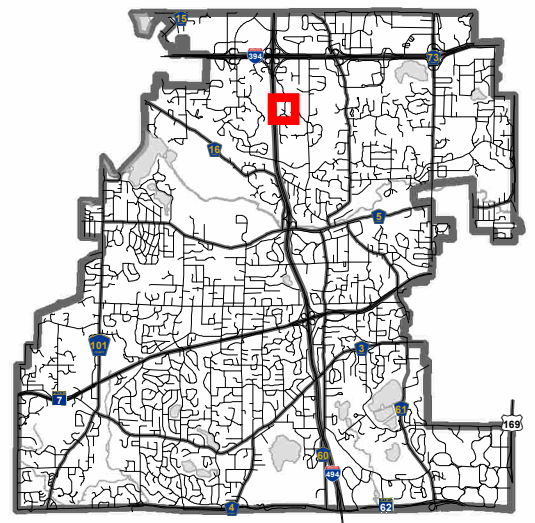


### Location Map

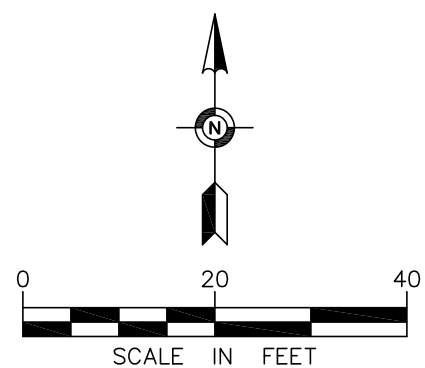
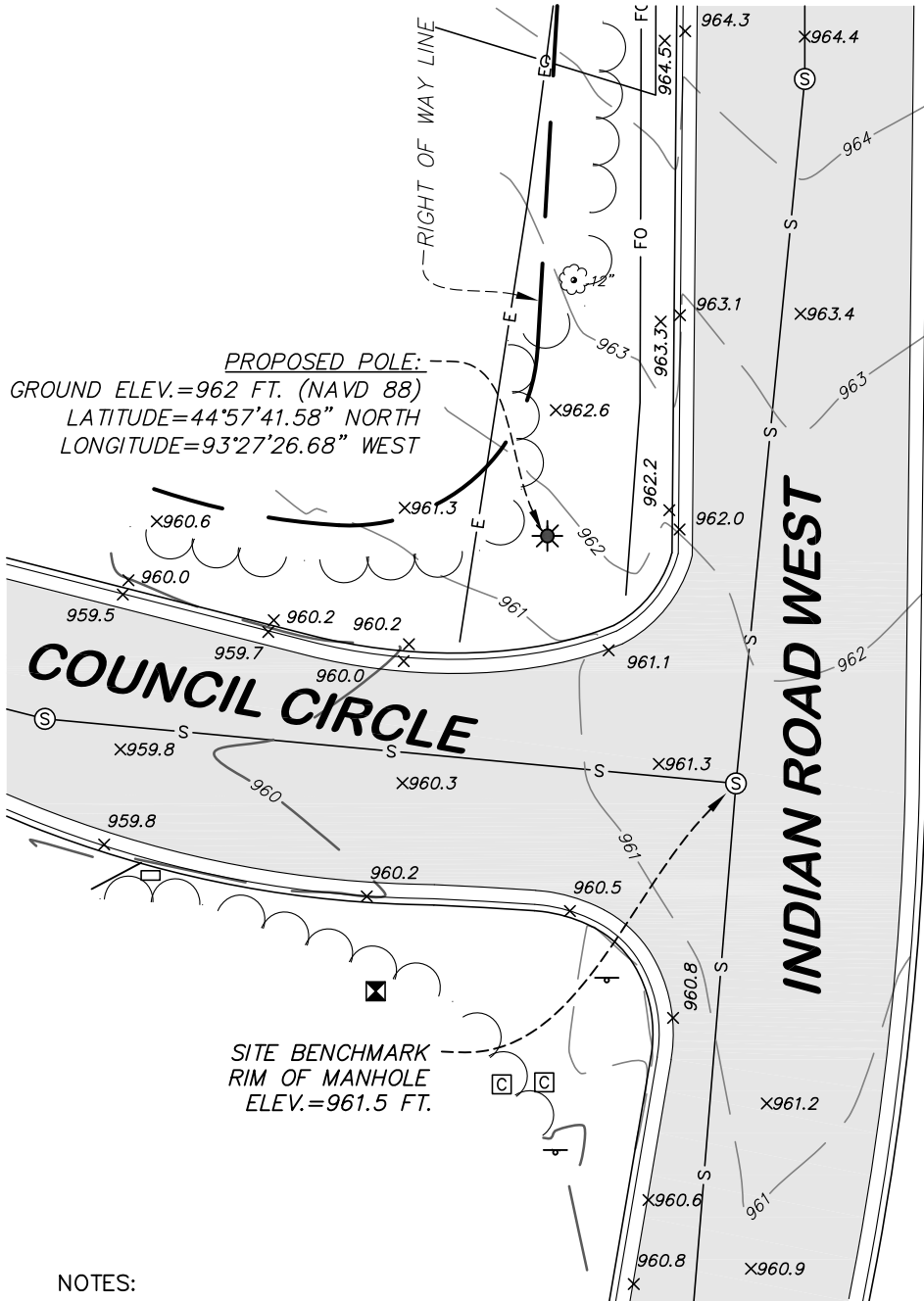
Project: Verizon Small Cell Wireless  
Location: Indian Road W and Council Circle



**SITE LOCATION SURVEY FOR:  
EDGE CONSULTING ENGINEERS, INC.**

**SITE LOCATION: Indian Road West and Council Circle, Minnetonka, Minnesota**

**SITE NAME: MIN EQUESTRIAN SC2**



**NOTES:**

1. The orientation of this survey is based on the Hennepin County, Minnesota Coordinate Grid, NAD 83-2011 Adjustment.
2. Elevations shown hereon are based on the MNDOT VRS Network, Adjusted Vertical Datum of 1988 (NAVD 88).
3. Complete boundary work was not performed in the preparation of this exhibit. Right-of-way lines depicted hereon were based on found monumentation.
4. Existing utilities, services and underground structures shown hereon were located either physically, from existing records made available to us, by resident testimony, or by locations provided by Gopher State One Call, per Ticket No. 200770675. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary. Other utilities and services may be present and verification and location of all utilities and services should be obtained from the owners of the respective utilities prior to any design, planning or excavation.
5. The field work for this survey was performed on March 30, 2020.

**LEGEND**

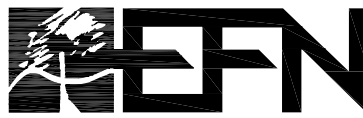
- ⊙ SANITARY MANHOLE
- ⊠ ELECTRIC BOX
- COMMUNICATION BOX
- ↑ SIGN
- S— SANITARY SEWER
- E— UNDERGROUND ELECTRIC
- FO— UNDERGROUND FIBER OPTIC
- G— UNDERGROUND GAS
- ~~~~~ TREELINE
- x949.5 SPOT ELEVATION
- 949 EXISTING CONTOUR LINE
- ☼ DECIDUOUS TREE
- ▭ BITUMINOUS SURFACE

EFN PROJECT NO. 36900

SITE LOCATION SURVEY FOR:

**EDGE CONSULTING ENGINEERS, INC.**

SITE LOCATION: Indian Road West and Council Circle, Minnetonka, Minnesota



**Egan, Field & Nowak, Inc.**

land surveyors since 1872

1229 Tyler Street NE, Suite 100  
Minneapolis, Minnesota 55413  
PHONE: (612) 466-3300  
FAX: (612) 466-3383  
WWW.EFNSURVEY.COM

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\\edgenas03\MIN\_projects\20100\20158\CAD\IPS\PlanT-901.dgn



**A** PHOTOGRAPH BEFORE SIMULATION



**B** PHOTOGRAPH AFTER SIMULATION

CONSULTANT:  
  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**PHOTO SIMULATION**  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA

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

PROJECT NO:	20181926405
LOCATION CODE:	499311
RFDS DATE:	03/27/2020

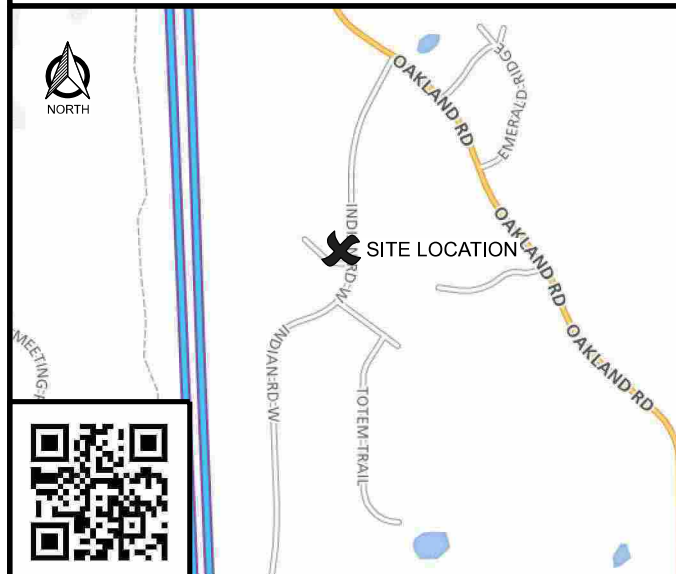
STRUCTURAL ANALYSIS:	
DATE:	DESCRIPTION:
N/A	N/A

SUBMITTAL:		
INT.	DATE:	DESCRIPTION:
JDM	01/26/2021	PHOTOSIM

CHECKED BY:	OGD
PLOT DATE:	1/26/2021
PROJECT NUMBER:	20158
SET TYPE:	FINAL

SHEET NUMBER **T-901**

**SITE LOCATION MAP**



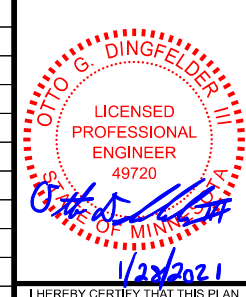
# verizon

## MIN EQUESTRIAN SC2 MINNETONKA, MINNESOTA NEW POLE

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**TITLE SHEET**  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA



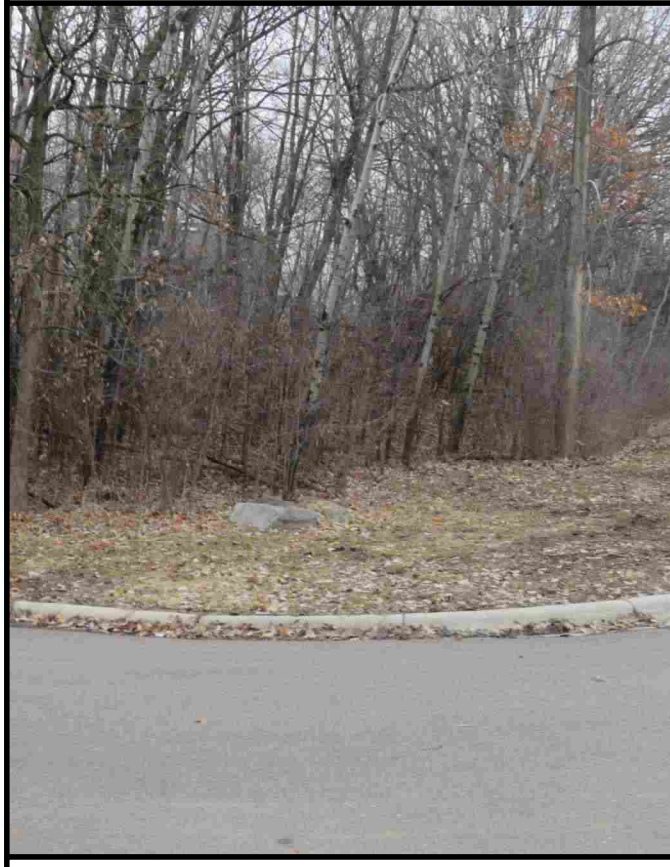
I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE EXCEPTIONS NOTED IN THE SHEET INDEX, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PROJECT NO:	20181826405
LOCATION CODE:	499311
RFDS DATE:	03/27/2020
<b>STRUCTURAL ANALYSIS:</b>	
DATE:	DESCRIPTION:
04/28/2020	REPORT NO. 20158

<b>SUBMITTAL:</b>		
INT.	DATE	DESCRIPTION:
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY:	MJM
PLOT DATE:	1/27/2021
PROJECT NUMBER:	20158
SET TYPE:	FINAL
SHEET NUMBER:	<b>G-001</b>

**POLE LOCATION**



**SCOPE OF WORK**

WORK PRODUCT	SUPPLIED BY	INSTALLED BY	SHEET INDEX	
			NO.:	SHEET TITLE
NEW POLE	EDGE	CONTRACTOR	G-001	TITLE SHEET
NEW CONCRETE FOUNDATION	VERIZON	CONTRACTOR	C-101	SITE PLAN
ELECTRICAL CONDUIT	VERIZON	CONTRACTOR	T-201	SITE ELEVATION & ANTENNA CONFIGURATION
FIBER CONDUIT, BETWEEN HAND HOLE/DEMARC AND POLE BASE	VERIZON	CONTRACTOR	T-501	MOUNTING DETAILS
FIBER CONDUIT, WITHIN RIGHT OF WAY	FIBER PROVIDER	FIBER PROVIDER	T-502	MOUNTING DETAILS
FIBER HAND HOLE, WITHIN RIGHT OF WAY	FIBER PROVIDER	FIBER PROVIDER	T-701	ANTENNA & EQUIPMENT SPECIFICATIONS
NEW VERIZON EQUIPMENT	VERIZON	CONTRACTOR	T-702	ANTENNA & EQUIPMENT SPECIFICATIONS
NEW ELECTRIC METER	VERIZON	CONTRACTOR	S-501	FOUNDATION DETAILS
			E-101	FIBER & POWER ROUTING PLAN
			E-501	GROUNDING & UTILITY DETAILS
			D-101	TRAFFIC & PEDESTRIAN PLANS
			R-001	GENERAL NOTES
			R-002	GENERAL NOTES

**SHEET INDEX**

CONTRACTOR TO REVIEW STRUCTURAL REPORT IN ITS ENTIRETY. ANY DISCREPANCIES OR DISAGREEMENTS BETWEEN THE REPORT AND THESE PLAN SHOULD BE RESOLVED PRIOR TO CONSTRUCTION.

THESE SITE PLANS ADHERE TO ALL OF THE REQUIREMENTS CALLED OUT IN THE JURISDICTION, PLANNING, AND ZONING FOR ANTENNAS AND SUPPORT STRUCTURE WHERE SITE IS LOCATED.

**ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:**

- AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, 1ST EDITION
- 2012 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRIC CODE
- TIA/EIA-222-G OR LATEST EDITION

IN THE EVENT OF CONFLICT THE MOST RESTRICTIVE CODE SHALL PREVAIL.

