



CITY OF DULUTH

Community Planning Division

411 W 1st St, Rm 208 * Duluth, Minnesota 55802-1197

Phone: 218/730.5580 Fax: 218/723-3559

File Number	PL 18-064, CUP		Contact	Steven Robertson, 218-730-5295	
Type	Concurrent Use Permit to Place Private Obstructions in Public Right of Way/Public Facilities (Utility Poles)		Planning Commission Date	June 12, 2018	
Deadline for Action	Application Date		May 8, 2018		
	Date Extension Letter Mailed		N/A	90 Days* (237.163)	August 6, 2018
Location of Subject	2 Separate Sites (250 Canal Park Drive, 688 West Railroad Street)				
Applicant	Verizon Wireless		Contact		
Agent	Jaymes D Littlejohn		Contact		
Legal Description					
Site Visit Date	May 30, 2018		Sign Notice Date	May 25, 2018	
Neighbor Letter Date	N/A for Concurrent Use		Number of Letters Sent	N/A for Concurrent Use	

Proposal

The applicant is proposing to “own or control two small wireless facilities in the public right-of-way, including the replacement of the existing, city owned poles and foundations to the support the new facilities. The City will continue to own the replacement poles/foundations”.

The wireless facilities will not be stealthed or camouflaged; the equipment will be visibly attached to the exterior of the pole. The attachments will include 1 exterior mounted panel antenna, 2 power converters, and 2 radio units mounted approximately between at least 26 to 30 feet above the ground. The replacement poles will be 40 feet tall.

	Current Zoning	Existing Land Use	Future Land Use Map Designation
Subject	Varies	Public Right of Way	Varies
North	Varies	Public Right of Way	Varies
South	Varies	Public Right of Way	Varies
East	Varies	Public Right of Way	Varies
West	Varies	Public Right of Way	Varies

Summary of Code Requirements

UDC Section 50-37.7.C. The planning commission shall review the application, and council shall approve the application or approve it with modifications, if it determines that:

- 1) The proposed concurrent use will not harm or inconvenience the health, safety and general welfare of the city;
- 2) No portion of a public easement proposed of use is being physically occupied by the public.

Comprehensive Plan Governing Principle and/or Policies and Current History (if applicable):

Principle #4 - Support emerging economic growth sectors. Emerging economic sectors add economic, cultural and social diversity. These include higher education, medical, value-added manufacturing, commercial outdoor recreation, historic resources interpretation, arts and music, information technology and visitor services.

The installation falls with the provisions of Minnesota Statute 237.162 and 247.1643, as amended in 2017.

This application is one of three being present to the June 12, 2018 Planning Commission. The three applications are for four separate sites (Maple Grove Road, 6th Avenue West, Canal Park Drive, and Railroad Street). In 2016 the city issued a Special Use Permit for 3 small wireless facilities on utility poles on private property owned by St Scholastica, and in 2017 the city issued a concurrent use permit for 3 small wireless facilities on utility poles owned by Minnesota Power in city right of way.

Review and Discussion Items

1) Applicant is proposing to install small wireless facilities on existing city utility poles located within dedicated public rights-of-way. The two proposed locations are located in rights-of-way near Canal Park Drive and West Railroad Street.

The wireless facilities will not be stealthed or camouflaged; the equipment will be visibly attached to the exterior of the pole. The attachments will include 1 exterior mounted panel antenna, 2 power converters, and 2 radio units mounted approximately between at least 26 to 30 feet above the ground. The replacement poles will be 40 feet.

2) Granting a concurrent use permit would give the applicant the ability to use dedicated public rights-of-way, with conditions, while preserving other existing public uses in the same right-of-way corridors. Concurrent use permits require a public hearing and recommendation by the Planning Commission, and is approved by the City Council via ordinance. Unlike street right-of-way vacations, concurrent use permits are not recorded at the County as they are voidable permits issued by the City to applicants who are private users of public rights-of-way.

3) Both small wireless facilities will be similar in general configuration. Ownership of the poles will remain with the City of Duluth, with the poles in dedicated public rights-of-way. Liability, maintenance, and operation of the small wireless facilities will remain the responsibility of the applicant. In the event of an accident, such as a vehicle hitting the utility pole, the city is not responsible for restoring or replacing any of the applicant's equipment.

4) The existing city utility poles will be replaced with new poles, as specified and approved by the City engineer. The new poles will have a structural analysis by the manufacturer to ensure that they can support the weight of the private small cell facilities and required public infrastructure. The poles will be embedded into the ground a distance of 15 feet.

5) Granting the proposed concurrent use permits will not harm or inconvenience the health, safety and general welfare of the city. The area proposed for the concurrent use permit will not take away from the public's ability to use the public right-of-way. The city will own the poles and continue to use them for utility purposes (lighting).

6) The UDC generally requires that new wireless facilities follow a location standard: first they should be collocated on existing towers or other structures on city owned properties first, and then existing towers or other structures on other (private) property, and so forth down the location standard list. As these small wireless facilities would be located on existing infrastructure in public right of way, and as per the recent change in state statute, the city is processing these applications as concurrent use permits and not special use permits, and the UDC's use-specific standards do not apply in this specific situation.

7) The city has the ability to regulate land use, however, the Federal Communications Commission preempts local review on the potential environmental effects of radio frequency (RF) emissions, with the presumption that the applicant and service provider is in compliance with the Commission's RF rules.

8) At the time that this memo was written, no written comments from the public have been received.

Staff Recommendation:

Based on the above findings, Staff recommends that the Planning Commission recommend approval of the two concurrent use permits subject to the following conditions:

- 1) The project be limited to, constructed, and maintained according to construction drawings signed May 3, 2018, and included with this staff report, and as revised per the City Engineer's comments of May 29, 2018, updated June 5, 2018.
- 2) Applicant, or successor, shall remove the proposed obstructions at applicant's expense if directed to do so by the City with appropriate notice, as outlined with other conditions in the concurrent use permit ordinance to be approved by the City Council.
- 3) Any alterations to the approved plans that do not alter major elements of the plan may be approved by the Land Use Supervisor without further Planning Commission approval; however, all other changes must be approved by amending the City Council's approved ordinance.

