T-MOBILE SITE #
A5P0093A

T-MOBILE PROJECT ID #
A5P0093A-0002434232

T-MOBILE SITE NAME
CITY OF WILLARD

NATIONAL HARDENING PROJECT

SITE ADDRESS
519 E. JACKSON
WILLARD, MO 65781

FACILITY OWNER ID
521 EAST JACKSON

SCOPE OF WORK

THE SCOPE OF WORK CONSISTS OF:

1. INSTALLATION OF NEW 48KW GENERAC RD048 GENERATOR W/ 240 GALLON DIESEL TANK.
2. INSTALLATION OF NEW AUTOMATIC TRANSFER SWITCH.
3. INSTALLATION OF NEW 4'-0" X 9'-6" CONCRETE PAD.
4. INSTALLATION OF (1) NEW 10 LB ABC FIRE EXTINGUISHER INSIDE WEATHERPROOF CABINET
5. INSTALLATION OF NEW CONDUITS FOR POWER & COMMUNICATION FOR PROPOSED GENERATOR & AUTOMATIC TRANSFER SWITCH.
6. INSTALLATION OF (1) NEW 20 AMP 1-POLE BREAKER FOR GENERATOR BLOCK HEATER & LABEL "GEN GFCI"
7. REMOVAL OF EXISTING CHAIN-LINK FENCE SECTION.
8. INSTALLATION OF NEW CHAIN-LINK W/ DOUBLE GATE EXPANSION.

DRIVING DIRECTIONS

DRIVING DIRECTIONS FROM SPRINGFIELD-BRANSON NATIONAL AIRPORT (SGF)
2300 N AIRPORT BLVD, SPRINGFIELD, MO 65802

1. HEAD EAST ON N AIRPORT BLVD TOWARD CELL LOT RD 0.1 MI
2. TURN RIGHT ONTO CELL LOT RD 0.1 MI
3. TURN RIGHT 0.4 MI
4. TURN RIGHT ONTO W DIVISION ST 0.3 MI
5. AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO STATE HWY EE W/N KAYLOR RD CONTINUE TO FOLLOW STATE HWY EE W 1.4 MI
6. TURN RIGHT ONTO N FARM RD 103 2.4 MI
7. CONTINUE ONTO FARM TO MARKET RD RD 103/S HUNT RD
8. CONTINUE TO FOLLOW S HUNT RD 1.1 MI
9. AT THE TRAFFIC CIRCLE, TAKE THE 3RD EXIT ONTO US-160 W 0.7 MI
10. KEEP RIGHT TO CONTINUE TOWARD E JACKSON ST 233 FT
11. MERGE ONTO E JACKSON ST 240 FT
12. TURN RIGHT AFTER GREAT SOUTHERN BANK (ON THE LEFT) 305 FT
13. TURN LEFT 69 FT

DESTINATION WILL BE ON THE LEFT
TOTAL TRAVEL ESTIMATE: 6.7 MI, 11 MINS

SHEET INDEX

SHEET	DESCRIPTION
T-1	TITLE SHEET
SP-1	SITE NOTES
SP-2	GENERAL NOTES & SPECIFICATIONS
A-1	SITE PLAN
A-1A	EQUIPMENT LAYOUT
A-2	GENERATOR ELEVATION
A-3	SIGNAGE
A-4	CHAIN-LINK FENCE DETAILS
A-5	ARCHITECTURAL & CIVIL DETAILS
S-1	CONCRETE PAD DETAILS
E-1	UTILITY PLAN AND DETAILS
E-1A	ONE LINE DIAGRAM
E-2	ALARM SCHEDULE
EG-1	GROUNDING DETAILS
EG-2	GROUNDING DETAILS
SPEC-1	GENERATOR SPECIFICATIONS
SPEC-2	GENERATOR SPECIFICATIONS
SPEC-3	GENERATOR SPECIFICATIONS
SPEC-4	GENERATOR SPECIFICATIONS
SPEC-5	GENERATOR SPECIFICATIONS
SPEC-6	ATS SPECIFICATIONS
SPEC-7	ATS SPECIFICATIONS

AERIAL MAP

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE 2018
2. INTERNATIONAL RESIDENTIAL CODE 2018
3. MISSOURI PLUMBING CODE 2018
4. MISSOURI FUEL GAS CODE 2018
5. MISSOURI FIRE CODE 2018
6. MISSOURI MECHANICAL CODE 2018
7. INTERNATIONAL EXISTING BUILDING CODE 2018
8. INTERNATIONAL ENERGY CONSERVATION CODE 2012.
9. NATIONAL ELECTRICAL CODE (NEC) 2017
10. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
11. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION
12. TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL TOWER AND ANTENNA SUPPORTING STRUCTURES
13. TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

GENERAL NOTES

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

FOR SITES WHERE A CRANE IS NECESSARY, THE CONTRACTOR SHALL CONFIRM AN UNOBSTRUCTED ROUTE FOR THE CRANE FROM PUBLIC ROAD TO TOWER SITE PRIOR TO CONSTRUCTION. NO AERIAL OBSTRUCTIONS UNDER FIFTEEN FEET ABOVE GRADE, INCLUDING AERIAL UTILITY LINES, ARE ALLOWED ALONG SAID CRANE ROUTE.

GC SHALL CONTACT THE A&E FIRM PRIOR TO BIDWALK AND CONSTRUCTION START TO CONFIRM THAT DRAWINGS ARE THE MOST RECENT SET.

PROFESSIONAL LICENSURE

I CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF THE GOVERNING LOCAL BUILDING CODE.

LICENSED PROFESSIONAL
LICENSE # PE-2024012766

EXPIRES:12/31/26 SIGNED:05/15/25

UTILITY LOCATE SERVICE

811
Know what's below.
Call 811 before you dig.

PROJECT CONTACTS

APPLICANT:	T- MOBILE 1400 OPUS PLACE DOWNERS GROVE, IL 60515 MAIN: (773) 444-5400	ENGINEERING CONTACT:	CONCORDIA WIRELESS GM SADAT, PE PHONE: (847) 708-7500 FAX: (847) 589-0643
FACILITY OWNER:	CITY OF WILLARD	SITE ACQUISITION CONTACT:	CONCORDIA WIRELESS ANN KOOYMAN PHONE: (224) 230-7191
LANDLORD EMERGENCY NOC #:	(417) 742-3033		

SITE INFORMATION

LATITUDE:	N 37° 17' 57.5" / 37.299314 (NAD 83)
LONGITUDE:	W 93° 25' 04.9" / -93.418025 (NAD 83)
SITE TYPE:	WATER TANK
JURISDICTION:	CITY OF WILLARD
COUNTY:	GREENE COUNTY
PIN:	880725201034

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

REV	DESCRIPTION	DATE	INITIALS
1	PCD'S	04/21/25	ES/VL
2	FCD'S	05/15/25	BK

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

Ghazwan Sadat
Digitally signed by Ghazwan Sadat
Date: 2025.05.20 13:43:02 -05'00'

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

NEW ANTENNA
EXISTING ANTENNA
GROUND ROD
GROUND BUS BAR
MECHANICAL GRND. CONN.
CAD WELD
GROUND ACCESS WELL
ELECTRIC BOX
TELEPHONE BOX
LIGHT POLE
FND. MONUMENT
SPOT ELEVATION
SET POINT
REVISION
GRID REFERENCE
DETAIL REFERENCE
ELEVATION REFERENCE

GROUT OR PLASTER
(E) BRICK
(E) MASONRY
CONCRETE
EARTH
GRAVEL
PLYWOOD
SAND
WOOD CONT.
WOOD BLOCKING
STEEL
CENTERLINE
PROPERTY/LEASE LINE
MATCH LINE
WORK POINT
GROUND CONDUCTOR
BELOW GRADE TELEPHONE CONDUIT
BELOW GRADE ELECTRICAL CONDUIT
COAXIAL CABLE
OVERHEAD ELECTRIC/TELEPHONE CONDUCTORS
CHAIN LINK FENCING

1 PROJECT SYMBOLS
SCALE: NTS

ABV.	ABOVE
ADD'L	ADDITIONAL
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALUM.	ALUMINUM
ALT.	ALTERNATE
ANT.	ANTENNA
APPROX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URAL)
ATS	AUTOMATIC TRANSFER SWITCH
AWG.	AMERICAN WIRE GAUGE
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BTCW.	BARE TINNED COPPER WIRE
B.O.F.	BOTTOM OF FOOTING
B/U	BACK-UP CABINET
CAB.	CABINET
CANT.	CANTILEVER(ED)
C.I.P.	CAST IN PLACE
CLG.	CEILING
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION(OR)
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
DBL.	DOUBLE
DEPT.	DEPARTMENT
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DWG.	DRAWING(S)
DWL.	DOWEL(S)
EA.	EACH
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMT.	ELECTRICAL METALLIC TUBING
ENG.	ENGINEER
EQ.	EQUAL
EXP.	EXPANSION
EXIST.(E)	EXISTING
EXT.	EXTERIOR
FAB.	FABRICATION(OR)
F.F.	FINISH FLOOR
F.G.	FINISH GRADE
FIN.	FINISH(ED)
FLR.	FLOOR
FDN.	FOUNDATION
F.O.C.	FACE OF CONCRETE
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.O.W.	FACE OF WALL
F.S.	FINISH SURFACE
FT.(')	FOOT(FEET)
FTG.	FOOTING
G.	GROWTH (CABINET)
GA.	GAUGE
GI.	GALVANIZE(D)
G.F.I.	GROUND FAULT CIRCUIT INTERRUPTER
GPS	GLOBAL POSITIONING SYSTEM
GND.	GROUND
HGR.	HANGER
HT.	HEIGHT
ICGB.	ISOLATED COPPER GROUND BUS
IN.(")	INCH(ES)
INT.	INTERIOR
LB.(#)	POUND(S)
L.F.	LINEAR FEET (FOOT)
L.	LONG(ITUDINAL)
MAS.	MASONRY
MAX.	MAXIMUM
MDCMC	METRICOM DESIGNATED CONSTRUCTION MANAGEMENT & CONTRACTING
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTL.	METAL
(N)	NEW
NO.(#)	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPNG.	OPENING
PCS	PERSONAL COMMUNICATION SERVICES
PLY.	PLYWOOD
PRC	PRIMARY RADIO CABINET
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PWR.	POWER (CABINET)
QTY.	QUANTITY
RAD.(R)	RADIUS
REF.	REFERENCE
REINF.	REINFORCEMENT(ING)
REQ'D.	REQUIRED
RGS.	RIGID GALVANIZED STEEL
SCH.	SCHEDULE
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION(S)
SQ.	SQUARE
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
TEMP.	TEMPORARY
THK.	THICK(NESS)
T.O.A.	TOP OF ANTENNA
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FOUNDATION
T.O.P.	TOP OF PLATE (PARAPET)
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.G.	UNDER GROUND
U.L.	UNDERWRITERS LABORATORY
U.N.O.	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
W	WIDE(WIDTH)
W/	WITH
WAP.	WIRED ACCESSED POINT
WCS	WIRELESS COMMUNICATION SERVICE
WT.	WEIGHT
℄	CENTERLINE
ℙ	PLATE

2 PROJECT ABBREVIATIONS
SCALE: NTS

1. REPRESENTATIVES OF THE OWNER MUST BE NOTIFIED AT LEAST TWO FULL DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
3. DO NOT SCALE BUILDING DIMENSIONS FROM DRAWINGS.
4. ANY DRAIN AND/OR FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE RETURNED TO ITS ORIGINAL CONDITION PRIOR TO COMPLETION OF WORK. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-CONSTRUCTED DRAWINGS AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
5. ALL 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 ALL EXISTING 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 EXISTING UTILITIES.
6. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHOULD BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE. CONTRACTOR SHALL CALL PUBLIC/PRIVATE UTILITY LOCATE FOR UTILITY LOCATIONS 48 HOURS PRIOR TO START OF CONSTRUCTION.
7. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
8. THE BUILDING DEPARTMENT ISSUING THE BUILDING PERMIT SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF WORK OR AS STIPULATED BY THE CODE ENFORCEMENT OFFICIAL HAVING JURISDICTION.
9. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
10. ALL EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERLY LAID BACK OR BRACED IN ACCORDANCE WITH CORRECT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
11. STRUCTURAL FILLS SUPPORTING PAVEMENTS SHALL BE COMPACTED TO 100% OF MAXIMUM STANDARD PROCTOR DRY DENSITY.
12. NEW GRADES NOT IN BUILDING AND DRIVEWAY IMPROVEMENT AREA TO BE ACHIEVED BY FILLING WITH APPROVED CLEAN FILL AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY.
13. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS. THE LIFTS THICKNESS SHOULD NOT EXCEED THAT WHICH CAN BE PROPERLY COMPACTED THROUGHOUT ITS ENTIRE DEPTH WITH THE EQUIPMENT AVAILABLE.
14. ANY FILLS PLACED ON EXISTING SLOPES THAT ARE STEEPER THAN 10 HORIZONTAL TO 1 VERTICAL SHALL BE PROPERLY BENCHED INTO THE EXISTING SLOPE AS DIRECTED BY A GEOTECHNICAL ENGINEER.
15. THE GRADES WITHIN THE FENCED-IN AREA ARE TO BE ACHIEVED BY COMPACTING CLEAN FILL TO A DENSITY OF 90% OF STANDARD PROCTOR COVERING THE AREA WITH 6 MIL. VISQUENE (1' OVERLAP AT SEAMS) FOR WEED SUPPRESSION, THEN ACHIEVING FINISH GRADE BY ADDING 6" OF 3/4" CRUSHED STONE-NO FINES.
16. CONTRACTOR SHALL CLEAN ENTIRE SITE AFTER CONSTRUCTION SO THAT NO PAPERS, TRASH, WEEDS, BRUSH OR ANY OTHER DEPOSITS WILL REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE DISPOSED OF OFF-SITE.
17. ALL TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH THE IMPROVEMENTS SHALL BE PROTECTED.
18. GC TO HIRE PUBLIC & PRIVATE LOCATE SERVICE IN ORDER TO LOCATE AND PROTECT ANY AND ALL SURFACE UTILITIES. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES.
19. THESE PLANS MAY NOT CONTAIN OR REVEAL ALL SUBSURFACE UTILITIES; GC IS RESPONSIBLE OF LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION.
20. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL:
    A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
    B. AC/TELCO INTERFACE BOX(PPC)
    C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
    D. TOWERS, MONOPOLE
    E. TOWER LIGHTING
    F. GENERATORS & LIQUID PROPANE TANK
    G. ANTENNA STANDARD BRACKETS, FRAMES, AND PIPES FOR MOUNTING.
    H. ANTENNAS (INSTALLED BY OTHERS)
    I. TRANSMISSION LINE
    J. TRANSMISSION LINE JUMPERS
    K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
    L. TRANSMISSION LINE GROUND KITS
    M. HANGERS
    N. HOISTING GRIPS
    O. BTS EQUIPMENT
21. CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING: THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
22. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATED, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING UP.
23. ALL EQUIPMENT FURNISHED AND WORK PERFORMED UNDER THE CONTRACT DOCUMENTS SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIALS OR WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS NOTED OTHERWISE. ANY FAILURE OF EQUIPMENT OR WORK DUE TO DEFECTS IN MATERIALS OR WORKMANSHIP SHALL BE CORRECTED BY THE CONTRACTOR AT NO COST TO THE OWNER.
24. ALL WORK, MATERIAL, AND EQUIPMENT SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITIONS AND INTERIM AMENDMENTS OF THE NATIONAL ELECTRICAL CODE (NEC). NATIONAL ELECTRICAL SAFETY CODE, OSHA, AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES. ALL 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.

3 GENERAL NOTES
SCALE: NTS

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781S

SHEET TITLE:
SITE NOTES

SHEET NUMBER:
SP-1

GENERAL NOTES:

1. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS 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.

2. THE CONTRACTOR SHALL SUPPORT, BRACE AND SECURE EXISTING STRUCTURE AS REQUIRED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION.

3. THE CONTRACTOR SHALL NOT ALLOW OR CAUSE ANY OF THE WORK TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED BY THE GOVERNING AUTHORITIES. ANY 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.

4. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS, AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ARCHITECT/ENGINEER AND OWNER (T-MOBILE) ASSUME NO RESPONSIBILITY WHATEVER AS TO THE SFOFICIENCY 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 ALL 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.

5. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY 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.

6. CONTRACTORS SHALL CLEAN ENTIRE SITE EACH DAY AFTER CONSTRUCTION SUCH THAT NO PAPERS, TRASH, DEBRIS, WEEDS, BRUSH, OR ANY OTHER DEPOSITS REMAIN. ALL MATERIALS COLLECTED DURING CLEANING OPERATIONS SHALL BE PROPERLY DISPOSED OF OFF-SITE BY THE CONTRACTOR.

7. ALL SITE WORK SHALL BE CAREFULLY COORDINATED BY THE CONTRACTOR WITH LOCAL GAS, ELECTRIC, TELEPHONE, AND ANY OTHER UTILITY COMPANIES HAVING JURISDICTION OVER THIS LOCATION.

8. DURING CONSTRUCTION, THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE UTILITIES OF THE BUILDING/SITE WITHOUT INTERRUPTION. SHOULD IT BE NECESSARY TO INTERRUPT ANY SERVICE OR UTILITY, THE CONTRACTOR SHALL SECURE PERMISSION IN WRITING FROM THE BUILDING/PROPERTY OWNER FOR SUCH INTERRUPTION, AT LEAST 72 HOURS IN ADVANCE. ANY INTERRUPTION SHALL BE MADE WITH A MINIMUM AMOUNT OF INCONVENIENCE TO THE BUILDING/PROPERTY OWNER AND ANY SUCH SHUTDOWN TIME SHALL BE COORDINATED WITH THE BUILDING/PROPERTY OWNER.

9. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION.

10. CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS BUILT DRAWINGS TO T-MOBILE'S PROJECT ENGINEER.

11. GC WILL NOT START THE CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE CON PACKAGE AND HAVE A PRE CON WALK WITH THE PROJECT MANAGER.

DIVISION 2 - SITE WORK:

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
   ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY 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 LIMITED TO:
   - A. FALL PROTECTION
   - B. CONFINED SPACE
   - C. ELECTRICAL SAFETY
   - D. TRENCHING AND EXCAVATION

2. REMOVE FROM SITE/OWNER'S PROPERTY ALL WASTE MATERIALS, UNUSED EXCAVATED MATERIAL INCLUDING MATERIAL CLASSIFIED UNSATISFACTORY, CONTAMINATED OR DANGEROUS TRASH AND DEBRIS, AND DISPOSE OF IN A LEGAL MANNER.

3. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.

4. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH

5. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, AS REQUIRED DURING CONSTRUCTION.

   CONTRACTOR IS RESPONSIBLE FOR LAYOUT AND CONSTRUCTION STAKING. CONTRACTOR SHALL ESTABLISH GRADE AND LINE STAKES PRIOR TO CONSTRUCTION.

   CONCORDIA DOES NOT GUARANTEE OR WARRANT THAT THE AFOREMENTIONED EASEMENTS ARE SFOFICIENT FOR CONSTRUCTION TRAFFIC. GC SHALL CONSULT WITH A T-MOBILE REPRESENTATIVE AND LANDLORD WITH EXACT LOGISTICS TO FACILITATE CONTRACTIBILITY OF THE SITE AND DELIVERY OF CRITICAL MATERIALS SUCH AS THE TOWER, STEEL, CONCRETE AND CRANES TO THE PROPOSED LEASE AREA. GC SHALL RESTORE SITE TO ORIGINAL CONDITIONS AND REPLACE ANY AND ALL DISTURBED TREES OR LANDSCAPING.

   CONCORDIA IS NOT RESPONSIBLE FOR THE MAINTENANCE AND/OR OPERATIONAL FEASIBILITY.

   SCOPE OF WORK FOR THESE PLANS DOES NOT INVOLVE VALUE ENGINEERING AS WELL AS MAINTAINABILITY OPERATIONS OF THE SITE, ACCESS OR UTILITIES.

DIVISION 3 - CONCRETE:

1. MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI AT 28 DAYS WHEN TESTED IN ACCORDANCE WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS METHODS STANDARDS ASTM C172, ASTM C31 AND ASTM C39 UNLESS OTHERWISE NOTED.

2. CONCRETE FOR ALL FOUNDATIONS: 540 LBS PER CUBIC YARD OF CONCRETE MINIMUM CEMENT CONTENT FOR 1-INCH MAXIMUM SIZE AGGREGATE, SLUMP RANGE 3 INCHES TO 5 INCHES, TOTAL AIR CONTENT 4 PERCENT TO 7 PERCENT BY VOLUME. AIR ENTRAINING ADMIXTURE REQUIRED TO CONTROL TOTAL AIR CONTENT, WATER REDUCING ADMIXTURE PERMITTED TO OBTAIN SLUMP OVER 3-INCHES.

3. ALL CONCRETE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI 318) BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND (ACI 301) STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE.

4. REBARS SHALL BE ASTM A-615 DEFORMED TYPE WITH MINIMUM YIELD STRENGTH OF 60,000 PSI (40,000 PSI GRADE MAY BE USED FOR TIES & STIRRUPS).

   WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185.

5. DETAILING SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE OF DETAILING REINFORCED CONCRETE STRUCTURES (ACI STD-315 LATEST EDITION).

6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".UNLESS OTHERWISE NOTED.

7. REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SECURED IN POSITION. LOCATION OF REINFORCEMENT SHALL BE INDICATED ON THE DRAWINGS. THE FOLLOWING MINIMUM COVER (INCHES) FOR REINFORCEMENT SHALL BE PROVIDED, EXCEPT AS NOTED ON DRAWINGS.

   MINIMUM COVER (INCHES)
   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ... 3"
   EXPOSED TO EARTH OR WEATHER:
   #6 THROUGH #18 ... 2"
   #5 BAR AND SMALLER ... 1-1/2"

8. TESTS
   CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER AS THE WORK PROGRESSES. FAILURE TO DETECT ANY DEFECTIVE WORK OR MATERIAL SHALL NOT IN ANY WAY PREVENT LATER REJECTION WHEN SUCH DEFECT IS DISCOVERED NOR SHALL IT OBLIGATE THE ENGINEER FOR FINAL ACCEPTANCE.

   A. FIVE CONCRETE TEST CYLINDERS SHALL BE TAKEN OF THE TOWER PIER FOUNDATION. TWO SHALL BE TESTED @ THREE DAYS, TWO @ TWENTY-EIGHT DAYS. THE FIFTH CYLINDER SHALL BE KEPT SEPARATELY, IF REQUIRED TO BE USED IN THE FUTURE.

   B. ONE ADDITIONAL TEST CYLINDER SHALL BE TAKEN DURING COLD WEATHER AND CURED ON SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.

   C. ONE SLUMP TEST SHALL BE TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.

9. PLACING CONCRETE
   A. THE ENGINEER SHALL BE NOTIFIED NOT LESS THAT 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT, UNLESS INSPECTION IS WAIVED IN EACH CASE, PLACING OF CONCRETE SHALL BE PERFORMED ONLY IN THE PRESENCE OF THE ENGINEER. CONCRETE SHALL NOT BE PLACED UNTIL ALL FORMWORK, EMBEDDED PARTS, STEEL REINFORCEMENT, FOUNDATION SURFACES AND JOINTS INVOLVED IN THE PLACING HAVE BEEN APPROVED, AND UNTIL FACILITIES ACCEPTABLE TO THE T-MOBILE REPRESENTATIVE HAVE BEEN PROVIDED AND MADE READY FOR ACCOMPLISHMENT OF THE WORK AS SPECIFIED. CONCRETE MAY NOT BE ORDERED FOR PLACEMENT UNTIL ALL ITEMS HAVE BEEN APPROVED AND T-MOBILE HAS PERFORMED A FINAL INSPECTION AND GIVEN APPROVAL TO START PLACEMENT IN WRITING.

   B. PLACEMENT OF CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301.

10. PROTECTION
    A. IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.

    B. CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.

    C. ALL CONCRETE SHALL BE WATER CURED BY CONTINUOUS (NOT PERIODIC) FINE MIST SPRAYING OR SPRINKLING ALL EXPOSED SURFACES. WATER SHALL BE CLEAN AND FREE FROM ACID, ALKALI, SALTS, OIL SEDIMENT, AND ORGANIC MATTER. SUCCESSFUL CURING SHALL BE OBTAINED BY USE OF AN AMPLE WATER SUPPLY UNDER PRESSURE IN PIPES, WITH ALL NECESSARY APPLIANCES OF SPRINKLERS, AND SPRAYING DEVICES.

ELECTRICAL NOTES:

1. ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTRUAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.

2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF CONCORDIA. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

DIVISION 5:

STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECIFICATIONS AND CODES.

2. PROVIDE STRUCTURAL STEEL AS FOLLOWS:

WIDE FLANGE SHAPES	ASTM A992 GR50
STEEL PIPE	ASTM A53 GR B
STEEL TUBE (HSS)	ASTM A1085 OR A500 GR. C
ANCHOR RODS (THREADED RODS)	ASTM F1554 GR. 50 (U.N.O.)
ALL OTHER STEEL	ASTM A36
ASSUMED EXISTING STEEL GRADE	ASTM A36 (U.N.O.)

3. ALL STRUCTURAL STEEL TO BE STRAIGHT AND FREE OT TWIST. COLUMN BEARING ENDS TO BE TRUE AND SQUARE. ALL COLUMNS TO BE PLUMB AND LEVEL BEARING.

4. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 HOT-DIP GALVANIZED.

5. ALL CONNECTIONS, UNLESS INDICATED OTHERWISE, SHALL BE SIMPLE SHEAR CONNECTIONS UTILIZING A MIN. OF TWO 3/4" DIAMETER A325 HIGH STRENGTH BOLTS IN BEARING TYPE CONNECTIONS. ALL JOINTS SHALL BE SNUG-TIGHTENED.

6. UNLESS NOTED ON THE CONTRACT DRAWINGS, ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR, USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS FOR 100% OF THE UNIFORM LOAD SHOWN IN THE MAXIMUM TOTAL UNIFORM LOAD TABLES 3-6 THRU 3-9 OF THE AISC STEEL CONSTRUCTION MANUAL FOR THE SPAN SHOWN ON THE DRAWING.

7. ALL WELDING ELECTRODES SHALL BE E70XX.

8. ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE, LATEST EDITION, AND SHALL BE PERFORMED BY AWS CERTIFIED WELDERS.

9. THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED, AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER TO REVIEW FOR COMPLIANCE WITH THE DESIGN INTENT PRIOR TO THE START OF FABRICATION AND/OR ERECTION.

10. MINIMUM FILLET WELD SIZE SHALL COMPLY WITH THE AISC REQUIREMENTS, BUT SHALL NOT BE LESS THAN 3/16 INCH, UNLESS NOTED OTHERWISE.

11. ALL PARTIAL PENETRATION WELD SIZES INDICATED DESIGNATE EFFECTIVE THROAT SIZE UNLESS NOTED OTHERWISE.

12. ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES, ESPECIALLY WITH RELATION TO TEMPERATURE DIFFERENTIAL, ERECTION TOLERANCES, AND WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO BEAMS, COLUMNS, OR WALLS.

14. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS AND SHALL BE HOT-DIP GALVANIZED PER ASTM A123.

15. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS, FOR THE WORK OF OTHER TRADES, WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT/ENGINEER.

16. ALL ADDITIONAL STEEL REQUIRED BY THE CONTRACTOR FOR ERECTION PURPOSES AND SITE ACCESS OF STOCKPILED MATERIALS SHALL BE PROVIDED AT NO COST TO THE OWNER. ALL SUCH ADDITIONAL STEEL SHALL BE REMOVED BY THE CONTRACTOR UNLESS APPROVED BY THE OWNER IN WRITING.

17. ALL PLAN DIMENSIONS ARE TO STRUCTURAL STEEL MEMBER CENTERLINES, EXCEPT FOR CHANNELS AND ANGLES. CHANNEL AND ANGLE DIMENSIONS ARE TO THE BACK FACE OF THE WEB.

NON-STRUCTURAL COMPONENT ANCHORAGE NOTES:

MECHANICAL, PLUMBING, COMMUNICATION, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED AND BRACED TO RESIST THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE ASCE 7-16 CHAPTER 13, 26, 29 AND 30 FOR THE LOADS LISTED ABOVE EXCEPT, MECHANICAL AND ELECTRICAL EQUIPMENT IN SEISMIC DESIGN CATEGORY "B" ARE EXEMPT FROM REQUIREMENTS OF CHAPTER 13.

1. PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARDWIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS, OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE INSTALLATION SHOP DRAWINGS.

1. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
2. COMPONENTS WEIGHING LESS THAN 20 POUNDS, AND IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED SHOP DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. THE OWNER'S FIELD INSPECTOR SHALL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

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Concordia
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CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SS

SHEET TITLE:
GENERAL NOTES & SPECIFICATIONS

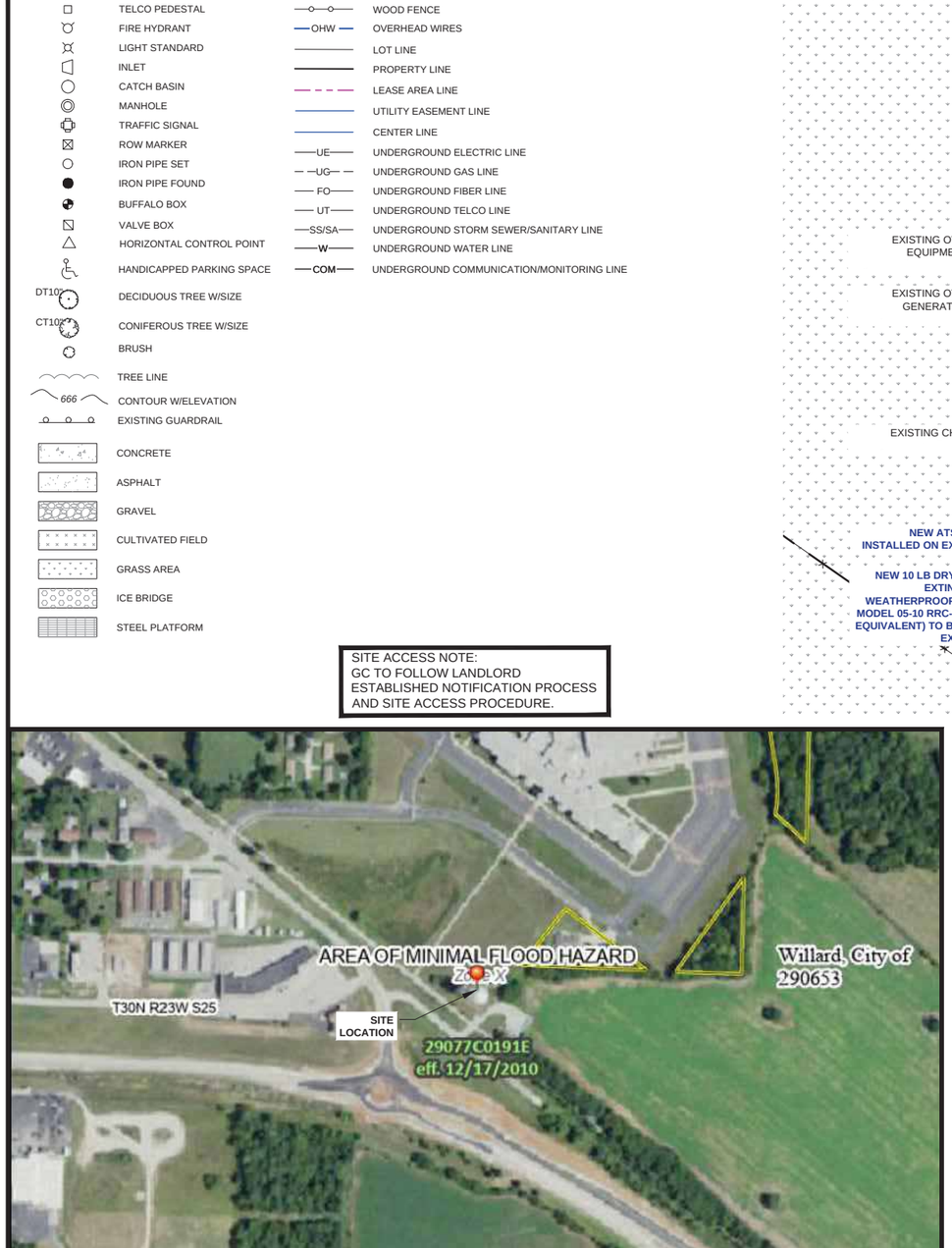
SHEET NUMBER:
SP-2

LEGEND & SYMBOLS

- UTILITY POLE
- SIGN
- TELCO PEDESTAL
- FIRE HYDRANT
- LIGHT STANDARD
- INLET
- CATCH BASIN
- MANHOLE
- TRAFFIC SIGNAL
- ROW MARKER
- IRON PIPE SET
- IRON PIPE FOUND
- BUFFALO BOX
- VALVE BOX
- HORIZONTAL CONTROL POINT
- HANDICAPPED PARKING SPACE
- DT10 DECIDUOUS TREE W/SIZE
- CT10 CONIFEROUS TREE W/SIZE
- BRUSH
- TREE LINE
- 666 CONTOUR W/ELEVATION
- EXISTING GUARDRAIL
- CONCRETE
- ASPHALT
- GRAVEL
- CULTIVATED FIELD
- GRASS AREA
- ICE BRIDGE
- STEEL PLATFORM

