



Certificate of Appropriateness

Milwaukee Historic Preservation Commission/200 E. Wells Street/Milwaukee, WI 53202/phone 414-286-5712/fax 414-286-3004

Property 1337 W. FOREST HOME AV. Mitchell Street HD
Description of work Project consists of replacing equipment on three existing support structures and partial limited reconfiguration of those support structures.
Date issued 5/23/2018 PTS ID 114502 COA: cell antennae

In accordance with the provisions of Section 320-21 (11) and (12) of the Milwaukee Code of Ordinances, the Milwaukee Historic Preservation Commission has granted a certificate of appropriateness for the work listed above. The work was found to be consistent with preservation guidelines. The following conditions apply to this certificate of appropriateness:

The Commission has approved this proposal only as a minor alteration to existing equipment that had been previously approved. The Commission's approval in this case does not constitute a precedent for reviewing such an installation as a new installation under the current guidelines.

All work must be done in a craftsman-like manner, and must be completed within one year of the date this certificate was issued. Staff must approve any changes or additions to this certificate before work begins. Work that is not completed in accordance with this certificate may be subject to correction orders or citations. If you require technical assistance, please contact the Historic Preservation staff as follows: Phone: (414) 286-5712 E-mail: hpc@milwaukee.gov.

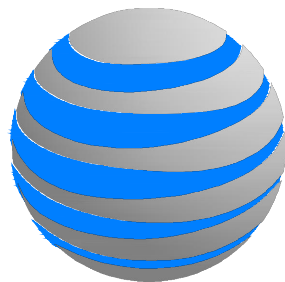
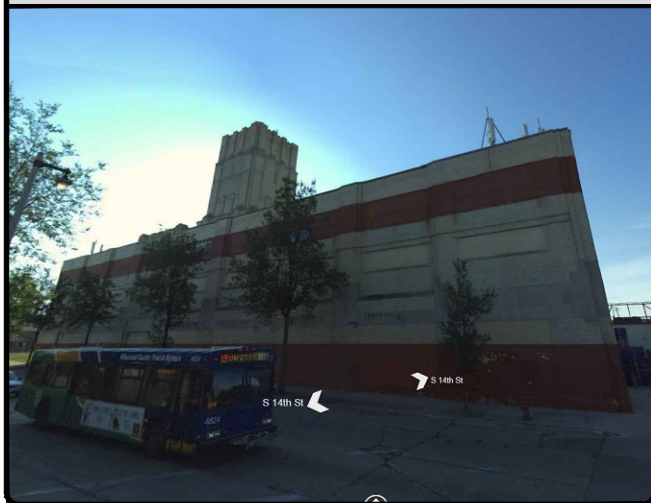
If permits are required, you are responsible for obtaining them from the Milwaukee Development Center. If you have questions about permit requirements, please consult the Development Center's web site, www.milwaukee.gov/build, or call (414) 286-8210.

City of Milwaukee Historic Preservation Staff

Copies to: Development Center, Ald. Jose Perez, DPW

1 of 1 pages plus 23 oversize sheet attachments

TOWER ELEVATION



at&t

930 NATIONAL PARKWAY
SHAUMBERG, IL 60173

SITE NAME:

FA # / SITE ID:

PROJECT TYPE:

SITE ADDRESS:

SITE JURISDICTION:

STRUCTURE TYPE:

EL REY

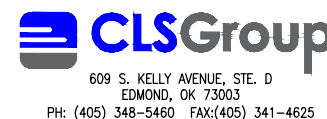
10012401 / WI0195

**LTE 4C/LTE 5C/LTE 6C/
RRU SWAP**

1337 WEST FOREST HOME AVE.

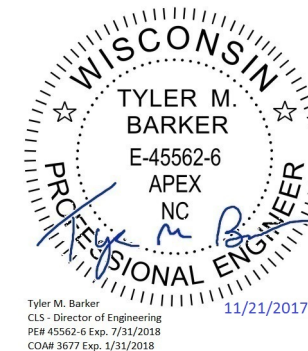
CITY OF MILWAUKEE

**COLLOCATION 111'-6"
ROOFTOP**



COA# 3677 EXP. 01/31/2018

REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	10/03/17	PRELIMINARY ISSUE	JLK
0	11/21/17	FOR CONSTRUCTION	PWD
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET			



PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

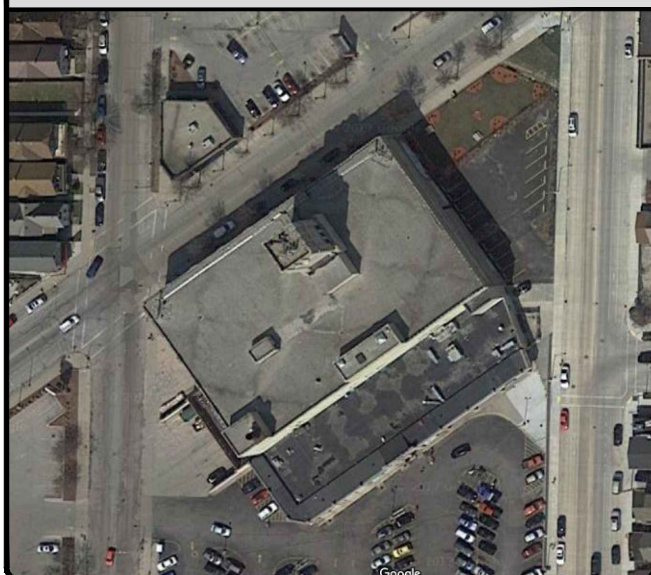
SHEET TITLE

TITLE SHEET

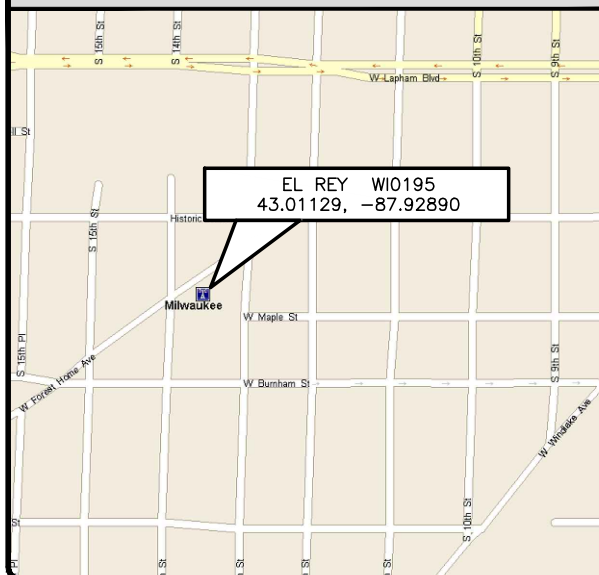
SHEET NUMBER

T1

AERIAL PHOTO



LOCATION MAP



PROJECT INFORMATION

LATITUDE: (NAD 83) 43.01129°
LONGITUDE: (NAD 83) -87.92890°

SITE ADDRESS: WI0195-EL REY
1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

GROUND ELEVATION: 645' AMSL

MARKET: WISCONSIN-ILLINOIS

JURISDICTION: CITY OF MILWAUKEE

COUNTY: MILWAUKEE

PARENT PACE ID: MRCHIO29013

CHILD PACE IDs: MRCHIO29066/MRCHIO29104/
MRCHIO29205

PTN NUMBERS: 3352A0CMHM/3352A0CRGB/33520CQ5Q/
3352A0CPK9

OCCUPANCY TYPE: UNMANNED

A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR
HUMAN HABITATION.

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T1	TITLE SHEET	0
GN1	GENERAL NOTES	0
A1	COMPOUND PLAN	0
A2	EXISTING EQUIPMENT PLAN	0
A2.1	PROPOSED EQUIPMENT PLAN	0
A3	TOWER ELEVATIONS	0
A4	ANTENNA PLANS/ANTENNA SCHEDULE	0
A5	EQUIPMENT DETAILS	0
A6	EQUIPMENT DETAILS	0
A7	EQUIPMENT DETAILS	0
A8	EQUIPMENT DETAILS	0
E1	UTILITY PLAN	0
G1	GROUNDING DETAILS	0
G2	GROUNDING DETAILS	0
G3	GROUNDING DETAILS	0
ADDENDUM	MOUNT REPLACEMENT/REINFORCEMENT	-

SCOPE OF WORK

TOWER SOW:

- MOUNTS ON ALPHA AND GAMMA TO BE REPLACED AND MOUNTS ON BETA TO BE REINFORCED AS PER MOUNT ANALYSIS DONE BY CLS GROUP PROJECT #24015-10012401-02-MOD, DATED NOVEMBER 16, 2017.
- DECOMMISSION AND CAP OFF GSM AND UMTS 1900.
- REPLACE (1) EXISTING DBXNH-6565B-R2M ANTENNA IN POSITION 4 WITH (1) PROPOSED NHH-65B-R4 ANTENNA EACH SECTOR.
- INSTALL (1) PROPOSED RRUS-32 B66A AND (1) PROPOSED RRUS-4478 IN POSITION 4 EACH SECTOR.
- RELOCATE UMTS 850 (RRUW) COAX TO POSITION 1 EACH SECTOR.
- REMOVE (6) EXISTING DC2 AND (2) EXISTING FC12.
- INSTALL (1) PROPOSED DC6-48-60-18-8C EACH SECTOR.
- INSTALL (2) PROPOSED 8:6 DC POWER TRUNKS, (1) PROPOSED FIBER TRUNK AND (1) PROPOSED ALARM CABLE FOR EACH PROPOSED SQUID.
- REPLACE (1) EXISTING SBNHH-1D65C ANTENNA IN POSITION 2 WITH (1) PROPOSED JAHH-65B-R3B ANTENNA EACH SECTOR.
- REPLACE (1) EXISTING RRUS-12/A2 IN POSITION 2 WITH (1) PROPOSED RRUS-32 B2 AND (1) PROPOSED RRUS-12 EACH SECTOR.

GROUND SOW:

- REPLACE EXISTING DUS WITH (2) PROPOSED 5126.
- INSTALL (1) PROPOSED 6601.
- INSTALL (1) PROPOSED INSTALL XMU AND (1) IDLe.
- INSTALL (1) PROPOSED DC12 RAYCAP IN EXISTING FIF RACK.
- INSTALL (6) 30 AMP AND (7) 25 AMP BREAKERS IN EXISTING POWER PLANT FOR PROPOSED CARRIERS AND EQUIPMENT.

REFERENCE MATERIALS

THESE DRAWINGS ARE BASED OFF AT&T SCOPING
DOCUMENT DATED 08/29/2017.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS
INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS
OF THE FOLLOWING APPLICABLE CODES AS ADOPTED BY
THE LOCAL GOVERNING AUTHORITIES.

BUILDING/DWELLING CODE: IBC 2009
STRUCTURAL CODE: IBC 2009
PLUMBING CODE: IPC 2009
MECHANICAL CODE: IMC 2009
ELECTRICAL CODE: NEC 2011
FIRE & LIFE SAFETY CODE: IFC 2009

DRIVING DIRECTIONS

FROM GENERAL MITCHELL INTERNATIONAL AIRPORT:

HEAD TOWARD WI-119 W. CONTINUE ONTO WI-119 W.
TAKE THE EXIT TOWARD I-94 W. IN 1.2 MILES USE
THE RIGHT LANE TO FOLLOW SIGNS FOR I-43 S. IN
0.2 MILES KEEP RIGHT AT THE FORK, FOLLOW SIGNS
FOR I-43 W AND MERGE ONTO I-94 W. IN 3.8
MILES TAKE EXIT 312A-312B FOR I-94 TOWARD
BECHER ST. IN 482 FEET KEEP LEFT, FOLLOW SIGNS
FOR LAPHAM BLVD/GREEN FIELD AVE. IN 0.7 MILES
TURN LEFT ONTO W LAPHAM BLVD. IN 0.6 MILES
TURN LEFT ONTO SOUTH 13TH ST. IN 0.1 MILES
TAKE A SLIGHT RIGHT ONTO W FOREST HOME AVE. IN
400 FEET THE BUILDING WILL BE ON THE LEFT.

PROJECT TEAM

ENGINEER/ARCHITECT:
CLS GROUP
609 S. KELLY AVENUE, STE. D
EDMOND, OK 73003
PM: DAVID ROGERS
405-348-5460

PROJECT MANAGEMENT:
SAC WIRELESS
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CHICAGO, ILLINOIS 60661
CONTACT: DAVID POTEMPA
EMAIL: DAVID.POTEMPA@SACW.COM

CUSTOMER:
AT&T MOBILITY
930 NATIONAL PARKWAY
SHAUMBERG, IL 60173
CONTACT: N/A
PHONE: 920-236-7330

SITE ACQUISITION:
SAC WIRELESS
CONTACT: NICOLE LINARES
EMAIL: NICOLE.LINARES@SACW.COM

TOWER OWNER:
LD HOLDINGS
DAN REBEOR
EXECUTIVE VP
OPERATIONS

CONSTRUCTION:
SAC WIRELESS
CONTACT: JAMES PRATHER
EMAIL: JAMES.PRATHER@SACW.COM

ONE CALL



DO NOT SCALE DRAWINGS

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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – GENERAL CONTRACTOR
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T MOBILITY
OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSIONS OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, QUANTITIES AND DIMENSIONS BEFORE STARTING ANY WORK. NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES OR INSONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR.
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FOR THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC 13 EDITION SPECIFICATIONS.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES".
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUT DOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
19. ALL ANTENNA PIPES SHALL BE SCHEDULE 80.
20. LIMITS OF LIABILITY – ITEMS REFERENCED ARE OWNER/CLIENT DICTATED ITEMS, OR SUPPLIED ITEMS WHICH ARE REPRODUCED WITHOUT ALTERATION AS DIRECTED BY OWNER/CLIENT, AND OWNER/CLIENT ASSUMES ANY AND ALL LIABILITY FOR USE OF, CONSEQUENCES OF, OR INTERPRETATION OF SAID ITEM, SPECIFICATION, OR DIRECTIVE; AND AGREES TO INDEMNIFY AND HOLD ENGINEER COMPLETELY HARMLESS.
21. PROFESSIONAL SEAL – DETAILS, SPECIFICATION(S), OR ITEMS REFERENCED, ARE NOT PART OF THE PROFESSIONAL DESIGN PERFORMED BY LICENSEE AND THE PROFESSIONAL SEAL DOES NOT APPLY.
22. LIMITS OF LIABILITY – ITEMS REFERENCED ARE OWER/CLIENT DICTATED ITEMS, OR SUPPLIED ITEMS WHICH ARE REPRODUCED WITHOUT ALTERATION AS DIRECTED BY OWNER/CLIENT, AND OWNER/CLIENT ASSUMES ANY AND ALL LIABILITY FOR USE OF, CONSEQUENCES OF, OR INTERPRETATION OF SAID ITEM, SPECIFICATION, OR DIRECTIVE; AND AGREES TO INDEMNIFY AND HOLD ENGINEER COMPLETELY HARMLESS.

ELECTRICIAL INSTALLATION NOTES

1. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
2. SUBCONTRACTORS SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

ELECTRICAL INSTALLATION NOTES CONT.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
9. ALL TIE WRAPS WHERE PERMITTED SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. USE LOW PROFILES TIE WRAPS.
10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR 2 AWG SOLID TINNED COPPED CABLE, UNLESS OTHERWISE SPECIFIED.
13. POWER WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (12 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT ON LESS THAN 75°C (90°C IF AVAILABLE).
15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
18. ELECTRICAL METALLIC TUBING (EMT) OR ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 34 (OR BETTER) OUTDOORS.
26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 34 (OR BETTER) OUTDOORS.
27. METAL RECEPACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
28. NONMETALLIC RECEPACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 91) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. 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.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER INDOORS BTS; 2 AWG STRANDED COPPER FOR OUTDOORS BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND 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 PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUND SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FOR 8 FEET TO 10 FEET.
14. ALL GROUND WIRE TO RRUS SHALL BE #2 GREEN STRANDED.
15. ALL OUTDOOR LUGS SHALL USE BLACK HEAT SHRINK AND INDOOR LUGS SHALL USE CLEAR HEAT SHRINK.
16. ALL OUTDOOR LUGS TO BE LONG BARREL 2 HOLE WITHOUT INSPECTION HOLES AND INDOOR LUGS TO HAVE INSPECTION HOLES.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	MFR	MANUFACTURER
AMSL	ABOVE MEAN SEA LEVEL	MGB	MASTER GROUND BAR
AWG	AMERICAN WIRE GAUGE	MIN	MINIMUM
BLDG	BUILDING	N.T.S.	NOT TO SCALE
DWG	DRAWING	(P)	PROPOSED
FT	FOOT	PPC	POWER PROTECTION CABINET
EMT	ELECTRICAL METALLIC TUBING	RBS	RADIO BASE STATION
ELEV	ELEVATION	IN	INCH(ES)
EQUIP	EQUIPMENT	INT	INTERIOR
(E)	EXISTING	LB(S) OR #	POUND(S)
EXT	EXTERIOR	SF	SQUARE FOOT
FND	FOUNDATION	TYP	TYPICAL
F	FIBER	W/	WITH
GALV	GALVANIZED	XFMR	TRANSFORMER
GPS	GLOBAL POSITIONING SYSTEM		
GND	GROUND		
LTE	LONG TERM EVOLUTION		
MAX	MAXIMUM		



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COA# 3677 EXP. 01/31/2018

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A	10/03/17	PRELIMINARY ISSUE	JKL
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CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018

PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

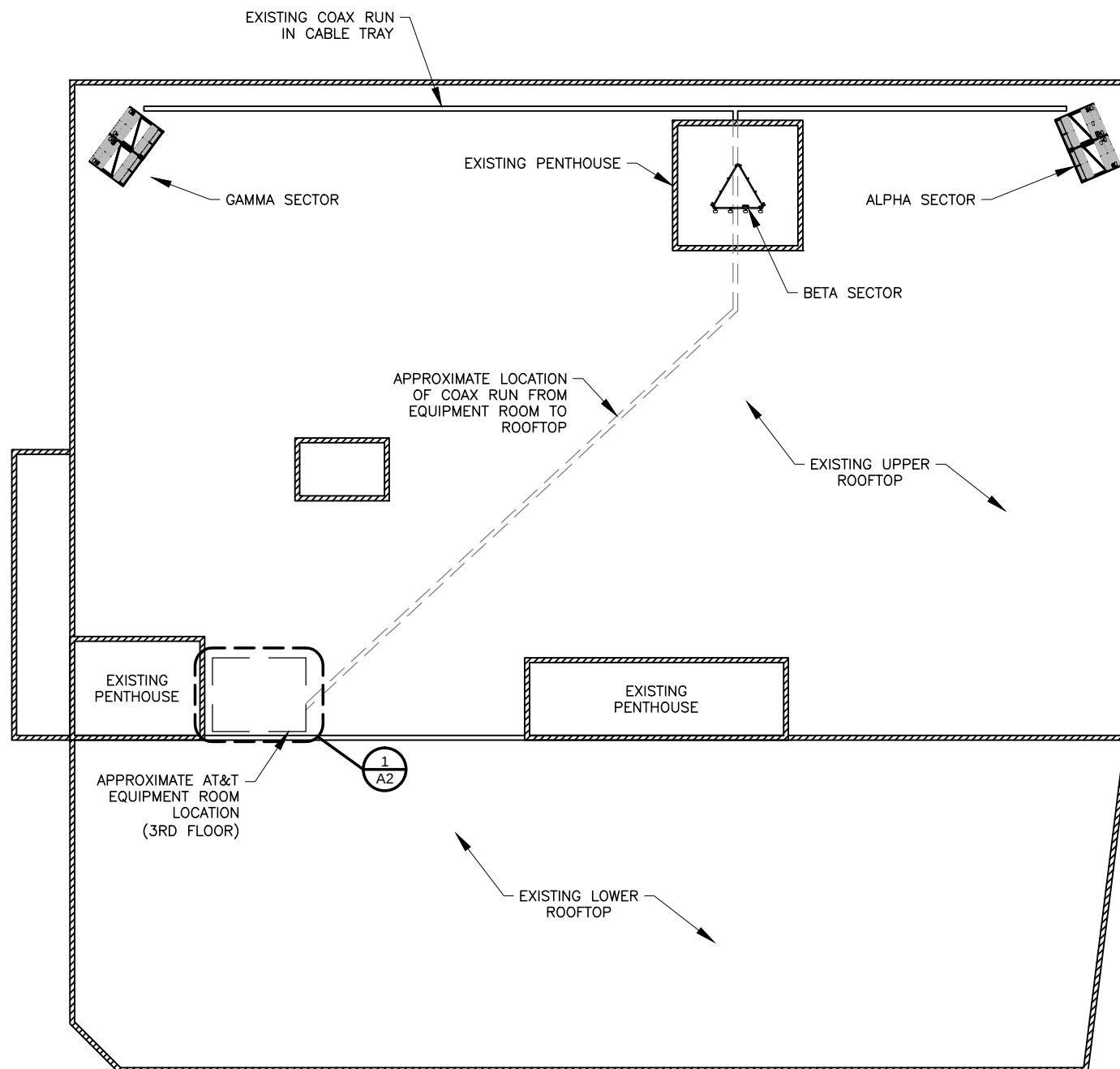
1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

