

SITE LOCATION



WATERLOO (27651) WATERLOO, WISCONSIN 60' FREE STANDING TOWER

PROJECT DIRECTORY

ENGINEERING COMPANY:
EDGE CONSULTING ENGINEERS, INC.
624 WATER STREET
PRAIRIE DU SAC, WI 53578
CONTACT: ARLEN OSTRENG
PHONE: (608) 644-1449

OWNER
JEFFERSON COUNTY SHERIFF'S OFFICE
411 S CENTER AVE.
JEFFERSON, WI 53549-1703
CONTACT: (920) 674-7346
NAME: TODD LINDERT

TECHNOLOGY CONSULTANT:
TRUE NORTH CONSULTING GROUP
140 3RD STREET SOUTH
STILLWATER, MN 55082
CONTACT: (651) 705-1255
NAME: JOHN THOMPSON

RADIO SYSTEM VENDOR:
GENERAL COMMUNICATIONS
2880 COMMERCE PARK DR.
MADISON, WI 53719
CONTACT: (608) 271-4848
NAME: CHAD TOMASZEWSKI

ELECTRICAL SERVICE PROVIDER:
WATERLOO UTILITIES
575 COMMERCIAL AVE
WATERLOO, WI 53594
CONTACT: (920) 478-2260

PROJECT INFO

SITE ADDRESS:
HERRON CT (END OF COURT)
WATERLOO, WI 53594

PROPERTY OWNER(S):
JEFFERSON COUNTY
311 S CENTER AVE
JEFFERSON, WI 53549

CITY OF WATERLOO
WATER & LIGHT COMMISSION
136 N MONROE ST
WATERLOO, WI 53594

TOWER OWNER:
JEFFERSON COUNTY
311 S CENTER AVE
JEFFERSON, WI 53549

TOWER COORDINATES (PER EDGE SURVEY):
LAT (NAD83/2011): 43°-11'-27" N (43.190833)
LONG (NAD83/2011): 88°-59'-53" W (-88.998056)
GROUND ELEVATION (NAVD 88): 938.1'
ASR NUMBER: NA

PLSS INFORMATION
PART OF SW 1/4 OF THE NE 1/4
SECTION 06, T8N, R13W
CITY OF WATERLOO
JEFFERSON COUNTY
WISCONSIN

PARCEL ID(S): 290-0813-0613-034
290-0813-0613-001

ZONING CLASSIFICATION(S): ???

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E-501	GROUNDING DETAILS
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E-505	UTILITY RACK DETAILS

CONSULTANT:
Edge
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824 WATER STREET
PRAIRIE DU SAC, WI 53578
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www.edgeconsult.com



TITLE SHEET
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

ONE CALL
SYSTEMS INTERNATIONAL

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN, CALL DIGGERS HOTLINE

TOLL FREE: 1-800-242-8511
FAX A LOCATE: 1-800-242-5811

WI STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

ENGINEER SEAL:

I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE EXCEPTIONS NOTED IN THE SHEET INDEX, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

SIGNATURE:

DATE: 5-12-2021

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	G-001

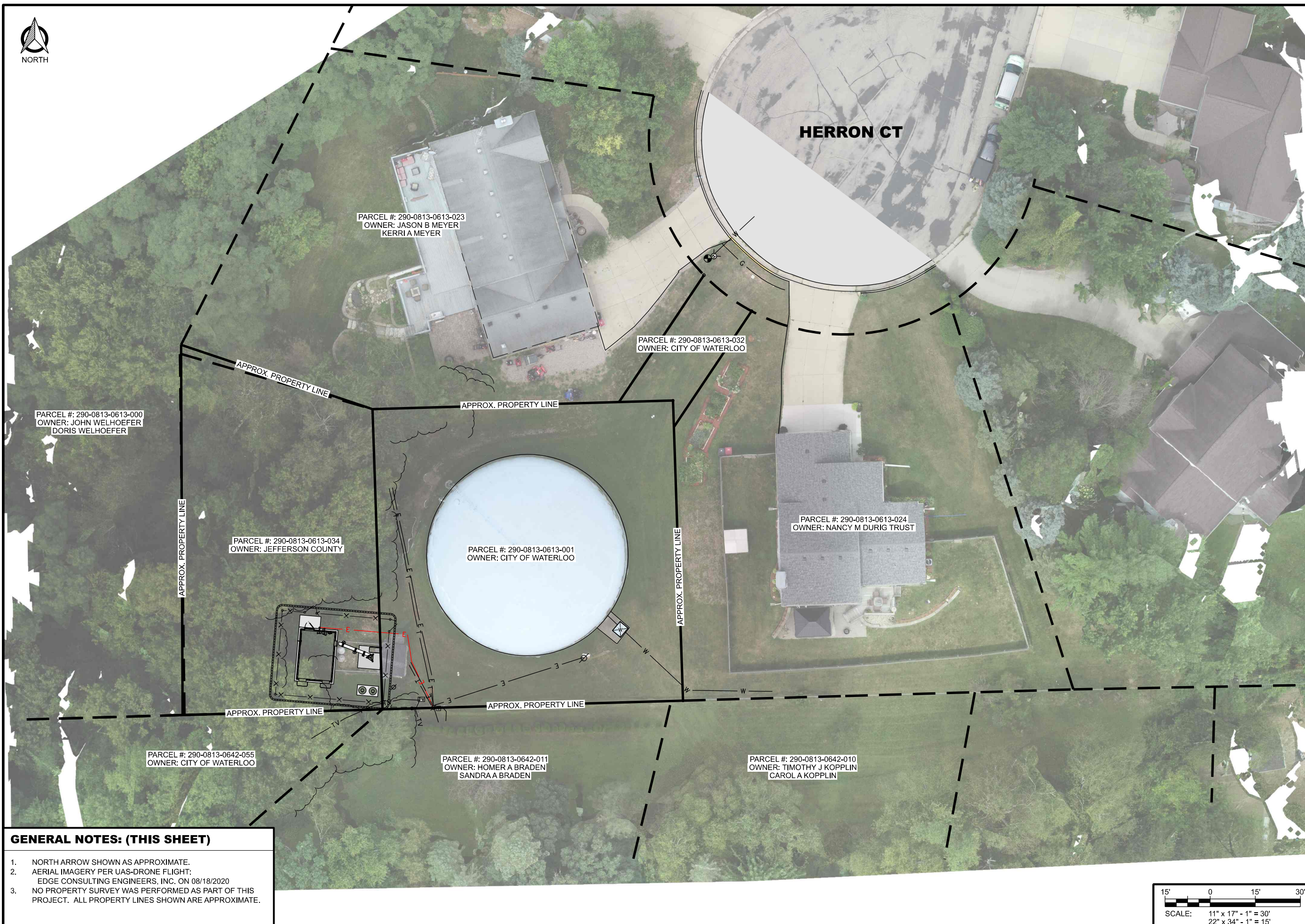
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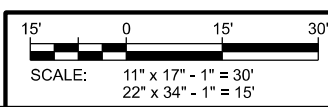


CLIENT:
OVERALL SITE PLAN
WATERLOO (27651)
WATERLOO, WISCONSIN



GENERAL NOTES: (THIS SHEET)

- NORTH ARROW SHOWN AS APPROXIMATE.
- AERIAL IMAGERY PER UAS-DRONE FLIGHT:
EDGE CONSULTING ENGINEERS, INC. ON 08/18/2020
- NO PROPERTY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. ALL PROPERTY LINES SHOWN ARE APPROXIMATE.



SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-101

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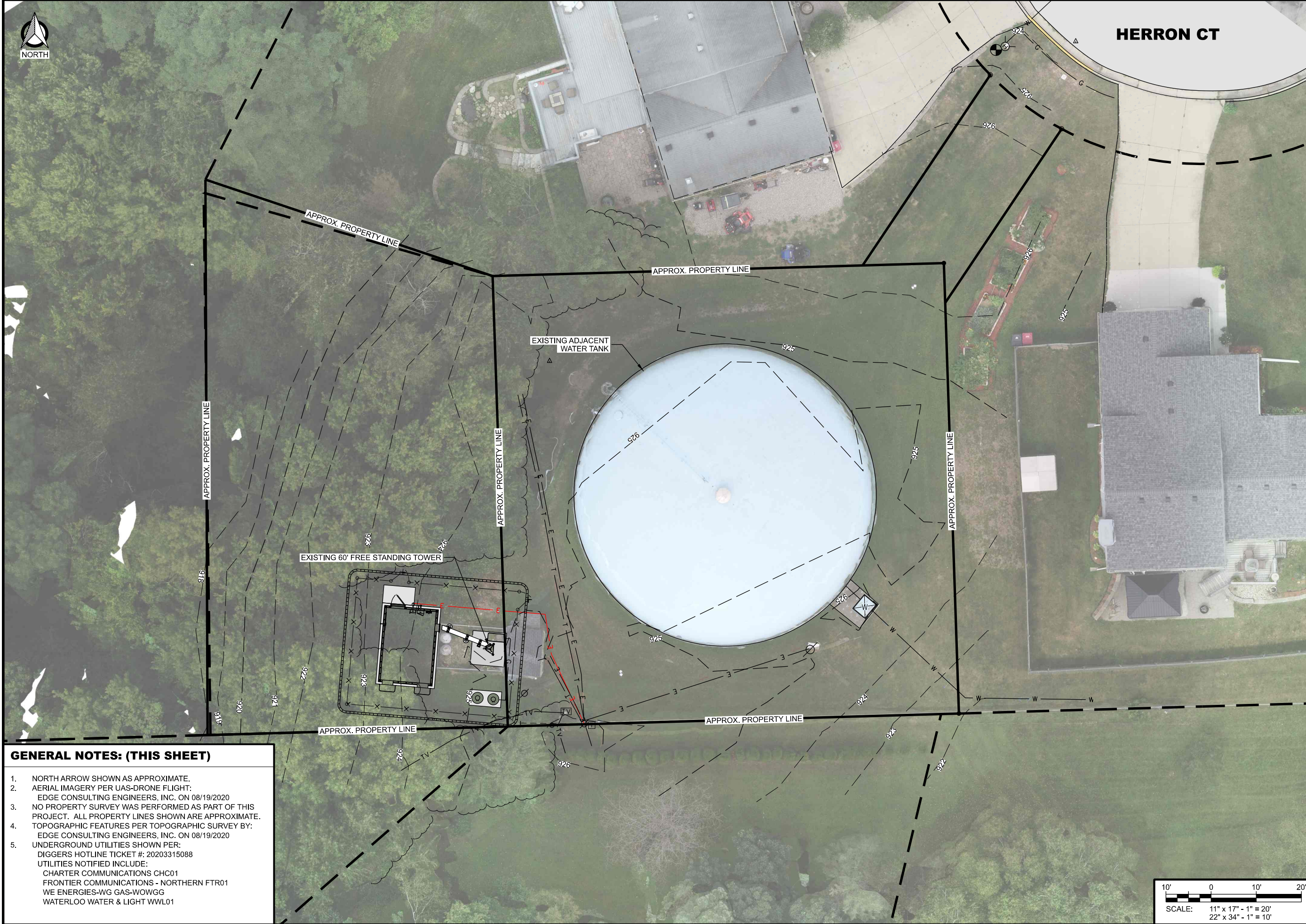


HERRON CT

CONSULTANT:
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CLIENT:
ENLARGED SITE PLAN
WATERLOO (27651)
WATERLOO, WISCONSIN

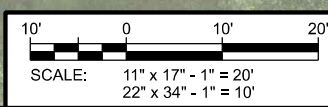


- GENERAL NOTES: (THIS SHEET)**
1. NORTH ARROW SHOWN AS APPROXIMATE.
 2. AERIAL IMAGERY PER UAS-DRONE FLIGHT: EDGE CONSULTING ENGINEERS, INC. ON 08/19/2020
 3. NO PROPERTY SURVEY WAS PERFORMED AS PART OF THIS PROJECT. ALL PROPERTY LINES SHOWN ARE APPROXIMATE.
 4. TOPOGRAPHIC FEATURES PER TOPOGRAPHIC SURVEY BY: EDGE CONSULTING ENGINEERS, INC. ON 08/19/2020
 5. UNDERGROUND UTILITIES SHOWN PER:
 DIGGERS HOTLINE TICKET #: 20203315088
 UTILITIES NOTIFIED INCLUDE:
 CHARTER COMMUNICATIONS CHC01
 FRONTIER COMMUNICATIONS - NORTHERN FTR01
 WE ENERGIES-WG GAS-WOWGG
 WATERLOO WATER & LIGHT WWL01

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-102



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KEYNOTES: (THIS SHEET)

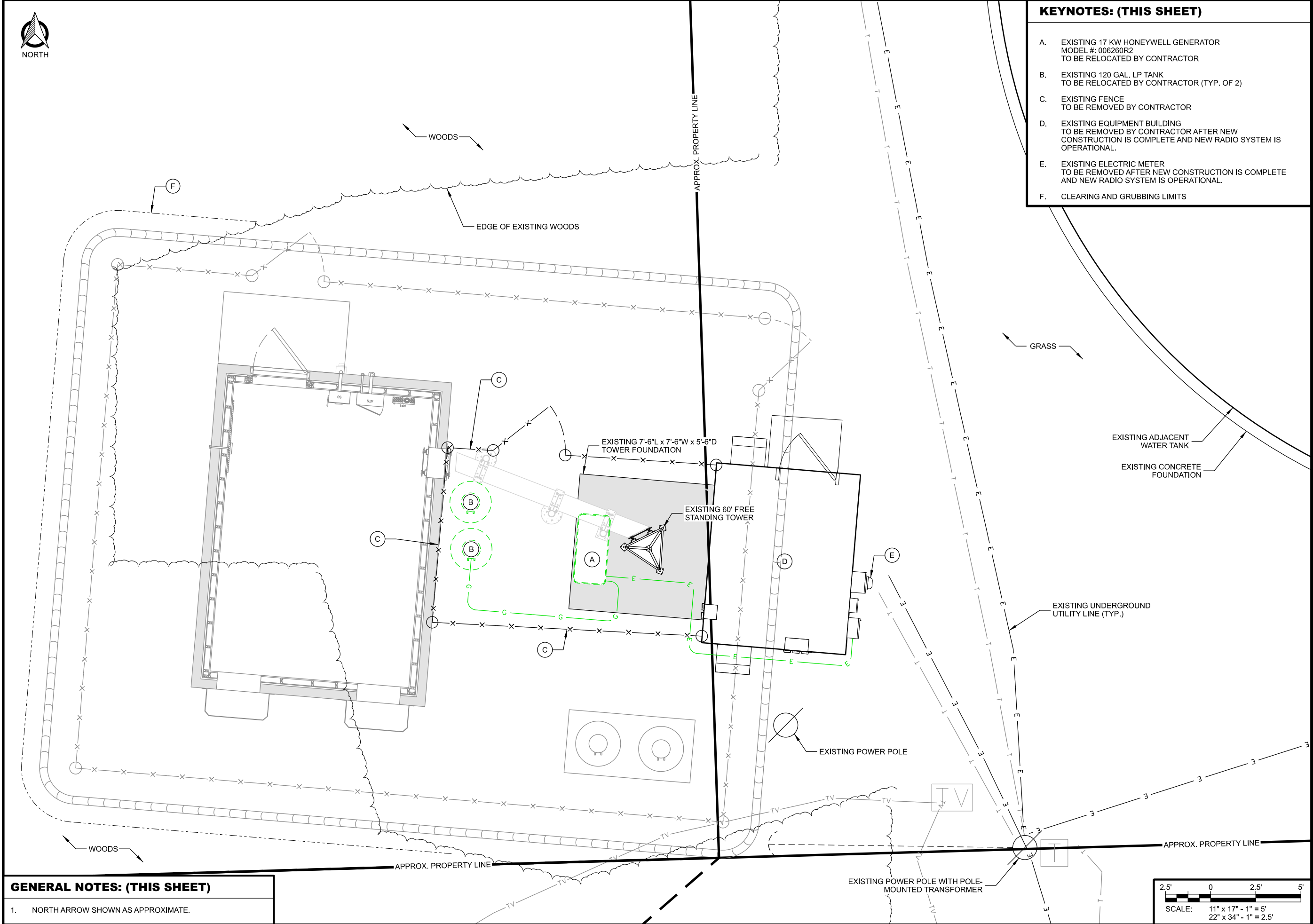
- A. EXISTING 17 KW HONEYWELL GENERATOR
MODEL #: 006260R2
TO BE RELOCATED BY CONTRACTOR
- B. EXISTING 120 GAL. LP TANK
TO BE RELOCATED BY CONTRACTOR (TYP. OF 2)
- C. EXISTING FENCE
TO BE REMOVED BY CONTRACTOR
- D. EXISTING EQUIPMENT BUILDING
TO BE REMOVED BY CONTRACTOR AFTER NEW
CONSTRUCTION IS COMPLETE AND NEW RADIO SYSTEM IS
OPERATIONAL.
- E. EXISTING ELECTRIC METER
TO BE REMOVED AFTER NEW CONSTRUCTION IS COMPLETE
AND NEW RADIO SYSTEM IS OPERATIONAL.
- F. CLEARING AND GRUBBING LIMITS

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**DEMOLITION PLAN
 WATERLOO (27651)
 WATERLOO, WISCONSIN**

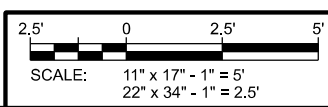


GENERAL NOTES: (THIS SHEET)
 1. NORTH ARROW SHOWN AS APPROXIMATE.

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-103



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KEYNOTES: (THIS SHEET)

- A. JEFFERSON COUNTY EQUIPMENT SHELTER; SEE A-101 FOR DETAILS
- B. 4' x 7' CONCRETE STOOP; SEE C-503 FOR DETAILS
- C. 12" WIDE ICE BRIDGE; SEE T-502 FOR DETAILS
- D. RELOCATED 17 KW HONEYWELL GENERATOR MODEL #: 006260R2, 120/240V, 141.7/70.8 A
- E. RELOCATED 120 GAL. LP TANK ON NEW 3'-6" x 7'-0" CONCRETE PAD (TYP. OF 2)
- F. COMPOUND FENCE; SEE C-502 FOR DETAILS
- G. 4' WIDE MAN GATE (TYP. OF 2); SEE C-502 FOR DETAILS
- H. CLEARANCE ZONE/SETBACKS:
 - 10' AROUND LP TANK(S)
 - 3' AROUND GENERATOR
- I. SIGNAGE:
 - (0) ASR. INSTALL ON VEHICLE GATE.
 - (1) SITE IDENTIFICATION. INSTALL ON SHELTER DOOR.
 - (4) RF NOTICE. INSTALL ON EACH SIDE OF FENCE.
 - (2) RF CAUTION. INSTALL ON SHELTER DOOR AND TOWER
 - (1) OSHA DANGER. INSTALL ON VEHICLE GATE.
 - (1) NFPA LP FUEL. INSTALL ON VEHICLE GATE
- J. GATE LOCKS
(2) PACKLOCKS BY CONTRACTOR, (1) EACH GATE
- K. GRAVEL COMPOUND W/ PERIMETER LANDSCAPE PAVER EDGING; SEE DETAILS B/C-501 & D/C-501
- L. BOLTED ICE BRIDGE POST. WELD 8"x8"x1/4" BASE PLATE TO BOTTOM OF POST. FASTEN TO CONCRETE FOUNDATION W/ (4) 1/2"x3-1/2" ANCHOR BOLTS. ALL MATERIALS TO BE GALVANIZED.

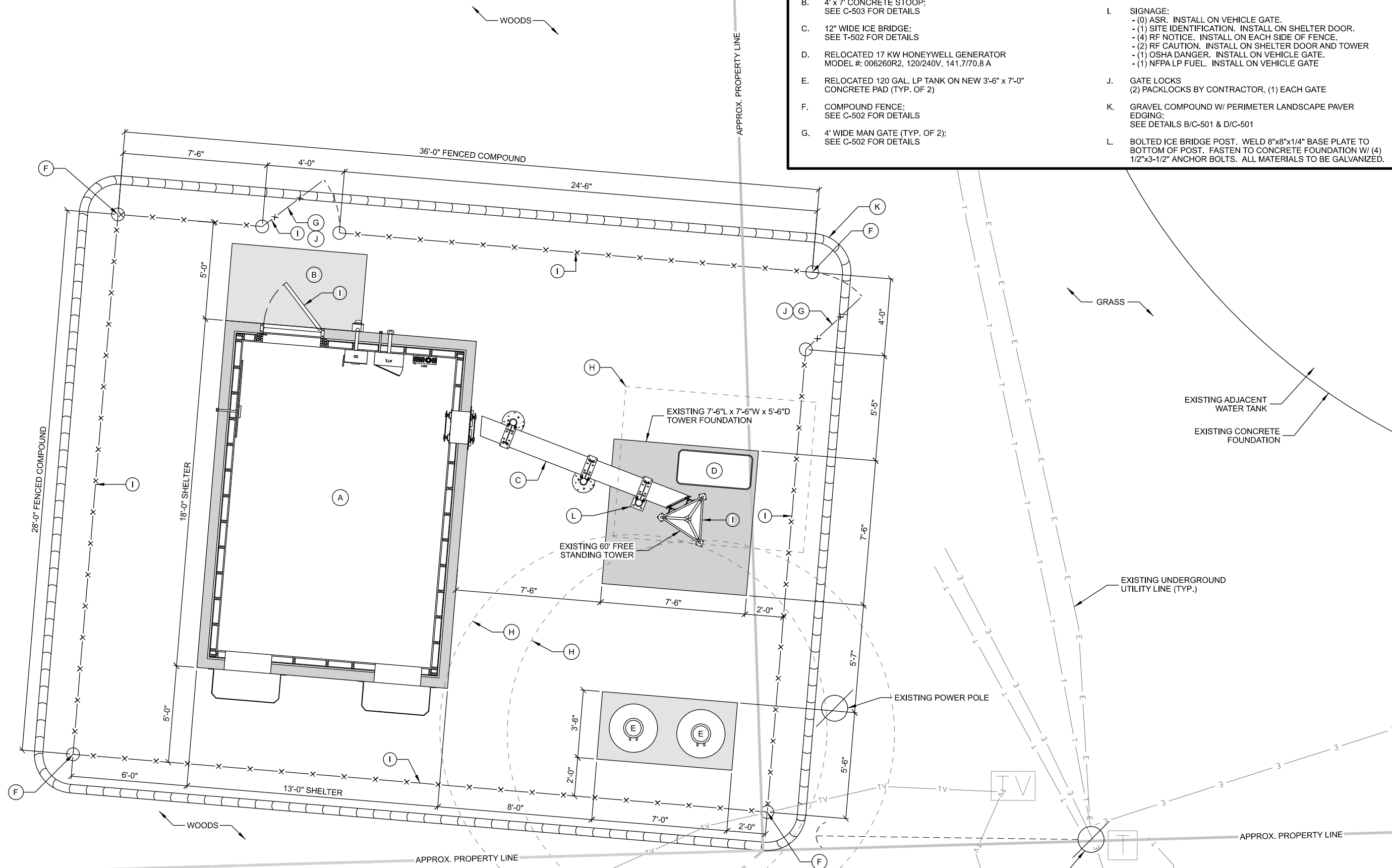
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CLIENT:

JEFFERSON COUNTY WI
ESTABLISHED 1838

**COMPOUND PLAN
WATERLOO (27651)
WATERLOO, WISCONSIN**



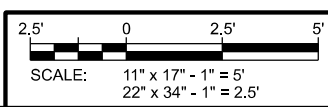
GENERAL NOTES: (THIS SHEET)

1. NORTH ARROW SHOWN AS APPROXIMATE.

SUBMITTAL:

INT.	DATE	DESCRIPTION:

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	C-104



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GRADING NOTES: (THIS SHEET)

1. CONTOUR INTERVAL IS 1 FOOT.
2. PERIMETER CONTROLS AND STONE TRACKING PADS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES, INCLUDING CLEARING AND GRUBBING OPERATIONS. STONE TRACKING PAD SHALL BE A 12'X50' MIN. CONSISTING OF 3" BREAKER STONE.
3. CONTRACTOR SHALL INSTALL ADDITIONAL EROSION CONTROL MEASURES, BEYOND THOSE SHOWN IN THIS PLAN, SUITABLE FOR THEIR MEANS AND METHODS TO KEEP ALL SEDIMENT ON SITE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES IMPLEMENTATION OF SILT FENCE, EROSION BALES, TRACKING PADS, DIVERSION BERMS AND/OR OTHER APPROPRIATE DEVICES.
4. CONTRACTOR SHALL GRADUALLY MATCH INTO EXISTING GRADE. NO PROPOSED EARTHWORK SHALL HAVE A GREATER SLOPE THAN 3:1. FINISHED SITE TO BE GRADED TO MAINTAIN POSITIVE DRAINAGE IN ALL AREAS.
5. DRIVEWAY GRADE WITHIN 25 FEET OF PUBLIC ROAD ACCESS POINT SHALL BE LESS THAN 10% (10:1).
6. FINISHED GRADE SLOPES GREATER THAN 10:1, DITCH BOTTOMS AND GRASS SURFACES WITHIN 6 FEET OF ANY PAVED OR GRAVEL SURFACE REQUIRE EROSION MAT (CLASS II, URBAN TYPE B)
7. ALL DISTURBED GRASS/TURF AREAS SHALL BE RESTORED WITH TOPSOIL, SEED AND MULCH. TOPSOIL TO BE 6-INCHES MINIMUM. SEED TO CONSIST OF NATIVE PURE LIVE SEED (PLS) AT 98% PURITY AND 95% GERMINATION. MULCH TO BE WEED-FREE GRAIN STRAW.
8. CONTRACTOR TO PERFORM MAINTENANCE AND INSPECTION OF EROSION CONTROL DEVICES AND EXPOSED GRADE THROUGHOUT CONSTRUCTION. THE CONTRACTOR SHALL INSPECT THE EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES ON A WEEKLY BASIS AND WITHIN 24 HOURS AFTER A PRECIPITATION EVENT 0.5 INCHES OR GREATER WHICH RESULTS IN RUNOFF. CONTRACTOR SHALL CONTINUE MAINTENANCE AND INSPECTION UNTIL FULL VEGETATION ESTABLISHMENT AND/OR PROJECT ACCEPTANCE.
9. CONTRACTOR TO REMOVE EROSION CONTROL MEASURES AFTER PROJECT ACCEPTANCE.

GENERAL NOTES: (THIS SHEET)

1. EXISTING SITE MAPPING DATA IS FROM TOPOGRAPHIC SURVEY PERFORMED BY EDGE CONSULTING ENGINEERS ON 19-08-2020.
2. CONTRACTOR IS RESPONSIBLE FOR EARTHWORK NECESSARY TO ACHIEVE DESIGN GRADES. THIS INCLUDES IMPORT OR EXPORT OF MATERIAL.

