

VERIZON WIRELESS

MINC RUSH CREEK COLO

VERIZON WIRELESS DEPARTMENTAL APPROVALS

	NAME	DATE
RF ENGINEER	JORDAN ALSTAD	05-20-14 ¹
OPERATIONS MANAGER	DAVID COX	05-27-14
CONSTRUCTION ENGINEER	STEVE COLLIN	05-30-14
CONSTRUCTION MANAGER		
REAL ESTATE MANAGER		

LESSOR / LICENSOR APPROVAL

SIGNATURE	PRINTED NAME	DATE
PDF	CHAD HILTNER	06-10-14

LESSOR / LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW

NO CHANGES. CHANGES NEEDED. SEE COMMENTS ON PLANS.

PROJECT INFORMATION

SITE NAME:	MINC RUSH CREEK
PROJECT NUMBER:	20130877266
SITE ADDRESS:	8925 LAWDALE AVE MAPLE GROVE, MN 55311
COUNTY:	HENNEPIN
LATITUDE:	N45° 07' 02.046" (NAD83)
LONGITUDE:	W93° 30' 11.912" (NAD83)
GROUND ELEVATION:	952.2' AMSL (NAVD88)
ANTENNA TIP HEIGHT:	1039.2' AMSL - 87.0' AGL
ANTENNA CENTERLINE HEIGHT:	1035.2' AMSL - 83.0' AGL
TOWER HEIGHT:	1052.2' AMSL - 100.0' AGL
OVERALL STRUCTURE HEIGHT:	1056.2' AMSL - 104.0' AGL
DRAWING BASED ON SITE DATA FORM DATED:	01-03-17 ¹
OCCUPANCY:	U
BUILDING TYPE:	I-B
SITE AREA:	9' X 11' = 99 SF
PARKING:	PROVIDED
ESTIMATED COAX RUN:	"X" COAX RUN = (2) 1-5/8" LINES @ 150' EA "Y" COAX RUN = (2) 1-5/8" LINES @ 150' EA "Z" COAX RUN = (2) 1-5/8" LINES @ 150' EA

PROJECT DESCRIPTION:
INSTALL THE PROPOSED SHELTER IN THE EXISTING COMPOUND AND PROPOSED ANTENNAS ON THE EXISTING MONOPOLE TOWER TO IMPROVE COMMUNICATION SERVICE IN THE MAPLE GROVE, MN AREA.

SHEET INDEX

SHEET	SHEET DESCRIPTION
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G-2	GROUNDING PLAN AND NOTE KEY
G-3	EXTERIOR GROUNDING DETAILS
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-	ENVIROBUILDING DRAWINGS REMOVED FROM SUBMITTAL ¹
E-1/E-7	ELECTRICAL PLAN, NOTES, AND DETAILS
S1 & S2	SURVEY

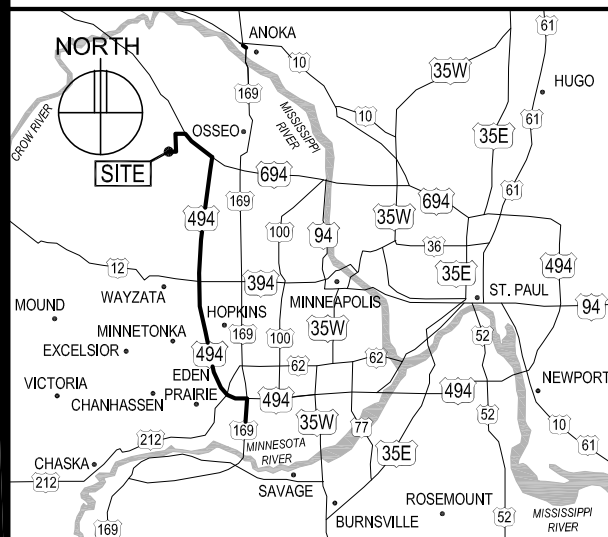
ISSUE SUMMARY

REV.	DESCRIPTION	SHEET OR DETAIL
G	CITY CMTS, SDF UPDATE, GATE ADD 03-14-17	T-1:A-6, G-2:U-1, ELEC, SURVEY
H	CITY COMMENTS, REVISED SURVEY 05-01-17	T-1:A-3, A-5, A-6, G-2, SURVEY
J	REVISED ACCESS DRIVE, APPROACH, & GROUNDING 08-02-17	A-1, A-2, A-2.1, A-5, G-2
K	ACCESS EASEMENT 10-18-17	T-1, A-1, A-2, SURVEY
0	ISSUED FOR BID/CONSTRUCTION 02-07-18	ALL
1	BUILDING DEPARTMENT REVISIONS 06-08-18	T & A

CONTACTS

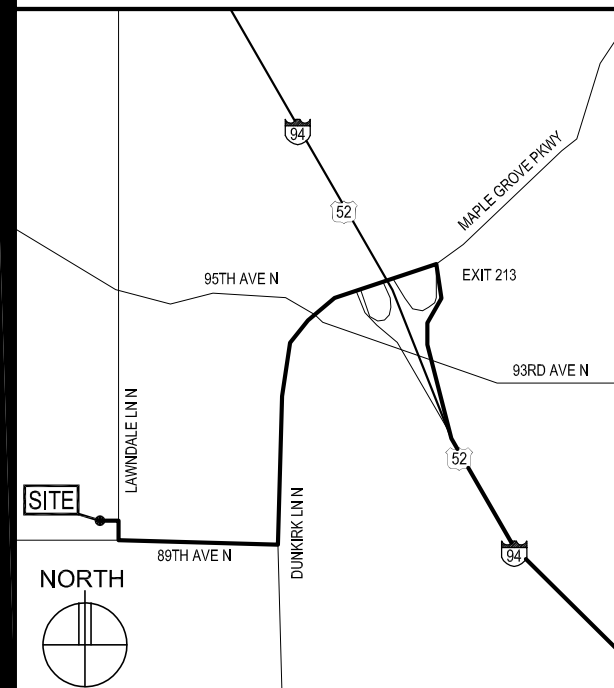
LESSOR / LICENSOR:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
LESSEE:	VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 RON REITER (612) 720-0052
POWER UTILITY COMPANY CONTACT:	XCEL ENERGY BOX 9477 MINNEAPOLIS, MN 55484 JASON DARRINGTON 763-493-1854
TELCO UTILITY COMPANY CONTACT:	T.B.D.
ARCHITECT:	DESIGN 1 OF EDEN PRAIRIE, LLC. 9973 VALLEY VIEW ROAD EDEN PRAIRIE, MN 55344 (952) 903-9299
SURVEYOR:	WIDSETH SMITH NOLTING 610 FILLMORE ST, PO BOX 1028 ALEXANDRIA, MN 56308 320-762-8149
STRUCTURAL ENGINEER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 724-416-2000
GEOTECHNICAL ENGINEER:	N/A
ELECTRICAL ENGINEER:	BUSSELL COMPANIES, INC. 16026 MINNETONKA BLVD. SUITE 100 MINNETONKA, MN 55345 PHONE: (952) 931-2111

AREA MAP



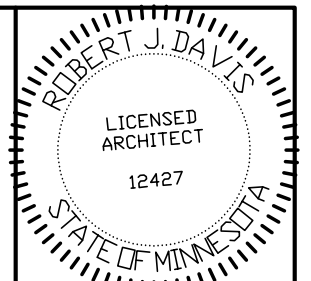
DIRECTIONS FROM BLOOMINGTON RNC:
HEAD NORTH ON I-494. TAKE THE EXIT FOR I-94W. TAKE EXIT 213 FOR MAPLE GROVE PKWY AND TURN LEFT. CONTINUE ON DUNKIRK LN N. TURN RIGHT ONTO 89TH AVE N. TURN RIGHT ONTO LAWDALE LN N. SITE WILL BE ON YOUR LEFT, BEHIND THE FIRE STATION.

VICINITY MAP



GENERAL NOTES

- In the event that Special Inspections are not performed in compliance with the contract terms, bid specifications and/or specified form, the General Contractor will be liable for all damages, construction performance, failures, and corrective actions related to the same.
- The following general notes shall apply to drawings and govern unless otherwise noted or specified.
- The work delineated in these drawings and described in the specifications shall conform to codes, standards and regulations that have jurisdiction in the state of MINNESOTA, and the city of MAPLE GROVE.
- Requirements and regulations pertaining to R.F. safety codes and practices must be incorporated in the work even though they may not be listed individually and separately in either the drawings or the specifications.
- Compare field conditions with architectural and engineering drawings. Any discrepancies shall be directed to the Architect for clarification prior to fabrication and/or construction. Submit necessary shop drawings prior to fabrication for approval by the Architect. No information or details on these sheets may be used without the permission of the owner, or the architect.
- Do not scale drawings! 11" x 17" drawings to scale 24" x 36" drawings scale multiply by 2
- Unless otherwise shown or noted, typical details shall be used where applicable.
- Details shall be considered typical at similar conditions.
- Safety measures: The contractor shall be solely and completely responsible for the conditions of the job site, including safety of the persons and property and for independent engineering reviews of these conditions. The Architect's or Engineers' job site review is not intended to include review of the adequacy of the contractor's safety measures.
- Within these plans and specifications, "Owner" implies VERIZON WIRELESS.
- The work is the responsibility of the general contractor unless noted otherwise.
- The terms "contractor" and "g.c." refer to the owner's general contractor and the general contractor's sub-contractors. It is the general contractor's responsibility to determine the division of work among sub-contractors.
- The general contractor is responsible in obtaining necessary public and private underground utility locate services prior to start of excavating / construction.



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

Signed: *Robert J. Davis*

Date: 06-08-18



9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
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VERIZON WIRELESS
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0052

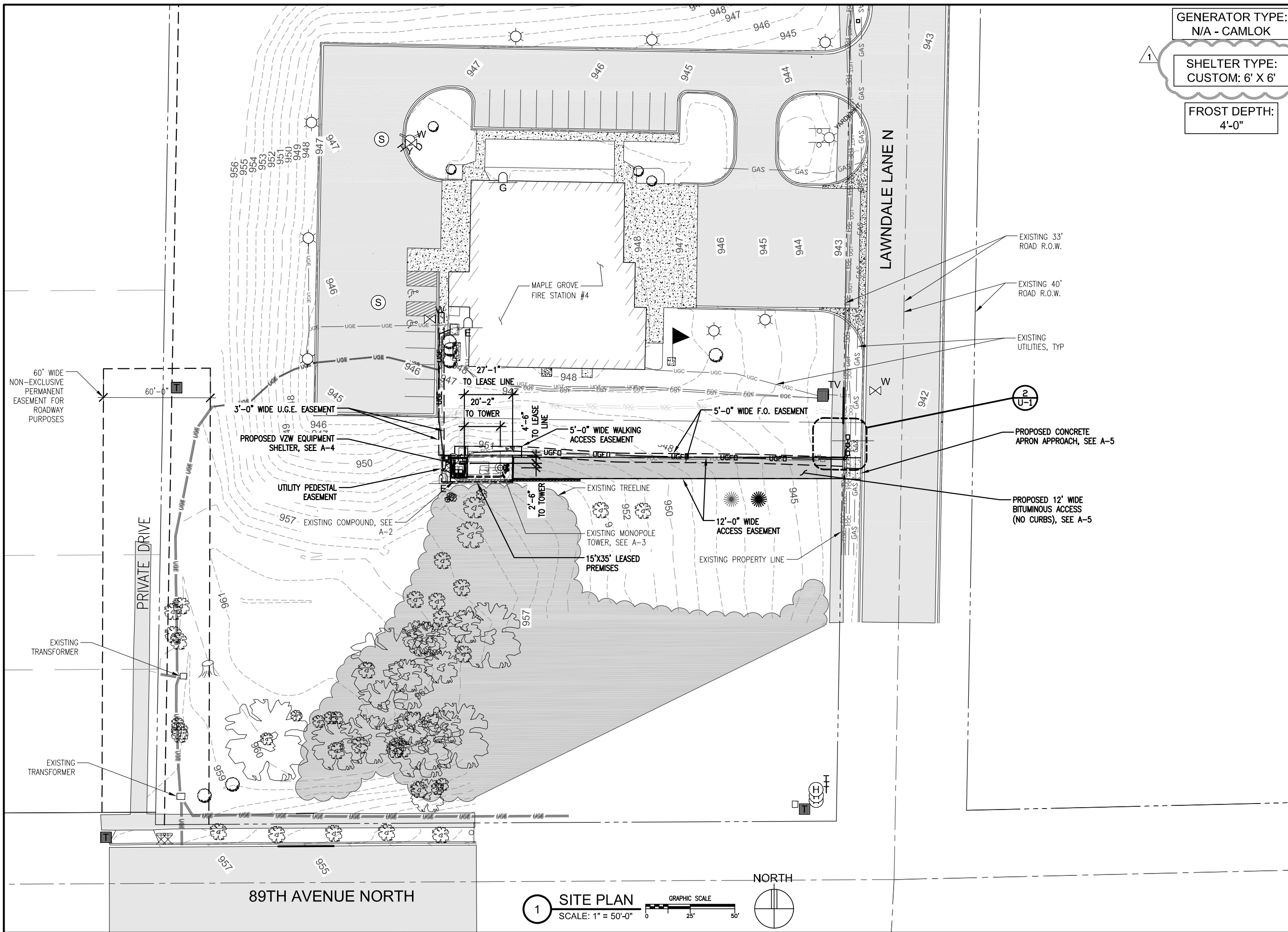
PROJECT
20130877266
LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

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

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. 0	02-07-18
REV. 1	06-08-18

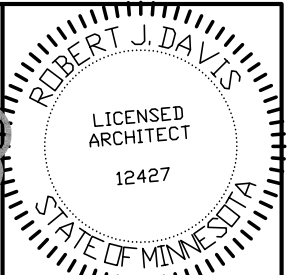
T-1



GENERATOR TYPE:
N/A - CAMLOK

SHELTER TYPE:
CUSTOM: 6' X 6'

FROST DEPTH:
4'-0"



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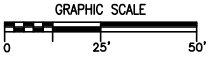
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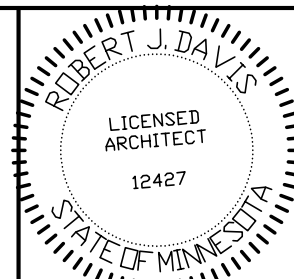
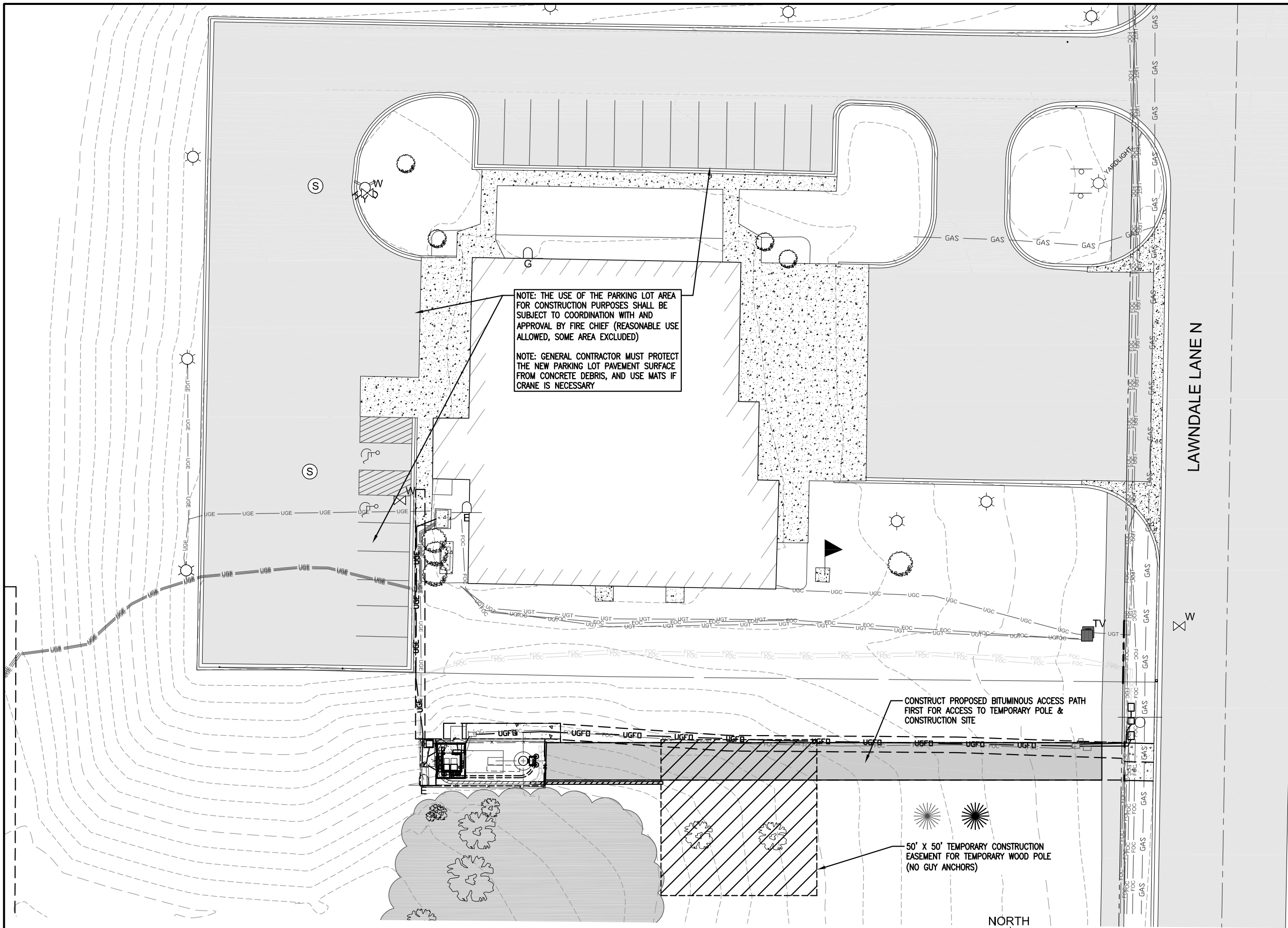
SHEET CONTENTS:
SITE PLAN

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
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REV. K	10-18-17
REV. O	02-07-18
REV. 1	06-08-18

A-1

1 SITE PLAN
SCALE: 1" = 50'-0"





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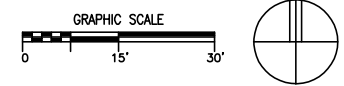
PROJECT
 20130877266
 LOC. CODE: 265758

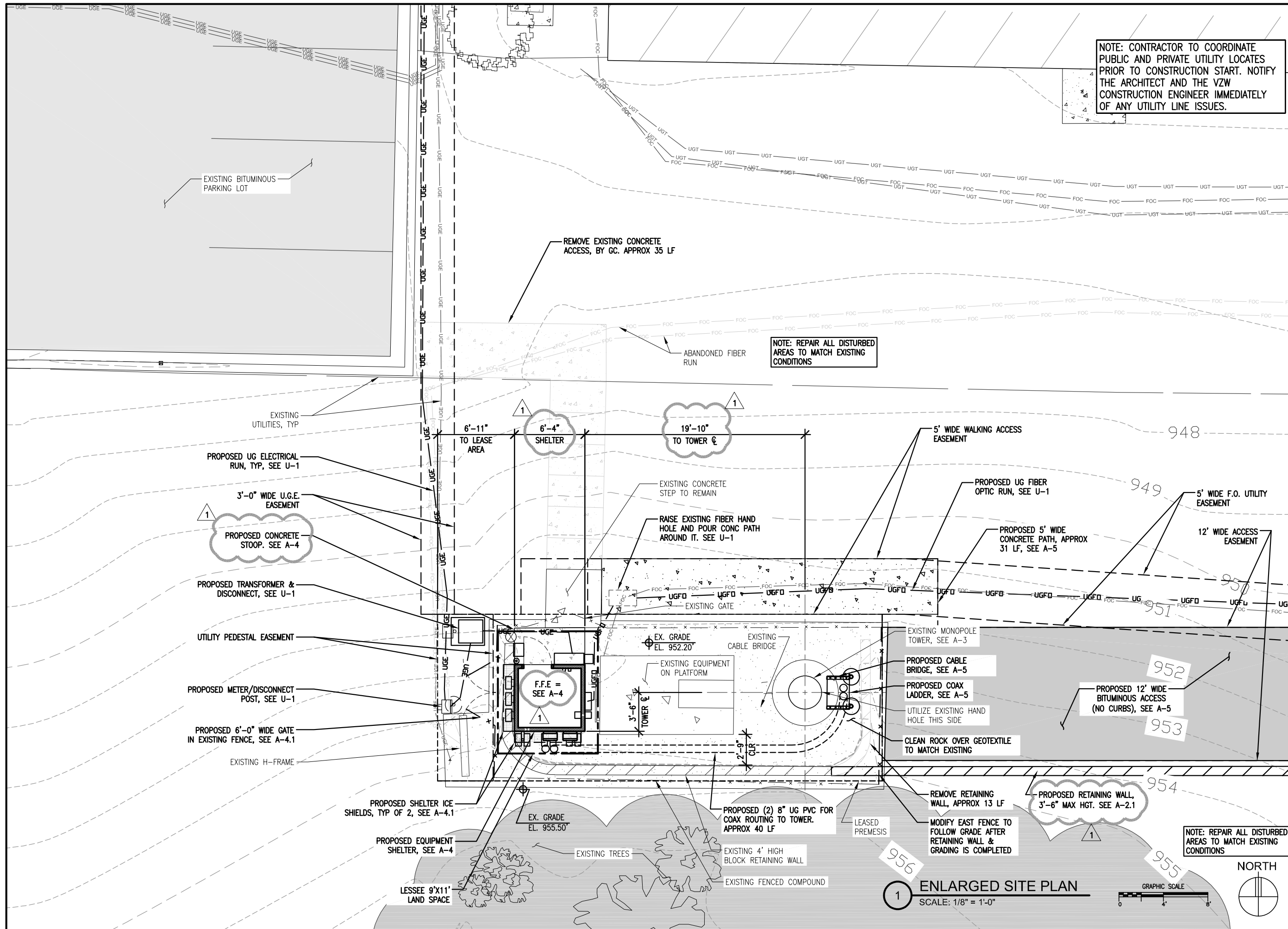
MINC
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SHEET CONTENTS:
 TEMPORARY
 CONSTRUCTION PLAN

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
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REV. 0	02-07-18
REV. 1	06-08-18

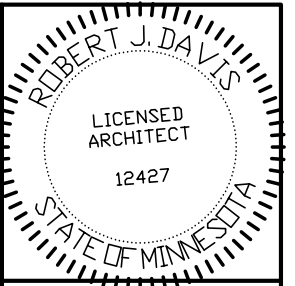
1 TEMPORARY CONSTRUCTION PLAN
 SCALE: 1" = 30'-0"





NOTE: CONTRACTOR TO COORDINATE PUBLIC AND PRIVATE UTILITY LOCATES PRIOR TO CONSTRUCTION START. NOTIFY THE ARCHITECT AND THE VZW CONSTRUCTION ENGINEER IMMEDIATELY OF ANY UTILITY LINE ISSUES.

