

# T-Mobile

**2CN9311C**

# CROWN 839176 -BELLEFONTE

# 2022 HARDENING PROJECT

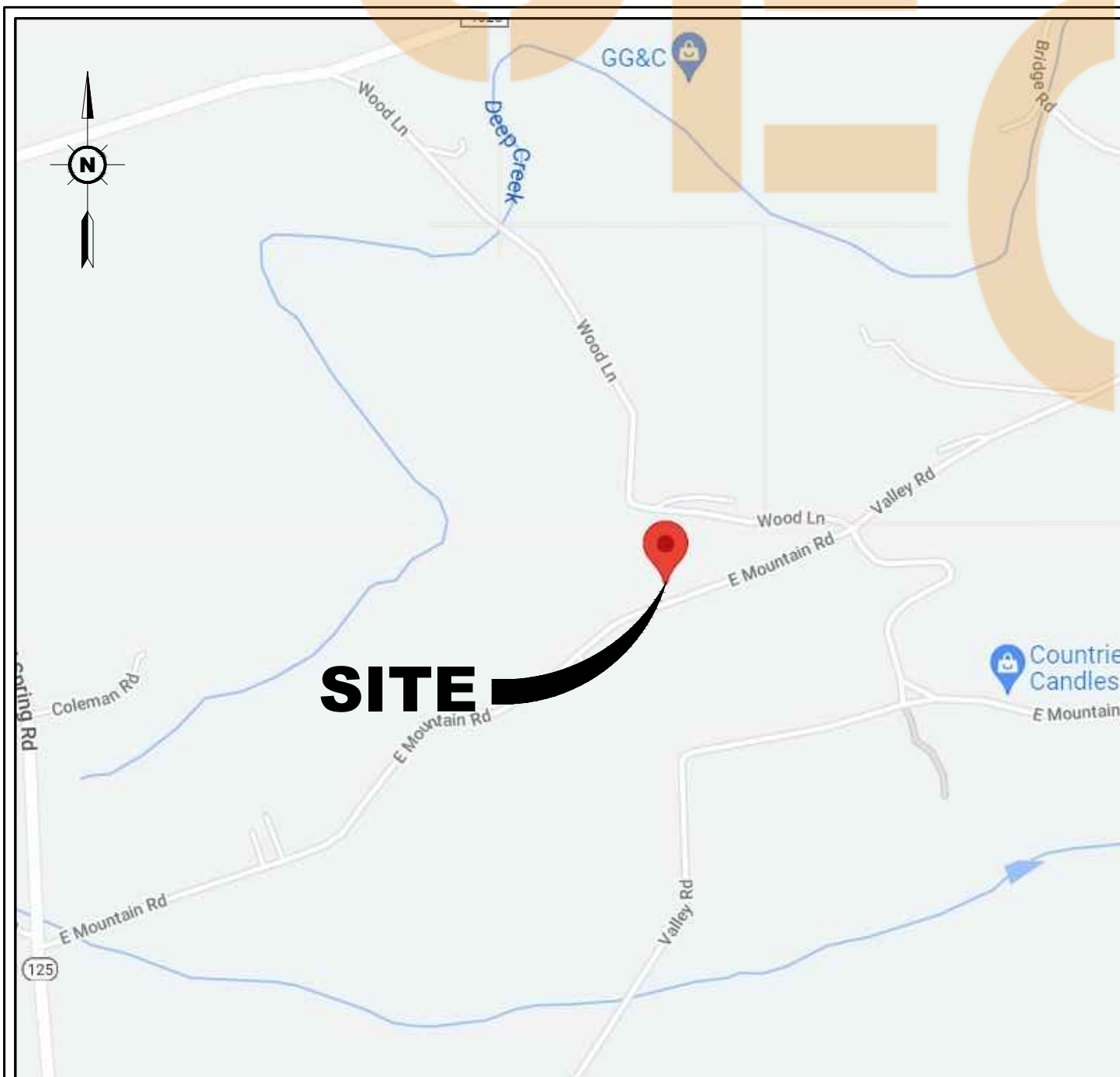
# CROWN BUSINESS UNIT #839176

# 321 MOONGLO LANE

**BELLEFONTE, PA 16823**

SITE INFORMATION	
SITE NUMBER:	2CN9311C
SITE NAME:	CROWN 839176 -BELLEFONTE
SITE ADDRESS:	321 MOONGLO LAKE BELLEFONTE, PA 16823
ZONING DISTRICT:	C2
TAX MAP:	13-001-001-0000
JURISDICTION:	PA SPRING TOWNSHIP TIOGA COUNTY
SITE COORDINATES:	N 40° 55' 1.40" (NAD 83) W 77° 47' 31.43" (NAD 83)
GROUND ELEVATION:	982± (NAVD 88)
SIZE OF LEASE AREA:	10'-0"W X 20'-0"L
TENANT:	T-MOBILE 250 GRANITE RUN DRIVE LANCASTER, PENNSYLVANIA 17601
TOWER OWNER'S NAME:	CROWN CASTLE INTERNATIONAL
TOWER OWNER'S ADDRESS:	2000 CORPORATE DRIVE CANONSBURG, PA 15317

CODE ANALYSIS	
BUILDING CODE:	IBC 2015 (PUCC)
ELECTRICAL CODE:	NEC 2014
FIRE CODE:	IFC 2015
USE GROUP:	U (UTILITY)
CONSTRUCTION TYPE:	IIB



**BELLEFONTE, PA 16823**

# DIRECTIONS

FROM 250 GRANITE RUN, LANCASTER, PENNSYLVANIA 17602:  
HEAD SOUTHWEST TOWARD GRANITE RUN DR. TURN RIGHT TOWARD GRANITE RUN DR.  
TURN RIGHT AT THE 1ST CROSS STREET ONTO GRANITE RUN DR. TURN LEFT TO MERGE  
WITH PA-283 W TOWARD HARRISBURG. FOLLOW PA-283 W AND US-322 W TO OLD RTE 322 IN  
POTTER TOWNSHIP. EXIT FROM US-322 W. FOLLOW OLD RTE 322 AND PA-144 N TO MOONGLO  
LN IN SPRING TOWNSHIP. TURN LEFT ONTO OLD RTE 322. KEEP RIGHT TO CONTINUE ON  
PA-144 N. SLIGHT LEFT ONTO MILL ST. TURN RIGHT ONTO S WATER ST. TURN LEFT ONTO W  
HIGH ST. TURN RIGHT ONTO N POTTER ST. CONTINUE ONTO N THOMAS ST. KEEP RIGHT TO  
CONTINUE ON RAILROAD ST. TURN RIGHT ONTO SUNNYSIDE BLVD. TURN LEFT ONTO  
MOONGLO LN. ARRIVE AT 321 MOONGLO LANE, BELLEFONTE, PA 16823.

SCOPE OF WORK	
•	INSTALL (1) NEW T-MOBILE 25KW DIESEL GENERATOR WITH 240 GALLON BELLY TANK ON PROPOSED 4'-0"X3'-0" CONCRETE PAD
•	INSTALL (1) NEW T-MOBILE 120/240VAC, 1Ø, 200A ATS MOUNTED ON EXISTING H-FRAME

SHEET INDEX	
DRAWING SHEET	DRAWING TITLE
T-1	TITLE SHEET
N-1	DRAWING NOTES
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N-3	ELECTRICAL NOTES
S-1	COMPOUND PLAN
S-2	ELEVATION
A-1	PROPOSED & EXISTING EQUIPMENT LAYOUT
D-1	GENERATOR DETAIL
D-2	240 GALLON BELLY TANK DETAIL
D-3	ATS DETAIL
D-4	DETAILS
E-1	ELECTRICAL ONE LINE DIAGRAM
G-1	GROUNDING DIAGRAM & NOTES
G-2	GROUNDING DETAILS

<p align="center"><b>DO NOT SCALE DRAWINGS</b></p> <p>CONTRACTOR IS TO VERIFY ALL PLANS, EXISTING DIMENSIONS &amp; CONDITIONS RELATING TO THIS PROJECT. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF THERE ARE ANY DISCREPANCIES PRIOR TO CONSTRUCTION.</p>
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<b>T-MOBILE REVIEW</b>	
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <b>PROJECT MANAGER</b>	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <b>DATE:</b>
<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <b>CONSTRUCTION</b>	<div style="border-bottom: 1px solid black; margin-bottom: 5px;"></div> <b>DATE:</b>

**T** - Mobile  
NORTHEAST, LLC  
CENTRAL PA  
**T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601**

SCHEDULE OF REVISIONS		
4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs
REV. NO.	DATE	DESCRIPTION OF CHANGES

**DRAWN BY:** SA

**CHECKED BY:** SP

**SCALE:** NOTED

**JOB NO:** 19E0095.001

**DRAWING TITLE:**

# TITLE SHEET

**DRAWING SHEET:**

**T-1**

**2CN9311C**  
**CROWN 839176 -BELLEFONTE**  
**CROWN BU #816658**  
**321 MOONGLO LANE**  
**BELLEFONTE, PA 16823**

SHEET NO. 1 OF 14

**ANDREW M. MILLER, P.E.**  
**PENNSYLVANIA PROFESSIONAL ENGINEER**  
**LICENSE # PE080134**



CONCRETE

1. ALL POURED-IN-PLACE CONCRETE SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. UNLESS OTHERWISE NOTED, CEMENT TO BE TYPE-8 FROM TESTED STOCK PER ASTM C-150.
2. CONCRETE FORM TOLERANCES SHALL BE WITHIN THE STANDARDS SET BY THE AMERICAN CONCRETE INSTITUTE.
3. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS OR OTHER INSERTS SHALL BE SECURED IN POSITION AND INSPECTED BY THE LOCAL BUILDING DEPARTMENT INSPECTOR PRIOR TO THE POURING OF ANY CONCRETE.
4. PROVIDE LIGHT BROOM FINISH ON ALL EXPOSED CONCRETE UNLESS NOTED OTHERWISE.

MASONRY

GENERAL:  
HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, MEDIUM WEIGHT, GRADE S, F'M = 2,000 PSI, RUNNING BOND, MORTAR TYPE S, 2,000 PSI. GROUT 2,000 PSI. MECHANICALLY VIBRATE GROUT IMMEDIATELY AFTER POURING AND AGAIN 5 TO 10 MINUTES LATER. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 5'-0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 6'-0". WHEN APPROVED BY THE STRUCTURAL ENGINEER AND BUILDING OFFICIAL, GROUT LIFTS MAY BE GREATER THAN 6'-0" IF IT CAN BE DEMONSTRATED BY CONTRACTOR THAT THE GROUT SPACES CAN BE PROPERLY FILLED. FILL CELLS SOLIDLY WITH GROUT IN LIFTS AND STOP POURS 1 1/2" BELOW THE TOP OF A COURSE TO FORM A KEY AT POUR POINTS. UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUNS OF WALL EXCEEDS 24'-0". CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 24" OF CONCENTRATED POINTS OF BEARING OR JAMBS, OR OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID.

VERTICAL REINFORCING:

1 #5 IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARINGS, JAMBS, EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48" O.C. UNLESS NOTED OTHERWISE. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY A.A. WIRE PRODUCTS COMPANY. DOWEL VERTICAL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH VERTICAL REINFORCING.

HORIZONTAL REINFORCING:

2 #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT ELEVATED FRAMING ASSEMBLIES. 1 #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT TOP OF PARAPETS AND FREESTANDING WALLS. PLACE THESE BARS CONTINUOUS THRU CONTROL JOINTS PER TYPICAL DETAIL. TO MAINTAIN BOND BEAM CONTINUITY, INSTALL BENT BARS PER TYPICAL DETAILS TO MATCH HORIZONTAL BOND BEAM REINFORCING AT CORNERS AND INTERSECTIONS. STANDARD WEIGHT (NO. 9 GAGE WIRE) DUR-O-WAL OR DUR-O-WIRE (OR EQUIVALENT) LADDER TYPE JOINT REINFORCEMENT AT 16" O.C.

LAP SPLICES:

LAP SPLICES FOR VERTICAL AND HORIZONTAL REINFORCING SHALL BE PER TYPICAL DETAIL. DO NOT SPLICE WITHIN 8'-0" OF CONTROL JOINTS. LAP HORIZONTAL LADDER TYPE JOINT REINFORCING 12" MINIMUM.

FOR ADDITIONAL REINFORCING INFORMATION, SEE REINFORCING SECTION OF G.S.N., PLANS, SCHEDULES AND DETAILS.

REINFORCING STEEL

1. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60 U.N.O.
2. BARS SHALL BE CLEAN OF MUD, OIL, OR OTHER COATINGS LIKELY TO IMPAIR BONDING.
3. ALL REINFORCING SHALL BE SECURED IN PLACE PRIOR TO PLACING CONCRETE OR GROUTING MASONRY. ALL REINFORCING SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE/CORROSION BY USE OF A PLASTIC OR CONCRETE CHAIR. DUCT-TAPE IS NOT AN ACCEPTABLE MOISTURE/CORROSION PROTECTION.
4. REINFORCING STEEL SHALL BE SPLICED AS SHOWN OR NOTED. SPLICES AT OTHER LOCATIONS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER. ALL VERTICAL WALL REINFORCEMENT SHALL BE CONTINUOUS BETWEEN SPLICE LOCATIONS SHOWN IN THE DRAWINGS.
5. ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706.
6. CLEAR CONCRETE COVERAGE IS AS FOLLOWS:  
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"  
EXPOSED TO EARTH OR WEATHER
- |   |                             |
|---|-----------------------------|
| #6 OR LARGER                            | 2"                          |
| #5 AND SMALLER                          | 1-1/2"                      |
| COLUMNS (TO TIES)                       | 1-1/2"                      |
| BEAMS (TO STIRRUPS)                     | 1-1/2"                      |
| FLAT SLABS                              | 3/4"                        |
| WALLS                                   | SEE SCHEDULE AND OR DETAILS |
| ALL OTHER PER LATEST EDITION OF ACI 318 |                             |

		CLASS B TENSION SPLICE LENGTHS						COMP BARS	
CONC PSI		f'c = 3,000 PSI		f'c = 4,000 PSI		f'c = 5,000 PSI		f'c = ≤ 3,000	
BAR LOCATION  SIZE (METRIC)		REGULAR	TOP	REGULAR	TOP	REGULAR	TOP	STD LAP	ENCLOSED W/ SPIRAL TIES
#3 (10)		24"	31"	19"	24"	17"	22"	12"	12"
#4 (13)		32"	41"	25"	32"	22"	29"	15"	12"
#5 (16)		39"	51"	31"	40"	28"	36"	19"	14"
#6 (19)		47"	61"	37"	48"	33"	43"	23"	17"
#7 (22)		69"	89"	54"	70"	49"	63"	26"	20"
#8 (25)		78"	102"	62"	80"	55"	72"	30"	23"
#9 (29)		88"	115"	70"	91"	63"	81"	34"	25"
#10 (32)		99"	129"	79"	102"	70"	91"	84"	28"
#11 (36)		110"	143"	87"	113"	78"	101"	42"	31"

NOTES:

1. TOP BARS ARE ANY HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.
2. LAP SPLICES SHALL BE CLASS "B" TENSION LAP SPLICES PER LATEST EDITION OF ACI 318 UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS OR SCHEDULES.
3. CONTACT STRUCTURAL ENGINEER IF CLEAR SPACING OF REINFORCEMENT IS LESS THAN OR EQUAL TO 2 BAR DIAMETERS (≤2DB), OR IF CLEAR COVER IS LESS THAN THE BAR DIAMETER (DB).
4. THIS TABLE IS BASED ON NORMAL WEIGHT CONCRETE.
5. FOR ADDITIONAL INFORMATION, SEE G.S.N., PLANS, SCHEDULES AND DETAILS.

LAP SCHEDULE FOR REINFORCING STEEL

SCALE:  
N.T.S.

1

REBAR SIZE (METRIC)	REBAR GRADE	MASONRY LAP SPLICE LENGTH					
		STEEL AT CENTER OF WALL			STEEL AT FACE OF WALL (& BOND BEAMS)		
		6" WALL	8" WALL	12" WALL	8" WALL	12" WALL	
#3 (10)	60	17"	17"	17"	21"	21"	
#4 (13)	60	26"	26"	26"	32"	32"	
#5 (16)	60	40"	32"	32"	50"	50"	
#6 (19)	60	N/A	58"	58"	100"	100"	
#7 (22)	60	N/A	80"	80"	N/A	135"	
#8 (25)	60	N/A	N/A	115"	N/A	189"	

NOTES:

1. LAPS APPLY TO BOTH VERTICAL AND HORIZONTAL REINFORCING.
2. PROVIDE BENT BARS TO MATCH HORIZONTAL BOND BEAM REINFORCING, AT CORNERS AND WALL INTERSECTION TO MAINTAIN BOND BEAM CONTINUITY.
3. DO NOT SPLICE HORIZONTAL BARS WITHIN 8'-0" OF CONTROL JOINTS.
4. FOR LADDER TYPE HORIZONTAL REINFORCING, SEE G.S.N.
5. LAP LENGTHS HAVE BEEN CALCULATED FOR BOTH WORKING STRESS AND ULTIMATE STRENGTH DESIGN. WORST CASE VALUES HAVE BEEN USED.

WORKING STRESS OR ULTIMATE STRENGTH MASONRY LAP SPICES FOR REINFORCING STEEL – I.B.C.

LAP SPLICES FOR REINFORCING STEEL

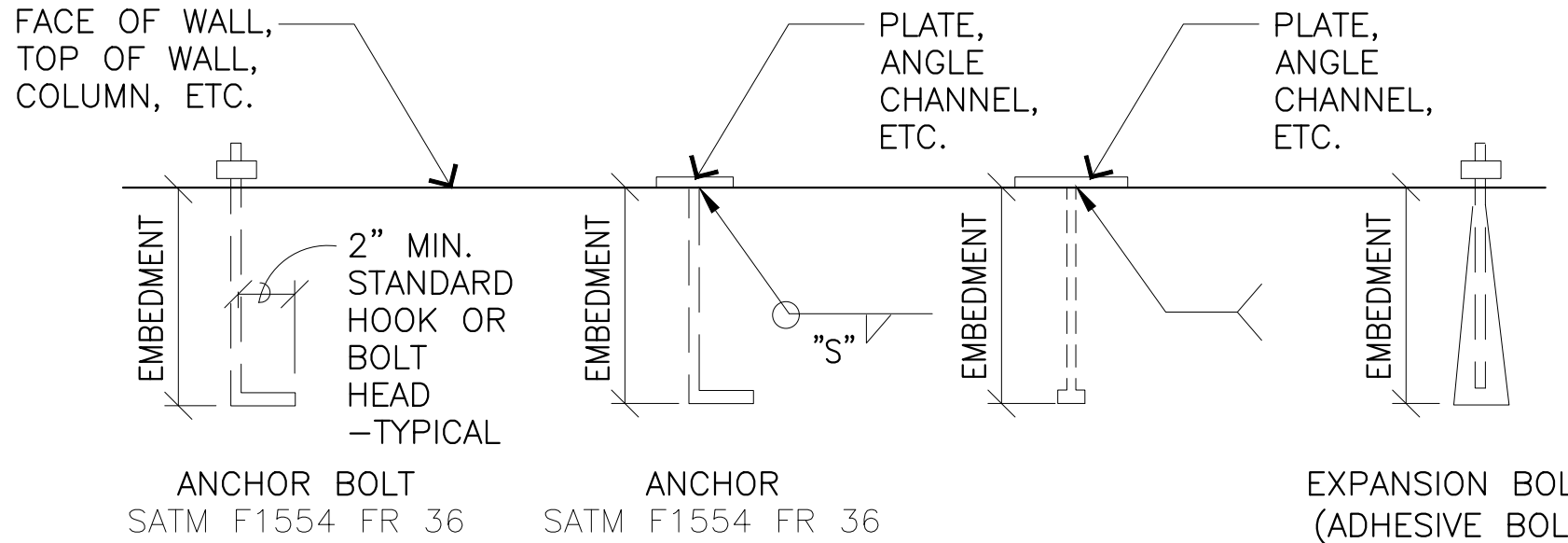
SCALE:  
N.T.S.