LEGEND: (THIS SHEET)

- EXISTING CONTOUR GRADES
- PROPOSED CONTOUR GRADES
- SPOT ELEVATIONS
P = PROPOSED ELEV.
E = EXISTING ELEV.
TOC = TOP OF CONC.
- PROPOSED DRAINAGE PATH
- SILT FENCE
- LIMITS OF DISTURBANCE
- EROSION MAT



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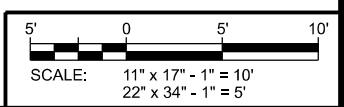


GRADING AND EROSION CONTROL PLAN WATERLOO (27651) WATERLOO, WISCONSIN

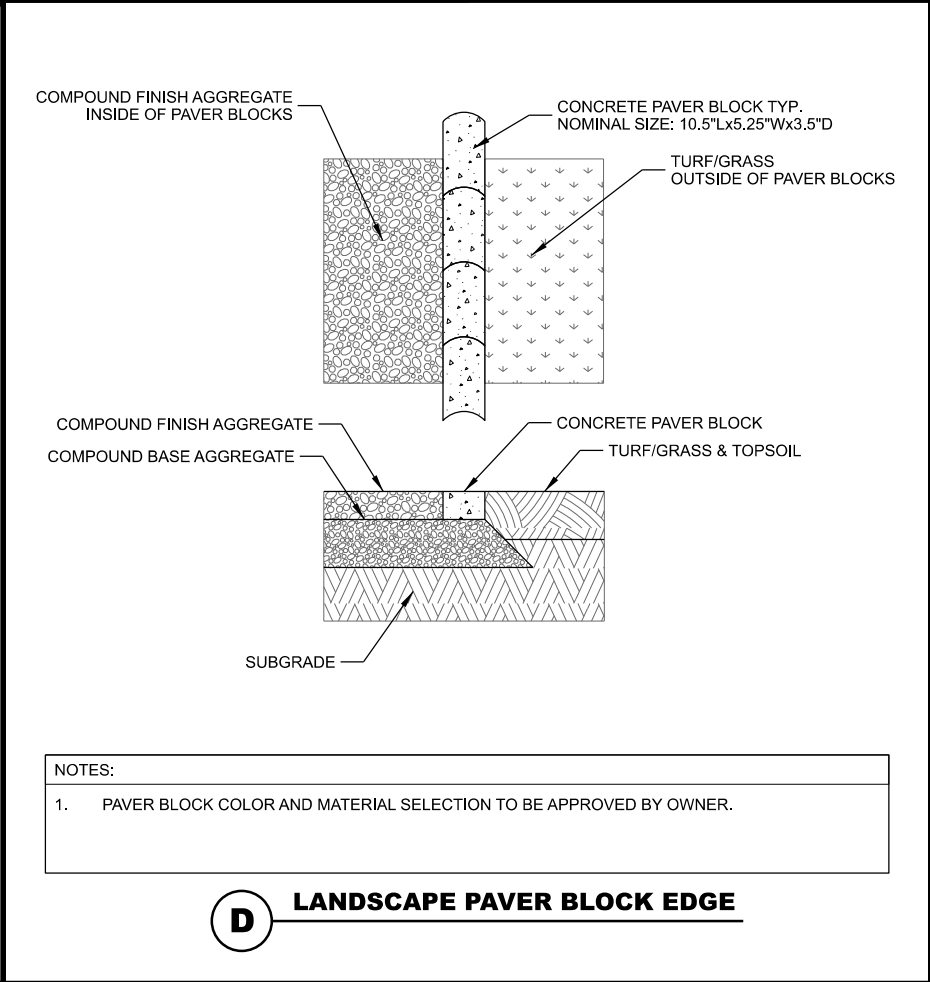
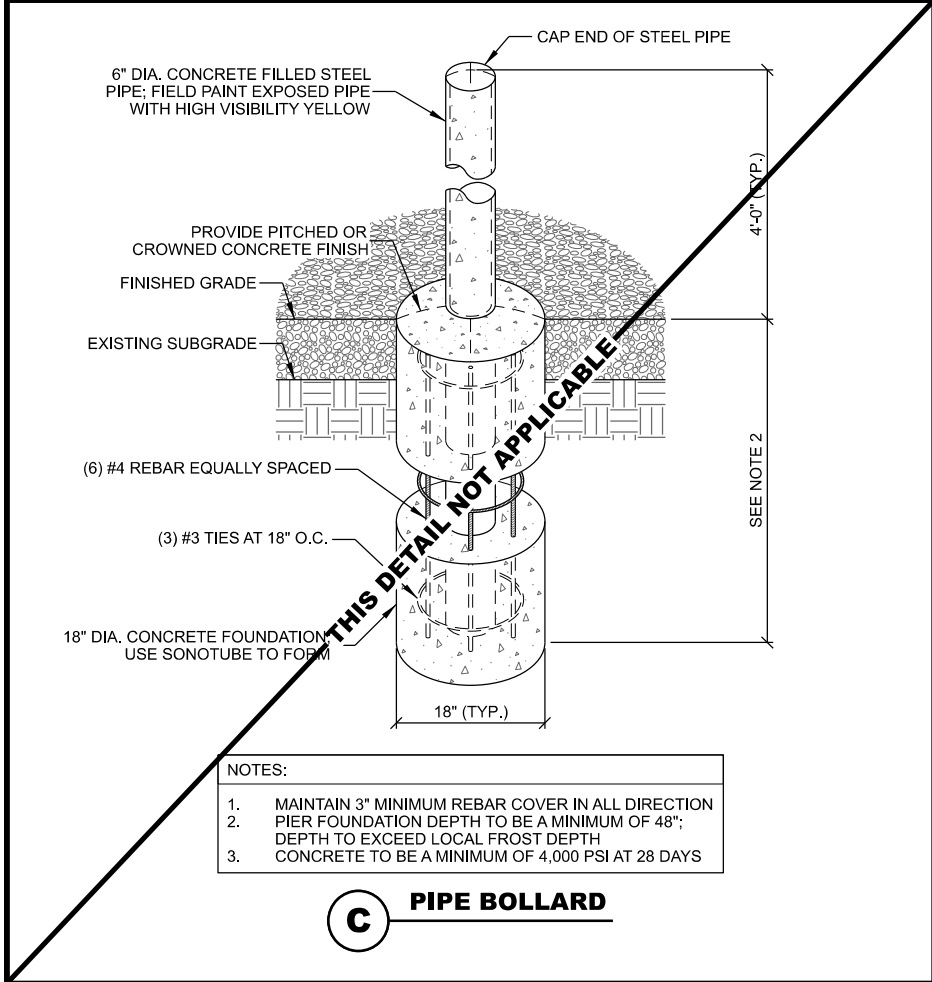
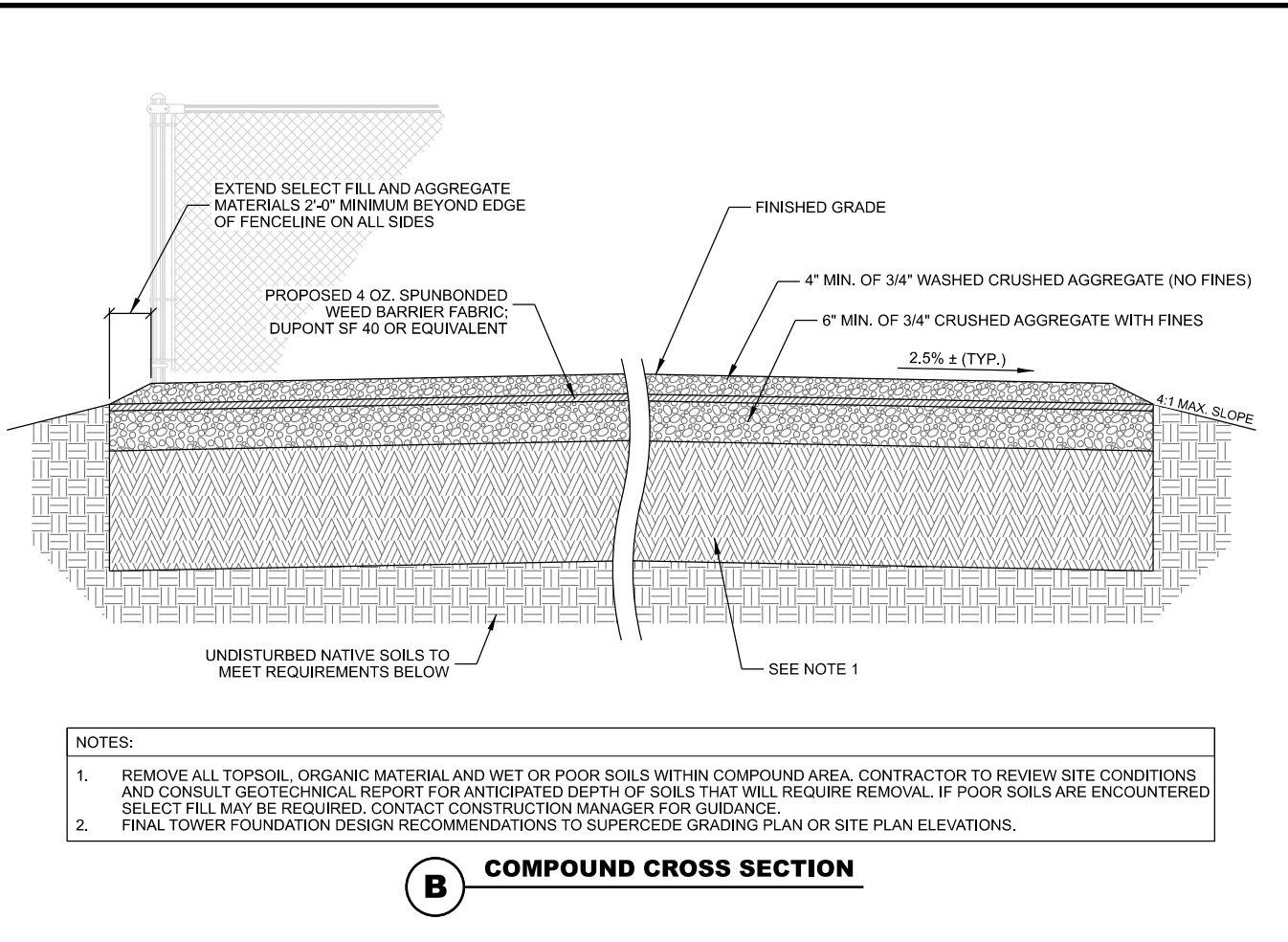
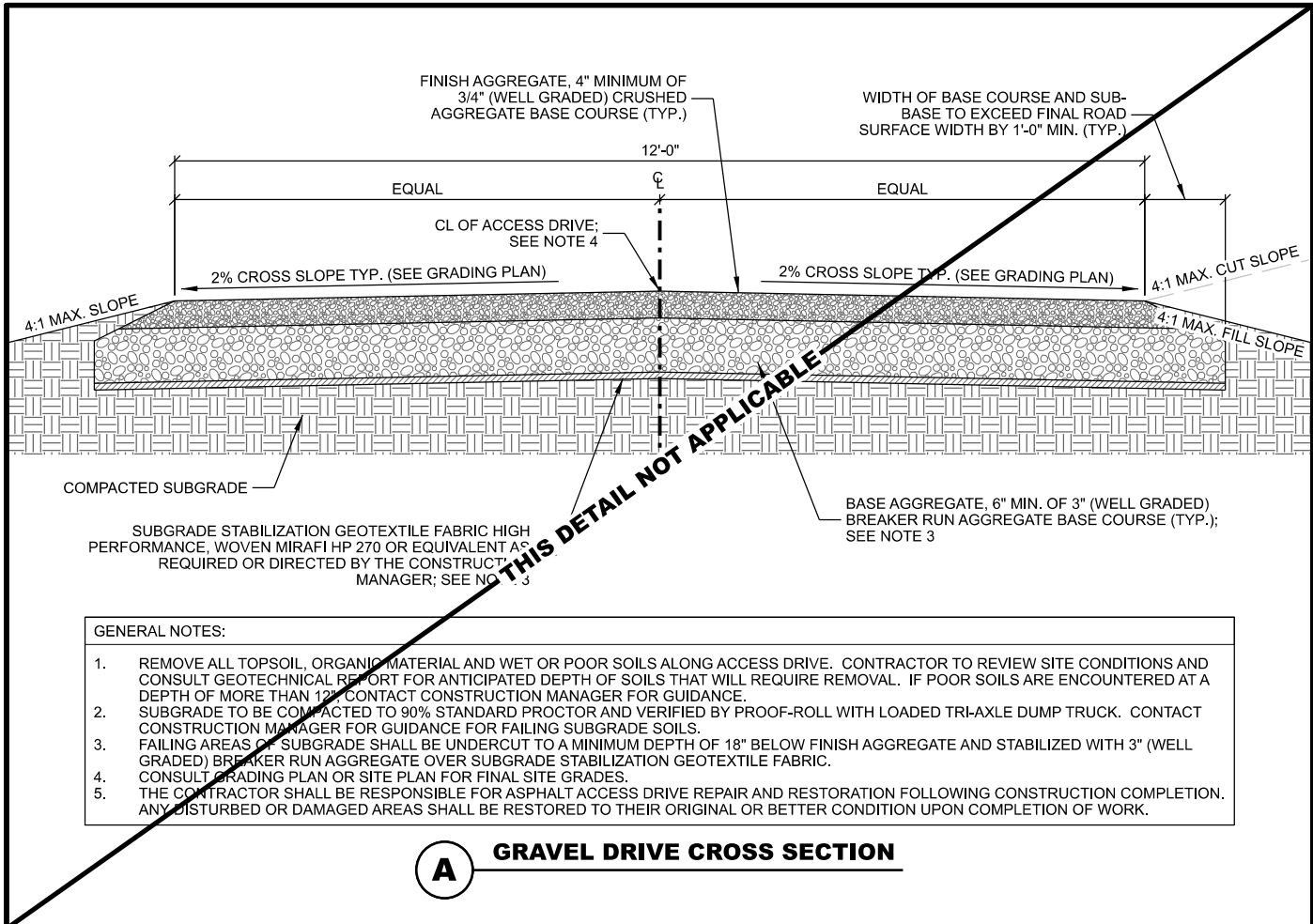
SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	C-105



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CONSULTANT:

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CLIENT:

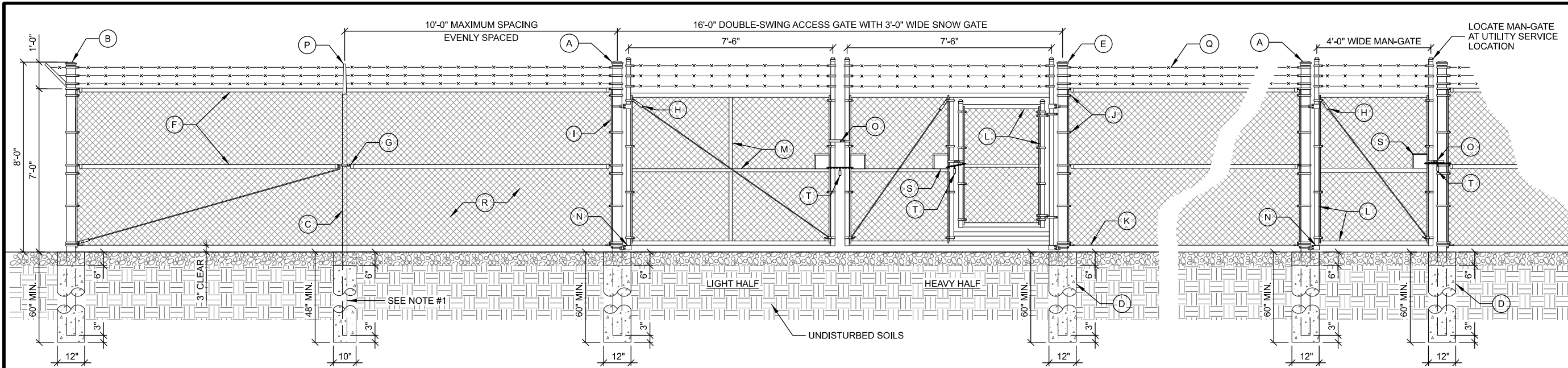
JEFFERSON COUNTY WI
ESTABLISHED 1838

SITE DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-501

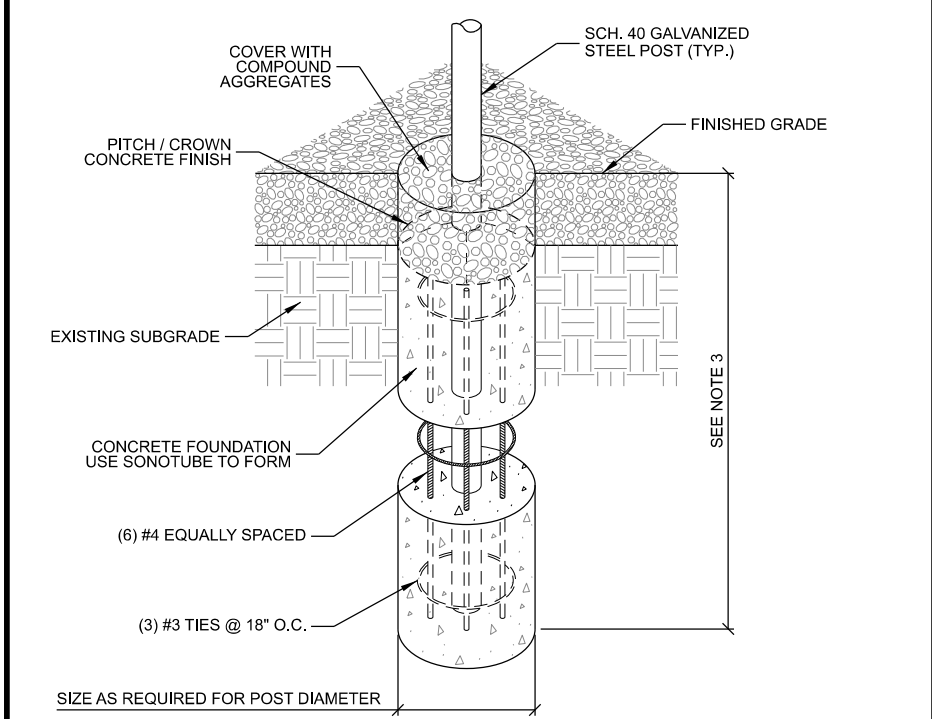


KEY NOTES: (THIS DETAIL)

- | | | |
|---|---|---|
| (A) 3-1/2" (4" O.D.) SCH. 40 GALV. STEEL GATE POST | (G) OFFSET BRACE RAIL ENDS FOR MID BRACE RAIL | (N) MALLEABLE BUTT HINGES (TYP.) |
| (B) 2-1/2" (2-7/8" O.D.) SCH. 40 GALV. STEEL CORNER POST | (H) 5/16" O.D. TRUSS ROD WITH TRUSS TIGHTENER ASSEMBLY | (O) GATE LATCH; VERIFY REQUIREMENTS WITH FENCE MANUFACTURER |
| (C) 2" (2-3/8" O.D.) SCH. 40 GALV. STEEL LINE POSTS; LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10'-0" O.C.; SEE NOTE #1 | (I) 3/16" x 3/4" STRETCHER BAR; TO EXTEND FULL HEIGHT OF FENCE FABRIC | (P) 45° BARB ARM FENCE POST CAP |
| (D) CONCRETE POST FOUNDATION; 12" DIA. AT GATE & CORNER POSTS, 10" DIA. AT LINE POSTS SEE DETAIL BELOW | (J) 3/4" TENSION BAND (TYP.) | (Q) (3) STRANDS OF 4 PT. GALV. BARB WIRE |
| (E) FENCE POST CAP (SIZE VARIES) | (K) TENSION WIRE (7 GAUGE) | (R) FENCE FABRIC; #9 GAUGE GALV. COATED, 2" DIAMOND PATTERN CHAIN LINK; TWISTED TOP SELVAGE AND KNUCKLED BOTTOM SELVAGE |
| (F) 1-1/4" (1.66" O.D.) TOP RAIL & MID BRACE RAIL PIPE | (L) 1-1/2" (1.9" O.D.) SCH. 40 GALV. STEEL FENCE GATE FRAME | (S) 6" x 6" HANDHOLE FOR CHAIN LOCK |
| | (M) 1-1/4" (1.66" O.D.) SCH. 40 GALV. STEEL HORIZONTAL AND VERTICAL GATE BRACES | (T) GATE LOCK |

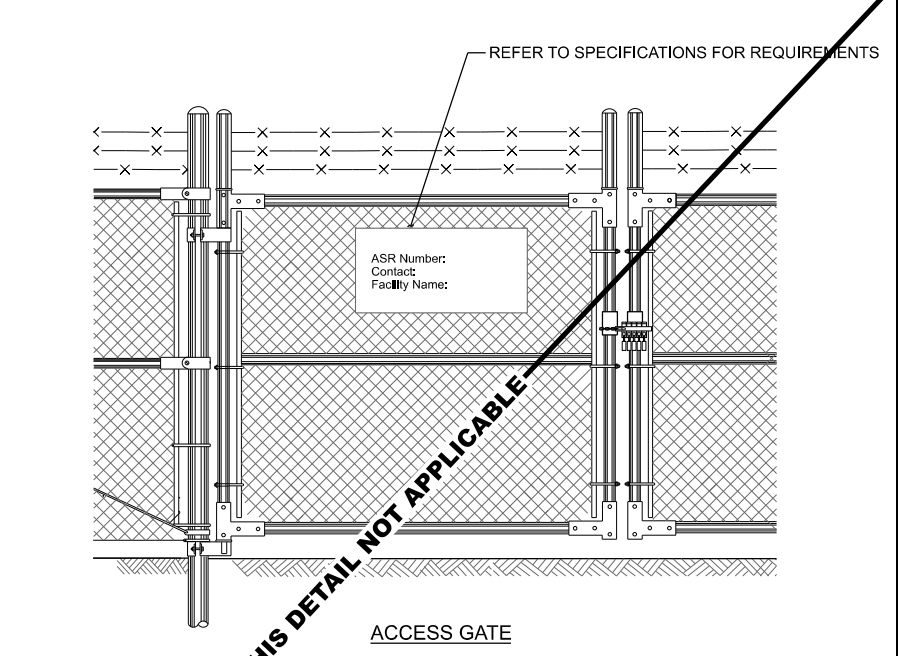
- NOTES:**
- ALL LINE POSTS MAY BE EITHER DRIVEN OR SET IN CONCRETE AT CONTRACTORS OPTION. SEE DETAIL FOR DEPTH AND FOOTING REQUIREMENTS. IF DRIVEN, DRIVE LINE POSTS TO 60" DEPTH MIN.
 - ALL FENCE POSTS AND FRAMING TO BE SCH. 40 GALVANIZED STEEL. SEE DETAIL FOR SIZES.

A COMPOUND FENCE



- NOTES:**
- MAINTAIN 3" MINIMUM REBAR COVER WITH CONCRETE IN ALL DIRECTIONS.
 - CONCRETE MIX TO BE 4,000 PSI @ 28 DAYS.
 - FOUNDATION DEPTH TO EXCEED LOCAL FROST DEPTH, OR 48" MINIMUM.

B FENCE POST PIER FOUNDATION



- GENERAL NOTES:**
- THE ANTENNA STRUCTURE REGISTRATION NUMBER SHALL BE DISPLAYED PER 47 CFR 17.4 (g). THE ASR NUMBER SHALL BE POSTED ON THE PERIMETER FENCE OR ACCESS GATE SO THAT IT IS CONSPICUOUSLY VISIBLE AND LEGIBLE FROM THE PUBLICLY ACCESSIBLE AREA NEAREST THE BASE OF THE ANTENNA STRUCTURE ALONG A PUBLICLY ACCESSIBLE ROADWAY OR PATH.
 - MATERIALS USED TO DISPLAY THE ANTENNA STRUCTURE REGISTRATION NUMBER MUST BE WEATHER-RESISTANT AND OF SUFFICIENT SIZE TO BE EASILY SEEN WHERE POSTED.

C ANTENNA STRUCTURE REGISTRATION (ASR) SIGNAGE

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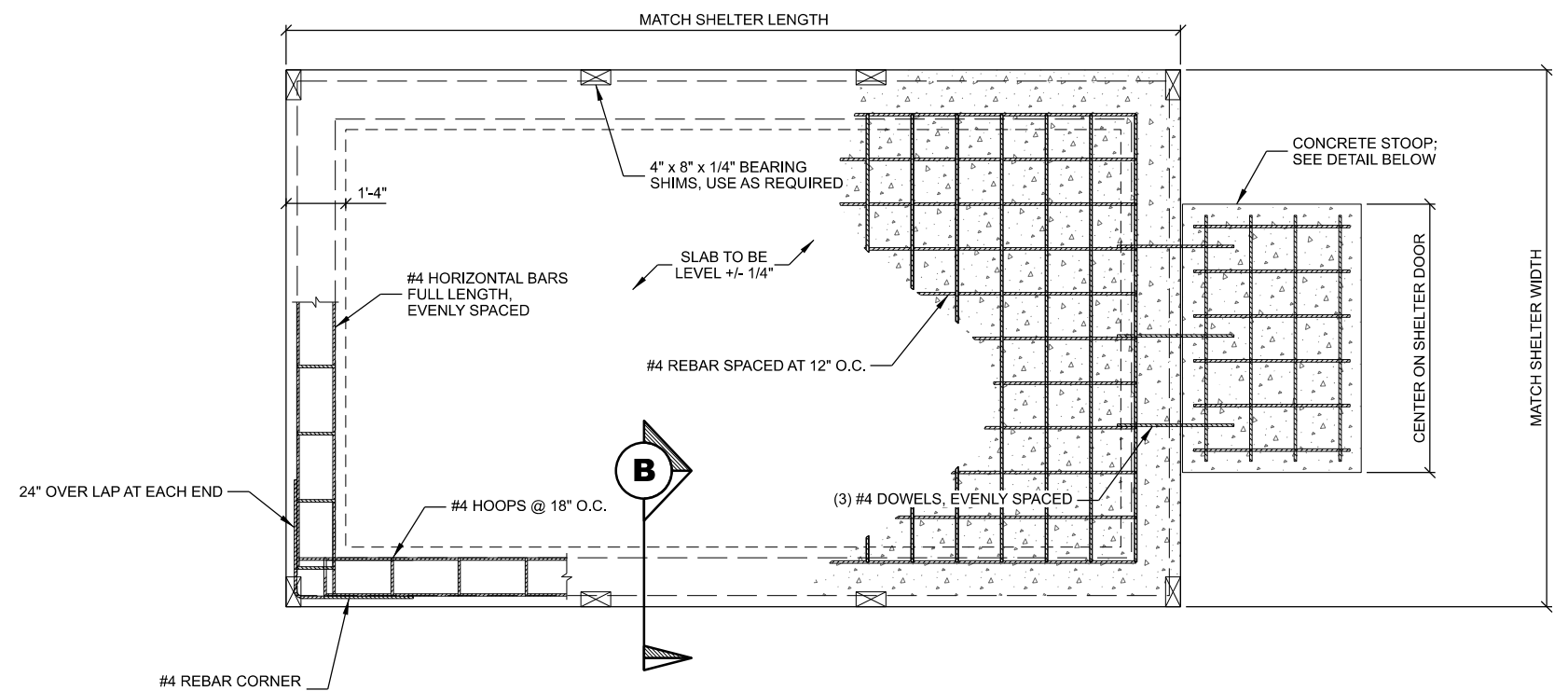
CLIENT:
FENCE DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

