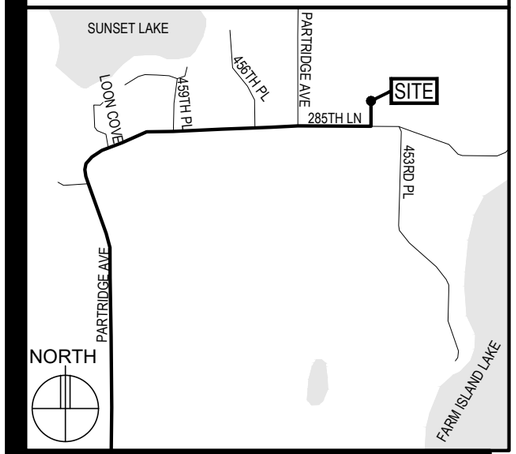
MN06 SHIRT LAKE NEW BUILD

PROJECT INFORMATION

SITE NAME:	MN06 SHIRT LAKE
SITE ADDRESS:	285TH LN AITKIN, MN 56431
COUNTY:	AITKIN
LATITUDE:	N 46° 25' 32.15" (NAD83)
LONGITUDE:	W 93° 47' 50.72" (NAD83)
DRAWING BASED ON SITE DATA FORM DATED:	07-21-20
CONSTRUCTION TYPE:	IIB
SITE AREA:	75' X 75' = 5,625 S.F.

SHEET INDEX

VICINITY MAP



LOCATION SCAN

ISSUE SUMMARY

REV	DESCRIPTION	SHEET/DETAIL
A	ISSUED FOR REVIEW 07-27-20	ALL
B	ISSUED FOR OWNER SIGNOFF 08-13-20	ALL
C	ISSUED FOR OWNER SIGNOFF 03-10-21	ALL

DEPARTMENTAL APPROVALS

JOB TITLE	NAME	DATE
RF ENGINEER	MICHAEL KOCH	07-27-20
OPERATIONS MANAGER	RAYMOND CHANDLER	07-27-20
CONSTRUCTION ENGINEER	GREG LINDER	07-29-20

LESSOR / LICENSOR APPROVAL

SIGNATURE	PRINTED NAME	DATE

LESSOR / LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW

☐ NO CHANGES. ☐ CHANGES NEEDED. SEE COMMENTS.

CONTACTS

LESSOR / LICENSOR:	VINCENT A BENSON 28746 PARTRIDGE AVE AITKIN, MN 56431 (218) 839-8414
LESSEE:	VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 CONSTRUCTION DEPT (952) 946-4700
POWER UTILITY COMPANY CONTACT:	MILLE LACS ENERGY COOP 36559 US HWY 169 AITKIN, MN 56431 KATIE PIECEK (218) 927-8231
TELCO UTILITY COMPANY CONTACT:	T.B.D.
ARCHITECT:	DESIGN 1 ARCHITECTS LLC 9973 VALLEY VIEW ROAD EDEN PRAIRIE, MN 55344 (952) 903-9299
SURVEYOR:	WIDSETH SMITH NOLTING 610 FILLMORE STREET - PO BOX 1028 ALEXANDRIA, MN 56308-1028 320-762-8149
STRUCTURAL ENGINEER:	N/A
GEOTECHNICAL ENGINEER:	T.B.D

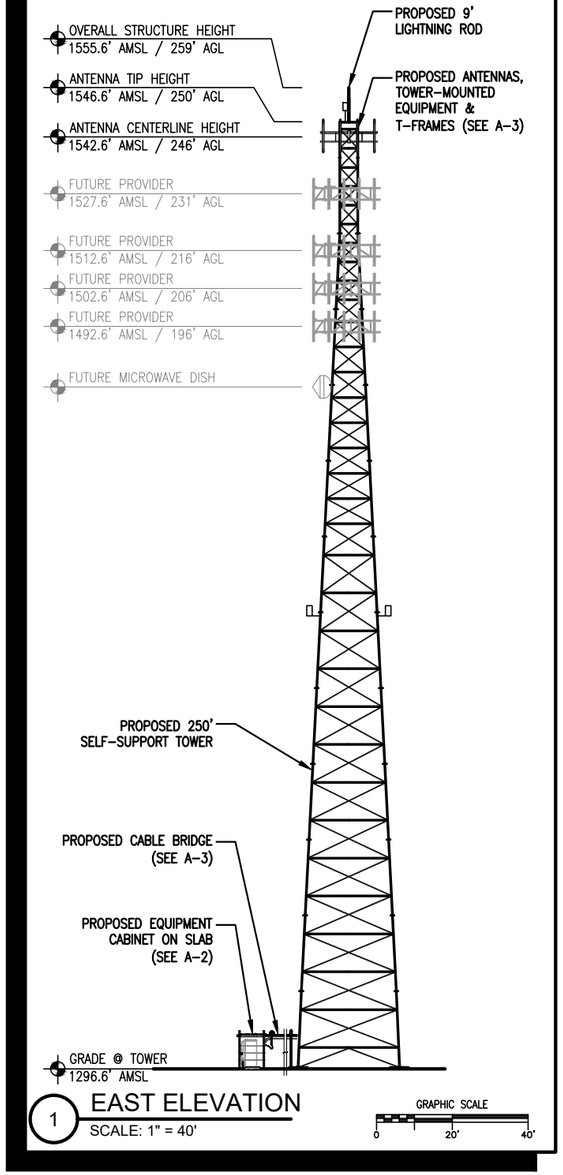
TOWER ELEVATION

NOTE:

1.) TOWER TO BE ERECTED AND INSTALLED IN ACCORDANCE WITH TOWER MANUFACTURER'S DRAWINGS NOT INCLUDED WITH THIS PACKAGE. DISCREPANCIES BETWEEN TOWER DRAWINGS AND ARCHITECTURAL DRAWINGS TO BE REPORTED TO VERIZON WIRELESS AND THE ARCHITECT IMMEDIATELY.

2.) TOWER FOUNDATION, EQUIPMENT SLAB FOUNDATION, GENERATOR FOUNDATION, AND THE ACCESS DRIVE TO BE EXCAVATED AND CONSTRUCTED IN ACCORDANCE WITH RECOMMENDATIONS AND SPECIFICATIONS OF THE GEOTECHNICAL REPORT WHICH IS NOT INCLUDED IN THIS PACKAGE. DISCREPANCIES BETWEEN THE REPORT AND THE OTHER DOCUMENTS TO BE IMMEDIATELY REPORTED TO VERIZON WIRELESS AND THE ARCHITECT.

3.) CONTRACTOR TO ENSURE TIP OF ANTENNAS DO NOT EXCEED TOWER HEIGHT.



1 EAST ELEVATION
SCALE: 1" = 40'

GRAPHIC SCALE
0 20' 40'

ROBERT J. DAVIS
LICENSED ARCHITECT
12427
STATE OF MINNESOTA

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the state of MINNESOTA.
ROBERT J. DAVIS, Reg. No. 12427

Signed:
03/10/2021
Date:

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verizon
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(952) 946-4700

PROJECT
20181794354
LOC. CODE: 490298

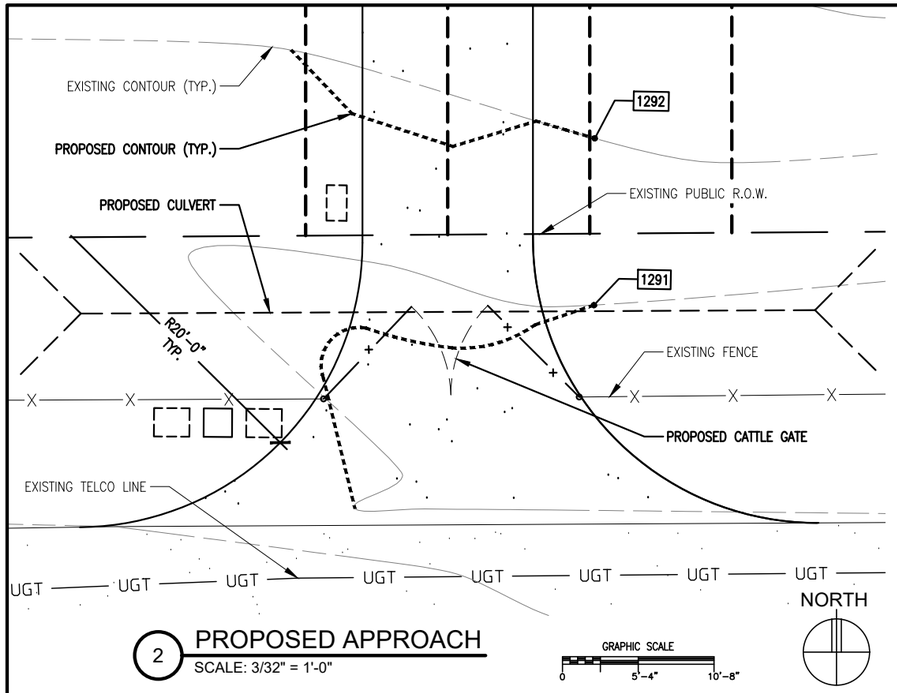
MN06
SHIRT LAKE

285TH LN
AITKIN, MN 56431

SHEET CONTENTS:
CONTACTS
ISSUE SUMMARY
SHEET INDEX
DEPARTMENTAL APPROVALS
LESSOR APPROVAL
PROJECT INFORMATION
AREA & VICINITY MAPS
GENERAL NOTES

