

# EXHIBIT A



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Insite RE, Inc.  
1s660 Midwest Road  
Suite 140  
Oakbrook Terrace, IL 60181

June 27, 2017

Via electronic transmittal  
[schatzm@naperville.il.us](mailto:schatzm@naperville.il.us)  
[wilder@naperville.il.us](mailto:wilder@naperville.il.us)

Mr. Doug A. Krieger  
Naperville City Manager  
400 S. Eagle Street  
Naperville, IL 60540

**RE: Verizon Small Cell license agreement for city light pole located at 1125 E. Gartner Road**

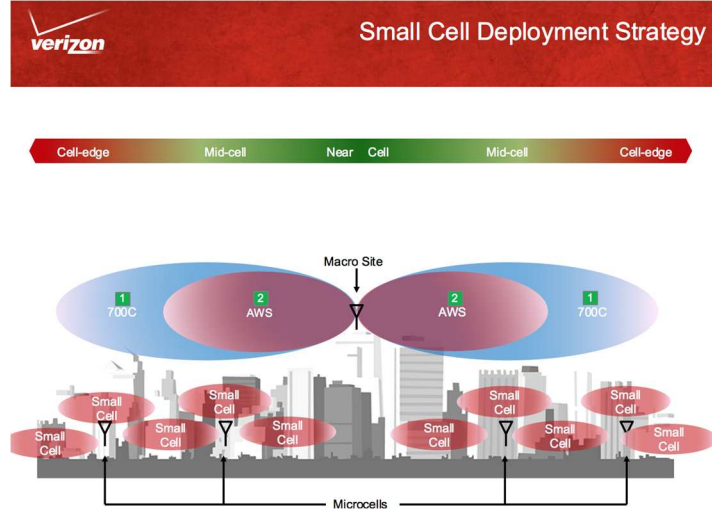
Dear Mr. Krieger,

Chicago SMSA L.P., aka Verizon Wireless ("Applicant") requests to address the city council regarding a license agreement on a city owned light pole referenced above for the installation of a Verizon Small Cell. Small cells in the ROW are not new to Naperville. The city currently has small cell license agreements in place with both Verizon and AT&T and has issued permits to both carriers to collocate on existing ComED wood poles for small cell placement.

The City Council recently approved seven (7) similar Verizon Small Cell license agreements at the August 16<sup>th</sup>, 2016 meeting as well as an 8th at the May 16<sup>th</sup> meeting for a light pole located at 485 Diehl Road. The 1125 Gartner Road site has been reviewed and approved by the city building and zoning departments. Once the agreement is approved, the permit will be issued.

As I explained in our last proposals, Small Cell technology is new, but one Verizon is embracing. Small Cells are meant to complement the existing Macro sites, not replace them. Due to the low height and small amount of equipment, they are meant to cover a much smaller area. They are placed in precise locations to address current or anticipated capacity coverage issues. That means during certain times of the day when the wireless traffic is so high, the small cells will help take the load off the existing Macro site sector in the area. See link below with a short, but great video clip explaining the benefit to Naperville as well as the map below to help illustrate the concept:

<https://www.youtube.com/watch?v=VQYQAaeyzFs&feature=youtu.be>



Verizon is proposing a license agreement with the following terms:

- 5-year term with 4/5 year renewals.
- Annual payments of \$3,275 increasing 3% after 2 years.
- 180 day-notice right to terminate for either party.
- City has 60-day notice right to terminate if the site is needed for city services.
- \$4,775 upfront payment due within 90 days of full execution.
- \$7,500 escrow deposit to guarantee maintenance and removal of sites.
- Verizon is required to provide an independent 3<sup>rd</sup> party radio frequency study for each site to show the site is FCC compliant.

We have been working very hard with the city staff to review and design these sites over the last year. We've had several staff meetings reviewing each site and changing them to meet their design criteria. Right now, Verizon does not know how many more they will need, but they are certain this new technology is a creative way to meet the demand for seamless wireless coverage in Naperville. Nobody wants more "towers" in or near residential. This will help avoid that necessity.

We look forward to discussing this proposal and thank you for providing Verizon the opportunity to address the City Council.

Sincerely,  
Ray Shinkle  
Ray Shinkle  
Insite RE, Inc.  
Authorized agent for Verizon Wireless

Enclosures



BEFORE



AFTER

verizon<sup>v</sup>

DT  
NAPERVILLE  
1 SC 3

View from Southeast  
looking Northwest

 **TERRA**  
CONSULTING GROUP, LTD.  
600 Busse Highway, Park Ridge, IL 60068  
Phone: 847.698.6400 Fax: 847.698.6401



**CONSULTANT TEAM**

**PROJECT CONSULTANT:** TERRA CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
(847) 698-6400

**STRUCTURAL:** HUTTER TRANKINA ENGINEERING  
32 W 273 ARMY TRAIL RD, SUITE 100  
WAYNE, IL 60184  
(630) 513-6711

**SURVEY:** MERIDIAN SURVEYING, LLC  
N8774 FIRELANE 1  
MENASHA, WI 54952  
(920) 993-0881

**POLE DESIGN:** VALMONT INDUSTRIES, INC.  
20805 EATON AVE.  
FARMINGTON, MI 55024  
(651) 463-8990

**CABINET FOUNDATION DESIGN:** HUBBELL POWER SYSTEMS, INC.  
CHANCE CIVIL & UTILITY HELICAL PRODUCTS  
210 N. ALLEN ST.  
CENTRALIA, MO 65240

**PROJECT TYPE**

PROPOSED VERIZON WIRELESS SMALL CELL ANTENNA ON PROPOSED LIGHT POLE AND PROPOSED SMALL CELL EQUIPMNET ADJACENT TO POLE. EQUIPMENT ON POLE TO BE PAINTED TO MATCH POLE. POWER TO BE DELIVERED VIA UNDERGROUND. FIBER TO BE DELIVERED VIA UNDERGROUND (BY OTHERS).

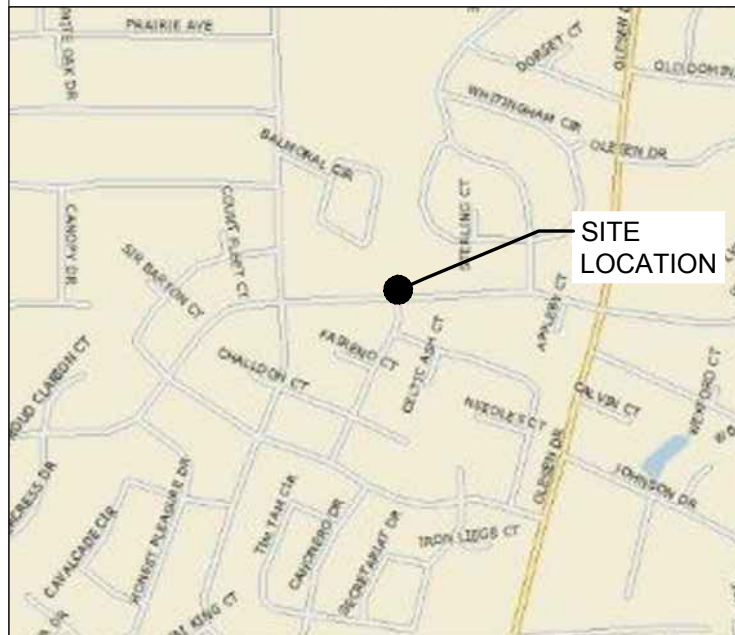
SITE COORDINATES:

LATITUDE: 41° 45' 46.65" N (1A CERTIFICATION)  
LONGITUDE: 88° 07' 33.26" W (1A CERTIFICATION)  
ELEVATION: ±726' (1A CERTIFICATION)

**APPROVALS**

REAL ESTATE: \_\_\_\_\_  
RF: \_\_\_\_\_  
CONSTRUCTION: \_\_\_\_\_  
OPERATIONS: \_\_\_\_\_  
EQUIPMENT ENGINEERING: \_\_\_\_\_

**VICINITY MAP** N.T.S.



**REGIONAL MAP** N.T.S.



**CHICAGO SMSA**  
*limited partnership*  
d/b/a VERIZON WIRELESS



**CHICAGO SMSA**  
*limited partnership*

CHICAGO SMSA LIMITED PARTNERSHIP  
d/b/a VERIZON WIRELESS  
1515 WOODFIELD ROAD, SUITE 1400  
SCHAUMBURG, ILLINOIS 60173  
PHONE: (847) 619-5397 FAX: (847) 706-7415

**LOCATION NUMBER: 383984**  
**SITE NAME: DT NAPERVILLE\_1\_SC\_3**

**1125 E. GARTNER RD.**  
**NAPERVILLE, IL 60540**

OPERATES 24 HOURS  
A DAY 365 DAYS A YEAR



**PROJECT INFORMATION**

PROJECT #: 20151233053  
APPLICATION #: T.B.D.  
UTILITIES: POWER: CITY OF NAPERVILLE  
MARCOS VALENCIA (630) 420-6653  
FIBER: WOW  
BILL SCHENK (630) 536-3123

POLE #: 117003  
JURISDICTION: CITY OF NAPERVILLE  
OCCUPANCY: UNINHABITED  
ZONING: -  
CONSTRUCTION TYPE: CO-LOCATION ON MUNICIPAL POLE  
PROPERTY OWNER: -  
APPLICANT: CHICAGO SMSA  
limited partnership  
d/b/a Verizon Wireless  
1515 WOODFIELD ROAD  
SCHAUMBURG, IL 60173

CONSTRUCTION MANAGER: JASON EISELEIN (847) 706-7118  
REAL ESTATE MANAGER: KATHY COGSWELL (847) 619-4270

**SHEET DRAWING INDEX REVISION**

SHEET	DRAWING INDEX	REVISION
T-1	TITLE SHEET	A
LP-1	AERIAL LOCATION & EXHIBIT PHOTO	B
C-1	SITE PLAN	D
06-13-17 C-2	TRAFFIC CONTROL PLAN	D
ANT-1	EXISTING SITE ELEVATIONS	A
ANT-2	PROPOSED SITE ELEVATIONS	B
06-13-17 ANT-3	PROPOSED ANTENNA CONFIGURATION	D
ANT-4	ANTENNA DETAILS	D
ANT-5	CABINET & RADIO UNIT DETAILS	B
ANT-5A	METER PEDESTAL DETAILS	A
ANT-6	CABLE DIAGRAMS AND INFORMATION	A
06-13-17 E-1	ELECTRICAL ROUTING PLAN	D
E-2	FIBER ROUTING PLAN	D
E-3	UTILITY ROUTING DETAILS	A
E-4	GROUNDING PLAN & DETAILS	A
S-1	STRUCTURAL DETAILS	C
SP-1	SPECIFICATIONS	A
<b>ATTACHMENTS</b>		
1-3	VALMONT POLE SPECIFICATIONS	C
4	LIGHTING FOUNDATION	C
5	CHARLES CABINET FOUNDATION	C
L-1	SURVEY	C

FULL SCALE PRINT IS ON 22"x34" MEDIA

**REVISIONS**

NO.	DATE	BY	DESCRIPTION
A	02/09/17	MPC	ISSUED FOR REVIEW
B	03/01/17	MPC	REVISED WITH AC/DC CONVERTER DETAIL
C	03/28/17	LRB	UPDATED PER UTILITY COORDINATION
D	06/13/17	MPC	REVISED PER CITY COMMENTS

**LOC# 383984**  
**DT NAPERVILLE\_1\_SC\_3**  
1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY: MPC  
CHECKED BY: TAZ  
DATE: 02/09/17  
PROJECT #: 88-053

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**





1 AERIAL LOCATION  
SCALE: N.T.S.



2 EXHIBIT PHOTO OF POLE  
SCALE: N.T.S.

**CHICAGO  
SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS

**TERRA**  
CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

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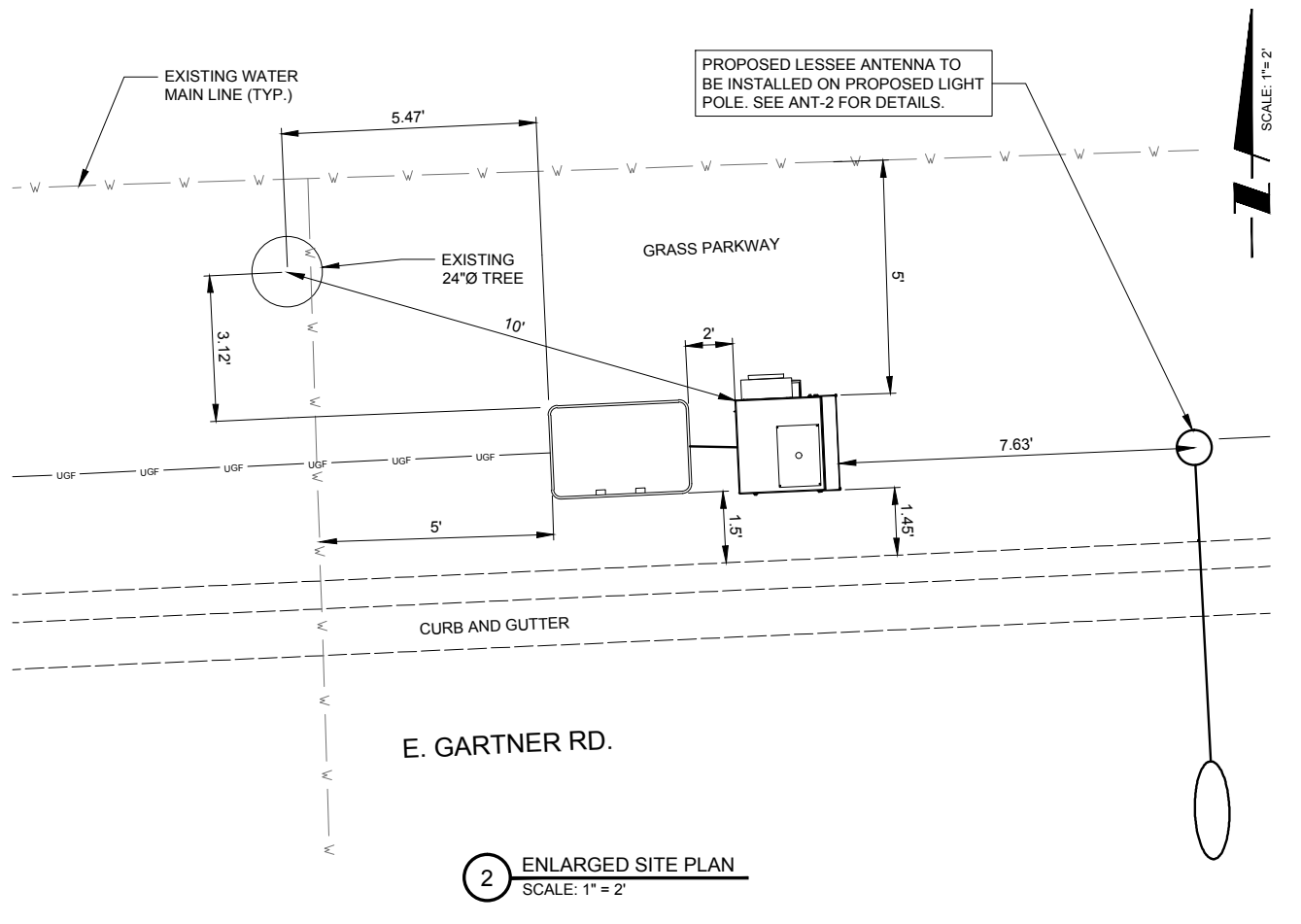
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DATE:	02/09/17
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SHEET TITLE  
AERIAL LOCATION &  
EXHIBIT PHOTO

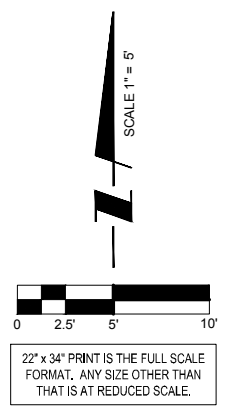
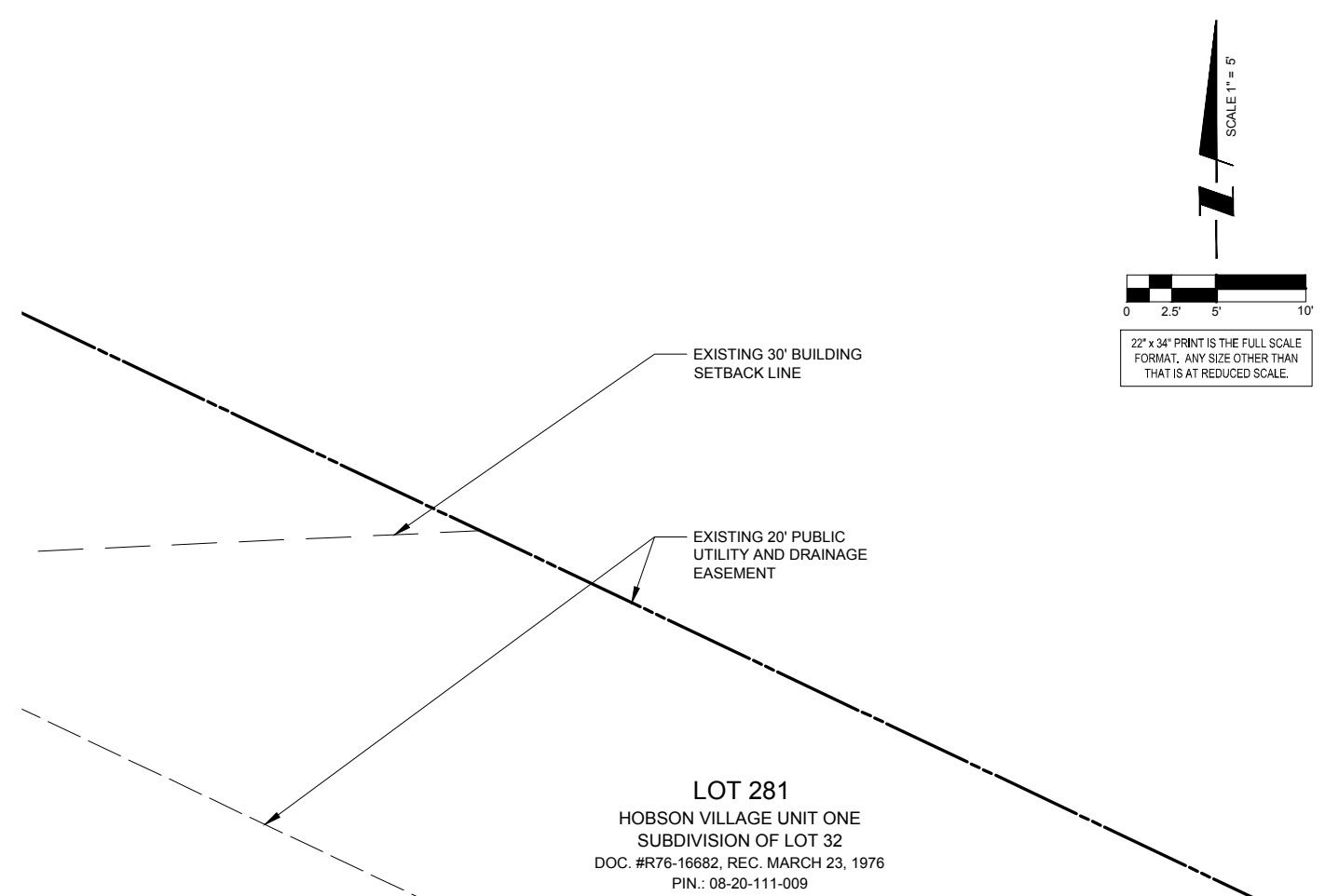
SHEET NUMBER