2

NOTES:

1. PROVIDE ANCHORS, ANCHOR BOLTS AND EXPANSION BOLTS PER THIS SCHEDULE UNLESS NOTED ON PLANS OR DETAILS.
2. EXPANSION OR ADHESIVE BOLTS USED IN MASONRY SHALL HAVE I.C.B.O. APPROVAL IN MASONRY.
3. AT "ANCHORS" USE 3/16" FILLET WELD ("S").
4. THICKNESS OF DRY PACK DOES NOT APPLY TOWARDS EMBEDMENT.
5. BOLT/PLATE EDGE CLEARANCES PER THE FOLLOWING – TYP U.N.O.
- |                   |           |
|-------------------|-----------|
| 3/4" DIA. OR LESS | 1-1/4"    |
| 7/8" DIA.         | 1 1/2"    |
| 1" DIA.           | 1 3/4"    |
| 1 1/8" DIA.       | 2"        |
| 1 1/4" DIA.       | 2 1/4"    |
| OVER 1 1/4" DIA.  | 1.75xDIA. |

BOLT DIAMETER	VERTICAL BOLT EMBEDMENT LENGTH	HORIZONTAL BOLT EMBEDMENT LENGTH	HEADED STUD FILLET WELD SIZE, "S"
1/2"	6"	4"	1/4"
5/8"	6"	4"	5/16"
3/4"	7"	5"	5/16"
7/8"	8"	6"	5/16"
1"	9"	7"	3/8"
1-1/8"	10"	8"	-
1-1/4"	11"	9"	-



TYPICAL ANCHOR, ANCHOR BOLT, AND EXPANSION BOLT SCHEDULE AND BOLT/PLATE EDGE CLEARANCE

ANCHOR / BOLT SCHEDULE

SCALE:  
N.T.S.

3

**T - Mobile**  
NORTHEAST, LLC  
CENTRAL PA  
T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

SCHEDULE OF REVISIONS

4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs
REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY: SA

CHECKED BY: SP

SCALE: NOTED

JOB NO: 19E0095.001

DRAWING TITLE:

DRAWING NOTES

DRAWING SHEET:

**N-1**

**2CN9311C**  
**CROWN 839176 -BELLEFONTE**  
**CROWN BU #816658**  
**321 MOONGLO LANE**  
**BELLEFONTE, PA 16823**

SHEET NO. 2 OF 14

**ANDREW M. MILLER, P.E.**  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134



GENERAL NOTES

1. THE FACILITY IS AN UNOCCUPIED SPECIALIZED MOBILE RADIO FACILITY.
2. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A GRAPHIC REPRESENTATION OF THE FINAL INSTALLATION. THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
3. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
4. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK.
5. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
6. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK. MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
7. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE PROJECT MANAGER AND WITH LANDLORD’S AUTHORIZED REPRESENTATIVE.
8. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2–A OR 2–A10BC WITHIN 5 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF THE PROJECT AREA DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL PROVIDE SITE FOREMAN WITH A CELLULAR PHONE, AND KEEP ON SITE WHENEVER ANY PERSONNEL ARE ON SITE.
10. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC., AND UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION TO THE SATISFACTION OF THE PROJECT MANAGER AND/OR LANDLORD.
12. ON A DAILY BASIS: KEEP GENERAL AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH, AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. CONTRACTOR TO PROVIDE COMPLETE SET OF AS–BUILT DRAWINGS WITHIN 10 WORKING DAYS OF PROJECT COMPLETION.
- 14 WHERE A CONSTRUCTION DETAIL IS NOT SHOWN OR NOTED, THE DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
15. ASTM SPECIFICATIONS NOTED ON THE DRAWINGS SHALL BE OF THE LATEST REVISION.
- 16 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTI9LITIES WHETHER SHOWN HERON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT IN CONJUNCTION WITH THE PROSECUTION OF THIS WORK.
17. ALL ITEMS REMOVED OR DAMAGED DURING CONSTRUCTION WORK WILL BE REPLACED OR REPAIRED TO MATCH EXISTING.
18. ALL ELEMENTS OF EXISTING STRUCTURE TO REMAIN UNDISTURBED, UNLESS NOTED OTHERWISE. EXISTING STRUCTURE IS ASSUMED TO BE IN GOOD CONDITION, FREE OF DAMAGE OR DETERIORATION. CONTRACTOR TO VERIFY ALL ELEMENTS OF EXISTING STRUCTURE AFFECTED BY THIS MODIFICATION AND NOTIFY ENGINEER OF RECORD IF ANY DAMAGE, DETERIORATION OR DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE DEPICTED ON THESE CONSTRUCTION DRAWINGS ARE FOUND.

SPECIAL INSPECTION

1. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT SPECIAL INSPECTOR.
2. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THEIR REPORT TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL AS EACH TEST IS COMPLETED.
3. ANY MATERIAL WHICH FAILS TO MEET THE PROJECT SPECIFICATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND THE STRUCTURAL ENGINEER. SPECIAL INSPECTOR TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
4. INSPECTION FOR PREFABRICATED CONSTRUCTION SHALL BE THE SAME AS FOR THE MATERIAL USED IF THE CONSTRUCTION TOOK PLACE ON SITE. CONTINUOUS INSPECTION WILL NOT BE REQUIRED DURING PREFABRICATION IF THE APPROVED AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE.
5. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT CERTIFYING THAT ALL WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR’S KNOWLEDGE IN CONFORMANCE WITH THE APPROVED PERMIT PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS.

STRUCTURAL NOTES

GENERAL STRUCTURAL NOTES:

1. WHERE A CONSTRUCTION DETAIL IS NOT SHOWN OR NOTED, THE DETAIL SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
2. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES.
3. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS, BEAMS, OR WALLS UNLESS SPECIFICALLY SHOWN OR NOTED, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC., UNLESS OTHERWISE NOTED. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FOR INSTALLATION OF ANY ADDITIONAL PIPES, DUCTS, ETC.
4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD VERSION WIRELESS AND THE ARCHITECT/ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF T–MOBILE OR THE ARCHITECT/ENGINEER.
5. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKERS, AND PEDESTRIANS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, TEMPORARY STRUCTURES, AND PARTIALLY COMPLETED WORK, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT/ENGINEER SHALL NOT INCLUDE INSPECTION OF SUCH ITEMS.
6. ASTM SPECIFICATIONS NOTED ON THE DRAWINGS SHALL BE OF THE LATEST REVISION.
7. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOOR OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING/BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT IN CONJUNCTION WITH THE PROSECUTION OF THIS WORK.
9. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS.
10. THESE NOTES SHALL BE CONSIDERED A PART OF THE WRITTEN SPECIFICATIONS.
11. ALL ITEMS REMOVED DURING CONSTRUCTION WORK (I.E., DRYWALL, PLYWOOD, CEILING S, ETC.) SHALL BE REPLACED TO MATCH EXISTING.
12. THE FOLLOWING REQUIREMENTS SHALL BE MET FOR SPECIAL INSPECTION:
  - A. THE SPECIAL INSPECTOR SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER.
  - B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE ARCHITECT/ENGINEER, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION; THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND THE BUILDING OFFICIAL.
  - C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT SIGNED BY BOTH HE AND HIS SUPERVISOR STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.
  - D. COMPLY WITH ALL JURISDICTIONAL SPECIAL INSPECTION REQUIREMENTS.

STANDARD STRUCTURAL STEEL NOTES:

1. ALL METAL WORK SHALL BE IN ACCORDANCE WITH THE SPECIFICATION GALVANIZED ASTM A123–A123M–02 UNLESS NOTED OTHERWISE.
2. STRUCTURAL TUBING MEMBERS SHALL CONFORM TO ASTM A500, GRADE B OR A501, GRADE B.
3. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC “MANUAL OF STEEL CONSTRUCTION”, 14TH EDITION.
4. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALV. ASTM A325 BOLTS (5/8” DIA. UNO) AND SHALL HAVE A MINIMUM OF TWO BOLTS U.N.O AND SHALL INCLUDE HEAVY–HEX NUTS AND STANDARD CUT WASHERS.
5. NON–STRUCTURAL CONNECTIONS FOR HANDRAIL, LADDERS AND STEEL GRATING MAY USE 5/8” DIA GALVANIZED ASTM A325 BOLTS U.N.O.
6. ALL STRUCTURAL PIPE ASTM A53, TYPE E OR S, GRADE B.
7. ALL OTHER STRUCTURAL STEEL IS TO BE NEW AND TO CONFORM TO ASTM A572–50, U.N.O.

SPECIAL INSPECTION:

1. SPECIAL INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT SPECIAL INSPECTOR PER CODE FOR THE FOLLOWING ITEMS:
  - A. PERIODIC FOR THE INSTALLATION OF HILTI TZ2 POST–INSTALLED EXPANSION ANCHORS IN CONCRETE. INSPECT INSTALLATION PER ICC ESR–4266 AND MANUFACTURER RECOMMENDATIONS. SEE DRAWING DETAILS FOR REQUIRED INSTALLATION TORQUE VALUES.
  - B. PERIODIC DURING THE INSTALLATION OF HIGH STRENGTH BOLTED CONNECTION PER AISC AND RCSC SPECIFICATIONS. INSPECT TIGHTNESS OF ALL NON–PRETENSION BOLTED CONNECTIONS.

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NORTHEAST, LLC  
CENTRAL PA

T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

SCHEDULE OF REVISIONS

4		
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0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs
REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY:	SA
CHECKED BY:	SP
SCALE:	NOTED
JOB NO:	19E0095.001

DRAWING TITLE:

DRAWING  
NOTES

DRAWING SHEET:

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CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823





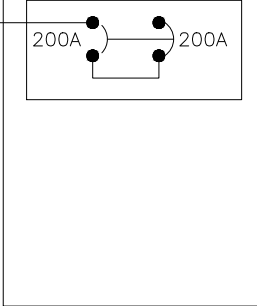



SHEET NO. 3 OF 14

ANDREW M. MILLER, P.E.  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134



GENERAL ELECTRICAL NOTES & BASIC ELECTRICAL REQUIREMENTS

1. THE DRAWINGS ARE PROVIDED TO DEPICT DESIGN INTENT AND ARE NOT TO BE CONSIDERED INSTALLATION DRAWINGS. NOT ALL COMPONENTS OR CONNECTIONS ARE SHOWN. EQUIPMENT PART NUMBERS ARE SHOWN TO PROVIDE PERFORMANCE CRITERIA AND LEVEL OF PRODUCT STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING, INSTALLATION OF ALL ELECTRICAL EQUIPMENT, COMPONENTS AND MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSTALLATION MEANS AND METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, ENERGIZING AND TESTING OF ALL ELECTRICAL COMPONENTS PER THE MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ADVANTAGE ENGINEERS PROJECT MANAGER OR CONSTRUCTION MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
3. CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE DESIGN PROFESSIONAL LISTING ANY AND ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
4. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN PROFESSIONAL OF ANY UNFORESEEN SITE CONDITIONS THAT MAY IMPACT THE DESIGN.
6. THE CONTRACTOR IS IN NO WAY PERMITTED TO MODIFY OR CHANGE THE DESIGN WITHOUT THE EXPRESS, WRITTEN CONSENT OF THE DESIGN PROFESSIONAL. SHOULD THE CONTRACTOR MAKE MODIFICATIONS TO THE DESIGN WITHOUT THE CONSENT OF THE DESIGN PROFESSIONAL, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR SUCH CHANGES.
7. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES, THE AUTHORITY HAVING JURISDICTIONS OR OTHER PUBLIC AUTHORITIES.
8. ALL ELECTRICAL WORK SHALL CONFORM TO THE CURRENTLY ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR LOCAL MUNICIPAL AUTHORITIES.
10. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AS INDICATED IN THE CONSTRUCTION DOCUMENTS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF THE WORK SITE AND REMOVING ALL TRASH AND DEBRIS ON A DAILY BASIS.
13. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.
15. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH THE APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NFPA, IBC, IMC, IECC, IEC, NEC, IEEE, ASTM, NEMA, U.L. AND NBFU.
16. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
17. THE CONDUIT RUNS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
18. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED; 22,000 AIC MINIMUM FOR MAINS AND 10,000 AIC MINIMUM FOR BRANCH DEVICES. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.
19. ALL NEW INSTALLED ELECTRICAL EQUIPMENT SHALL BE FURNISHED WITH ARC FLASH HAZARD LABELS AS REQUIRED BY THE NEC.
20. ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO: DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, POWER PROTECTION CABINET (PPC), AUTOMATIC TRANSFER SWITCH (ATS), MANUAL TRANSFER SWITCH (MTS), POWER TRANSFER LOAD CENTER (PTLC), ETC., SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. LABELS SHALL INDICATE EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
21. THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, INCLUDING MANUFACTURER'S AND PART NUMBERS FOR PANELBOARDS, TRANSFORMERS, POWER PROTECTION CABINETS (PPC) AND DISCONNECTS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE DESIGN PROFESSIONAL AT THE COMPLETION OF THE PROJECT.
22. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE DEBRIS, CRATING AND CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.
23. THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER FIVE (5) BUSINESS DAYS PRIOR TO ANY PLANNED POWER OR OTHER SERVICE OUTAGE. THE OWNER SHALL RESERVE THE RIGHT TO REFUSE SUCH OUTAGE AND HAVE IT RESCHEDULED.
24. ANY CODE VIOLATIONS DUE TO THE CONTRACTOR'S WORK SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

ELECTRICAL SYMBOLS		
	TRANSFORMER	Ø PHASE
	METER	— P — POWER WIRE
	CIRCUIT BREAKER	— T — TELCO WIRE
	DISCONNECT SWITCH	
	JUNCTION BOX	
	ENCLOSED CIRCUIT BREAKER	
	AUTOMATIC TRANSFER SWITCH	

ELECTRICAL SPECIFICATIONS: ELECTRICAL MATERIALS AND EQUIPMENT CONDUIT

1. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND WHERE INDICATED ON THE DRAWINGS. FOR UNDERGROUND RUNS, RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITER'S LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTED.
2. UNDERGROUND CONDUIT SHALL BE POLYVINYLCHLORIDE SCHEDULE 40 (PVC), SCHEDULE 40 PVC SHALL NOT BE PERMITTED ABOVE GRADE. WHERE CONDUIT PASSES UNDER A ROAD OR DRIVE, IT SHALL BE SCHEDULE 80 PVC, SUITABLE FOR DIRECT BURIAL. JOINTS SHALL BE BELLED, AND FLUSH, SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED INTERIOR SPACES, CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE U.L. LISTED. FITTING SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS ARE NOT PERMITTED.
4. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS ARE NOT PERMITTED. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED SIX (6) FEET, EXCEPT WHERE PERMITTED BY THE NEC. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRED BY THE NEC.
5. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH.
6. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY THE NEC.
7. PROVIDE VERTICAL CABLE SUPPORTS IN ALL VERTICAL CONDUITS WHERE SHOWN OR REQUIRED BY THE NEC.
8. PROVIDE EXPANSION FITTINGS IN CONDUIT WHERE SHOWN OR REQUIRED BY THE NEC.
9. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12 INCH MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2 INCH OR LARGER.
10. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) BETWEEN PULL BOXES, CONDUIT BODIES AND BOXES. CONTRACTOR SHALL FURNISH AND INSTALL ANY/ALL JUNCTION BOXES SIZED IN ACCORDANCE WITH THE NEC REQUIREMENTS AS REQUIRED FOR THE INSTALLATION.
11. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUND BUSHINGS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION.
13. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
14. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATELY SIZED MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
15. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
16. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUIT AND CONDUCTORS, OR AS INDICATED ON THE DRAWINGS.
17. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO ENSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
18. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION (WALLS AND FLOORS) SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL, FLOOR OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE U.L. APPROVED FOR THIS PURPOSE.
19. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE ARE NOT PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO THE STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
20. SPARE CONDUITS SHALL BE FURNISHED WITH PULL LINES AND CAPPED WITH FACTORY CAPS.
21. LABEL ALL T-MOBILE CONDUITS EVERY 20' THROUGH THE BUILDING AND ON THE ROOF, "T-MOBILE" USING STENCILS AND SPRAY PAINT.

CONDUCTORS

1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, OR TYPE XHHW, 600V OR XHHW-2, 600V, SIZE AS INDICATED. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR.
2. #10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
4. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, JUNCTION BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS.
5. CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND AISG RET CABLES. CABLE STRAIN-RELIEF & CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. ZIP TIES OR VELCO STRAPS ARE NOT PERMITTED.

ELECTRICAL SPECIFICATIONS: ELECTRICAL MATERIALS AND EQUIPMENT, CONTINUED DISCONNECT SWITCHES

1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, FUSIBLE, DEAD FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, VOLTAGE, AMPERAGE AND NEMA RATING AS INDICATED.
2. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.
3. PROVIDE A WHITE PHENOLIC SIGN WITH 3/4" RED ENGRAVED LETTERING LABELING EACH SERVICE DISCONNECT AS "SERVICE DISCONNECT". IF SOURCE IS HOUSE POWER, INCLUDE LOCATION AND LABEL OF PANEL FEEDING EQUIPMENT. HVAC DISCONNECTS SHALL BE LABELED "HVAC DISCONNECT" AND INCLUDE PANEL AND CIRCUIT NUMBER OF CIRCUIT SERVING THE HVAC EQUIPMENT.
4. ALL FUSIBLE DISCONNECTS SHALL BE FURNISHED WITH CLASS RK-1 FUSES, SIZED AS INDICATED.

