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CCL00528 - 2022 5G NR RADIO

PA#: MRSFR086859 PTN#: 3701A10XD0 - 4TXRX ANTENNA RETROFIT

PA#: MRSFR086911 PTN#: 3701A10WSN - 5G NR CBAND

PA#: MRSFR086909 PTN#: 3701A10YJX - 5G NR CBAND

FA#: 10088152

HWY 101-IGNACIO

150 HAMILTON ROAD

NOVATO, CA 94945

MODIFICATION OF TELECOMMUNICATION SITE

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE
2022 CALIFORNIA ELECTRICAL CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA FIRE CODE
2022 CALIFORNIA ENERGY CODE
2021 INTERNATIONAL BUILDING CODE W/ STATE AMENDMENTS

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

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2022 CALIFORNIA BUILDING CODE. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SITE INFORMATION

APPLICANT: AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

PROPERTY OWNER: PACIFIC GAS & ELECTRIC PG&E
245 MARKET ST. #N10D
SAN FRANCISCO, CA 94105

STRUCTURE TYPE: LATTICE TOWER

TOWER HEIGHT: 121'-0"

ASSESSORS PARCEL NUMBER: 157-171-17

LATITUDE: 38° 04' 41.693"N 38.07825°

LONGITUDE: 122° 32' 29.753"W -122.54160°

LAT/LONG TYPE: NAD-83

ELEVATION: ±3.3' AMSL

EXISTING ZONING: C1-1

PROPOSED PROJECT AREA: NO INCREASE IN S.F.

TYPE OF CONSTRUCTION: TYPE V-B

OCCUPANCY GROUP: U

JURISDICTION: CITY OF NOVATO

PROJECT TEAM

CLIENT REPRESENTATIVE: MASTEC NETWORK SOLUTIONS
3443 AIRPORT RD
SACRAMENTO, CA 95834
CONTACT: CHRISTOPHER DOWELL
PH: (415) 230-9185
EMAIL: Christopher.Dowell@mastec.com

SCOPING ENGINEER: MASTEC NETWORK SOLUTIONS
3443 AIRPORT RD
SACRAMENTO, CA 95834
CONTACT: SHAWN MARTIN
EMAIL: SHAWN.MARTIN@MASTEC.COM

ENGINEERING: MASTEC NETWORK SOLUTIONS
125 KLUG CIRCLE
CORONA, CA 92880
CONTACT: RAPHAEL MOHOMED
PH: (919) 674-5895
EMAIL: Raphael.Mohamed@mastec.com

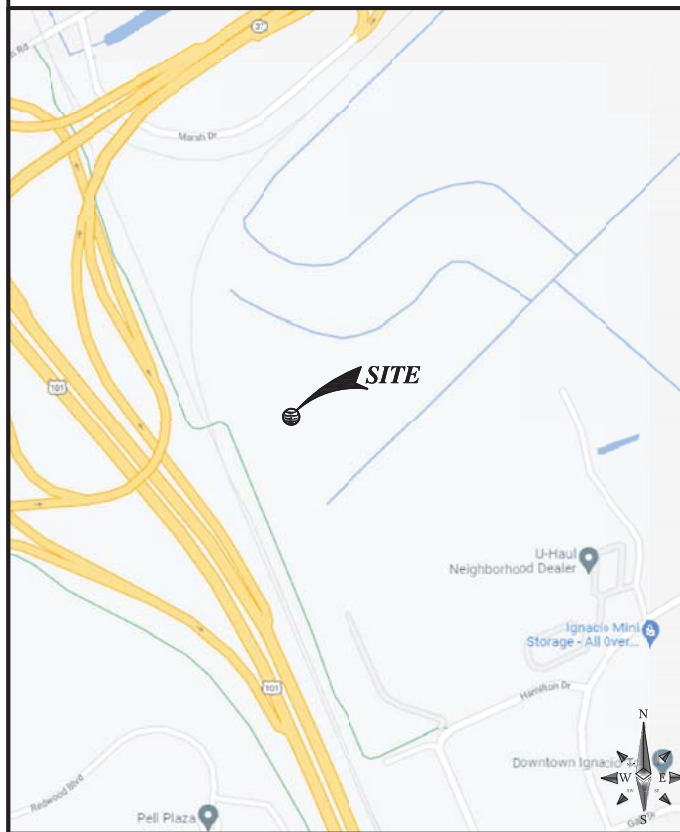
CONSTRUCTION: MASTEC NETWORK SOLUTIONS
3443 AIRPORT RD
SACRAMENTO, CA 95834
CONTACT: BEN BRODERICK
PH: (206) 303-9666
EMAIL: Benjamin.Broderick@mastec.com

RF ENGINEER: AT&T MOBILITY
5001 EXECUTIVE PKWY 4W750S
SAN RAMON, CA 94583
CONTACT: TARUN SETHI
EMAIL: ts458v@att.com

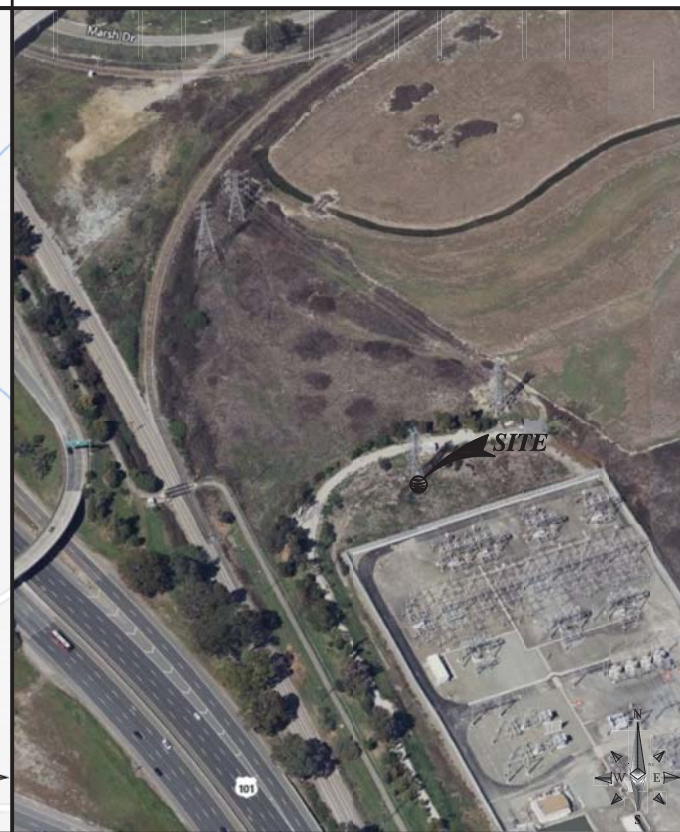
SITE ACQUISITION: MASTEC NETWORK SOLUTIONS
3443 AIRPORT RD
SACRAMENTO, CA 95834
CONTACT: JAMES PHILLIPS
PH: (530) 333-5786
EMAIL: James.Phillips@mastec.com

LOCATION MAP

VICINITY MAP



LOCAL MAP



DRIVING DIRECTIONS

DIRECTIONS FROM: 5001 EXECUTIVE PARKWAY 4W750S, SAN RAMON, CALIFORNIA

CALL THE CONTRACTOR HELP DESK BEFORE ENTERING SITE @ 866-539-1483

- DEPART AND HEAD TOWARD SUNSET DR
- KEEP STRAIGHT TO GET ONTO SUNSET DR
- TURN RIGHT ONTO BOLLINGER CANYON RD
- TAKE THE RAMP ON THE RIGHT FOR I-680 AND HEAD TOWARD SACRAMENTO
- AT EXIT 46A, HEAD RIGHT ON THE RAMP FOR CA-24 TOWARD LAFAYETTE/OAKLAND
- TAKE THE RAMP ON THE RIGHT FOR I-580 AND HEAD TOWARD HAYWARD/SAN FRANCISCO
- KEEP STRAIGHT TO GET ONTO I-80 E/I-580 W
- TAKE THE RAMP ON THE LEFT FOR I-80 E/I-580 W
- KEEP RIGHT TO STAY ON I-580 W
- TOLL ROAD
- TAKE THE RAMP ON THE LEFT FOR US-101 N
- PASS DAYTON MONTGOMERY COUNTY ON THE RIGHT
- AT EXIT 460A, HEAD RIGHT ON THE RAMP FOR CA-37 TOWARD NAPA/VALLEJO
- ARRIVE AT RAMP ON THE RIGHT

PROJECT DESCRIPTION

AT&T MOBILITY PROPOSES TO MODIFY AN EXISTING UNMANNED WIRELESS COMMUNICATIONS FACILITY. THIS MODIFICATION WILL CONSIST OF THE FOLLOWING:

- TOWER ABOVE CONDUCTOR**
- REMOVE (3) EXISTING RRUS-11 B12 (1 PER SECTOR)
 - RELOCATE (2) EXISTING PANEL ANTENNAS @ 118' RAD @ BETA & GAMMA SECTOR FROM P2 TO P1
 - INSTALL (3) NEW PANEL ANTENNA @ 118' RAD @ P2
 - INSTALL (3) NEW RRUS-4478 B12A IN FOOTPRINT OF REMOVED RRUS-11 B12 (1 PER SECTOR)
- BELOW CONDUCTOR**
- RELOCATE (2) EXISTING H-FRAMES FROM 46' RAD TO 42' RAD (1 PER ALPHA/GAMMA) (1) FRAME @ GAMMA RELOCATED FROM C-LEG TO D-LEG
 - RELOCATE (3) EXISTING RRUS-4478 B14 FROM EXISTING H-FRAME @ 46' RAD TO NEW H-FRAME @ 35' RAD (ADD JUMPERS FROM EXISTING 7/8" LINES)
 - RELOCATE (3) EXISTING RRUS-4478 B5 FROM EXISTING H-FRAME @ 46' RAD TO NEW H-FRAME @ 35' RAD (ADD JUMPERS FROM EXISTING 7/8" LINES)
 - INSTALL (2) NEW B144796 H-FRAMES @ NEW 35' RAD ON B/C LEG
 - INSTALL (1) NEW B144796 H-FRAME W/ NEW (1) B139409 BRACKETS @ 42' RAD, A LEG
 - INSTALL (3) NEW AIR6449 B77D @ 42' RAD TO BE NEW P5
 - INSTALL (3) NEW AIR6419 B77G @ 42' RAD TO BE NEW P6
 - INSTALL (1) NEW DC9 SQUID ON EXTENDED PIPE WITH ANTENNAS @ 42' RAD
 - INSTALL (2) NEW 6AWG DC TRUNKS
 - INSTALL (1) NEW 24 PAIR FIBER TRUNK
- EQUIPMENT SHELTER**
- INSTALL (1) GROUND TEST WELL FOR TEMP GENERATOR GROUNDING
 - INSTALL (1) NEW DC12 IN EXISTING RACK
 - INSTALL (5) NEW GE -48 RECTIFIERS IN EXISTING POWER PLANT (10 TOTAL)
 - INSTALL (1) NEW BATTERY SHELF IN EXISTING POWER PLANT
 - INSTALL (1) NEW 185AH BATTERY STRING IN NEW BATTERY SHELF (6 TOTAL)
 - INSTALL (1) NEW 6648 UNIT IN EXISTING DATA RACK
 - FINAL: (1) 5216, (2) XMU, (1) 6630 (MM) AND (1) 6648
- WEED ABATEMENT TO BE ASSESSED ON PRECON WALK, AROUND SHELTER AND CONDUIT STUB UPS AT BASE OF TOWER
- IF THERE IS ANY DISCREPANCY FOUND AT CIO25 ON THE RECTIFIER/BATTERY COUNT IN RELATION TO THE SPCT PLEASE CONTACT DAVE THOMAS IMMEDIATELY; SEE SHEET E-1

REFERENCE RFDS ID# 4496147, VERSION 3.00, DATED 06/29/2022

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
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A-1	ENLARGED SITE PLAN
A-2	EQUIPMENT LAYOUT
A-3	EXISTING ANTENNA LAYOUT
A-3.1	PROPOSED ANTENNA LAYOUT
A-4	ELEVATIONS
A-5	DETAILS
A-6	DETAILS
A-7	DETAILS
G-1	GROUNDING DETAILS
E-1	ELECTRICAL DIAGRAM & LTE RET SCHEMATIC DIAGRAM
E-2	ELECTRICAL SITE PLAN

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS & AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT & MAY IMPOSE CHANGES OR MODIFICATIONS.

90% CDS _____ DATE: _____

100% CDS _____ DATE: _____

100% CDS WITH STRUCTURALS _____ DATE: _____

CONSTRUCTION: _____ DATE: _____

RF ENGINEER _____ DATE: _____

SCOPING ENGINEER _____ DATE: _____

PROJECT MANAGER: _____ DATE: _____

SCALE

THE DRAWING SCALES SHOWN IN THIS SET REPRESENT THE CORRECT SCALE ONLY WHEN THESE DRAWINGS ARE PRINTED IN A 11"x17" OR 24"x36" FORMAT.



