clearwire®

TRUE VALUE HARDWARE STORE

CA-MRC0025

321 SECOND STREET
LIVINGSTON, CA 95334

BUILDING CODES

THIS PROJECT SHALL COMPLY WITH THE 2007 CALIFORNIA BUILDING CODE, WHICH ADOPTS THE INTERNATIONAL BUILDING CODE, 2009 EDITION WITH STATE AMENDMENTS

PROJECT INFORMATION

PROJECT DESCRIPTION:

CLEARWIRE PROPOSES TO INSTALL AN UNMANNED WIRELESS FACILITY BY INSTALLING (3) RF PANEL ANTENNAS, ASSOCIATED RRU UNITS, AND (3) MICROWAVE ANTENNAS ON A NEW MONOPALM TOWER, ALONG WITH THE INSTALLATION OF (1) OUTDOOR RAISED WIRELESS INTERNET EQUIPMENT CABINET WITH (1) GPS ANTENNA MOUNTED TO SAID CABINET, ANCHORED TO A NEW CONCRETE SLAB ON GRADE CONCRETED WITHIN A NEW FENCED ENCLOSURE LEASE AREA.

APPLICANT:
CLEARWIRE, LLC
4400 CARILLON POINT
KIRKLAND, WA 98033
CONTACT: JEREMY KENNISH
PH: 208-965-2213

CODE INFORMATION:
ZONING CLASSIFICATION: DTC-DOWNTOWN COMMERCIAL
BUILDING CODE: 2007 CBC, 2007 CEC, 2007 CFC
CONSTRUCTION TYPE: V-B
OCCUPANCY: S-2
JURISDICTION: CITY OF LIVINGSTON
CURRENT USE: UNOCCUPIED TELECOMMUNICATIONS FACILITY
PROPOSED USE: UNOCCUPIED TELECOMMUNICATIONS FACILITY

TELCO COMPANY:
AT&T
PH: 1-800-750-2355

POWER COMPANY:
PG&E
PH: 1-800-468-4743

SITE LOCATION: (BASED ON NAD 83):
LATITUDE: 37.387332° N
LONGITUDE: -120.724033° W
TOP OF STRUCTURE AGL: 70'
BASE OF STRUCTURE AMSL: 132'

PARCEL NUMBER(S):
024-114-018

AREA OF PARCEL:
TBD

PROJECT AREA:
100 SQ. FT.

PROPERTY OWNER:
LIVINGSTON TRUE VALUE HARDWARE, INC.
CONTACT: BRANDON FRIESEN
PH: 209-394-7949

PROJECT LEAD:
CONTACT: DOUG SANDSTROM
THE DERNA GROUP
PH: 415-596-3312

SITE ACQUISITION:
CONTACT: ERIC HALE
THE DERNA GROUP
PH: 559-790-5931

CONSTRUCTION:
CONTACT: TBD
PH: TBD

PERMITTING:
CONTACT: SUNNY YIM
THE DERNA GROUP
PH: 209-446-0448

RF ENGINEER:
CONTACT: AMARJIT SINGH
CLEARWIRE
PH: 209-327-5923

BH ENGINEER:
CONTACT: TBD
CLEARWIRE
PH: TBD

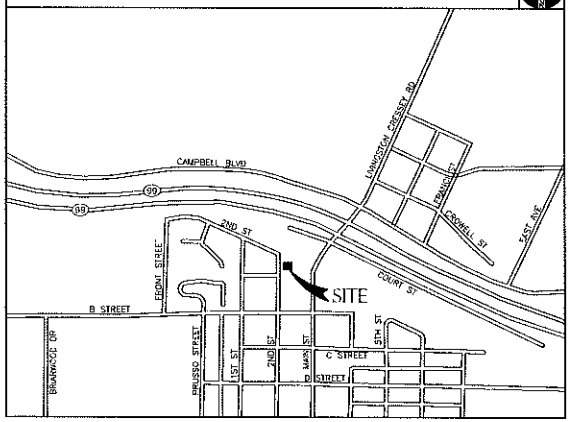
GENERAL INFORMATION:
1. PARKING REQUIREMENTS ARE UNCHANGED.
2. TRAFFIC IS UNAFFECTED.
3. SIGNAGE IS PROPOSED.

PROJECT TEAM

PROJECT ARCHITECT
THOMAS ROLLAND, AIA
PACIFIC TELECOM SERVICES, LLC
3199 AIRPORT LOOP DRIVE
COSTA MESA, CA 92626
CONTACT: ROBERT LEIGHTON
PH: (206) 464-4402
EMAIL: RLEIGHTON@PTSWA.COM

PROJECT CONSULTANT
THE DERNA GROUP
1155 E. FREMONT AVE.
FRESNO, CA 93710
CONTACT: DOUG SANDSTROM
PH: (415) 596-3312

VICINITY MAP



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PROPRIETARY INFORMATION

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS STRICTLY PROHIBITED.

LEGAL DESCRIPTION

BEING A PORTION OF LAND WHICH ENCOMPASSES LOTS 14 AND 16 IN BLOCK 1 OF A SUBDIVISION KNOWN AS LIVINGSTON LAND AND COLONY CO'S ADDITION NO. 1 TO THE TOWN OF LIVINGSTON AS SHOWN IN VOLUME 4 OF OFFICIAL PLATS AT PAGE 12, MERCED COUNTY RECORDS, LYING IN THE NORTH-EAST QUARTER OF SECTION 26, TOWNSHIP 6 SOUTH, RANGE 11 EAST, M.D.B. & M.

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

DRIVING DIRECTIONS

START FROM DOWNTOWN FRESNO:

1. HEAD WEST ON E WASHINGTON AVE TOWARD N 1ST ST 69 FT
2. TAKE THE 1ST LEFT ONTO N 1ST ST 0.3 MI
3. TURN RIGHT AT E TULARE AVE 0.1 MI
4. SLIGHT RIGHT AT E DIMSADERO ST 358 FT
5. TURN RIGHT TO MERGE ONTO CA-41 N 0.6 MI
6. TAKE EXIT 128B TO MERGE ONTO CA-180 W TOWARD MENDOTA 24 MI
7. TAKE EXIT 57A TO MERGE ONTO CA-99 N TOWARD SACRAMENTO 68.3 MI
8. TAKE EXIT 201 FOR HAMMATT AVE 0.2 MI
9. TURN RIGHT AT HAMMATT AVE 446 FT
10. TAKE THE 1ST LEFT ONTO CAMPBELL BLVD 0.6 MI
11. TURN LEFT AT LIVINGSTON CRESSEY RD 0.2 MI
12. TAKE THE 2ND RIGHT ONTO B ST 312 FT
13. TAKE THE 1ST RIGHT ONTO 2ND ST
    DESTINATION WILL BE ON THE RIGHT

APPROVAL	DATE	SIGNATURE
CLEARWIRE:		
LANDLORD:		
CONST:		
S/A:		
R.F.:		
ZONING:		
A&E:		
B.H.:		