PANELBOARDS

1. RATED FOR USE AT 120/240V, SINGLE PHASE, THREE WIRE PLUS GROUND, OR 120/208V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, THREE PHASE, FOUR WIRE PLUS GROUND AS REQUIRED FOR THE INTENDED APPLICATION OR AS INDICATED ON THE DRAWINGS.
2. ALUMINUM OR COPPER BUS, RATED FOR 200 AMPERES OR AS INDICATED ON THE DRAWINGS, AND HAVE A SHORT CIRCUIT WITHSTAND RATING OF 22,000 AIC MINIMUM.
3. MAIN CIRCUIT BREAKER SHALL BE 200 AMPERES OR AS INDICATED ON THE DRAWINGS AND HAVE A SHORT CIRCUIT RATING OF 22,000 AIC MINIMUM. THE MAIN BREAKER SHALL NOT BE INSTALLED SO AS TO BACKFEED THE PANEL BUS.
4. PANEL SHALL HAVE A NUMBER OF BRANCH CIRCUITS AS INDICATED ON THE DRAWINGS. THE MAIN BREAKER SHALL NOT USE ANY OF THESE SPACES.
5. BRANCH CIRCUIT BREAKERS SHALL BE PLUG-IN OR BOLT-ON TYPE.
6. BRANCH CIRCUIT BREAKERS SHALL HAVE A MINIMUM RATING OF 10,000 AIC.
7. TANDEM BRANCH CIRCUIT BREAKERS ARE NOT PERMITTED.
8. PANEL ENCLOSURE SHALL BE NEMA 1 FOR INTERIOR APPLICATIONS OR NEMA 3R FOR EXTERIOR APPLICATIONS OR AS INDICATED ON THE DRAWINGS.
9. DO NOT INSTALL PANEL UPSIDE DOWN.
10. WHERE A PANELBOARD IS INSTALLED, AN EXTERNAL SURGE PROTECTION DEVICE MUST ALSO BE INSTALLED ADJACENT AND CONNECTED TO THE PANELBOARD.
11. QUALITY PRODUCT CIRCUIT BREAKERS ARE NOT PERMITTED.
12. UNUSED BRANCH CIRCUIT SPACES SHALL HAVE PANEL MANUFACTURER'S BLANK SPACE INSERTS INSTALLED.
13. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN, NOT HANDWRITTEN.
14. PANEL DIRECTORIES SHALL BE UPDATED TO ACCURATELY REFLECT THE FINAL CIRCUITING.
15. ALL UNUSED CIRCUIT BREAKERS SHALL BE SWITCHED OFF AND LABELED "SPARE".

EXTERNALLY MOUNTED SURGE PROTECTION DEVICES

1. RATED FOR THE INTENDED APPLICATION AND AS INDICATED ON THE DRAWINGS: 120/240V, SINGLE PHASE, OR 120/208V, SINGLE PHASE, OR 120/208V, THREE PHASE, OR 480/277V, SINGLE PHASE OR 480/277V, THREE PHASE.
2. RATED FOR 100KA PEAK SURGE CURRENT PER PHASE.
3. INDICATOR LEDS FOR NORMAL AND FAULT CONDITION FOR EACH PHASE.
4. U.L. LISTED 1449
5. ENCLOSURE SHALL BE: INTERIOR APPLICATIONS, NEMA 1. EXTERIOR APPLICATIONS: NEMA 3R OR NEMA 4 OR NEMA 4X STAINLESS STEEL.

POWER PROTECTION CABINET (PPC)

1. RATED FOR USE AT 120/240V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, THREE PHASE, FOUR WIRE PLUS GROUND AS REQUIRED FOR THE INTENDED APPLICATION OR AS INDICATED ON THE DRAWINGS.
2. ALUMINUM OR COPPER BUS, RATED FOR 200 AMPERES OR AS INDICATED ON THE DRAWINGS, AND HAVE A SHORT CIRCUIT WITHSTAND RATING OF 22,000 AIC MINIMUM.
3. TWO (2) MAIN CIRCUIT BREAKERS, MECHANICALLY INTERLOCKED, THAT ACT AS A MANUAL TRANSFER SWITCH, BREAK BEFORE MAKE, ALLOW FOR A NORMAL AND PORTABLE GENERATOR STANDBY FEEDS. MAIN BREAKERS SHALL BE 200 AMPERES AND HAVE A SHORT CIRCUIT RATING OF 22,000 AIC MINIMUM. CONTRACTOR SHALL ENSURE THAT THE MECHANICAL INTERLOCK HAS BEEN INSTALLED.
4. INTERNAL PANEL SHALL HAVE A MINIMUM OF TWENTY FOUR (24) BRANCH CIRCUITS AVAILABLE.
5. BRANCH CIRCUIT BREAKERS SHALL BE PLUG-IN OR BOLT-ON.
6. BRANCH CIRCUIT BREAKERS SHALL HAVE A MINIMUM RATING OF 10,000 AIC.
7. TANDEM BRANCH CIRCUIT BREAKERS ARE NOT PERMITTED.
8. CLASSIFIED PRODUCT CIRCUIT BREAKERS ARE NOT PERMITTED.
9. FURNISHED WITH INTERNAL, FACTORY INSTALLED, INTEGRATED SURGE SUPPRESSION.
10. FURNISHED WITH STANDBY GENERATOR INLET (RECEPTACLE), REVERSE SERVICE RATED, VOLTAGE AND AMPERAGE AS INDICATED ON THE DRAWINGS. GENERATOR RECEPTACLE SHALL BE FACTORY INSTALLED ON SIDE OF PPC UNLESS SHOWN AS REMOTE MOUNTED ON THE DRAWINGS.
11. UNUSED BRANCH CIRCUIT BREAKERS SHALL HAVE PANEL MANUFACTURER'S BLANK SPACE INSERTS INSTALLED.
12. ENCLOSURE SHALL BE NEMA 1 FOR INTERIOR APPLICATIONS OR NEMA 3R FOR EXTERIOR APPLICATIONS OR AS INDICATED ON THE DRAWINGS.
13. IF AN EXISTING PPC IS MISSING THE MECHANICAL INTERLOCK, THE CONTRACTOR SHALL FURNISH AND INSTALL THE CORRECT FACTORY MECHANICAL INTERLOCK ON THE TWO (2) MAIN CIRCUIT BREAKERS.
14. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN, NOT HANDWRITTEN.
15. PANEL DIRECTORIES SHALL BE UPDATED TO ACCURATELY REFLECT THE FINAL CIRCUITING.
16. ALL UNUSED CIRCUIT BREAKERS SHALL BE SWITCHED OFF AND LABELED "SPARE".

EXTERIOR COMBINATION GFCI/SWITCH UNIT

1. WEATHERPROOF ENCLOSURE WHICH INCLUDES A 120V, 20A GFCI RECEPTACLE AND A 120V, 20A TOGGLE SWITCH.
2. "IN-USE" COVER, CORROSION RESISTANT, GALVANIZED STEEL ENCLOSURE.
3. GFCI RECEPTACLE AND LIGHT SWITCH SHALL BE WIRED ON SEPARATE CIRCUITS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
4. G.E. # U010S010GRP OR APPROVED EQUAL.

VERTICAL CABLE SUPPORTS

1. INSTALL IN ACCORDANCE WITH NEC 300.19.
2. FOR USE WITH THREADED OR NON-THREADED CONDUIT.
3. MALLEABLE OR DUCTILE IRON WITH HOT DIP GALVANIZED FINISH.
4. WEDGING PLUG.
5. O/Z GEDNEY TYPE "S", TYPE "R" OR EQUAL.

LED LIGHT FIXTURE

1. ALUMINUM HOUSING, TWO ADJUSTABLE AIMABLE HEADS, LED LAMPS
2. INTEGRAL MOTION SENSOR AND PHOTOCELL
3. FIELD SETTABLE TIMER FOR ON
4. 120V, BRONZE OR BLACK FINISH
5. LITHONIA #0LF2RH40K120MODDB OR RAB #SMSBULLET2X12NA OR EQUAL

SCHEDULE OF REVISIONS		
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SCALE: NOTED

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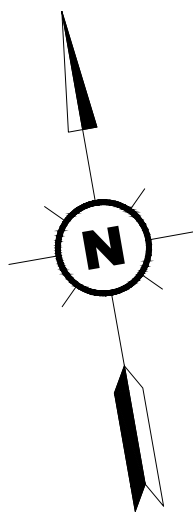
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CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
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SHEET NO. 4 OF 14





GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
8. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
9. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
10. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE, NO SIGNS WILL BE POSTED EXCEPT THOSE REQUIRED.
11. NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
12. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

T - Mobile  
NORTHEAST, LLC  
CENTRAL PA

T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs

DRAWN BY: SA

CHECKED BY: SP

SCALE: NOTED

JOB NO: 19E0095.001

DRAWING TITLE:

COMPOUND PLAN

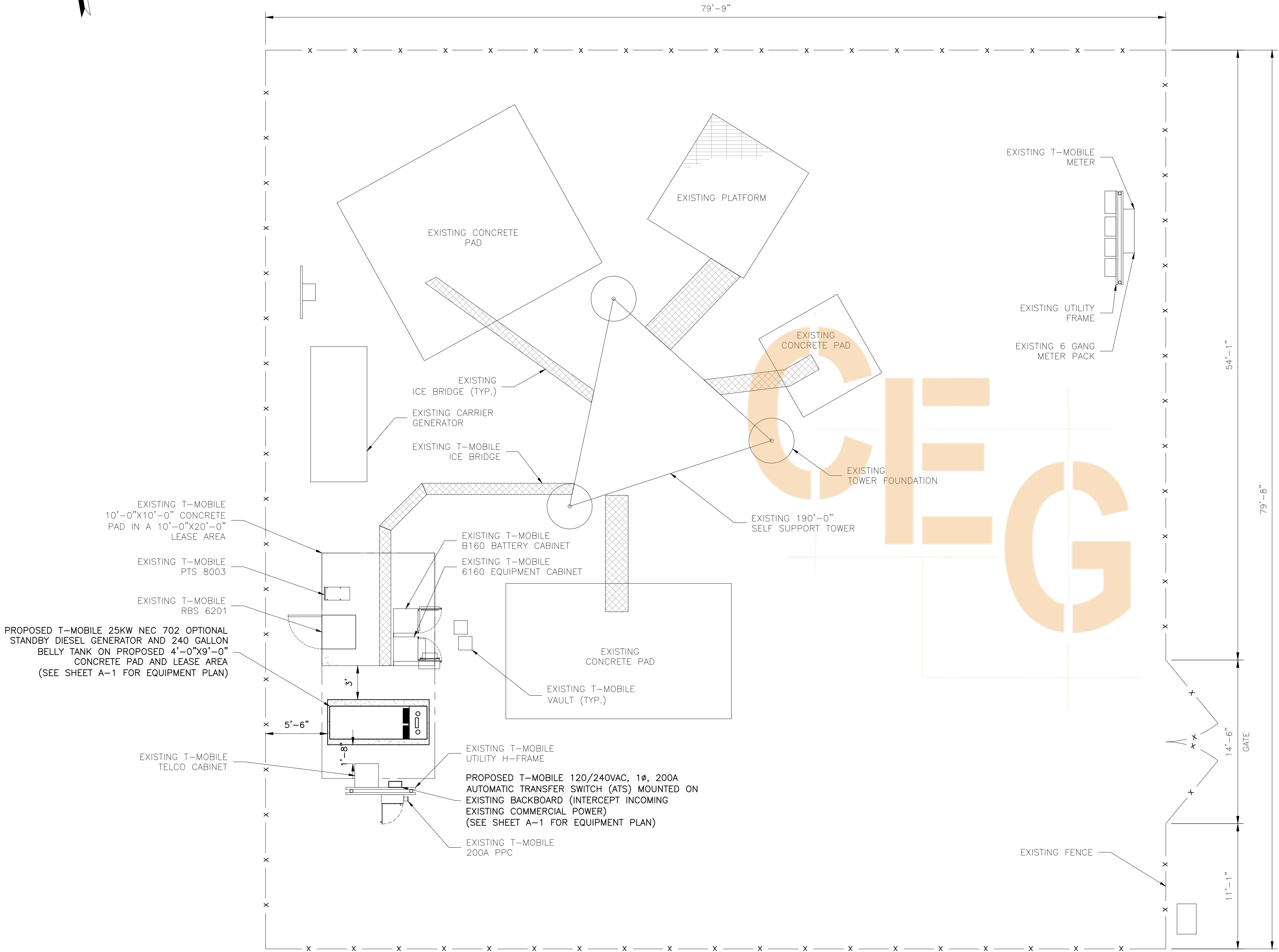
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S-1

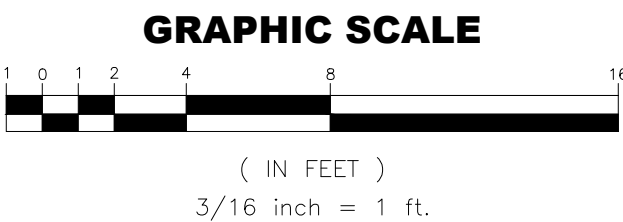
2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823

SHEET NO. 5 OF 14

ANDREW M. MILLER, P.E.  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134

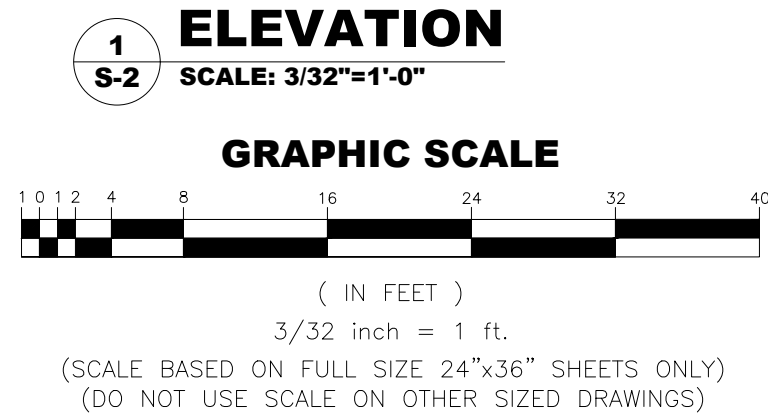
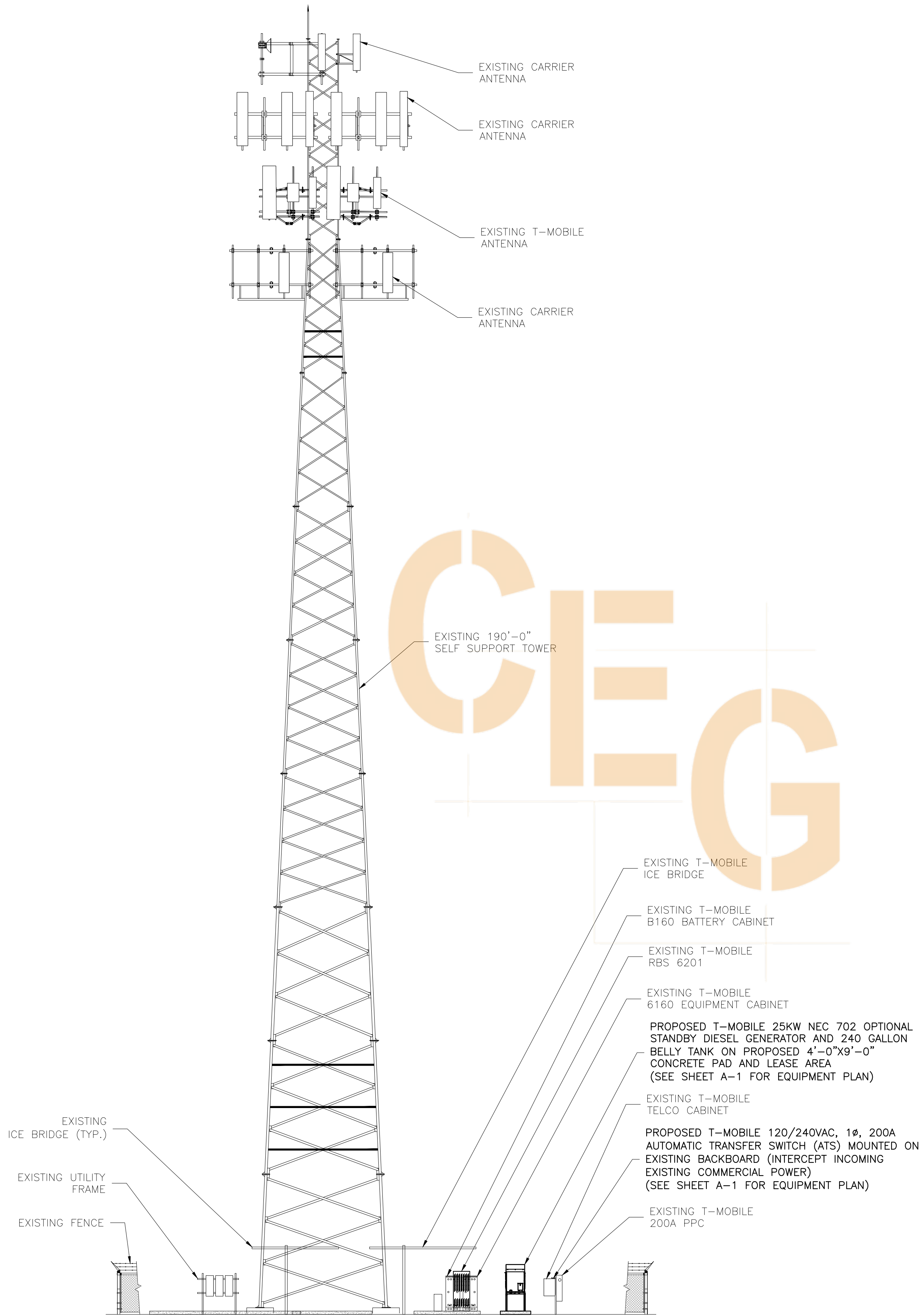


1  
S-1  
COMPOUND PLAN  
SCALE: 3/16"=1'-0"



(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)  
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)





GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
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T - Mobile  
NORTHEAST, LLC  
CENTRAL PA

T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

SCHEDULE OF REVISIONS

4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs
REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY: SA

CHECKED BY: SP

SCALE: NOTED

JOB NO: 19E0095.001

DRAWING TITLE:

ELEVATION

DRAWING SHEET:

