

CONSULTANT TEAM

PROJECT CONSULTANT:

TERRA CONSULT NG GROUP, LTD.
600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
(847) 698-6400

SURVEYOR:

ASM CONSULTANTS, INC.
P.O. BOX 7
PLANO, IL 60545
(630) 273-2500

STRUCTURAL:
(TOWER ANALYSIS)

KRECH OJARD & ASSOCIATES, PA
101 PUTNAM STREET
EAU CLAIRE, WI 54703
(715) 552-7374

STRUCTURAL ANALYSIS
DATE:

12/21/17

VICINITY MAP

N.T.S.

REGIONAL MAP

N.T.S.

PROJECT TYPE

PROPOSED LESSEE ANTENNAS TO BE MOUNTED ON EXISTING WATER TOWER WITH PROPOSED 9'-4" x 16'-0" EQUIPMENT PLATFORM AT BASE.

PROJECT INFORMATION

SITE COORD NATES:

LATITUDE: 41° 36' 29.25" N (1A)
LONGITUDE: 87° 52' 32.82" W (1A)

ELEVATION:

±731' (1A)

ADDRESS:

15501 PARK STATION BLVD
ORLAND PARK, L 60462

UTILITIES:

POWER: COMED
WARREN TAYLOR (708) 235-2328
ACCT # 03540-83159

FIBER: ONEF BER
ALLEN BROTHERRSON
(630) 464-1590

JURISDICTION:

VILLAGE OF ORLAND PARK

OCCUPANCY:

UN NHABITED

ZONING:

MANUFACTURING

CONSTRUCTION TYPE:

CO LO

PROPERTY OWNER:

VILLAGE OF ORLAND PARK
147000 RAVINA AVENUE
ORLAND PARK, L 60462

TOWER OWNER:

NECTARIOS PITTO
(708) 403-6100

CONTACT PERSON:

DOUG MEDLAND
(708) 362-2361

APPLICANT:

CHICAGO SMSA
limited partnership
d/b/a Verizon Wireless
1515 WOODFIELD ROAD
SCHAUMBURG, IL 60173

CONSTRUCTION MANAGER:

MICHAEL EISENMENGER (847) 619-3043

REAL ESTATE MANAGER:

OCTAVIO HERRERA (847) 619-4142

GENERATOR TYPE:

TERTIARY

MAKE:

MTU

MODEL #:

DG03RJ096V1M22 30KW DIESEL
MTU-GENSET-WP-30KW-DIESEL-1PH120/240-DRE-TANK

SHEET

DRAWING INDEX

REVISION

T-1

LP

C-1

C-2

C-3

ANT-1

ANT-2

ANT-2A

ANT-3

ANT-3A

ANT-4

S-1

S-2

B-1

B-2

E-1

E-1A

E-2

E-3

E-4

E-5

SP-1

SP-2

P-1

TITLE SHEET

LOCATION PLAN

ENGINEER NG SITE PLAN

SITE GRAD NG PLAN (SHEET 1 OF 1)

FOUNDATION DETA LS

SITE ELEVATION & ANTENNA LAYOUT

ANTENNA INFORMATION

ANTENNA INFORMATION

CONDUIT ROUT NG DETAILS

ANTENNA MOUNTING DETA LS

SITE DETAILS

STRUCTURAL SHEETS

STRUCTURAL SHEETS

EQUIPMENT PLATFORM PLAN & NOTES

EQUIPMENT PLATFORM ELEVATIONS

UTILITY ROUTING PLAN

UTILITY RISER DIAGRAMS

SITE GROUNDING PLAN

GROUNDING DETAILS

GROUNDING DETAILS

ELECTRICAL DETAILS

SPEC FICATIONS

SPEC FICATIONS

EXISTING SITE PHOTOS

1

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ATTACHMENTS

EX-1

SE-1

RF-1

NTC-1,2

GENERATOR CUT-SHEET

SITE SURVEY

PRE-EME REPORT

NOTICE TO CONTRACTOR

-

-

1

1

22" x 34" IS FULL SCALE.
11" x 17" IS HALF SCALE.

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:

DMS

CHECKED BY:

TAZ

DATE:

12/27/17

PROJECT #:

33-2531

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

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: 187771

SITE NAME: RTE 7 & WEST

15501 PARK STATION BLVD

ORLAND PARK, IL 60462

OPERATES 24 HOURS
A DAY 365 DAYS A YEAR

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1	ISSUED FOR REVIEW	12/27/17	DMS
2	ISSUED FOR FINALS	01/22/18	JTM
	UPDATE CABLE LENGTHS	02/02/18	JTM

CHICAGO SMSA

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limited partnership

d/b/a VERIZON WIRELESS

TERRA

600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

LEGEND

⊗

Light Post

⊗

Power Pole

○

Telephone Pedestal

⊗

Manhole

⊗

Water Valve Vault

⊗

Water Service Valve

⊗

Fire Hydrant

⊗

Electrical Meter

⊗

Gas Meter

⊙

Found Section Corner Monument

●

Found or Set Monument

✱

Found or Set Cut Cross

59.75' Measured

(60.00') Record

DOC. NO.

Document Number

■

Building

■

Asphalt

■

Concrete

PROPERTY LINE

FENCE

OVERHEAD POWER LINE

UNDERGROUND TELCO

UNDERGROUND POWER

BURIED WATER LINE

BURIED GAS LINE

EDGE OF BUSH/TREES

SURVEY PERFORMED BY:

Advanced Surveying & Mapping

ASM Consultants, Inc.

16 E Wilson St, Batavia IL 60510

Tel (630) 879-0200 Fax (630) 454-3774

advanced@advct.com

Site Benchmark:

NE Bolt of Fire Hydrant

Elevation = 731.55'

GENERAL SITE NOTES

1. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING PAVEMENT. CONTRACTOR SHALL PHOTOGRAPH AND VIDEOTAPE EXISTING PAVEMENT PRIOR TO CONSTRUCTION. ANY DAMAGE CAUSED DURING CONSTRUCTION SHALL BE REPLACED TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST.

2. THE CONTRACTOR WILL, UPON BECOMING AWARE OF SUBSURFACE OR LATENT PHYSICAL CONDITIONS DIFFERING FROM THOSE DISCLOSED BY THE ORIGINAL SOIL INVESTIGATION WORK, PROMPTLY NOTIFY THE OWNER VERBALLY AND IN WRITING, AS TO THE NATURE OF THE DIFFERING CONDITIONS. NO CLAIM BY THE CONTRACTOR FOR ANY CONDITIONS DIFFERING FROM THOSE ANTICIPATED IN THE PLANS AND SPECIFICATIONS AND DISCLOSED BY THE SOIL STUDIES WILL BE ALLOWED UNLESS THE CONTRACTOR HAS SO NOTIFIED THE OWNER, VERBALLY AND IN WRITING, AS REQUIRED ABOVE, OF SUCH DIFFERING SUBSURFACE CONDITIONS.

3. CONTRACTOR TO PROVIDE APPROXIMATE 50'X50' STAGING AREA AND TEMPORARY ROAD. CONTRACTOR SHALL COORDINATE WITH ANTENNA CONTRACTOR, A STAGING AREA AND TEMPORARY ROAD THAT IS ACCEPTABLE TO THE OWNER. STAGING AREA AND TEMPORARY ROAD SHALL BE RESTORED TO EXISTING CONDITIONS AS NECESSARY UPON COMPLETION OF THE PROJECT.

4. BEFORE AND DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL AS NECESSARY IN THE FORM OF SILT FENCES FOR THE SITE AND BALES AROUND ANY EXISTING MANHOLES, INLETS, OR CATCH BASINS SUSCEPTIBLE TO EROSION. EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED TO ENSURE PROPER FUNCTION. EROSION CONTROL SHALL BE REMOVED UPON COMPLETION OF WORK.

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1 LOCATION PLAN

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SMSA

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d/b/a VERIZON WIRELESS

TERRA

CONSTRUCTION MANAGEMENT, LTD.