REVIEWERS SHALL CLEARLY PLACE INITIALS ADJACENT TO EACH REDLINE NOTE AS DRAWINGS ARE BEING REVIEWED

ABBREVIATIONS

A/C	AIR CONDITIONING	HORZ	HORIZONTAL	PLYWD	PLYWOOD
AGL	ABOVE GRADE LEVEL	HR	HOUR	PROJ	PROJECT
APPROX	APPROXIMATELY	HT	HEIGHT	PROP	PROPERTY
		HVAC	HEATING VENTILATION AIR CONDITIONING	PT	PRESSURE TREATED
BLDG	BUILDING			REQ	REQUIRED
BLK	BLOCKING			RM	ROOM
C/G	CEILING	ID	INSIDE DIAMETER	RO	ROUGH OPENING
CLR	CLEAR	IN	INCH	RRU	REMOTE RADIO UNIT
CONC	CONCRETE	INFO	INFORMATION		
CONST	CONSTRUCTION	INSUL	INSULATION	SHT	SHEET
CONT	CONTINUOUS	INT	INTERIOR	SIM	SIMILAR
		IBC	INTERNATIONAL BUILDING CODE	SPEC	SPECIFICATION
DBL	DOUBLE			SF	SQUARE FOOT
DIA	DIAMETER			SS	STAINLESS STEEL
DIAG	DIAGONAL	LBS	POUNDS	STL	STEEL
DN	DOWN			STRUCT	STRUCTURAL
DET	DETAIL	MAX	MAXIMUM	STD	STUD
DWG	DRAWING	MECH	MECHANICAL	SUSP	SUSPENDED
		MTL	METAL		
EA	EACH	MFR	MANUFACTURE	THRU	THROUGH
ELEV	ELEVATION	MGR	MANAGER	TLWD	TRUWD
ELEC	ELECTRICAL	MIN	MINIMUM	TYP	TYPICAL
EQ	EQUAL	MISC	MISCELLANEOUS		
EQUIP	EQUIPMENT			UNO	UNLESS NOTED OTHERWISE
EXT	EXTERIOR	NA	NOT APPLICABLE		
		NIC	NOT IN CONTRACT	VERT	VERTICAL
FIN	FINISH	NTS	NOT TO SCALE	VIF	VERIFY IN FIELD
FLUOR	FLOURESCENT				
FLR	FLOOR	OC	ON CENTER	W/	WITH
FT	FOOT	OD	OUTSIDE DIAMETER	W/O	WITHOUT
				WP	WATER PROOF
GA	GAUGE				
GALV	GALVANIZED				
GC	GENERAL CONTRACTOR				
GRND	GROUND				
GYP BD	GYPSUM WALL BOARD				

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TRUE VALLEY HARDWARE STORE
CA-MRC0025
321 SECOND STREET
LIVINGSTON, CA 95334

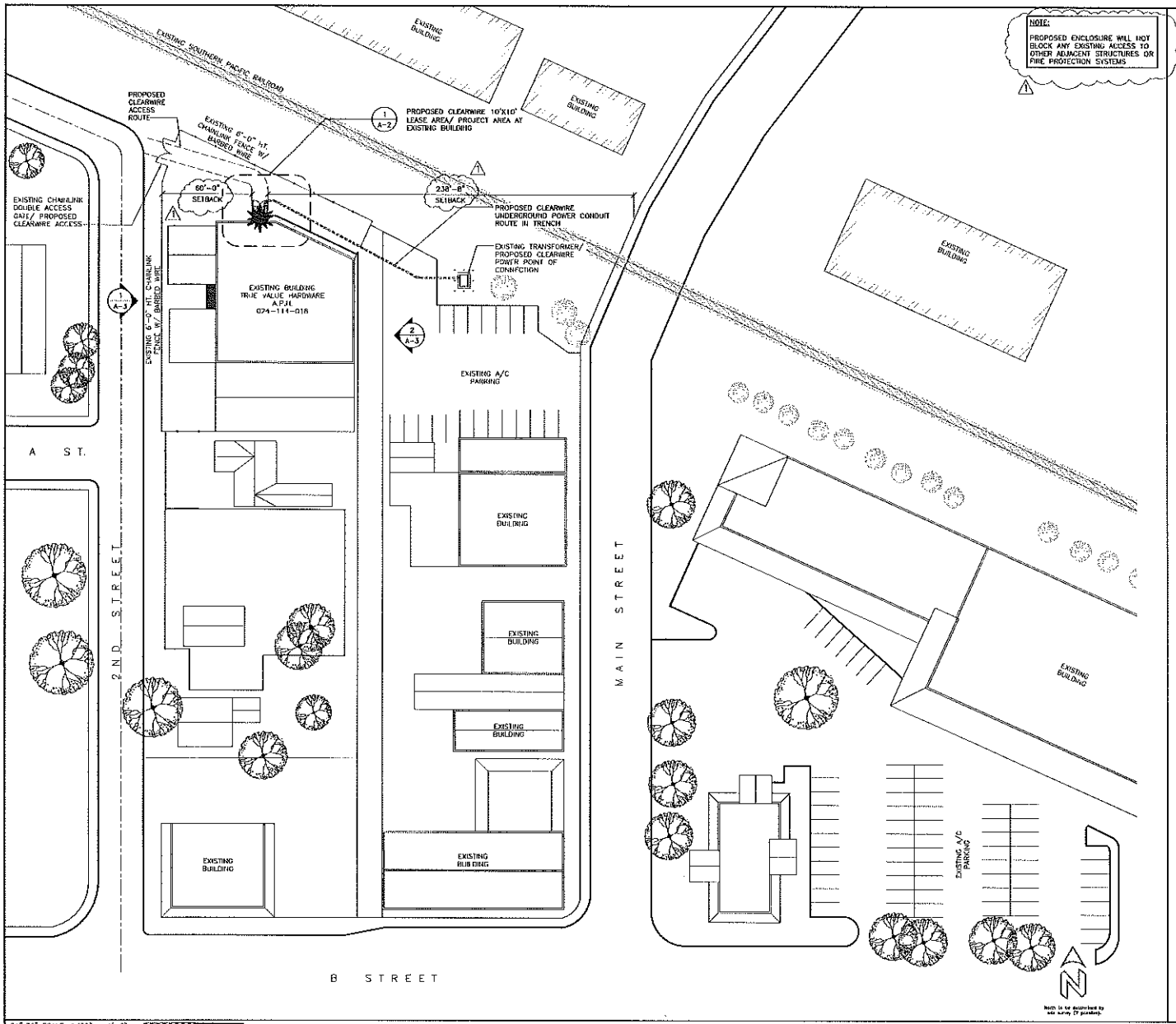
REVISIONS

NO	DATE	DESCRIPTION	INITIAL
1	05/11/10	PRELIMINARY ZONING	JV
2	08/18/10	ISSUED FOR FINAL ZONING	JV
3	10/8/10	100% ZONING DRAWINGS	SVC
⚠	01/27/11	CITY PLANNING COMMENTS	SV