**LP-1**

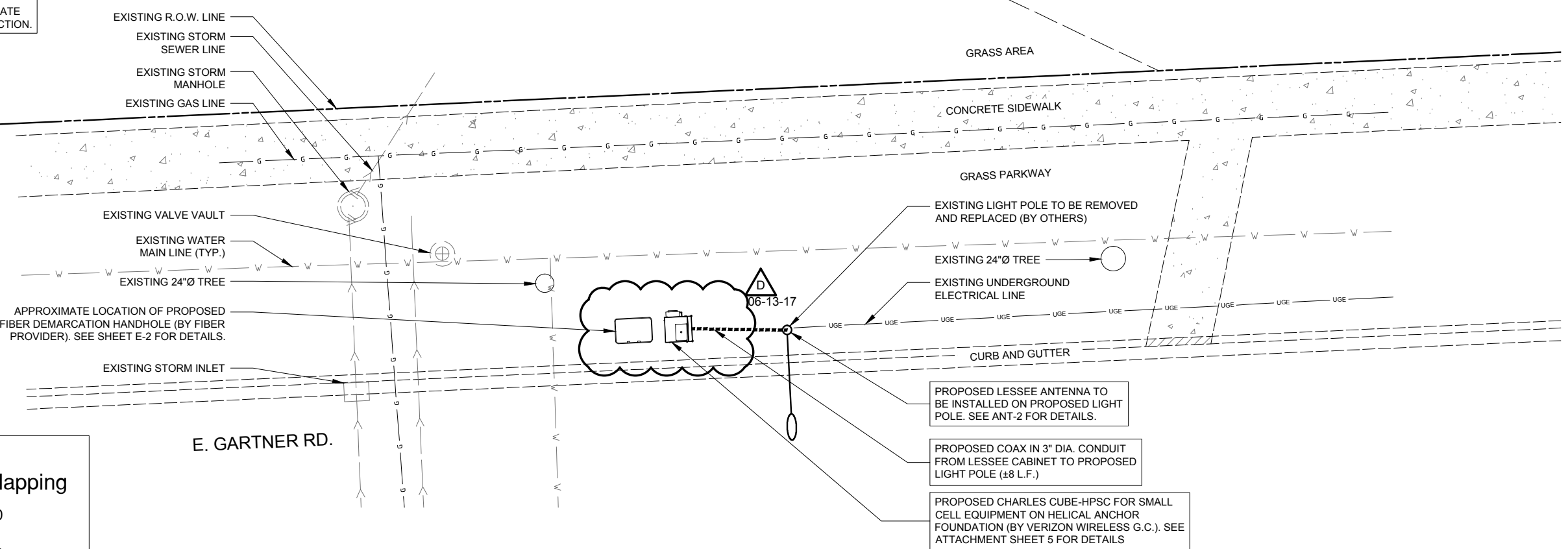




**2** ENLARGED SITE PLAN  
SCALE: 1" = 2'



**NOTE:**  
SITE PLAN MAY NOT CONTAIN ALL SUBSURFACE UTILITIES. VERIZON WIRELESS G.C. TO FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO CONSTRUCTION.



**1** SITE PLAN  
SCALE: 1" = 5'

OPERATES 24 HOURS  
A DAY 365 DAYS A YEAR

**Call Before You Dig**

**JULIE**  
ILLINOIS ONE CALL SYSTEM

CALL JULIE TOLL FREE  
1(800) 892-0123  
48 HOURS BEFORE YOU DIG

**SURVEY PERFORMED BY:**

**Advanced Surveying & Mapping**

Telephone (630) 273-2500  
Fax (630) 273-2600  
E-MAIL [asmc@advct.com](mailto:asmc@advct.com)

**CHICAGO SMSA**  
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d/b/a VERIZON WIRELESS

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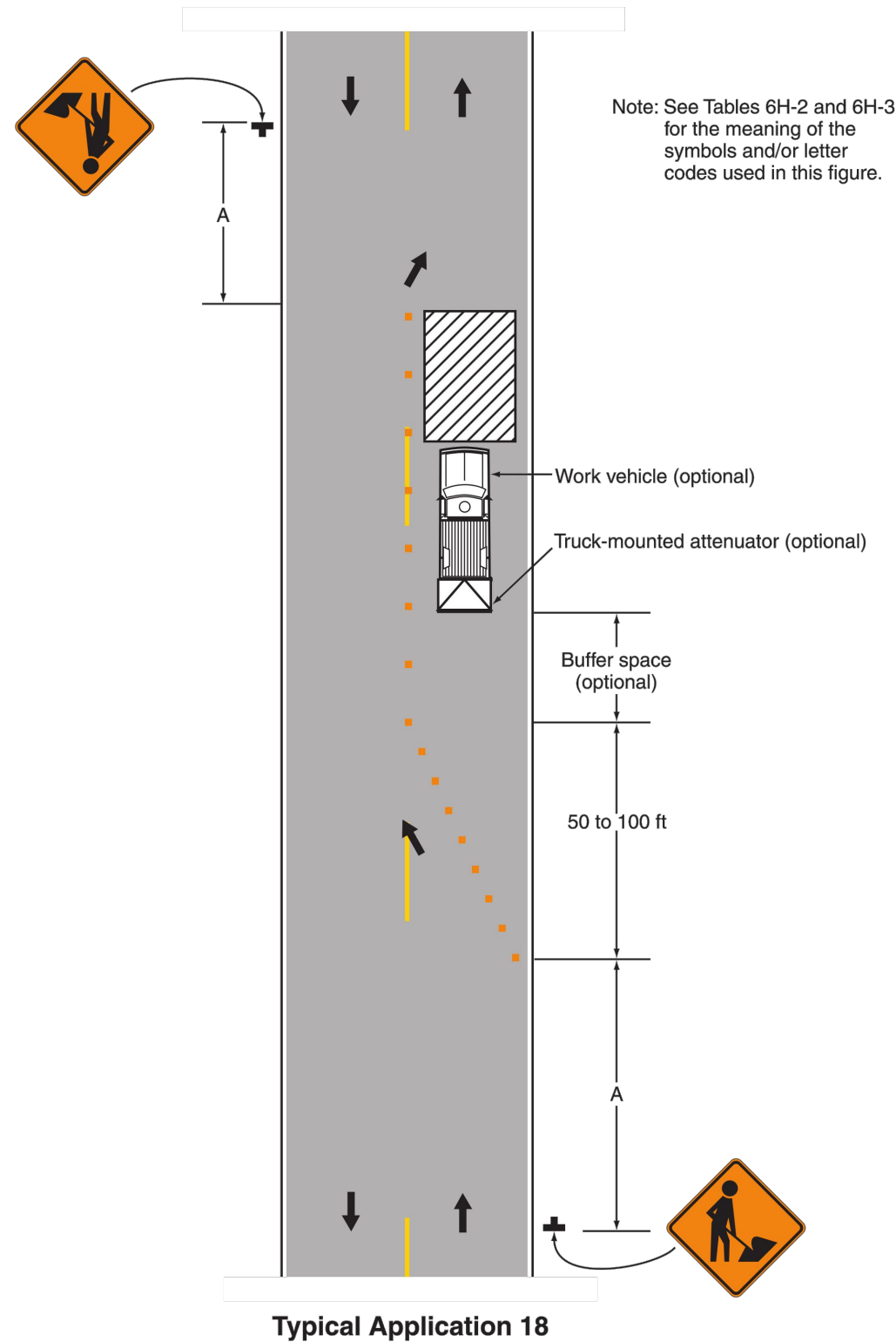
**LOC# 383984**  
**DT NAPERVILLE\_1\_SC\_3**  
1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY: MPC  
CHECKED BY: TAZ  
DATE: 02/09/17  
PROJECT #: 88-053

SHEET TITLE  
**SITE PLAN**

SHEET NUMBER  
**C-1**

Figure 6H-18. Lane Closure on a Minor Street (TA-18)



Notes for Figure 6H-18—Typical Application 18  
Lane Closure on a Minor Street

**Standard:**

1. This TTC shall be used only for low-speed facilities having low traffic volumes.

**Option:**

2. Where the work space is short, where road users can see the roadway beyond, and where volume is low, vehicular traffic may be self-regulating.

**Standard:**

3. Where vehicular traffic cannot effectively self-regulate, one or two flaggers shall be used as illustrated in Figure 6H-10.

**Option:**

4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. A truck-mounted attenuator may be used on the work vehicle and the shadow vehicle.

NOTE:  
ADDITIONAL SIGNAGE TO BE PLACED AT INTERSECTION OF CITATION DR. AND E. GARTNER RD.

Symbols	Description
	Arrow board
	Arrow board support or trailer (shown facing down)
	Changeable message sign or support trailer
	Channelizing device
	Crash cushion
	Direction of temporary traffic detour
	Direction of traffic
	Flagger
	High-level warning device (Flag tree)
	Longitudinal channelizing device
	Luminaire
	Pavement markings that should be removed for a long-term project
	Shadow vehicle
	Sign (shown facing left)
	Surveyor
	Temporary barrier
	Temporary barrier with warning light
	Traffic or pedestrian signal
	Truck-mounted attenuator
	Type 3 barricade
	Warning light
	Work space
	Work vehicle

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

NOTE:  
REFERENCED FROM PAGES 668-669 OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS 2009 EDITION

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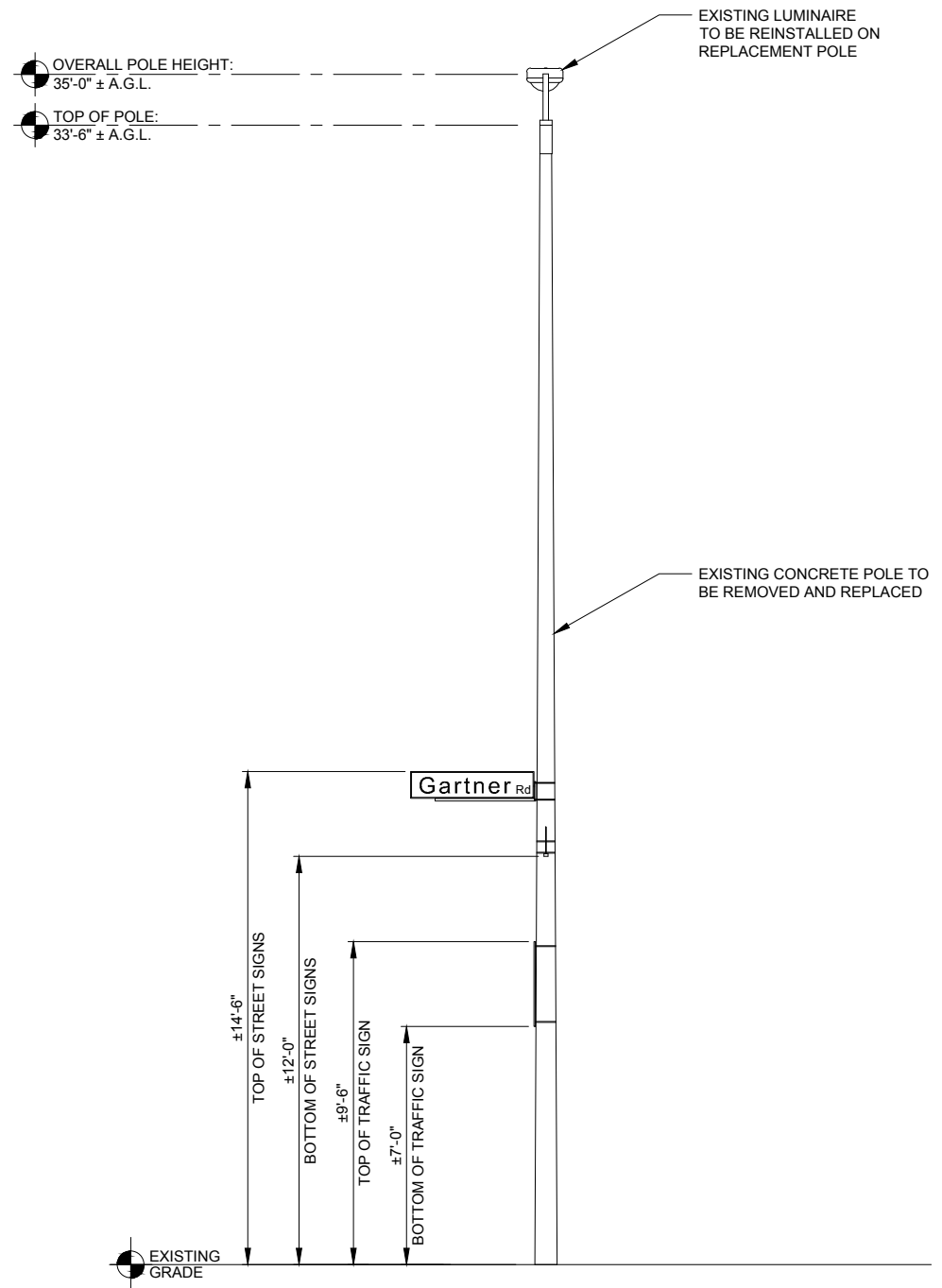
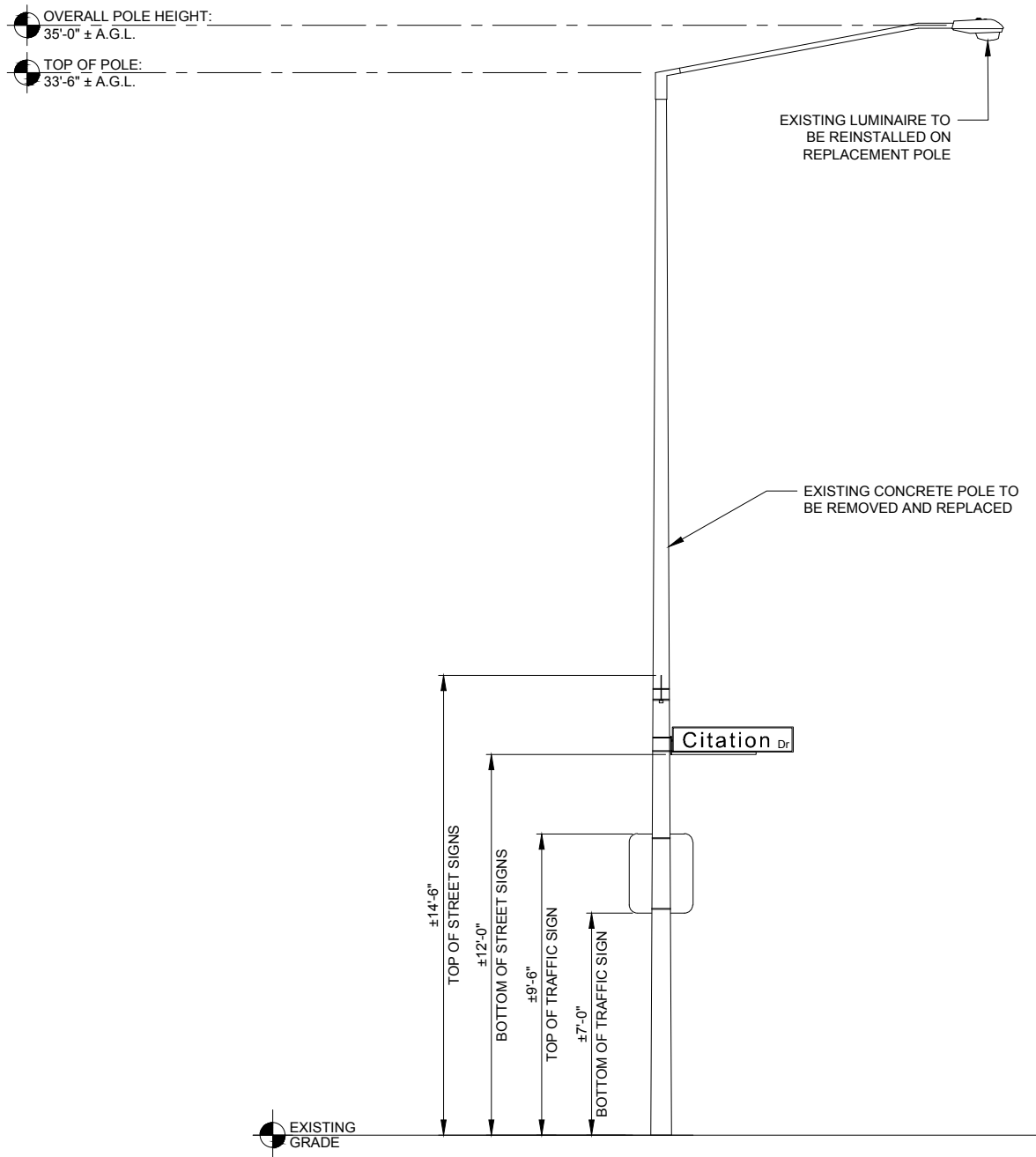
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NAPERVILLE, IL 60540

DRAWN BY:	MPC
CHECKED BY:	TAZ
DATE:	02/09/17
PROJECT #:	88-053

SHEET TITLE  
TRAFFIC CONTROL PLAN  
LANE CLOSURE DETAILS

SHEET NUMBER  
**C-1**



NOTE:  
THIS DRAWING IS FOR EXHIBIT  
AND LAYOUT PURPOSES ONLY.  
ELEVATIONS WERE CREATED  
OFF OF FIELD MEASUREMENTS  
BY ENGINEER.

22" x 34" PRINT IS THE FULL SCALE  
FORMAT. ANY SIZE OTHER THAN  
THAT IS AT REDUCED SCALE.

1 EXISTING EAST ELEVATION  
SCALE: 3/8" = 1'-0" ±

2 EXISTING NORTH ELEVATION  
SCALE: 3/8" = 1'-0" ±

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LOC# 383984  
DT NAPERVILLE  
1\_SC\_3

1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY:	MPC
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DATE:	02/09/17
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SHEET TITLE  
EXISTING SITE  
ELEVATIONS

SHEET NUMBER  
**ANT-1**



PROPOSED KATHREIN DUAL BAND ANTENNA (MODEL #80010746, OR EQUIVALENT) TO BE PAINTED SHERWIN-WILLIAMS INDUSTRIAL URETHANE ALKYD SILVER BRITE B59S11, OR EQUIVALENT.

OVERALL POLE HEIGHT:  
32'-9" ± A.G.L.

ANTENNA RAD CENTER:  
31'-9" ± A.G.L.

TOP OF POLE:  
30'-0" ± A.G.L.

PROPOSED CONCEALFAB POLE-TOP MOUNT WITH CONCEALMENT SHROUD TO BE PAINTED SHERWIN-WILLIAMS INDUSTRIAL URETHANE ALKYD SILVER BRITE B59S11, OR EQUIVALENT. SEE SHEET S-1 FOR DETAILS.

PROPOSED TRUSS ARM (BY OTHERS). SEE ATTACHMENT SHEET 2 FOR DETAILS.

EXISTING LUMINAIRE TO BE REINSTALLED ON PROPOSED TRUSS ARM (BY OTHERS).

PROPOSED #2 GREEN STRANDED COPPER GROUND WIRE ROUTED UP POLE INTERIOR

PROPOSED BASIC SATIN VALMONT ALUMINUM LIGHT POLE (BY OTHERS). SEE ATTACHMENT SHEET 1 FOR DETAILS.