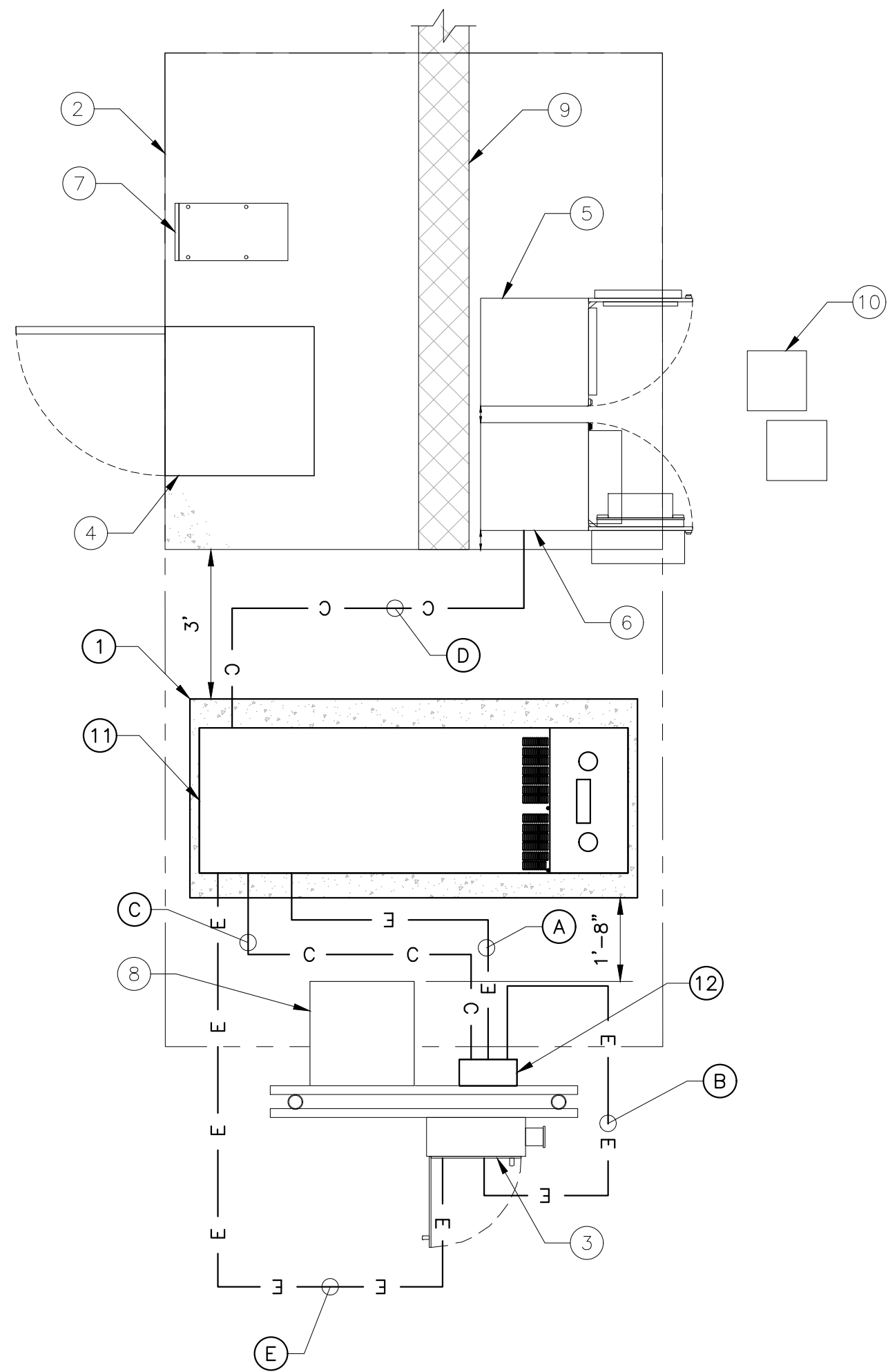
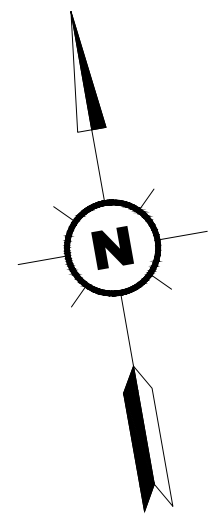
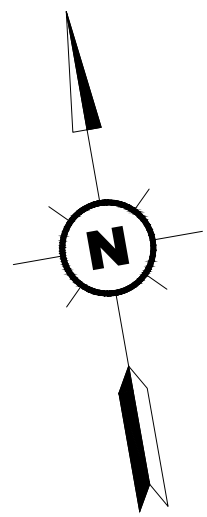
S-2

2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823

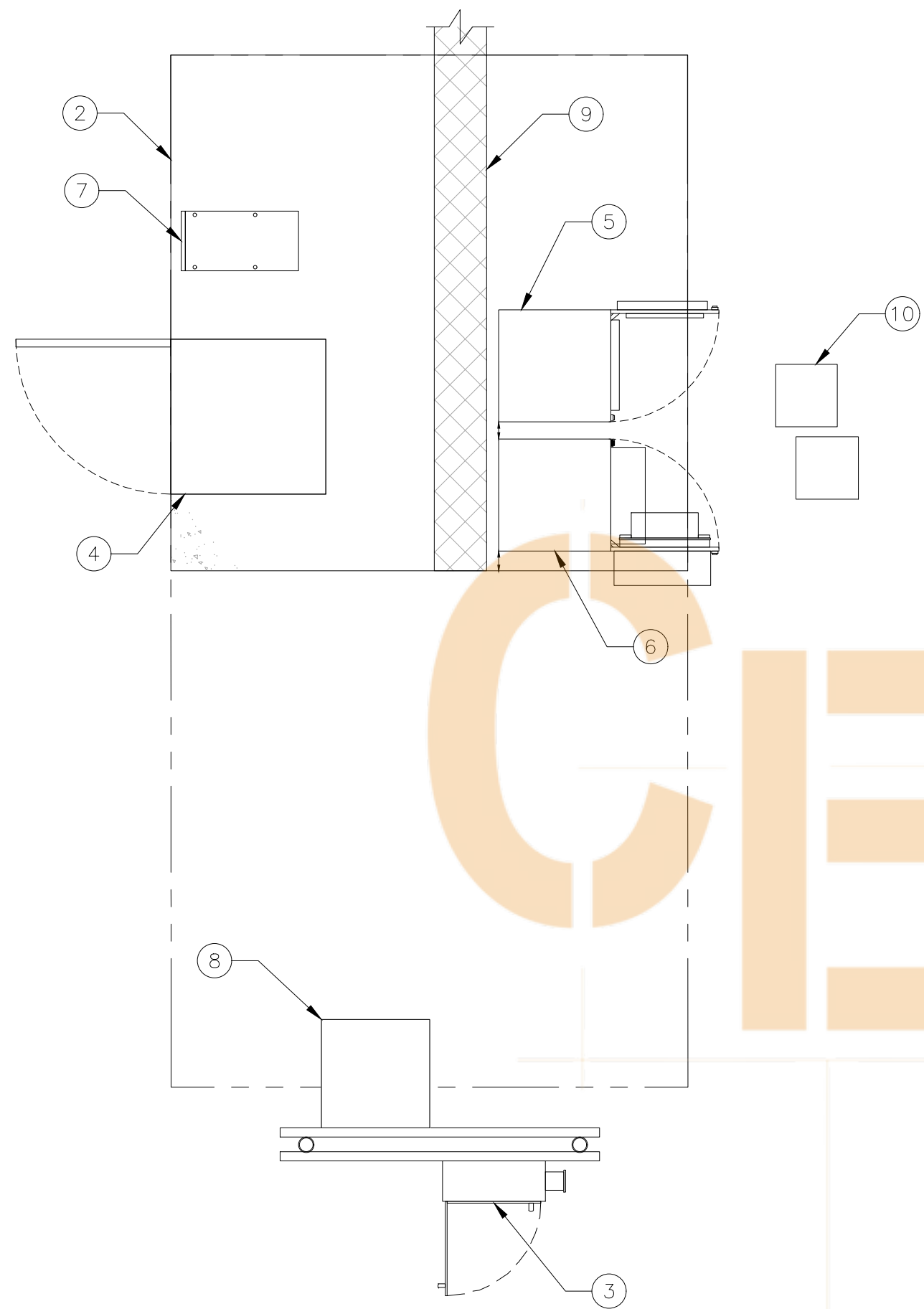
SHEET NO. 6 OF 14

ANDREW M. MILLER, P.E.  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134





**1**  
**A-1** **PROPOSED EQUIPMENT LAYOUT**  
SCALE: N.T.S.



**2**  
**A-1** **EXISTING EQUIPMENT LAYOUT**  
SCALE: N.T.S.

### T-MOBILE EQUIPMENT PLAN KEY

IDENTIFIER	ITEM AND STATUS	NOTES	DETAIL
①	PROPOSED T-MOBILE 4'-0"x9'-0" CONCRETE PAD AND LEASE AREA	SEE 1/A-1 FOR PROPOSED LAYOUT	3/D-4
②	EXISTING T-MOBILE 10'-0"x10'-0" CONCRETE PAD IN A 10'-0"x20'-0" LEASE AREA	SEE 2/A-1 FOR EXISTING LAYOUT	N/A
③	EXISTING T-MOBILE 200A PANEL	INSTALL (2) 20A, 1P C.B.S FOR GENERATOR ANCILLARIES AND INSTALL NEC SIGNAGE	1/E-1, 2/D-4
④	EXISTING T-MOBILE RBS 6102 CABINET	-	N/A
⑤	EXISTING T-MOBILE B160 BATTERY CABINET	-	N/A
⑥	EXISTING T-MOBILE 6160 EQUIPMENT CABINET	-	N/A
⑦	EXISTING T-MOBILE PTS 8003	-	N/A
⑧	EXISTING T-MOBILE TELCO CABINET	-	N/A
⑨	EXISTING T-MOBILE ICE BRIDGE	-	N/A
⑩	EXISTING T-MOBILE VAULT (TYP.)	-	N/A
⑪	PROPOSED T-MOBILE 25KW NEC 702 OPTIONAL STANDBY DIESEL GENERATOR W/ 240 GALLON BELLY TANK	INSTALL E-STOP, AND INSTALL SIGNAGE IN LOCATION CLEARLY VISIBLE FROM COMPOUND ENTRANCE	4/D-4, 1/D-1
⑫	PROPOSED T-MOBILE 120/240VAC, 1Ø, 200A AUTOMATIC TRANSFER SWITCH (ATS)	INTERCEPT INCOMING T-MOBILE COMMERCIAL POWER, MOUNTED TO EXISTING H-FRAME	1/D-3

### ELECTRICAL AT T-MOBILE CABINETS KEY

IDENTIFIER	ITEM AND STATUS	ROUTING/LOCATION	DETAIL
Ⓐ	PROPOSED (3) #1/0 & (1) #4 GND IN PROPOSED 2" CONDUIT	FROM PROPOSED GENERATOR TO PROPOSED ATS	1/E-1
Ⓑ	PROPOSED (3) #3/0 & (1) #4 GND IN PROPOSED 2" CONDUIT	FROM PROPOSED ATS TO EXISTING T-MOBILE PPC	1/E-1
Ⓒ	PROPOSED (7) #14 AWG WIRE IN PROPOSED 2" SCH. 40 CONDUIT (FOR ATS START RELAY)	FROM PROPOSED GENERATOR TO PROPOSED ATS	1/E-1
Ⓓ	PROPOSED (2) CAT5 CABLES IN PROPOSED 1" CONDUIT (FOR GENERATOR ALARMS)	FROM PROPOSED GENERATOR TO EXISTING EQUIPMENT CABINET	N/A
Ⓔ	PROPOSED (4) #12 AWG & (2) #12 GND IN PROPOSED 1" CONDUIT (FOR GENERATOR BLOCK HEATER AND BATTERY CHARGER)	FROM PROPOSED GENERATOR TO EXISTING T-MOBILE PPC	1/E-1

#### NOTES:

- INTERCEPT EXISTING INCOMING COMMERCIAL POWER TO EXISTING PPC AND COORDINATE OUTAGE WITH T-MOBILE CONSTRUCTION MANAGER, EXTEND CONDUIT AND CONDUCTORS AS NECESSARY TO PROPOSED T-MOBILE ATS. ALL CONDUCTORS AND CONDUIT EXTENSION WORK SHALL CONFORM TO THE CURRENTLY ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND OTHER APPLICABLE CODES.
- RE-USE AVAILABLE SPARE STUBBED UP CONDUITS WHERE AVAILABLE. CONDUIT ROUTING EXAGGERATED FOR CLARITY. ALL CONDUITS RUN ABOVE GRADE SHALL BE ROUTED IN SUCH A MANNER TO AVOID TRIPPING HAZARDS.
- NEC 702.7 SIGNAGE MUST BE INSTALLED ON T-MOBILE PPC/PANEL, T-MOBILE SERVICE DISCONNECT, AND T-MOBILE ATS. SEE SIGNAGE DETAIL ON SHEET D-4 FOR MORE INFORMATION.

**T - Mobile**  
NORTHEAST, LLC  
CENTRAL PA  
T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

#### SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs

**DRAWN BY:** SA  
**CHECKED BY:** SP  
**SCALE:** NOTED  
**JOB NO:** 19E0095.001

#### DRAWING TITLE:

**PROPOSED &  
EXISTING  
EQUIPMENT LAYOUT**

#### DRAWING SHEET:

**A-1**

**2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823**

**SHEET NO. 7 OF 14**

**ANDREW M. MILLER, P.E.**  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134



SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs

DRAWN BY: SA

CHECKED BY: SP

SCALE: NOTED

JOB NO: 19E0095.001

DRAWING TITLE:

GENERATOR  
DETAIL

DRAWING SHEET:

D-1

2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823

SHEET NO. 8 OF 14

ANDREW M. MILLER, P.E.  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134

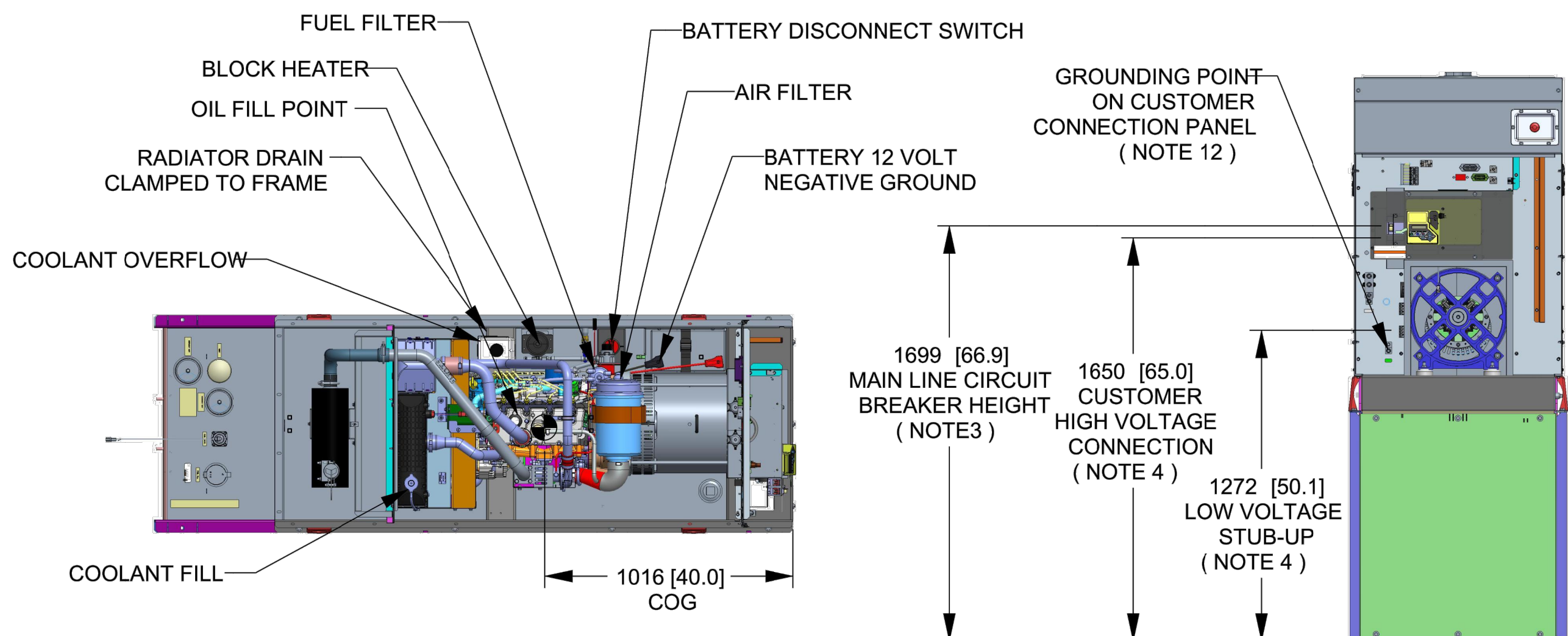
SH 1/2 REV 2 WINDCHILL VERSION 2.12

WEIGHT DATA WITH EMPTY BASE TANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1336 [2946]
WITH WOODEN SHIPPING SKID	1354 [2984]

WEIGHT: KG [LBS]  
DIMENSIONS: MM [INCHES]

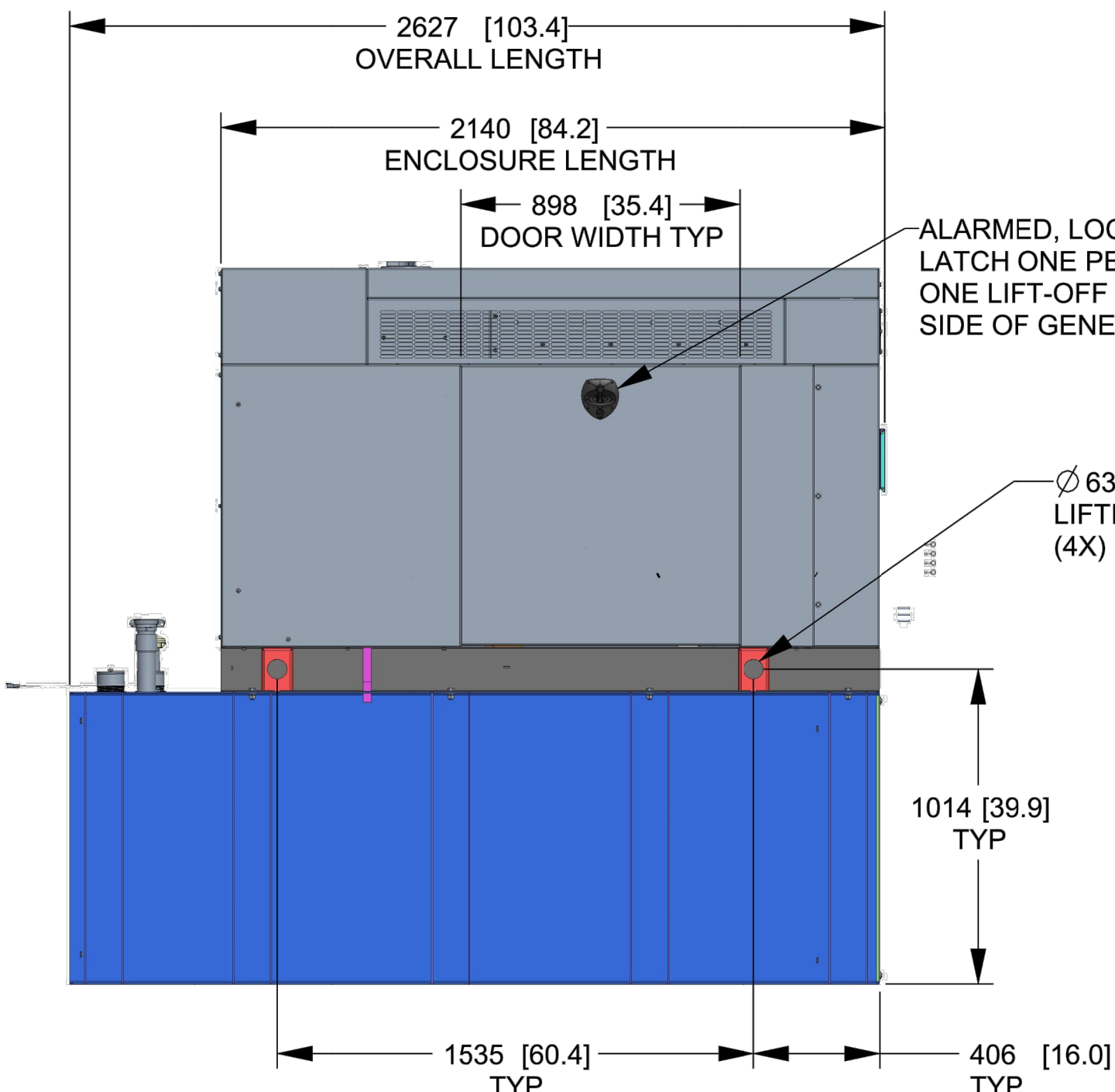
NOTES:

- THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
- BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
- CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
  - MAIN LINE CIRCUIT BREAKER 125 AMPS
  - SEE SPECIFICATION SHEET OR OWNERS MANUAL
  - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
  - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER
- REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
  - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
  - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES
- ENGINE SERVICE CONNECTIONS
  - OIL DRAIN: 1/2" NPT
  - RADIATOR DRAIN: HOSE CLAMPED TO FRAME
- CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
- BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
- REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
- MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
- MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
- GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER(3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
- GENERATOR MUST BE GROUNDED.

