47 feet above ground and would be oriented in groups of four toward 20°T, 140°T, and 260°T, to provide service in all directions. The maximum effective radiated power in any direction would be 9,170 watts, representing simultaneous operation at 7,050 watts for PCS, 1,000 watts for cellular, and 1,120 watts for 700 MHz service.

Presently located on a pole about 570 feet to the northwest are similar antennas for use by Sprint Nextel and T-Mobile. For the limited purpose of this study, the transmitting facilities of those carriers are assumed to be as follows:

<u>Operator</u>	<u>Service</u>	<u>Maximum ERP</u>	<u>Antenna Model</u>	<u>Downtilt</u>	<u>Height</u>
Sprint Nextel	PCS	1,500 watts	Andrew RR9017	2°	44 ft
T-Mobile	AWS	700	} RFS AP16DWV	2	31½
	PCS	2,000			

**Study Results**

For a person anywhere at ground, the maximum RF exposure level due to the proposed AT&T operation by itself is calculated to be 0.043 mW/cm<sup>2</sup>, which is 4.4% of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all three

**AT&T Mobility • Proposed Base Station (Site No. CC4239)  
2500 Santa Rita Road • Pleasanton, California**

carriers, is 4.8% of the public exposure limit. The maximum calculated cumulative level at any nearby building\* is 7.6% of the public limit. The maximum calculated cumulative level at the second-floor elevation of any nearby residence† is 2.6% of the public exposure limit. It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels.

**No Recommended Mitigation Measures**

Due to their mounting locations, the AT&T antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that AT&T will, as an FCC licensee, take adequate steps to ensure that its employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

**Conclusion**

Based on the information and analysis above, it is the undersigned’s professional opinion that operation of the base station proposed by AT&T Mobility at 2500 Santa Rita Road in Pleasanton, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

**Authorship**

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2013. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



*William F. Hammett*  
William F. Hammett, P.E.

707/996-5200

November 6, 2012

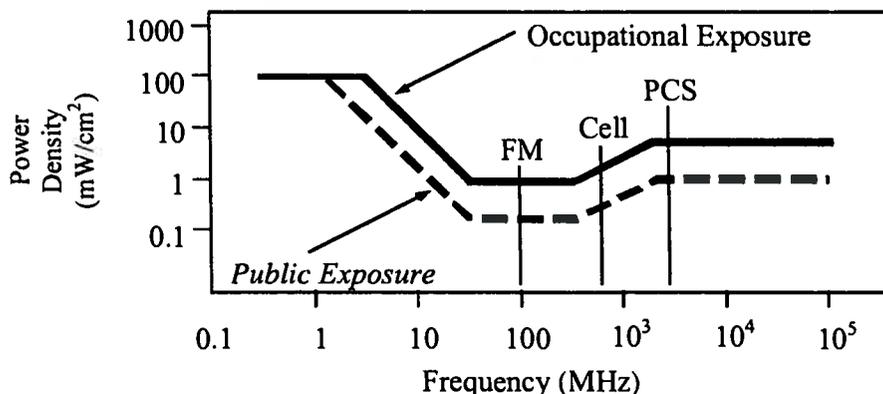
\* Located at least 80 feet away, based on the drawings.  
† Located at least 360 feet away, based on the drawings.

## FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm <sup>2</sup> )	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f<sup>2</sup></i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f <sup>2</sup>	<i>180/f<sup>2</sup></i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	1/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

## RFR.CALC™ Calculation Methodology

### Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

#### Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density  $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$ , in mW/cm<sup>2</sup>,

and for an aperture antenna, maximum power density  $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$ , in mW/cm<sup>2</sup>,

where  $\theta_{BW}$  = half-power beamwidth of the antenna, in degrees, and

$P_{net}$  = net power input to the antenna, in watts,

$D$  = distance from antenna, in meters,

$h$  = aperture height of the antenna, in meters, and

$\eta$  = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

#### Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density  $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$ , in mW/cm<sup>2</sup>,

where ERP = total ERP (all polarizations), in kilowatts,

RFF = relative field factor at the direction to the actual point of calculation, and

$D$  = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.