

HANFT FRIDE
A PROFESSIONAL ASSOCIATION

1000 U.S. BANK PLACE
130 W SUPERIOR STREET
DULUTH, MN 55802-2094
TELEPHONE: 218/722-4766
FAX: 218/529-2401
WWW.HANFTLAW.COM

WRITER'S EMAIL
wmb@hanftlaw.com

December 5, 2014

GILBERT W. HARRIES*
WILLIAM M. BURNS
JOHN D. KELLY*
FREDERICK A. DUDDERAR, JR.
TIM A. STROM*
R. THOMAS TORGERSON*
CHERYL M. PRINCE*
ROBIN C. MERRITT*
JENNIFER L. CAREY*
MARK D. PILON*
JACOB J. BAKER*
KENNETH A. KIMBER*
SCOTT A. WITTY*
DAVID L. TILDEN*
KIMBERLY E. BRZEZINSKI
HOLLY LABOONE-HALLER
RICHARD R. BURNS,* OF COUNSEL
CHARLES H. ANDRESEN, OF COUNSEL
*ALSO ADMITTED IN WISCONSIN

Via Email Only

Mr. Steven Robertson, Senior Planner
City of Duluth, Planning Division
411 W 1st Street, Room 208
Duluth, MN 55802

Mr. Charles Froseth, Land Use Supervisor
City of Duluth, Construction Services &
Inspections Division
411 W 1st Street, Room 210
Duluth, MN 55802

Re: PL13-003 Special Use Permit for Expansion of an
Existing AT&T Telecommunications Facility at 218 East Central Entrance
to Accommodate Verizon Wireless Antennas (Monopole Extension)
Verizon Site Name: DULC View Crest
Our File No.: 30576.000

Dear Steven and Chuck:

As discussed, the Planning Commission tabled this matter at its meeting on November 10 with the desire that Verizon Wireless review potential options regarding the appearance of this existing site and address whether any design changes are feasible or appropriate. In particular, the Planning Commission made inquiry regarding whether the existing tower structure to which Verizon Wireless would attach its antennas could be changed out and replaced with a "monopine" type stealth tower structure. We certainly understand the Commission's desire that this installation be as ascetically pleasing as possible.

Verizon Wireless's history in Duluth confirms that it has worked cooperatively with the City to use existing structures and nonintrusive designs wherever possible. Verizon Wireless has taken a close look at this location in response to the express concerns and questions of the Commission. After an exhaustive review of potential alternatives, including changing out the existing tower to a monopine style tower, Verizon Wireless concluded unfortunately that such a change would not be feasible or appropriate in this location for the following reasons:

- The ground space necessary to construct a new stealth tower and transfer antennas from the existing tower prior to removal is not available. The current monopole and associated ground equipment completely occupies all available space in this location.

- A stealth design such as a monopine would significantly limit the number of antennas that could be placed at the site and reduce the quality of wireless services provided from this site. The current owner of the tower, AT&T, previously increased the number of antennas on the tower in 2012. Verizon's proposed design includes 12 antennas with 6 installed now and the additional antennas likely in the near future. The current standard platform design is essential to sufficiently accommodate the antennas required by rapid technological change as well as the rapid demand increase at this location. A monopine structure could not accommodate the antennas necessary to provide the quality of wireless services to be provided by Verizon Wireless and AT&T, and which is demanded by the public. A monopine design would force the antennas to be mounted at multiple levels which would detract from the appearance, not enhance it, and would significantly degrade the signal because the tower structure is very short.
- As you are aware, Verizon Wireless does not own or control the tower and will only be leasing tower space and ground space at this location for its antennas and equipment. Even if there were space available on the property to change out the tower design (which there is not) Verizon Wireless does not have any authority to force AT&T to make such a change to the tower's design. AT&T's operation of the tower as designed is consistent with its previously granted Special Use Permit.
- We have concluded that that appearance of the existing monopole with a standard antenna platform is consistent with the commercial non-residential character of the immediate vicinity. Furthermore, as you know, there do not appear to have been any complaints regarding this site, or the proposed plan. The extension we submitted to accommodate Verizon's antennas is viewed by us as consistent with the site's current appearance.
- The monopole design with standard antenna platform was constructed after issuance of a building permit in December 2009 but, after the city adopted a new ordinance, when AT&T added antennas a Special Use Permit was granted by the Planning Commission in September 2012 (PL12-144). No design change was required by the Planning Commission at that time.
- The Verizon Wireless analysis concluded that a major change in design would be cost prohibitive and unlikely yield any significant reduction in visual impact, as discussed above. Unique designs such as faux trees (i.e., monopines) or flagpoles are usually proposed in heavily forested or large-scale institutional settings, respectively. These types of designs tend to draw more, rather than less, attention when placed in an inconsistent environment such as the existing commercial setting.
- The modest proposed extension of the monopole to accommodate Verizon's co-location is in keeping with the intent of Duluth's wireless telecommunications facility regulations and is not considered a substantial change under federal law. This application is an "eligible facilities request" within the meaning of Section 6409(a)(2) of the Middle Class Tax Relief and Job Creation Act of 2012. The request does not "substantially change" any physical dimensions within the meaning of Section 6409(a)(1). In terms of co-location, the FCC has defined substantial change in this type of situation as one that would increase the existing height of the

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tower by more than the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet. In this case the proposed antenna separation is 15' between centerlines and 7' between antennas. It is our interpretation that the FCC's approach to this application would be that it must be approved without condition. As our original and continuing applications have indicated, we have submitted plans to the City in the interest of carrying through on Verizon Wireless's long-term commitment to be a good neighbor and prior commitments.

Although a major design change to the tower is not feasible or appropriate, Verizon Wireless has given serious consideration to the way in which the site's proposed appearance may be improved. While the number and configuration of the proposed antennas is necessary to provide the needed service, the proposed banding of coaxial cable to the outside of the monopole can be eliminated through the use of hybrid cables.

Because space inside of the monopole is limited by its diameter, standard coaxial cable connecting Verizon's antennas to the ground equipment would need to be strapped onto the outside of the pole. This exterior clutter on the pole can be eliminated by designing this project with two hybrid cables that would allow all cabling to be inside of the pole. Verizon Wireless would make this change to the drawings prior to submitting for a building permit.

In this busy corridor, residents expect the highest quality of wireless service whether they are just passing through or stopping for a sub sandwich, a cheeseburger or some auto parts. Just as the presence of stores and fast food restaurants is expected in this commercial area, the current pole is an accepted utilitarian part of the landscape and will remain so after the proposed modification. It is understood that what is expected in this commercial area is different than what might be expected in more sensitive neighborhoods and the Planning Commission's approval of this proposal would necessarily be limited to the facts and circumstances of this particular location where the proposed design is consistent with staff recommendation and there is no neighborhood opposition.

We hope that this helps to answer the questions raised at the meeting on November 10 and we stand ready to further clarify any lingering confusion and to respond to any further questions at the meeting on December 9. I am comfortable that it is consistent with the meeting that we had on Thursday, December 4, 2014. Obviously, if either of you have questions that you want to pose in advance of the meeting on December 9, I will make myself available.

Very truly yours,



William M. Burns

WMB/ljc

c: Mr. Keith Hamre
Mr. Curtis Holland
Mr. Ralph Wyngarden

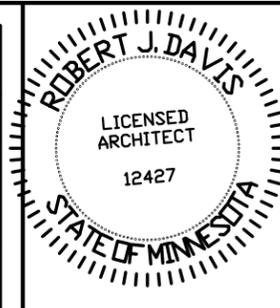
VERIZON WIRELESS

VERIZON WIRELESS DEPARTMENTAL APPROVALS

	NAME	DATE
RF ENGINEER	SENAI ABRAHAM	06-05-13
OPERATIONS MANAGER		
CONSTRUCTION ENGINEER	DOUGLAS FREDERICK	06-06-13
CONSTRUCTION MANAGER		
REAL ESTATE MANAGER		

SHEET INDEX

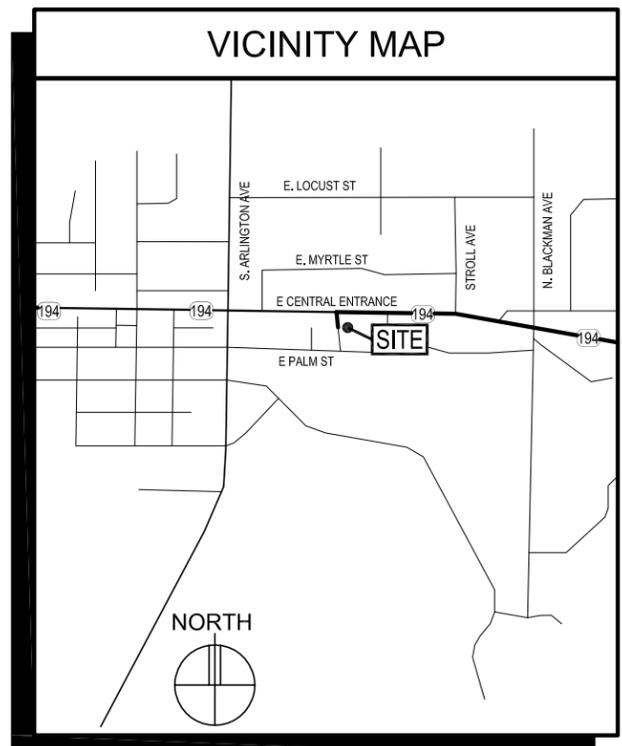
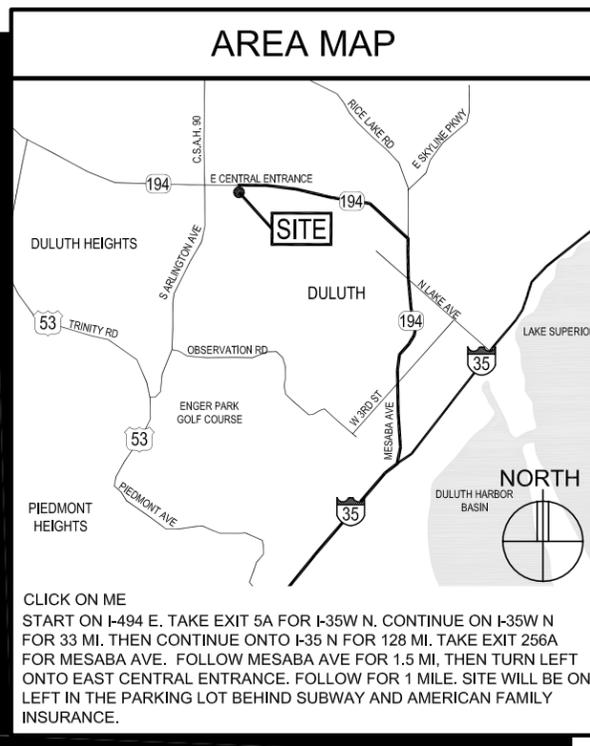
SHEET	SHEET DESCRIPTION
T-1	PROJECT INFORMATION, MAPS, DIRECTIONS, AND SHEET INDEX
A-1	SITE PLAN
A-2	ENLARGED SITE PLAN
A-3	TOWER ELEVATION, NOTES, AND DETAILS
A-3.1	COAX & ANTENNA KEY
A-4	PREFABRICATED SHELTER PLANS, ELEVATIONS, NOTES, & DETAILS
A-5	MISCELLANEOUS DETAILS
A-6	OUTLINE SPECIFICATIONS
G-1	GROUNDING NOTES AND DETAILS
G-2	GROUNDING PLAN AND NOTE KEY
G-3	EXTERIOR GROUNDING DETAILS
U-1 & U-2	SITE UTILITY PLAN, NOTES, AND DETAILS
	SURVEY



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered Architect under the laws of the State of MINNESOTA. ROBERT J. DAVIS, Reg. No. 12427.

Robert J. Davis
Signature

Date: 12-05-14 License # 12427



LESSOR / LICENSOR APPROVAL

SIGNATURE	PRINTED NAME	DATE

LESSOR / LICENSOR: PLEASE CHECK THE APPROPRIATE BOX BELOW
 NO CHANGES. CHANGES NEEDED. SEE COMMENTS ON PLANS.

ISSUE SUMMARY

REV.	DESCRIPTION	SHEET OR DETAIL
A	ISSUED FOR REVIEW 05-17-13	ALL
B	ISSUED FOR OWNER APPROVAL 06-26-13	ALL
D	ISSUED FOR ZONING 12-05-14	ALL

DESIGN 1

ROBERT J. DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

PROJECT INFORMATION

SITE NAME:	DULC VIEW CREST
PROJECT NUMBER:	20120822230
SITE ADDRESS:	EAST CENTRAL ENTRANCE DULUTH, MN 55811
COUNTY:	ST. LOUIS
LATITUDE:	N 46° 47' 59.316" (NAD 83)
LONGITUDE:	W 92° 07' 41.413" (NAD 83)
GROUND ELEVATION:	1243.6' AMSL (NAVD 88)
ANTENNA TIP HEIGHT:	1308.6' AMSL - 65' AGL
ANTENNA CENTERLINE HEIGHT:	1305.6' AMSL - 62' AGL
TOWER HEIGHT:	1303.6' AMSL - 60' AGL
OVERALL STRUCTURE HEIGHT:	1311.6' AMSL - 68' AGL
DRAWING BASED ON SITE DATA FORM DATED:	11-13-12
OCCUPANCY:	B
BUILDING TYPE:	V-B
SITE AREA:	15.5' X 27' = 418.5 S.F.
ROOF LOAD:	LIVELOAD = 105 PSF
PARKING:	PROVIDED
ESTIMATED COAX RUN:	(2) 6 RRU TRUNK CABLES @ 100' EA
PROJECT DESCRIPTION:	TO INSTALL A PREFABRICATED EQUIPMENT SHELTER, 11' EXTENSION AND ANTENNAS, ON AN EXISTING MONOPOLE TOWER TO IMPROVE COMMUNICATION SERVICE IN THE DULUTH, MN AREA.