NOTE: REPAIR ALL DISTURBED AREAS TO MATCH EXISTING CONDITIONS



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DESIGN 1

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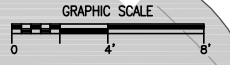
MINC RUSH CREEK CROWN CASTLE BU #825666
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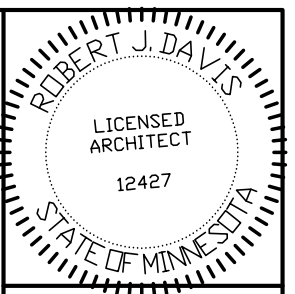
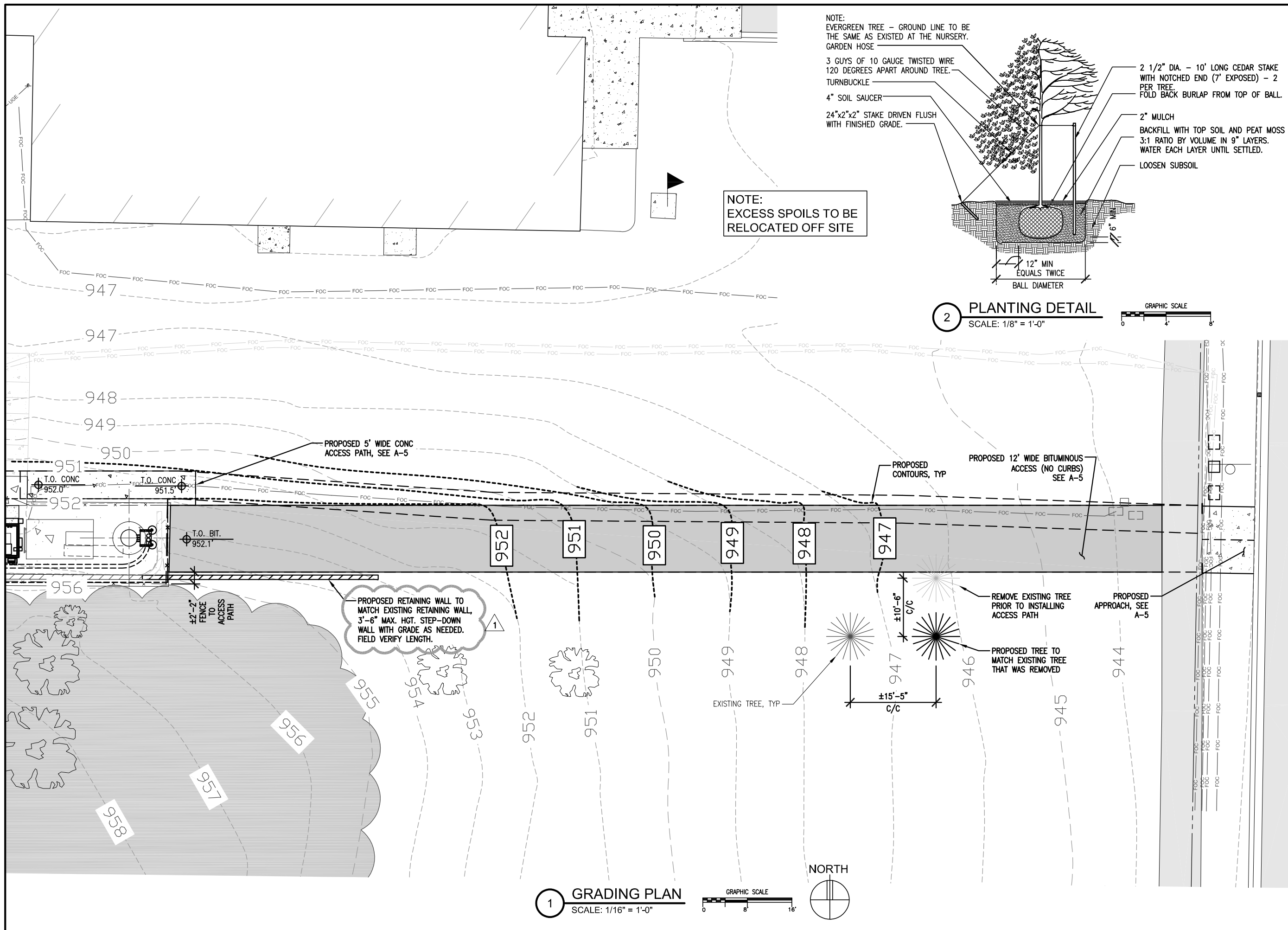
SHEET CONTENTS:
ENLARGED SITE PLAN

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. O	02-07-18
REV. 1	06-08-18

A-2

ENLARGED SITE PLAN
SCALE: 1/8" = 1'-0"





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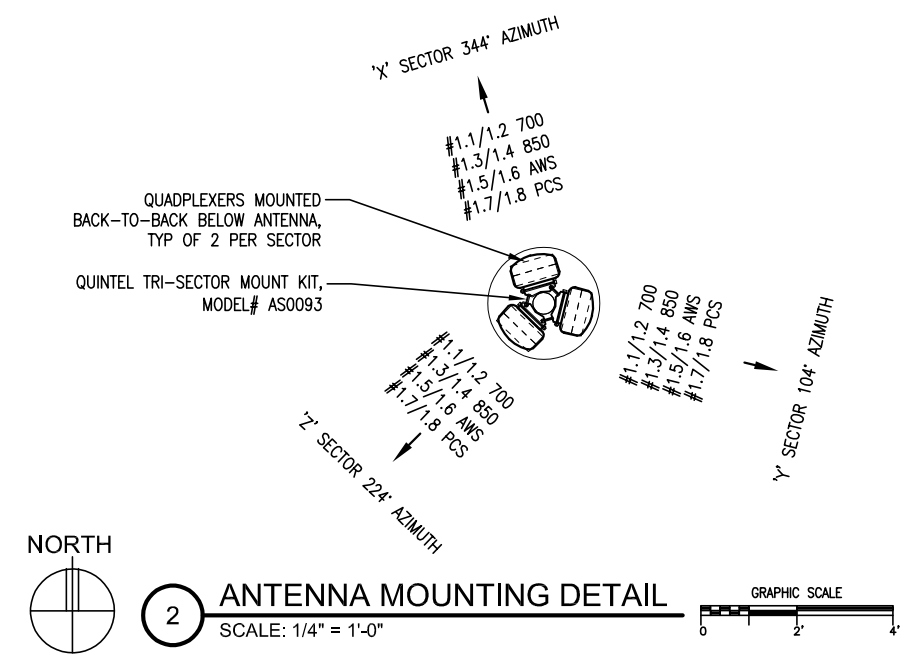
SHEET CONTENTS:
GRADING PLAN
PLANTING DETAIL

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. O	02-07-18
REV. 1	06-08-18

A-2.1

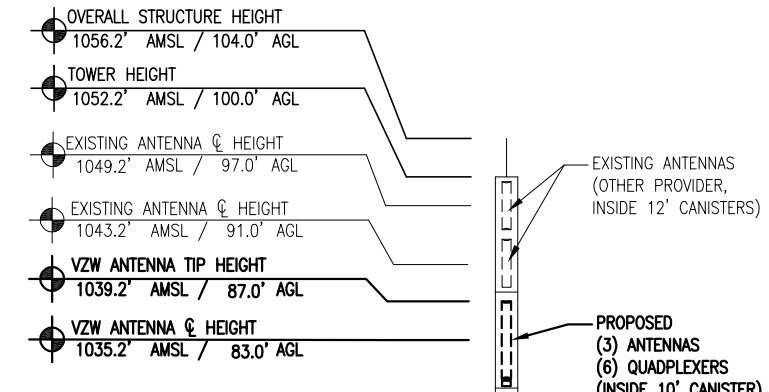
ANTENNA KEY											COAX KEY								
	AZIMUTH	POSITION	FUNCTION	QTY	MANUFACTURER	MODEL	MOD TYPE	ANTENNA LENGTH	ANTENNA TIP	ANTENNA CENTER	ELEC DOWNTILT	MECH DOWNTILT	QTY	COAX TYPE	MANUFACTURER	MODEL	DIELECTRIC	DIAMETER (INCH)	RUN (FEET)
"X" SECTOR	344°	1.1	TX/RX0	1	QUINTEL	SBJAHH-1D65C-DL	700+45	96.6"	87'	83'	0°	0°	1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.2	TX/RX1			2ND PORT	700-45				0°		1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.3	TX/RX0			3RD PORT	850+45				0°						QUADPLEXED WITH	700+45	
		1.4	TX/RX1			4TH PORT	850-45				0°						QUADPLEXED WITH	700-45	
		1.5	TX/RX0			5TH PORT	AWS+45				0°						QUADPLEXED WITH	700+45	
		1.6	TX/RX1			6TH PORT	AWS-45				0°						QUADPLEXED WITH	700-45	
		1.7	TX/RX0			7TH PORT	PCS+45				0°						QUADPLEXED WITH	700+45	
		1.8	TX/RX1			8TH PORT	PCS-45				0°						QUADPLEXED WITH	700-45	
"Y" SECTOR	104°	1.1	TX/RX0	1	QUINTEL	SBJAHH-1D65C-DL	700+45	96.6"	87'	83'	0°	0°	1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.2	TX/RX1			2ND PORT	700-45				0°		1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.3	TX/RX0			3RD PORT	850+45				0°						QUADPLEXED WITH	700+45	
		1.4	TX/RX1			4TH PORT	850-45				0°						QUADPLEXED WITH	700-45	
		1.5	TX/RX0			5TH PORT	AWS+45				0°						QUADPLEXED WITH	700+45	
		1.6	TX/RX1			6TH PORT	AWS-45				0°						QUADPLEXED WITH	700-45	
		1.7	TX/RX0			7TH PORT	PCS+45				0°						QUADPLEXED WITH	700+45	
		1.8	TX/RX1			8TH PORT	PCS-45				0°						QUADPLEXED WITH	700-45	
"Z" SECTOR	224°	1.1	TX/RX0	1	QUINTEL	SBJAHH-1D65C-DL	700+45	96.6"	87'	83'	0°	0°	1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.2	TX/RX1			2ND PORT	700-45				0°		1	MAIN	ANDREW	AVA7-50	FOAM	1-5/8"	150'
		1.3	TX/RX0			3RD PORT	850+45				0°						QUADPLEXED WITH	700+45	
		1.4	TX/RX1			4TH PORT	850-45				0°						QUADPLEXED WITH	700-45	
		1.5	TX/RX0			5TH PORT	AWS+45				0°						QUADPLEXED WITH	700+45	
		1.6	TX/RX1			6TH PORT	AWS-45				0°						QUADPLEXED WITH	700-45	
		1.7	TX/RX0			7TH PORT	PCS+45				0°						QUADPLEXED WITH	700+45	
		1.8	TX/RX1			8TH PORT	PCS-45				0°						QUADPLEXED WITH	700-45	
ADDITIONAL: (2) COMMSCOPE 6RRU HYBRID CABLE HFT1206-24SV2-020 (SHELTER MOUNTED DIST. BOX TO INSIDE SHELTER)											48	JUMPER	ANDREW	LDF4-50A	FOAM	1/2"	10'		

- ADDITIONAL: (2) COMMSCOPE 6RRU HYBRID CABLE HFT1206-24SV2-020 (SHELTER MOUNTED DIST. BOX TO INSIDE SHELTER)
 (2) DISTRIBUTION BOX RXXDC-3315-PF-DC (MOUNTED ON OUTSIDE OF SHELTER)
 (3) ERICSSON RADIO 2212 B13 (MOUNTED ON OUTSIDE OF SHELTER, 1 PER SECTOR)
 (3) ERICSSON RADIO 2212 B66A (MOUNTED ON OUTSIDE OF SHELTER, 1 PER SECTOR)
 (3) ERICSSON RADIO 2212 B2 (MOUNTED ON OUTSIDE OF SHELTER, 1 PER SECTOR)
 (3) ERICSSON RADIO 2212 B5 (MOUNTED ON OUTSIDE OF SHELTER, 1 PER SECTOR)
 (12) COMMSCOPE QUADPLEXER E15V90P46 (6 MOUNTED ON OUTSIDE OF SHELTER, 6 MOUNTED IN TOWER, 2 PER SECTOR)
 (6) COMMSCOPE HYBRID JUMPER HFT410-4SVHY-15 (FIBER FEED TAIL SHELTER MOUNTED DIST. BOX TO RRU)



2 ANTENNA MOUNTING DETAIL
SCALE: 1/4" = 1'-0"

3 COAX KEY
SCALE: NONE



NOTE: THESE DRAWINGS WERE PREPARED BASED ON INFORMATION SUPPLIED IN THE STRUCTURAL MODIFICATION REPORT DATED 02/23/17 BY GPD GROUP, PROJECT# 2017777.825666.02.

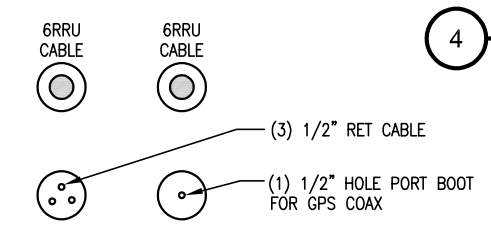
NOTE: CONTRACTOR TO OBTAIN CURRENT FINAL SDF & FAA DETERMINATION FROM VZW PRIOR TO CONSTRUCTION COMMENCEMENT.

NOTE: CONTRACTOR TO OBTAIN CURRENT FINAL SDF & FAA DETERMINATION FROM VZW PRIOR TO CONSTRUCTION COMMENCEMENT.

NOTE: CONTRACTOR TO VERIFY TOWER MODIFICATIONS REFERENCED IN TOWER STUDY HAVE BEEN COMPLETED BY OTHERS PRIOR TO INSTALLING PROPOSED VZW EQUIPMENT & RELATED HARDWARE.

NOTE: EXISTING EQUIPMENT & FENCE NOT SHOWN FOR CLARITY.

1 NORTH ELEVATION
SCALE: 1" = 20'

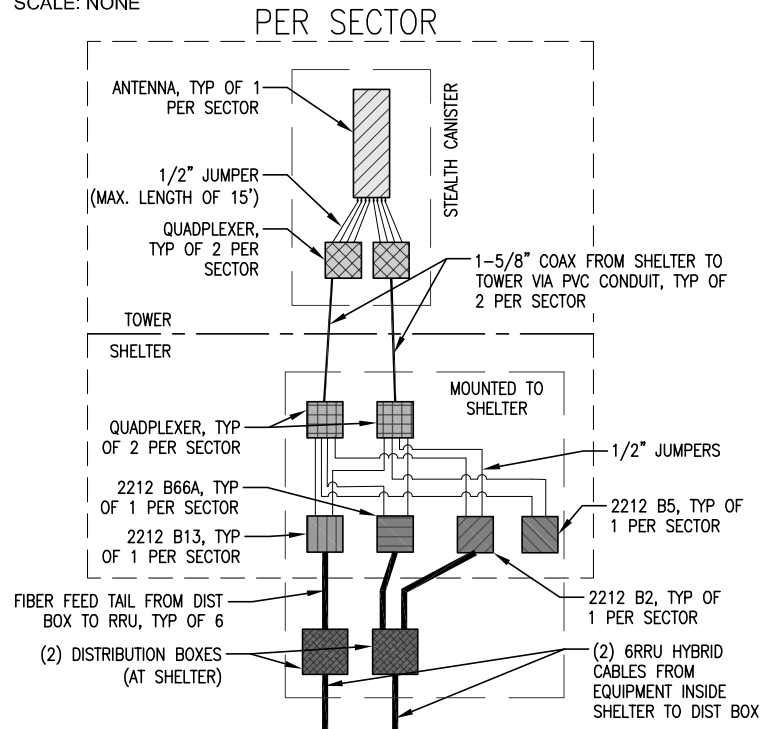


4 ANTENNA KEY
SCALE: NONE

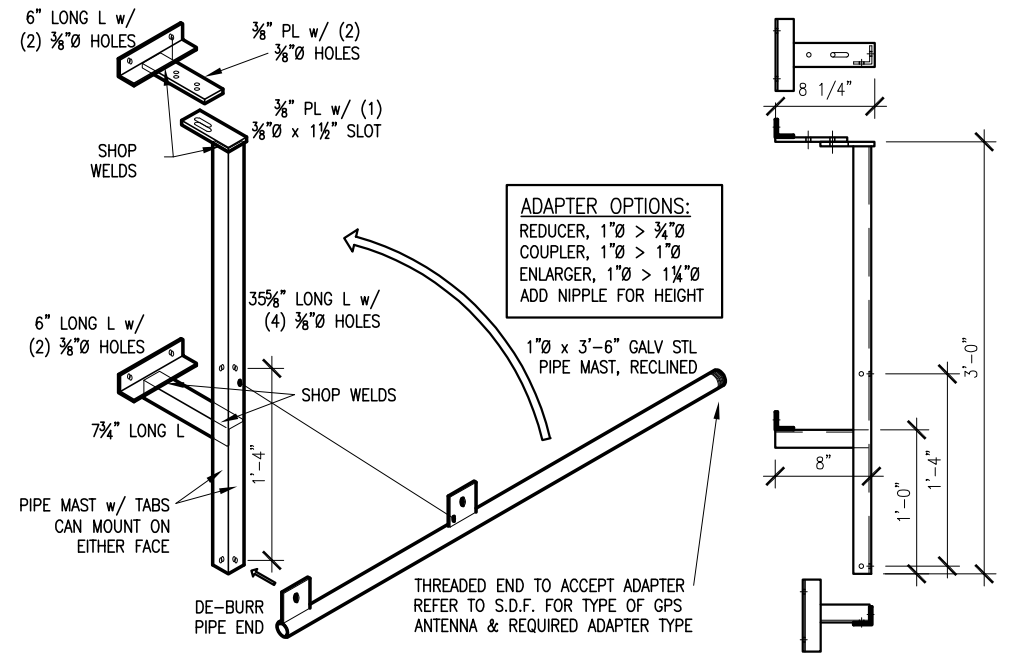
NOTE: CONTRACTOR TO OBTAIN CURRENT FINAL SDF & FAA DETERMINATION FROM VZW PRIOR TO CONSTRUCTION COMMENCEMENT.

NOTE: THE ARCHITECT MAKES NO WARRANTY, EXPRESSED OR IMPLIED, OF THE ACCURACY OF THE STRUCTURAL ANALYSIS AND THE PERFORMANCE OF THE COMPLETED CONSTRUCTION AS SHOWN ON THESE DOCUMENTS AND THE STRUCTURAL ANALYSIS.

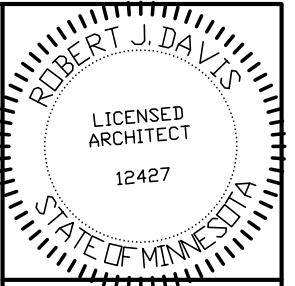
5 COAX ENTRY DETAIL (VIEW FROM INSIDE)
SCALE: NONE



6 ONE-LINE DIAGRAM
SCALE: NONE



7 GPS MOUNTING DETAIL
SCALE: 3/4" = 1'-0"



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SHEET CONTENTS:
TOWER ELEVATION
COAX & ANTENNA KEY
GPS DETAIL & ELEVATION
ANTENNA MOUNTING DETAIL
COAX ENTRY DETAIL

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
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REV. O	02-07-18
REV. 1	06-08-18

SLAB ON GRADE SHALL BEAR ON 6" COMPACTED GRANULAR FILL OVER NATURAL UNDISTURBED SOIL. GRANULAR FILL SHALL BE COMPACTED TO 98% STANDARD DENSITY (ASTM: D698-91). GRANULAR FILL SHALL BE REASONABLY WELL GRADED SAND (SW OR CP) CLEAN AND FREE OF ORGANIC MATERIAL WITH MORE THAN 50% RETAINED ON THE NO. 200 SIEVE AND 50% OR MORE OF COARSE FRACTION PASSES NO. 4 SIEVE. AGGREGATE SHALL NOT EXCEED 3/4".

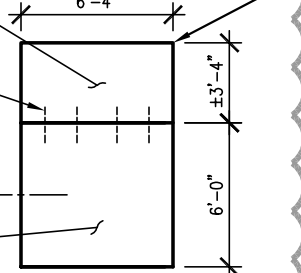
ENVIROBUILDING DRAWINGS
REMOVED FROM SUBMITTAL

NOTES:

1. T/O CONCRETE TO BE LEVEL $\pm 1/8"$.
2. T/O THICKENED SLAB = 952.7' AMSL
3. T/O STOOP SLAB = 952.45' AMSL

STOOP, 6" SLAB WITH #5 @ 12" O.C.E.W. #5 DOWEL @ 16" O.C. MIN 10" EMBED

THICKENED SLAB, SEE 5/A-4.2



PROPOSED STOOP, EXTEND TO EXISTING CONCRETE & 1/2" GAP FILL WITH SEALING COMPOUND ATOP EXPANSION JOINT MATERIAL

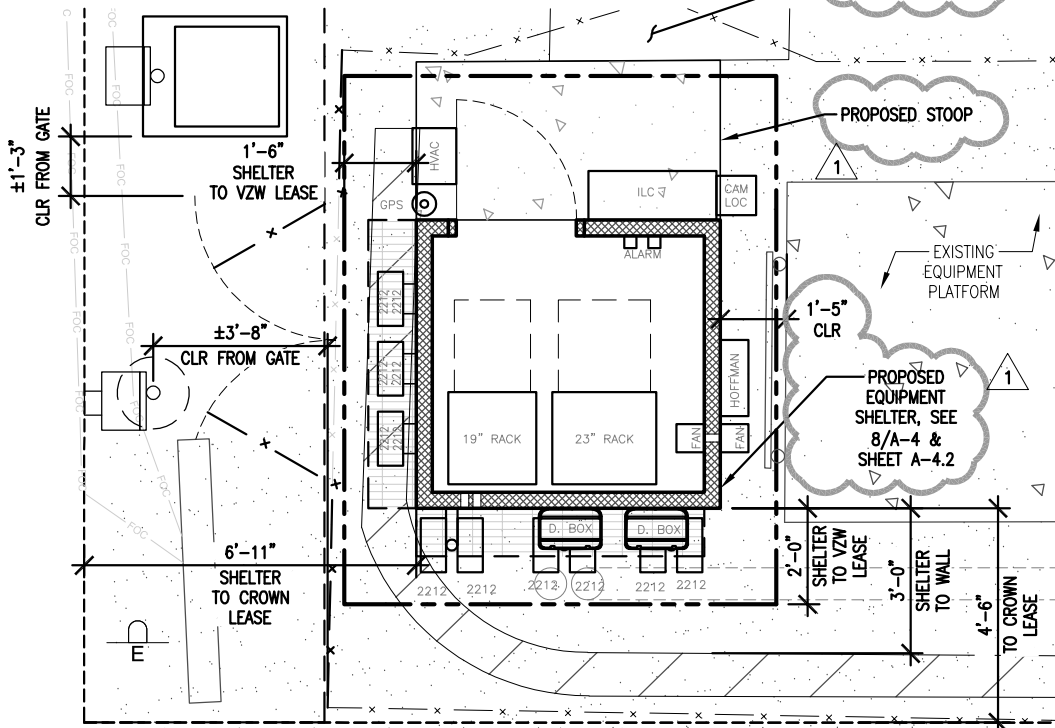
FOUNDATION SECTION NOT USED, SEE SHEET A-4.2

FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

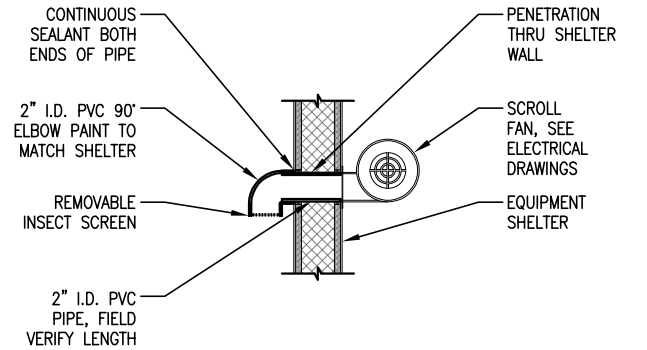
FOUNDATION SECTION

SCALE: 3/4" = 1'-0"



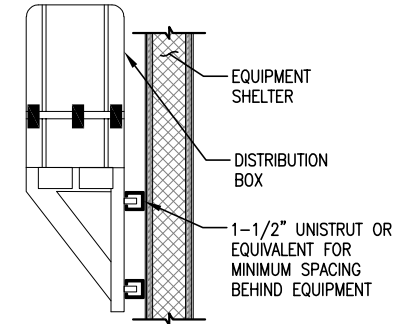
FLOOR PLAN

SCALE: 1/4" = 1'-0"



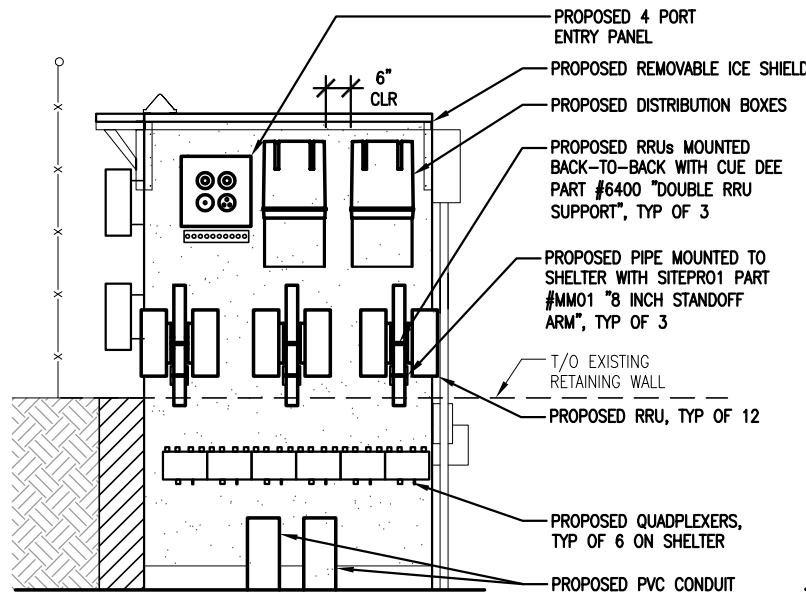
SCROLL FAN DETAIL

SCALE: 3/4" = 1'-0"



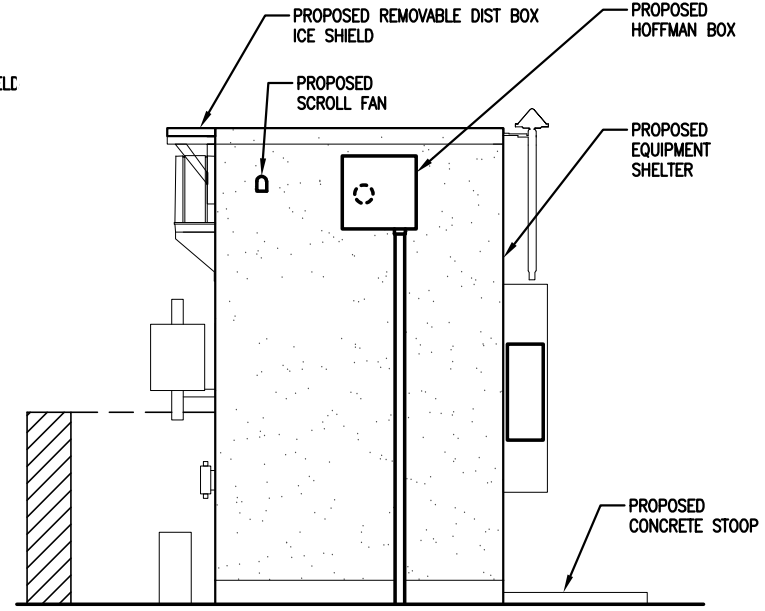
DIST BOX MOUNT DTL

SCALE: 3/4" = 1'-0"



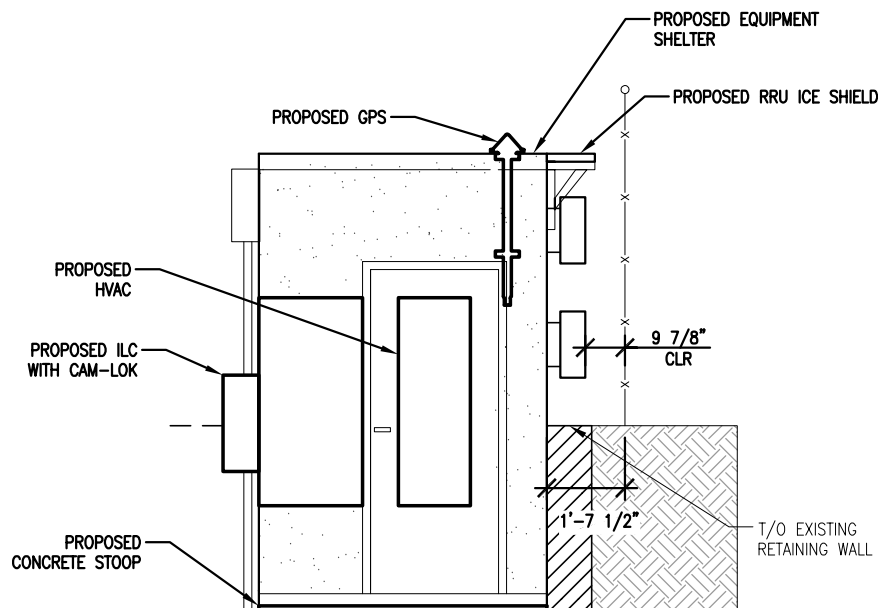
SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