600 BUSSE HIGHWAY

PARK RIDGE, IL 60068

PH: 847-898-8400

FAX: 847-898-8401

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LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: DMS

CHECKED BY: TAZ

DATE: 12/27/17

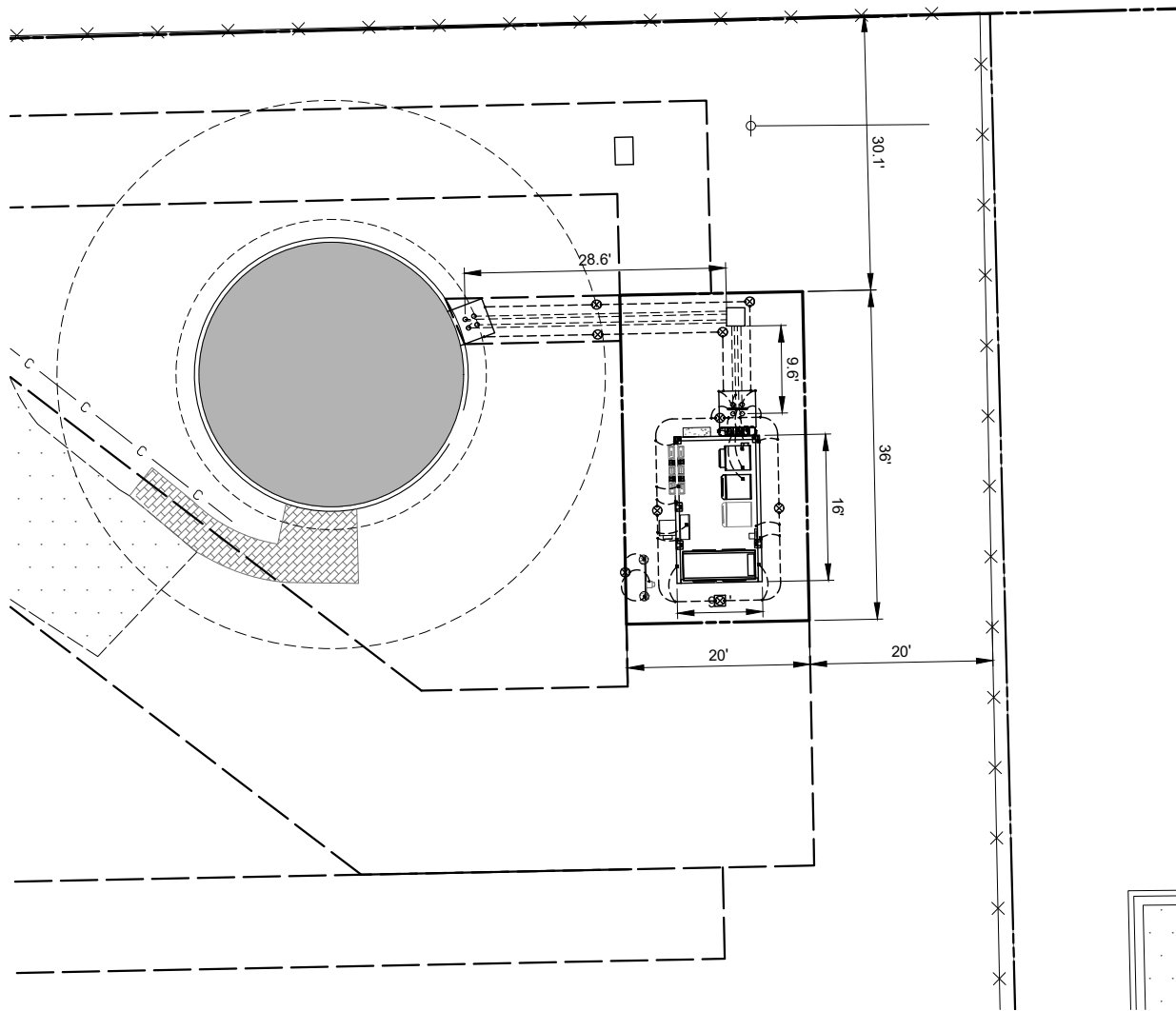
PROJECT #: 33-2531

SHEET TITLE

LOCATION PLAN

SHEET NUMBER

LP



2 SITE DIMENSION PLAN
SCALE: 1" = 10'

PLATFORM TYPE: CONCRETE SKID

PAVEMENT MATERIAL

LEASE SITE
80 S.Y.
8" COMPACTED AGGREGATE BASE COURSE, WITH 3/4" CRUSHED AGGREGATE, NO FINES. OR APPROVED EQUAL. MIRAFI 500X SUBGRADE GEOTEXTILE FABRIC OR APPROVED EQUAL
112 L.F. OF FENC NG

THE CONTRACTOR SHALL INCLUDE AS PART OF THE B D, THE COST OF REMOVAL OF ANY SURFACE VEGETATION AND ORGANIC SOILS OR OTHER DELETERIOUS MATERIALS AND THE REPLACEMENT WITH ENGINEERED BACKF LL FOR THE AGGREGATE ACCESS DRIVE AND LEASE SITE, IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

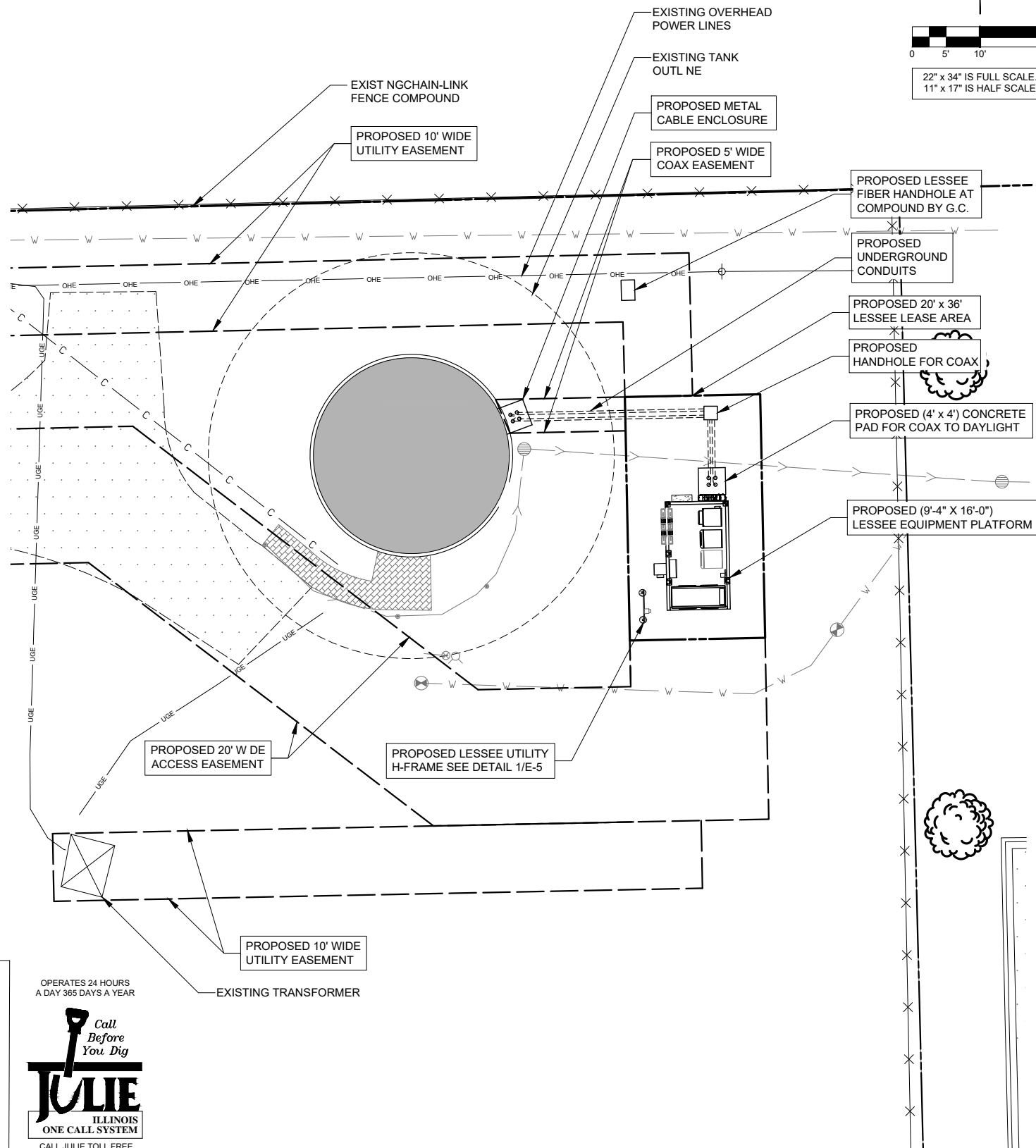
SURVEY PERFORMED BY:

Advanced Surveying & Mapping

ASM Consultants, Inc.
16 E Wilson St, Batavia IL 60510
Tel (630) 879-0200 Fax (630) 454-3774
advanced@advct.com

Site Benchmark:
NE Bolt of Fire Hydrant
Elevation = 731.55'