PROPOSED (4) COAX ROUTED UP POLE INTERIOR FROM RRUS TO ANTENNA IN 3.50" O.D. BLUE DIAMOND HDPE (TO BE INSTALLED IN FIELD BY VERIZON WIRELESS G.C.) SEE ATTACHMENT SHEET 3 FOR DETAILS.

EXISTING STREET SIGNS TO BE REINSTALLED ON PROPOSED LIGHT POLE (TYP.)

Citation Dr

EXISTING TRAFFIC SIGN TO BE REINSTALLED ON PROPOSED LIGHT POLE

PROPOSED CHARLES CUBE-HPSC FOR VERIZON WIRELESS SMALL CELL EQUIPMENT

PROPOSED HELICAL ANCHOR FOUNDATION (BY VERIZON WIRELESS G.C.) SEE ATTACHMENT SHEET 5 FOR DETAILS.

EXISTING GRADE

±7'-0"

±12'-0"

±14'-6"

NOTES:

1. FIBER TO BE CLEAN AND TESTED PRIOR TO CONNECTING TO RRUS.
2. GENERAL CONTRACTOR TO ENSURE BATTERIES ARE NOT CONNECT PRIOR TO COMMERCIAL POWER ACTIVATION.
3. THIS DRAWING IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY. PLEASE REFER TO POLE SPECIFICATIONS PREPARED BY VALMONT INDUSTRIES, INC. (POLE).

22" x 34" PRINT IS THE FULL SCALE FORMAT. ANY SIZE OTHER THAN THAT IS AT REDUCED SCALE.

1 PROPOSED EAST ELEVATION  
SCALE: 3/8" = 1'-0" ±

OVERALL POLE HEIGHT:  
32'-9" ± A.G.L.

ANTENNA RAD CENTER:  
31'-9" ± A.G.L.

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Gartner Rd

EXISTING TRAFFIC SIGN TO BE REINSTALLED ON PROPOSED LIGHT POLE

PROPOSED CHARLES CUBE-HPSC FOR VERIZON WIRELESS SMALL CELL EQUIPMENT.

SEE ATTACHMENT SHEET 4 FOR PROPOSED LIGHT POLE FOUNDATION DESIGN.

EXISTING GRADE

±7'-0"

±12'-0"

±14'-6"

PROPOSED HELICAL ANCHOR FOUNDATION (BY VERIZON WIRELESS G.C.) SEE ATTACHMENT SHEET 5 FOR DETAILS.

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2 PROPOSED NORTH ELEVATION  
SCALE: 3/8" = 1'-0" ±

**CHICAGO SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS

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1\_SC\_3  
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NAPERVILLE, IL 60540

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SHEET TITLE  
PROPOSED SITE ELEVATIONS

SHEET NUMBER  
**ANT-2**

**RF EMISSIONS REPORT REQUIRED**

YES  NO

DATE OF REPORT: \_\_\_\_\_

NOTE:  
G.C. TO INSTALL ANTENNA USING  
CENTERLINE FROM SHEET ANT-2

**EQUIPMENT CHANGE REQUEST FORM - ECR**

<b>Name</b>	DT Naperville_1_SC_3 - Small Cell Build	<b>RF Engineer</b>	Jeremy Litz	<b>Cell ID</b>	
<b>Location Number</b>	383984	<b>Market</b>	Chicago-HH	<b>Address</b>	1125 E. Gartner Rd.
<b>Date of Request</b>	2/14/2017	<b>Carriers</b>	700 & AWS	<b>Structure Type</b>	Utility Pole/Tower

Sector	Power Required	Antenna Manufacturer	Antenna Model	Centerline	Azimuth	Mechanical Tilt	Variable Tilt
Alpha	40 W	Kathrein	840-10510 <sup>D</sup> <sub>06-13-7</sub>	32	30	0	0
Beta	N/A	N/A	N/A	80010746		0	0
Gamma	N/A	N/A	N/A			0	0

	Manufacturer	Component Model	Location	Count	Length	Action
<b>Passive Components</b>						
<b>Coax</b>	Commscope	1/2"	Without Splitters	4	24	Install
	Generic	1/2"	Pole	2	3	Install
<b>Fiber</b>	Generic	1/2"	Pole	2	3	Install
<b>Power</b>	Generic	1/2"	Pole	2	3	Install
<b>GPS</b>	Generic	1/2"	Pole	N/A	N/A	Install

See  
Layout  
Tab

NOT APPLICABLE

Carrier - LTE/AWS	Power Required	Equipment Manufacturer	Equipment Model	CWDM?	Equipment Cabinet Needed?	Comments	Radios Location From Ground
700	40 W	Ericsson	RRUS11 B13	No	Battery Only if Possible	Radio(s) and Charles 207 Battery Cabinet on Pole	8'
2100	40 W	Ericsson	RRUS12 B4	-	-	-	-

<b>Telco Solution</b>	Dark Fiber
-----------------------	------------

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limited partnership  
d/b/a VERIZON WIRELESS



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SHEET TITLE  
**PROPOSED ANTENNA CONFIGURATION**

SHEET NUMBER  
**ANT-3**



**4-Port Omni Antenna** R1 Y1  
**Frequency Range** 698-960 1695-2690  
**Dual Polarization** X X  
**HPBW** 360° 360°  
**Fixed Electr. DT** 2° 2°

**KATHREIN**

4-Port Omni 698-960/1695-2690 360°/360° 6/9dBi 2°/2°T with GPS

Type No.	80010745	80010746	
Radome Colour	Brown	Grey	
<b>Low band</b>			
<span style="border: 1px solid black; padding: 0 2px;">R1</span>			
<span style="border: 1px solid black; padding: 0 2px;">698-960</span>			
Frequency range	MHz 698 - 824	824 - 894	890 - 960
Polarization	* +45, -45	+45, -45	+45, -45
Gain	dBi 2 x 5.0	2 x 6.0	2 x 6.5
<b>Horizontal Pattern:</b>			
Half-power beam width	° 360 (with 1-8 dB nulls, typical)		
<b>Vertical Pattern:</b>			
Half-power beam width	* 42	37.5	34
Electrical tilt	° 2, fixed		
Impedance	Ω 50		
VSWR	< 1.5	< 1.5	< 1.5
Isolation	Intrasystem dB > 26, typ. 30	Intersystem dB > 28 (R1 // Y1)	
Intermodulation IM3	dBc < -150 (2 x 43 dBm carrier)		
Max. power per input	W 250 (at 50 °C ambient temperature)		



998.5139 Subject to alteration.

All specifications are subject to change without notice. The latest specifications are available at [www.kathreinusa.com](http://www.kathreinusa.com) 80010745, 80010746 Page 1 of 3

Kathrein USA Greenway Plaza II, 2400 Lakeside Blvd., Suite 650, Richardson TX 75082  
 Phone: 214.238.8800 Fax: 214.238.8801 Email: [info@kathrein.com](mailto:info@kathrein.com)

**4-Port Omni Antenna**

**KATHREIN**

High band	<span style="border: 1px solid black; padding: 0 2px;">Y1</span>				
	<span style="border: 1px solid black; padding: 0 2px;">1695-2690</span>				
Frequency range	MHz 1695 - 1880	1850 - 1990	1920 - 2180	2200 - 2490	2490 - 2690
Polarization	* +45, -45	+45, -45	+45, -45	+45, -45	+45, -45
Gain	dBi 2 x 9	2 x 9	2 x 9	2 x 9	2 x 9.5
<b>Horizontal Pattern:</b>					
Half-power beam width	° 360 (with 6-16 dB nulls, typical)				
<b>Vertical Pattern:</b>					
Half-power beam width	* 18.4	17.5	16.5	14.5	13.5
Electrical tilt	° 2, fixed				
Impedance	Ω 50				
VSWR	< 1.55	< 1.6	< 1.6	< 1.55	< 1.55
Isolation	Intrasystem dB > 25, typ. 28	Intersystem dB > 40 (Y1 // R1)			
Intermodulation IM3	dBc < -150 (2 x 43 dBm carrier)				
Max. power per input	W 200 (at 50 °C ambient temperature)				

GPS specifications		
Frequency range	MHz	1575.42 ± 3
LNA gain	dB	27 typical
Pre-amp filtering	dB	-30 at ± 100 MHz
Polarization		Right-hand circular
H-plane beam width		Omni
E-plane half-power beam width	°	105
Connector		N female
DC power	Vdc	+3-5.5, 18-25 mA
		Through N output connector
Temperature range	° C	-35 to +70

Mechanical specifications		
Input	4 x 7-16 connector female	
Connector position	Bottom	
Weight	kg	18.1
	lb	39.9
Wind load (at Rated Wind Speed: 150 km/h)	N	138
	lbf	32
Max. wind velocity	km/h	242
	mph	150
Mechanical interface	Hex nut (requires a 1½" wrench) Torque setting: 122 Nm   90 lbf-ft	
Packing size	mm	755 x 480 x 480
	inches	29.7 / 18.9 / 18.9
Height / diameter	mm	626 / 407
	inches	24.6 / 16

Page 2 of 3 80010745, 80010746

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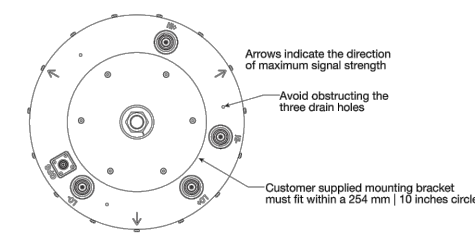
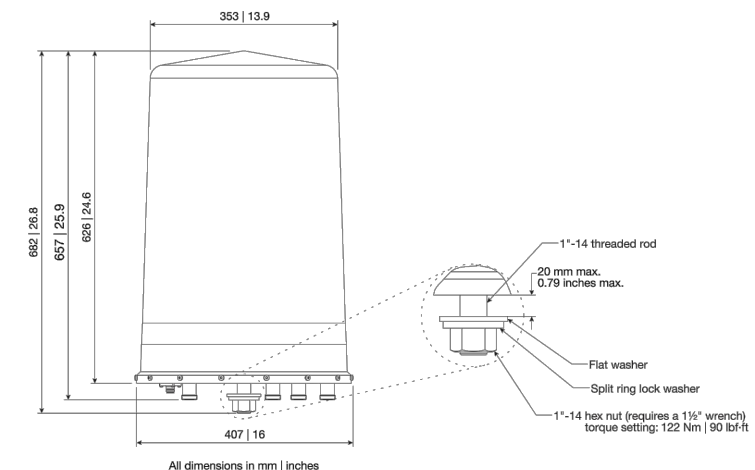
Kathrein USA Greenway Plaza II, 2400 Lakeside Blvd., Suite 650, Richardson TX 75082  
 Phone: 214.238.8800 Fax: 214.238.8801 Email: [info@kathrein.com](mailto:info@kathrein.com)

**Accessories**  
**General Information**

**KATHREIN**

**Antenna area:** Reflector screen: Aluminum. Radiator: Tin plated zinc. Cylindrical fiberglass radome: The max. radome diameter is 407 mm | 16 inches. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. Radome colour 80010745: Brown. 80010746: Grey.

**Mounting:** Designed to be mounted on top of a utility pole using a custom mounting bracket supplied by the customer.



998.5139 Subject to alteration.

Any previous data sheet issues have now become invalid.

All specifications are subject to change without notice. The latest specifications are available at [www.kathreinusa.com](http://www.kathreinusa.com)

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**CHICAGO SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS

**TERRA CONSULTING GROUP, LTD.**  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

NO.	DESCRIPTION	BY	DATE
		MPC	MPC
A	ISSUED FOR REVIEW	MPC	02/09/17
B	REVISED WITH AC/DC CONVERTER DETAIL	MPC	03/01/17
C	UPDATED PER UTILITY COORDINATION	LRB	03/28/17
D	REVISED PER CITY COMMENTS	MPC	06/13/17