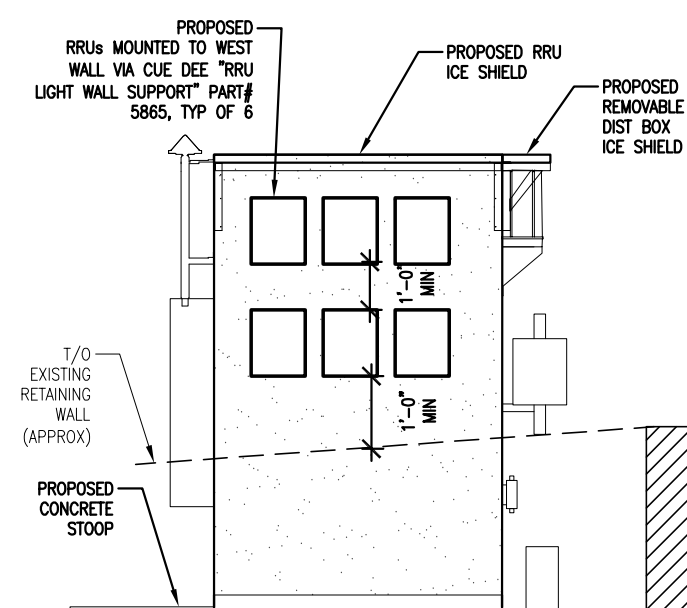
EAST ELEVATION

SCALE: 1/4" = 1'-0"



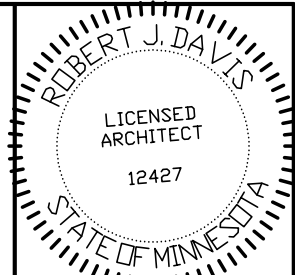
NORTH ELEVATION

SCALE: 1/4" = 1'-0"



WEST ELEVATION

SCALE: 1/4" = 1'-0"



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Signed: *Robert J. Davis*

Date: 06-08-18



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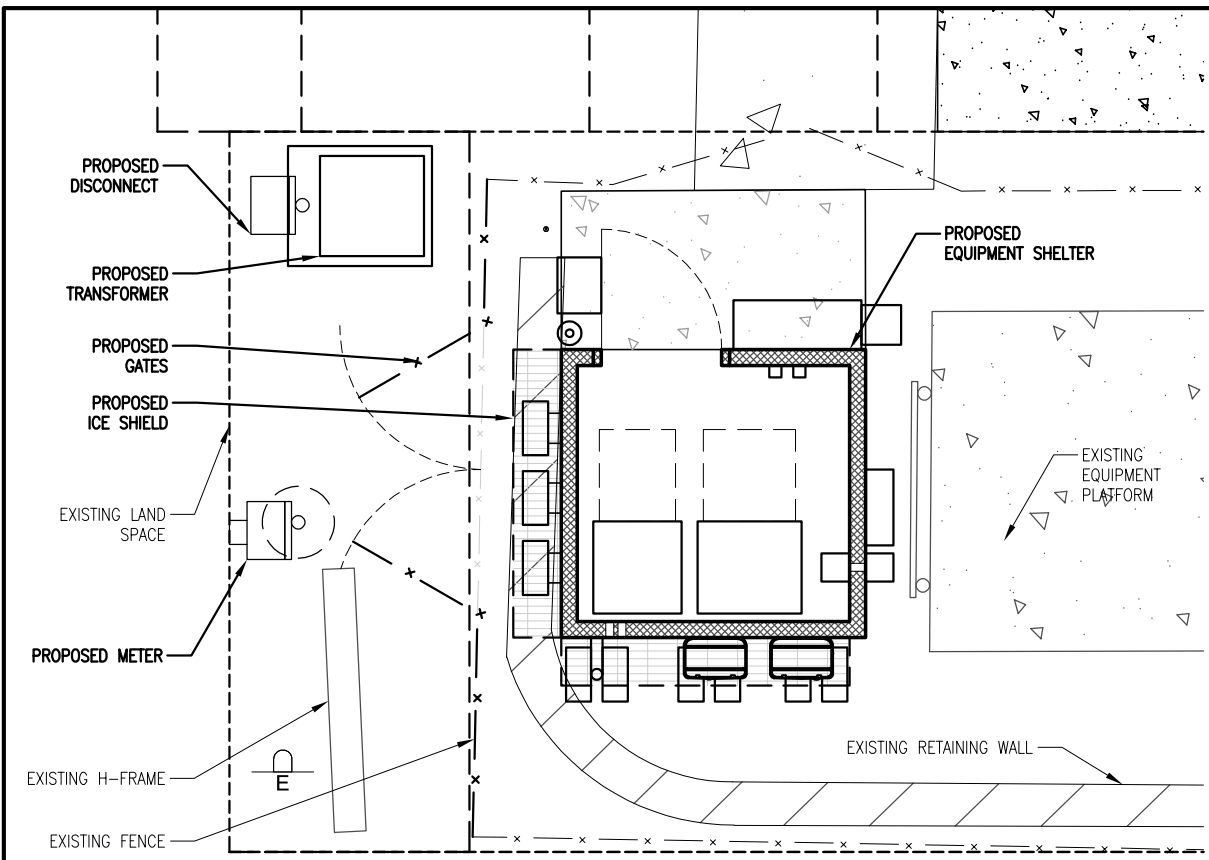
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

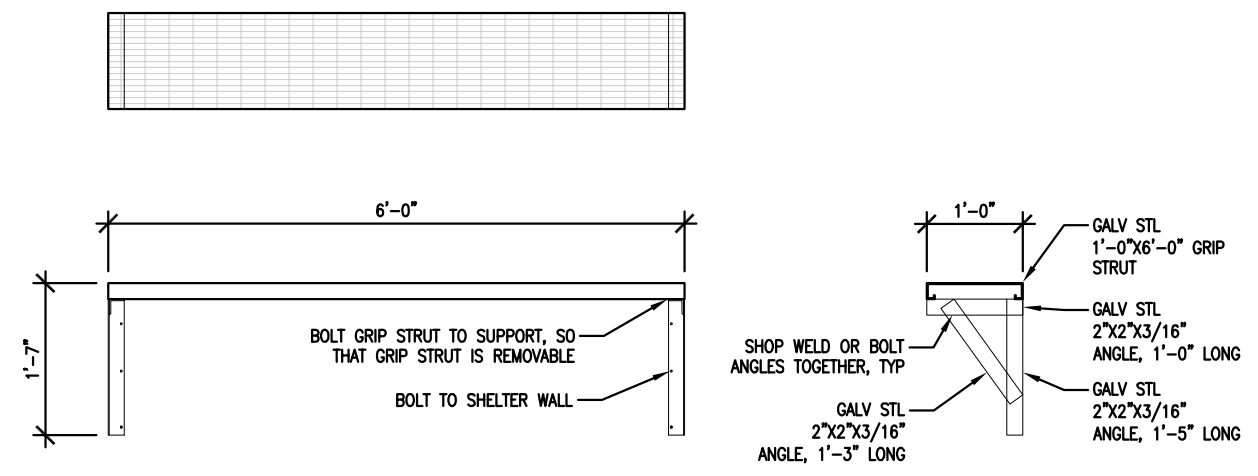
MINC
RUSH CREEK
CROWN CASTLE
BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
FOUNDATION PLAN & DETAILS
FLOOR PLAN
ELEVATIONS
MISC DETAILS

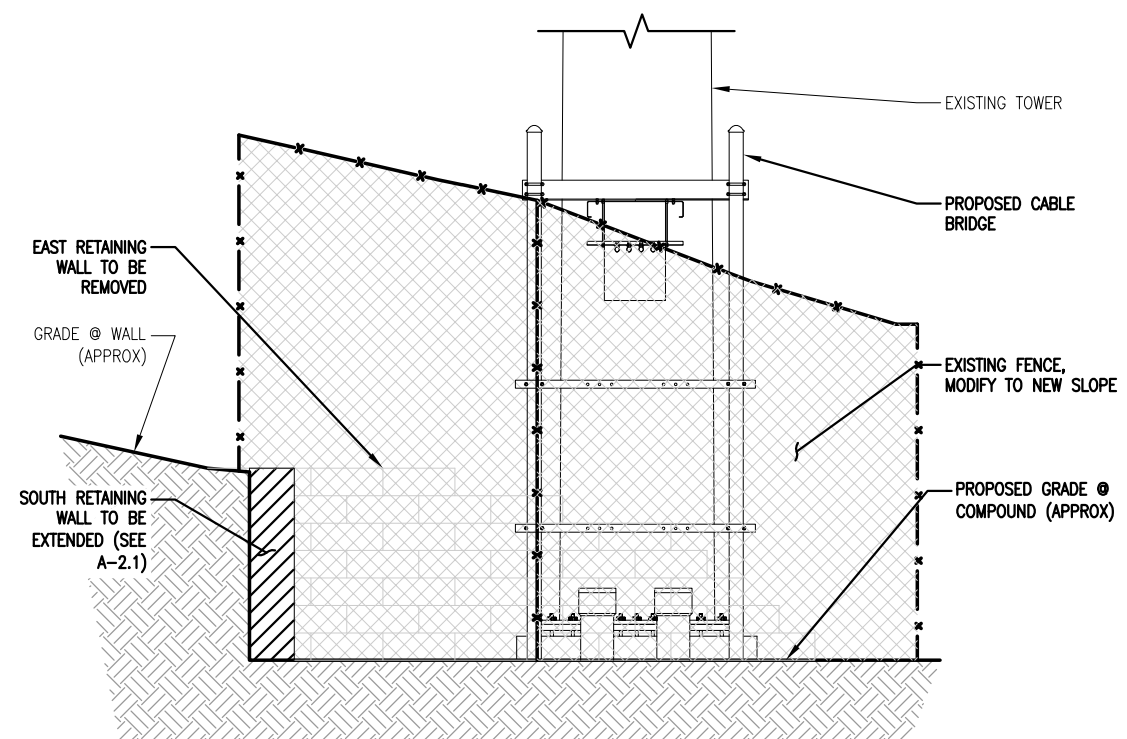
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DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. O	02-07-18
REV. 1	06-08-18



1 SITE PLAN
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE



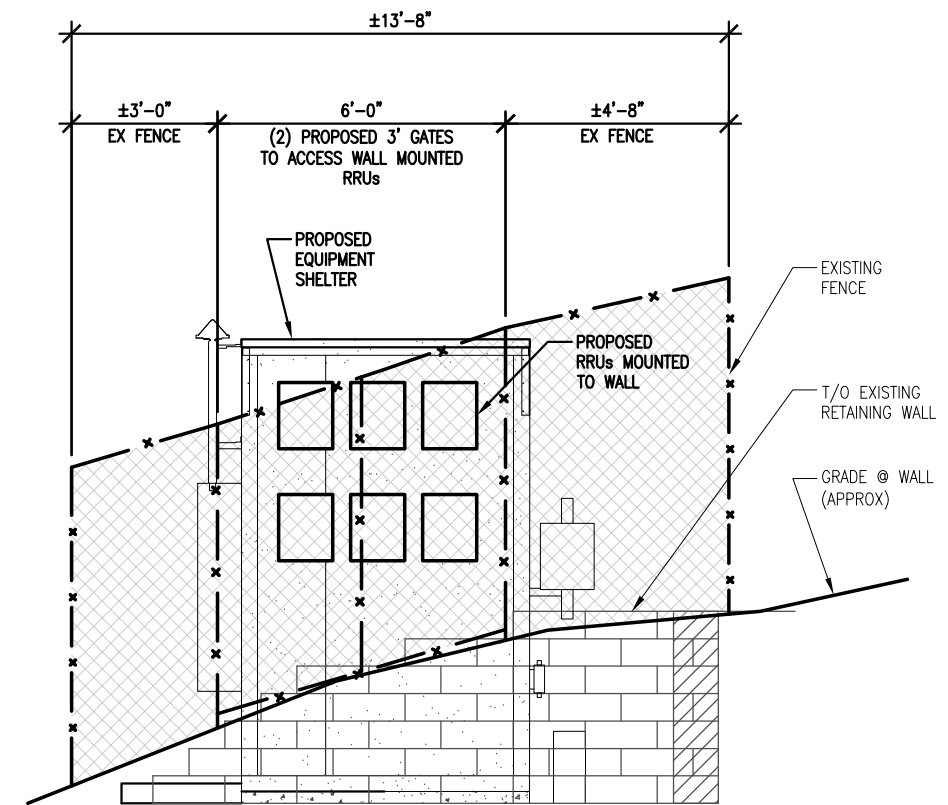
4 ICE SHIELD DETAIL
SCALE: 1/2" = 1'-0"
GRAPHIC SCALE



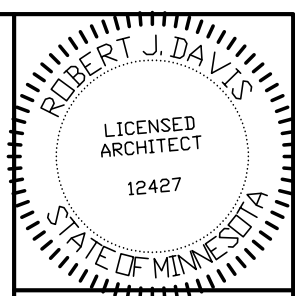
2 EAST FENCE ELEVATION
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE

NOTE:
PROPOSED GATE & EAST SIDE FENCE
MODIFICATIONS BY ORIGINAL FENCE
INSTALLER:

TOWN & COUNTRY FENCE
ADDRESS: 8511 XYLON AVENUE
BROOKLYN PARK, MN 55445
CONTACT: MARK WASSINK
PHONE: (763) 425-5050
EMAIL: INFO@TCFENCE.COM



3 WEST FENCE ELEVATION
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE



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Signed: *Robert J. Davis*
Date: 06-08-18



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PROJECT
20130877266
LOC. CODE: 265758

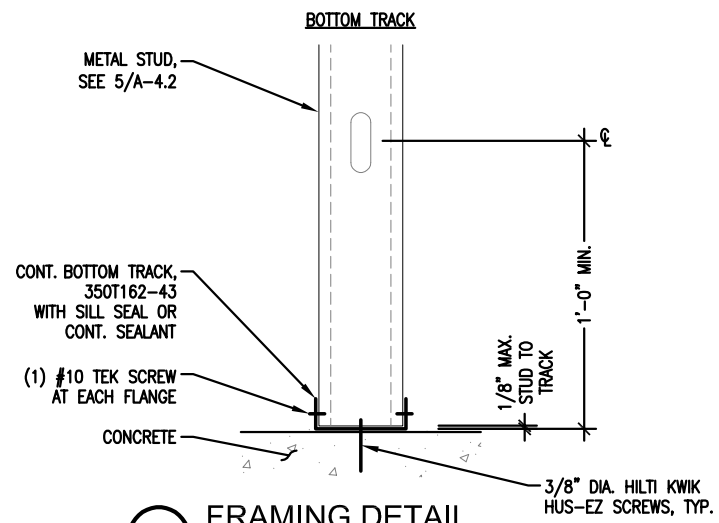
MINC
RUSH CREEK
CROWN CASTLE

BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

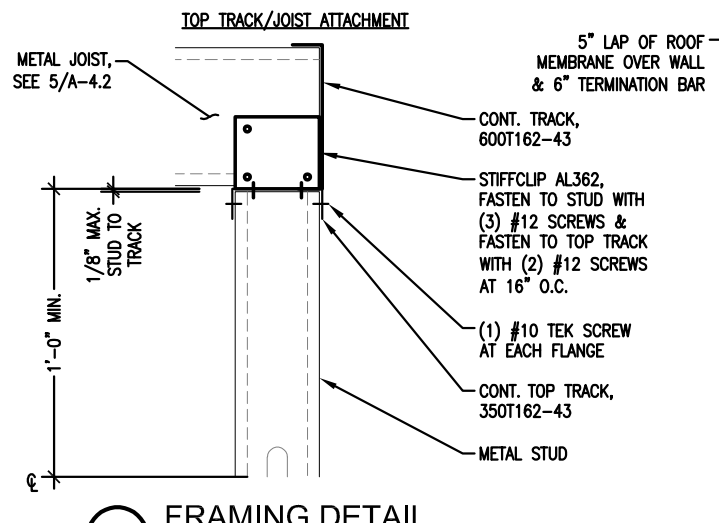
SHEET CONTENTS:
FENCE DETAILS
ICE SHIELD DETAIL

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. 0	02-07-18
REV. 1	06-08-18

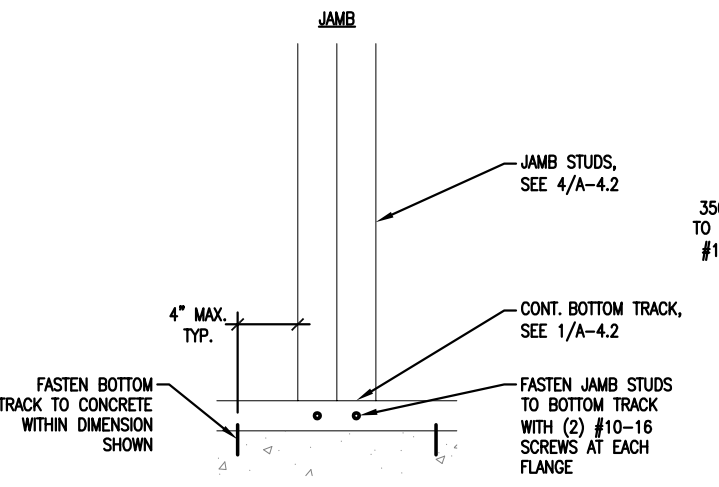
A-4.1



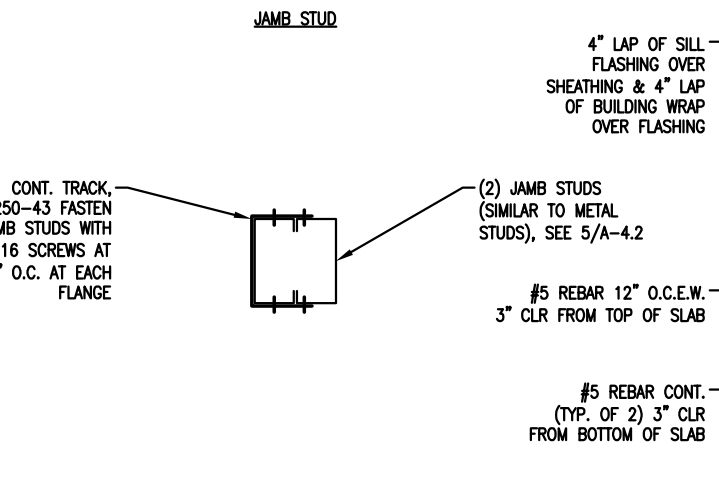
1 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



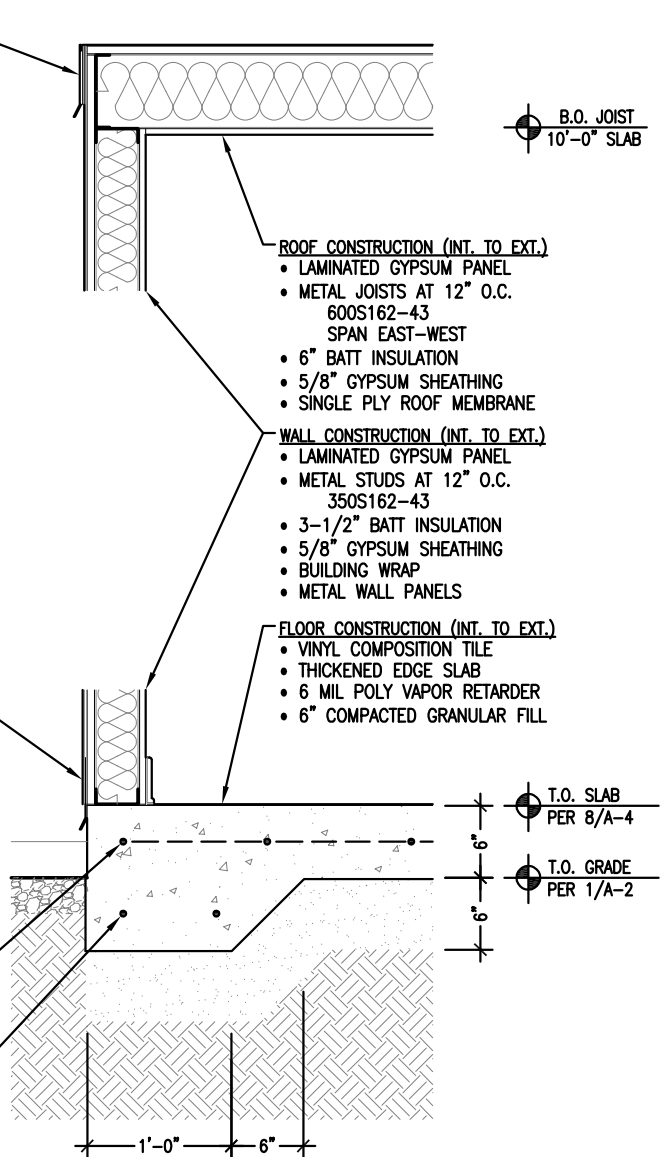
2 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



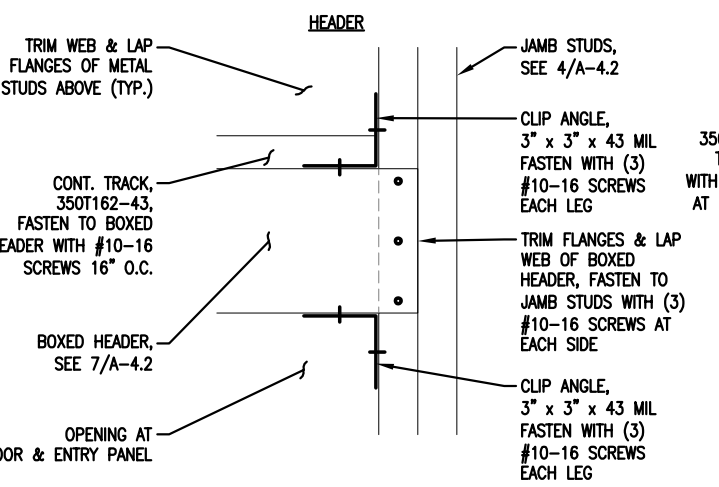
3 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



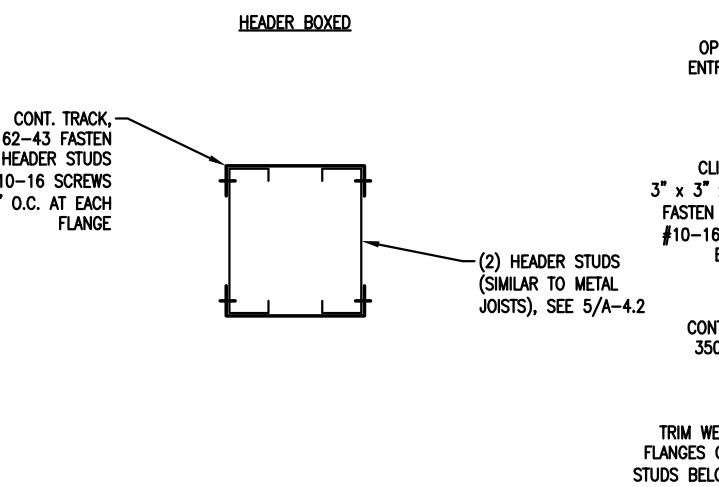
4 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



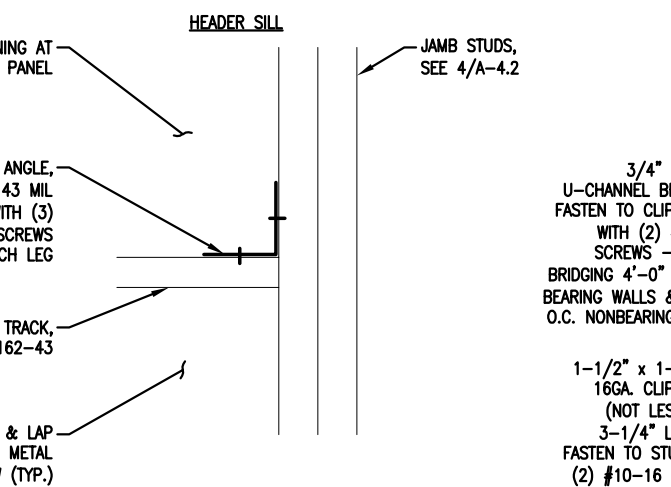
5 WALL SECTION
SCALE: 3/4" = 1'-0"



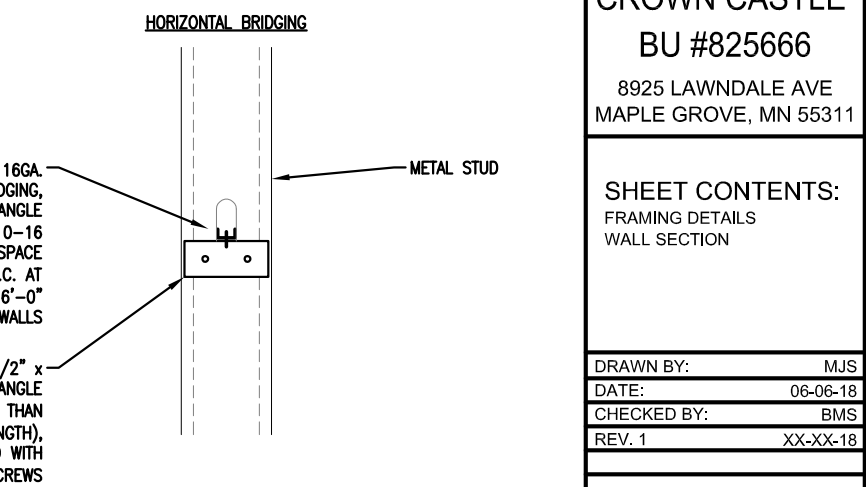
6 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



7 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"



8 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"

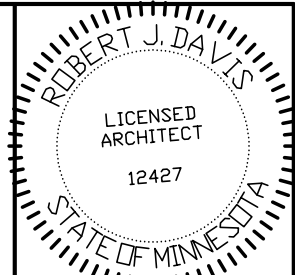


9 FRAMING DETAIL
SCALE: 1-1/2" = 1'-0"

NOTE:
CONTRACTOR TO FURNISH AND INSTALL METAL STUD BLOCKING AS NECESSARY FOR MOUNTING ALL INTERIOR AND EXTERIOR EQUIPMENT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

- ELECTRICAL
- GPS
- FIBER
- RADIO/DIST. BOX
- GROUNDING
- ICE SHIELD

COORDINATE MAKE/MODEL OF VZW SUPPLIED EXTERIOR EQUIPMENT WITH VZW CE AS WELL AS VZW SUPPLIED INTERIOR EQUIPMENT WHICH IS NOT ILLUSTRATED.