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1 SITE PLAN

CHICAGO SMSA
limited partnership
d/b/a VERIZON WIRELESS



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LOC. # 187771

RTE 7 & WEST

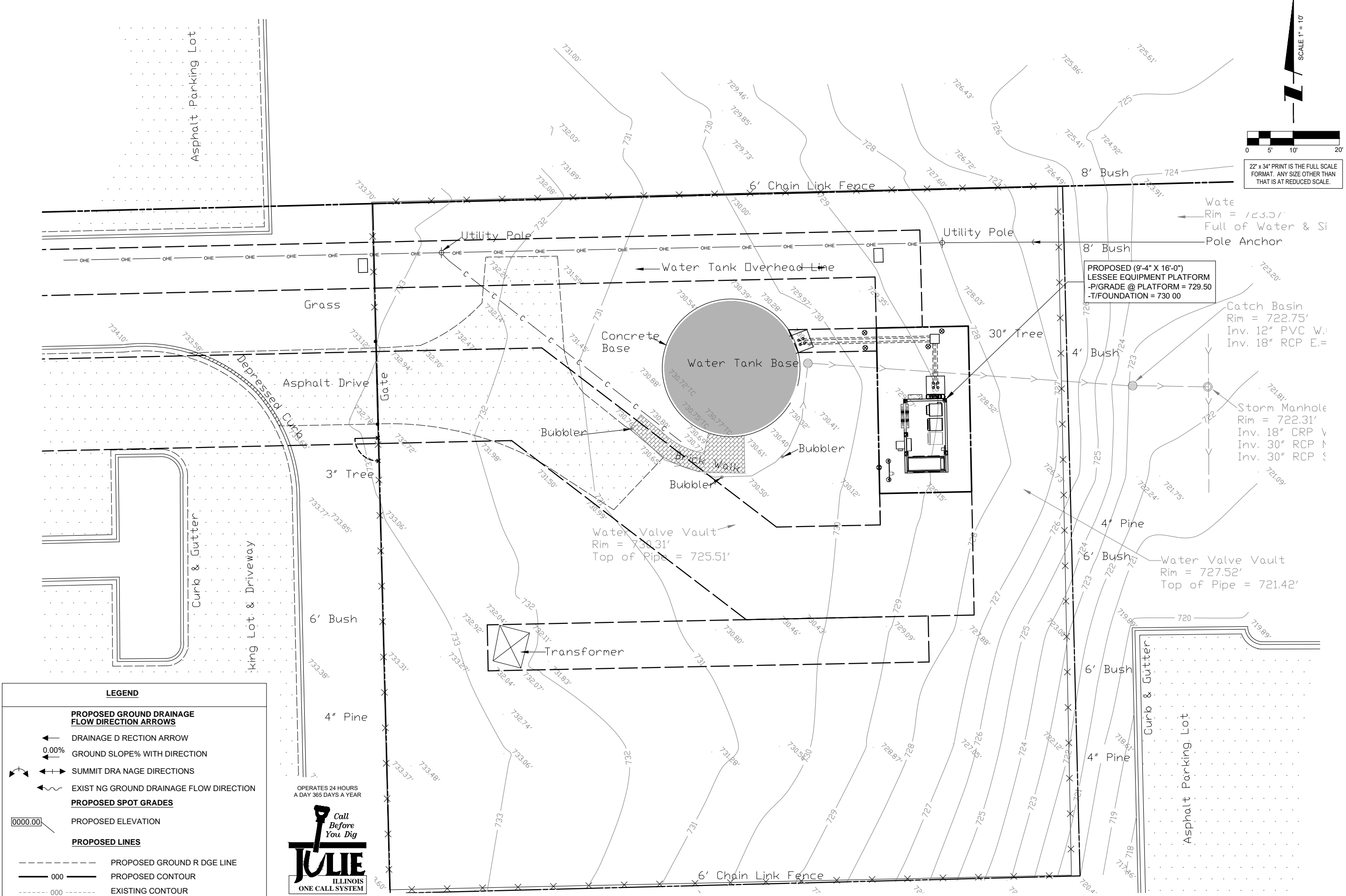
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DRAWN BY:	DMS
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DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER

C-1



LEGEND

**PROPOSED GROUND DRAINAGE
FLOW DIRECTION ARROWS**

DRAINAGE D RECTION ARROW

0.00%
GROUND SLOPE% WITH DIRECTION

SUMMIT DRA NAGE DIRECTIONS

EXIST NG GROUND DRAINAGE FLOW DIRECTION

PROPOSED SPOT GRADES

0000.00
PROPOSED ELEVATION

PROPOSED LINES

PROPOSED GROUND R DGE LINE

000
PROPOSED CONTOUR

000
EXISTING CONTOUR

PROPOSED CULVERT & END SECTIONS

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SITE GRADING PLAN
SCALE: 1" = 20'

SCALE 1" = 10'

0 5' 10' 20'

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

PROPOSED (9'-4" X 16'-0")
LESSEE EQUIPMENT PLATFORM
-P/GRADE @ PLATFORM = 729.50
-T/FOUNDATION = 730.00

Water
Rim = 723.51'
Full of Water & Si
Pole Anchor

Catch Basin
Rim = 722.75'
Inv. 12" PVC W.
Inv. 18" RCP E.=

Storm Manhole
Rim = 722.31'
Inv. 18" CRP V
Inv. 30" RCP M
Inv. 30" RCP S

Water Valve Vault
Rim = 727.52'
Top of Pipe = 721.42'

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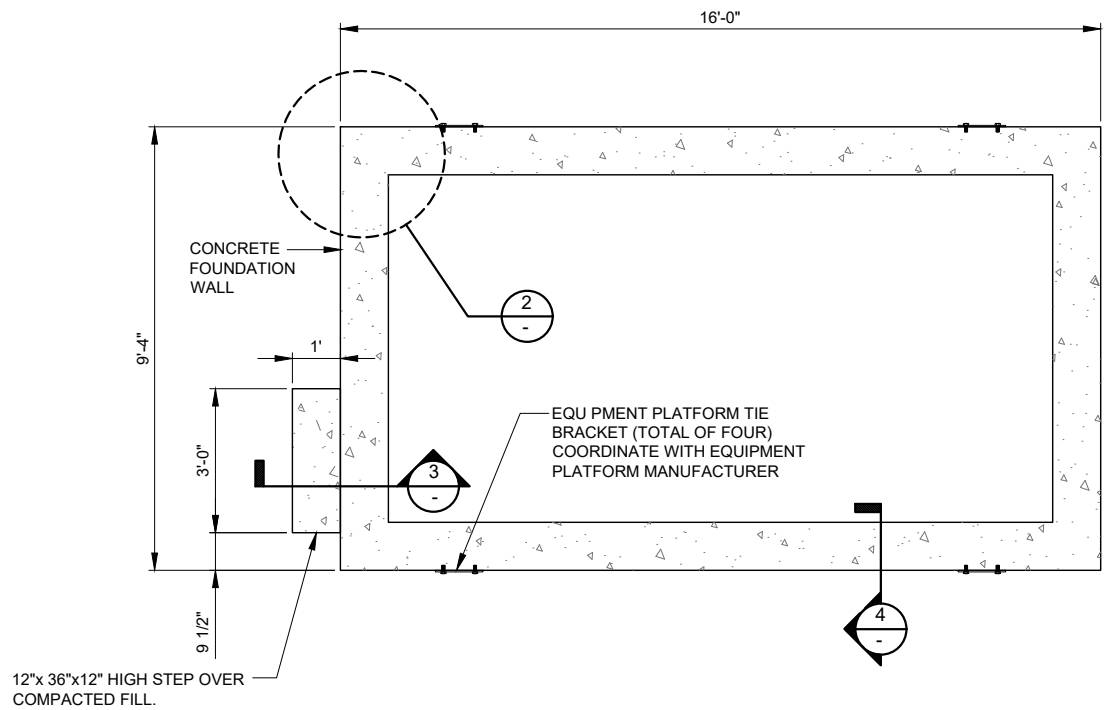
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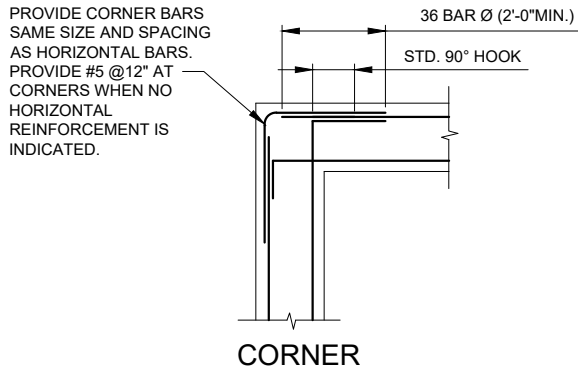
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SHEET TITLE
SITE GRADING PLAN
(SHEET 1 OF 1)