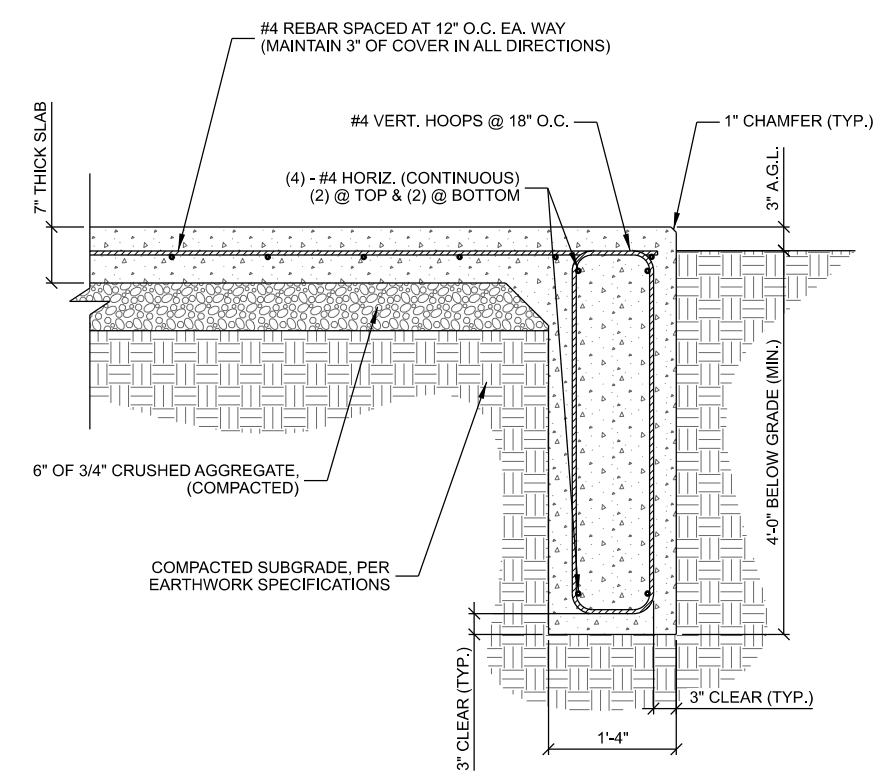
CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-502

SHELTER FOUNDATION DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

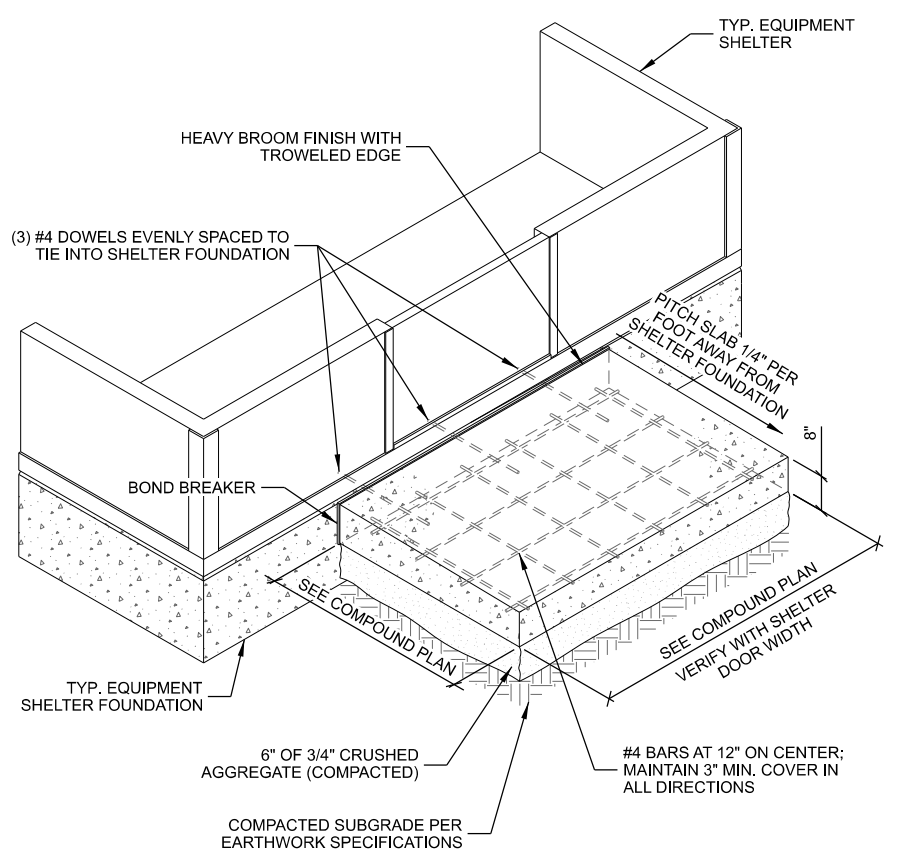


NOTES:
 1. BEARING SHIM: GALVANIZED STEEL, 4 EACH SIDE USE SHIMS AS REQUIRED TO ASSURE SHELTER IS BEARING AT PERIMETER.

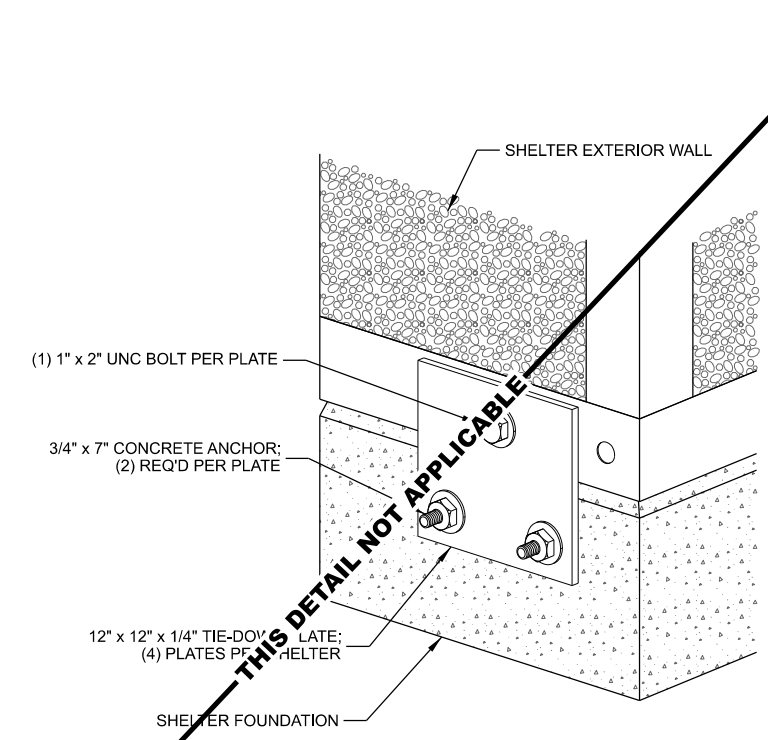
A SHELTER FOUNDATION PLAN
 SCALE: 11" x 17" - 1/4" = 1'-0"
 22" x 34" - 1/2" = 1'-0"



B SHELTER FOUNDATION
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"



C SHELTER STOOP



D TIE DOWN PLATE

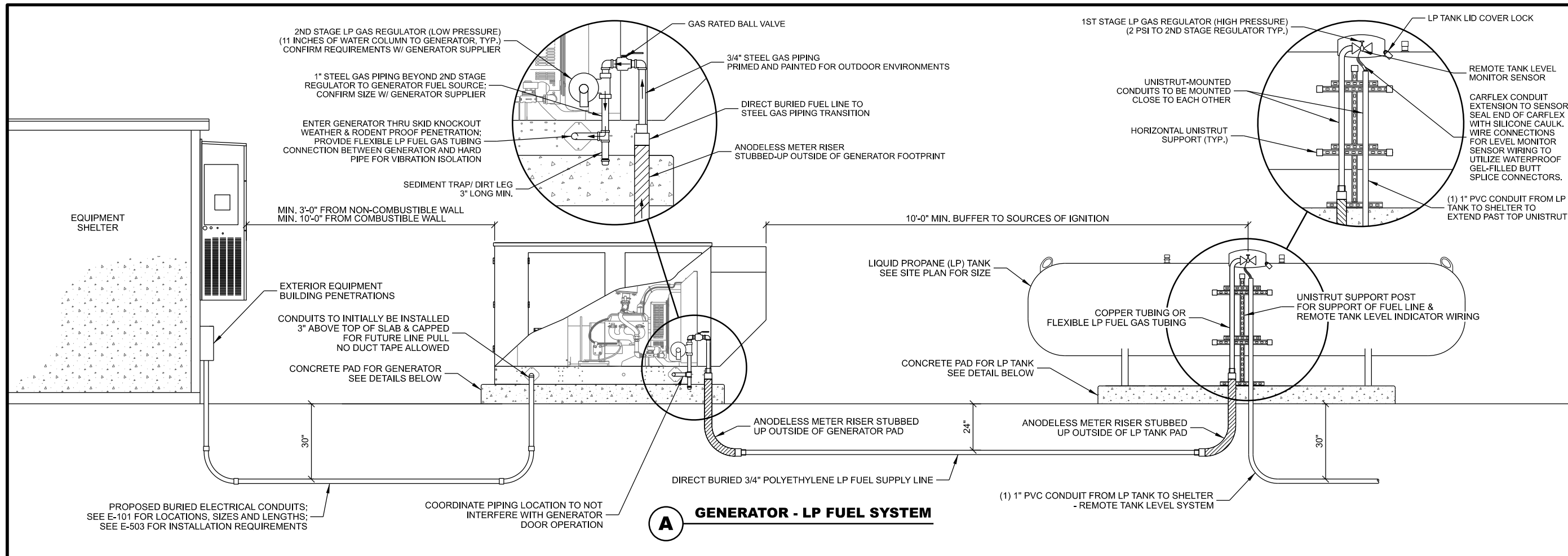
CONCRETE AND REINFORCING NOTES:

- ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL BUILDING CODE REQUIREMENTS AND MOST CURRENT VERSION OF ACI STANDARDS.
- ALL CONCRETE UNLESS SPECIFICALLY NOTED SHALL BE NORMAL WEIGHT (145 PCF) AND SHALL ACHIEVE A 28-DAY COMPRESSIVE STRENGTH (f_c) OF 4,000 PSI. EXPOSED EXTERIOR CONCRETE TO BE AIR ENTRAINED WITH 6% +/- 1% AIR CONTENT. CONTRACTOR TO PERFORM CONCRETE SLUMP TEST (4" MAX SLUMP). NO WATER TO BE ADDED AFTER SLUMP HAS BEEN MEASURED.
- ALL CONCRETE REINFORCING SHALL BE ASTM A615 GRADE 60 AND PLACED IN ACCORDANCE WITH ACI STANDARDS
- REMOVE ALL ORGANIC MATERIAL, SOFT AND/OR UNSUITABLE SOILS WITHIN FOUNDATION FOOTPRINT. DO NOT UTILIZE THESE SOILS FOR BACKFILL.
- CONSULT GEOTECHNICAL INVESTIGATION REPORT FOR ANTICIPATED SOIL CONDITIONS AND CONSTRUCTION CONSIDERATIONS.
- FOUNDATION DESIGN BASED ON A PRESUMPTIVE SOIL BEARING CAPACITY OF 2000 PSF AND MAX. PLASTICITY INDEX OF 20. CONTRACTOR TO CONFIRM BEARING SOILS MEET THESE CONDITIONS BEFORE INSTALLATION.
- SOILS NOT MEETING THE DESIGN BEARING STRENGTH SHALL BE UNDERCUT AND REPLACED WITH 3-INCH BREAKER STONE. UNDERCUT ONE FOOT ON EACH SIDE OF THE FOOTING FOR EVERY FOOT IN DEPTH. CONSULT WITH ENGINEER FOR REQUIRED UNDERCUT DEPTH.
- CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM ALL FOUNDATIONS.
- FOUNDATION DESIGN BASED ON INFORMATION PROVIDED BY SHELTER MFG. (WEIGHT, LIVE LOAD, ETC.). CONTRACTOR TO VERIFY EXACT SHELTER SIZE AND TYPE.

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-503



CONSULTANT:
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GENERATOR FUEL SYSTEM DETAILS
 WATERLOO (27651)
 WATERLOO, WISCONSIN

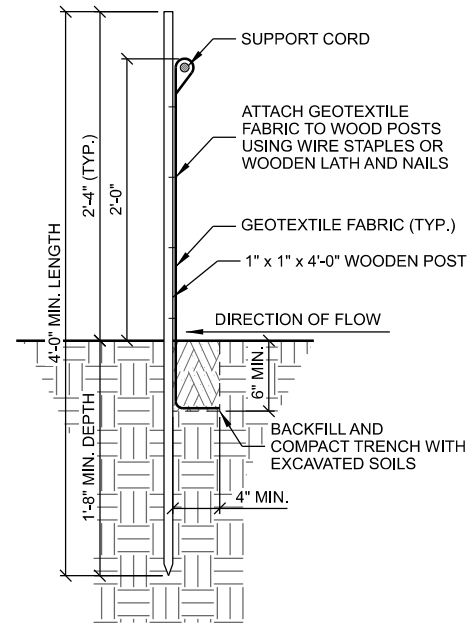
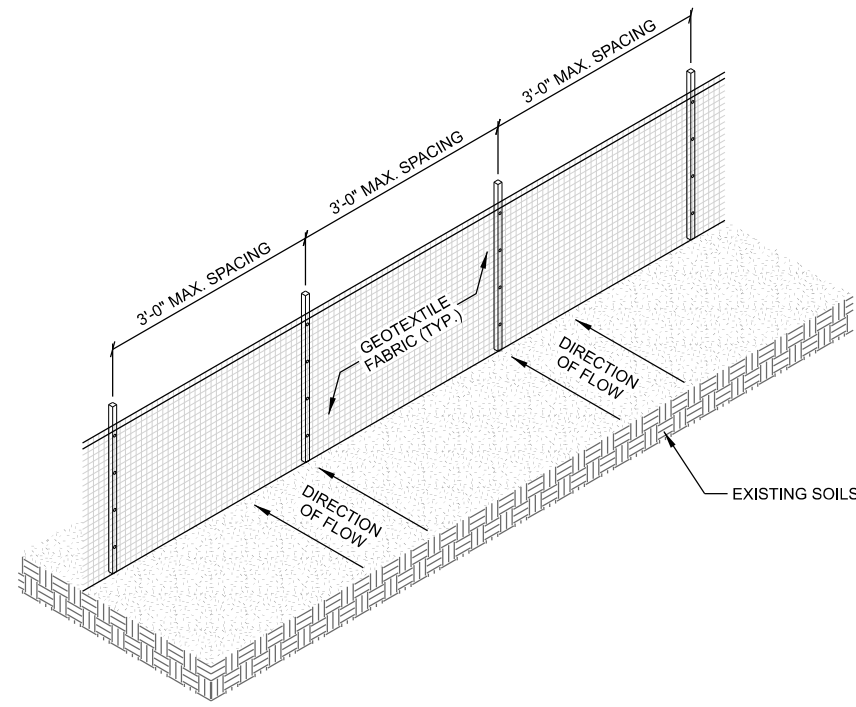
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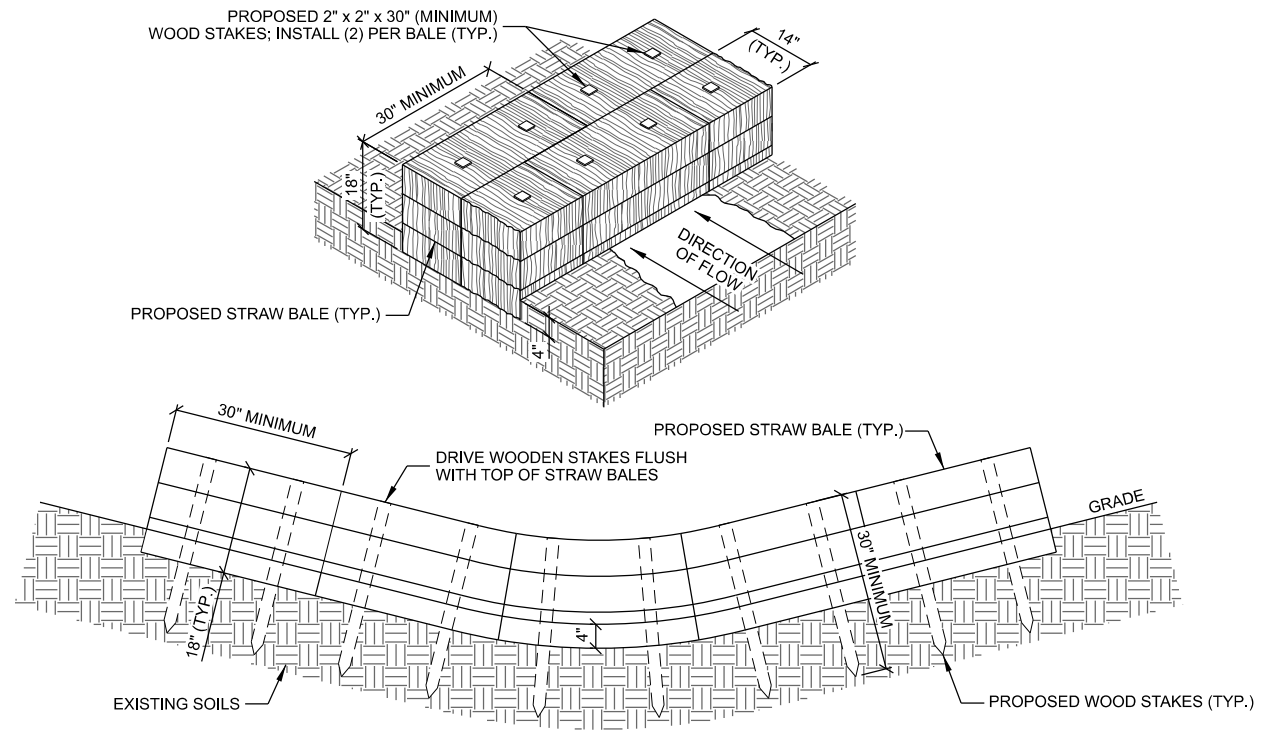
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PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	C-504

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- NOTES:
1. TRENCH SHALL BE SIZED TO ACHIEVE ADEQUATE GEOTEXTILE FABRIC ANCHORAGE. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
 2. WOOD POSTS SHALL BE HICKORY OR OAK.
 3. 8'-0" POST SPACING IS ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.
 4. ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOIL CONDITIONS.

A SILT FENCE



- NOTES:
1. STAGGER JOINTS BETWEEN ADJACENT ROWS OF BALES.
 2. ALL DIMENSIONS ARE APPROXIMATE.

B STRAW BALE DITCH CHECK

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GRADING & EROSION CONTROL DETAILS
 WATERLOO (27651)
 WATERLOO, WISCONSIN

SUBMITTAL:

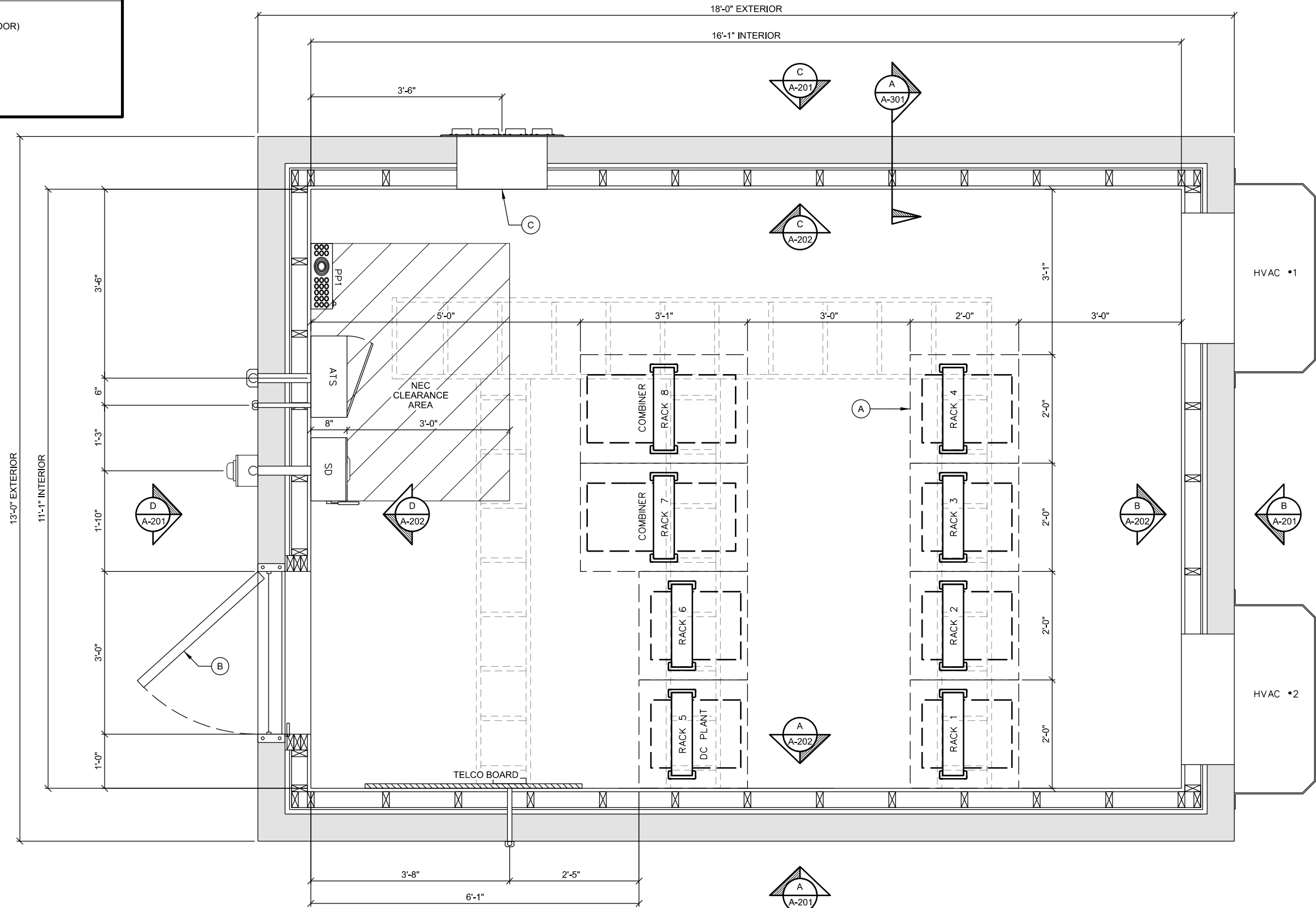
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CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	C-505

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KEYNOTES: (THIS SHEET)

- A. RADIO EQUIPMENT RACK
INSTALLED BY OTHERS (RADIO VENDOR)
- B. 3'-0" ENTRY DOOR
- C. 12 HOLE (4x3) ENTRY PANEL PORT



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SHELTER FLOOR PLAN
 WATERLOO (27651)
 WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	A-101

GENERAL NOTES: (THIS SHEET)

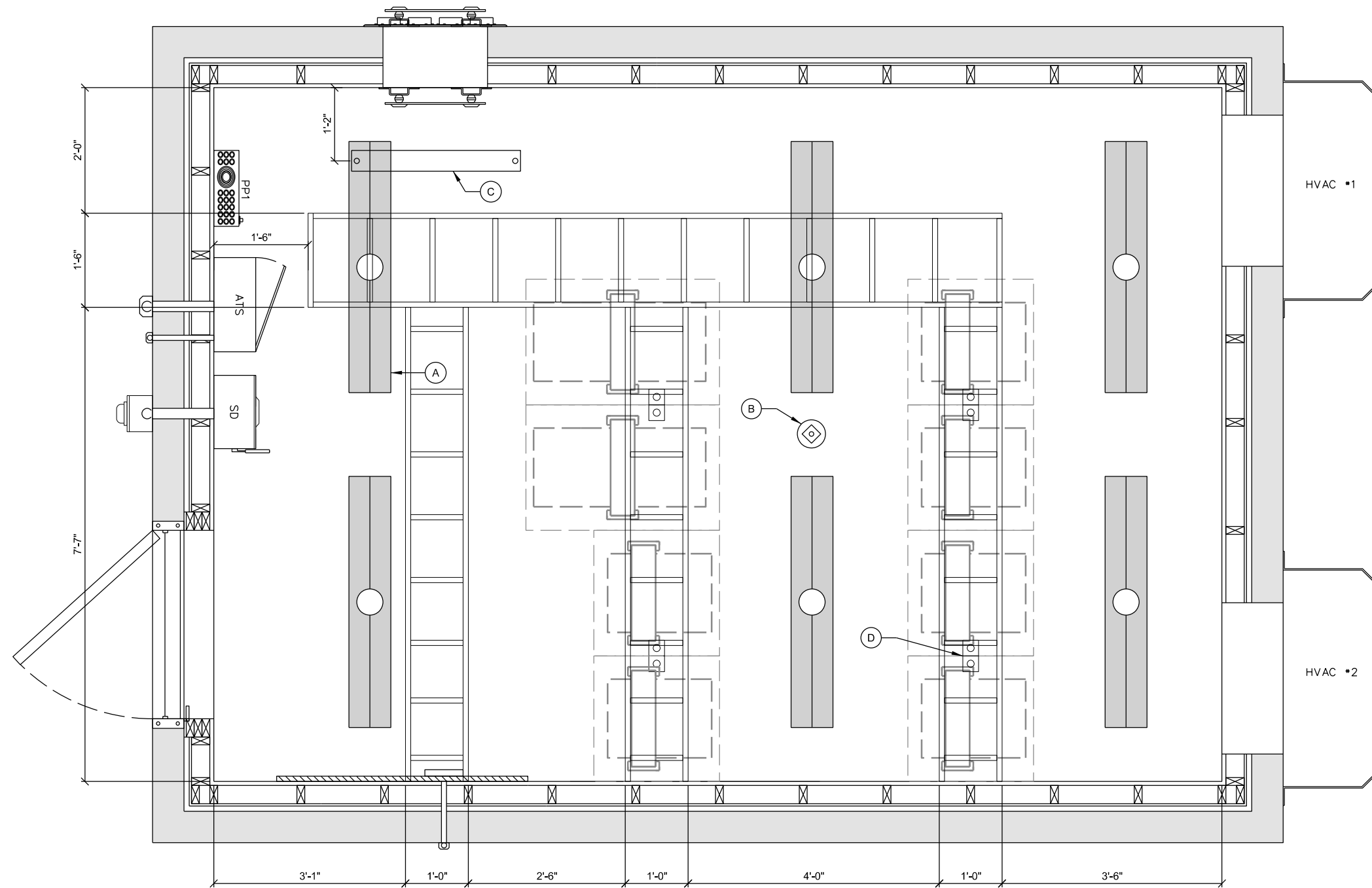
- 1. CONTRACTOR TO COORDINATE UTILITY/CONDUIT PENETRATIONS. DIMENSIONS SHOWN ARE APPROXIMATE.

A SHELTER FLOOR PLAN
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"

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KEYNOTES: (THIS SHEET)

- A. 48" 2-BULB LIGHT FIXTURE
- B. SMOKE DETECTOR
- C. SURGE PROTECTOR TRAPEZE (POLYPHASER)
- D. (2) 20A 120V TWIST LOCK RECEPTACLES, CEILING MOUNTED IN 2 GANG BOX, LOCATED BETWEEN (2) ADJACENT RACKS.