**PROJECT INFO**

<p><b>APPROX. ADDRESS:</b>                  14100 COUNCIL CIRCLE                  MINNETONKA, MN 55305                  HENNEPIN COUNTY</p> <p><b>SITE COORDINATES:</b>                  LAT: 44° 57' 41.58" N                  LONG: 93° 27' 26.68" W                  GROUND ELEV.: 962' AMSL                  (PER 1A CERTIFICATE)</p>	<p><b>PROJECT NUMBER:</b>                  20181826405</p> <p><b>LOCATION CODE:</b>                  499311</p>	<p><b>EXISTING POLE TYPE:</b>                  N/A</p> <p><b>EXISTING POLE FINISH:</b>                  N/A</p> <p><b>NEW POLE MATERIAL:</b>                  STEEL</p> <p><b>NEW POLE FINISH:</b>                  GALVANIZED</p> <p><b>PAINT CODE:</b>                  SHERWIN WILLIAMS "NETWORK GRAY" SW 7073</p> <p><b>POLE DISPOSAL INFORMATION:</b>                  N/A</p>
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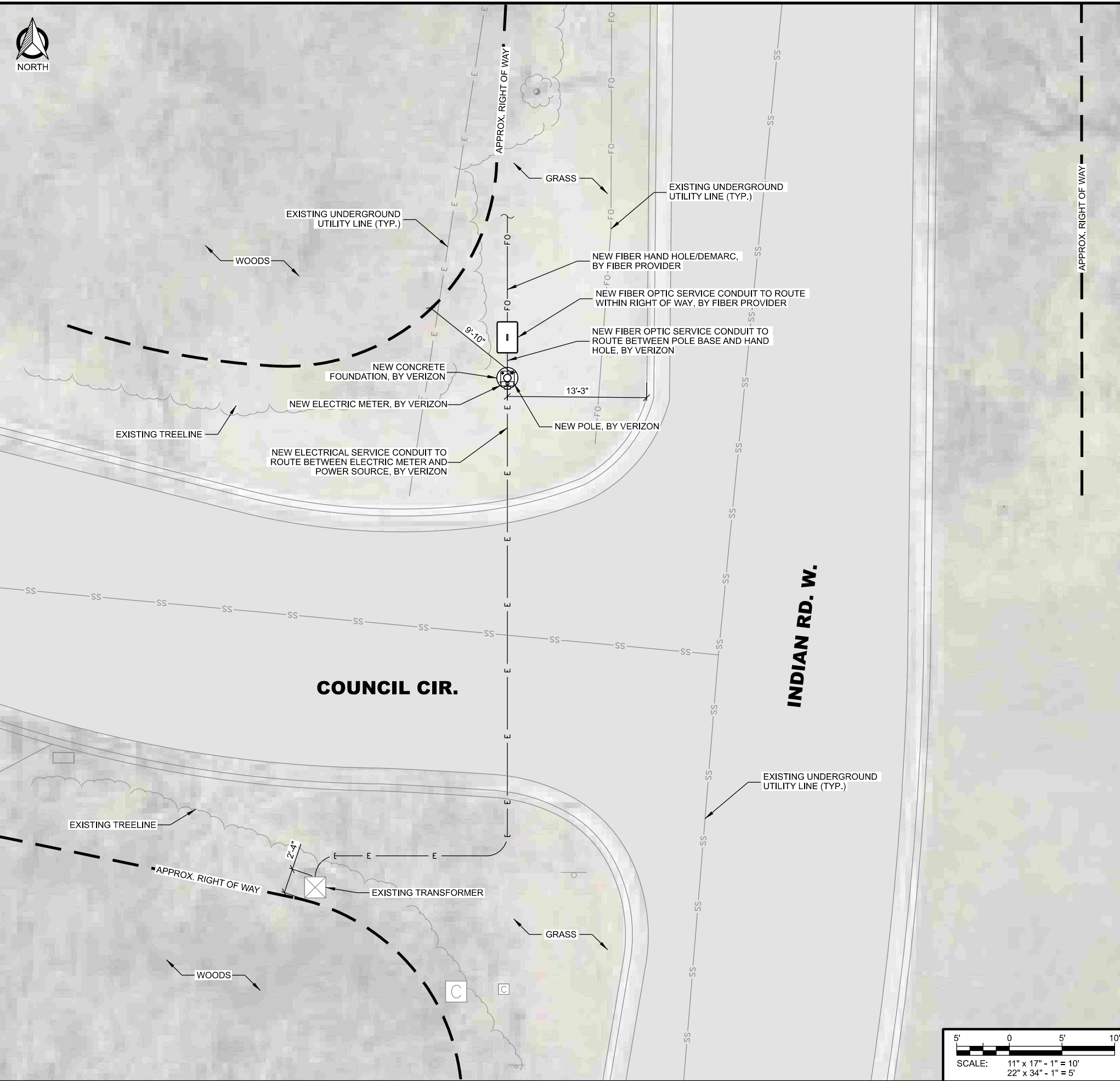
**DIRECTORY**

<p><b>VERIZON PROJECT MANAGER:</b>                  CONTACT: KATIE POSER                  PHONE: 612.968.9077                  EMAIL: katie.poser@verizonwireless.com</p> <p><b>ENGINEER:</b>                  EDGE CONSULTING ENGINEERS, INC.                  2101 HIGHWAY 13 W.                  BURNSVILLE, MN 55337                  CONTACT: MIKE MLINER                  PHONE: 608.644.1449</p> <p><b>ASSET OWNER:</b>                  VERIZON WIRELESS                  10801 BUSH LAKE RD                  BLOOMINGTON, MN 55438                  PHONE: 952.946.4694</p>	<p><b>ROW CONTACT:</b>                  CITY OF MINNETONKA                  14600 MINNETONKA BLVD                  MINNETONKA, MN 55345                  PHONE: 952.939.8200</p> <p><b>POWER PROVIDER:</b>                  XCEL ENERGY                  414 NICOLLET MALL                  MINNEAPOLIS, MN 55401                  PHONE: 1.800.895.4999</p>
--	--

L:\201\001020158\CAD\Drawings\G-001.dgn



**A** OVERVIEW OF SITE



CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**SITE PLAN**  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA

ENGINEER SEAL:  
 APPROVED -  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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

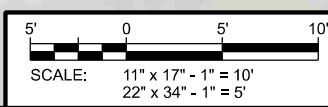
PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

**STRUCTURAL ANALYSIS:**  
 DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

**SUBMITTAL:**

INT.	DATE	DESCRIPTION:
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY	MJM
PLOT DATE	1/27/2021
PROJECT NUMBER	20158
SET TYPE	FINAL
SHEET NUMBER	<b>C-101</b>



L:\201\00\20158\CAD\Plot\C-101.dgn

PROPOSED ANTENNA KEY											
NODE	AZIMUTH	QTY	MANUFACTURER	MODEL	ANTENNA HEIGHT	ANTENNA WIDTH	ANTENNA WEIGHT	ANTENNA TIP	ANTENNA CENTER	ELEC DOWNTILT	MECH DOWNTILT
SC	0	1	JMA	CX160M236-1C	35.4"	14"	35.0 lbs	29'-4"	28'-0"	0°	0°

PROPOSED EQUIPMENT KEY					
QTY.	MANUFACTURER	MODEL	HEIGHT	ORIENTATION	MOUNT
2	COMMSCOPE	CBC1923T-DS-43	23'-6"	Street + 180°	Band Strap
1	ERICSSON	RRU 4449	21'-6"	Street + 180°	Aluma-Form
1	ERICSSON	RRU 8843	21'-6"	Street	Aluma-Form
2	ERICSSON	PSU 6302	18'-6"	Street + 180°	Aluma-Form

**NOTES:**

- ALL HARDWARE SHALL BE STAINLESS STEEL.
- ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS.
- LIGHTNING RODS SHALL BE INCLUDED WHERE REQUIRED.
- ALL NEW POLE MOUNTED EQUIPMENT TO BE PAINTED TO MATCH POLE.
- PAINT SPECIFICATION: SHERWIN WILLIAMS "NETWORK GRAY" SW 7073
- THE ORIENTATION SHOWN IN ELEVATION "A" IS FOR CLARITY AND DOES NOT ACCURATELY REPRESENT THE AZIMUTH OF THE ANTENNAS.