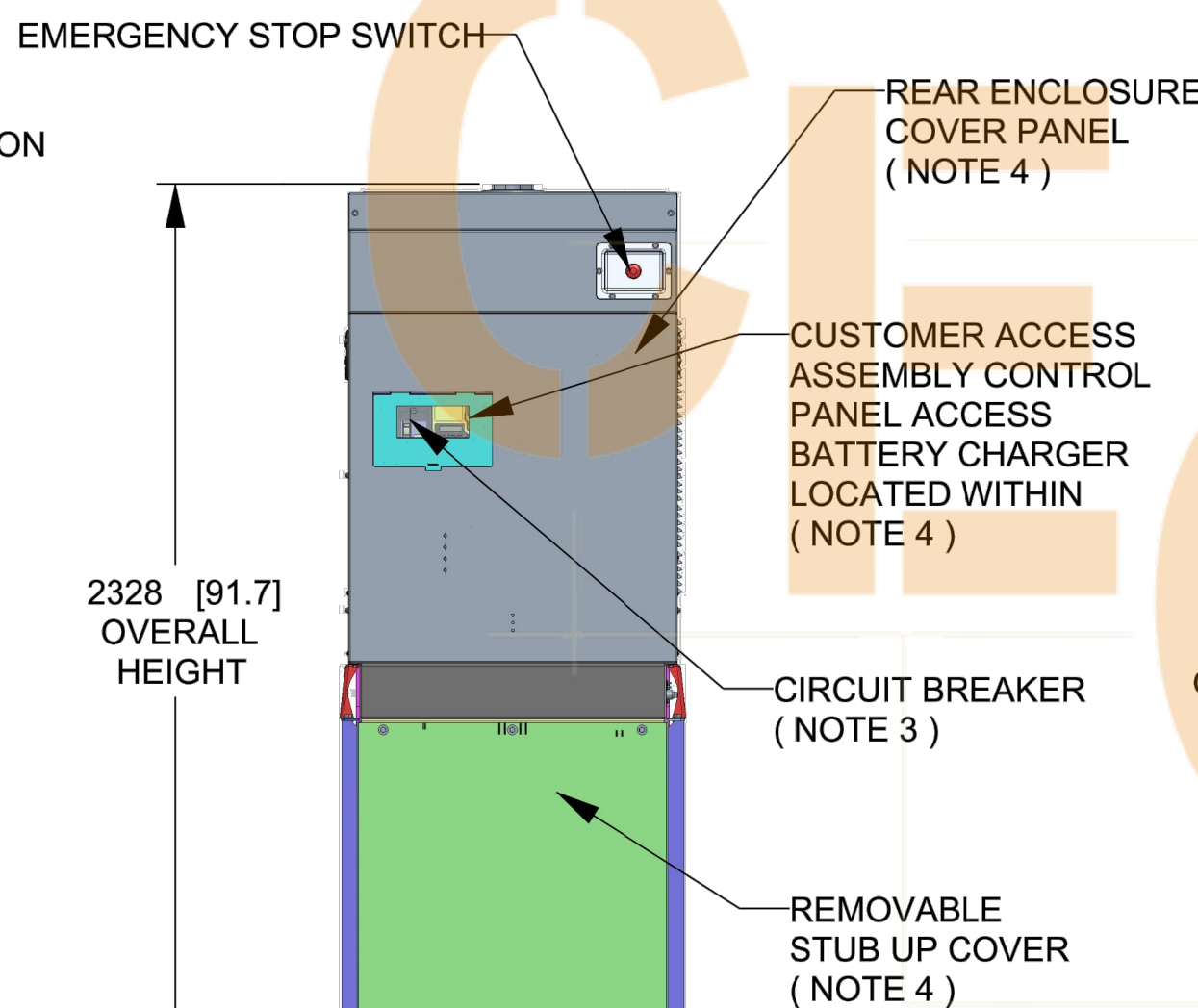


TOP VIEW  
(SHOWN WITH ENCLOSURE REMOVED)

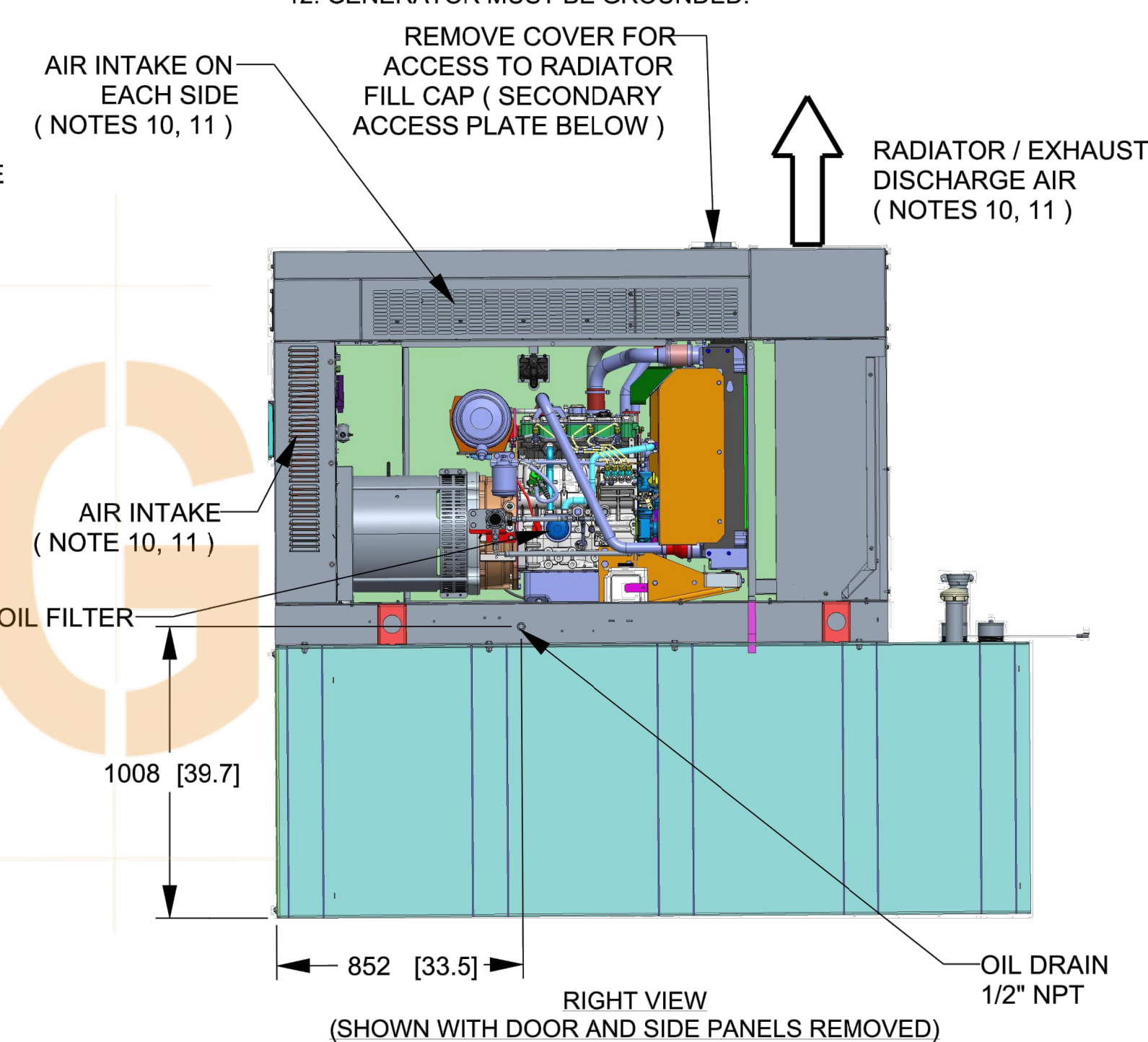
REAR VIEW  
(SHOWN WITH REAR COVER PANEL REMOVED)



LEFT VIEW



REAR VIEW



RIGHT VIEW  
(SHOWN WITH DOOR AND SIDE PANELS REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

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ELECTRONICALLY APPROVED  
INSIDE WINDCHILL

GENERAC

TITLE

INSTALLATION D2.2L  
25KW Y06 PD

ISSUE DATE:

5/10/18

SIZE

CAGE NO

DWG NO

10000036728

REV

2

SCALE

0.031

WT-KG

SEE ABOVE

SHEET

1 of 2

NOTES:

- SEE SHEET D-2 FOR 240 GALLON BELLY TANK DETAIL
- SEE SHEET D-3 FOR ANCHOR & SAFETY SIGN DETAILS

1

D-1

25KW NEC 702 OPTIONAL STANDBY DIESEL GENERATOR DETAIL

SCALE: NOT TO SCALE

NOTE: GENERATOR SHALL BE FACTORY FURNISHED WITH THE DISCONNECTING MEANS AND SHUTDOWN OF PRIME MOVER, PER 2017 NEC, 445.18.



FUEL TANK	
TOTAL CAPACITY	908.5 (240)
USABLE CAPACITY	866.9 (229)

CAPACITY: LITER (GALLON)  
DIMENSIONS: MM (INCH)

TANK IS LISTED TO UL142 AND ULC5601

NOTE:  
STUB-UP AREA FOR HIGH  
AND LOW VOLTAGE CONNECTIONS  
CIRCUIT BREAKER, NEUTRAL AND  
CUSTOMER CONNECTION OPENING.

SCHEDULE OF REVISIONS		
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1		
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REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY:	SA
CHECKED BY:	SP
SCALE:	NOTED
JOB NO:	19E0095.001

DRAWING TITLE:

**240 GALLON BELLY  
TANK DETAIL**

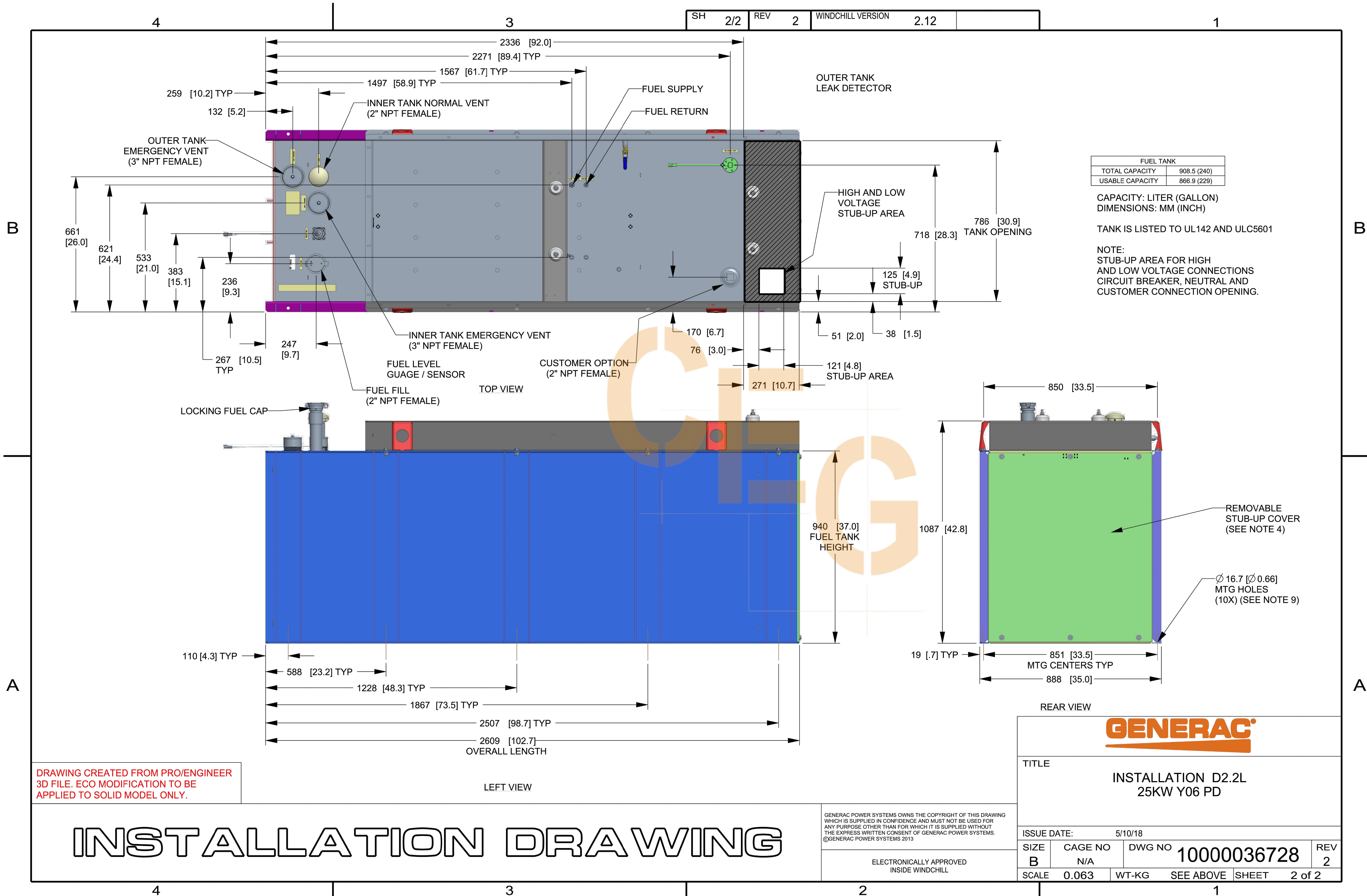
DRAWING SHEET:

**D-2**

**2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823**

**SHEET NO. 9 OF 14**

**ANDREW M. MILLER, P.E.**  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134





GENERAC®

100-200 Amps, Single Phase

Automatic Transfer Switches

Functions

All timing and sensing functions originate in the generator controller.

Utility Voltage Drop-out	<65%
Timer to Generator Start	10 Second Factory Set, Adjustable Between 2 - 1,500 Seconds by a Qualified Dealer*
Engine Warmup Delay	5 Seconds
Standby Voltage Sensor	65% for 5 Seconds
Utility Voltage Pickup	>80%
Re-transfer Time Delay	15 Seconds
Engine Cooldown Timer	60 Seconds
Exerciser	Nexus™: 12 Minutes Weekly Evolution™: 5 to 12 Minutes Adjustable, Weekly/Bi-weekly/Monthly
The Transfer Switch can be Operated Manually Without Power Applied	

\* When used in conjunction with units utilizing Evolution™ controls

Specifications

Model	RXSC100A3	RXSW100A3	RXSW150A3	RXSC200A3	RXSW200A3
Amps	100	100	150	200	200
Voltage	120/240, 1ø	120/240, 1ø	120/240, 1ø	120/240, 1ø	120/240, 1ø
Load Transition Type (Automatic)	Open Transition	Open Transition Service Rated	Open Transition Service Rated	Open Transition	Open Transition Service Rated
Enclosure Type	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R	NEMA/UL 3R
UL Rating	UL/CUL	UL	UL	UL/CUL	UL
Withstand Rating (Amps)	10,000	10,000	22,000	10,000	22,000
Lug Range	2/0 - #14		250 MCM - #6		

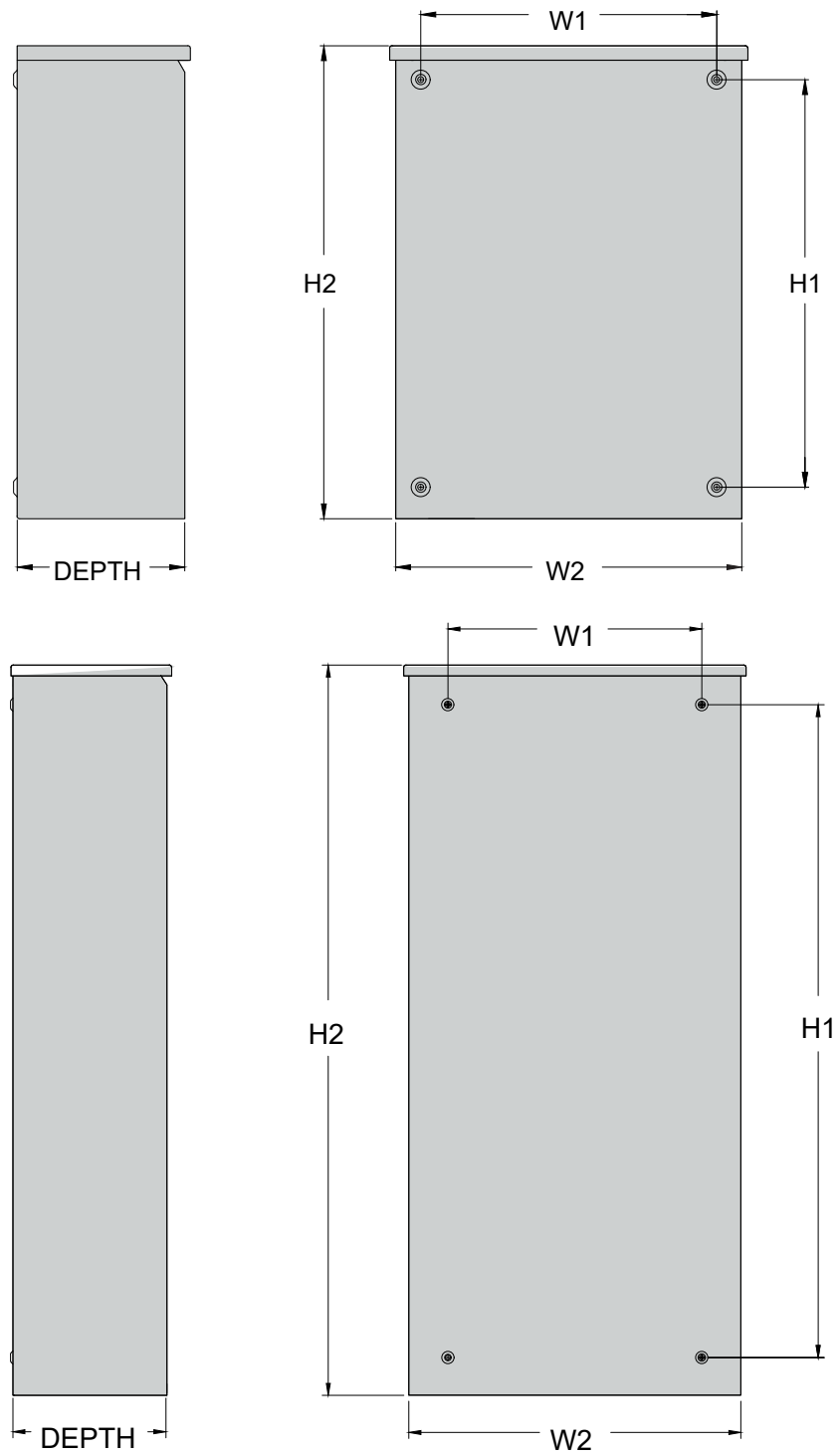
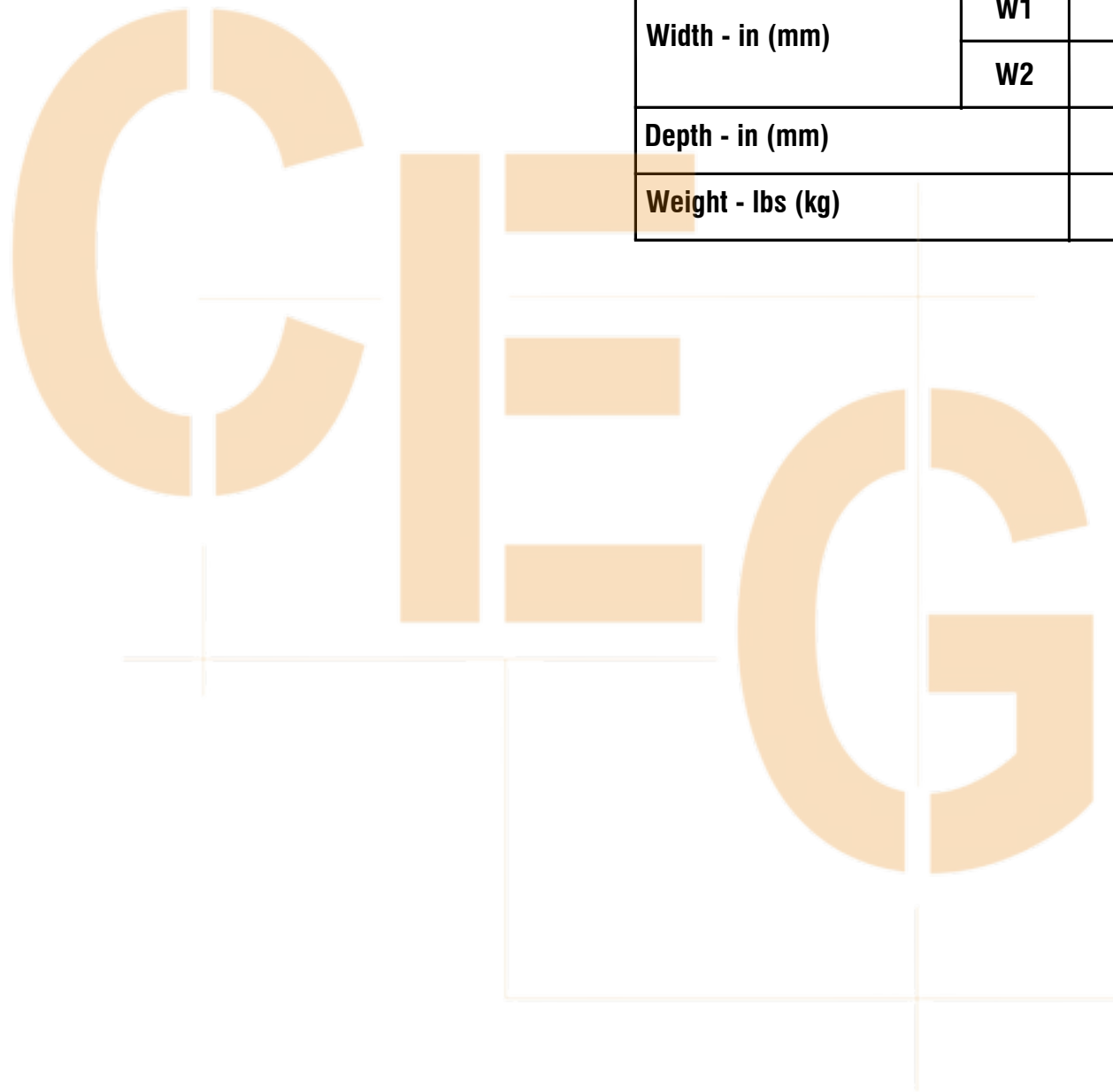
GENERAC®