A **SHELTER CEILING PLAN**
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"

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CLIENT:



SHELTER CEILING PLAN
 WATERLOO (27651)
 WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE	DESCRIPTION

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	A-102

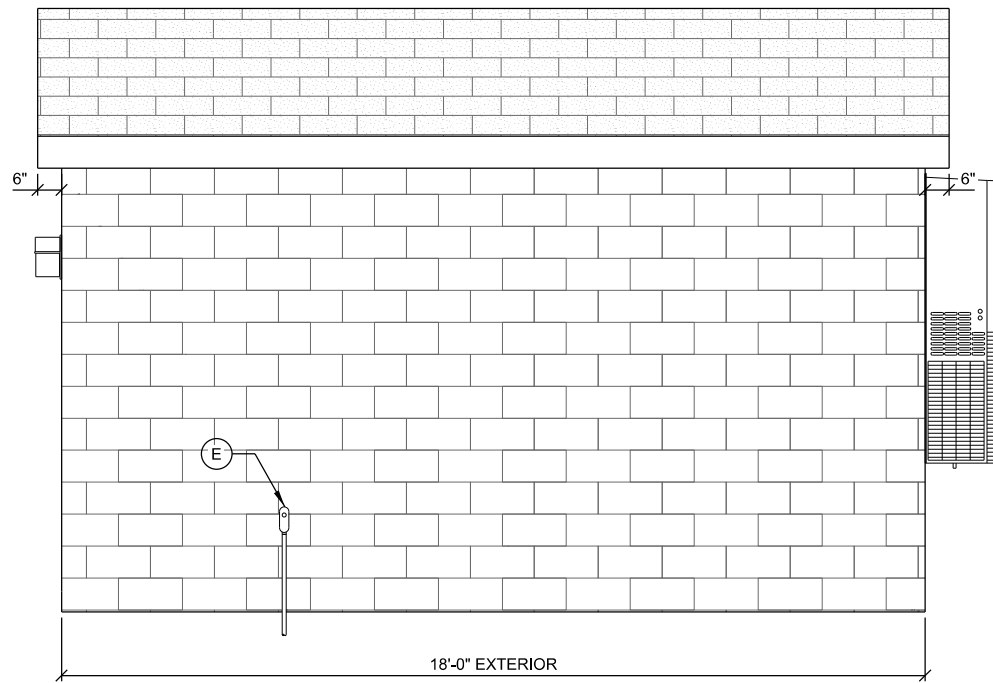
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KEYNOTES: (THIS SHEET)

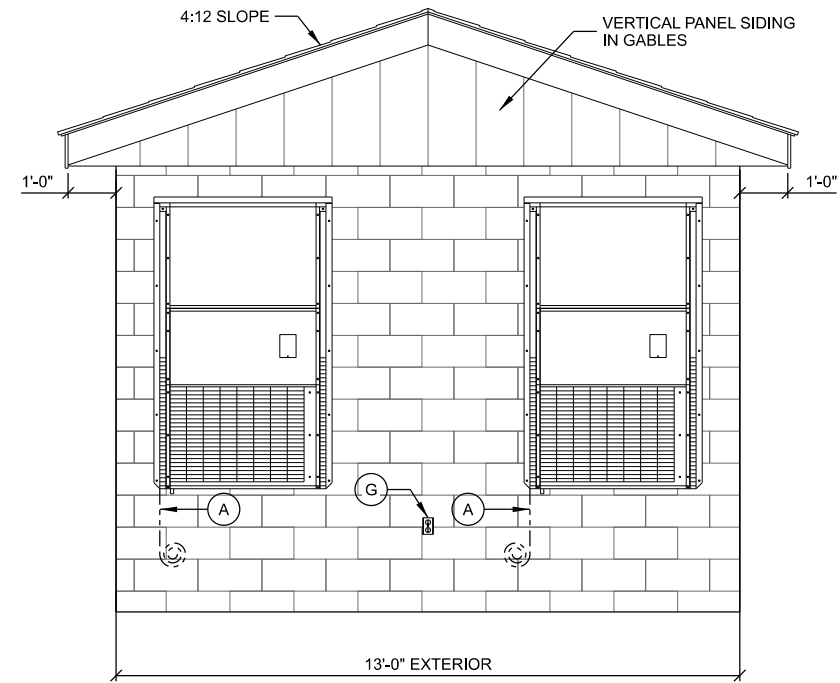
- A. (2) #2 SOLID TINNED GROUND LEADS TO SITE GROUND SYSTEM
- B. 2" CONDUIT TO SINGLE ELECTRIC METER (AC POWER)
- C. 2" CONDUIT TO GENERATOR (AC POWER)
- D. 1" CONDUIT TO GENERATOR (CONTROL & ALARM)
- E. 1" CONDUIT TO LP TANK (REMOTE LEVEL MONITOR)
- F. #6 STRANDED INSULATED BONDING JUMPER TO ENTRY PORT PLATE
- G. EXTERIOR GFCI RECEPTACLE
- H. EXTERIOR LIGHT (WALL PACK)
- I. LATCH GUARD

GENERAL NOTES: (THIS SHEET)

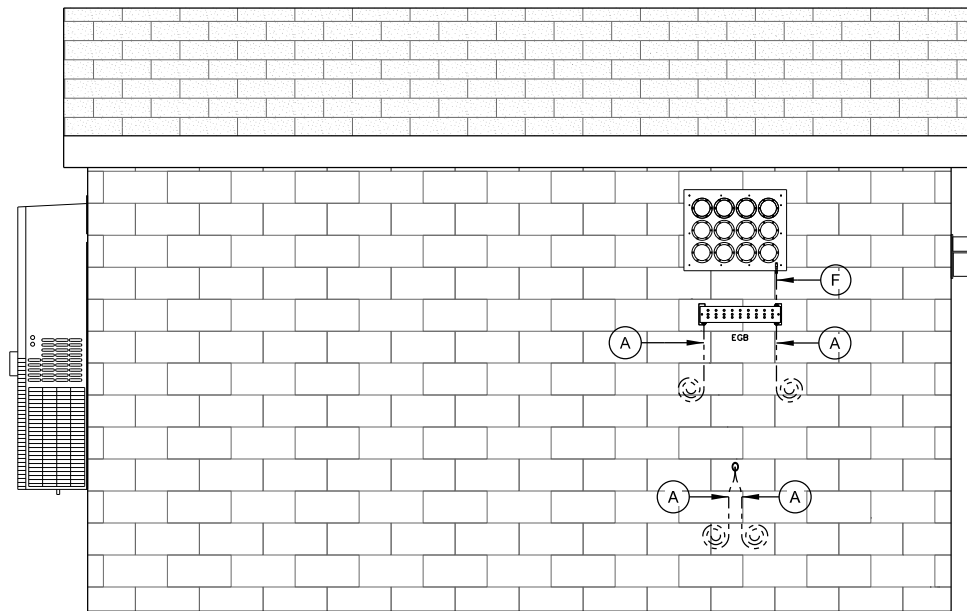
1. ALL PVC CONDUITS TO BUILDING TO INCLUDE SLIP JOINTS WHEN EXITING GRADE.
2. ALL MECHANICAL GROUND CONNECTIONS TO UTILIZE TWO HOLE LUGS, STAINLESS STEEL HARDWARE AND "NO-OX" COMPOUND ON CONNECTIONS. SELF TAPPING SCREWS ARE NOT ALLOWED.
3. ALL EXTERIOR METALLIC CONDUITS AND BOXES TO BE PROVIDED WITH GROUND BOND CONNECTION VIA THROUGH WALL HUB CONNECTION TO INTERIOR GROUNDED DEVICE OR OTHER DIRECT CONNECTION TO GROUND SYSTEM. ALL MECHANICAL CONNECTIONS SHALL INCLUDE ANTI OXIDANT COMPOUND BETWEEN LUG & CONNECTION POINT. USE COPPER ANTI-OXIDANT FOR COPPER TO COPPER CONNECTIONS.



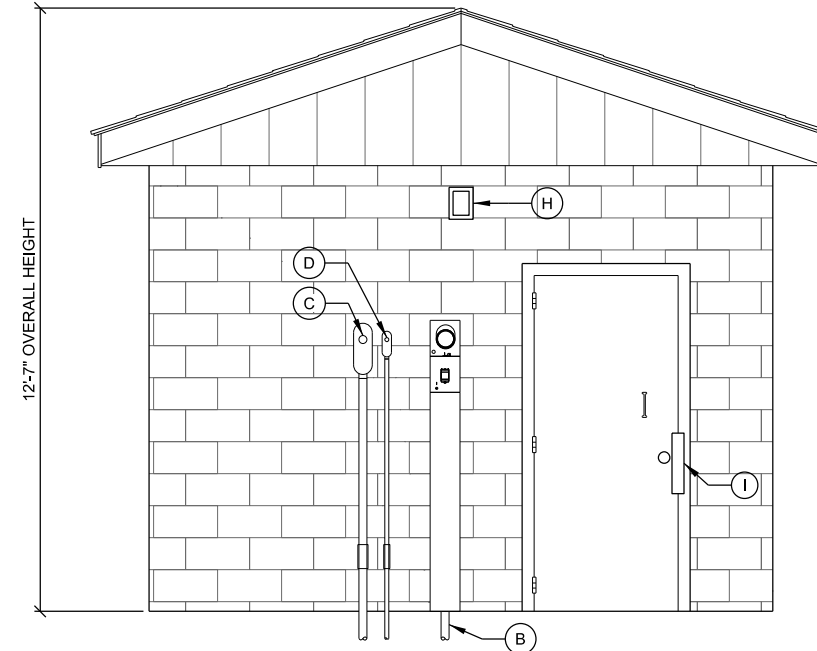
A EXTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



B EXTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



C EXTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



D EXTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"

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CLIENT:



SHELTER ELEVATIONS: EXTERIOR
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

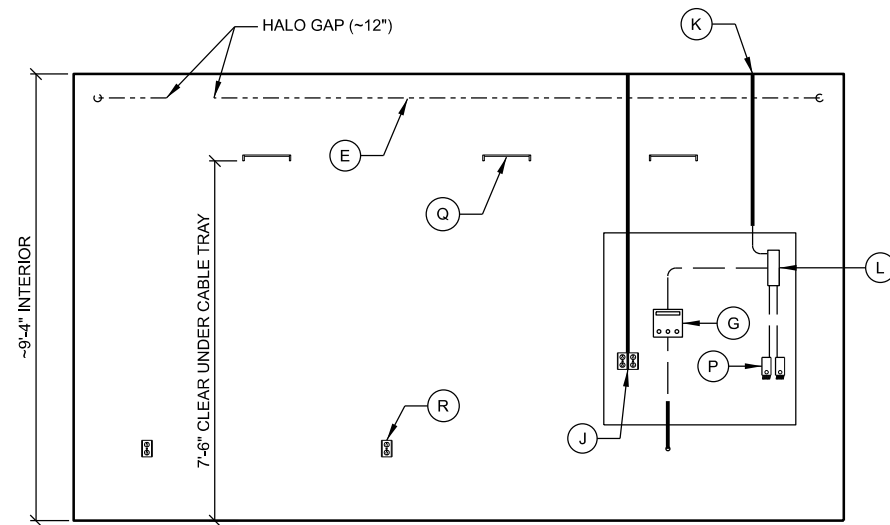
CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	A-201

KEYNOTES: (THIS SHEET)

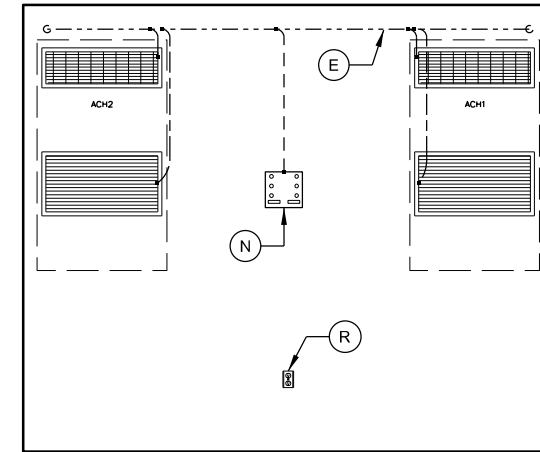
- A. AUTOMATIC TRANSFER SWITCH (ATS) PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR; INSTALL AT 6'-0" ABOVE FINISH FLOOR
- B. CONDUIT/RACEWAY BETWEEN ELECTRICAL BOXES (TYP.)
- C. 60A CIRCUIT BREAKER & SPD1 ON ELEC. SERVICE DISCONNECT
- D. BOND ALL DEVICE BOXES (ATS, SPD1 & SPD2) TO HALO (#6 STRANDED INSULATED)
- E. GROUNDING HALO (#2 STRANDED INSULATED)
- F. SPD2 ON DIST. PANEL (PP1)
- G. LP TANK LEVEL MONITOR
- H. MASTER GROUND BAR. FOLLOW PANI SYSTEM FOR ORGANIZATION OF CONNECTIONS TO BAR
- I. COAXIAL SURGE PROTECTOR TRAPEZE GROUND SYSTEM
- J. LP TANK LEVEL MONITOR DOUBLE DUPLEX OUTLET
- K. ALARM WIRING FROM INSTALLED DEVICES
- L. R66 ALARM BLOCK
- M. NEUTRAL-GROUND BOND CONNECTION FROM SD GROUND TERMINAL TO MGB (#2 STRANDED INSULATED). ROUTE ALONG PERIMETER WALL BELOW HALO
- N. HVAC LEAD LAG CONTROLLER
- O. 3/4" ALARM WIRING CONDUIT
- P. HIGH & LOW TEMP ENVIRONMENTAL ALARMS
- Q. CABLE TRAY SYSTEM
- R. RECEPTACLE/CONVENIENCE OUTLET

GENERAL NOTES: (THIS SHEET)

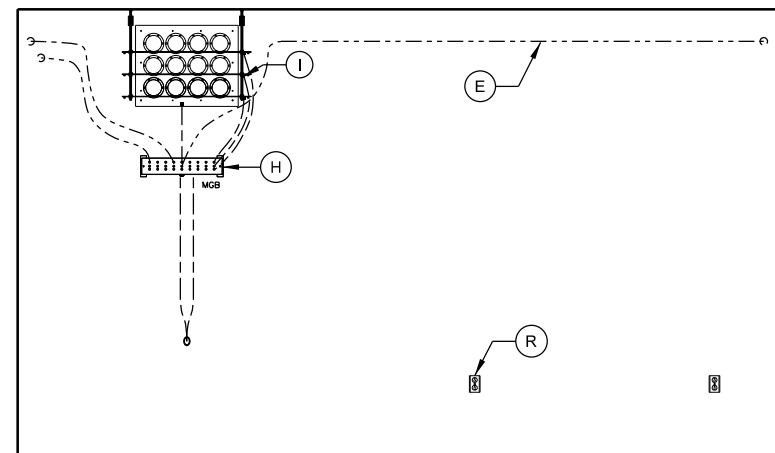
1. ALL INTERIOR CONDUITS TO BE RGS OR EMT. UTILIZE COMPRESSION FITTINGS FOR EMT INSTALLATIONS.
2. ALL MECHANICAL GROUND CONNECTIONS TO UTILIZE TWO HOLE LUGS, STAINLESS STEEL HARDWARE AND "NO-OX" COMPOUND ON CONNECTIONS. SELF TAPPING SCREWS ARE NOT ALLOWED.
3. PROVIDE EMT CONDUIT FOR ALL ALARM AND LOW VOLTAGE WIRING FROM DEVICE TO ALARM BOARD. CONDUITS NEED NOT BE FULL LENGTH AND MAY UTILIZE CABLE TRAY FOR HORIZONTAL RUNS. CONDUITS SHALL EXTEND ABOVE AND OVER TO CABLE TRAY AND PROVIDE BUSHINGS ON ENDS.
4. ALL METALLIC CONDUITS AND BOXES TO BE GROUND BONDED TO HALO.
5. ALL MECHANICAL CONNECTIONS SHALL INCLUDE ANTI OXIDANT COMPOUND BETWEEN LUG & CONNECTION POINT. USE COPPER ANTI-OXIDANT FOR COPPER TO COPPER CONNECTIONS.



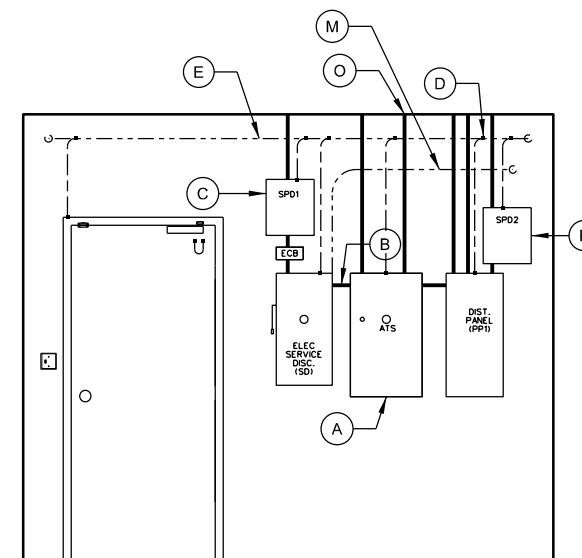
A INTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



B INTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



C INTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



D INTERIOR ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"

CONSULTANT:

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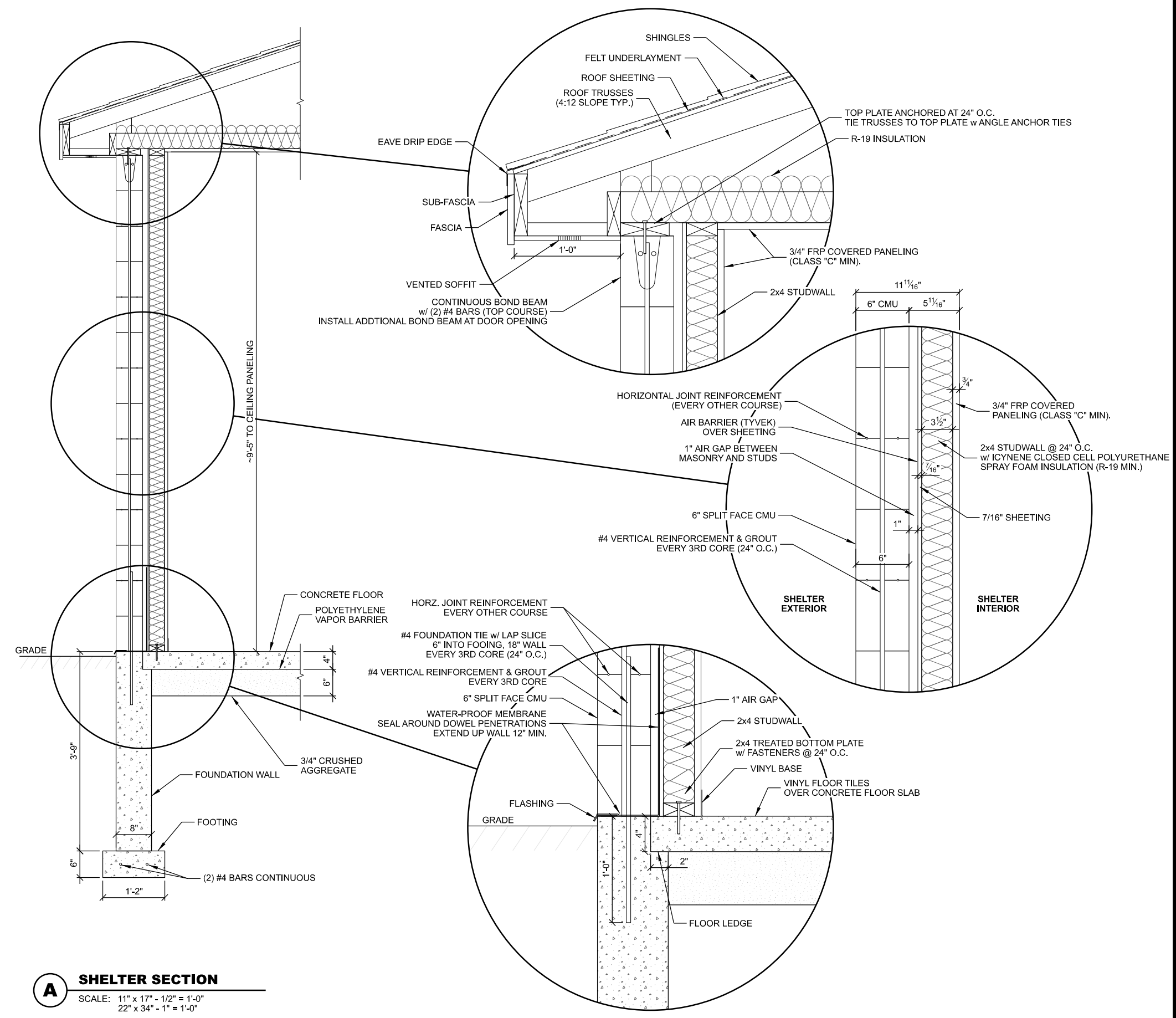
SHELTER ELEVATIONS: INTERIOR
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	A-202

**SHELTER DETAILS
 WATERLOO (27651)
 WATERLOO, WISCONSIN**



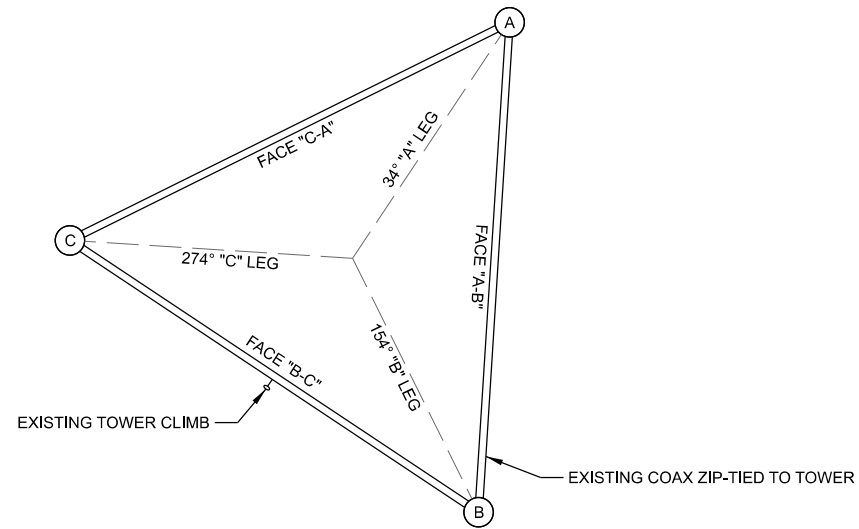
A SHELTER SECTION
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"

SUBMITTAL:

INT.	DATE	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	A-301

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A TOWER ORIENTATION

TOWER LOADING

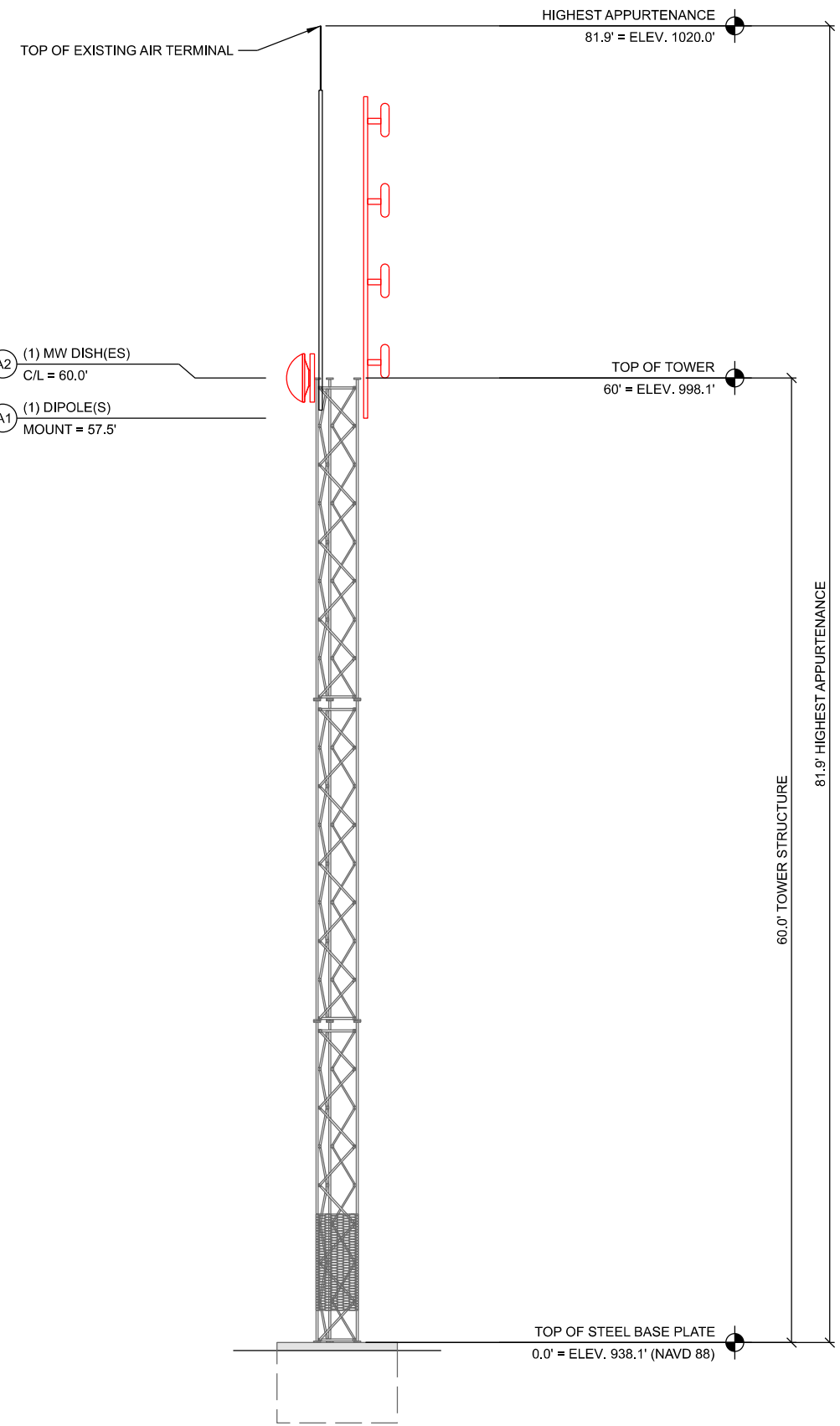
ANTENNA ID	ANTENNA TYPE	(QTY) ANTENNA MODEL SIZE & WEIGHT	TOWER LEG	ANTENNA MOUNT SIZE & WEIGHT	MOUNT HEIGHT (T.O.C.)	C/L HEIGHT (T.O.C.)	C/L ELEV. (NAVD 88)	ANTENNA AZMUTH	TLT (+/-)	Tx LINE (QTY) SIZE	FREQUENCY (MHz)	OWNER USE	NOTES
A1	Dipole	(1) Comprod 876F-70-TM40-14 20.5' Long 67 lbs.	A	Leg Mount (PM-SU4-63) 4.5" OD x 63" Mast Pipe 138.0 lbs.	57.5'	67.8'	1005.9'	315°		(2) LCF78-SU4A (7.8")	138-174	Jefferson Co P25 Dual Rx/Tx	To replace existing DB224 Dual Antenna mounted @ 57.5' (Leg A)
A2	MW Dish	(1) radiowaves HP3-11 (TR) 3' Dia 50 lbs.	B	Leg Mount (PM-SU4-63) 4.5" OD x 63" Mast Pipe 138.0 lbs.	60.0'	60.0'	998.1'	88.4°		(1) LDF2-50 (3.8")	11200	Jefferson Co. Path to Watertown	To replace existing Grid Dish @ 61.8' (Leg B) (Path to Jefferson Main Site)

**** ANTENNA AND LINE INSTALLATION BY OTHERS **
NOT PART OF CONTRACT**

NOTES:

- REFER TO ANTENNA MOUNTING DETAILS FOR ADDITIONAL INFO ON MOUNT DESIGN AND MOUNTING REQUIREMENTS.
- PROPOSED ANTENNA AND MICROWAVE LOADING IS BASED ON DESIGN SUPPLIED BY GENERAL COMMUNICATIONS, DATED 04/01/2021.