SHEET TITLE

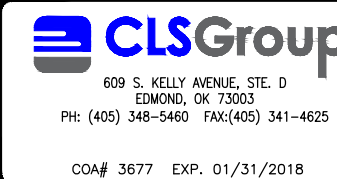
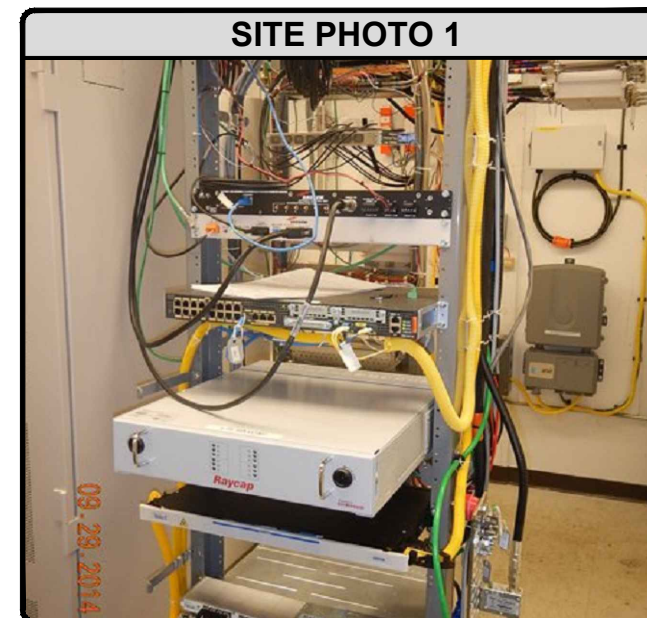
GENERAL NOTES

SHEET NUMBER

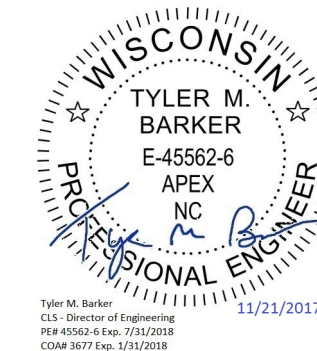
GN1



1 ROOFTOP PLAN
 SCALE: 0' 20' 40' 80' 1"=40'



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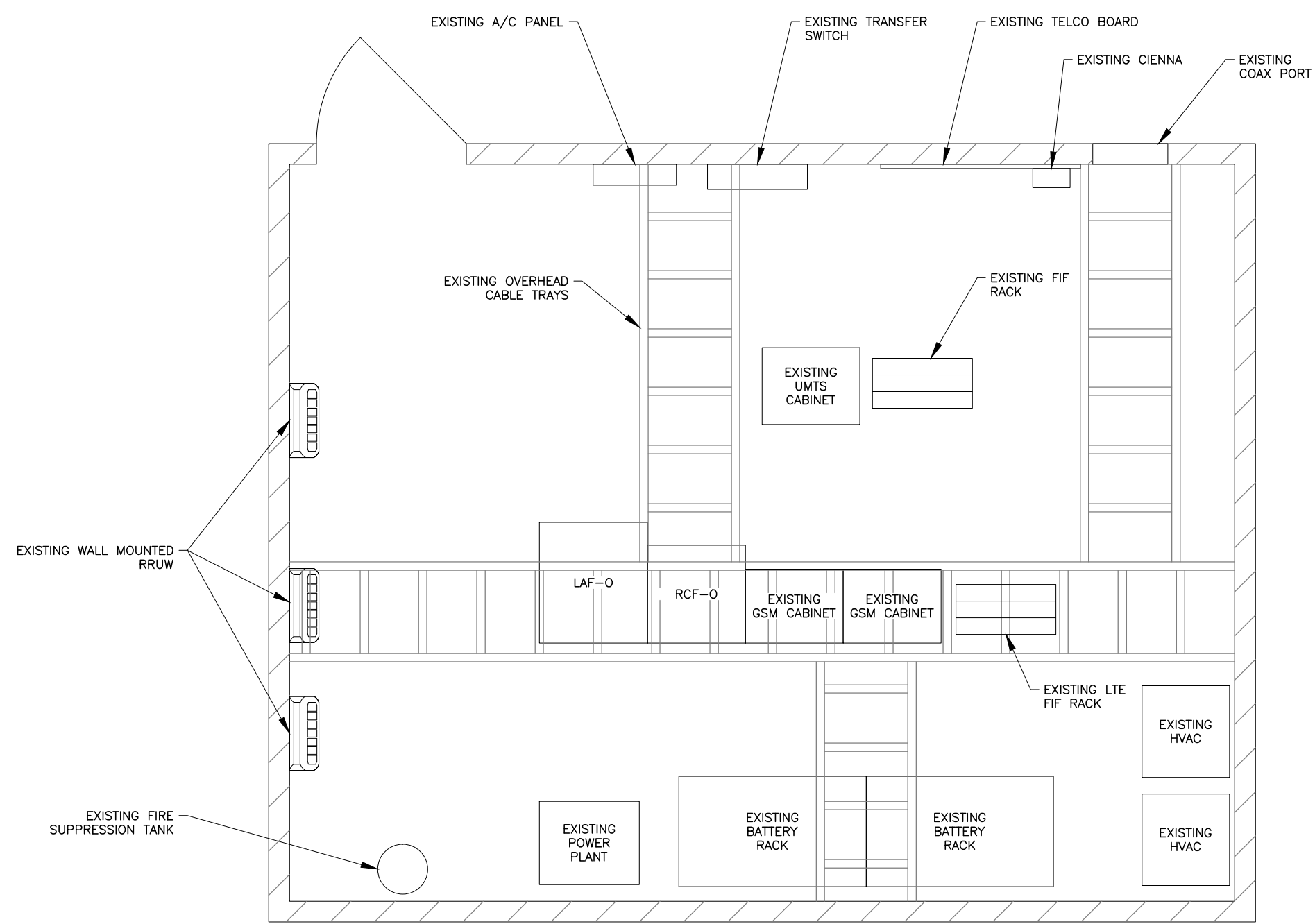


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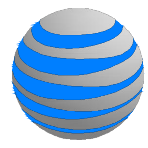
SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A1



1 EXISTING EQUIPMENT PLAN
SCALE: 3/8"=1'-0"





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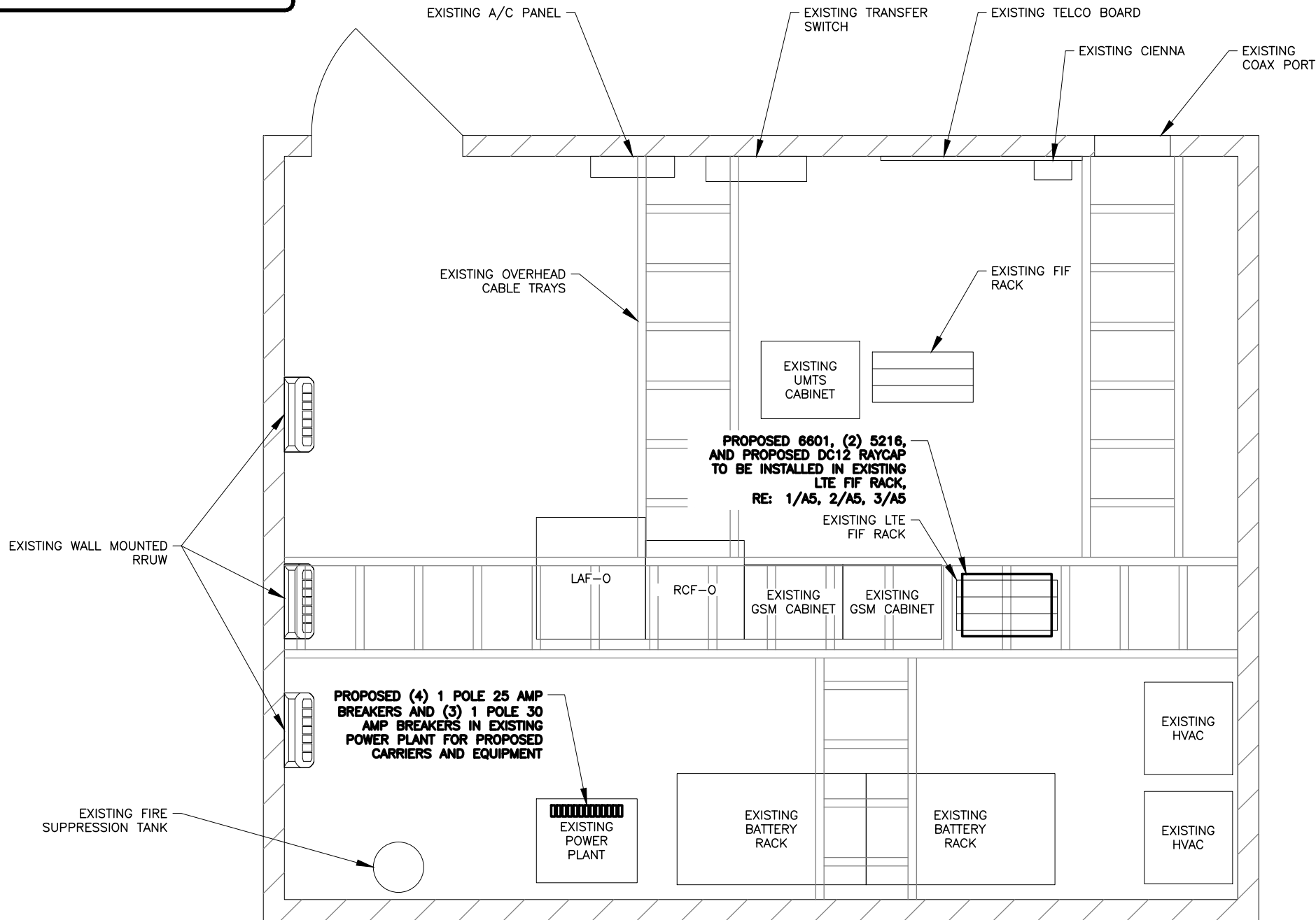
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FA#: 10012401
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SHEET TITLE
**EXISTING
EQUIPMENT PLAN**

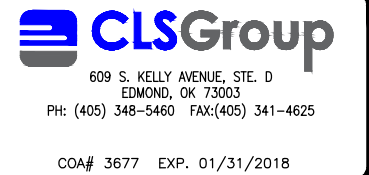
SHEET NUMBER
A2

SCOPE OF WORK

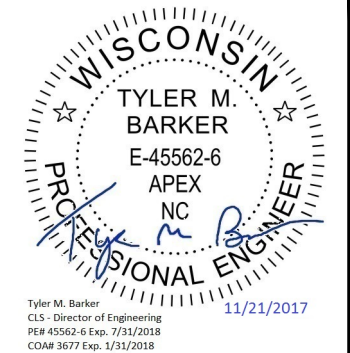
- GROUND SOW:
1. REPLACE EXISTING DUS WITH (2) PROPOSED 5126.
 2. INSTALL (1) PROPOSED 6601.
 3. INSTALL (1) PROPOSED INSTALL XMU AND (1) IDLe.
 4. INSTALL (1) PROPOSED DC12 RAYCAP IN EXISTING FIF RACK.
 5. INSTALL (6) 30 AMP AND (7) 25 AMP BREAKERS IN EXISTING POWER PLANT FOR PROPOSED CARRIERS AND EQUIPMENT.



1 PROPOSED EQUIPMENT PLAN
SCALE: 3/8"=1'-0"



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SHEET TITLE
PROPOSED EQUIPMENT
PLAN

SHEET NUMBER

A2.1

LOADING NOTE:

OTHER CARRIERS EQUIPMENT MAY BE OMITTED FOR CLARITY.

TOWER NOTES

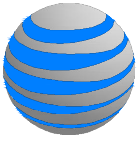
ROOFTOP IS SHOWN FOR ILLUSTRATION ONLY AND FOR LOCATION OF APPURTENANCE(S).
REFER TO ROOFTOP SURVEY FOR ALL EXISTING ROOFTOP COMPONENTS TO INCLUDE ANTENNAS, LIGHTS, LIGHTNING ROD & ROOFTOP HEIGHT.
CONTRACTOR(S) TO COMPLY WITH ALL FCC AND FAA REGULATIONS ON THIS PROJECT.
COAX ROUTING MUST BE PER STRUCTURAL ANALYSIS.

PRIOR TO CONSTRUCTION:
CONTRACTOR SHALL VERIFY THAT A ROOFTOP AND MOUNT STRUCTURAL ANALYSIS, DEPICTING THE LOADING SHOWN, HAS BEEN PERFORMED AND SHOWS A "PASS" OR AN "ACCEPTABLE" RATING. UNDER NO CIRCUMSTANCE WHAT SO EVER SHALL THE PROPOSED EQUIPMENT BE INSTALLED WITHOUT SAID STRUCTURAL ANALYSIS. IF SAID STRUCTURAL ANALYSIS REQUIRES THAT THE ROOFTOP AND/OR MOUNT BE MODIFIED, SUCH MODIFICATIONS SHALL BE COMPLETED PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT.

MOUNT ANALYSIS AND STRUCTURAL ANALYSIS DONE BY CLS GROUP PROJECT #24015-10012401-02-MOD, DATED NOVEMBER 16, 2017.

NOTE:

GENERAL CONTRACTORS SHALL MAKE SURE SAFETY CLIMB IS 100% FREE OF COAX AND MOUNTS AFTER INSTALL IS COMPLETE.



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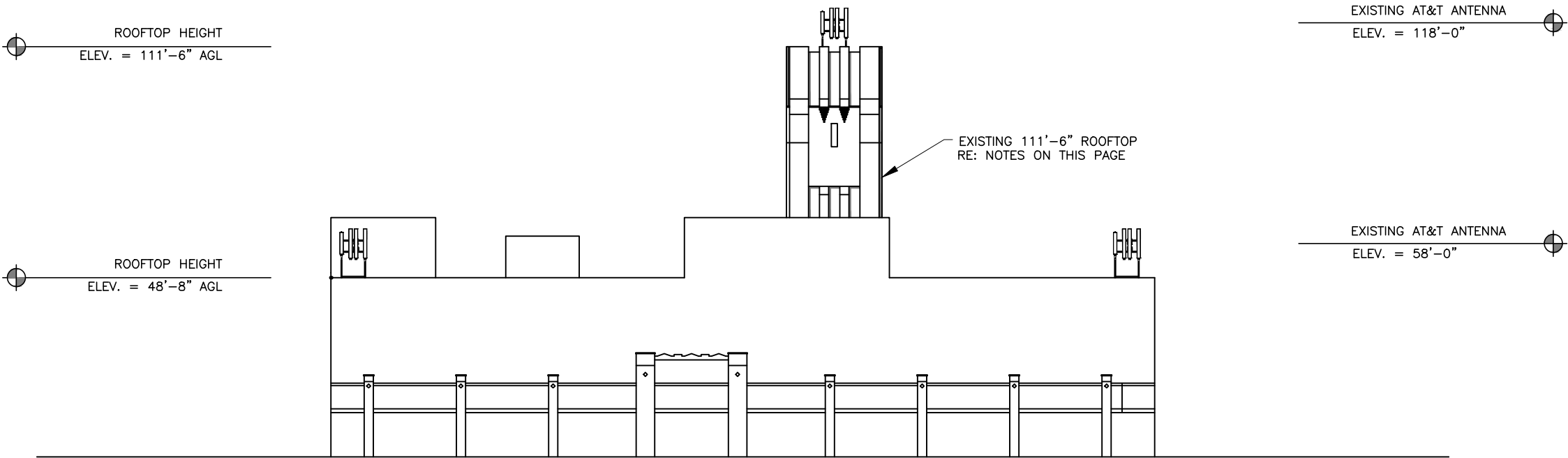
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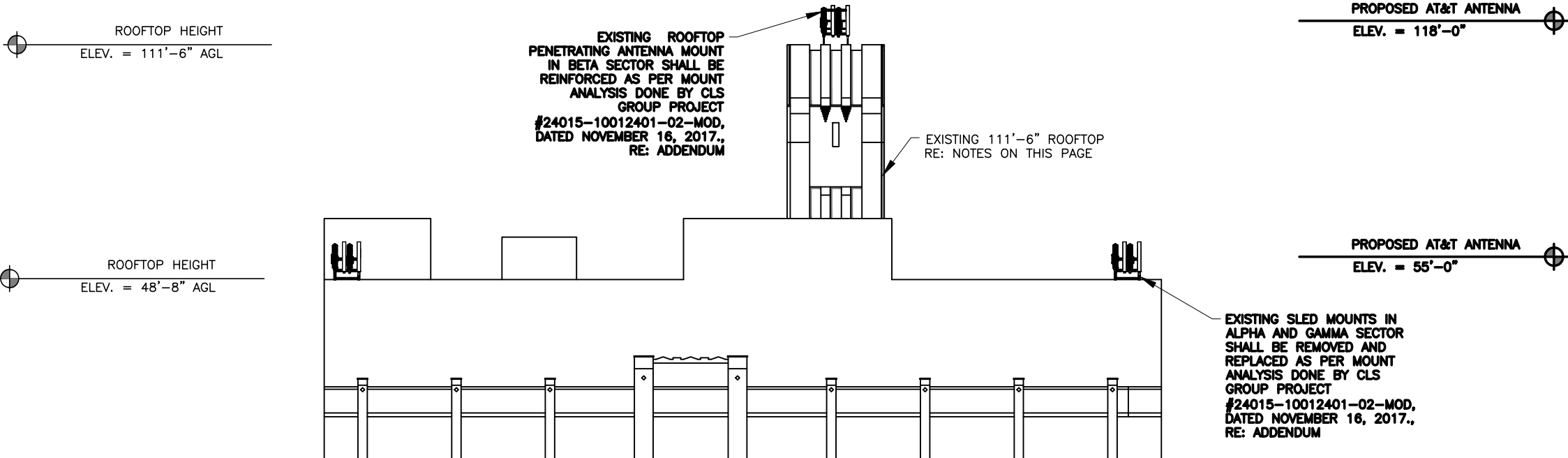
SHEET TITLE
TOWER ELEVATIONS

SHEET NUMBER

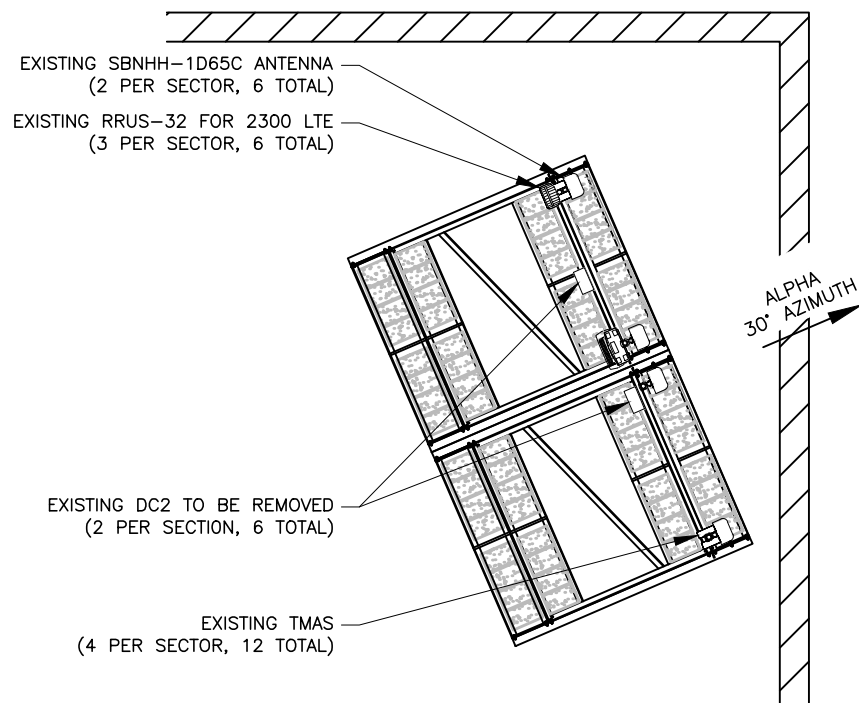
A3



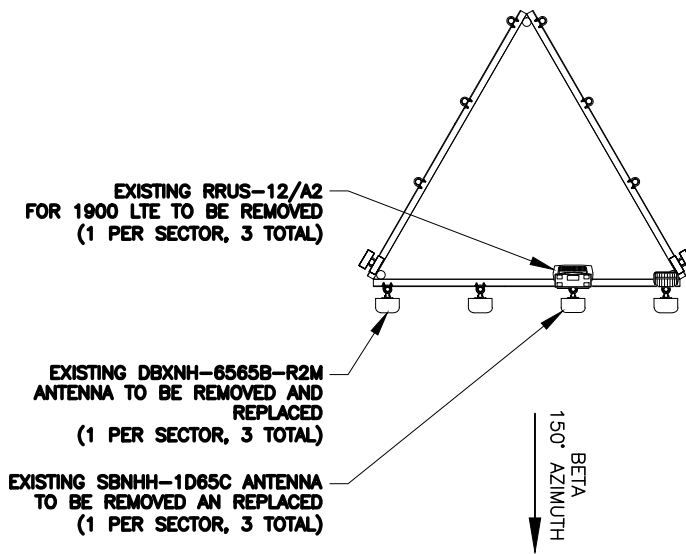
1 EXISTING ELEVATION
SCALE: N.T.S.



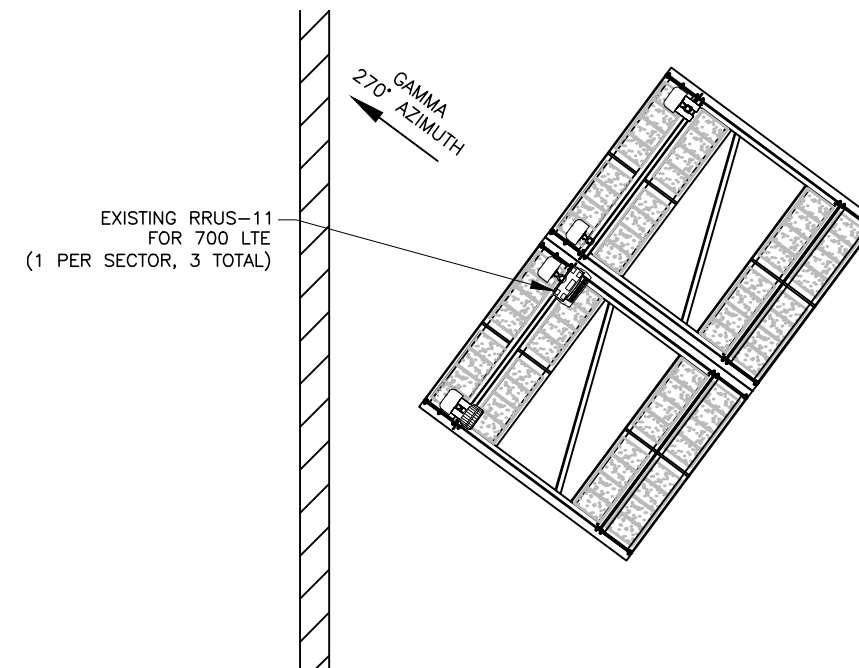
2 PROPOSED ELEVATION
SCALE: N.T.S.