CONTACTS

LESSOR / LICENSOR:	MANSEL PROPERTIES, LLC (GROUND) 595 WEST WABASHA DULUTH, MN 55811 TIM PICHETTI (218) 724-7374
LESSEE:	VERIZON WIRELESS 10801 BUSH LAKE ROAD BLOOMINGTON, MN 55438 MIKE COGAR (612) 720-0030
POWER UTILITY COMPANY CONTACT:	MINNESOTA POWER 30 WEST SUPERIOR STREET DULUTH, MN 55802 KEVIN KOSKELA (800) 228-4966
TELCO UTILITY COMPANY CONTACT:	QWEST
ARCHITECT:	DESIGN 1 OF EDEN PRAIRIE, LLC. 9973 VALLEY VIEW ROAD EDEN PRAIRIE, MN 55344 (952) 903-9299
SURVEYOR:	WIDSETH, SMITH, & NOLTING 7804 INDUSTRIAL PARK ROAD BAXTER, MN 56425 (218) 829-5117
STRUCTURAL ENGINEER:	GPD GROUP 1117 PERIMETER CENTER WEST, SUITE W303 ATLANTA, GA 30338 KEVIN CLEMENTS: (678) 781-5061
GEOTECHNICAL ENGINEER:	N/A

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

PROJECT
20120822230

DULC
VIEW CREST
AT&T FA#:1013800

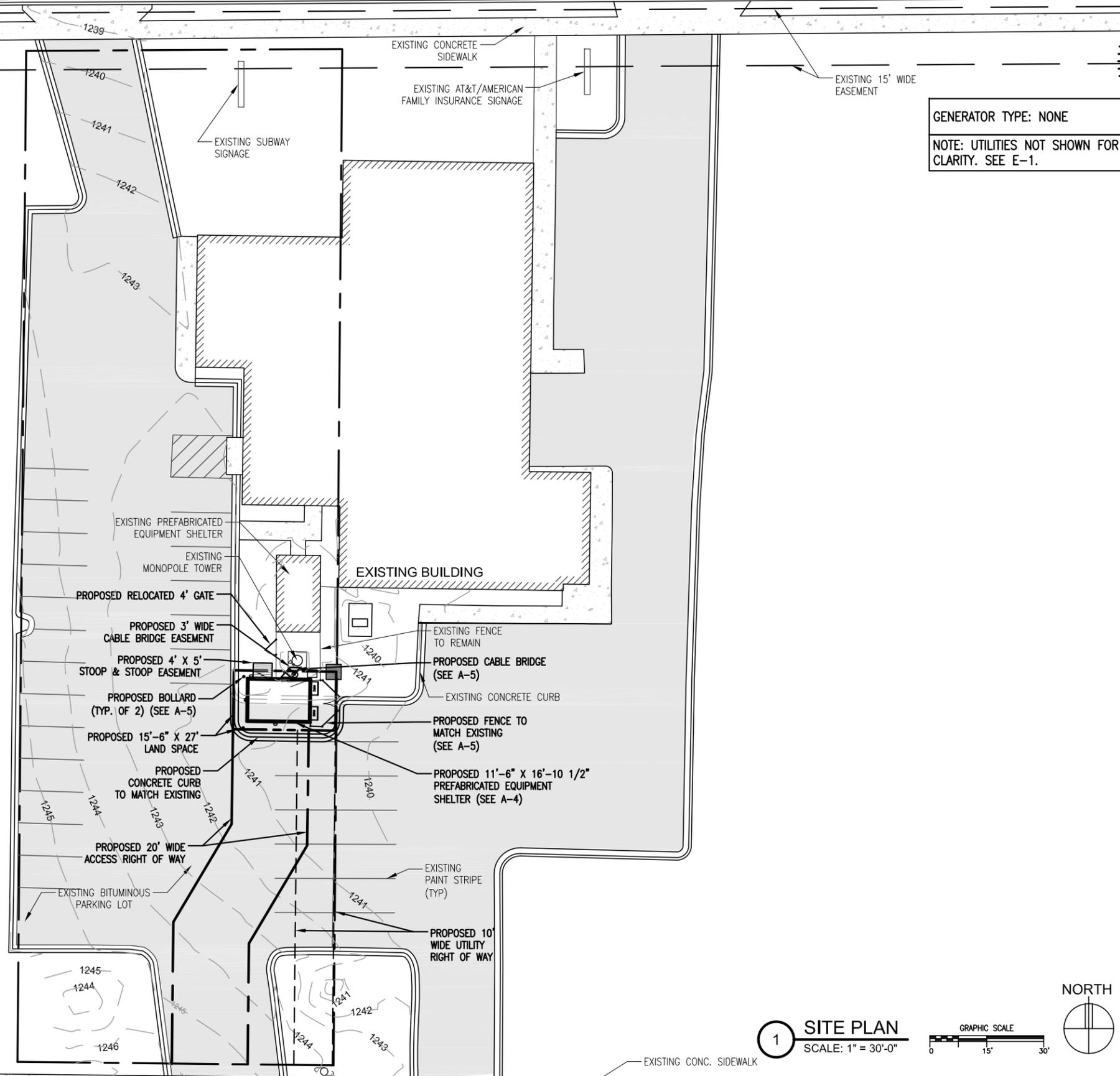
E. CENTRAL ENTRANCE
DULUTH, MN 55811

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

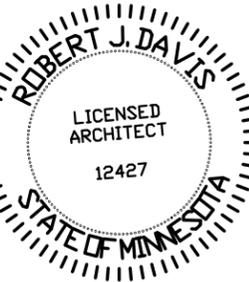
DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

- ### 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 DULUTH.
 - 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.

STATE HIGHWAY 194



GENERATOR TYPE: NONE
 NOTE: UTILITIES NOT SHOWN FOR CLARITY. SEE E-1.



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered Architect under the laws of the State of MINNESOTA. ROBERT J. DAVIS, Reg. No. 12427
 Signature: *Robert J. Davis*
 Date: 12-05-14 License # 12427

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 EDEN PRAIRIE, MN 55344
 (952) 903-9299

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 10801 BUSH LAKE ROAD
 BLOOMINGTON, MN 55438
 (612) 720-0030

PROJECT
 20120822230

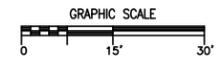
DULC
 VIEW CREST
 AT&T FA#:1013800

E. CENTRAL ENTRANCE
 DULUTH, MN 55811

SHEET CONTENTS:
 SITE PLAN

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

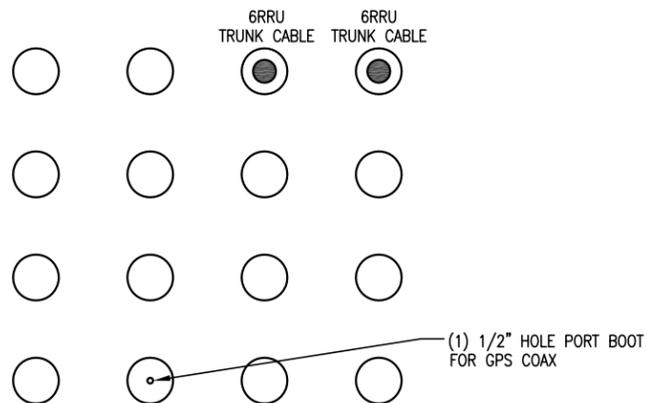
1 SITE PLAN
 SCALE: 1" = 30'-0"



EAST PALM STREET

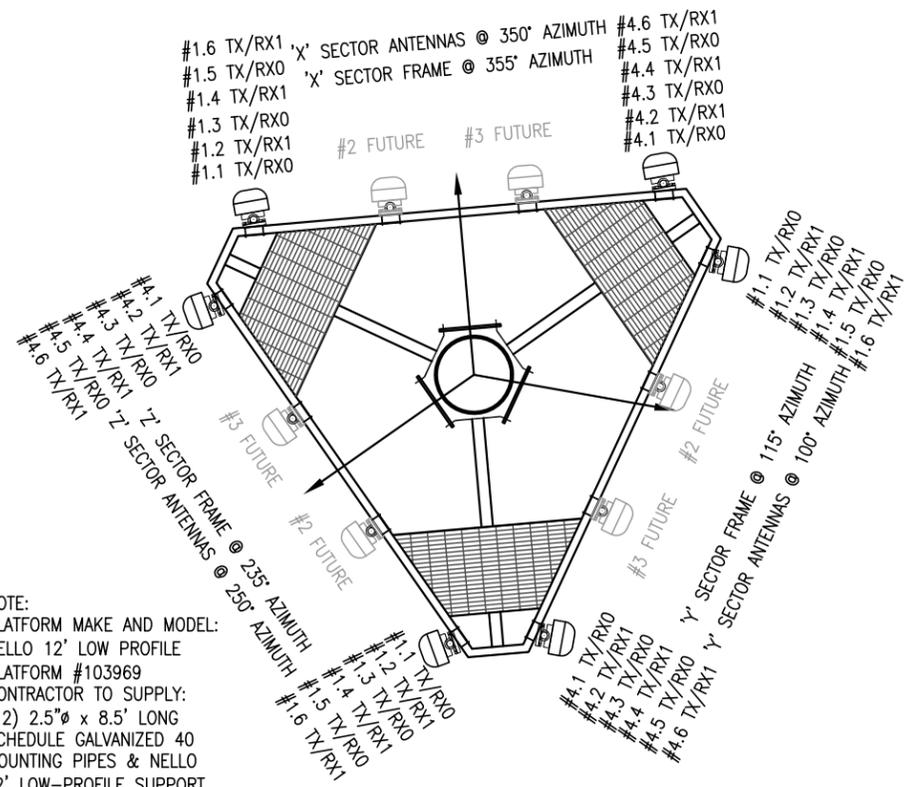
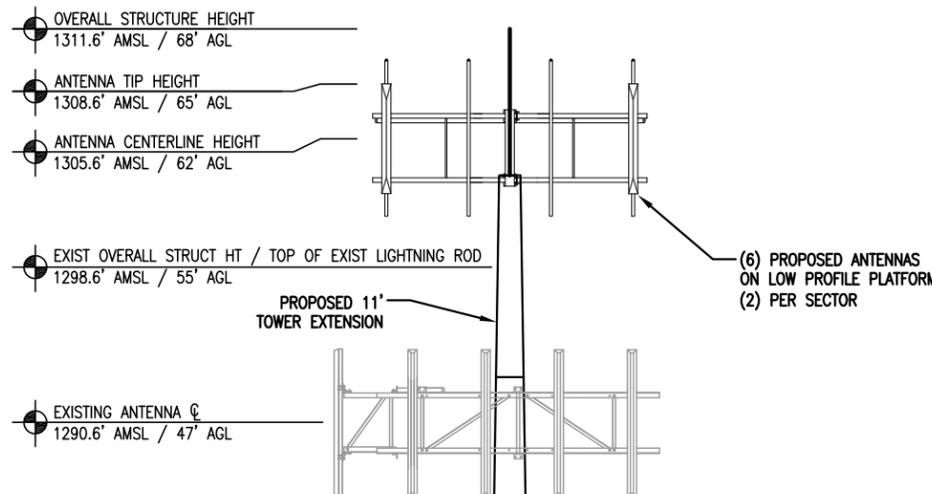
2 NOT USED
SCALE: NONE