100-200 Amps, Single Phase

Automatic Transfer Switches

Dimensions

Model		RXSC100A3	RXSW100A3	RXSW150A3	RXSC200A3	RXSW200A3
Height - in (mm)	H1	17.2 (437.9)	17.2 (437.9)	26.8 (679.4)	17.2 (437.9)	26.8 (679.4)
	H2	20.0 (508.0)	20.0 (508.0)	30.0 (672.0)	20.0 (508.0)	30.0 (672.0)
Width - in (mm)	W1	12.5 (317.5)	12.5 (317.5)	10.5 (266.7)	12.5 (317.5)	10.5 (266.7)
	W2	14.6 (370.8)	14.6 (370.8)	13.5 (342.9)	14.6 (370.8)	13.5 (342.9)
Depth - in (mm)		7.1 (180.1)	7.1 (180.1)	6.3 (160.1)	7.1 (180.1)	6.3 (160.1)
Weight - lbs (kg)		20.0 (9.1)	22.5 (10.2)	39.0 (17.7)	20.0 (9.1)	39.0 (17.7)



SCHEDULE OF REVISIONS

4		
3		
2		
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0	04-21-2022	FINAL CDs
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REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY:	SA
CHECKED BY:	SP
SCALE:	NOTED
JOB NO:	19E0095.001

DRAWING TITLE:

ATS DETAIL

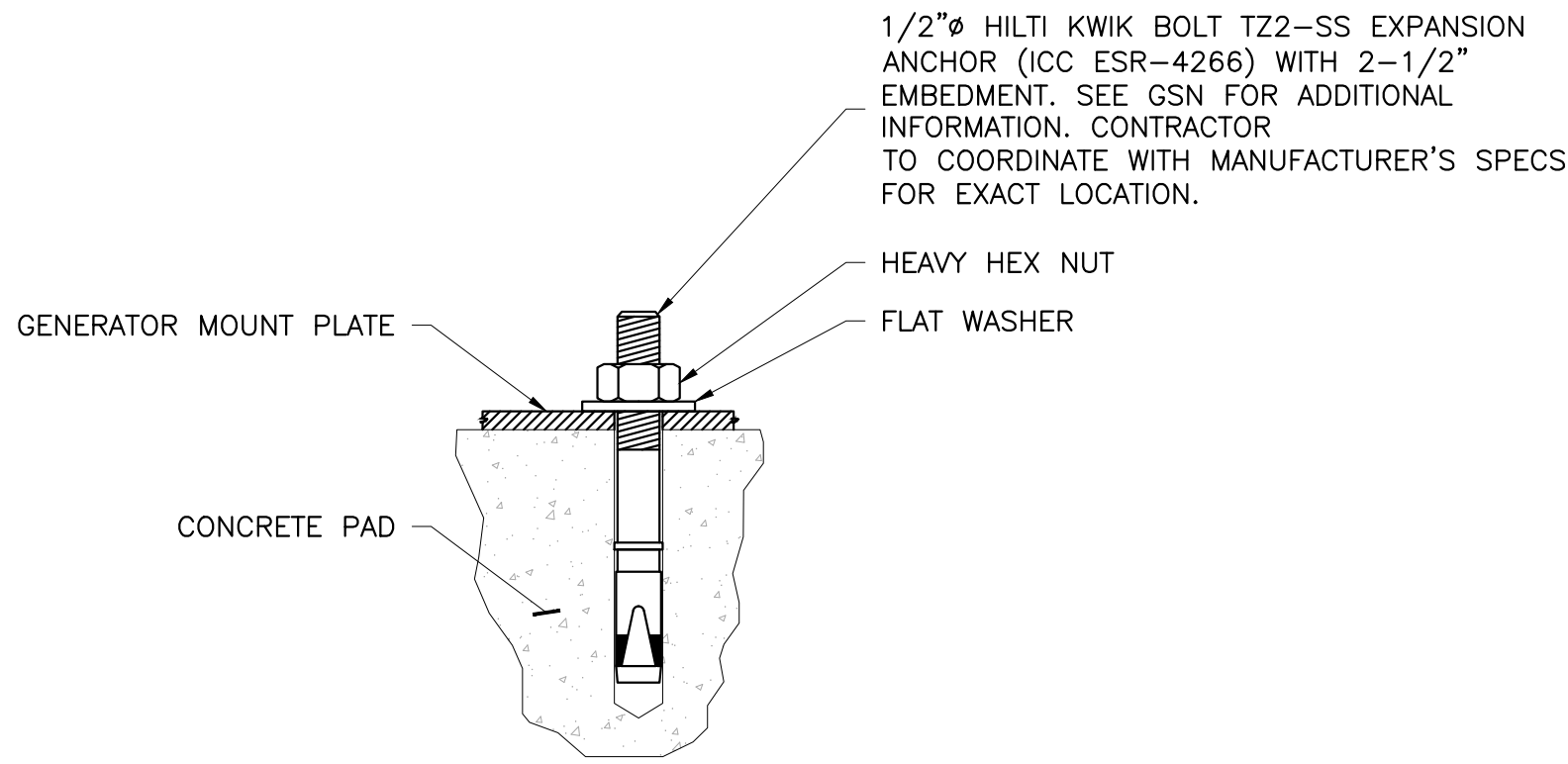
DRAWING SHEET:

D-3

2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823

SHEET NO. 10 OF 14





- NOTES:
- BOLTS CAN BE INSTALLED 2 DAYS AFTER POURING CONCRETE PROVIDED THE KWIK BOLTS ARE ONLY TIGHTENED TO A SNUG TIGHT CONDITION
  - APPLY HILTI HIT-RE 500-SD EPOXY TO ALL GAPS TO PREVENT WATER/MOISTURE BUILD UP.

1 ANCHOR DETAIL  
D-4 SCALE: NOT TO SCALE

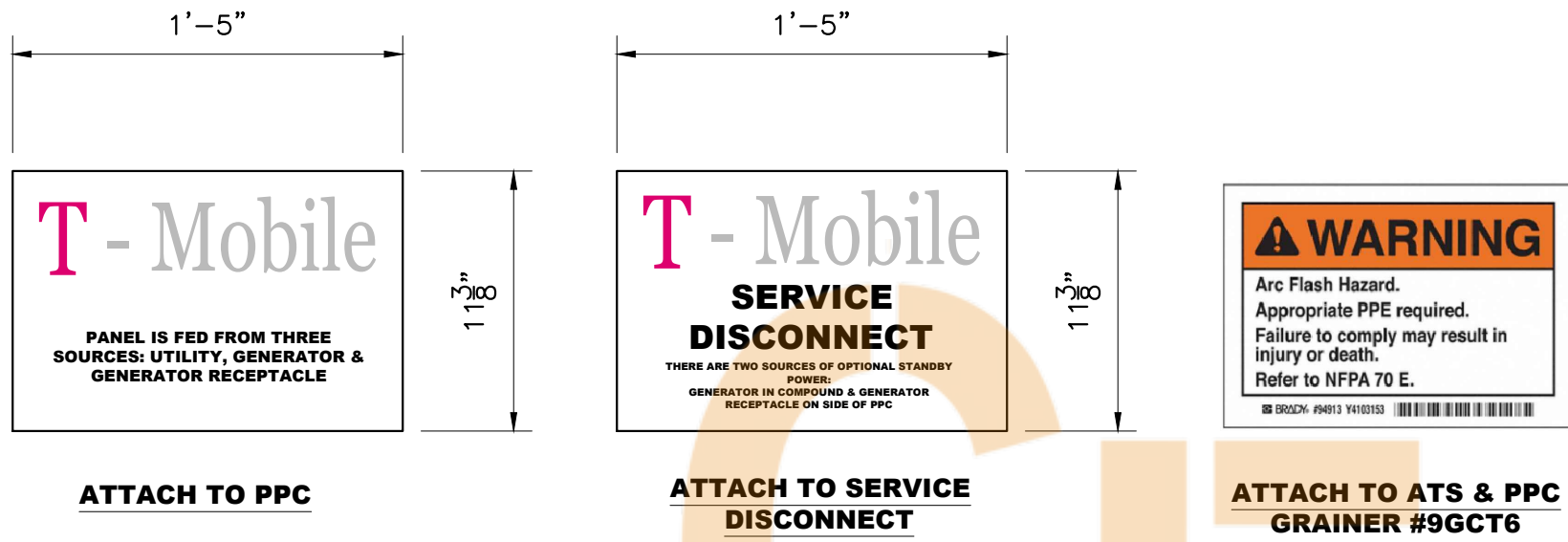


10"x14" MIN. NFPA DIESEL FUEL 1-2-0 DANGER SIGN  
(MYSAFETYSIGN.COM PN: M3348-AC OR EQUIVALENT)



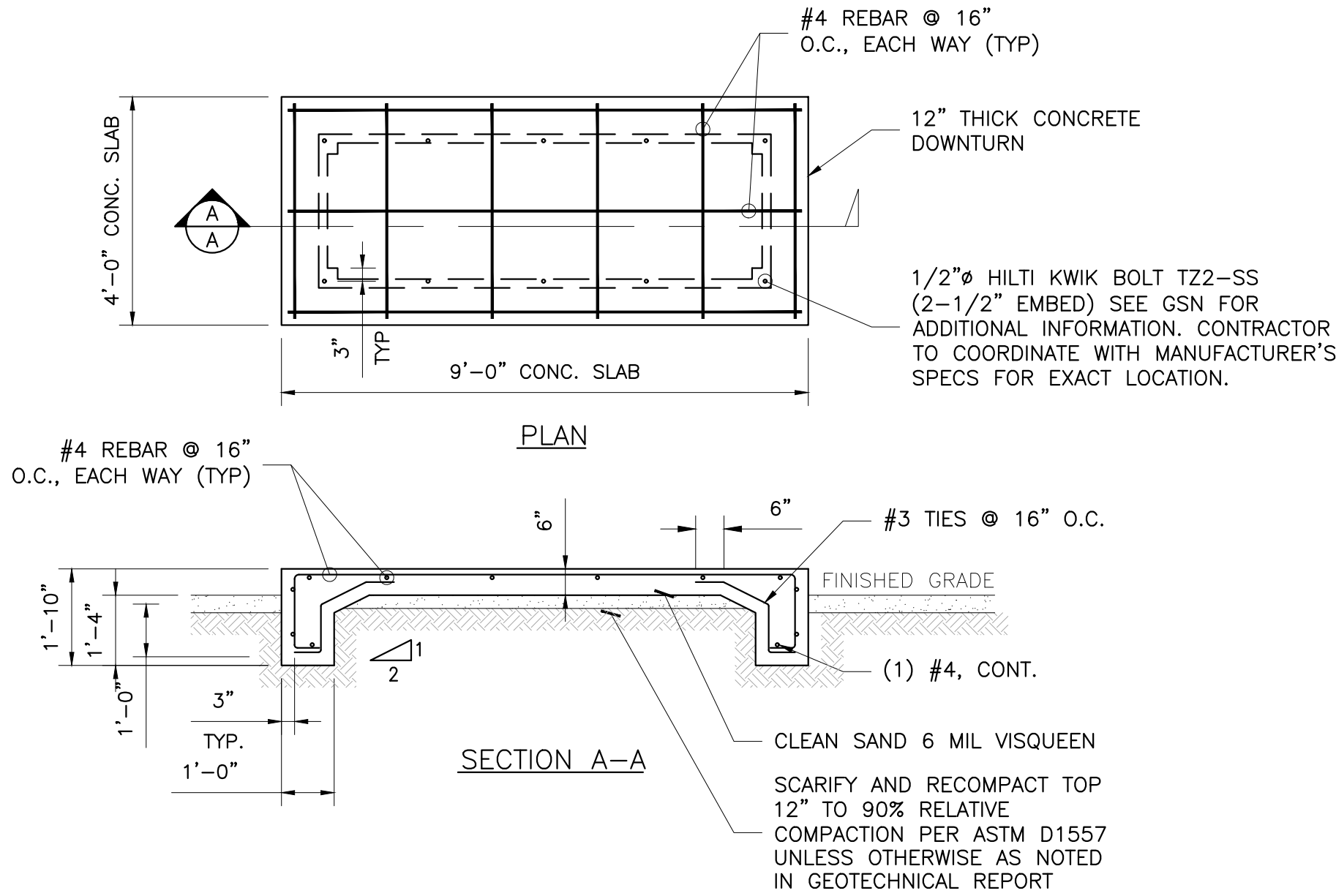
10"x14" MIN. DIESEL FUEL BILINGUAL WARNING SIGN  
(MYSAFETYSIGN.COM PN: G4862-AC OR EQUIVALENT)

NOTE:  
INSTALL ALL SIGNAGE ON PROPOSED GENERATOR  
IN A MANNER TO MAXIMIZE VISIBILITY FROM  
EQUIPMENT COMPOUND ENTRANCE.



NOTE: FURNISH AND INSTALL SIGNAGE CLEARLY IDENTIFYING THE  
SOURCES OF POWER AND LOCATIONS IN ACCORDANCE WITH NEC  
702.7

2 SIGNAGE DETAIL  
D-4 SCALE: NOT TO SCALE



3 CONCRETE GENERATOR PAD DETAIL  
D-4 SCALE: NOT TO SCALE

T-Mobile  
NORTHEAST, LLC  
CENTRAL PA  
T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

SCHEDULE OF REVISIONS		
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REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY: SA  
CHECKED BY: SP  
SCALE: NOTED  
JOB NO: 19E0095.001

DRAWING TITLE:

DETAILS

DRAWING SHEET:

D-4

2CN9311C  
CROWN 839176 -BELLEFONTE  
CROWN BU #816658  
321 MOONGLO LANE  
BELLEFONTE, PA 16823

SHEET NO. 11 OF 14

ANDREW M. MILLER, P.E.  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134



NOTES:  
THE DRAWINGS ARE PROVIDED TO DEPICT DESIGN INTENT, AND ARE NOT TO BE CONSIDERED INSTALLATION DRAWINGS. NOT ALL COMPONENTS OR CONNECTIONS ARE SHOWN. EQUIPMENT PART NUMBERS ARE SHOWN TO PROVIDE PERFORMANCE CRITERIA AND LEVEL OF PRODUCT STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING, INSTALLATION OF ALL ELECTRICAL EQUIPMENT, COMPONENTS AND MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSTALLATION MEANS AND METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, ENERGIZING AND TESTING OF ALL ELECTRICAL COMPONENTS PER THE MANUFACTURER'S INSTRUCTIONS.

