

COUNCIL ACTION FORM

**SUBJECT: AMENDMENT TO LEASE AGREEMENT FOR CELLULAR EQUIPMENT
AT MORTENSEN AND COUNTY LINE ROAD (MAC) WATER TOWER**

BACKGROUND:

In April 2004, the City entered into a lease agreement with Sprint Spectrum L.P., to place cellular antenna equipment on the City water tower located at 900 S. 500th Avenue. This water tower is referred to by City staff as the MAC (Mortensen and County Line Road) Water Tower. The equipment that may be installed is specified within the lease agreement, along with the areas on the ground and on the top of the tank where Sprint is permitted to install it.

Sprint (now owned by T-Mobile) has requested a lease amendment in order to reflect new equipment that will be installed at the water tower, replacing obsolete equipment in the same area. No other terms of the lease will be modified with this amendment. The proposed lease amendment (attached) has been reviewed and approved by staff from the Water and Pollution Control Department and the City Attorney's Office.

ALTERNATIVES:

1. Approve the amendment to the tower lease with Sprint Spectrum L.P. for the Mortensen and County Line Road Water Tower.
2. Do not approve the lease amendment.

CITY MANAGER'S RECOMMENDED ACTION:

The lease agreement with Sprint for the use of the MAC water tower provides additional income for the City's water utility. The requested lease amendment will permit Sprint to replace aging equipment on the water tower to serve its customers. No other changes will occur as a result of approving the lease amendment.

Therefore, it is the recommendation of the City Manager that the City Council adopt Alternative No. 1, as described above.

FIRST AMENDMENT TO TOWER LEASE

This **First Amendment to Tower Lease (“Amendment”)** is made by and between **City of Ames, Iowa (“Landlord”)** and **Sprint Spectrum L.P.,** a Delaware limited partnership (**“Tenant”**).

WHEREAS, Landlord and Tenant entered into that certain **Tower Lease** dated **April 27, 2004** (the **“Lease”**), whereby Landlord leased to Tenant certain portions of the Property located at **900 S. 500th Avenue, Ames, Iowa** (the **“Property”**);

WHEREAS, Landlord and Tenant desire to amend the Lease as follows;

WHEREAS, Landlord and Tenant hereby affirm that, as of the date hereof: (i) no breach or default by Landlord or Tenant occurred; and (ii) the Lease, and all the terms, covenants, conditions, provisions and agreements thereof, except as expressly modified by this Amendment are in full force and effect, with no defenses or offsets thereto; and

NOW THEREFORE, in consideration of the mutual covenants contained in the Lease and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Landlord and Tenant hereby agree as follows:

1. Landlord consents to the installation and operation of additional antennas, associated cables and equipment as more completely described on the scope of work and elevation drawing attached hereto as Exhibit B-1 (the **“New Equipment”**). Landlord’s execution of this First Amendment will signify Landlord’s approval of Exhibit B-1, which hereby replaces Exhibit B to the Lease.
2. Each of the parties represent and warrant that they have the right, power, legal capacity and authority to enter into and perform their respective obligations under this Amendment.
3. This Amendment will be binding on and inure to the benefit of the parties herein, their heirs, executors, administrators, successors-in-interest and assigns.
4. Landlord represents and warrants to Tenant that the consent or approval of a third party has either been obtained or is not required with respect to the execution of this Amendment.
5. Except as specifically amended herein, the remaining terms of the Lease shall remain in full force and effect. To the extent any provision contained in this Amendment conflicts with the terms of the Lease, the terms and provisions of this Amendment shall prevail. All capitalized terms shall have the meaning ascribed to them in the Lease unless otherwise defined in this Amendment.
6. This Amendment may be executed in duplicate counterparts, each of which will be deemed an original.

IN WITNESS WHEREOF, the parties have executed this Amendment on the day and year last written below.

LANDLORD
CITY OF AMES, IOWA

TENANT
Sprint Spectrum L.P.

By: _____
Name: _____
Title: _____
Date: _____

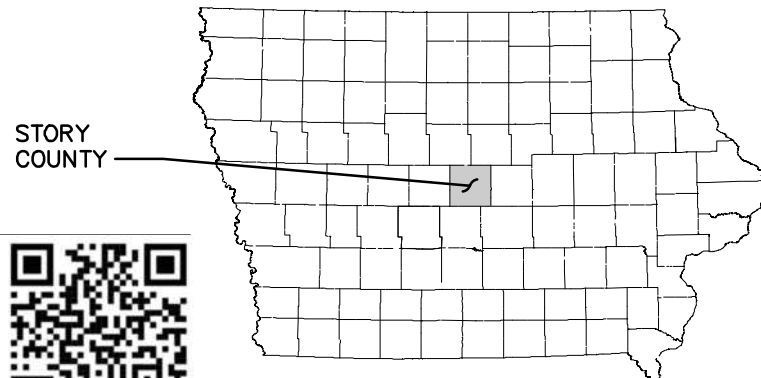
By: _____
Name: _____
Title: _____
Date: _____

**EXHIBIT B-1
NEW EQUIPMENT**

Site Number: DM01886A
Site Name: Ames West Y Ave
Market: IA NE

STATE MAP

SCALE: NONE



STORY COUNTY



T-Mobile

SPRINT RETAIN

DM01886A - AMES WEST Y AVE

900 S. 500TH AVENUE

AMES, IA 50014

STORY COUNTY

PBM PROJECT #22-10-40-14

G.C. NOTE
THIS SITE IS MUNICIPALLY OWNED. BOTH STATE & LOCAL LAWS PROHIBIT SMOKING ANYWHERE ON THE PROPERTY. CONTRACTORS MUST EXIT THE FENCED PERIMETER OF THE PROPERTY TO SMOKE. CONTRACTOR(S) CAUGHT SMOKING WILL BE REMOVED FROM THE SITE, & MAY BE SUBJECT TO FINES

LOCATION INFORMATION

LATITUDE: N42° 00' 54.3" (42.015086°)

LONGITUDE: W93° 41' 53.6" (-93.697953°)

ELEVATION AT GRADE: 1050'

TOWER TYPE: EXISTING WATER TANK

PARCEL #: 0907300105

PROJECT TEAM

LANDLORD:

CITY OF AMES WATER PLANT
1800 E. 13th STREET
AMES, IA 50010
(515) 239-5150

APPLICANT:

SPRINT SPECTRUM L.P.,
A DELAWARE LIMITED PARTNERSHIP
6391 SPRINT PARKWAY
OVERLAND PARK, KS 66251
NATE MEYER (AGENT)
(317) 501-9164

DESIGN FIRM:

PBM WIRELESS SERVICES
3620 DEVELOPERS ROAD
INDIANAPOLIS, IN 46227
MARK MARECKI
(224) 531-2400

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
N-1	GENERAL NOTES	0
N-2	GENERAL NOTES	0
N-3	GENERAL NOTES	0
N-4	GENERAL NOTES	0
N-5	GENERAL NOTES	0
C-1.0	PARTIAL SITE PLAN	0
C-1.1	COMPOUND PLAN	0
C-2.0	EQUIPMENT PLANS	0
C-3.0	EQUIPMENT ELEVATION	0
C-3.1	SITE PHOTOS (REF ONLY)	0
C-4.0	TOWER ELEVATION	0
C-4.1	ENLARGED ANTENNA ELEVATION	0
C-5.0	EXISTING TANK TOP PLAN	0
C-5.1	PROPOSED TANK TOP PLAN	0
C-6.0	RFDS INFORMATION (REF ONLY)	0
C-7.0	RF PLUMBING DIAGRAM & DETAILS (REF ONLY)	0
C-8.0	EQUIPMENT DETAILS (REF ONLY)	0
C-8.1	MOUNT DETAILS	0
C-8.2	MOUNT DETAILS	0
C-8.3	MOUNT DETAILS	0
E-0.0	ELECTRICAL NOTES & DETAILS	0
E-1.0	UTILITY SCHEMATIC	0
E-2.0	GROUNDING SCHEMATIC	0
-	-	-
-	-	-
-	-	-
-	-	-

JURISDICTIONAL INFORMATION

JURISDICTION:
CITY OF AMES, IA

ZONING:
COMMERCIAL

ONE-CALL INFORMATION



1-800-292-8989

SCOPE OF WORK

GROUND LEVEL

- EXISTING SPRINT EQUIPMENT CABINETS (TYP. 2) TO BE REMOVED.
- PROPOSED DELTA HPL3 SSC TO BE INSTALLED.
- PROPOSED DELTA LB3 BATTERY CABINET TO BE INSTALLED.
- PROPOSED NON-PENETRATING BALLAST FRAME.
- PROPOSED 200A PPC w/GENERATOR RECEPTACLE MOUNTED TO BALLAST FRAME.
- PROPOSED RAC24 CABINET MOUNTED TO BALLAST FRAME.
- PROPOSED COVPs (TYP. 2) MOUNTED TO BALLAST FRAME.
- PROPOSED CABLE TRAY w/SLEEPERS

TOWER LEVEL

- EXISTING SPRINT ANTENNAS & EQUIPMENT:
 - (3) ANTENNAS TO BE REMOVED
 - (3) RRUs TO BE REMOVED
 - (6) TMAs TO BE REMOVED
- PROPOSED T-MOBILE ANTENNAS & EQUIPMENT LOADING ON STRUCTURE:
 - (3) PROPOSED COMMSCOPE FFV-65C-R3-V1 ANTENNAS
 - (3) PROPOSED AEHC ANTENNAS
 - (3) PROPOSED AHLOA RRUs
 - (3) PROPOSED AHFIG RRUs
 - (2) PROPOSED UPPER BREAKOUT FEATURES/PENDANTS
 - (7) PROPOSED MOUNTING PIPES
 - (7) PROPOSED MOUNTS
 - (2) PROPOSED HYBRID HCS2.0 TRUNK CABLES
 - (1) PROPOSED GPS ANTENNA
 - PROPOSED RRU MOUNTS

NOTE:

- PROJECT DESCRIPTION DOES NOT INCLUDE ALL EQUIPMENT & MATERIALS FOR A COMPLETE INSTALLATION.
- DRAWINGS BASED ON T-MOBILE RFDS DATED: 05/16/22. G.C. TO COORDINATE WITH T-MOBILE PM FOR FINAL EQUIPMENT BASED ON MOST RECENT RFDS.

CODE COMPLIANCE

WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY CITY OF AMES, STORY COUNTY, STATE OF IOWA & OTHER GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

BUILDING CODE: IBC (2015) TIA/EIA, REVG, OR LATEST EDITION
MECHANICAL CODE: IMC (2021)
ELECTRICAL CODE: NEC (2020)

UTILITIES

ELECTRICAL: ALLIANT ENERGY (800) 255-4268
UTILITY CONTACT:
COMMUNICATIONS: UTILITY MEDIACOM (855) 633-4226
CONTACT:

LOCATION MAP

SCALE: NONE



SITE LOCATION

DRIVING DIRECTIONS

FROM T-MOBILE OFFICE LOCATED AT 7600 OFFICE PLAZA DRIVE S, WEST DES MOINES, IA 50266: HEAD EAST TOWARD OFFICE PLAZA DR S, TURN LEFT TOWARD OFFICE PLAZA DR S, TURN RIGHT ONTO OFFICE PLAZA DR S, TURN LEFT ONTO JORDAN CREEK PKWY TURN RIGHT TO MERGE ONTO I-80 E, FOLLOW TO 270TH ST/BOONE ST IN LUTHER, MERGE ONTO I-80 E, KEEP LEFT TO STAY ON I-80 E, KEEP RIGHT AT THE FORK, KEEP LEFT TO CONTINUE ON I-35 N/I-80 E, TAKE EXIT 127B TO MERGE ONTO IA-141 W/SE GRIMES BLVD TOWARD GRIMES, MERGE ONTO IA-17 N/NW 142ND ST VIA THE RAMP TO MADRID/BOONE, CONTINUE ON 270TH ST. DRIVE TO S 500TH AVE/Y AVE, TURN RIGHT ONTO 270TH ST/BOONE ST, TURN LEFT ONTO X AVE, TURN RIGHT ONTO 250TH ST, TURN LEFT ONTO S 500TH AVE/Y AVE, DESTINATION WILL BE ON THE RIGHT

APPROXIMATE TRAVEL: 45 MIN; 39.4 MILES

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

(SIGNATURE) (DATE) 10.07.22

NAME: James A. Clancy

LICENSE NUMBER: 18539

MY LICENSE RENEWAL DATE IS: 12.31.22

PAGES OR SHEETS COVERED BY THIS SEAL: T-1, N-1, N-2, N-3, N-4, N-5, C-1.0, C-1.1, C-2.0, C-3.0, C-4.0, C-4.1, C-5.0, C-5.1, C-8.1, C-8.2, C-8.3, E-0.0, E-1.0, E-2.0

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

T-Mobile
7600 OFFICE PLAZA DRIVE SOUTH, SUITE 150
WEST DES MOINES, IA 50266

PBM
Wireless Services
Think outside the triangle.

JD	JD	JD	JKB	BCG	BCG
C 05/10/22	LL REVIEW				
D 08/09/22	LL COMMENTS				
E 08/17/22	FINAL LL REVIEW				
F 09/16/22	LL COMMENTS				
G 09/20/22	LL REVIEW				
O 10/07/22	BID/PERMIT				

DM01886A - AMES WEST Y AVE
900 S. 500th AVE., AMES, IA, 50014
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SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14
CHKD BY: MJM
DWG BY: JD

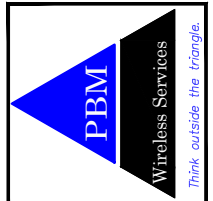
SHEET TITLE
TITLE SHEET
SHEET NUMBER
T-1

DIVISION 1 GENERAL REQUIREMENTS:

1. WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH T-MOBILE WIRELESS STANDARD CONSTRUCTION SPECIFICATIONS, REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.), NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ELECTRICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE NEW (EXCEPT WHERE OTHERWISE NOTED) AND SHALL COMPLY WITH THE REQUIREMENTS OF THE UNDERWRITERS' LABORATORIES (U.L.) AND BEAR THE U.L. LABEL.
2. THE CONTRACTOR SHALL BE PROPERLY LICENSED AND PROPERLY REGISTERED TO PERFORM THIS WORK IN PROJECT STATE AND JURISDICTION. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, SAID TRADESMAN OR SUBCONTRACTOR PERFORMING THOSE TRADES SHALL ALSO BE LICENSED.
3. THE CONTRACTOR SHALL VISIT THE JOB SITE (PRE-CONSTRUCTION WALK), VERIFY DIMENSIONS AND BECOME FAMILIAR WITH THE PROJECT/FIELD CONDITIONS. DISCREPANCIES SHALL BE IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
4. THE CONTRACTOR SHALL NOT PROCEED WITH WORK NOT CLEARLY IDENTIFIED ON THE DRAWINGS WITHOUT PRIOR WRITTEN APPROVAL OF THE PROJECT MANAGER.
5. IN CASE OF CONFLICT BETWEEN THESE DRAWINGS OR MANUFACTURER SPEC, CONTRACTOR SHALL NOTIFY ENGINEER OR T-MOBILE REPRESENTATIVE.
6. CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED PLASTIC LABELS "T-MOBILE" ON THE FACE OF EACH PIECE OF EQUIPMENT AND ABOVE THE ELECTRICAL METER.
7. THE OWNER OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT EQUIPMENT OR MATERIALS WHICH, IN HIS/HER OPINION, ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO THE OWNER OR HIS ARCHITECT/ENGINEER.
8. THE CONTRACTOR SHALL SUPPORT, BRACE AND SECURE EXISTING STRUCTURES AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION.
9. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE THE WORK TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED BY THE GOVERNING AUTHORITIES. WORK THAT IS ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST SHALL BE UNCOVERED AT THE CONTRACTOR'S EXPENSE; AFTER IT HAS BEEN INSPECTED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITION AT HIS OWN EXPENSE.
10. EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT/ENGINEER AND OWNER ASSUME NO RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF SAID UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING AFFECTED UTILITIES.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE PROJECT MANAGER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL UTILITY LOCATES 48 HOURS PRIOR TO START OF CONSTRUCTION TO HAVE UNDERGROUND UTILITIES LOCATED AND MARKED.
12. CONTRACTORS SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SUCH THAT NO PAPERS, TRASH, DEBRIS, WEEDS, BUSH OR ANY OTHER DEPOSITS REMAIN. MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE PROPERLY DISPOSED OF OFF-SITE BY THE CONTRACTOR IN A LEGAL MANNER.
13. SITE WORK SHALL BE CAREFULLY COORDINATED BY THE CONTRACTOR WITH LOCAL GAS, ELECTRIC, TELEPHONE, AND OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.
14. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN THE UTILITIES OF THE BUILDING/SITE WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT A SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE BUILDING/PROPERTY OWNER FOR SUCH INTERRUPTION, AT LEAST 72 HOURS IN ADVANCE. INTERRUPTIONS SHALL BE MADE WITH A MINIMUM AMOUNT OF INCONVENIENCE TO THE BUILDING/PROPERTY OWNER AND SUCH SHUTDOWN TIME SHALL BE COORDINATED WITH THE BUILDING/PROPERTY OWNER.
15. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE STATE STANDARDS FOR EROSION AND SEDIMENT CONTROL.
16. CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS-BUILT DRAWINGS TO THE OWNER AND/OR PROJECT MANAGER.

DIVISION 2 SITE WORK:

1. THE CONTRACTOR SHALL LOCATE UTILITIES PRIOR TO THE START OF CONSTRUCTION. EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES (WHERE ENCOUNTERED IN THE WORK) SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE PROJECT MANAGER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
 - A. FALL PROTECTION
 - B. CONFINED SPACE
 - C. ELECTRICAL SAFETY
 - D. TRENCHING AND EXCAVATION
2. REMOVE FROM SITE/OWNER'S PROPERTY WASTE MATERIALS, UNUSED EXCAVATED MATERIAL INCLUDING MATERIAL CLASSIFIED UNSATISFACTORY, CONTAMINATED OR DANGEROUS TO HUMANS AND DEBRIS, AND DISPOSE OF IN A LEGAL MANNER.
3. EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING AND DOCUMENTED ON THE AS-BUILT DRAWINGS.
4. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE CONFORMED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK.
5. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE STATE STANDARD GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
6. CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND CONSTRUCTION STAKING. CONTRACTOR SHALL ESTABLISH GRADE AND LINE STAKES PRIOR TO CONSTRUCTION, IF REQUIRED.
7. THE CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO ESTABLISH INSPECTION AND APPROVAL PROCESS FOR SITE WORK.



C	05/10/22	LL	REVIEW	JD
D	08/09/22	LL	COMMENTS	JD
E	08/17/22	FINAL	LL REVIEW	JD
F	09/16/22	LL	COMMENTS	JKB
G	09/20/22	LL	REVIEW	BCG
O	10/07/22	BID	PERMIT	BCG

DM01886A - AMES WEST Y AVE
 900 S. 500th AVE., AMES, IA, 50014
 STORY COUNTY
 SPRINT RETAIN - EXISTING WATER TANK
 PROJ # : 22-10-40-14
 DWG BY: JD
 CHKD BY: MJM

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-1

DIVISION 3 CONCRETE· N/A

DIVISION 5 STRUCTURAL STEEL·

1. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE CURRENT EDITION AISC "MANUAL OF STEEL CONSTRUCTION"(ASD), AWS D1.1 AND IBC LATEST EDITION. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING:
 - A. ASTM A992, GRADE 50, W SECTIONS.
 - B. ASTM A36, GRADE 36, CHANNELS, ANGLES, PLATES, RODS, U-BOLTS AND ANCHOR BOLTS.
 - C. STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED PER ASTM A123.
 - D. STRUCTURAL BOLTED CONNECTION SHALL BE MADE WITH ASTM A325 BOLTS IN BEARING TYPE CONNECTIONS.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL CONNECTIONS ARE COMPLETE.
3. FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE CONSTRUCTION MANAGER.
4. TIGHTEN HIGH STRENGTH BOLTS TO A SNUG TIGHT CONDITION WHERE PILES IN A JOINT ARE IN FIRM CONTACT BY EITHER:
 - A. A FEW IMPACTS OF AN IMPACT WRENCH
 - B. THE FULL EFFORT OF A PERSON USING A SPUD WRENCH
5. WELDING
 - A. WELDING SHALL BE DONE BY CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.
 - B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM A-233, E70 SERIES, BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.
 - C. FIELD WELDING SHALL BE DONE AS PER AWS D1.1 REQUIREMENTS. VISUAL INSPECTION IS ACCEPTABLE.
6. PROTECTION
 - A. UPON COMPLETION OF ERECTION, INSPECT GALVANIZED STEEL AND PAINT FIELD CUTS, WELDS OR GALVANIZED BREAKS WITH ZINC BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

DIVISION 16 ELECTRICAL·

QUALITY ASSURANCE·

1. CONTRACTOR FURNISHED MATERIALS AND EQUIPMENT SPECIFIED ON THE DRAWINGS SHALL BE NEW AND UNUSED, OF CURRENT MANUFACTURE AND OF THE HIGHEST GRADE.
2. EQUIPMENT, MATERIALS AND INSTALLATION METHODS SPECIFIED ON THE PROJECT DRAWINGS SHALL BE DESIGNED AND FABRICATED IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES AND REGULATIONS, AND APPROPRIATE INDUSTRIAL CONSENSUS STANDARDS AND CODES INCLUDING ANSI, IEEE, NEMA, NFPA AND AS REVISED AS OF THE DATE OF THIS WORK PACKAGE.
3. ELECTRICAL ITEMS BOTH CONTRACTOR AND OWNER FURNISHED SHALL BE CHECKED FOR AGREEMENT WITH THE PROJECT DRAWINGS AND SPECIFICATION AND SHALL BE VISUALLY INSPECTED TO ENSURE THAT EQUIPMENT IS UNDAMAGED AND IS IN PROPER ALIGNMENT, INSTALLED PER MANUFACTURER'S INSTRUCTIONS, ELECTRICAL CONNECTIONS ARE TIGHT AND PROPERLY INSULATED WHERE REQUIRED, FUSES ARE OF THE PROPER TYPE AND SIZE, AND ELECTRICAL ENCLOSURES ARE OF THE PROPER NEMA TYPE.
4. NOTIFY OWNER IN WRITING OF DISCREPANCIES BETWEEN DRAWING/SPECIFICATIONS AND FIELD INSTALLATIONS, OR IF THE VISUAL INSPECTIONS SHOW DAMAGE OR IMPROPER INSTALLATION.