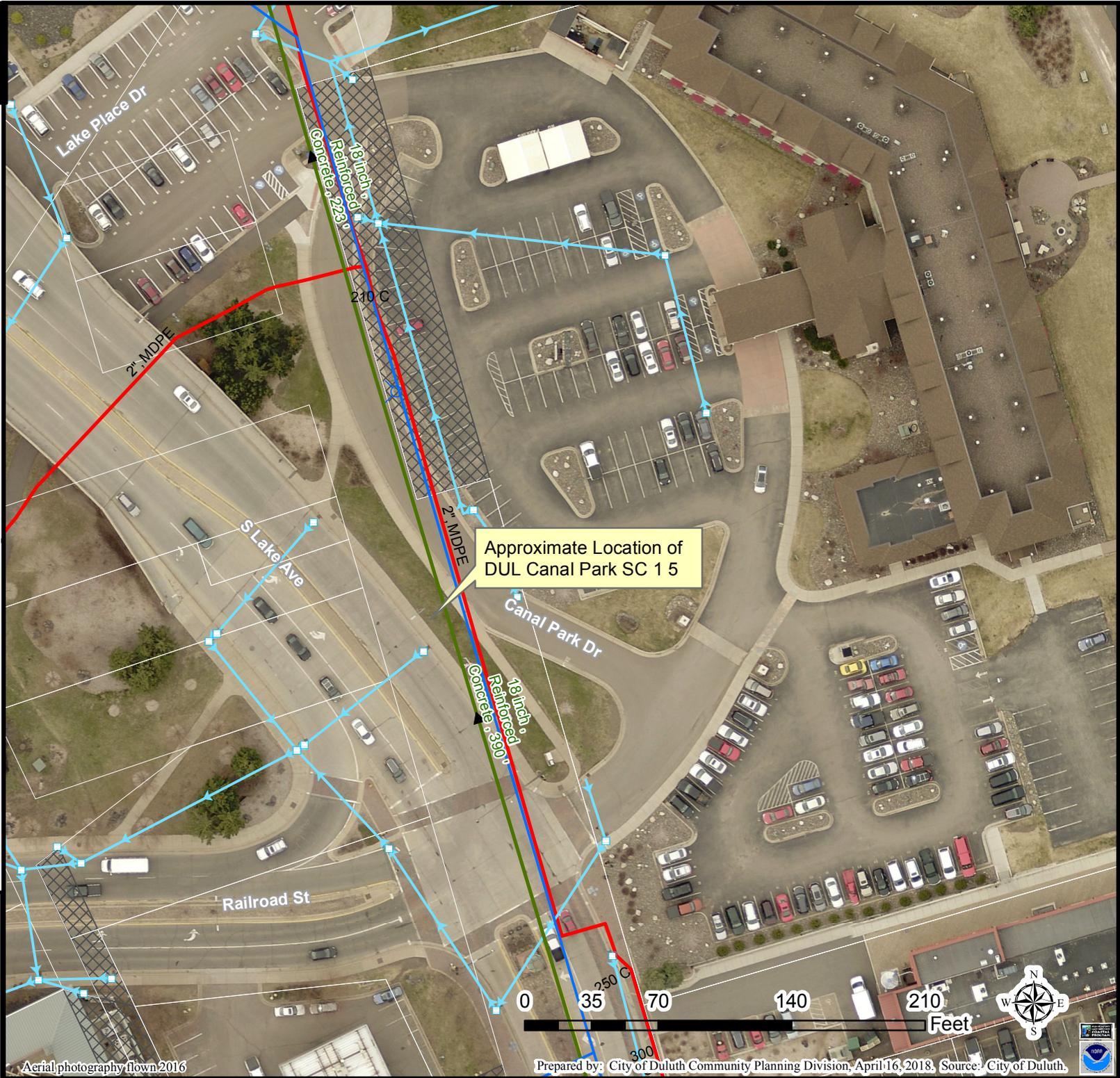


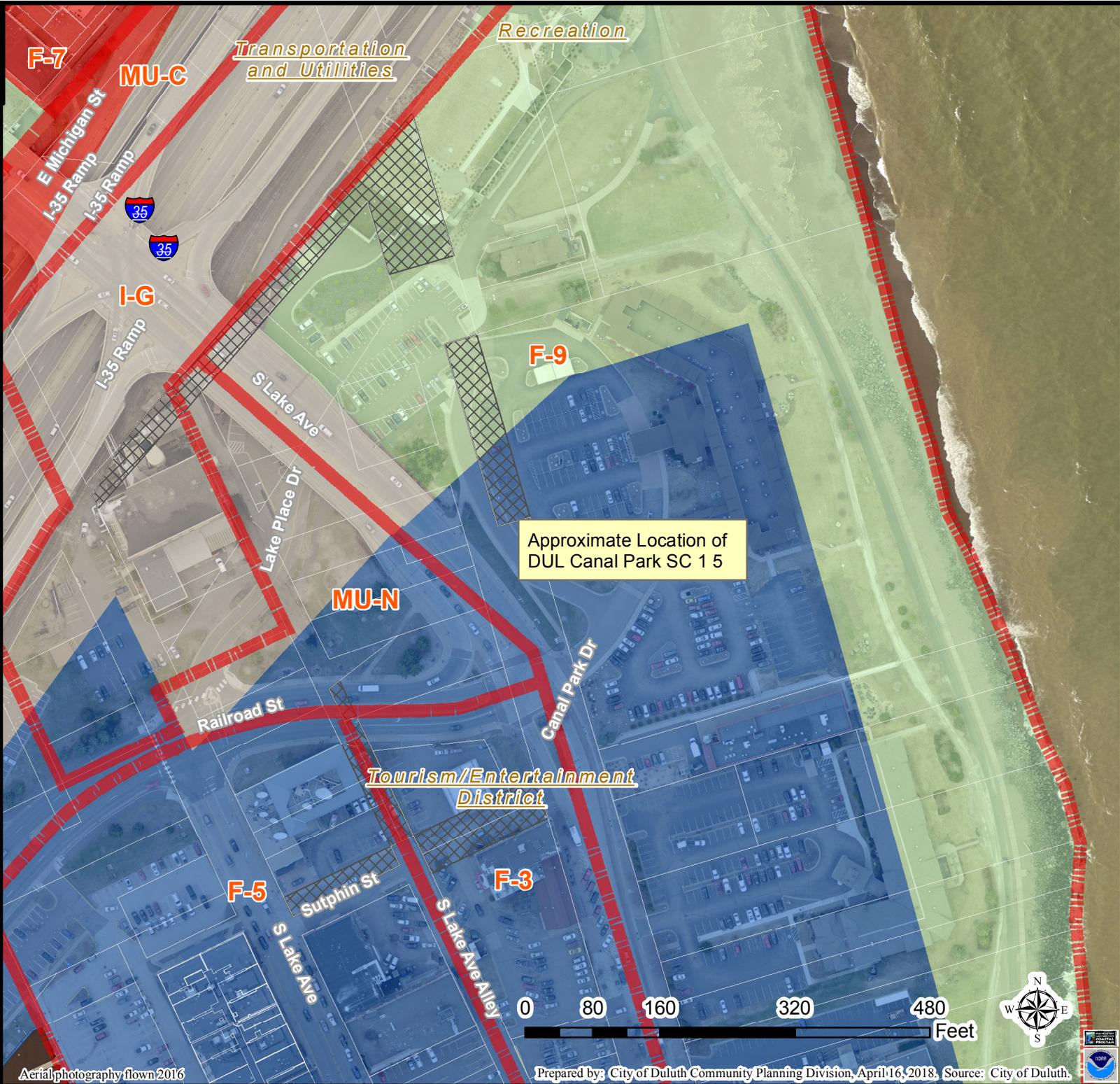
Site Map

Legend

- Gas Main
- Water Main
- Hydrant
- Sanitary Sewer Mains**
- CITY OF DULUTH
- WLSSD; PRIVATE
- Sanitary Sewer Forced Main
- Storage Basin
- Pump Station
- Storm Sewer Mains**
- Storm Sewer Pipe
- Storm Sewer Catch Basin
- Vacated ROW

The City of Duluth has tried to ensure that the information contained in this map or electronic document is accurate. The City of Duluth makes no warranty or guarantee concerning the accuracy or reliability. This drawing/data is neither a legally recorded map nor a survey and is not intended to be used as one. The drawing/data is a compilation of records, information and data located in various City, County and State offices and other sources affecting the area shown and is to be used for reference purposes only. The City of Duluth shall not be liable for errors contained within this data provided or for any damages in connection with the use of this information contained within.





Legend

-  Vacated ROW
-  Zoning Boundaries

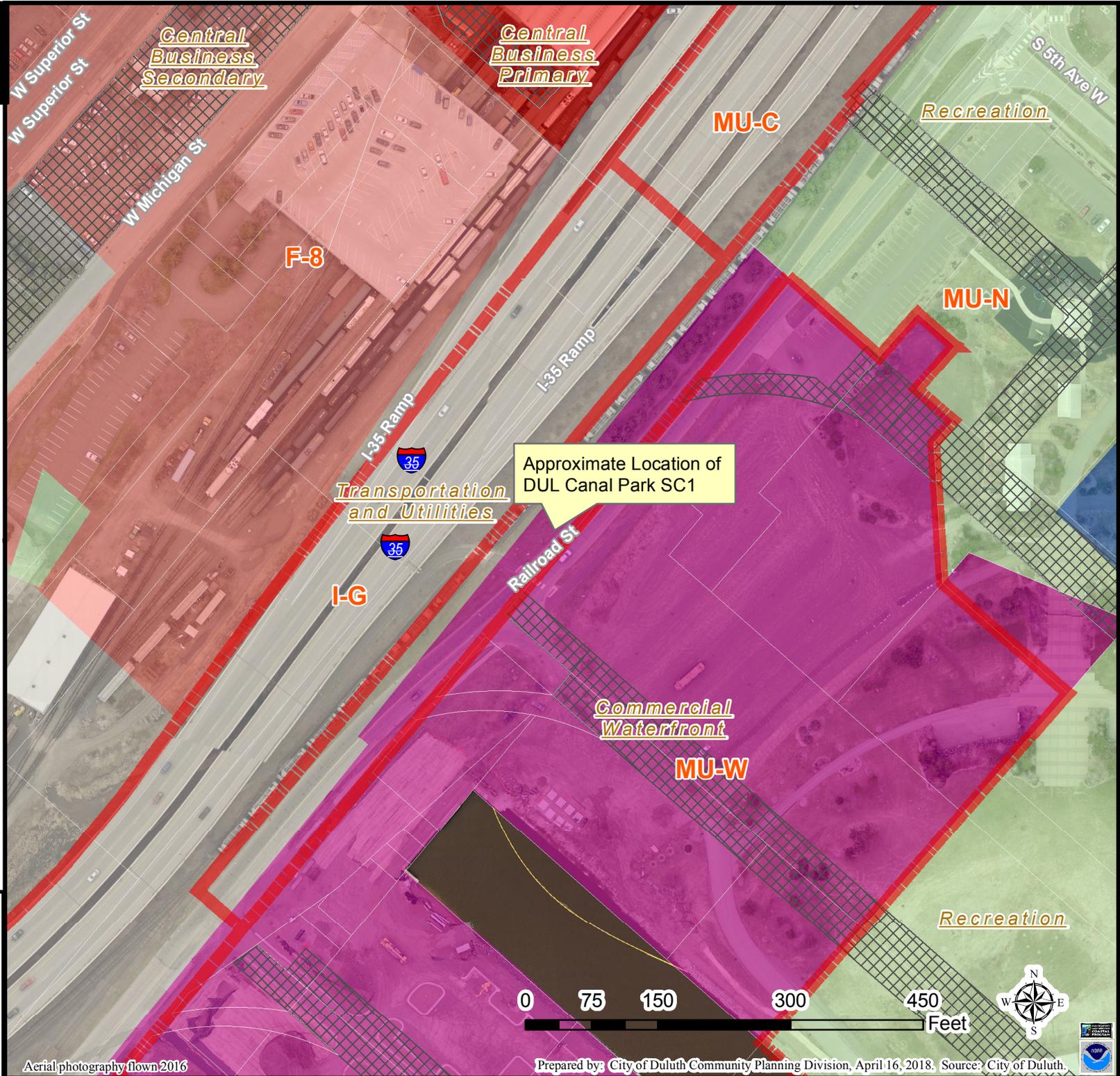
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04/27/2016



Legend

- Vacated ROW
- Zoning Boundaries

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Site Map

Legend

- Gas Main
- Water Main
- Hydrant

Sanitary Sewer Mains

- CITY OF DULUTH
- WLSSD; PRIVATE
- Sanitary Sewer Forced Main
- Storage Basin
- Pump Station

Storm Sewer Mains

- Storm Sewer Pipe
- Storm Sewer Catch Basin

Boundary Lines

- <all other values>

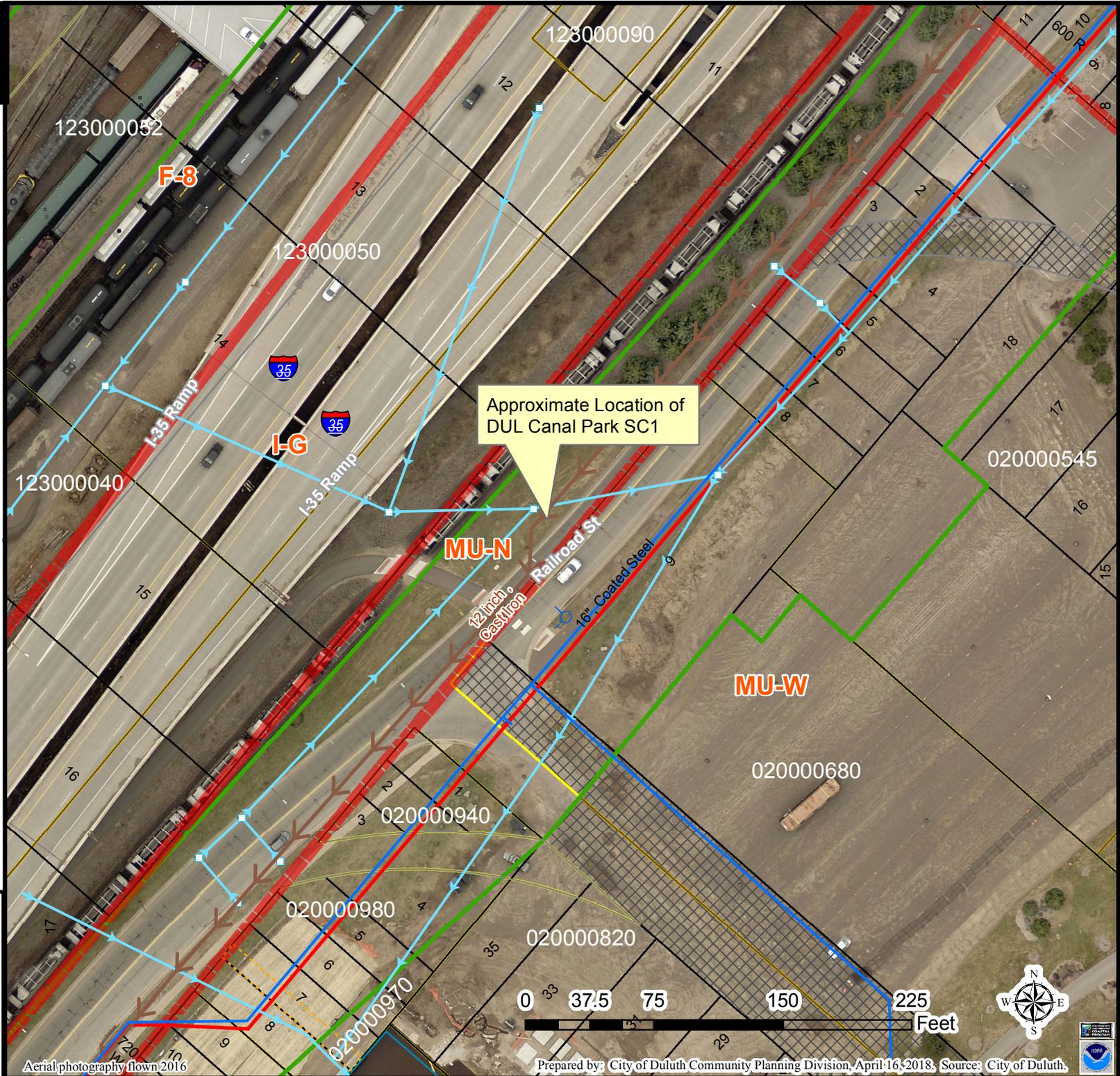
Subtype, ROW_TYPE

- Lot Line
- Parcel Line
- ROW (Road)
- ROW (Not Road)
- Subdivision Line
- Water Line
- Survey Line
- Municipal Boundary