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

Signed: *Robert J. Davis*
Date: XX-XX-18



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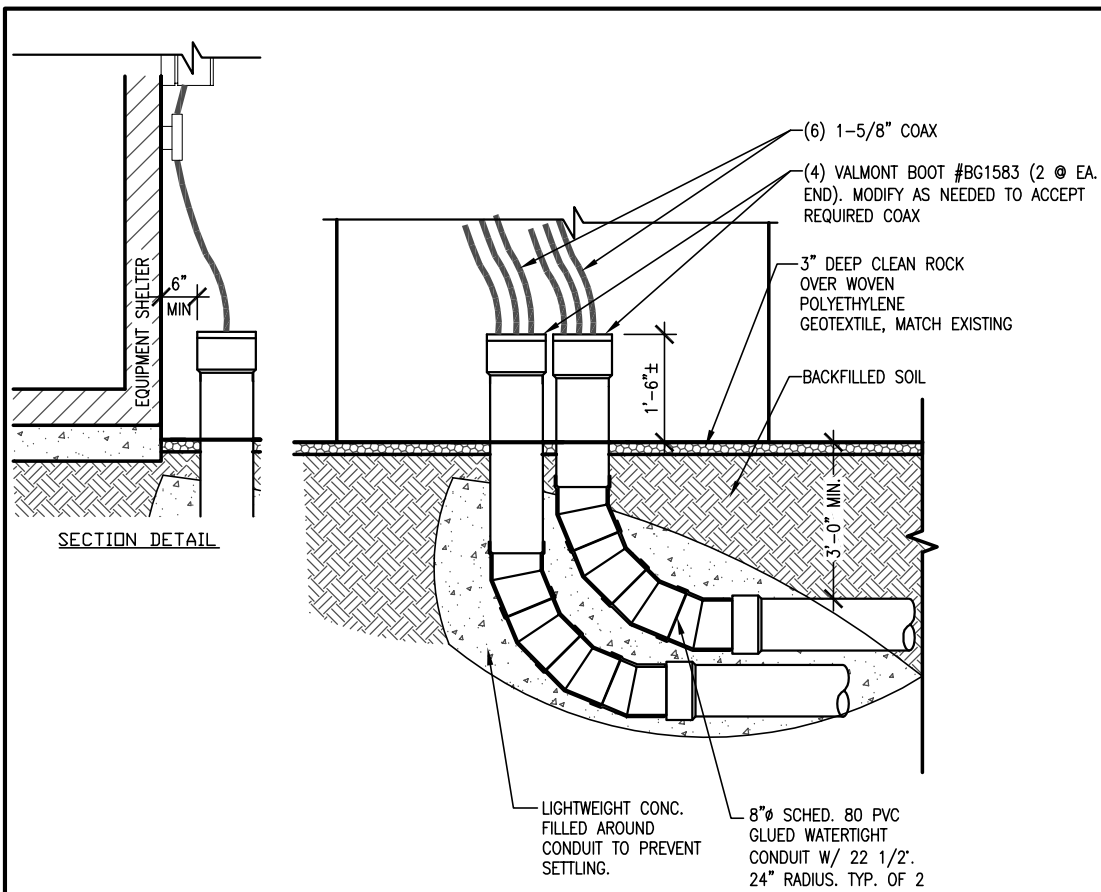
VERIZON WIRELESS
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

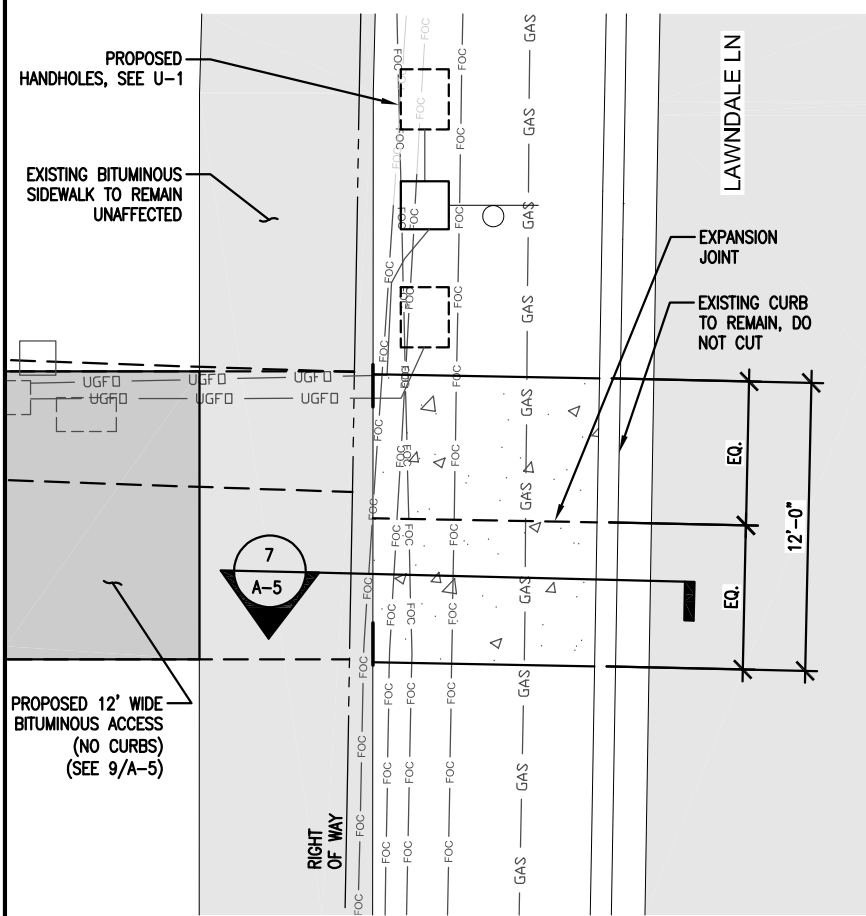
MINC
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CROWN CASTLE
BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
FRAMING DETAILS
WALL SECTION

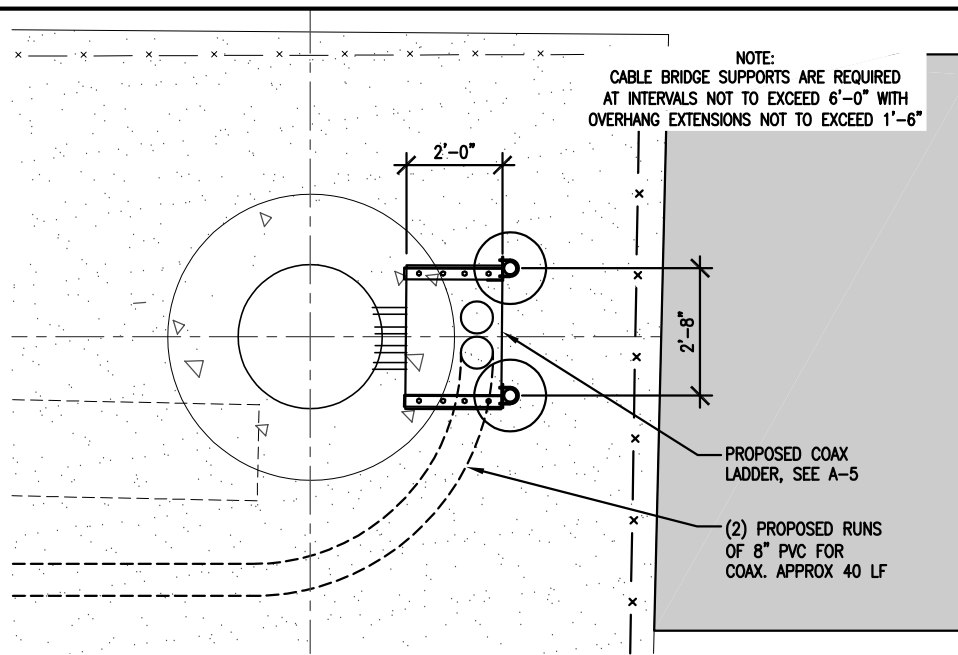
DRAWN BY: MJS
DATE: 06-06-18
CHECKED BY: BMS
REV. 1 XX-XX-18



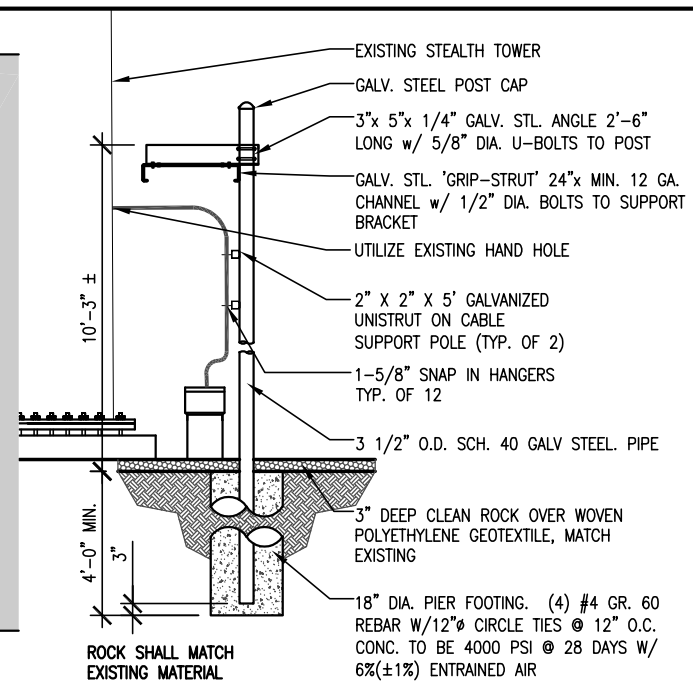
5 PVC CONDUIT DETAILS
SCALE: 3/8" = 1'-0"



6 CONCRETE APPROACH
SCALE: 1/8" = 1'-0"



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



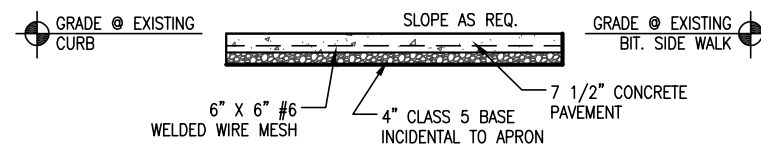
3 CABLE BRIDGE SECTION
SCALE: 1/4" = 1'-0"

2 NOT USED
SCALE: NA

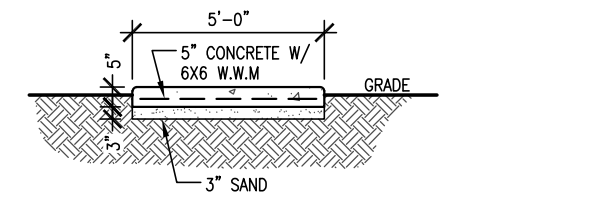
NOTE: FOR DRIVEWAY SECTION DETAIL SEE MAPLE GROVE STANDARD PLATE #STR-6 AT [HTTPS://WWW.MAPLEGROVMN.GOV/](https://www.maplegrovmn.gov/). SCAN OR CLICK BELOW.



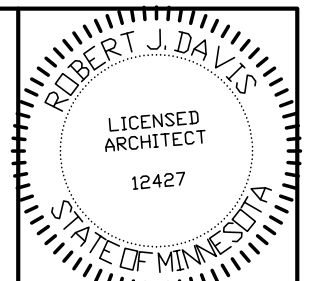
9 ACCESS PATH SECTION
SCALE: NA



7 APPROACH SECTION
SCALE: 3/16" = 1'-0"



8 CONC PATH DTL
SCALE: 1/4" = 1'-0"



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Signed: *Robert J. Davis*
06-08-18
Date:



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VERIZON WIRELESS

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(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

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BU #825666

8925 LAWDALE AVE
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SHEET CONTENTS:
CABLE BRIDGE PLAN
CABLE BRIDGE SECTION
PVC CONDUIT DETAIL
PHOTO
FENCE DETAIL
APPROACH DETAIL

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. 0	02-07-18
REV. 1	06-08-18

A-5

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 relined 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.

SITWORK

02 1000 SITE PREPARATION & DEMOLITION
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 area defined by timber edging shall be scraped to a depth of 3" minimum to remove vegetative matter. Excess material to be disposed off site in accordance with RFQ.

02 1100 ROAD IMPROVEMENT & CONSTRUCTION
Contractor shall furnish materials for, and install, a twelve foot (12') wide bituminous roadway from the road access to the work area, for truck and crane access to site.

02 5000 PAVING & SURFACING
New paving shall be according to plans. Asphalt paving shall be per 9/A-5. Concrete paving shall be 5" thick, reinforced with 6"x6" welded wire mesh or #3 steel bars 18" o.c.e.w., over a 3" sand cushion.

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.

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 Carlon expansion joint connections at shelter/platform location per manufacturer's specifications and recommendations.

02 8000 SITE IMPROVEMENTS
Areas bounded by fence and adjacent to shelter shall receive polyethylene geotextile, 200 mesh woven, topped with 3" deep 3/4" to 1 1/2" clean rock (no fines), raked smooth, to match existing.

02 8001 FENCING
Fence shall match existing fence. All fence materials and fittings shall be galvanized steel. Fence shall be 7'-0" high x 9 ga. X 2" chain link fabric. Corner and Gate posts shall be 2 7/8" O.D. sch 40 steel pipe, driven 60" 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. Bracing shall be 3/8" truss rods and 1 5/8" O.D. pipe mid-rails at corners. 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. Proposed gate & east side fence modification shall be by original fence installer: Town & Country Fence: 8511 Xylon Ave, Brooklyn Park, MN 55445. Contact: Mark Wassink. Phone: (763)425-5050. Email: info@tcfence.com

02 8500 IRRIGATION SYSTEMS
Contractor shall provide temporary irrigation of new trees, shrubs, and grass, to be maintained so it survives 1 year after planting.

02 9000 LANDSCAPING
Contractor to restore turf areas damaged by construction by preparing soil, seeding with mulch or hydro-seed & watering to maintain grass survival for 1 year. Contractor shall protect existing landscape elements that are not in the Scope of Work. Reasonable precautions shall be taken to assure the health of existing trees and shrubbery. If conflicts arise regarding the location of root systems, branch lines, etc., the Architect must be contacted prior to performing Work that may cause damage. Damage resulting from disregard of this Article shall be compensated by the Responsible Party and at a cost to be determined by the Property Owner, Architect, and Owner. Contractor shall furnish and install new trees, shrubs, and sod. Watering shall be as described in 02 8500.

CONCRETE

03 1000 CONCRETE FORMWORK
Concrete forms shall be dimension lumber, modular, or steel.

03 9000 SHELTER FOUNDATION
Contractor shall furnish & install materials for Shelter 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.

METALS

05 0000 METALS
Contractor will furnish and install structural and fabricated steel items not specifically furnished by Owner, and install Owner-furnished items. Structural steel shall be fabricated and erected per AISC specifications. Welding shall conform to AWS standards. Field welding shall be as shown on Shop Drawings, performed by AWS Certified Welders, and inspected as prescribed by the Structural Engineer. Steel shall be ASTM A992 OR A36, and 3/4" field bolts shall be A325. Temporary erecting bolts, clip hangers, and bracing shall be furnished by Contractor. Fabrications shall be shop welded if possible, and galvanized before delivery to site. Structural steel, and miscellaneous iron and steel, shall be hot dipped galvanized per ASTM A123 thickness grade 55. Fabricated iron and steel hardware shall be hot dipped galvanized per ASTM A153. Repair of damaged or uncoated galvanized surfaces shall be per ASTM A780.

05 2000 METAL WALL PANELS
Contractor shall furnish and install metal panels as indicated on the Architectural Documents. Shelter Assembly metal panels shall be stucco embossed steel with vertical lap joints. Color shall be Berridge Manufacturing Company "Almond" or equal.

05 4000 COLD-FORMED METAL FRAMING
Contractor shall furnish and install cold-formed metal framing as described on the Architectural Documents. Stud and joist properties must conform to the latest SSMA and AISI specifications. Studs and joists shall have a G-60 galvanized finish conforming to ASTM C955-06. Steel used in the fabrication of Studs and joists must meet the requirements of ASTM C-653 and fabrication must be in accordance with ASTM C-955. Joists, headers and sill plates shall be constructed of unpunched material and installed continuous without splices. Framing (43MIL-18GA) must have a yield strength of at least 33 KSI. Track members must have a yield strength of at least 33 KSI.

WOOD & PLASTICS

06 1600 SHEATHING
Contractor shall furnish and install Fiberglass-Mat Faced Gypsum Sheathing as indicated on the Architectural Documents. Sheathing shall be Type "X" and moisture/mold-resistant such as DensGlass Fireguard Sheathing by Georgia-Pacific Gypsum LLC or equal. Installation per Manufacturer's recommendation and warranty requirements. Fasten Gypsum Sheathing to studs/joists at 8" o.c. (on edges) & 12" o.c. (on field).

THERMAL & MOISTURE

07 2000 INSULATION
Contractor shall furnish and install fiberglass batt insulation as indicated on the Architectural Documents. Installation of insulation shall be per Manufacturer's recommendations.

07 2500 BUILDING WRAP (WEATHER BARRIERS)
Contractor shall furnish and install an air & moisture control building wrap as indicated on the Architectural Documents. Building wrap shall be a complete weather barrier system consisting of membrane, seam tape, flashing and fasteners such as DuPont Tyvek CommercialWrap or equal.

07 5000 MEMBRANE ROOFING
Contractor to furnish and install a roof membrane as indicated on the Architectural Documents. Roof membrane shall be a single ply, 60 mil, EPDM and a complete assembly consisting of membrane, mechanical attachment method and 25 year warranty, at a minimum, such as Firestone RubberGard or equal.

Contractor shall protect existing building roof membrane against damage during antenna installation and any damage that may occur shall be repaired or replaced by the contractor.

07 6000 FLASHING AND SHEET METAL
Contractor shall provide materials and labor for details per Architectural Documents. Flashing color shall match the Metal Wall Panels, see specification 05 2000.

07 7920 JOINT SEALERS
Contractor shall furnish & install vertical expansion joints in the brick veneer assembly as indicated on the Architectural Documents consisting of an opening through the brick wythe closed with backer rod and sealant to match adjacent mortar joints. Expansion joint sealants shall comply with ASTM C 920, Grade NS, Use M. Consult manufacturer's literature for guidance regarding application.

DOORS AND HARDWARE

08 0000 DOORS AND HARDWARE
Contractor shall furnish and install the Factory-Primed Hollow Metal Door Assembly. Assembly shall be 2'-6" x 7'-0" fully welded and insulated hollow metal door (16 ga.) and frame (14 ga.), Ceco or equal. Hardware shall be commercial grade and include high security exterior piano hinge, closer, pulls, thermally-broken threshold, weatherstrip and door bottom drip cap shall be commercial grade furnished and installed by Contractor. Lock shall be full mortise type with Best 83t-B deadbolt. See also Electrical Drawings for coordination of electrical door locks, alarm and through-door HVAC unit.

FINISHES

09 2600 LAMINATED GYPSUM PANEL
Contractor shall furnish and install laminated gypsum panel on interior walls/ceiling as indicated on the Architectural Documents. Product shall be FRP (0.30") laminated fire-rated gypsum panels (0.50"), NUDO F3PB500-FR-MR or equal, color: white. Trim with compatible material.

09 5700 FLOOR COVERING
Vinyl composition tile shall be 1/8" ga. (Armstrong #51830 Cottage Tan, or equal) furnished and installed by Contractor. Base shall be 4" high vinyl, with toe, dark brown color.

09 9000 PAINTING
Contractor shall provide materials/labor for painting per Architectural Documents and touchup painting of construction related scrapes & scratches.

Door/Frame Assembly - Prepare and paint with Sherwin Williams Exterior Grade Alkyd Enamel according to manufacturer's recommendation. Finish Coat color shall match metal wall panels, see specification 05 2000.

SPECIAL CONSTRUCTION

13 1250 WAVE GUIDE, (Coaxial Cables)
LDF4-50A= 1/2" nominal, 0.63" actual dia.; 5" min. bending radius; 0.15 lbs/ft
AVA5-50= 7/8" nominal, 1.102" actual dia.; 10" min. bending radius; 0.30 lbs/ft
AVA7-50= 1-5/8" nominal, 1.98" actual dia.; 15" min. bending radius; 0.72 lbs/ft

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, SET & ERECT SHELTER
Specification removed.

13 3613 TRANSPORT AND INSTALL ANTENNAS
Contractor shall schedule delivery of Owner-furnished Materials, and provide means for unloading and erecting. Contractor shall provide crane(s) and/or truck for setting shelter & platform per RFQ. Contractor to furnish and install antennas.

MECHANICAL

15 5000 HVAC
Contractor shall furnish and install one through-door HVAC unit as per Electrical Drawings.

ELECTRICAL

16 5000 LIGHTING AND ELECTRICAL
Contractor shall perform work as described on the Electrical Plans. Contractor shall provide labor and materials as necessary to complete the work shown on plans. If service is sub-metered from an existing service, sub-meter shall be 10x or 16x type.

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

INTEGRATED LOAD CENTER
CAM-LOC
HYBRID CABLES
ANTENNAS AND DOWNTILT BRACKETS
GPS
BUILDING PERMIT FEE
MATERIALS TESTING FEES
SPECIAL INSPECTIONS FEES

CONTRACTOR-FURNISHED EQUIPMENT

POWER TO SITE
TELCO TO SITE
CONNECTORS, BOOTS, RELATED HARDWARE
GPS MOUNTING
GROUNDING MATERIALS
PVC MATERIALS
FENCE MATERIALS
RETAINING WALL
TREE

SHELTER MATERIALS & HVAC

SCOPE OF WORK:

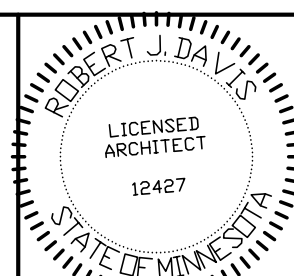
CONTRACTOR SHALL PROVIDE MATERIALS, LABOR, TOOLS, TRANSPORTATION, SUPERVISION, ETC. TO FULLY EXECUTE WORK. WORK REQUIREMENTS ARE DETAILED ON THE DRAWINGS AND SPECIFICATIONS AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

ELECTRICAL/TELEPHONE SERVICE
ROUTING OF GROUND, POWER, FIBER AND ALARM

SHELTER CONSTRUCTION

INSTALL ANTENNAS & CABLES
INSTALL GATE & MODIFY FENCE
REMOVE & INSTALL RETAINING WALL/TREE
REMOVE & INSTALL TREE
SITE PREPARATION/WORK/GROUNDING
BITUMINOUS ACCESS ROAD
CONCRETE APPROACH APRON/SIDEWALK
PVC INSTALLATION

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.



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

Signed: *Robert J. Davis*
06-08-18
Date:



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PROJECT
20130877266
LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
OUTLINE SPECIFICATIONS

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. 0	02-07-18
REV. 1	06-08-18

A-6

GENERAL GROUNDING NOTES:

An external buried ground ring (Lead 1) shall be established around the equipment shelter 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 shelter, 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 1/G1.

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 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 shelters 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 inside on the equipment shelter 'back' wall.
- * The Entry Cable Port Ground Bars (ECPGB), mounted inside and outside on the equipment shelter walls beneath the transmission line port. Note: Transmission line grounds also attach to the ECPGBs.
- * The Transmission Line Ground Bar (TGB) mounted at the base of the tower to which the transmission line grounds are attached. 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 and Other General Requirements:

- * 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 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

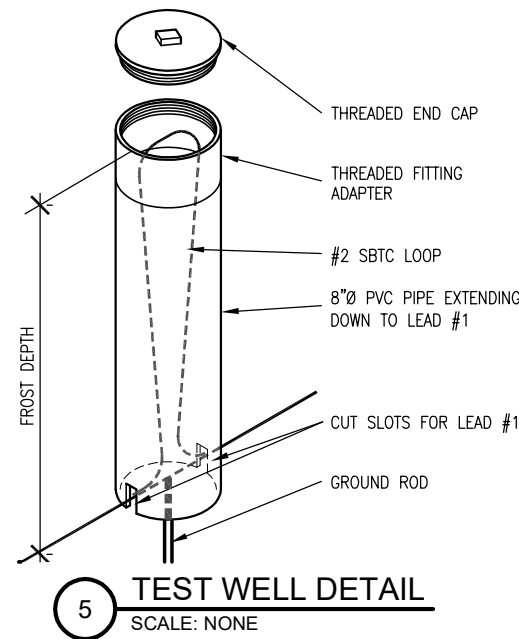
Test lead #1 and ground rods after installation but before backfilling or connecting to any other grounding, using the 3-point fall of potential method. Contractor to notify Verizon Wireless senior construction engineer at least 48 hours prior to testing. Document installation and test results with photographs.

SYMBOL AND NOTE LEGEND

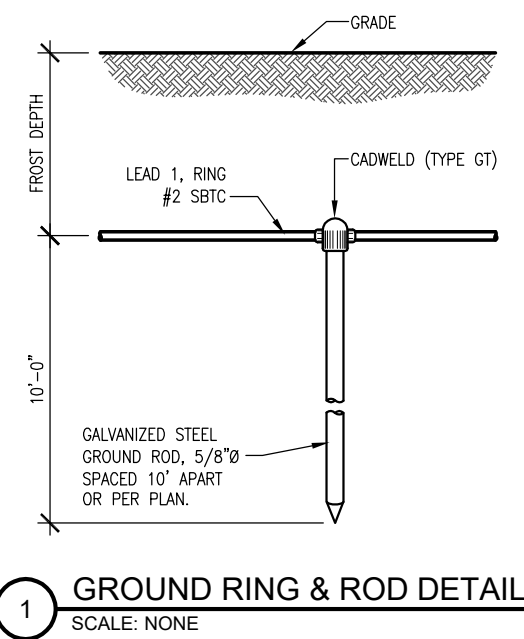
- ① #2 SBTC AROUND SHELTER, TOWER, OR GUY ANCHOR
- 5/8" X 10'-0" GALVANIZED STEEL GROUND ROD
- ⊙ TEST WELL PREFERRED LOCATION
- #2 SBTC 'WHIP' LEAD
- ⑤ (2) #2 SBTC FROM MGB, PGB, OR TGB TO LEAD 1
- ⑥ AC HVAC UNIT
- ②1B BC BUILDING CORNER
- ⑥ BO BOLLARD
- ⑥ CBS CABLE BRIDGE SUPPORT POST
- ④ EL ELECTRICAL 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:

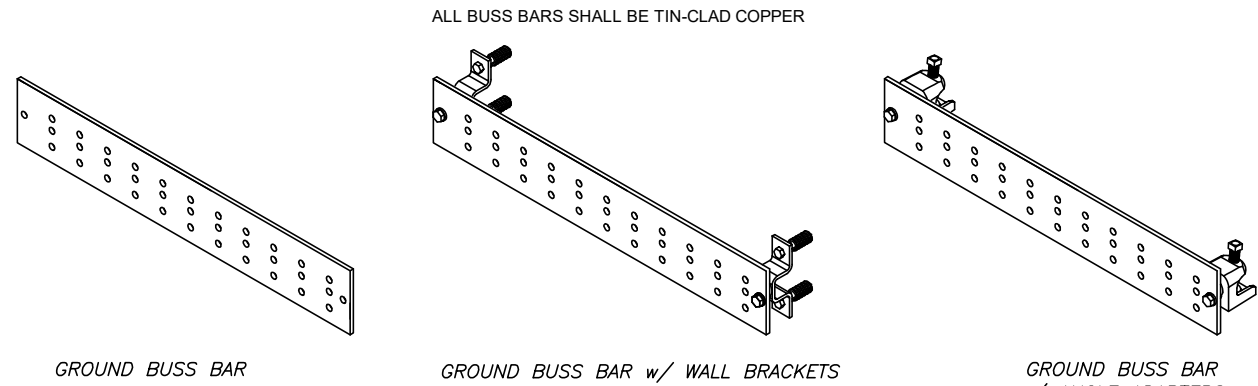
Contractor to provide #2 solid bare tin-clad (SBTC) copper wire lead from #1 ground ring to air conditioner & ice shield if provided by VZW.