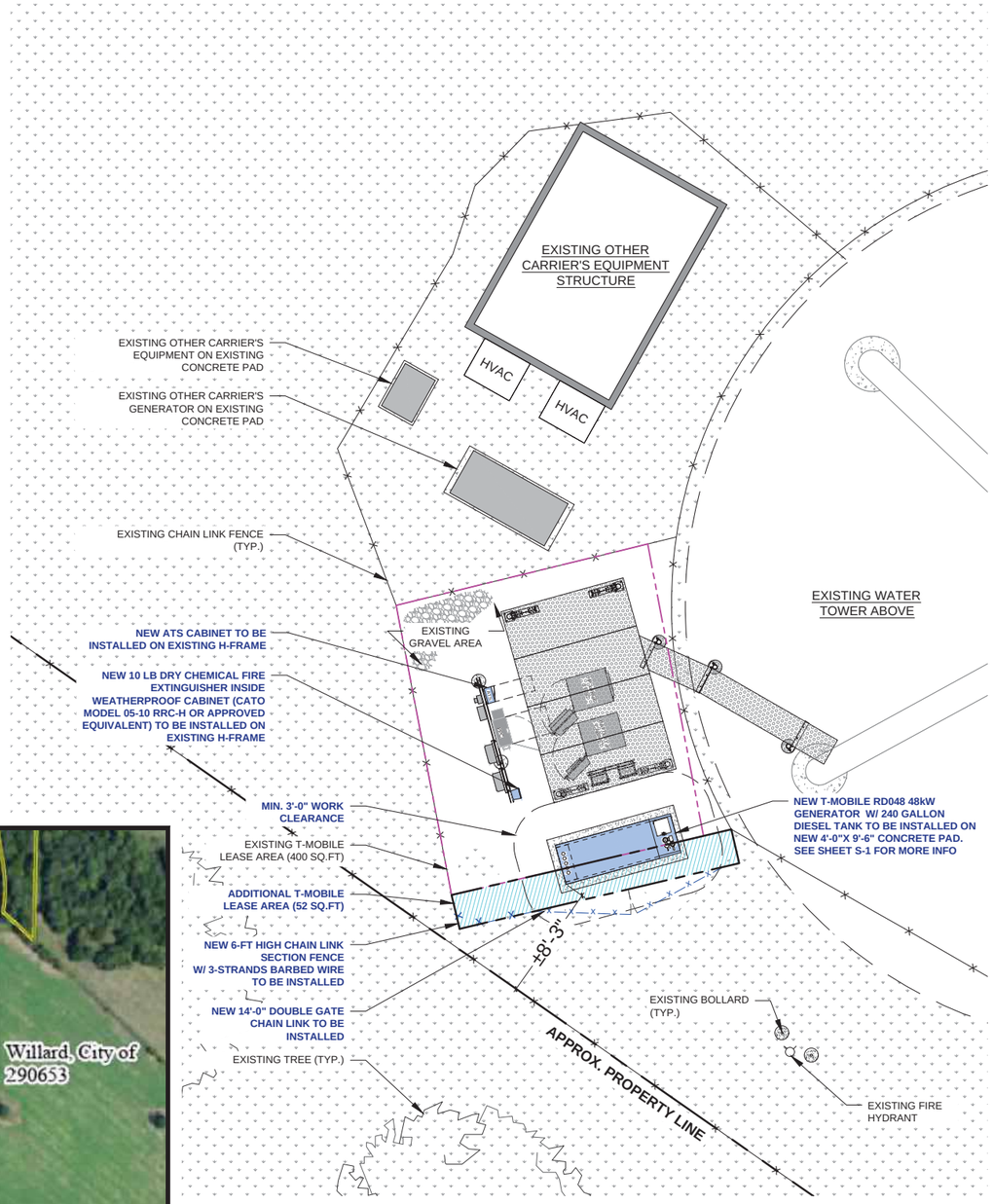
- CHAIN-LINK FENCE
- IRON FENCE
- WOOD FENCE
- OHW OVERHEAD WIRES
- LOT LINE
- PROPERTY LINE
- LEASE AREA LINE
- UTILITY EASEMENT LINE
- CENTER LINE
- UE UNDERGROUND ELECTRIC LINE
- UG UNDERGROUND GAS LINE
- FO UNDERGROUND FIBER LINE
- UT UNDERGROUND TELCO LINE
- SS/SA UNDERGROUND STORM SEWER/SANITARY LINE
- W UNDERGROUND WATER LINE
- COM UNDERGROUND COMMUNICATION/MONITORING LINE

SITE ACCESS NOTE:
GC TO FOLLOW LANDLORD ESTABLISHED NOTIFICATION PROCESS AND SITE ACCESS PROCEDURE.



FLOOD PLAIN MAP INFO: THE PROJECT SITE "DOES NOT" APPEAR TO BE LOCATED WITHIN A FLOOD PLAIN.
SITE LOCATED IN "ZONE X" - AREA OF MINIMAL FLOOD HAZARD.

2 FLOOD PLAIN MAP
N.T.S.



1 SITE PLAN
SCALE: 3/16"=1'-0" (3/16"=2'-0" IF 11 X 17 SHEET SIZE)

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WILLARD, MO 65781

SHEET TITLE:
SITE PLAN

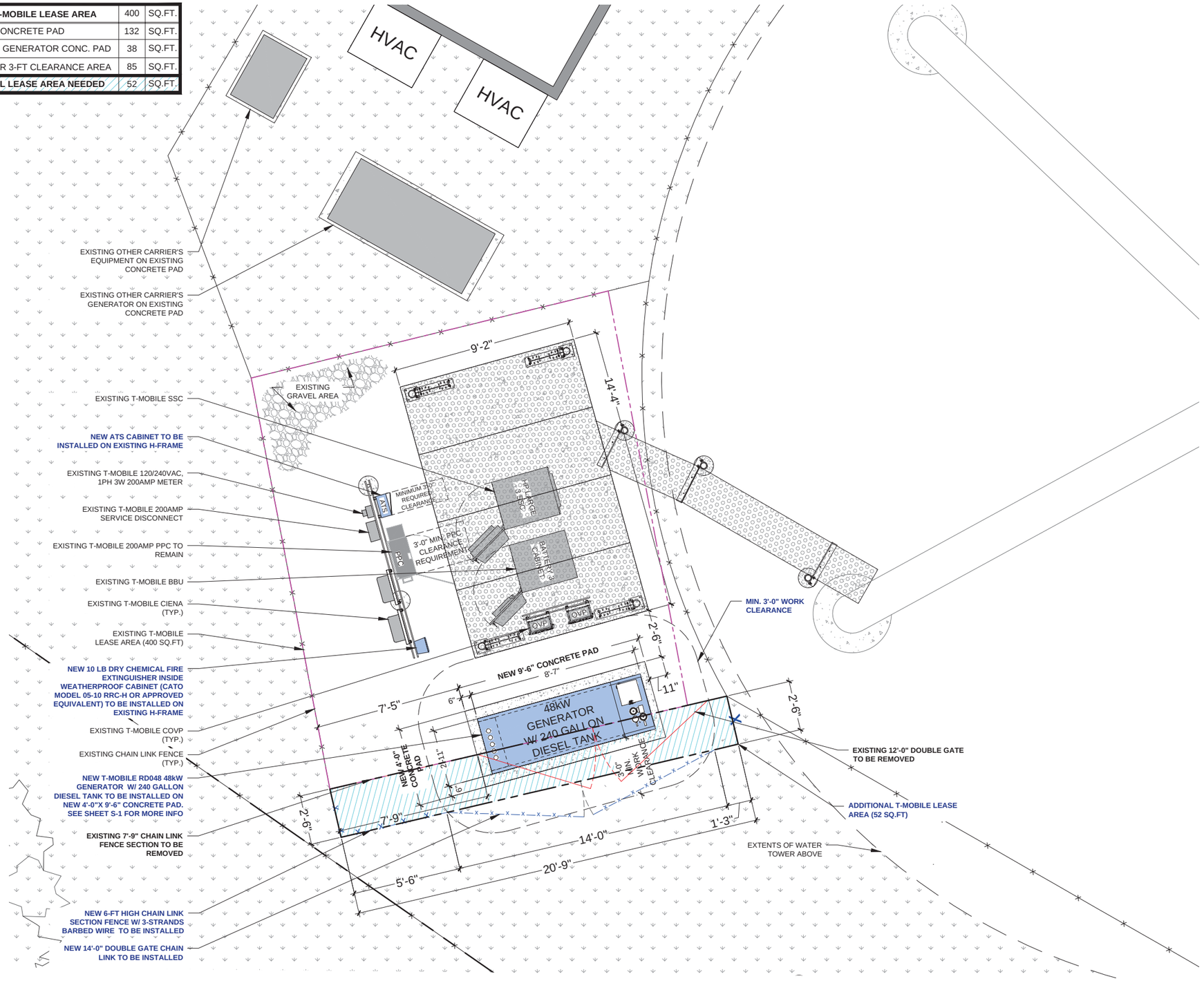
SHEET NUMBER:
A-1

LEGEND

- EXISTING EQUIPMENT TO REMAIN
- NEW EQUIPMENT
- EXISTING EQUIPMENT TO BE REMOVED
- EXISTING EQUIPMENT TO BE RELOCATED
- EXISTING LEASE AREA
- ADDITIONAL LEASE AREA

SITE ACCESS NOTE:
GC TO FOLLOW LANDLORD ESTABLISHED NOTIFICATION PROCESS AND SITE ACCESS PROCEDURE.

EXISTING T-MOBILE LEASE AREA	400	SQ.FT.
EXISTING CONCRETE PAD	132	SQ.FT.
PROPOSED GENERATOR CONC. PAD	38	SQ.FT.
GENERATOR 3-FT CLEARANCE AREA	85	SQ.FT.
ADDITIONAL LEASE AREA NEEDED	52	SQ.FT.



1 ENLARGED EQUIPMENT LAYOUT
SCALE: 3/8"=1'-0" (3/8"=2'-0" IF 11 X 17 SHEET SIZE)

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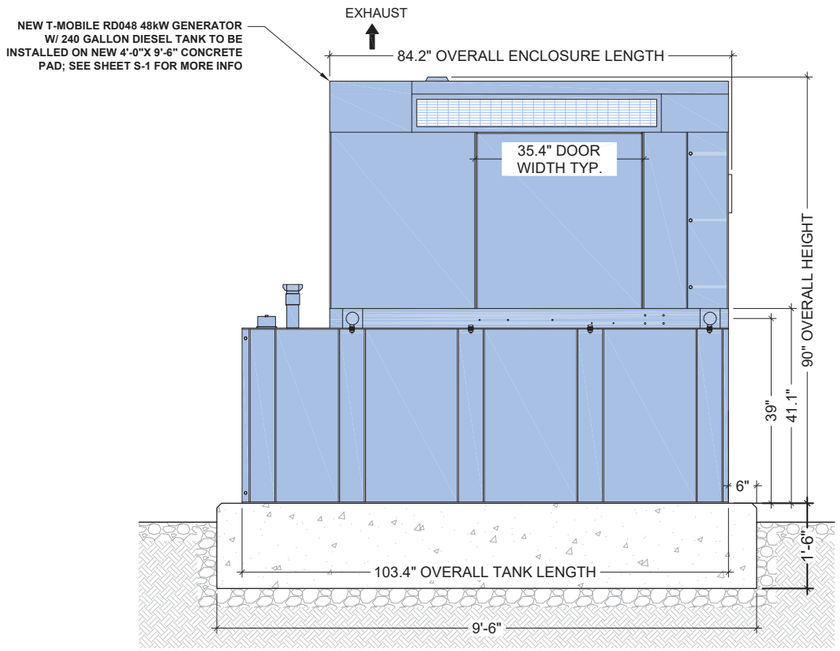
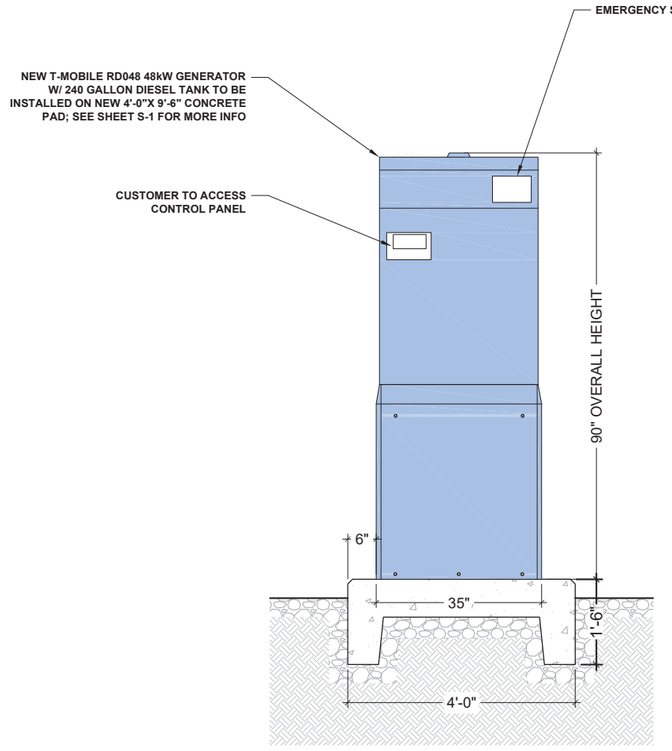
SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
EQUIPMENT LAYOUT

SHEET NUMBER:
A-1A



1 GENERATOR ELEVATION (SIDE VIEW)
SCALE: 3/4"=1'-0" (3/4"=1'-0" IF 11X17 SHEET SIZE)



2 GENERATOR ELEVATION (REAR VIEW)
SCALE: 3/4"=1'-0" (3/4"=1'-0" IF 11X17 SHEET SIZE)

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SHEET TITLE:
GENERATOR ELEVATION

SHEET NUMBER:
A-2

SIGNAGE REQUIREMENTS:

1.STORAGE CONTAINER MUST HAVE A DATAPLATE. (PROVIDED BY TANK MANUFACTURER DURING TANK FABRICATION)
NFPA 58:5.2.8.3

2. STORAGE CONTAINER MUST BE MARKED DESCRIBING THE CONTENETS (PROPANE OR LIQUEFIED PETROLEUM GAS) AND A STATEMENT OF THE HAZARD (FLAMMABLE).
NFPA 1:60.1.13 & IFC :2703.5

3. STORAGE CONTAINER MUST BE MARKED WITH HAZMAT ID. (CERTAIN ENTRANCES TO STORAGE OR DISPENSING AREAS MAY ALSO REQUIRE HAZMAT ID MARKING)
NFPA 1:60.1.13, NFPA 704:1.3 & IFC :2703.5