Vacated ROW

Zoning Boundaries

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04/27/2016



SITE NAME: DUL CANAL PARK SC1 5

SITE NUMBER: 20151281310

LOCATION CODE: 393119

SITE TYPE: SMALL CELL

INSTALLATION TYPE: REPLACEMENT LIGHT POLE



Jacobs Engineering Group, Inc.
2727 Patton Road
Roseville, Minnesota 55113
www.jacobs.com



2101 Highway 13 W
Burnsville, MN 55337
608.644.1449 voice
608.644.1549 fax
www.edgeconsult.com

PROJECT NO: 20151281310

LOCATION CODE: 393119

EDGE PROJECT NO: 16592

CHECKED BY: OGD

REV.	DATE	DESCRIPTION	INT.
A	08/29/2017	PRELIM SMALL CELL DWGS	MTS
0	09/13/2017	FINAL DRAWINGS	MTS
1	10/27/2017	FINAL DRAWINGS	DGS
2	04/25/2018	FINAL DRAWINGS	MWH
3	04/25/2018	FINAL DRAWINGS	MWH
4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL DRAWINGS	RJK

OTTO DINGFELDER III
LICENSED PROFESSIONAL ENGINEER
49720
6/5/2018

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DUL CANAL PARK SC1 5
DULUTH, MINNESOTA
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
TITLE SHEET &
PROJECT DATA

SHEET NUMBER
G-001

SITE INFORMATION

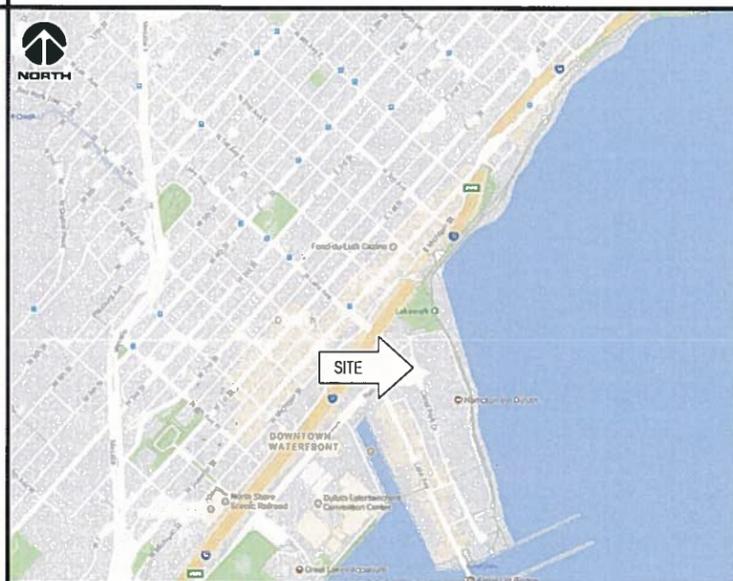
APPROXIMATE ADDRESS:
250 CANAL PARK DRIVE
DULUTH, MN 55802
SAINT LOUIS COUNTY

SITE COORDINATES:
LAT: 46°-47'-07.06"N
LONG: 92°-05'-43.06"W
GROUND ELEVATION: 613.7' AMSL
(PER BOUNDARY SURVEY)

POLE HEIGHT:
40'-0" T.O.C.

MAXIMUM APPURTENANCE HEIGHT:
40'-7" A.G.L.

AREA MAP



PROJECT DESCRIPTION/SOW

- INSTALL (1) REPLACEMENT STEEL LIGHT POLE AND ASSOCIATED CONCRETE FOUNDATION
- INSTALLATION OF PANEL ANTENNA
- INSTALLATION OF ERICSSON RRUS AND POWER CONVERTERS
- INSTALLATION OF LOAD CENTER
- INSTALLATION OF DIPLEXERS
- INSTALLATION OF ELECTRIC METER, BY VERIZON
- INSTALLATION OF HAND HOLE FOR FIBER AT POLE BASE, BY FIBER PROVIDER
- INSTALLATION OF CONDUIT FOR FIBER BETWEEN HAND HOLE AND POLE BASE (APPROX. 2'-0"), TO BE TRENCHED BELOW GRADE, BY VERIZON
- INSTALLATION OF CONDUIT FOR FIBER IN ROW, TO BE TRENCHED BELOW GRADE, BY PROVIDER
- INSTALLATION OF NEW ELECTRIC SERVICE CONDUIT AND CONDUCTORS FROM POLE BASE TO POWER SOURCE, BY VERIZON
- REMOVE EXISTING FOUNDATION, BY VERIZON
- REMOVE EXISTING LIGHT POLE AND DELIVER TO CITY OF DULUTH, BY VERIZON
- INSTALLATION OF GROUND SYSTEM AROUND POLE FOUNDATION
- ALL OTHER CONSTRUCTION RELATED ACTIVITIES TO BE COMPLETED BY OTHERS

SHEET INDEX

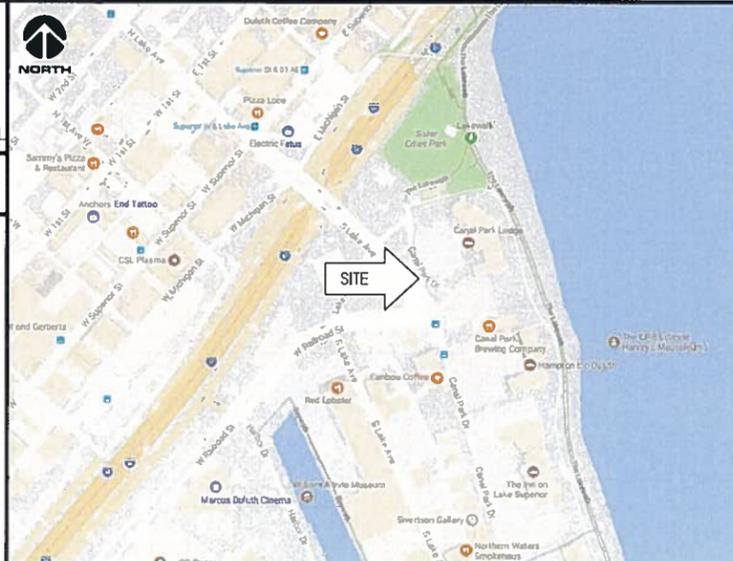
NO:	SHEET TITLE
G-001	TITLE SHEET & PROJECT DATA
G-002	GENERAL SPECIFICATIONS
G-003	GENERAL SPECIFICATIONS
C-101	SITE PLAN
C-601	TRAFFIC CONTROL PLANS
T-201	SITE ELEVATION
T-501	ANTENNA DETAILS
T-502	EQUIPMENT DETAILS
S-001	STRUCTURAL NOTES **
S-601	STRUCTURAL DETAILS **
E-101	UTILITY PLAN
E-102	UTILITY PLAN
E-103	GROUNDING PLAN
E-501	UTILITY DETAILS
E-602	GROUNDING DETAILS

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:
- 2012 INTERNATIONAL BUILDING CODE
- 2014 NATIONAL ELECTRIC CODE
- TIA/EIA-222-G OR LATEST EDITION

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

LOCATION MAP



PROJECT DIRECTORY

LESSEE:
VERIZON WIRELESS
10801 BUSH LAKE RD
BLOOMINGTON, MN 55438
CONTACT: RICK WENTA
PHONE: 952.946.4690

LESSOR:
CITY OF DULUTH
411 W 1ST ST
DULUTH, MN 55802
PHONE: 218.730.5000

ENGINEERING COMPANY:
EDGE CONSULTING ENGINEERS, INC.
2101 HIGHWAY 13 W
BURNSVILLE, MN 55337
CONTACT: OTTO DINGFELDER III, P.E.
PHONE: 608.644.1449

RE ENGINEER:
VERIZON WIRELESS
10801 BUSH LAKE RD
BLOOMINGTON, MN 55438
CONTACT: MICHAEL KOCH

SITE ACQUISITION:
JACOBS ENGINEERING GROUP, INC.
2727 PATTON ROAD
ROSEVILLE, MN 55113
CONTACT: AMY DRESCH
PHONE: 952.831.1043

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS/CONDITIONS ON SITE. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME.

ENGINEER OF RECORD

EDGE CONSULTING ENGINEERS, INC.
CONTACT: OTTO DINGFELDER III (PE # 49720 (MN))
PHONE: 608.644.1449

STRUCTURAL REVIEW

FOUNDATION DESIGN:
EDGE CONSULTING ENGINEERS
PROJECT #: 16592
DATE: 10/17/2017

POLE DESIGN:
VALMONT
DRAWING #: MN379742P1
DATE: 10/12/2017

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

C:\6600\16592\CAD\Plot\PlotV01.dgn



A AERIAL OVERVIEW



B SITE OVERVIEW [LOOKING SOUTHEAST]



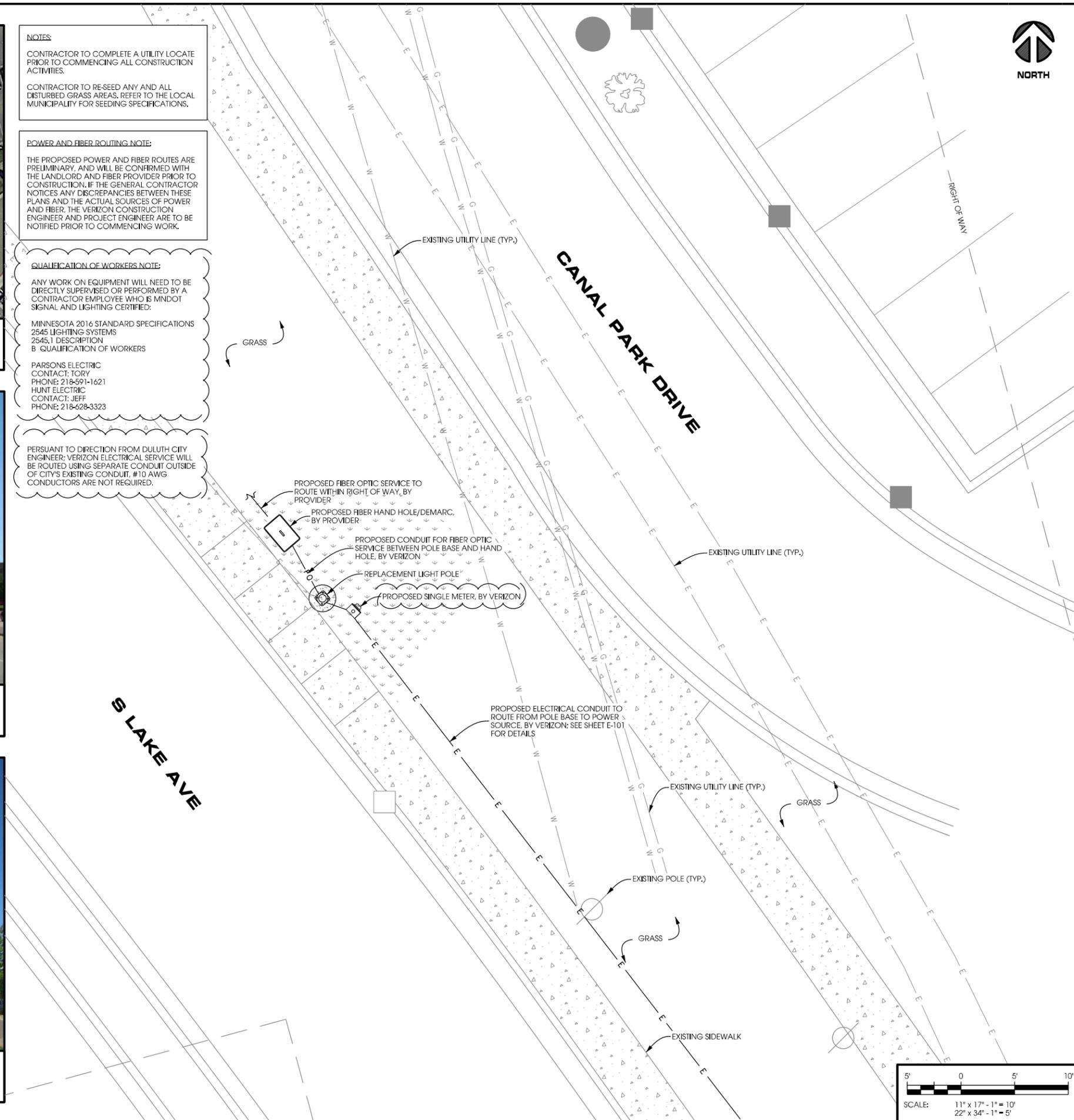
C SITE OVERVIEW [LOOKING NORTHWEST]