- CONTRACTOR TO SECURE ALL CABLING TO POLE EXTERIOR BY USE OF CABLE BLOCK (SITE PRO 1 #: CXB12 OR APPROVED EQUAL) AND TOWER STANDOFF BRACKET (1-1/2" TO 3" DIA. USE SITE PRO 1 #: MST OR APPROVED EQUAL; 3" DIA. AND UP USE SITE PRO 1 #: LST OR APPROVED EQUAL); SECURE CABLE BLOCK TO STANDOFF BRACKET WITH HARDWARE KIT (SITE PRO 1 #: CH35 OR APPROVED EQUAL); SPACE NO MORE THAN 36" O.C., MAXIMUM

**A ANTENNA AND EQUIPMENT KEY**

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**SITE ELEVATION & ANTENNA CONFIGURATION**  
 MINNEAPOLIS, MINNESOTA

ENGINEER SEAL:  
 APPROVED - SEE TITLE SHEET FOR ENGINEER SEAL

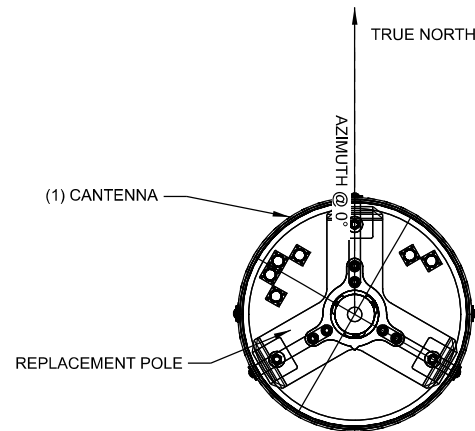
SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 I HEREBY CERTIFY THAT THIS PLAN SET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION OTHER THAN THE EXCEPTIONS NOTED IN THE SHEET INDEX, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

STRUCTURAL ANALYSIS:  
 DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY	MJM
PLOT DATE	1/27/2021
PROJECT NUMBER	20158
SET TYPE	FINAL
SHEET NUMBER	<b>T-201</b>



NOTE:  
 1. ALL ANTENNA AZIMUTHS TO BE FROM TRUE NORTH.

**B ANTENNA LAYOUT PLAN**  
 SCALE: 11" x 17" - 3/4" = 1'-0"  
 22" x 34" - 1-1/2" = 1'-0"

**THIS SPACE INTENTIONALLY LEFT BLANK**

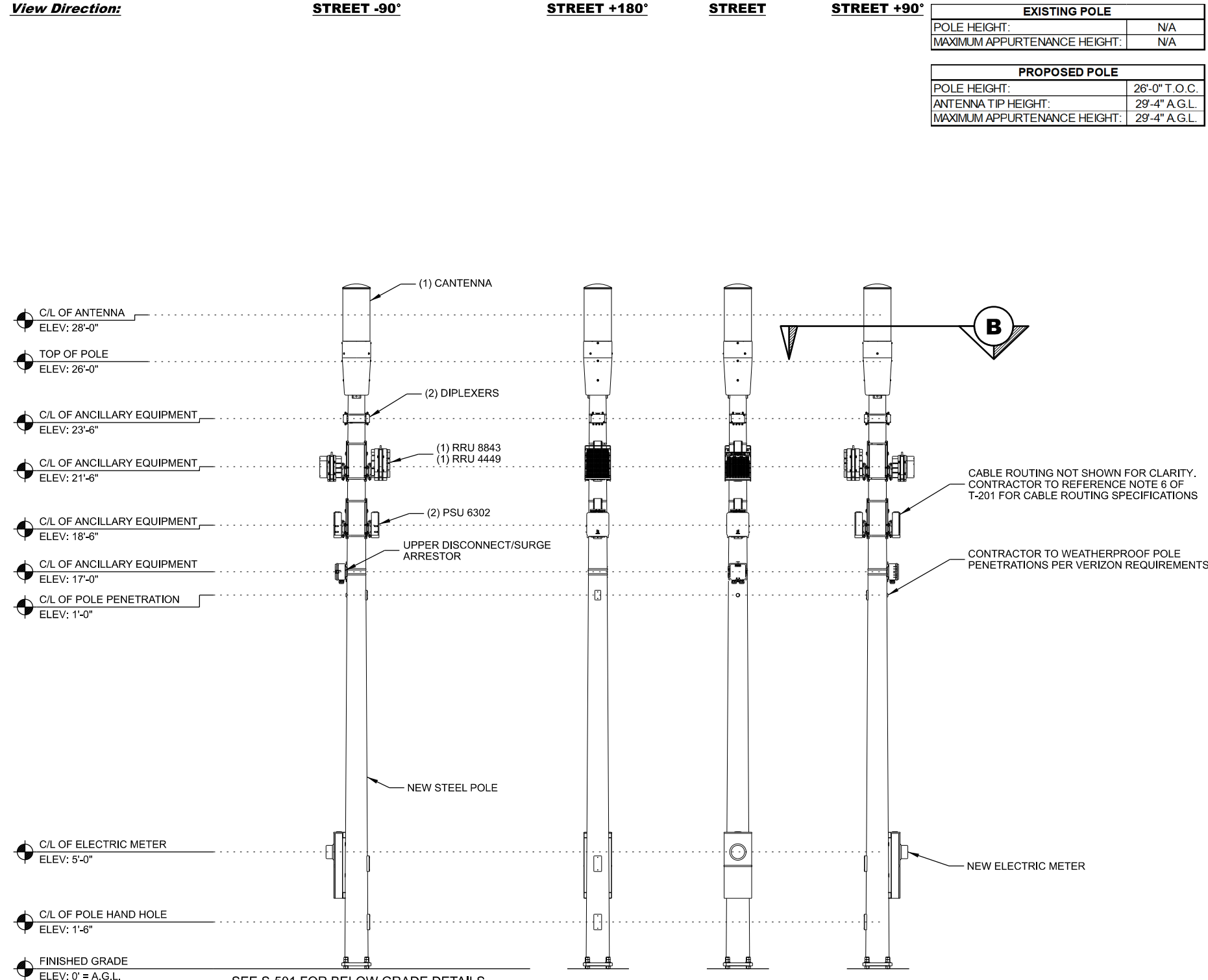
**View Direction:**

**STREET -90°**

**STREET +180°**

**STREET**

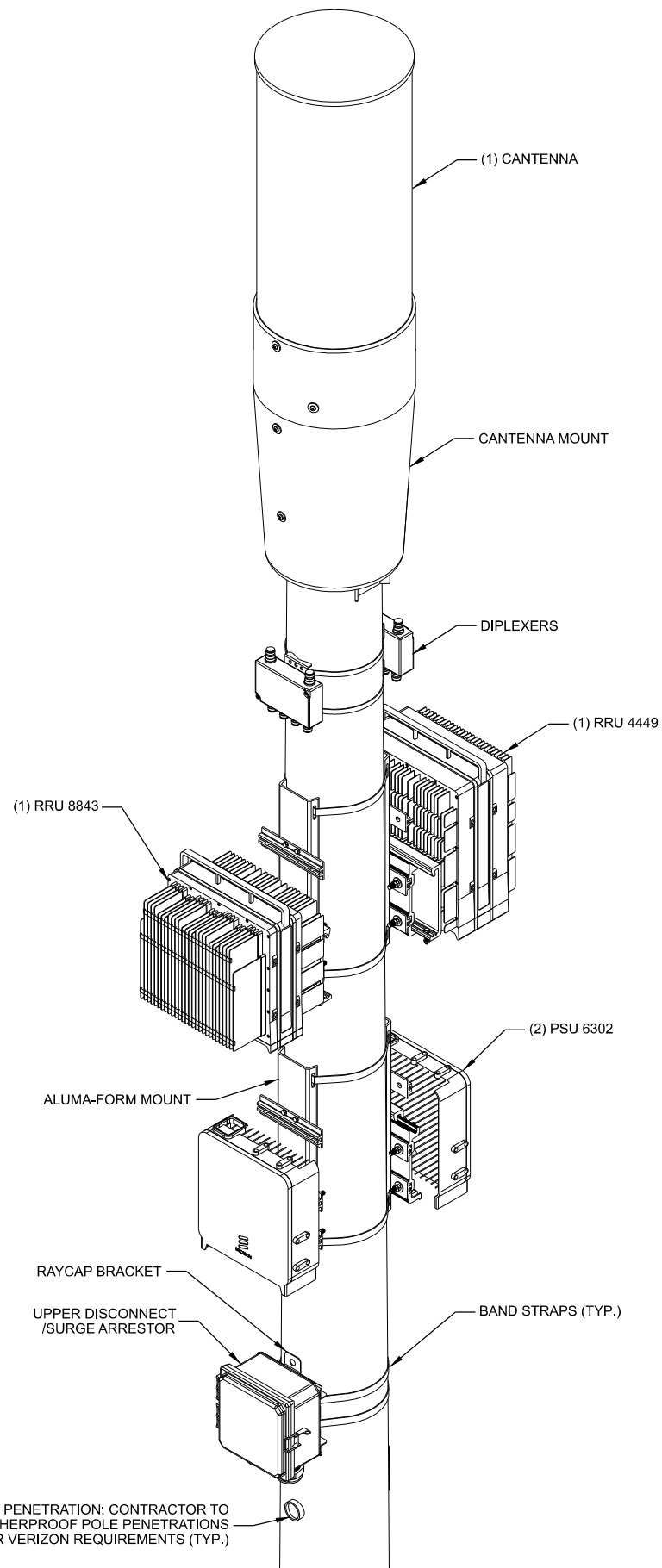
**STREET +90°**



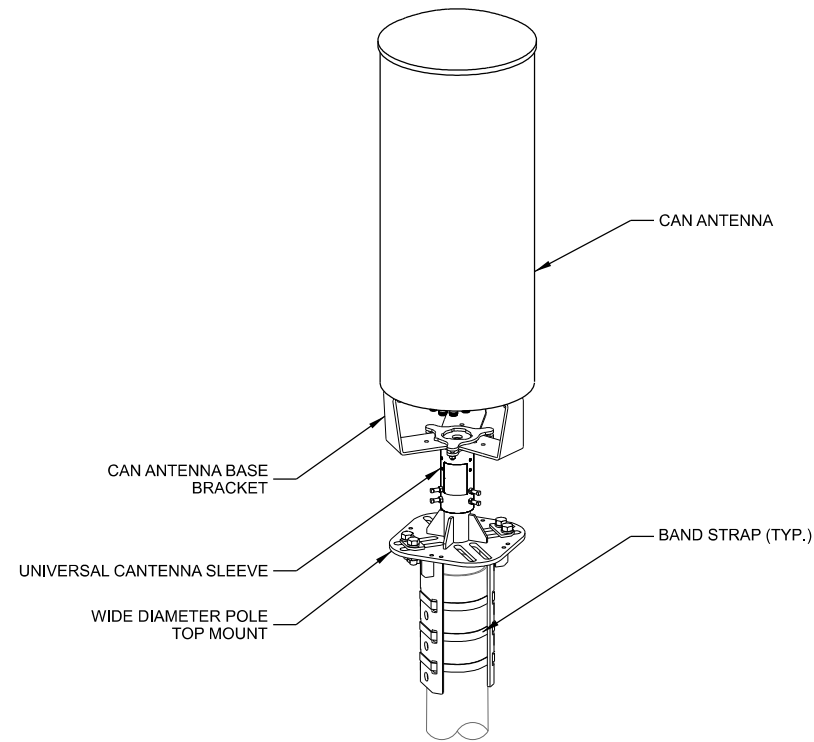
SEE S-501 FOR BELOW GRADE DETAILS

**C POLE ELEVATION**  
 SCALE: 11" x 17" - 3/16" = 1'-0"  
 22" x 34" - 3/8" = 1'-0"

L:\201\00100158\CAD\PRINT\T-501.dgn

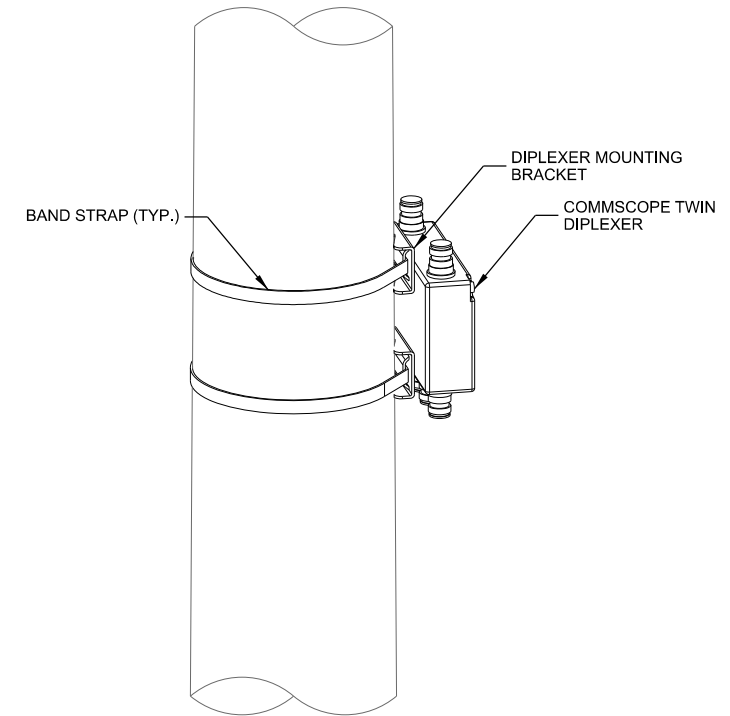


**A POLE ISOMETRIC**

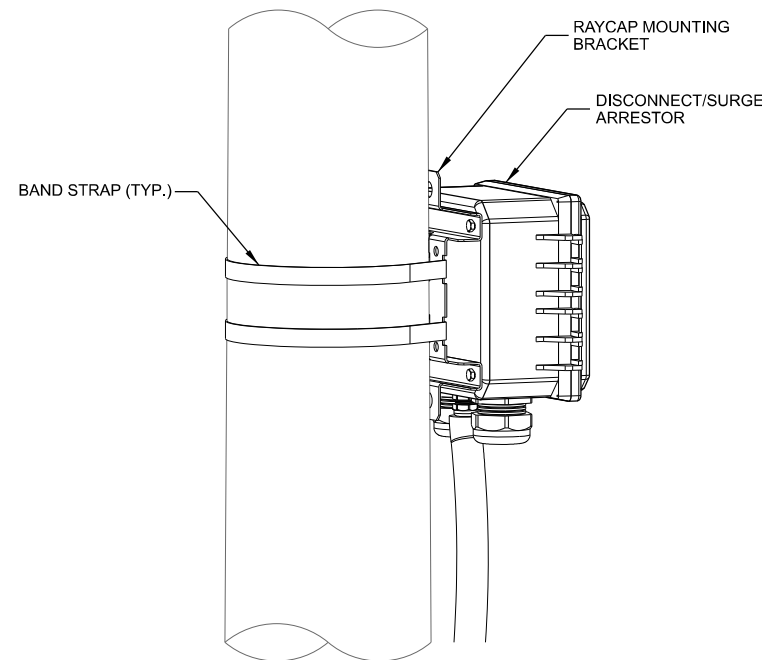


NOTES:  
1. THE MOUNT IS SHOWN WITHOUT THE SHROUD FOR CLARITY

**B CAN ANTENNA**

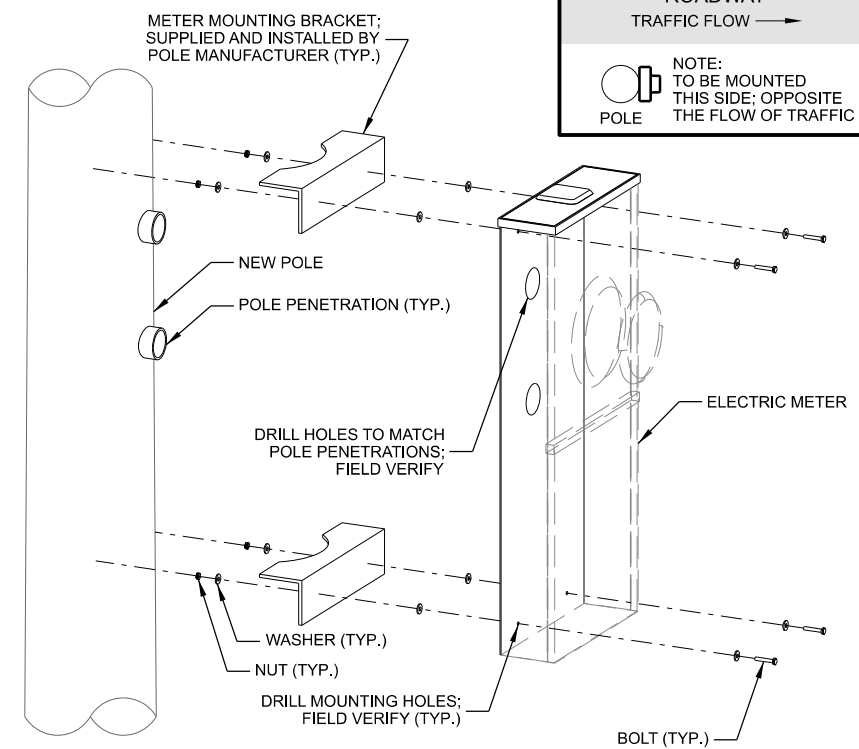


**C TWIN DIPLEXER**



**D DISCONNECT/SURGE ARRESTOR**

MOUNT: ANGLE BRACKET  
DIMENSIONS: 3.5" x 14" x 3.5" (H x W x D)



**E ELECTRIC METER**

CONSULTANT:  
**Edge**  
Consulting Engineers, Inc.  
2101 HIGHWAY 13 W  
BURNSVILLE, MN 55337  
952.683.1032 VOICE  
952.405.8583 FAX  
www.edgeconsult.com

CLIENT:  
**verizon**  
10801 BUSH LAKE RD  
BLOOMINGTON, MN 55438  
952.946.4694 VOICE

**MOUNTING DETAILS**  
MIN EQUESTRIAN SC2  
MINNETONKA, MINNESOTA

ENGINEER SEAL:  
**APPROVED - SEE TITLE SHEET FOR ENGINEER SEAL**

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PROJECT NO:	20181826405	
LOCATION CODE:	499311	
RFDS DATE:	03/27/2020	
<b>STRUCTURAL ANALYSIS:</b>		
DATE:	DESCRIPTION:	
04/28/2020	REPORT NO. 20158	
<b>SUBMITTAL:</b>		
INT.	DATE	DESCRIPTION:
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

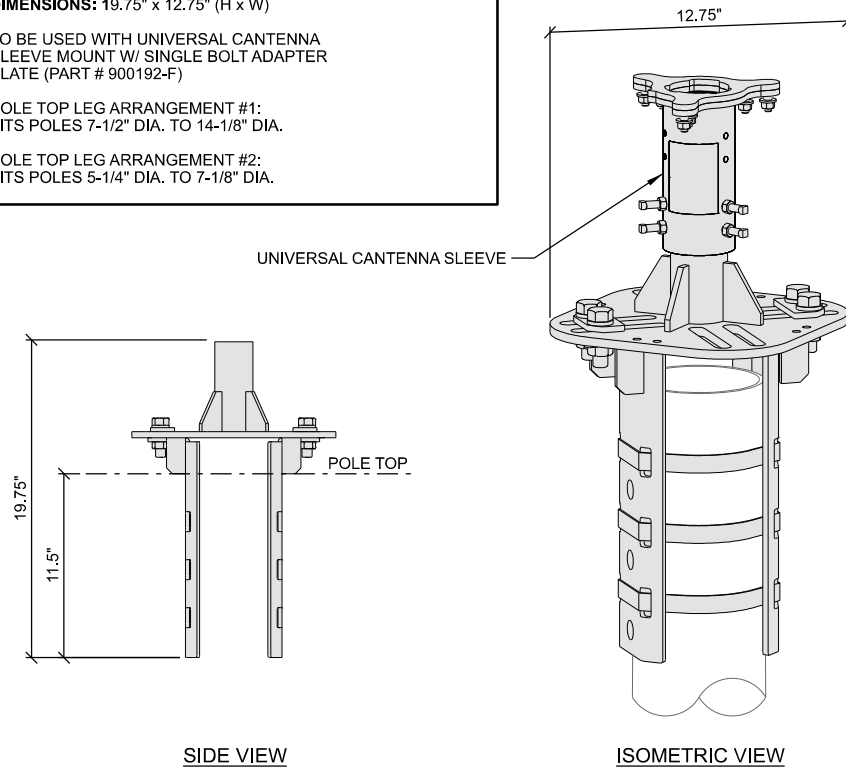
CHECKED BY:	MJM
PLOT DATE:	1/27/2021
PROJECT NUMBER:	20158
SET TYPE:	FINAL
SHEET NUMBER:	<b>T-501</b>

MANUFACTURER: CONCEALFAB  
 MODEL: WIDE DIAMETER POLE TOP MOUNT (PART # 007951-F)  
 DIMENSIONS: 19.75" x 12.75" (H x W)

TO BE USED WITH UNIVERSAL ANTENNA SLEEVE MOUNT W/ SINGLE BOLT ADAPTER PLATE (PART # 900192-F)

POLE TOP LEG ARRANGEMENT #1:  
 FITS POLES 7-1/2" DIA. TO 14-1/8" DIA.

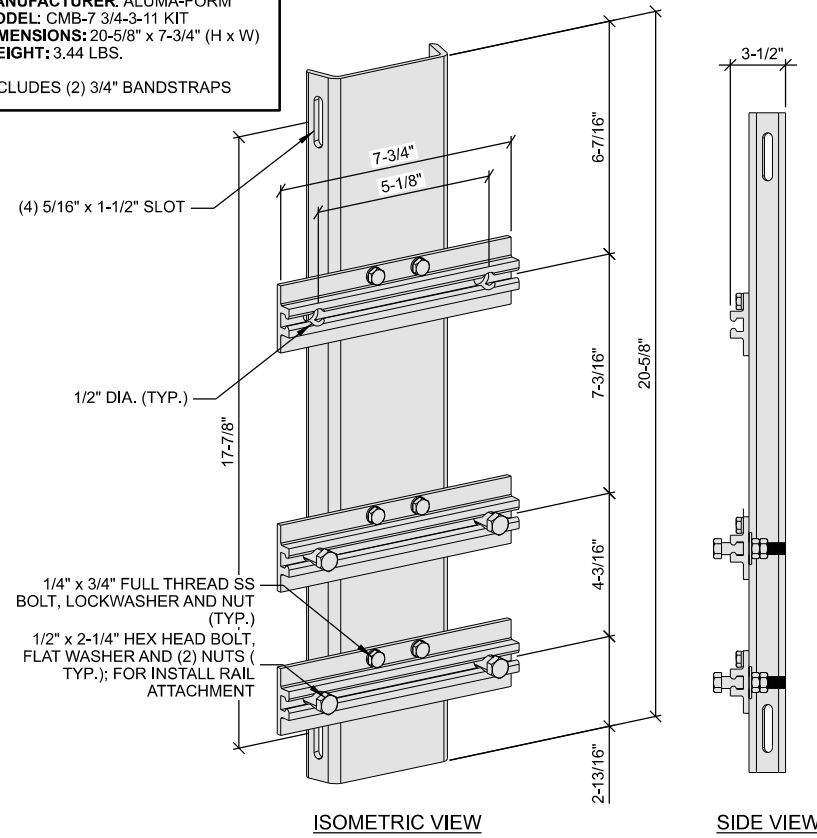
POLE TOP LEG ARRANGEMENT #2:  
 FITS POLES 5-1/4" DIA. TO 7-1/8" DIA.



**A** WIDE DIAMETER POLE TOP MOUNT

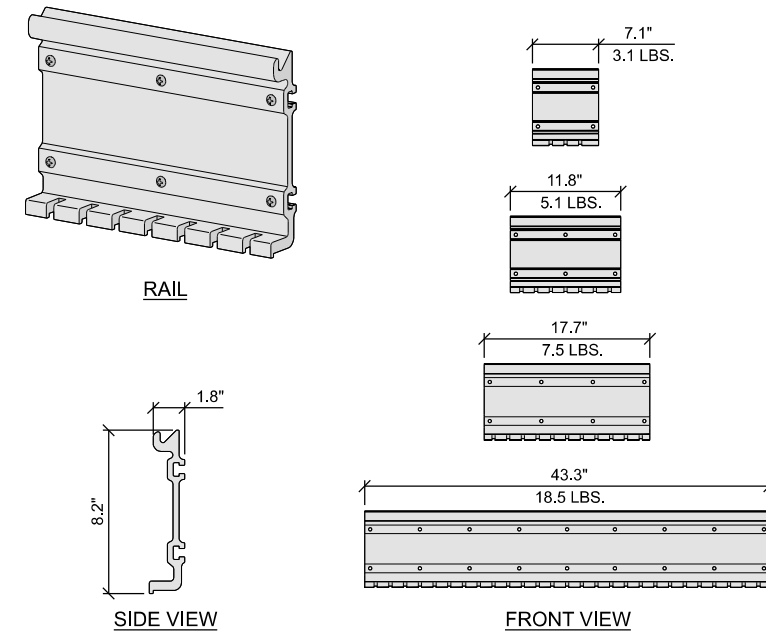
MANUFACTURER: ALUMA-FORM  
 MODEL: CMB-7 3/4-3-11 KIT  
 DIMENSIONS: 20-5/8" x 7-3/4" (H x W)  
 WEIGHT: 3.44 LBS.