ELECTRICAL DIVISION·

1. THE EQUIPMENT AND MATERIAL SHALL BE FURNISHED AND INSTALLED TO OPERATE SAFELY AND CONTINUOUSLY OUTDOORS WITH NO PROTECTION FROM THE WEATHER.
2. ELECTRICAL WORK REPRESENTED ON THE PROJECT DRAWINGS IS SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS AND ELEVATIONS OF ELECTRICAL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND VERIFIED WITH THE OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TEMPORARY, IF REQUIRED, AND PERMANENT POWER WITH THE LOCAL UTILITY COMPANY. THE TEMPORARY POWER AND HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.

4. PROVIDE MOLDED CASE, BOLT-ON, THERMAL MAGNETIC TRIP, SINGLE, TWO OR THREE POLE CIRCUIT BREAKERS. MULTIPLE POLE CIRCUIT BREAKERS SHALL BE SINGLE HANDLE COMMON TRIP. SHORT CIRCUIT INTERRUPTING RATING SHALL BE AS REQUIRED FOR AVAILABLE FAULT CURRENTS. CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE A SHORT CIRCUIT INTERRUPTING RATING EQUAL TO OR GREATER THAN THAT SHOWN ON PROJECT DRAWINGS.
5. CONTRACTOR SHALL PERFORM EXCAVATION, TRENCHING, BACKFILLING, AND REMOVAL OF DEBRIS IN CONNECTION WITH THE ELECTRICAL WORK IN ACCORDANCE WITH THE PROJECT DRAWINGS.
6. CONTRACTOR SHALL PROVIDE NECESSARY SUPPORTS FOR EQUIPMENT INSTALLED AS PART OF THIS PROJECT. SUPPORT SHALL CONSIST OF GALVANIZED STEEL FRAMES, PLATES, BRACKETS, RACKS AND OTHER SHAPES OF ADEQUATE SIZE AND FASTENED WITH BOLTS, SCREWS, OR BY WELDING TO PROVIDE RIGID SUPPORT.
7. CONTRACTOR SHALL LOCATE THE APPROPRIATE UTILITIES BEFORE UNDERGROUND WORK IS PERFORMED, SUCH AS TRENCHING, EXCAVATING, AND DRIVING GROUND RODS.
8. CONTRACTOR SHALL SEAL AROUND ELECTRICAL PENETRATIONS THROUGH FIRE-RATED WALLS/FLOORS USING APPROVED FIRE STOP MATERIALS TO MAINTAIN THE FIRE RESISTANCE RATING.
9. ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENTLY ENGRAVED LAMINATED PHENOLIC NAMEPLATES WITH WHITE ON BLUE BACKGROUND (MINIMUM LETTER HEIGHT SHALL BE 1/2 - INCH). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS.

RACEWAYS·

1. CONDUIT AND CONDUIT FITTINGS SHALL MEET ANSI AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP AND SHALL BE UL LISTED.
 - A. RIGID STEEL CONDUIT (FOR ABOVE GRADE WORK) SHALL CONFORM TO ANSI C80.1 AND THE REQUIREMENTS OF NEC, PARAGRAPH 344 AND BE STANDARD WEIGHT, MILD RIGID STEEL, HOT DIP GALVANIZED WITH INSIDE AND OUTSIDE FINISHED WITH A PROTECTIVE ZINC COATING, COUPLING, ELBOWS AND BENDS SHALL MEET THESE SAME REQUIREMENTS. FITTINGS SHALL BE OF THE GALVANIZED IRON OR STEEL THREADED TYPE.
 - B. PVC CONDUIT (FOR ABOVE GROUND OR UNDERGROUND WORK) SHALL CONFORM TO UL STANDARD 651 AND THE REQUIREMENTS OF NEC, PARAGRAPH 352. CONDUIT SHALL BE HEAVY WALL TYPE, SCHEDULE 40 OR 80, AND SUNLIGHT RESISTANT. FITTINGS SHALL BE OF THE UNTHREADED SOLVENT CEMENT TYPE.
 - C. EMT CONDUIT (FOR EXPOSED AND CONCEALED WORK): ELECTRIC METALLIC TUBING SHALL CONFORM TO ANSI C80.3 AND THE REQUIREMENTS OF NEC, PARAGRAPH 358 AND BE PROTECTED FROM CORROSION SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED. COUPLINGS AND CONNECTORS SHALL BE MADE UP TIGHT AND WHERE INSTALLED IN WET LOCATIONS SHALL COMPLY WITH NEC PARAGRAPH 314.15.
2. MINIMUM CONDUIT SIZE SHALL BE 3/4-INCH, SIZES NOT SHOWN ON DRAWINGS SHALL BE PER THE LATEST EDITION OF NEC.
3. SPARE CONDUITS SHALL HAVE A METALLIC PULL WIRE.
4. CONDUIT SUPPORTS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC.
5. UNDERGROUND CONDUITS:
 - A. INSTALL WARNING TAPE 12" ABOVE EACH CONDUIT OR SET OF CONDUITS.
 - B. IDENTIFY EACH CONDUIT AT BOTH ENDS.
 - C. INSTALL A MINIMUM OF 36" BELOW FINISHED GRADE, OR DEEPER IF NOTED ON DRAWINGS.
 - D. SLOPE A MINIMUM OF 4" PER 100' TO DRAIN AWAY FROM BUILDINGS AND EQUIPMENT.
 - E. USE MANUFACTURED ELECTRICAL PVC ELBOWS AND FITTINGS FOR BELOW GRADE BENDS.
 - F. MAKE JOINTS AND FITTING WATERTIGHT ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
 - G. INSTALL A COUPLING BEFORE EACH WALL PENETRATION. - N/A
 - H. RESTORE SURFACE FEATURES DISTURBED BY EXCAVATION (AND TRENCHING) IN AFFECTED AREAS

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DM01886A - AMES WEST Y AVE
 900 S. 500th AVE., AMES, IA, 50014
 STORY COUNTY
 SPRINT RETAIN - EXISTING WATER TANK
 PROJ # 22-10-40-14
 DWG BY:JD
 CHKD BY:MJM

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-2

CONDUCTORS:

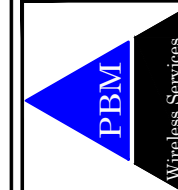
1. POWER, CONTROL AND COMMUNICATION WIRING SHALL MEET NEMA WC, ASTM, UL, AND NEC STANDARDS FOR MATERIAL AND WORKMANSHIP UNLESS OTHERWISE SPECIFIED.
 - A. SERVICE ENTRANCE CONDUCTORS SHALL BE COPPER, 600 VOLT, SUNLIGHT RESISTANT, SUITABLE FOR WET LOCATIONS, TYPE USE-2. THE GROUNDED NEUTRAL CONDUCTOR SHALL BE IDENTIFIED WITH A WHITE MARKING AT EACH TERMINATION.
 - B. CONDUCTORS FOR FEEDER AND BRANCH CIRCUITS SHALL BE COPPER, 600 VOLT, TYPE THHN/THWN WITH A MINIMUM SIZE OF 12AWG.
2. CONDUCTOR ACCESSORIES INCLUDING CONNECTORS, TERMINATIONS, INSULATING MATERIALS, SUPPORT GRIPS, MARKER AND CABLE TIES SHALL BE FURNISHED AND INSTALLED. SUPPLIER'S INSTALLATION INSTRUCTIONS SHALL BE OBTAINED FOR CABLE ACCESSORIES; THESE INSTRUCTIONS SHALL BE IN THE POSSESSION OF THE CRAFTSMAN WHILE INSTALLING THE ACCESSORIES AND SHALL BE AVAILABLE TO THE COMPANY FOR REFERENCE.
3. WHERE POSSIBLE, 6 AWG AND SMALLER WIRE SHALL BE COLOR CODED BY THE COLOR OF THE INSULATION COVERING. COLOR CODING OF WIRE LARGER THAN 6 AWG MAY BE BY MEANS OF SELF-ADHESIVE WRAP-AROUND TYPE MARKERS, PER NEC.
4. TERMINAL CONNECTORS FOR CONDUCTORS SMALLER THAN 8 AWG SHALL BE COMPRESSION TYPE CONNECTORS SIZED FOR THE CONDUCTOR AND THE TERMINAL. THE CONNECTORS SHALL BE CONSTRUCTED OF FINE GRADE HIGH CONDUCTIVITY COPPER IN ACCORDANCE WITH FEDERAL SPECIFICATION QQ-C-576 AND SHALL BE TIN-PLATED IN ACCORDANCE WITH MILITARY PLATING SPECIFICATION MIL-T-10727. THE INTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALL BE SERRATED AND THE EXTERIOR SURFACE OF THE CONNECTOR WIRE BARREL SHALL BE PROVIDED WITH CRIMP GUIDES.
5. TERMINAL CONNECTORS FOR CONDUCTORS 8 AWG AND LARGER SHALL BE PRESSURE OR BOLTED CLAMP, TYPE BURNDY, QUICKLUG, VARILUG, OR ACCEPTABLE EQUAL, OR COMPRESSION, TYPE BURNDY TYPE YAV OR YA (LONG BARREL), PANDUIT TYPE LCA OR LCC, OR ACCEPTABLE EQUAL. ACCEPTABLE CONNECTORS INCLUDED WITH COMPANY FURNISHED EQUIPMENT MAY BE USED.
6. TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED 100 AMPERES OR LESS, OR MARKED FOR NOS. 14 THROUGH 1 CONDUCTORS, SHALL BE USED ONLY FOR CONDUCTORS RATED 60°C (140°F). CONDUCTORS WITH HIGHER TEMPERATURE RATINGS SHALL BE PERMITTED PROVIDED THE AMPACITY OF EACH CONDUCTOR IS DETERMINED BASED ON THE 60°C (140°F) AMPACITY OF THE CONDUCTOR SIZE USED.
7. TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS RATED OVER 100 AMPERES, OR MARKED FOR CONDUCTORS LARGER THAN NO. 1 SHALL BE USED ONLY FOR CONDUCTORS RATED 75°C (167°F). CONDUCTORS WITH HIGHER TEMPERATURE RATINGS SHALL BE PERMITTED, PROVIDED THE AMPACITY OF EACH CONDUCTOR IS DETERMINED BASED ON THE 75°C (167°F) AMPACITY OF THE CONDUCTOR SIZE USED.
8. 600 VOLT OR LESS WIRING, WHERE COMPRESSION TYPE CONNECTORS ARE USED, SHALL BE INSULATED WITH AT LEAST ONE TURN OF "SCOTCHFILL" ELECTRICAL INSULATING PUTTY AND THEN COVERED WITH TWO HALF TURNS OF TAPE SIMILAR TO 3M COMPANY'S "33 PLUS" (33+) PLASTIC TAPE OR 88 OUTDOOR.

GROUNDING:

1. BASE TRANSCEIVER SITE EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), THE LATEST EDITION OF LIGHTNING PROTECTION CODE NFPA 780 AND MANUFACTURER SPECIFICATIONS.
2. THE ELECTRICAL SERVICE TO THE SITE SHALL BE GROUNDED AT THE SERVICE DISCONNECTING MEANS REQUIRED IN ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, AND IN ACCORDANCE WITH LOCAL CODE.
3. UNDERGROUND (BELOW GRADE) GROUNDING CONNECTIONS SHALL BE MADE BY THE CADWELD PROCESS (MECHANICAL LUG ATTACHMENTS BELOW GRADE ARE NOT ACCEPTABLE). CONNECTIONS SHALL INCLUDE CABLE TO CABLE SPLICES (TEES, XS, ETC.), CABLE CONNECTIONS TO GROUND RODS, GROUND ROD SPLICES, AND LIGHTNING PROTECTION SYSTEM AS INDICATED. MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY CADWELD AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
4. GROUNDING AND BONDING CONDUCTORS THAT ARE CONNECTED ABOVE GRADE OR INTERIOR TO A BUILDING SHALL BE CONNECTED USING TWO HOLED CRIMP TYPE (COMPRESSION) CONNECTIONS FOR 2 & 6 AWG INSULATED COPPER CONDUCTORS.
5. GROUNDING CONNECTIONS, INTERIOR AND EXTERIOR, MADE THROUGHOUT THIS DOCUMENT SHALL BE MADE USING AN ANTI-OXIDATION COMPOUND. THE ANTI-OXIDATION COMPOUND SHALL BE THOMAS AND ETTS KOPR-SHIELD (TMOF JET LUBE INC.), OR BURNDY PENTROX-E, NO SUBSTITUTIONS. COAT WIRES BEFORE LUGGING. COAT SURFACES BEFORE CONNECTING.
6. CONNECTIONS SHALL BE MADE TO BARE METAL. PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. PRIOR TO CADWELD, GALVANIZING SHALL BE REMOVED BY GRINDING SURFACE TO BARE METAL. "SLAG" FROM CADWELD MUST BE REMOVED AND WELD SHALL BE SPRAYED WITH COLD GALVANIZE AFTER COMPLETION.

7. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED. CLIPS OF THE FOLLOWING MATERIALS AND TYPES MAY BE USED TO SUPPORT GROUNDING CONDUCTORS:
 - PLASTIC CLIPS
 - STAINLESS STEEL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
 - FERROUS METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTOR.
8. BELOW GRADE GROUNDING CONDUCTORS SHALL BE BARE TINNED SOLID COOPER WIRE. ABOVE-GRADE GROUNDING CONDUCTORS MAY BE EITHER:
 - BARE TINNED SOLID COPPER WIRE
 - THWN-INSULATED, CONTINUOUS GREEN COLOR, SOLID COPPER WIRE.
 - THWN-INSULATED, CONTINUOUS GREEN COLOR, STRANDED COPPER WIRE AS SPECIFIED ON THE GROUNDING DRAWINGS.
 - A. UNDERGROUND GROUND RING SHALL BE A 2 AWG BARE TINNED SOLID COPPER WIRE.
 - B. 2 AWG WIRE SHALL BE STRANDED COPPER WITH GREEN THWN INSULATION SUITABLE FOR WET INSTALLATION (SOME ABOVE GROUND APPLICATIONS, I.E. INDOOR GROUND RING).
 - C. 4/0 AWG WIRE SHALL BE STRANDED COPPER WITH GREEN THWN INSULATION SUITABLE FOR WET LOCATIONS (I.E. TO MAIN GROUND, BUILDING STEEL, BETWEEN GROUND BARS, LIGHTNING PROTECTION, MAIN WATER LINE OF THE BUILDING OR EXISTING GROUND ROD).
 - D. 2 AWG WIRE SHALL BE BARE TINNED SOLID COPPER. BURIED WIRE SHALL MEET THIS CRITERIA, INCLUDING CABLE TRAY GROUNDING WIRES AND OTHER WIRES AS INDICATED ON THE DRAWINGS.
 - E. THE MINIMUM BEND RADIUS IS 8" FOR 6 AWG AND SMALLER; 12" FOR WIRE LARGER THAN 6 AWG.
9. HARDWARE, BOLTS, NUTS, WASHERS AND LOCK WASHERS SHALL BE 18-8 STAINLESS STEEL. CONNECTIONS SHALL BE BOLT-FLAT WASHER-BUSS-LUG-FLAT WASHER-LOCK WASHER-NUT IN THAT EXACT ORDER, WITH NUT FACING OUTWARD. BACK-TO-BACK LUGGING, BOLT-FLAT WASHER-LUG-FLAT WASHER-BUSS-LUG-LOCK WASHER-NUT, IN THAT EXACT ORDER IS ACCEPTED WHERE NECESSARY TO CONNECT MANY LUGS TO A BUSS BAR. STACKING OF LUGS, BUSS-LUG-LUG, IS NOT ACCEPTABLE.
10. COMPRESSION GROUND LUGS FOR GROUNDING CONDUCTORS SHALL BE BURNDY TYPE YAXX-2TC38 OR APPROVED EQUAL.
11. THE DEPTH OF THE GROUND RING, WHEN SPECIFIED, SHALL BE EITHER 3'-6" BELOW FINAL GRADE OR IT SHALL BE INSTALLED TO THE MINIMUM DEPTH REQUIRED BY LOCALLY ENFORCED CODES, REGULATIONS AND ORDINANCES, WHICHEVER IS DEEPER.
12. THE GROUND RING, WHEN SPECIFIED, SHALL BE A MINIMUM OF 24" FROM THE EQUIPMENT SHELTER FOUNDATIONS, PLATFORM OR CONCRETE PAD.
13. GROUND RODS, WHEN SPECIFIED SHALL BE 5/8 INCH STEEL CLAD WITH A PURE COPPER JACKET OF NOT LESS THAN 0.0012 INCHES THICK, 8 FEET LONG (MIN.). GROUND RODS SHALL BE DRIVEN TO THE FULL VERTICAL LENGTH IN UNDISTURBED EARTH.
14. SPACING BETWEEN GROUND RODS, WHEN SPECIFIED, SHALL BE A MINIMUM OF 6' PER THE NATIONAL ELECTRICAL CODE.
15. XIT RODS, WHEN SPECIFIED, SHALL BE MIN. 2" ID TYPE "K" COPPER TUBE WITH A MINIMUM WALL THICKNESS OF 0.083" AND SHALL BE A MINIMUM OF 8 FEET IN LENGTH. THE XIT COPPER PIPE/ROD SHALL BE FILLED WITH NON-HAZARDOUS METALLIC SALTS. THE BACKFILL MATERIAL SHALL BE NATURAL CLAY LYNCONITE II. THE COVER SHALL BE FIBERLYTE CAST IRON, LYNCOLE MODEL XB-12F, FOR LIGHT TRAFFIC AREAS, XB-12 FOR MEDIUM TRAFFIC AREAS AND XB-22, FOR HEAVY TRAFFIC OR PAVED AREAS.
16. THE ANTENNA CABLES SHALL BE GROUNDED AT THE TOP AND BOTTOM OF THE VERTICAL RUN. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUS AT THE LOWEST POINT OF THE VERTICAL RUN, THE ANTENNA CABLE SHIELD SHALL BE GROUNDED JUST BEFORE ENTERING THE BTS CABINET. GROUNDING KITS ON COAX CABLE SHALL HAVE A MINIMUM BEND OF 6" AND SHALL BE KEPT AS CLOSE TO VERTICAL AS POSSIBLE. FLAT WASHER SENT WITH GROUND KITS MUST BE REPLACED WITH SMALLER STAINLESS FLAT WASHERS. WASHERS MUST REMAIN FLAT AGAINST GROUND BAR. FASTENERS MUST BE STAINLESS STEEL AND KOPR-SHIELD MUST BE USED ON BOTH SIDES OF GROUND BAR.

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DM01886A - AMES WEST Y AVE
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STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14
DWG BY:JD
CHKD BY:MJM

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-3

LIGHTNING PROTECTION:

1. LIGHTING PROTECTION MATERIALS SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.

GROUND SYSTEM TESTING:

1. A RESISTANCE-TO-GROUND OF 5 OHMS OR LESS IS THE OBJECTIVE OF THE EXTERNAL GROUND SYSTEM. THE CONTRACTOR SHALL PERFORM TESTS AS SPECIFIED IN THE OWNERS STANDARDS -SITE RESISTANCE TO EARTH TESTING TO DETERMINE RESISTANCE-TO-GROUND OF THE COMPLETED EXTERNAL GROUND SYSTEM. TEST SHALL BE PERFORMED PRIOR TO BACKFILLING TRENCHES. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN EXPERIENCED TESTING LABORATORY OR ENGINEERING FIRM FAMILIAR WITH THE SPECIFIED TEST METHOD. IF RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 10 OHMS, NOTIFY THE OWNER'S REPRESENTATIVE FOR FURTHER DIRECTION.
2. GROUND RESISTANCE SHALL BE MEASURED FOR EACH PIECE OF EQUIPMENT TO THE GROUND ELECTRODE.
3. GROUNDING RESISTANCE TEST REPORT:
A GROUNDING RESISTANCE TEST REPORT SHALL BE PREPARED UPON COMPLETION OF THE TESTING FOR EACH SITE. THE TEST REPORT SHALL CONTAIN THE COMPLETED OWNERS FORMS AND SHOW THE RESISTANCE IN OHMS AT 62% SPACING AND WITH AUXILIARY POTENTIAL ELECTRODES AND READINGS AT 10% INTERVALS WITH A TOTAL DISTANCE OF AT LEAST 500 FEET OR UNTIL THE AVERAGE RESISTANCE STARTS INCREASING. IT SHALL CONTAIN 10 TO 15 PHOTOGRAPHS TAKEN DURING CONSTRUCTION TO PROVIDE PROOF THAT THE EXTERNAL GROUND RING SYSTEM WAS COMPLETE BEFORE BACKFILLING. THE CONTRACTOR SHALL ALSO NOTIFY THE OWNER NO LESS THAN 48 HOURS IN ADVANCE OF BACKFILL. TESTING SHALL BE COMPLETED BY THE CONTRACTOR AND TWO (2) COPIES OF THE GROUNDING RESISTANCE TEST REPORT ARE TO BE BOUND AND SUBMITTED WITHIN 2 DAYS OF TEST COMPLETION FOR EACH SITE.