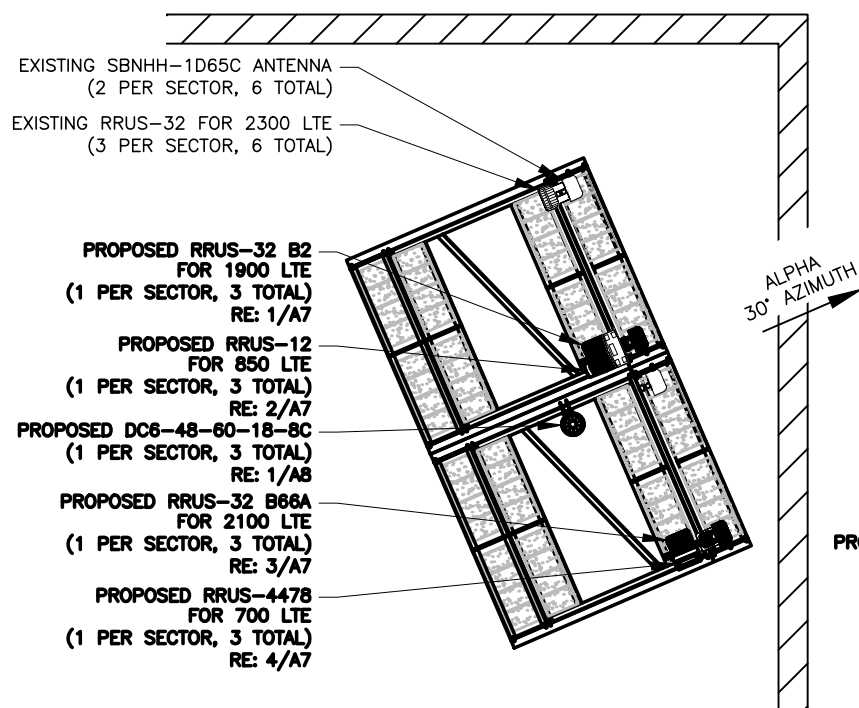
1 EXISTING ANTENNA PLAN (ALPHA)
SCALE: N.T.S.



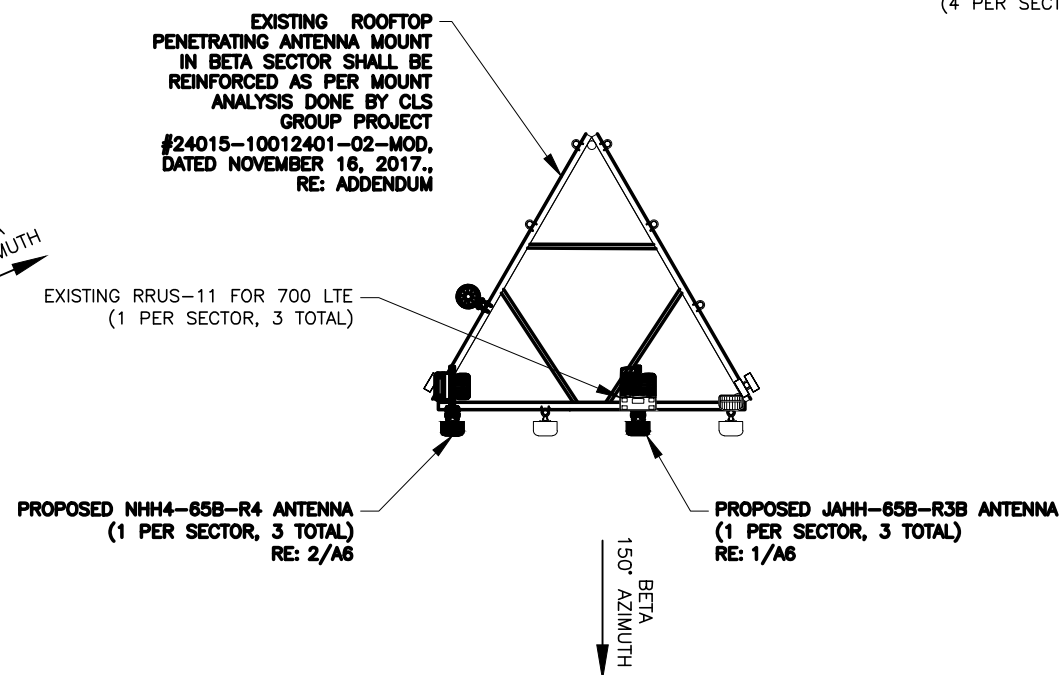
2 EXISTING ANTENNA PLAN (BETA)
SCALE: N.T.S.



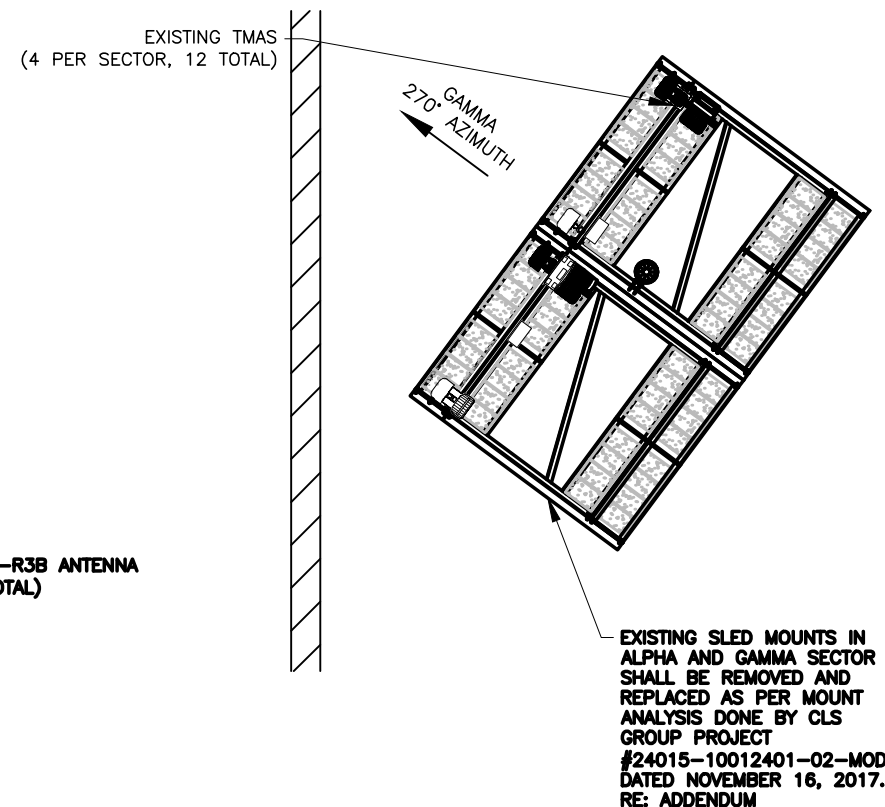
3 EXISTING ANTENNA PLAN (GAMMA)
SCALE: N.T.S.



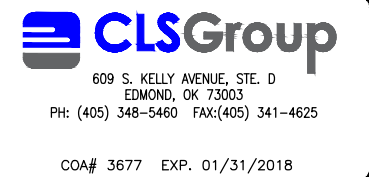
4 PROPOSED ANTENNA PLAN (ALPHA)
SCALE: N.T.S.



5 PROPOSED ANTENNA PLAN (BETA)
SCALE: N.T.S.



6 PROPOSED ANTENNA PLAN (GAMMA)
SCALE: N.T.S.



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SHEET TITLE

ANTENNA PLANS / ANTENNA
& COAX SCHEDULE

SHEET NUMBER

A4



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WISCONSIN

PROFESSIONAL ENGINEER

TYLER M. BARKER

E-45562-6

APEX NC

11/21/2017

Tyler M. Barker

CLS - Director of Engineering

PE# 45562-6 Exp. 7/31/2018

COAB# 3677 Exp. 1/31/2018

PE# 45562-6 EXP: 07/31/2018

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EL REY
FA#: 10012401
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SHEET TITLE
**ANTENNA PLANS / ANTENNA
& COAX SCHEDULE**

SHEET NUMBER
A4.1

ANTENNA AND COAXIAL CABLE SCHEDULE BOLD DENOTES PROPOSED EQUIPMENT										
ANTENNA MARK	SECTOR	DESCRIPTION OF ANTENNAS	ANTENNA ORIENTATION	ANTENNA QUANTITY	RAD CENTER	TMA QUANTITY	COAX/CABLE	SURGE PROTECTION	RRU MODEL	TECHNOLOGY
A1	ALPHA	(E) COMMSCOPE SBNHH-1D65C	30°	1	55'	(2) TMA	(4) COAX	--	(E) (1) RRUS-32 (E) (1) RRUW (GROUND)	LTE 850 LTE 2300
A2	ALPHA	(P) COMMSCOPE JAHH-65B-R3B	30°	1	55'	--	(P) (2) 0.82" DC (P) (1) 0.40" FIBER	(P) (1) RAYCAP DC6-48-60-18-8C	(E) (1) RRUS-11 (P) (1) RRUS-12 (P) (1) RRUS-32 B2	LTE 700 LTE 850 LTE 1900
A3	ALPHA	(E) COMMSCOPE SBNHH-1D65C	30°	1	55'	--	--	--	--	--
A4	ALPHA	(P) COMMSCOPE NNH4-65B-R4	30°	1	55'	(2) TMA	--	--	(P) (1) RRUS-32 B66A (P) (1) RRUS-4478	LTE 700 LTE 2100
B1	BETA	(E) COMMSCOPE SBNHH-1D65C	150°	1	118'	(2) TMA	(4) COAX	--	(E) (1) RRUS-32 (E) (1) RRUW (GROUND)	LTE 850 LTE 2300
B2	BETA	(P) COMMSCOPE JAHH-65B-R3B	150°	1	118'	--	(P) (2) 0.82" DC (P) (1) 0.40" FIBER	(P) (1) RAYCAP DC6-48-60-18-8C	(E) (1) RRUS-11 (P) (1) RRUS-12 (P) (1) RRUS-32 B2	LTE 700 LTE 850 LTE 1900
B3	BETA	(E) COMMSCOPE SBNHH-1D65C	150°	1	118'	--	--	--	--	--
B4	BETA	(P) COMMSCOPE NNH4-65B-R4	150°	1	118'	(2) TMA	--	--	(P) (1) RRUS-32 B66A (P) (1) RRUS-4478	LTE 700 LTE 2100
G1	GAMMA	(E) COMMSCOPE SBNHH-1D65C	270°	1	55'	(2) TMA	(4) COAX	--	(E) (1) RRUS-32 (E) (1) RRUW (GROUND)	LTE 850 LTE 2300
G2	GAMMA	(P) COMMSCOPE JAHH-65B-R3B	270°	1	55'	--	(P) (2) 0.82" DC (P) (1) 0.40" FIBER	(P) (1) RAYCAP DC6-48-60-18-8C	(E) (1) RRUS-11 (P) (1) RRUS-12 (P) (1) RRUS-32 B2	LTE 700 LTE 850 LTE 1900
G3	GAMMA	(E) COMMSCOPE SBNHH-1D65C	270°	1	55'	--	--	--	--	--
G4	GAMMA	(P) COMMSCOPE NNH4-65B-R4	270°	1	55'	(2) TMA	--	--	(P) (1) RRUS-32 B66A (P) (1) RRUS-4478	LTE 700 LTE 2100

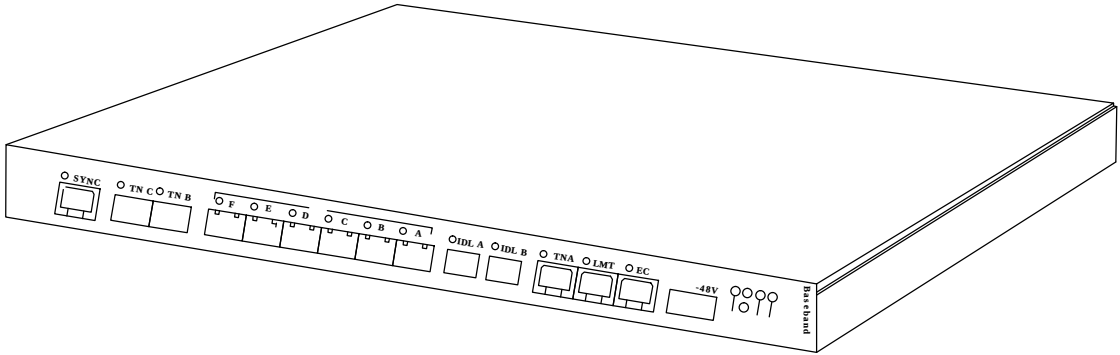
ERICSSON BASEBAND 5216

POWER DISTRIBUTION: -48 VDC TO DIGITAL UNITS

DIMENSIONS: 1.2" X 13.8" X 11.0"
H X W X D (IN)
(EXCLUDING BRACKETS AND CONNECTORS)

WEIGHT, KG(LBS): <9 (<4)

MOUNTING: 19" RACK INSIDE SHELTER



2 ERICSSON BASEBAND 5216

SCALE: N.T.S.

RE: GN22/GN1



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RAYCAP DC12-48-60-RM

MANUFACTURER: RAYCAP

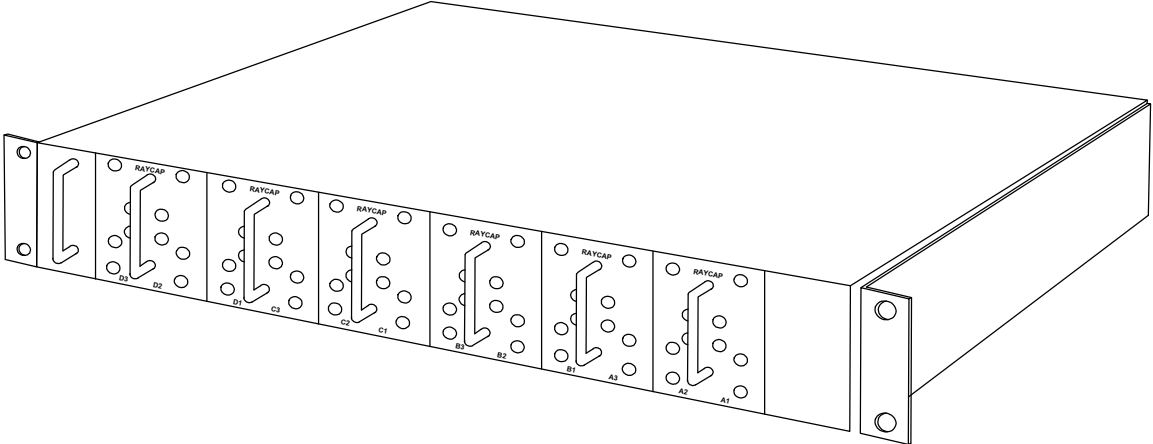
MODEL: DC12-48-60-RM

DIMENSIONS: 3.48" X 17.23" X 15.40"
H X W X D (IN)

WEIGHT (LBS): 27LBS

NOMINAL OPERATION: 48 VDC
VOLTAGE

VOLTAGE PROTECTION: 700 VOLTS
RATING



1 DC12-48-60-RM SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1

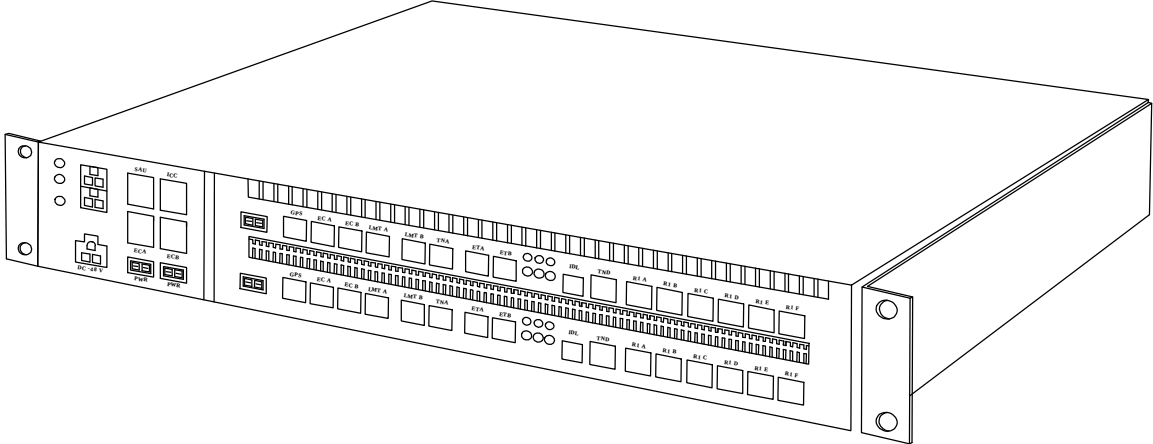
ERICSSON RBS 6601 MAIN UNIT

POWER DISTRIBUTION: -48 VDC TO DIGITAL UNITS

DIMENSIONS: 2.6" X 18.98" X 13.78"
H X W X D (IN)
(EXCLUDING BRACKETS AND CONNECTORS)

WEIGHT, KG(LBS): 10.5 (23.15)

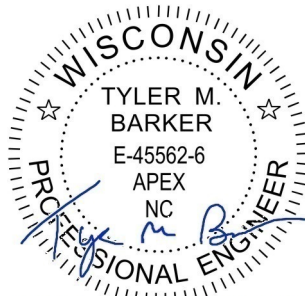
MOUNTING: 19" RACK INSIDE SHELTER



3 RBS 6601 MAIN UNIT

SCALE: N.T.S.

RE: GN22/GN1



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11/21/2017

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SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

A5

ANTENNA INFORMATION
PULLED FROM PRELIMINARY
PRODUCT DATA SHEET

COMMSCOPE JAHH-65B-R3B

MANUFACTURE: COMMSCOPE
MODEL: JAHH-65B-R3B
DIMENSIONS: 72.0" X 13.8" X 8.2"
H X W X D
WEIGHT: 63.3 LB
FREQUENCY: REFER TO RF DATA SHEET

ANTENNA INFORMATION
PULLED FROM PRELIMINARY
PRODUCT DATA SHEET

COMMSCOPE NNH4-65B-R4

MANUFACTURE: COMMSCOPE
MODEL: NNH4-65B-R4
DIMENSIONS: 72.0" X 19.6" X 7.8"
H X W X D
WEIGHT: 88.2 LB
FREQUENCY: REFER TO RF DATA SHEET



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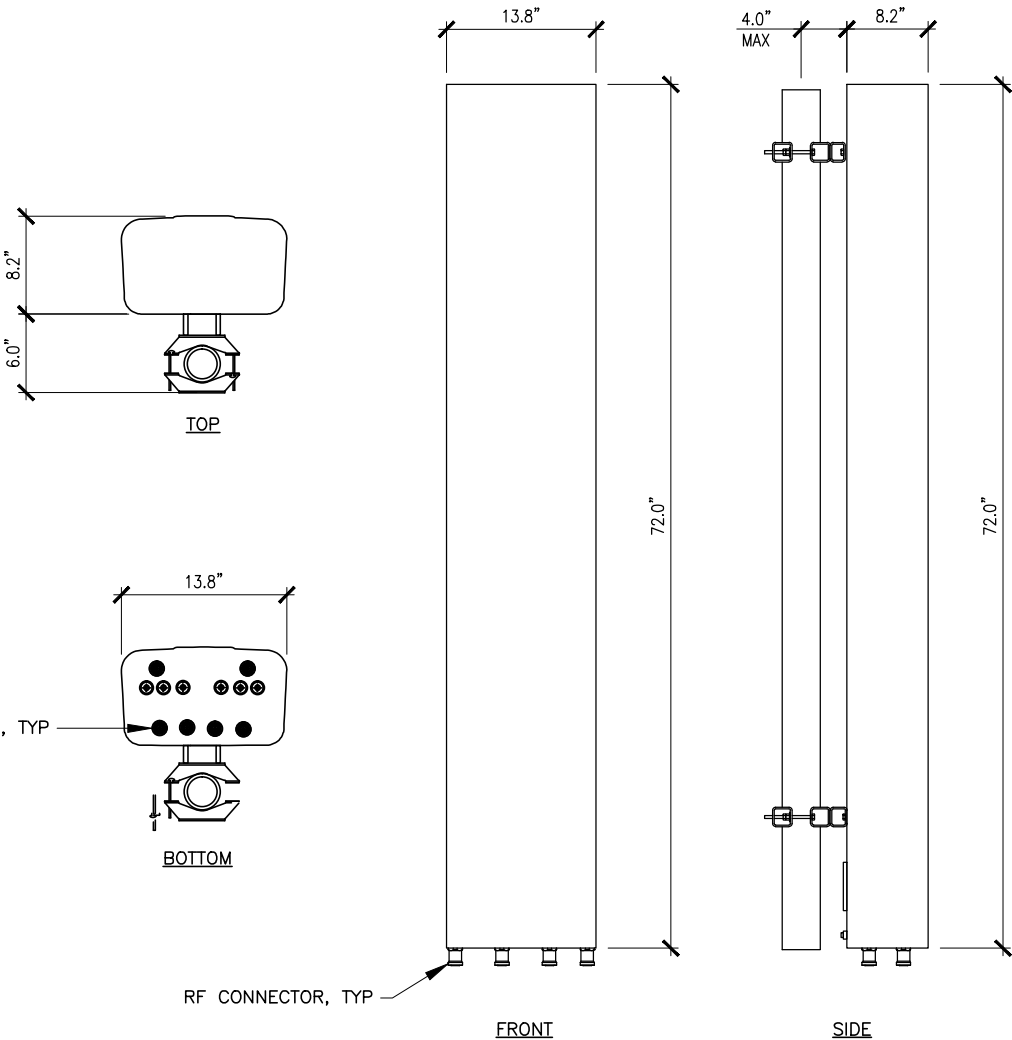
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MILWAUKEE, WI 53204