NOTES:
 CONTRACTOR TO COMPLETE A UTILITY LOCATE PRIOR TO COMMENCING ALL CONSTRUCTION ACTIVITIES.
 CONTRACTOR TO RE-SEED ANY AND ALL DISTURBED GRASS AREAS. REFER TO THE LOCAL MUNICIPALITY FOR SEEDING SPECIFICATIONS.

POWER AND FIBER ROUTING NOTE:
 THE PROPOSED POWER AND FIBER ROUTES ARE PRELIMINARY, AND WILL BE CONFIRMED WITH THE LANDLORD AND FIBER PROVIDER PRIOR TO CONSTRUCTION. IF THE GENERAL CONTRACTOR NOTICES ANY DISCREPANCIES BETWEEN THESE PLANS AND THE ACTUAL SOURCES OF POWER AND FIBER, THE VERIZON CONSTRUCTION ENGINEER AND PROJECT ENGINEER ARE TO BE NOTIFIED PRIOR TO COMMENCING WORK.

QUALIFICATION OF WORKERS NOTE:
 ANY WORK ON EQUIPMENT WILL NEED TO BE DIRECTLY SUPERVISED OR PERFORMED BY A CONTRACTOR EMPLOYEE WHO IS MNDOT SIGNAL AND LIGHTING CERTIFIED.
 MINNESOTA 2016 STANDARD SPECIFICATIONS 2545 LIGHTING SYSTEMS 2545.1 DESCRIPTION B QUALIFICATION OF WORKERS
 PARSONS ELECTRIC
 CONTACT: TORY
 PHONE: 218-591-1621
 HUNT ELECTRIC
 CONTACT: JEFF
 PHONE: 218-628-3323

PERSUANT TO DIRECTION FROM DULUTH CITY ENGINEER, VERIZON ELECTRICAL SERVICE WILL BE ROUTED USING SEPARATE CONDUIT OUTSIDE OF CITY'S EXISTING CONDUIT. #10 AWG CONDUCTORS ARE NOT REQUIRED.



PROJECT NO:	20151281310
LOCATION CODE:	393119
EDGE PROJECT NO:	16592
CHECKED BY:	OGD

REV.	DATE	DESCRIPTION	INT.
A	08/29/2017	PRELIM SMALL CELL DWGS	MTS
0	09/13/2017	FINAL DRAWINGS	MTS
1	10/27/2017	FINAL DRAWINGS	DGS
2	04/25/2018	FINAL DRAWINGS	MWH
3	04/26/2018	FINAL DRAWINGS	MWH
4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL DRAWINGS	RJK

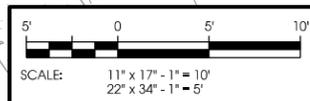
APPROVED - SEE SHEET G-001 FOR ENGINEER SEAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

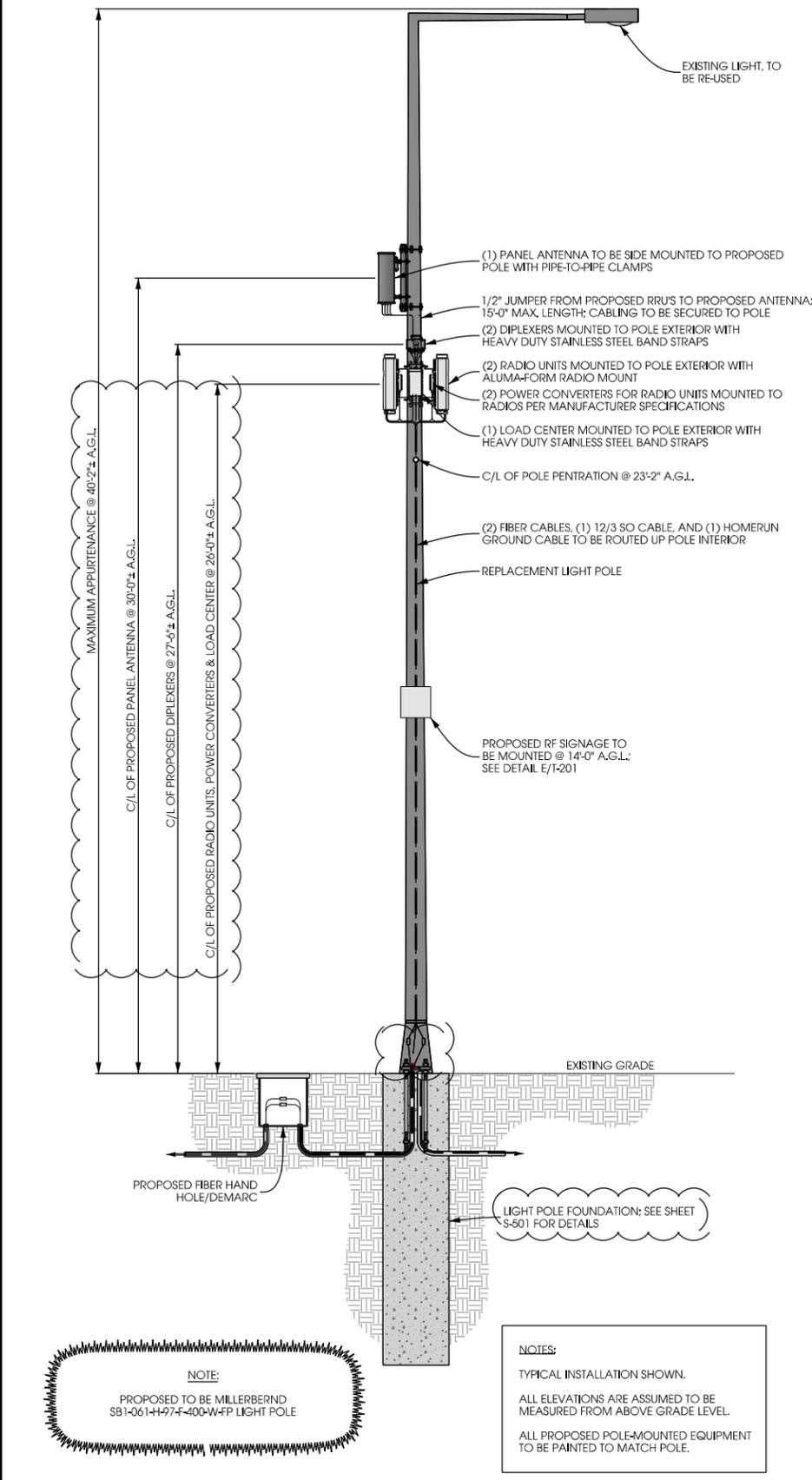
DUL CANAL PARK SC1 5
 DULUTH, MINNESOTA
 REPLACEMENT LIGHT POLE
 SMALL CELL DRAWINGS

SHEET TITLE
SITE PLAN

SHEET NUMBER
C-101



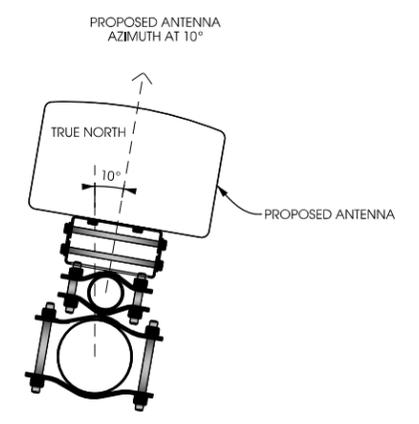
LA:16592\16592\CAD\Plan\Final\G-101.dgn



A POLE ELEVATION
SCALE: 11" x 17" - 1" = 6'-0"
22" x 34" - 1" = 3'-0"



B SITE ELEVATION



C ANTENNA ORIENTATION
SCALE: NTS

ANTENNAS					
QUANTITY	MAKE	MODEL	CENTERLINE	TIP HEIGHT	AZIMUTH
1	COMMSCOPE	HBXX6513DS-A2M	30' AGL	31'-6" AGL	10°

EQUIPMENT			
QUANTITY	TYPE	MAKE	MODEL
1	RRU	ERICSSON	RRUS32 B66
1	RRU	ERICSSON	RRUS32 B2
2	DIPLEXER	COMMSCOPE	CBC1923T-4310 E11F13PO6

CABLING			
QUANTITY	TYPE	MAKE	MODEL
6	COAX	COMMSCOPE	LFD4-50

D ANTENNA AND CABLING
SCALE: NTS

CAUTION

Transmitting Antenna(s)
Radio frequency fields beyond this point MAY EXCEED the FCC Occupational Exposure Limit.
Obey all posted signs and site guidelines.
Call Verizon Wireless at 1-800-264-6620 PRIOR to working beyond this point.

WARNING

Beyond this point:
Radio frequency fields at this site exceed the FCC rules for human exposure.
Failure to obey all posted signs and site guidelines for working in radio frequency environments could result in serious injury.
© 2017 Verizon Wireless. All rights reserved. 4818 Retail Services Co.

NOTICE

Transmitting Antenna(s)
Radio frequency fields beyond this point MAY EXCEED the FCC General Population Exposure Limit.
Obey all posted signs and site guidelines.
Call Verizon Wireless at 1-800-264-6620 PRIOR to working beyond this point.

