



at&t

SAINT VINCENT DE PAUL HS NOKIA MBO

849 KEOKUK ST.
PETALUMA, CA 94952

PROJECT REFERENCE NUMBERS

SITE I.D.: .
US I.D.: .
FA NO.: 15456805
ORACLE NO.: 3705A0XTRM
PACE NO.: MRSFR075484
PROGRAM: .

APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTORS' WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

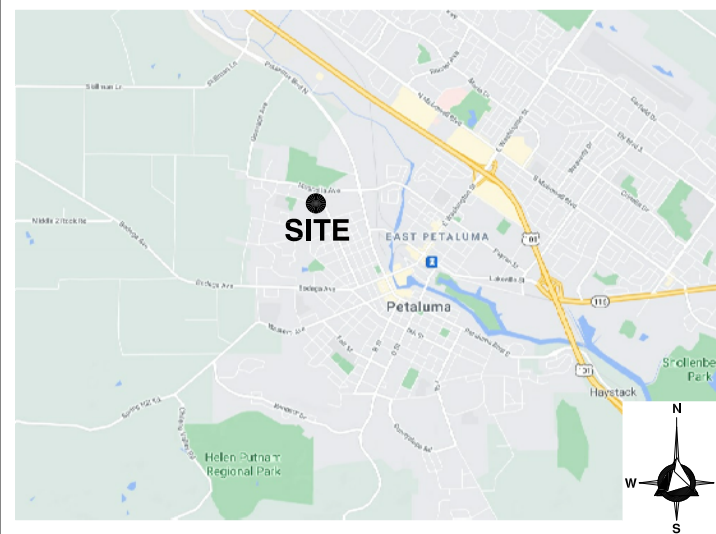
2019 CA ADMINISTRATIVE CODE
2019 CA BUILDING CODE
2019 CA ELECTRICAL CODE
2019 CA MECHANICAL CODE
2019 CA PLUMBING CODE
2019 CA FIRE CODE
2019 ENERGY CODE

SUBCONTRACTORS' WORK SHALL COMPLY WITH ALL LOCAL BUILDING CODES AND CITY/COUNTY ORDINANCES.

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. ACCESSIBILITY IS EXEMPT BASED ON ADA STANDARDS 203.5 AND CBC 11B-203.5 "MACHINERY SPACES."

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

VICINITY MAP



PROJECT TEAM

APPLICANT/LESSEE:

AT&T MOBILITY
2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821
CONTACT: CAROL MCCLOSKEY
PHONE: (916) 952-1466

OWNER:

TBD
ADDRESS: TBD
PHONE: TBD

SAQ/ZONING/PERMITTING:

COMPLETE WIRELESS CONSULTING
2009 V STREET
SACRAMENTO, CA 95818
CONTACT: KEVIN GALLAGHER
PHONE: (916) 764-2632

ARCHITECT:

DELTA GROUPS ENGINEERING
6800 KOLL CENTER PARKWAY,
SUITE 225
PLEASANTON, CA 94566
CONTACT: ALBERT TENG
PHONE: (925) 468-0115

STRUCTURAL:

DELTA GROUPS ENGINEERING
6800 KOLL CENTER PARKWAY,
SUITE 225
PLEASANTON, CA 94566
PHONE: (925) 468-0115

CONSTRUCTION:

TOTAL ENVIRONMENTAL & POWER SYSTEMS, INC.
2500 BISSO LN. SUITE 500
CONCORD, CA 94520
CONTACT: TONY PACHAO
PHONE: (925) 681-2238

RF ENGINEER:

AT&T MOBILITY
2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821
CONTACT: FRANK AHMADKHALLOU
PHONE: .

SITE DIRECTIONS

FROM AT&T MOBILITY OFFICES LOCATED AT 2700 WATT AVENUE IN SACRAMENTO, CA:

HEAD WEST TOWARD KINGS WAY. TURN RIGHT AT THE 1ST CROSS STREET ONTO WATT AVE. USE THE RIGHT LANE TO MERGE ONTO I-80 W VIA THE RAMP TO LIGHT RAIL STATION. CONTINUE ON I-80 W TO VALLEJO. TAKE EXIT 33B FROM I-80. MERGE ONTO I-80 W. USE ANY LANE TO STAY ON I-80 W TOWARD SAN FRANCISCO. KEEP LEFT TO STAY ON I-80 W. USE THE RIGHT 2 LANES TO TAKE EXIT 33B FOR CA-37 TOWARD NOVATO/SAN RAFAEL. FOLLOW CA-37 W AND LAKEVILLE HWY TO YOUR DESTINATION IN PETALUMA. CONTINUE ONTO CA-37. TURN RIGHT ONTO LAKEVILLE HWY. TURN RIGHT ONTO PETALUMA BLVD. TURN LEFT ONTO MAGNOLIA AVE. TURN LEFT ONTO KEOKUK ST. DESTINATION WILL BE ON THE LEFT.

PROJECT DESCRIPTION

SCOPE OF WORK:

THIS IS AN APPLICATION FOR A NEW, UNMANNED AT&T MOBILITY SERVICES FACILITY CONSISTING OF:

- THE INSTALLATION OF TELECOMMUNICATIONS EQUIPMENT WITHIN EXISTING EQUIPMENT RACK INSIDE EXISTING BUILDING.
- THE INSTALLATION OF ONE (1) OUTDOOR OMNI DIRECTIONAL ANTENNA MOUNTED TO EXISTING BUILDING ROOFTOP.
- THE INSTALLATION OF ONE (1) MBO UNIT MOUNTED BELOW OUTDOOR ANTENNA.
- ASSOCIATED COMMUNICATIONS AND UTILITIES WIRING AS REQUIRED.

PROJECT INFORMATION

SITE ADDRESS:

849 KEOKUK ST.
PETALUMA, CA 94952

A.P.N.:

006-021-035

PROPERTY OWNER:

TBD
ADDRESS: TBD
PHONE: TBD

JURISDICTION:

TBD

ZONE:

TBD

OCCUPANCY TYPE:

TBD

TYPE OF CONSTRUCTION:

TBD

DRAWING INDEX

T1	TITLE SHEET
T2	GENERAL NOTES, LEGEND, & ABBREVIATIONS
A1	OVERALL SITE PLAN
A2	ENLARGE SITE PLAN, EQUIPMENT & ANTENNA PLANS
A3	SOUTH & WEST ELEVATIONS
A4	GENERAL STRUCTURAL NOTES, DETAILS, & SIGNAGE
A5	DETAILS
A6	ANTENNA EQUIPMENT SPECIFICATIONS
E1	ELECTRICAL & TELEPHONE SPECIFICATIONS & UTILITIES NOTES
E2	ONE-LINE DIAGRAM, & PANEL SCHEDULE
E3	EQUIPMENT & ANTENNA GROUNDING PLANS
E4	GENERAL GROUNDING NOTES, & GROUNDING DETAILS



2700 WATT AVENUE, 3473-34
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NOKIA MBO**
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**DELTA GROUPS
ENGINEERING, INC.**
CONSULTING ENGINEERS

6800 KOLL CENTER PARKWAY, SUITE 225
PLEASANTON, CA 94566
TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/13/21	ISSUED FOR REVIEW	JK	.
2	5/28/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE

TITLE SHEET

SHEET

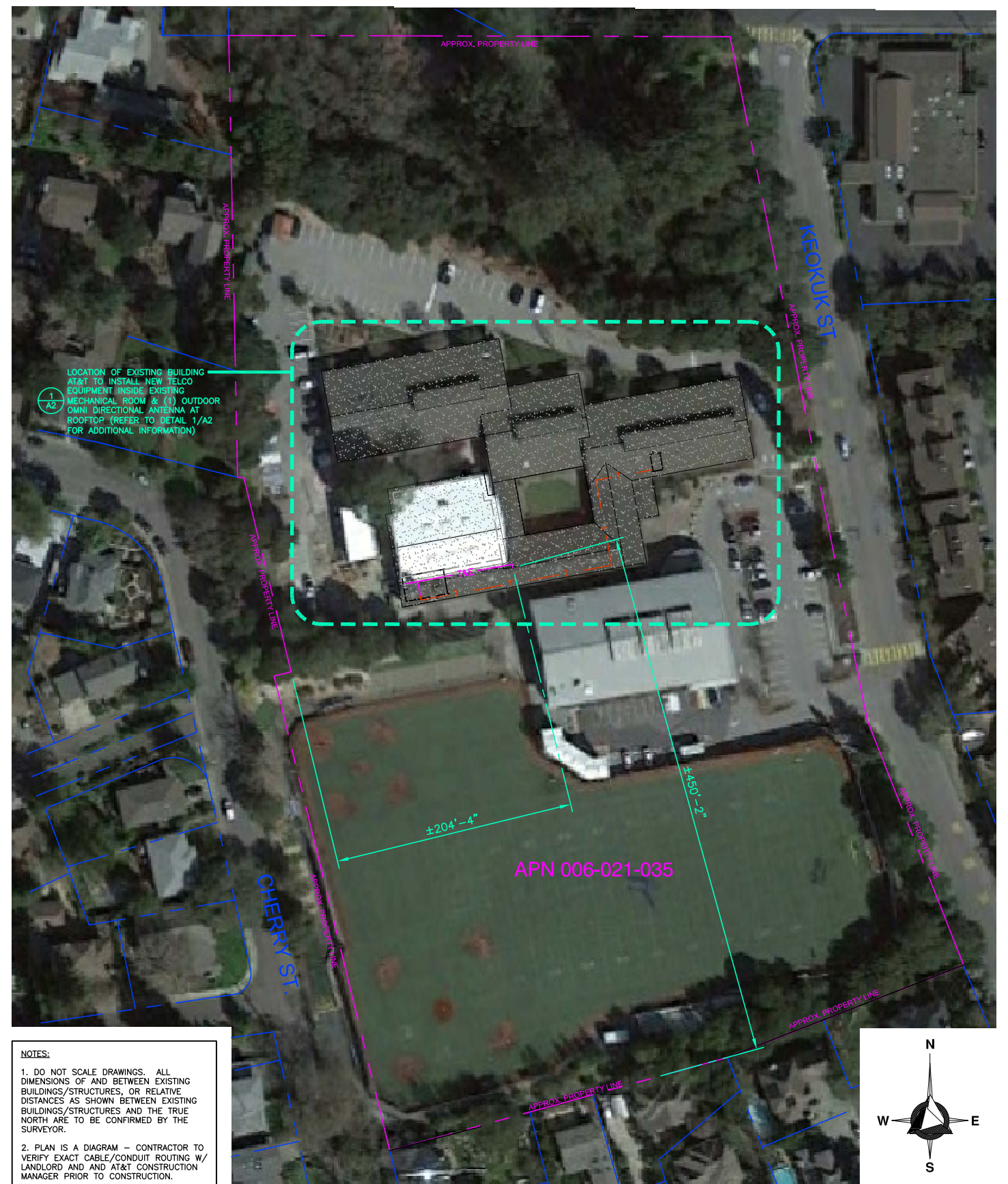
T1

DGE NO.

P21AT008

SITE NAME

SAINT VINCENT DE PAUL HS

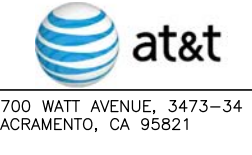


NOTES:

1. DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.

2. PLAN IS A DIAGRAM - CONTRACTOR TO VERIFY EXACT CABLE/CONDUIT ROUTING W/ LANDLORD AND AND AT&T CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.