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125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE: _____ FA # 10088152

DRAWN BY: _____ JPG

JOB #: _____ 30109

REV	DATE	DESCRIPTION
3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
1	05/02/2022	100% CD'S - S&S
0	03/15/2022	95% CD'S FOR REVIEW
A	02/16/2022	90% CD'S FOR REVIEW



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CCL00528
HWY 101-IGNACIO
150 HAMILTON ROAD
NOVATO, CA 94945
FA NUMBER
10088152

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

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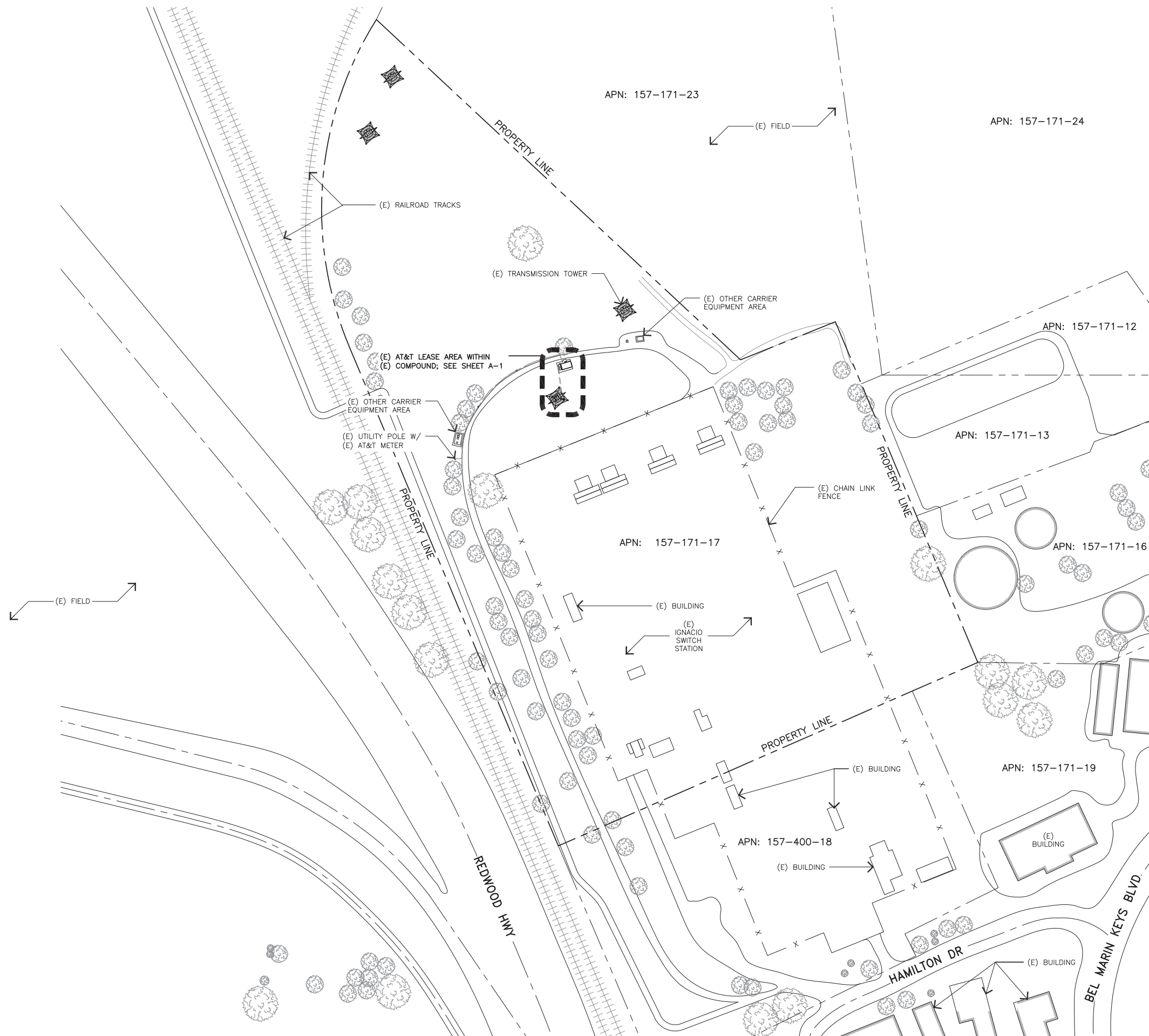
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HWY 101-IGNACIO
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NOVATO, CA 94945
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10088152

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-0



NOTE
THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A CURRENT LAND SURVEY. ALL PROPERTY LINES, EASEMENTS, SETBACKS, AND EXISTING CONDITIONS ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION.

OVERALL SITE PLAN

11X17 SCALE: 1" = 200'
24X36 SCALE: 1" = 100'

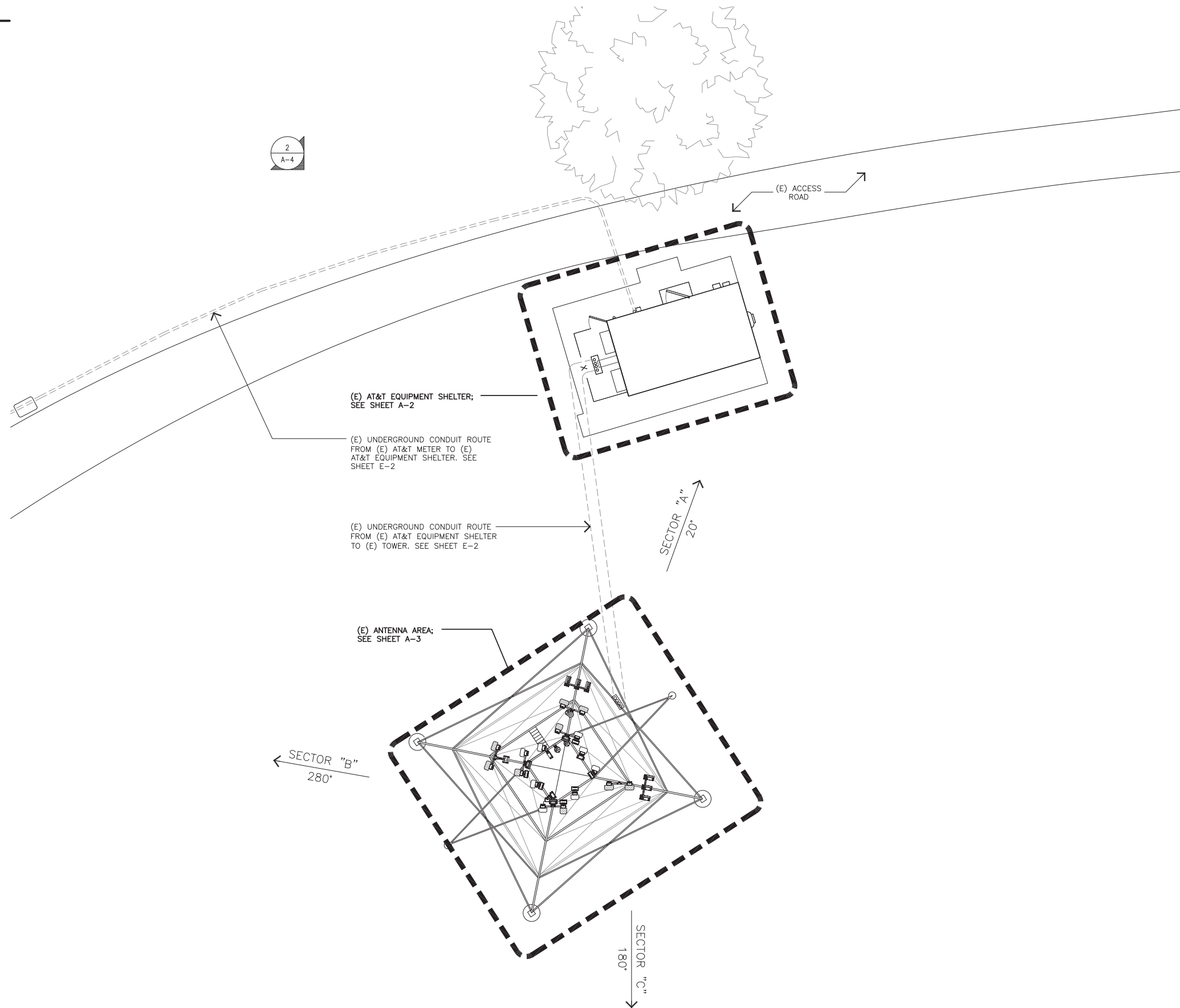


1

ENLARGED SITE PLAN GENERAL NOTES

- A. OTHER CARRIER ANTENNAS NOT SHOWN FOR CLARITY.
- B. GROUND ALL (N) EQUIPMENT AND COAX PER SHEET G-1.
- C. CONTRACTOR TO PROVIDE ALL LABOR TO INSTALL COAX, RETS AND ANTENNAS.
- D. CONTRACTOR TO PROVIDE ALL COAX, CONNECTORS, ANCILLARY EQUIPMENT (INCLUDING WEATHER STRIPPING, GROUND KITS, ETC.).
- E. CONTRACTOR TO COLOR CODE ALL COAX. COLORED BANDS OF TAPE ON COAX IDENTIFY SECTOR, FREQUENCY, TECHNOLOGY, AND TRANSMIT GROUP AS FOLLOWS ON ALL COAX MODIFIED OR INSTALLED ONLY.
- F. WHEN ANTENNA LINES ARE DIPLEXED, THE COLOR CODE OF THE HIGHEST FREQUENCY PREVAILS (I.E. UMTS DIPLEXED WITH TDMA SHOULD HAVE COLOR 4 BANDS).
- G. ALL ANTENNAS AND ANTENNA CABLE SHALL BE FURNISHED BY CONTRACTOR AND INSTALLED BY ANTENNA INSTALLATION CONTRACTOR.
- H. PRIOR TO PLACEMENT OF ANTENNA POLE MOUNTS, THE CONTRACTOR SHALL VERIFY THAT THE AZIMUTH AND DIMENSIONS SHOWN ON THE PLANS MATCH ACTUAL FIELD CONDITIONS. ALLOWABLE TOLERANCE: HORIZONTAL ALIGNMENT = ±5'; VERTICAL ALIGNMENT = ±1'.
- I. ANTENNA INSTALLATION CONTRACTOR SHALL PROVIDE ALL CONDUIT, CABLE TRAY, GROUNDS, ETC. FOR COMPLETE INSTALLATION OF ANTENNAS AND CABLES SHOWN AND INTENDED AS REQUIRED FOR A COMPLETE OPERATING SYSTEM IN ACCORDANCE WITH CONTRACTOR STANDARDS.
- J. IN NO CASE SHALL THERE BE ANY MORE THAN TWO (2) 90° TURNS (OR EQUIVALENT) IN ANY CONTINUOUS LENGTH OF CONDUIT BETWEEN PULL BOXES OR SIMILAR FEATURES.
- K. ANTENNA CONDUIT SHALL ONLY INCLUDE FACTORY-MADE LARGE RADIUS SWEEPS AT ALL CHANGES IN DIRECTION. SWEEP RADIUS SHALL BE 18" MINIMUM ABOVE GROUND AND 36" MINIMUM BELOW GROUND.
- L. CONDUIT SHALL BE 3"Ø MINIMUM. ALL UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC. ALL EXPOSED CONDUIT ABOVE GRADE LEVEL SHALL BE IMC OR RIGID GALVANIZED. ALL EXPOSED CONDUIT PROTECTED IN A BUILDING OR ON A ROOF SHALL BE EMT OR UV STABILIZED PAINTED SCHEDULE 80 PVC.
- M. IN HIGH TRAFFIC AREAS OR WHERE SUSCEPTIBLE TO DAMAGE CONTRACTOR SHALL PROVIDE FORMED 14 GA. GALVANIZED SHEET METAL COVER OVER COAXIAL CABLE ROUTES. WHERE CABLE IS RUN ON THE WALL, ATTACH UNISTRUT TO WALL AND COVER WITH 14 GA. GALVANIZED FORMED SHEET METAL COVER OR MATERIAL AS DIRECTED BY CONTRACTOR CONSTRUCTION MANAGER.
- N. VERIFY ROUTE AND LENGTH OF CABLE PRIOR TO CUTTING. ADJUST INDICATED ROUTE AS REQUIRED TO CLEAR (E) EQUIPMENT AT FACILITIES.
- O. MAXIMUM LENGTH OF 7/8" COAX CABLE SHALL BE 140'-0". MAXIMUM LENGTH OF 1-1/4" COAX CABLE SHALL BE 190'-0". MAXIMUM LENGTH OF 1-5/8" COAX CABLE SHALL BE 235'-0".
- P. VERIFY MODEL NUMBERS OF ANTENNAS WITH CONTRACTOR SERVICES.
- Q. THE CONTRACTOR SHALL PROVIDE TESTING OF ANTENNAS AND SHALL PROVIDE DOCUMENTATION TO THE CONTRACTOR PROJECT MANAGER.
- R. GENERAL CONTRACTOR TO VERIFY ALL TORQUE TOLERANCES PER THE MANUFACTURERS SPECIFICATIONS AND RECOMMENDATIONS.

NOTE:
1. WEED ABATEMENT TO BE ASSESSED ON PRECON WALK, AROUND SHELTER AND CONDUIT STUB UPS AT BASE OF TOWER



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

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NOVATO, CA 94945
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SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
A-1





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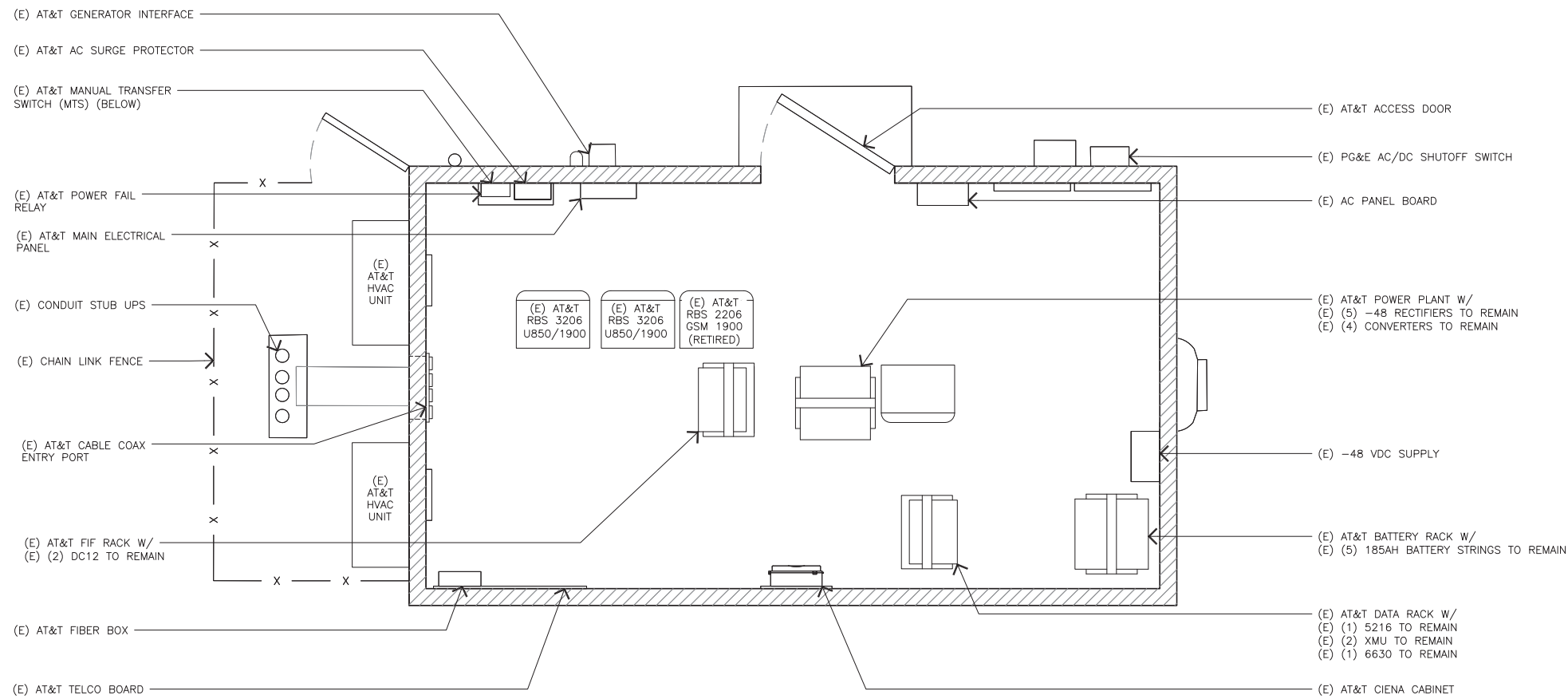
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SHEET TITLE
EQUIPMENT LAYOUT