B TOWER LOADING SUMMARY



NOTES:

- ALL DIMENSIONS SHOWN ARE REFERENCED FROM THE TOP OF TOWER STEEL BASE PLATE.
- ALL ANTENNAS, DISHES, MOUNTS, ICE SHIELDS AND LINES SHALL BE SUPPLIED AND INSTALLED BY OTHERS (??????????).

C TOWER PROFILE (ELEVATION)

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**TOWER LOADING / ELEVATION
WATERLOO (27651)
WATERLOO, WISCONSIN**

SUBMITTAL:

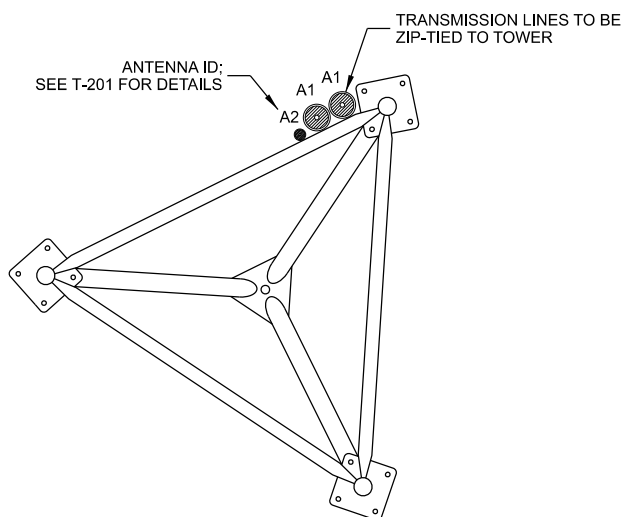
INT.	DATE	DESCRIPTION:

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	T-201

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LEGEND: (THIS SHEET)

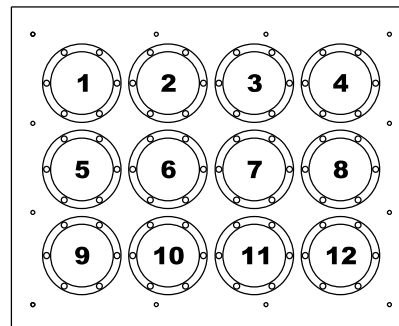
SIZE	SYMBOL	O.D.	MIN. BEND RAD.
1-5/8"		1.98"	20"
1-1/4"		1.55"	15"
7/8"		1.09"	10"
1/2"		0.63"	5"
CAT5		0.35"	3"
EW63		2"x1.16"	20"
EWP90-107		1.3"x0.8"	13"
LMR-400		0.4"	1"



NOTES:

1. REFER TO SHEET T-201 FOR ANTENNA ID REFERENCE AND LADDER INSTALLATION LOCATION.
2. DOUBLE STACKING OF 1-5/8" AND TRIPLE STACKING OF 7/8" COAX IS ALLOWED.
3. DOUBLE STACKING OF WAVEGUIDE IS ALLOWED WHEN USING CUSHION TYPE SNAP IN HANGERS.
4. GROUP LINES WITHIN LADDERS FOR SIMILAR TERMINATION LEVEL. SEPARATE WAVEGUIDE FROM COAX.
5. PROVIDE & INSTALL PROPERLY SIZED SNAP-INS FOR EACH COAX.
6. TOWER LOADING DESIGN SHALL ASSUME (3) COAX LADDERS INSTALLED

A TRANSMISSION LINE ROUTING



ENTRY PANEL 1
(AS VIEWED FROM INSIDE SHELTER)

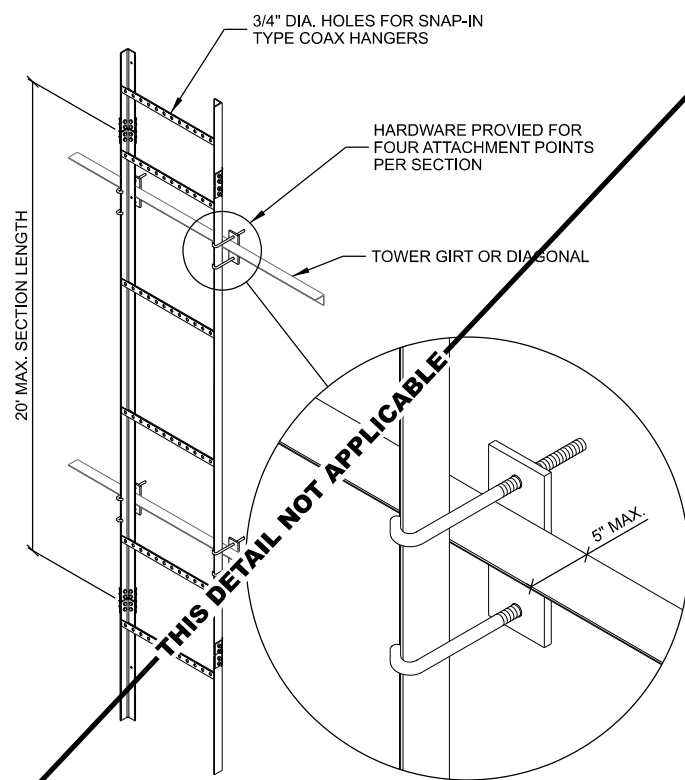
ENTRY PANEL PORT ASSIGNMENT			
PORT #	ANTENNA ID	ANTENNA SYSTEM	(QTY.) CABLE SIZE
1	A2	MW DISH	(1) 3/8"
2	A1	P25 DUAL Rx/Tx	(2) 7/8"
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

NOTES:

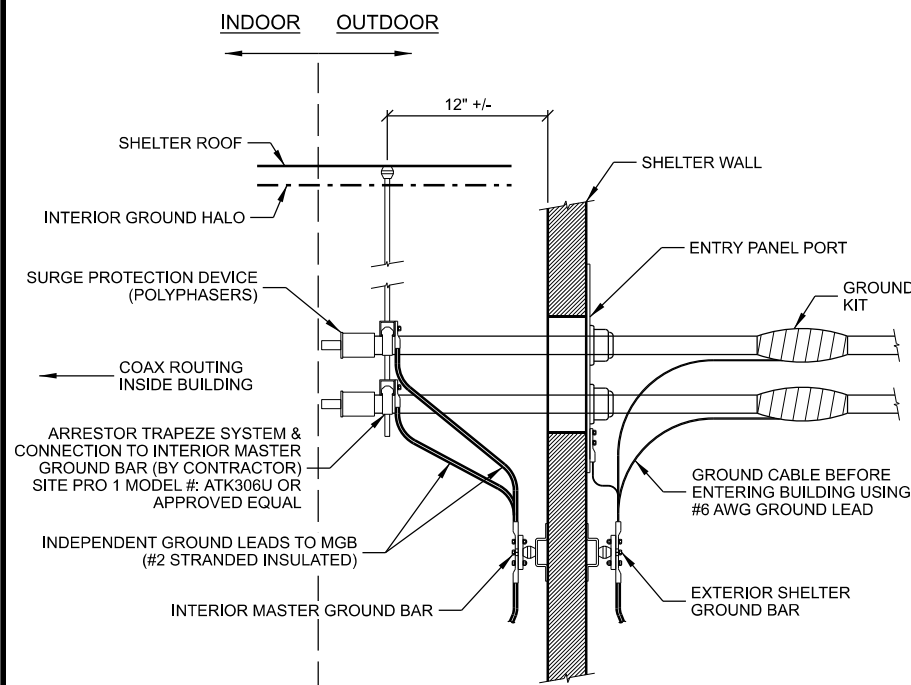
1. REFER TO SHEET T-201 FOR ANTENNA ID REFERENCE
2. PORT OPENINGS ARE 4" DIA UNLESS OTHERWISE NOTED.
3. PROVIDE AND INSTALL PROPERLY SIZED BOOTS, CUSHIONS AND PLUGS FOR EACH PORT OPENING INSIDE AND OUTSIDE OF SHELTER.
4. ALL UNUSED PORTS ON ALL ENTRY PANELS TO BE CAPPED & SECURED IN PLACE W/ BLACK CABLE TIE.

B ENTRY PANEL ROUTING

****TRANSMISSION LINE INSTALLATION BY OTHERS**
NOT PART OF CONTRACT**



C VERTICAL TRANSMISSION LINE LADDER



D CABLE ENTRY

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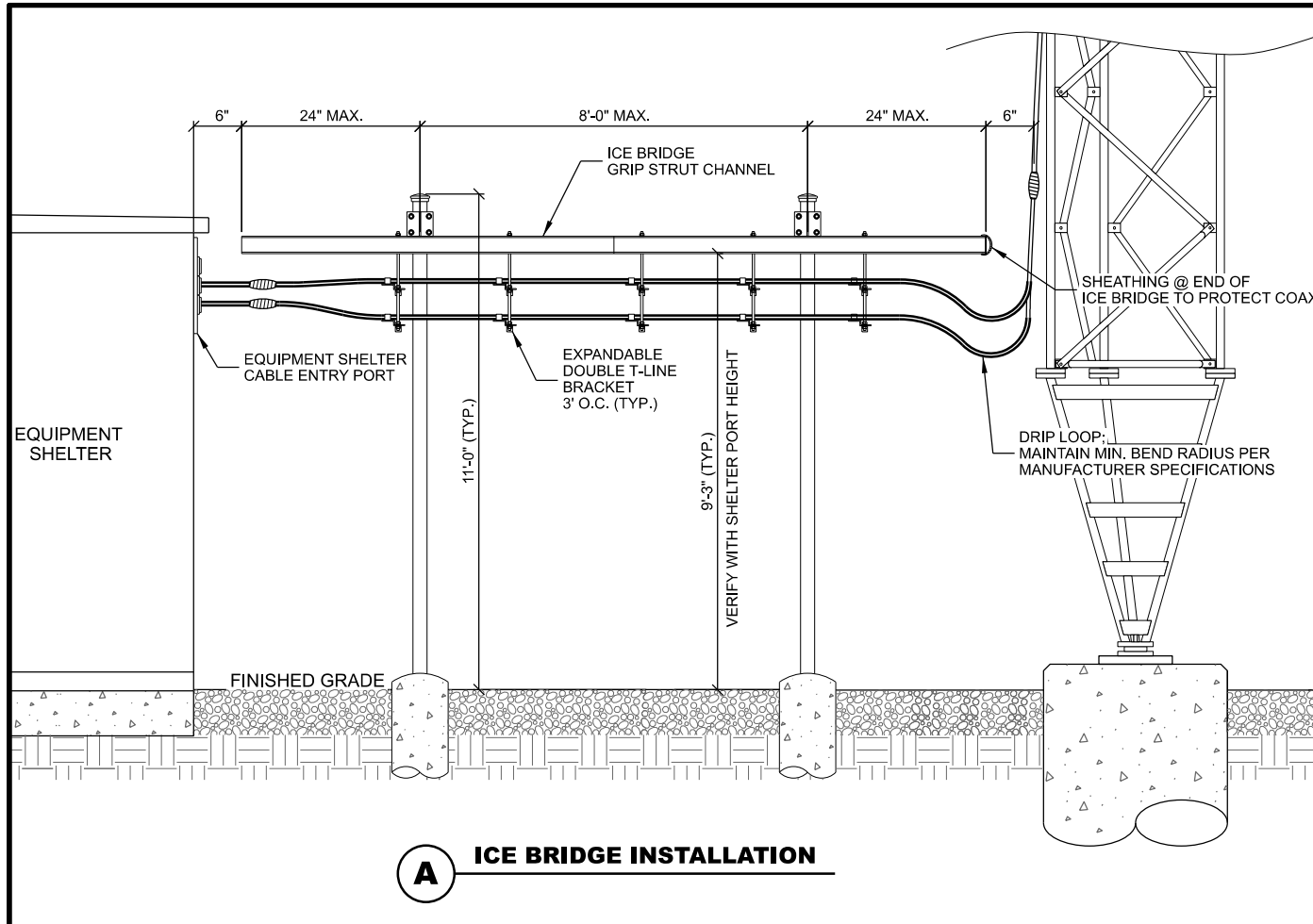


TRANSMISSION LINE INSTALLATION DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

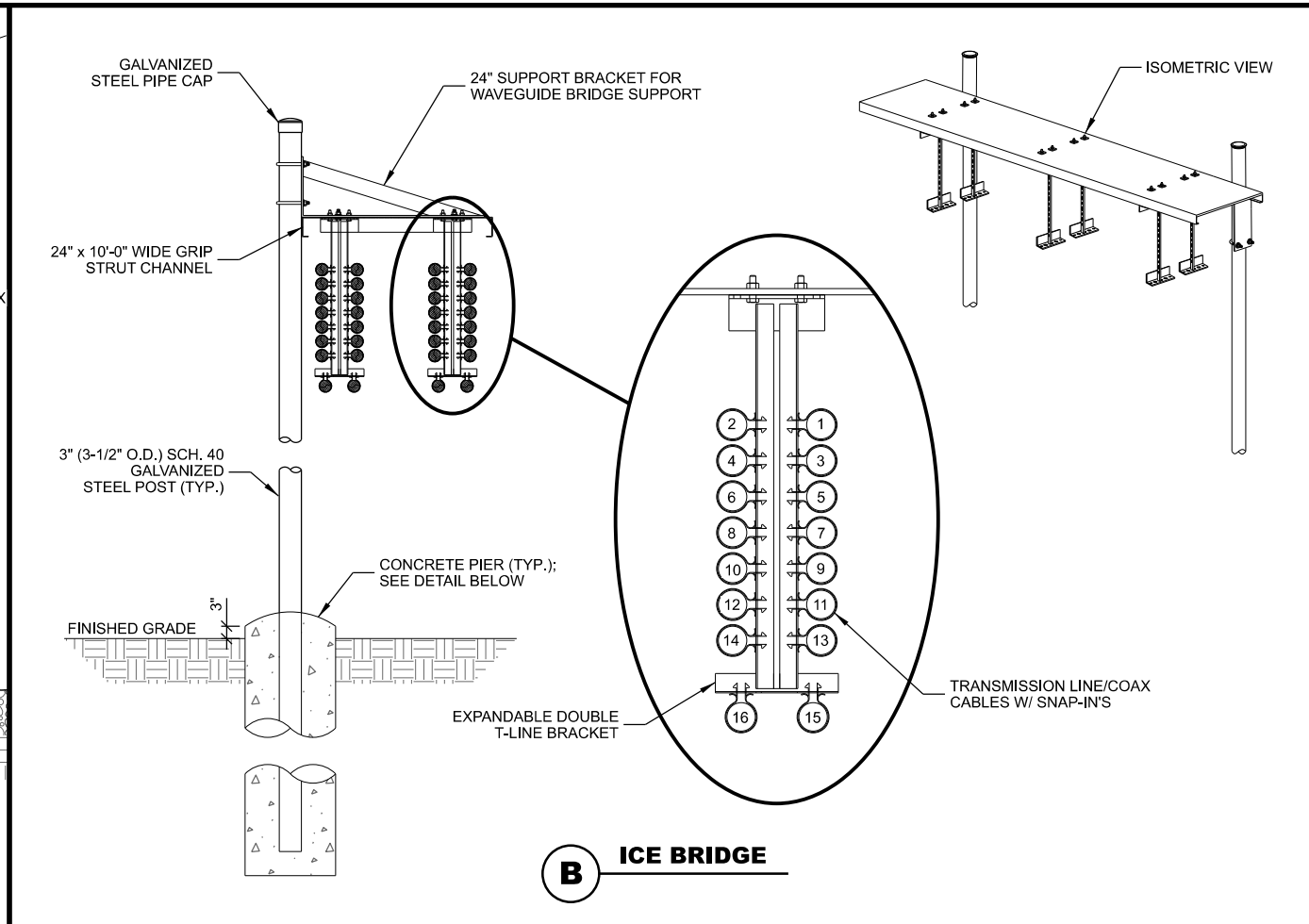
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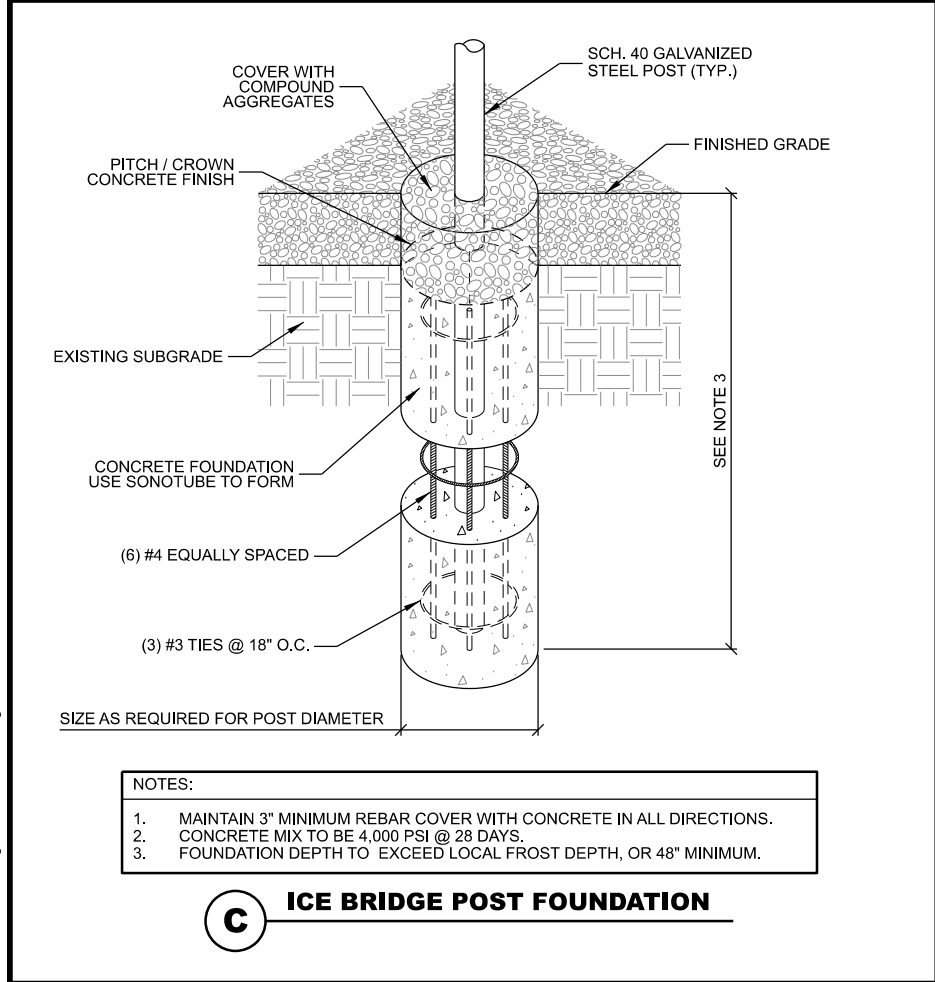
CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	T-501



A ICE BRIDGE INSTALLATION



B ICE BRIDGE



C ICE BRIDGE POST FOUNDATION

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- ICE BRIDGE NOTES : (THIS SHEET)**
- FOR COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 8' FOR A 10' SECTION.
 - SPLICES IN SECTIONS OF BRIDGE CHANNEL SHALL BE INSTALLED AT SUPPORTS, WHERE POSSIBLE, OR AT MOST 2' FROM A SUPPORT.
 - FREE ENDS OF ICE BRIDGE CHANNELS SHALL NOT EXCEED A CANTILEVER DISTANCE OF 2' FROM A SUPPORT.
 - CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH COLD GALVANIZING SPRAY.
 - DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH MANUFACTURER'S AND ENGINEER'S APPROVAL.
 - DEVIATIONS FROM ICE BRIDGE FOUNDATIONS SHOWN ON SITE SPECIFIC DRAWINGS OR STANDARD DETAILS REQUIRE ENGINEERING APPROVAL.
 - INSTALL PROTECTIVE SHEATHING AT TOWER END OF ICE BRIDGE TO PROTECT CABLING.

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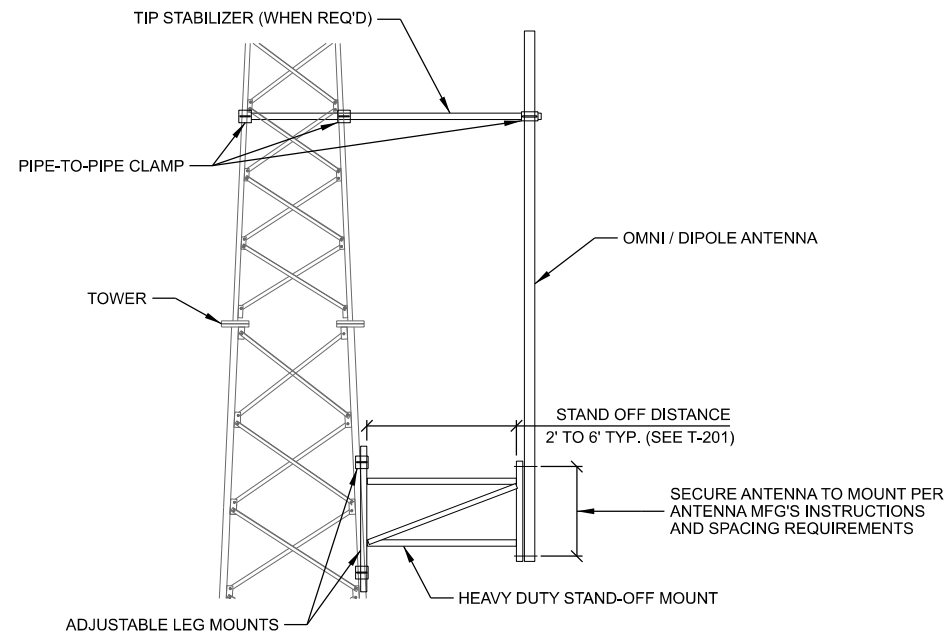
**ICE BRIDGE DETAILS
 WATERLOO (27651)
 WATERLOO, WISCONSIN**

SUBMITTAL:

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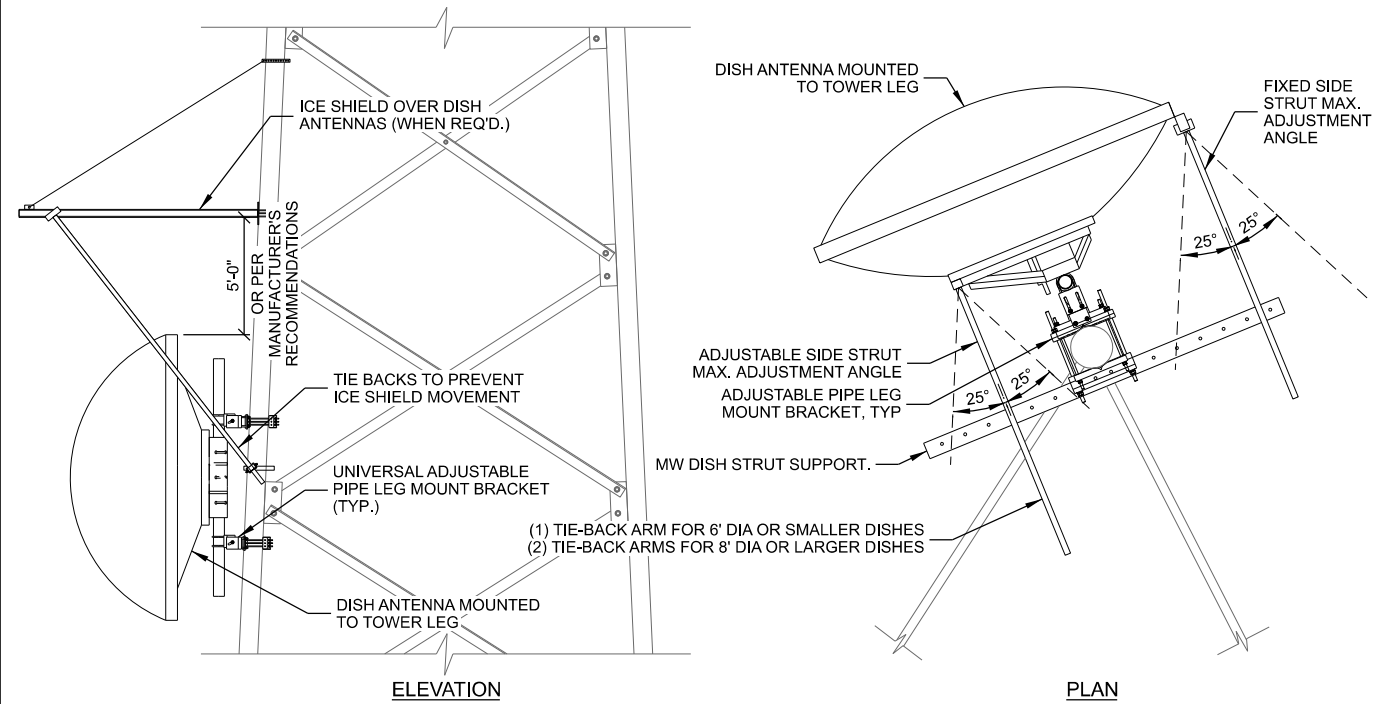
CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	T-502

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- NOTES:
1. ANTENNA MOUNTS SHOWN ARE SCHEMATIC ONLY. TOWER MANUFACTURER IS RESPONSIBLE TO DESIGN MOUNTS TO MEET THE ANTENNA LOADS AND MAXIMUM WIND DESIGN PARAMETERS AS OUTLINED IN THE SPECS.
 2. POSITION LOCATIONS ARE REFERENCED INCREASING IN A CLOCKWISE DIRECTION (INCREASING AZIMUTH).
 3. ALL MOUNTS, MOUNTING HARDWARE AND ACCESSORIES TO BE HOT DIPPED GALVANIZED.

A OMNI / DIPOLE STANDOFF MOUNTING



- NOTES:
1. 4' DIA. OR GREATER DISH ANTENNAS TO BE MOUNTED ON 4.5" O.D. PIPE MASTS.
 2. INSTALL TIE-BACK SUPPORT(S) FOR EACH DISH PER DETAIL OR DISH MANUFACTURERS INSTRUCTIONS.
 3. ANTENNA MOUNTS SHOWN ARE SCHEMATIC ONLY. MOUNT MANUFACTURER IS RESPONSIBLE TO DESIGN MOUNTS TO MEET THE ANTENNA LOADS AND MAXIMUM WIND DESIGN PARAMETERS AS OUTLINED IN THE SPECS.
 4. ICE SHIELD WIDTH TO BE 2' WIDER THAN DISH DIAMETER MIN.
 5. ICE SHIELDS TO INCLUDE TIE BACK WIRES TO PREVENT MOVEMENT & TWIST IN HIGH WIND CONDITIONS.