GROUNDING NOTES:

1. REFER TO GROUNDING NOTES FOR TERMINATION, CONDUCTOR, GROUND ROD AND TESTING REQUIREMENTS.
2. CONTRACTOR SHALL INSTALL GROUNDING AS SHOWN AND PER T-MOBILE WIRELESS STANDARDS AND APPLICABLE CODES, BUT SHALL NOT DUPLICATE EXISTING GROUNDING (I.E. FENCE GROUNDING, TOWER GROUND RING ON CO-LOCATE SITES) WHICH IS PROPER AND ADEQUATE.
3. GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS TO CHANGE DIRECTION IF NECESSARY. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
4. TRENCHES SHALL NOT BE BACKFILLED UNTIL SPECIFIED TESTS HAVE BEEN PERFORMED AND UNTIL THE GROUNDING SYSTEM CONFORMS TO THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS.
5. IF FENCE IS WITHIN 6' OF EQUIPMENT GROUND RING, EXTEND 2 AWG SOLID BARE TINNED COPPER WIRE FROM BURIED GROUND RING TO FENCE POSTS AND EXOTHERMICALLY WELD. BOND INTERMEDIATE POST IF REQUIRED TO MAINTAIN 25' MAX SPACING.
6. GROUND WIRES THAT TRANSITION FROM ABOVE GRADE TO BELOW GRADE SHALL BE ROUTED IN A 3/4" PVC CONDUIT FROM THE CONNECTION TO A MINIMUM OF 18" BELOW GRADE. BOTH ENDS OF THE PVC CONDUIT SHALL BE SEALED WITH SILICONE CAULK.
7. TAMPER PROOF HARDWARE SHALL BE USED FOR EXPOSED GROUND BARS INSTALLED AT COMPOUND LEVEL.

ANTENNA NOTES:

1. ANTENNA CONTRACTOR SHALL ENSURE THAT EACH ANTENNA MOUNTING PIPE IS PLUMB.
2. COAXIAL FEEDER & FIBER LENGTHS INDICATED ARE APPROXIMATE.
3. ANTENNA COAXIAL FEEDERS & ANTENNA JUMPERS SHALL BE COLOR CODED PER T-MOBILE REQUIREMENTS AND LATEST STANDARDS.
4. LMU COAXIAL FEEDERS & JUMPERS SHALL BE COLOR CODED PER T-MOBILE REQUIREMENTS AND LATEST STANDARDS.
5. MULTI-PORT ANTENNAS: TERMINATE UNUSED ANTENNA PORTS WITH CONNECTOR CAP & WEATHER PROOF THOROUGHLY. JUMPERS FROM TMA_s MUST TERMINATE TO OPPOSITE POLARIZATIONS IN EACH SECTOR.
6. CONTRACTOR MUST FOLLOW MANUFACTURERS' RECOMMENDATIONS REGARDING THE INSTALLATION OF COAXIAL CABLES, CONNECTORS & ANTENNAS.
7. MINIMUM BEND RADIUS:

LDF4-50A	(1/2" HARD LINE) = 5"
FSJ4-50B	(1/2" SUPER FLEX) = 1 1/4"
AVA5-50A	(7/8" HARD LINE) = 10"
AVA7-50A	(1 5/8" HARD LINE) = 15"
LDF7-50A	(1 5/8" HARD LINE) = 20"
8. CONTRACTOR SHALL RECORD THE SERIAL, SECTOR & POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND FURNISH THE INFORMATION TO T-MOBILE.
9. WEATHERPROOF ANTENNA CONNECTORS WITH SELF-AMALGAMATING TAPE.
10. ANTENNA CONTRACTOR SHALL PERFORM A "TAPE DROP" MEASUREMENT TO CONFIRM/VALIDATE ANTENNA CENTERLINE (A.C.L.) HEIGHT. CONTRACTOR SHALL SUBMIT A COMPLETED HEIGHT VERIFICATION FORM TO THE CONSTRUCTION MANAGER.
11. FIBER RUNS CONTAINED IN ONE HYBRID DC-FIBER CABLE FROM LOWER COVP TO UPPER COVP SHALL BE COLOR CODED PER T-MOBILE REQUIREMENTS. (CONTRACTOR SHALL VERIFY REQUIRED LENGTH WITH T-MOBILE OPERATIONS).

ANTENNA ALIGNMENT NOTES:

1. CONTRACTOR TO PROVIDE AND INSTALL PATH BOXES OR OTHER INDUSTRY APPROVED PATHING EQUIPMENT THAT WILL ENABLE ALIGNMENT OF ANTENNAS IN HOPS, PER THE DESIGN.
2. TO ENSURE THAT THE ALIGNMENT REMAINS PERMANENT, TORQUE MARKS WILL BE ADDED TO ALL ALIGNMENT SCREWS AND BOLTS AFTER THEY ARE TIGHTENED AND PICTURES OF THEM WILL BE TAKEN FOR THE CLOSEOUTS. TORQUE MARKS WILL BE MADE WITH INDELIBLE MARKING PAINT OR NAIL POLISH (SHARPIES OR SIMILAR MARKER WILL NOT BE ALLOWED). IF ANTENNA IS TO BE MOUNTED TO AN EXISTING SECTOR FRAME AND THE FRAME DOES NOT HAVE (2) TIEBACKS INSTALLED, CONTRACTOR WILL NOTIFY T-MOBILE FIELD REPRESENTATIVE ASAP.

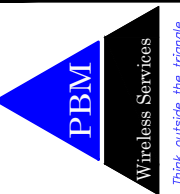
COMMISSIONING AND INTEGRATION BY CONTRACTOR

1. T-MOBILE WILL PROVIDE PROVISIONING DATA TO THE CONTRACTOR PRIOR TO OR DURING HARDWARE INSTALLATION. THE CONTRACTOR WILL BE RESPONSIBLE FOR PATH ALIGNMENT, INTEGRATION, AND COMMISSIONING FROM END TO END ON EACH HOP.

CONTRACTOR SUPPLIED MATERIAL

1. THE CONTRACTOR WILL SUPPLY ALL PIPE MOUNTS AND RELATED ATTACHMENT HARDWARE, TRAPEZE, PORT/BOOT ASSEMBLY FOR ENTRANCE TO CABINET OR SHELTER, SMALL GROUNDING BARS, ROUND MEMBER ADAPTERS, ANGLE ADAPTERS, SNAP-IN HANGERS, POWER CABLE TO IDU AND ICE SHIELD(S) WITH ALL REQUIRED MATERIAL AND HARDWARE WHEN REQUIRED.

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STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ #: 22-10-40-14
DWG BY: JD
CHKD BY: MJM

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-4

CONTRACTOR NOTES:



1. THE CITY OF AMES WATER & POLLUTION CONTROL REQUIRES THAT NO NEW ATTACHMENTS BE MADE DIRECTLY TO THE TANK. NO PENETRATIONS, WELDING, OR FASTENINGS OF ANY KIND TO THE TANK, FLUTED COLUMN, LADDER, ACCESS TUBE, OR CONCRETE FLOORING ARE PERMITTED.
2. ATTACHMENTS TO ALREADY EXISTING SUPPORTS, RAILS, GUIDES, ETC. THAT ARE PROVIDED FOR THE EXPRESS PURPOSE OF FACILITATING CELLULAR ANTENNA INSTALLATIONS ARE PERMITTED; THE PROPOSED T-MOBILE INSTALLATION SHOWN HEREIN WILL BE UTILIZING THE ALREADY-EXISTING INFRASTRUCTURE; HENCE, A NEW STRUCTURAL ANALYSIS WILL NOT BE REQUIRED FOR THE COMPONENTS.
3. WELDING IS NOT REQUIRED PER THE DESIGN FOR THIS PROJECT; HOWEVER SHOULD T-MOBILE'S CONTRACTOR DEEM WELDING IS NECESSARY, SAID CONTRACTOR SHALL FIRST OBTAIN APPROVAL FROM LANDLORD PRIOR TO BEGINNING ANY WELDING WORK. ALL WELDING WORK MUST BE DONE WITH EXTREME CARE SO AS NOT TO DAMAGE THE EXISTING PAINT SYSTEM OR ANY OTHER APPURTENANCES.
4. THERE IS TO BE ABSOLUTELY NO ACCESS BY ANY PERSON TO THE WET SIDE OF THE TANK. CONTRACTORS ARE EXPRESSLY PROHIBITED FROM EVEN OPENING THE ACCESS HATCH INTO THE WET SIDE OF THE TANK. TAMPERING WOULD BE PROSECUTED UNDER STATE AND FEDERAL LAWS THAT PROTECT DRINKING WATER SUPPLIES.
5. T-MOBILE'S G.C. SHALL COORDINATE HAVING TEMPORARY RESTROOM FACILITIES ON SITE DURING THE ENTIRE CONSTRUCTION PHASE OF THE PROJECT; G.C. TO COORDINATE WITH LANDLORD FOR EXACT LOCATION OF SAID FACILITIES BEFORE PLACEMENT PRIOR TO START OF CONSTRUCTION.
6. THIS SITE IS MUNICIPALLY OWNED. BOTH STATE AND LOCAL LAWS PROHIBIT SMOKING ANYWHERE ON THE PROPERTY. CONTRACTORS MUST EXIT THE FENCED PERIMETER OF THE PROPERTY TO SMOKE. CONTRACTOR(S) CAUGHT SMOKING WILL BE REMOVED FROM THE SITE AND MAY BE SUBJECT TO FINES.
7. ACCESS TO BOTH THE SITE AND THE TANK ARE REGULATED BY THE CITY OF AMES WATER & POLLUTION CONTROL SECURITY PROCEDURES. THE CITY OF AMES WATER & POLLUTION CONTROL REQUIRES THAT KEYS BE CHECKED OUT EACH MORNING FROM THE WATER PLANT (1800 E 13th STREET) AND RETURNED EACH EVENING. THE ONLY EXCEPTION IS IF THERE IS WORK OCCURRING AROUND THE CLOCK AND A CONTRACTOR EMPLOYEE WILL BE PHYSICALLY PRESENT AT ALL TIMES.
8. T-MOBILE (NOT THE CONTRACTOR) IS REQUIRED TO INFORM THE CITY OF AMES WATER & POLLUTION CONTROL OF ALL CONTRACTORS AND SUBCONTRACTORS WHO WILL BE WORKING ON THE SITE. THE CITY OF AMES WATER & POLLUTION CONTROL ALSO REQUIRES THAT T-MOBILE (NOT THE CONTRACTOR) PROVIDE THE NAMES OF ANYONE WHO WILL BE AUTHORIZED TO SIGN FOR KEYS. IF THE CONTRACTOR AND THE INDIVIDUAL EMPLOYEE ARE NOT ON THE LIST PROVIDED BY T-MOBILE, THEY WILL NOT BE GIVEN ACCESS.
9. THE CITY OF AMES WATER & POLLUTION CONTROL SECURITY PROCEDURES ALSO MANDATE THAT ALL CONTRACTOR VEHICLES ON THE PROPERTY BE CLEARLY MARKED WITH SIGNS OR DECALS BEARING THE NAME OF A CONTRACTOR FROM THE LIST PROVIDED BY T-MOBILE. ALL VEHICLES ON THE SITE SHALL BE PARKED ON THE GRAVEL (NOT IN VEGETATED AREAS) WITHIN THE PERIMETER FENCE ON THE PROPERTY OF THE LANDLORD. AT NO TIME SHALL THE SHARED ACCESS DRIVE BE BLOCKED OR OTHERWISE IMPEDE THE USE BY THE ABUTTING NEIGHBORS.

10. EXISTING T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):
 - (3) EXISTING 1.8"Ø TRUNK CABLES – TO BE REMOVED
 - (1) EXISTING .50"Ø GPS CABLE – TO BE REMOVED
 - (1) EXISTING 2 AWG GROUND WIRE – TO REMAIN

- PROPOSED T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):
- (2) 1.8"Ø HYBRID TRUNK CABLES
 - (1) .50"Ø GPS CABLE

- FINAL T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):
- (2) 1.8"Ø HYBRID TRUNK CABLES
 - (1) .50"Ø GPS CABLE
 - (1) EXISTING 2 AWG GROUND WIRE

FROM PREVIOUS CONSTRUCTION DRAWINGS AND DOCUMENTS, AN EXISTING CABLE BRACKET WAS INSTALLED SPECIFICALLY TO SUPPORT THE CABLES (G.C. TO FIELD VERIFY). PROPOSED CABLES SHALL BE INSTALLED IN-LINE ON SAID BRACKET AND SHALL NOT IMPEDE EGRESS/INGRESS.

11. THE CITY OF AMES WATER & POLLUTION CONTROL REQUIRE ALL CABLES, WIRES, CONDUITS, etc. BE NEATLY BUNDLED INTO ONE ROUTE FROM THE TANK TOP PENETRATION TO THE EXISTING CORRAL RAILS, AND THEN ROUTED ALONG THE RAILS TO THE INDIVIDUAL ANTENNAS. AN OCTOPUS OF WIRES RUNNING ALL OVER THE TOP OF THE TANK WILL NOT BE PERMITTED. ENSURE THAT THE ROUTING DOES NOT INTERFERE WITH THE OPERATION OF THE HATCHES INTO EITHER THE WET OR DRY SIDES OF THE TANK, AND THAT THEY ALLOW FOR SAFE INGRESS AND EGRESS FROM BOTH HATCHES.
12. THE CITY OF AMES WATER & POLLUTION CONTROL REQUIRE ALL PAINT TOUCH UP BE COMPLETED USING THE EXACT SAME PAINT SYSTEM AS IS UTILIZED ON THE TANK. THE CITY OF AMES WATER & POLLUTION CONTROL WILL PROVIDE A LISTING OF THE SPECIFIC PRODUCTS AND COLORS.

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PBM
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 Think outside the triangle.

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D	08/09/22	LL	COMMENTS	JD
E	08/17/22	FINAL	LL REVIEW	JD
F	09/16/22	LL	COMMENTS	JKB
G	09/20/22	LL	REVIEW	BCG
O	10/07/22	BID/PERMIT		BCG

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 STORY COUNTY
 SPRINT RETAIN - EXISTING WATER TANK
 PROJ # 22-10-40-14
 DWG BY: JD
 CHKD BY: MJM

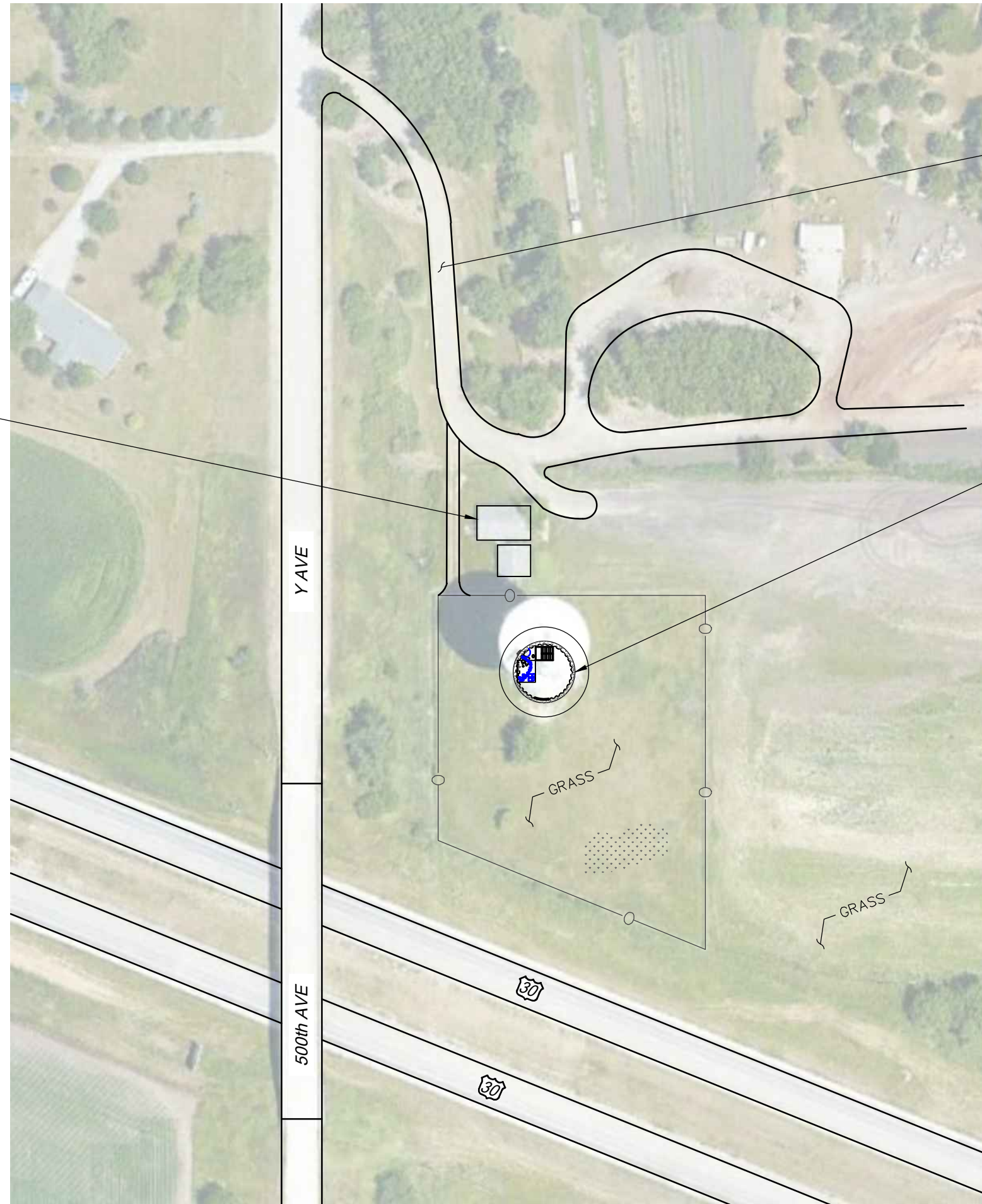
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
N-5

NOTES:

1. G.C. SHALL NOTIFY T-MOBILE FOPS MANAGER OF CONSTRUCTION START DATE, MINIMUM (1) WEEK PRIOR TO START OF CONSTRUCTION.
2. G.C. SHALL THOROUGHLY INVENTORY EQUIPMENT BEFORE SIGNING FOR & REMOVING FROM WAREHOUSE. G.C. SHALL IMMEDIATELY NOTIFY T-MOBILE CM OF ANY MISSING OR INCORRECT ITEMS.
3. G.C. SHALL REVIEW AND ADHERE TO CONTRACTOR NOTES ON SHEET N-5. ANY QUESTIONS SHALL BE ADDRESSED TO T-MOBILE CM PRIOR TO START OF CONSTRUCTION.