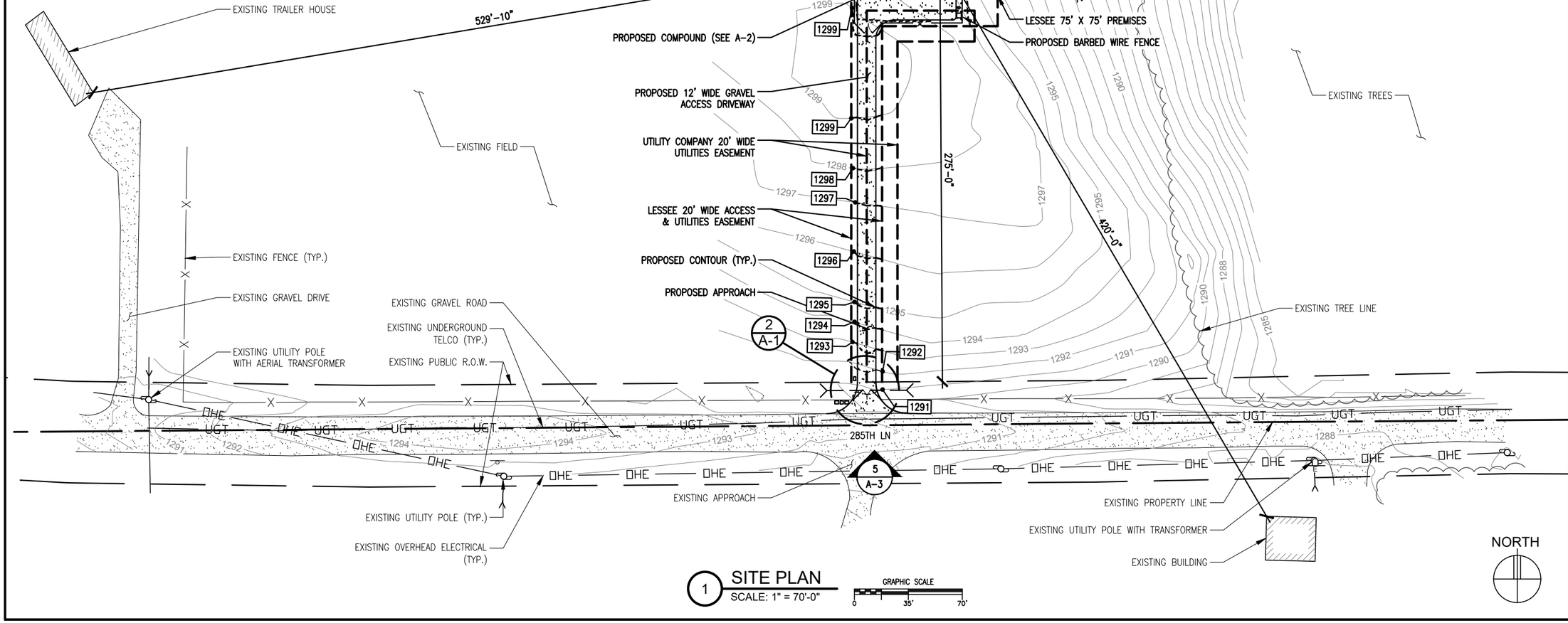
DRAWN BY:	CJW
DATE:	07-22-20
CHECKED BY:	TRB
REV. A	07-27-20
REV. B	08-13-20
REV. C	03-10-21

T-1



2 PROPOSED APPROACH
SCALE: 3/32" = 1'-0"

GRAPHIC SCALE
0 5'-4" 10'-8"



1 SITE PLAN
SCALE: 1" = 70'-0"

GRAPHIC SCALE
0 35' 70'

GENERATOR TYPE:
DIESEL

FROST DEPTH
DESIGN = 5'-0"

DETAIL INDEX

DETAIL	DETAIL DESCRIPTION
SLAB	SLAB WITH 3 CABINETS
GEN 1.4	30REOZK: DIESEL GENERATOR W/ ICE SHIELD
1.1	BOLLARD DETAIL
2.1	FENCE SECTION (DETAIL 2)
3.1	CABLE BRIDGE SECTION
4.1	CABLE BRIDGE ELEVATION
5.1	GRAVEL ROAD W/ BASE (DETAIL 1)
6.1	SNOW/MAN GATE (DETAIL 1) & CATTLE GATE (DETAIL 2)
7.1	GPS MOUNTING DETAIL (DETAIL 2)
8.1	TELCO ENTRY DETAIL
9.1	CMPH DETAIL
10.8	ONE-LINE ELECTRICAL DIAGRAM
12.1	METER ON POST (DETAIL 2)

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SITE PLAN
DETAIL INDEX

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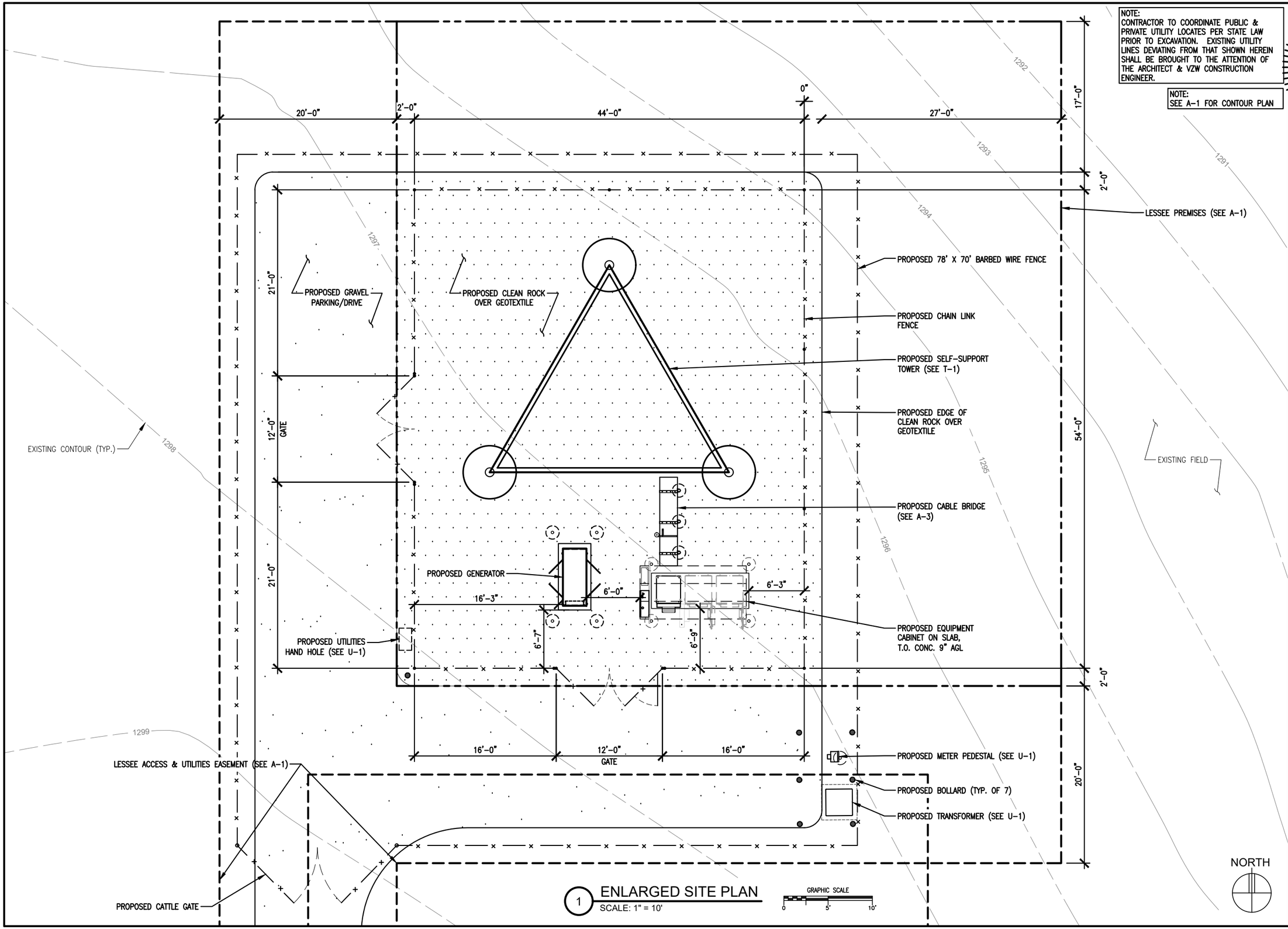
A-1



1 ENLARGED SITE PLAN
SCALE: 1" = 10'

NOTE:
CONTRACTOR TO COORDINATE PUBLIC & PRIVATE UTILITY LOCATES PER STATE LAW PRIOR TO EXCAVATION. EXISTING UTILITY LINES DEVIATING FROM THAT SHOWN HEREIN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT & VZW CONSTRUCTION ENGINEER.

NOTE:
SEE A-1 FOR CONTOUR PLAN

ROBERT J. DAVIS
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SHEET CONTENTS:
ENLARGED SITE PLAN

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REV. A	07-27-20
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A-2