4. NO SMOKING SIGNS MUST BE POSTED IN AREAS OR SITES WHERE FLAMMABLE GASES ARE USED OR STORED. NO SMOKING OR OPEN FLAMES WITHIN 25-FT OF POINT OF TRANSFER.
NFPA 1:60.1.13, IFC: 3807.2, IFC :2703.7 & NFPA 58 :7.2.3.2 (B)

5. THE MAXIMUM PERMITTED PERCENTAGE (%) OF TANK CAPACITY MUST BE MARKED EITHER ON THE DATAPLATE OR ADJACENT TO THE FIXED MAXIMUM LIQUID LEVEL GAUGE.
NFPA 58:5.7.5.4

1 SIGNAGE REQUIREMENTS
N.T.S.

2 DIESEL SIGN
N.T.S.

3 FLAMMABLE SIGN
N.T.S.

4 DIESEL
N.T.S.

5 HAZARD LEVEL INDICATOR SIGN
N.T.S.

6 NO SMOKING SIGN
N.T.S.

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SITE #: A5P0093A
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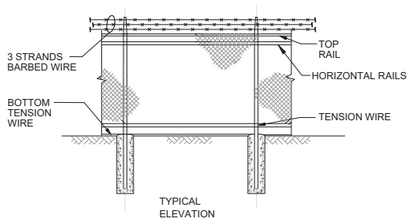
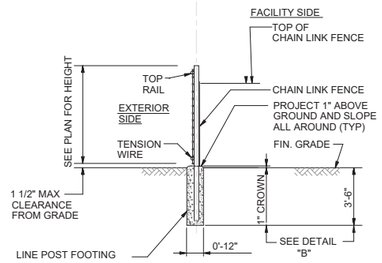
SHEET TITLE:
SIGNANGE

SHEET NUMBER:
A-3



WOVEN WIRE FENCE



TYPICAL SECTION

GENERAL NOTES

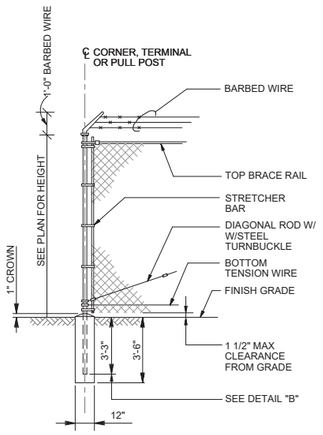
1. ALL WELDING SHALL BE COATED WITH (3) COATS OF COLD GALV. (OR EQUAL)
2. ALL OPEN POSTS SHALL HAVE END-CAPS.
3. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC.
4. NO SCREENING SHALL INTERFERE WITH SIGHT REQUIREMENTS FOR SAFE INGRESS AND EGRESS
5. DURING CONSTRUCTION, GENERAL CONTRACTOR WILL CONFORM TO THE STATE STANDARD PROCEDURES FOR EROSION CONTROL BASED ON "THE STATE PROCEDURES FOR URBAN SOIL EROSION AND SEDIMENTATION CONTROL MANUAL", LATEST EDITION..

TYPICAL FENCING NOTES

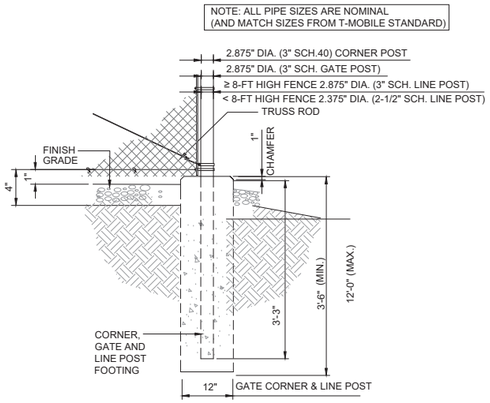
(INSTALL FENCING PER ASTM F-567, SWING GATES PER ASTM F- 900)

1. GATE POST, CORNER, TERMINAL OR PULL POST 3" SCHEDULE 40
2. FOR GATE WIDTHS UP THRU 6 FEET OR 12 FEET FOR DOUBLE SWING
3. GATE PER ASTM-F1083.
4. LINE POST: 3" SCHEDULE 40 PIPE PER ASTM-F1083.
5. GATE FRAME: 1-5/8" SCHEDULE 40 PIPE PER ASTM-F1083.
6. TOP RAIL & BRACE RAIL: 1-1/4" SCHEDULE 40 PIPE PER ASTM-F1083.
7. FABRIC: 9 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
8. TIE WIRE: MINIMUM 9 GA. GALVANIZED STEEL AT POSTS AND RAILS A SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG RINGS SPACED MAX 24" INTERVALS.
9. TENSION WIRE: 7 GA. GALVANIZED STEEL.
10. GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH AND LOCK, KEYED ALIKE FOR ALL SITES IN A GIVEN MTA.
11. LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLIED IF REQUIRED.
12. HEIGHT = SEE SITE PLAN FOR HEIGHT
13. PICKETS TO BE 7/8 " THICK NO. 1 SPRUCE (IF APPLICABLE).
14. ALL HARDWARE TO BE HOT DIP GALVANIZED.
15. ALL MATERIALS ARE FURNISHED, DELIVERED & INSTALLED BY CONTRACTOR.

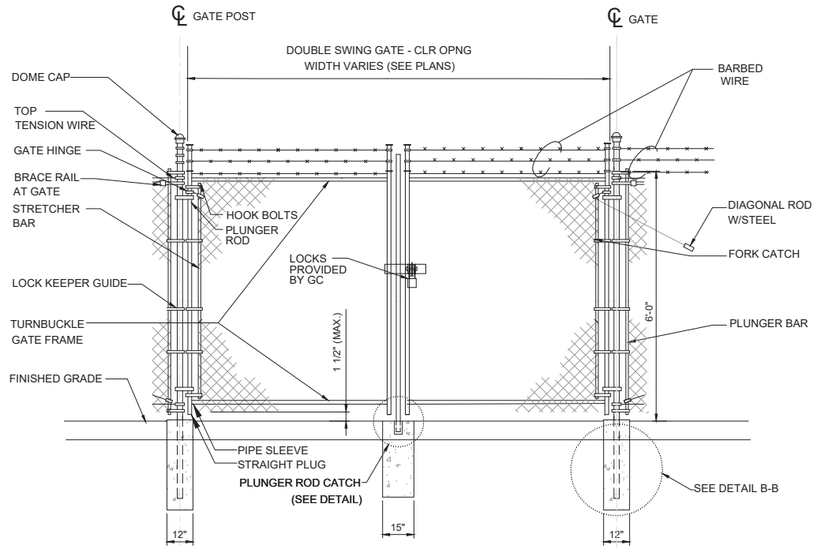
1 NEW CHAIN LINK FENCE DETAILS & NOTES
SCALE: NTS



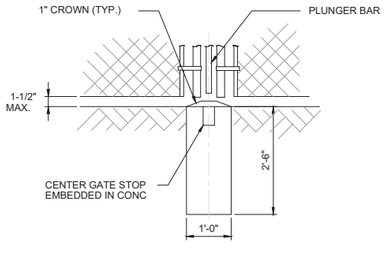
WOVEN WIRE CORNER, GATE, TERMINAL OR PULL POST



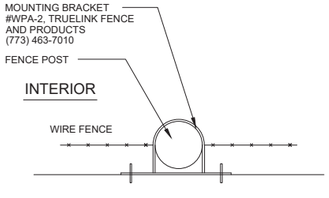
DETAIL "B" POST FOOTING



WOVEN WIRE SWING GATE, DOUBLE



MUSHROOM CAP DETAIL



EXTERIOR FENCE MOUNTING

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

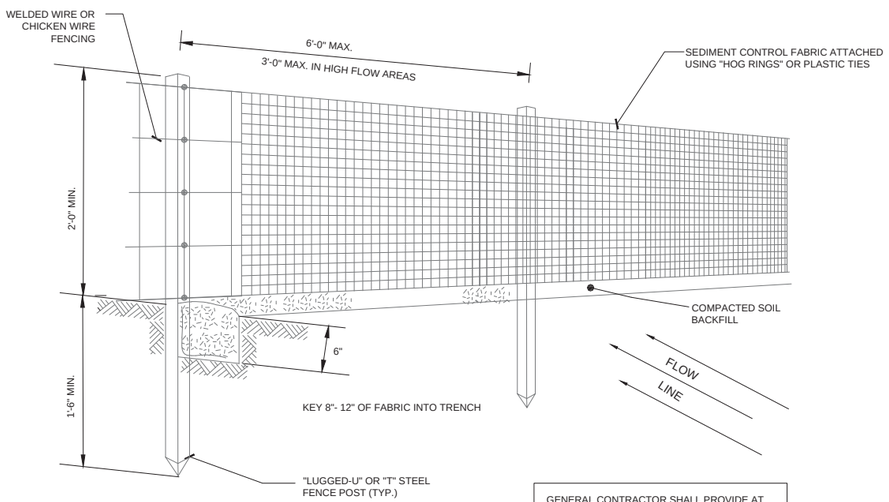
STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
CHAIN-LINK FENCE DETAILS

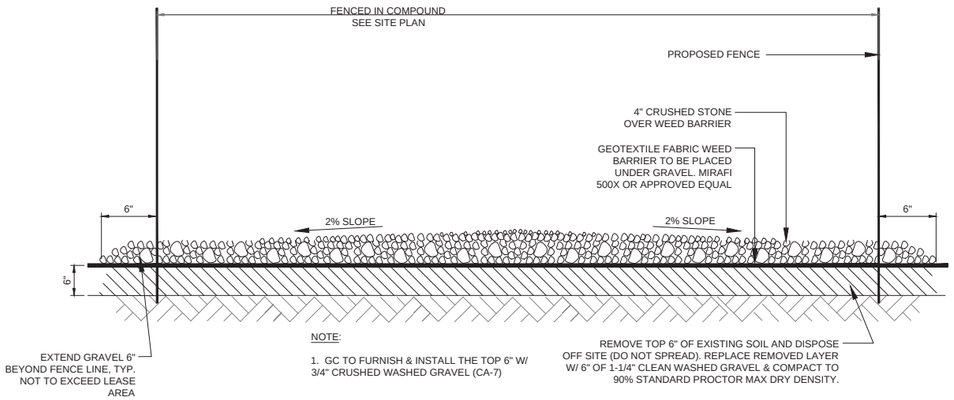
SHEET NUMBER:
A-4



GENERAL CONTRACTOR SHALL PROVIDE AT HIS/HER OWN EXPENSE ANY AND ALL SOIL EROSION CONTROL MEASURES/FENCING AROUND ALL AREAS THAT HAVE A GRADE IN EXCESS OF 5% OR WHERE THERE IS POTENTIAL FOR SOIL EROSION AND SOIL RUN-OFF DURING THE CONSTRUCTION PHASE OF THE PROJECT

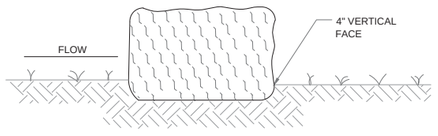
1 SOIL EROSION CONTROL
SCALE: N.T.S.

NOTE:
PRIOR TO BIDDING AND CONSTRUCTION, GC TO REVIEW GEOTECHNICAL REPORT AND FOUNDATION RECOMMENDATIONS. REFER TO GEOTECH REPORT FOR ANY ADDITIONAL SPECIFICATION AND/OR RECOMMENDATIONS PRIOR TO BID

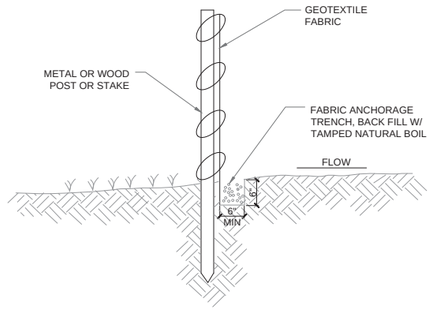


NOTE:
1. GC TO FURNISH & INSTALL THE TOP 6" W/ 3/4" CRUSHED WASHED GRAVEL (CA-7)

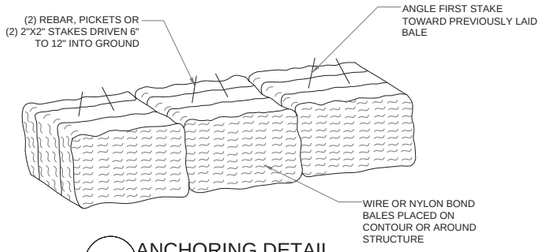
2 SITE COMPOUND GRAVEL DETAIL
SCALE: N.T.S.



3 EMBEDDING DETAIL
SCALE: N.T.S.



4 SILT FENCE DETAIL
SCALE: N.T.S.



5 ANCHORING DETAIL
SCALE: N.T.S.

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

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CAROL STREAM, IL 60188
MAIN: (847) 708-7500

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STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
ARCHITECTURAL & CIVIL DETAILS

SHEET NUMBER:
A-5

NOTE:
1. BOLTS CAN BE INSTALLED 3 DAYS AFTER POURING CONCRETE PROVIDED THE KWIK BOLTS ARE ONLY TIGHTENED TO A SNUG TIGHT CONDITION.
2. APPLY "HILTI" HIT-RE 500-SD EPOXY TO ALL GAPS TO PREVENT WATER/MOISTURE BUILD-UP.
3. PROVIDE 5 ANCHOR BOLTS PER EACH SIDE OF THE TANK BASE PER MANUFACTURER'S RECOMMENDATIONS.

GENERATOR CONNECTION DESIGN CRITERIA:

1. GENERATOR ANCHORS ARE DESIGNED TO MEET THE INTERNATIONAL BUILDING CODE 2018 CRITERIA FOR WIND SPEED.
2. WIND PARAMETERS:

SURVIVAL WIND VELOCITY PER ASCE7-10	140 MPH
EQUIVALENT WIND VELOCITY PER ASCE7-05	108 MPH
WIND EXPOSURE	B
WIND RISK CATEGORY	II
WIND IMPORTANCE FACTOR	1.0

CONCRETE PAD CONSTRUCTION NOTES

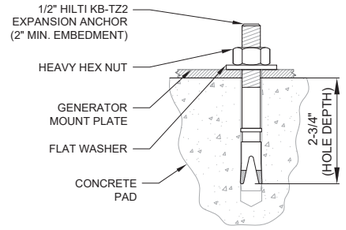
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI.
2. CONCRETE SLUMP: 2" TO 4".
3. AIR ENTRAINMENT: 5% TO 7%.
4. REINFORCED CONCRETE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ACI STANDARDS 318.
5. MINIMUM CLEAR CONCRETE COVER FOR REBAR IS 1 1/2".
6. REINFORCING MATERIAL SHALL BE IN ACCORDANCE WITH ASTM A615.
7. ALL REBARS SHALL BE SECURELY WIRE TIED TO PREVENT DISPLACEMENT DURING POURING OF CONCRETE.
8. CONCRETE VOLUME: 1.17 CUBIC YARDS.