SHEET TITLE

EQUIPMENT DETAILS

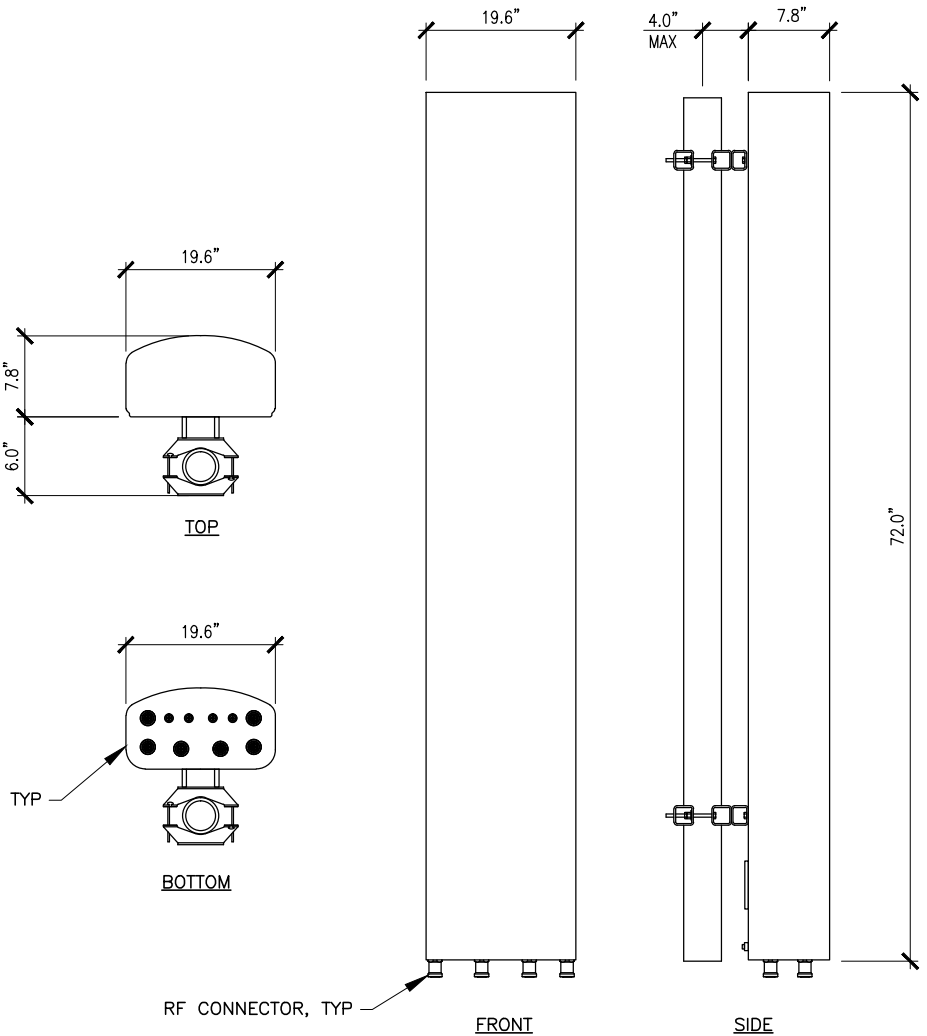
SHEET NUMBER

A6



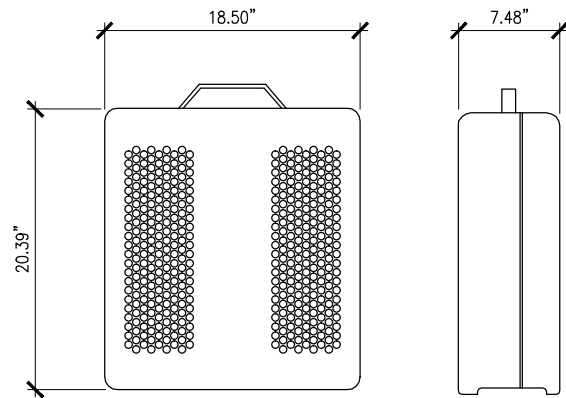
1 ANTENNA SPECIFICATIONS
SCALE: N.T.S.

RE: GN22/GN1



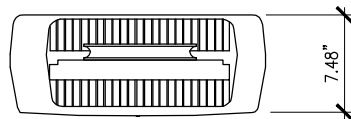
2 ANTENNA SPECIFICATIONS
SCALE: N.T.S.

RE: GN22/GN1



NOTE:
RRUS CAN ONLY BE
PAINTED ON SOLAR SHIELD. FRONT

SIDE



TOP

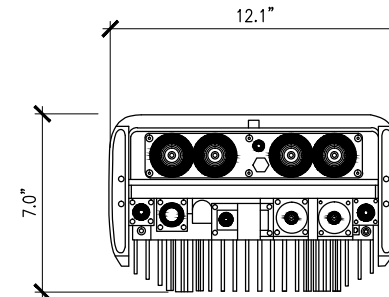
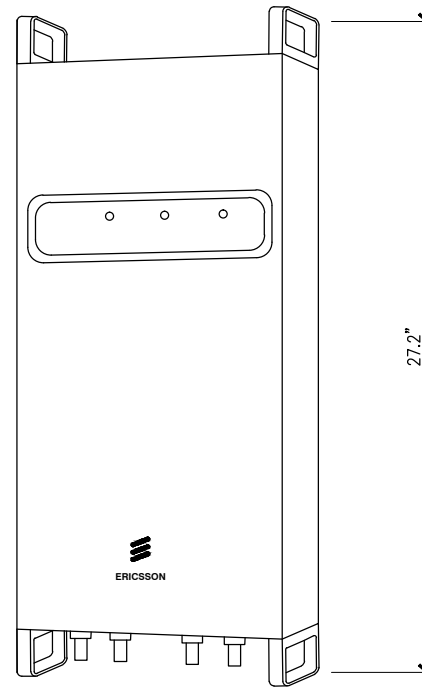
ERICSSON RRUS-12

MANUFACTURE:	ERICSSON
MODEL:	RRUS-12
DIMENSIONS W/ SOLAR SHIELD: H X W X D	20.39" X 18.50" X 7.48"
WEIGHT:	50.0 LB
FREQUENCY:	REFER TO RF DATA SHEET

2 REMOTE RADIO UNIT SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



BOTTOM

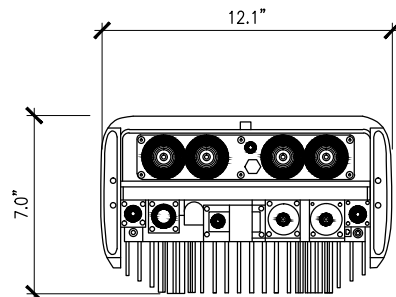
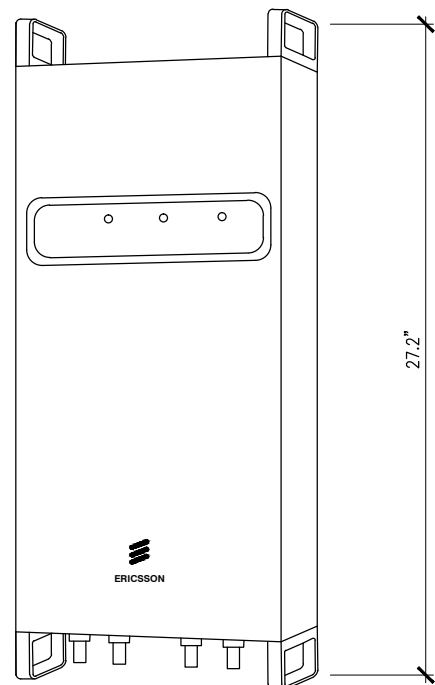
ERICSSON RRUS-32 B66A

MANUFACTURE:	ERICSSON
MODEL:	RRUS-32 B25
DIMENSIONS: H X W X D	27.2" X 12.1" X 7.0"
WEIGHT:	53 LB
FREQUENCY:	REFER TO RF DATA SHEET

3 REMOTE RADIO UNIT SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



BOTTOM

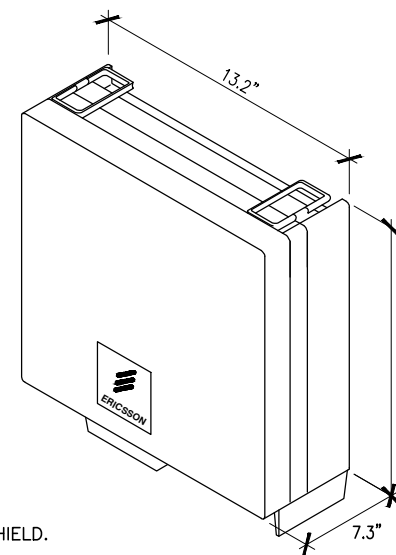
ERICSSON RRUS-32 B2

MANUFACTURE:	ERICSSON
MODEL:	RRUS-32 B25
DIMENSIONS: H X W X D	27.2" X 12.1" X 7.0"
WEIGHT:	53 LB
FREQUENCY:	REFER TO RF DATA SHEET

1 REMOTE RADIO UNIT SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



NOTE:
RRUS CAN ONLY BE
PAINTED ON SOLAR SHIELD.

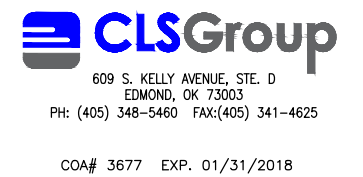
ERICSSON 4478 RRU

MANUFACTURE:	ERICSSON
MODEL:	RADIO 4478
DIMENSIONS: H X W X D	15.0" X 13.2" X 7.3"
WEIGHT (LBS):	59.4 LBS
FREQUENCY:	REFER TO RF DATA SHEET

4 REMOTE RADIO UNIT SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	10/03/17	PRELIMINARY ISSUE	JLK
0	11/21/17	FOR CONSTRUCTION	PWD
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Tyler M. Barker
CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018
PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

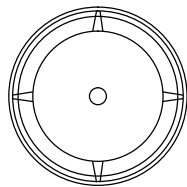
1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

SHEET TITLE

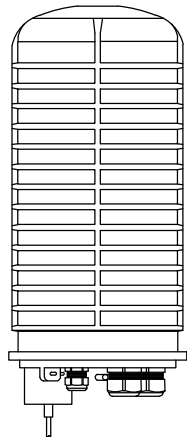
EQUIPMENT DETAILS

SHEET NUMBER

A7



TOP



FRONT

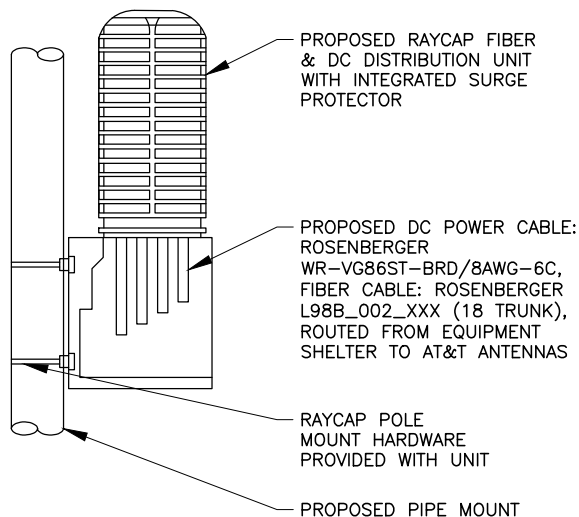
RAYCAP DC6-48-60-18-8C

MANUFACTURE:	RAYCAP
MODEL:	DC6-48-60-18-8C
DIMENSIONS: H X W X D (IN)	18.2" X 10.2" X 10.2"
WEIGHT (LBS):	26.2 LBS WITH BRACKET
NOMINAL OPERATION: VOLTAGE	48 VDC
VOLTAGE PROTECTION: RATING	300 VOLTS

1 DC6-48-60-18-8C RAYCAP SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



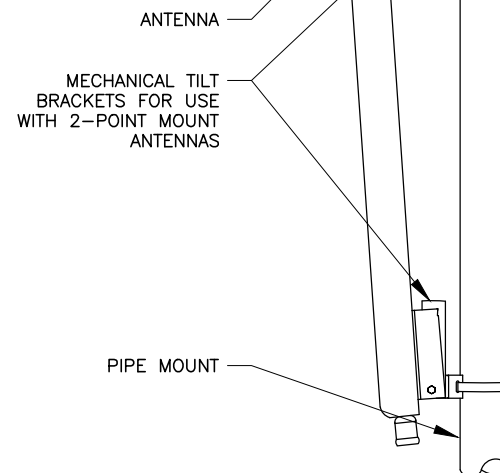
2 SURGE UNIT MOUNTING DETAIL (TYP.)

SCALE: N.T.S.

RE: GN22/GN1

NOTES

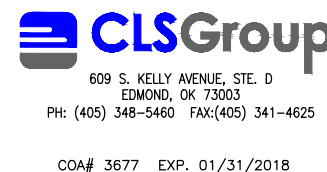
ANTENNA, HARDWARE AND MOUNTING MATERIALS BY OTHERS



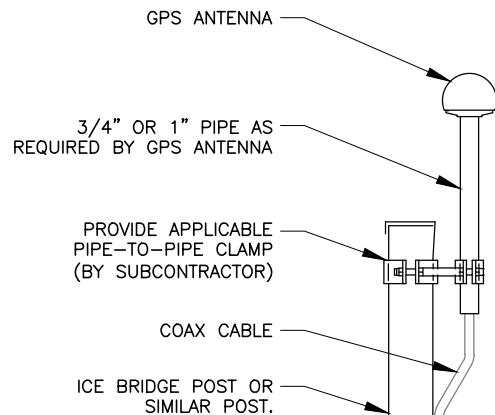
3 DOWN TILT ASSEMBLY

SCALE: N.T.S.

RE: GN22/GN1



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	10/03/17	PRELIMINARY ISSUE	JLK
O	11/21/17	FOR CONSTRUCTION	PWD
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ELEVATION

NOTES

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

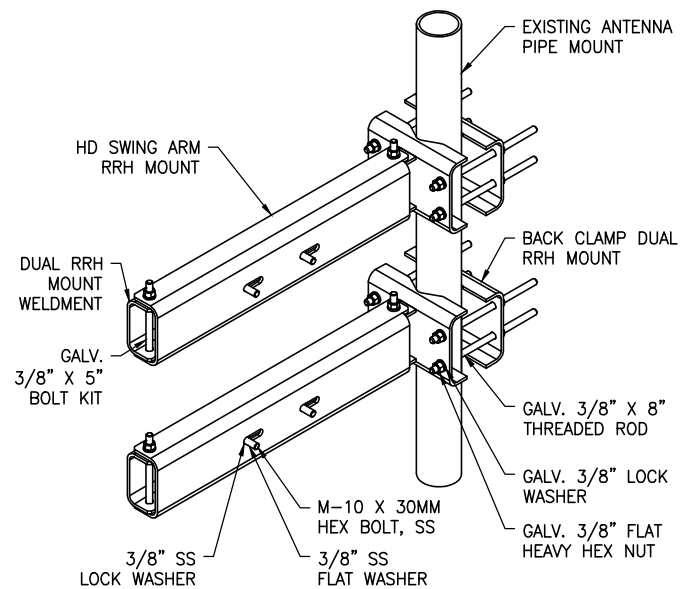
4 GPS ANTENNA MOUNT DETAIL

SCALE: N.T.S.

RE: GN22/GN1

DUAL MOUNTING BRACKET

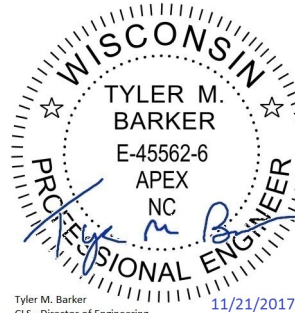
VENDOR: COMMSCOPE
MODEL: MTC3326DHD
WEIGHT: 40.91 LBS



5 DUAL MOUNTING BRACKET - HD SPECIFICATIONS

SCALE: N.T.S.

RE: GN22/GN1



Tyler M. Barker
CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018
PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

SHEET TITLE

EQUIPMENT DETAILS

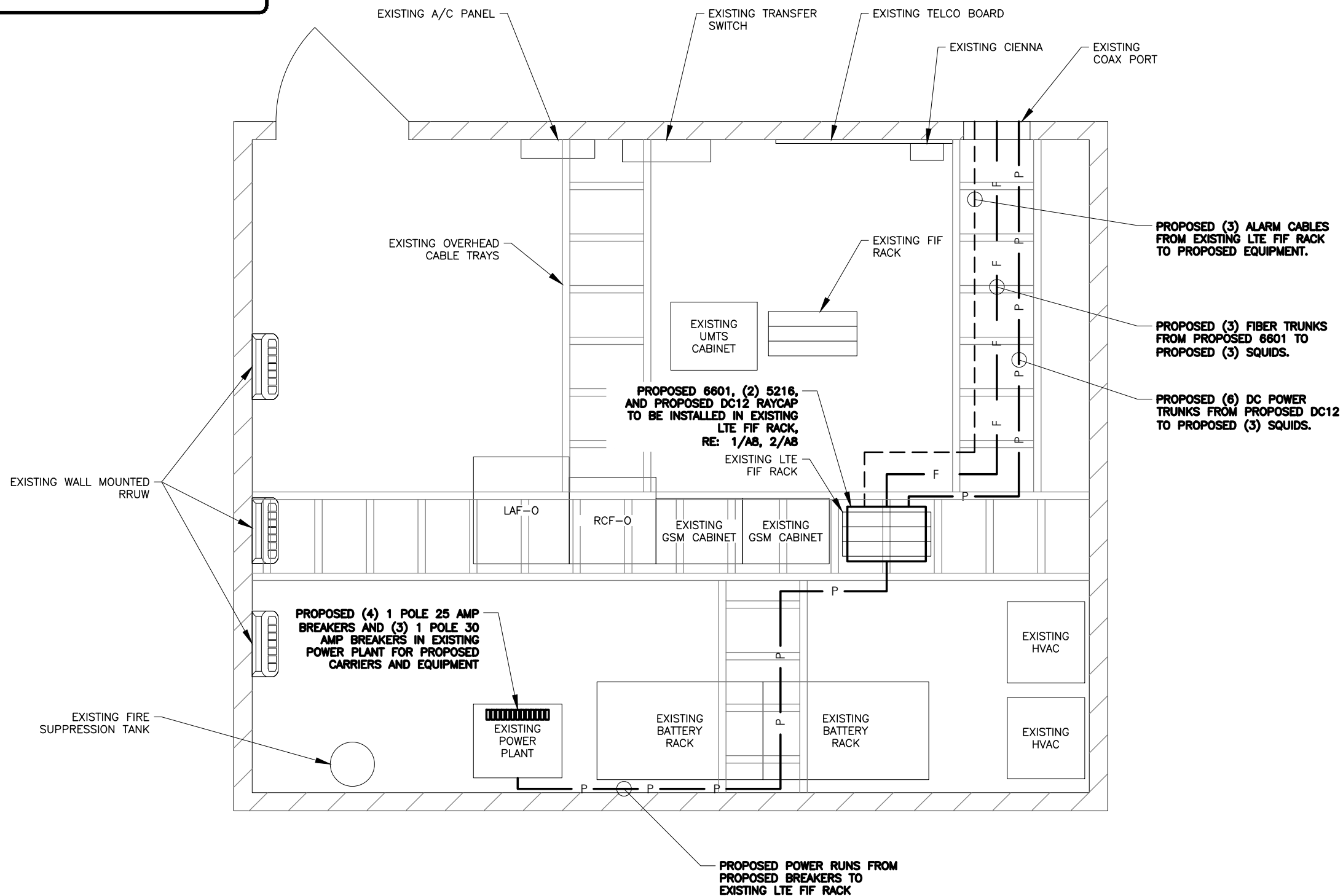
SHEET NUMBER

A8

SCOPE OF WORK

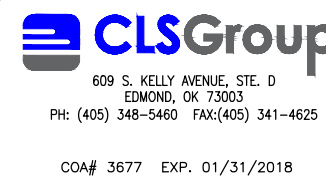
GROUND SOW:

1. REPLACE EXISTING DUS WITH (2) PROPOSED 5126.
2. INSTALL (1) PROPOSED 6601.
3. INSTALL (1) PROPOSED INSTALL XMU AND (1) IDLe.
4. INSTALL (1) PROPOSED DC12 RAYCAP IN EXISTING FIF RACK.
5. INSTALL (6) 30 AMP AND (7) 25 AMP BREAKERS IN EXISTING POWER PLANT FOR PROPOSED CARRIERS AND EQUIPMENT.