3 NOT USED
SCALE: NONE

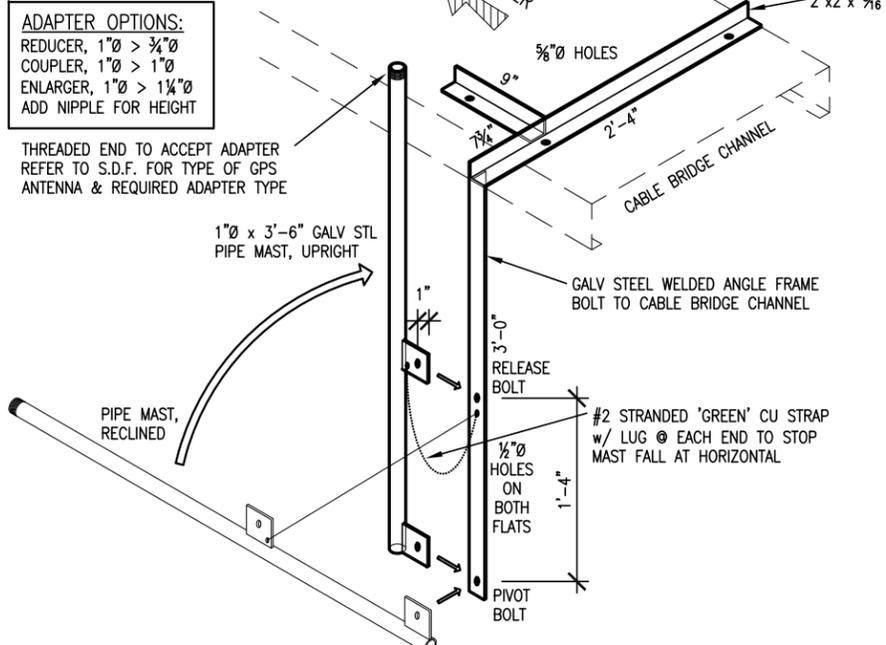


4 COAX ENTRY DETAIL (VIEW FROM INSIDE)
SCALE: NONE

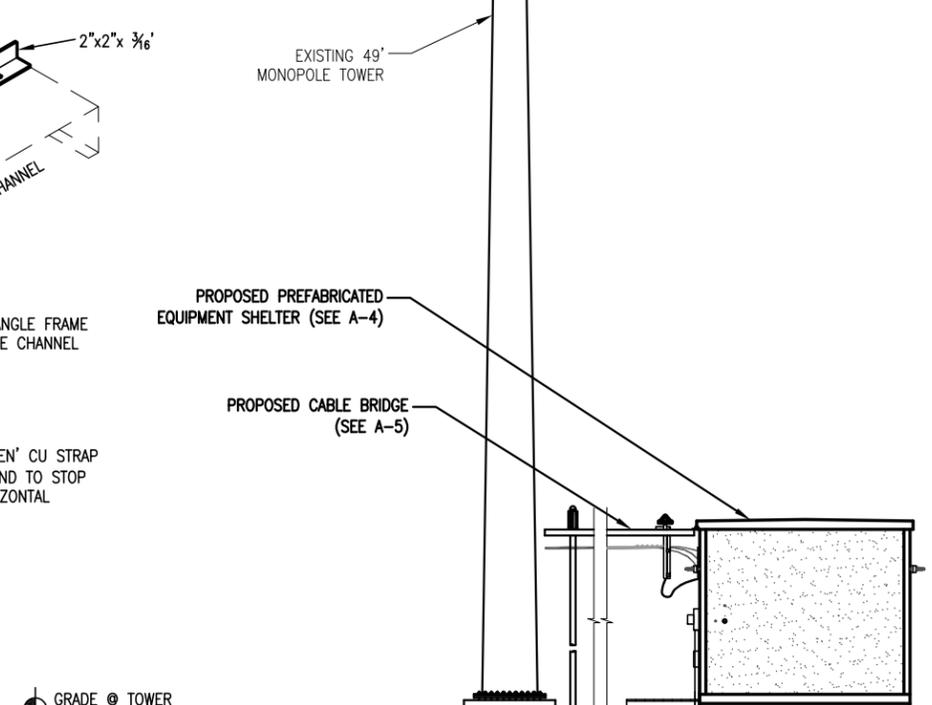
NOTE:
1.) THE ARCHITECT MAKES NO WARRANTY, EXPRESSED OR IMPLIED, OF THE ACCURACY OF THE STRUCTURAL ANALYSIS AND THE PERFORMANCE OF THE COMPLETED CONSTRUCTION AS SHOWN ON THESE DOCUMENTS AND THE STRUCTURAL ANALYSIS.



NOTE:
PLATFORM MAKE AND MODEL:
NELLO 12' LOW PROFILE
PLATFORM #103969
CONTRACTOR TO SUPPLY:
(12) 2.5" x 8.5' LONG
SCHEDULE GALVANIZED 40
MOUNTING PIPES & NELLO
12' LOW-PROFILE SUPPORT
RAIL KIT #103996

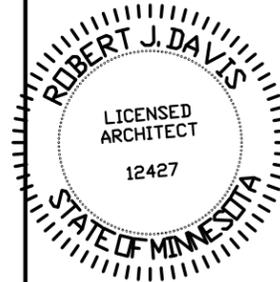


6 GPS MOUNTING DETAIL
SCALE: 3/4" = 1'-0"



1 WEST ELEVATION
SCALE: 1" = 20'

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



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered Architect under the laws of the State of MINNESOTA. ROBERT J. DAVIS, Reg. No. 12427

Signature: *Robert J. Davis*
Date: 12-05-14 License # 12427



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9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

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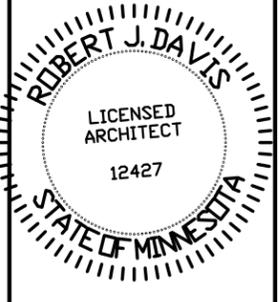
SHEET CONTENTS:
TOWER ELEVATION
GPS DETAIL & ELEVATION
ANTENNA MOUNTING DETAIL
COAX ENTRY DETAIL

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

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	350°	1.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°	1	RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	350°	1.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	350°	1.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	350°	1.4	TX/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-							
	350°	1.5	TX/RX0	-	-	5TH PORT	AWS +45	-	-	-	-	-							
	350°	1.6	TX/RX1	-	-	6TH PORT	AWS -45	-	-	-	-	-							
	350°	2	-	-	FUTURE	-	-	-	-	-	-	-							
	350°	3	-	-	FUTURE	-	-	-	-	-	-	-							
	350°	4.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°		RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	350°	4.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	350°	4.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	350°	4.4	TX/RX0	-	-	4TH PORT	PCS -45	-	-	-	-	-							
350°	4.5	TX/RX1	-	-	5TH PORT	AWS +45	-	-	-	-	-								
350°	4.6	TX/RX0	-	-	6TH PORT	AWS -45	-	-	-	-	-								
"Y" SECTOR	100°	1.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°	1	RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	100°	1.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	100°	1.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	100°	1.4	TX/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-							
	100°	1.5	TX/RX0	-	-	5TH PORT	AWS +45	-	-	-	-	-							
	100°	1.6	TX/RX1	-	-	6TH PORT	AWS -45	-	-	-	-	-							
	100°	2	-	-	FUTURE	-	-	-	-	-	-	-							
	100°	3	-	-	FUTURE	-	-	-	-	-	-	-							
	100°	4.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°		RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	100°	4.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	100°	4.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	100°	4.4	TX/RX0	-	-	4TH PORT	PCS -45	-	-	-	-	-							
100°	4.5	TX/RX1	-	-	5TH PORT	AWS +45	-	-	-	-	-								
100°	4.6	TX/RX0	-	-	6TH PORT	AWS -45	-	-	-	-	-								
"Z" SECTOR	250°	1.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°	1	RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	250°	1.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	250°	1.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	250°	1.4	TX/RX1	-	-	4TH PORT	PCS -45	-	-	-	-	-							
	250°	1.5	TX/RX0	-	-	5TH PORT	AWS +45	-	-	-	-	-							
	250°	1.6	TX/RX1	-	-	6TH PORT	AWS -45	-	-	-	-	-							
	250°	2	-	-	FUTURE	-	-	-	-	-	-	-							
	250°	3	-	-	FUTURE	-	-	-	-	-	-	-							
	250°	4.1	TX/RX0	1	COMMSCOPE	SBNHH-1D45B	LTE +45	72"	65'	62'	0°	0°		RRH	ERICSSON	RRUS-B13 w/A2	(1) COMMSCOPE HFT412-2S29-15 FIBER FEED TAIL DIST. BOX TO RRU		
	250°	4.2	TX/RX1	-	-	2ND PORT	LTE -45	-	-	-	-	-							
	250°	4.3	TX/RX0	-	-	3RD PORT	PCS +45	-	-	-	-	-							
	250°	4.4	TX/RX0	-	-	4TH PORT	PCS -45	-	-	-	-	-							
250°	4.5	TX/RX1	-	-	5TH PORT	AWS +45	-	-	-	-	-								
250°	4.6	TX/RX0	-	-	6TH PORT	AWS -45	-	-	-	-	-								
ADDITIONAL: (4) DISTRIBUTION BOX RxxDC-3315-PF-48 (2 IN SHELTER, 2 ON TOWER) (2) COMMSCOPE 6 RRU TRUNK CABLE MODEL #HFT1206-24S49-100 (9) RET JUMPERS - COMMSCOPE MODEL# ATCB-B01-005													24	JUMPER	COMMSCOPE	LDF4-50A	FOAM	1/2"	10'

3 ANTENNA KEY
SCALE: NONE

2 COAX KEY
SCALE: NONE



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered Architect under the laws of the State of MINNESOTA. ROBERT J. DAVIS, Reg. No. 12427

Robert J. Davis
Date: 12-05-14 License # 12427

DESIGN 1

ROBERT J. DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

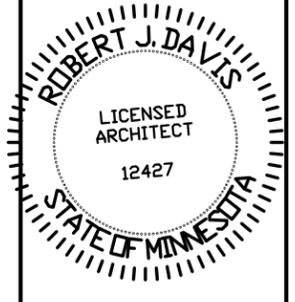
PROJECT
20120822230

DULC
VIEW CREST
AT&T FA#:1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

SHEET CONTENTS:
COAX & ANTENNA KEY

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14



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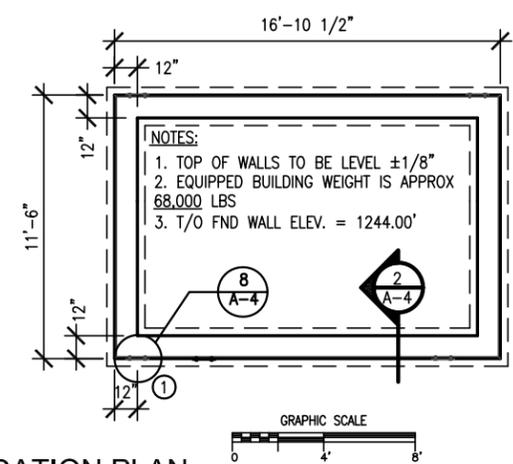
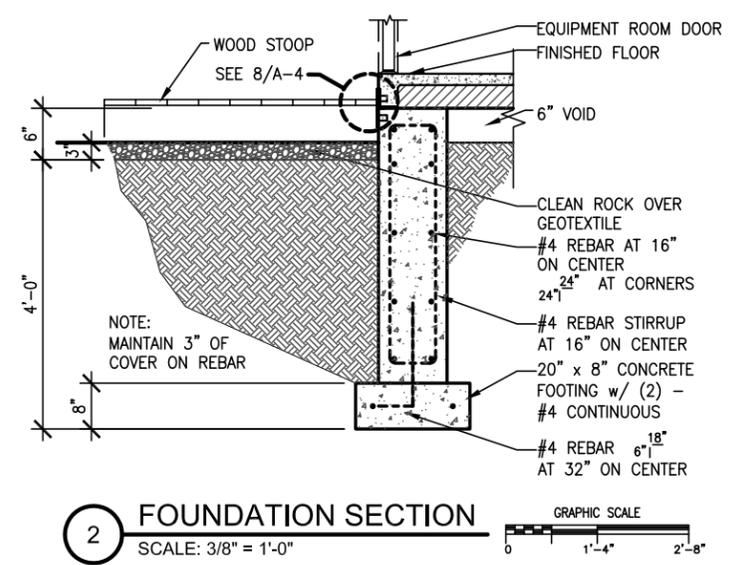
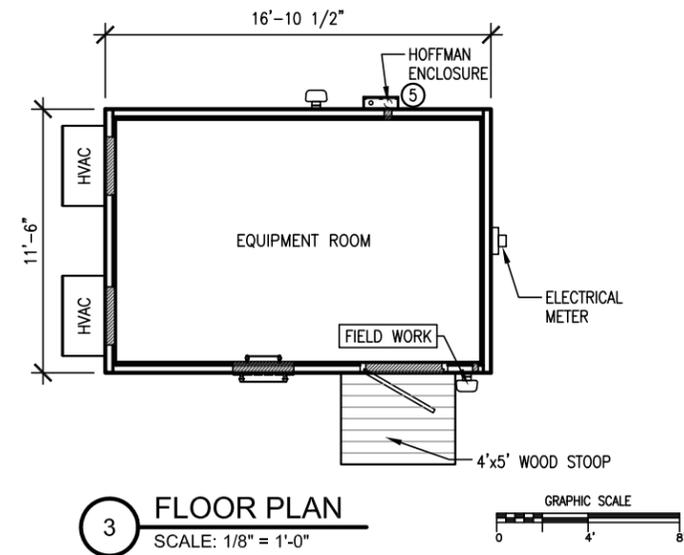
DULC
VIEW CREST
AT&T FA#:1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