PROPOSED 25KW NEC 702 OPTIONAL  
STANDBY DIESEL GENERATOR  
120/240, 1 $\phi$ , 60HZ WITH  
240 GALLON BELLY TANK

#2 AWG SOLID TINNED  
GROUND (TYP)

EXISTING T-MOBILE 240V, 200A  
SERVICE DISCONNECT AND UTILITY  
METER

PROPOSED 120/240V, 1PH., 200A,  
AUTOMATIC TRANSFER SWITCH IN NEMA  
3R ENCLOSURE. NEUTRAL IS NOT  
SWITCHED. FURNISH & INSTALL 2"x3"  
LABEL, BLUE LETTERING ON WHITE  
BACKGROUND, STATING THAT TRANSFER  
SWITCH IS RATED FOR 10KAIC

PROPOSED (3) #3/0 & (1) #4 GND IN  
PROPOSED 2" CONDUIT INTERCEPT OR  
EXTEND FROM EXISTING INCOMING  
120/240V 200A 1 PH COMMERCIAL POWER

PROPOSED (3) #3/0 & (1) #4 GND  
IN PROPOSED 2" CONDUIT

PROPOSED (1) CAT6 CABLE IN  
PROPOSED 1" CONDUIT  
(FOR GENERATOR ALARMS)

PROPOSED (4) #12 AWG & (2)  
#12 GND IN PROPOSED 1" CONDUIT  
(FOR GENERATOR BLOCK HEATER  
AND BATTERY CHARGER)

EXISTING FACTORY INSTALLED ON SIDE OF  
PPC, OPTIONAL STANDBY GENERATOR  
RECEPTACLE, 240V, 1PH., 200A REVERSE  
SERVICE RATED, NEMA 3R ENCLOSURE

EXISTING 120/240V, 1 $\phi$ , 200A PPC WITH TWO 200A  
MECHANICALLY INTERLOCKED MAIN CIRCUIT BREAKERS  
THAT ACT AS A MANUAL TRANSFER SWITCH, BREAK  
BEFORE MAKE, MAIN BREAKERS RATED 65KAIC, NEMA 3R  
ENCLOSURE.  
THE MECHANICAL INTERLOCK ON THE MAIN BREAKERS  
COMPLIES WITH NEC 702.5

NOTES:

- ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT ADOPTED NATIONAL ELECTRIC CODES AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC.
- ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 AND CONDUIT EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL, INTERIOR CONDUIT SHALL BE EMT UNLESS OTHERWISE INDICATED. POWER CONDUIT LINES SHALL BE SIZED AS REQUIRED PER CABLE SIZING AND NEC REQUIREMENTS.
- CONDUITS INSTALLED AT BTS EQUIPMENT ENDS PRIOR TO THE EQUIPMENT INSTALLATION SHALL BE STUBBED AND CAPPED AT 6" ABOVE GRADE OR PLATFORM. IF SERVICE LINES CAN'T BE INSTALLED INITIALLY, PROVIDE NYLON PULL CORD IN CONDUITS.
- LABEL ALL T-MOBILE CONDUITS EVERY 20', "T-MOBILE" USING STENCILS AND SPRAY PAINT. THIS APPLIES TO EXISTING T-MOBILE CONDUITS AS WELL.
- GENERATOR SHALL BE FACTORY FURNISHED WITH THE DISCONNECTING MEANS AND SHUTDOWN OF PRIME MOVER, PER 2017 NEC, 445.18.

**1**  
**E-1** **ELECTRICAL ONE LINE DIAGRAM**  
SCALE: N.T.S.

**T - Mobile**  
NORTHEAST, LLC  
CENTRAL PA  
T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

**SCHEDULE OF REVISIONS**

REV. NO.	DATE	DESCRIPTION OF CHANGES
4		
3		
2		
1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs

**DRAWN BY:** SA  
**CHECKED BY:** SP  
**SCALE:** NOTED  
**JOB NO:** 19E0095.001

**DRAWING TITLE:**

**ELECTRICAL ONE  
LINE DIAGRAM**

**DRAWING SHEET:**

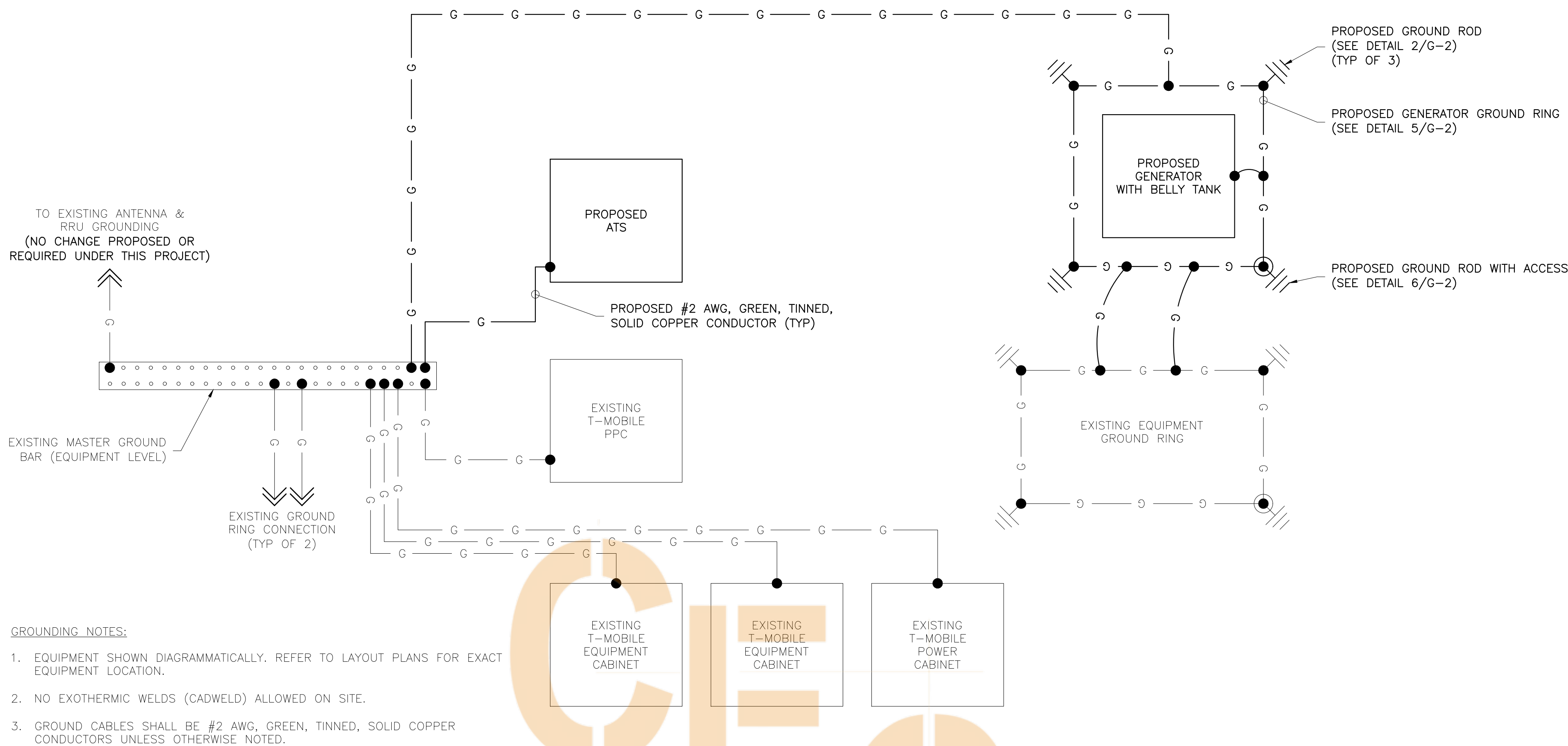
**E-1**

**2CN9311C**  
**CROWN 839176 -BELLEFONTE**  
**CROWN BU #816658**  
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**BELLEFONTE, PA 16823**

**SHEET NO. 12 OF 14**

**ANDREW M. MILLER, P.E.**  
PENNSYLVANIA PROFESSIONAL ENGINEER  
LICENSE # PE080134





**1**  
**G-1** **GROUNDING DIAGRAM**  
SCALE: N.T.S.

### GROUNDING SYMBOLS

- G — PROPOSED #2 AWG, GREEN, INSULATED, SOLID COPPER CONDUCTOR
- ○ ○ ○ ○ ○ ○ ○ PROPOSED GROUND BAR
- PROPOSED MECHANICAL GROUNDING CONNECTION
- ⏏ PROPOSED 5/8"Ø x 12'-0" GROUND ROD
- ⏏ PROPOSED 5/8"Ø x 12'-0" GROUND ROD WITH ACCESS

### GROUND ROD NOTES

- ALL GROUND RODS SHALL HAVE A MINIMUM 8'-0" LENGTH OF CONTACT WITH THE SOIL.
- ALL GROUND RODS SHALL HAVE A MINIMUM OF 6'-0" SPACING BETWEEN RODS.
- ALL GROUND RODS SHALL BE INSTALLED SUCH THAT AT LEAST 8 FT OF LENGTH IS IN CONTACT WITH THE SOIL. IT SHALL BE DRIVEN TO A DEPTH OF NOT LESS THAN 8 FT EXCEPT THAT, WHERE ROCK BOTTOM IS ENCOUNTERED, THE ELECTRODE SHALL BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL OR, WHERE ROCK BOTTOM IS ENCOUNTERED AT AN ANGLE UP TO 45 DEGREES, THE ELECTRODE SHALL BE PERMITTED TO BE BURIED IN A TRENCH THAT IS AT LEAST 30 IN. DEEP.

### GROUNDING NOTES

- ALL GROUNDING SYSTEM CONDUCTORS AND CONNECTIONS BELOW GRADE SHALL BE THERMAL WELDS AT GROUND RODS AND AT A MINIMUM OF 36" BELOW GRADE.
- ALL INSTALLATIONS SHALL BE FIELD VERIFIED.
- ALL GROUND WIRE SHALL BE #2 AWG BARE COPPER TINNED UNLESS NOTED OTHERWISE.
- ALL GROUND WIRES SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
- THE CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
- EACH EQUIPMENT CABINET SHALL BE CONNECTED WITH (2) #2 AWG INSULATED SOLID TINNED COPPER WIRE TO GROUND BAR. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
- ANTENNA GROUND KITS SHALL BE FURNISHED BY T-MOBILE AND INSTALLED BY ELECTRICAL CONTRACTOR.
- KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
- ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE A MINIMUM OF 3/8" DIAMETER AND SHALL BE STAINLESS STEEL.
- GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
- PLASTIC CLIPS OR METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
- STANDARD BUS BARS (CIGBE AND MIGB) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
- THE GROUNDING CONNECTION TO THE POWER AND TELCO SECTIONS OF THE PPC SHALL BE MADE BY CONNECTING A CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED BUS BAR IN EACH COMPARTMENT.
- THE CONTRACTOR SHALL SUPPLY T-MOBILE WITH RESULTS FROM PRE-CONSTRUCTION (CO-LO ONLY) AND POST-CONSTRUCTION OHM TESTING (GROUND) RESULTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A "FALL OF POTENTIAL" TEST ON THE NEW SUPPLEMENTAL GROUND FIELD PRIOR TO FINAL CONNECTION OF THE GROUNDING SYSTEM TO EQUIPMENT. THE TEST SHALL BE PERFORMED BY A QUALIFIED AND CERTIFIED TESTING AGENT. PROVIDE INDEPENDENT TEST RESULTS TO THE PROJECT MANAGER FOR REVIEW. THE GROUND SYSTEM RESISTANCE TO EARTH GROUND SHALL NOT EXCEED FIVE (5) OHMS. IF THE GROUND TEST EXCEEDS THE MAXIMUM OF 5 OHMS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ADDITIONAL GROUND CONNECTIONS AS REQUIRED TO MEET THE 5 OHMS MAXIMUM.

### SCHEDULE OF REVISIONS

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4		
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1		
0	04-21-2022	FINAL CDs
A	04-05-2022	PRELIMINARY CDs

**DRAWN BY:** SA  
**CHECKED BY:** SP  
**SCALE:** NOTED  
**JOB NO:** 19E0095.001

### DRAWING TITLE:

## GROUNDING DIAGRAM & NOTES

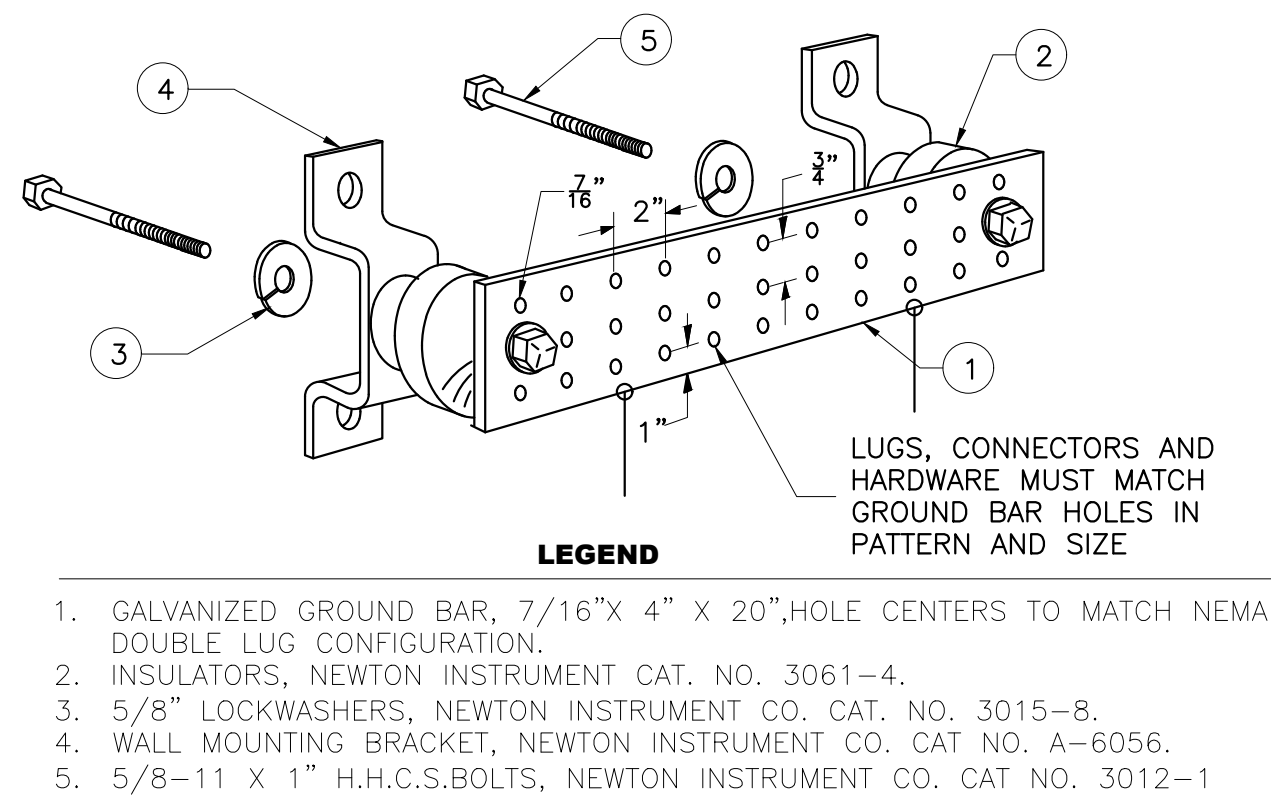
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# G-1

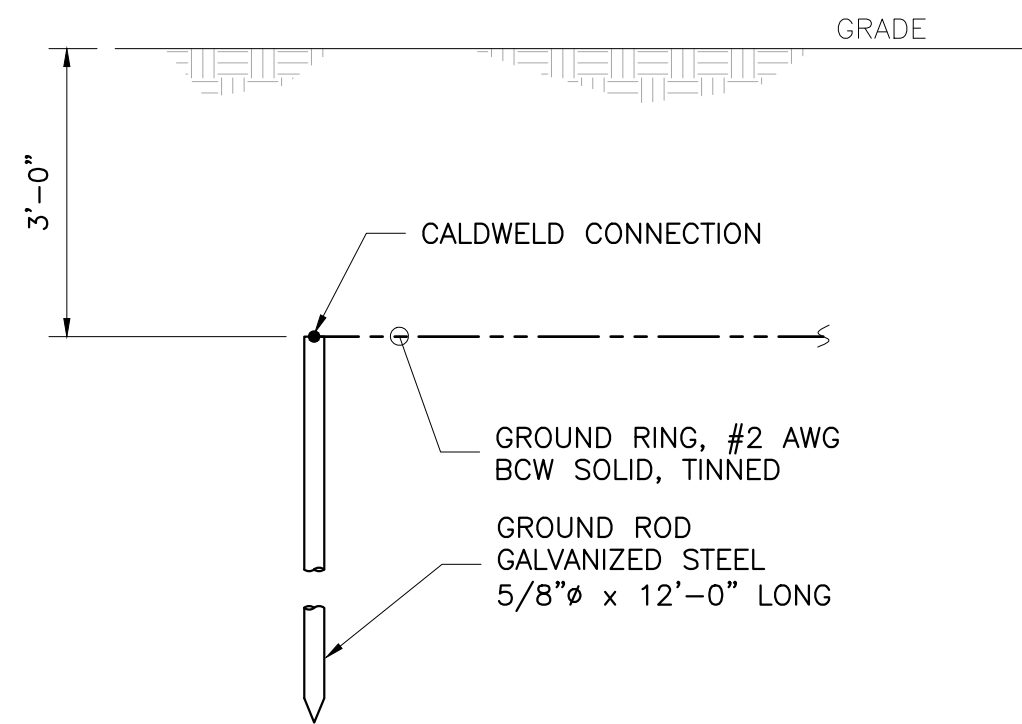
**2CN9311C**  
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**CROWN BU #816658**  
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**BELLEFONTE, PA 16823**