E RF WARNING SIGNS
SCALE: NTS



PROJECT NO: 20151281310
LOCATION CODE: 393119
EDGE PROJECT NO: 16592
CHECKED BY: OGD

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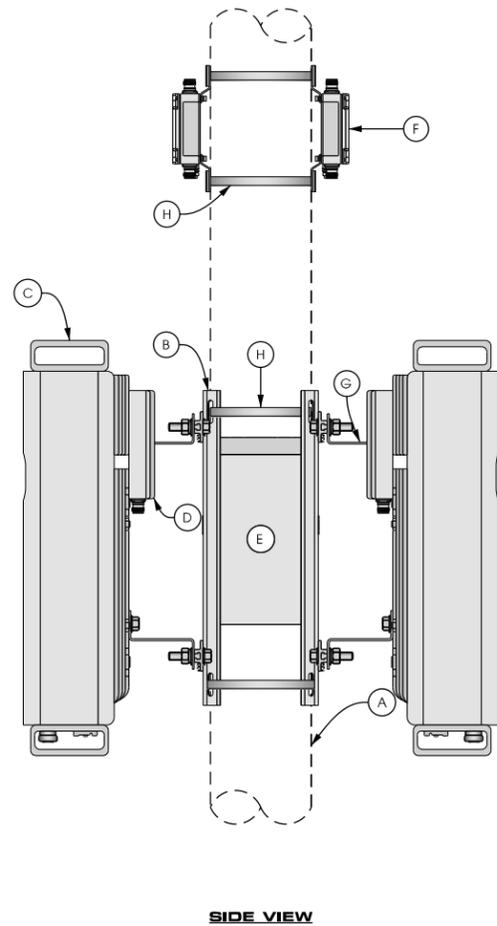
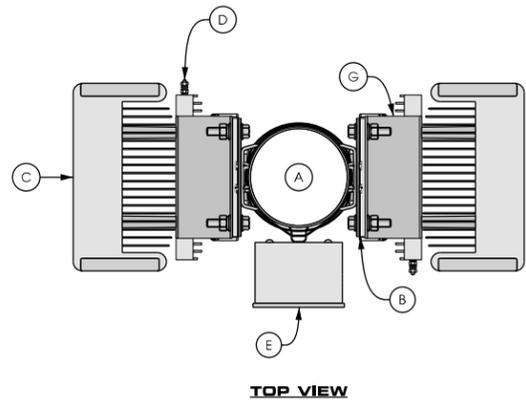
DUL CANAL PARK SC1 5
DULUTH, MINNESOTA
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
SITE ELEVATION

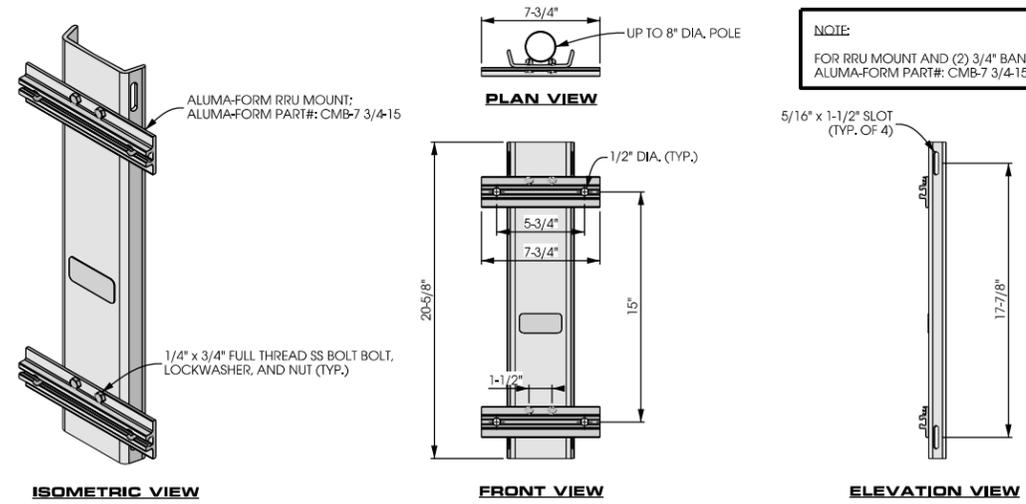
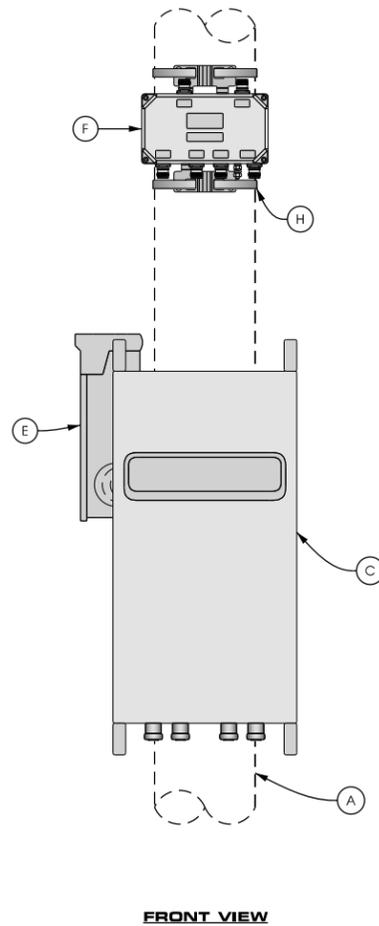
SHEET NUMBER
T-201

NOTE:
PAINT ALL ANTENNAS, OUTDOOR EQUIPMENT, CABLING, AND MOUNTING HARDWARE TO MATCH THE POLE.

- KEYED NOTES:**
- A. UP TO 8" DIA. POLE
 - B. REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL B THIS SHEET
 - C. REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL C THIS SHEET
 - D. POWER SUPPLY UNIT SECURED TO BACK OF REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL D THIS SHEET
 - E. LOAD CENTER SECURED WITH HEAVY DUTY STAINLESS STEEL BAND STRAP; SEE DETAIL E THIS SHEET
 - F. DIPLEXER SECURED WITH HEAVY DUTY STAINLESS STEEL BAND STRAP (TYP. OF 2); SEE DETAIL F THIS SHEET
 - G. ANGLE ADAPTER MOUNTED TO BACK OF REMOTE RADIO UNIT PER MANUFACTURER'S SPECIFICATIONS (TYP.)
 - H. HEAVY DUTY STAINLESS STEEL BAND STRAP (TYP.)

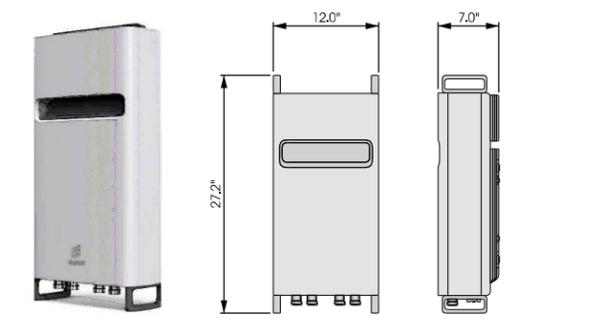


A POLE ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



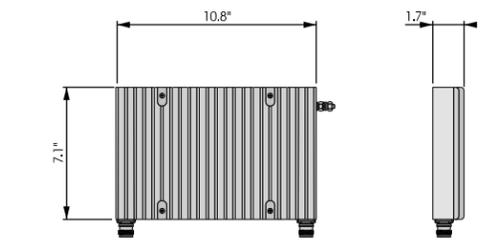
B EQUIPMENT MOUNTING
SCALE: NTS

NOTE:
FOR RRU MOUNT AND (2) 3/4" BANDSTRAPS ORDER: ALUMA-FORM PART#: CMB-7 3/4-15 KIT



REMOTE RADIO UNIT:
ERICSSON PART # RRU32
DIMENSIONS: 27.2" x 12.0" x 7.0" (H x W x D)
WEIGHT: 60 LBS

C REMOTE RADIO UNIT
SCALE: NTS



POWER SUPPLY UNIT:
ERICSSON PART # PSU AC-08
DIMENSIONS: 10.8" x 7.1" x 1.9" (H x W x D)
WEIGHT: 11.5 LBS

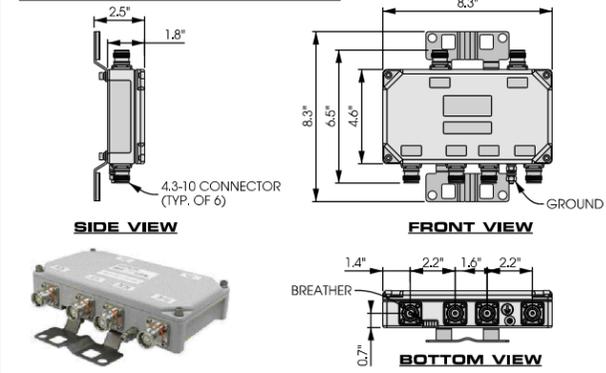
D POWER SUPPLY UNIT
SCALE: NTS

MANUFACTURER: SIEMENS
MODEL: W0408ML1125
DIMENSIONS: 12.25" x 6" x 4.25" (H x W x D)
WEIGHT: 6.8 LBS.
NUMBER OF POLES: 4 (EXPANDABLE TO 8)
MAX. CURRENT RATING: 125 A
VOLTAGE RATING: 240 VAC
CONTRACTOR TO INSTALL LED LIGHT



E LOAD CENTER
SCALE: NTS

MANUFACTURER: COMMSCOPE
MODEL #: CBC19231-4310 / E11F13P06
TWIN DIPLEXER PCS/AWS+WCS, DC BLOCK, 4.3-10
DIMENSIONS: 8.3" x 4.6" x 1.8"
WEIGHT: 4.4 LBS



F DIPLEXER
SCALE: NTS



PROJECT NO: 20151281310
LOCATION CODE: 393119
EDGE PROJECT NO: 16592
CHECKED BY: OGD

REV.	DATE	DESCRIPTION	INT.
A	08/29/2017	PRELIM SMALL CELL DWGS	MTS
0	09/13/2017	FINAL DRAWINGS	MTS
1	10/27/2017	FINAL DRAWINGS	DGS
2	04/25/2018	FINAL DRAWINGS	MWH
3	04/26/2018	FINAL DRAWINGS	MWH
4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL DRAWINGS	RJK

APPROVED - SEE SHEET G-001 FOR ENGINEER SEAL

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DUL CANAL PARK SC1 5
DULUTH, MINNESOTA
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
T-502

POWER AND FIBER ROUTING NOTE:

THE PROPOSED POWER AND FIBER ROUTES ARE PRELIMINARY, AND WILL BE CONFIRMED WITH THE LANDLORD AND FIBER PROVIDER PRIOR TO CONSTRUCTION. IF THE GENERAL CONTRACTOR NOTICES ANY DISCREPANCIES BETWEEN THESE PLANS AND THE ACTUAL SOURCES OF POWER AND FIBER, THE VERIZON CONSTRUCTION ENGINEER AND PROJECT ENGINEER ARE TO BE NOTIFIED PRIOR TO COMMENCING WORK.

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 PROPOSED 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.
- NOTIFY CITY OF DULUTH 730-9130 2 WORKING DAYS PRIOR TO EXCAVATION OR DIRECTIONAL DRILLING WITHIN 6FT OF GAS MAINS.



verizon

JACOBS

Jacobs Engineering Group, Inc
2727 Patton Road
Roseville, Minnesota 55113
www.jacobs.com

Edge

Consulting Engineers, Inc.