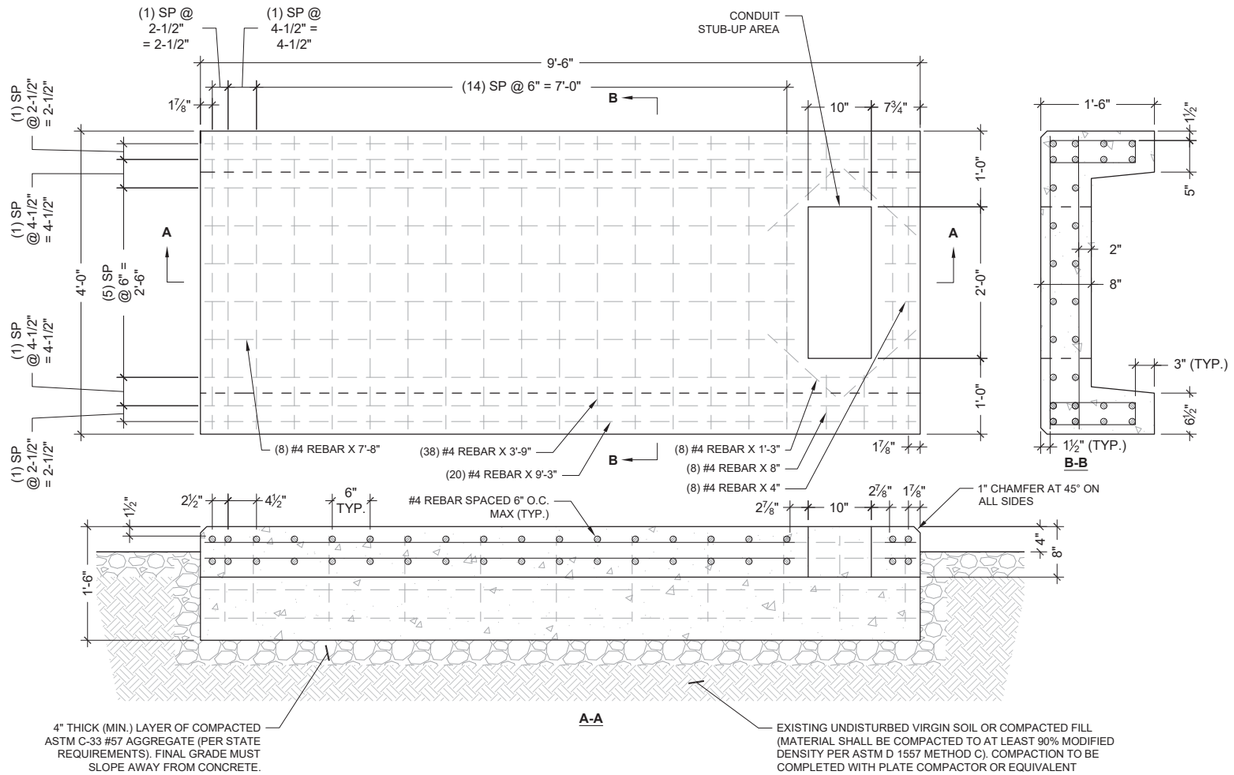
CONCRETE PAD AND EMBEDMENT TOLERANCES

1. CONCRETE DIMENSIONS: PLUS OR MINUS 1/4".
2. REINFORCING STEEL PLACEMENT: PLUS OR MINUS 1/4" INCLUDING CONCRETE COVER.

FOUNDATION NOTES

1. FOUNDATION WAS DESIGNED BY ASSUMING ALLOWABLE SOIL BEARING CAPACITY OF 1,500 PSF.
2. THE SOIL UNDERNEATH THE CONCRETE PAD MUST BE FREE OF ORGANIC MATTER OR OTHER DELETERIOUS SUBSTANCES, AND SHOULD BE LEVELED AND COMPACTED TO 90% MODIFIED PROCTOR DENSITY BEFORE PLACING THE FOUNDATION. PAD SHALL BE INSTALLED LEVEL TO WITHIN +/- 1/8".





1 CONCRETE PAD DETAIL
SCALE: 1"=1'-0" (1"=2'-0" IF 11 X 17 SHEET SIZE)

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

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361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

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STATE OF MISSOURI
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PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SS

SHEET TITLE:
CONCRETE PAD DETAILS

SHEET NUMBER:
S-1

LEGEND

- UT — UNDERGROUND ALARM CONDUIT
- T — ALARM CABLE
- UE — UNDERGROUND ELECTRIC CONDUIT
- E — ELECTRIC CONDUIT

IMPORTANT NOTES:

1. GC TO ORDER UTILITY LOCATE SERVICE IN ORDER TO LOCATE AND PROTECT ANY AND ALL SURFACE UTILITIES ENCOUNTERED. DO NOT SCALE OFF THESE PLANS FOR ANY BELOW GRADE UTILITIES.

2. THESE PLANS MAY NOT CONTAIN OR REVEAL ALL SUBSURFACE UTILITIES; GC IS RESPONSIBLE OF LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION.

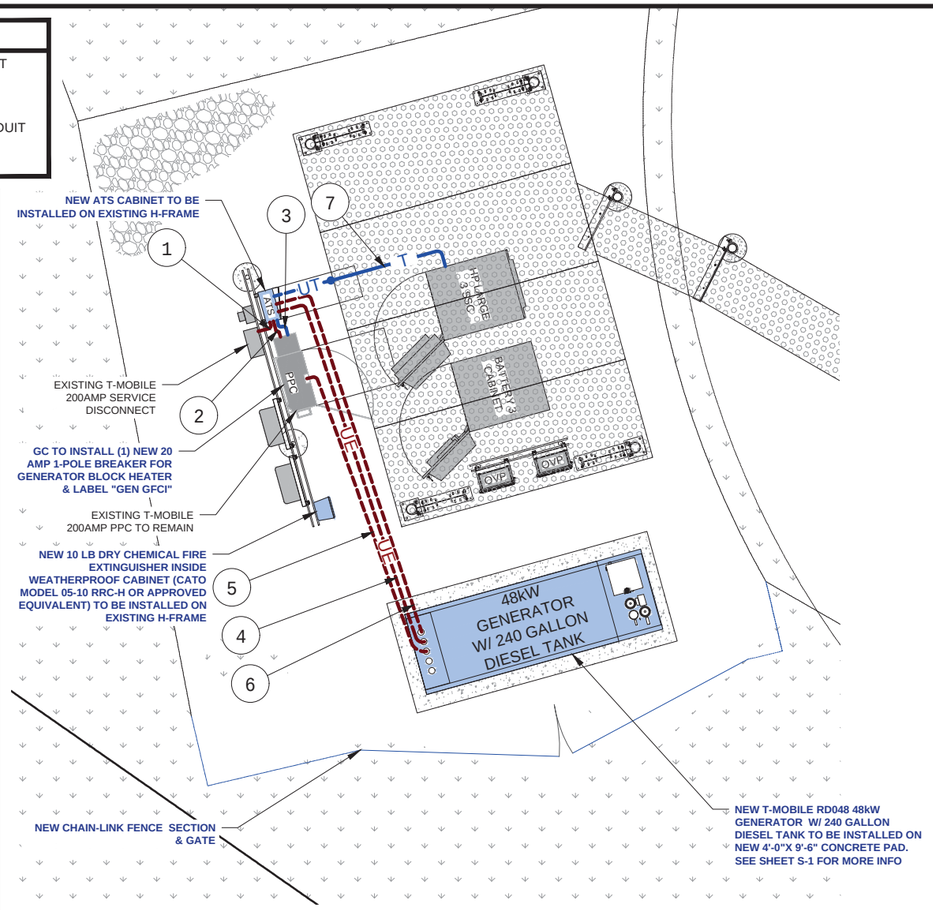
3. GC WILL NOT START CONSTRUCTION UNTIL AFTER THEY RECEIVE THE PRE CON PACKAGE AND HAVE A PRE CON WALK WITH THE CLIENT PM

4. ALL UNISTRUT, FASTENERS, HARDWARE, ETC; ARE TO BE EITHER HOT-DIPPED GALVANIZED OR STAINLESS STEEL. GENERAL CONTRACTOR SHALL NOT USE ZINC-PLATED OR PRE-GALVANIZED

5. WIRE SIZES SHOWN ARE ESTIMATED MINIMUMS. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND COMPLY WITH THE APPLICABLE LOCAL ELECTRICAL AND BUILDING CODES IN ADDITION TO NEC 2008 AND FOLLOW WHICHEVER IS MORE CONSERVATIVE. CONTRACTOR SHALL ESTIMATE PHASE CONDUCTOR SIZE & UTILIZE THE APPROPRIATE WIRE SIZE AND TYPE ASSUMING A 3% VOLTAGE DROP. CONTRACTOR TO CONFIRM WITH LOCAL ELECTRICAL INSPECTOR PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO CONSTRUCTION START.

6. POWER ROUTE TO BE CONFIRMED WITH T-MOBILE PRIOR TO CONSTRUCTION START.

7. GC TO HAND DIG ALL NEW TRENCHES INSIDE COMPOUND.



1 UTILITY PLAN
SCALE:3/8"=1'-0" (3/8"=2'-0" IF 11x17 SHEET SIZE)

UTILITY LEGEND

NO.	FROM	TO	WIRE QTY. & TYPE	GROUND (SIZE FOR CU WIRE)	CONDUIT SIZE	FUNCTION	APPROXIMATE CONDUIT LENGTH
1	EXISTING SERVICE DISCONNECT (200A, 120/240V, 1Ø, 3W)	ATS	(3) 3/0	(1) #6	2" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	NORMAL POWER FEEDER TO ATS	±12'
2	ATS	PPC	(3) 3/0	(1) #6	2" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	POWER FEEDER TO PPC	±9'
3	ATS	PPC	(5) #18 TYPE TC WIRES	N/A	1" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	ALARM CIRCUIT	±9'
4	GENERATOR	ATS	(3) 3/0	(1) #6	2" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	EMERGENCY POWER FEEDER TO ATS	±43'
5	GENERATOR	PPC	(4) #12	(2) #12	1" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	(1) 20 AMP 1-POLE BREAKER FOR GENERATOR BLOCK HEATER	±46'
6	GENERATOR	ATS	(5) #18 TYPE TC WIRES	N/A	1" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	CIRCUIT FOR BATTERY CHARGER & COMMERCIAL POWER SENSING	±43'
7	ATS	FSEE (ALARM BOX)	(2) CAT6 CABLES	N/A	1" RIGID RMC (ABOVE GROUND), UNDERGROUND SCH. 40 GREY PVC	ALARM CABLES (RUN INTO ALARM BOX. PROVIDE 24" OF SLACK CABLE. FINAL PUNCH DOWN IS BY GC. LABEL ALL WIRES)	±26'

NOTE: * THE CONDUIT LENGTH GIVEN IS BASED ON THE DRAWING +15%. THE EXACT LENGTH TO BE VERIFIED IN FIELD. GC TO VERIFY LENGTHS AFTER COORDINATING W/ SERVICE UTILITY COMPANIES.

811 Know what's below. Call 811 before you dig.

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1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER
Expires: 12-31-2026

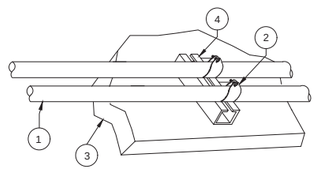
SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

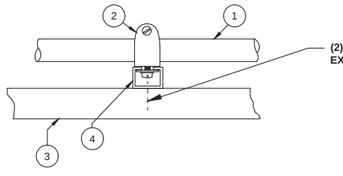
SHEET TITLE:
UTILITY PLAN AND DETAILS

SHEET NUMBER:
E-1

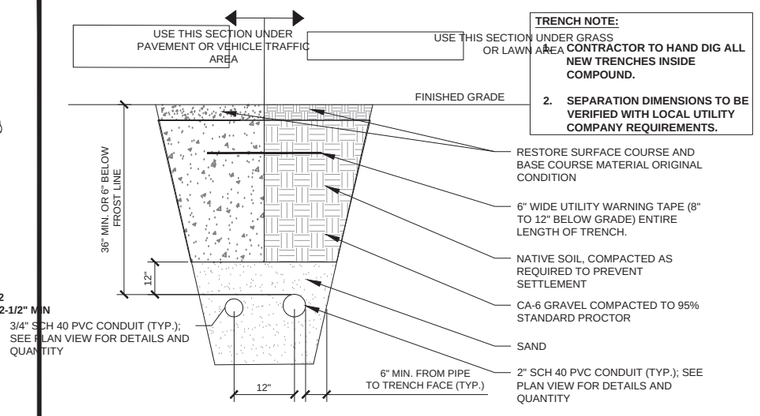
UNISTRUT MOUNTING CHART	
CONSTRUCTION TYPE	USE
CONCRETE (SOLID)	3/8"Ø HILTI HIT-HY150 ADHESIVE ANCHOR WITH SCREEN, MINIMUM EMBEDMENT 2-1/2"

1. CONDUIT
2. FIMO OR BUTTERFLY CLAMP AS REQUIRED
3. EXISTING CONCRETE PAD
4. "UNISTRUT" P1000 'I' SERIES LENGTH BASED ON NUMBER OF CONDUIT TO BE MOUNTED





2 ABOVE GROUND CONDUIT SUPPORT DETAILS
SCALE: N.T.S.



TRENCH NOTE:
1. **CONTRACTOR TO HAND DIG ALL NEW TRENCHES INSIDE COMPOUND.**
2. **SEPARATION DIMENSIONS TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.**

3 JOINT UTILITY TRENCH DETAIL
N.T.S.

4 PPC DETAILS
N.T.S.

MATERIALS NOTES:

A. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING & VERIFYING THE TYPE OF ELECTRICAL SERVICE AS WELL AS THE ACTUAL CONDUIT DISTANCE TO SERVICE POINT -- ELECTRICAL CONTRACTOR TO NOTIFY ENGINEER OF DISCREPANCIES IMMEDIATELY -- OTHERWISE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING PHASE CONDUCTORS FROM THE SERVICE POINT TO LOAD CENTER IN ORDER TO COMPLY WITH THE LOCAL BUILDING/ELECTRICAL CODE AS WELL AS THE NEC AND UTILITY COMPANY REQUIREMENTS

B. ELECTRICAL CONTRACTOR TO FURNISH & INSTALL NEW SERVICE GROUND IN COMPLIANCE WITH LOCAL ELECTRICAL, NEC & ELECTRICAL UTILITY REQUIREMENTS.

SERVICE EQUIPMENT NOTES:

1.) SERVICE EQUIPMENT SHALL HAVE A SHORT CIRCUIT TO WITHSTAND RATING THAT IS EQUAL TO OR EXCEEDS THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SUPPLY TERMINAL. THE INSTALLATION SHALL BE FREE FROM ANY SHORT CIRCUITS AND GROUNDS.
2.) ALL ELECTRICAL EQUIPMENT SHALL BE ANCHORED TO WITHSTAND 80 M.P.H. WIND SPEED, EXPOSURE C.
3.) ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
4.) PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF ELECTRICAL WORK.

CONDUIT NOTES:

1.) RGS SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH EARTH, OR EXPOSED ABOVE GRADE.
2.) EMT SHALL BE USED ONLY FOR INTERIORS RUNS AND SHALL HAVE COMPRESSION TYPE FITTINGS.
3.) SEALTITE, FLEXIBLE CONDUIT MAY BE USED WHERE CODE PERMITS. ALL CONDUIT SHALL HAVE FULL SIZE EQUIPMENT GROUND WIRE.
5.) SERVICE CONDUITS SHALL HAVE NO MORE THAN (3) -90° BENDS IN ANY SINGLE RUN. THE ELECTRICAL CONTRACTOR SHALL PROVIDE PULL BOXES AS NEEDED WHERE CONDUIT REQUIREMENTS EXCEED THESE CONDITIONS.
6.) SERVICE CONDUIT SHALL BE AT A MINIMUM DEPTH OF 42".
7.) ALL COAX, POWER AND TELEPHONE SYSTEM CONDUIT SHALL HAVE A MINIMUM 36" RADIUS SWEEPS TO EQUIPMENT, PULL BOXES, TOWER, ETC., UNLESS OTHERWISE NOTED, OR AS REQUIRED BY UTILITY COMPANIES.

NOTES ON POWER COORDINATION:

1.) ROUTING SHOWN IS BASED ON ASSUMPTIONS MADE FROM VISUAL FIELD OBSERVATIONS OF EXISTING EQUIIPMENT.
2.) THESE PLANS/DIAGRAM MAY OR MAY NOT REFLECT AND/OR CONTAIN THE FINAL SCENARIO FOR POWER OR FIBER ROUTING.
3.) THE ELECTRICAL DESIGN SHOWN IS FOR PERMITTING PURPOSES ONLY AND IS NOT FOR CONSTRUCTION.
4.) CONCORDIA IS NOT RESPONSIBLE FOR CODE COMPLIANCE OR COMPLIANCE WITH POWER CODE.
5.) ELECTRICIAN IS REQUIRED TO CONFIRM COMPLIANCE OF SITE WITH LOCAL, COUNTY, STATE AND/OR NATIONAL ELECTRICAL CODES. THE MOST RESTRICTIVE OF SUCH CODES SHALL GOVERN AND BE APPLICABLE.
6.) ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FINAL SCENARIO & CODE COMPLIANCE & IS RESPONSIBLE FOR COORDINATING WITH T-MOBILE POWER COORDINATOR.
7.) ELECTRICAL CONTRACTOR SHALL BID ON THESE PLANS USING THE WORST CASE SCENARIO.

