



DISH Wireless L.L.C. SITE ID:

SFSFO00570D

DISH Wireless L.L.C. SITE ADDRESS:

**NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080**

SBA NUMBER:

CA35906-L

CALIFORNIA BUILDING CODES

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

- 2019 CALIFORNIA BUILDING CODE (CBC)
WORK PERFORMED SHALL COMPLY WITH THE FOLLOWING:
PART 1, 2019 CALIFORNIA ADMINISTRATIVE CODE
PART 2, 2019 CALIFORNIA BUILDING CODE CBC (2018 IBC)
PART 3, 2019 CALIFORNIA ELECTRICAL CODE CEC (2017 NEC)
PART 4, 2019 CALIFORNIA MECHANICAL CODE CMC (2018 UMC)
PART 5, 2019 CALIFORNIA PLUMBING CODE CPC (2018 UPC)
PART 6, 2019 CALIFORNIA ENERGY CODE CEC
PART 9, 2019 CALIFORNIA FIRE CODE CFC (2018 IFC)

ALL APPLICABLE LOCAL & STATE ORDINANCES, CODES AND REGULATIONS AND 2019 CALIFORNIA STATE STANDARDS CODE AMENDMENTS.

- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES
- NFPA 76 FIRE PROTECTION OF TELECOMMUNICATIONS FACILITIES
- NFPA 110 EMERGENCY & STANDBY POWER SYSTEMS.

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SCOPE OF WORK

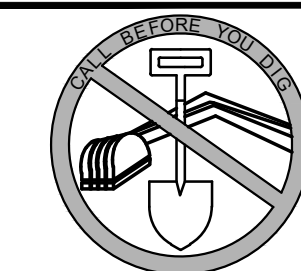
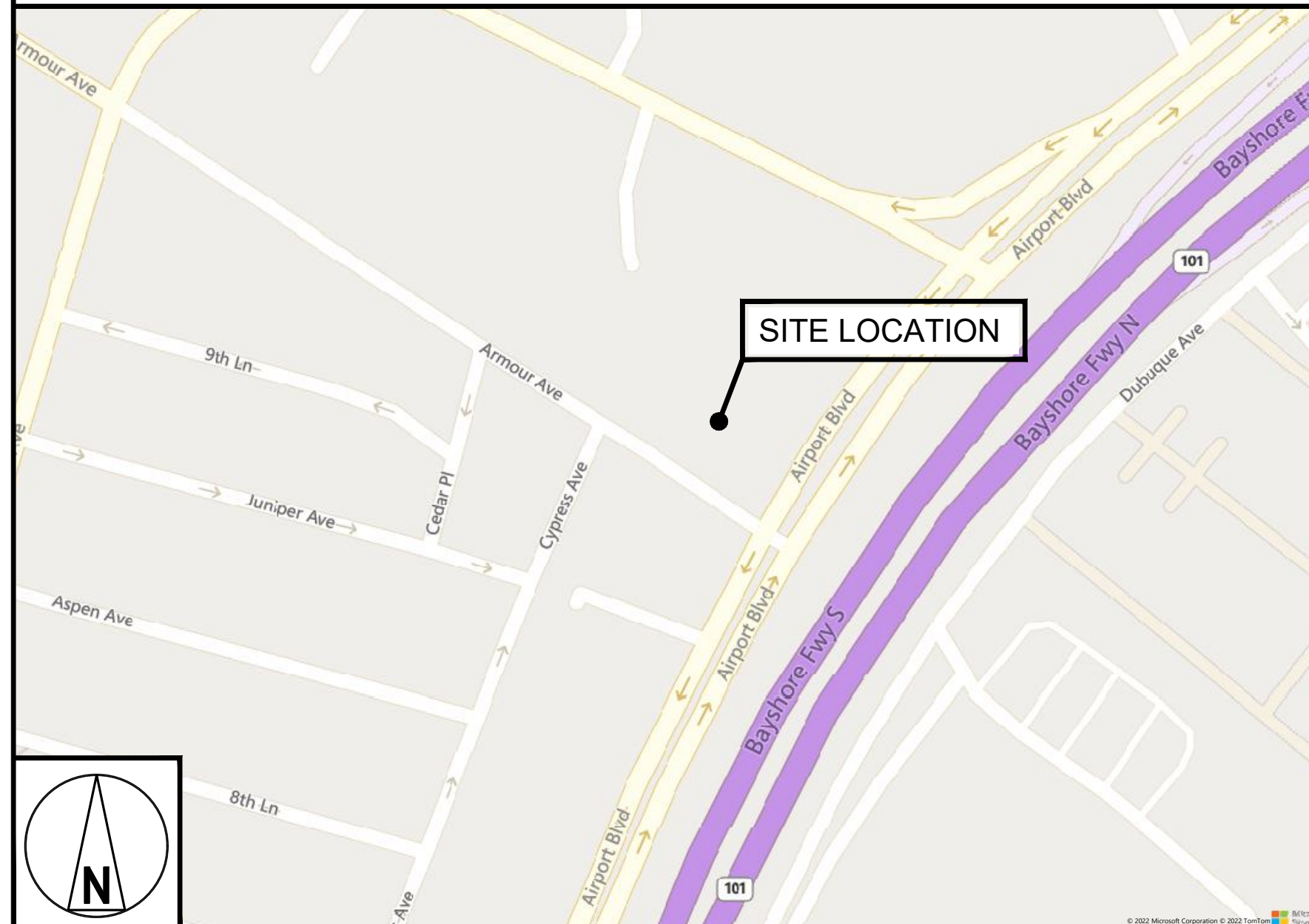
THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE.
THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

- TOWER SCOPE OF WORK TO BE INSTALLED:
- (3) PANEL ANTENNAS (1 PER SECTOR)
 - (6) RRUS (2 PER ANTENNA)
 - (1) RAYCAP OVER VOLTAGE PROTECTION DEVICE
 - (1) HYBRID CABLE
 - (1) CONCRETE EQUIPMENT PAD
 - (1) EQUIPMENT CABINET
 - (1) ELECTRICAL SAFETY SWITCH
 - (1) ELECTRICAL DISTRIBUTION PANEL
 - (1) FIBER CIENA
 - (1) NEMA 3R FIBER BOX
 - (1) EMERGENCY POWER OFF SWITCH
 - (1) GPS ANTENNA

DIRECTIONS

- DIRECTIONS FROM SFO AIRPORT:
- START OUT GOING EAST ON AIRPORT ACCESS RD.
 - TURN SLIGHT LEFT TOWARD US-101/I-380/I-280
 - TURN SLIGHT LEFT ONTO AIRPORT ACCESS RD.
 - MERGE ONTO US-101 N TOWARD SAN FRANCISCO.
 - TAKE THE GRAND AVENUE EXIT 425A.
 - TURN RIGHT ONTO E. GRAND AVE.
 - TURN LEFT TO STAY ON E. GRAND AVE.
 - TURN RIGHT ONTO AIRPORT BLVD.
 - TURN LEFT ONTO ARMOUR AVE.
 - 200 ARMOUR AVE. IS ON THE RIGHT.

VICINITY MAP



UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER OF CALIFORNIA
(800) 642-2444
WWW.CALIFORNIA811.ORG
CALL 2-14 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. 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.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

SITE INFORMATION

PROPERTY OWNER: PG&E
SITE ADDRESS: NEAR 200 ARMOUR AVE.
SOUTH SAN FRANCISCO, CA 94109
TOWER TYPE: TRANSMISSION TOWER
COUNTY: SAN MATEO COUNTY
LATITUDE (NAD 83): 37° 39' 37.74" N
LONGITUDE (NAD 83): 122° 24' 18.72" W
ZONING JURISDICTION: CITY OF SOUTH SAN FRANCISCO
ZONING DISTRICT: PR - PARKS AND RECREATION
PARCEL NUMBER: 012102999
OCCUPANCY GROUP: U
CONSTRUCTION TYPE: II-B
POWER COMPANY: PG&E
TELEPHONE COMPANY: AT&T

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120
SITE ACQUISITION: MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108
(415) 989-1102
CONSTRUCTION MANAGER: DANIEL TAYLOR
(714) 951-1738
PROJECT ARCHITECT: DIAMOND ENGINEERING SERVICES
4255 PARK ROAD
BENICIA, CA 94510
CONTACT: BRUCE LYON, ARCHITECT
PROJECT ENGINEER: DIAMOND ENGINEERING SERVICES
4255 PARK ROAD
BENICIA, CA 94510
CONTACT: ERIC UHRENHOLT, PE

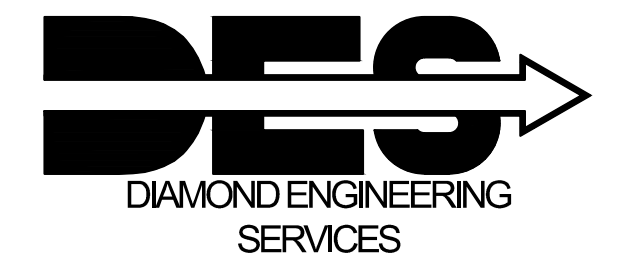
SITE PHOTO



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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240 STOCKTON ST., 3RD FLOOR
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94108



4255 PARK ROAD
BENICIA, CA 94510

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.

DRAWN BY:	CHECKED BY:	APPROVED BY:
CDO	BLL	BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

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PROJECT INFORMATION
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SHEET TITLE
TITLE SHEET

SHEET NUMBER
T1

EXOTHERMIC CONNECTION NOT TO BE USED ON ROOF TOPS

MECHANICAL CONNECTION

BUS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DOBTD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

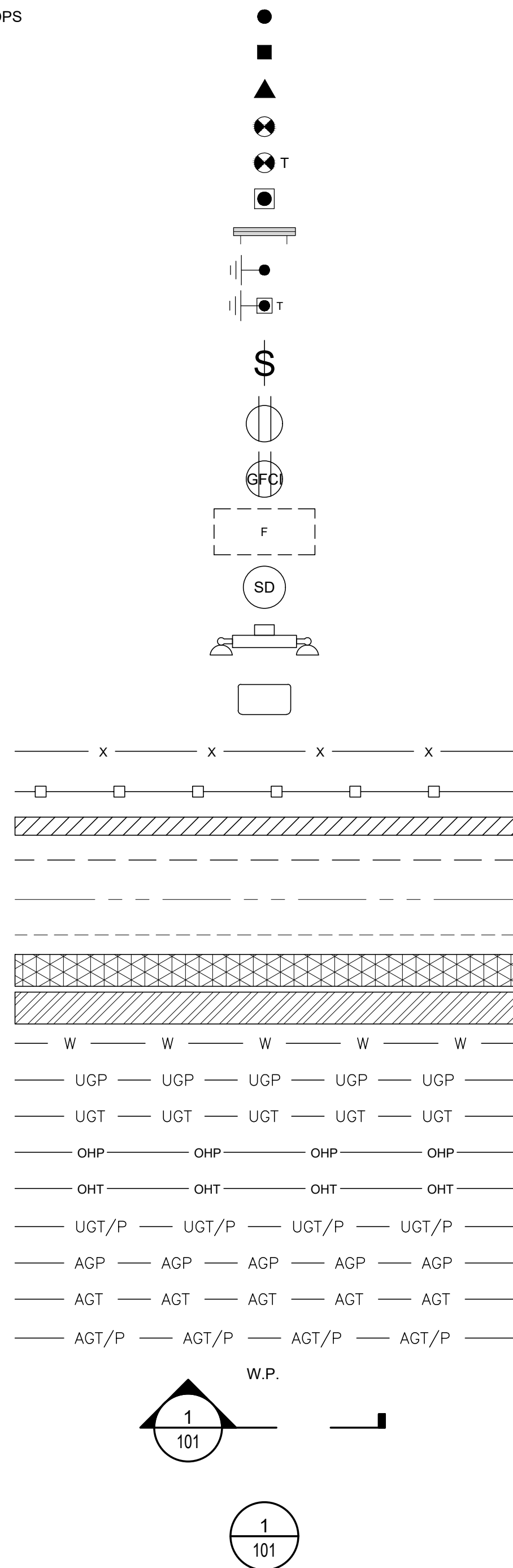
ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE



LEGEND

AB	ANCHOR BOLT	IGR	INTERIOR GROUND RING
ABV	ABOVE	IN	INCH
AC	ALTERNATING CURRENT	INT	INTERIOR
ADDL	ADDITIONAL	LB(S)	POUND(S)
AFF	ABOVE FINISHED FLOOR	LF	LINEAR FEET
AFG	ABOVE FINISHED GRADE	LTE	LONG TERM EVOLUTION
AGL	ABOVE GROUND LEVEL	MAS	MASONRY
AIC	AMPERAGE INTERRUPTION CAPACITY	MAX	MAXIMUM
ALUM	ALUMINUM	MB	MACHINE BOLT
ALT	ALTERNATE	MECH	MECHANICAL
ANT	ANTENNA	MFR	MANUFACTURER
APPROX	APPROXIMATE	MGB	MASTER GROUND BAR
ARCH	ARCHITECTURAL	MIN	MINIMUM
ATS	AUTOMATIC TRANSFER SWITCH	MISC	MISCELLANEOUS
AWG	AMERICAN WIRE GAUGE	MTL	METAL
BATT	BATTERY	MTS	MANUAL TRANSFER SWITCH
BLDG	BUILDING	MW	MICROWAVE
BLK	BLOCK	NEC	NATIONAL ELECTRIC CODE
BLKG	BLOCKING	NM	NEWTON METERS
BM	BEAM	NO.	NUMBER
BTC	BARE TINNED COPPER CONDUCTOR	#	NUMBER
BOF	BOTTOM OF FOOTING	NTS	NOT TO SCALE
CAB	CABINET	OC	ON-CENTER
CANT	CANTILEVERED	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CHG	CHARGING	OPNG	OPENING
CLG	CEILING	P/C	PRECAST CONCRETE
CLR	CLEAR	PCS	PERSONAL COMMUNICATION SERVICES
COL	COLUMN	PCU	PRIMARY CONTROL UNIT
COMM	COMMON	PRC	PRIMARY RADIO CABINET
CONC	CONCRETE	PP	POLARIZING PRESERVING
CONSTR	CONSTRUCTION	PSF	POUNDS PER SQUARE FOOT
DBL	DOUBLE	PSI	POUNDS PER SQUARE INCH
DC	DIRECT CURRENT	PT	PRESSURE TREATED
DEPT	DEPARTMENT	PWR	POWER CABINET
DF	DOUGLAS FIR	QTY	QUANTITY
DIA	DIAMETER	RAD	RADIUS
DIAG	DIAGONAL	RECT	RECTIFIER
DIM	DIMENSION	REF	REFERENCE
DWG	DRAWING	REINF	REINFORCEMENT
DWL	DOWEL	REQ'D	REQUIRED
EA	EACH	RET	REMOTE ELECTRIC TILT
EC	ELECTRICAL CONDUCTOR	RF	RADIO FREQUENCY
EL	ELEVATION	RMC	RIGID METALLIC CONDUIT
ELEC	ELECTRICAL	RRH	REMOTE RADIO HEAD
EMT	ELECTRICAL METALLIC TUBING	RRU	REMOTE RADIO UNIT
ENG	ENGINEER	RWY	RACEWAY
EQ	EQUAL	SCH	SCHEDULE
EXP	EXPANSION	SHT	SHEET
EXT	EXTERIOR	SIAD	SMART INTEGRATED ACCESS DEVICE
EW	EACH WAY	SIM	SIMILAR
FAB	FABRICATION	SPEC	SPECIFICATION
FF	FINISH FLOOR	SQ	SQUARE
FG	FINISH GRADE	SS	STAINLESS STEEL
FIF	FACILITY INTERFACE FRAME	STD	STANDARD
FIN	FINISH(ED)	STL	STEEL
FLR	FLOOR	TEMP	TEMPORARY
FDN	FOUNDATION	THK	THICKNESS
FOC	FACE OF CONCRETE	TMA	TOWER MOUNTED AMPLIFIER
FOM	FACE OF MASONRY	TN	TOE NAIL
FOS	FACE OF STUD	TOA	TOP OF ANTENNA
FOW	FACE OF WALL	TOC	TOP OF CURB
FS	FINISH SURFACE	TOF	TOP OF FOUNDATION
FT	FOOT	TOP	TOP OF PLATE (PARAPET)
FTG	FOOTING	TOS	TOP OF STEEL
GA	GAUGE	TOW	TOP OF WALL
GEN	GENERATOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TYP	TYPICAL
GLB	GLUE LAMINATED BEAM	UG	UNDERGROUND
GLV	GALVANIZED	UL	UNDERWRITERS LABORATORY
GPS	GLOBAL POSITIONING SYSTEM	UNO	UNLESS NOTED OTHERWISE
GND	GROUND	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
HDG	HOT DIPPED GALVANIZED	VIF	VERIFIED IN FIELD
HDR	HEADER	W	WIDE
HGR	HANGER	W/	WITH
HVAC	HEAT/VENTILATION/AIR CONDITIONING	WD	WOOD
HT	HEIGHT	WP	WEATHERPROOF
		WT	WEIGHT

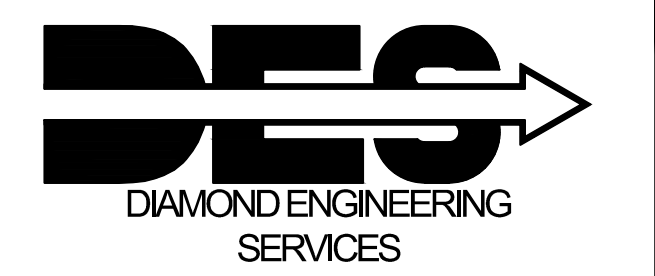
ABBREVIATIONS



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LEGEND AND ABBREVIATIONS

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GN1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED - NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" - DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:
3. THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
4. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
5. ALL CONSTRUCTION MEANS AND METHODS: INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
6. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
7. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
8. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
11. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
12. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
13. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
14. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
15. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
16. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
17. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
18. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
19. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
20. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
21. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
22. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
23. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

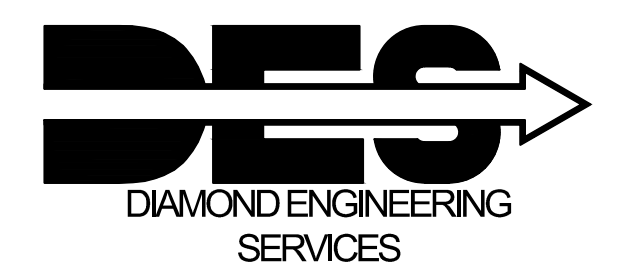
1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
 CARRIER:DISH Wireless L.L.C.
 TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA
94108



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BENICIA, CA 94510

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CDO	BLL	BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN2

INFORMATION WHITE LETTERING

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH NOC at 1-833-347-4602 for more information.

SITE ID: SFSFO00570D

BLACK LETTERING, TYP (MIN. FONT SIZE 0.24")

WHITE BACKGROUND

NOTES:
ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE: 0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER: 4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE: 2.5 MIL PVC FILM (OPTICALLY CLEAR)
SCRATCH RESISTANT
CHEMICAL RESISTANT
UV RESISTANT
MOUNTING: 0.20" DIAMETER HOLES IN EACH OF 4 CORNER, OR TOP & BOTTOM, OFFSET .025" FROM ADJACENT EDGE.

INFORMATION SIGN **NO SCALE** **1**

NOTICE WHITE NOTICE

TRANSMITTING ANTENNA(S)
Radio frequency fields beyond this point MAY EXCEED the FCC General Public exposure limit. Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH NOC at 1-833-347-4602 prior to working beyond this point.

SITE ID: SFSFO00570D

BLACK LETTERING, TYP (MIN. FONT SIZE 0.16")

WHITE BACKGROUND

NOTES:
ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE: 0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER: 4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE: 2.5 MIL PVC FILM (OPTICALLY CLEAR)
SCRATCH RESISTANT
CHEMICAL RESISTANT
UV RESISTANT
MOUNTING: 0.20" DIAMETER HOLES IN EACH OF 4 CORNER, OR TOP & BOTTOM, OFFSET .025" FROM ADJACENT EDGE.

NOTICE SIGN **NO SCALE** **2**

CAUTION YELLOW CAUTION

TRANSMITTING ANTENNA(S)
Radio frequency fields beyond this point MAY EXCEED the FCC Occupational exposure limit. Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH NOC at 1-833-347-4602 prior to working beyond this point.

SITE ID: SFSFO00570D

BLACK LETTERING, TYP (MIN. FONT SIZE 0.16")

WHITE BACKGROUND

NOTES:
ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE: 0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER: 4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE: 2.5 MIL PVC FILM (OPTICALLY CLEAR)
SCRATCH RESISTANT
CHEMICAL RESISTANT
UV RESISTANT
MOUNTING: 0.20" DIAMETER HOLES IN EACH OF 4 CORNER, OR TOP & BOTTOM, OFFSET .025" FROM ADJACENT EDGE.

CAUTION SIGN **NO SCALE** **3**

EMERGENCY SHUT DOWN 1" HIGH WHITE LETTERING

FOR IMMEDIATE SHUT DOWN OF ALL RADIO FREQUENCY EMISSIONS OF THIS SITE.

1) CALL CONTRACT NUMBER AND GIVE SITE ID NO.
CONTACT PHONE NUMBER: 1-833-347-4602
SITE ID NUMBER: SFSFO00570D

2) DISCONNECT POWER AT MAIN SERVICE DISCONNECT.
(MAP AND/OR VERBIAGE)

RED BACKGROUND

RED BACKGROUND

BLACK LETTERING, TYP

WHITE BACKGROUND

NOTES:
1. CONTRACTOR TO PLACE SIGNS IN FOLLOWING LOCATIONS:
1.1. CELL SITE EQUIPMENT ROOM DOOR
1.2. BATTERY LOCATION WITHIN PROXIMITY OF BATTERY DISCONNECT
1.3. FCC ROOM WITHIN PROXIMITY OF THE FIRE ALARM LEVEL
1.4. BUILDING'S MAIN ELECTRICAL ROOM WITHIN PROXIMITY OF THE MAIN SHUTOFF AND/OR AT THE CELL SITE MAIN ELECTRICAL DISCONNECT

EMERGENCY SHUT DOWN SIGN **NO SCALE** **4**

NOTICE

GUIDELINES FOR WORKING IN RADIOFREQUENCY ENVIRONMENTS

- All personnel should have electromagnetic energy (EME) awareness training.
- All personnel entering this site must be authorized.
- Obey all posted signs.
- Assume all antennas are active.
- Before working on antennas, notify owners and disable appropriate transmitters.
- Maintain minimum 3 feet clearance from all antennas.
- Never operate transmitters without shields during normal operation.
- Do not operate base station antennas in equipment room.

BLACK LETTERING, TYP (MIN. FONT SIZE 0.24")

YELLOW BACKGROUND

NOTES:
ALUMINUM SUBSTRATE SIGNS PRINTED WITH UV RESISTANT ECO-SOLVENT INK, REINFORCED WITH UV, CHEMICAL, ABRASION, AND MOISTURE RESISTANT LAMINATE LAYER.

SUBSTRATE: 0.040" ALUMINUM, WHITE ENAMEL COATED BOTH SIDES
PRINTING LAYER: 4.0 MIL VINYL WITH PERMANENT ACRYLIC ADHESIVE UV STABLE ECO-SOLVENT INK
LAMINATE: 2.5 MIL PVC FILM (OPTICALLY CLEAR)
SCRATCH RESISTANT
CHEMICAL RESISTANT
UV RESISTANT
MOUNTING: 0.20" DIAMETER HOLES IN EACH OF 4 CORNER, OR TOP & BOTTOM, OFFSET .025" FROM ADJACENT EDGE.

NOTICE GUIDELINE SIGN **NO SCALE** **5**

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

MODUS

MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA 94108

DES
DIAMOND ENGINEERING SERVICES

4255 PARK ROAD
BENICIA, CA 94510

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CDO	BLL	BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

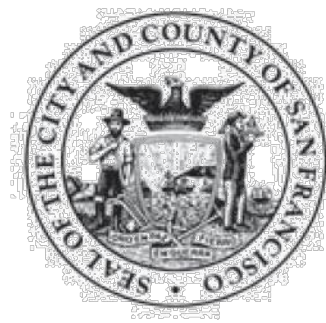
DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
SIGNAGE

SHEET NUMBER
GN3

City and County of San Francisco
Department of Building Inspection



London N. Breed, Mayor
Patrick O'Riordan, Interim Director

Attachment NRE

Attachment NRE

NOTICE

TITLE-24 NON-RESIDENTIAL ENERGY INSPECTION REQUIREMENTS (ELECTRICAL/LIGHTING)

Please note that Certificates of Installation and/or Acceptance and/or Verification are required for this project, as indicated on this form issued with this permit. Ensuring the accurate completion of this documentation is the direct responsibility of the engineer/architect of record. This documentation is required *in addition to* the called inspections performed by the Department of Building Inspection.

For questions regarding the details or extent of required documentation or testing, and if there are any field problems regarding documentation or testing, please call your District Building Inspector or (628) 652-3400.

Before final building inspection is scheduled, documentation of energy compliance "Certificate of Installation, Acceptance, and Verification" must be completed and signed by the responsible person in charge. **The permit will not be finalized without compliance with the energy inspection requirements.**

Energy Inspection Services Contact Information

1. Telephone: (628) 652-3407
2. Email: dbi.energyinspections@sfgov.org
3. In person: 4th floor at 49 South Van Ness Ave.

Note: We are moving towards a 'paperless' mode of operation. All special inspection submittals, including final letters, may be emailed (preferred) or faxed. We will also be shifting to a paperless fax receipt mode.

Installation, Acceptance, and Verification certificates can be found on the California Energy Commission website at <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency>

Information Sheet M-06 provides submittal instructions for the Title-24 installation, verification, and acceptance energy certificates. M-06 may be found on the SFDBI website at <http://sfdbi.org/information-sheets>

Energy Inspection Services
49 South Van Ness Ave, Suite 400 – San Francisco CA 94103
Office (628) 652-3407 – www.sfdbi.org

Rev 2/26/2021

Page 2 of 2

TITLE-24 NON-RESIDENTIAL ENERGY INSPECTION (ELECTRICAL/LIGHTING)

A COPY OF THIS DOCUMENT SHALL BE KEPT WITH THE APPROVED DRAWING SET

JOB ADDRESS _____ APPLICATION NO. _____ ADDENDUM NO. _____
ENGINEER/ARCHITECT NAME Eric Uhrenholt P.E. PHONE NO. (925) 352-2264

Ensuring the completion of installation documentation as well as the required acceptance/verification testing is the direct responsibility of the undersigned. Installation documentation must be completed by the contractor performing the installation. Acceptance testing must be performed by an individual licensed to perform the specific testing needed. Verification testing must be completed by a certified HERS rater.

In accordance with the requirements of the 2019 California Energy Code, the following documentation is required for the **electrical and lighting** elements in this project:

1. Installation

Indoor Lighting

- NRCI-LTI-01-E Indoor Lighting (IE6)
- NRCI-LTI-02-E Energy Management Control System (EMCS) or Lighting Control System (IE7)
- NRCI-LTI-03-E Track Lighting Integral Current Limiter or Supplementary Overcurrent Protection Panel (IE8)
- NRCI-LTI-04-E Two Interlocked Lighting Systems (IE9)
- NRCI-LTI-05-E Power Adjustment Factors (IE10)
- NRCI-LTI-06-E Additional Videoconference Studio Lighting (IE11)

Outdoor Lighting

- NRCI-LTO-01-E Outdoor Lighting (IE12)
- NRCI-LTO-02-E Energy Management Control System (EMCS) or Lighting Control System (IE13)

Sign Lighting

- NRCI-LTS-01-E Sign Lighting (IE14)

Electrical

- NRCI-ELC-01-E Electrical Power Distribution (IE15)

Solar

- NRCI-SPV-01-E Solar Photovoltaic System (IE16)

Required information:

Prepared by: Eric Uhrenholt P.E. Date: 02/24/2022
Engineer/Architect of Record Signature

Fax: _____ Email: Eric@DESbuilders.com

Review by: _____ Phone: (628) 652 - 7896
DBI Engineer or Plan Checker

APPROVAL (Based on submitted reports)

DATE _____ DBI Electrical Inspector or Energy Inspection Services Staff

QUESTIONS ABOUT TITLE-24 ENERGY INSPECTION SHOULD BE DIRECTED TO: Energy Inspection Services (628) 652-3407; or, dbi.energyinspections@sfgov.org

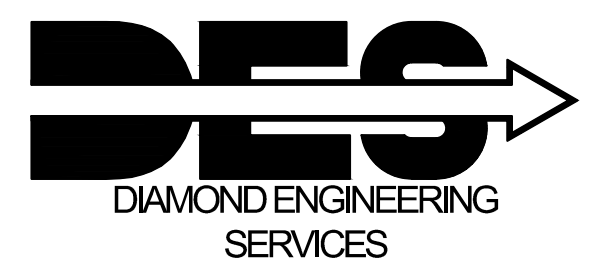
dish

wireless.