B DISH MOUNTING

*** * ANTENNA INSTALLATION BY OTHERS * ***
NOT PART OF CONTRACT

CONSULTANT:
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
CLIENT:
ANTENNA INSTALLATION DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	T-503

GROUNDING LEGEND: (THIS SHEET)

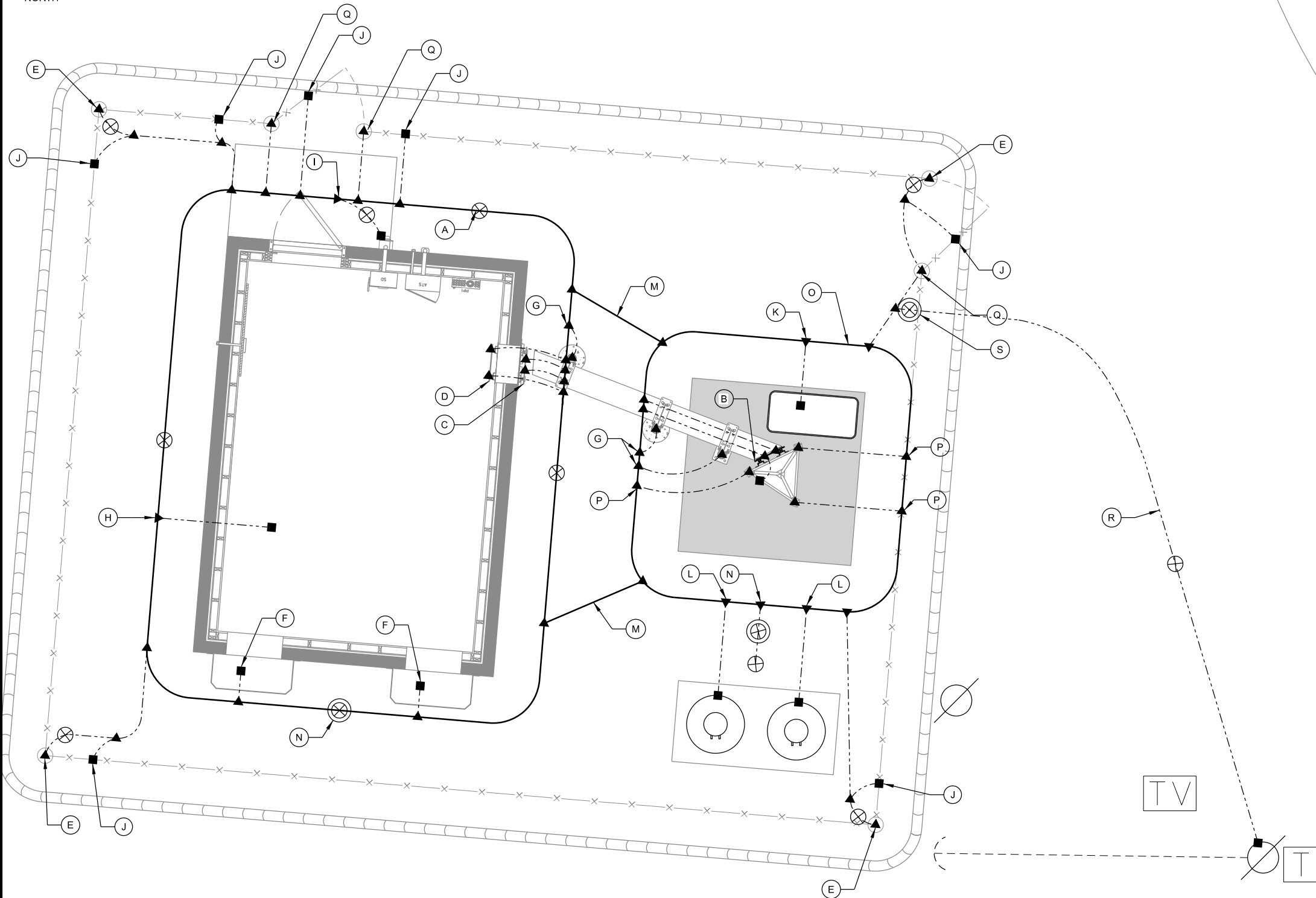
-  GROUND TEST WELL, SEE E-502 FOR DETAILS
-  COPPER CLAD GROUND ROD, (5/8" DIA. x 10' LONG)
SPACE @ 2X GROUND ROD LENGTH (20' O.C. MAX., 6' MIN.)
-  COPPER PLATE, (18" x 18" x 0.032" THK)
SPACE @ 2X GROUND ROD LENGTH (20' O.C. MAX., 6' MIN.)
-  EXOTHERMIC OR UL RATED IRREVERSIBLE CONNECTION
(CADWELD OR HYGROUND)
-  MECHANICAL CONNECTION
(BURNDY 2-HOLE LUG OR APPROVED EQUAL)
-  #2 AWG BARE SOLID TINNED COPPER CONDUCTOR
IN STANDARD GROUND TRENCH, SEE E-502 FOR DETAILS
-  #2/0 AWG BARE STRANDED TINNED COPPER CONDUCTOR
IN STANDARD GROUND TRENCH, SEE E-502 FOR DETAILS
-  #2 AWG BARE SOLID TINNED COPPER CONDUCTOR
IN ENHANCED GROUND TRENCH, SEE E-502 FOR DETAILS

KEYNOTES: (THIS SHEET)

- A. SHELTER GROUND RING, MAINTAIN 2' SEPARATION FROM SHELTER FOUNDATION
- B. TOWER GROUND BAR, (2) LEADS TO TOWER GROUND RING & (1) TO TOWER STEEL
- C. EXTERIOR SHELTER GROUND BAR, (2) LEADS TO SHELTER GROUND RING
- D. INTERIOR SHELTER GROUND BAR (MGB), (2) LEADS TO SHELTER GROUND RING
- E. FENCE CORNER POST GROUND, SEE E-502 FOR DETAILS
- F. SHELTER EXTERIOR AC UNIT GROUND
- G. ICE BRIDGE/UTILITY POST GROUND, SEE E-501 FOR DETAILS
- H. SHELTER FOUNDATION GROUND, SEE E-502 FOR DETAILS
- I. A/C METER BOX GROUND
- J. FENCE FABRIC & DETERRENT WIRING BONDING, SEE E-502 FOR DETAILS
- K. GROUND GENERATOR ENCLOSURE, (1) LEAD
- L. GROUND LP TANK, EACH LEG
- M. SHELTER GROUND RING TO TOWER GROUND RING, (2) LEADS
- N. GROUND TEST WELL, SEE DETAIL C/E-502
- O. TOWER GROUND RING, MAINTAIN 2' SEPARATION FROM TOWER FOUNDATION
- P. TOWER STEEL GROUND, (1) PER LEG REQ'D. EXOTHERMIC WELD TO LEG GROUND TAB
- Q. FENCE GATE GROUND, SEE E-502 FOR DETAILS
- R. TRANSFORMER GROUND, (1) LEAD
- S. TRANSFORMER GROUND DISCONNECT, SEE E-502

GENERAL NOTES: (THIS SHEET)

1. ALL EXTERIOR GROUNDING SHALL MEET OR EXCEED THE CURRENT HARRIS SITE GROUNDING AND LIGHTNING PROTECTION GUIDELINES. REFER TO INSTALLATION MANUAL AE/LZT 123 4618/1 REV F (JUNE 2017).
2. THE GROUNDING SYSTEM & CONDUCTORS SHALL BE INSPECTED BY THE ENGINEER PRIOR TO BACK FILLING. SYSTEM SHALL PROVIDE 3 OHM OR LESS RESISTANCE UPON COMPLETION.
3. ALL NON-INSULATED GROUND LEADS EXTENDING ABOVE GROUND LEVEL SHALL BE ENCASED IN 1/2" PVC & SEALED WITH SILICONE.
4. GROUND RINGS & TOP OF RODS SHALL BE INSTALLED AT 30" BELOW FINISHED GRADE. (SEE DETAIL A/E-501)
5. INSTALL 18"x18" COPPER PLATES IN LIEU OF GROUND RODS WHEN INSTALLING OVER TOWER FOUNDATION OR WHERE DRIVING GROUND RODS IS NOT FEASIBLE. REFER TO GEOTECH REPORT FOR SOIL CONDITIONS.
6. ALL MECHANICAL CONNECTIONS SHALL INCLUDE ANTI-OXIDANT COMPOUND BETWEEN LUG & CONNECTION POINT. USE COPPER ANTI-OXIDANT FOR COPPER TO COPPER CONNECTION
7. ALL ABOVE GRADE CADWELD CONNECTIONS (TO GALVANIZED ITEMS) SHALL BE SPRAYED WITH COLD GALVANIZING COMPOUND TO PREVENT CORROSION.
8. ALL MECHANICAL GROUND CONNECTIONS TO UTILIZE TWO HOLE LUGS, STAINLESS STEEL HARDWARE AND "NO-OX" COMPOUND ON CONNECTIONS. SELF TAPPING SCREWS ARE NOT ALLOWED.



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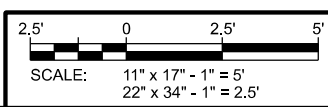


**GROUNDING PLAN
 WATERLOO (27651)
 WATERLOO, WISCONSIN**

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	E-101



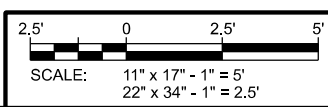
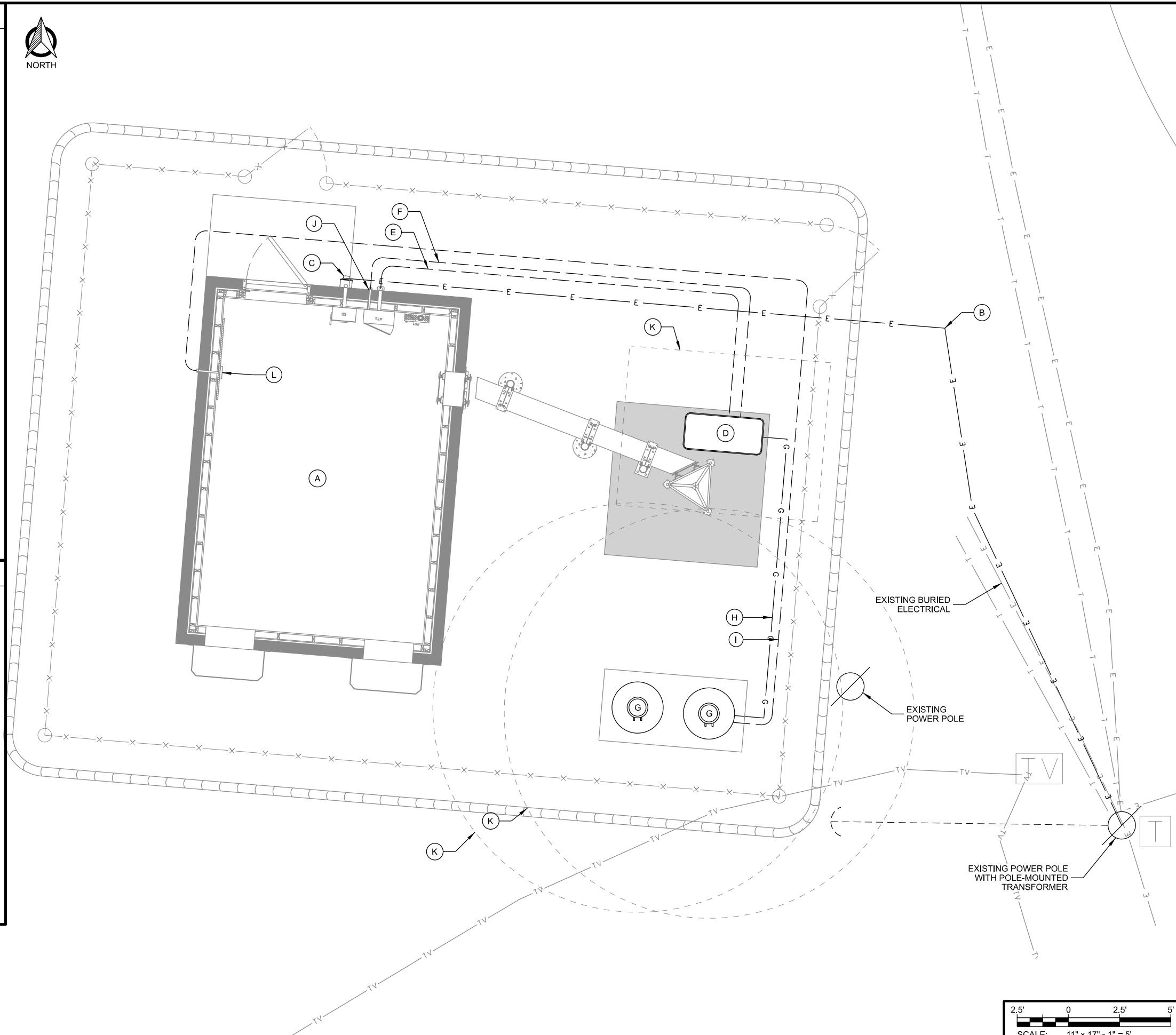
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KEYNOTES: (THIS SHEET)

- A. EQUIPMENT SHELTER
- B. 200A 120/240V 1P ELECTRIC SERVICE FROM EXISTING POLE-MOUNTED TRANSFORMER TO SINGLE ELECTRIC METER MOUNTED TO JEFFERSON COUNTY EQUIPMENT BUILDING; (1) 2" CONDUIT INSTALLED BY CONTRACTOR
- C. SINGLE ELECTRIC METER SOCKET INSTALLED BY CONTRACTOR; E-504 FOR DETAILS
- D. EXISTING 17 KW HONEYWELL GENERATOR MODEL #: 006260R2, 120/240V, 141.7/70.8A; RELOCATED BY CONTRACTOR
- E. GENERATOR AC ELECTRIC; (1) 2" CONDUIT BY CONTRACTOR.
- F. GENERATOR CONTROL & ALARM; (1) 1" CONDUIT BY CONTRACTOR.
- G. EXISTING RELOCATED 120 GAL. LP TANK ON NEW 3'-6" x 7'-0" CONCRETE PAD (TYP. OF 2) RELOCATED BY CONTRACTOR; SEE C-504 FOR DETAILS
- H. LP FUEL LINE BY CONTRACTOR, SEE E-505 FOR DETAILS
- I. REMOTE LP FUEL TANK LEVEL MONITOR CONDUIT; (1) 1" CONDUIT BY CONTRACTOR
- J. STUB ALL CONDUITS ON OUTSIDE OF CONCRETE FOUNDATION. ALL OUTSIDE BUILDING PENETRATIONS TO BE WEATHERPROOF LB, SEE E-503 FOR DETAILS
- K. UTILITY SETBACK / CLEARANCES. 3' AROUND GENERATOR. 10' AROUND LP TANK VALVE
- L. REMOTE LP FUEL TANK LEVEL MONITOR BY CONTRACTOR

GENERAL NOTES: (THIS SHEET)

1. CONTRACTOR SHALL FIELD VERIFY DEPTHS, LOCATIONS, & SIZES OF ALL EXISTING UTILITIES.
2. ALL UTILITIES SHALL BE INSTALLED ACCORDING TO STATE AND LOCAL REQUIREMENTS.
3. ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL, STATE, AND LOCAL CODES.
4. ALL UNDERGROUND TRENCHING, PIPE AND CONDUIT INSTALLATION TO BE COMPLETED PRIOR TO FINAL SUBGRADE COMPACTION AND AGGREGATE INSTALLATION.
5. ALL CONDUCTORS TO BE COPPER.
6. ALL UNDERGROUND ELECTRICAL & TELCO CONDUITS TO BE SCH. 80 PVC UNLESS OTHERWISE REQUIRED BY THE UTILITY PROVIDER.
7. ALL OUTDOOR ABOVE GRADE EXPOSED ELECTRICAL CONDUITS TO BE RIGID GALVANIZED STEEL (RGS). ALL BELOW GRADE CONDUIT STUB UPS TO BE SCH 80 PVC WITH SLIP JOINT.
8. REFERENCE MANUFACTURER AND CATALOG NUMBERS ARE USED FOR QUALITY AND PERFORMANCE ONLY. EQUIPMENT MFR. BY OTHERS ARE EQUALLY ACCEPTABLE PROVIDED THEY MEET OR EXCEED THE SPEC.
9. PROVIDE AND INSTALL ALL NECESSARY WIRING AND CONDUITS FROM EXTERIOR ELECTRICAL ITEMS TO DISTRIBUTION PANEL WITHIN EQUIPMENT BUILDING.
10. ALL CONDUIT STUBS IN BUILDINGS & PULL BOXES TO BE IDENTIFIED AND LABELED.
11. PROVIDE PULL STRINGS IN ALL CONDUITS.
12. ALL INDOOR EXPOSED CONDUIT TO BE METALLIC (EMT OR RGS).
13. SEE E-503 FOR CONDUIT INSTALLATION REQUIREMENTS.



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**UTILITY PLAN
 WATERLOO (27651)
 WATERLOO, WISCONSIN**

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY	AJO
PLOT DATE	5/12/2021
PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	E-102

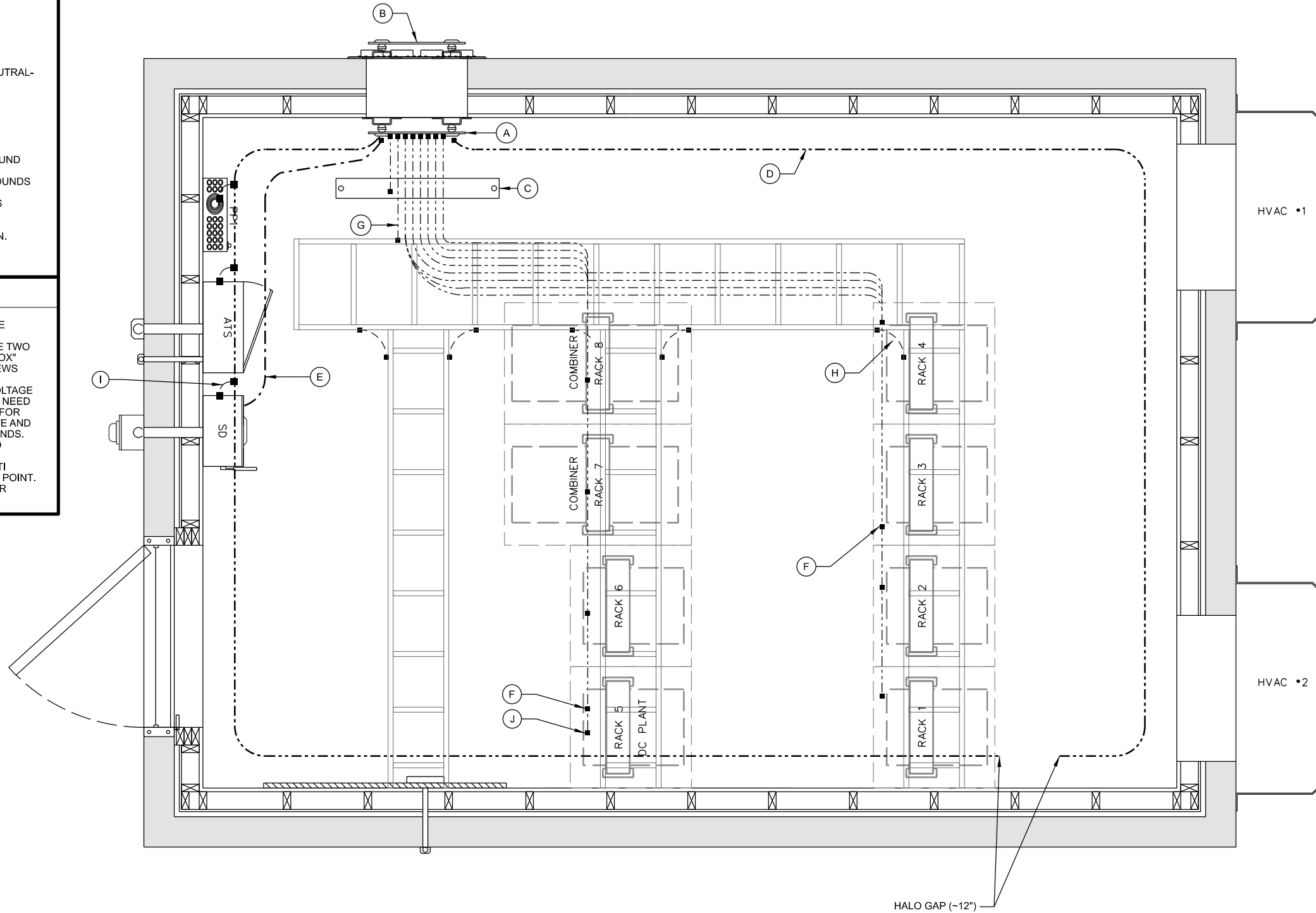
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KEYNOTES: (THIS SHEET)

- A. MASTER GROUND BAR
- B. EXTERIOR GROUND BAR
- C. COAXIAL SURGE ARRESTOR TRAPEZE
- D. #2 STRANDED INSULATED HALO
- E. #2 STRANDED INSULATED SERVICE DISCONNECT NEUTRAL-GROUND BOND LEAD TO MGB
- F. #2 STRANDED INSULATED RACK GROUNDS; PROVIDE PIGTAIL LEAD TO EACH RACK LOCATION. CONNECTION TO RACK BY RADIO VENDOR. (1) PER RACK
- G. #2 STRANDED INSULATED CABLE TRAY SYSTEM GROUND
- H. #6 STRANDED INSULATED CABLE TRAY SECTION GROUNDS
- I. #6 STRANDED INSULATED METAL DEVICE/BOX BONDS
- J. (1) #2 STRANDED INSULATED DC PLANT GROUND; PROVIDE PIGTAIL LEAD TO DC PLANT RACK LOCATION. CONNECTION TO RACK BY RADIO VENDOR.

GENERAL NOTES: (THIS SHEET)

1. ALL INTERIOR CONDUITS TO BE RGS OR EMT. UTILIZE COMPRESSION FITTINGS FOR EMT INSTALLATIONS.
2. ALL MECHANICAL GROUND CONNECTIONS TO UTILIZE TWO HOLE LUGS, STAINLESS STEEL HARDWARE AND "NO-OX" COMPOUND ON CONNECTIONS. SELF TAPPING SCREWS ARE NOT ALLOWED.
3. PROVIDE EMT CONDUIT FOR ALL ALARM AND LOW VOLTAGE WIRING FROM DEVICE TO ALARM BOARD. CONDUITS NEED NOT BE FULL LENGTH AND MAY UTILIZE CABLE TRAY FOR HORIZONTAL RUNS. CONDUITS SHALL EXTEND ABOVE AND OVER TO CABLE TRAY AND PROVIDE BUSHINGS ON ENDS.
4. ALL METALLIC CONDUITS AND BOXES TO BE GROUND BONDED TO HALO.
5. ALL MECHANICAL CONNECTIONS SHALL INCLUDE ANTI OXIDANT COMPOUND BETWEEN LUG & CONNECTION POINT. USE COPPER ANTI-OXIDANT FOR COPPER TO COPPER CONNECTIONS.



A **SHELTER GROUNDING PLAN**
 SCALE: 11" x 17" - 1/2" = 1'-0"
 22" x 34" - 1" = 1'-0"

CONSULTANT:



CLIENT:



SHELTER GROUNDING PLAN
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	E-103

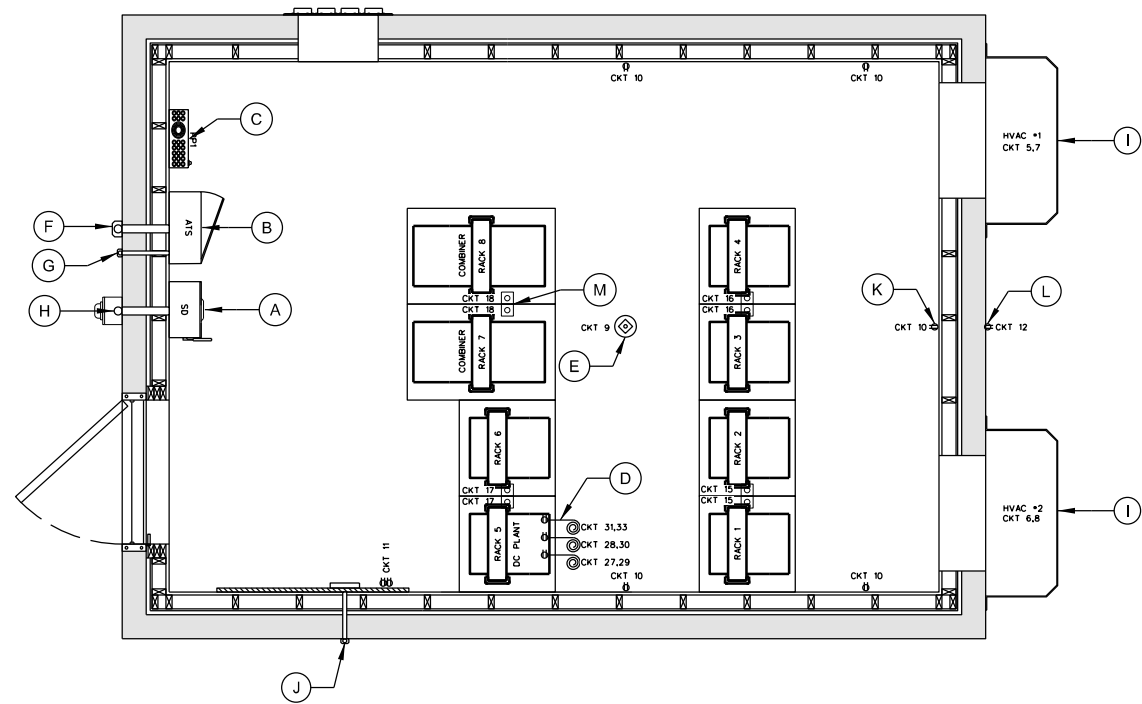
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KEYNOTES: (THIS SHEET)

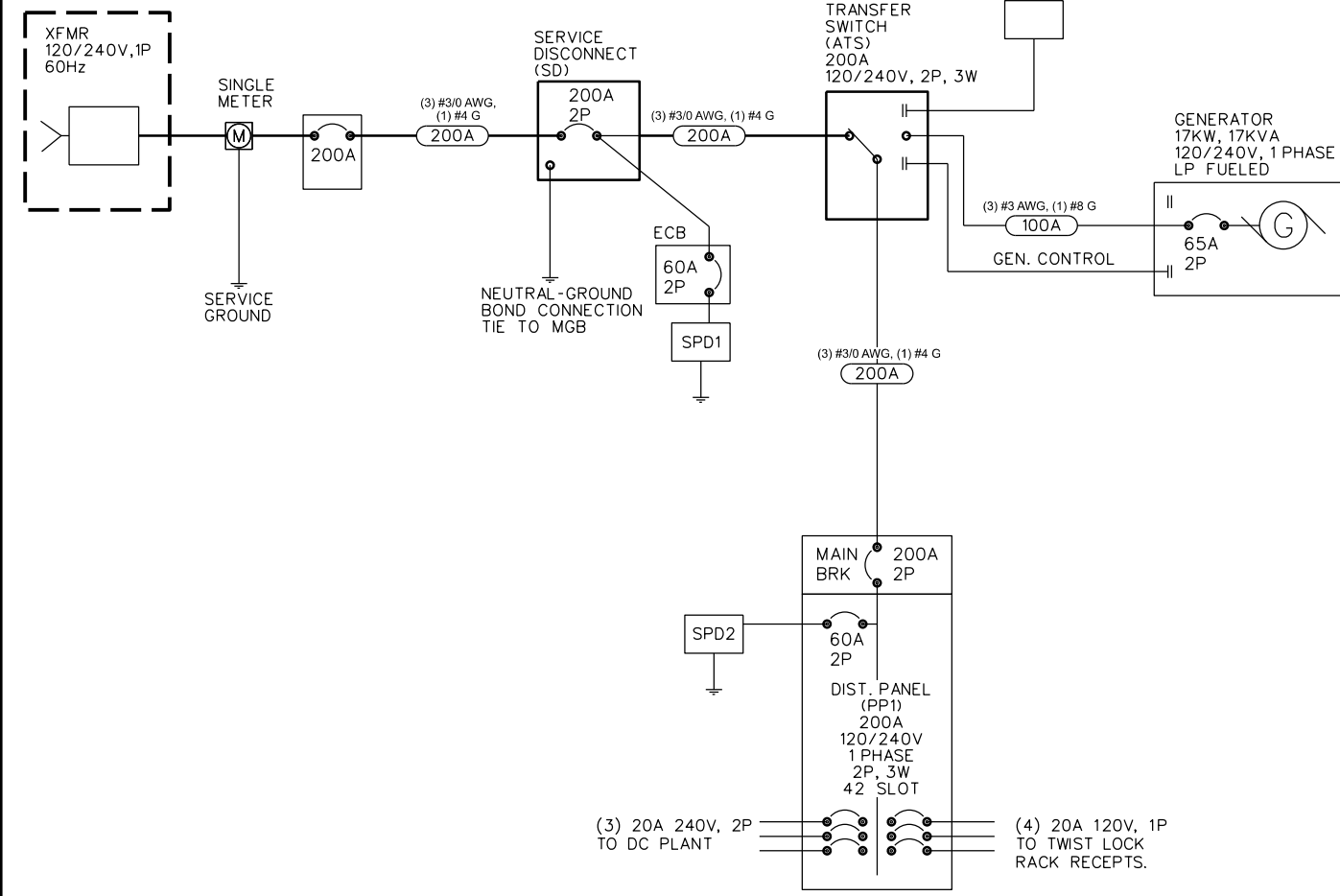
- A. SERVICE DISCONNECT
- B. AUTOMATIC TRANSFER SWITCH (ATS)
200A GENERAC (30"Hx13.5"Wx7"D)
PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR
- C. DISTRIBUTION PANEL (PP1)
- D. (3) DC PLANT POWER FEEDS.
PROVIDE PIGTAIL LEADS FROM CEILING MOUNTED
JUNCTION BOX.
CONNECTION TO RACKS BY RADIO VENDOR.
- E. SMOKE ALARM
- F. GENERATOR A/C POWER FEED
- G. GENERATOR CONTROL WIRING FEED
- H. ELECTRIC UTILITY SERVICE FEED
- I. HVAC UNIT (2 TON)
- J. LP TANK LEVEL MONITOR RECEPTACLE
- K. INTERIOR CONVENIENCE OUTLET
- L. EXTERIOR CONVENIENCE OUTLET
- M. (2) 20A 120V TWIST LOCK RECEPTACLES, CEILING MOUNTED
IN 2 GANG BOX, LOCATED BETWEEN (2) ADJACENT RACKS.
(1) 20A, 120V CIRCUIT PER EACH PAIR OF TWIST LOCKS.