LOC# 383984  
DT NAPERVILLE\_1\_SC\_3

1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

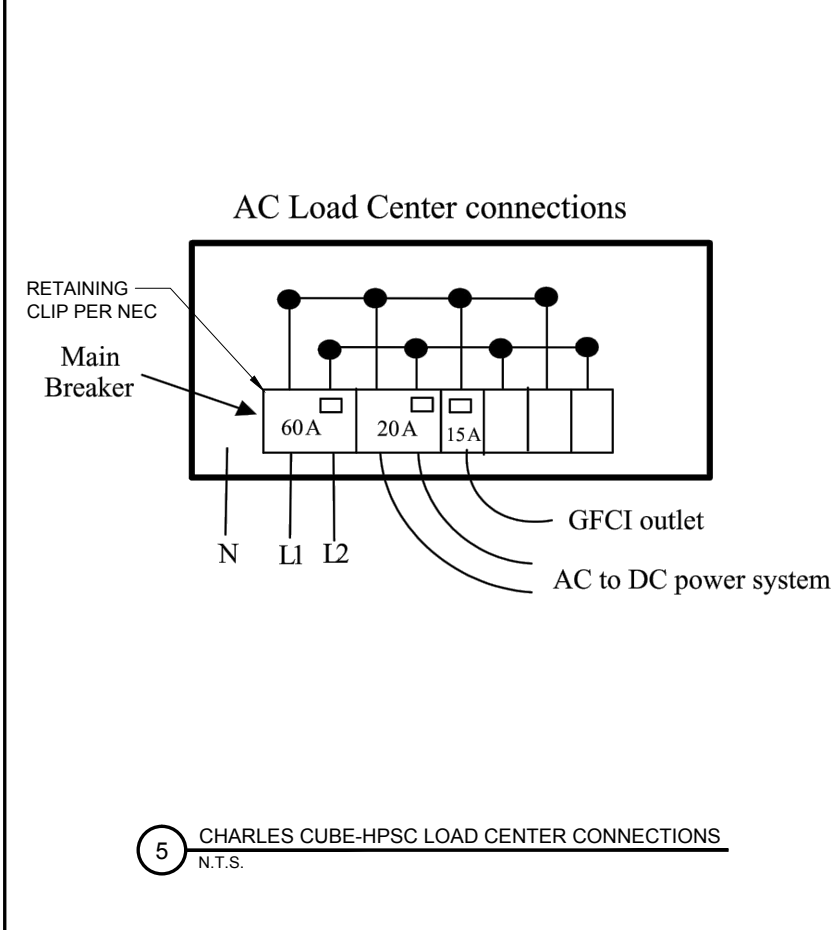
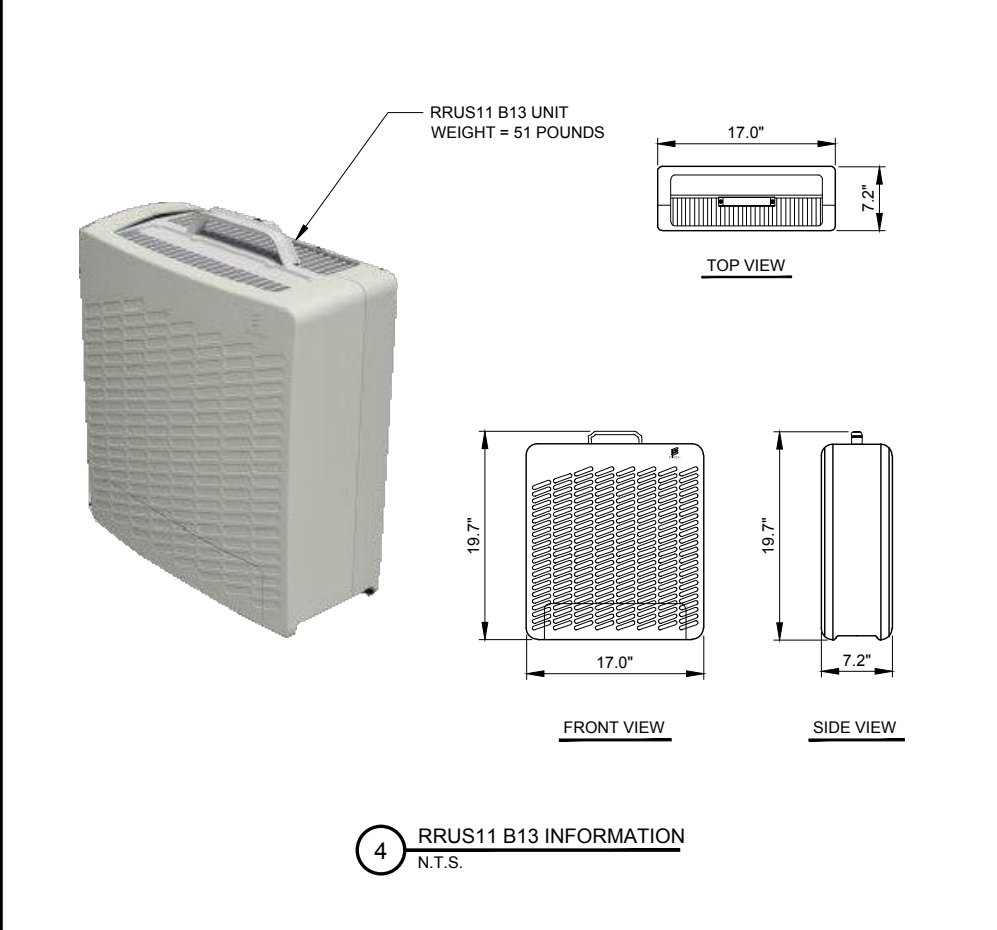
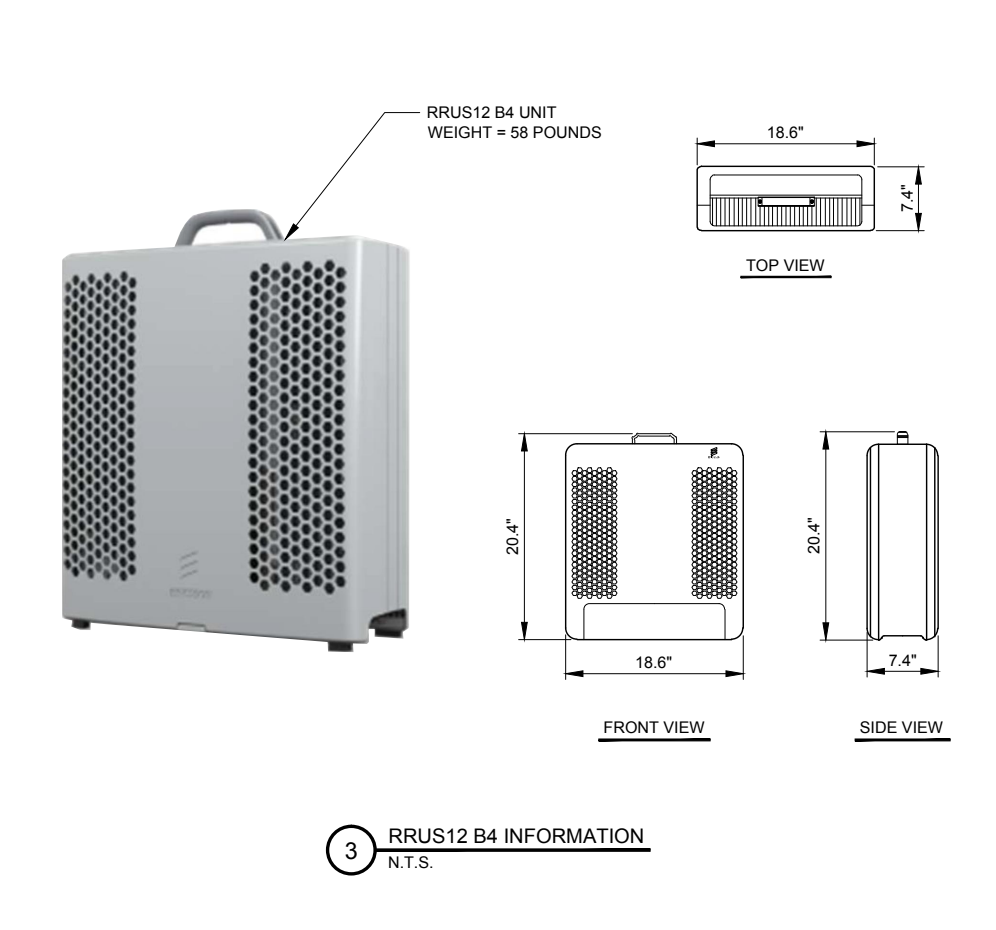
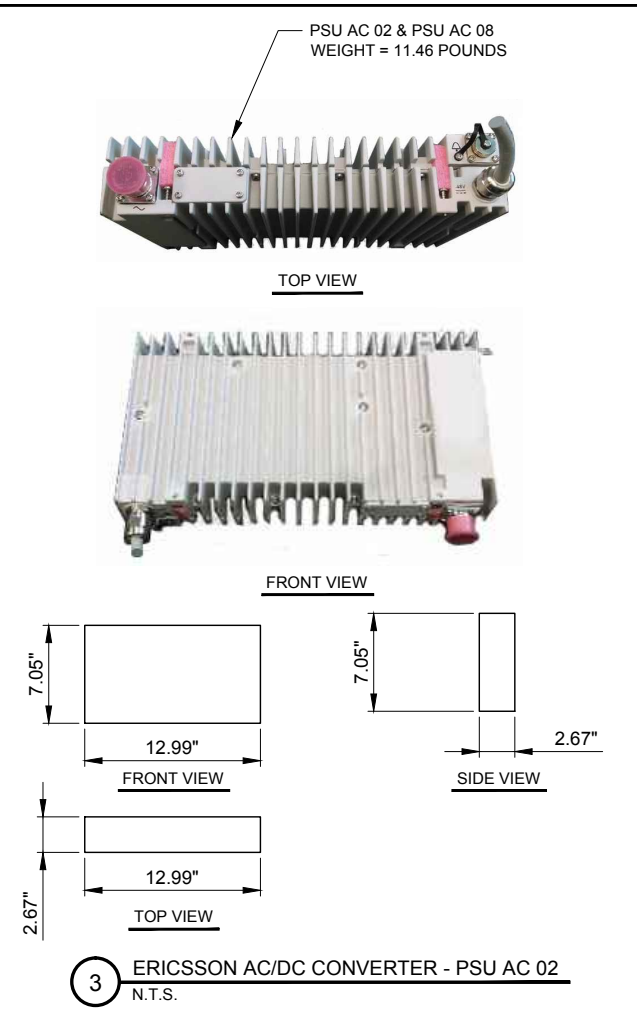
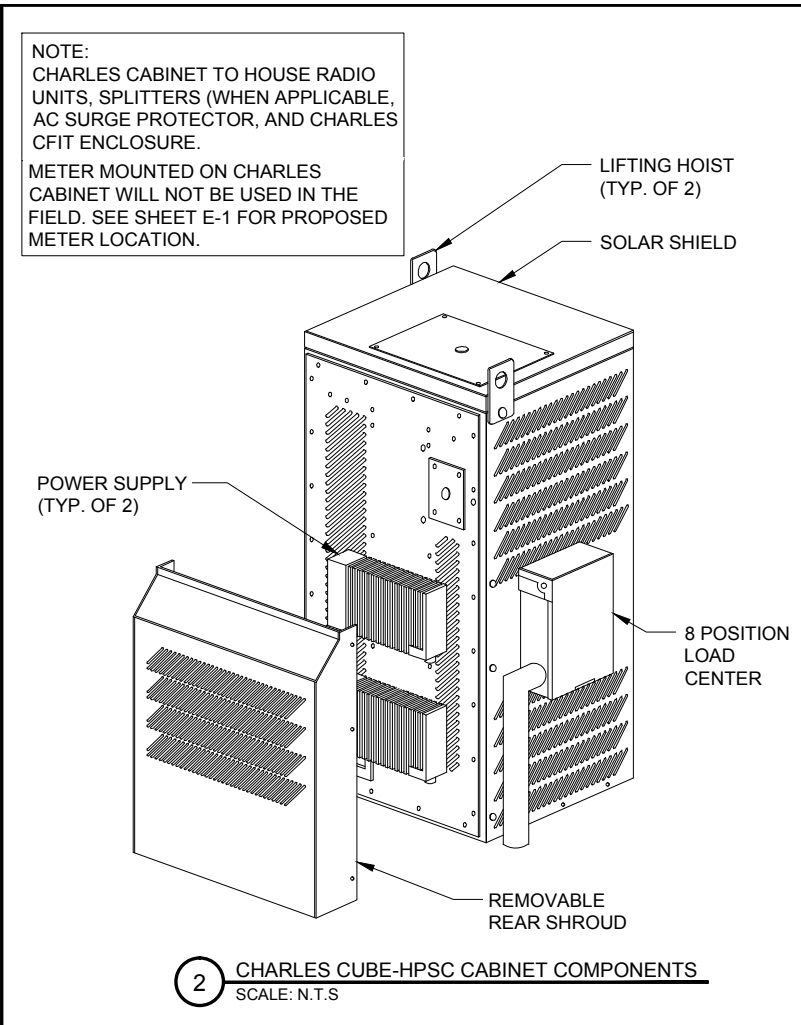
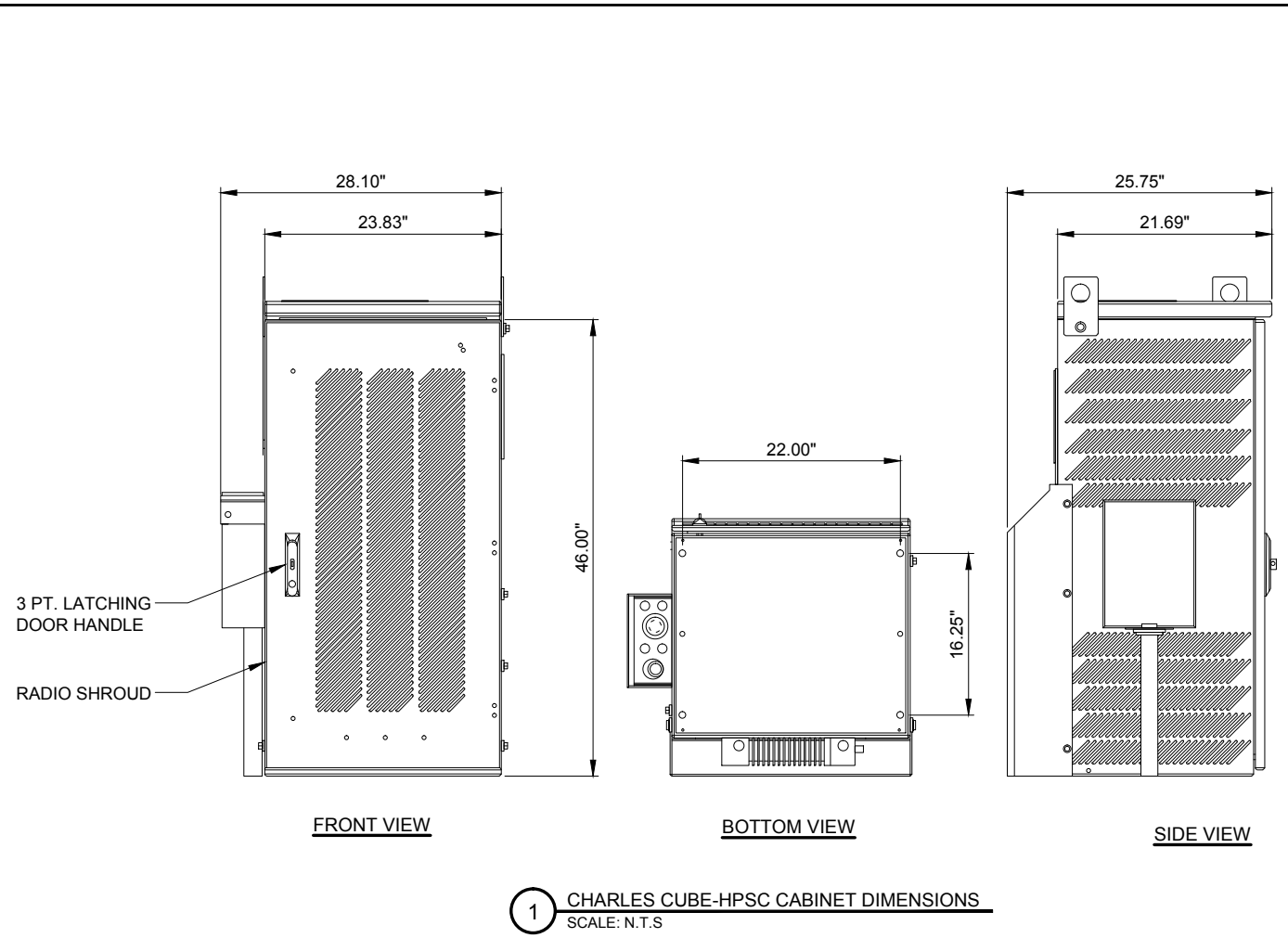
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SHEET TITLE  
ANTENNA DETAILS

SHEET NUMBER

**ANT-4**

06-13-17



**CHICAGO SMSA**  
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d/b/a VERIZON WIRELESS

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CONSULTING GROUP, LTD.  
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PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

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PROJECT #: 88-053

SHEET TITLE  
CABINET & RADIO UNIT DETAILS

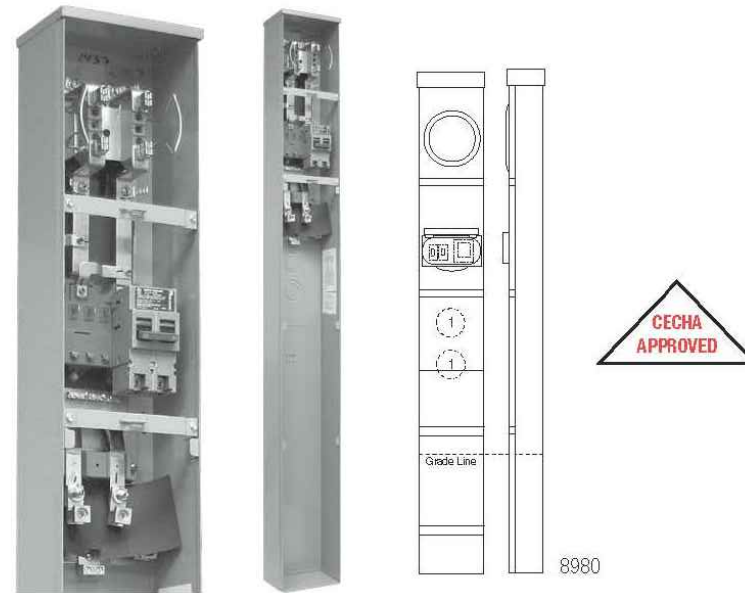
SHEET NUMBER  
**ANT-5**



**24**  
100-200 AMP  
METER MAIN  
PEDESTAL

## Meter Main Pedestal

100-200 Amp | 4 Terminal | Ringless



NU8980-O-200-KK

### 100-200 Amp — 4 Terminal — Ringless — Underground Service

Catalog Number	Hub	Connectors CU/AL		Bypass	Main Breaker		Dimensions			Knockouts
		Line	Load		10K	22K	D"	W"	H"	1
NU8980-O-KK	Blank	#6-350	CB*	Hom	—	—	6	9	79	2½
NU8980-O-KK-LP	Blank	#6-350	CB*	Hom	—	—	6	9	70	2½
NU8980-O-SF100-KK	Blank	#6-350	#6-1/0	Hom	Q2100	Q2100H	6	9	79	2½
NU8980-O-SF100-KK-LP	Blank	#6-350	#6-1/0	Hom	Q2100	Q2100H	6	9	70	2½
NU8980-O-200-KK	Blank	#6-350	1/0-300	Hom	UQFP	UQFPH	6	9	79	2½
NU8980-O-200-KK-LP	Blank	#6-350	1/0-300	Hom	UQFP	UQFPH	6	9	70	2½

#### Notes

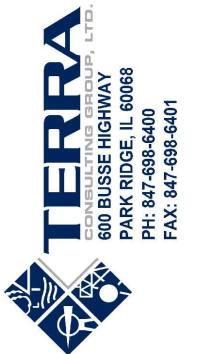
- \* **Field Installed Circuit Breaker Required.**
- **Series Wired Main:** For series wired main order wire kit **K4714** and **UQFPH-M** type circuit breaker.
- **Branch Circuit Breakers:** Branch interior accepts most manufacturers' small frame plug-in type circuit breakers (Milbank, GE, Siemens, Cutler-Hammer).
- **SF:** SF in catalog number has small frame plug-in type circuit breaker installed on middle stabs of 4-circuit interior. Only two single pole space available.
- **Fifth Terminal:** For field-installed 5th terminal order kit **5T8K2**. Mounts in 9 o'clock position only.
- **Extension Kit:** Available for low profile (-LP) units only. Order kit **K4694**.



Utility requirements for this equipment may vary. Always consult the serving utility for their requirements before ordering or installing equipment in this catalog.



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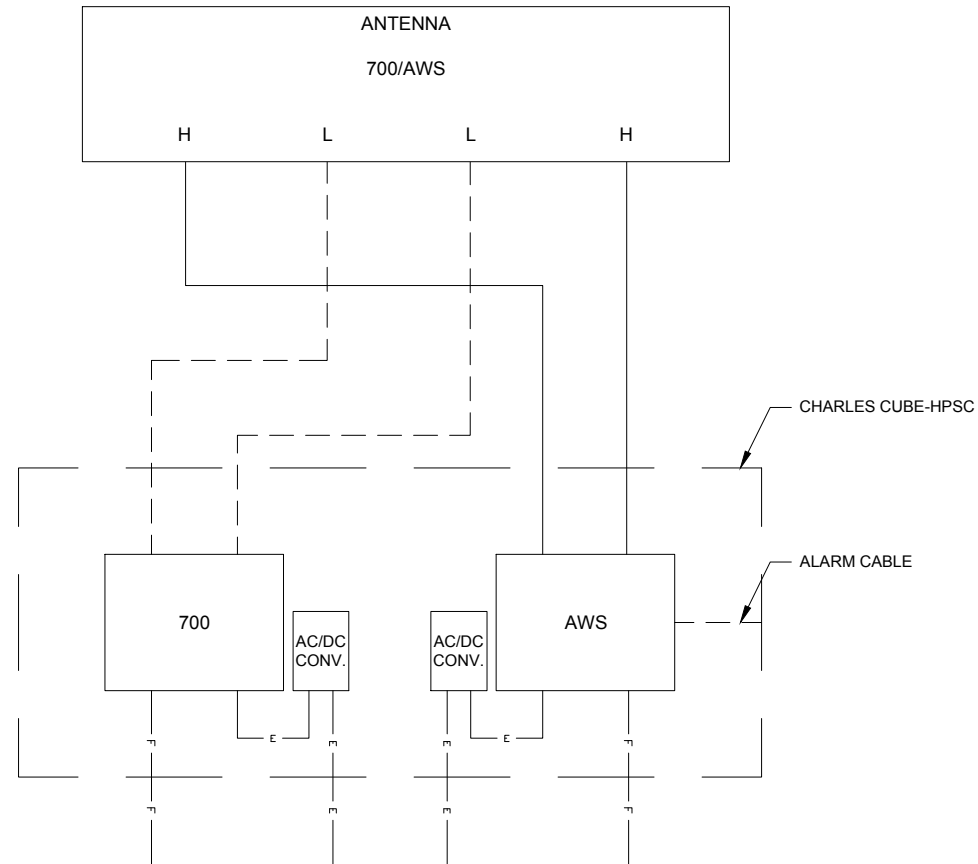
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PROJECT #:	88-053

SHEET TITLE  
METER PEDESTAL  
DETAILS

SHEET NUMBER  
**ANT-5A**



1 CABLE DIAGRAM  
SCALE: N.T.S

SECTOR	ALPHA	ALPHA	ALPHA	ALPHA	LTE RRUS	LTE RRUS	AWS RRUS	AWS RRUS
TAG COLOR	GREEN	GREEN	GREEN	GREEN	BLACK	BLACK	BLACK	BLACK
TECHNOLOGY	LTE	LTE	AWS	AWS	LTE	LTE	AWS	AWS
LINE IDENTITY	RXTX0	RXTX1	RXTX0	RXTX1	RXTX0	RXTX1	RXTX0	RXTX1

2 LINE IDENTITY CHART  
N.T.S.



OMNI ANTENNA



AWS RRUS



LTE RRUS

3 EXAMPLE IDENTIFICATION PHOTOS  
N.T.S.

**CHICAGO  
SMSA**  
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d/b/a VERIZON WIRELESS

**TERRA**  
CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

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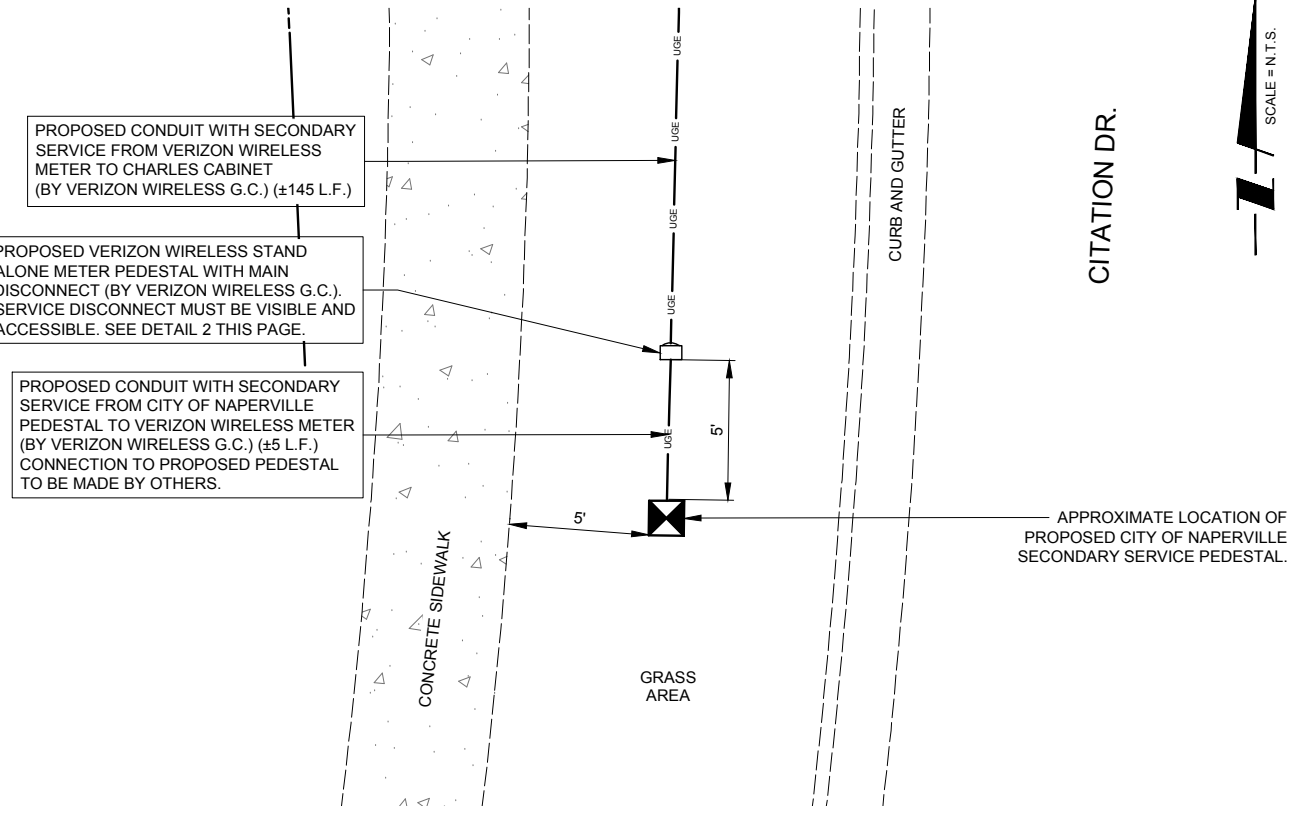
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NAPERVILLE, IL 60540