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SAN FRANCISCO, CA
94108



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TO ALTER THIS DOCUMENT.

DRAWN BY: _____ CHECKED BY: _____ APPROVED BY: _____

CDO BLL BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
ENERGY COMPLIANCE

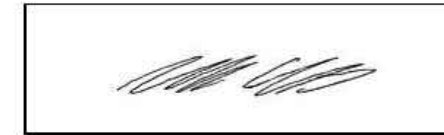
SHEET NUMBER

GN4

Preparer Certification

I, Lindsay Clark, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commission (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Reviewed and Approved by:



sealed 16Jun2022

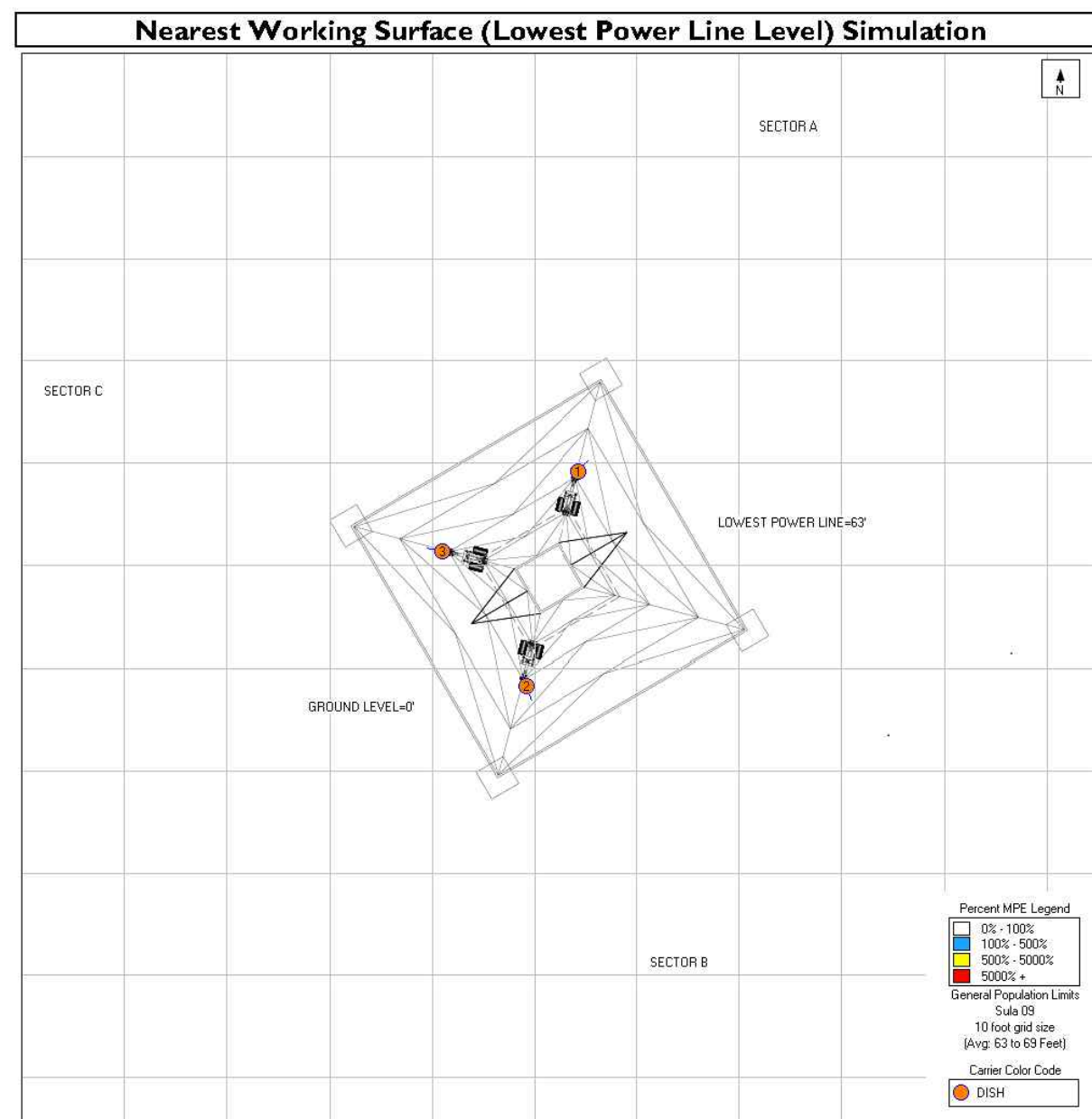
Michael McGuire
Electrical Engineer
mike@zh2dc.com

Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

EBI Consulting • 21 B Street • Burlington, MA 01803 • 1.800.786.2346

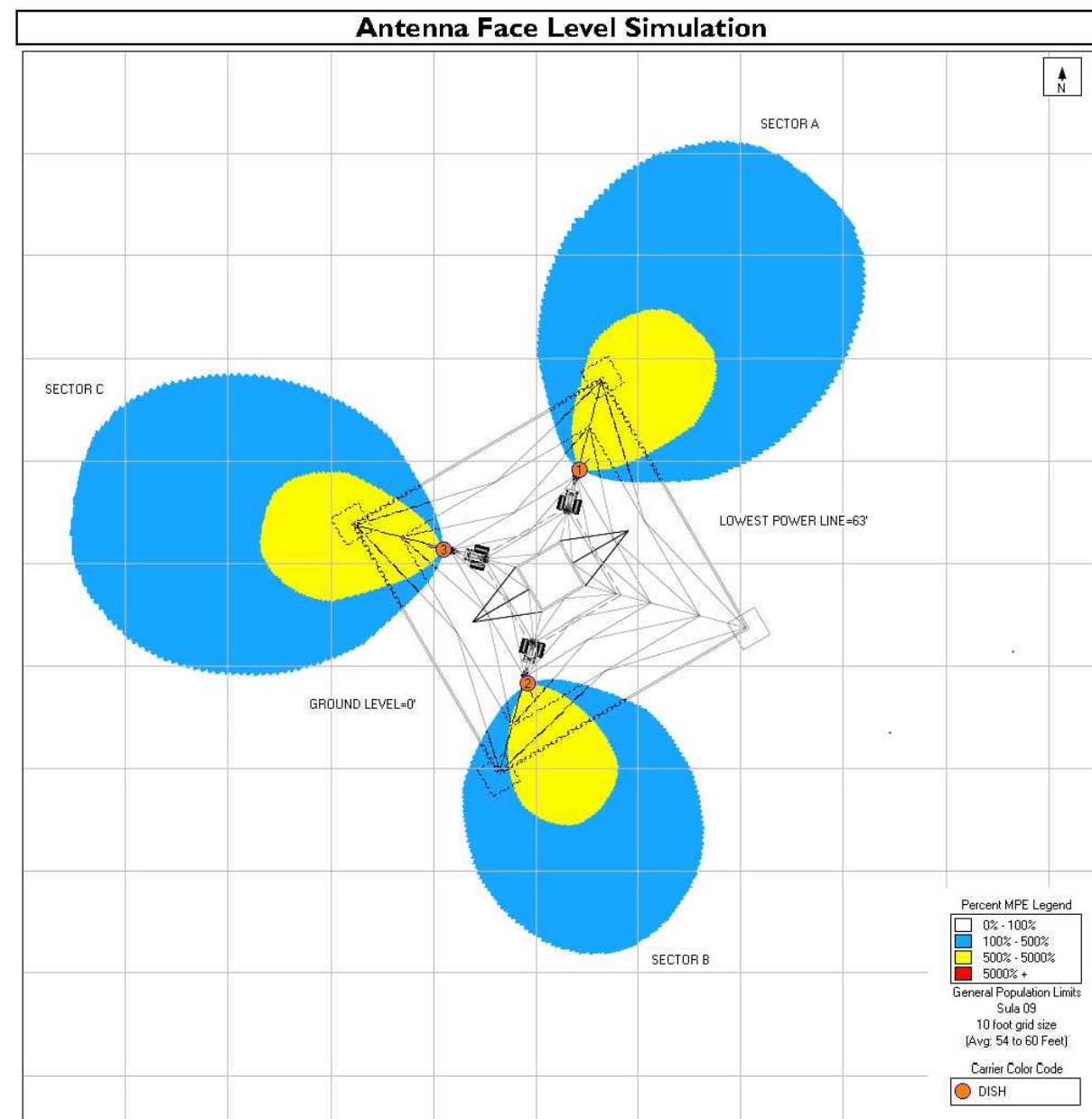
EBI Consulting • 21 B Street • Burlington, MA 01803 • 1.800.786.2346

Nearest Working Surface (Lowest Power Line Level) Simulation



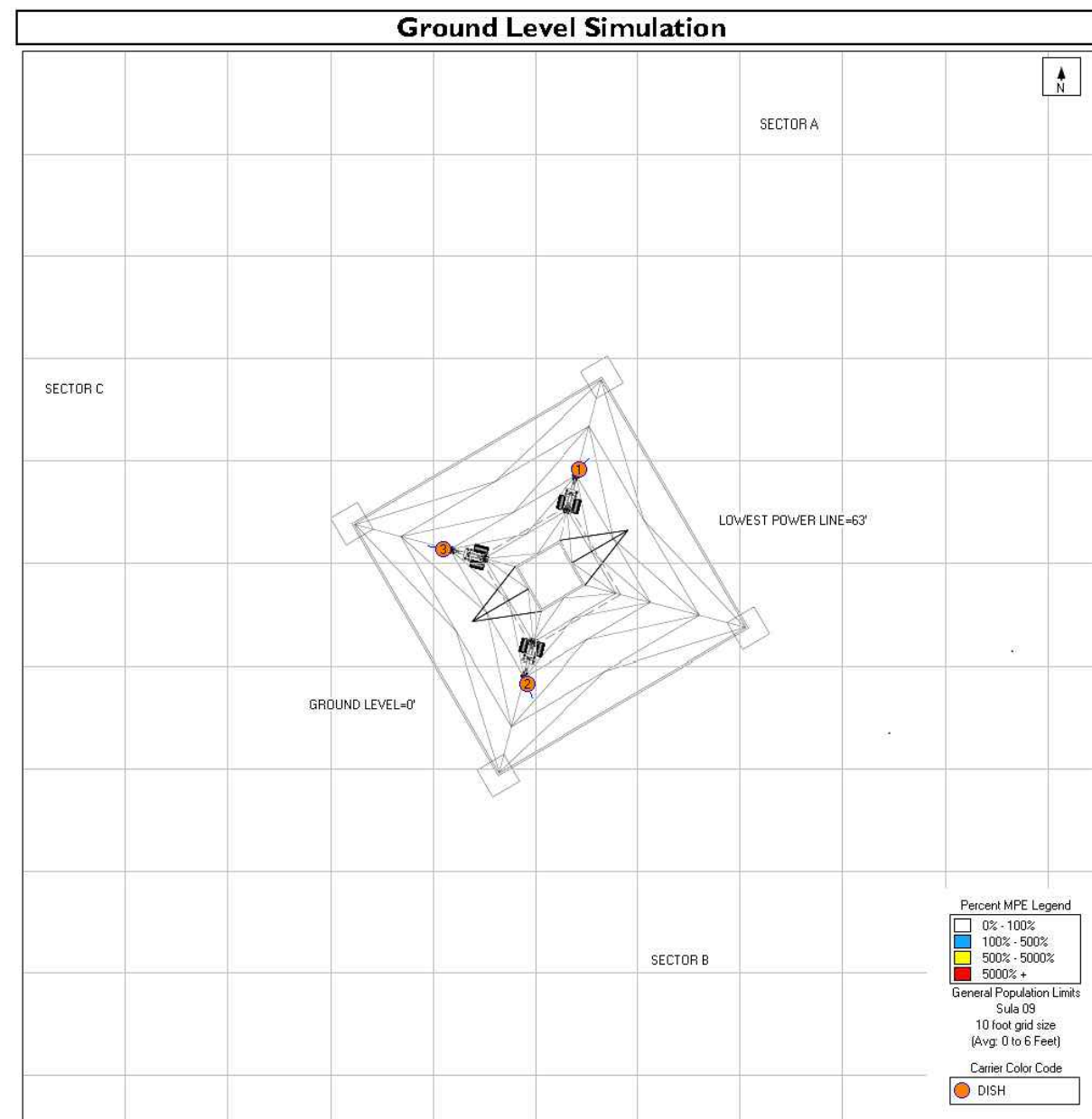
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Antenna Face Level Simulation



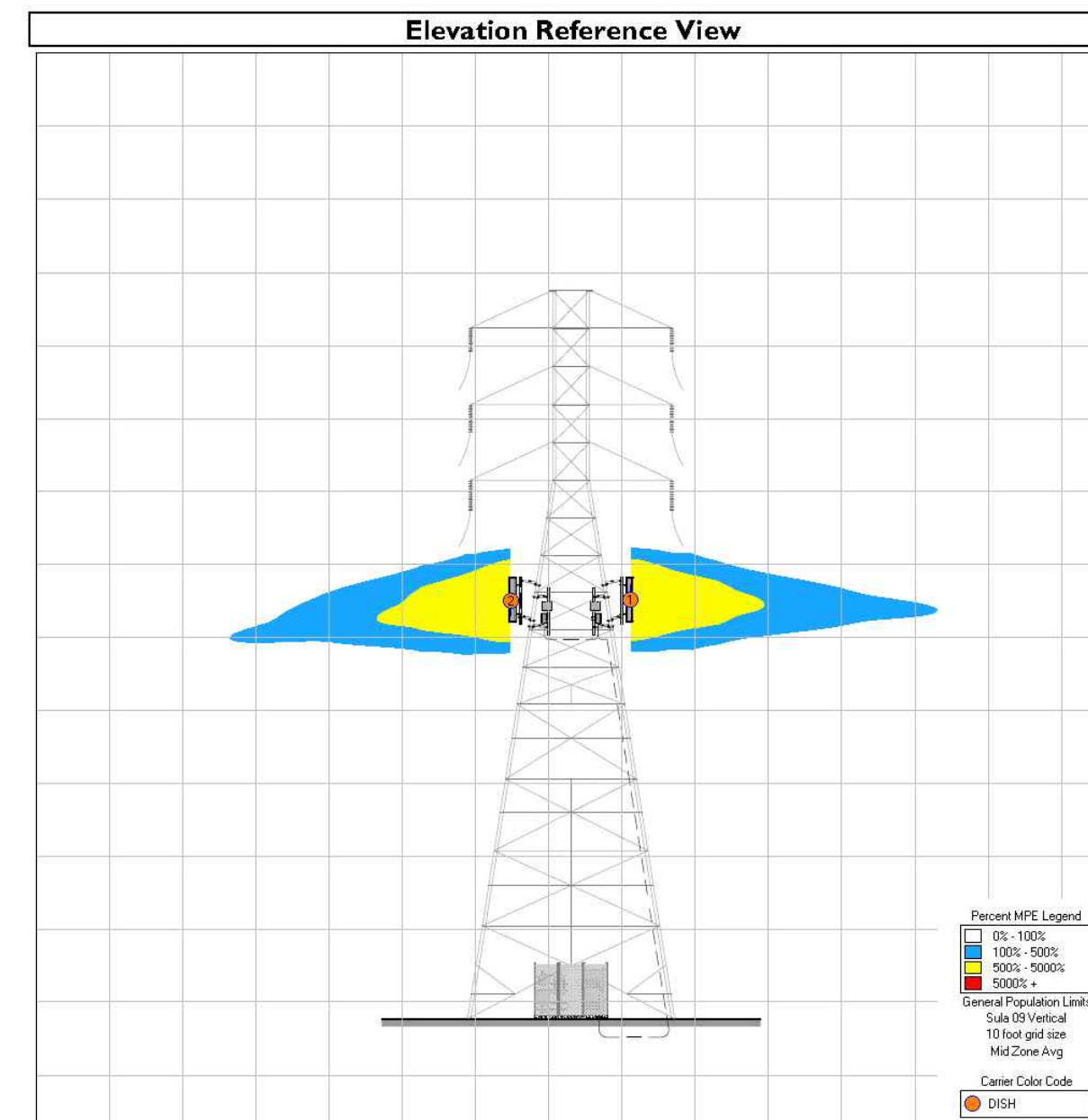
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Ground Level Simulation



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Elevation Reference View







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Dish Wireless Safety (Signage) Plan



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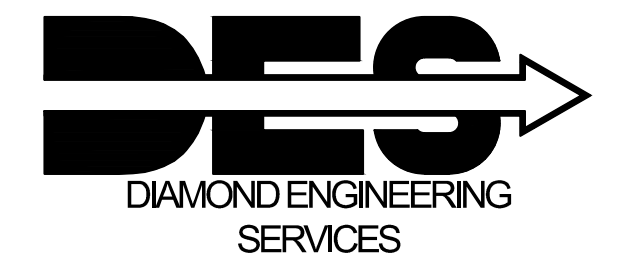
Sign	Posting Instructions	Required Signage / Mitigation
	NOC Instructions Information signs are used to provide contact information for any questions or concerns for personnel accessing the site. Guidelines Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Securely post 10 feet above ground level at the base of the transmission tower in a manner conspicuous to all individuals entering thereon as indicated in the signage plan. Signage not required.
	Notice Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.	Signage not required.
	Caution Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.	Securely post 10 feet above ground level at the base of the transmission tower in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.
	Warning Used to notify individuals that they are entering a hot zone where the occupational FCC's MPE limit has been exceeded by 10x.	Signage not required.



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DISH Wireless L.L.C.
PROJECT INFORMATION
SF5FO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
EME REPORT

SHEET NUMBER
EME2

Appendix C

Federal Communications
Commission (FCC) Requirements

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EMF) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

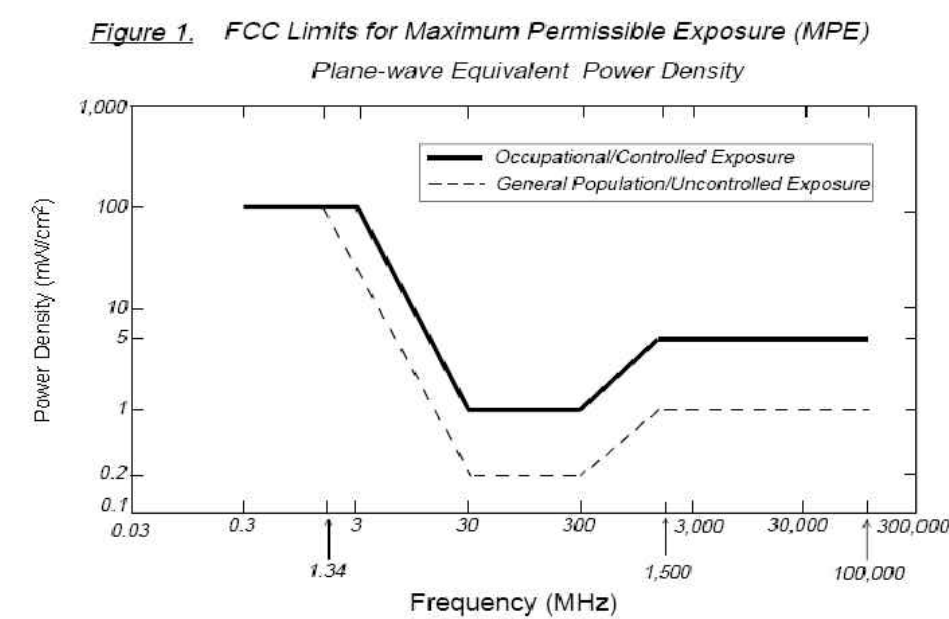
General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the Dish Wireless equipment operating at 600 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². For the Dish Wireless equipment operating at 1900 MHz, the FCC's occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². These limits are considered protective of these populations.

(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E], [H], or S (minutes)
0.3-3.0	61.4	1.63	(100) ^f	5
3.0-30	1842 ^f	4.89 ^f	(900) ^f	5
30-300	61.4	0.163	1.0	5
300-1,500	--	--	1/200	5
1,500-100,000	--	--	5	5
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E], [H], or S (minutes)
0.3-1.34	61.4	1.63	(100) ^f	30
1.34-30	824 ^f	2.19 ^f	(180) ^f	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	1/1,500	30
1,500-100,000	--	--	1.0	30

^f = Frequency in (MHz)
* Plane-wave equivalent power density



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Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Microwave (Point-to-Point)	5,000 - 80,000 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Broadband Radio (BRS)	2,600 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Wireless Communication (WCS)	2,300 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Advanced Wireless (AWS)	2,100 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm ²	1.00 mW/cm ²
Cellular Telephone	870 MHz	2.90 mW/cm ²	0.58 mW/cm ²
Specialized Mobile Radio (SMR)	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Long Term Evolution (LTE)	700 MHz	2.33 mW/cm ²	0.47 mW/cm ²
Most Restrictive Frequency Range	30-300 MHz	1.00 mW/cm ²	0.20 mW/cm ²

MPE limits are designed to provide a substantial margin of safety. 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.

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 2100 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-sight paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

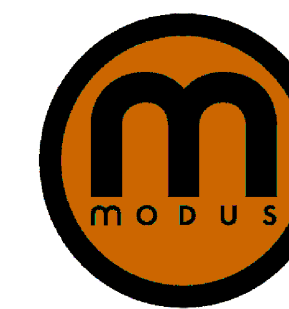
FCC Compliance Requirement

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

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RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SF5FO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
EME REPORT

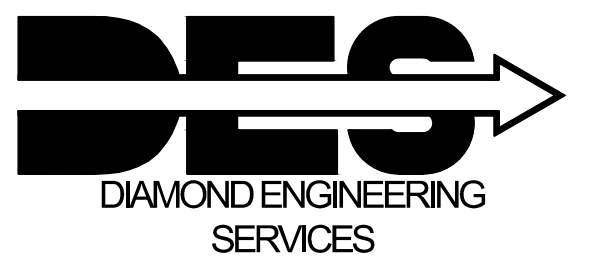
SHEET NUMBER
EME3

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wireless.

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PROJECT INFORMATION
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S. SAN FRANCISCO, CA 94080

SHEET TITLE

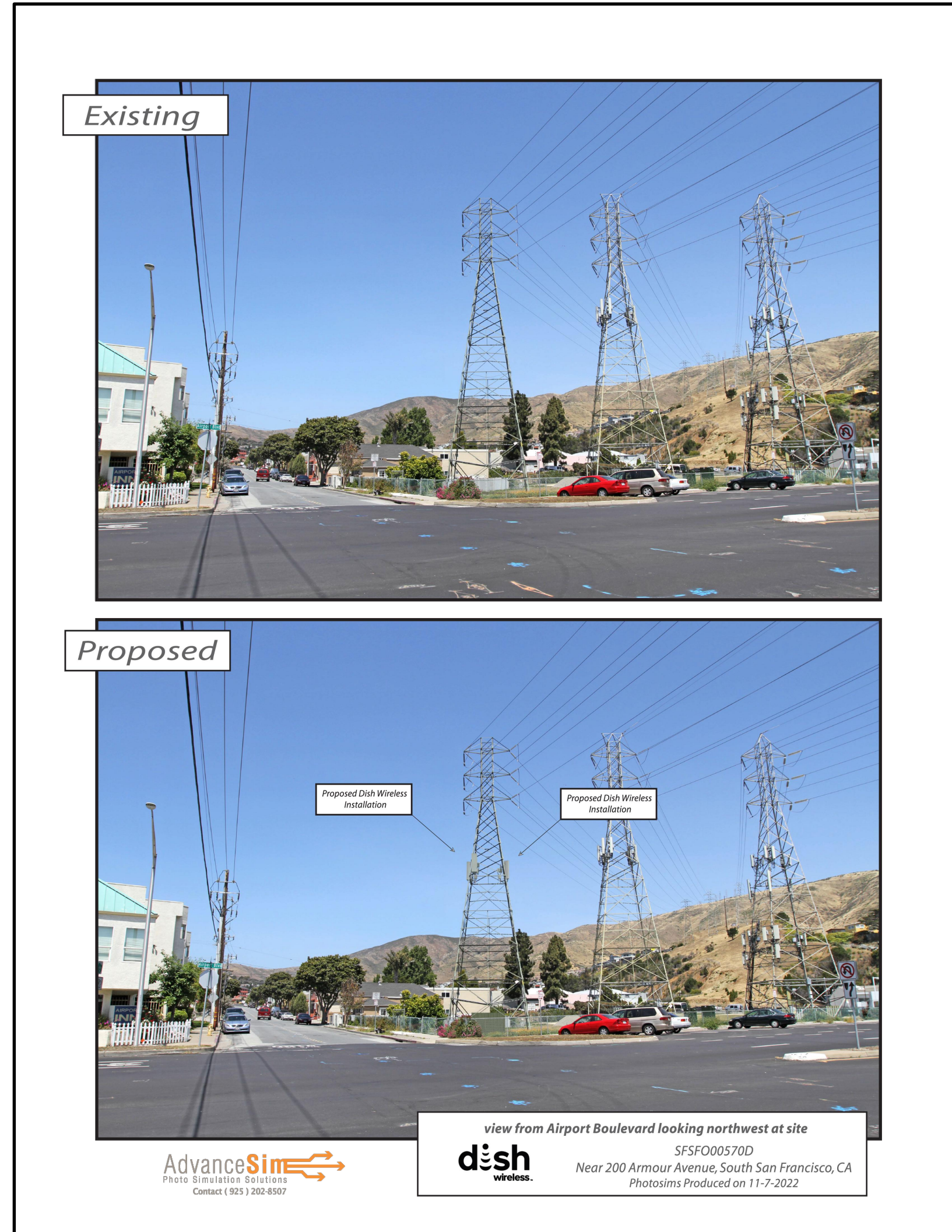
PHOTO SIMS

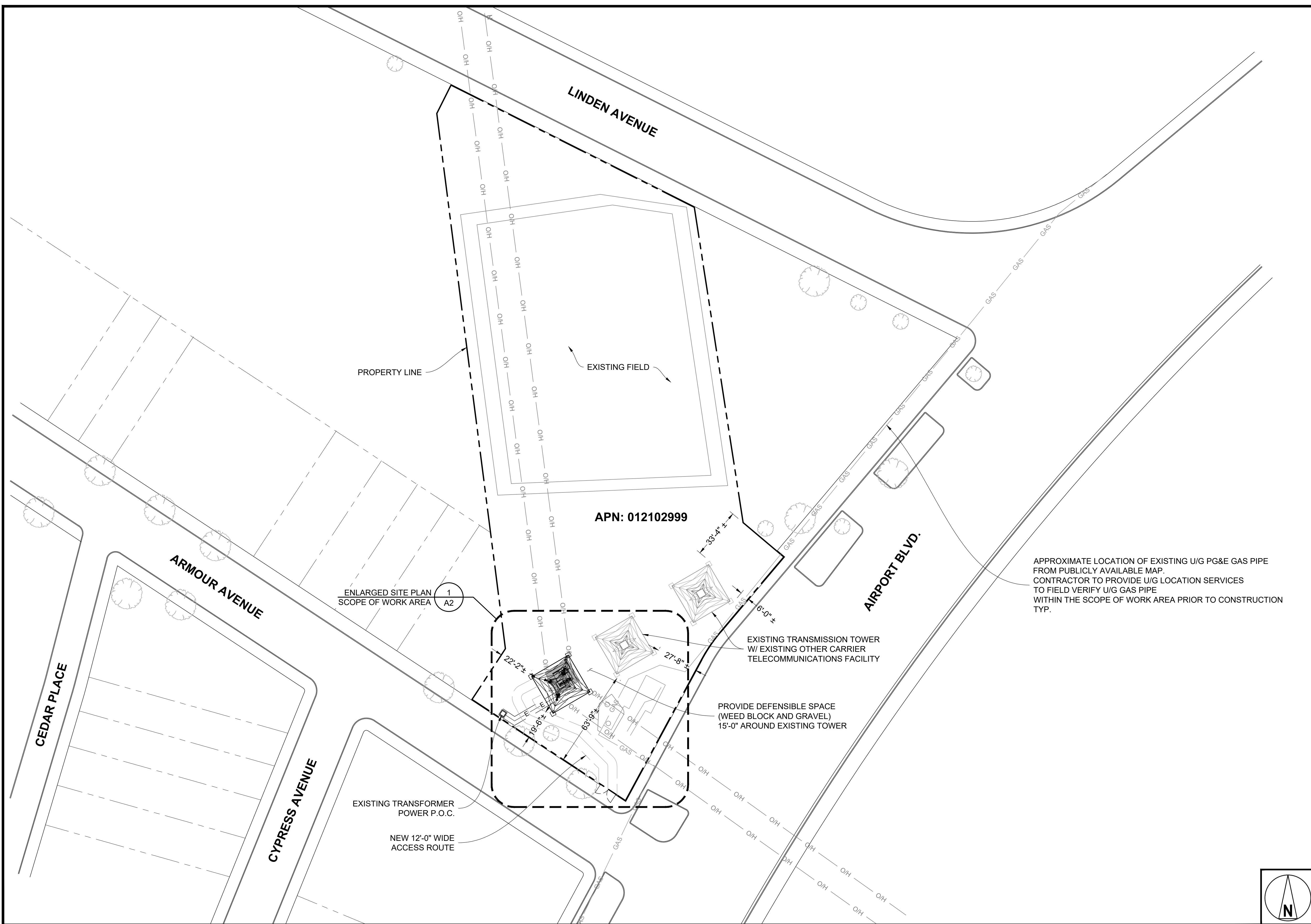
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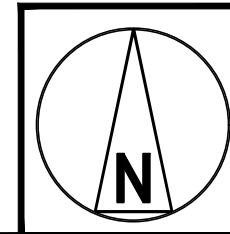
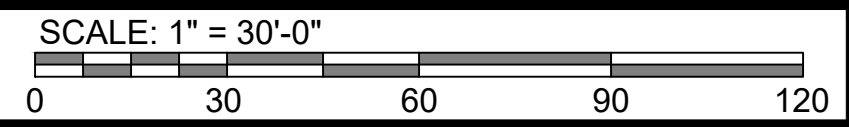