SHEET NUMBER
A-2



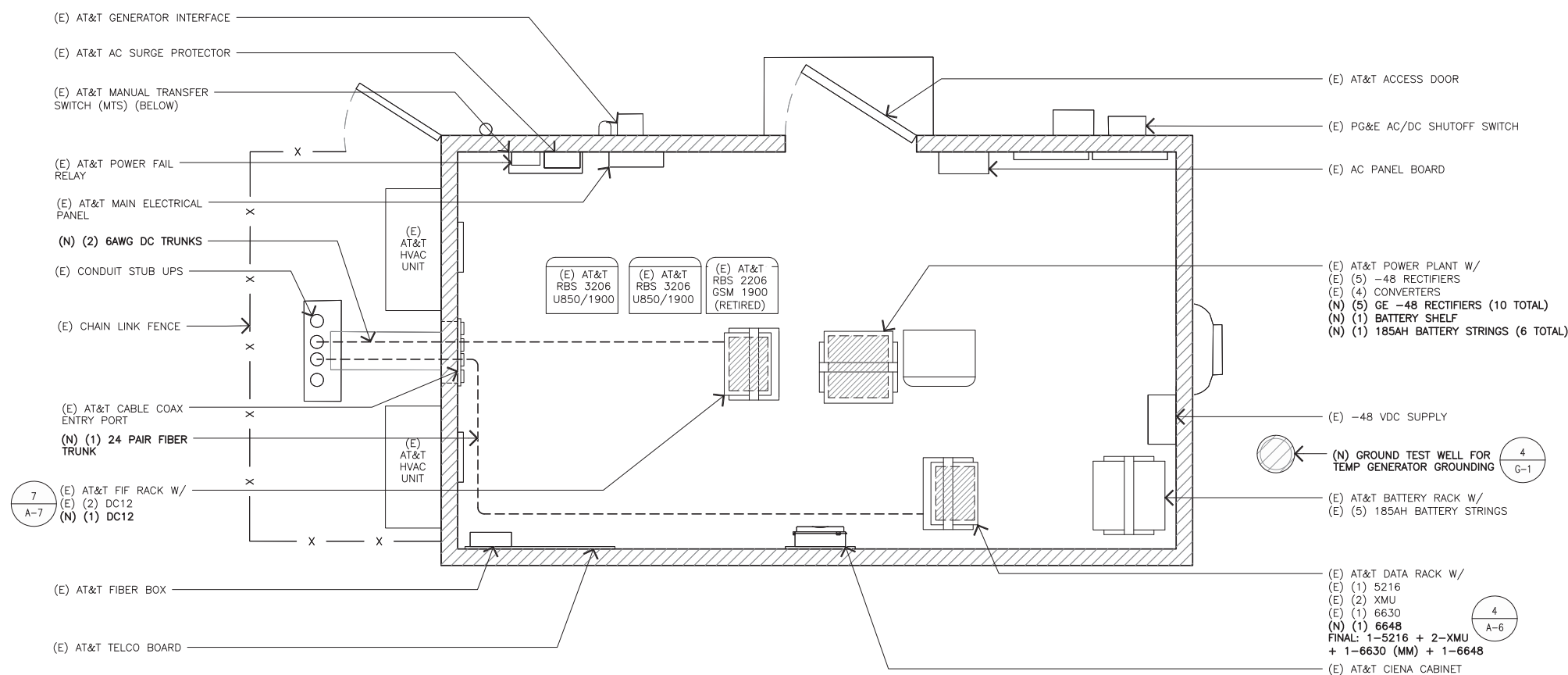
NOTE:
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EXISTING EQUIPMENT LAYOUT

11X17 SCALE: 1/4" = 1'-0"
24X36 SCALE: 1/2" = 1'-0"



1



PROPOSED EQUIPMENT LAYOUT

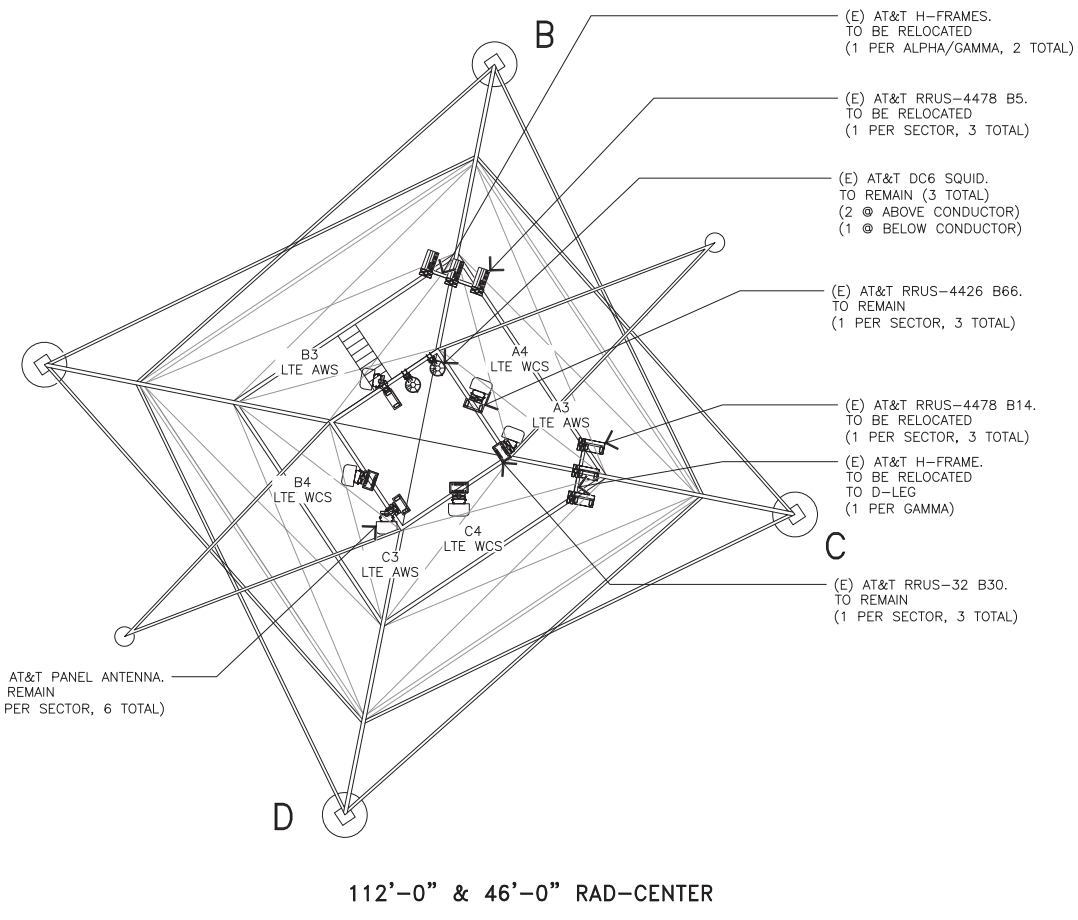
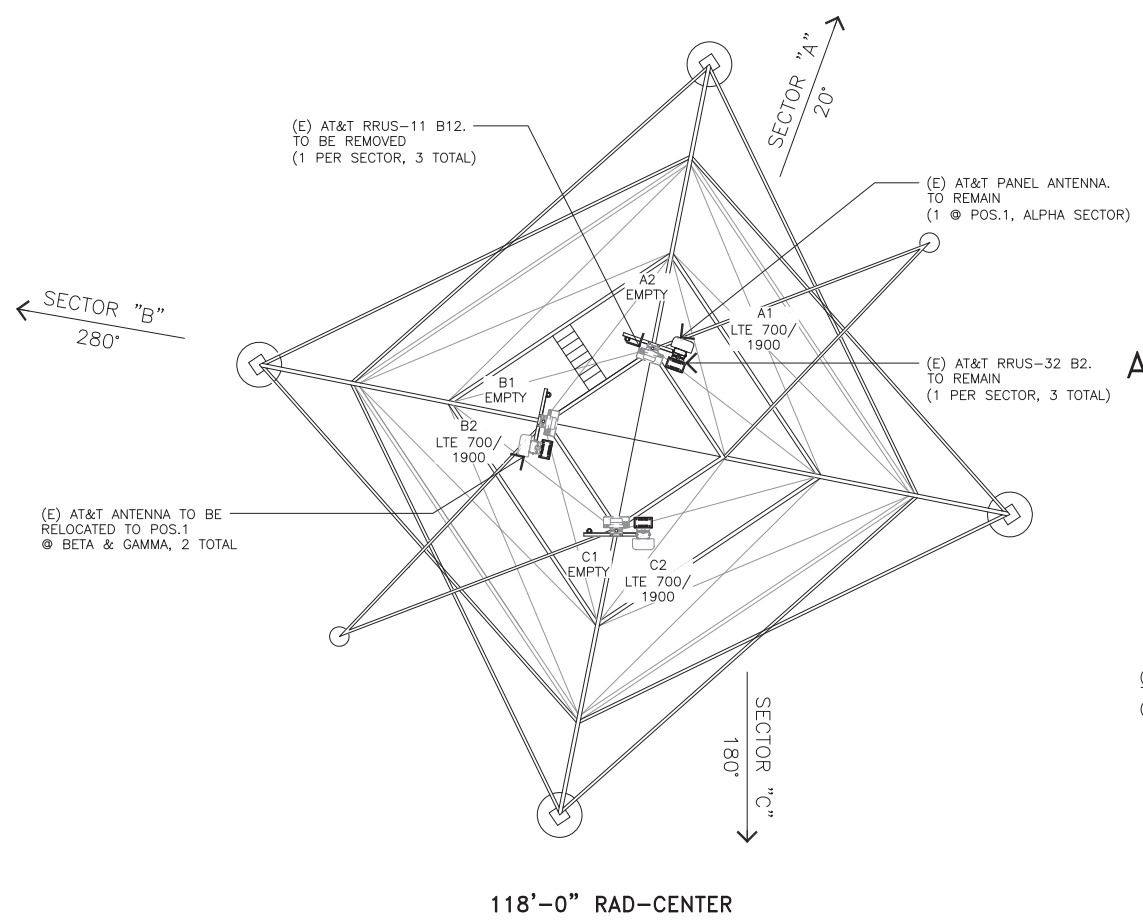
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24X36 SCALE: 1/2" = 1'-0"



2

EXISTING ANTENNA SCHEDULE										
SECTOR	POSITION	BAND TECH.	ANTENNA MODEL	ANTENNA AZIMUTH	RAD-CENTER	QTY./RRU MODEL	QTY./TMA MODEL	QTY./RAYCAP MODEL	CABLING	LENGTH
ALPHA	A1	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	20°	118'-0"	(1) RRUS-11 B12 (1) RRUS-32 B2	-	(2) DC6-48-60-18-8F	(6) POWER TRUNKS/ (2) FIBER TRUNKS	±75'
	A2	-	-	-	-	-	-	-		
	A3	LTE AWS	COMMSCOPE JAHH-65A-R3B	20°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	A4	LTE WCS	COMMSCOPE JAHH-65A-R3B	20°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	-		
BETA	B1	-	-	-	-	-	-	-		
	B2	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	280°	118'-0"	(1) RRUS-11 B12 (1) RRUS-32 B2	-	-		
	B3	LTE AWS	COMMSCOPE JAHH-65A-R3B	280°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	B4	LTE WCS	COMMSCOPE JAHH-65A-R3B	280°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	-		
GAMMA	C1	-	-	-	-	-	-	-		
	C2	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	180°	118'-0"	(1) RRUS-11 B12 (1) RRUS-32 B2	-	-		
	C3	LTE AWS	COMMSCOPE JAHH-65A-R3B	180°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	C4	LTE WCS	COMMSCOPE JAHH-65A-R3B	180°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	(1) DC6-48-60-18-8F		
TOTALS			9 TOTAL			18 TOTAL	0 TOTAL	3 TOTAL		

(UP) UP ON TOWER
(DN) DOWN NEAR EQUIPMENT AREA
*VERIFY LATEST VERSION OF THE RFDS PRIOR TO CONSTRUCTION.
*DO NOT USE CABLE LENGTHS FOR CUT LENGTHS - ESTIMATES ONLY - VERIFY IN FIELD PRIOR TO ORDERING MATERIAL.



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NOVATO, CA 94945
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SHEET TITLE
ANTENNA LAYOUT