DRAWN BY:	MPC
CHECKED BY:	TAZ
DATE:	02/09/17
PROJECT #:	88-053

SHEET TITLE  
CABLE DIAGRAMS  
AND INFORMATION

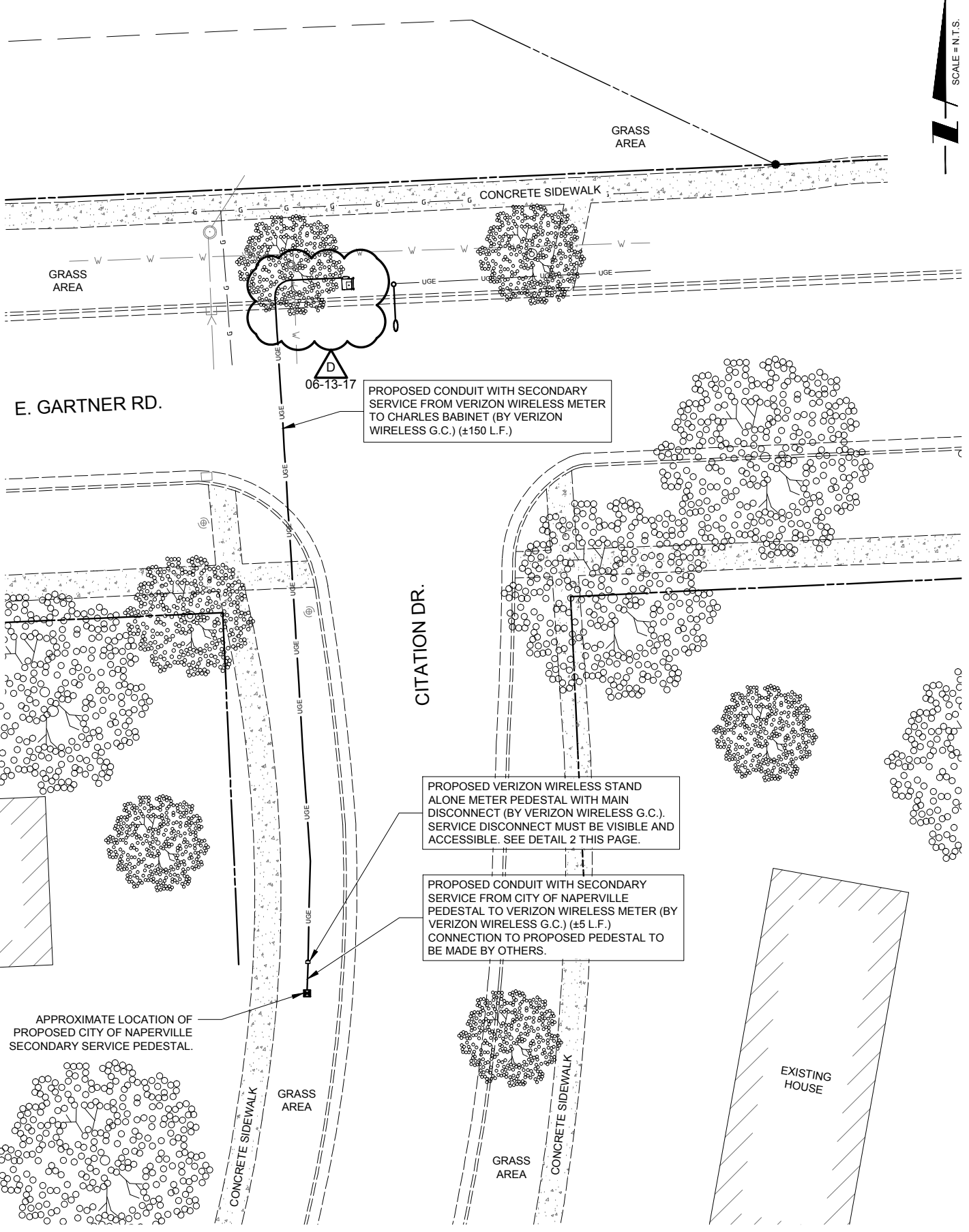
SHEET NUMBER  
**ANT-6**





**2 ENLARGED ELECTRICAL ROUTING PLAN**  
SCALE: N.T.S.

**NOTE:**  
 1. SITE PLAN MAY NOT CONTAIN ALL SUBSURFACE UTILITIES. VERIZON WIRELESS G.C. TO FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO CONSTRUCTION.  
 2. VERIZON WIRELESS G.C. TO CONTACT WILLIAM BOLSTER (630) 420-4122 OF THE CITY OF NAPERVILLE PRIOR TO CONSTRUCTION FOR PROPOSED UTILITY CROSSINGS OVER EXISTING WATERMAIN LINE.



**1 ELECTRICAL ROUTING PLAN**  
SCALE: N.T.S.

**CHICAGO SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS



NO.	DESCRIPTION	DATE	BY
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C	UPDATED PER UTILITY COORDINATION	03/28/17	LRB
D	REVISED PER CITY COMMENTS	06/13/17	MPC

**LOC# 383984**  
**DT NAPERVILLE\_1\_SC\_3**

1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

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CHECKED BY:	TAZ
DATE:	02/09/17
PROJECT #:	88-053

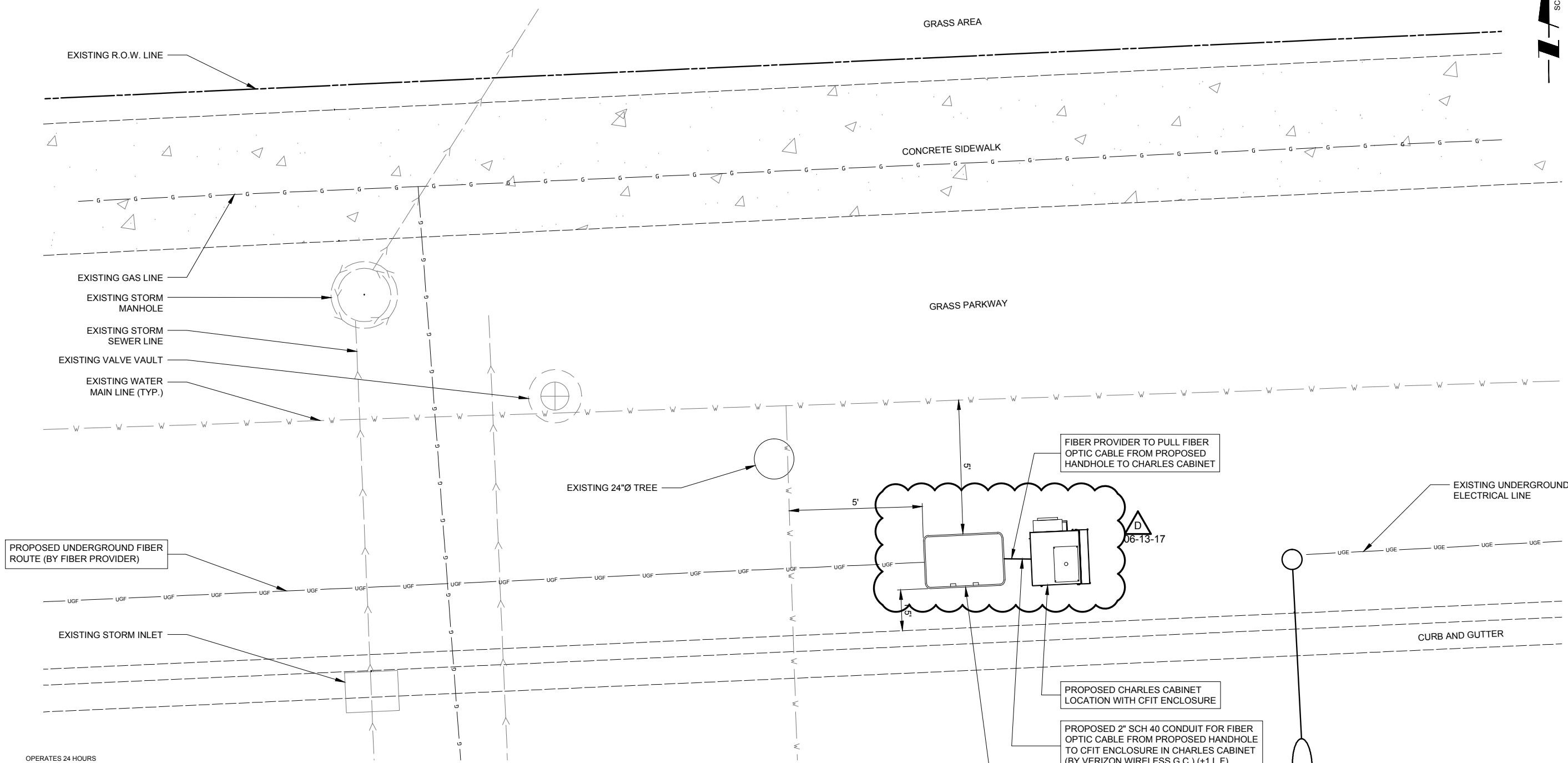
SHEET TITLE  
**ELECTRICAL ROUTING PLAN**

SHEET NUMBER  
**E-1**



**CHICAGO SMSA**  
 limited partnership  
 d/b/a VERIZON WIRELESS

**TERRA**  
 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
 PH: 847-698-6400  
 FAX: 847-698-6401



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LOC# 383984  
 DT NAPERVILLE\_1\_SC\_3

1125 E. GARTNER RD.  
 NAPERVILLE, IL 60540

DRAWN BY:	MPC
CHECKED BY:	TAZ
DATE:	02/09/17
PROJECT #:	88-053

SHEET TITLE  
**FIBER ROUTING PLAN**

SHEET NUMBER  
**E-2**

OPERATES 24 HOURS  
 A DAY 365 DAYS A YEAR

**Call Before You Dig**

**JULIE**  
 ILLINOIS ONE CALL SYSTEM

CALL JULIE TOLL FREE  
 1(800) 892-0123  
 48 HOURS BEFORE YOU DIG

**NOTE:**

- SITE PLAN MAY NOT CONTAIN ALL SUBSURFACE UTILITIES. VERIZON WIRELESS G.C. TO FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO CONSTRUCTION.
- FIBER ROUTE IS PRELIMINARY. PENDING FINAL FIBER SURVEY.

**1 FIBER ROUTING PLAN**  
 SCALE: N.T.S.



**UTILITY NOTES:**

**WORK INCLUDES:**

THESE NOTES AND ACCOMPANYING DRAWINGS COMPLEMENT THE PROVISIONS AND INSTALLATIONS BY THE ELECTRICAL CONTRACTOR, OF ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS VERIZON WIRELESS SITE AND SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. THE PROVISIONS, INSTALLATION, AND CONNECTION OF A GROUNDING ELECTRODE SYSTEM COMPLETE WITH SECONDARY GROUNDING, AND CONNECTIONS TO THE INCOMING ELECTRICAL DISTRIBUTION EQUIPMENT.
2. THE PROVISION AND INSTALLATION OF AN OVERHEAD ELECTRICAL SERVICE OR UNDERGROUND ELECTRICAL SERVICE AND ALL ASSOCIATED WIRE AND CONDUIT AS REQUIRED AND/OR INDICATED ON PLANS.
3. THE PROVISION, INSTALLATION OF CONDUIT AND CONNECTIONS FOR LOCAL FIBER SERVICE.
4. THE FURNISHING AND INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUITS, METER SOCKET, AND CONNECTIONS TO THE SERVICE EQUIPMENT.
5. TWO INCH (2") AND THREE INCH (3") DIAMETER PVC CONDUITS SCHEDULE 40.
6. ALL PVC CONDUITS SHOULD BE LEFT WITH NYLON PULL CORD FOR FUTURE USE.
7. EXCAVATION, TRENCHING, AND BACKFILLING FOR CONDUIT(S), CABLE(S), AND EXTERNAL GROUNDING SYSTEM.

**CODES, PERMITS, AND FEES:**

1. ALL REQUIRED PERMITS, LICENSES, INSPECTIONS AND APPROVALS SHALL BE SECURED AND ALL FEES FOR SAME PAID BY CONTRACTOR.
2. THE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES: STATE, LOCAL AND NATIONAL, AND THE DESIGN, PERFORMANCE CHARACTERISTICS AND METHODS OF CONSTRUCTION OF ALL ITEMS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF THE VARIOUS APPLICABLE STANDARD SPECIFICATIONS OF THE FOLLOWING AUTHORITIES:

N.E.C.	NATIONAL ELECTRIC CODE
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE
I.E.E.E.	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
A.S.T.M.	AMERICAN SOCIETY FOR TESTING MATERIALS
N.E.M.A.	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
U.L.	UNDERWRITERS LABORATORIES, INC.
N.F.P.A.	NATIONAL FIRE PROTECTION ASSOCIATION

**RACEWAYS AND WIRING:**

1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER.
2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION.
4. PULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING. PROVIDE JUNCTION AND PULLBOXES FOR CONDUIT RUNS WITH MORE THAN (360) DEGREES OF BENDS.
5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
6. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.

**GENERAL NOTES:**

SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO ENGINEER BEFORE SUBMITTING BID. ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS.

**COORDINATION WITH UTILITY COMPANY:**

THE ELECTRICAL CONTRACTOR SHALL COORDINATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UTILITY COMPANY FOR A COMPLETE OPERATIONS SYSTEM, INCLUDING TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS, IF REQUIRED, METER SOCKETS, PRIMARY CABLE RACEWAY REQUIREMENTS, SECONDARY SERVICE, ETC. PRIOR TO SUBMITTING BID TO INCLUDE ALL LABOR AND MATERIALS. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN THE BID ANY OPTIONAL OR EXCESS FACILITY CHARGES ASSOCIATED WITH PROVIDING ELECTRICAL SERVICE FROM LOCAL UTILITY COMPANY. VERIFY BEFORE BIDDING TO INCLUDE ALL COSTS. THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE LOCAL UTILITY COMPANY PRIOR TO SUBMITTING BID. ADJUST A.I.C. RATINGS OF ALL OVER CURRENT PROTECTION DEVICES IN DISTRIBUTION EQUIPMENT AS REQUIRED TO COORDINATE WITH AVAILABLE FAULT CURRENT FROM LOCAL UTILITY COMPANY. ALL GROUNDING RODS PROVIDED BY THE POWER OR TELEPHONE UTILITY COMPANIES MUST BE TIED INTO THE MAIN EXTERNAL GROUND RING.

**UTILITY CONTACTS:**

POWER: CITY OF NAPERVILLE  
MARCOS VALENCIA  
(630) 420-6653

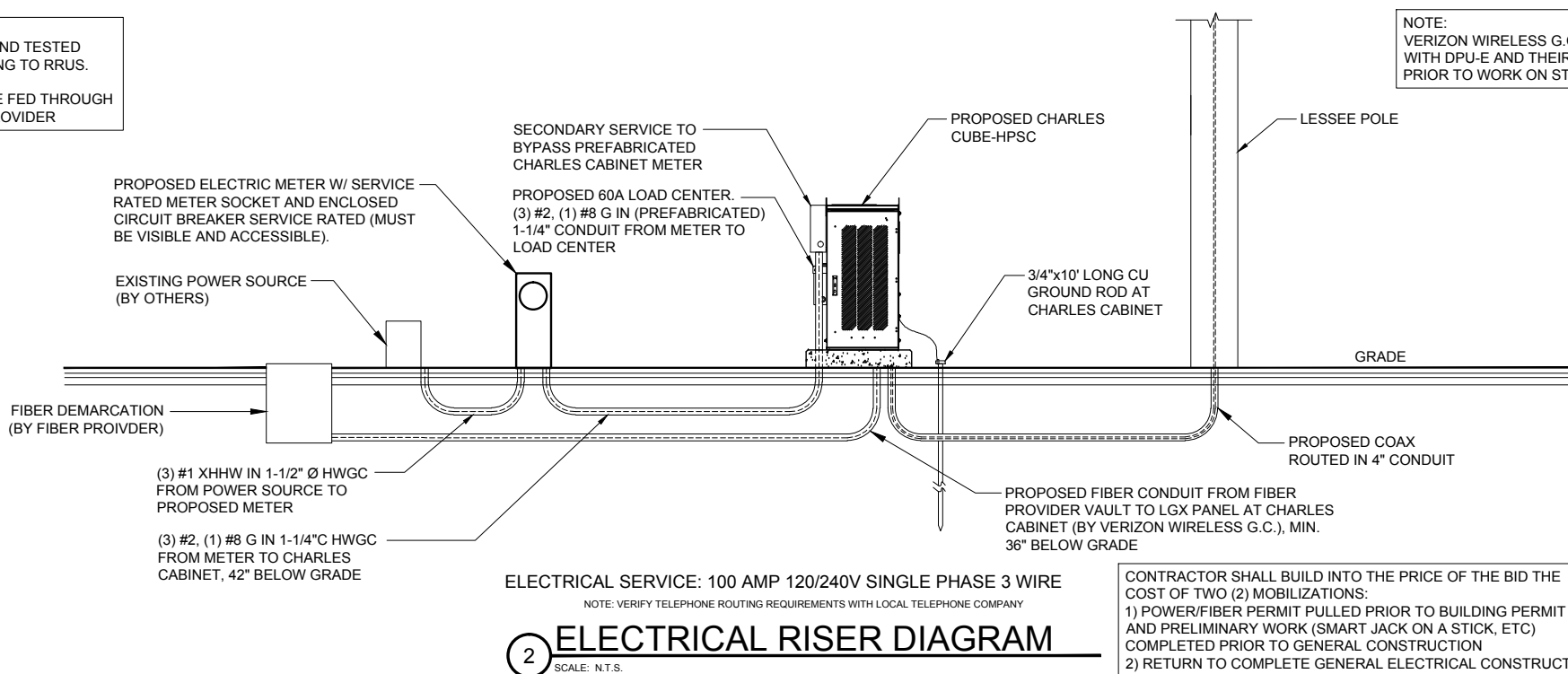
FIBER: WOW  
BILL SCHENK  
(630) 536-3123

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER COMPANY FOR ENTRY INTO FENCED AREA BY EITHER MAILING A KEY TO A SLAVE LOCKED CHAIN AT THE FENCE GATE OR CALLING AND LEAVING A COMBINATION.