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



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LIVINGSTON, CA 95334

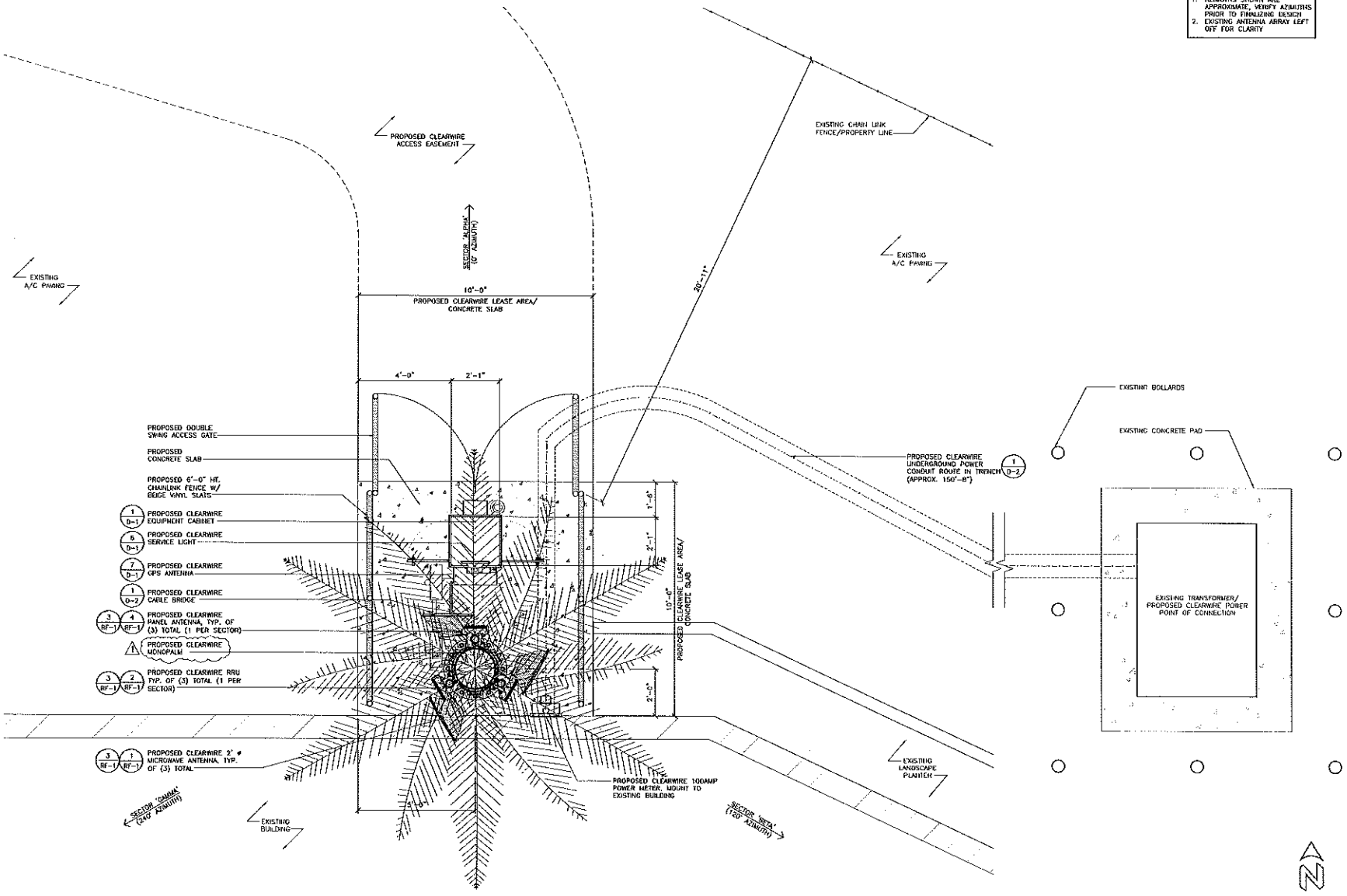
REVISIONS			
NO.	DATE	DESCRIPTION	INITIAL
1	06/16/16	PRELIMINARY ZONING	JV
2	08/11/16	ISSUED FOR FINAL ZONING	JV
3	10/07/16	100% ZONING DRAWINGS	MG
4	11/23/16	CITY PLANNING COMMENTS	SV

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1

24"x36" SCALE: 1/32" = 1'-0" 0 32'
11"x17" SCALE: 1/64" = 1'-0" 32' 24 16 8 0 32'



24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"
2' 1' 0" 2'

ENLARGED PROJECT AREA PLAN 1

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4400 CARILLON POINT
KIRKLAND, WA 98033

THE DENNA GROUP
1105 E. TRIMMER AVENUE
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TRUE VALLEY HARDWARE STORE

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321 SECOND STREET
LIVINGSTON, CA 95334

REVISIONS

NO	DATE	DESCRIPTION	INITIAL
1	06/24/10	PRELIMINARY ZONING	JV
2	08/31/10	RESUBMIT FOR FINAL ZONING	JV
3	10/8/10	100% ZONING DRAWINGS	NJC
4	11/29/10	CITY PLANNING COMMENTS	RV