GENERAL NOTES: (THIS SHEET)

- 1. ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL, STATE AND LOCAL CODES.
- 2. ALL WIRE AND CONDUIT SIZES SPECIFIED ARE MINIMUMS. LARGER SIZES MAY BE REQUIRED BY CODE. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND CODE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- 3. ALL CONDUCTORS SHALL BE COPPER.
- 4. ALL INDOOR RACEWAY TO BE EMT OR RGS. EMT INSTALLATIONS SHALL UTILIZE COMPRESSION FITTINGS.
- 5. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY WIRING AND CONDUITS FROM ELECTRICAL DEVICES REQUIRED ON PROJECT TO THE DISTRIBUTION PANELS.
- 6. ALL ELECTRICAL WORK SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF A LICENSED MASTER ELECTRICIAN.
- 7. CONTRACTOR SHALL PERFORM AN INSPECTION OF THE EXISTING ELECTRICAL EQUIPMENT AND INSTALLATION WITHIN THE PRE-MANUFACTURED BUILDING PROVIDED BY THE OWNER FOR CONFORMANCE WITH STATE AND LOCAL ELECTRICAL CODE. ELECTRICAL CONTRACTOR SHALL NOTIFY ENGINEER OF ANY NON-CONFORMING ITEMS.



BY UTILITY



A SHELTER ELECTRICAL PLAN

SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"

DIST. PANEL (PP1)	PHASE/WIRE		BUS SIZE		MAIN LUGS			AIC RATING			
120/240VAC	1/3		200A					10,000			
LOAD	POLE	TRIP	CKT #	A	B	CKT#	TRIP	POLE	WIRE	LOAD	
Surge Arrester SPD2	4	2	60	1			2	-	-	SPARE	
	-	-	-	3			4	-	-	SPARE	
HVAC #1	8	2	30	5			6	30	2	8	HVAC #2
	-	-	-	7			8	-	-		
Smoke Detector	12	1	20	9			10	20	1	12	Receptacles - Interior
LP Tank Monitor	12	1	20	11			12	20	1	12	Receptacles - Exterior
SPARE	-	-	-	13			14	20	1	12	Lights - Int/Emer/Door
Twist Lock Recepts. 1&2	12	1	20	15			16	20	1	12	Twist Lock Recepts. 3&4
Twist Lock Recepts. 5&6	12	1	20	17			18	20	1	12	Twist Lock Recepts. 7&8
SPARE	-	-	-	19			20	-	-		SPARE
SPARE	-	-	-	21			22	-	-		SPARE
SPARE	-	-	-	23			24	-	-		SPARE
SPARE	-	-	-	25			26	-	-		SPARE
DC Drop #1	12	2	20	27			28	20	2	12	DC Drop #2
	-	-	-	29			30	-	-		
DC Drop #3	12	2	20	31			32	-	-		SPARE
	-	-	-	33			34	-	-		SPARE
SPARE	-	-	-	35			36	-	-		SPARE
SPARE	-	-	-	37			38	-	-		SPARE
SPARE	-	-	-	39			40	-	-		SPARE
SPARE	-	-	-	41			42	-	-		SPARE

B ELECTRICAL ONE LINE DIAGRAM

SCALE: 11" x 17" - NTS
22" x 34" - NTS

C ELECTRIC DISTRIBUTION PANEL DIRECTORY

SCALE: 11" x 17" - NTS
22" x 34" - NTS

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SHELTER ELECTRICAL PLAN
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

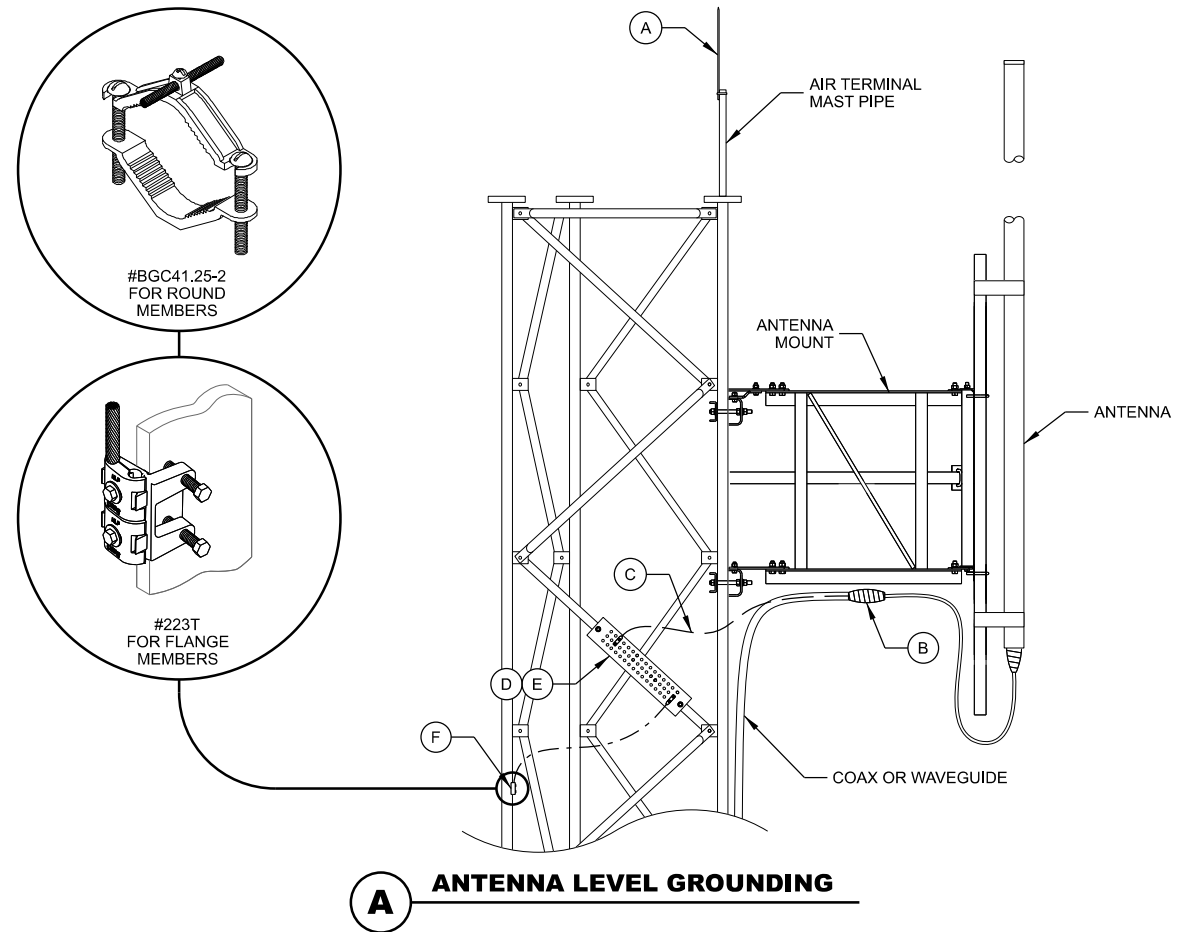
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CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
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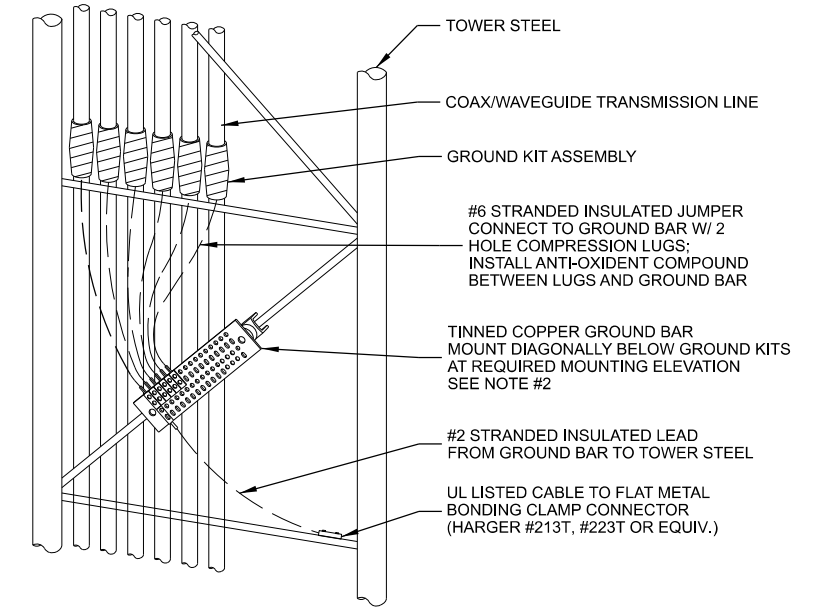
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KEYNOTES: (THIS SHEET)

- A. AIR TERMINAL:
EXTEND 2' ABOVE HIGHEST ANTENNA MIN. ON MAST PIPE
MECHANICALLY FASTEN AIR TERMINAL TO MAST PIPE
PIPE TO BE MECHANICALLY CONNECTED TO TOWER STEEL
- B. COAX / WAVEGUIDE TRANSMISSION LINE GROUND KIT;
SEE DETAIL THIS PAGE
- C. GROUND KIT JUMPER;
CONNECT TO GROUND BAR WITH 2 HOLE LONG BARREL LUG
- D. ANTENNA GROUND BAR (TINNED);
FOR CONNECTION OF MULTIPLE GROUND KITS AT ONE
LEVEL MOUNT TO TOWER STEEL;
INSTALL #2 STRANDED LEAD FROM GROUND BAR TO TOWER
STEEL
- E. FOR SINGLE ANTENNAS AT ONE LEVEL OMIT ANTENNA
GROUND BAR CONNECT GROUND KIT JUMPER DIRECTLY TO
TOWER STEEL WITH UL LISTED BONDING CLAMP
- F. UL LISTED BONDING CLAMP:
- HARGER BGC41.25-2 PIPE CLAMPS FOR
1-1/4" TO 2" DIA. ROUND MEMBERS
OR
- HARGER #223T HEAVY DUTY TINNED FLANGE
BONDING PLATE
- USE EXTERNAL ANTI-OXIDATION COMPOUND.
- PAINT WITH COLD GALV. COMPOUND AFTER BONDING.
- G. TOWER GROUND BAR (TGB) (TINNED);
4" x 18" x 1/2" - SIZED FOR (30) 2 HOLE GROUND LUGS MOUNT
DIAGONALLY FOR EASIER HOOK-UP OF GROUNDING KIT
LEADS INSTALL ON TOWER WITH INSULATORS AT 12" (ABOVE
ICE BRIDGE)
- H. TGB GROUNDS;
#2 BARE SOLID TINNED ENCASED IN CARFLEX CONDUIT
FROM TGB TO TOWER GROUND RING (2) REQ'D AND FROM
TGB TO TOWER STEEL (1) REQ'D
- I. TOWER STEEL GROUNDS;
#2 BARE SOLID TINNED ENCASED IN CARFLEX CONDUIT
FROM TOWER STEEL TO TOWER GROUND RING (3) REQ'D.
- J. TOWER FOUNDATION GROUND, (1 REQ'D);
SEE E-502 FOR DETAILS
- K. SHELTER EXTERIOR GROUND BAR (EGB) (TINNED);
SEE DETAIL THIS PAGE
- L. EGB GROUNDS;
#2 BARE SOLID TINNED
SEE DETAIL THIS PAGE
ENCASE IN CARFLEX CONDUIT FROM EGB TO SHELTER
GROUND RING (2) REQ'D.
- M. SURGE ARRESTOR/POLY PHASER
- N. INTERIOR SHELTER GROUND BAR / MASTER GROUND BAR
(MGB);
SEE DETAIL THIS PAGE
- O. #2 BARE SOLID TINNED, ENCASE IN CARFLEX CONDUIT
FROM MGB TO SHELTER GROUND RING (2) REQ'D.;
SEE DETAIL THIS PAGE
- P. ICE BRIDGE POST GROUNDS;
#2 BARE SOLID TINNED ENCASE IN CARFLEX CONDUIT TO 24"
BELOW GRADE;
SEE E-502 FOR DETAILS
- Q. ICE BRIDGE SECTION GROUNDS;
#6 STRANDED INSULATED
2 HOLE LONG BARREL ON EACH END (TYP.)
- R. ICE BRIDGE SECTION TO POST GROUNDS;
#6 STRANDED INSULATED
2 HOLE LONG BARREL ON SECTION & CADWELD TO POST
ORIENT LEAD WITH HIGH SIDE TOWARDS TOWER
- S. ENTRY PANEL GROUND;
#6 STRANDED INSULATED
2 HOLE LONG BARREL ON EACH END (TYP.)

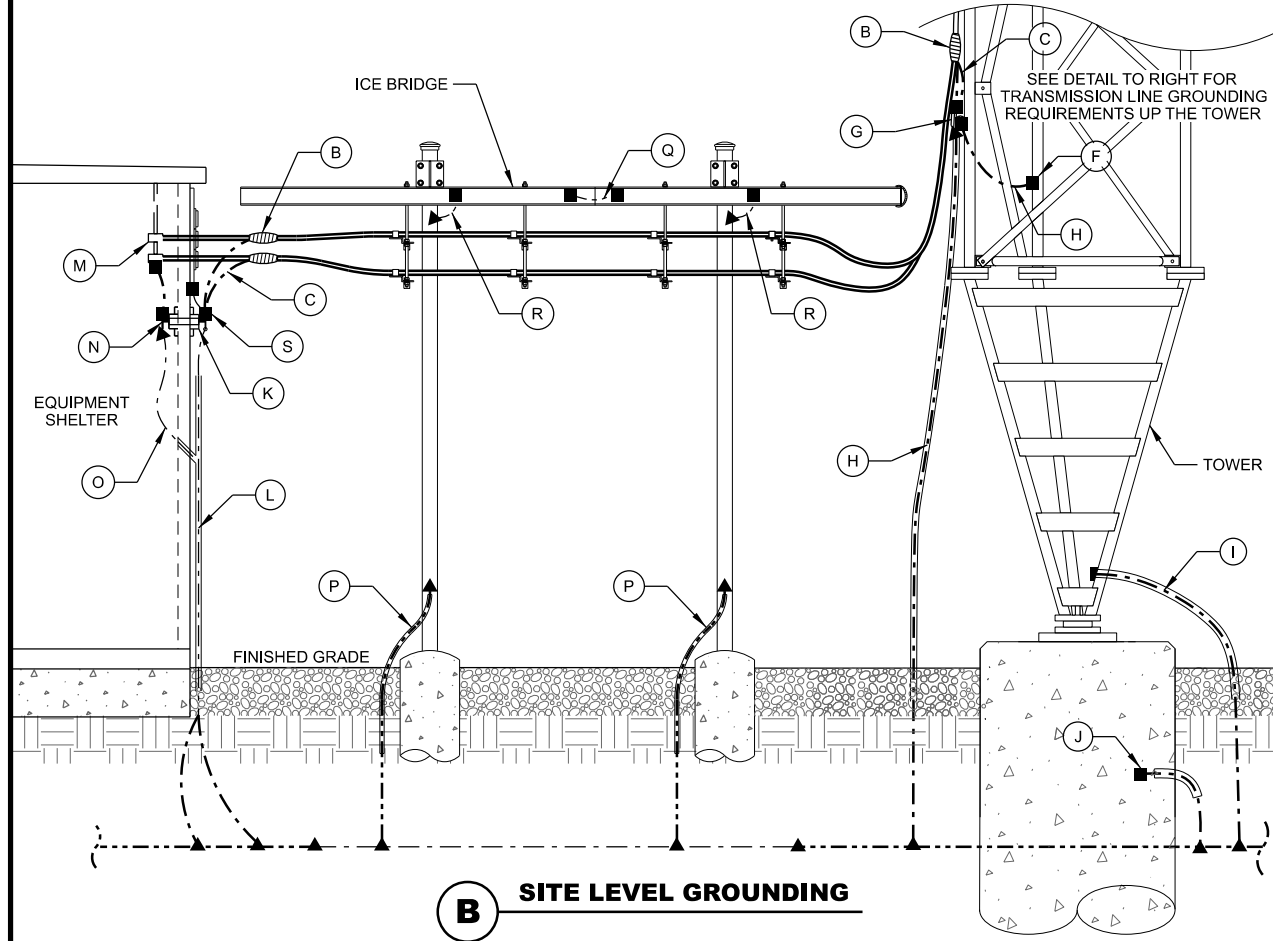


A ANTENNA LEVEL GROUNDING

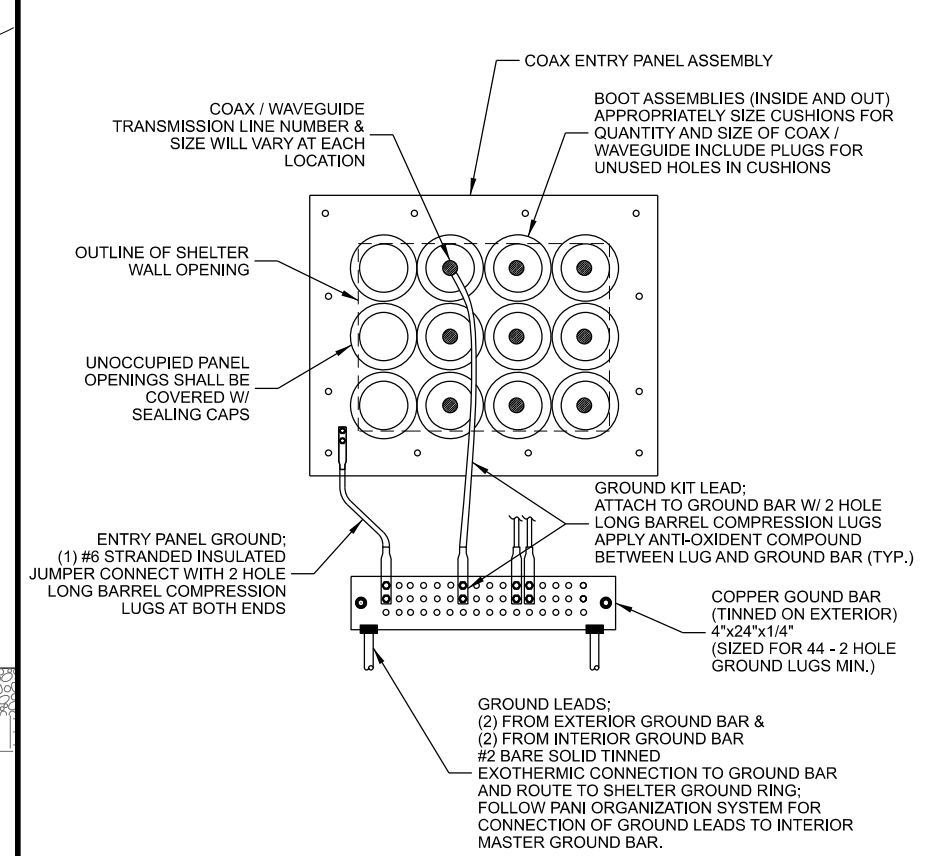


- NOTES:**
- INSTALL GROUND KITS ON EACH TRANSMISSION LINE IN THE FOLLOWING LOCATIONS:
 - A. ANTENNA / DISH LEVEL
 - B. AT 75 FOOT MAX INTERVALS FROM ANTENNA LEVEL TO BASE OF TOWER
 - C. TOWER BASE
 - D. EQUIPMENT BUILDING ENTRY
 - INSTALL ANTENNA GROUND BARS AT EACH ANTENNA TIER LEVEL FOR CONNECTION OF MULTIPLE ANTENNAS AT EACH LEVEL. WHEN ONLY ONE ANTENNA IS INSTALLED AT A LEVEL, CONNECT GROUND KIT DIRECTLY TO TOWER STEEL WITH UL LISTED BONDING CLAMP.

C TRANSMISSION LINE GROUNDING



B SITE LEVEL GROUNDING



D INTERIOR / EXTERIOR SHELTER GROUND BARS

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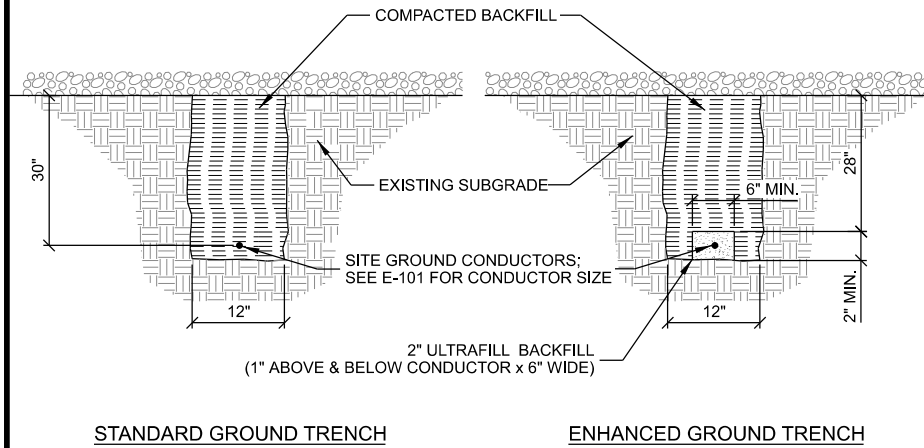
CLIENT:
**GROUNDING DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN**

SUBMITTAL:

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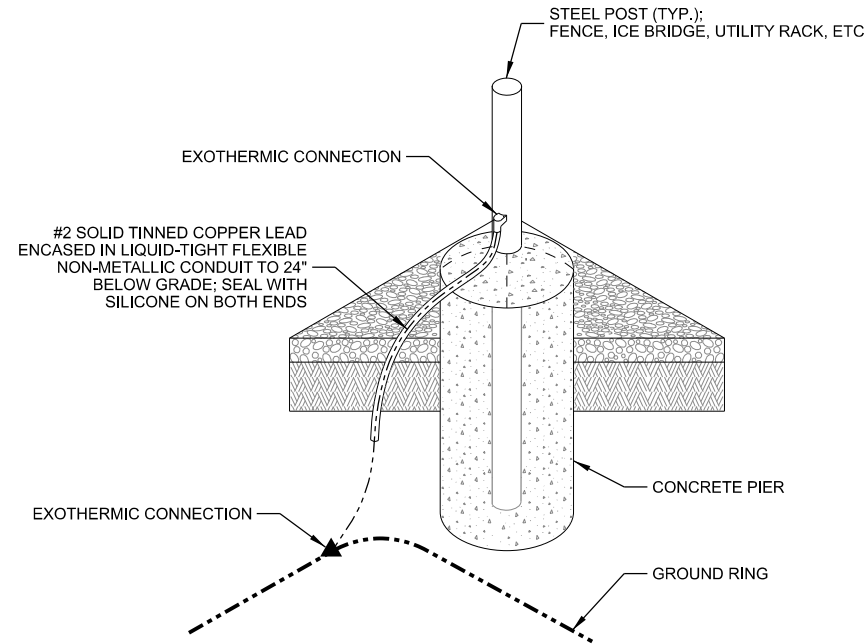
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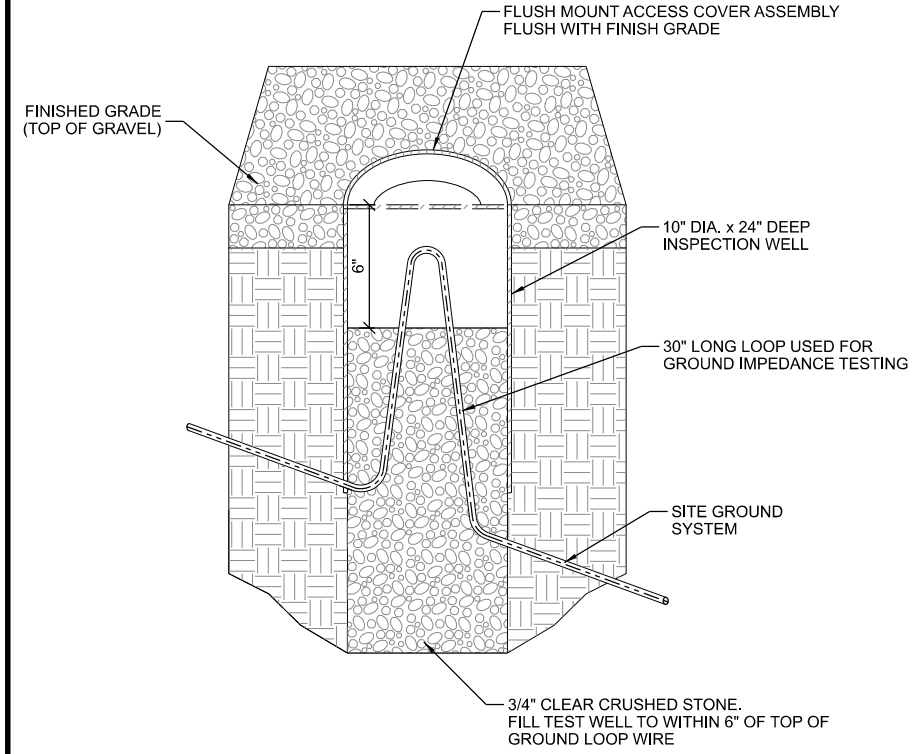


- NOTES:
- GROUNDING TRENCHES TO BE BACK FILLED WITH NATIVE SOIL.
 - COMPACT BACK FILL TO 95% MODIFIED PROCTOR.