FOR CONTINUATION AND CONNECTION OF ELECTRIC AND TELEPHONE SERVICE. COORDINATE WITH ELECTRIC AND PHONE COMPANY

**NOTE:**

1. FIBER TO BE CLEAN AND TESTED PRIOR TO CONNECTING TO RRUS.
2. FIBER STRANDS TO BE FED THROUGH CONDUIT BY FIBER PROVIDER



ELECTRICAL SERVICE: 100 AMP 120/240V SINGLE PHASE 3 WIRE

NOTE: VERIFY TELEPHONE ROUTING REQUIREMENTS WITH LOCAL TELEPHONE COMPANY

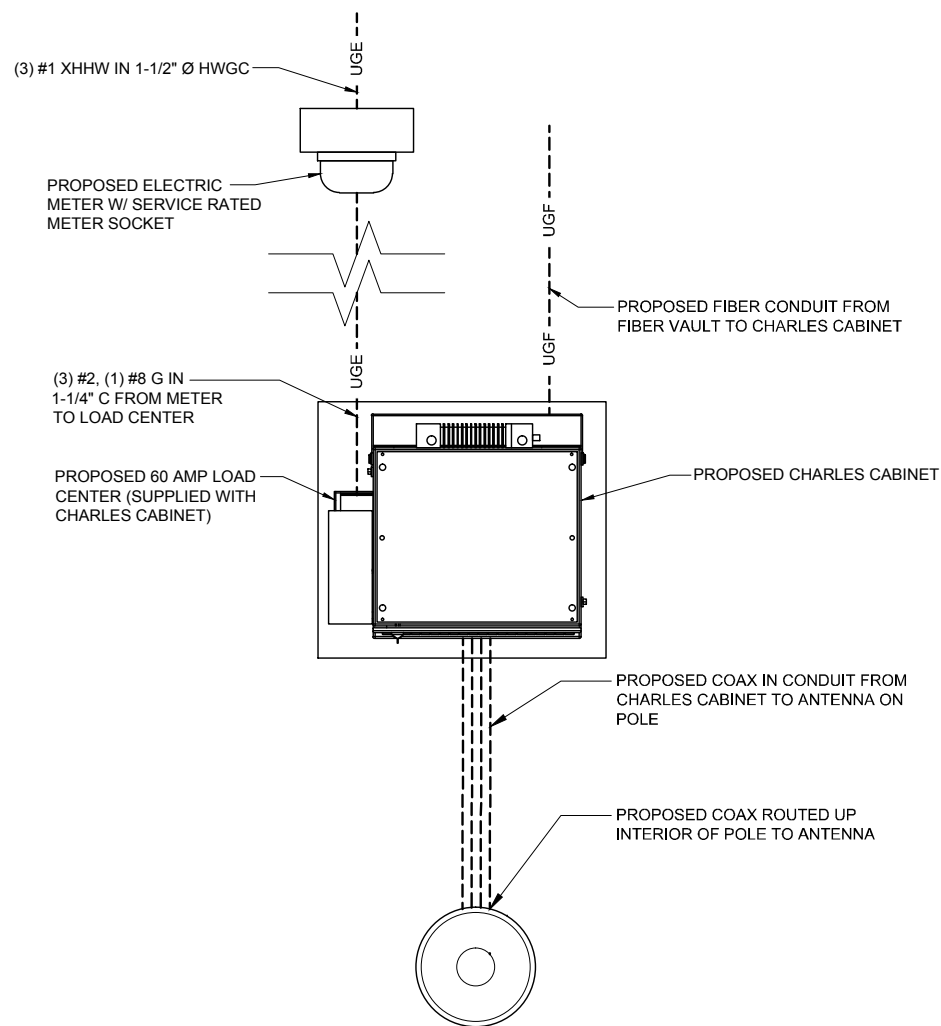
**2 ELECTRICAL RISER DIAGRAM**  
SCALE: N.T.S.

CONTRACTOR SHALL BUILD INTO THE PRICE OF THE BID THE COST OF TWO (2) MOBILIZATIONS:  
1) POWER/FIBER PERMIT PULLED PRIOR TO BUILDING PERMIT AND PRELIMINARY WORK (SMART JACK ON A STICK, ETC) COMPLETED PRIOR TO GENERAL CONSTRUCTION  
2) RETURN TO COMPLETE GENERAL ELECTRICAL CONSTRUCTION

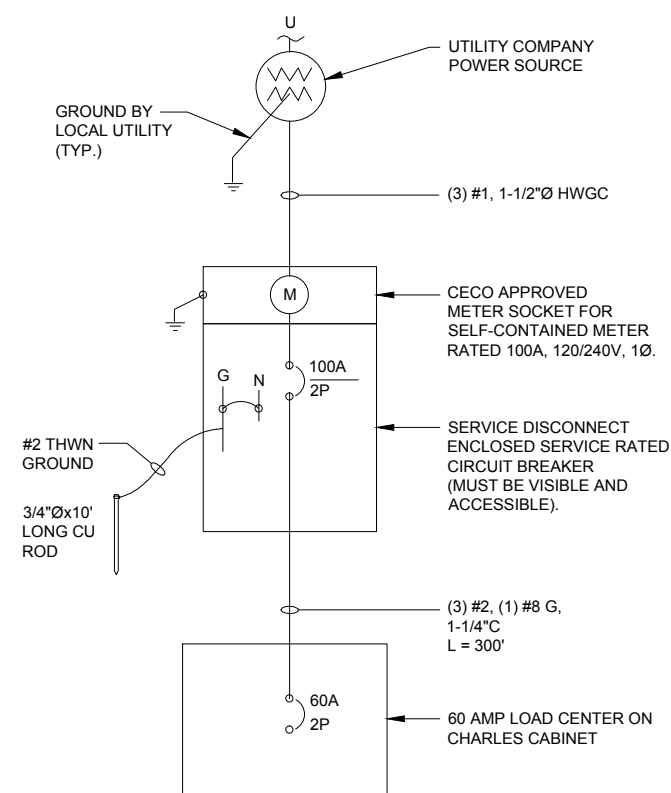
NOTE:  
VERIZON WIRELESS G.C. TO COORDINATE WITH DPU-E AND THEIR UNION CONTACT PRIOR TO WORK ON STREET LIGHT.

**CHICAGO SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS

**TERRA**  
CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401



**1 UTILITY ROUTING PLAN (UNDERGROUND)**  
SCALE: N.T.S.



**3 SINGLE LINE DIAGRAM**  
N.T.S.

NO.	DESCRIPTION	DATE	BY			
			MPC	LRB	MPC	
A	ISSUED FOR REVIEW	02/09/17				
B	REVISED WITH AC/DC CONVERTER DETAIL	03/01/17				
C	UPDATED PER UTILITY COORDINATION	03/28/17				
D	REVISED PER CITY COMMENTS	06/13/17				

**LOC# 383984**  
**DT NAPERVILLE\_1\_SC\_3**  
1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY:	MPC
CHECKED BY:	TAZ
DATE:	02/09/17
PROJECT #:	88-053

SHEET TITLE  
**UTILITY ROUTING DETAILS**

SHEET NUMBER  
**E-3**

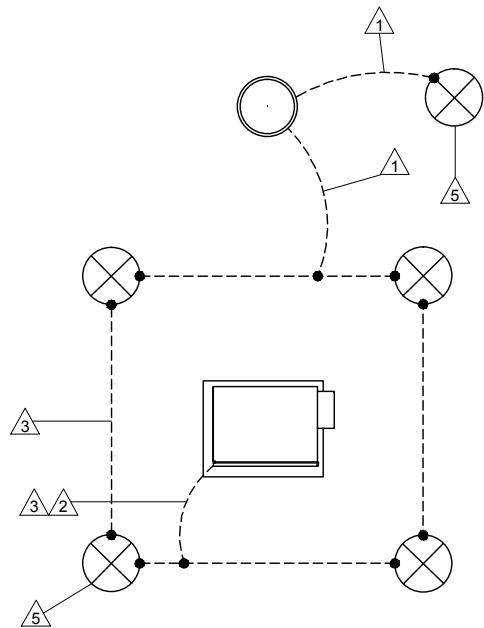
**GROUNDING ELECTRODE SYSTEM NOTES:**

1. ALL GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC PROCESS CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, ETC. ALL CABLE TO GROUND RODS, GROUND RODS SPLICES AND LIGHTNING PROTECTION SYSTEM AS INDICATED. GROUND FOUNDATION ONLY AS INDICATED BY PM. ALL MATERIALS USED (MOLDS, WELDING, METAL, TOOLS, ETC.) SHALL BE BY EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. GROUND CONDUCTOR SHALL HAVE A MINIMUM 24" BENDING RADIUS.
2. ALL EXOTHERMIC CONNECTIONS ON GALVANIZED SURFACES SHALL BE CLEANED THOROUGHLY AND COLORED TO MATCH SURFACE WITH (2) TWO COATS OF SHERWIN-WILLIAMS GALVITE (WHITE) PAINT B50W3 (OR EQUAL) OR SHERWIN- WILLIAMS SILVERBRITE (ALUMINUM) B59S11 (OR EQUAL).
3. ALL ELECTRICAL & MECHANICAL GROUND CONNECTIONS SHALL HAVE ANTI-OXIDANT COMPOUND APPLIED TO CONNECTION

LEGEND	
SYMBOL	DESCRIPTION
⊗	5/8" DIAMETER X 10'-0" LONG COPPER CLAD GROUND ROD (HARGER-5810)
○	5/8" DIAMETER X 10'-0" LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL
----	#2 AWG T1ND SOLID BARE COPPER WIRE MINIMUM 42" BELOW GRADE (HARGER-L2)
---UE---	UNDERGROUND ELECTRICAL
---UT---	UNDERGROUND TELEPHONE
---F---	UNDERGROUND FIBER
●	EXOTHERMIC WELD
—OE—	OVERHEAD ELECTRICAL SERVICE
—OT—	OVERHEAD TELEPHONE SERVICE

6. UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR SHALL CONFIRM THAT ALL WORK IS IN ACCORDANCE WITH THE RULES OF THE LOCAL UTILITY COMPANY BEFORE SUBMITTING THE BID. THE CONTRACTOR SHALL CHECK WITH THE UTILITY COMPANIES SUPPLYING SERVICE TO THIS PROJECT AND SHALL DETERMINE FROM THEM ALL EQUIPMENT AND CHARGES WHICH THEY WILL REQUIRE AND SHALL INCLUDE THE COST IN THE BID.
7. GROUND TEST: GROUND TESTS SHALL BE PERFORMED AS REQUIRED BY LESSEE STANDARD PROCEDURES. GROUND GRID RESISTANCE SHALL NOT EXCEED 5 OHMS.
8. CONTRACTOR SHALL SUBMIT THE GROUND RESISTANCE TEST REPORT AS FOLLOWS:
  1. ONE (1) COPY TO OWNER REPRESENTATIVE
  2. ONE (1) COPY TO ENGINEER
  3. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

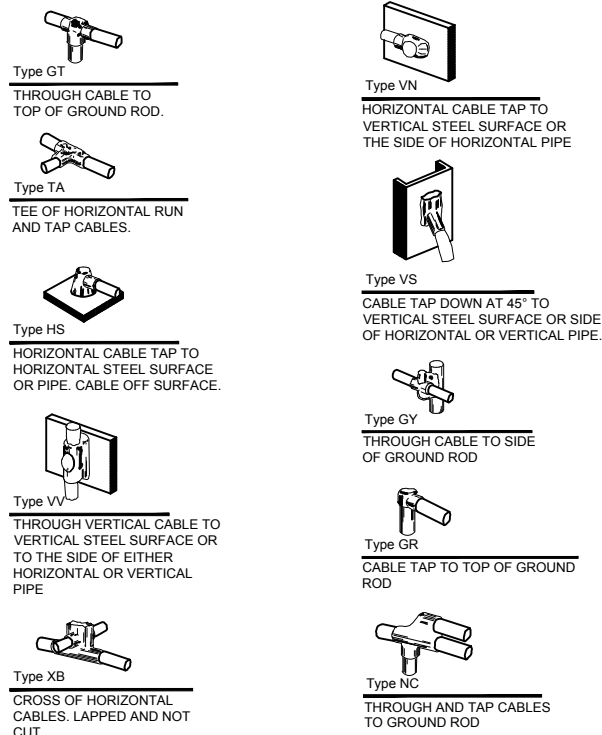
NOTE:  
ELECTRICAL CONTRACTOR TO INSTALL GROUND ROD AS BEST FIT. IN SOME INSTANCES, SITE CONDITIONS MAY DICTATE GROUND ROD PLACEMENT. DETAIL IS FOR SCHEMATIC PURPOSES ONLY.



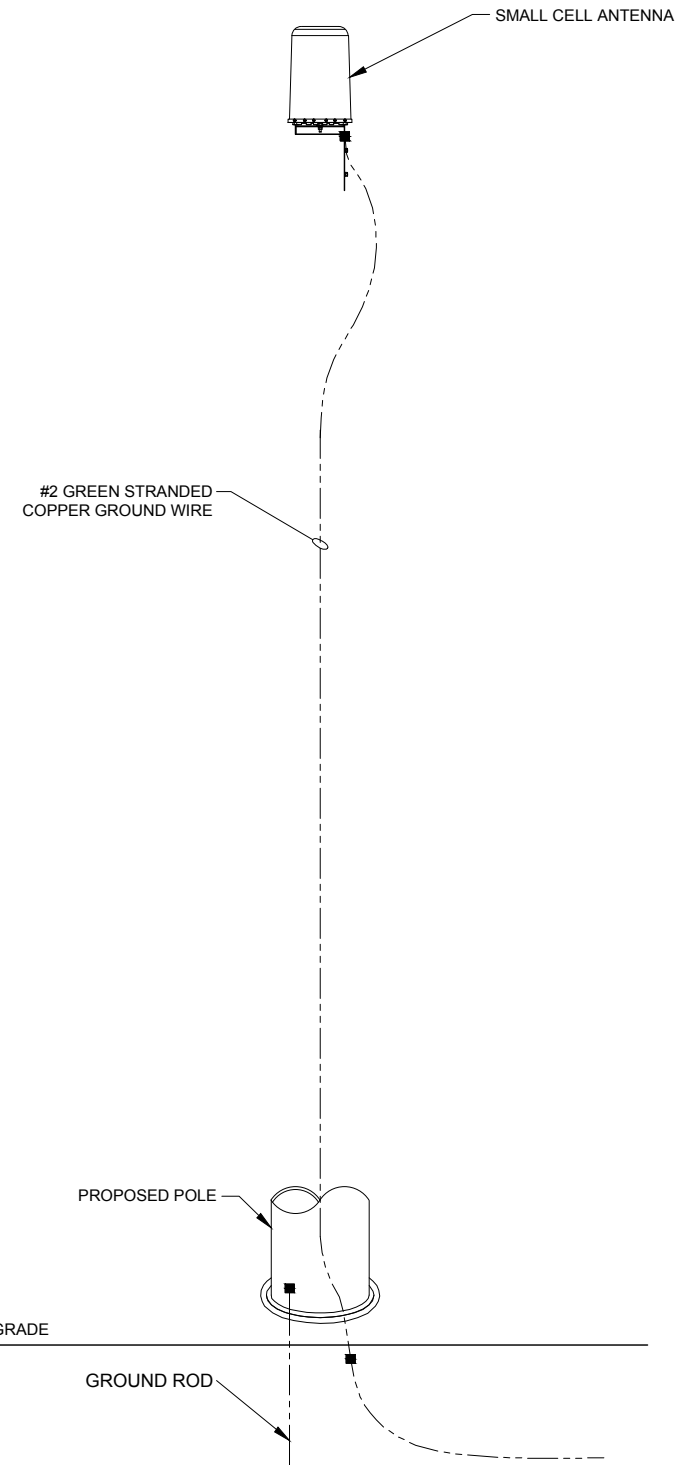
1 TYPICAL NODE GROUNDING PLAN  
SCALE: 1" = 2'

**TYPICAL KEYED GROUNDING NOTES**

- 1 #2 GREEN STRANDED COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS
- 2 ENCLOSURE GROUND (TYP.) IN 1/2" DIAMETER SCHEDULE 40 PVC CONDUIT
- 3 #2 AWG T1ND SOLID COPPER CONDUCTOR 42" BELOW GRADE (SEE DETAIL, SHEET E-3)
- 4 ELECTRIC METER AND ELECTRIC SERVICE GROUNDING, COORDINATE ALTERNATE WITH PM
- 5 5/8" DIAMETER X 8'-0" LONG COPPER CLAD GROUND ROD (HARGER-5810) WITH EXOTHERMIC CONNECTION



2 EXOTHERMIC WELD DETAILS  
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL



3 TYPICAL GROUNDING SCHEMATIC  
N.T.S.



**CHICAGO SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS



NO.	DESCRIPTION	DATE	BY	REVISIONS		
				ISSUED FOR REVIEW	REVISED WITH AC/DC CONVERTER DETAIL	UPDATED PER UTILITY COORDINATION
A		02/09/17	MPC			
B		03/01/17	MPC			
C		03/28/17	LRB			
D		06/13/17	MPC			

LOC# 383984  
DT NAPERVILLE\_1\_SC\_3  
1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY:	MPC
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DATE:	02/09/17
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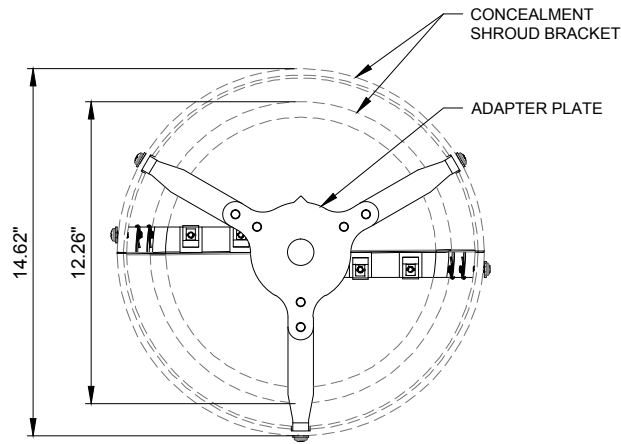
SHEET TITLE  
GROUNDING PLAN AND DETAILS