UNUSED SCALE: NTS 1



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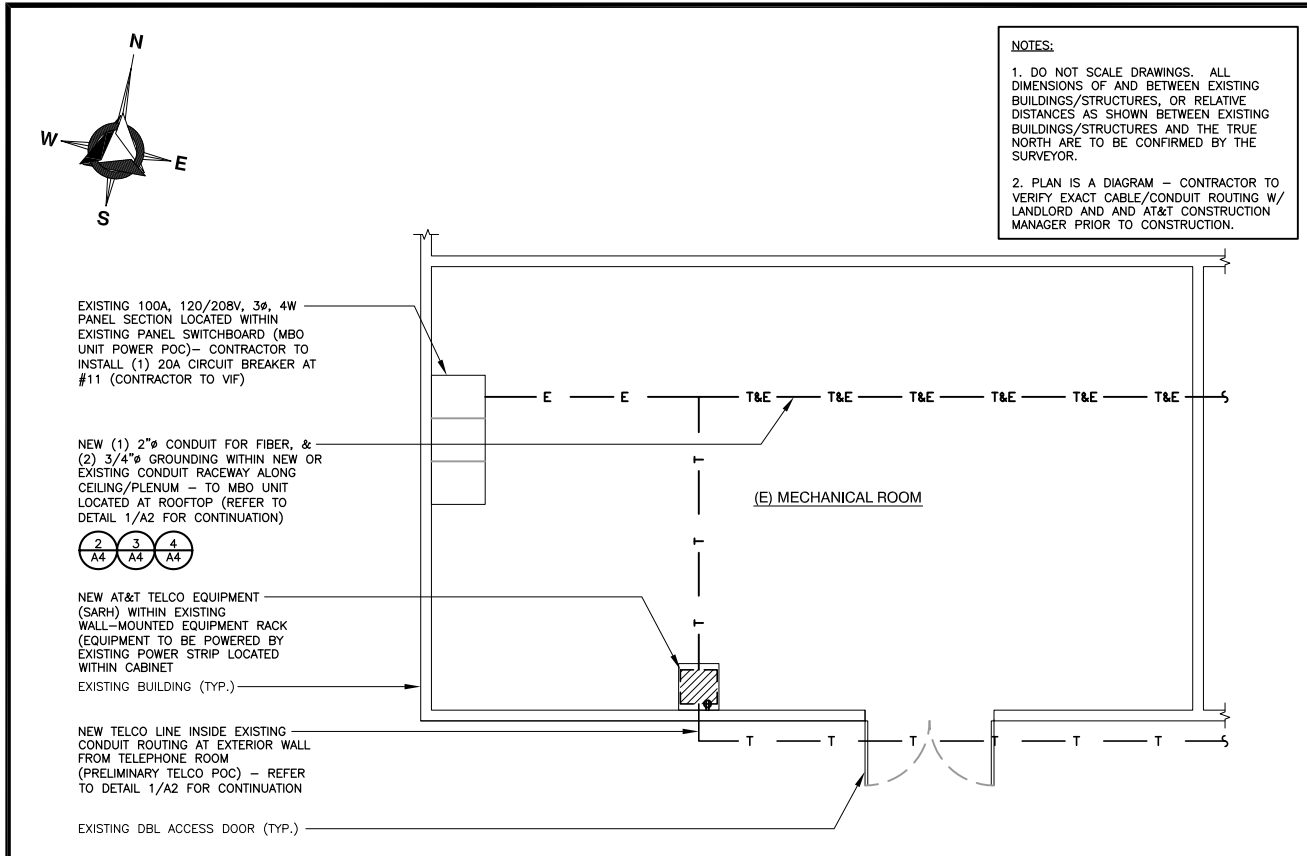
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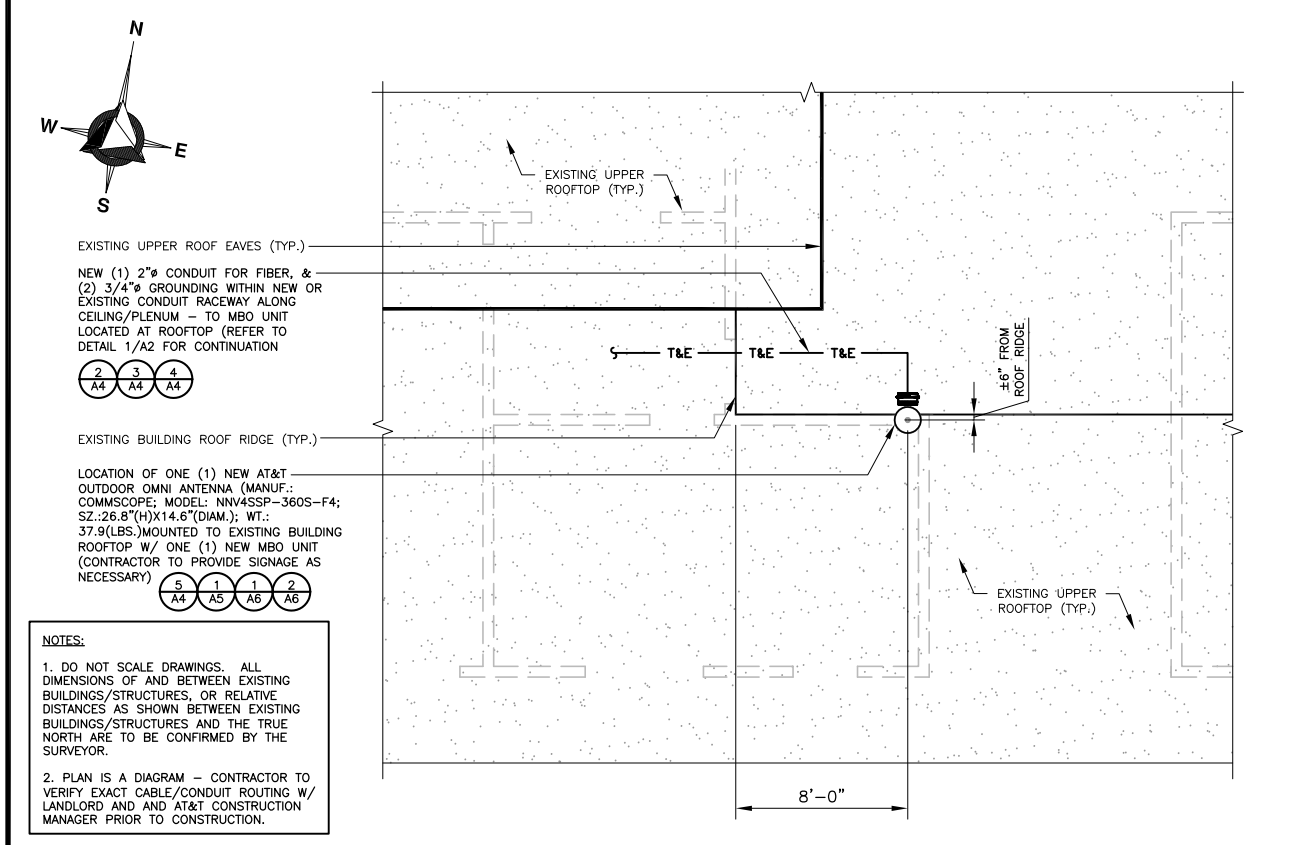
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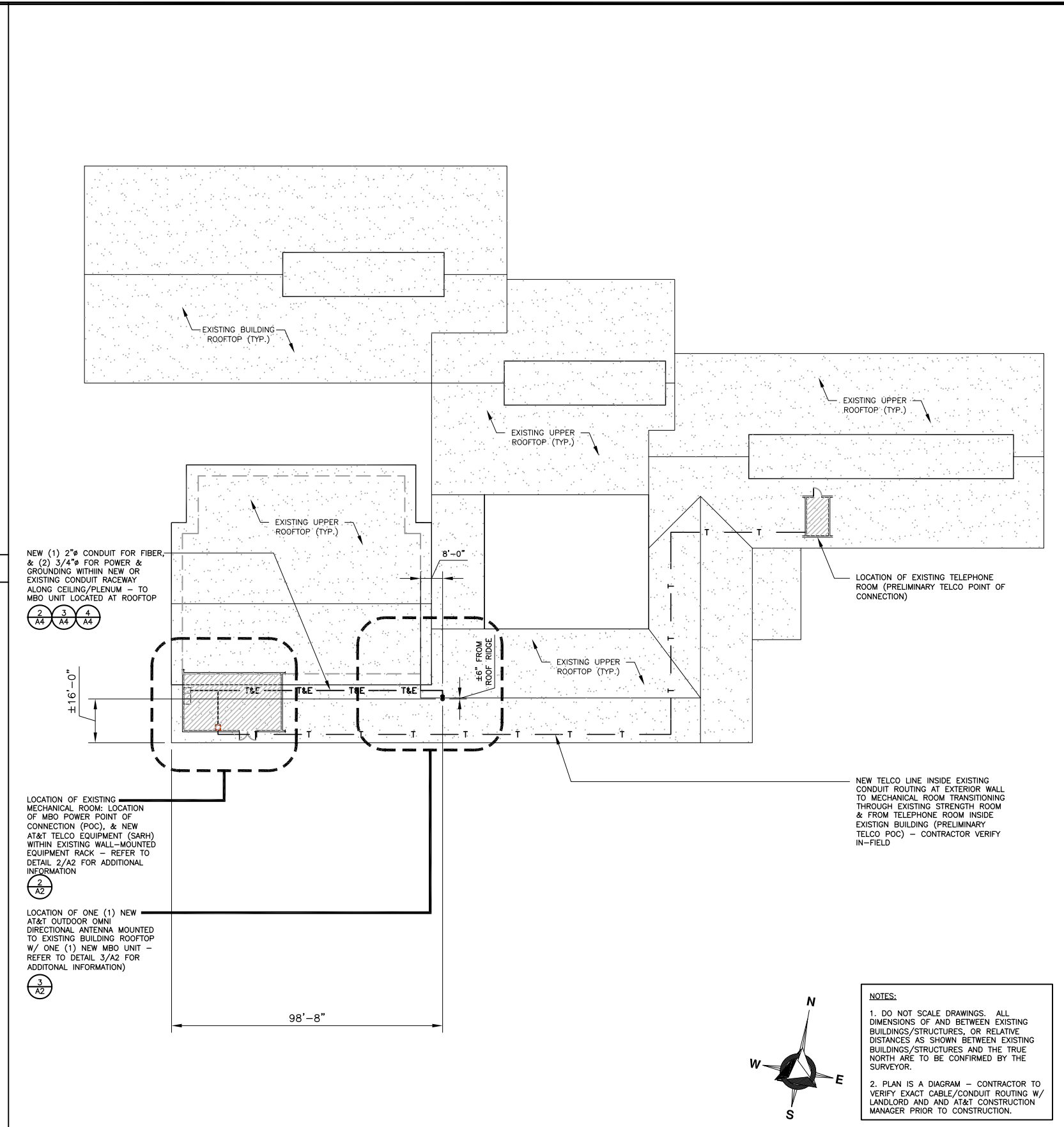
SHEET TITLE	
OVERALL SITE PLAN	
SHEET	DGE NO.
A1	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	