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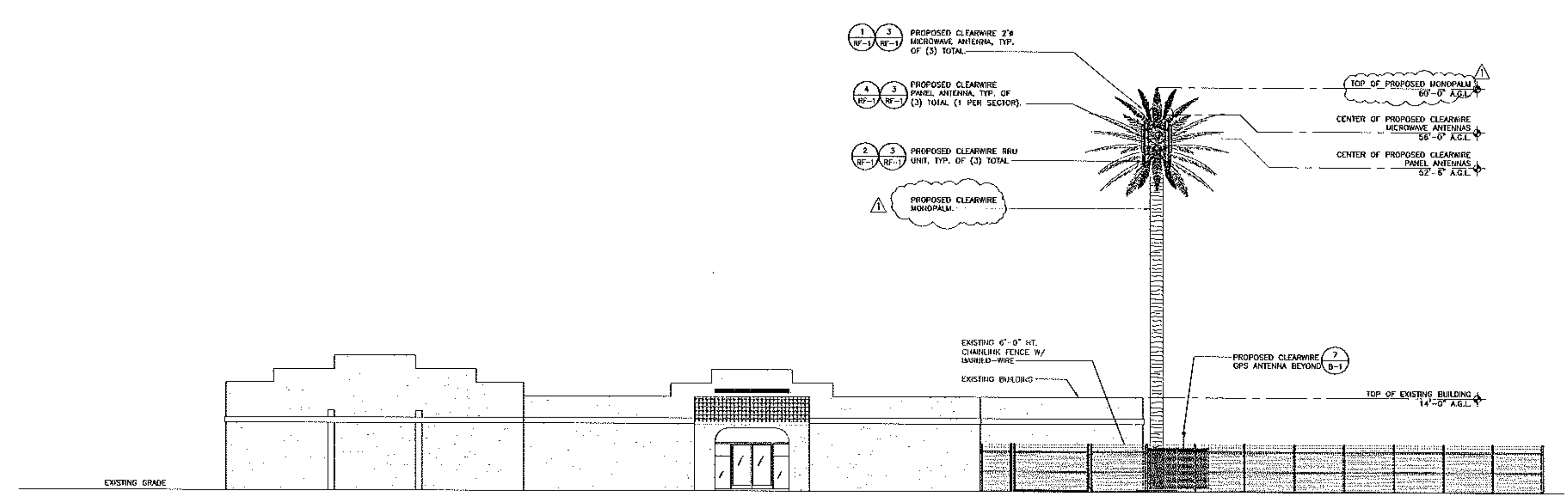
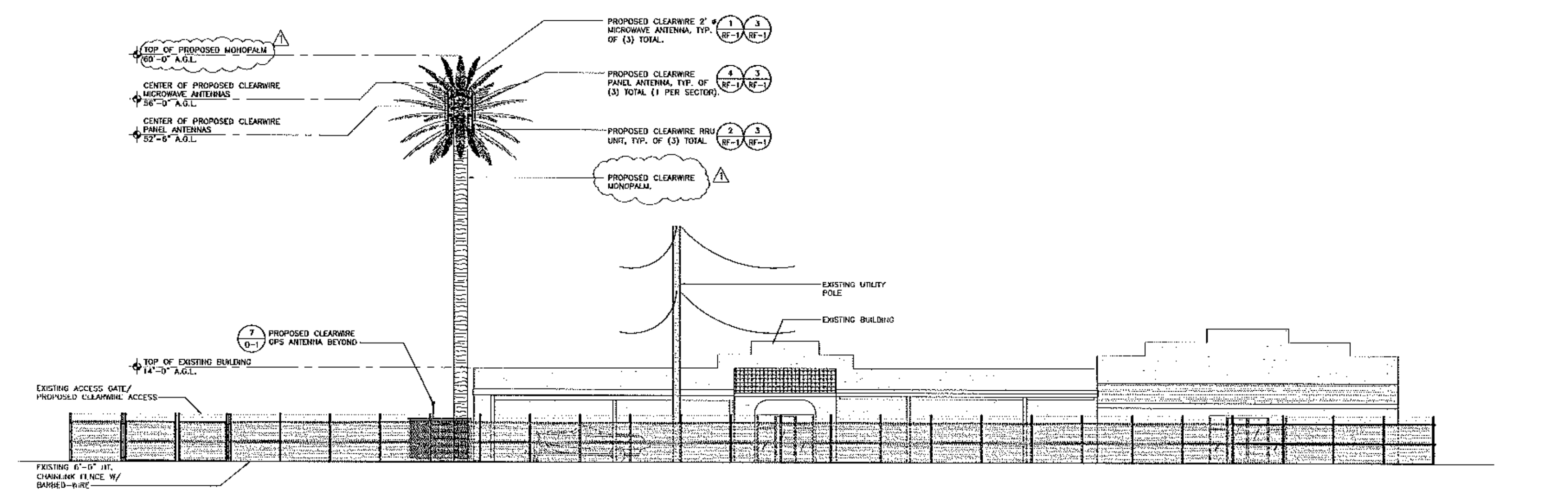
SHEET TITLE
ENLARGED PROJECT AREA PLAN

SHEET NUMBER
A-2



24"x36" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

EAST ELEVATION 2



24"x36" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

WEST ELEVATION 1

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REVISIONS			
NO.	DATE	DESCRIPTION	INITIAL
1	[illegible]	PRELIMINARY ZONING	JV
2	[illegible]	ISSUED FOR FINAL ZONING	JV
3	10/9/10	100% ZONING DRAWINGS	[illegible]
△	[illegible]	CITY PLANNING COMMENTS	SV

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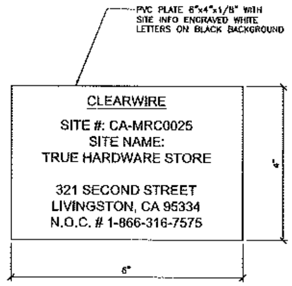
SHEET TITLE
ELEVATIONS

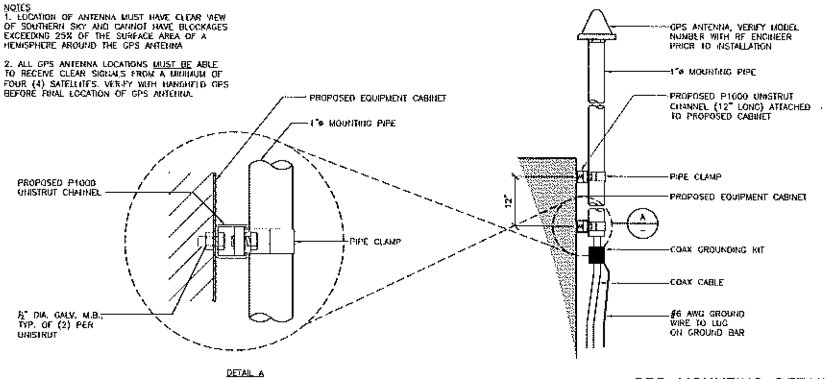
SHEET NUMBER
A-3



NAME PLATE DETAIL 8
24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

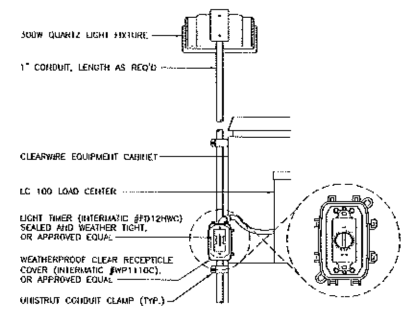
NOTES
1. LOCATION OF ANTENNA MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA

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.

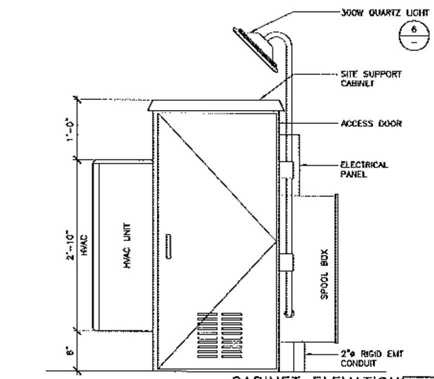


GPS MOUNTING DETAIL 7
24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

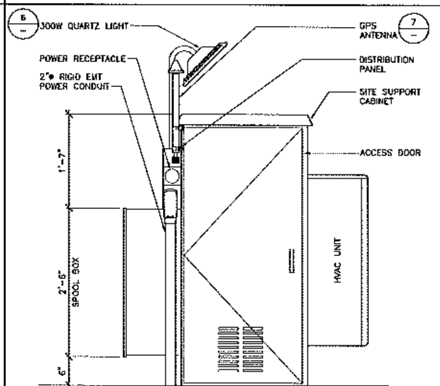
NOTE:
1. ENSURE ALL CONDUIT CONNECTIONS ARE PROPERLY SEALED AND WEATHER TIGHT.