INCLUDES (2) 3/4" BANDSTRAPS



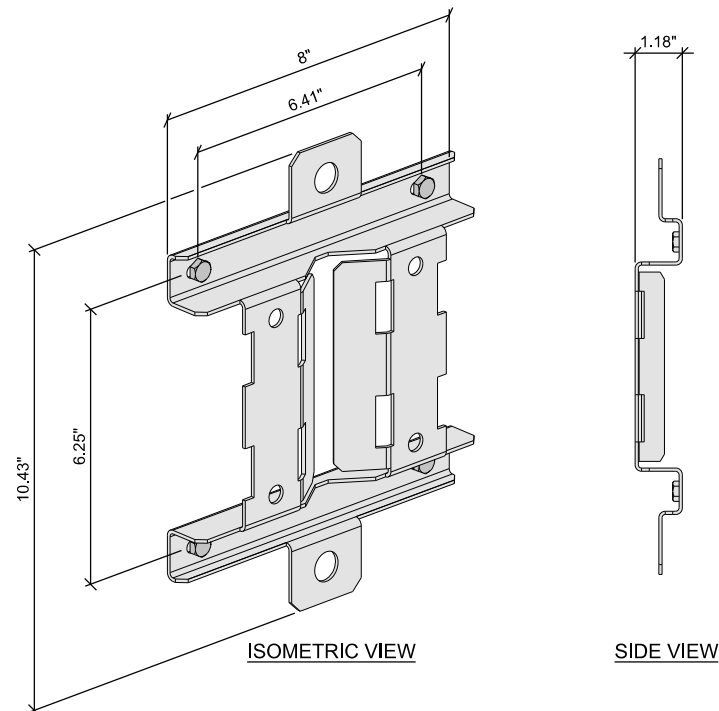
**B** ALUMAFORM MOUNT

MANUFACTURER: ERICSSON  
 MODEL: INSTALL RAIL  
 DIMENSIONS: 8.2" x VARIES x 1.8" (H x W x D)  
 WEIGHT: VARIES



**C** ERICSSON INSTALL RAIL

MANUFACTURER: RAYCAP  
 MODEL: RVZDC-2210-P-48  
 DIMENSIONS: 10.43" x 8.59" x 5.06" (H x W x D)  
 WEIGHT: 8 LBS.



**D** RAYCAP MOUNTING BRACKET

THIS SPACE INTENTIONALLY LEFT BLANK

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

MOUNTING DETAILS  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA

ENGINEER SEAL:  
 APPROVED-  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

STRUCTURAL ANALYSIS:  
 DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

SUBMITTAL:

INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY: MJM

PLOT DATE: 1/27/2021

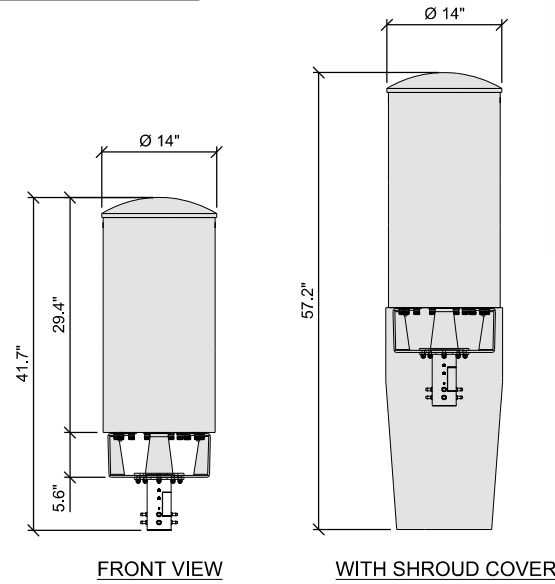
PROJECT NUMBER: 20158

SET TYPE: FINAL

SHEET NUMBER: **T-502**



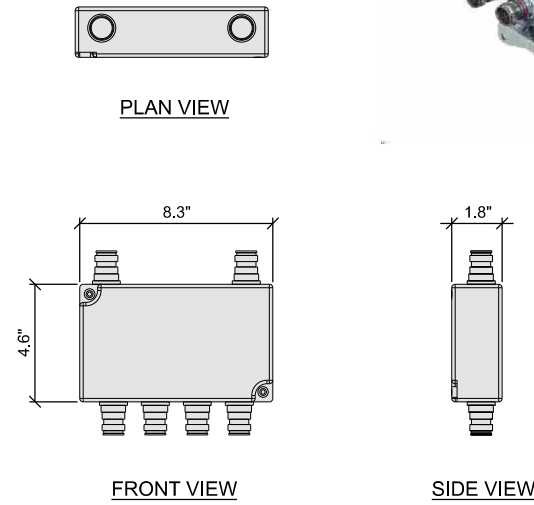
MANUFACTURER: JMA  
 MODEL: CX060MI236-1C  
 DIMENSIONS: 29.4" x Ø 14" (H x W)  
 WEIGHT: 38.6 LBS.  
 INSTALLATION TYPE: POLE TOP MOUNT



NOTES:  
 1. ANTENNA(S) TO BE MOUNTED TO POLE EXTERIOR WITH CONCEALFAB WIDE DIAMETER POLE TOP MOUNT (PART # 007951-F)

**A CANTENNA**

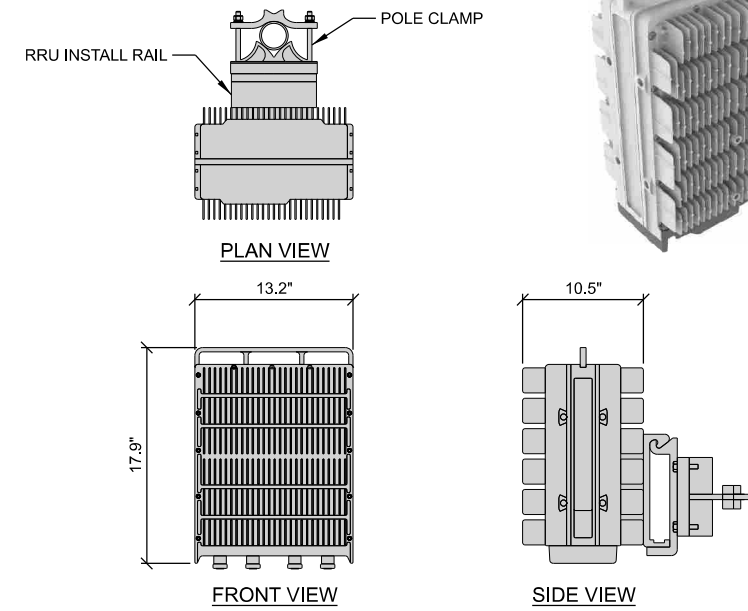
MANUFACTURER: COMMSCOPE  
 MODEL: DIPLEXER CBC1923T-43  
 DIMENSIONS: 4.6" x 8.3" x 1.8" (H x W x D)  
 WEIGHT: 4.3 LBS



NOTES:  
 1. DIPLEXERS MUST BE POWERED UP WITHIN 48 HOURS OF INSTALLATION.

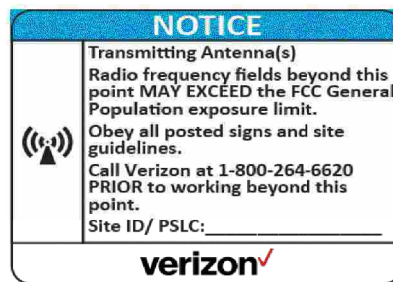
**B TWIN DIPLEXER**

MANUFACTURER: ERICSSON  
 MODEL: RADIO 4449  
 DIMENSIONS: 17.9" x 13.2" x 10.5" (H x W x D)  
 WEIGHT: 70.5 LBS



NOTES:  
 1. REMOTE RADIO UNITS MUST BE POWERED UP WITHIN 48 HOURS OF INSTALLATION.

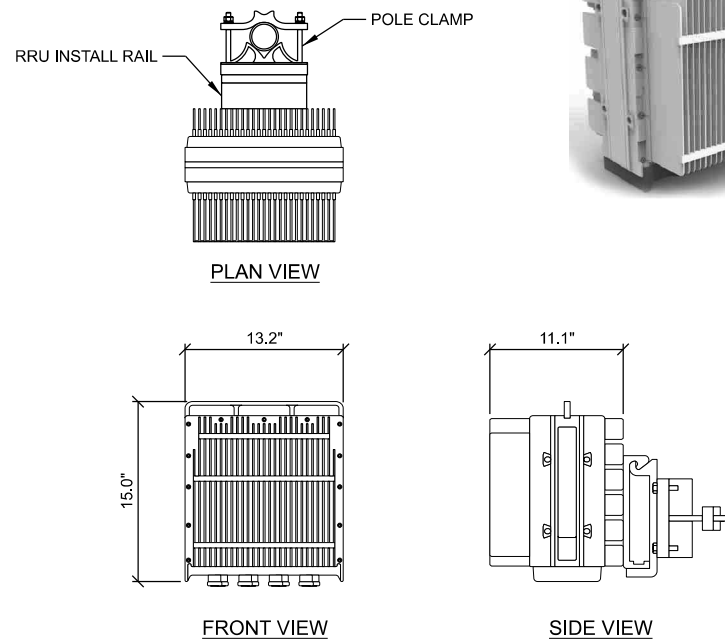
**C REMOTE RADIO UNIT (RRU)**



NOTES:  
 1. RF WARNING SIGNS TO BE MOUNTED @ 7'-0" A.G.L.

**D RF WARNING SIGNS**

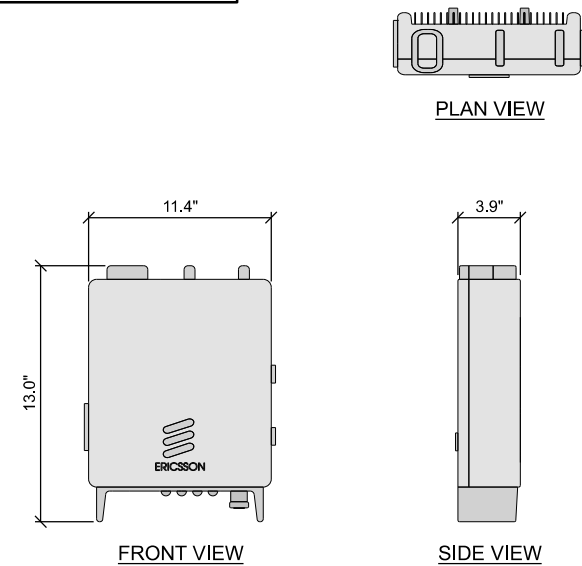
MANUFACTURER: ERICSSON  
 MODEL: RRU 8843  
 DIMENSIONS: 15.0" x 13.2" x 11.1" (H x W x D)  
 WEIGHT: 75 LBS.



NOTES:  
 1. REMOTE RADIO UNITS MUST BE POWERED UP WITHIN 48 HOURS OF INSTALLATION.

**E REMOTE RADIO UNIT (RRU)**

MANUFACTURER: ERICSSON  
 MODEL: PSU 6302  
 DIMENSIONS: 13.0" x 11.4" x 3.9" (H x W x D)  
 WEIGHT: 22 LBS.



**F POWER SUPPLY UNIT (PSU)**

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**ANTENNA & EQUIPMENT SPECIFICATIONS**  
 MINNESOTA  
 MINNETONKA, MINNESOTA

ENGINEER SEAL:  
 APPROVED -  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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

PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

STRUCTURAL ANALYSIS:  
 DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

SUBMITTAL:		
INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY: MJM

PLOT DATE: 1/27/2021

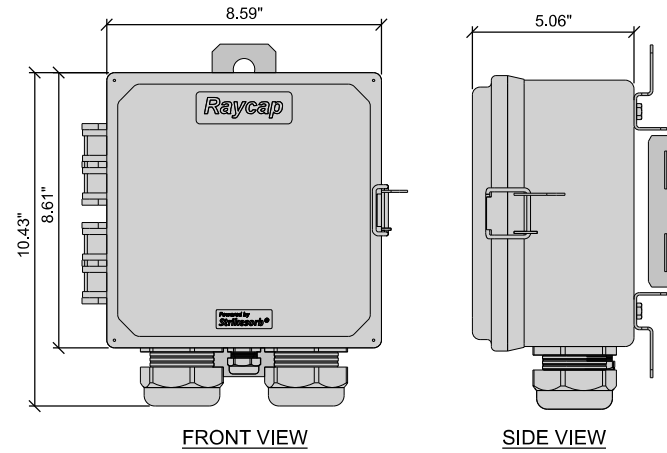
PROJECT NUMBER: 20158

SET TYPE: FINAL

SHEET NUMBER: **T-701**

MANUFACTURER: RAYCAP  
 MODEL: RSCAC-1333-P-240  
 DIMENSIONS: 10.43" x 8.59" x 5.06" (H x W x D)  
 WEIGHT: 8 LBS.

SUPPLIED WITH MOUNTING BRACKET:  
 RVZDC-2210-P-48

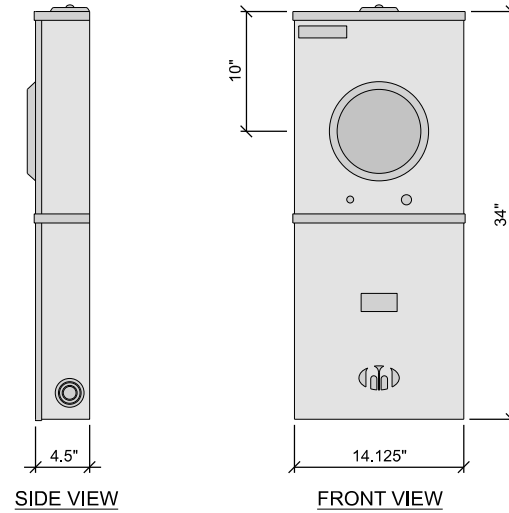


**A DISCONNECT / SURGE ARRESTOR**

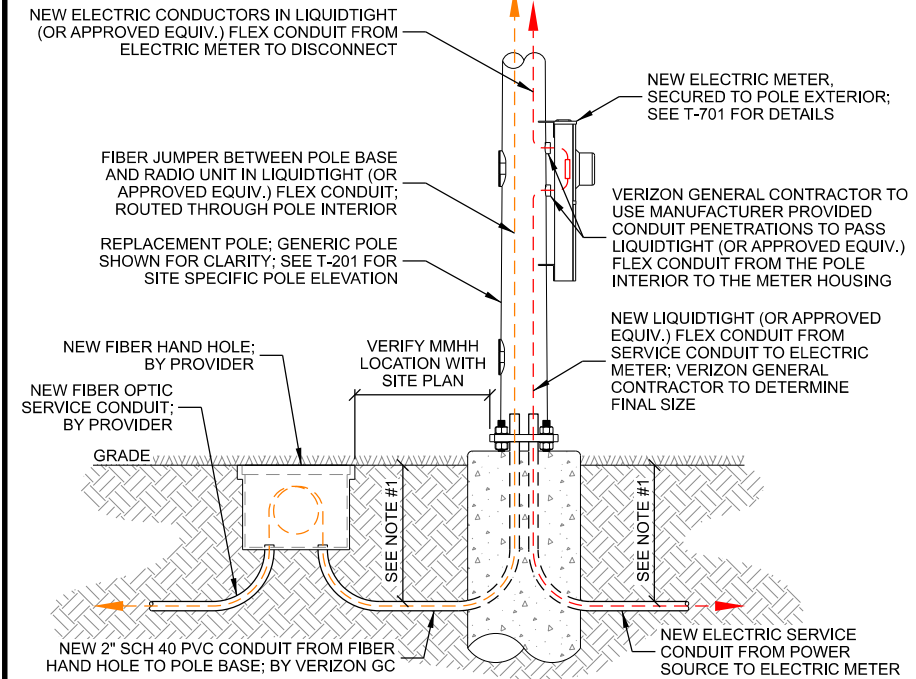
MANUFACTURER: MILBANK  
 MODEL: U6821-(-)(-AMP)  
 DIMENSIONS: 34" x 14.125" x 4.5" (H x W x D)  
 WEIGHT: 41 LBS.