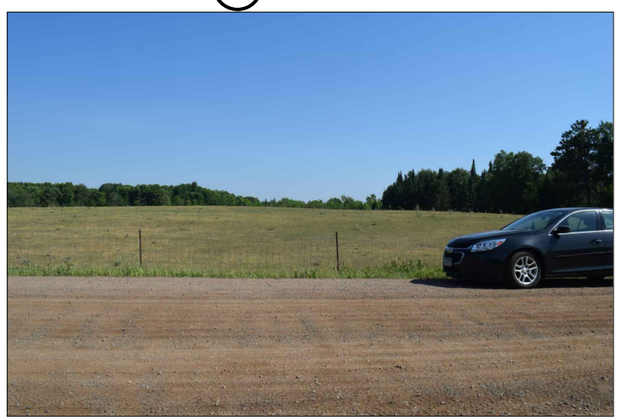
ANTENNA KEY													EQUIPMENT KEY			
	AZIMUTH	POSITION	FUNCTION	QTY	MANUFACTURER	MODEL	MOD TYPE	ANTENNA LENGTH	ANTENNA TIP	ANTENNA CENTER	ELEC DOWNTILT	MECH DOWNTILT	QTY	MANUFACTURER	MODEL	RRU PORT
	–	1	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–
	30°	2.1	TX/RX1	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	1	ERICSSON	4449	1
	–	2.2	TX/RX2	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	2
	–	2.3	TX/RX1	–	–	3RD PORT	AWS/AWS3	–	–	–	0°	0°	1	ERICSSON	8843	1
	–	2.4	TX/RX2	–	–	4TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	2
	–	2.5	TX/RX3	–	–	5TH PORT	AWS/AWS3	–	–	–	0°	0°	–	–	8843	3
"X"	–	2.6	TX/RX4	–	–	6TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	4
SECTOR	30°	3.1	TX/RX3	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	–	–	4449	3
	–	3.2	TX/RX4	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	4
	–	3.3	TX/RX1	–	–	3RD PORT	PCS	–	–	–	0°	0°	–	–	8843	5
	–	3.4	TX/RX2	–	–	4TH PORT	PCS	–	–	–	–	–	–	–	–	6
	–	3.5	TX/RX3	–	–	5TH PORT	PCS	–	–	–	0°	0°	–	–	8843	7
	–	3.6	TX/RX4	–	–	6TH PORT	PCS	–	–	–	–	–	–	–	–	8
	–	4	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–
	–	1	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–
	150°	2.1	TX/RX1	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	1	ERICSSON	4449	1
	–	2.2	TX/RX2	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	2
	–	2.3	TX/RX1	–	–	3RD PORT	AWS/AWS3	–	–	–	0°	0°	1	ERICSSON	8843	1
	–	2.4	TX/RX2	–	–	4TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	2
	–	2.5	TX/RX3	–	–	5TH PORT	AWS/AWS3	–	–	–	0°	0°	–	–	8843	3
"Y"	–	2.6	TX/RX4	–	–	6TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	4
SECTOR	150°	3.1	TX/RX3	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	–	–	4449	3
	–	3.2	TX/RX4	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	4
	–	3.3	TX/RX1	–	–	3RD PORT	PCS	–	–	–	0°	0°	–	–	8843	5
	–	3.4	TX/RX2	–	–	4TH PORT	PCS	–	–	–	–	–	–	–	–	6
	–	3.5	TX/RX3	–	–	5TH PORT	PCS	–	–	–	0°	0°	–	–	8843	7
	–	3.6	TX/RX4	–	–	6TH PORT	PCS	–	–	–	–	–	–	–	–	8
	–	4	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–
	–	1	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–
	270°	2.1	TX/RX1	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	1	ERICSSON	4449	1
	–	2.2	TX/RX2	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	2
	–	2.3	TX/RX1	–	–	3RD PORT	AWS/AWS3	–	–	–	0°	0°	1	ERICSSON	8843	1
	–	2.4	TX/RX2	–	–	4TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	2
	–	2.5	TX/RX3	–	–	5TH PORT	AWS/AWS3	–	–	–	0°	0°	–	–	8843	3
"Z"	–	2.6	TX/RX4	–	–	6TH PORT	AWS/AWS3	–	–	–	–	–	–	–	–	4
SECTOR	270°	3.1	TX/RX3	1	COMMSCOPE	NHH-65C-R2B	700/850	96"	250'	246'	0°	0°	–	–	4449	3
	–	3.2	TX/RX4	–	–	2ND PORT	700/850	–	–	–	–	–	–	–	–	4
	–	3.3	TX/RX1	–	–	3RD PORT	PCS	–	–	–	0°	0°	–	–	8843	5
	–	3.4	TX/RX2	–	–	4TH PORT	PCS	–	–	–	–	–	–	–	–	6
	–	3.5	TX/RX3	–	–	5TH PORT	PCS	–	–	–	0°	0°	–	–	8843	7
	–	3.6	TX/RX4	–	–	6TH PORT	PCS	–	–	–	–	–	–	–	–	8
	–	4	FUTURE	–	FUTURE	FUTURE	–	–	–	–	–	–	–	–	–	–

ADDITIONAL:
(1) DISTRIBUTION BOX, MODEL RVZDC-6627-PF-48 (ON TOWER)
(1) DISTRIBUTION BOX, MODEL RVZDC-4520-RM-48 (IN CABINET)
(1) COMMSCOPE HYBRID CABLE, MODEL HFT1206-24SV2-270 (DIST BOX IN CABINET TO DIST BOX ON TOWER)
(6) COMMSCOPE HYBRID JUMPER, MODEL HFT410-4SVHY-15 (DIST. BOX TO RRU)
(36) ANDREW COAX JUMPER, MODEL LDF4-50A, 1/2"ø FOAM DIELECTRIC, 10' EACH (RRU TO ANTENNA)
(1) DC-DC UP-CONVERTER
(3) UP-CONVERTER MODULES

CABLE BRIDGE	=	10'
RAD CENTER	=	246'
CANOPY	=	12'
TOTAL	=	268'

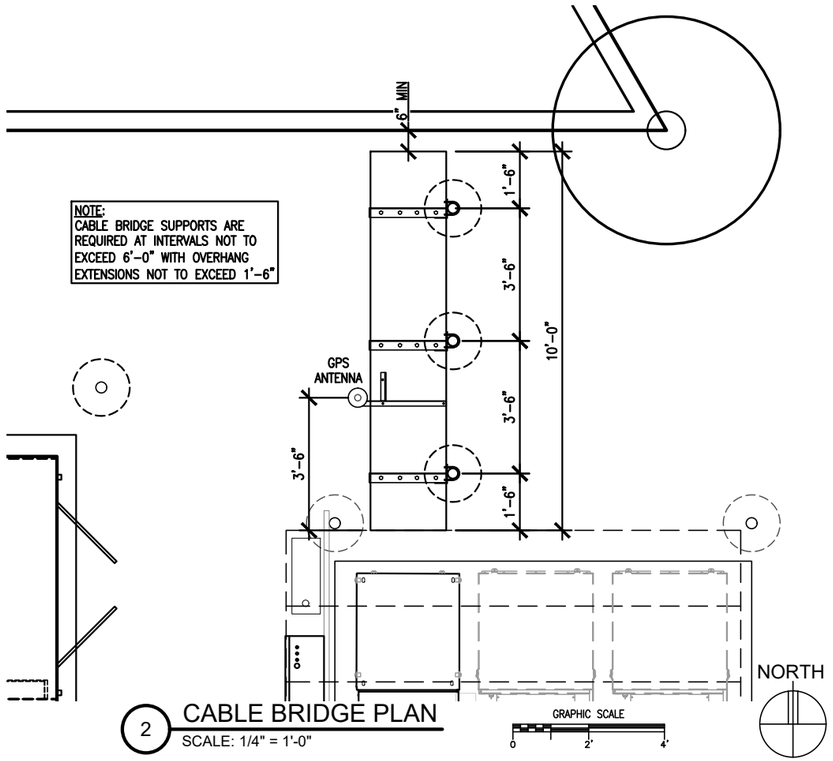
4 ANTENNA KEY

3 EQUIPMENT KEY



5 SITE PHOTO
VIEW: LOOKING NORTH

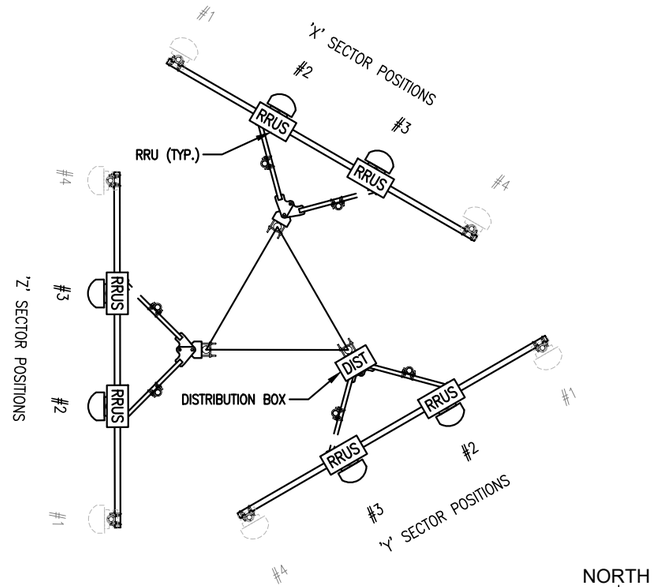
6 SITE PHOTO
VIEW: LOOKING SOUTH



2 CABLE BRIDGE PLAN
SCALE: 1/4" = 1'-0"

NOTE:
ANTENNA FRAME MAKE AND MODEL T.B.D.
CONTRACTOR TO SUPPLY:
(12) 2.5"ø x 8.5' LONG SCHEDULE 40 GALVANIZED MOUNTING PIPES

NOTE:
TIE BACKS NOT SHOWN FOR CLARITY



1 ANTENNA MOUNTING DETAIL
SCALE: 3/16" = 1'-0"

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12427
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PROJECT
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SHEET CONTENTS:
COAX & ANTENNA KEY
CABLE BRIDGE PLAN
ANTENNA MOUNTING DETAIL
PHOTOS

DRAWN BY:	CJW
DATE:	07-22-20
CHECKED BY:	TRB
REV. A	07-27-20
REV. B	08-13-20
REV. C	03-10-21

A-3

GENERAL CONDITIONS

00 0001 PERMITS

Construction Permit shall be acquired by, or in the name of, Verizon Wireless, to be hereinafter referred to as the OWNER. Other permits shall be acquired by the Contractor.

00 0002 SURVEY FEES

Survey shall be furnished by the Architect. Layout Staking shall be coordinated with the Surveyor per "Request For Quote", (RFQ).

01 0010 INSURANCE & BONDS

Contractor is to furnish Insurance certificates for themselves and subcontractors. Contractor will provide any required Bonding. Contractor agrees to warranty the project for (1) one year after completion.

01 0400 SUPERVISION & COORDINATION

Contractor shall provide supervision throughout the Project, coordinating the work of the Subcontractors, and delivery & installation of Owner-furnished items. Contractor's responsibilities include arranging & conducting of Underground Utilities Locates. Contractor shall comply with municipal, county, state and/or federal codes, including OSHA.

01 0600 TESTING

Contractor is responsible for providing Agencies with sufficient notice to arrange for Test Samples (i.e.: Concrete Cylinders), and for Special Inspections.

01 2000 MEETINGS

Contractor shall make themselves aware of, and attend, meetings with the Owner and/or Architect. Contractor is to attend a Pre-Construction Meeting of all parties involved, prior to the start of construction.

01 5100 TEMPORARY UTILITIES

Contractor shall maintain the job site in a clean and orderly fashion, providing temporary sanitary facilities, waste disposal, and security (fence area or trailer module).