Shot Point Map





SITE PLAN



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DES
DIAMOND ENGINEERING
SERVICES

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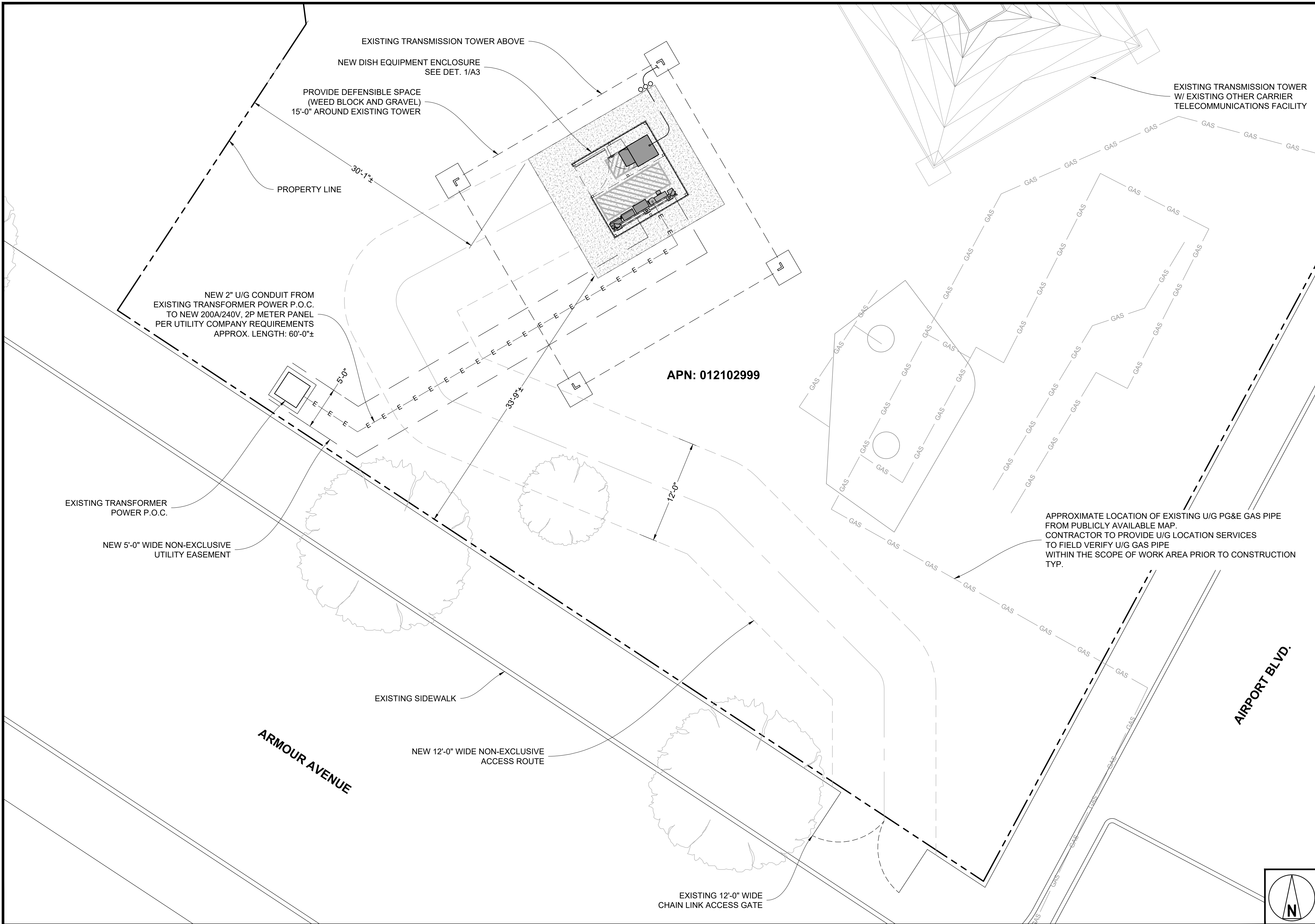
SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

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M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
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SHEET TITLE
SITE PLAN

SHEET NUMBER
A1



APN: 012102999

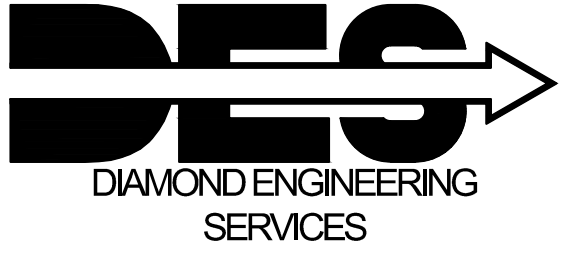
APPROXIMATE LOCATION OF EXISTING U/G PG&E GAS PIPE FROM PUBLICLY AVAILABLE MAP. CONTRACTOR TO PROVIDE U/G LOCATION SERVICES TO FIELD VERIFY U/G GAS PIPE WITHIN THE SCOPE OF WORK AREA PRIOR TO CONSTRUCTION TYP.

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CONSTRUCTION DOCUMENTS

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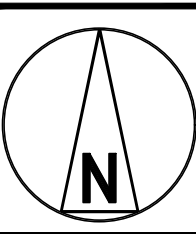
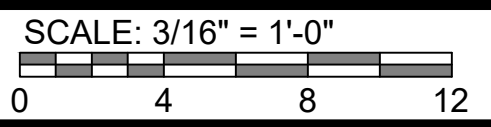
DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
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SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
A2

ENLARGED SITE PLAN



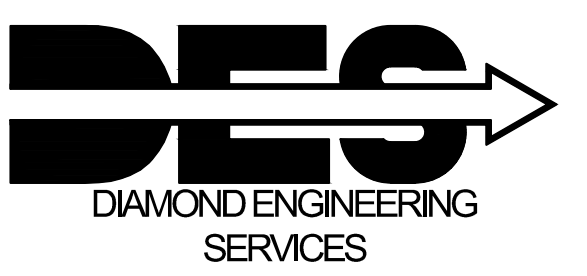
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CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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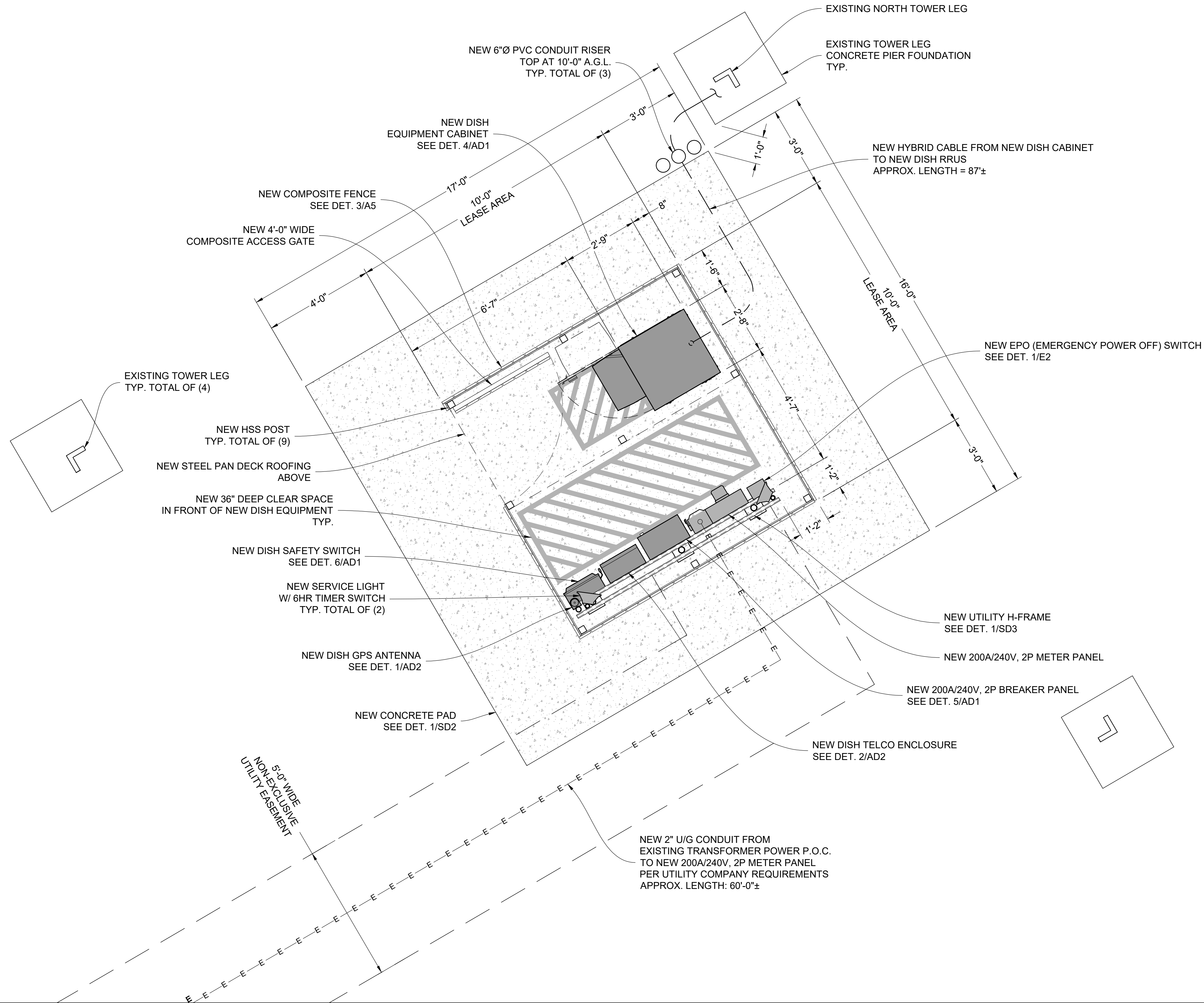
A&E PROJECT NUMBER
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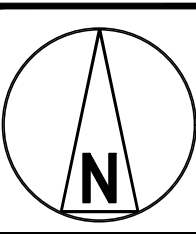
SHEET TITLE
EQUIPMENT PLAN

SHEET NUMBER
A3



EQUIPMENT PLAN

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



1

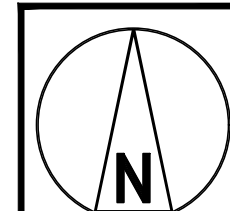
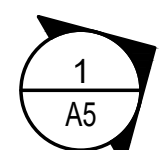
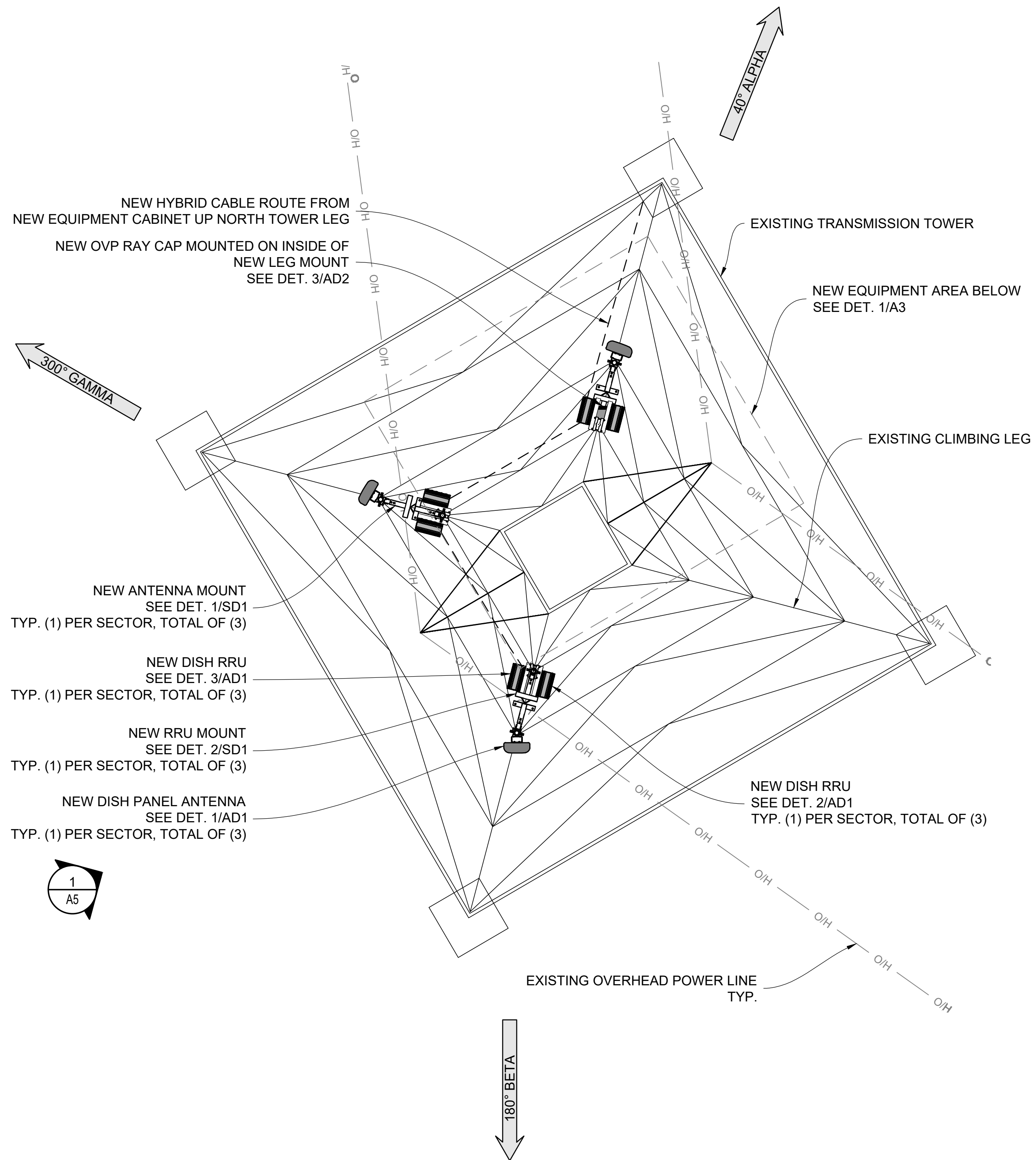
SECTOR	POSITION	ANTENNA					TRANSMISSION CABLE
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	JMA-MX08FRO665-21	5G	72" x 20" x 8"	40°	56'-0"	(1) HYBRID CABLE APPROX. LENGTH = 87'-0"±
BETA	B1	JMA-MX08FRO665-21	5G	72" x 20" x 8"	180°	56'-0"	
GAMMA	C1	JMA-MX08FRO665-21	5G	72" x 20" x 8"	300°	56'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	SAMSUNG - RF4450L-71A	n71	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
		SAMSUNG - RF4451d-70A	n70 n66	
BETA	B1	SAMSUNG - RF4450L-71A	n71	
		SAMSUNG - RF4451d-70A	n70 n66	
GAMMA	C1	SAMSUNG - RF4450L-71A	n71	
		SAMSUNG - RF4451d-70A	n70 n66	

ANTENNA CONFIGURATION SCHEDULE

NO SCALE

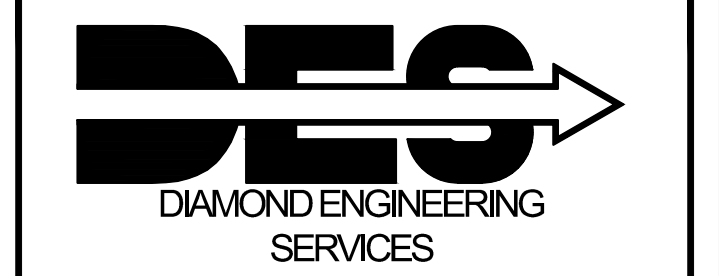
2



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

ANTENNA PLAN

1



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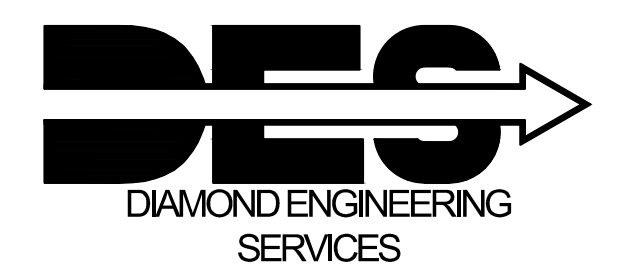
SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
ANTENNA PLAN AND SCHEDULE

SHEET NUMBER
A4



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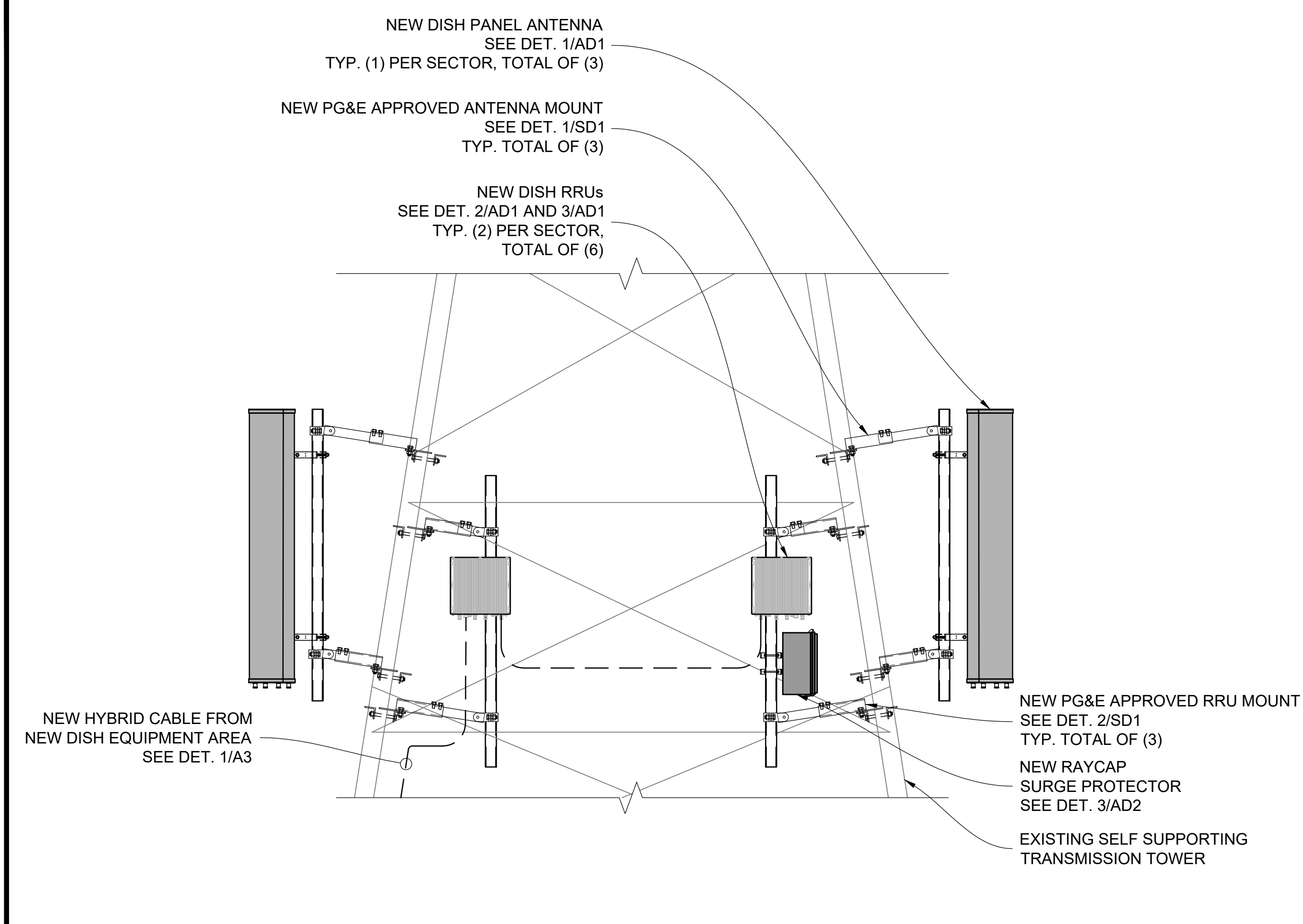
SUBMITTALS		
REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

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M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
ELEVATIONS

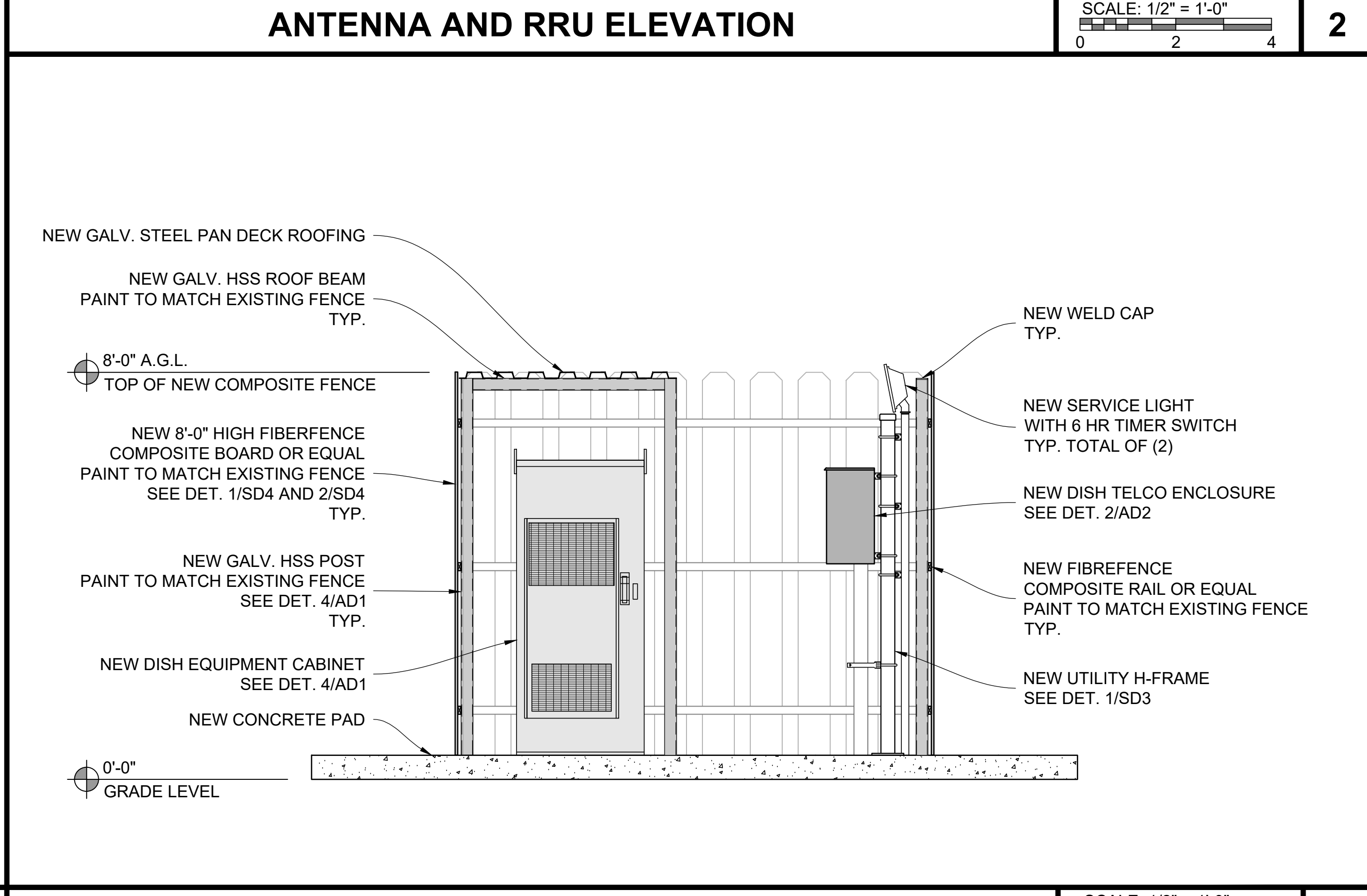
SHEET NUMBER
A5



ANTENNA AND RRU ELEVATION

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

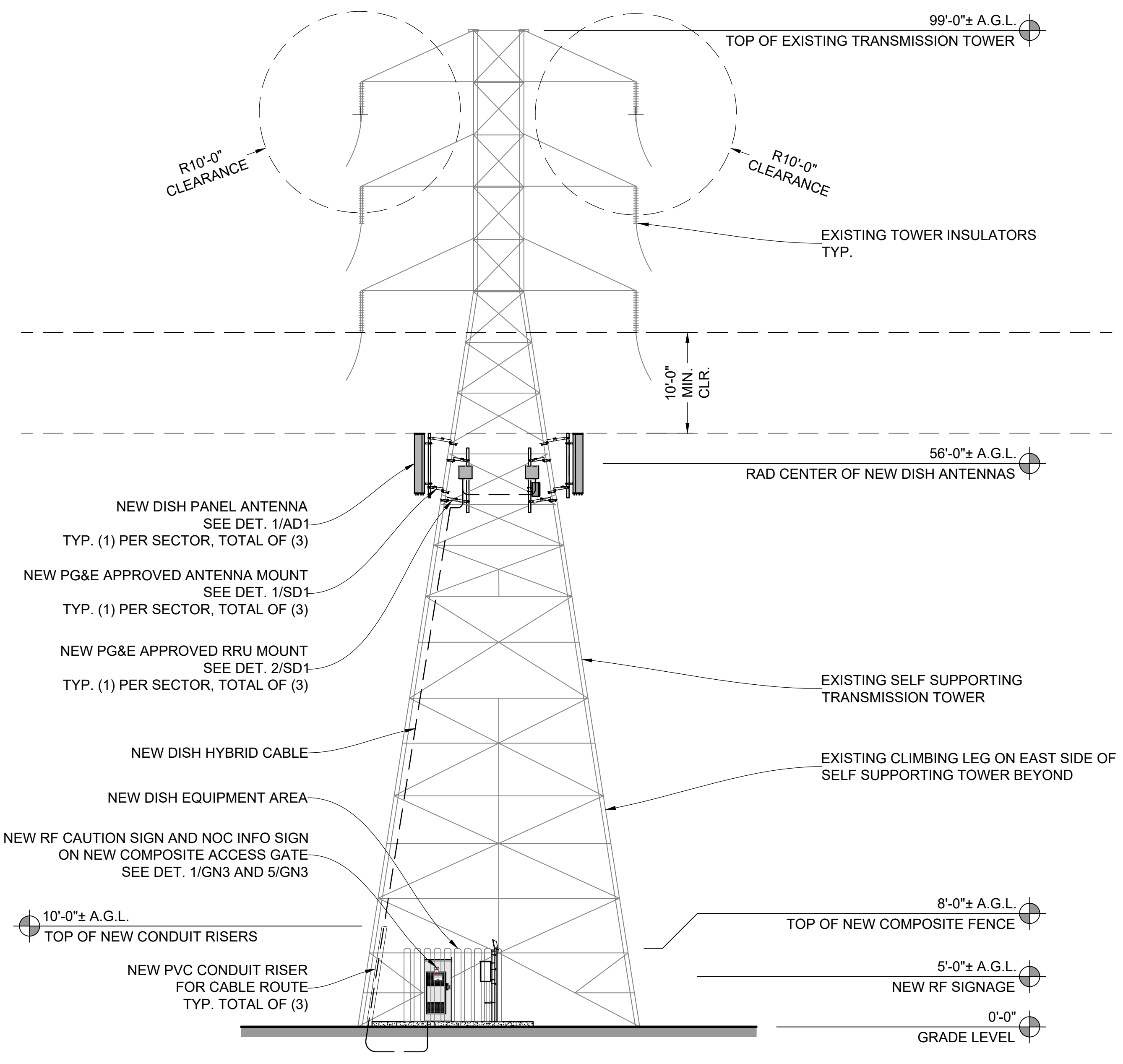
2



EQUIPMENT AREA INTERIOR ELEVATION

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

3

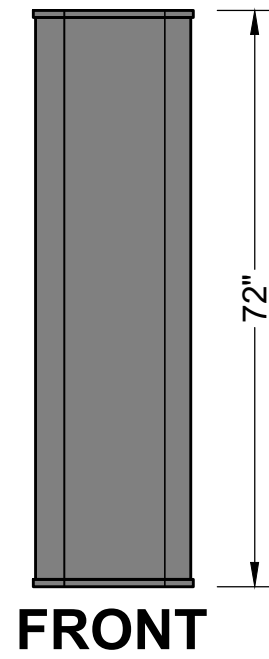
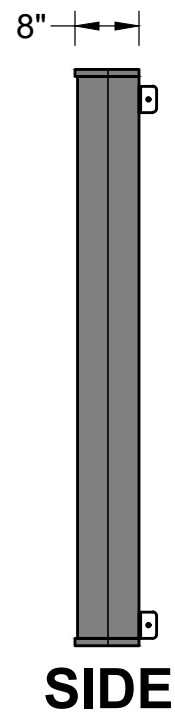
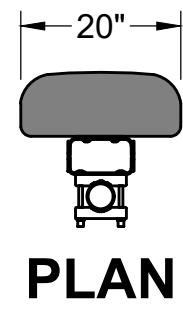