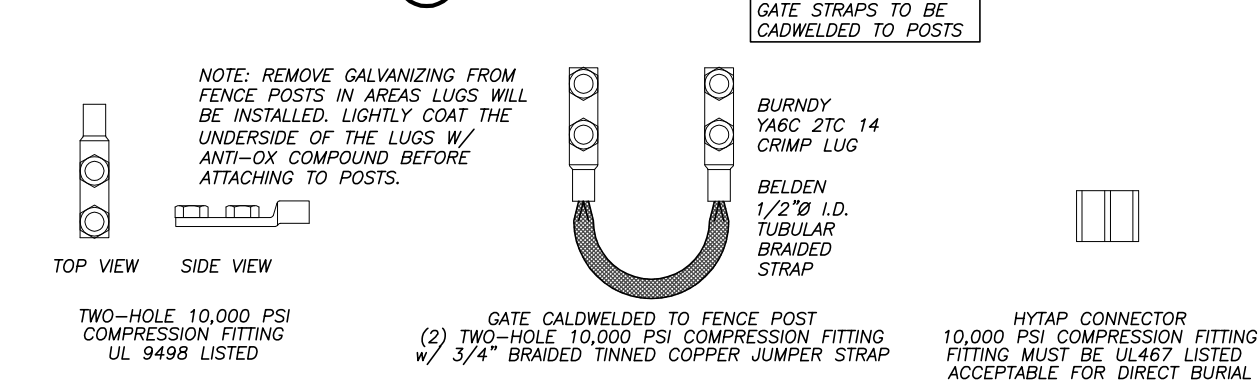
5 TEST WELL DETAIL
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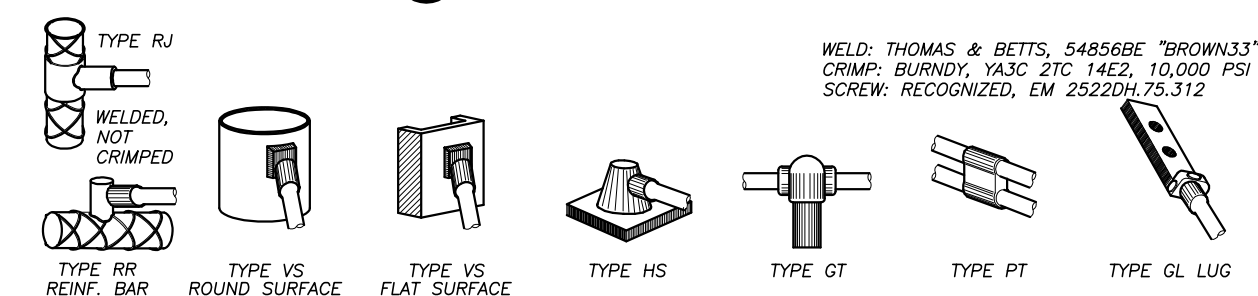
1 GROUND RING & ROD DETAIL
SCALE: NONE



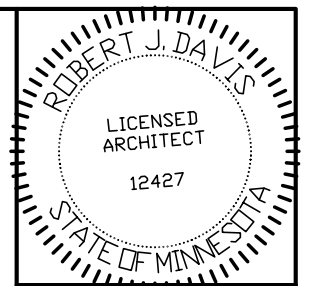
2 GROUND BUSS BAR DETAILS
SCALE: NONE



3 COMPRESSION CONNECTOR DETAILS
SCALE: NONE



4 EXOTHERMIC WELD DETAILS
SCALE: NONE



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

Signed: *Robert J. Davis*
Date: 02-07-18

DESIGN 1
9973 VALLEY VIEW RD.
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VERIZON WIRELESS
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

MINC RUSH CREEK CROWN CASTLE BU #825666
8925 LAWNSDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
GENERAL NOTES
GROUND RING & ROD DETAIL
BUSS BAR DETAILS
CONNECTOR DETAILS
EXOTHERMIC WELD DETAILS
TEST WELL DETAIL

DRAWN BY:	TRD
DATE:	08-02-13
CHECKED BY:	CDB
REV. F	08-19-16
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. O	02-07-18

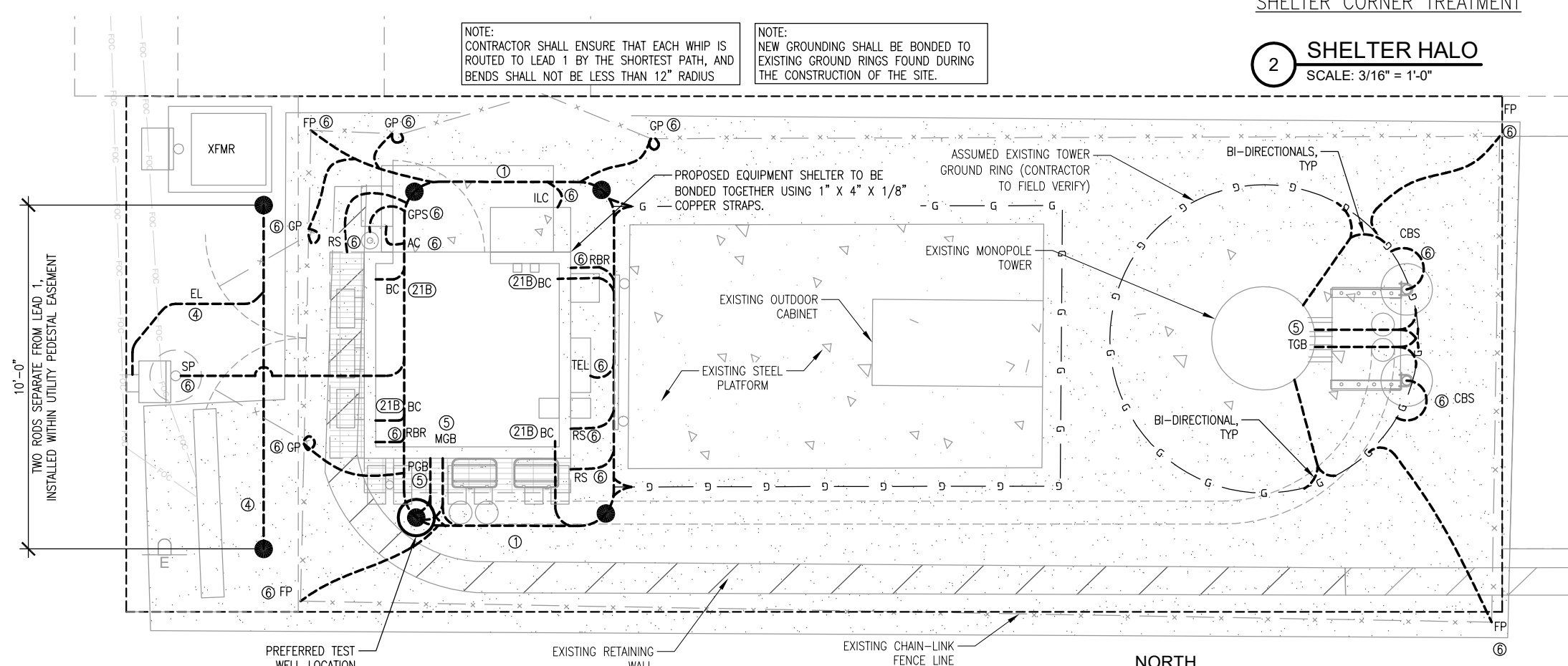
LEAD IDENTIFICATION & DESCRIPTION:

- 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-0 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 BTY CHG FRM NSTD33-11
- 30 BRANCH AC PNL TO OUTLETS NSTD33-11
- 31 MGB/FGB TO PWR, BTY 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 BTY 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 BTY 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 XMTR #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

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

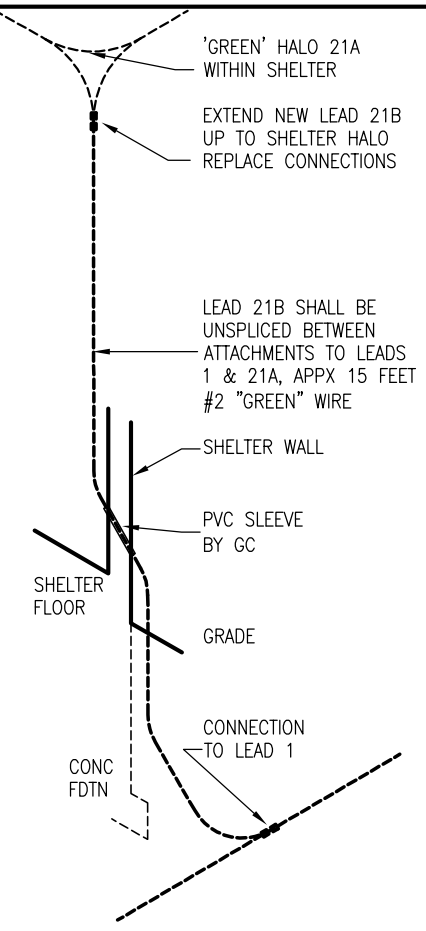
NOTE: NEW GROUNDING SHALL BE BONDED TO EXISTING GROUND RINGS FOUND DURING THE CONSTRUCTION OF THE SITE.



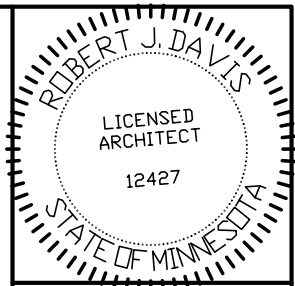
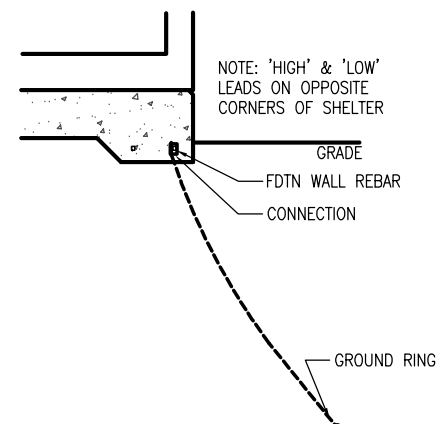
1 GROUNDING PLAN
SCALE: NONE



2 SHELTER HALO
SCALE: 3/16" = 1'-0"



3 REBAR GROUNDING
SCALE: 3/8" = 1'-0"



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

Signed: *Robert J. Davis*
Date: 02-07-18



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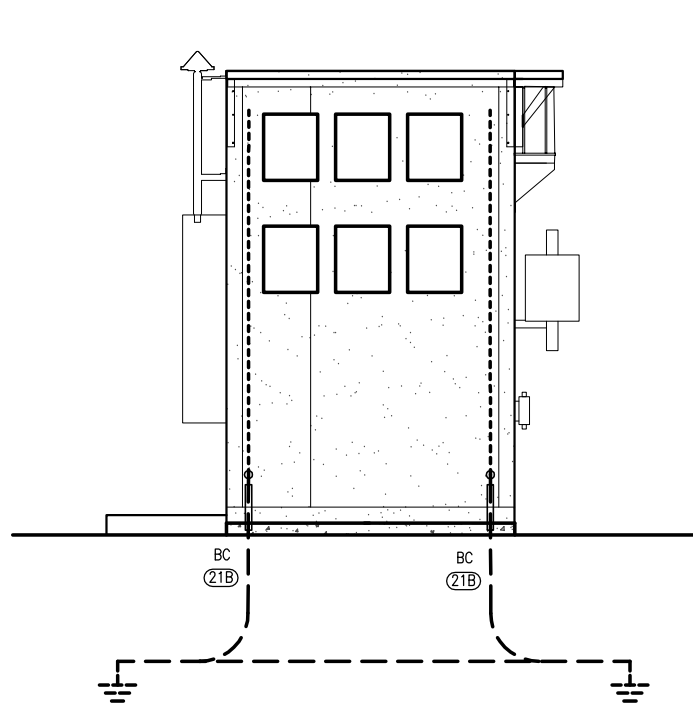
VERIZON WIRELESS
10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

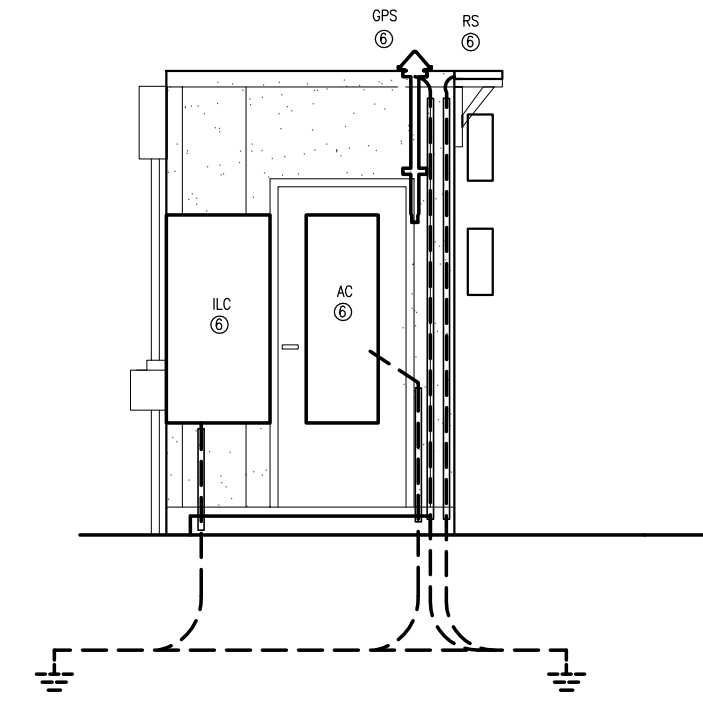
MINC RUSH CREEK CROWN CASTLE BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
GROUNDING PLAN
LEAD IDENTIFICATION
SHELTER CORNER DETAIL
FOUNDATION LEADS

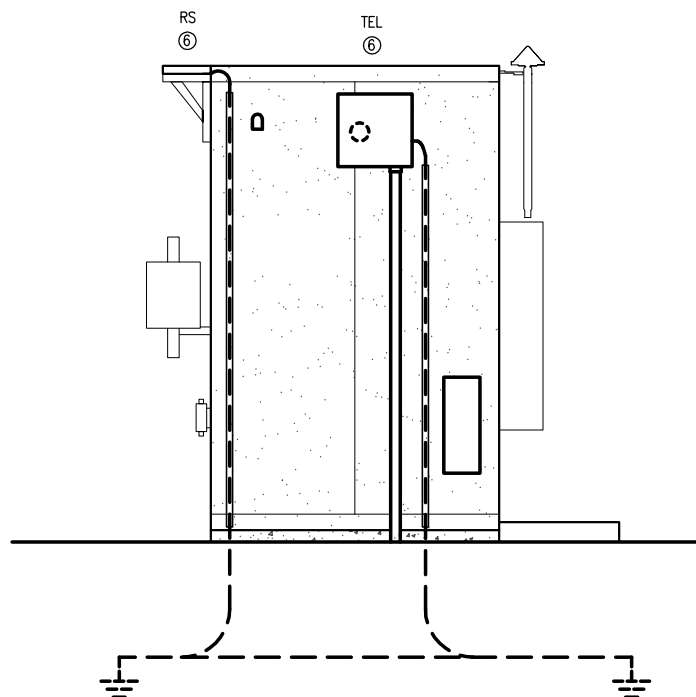
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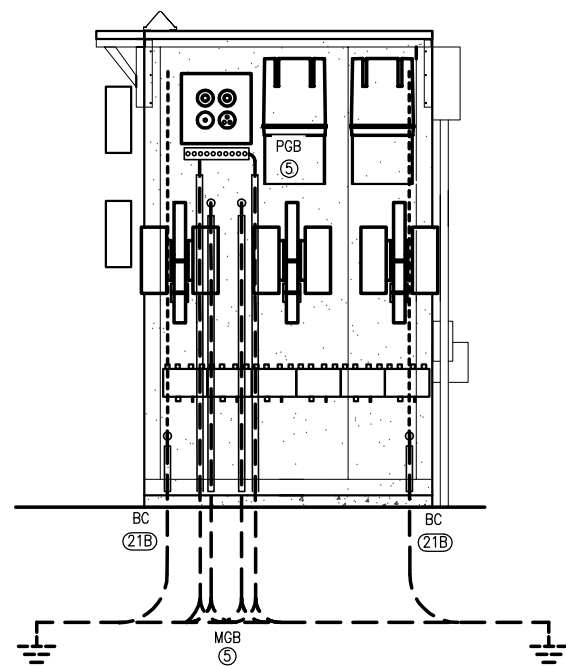
2 RIGHT ELEVATION
SCALE: 1/4" = 1'-0"



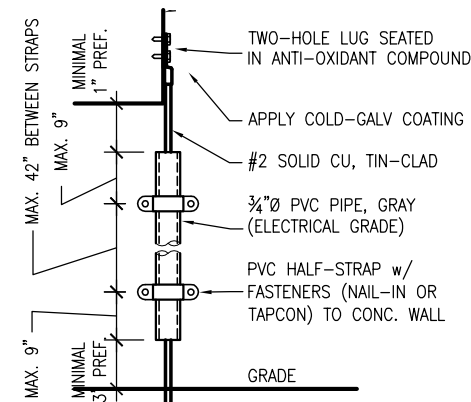
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GRAPHIC SCALE



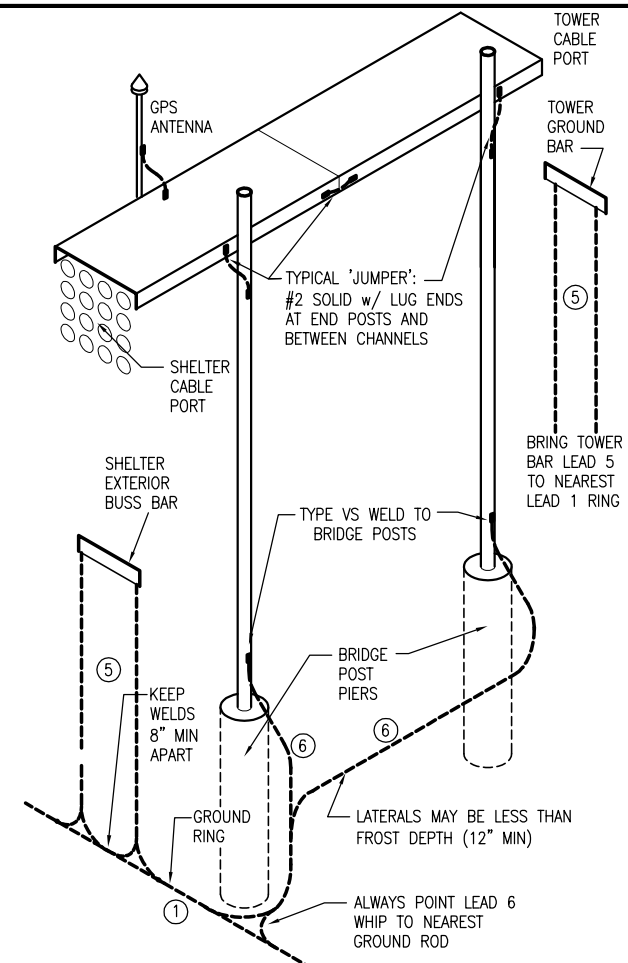
4 LEFT ELEVATION
SCALE: 1/4" = 1'-0"



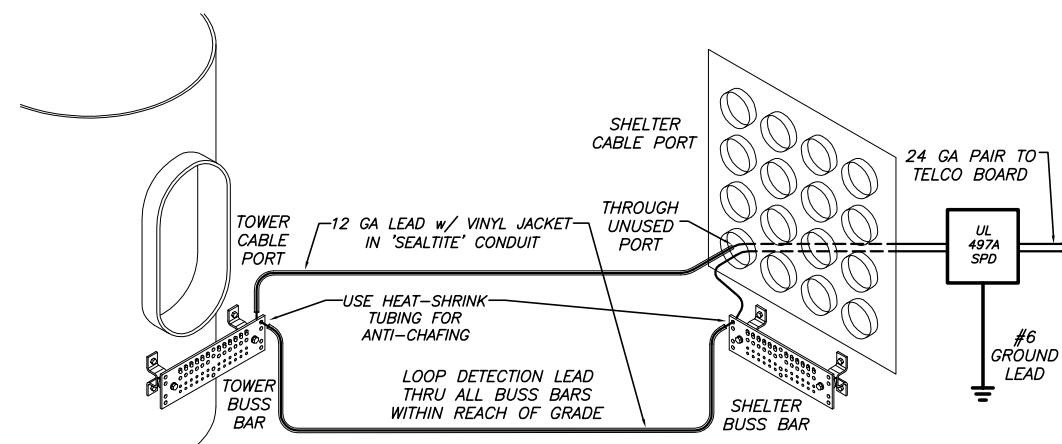
3 REAR ELEVATION
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE



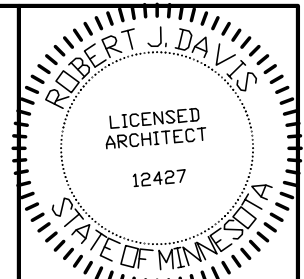
6 CONDUIT DETAIL
SCALE: NONE



7 TYPICAL CABLE BRIDGE
SCALE: NONE



5 ANTI-THEFT MEASURE
SCALE: NONE



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

Signed: *Robert J. Davis*
Date: 02-07-18



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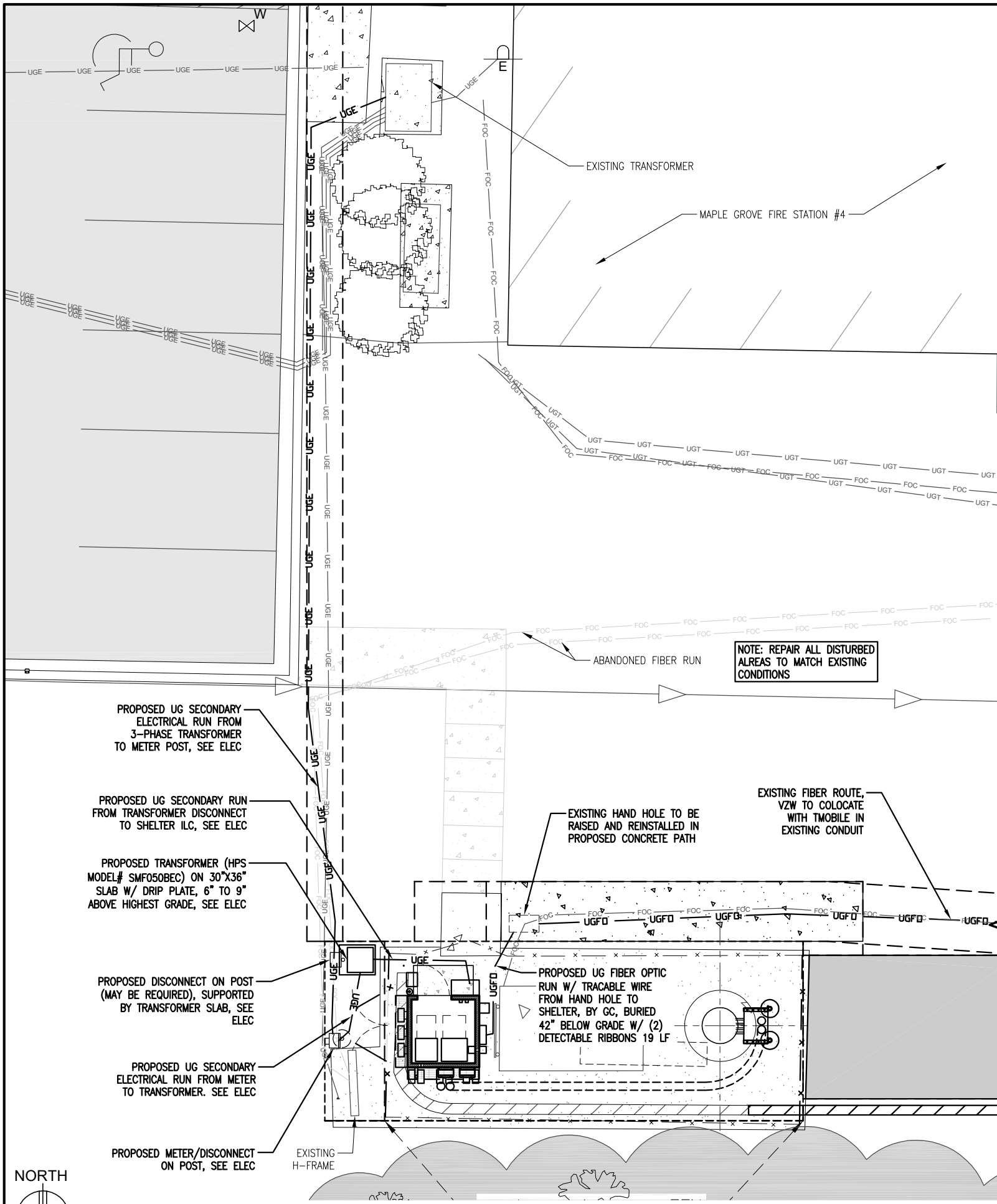
PROJECT
20130877266
LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666

8925 LAWNDALE AVE
MAPLE GROVE, MN 55311

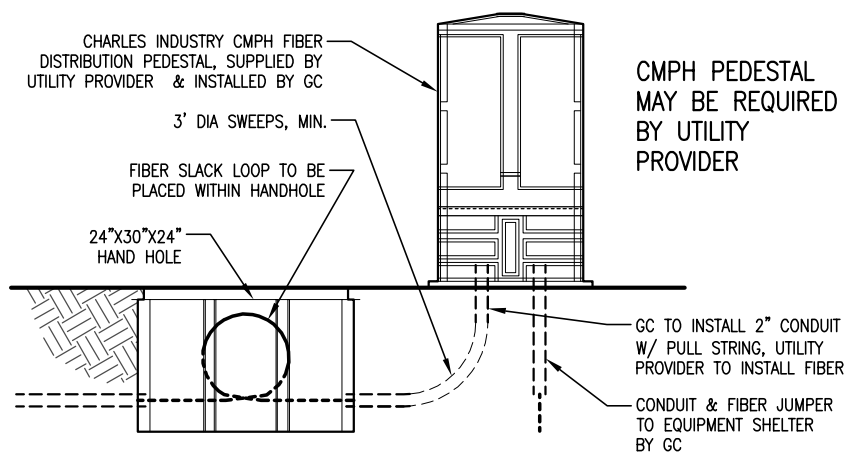
SHEET CONTENTS:
EXTERIOR ELEVATIONS
CONDUIT, STOOP, ANTI-THEFT, BRIDGE, TOWER
BASE DETAILS