01 5300 EQUIPMENT RENTAL

Contractor shall furnish equipment necessary to expedite work.

01 5900 FIELD OFFICES & SHEDS

Contractor shall provide security (fence area or trailer module) for tools and materials that remain overnight on site.

01 7000 CLEAN UP & CLOSE OUT

Contractor shall clean up the Site to the satisfaction of Owner. Contractor shall complete the items listed on the Owner's Punch List, and shall sign and return the List to the Owner. Contractor shall maintain a set of drawings during the job, on which changes shall be noted in red ink. A full set of redlined drawings (As-Builts) are to be given to the Architect at Job completion and submit "construction work complete memo" to Construction Engineer.

01 8000 TRUCKS & MILEAGE

Contractor shall provide transportation for their own personnel.

01 8300 TRAVEL TIME & PER DIEM

Contractor shall provide room and board for their own personnel, and reasonable time for traveling to & from job site.

01 9200 TAXES

Contractor shall pay sales and/or use tax on materials and taxable services.

SITEWORK

02 1000 SITE PREPARATION

Contractor is to mobilize within 7 calendar days of the Owner issuing a 'START' document. Contractor will immediately report to Architect if any environmental considerations arise. Site shall be scraped to a depth of 3" minimum to remove vegetative matter, and scrapings shall be stockpiled on site. Excess material to be disposed of in accordance with RFQ.

02 1100 ROAD IMPROVEMENT & CONSTRUCTION

Contractor shall furnish materials for, and install, a twelve foot (12') wide gravel roadway from the road access to the work area, for truck and crane access to site. Base course shall be 6" deep, 3"+ crushed rock, topped with 3" deep, 1½" crushed rock, topped with 3" deep MN Class 5 Aggregate, (3/4" minus with binder) or Driveway Mix. Contractor shall furnish & install culverts as necessary to prevent ponding or washing-out from normal surface runoff. Contractor shall obtain city, county, state and/or federal approvals for road approach and culvert work within or adjacent to right-of ways. Road shall be graded smooth, and edges dressed, at job completion.

02 2000 EARTHWORK & EXCAVATION

Excavation material shall be used for surface grading as necessary; excess to be stockpiled on site. Excess material to be disposed of in accordance with RFQ. For dewatering excavated areas, contractor shall utilize sock or sediment filter for filtering of water discharge.

02 5000 PAVING & SURFACING

Gravel paving shall be as described in 02 1100.

02 7800 POWER TO SITE

Contractor shall coordinate the electrical service to the building with the Utility Provider. Conduits shall include pull strings. Underground conduits shall be 2-1/2" Schedule 40 PVC. (schedule 80 PVC under roads and drives) Cable to be 3/0 THWN CU. Trenches shall be backfilled in a timely fashion, using a compactor, and including two (2) detectable ribbons; one each at 3" and 15" above conduit. Service shall be 200 amp, single phase, 120/240 volt. Service type shall be "General Time-Of-Day" if available, and meter base shall be approved by utility provider.

Contractor to provide and install expansion joint sleeve connections to prevent differential movement at utility connections.

02 7900 TELCO TO SITE

Contractor shall provide 2" SDR-11 HDPE conduit for fiber conduit as noted on Drawings when directional boring is utilized. Contractor shall provide 2" schedule 40 PVC conduit and 2" schedule 80 PVC conduit under roadways with large-sweep elbows for fiber conduit as noted on Drawings when hand trenched. Trenches shall be as in 02 7800.

Contractor to provide and install handholes as noted in the Drawings. Additional handholes shall be provided and installed a maximum of 500 feet on center; at 90° bends if directional boring; and every third bend if hand trenched. Handholes size per Drawings and traffic-rated in roadways.

Contractor to provide and install expansion joint sleeve connections to prevent differential movement at utility connections.

02 8000 SITE IMPROVEMENTS

Areas bounded by fence and adjacent to Equipment Cabinets shall receive polyethylene geotextile, 200 mesh woven, topped with 3" deep 3/4" to 1 1/2" clean rock (no fines), raked smooth.

02 8001 FENCING

All fence materials and fittings shall be galvanized steel. Fence shall be 6'-0" high x 9 ga. X 2" chain link fabric, w/ 7 ga. bottom tension wire. Corner and Gate posts shall be 2 7/8" O.D. sch 40 steel pipe, driven 72" below grade. Line posts shall be 2 3/8" O.D. sch 40 steel pipe. Top Rails shall be 1 5/8" O.D. steel pipe. Gate frames shall be 1 5/8" O.D. welded pipe. Fence top shall be three (3) strands barbed wire to 7'-0" above grade, canted outward. Bracing shall be 3/8" truss rods and 1 5/8" O.D. pipe mid-rails at corners. Gate latch shall be commercial grade, "Cargo" or equal. Fabric shall extend to within 1" of finish grade. Fence enclosures shall be completed within 7 days of tower erecting and Contractor shall provide for temporary security fence at base of Tower. Existing fences shall be protected against damage during this work, and any damage that may occur shall be repaired or replaced to equal existing pre-construction condition. Cattle gate to be commercial grade, galv tube steel, two leaf, 16' gate with chain and daisy chained padlock.

02 8500 IRRIGATION SYSTEMS

N/A

02 9000 LANDSCAPING

N/A

CONCRETE

03 1000 CONCRETE FORMWORK

Concrete forms shall be dimensional lumber, modular, or steel.

03 8000 TOWER FOUNDATION

Contractor shall arrange for delivery of anchors, and shall furnish and install materials per Tower Manufacturer Plans. Tower foundation concrete and reinforcing to be per tower manufacturer's specification. Contractor shall comply with the Owner's Standard CONSTRUCTION SPECIFICATIONS MINIMUM CONCRETE STANDARDS.

03 8001 CATHODIC PROTECTION

N/A

03 9000 EQUIPMENT CABINETS/GENERATOR FOUNDATION

Contractor shall furnish & install materials for Equipment Cabinets/Generator foundation. Concrete shall be 6% ±1% air entrained, and 4,000 psi at 28 days.

All reinforcing steel is to be Grade 60 (ASTM 615). Anchor bolts are furnished by Contractor. Contractor shall comply with the Owner's Standard CONSTRUCTION SPECIFICATIONS MINIMUM CONCRETE STANDARDS.

MASONRY

N/A

METALS

05 0000 METALS

Contractor will furnish and install steel shapes and fabricated steel items not specifically furnished by Owner, and install Owner-furnished materials. Fabrication and erection of steel items per AISC standards. Welding shall conform to AWS standards. Fabrications shall be shop welded and galvanized before delivery to site unless noted otherwise.

Steel shapes shall meet ASTM A36 and steel pipe ASTM A53 Grade B. Steel shapes and fabrications shall be hot-dip galvanized per ASTM A123 with minimum coating thickness Grade 55 (2.2 mil). Bolts shall meet ASTM F3125 and U-bolts SAE J429 Grade 5 minimum. Bolts and hardware to be hot-dip galvanized per ASTM A153. Field repair of galvanized coatings shall be per ASTM A780.

WOOD & PLASTICS

N/A

THERMAL & MOISTURE

N/A

DOORS AND HARDWARE

N/A

FINISHES

09 9000 PAINTING

Contractor shall provide materials and labor for all painting indicated in the architectural documents and shall touch-up construction related scrapes & scratches with appropriate paint.

SPECIAL CONSTRUCTION

13 1260 CABLE BRIDGE, CANOPY, & ICE SHIELDS

Contractor shall furnish & install materials for the Cable Bridge as indicated on the drawings and Verizon Wireless Standard Details.

Contractor shall furnish & install materials for the Ice Shields as indicated on the Drawings & Verizon Wireless Standard Details.

13 1400 ANTENNA INSTALL

Contractor shall install Owner's antennas and feed lines during erecting. Contractor shall test and certify feed lines per current VZW standards.

13 3423 TRANSPORT AND SET EQUIPMENT CABINETS/GENERATOR

Contractor shall provide crane(s) and/or truck for transporting, setting and erecting Equipment Cabinets/Generator per RFQ. Contractor shall install items shipped loose with the Equipment Cabinets/Generator.

13 3613 TRANSPORT AND ERECT TOWER/ANTENNA MOUNTS

Contractor shall schedule delivery of Owner-furnished Tower, and provide cranes for unloading and erecting. Contractor to Install antenna mounts. Contractor shall ensure the existence of a 3/8" cable safety climb (DBI/Sala or equal) on the Tower.

MECHANICAL

15 4000 PLUMBING

N/A

15 5000 HVAC

N/A

ELECTRIC

16 5000 LIGHTING AND ELECTRICAL

Contractor shall provide labor and materials as necessary to complete the work shown on Drawings including items shipped loose with the Equipment Cabinets/Generator assembly.

16 6000 GROUNDING

Contractor shall make themselves familiar with and follow the current GROUNDING STANDARDS of VERIZON WIRELESS. Contractor shall perform work as shown on Grounding Plans. Any site-specific grounding issues not covered by the GROUNDING STANDARD are to be addressed by the Contractor to the Owner.

OWNER-FURNISHED EQUIPMENT & FEES

GENERATOR
SELF-SUPPORT TOWER
ANTENNA FRAMES
CABINETS
COAX AND/OR CABLES
ANTENNAS & DOWNTILT BRACKETS
GPS & GPS MOUNTING
BUILDING PERMIT FEES
MATERIALS TESTING FEES
SPECIAL INSPECTIONS FEES

CONTRACTOR-FURNISHED EQUIPMENT

POWER TO SITE
TELCO TO SITE
CABLE BRIDGE & ICE SHIELDS
GROUNDING MATERIALS
FENCING
CONNECTORS, BOOTS, & RELATED HARDWARE

SCOPE OF WORK:

CONTRACTOR SHALL PROVIDE MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERVISION, ETC. TO FULLY EXECUTE WORK. WORK REQUIREMENTS ARE DETAILED ON THE DRAWINGS AND SPECIFICATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

SITE PREPARATION
SITE WORK & ROAD CONSTRUCTION
EQUIPMENT SLAB, GENERATOR, & TOWER FOUNDATIONS
SET EQUIPMENT CABINETS, SET GENERATOR, & ERECT TOWER
ROUTING OF GROUND, POWER, FIBER & ALARM
SITE GROUNDING
ELECTRICAL & TELEPHONE SERVICES
INSTALL ANTENNAS & CABLES
CABLE BRIDGE & ICE SHIELDS
GRAVEL SURFACING & FENCING
SITE GRADING

Contractor to compare drawings against Owner's "Request for Quote", (RFQ). If discrepancies arise, Contractor shall verify with Owner that the RFQ supersedes the drawings.