200 AMP HD BYPASS RNLGS 4T/5T SIDE WIREWAY  
 OH/UG METER MAIN 22kA SCCR

\*\*\*OR APPROVED EQUIVALENT

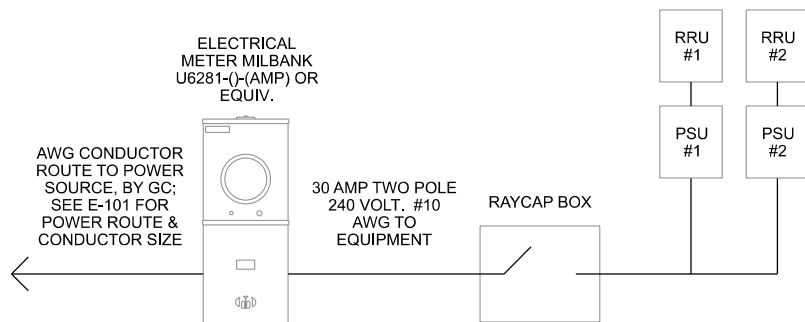


**B ELECTRIC METER**



- NOTES:
- CONDUIT TO BE 42" BELOW GRADE OR 6" BELOW FROST DEPTH, WHICHEVER IS DEEPER.
  - DUE TO PRESENCE OF ELECTRIC SERVICE WIRES IN POLE BASE, ALL CONDUCTIVE WIRES (ELECTRIC, GROUNDING, ARMORED, FIBER, ETC.) TO BE PLACED IN CONDUIT, PER THE NATIONAL ELECTRICAL CODE.

**C CONDUIT ROUTING DETAIL**



- NOTES:
- ELECTRICAL CONTRACTOR TO VERIFY FINAL ELECTRICAL ROUTING WITH UTILITY COMPANY ON-SITE.
  - ELECTRICAL CONDUCTOR SIZING IS BASED ON THE FOLLOWING ASSUMPTIONS: 240 VOLT SERVICE, SINGLE PHASE POWER, 100 A CIRCUIT, AND 3% ALLOWABLE VOLTAGE DROP.
  - THE VERIZON GENERAL CONTRACTOR IS RESPONSIBLE TO VERIFY ALL REQUIRED CONDUCTOR AND CONDUIT SIZES DURING THE BIDDING PROCESS.

**D ELECTRICAL ONE-LINE DIAGRAM**

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CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**ANTENNA & EQUIPMENT SPECIFICATIONS**  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA

ENGINEER SEAL:  
 APPROVED -  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

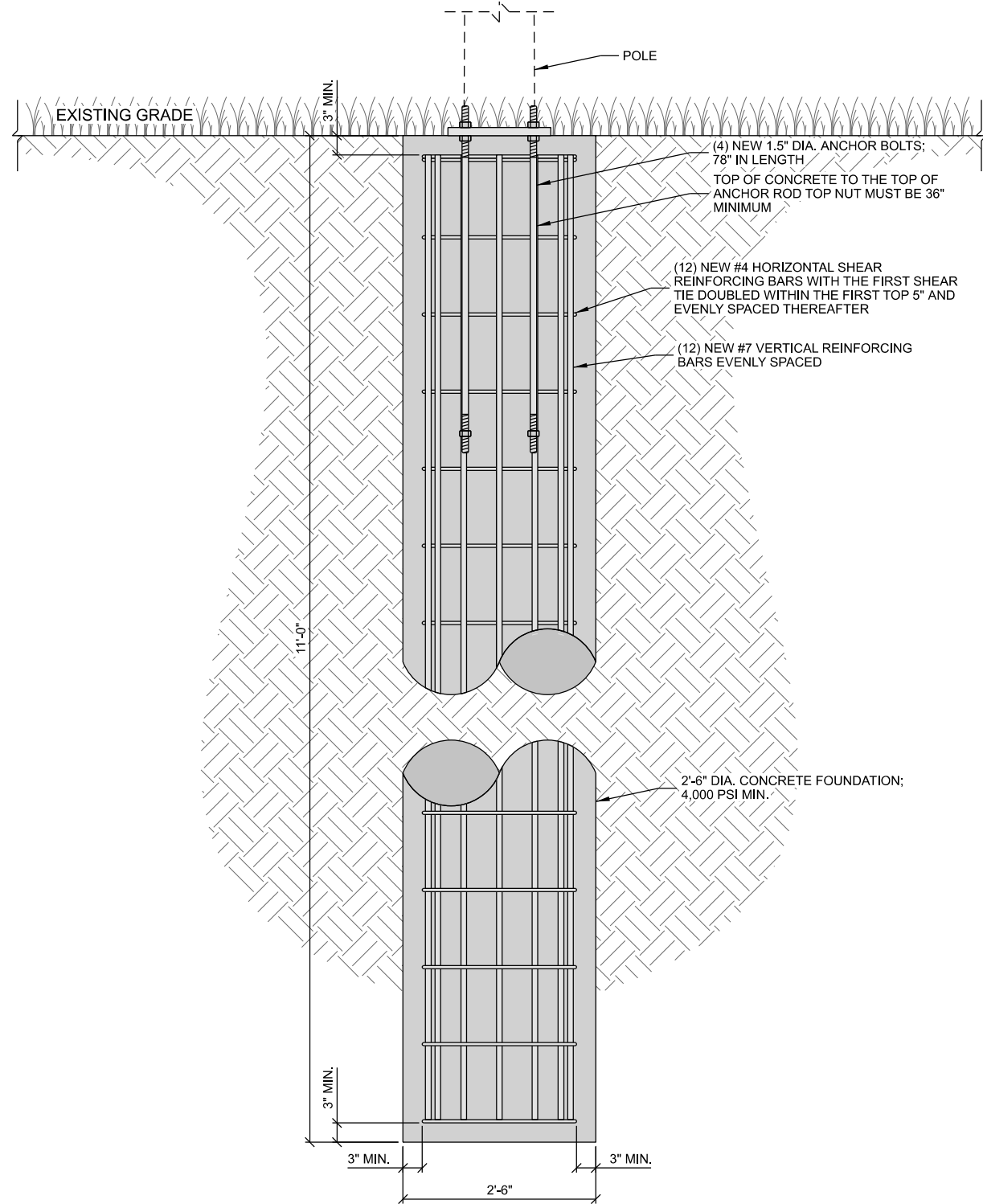
STRUCTURAL ANALYSIS:  
 DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

SUBMITTAL:

INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

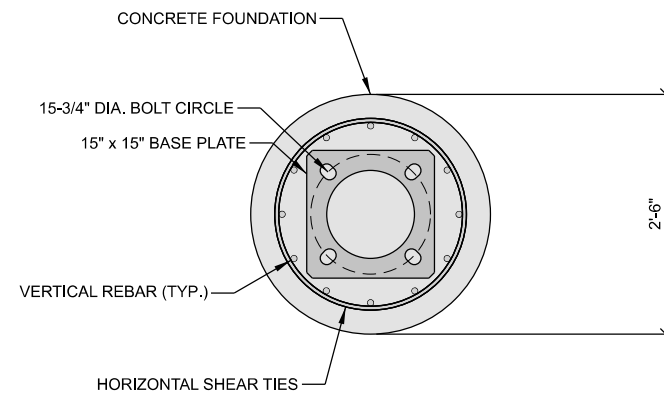
CHECKED BY: MJM  
 PLOT DATE: 1/27/2021  
 PROJECT NUMBER: 20158  
 SET TYPE: FINAL  
 SHEET NUMBER: **T-702**

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ELEVATION VIEW

TABLE OF QUANTITIES		
MATERIAL	DESCRIPTION	SUPPLIED BY
HORIZONTAL REBAR	(12) #4	CONTRACTOR
VERTICAL REBAR	(12) #7	CONTRACTOR
ANCHOR BOLT	(4) 1.5" DIA. x 78"	EDGE
CONCRETE	4,000 PSI MIN.	CONTRACTOR



PLAN VIEW

NOTE:  
1. VERIFY DETAILS WITH STRUCTURAL ANALYSIS LISTED ON THE TITLE SHEET.

**A FOUNDATION DETAIL**

CONSULTANT:  
**Edge**  
Consulting Engineers, Inc.  
2101 HIGHWAY 13 W  
BURNSVILLE, MN 55337  
952.683.1032 VOICE  
952.405.8583 FAX  
www.edgeconsult.com

CLIENT:  
**verizon**  
10801 BUSH LAKE RD  
BLOOMINGTON, MN 55438  
952.946.4694 VOICE

**FOUNDATION DETAILS**  
MIN EQUESTRIAN SC2  
MINNETONKA, MINNESOTA

ENGINEER SEAL:  
**APPROVED-**  
SEE TITLE SHEET FOR  
ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

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PROJECT NO: 20181826405  
LOCATION CODE: 499311  
RFDS DATE: 03/27/2020

STRUCTURAL ANALYSIS:  
DATE: 04/28/2020 DESCRIPTION: REPORT NO. 20158

SUBMITTAL:

INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY: MJM

PLOT DATE: 1/27/2021

PROJECT NUMBER: 20158

SET TYPE: FINAL

SHEET NUMBER: **S-501**



XCEL ENERGY CONTACT  
 CONTACT: JACOB MOCK  
 PHONE: 952.380.2637  
 EMAIL: jacob.r.mock@xcelenergy.com



TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN MINNESOTA, CALL GOPHER STATE ONE CALL  
 TOLL FREE: 1-800-252-1166  
 FAX A LOCATE: 1-800-236-4967  
 MN STATUTE REQUIRES MIN. OF 48 HOURS NOTICE BEFORE YOU EXCAVATE

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**FIBER & POWER ROUTING PLAN**  
 MINNEAPOLIS, MINNESOTA

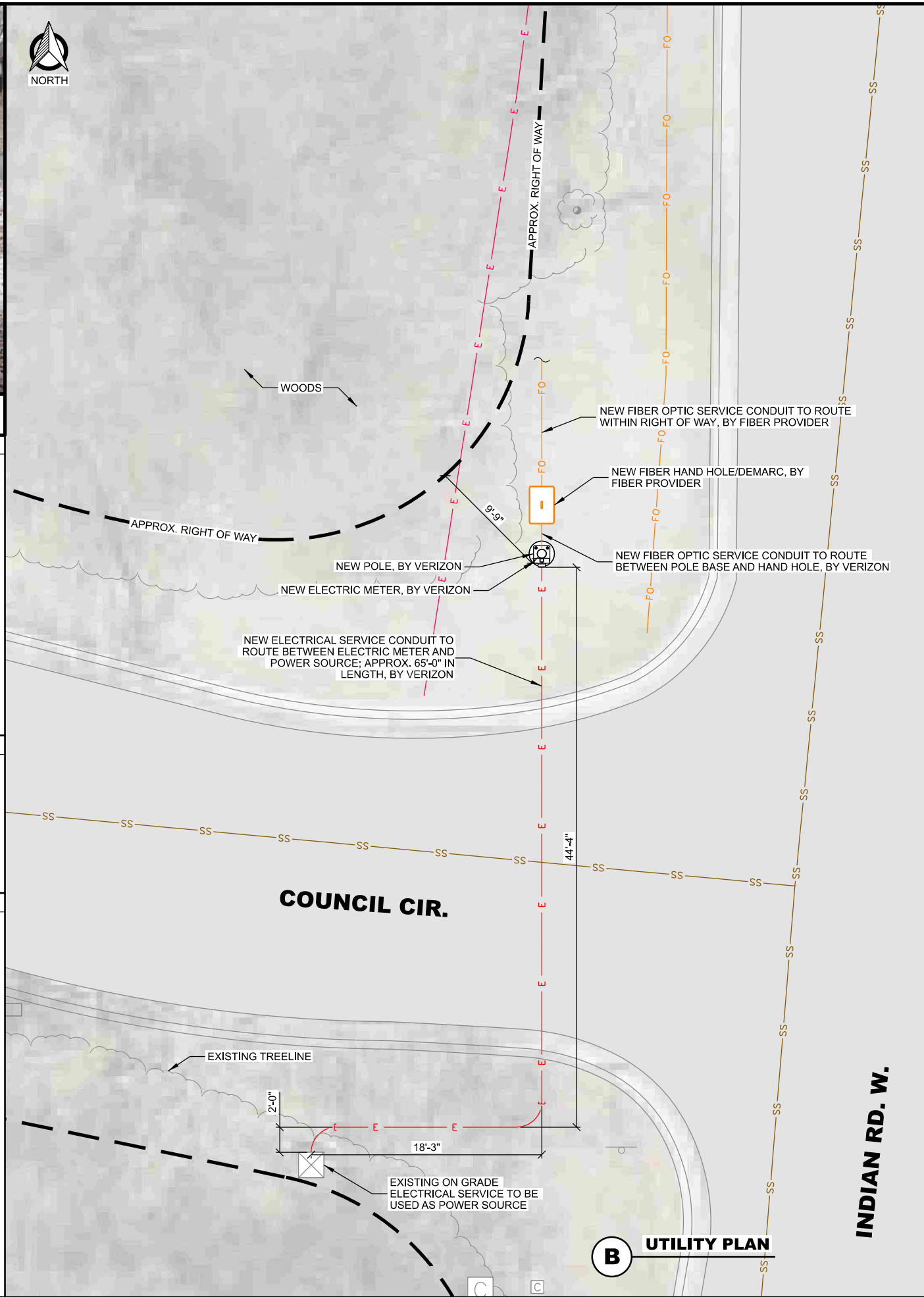
**A POWER SOURCE**

LEGEND:

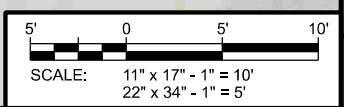
GAS MAIN	G	G
SANITARY SEWER	SS	SS
STORM SEWER	ST	ST
STREET LIGHTS	E	E
FIBER OPTIC	FO	FO
WATER	W	W
TELEPHONE	T	T
OVERHEAD ELECTRIC	OHE	OHE
NEW ELECTRIC	E	E
NEW FIBER OPTIC	FO	FO

ELECTRICAL CONDUCTOR SIZING:  
 THE FOLLOWING ASSUMPTIONS WERE MADE IN CALCULATING THE PROPOSED ELECTRICAL CONDUCTOR SIZING:  
 240 VOLT SERVICE  
 SINGLE PHASE POWER  
 100A CIRCUIT  
 3% ALLOWABLE VOLTAGE DROP  
 CONDUCTOR WIRE SIZE: 1 AWG COPPER  
 GC REQUIRED TO VERIFY WIRE SIZE WITH A MASTER ELECTRICIAN

- NOTES:
- CONTRACTOR TO COMPLETE UTILITY LOCATE PRIOR TO COMPLETING ANY CONSTRUCTION ACTIVITIES.
  - CONTRACTOR TO MAINTAIN A MINIMUM 48" OF COVER BETWEEN DIRECTIONAL CORE AND ROADWAY PAVEMENT TO THE EXTENT PRACTICAL.