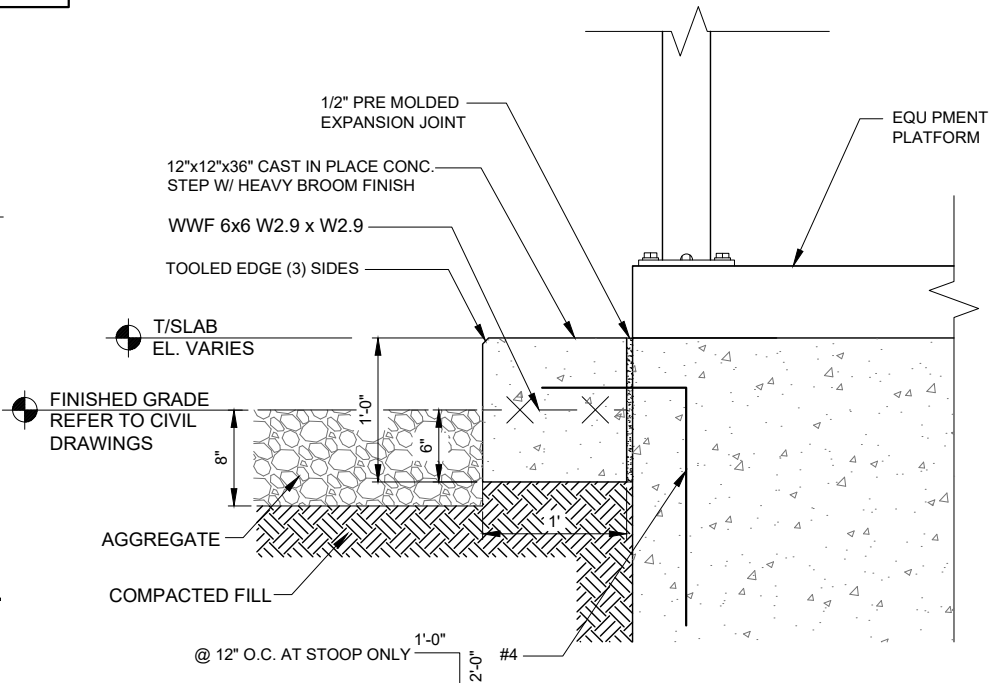
SHEET NUMBER
C-2



1 EQUIPMENT ENCLOSURE FOUNDATION PLAN
N.T.S.

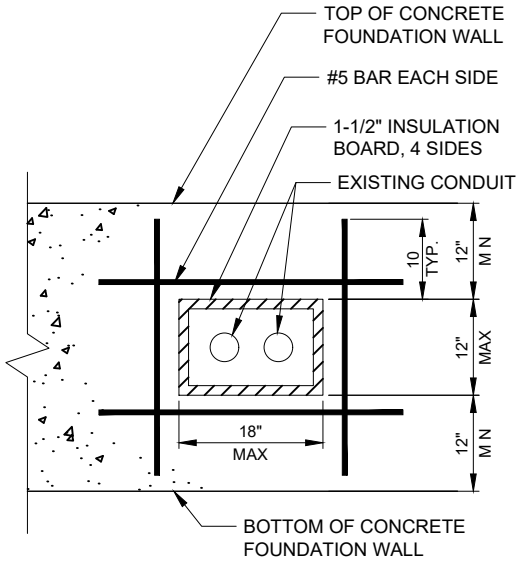


2 CONCRETE WALL REINFORCEMENT DETAILS
N.T.S.

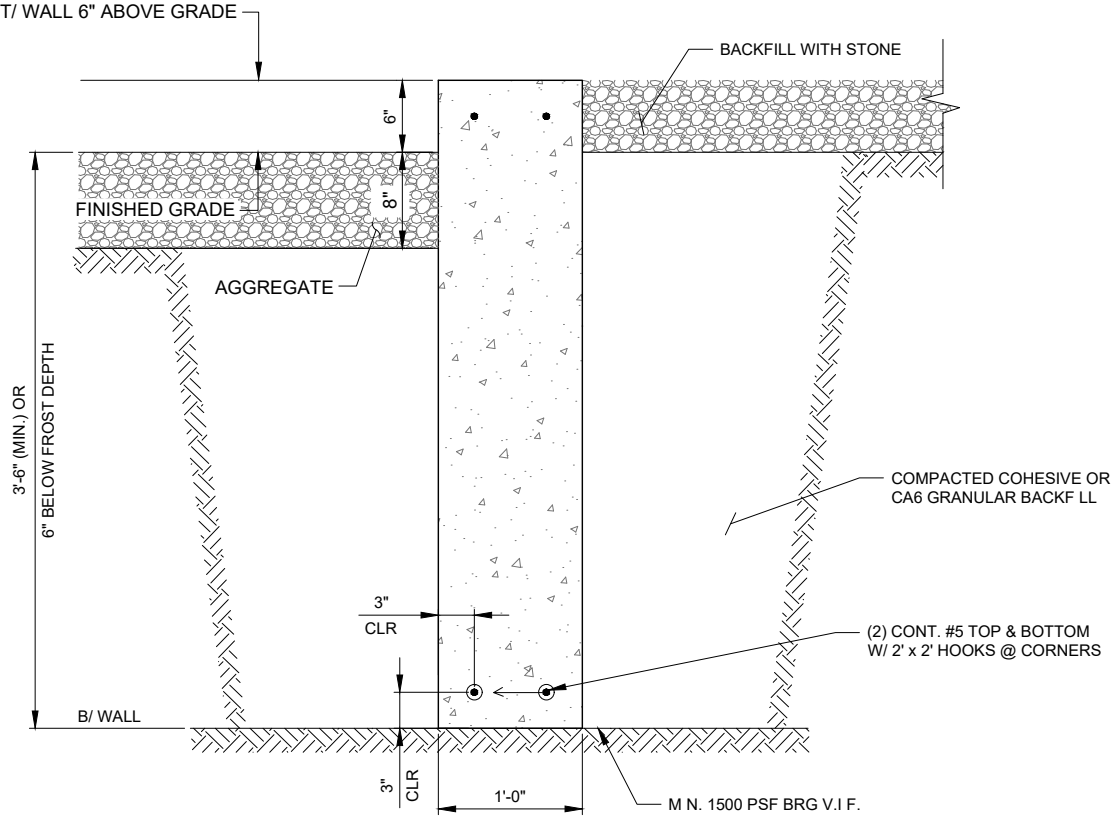


3 STEP DETAIL
N.T.S.

NOTE:
LOCALIZED AREAS OF SOFT OR LOOSE MATERIALS MAY BE ENCOUNTERED AT THE PROPOSED BEARING ELEVATION. THE SOILS MAY REQUIRE COMPACTION USING A PLATE COMPACTOR IN THE FOOTING TRENCH. FIELD CONDITIONS INDICATE LOOSE GRANULAR SOILS. THE SOILS MAY REQUIRE REMOVAL AND REPLACEMENT WITH AN APPROVED ENGINEERED FILL. FOUNDATION DEPTH AND OVERDIG REQUIREMENTS SHALL BE VERIFIED WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND INCLUDED IN THE BID BEFORE CONSTRUCTION. THE EVALUATION OF THE SUBGRADE AND SELECTION OF FILL MATERIALS SHALL BE MONITORED AND TESTED BY A QUALIFIED REPRESENTATIVE OF THE SOILS ENGINEER.



5 SLEEVE DETAIL (IF APPLICABLE)
N.T.S.



4 FOUNDATION WALL SECTION
SCALE: N.T.S.

A. EQUIPMENT PLATFORM FOUNDATION

- REFER TO CIVIL DRAWINGS FOR ORIENTATION OF THE FOUNDATIONS.
- EQUIPMENT ENCLOSURE FOUNDATION IS DESIGNED FOR THE FOLLOWING LOADS:
ROOF LIVE LOAD: 81 PSF
FLOOR LIVE LOAD: 986 PSF
- THE CONTRACTOR SHALL NOTIFY THE CLIENT'S GEOTECHNICAL ENGINEER TO COORDINATE HAVING A FIELD REPRESENTATIVE ON SITE FOR TESTING AND INSPECTION.
- FOOTINGS SHALL BEAR ON VIRGIN SOIL OR COMPACTED FILL MATERIAL CAPABLE OF SUPPORTING A MINIMUM SOIL BEARING PRESSURE OF 1500 PSF MINIMUM.
- SUBGRADE PREPARATION:
A. REMOVE ALL SOILS CONTAINING TOPSOIL: ORGANIC MATERIALS, AND/OR FILL MATERIALS FROM WITHIN AREA OF ENCLOSURE FOUNDATION.
B. PROOF ROLL RESULTING SUBGRADE WITH A HEAVILY LOADED SINGLE AXLE ROLLER OR SIMILAR VEHICLE. (20 TON LOAD). CONTRACTOR SHALL UNDERCUT AND REPLACE WITH ENGINEERED FILL. ALL LOOSE SOFT OR UNSTABLE AREAS REVEALED DURING PROOFROLLING AS DIRECTED BY THE TESTING AGENCY. CONTRACTOR SHALL INCLUDE ANTICIPATED UNDERCUT AND REPLACEMENT AS INDICATED IN THE GEOTECHNICAL REPORT AS PART OF THE BID.
C. BACKFILL AND COMPACT THE AREA WITHIN THE PLATFORM FOUNDATION. BETWEEN RESULTANT SUBGRADE AND FOUNDATION WALL WITH APPROVED GRANULAR MATERIAL.
- FOUNDATION WALLS SHALL BE BACKFILLED EVENLY ON EACH SIDE OF THE WALL OR WALLS SHALL BE ADEQUATELY BRACED BY THE CONTRACTOR UNTIL FOUNDATION WALL HAS BEEN PLACED AND CURED FOR 72 HOURS MINIMUM.
- PLATFORM SHALL NOT BE SET UNTIL FOUNDATION WALL HAS BEEN CURED FOR 72 HOURS MINIMUM.
- CONTRACTOR TO ENSURE FOUNDATION WALL ARE POURED TO MEET FLATNESS LEVEL TOLERANCES AS INDICATED IN ACI 456 AND 4.5.7.

B. EQUIPMENT PLATFORM

THE EQUIPMENT PLATFORM IS A PRE-FABRICATED PLATFORM MANUFACTURED BY FIBREBOND, MINDEN, LA 71055
THE EQUIPMENT PLATFORM SHALL BE FURNISHED AND INSTALLED BY THE OWNER UNDER SEPARATE CONTRACT PER THE OWNER AND MANUFACTURER SPECIFICATIONS.

C. CONCRETE NOTES

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 AND ACI 301, LATEST EDITION. THESE DOCUMENTS SHALL BE AVAILABLE IN THE FIELD OFFICE.
- EXCEPT WHERE OTHERWISE INDICATED, CONCRETE SHALL BE NORMAL WEIGHT AND WITH MINIMUM 28-DAY COMPRESSIVE STRENGTHS OF $F'_c=4000$ PSI. ALL EXTERIOR EXPOSED CONCRETE SHALL BE AIR ENTRAINED WITH 6% AIR CONTENT.
- REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
- UNLESS NOTED OTHERWISE, ALL SLABS-ON-GRADE SHALL BE REINFORCED WITH ONE (1) LAYER OF 6X6 W2.1XW2.1 W.W.F.