SOUTHWEST ELEVATION

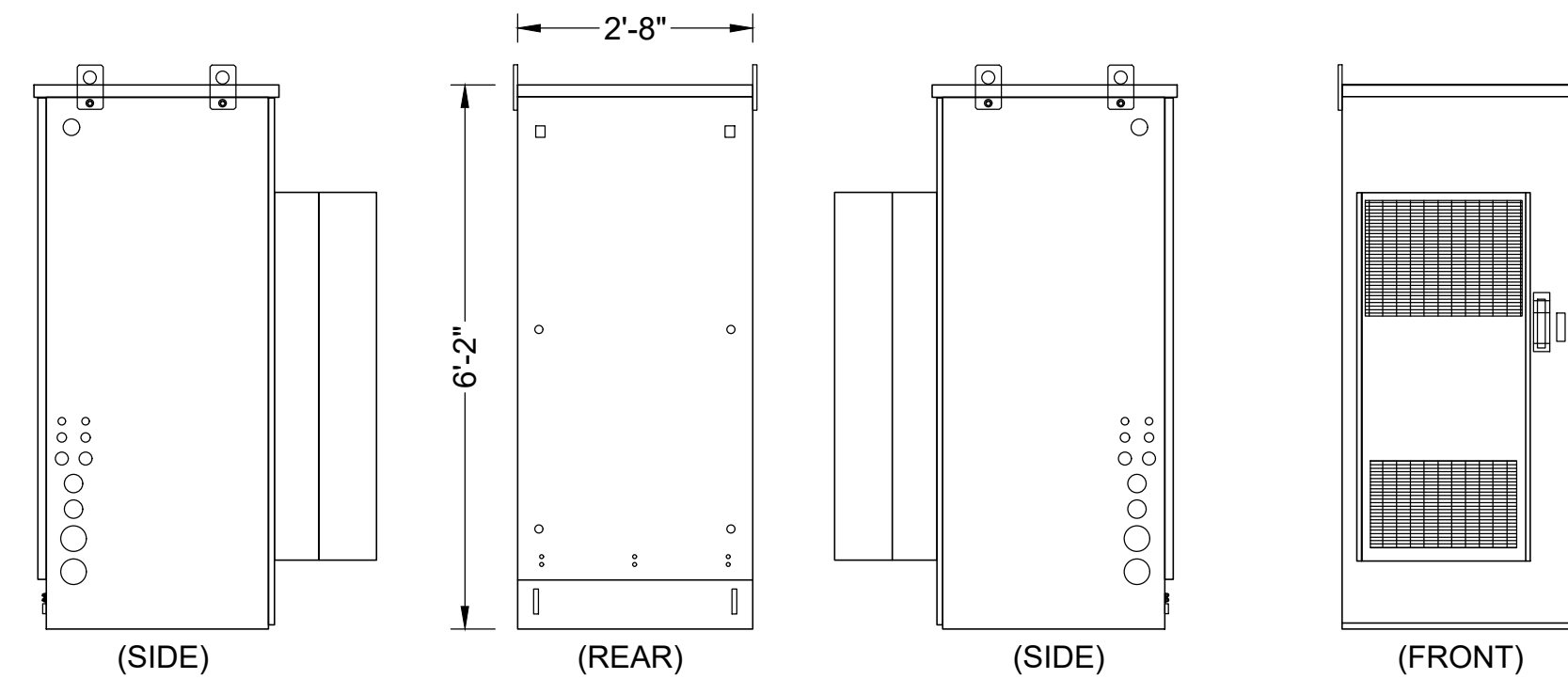
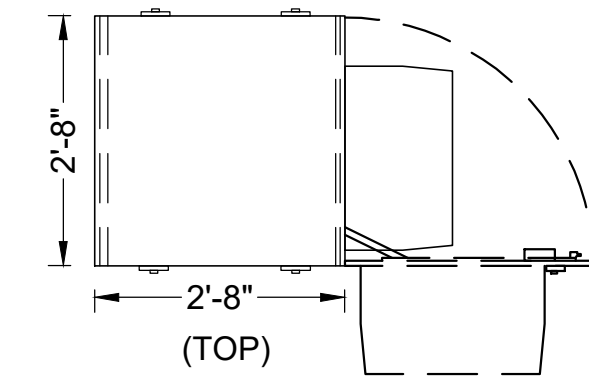
SCALE: 1/8" = 1'-0"
0 8 16 24 32

1

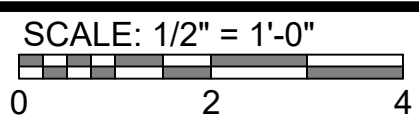
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



CABINET DATA	
MANUFACTURER	CHARLES INDUSTRY
MODEL	CUBE-PM639155N4
DIMENSIONS	74"H x 32"W x 32"D
WEIGHT (EMPTY)	408 Lbs
POWER PLANT	-48VDC ABB/600W

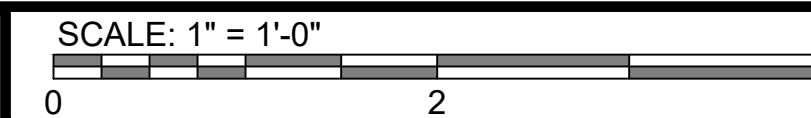


PANEL ANTENNA

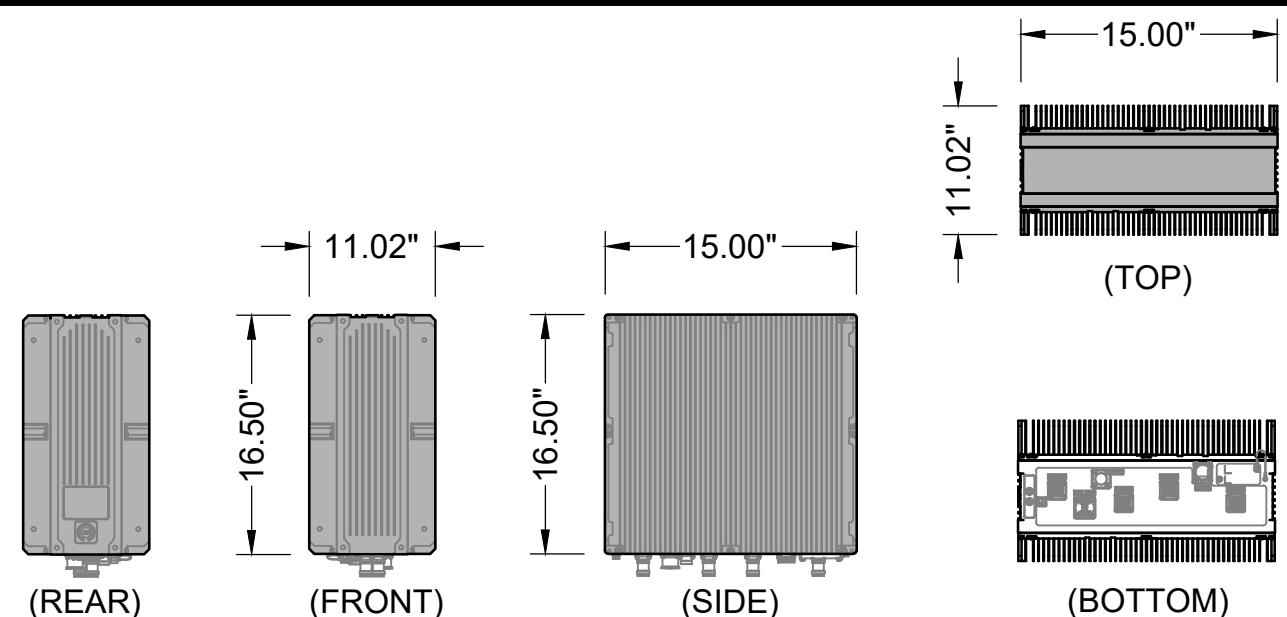


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CABINET

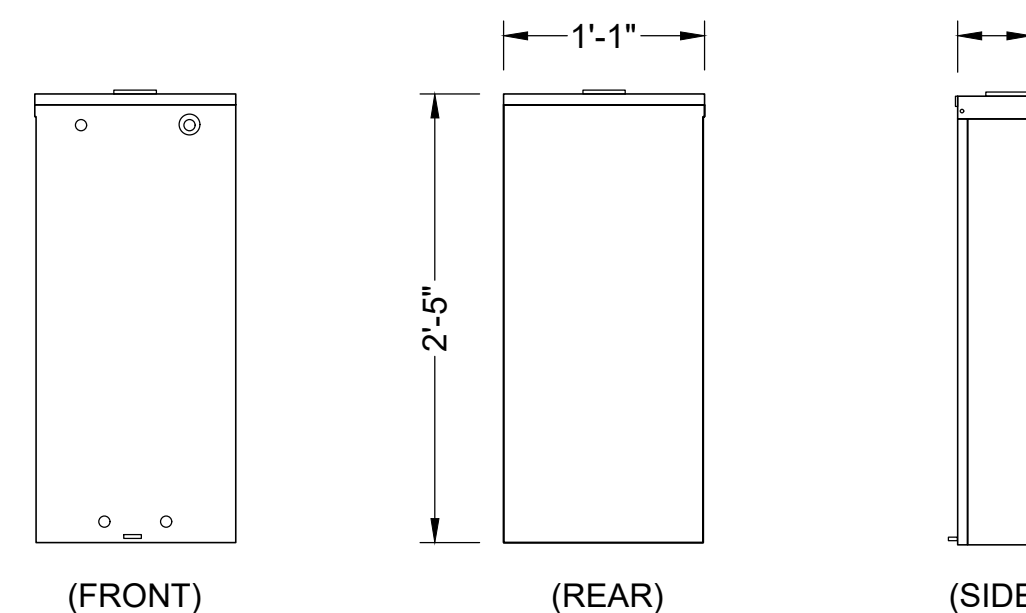
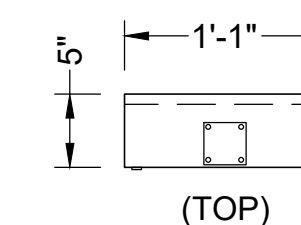


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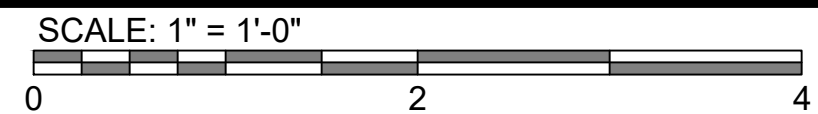


RADIO DATA	
MANUFACTURER	SAMSUNG
MODEL	RF4450t-71A
DIMENSIONS	16.50"H x 15.00"W x 11.02"D
WEIGHT	94.58 Lbs
MOUNTING PIPE Ø	2.36"-4.72"
MANUFACTURE SUPPLIED MOUNTING HARDWARE	

BREAKER PANEL DATA	
MANUFACTURER	GE
MODEL	TLM1220RCUP
DIMENSIONS	29"H x 13"W x 5"D
WEIGHT (EMPTY)	26 Lbs
ENCLOSURE RATING	OUTDOOR NEMA 3R

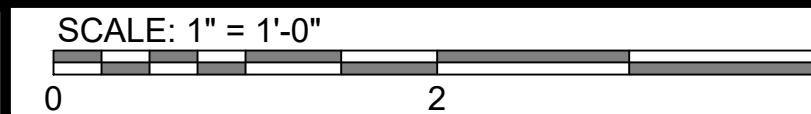


RRU

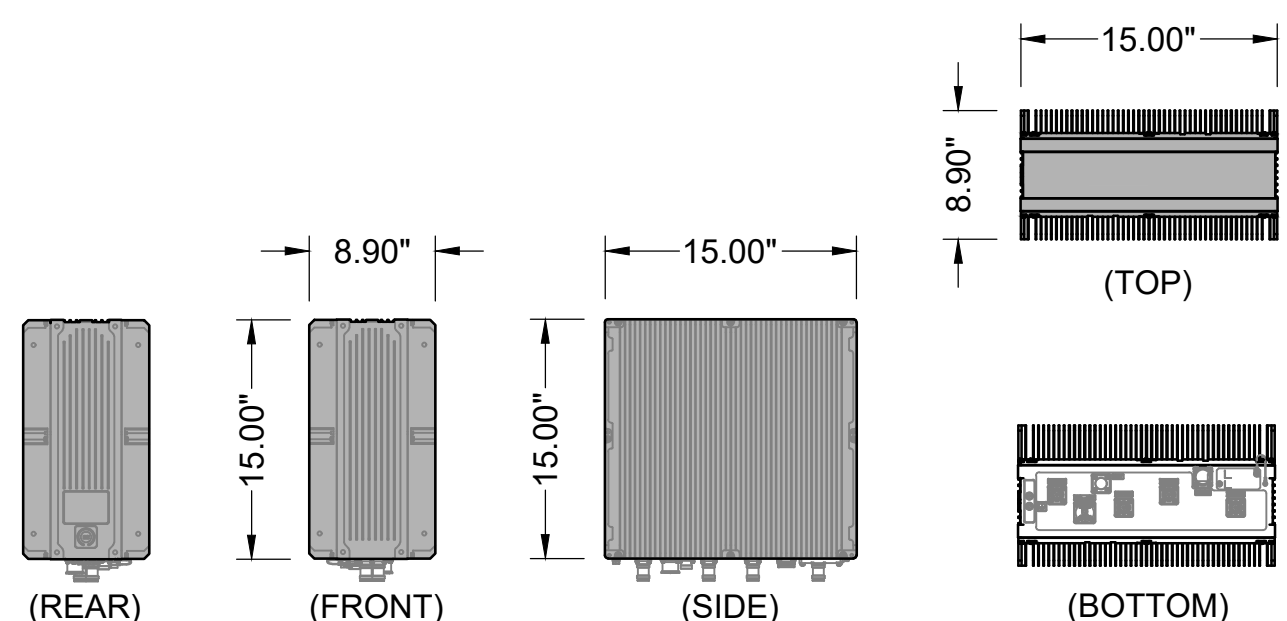


2

BREAKER PANEL

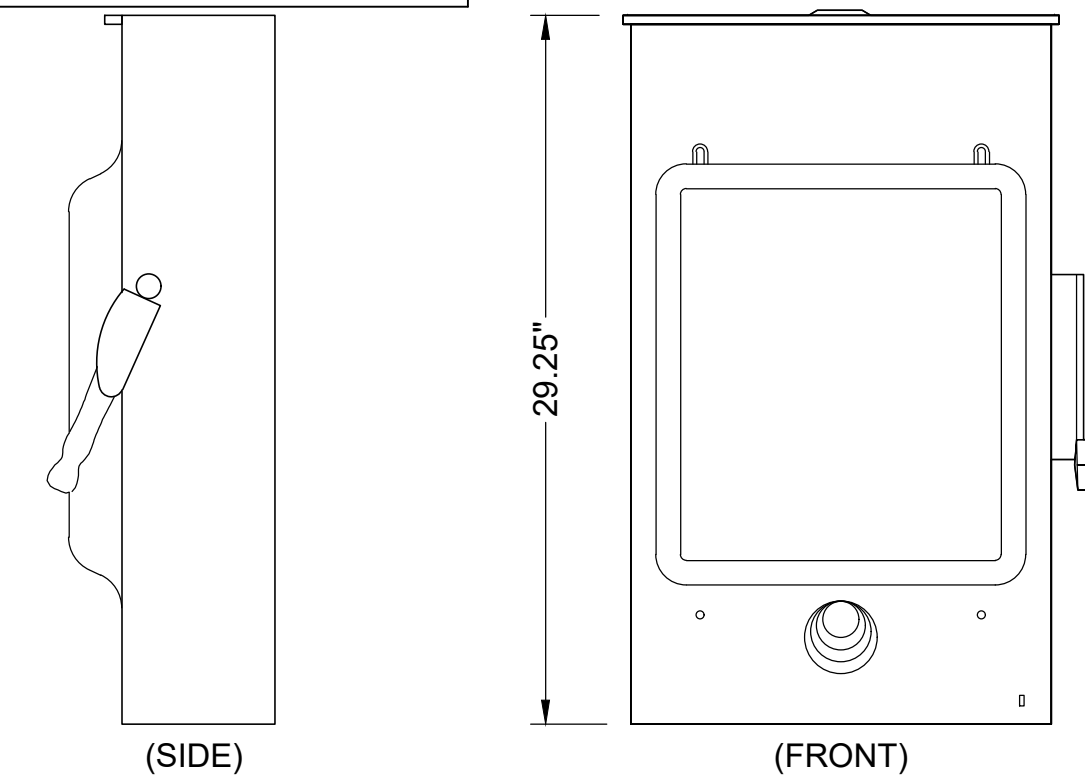
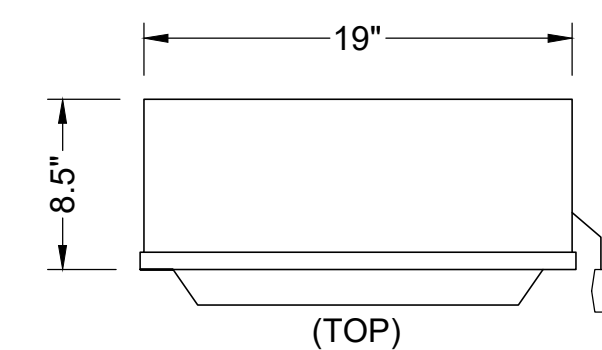


5



RADIO DATA	
MANUFACTURER	SAMSUNG
MODEL	RF4451d-70A
DIMENSIONS	15.00"H x 15.00"W x 8.90"D
WEIGHT	61.30 Lbs
MOUNTING PIPE Ø	2.36"-4.72"
MANUFACTURE SUPPLIED MOUNTING HARDWARE	

SAFETY SWITCH DATA	
MANUFACTURER	SQUARE D
MODEL	D224NRB
DIMENSIONS	29.25"H x 19"W x 8.50"D
UL LISTED	FILE E-2875
ENCLOSURE RATING	OUTDOOR NEMA 3R

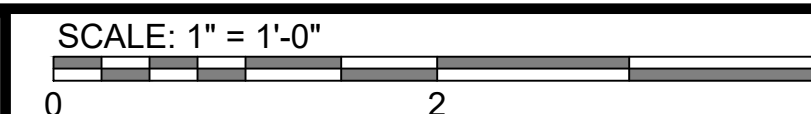


RRU



3

SAFETY SWITCH



6

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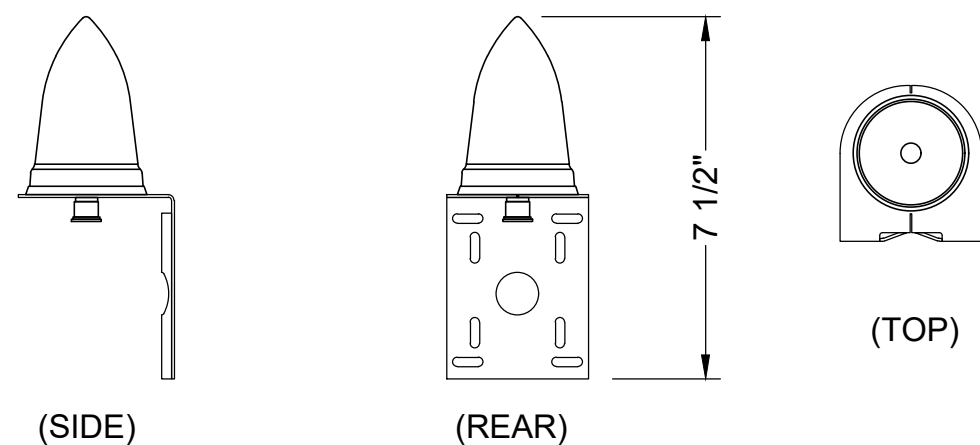
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
ARCHITECTURAL DETAILS

SHEET NUMBER

AD1

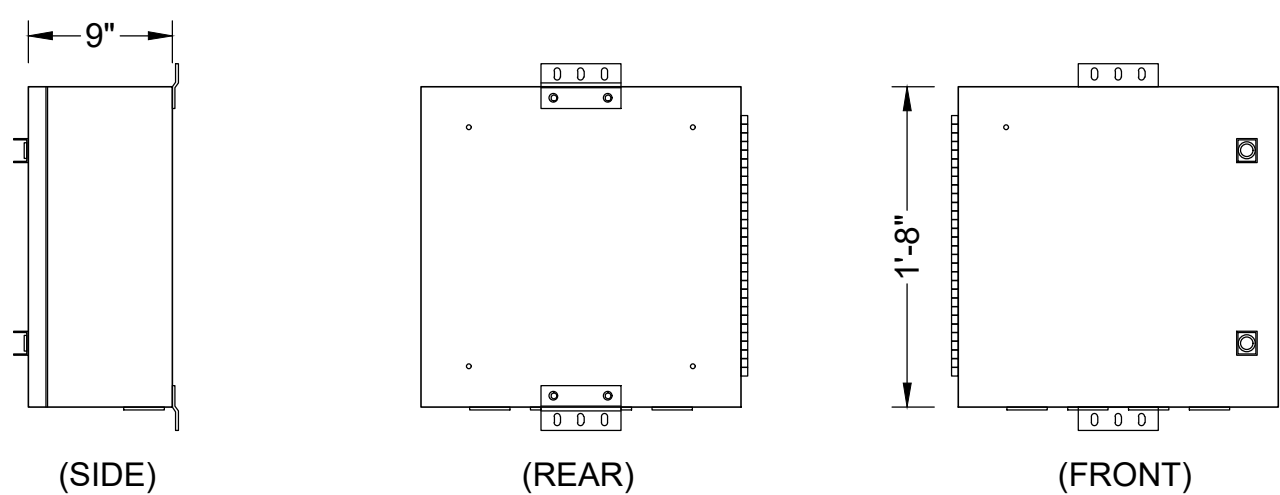
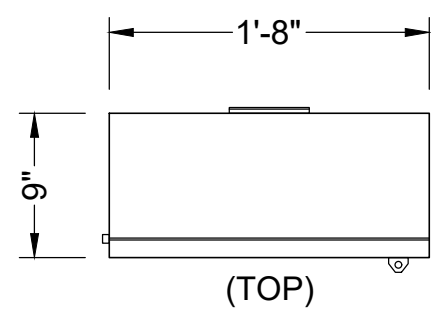


GPS ANTENNA DATA	
MANUFACTURER	PCPTTEL
MODEL	GPSGL-TMG-SPI-40NCB
DIMENSIONS	3.2"Ø x 7.5"H
WEIGHT W/ ACCESSORIES	0.75Lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz

GPS ANTENNA

SCALE: 3" = 1'-0" **1**

TELCO ENCLOSURE DATA	
MANUFACTURER	CHARLES
MODEL	CFIT-PF2020DSH1
DIMENSIONS	20"H x 20"W x 9"D
WEIGHT	20 Lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FIBER TELCO ENCLOSURE

SCALE: 1" = 1'-0" **2**

(UNIT WEIGHT: 21.82 LBS)

TOLERANCES	PH: 208-777-1166	Raycap
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED	FAX: 208-777-4466	
	800-890-2569	
INCHES (mm)		
.0	±0.02 [5]	
.00	±0.010 [3]	
.000	±0.005 [1]	
ANGLES	±.5	
ALL SHOWN TOLERANCES TO BE ±.14"		

SECTION A-A SCALE 1 : 6

DATE	NAME	DWG. NO.	REV.
6/30/2020	C. Steele		
			04

RDIDC-9181-PF-48 CUSTOMER REVIEW

SCALE: NOT TO SCALE SHEET 3 OF 4

RAYCAP SURGE PROTECTION

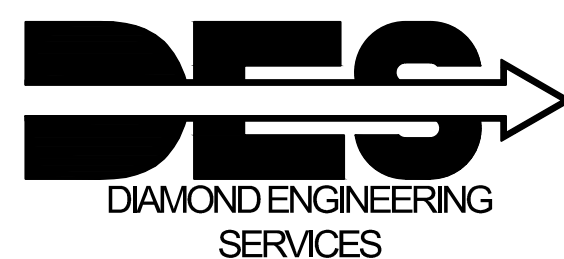
SCALE: 1" = 1'-0" **3**



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LITTLETON, CO 80120



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REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
**ARCHITECTURAL
DETAILS**

SHEET NUMBER

AD2

1. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI-318 MOST CURRENT EDITION.
2. CONTRACTOR SHALL VERIFY SITE CONDITIONS AND DIMENSIONS PRIOR TO STARTING WORK. NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES FOR RESOLUTION PRIOR TO PROCEEDING.
3. CONCRETE SHALL CONFORM TO ASTM C-94.
4. CEMENT SHALL CONFORM TO ASTM C150, TYPE II.
5. CONCRETE - MATERIALS: AGGREGATE, ASTM C-33; WATER, POTABLE; TRANSIT MIX, ASTM C-94; ADMIXTURE, ONLY WITH WRITTEN APPROVAL. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACE IN ACCORDANCE WITH C.B.C. SECTION 1903 AND ACI 318. STRENGTHS AT 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS. THE CONTRACTOR SHALL REMOVE AND REPLACE ANY CONCRETE WHICH FAILS TO ATTAIN SPECIFIED STRENGTH IN 28 DAYS IF SO DIRECTED BY THE ENGINEER.
 - 5.1. THE CONTRACTOR SHALL PROVIDE CONCRETE WITH THE FOLLOWING SPECIFIED 28 DAY STRENGTH (F'c)
 - 5.1.1. NEW CONCRETE UTILITY PAD 3,000 PSI, NO SPECIAL INSPECTION REQUIRED
 - 5.1.2. CEMENT SHALL BE ASTM C150, PORTLAND CEMENT TYPE II U.N.O.
6. REINFORCING SHALL BE FREE OF LOOSE RUST OR OTHER DELETERIOUS COATING.
7. USE Fy=60 ksi, TYPICAL AND 60 KSI FOR TIES AND STIRRUPS. REINFORCING MIN. COVER SHALL BE AS FOLLOWS:
8. REINFORCING AND TIEDOWN ANCHORS SHALL BE SECURED IN PLACE PRIOR TO POURING THE FOUNDATION CONCRETE.
9. THE GENERAL CONTRACTOR SHALL SUPERVISE AND BE RESPONSIBLE FOR THE METHODS AND PROCEDURES OF CONCRETE PLACEMENT.
10. ALL CONCRETE WITH SURFACES EXPOSED TO STANDING WATER SHALL BE AIR-ENTRAINED WITH AN AIR-ENTRAINING AGENT CONFORMING TO ASTM 260,C494,C618,C989 AND C1017. TOTAL AIR CONTENT SHALL BE IN ACCORDANCE WITH TABLE 1904.2.1 OF THE C.B.C.
11. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (INCLUDING SUPPLEMENTS 1). GRADE 60, Fy=60,000PSI EXCEPTIONS, ANY BARS SPECIFICALLY 40 NOTED ON THE DRAWINGS SHALL BE GRADE 40, Fy=40,000 PSI. GRADE 60 REINFORCING BARS INDICATED ON THE DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D14 ARE SUBMITTED.
12. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315 AND 318. LAP ALL CONTINUOUS REINFORCEMENT AT LEAST 309 BAR DIAMETERS OR A MINIMUM OF 2'-0". PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP CORNER BARS AT LEAST 30 BAR DIAMETERS OR A MINIMUM OF 2'-0". LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
13. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185
14. SPIRAL REINFORCEMENT SHALL BE DEFORMED WIRE CONFORMING TO ASTM A615. GRADE 60, Fy 60,000PSI.
15. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED OR APPROVED BY DIAMOND ENGINEERING SERVICES (DES) CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS.