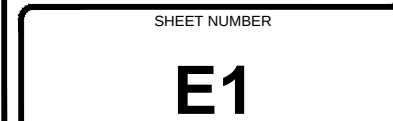
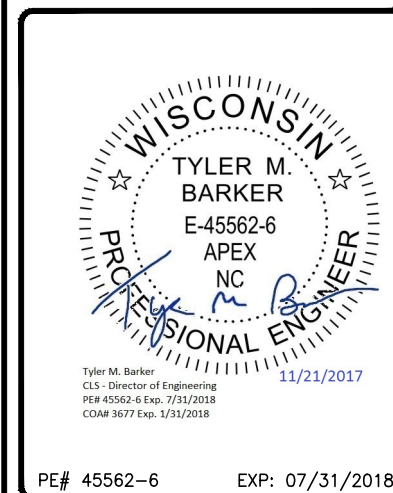


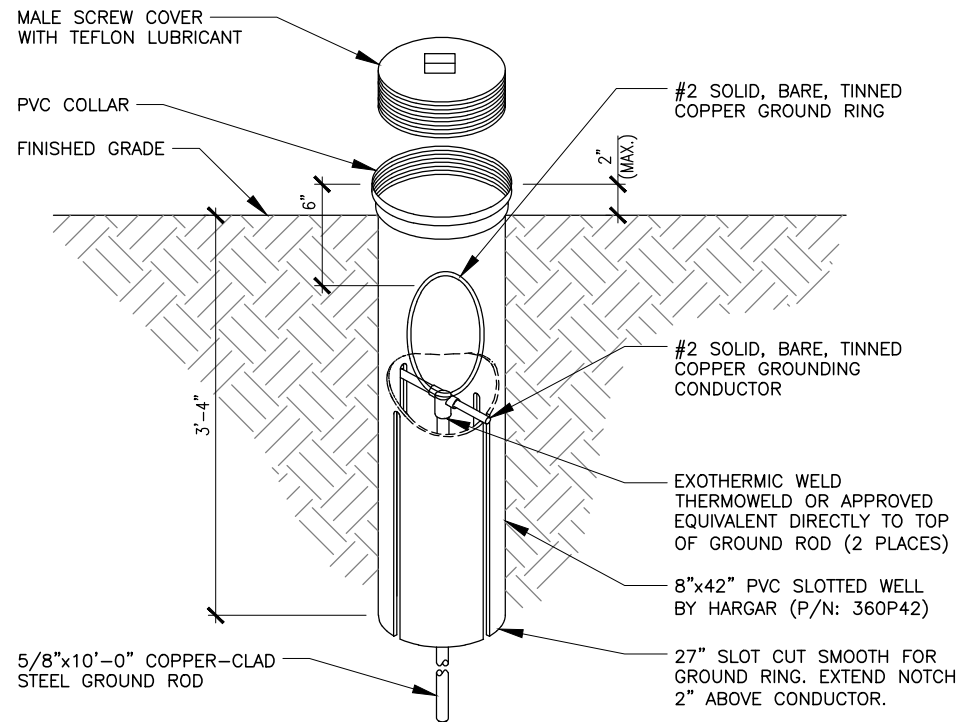
1 UTILITY PLAN

SCALE: 3/8"=1'-0"



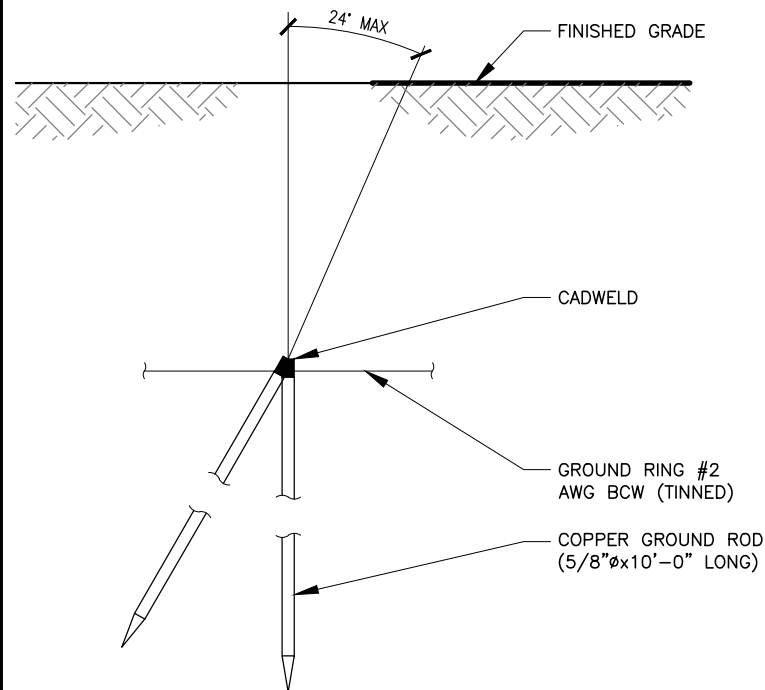
REVISIONS			
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1 GROUND ROD WITH INSPECTION WELL
SCALE: N.T.S.

RE: GN22/GN1

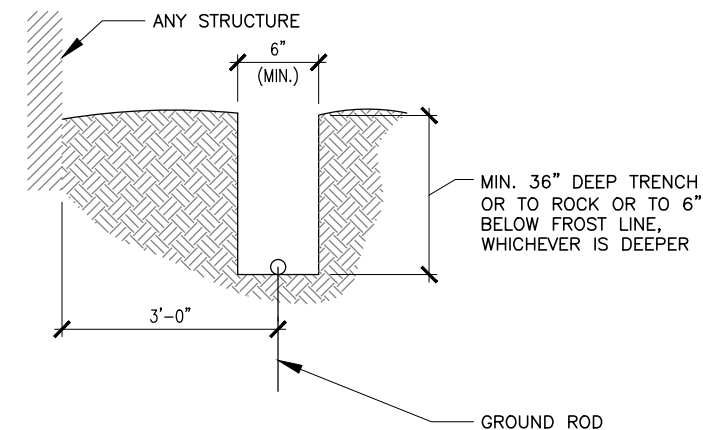


2 COPPER-CLAD STEEL GROUNDING ROD
SCALE: N.T.S.

RE: GN22/GN1

NOTES

GROUNDING EQUIPMENT, WIRE SIZE, CONNECTIONS, LOCATION AND NUMBER OF RODS PER OWNER REQUIREMENTS. THIS INFORMATION IS SCHEMATIC AND SUPPLIED TO US AND IS FOR GENERAL REFERENCE ONLY. CONTACT OWNER OR OWNERS ELECTRICAL ENGINEER FOR SPECIFICS OR QUESTIONS REGARDING ELECTRICAL CAPACITY, OR INSTALL PER PERTINENT ELECTRICAL CODES.



3 GROUND RING TRENCH DETAIL
SCALE: N.T.S.

RE: GN22/GN1



540 W. MADISON ST.
16TH FLOOR
CHICAGO, IL 60661
www.sacw.com
312.895.4977



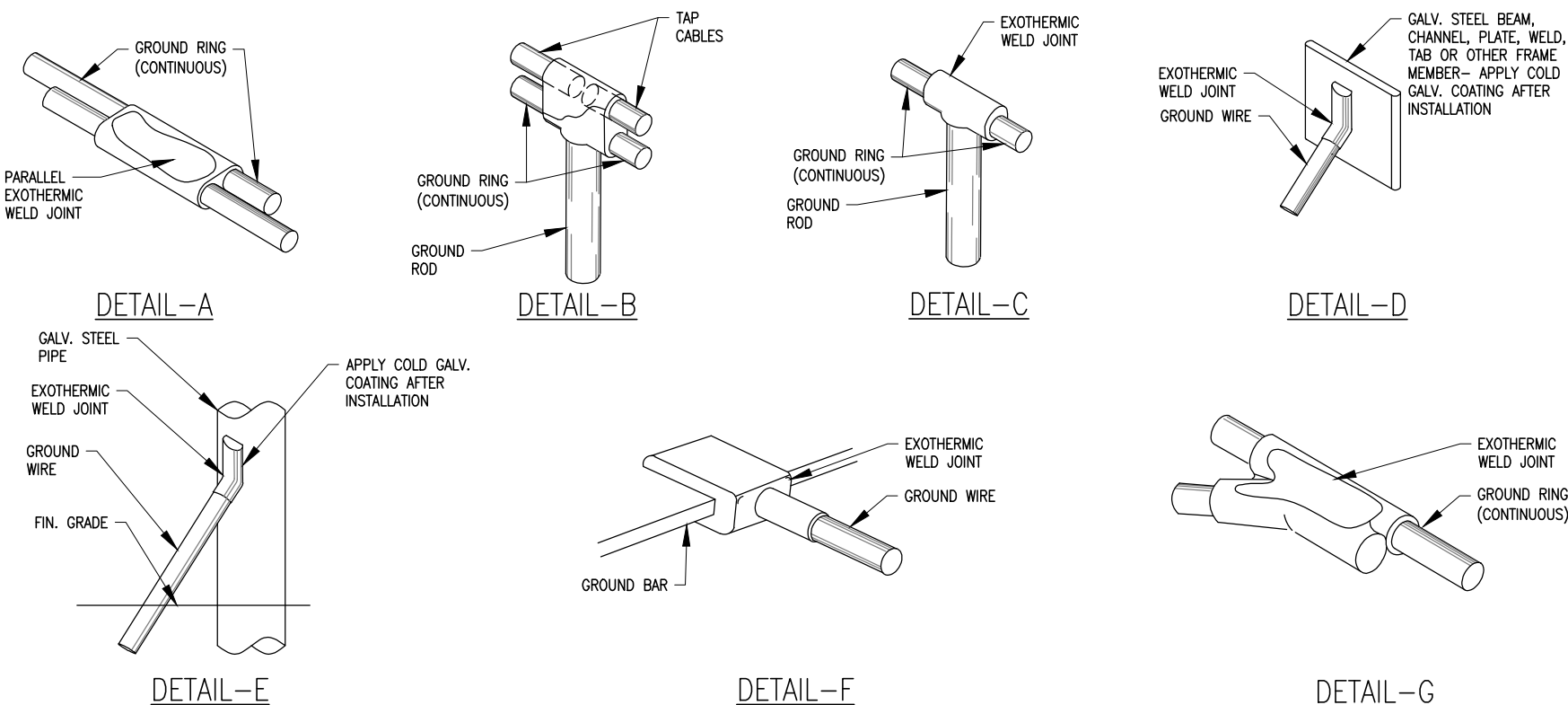
609 S. KELLY AVENUE, STE. D
EDMOND, OK 73003
PH: (405) 348-5460 FAX: (405) 341-4625

COA# 3677 EXP. 01/31/2018

REVISIONS

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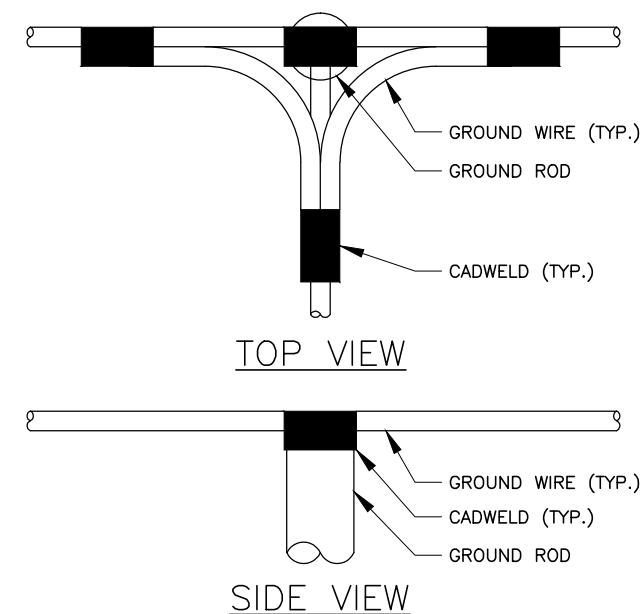


4 WELD CONNECTION DETAILS
SCALE: N.T.S.

RE: GN22/GN1

NOTES

MINIMUM SPACING OF 12"
BETWEEN ALL CADWELDS



5 CADWELD GROUNDING DETAIL
SCALE: N.T.S.

RE: GN22/GN1



Tyler M. Barker
CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018

PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

SHEET TITLE

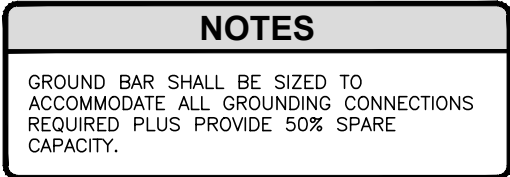
GROUNDING DETAILS

SHEET NUMBER

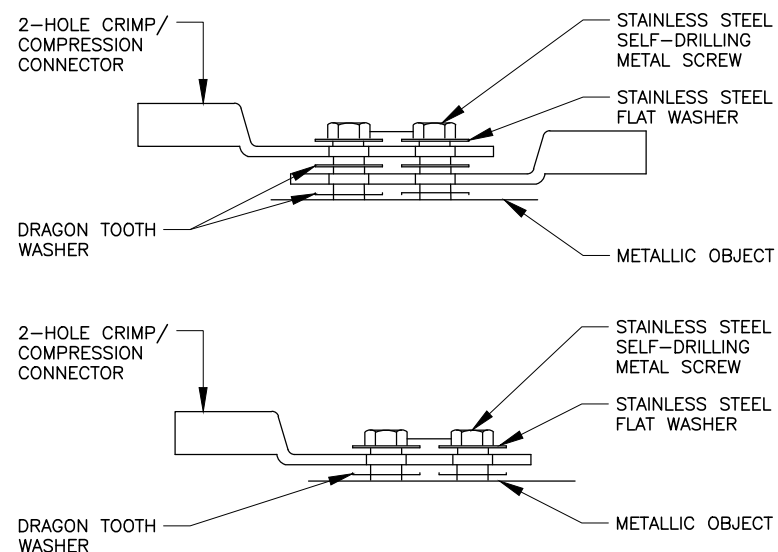
G1

NOTES	
GROUNDING EQUIPMENT, WIRE SIZE, CONNECTIONS, LOCATION AND NUMBER OF RODS PER OWNER REQUIREMENTS. THIS INFORMATION IS SCHEMATIC AND SUPPLIED TO US AND IS FOR GENERAL REFERENCE ONLY. CONTACT OWNER OR OWNERS ELECTRICAL ENGINEER FOR SPECIFICS OR QUESTIONS REGARDING ELECTRICAL CAPACITY, OR INSTALL PER PERTINENT ELECTRICAL CODES.	

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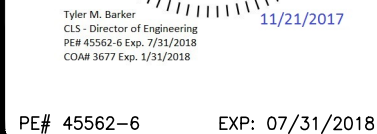
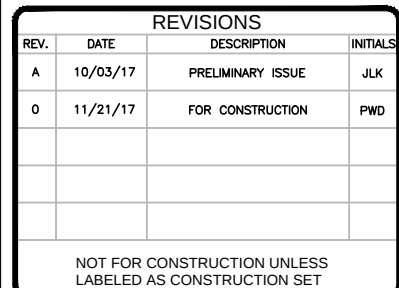


RE: GN22/GN1



1. CHOOSE BOLT LENGTH TO ALLOW A MIN. OF THREE THREADS EXPOSED.
2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF THE CONNECTOR.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF CONNECTOR AND WIPE OFF EXCESS COMPOUND. FOR ALL DISSIMILAR METALS WHICH CONNECT.
4. APPLY CLEAR HEAT SHRINK OVER ENTIRE LENGTH OF LABEL FOR PROTECTION. (REFER TO CONDUCTOR LABELS SECTION.)

RE: GN22/GN1



1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

GROUNDING DETAILS

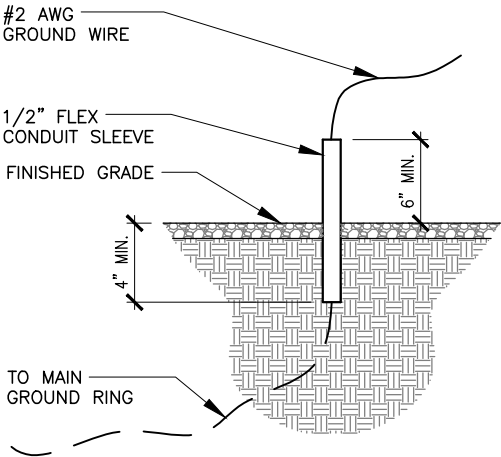
G2

3 NOT USED
SCALE: N.T.S.

4 NOT USED
SCALE: N.T.S.

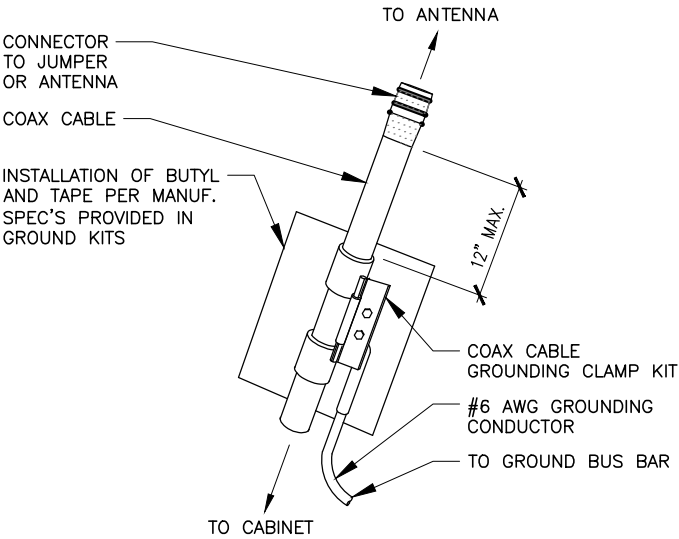
NOTES

GROUNDING EQUIPMENT, WIRE SIZE, CONNECTIONS, LOCATION AND NUMBER OF RODS PER OWNER REQUIREMENTS. THIS INFORMATION IS SCHEMATIC AND SUPPLIED TO US AND IS FOR GENERAL REFERENCE ONLY. CONTACT OWNER OR OWNERS ELECTRICAL ENGINEER FOR SPECIFICS OR QUESTIONS REGARDING ELECTRICAL CAPACITY, OR INSTALL PER PERTINENT ELECTRICAL CODES.



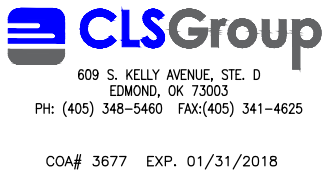
1 GROUNDING SLEEVE DETAIL
SCALE: N.T.S.

RE: GN22/GN1

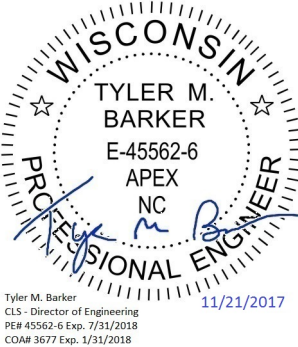


2 GROUNDING KIT DETAIL
SCALE: N.T.S.

RE: GN22/GN1



REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	10/03/17	PRELIMINARY ISSUE	JLK
0	11/21/17	FOR CONSTRUCTION	PWD
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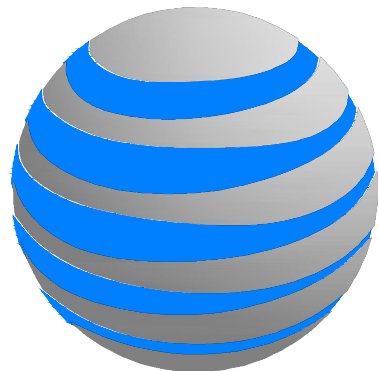
PE# 45562-6 EXP: 07/31/2018

WI0195
EL REY
FA#: 10012401
1337 WEST FOREST HOME AVE.
MILWAUKEE, WI 53204

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G3



at&t

930 NATIONAL PKWY
SHAUMBURG, IL 60173

SITE NAME:

EL REY

FA #/ SITE ID:

10012401 / WI0195

PROJECT TYPE:

LTE 4C/ LTE 5C/ LTE 6C/ RRU SWAP

STRUCTURE TYPE:

111'-6" AND 48'-8" ROOFTOP

PROJECT SCOPE:

MOUNT REINFORCEMENT

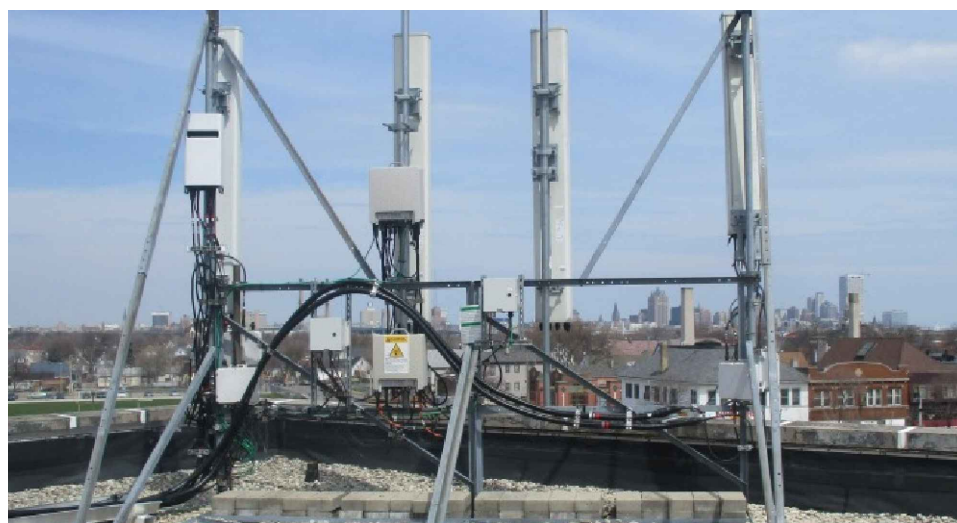


COA# 3677 EXP. 01/31/2018

LOCATION MAP



STRUCTURE ELEVATION PHOTO



DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV #
T-1	TITLE SHEET & DRAWING INDEX	0
GN-1	STRUCTURAL NOTES	0
IN-1	MODIFICATION INSPECTION NOTES	0
S-1	OVERALL PLAN VIEW	0
S-2	ALPHA & GAMMA MODIFICATION SCHEDULE AND DETAILS	0
S-3	BETA MOUNT VIEWS & MODIFICATION SCHEDULE	0
S-4	BETA MODIFICATION DETAIL VIEWS	0

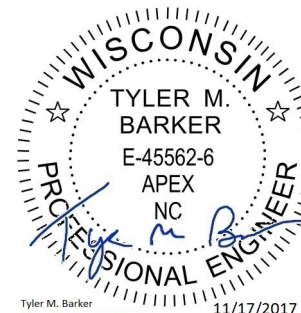
REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	11/16/17	PRELIMINARY ISSUE	SEB
0	11/17/17	FOR CONSTRUCTION	SEB

NOT FOR CONSTRUCTION UNLESS
LABELED AS CONSTRUCTION SET

SCOPE OF WORK

- THIS MODIFICATION PLAN HAS BEEN DESIGNED UTILIZING THE STRUCTURAL ANALYSIS BY CLS GROUP, REPORT #24015-10012401-02-MOD, DATED NOVEMBER 16, 2017.
- FULL MODIFICATION SCHEDULE CAN BE FOUND ON S-1.
- CONTRACTOR SHALL SCHEDULE A SITE VISIT TO CONFIRM ALL EXISTING STRUCTURE DIMENSIONS, SITE CONSTRAINTS, PROPOSED REINFORCING DIMENSIONS, THE CLEARANCES OF THE PROPOSED REINFORCING, EXISTING FOUNDATION INFORMATION, EXISTING SITE UTILITIES, AND ALL OTHER INFORMATION NECESSARY TO PERFORM THE WORK ON THESE DRAWINGS IN ORDER TO ELIMINATE THE RISK OF RFIS ONCE CONSTRUCTION AND FABRICATION HAVE BEGUN. THE CONTRACTOR SHALL NOT BEGIN FABRICATION OR CONSTRUCTION PRIOR TO PERFORMING THIS SITE VISIT AND VALIDATING THE INFORMATION ON THESE DRAWINGS AND ANY ADDITIONAL INFORMATION THE CONTRACTOR NEEDS TO PERFORM THE WORK.
- THE CONTRACTOR SHALL PERFORM THIS PRE-CONSTRUCTION WORK AND REPORT ALL DISCREPANCIES TO THE CUSTOMER AND THE ENGINEER OF RECORD OR BE LIABLE FOR THE LABOR & MATERIALS FOR DISCREPANCIES NOT CAUGHT BY THE CONTRACTOR'S DUE DILIGENCE SITE VISIT.



PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

1337 W FOREST HOME AVE
MILWAUKEE, WI 53204

SHEET TITLE

TITLE SHEET &
DRAWING INDEX

SHEET NUMBER

T-1

DRIVING DIRECTIONS

DEPART GENERAL MITCHELL FIELD ON LOCAL ROAD(S) (EAST) 120 YDS BEAR LEFT (EAST) ONTO LOCAL ROAD(S) 0.2 MI RETURN TO PARKING / REMOTE PARKING MERGE ONTO LOCAL ROAD(S) 87 YDS ROAD NAME CHANGES TO WI-119 [AIRPORT SPUR] 1.6 MI TAKE RAMP (RIGHT) ONTO I-94 [US-41] 1.8 MI I-94 / I-894 W / MILWAUKEE MERGE ONTO I-43 [I-94] 3.3 MI AT EXIT 312 A-B, TURN RIGHT ONTO RAMP 0.1 MI MITCHELL ST / BECHER ST KEEP RIGHT TO STAY ON RAMP 0.1 MI BECHER ST / MITCHELL ST KEEP LEFT TO STAY ON RAMP 109 YDS I-43 / US-41 / I-94 / BECHER ST WEST / DOWNTOWN / 4 TH ST / MITCHELL ST KEEP STRAIGHT ONTO LOCAL ROAD(S) 32 YDS TURN LEFT (WEST) ONTO W BECHER ST 0.7 MI TURN RIGHT (NORTH) ONTO S 14TH ST 0.3 MI BEAR RIGHT (NORTH-EAST) ONTO W FOREST HOME AVE 43 YDS ARRIVE 43.011333'N 87.929056'W.

DO NOT SCALE DRAWINGS

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

PROJECT TEAM

ENGINEER/ARCHITECT:
CLS GROUP, INC.
1250 BENSON RD.
GARNER, NC 27529
(405) 348-5460

STRUCTURE OWNER:
LD HOLDINGS

CUSTOMER/APPLICANT:
AT&T MOBILITY
930 NATIONAL PKWY
SHAUMBURG, IL 60173

ONE CALL



PROJECT INFORMATION

STRUCTURE TYPE:	ROOFTOP
STRUCTURE HEIGHT:	111'-6" AND 48'-8"
LATITUDE:	43.0113333 (NAD 83)
LONGITUDE:	-87.9290556 (NAD 83)
ADDRESS:	1337 W FOREST HOME AVE MILWAUKEE, WI 53204
COUNTY:	MILWAUKEE
CODE JURISDICTION:	CITY OF MILWAUKEE
GROUND ELEVATION:	645' AMSL

GENERAL NOTES

1. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, AISC, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
2. ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
3. ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
4. PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
5. UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
6. ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

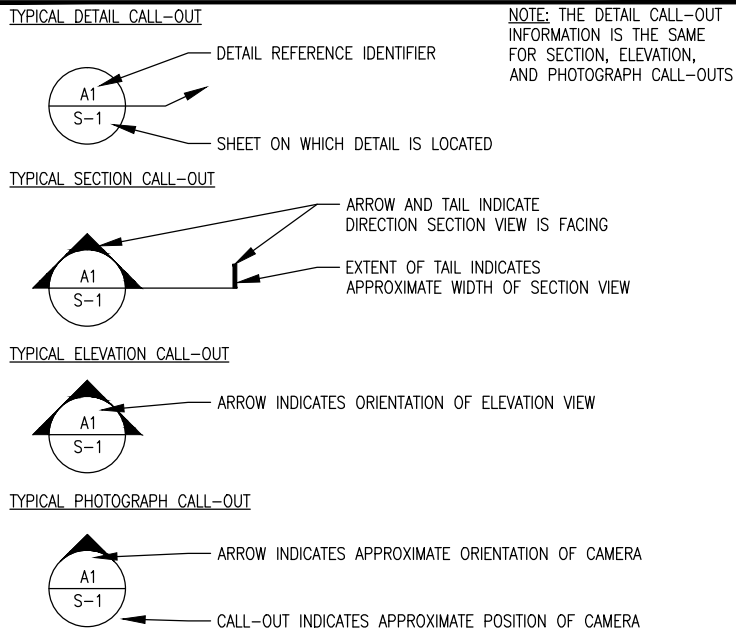
STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
- A) STRUCTURAL STEEL SHAPES, PLATES AND BARS
(EXCEPT W-SHAPES)- ASTM A36, Fy=36 KSI
- B) PIPES - ASTM A53, GRADE B, Fy=35 KSI
- C) HSS-SHAPES - ASTM A500, GRADE B, Fy=42 KSI (ROUND)
Fy=46 KSI (SQUARE & RECTANGULAR)
- D) ANCHOR & ALL-THREAD RODS - ASTM F1554, GRADE 55
- E) STRUCTURAL BOLTS 1/2"Ø AND LARGER - ASTM A325
- F) STRUCTURAL BOLTS SMALLER THAN 1/2"Ø - DIMENSIONS: ASME B18.2.1 | MATERIAL: SAE J429 GRADE 5 | THREADING: ASME B1.1, UNC, CLASS 2A | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
- G) SHEET METAL SCREWS - DIMENSIONS: ASME B18.6.3 | MATERIAL: SAE J933 | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
- H) NUTS FOR BOLTS/ALL-THREAD - ASTM A563 (THREADING TO MATCH BOLT)
- I) WASHERS FOR BOLTS/ALL-THREAD - ASTM F436
- J) W & WT SHAPES - ASTM A36, Fy=36 KSI
ALTERNATE SPEC: ASTM A992 (IF OTHER SPEC IS UNAVAILABLE)
2. STRUCTURAL BOLTS SHALL CONFORM TO THIS NOTE. ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERSIZE HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (3/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
3. ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZRC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
4. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE OF 3/16 INCH OR OF A SIZE EQUAL TO THE THICKNESS OF THE THINNER MATERIAL BEING JOINED (WHICHEVER IS LESS). FOR ACUTE OR OBTUSE JOINT ANGLES, THE FILLET WELD LEG SIZE SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE EFFECTIVE THROAT OF A 3/16 INCH FILLET WELD IN A 90° JOINT. ALL WELD SIZES SHOWN IN INCHES.
5. PRIOR TO WELDING, THE CONTRACTOR SHALL SUBMIT CERTIFICATION FOR EACH WELDER STATING THE TYPE OF WELDING AND POSITIONS QUALIFIED FOR, THE CODE AND PROCEDURE QUALIFIED UNDER, DATE QUALIFIED, AND THE FIRM AND INDIVIDUAL CERTIFYING THE QUALIFICATION TESTS. THIS INFORMATION SHALL BE SUBMITTED TO THE MODIFICATION INSPECTOR (SEE SHEET S-003) AS WELL AS ANY THIRD-PARTY CERTIFIED WELD INSPECTOR (CWI).
6. MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

CONTRACTOR NOTES

1. PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO STRUCTURE OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
2. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
3. THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED MODIFICATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE MODIFICATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "MODIFICATION INSPECTION NOTES" SHEET. THE INSPECTOR SHALL BE QUALIFIED AS A REGISTERED PROFESSIONAL ENGINEER (PE) OR AS AN ENGINEERING INTERN (EI) OR ENGINEER IN TRAINING (EIT) UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER (PE). IT IS ALSO ACCEPTABLE FOR THE CONTRACTOR TO SUBCONTRACT THE MODIFICATION INSPECTOR DUTIES TO A THIRD PARTY FIRM MEETING THE ABOVE REQUIREMENTS.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD WHEN PHASES OF CONSTRUCTION HAVE BEEN MOVED UP AND SHALL GIVE THE ENGINEER ADEQUATE NOTICE SO THAT THE ENGINEER OF RECORD MAY, AT THEIR DISCRETION, INSPECT PORTIONS OF THE WORK THAT ARE DEEMED CRITICAL TO THE INTEGRITY OF THE STRUCTURE. FAILURE TO PROVIDE THIS NOTICE MAY RESULT IN REJECTION OF THE CONTRACTOR'S WORK. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED MODIFICATION INSPECTIONS & TESTING.
5. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, QUALIFIED WELDER CERTIFICATES, CERTIFIED WELDING INSPECTOR CREDENTIALS, ET CETERA.
6. THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
7. CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

SYMBOLS AND CALL-OUTS

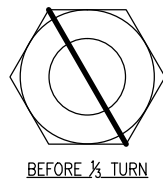


STANDARD ABBREVIATIONS

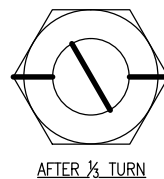
AFF	ABOVE FINISHED FLOOR	MAS	MASONRY
ARCH	ARCHITECT, -URAL	MATL	MATERIAL
BLDG	BUILDING	MAX	MAXIMUM
BOD	BOTTOM OF DECK	MECH	MECHANICAL
BOT	BOTTOM	MFR	MANUFACTURER
BRGC	BRACING	MIN	MINIMUM
BRDG	BRIDGING	MOD	MODIFICATION
C	CHANNEL	MPH	MILES PER HOUR
CL	CENTER LINE	MRI	MEAN RECURRENCE INTERVAL
CLR	CLEAR	#	NUMBER
CMU	CONCRETE MASONRY UNIT	NTS	NOT TO SCALE
CONC	CONCRETE	OC	ON CENTER
CONT	CONTINUOUS	OPH	OPPOSITE HAND
DIA (OR) Ø	DIAMETER	OPNG	OPENING
DWGS	DRAWINGS	PC	PIECE
EA	EACH	PL	PLATE
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT
EQ, EQUIV	EQUAL, EQUIVALENT	PSI	POUNDS PER SQUARE INCH
EW	EACH WAY	REF	REFERENCE
EXIST	EXISTING	REINF	REINFORCE, -MENT
' OR FT	FEET (DIMENSION)	REQD	REQUIRED
f'c	COMPRESSIVE STRESS	REV	REVISION
FDN	FOUNDATION	SF	SQUARE FEET
FTG	FOOTING	SIM	SIMILAR
GALV	GALVANIZED	SR	SOLID ROUND (SHAPE)
HORIZ	HORIZONTAL	STD	STANDARD
HSS	HOLLOW STRUCTURAL SHAPES	T&B	TOP AND BOTTOM
KIP	KILOPOUNDS (1000 LBS PER UNIT)	THK	THICKNESS
KSI	KIPS PER SQUARE INCH	TOF	TOP OF FOOTING
" OR IN	INCH	TOM	TOP OF MASONRY
L	ANGLE	TOS	TOP OF STEEL
LB	POUND	TYP	TYPICAL
LLH	LONG LEG HORIZONTAL	UON	UNLESS OTHERWISE NOTED
LLV	LONG LEG VERTICAL	VERT	VERTICAL
LONG	LONGITUDINAL	W/	WITH

BOLT TIGHTENING PROCEDURE

1. TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:
- BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:
+1/3 TURN BEYOND SNUG TIGHT
- BOLT LENGTHS UP TO AND INCLUDING FOUR TO EIGHT DIAMETERS:
+1/2 TURN BEYOND SNUG TIGHT
- BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS:
+2/3 TURN BEYOND SNUG TIGHT
2. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:
- *FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).
- 8(d)(1) TURN-OF-THE-NUT TIGHTENING.
- BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

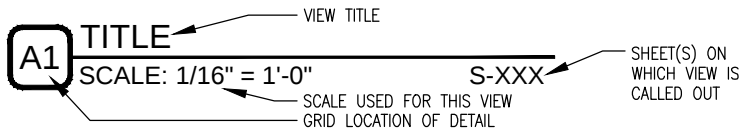


BEFORE 1/3 TURN



AFTER 1/3 TURN

SECTION / ELEVATION / DETAIL VIEW CALLOUTS



COA# 3677 EXP. 01/31/2018

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	11/16/17	PRELIMINARY ISSUE	SEB
0	11/17/17	FOR CONSTRUCTION	SEB

NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET



Tyler M. Barker
CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018

PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

1337 W FOREST HOME AVE
MILWAUKEE, WI 53204

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

GN-1

A

B

C

D

PRE-CONSTRUCTION INSPECTION CHECKLIST	
CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	MODIFICATION INSPECTION CHECKLIST
√	SHOP DRAWINGS APPROVED BY ENGINEER OF RECORD (LATEST REVISION)
√	FABRICATION INSPECTION
	FABRICATOR'S CERTIFIED WELD INSPECTOR (CWI)
	FABRICATOR'S QUALIFIED PERSONNEL FOR WELDING
√	MATERIAL TEST REPORT(S) / MILL CERTIFICATE(S)
	FABRICATOR'S NON-DESTRUCTIVE TESTING (NDT) TECHNICIAN
√	PACKING SLIPS FOR STRUCTURAL MATERIALS

CONSTRUCTION INSPECTION CHECKLIST	
CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	CONSTRUCTION INSPECTIONS
	FOUNDATION INSPECTIONS
	CONCRETE COMPRESSIVE STRENGTH AND SLUMP TESTING RESULTS/CERTIFICATES
	ADHESIVE ANCHOR ROD(S) INSTALLATION INSPECTION
	BASE PLATE GROUT INSPECTION
	THIRD-PARTY CERTIFIED WELD INSPECTION (INCLUDING IBC SPECIAL INSPECTIONS)
	SOIL EXCAVATION – DENSITY TESTING, COMPACTION INSPECTION/VERIFICATION, USE OF SUITABLE FILL
√	GALVANIZING REPAIR MATERIAL PREPARATION, INSPECTION, & PAINT APPLICATION
	GUY WIRE (RE-)TENSION REPORT AND INSPECTION
√	PRIME CONTRACTOR'S AS-BUILT DOCUMENTS (SIGNED & DATED)

POST-CONSTRUCTION INSPECTION CHECKLIST	
CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	MODIFICATION INSPECTOR'S ISSUE LIST (INCLUDING CORRECTIVE ACTIONS TAKEN) AND/OR REDLINED RECORD DRAWINGS
	POST-INSTALLED ADHESIVE ANCHOR ROD PULL-OUT TESTING
√	PHOTOGRAPHS OF MODIFICATIONS (INCLUDE PHOTOS OF BOTH SIDES OF WELDED OR BOLTED CONNECTIONS, OF OVERALL AND DETAIL VIEWS OF INSTALLED MODIFICATIONS, AND BEFORE/AFTER PHOTOS OF ANY ISSUES IDENTIFIED BY THE INSPECTOR)

GENERAL NOTES	
1.	THE POST-MODIFICATION INSPECTION IS A VISUAL EXAMINATION OF STRUCTURE MODIFICATIONS AND A REVIEW OF ANY REQUIRED CONSTRUCTION INSPECTIONS, TESTING, AND OTHER DATA TO VERIFY THAT THE MODIFICATIONS ARE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AS DESIGNED BY THE ENGINEER OF RECORD. THE CONTRACT DOCUMENTS INCLUDE THESE MODIFICATION DRAWINGS, ANY PROJECT SPECIFICATIONS REFERENCED TO IN THE PROJECT NOTES OR OTHERWISE PROVIDED WITH THE DRAWINGS, AND OTHER DOCUMENTS OR DRAWINGS PROVIDED WITH THE MODIFICATION DRAWINGS WITH THE INTENT THAT THEY BE USED AS A DESIGN AID OR GUIDELINE FOR CONSTRUCTION.
2.	THE POST-MODIFICATION INSPECTION SHALL CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A QUALITATIVE REVIEW OF THE ENGINEERING ASPECTS OF THE DESIGN OR THE DESIGN DRAWINGS. THE MODIFICATION INSPECTOR IS NOT TAKING OWNERSHIP OF THE MODIFICATION DESIGN IN THE PERFORMANCE OF THEIR DUTIES. OWNERSHIP OF THE MODIFICATION DESIGN'S EFFECTIVENESS AND INTENT, AS WELL AS ALL ASSOCIATED RISK, LIES WITH THE ENGINEER OF RECORD AT ALL TIMES.
3.	TO ENSURE THAT THE REQUIREMENTS OF THE POST-MODIFICATION INSPECTION ARE MET, IT IS ESSENTIAL THAT COORDINATION BETWEEN THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR BEGIN AS SOON AS THE PROJECT IS FUNDED AND WORK ENTERS THE PLANNING STAGE. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BE PROACTIVE IN IDENTIFYING CONSTRUCTION ISSUES AND COMMUNICATING THESE ISSUES TO EACH OTHER AND TO THE ENGINEER OF RECORD AND STRUCTURE OWNER & CUSTOMER, AS REQUIRED.

INSPECTION AND REPORT RECOMMENDATIONS	
1.	THE FOLLOWING ARE PROVIDED WITH THE INTENT OF ENHANCING THE EFFECTIVENESS OF THE MODIFICATION INSPECTION AND IMPROVING THE EFFICIENCY OF THE PROCESS OF COLLECTING AND COMPILING THE INFORMATION INTO A USABLE REPORT:
1.1.	IT IS RECOMMENDED THAT THE PRIME CONTRACTOR PROVIDE THE MODIFICATION INSPECTOR AT LEAST 5 BUSINESS DAYS NOTICE FOR WHEN THE SITE WILL BE READY FOR THE MODIFICATION INSPECTION.
1.2.	THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR SHALL COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
1.3.	THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BOTH BE PRESENT DURING THE INITIAL INSPECTION IN ORDER TO ALLOW FOR THE REMEDIATION OF DEFICIENCIES DURING THE INSPECTION, AS PRACTICABLE. IT MAY BE PREFERABLE TO KEEP WORK CREWS AND THEIR EQUIPMENT ON-SITE TO REMEDIATE DEFICIENCIES DURING INSPECTIONS.

INSPECTION RESCHEDULING AND CANCELLATION	
1.	IF THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR HAVE AGREED UPON A TIME AND DATE FOR A GIVEN INSPECTION AND EITHER PARTY RESCHEDULES OR CANCELS THE INSPECTION, THE STRUCTURE OWNER SHALL NOT BE RESPONSIBLE FOR COSTS, FEES, LOST DEPOSITS, OR OTHER EXPENSES INCURRED BY THE PRIME CONTRACTOR, THEIR SUBCONTRACTOR(S), OR THE MODIFICATION INSPECTOR DUE TO THESE SCHEDULING CHANGES. EXCEPTIONS MAY BE MADE IN THE EVENT OF UNCONTROLLABLE SITUATIONS SUCH AS NATURAL DISASTERS, SEVERE WEATHER, OR OTHER CONDITIONS THAT COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

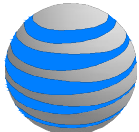
REMEDiation OF FAILING INSPECTION	
1.	IN THE EVENT THAT ANY PORTION OF THE MODIFICATION WORK IS DETERMINED TO BE UNSATISFACTORY BY THE MODIFICATION INSPECTOR, THE PRIME CONTRACTOR SHALL WORK WITH THE MODIFICATION INSPECTOR TO CREATE A PLAN OF ACTION THAT WILL EITHER:
1.1.	REPAIR THE DEFICIENT WORK TO SATISFACTORY CONDITION AND INCLUDE A SUBSEQUENT RE-INSPECTION OF THE WORK TO VERIFY THAT IT IS SATISFACTORY
1.2.	OR, WITH THE PERMISSION OF THE STRUCTURE OWNER AND/OR CUSTOMER, THE PRIME CONTRACTOR MAY WORK WITH THE ENGINEER OF RECORD TO REVIEW THE AS-BUILT CONDITION OF THE MODIFICATION TO DETERMINE IF IT IS STRUCTURALLY ACCEPTABLE. IF THIS ACTION IS NOT ACCEPTABLE TO ANY PARTY, THE PRIME CONTRACTOR SHALL PROCEED TO REPAIR THE DEFICIENT WORK TO A SATISFACTORY CONDITION.