CONDUCTOR NOTES:

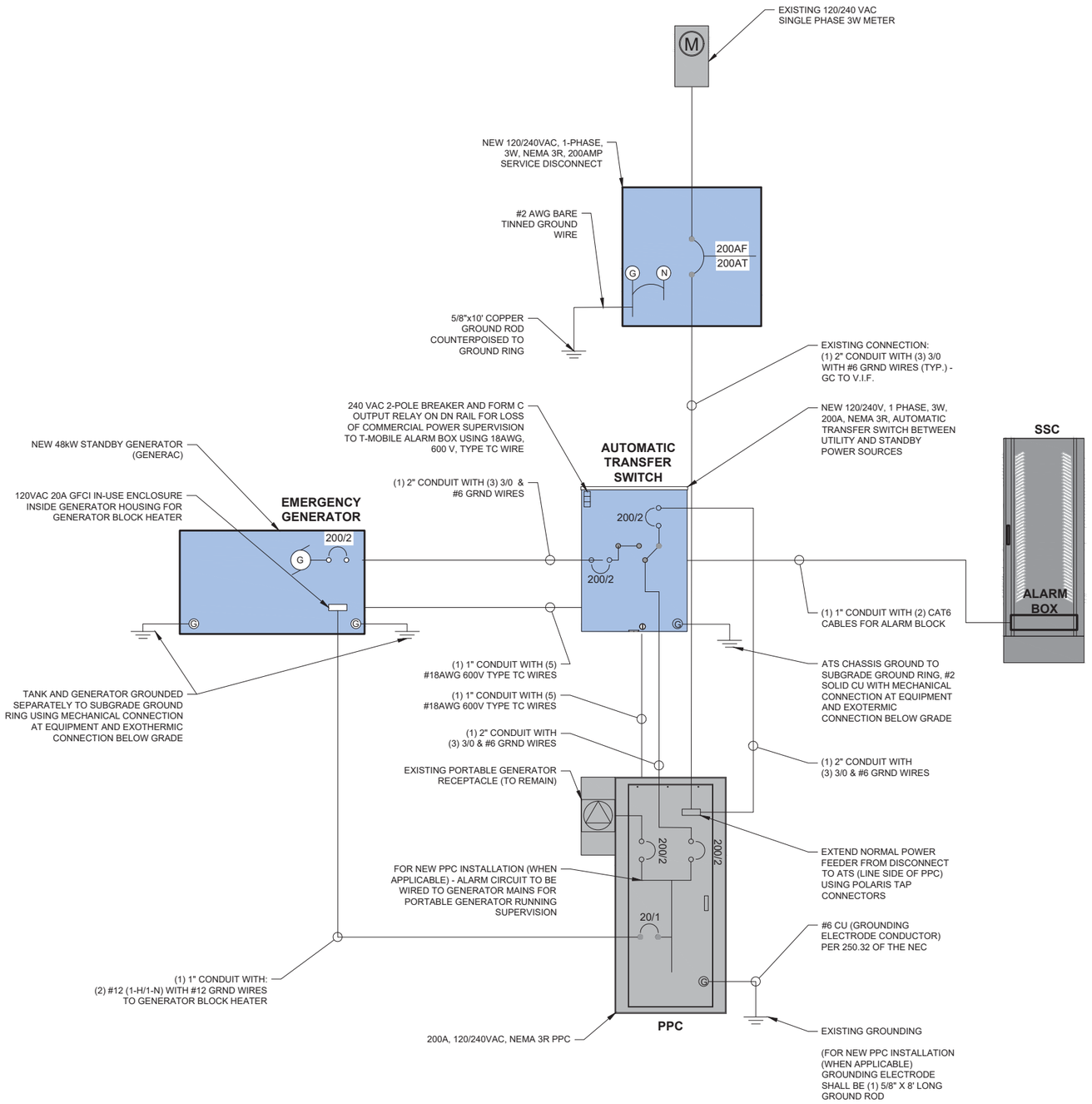
1.) ALL CONDUCTORS SHALL BE COPPER
2.) ALL WIRING SHALL BE COPPER WITH XHHW/THWN DUAL RATED 600 VOLTS INSULATION.
3.) CONDUCTORS SHALL BE 12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE.
4.) GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER UNLESS OTHERWISE NOTED.

CONDUIT MATERIAL SCHEDULE:

UNLESS NOTED OTHERWISE, ALL CONDUIT RUNS SHALL CONFORM TO THE FOLLOWING :
1.) ALL BELOW GRADE HORIZONTAL CONDUITS SHALL BE PVC
2.) ALL BELOW GRADE 3' Ø @ 45° BENDS SHALL BE STEEL W/THREADED CONNECTIONS.
3.) SEALTITE FLEXIBLE CONDUIT MAY BE USED WHERE CODE PERMITS.

LEGEND

- EXISTING EQUIPMENT TO REMAIN
- NEW EQUIPMENT



1 ONE LINE DIAGRAM
SCALE: N.T.S

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
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MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER
Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SNTS

SHEET TITLE:
ONE LINE DIAGRAM

SHEET NUMBER:
E-1A

ALARM LABEL CODING (GENERATOR TO FSEB)

GENERAC GENERATOR, LOCP RELAY INSTALLED					TERMINATION AT FSEB				TERMINATION AT GENERATOR			
NAME	LINE #	DESCRPTION	POLARITY	EAC CABLE	WIRES	TERMINAL BLOCK	WIRES	TERMINAL BLOCK	WIRES	TERMINATION	WIRES	TERMINATION
GENERATOR LOW FUEL	13	NC#5-LOW FUEL	NC	CAT6 TO GENERATOR RELAY	WHITE/BLUE	X4111 PIN 13	BLUE	X4110 PIN 13	WHITE/BLUE	GENERAC CUSTOMER CONNECTION RB4 #3	BLUE	GENERAC CUSTOMER CONNECTION RB4 #2
GENERATOR RUNNING	14	NC#8-GEN RUNNING	NC	CAT6 TO GENERATOR RELAY	WHITE/ORANGE	X4111 PIN 14	ORANGE	X4110 PIN 14	WHITE/ORANGE	GENERAC CUSTOMER CONNECTION RB4 #9	ORANGE	GENERAC CUSTOMER CONNECTION RB4 #8
GENERATOR NOT IN AUTO	15	NC#11-NOT IN AUTO	NC	CAT6 TO GENERATOR RELAY	WHITE/GREEN	X4111 PIN 15	GREEN	X4110 PIN 15	WHITE/GREEN	GENERAC CUSTOMER CONNECTION RB4 #12	GREEN	GENERAC CUSTOMER CONNECTION RB4 #11
GENERATOR ALARM CRITICAL	16	COMMON SHUTDOWN ALARM OUTPUT	NC	CAT6 TO GENERATOR RELAY	WHITE/BROWN	X4111 PIN 16	BROWN	X4110 PIN 16	WHITE/BROWN	GENERAC CUSTOMER CONNECTION TB4 #2	BROWN	GENERAC CUSTOMER CONNECTION TB4 #1
GENERATOR ALARM NSI	17	NC#2-DOOR ALARM	NC	CAT6 TO GENERATOR RELAY	WHITE/BLUE	X4111 PIN 17	BLUE	X4110 PIN 17	WHITE/BLUE	GENERAC CUSTOMER CONNECTION RB4 #6	BLUE	GENERAC CUSTOMER CONNECTION RB4 #5

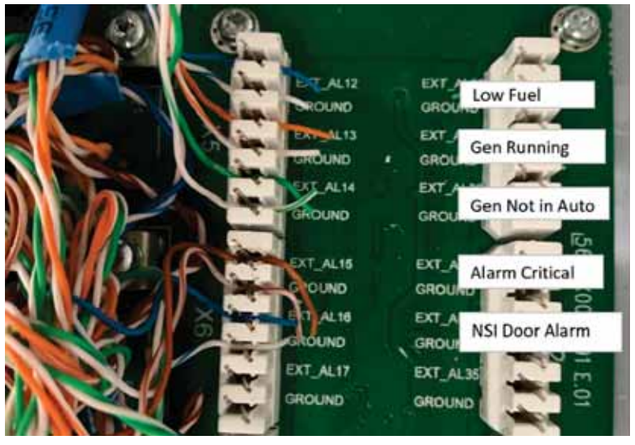
ALARM LABEL CODING (GENERATOR TO FSEE)

GENERAC GENERATOR, LOCP RELAY INSTALLED					TERMINATION AT FSEE ONLY IF STARTS ON 0				TERMINATION AT GENERATOR			
NAME	LINE #	DESCRPTION	POLARITY	EAC CABLE	WIRES	TERMINAL BLOCK	WIRES	TERMINAL BLOCK	WIRES	TERMINATION	WIRES	TERMINATION
GENERATOR LOW FUEL	12	NC#5-LOW FUEL	NC	CAT6 TO GENERATOR RELAY	WHITE/BLUE	X4111 PIN 12	BLUE	X4110 PIN 12	WHITE/BLUE	GENERAC CUSTOMER CONNECTION RB4 #3	BLUE	GENERAC CUSTOMER CONNECTION RB4 #2
GENERATOR RUNNING	13	NC#8-GEN RUNNING	NC	CAT6 TO GENERATOR RELAY	WHITE/ORANGE	X4111 PIN 13	ORANGE	X4110 PIN 13	WHITE/ORANGE	GENERAC CUSTOMER CONNECTION RB4 #9	ORANGE	GENERAC CUSTOMER CONNECTION RB4 #8
GENERATOR NOT IN AUTO	14	NC#11-NOT IN AUTO	NC	CAT6 TO GENERATOR RELAY	WHITE/GREEN	X4111 PIN 14	GREEN	X4110 PIN 14	WHITE/GREEN	GENERAC CUSTOMER CONNECTION RB4 #12	GREEN	GENERAC CUSTOMER CONNECTION RB4 #11
GENERATOR ALARM CRITICAL	15	COMMON SHUTDOWN ALARM OUTPUT	NC	CAT6 TO GENERATOR RELAY	WHITE/BROWN	X4111 PIN 15	BROWN	X4110 PIN 15	WHITE/BROWN	GENERAC CUSTOMER CONNECTION TB4 #2	BROWN	GENERAC CUSTOMER CONNECTION TB4 #1
GENERATOR ALARM NSI	16	NC#2-DOOR ALARM	NC	CAT6 TO GENERATOR RELAY	WHITE/BLUE	X4111 PIN 16	BLUE	X4110 PIN 16	WHITE/BLUE	GENERAC CUSTOMER CONNECTION RB4 #6	BLUE	GENERAC CUSTOMER CONNECTION RB4 #5

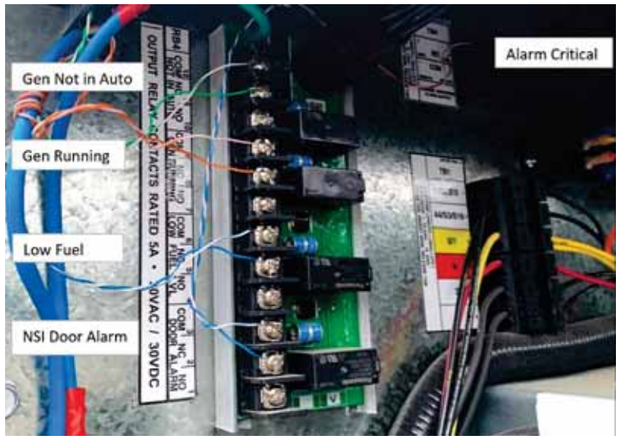
IMPORTANT NOTES:

1. A FLAG STYLE LABEL IS TO BE PLACED ON EACH ALARM CABLE NOT MORE THAN 5" FROM ANY TERMINATION POINT. THE CABLE LABELS ARE TO DEFINE THE CIRCUIT DESCRIPTION AND POINT OF TERMINATION ON EACH END OF THE CABLE WITH THE NEAR END ("THIS POSITION") AND FAR END ("TO POSITION") INFORMATION AND TERMINATION POINTS.
2. ALARM WIRING TERMINATIONS SHALL BE RING OR FORK TONGUE VINYL INSULATED COMPRESSION TYPE, UL-CSA APPROVED MANUFACTURERS WITH 600V INSULATION.
3. (2) OUTDOOR RATED CAT 6 CABLES TO BE UTILIZED FOR ALARM CONNECTIONS; POLYOLEFIN INSULATION, RIP CORD AND OUTER PVC JACKET.
4. TERMINATIONS FOR SHIELDED ALARM CABLING SHALL BE SIMILAR, WITH TERMINATIONS FOR LOOP AND BRAIDED GROUND CONDUCTORS.
5. ALL FIELD ALARMS INCLUDING GENERATOR ALARMS ARE TO ROUTE DIRECTLY TO THE ALARM BOX FOR TERMINATION.
6. CLEARLY LABEL AND TAG ALL COMPONENTS.

TERMINATIONS TO FSEB/FSEE



TERMINATIONS TO GENERATOR



LABELS AT FSEB/FSEE

LABELS AT GENERATOR

1 ALARM SCHEDULE
SCALE: N.T.S.

T-Mobile
1400 OPUS PLACE
DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
361 RANDY RD, UNIT 101
CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

STATE OF MISSOURI
GHAZWAN MOUNIR SADAT
NUMBER PE-2024012766
PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
ALARM SCHEDULE

SHEET NUMBER:
E-2

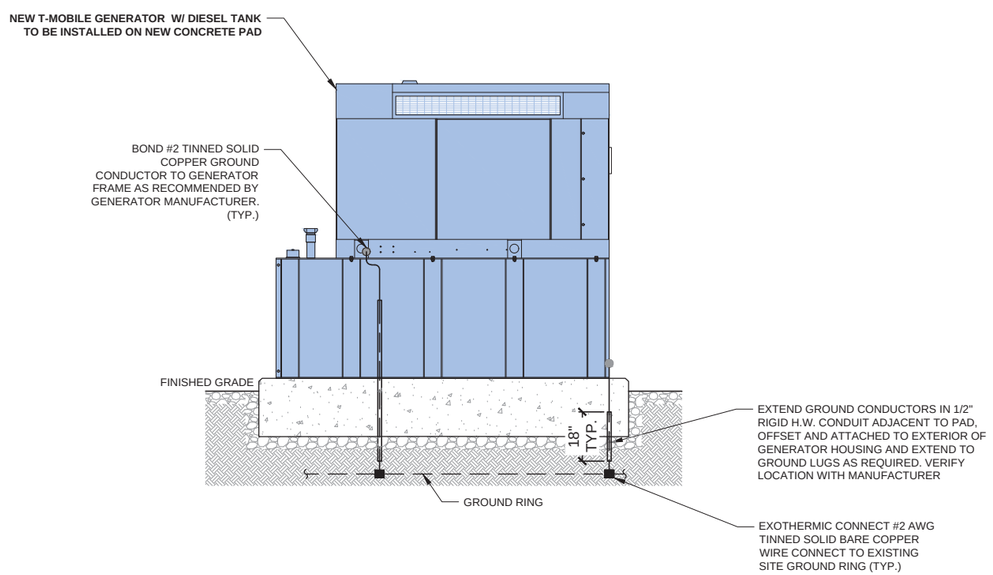
GENERATOR NOTE:

1. **GENERATOR SYSTEM SHALL BE SOLIDLY GROUNDED PER NEC 250.20.**
2. **BASE GROUND WIRES TO BE IN NON-METALLIC LIQUID TIGHT. GC TO SEAL OPEN ENDS WITH SILICONE.**

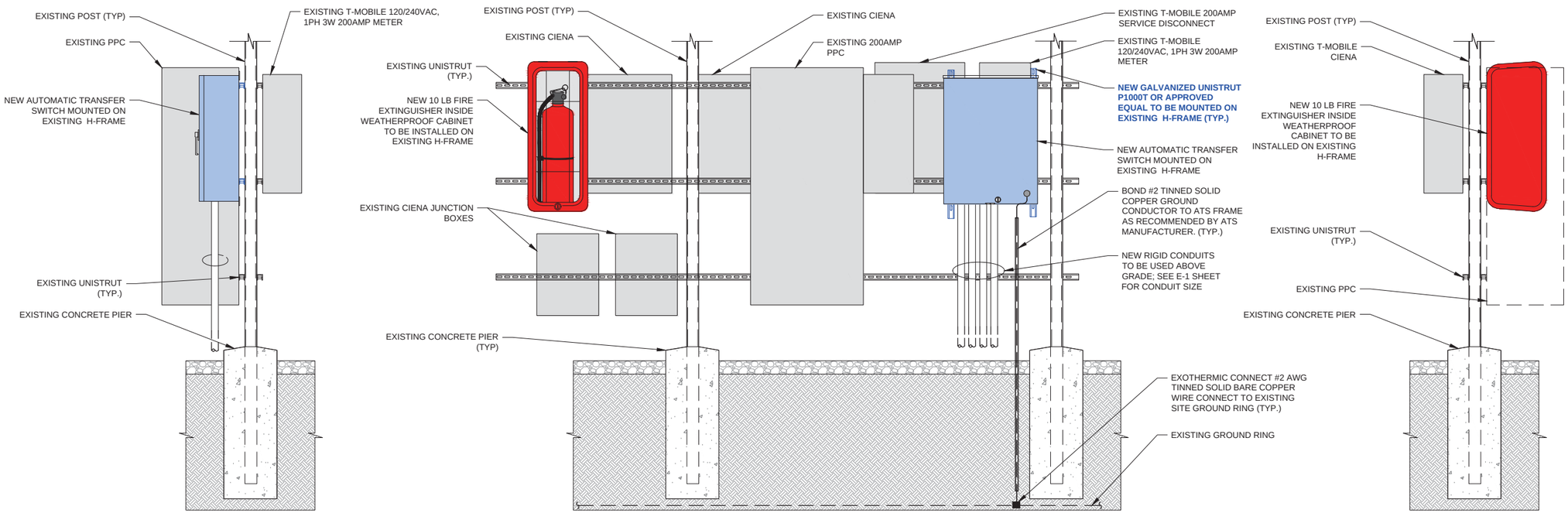
LEGEND:

- ● MECHANICAL CONNECTION
- ■ EXOTHERMIC CONNECTION

NOTE:
INSPECTION REQUIRED ON EXOTHERMIC GROUNDING CONNECTIONS



1 GENERATOR GROUNDING ELEVATION (TYP.)
SCALE: N.T.S.



2 (TYP.) FIRE EXTINGUISHER MOUNTING AND GROUNDING DETAILS
SCALE: N.T.S.