CHICAGO SMTA
limited partnership
d/b/a VERIZON WIRELESS



REVISIONS		BY	DMS	JTM	JTM
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1		12/27/17		01/22/18	02/02/18
2					

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

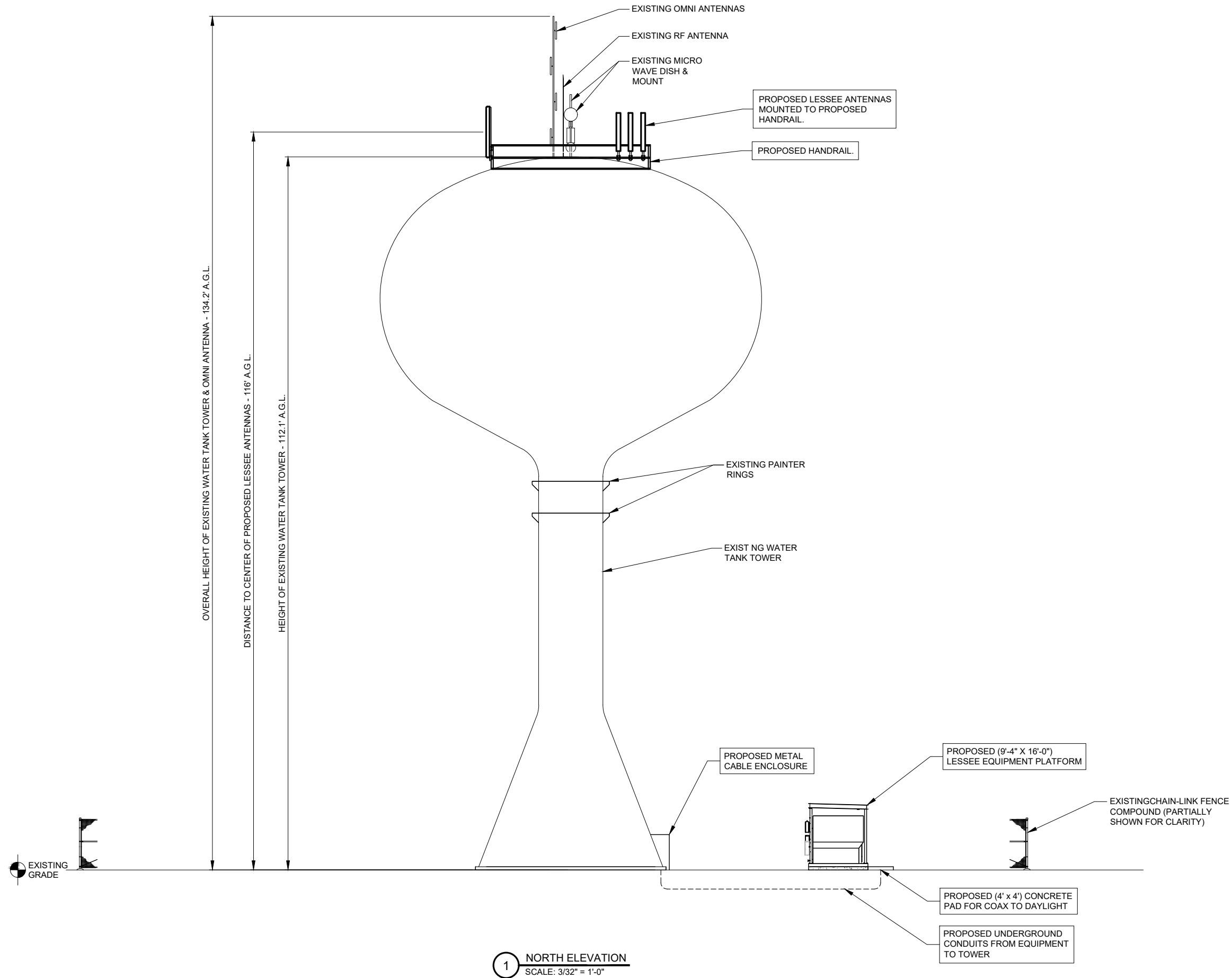
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SHEET TITLE
PLATFORM FOUNDATION PLAN


SHEET NUMBER

C-3

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15501 PARK STATION BLVD
ORLAND PARK, IL 60462

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PROJECT #:	33-2531

SHEET TITLE

SITE ELEVATION

SHEET NUMBER

ANT-1

RF EMISSIONS REPORT REQUIRED

☒ YES ☐ NO

DATE OF REPORT: 01/09/2018

EQUIPMENT CHANGE REQUEST FORM- ECR										
Cell Name		RT 7 And West		RF Engineer		Jeremy Lutz		Cell ID		15501 Park Station Blvd
Location Number		187771		Market		HH		Address		
Date of Request		1/16/2018						City/State/Zip		Orland Park, IL, 60467
PROPOSED CONFIGURATION							Configuration		Option-A2	
Antenna			Antenna Manufacturer	Antenna Model	Antenna Serial Number	Centerline	Azimuth	Variable Tilt	Mechanical Tilt	Action
Sector	Pos	RF Path								
Alpha	A1	L1 (+45)	700/850 - RxTx0	COMMSCOPE	SBNHH-1D65B	116	15	0	0	Add- Install
		L2 (+45)	700/850 - RxTx1					0		
		H1 (+45)	PCS - RxTx0					0		
		H2 (+45)	PCS - RxTx1					0		
		H3 (+45)	PCS - RxTx2					0		
	H4 (+45)	PCS - RxTx3	0							
	A2	L1 (+45)	Unused at this time							Unchanged
		L2 (+45)	Unused at this time							
		H1 (+45)	Unused at this time							
		H2 (+45)	Unused at this time							
		H3 (+45)	Unused at this time							
	H4 (+45)	Unused at this time								
	A3	L1 (+45)	700/850 - RxTx2	COMMSCOPE	SBNHH-1D65B	116	15	0	0	Add- Install
		L2 (+45)	700/850 - RxTx3					0		
		H1 (+45)	Unused at this time					0		
		H2 (+45)	Unused at this time					0		
		H3 (+45)	Unused at this time					0		
	H4 (+45)	Unused at this time	0							
	A4	L1 (+45)	Unused at this time	COMMSCOPE	SBNHH-1D65B	116	15	0	0	Add- Install
		L2 (+45)	Unused at this time					0		
		H1 (+45)	AWS - RxTx0					0		
		H2 (+45)	AWS - RxTx1					0		
		H3 (+45)	AWS - RxTx2					0		
H4 (+45)	AWS - RxTx3	0								
Beta	B1	L1 (+45)	700/850 - RxTx0	COMMSCOPE	SBNHH-1D65B	116	140	0	0	Add- Install
		L2 (+45)	700/850 - RxTx1					0		
		H1 (+45)	PCS - RxTx0					0		
		H2 (+45)	PCS - RxTx1					0		
		H3 (+45)	PCS - RxTx2					0		
	H4 (+45)	PCS - RxTx3	0							
	B2	L1 (+45)	Unused at this time							Unchanged
		L2 (+45)	Unused at this time							
		H1 (+45)	Unused at this time							
		H2 (+45)	Unused at this time							
		H3 (+45)	Unused at this time							
	H4 (+45)	Unused at this time								
	B3	L1 (+45)	700/850 - RxTx2	COMMSCOPE	SBNHH-1D65B	116	140	0	0	Add- Install
		L2 (+45)	700/850 - RxTx3					0		
		H1 (+45)	Unused at this time					0		
		H2 (+45)	Unused at this time					0		
		H3 (+45)	Unused at this time					0		
	H4 (+45)	Unused at this time	0							
	B4	L1 (+45)	Unused at this time	COMMSCOPE	SBNHH-1D65B	116	140	0	0	Add- Install
		L2 (+45)	Unused at this time					0		
		H1 (+45)	AWS - RxTx0					0		
		H2 (+45)	AWS - RxTx1					0		
		H3 (+45)	AWS - RxTx2					0		
H4 (+45)	AWS - RxTx3	0								
GAMMA	G1	L1 (+45)	700/850 - RxTx0	COMMSCOPE	SBNHH-1D65B	116	260	0	0	Add- Install
		L2 (+45)	700/850 - RxTx1					0		
		H1 (+45)	PCS - RxTx0					0		
		H2 (+45)	PCS - RxTx1					0		
		H3 (+45)	PCS - RxTx2					0		
	H4 (+45)	PCS - RxTx3	0							
	G2	L1 (+45)	Unused at this time							Unchanged
		L2 (+45)	Unused at this time							
		H1 (+45)	Unused at this time							
		H2 (+45)	Unused at this time							
		H3 (+45)	Unused at this time							
	H4 (+45)	Unused at this time								
	G3	L1 (+45)	700/850 - RxTx2	COMMSCOPE	SBNHH-1D65B	116	260	0	0	Add- Install
		L2 (+45)	700/850 - RxTx3					0		
		H1 (+45)	Unused at this time					0		
		H2 (+45)	Unused at this time					0		
		H3 (+45)	Unused at this time					0		
	H4 (+45)	Unused at this time	0							
	G4	L1 (+45)	Unused at this time	COMMSCOPE	SBNHH-1D65B	116	260	0	0	Add- Install
		L2 (+45)	Unused at this time					0		
		H1 (+45)	AWS - RxTx0					0		
		H2 (+45)	AWS - RxTx1					0		
		H3 (+45)	AWS - RxTx2					0		
H4 (+45)	AWS - RxTx3	0								
Comments										