SHEET NUMBER

**E-4**

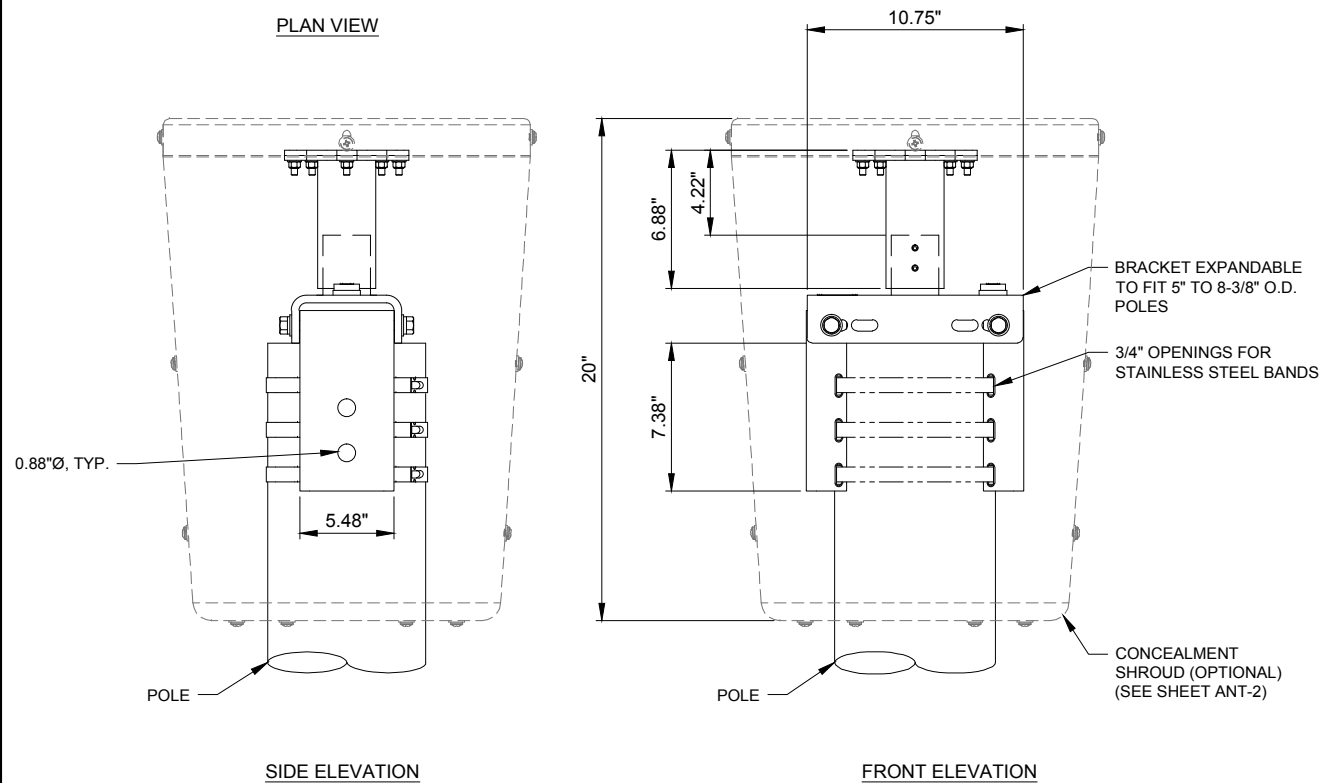
NOTE:  
IF KATHREIN CANTENNA MOUNTING PARTS DO MATCH VALMONT POLE, PARTS TO BE SHERWIN-WILLIAMS INDUSTRIAL URETHANE ALKYD SILVER BRITE B59S11, OR EQUIVALENT

KATHREIN CANTENNA SLEEVE MOUNT PART INDEX					
POLE COLOR	BROWN	BLACK	SILVER	GALVANIZED	GRAY
PART NUMBER	002769-A	002706-A	002770-A	002948-A	003005-A
UNIVERSAL POLE-TOP MOUNTING BRACKET					
POLE COLOR	BROWN	BLACK	SILVER	GALVANIZED	GRAY
PART NUMBER	002609-A	002767-A	002768-A	002946-A	003007-A
POLE-TOP CABLE CONCEALMENT SHROUD					
POLE COLOR	BROWN	BLACK	SILVER	GALVANIZED	GRAY
PART NUMBER	002774-A	002555-A	002775-A	002950-A	003008-A



SPECIFICATIONS	
SPECIFICATION	MEASUREMENT
BRACKET HEIGHT	12-3/4" (324 mm)
BRACKET WIDTH (CLAMP)	6.65" (169 mm)
BRACKET LENGTH	10-3/4" (273 mm)
BRACKET WEIGHT	22 LBS (10 kg)
HEIGHT WITH SHROUD	20" (508 mm)
SHROUD DIAMETER	14-3/8" (365 mm)
WEIGHT OF SHROUD	6.0 LBS (2.7 kg)

PLAN VIEW



SIDE ELEVATION

FRONT ELEVATION

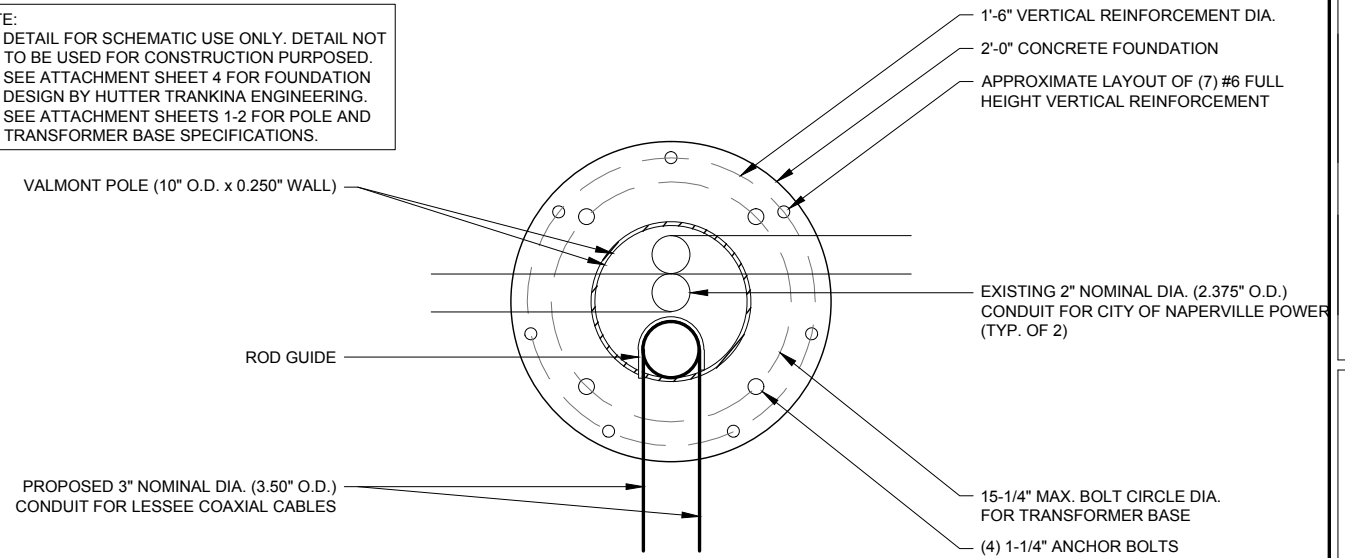
NOTE:  
G.C. TO COORDINATE WITH MANUFACTURER PRIOR TO ORDERING PARTS

MANUFACTURER - CONCEALFAB

DESCRIPTION - UNIVERSAL POLE-TOP MOUNTING SYSTEM

1 ANTENNA MOUNTING DETAILS - UNIVERSAL POLE-TOP MOUNT  
SCALE: N.T.S.

NOTE:  
1. DETAIL FOR SCHEMATIC USE ONLY. DETAIL NOT TO BE USED FOR CONSTRUCTION PURPOSES.  
2. SEE ATTACHMENT SHEET 4 FOR FOUNDATION DESIGN BY HUTTER TRANKINA ENGINEERING.  
3. SEE ATTACHMENT SHEETS 1-2 FOR POLE AND TRANSFORMER BASE SPECIFICATIONS.



NAPERVILLE CONDUIT (O.D.)	=	2.375" x 2
VERIZON WIRELESS CONDUIT (O.D.)	=	3.50"
TOTAL CONDUIT DIAMETER	=	8.25"
INTERIOR POLE DIAMETER	=	9.50"

\*PROPOSED VERIZON WIRELESS CONDUIT AND NAPERVILLE ELECTRICAL CONDUITS WILL ALL FIT AT THE BASE OF THE PROPOSED VALMONT POLE.

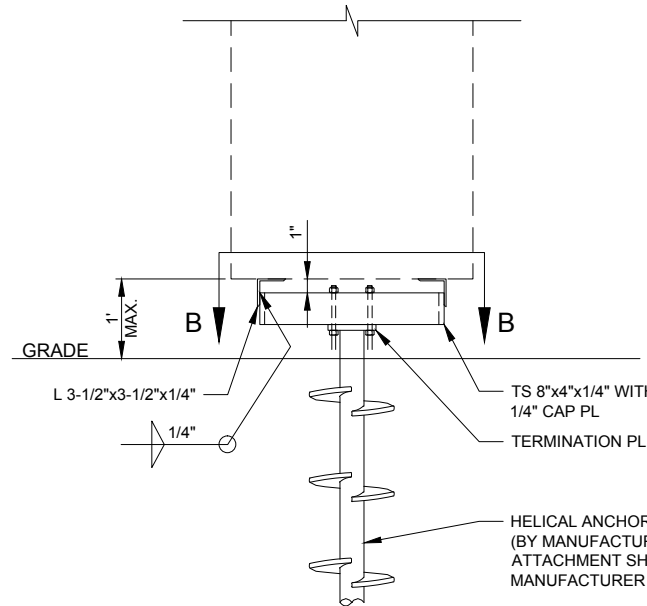
3 CONDUIT FOUNDATION ENTRANCE DETAIL  
SCALE: 2" = 1'

FACTORED BASE REACTIONS

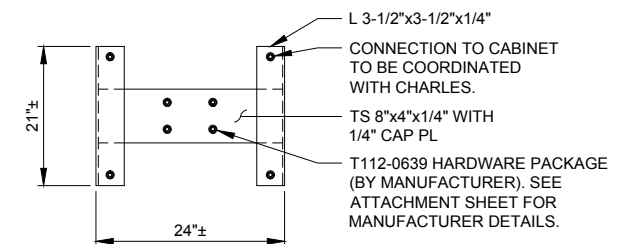
LOAD	MAGNITUDE
AXIAL	400 lbs
SHEAR	290 lbs
BASE MOMENT	865 ft-lbs

NOTES

- SEE ATTACHMENT SHEET 5 FOR DESIGN.
- VERIZON WIRELESS G.C. TO ORDER HELICAL FOUNDATION SYSTEM BASED ON BASE REACTIONS PROVIDED BY HUTTER TRANKINA ENGINEERING, INC.
- BASE REACTIONS PROVIDED BY HUTTER TRANKINA ENGINEERING, INC. ARE SPECIFIC FOR CHARLES CUBE-HPSC ATTACHED TO DRAWING SET ONLY.
- SEE STRUCTURAL ANALYSIS PERFORMED BY HUBBELL LIGHTING SYSTEMS FOR CALCULATIONS AND MORE DETAILS



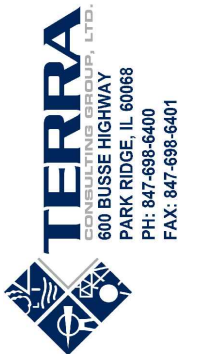
A ELEVATION  
SCALE: N.T.S.



B PLAN VIEW  
SCALE: N.T.S.

2 CHARLES CABINET FOUNDATION DETAIL  
SCALE: N.T.S.

**CHICAGO**  
**SMSA**  
limited partnership  
d/b/a VERIZON WIRELESS



NO.	DESCRIPTION	DATE	BY	REVISIONS
A	ISSUED FOR REVIEW	02/09/17	MPC	
B	REVISED WITH AC/DC CONVERTER DETAIL	03/01/17	MPC	
C	UPDATED PER UTILITY COORDINATION	03/28/17	LRB	
D	REVISED PER CITY COMMENTS	06/13/17	MPC	

LOC# 383984  
DT NAPERVILLE\_1\_SC\_3

1125 E. GARTNER RD.  
NAPERVILLE, IL 60540

DRAWN BY:	MPC
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DATE:	02/09/17
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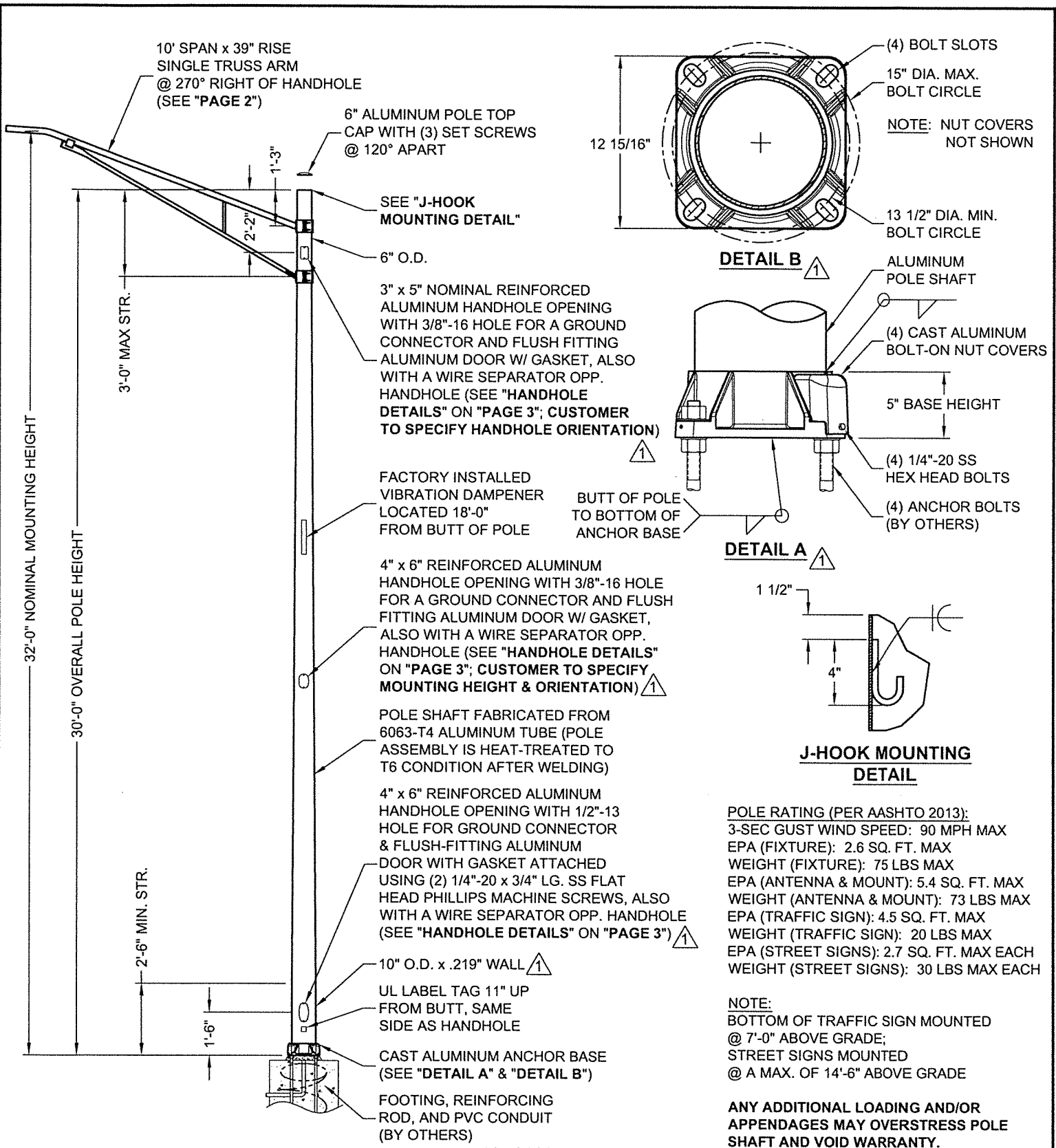
SHEET TITLE  
STRUCTURAL  
DETAILS

SHEET NUMBER

**S-1**







**POLE RATING (PER AASHTO 2013):**  
 3-SEC GUST WIND SPEED: 90 MPH MAX  
 EPA (FIXTURE): 2.6 SQ. FT. MAX  
 WEIGHT (FIXTURE): 75 LBS MAX  
 EPA (ANTENNA & MOUNT): 5.4 SQ. FT. MAX  
 WEIGHT (ANTENNA & MOUNT): 73 LBS MAX  
 EPA (TRAFFIC SIGN): 4.5 SQ. FT. MAX  
 WEIGHT (TRAFFIC SIGN): 20 LBS MAX  
 EPA (STREET SIGNS): 2.7 SQ. FT. MAX EACH  
 WEIGHT (STREET SIGNS): 30 LBS MAX EACH

**NOTE:**  
 BOTTOM OF TRAFFIC SIGN MOUNTED @ 7'-0" ABOVE GRADE;  
 STREET SIGNS MOUNTED @ A MAX. OF 14'-6" ABOVE GRADE

**ANY ADDITIONAL LOADING AND/OR APPENDAGES MAY OVERSTRESS POLE SHAFT AND VOID WARRANTY.**

DO NOT SCALE



Valmont Industries, Inc. Structures Division  
 20805 Eaton Ave Farmington, Minnesota 55024-7932  
 Phone: (651) 463-8990 (800) 899-7577 Fax: (651) 463-3349

**CLASSIFIED**  
**LUMINAIRE POLE**  
 WITH RESPECT TO ELECTRICAL HAZARDS ONLY NOT FOR MECHANICAL STRENGTH OR WIND LOADING 30 UM - SUITABLE FOR WET LOCATIONS

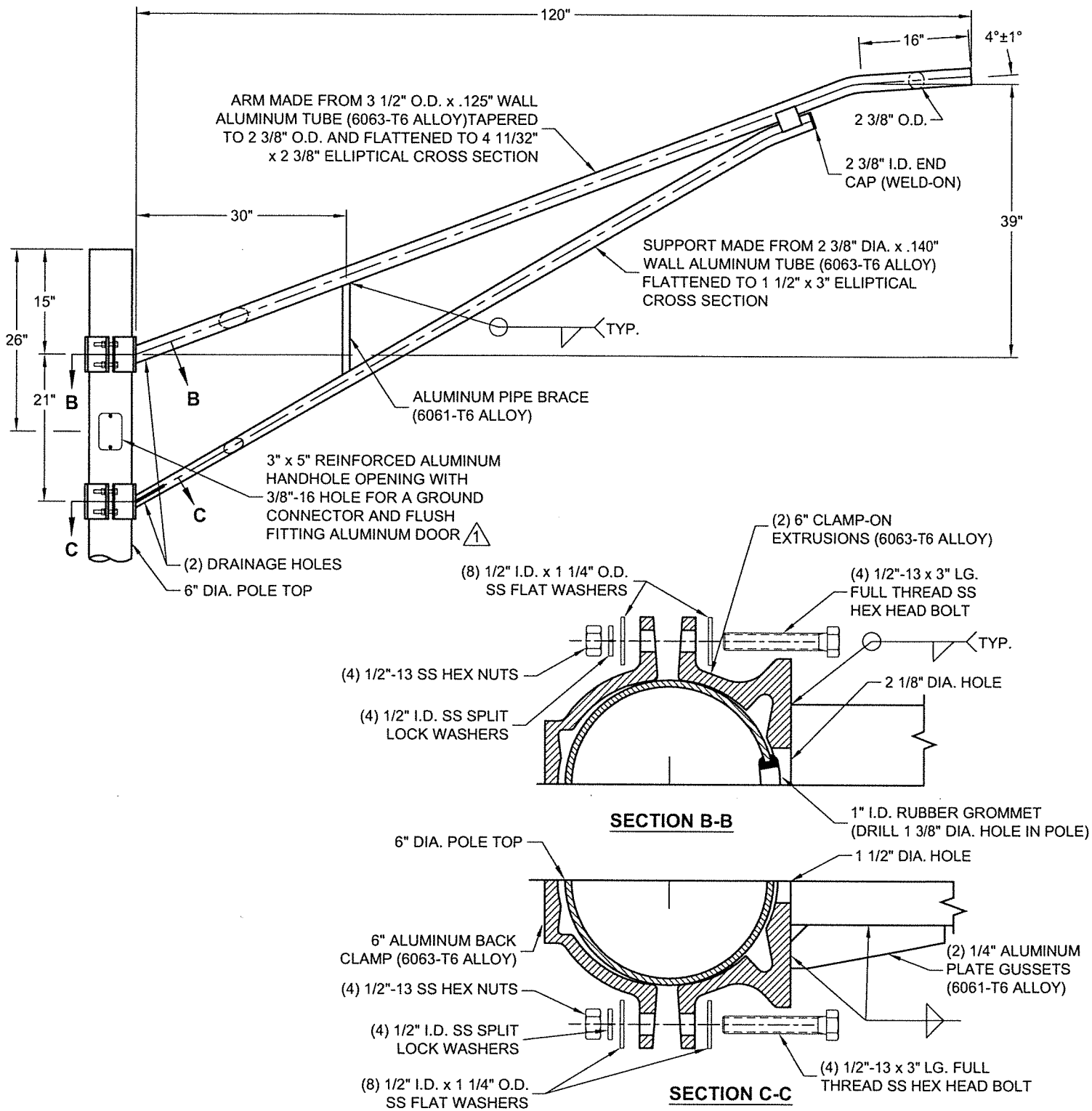
**\*\*CONFIDENTIAL\*\***  
 The information contained in this drawing is privileged and confidential, and may be protected from disclosure. Please be aware that any use or dissemination of this drawing may be subject to legal restriction or sanction.