ROBERT J. DAVIS
LICENSED ARCHITECT
12427
STATE OF MINNESOTA

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Signed:

Date: 03/10/2021

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MN06
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SHEET CONTENTS:
OUTLINE SPECIFICATIONS

DRAWN BY:	CJW
DATE:	07-22-20
CHECKED BY:	TRB
REV. A	07-27-20
REV. B	08-13-20
REV. C	03-10-21

A-4

GENERAL GROUNDING NOTES:

An external buried ground ring (Lead 1) shall be established around the equipment cabinets and tower foundations. Lead 1 shall be kept 24" from foundations; if foundations are less than 48" apart, keep Lead 1 centered between them. If the tower base is over 20'–0" from the equipment cabinets, a separate Lead 1 shall be established around each foundation, and the two Lead 1s shall be bonded with two parallel leads at least 6 feet apart horizontally. Connections between the two Lead 1s shall be bi–directional.

All subgrade connections shall be by exothermic weld, brazed weld, or gas–tight UL467–listed compression fittings pre–filled with anti–oxidant compound. Subgrade connections shall not be 'cold galvanize' coated.

Lead 1 shall be #2 solid bare tin–clad (SBTC) copper wire buried at local frost depth. Lead 1 bends shall be minimum 24" radius. 'Whip' lead bends may be of 12" radius.

Ground rods shall be galvanized steel, 5/8"Ø, spaced twenty feet apart, or as shown. Rods shall be kept min. 24 inches from foundations. Ground rods are required to be installed at their full specified length. Depth shall be as shown in Detail 11.1 in the Verizon Wireless Standard Detail Booklet.

SPECIAL CONSIDERATIONS FOR GROUND RODS:

When ground rods are not specified to be backfilled w/ Bentonite Slurry: If boulders, bedrock, or other obstructions prevent driving of ground rods, the Contractor will need to have drilling equipment bore a hole for ground rod placement. Hole to be backfilled w/ Bentonite Slurry.

When specified with slurried Bentonite encasement, drilling equipment will be need to be used to be bore a hole for ground rod placement. Slurry shall be made from pelletized material ("Grounding Gravel"); powdered Bentonite is not allowed. If boulders, bedrock, or other obstructions are found, Contractor shall drill to the specified depth and provide Bentonite encasements.

Above–grade connections shall be by lugs w/ two–hole tongues unless noted otherwise, joined to solid leads by welding (*T&B 54856BE "BROWN"*), self–threading (*RECOGNIZED, EM 2522DH.75.312*), or 10,000psi crimping (*BURNDY YA3C 2TC 14E2*). Surfaces that are galvanized or coated shall have coating(s) removed prior to bolting. Bolts shall be stainless steel with flat washers on each side of the connection and a lock washer beneath the fastening nut. Star–tooth washers shall be used between lug & dissimilar metal (copper–to–steel, etc) but are not required between tin–clad CU lugs & tin–clad CU bus bars. Lug tongues shall be coated with anti–oxidant compound, and excess compound wiped clean after bolting. The connection shall then be coated with cold–galvanizing compound, or with color–matching paint.

Ground bars exposed to weather shall be tin–clad copper, and shall be clean of any oxidation prior to lug bolting.

Galvanized items shall have zinc removed within 1" of weld area, and below lug surface contact area. After welding or bolting, the joint shall be coated with cold galvanizing compound.

Ground Bar leads

Ground bars are isolated electrically from tower bottoms and equipment cabinets by their standoff mounts. Leads from each ground bar to the ground ring shall be a pair of #2 SBTC, each connected to Lead 1 bi–directionally with #2 SBTC 'jumpers'. Pairs of #2 SBTC may be required between ground bars. Leads shall be routed to ground bars as follows:

* The Main Ground Bar (MGB), typically mounted adjacent to the ILC (location varies).
* The Port Ground Bars (PGB), mounted inside and outside on the equipment shelter walls beneath the transmission line port. Note: Transmission line grounds also attach to the PGBs.
* The Tower Ground Bar (TGB) mounted at the base of the tower. Note: Transmission line grounds also attach to the TGBs.

NOTE: Contractor shall confirm that TGBs exist at 75–foot vertical intervals on any guyed or self–support tower, and that transmission lines are grounded to each TGB. Only the bottom–most TGB is isolated from the tower steel frame; upper TGBs may use the tower steel frame as common ground, requiring no copper leads between TGBs.

#2 SBTC Whip leads

"Whip" leads shall connect the buried external ground ring to the following items:

Monopole Towers:
* Three whips to flanges on the monopole base, at least 90° apart. If none are provided, attach to the baseplate or consult tower manufacturer.

Self–Support Towers:
* Two whips to flange(s) on each tower leg base. If none are provided, attach to the baseplate or consult tower manufacturer.

Guyed Towers:
* Two whips to flange(s) on the tower base. If none are provided, attach to the baseplate or consult tower manufacturer.
* Establish a Lead 1 within the fence enclosure of each guy anchor, at least 40 foot perimeter and having 4 ground rods.
* #2 SBTC leads shall extend up, and be clamped (bronze clamshell or equal), to any two guy wires. NEVER weld leads to the guy wires. The lead to the guy anchor 'hand' plate may be welded.

Fences:
Metallic fence within 25 feet of tower Lead 1, or within 6 feet of shelter lead 1, shall have whip leads as follows:
* Each corner post.
* Each pair of gate posts.
* Any line post over 20'–0" from a grounded post.
* Each gate leaf to its respective gatepost using braided strap (3/4", tin–clad copper w/ lug ends).
* Fences around guy anchors shall be grounded in similar fashion.

Fuel tanks:
NEVER WELD to any fuel enclosure. NEVER penetrate the fuel containment. Metal tanks shall have one whip lead attached. Use an approved clamp or two–hole lug on an available flange.

Equipment Shelter/Platform and Other General Requirements (including but not limited to):
- Extend new Lead 21B up to shelter halo, remaking two–way connections as needed. Generator–equipped shelters have 6 such connections. Connections within the shelter shall be by compression; NEVER weld inside the shelter.
- Each vertical support pipe of the exterior cable bridge. Bridge end shall be kept at least 6" from the tower structure. The cable bridge shall be jumpered to the vertical support pipes with #2 SBTC at each vertical support pipe.
- Opposite corners of the steel equipment platform.
- Opposite corners of the roof shield over the equipment shelter.
- Each HVAC unit shield, if separate (may be 'jumpered' to main roof shield).
- Each HVAC package unit.
- Commercial electric meter box.
- Generator receptacle, if present.
- Steel building skid, if shelter is metal frame.
- Each air intake or exhaust fan vent louver.
- Each generator vent hood or louver.
- Generator exhaust stack, external.
- Opposite corners of generator support frame, if separate from shelter.
- Generator fuel tank, if separate from generator unit.
- Host building rain gutter, downspouts, and roof flashings within 25 feet.
- Telco MPOP (Main Point of Presence), if external to equipment shelter.
- Within cable vaults, one each to the ladder and to the manhole rim.

Note: The door frame is connected to the interior ground halo, and need no separate connection to the external ground ring.

Inspection & Testing

Test lead #1 and ground rods after installation but before backfilling or connecting to any other grounding, using the 3–point fall of potential method. Contractor to notify Verizon Wireless senior construction engineer at least 48 hours prior to testing. Document installation and test results with photographs.

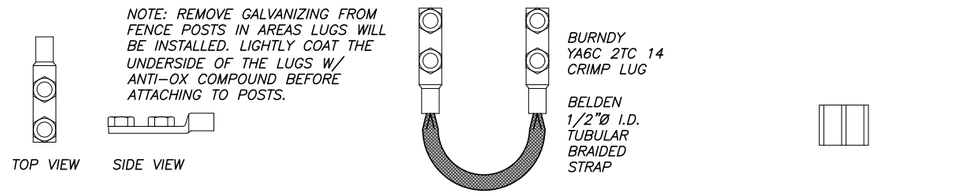
SYMBOL AND NOTE LEGEND

--①--		#2 SBTC AROUND EQUIPMENT CABINETS, TOWER, OR GUY ANCHOR
●		5/8" X 10'–0" GALVANIZED STEEL GROUND ROD
◉		TEST WELL PREFERRED LOCATION
------		#2 SBTC 'WHIP' LEAD
--⑤--		(2) #2 SBTC FROM MGB, PGB, OR TGB TO LEAD 1
⑥	AC	HVAC UNIT
21B	BC	BUILDING CORNER
⑥	BO	BOLLARD
⑥	CBS	CABLE BRIDGE SUPPORT POST
④	EL	ELECTRICAL SERVICE GROUND
⑥	EM	COMMERCIAL ELECTRICAL METER
⑥	FAN	GUY ANCHOR PLATE
⑥	FP	FENCE POST
90	GEN	GENERATOR
	GP	GATE POST, 3/4" BRAID STRAP TO LEAF
⑥	GPS	GPS UNIT
⑥	GUY	GUY WIRE, MECH. CLAMP ONLY – NO WELDS
⑥	HL	HOOD OR LOUVER
⑥	HB	OUTSIDE OF HOFFMAN BOX
⑥	ILC	INTEGRATED LOAD CENTER
⑤	MGB	MAIN GROUND BAR
⑥	MU	GENERATOR MUFFLER
⑤	PGB	PORT GROUND BAR
⑥	RBR	FOUNDATION REINFORCING
⑥	RS	ROOF SHIELD
⑥	SB	STEEL BEAM
⑥	SP	STEEL POST
⑥	STP	STEEL PLATFORM
⑥	TEL	HOFFMAN BOX
⑤	TGB	TOWER GROUND BAR
⑥	TWR	TOWER BASE
⑥	VP	DIESEL FUEL VENT PIPE

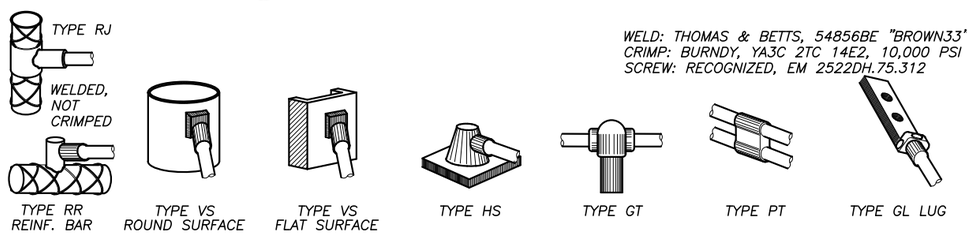
Note:
Contractor to provide #2 solid bare tin–clad (SBTC) copper wire lead from #1 ground ring to air conditioner & ice shield if provided by VZW.