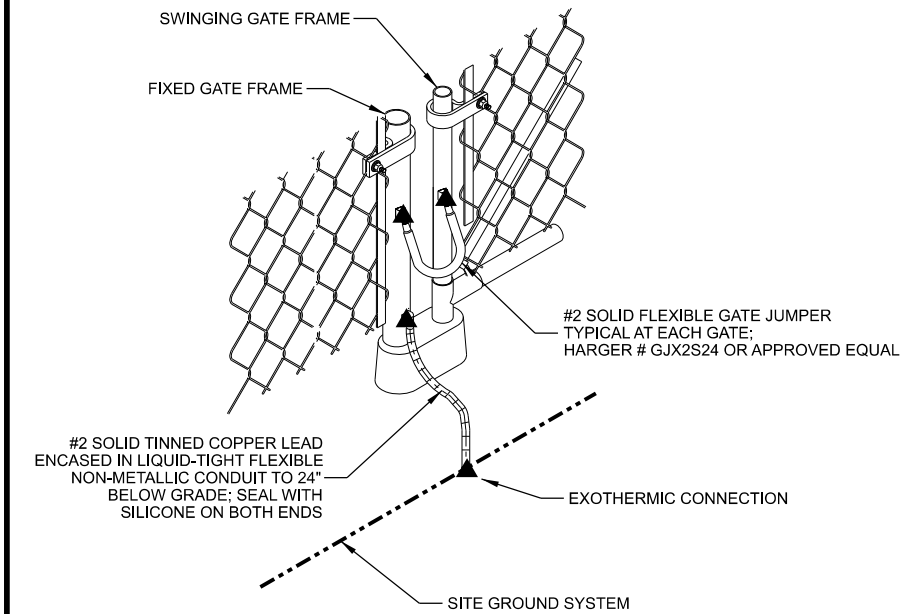
A GROUNDING TRENCH



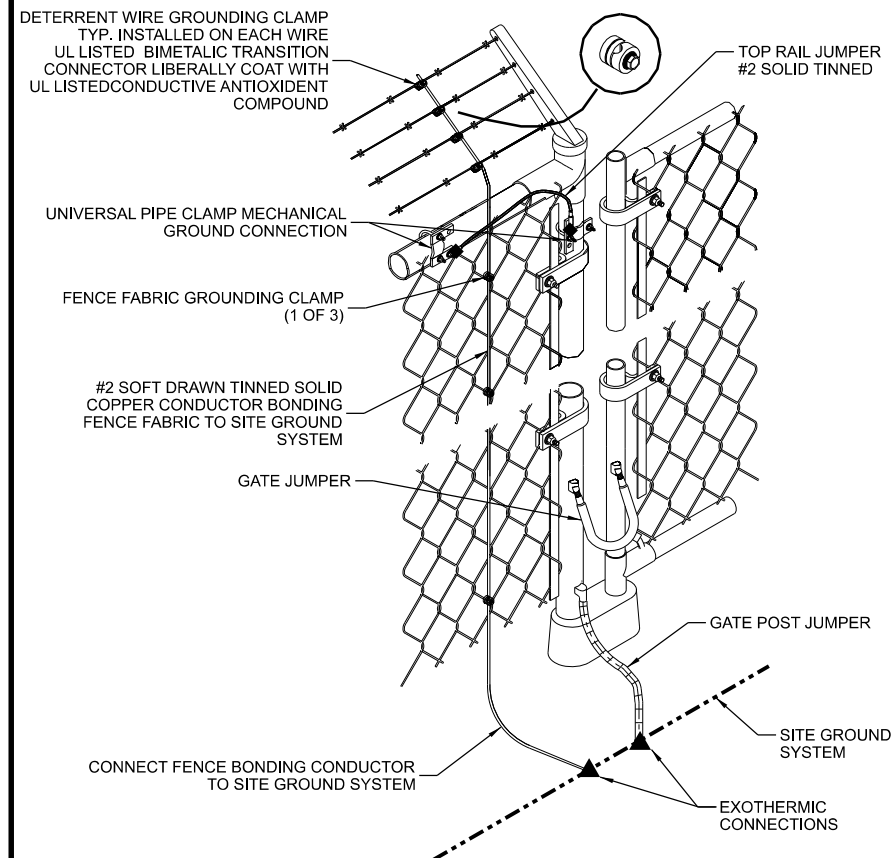
B STEEL POST GROUNDING



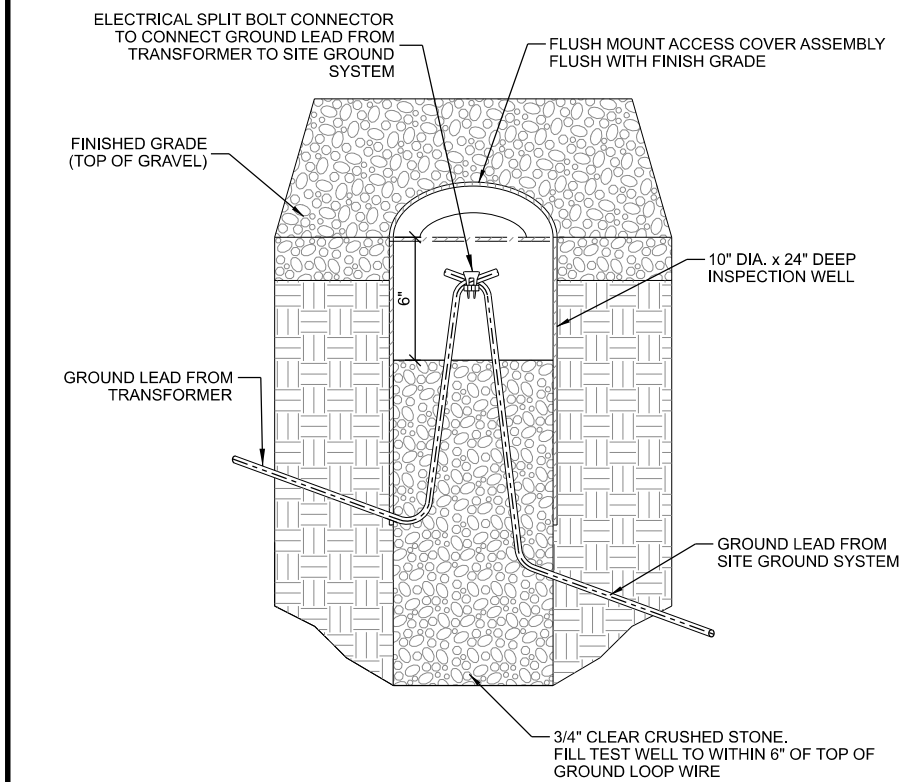
C GROUND TEST WELL



D FENCE GATE GROUNDING



E FENCE FABRIC AND DETERRENT WIRING BONDING



F TRANSFORMER GROUND DISCONNECT

CONSULTANT:
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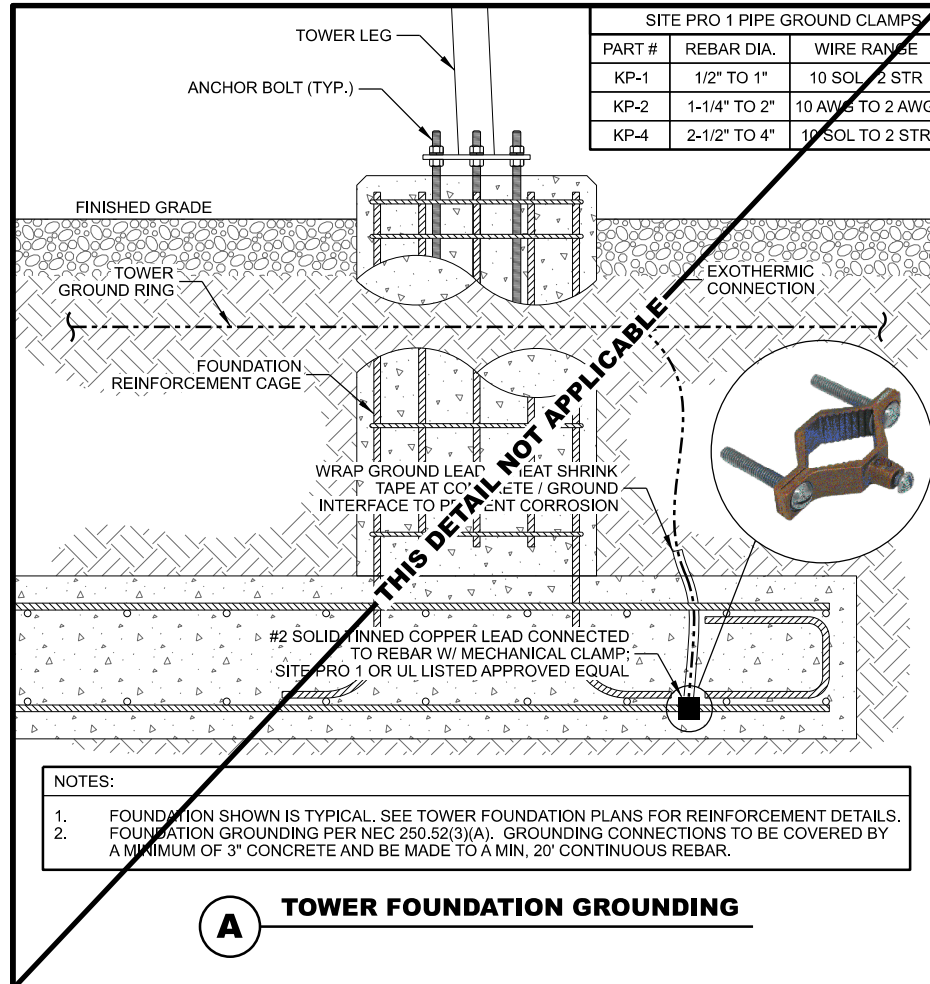
CLIENT:
GROUNDING DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:

INT.	DATE:	DESCRIPTION:

CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	E-502

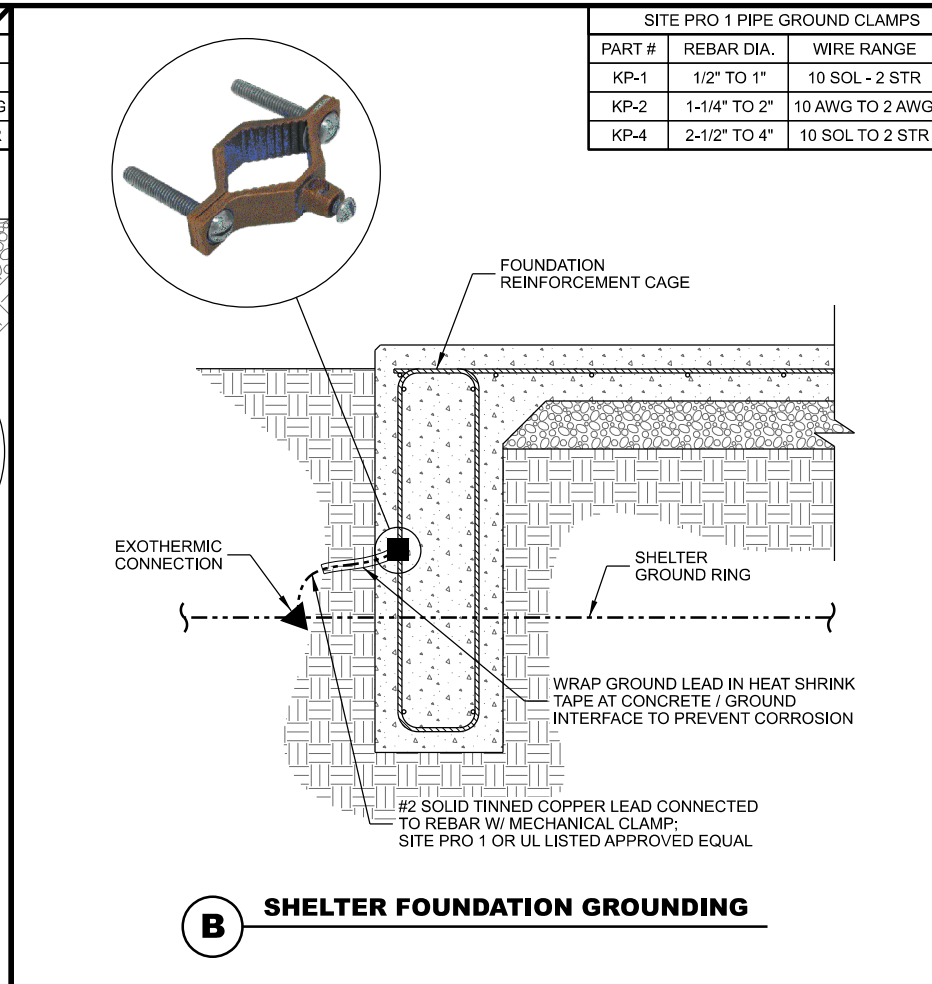
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SITE PRO 1 PIPE GROUND CLAMPS		
PART #	REBAR DIA.	WIRE RANGE
KP-1	1/2" TO 1"	10 SOL - 2 STR
KP-2	1-1/4" TO 2"	10 AWG TO 2 AWG
KP-4	2-1/2" TO 4"	10 SOL TO 2 STR

- NOTES:
1. FOUNDATION SHOWN IS TYPICAL. SEE TOWER FOUNDATION PLANS FOR REINFORCEMENT DETAILS.
 2. FOUNDATION GROUNDING PER NEC 250.52(3)(A). GROUNDING CONNECTIONS TO BE COVERED BY A MINIMUM OF 3" CONCRETE AND BE MADE TO A MIN. 20' CONTINUOUS REBAR.

A TOWER FOUNDATION GROUNDING



SITE PRO 1 PIPE GROUND CLAMPS		
PART #	REBAR DIA.	WIRE RANGE
KP-1	1/2" TO 1"	10 SOL - 2 STR
KP-2	1-1/4" TO 2"	10 AWG TO 2 AWG
KP-4	2-1/2" TO 4"	10 SOL TO 2 STR

B SHELTER FOUNDATION GROUNDING

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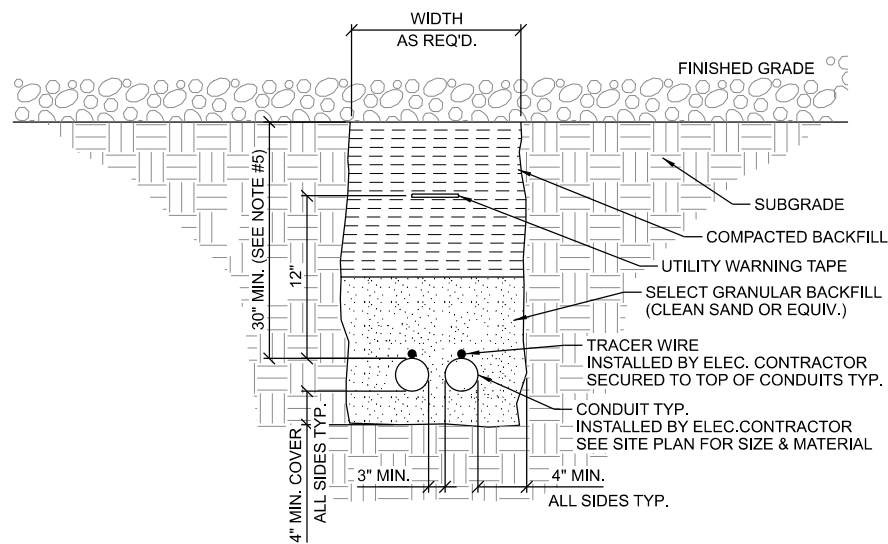


CLIENT:
GROUNDING DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN

SUBMITTAL:		
INT.	DATE:	DESCRIPTION:

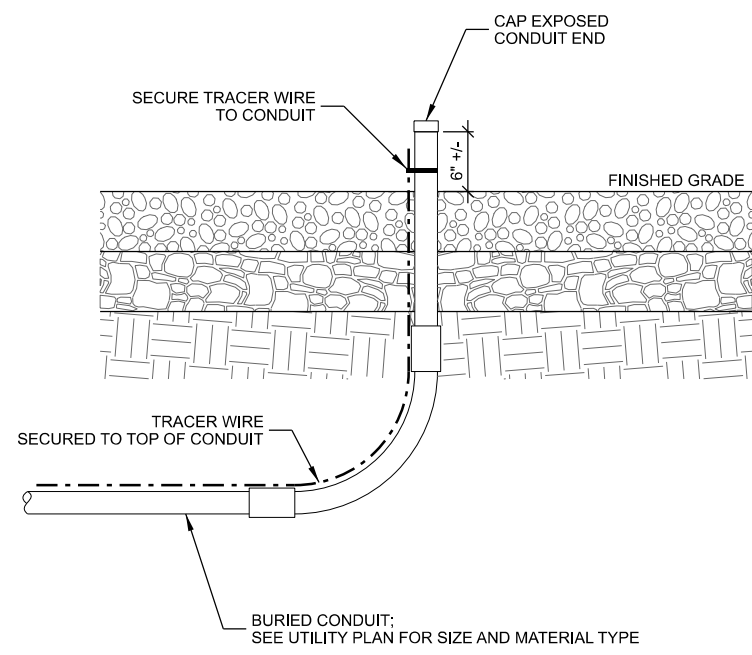
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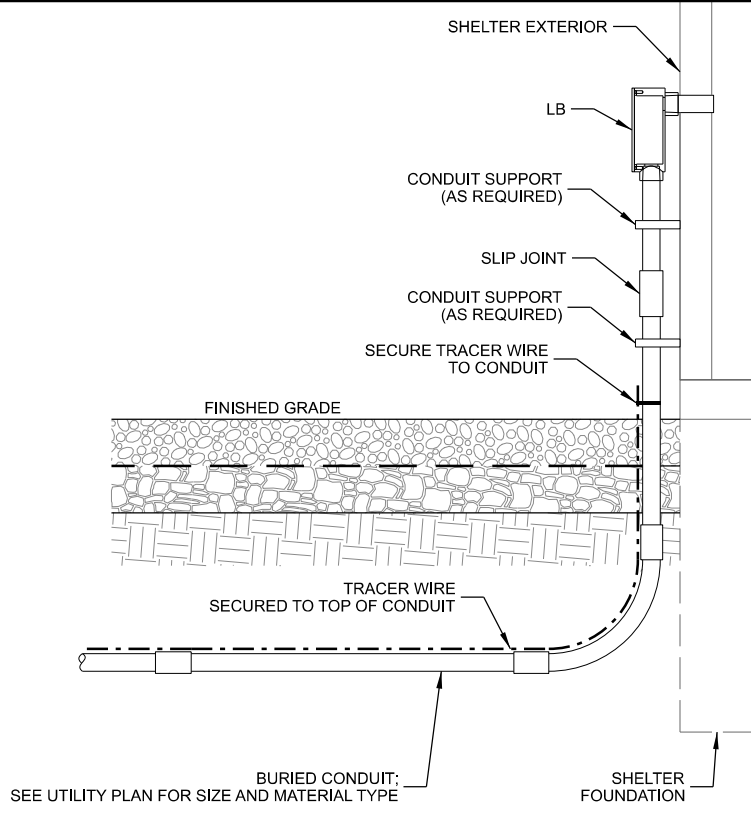


- NOTES:
1. ALL CONDUITS TO BE EQUIPPED W/ PULL CORDS & CAPPED FOR FUTURE LINE PULLS. NO DUCT TAPE CAPS ALLOWED
 2. WARNING TAPE TO RUN CONTINUOUSLY ALONG THE ENTIRE CONDUIT LENGTH. INSTALL TAPE 12" ABOVE THE TOP OF THE CONDUITS.
 3. TRACER WIRE TO BE 14 GA. SOLID COPPER WIRE WITH CORROSION PROTECTIVE COATING. SECURE TO TOP OF CONDUIT AND RUN CONTINUOUSLY ALONG THE ENTIRE LENGTH. EXTEND TO GRADE AT BOTH ENDS - LOOP AND WRAP AROUND APPROPRIATE CONDUIT.
 4. CONTRACTOR TO CHECK CONTINUITY OF TRACER WIRE BEFORE AND AFTER BURIAL.
 5. VERIFY CONDUIT DEPTH REQUIREMENTS WITH LOCAL UTILITY PROVIDER.

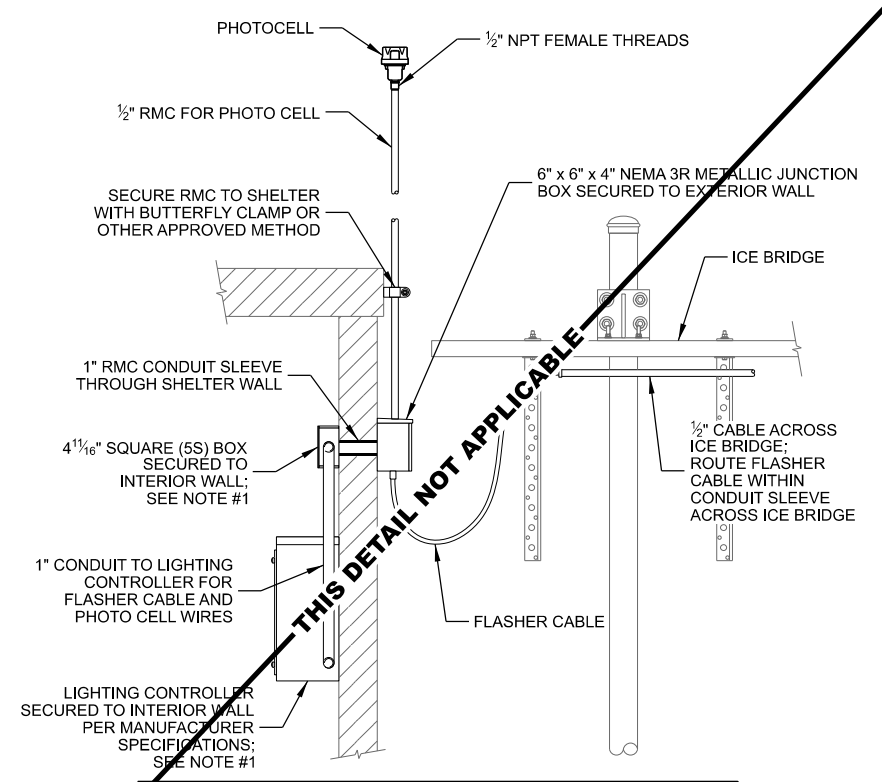
A UTILITY TRENCH



B CONDUIT STUB-UP



C CONDUIT STUB-UP AT SHELTER



- NOTES:
1. PROVIDE GROUND BOND FROM LIGHTING CONTROLLER BOX AND INTERIOR JUNCTION BOX TO INTERIOR GROUND HALO SYSTEM.

D TOWER LIGHTING INSTALLATION

THIS SPACE INTENTIONALLY LEFT BLANK

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WATERLOO, WISCONSIN

SUBMITTAL:

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CHECKED BY:	AJO
PLOT DATE:	5/12/2021
PROJECT NUMBER:	27651
SET TYPE:	BD
SHEET NUMBER:	E-504

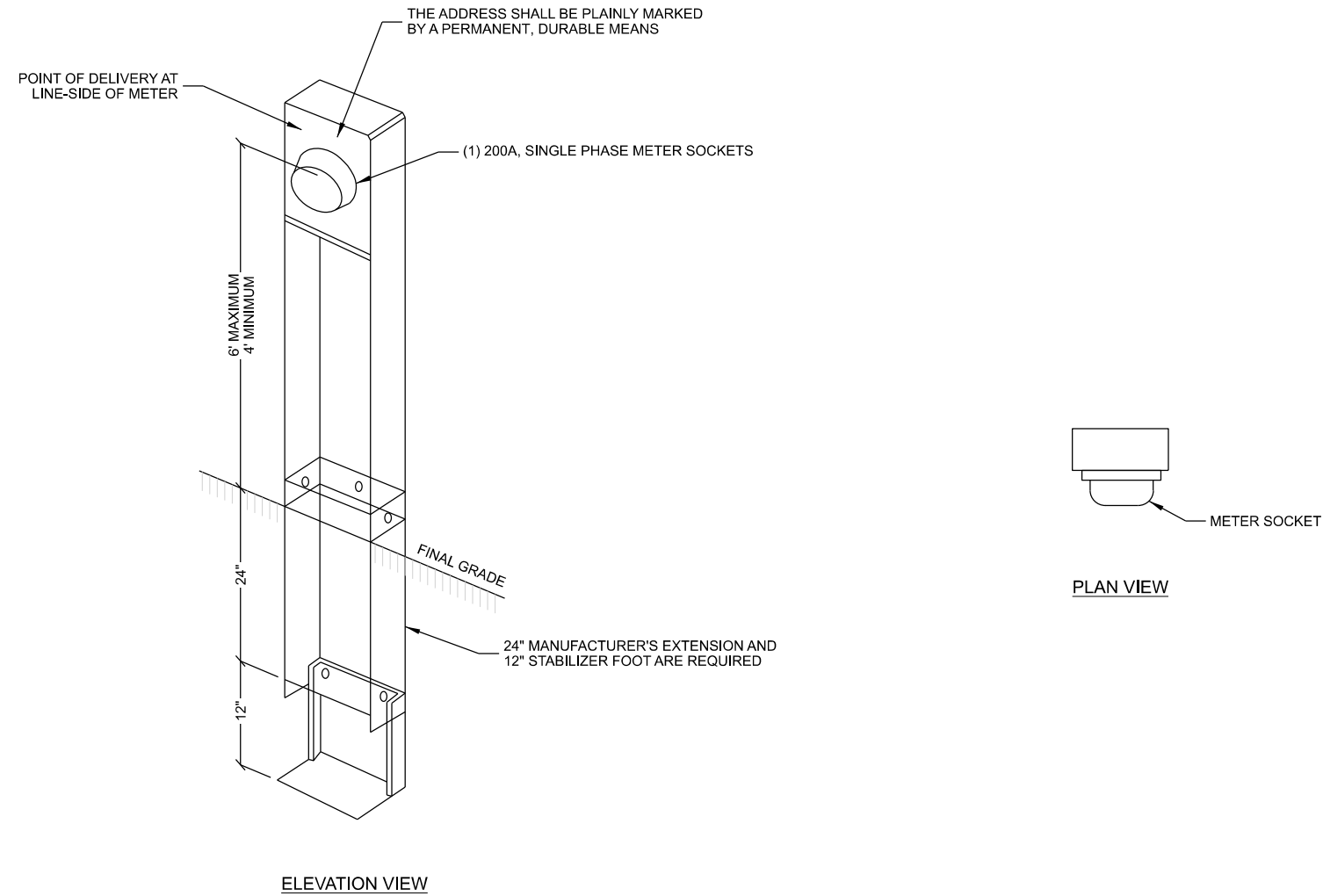
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CLIENT:



UTILITY RACK DETAILS
WATERLOO (27651)
WATERLOO, WISCONSIN



ELEVATION VIEW

PLAN VIEW

NOTES:
 1. PRIOR TO SETTING METER, ALL SMALL COMMERCIAL SERVICES NEED TO BE STATE INSPECTED AND AN ELECTRIC INSPECTION CERTIFICATE PROVIDED TO THE UTILITY PROVIDER.

A SINGLE ELECTRIC METER PEDESTAL

SUBMITTAL:		
INT.	DATE:	DESCRIPTION:

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PROJECT NUMBER	27651
SET TYPE	BD
SHEET NUMBER	E-505

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