TITLE:	S ANCHOR BASE POLE
MODEL NO.:	
MATERIAL:	ALUMINUM ALLOY
FINISH:	SATIN FINISH
PROJECT:	NAPERVILLE B
SOLD TO:	
SHIP TO:	
P.O. NO.:	
REP:	LIGHTING SOLUTIONS OF ILLINOIS

QTY:	2
OWN BY:	KPS
CHK'D BY:	
APPR BY:	CEW
DATE:	02-15-17
DWG NO.:	QT16690C

REV	DATE	REVISION DESCRIPTION	BY
▲			
▲			
▲	03-10-17	CHG'D BASE/POLE O.D., ADDED HH'S, ADDED PG	PTP

PAGE:	1/3
-------	-----



DO NOT SCALE



Valmont Industries, Inc. Structures Division  
 20805 Eaton Ave Farmington, Minnesota 55024-7932  
 Phone: (651) 463-8990 (800) 899-7577  
 Fax: (651) 463-3349

TITLE: S TRUSS SGL A FS 10' x 39" x 3.5" 6.0"CL		QTY: 2
MODEL NO.: 1TA1039C60ZA		OWN BY: KPS
MATERIAL: ALUMINUM ALLOY		CHK'D BY:
FINISH: SATIN FINISH		APPR BY: CEN
PROJECT: NAPERVILLE B		DATE: 02-15-17
SOLD TO:		DWG NO: QT16690C
SHIP TO:		PAGE: 2/3
P.O. NO:		
REP: LIGHTING SOLUTIONS OF ILLINOIS		

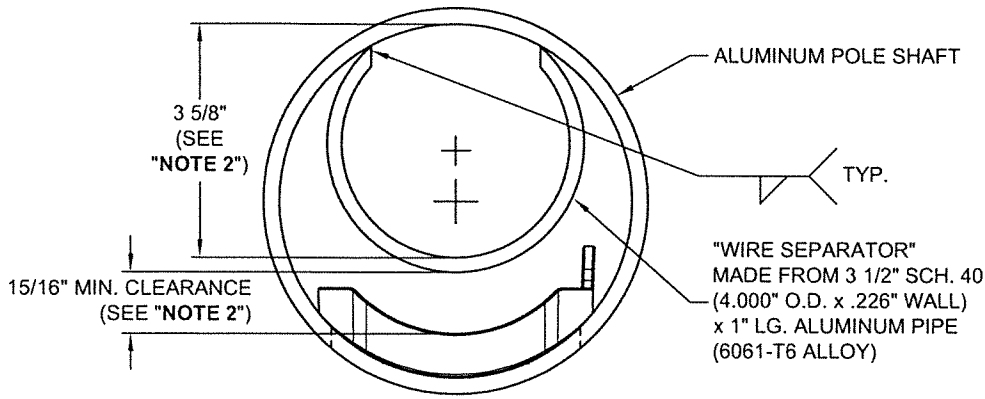
**\*\*CONFIDENTIAL\*\***

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REV	DATE	REVISION DESCRIPTION	BY
△			
△			
△	03-10-17	ADDED PG, ADDED HANDHOLE	PTP



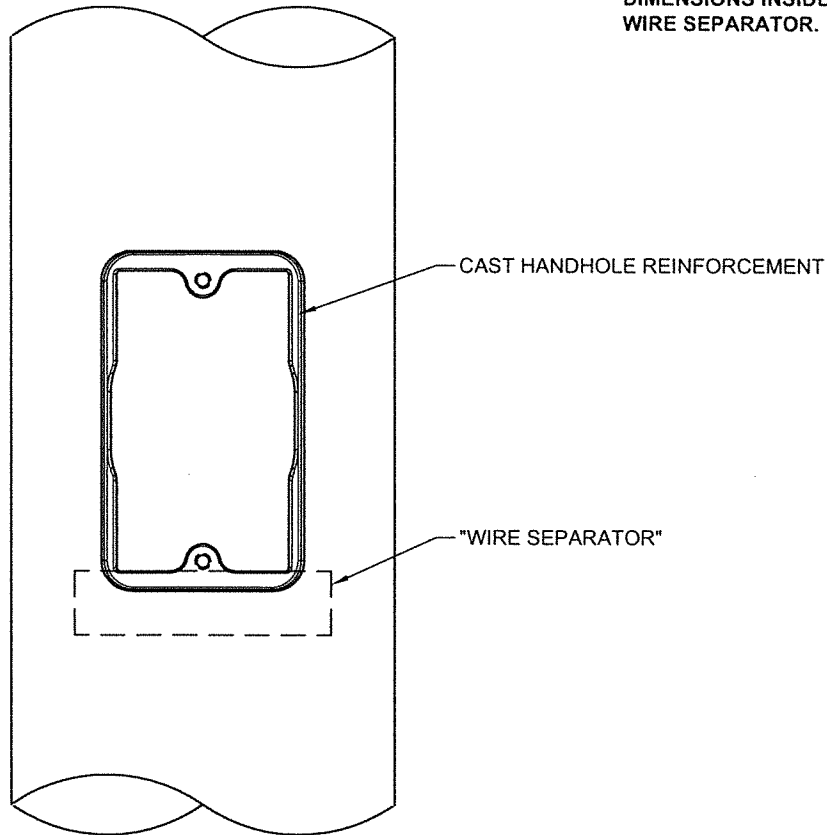




**TOP VIEW**

**NOTES:**

- 1.) WORST CASE SCENARIO, AT POLE TOP, OF HANDHOLE REINFORCEMENT & WIRE SEPARATOR SHOWN.
- 2.) CUSTOMER TO CONFIRM WIRE CLEARANCE DIMENSIONS INSIDE & OUTSIDE OF WIRE SEPARATOR.



**FRONT VIEW**

DO NOT SCALE



Valmont Industries, Inc. Structures Division  
 20805 Eaton Ave Farmington, Minnesota 55024-7932  
 Phone: (651) 463-8990 (800) 899-7577  
 Fax: (651) 463-3349

**\*\*CONFIDENTIAL\*\***

The information contained in this drawing is privileged and confidential, and may be protected from disclosure. Please be aware that any use or dissemination of this drawing may be subject to legal restriction or sanction.

TITLE: S HANDHOLE DETAILS		QTY: 2
MODEL NO.:		DWN BY: PTP
MATERIAL: ALUMINUM ALLOY		CHK'D BY:
FINISH:		APPR BY: CEN
PROJECT: NAPERVILLE B		DATE: 03-10-17
SOLD TO:		DWG NO: QT16690C
SHIP TO:		PAGE:
P.O. NO:		3/3
REP: LIGHTING SOLUTIONS OF ILLINOIS		
△		
△		
△		
REV	DATE	REVISION DESCRIPTION

(4) ANCHOR

RODS (DIAMETER CHECK W/

POLE MFGR) 1" Ø MINIMUM

F1554-105 W/ 1/2" 2 1/8" 2 1/2" WASHER

R & HEAVY HEX INT TRAP

EMBEDDED MINIMUM 2'-9" INTO CONCRETE

T/CAISSON

0'-0"

T/GRADE

0'-0"

10'-6"

B/CAISSON

10'-0"

Ø POLE & CASSON

POLE BY OTHERS

BASE R BY OTHERS

6" Ø SLEEVE

Ø SLEEVE

3" CLEAR

9' 2'-0"

(7) #6 FULL HT VERTICAL REINFORCING W/ STD HOOKS @ TOP (F<sub>y</sub> = 60 KSI)

#4 CLOSED TIES @ 12' OC. (F<sub>y</sub> = 60 KSI) (2 @ 6' OC AT TOP)

CONCRETE CASSON 2'-0" DIAMETER (F<sub>c</sub> = 4,000 PSI)

2'-0" DIAMETER

(A)

FOUNDATION DETAIL

HUTTER  
TRANKINA  
ENGINEERING, PC

Consulting Structural Engineers

32 W 273 ARMY TRAIL ROAD  
SUITE # 100  
WAYNE, ILLINOIS 60184

Phone (630) 513-6711 Fax (630) 513-2925

JOB 15294

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY \_\_\_\_\_ DATE \_\_\_\_\_

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

SCALE \_\_\_\_\_



**LEGEND**

	Light Post		Found Section Corner Monument
	Power Pole		Found or Set Monument
	Telephone Pedestal		Found or Set Cut Cross
	Manhole		Measured
	Water Valve Vault		Record
	Water Service Valve		Document Number
	Fire Hydrant		Building
	Electric Meter		Asphalt
	Gas Meter		Concrete
	Fence		PROPOSED Lease Site Area
	Centerline		Access Easement
	Section Line		Utility Easement
	Underground Sanitary Line		AGL Above Ground Level
	Underground Electric Line		POC Point of Commencement
	Underground Fiber Optic Line		POB Point of Beginning
	Underground Gas Line		
	Underground Storm Line		
	Underground Water Line		
	Underground Communication Line		

**BASIS OF BEARING**

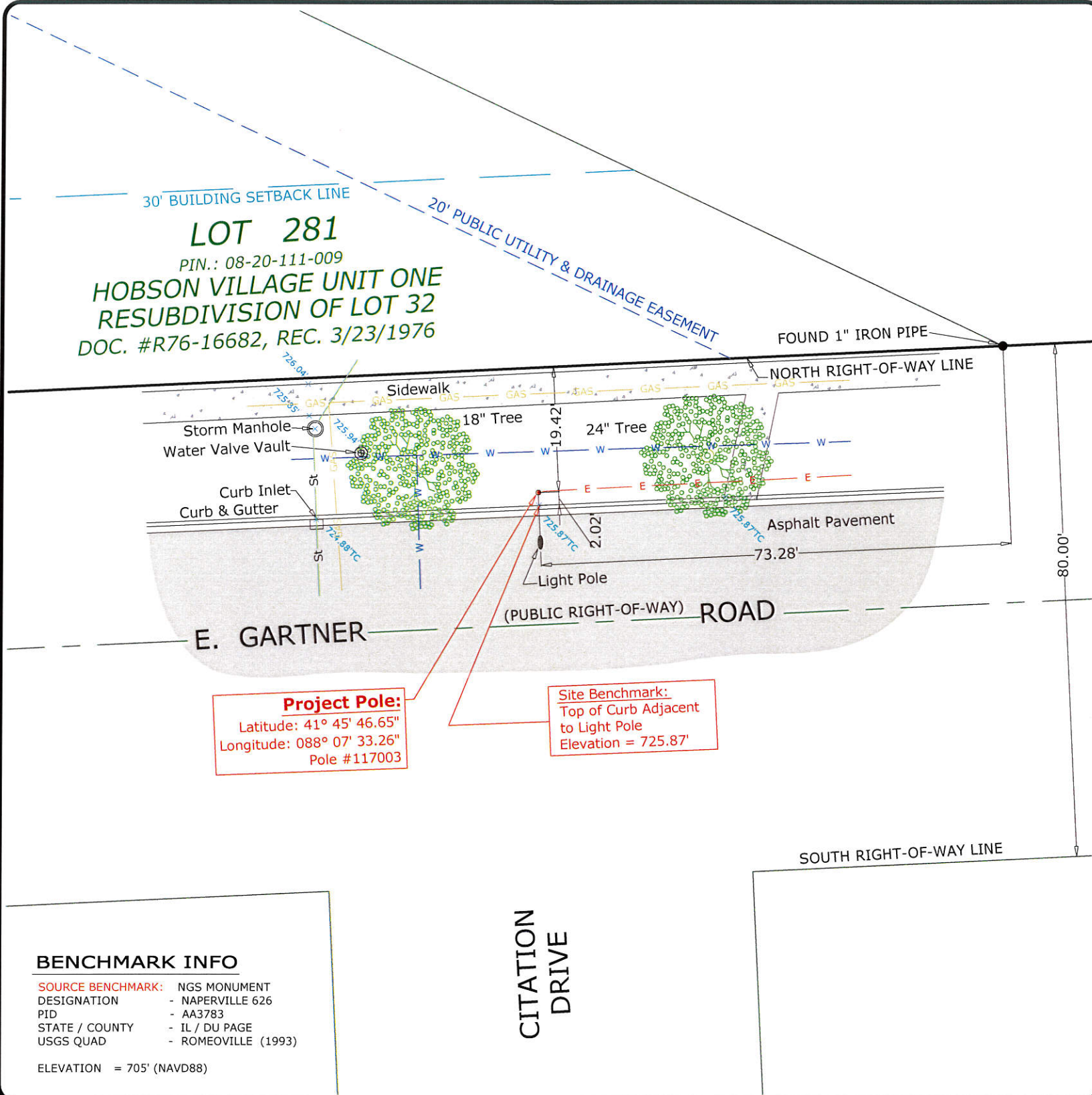
BEARINGS SHOWN HEREON ARE BASED ON ILLINOIS STATE PLANE, EAST ZONE, NAD83 (2011)

MEAN MAGNETIC DECLINATION OBTAINED FROM U.S.G.S. 7 1/2 MINUTE SERIES MAP NAPERVILLE QUADRANGLE STATE OF ILLINOIS

LATITUDE: N 41° 45' 46.65"  
LONGITUDE: W 088° 07' 33.26"  
AT CENTERLINE OF PROJECT POLE  
COMPLIES WITH F.A.A. 1/A ACCURACY REQUIREMENTS

SCALE: 1" = 20'

11" X 17" PRINT IS THE FULL SCALE FORMAT OF THIS SURVEY. ANY OTHER SIZE IS AT AN ADJUSTED SCALE.



**LEGAL DESCRIPTION**

THAT PART OF THE PUBLIC RIGHT-OF-WAY, 73 FEET MORE OR LESS WEST OF THE EAST CORNER AND 19 FEET MORE OR LESS SOUTH OF THE SOUTH LINE OF LOT 281 IN HOBSON VILLAGE UNIT ONE RESUBDIVISION OF LOT 32 OF HOBSON VILLAGE UNIT ONE, BEING A SUBDIVISION OF PART OF THE EAST HALF OF SECTION 19 AND PART OF THE WEST HALF OF SECTION 20, TOWNSHIP 38 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LISLE TOWNSHIP, ACCORDING TO THE PLAT THEREOF RECORDED MARCH 23, 1976 AS INSTRUMENT NUMBER R76-16682, IN THE RECORDER'S OFFICE OF DU PAGE COUNTY, ILLINOIS.

**SURVEY NOTES**

EASEMENTS AND SETBACKS SHOWN HEREON ARE BASED UPON THE RECORDED SUBDIVISION PLAT UNLESS NOTED OTHERWISE.

THE SURVEYOR EXPRESSES NO OPINION AS TO THE ACCURACY OF ANY UNDERGROUND UTILITIES WHEN NOT READILY VISIBLE FROM THE SURFACE. IT IS RECOMMENDED THAT THE APPROPRIATE GOVERNMENTAL AGENCY, MUNICIPALITY AND/OR UTILITY COMPANY BE CONTACTED FOR VERIFICATION.

THE PERMANENT PARCEL INDEX NUMBER FOR THE PROPERTY NORTH OF AND ADJACENT TO THE PROJECT POLE SHOWN HEREON IS 08-20-111-009.

**A CURRENT TITLE REPORT WAS NOT FURNISHED TO US FOR OUR USE IN PREPARING THIS SURVEY. THEREFORE THERE MAY BE ADDITIONAL EASEMENTS AND/OR SERVITUDES EFFECTING THIS PROPERTY WHICH ARE NOT SHOWN ON THIS SURVEY.**

**Project Pole:**  
Latitude: 41° 45' 46.65"  
Longitude: 088° 07' 33.26"  
Pole #117003

**Site Benchmark:**  
Top of Curb Adjacent to Light Pole  
Elevation = 725.87'

**BENCHMARK INFO**  
SOURCE BENCHMARK: NGS MONUMENT  
DESIGNATION: - NAPERVILLE 626  
PID: - AA3783  
STATE / COUNTY: - IL / DU PAGE  
USGS QUAD: - ROMEOVILLE (1993)  
ELEVATION = 705' (NAVD88)

**SURVEYOR'S CERTIFICATE**

STATE OF ILLINOIS }  
COUNTY OF KANE } SS

I, CHARLES S. MARSHALL, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON, BEING COMPLETED IN THE FIELD ON 1/26/2017 IS A CORRECT REPRESENTATION OF A SURVEY PERFORMED AT AND UNDER MY DIRECTION.

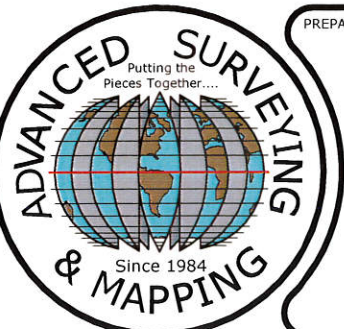
THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR LAND BOUNDARY SURVEYS SET FORTH BY ILLINOIS STATE LAW.

ALL DIMENSIONS ARE IN FEET AND DECIMAL PARTS THEREOF.

GIVEN UNDER MY HAND AND SEAL  
THIS 2ND DAY OF FEBRUARY, A.D. 2017.

CHARLES S. MARSHALL  
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 035-3377  
LICENSE EXPIRES 11/30/2018

NO.	DATE	REVISION
1.	1/26/2017	FIELD SURVEY COMPLETED
2.	1/27/2017	ISSUED PRELIMINARY SURVEY
3.	12/2/2017	FINAL SURVEY COMPLETED



PREPARED BY:

**ASM**

ASM Consultants, Inc.  
16 E Wilson St, Batavia IL 60510  
Tel (630) 879-0200 Fax (630) 454-3774  
advanced@advct.com  
Professional Design Firm #184-006014 expires 4/30/2017

**SMALL CELL - SITE SURVEY**

PREPARED FOR:

**Chicago SMSA**

CHICAGO SMSA LIMITED PARTNERSHIP  
d/b/a VERIZON WIRELESS  
1515 WOODFIELD ROAD, SUITE 1400  
SCHAUMBURG, ILLINOIS 60173  
PHONE: 847-619-5397 FAX: 847-706-7415

**TERRA**

Consulting Group, LTD.  
600 Busse Highway  
Park Ridge, IL 60068  
(847) 698-6400  
JOB No.: 88-053

SITE DESIGNATION INFORMATION:

**DT NAPERVILLE\_1\_SC\_3**

Location No.: 383984  
Project No.: 20151233053  
E GARTNER RD & CITATION DR  
NAPERVILLE, IL 60540

DRAWN BY: PS  
CHECKED BY: CSM

PROJECT NO.  
720562

**L-1**