  - CONTRACTOR TO PROVIDE A MINIMUM OF 12" OF CLEARANCE BETWEEN NEW CONDUIT AND EXISTING UTILITIES.
  - ALL CONCRETE DAMAGED AS PART OF THIS WORK TO BE REPAIRED/REPLACED TO ITS ORIGINAL CONDITION.
  - ALL ASPHALT REMOVED DURING CONSTRUCTION IS TO BE PATCHED AND REPAIRED TO ITS ORIGINAL CONDITION.
  - POT HOLE AND PATCH OVER ALL SANITARY SEWER LINES.
  - POT HOLE AND PATCH OVER ALL WATER LINES/MAINS.
  - THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA.



**B UTILITY PLAN**



ENGINEER SEAL:  
 APPROVED -  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
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PROJECT NO:	20181826405
LOCATION CODE:	499311
RFDS DATE:	03/27/2020
DATE:	04/28/2020
DESCRIPTION:	REPORT NO. 20158

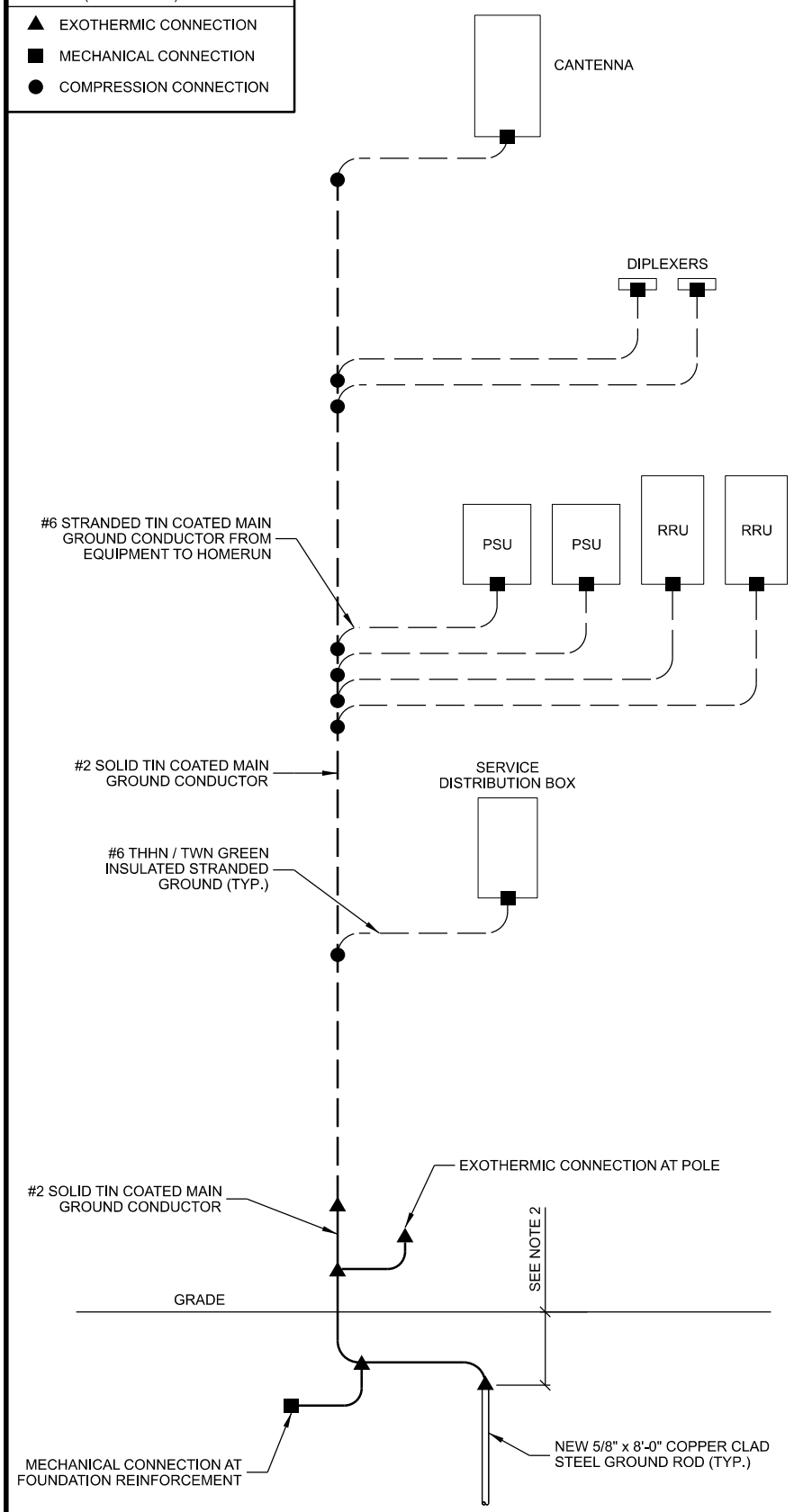
INT.	DATE	DESCRIPTION
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY:	MJM
PLOT DATE:	1/27/2021
PROJECT NUMBER:	20158
SET TYPE:	FINAL
SHEET NUMBER:	<b>E-101</b>

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LEGEND: (THIS SHEET)

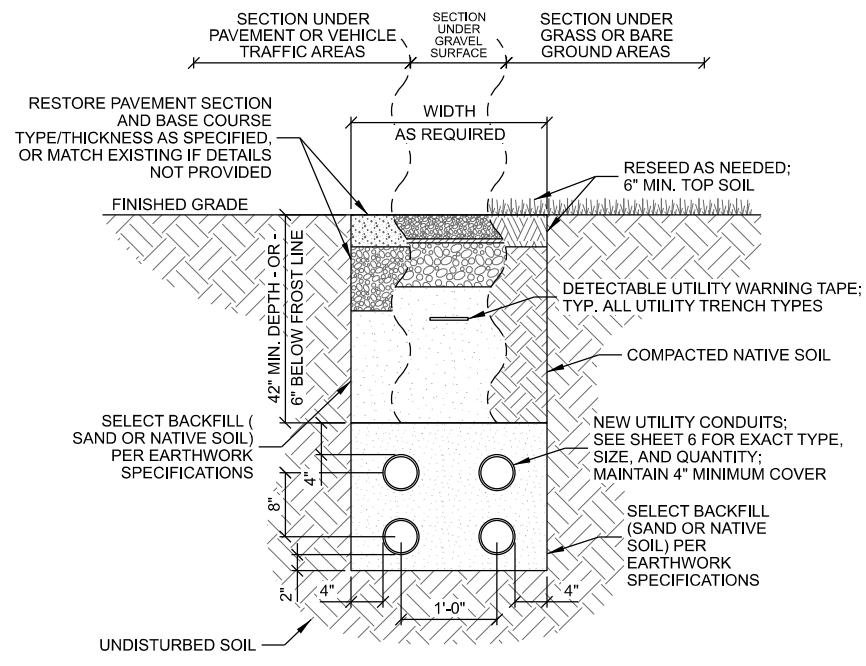
- ▲ EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- COMPRESSION CONNECTION



NOTES:

1. GROUNDING RISER FOR DIAGRAMMATIC PURPOSES ONLY. SEE ELEVATION DRAWINGS FOR EQUIPMENT AND ANTENNA LOCATIONS.
2. DRIVE GROUND RODS TO A MINIMUM DEPTH OF 30" OR 6" BELOW FROST LINE

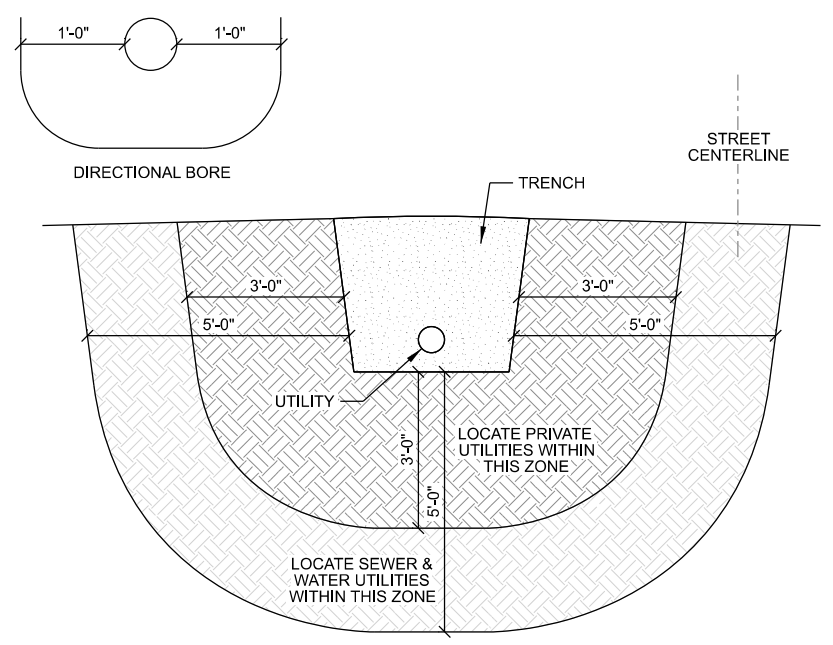
**A GROUNDING RISER DIAGRAM**



NOTES:

1. UTILITY CONDUITS TO BE BURIED A MINIMUM DEPTH OF 42" BELOW GROUND LEVEL OR 6" BELOW THE FROST LINE.
2. CONDUIT TYPE, SIZE, AND QUANTITY TO BE VERIFIED WITH PROVIDER.

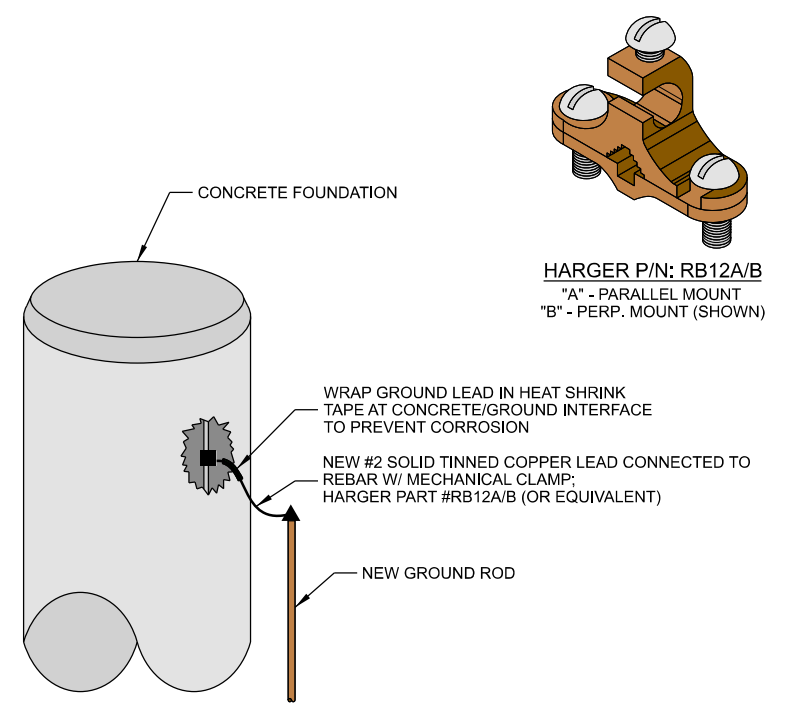
**B UTILITY TRENCH DETAIL**



NOTES:

1. CROSS SECTION REQUIRED WHEN TRENCH IS WITHIN 3' OF PRIVATE UTILITIES, OR WITHIN 5' OF SEWER AND WATER UTILITIES (OR WHEN DIRECTIONAL BORE IS WITHIN 1' OF ANY UTILITY)

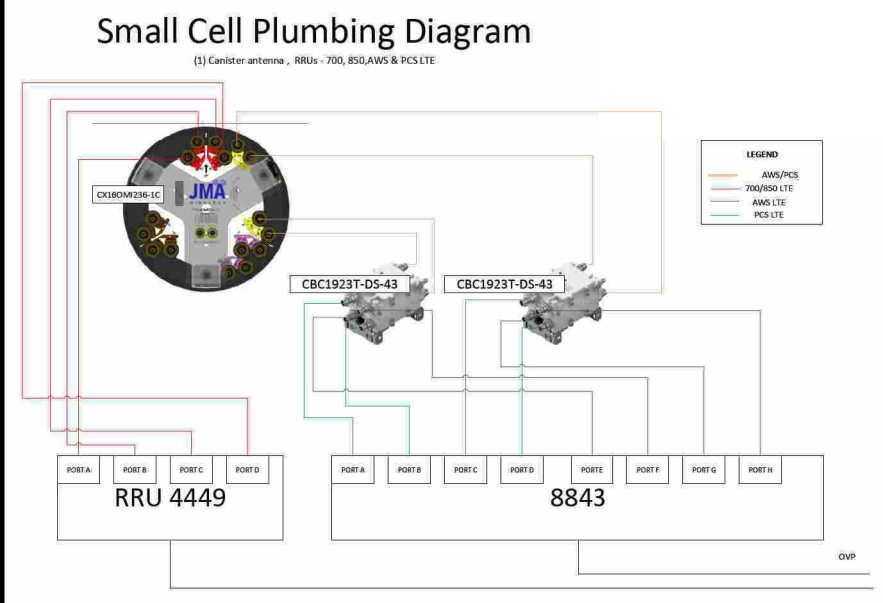
**C TRENCH LOCATE REQUIREMENTS**



NOTES:

1. FOUNDATION SHOWN IS TYPICAL.
2. GROUNDING CONNECTIONS TO BE COVERED BY A MINIMUM OF 3" CONCRETE.
3. CONTRACTOR TO PROVIDE ALL REQUIRED COMPRESSION CONNECTIONS.

**D REBAR CONNECTION**



**E PLUMBING DIAGRAM**

CONSULTANT:  
**Edge**  
 Consulting Engineers, Inc.  