MODIFICATION INSPECTOR'S RESPONSIBILITIES	
1.	THE MODIFICATION INSPECTOR SHALL CONTACT THE PRIME CONTRACTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THIS INSPECTION. THE MODIFICATION INSPECTOR SHALL REVIEW THE REQUIREMENTS OF THE INSPECTION CHECKLIST, SHALL WORK WITH THE PRIME CONTRACTOR TO DEVELOP A SCHEDULE OF NECESSARY ON-SITE INSPECTIONS, AND SHALL DISCUSS ANY SITE-SPECIFIC INSPECTION REQUIREMENTS OR OTHER CONCERNS.
2.	THE MODIFICATION INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL PRIME CONTRACTOR INSPECTION AND TEST REPORTS (INCLUDING THOSE OF ASSIGNED SUB-CONTRACTORS), SHALL REVIEW THE REPORTS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, SHALL CONDUCT THE NECESSARY ON-SITE INSPECTIONS, AND SHALL COMPILE AND SUBMIT THE MODIFICATION INSPECTION REPORT.

PRIME CONTRACTOR'S RESPONSIBILITIES	
1.	THE PRIME CONTRACTOR SHALL CONTACT THE MODIFICATION INSPECTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THE MODIFICATION INSTALLATION OR PROJECT. THE PRIME CONTRACTOR SHALL REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST, SHALL WORK WITH THE MODIFICATION INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, AND SHALL DISCUSS SPECIFIC INSPECTION AND TESTING REQUIREMENTS WITH THE MODIFICATION INSPECTOR IN DETAIL TO OBTAIN A FULL UNDERSTANDING OF THE REQUIRED INSPECTIONS AND TESTING.
2.	THE PRIME CONTRACTOR SHALL PERFORM AND RECORD THE TESTING AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

PHOTOGRAPHY REQUIREMENTS	
1.	THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL, BETWEEN THE EFFORTS OF BOTH PARTIES AND THEIR EMPLOYED PERSONNEL, PROVIDE PHOTOGRAPHS WITH THE INSPECTION REPORT TO INCLUDE THE FOLLOWING:
a.	GENERAL SITE PHOTOGRAPHS PRE-CONSTRUCTION
b.	MODIFICATION INSTALLATION PHOTOGRAPHS DURING CONSTRUCTION/ERECTION OPERATIONS AND INSPECTIONS
b.1.	RAW MATERIALS
b.2.	PHOTOS OF DETAILED WORK REQUIRED ON THE DRAWINGS (CONNECTIONS, WELDMENTS, FIELD-FABRICATED MEMBERS, ETC)
b.3.	WELD PREPARATION AND COMPLETED WELD INSPECTION (INCLUDING A FILLET WELD SIZE GAUGE, AS APPLICABLE)
b.4.	BOLT INSTALLATION AND TORQUE/PRETENSION.
b.5.	FINAL INSTALLED CONDITION (AFTER DEFICIENT CONDITIONS, IF ANY, ARE REMEDIATED).
b.6.	REPAIR OF SURFACE COATINGS (INCLUDING GALVANIZING AND/OR PAINT COATING)
c.	POST-MODIFICATION PHOTOGRAPHS OF THE SITE & WORK.
d.	PHOTOGRAPHS OF THE FINAL STATE OF THE SITE AT CONCLUSION OF THE WORK BY THE PRIME CONTRACTOR, ASSOCIATED SUBCONTRACTORS, AND THE MODIFICATION INSPECTOR.
e.	OTHER PHOTOS MAY BE INCLUDED AT PRIME CONTRACTOR & MODIFICATION INSPECTOR'S DISCRETION.
NOTE: PHOTOS OF MODIFICATIONS INSTALLED ON THE STRUCTURE ABOVE AN ELEVATION OF 20 FT SHALL REQUIRE PHOTOS TAKEN FROM THE STRUCTURE AS WELL AS OVERALL PHOTOGRAPHS OF THE MODIFICATIONS TAKEN FROM THE GROUND.	

OWNER INSPECTIONS	
1.	THE STRUCTURE OWNER MAY CONDUCT INSPECTIONS TO VERIFY THE QUALITY AND COMPLETENESS OF THE PREVIOUSLY COMPLETED MODIFICATION INSPECTION REPORTS FOR THE MODIFICATION INSTALLATION WORK.
2.	INSPECTIONS MAY BE COMPLETED BY A 3RD-PARTY FIRM OF THE STRUCTURE OWNER'S CHOOSING AFTER A MODIFICATION PROJECT IS COMPLETED AND A PASSING MODIFICATION INSPECTION REPORT IS ISSUED.



at&t

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1250 BENSON RD., CARMER, NC 27529
PH: (405) 348-5460 FAX:(405) 341-4625

COA# 3677 EXP. 01/31/2018

REVISIONS			
REV.	DATE	DESCRIPTION	INITIALS
A	11/16/17	PRELIMINARY ISSUE	SEB
0	11/17/17	FOR CONSTRUCTION	SEB
NOT FOR CONSTRUCTION UNLESS LABELED AS CONSTRUCTION SET			



11/17/2017

PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

FA#: 10012401

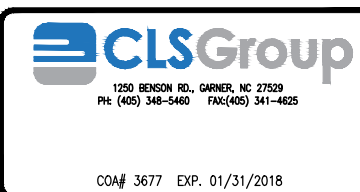
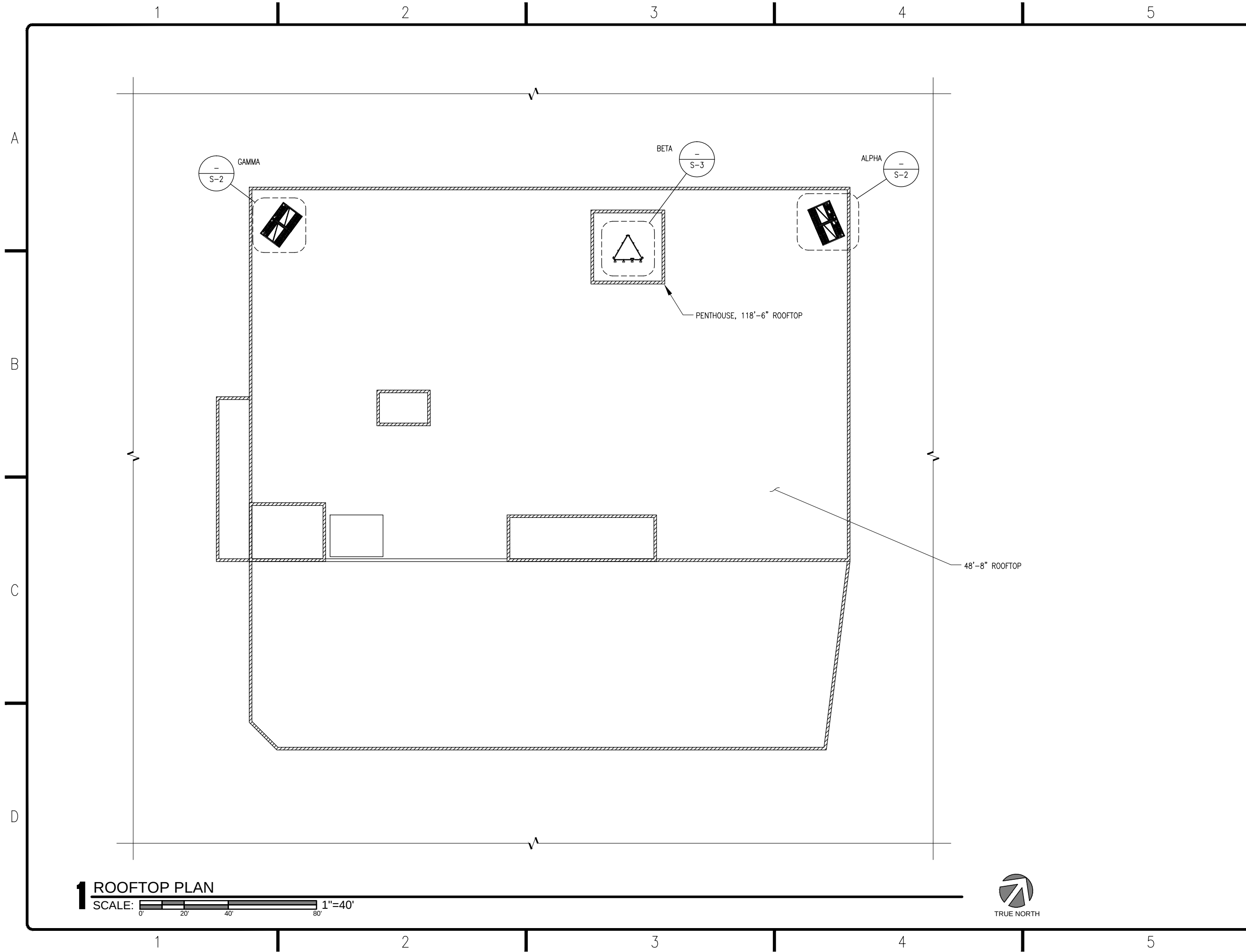
1337 W FOREST HOME AVE
MILWAUKEE, WI 53204

SHEET TITLE

MODIFICATION
INSPECTION NOTES

SHEET NUMBER

IN-1



REVISIONS			
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0	11/17/17	FOR CONSTRUCTION	SEB
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WISCONSIN

PROFESSIONAL ENGINEER

TYLER M. BARKER

E-45562-6

APEX NC

11/17/2017

Tyler M. Barker

CLS - Director of Engineering

PE# 45562-6 Exp. 7/31/2018

COA# 3677 Exp. 1/31/2018

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EL REY
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MILWAUKEE, WI 53204

SHEET TITLE
OVERALL PLAN VIEW

SHEET NUMBER
S-1

1 ROOFTOP PLAN
SCALE: 1"=40'
0' 20' 40' 80'

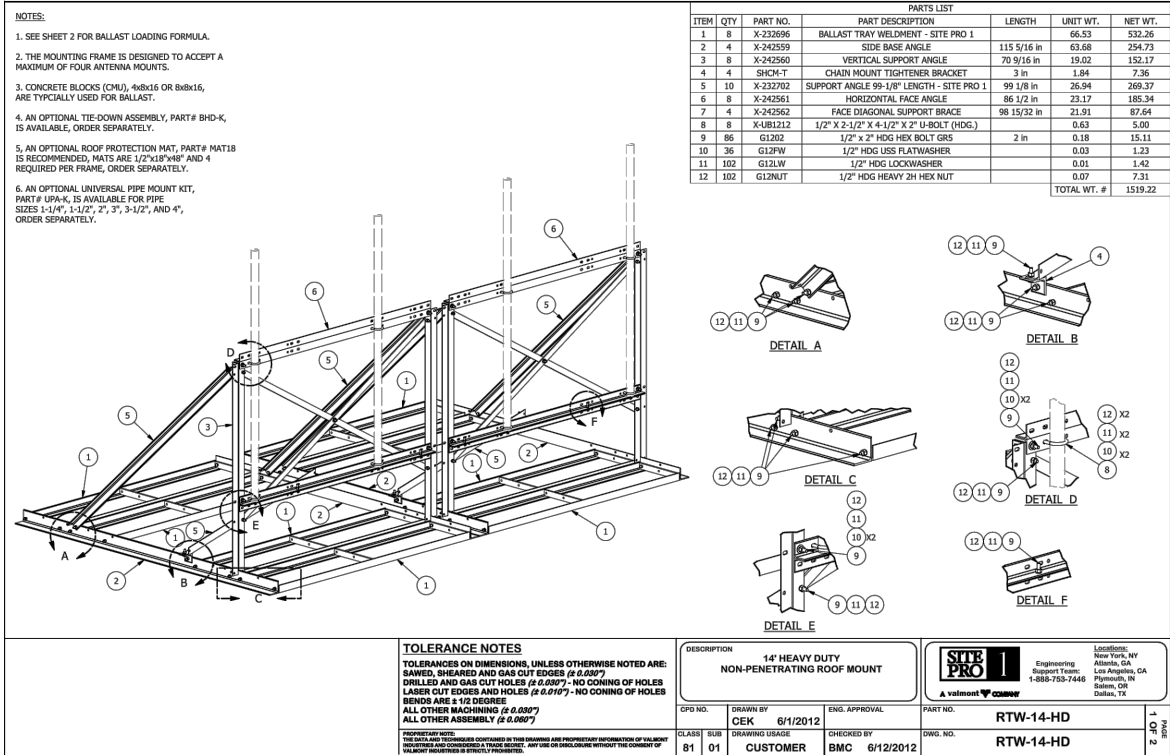


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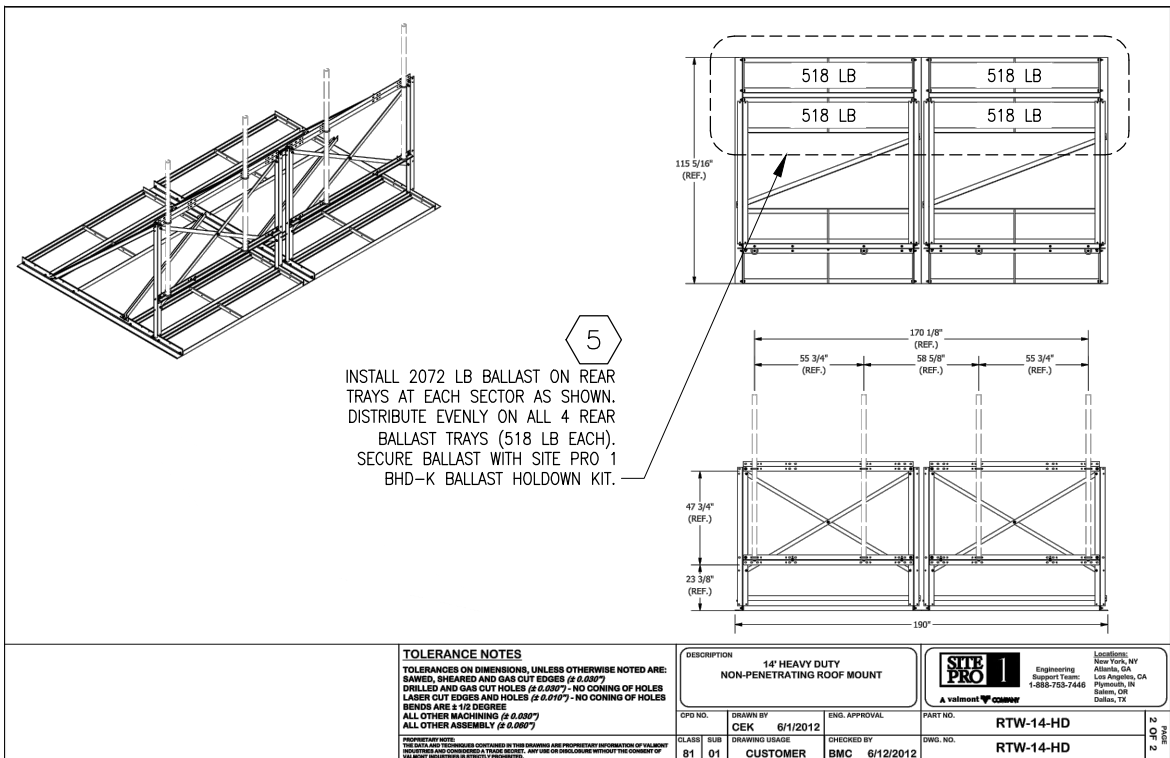
B

C

D



B1 SITE PRO 1 RTW-14-HD
SCALE: N.T.S.



D1 SITE PRO 1 RTW-14-HD
SCALE: N.T.S.

2

3

4

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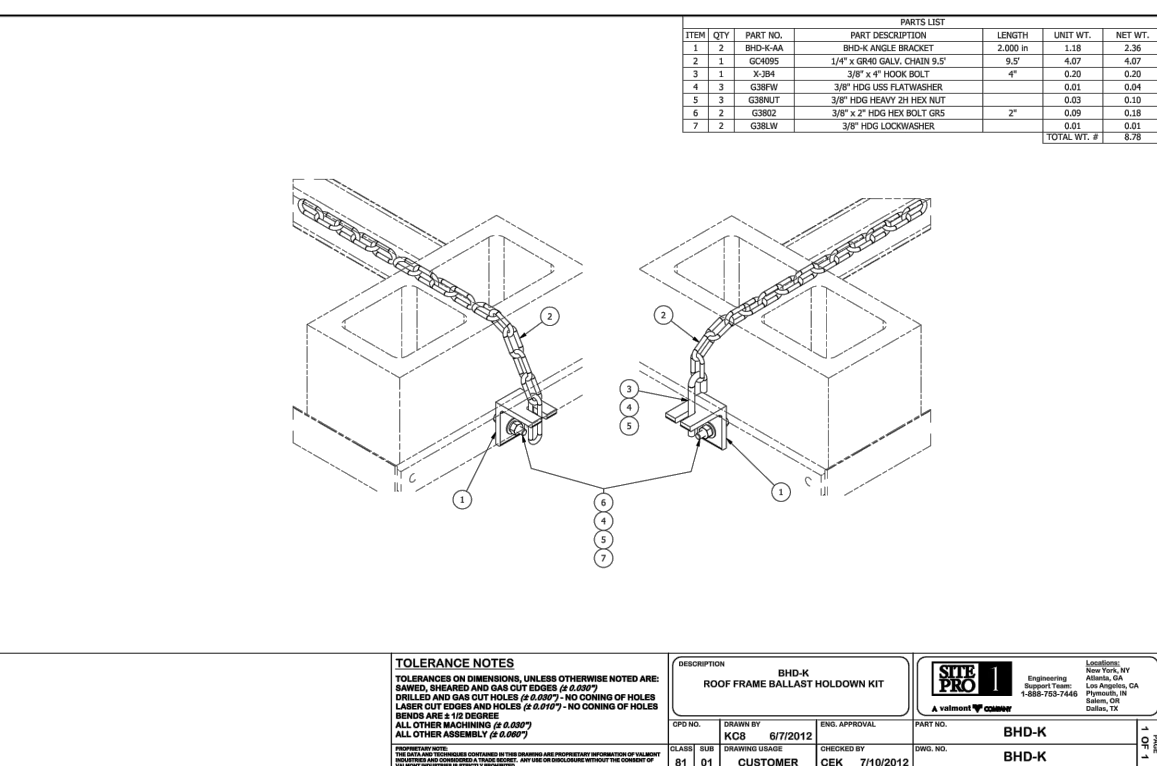
CONSTRUCTION NOTES

- SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.
- ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.

ALPHA & GAMMA MODIFICATION SCHEDULE (48'-8" ROOFTOP)

LABEL	ELEVATION	SCOPE	MATERIAL	NOTES
1	±55'-0"	REDUCE RAD HEIGHT OF THE ANTENNAS BY 3'-0" TO A NEW RAD HEIGHT OF 55'-0". INSTALL EXISTING AND PROPOSED ANTENNAS SUCH THAT THE CENTER LINE OF ANTENNAS IS NO MORE THAN 6'-0" ABOVE THE ROOF.	-	S-2
2	±55'-0"	REPLACE (2) EXISTING BALLAST FRAMES WITH (2) SITE PRO 1 RTW-14-HD, 14' HEAVY DUTY NON-PENETRATING ROOF MOUNTS.	SITE PRO 1 RTW-14-HD	S-2
3	±55'-0"	INSTALL (16) SITE PRO 1 MAT18, ROOF PROTECTION MATS, PER SECTOR (32 TOTAL) UNDERNEATH BALLAST TRAYS OF PROPOSED FRAMES.	SITE PRO 1 MAT18	S-2
4	±55'-0"	INSTALL (4) SITE PRO 1 P296 ANTENNA MOUNT PIPES AT EACH SECTOR (8 TOTAL), SPACED AND U-BOLTED TO FRAME AS SHOWN.	SITE PRO 1 P296	S-2
5	±55'-0"	INSTALL 2072 LB BALLAST ON REAR TRAYS AT EACH SECTOR AS SHOWN. DISTRIBUTE EVENLY ON ALL 4 REAR BALLAST TRAYS (518 LB EACH). SECURE BALLAST WITH SITE PRO 1 BHD-K BALLAST HOLDOWN KIT.	CMU BLOCK SITE PRO 1 BHD-K	S-2

D3 SITE PRO 1 BHD-K
SCALE: N.T.S.