SHEET NUMBER
A-3





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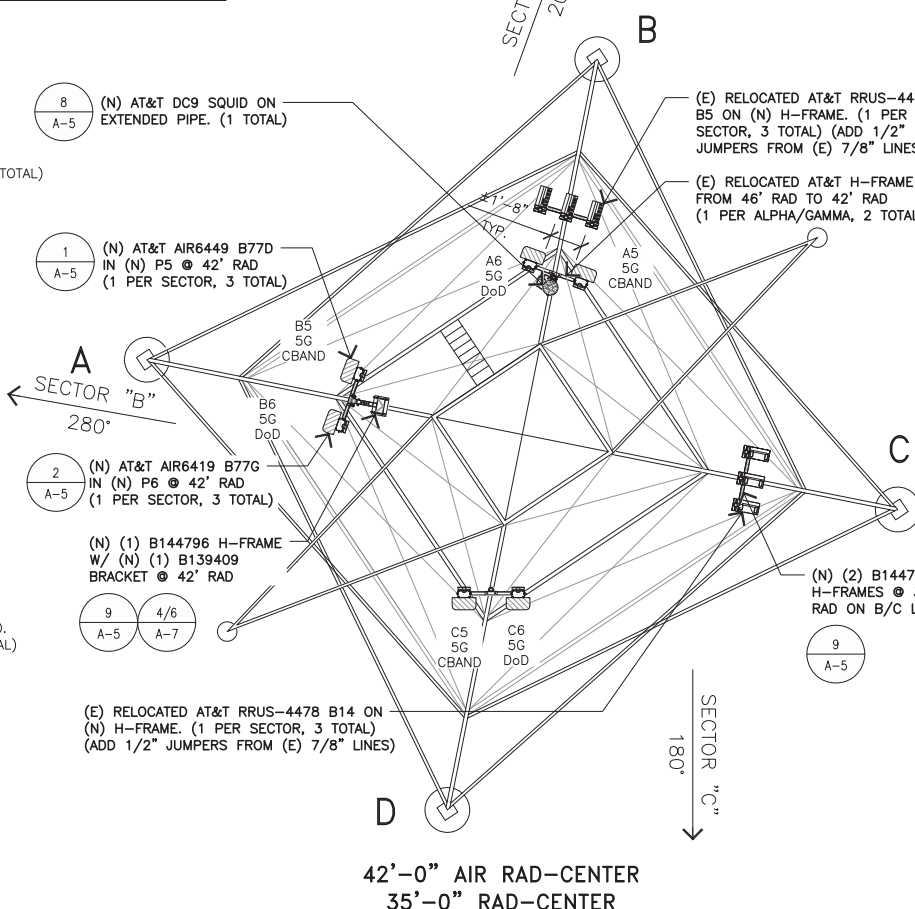
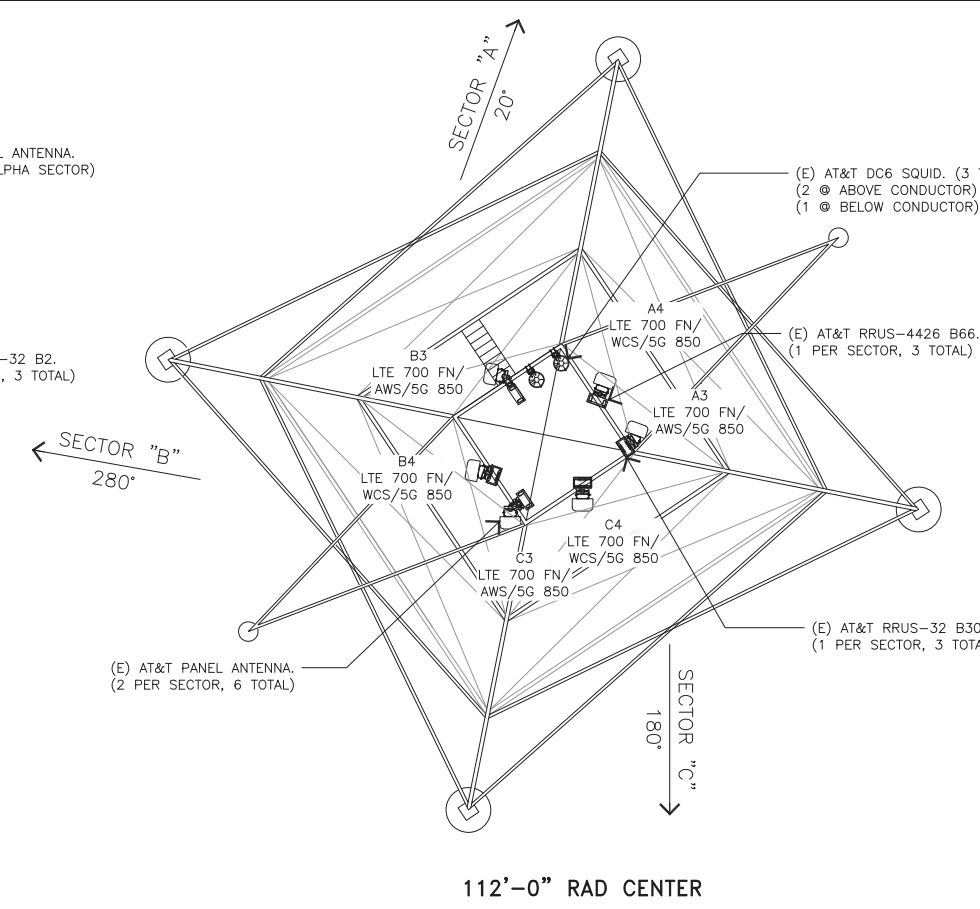
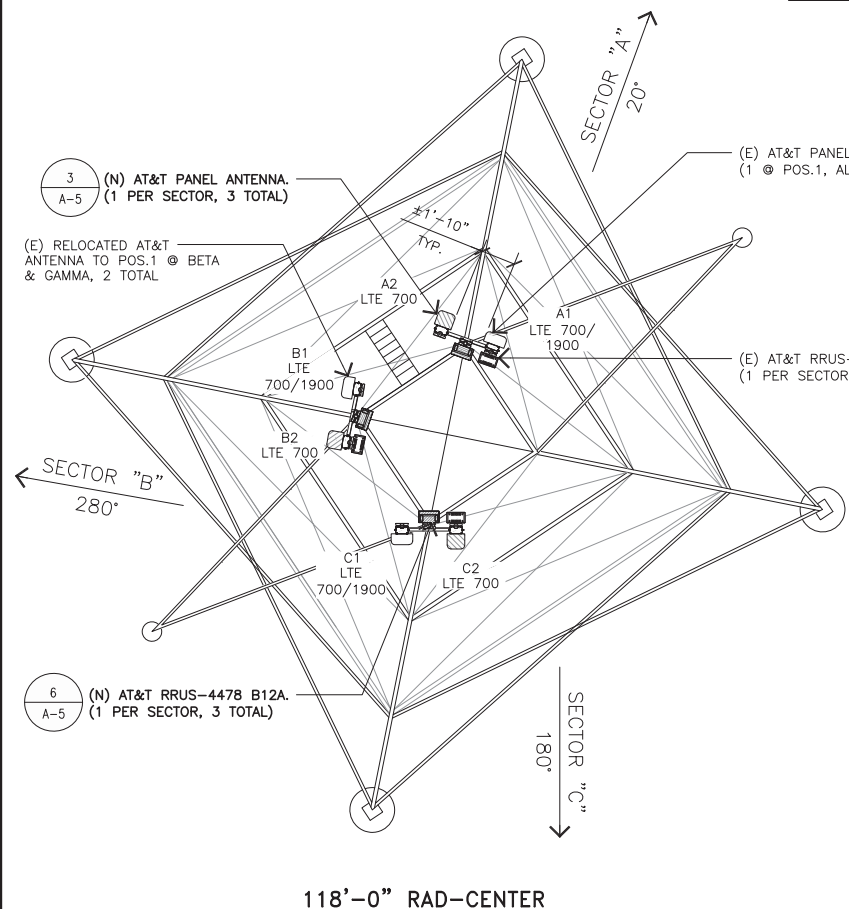
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HWY 101-IGNACIO
150 HAMILTON ROAD
NOVATO, CA 94945
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ANTENNA LAYOUT

SHEET NUMBER
A-3.1

FINAL ANTENNA SCHEDULE										
SECTOR	POSITION	BAND TECH.	ANTENNA MODEL	ANTENNA AZIMUTH	RAD-CENTER	QTY./RRU MODEL	QTY./TMA MODEL	QTY./RAYCAP MODEL	CABLING	LENGTH
ALPHA	A1	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	20°	118'-0"	(1) RRUS-4478 B12A (1) RRUS-32 B2	-	(2) DC6-48-60-18-8F	(8) POWER TRUNKS/ (3) FIBER TRUNKS	±75'
	A2	LTE 700	CCI OPA65R-BU4BA-K	20°	118'-0"	-	-	-		
	A3	LTE 700 FN/LTE AWS/5G 850	COMMSCOPE JAHH-65A-R3B	20°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	A4	LTE 700 FN/LTE WCS/5G 850	COMMSCOPE JAHH-65A-R3B	20°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	-		
	A5	5G CBAND	ERICSSON AIR6449 B77D	20°	42'-0"	-	-	(1) DC9-48-60-24-8C-EV		
	A6	5G DoD	ERICSSON AIR6419 B77G	20°	42'-0"	-	-	-		
BETA	B1	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	280°	118'-0"	-	-	-		
	B2	LTE 700	CCI OPA65R-BU4BA-K	280°	118'-0"	(1) RRUS-4478 B12A (1) RRUS-32 B2	-	-		
	B3	LTE 700 FN/LTE AWS/5G 850	COMMSCOPE JAHH-65A-R3B	280°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	B4	LTE 700 FN/LTE WCS/5G 850	COMMSCOPE JAHH-65A-R3B	280°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	-		
	B5	5G CBAND	ERICSSON AIR6449 B77D	280°	42'-0"	-	-	-		
	B6	5G DoD	ERICSSON AIR6419 B77G	280°	42'-0"	-	-	-		
GAMMA	C1	LTE 700/1900	CCI OPA-65R-LCUU-H4-K	180°	118'-0"	-	-	-		
	C2	LTE 700	CCI OPA65R-BU4BA-K	180°	118'-0"	(1) RRUS-4478 B12A (1) RRUS-32 B2	-	-		
	C3	LTE 700 FN/LTE AWS/5G 850	COMMSCOPE JAHH-65A-R3B	180°	112'-0"	(1) RRUS-4478 B5 (1) RRUS-4426 B66	-	-		
	C4	LTE 700 FN/LTE WCS/5G 850	COMMSCOPE JAHH-65A-R3B	180°	112'-0"	(1) RRUS-4478 B14 (1) RRUS-32 B30	-	(1) DC6-48-60-18-8F		
	C5	5G CBAND	ERICSSON AIR6449 B77D	180°	42'-0"	-	-	-		
	C6	5G DoD	ERICSSON AIR6419 B77G	180°	42'-0"	-	-	-		
TOTALS			18 TOTAL			18 TOTAL	0 TOTAL	4 TOTAL		

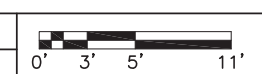
LEGEND /NOTES
(UP) UP ON TOWER
(DN) DOWN NEAR EQUIPMENT AREA
*VERIFY LATEST VERSION OF THE RFDS PRIOR TO CONSTRUCTION.
*DO NOT USE CABLE LENGTHS FOR CUT LENGTHS - ESTIMATES ONLY - VERIFY IN FIELD PRIOR TO ORDERING MATERIAL.



NOTE:
1. ALL BOLTS AND HARDWARE SHOULD BE CHECKED FOR TIGHTNESS AND CONDITION PRIOR TO INSTALLING THE PROPOSED EQUIPMENT
2. NO EQUIPMENT SHALL BE INSTALLED AROUND OR IN FRONT OF THE ANTENNA OR ANTENNA PATTERNS
3. MOUNTED RRUS NOT TO EXCEED 6" ABOVE OR BELOW ANTENNAS

PROPOSED ANTENNA LAYOUT

11X17 SCALE: 3/32" = 1'-0"
24X36 SCALE: 3/16" = 1'-0"



1



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE: FA # 10088152
DRAWN BY: JPG
JOB #: 30109

REV	DATE	DESCRIPTION
3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
1	05/02/2022	100% CD'S - S&S
0	03/15/2022	95% CD'S FOR REVIEW
A	02/16/2022	90% CD'S FOR REVIEW



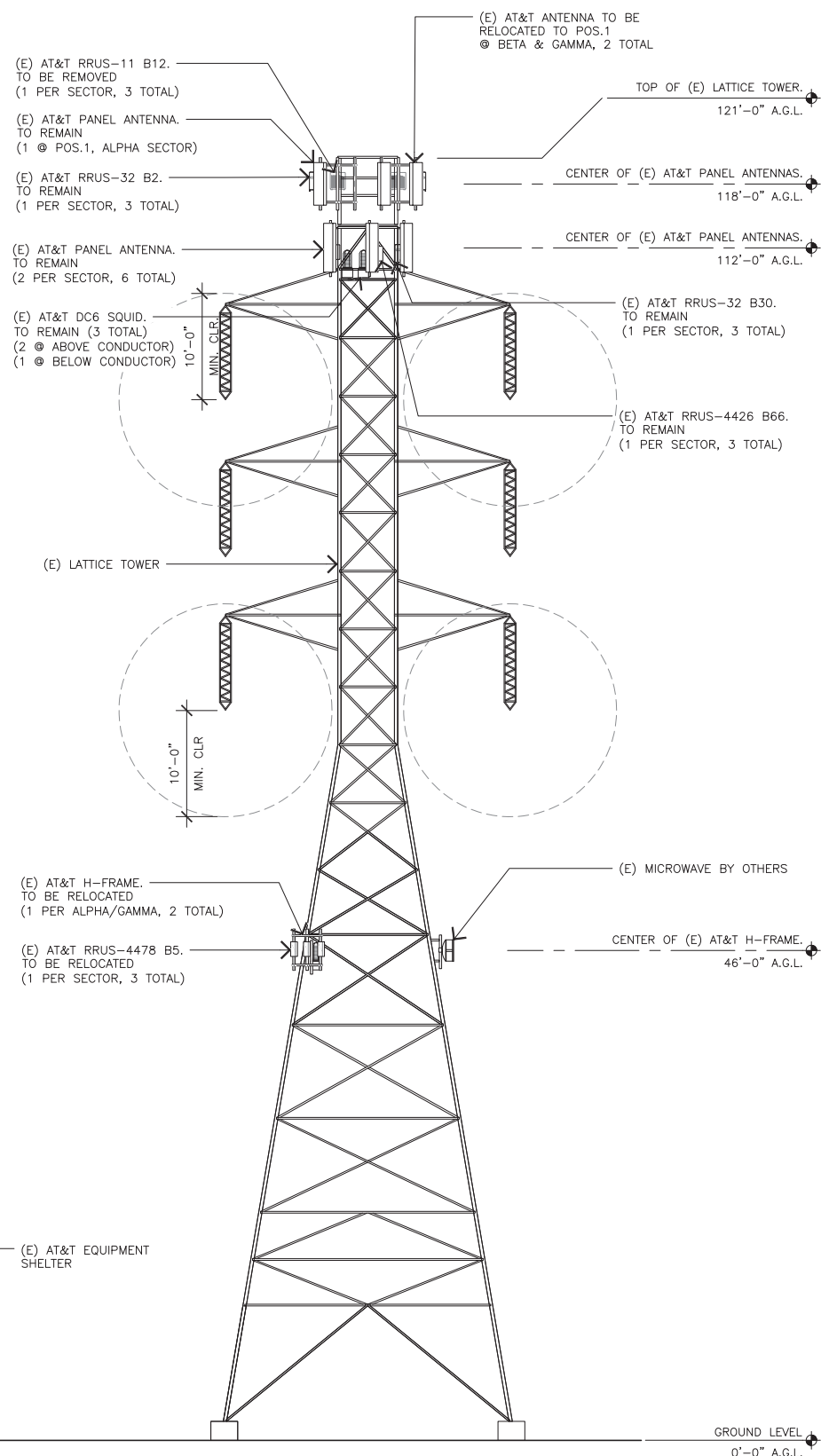
Digitally signed by Joseph Russell King
Date: 2023.10.20 09:57:28 -04'00'

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CCL00528
HWY 101-IGNACIO
150 HAMILTON ROAD
NOVATO, CA 94945
FA NUMBER
10088152