ANTENNA LAYOUT AT ROOFTOP SCALE: 1/4 inch = 1 ft 4' 0' 4' 8' **2**



ANTENNA LAYOUT AT ROOFTOP SCALE: 1/4 inch = 1 ft 4' 0' 4' 8' **3**



ANTENNA ENLARGED SITE PLAN (ROOFTOP) SCALE: 1 inch = 20 ft 20' 0' 20' 40' **1**



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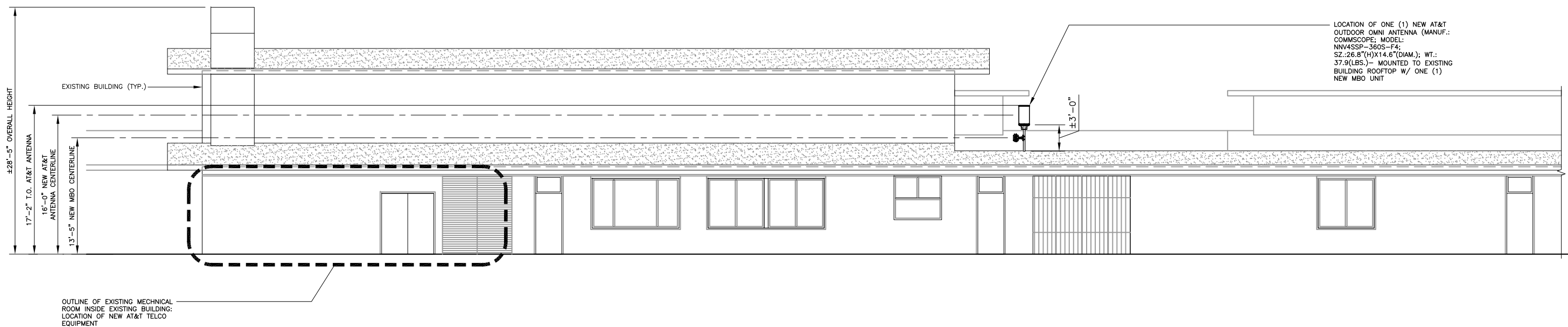
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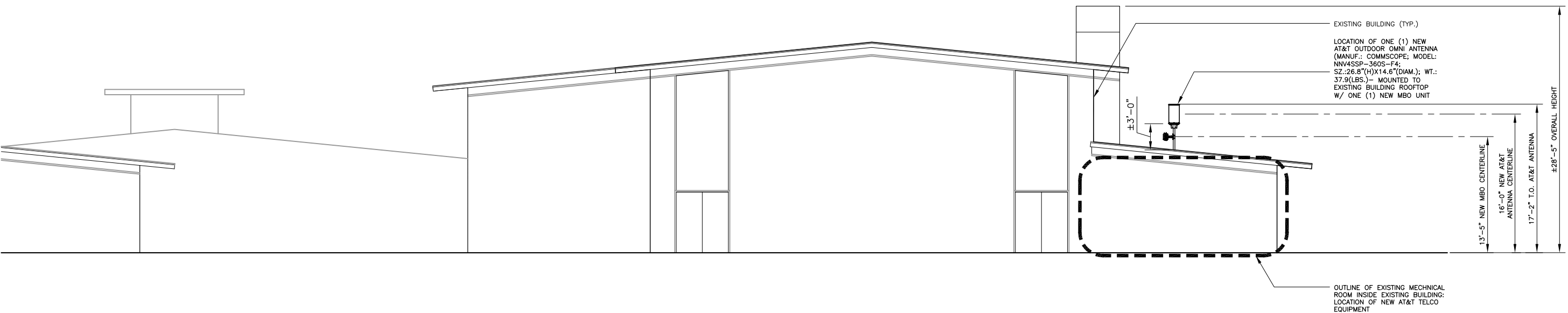
SHEET TITLE	
ENLARGED SITE PLAN, EQUIPMENT & ANTENNA LAYOUTS	
SHEET	DGE NO.
A2	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	



SOUTH ELEVATION

SCALE: 3/16 inch = 1 ft

1



WEST ELEVATION

SCALE: 3/16 inch = 1 ft

2

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SHEET TITLE	
SOUTH & WEST ELEVATIONS	
SHEET	DGE NO.
A3	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	



On this tower:

Radio frequency (RF) fields near some antennas *may exceed* the FCC Occupational Exposure Limits.

Contact AT&T at 800-638-2822, option 9 and 3, and follow their instructions prior to performing maintenance or repairs beyond this point.

Personnel climbing this tower should be trained for working in RF environments and use a personal RF monitor if working near active antennas.

Caution Sign #CA01T-AL-057 This is AT&T site

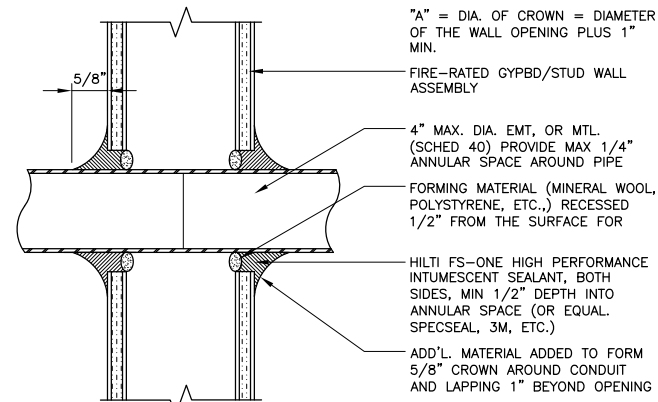
THE CUSTODIAN OF THIS STATION'S LICENSE IS:

AT&T
ATTENTION TO: FCC GROUP
 208 S. AKARD STREET, RM 1016
 DALLAS, TX 75202
 855-699-7073
 FCCMW@att.com



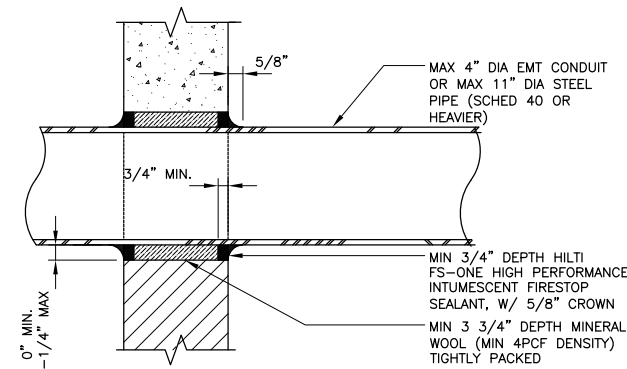
SIGNAGE

5



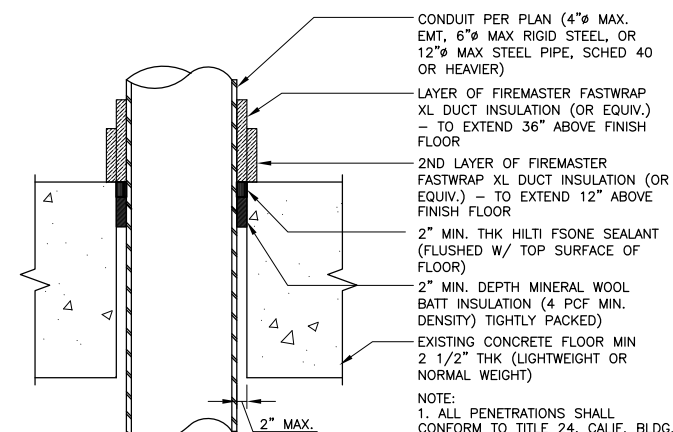
NOTE: CONTRACTOR SHALL FOLLOW MFR'S (HILTI, OR EQUAL) SPECS & INSTALLATION MANUAL. SUBMIT MFR'S LITERATURE FOR OTHER PRODUCT TO BE CONSIDERED FOR EQUAL.)

(A) FRAMED WALL PENETRATION



NOTE: CONTRACTOR SHALL FOLLOW MFR'S (HILTI, OR EQUAL) SPECS & INSTALLATION MANUAL. SUBMIT MFR'S LITERATURE FOR OTHER PRODUCT TO BE CONSIDERED FOR EQUAL.)

(B) CMU, CONC WALL PENETRATION



NOTE: 1. ALL PENETRATIONS SHALL CONFORM TO TITLE 24, CALIF. BLDG. CODE, SECTION 714. 2. PENETRATIONS THRU WALLS SHALL COMPLY WITH T24, CBC SECTION 709.6. F RATING - NOT LESS THAN THE REQ'D RATING OF THE WALL PENETRATED. 3. PENETRATIONS THRU FLOORS/CEILINGS SHALL COMPLY WITH T24, CBC SECTION 710.2 F & T RATING - NOT LESS THAN 1 HR, NOR LESS THAN THE REQ'D RATING OF THE FLOOR/CEILING PENETRATED. 4. CONTRACTOR TO ENSURE WATER-TIGHTNESS AT ALL WALL AND FLOOR PENETRATIONS.

(C) CONCRETE FLOOR PENETRATION

TYPICAL CONDUIT PENETRATION

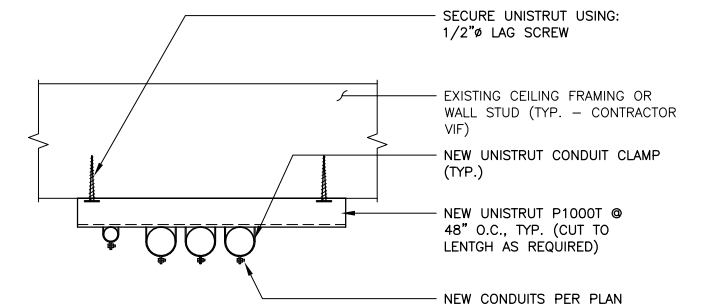
4

GENERAL NOTES:

1. THE CONTRACTOR SHALL EXAMINE THE STRUCTURAL DRAWINGS AND SHALL NOTIFY THE ARCHITECT/ENGINEER, AND PROJECT MANAGER, IN WRITING, SHOULD ANY DISCREPANCIES BE FOUND PRIOR TO PROCEEDING WITH WORK.
2. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETE STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND THE EXISTING STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING, SHORING, ETC. VISITS BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OF THESE ITEMS.
3. ALL WORK NOT DETAILED OR NOTED SHALL BE CONSTRUCTED IN ACCORDANCE WITH OTHER SIMILAR WORK AND TYPICAL DETAILS SHOWN ON THE DRAWINGS. DIMENSIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. NO PIPES OR DUCTS SHALL BE PLACED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE ARCHITECT.
4. ALL WORK PERFORMED ON PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES INCLUDING OSHA AND STATE SAFETY ORDERS. THE GENERAL CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL, AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.

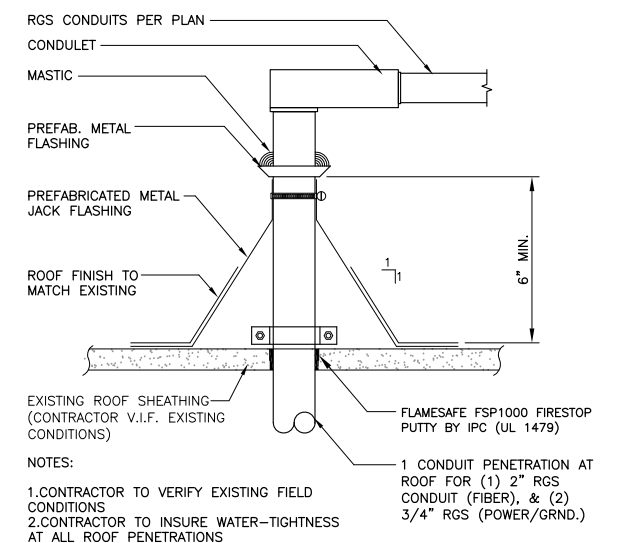
GENERAL STRUCTURAL NOTES

1



CONDUIT/CABLE ROUTING AT CEILING/WALL

2



NOTES: 1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS. 2. CONTRACTOR TO INSURE WATER-TIGHTNESS AT ALL ROOF PENETRATIONS.

CONDUIT PENETRATION AT ROOFTOP

3

UNUSED

UNUSED



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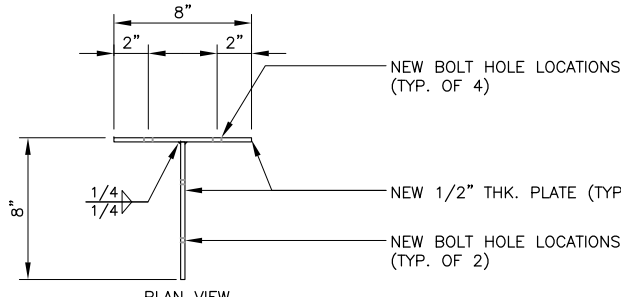
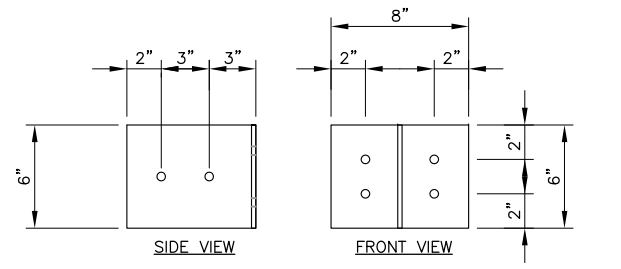


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ENGINEERING, INC.
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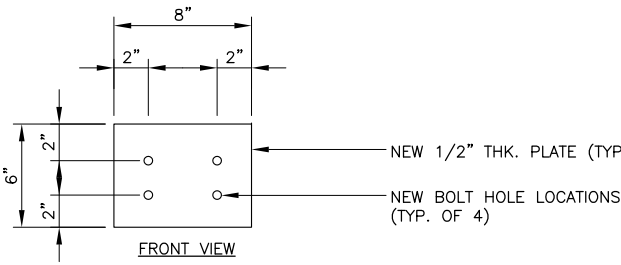
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SHEET TITLE	
GENERAL STRUCTURAL NOTES, DETAILS, & SIGNAGE	
SHEET	DGE NO.
A4	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	