COA# 3677 EXP. 01/31/2018

REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	11/16/17	PRELIMINARY ISSUE	SEB
0	11/17/17	FOR CONSTRUCTION	SEB

NOT FOR CONSTRUCTION UNLESS
LABELED AS CONSTRUCTION SET



Tyler M. Barker
CLS - Director of Engineering
PE# 45562-6 Exp. 7/31/2018
COA# 3677 Exp. 1/31/2018

11/17/2017

PE# 45562-6 EXP: 07/31/2018

WI0195

EL REY

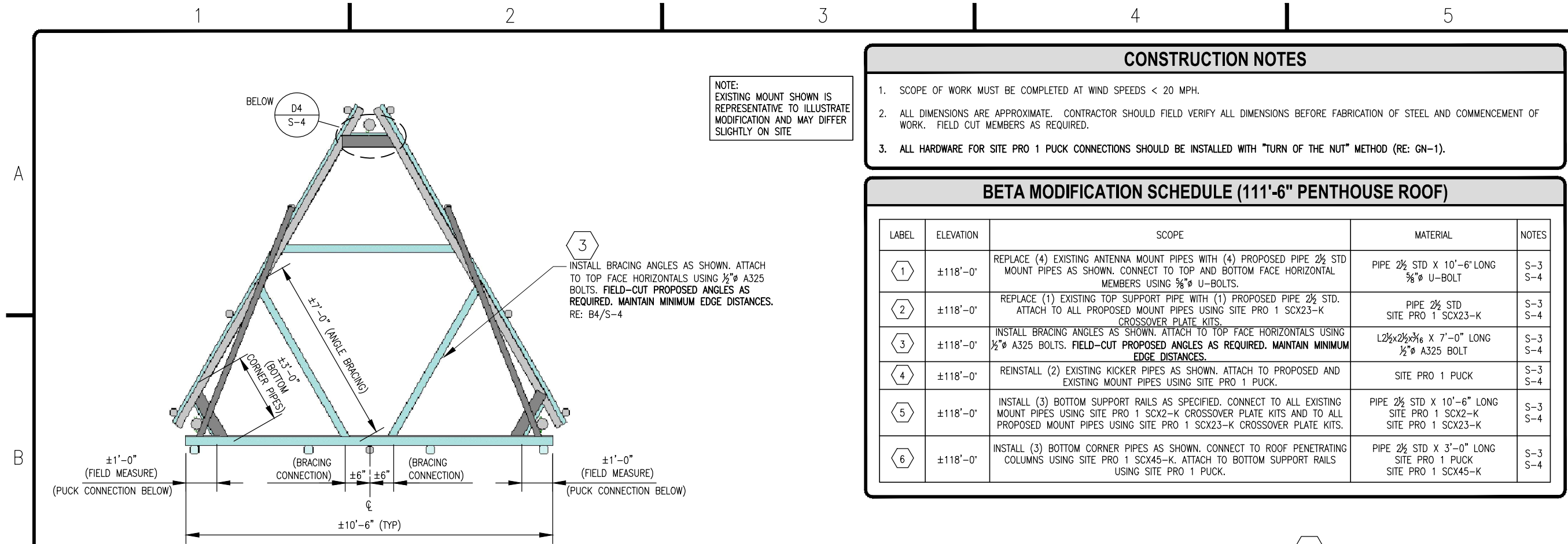
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MILWAUKEE, WI 53204

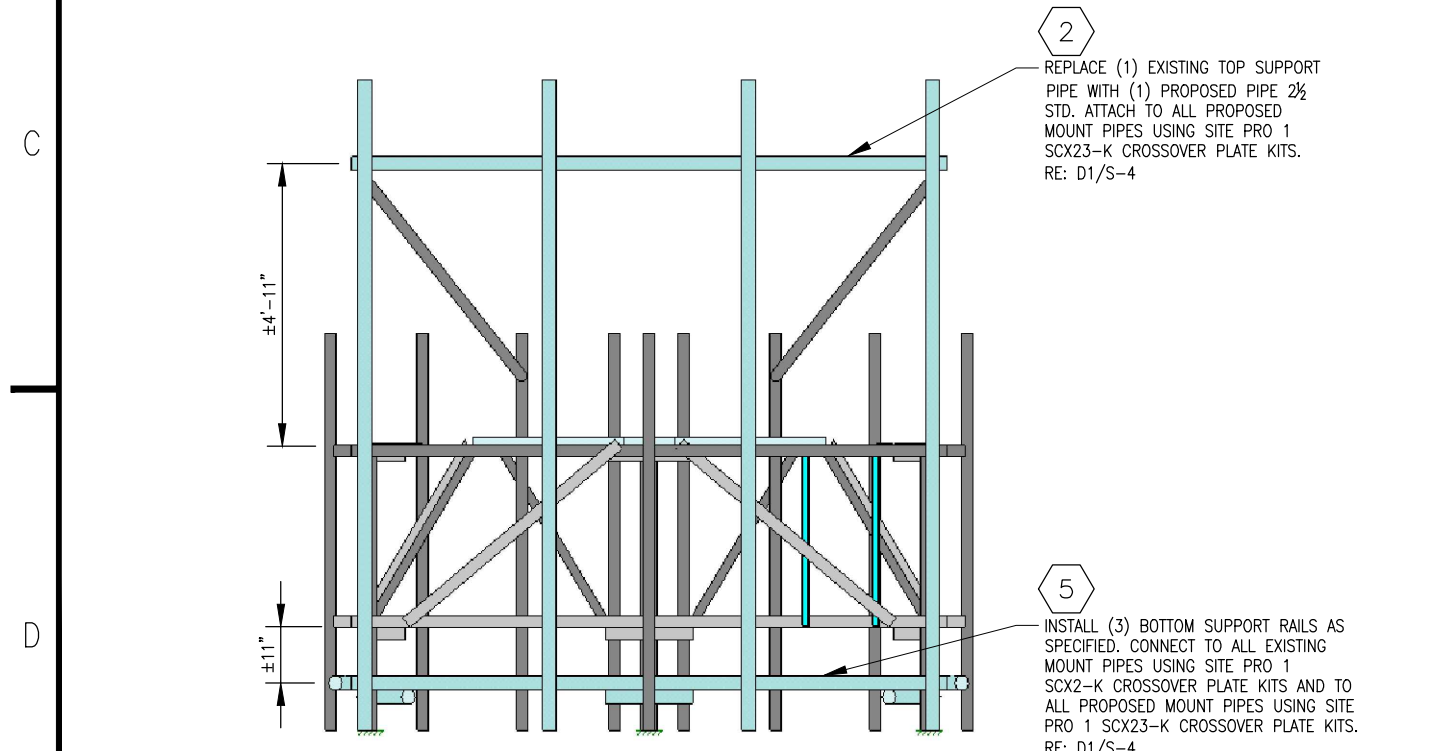
SHEET TITLE
**ALPHA & GAMMA
MODIFICATION
SCHEDULE AND DETAILS**

SHEET NUMBER

S-2



B1 BETA MOUNT PLAN VIEW
SCALE: N.T.S.



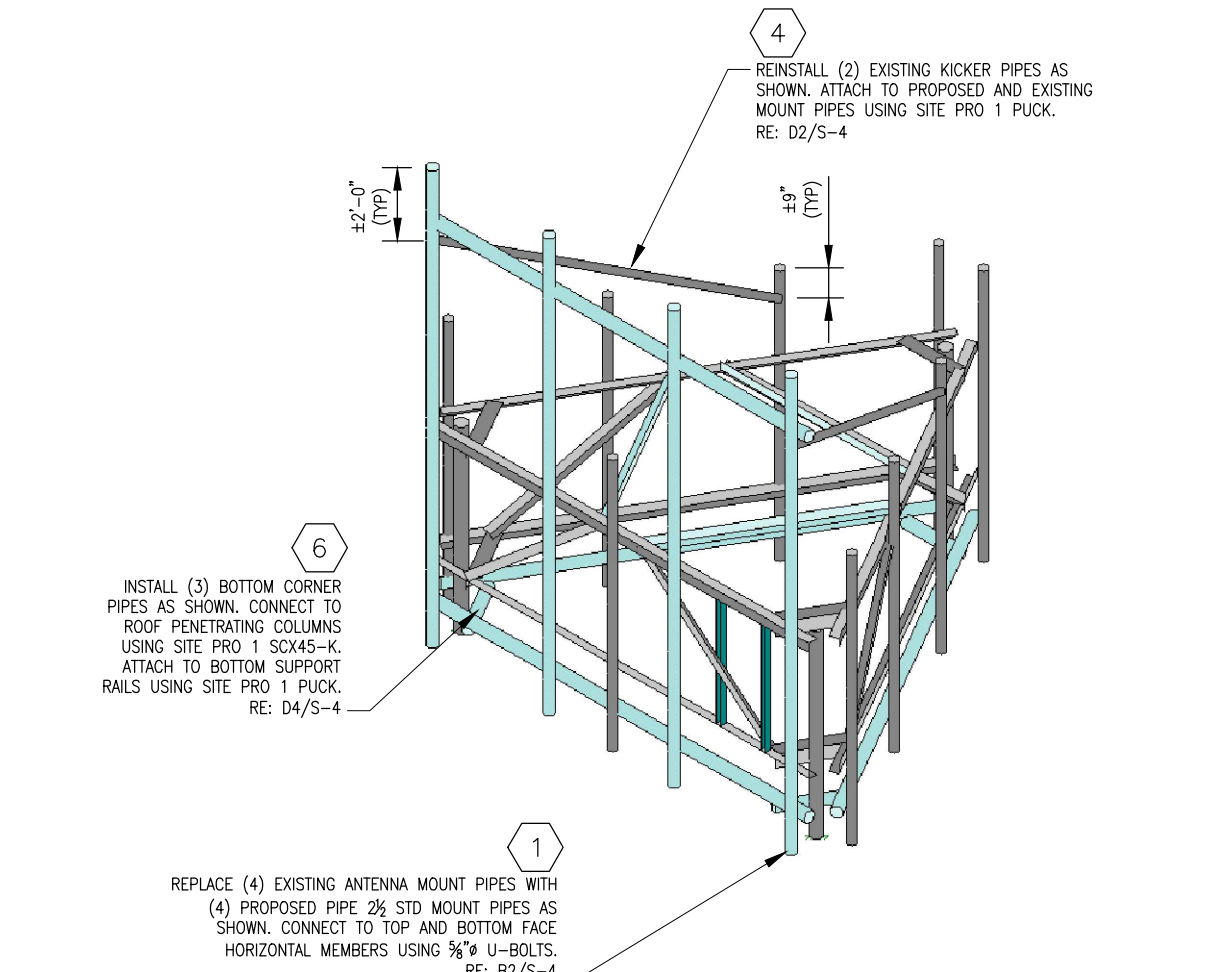
D1 BETA MOUNT FRONT ELEVATION VIEW
SCALE: N.T.S.

CONSTRUCTION NOTES

- SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.
- ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.
- ALL HARDWARE FOR SITE PRO 1 PUCK CONNECTIONS SHOULD BE INSTALLED WITH "TURN OF THE NUT" METHOD (RE: GN-1).

BETA MODIFICATION SCHEDULE (111'-6" PENTHOUSE ROOF)

LABEL	ELEVATION	SCOPE	MATERIAL	NOTES
1	±118'-0"	REPLACE (4) EXISTING ANTENNA MOUNT PIPES WITH (4) PROPOSED PIPE 2½ STD MOUNT PIPES AS SHOWN. CONNECT TO TOP AND BOTTOM FACE HORIZONTAL MEMBERS USING ¾"Ø U-BOLTS.	PIPE 2½ STD X 10'-6" LONG ¾"Ø U-BOLT	S-3 S-4
2	±118'-0"	REPLACE (1) EXISTING TOP SUPPORT PIPE WITH (1) PROPOSED PIPE 2½ STD. ATTACH TO ALL PROPOSED MOUNT PIPES USING SITE PRO 1 SCX23-K CROSSOVER PLATE KITS.	PIPE 2½ STD SITE PRO 1 SCX23-K	S-3 S-4
3	±118'-0"	INSTALL BRACING ANGLES AS SHOWN. ATTACH TO TOP FACE HORIZONTALS USING ½"Ø A325 BOLTS. FIELD-CUT PROPOSED ANGLES AS REQUIRED. MAINTAIN MINIMUM EDGE DISTANCES.	L2½x2½x¼ X 7'-0" LONG ½"Ø A325 BOLT	S-3 S-4
4	±118'-0"	REINSTALL (2) EXISTING KICKER PIPES AS SHOWN. ATTACH TO PROPOSED AND EXISTING MOUNT PIPES USING SITE PRO 1 PUCK.	SITE PRO 1 PUCK	S-3 S-4
5	±118'-0"	INSTALL (3) BOTTOM SUPPORT RAILS AS SPECIFIED. CONNECT TO ALL EXISTING MOUNT PIPES USING SITE PRO 1 SCX2-K CROSSOVER PLATE KITS AND TO ALL PROPOSED MOUNT PIPES USING SITE PRO 1 SCX23-K CROSSOVER PLATE KITS.	PIPE 2½ STD X 10'-6" LONG SITE PRO 1 SCX2-K SITE PRO 1 SCX23-K	S-3 S-4
6	±118'-0"	INSTALL (3) BOTTOM CORNER PIPES AS SHOWN. CONNECT TO ROOF PENETRATING COLUMNS USING SITE PRO 1 SCX45-K. ATTACH TO BOTTOM SUPPORT RAILS USING SITE PRO 1 PUCK.	PIPE 2½ STD X 3'-0" LONG SITE PRO 1 PUCK SITE PRO 1 SCX45-K	S-3 S-4

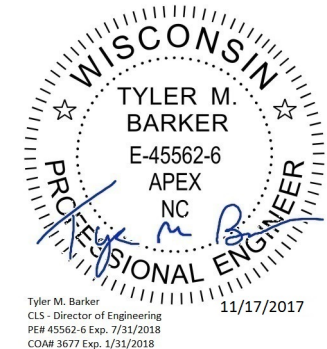


D3 BETA MOUNT ISOMETRIC VIEW
SCALE: N.T.S.



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SHEET TITLE
BETA MOUNT VIEWS & MODIFICATION SCHEDULE

SHEET NUMBER
S-3

1

2

3

4

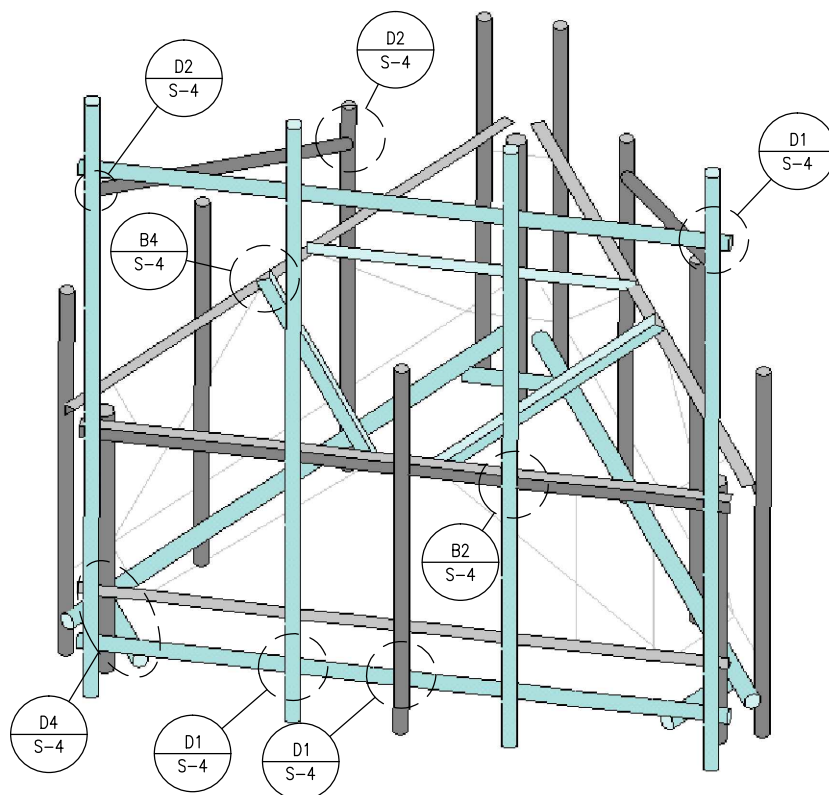
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A

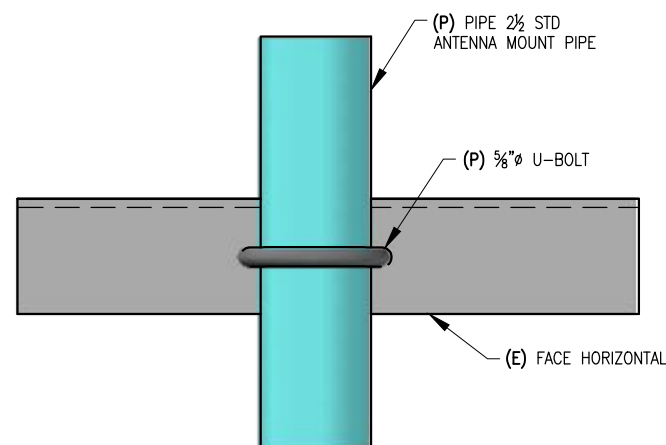
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C

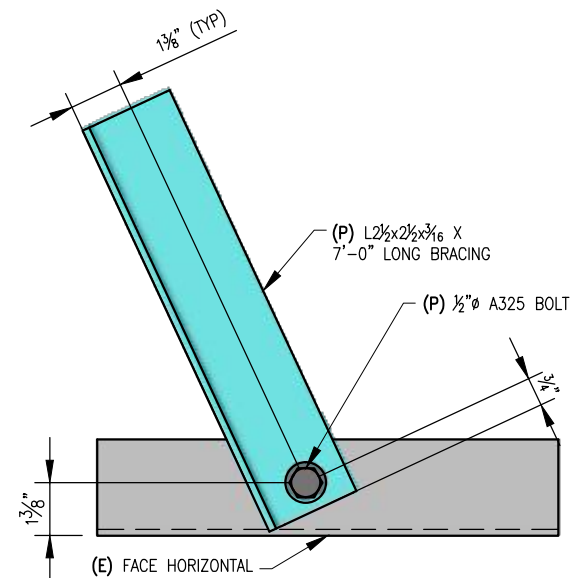
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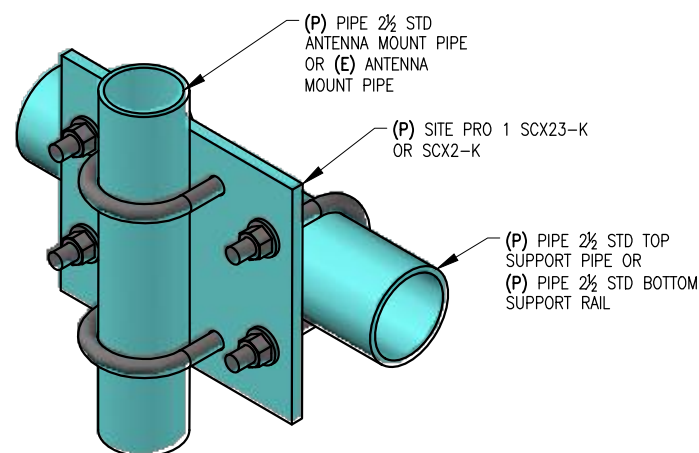
B1 MOUNT MODIFICATION ISOMETRIC VIEW
SCALE: N.T.S.



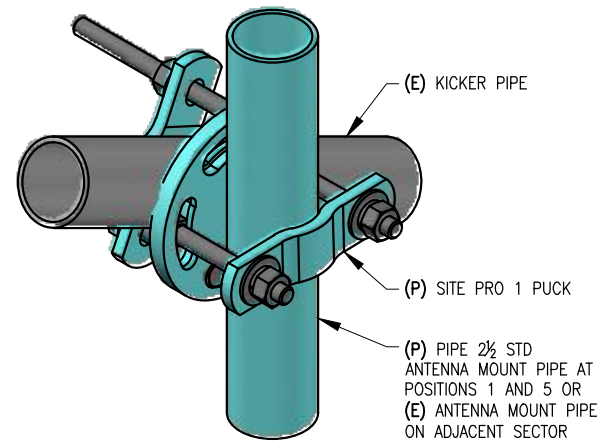
B2 VERTICAL PIPE U-BOLT CONNECTION DETAIL
SCALE: N.T.S.



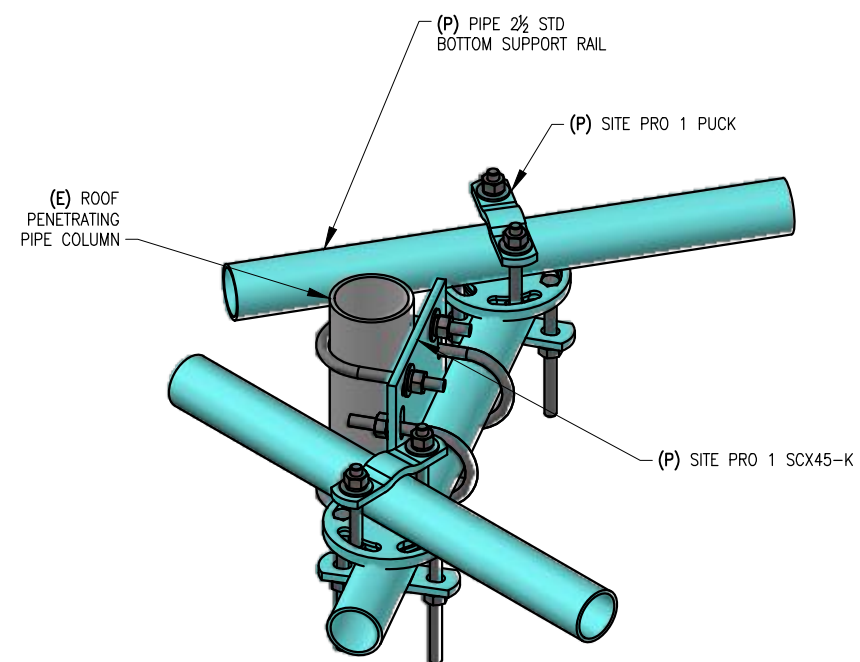
B4 FACE HORIZONTAL BRACING DETAIL
SCALE: N.T.S.



D1 SITE PRO 1 SCX23-K and SCX2-K
SCALE: N.T.S.



D2 PUCK CONNECTION (TYP)
SCALE: N.T.S.



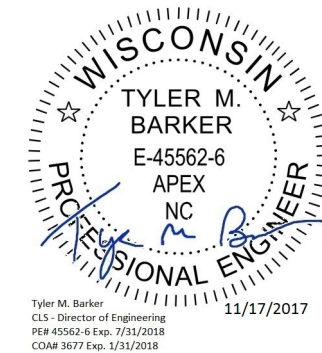
D4 CORNER BRACING CONNECTION
SCALE: N.T.S.



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SHEET TITLE
**BETA MODIFICATION
DETAIL VIEWS**

SHEET NUMBER

S-4

1

2

3

4

5