SHEET TITLE
ELEVATION

SHEET NUMBER
A-4



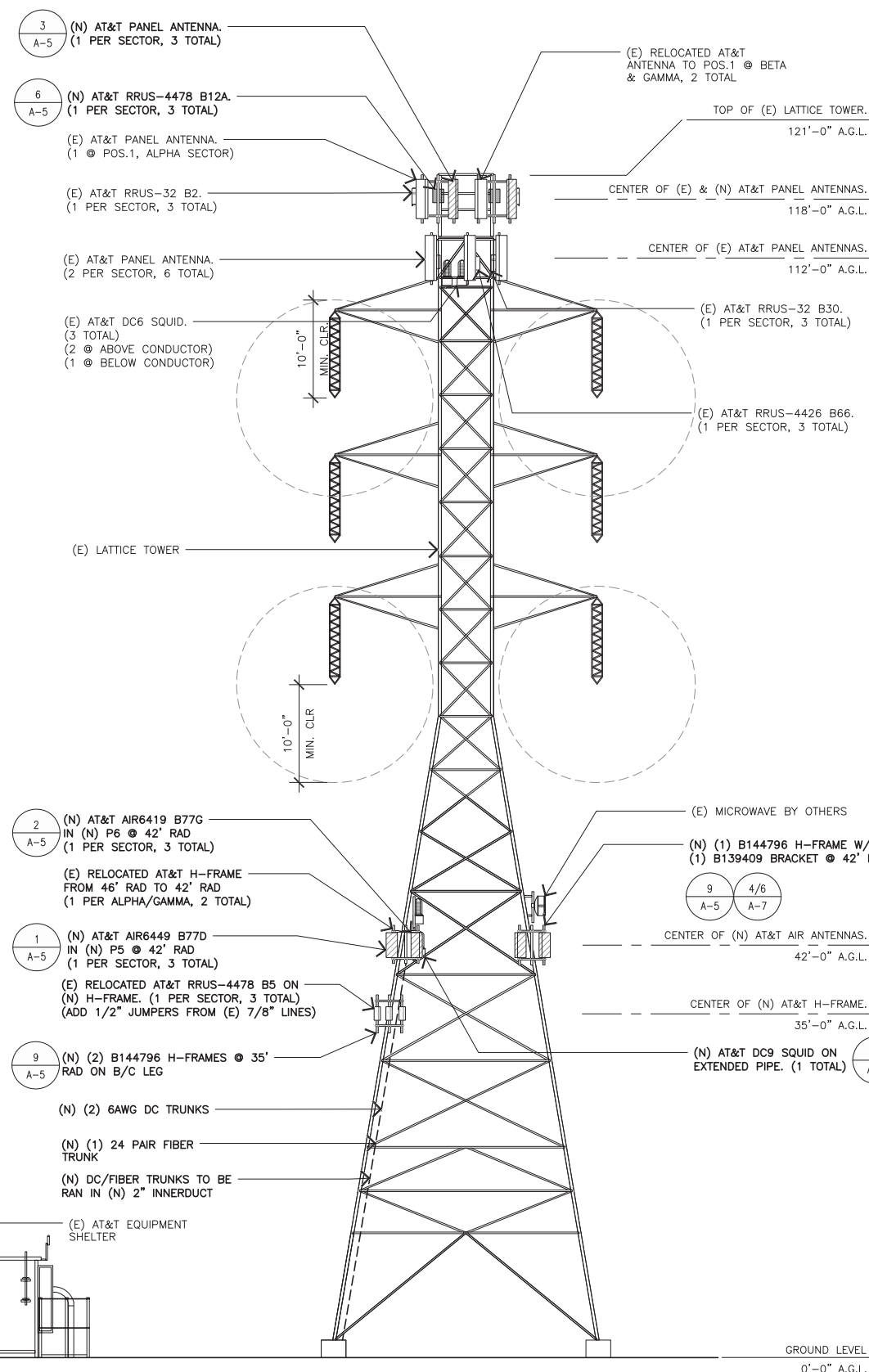
NOTE:
1. WEED ABATEMENT TO BE ASSESSED ON PRECON WALK, AROUND SHELTER AND CONDUIT STUB UPS AT BASE OF TOWER

EXISTING NORTHWEST ELEVATION

11X17 SCALE: 1/16" = 1'-0"
24X36 SCALE: 1/8" = 1'-0"



1



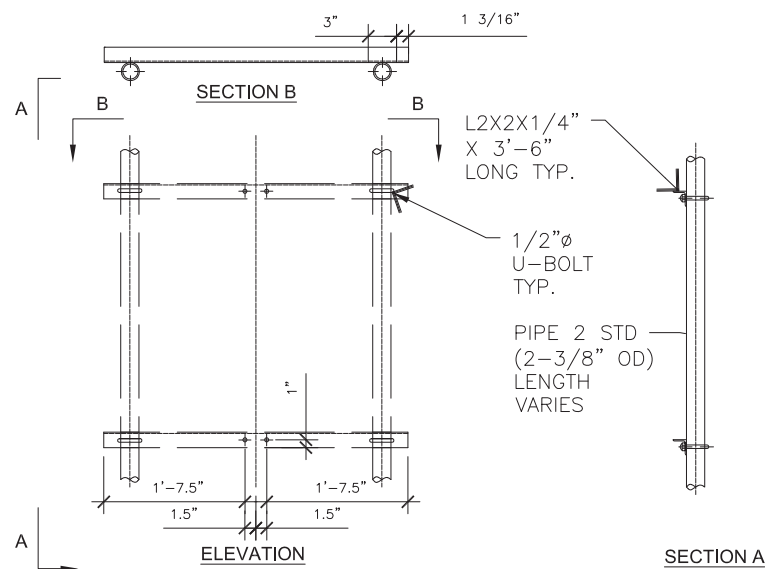
NOTE:
1. ALL BOLTS AND HARDWARE SHOULD BE CHECKED FOR TIGHTNESS AND CONDITION PRIOR TO INSTALLING THE PROPOSED EQUIPMENT
2. NO EQUIPMENT SHALL BE INSTALLED AROUND OR IN FRONT OF THE ANTENNA OR ANTENNA PATTERNS
3. MOUNTED RRUS NOT TO EXCEED 6" ABOVE OR BELOW ANTENNAS

PROPOSED NORTHWEST ELEVATION

11X17 SCALE: 1/16" = 1'-0"
24X36 SCALE: 1/8" = 1'-0"



2

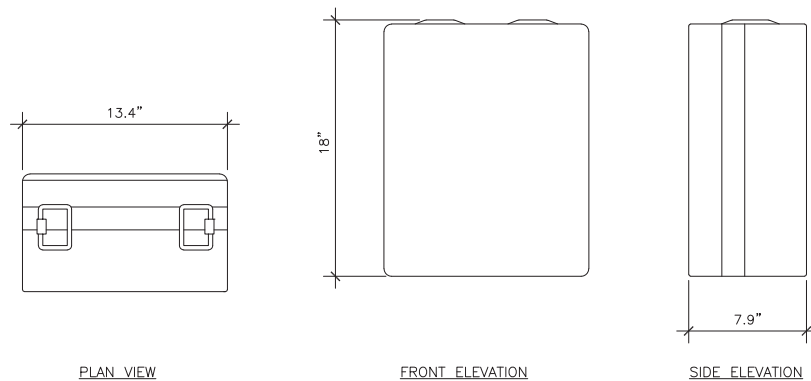


B144796 H-FRAME DETAIL

SCALE: NONE **9**

ERICSSON 4478 B12A

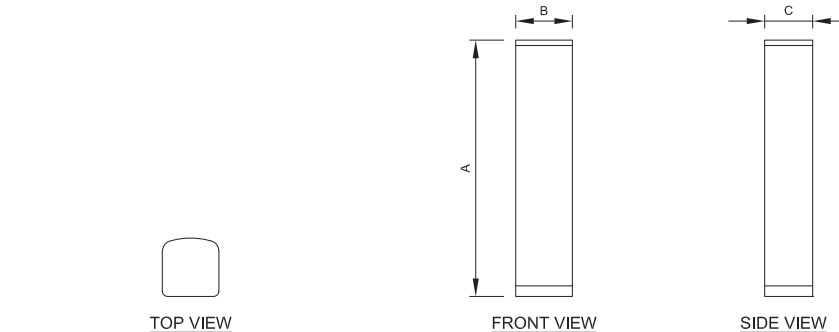
COLOR: GRAY
DIMENSIONS, HxWxD: 18.0"x13.4"x7.9"
WEIGHT: 57.2 LBS.



RRU DETAIL

SCALE: NONE **6**

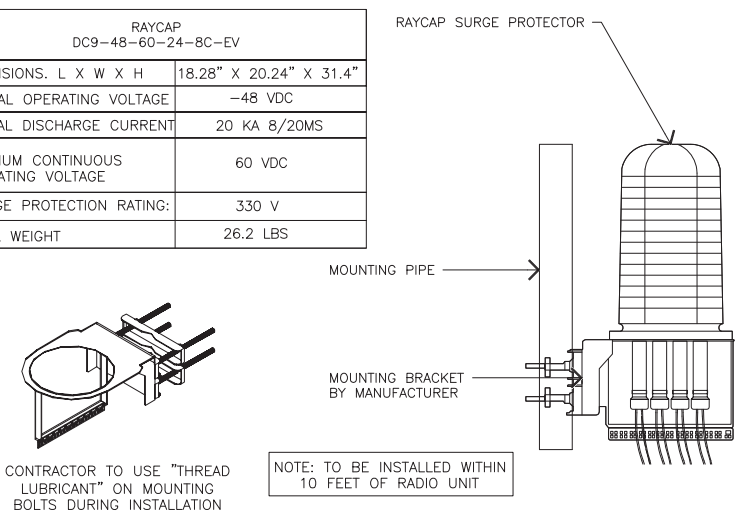
MANUFACTURER:	CCI	
MODEL NO.:	OPA65R-BU4B-K	
DIMENSIONS:	CONNECTOR TYPE:	TOTAL WEIGHT :
A 48.0"	8x4.3 -10 FEMALE	43.0 LBS
B 11.7"	CONNECTOR LOCATION:	
C 10.1"	BOTTOM	



ANTENNA SPECIFICATIONS

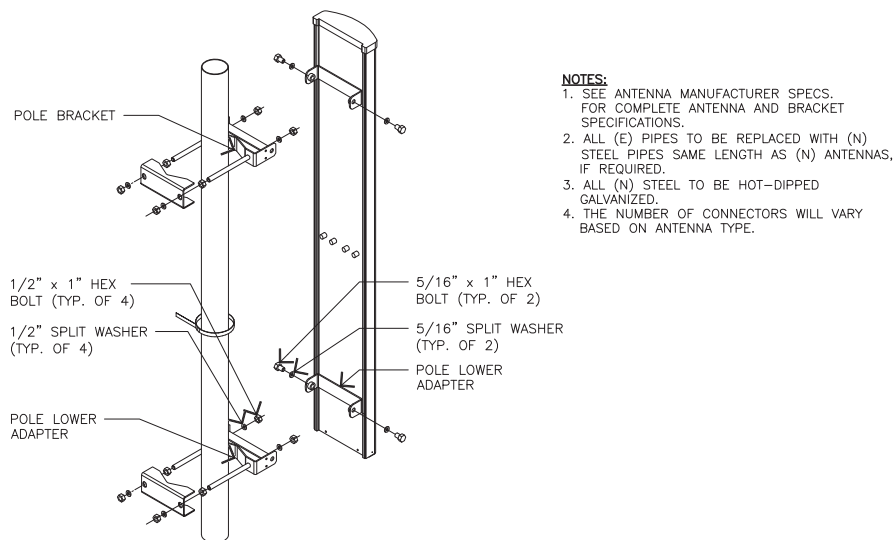
SCALE: NONE **3**

RAYCAP DC9-48-60-24-8C-EV	
DIMENSIONS, L X W X H	18.28" X 20.24" X 31.4"
NOMINAL OPERATING VOLTAGE	-48 VDC
NOMINAL DISCHARGE CURRENT	20 KA 8/20MS
MAXIMUM CONTINUOUS OPERATING VOLTAGE	60 VDC
VOLTAGE PROTECTION RATING:	330 V
TOTAL WEIGHT	26.2 LBS



SURGE SUPPRESSOR

SCALE: NONE **8**

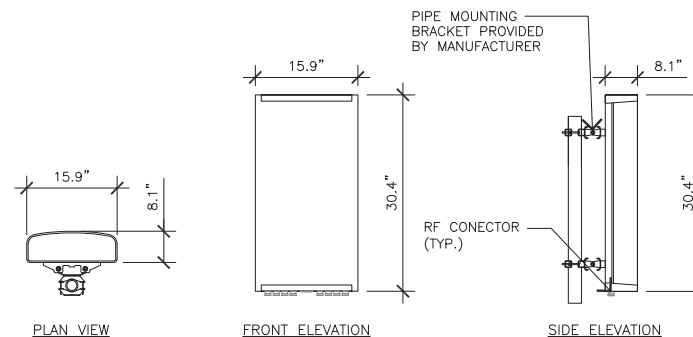


ANTENNA MOUNT DETAIL

SCALE: NONE **5**

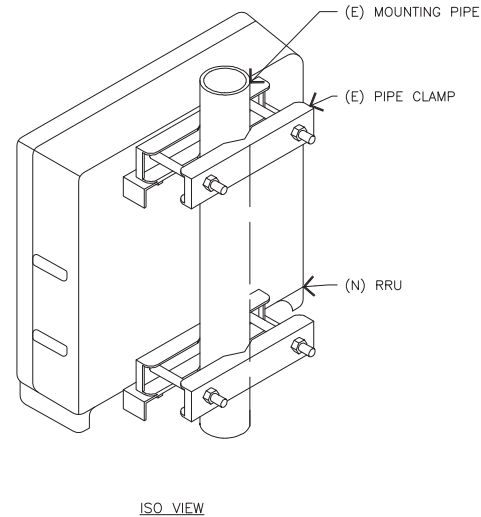
ERICSSON AIR6419 B77G

DIMENSIONS, HXWxD: 30.4"x15.9"x8.1"
WEIGHT, WITHOUT PRE-MOUNTED CLAMPS: 81.6 LBS



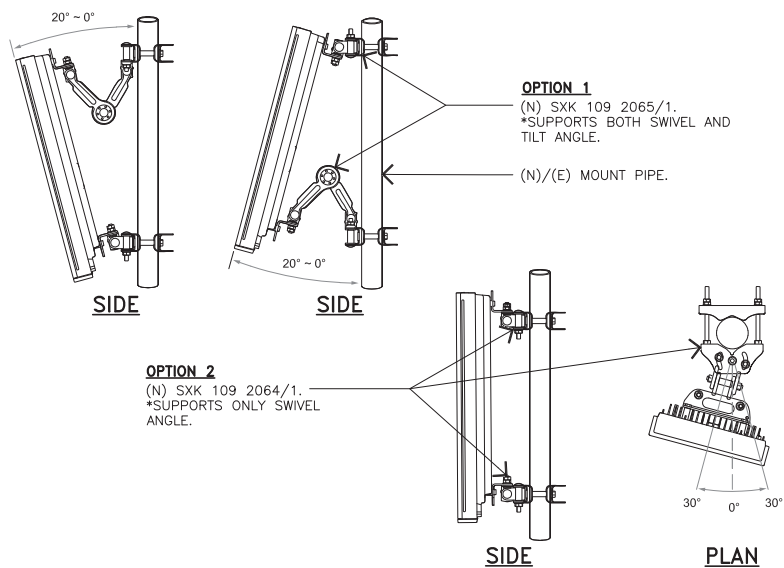
ANTENNA SPECIFICATIONS

SCALE: NONE **2**



RRU MOUNT DETAIL

SCALE: NONE **7**

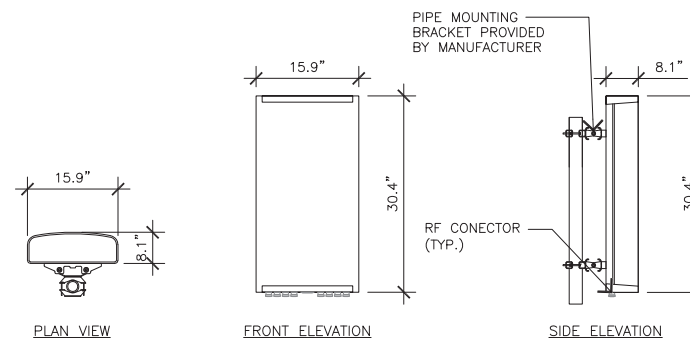


AIR ANTENNA MOUNT

SCALE: NONE **4**

ERICSSON AIR6449 B77D

DIMENSIONS, HXWxD: 30.4"x15.9"x8.1"
WEIGHT, WITHOUT PRE-MOUNTED CLAMPS: 81.6 LBS
WIND LOAD, FRONTAL: 478 N. @ 42 M/S.