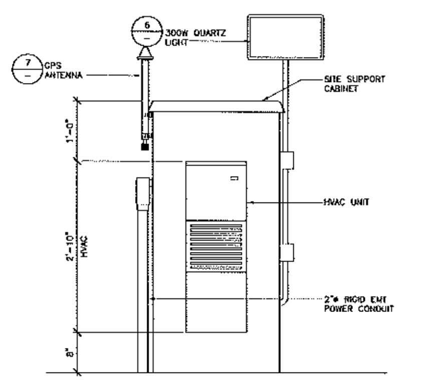
LIGHT DETAIL 6
24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE



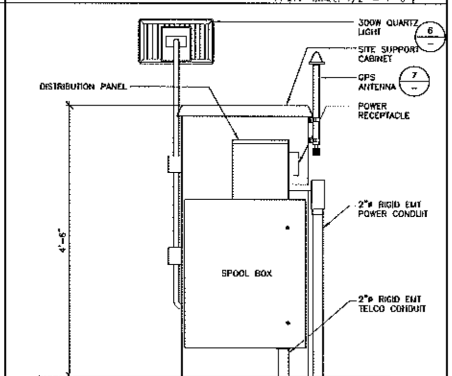
CABINET ELEVATION 5
24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"



CABINET ELEVATION 4
24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"



CABINET ELEVATION 3
24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"



CABINET ELEVATION 2
24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"

CONCRETE NOTES:

1. UNLESS OTHERWISE NOTED ALL CONCRETE SHALL DEVELOP A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI.

2. ALL EXPOSED EXTERNAL CORNERS OF CONCRETE TO BE TOOLED EDGE, UNLESS OTHRWISE NOTED.

3. CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES.

4. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL ELECTRICAL OPENINGS AND EQUIPMENT PADS WITH THE ELECTRICAL OPENINGS AND EQUIPMENT DETAIL AND SHOP DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION FOR ALL UTILITIES.

BATTERY INFORMATION:

LONG DURATION SERIES – TEL 12-70
1. FLAME-ARRESTING ONE-WAY PRESSURE-RELIEF VENT FOR SAFETY AND LONG LIFE.

2. THERMALLY WELDED CASE-TO COVER BOND ENSURING A LEAK-PROOF SEAL.

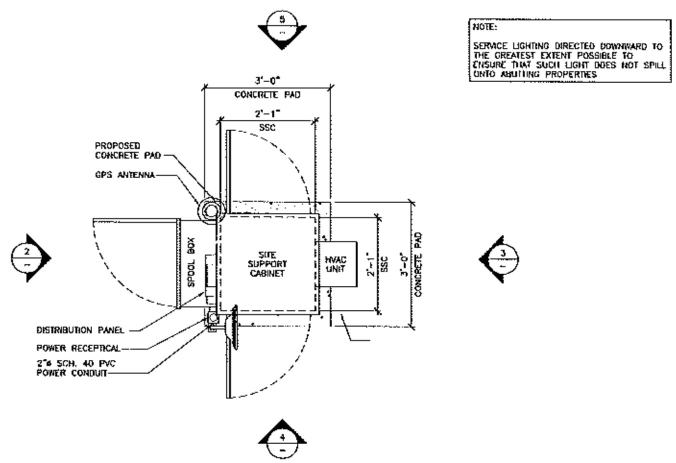
3. FLAME-RETARDANT POLYPROPYLENE CASE AND COVER COMPLIANT WITH UL94 V-0 WITH AN OXYGEN LIMITING INDEX OF GREATER THAN 28.

4. COMPLIES WITH UL 1778, 924, 1989 AND 94 V-0.

5. UL-RECOGNIZED COMPONENT.

6. NOT RESTRICTED FOR SURFACE TRANSPORT-CLASSIFIED AS NON-HAZARDOUS MATERIAL AS RELATED TO DOT-CFR TITLE 49 PARTS 171-189.

NOTE:
SERVICE LIGHTING DIRECTED DOWNWARD TO THE GREATEST EXTENT POSSIBLE TO ENSURE THAT SUCH LIGHT DOES NOT SPILL ONTO ABUTTING PROPERTIES



TEL 12-70 SPECIFICATIONS:
CELLS PER UNIT = 6
VOLTAGE PER UNIT = 12.84
WEIGHT = 55 LBS
ELECTROLYTE = ABSORBED H_2SO_4 / SG = 1.300
VOLUME: 8.02" X 10.17" X 6.65" = 542.40 cu in
MAX = 4

EQUIPMENT PLAN 1
24"x36" SCALE: 3/4" = 1'-0"
11"x17" SCALE: 3/8" = 1'-0"

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REVISIONS			
NO.	DATE	DESCRIPTION	INITIAL
1	05/14/10	PRELIMINARY ZONING	JJ
2	05/11/10	ISSUED FOR FINAL ZONING	JJ
3	10/8/10	100% ZONING DRAWINGS	N/C
⚠	11/29/10	CITY PLANNING COMMENTS	SV

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
D-1

ANTENNA CABLING:

1) ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY THE CONTRACTOR.

2) THE DESIGN IS BASED ON THE EMSS REPORT, SIGNED AND APPROVED BY ENGINEERING.

3) THE CONTRACTOR SHALL VERIFY THE ACTUAL LENGTHS OF CABLES BEFORE INSTALLATION.

4) ALL TIE WRAPS SHALL BE CUT FLUSH WITH THE APPROVED CUTTING TOOL FOR SAFETY AND PROTECTION.

5) THE ANTENNAS WILL BE FED BY RF CABLES WHICH MAY BE RUN OUTSIDE OR INSIDE THE TOWER DEPENDENT UPON SITE CONDITIONS AND ENGINEERING DRAWINGS.

6) ALL SITE CABLING SHALL MAINTAIN MAXIMUM CABLE SEPARATION REQUIREMENTS AS TO THE TYPE OF CABLE AND FUNCTION. THIS IS DONE TO PROTECT DAMAGE; AS WELL AS, TO PREVENT THE INDUCTION OF CURRENT INTO THE CONDUCTORS FROM MAGNETIC LINES OF FLUX CREATED FROM POWER AND CURRENTS THROUGH THE CABLES.

7) CABLES SHALL BE PROTECTED FROM DAMAGE AND SHALL HAVE THE MINIMUM BEND RADIUS FOR THE SIZE AND MANUFACTURER OF THAT CABLE. IN THIS CASE THE MINIMUM BEND RADIUS IS 100MM.

8) SLACK SHALL BE LEFT IN THE CABLES LEAVING THE EQUIPMENT TO THEIR TERMINATION POINTS. THIS IS DONE IN ORDER TO PROVIDE STRESS RELIEF ON THE CABLES AND CONNECTIONS IN THE EVENT OF SEISMIC ACTIVITY.

9) ALL CABLES SHALL BE ROUTED AND INSTALLED IN A MANNER AS TO PROTECT THE CABLES FROM DAMAGE OF SHARP EDGES OF HARDWARE AND WHERE CABLES ARE ROUTED DOWN THE TOWER.

10) CABLES SHALL BE SUPPORTED A MINIMUM OF EVERY THREE FEET EXCEPT FOR INSIDE MONOPALMS AND LATTICE TOWERS WHERE CABLE AND CONNECTOR MANUFACTURERS RECOMMENDED FIBER SUPPORT ACCESSORIES SHALL BE USED IF REQUIRED.