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

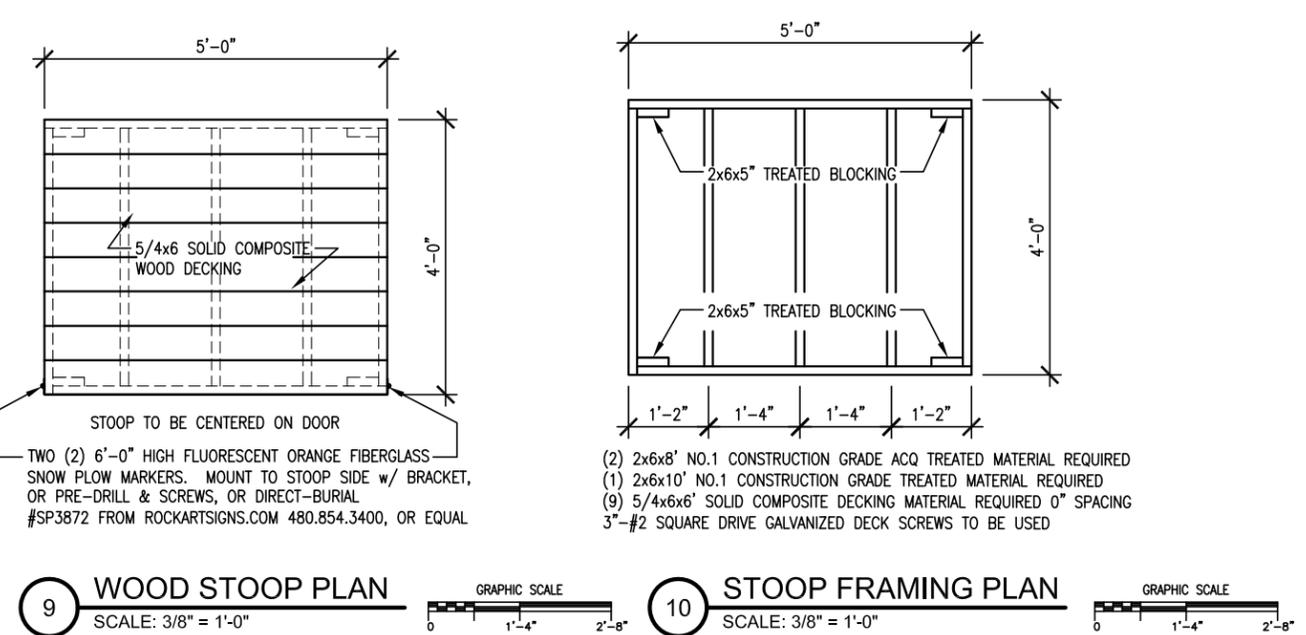
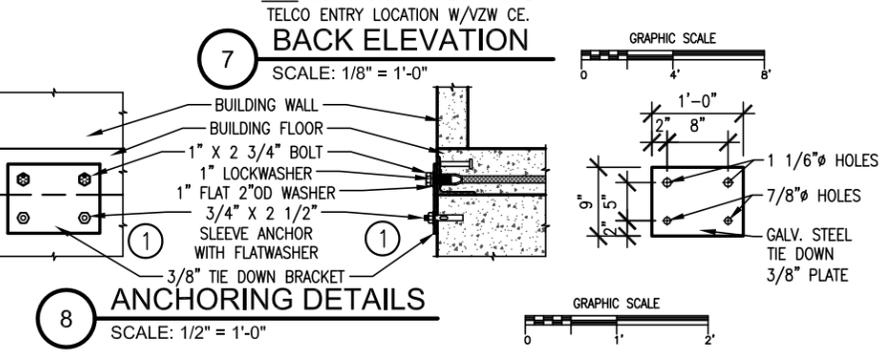
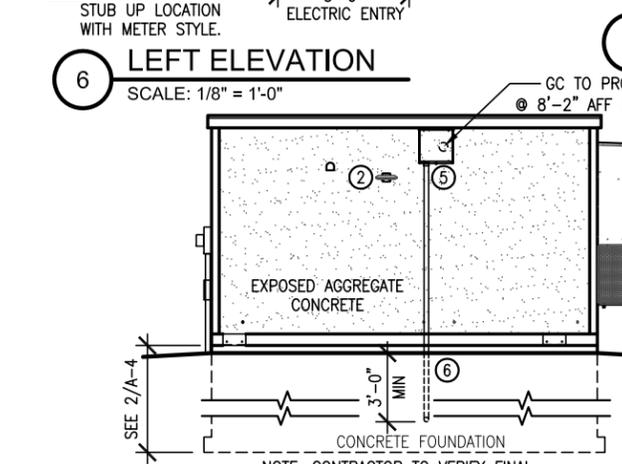
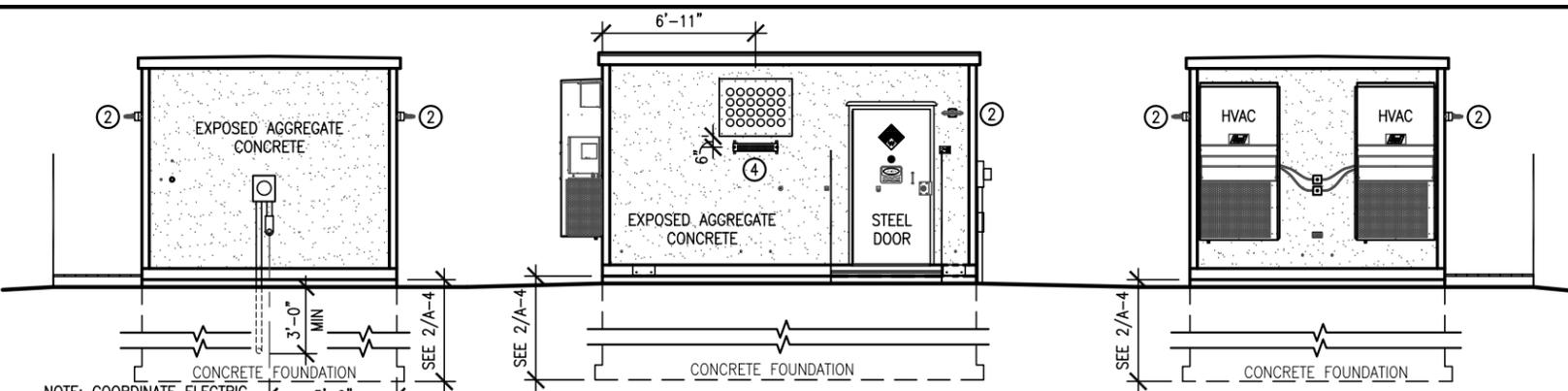
DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

A-4



- | | |
|-----------------------------|--------------------------------------|
| FIELD-APPLIED ITEMS | CONTRACTOR-FURNISHED ITEMS |
| SHIPPED LOOSE WITHIN PREFAB | |
| ① ANCHORING PLATES | ⑤ HOFFMAN ENCLOSURE (18" x 18" x 6") |
| ② EXTERIOR LIGHT FIXTURE | ⑥ PVC CONDUIT & FITTINGS |
| ③ GENERATOR MUFFLER | |
| ④ BUSS BAR | |

PREFABRICATED BUILDING BY:
Fibrebond Corporation
1300 Davenport Drive
Minden, LA 71055
800-824-2614
ATTN: MIKE GOODWIN



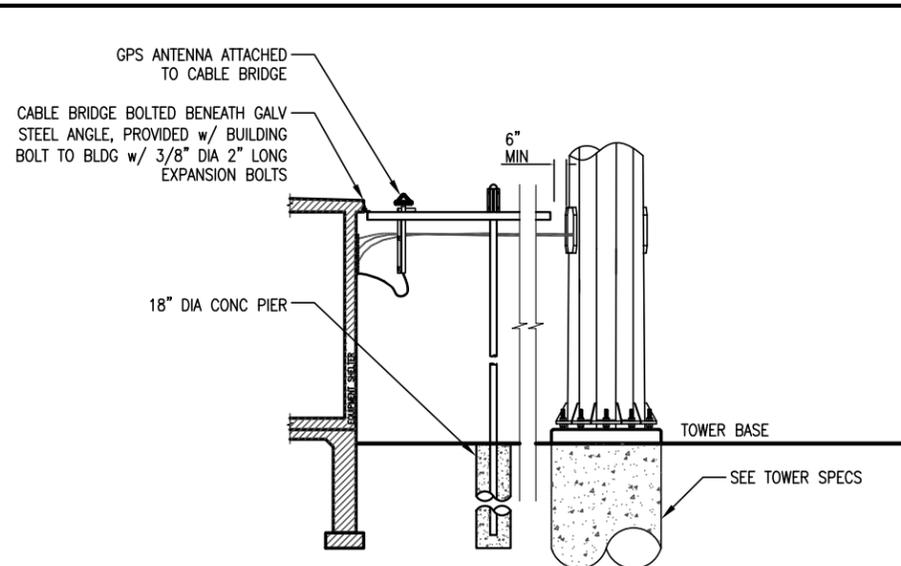
NOTE: COORDINATE ELECTRIC STUB UP LOCATION WITH METER STYLE.

NOTE: CONTRACTOR TO VERIFY FINAL TELCO ENTRY LOCATION W/VZW CE.

STOOP TO BE CENTERED ON DOOR

TWO (2) 6'-0" HIGH FLUORESCENT ORANGE FIBERGLASS SNOW PLOW MARKERS. MOUNT TO STOOP SIDE W/ BRACKET, OR PRE-DRILL & SCREWS, OR DIRECT-BURIAL #SP3872 FROM ROCKARTSIGNS.COM 480.854.3400, OR EQUAL

(2) 2x6x8' NO.1 CONSTRUCTION GRADE ACQ TREATED MATERIAL REQUIRED
(1) 2x6x10' NO.1 CONSTRUCTION GRADE TREATED MATERIAL REQUIRED
(9) 5/4x6x6' SOLID COMPOSITE DECKING MATERIAL REQUIRED 0" SPACING
3"-#2 SQUARE DRIVE GALVANIZED DECK SCREWS TO BE USED



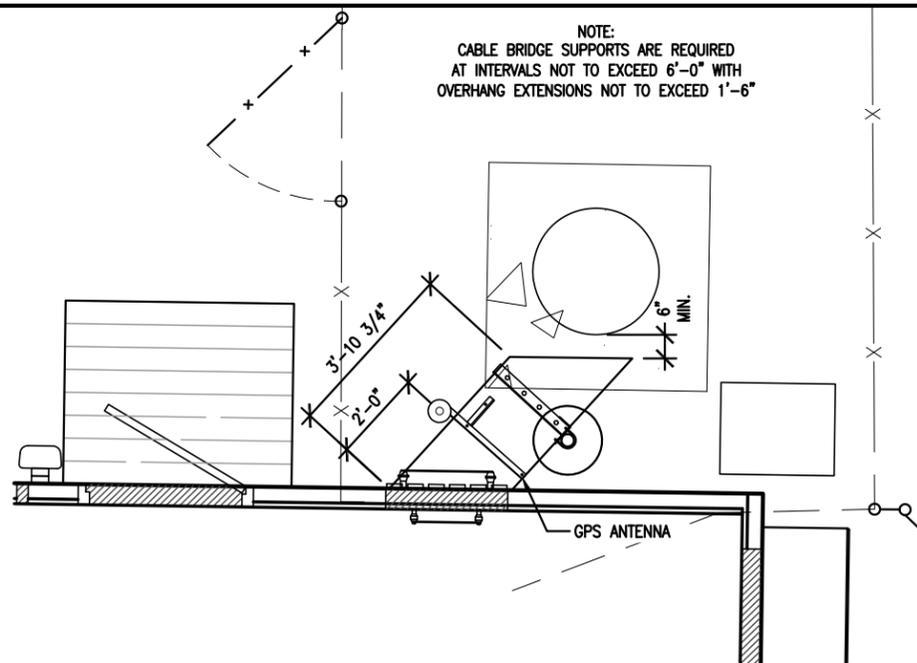
5 CABLE BRIDGE ELEVATION
SCALE: 1/8" = 1'-0"



6 PHOTO: EXISTING ANTENNA ARRAY
NO SCALE



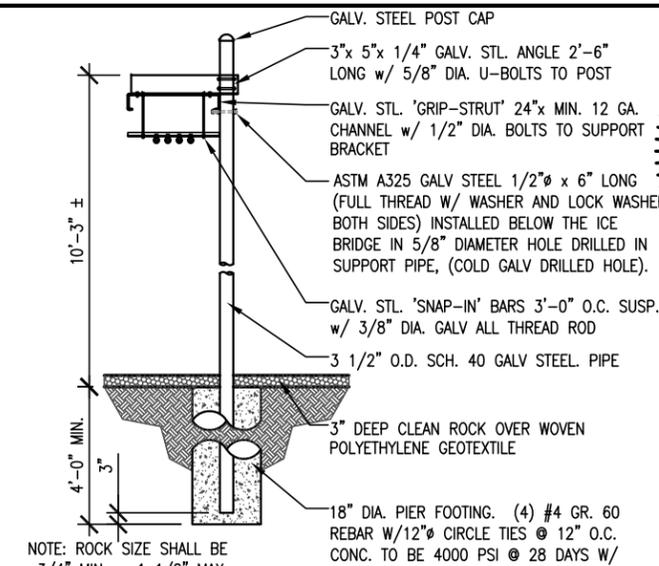
7 PHOTO: EXISTING COMPOUND
LOOKING NORTH-WEST AT EXISTING COMPOUND



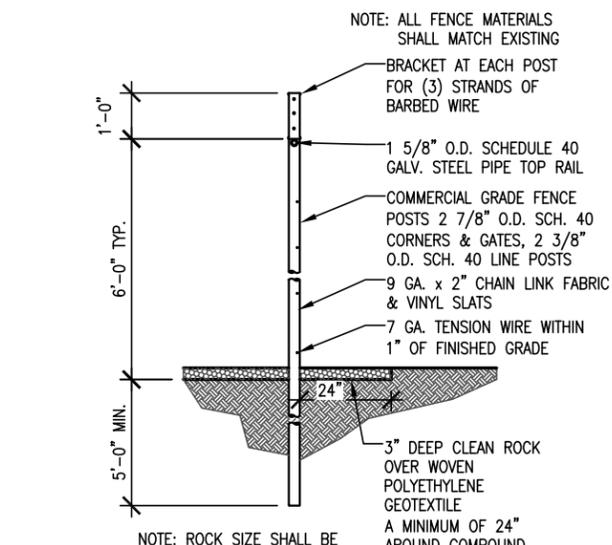
4 CABLE BRIDGE PLAN
SCALE: 1/4" = 1'-0"



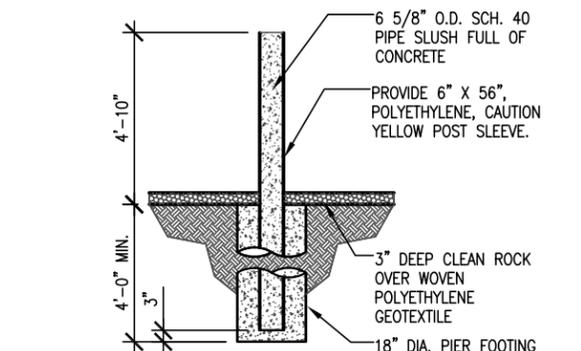
8 PHOTO: EXISTING SITE
LOOKING NORTH-EAST AT EXISTING SITE



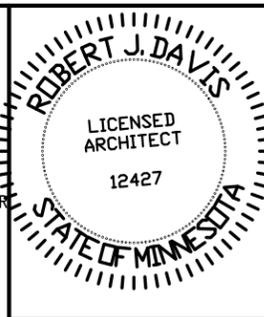
3 CABLE BRIDGE SECTION
SCALE: 1/4" = 1'-0"



2 FENCE SECTION
SCALE: 1/4" = 1'-0"



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



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PROJECT
20120822230

DULC
VIEW CREST
AT&T FA#: 1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

SHEET CONTENTS:
FENCE SECTION
CABLE BRIDGE SECTION
DRIVEWAY SECTION
MISC. DETAILS

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

GENERAL CONDITIONS

00 0001 PERMITS

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

00 0002 SURVEY FEES

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

01 0010 INSURANCE & BONDS

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

01 0400 SUPERVISION & COORDINATION

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

01 0600 TESTING

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

01 2000 MEETINGS

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

01 5100 TEMPORARY UTILITIES

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

01 5300 EQUIPMENT RENTAL

Contractor shall furnish equipment necessary to expedite work.