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DATE:	08-02-13
CHECKED BY:	CDB
REV. F	08-19-16
REV. G	03-14-17
REV. H	05-01-17
REV. J	08-02-17
REV. K	10-18-17
REV. 0	02-07-18

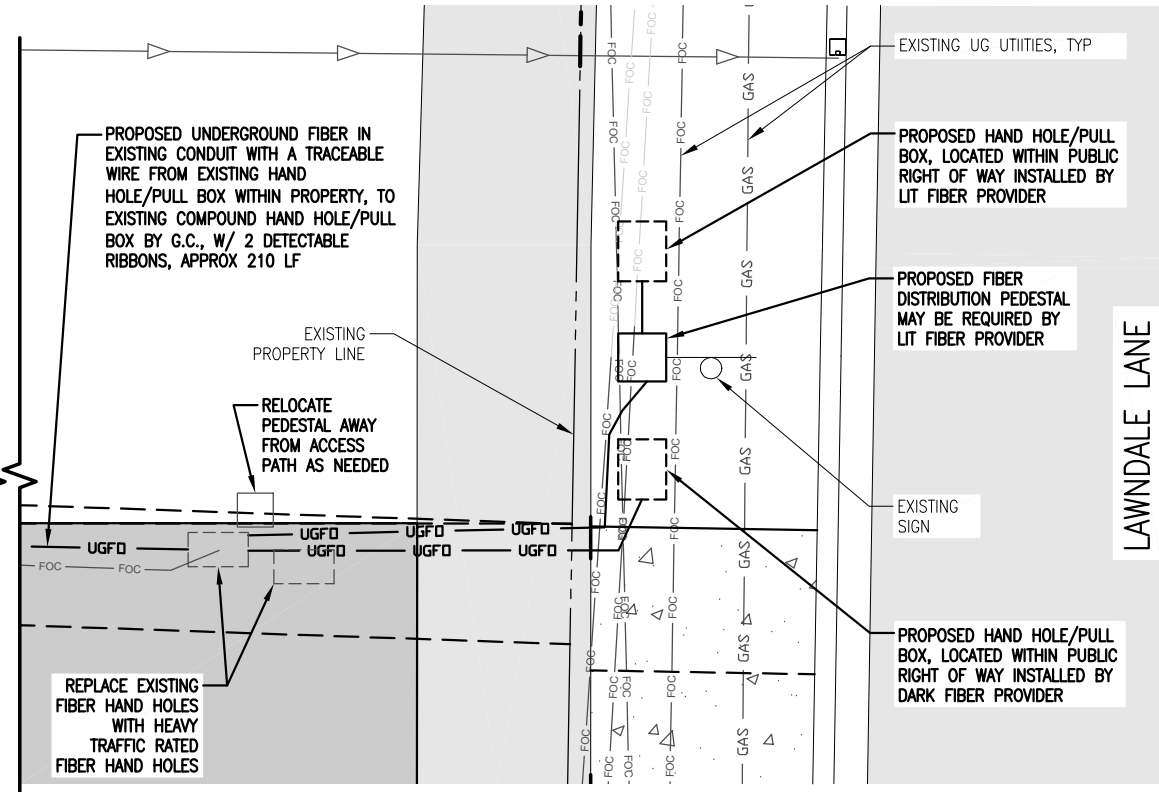


1 SITE UTILITY PLAN
SCALE: 1" = 10'-0"

- NOTE:**
- CONTRACTOR TO COORDINATE PUBLIC AND PRIVATE UTILITY LOCATES PRIOR TO CONSTRUCTION START. NOTIFY THE ARCHITECT AND THE VZW CONSTRUCTION ENGINEER IMMEDIATELY OF ANY UTILITY LINE ISSUES.
 - EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND NOT ALL UTILITIES ARE SHOWN. CONTRACTOR IS RESPONSIBLE TO NOT DAMAGE UNDERGROUND UTILITIES AND MUST CONDUCT BOTH PUBLIC AND PRIVATE UTILITY LOCATES BEFORE EXCAVATING.
 - CONTRACTOR SHALL RESTORE ALL AREAS, INCLUDING LANDSCAPE, DISTURBED BY CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS.

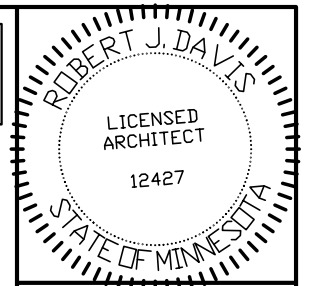


3 CHARLES PEDESTAL DETAIL
SCALE: 3/8" = 1'-0"



2 FIBER HAND HOLE DETAIL
SCALE: 1/8" = 1'-0"

POWER TYPE:
208/240V, SINGLE
PHASE, 200 AMPS



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

Signed: *Robert J. Davis*
Date: 02-07-18

DESIGN 1

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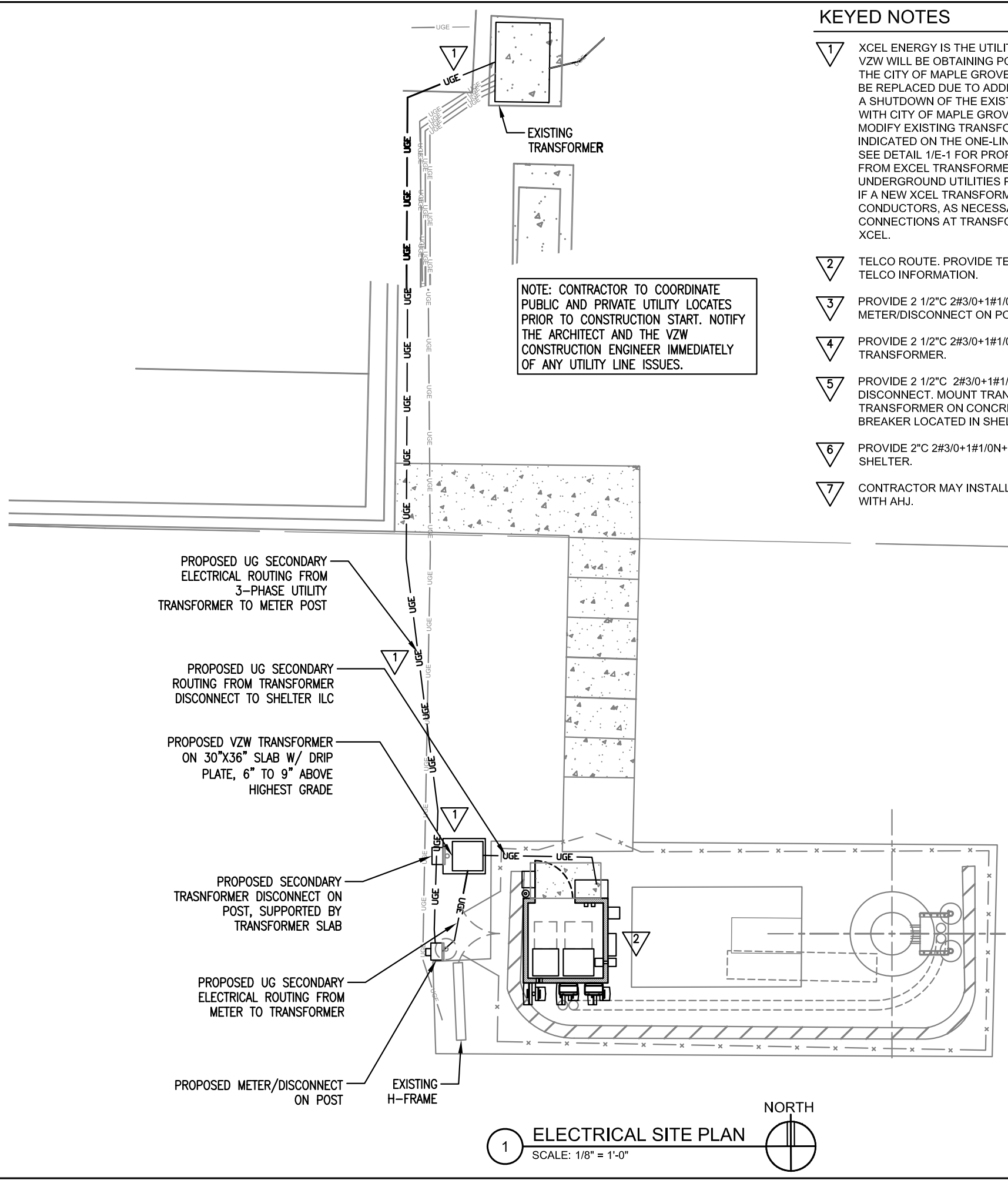
PROJECT
20130877266
LOC. CODE: 265758

MINC RUSH CREEK CROWN CASTLE BU #825666
8925 LAWDALE AVE
MAPLE GROVE, MN 55311

SHEET CONTENTS:
SITE UTILITY PLAN
HAND HOLE DETAIL
CHARLES PED DETAIL

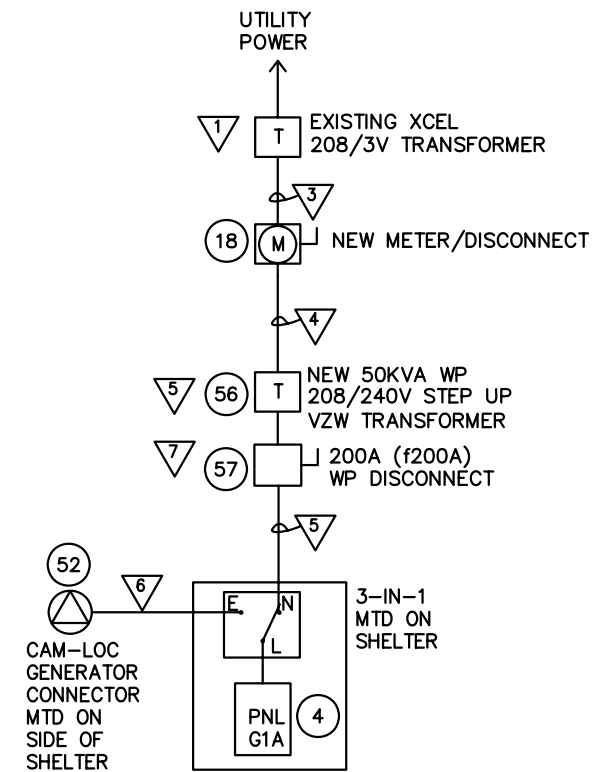
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REV. K	10-18-17
REV. O	02-07-18

U-1

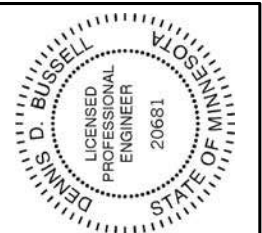


KEYED NOTES

- 1 XCEL ENERGY IS THE UTILITY. CONTACT JASON DARRINGTON AT 763-493-1854. VZW WILL BE OBTAINING POWER FROM AN EXISTING 208/3V, PAD MOUNTED XCEL TRANSFORMER SERVING THE CITY OF MAPLE GROVE. COORDINATE SCOPE OF WORK WITH XCEL IF EXISTING TRANSFORMER IS TO BE REPLACED DUE TO ADDED VZW LOADS. PROVIDE ALL MATERIALS AND LABOR NOT FURNISHED BY XCEL. A SHUTDOWN OF THE EXISTING TRANSFORMER WILL BE REQUIRED. COORDINATE ELECTRICAL OUTAGE WITH CITY OF MAPLE GROVE. MODIFY EXISTING TRANSFORMER SECONDARY LUGS TO ACCOMMODATE NEW VZW CONDUCTORS INDICATED ON THE ONE-LINE DIAGRAM - DETAIL 2/E-1. SEE DETAIL 1/E-1 FOR PROPOSED ROUTING OF SECONDARY CONDUCTORS. COORDINATE FEEDER ROUTING FROM EXCEL TRANSFORMER TO NEW VZW METER/DISCONNECT. VERIFY LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING. IF A NEW XCEL TRANSFORMER IS REQUIRED, MODIFY EXISTING CITY OF MAPLE GROVE SECONDARY CONDUCTORS, AS NECESSARY, FOR CONNECTION TO NEW TRANSFORMER. COORDINATE FINAL CONNECTIONS AT TRANSFORMER WITH XCEL. PROVIDE ALL MATERIALS AND LABOR NOT FURNISHED BY XCEL.
- 2 TELCO ROUTE. PROVIDE TELCO RACEWAY REQUIREMENTS PER SPECIFICATIONS. SEE UTILITY SHEETS FOR TELCO INFORMATION.
- 3 PROVIDE 2 1/2" C 2#3/0+1#1/0N+1#4G FROM EXISTING 208/3V TRANSFORMER SECONDARY TO METER/DISCONNECT ON POST.
- 4 PROVIDE 2 1/2" C 2#3/0+1#1/0N+1#6G FROM METER/DISCONNECT TO VZW 208/240/1V, 50KVA STEP UP TRANSFORMER.
- 5 PROVIDE 2 1/2" C 2#3/0+1#1/0N+1#4G FROM SECONDARY OF TRANSFORMER TO 200A (f200A) WP SECONDARY DISCONNECT. MOUNT TRANSFORMER SECONDARY DISCONNECT ON METAL FRAMING ADJACENT TO TRANSFORMER ON CONCRETE PAD. PROVIDE 2" C 2#3/0+1#1/0N+1#6G FROM DISCONNECT TO 3-IN-1 MAIN BREAKER LOCATED IN SHELTER.
- 6 PROVIDE 2" C 2#3/0+1#1/0N+1#6G FROM 3-IN-1 TO CAMLOC GENERATOR CONNECTOR MOUNTED ON SIDE OF SHELTER.
- 7 CONTRACTOR MAY INSTALL TRANSFORMER WITHOUT DISCONNECT IF APPROVED BY LOCAL AHJ. VERIFY WITH AHJ.



2 ONE-LINE RISER DIAGRAM
SCALE: NONE



CERTIFICATION
I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
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REG. NO. 20681



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BU #825666

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SHEET CONTENTS:
ELECTRICAL ROOF PLAN
AND DETAILS

DRAWN BY:	AB
DATE:	02-19-14
CHECKED BY:	DB
REV. A	09-16-13
REV. A.1	05-08-14
REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17

E-1

GENERAL ELECTRICAL NOTES:

1. SUBMITTAL OF BID INDICATES CONTRACTOR IS AWARE OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
2. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINE WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
3. HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
4. THESE PLANS ARE DIAGRAMATIC ONLY. FOLLOW AS CLOSELY AS POSSIBLE.
5. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX,
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS,
7. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY U.L. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
8. CONTRACTOR SHALL CARRY OUT HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES.
9. CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS.
10. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
11. ALL CONDUIT SHALL HAVE A PULL WIRE.
12. PROVIDE CONSTRUCTION MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
13. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
14. MULTI-WIRE CIRCUITS WITH COMMON NEUTRAL CONDUCTOR SHALL NOT BE ALLOWED.
15. ALL CONDUCTORS SHALL BE COPPER. WIRE SMALLER THAN #6 AWG TO BE STRANDED, THHN CONDUCTORS. EXCEPTION: AWG TELCO WIRE AND #12/#14 AWG WIRE USED FOR A.C. CONTROLS TO BE SOLID COPPER.
16. ALL ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
17. THE ELECTRICAL SYSTEM SHALL BE GROUNDED AND BONDED AS REQUIRED BY ALL APPLICABLE CODES. A SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE "PIGTAILED" AT EACH J-BOX, WITH A SEPARATE PIGTAIL TO A GREEN GROUNDING SCREW ATTACHED TO THE "TAPPED" 10-32 HOLE IN THE BOX. ADDITIONALLY, ANOTHER GREEN PIGTAIL IS TO BE FASTENED TO ALL YOKES OF DEVICES, AND TO METAL CASES OF LIGHTING FIXTURES. THE USE OF GROUNDING CLIPS IS NOT ACCEPTABLE.
18. RECEPTACLES SHALL BE 20 AMPERE, 125 VOLT A.C., SPECIFICATION GRADE, WHITE.
19. WALL SWITCHES SHALL BE SINGLE-POLE, HUBBELL #1201 OR EQUIVALENT, WHITE.
20. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, SHALL HAVE ENGRAVED LETTERING. WEATHERPROOF RECEPTACLES SHALL HAVE RACO #800, 1/2" RAISED WORK COVERS.
21. CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM, NO BX OR ROMEX CABLE IS PERMITTED.
22. NOT USED.
23. METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS. MANUFACTURED BY SQUARE D CO. OR APPROVED EQUAL. IF HOST FACILITY REQUIRES THE NEW SERVICE TO BE SUB-METERED FROM THE EXISTING SERVICE, SUB-METER SHALL BE OF THE 10xOR 16x TYPE.
24. ALL MATERIALS SHALL BE U.L. LISTED.
25. CONDUIT:
 - A. SERVICE CONDUITS SHALL BE GRAY SCH.40 PVC BURIED MIN. 36", EXCEPT THAT SCH.80 SHALL BE USED UNDER ROADWAYS AND IN LOCATIONS SUBJECT TO IMPACTS. BENDS SHALL BE MADE USING "WIDE SWEEP" (12" MIN. RADIUS) ELBOW FITTINGS. ANY RIGID STEEL CONDUIT SHALL BE U.L. LABEL, MIN. 36" BELOW GRADE, WITH "SWEEP" ELBOWS (12"R.MIN.) ENDING IN PVC TRANSITION FITTINGS. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAP-WRAPPED WITH HUNTS PROCESS NO. 3 EXTENDING MIN. 12" ABOVE GRADE.
 - B. INTERIOR CONDUITS SHALL BE EMT; FITTINGS SHALL BE RING COMPRESSION TYPE.
 - C. SEALTITE FLEXIBLE METALLIC CONDUIT MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEALTITE CONDUIT SHALL EXCEED SIX FEET IN LENGTH. WHEN EXPOSED TO WEATHER, THEN USE UV RESISTANT FLEXIBLE NONMETALLIC LIQUIDTITE CONDUIT.
26. ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
27. REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
28. PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH LOCAL BUILDING CODE.
29. DRILLING OR CORING HOLES INTO CONCRETE WALLS, WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC., REQUIRES THAT TENDONS OR REINFORCING STEEL MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT (X-RAY OR OTHER DEVICE) THAT CAN ACCURATELY LOCATE THEM. TENDONS OR REINFORCING MUST NOT BE DRILLED, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
30. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
31. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF BOTH TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
32. CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS AS NECESSARY TO COMPLETE THE INSTALLATION OF ANY TOWER LIGHTING SYSTEM DESCRIBED IN THE RFQ.
33. WIRE:
 - A. ALL 20 AMP CIRCUITS TO HAVE #12 THHN WIRING.
 - B. ALL 40 AMP CIRCUITS TO HAVE #8 THHN WIRING.
 - C. ALL 60 AMP CIRCUITS TO HAVE #6 THHN WIRING.
34. ALL DC GROUNDING CONDUCTORS TO BE TERMINATED WITH 1/4" STUD RING TYPE TERMINALS FOR THE APPROPRIATE SIZE OF WIRE.
35. PANEL SCHEDULE SHALL BE ACCURATELY IDENTIFIED AND PRINTED WITH AN ADHESIVE TYPE LABEL MAKER (KROY, BROTHER, OR EQUAL). NOTE: EMBOSSED MARKER SHALL NOT BE USED.
36. USE FLEXIBLE LIQUIDTITE NONMETALLIC CONDUIT AND FITTINGS FOR FINAL CONNECTION TO RECTIFIER CIRCUITS TO ISOLATE THE CONDUIT GROUND (SEE ALSO NEC ARTICLE 2505, WHICH SPECIFIES ALL GROUND RINGS, REBAR AND/OR UFER GROUND, AND GROUND RODS TO BE EFFECTIVELY BONDED WITH "NON-REVERSING" TYPE SPLICES).
37. SMOKE DETECTORS TO SHUT DOWN AC UNIT AND EXHAUST FAN WHEN ACTIVATED.
38. EXTERIOR GROUNDING SYSTEM FOR METER AND SERVICE BY ELECTRICAL CONTRACTOR.
39. WHEN ONE-WAY FOOTAGE FROM THE UTILITY TRANSFORMER CONNECTIONS TO THE SERVICE DISCONNECT MEANS (LINE TERMINAL LUGS) IS LESS THAN 15' AND THE UTILITY TRANSFORMER IS 2% IMPEDANCE OR LOWER; USE A FUSED DISCONNECT WITH RK1 FUSES ("SQ D" D224NRB).



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SHEET CONTENTS:
 ELECTRICAL
 GENERAL NOTES

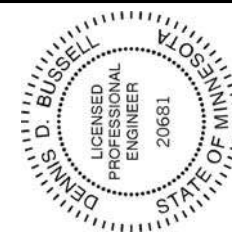
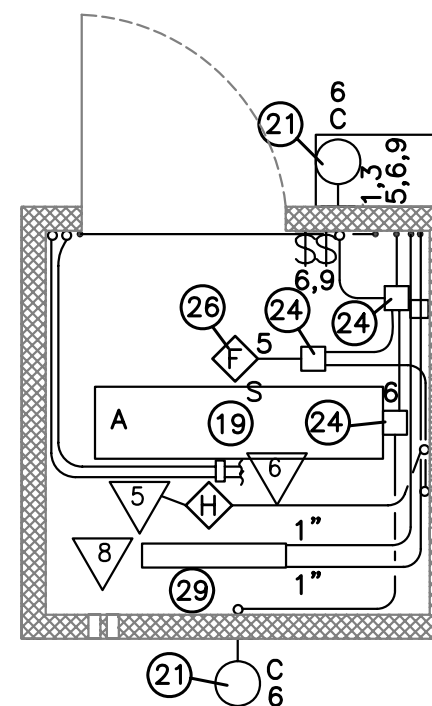
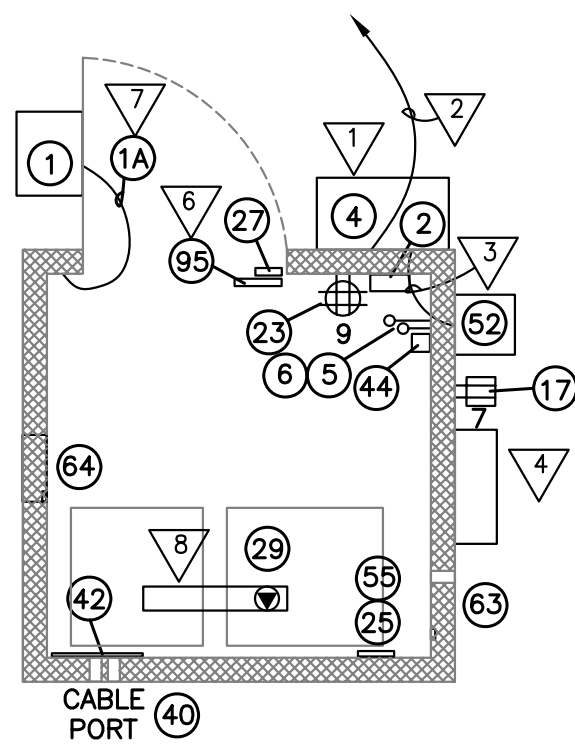
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REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17

GENERAL NOTES

- A. REFER TO WALL ELEVATION SECTIONS SHEETS FOR MOUNTING HEIGHTS.
- B. CIRCLES WITH NUMBERS INSIDE REPRESENT EQUIPMENT NUMBERS. SEE EQUIPMENT LIST.
- C. SEE FIXTURE SCHEDULE FOR FIXTURE INFORMATION.
- D. ALL CONDUCTORS SHALL BE TYPE THHN.
- E. ALL CONDUITS TO BE 1/2" UNLESS NOTED OTHERWISE.

KEYED NOTES

- 1 PANELBOARD G1A (EQ#4).
- 2 2" RIGID CONDUIT 2#3/0+1#1/0N+1#6G FROM EQ#4 UTILITY MAIN CIRCUIT BREAKER THRU LB TO DISCONNECT. SEE SHEET E-1 FOR ROUTING INFORMATION.
- 3 2" RIGID CONDUIT 2#3/0+1#1/0N+1#6G FROM 200A GENERATOR CIRCUIT BREAKER IN EQ#4 CABINET TO CAM-LOC.
- 4 TELCO ENTRY. WALL PENETRATION LOCATION WILL BE DETERMINED ON SITE. SEE DETAIL 1/E1 FOR CONDUIT ROUTING.
- 5 HYDROGEN DETECTOR SYSTEM. MOUNT H2 SENSOR ON CEILING. MOUNT INTERFACE MODULE ON WALL. PROVIDE DC POWER FROM BATTERY CABINETS. CONNECT TO RELAY FOR CONTROL OF VENTING SYSTEM (SEE SHEET E5 CONNECTION DIAGRAM).
- 6 POWER DOOR LOCK FROM DC CABINETS. PROVIDE 4"X4" J-BOX ON CEILING WITH TWO 1/2"C FROM MASTER LOCK BOX MOUNTED ON WALL TO DC CABINETS.
- 7 CONNECT DOOR MOUNTED HVAC UNIT VIA 4' BLACK FLEXIBLE CORRUGATED SEAL TIGHT. PROVIDE 2#12+1#12G FROM UNIT TO J-BOX MOUNTED INSIDE NEXT TO DOOR. PROVIDE 4#12+1#12G FROM J-BOX TO HVAC SHUTDOWN RELAY. PROVIDE 2#12+1#12G TO CIRCUITS 1,3 IN PANEL G1A. PROVIDE 30A WP DISCONNECT IF REQUIRED BY AHJ.
- 8 PROVIDE WIREWAY WITH FOUR L6-30 TWIST LOCK RECEPTACLES MOUNTED INSIDE FOR PLUGGING IN RECTIFIERS. PROVIDE 2-1" CONDUITS FROM WIREWAY TO PANELBOARD RECTIFIER BREAKERS. LOCATE ON CEILING. SITE VERIFY EXACT LOCATION OF EQUIPMENT AND LOCATE WIREWAY ACCORDINGLY.