15.1. FOOTING AND OTHER UNFORMED SURFACES, EARTH FACE	3"
15.2. FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS OR LARGER)	2"
	(#5 BARS OR LARGER) 1-1/2"
15.3. SLABS AND WALLS (INTERIOR FACE)	3/4"
16. BARS SHALL BE SUPPORTED ON CHAIRS OR CONCRETE BRICKS.
17. MINIMUM LAP SPLICE SHALL BE 48 BAR DIAMETERS UNLESS OTHERWISE NOTED.
18. MINIMUM BEND DIAMETER SHALL BE 6 BAR DIAMETERS UNLESS OTHERWISE NOTED.
19. CONCRETE SHALL BE PLACED AGAINST FIRM UNDISTURBED NON EXPANSIVE SOIL AT DEPTH SHOWN. WHERE OTHER CONDITIONS ARE ENCOUNTERED DURING EXCAVATION THE ENGINEER OF RECORD SHALL BE NOTIFIED AND REMEDIAL MEASURES PRESCRIBED PRIOR TO PROCEEDING WITH WORK.
20. BOTTOM OF FOOTING TRENCHES SHALL BE CLEAN AND LEVEL. REMOVE DEBRIS PRIOR TO PLACING CONCRETE.
21. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 55 AND WITHOUT SIGNIFICANT RUST.
22. PROVIDE A 3/4" CAMPHOR AT EXPOSED EDGES OF CONCRETE.
23. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURE AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURE'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL 7,000 PSI.
24. ANCHORS INSTALLED IN CONCRETE SHALL BE HOT DIPPED GALVANIZED PER A123/A123M-00 OR STAINLESS STEEL.
25. REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY POSITIONED PRIOR TO PLACING CONCRETE .
26. CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY MOTORIZED VIBRATORY MEANS AND THOROUGHLY WORKED AROUND REINFORCEMENT. EMBEDDED ITEMS AND INTO CORNERS OF FORMS.
27. FOUNDATION DESIGN IS BASED ON THE MINIMUM REQUIREMENTS OF CHAPTER 18 OF THE CURRENT EDITION OF THE CALIFORNIA BUILDING CODE VOLUME II (CBC) AND SPECTRAL RESPONSE VALUES. THE ANALYSIS IS ALSO BASED ON THE MINIMUM REQUIREMENTS OF CHAPTER 18 OF THE CURRENT EDITION OF THE CALIFORNIA BUILDING CODE VOLUME II (CBC) AND SPECTRAL RESPONSE VALUES PROVIDED BY USGS, INCLUDED IN THE APPENDIX.

CONCRETE GENERAL NOTES

1. STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM STANDARD A123. ALTERNATE METHODS SHALL PROVIDE PROTECTION EQUAL TO THE REQUIREMENTS OF ASTM STANDARD A123. TOUCH UP AND REPAIRS TO STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARD A780.
2. FABRICATION AND ERECTION SHALL CONFORM TO THE AISC SPECIFICATIONS AND AMERICAN IRON AND STEEL SPECIFICATION MANUAL, LATEST EDITION.
3. WELDING SHALL CONFORM TO THE AWS SPECIFICATIONS.
4. WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE BEST PRACTICE AND WITHIN THE TOLERANCES SPECIFIED IN THE AISC SPECIFICATION FOR STRUCTURAL STEEL.
5. STEEL GRADE SPECIFICATIONS FOR THE FOLLOWING MATERIALS:

HSS RECTANGULAR, SQUARE	ASTM A500, GRADE B, Fy = 46 KSI
HSS ROUND	ASTM A500, GRADE B, Fy = 42 KSI
PIPE SECTIONS , PIPE COLUMNS	ASTM A53, GRADE B, Fy = 35 KSI
W SHAPE	ASTM A992, GRADE 50, Fy = 50 KSI
M, S, SP, C, MC, SHAPES	ASTM A36, Fy = 36 KSI
PLATE	ASTM A36, Fy = 36 KSI
ANGLE	ASTM A36, Fy = 36 KSI
6. STEEL GRADE SPECIFICATIONS FOR THE FOLLOWING ANCHORAGE MATERIALS:

BOLTS USED TO CONNECT STEEL TO WOOD	ASTM A307, GRADE 36
BOLTS USED TO CONNECT STEEL TO STEEL	ASTM A325, GRADE 36
BOLTS USED TO CONNECT STEEL TO CONCRETE	ASTM F1554, GRADE 55
U BOLTS	SAE GRADE 5
THREADED ROD, 1/4" THROUGH 3" DIAMETERS	ASTM A449, TYPE 1
GALVANIZED NUTS	ASTM A563DH HEAVY HEX
WASHERS	ASTM F436
6. STEEL MATERIAL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER A123/A123M-00
7. WELDING MATERIALS, PER AWS D1.1 AND D1.8
 - A. WELDING ELECTRODES. E70XX SERIES AS REQUIRED FOR INTENDED USE.
 - B. THE USE OF E70T-4 WELDING WIRE IS NOT ALLOWED FOR ANY APPLICATION.
 - C. SEISMIC FORCE RESISTING SYSTEM AND DEMAND CRITICAL WELDS SHALL COMPLY WITH AWS D1.8 CLAUSE 6.3
8. A WELDING SEQUENCE SHALL BE PLANNED TO MINIMIZE RESIDUAL STRESS AND DISTORTIONS OF INDIVIDUAL MEMBERS AND THE BUILDING FRAME.
9. DO NOT WELD ANY STRUCTURAL STEEL MEMBER OR CONNECTION UNLESS EXPLICITLY CALLED OUT IN THE CONTRACT DOCUMENTS.
10. WELD SYMBOLS SHOW FINAL WELD REQUIRED. THE CHOICE TO WELD IN THE FIELD OR IN THE SHOP SHALL BE UP TO THE CONTRACTOR AND SHALL BE INDICATED IN THE FABRICATORS SHOP DRAWINGS.
11. MINIMUM FILLET WELDS SHALL BE PER TABLE J2.4 OF AISC 360-05.
12. WRITTEN WELDING PROCEDURE SPECIFICATIONS (WPS) PER THE RECOMMENDATIONS OF THE AMERICAN WELDING SOCIETY (AWS) SHALL BE DEVELOPED BY THE FABRICATOR/ERECTOR AND SUBMITTED FOR REVIEW BY THE ENGINEER PRIOR TO ANY WELDING OF THE STRUCTURAL STEEL. WELDING. PROCEDURES SHALL INCLUDE ALL THE WELDED JOINTS AND CONFIGURATIONS TO BE USED ON THIS PROJECT-ONLY. WPS WHICH ARE RELEVANT TO THIS PROJECT SHALL BE SUBMITTED. ALL WELDED JOINTS SHALL BE PRE-QUALIFIED PER AWS OR BE QUALIFIED BY TEST PER AWS. A PROCEDURE QUALIFICATION RECORD (PQR) SHALL BE INCLUDED WITH THE WPS IF MANUFACTURER AND PRODUCT/TRADE NAME SHALL BE IDENTIFIED IN THE WPS IN ADDITION TO TECHNICAL DATA SHEET WITH THE RECOMMENDED WELDING PARAMETERS SHALL BE SUBMITTED WITH THE WPS.
13. WELD LENGTH CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED.
14. BOLT HOLES SHALL BE STANDARD SIZE IN ACCORDANCE WITH AISC SPECIFICATIONS FOR JOINTS.
15. CONNECTIONS: BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION.
16. REFER TO STRUCTURAL DETAIL SHEETS AS REFERENCED FOR CONNECTIONS.
17. STEEL FABRICATOR TO VERIFY ELEVATION DATUM WHICH ARE LABELED "VERIFY" PRIOR TO FABRICATION.
18. PROVIDE NON-SHRINK GROUT BETWEEN CONCRETE SUPPORT AND BOTTOM OF BASE PLATE.
19. WELDING SHALL BE AISC CERTIFIED.
20. STEEL FABRICATOR TO MEASURE OR RETAIN SURVEYOR TO VERIFY HORIZONTAL DIMENSIONS BETWEEN BASE PLATES PRIOR TO FABRICATION.
21. PROVIDE (4) SETS OF SHOP DRAWINGS TO THE ARCHITECT FOR DISTRIBUTION TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

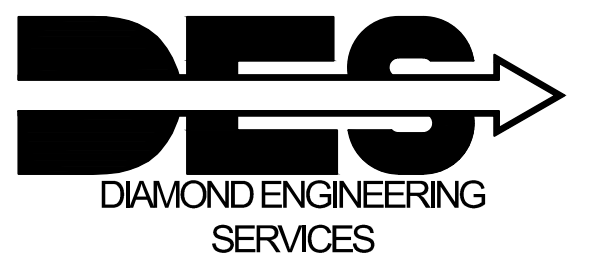
STEEL NOTES

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA
94108



4255 PARK ROAD
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CDO	BLL	BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

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DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
STRUCTURAL NOTES

SHEET NUMBER

SN1

SPECIAL INSPECTION:

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION A TESTING PER C.B.C. SECTION 1704A THIS WORK SHALL BE PERFORMED BY A SPECIAL INSPECTOR QUALIFIED TO PERFORM THE TYPES OF INSPECTION AN TESTS SPECIFIED HEREIN. THE FREQUENCY OF TESTING SHALL BE REPORTED IMMEDIATELY TO THE CONTRACTOR. SUMMARY REPORTS SHALL BE DISTRIBUTED WEEKLY TO THE OWNER, ARCHITECT, CONTRACTOR, AND STRUCTURAL ENGINEER. SEE THE SPECIFICATION FOR ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTION AND TESTING.

LEGEND

	R	REQUIRED
	C	CONTINUOUS
	P	PERIODIC
		NOT PART OF THIS PROJECT
X		REQUIRED FOR THIS PROJECT

SPECIAL INSPECTION LEGEND

- SPECIAL INSPECTIONS FOR NEW MATERIALS ARE REQUIRED, SEE THE TABLES THAT ACCOMPANY THIS SHEET FOR MATERIAL ITEM AND TYPE OF INSPECTION.
- C.B.C §1703.1 AN APPROVED AGENCY SHALL PROVIDE ALL INFORMATION AS NECESSARY FOR THE BUILDING OFFICIAL TO DETERMINE THAT THE AGENCY MEETS THE FOLLOWING APPLICABLE REQUIREMENTS:
 - C.B.C §1703.1.1 AN APPROVED AGENCY SHALL BE OBJECTIVE, COMPETENT AND INDEPENDENT FROM THE CONTRACTOR RESPONSIBLE FOR THE WORK BEING INSPECTED.
 - C.B.C §1703.1.2 AN APPROVED AGENCY SHALL HAVE ADEQUATE EQUIPMENT TO PERFORM REQUIRED TESTS. THE EQUIPMENT SHALL BE PERIODICALLY CALIBRATED.
 - C.B.C §1703.1.3 AN APPROVED AGENCY SHALL EMPLOY EXPERIENCED PERSONNEL EDUCATED IN CONDUCTING, SUPERVISING AND EVALUATING TESTS AND SPECIAL INSPECTIONS.
- C.B.C §1703.5.1 APPROVED AGENCY: AN APPROVED AGENCY SHALL TEST A REPRESENTATIVE SAMPLE OF THE PRODUCT, MATERIAL OR ASSEMBLY BEING LABELED TO THE RELEVANT STANDARD OR STANDARDS. THE APPROVED AGENCY SHALL MAINTAIN A RECORD OF THE TESTS PERFORMED. THE RECORD SHALL PROVIDE SUFFICIENT DETAIL TO VERIFY COMPLIANCE WITH THE TEST STANDARD.
- C.B.C §1704.2 SPECIAL INSPECTION AND TESTS: THE OWNER OR THE OWNER'S AUTHORIZED AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PROVIDE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION ON THE TYPES OF WORK SPECIFIED. THESE SPECIAL INSPECTIONS AND TESTS ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL.
- C.B.C §1704.2.1 SPECIAL INSPECTOR QUALIFICATIONS: PRIOR TO THE START OF THE CONSTRUCTION, THE APPROVED AGENCIES SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THE COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION.
- C.B.C §1704.2.4 REPORT REQUIREMENT. APPROVED AGENCIES SHALL KEEP RECORDS OF SPECIAL INSPECTIONS AND TESTS. THE APPROVED AGENCY SHALL SUBMIT REPORTS OF SPECIAL INSPECTIONS AND TESTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED OR TESTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS OR TESTS, SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF WORK BY THE OWNER OR THE OWNER'S AUTHORIZED AGENT TO THE BUILDING OFFICIAL.
- C.B.C §1704.2.5 SPECIAL INSPECTION OF FABRICATED ITEMS: SPECIAL INSPECTIONS DURING FABRICATION ARE NOT REQUIRED WHERE THE FABRICATOR MAINTAINS APPROVED DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR CONTROL OF THE WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO APPROVED CONSTRUCTION DOCUMENTS AND THIS CODE. APPROVAL SHALL BE BASED UPON REVIEW OF FABRICATION AND QUALITY CONTROL PROCEDURES AND PERIODIC INSPECTION OF FABRICATION PRACTICES BY THE BUILDING OFFICIAL. SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE THE FABRICATOR IS REGISTERED AND APPROVED. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED AGENCY. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE (AFFIDAVIT) TO THE OWNER OR THE OWNER'S AUTHORIZED AGENT FOR SUBMITTAL TO THE BUILDING OFFICIAL, STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- C.B.C §1704.3 STATEMENT OF SPECIAL INSPECTIONS:
 - WELDING REQUIRES A SPECIAL INSPECTION PER AISC. THE STRUCTURAL STEEL FABRICATOR SHALL BE AN APPROVED FABRICATOR BY AISC OR ANOTHER AGENCY (CERTIFICATE REQUIRED). IN THE EVENT THAT THE FABRICATOR/WELDER IS NOT AN APPROVED FABRICATOR BY AISC OR ANOTHER AGENCY A SPECIAL INSPECTION OF SHOP WELDING IS REQUIRED.
 - INSPECTION OF HIGH STRENGTH BOLTING IS REQUIRED.
 - INSPECTION OF POST INSTALLED EXPANSION ANCHORS IS REQUIRED.
- C.B.C §1704.5 SUBMITTALS TO THE BUILDING OFFICIAL. IN ADDITION TO THE SUBMITTAL OF REPORTS OF SPECIAL INSPECTIONS AND TESTS IN ACCORDANCE WITH SECTION 1704.2.4, REPORTS AND CERTIFICATES SHALL BE SUBMITTED BY THE OWNER OR THE OWNER'S AUTHORIZED AGENT TO THE BUILDING OFFICIAL.

SPECIAL INSPECTION NOTES

SPECIAL INSPECTIONS

INSPECTION TABLE 1705A.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

X	P	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE.
X	C	TEST POST INSTALLED ANCHORS 50% FOR EQUIPMENT ANCHORAGE PER PER CBC SEC.1909.2.7.3 TEST FREQUENCY AND 1909.2.7.4 TEST LOADS OR THE MANUFACTURE'S RECOMMENDED INSTALLATION TORQUE BASED ON APPROVED EVALUATION REPORT.

SPECIAL INSPECTION TABLE

STRUCTURAL DESIGN CRITERIA	
SFSFO00570D NEAR 200 ARMOUR AVE, SOUTH SAN FRANCISCO, CALIFORNIA, CA 94080	
BUILDING CODE	CALIFORNIA BUILDING CODE (CBC) 2019 EDITION.
REFERENCE STANDARD	ASCE/SEI 7-16 (FOR WIND & SEISMIC)
REFERENCE STANDARD	AISC-STEEL CONSTRUCTION MANUAL 15TH EDITION
REFERENCE STANDARD	ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
EXISTING TOWER	
OCCUPANCY GROUP:	GROUP: U, TELECOMMUNICATIONS ACCESSORY
CONSTRUCTION TYPE:	TYPE I-B
AUTOMATIC FIRE SUPPRESSION SYSTEM (FIRE SPRINKLERS)	THE EXISTING BUILDING IS NOT EQUIPPED WITH AN AUTOMATIC FIRE SPRINKLER SYSTEM
DESIGN LOADS	
DESIGN LOAD	DESIGN CRITERIA VALUE
GROUND SNOW LOAD	0 N/A
EXISTING ROOF LIVE LOAD	20 PSF
WIND EXPOSURE	C
BASIC WIND SPEED	92 MPH
OCCUPANCY RISK CATEGORY	II TABLE 1.5-1
SITE SOIL CLASSIFICATION	SITE CLASS D-"DEFAULT"
SEISMIC DESIGN CATEGORY	D
SEISMIC IMPORTANCE FACTOR	I=1.0
SEISMIC FACTORS FOR NEW TELECOMMUNICATION ANTENNA AND EQUIPMENT	
DESIGN FACTOR	DESIGN CRITERIA VALUE
Cd=COMPONENT AMPLIFICATION FACTOR	Cd=3 ASCE TABLE 13.6-1
Rp=COMPONENT RESPONSE MODIFICATION FACTOR	Rp=3 ASCE TABLE 13.6-1
Ω=OVERSTRENGTH FACTOR	Ω=1.8 ASCE TABLE 13.6-1
MAPPED SPECTRAL RESPONSE ACCELERATIONS	
Ss=1.902 g	S1=0.781 g Sms=2.283 g Sds=1.522 g
SPECTRAL RESPONSE COEFFICIENTS	
	Fa=1.2

DESIGN CRITERIA

HILTI KB TZ2 STAINLESS STEEL EXPANSION ANCHOR				
ANCHOR SIZE	TORQUE	EFFECTIVE EMBEDMENT h_{ef} SEE DETAIL FOR SPECIFIED EMBEDMENT DEPTH	EDGE DISTANCE	REFERENCE DOCUMENT
3/8"Ø	30 FT.-LBS.	1.5", 2", 2.5"	8"	ICC-ES EVALUATION REPORT ESR-4266
1/2"Ø	40 FT.-LBS.	2", 2.5", 3.5"	8"	
5/8"Ø	60 FT.-LBS.	2.75", 3.25", 4"	8"	
3/4"Ø	125 FT.-LBS.	3.25", 3.75", 4.75"	8"	

POST INSTALLED ANCHOR TORQUE



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



MODUS, LLC
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SAN FRANCISCO, CA
94108



4255 PARK ROAD
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SFSFO00570D

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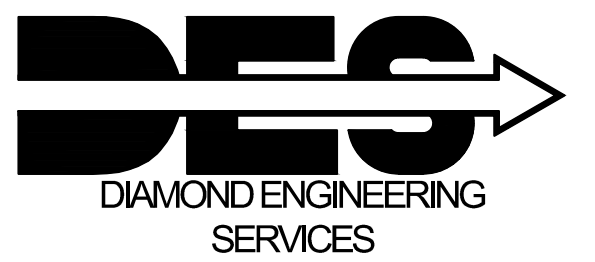
SHEET TITLE
SPECIAL INSPECTION & DESIGN CRITERIA

SHEET NUMBER

SN2



MODUS, LLC
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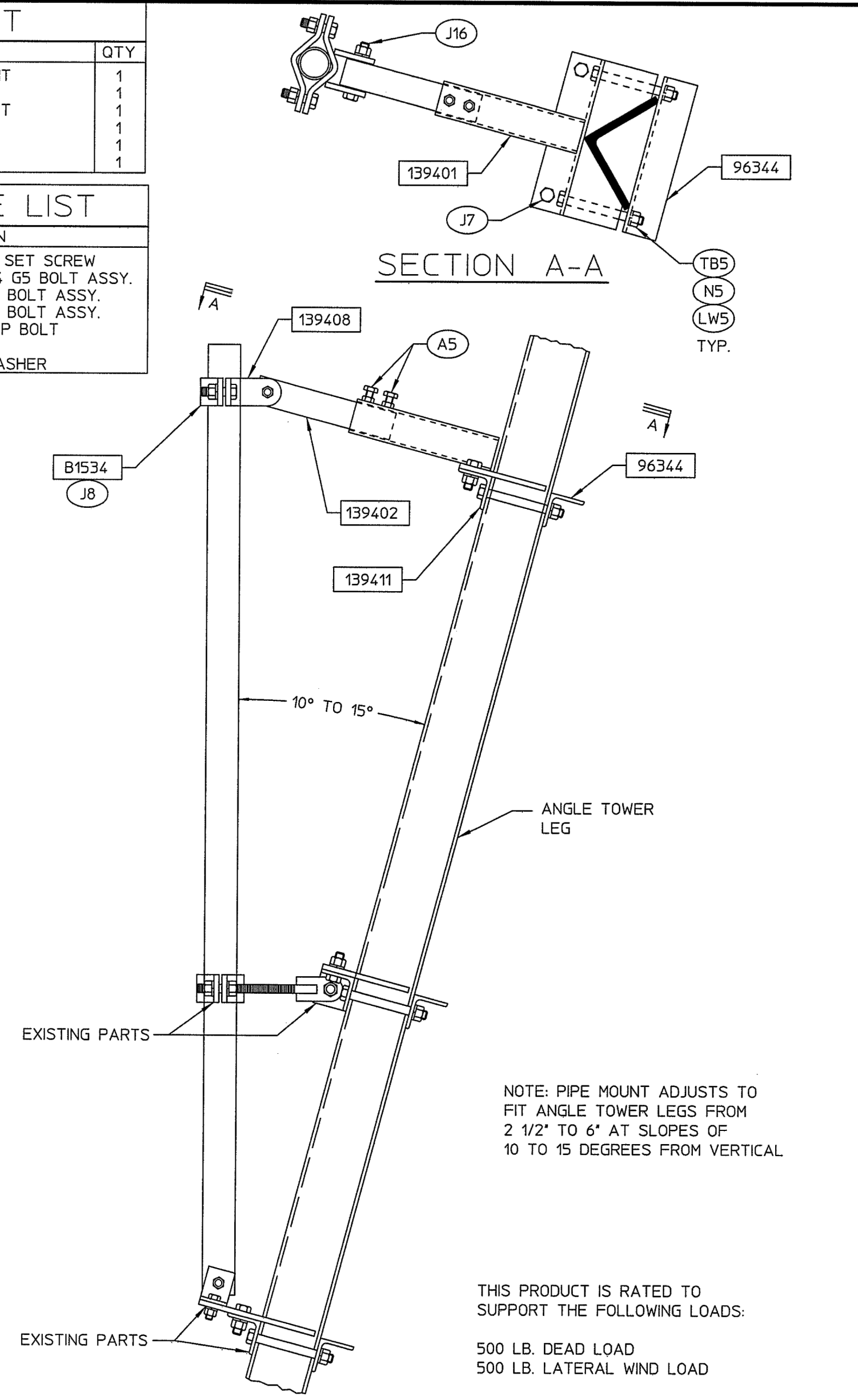
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

SD1

MARK	DESCRIPTION	QTY
139401	BRKT WELDMENT	1
139402	TUBE STEEL	1
139408	BRKT WELDMENT	1
96344	ANGLE	1
139411	ANGLE	1
B1534	FORMED PLATE	1

SYM	QTY	DESCRIPTION
A5	2	1/2" X 1 1/2" SET SCREW
J7	2	5/8" X 1 3/4" G5 BOLT ASSY.
J8	2	5/8" X 2 G5 BOLT ASSY.
J16	1	5/8" X 4 G5 BOLT ASSY.
TBS	2	5/8" X 6 TAP BOLT
N5	2	5/8" NUT
LW5	2	5/8" LOCKWASHER

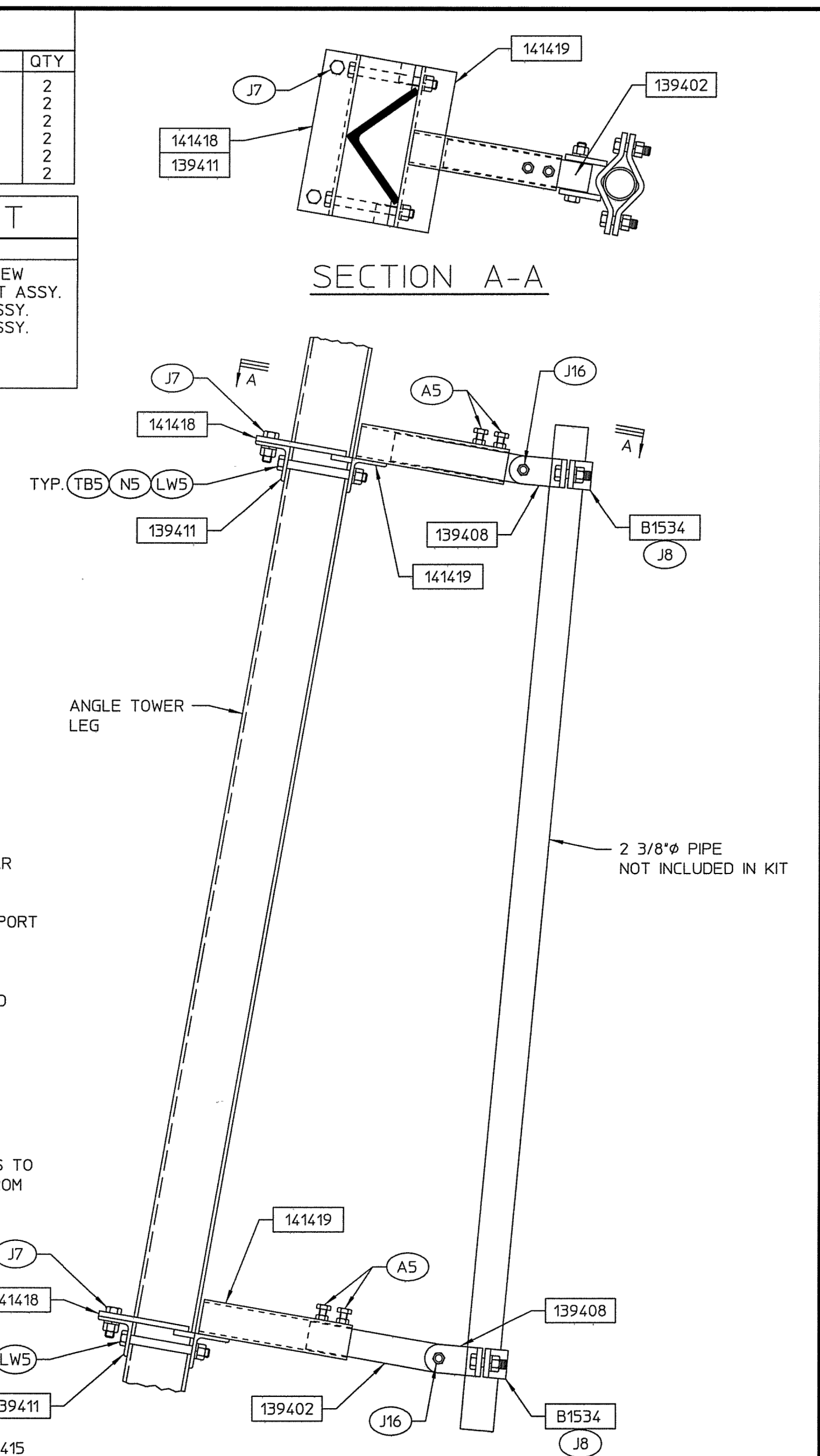


SHEET 1 OF 1 DWG. NO. B-139409	MODIFICATION FOR B1709 PCS PIPE MOUNT ASSEMBLY FOR 4-LEG ANGLE TOWERS			REVISIONS DATE BY/CHK _____ _____ _____
	BY	DAH		
	CK	AH		
	DATE	01JUL14		
3575 25TH STREET SE SALEM, OR 97302-0985 (503)363-9267 FAX (503) 363-4613		S.O.	-----	

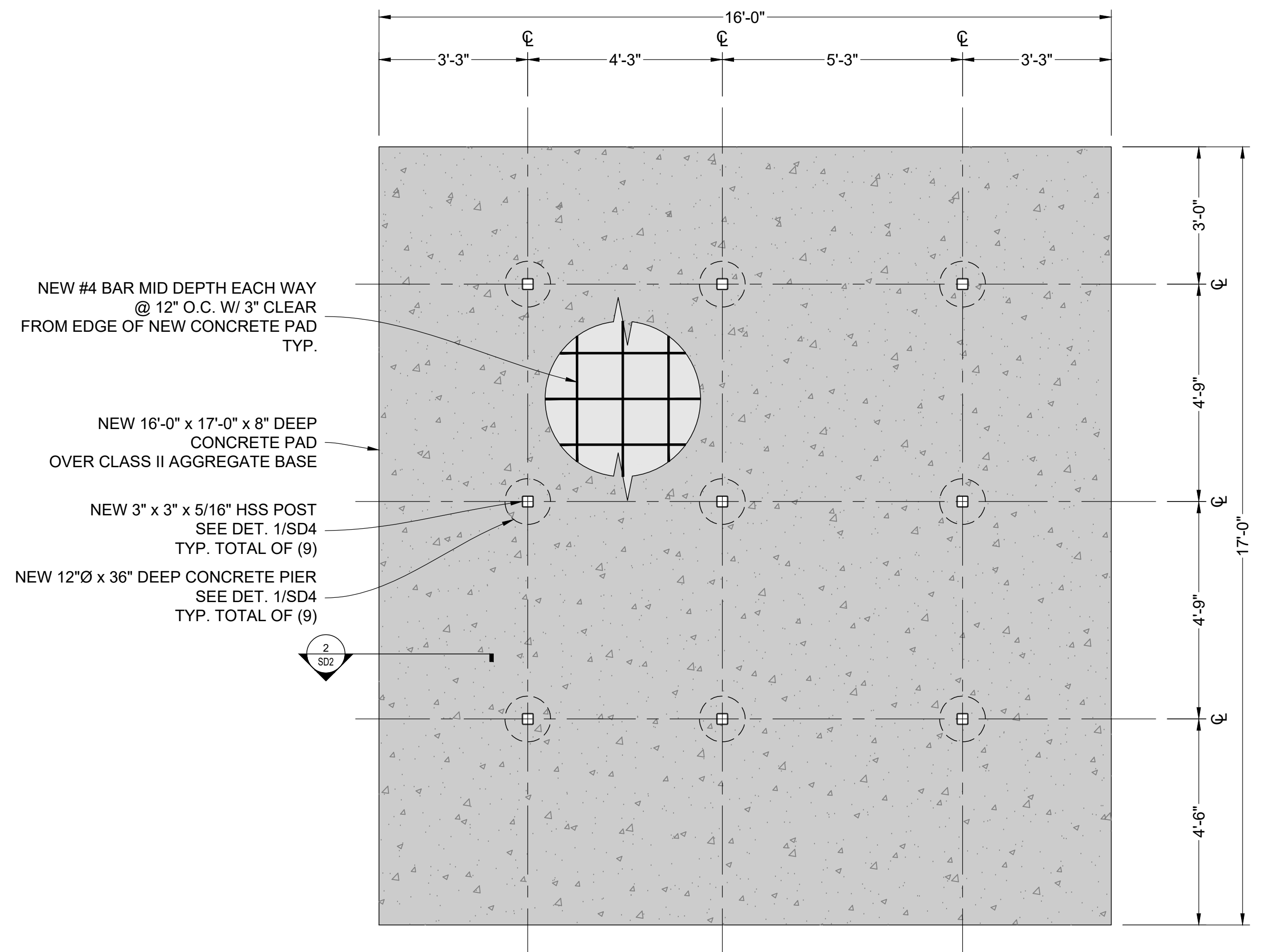
Valmont POC: Dennis Beal at 503-589-6671 or Dennis.Beal@valmont.com

MARK	DESCRIPTION	QTY
141419	BRKT WELDMENT	2
139402	TUBE STEEL	2
139408	BRKT WELDMENT	2
141418	ANGLE	2
139411	ANGLE	2
B1534	FORMED PLATE	2

SYM	QTY	DESCRIPTION
A5	4	1/2" X 1 1/2" SET SCREW
J7	4	5/8" X 1 3/4" G5 BOLT ASSY.
J8	4	5/8" X 2 G5 BOLT ASSY.
J16	2	5/8" X 4 G5 BOLT ASSY.
TBS	4	5/8" X 6 TAP BOLT
N5	4	5/8" NUT
LW5	4	5/8" LOCKWASHER



SHEET 1 OF 1 DWG. NO. B-141415	INSTALLATION DRAWING INSIDE MOUNT FOR RRUs FOR 4-LEG ANGLE TOWERS			REVISIONS DATE BY/CHK _____ _____ _____
	BY	AH		
	CK	MF		
	DATE	31MAR15		
3575 25TH STREET SE SALEM, OR 97302-0985 (503)363-9267 FAX (503) 363-4613		S.O.	-----	

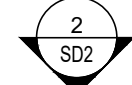


NEW #4 BAR MID DEPTH EACH WAY @ 12" O.C. W/ 3" CLEAR FROM EDGE OF NEW CONCRETE PAD TYP.