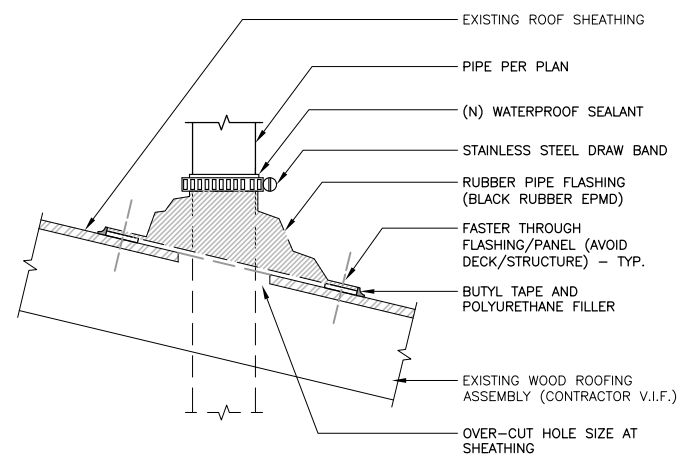
A1 STEEL FACE PLATE



A2 STEEL BACKING PLATE

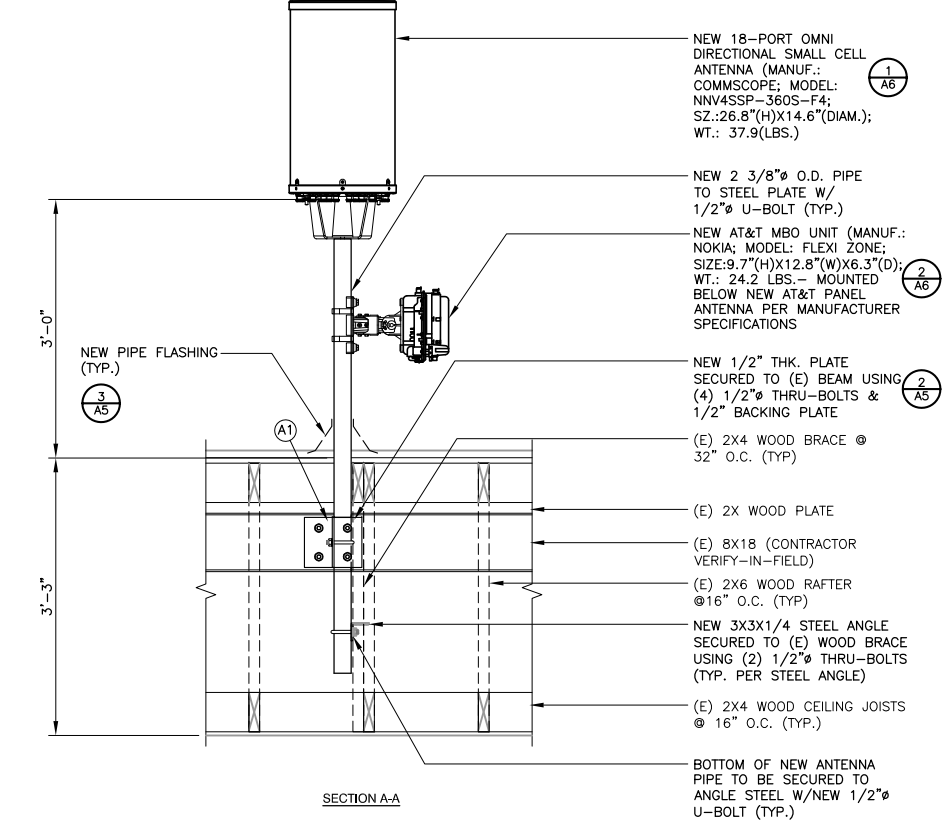
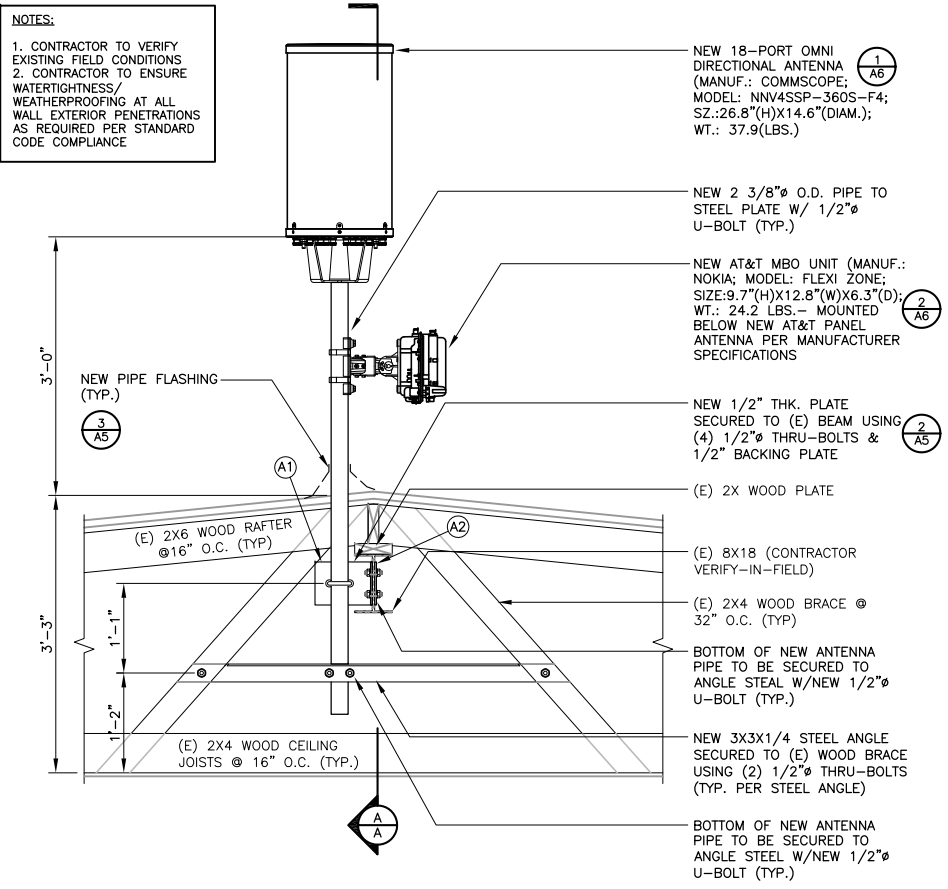
PLATE DETAIL

2



PIPE FLASHING AT ROOFTOP

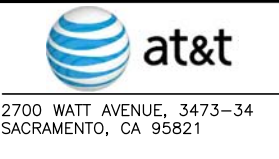
3



ANTENNA MOUNTING AT ANTENNA SECTORS 3A & 3B

1

UNUSED



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NOKIA MBO
FA NO. 15456805**
849 KEOKUK ST.
PETALUMA, CA 94952



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2	5/28/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
DETAILS	
SHEET	DGE NO.
A5	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	

1 NOTICE: The BTS interface panel should always face the ground. Any other installation position might cause overheating and possible damage to the BTS.

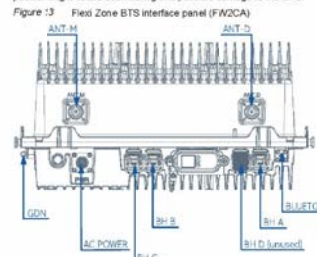


Figure 13 Flexi Zone BTS interface panel (FW2CA)

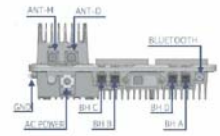


Figure 14 Flexi Zone BTS interface panel (FW2QC)

- 1** Note: Port BH-D is reserved for future support of FW2QC.
- 1** Note: The band straps are not part of the delivery and must be ordered separately.

- When selecting a location to mount the BTS, keep in mind the following:
- Avoid mounting the BTS such that the antennas are blocked by other structures such as walls. A direct line of sight to the area to be covered will provide the best performance.
 - Keep other metallic mounting features as far away from all antennas as possible.
 - Keep cables routed and secured away from the LTE and Bluetooth antennas.
 - Remotely locating the Bluetooth antenna is not allowed.

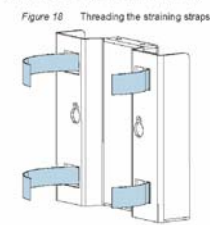
- If you plan to use an omnidirectional antenna, do not install the BTS on a metal wall or nearby metal obstructions.
- Remotely connecting the FAWS omnidirectional antenna (472633A) is not allowed as this is a monopole antenna.
- If any omnidirectional or directional antennas are remotely connected, external lightning surge protection must be added.

If side clearance is less than screw driver length, the grounding cable needs to be pre-installed. The minimum and recommended maintenance clearances are shown in Table 3. Flexi Zone Micro BTS maintenance clearances.

BTS side	Minimum clearances	Recommended clearances
Front	60 mm / 360 mm ⁽¹⁾ (1.97 in. / 14.17 in. ⁽¹⁾)	600 mm (19.68 in.)
Rear	35 mm ⁽²⁾ (1.38 in. ⁽²⁾)	35 mm ⁽²⁾ (1.38 in. ⁽²⁾)
Top	100 mm / 400 mm ⁽³⁾ (3.94 in. / 15.75 in. ⁽³⁾)	Height of the unit + 10 mm / 300 mm ⁽³⁾ (Height of the unit + 0.39 in. / 11.81 in. ⁽³⁾)
Bottom	100 mm (3.94 in.)	300 mm (11.81 in.)
Left	10 mm / 110 mm ⁽⁴⁾ (0.39 in. / 4.33 in. ⁽⁴⁾)	10 mm / 110 mm ⁽⁴⁾ (0.39 in. / 4.33 in. ⁽⁴⁾)
Right	10 mm / 110 mm ⁽⁴⁾ (0.39 in. / 4.33 in. ⁽⁴⁾)	10 mm ⁽⁴⁾ / 110 mm ^{(4), (5)} (0.39 in. ⁽⁴⁾ / 4.33 in. ^{(4), (5)})

- ⁽¹⁾ For applications with tilting bracket.
- ⁽²⁾ For wall and pole installations.
- ⁽³⁾ For applications with directional antenna.
- ⁽⁴⁾ Depends on the screwdriver length.

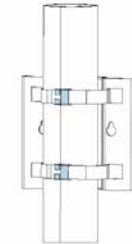
3 Thread the band straps to the static mounting bracket.



4 Install the static mounting bracket to the pole with the band straps.

1 Note: The straps should be tightened and secured according to the strap manufacturer's instructions and the bracket should be secure and immovable.

Figure 19 Installing the installation plate to the pole



18-port small cell antenna 4x 698-896, 8x 1695-2690, 4x 3400-3800 and 2x 5150-5925 MHz, 360° Horizontal Beamwidth, fixed tilt.

Electrical Specifications

Frequency Band, MHz	698-806	806-896	1695-1920	1920-2180	2300-2690	3400-3800	5150-5925
Gain, dBi	5.4	5.5	7.8	8.2	9.0	6.4	4.6
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360
Beamwidth, Vertical, degrees	34.2	36.2	19.8	16.5	14.2	32.5	24.2
Beam Tilt, degrees	4	4	4	4	0	0	0
USL5 (First Lobe), dB	12	8	15	15	11	21	6
Isolation, Cross Polarization, dB	25	25	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	25	25	25
VSWR Return Loss, dB	1.3 14.0	1.3 14.0	1.3 14.0	1.3 14.0	1.3 14.0	1.3 14.0	1.3 14.0
IMD, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	75	75	75	75	75	35	5
Polarization	+45°	+45°	+45°	+45°	+45°	+45°	+45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

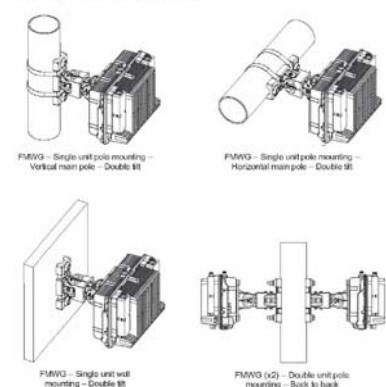
Frequency Band, MHz	698-806	806-896	1695-1920	1920-2180	2300-2690	3400-3800	5150-5925
Gain by all Beam Tilt, average, dBi	5.0	5.2	7.0	7.3	8.4	6.0	3.9
Gain by all Beam Tilt, Tolerance, dB	+0.9	+0.5	+1.2	+0.9	+1.1	+0.6	+0.3
Beamwidth, Vertical Tolerance, degrees	+5.2	+11.2	+4.7	+1.9	+1.7	+7.3	+3.3
CPI at Bore-sight, dB	13	16	12	17	18	10	14

* Commscope® supports NGMN recommendations on Base Station Antenna Standards (BASTA) to learn more about the benefits of BASTA, download the [whitepaper: Time to Base the BS on BASTA](#).