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PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
EG-1

LEGEND:

- MECHANICAL CONNECTION
- EXOTHERMIC CONNECTION
- GROUND ROD

KEY NOTES:

1. GROUND RING, #2 SOLID, TINNED BARE COPPER WIRE CONSTRUCT RING FROM ONE CONTINUOUS PIECE.
2. 5/8" Ø X 10' COPPER CLAD GROUND ROD
3. #2 SOLID, TINNED BARE COPPER GROUND WIRE FROM FENCE POST TO GROUND RING
4. MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.
5. BOND FLEXIBLE JUMPER TO GATE
6. BOND GATE POST TO PROPOSED GROUND RING
7. BOND GROUND RING(S) TO SITE CORNER POST (TYP. OF 2).

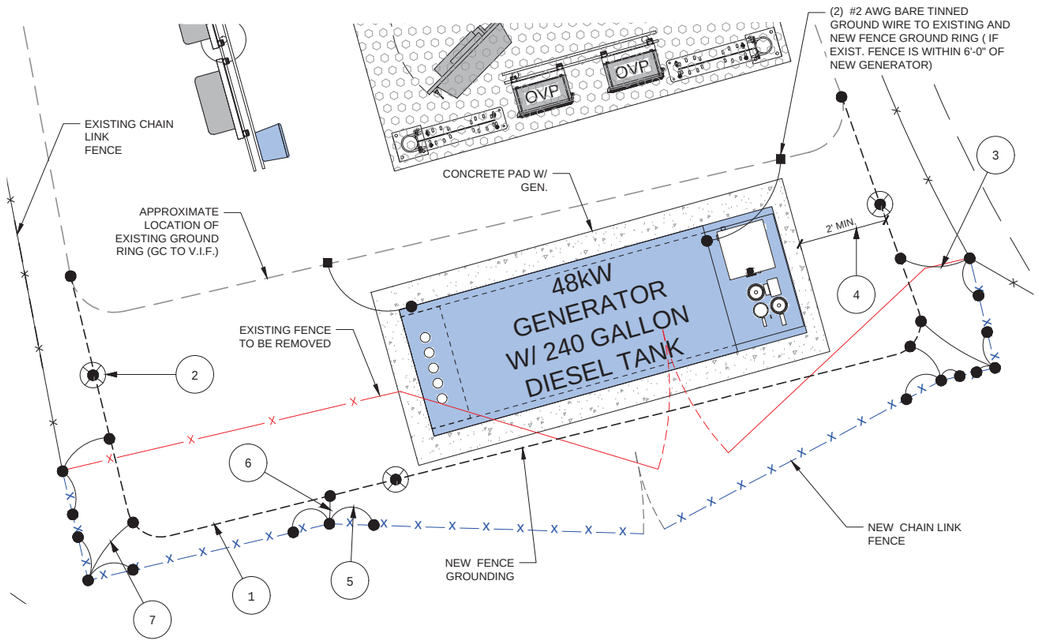
INSTALLATION NOTES:

1. SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS.

2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT.

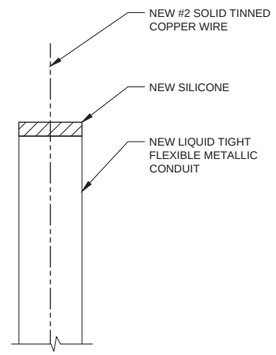
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND.

4. USE SOLID COPPER WIRE AND MECHANICAL 2-HOLE LUG FOR ALL EXTERIOR GROUNDING.



CADWELD CONNECTIONS (OR APPROVED EQUAL)		BURNDY CONNECTIONS (OR APPROVED EQUAL)
PARALLEL HORIZONTAL CONDUCTORS PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES TYPE PT	HORIZONTAL STEEL SURFACE TO FLAT STEEL SURFACE OR HORIZONTAL PIPE TYPE HS	"C" CONNECTOR HYPRESS TYPE YGHC
THROUGH CABLE TO GROUND ROD THROUGH CABLE TO TOP OF GROUND ROD TYPE GT	VERTICAL STEEL SURFACE CABLE DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE TYPE VS	BOND JUMPER FIELD FABRICATED GREEN STRANDED INSULATED TYPE 2-YA-2
HORIZONTAL SPLICE SPLICE OF HORIZONTAL CABLES	VERTICAL PIPE CABLE DOWN AT 45° TO RANGE OF VERTICAL PIPES TYPE VS	COPPER LUGS TWO HOLE - LONG BARREL LENGTH TYPE YA-2

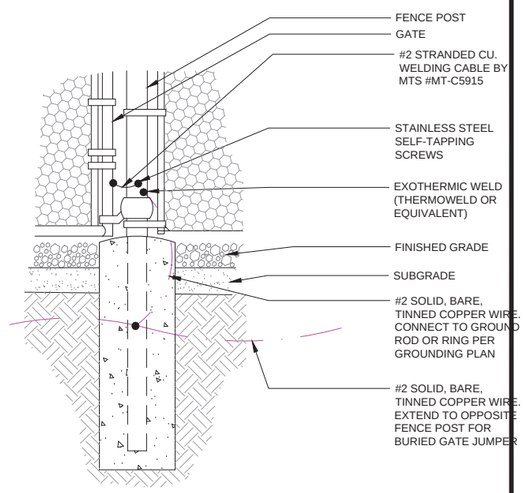
1 GROUNDING PLAN (TYP.)
SCALE: N.T.S.



GROUND WIRE NOTE:

CONTRACTOR TO USE CLEAR OR GRAY SILICONE AS NECESSARY TO SEAL LIQUID TIGHT FLEXIBLE METALLIC CONDUIT.

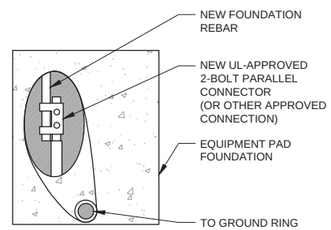
2 GROUND WIRE WEATHERPROOFING
SCALE: N.T.S.



3 GATE GROUNDING (TYP.)
SCALE: N.T.S.

EQUIPMENT PAD GROUNDING NOTES:

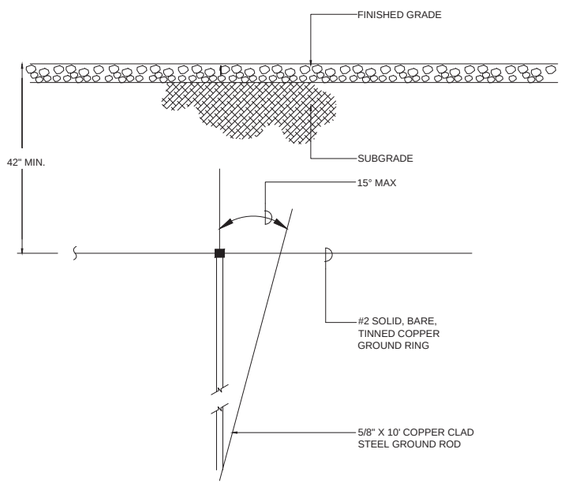
1. **CONNECTION SHALL BE COVERED BY NO LESS THAN 2" OF CONCRETE**
2. **ATTEMPT TO MAKE CONNECTION TO A 6'-0" RUN OF REBAR OR GREATER.**
3. **APPLY HEAT SHRINK OR ELECTRICAL TAPE AROUND THE CONDUCTOR TO AVOID CORROSION.**
4. **CONNECTION TO REMAIN OUTSIDE THE SLEEVE AND VISIBLE**



4 EQUIPMENT PAD GROUNDING
SCALE: N.T.S.

GROUNDING PLAN NOTES:

VERIFY QTY., LENGTH, TYPE, & CONFIGURATION OF GROUND RODS TO ENSURE SYSTEM PROVIDES GROUND RESISTANCE OF 5 OHMS OR LESS.



5 GROUND ROD DETAIL
SCALE: N.T.S.

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STATE OF MISSOURI
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PROFESSIONAL ENGINEER

Expires: 12-31-2026

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
GROUNDING DETAILS

SHEET NUMBER:
EG-2

RD048 | 3.3L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Model Number
48 kW: G0079600

Standby Power Rating
48 kW, 60 Hz

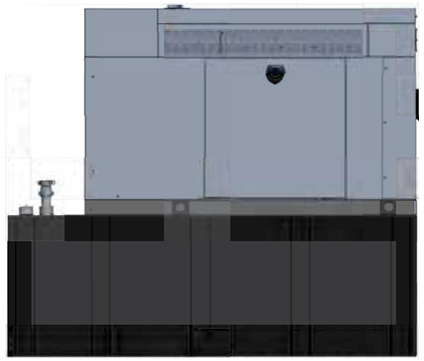

Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

- UL2200, UL6200, UL1236, UL489, UL142
- CSA C22.2, ULC S601
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99
- ISO 3046, 8528, 9001
- NEMA ICS1, ISC10, MG1, 250, ICS6, AB1
- ANSI/IEEE C62.41

Powering Ahead

For over 60 years, Generac has provided innovative design and superior manufacturing. Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application. Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

RD048 | 3.3L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD FEATURES

ENGINE SYSTEM

- Block Heater
- Oil Drain Extension
- Fan Guard
- Factory Filled Oil and Coolant

GENERATOR SET

- Sound Attenuated Aluminum Enclosure
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Wrapped Exhaust Piping
- Standard Factory Testing
- Ready to Accept Full Load in <10 Seconds
- External Emergency Stop Push Button

ENCLOSURE

- Lockable Doors - Keyed Lock with Padlock Hasp
- Rust Proof Hardware
- RhinoCoat™ - Textured Polyester Powder Coat

Electrical System

- Battery
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Smart Battery Charger
- Battery Disconnect

ALTERNATOR SYSTEM

- 2/3 Pitch
- Skewed Stator
- Sealed Bearings
- Low Temperature Rise (<120 °C)
- Low THD (<5%)

Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- Can Operate at up to 122 °F (50 °C) Ambient Temperature

Fuel System

- Primary Fuel Filter
- Stainless Steel Fuel Lines

FUEL TANKS

- 48 Minimum Hour Run Time
- UL142/ULC S601 Listed
- Lockable Fuel Cap

CONTROL SYSTEM

Evolution™ Controller

- Two-Line Plain Text LCD Display
- Programmable Start Delay Between 10-30 Seconds
- 10 Second Engine Start Sequence
- 5 Second Engine Warm Up
- 1 Minute Engine Cool-Down
- Starter Lock-Out
- Smart Battery Charger
- Automatic Voltage Regulation with Over and Under Protection
- Automatic Low Oil Pressure Shutdown
- Overspeed Shutdown
- High Temperature Shutdown
- Overcrank Protection
- Safety Fused
- Failure to Transfer Protection
- Low Battery Protection
- 50 Event Run Log
- Future Set Capable Exerciser
- Incorrect Wiring Protection
- Internal Fault Protection
- Common External Fault Capability
- Governor Failure Protection
- OBD2 Diagnostic Port

Alarms

- Door Open
- Fuel Level
  - 90% Full
  - 50% Low Fuel
  - 10% Shutdown
- Generator Running
- Not in Auto
- Common Shutdown

OPTIONAL SHIPPED LOOSE AND FIELD INSTALL KITS

GENERATOR SET

- Paint Kit
- Scheduled Maintenance Kit

FUEL TANK

- Fuel Fill Drop Tube
- Spill Box
- 90% Fuel Audible Alarm
- Tank Risers
- Spill Box Drainback Kit
- Vent Extension Support Kit
- Overfill Prevention Valve

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PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

CHECKED BY: RH | CHECKED BY: GMS

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SNTS

SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
SPEC-1

RD048 | 3.3L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Mitsubishi
Cylinder #	4
Type	In-Line
Displacement - in^3 (L)	201.38 (3.3)
Bore - in (mm)	3.70 (94)
Stroke - in (mm)	4.72 (120)
Compression Ratio	19:1
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
Intake Air System	Turbocharged/Aftercooled

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Spin-On Canister
Crankcase Capacity - qt (L)	11.2 (10.6)

Cooling System

Cooling System Type	Closed Recovery
Fan Type	Pusher
Fan Speed - RPM	2,340
Fan Diameter - in (mm)	17 (431.8)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specification	ASTM
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line - in (mm)	0.31 (7.94) ID
Fuel Return Line - in (mm)	0.31 (7.94) ID
Fuel Filtering (Microns)	6

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	Group 27F
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Generac
Poles	4
Field Type	Rotating
Insulation Class - Rotor	F
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Direct
Bearings	Single Sealed Cartridge
Coupling	Direct via Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Electronic
Regulation Accuracy (Steady State)	±1.0%

SPEC SHEET 3 of 5

RD048 | 3.3L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

OPERATING DATA

POWER RATINGS

	Standby		
Single-Phase 120/240 VAC @1.0pf	48 kW	Amps: 200	Circuit Breaker Size Amps: 200

MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip at 30%	
120/240 V, Single-Phase at 0.4pf	189 Amps

FUEL CONSUMPTION RATES*

Percent Load	Diesel gph (Lph)
25%	1.23 (4.66)
50%	2.02 (7.66)
75%	3.02 (11.43)
100%	4.02 (15.22)

* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Air Flow	cfm (m^3/min)	3,038 (86)
Coolant System Capacity	gal (L)	2.8 (10.6)
Heat Rejection to Coolant	BTU/hr (MJ/hr)	111,000 (117.1)
Temperature Deration	3% for every 5 °C above 25 °C or 1.7% for every 5 °F over 77 °F	
Altitude Deration	1% for every 100 m above 915 m or 3% for every 1,000 ft over 3,000 ft	
Maximum Ambient Temperature Operating Range	°F (°C)	50 (122)
Maximum Radiator Backpressure	in H_2O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - cfm (m^3/min)	90 (2.5)

ENGINE

		Standby
Rated Engine Speed	RPM	1,800

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	230 (6.5)
Exhaust Temperature (Rated Output)	°F (°C)	930 (499)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.