NEW 16'-0" x 17'-0" x 8" DEEP CONCRETE PAD OVER CLASS II AGGREGATE BASE

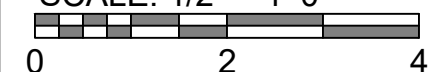
NEW 3" x 3" x 5/16" HSS POST SEE DET. 1/SD4 TYP. TOTAL OF (9)

NEW 12"Ø x 36" DEEP CONCRETE PIER SEE DET. 1/SD4 TYP. TOTAL OF (9)

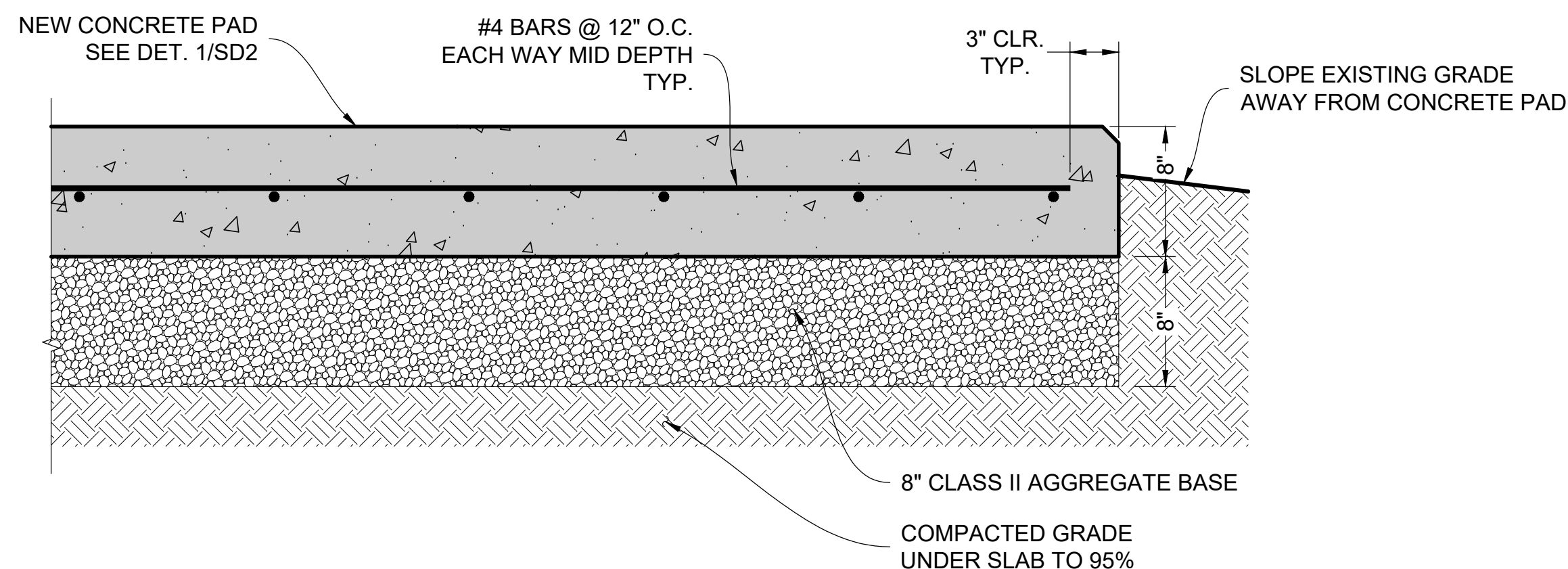


CONCRETE PAD

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

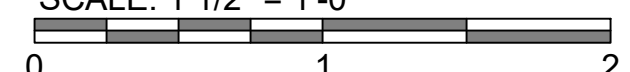


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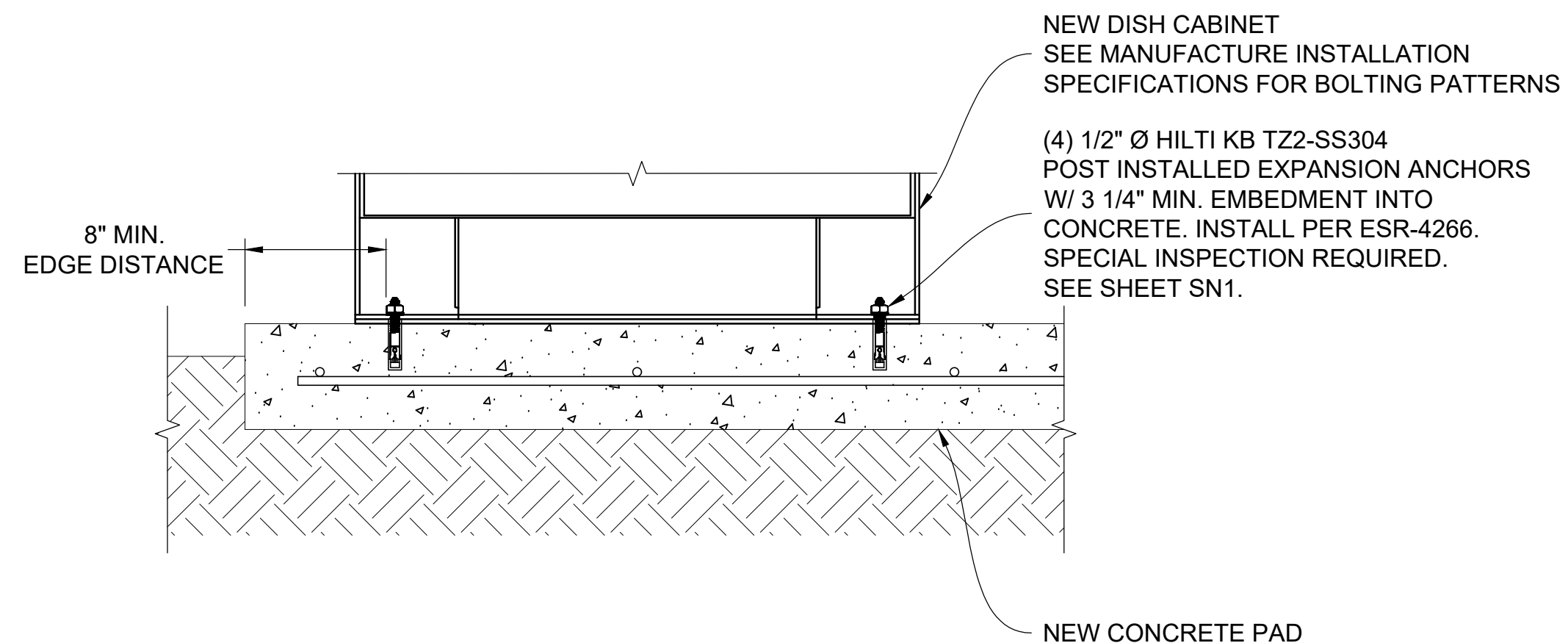


CONCRETE PAD SECTION

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



2



CABINET ANCHORAGE

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



3

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA
94108



4255 PARK ROAD
BENICIA, CA 94510

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CONSTRUCTION DOCUMENTS

SUBMITTALS		
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A	11/07/2022	90% CD's FOR REVIEW

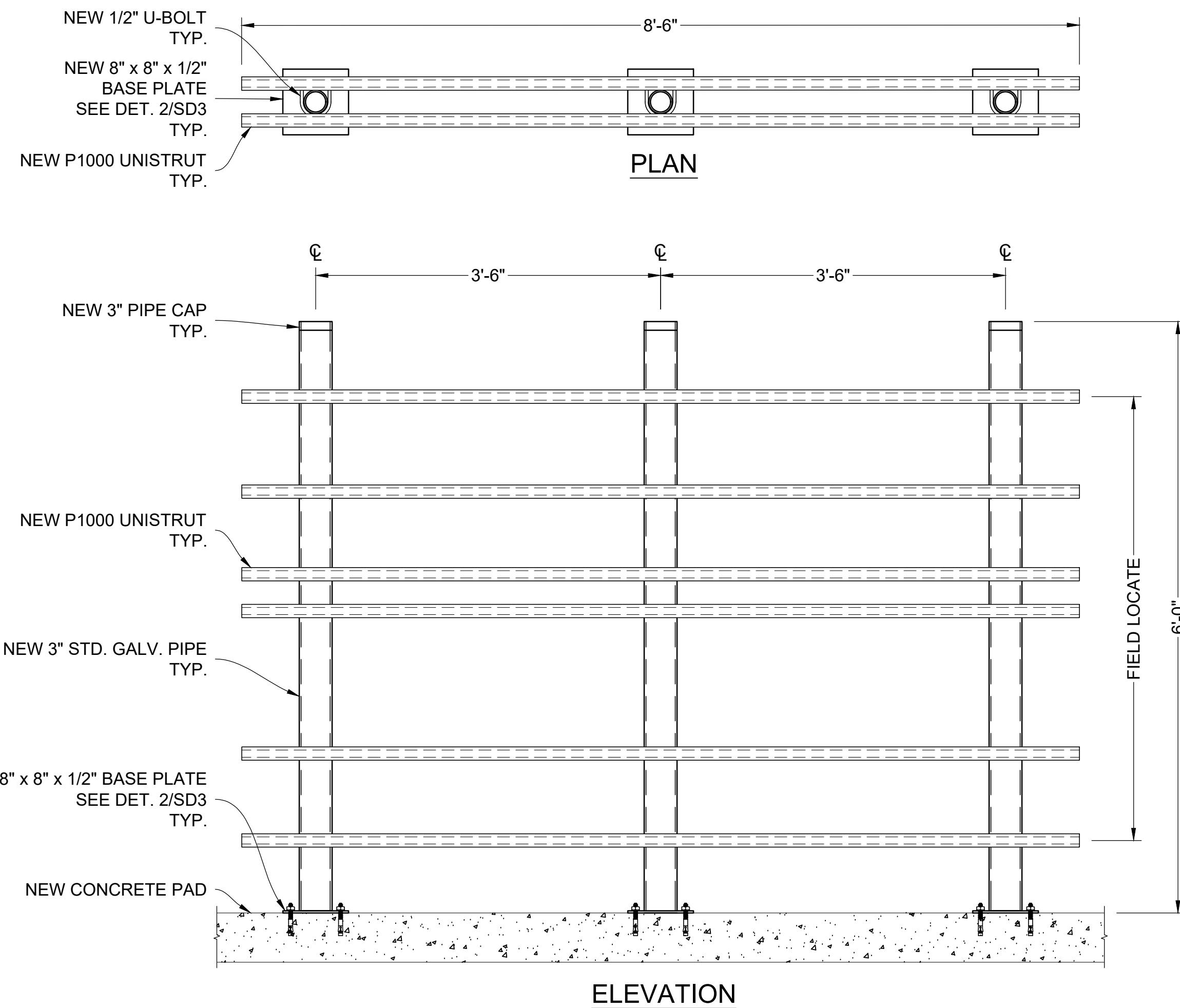
A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

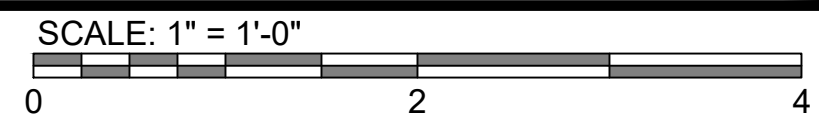
SHEET TITLE
**STRUCTURAL
DETAILS**

SHEET NUMBER

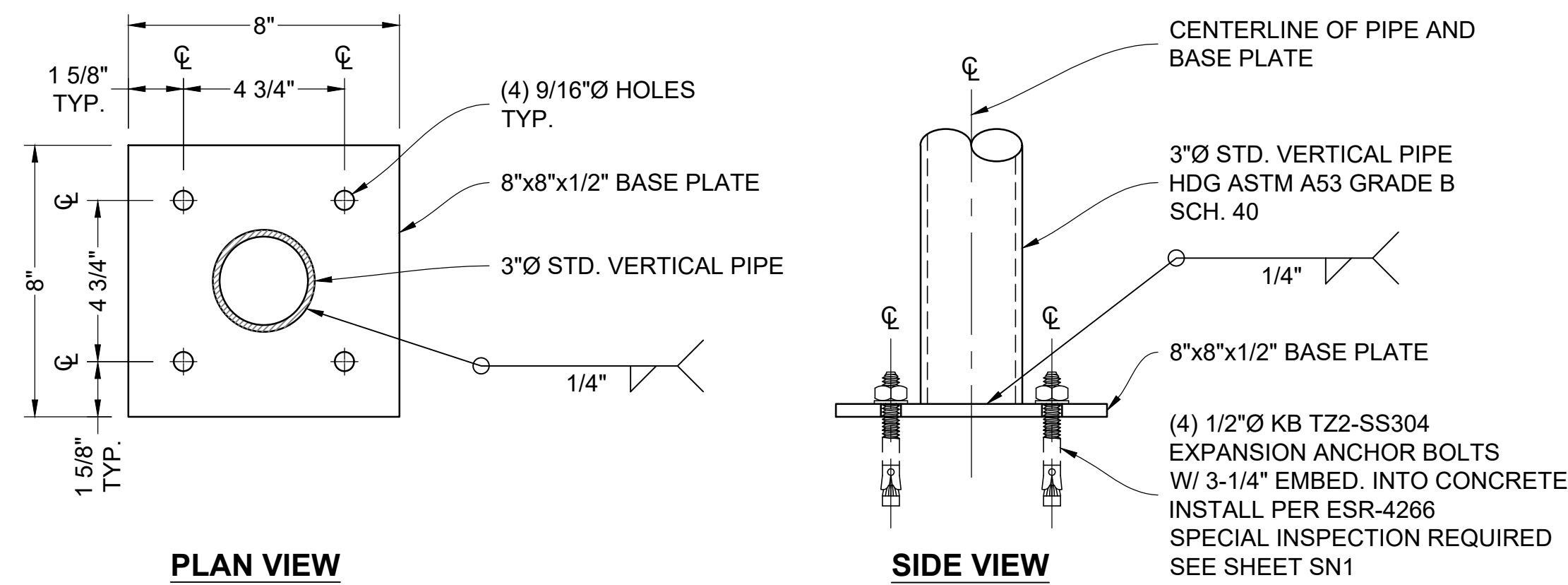
SD2



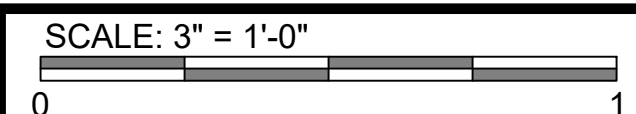
UTILITY H-FRAME



1



BASE PLATE



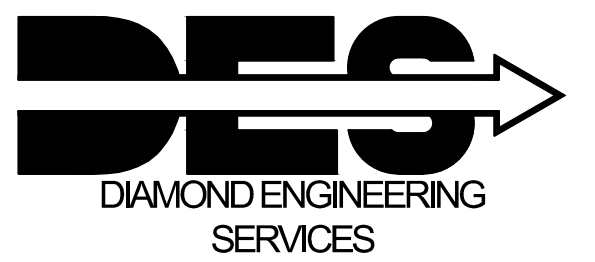
2

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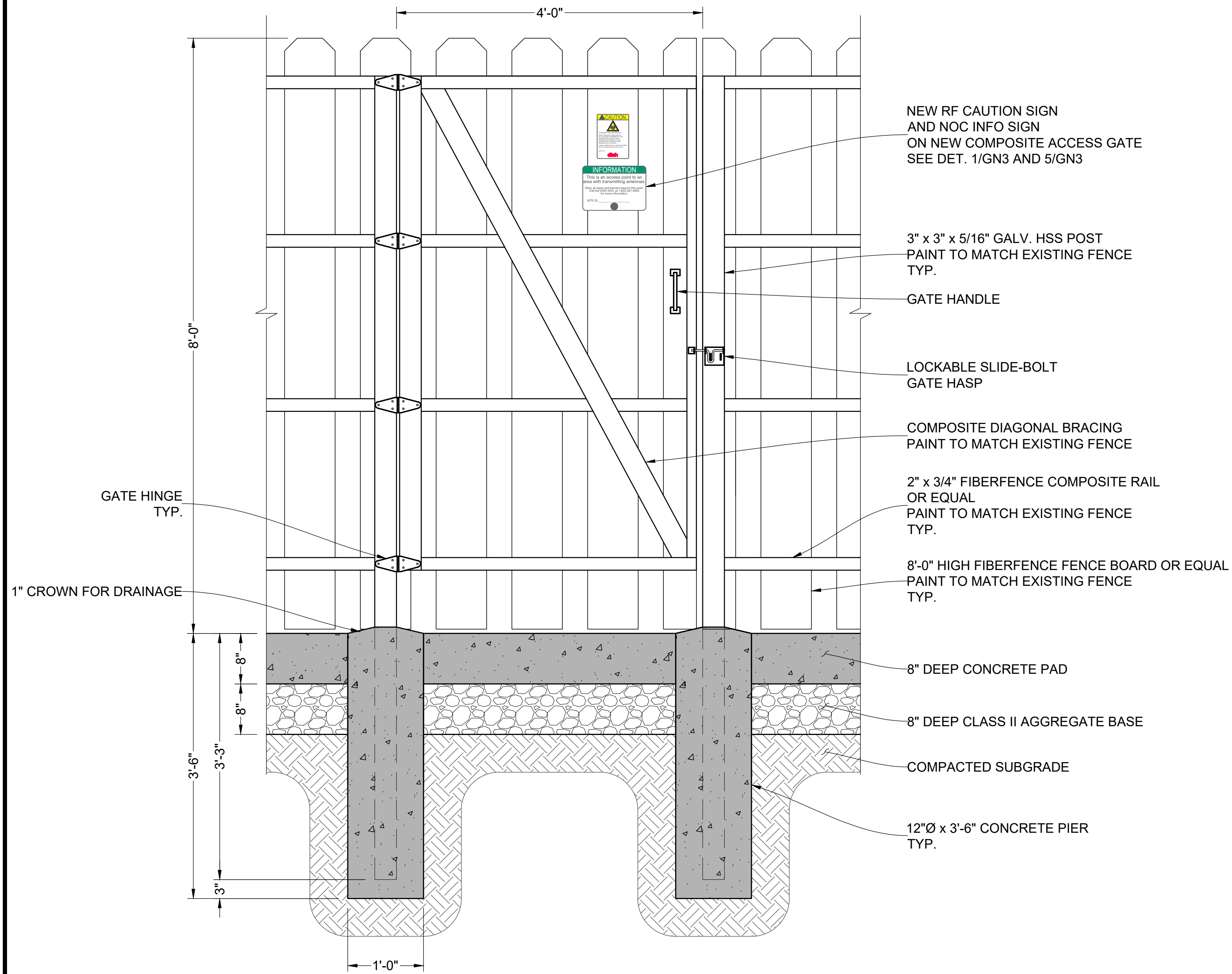
SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER

SD3

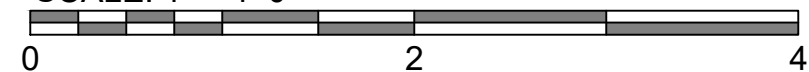
GENERAL NOTES:

1. PAINT TO MATCH EXISTING FENCE.
2. ALL NAILS AND HARDWARE TO BE H.D.G.
3. POST TO BE WOLMANIZED PINE GRADE C OR BETTER.
4. STRINGERS AND BOARDS TO BE COMPOSITE.

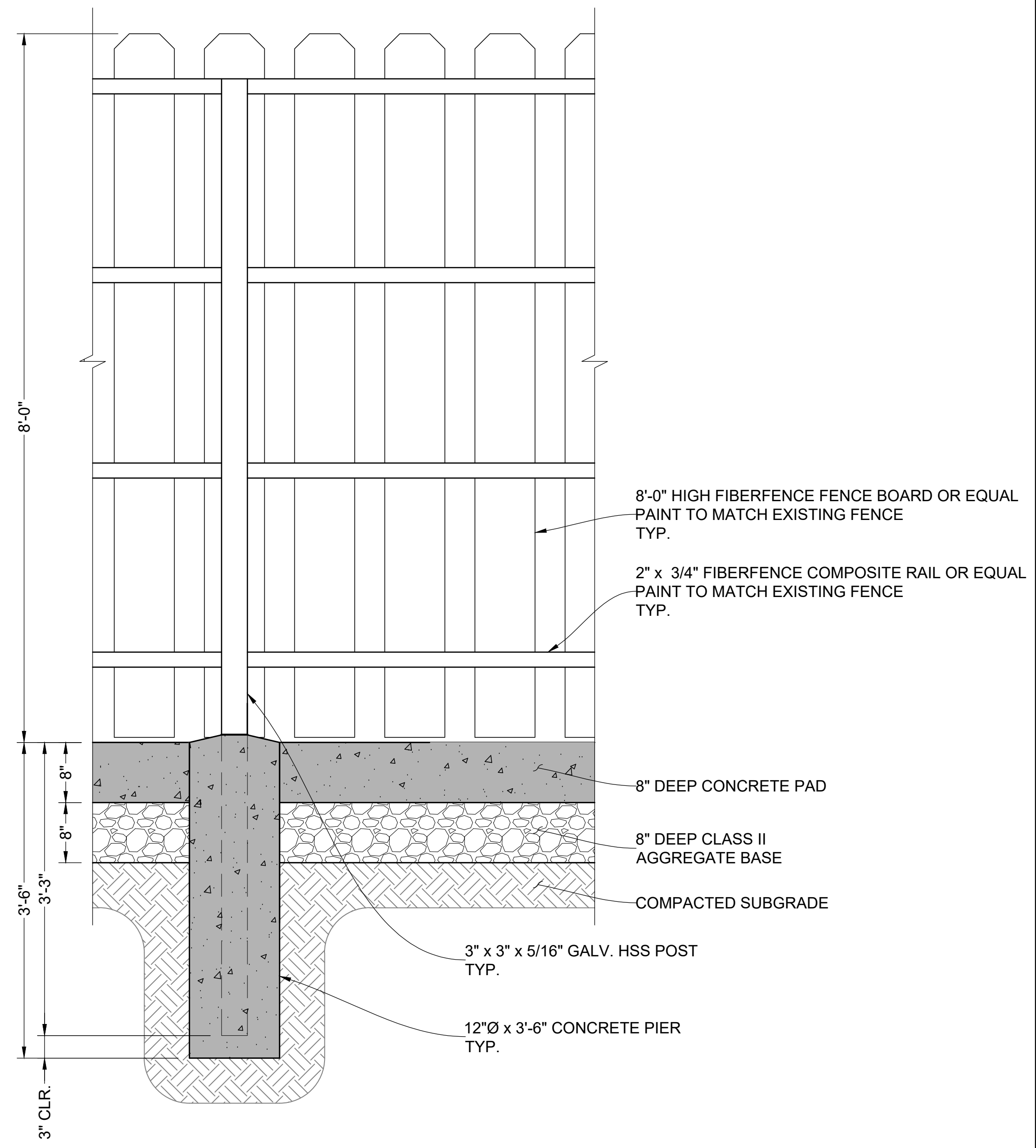


NEW FENCE GATE

SCALE: 1" = 1'-0"

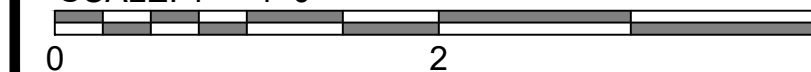


2



NEW FENCE

SCALE: 1" = 1'-0"



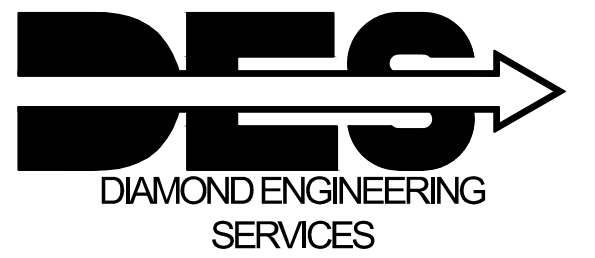
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SHEET TITLE
**STRUCTURAL
DETAILS**

SHEET NUMBER

SD4

POWER AND TELCO NOTES

- POWER AND TELCO POINTS OF CONNECTION AND ANY EASEMENTS ARE PRELIMINARY AND SUBJECT TO CHANGE BY THE UTILITY COMPANIES.
- CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY ENGINEERING PLANS AND SPECIFICATIONS ONLY WHERE APPLICABLE PER PROJECT SCOPE OF WORK.
- CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, PULL WIRES, CABLE PULL BOXES, CONCRETE ENCASUREMENT OF CONDUIT, TRANSFORMER PAD, BARRIERS, POLE RISER TRENCHING, BACK FILL, AND UTILITY FEES, AND INCLUDE REQUIREMENTS IN SCOPE.
- ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.