5 GHz Port Power Table

U-NII Band	5 GHz FCC Power Requirements			
	U-NII 1	U-NII 2A	U-NII 2C	U-NII 3
Frequency (MHz)	5150 - 5250	5210 - 5350	5470 - 5725	5725 - 5850
Max Input power per port to align with FCC Title 47 Part 15 (Watts)	0.8	0.125	0.125	0.5

Figure 38 FMWG pole mount configurations



1 Note: The steps in this procedure primarily cover installation on a vertical main pole. The same steps can be followed for installation on a horizontal main pole with corresponding variations to account for the horizontal orientation of the main pole.

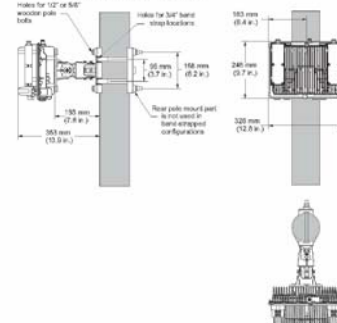
Before you start

CAUTION! Risk of personal injury. Ensure that the selected pole bracket fasteners (band straps, bolts, or screws) and the mounting structure (wall, metal pole, or wooden pole) can sustain the device under required circumstances. The selected fasteners should be rated for outdoor use and be capable of securing the weight of the BTS and pole mount kit hardware. Evaluation of the mounting structure and fastening hardware should be done by a structural engineer prior to installation.

1 NOTICE: Flexi Zone Micro BTS equipment must be installed by trained and qualified service personnel in accordance with all local codes and requirements.

1 NOTICE: Flexi Zone Micro BTS equipment is intended for installation in a restricted access location or equivalent.

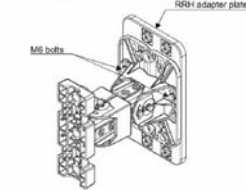
Figure 39 FMWG pole mount dimensions



Procedure

1 Remove the RRH adapter plate from the unit mount assembly.

Figure 39 RRH adapter plate bolts



NOKIA MBO SPEC SHEETS



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1	5/13/21	ISSUED FOR REVIEW	JK	-
2	5/28/21	ISSUED FOR REVIEW	JK	-

2 OMNI DIRECTIONAL ANTENNA SPEC SHEETS 1

SHEET TITLE	
ANTENNA EQUIPMENT SPECIFICATIONS	
SHEET	DGE NO.
A6	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	

1. ALL WORK AND MATERIAL SHALL BE IN COMPLETE COMPLIANCE WITH THE LATEST EDITION OF THE N.E.C. AND ALL REGULATIONS, LAWS, SAFETY ORDERS, ORDINANCES OR CODES. IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.

2. THE SEISMIC BRACING AND ANCHORAGE OF ELECTRICAL CONDUITS AND WIREWAYS SHALL BE IN ACCORDANCE WITH THE UNIFORM BUILDING CODE, CHAPTER 23 AND "GUIDELINE FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS," PUBLISHED BY SMACNA AND FPIC, OR THE SUPERSTRUT-SEISMIC RESTRAINTS SYSTEM, OR THE KIN-LINE SEISMIC RESTRAINT SYSTEM.

3. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING AUTHORITY WHERE (UL) DOES NOT HAVE LISTING. CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY. IN ADDITION, THE MATERIALS, EQUIPMENT, AND INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES AND REGULATIONS:

- AMERICAN SOCIETY OF TESTING MATERIALS (ASTM)
- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
- AMERICAN STANDARD ASSOCIATION (ASA)
- NATIONAL FIRE PROTECTION AGENCY (NFPA)
- AMERICAN NATIONAL STANDARD INSTITUTE (ANSI)
- NATIONAL ELECTRICAL CODE (NEC)
- INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
- ALL LOCAL CODES HAVING JURISDICTION

4. THE CONTRACTOR SHALL VISIT THE SITE, INCLUDING ALL AREAS INDICATED ON THE DRAWINGS, AND SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AS WELL AS THE ELECTRICAL AND GROUNDING REQUIREMENTS OF THIS PROJECT. BY SUBMITTING A BID, HE ACCEPTS THE CONDITIONS UNDER WHICH HE SHALL BE REQUIRED TO PERFORM HIS WORK.

5. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, ADDENDA, DRAWINGS AND SPECIFICATIONS AS WELL AS THE LATEST EDITION OF ANY DESIGN SPECIFICATIONS. HE SHALL CHECK THE DRAWINGS OF THE OTHER TRADES AND SHALL CAREFULLY READ THE ENTIRE SPECIFICATIONS AND DETERMINE HIS RESPONSIBILITIES. FAILURE TO DO SO SHALL NOT RELEASE THE CONTRACTOR FROM THE RESPONSIBILITY OF DOING THE WORK IN COMPLETE ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

6. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE DRAWINGS SHALL BE INCURRED BY THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER AND THE ARCHITECT/ENGINEER IN WRITING PRIOR TO SUBMITTING A BID. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL SUBJECT TO THE INTERPRETATION OF THE PROJECT MANAGER AT NO ADDITIONAL COST.

7. THE CONTRACTOR SHALL OBTAIN AND KEEP UP-TO-DATE A COMPLETE RECORD SET OF DRAWINGS. UPON COMPLETION OF THE WORK, A SET OF REPRODUCIBLE CONTRACT DRAWINGS SHALL BE OBTAINED FROM THE PROJECT MANAGER, AND ALL CHANGES AS NOTED ON THE RECORD SET OF DRAWINGS SHALL BE INCORPORATED THEREON BY THE CONTRACTOR WITH RED INK IN A NEAT, LEGIBLE, UNDERSTANDABLE AND PROFESSIONAL MANNER.

8. ALL INTERRUPTION OF ELECTRICAL POWER SHALL BE KEPT TO A MINIMUM. HOWEVER, WHEN AN INTERRUPTION IS NECESSARY, THE SHUTDOWN MUST BE COORDINATED WITH THE PROJECT MANAGER AND THE PROPERTY OWNER 14 DAYS PRIOR TO THE OUTAGE. ANY OVERTIME PAY SHALL BE INCLUDED IN THE CONTRACTOR'S BID. WORK IN EXISTING SWITCHBOARDS OR PANELBOARDS SHALL BE COORDINATED WITH THE PROJECT MANAGER AND THE BUILDING OWNER PRIOR TO REMOVING ACCESS PANELS OR DOORS.

9. SHOP DRAWINGS SHALL BE SUBMITTED FOR ITEMS INDICATED ON PLANS. SHOP DRAWINGS SHALL INCLUDE ALL DATA WITH CAPACITIES, SIZES, DIMENSIONS, CATALOG NUMBERS AND MANUFACTURER'S BROCHURES.

10. AFTER ALL REQUIREMENTS OF THE SPECIFICATIONS AND THE DRAWINGS HAVE BEEN FULLY COMPLETED, THE PROJECT MANAGER WILL INSPECT THE WORK. THE CONTRACTOR SHALL PROVIDE COMPETENT PERSONNEL TO DEMONSTRATE THE OPERATION OF ANY ITEM OR SYSTEM TO THE FULL SATISFACTION OF THOSE REPRESENTATIVES. FINAL ACCEPTANCE OF THE WORK WILL BE MADE BY THE PROJECT MANAGER AFTER RECEIPT OF APPROVAL AND RECOMMENDATION OF ACCEPTANCE FROM EACH REPRESENTATIVE.

11. THE CONTRACTOR SHALL FURNISH ONE YEAR WRITTEN GUARANTEE OF MATERIALS AND WORKMANSHIP FROM THE DATE OF SUBSTANTIAL COMPLETION.

12. COORDINATE WITH OTHER TRADES AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT. SUPPLY POWER AND MAKE CONNECTION TO EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. REVIEW THE DRAWINGS OF OTHER TRADES AND LOCATION OF EQUIPMENT.

13. EXACT METHOD AND LOCATION OF CONDUIT PENETRATIONS AND OPENINGS IN CONCRETE WALLS OR FLOORS OR STRUCTURAL STEEL MEMBERS, SHALL BE DIRECTED BY THE STRUCTURAL ENGINEER. PERFORM CORING, SAWCUTTING, PATCHING, AND REFINISHING OF EXISTING WALLS AND SURFACES WHEREVER IT IS NECESSARY TO PENETRATE. OPENINGS SHALL BE SEALED IN AN APPROVED METHOD TO MEET THE FIRE RATING OF THE PARTICULAR WALL, FLOOR, OR CEILING.

14. UTILITY PENETRATIONS OF ANY KIND IN FIRE AND SMOKE PARTITIONS AND CEILING ASSEMBLIES, SHALL BE FIRESTOPPED AND SEALED WITH AN APPROVED MATERIAL SECURELY INSTALLED.

15. CONNECTIONS TO VIBRATING EQUIPMENT AND SEISMIC SEPARATIONS:
LIQUID-TIGHT FLEXIBLE STEEL CONDUIT IN DRY INTERIOR LOCATIONS AND IN AREAS EXPOSED TO WEATHER, DAMP LOCATIONS, CONNECTIONS TO TRANSFORMER ENCLOSURES, AND FINAL CONNECTIONS TO MOTORS.

PROVIDE A SEPARATE INSULATED GROUNDING CONDUCTOR IN FLEXIBLE CONDUIT RUNS. MAXIMUM LENGTH SHALL BE SIX FEET UNLESS OTHERWISE NOTED.

16. ROUTE EXPOSED AND CONCEALED CONDUIT PARALLEL AND PERPENDICULAR TO WALL AND ADJACENT PIPING. ARRANGE CONDUIT TO MAINTAIN HEADROOM AND TO PRESENT A NEAT APPEARANCE.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAWCUTTING, TRENCHING, BACKFILLING, COMPACTING AND PATCHING OF CONCRETE AND ASPHALT AS REQUIRED TO PERFORM HIS WORK. ATTENTION IS CALLED TO THE FACT THAT THERE ARE EXISTING UNDERGROUND UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION AND COORDINATION WITH ALL PROPERTY OWNERS, UTILITIES, AND APPROPRIATE "DIG ALERT" UNDERGROUND MARKING AGENCIES AND COMPANIES. THE CONTRACTOR SHALL ALWAYS USE EXTREME CAUTION WHEN TRENCHING FOR HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER AND APPROVED REPAIR OF ANY AND ALL DAMAGES CAUSED DURING THE COURSE OF HIS WORK.

18. WHENEVER A DISCREPANCY IN QUANTITY OR SIZE OF CONDUIT, WIRE, EQUIPMENT DEVICES, CIRCUIT BREAKERS, GROUND FAULT PROTECTION SYSTEMS, ETC. (ALL MATERIALS), ARISES ON THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE AND OPERABLE SYSTEMS AS REQUIRED BY THE PROJECT MANAGER AND THE ARCHITECT/ENGINEER.

19. STRAIGHT FEEDER, BRANCH CIRCUIT, AND CONDUIT RUNS SHALL BE PROVIDED WITH SUFFICIENT WEATHER PROOF PULL BOXES OR JUNCTION BOXES TO LIMIT THE MAXIMUM LENGTH OF ANY SINGLE CABLE PULL TO 100 FEET. PULL BOXES SHALL BE SIZED PER CODE OR PER THE LATEST EDITION OF THE DESIGN SPECIFICATIONS, WHICHEVER IS MOST RESTRICTIVE. LOCATIONS SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

20. MAXIMUM NUMBER OF CONDUCTORS IN OUTLET SHALL BE DETERMINED IN THE FIELD OR AS INDICATED ON THE DRAWINGS.

21. IDENTIFICATION NAME PLATES SHALL BE MICARTA 1/8 INCH THICK AND OF APPROVED SIZE WITH BEVELED EDGES AND ENGRAVED WHITE LETTERS A MINIMUM OF 1/4 INCH HIGH ON BLACK BACKGROUND. NAMEPLATES SHALL BE PROVIDED ALL CIRCUITS IN THE SERVICE DISTRIBUTION AND POWER DISTRIBUTION SWITCH BOARDS OR PANEL BOARDS, DISCONNECTING SWITCHES, TRANSFORMERS, TERMINAL CABINETS, TELEPHONE CABINETS, ETC. ALL NAMEPLATES SHALL BE ATTACHED WITH SCREWS. PULL BOXES, JUNCTION BOXES, AND DEVICE BOXES SHALL BE MARKED WITH A PERMANENT MARKER.