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REG. NO. 20681
DENNIS BUSSSELL



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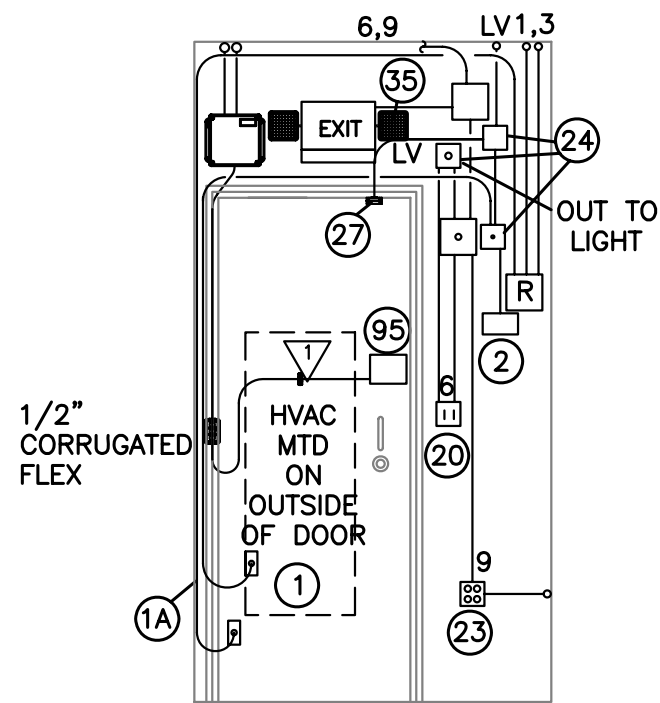
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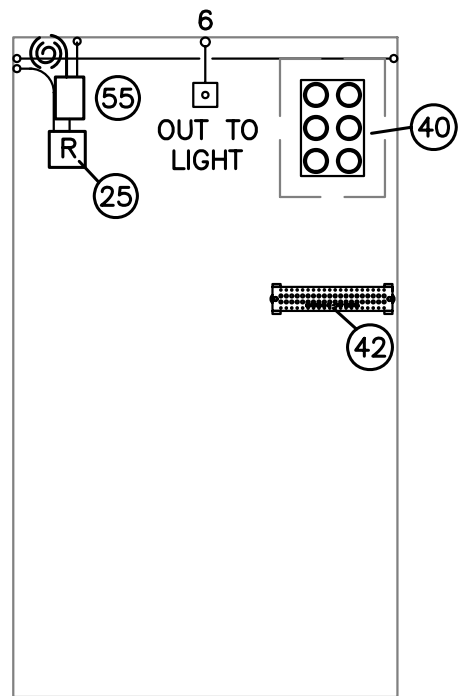
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SHEET CONTENTS:
ELECTRICAL
POWER & LIGHTING
PLAN

DRAWN BY:	AB
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REV. E	04-12-16
REV. G	02-07-17



1 ELECTRICAL WALL ELEVATION "A"
SCALE: 3/8" = 1'-0"



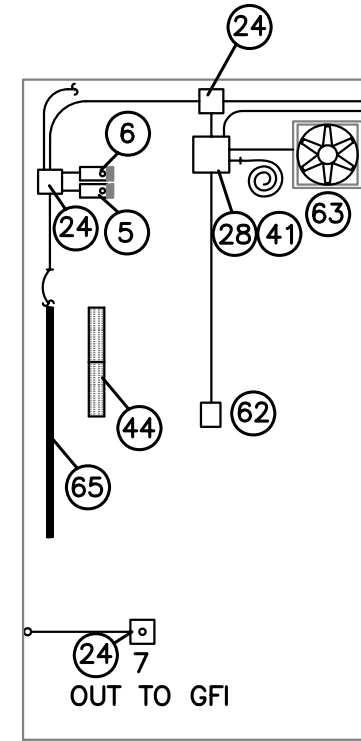
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SCALE: 3/8" = 1'-0"



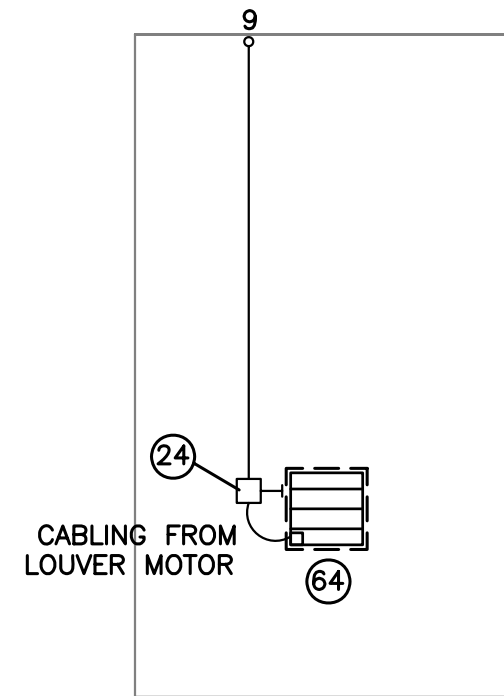
5 DOOR LOCK INSTALLATION PHOTOS
SCALE: NONE

KEYED NOTES

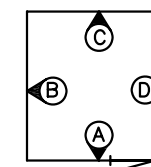
1 SEE DETAIL 5 FOR DOOR LOCK PHOTOS INDICATING APPROXIMATE INSTALLATION LOCATION.



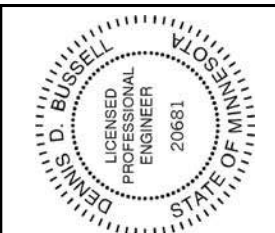
2 ELECTRICAL WALL ELEVATION "B"
SCALE: 3/8" = 1'-0"



4 ELECTRICAL WALL ELEVATION "D"
SCALE: 3/8" = 1'-0"



ELEVATION KEY



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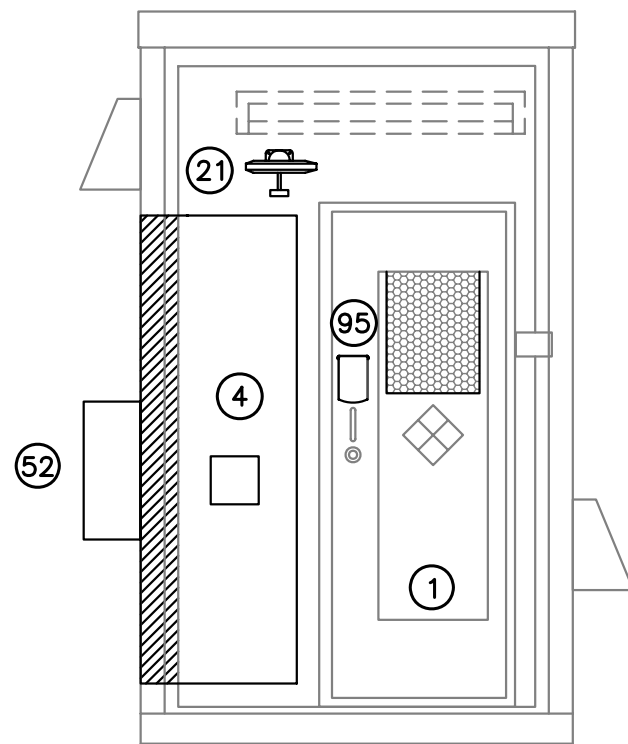
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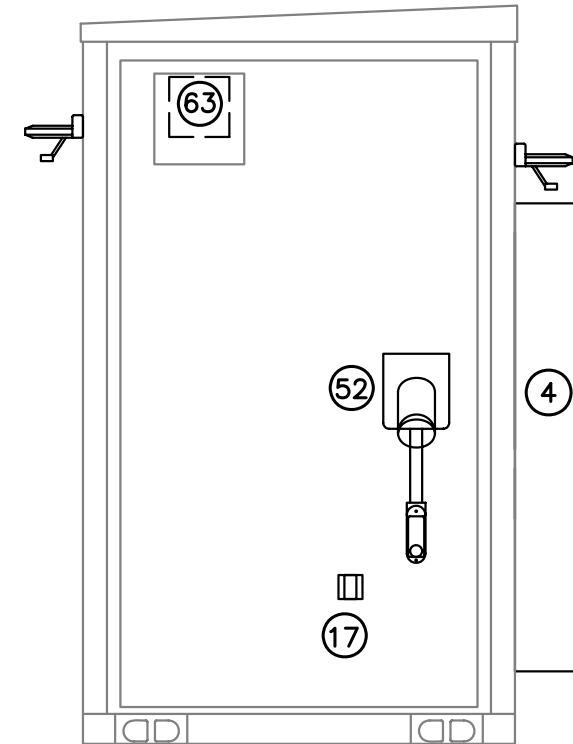
LAWNDALE LANE N
MAPLE GROVE, MN 55311

SHEET CONTENTS:
ELECTRICAL INTERIOR
WALL ELEVATIONS

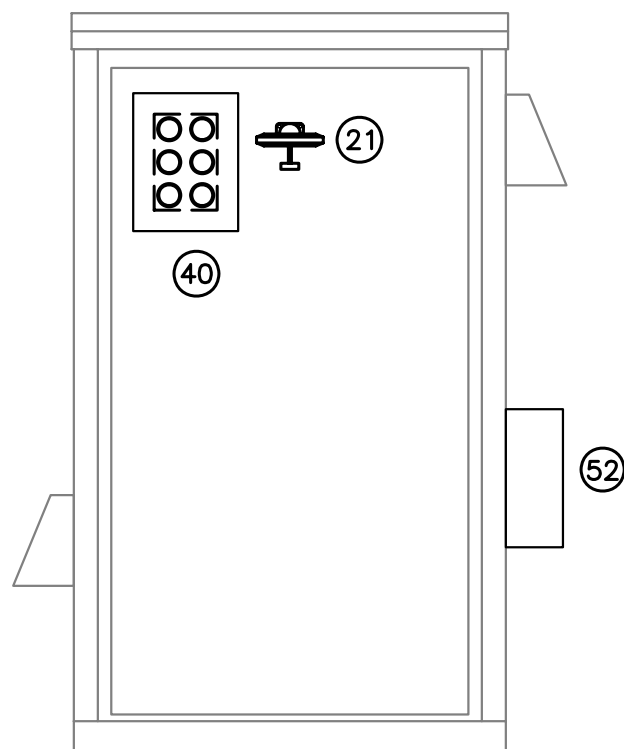
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REV. A	09-16-13
REV. A.1	05-08-14
REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17



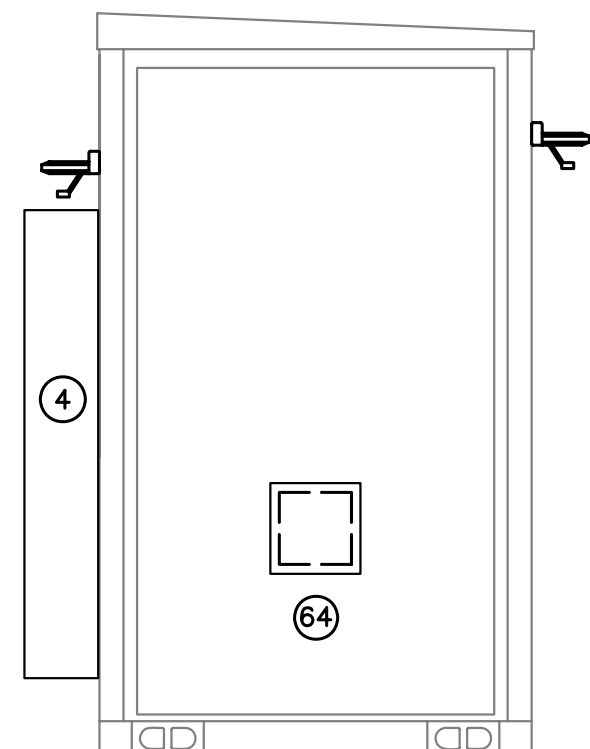
1 ELECTRICAL WALL ELEVATION "A"
SCALE: 3/8" = 1'-0"



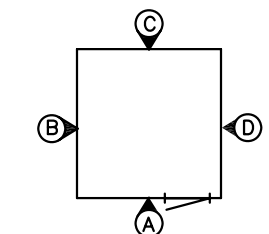
2 ELECTRICAL WALL ELEVATION "B"
SCALE: 3/8" = 1'-0"



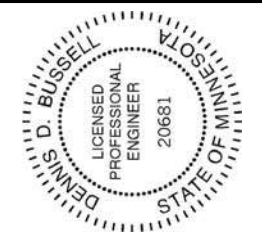
3 ELECTRICAL WALL ELEVATION "C"
SCALE: 3/8" = 1'-0"



4 ELECTRICAL WALL ELEVATION "D"
SCALE: 3/8" = 1'-0"



ELEVATION KEY



CERTIFICATION
I HEREBY CERTIFY THAT THIS DRAWING
WAS PREPARED BY ME, OR UNDER MY
DIRECT SUPERVISION, AND THAT I AM A
LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF MINNESOTA.
Dennis D. Buswell
DENNIS BUSWELL REG. NO. 20681

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VERIZON WIRELESS
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BLOOMINGTON, MN 55438
(612) 720-0052

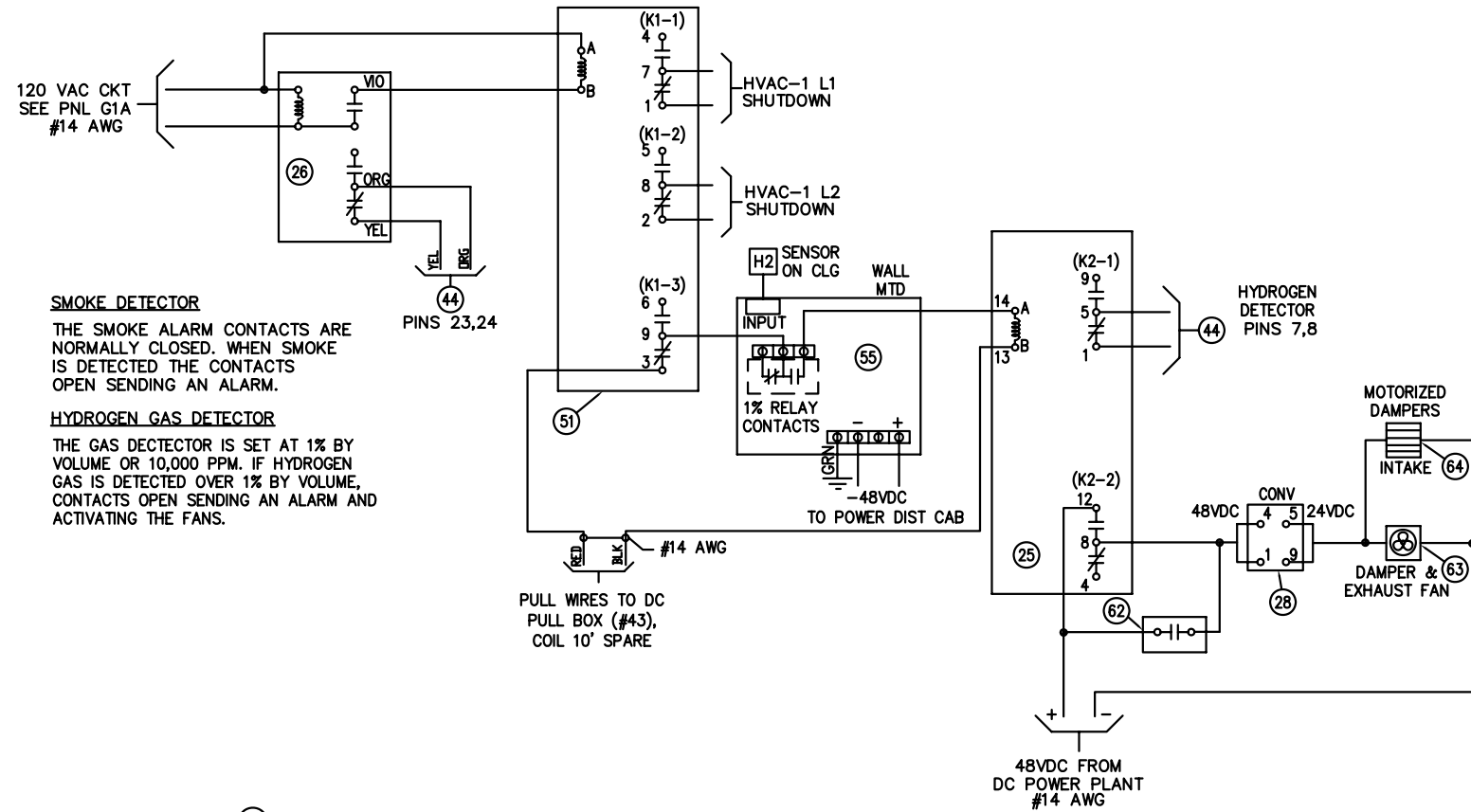
PROJECT
20130877266
LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666
LAWNDALE LANE N
MAPLE GROVE, MN 55311

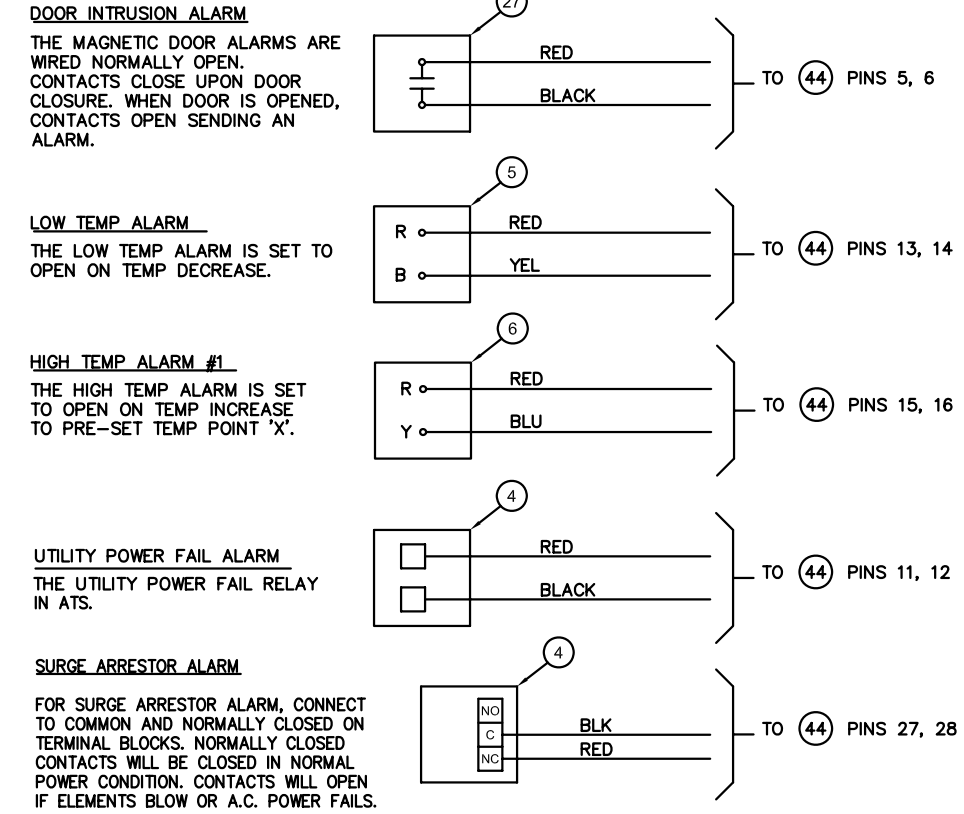
SHEET CONTENTS:
ELECTRICAL EXTERIOR
WALL ELEVATIONS

DRAWN BY:	AB
DATE:	02-19-14
CHECKED BY:	DB
REV. A	09-16-13
REV. A.1	05-08-14
REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17

E-5

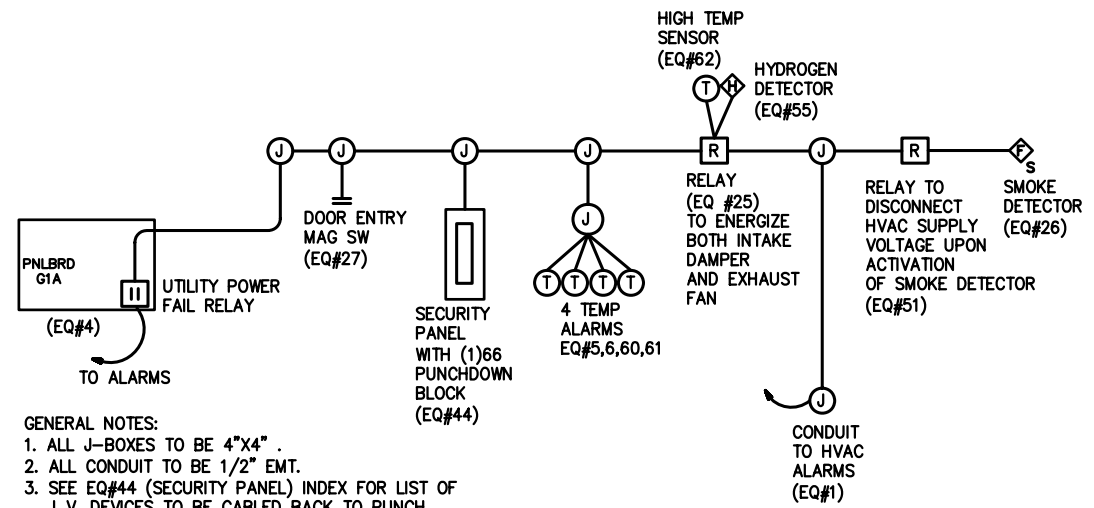


ALARM BLOCK #1	
BATTERY DISCHARGE	1
COMMERCIAL POWER FAILURE	2
DOOR INTRUSION	3
HYDROGEN DETECTOR	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
LOW TEMPERATURE	14
HIGH TEMP	15
INVERTER FAILURE	16
MULTIPLE RECTIFIER FAILURE	17
RECTIFIER FAILURE	18
SMOKE/FIRE	19
SMOKE/FIRE DETECTOR FAILURE	20
	21
	22
	23
	24
	25
	26
	27
SURGE SUPPRESSOR LIGHTNING ARRESTOR	28
TOWER LIGHT	29
TOWER LIGHT BEACON	30
TOWER LIGHT STROBE	31
TOWER LIGHT POWER FAILURE	32
	33
	34
	35
	36
	37
	38
	39
CONVERTER FAILURE	40
TOWER MOUNTED AMPLIFIER	41
	42
	43
EXPLOSIVE GAS	44
HVAC-1 FAILURE	45
	46
	47
	48
	49
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	65
	66



2 HVAC SHUTDOWN CONNECTION DIAGRAM
SCALE: NONE

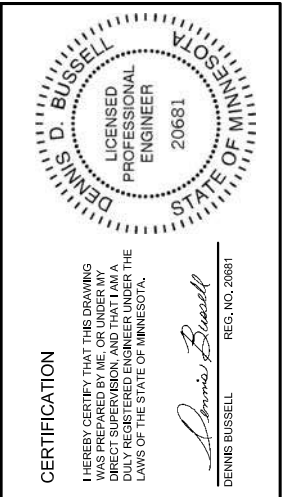
3 SECURITY PANEL - EQUIPMENT #44
SCALE: NONE



GENERAL NOTES:

- ALL J-BOXES TO BE 4"x4"
- ALL CONDUIT TO BE 1/2" EMT.
- SEE EQ#44 (SECURITY PANEL) INDEX FOR LIST OF L.V. DEVICES TO BE CABLED BACK TO PUNCH DOWN BLOCK.

NOTE: SEE PLAN VIEW DRAWINGS FOR LOCATIONS



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PROJECT
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LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666
LAWNDALE LANE N
MAPLE GROVE, MN 55311

SHEET CONTENTS:
ELECTRICAL
LOW VOLTAGE
CABLING DIAGRAMS

DRAWN BY:	AB
DATE:	02-19-14
CHECKED BY:	DB
REV. A	09-16-13
REV. A.1	05-08-14
REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17

PANEL - G1A																	
MLO 120 \ 240 VOLTS 1 PHASE 3 WIRE 200A MCB																	
LOCATION	VOLT AMPS		L G	T C	R R	M R	B R	C T	BUS A B	C T	B R	M R	L C	VOLT AMPS		LOCATION	
	A	B												A	B		
EQ#1,1A 45 HVAC-1 2#12+1#12G	1380				X	20/2	1			2	20/2					EQ#51 HVAC SHUTDOWN RELAY 4#12+1#12G	
"		1380			X	-	3			4						"	
EQ# 26 SM DET 3#14	8				X	15/1	5			6	20/1		X	159		EQ#S # 19, 21, 35 LIGHT FIXTURES 2#12+1#12G	
EQ# 17 EXT RECEPTACLE(S) 2#12+1#12G		180			X	20/1	7			8	20/1	X			52	EQ#26 FAN	
EQ# 23 RECEPTACLE(S) 2#12+1#12G		360			X	20/1	9			10							
SPARE						20/1	11			12							
SPARE						20/1	13			14							
RECTIFIER #1 (FURN BY OTHERS) #6 AWG		1400			X	30/2	15			16							
"		1400			X	-	17			18							
RECTIFIER #2 (FURN BY OTHERS) #6 AWG		1400			X	30/2	19			20	30/2					SPARE RECTIFIER	
"		1400			X	-	21			22						"	
RECTIFIER #3 (FURN BY OTHERS) #6 AWG		1400			X	30/2	23			24	30/2					SPARE RECTIFIER	
"		1400			X	-	25			26						"	
RECTIFIER #4 (FURN BY OTHERS) #6 AWG		1400			X	30/2	27			28							
"		1400			X	-	29			30							
							31			32							
							33			34							
							35			36							
							37			38							
							39			40							
							41			42							
VOLT-AMPS PER LINE A 7507 B 7212																	
TOTAL VOLT-AMPS = 14719														AMPS = 61.33		LCL =	
NOTES:														A. PULL RECTIFIER CABLES 5'-0" PAST END OF SEAL TITE. COIL AND TAG. VERIFY RECTIFIER LOCS ON ARCHITECTURAL SHEETS.			

1 PANELBOARD SCHEDULE
SCALE: NONE

LIGHT FIXTURE SCHEDULE								
TYPE	DESCRIPTION	LAMPS			MTG	VOLT	MFR/CAT NO.	NOTES
		QTY	WATT	CAT. NO.				
A	1X4 LED LIGHT FIXTURE	1	50	LED 4000K	CLG	120V	LITHONIA: LBL4 LP840 OR EQUAL	
B	EMERGENCY EXIT W/BATTERY PACK	2	1.5	LED	WALL	120V	LITHONIA: ECRM6 OR EQUAL	2
C	EXTERIOR LED WALL PACK	1	26	LED	WALL	120V	LITHONIA: OLW14 FCOS M24 W/OMS 1000 PHOTOSENSOR	1

NOTES:
1. FIXTURE TO INCLUDE INTEGRAL PHOTOCCELL.
2. CONNECT FIXTURE TO UNSWITCHED LEG OF CIRCUIT. MOUNT ABOVE DOOR.