01 5900 FIELD OFFICES & SHEDS

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

01 7000 CLEAN UP & CLOSE OUT

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

01 8000 TRUCKS & MILEAGE

Contractor shall provide transportation for their own personnel.

01 8300 TRAVEL TIME & PER DIEM

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

01 9200 TAXES

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

SITWORK

02 1000 SITE PREPARATION

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

02 1100 ROAD IMPROVEMENT & CONSTRUCTION

N/A

02 2000 EARTHWORK & EXCAVATION

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

02 5000 PAVING & SURFACING

Curb extension shall be constructed as noted on plan.

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" schedule 40 PVC conduit, (schedule 80 PVC under roads and drives) with 'large sweep' elbows & pull string for TELCO service as noted on plans. Cable to be fiber optic lines, source and provider T.B.D. Trenches shall be as in 02 7800.

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.

02 8001 FENCING

All fence materials and fittings shall be galvanized steel. Fence shall be 6'-0" high x 9 ga. X 2" chain link fabric, w/ 7 ga. bottom tension wire. Corner and Gate posts shall be 2 7/8" O.D. sch 40 steel pipe, driven 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. Fence top shall be three (3) strands barbed wire to 7'-0" above grade. Bracing shall be 3/8" truss rods and 1 5/8" O.D. pipe mid-rails at corners. Gate latch shall be commercial grade, "Cargo" or equal. Fabric shall extend to within 1" of finish grade. Fence enclosures shall be completed within 7 days of tower erecting. Existing fences shall be protected against damage during this work, and any damage that may occur shall be repaired or replaced to equal existing preconstruction condition.

02 8500 IRRIGATION SYSTEMS

N/A

02 9000 LANDSCAPING

N/A

CONCRETE

03 1000 CONCRETE FORMWORK

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

03 6000 GROUT

N/A

03 8000 TOWER FOUNDATION

N/A

03 8001 CATHODIC PROTECTION

N/A

03 8050 ANTENNA MOUNTS

Contractor to furnish and install antenna mounts and handholes. Contractor shall ensure the existence of a 3/8" cable safety climb (DBI/Sala or equal) on the Tower.

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.

03 9050 TRANSPORT AND SET SHELTER

Contractor shall provide crane(s) and/or truck for setting shelter per RFQ. Contractor shall install items shipped loose within shelter, including but not limited to: generator connector, exterior light and sensor, vent hoods, and buss bars.

MASONRY

04 0000 MASONRY

N/A

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.

Contractor shall ensure the existence of a 3/8" cable safety climb system (DBI/SALA or equal) on tower.

WOOD & PLASTICS

06 1000 ROUGH CARPENTRY

Contractor shall provide materials, labor for wood stoops per architectural documents, see sheet A-4.

06 2000 FINISH CARPENTRY

N/A

THERMAL & MOISTURE

07 2000 INSULATION

N/A

07 2500 FIREPROOFING

N/A

07 3000 SHINGLES AND ROOFING TILES

N/A

07 5000 MEMBRANE ROOFING

N/A

07 6000 FLASHING AND SHEET METAL

N/A

DOORS AND HARDWARE

08 0000 DOORS AND HARDWARE

PREFAB: Door is furnished and installed by Prefab Manufacturer with 'Construction' key core.

FINISHES

09 2600 DRYWALL

N/A

09 5700 FLOOR COVERING

N/A

09 9000 PAINTING

Touchup paint construction related scrapes & scratches.

SPECIAL CONSTRUCTION

13 1250 WAVE GUIDE, (Coaxial Cables)

LDF4-50A = 1/2" nominal, .63 in. actual diameter; 5" min. bending radius; .15 lbs/ft
AVA5-50 = 7/8" nominal, 1.102 in. actual dia.; 10" min. bending radius; .30 lbs/ft
AVA7-50 = 1 5/8" nominal, 1.98 in. actual dia.; 15" min. bending radius; .72 lbs/ft

13 1260 CABLE BRIDGE

Cable bridge to be 24 inch wide, 12 gauge, 'grip strut' supported no more than 6'-0" on center by 3 1/2" steel pipe and 3" x 5" x 1/4" x 30" long angle. Cable bridge overhang extensions not to exceed 1'-6". Steel to be hot dipped galvanized.

13 1400 ANTENNA INSTALL

Contractor shall install Owner's antennas and feed lines during erecting. Contractor shall sweep coax lines for continuity per current VZW standards.

MECHANICAL

15 4000 PLUMBING

N/A

15 5000 HVAC

PREFAB: Shelter is factory-equipped with two through-wall package units of 5-ton and 10 KW capacity.

ELECTRIC

16 5000 LIGHTING AND ELECTRICAL

N/A

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

PREFABRICATED EQUIPMENT SHELTER
COAXIAL CABLES, CONNECTORS, BOOTS, RELATED HARDWARE
ANTENNAS AND DOWNTILT BRACKETS
BUILDING PERMIT FEE
MATERIALS TESTING FEES
SPECIAL INSPECTIONS FEES

CONTRACTOR-FURNISHED EQUIPMENT

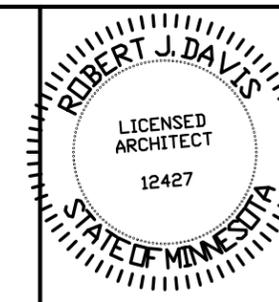
POWER TO SITE, TELCO TO SITE.
CABLE BRIDGE
PLATFORM

SCOPE OF WORK:

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

SITE PREPARATION
SITE WORK
SHELTER FOUNDATION
SITE GROUNDING
ELECTRICAL AND TELEPHONE SERVICES
SET SHELTER
INSTALL ANTENNAS & CABLES
CABLE BRIDGE
FENCING
CURB EXTENSION
TOWER EXTENSION

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.



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Signature: *Robert J. Davis*

Date: 12-05-14 License # 12427



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EDEN PRAIRIE, MN 55344
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DULUTH, MN 55811

SHEET CONTENTS:
OUTLINE SPECIFICATIONS

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

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 ten 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

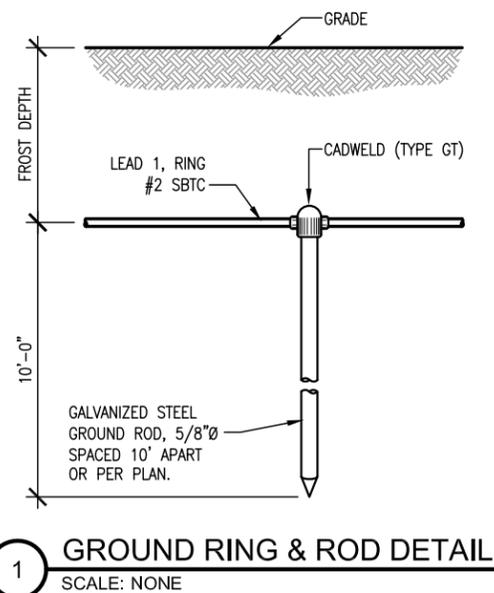
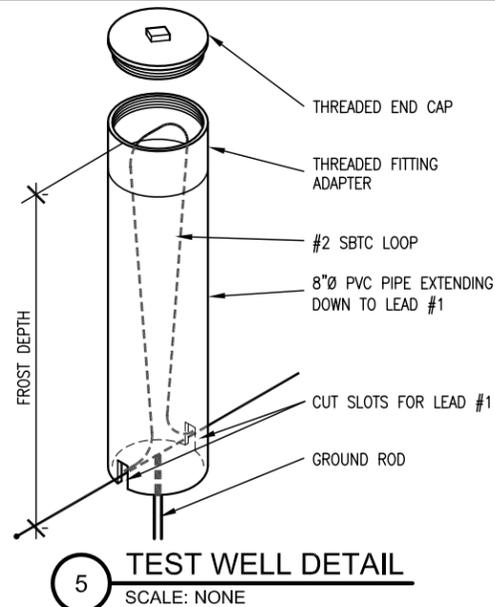
Test lead #1 and ground rods after installation but before backfilling or connecting to any other grounding, using the 3-point fall of potential method. Contractor to notify Verizon Wireless senior construction engineer at least 48 hours prior to testing. Document installation and test results with photographs.

SYMBOL AND NOTE LEGEND

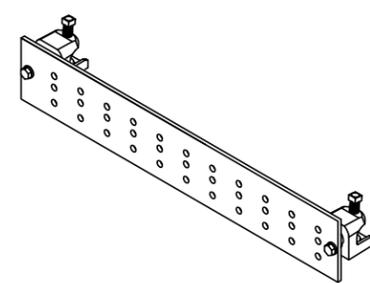
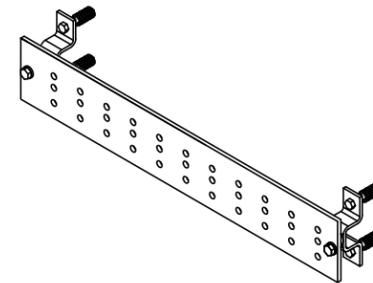
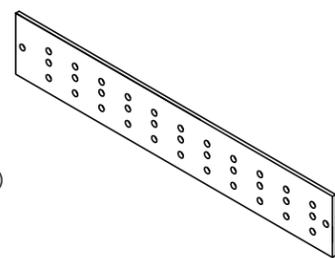
- ① --- #2 SBTC AROUND SHELTER, TOWER, OR GUY ANCHOR
- 5/8" X 10'-0" GALVANIZED STEEL GROUND ROD
- ⊙ TEST WELL PREFERRED LOCATION
- #2 SBTC 'WHIP' LEAD
- ⑤ --- (2) #2 SBTC FROM MGB, PGB, OR TGB TO LEAD 1
- ⑥ AC HVAC UNIT
- ②①③ BC BUILDING CORNER
- ⑥ BO BOLLARD
- ⑥ CBS CABLE BRIDGE SUPPORT POST
- ⑥ FAN GUY ANCHOR PLATE
- ⑥ FP FENCE POST
- ⊖ GP GATE POST, 3/4" BRAID STRAP TO LEAF
- ⑥ GUY GUY WIRE, MECH. CLAMP ONLY - NO WELDS
- ⑥ HL HOOD OR LOUVER
- ⑥ HB OUTSIDE OF HOFFMAN BOX
- ⑥ EM COMMERCIAL ELECTRICAL METER
- ④ EL ELECTRICAL SERVICE GROUND
- ⑥ MU GENERATOR MUFFLER
- ⑥ RBR FOUNDATION REINFORCING
- ⑥ SP STEEL POST
- ⑥ TEL HOFFMAN BOX
- ⑥ TWR TOWER BASE
- ⑥ VP DIESEL FUEL VENT PIPE

Note:

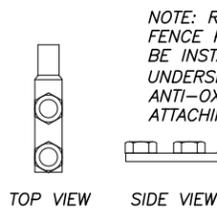
Contractor to provide #2 solid bare tin-clad (SBTC) copper wire lead from #1 ground ring to air conditioner & ice shield if provided by VZW.



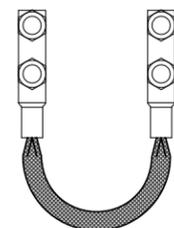
ALL BUSS BARS SHALL BE TIN-CLAD COPPER



2 GROUND BUSS BAR DETAILS
SCALE: NONE



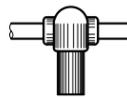
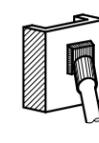
NOTE: REMOVE GALVANIZING FROM FENCE POSTS IN AREAS LUGS WILL BE INSTALLED. LIGHTLY COAT THE UNDERSIDE OF THE LUGS W/ ANTI-OX COMPOUND BEFORE ATTACHING TO POSTS.