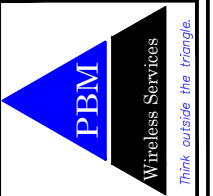
EXISTING STRUCTURE (TYP.), PROTECT DURING CONSTRUCTION



EXISTING GRAVEL ACCESS DRIVE TO BE UTILIZED BY T-MOBILE

EXISTING WATER TANK TO BE UTILIZED BY T-MOBILE, PROTECT DURING CONSTRUCTION

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G	09/20/22	LL REVIEW	BCG
O	10/07/22	BID/PERMIT	BCG

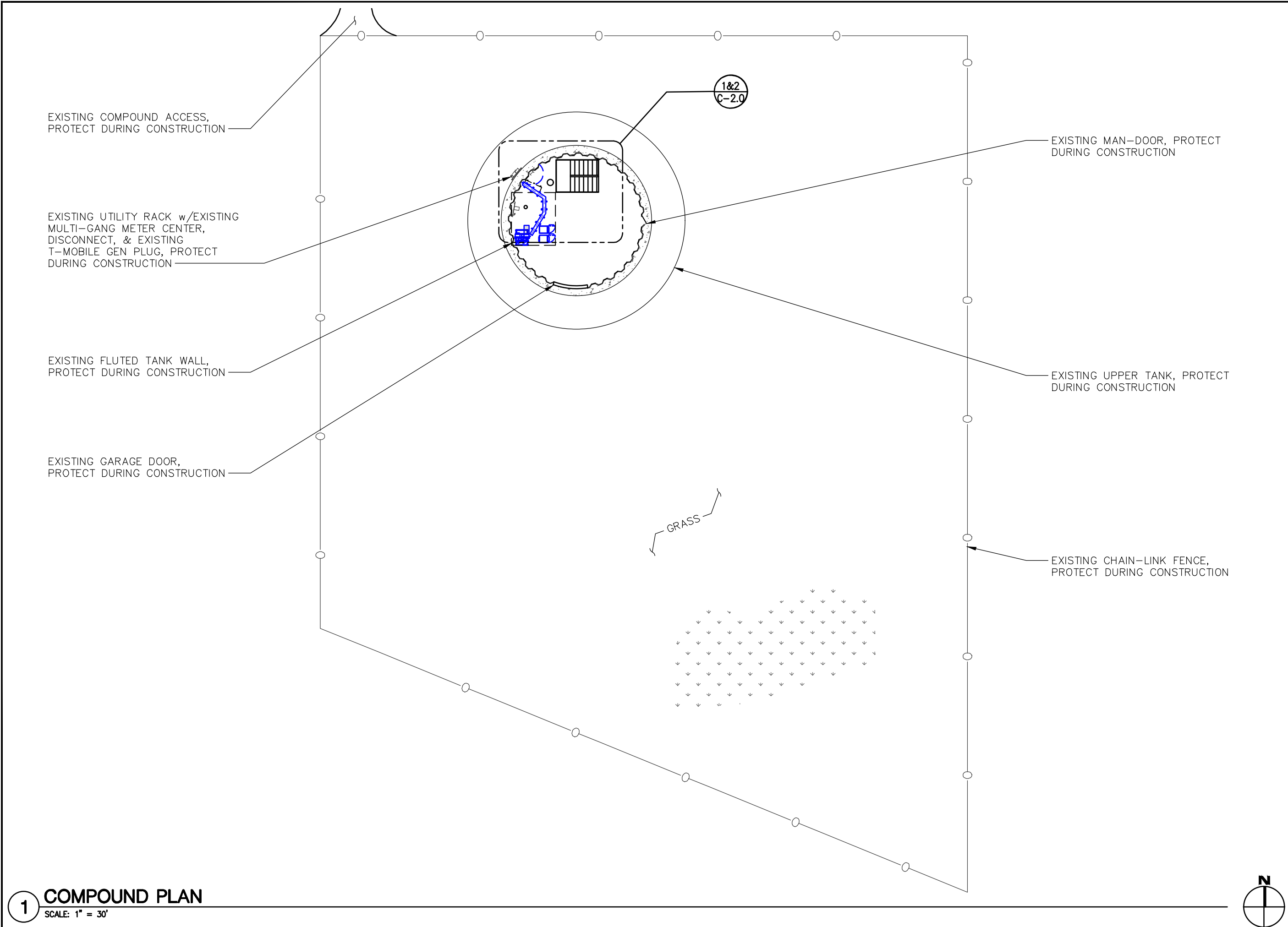
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PROJ #: 22-10-40-14 DWG BY: JD CHKD BY: MJM

SHEET TITLE
PARTIAL SITE PLAN

SHEET NUMBER
C-10





EXISTING COMPOUND ACCESS,
PROTECT DURING CONSTRUCTION

EXISTING UTILITY RACK w/EXISTING
MULTI-GANG METER CENTER,
DISCONNECT, & EXISTING
T-MOBILE GEN PLUG, PROTECT
DURING CONSTRUCTION

EXISTING FLUTED TANK WALL,
PROTECT DURING CONSTRUCTION

EXISTING GARAGE DOOR,
PROTECT DURING CONSTRUCTION

1&2
C-2.0

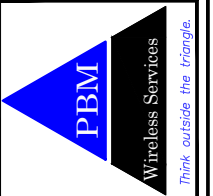
EXISTING MAN-DOOR, PROTECT
DURING CONSTRUCTION

EXISTING UPPER TANK, PROTECT
DURING CONSTRUCTION

GRASS

EXISTING CHAIN-LINK FENCE,
PROTECT DURING CONSTRUCTION

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E	08/17/22	FINAL LL REVIEW	JD
F	09/16/22	LL COMMENTS	JKB
G	09/20/22	LL REVIEW	BCG
O	10/07/22	BID/PERMIT	BCG

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STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK

CHKD BY: MJM

DWG BY: JD

PROJ #: 22-10-40-14

SHEET TITLE
**COMPOUND
PLAN**

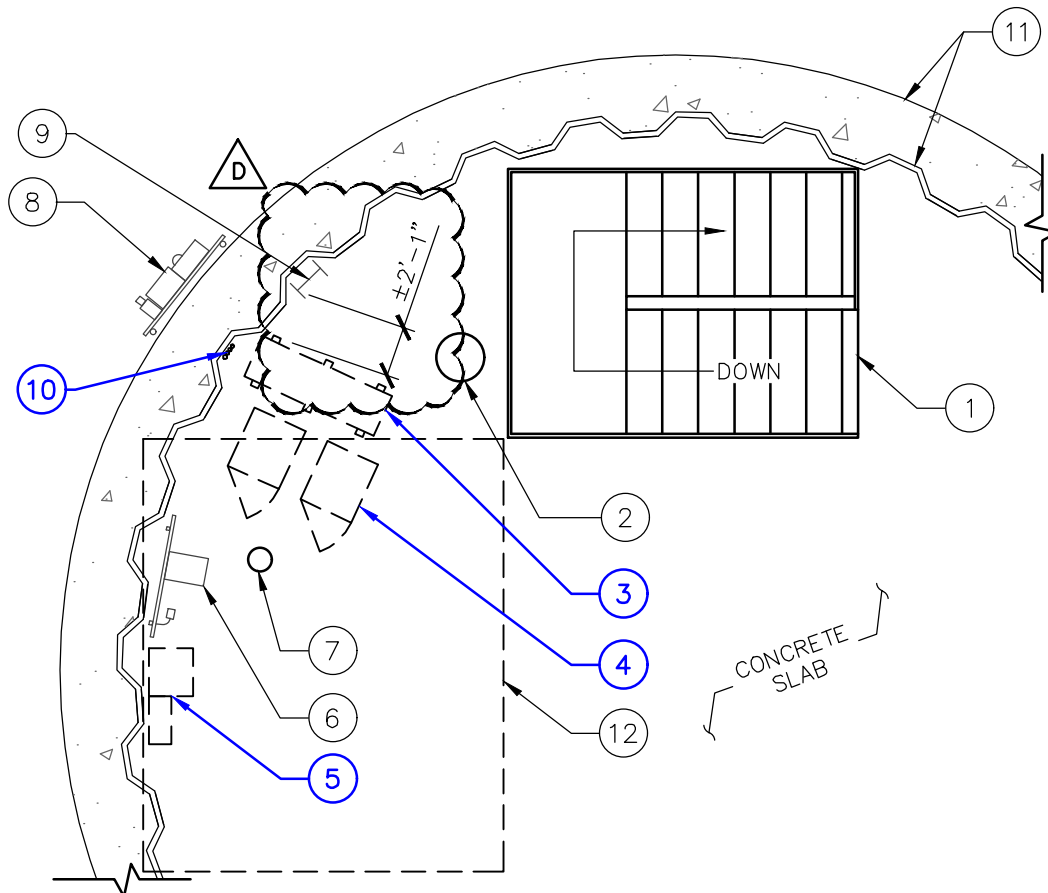
SHEET NUMBER
C-11

1 **COMPOUND PLAN**
SCALE: 1" = 30'



KEY NOTES:

- 1 EXISTING STAIRS, PROTECT DURING CONSTRUCTION
- 2 EXISTING FILL PIPE, PROTECT DURING CONSTRUCTION
- 3 EXISTING SPRINT PVC SLEEPERS & CABLE COVER TO BE REMOVED
- 4 EXISTING EQUIPMENT CABINET TO BE REMOVED (TYP. 2); G.C. SHALL COORDINATE w/T-MOBILE CM FOR REMOVAL PRIOR TO START OF CONSTRUCTION
- 5 EXISTING PPC & TELCO CABINET TO BE REMOVED; G.C. SHALL COORDINATE w/T-MOBILE CM FOR REMOVAL PRIOR TO START OF CONSTRUCTION
- 6 EXISTING UTILITY RACK w/TELCO CABINET, J-BOXES AND LIGHT TO REMAIN, PROTECT DURING CONSTRUCTION
- 7 EXISTING OVERFLOW PIPE, PROTECT DURING CONSTRUCTION
- 8 EXISTING UTILITY RACK w/EXISTING MULTI-GANG METER CENTER AT GRADE, EXISTING SPRINT 200A METER, DISCONNECT, & 200A GEN PLUG TO REMAIN, PROTECT DURING CONSTRUCTION
- 9 EXISTING UPPER TANK ACCESS LADDER, PROTECT DURING CONSTRUCTION
- 10 EXISTING SPRINT RISER PIPE w/CABLE SUPPORTS; EXISTING SPRINT CABLES TO BE REMOVED; SEE NOTE #10/N-5 DETAILS; G.C. SHALL FURNISH & INSTALL CABLE SNAP-INS.
- 11 EXISTING FLUTED COLUMN TANK AND CONCRETE FOUNDATION
- 12 EXISTING 15'x18' LEASE AREA

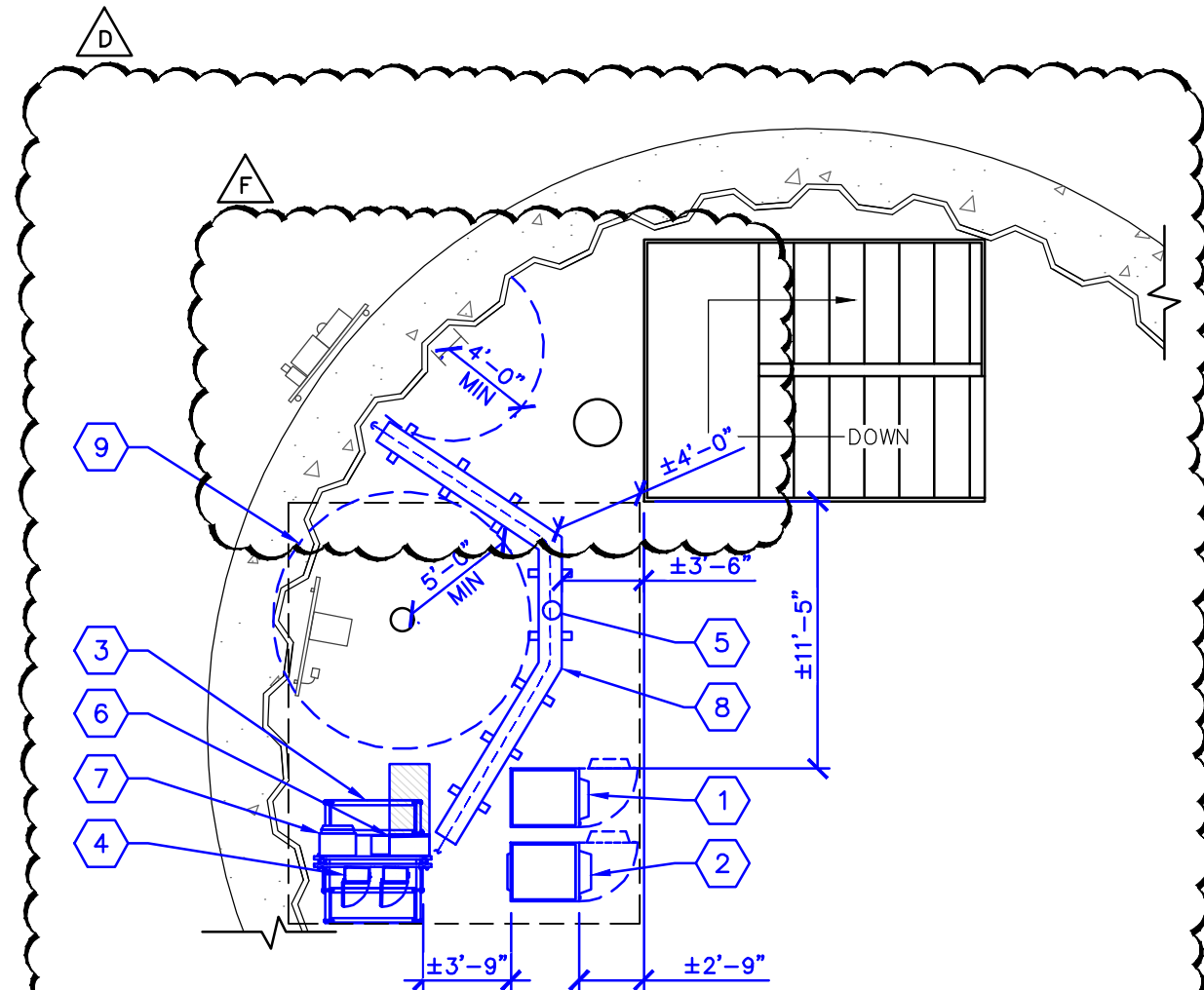


1 EXISTING 2nd FLOOR EQUIPMENT PLAN
SCALE: 1/8" = 1'-0"



KEY NOTES:

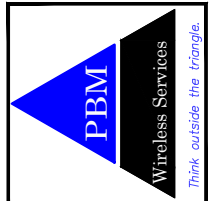
- 1 PROPOSED T-MOBILE LB3 BATTERY CABINET; G.C. SHALL COORDINATE w/ T-MOBILE CM FOR EXACT DIMENSIONS AND REQUIREMENTS PRIOR TO START OF CONSTRUCTION; SEE DETAIL 2/C-8.0
- 2 PROPOSED T-MOBILE DELTA HPL3 SSC; G.C. SHALL INSTALL CSR IN PROPOSED SSC; G.C. SHALL NOTIFY FOPS MANAGER THE DAY OF INTENDED CSR INSTALLATION; SEE DETAIL 1/C-8.0
- 3 PROPOSED T-MOBILE NON-PENETRATING BALLAST FRAME
- 4 PROPOSED T-MOBILE LOWER COVP (TYP. 2) MOUNTED TO PROPOSED BALLAST FRAME USING MANUFACTURER SUPPLIED MOUNTING BRACKET
- 5 (2) PROPOSED T-MOBILE 1.8" HYBRID HCS2.0 TRUNK CABLES & (1) PROPOSED .5" GPS CABLE ROUTED FROM PROPOSED LOWER COVP, ALONG CABLE TRAY & UP EXISTING RISER PIPE INSIDE OF WATER TANK USING EXISTING CABLE BRACKETS
- 6 PROPOSED T-MOBILE 200A PPC w/GENERATOR RECEPTACLE MOUNTED TO PROPOSED BALLAST FRAME
- 7 PROPOSED T-MOBILE RAC24 CABINET MOUNTED TO PROPOSED BALLAST FRAME
- 8 PROPOSED T-MOBILE CABLE TRAY w/SLEEPERS, TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS
- 9 5' MINIMUM OVERFLOW PIPE CLEARANCE RADIUS



2 PROPOSED 2nd FLOOR EQUIPMENT PLAN
SCALE: 1/8" = 1'-0"



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G	09/20/22	LL REVIEW	BCG
O	10/07/22	BID/PERMIT	BCG

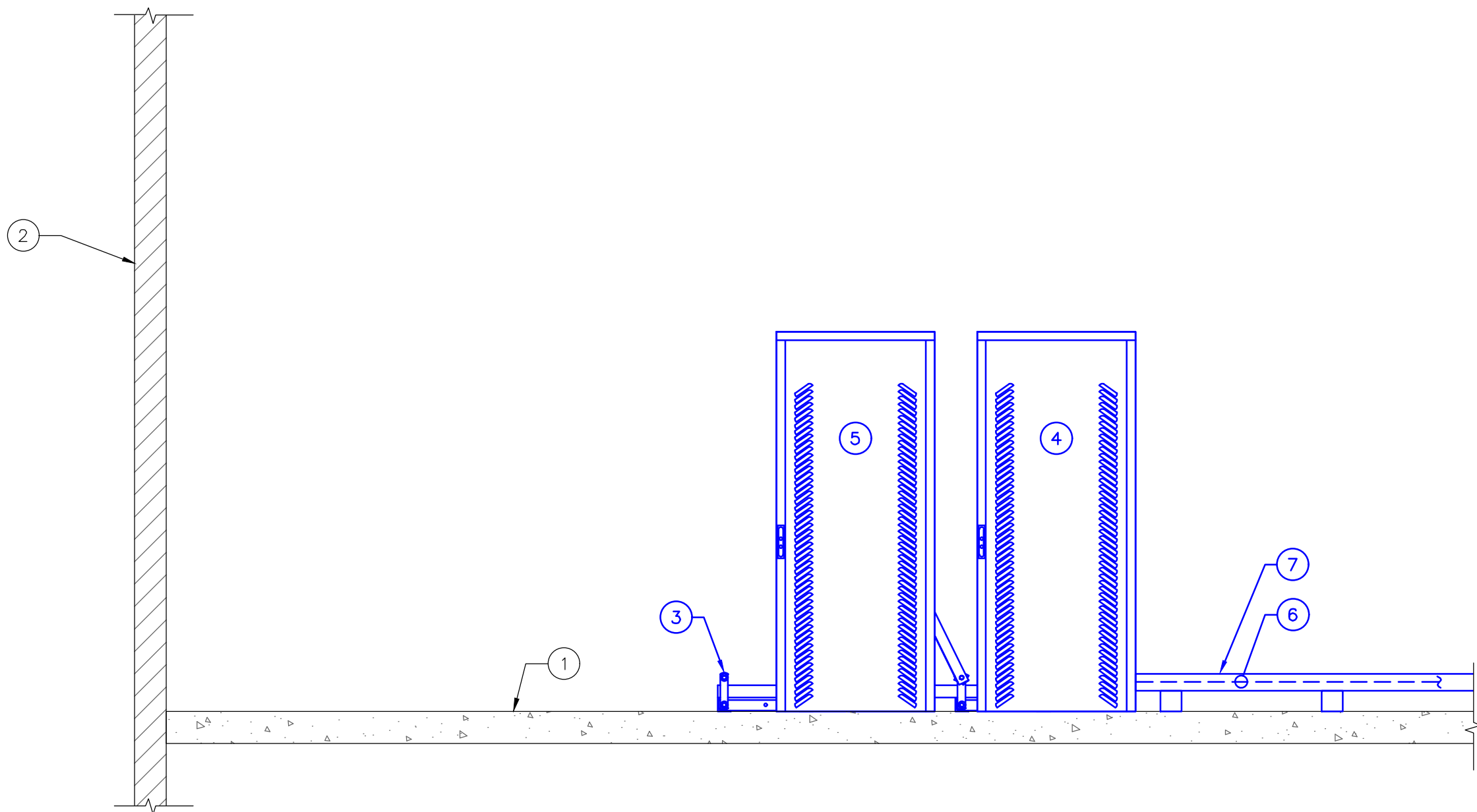
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STORY COUNTY
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DWG BY: JD
CHKD BY: MJM

SHEET TITLE
EQUIPMENT PLANS

SHEET NUMBER
C-2.0

KEY NOTES:

- ① EXISTING WATER TANK CONCRETE FLOOR, PROTECT DURING CONSTRUCTION
- ② EXISTING WATER TANK WALL, PROTECT DURING CONSTRUCTION
- ③ PROPOSED T-MOBILE UTILITY NON-PENETRATING BALLAST FRAME w/;
 - PROPOSED 200A PPC w/GENERATOR RECEPTACLE
 - PROPOSED RAC24 CABINET
 - (2) PROPOSED LOWER COVPs
- ④ PROPOSED T-MOBILE LB3 BATTERY CABINET
- ⑤ PROPOSED T-MOBILE DELTA HPL3 SSC; G.C. SHALL INSTALL CSR IN PROPOSED SSC; G.C. SHALL NOTIFY FOPS MANAGER THE DAY OF INTENDED CSR INSTALLATION
- ⑥ PROPOSED T-MOBILE HYBRID HCS2.0 TRUNK CABLE ROUTED FROM LOWER COVP, ALONG CABLE TRAY AND UP EXISTING RISER PIPE INSIDE OF WATER TANK USING EXISTING CABLE BRACKETS
- ⑦ PROPOSED CABLE TRAY w/SLEEPERS



1 PROPOSED EQUIPMENT ELEVATION
SCALE: 1/2" = 1'-0"

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E	08/17/22	FINAL LL REVIEW	JD
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G	09/20/22	LL REVIEW	BCG
O	10/07/22	BID/PERMIT	BCG

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STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK

CHKD BY: MJM

DWG BY: JD

PROJ #: 22-10-40-14

SHEET TITLE
EQUIPMENT ELEVATION

SHEET NUMBER
C-3.0

NOTE:
FINAL RF CONFIGURATION SHALL BE CONFIRMED
w/T-MOBILE RF/CM PRIOR TO START OF
CONSTRUCTION.