**SHEET NO. 13 OF 14**

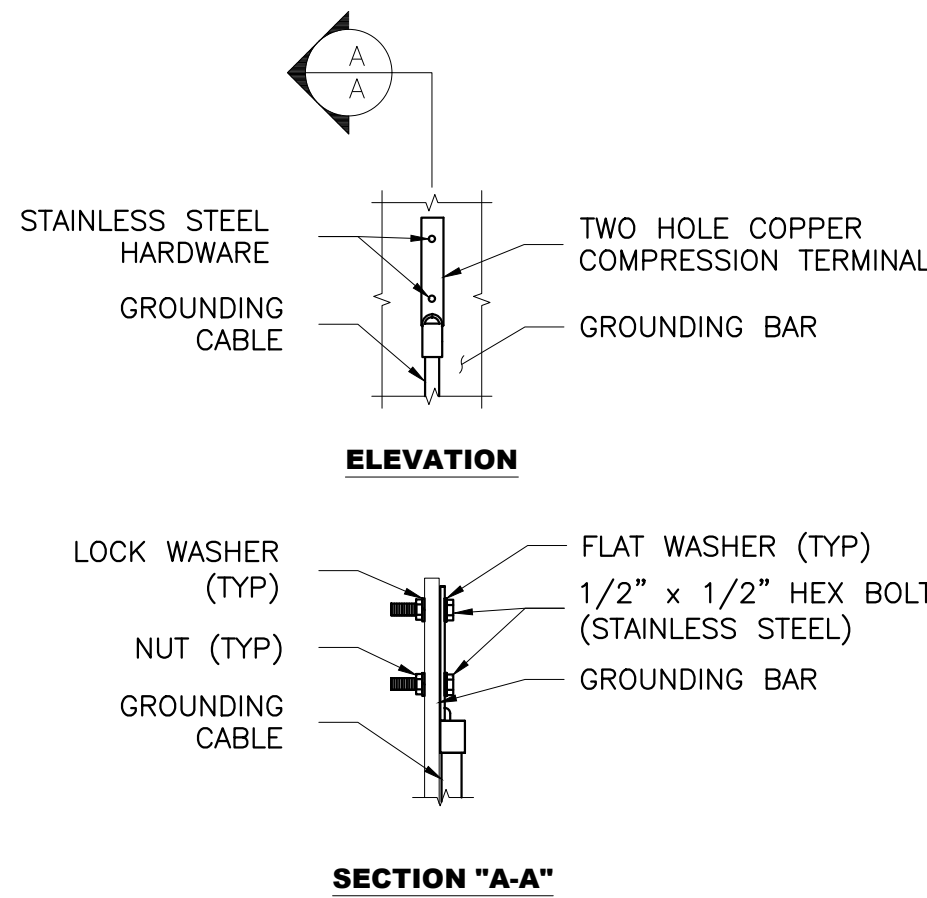




**1 GROUND BAR DETAIL**  
SCALE: NOT TO SCALE

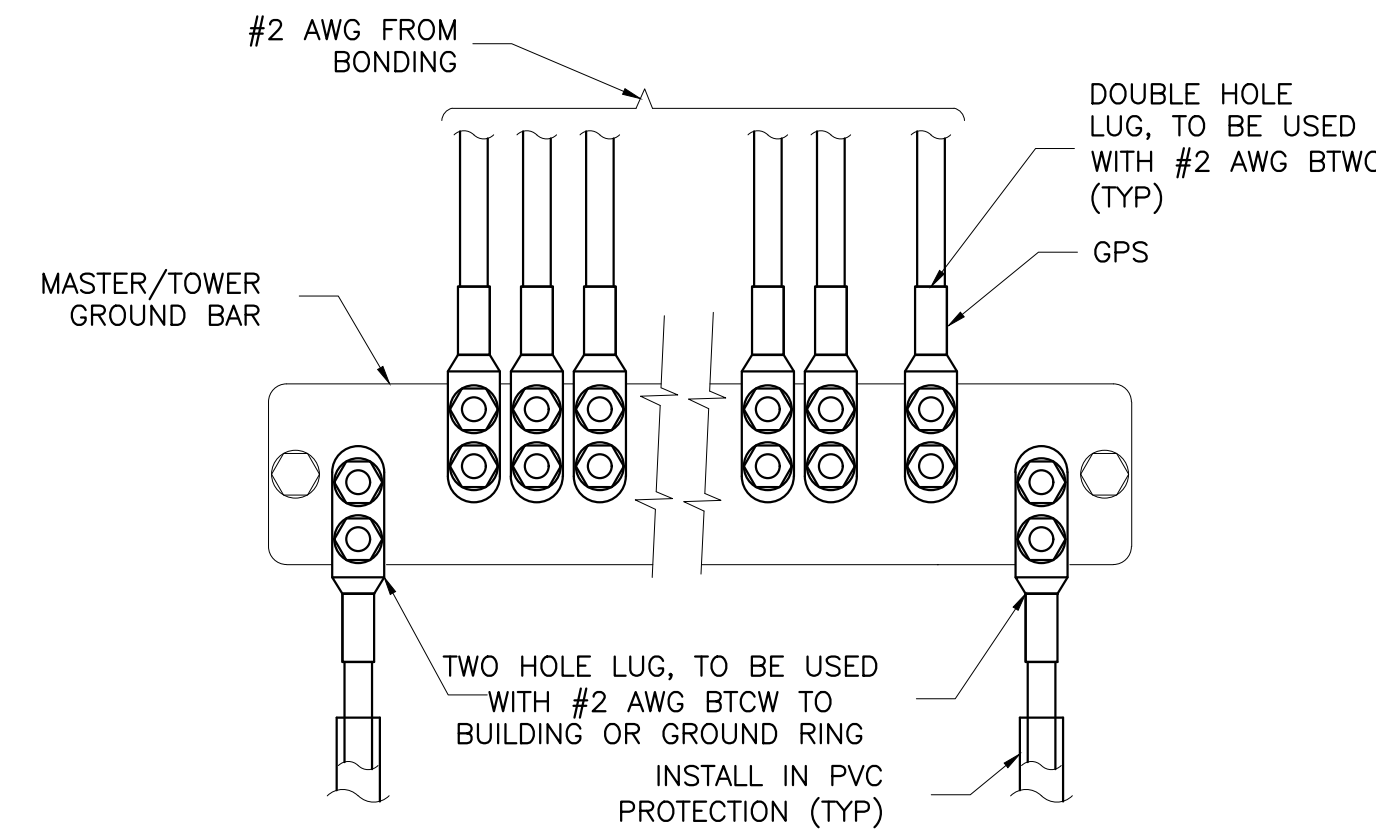


**2 GROUND ROD DETAIL**  
SCALE: NOT TO SCALE

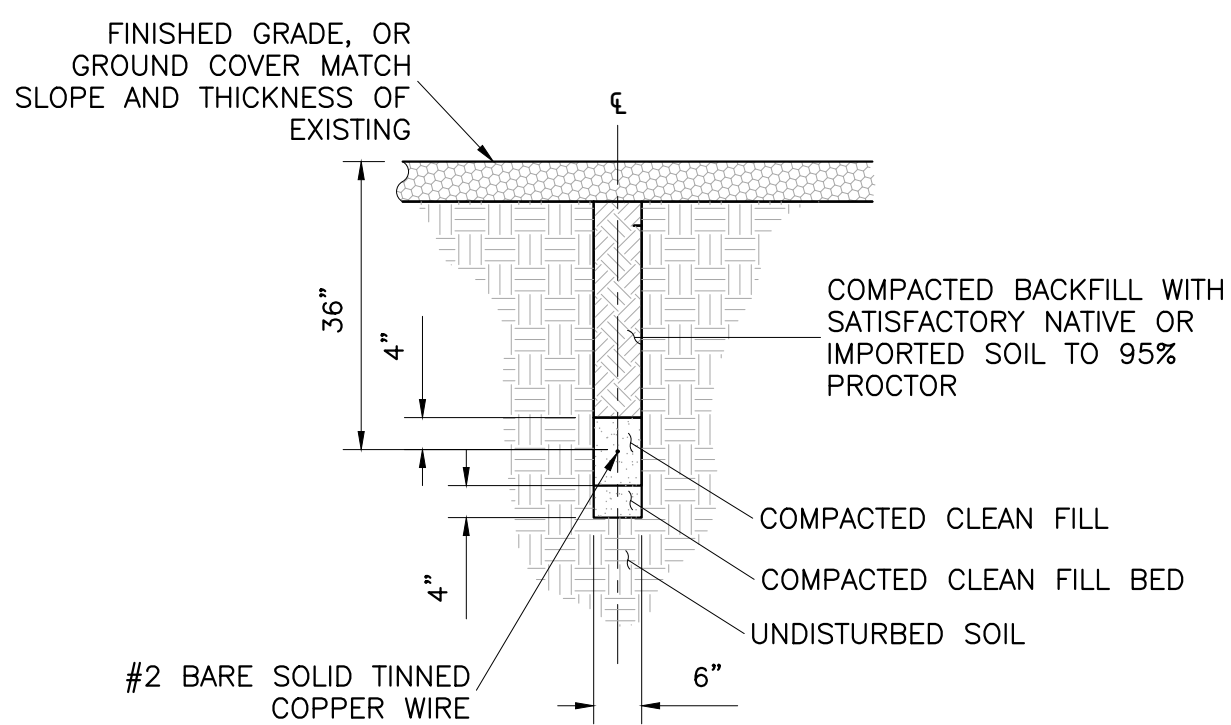


- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
  - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
  - EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM, NO INSULATION ALLOWED WITHIN THE COMPRESSION TERMINAL (TYP)

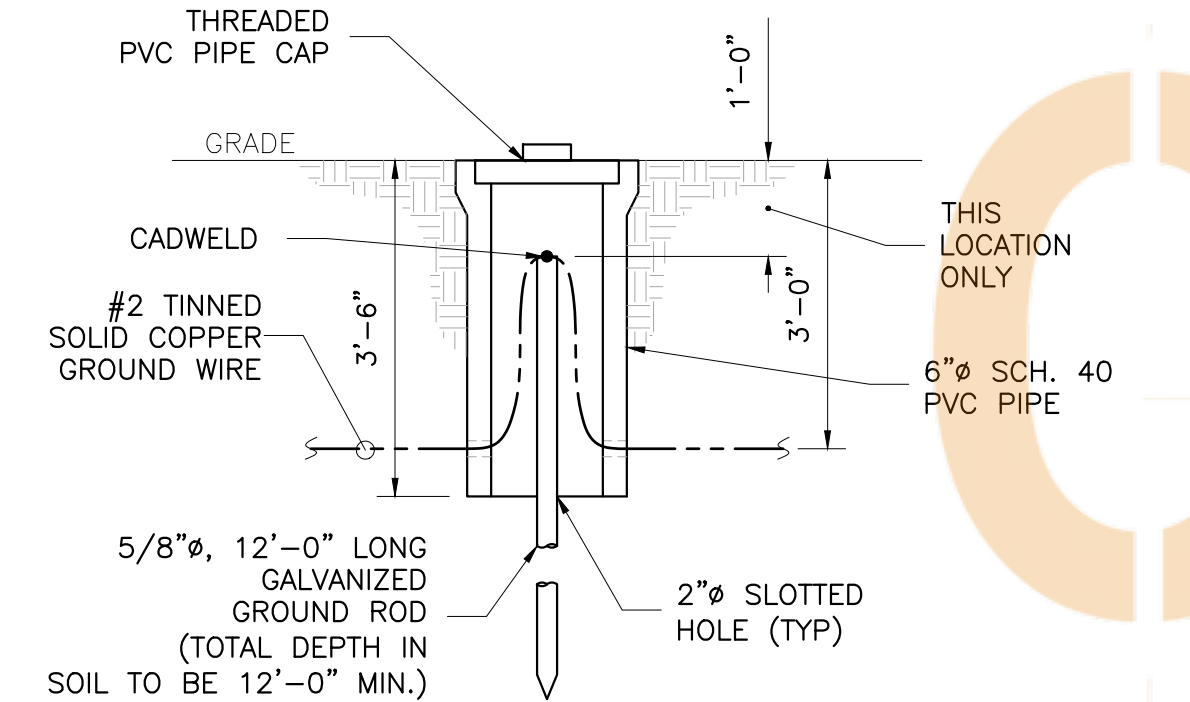
**3 GROUND BAR CONNECTION DETAIL**  
SCALE: NOT TO SCALE



**4 GROUNDING @ GROUND BAR DETAIL**  
SCALE: NOT TO SCALE



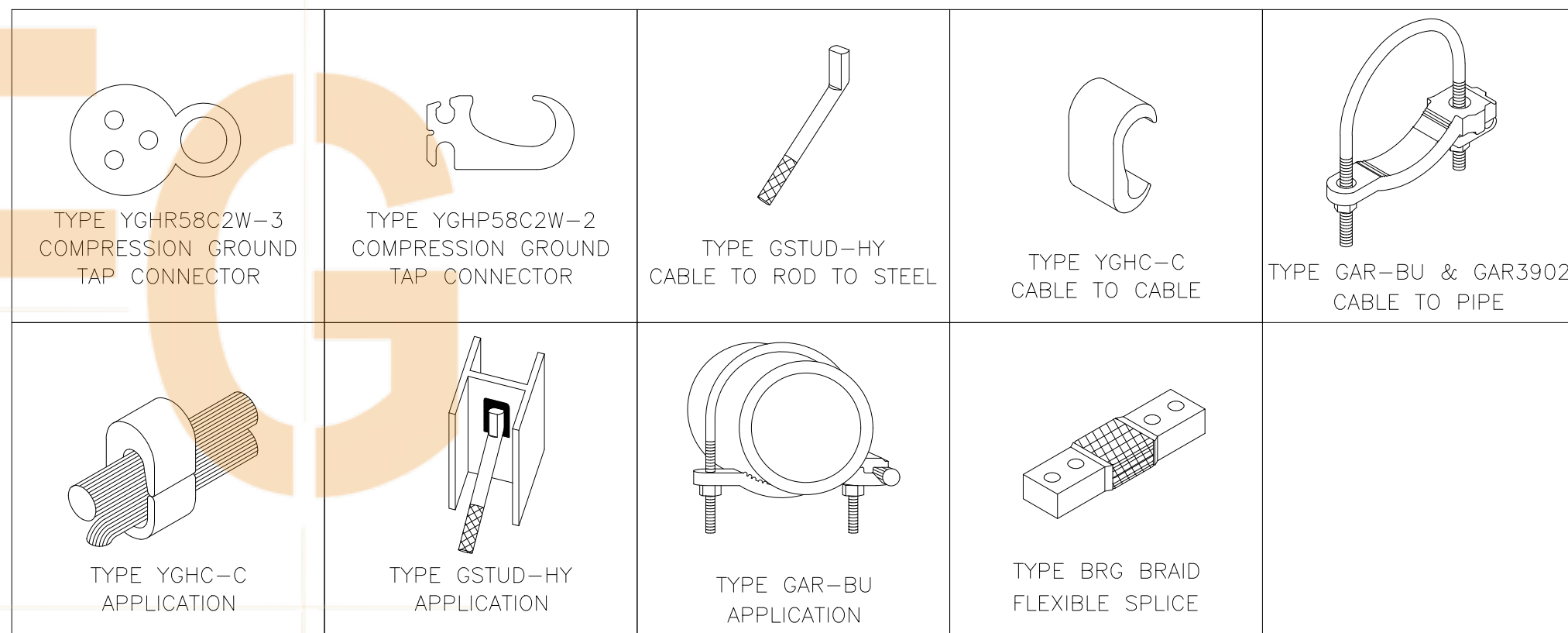
**5 GROUND TRENCH DETAIL**  
SCALE: NOT TO SCALE



**6 GROUND ROD WITH ACCESS DETAIL**  
SCALE: NOT TO SCALE

### GROUND BAR NOTE

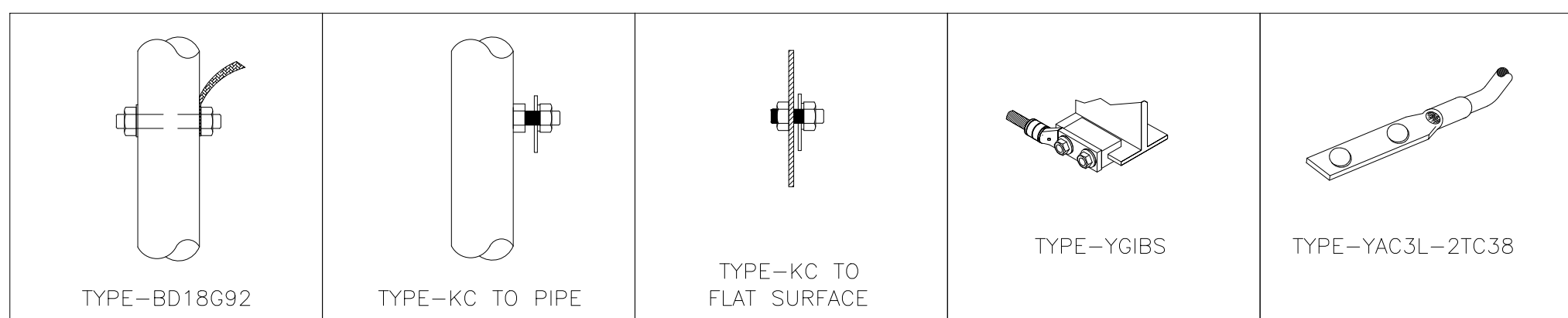
ALL GROUND LEVEL GROUND BARS TO BE GALVANIZED STEEL (NO COPPER)



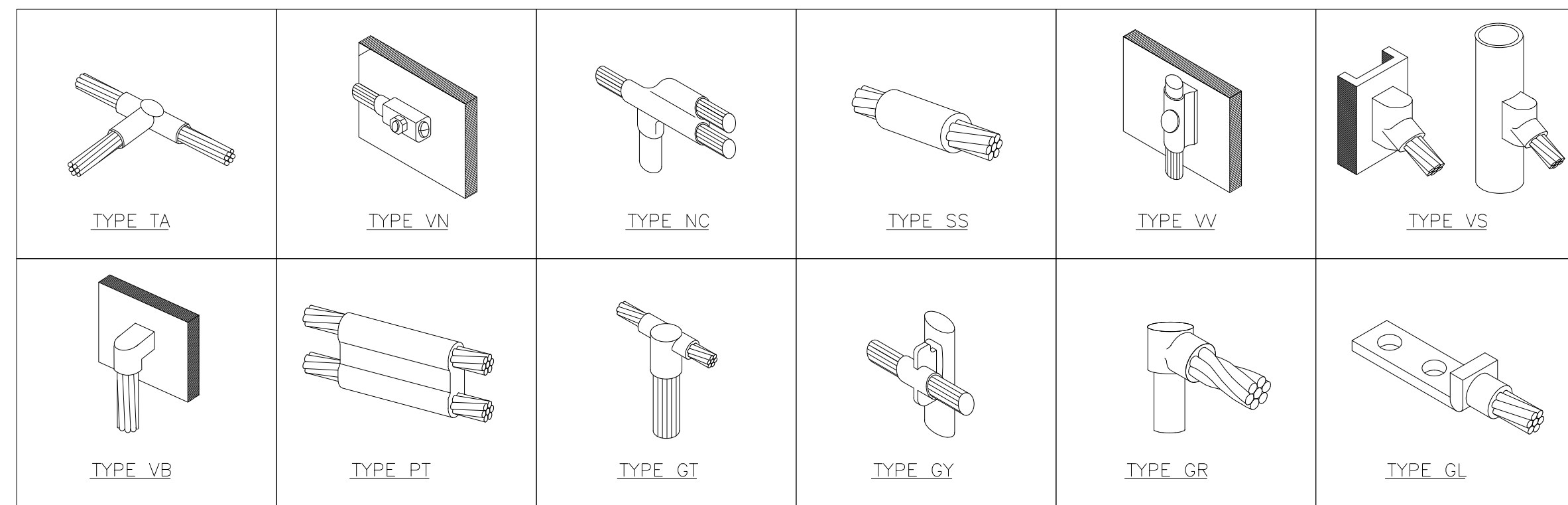
**9 BURNDY GROUNDING PRODUCTS**  
SCALE: NOT TO SCALE

TERMINATION TYPES: A. MECHANICAL COMPRESSION LUG B. DOUBLE BARREL COMPRESSION CONNECTOR C. EXOTHERMIC TERMINATION D. BEAM CLAMP		SOLID #2 TINNED COPPER		#6 GROUND LEAD		#2/0 SOLID GROUNDING ELECTRODE CONDUCTOR		MASTER GROUND BAR		STRUCTURAL OR TOWER STEEL		BLDG SERVICE RMTIR OR GROUND RING		GROUND ROD	
		B	OR C	B	OR C	C	A, C, OR D	A	A, C, OR D	A	A, C, OR D	A	A, C, OR D	C	C
	SOLID #2 TINNED COPPER	B	OR C	B	OR C			C	A, C, OR D						
	#6 GROUND LEAD	B	OR C					A	A, C, OR D						
	#2/0 SOLID GROUNDING ELECTRODE CONDUCTOR							A	A, C, OR D			A			
	MASTER GROUND BAR	C		A		A									
	STRUCTURAL OR TOWER STEEL	A, C, OR D		A, C, OR D		A, C, OR D									
	GROUND RING	C				C								C	

**7 GROUNDING TERMINATION MATRIX**  
SCALE: NOT TO SCALE



**8 BURNDY GROUNDING DETAILS**  
SCALE: NOT TO SCALE



**10 CADWELD DETAILS**  
SCALE: NOT TO SCALE

**T-Mobile**  
NORTHEAST, LLC  
CENTRAL PA  
T-MOBILE NORTHEAST LLC  
CENTRAL PA  
250 GRANITE RUN DRIVE  
LANCASTER, PENNSYLVANIA 17601

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<b>CHECKED BY:</b>	SP
<b>SCALE:</b>	NOTED
<b>JOB NO:</b>	19E0095.001

**DRAWING TITLE:**

## GROUNDING DETAILS

**DRAWING SHEET:**

**G-2**

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