1 PROPOSED ANTENNA CONFIGURATION
N.T.S.

SECTOR	HYBRID LENGTH ESTIMATE				
	AT GROUND		AT STRUCTURE		
	HOR (±)	VER (±)	HOR (±)	RAYCAP CL (±)	TOTAL (±)
ALPHA	39	5	15	116	175
BETA	39	5	20	116	180
GAMMA	39	5	33	116	193

FINAL CONFIGURATION					
Passive Components	Location	Manufacturer	Component Model	Count	
	Top (Platform)	Ericsson	4449 B13/B5	3	
	Top (Platform)				
	Top (Platform)	Ericsson	8843 B66/B2	3	
	Top (Platform)				
	Top (Platform)				
	Top (Platform)	Raycap	RCMDC-3315-PF-48	3	
	Top (Platform)				
	Bottom (Shelter)				
	Bottom (Shelter)	Raycap	RCMDC-3315-PF-48	3	
Coax	Sector	Coax Manufacturer	Type	Size	Count
	Alpha				
	Beta				
	Gamma				
	Raycap	Andrew	HFT1206-24S49-XXX	1 5/8	3
Comments					

2 COMBINER CABLE DATA INFORMATION
N.T.S.

CHICAGO
SMSA
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d/b/a VERIZON WIRELESS



NO.	DESCRIPTION	BY	DATE	DMS	JTM	JTM				
1	ISSUED FOR REVIEW		12/27/17							
2	ISSUED FOR FINALS		01/22/18							
	UPDATE CABLE LENGTHS		02/02/18							

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: DMS

CHECKED BY: TAZ

DATE: 12/27/17

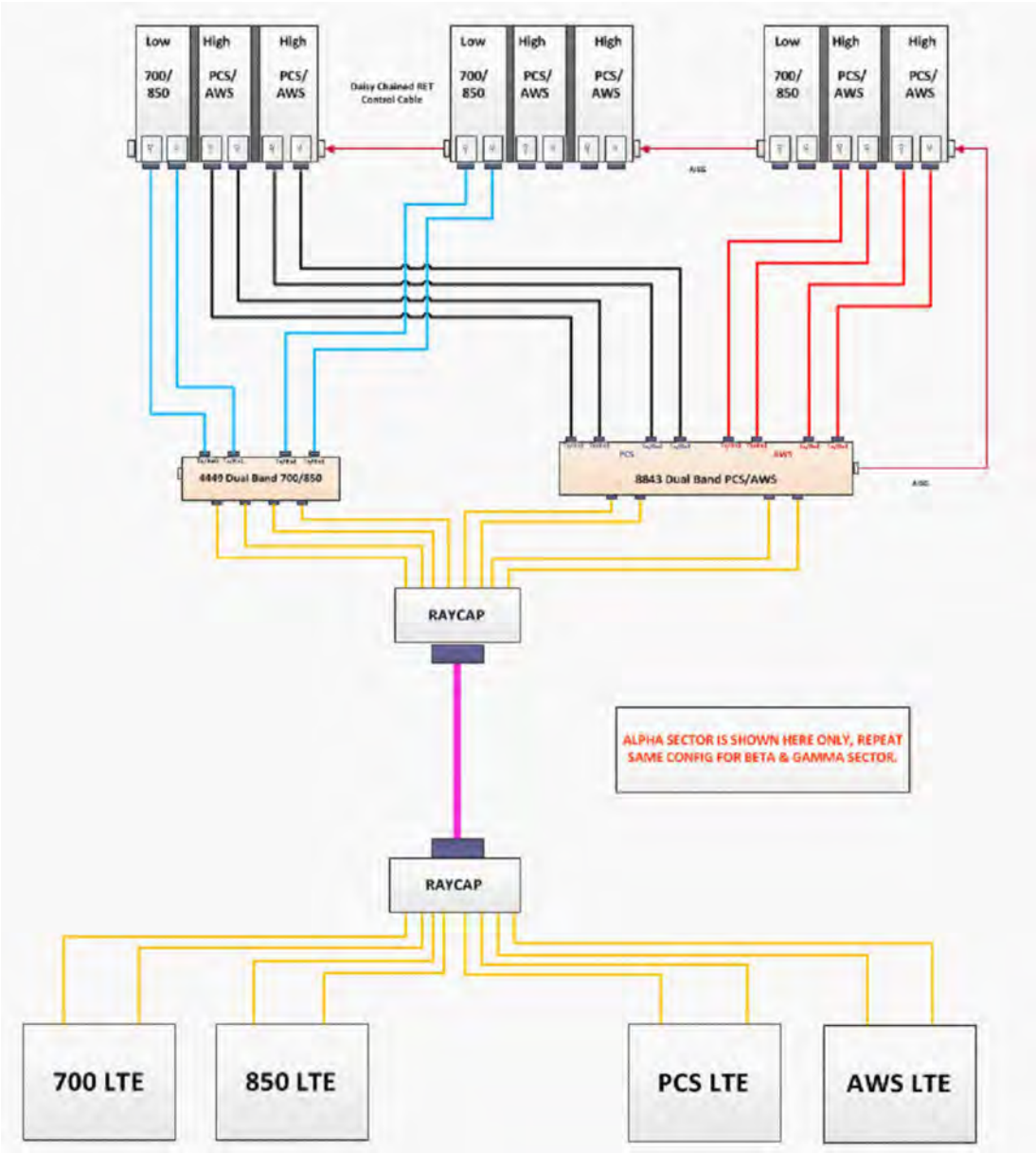
PROJECT #: 33-2531

SHEET TITLE

ANTENNA INFORMATION

SHEET NUMBER

ANT-2



1 CABLE DIAGRAM
N.T.S.

Raycap Layout - Raycap Per Sector					
POWER					
3	700 RRU		6	700 RRU2/A2	
2	PCSLT RRU		5	PCSLT RRU2/A2	
1	AWS RRU		4	AWS RRU2/A2	
FIBER					
1	2	3	4	5	6
AWS RRU	AWS RRU2/A2	PCSLT RRU	PCSLT RRU/A2	700 RRU	700 RRU/A2
7	8	9	10	11	12

2 RAYCAP TABLE
N.T.S.

REVISIONS		DATE	BY
DESCRIPTION	ISSUED FOR REVIEW	12/27/17	DMS
	ISSUED FOR FINALS	01/22/18	JTM
	UPDATE CABLE LENGTHS	02/02/18	JTM
NO.	1		
	2		

LOC. # 187771

RTE 7 & WEST

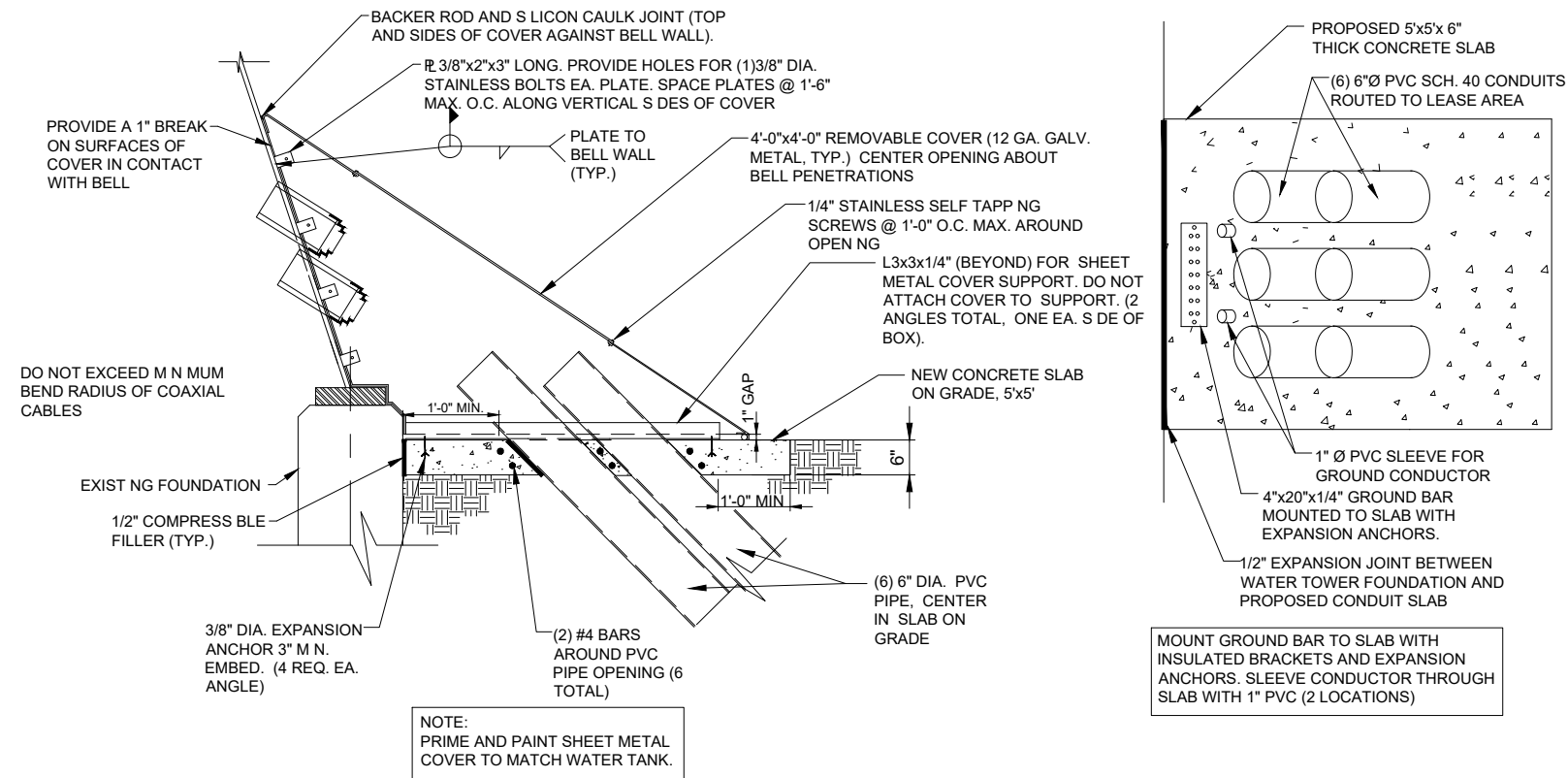
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