(2) GATE BONDED TO FENCE POST TWO-HOLE 10,000 PSI COMPRESSION FITTING w/ 3/4" BRAIDED TINNED COPPER JUMPER STRAP

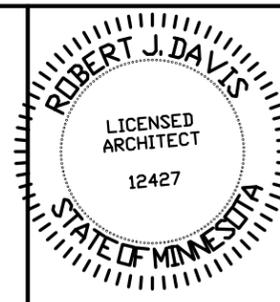
HYTAP CONNECTOR 10,000 PSI COMPRESSION FITTING MUST BE UL467 LISTED ACCEPTABLE FOR DIRECT BURIAL

3 COMPRESSION CONNECTOR DETAILS
SCALE: NONE



WELD: THOMAS & BETTS, 54856BE "BROWN33" CRIMP: BURNDY, YA3C 2TC 14E2, 10,000 PSI SCREW: RECOGNIZED, EM 2522DH.75.312

4 EXOTHERMIC WELD DETAILS
SCALE: NONE



I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered Architect under the laws of the State of MINNESOTA. ROBERT J. DAVIS, Reg. No. 12427

Signed: *Robert J. Davis*
12-05-14
Date:

DESIGN

ROBERT J. DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

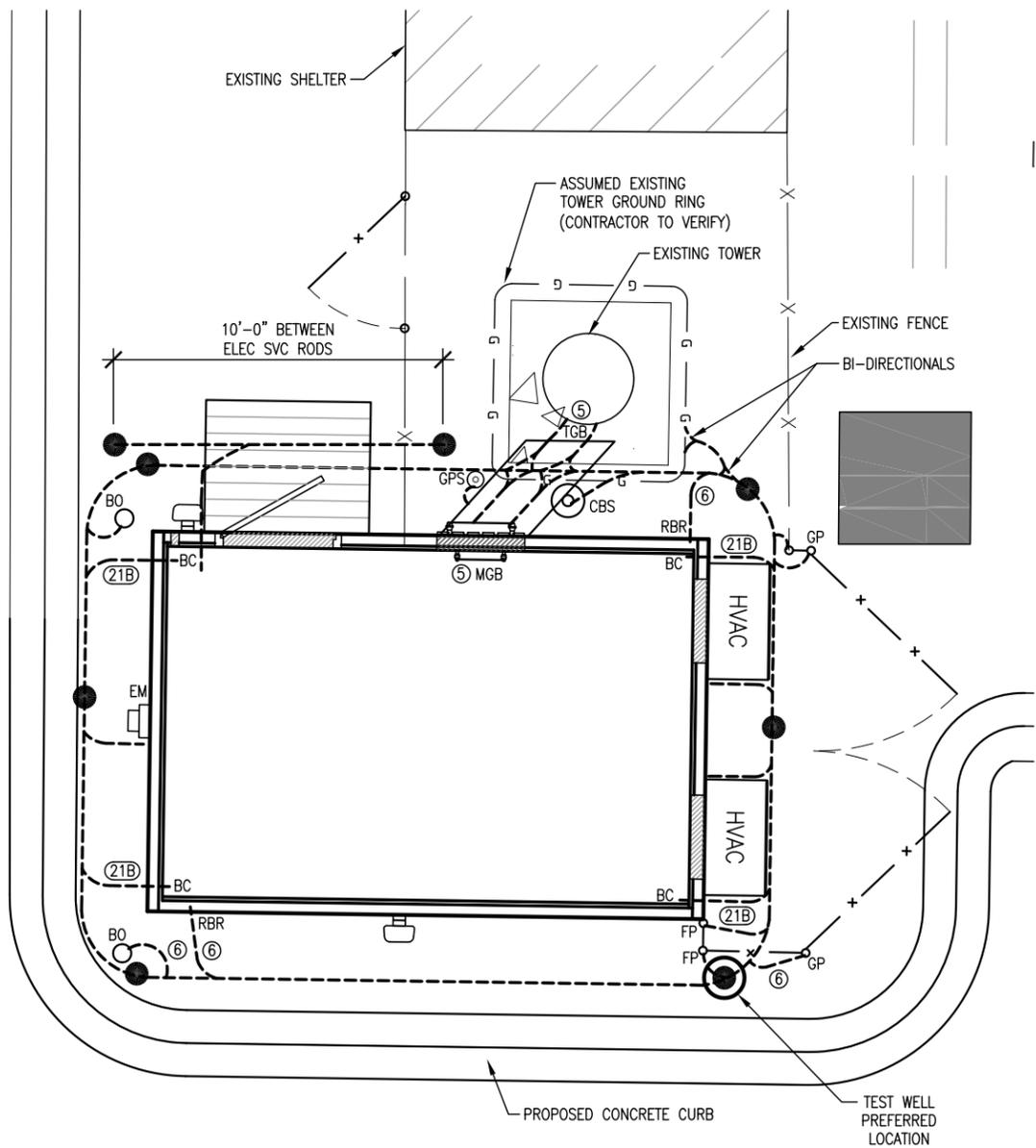
PROJECT
20120822230

DULC VIEW CREST
AT&T FA#:1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

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

DRAWN BY:	CDB
DATE:	05-09-13
CHECKED BY:	CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14



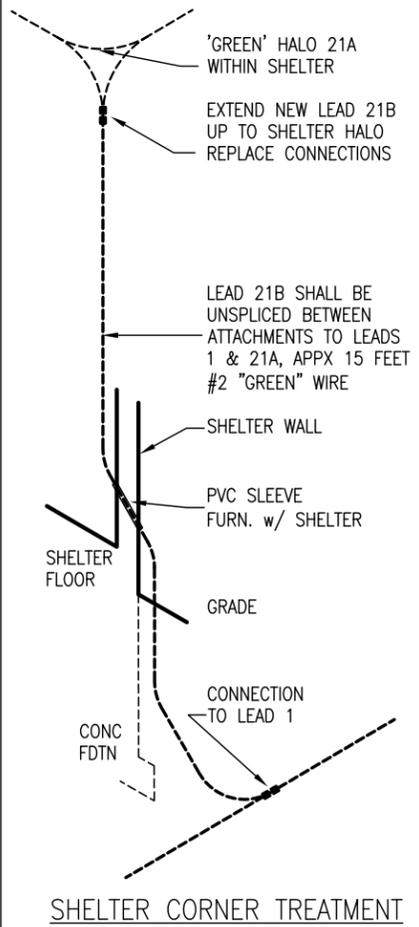
1 **GROUNDING PLAN**
SCALE: 3/16" = 1'-0"



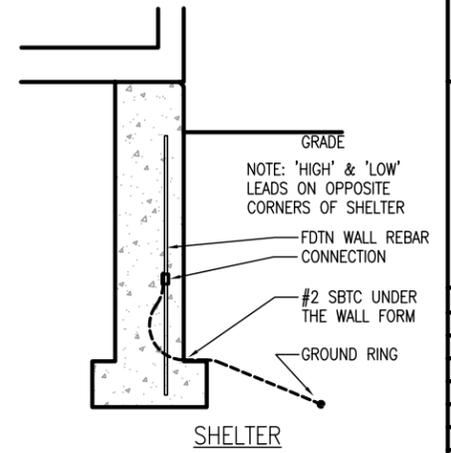
NOTE:
CONTRACTOR SHALL ENSURE THAT EACH WHIP IS ROUTED TO LEAD 1 BY THE SHORTEST PATH, AND BENDS SHALL NOT BE LESS THAN 12" RADIUS

LEAD IDENTIFICATION & DESCRIPTION:

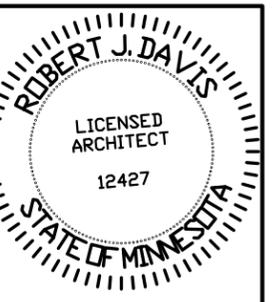
1 RING, EXTERNAL BURIED w/ RODS	#2 SBTC	25 RING TO NEAREST LIGHTNING ROD	#2 SBTC
1A RING, CONCRETE ENCASED	#2 SBTC	26 LGHTNG ROD SYS TO NEARBY MTL	NFPA 780
2 DEEP ANODE (TO IMPROVE OHMS)	ROD OR PIPE	27 RING TO TOWER RING	(2) #2 SBTC
3 RING TO BLDG STL FRAME	#2 SBTC	28 RING TO SHELTER RING	(2) #2 SBTC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



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



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



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Signed: *Robert J. Davis*
Date: 12-05-14

DESIGN

ROBERT J. DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

PROJECT
20120822230

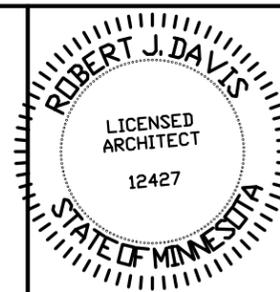
DULC
VIEW CREST
AT&T FA#:1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

SHEET CONTENTS:

GROUNDING PLAN	
LEAD IDENTIFICATION	
SHELTER CORNER DETAIL	
FOUNDATION LEADS	

DRAWN BY:	CDB
DATE:	05-09-13
CHECKED BY:	CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14



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DESIGN
 ROBERT J. DAVIS, AIA
 ARCHITECT
 9973 VALLEY VIEW RD.
 EDEN PRAIRIE, MN 55344
 (952) 903-9299

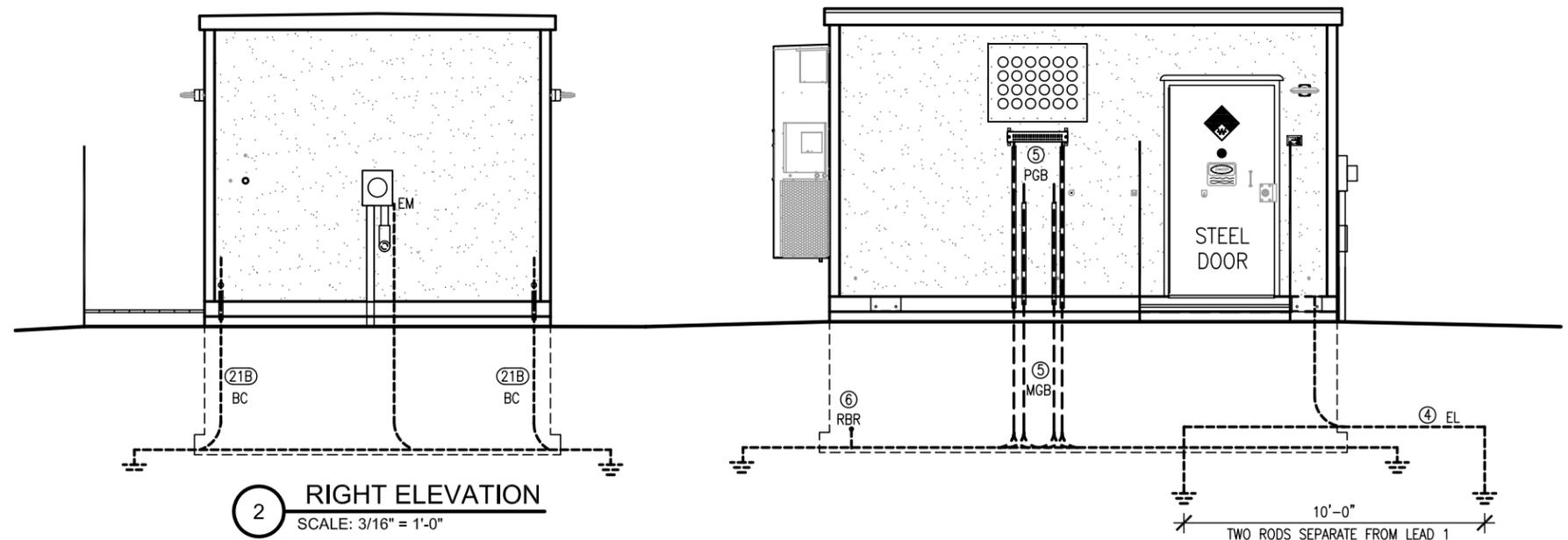
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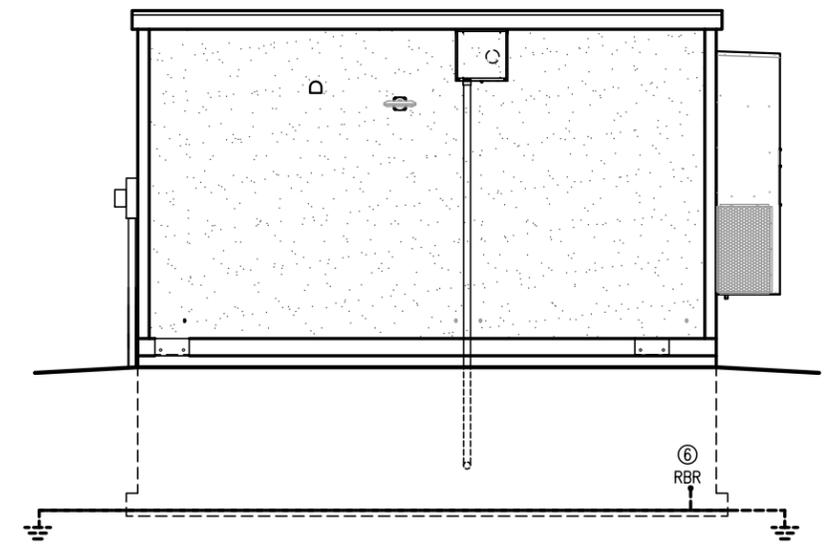
SHEET CONTENTS:
 EXTERIOR ELEVATIONS
 CONDUIT, STOOP, ANTI-THEFT, BRIDGE, TOWER BASE DETAILS

DRAWN BY:	CDB
DATE:	05-09-13
CHECKED BY:	CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