11) CABLE BRIDGE SYSTEM SHALL BE USED AS AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA AND MICROWAVE CABLES.

12) DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM THE BUILDING OR OUTDOOR CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE CABLE PORT.

ANTENNA CABLING NOTES 4

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

NOTES:
THE FIBER OPTIC CABLE COMES PRE-MANUFACTURED WITH HUBER-SUHNER CONNECTORS INSTALLED ON EACH END. THE AVAILABLE LENGTHS ARE 20M, 40M, 60M, 80M, 100M.

THE POWER CABLE COMES PRE-MANUFACTURED WITH AN AMPHENOL CONNECTOR FOR USE AT THE DAP HEAD END ONLY. THE OTHER END OF THE CABLE IS BARE. THE AVAILABLE LENGTHS ARE 20M, 40M, 60M, 80M, 100M.

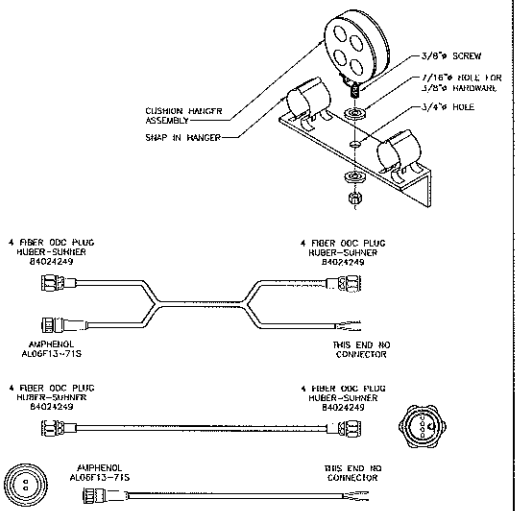
A UNIQUE COMBINED POWER & FIBER OPTIC CABLE (INTEGRATED CABLE 971903-1) HAS BEEN DEVELOPED TO MAKE RUNNING CABLES EASIER AND MAY BE MADE AVAILABLE IN THE FUTURE. THE POWER CABLE IS LONGER THAN THE FIBER CABLE TO PREVENT THE FIBER CABLE FROM BEING DAMAGED.

INSTALL THE POWER AND FIBER OPTIC CABLE FROM EACH DAP HEAD TO THE EQUIPMENT CABINET ATTACH THE CABLE END TO THE CONNECTORIZED POWER AND FIBER DAP HEAD CONNECTORS. EACH CABLE SHALL HAVE A SERVICE/DRIP LOOP AT EACH END OF AT LEASE ONE FULL LOOP NOT SMALLER THAN 6" IN DIAMETER. EXTRA CABLE SHALL BE LOOPED AT THE EQUIPMENT CABINET.

CABLE SHALL BE ROUTED FROM EACH DAP HEAD UNIT, ALONG THE ANTENNA MOUNT IN ULTRA-TIGHT NON-METALLIC / LIQUID TIGHT / FLEXIBLE CONDUCT / SUB-DUCT STRUCTURE TO PROTECT THE CABLES FROM EACH INDIVIDUAL SECTOR.

INSTALL TWO 2"ø FLEXIBLE CONDUITS. THE FIRST 2" CONDUIT IS USED TO RUN ALL FIBER AND POWER OPTIC CABLES. THE SECOND 2" CONDUIT IS INSTALLED DURING THE INITIAL INSTALLATION BUT IS RESERVED FOR FUTURE GROWTH / USE. THEN USE OF A KELLEM GRIP PROVIDES ACCEPTABLE CABLE SUPPORT

THE RF CABLES SHALL BE RUN SEPARATELY OUTSIDE OF THE FLEXIBLE CONDUIT. OTHER CABLE RUNNING OPTIONS MAY BE USED BASED ON SITE SPECIFIC REQUIREMENTS. THE INSTALLER SHOULD CONSULT WITH THE CLEARWIRE PROJECT MANAGER WHO WILL WORK WITH THE TOWER OWNER TO DEVELOP AN APPROPRIATE METHOD PER SITE. FOR CASES WHERE PROTECTIVE CONDUIT IS NOT INSTALLED, THE USE OF VALMONT MICROFLECT CUSHION HANGER OR APPROVED EQUAL IS RECOMMENDED AS A WAY TO PREVENT DAMAGE TO THE FIBER OPTIC CABLES.



RRU UNIT COAX 2

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

NOTES:

1) ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY THE CONTRACTOR.

2) THE DESIGN IS BASED ON THE EMSS REPORT, SIGNED AND APPROVED BY ENGINEERING.

3) THE CONTRACTOR SHALL VERIFY THE ACTUAL LENGTHS OF CABLES BEFORE INSTALLATION.

4) ALL TIE WRAPS SHALL BE CUT FLUSH WITH THE APPROVED CUTTING TOOL FOR SAFETY AND PROTECTION.

5) ALL SITE CABLING SHALL MAINTAIN MAXIMUM CABLE SEPARATION REQUIREMENTS AS TO THE TYPE OF CABLE AND FUNCTION. THIS IS DONE TO PROTECT DAMAGE, AS WELL AS, TO PREVENT THE INDUCTION OF CURRENT INTO THE CONDUCTORS FROM MAGNETIC LINES OF FLUX CREATED FROM POWER AND CURRENTS THROUGH THE CABLES.

6) ALL CABLES SHALL BE PROTECTED FROM DAMAGE AND SHALL HAVE THE MINIMUM BEND RADIUS FOR SIZE AND MANUFACTURER OF THAT CABLE.

7) SLACK SHALL BE LEFT IN THE CABLES LEAVING THE EQUIPMENT TO THEIR TERMINATION POINTS. THIS IS DONE IN ORDER TO PROVIDE STRESS RELIEF ON THE CABLES AND CONNECTIONS IN THE EVENT OF SEISMIC ACTIVITY.

8) ALL CABLES SHALL BE ROUTED AND INSTALLED IN A MANNER AS TO PROTECT THE CABLES FROM DAMAGE FROM SHARP EDGES ON HARDWARE AND WHERE CABLES ARE ROUTED DOWN THE TOWER.

9) ALL CABLES SHALL BE SUPPORTED A MINIMUM OF EVERY (3) FEET EXCEPT FOR INSIDE MONOPALMS AND LATTICE TOWERS WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURERS RECOMMENDED CABLE SUPPORT ACCESSORIES SHALL BE USED.

10) A CABLE BRIDGE SYSTEM SHALL BE USED AS AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA AND MICROWAVE CABLES.

11) DRIP LOOPS ARE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM THE BUILDING OR OUTDOOR CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE CABLE PORT.