ANTENNA SPECIFICATIONS

SCALE: NONE **1**



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE:	FA # 10088152
DRAWN BY:	JPG
JOB #:	30109

REV	DATE	DESCRIPTION
3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
1	05/02/2022	100% CD'S - S&S
0	03/15/2022	95% CD'S FOR REVIEW
A	02/16/2022	90% CD'S FOR REVIEW



Digitally signed by Joseph Russell King
Date: 2023.10.20
09:57:48 -04'00'

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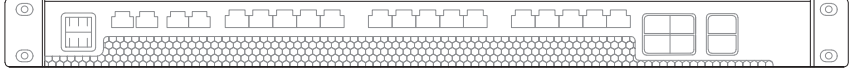
CCL00528
HWY 101-IGNACIO
150 HAMILTON ROAD
NOVATO, CA 94945
FA NUMBER
10088152

SHEET TITLE
DETAILS

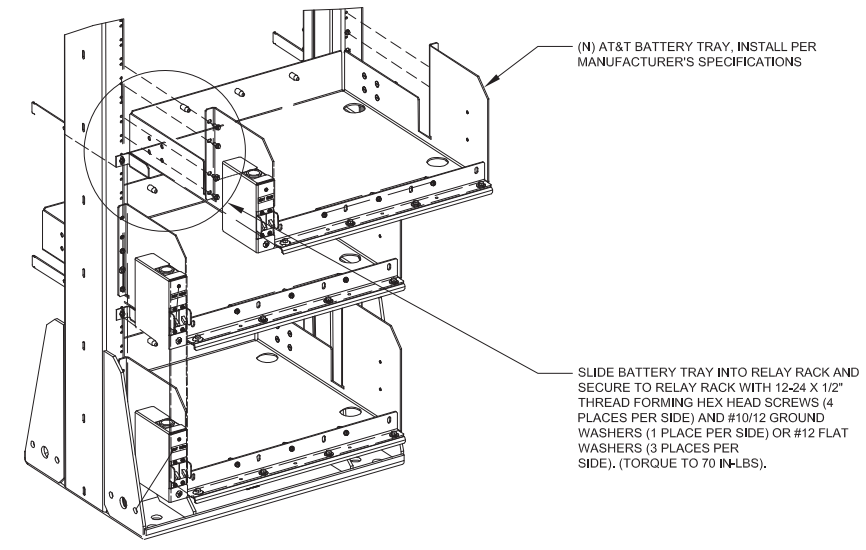
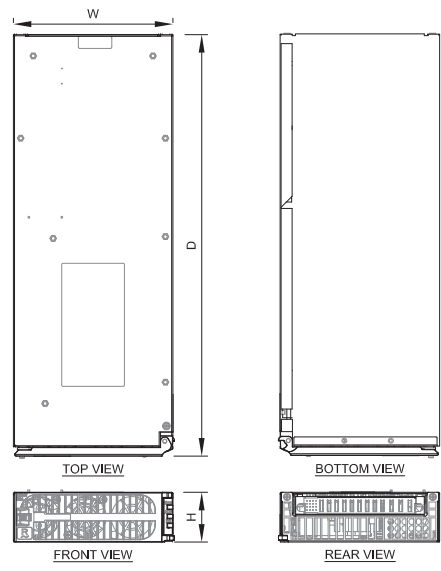
SHEET NUMBER
A-5

BASEBAND 6648
 DIMENSIONS, HXWXD: 1.75"X19"X13.8"
 WEIGHT: 7.5 KG

MAKE: INFINITY
 MODEL: NE050AC48ATEZ
 HEIGHT: 1.63" WIDTH: 5.23"
 DEPTH: 13.85" WEIGHT: 5.95 LBS



FRONT VIEW



(N) AT&T BATTERY TRAY, INSTALL PER MANUFACTURER'S SPECIFICATIONS

SLIDE BATTERY TRAY INTO RELAY RACK AND SECURE TO RELAY RACK WITH 12-24 X 1/2" THREAD FORMING HEX HEAD SCREWS (4 PLACES PER SIDE) AND #10/12 GROUND WASHERS (1 PLACE PER SIDE) OR #12 FLAT WASHERS (3 PLACES PER SIDE), (TORQUE TO 70 IN-LBS).



125 KLUG CIRCLE
 CORONA, CALIFORNIA 92880

6648 BASEBAND UNIT

SCALE: NONE
4

-48 RECTIFIERS

SCALE: NONE
3

BATTERY SHELF

SCALE: NONE
2

FA CODE:	FA # 10088152
DRAWN BY:	JPG
JOB #:	30109



PYL SERIES
 HIGH TEMPERATURE SUPER LONG LIFE BATTERIES with HT Element X Alloy™

PYL SERIES

Proven in the real world, the PYL Series of telecom batteries provides security and long life in extremely hot climates where other VRLA batteries just don't survive. The PYL technology utilizes GS Battery's proprietary HT Element X Alloy™ and active material additives. The PYL Series is the most cost effective battery solution over the total life cycle and for initial installation in your network.

10+ YEAR DESIGN LIFE

- + Exceeds Telcordia GR-1200 criteria
- + Greater than 5 years at 35°C

HIGH TEMPERATURE LONG LIFE DESIGN

- + HT Element X Alloy™ extends life in high temp applications
- + Additives to maintain compression
- + Designed to control charging current as temperature increases
- + No thermal runaway
- + Epoxy sealed terminals to prevent post leaks
- + Rugged ABS cases to minimize handling damage

CAPACITY RANGE

- + 45Ah - 200Ah

COMPLIANCE

- + VZ TPR-9802
- + GR-4228
- + GR-1089
- + GR-63 NEBS

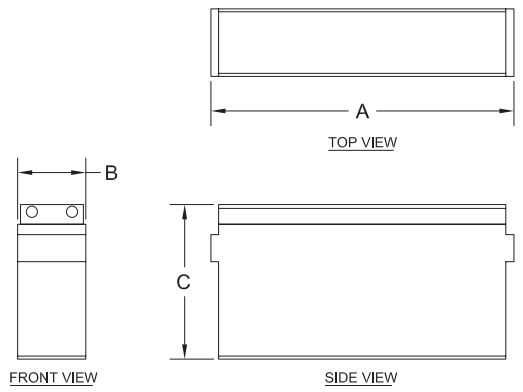
SAFETY

- + UL 94V-0
- + UL 1989



PYL SERIES SPECIFICATIONS

MODEL NUMBER	VOLTAGE	CAPACITY (AH) 8HR TO 1.75 VPC @ 25°C	NOMINAL DIMENSIONS			NOMINAL WEIGHT LBS., KG.				
			INCHES				MILLIMETERS			
			A	B	C	A	B	C		
PYL12V140TT	12	140	13.40	6.80	11.00	341	173	281	108.0	49.0
PYL12V160FT	12	160	21.90	4.90	11.00	556	125	280	116.2	52.7
PYL12V175FT	12	175	21.90	4.90	12.50	556	125	317	123.5	56.0
PYL12V185FT	12	185	21.90	4.90	12.50	556	125	317	133.8	60.7
PYL12V200FT	12	200	23.80	4.80	12.60	604	123	320	147.7	67.0



PYL SERIES SPECIFICATIONS

MODEL NUMBER	AMPERES TO FINAL VOLTAGE	INTERNAL RESISTANCE (mOhms)
PYL12V140TT	17.5	3.5
PYL12V160FT	20.0	3.5
PYL12V175FT	21.9	3.5
PYL12V185FT	23.1	3.5
PYL12V200FT	25.0	3.5

FLOAT CHARGE VOLTAGE: 13.65 ±0.15 @ 25°C (77°F)
 TEMPERATURE COMPENSATION: ADJUST FLOAT CHARGE VOLTAGE +3mV/°C/CELL FOR TEMPERATURES <25°C; -3mV/°C/CELL FOR TEMPERATURES >25°C.

NOTE: (1) BATTERY STRING = (4) BATTERY CELLS

BATTERY STORAGE SYSTEM THRESHOLD QUANTITIES	
BATTERY MODEL NUMBER	PYL12V185FT
BATTERY VOLTAGE	12V
BATTERY TECHNOLOGY	LEAD ACID
QUANTITY OF EXISTING BATTERIES	20
QUANTITY OF NEW BATTERIES	4
QUANTITY OF TOTAL BATTERIES	24
EXISTING BATTERY STORAGE SYSTEM CAPACITY	185AH PER BATTERY
NEW BATTERY STORAGE SYSTEM CAPACITY	185AH PER BATTERY
NEW BATTERY STORAGE SYSTEM CAPACITY (V*AH)/1000	53.28 KWH

* TOTAL VOLUME IS LESS THAN 70KWH, WHICH DOES NOT EXCEED ENERGY CAPACITY THRESHOLD PER CFC SECTION 1207, THEREFORE NO ADDITIONAL ENERGY STORAGE NEEDED.

CALIFORNIA FIRE CODE 2022

TABLE 1207.1.1
 ENERGY STORAGE SYSTEM (ESS) THRESHOLD QUANTITIES

TECHNOLOGY	ENERGY CAPACITY ^a
Lead-acid batteries, all types	70 KWh (252 Megajoules) ^c
Nickel-cadmium batteries (Ni-Cd)	70 KWh (252 Megajoules)
Nickel-metal hydride (Ni-MH)	70 KWh (252 Megajoules)
Lithium-ion batteries	20 KWh (72 Megajoules)
Flow batteries ^b	20 KWh (72 Megajoules)
Other battery technologies	10 KWh (36 Megajoules)
Capacitor ESS	3 KWh (10.8 Megajoules)
Other electrochemical ESS technologies	3 KWh (10.8 Megajoules)

For SI: 1 kilowatt hour = 3.6 megajoules.

a. Energy capacity is the total energy capable of being stored (nameplate rating), not the usable energy rating. For units rated in Amp-Hours, KWh shall equal rated voltage multiplied by the amp-hour rating divided by 1000.

b. Shall include vanadium, zinc-bromine, polysulfide-bromide, and other flowing electrolyte type technologies.

c. 50 gallons of lead-acid battery electrolyte shall be considered equivalent to 70 KWh.



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 Date: 2023.10.20 09:58:04 -04'00'

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CCL00528
 HWY 101-IGNACIO
 150 HAMILTON ROAD
 NOVATO, CA 94945
 FA NUMBER
 10088152

SHEET TITLE
 DETAILS

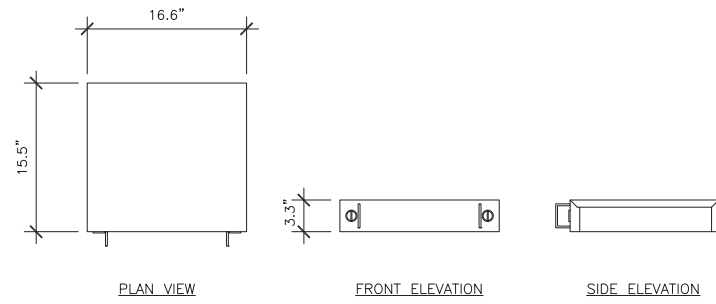
SHEET NUMBER
A-6

BATTERY SPECIFICATIONS AND CAPACITIES

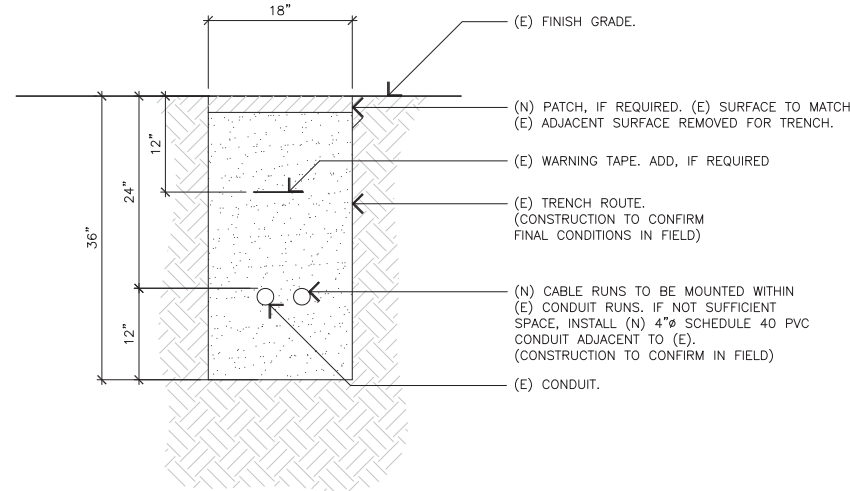
SCALE: NONE
1

RAYCAP DC12-48-60-0-RM DC SURGE SUPPRESSION SOLUTION

DIMENSIONS, HXWXD: 15.5"x16.6"x3.3"
 NOMINAL OPERATING VOLTAGE: 48 VDC
 NOMINAL DISCHARGE CURRENT: 20 KA 8/20US
 MAXIMUM DISCHARGE CURRENT: 60 KA 8/20US
 MAXIMUM CONTINUOUS OPERATING VOLTAGE: 70 VDC
 VOLTAGE PROTECTION RATING: 400 V
 TOTAL WEIGHT: 36.9 LBS



NOTE: CONTRACTOR TO INSTALL AT TOP OF SURGE PROTECTION ONLY RACK.