POWER AND TELCO NOTES

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- NO EXOTHERMIC WELDING ON ROOFTOP
- ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
- NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
- ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).
- ROOFTOP GROUND SYSTEM: THE GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- CELL REFERENCE GROUND BAR (CRGB): POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO COMMON BUILDING GROUND SYSTEM WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR.
- FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE COMMON BUILDING GROUND SYSTEM. USING #2 TINNED SOLID COPPER WIRE
- CABLE TRAY: EACH CABLE TRAY SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR.
- DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- ROOFTOP COLLECTOR BUS BAR IS TO BE MECHANICALLY BONDED TO COMMON BUILDING GROUND SYSTEM.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BUS BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (I.E., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP GROUNDING TO THE EXISTING BUILDING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

GROUNDING NOTES

ELECTRICAL GENERAL NOTES

- PROVIDE ALL ELECTRICAL WORK AND MATERIALS AS SHOWN ON THE DRAWINGS, AS CALLED FOR HEREIN, AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.
- THE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ADOPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE 24, ALL OTHER APPLICABLE CODES AND ORDINANCES AND THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT AND 'M RING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS LABORATORY (UL) OR AN APPROVED TESTING LABORATORY, PAYMENT FOR ALL INSPECTION FEES AND PERMIT ARE PART OF THIS CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS AND EQUIPMENT FOR THE ENTIRE INSTALLATION AND UNIT COMPLETION OF WORK, ERECT AND MAINTAIN APPROVED AND SUITABLE BARRIERS, PROTECTIVE DEVICES AND WARNING SIGNS, BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE AND / OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS & WARNINGS.
- COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.
- ALL SAW CUTTING, TRENCHING, BACK FILLING AND PATCHING SHALL BE PART OF THIS CONTRACT.
- FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION ~ PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY, VERIFY LOCATION FOR FACILITIES AND DETAILS WITH POWER UTILITY, IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS AND SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DRAWINGS ISSUED ~ SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.
- ALL NEW WIRING SHALL BE COPPER. INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE "THWN" OR "THWN-2".
- PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING OR WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
- UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, S/DUAL ELEMENT FUSES SIZED TO EQUIPMENT NAMEPLATE FUSE CURRENT RATING. SWITCHES AND OTHER OUTDOOR EQUIPMENT SHALL BE RATED NEMA 3R AND/OR UL LISTED FOR 'MET ENVIRONMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A 5 OHM OR LESS GROUNDING PATH, ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT IF THE GIVEN DESIGN CANNOT BE MADE TO ACHIEVE THIS REQUIREMENT
- POWER IS TO BE TURNED OFF TO THE SITE BEFORE WORK BEGINS.
- NEW PANEL CHASSIS SHALL BE BONDED.
- ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR MULE TAPE.
- ELECTRICAL CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOK-UP COSTS SHALL BE PAID BY THE CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUT-SHEETS ON ALL NON-SPECIFIED ORIGINAL MATERIALS AND EQUIPMENT, TO PROJECT MANAGER PRIOR TO COMMENCEMENT OF THE WORK.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY AND SHORT CIRCUIT, AS WELL AS, GROUNDING TEST. NON-SPECIFIED ORIGINAL MATERIALS AND EQUIPMENT, TO PROJECT MANAGER PRIOR TO COMMENCEMENT OF THE WORK.
- CLEAN PREMISES DAILY OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK PREMISES IN A COMPLETE AND UNDAMAGED CONDITION.
- ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED, WITH POLYSEAM SEALANT.
- ALL #2 TINNED BARE COPPER DOWNLEADS TO BE PROTECTED BY 1/2" P.V.C. PIPE AND SECURED TO EQUIPMENT AND SUPPORT FRAMING.
- COMPRESSION FITTINGS TO BE USED ON ALL CONDUITS (NO SETSCREWS).
- ALL #6 STRANDED COPPER WITH GREEN INSULATION TO BE ATTACHED WITH CRIMPED DOUBLE LUG, ATTACHED WITH NUTS, BOLTS AND STAR WASHERS TYPICAL AND NO-OX GREASE BETWEEN LUG AND BUS BAR.
- ALL ABOVE GROUND CONDUIT SHALL BE SCHEDULE 80 PVC WITH UV PROTECTION, IMT, OR GRC.
- IN DRILLING HOLES INTO CONCRETE (WHETHER FOR FASTENING OR ANCHORING PURPOSES OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC.) IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND REBARS WILL NOT BE DRILLED INTO, CUT, OR DAMAGED UNDER ANY CIRCUMSTANCES.
- LOCATION OF TENDONS AND RE-BARS ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY, OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING STEEL TENDONS.

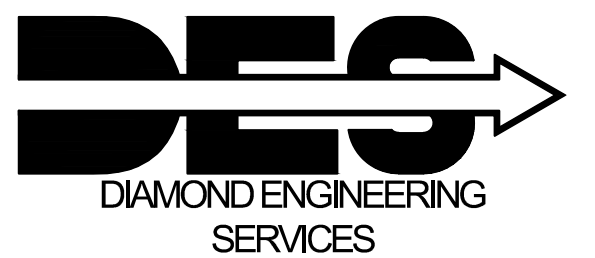
ELECTRICAL GENERAL NOTES



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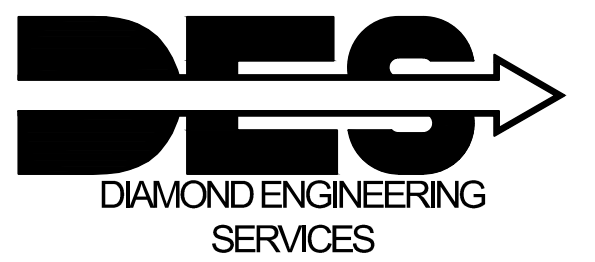
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SHEET TITLE
**ELECTRICAL
NOTES**

SHEET NUMBER

EN1



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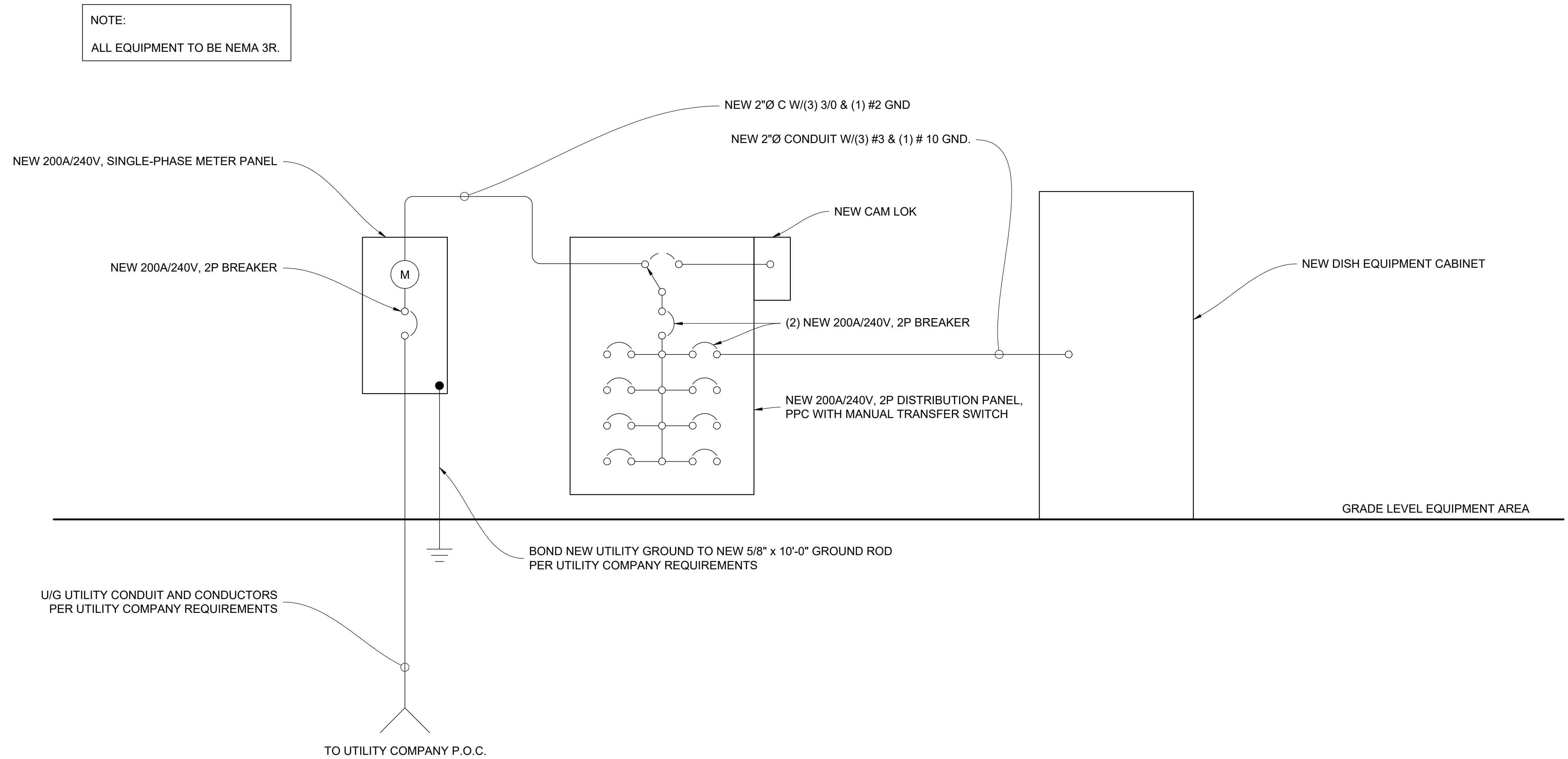
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SHEET TITLE
**SINGLE LINE
DIAGRAM**

SHEET NUMBER

E1

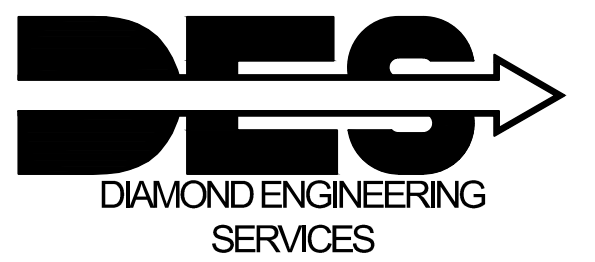




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SHEET TITLE
**EPO SINGLE LINE
DIAGRAM**

SHEET NUMBER
E2

PARTS USED

EPO SWITCH: EEC CONTROLS P/N: B22-SG1-50D-11 NORMALLY CLOSED (NC)
ORDER WITH (2) NORMALLY CLOSED CONTACTORS

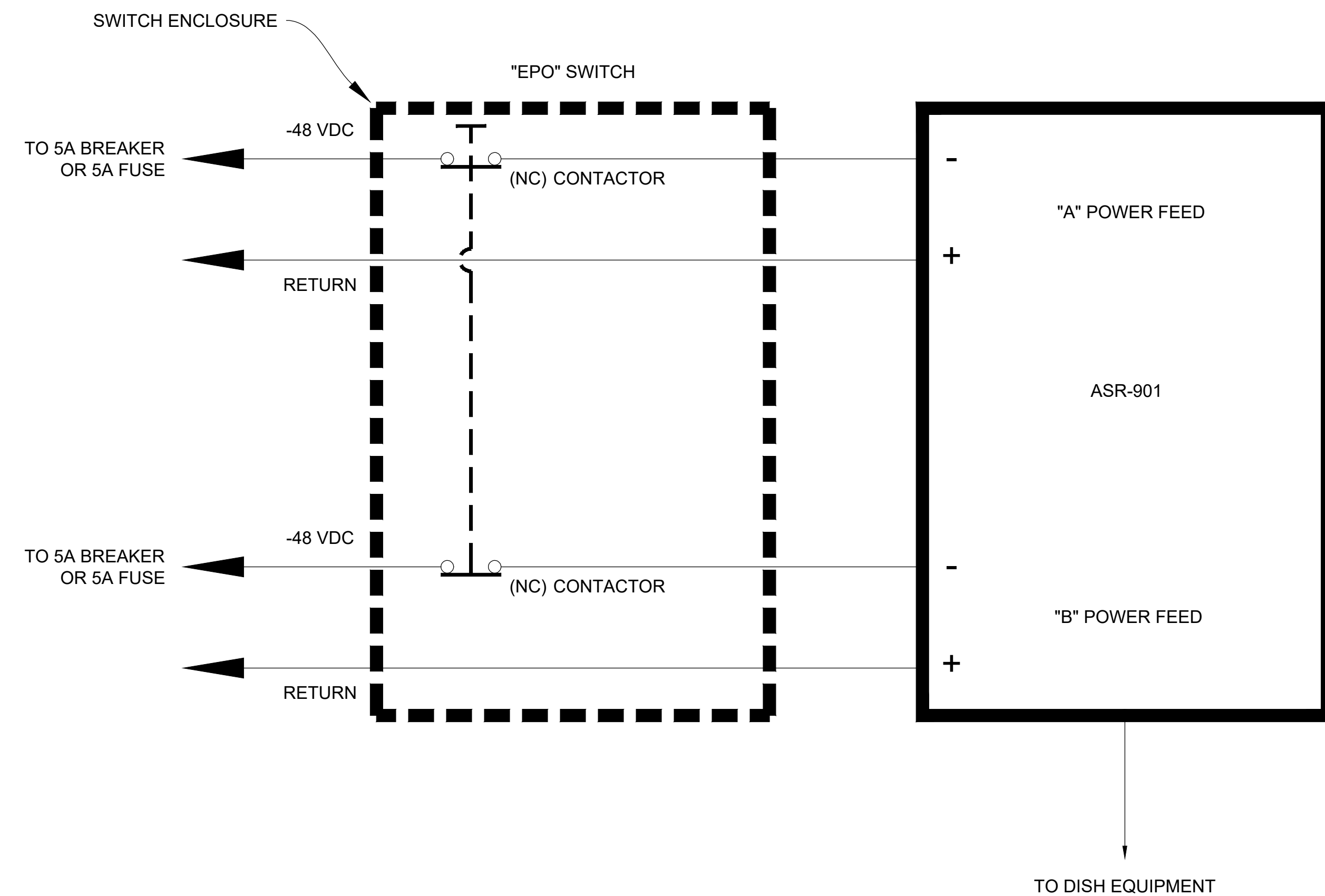
SWITCH ENCLOSURE: HOFFMAN P/N: A8R86 NEMA 3R WITH LOCKABLE HASP

CONDUIT AS NECESSARY

WIRE CONDUCTOR 16 ga. MINIMUM

INSTALLATION NOTES

1. THE EPO (EMERGENCY POWER OFF) SWITCH ENCLOSURE SHALL BE CLEARLY VISIBLE WHEN APPROACHING THE SITE AND LOCATED INSIDE A PG&E LOCKED ENCLOSURE. ENCLOSURE LOCK PROVIDED BY PG&E.
2. FOR EQUIPMENT SHELTER INSTALLATIONS, THE EPO SWITCH ENCLOSURE SHALL BE LOCATED ADJACENT TO THE EQUIPMENT SHELTER ENTRANCE DOOR.
3. FOR FENCED EQUIPMENT CABINET INSTALLATIONS, THE EPO SWITCH ENCLOSURE SHALL BE LOCATED WITHIN THE FENCED AREA AS CLOSE AS POSSIBLE TO THE COMPOUND ENTRANCE AND CLEARLY VISIBLE.
4. FOR UNFENCED EQUIPMENT CABINET INSTALLATIONS, THE EPO SWITCH ENCLOSURE SHALL BE PLACED SO THAT IT IS CLEARLY VISIBLE AS ONE WALKS UP TO THE SITE.
5. INSTALL PG&E SUPPLIED PHENOLIC LABEL PER PG&E SPECIFICATION ON SWITCH ENCLOSURE COVER.



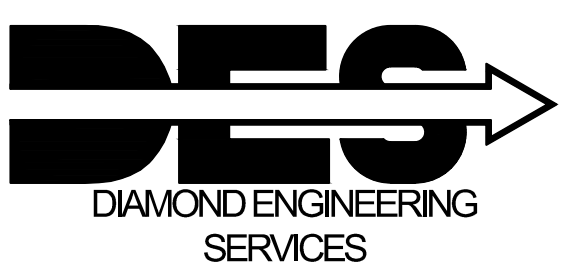
EMERGENCY POWER OFF SWITCH SINGLE LINE DIAGRAM

NO SCALE

1



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DRAWN BY: CDO CHECKED BY: BLL APPROVED BY: BLL

RFDS REV 5: 10/06/2022

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	11/07/2022	90% CD's FOR REVIEW

A&E PROJECT NUMBER
M22SFO-00570D

DISH Wireless L.L.C.
PROJECT INFORMATION
SFSFO00570D

NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
GROUNDING DIAGRAM

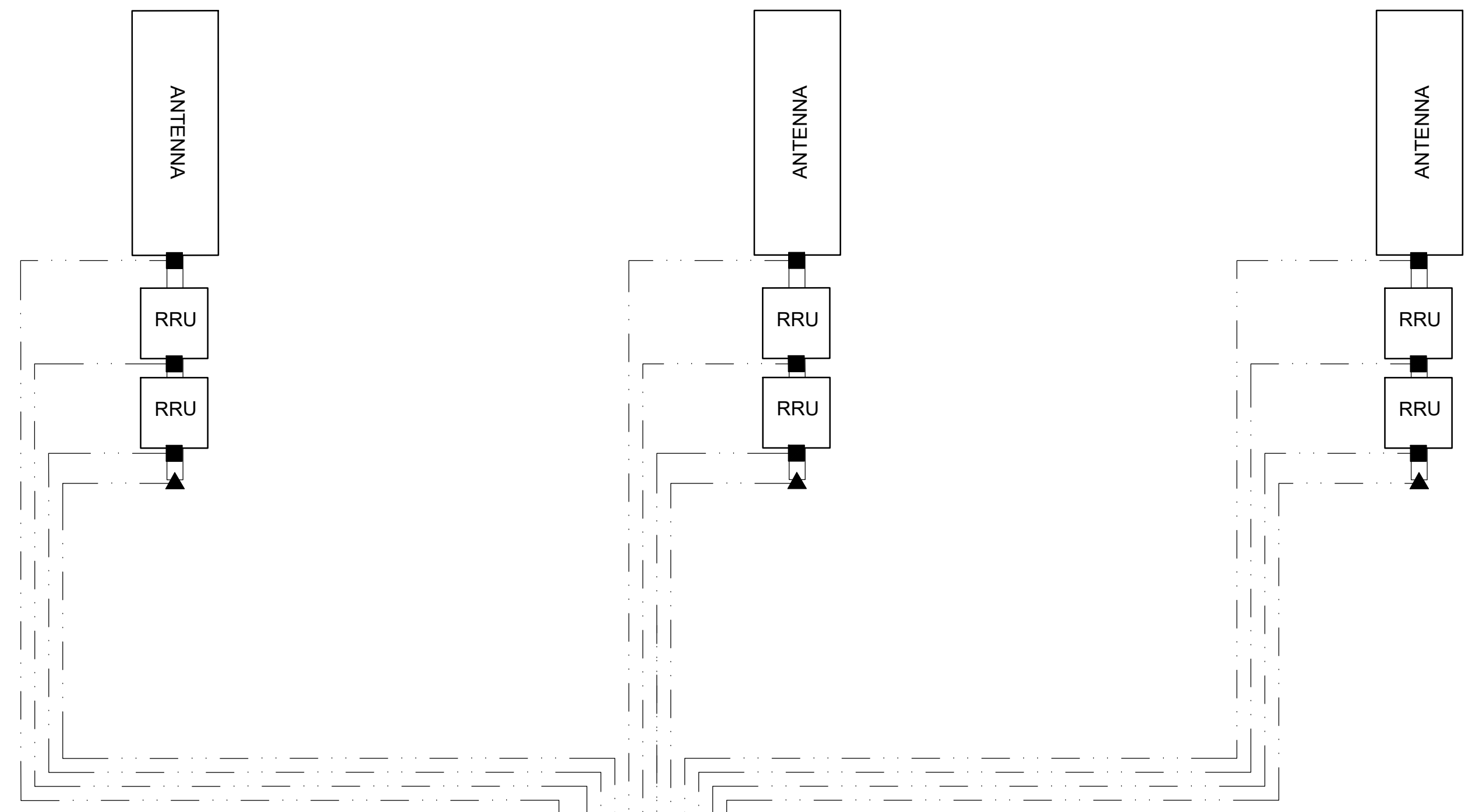
SHEET NUMBER

E3

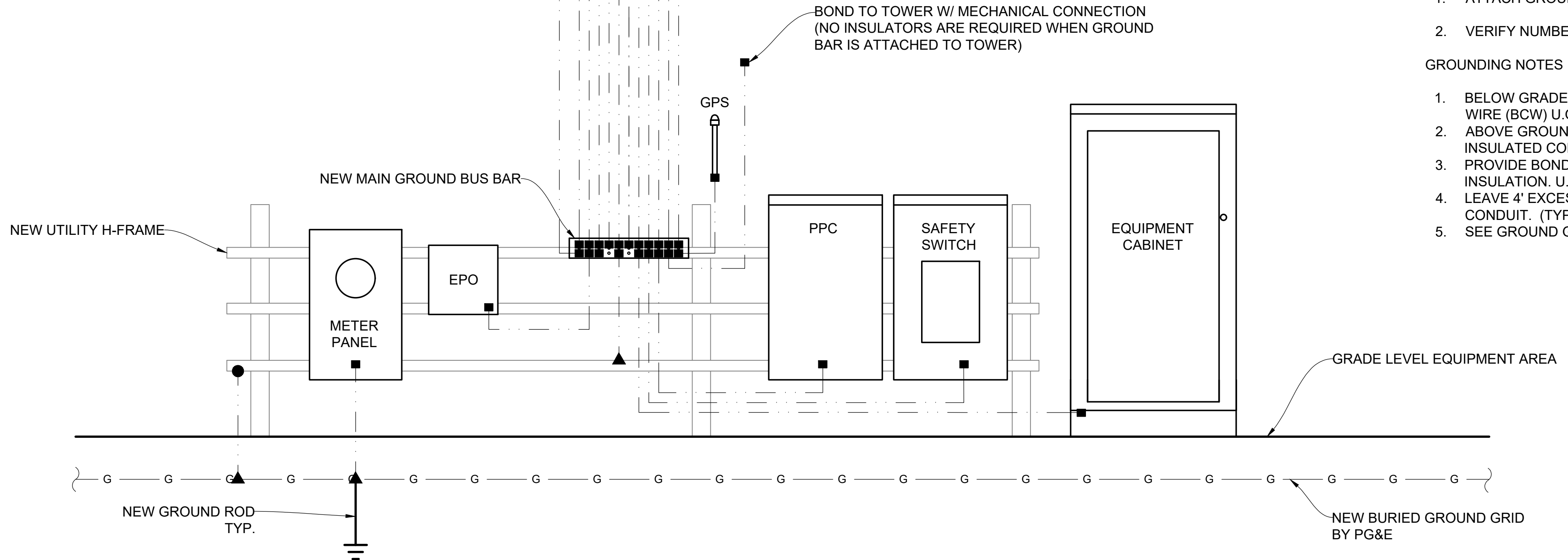
ALPHA SECTOR

BETA SECTOR

GAMMA SECTOR



BOND TO TOWER W/ MECHANICAL CONNECTION
(NO INSULATORS ARE REQUIRED WHEN GROUND
BAR IS ATTACHED TO TOWER)



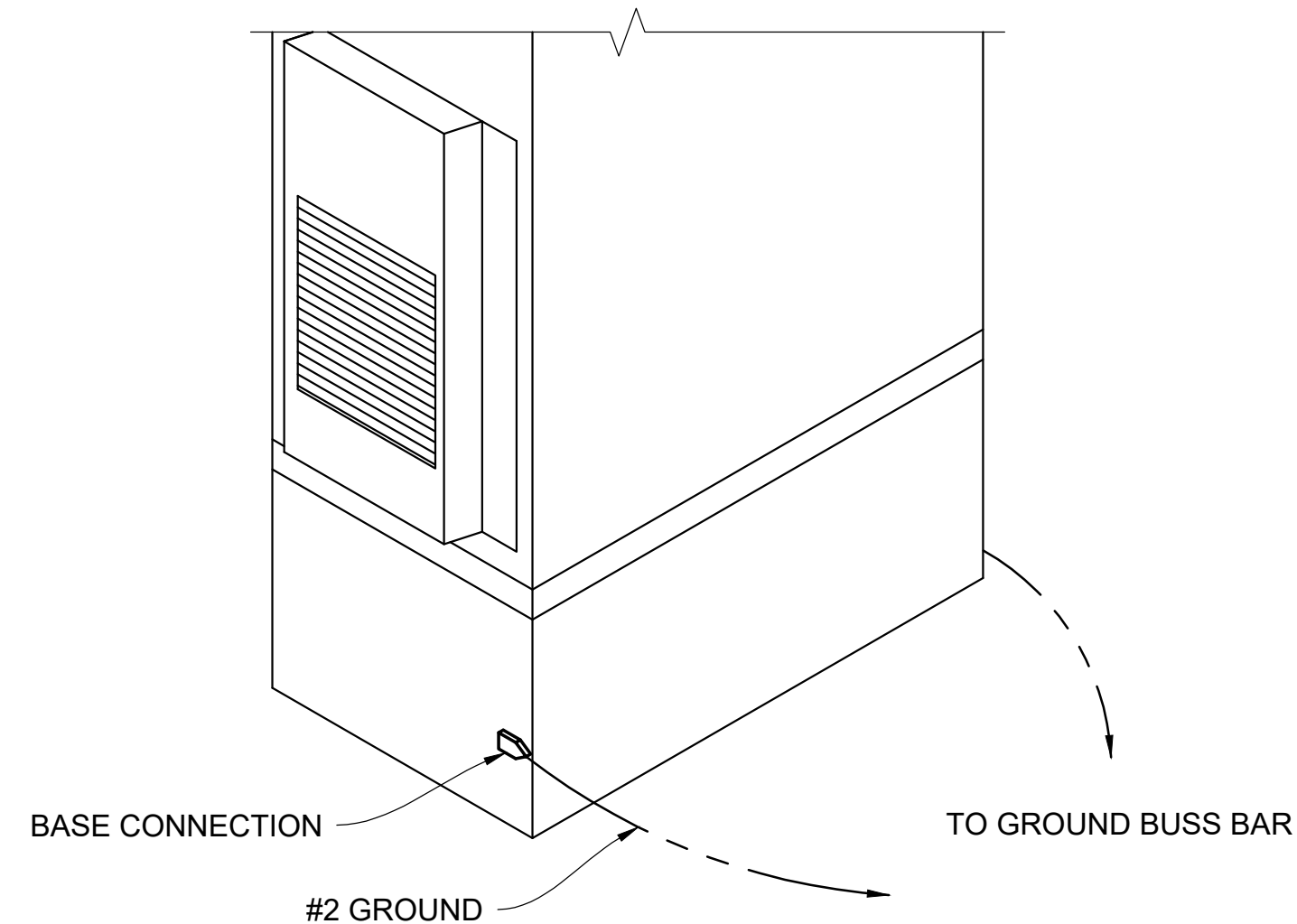
GROUNDING SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
	TYP. #2 TINNED BCW UNDERGROUND GROUND RING @ 18" MIN BELOW FINISH GRADE
	#2 STRANDED GREEN INSULATED WIRE
	#2 AWG STRANDED COPPER WIRE
	MECHANICAL CONNECTION
	EXOTHERMIC WELD CONNECTION
	CAD WELD CONNECTION
	SIDE SPLICE CADWELD CONNECTION
	FIELD VERIFY AND TIE INTO EXISTING GROUNDING SYSTEM
	GROUND BUS BAR

NOTES:

1. ATTACH GROUND BAR DIRECTLY TO THE CABINET USING STANDARD ADAPTER.
2. VERIFY NUMBER OF CABLES/TMAS PER RF CONFIGURATION.