22. THE EXACT LOCATION OF ALL ELECTRICAL DEVICES AND EQUIPMENT SHALL BE COORDINATED WITH THE PLANS AND DETAILS, PRIOR TO INSTALLATION.

23. DRAWINGS ARE DIAGRAMMATIC ONLY. ROUTING OF RACEWAYS SHALL BE AT THE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED ON THE ELECTRICAL DRAWINGS FOR LOCATIONS OF ANY ELECTRICAL, ARCHITECTURAL, STRUCTURAL, CIVIL, OR MECHANICAL ITEMS OR FEATURES.

24. RIGID GALVANIZED STEEL CONDUIT SHALL BE FULL WEIGHT THREADED TYPE. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED IN WALLS OR CEILING SPACES WHERE NOT SUBJECT TO MECHANICAL DAMAGE. DIRECT BURIED PVC SCHEDULE 40 MAY BE INSTALLED BENEATH SLAB OR BELOW GRADE AND SHALL BE CONCRETE ENCASED UNLESS NOTED OTHERWISE. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED IN ALL CONDUIT RUNS. PROVIDE CONDUIT SUPPORTS NOT TO EXCEED 8'-0". PROVIDE 3-PC CONNECTORS FOR SECONDARY GROWTH PATH OF SURFACE MOUNTED EMT.

25. RIGID STEEL CONDUIT FITTINGS INCLUDING COUPLINGS, LOCKOUTS, NIPPLES, ETC. SHALL BE THREADED AND THOROUGHLY GALVANIZED EXCEPT WHERE AN ADAPTER IS NEEDED TO CONNECT TO PVC. ELECTRICAL METALLIC TUBING (EMT) CONDUIT FITTINGS SHALL BE STEEL, RAIN-TIGHT THREADLESS COMPRESSION TYPE. DIE CAST, SET SCREW, OR INDENTED TYPES ARE NOT ACCEPTABLE. SET SCREW TYPE IS NOT ACCEPTABLE.

26. ALL TELCO CONDUIT INSTALLATIONS AND OTHER EMPTY CONDUIT RUNS AND STUBS SHALL INCLUDE A YELLOW 3/8" POLYPROPYLENE PULL STRING.

27. ALL CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM SIZE, TYPE THHN/THWN THERMOPLASTIC, 600 VOLT, 75 DEGREES CELSIUS WET AND 90 DEGREES CELSIUS DRY AND UL LISTED UNLESS NOTED OTHERWISE. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. UNLESS SPECIFICALLY NOTED TO THE CONTRARY. ALL WIRE CONNECTORS SHALL BE CRIMP COMPRESSION TYPE BY "THOMAS AND BETT" OR APPROVED EQUIVALENT, INSTALLED AND INSULATED PER THE MANUFACTURER'S RECOMMENDATIONS. ALL WIRE ENDS SHALL BE MARKED FOR EASY IDENTIFICATION AND TRACING.

28. JUNCTION AND PULL BOXES: FOR INTERIOR DRY LOCATIONS, BOXES SHALL BE GALVANIZED ONE-PIECE, DRAWN STEEL, KNOCKOUT TYPE WITH REMOVABLE MACHINE SCREW SECURED COVERS. FOR OUTSIDE, DAMP, OR SURFACE LOCATIONS, BOXES SHALL BE HEAVY CAST ALUMINUM OR CAST IRON WITH REMOVABLE, GASKETS, NON-FERROUS MACHINE SCREW SECURED COVERS. BOXES SHALL BE SIZED FOR THE NUMBER AND SIZES OF CONDUCTORS AND CONDUIT ENTERING THE BOX AND EQUIPPED WITH PLASTER EXTENSION RINGS WHERE REQUIRED. BOXES SHALL BE LABELED TO INDICATE PANEL AND CIRCUIT NUMBER, OR TYPE OF SIGNAL OR COMMUNICATIONS SYSTEM.

29. ALL OUTDOOR ELECTRICAL DEVICES OR EQUIPMENT SHALL BE OF WEATHERPROOF TYPE.

30. ALL EQUIPMENT, MONOPOLE, FRAME, CABLE TRAY AND ANTENNA GROUND WIRE CONNECTIONS TO GROUND BUSSES SHALL BE MADE WITH CRIMP TYPE COMPRESSION CONNECTIONS TO CONNECTORS (MINIMUM 2 HOLE LUGS WITH FULL BOLTING). BUSS SHALL BE PRE-DRILLED TO ACCOMMODATE ALL CONNECTORS.

31. ALL GROUNDING SHALL BE PER N.E.C. SECTION 250 AND 810 AND THE GROUNDING REQUIREMENTS OF THESE DRAWINGS.

32. ALL GROUND WIRE CONNECTIONS BETWEEN GROUND BUSSES AND OTHER GROUND BUSSES AND GROUND RODS SHALL BE CADWELDED.

33. ALL METALLIC GROUND WIRE CONDUIT SHALL BE GROUNDED TO THE GROUND WIRE USING SET SCREW CONNECTIONS AT CONDUIT END CAPS AND CRIMP CONNECTIONS AT WIRE.

34. COAT ALL BOLTED LUG & BUSS GROUND CONTACT SURFACES WITH KIPR-SHIELD, NO-OX, OR EQUAL PRIOR TO ATTACHMENT.

35. MAIN CIRCUIT BREAKER SHALL BE RATED FOR STANDARD A.I.C. RATING HIGHER THAN INCOMING A.I.C.

36. ALL EQUIPMENT SHALL BE U.L. LISTED.

37. ALL EQUIPMENT SHALL BE BRACED FOR STANDARD A.I.C. RATING HIGHER THAN INCOMING FROM UTILITY COMPANY.

38. ALL CORING CLEARANCES SHALL BE FIELD VERIFIED AND ALL CONDUIT ROUTING SHALL BE COORDINATED WITH PROPERTY OWNERS REPRESENTATIVE.

39. ALL CONNECTIONS TO EXISTING MAIN SWITCHGEAR INCLUDING "BUS-TAPS" AND/OR "HOT-TAPS" REQUIRE CERTIFICATION AND APPROVAL. FABRICATION AND CERTIFICATION SHALL BE FURNISHED BY A CONTRACTOR APPROVED BY THE APPLICABLE UTILITY.

40. CONTRACTOR SHALL COORDINATE WORK WITH UTILITY COMPANIES FOR FINAL AND EXACT WORK AND MATERIAL REQUIREMENTS, CONSTRUCT TO UTILITY COMPANIES ENGINEERING PLANS AND SPECIFICATIONS ONLY.

41. ALL BROCHURES, OPERATION MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE PROJECT MANAGER AT THE COMPLETION OF WORK.

42. SWITCHES AND RECEPTACLES AS SPECIFIED ON FLOOR PLANS.

1. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE POINT OF CONNECTION, CONDUIT ROUTE, INSTALLATION DETAILS AND SPECIFIC PROJECT PARAMETERS WITH THE LOCAL TELEPHONE COMPANY SINGLE POINT OF CONTACT (SPOC) PRIOR TO BEGINNING ANY WORK IN THE FIELD.

2. THE PROJECT ADDRESS AND ANY SPECIFIC UNIT NUMBER MUST BE PROVIDED TO THE LOCAL TELEPHONE COMPANY SPOC MINIMUM 1 WEEK PRIOR TO FINAL INSPECTION TO AVOID DELAY IN INSTALLATION OF SERVICE.

3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUIT AND FACILITIES AS SHOWN AND DETAILED ON THE PLANS AS REQUIRED FOR T1 SERVICE AND A SINGLE POTS LINE TO THE BTS FACILITY.

4. THE TELEPHONE TERMINAL BACKBOARD SHALL BE 30"x8"-0"x5/8" THICK FIRE RATED PLYWOOD SANDED AND PAINTED WITH FIRE RATED PAINT. MOUNT BACKBOARD BOTTOM AT 6" A.F.F. PROVIDE MINIMUM 12" CLEARANCE FROM POWER ON THE SAME WALL AND 42" MINIMUM CLEARANCE FROM ADJOINING OR OPPOSITE WALLS. VERIFY WIDTH.

5. CONDUIT SPECIFICATIONS SHALL BE AS FOLLOWS:
a. GENERAL: ALL TELEPHONE SERVICE CONDUIT SHALL RUN FROM POLE, VAULT, PULL-BOX, MANHOLE OR OTHER POINT OF CONNECTION ESTABLISHED BY THE LOCAL TELEPHONE COMPANY SPOC AND SHALL RUN CONTINUOUS TO AN EDGE OF THE TELEPHONE TERMINAL BACKBOARD.

b. UNDERGROUND CONDUIT AND BENS SHALL BE MINIMUM 4" DIAMETER SCHEDULE 40 PVC. TRENCH DEPTH SHALL PROVIDE FOR MINIMUM 24" COVER OVER CONDUIT. CONDUIT RUN SHALL BE NO MORE THAN 200 FEET IN LENGTH OR HAVE NO MORE THAN (2) 90° BENDS (OR EQUIVALENT) BETWEEN PULL BOXES.

c. ABOVE GROUND CONDUIT AND CONDUIT INSIDE BUILDINGS SHALL BE EMT WITH FITTINGS AS NOTED IN ELECTRICAL NOTES. PROVIDE A UL APPROVED 18" HIGH x 10" DEEP WEATHER RESISTANT NEMA 3R RATED PULL BOX ON ALL ABOVE GRADE CONDUIT RUNS AT INTERVALS NOT TO EXCEED 100 FEET OR (2) 90° BENDS (OR EQUIVALENT).

d. OVERHEAD EXTERIOR FEEDS SHALL BE 4" DIAMETER RIGID GALVANIZED CONDUIT WITH A WEATHERHEAD OF A TYPE AND AT A HEIGHT APPROVED BY LOCAL TELEPHONE COMPANY SPOC (MINIMUM 20 FEET ABOVE FINISHED GRADE).

6. A 1-1/4" DIAMETER ORANGE INTER-DUCT SHALL BE PROVIDED IN ALL TELEPHONE SERVICE CONDUIT.

7. A MINIMUM 3/8" YELLOW POLYPROPYLENE PULL ROPE SHALL BE INCLUDED IN EVERY INTER-DUCT WITH A SEPARATE 3/8" YELLOW POLYPROPYLENE PULL ROPE INSIDE THE CONDUIT, NOT INSIDE THE INTER-DUCT.

8. THE ELECTRICAL CONTRACTOR SHALL VERIFY AVAILABILITY OR SHALL PROVIDE A NEW 120V POWER SOURCE MINIMUM 12" FROM TELEPHONE TERMINAL BACKBOARD.

9. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A #6 SOLID INSULATED COPPER GROUND WIRE FROM A GROUND SOURCE APPROVED BY THE LOCAL TELEPHONE COMPANY SPOC MINIMUM STANDARD SOURCE SHALL BE A 5/8" DIAMETER x 8'-0" LONG COPPER CLAD STEEL GROUND ROD.

10. ALL WIRING SHALL BE DONE BY THE LOCAL TELEPHONE COMPANY UNLESS OTHERWISE NOTED.

11. ALL TELEPHONE CONDUIT SHALL BE LABELED AT DESIGNATED TELEPHONE COMPANY.

TELEPHONE SPECIFICATIONS **1**


1. UTILITY POINTS OF SERVICE AND WORK / MATERIALS SHOWN ARE BASED UPON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.

2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK / MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL ROPES, CABLES, PULL BOXES, CONCRETE ENCASUREMENT OF CONDUIT (IF REQUIRED), TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING, BACKFILL, PAY ALL UTILITY COMPANY FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.