SURGE SUPPRESSOR

SCALE: NONE

7

UNDERGROUND CONDUIT

SCALE: NONE

5

NOT USED

SCALE: NONE

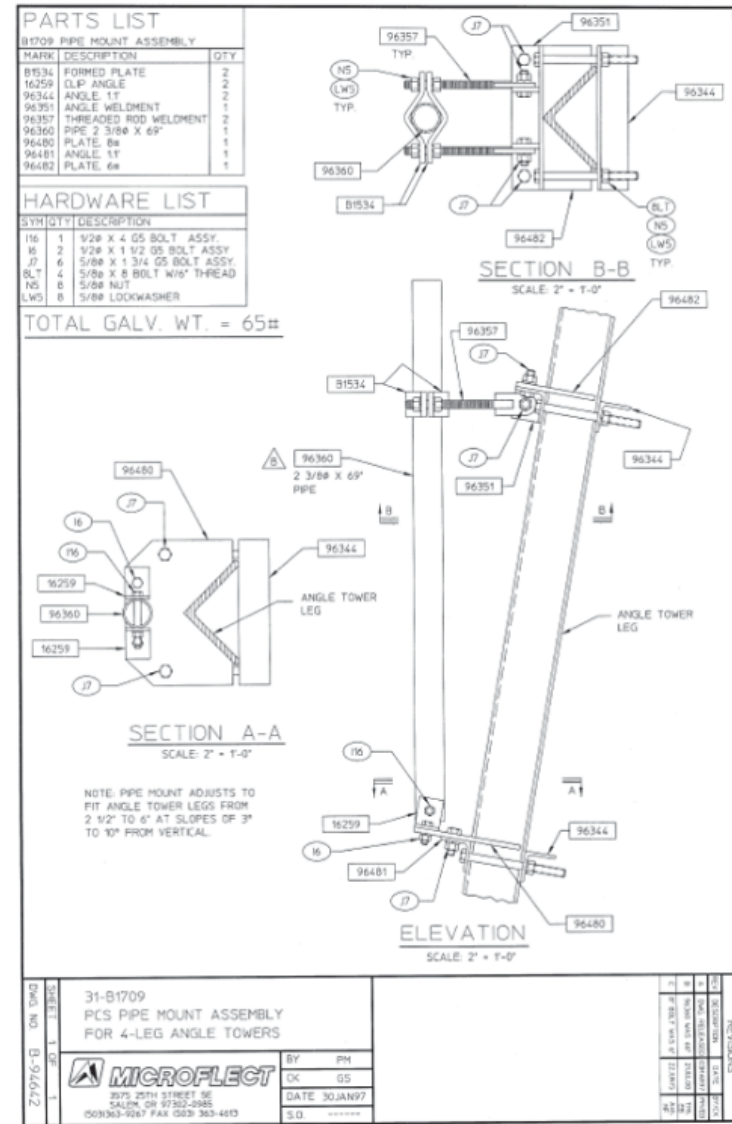
3



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE:	FA # 10088152
DRAWN BY:	JPG
JOB #:	30109

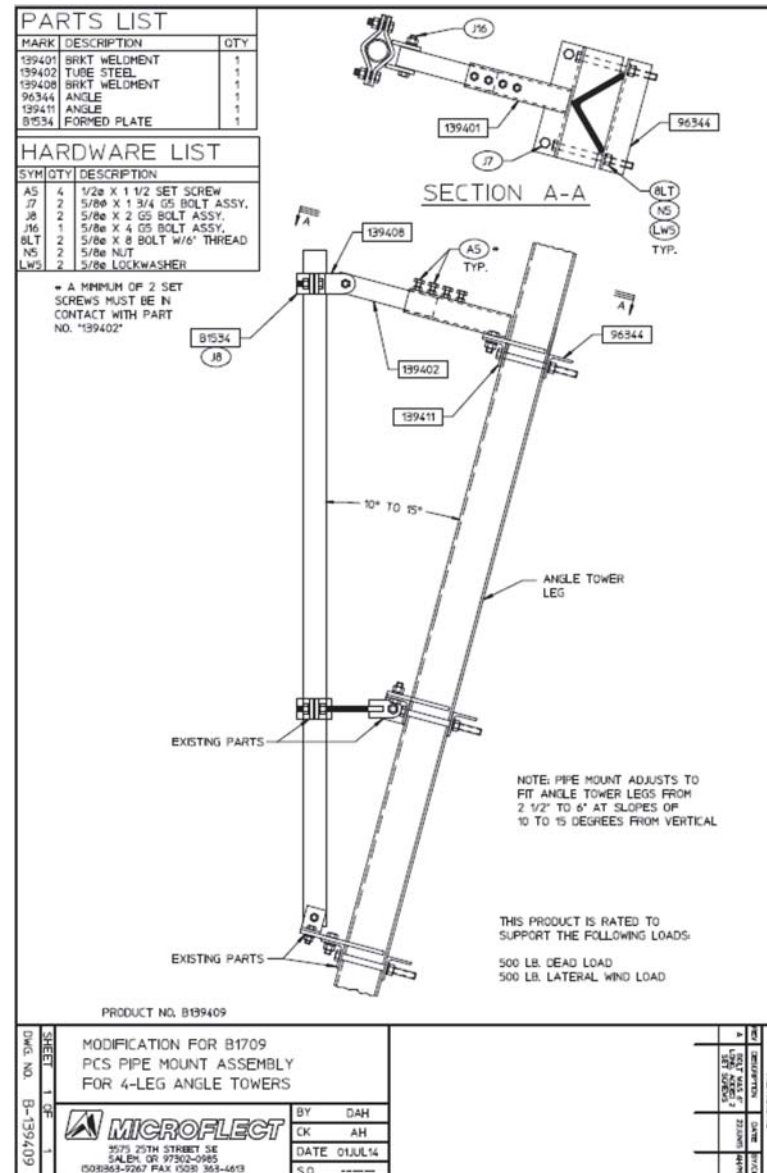
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3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
1	05/02/2022	100% CD'S - S&S
0	03/15/2022	95% CD'S FOR REVIEW
A	02/16/2022	90% CD'S FOR REVIEW



B1709 PIPE MOUNT

SCALE: NONE

6



B139409 REINFORCEMENT BRACKET

SCALE: NONE

4

NOT USED

SCALE: NONE

2



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Date: 2023.10.20 09:58:21 -0400

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CCL00528
 HWY 101-IGNACIO
 150 HAMILTON ROAD
 NOVATO, CA 94945
 FA NUMBER
 10088152

SHEET TITLE
DETAILS

SHEET NUMBER
A-7

B1709 PIPE MOUNT

SCALE: NONE

6

B139409 REINFORCEMENT BRACKET

SCALE: NONE

4

NOT USED

SCALE: NONE

1

NOT USED

SCALE:
NONE

6

NOT USED

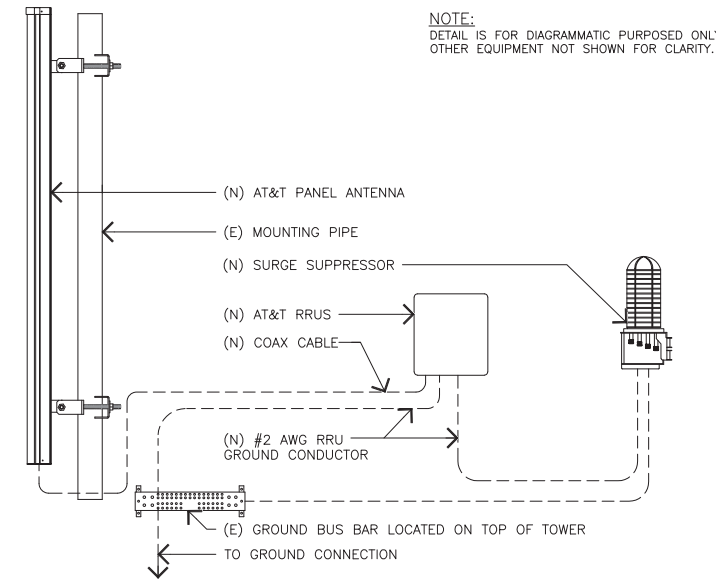
SCALE:
NONE

5

ANTENNA/RRU CONNECTION

SCALE:
NONE

3



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE:	FA # 10088152
DRAWN BY:	JPG
JOB #:	30109

REV	DATE	DESCRIPTION
3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
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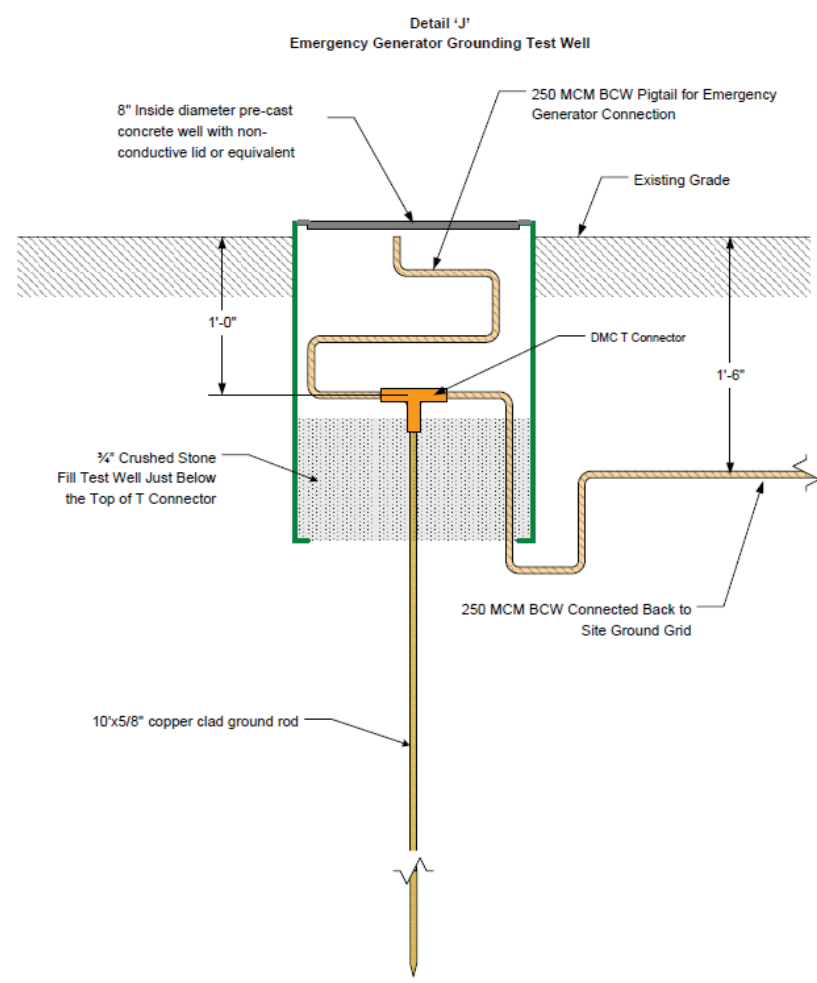


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CCL00528
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NOVATO, CA 94945
FA NUMBER
10088152

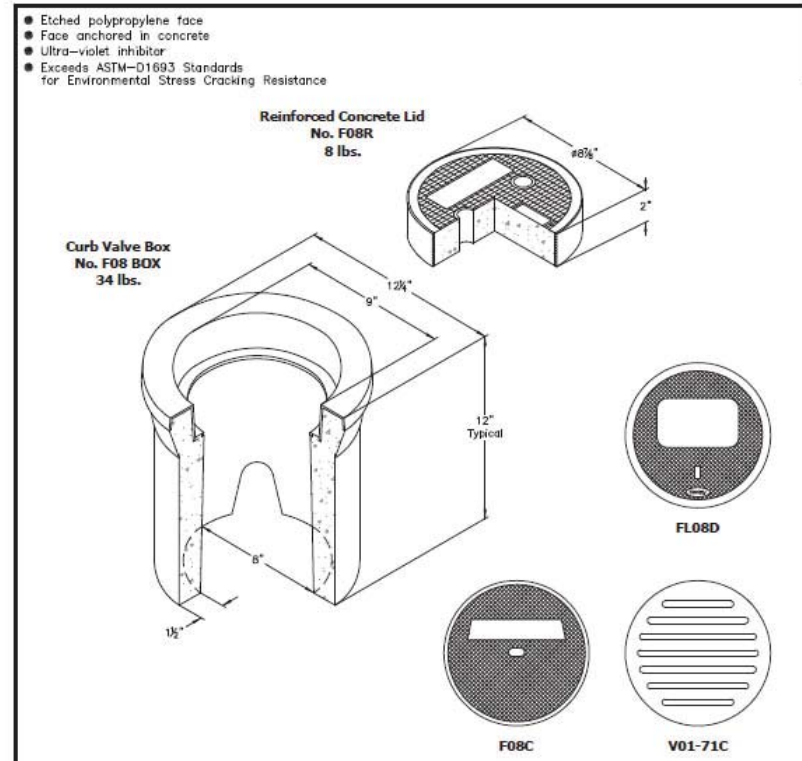
SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-1



Title: Typical Test Well for Emergency Generator Connection			
Redrawn By: Greg Chang	SIZE 0	Revision Date: 3/24/2022	DWG NO: Emergency Generator Grounding Test Well Detail 'J'
SCALE: none			REV 1
			SHEET 1 of 1

UTILITY & VALVE BOXES



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

Oldcastle Ordering Code	Item	Approx. Shipping Weight	Description
F08BOX	BOX	34 lbs.	F08 Curb Valve Box (8" I.D. x 12" High) - 48 per pallet
F08R	LID	8 lbs.	Reinforced Concrete Lid with Plastic Ring
F08C	LID	8 lbs.	Cast Iron Lid
F08D	LID	2 lbs.	Fibreglass Lid, Non-Concrete
V01-71C	LID	12 lbs.	Cast Iron Grate ADA Compliant

Oldcastle Infrastructure

F08 BOX	F08 CURB VALVE BOX
FILE NAME: F08_ISD	8" I.D. x 12"
ISSUE DATE: January, 2011	CHRISTY

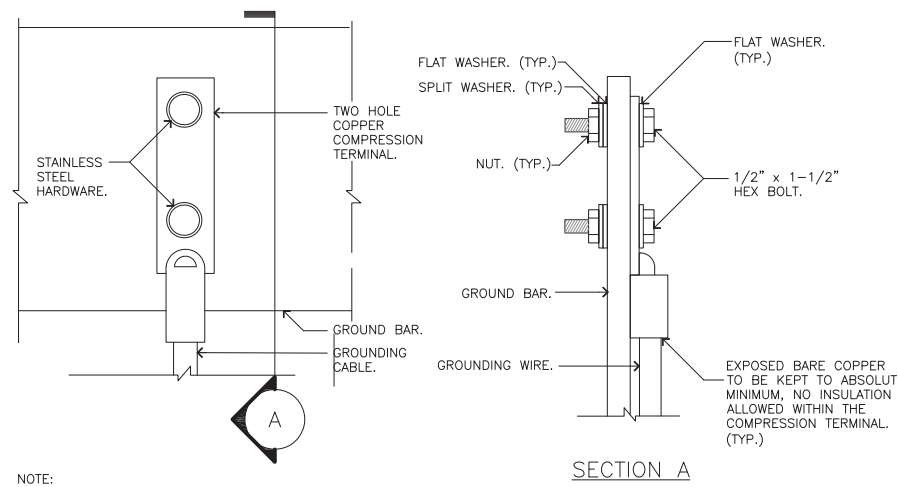
(888) 965-3227 www.oldcastleinfrastructure.com

17

WIRE TO GROUND BAR CONNECTION

SCALE:
NONE

2



NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS AND TO BE APPLIED PRIOR TO ADDING HARDWARE.