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CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

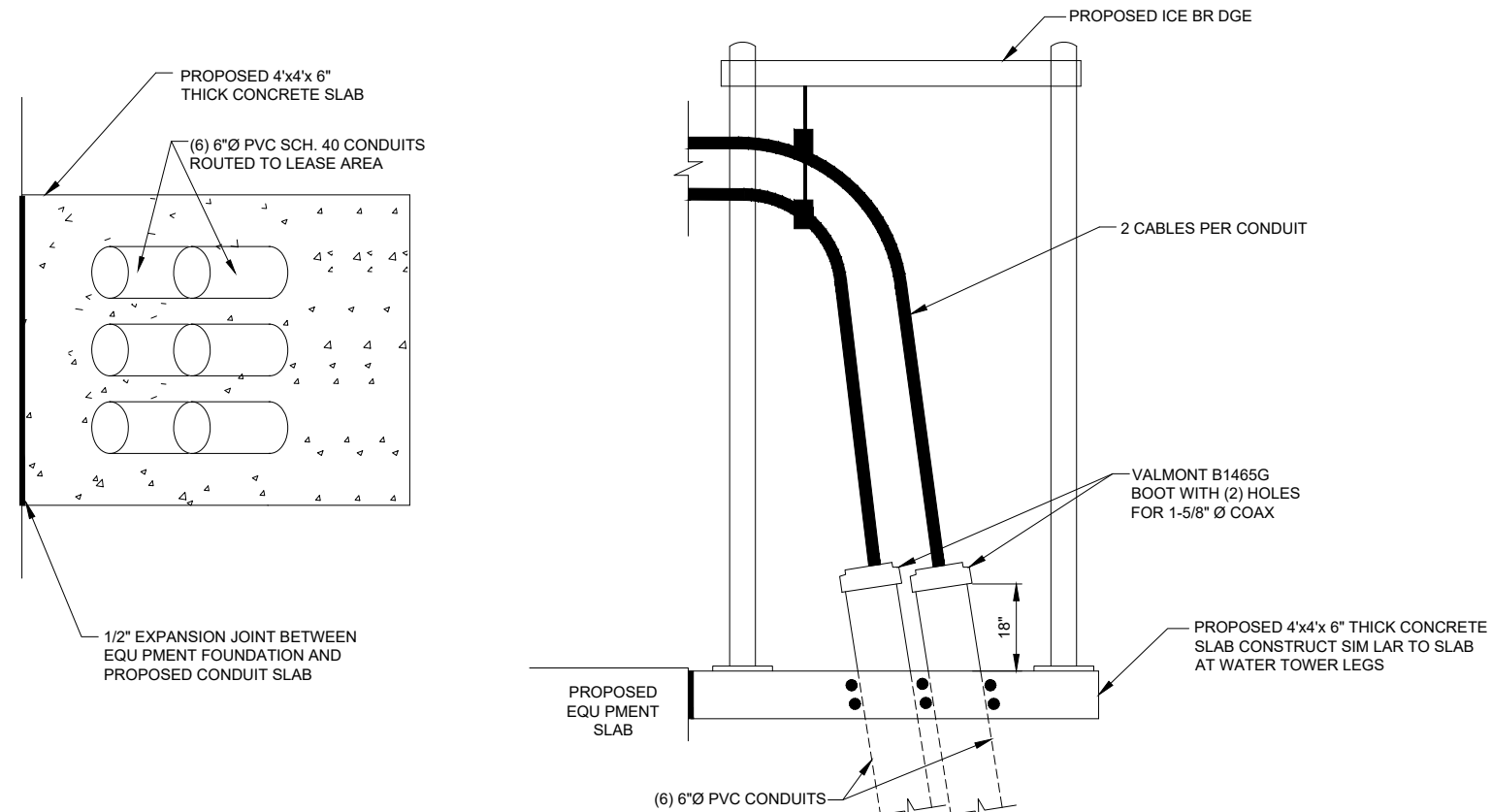
SHEET TITLE
ANTENNA INFORMATION

SHEET NUMBER

ANT-2A



1 SHEET METAL ENCLOSURE @ WATER TOWER BASE
N.T.S.



2 CONDUIT STUB AT LEASE AREA
N.T.S.

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		UPDATE CABLE LENGTHS	02/02/18	JTM	

LOC. # 187771

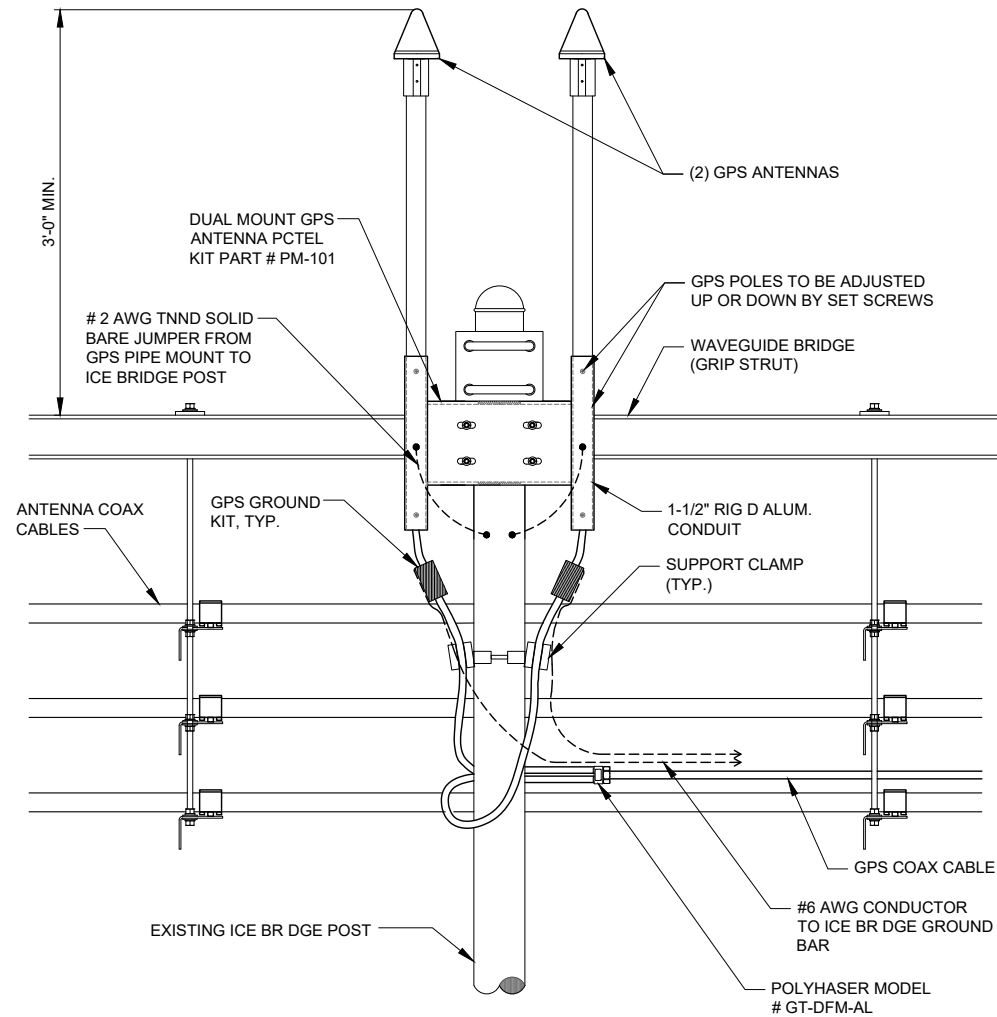
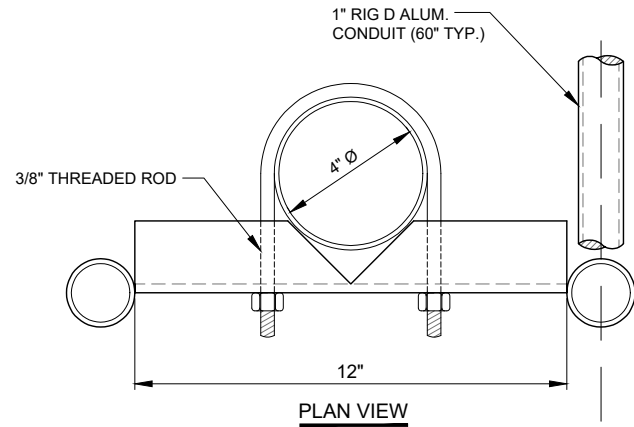
RTE 7 & WEST