LEAD IDENTIFICATION & DESCRIPTION:

1	RING, EXTERNAL BURIED w/ RODS	#2 SBTC
1A	RING, CONCRETE ENCASED	#2 SBTC
2	DEEP ANODE (TO IMPROVE OHMS)	ROD OR PIPE
3	RING TO BLDG STL FRAME	#2 SBTC
4	MAIN AC PANEL NEUTRAL BUS TO (2) GROUND RODS, ISOLATED FROM LEAD #1	NEC 250.66
5	RING TO GROUND BAR	(2) #2 SBTC
6	RING TO EXT MTL OBJECT	#2 SBTC
7	DEEP ANODE TO MGB	NSTD33–9
8	AC PANEL TO WATER METER	NEC 250.66
9	EXT WATER TO INT WATER PIPES	NSTD33–9
10	INT WATER PIPE TO MGB	NSTD33–9
11–12	NOT USED	
13	AC PANEL TO MGB	NSTD33–9
14	MGB/FGB TO BLDG STL FRAME	#2/0 I–STR
14C	MGB/FGB TO ROOF/WALL MTL PNL	#1/0 I–STR
15	MGB/FGB TO FGB–HE SAME FLOOR	#2/0 I–STR
16	NOT USED	
16A	ECPGB TO CABLE ENTRY RACK	#1/0 I–STR
17	MGB TO CABLE SHIELDING	#6 I–STR
17A	ECPGB TO CABLE SHIELDING	#6 I–STR
17B	MGB/FGB TO F–O SPLICE SHELF	#1 I–STR
18	LOWEST MGB/FGB TO HIGHEST FGB	#2/0 I–STR
19	LEAD 18 TO OTHER FGBs, <6'	#2/0 I–STR
20	MGB/FGB TO BRANCH AC PNL	#6 I–STR
20A	NEAREST GRND TO DISCONNECT PNL	NEC 250.66
20B	GWB TO AC DISTR PNL	#6 I–STR
21	MGB/FGB TO INT HALO	#2 I–STR
21A	INTERIOR 'GREEN' HALO	#2 I–STR
21B	INT HALO TO EXT RING	#2 SBTC
21C	INT HALO TO EQUIPMENT MTL	#6 I–STR
22	ROOF TOWER RING TO ROOF GRND	NFPA 780
23	MGB/FGB TO ECPGB, SAME FLOOR	#1 I–STR
23A	MGB/FGB TO CXR–HF LINR PROT	#6 I–STR
24	ECPGB TO EACH PROTECTOR ASSEMBLY	#6 I–STR
24A	LOWER PROT ASSY TO UPPER	#6 I–STR
25	RING TO NEAREST LIGHTNING ROD	#2 SBTC
26	LGHTNG ROD SYS TO NEARBY MTL	NFPA 780
27	RING TO TOWER RING	(2) #2 SBTC
28	RING TO SHELTER RING	(2) #2 SBTC
29	BRANCH AC PNL TO BTTY CHG FRM	NSTD33–11
30	BRANCH AC PNL TO OUTLETS	NSTD33–11
31	MGB/FGB TO PWR, BTTY FRAMES	#2/0 I–STR
32	#31 TO BATTERY CHARGER FRAME	#6 I–STR
33	#31 TO BATTERY RACK FRAME	#6 I–STR
34	#31 TO PCU FRAME	#6 I–STR
35	#31 TO DSU FRAME	#6 I–STR
36	#31 TO PDU FRAME	#6 I–STR
37	MGB/FGB TO BTTY RETURN	NSTD33–14.5
37A	MGB/FGB TO RTN TERM CARR SUPP	#6 I–STR
38	FGB TO PDU GB	#750MCM I–STR
38A	FGB TO PDU GB CARRIER SUPPLY	#2/0 I–STR
39	DC BUS DUCT TO NEXT SECTION	#6 I–STR
40	DC BUS DUCT TO MGB/FGB	#6 I–STR
41A	MGB/FGB TO #58	#2/0 I–STR
42–44	NOT USED	
45	MAIN AC PNL TO BRANCH AC PNL	NSTD33–11
46	BRANCH AC PNL TO DED OUTLET	NSTD33–11
47	FGB TO INTEG FRM	#2 I–STR
48	LEAD #31 TO INTEG FRM	#6 I–STR
49	INTEG FRM TO EQUIP SHELF	BY FASTENERS
50	PDU BTTY RET TO #51	#2/0 I–STR
51	#50 TO TRANS FRM ISO DC PWR	#6 I–STR
52	TRANS FRM FUSE TO FRM OR BAR	#8 I–STR
53A	MGB/FGB TO PDF/BDFB	NSTD33–22
54	MGB/FGB TO STATIC DEVICES	#6 I–STR
55	MGB/FGB TO CABLE AT ENTRY	#6 I–STR
56	MGB/FGB TO AC PWR RADIO XMTTR	#6 I–STR
57A	MGB/FGB TO CBL GRID/RUNWAY	#2/0 I–STR
58A	#41A TO AISLE FRAME	#2 I–STR
59A	#58A TO EACH SGL FRAME GRND	#6 I–STR
60–89	NOT USED	
90	GENERATOR FRAME TO EXT RING	#2 SBTC



2 COMPRESSION CONNECTOR DETAILS
SCALE: NTS



1 EXOTHERMIC WELD DETAILS
SCALE: NTS

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ROBERT J. DAVIS, Reg. No. 12427

Signed:
03/10/2021
Date:

DESIGN 1
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(952) 903-9299
WWW.DESIGN1EP.COM

verizon
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PROJECT
20181794354
LOC. CODE: 490298

MN06
SHIRT LAKE

285TH LN
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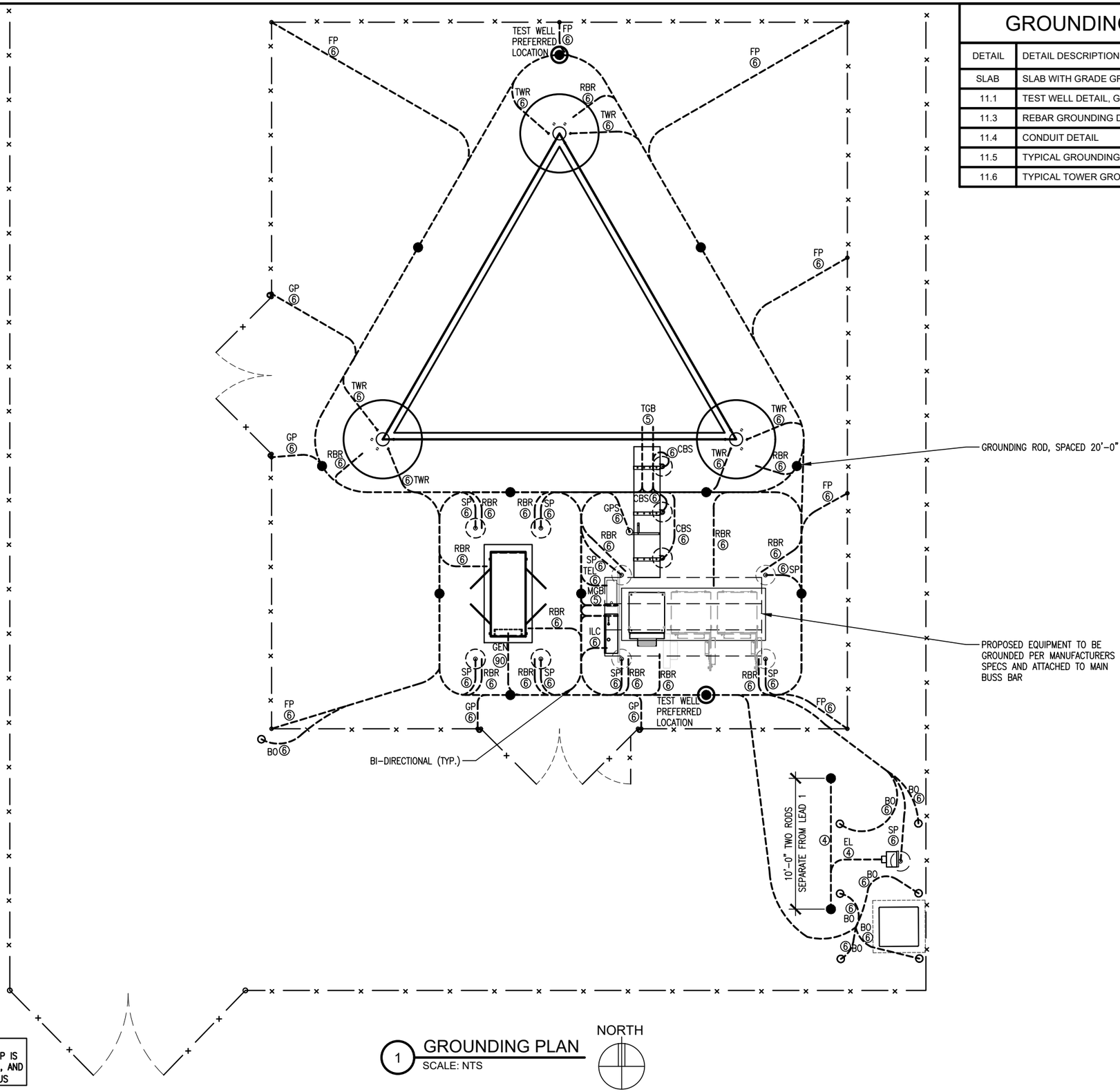
SHEET CONTENTS:
GROUNDING NOTES