2101 Highway 13 W
Burnsville, MN 55337
608.644.1449 voice
608.644.1549 fax
www.edgeconsult.com

PROJECT NO: 20151281310

LOCATION CODE: 393119

EDGE PROJECT NO: 16592

CHECKED BY: OGD

REV.	DATE	DESCRIPTION	INT.
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4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL DRAWINGS	RJK

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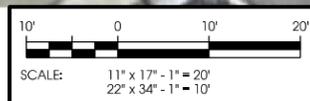
DUL CANAL PARK SC1 5
DULUTH, MINNESOTA
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
E-101



A UTILITY PLAN



LA:16592\CAD\Plan\Final\E-101.dgn



SITE NAME: DUL CANAL PARK SC1

SITE NUMBER: 20130998150

LOCATION CODE: 2440128

SITE TYPE: SMALL CELL

INSTALLATION TYPE: REPLACEMENT LIGHT POLE



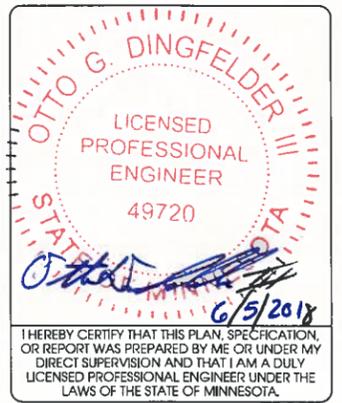
Jacobs Engineering Group, Inc.
2727 Patton Road
Roseville, Minnesota 55113
www.jacobs.com



2101 Highway 13 W
Burnsville, MN 55337
608.644.1449 voice
608.644.1549 fax
www.edgeconsult.com

PROJECT NO:	20131998150
LOCATION CODE:	2440128
EDGE PROJECT NO:	16591
CHECKED BY:	OGD

REV.	DATE	DESCRIPTION	INT.
A	08/29/2017	PRELIM SMALL CELL DWGS	KJM
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4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL SMALL CELL DWGS	RJK



DUL CANAL PARK SC1
DULUTH, MN
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
TITLE SHEET & PROJECT DATA

SHEET NUMBER
G-001

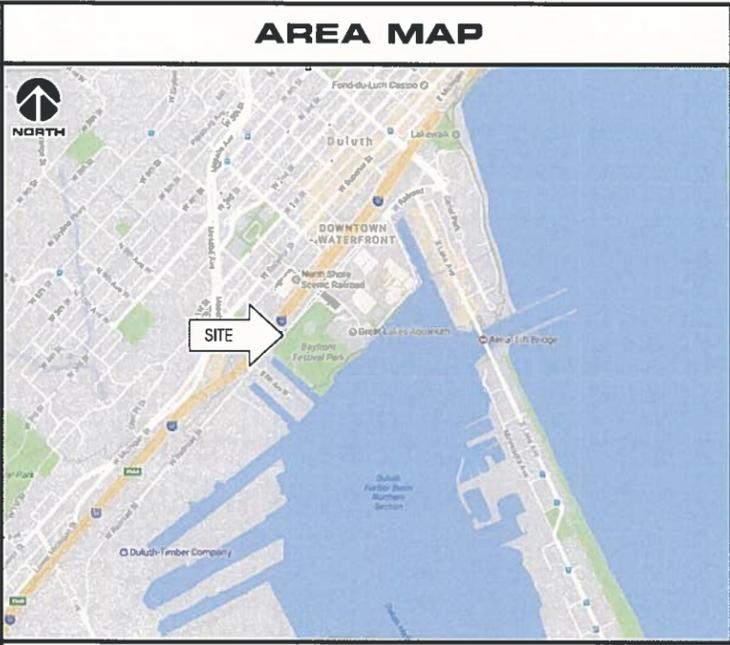
SITE INFORMATION

APPROXIMATE ADDRESS:
688 W RAILROAD ST
DULUTH, MN 55802
SAINT LOUIS COUNTY

SITE COORDINATES:
LAT: 46°-46'-44.62"N
LONG: 92°-06'-15.92"W
GROUND ELEVATION: 608.1' AMSL
(PER 1A CERTIFICATE)

POLE HEIGHT:
40'-0" T.O.C.

MAXIMUM APPURTENANCE HEIGHT:
40'-7" A.G.L.



- PROJECT DESCRIPTION/SOW**
- INSTALL (1) REPLACEMENT STEEL LIGHT POLE AND ASSOCIATED CONCRETE FOUNDATION
 - INSTALLATION OF PANEL ANTENNA
 - INSTALLATION OF ERICSSON RRUS AND POWER CONVERTERS
 - INSTALLATION OF LOAD CENTER
 - INSTALLATION OF DIPLEXERS
 - INSTALLATION OF ELECTRIC METER, BY VERIZON
 - INSTALLATION OF HAND HOLE FOR FIBER AT POLE BASE, BY FIBER PROVIDER
 - INSTALLATION OF CONDUIT FOR FIBER BETWEEN HAND HOLE AND POLE BASE (APPROX. 2'-0"), TO BE TRENCHED BELOW GRADE, BY VERIZON
 - INSTALLATION OF CONDUIT FOR FIBER IN ROW, TO BE TRENCHED BELOW GRADE, BY PROVIDER
 - INSTALLATION OF NEW ELECTRIC SERVICE CONDUIT AND CONDUCTORS FROM POLE BASE TO POWER SOURCE, BY VERIZON
 - REMOVE EXISTING FOUNDATION, BY VERIZON
 - REMOVE EXISTING LIGHT POLE AND DELIVER TO CITY OF DULUTH, BY VERIZON
 - INSTALLATION OF GROUND SYSTEM AROUND POLE FOUNDATION
 - ALL OTHER CONSTRUCTION RELATED ACTIVITIES TO BE COMPLETED BY OTHERS

SHEET INDEX

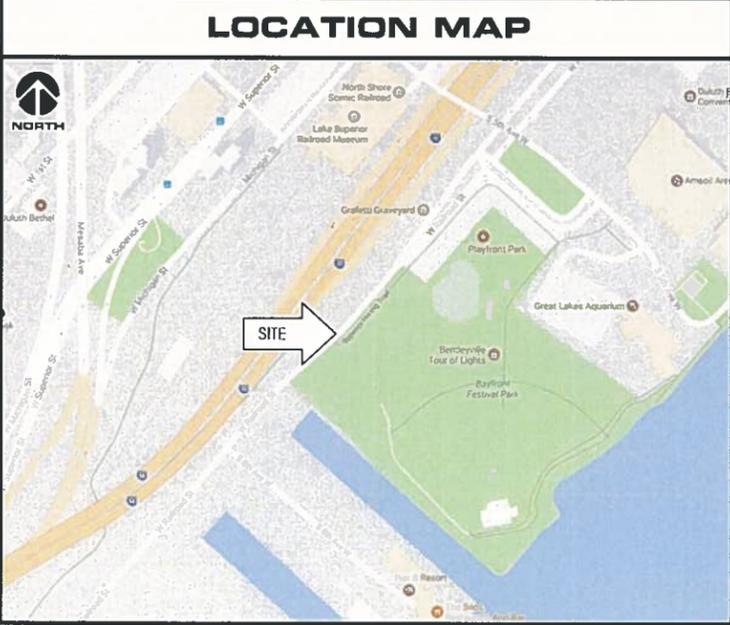
NO:	SHEET TITLE
G-001	TITLE SHEET & PROJECT DATA
G-002	GENERAL SPECIFICATIONS
G-003	GENERAL SPECIFICATIONS
C-101	SITE PLAN
C-501	TRAFFIC CONTROL PLANS
T-201	SITE ELEVATION
T-501	ANTENNA DETAILS
T-502	EQUIPMENT DETAILS
S-001	STRUCTURAL NOTES **
S-501	STRUCTURAL DETAILS **
E-101	UTILITY PLAN
E-102	UTILITY PLAN
E-103	GROUNDING PLAN
E-501	UTILITY DETAILS
E-502	GROUNDING DETAILS

* COMPLETED BY OTHERS
** REVIEWED AND APPROVED BY STRUCTURAL ENGINEER

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:
- 2012 INTERNATIONAL BUILDING CODE
- 2014 NATIONAL ELECTRIC CODE
- TIA/EIA-222-G OR LATEST EDITION

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



PROJECT DIRECTORY

LESSEE:
VERIZON WIRELESS
10801 BUSH LAKE RD
BLOOMINGTON, MN 55438
CONTACT: RICK WENTA
PHONE: 952.946.4690

LESSOR:
CITY OF DULUTH
411 W 1ST ST
DULUTH, MN 55802
PHONE: 218.730.5000

ENGINEERING COMPANY:
EDGE CONSULTING ENGINEERS, INC.
2101 HIGHWAY 13 W
BURNSVILLE, MN 55337
CONTACT: OTTO DINGFELDER III, P.E.
PHONE: 608.644.1449

RF ENGINEER:
VERIZON WIRELESS
10801 BUSH LAKE RD
BLOOMINGTON, MN 55438
CONTACT: MICHAEL KOCH

SITE ACQUISITION:
JACOBS ENGINEERING GROUP, INC.
2727 PATTON ROAD
ROSEVILLE, MN 55113
CONTACT: AMY DRESCH
PHONE: 952.831.1043

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS/CONDITIONS ON SITE. IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME.

ENGINEER OF RECORD

EDGE CONSULTING ENGINEERS, INC.
CONTACT: OTTO DINGFELDER III (PE # 49720 (MN))
PHONE: 608.644.1449

STRUCTURAL REVIEW

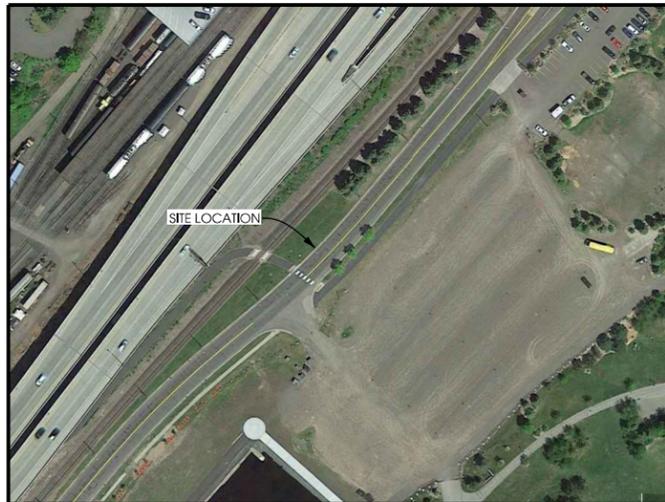
FOUNDATION DESIGN:
EDGE CONSULTING ENGINEERS
PROJECT #: 16591
DATE: 10/17/2017

POLE DESIGN:
VALMONT
DRAWING #: MN379742P1
DATE: 10/12/2017

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



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A AERIAL OVERVIEW



B SITE OVERVIEW [LOOKING NORTH]



C SITE OVERVIEW [LOOKING SOUTHWEST]