GROUNDING NOTES

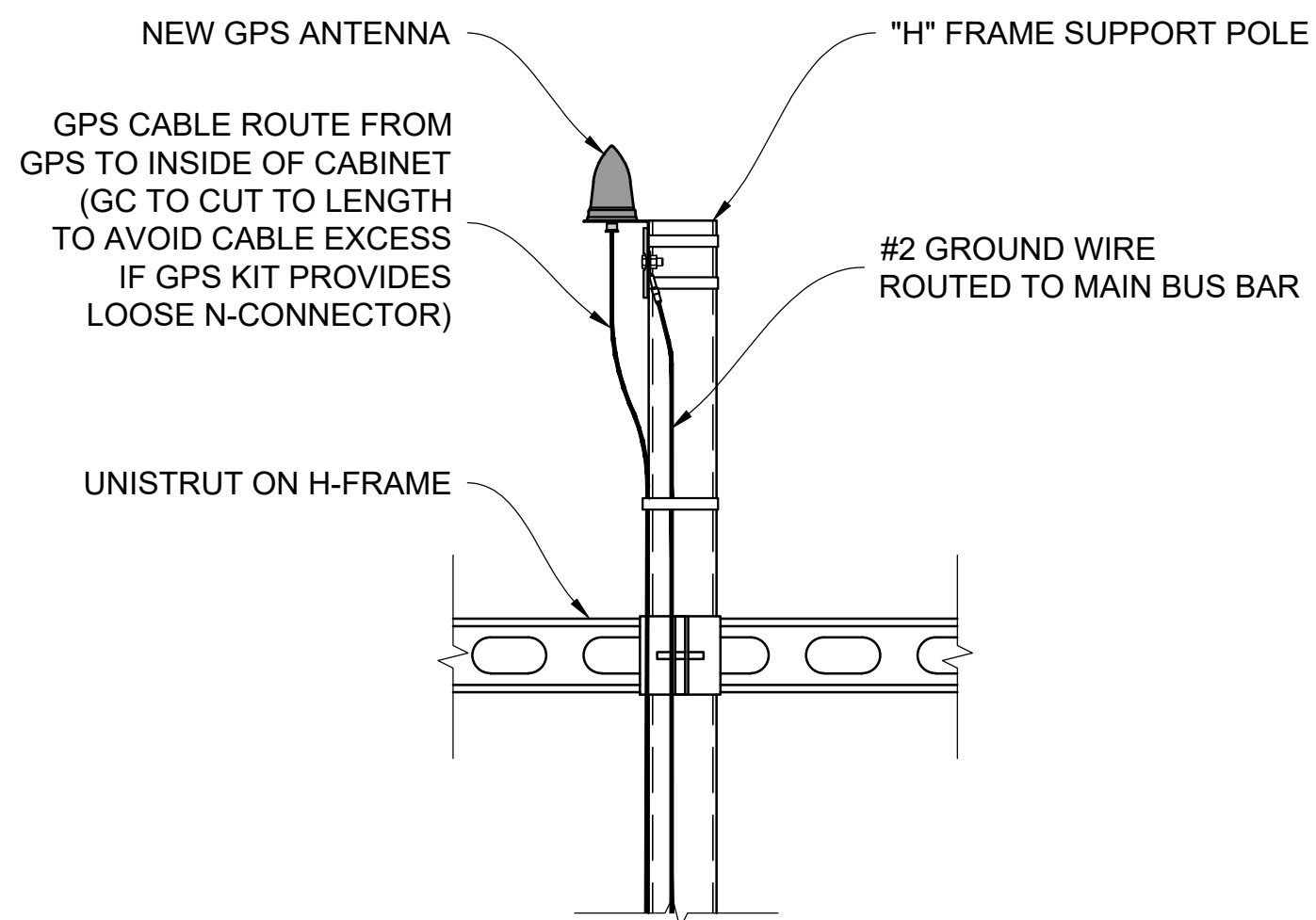
1. BELOW GRADE ALL GROUNDING CONDUCTORS TO BE #2 AWG SOLID BAR COPPER WIRE (BCW) U.O.N.
2. ABOVE GROUND ALL GROUNDING CONDUCTORS TO BE #2 AWG STRANDED INSULATED COPPER WIRE U.N.O.
3. PROVIDE BONDING AND GROUNDING CONDUCTORS WITH GREEN TYPE-THWN INSULATION. U.O.N.
4. LEAVE 4' EXCESS GROUND WIRE COILED UP ABOVE GRADE SEAL WEATHER PROOF CONDUIT. (TYP. AT EACH ABOVE GRADE CONNECTION TO GROUND RING).
5. SEE GROUND GRID DRAWINGS BY PG&E.



OUTDOOR CABINET GROUNDING

NO SCALE

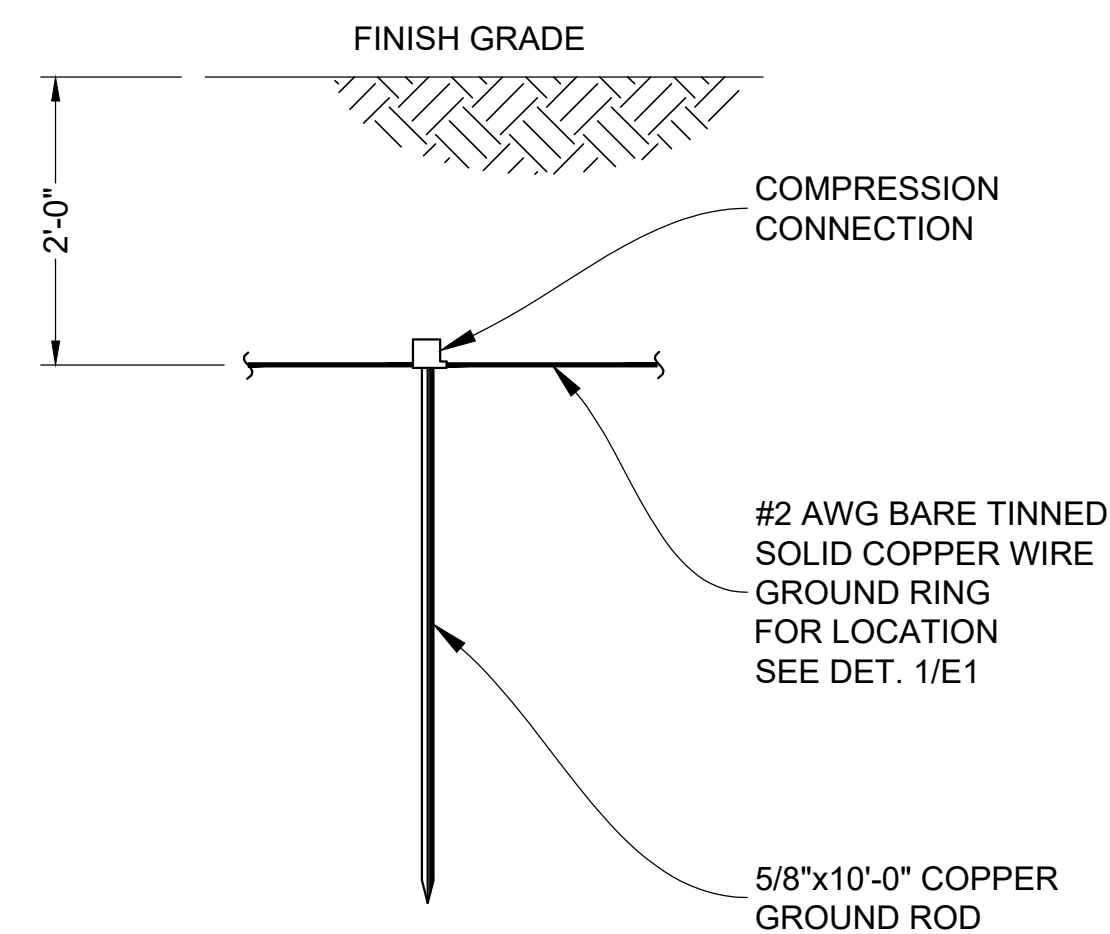
1



GPS ANTENNA GROUNDING

NO SCALE

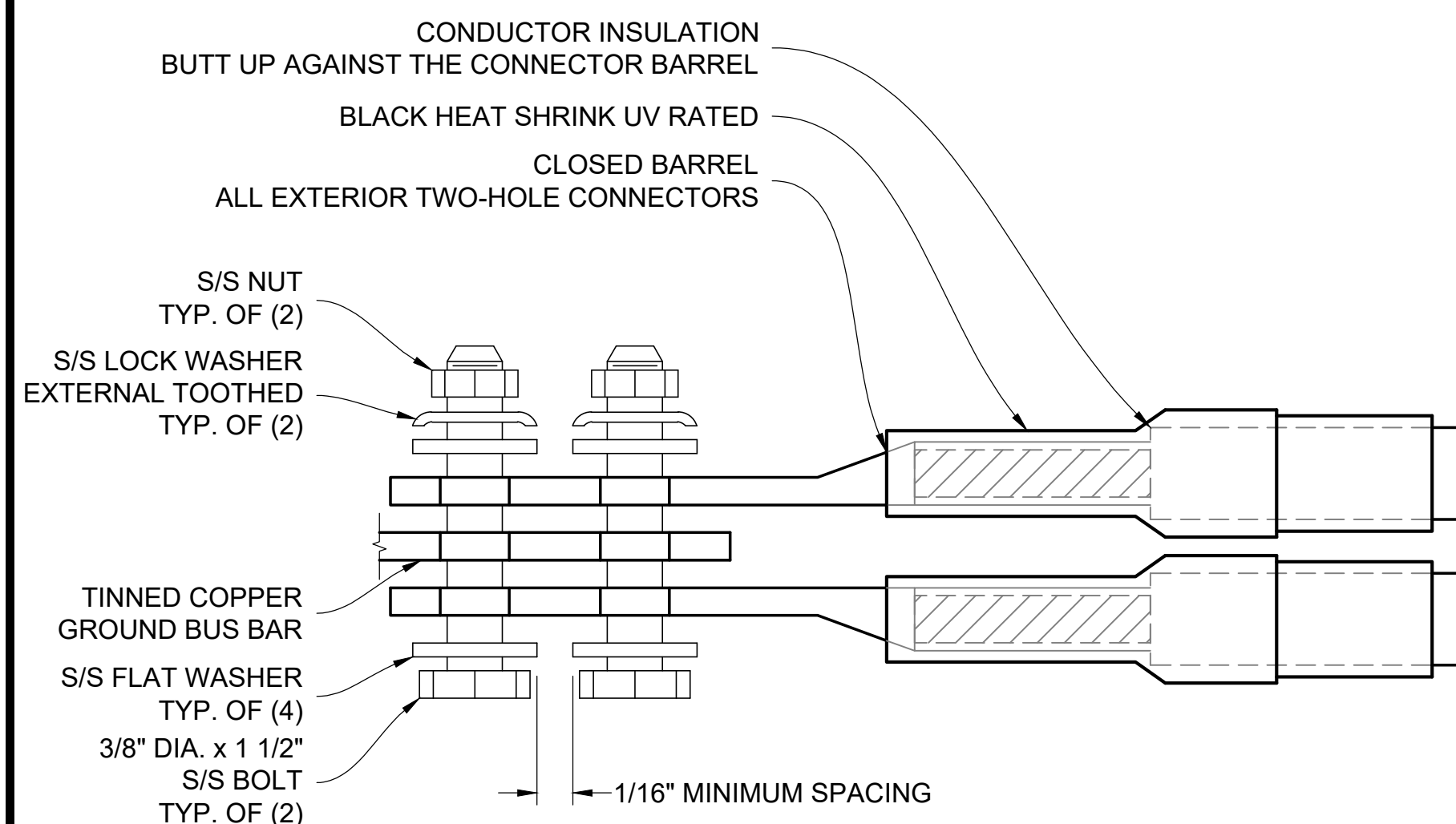
4



GROUND ROD

NO SCALE

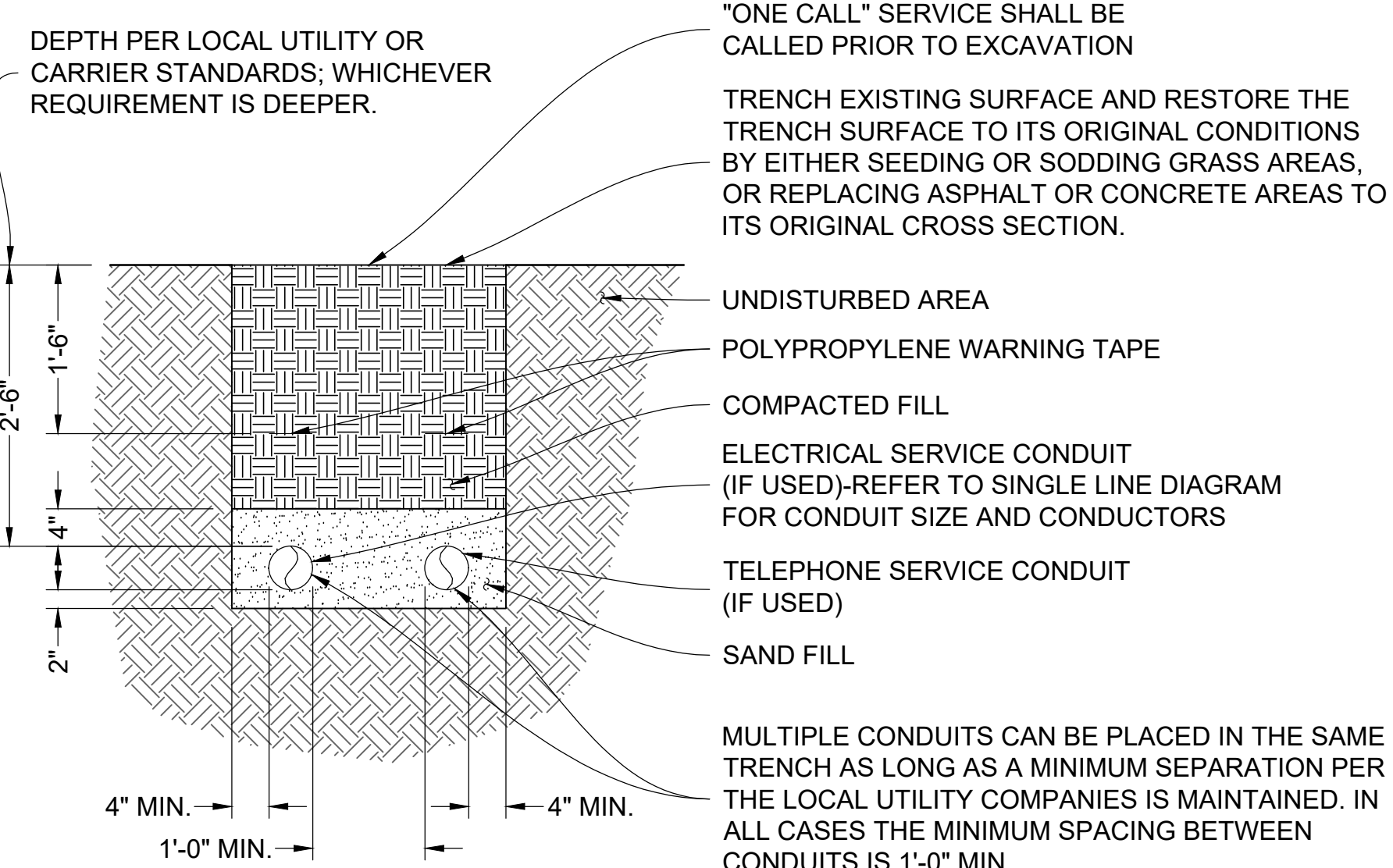
7



EXTERIOR TWO HOLE LUG

NO SCALE

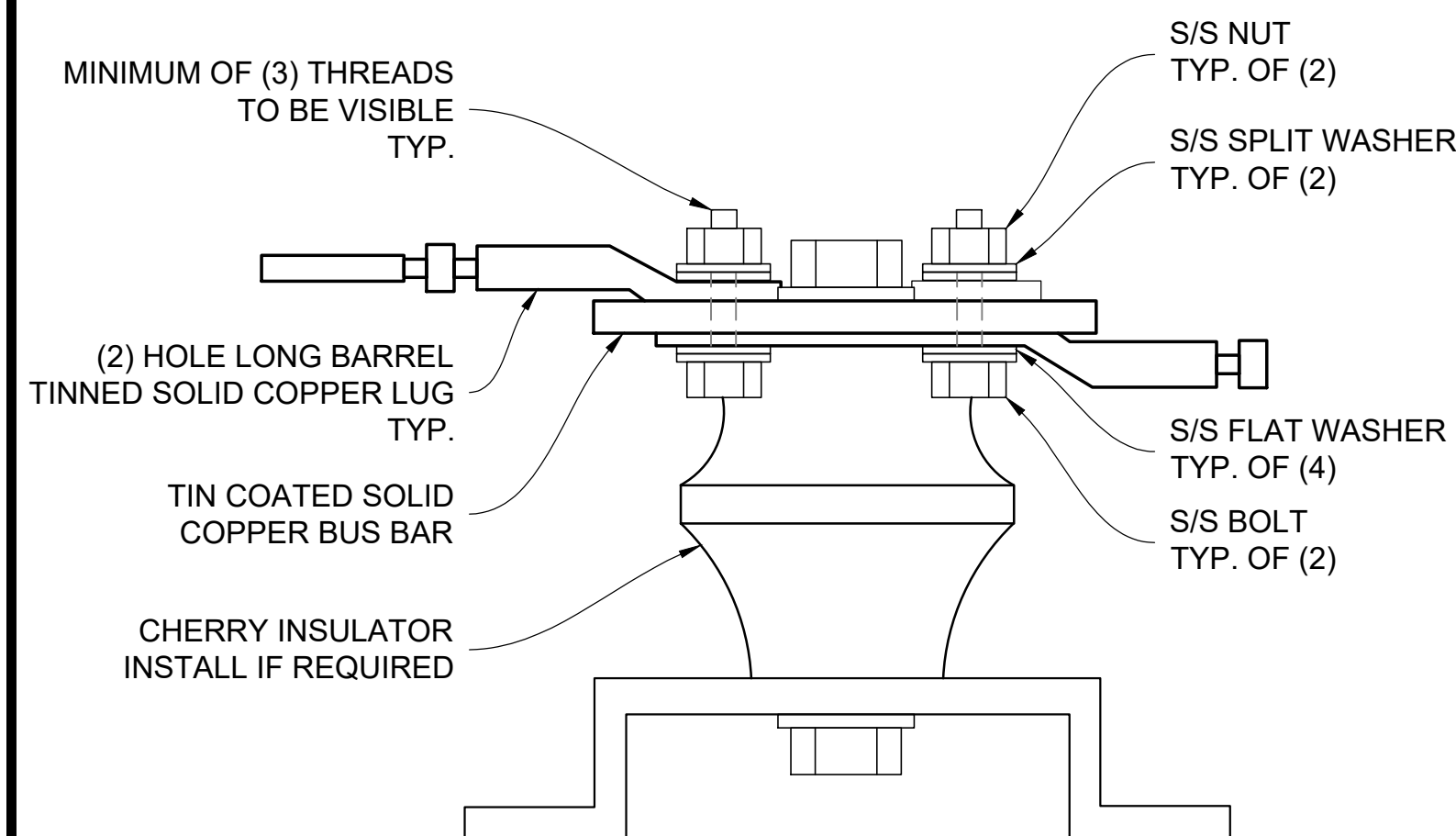
2



UNDERGROUND CONDUIT TRENCH

NO SCALE

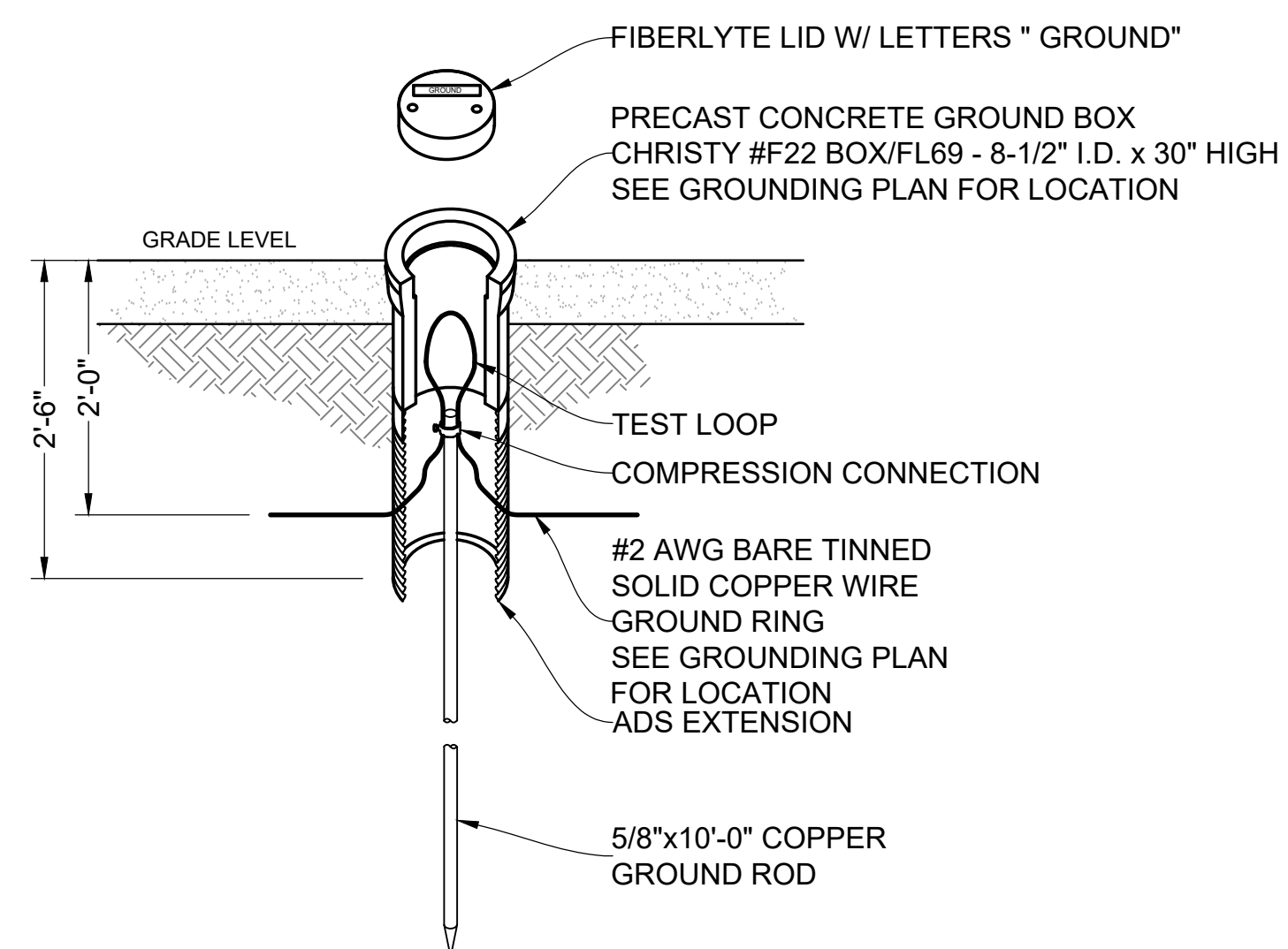
5



BUS BAR LUG

NO SCALE

6



GROUND ROD TEST WELL

NO SCALE

6

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



MODUS, LLC
240 STOCKTON ST., 3RD FLOOR
SAN FRANCISCO, CA
94108



4255 PARK ROAD
BENICIA, CA 94510

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PROJECT INFORMATION
SFSFO00570D

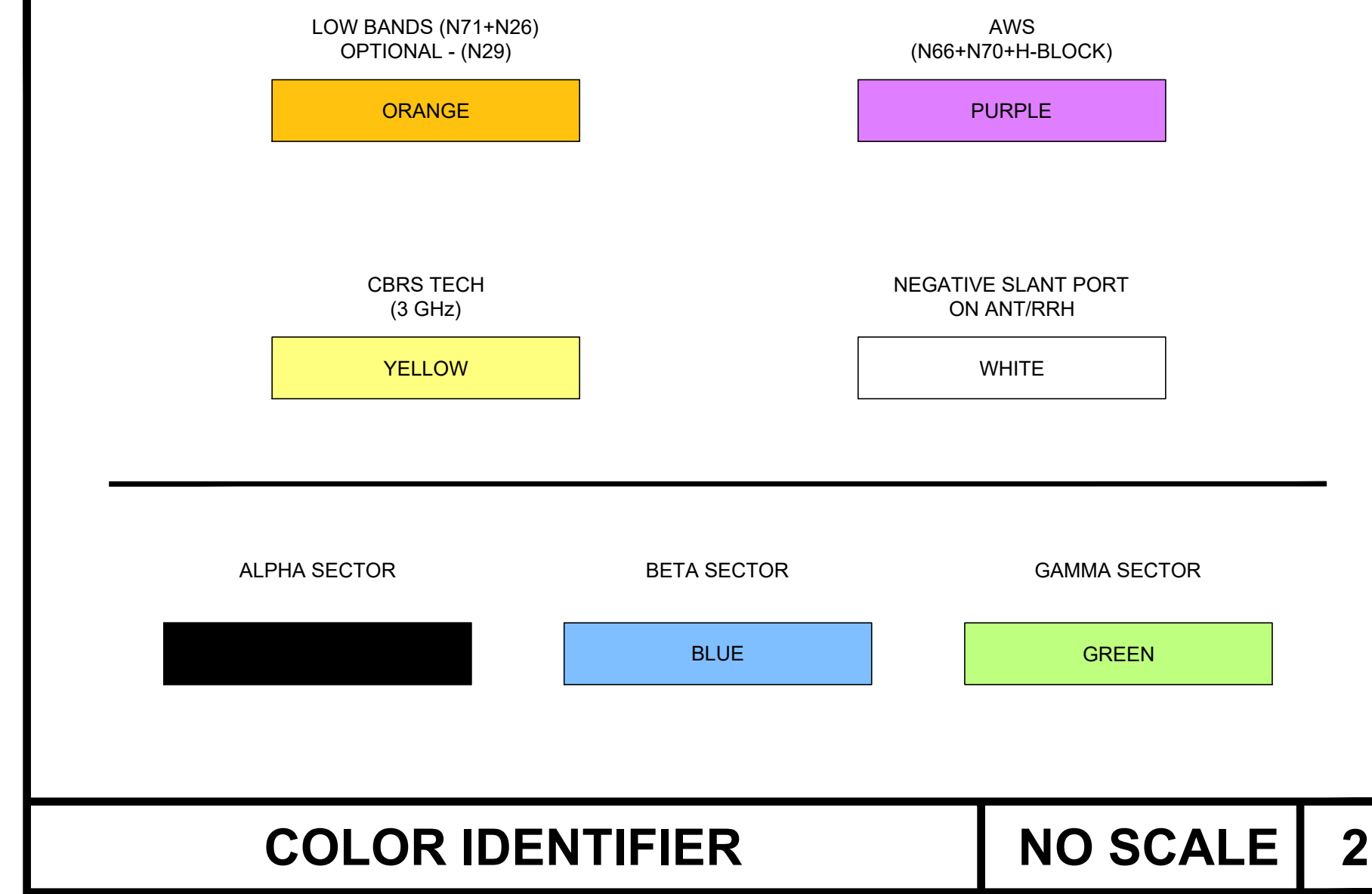
NEAR 200 ARMOUR AVE.
S. SAN FRANCISCO, CA 94080

SHEET TITLE
GROUNDING NOTES AND DETAILS

SHEET NUMBER

ED1

HYBRID/DISCREET CABLES												
3/4" TAPE WIDTHS WITH 3/4" SPACING												
<p>LOW-BAND RRH (600 MHz N71 BASEBAND) + (850 MHz N26 BAND) + (700 MHz N29 BAND) - OPTIONAL PER MARKET</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BAND)</p>	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	BETA RRH				GAMMA RRH			
	ORANGE	ORANGE	ORANGE	ORANGE	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
<p>MID-BAND RRH (AWS BANDS N66+N70)</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)</p>	WHITE (-) PORT	ORANGE	ORANGE	WHITE (-) PORT	ORANGE	ORANGE	ORANGE	ORANGE	WHITE (-) PORT	ORANGE	ORANGE	
	PURPLE	PURPLE	PURPLE	PURPLE	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
<p>HYBRID/DISCREET CABLES</p> <p>INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.</p> <p>EXAMPLE 1 - HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.</p> <p>EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.</p> <p>EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.</p>	EXAMPLE 1	EXAMPLE 2	EXAMPLE 3 COAX #1 (ALPHA)	CANISTER COAX #2 (ALPHA)								
	BLUE	BLUE	RED	RED								
<p>FIBER JUMPERS TO RRHs</p> <p>LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.</p>	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH						
	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE						
<p>POWER CABLES TO RRHs</p> <p>LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY</p>	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH						
	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE						
<p>RET MOTORS AT ANTENNAS</p> <p>RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.</p> <p>SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.</p>	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND						
	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE						
<p>MICROWAVE RADIO LINKS</p> <p>LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.</p> <p>ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.</p>	FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES				FORWARD AZIMUTH OF 240-359 DEGREES					
	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
WHITE	WHITE	BLUE	BLUE	WHITE	WHITE	GREEN	GREEN	WHITE	WHITE	GREEN	GREEN	WHITE
		WHITE	WHITE	BLUE	BLUE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE

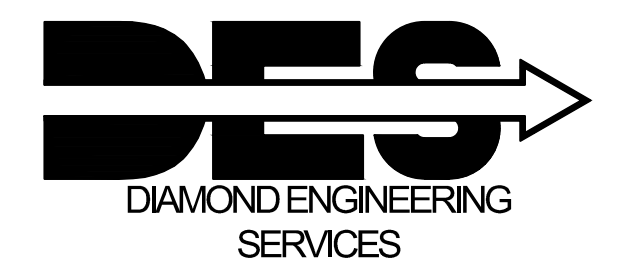


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SHEET TITLE
RF CABLE COLOR CODE

SHEET NUMBER
RF1