DRAWN BY:	CJW
DATE:	07-22-20
CHECKED BY:	TRB
REV. A	07-27-20
REV. B	08-13-20
REV. C	03-10-21

G-1



NOTE:
CONTRACTOR SHALL ENSURE THAT EACH WHIP IS ROUTED TO LEAD 1 BY THE SHORTEST PATH, AND BENDS SHALL NOT BE LESS THAN 12" RADIUS

1 GROUNDING PLAN
SCALE: NTS

GROUNDING DETAIL INDEX

DETAIL	DETAIL DESCRIPTION
SLAB	SLAB WITH GRADE GROUNDING
11.1	TEST WELL DETAIL, GROUND RING & ROD DETAIL
11.3	REBAR GROUNDING DETAIL
11.4	CONDUIT DETAIL
11.5	TYPICAL GROUNDING CABLE BRIDGE DETAIL
11.6	TYPICAL TOWER GROUNDING DETAIL

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GROUNDING DETAIL INDEX

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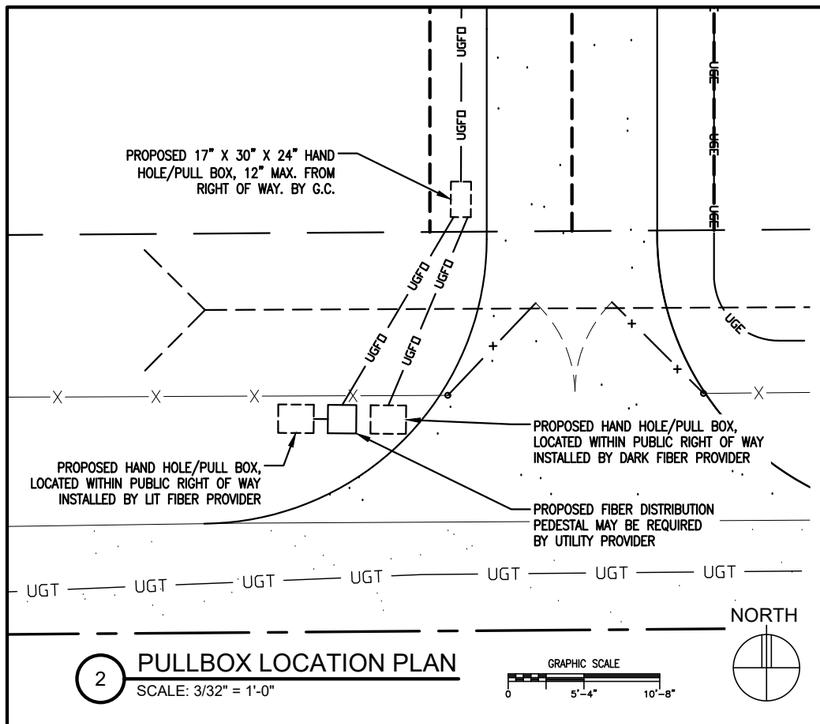
G-2

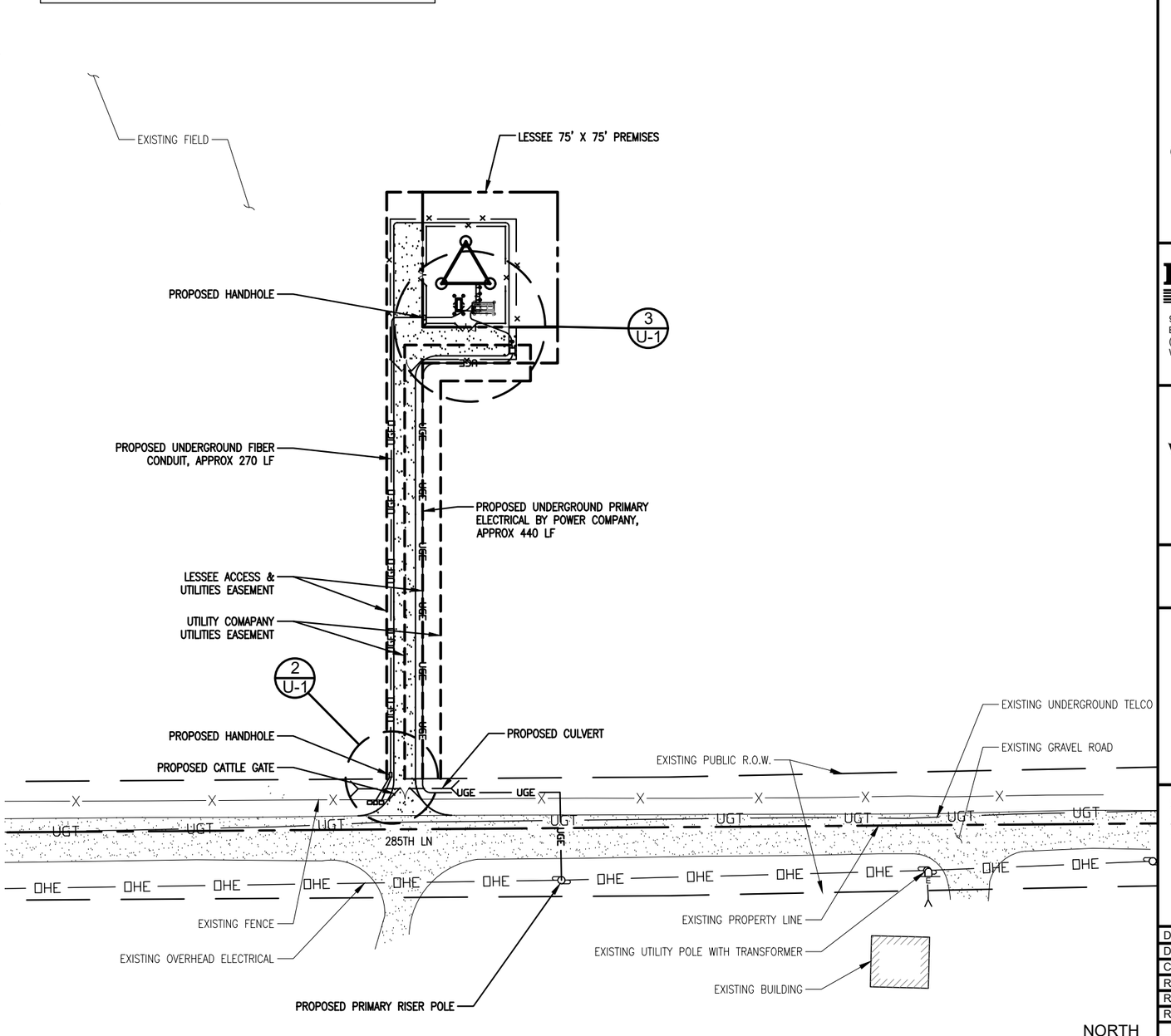
GENERAL NOTES:
1) CONTRACTOR TO COORDINATE PUBLIC & PRIVATE UTILITY LOCATES PER STATE LAW PRIOR TO EXCAVATION. EXISTING UTILITY LINES DEVIATING FROM THAT SHOWN HEREIN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT & VZW CONSTRUCTION ENGINEER.
2) PRIMARY ELECTRICAL –
DEPTH AND SPECIFICATION BY POWER UTILITY COMPANY.
3) SECONDARY ELECTRICAL –
INSTALL CONDUIT 32" BELOW GRADE WITH TWO (2) DETECTABLE RIBBONS.
4) FIBER OPTIC –
INSTALL CONDUIT 42" BELOW GRADE WITH PULL STRING, TRACEABLE WIRE AND TWO (2) DETECTABLE RIBBONS.

POWER TYPE:
120/240V, SINGLE PHASE, 200 AMPS



2 PULLBOX LOCATION PLAN
SCALE: 3/32" = 1'-0"
GRAPHIC SCALE 0 5'–4" 10'–8"

3 ENLARGED SITE UTILITY PLAN
SCALE: 3/32" = 1'-0"
GRAPHIC SCALE 0 5'–4" 10'–8"



1 SITE UTILITY PLAN
SCALE: 1" = 70'-0"
GRAPHIC SCALE 0 35' 70'

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SHEET CONTENTS:
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PULLBOX LOCATION PLAN

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U-1

SITE SURVEY

SURVEYOR NOTES:

1.) Utilities are from observed evidence and from markings per GOPHER STATE ONE CALL Locate Request Ticket No. 201763033, dated June 24, 2020.

2.) The Premises together with all Access and Utilities Easements are within the area described in the Property Description contained herein.

PROPOSED POWER COMPANY EASEMENT DESCRIPTION:

A 20.00 foot wide easement for utility purposes, over, under and across the South Half of the Southwest Quarter of the Northeast Quarter of Section 31, Township 46 North, Range 27 West of the Fourth Principal Meridian, Aitkin County, Minnesota, lying between 0.00 feet and 20.00 feet to the left (South and East) of the following described Line "A":

Commencing at the southeast corner of the Northeast Quarter of said Section 31; thence South 89 degrees 33 minutes 10 seconds West along the South line of said Northeast Quarter, a distance of 1,711.50 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 268.59 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 15.05 feet to the Point of Beginning of Line "A"; thence continue North 90 degrees 00 minutes 00 seconds West, a distance of 69.95 feet; thence South 0 degrees 00 minutes 00 seconds West, a distance of 241.18 feet to the North right of way line of Partridge Avenue and said Line "A" there terminating.

The sideline of said easement shall be shortened or lengthened to terminate at said North right of way line of Partridge Avenue.