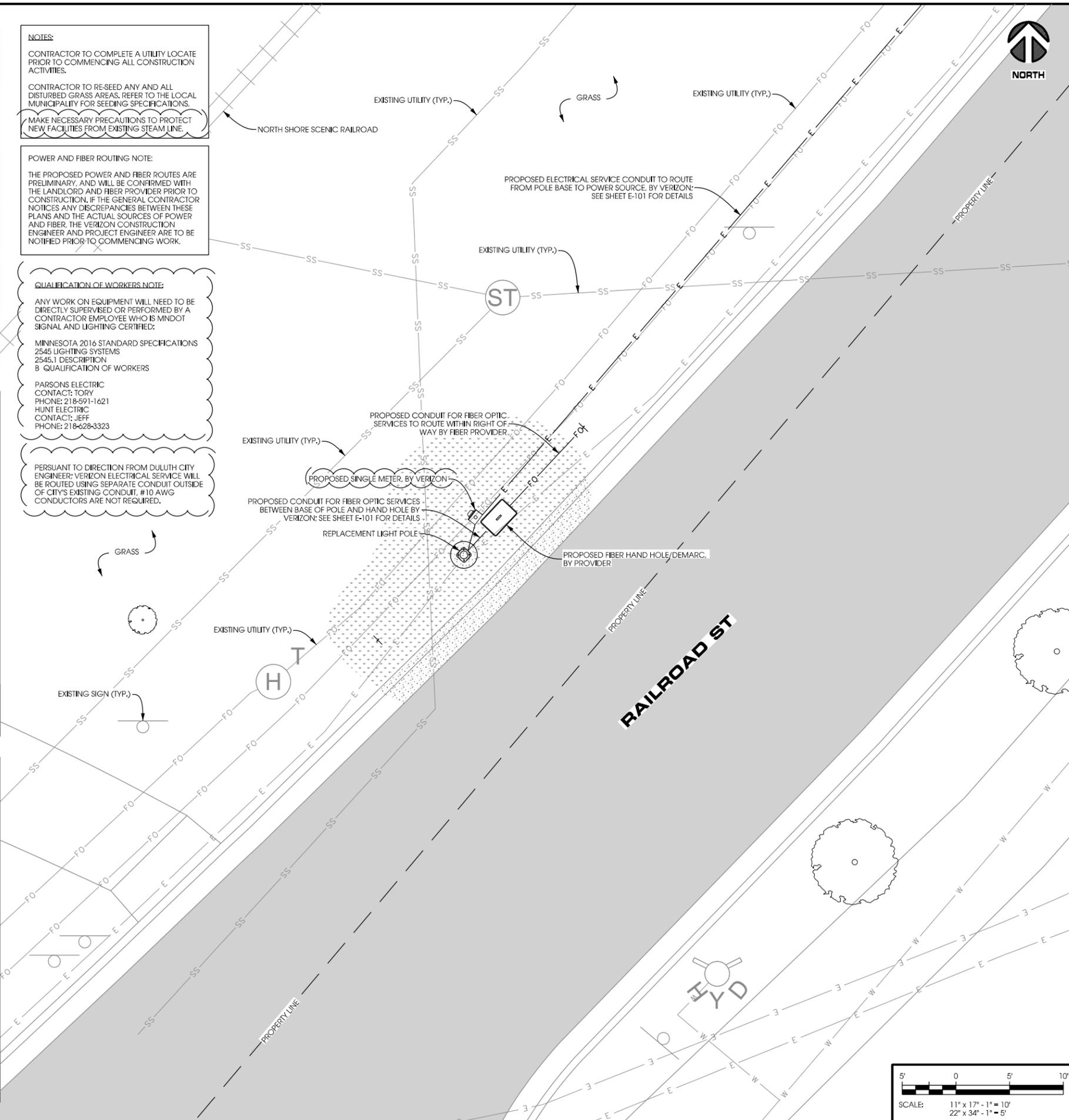
NOTES:
 CONTRACTOR TO COMPLETE A UTILITY LOCATE PRIOR TO COMMENCING ALL CONSTRUCTION ACTIVITIES.
 CONTRACTOR TO RE-SEED ANY AND ALL DISTURBED GRASS AREAS. REFER TO THE LOCAL MUNICIPALITY FOR SEEDING SPECIFICATIONS.
 MAKE NECESSARY PRECAUTIONS TO PROTECT NEW FACILITIES FROM EXISTING STEAM LINE.

POWER AND FIBER ROUTING NOTE:
 THE PROPOSED POWER AND FIBER ROUTES ARE PRELIMINARY, AND WILL BE CONFIRMED WITH THE LANDLORD AND FIBER PROVIDER PRIOR TO CONSTRUCTION. IF THE GENERAL CONTRACTOR NOTICES ANY DISCREPANCIES BETWEEN THESE PLANS AND THE ACTUAL SOURCES OF POWER AND FIBER, THE VERIZON CONSTRUCTION ENGINEER AND PROJECT ENGINEER ARE TO BE NOTIFIED PRIOR TO COMMENCING WORK.

QUALIFICATION OF WORKERS NOTE:
 ANY WORK ON EQUIPMENT WILL NEED TO BE DIRECTLY SUPERVISED OR PERFORMED BY A CONTRACTOR EMPLOYEE WHO IS MNDOT SIGNAL AND LIGHTING CERTIFIED.

MINNESOTA 2016 STANDARD SPECIFICATIONS
 2545 LIGHTING SYSTEMS
 2545.1 DESCRIPTION
 B QUALIFICATION OF WORKERS
 PARSONS ELECTRIC
 CONTACT: TORY
 PHONE: 218-591-1621
 HUNT ELECTRIC
 CONTACT: JEFF
 PHONE: 218-628-3323

PERSUANT TO DIRECTION FROM DULUTH CITY ENGINEER, VERIZON ELECTRICAL SERVICE WILL BE ROUTED USING SEPARATE CONDUIT OUTSIDE OF CITY'S EXISTING CONDUIT. #10 AWG CONDUCTORS ARE NOT REQUIRED.



PROJECT NO: 20131998150
 LOCATION CODE: 2440128
 EDGE PROJECT NO: 16591
 CHECKED BY: OGD

REV.	DATE	DESCRIPTION	INT.
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0	09/13/2017	FINAL DRAWINGS	MTS
1	10/27/2017	FINAL DRAWINGS	DGS
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4	05/03/2018	FINAL DRAWINGS	MWH
5	06/05/2018	FINAL SMALL CELL DWGS	RJK

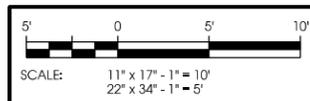
APPROVED - SEE SHEET G-001 FOR ENGINEER SEAL

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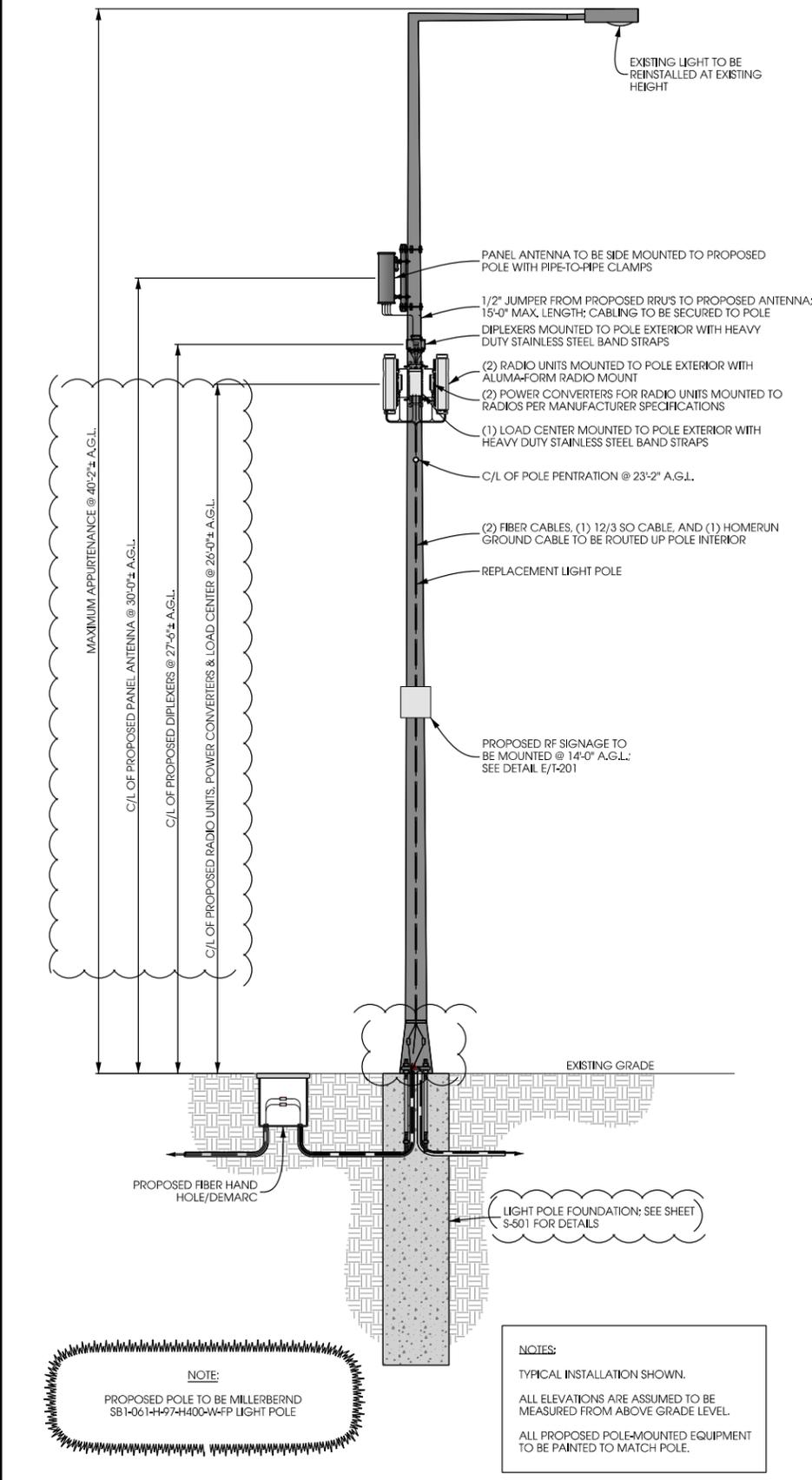
DUL CANAL PARK SC1
 DULUTH, MN
 REPLACEMENT LIGHT POLE
 SMALL CELL DRAWINGS

SHEET TITLE
SITE PLAN

SHEET NUMBER
C-101



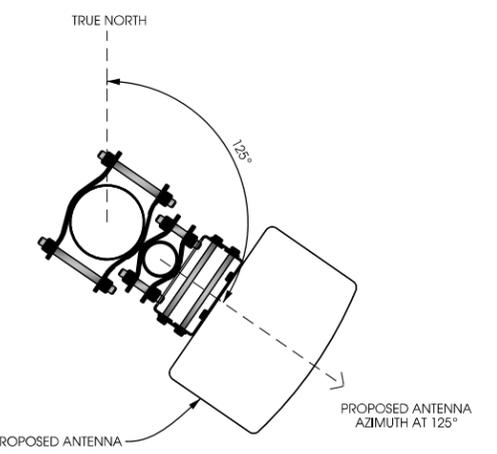
LA:16590\16591\CAD\Plan\Final\C-101.dgn



A POLE ELEVATION
SCALE: 11" x 17" - 1" = 6'-0"
22" x 34" - 1" = 3'-0"