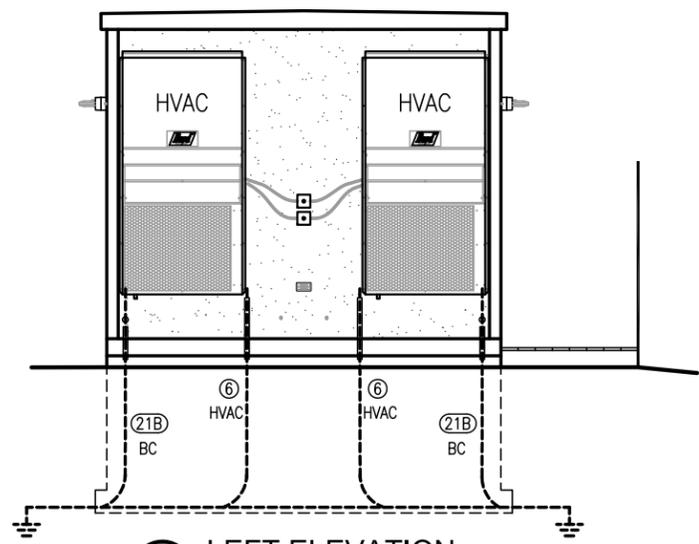


2 RIGHT ELEVATION
 SCALE: 3/16" = 1'-0"

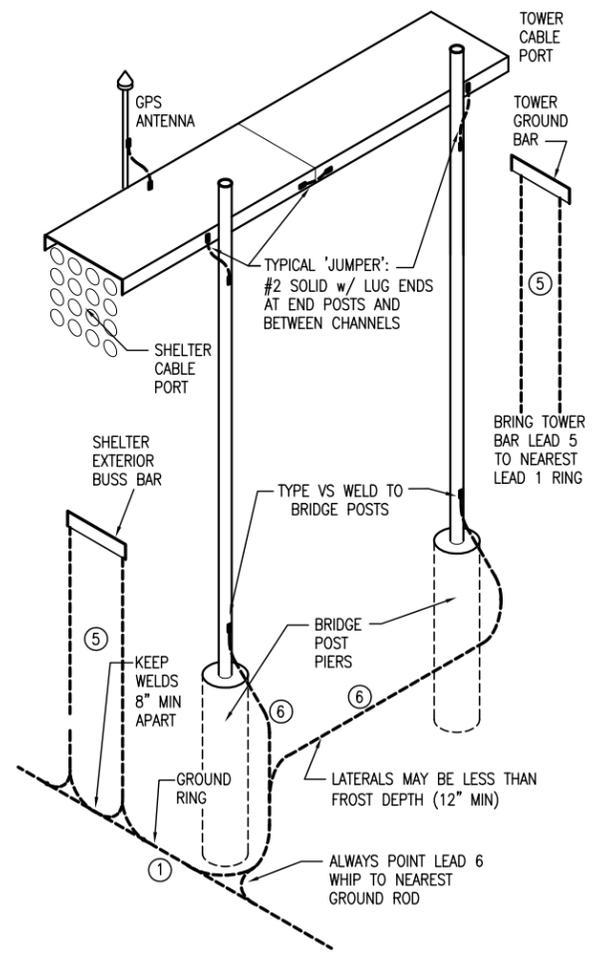
1 FRONT ELEVATION
 SCALE: 3/16" = 1'-0"



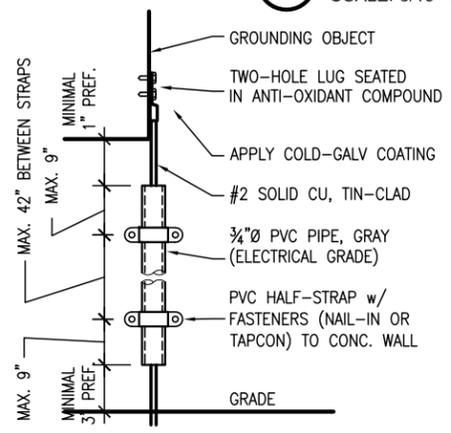
3 REAR ELEVATION
 SCALE: 3/16" = 1'-0"



4 LEFT ELEVATION
 SCALE: 3/16" = 1'-0"



8 TYPICAL CABLE BRIDGE
 SCALE: NONE



5 CONDUIT DETAIL
 SCALE: NONE



DESIGN 1

ROBERT J DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

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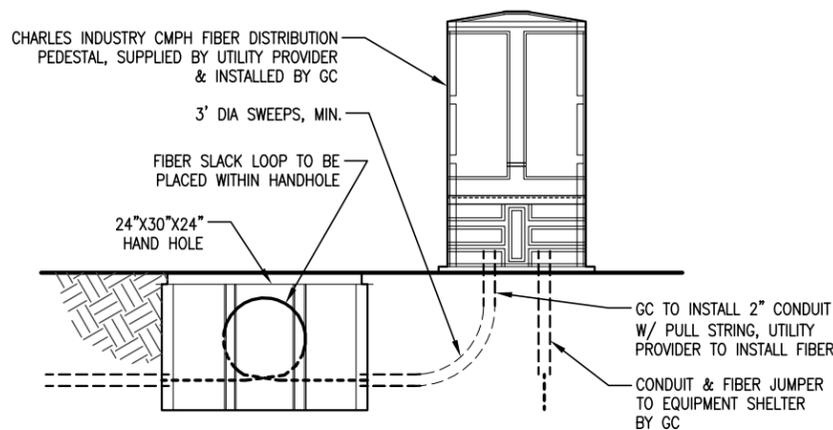
E. CENTRAL ENTRANCE
DULUTH, MN 55811

SHEET CONTENTS:
SITE UTILITY PLAN

DRAWN BY:	A. STANLEY
DATE:	05-01-13
CHECKED BY:	TAB/CDB
REV. A	05-17-13
REV. B	06-26-13
REV. D	12-05-14

U-1

CMPH PEDESTAL MAY BE REQUIRED BY UTILITY PROVIDER



PANEL G1A : 120/240V, SINGLE PHASE, 200A MAIN BREAKER, 42 CIRCUIT, SURFACE MOUNT										
CIRCUIT DESCRIPTION	AMPS	CKT	A	B	A	B	CKT	AMPS	CIRCUIT DESCRIPTION	
HVAC UNIT 1	60	1		5696		5696	2	60	HVAC UNIT 2	
	60	3	5696		5696		4	60		
SD_VENT_TIMER-FAN	15	5		132			6		SPACE	
BATT_CHG-BLK_HTR	20	7	180		892		8	20	LIGHTS	
RECEPTACLES	20	9		1260		150	10	15	VENTS	
	30	11	1200				12			
	30	13		1200			14			
RECTIFIER	30	15	1200				16			
	30	17		1200			18			
RECTIFIER	30	19	1200				20			
	30	21	1200		1200		22			
RECTIFIER	30	23	1200				24			
	30	25		1200			26			
RECTIFIER	30	27	1200				28			
	30	29		1200			30			
RECTIFIER	30	31	1200				32			
	30	33		1200			34			
SPACE		35					36			
		37					38			
SURGE ARRESTOR	60	39					40			
	60	41					42			
SUBTOTAL CONTINUOUS			7380	8360	892	150	WATTS			
SUBTOTAL NON-CONTINUOUS			5696	5696	5696	5696	WATTS			
CONNECTED LOAD ANALYSIS (REQUIRED BY POWER COMPANY)					DERATED SERVICE CALCULATION (PLUS 25% OF CONTINUOUS LOADS - 3 HOURS OR MORE - NEC SERVICE CALCULATION)					
TOTAL PHASE A LOAD			19,664	TOTAL DEMAND LOAD			43,762			
TOTAL PHASE B LOAD			19,902	TOTAL DEMAND AMPS			182.3			
TOTAL CONNECTED LOAD			39,566							
TOTAL CONNECTED AMPS			164.9							

5 CMPH PEDESTAL
SCALE: 3/8" = 1'-0"



GENERAL ELECTRICAL NOTES:

- SUBMITTAL OF BID INDICATES CONTRACTOR IS AWARE OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
- 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.
- HEIGHTS SHALL BE VERIFIED WITH OWNER PRIOR TO INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY. FOLLOW AS CLOSELY AS POSSIBLE.
- EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANEL BOARD, PULLBOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.).
- CONTRACTOR SHALL PROVIDE LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.

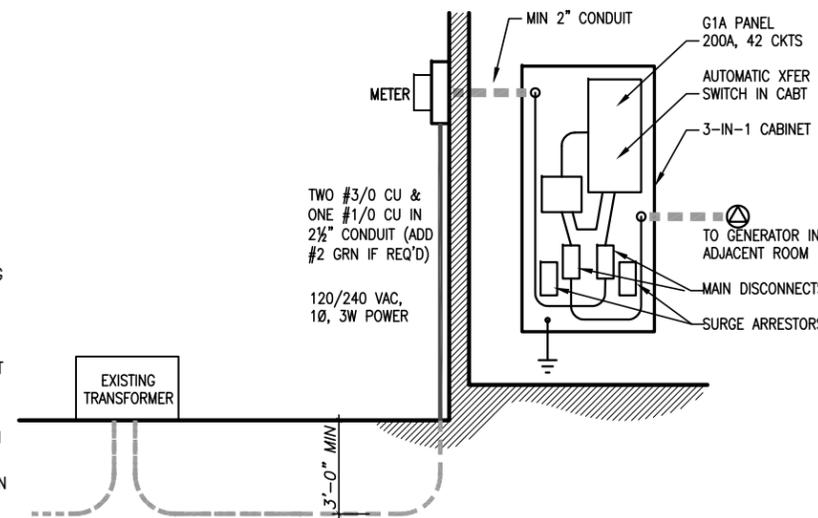
- CONTRACTOR SHALL CARRY OUT HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES AND O.S.H.A.
- CONTRACTOR SHALL SECURE ALL NECESSARY BUILDING PERMITS.
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
- ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR ROPE.
- PROVIDE CONSTRUCTION ENGINEER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
- USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR.
- ALL CONDUCTORS SHALL BE COPPER.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES AND DRAWINGS.
- RECEPTACLES SHALL BE 20 AMPERE, 125 VOLT A.C., WHITE AS REQUIRED BY THE ARCHITECT OR APPROVED EQUAL.

4 EXISTING TRANSFORMER
SCALE: NO SCALE

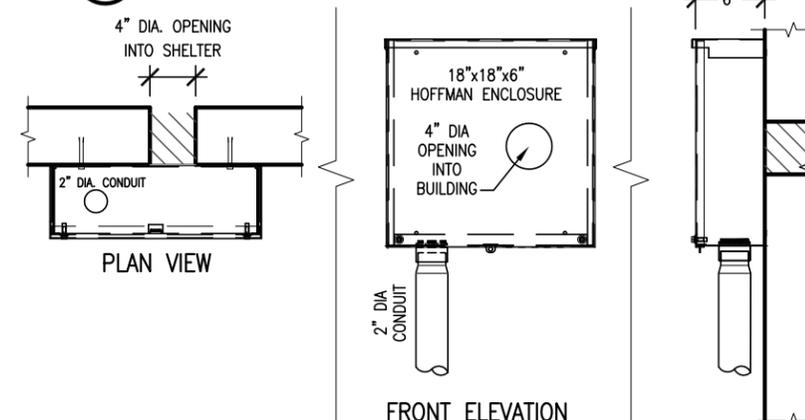
- WALL SWITCHES SHALL BE SINGLE-POLE, HUBBELL #1201 OR EQUIVALENT, WHITE AS REQUIRED BY THE ARCHITECT.
- PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS, SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE RACO #800, 1/2" RAISED WORK COVERS.
- WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM, NO BX OR ROMEX CABLE IS PERMITTED UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.
- GROUND RODS SHALL BE AS SPECIFIED ON THE GROUNDING DRAWINGS.
- METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS. MANUFACTURED BY SQUARE D COMPANY OR APPROVED EQUAL. IF HOST FACILITY REQUIRES THE NEW SERVICE TO BE SUB-METERED FROM THE EXISTING SERVICE, SUB-METER SHALL BE OF THE 10x OR 16x TYPE.
- ALL MATERIALS SHALL BE U.L. LISTED.
- CONDUIT:
 - 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 CASUAL IMPACTS. BENDS SHALL BE MADE USING "WIDE SWEEP" (12" MIN. RADIUS) ELBOW FITTINGS. ANY CODE-REQUIRED RIGID STEEL CONDUIT SHALL BE U.L. LABEL, GALVANIZED INSIDE & OUTSIDE. CONDUIT SHALL EXTEND 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.

- INTERIOR CONDUITS SHALL BE ELECTRICAL METALLIC TUBING HAVING U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE.
- FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. NO SUCH CONDUIT SHALL EXCEED SIX FEET IN LENGTH.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH SECTION 712, PENETRATIONS- INTERNATIONAL BUILDING CODE (IBC)
- DRILLING OR CORING HOLES IN CONCRETE WALLS OR DECKS, WHETHER FOR FASTENING OR ANCHORING PURPOSES, 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.
- UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO CONSTRUCTION ENGINEER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
- 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.
- CONTRACTOR SHALL PROVIDE LABOR AND MATERIALS AS NECESSARY TO COMPLETE THE INSTALLATION OF ANY TOWER LIGHTING SYSTEM DESCRIBED IN THE RFQ.