PROPERTY DESCRIPTION: (per U.S. Title Solutions File No. 65630–MN2006–5030, effective date June 8, 2020.)

The North Half of the Southwest Quarter of the Northeast Quarter (N1/2 of SW1/4 of NE1/4) of Section Thirty–one (31), Township Forty–six (46), Range Twenty–seven (27)
as recited in Quit Claim Deed in Instrument No. 356298
AND
The South Half of the Southwest Quarter of the Northeast Quarter (S1/2 of SW1/4 of NE1/4) of Section Thirty–one (31), Township Forty–six (46), Range Twenty–seven (27)
as recited in Quit Claim Deed in Instrument No. 373371

SCHEDULE "B" EXHIBITS: (per U.S. Title Solutions File No. 65630–MN2006–5030, effective date June 8, 2020.)

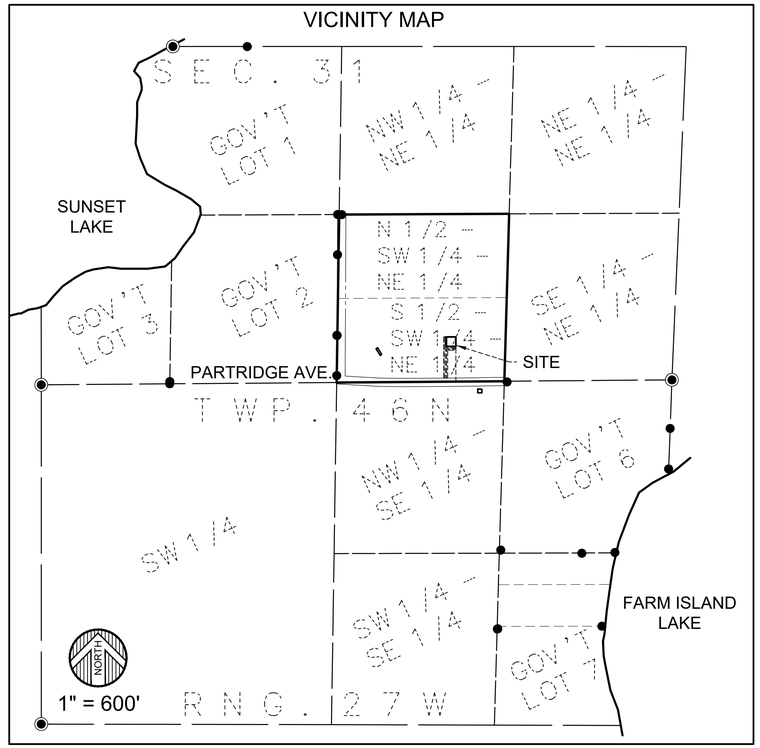
1–6.) Not related to the survey.

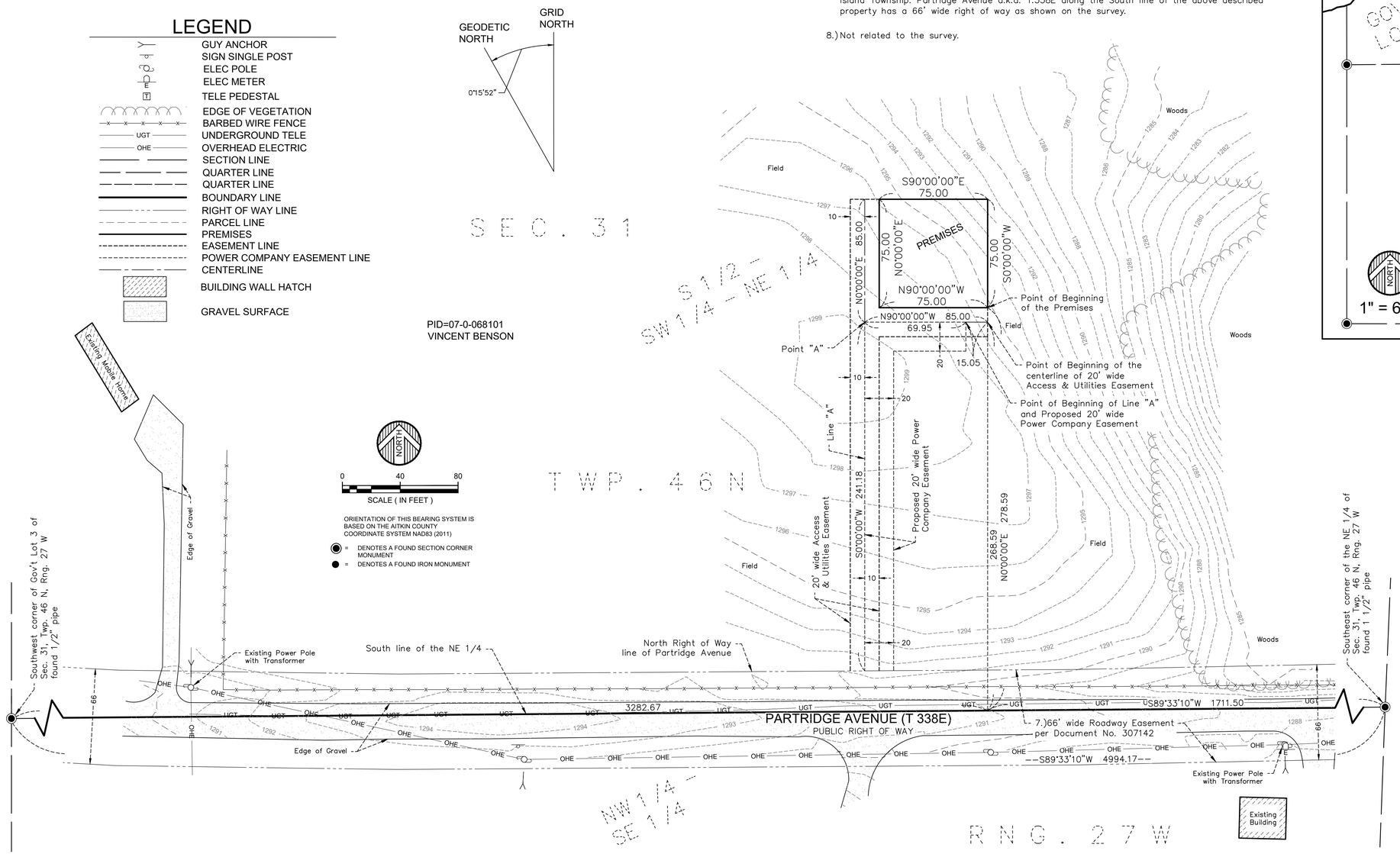
7.) Resolution by Farm Island Township in Aitkin County, Minnesota, dated 3/11/1997 recorded 1/28/1998 in Instrument No: 307142.
This document describes several 33' wide and 66' wide roadway easements throughout Farm Island Township. Partridge Avenue a.k.a. T.338E along the South line of the above described property has a 66' wide right of way as shown on the survey.

8.) Not related to the survey.

LEGEND

- GUY ANCHOR
- SIGN SINGLE POST
- ELEC POLE
- ELEC METER
- TELE PEDESTAL
- EDGE OF VEGETATION
- BARBED WIRE FENCE
- UNDERGROUND TELE
- OVERHEAD ELECTRIC
- SECTION LINE
- QUARTER LINE
- QUARTER LINE
- BOUNDARY LINE
- RIGHT OF WAY LINE
- PARCEL LINE
- PREMISES
- EASEMENT LINE
- POWER COMPANY EASEMENT LINE
- CENTERLINE
- BUILDING WALL HATCH
- GRAVEL SURFACE





PREMISES DESCRIPTION:

That part of the South Half of the Southwest Quarter of the Northeast Quarter of Section 31, Township 46 North, Range 27 West of the Fourth Principal Meridian, Aitkin County, Minnesota, described as follows:

Commencing at the southeast corner of the Northeast Quarter of said Section 31; thence South 89 degrees 33 minutes 10 seconds West along the South line of said Northeast Quarter, a distance of 1,711.50 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 278.59 feet to the Point of Beginning of the premises to be described; thence North 90 degrees 00 minutes 00 seconds West, a distance of 75.00 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 75.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 75.00 feet; thence South 0 degrees 00 minutes 00 seconds West, a distance of 75.00 feet to the Point of Beginning.

ACCESS AND UTILITIES EASEMENT DESCRIPTION:

A 20.00 foot wide easement for ingress, egress and utility purposes, over, under and across the South Half of the Southwest Quarter of the Northeast Quarter of Section 31, Township 46 North, Range 27 West of the Fourth Principal Meridian, Aitkin County, Minnesota, the centerline of said easement is described as follows:

Commencing at the southeast corner of the Northeast Quarter of said Section 31; thence South 89 degrees 33 minutes 10 seconds West along the South line of said Northeast Quarter, a distance of 1,711.50 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 268.59 feet to the Point of Beginning of the centerline to be described; thence North 90 degrees 00 minutes 00 seconds West, a distance of 85.00 feet to a point hereinafter referred to as Point "A"; thence South 0 degrees 00 minutes 00 seconds West, a distance of 241.18 feet to the North right of way line of Partridge Avenue and said centerline there terminating.

The sidelines of said easement shall be shortened or lengthened to terminate at said North right of way line of Partridge Avenue.

TOGETHER WITH

A 20.00 foot wide easement for ingress, egress and utility purposes, over, under and across said South Half of the Southwest Quarter of the Northeast Quarter, the centerline of said easement is described as follows:

Beginning at the previously described Point "A"; thence North 0 degrees 00 minutes 00 seconds East, a distance of 85.00 feet and said centerline there terminating.

DESIGN 1

SITE NAME:
MN06 SHIRT LAKE

Aitkin County, MN

No.	Date	REVISIONS	By	CHK	APP'D

FIELD WORK: 6/30/20 | CHECKED BY: BTB | DRAWN BY: JMB

I HEREBY CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Bryan T. Balcome
BRYAN T. BALCOME, L.S.
DATE: 8/20/20 LICENSE # 42594

FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"
2020-11046

WIDSETH
ARCHITECTS ▪ ENGINEERS ▪ SCIENTISTS ▪ SURVEYORS