EMERGENCY GENERATOR GROUND TEST WELL

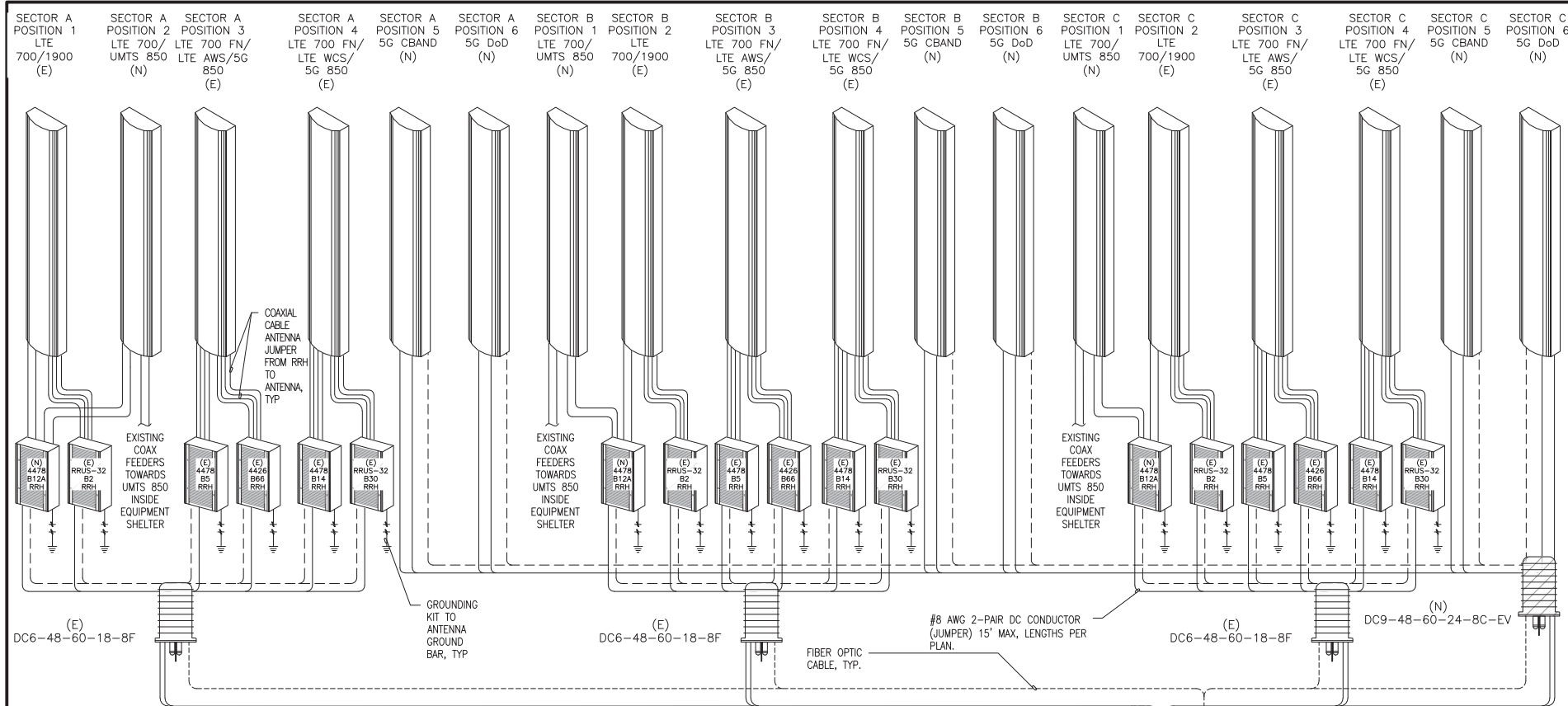
SCALE:
NONE

4

GROUND BAR CONNECTION

SCALE:
NONE

1



PER SPCT COMPLETED ON: 11/02/2021

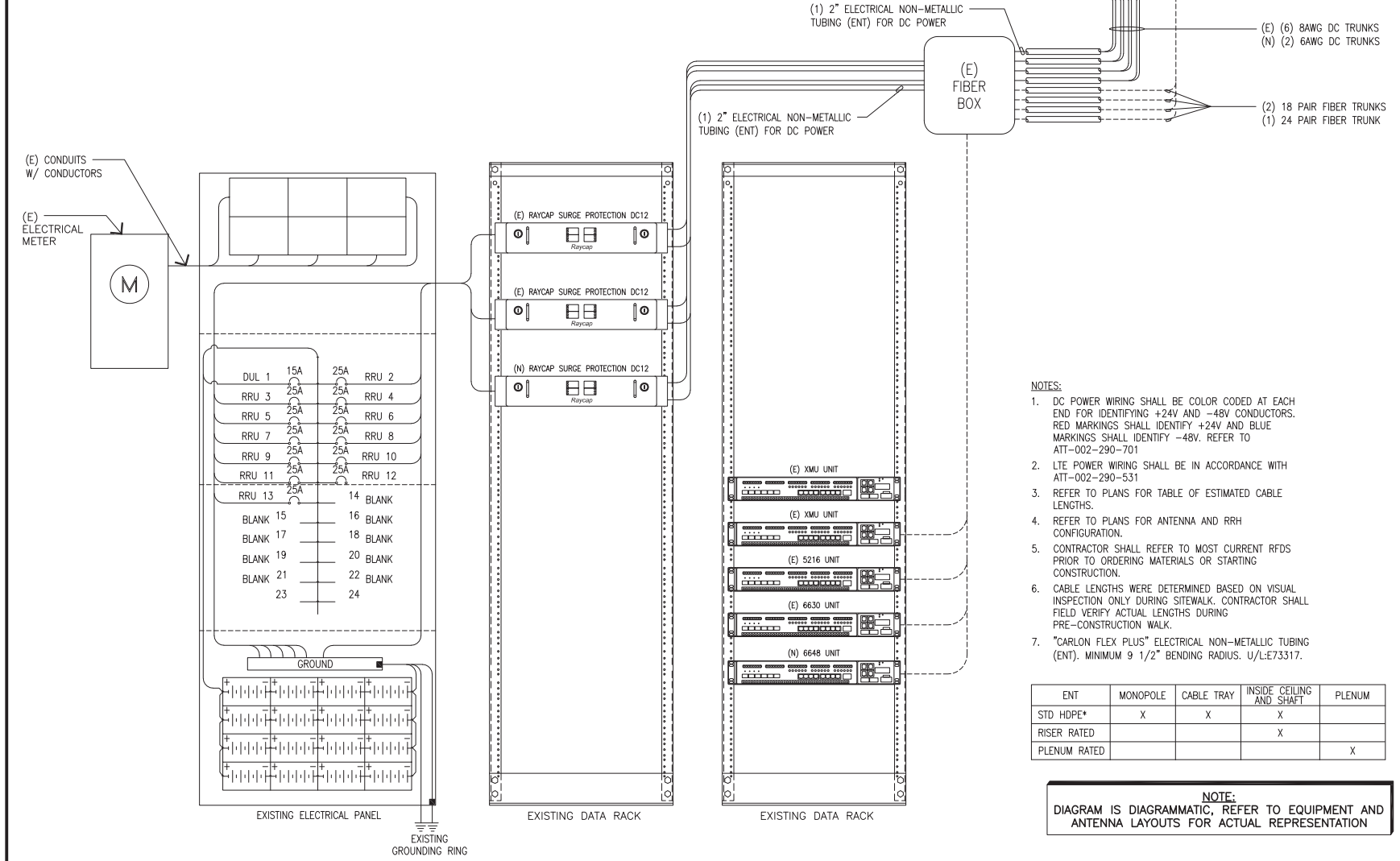
- (E) INFINITY D POWER PLANT : (1) TOTAL
- (E) GE/INFINITY -48 RECTIFIERS (5) TOTAL
- (N) GE/INFINITY -48 RECTIFIERS (5) TOTAL (10) REQUIRED
- (E) GE/INFINITY DC24 CONVERTERS (4) TOTAL
- (N) STRINGS 185AH BATTERIES (1) TOTAL
- (E) BATTERY BACK UP RACK : (1) TOTAL
- (E) STRINGS 185AH BATTERIES (5) TOTAL
- (6) TOTAL STRINGS 185AH BATTERIES FOR 4.57 HOURS BACK UP.
- VERTIV
- N/A
- DC TRUNK CALCULATOR RAN, NO VERTIV UP CONVERTERS REQUIRED FOR NEW 4478 B12 ON EXISTING #8 DC TRUNKS OR FOR NEW AIR ANTENNAS ON NEW #6 DC TRUNKS.
- IF THERE IS ANY DISCREPANCY FOUND AT C1025 PLEASE CONTACT DAVE THOMAS IMMEDIATELY



125 KLUG CIRCLE
CORONA, CALIFORNIA 92880

FA CODE:	FA # 10088152
DRAWN BY:	JPG
JOB #:	30109

REV	DATE	DESCRIPTION
3	10/19/2023	JURISDICTION COMMENTS
2	08/09/2023	100% CD'S - UPDATED S&S
1	05/02/2022	100% CD'S - S&S
0	03/15/2022	95% CD'S FOR REVIEW
A	02/16/2022	90% CD'S FOR REVIEW



- NOTES:
- DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V. REFER TO ATT-002-290-701
 - LTE POWER WIRING SHALL BE IN ACCORDANCE WITH ATT-002-290-531
 - REFER TO PLANS FOR TABLE OF ESTIMATED CABLE LENGTHS.
 - REFER TO PLANS FOR ANTENNA AND RRH CONFIGURATION.
 - CONTRACTOR SHALL REFER TO MOST CURRENT RFDS PRIOR TO ORDERING MATERIALS OR STARTING CONSTRUCTION.
 - CABLE LENGTHS WERE DETERMINED BASED ON VISUAL INSPECTION ONLY DURING SITEWALK. CONTRACTOR SHALL FIELD VERIFY ACTUAL LENGTHS DURING PRE-CONSTRUCTION WALK.
 - "CARLON FLEX PLUS" ELECTRICAL NON-METALLIC TUBING (ENT). MINIMUM 9 1/2" BENDING RADIUS. U/L:E73317.

ENT	MONOPOLE	CABLE TRAY	INSIDE CEILING AND SHAFT	PLENUM
STD HDPE*	X	X	X	
RISER RATED			X	
PLENUM RATED				X

NOTE:
DIAGRAM IS DIAGRAMMATIC, REFER TO EQUIPMENT AND ANTENNA LAYOUTS FOR ACTUAL REPRESENTATION

POWER PLANT/BATTERY DETAILS SCALE: NONE 2

- FINAL TOWER MOUNTED EQUIPMENT ABOVE CONDUCTOR**
- (12) PANEL ANTENNAS
 - (12) RRHs
 - (2) SQUIDS
 - (2) 2" INNERDUCT CONDUITS
 - (4) 8AWG POWER TRUNKS (IN INNERDUCT) (EXISTING)
 - (2) 18 PAIR FIBER TRUNKS (IN INNERDUCT) (EXISTING)
 - (12) RETs
 - (48) 1/2" ANTENNA JUMPERS
 - (24) 7/8" COAX JUMPERS FROM LOWER H-FRAME TO ABOVE CONDUCTOR
- BELOW CONDUCTOR**
- (6) ANTENNAS
 - (6) RRHs
 - (2) SQUIDS
 - (3) 2" INNERDUCT CONDUITS
 - (2) 8AWG POWER TRUNKS (IN INNERDUCT) (EXISTING)
 - (2) 6AWG POWER TRUNKS (IN INNERDUCT) (NEW)
 - (1) 18 PAIR FIBER TRUNK (IN INNERDUCT) (EXISTING)
 - (1) 24 PAIR FIBER TRUNK (IN INNERDUCT) (NEW)
 - (12) 7/8" COAX LINES FROM RRUS TO ABOVE CONDUCTOR

SINGLE LINE DIAGRAM SCALE: NONE 3

FINAL TOWER EQUIPMENT COUNT SCALE: NONE 1



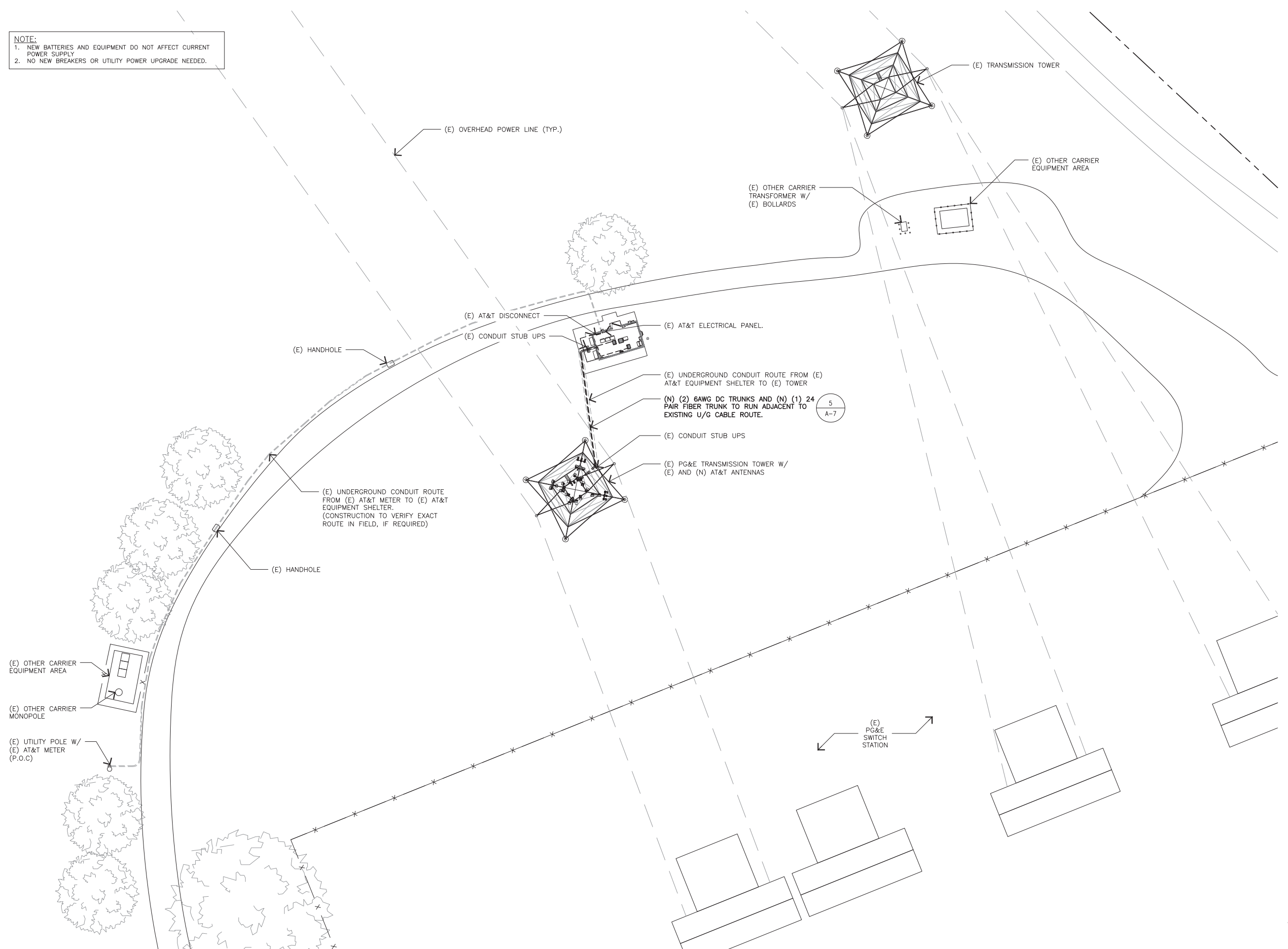
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

CCL00528
HWY 101-IGNACIO
150 HAMILTON ROAD
NOVATO, CA 94945
FA NUMBER
10088152

SHEET TITLE
ELECTRICAL & LTE SCHEMATIC DIAGRAM

SHEET NUMBER
E-1

NOTE:
 1. NEW BATTERIES AND EQUIPMENT DO NOT AFFECT CURRENT POWER SUPPLY
 2. NO NEW BREAKERS OR UTILITY POWER UPGRADE NEEDED.



MasTec
 Network Solutions

125 KLUG CIRCLE
 CORONA, CALIFORNIA 92880

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Digitally signed by Joseph Russell King
 Date: 2023.10.20 09:59:11 -04'00'

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CCL00528
HWY 101-IGNACIO
 150 HAMILTON ROAD
 NOVATO, CA 94945
 FA NUMBER
10088152

SHEET TITLE
ELECTRICAL SITE PLAN

SHEET NUMBER
E-2

ELECTRICAL SITE PLAN

11X17 SCALE: 1" = 40'
 24X36 SCALE: 1" = 20'



1