2 FIXTURE SCHEDULE
SCALE: NONE

EQUIPMENT LIST-ALL ITEMS FURNISHED, INSTALLED AND CONNECTED BY ELEC CONTRACTOR			
EQ #	MANUFACTURER PART NO.	MANUFACTURER	DESCRIPTION
1	ECUA12ACA036S	MARVAIR	HVAC, 12,000 BTU, 230V
1A			4" BLACK FLEXIBLE CORRUGATED SEALTIGHT
2	8403-058	BARD	NON-PROGRAMMABLE THERMOSTAT W/ 4"X4" J.B.
4	AA300G-1PH-N-3R	INTERSECT	LOADCENTER, INTEGRATED 200A W/ATS
5	1UHH2	DAYTON	LOW TEMP ALARM THERMOSTAT, SPDT, 24-240VAC
6	1UHH2	DAYTON	HIGH TEMP ALARM THERMOSTAT, SPDT, 24-240VAC
17	1591I	HUBBELL	20AMP GFCI DUPLEX RECEPTACLE / 2" X 4" W.P. J.B.
18	U5168-XTL-200	MILBANK, C-H	COMBINATION SERVICE ENTRANCE METER HUB & DISCONNECT 200A W/200A MCB 208/1V W/BYPASS SWITCH (SHALL BE UTILITY APPROVED - VERIFY)
19	TYPE A - SEE FIXTURE SCHEDULE		INTERIOR LIGHT FIXTURE
20	CS120I	P&S	INTERIOR LIGHT SWITCH/ 2G J-BOX
21	TYPE C - SEE FIXTURE SCHEDULE		EXTERIOR LIGHT FIXTURE
23	CR201	P&S	20AMP DOUBLE DUPLEX RECEPTACLES / 2G J-BOX
24	4SD12	APPLETON	4" X 4" J.B. (1/2" & 3/4" KNOCKOUT)
25	RPM22ED	SCHNEIDER ELECTRIC	RELAY, 48VDC, DPDT, 8 PIN W/8 PIN BASE
26	7100F	GENTEX	SMOKE DETECTOR / 4" X 4" J.B.
27	7939-2GY	ADEMCO	MAGNETIC DOOR ALARM
28	418CHB300W-48S24		DC TO DC POWER CONVERTER, 48VDC - 24 VDC
29			DC RECTIFIER TWIST LOCK AC OUTLETS (4 TWISTLOCKS) 4" WIREWAY, PUNCHED RECEPTACLES, 30A, TW, 240V
35	TYPE B - SEE FIXTURE SCHEDULE		BATTERY BACK-UP EMERGENCY LIGHT
37	ASE6X4	HOFFMAN	ENCLOSURE 6" X 6" X 4" (HVAC SHUTDOWN)
41		STEEL CITY	6" X 6" J-BOX W/1" KNOCKOUTS
42	196632		1/4" X 4" X 16" TELEPHONE BD GROUND BAR (TINNED)
43	4SDEK	APPLETON	4" X 4" J.B. (1/2" & 3/4" KNOCKOUT) 24 VCD PULL BOX
44	AHE16X12X6	SIEMONS	1-66 PAIR PUNCH DOWN ALARM BLOCK
45	DPU222R	CUTLER HAMMER	30A WP DISCONNECT (HVAC) IF REQUIRED BY LOCAL AHJ
47			2" LB
49	72171341	STEEL CITY	4 11/16" X 4 11/16" J.B.
51	21011-84	DELTRON	120 VOLT RELAY 8 PIN 30A (HVAC SHUTDOWN)
52	1CGC-1P	INTERSECT	200A CAM-LOC GENERATOR CONNECTOR
55	SBS-H2	STORAGE BATTERY SYSTEMS	HYDROGEN GAS DETECTOR, 12-48VDC INPUT
56	SMF050BEC	HAMMOND (HPS)	50KVA 208/1V TO 240/1V TRANSFORMER, NEMA 3R WITH DRIP PLATE
57		C-H, GE, SQ D	200A 240V H-DUTY, WEATHERPROOF SERVICE-RATED DISCONNECT SWITCH
62	1UHH2	DAYTON	HIGH TEMP THERMOSTAT (CONTROL EXHAUST FAN)
63	PFFP-200-D24-01-FS	THERMAL EDGE INC.	10" X 10" EXHAUST FAN, +24VDC, 300CFM
64	MS8105A1030	HONEYWELL	12" X 12" MOTORIZED LOUVER W/SHROUD HOOD FOR INTAKE VENT, 24VAC/DC
65	89-610		BARRIER STRIP (BS), 12 CIRCUIT, 30A, 300V
95	7221 (KIT 2172 GRP)	MASTER LOCK	DOOR LOCK - INPUT RATING +/- 15-60VDC

3 EQUIPMENT LIST
SCALE: NONE

ELECTRICAL SYMBOL SCHEDULE	
POWER DISTRIBUTION	LIGHTING DEVICES
BRANCH CIRCUIT PANELBOARD	FLUORESCENT - CEILING
MOTOR STARTER AND CONTROL	WALL/CEILING MOUNTED FIXTURE
MOTOR CONNECTION	FIXTURE ON EMERGENCY POWER/EGRESS LIGHTING
DISCONNECT OR SAFETY SWITCH	EMERGENCY BATTERY FIXTURE
RACEWAY	LIGHT FIXTURE TYPE DESIGNATION - SEE SCHEDULE
CONCEALED RACEWAY	SWITCH DESIGNATION (a,b,c,d,e,ETC)
SURFACE MTD RACEWAY	SINGLE POLE SWITCH
ONE-LINE/RISER DEVICES	PHOTO CELL
GENERATOR	NOTE SYMBOLS
AUTOMATIC TRANSFER SWITCH	ELECTRICAL NOTE REFERRAL (SEE NOTE ON DRAWINGS)
DISCONNECT SWITCH	EQUIPMENT NUMBER
CIRCUIT BREAKER	ELECTRICAL AND COMMUNICATION DEVICES
RELAY	RECEPTACLE (DUPLEX)
TRANSFORMER	RECEPTACLE (DUPLEX GFI)
FIRE ALARM DEVICES	JUNCTION BOX (WALL/CEILING MTD)
SMOKE DETECTOR	TELEPHONE OUTLET (WALL MOUNTED)
HYDROGEN DETECTOR	
FIRE ALARM CONTROL PANEL (FACP)	
ELECTRICAL SYMBOL NOTES	
1. DEVICES SHALL BE INSTALLED AT THE MOUNTING HEIGHT INDICATED ON WALL ELEVATIONS.	
2. PROVIDE GROUND WIRES IN ALL LIGHTING AND POWER BRANCH CIRCUITS.	

4 ELECTRICAL SYMBOL SCHEDULE
SCALE: NONE



CERTIFICATION
I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Dennis D. Bussell
REG. NO. 20681



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BLOOMINGTON, MN 55438
(612) 720-0052

PROJECT
20130877266
LOC. CODE: 265758

MINC
RUSH CREEK
CROWN CASTLE
BU #825666
LAWNDAL E LANE N
MAPLE GROVE, MN 55311

SHEET CONTENTS:
ELECTRICAL SCHEDULES

DRAWN BY:	AB
DATE:	02-19-14
CHECKED BY:	DB
REV. A	09-16-13
REV. A.1	05-08-14
REV. B	06-04-14
REV. C	06-12-15
REV. D	03-21-16
REV. E	04-12-16
REV. G	02-07-17

SITE SURVEY

PARENT PARCEL DESCRIPTION: (per Old Republic National Title Insurance Company Commitment No. 101587, dated June 19, 2013.)

The land referred to in this Commitment is described as follows:

The South 545.00 feet of the East 415.00 feet of the East 1/2 of the Southeast 1/4 of the Northeast 1/4 of Section 18, Township 119, Range 22, Hennepin County, Minnesota.

G7<981 @ 161'9L<64G. (per Old Republic National Title Insurance Company Commitment No. 101587, dated June 19, 2013.)

- 13.) Subject to an easement for road over and across the Easterly and Southerly 33.00 feet thereof as shown in Deed dated 7-6-95, filed 7-7-95 as Document No. 2619917.
This document describes a 33' wide easement for roadway purposes and is as shown on the survey.
- 14.) Terms of Deed of Easement dated 9-12-70, filed 7-23-71 as Document No. 1003837.
This document describes a 60' wide non-exclusive permanent easement for roadway purposes along with West line of the property. This easement does not affect the surveyed area and is not shown on the survey.
- 15.) Terms of Driveway Easement Grant dated 5-14-98, filed 5-26-98 as Document No. 3018713.
This document describes a 5' wide perpetual easement for driveway purposes along the West line of the property. This easement does not affect the surveyed area and is not shown on the survey.

LAND SPACE DESCRIPTION:

That part of the East Half of the Southeast Quarter of the Northeast Quarter of Section 18, Township 119 North, Range 22 West of the Fifth Principal Meridian, Hennepin County, Minnesota, described as follows:

Commencing at the southeast corner of said East Half of the Southeast Quarter of the Northeast Quarter; thence South 89 degrees 42 minutes 00 seconds West along the South line of said East Half of the Southeast Quarter of the Northeast Quarter, a distance of 249.04 feet; thence North 0 degrees 00 minutes 03 seconds East, a distance of 224.48 feet; thence North 9 degrees 36 minutes 56 seconds East, a distance of 2.50 feet to the Point of Beginning of the land space to be described; thence North 0 degrees 00 minutes 00 seconds East, a distance of 11.00 feet; thence South 90 degrees 00 minutes 00 seconds East, a distance of 9.00 feet; thence South 0 degrees 00 minutes 00 seconds West, a distance of 11.00 feet; thence North 90 degrees 00 minutes 00 seconds West, a distance of 9.00 feet to the Point of Beginning.



SITE NAME:
MINC RUSH CREEK
Hennepin County, MN

No.	Date	REVISIONS	By	CHK	APP'D
2	10/17/17	CLIENT COMMENTS	SMK	BTB	BTB
1	5/1/17	CLIENT COMMENTS	SMK	BTB	BTB
FIELD WORK:		5/8/13	CHECKED BY:	BTB	DRAWN BY: JMB/SMK/THD

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: 3/14/17 LICENSE # 42594

FULL SCALE ON 22"x34"
HALF SCALE ON 11"x17"
0494A0608.010

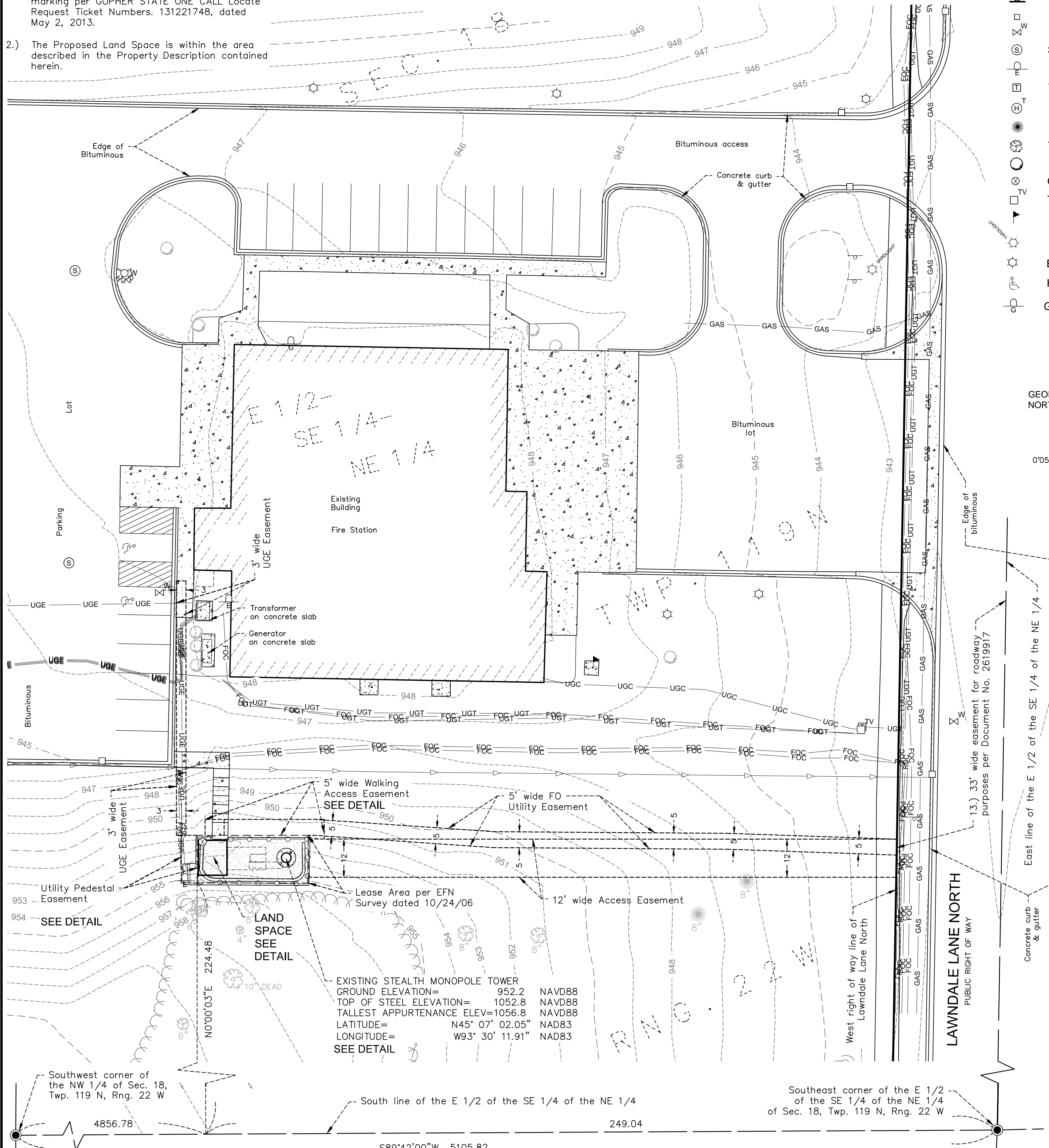


WIDSETH SMITH NOLTING
Engineering | Architecture | Surveying | Environmental

SURVEYOR NOTES:

- 1.) Utilities are from observed evidence and from marking per GOPHER STATE ONE CALL Locate Request Ticket Numbers. 131221748, dated May 2, 2013.
- 2.) The Proposed Land Space is within the area described in the Property Description contained herein.

SITE SURVEY



Southwest corner of the NW 1/4 of Sec. 18, Twp. 119 N, Rng. 22 W

4856.78

N0°00'03"E 224.48

S89°42'00"W 5105.82

224.48

10" DEAD

SEE DETAIL

SEE DETAIL

SEE DETAIL

EXISTING STEALTH MONOPOLE TOWER
GROUND ELEVATION= 952.2 NAVD88
TOP OF STEEL ELEVATION= 1052.8 NAVD88
TALLEST APPURTENANCE ELEV=1056.8 NAVD88
LATITUDE= N45° 07' 02.05" NAD83
LONGITUDE= W93° 30' 11.91" NAD83
SEE DETAIL

Lease Area per EFN Survey dated 10/24/06

12' wide Access Easement

5' wide FO Utility Easement

5' wide Walking Access Easement

SEE DETAIL

SEE DETAIL

SEE DETAIL

SEE DETAIL

South line of the E 1/2 of the SE 1/4 of the NE 1/4

249.04

SE 1/4

NE 1/4

SEE DETAIL

SEE DETAIL

SEE DETAIL

SEE DETAIL

SEE DETAIL

Southeast corner of the E 1/2 of the SE 1/4 of the NE 1/4 of Sec. 18, Twp. 119 N, Rng. 22 W

249.04

SE 1/4

NE 1/4

SEE DETAIL

SEE DETAIL

SEE DETAIL

SEE DETAIL

SEE DETAIL

East line of the E 1/2 of the SE 1/4 of the NE 1/4

249.04

SE 1/4

NE 1/4

SEE DETAIL

SEE DETAIL

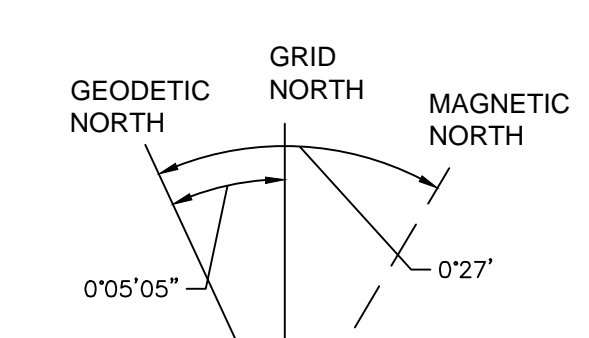
SEE DETAIL

SEE DETAIL

SEE DETAIL

LEGEND

- SINGLE SIGN POST
- STORM CATCH BASIN
- WATER VALVE
- SANITARY SEWER MANHOLE
- ELEC METER
- TELE PEDESTAL
- TELEPHONE HANDHOLE
- TREE CONIFEROUS
- TREE DECIDUOUS
- SHRUB
- GROUND ACCESS COVER
- TV PEDESTAL
- FLAG POLE
- YARD LIGHT
- ELEC LIGHT POLE
- HANDICAP SYMBOL
- GAS METER
- UNDERGROUND GAS
- UNDERGROUND ELECTRIC
- UNDERGROUND FIBER OPTIC
- UNDERGROUND TELE
- FENCE CHAIN LINK
- EDGE OF WOODS
- LOT LINE
- RIGHT OF WAY EXISTING
- BOUNDARY LINE
- LAND SPACE LINE
- EASEMENT LINE
- SECTION LINE
- QUARTER SECTION LINE
- SIXTEENTH SECTION LINE
- BUILDING WALL HATCH
- CONCRETE SURFACE
- GRAVEL SURFACE

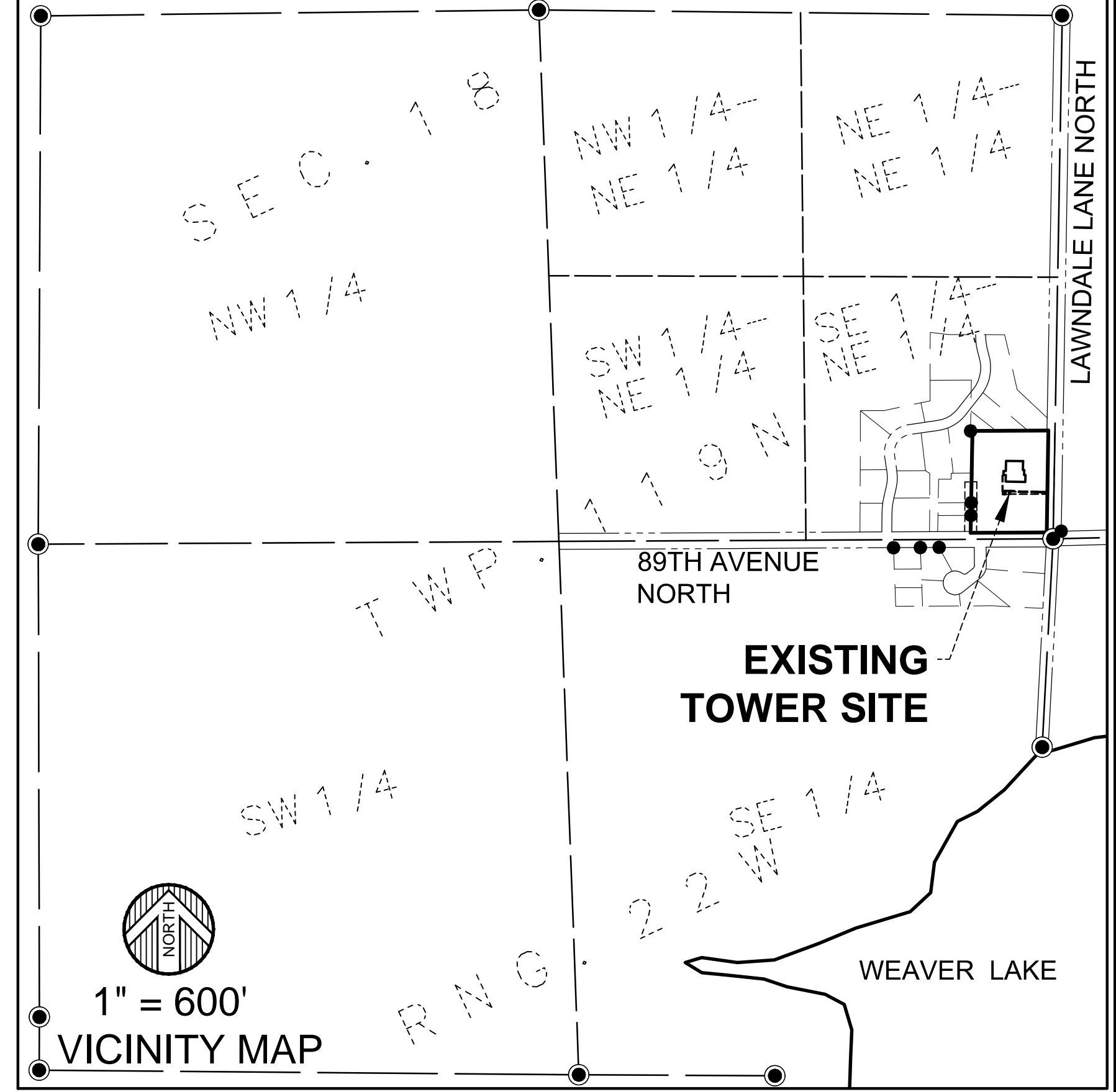


SCALE (IN FEET)

ORIENTATION OF THIS BEARING SYSTEM IS BASED ON THE HENNEPIN COUNTY COORDINATE SYSTEM NAD83 (1986)

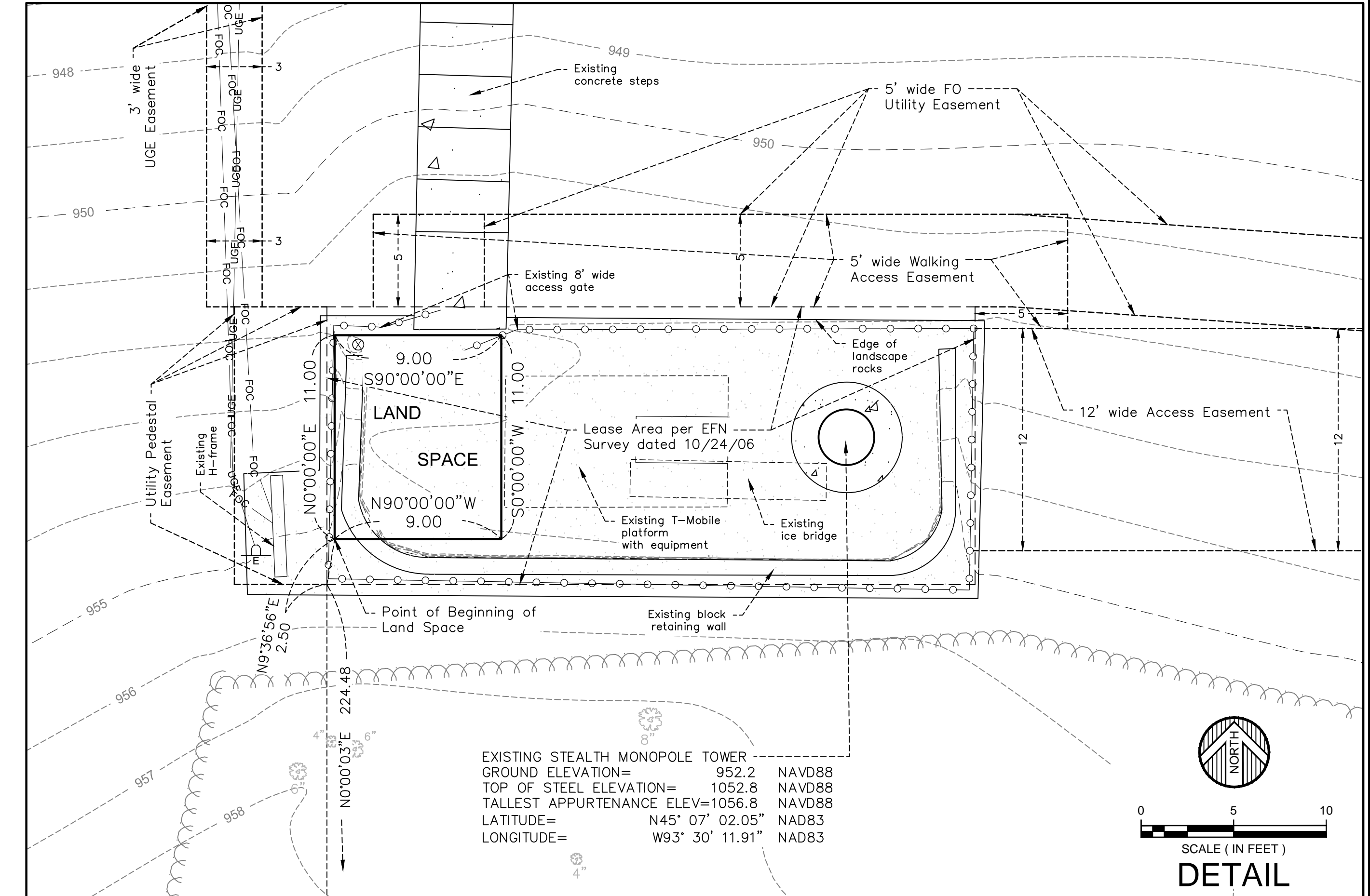
● DENOTES A FOUND SECTION CORNER MONUMENT

● DENOTES A FOUND IRON MONUMENT



1" = 600'

VICINITY MAP



EXISTING STEALTH MONOPOLE TOWER
GROUND ELEVATION= 952.2 NAVD88
TOP OF STEEL ELEVATION= 1052.8 NAVD88
TALLEST APPURTENANCE ELEV=1056.8 NAVD88
LATITUDE= N45° 07' 02.05" NAD83
LONGITUDE= W93° 30' 11.91" NAD83



SCALE (IN FEET)

DETAIL



SITE NAME:
MINC RUSH CREEK

Hennepin County, MN

No.	Date	REVISIONS	By	CHK	APP'D
2	10/17/17	CLIENT COMMENTS	SMK	BTB	BTB
1	5/1/17	CLIENT COMMENTS	SMK	BTB	BTB
FIELD WORK: 5/8/13 CHECKED BY: BTB DRAWN BY: JMB/SMK/THD					

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FULL SCALE ON 22"x34"
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0494A0608.010