REFERENCE
ONLY



A EXIST. TOWER ELEVATION
SCALE: NONE



B EXIST. EQUIPMENT
SCALE: NONE



C EXIST. COMM. ENCLOSURE
SCALE: NONE



D EXIST. ENCLOSURES
SCALE: NONE



E EXIST. DISCONNECT
SCALE: NONE



F EXIST. METER
SCALE: NONE



G EXIST. CABLE ROUTE
SCALE: NONE

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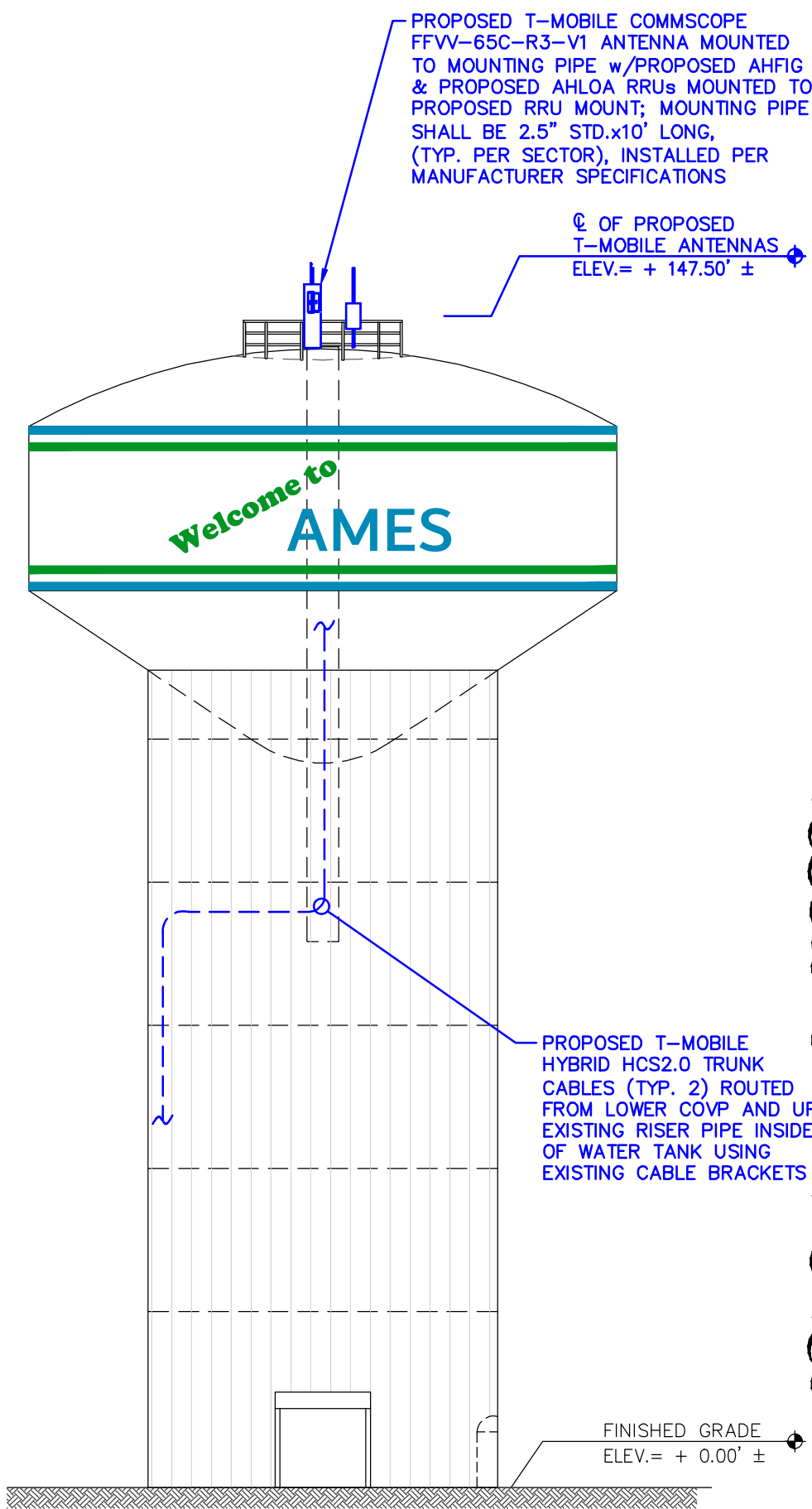
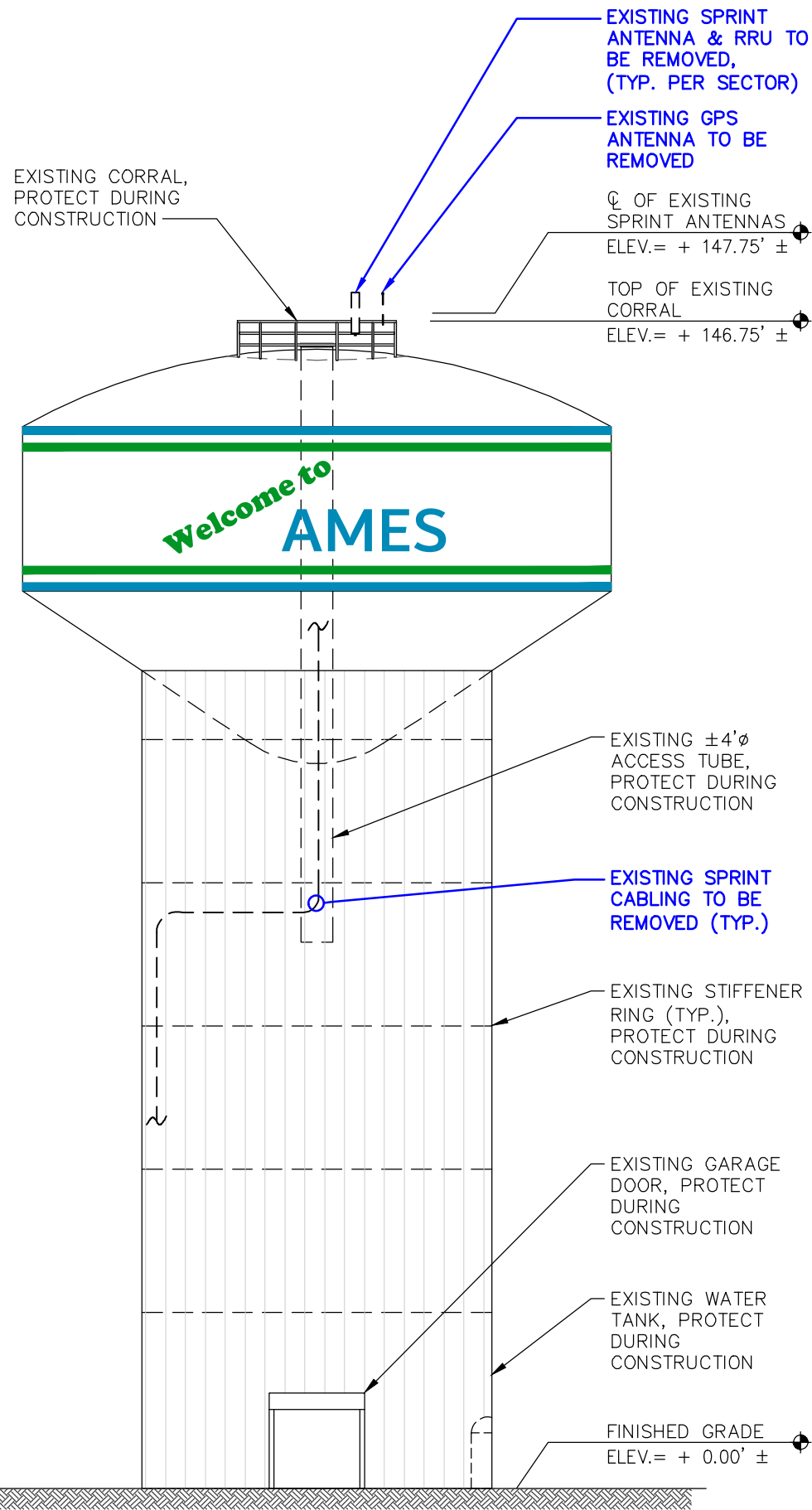


C	05/10/22	LL	REVIEW	JD
D	08/09/22	LL	COMMENTS	JD
E	08/17/22	FINAL	LL REVIEW	JD
F	09/16/22	LL	COMMENTS	JKB
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DWG BY: JD
CHKD BY: MJM

SHEET TITLE
SITE PHOTOS

SHEET NUMBER
C-3.1



1 EXISTING ELEVATION
SCALE: 1" = 20'

2 PROPOSED ELEVATION
SCALE: 1" = 20'

- NOTES:**
- ELEVATION IS FOR REFERENCE PURPOSE ONLY.
 - CONTRACTOR SHALL PERFORM WORK DONE TO OR ON STRUCTURE IN ACCORDANCE WITH PROVIDED STRUCTURAL ANALYSIS SEPARATE FROM PBM WIRELESS DRAWINGS.
 - ONLY (1) T-MOBILE SECTOR SHOWN FOR CLARITY.
 - FINAL RF CONFIGURATION SHALL BE CONFIRMED w/T-MOBILE RF/CM PRIOR TO START OF CONSTRUCTION.

- FINAL CONFIGURATION:**
- (3) PROPOSED COMMSCOPE FFVV-65C-R3-V1 ANTENNAS
 - (3) PROPOSED AEHC ANTENNAS
 - (3) PROPOSED AHLOA RRUs
 - (3) PROPOSED AHFIG RRUs
 - (2) PROPOSED UPPER BREAKOUT FEATURES/PENDANTS
 - (2) PROPOSED HYBRID HCS2.0 TRUNK CABLES
 - (1) PROPOSED GPS CABLE
 - (7) PROPOSED MOUNTS
 - (7) PROPOSED MOUNTING PIPES

EXISTING T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):

- (3) EXISTING 1.8" Ø TRUNK CABLES - TO BE REMOVED
- (1) EXISTING .50" Ø GPS CABLE - TO BE REMOVED
- (1) EXISTING 2 AWG GROUND WIRE - TO REMAIN

PROPOSED T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):

- (2) 1.8" Ø HYBRID TRUNK CABLES
- (1) .50" Ø GPS CABLE

FINAL T-MOBILE CABLING IN DRY RISER (ACCESS TUBE):

- (2) 1.8" Ø HYBRID TRUNK CABLES
- (1) .50" Ø GPS CABLE
- (1) EXISTING 2 AWG GROUND WIRE

FROM PREVIOUS CONSTRUCTION DRAWINGS & DOCUMENTS, AN EXISTING CABLE BRACKET WAS INSTALLED SPECIFICALLY TO SUPPORT THE CABLES (G.C. TO FIELD VERIFY). PROPOSED CABLES SHALL BE INSTALLED IN-LINE ON SAID BRACKET AND SHALL NOT IMPEDE EGRESS/INGRESS.

C	10/22	LL	REVIEW	JD
D	08/09/22	LL	COMMENTS	JD
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EXISTING CORRAL,
PROTECT DURING
CONSTRUCTION

APPROXIMATE TOP
OF TANK AT
CORRAL LOCATION

Welcome to
AMES

EXISTING WATER
TANK, PROTECT
DURING
CONSTRUCTION

EXISTING ACCESS
TUBE, PROTECT
DURING
CONSTRUCTION

EXISTING SPRINT
CABLING TO BE
REMOVED (TYP.)

☉ OF EXISTING
SPRINT ANTENNAS
ELEV.= + 147'-9" ±

TOP OF EXISTING
CORRAL
ELEV.= + 146'-9" ±

EXISTING SPRINT
ANTENNA & RRU TO
BE REMOVED,
(TYP. PER SECTOR)

EXISTING GPS
ANTENNA TO BE
REMOVED

PROPOSED T-MOBILE GPS
ANTENNA, INSTALLED PER
MANUFACTURER SPECIFICATIONS

PROPOSED T-MOBILE COMMSCOPE
FFVV-65C-R3-V1 ANTENNA MOUNTED
TO MOUNTING PIPE w/PROPOSED AHFIG
& PROPOSED AHLOA RRUs MOUNTED TO
PROPOSED RRU MOUNT; MOUNTING PIPE
SHALL BE 2.5" STD.x10' LONG,
(TYP. PER SECTOR), INSTALLED PER
MANUFACTURER SPECIFICATIONS

PROPOSED T-MOBILE AEHC
ANTENNA MOUNTED TO
MOUNTING PIPE; MOUNTING
PIPE SHALL BE 2.5" STD.x10'
LONG,
(TYP. PER SECTOR),
INSTALLED PER
MANUFACTURER
SPECIFICATIONS

☉ OF PROPOSED
T-MOBILE ANTENNAS
ELEV.= + 147'-6" ±

Welcome to
AMES

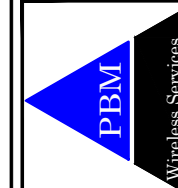
PROPOSED T-MOBILE CABLE
ROUTED UP THROUGH ±4"Ø
ACCESS TUBE (F.V.) USING
EXISTING CABLE SUPPORTS.
G.C. SHALL VERIFY
CONDITION AND SHALL
REPAIR AND/OR REPLACE
WITH EXPANSION BRACKETS
AS REQUIRED.

PROPOSED T-MOBILE
HYBRID HCS2.0 TRUNK
CABLES (TYP. 2) ROUTED
FROM LOWER COVP AND UP
EXISTING RISER PIPE INSIDE
OF WATER TANK USING
EXISTING CABLE BRACKETS

1 ENLARGED EXISTING ELEVATION
SCALE: 1/16" = 1'-0"

2 ENLARGED PROPOSED ELEVATION
SCALE: 1/16" = 1'-0"

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DWG BY: JD
CHKD BY: MJM

SHEET TITLE
**ENLARGED
ANTENNA
ELEVATION**

SHEET NUMBER
C-4.1

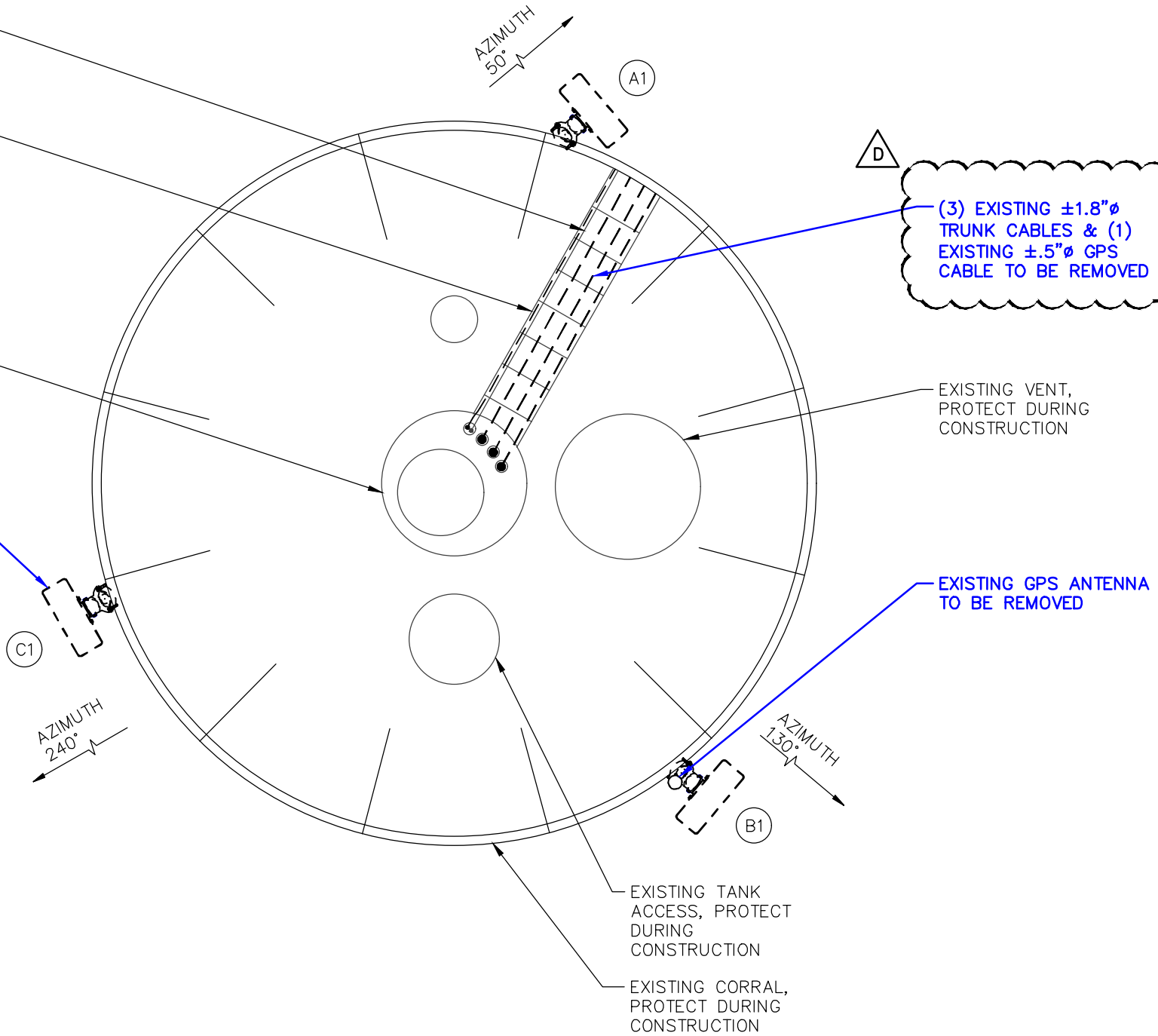
EXISTING SPRINT ANTENNA PIPES (VACANT & IN-USE) TO BE REMOVED FROM RAILING

EXISTING SPRINT ±.42"Ø GROUND LEAD TO REMAIN, PROTECT DURING CONSTRUCTION

EXISTING CABLE LADDER TO REMAIN, PROTECT DURING CONSTRUCTION

EXISTING ACCESS HATCH/TUBE, PROTECT DURING CONSTRUCTION

EXISTING SPRINT ANTENNA TO BE REMOVED (TYP. (1) PER SECTOR)



A EXISTING ANTENNA LAYOUT PHOTO
SCALE: NONE

(3) EXISTING ±1.8"Ø TRUNK CABLES & (1) EXISTING ±.5"Ø GPS CABLE TO BE REMOVED

EXISTING VENT, PROTECT DURING CONSTRUCTION

EXISTING GPS ANTENNA TO BE REMOVED

EXISTING TANK ACCESS, PROTECT DURING CONSTRUCTION

EXISTING CORRAL, PROTECT DURING CONSTRUCTION

1 EXISTING TANK TOP PLAN
SCALE: 1/4" = 1'-0"



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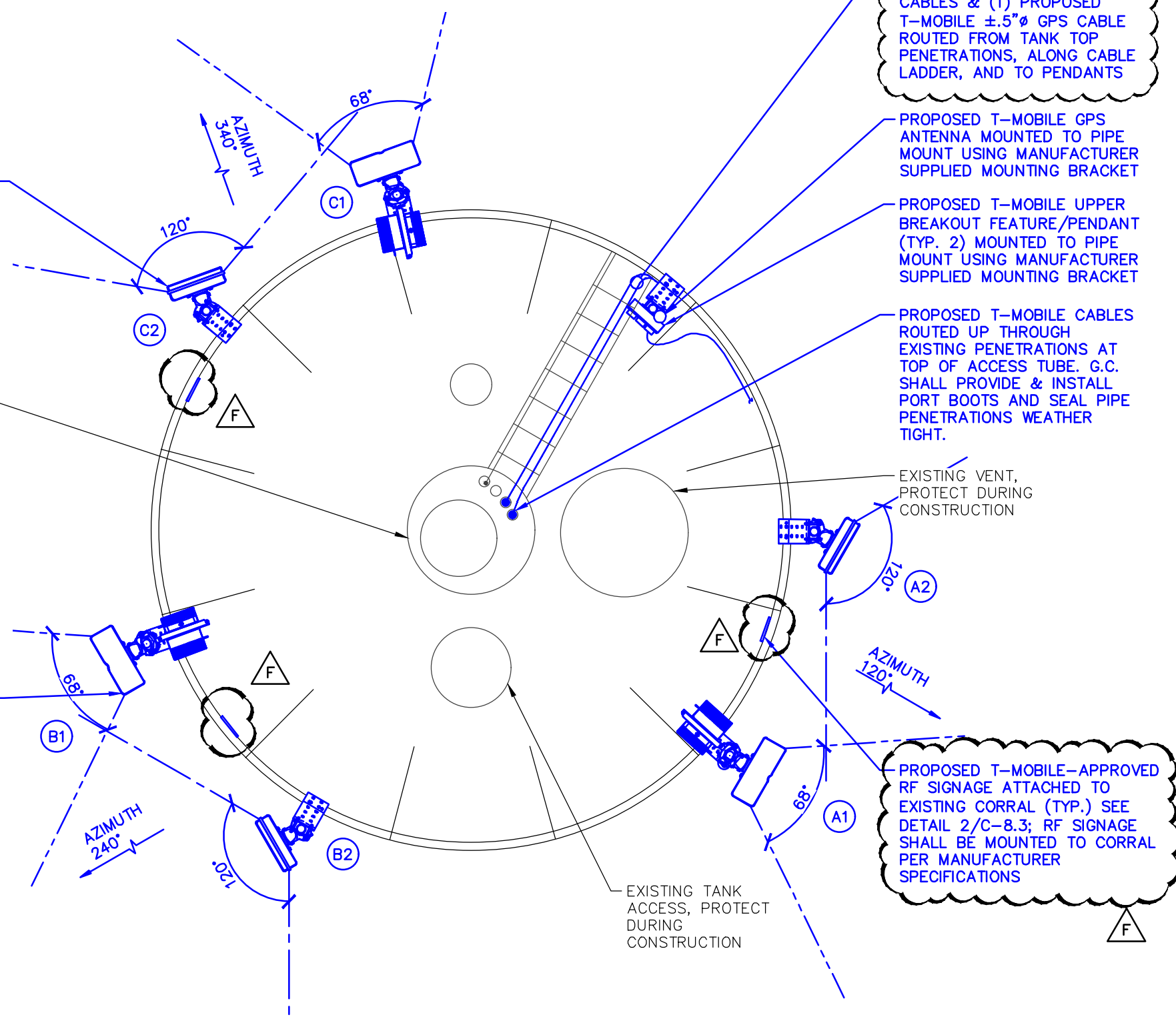
SHEET TITLE
ANTENNA LAYOUT-EXISTING

SHEET NUMBER
C-5.0

PROPOSED T-MOBILE AEHC ANTENNA (TYP. (1) PER SECTOR); TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS

EXISTING ACCESS HATCH/TUBE, PROTECT DURING CONSTRUCTION

PROPOSED T-MOBILE COMMSCOPE FFV-65C-R3-V1 ANTENNA MOUNTED TO MOUNTING PIPE w/PROPOSED AHFIG & PROPOSED AHLOA RRUs MOUNTED TO PROPOSED RRU MOUNT; MOUNTING PIPE SHALL BE 2.5" STD.x10' LONG, (TYP. PER SECTOR), INSTALLED PER MANUFACTURER SPECIFICATIONS



(2) PROPOSED T-MOBILE ±1.8"Ø HYBRID HCS2.0 TRUNK CABLES & (1) PROPOSED T-MOBILE ±.5"Ø GPS CABLE ROUTED FROM TANK TOP PENETRATIONS, ALONG CABLE LADDER, AND TO PENDANTS

PROPOSED T-MOBILE GPS ANTENNA MOUNTED TO PIPE MOUNT USING MANUFACTURER SUPPLIED MOUNTING BRACKET

PROPOSED T-MOBILE UPPER BREAKOUT FEATURE/PENDANT (TYP. 2) MOUNTED TO PIPE MOUNT USING MANUFACTURER SUPPLIED MOUNTING BRACKET

PROPOSED T-MOBILE CABLES ROUTED UP THROUGH EXISTING PENETRATIONS AT TOP OF ACCESS TUBE. G.C. SHALL PROVIDE & INSTALL PORT BOOTS AND SEAL PIPE PENETRATIONS WEATHER TIGHT.