 2101 HIGHWAY 13 W  
 BURNSVILLE, MN 55337  
 952.683.1032 VOICE  
 952.405.8583 FAX  
 www.edgeconsult.com

CLIENT:  
**verizon**  
 10801 BUSH LAKE RD  
 BLOOMINGTON, MN 55438  
 952.946.4694 VOICE

**GROUNDING & UTILITY DETAILS**  
 MIN EQUESTRIAN SC2  
 MINNETONKA, MINNESOTA

ENGINEER SEAL:  
 APPROVED -  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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PROJECT NO: 20181926405  
 LOCATION CODE: 499311  
 RFDS DATE: 03/27/2020

STRUCTURAL ANALYSIS:  
 DATE: DESCRIPTION:  
 04/28/2020 REPORT NO. 20158

SUBMITTAL:

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RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

CHECKED BY: MJM  
 PLOT DATE: 1/27/2021  
 PROJECT NUMBER: 20158  
 SET TYPE: FINAL  
 SHEET NUMBER: **E-501**

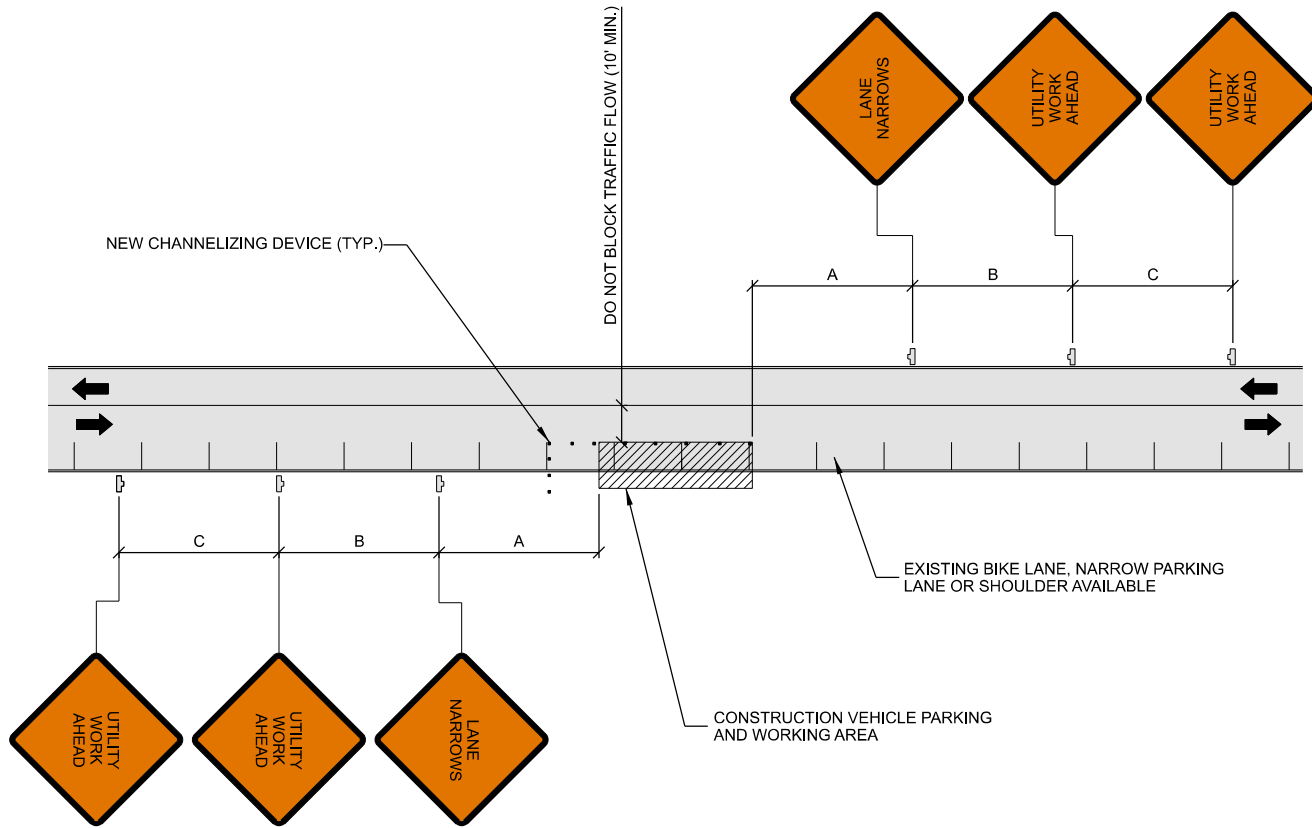


TABLE 1

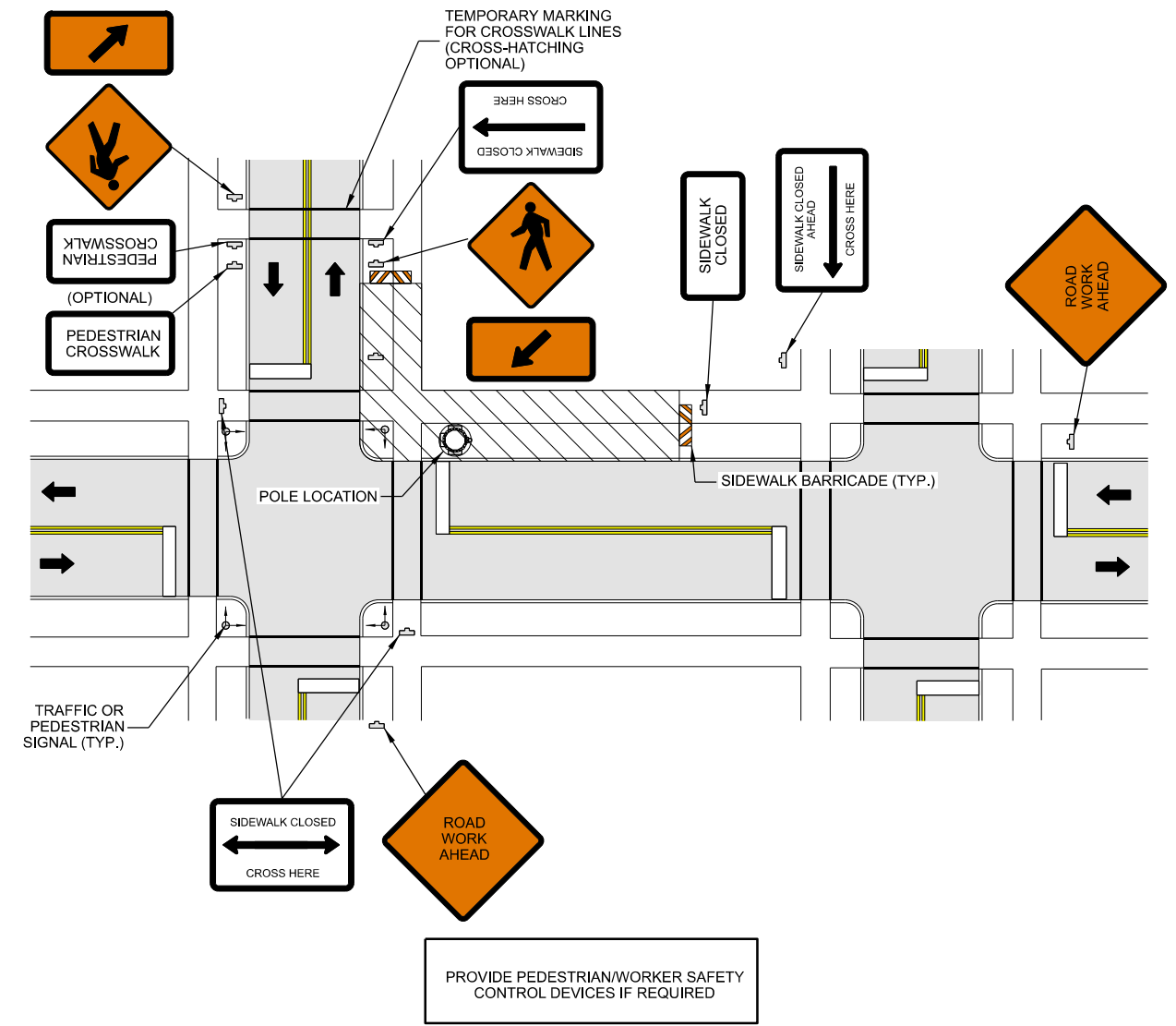
POSTED SPEED (MPH)	DISTANCE BETWEEN SIGNS			TAPER	BUFFER
	A	B	C	L (SEE NOTE)	
15	100'	100'	100'	45'	100'
20	100'	100'	100'	80'	115'
25	100'	100'	100'	125'	155'
30	200'	200'	200'	180'	200'
35	200'	200'	200'	245'	250'
40	350'	350'	350'	320'	305'
45	350'	350'	350'	540'	360'
50	500'	500'	500'	600'	425'
55	500'	500'	500'	660'	495'
60	500'	500'	500'	720'	570'
65	500'	500'	500'	780'	645'

NOTES:

- DISTANCES IN FEET UNLESS OTHERWISE NOTED.
- CONTRACTOR TO VERIFY EXISTING SPEED LIMIT.
- DISTANCES SHOWN ARE NOT VALID FOR LIMITED ACCESS HIGHWAYS. CONSULT STATE D.O.T. MANUAL FOR DISTANCES.
- ADJUST DISTANCES TO COMPLY WITH REQUIREMENT OF THE STATE OR LOCAL HIGHWAY AUTHORITY HAVING JURISDICTION. SEE NOTE 1/D-502.
- TAPER LENGTHS SHOWN BASED ON 12' LANE WIDTH. SEE NOTE 18/D-502.

- NOTES:
- PLANS DEPICTED ARE GENERAL GUIDELINES FOR TEMPORARY VEHICULAR TRAFFIC CONTROL PLANS (TCP) TO INCLUDE PEDESTRIAN AND WORKER SAFETY. CONTRACTOR IS REQUIRED TO HAVE PREPARED A SITE-SPECIFIC TCP FOR REVIEW AND APPROVAL BY THE HIGHWAY AUTHORITY HAVING JURISDICTION. IF REQUIRED, THE FIRM PREPARING THE TCP SHALL BE AUTHORIZED OR CERTIFIED BY THE AUTHORITY HAVING JURISDICTION.
  - EXTEND CHANNELIZATION DEVICES INTO SHOULDER WHERE APPLICABLE.
  - DISTANCES AS INDICATED IN TABLE 1 SHOULD BE INCREASED FOR CONDITIONS THAT WOULD AFFECT STOPPING. DISTANCE SUCH AS DOWNGRADES OR LIMITED SIGHT DISTANCES. DISTANCES CAN BE DECREASED FOR LOW-SPEED (RESIDENTIAL) AREAS WITH APPROVAL BY THE AUTHORITY HAVING JURISDICTION. NIGHT-TIME WORK IS PROHIBITED UNLESS IT IS REQUIRED AS A CONDITION OF APPROVAL BY THE HIGHWAY AND LOCAL AUTHORITY HAVING JURISDICTION.
  - SHOULDER TAPERS SHOULD BE 1/3 OF THE ON-STREET TAPER LENGTH.
  - MAINTAIN A MINIMUM LANE WIDTH OF 10'.

**A TRAFFIC CONTROL PLAN**



- NOTES
- ALL TEMPORARY TRAFFIC CONTROL SIGNAGE, LAYOUTS AND PROCEDURES SHALL COMPLY WITH LOCAL JURISDICTIONAL REQUIREMENTS AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION, WHICHEVER IS MORE STRINGENT.
  - PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
  - TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
  - SELECTION, PLACEMENT, MAINTENANCE, AND PROTECTION OF TRAFFIC, PEDESTRIANS, AND WORKERS SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) - PART VI "TEMPORARY TRAFFIC CONTROL", AND LOCAL JURISDICTIONAL REQUIREMENTS UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS, AND SHALL BE APPROVED BY THE APPROPRIATE HIGHWAY AUTHORITY HAVING JURISDICTION.
  - ADVANCE WARNING SIGNS, DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY AND FOR ACTUAL TRAFFIC SPEEDS IF IN EXCESS OF POSTED SPEED LIMITS.
  - TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.
  - CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON THE EXISTING TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
  - ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE NEW TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED, OR RELOCATED. ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO MATCH PRE-CONSTRUCTION CONDITION AFTER COMPLETION OF WORK.
  - CONTRACTOR SHALL CONTACT LOCAL AUTHORITY HAVING HIGHWAY JURISDICTION AND PROVIDE ADDITIONAL "FLAGMEN" OR POLICE SUPERVISION, IF REQUIRED.
  - ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON A MINIMUM 6H:1V SLOPE PRIOR TO END OF EACH WORK DAY. OTHER EXCAVATED AREAS WITHIN THE CLEAR ZONE ARE TO BE EITHER BACKFILLED OR PRECAST CONCRETE CURB BARRIER CONSTRUCTION BARRIER SET TEMPORARILY IN PLACE TO SHIELD VEHICULAR AND PEDESTRIAN TRAFFIC.
  - WHERE DICTATED BY LOCAL CONDITIONS, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN AND WORKER CROSSING LOCATIONS IN ACCORDANCE WITH ALL APPLICABLE CODES AND OSHA REQUIREMENTS.
  - CONSTRUCTION ZONE SPEED LIMIT IF REDUCED FROM POSTED LIMITS SHALL BE IN ACCORDANCE WITH MUTCD AND WILL BE DETERMINED BY THE AUTHORITY HAVING JURISDICTION.
  - THERE SHALL BE NO WORKERS, EQUIPMENT, OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD SPACE.
  - DRIVEWAYS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-1 SIGN (ROAD WORK AHEAD) AS A MINIMUM.
  - CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION PROVIDED THEY COMPLY WITH MUTCD.
  - THE SPACING BETWEEN CONES, TUBULAR MARKERS, VERTICAL PANELS, DRUMS, AND BARRICADES SHOULD NOT EXCEED A DISTANCE IN FEET EQUAL TO 1.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET EQUAL TO 2.0 TIMES THE SPEED LIMIT IN MPH WHEN USED FOR TANGENT CHANNELIZATION.
  - WHEN CHANNELIZATION DEVICES HAVE THE POTENTIAL OF LEADING VEHICULAR TRAFFIC OUT OF THE INTENDED VEHICULAR TRAFFIC SPACE, THE CHANNELIZATION DEVICES SHOULD BE EXTENDED A DISTANCE IN FEET OF 2.0 TIMES THE SPEED LIMIT IN MPH BEYOND THE DOWNSTREAM END OF THE TRANSITION AREA.
  - TAPER LENGTHS ARE CALCULATED AS FOLLOWS:  $L = WS^2/60$  (40 MPH AND HIGHER) OR  $L2 = WS$  (OVER 40 MPH), WHERE W= OFFSET WIDTH (FT), S= TRAFFIC SPEED (MPH).

**B PEDESTRIAN SAFETY PLAN**

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MIN EQUESTRIAN SC2  
MINNETONKA, MINNESOTA

ENGINEER SEAL:

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

APPROVED - SEE TITLE SHEET FOR ENGINEER SEAL

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT NO: 20181826405

LOCATION CODE: 499311

RFDS DATE: 03/27/2020

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RJK	04/21/2020	REV. A
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PROJECT NUMBER: 20158

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4.2 CONCRETE REINFORCEMENT

MATERIAL PROPERTIES (U.N.O)  
 SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE:  $f' = 4,000$  psi  
 SPECIFIED YIELD STRENGTH OF CONCRETE REINFORCEMENT:  $f' = 60,000$  psi

A. ALL BAR LAPS SHALL CONFORM TO ACI 318 CLASS "B" SPLICE CRITERIA. USE TO BAR LAP LENGTHS FOR TOP BARS IN SLABS AND BEAMS OVER 14" DEEP.

MINIMUM BAR LAPS AS FOLLOWS U.N.O.:

#3:1'-4"	#4:1'-4"	#5:1'-10"	#6:2'-7"	#7:4'-2"
#8:5'-2"	#8:6'-4"	#10: 7'-8"	#11:9'-0"	

FOR EPOXY COATED BARS, PROVIDE 1.5 TIMES THE INDICATED LAP LENGTH. FOR TOP BARS PROVIDE 1.3 TIMES THE INDICATED LAP LENGTH.

B. LAP LENGTH SHALL BE SPECIFICALLY NOTED ON SHOP DRAWINGS WHERE MORE THAN ONE BAR MAKES UP A CONTINUOUS STRING.

C. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 315. ALL REINFORCEMENT BARS SHALL BE FABRICATED IN ACCORDANCE WITH THE LATEST CRSI MANUAL OF STANDARD PRACTICE AND SHALL BE CLEAN AND FREE OF GREASE AND SCALING RUST.

D. PROVIDE HOT/COLD WEATHER PROCEDURES AND PROTECTION IN ACCORDANCE WITH ACI RECOMMENDATIONS AND PROJECT SPECIFICATIONS.

E. CONCRETE REINFORCEMENT PROTECTION/CLEAR COVER, U.N.O.:

FOOTINGS:	ALL SIDES 3"
PIERS:	ALL SIDES 3"

F. EXTEND ALL PIER STEEL TO PROVIDE STD. HOOK UNDER FOOTING REINFORCEMENT, UNLESS NOTED OTHERWISE.

G. SPLICES IN REINFORCEMENT STEEL ARE PROHIBITED, UNLESS APPROVED BY THE STRUCTURAL ENGINEER. ALL SPLICES MUST THEN MEET ALL APPLICABLE ASTM STANDARDS FOR SPLICING.

H. HEATING AND WELDING OF BARS IS PROHIBITED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE STRUCTURAL ENGINEER. WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY (AWG) D.1.1-92. STRUCTURAL WELDING CODE.

4.3 CAST-IN-PLACE CONCRETE

A. ANY NON-STRUCTURAL SITE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSL. ALL CONCRETE SUBJECT TO FREEZE-THAW SHALL CONTAIN 4-8% AIR ENTRAINMENT.

B. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF) UNLESS NOTED OTHERWISE. ALL CONCRETE SHALL BE COMPOSED OF PORTLAND CEMENT, TYPE III, IN CONFORMANCE WITH ASTM C150, FINE AND COARSE AGGREGATE IN CONFORMANCE WITH ASTM C33, AND WATER IN CONFORMANCE WITH ASTM C94. EXPOSED EXTERIOR CONCRETE SHALL BE AIR ENTRAINMENT WITH % AIR CONTENT. CONCRETE SHALL HAVE A MEASURED SLUMP OF 4" (CONTRACTOR SHALL PERFORM SLUMP TESTS). IF AN ALTERNATIVE MIX DESIGN IS DESIRED, MIX DESIGN SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

C. ALL CONCRETE SHALL BE VIBRATE IN PLACE USING HIGH FREQUENCY, LOW AMPLITUDE MECHANICAL IMMERSION TYPE VIBRATORS. INSERT VIBRATORS IN CONCRETE AT REGULAR INTERVALS AND OVER ENTIRE SURFACE TO SOLIDLY FILL AROUND AND BETWEEN REINFORCEMENT AND EMBEDDED ITEMS AND INTO CORNERS AND IRREGULARITIES. DISCONTINUE VIBRATION WHEN RISING ENTRAPPED AIR BUBBLES STOP BREAKING THE LEVELING SURFACE. DO NOT OVERVIBRATE AS THIS MAY CAUSE SEGREGATION.

D. ALL FORMED CONCRETE SURFACES EXPOSED TO VIEW SHALL HAVE A SURFACE FINISH SF-2.0 IN ACCORDANCE WITH ACI 301.

E. ALL CONCRETE MIXING, TRANSPORTING, PLACING AND CURING SHALL CONFORM WITH THE LOCAL BUILDING CODE REQUIREMENTS AND THOSE OF THE FOLLOWING STANDARDS (LATEST EDITION):

"ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONC."  
 "ACI 315, DETAILS AND DETAILING OF CONCRETE REINFORCEMENT"  
 "ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BLDGS."  
 "ACI 307, RECOMMENDED PRACTICE FOR CONCRETE FORM WORK"

F. ALUMINUM CONDUIT IS NOT PERMITTED TO BE EMBEDDED IN CONCRETE.

G. ALL DOWELS INTO EXISTING CONCRETE OR SOLID MASONRY TO BE EPOXY AND ANCHORED WITH HILTI HIT-HY 200 ADHESIVE OR APPROVED EQUIVALENT, (UNLESS NOTED OTHERWISE).

H. UNLESS NOTED OTHERWISE, ANY EXISTING CONCRETE SURFACE IS TO BE CLEANED AND INTENTIONALLY ROUGHED TO A 1/4" AMPLITUDE AND WETTED PRIOR TO FRESH CONCRETE BEING POURED AGAINST SURFACE.

4.4 QUALITY CONTROL

A. ALL STRUCTURAL CONCRETE SHALL BE INSPECTED BY INDEPENDENT, QUALIFIED PERSONNEL (ACI OR OTHERWISE). ALL STRUCTURAL CONCRETE SHALL BE TESTED BY AN INDEPENDENT LAB, AT A MINIMUM, 5 CYLINDERS SHALL BE CAST AND TESTED AT 7, 14, AND 28 DAYS. THE REMAINING CYLINDER SHALL BE RESERVED FOR RE-TESTING, IF NECESSARY.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE CONSTRUCTION MANAGER AND/OR TESTING AGENCY A MINIMUM OF 48 HOURS PRIOR TO EACH FOUNDATION POUR. IF A POUR OCCURS WITHOUT THE REQUESTED INSPECTION, THE OWNER CAN ASSUME THAT THE INSTALLATION WAS NOT INSTALLED CORRECTLY AND REQUIRE REPLACEMENT.

B. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT THEIR SOLE EXPENSE, ANY CONCRETE THAT DOES NOT MEET THE ABOVE SPECIFICATIONS, OR SIMILAR SPECIFICATIONS CONTAINED IN THE PLANS OR STRUCTURE DRAWINGS. ANY CONCRETE THAT DOES NOT MEET THE MINIMUM COMPRESSIVE STRENGTH REQUIRED UPON COMPLETION OF LAB TESTING SHALL BE REPLACED. THE AVERAGE OF THE TWO 28 DAY BREAK RESULTS SHALL GOVERN. NO DISPUTES REGARDING THE METHOD USED TO COLLECT THE TEST CYLINDERS OR PERFORM THE LAB TESTING ARE ALLOWED. IF THE CONTRACTOR CHOOSES, THEY MAY COLLECT AND TEST ADDITIONAL CYLINDERS AT THEIR SOLE EXPENSE.

C. DESPITE THE ABOVE REQUIREMENT, THE CONTRACTOR IS RESPONSIBLE TO PERFORM QUALITY WORK AND IS THE GUARANTOR OF THE FINISHED PRODUCT. IF A DEFECT IS NOT IMMEDIATELY IDENTIFIED BY THE INSPECTOR, OWNER, OR CONSTRUCTION MANAGER, BUT IDENTIFIED SUBSEQUENTLY, THE CONTRACTOR SHALL STILL BE RESPONSIBLE TO CORRECT SAID DEFECT.

D. CONTRACTOR MUST VERIFY THAT CONCRETE MEETS DESIGN REQUIREMENT (FOR STRENGTH AND OTHER PARAMETERS) BEFORE PLACING ANY SERVICE LOADS.

**STRUCTURAL STEEL**

5.1 GENERAL REQUIREMENTS

A. STRUCTURAL STEEL DESIGN AND FABRICATION SHALL BE IN ACCORDANCE WITH THE AISC 13TH EDITION STEEL CONSTRUCTION MANUAL.

B. MATERIAL PROPERTIES ARE TO BE AS INDICATED BELOW UNLESS NOTED OTHERWISE.

W-SHAPES	Fy = 50 KSI (A992 OR A 572 Gr 50)
C-SHAPES & ANGLES	Fy = 36 KSI (A36)
PLATES & BARS	Fy = 36 KSI (A36)
SQUARE TUBES	Fy = 46 KSI (A500 Gr B)
ROUND TUBES	Fy = 35 KSI (A53 TYPE S, Gr B)
RODS	Fy = 36 KSI (A36)
ANCHOR RODS	Fy = 55 KSI (F1554-Gr 55)

C. STEEL BEAMS WITH RESIDUAL CAMBER RESULTING FROM MILL FABRICATION OR ROLLING SHALL BE SHOP FABRICATED AND ERECTED SUCH THAT THIS RESIDUAL CAMBER COUNTERACTS GRAVITY LOAD DEFLECTION.

5.2 CONNECTION BOLTS AND ANCHORS

A. MINIMUM BOLT EDGE DISTANCES ARE TO BE THE LARGER OF THE EXISTING CONDITION OR THE TABLE PROVIDED BELOW UNLESS APPROVED BY THE ENGINEER.

BOLT DIAMETER (IN)	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	> 1 1/4
MIN. EDGE DISTANCE	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 5/8	1.25 x d

B. ALL CONNECTION BOLTING IS TO BE WITH A-325N BOLTS UNLESS NOTED OTHERWISE. BOLTS NEED ONLY BE TIGHTENED TO THE SNUG-TIGHT CONDITION. SNUG-TIGHT IS DEFINED AS THE TIGHTNESS OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A PERSON USING AN ORDINARY SPUD WRENCH.

C. U.N.O., POST INSTALLED ANCHORS ARE TO BE HILTI HIT HY 200 ADHESIVE ANCHORS FOR SOLID BASE MATERIAL AS MANUFACTURED BY HILTI FASTENING SYSTEMS OF TULSA, OKLAHOMA OR APPROVED EQUAL. INSTALL ANCHORS WITH EMBEDMENT DEPTHS INDICATED.

5.3 GROUT & FINISHES

A. U.N.O., NON-SHRINK GROUT SHALL BE A NON-METALLIC PREMIXED FORMULATION EQUIVALENT TO MASTERFLOW 713 PLUS BY DEGUSSA BUILDING SYSTEMS. BEAM AND LINTEL PLATES SHALL BE FULLY GROUTED WITH A MINIMUM 1/2" NON-SHRINK GROUT. COLUMN BASE PLATES SHALL BE FULLY GROUTED WITH A MINIMUM OF 1 1/2" NON-SHRINK GROUT.

B. ALL STEEL FRAMING MEMBERS, CONNECTION PLATES, FASTENERS AND ANCHOR BOLTS EXPOSED TO EARTH OR WEATHER TO HAVE HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE SPECIFIED. APPLY COATING BY THE HOT-DIP PROCESS FOR GALVANIZING ACCORDING TO ASTM A123 OR ASTM A153.

C. ALL DINGS, SCRAPES, MARS AND WELDS IN THE GALVANIZED AREA SHALL BE COATED WITH A ZINC-RICH PAINT, APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. AFTER ZINC-RICH PAINT IS DRY, OVERCOAT WITH AN APPROPRIATE PAINT WITH THE SAME COLOR AS THE EXISTING.

5.4 WELDING

A. ALL WELDING OF NEW STEEL IS TO BE WITH E70XX ELECTRODES, U.N.O. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS SPECIFICATIONS BY CERTIFIED WELDERS AND INSPECTED BY AN AWS CERTIFIED WELDING INSPECTOR.

B. WHEN FIELD WELDING TO EXISTING STEEL, ADJUST WELDING PROCEDURES AS REQUIRED TO BE COMPATIBLE WITH THE NEW AND EXISTING STEEL.

C. ALL WELDING OF GALVANIZED MATERIAL SHALL BE PERFORMED IN SUCH A MANNER AS TO SATISFY ALL OSHA AND AWS REQUIREMENTS. ALL FIELD WELDED LOCATIONS SHALL BE PREPARED AND PRIMED WITH A ZINC-RICH PRIMER PRIOR TO PAINTING PER THE MANUFACTURER'S RECOMMENDATIONS. THE SPECIFIC PRIMER TO BE USED SHALL BE TNEMEC SERIES 90-97 Tneme-Zinc @ 3.0-4.0 mils DFT OR APPROVED EQUAL.

**ELECTRICAL**

A. THE CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING UNDERGROUND POWER, TELCO, GROUNDING CONDUITS, AND ALL OTHER UTILITY EASEMENTS AND/OR WIRES PRIOR TO TRENCHING. ANY DAMAGE CAUSE TO THE EXISTING UNDERGROUND SERVICES OR SYSTEMS SHALL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.

B. CONTRACTOR SHALL CONTACT UTILITY PROVIDER PRIOR TO BIDDING AND CONSTRUCTION TO VERIFY THAT SERVICE HAS BEEN ORDERED AND DISCUSS ANY SITE SPECIFIC REQUIREMENTS. CHANGE ORDERS RELATED TO UTILITY REQUIREMENTS OR REQUESTS WILL NOT BE ALLOWED UNLESS THIS CONDITION HAS BEEN MET.

C. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS SHALL BE PAID BY CONTRACTOR.

D. SUBMITTAL OF BID INDICATES CONTRACTOR IS AWARE OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.

E. 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 ENGINEER LISTING ALL MALFUNCTIONS, FAULT EQUIPMENT, AND DISCREPANCIES.

F. THESE PLANS ARE DIAGRAMMATIC ONLY. FOLLOW AS CLOSELY AS POSSIBLE.

G. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

H. 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.

I. 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.

J. UPON COMPLETION OF WORK, CONDUIT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS ARE REQUIRED 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.

K. PROVIDE 2 PULL STRINGS SECURELY FASTENED AT EACH END OF ALL CONDUITS. ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR ROPE.

L. ALL MATERIALS UTILIZED SHALL BE U.L. LISTED. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.

M. 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.)

N. 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 THE 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 ASNI, NEMA, AND NBFU.

O. USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR.

P. 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.

Q. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES AND DRAWINGS. GROUND RODS SHALL BE AS SPECIFIED ON THE GROUNDING DRAWINGS.

R. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM, NO BX OR ROMEX CABLE IS PERMITTED UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS.

S. METER SOCKET AMPERAGE, VOLTAGE, AND 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.

T. PATCH, REPAIR, AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.

U. SERVICE CONDUITS SHALL BE GRAY SCH.40 PVC BURIED MIN. 36", EXCEPT THE 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 AND OUTSIDE. CONDUIT SHALL EXTEND MIN. 36" BELOW GRADE. WITH "SWEEP" ELBOWS (12" MIN. RADIUS) ENDING IN PVC TRANSITION FITTINGS. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAB-WRAPPED WITH HUNTS PROCESS NO. 3 EXTENDING MIN. ABOVE GRADE.

V. INTERIOR CONDUITS SHALL BE ELECTRICAL METALLIC TUBING HAVING U.L. LABEL, FITTINGS SHALL BE GLAND RING COMPRESSION TYPE.

W. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTING SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. NO SUCH CONDUIT SHALL EXCEED SIX FEET IN LENGTH.

**POLE AND ANTENNA INSTALLATION**

A. IF REQUIRED, ERECT FURNISHED STRUCTURE. PRIOR TO ERECTION, CONTRACTOR MUST VERIFY THAT CONCRETE HAS MET THE MINIMUM STRENGTH REQUIREMENTS AS WELL AS ANY OTHER INSPECTION OR TESTING REQUIREMENTS.

B. INSTALL ANTENNAS AND LINES AS INDICATED ON THE DRAWINGS AND PER OWNER SPECIFICATION. INSTALL ANTENNA AND CABLE MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS OR APPROVED BY THE CONSTRUCTION MANAGER. ANTENNA INSTALLATION TO BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURE.

C. ASSIST OWNER TECHNICIANS IN PERFORMING SWEEP TEST OF INSTALLED COAX.

D. CONTRACTOR SHALL FOLLOW ALL APPLICABLE STANDARDS INCLUDING, BUT NOT LIMITED TO: EIA 222 (LATEST VERSION), FAA ADVISORY CIRCULAR AC70/7460-1A, FCC RULES & REGULATIONS.

**LANDSCAPING & SITE RESTORATION.**

CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN LANDSCAPE WORK AS SHOWN ON THE CONSTRUCTION DRAWINGS OR REQUIRED IN THE SPECIFICATIONS.

CONTRACTOR SHALL UTILIZE THE SERVICES OF A LANDSCAPE CONTRACTOR TO ENSURE THE LANDSCAPING IS PROPERLY INSTALLED, WATERED, AND OTHERWISE MAINTAINED. CONTRACTOR SHALL GUARANTEE LANDSCAPING FOR A MINIMUM OF ONE (1) YEAR AND SHALL REPLACE ANY DEAD OR VISIBLY DISTRESSED PLANTS WITHIN THIS PERIOD.

A. CONTRACTOR SHALL PROTECT SEEDED AREAS FROM EROSION THROUGH THE USE OF AN EROSION CONTROL MESH OR MULCH NET.


B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE PLAN WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURE TO A STEEL ANGLE EXTENDING TWO FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.

C. ALL EXPOSED AREAS SHALL BE PROTECTED AGAINST WASHOUTS AND SOIL EROSION.

D. SEED AND FERTILIZER SHALL BE APPLIED TO SURFACE CONDITIONS TO ENCOURAGE ROOTING. RAKE AREAS TO BE SEED TO EVEN THE SURFACE AND LOOSEN THE SOIL. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.


E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING, CONTINUE TO REWORK BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

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GENERAL NOTES  
 MINNEAPOLIS, MINNESOTA

ENGINEER SEAL:

APPROVED  
 SEE TITLE SHEET FOR  
 ENGINEER SEAL

SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

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

PROJECT NO:	20181826405
LOCATION CODE:	499311
RFDS DATE:	03/27/2020

**STRUCTURAL ANALYSIS:**

DATE:	DESCRIPTION:
04/28/2020	REPORT NO. 20158

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INT.	DATE:	DESCRIPTION:
RJK	04/21/2020	REV. A
ZRS	05/13/2020	REV. 0
ZRS	09/04/2020	REV. 1
MJM	01/27/2021	REV. 2

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PLOT DATE:	1/27/2021
PROJECT NUMBER:	20158
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