SPEC SHEET 4 of 5

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PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

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SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SNTS

SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
SPEC-2

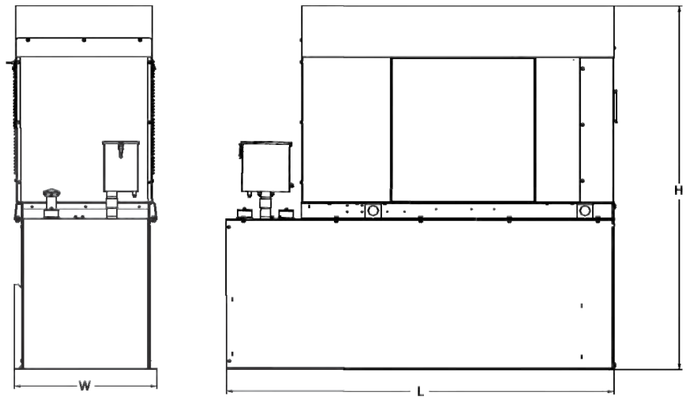
RD048 | 3.3L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



Unit Weight - lbs (kg)	Unit Weight with Skid - lbs (kg)	Dimensions (L x W x H) - in (kg)
2,915 (1,322)	2,954 (1,340)	103.4 (2,625) x 35.0 (888) x 90.0 (2,286)

48 kW Fuel Consumption (gal)	
Fuel Tank Gross Total Capacity	240
Fuel Tank Gross Usable Capacity	229
Fuel Tank Net Usable Capacity (Run Hours Based on Net Usage Capacity)	206
Run Hours at 100% Load	51
Run Hours at 75% Load	68
Run Hours at 50% Load	103

Sound Emission Data	
Rated Load Sound Output at 23 ft - dB (A)	65

* All measurements are approximate and for estimation purposes only. Drawing is for illustration purposes only, not to scale.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

SPEC SHEET

5 of 5

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P: (262) 544-4811

Part No. A0000705000
Rev. B 06/08/2020

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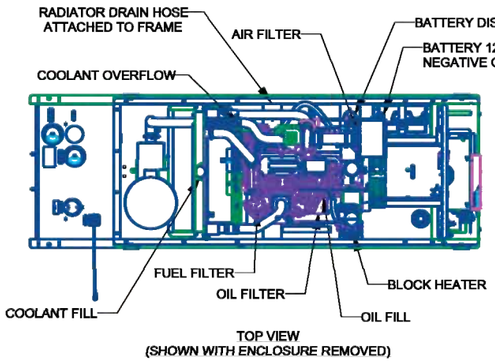
SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SNTS

SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
SPEC-3

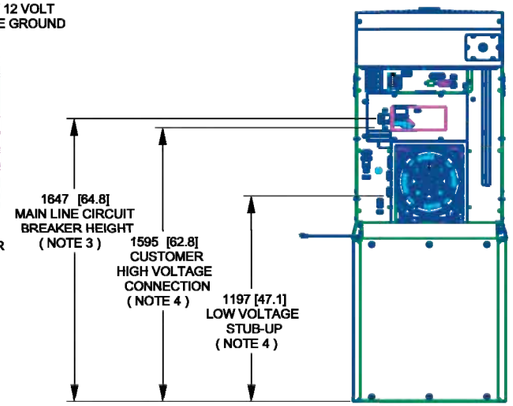
SH	REV	WINDCHILL VERSION	
1/2	C	C.4	



TOP VIEW
(SHOWN WITH ENCLOSURE REMOVED)

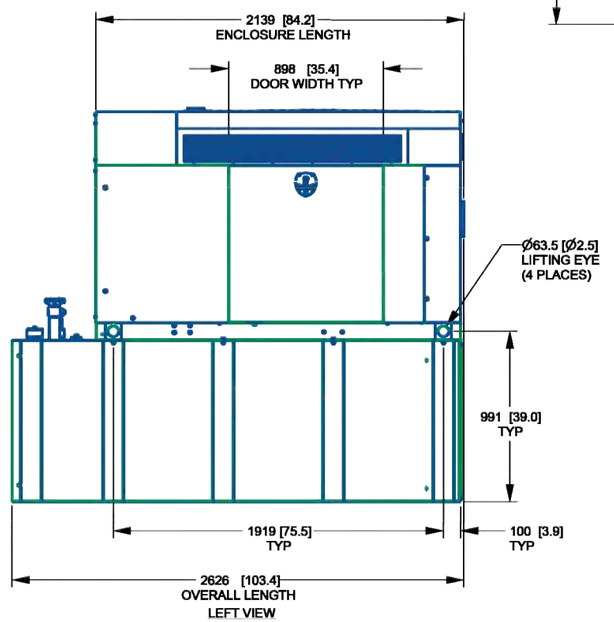
WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1,322 [2,915]
WITH WOODEN SHIPPING SKID	1,340 [2,954]

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

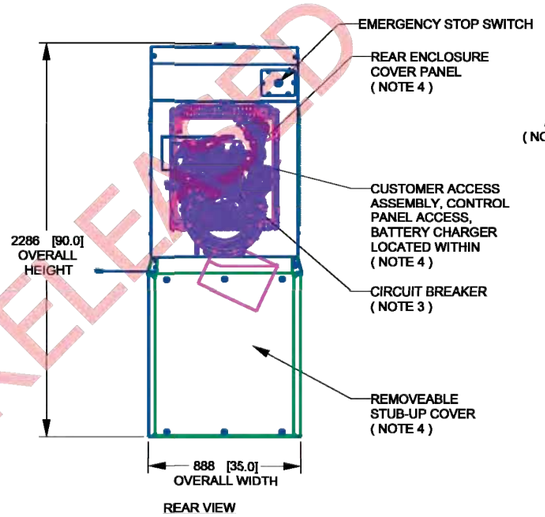


REAR VIEW
(SHOWN WITH REAR COVER PANEL REMOVED)

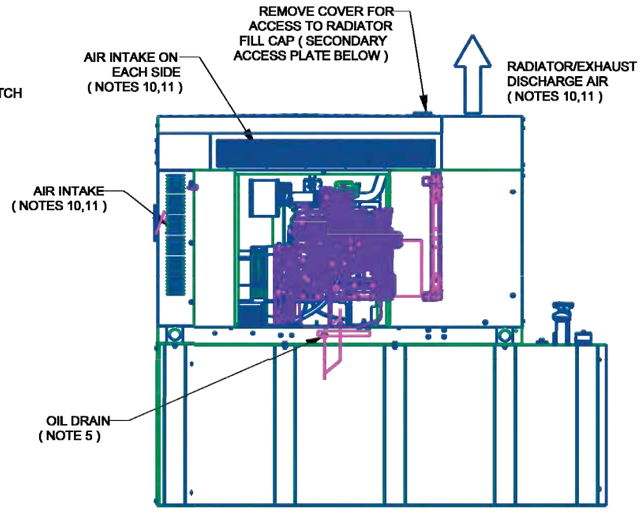
NOTES:
1. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
2. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - MAIN LINE CIRCUIT BREAKER 200 AMPS.
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
   - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER.
4. 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.
5. ENGINE SERVICE CONNECTIONS:
   OIL DRAIN = 1/2" NPT
   RADIATOR DRAIN = HOSE CLAMPED TO FRAME
6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
8. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
9. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
10. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. 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.
12. GENERATOR MUST BE GROUNDED.



LEFT VIEW



REAR VIEW



RIGHT VIEW
(SHOWN WITH DOOR REMOVED)

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

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D3.3L G2
48KW Y06 EXT

ISSUE DATE: 8/01/19

SIZE	CAGE NO	DWG NO	REV
B	N/A	A0000317219	C

SCALE	WT-KG	SHEET
0.035	SEE ABOVE	1 of 2

T-Mobile
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DOWNERS GROVE, IL 60515
MAIN: (773) 444-5400

Concordia
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CAROL STREAM, IL 60188
MAIN: (847) 708-7500

PROFESSIONAL DESIGN FIRM
CERTIFICATE OF AUTHORIZATION # A-2024018412

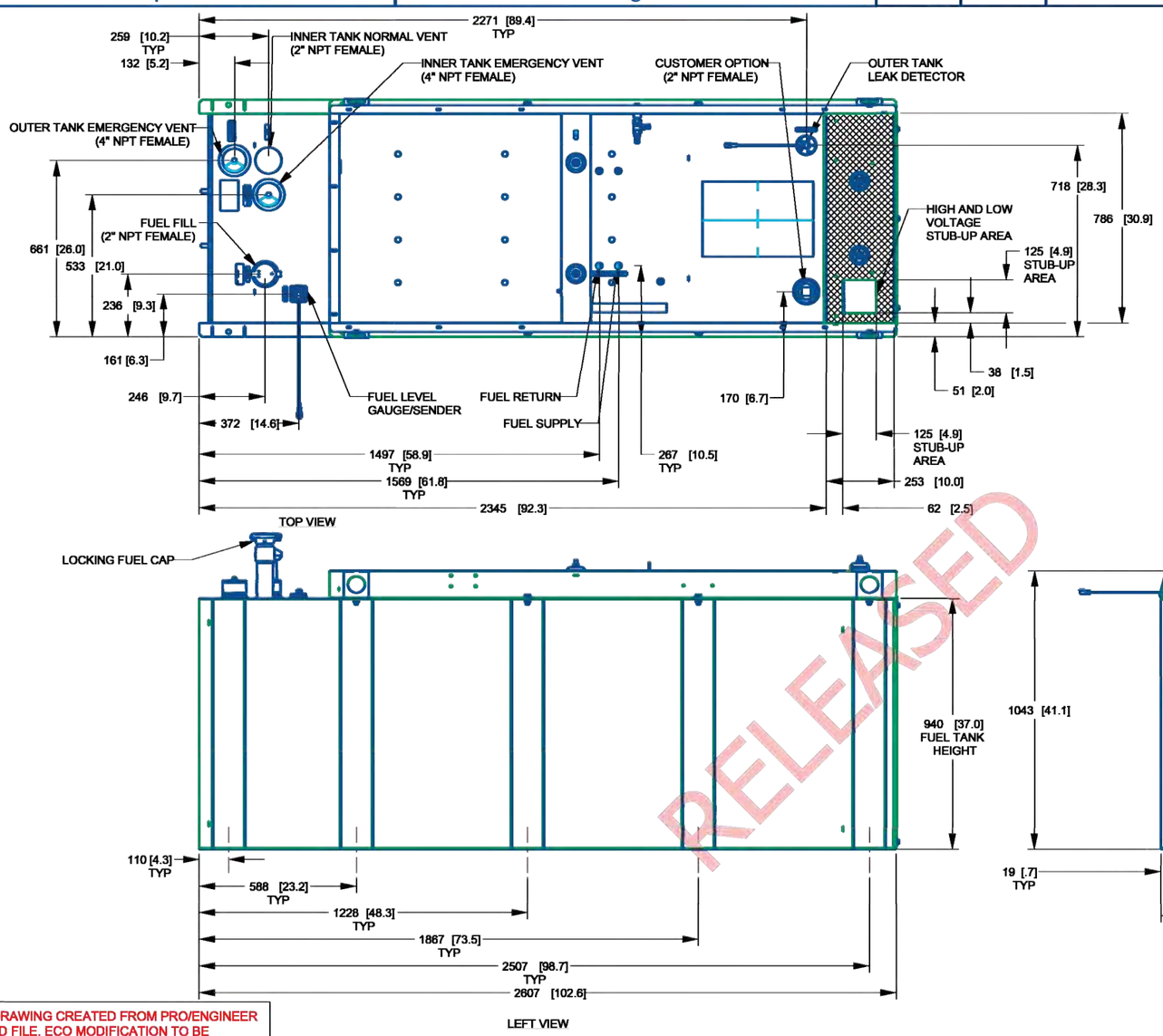
CHECKED BY: RH | CHECKED BY: GMS

SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781SNTS

SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
SPEC-4

SH	REV	WINDCHILL VERSION	
2/2	C	C.4	



NOTE: ROUNDED TO NEAREST GALLON

240 GAL EXTENDED BASETANK (P/N: 10000036243)		
DEPTH: INCHES	U.S. GALLONS	NOTES
0	2	
1	9	
2	17	
3	24	
4	31	
5	38	
6	46	
7	53	
8	60	
9	67	
10	74	
11	82	
12	89	
13	96	
14	103	
15	111	
16	118	
17	125	
18	132	
19	140	
20	147	
21	154	
22	161	
23	168	
24	176	
25	183	
26	190	
27	197	
28	205	
29	212	
30	219	
31	226	
31.38	229	USABLE TANK CAPACITY
32	234	
32.9	240	TOTAL TANK CAPACITY

TANK IS LISTED TO UL142 AND ULCS601

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

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

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE: INSTALL D3.3L G2
48KW Y06 EXT

ISSUE DATE: 8/01/19

SIZE	CAGE NO	DWG NO	REV
B	N/A	A0000317219	C

SCALE 0.060 | WT-KG SEE ABOVE | SHEET 2 of 2

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SHEET TITLE:
GENERATOR SPECIFICATIONS

SHEET NUMBER:
SPEC-5

Automatic Transfer Switches

GENERAC®

Service and Non-Service Rated Automatic Transfer Switches

Models: RXSC100A3
RXSW100A3
RXSW150A3
RXSC200A3
RXSW200A3

Description

This series of Generac Automatic Transfer Switches is designed for use with single phase generators that utilize an Evolution™ or Nexus™ Controller. The 100 and 200 Amp open transition switches are available in single phase in both service equipment rated and non-service equipment rated configurations. The 150 Amp open transition switch is only available in a service rated equipment configuration.

Standard Features

Service rated (RXSW) Generac Automatic Transfer Switches are housed in an aluminum NEMA Type 3R enclosure*, with electrostatically applied and baked powder paint. The Heavy Duty Generac Contactor is an ETL recognized device, designed for years of service. The controller at the generator handles all the timing, sensing, exercising functions, and transfer commands. All switches are covered by a five year limited warranty.

* Non-service rated (RXSC) switches are housed in a steel enclosure.

Load Management Technology

Through the use of the integrated Smart A/C Module (SACM), these switches have the capability to manage up to four individual HVAC (24 VAC controlled) loads with no additional hardware. When used in tandem with external Smart Management Modules, a total of eight more loads can be managed, providing the most installation efficient power management options available.

GENERAC® ISO 9001:2008

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 3R	NEMA 3R	NEMA 3R	NEMA 3R	NEMA 3R
ETL Rating	cETLus	ETLus	ETLus	cETLus	ETLus
Withstand Rating (Amps)	10,000	10,000	22,000	10,000	22,000
Lug Range	2/0 - #14		250 MCM - #6		

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SITE #: A5P0093A
CITY OF WILLARD
519 E. JACKSON
WILLARD, MO 65781

SHEET TITLE:
ATS
SPECIFICATIONS

SHEET NUMBER:
SPEC-6

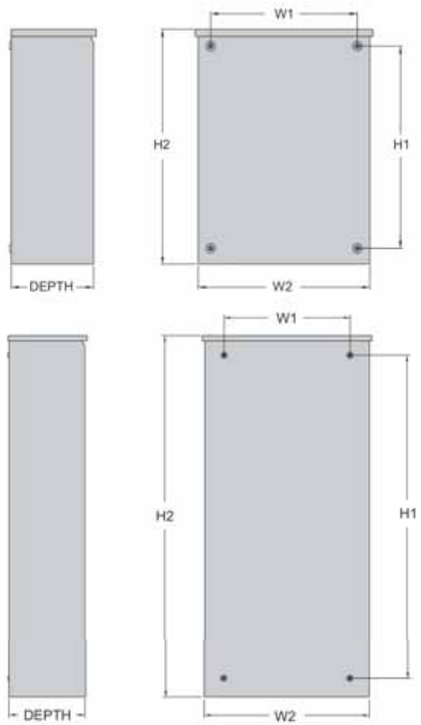
GENERAC

100-200 Amps, Single Phase — Automatic Transfer Switches

Automatic Transfer Switches
3 of 3

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)



GENERAC

Generac Power Systems, Inc. • S45 W29290 HWY. 59, Waukesha, WI 53189 • generac.com

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CITY OF WILLARD
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WILLARD, MO 65781

SHEET TITLE:
ATS
SPECIFICATIONS

SHEET NUMBER:
SPEC-7