B SITE ELEVATION



C ANTENNA ORIENTATION
SCALE: NTS

ANTENNAS					
QUANTITY	MAKE	MODEL	CENTERLINE	TIP HEIGHT	AZIMUTH
1	COMMSCOPE	HBXX-6513DS-A2M	30' AGL	31'-6" AGL	125°

EQUIPMENT			
QUANTITY	TYPE	MAKE	MODEL
1	RRU	ERICSSON	RRUS32 B66
1	RRU	ERICSSON	RRUS32 B2
2	DIPLEXER	COMMSCOPE	CBC1923T-4310 E11F13PO6

CABLING			
QUANTITY	TYPE	MAKE	MODEL
10	COAX	COMMSCOPE	LFD4-50

D ANTENNA AND CABLING
SCALE: NTS



E RF WARNING SIGNS
SCALE: NTS



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LOCATION CODE: 2440128
EDGE PROJECT NO: 16591
CHECKED BY: OGD

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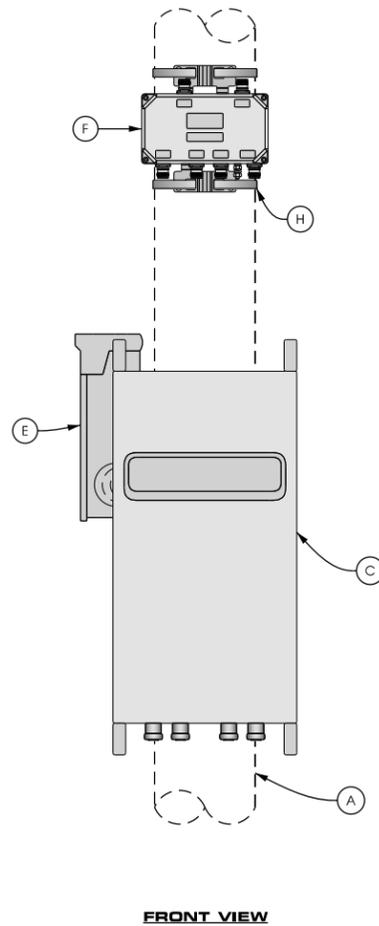
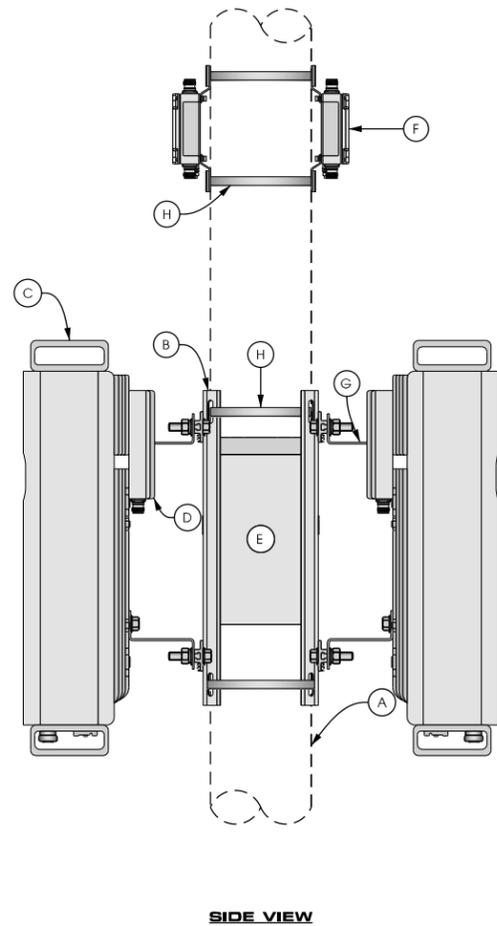
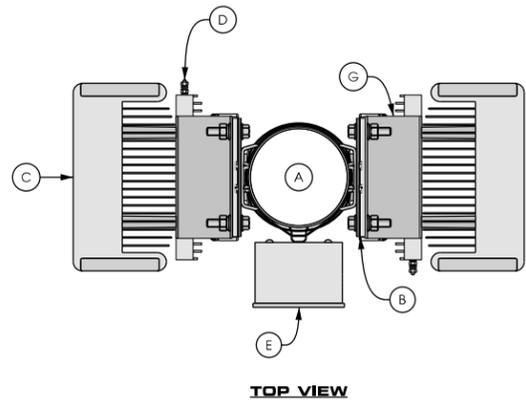
DUL CANAL PARK SC1
DULUTH, MN
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
SITE ELEVATION

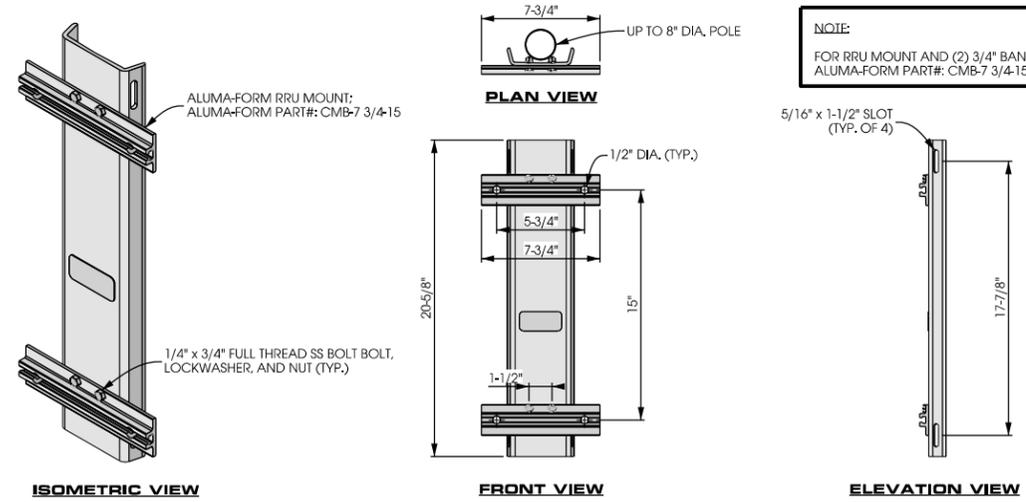
SHEET NUMBER
T-201

NOTE:
PAINT ALL ANTENNAS, OUTDOOR EQUIPMENT, CABLING, AND MOUNTING HARDWARE TO MATCH THE POLE.

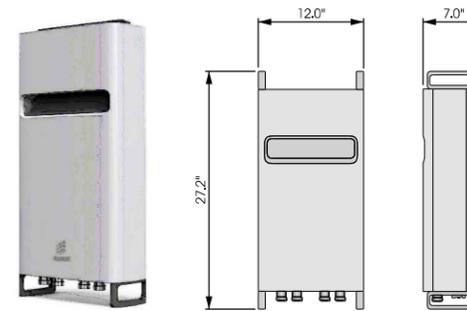
- KEYED NOTES:**
- A. UP TO 8" DIA. POLE
 - B. REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL B THIS SHEET
 - C. REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL C THIS SHEET
 - D. POWER SUPPLY UNIT SECURED TO BACK OF REMOTE RADIO UNIT (TYP. OF 2); SEE DETAIL D THIS SHEET
 - E. LOAD CENTER SECURED WITH HEAVY DUTY STAINLESS STEEL BAND STRAP; SEE DETAIL E THIS SHEET
 - F. DIPLEXER SECURED WITH HEAVY DUTY STAINLESS STEEL BAND STRAP (TYP. OF 2); SEE DETAIL F THIS SHEET
 - G. ANGLE ADAPTER MOUNTED TO BACK OF REMOTE RADIO UNIT PER MANUFACTURER'S SPECIFICATIONS (TYP.)
 - H. HEAVY DUTY STAINLESS STEEL BAND STRAP (TYP.)



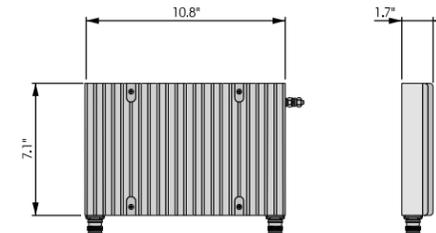
A POLE ELEVATION
SCALE: 11" x 17" - 1/4" = 1'-0"
22" x 34" - 1/2" = 1'-0"



B EQUIPMENT MOUNTING
SCALE: NTS



C REMOTE RADIO UNIT
SCALE: NTS



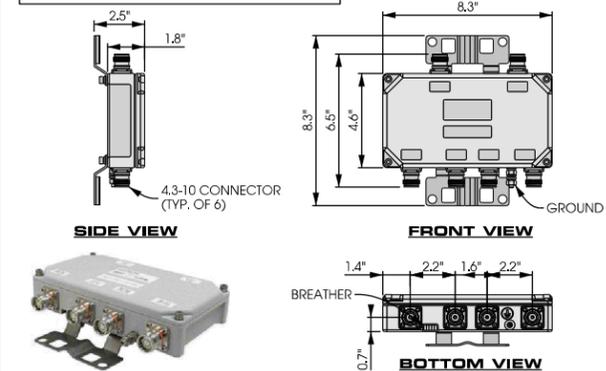
D POWER SUPPLY UNIT
SCALE: NTS

MANUFACTURER: SIEMENS
MODEL: W0408ML1125
DIMENSIONS: 12.25" x 6" x 4.25" (H x W x D)
WEIGHT: 6.8 LBS.
NUMBER OF POLES: 4 (EXPANDABLE TO 8)
MAX. CURRENT RATING: 125 A
VOLTAGE RATING: 240 VAC
CONTRACTOR TO INSTALL LED LIGHT



E LOAD CENTER
SCALE: NTS

MANUFACTURER: COMMSCOPE
MODEL #: CBC19231-4310 / E11F13P06
TWIN DIPLEXER PCS/AWS+WCS, DC BLOCK, 4.3-10
DIMENSIONS: 8.3" x 4.6" x 1.8"
WEIGHT: 4.4 LBS



F DIPLEXER
SCALE: NTS



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www.jacobs.com



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Burnsville, MN 55337
608.644.1449 voice
608.644.1549 fax
www.edgeconsult.com

PROJECT NO: 20131998150
LOCATION CODE: 2440128
EDGE PROJECT NO: 16591
CHECKED BY: OGD

REV.	DATE	DESCRIPTION	INT.
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DUL CANAL PARK SC1
DULUTH, MN
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
**EQUIPMENT
DETAILS**

SHEET NUMBER
T-502

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- CONTRACTOR TO PROVIDE A MINIMUM OF 12" OF CLEARANCE BETWEEN PROPOSED 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.
- TEMPORARY HARD SURFACE TO BE PROVIDED IMMEDIATELY UPON BACKFILL, UNTIL PERMANENT REPAIR IS MADE
- NOTIFY CITY OF DULUTH 730-9310 2 WORKING DAYS PRIOR TO EXCAVATION OR DIRECTIONAL DRILLING WITHIN 6FT OF NATURAL GAS MAINS.



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PROJECT NO:	20131998150
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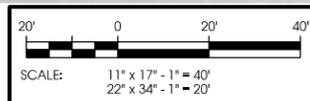
DUL CANAL PARK SC1
DULUTH, MN
REPLACEMENT LIGHT POLE
SMALL CELL DRAWINGS

SHEET TITLE
UTILITY PLAN

SHEET NUMBER
E-101



A UTILITY PLAN



LA:16591\16591\CAD\Plan\Plan\VE-01.dwg