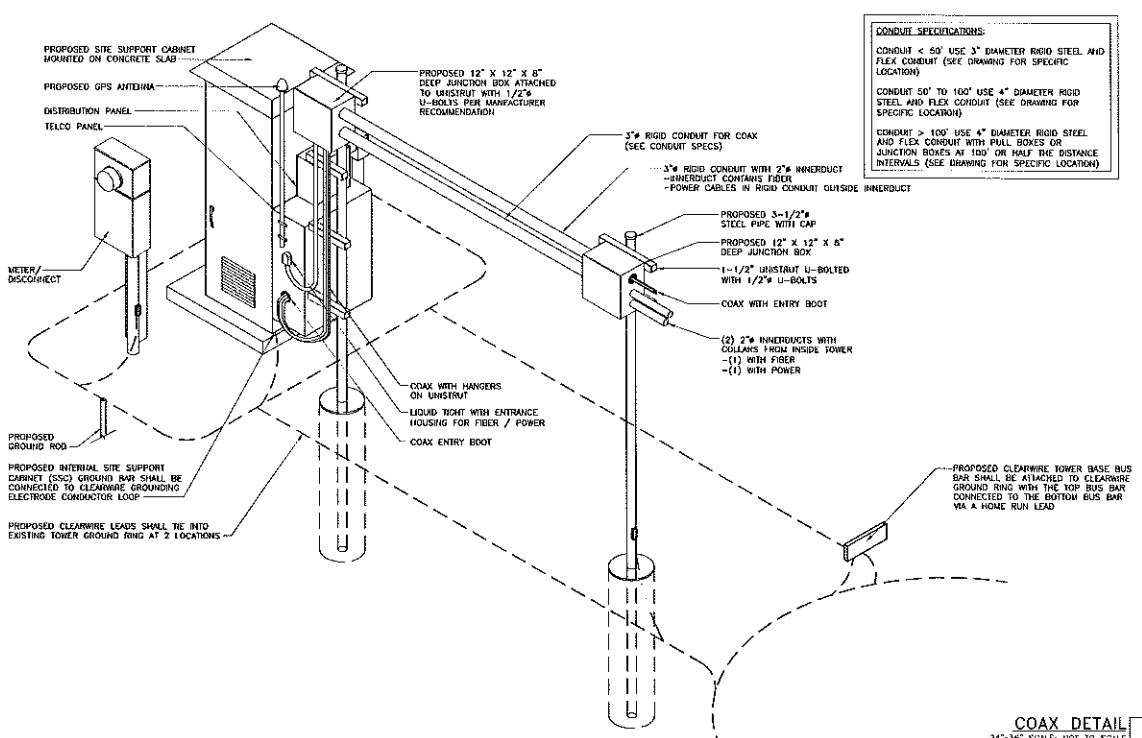
APPROVED COAX

MANUFACTURER DATA								MICROWAVE APPLICATIONS		
TYPE	MFG	PART #	DESCRIPTION	LOSS/100FT @2650 MHz	LOSS/100FT @700 MHz	LOSS/100FT @1900 MHz	WEIGHT (LB/FT)	MICROWAVE RADIO	DISTANCE (min) FEET	DISTANCE (MAX) FEET
CORRUGATED	EUPEN	EC4-50	1/2" FOAM DIELECTRIC	3.77	1.8	3.16	.16	DRAGONWAVE DUO	1	250
CORRUGATED	EUPEN	EC5-50-A	7/8" FOAM DIELECTRIC	1.98	.96	1.66	.33	DRAGONWAVE DUO	1	450
CORRUGATED	EUPEN	EC6-50-A	1-1/4" FOAM DIELECTRIC	1.463	.698	1.22	.58	DRAGONWAVE DUO	450	650
CORRUGATED	EUPEN	EC7-50A	1-5/8" FOAM DIELECTRIC	1.2	.57	.997	.78	DRAGONWAVE DUO	450	800
CORRUGATED	EUPEN	EC4-150-DINM	1/2" FOAM DIELECTRIC JUMPER-5FT WITH N(m)/DIN(m)	3.77	N/A	N/A	.16	N/A	N/A	N/A
CORRUGATED	EUPEN	EC4-150-DINM	1/2" FOAM DIELECTRIC JUMPER-5FT WITH DIN(m)/DIN(m)	3.77	N/A	N/A	.16	N/A	N/A	N/A
CORRUGATED	EUPEN	EC4-300-DINM	1/2" FOAM DIELECTRIC JUMPER-10FT WITH N(m)/DIN(m)	3.77	N/A	N/A	.16	N/A	N/A	N/A
CORRUGATED	EUPEN	EC4-300-DINM	1/2" FOAM DIELECTRIC JUMPER-10FT WITH DIN(m)/DIN(m)	3.77	N/A	N/A	.16	N/A	N/A	N/A

RAN APPLICATIONS			GPS APPLICATIONS			APPROVED CONNECTORS	
RAN SYSTEMS	DISTANCE (min) FEET	DISTANCE (MAX) FEET	RAN SYSTEM	DISTANCE (MAX) FEET	DISTANCE (MAX) FEET	MFG	PART #
DBS GROUND	1	20 70	DBS3900 WAP450 SPX213	N/A	N/A	PPC	CC-DM-L4 CC-NM-L4
DBS GROUND	1	45 145	N/A	N/A	N/A	PPC	CC-DM-EC5 CC-DF-EC5 CC-NM-C5
GROUND	1	165****	N/A	N/A	N/A	PPC	CC-DF-EC6
GROUND	1	110****	N/A	N/A	N/A	PPC	CC-DF-EC7
RFH TO ANTENNA/FILTER	N/A	5	N/A	N/A	N/A	INCLUDED	INCLUDED
FILTER TO ANTENNA	N/A	5	N/A	N/A	N/A	INCLUDED	INCLUDED
RFH TO ANTENNA/FILTER	N/A	10	N/A	N/A	N/A	INCLUDED	INCLUDED
FILTER TO ANTENNA	N/A	10	N/A	N/A	N/A	INCLUDED	INCLUDED

MICROWAVE COAX 3

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE



CONDUIT SPECIFICATIONS:

CONDUIT < 50' USE 3" DIAMETER RIGID STEEL AND FLEX CONDUIT (SEE DRAWING FOR SPECIFIC LOCATION)

CONDUIT 50' TO 100' USE 4" DIAMETER RIGID STEEL AND FLEX CONDUIT (SEE DRAWING FOR SPECIFIC LOCATION)

CONDUIT > 100' USE 4" DIAMETER RIGID STEEL AND FLEX CONDUIT WITH PULL BOXES OR JUNCTION BOXES AT 100' OR HALF THE DISTANCE INTERVALS (SEE DRAWING FOR SPECIFIC LOCATION)

COAX DETAIL 1

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

clearwire
4400 CARILLON POINT
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COSTA MESA, CA 92626
PHONE: (714) 434-0053