3. UTILITY CONTACTS FOR THIS PROJECT SHALL BE AS FOLLOWS:

POWER:	TELEPHONE:
TBD	TBD
.	.
.	.
CONTACT NAME	CONTACT NAME
CONTACT NUMBER	CONTACT NUMBER

ELECTRICAL SPECIFICATIONS **3** **UTILITIES NOTES** **2**



2700 WATT AVENUE, 3473-34
SACRAMENTO, CA 95821

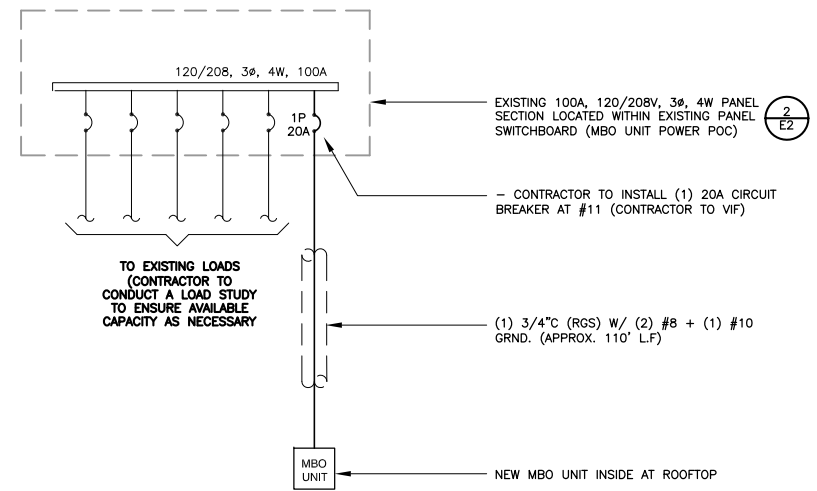
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2	5/28/21	ISSUED FOR REVIEW	JK	.

SHEET TITLE	
ELECTRICAL & TELEPHONE SPECIFICATIONS & UTILITIES NOTES	
SHEET	DGE NO.
E1	P21AT008
	SITE NAME
	SAINT VINCENT DE PAUL HS



NOTES:

- FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO DRAWINGS PROVIDED BY PANEL MANUFACTURER.
- ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
- SUBCONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.
- POWER CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG AND LARGER), 600V, OIL RESISTANT THN OR THN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 DEGREE CELSIUS (WET & DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED.

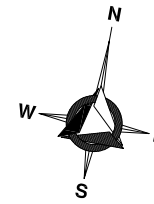
PANEL SCHEDULE (EXISTING PANEL) 1

A.I.C.	(E) 100A PANEL												MAIN	100	
	120/208V, 3-PHASE, 4-WIRE														BUS
SURFACE MOUNT	WATTAGE			LTS	REC	MSC	CB			CRC	CRC	WATTAGE			DESCRIPTION
	A	B	C				P/A	P/A	P/A			A	B	C	
LIGHTS NORTH ROW				1			1P / 20A	1	2	1P / 20A					1ST & 3RD PLUGS ON SOUTH
LIGHTS SOUTH ROW				1			1P / 20A	3	4	1P / 20A					2ND & 4TH PLUGS ON SOUTH
CIR. PUM P3 & P4						1	1P / 20A	5	6	1P / 20A	1				BOILER #1 & #2
UNKNOWN						1	1P / 20A	7	8	1P / 20A	1				AIR COMP
KILN						1	1P / 40A	9	10	1P / 20A	1				BACK NEW
(N) AT&T MBO UNIT	360					1	1P / 20A	11	12	1P / 20A	1				BACK NEW
PHASE SUB-TOTALS	360	0	0									0	0	0	PHASE SUB-TOTALS
PHASE TOTALS (WATTS)	A	360											1.00	A	PHASE TOTALS (AMPS)
	B	0											0.00	B	
	C	0											0.00	C	
PANEL TOTAL (WATTS)	360												1.00	ADDITIONAL PANEL TOTAL (AMPS)	

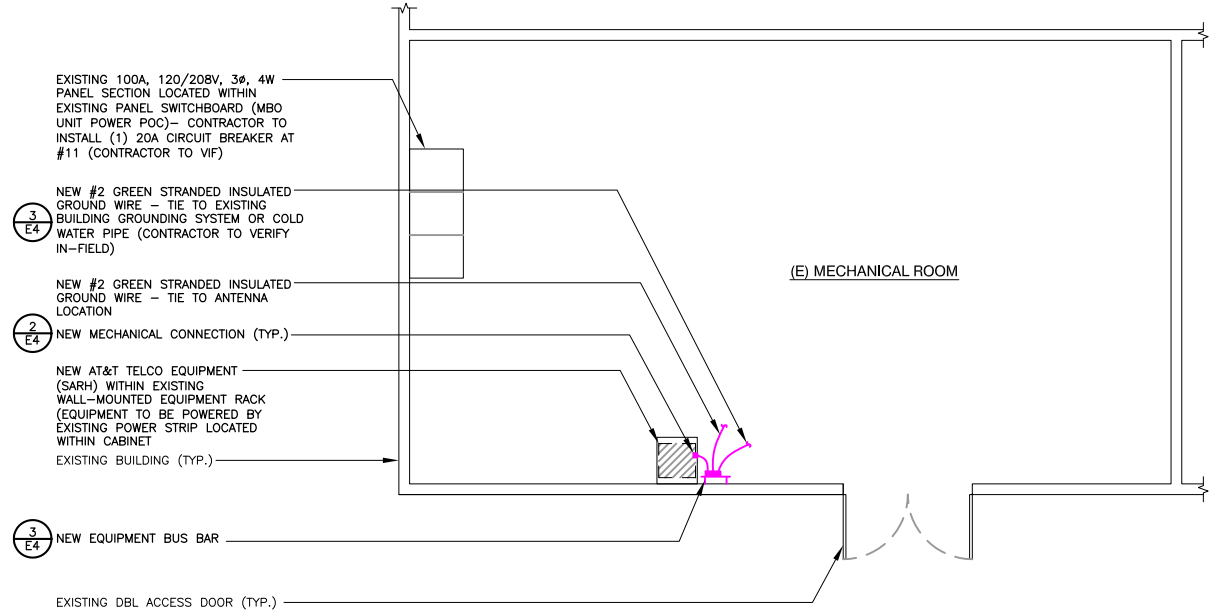
1. ALL CIRCUIT BREAKERS AND/OR FUSES SHALL BE FULLY RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT INDICATED.

PANEL SCHEDULE (EXISTING PANEL MAINTENANCE ROOM) 2

<p>2700 WATT AVENUE, 3473-34 SACRAMENTO, CA 95821</p>	<p>SAINT VINCENT DE PAUL HS NOKIA MBO FA NO. 15456805</p> <p>849 KEOKUK ST. PETALUMA, CA 94952</p>	<p>DELTA GROUPS ENGINEERING, INC. CONSULTING ENGINEERS</p> <p>6800 KOLL CENTER PARKWAY, SUITE 225 PLEASANTON, CA 94566 TEL: (925) 468-0115 FAX: (925) 468-0355</p>	REV.	DATE	DESCRIPTION	BY	CHK	SHEET TITLE
			1	5/13/21	ISSUED FOR REVIEW	JK	-	
2	5/28/21	ISSUED FOR REVIEW	JK	-	SHEET	DGE NO.		
					E2.2	P21AT008		
						SITE NAME	SAINT VINCENT DE PAUL HS	

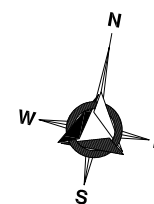


NOTES:
 1. DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.

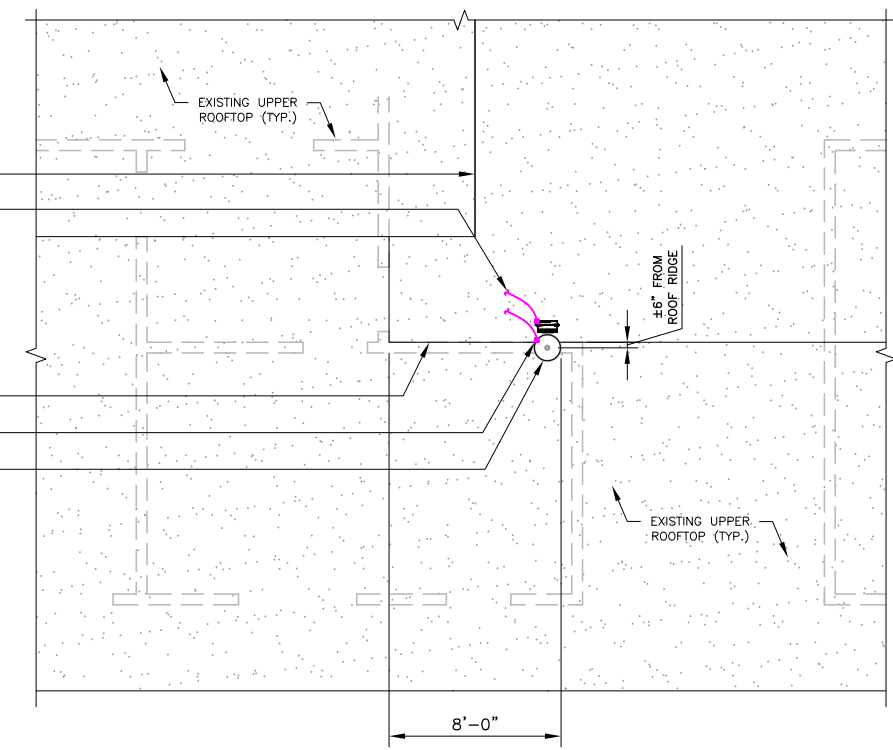


EQUIPMENT GROUNDING PLAN

1



- EXISTING UPPER ROOF EAVES (TYP.)
- NEW #2 GREEN STRANDED INSULATED GROUND WIRE - TIE TO EXISTING BUILDING GROUNDING SYSTEM OR COLD WATER PIPE (CONTRACTOR TO VERIFY IN-FIELD) - TYP.
- EXISTING BUILDING ROOF RIDGE
- NEW MECHANICAL CONNECTION (TYP.)
- LOCATION OF ONE (1) NEW AT&T OUTDOOR OMNI ANTENNA MOUNTED TO EXISTING BUILDING ROOFTOP W/ ONE (1) NEW MBO UNIT



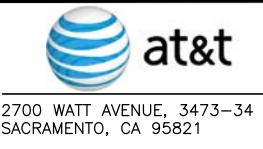
NOTES:
 1. DO NOT SCALE DRAWINGS. ALL DIMENSIONS OF AND BETWEEN EXISTING BUILDINGS/STRUCTURES, OR RELATIVE DISTANCES AS SHOWN BETWEEN EXISTING BUILDINGS/STRUCTURES AND THE TRUE NORTH ARE TO BE CONFIRMED BY THE SURVEYOR.