3 PANEL SCHEDULE
SCALE: NONE



2 ONE-LINE RISER DIAGRAM
SCALE: NONE



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

DESIGN 1

ROBERT J DAVIS, AIA
ARCHITECT
9973 VALLEY VIEW RD.
EDEN PRAIRIE, MN 55344
(952) 903-9299

VERIZON WIRELESS

10801 BUSH LAKE ROAD
BLOOMINGTON, MN 55438
(612) 720-0030

PROJECT
20120822230

DULC
VIEW CREST
AT&T FA#:1013800

E. CENTRAL ENTRANCE
DULUTH, MN 55811

SHEET CONTENTS:
TELCO ENTRY BOX DETAIL
ONE-LINE RISER DIAGRAM
PANEL SCHEDULE
GENERAL ELECTRICAL NOTES

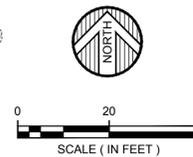
DRAWN BY: A. STANLEY
DATE: 05-01-13
CHECKED BY: TAB/CDB
REV. A 05-17-13
REV. B 06-26-13
REV. D 12-05-14

U-2

SITE SURVEY

LEGEND

- ELEC TRANSFORMER BOX
- ELEC METER
- SIGN
- POWER POLE
- ELECTRIC HANDHOLE
- LIGHT POLE
- TELEPHONE MANHOLE
- CATCH BASIN
- OVERHEAD ELECTRIC
- WIRE FENCE
- SANITARY LINE
- UNDERGROUND COMMUNICATIONS
- UNDERGROUND ELECTRIC
- EASEMENT LINE
- EASEMENT CENTERLINE
- LOT LINE
- BOUNDARY LINE
- RIGHT OF WAY LINE
- EXISTING CONCRETE



ORIENTATION OF THIS BEARING SYSTEM IS BASED ON THE ST. LOUIS COUNTY COORDINATE SYSTEM NAD83 (1996) ELEVATIONS ARE BASED ON NAVD 88 DATUM

● = DENOTES FOUND IRON MONUMENT

SURVEYOR NOTES:

- Utilities are per observed evidence and from markings per GOPHER STATE ONE CALL Locate Request Ticket No. 123141878, dated 11/27/2012.
- The Proposed Land Space together with all Access and Utility Rights of Way are within the area described in the Property Description contained herein.

LAND SPACE DESCRIPTION:

That part of Lot 5, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, St. Louis County, Minnesota, described as follows:

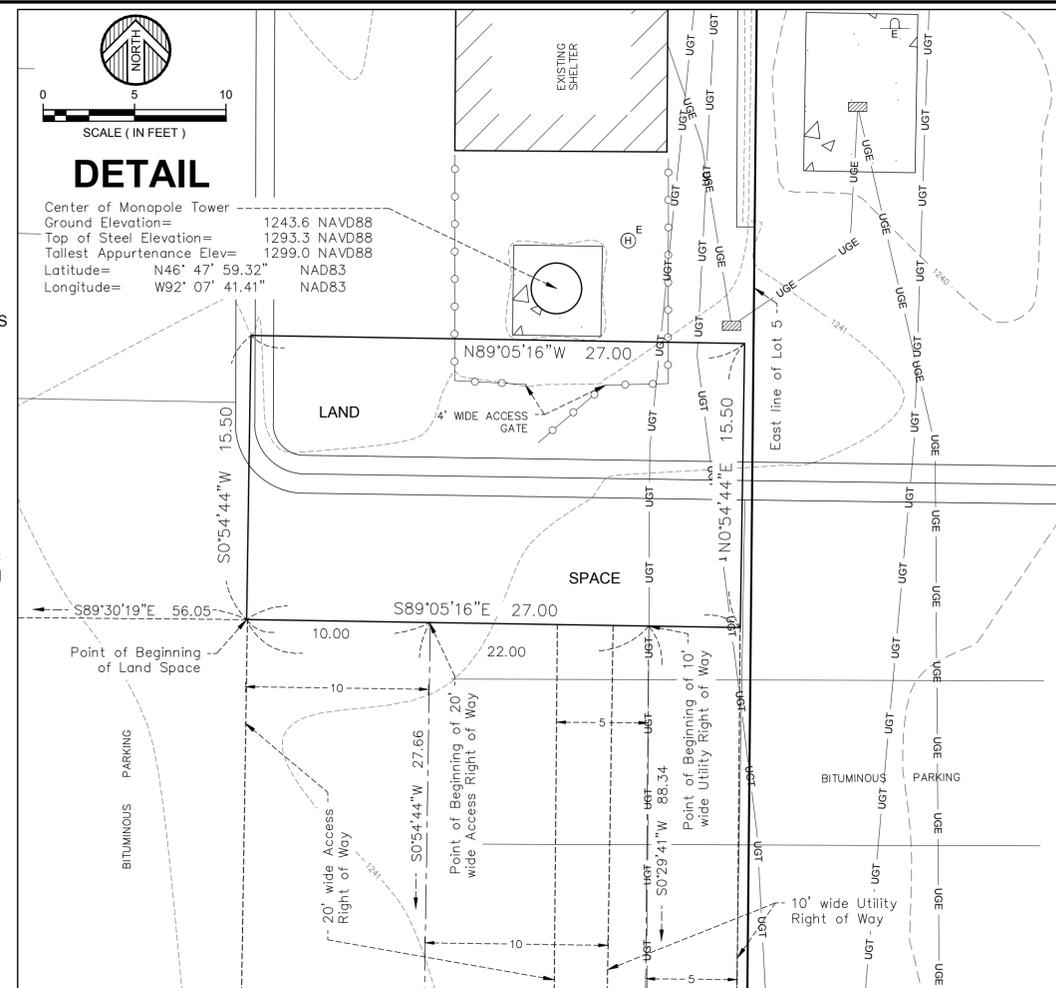
Commencing at the southwest corner of the East 33 1/3 feet of Lot 4, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, said St. Louis County; thence North 0 degrees 29 minutes 41 seconds East along the West line of said East 33 1/3 feet of Lot 4, a distance of 88.05 feet; thence South 89 degrees 30 minutes 19 seconds East, a distance of 56.05 feet to the Point of Beginning of the land space to be described; thence South 89 degrees 05 minutes 16 seconds East, a distance of 27.00 feet; thence North 0 degrees 54 minutes 44 seconds West, a distance of 15.50 feet; thence North 89 degrees 05 minutes 16 seconds West, a distance of 27.00 feet to the Point of Beginning.

ACCESS RIGHT OF WAY DESCRIPTION:

A 20.00 foot wide right of way for ingress, and egress purposes over and across Lot 5, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, St. Louis County, Minnesota, the centerline of said right of way is described as follows:

Commencing at the southwest corner of the East 33 1/3 feet of Lot 4, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, said St. Louis County; thence North 0 degrees 29 minutes 41 seconds East along the West line of said East 33 1/3 feet of Lot 4, a distance of 88.05 feet; thence South 89 degrees 11 minutes 31 seconds East, a distance of 10.00 feet to the Point of Beginning of the centerline to be described; thence South 0 degrees 54 minutes 44 seconds West, a distance of 27.66 feet; thence South 30 degrees 48 minutes 29 seconds West, a distance of 29.98 feet; thence South 0 degrees 36 minutes 59 seconds West, a distance of 34.73 feet to the South line of said Lot 5 and said centerline there terminating.

The sidelines of said right of way shall be shortened or lengthened to terminate at said South line of Lot 5.



UTILITY RIGHT OF WAY DESCRIPTION:

A 10.00 foot wide right of way for utility purposes over, under and across Lot 5, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, St. Louis County, Minnesota, the centerline of said right of way is described as follows:

Commencing at the southwest corner of the East 33 1/3 feet of Lot 4, Block 2, CAR LINE GARDENS, according to the recorded plat thereof, said St. Louis County; thence North 0 degrees 29 minutes 41 seconds East along the West line of said East 33 1/3 feet of Lot 4, a distance of 88.05 feet; thence South 89 degrees 30 minutes 19 seconds East, a distance of 56.05 feet; thence South 89 degrees 11 minutes 31 seconds East, a distance of 22.00 feet to the Point of Beginning of the centerline to be described; thence South 0 degrees 29 minutes 41 seconds West, a distance of 88.34 feet to the South line of said Lot 5 and said centerline there terminating.

The sidelines of said right of way shall be shortened or lengthened to terminate at said South line of Lot 5 and at a line bearing North 89 degrees 05 minutes 16 seconds West from the Point of Beginning.

PARENT PARCEL DESCRIPTION: (per First American Title Insurance Company File No. 1286066, dated October 22, 2012.)

The Easterly 33 1/3 feet of Lot 4, EXCEPT the Northerly 10 feet thereof, and Lot 5, EXCEPT the Northerly 10 feet thereof, Block 2, Car Line Gardens, St. Louis County, Minnesota.

SCHEDULE "B" EXCEPTIONS: (per First American Title Insurance Company File No. 1286066, dated October 22, 2012.)

11.) Easement for slopes and fills purposes in favor of the City of Duluth recorded September 1926 as Doc. No. 83881.

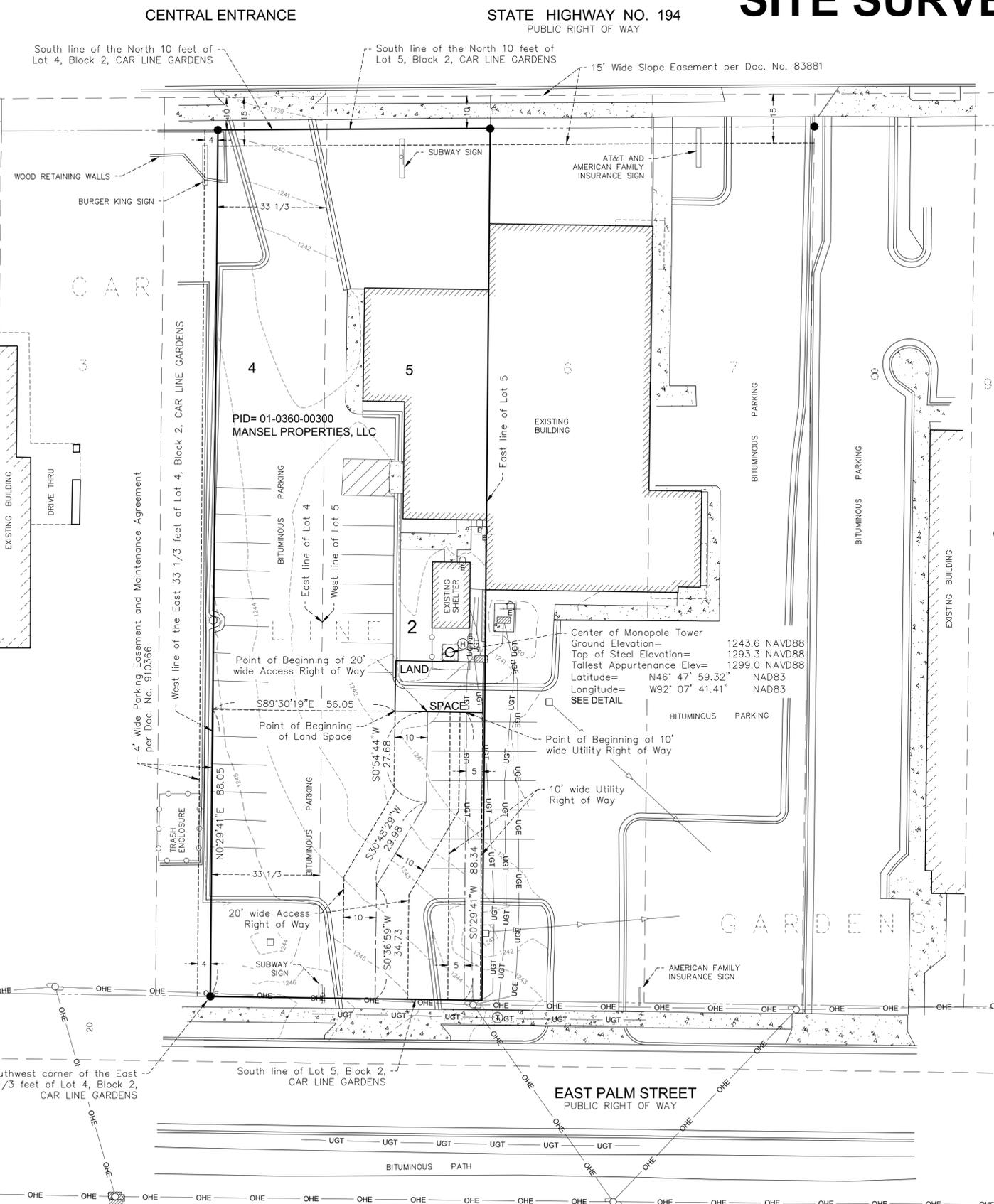
This document describes an easement for slopes and retaining walls within 15 feet of Central Entrance. The easement is as shown on the survey.

12.) Terms and conditions of Parking Easement and Maintenance Agreement recorded February 3, 2012 as Doc. No. 910366.

This document describes an easement for parking purposes across the East 4.00 feet of the East 16 2/3 feet of Lot 4, Block 2, CAR LINE GARDENS and is as shown on the survey.

13.) Memorandum of Lease recorded June 3, 2004 as Doc. No. 945685, in the office of the County Recorder, showing Mansell Properties, LLC a Minnesota limited liability company as lessor and Subway Real Estate Corp. as lessee.

No lease areas or easements are defined in this document and are not shown on the survey.



SITE #: 20120822230
 SITE NAME:
DULC FARGO - VIEW CREST
 ST. LOUIS COUNTY, MINNESOTA

No.	Date	REVISIONS	By	CHK	APPD

FIELD WORK: 11/15/2012 CHECKED BY: JBR DRAWN BY: RDS/SMK/JMB

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

SIGNATURE: *Bryan T. Balcome*
 BRYAN T. BALCOME, L.S.
 DATE: 2/27/14 LICENSE # 42594

FULL SCALE ON 22"x34"
 HALF SCALE ON 11"x17"
 049A0525.000



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Engineering
Architecture
Surveying
Environmental