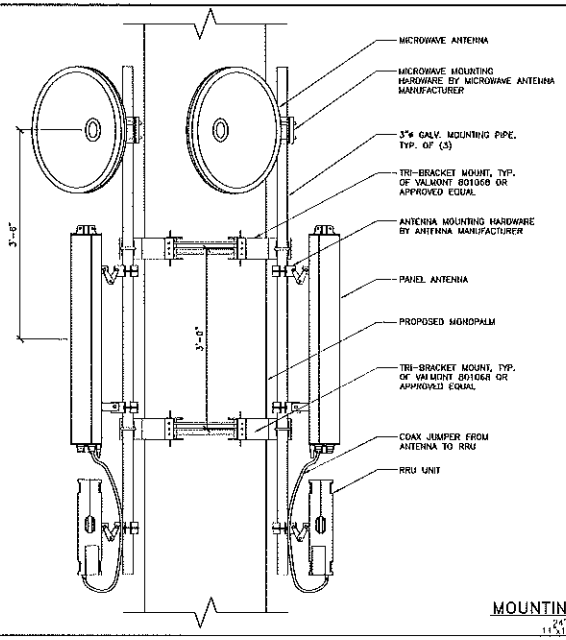
TRUE VALLEY HARDWARE STORE
CA-MRC0025
321 SECOND STREET
LIVINGSTON, CA 95334

REVISIONS			
NO.	DATE	DESCRIPTION	INITIAL
1	05/01/10	PRELIMINARY ZONING	AV
2	06/01/10	ISSUED FOR FINAL ZONING	AV
3	10/8/10	100% ZONING DRAWINGS	NAS
⚠	11/23/10	CITY PLANNING COMMENTS	SW

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

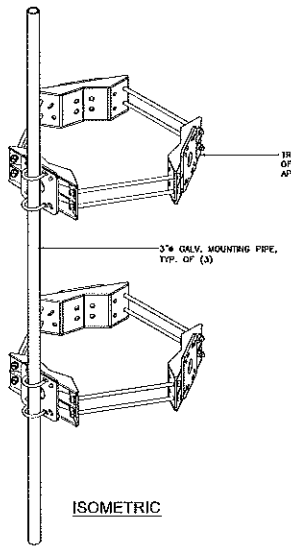
SHEET TITLE
COAX DETAILS

SHEET NUMBER
D-2



MOUNTING ELEVATION 7

24"x36" SCALE: 1" = 1'-0"
11"x17" SCALE: 1/2" = 1'-0"



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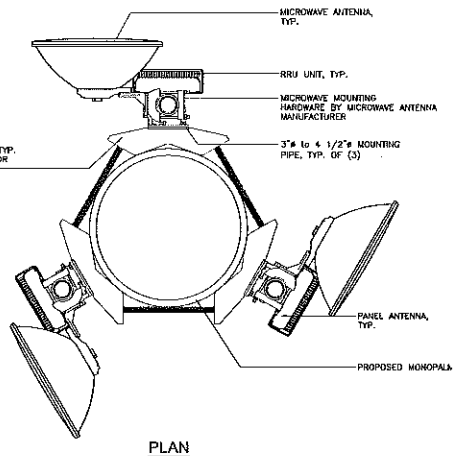


PLAN

MOUNTING DETAIL 3

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

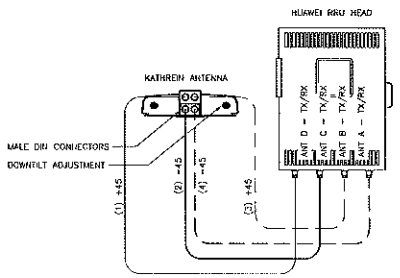
ANTENNA INFORMATION

SECTOR	ANTENNA	BAND #	AZIMUTH	MODEL	QTY.	DOWNTILT	RAD CENTER FT. AGL	COAX LENGTH (±)
ALPHA	RED	1	0°	840 10054B	1	0	52'-6"	70'-5"
BETA	BLUE	2	120°	840 10054B	1	0	52'-6"	70'-5"
GAMMA	YELLOW	3	240°	840 10054B	1	0	52'-6"	70'-5"
–	PARABOLIC	–	T.B.D.	VHLP2	1	0	58'-0"	73'-11"
–	PARABOLIC	–	T.B.D.	VHLP2	1	0	58'-0"	73'-11"
–	PARABOLIC	–	T.B.D.	VHLP2	1	0	58'-0"	73'-11"
GPS ANTENNA LOCATION OPTIONS: (1) EQUIPMENT CABINET; (2) ANTENNA MAST; (3) H-FRAME; FIELD VERIFY								

LABEL MARKING SHALL BE PLACED AT:
1. WITHIN 12" OF CABLE AT BOTH ENDS
2. AT/NEAR TOWER MGB
3. PRIOR TO ENTRY INTO THE CABINET FOR A CABLE SUPPORT BRIDGE
*COORDINATE BACKHAUL INSTALLATION WITH FINAL ENDS

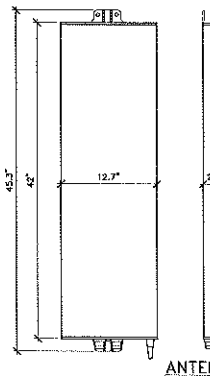
ANTENNA SCHEDULE 6

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE



CABLE CONNECTION 5

24"x36" SCALE: 1 - 1/2" = 1'-0"
11"x17" SCALE: 3/4" = 1'-0"

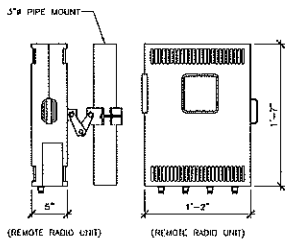


MANUFACTURER: KATHREIN
PART # 840 10054B
LENGTH: 42.0"
WIDTH: 12.7"
DEPTH: 2.8"
WEIGHT: 35 LBS

ANTENNA SPECIFICATION 4

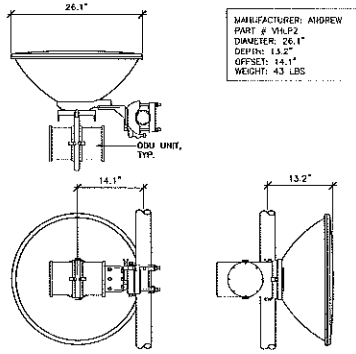
24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

MANUFACTURER: HUAWEI
MODEL # RRU3702
WIDTH: 14.0"
DEPTH: 4.7"
HEIGHT: 18.9"
WEIGHT: 44 LB



RRU SPECIFICATION 2

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE



MANUFACTURER: ANDREW
PART # VHLP2
DIAMETER: 26.1"
DEPTH: 13.2"
OFFSET: 14.1"
WEIGHT: 43 LBS

2' ø MICROWAVE ANTENNA SPECIFICATION 1

24"x36" SCALE: NOT TO SCALE
11"x17" SCALE: NOT TO SCALE

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4400 CARILLON POINT
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CA-MRC0025
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LIVINGSTON, CA 95334

REVISIONS

NO.	DATE	DESCRIPTION	INITIAL
1	08/19/16	PRELIMINARY ZONING	JV
2	08/19/16	ISSUED FOR FINAL ZONING	JV
3	10/3/16	100% ZONING DRAWINGS	NJC
4	11/29/16	CITY PLANNING COMMENTS	SV

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET

SHEET TITLE
RF INFORMATION AND DETAILS

SHEET NUMBER
RF-1