EXISTING VENT, PROTECT DURING CONSTRUCTION

PROPOSED T-MOBILE-APPROVED RF SIGNAGE ATTACHED TO EXISTING CORRAL (TYP.) SEE DETAIL 2/C-8.3; RF SIGNAGE SHALL BE MOUNTED TO CORRAL PER MANUFACTURER SPECIFICATIONS

PROPOSED T-MOBILE JUMPER CABLES FROM PENDANTS TO RRUs/ANTENNAS SHALL BE ROUTED ALONG EXISTING CORRAL RAILS

THE CITY OF AMES WATER & POLLUTION CONTROL REQUIRE ALL CABLES, WIRES, CONDUITS, etc. BE NEATLY BUNDLED INTO ONE ROUTE FROM THE TANK TOP PENETRATION TO THE EXISTING CORRAL RAILS, AND THEN ROUTED ALONG THE RAILS TO THE INDIVIDUAL ANTENNAS. AN OCTOPUS OF WIRES RUNNING ALL OVER THE TOP OF THE TANK WILL NOT BE PERMITTED. ENSURE THAT THE ROUTING DOES NOT INTERFERE WITH THE OPERATION OF THE HATCHES INTO EITHER THE WET OR DRY SIDES OF THE TANK, AND THAT THEY ALLOW FOR SAFE INGRESS AND EGRESS FROM BOTH HATCHES.

HYBRID CABLE LENGTH	
LENGTH FROM LOWER COVP TO UPPER BREAKOUT FEATURE/PENDANT - (TYP. 2)	±180' (54.9m)

DC/FIBER JUMPER CABLE LENGTH PROPOSED UPPER PENDANT TO AHLOA	
ALPHA SECTOR:	±20' (6.1m)
BETA SECTOR:	±40' (12.2m)
GAMMA SECTOR:	±13' (4.0m)

DC/FIBER JUMPER CABLE LENGTH PROPOSED UPPER PENDANT TO AHFIG	
ALPHA SECTOR:	±20' (6.1m)
BETA SECTOR:	±40' (12.2m)
GAMMA SECTOR:	±13' (4.0m)

DC/FIBER JUMPER CABLE LENGTH PROPOSED UPPER PENDANT TO AEHC	
ALPHA SECTOR:	±15' (4.6m)
BETA SECTOR:	±33' (10.1m)
GAMMA SECTOR:	±20' (6.1m)

COAX JUMPER CABLE INFO		
	AHFIG TO ANTENNA	CABLE QTY.
ALPHA SECTOR:	±10' (3.1m)	4
BETA SECTOR:	±10' (3.1m)	4
GAMMA SECTOR:	±10' (3.1m)	4

COAX JUMPER CABLE INFO		
	AHLOA TO ANTENNA	CABLE QTY.
ALPHA SECTOR:	±10' (3.1m)	4
BETA SECTOR:	±10' (3.1m)	4
GAMMA SECTOR:	±10' (3.1m)	4

* CABLE LENGTHS PROVIDED ARE APPROXIMATE

JD	JD	JD	JKB	BCG	BCG
C 05/10/22	LL REVIEW	D 08/09/22	LL COMMENTS	JD	
E 08/17/22	FINAL LL REVIEW	F 09/16/22	LL COMMENTS	JKB	
G 09/20/22	LL REVIEW	O 10/07/22	BID/PERMIT	BCG	

DM01886A - AMES WEST Y AVE
900 S. 500th AVE., AMES, IA, 50014
STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ #: 22-10-40-14
DWG BY: JD
CHKD BY: MJM

SHEET TITLE
ANTENNA LAYOUT-PROPOSED

SHEET NUMBER
C-5.1

Section 1 - Site Information

Site ID: DM01886A Site Name: Ames West Y Ave Latitude: 42.01508600
 Status: Final Site Class: Watertank Longitude: -93.69795300
 Version: 1 Site Type: Structure Non Building Address: 900 S 500TH AVE
 Project Type: Sprint Retain Plan Year: City, State: Ames, IA
 Approved: 5/16/2022 3:10:14 PM Market: DES MOINES IA Region: CENTRAL
 Approved By: Ramaraju.2.Manthena@t-mobile.com Vendor: Nokia
 Last Modified: 5/16/2022 3:10:14 PM Landlord: Not Specified
 Last Modified By: Ramaraju.2.Manthena@t-mobile.com

RAN Template: 56790EZ_SR_T AL Template: 56790EZ_SR_T
 Sector Count: 3 Antenna Count: 6 Coax Line Count: 0 TMA Count: 0 RRU Count: 6

Proposed RAN Equipment

Template: 56790EZ_SR_T

Enclosure	1	2	3	4
Enclosure Type	Generic 600A Site Support Cabinet	Tower Top Mount (Nokia)	Ancillary Equipment (Nokia)	Generic 600A Site Support Cabinet
Baseband	ASIL (x 2)			
Baseband Submodule	ABIO L600 L2100 N2500 N600 L1900 ABIO N1900 (DARK) L2500 N2100 (DARK)			
Baseband Subrack	AMIA			
Hybrid Cable System	Voltage Booster PowerPlus S2 w/ 2 Amplifier Raycap (Only compatible with HCS 1.0/2.0) Extra Amplifier for PowerPlus Voltage Booster Raycap		200' HCS 2.0 Trunk - 12#6AWG 24 SM FIBER PR (x 2)	
Junction Box			Nokia HCS 2.0 Tower Junction Box (x 2)	
Power subsystem	Rectifier Shelf *Select size* Breakers *Select size*			Batteries *Select size*
Radio		AHLOA (x 3) L600 L2100 N600 L1900	AHFIG (x 3) L2100 L1900 G1900 (DARK) N1900 (DARK) N2100 (DARK)	
Transport System	CSR IXRe V2 (Gen2)			

RAN Scope of Work:

NOTE:
 FINAL RF CONFIGURATION SHALL BE CONFIRMED w/T-MOBILE RF/CM PRIOR TO START OF CONSTRUCTION.

REFERENCE ONLY

Section 6 - A&L Equipment

Existing Template: Custom
 Proposed Template: 56790EZ_SR_T

Sector 1 (Proposed) view from front (Note: the images show view from behind)

Coverage Type	A - Outdoor Macro				
Antenna	1		2		
Antenna Model	Commscope - FFVV-65C-R3-V1 (Octo)		AEHC (Active Antenna - Massive MIMO)		
Azimuth	120		120		
M. Tilt	0		0		
Height	147'-6"		147'-6"		
Ports	P1	P2	P3	P4	P5
Active Tech.	L600 N600	L600 N600	L2100 L1900	L2100 L1900	L2500 N2500
Dark Tech.			G1900 N1900 N2100	G1900 N1900 N2100	
Restricted Tech.					
Decomm. Tech.					
E. Tilt	4	4	2	2	3
Cables					
TMA's					

Sector 2 (Proposed) view from front (Note: the images show view from behind)

Coverage Type	A - Outdoor Macro				
Antenna	1		2		
Antenna Model	Commscope - FFVV-65C-R3-V1 (Octo)		AEHC (Active Antenna - Massive MIMO)		
Azimuth	240		240		
M. Tilt	0		0		
Height	147'-6"		147'-6"		
Ports	P1	P2	P3	P4	P5
Active Tech.	L600 N600	L600 N600	L2100 L1900	L2100 L1900	L2500 N2500
Dark Tech.			G1900 N1900 N2100	G1900 N1900 N2100	
Restricted Tech.					
Decomm. Tech.					
E. Tilt	4	4	2	2	3
Cables					
TMA's					

Sector 3 (Proposed) view from front (Note: the images show view from behind)

Coverage Type	A - Outdoor Macro				
Antenna	1		2		
Antenna Model	Commscope - FFVV-65C-R3-V1 (Octo)		AEHC (Active Antenna - Massive MIMO)		
Azimuth	340		340		
M. Tilt	0		0		
Height	147'-6"		147'-6"		
Ports	P1	P2	P3	P4	P5
Active Tech.	L600 N600	L600 N600	L2100 L1900	L2100 L1900	L2500 N2500
Dark Tech.			G1900 N1900 N2100	G1900 N1900 N2100	
Restricted Tech.					
Decomm. Tech.					
E. Tilt	4	4	2	2	3
Cables					
TMA's					



C 05/10/22	LL REVIEW	JD
D 08/09/22	LL COMMENTS	JD
E 08/17/22	FINAL LL REVIEW	JD
F 09/16/22	LL COMMENTS	JKB
G 09/20/22	LL REVIEW	BCG
O 10/07/22	BID/PERMIT	BCG

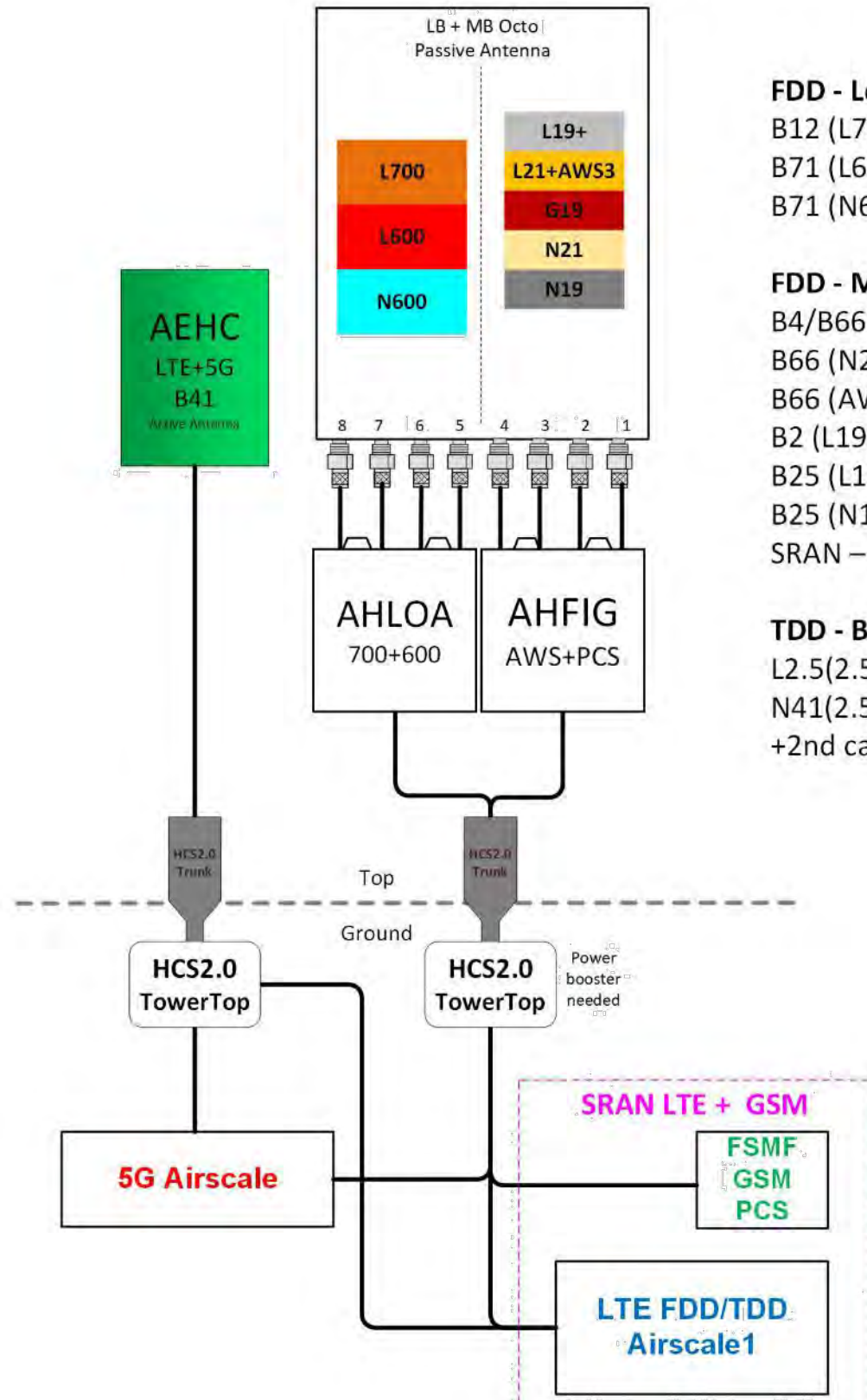
DM01886A - AMES WEST Y AVE
 900 S. 500th AVE., AMES, IA, 50014
 STORY COUNTY
 SPRINT RETAIN - EXISTING WATER TANK
 PROJ # 22-10-40-14 DWG BY:JD CHKD BY:MJM

SHEET TITLE
RFDS INFORMATION

SHEET NUMBER
C-6.0

Configuration 56790EZ_SR_T

* For 5G and LTE Airscale BB dimensioning refer to Fiber Port matrices.
(Alpha, Beta & Gamma)



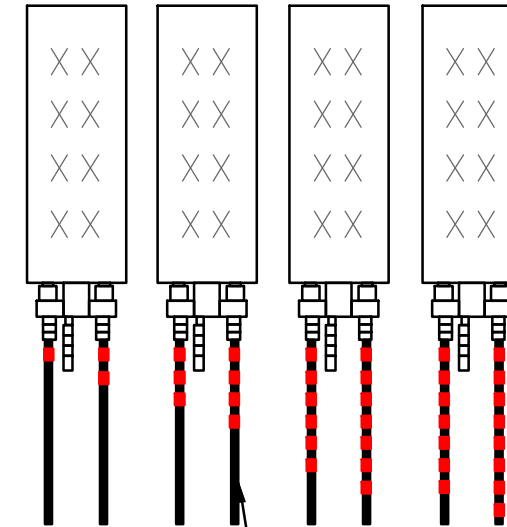
FDD - Lowband
 B12 (L700) – 5 MHz
 B71 (L600) – 10 MHz
 B71 (N600) – 15 MHz

FDD - Midband
 B4/B66 (L2100) – 20 MHz
 B66 (N2100) – 20MHz
 B66 (AWS3) – 5MHz
 B2 (L1900) – 20 MHz
 B25 (L1900) – 20 MHz
 B25 (N1900) – 20MHz
 SRAN – GSM PCS

TDD - Band 41
 L2.5(2.5GHz)– 60 MHz
 N41(2.5GHz) – 100MHz
 +2nd carrier (<=80MHz)

REFERENCE ONLY

NOTE:
 FINAL RF CONFIGURATION SHALL BE CONFIRMED w/T-MOBILE RF/CM PRIOR TO START OF CONSTRUCTION.



EXAMPLE: COAX WITH FOUR BANDS OF RED TAPE WILL REPRESENT ALPHA SECTOR AND THE 4TH PORT OF ANTENNA

SECTOR A	RED
SECTOR B	GREEN
SECTOR C	BLUE
SECTOR D	YELLOW
SECTOR E	WHITE
SECTOR F	PURPLE
LMU	BROWN – SECTOR COLOR BANDS (1,2)
FIBER ID	GRAY
UNUSED COAX	PINK
MICROWAVE	ORANGE
PWE T-1'S & GPS DOWNLINK CABLE	ID/LABEL MAKER

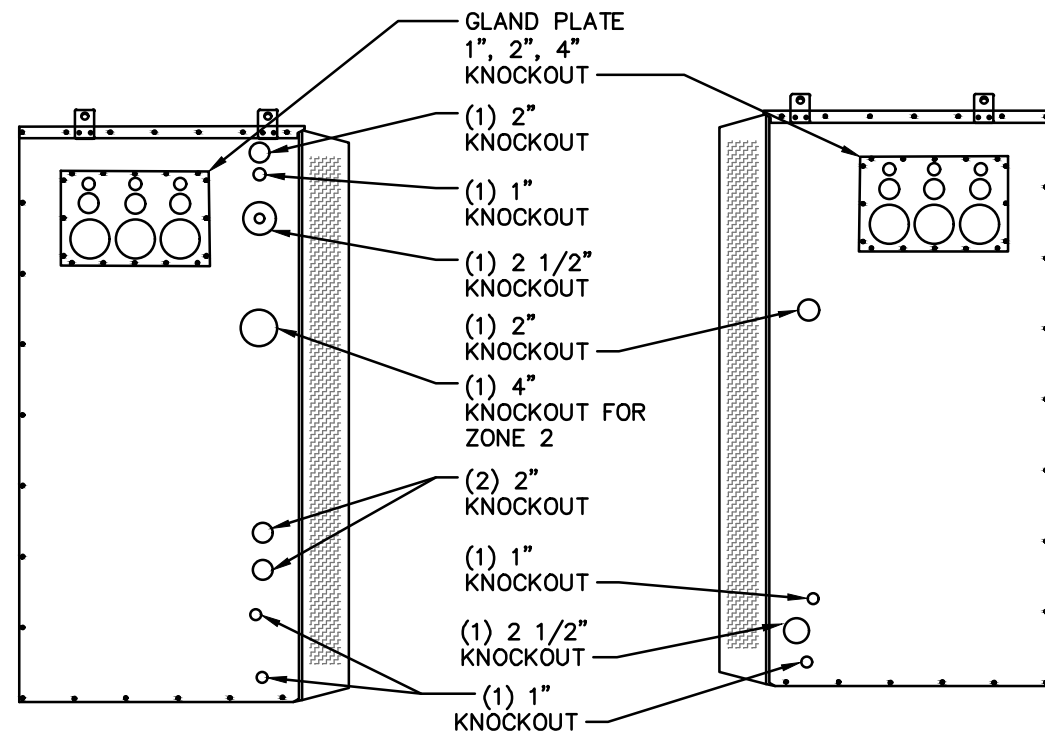
Color Coding per technology:
 U2100– GREEN
 U1900– PURPLE
 L2100– ORANGE
 L1900– YELLOW
 L700– GRAY
 L600– BROWN
 GSM– just the sector color coding

C	10/10/22	LL	REVIEW	JD
D	08/09/22	LL	COMMENTS	JD
E	08/17/22	FINAL	LL REVIEW	JD
F	09/16/22	LL	COMMENTS	JKB
G	09/20/22	LL	REVIEW	BCG
O	10/07/22	BID/PERMIT		BCG

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 CHKD BY: MJM

SHEET TITLE
RF PLUMBING DIAGRAM & DETAILS

SHEET NUMBER
C-7.0



**LEFT SIDE
VIEW**

**RIGHT SIDE
VIEW**



ISOMETRIC VIEW

DELTA HPL3 - LARGE SSC

DIMENSIONS:	72"H x 30"W x 35"D
WEIGHT CABINET ONLY:	±595 LBS (RECTIFIERS EXCLUDED)
WEIGHT OF CABINET (FULLY LOADED):	±2000 LBS

NOTE:

G.C. TO VERIFY CABINET INFORMATION w/MANUFACTURER PRIOR TO CABINET INSTALLATION & CONNECTION

BILL OF MATERIALS

BTS LEVEL			
DESCRIPTION	MANUFACTURER	PART #	QTY.
BALLAST FRAME	SITEPRO 1	RT-RRU5HD	1
12" WIDE CABLE TRAY w/SLEEPERS	SITEPRO 1	SP1542	±25 L.F.
ANTENNA LEVEL			
DESCRIPTION	MANUFACTURER	PART #	QTY.
HANDRAIL MOUNT (SINGLE BRACKET)	COMMSCOPE	MTC995501	14
MOUNT PIPE 2.5" STD. x 10' LONG	SABRE	C10901329	7
RRU MOUNT	T.B.D.	T.B.D.	T.B.D.

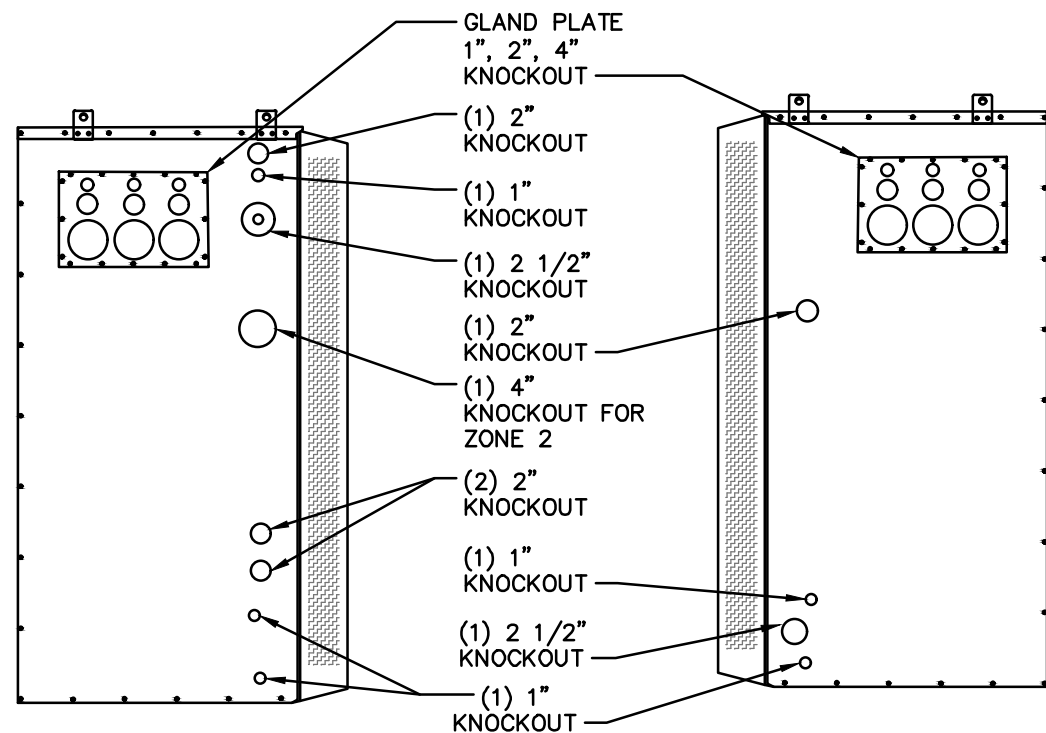
*OR CLIENT APPROVED EQUIVALENT

PLEASE NOTE:

G.C. SHALL COORDINATE w/T-MOBILE CM FOR FINAL BOM LIST PRIOR TO START OF CONSTRUCTION

1 DELTA SSC DETAILS

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



**LEFT SIDE
VIEW**

**RIGHT SIDE
VIEW**



ISOMETRIC VIEW

DELTA LB3 BATTERY CABINET

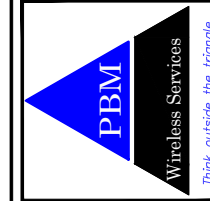
DIMENSIONS:	72"H x 30"W x 35"D
WEIGHT CABINET ONLY:	±540 LBS (BATTERIES EXCLUDED)
WEIGHT OF CABINET (FULLY LOADED):	±2500 LBS

**REFERENCE
ONLY**

2 DELTA LB3 BATTERY CABINET DETAILS

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

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WEST DES MOINES, IA 50266



C 10/10/22	LL REVIEW	JD	JD	JD	JKB	BCG	BCG
D 08/09/22	LL COMMENTS	JD	JD	JD	JKB	BCG	BCG
E 08/17/22	FINAL LL REVIEW	JD	JD	JD	JKB	BCG	BCG
F 09/16/22	LL COMMENTS	JD	JD	JD	JKB	BCG	BCG
G 09/20/22	LL REVIEW	JD	JD	JD	JKB	BCG	BCG
O 10/07/22	BID/PERMIT	JD	JD	JD	JKB	BCG	BCG

DM01886A - AMES WEST Y AVE
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STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14
DWG BY: JD
CHKD BY: MJM

SHEET TITLE
**EQUIPMENT
DETAILS**

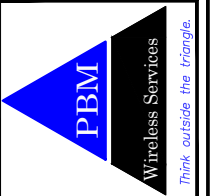
SHEET NUMBER
C-8.0



REFERENCE
ONLY

NOTE:
FINAL RF CONFIGURATION SHALL BE
CONFIRMED w/T-MOBILE RF/CM PRIOR TO START
OF CONSTRUCTION.