ANTENNA GROUNDING PLAN

SCALE: 1/4 inch = 1 ft

2

UNUSED

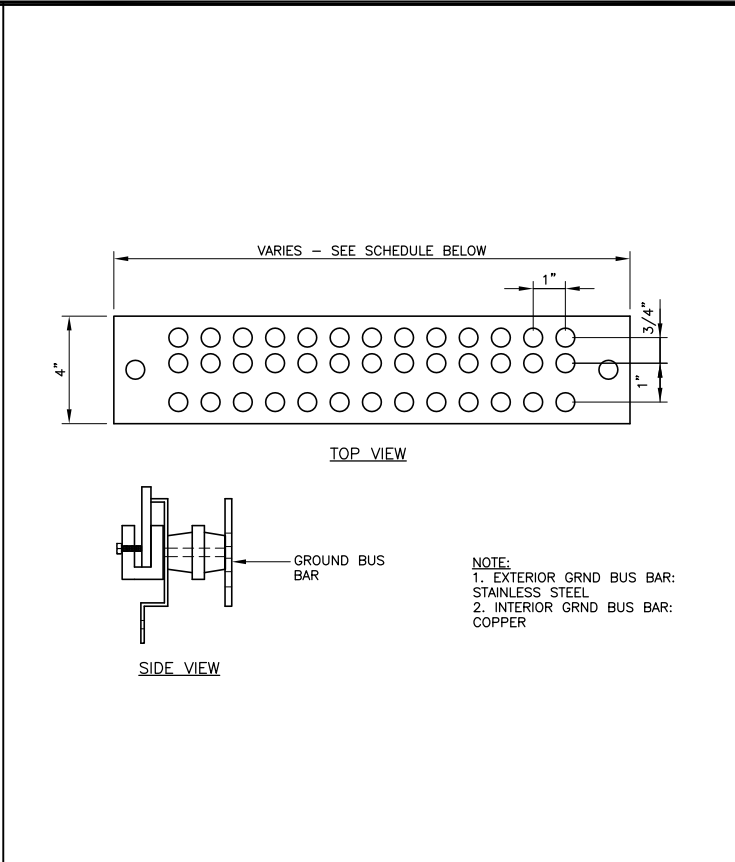
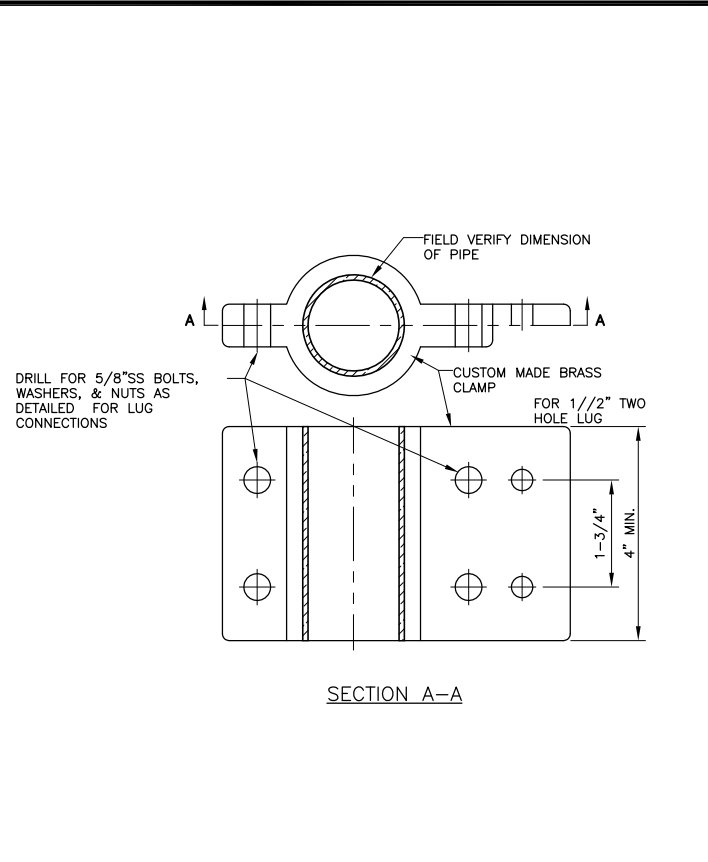


**SAINT VINCENT DE PAUL HS
 NOKIA MBO
 FA NO. 15456805**
 849 KEOKUK ST.
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**DELTA GROUPS
 ENGINEERING, INC.**
 CONSULTING ENGINEERS
 6800 KOLL CENTER PARKWAY, SUITE 225
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 TEL: (925) 468-0115 FAX: (925) 468-0355

REV.	DATE	DESCRIPTION	BY	CHK
1	5/13/21	ISSUED FOR REVIEW	JK	-
2	5/28/21	ISSUED FOR REVIEW	JK	-

SHEET TITLE	
EQUIPMENT & ANTENNA GROUNDING PLANS	
SHEET	DGE NO.
E3	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	



1. PROVIDE A COMPLETE GROUNDING SYSTEM PER NATIONAL ELECTRICAL CODE ARTICLE 250 AND EQUIPMENT MANUFACTURER'S REQUIREMENTS. USE THESE DRAWINGS AS MINIMUM GUIDELINE TO IMPLEMENT CARRIER AND EQUIPMENT CABINET MANUFACTURER SPECIFICATIONS.
2. ALL DETAILS ARE SHOWN IN GENERAL TERMS, ACTUAL GROUNDING INSTALLATION AND MOUNTING MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
3. ALL GROUNDING CONDUCTORS SHALL BE COPPER.
4. ALL GROUNDING WIRE BELOW GRADE SHALL BE BARE #2 TINNED SOLID COPPER WIRE BURIED @ 18" MINIMUM. ALL CONDUIT BELOW GRADE SHALL BE PVC SCHEDULE 80.
5. ALL GROUND WIRE ABOVE GRADE IS STRANDED COPPER (UNO). SIZE AS SHOWN ON PLANS.
6. USE MINIMUM #2/0 AWG COPPER CONDUCTORS FOR COMMUNICATION SERVICE GROUNDING CONDUCTORS.
7. ALL GROUND CONNECTIONS SHALL BE LISTED FOR THE PURPOSED INTENDED.
8. ALL LUGS SHALL BE 2-HOLE LONG-BARREL SOLID COPPER BURNDY THOMAS & BETTS OR EQUAL.
9. MINIMUM BEND RADIUS FOR GROUNDING CONDUCTORS #2 AND LARGER SHALL BE 12", 8" MINIMUM RADIUS FOR SMALL CONDUCTORS.
10. ALL CONNECTIONS AT BELOW GRADE APPLICATIONS SHALL BE CADWELD.
11. ALL IRREVERSIBLE COMPRESSION TYPE CONNECTORS SHALL BE INSTALLED USING A 12 TON HYDRAULIC PRESS MINIMUM.
12. INSTALL GROUNDING AND BONDING CONDUCTORS WITH SUFFICIENT SLACK TO AVOID BREAKING DUE TO SETTLEMENT AND MOVEMENTS OF CONDUCTORS AT ATTACHED POINTS.
13. COAT ALL BOLTED LUG & BUS GROUND CONTACT SURFACES WITH KOPR-SHEILD, NO-OX, OR PRIOR TO ATTACHMENT.
14. GROUNDING RODS SHALL BE 5/8" DIAMETER x10'-0" LONG COPPER CLAD STEEL.
15. WHERE MULTIPLE GROUND RODS ARE INSTALLED, THEY SHALL NOT BE LESS THAN 10 FEET NOR MORE THAN 16 FEET APART UNLESS APPROVED BY THE CARRIER REPRESENTATIVE, OR CONSTRUCTION MANAGER.
16. DRIVEN GROUND RODS SHALL BE USED EXCEPT WHERE SPECIFIC SITE CONDITIONS PRESENT DIFFICULTY, IN WHICH CASE A ELECTROLYTIC (CHEMICAL) ROD SYSTEMS MAY BE USED, SUCH AS MANUFACTURED BY LYNCOLE KIT GROUNDING SYSTEM OR EQUAL.
17. CONTRACTOR SHALL TEST GROUND RESISTANCE AT "MGB" TO VERIFY THAT RESISTANCE SHALL NOT EXCEED 5 OHMS AND SHALL SUBMIT AN INDEPENDENT TESTING REPORT TO ATTFWS REPRESENTATIVE, OR CONSTRUCTION MANAGER INDICATING RESISTANCE VALUE OBTAINED. CONTRACTOR SHALL PROVIDE GROUNDING SYSTEM AS PART OF ITS BID, AS REQUIRED TO ATTAIN A 5 OHM VALUE OR LESS.
18. TESTING: PERFORM FULL FALL OF POTENTIAL TEST PER EEE STANDARD NO. 81: SECTION 9.04 ON THE MAIN GROUNDING REQUIREMENTS.
19. FINAL GROUND TEST SHALL BE MADE IN PRESENCE OF THE CARRIER REPRESENTATIVE, OR CONSTRUCTION MANAGER.

UNUSED

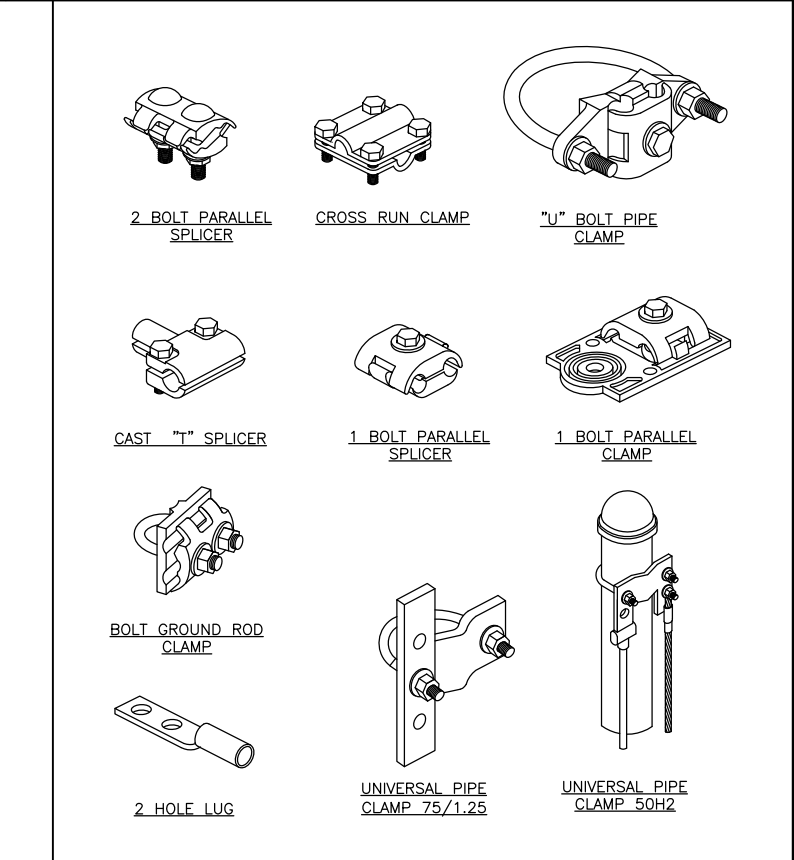
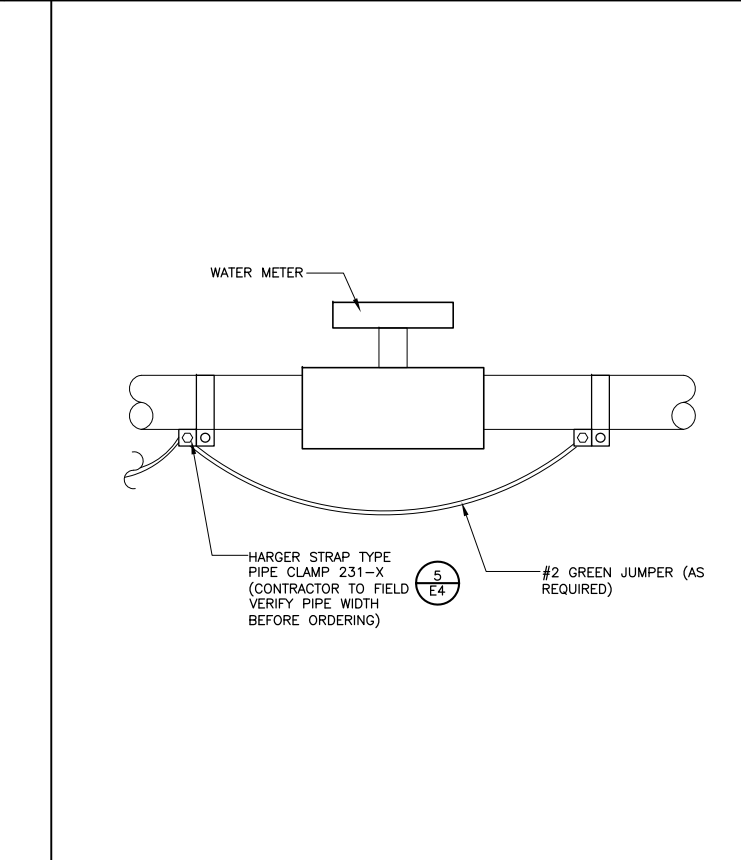
GROUNDING PIPE CLAMP

5 EQUIPMENT BUS BAR

3 GENERAL GROUNDING NOTES

UNUSED

UNUSED



UNUSED

2

GROUND TO COLD WATER PIPE

MECHANICAL CONNECTIONS



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SHEET TITLE	
GENERAL GROUNDING NOTES, AND GROUNDING DETAILS	
SHEET	DGE NO.
E4	P21AT008
SITE NAME	
SAINT VINCENT DE PAUL HS	