T-Mobile
7600 OFFICE PLAZA DRIVE SOUTH, SUITE 150
WEST DES MOINES, IA 50266



A EXISTING CORRAL
SCALE: NONE

PROPOSED T-MOBILE GPS
ANTENNA, INSTALLED PER
MANUFACTURER
SPECIFICATIONS

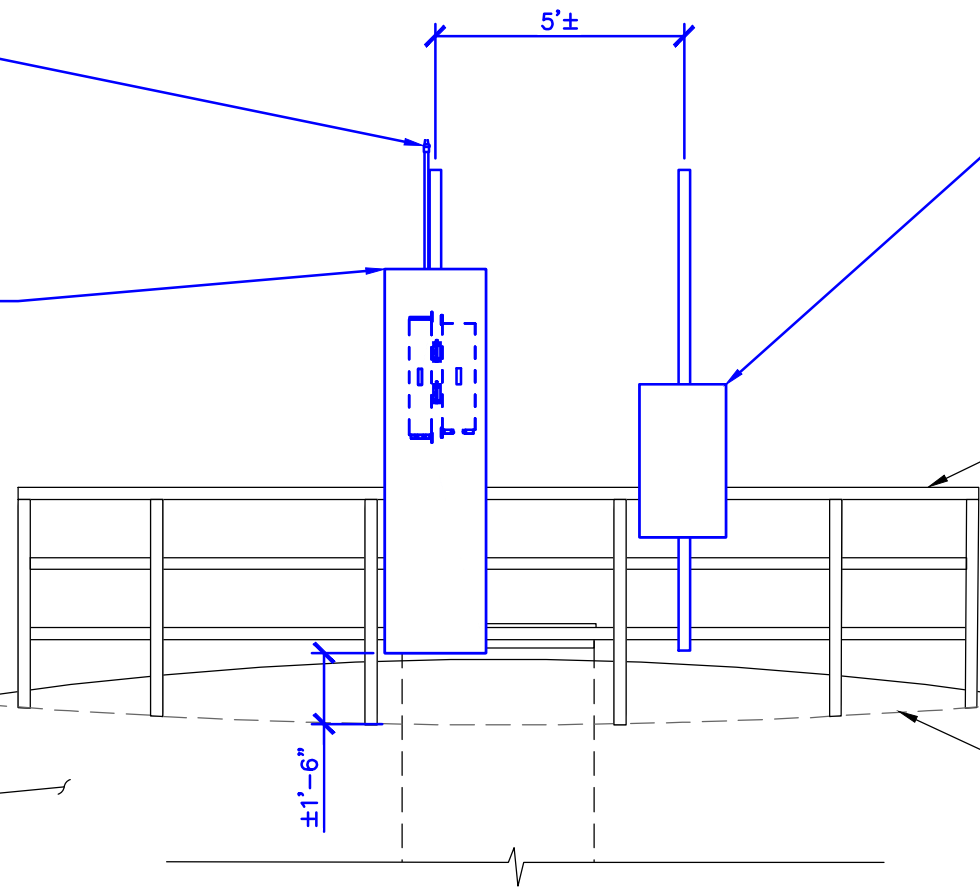
PROPOSED T-MOBILE COMMSCOPE
FFVV-65C-R3-V1 ANTENNA MOUNTED
TO MOUNTING PIPE w/PROPOSED AHFIG
& PROPOSED AHLOA RRUs MOUNTED TO
PROPOSED RRU MOUNT; MOUNTING PIPE
SHALL BE 2.5" STD.x10' LONG,
(TYP. PER SECTOR), INSTALLED PER
MANUFACTURER SPECIFICATIONS

PROPOSED T-MOBILE AEHC
ANTENNA MOUNTED TO MOUNTING
PIPE; MOUNTING PIPE SHALL BE
2.5" STD.x10' LONG,
(TYP. PER SECTOR), INSTALLED
PER MANUFACTURER
SPECIFICATIONS

EXISTING WATER TANK,
PROTECT DURING
CONSTRUCTION

EXISTING WATER TANK CORRAL,
PROTECT DURING
CONSTRUCTION

APPROXIMATE TOP
OF TANK AT
CORRAL LOCATION



1 PROPOSED ELEVATION • SECTOR (TYP.)
SCALE: 1/4" = 1'-0"

C	10/10/22	LL REVIEW	JD
D	08/09/22	LL COMMENTS	JD
E	08/17/22	FINAL LL REVIEW	JD
F	09/16/22	LL COMMENTS	JKB
G	09/20/22	LL REVIEW	BCG
O	10/07/22	BID/PERMIT	BCG

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SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14 DWG BY: JD CHKD BY: MJM

SHEET TITLE
MOUNT DETAILS

SHEET NUMBER
C-8.1

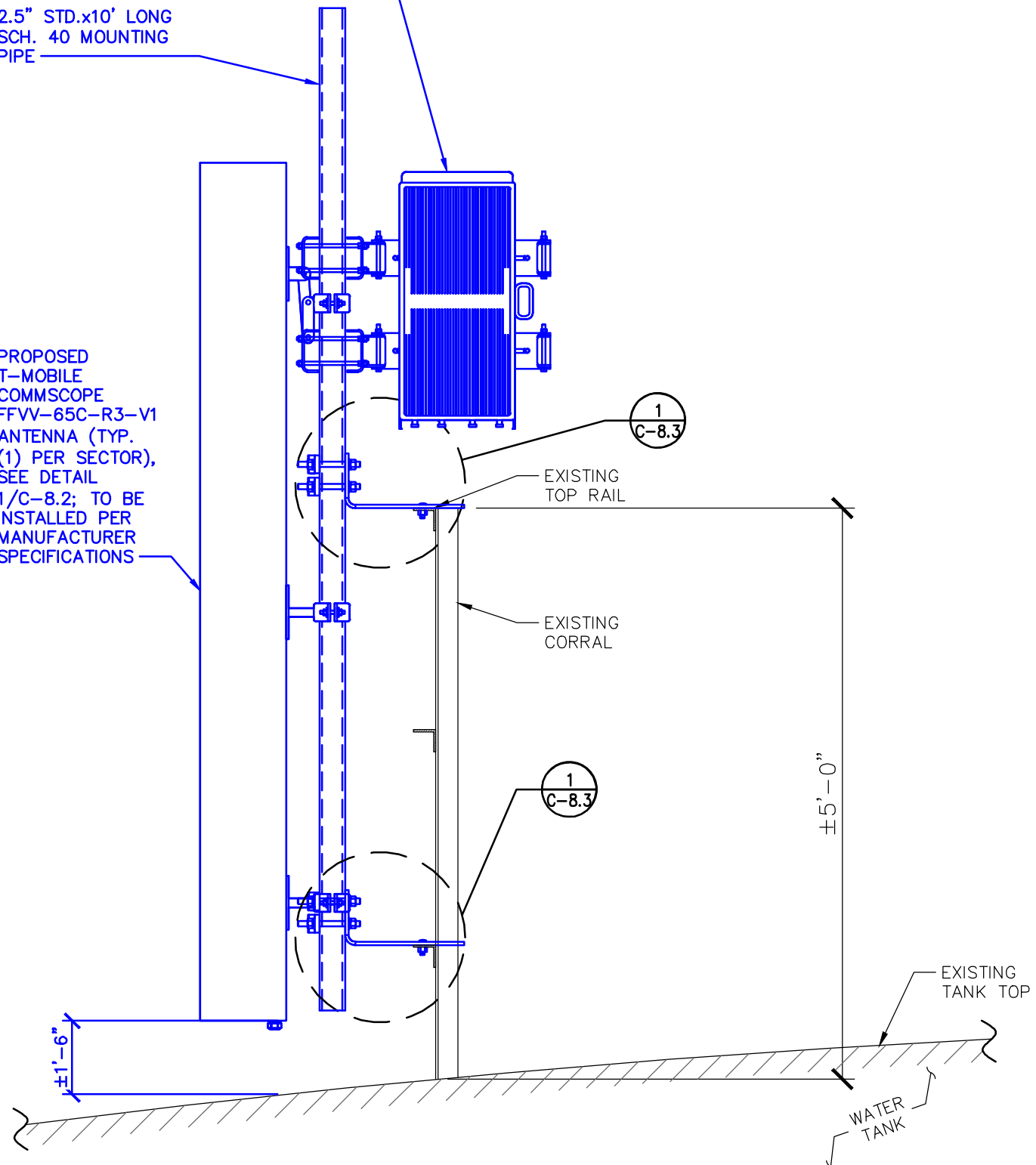
PROPOSED T-MOBILE AHLOA RRU AND AHFG RRU (TYP. 1 PER SECTOR) TO BE MOUNTED TO PIPE BEHIND ANTENNA ATTACHED TO PROPOSED RRU MOUNT; TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS

2.5" STD.x10' LONG SCH. 40 MOUNTING PIPE

PROPOSED T-MOBILE COMMSCOPE FFVV-65C-R3-V1 ANTENNA (TYP. (1) PER SECTOR), SEE DETAIL 1/C-8.2; TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS

NOTES:

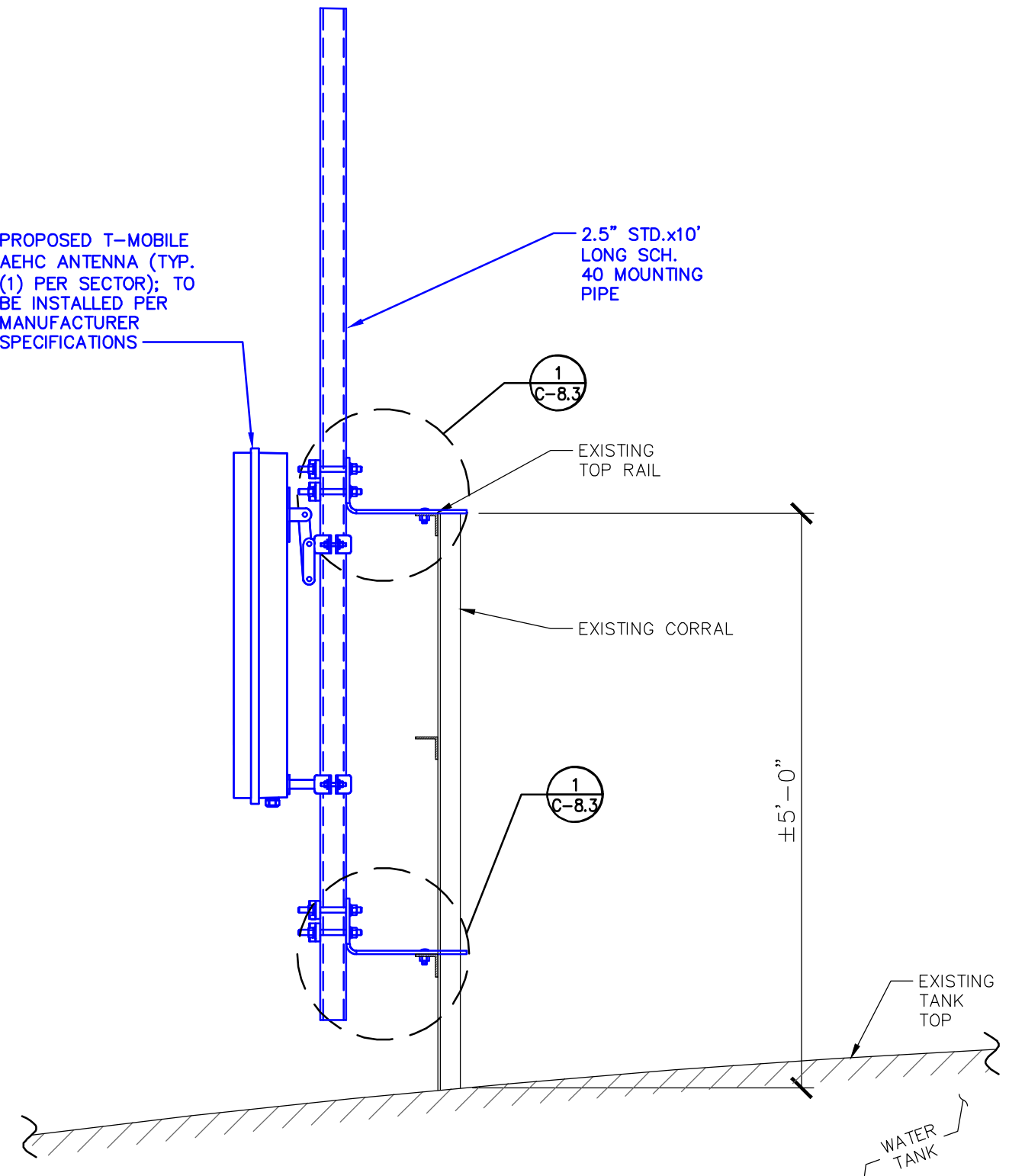
1. CONTRACTOR SHALL PERFORM WORK DONE TO OR ON STRUCTURE IN ACCORDANCE WITH PROVIDED STRUCTURAL MOUNT ANALYSIS SEPARATE FROM PBM WIRELESS DRAWINGS. MOUNT ANALYSIS WAS PERFORMED BY ACCELERATED TOWER ENGINEERING DATED 05/11/2022.
2. EXISTING AND PROPOSED T-MOBILE ANTENNAS, MOUNTS, CABLES, CABLE TRAYS/COVERS, AND RELATED EQUIPMENT SHALL BE PAINTED TO MATCH THE EXISTING WATER TANK.



1 ANTENNA MOUNTING DETAIL - POSITION 1 (TYP.)
SCALE: NONE

PROPOSED T-MOBILE AEHC ANTENNA (TYP. (1) PER SECTOR); TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS

2.5" STD.x10' LONG SCH. 40 MOUNTING PIPE



2 ANTENNA MOUNTING DETAIL - POSITION 2 (TYP.)
SCALE: NONE

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WEST DES MOINES, IA 50266

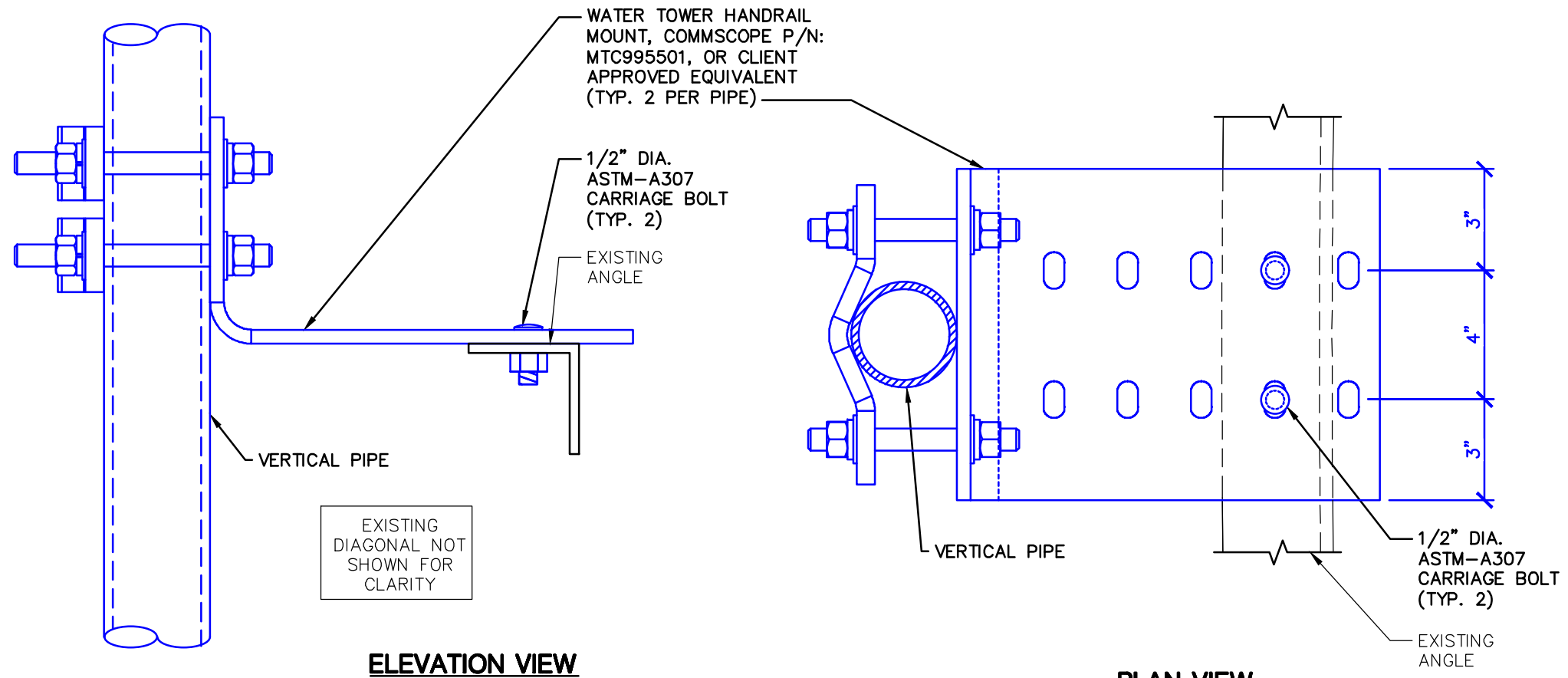


C	05/10/22	LL	REVIEW	JD
D	08/09/22	LL	COMMENTS	JD
E	08/17/22	FINAL	LL REVIEW	JD
F	09/16/22	LL	COMMENTS	JKB
G	09/20/22	LL	REVIEW	BCG
O	10/07/22	BID/PERMIT		BCG

DM01886A - AMES WEST Y AVE
900 S. 500th AVE., AMES, IA, 50014
STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14
DWG BY: JD
CHKD BY: MJM

SHEET TITLE
MOUNT DETAILS

SHEET NUMBER
C-8.2



ELEVATION VIEW

PLAN VIEW

1 UPPER & LOWER ATTACHMENT DETAIL (TYP.)

SCALE: 3" = 1'-0"

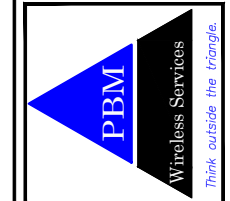
- NOTES:**
1. STEEL WORK SHALL BE GALVANIZED UNLESS NOTED OTHERWISE.
 2. NON-GALVANIZED STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS NOTED OTHERWISE.
 3. STEEL BOLTING - ASTM A325-N BOLTS, SEE PLAN/DETAILS FOR DIAMETER, NON SLIP CRITICAL CONNECTIONS SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
 4. DAMAGE TO THE EXISTING CATWALK/RAILING SHALL BE REPAIRED OR REPLACED TO MATCH EXISTING ORIGINAL CONDITIONS AT THE CONTRACTOR'S EXPENSE.
 5. STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISC STANDARDS LATEST EDITION.
 6. STEEL ANGLES AND PLATES - ASTM A36. (MINIMUM YIELD STRENGTH = 36KSI)
 7. STEEL PIPES - ASTM A53 TYPE E. (MINIMUM YIELD STRENGTH = 35KSI)
 8. CONTRACTOR SHALL COORDINATE AND VERIFY LAYOUT, PLACEMENT, ETC. OF EQUIPMENT PRIOR TO FABRICATION AND ERECTION.



2 RF SIGNAGE

SCALE: NONE

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C	05/10/22	LL REVIEW	JD
D	08/09/22	LL COMMENTS	JD
E	08/17/22	FINAL LL REVIEW	JD
F	09/16/22	LL COMMENTS	JKB
G	09/20/22	LL REVIEW	BCG
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DM01886A - AMES WEST Y AVE
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 STORY COUNTY
 SPRINT RETAIN - EXISTING WATER TANK
 PROJ #: 22-10-40-14
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 CHKD BY: MJM

SHEET TITLE
MOUNT DETAILS

SHEET NUMBER
C-8.3

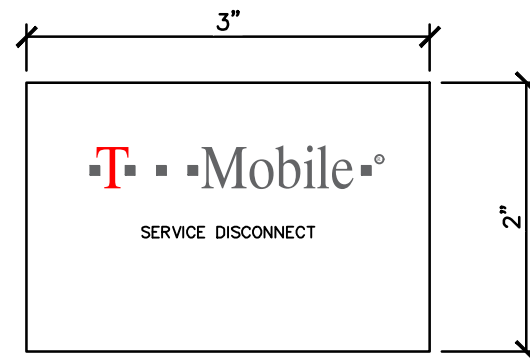
ELECTRICAL INSTALLATION NOTES:

ELECTRICAL INSTALLATION NOTES

- ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE FACILITY SHALL BE LABELED IN ACCORDANCE WITH OSHA 1910.335(b)(1) AND SAFETY AND ACCIDENT PREVENTION TAGS SHALL BE USED WHERE NECESSARY TO WARN EMPLOYEES OF ELECTRICAL HAZARDS PER OSHA 1910.145.
- ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

- POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (14 AWG OR LARGER), 600 V, OIL RESISTANT THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V, OIL RESISTANT THWN-2 GREEN INSULATION 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.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (14 AWG OR LARGER), 600 V, OIL RESISTANT THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
- POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR APPROVED EQUIVALENT). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID METALLIC CONDUIT FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), SHALL BE USED FOR CONCEALED INDOOR LOCATIONS WHERE PERMITTED BY NEC.
- GALVANIZED STEEL RIGID METAL CONDUIT (RMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

- 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.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUIVALENT); AND RATED NEMA 1 INTERIOR, NEMA 3R EXTERIOR (OR BETTER).
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET METAL. SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH AND OUTDOOR OUTLETS/DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 3R EXTERIOR (OR BETTER)
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- 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.



SERVICE DISCONNECT LABEL

SSC	ALARM
1	WHITE/BLUE 3
2	BLUE/WHITE 3 GROUND
4	WHITE/BROWN 7
5	BROWN/WHITE 7 GROUND
10	WHITE/ORANGE 4
11	ORANGE/WHITE 4 GROUND
13	WHITE/GREEN 5
14	GREEN/WHITE 5 GROUND
16	WHITE/BLUE 2 10
17	BLUE/WHITE 2 10 GROUND

66 BLOCK	DESCRIPTION	ALARM BOX
1A	WHITE/BLUE GEN RUNNING	12
1B	BLUE/WHITE GEN RUNNING	12 GROUND
2A	WHITE/ORANGE ATS IN EMERGENCY POSITION	11
2B	ORANGE/WHITE ATS IN EMERGENCY POSITION	11 GROUND
3A	WHITE/GREEN GEN FAIL TO START	6
3B	GREEN/WHITE GEN FAIL TO START	6 GROUND
13A	WHITE/BROWN LOSS OF SURGE	2
13B	BROWN/WHITE LOSS OF SURGE	2 GROUND



1 ALARM CABLING
SCALE: NONE

A EXISTING ELECTRICAL EQUIPMENT
SCALE: NONE

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JD	JD	JD	JKB	BCG	BCG
C 05/10/22	LL REVIEW	LL REVIEW	LL REVIEW	LL REVIEW	LL REVIEW
D 08/09/22	LL COMMENTS	LL COMMENTS	LL COMMENTS	LL COMMENTS	LL COMMENTS
E 08/17/22	FINAL LL REVIEW	FINAL LL REVIEW	FINAL LL REVIEW	FINAL LL REVIEW	FINAL LL REVIEW
F 09/16/22	LL COMMENTS	LL COMMENTS	LL COMMENTS	LL COMMENTS	LL COMMENTS
G 09/20/22	LL REVIEW	LL REVIEW	LL REVIEW	LL REVIEW	LL REVIEW
O 10/07/22	BID/PERMIT	BID/PERMIT	BID/PERMIT	BID/PERMIT	BID/PERMIT

DM01886A - AMES WEST Y AVE
900 S. 500th AVE., AMES, IA, 50014
STORY COUNTY
SPRINT RETAIN - EXISTING WATER TANK
PROJ # 22-10-40-14
DWG BY: J.D.
CHKD BY: M.J.M.

SHEET TITLE
ELECTRICAL NOTES & DETAILS

SHEET NUMBER
E-0.0

KEY NOTES:

- ① EXISTING T-MOBILE PPC 200A ELEC SERVICE; G.C. TO FIELD VERIFY
- ② PROPOSED T-MOBILE CABINET ELEC SERVICE:
(3) 3/0 AWG CU, (1) 2 AWG CU GND, 2"Ø CONDUIT. (PHASE CONDUCTORS & GROUND SHALL BE SIZED AND TERMINATED PER MANUFACTURER SPECIFICATIONS)
- ③ PROPOSED T-MOBILE ALARM/COMMUNICATION CONDUIT: CAT 5e OR EQUAL, 1-1/4"Ø SEALTIGHT.
- ④ PROPOSED T-MOBILE RAC24 ELEC SERVICE: -48VDC FROM SSC IN 1-1/4"Ø CONDUIT.
- ⑤ PROPOSED T-MOBILE RAC24 COMM SERVICE: 2"Ø CONDUIT FROM EXISTING FIBER DEMARC.
- ⑥ PROPOSED DELTA HPL3 SSC, AND LB3 BATTERY CABINET
- ⑦ PROPOSED T-MOBILE FIBER JUMPERS ROUTED INSIDE 2"Ø SEALTIGHT ROUTED FROM SSC TO LOWER COVPS; INSTALL J-BOX AS REQUIRED.
- ⑧ PROPOSED T-MOBILE DC POWER CABLES ROUTED INSIDE 2"Ø SEALTIGHT ROUTED FROM SSC TO LOWER COVPS; INSTALL J-BOX AS REQUIRED.
- ⑨ PROPOSED T-MOBILE 2 AWG SOLID TINNED BCW BELOW TO GND SYSTEM
- ⑩ G.C. SHALL BOND CHASSIS OF CABINET TO GROUND RING USING 2 AWG SOLID TINNED BCW
- ⑪ PROPOSED T-MOBILE 6 AWG STRANDED, GREEN INSULATED COPPER GROUND WIRE TO GROUNDING SYSTEM
- ⑫ G.C. SHALL BOND INTERNAL BUSS BAR TO CHASSIS USING 2 AWG STRANDED INSULATED GREEN GND WIRE
- ⑬ (1) PROPOSED T-MOBILE 4"Ø RIGID CONDUIT (WATER-TIGHT) FOR ROUTING BATTERY CABLES TO SSC
- ⑭ NOT USED
- ⑮ EXISTING INCOMING ELECTRICAL SERVICE; CONTRACTOR TO FIELD VERIFY (SEE NOTES THIS SHEET)
- ⑯ EXISTING UTILITY RACK w/MULTI-GANG METER CENTER; EXISTING SPRINT 200A METER TO REMAIN; EXISTING T-MOBILE 200A DISCONNECT TO REMAIN; EXISTING 200A GEN PLUG TO REMAIN
- ⑰ G.C. SHALL INSTALL NEW CONDUIT FROM HPL3 TO RAC24 AND RAC24 TO EXISTING FIBER BACKHAUL ROUTE. G.C. MUST COORDINATE WITH T-MOBILE CM TO IDENTIFY FIBER INTERCEPT LOCATION. G.C. SHALL INSTALL NEW TEMPORARY CONDUIT BETWEEN THE RAC24 AND THE EXISTING SSC. G.C. SHALL INSTALL NEW FIBER JUMPER FROM EXISTING SSC THROUGH RAC24 TO NEW HPL3 WHEN CSR IS RELOCATED TO HPL3. NEW FIBER JUMPER CAN BE RE-USED WHEN FIBER PROVIDER RELOCATES NID TO RAC24. G.C. SHALL PROVIDE TELCO READY PICTURES TO BE SUPPLIED TO THE FIBER BACKHAUL PROVIDER. G.C. SHALL REMOVE TEMPORARY CONDUIT AND EXISTING SSC AFTER FIBER PROVIDER RELOCATES NID TO RAC24. G.C. MUST COORDINATE WITH T-MOBILE CM BEFORE REMOVING CABINETS

G.C. SHALL RELOCATE EXISTING SPRINT CSR TO THE PROPOSED T-MOBILE RAC24; RELOCATED SPRINT CSR SHALL REMAIN PLUGGED INTO THE SPRINT BACKHAUL NID. SPRINT NID SHALL BE ENERGIZED OFF THE PROPOSED T-MOBILE HPL3 SSC.

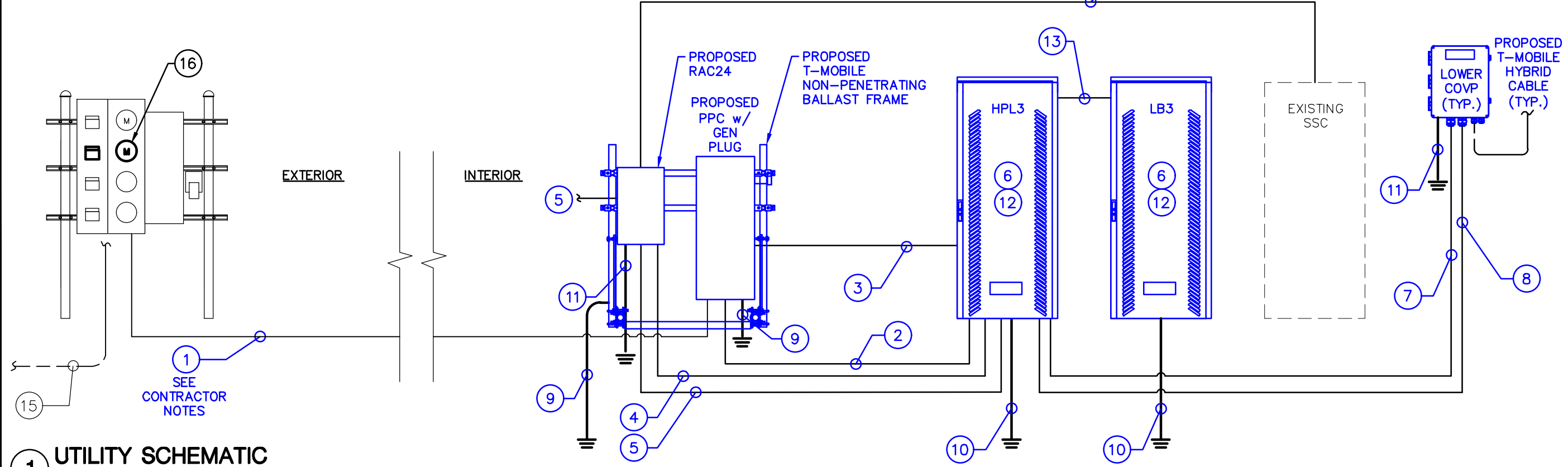
FINAL COMMUNICATION WORK WILL REQUIRE A RETURN VISIT

CONTRACTOR NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND CONDITION OF EXISTING GROUNDING SYSTEM PRIOR TO START OF CONSTRUCTION & SHALL NOTIFY T-MOBILE CM w/DISCREPANCIES.
2. CONTRACTOR SHALL INSTALL PROPOSED EQUIPMENT PER MANUFACTURER SPECIFICATIONS.
3. PROPOSED T-MOBILE CONDUITS SHALL HAVE PULL CORDS.
4. CONTRACTOR SHALL VERIFY ELECTRICAL SERVICE EQUIPMENT, CONDITION, WIRING, SIZE & CAPACITY, ETC. AND SHALL NOTIFY T-MOBILE CM PRIOR TO SERVICE CONNECTION, EQUIPMENT PLACEMENT, AND WIRING.
5. CONDUITS AT GRADE TO INCLUDE A PVC EXPANSION COUPLING (TYPICAL).
6. SEE PLAN FOR EQUIPMENT LOCATIONS AND APPROXIMATE CONDUIT/CABLE LENGTHS.
7. G.C. SHALL VERIFY THE EXISTING T-MOBILE METER AND G.C. SHALL LABEL T-MOBILE'S METER WITH AN OUTDOOR RATED LABEL. LABEL SHALL BE PER T-MOBILE STANDARDS.

SERVICE NOTES:

1. SERVICE POWER SHALL BE (120/240VAC, 200A, 1Ø, 3W) OR (208/120VAC, 200A, 3Ø, 4W) CONTRACTOR SHALL ADJUST FEEDER AND CIRCUIT ACCORDINGLY AS PLANS ARE NOTED FOR (120/240VAC, 200A, 1Ø, 3W).
2. CABLE SIZES SHALL BE ADJUSTED TO COMPENSATE FOR VOLTAGE DROP IF LONGER THAN 180FT. VERIFY CONDUIT SIZE WHEN CHANGING CABLE SIZE.
3. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR PRINTS PROVIDED BY MANUFACTURER.
4. CONDUITS ROUTED BELOW GRADE NEAR ACCESS DRIVE OR WITH/IN COMPOUND SHALL BE SCHEDULE 80 PVC (U.N.O.).



1 UTILITY SCHEMATIC
SCALE: NONE

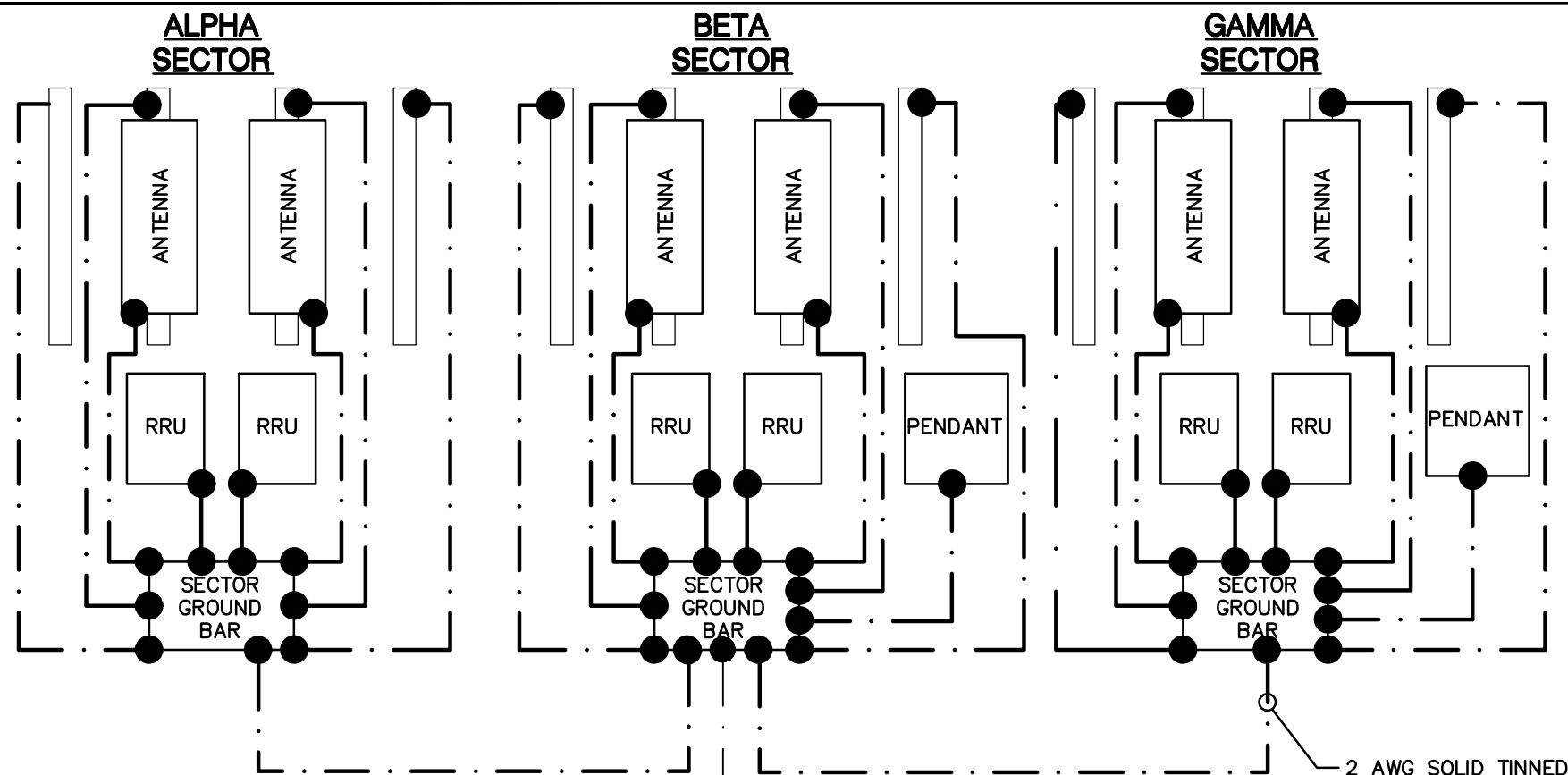
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SHEET NUMBER
E-10



ANTENNA MAST GROUNDING:

1. T-MOBILE PROPOSED/EXISTING AND UNUSED ANTENNA MAST PIPES TO BE GROUNDED WITHIN 2" OF THE TOP OF THE ANTENNA MAST PIPE.
2. CONTRACTOR TO PROVIDE 6 AWG STRANDED, GREEN INSULATED COPPER GROUND WIRE FROM MOUNTING PIPES TO GROUNDING SYSTEM.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION AND CONDITION OF EXISTING GROUNDING SYSTEM PRIOR TO START OF CONSTRUCTION & SHALL NOTIFY DESIGN FIRM PM & T-MOBILE CM w/ DISCREPANCIES.
2. PROPOSED T-MOBILE CONDUITS SHALL HAVE PULL CORDS.
3. GROUND LEADS TO BE INSTALLED ON REAR SIDE OF EQUIPMENT.
4. SEE COMPOUND PLAN FOR CORRECT CABINET ORIENTATION (TYP.).
5. SEE GROUNDING NOTES FOR ADDITIONAL INFORMATION.

NOTE: HOME RUN GROUND LEAD ONLY REQUIRED ON WATER TANKS AND BUILDINGS. ON TOWERS, THE SECTOR GROUND BARS SHOULD BE BONDED DIRECTLY TO THE TOWER STEEL

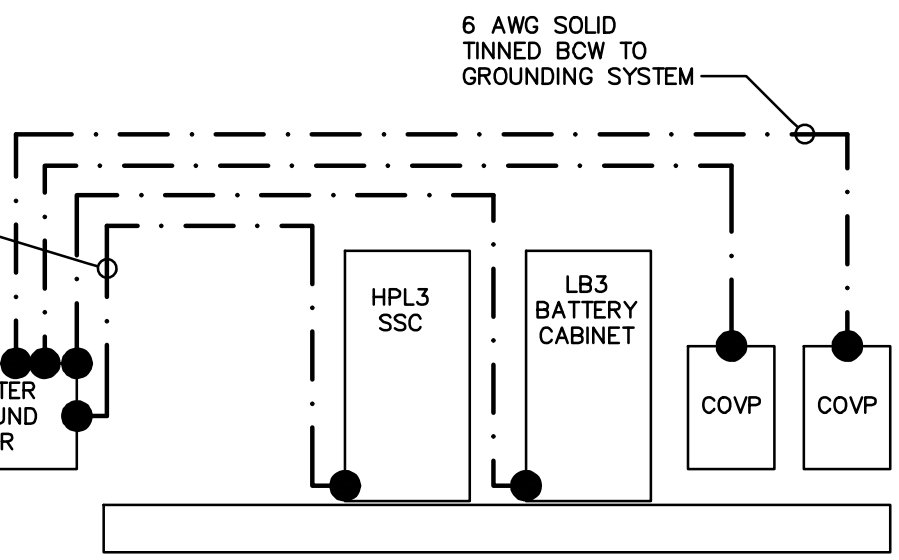
2 AWG SOLID TINNED BCW TO SECTOR GROUND BAR (TYP. @ ANTENNA SECTORS); AS REQUIRED PER T-MOBILE GROUNDING GUIDELINES

EXISTING SPRINT HOME RUN GROUND LEAD TO REMAIN, PROTECT DURING CONSTRUCTION

G.C. SHALL BOND CHASSIS OF CABINET TO GROUND RING USING 2 AWG SOLID TINNED BCW BELOW TO MGB

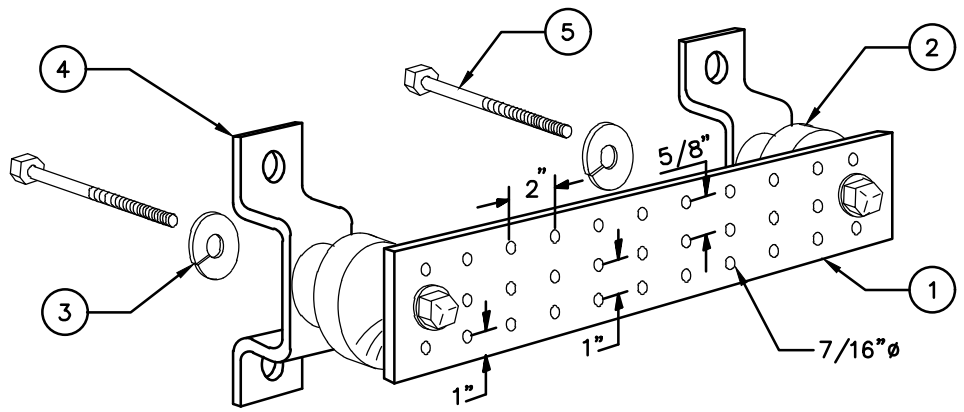
EXISTING MASTER GROUND BAR; G.C. TO VERIFY CONDITION & CAPACITY

EXISTING GROUND WIRE TO GROUNDING SYSTEM; G.C. SHALL CONFIRM TERMINATION POINT



LEGEND

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION



LEGEND

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", HOLE CENTERS
2. INSULATORS
3. 3/8" LOCKWASHERS
4. WALL MOUNTING BRACKET
5. 3/8"-11 x 2" H.H.C.S. BOLTS

2 GROUND BAR DETAIL
SCALE: NONE

1 GROUNDING SCHEMATIC
SCALE: NONE

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