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ORLAND PARK, IL 60462

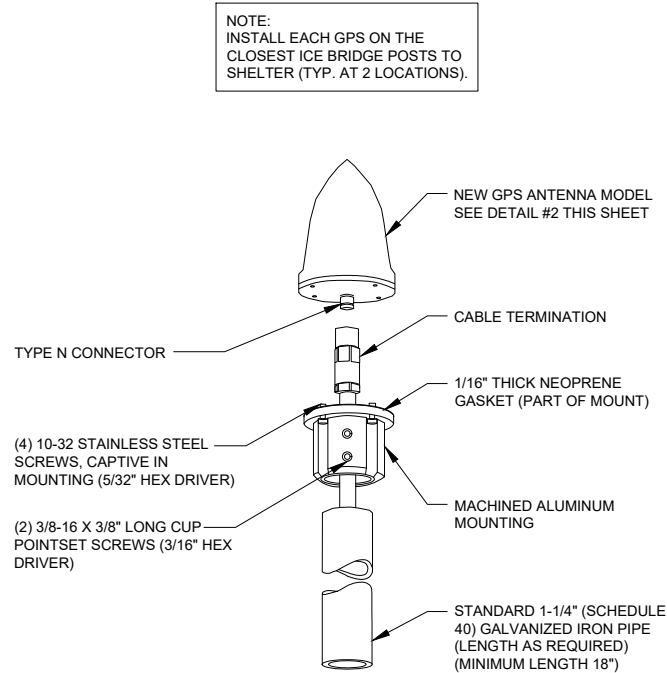
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CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
CONDUIT
ROUTING DETAILS

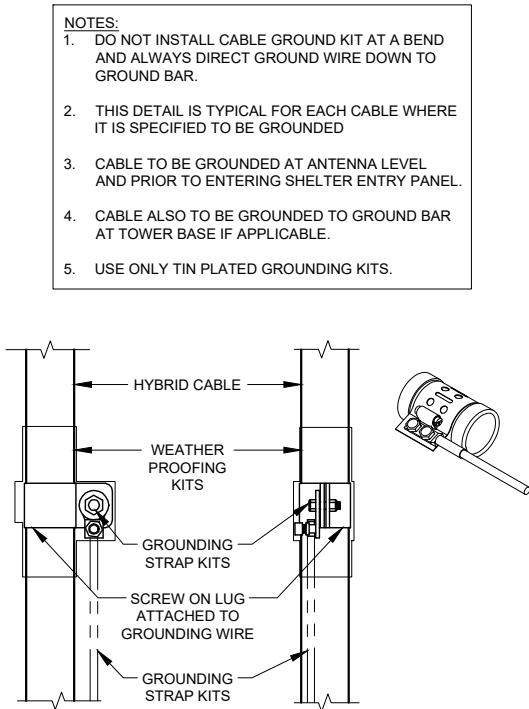
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ANT-3



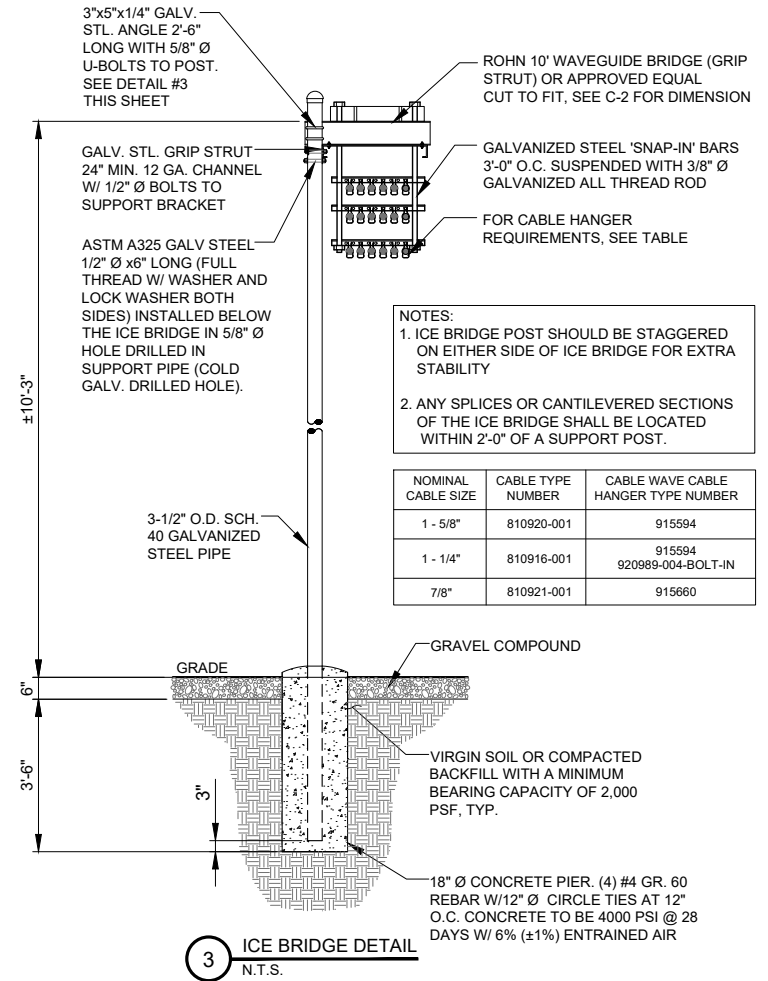
1 GPS MOUNTING DETAIL
N.T.S.



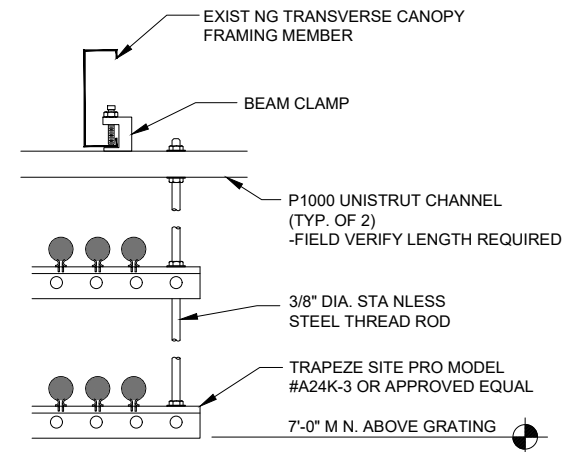
2 TYPICAL GPS DETAIL
N.T.S.



4 COAX/ HYBRID GROUND KIT DETAIL
N.T.S.



3 ICE BRIDGE DETAIL
N.T.S.



4 COAX TRAPEZE DETAIL (AT PLATFORM)
N.T.S.

CHICAGO SMTA
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	UPDATE CABLE LENGTHS		02/02/18		

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RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
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DATE:	12/27/17
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SHEET TITLE
SITE
DETAILS

SHEET NUMBER

ANT-4

GENERAL STRUCTURAL NOTES

- DESIGNED IN ACCORDANCE WITH THE FOLLOW NG CODES:
2006 NTERNATIONAL BUILD NG CODE
- DESIGN LOADS:
 - WIND LOAD (ASCE 7-05/2006 BC):
 - BASIC WIND SPEED (3 SEC. GUST) = 115 MPH
 - WIND IMPORTANCE FACTOR: I = 1.0 (1.15 FOR TANK STRUCTURE)
 - WIND EXPOSURE: C
 - SEISMIC LOAD (ASCE 7-05/2006 IBC)
 - RISK CATEGORY: II
 - SEISMIC MPORTANCE FACTOR: 1.0 (1.25 FOR TANK STRUCTURE)
 - SITE CLASS = D
 - SDS = 0.175g
 - SD1 = 0.112g
 - SEISMIC DESIGN CATEGORY: B
- EQU PMENT SUMMARY (NDIV DUAL SELF WEIGHT + 3/4" RADIAL ICE LOAD)
 - (9) TOTAL SBNHH-ID65B ANTENNAS = 359 LBS
 - (3) TOTAL RCMDC-3315-PF-48 RAYCAP = 135 LBS INTERIOR MOUNT
 - (3) TOTAL 4449 1313/BS RRU = 135 LBS INTERIOR MOUNT
 - (3) TOTAL 8843 B66/B2 RRU = 135 LBS INTERIOR MOUNT

- CONTRACTOR IS RESPONS BLE FOR THE PROTECTION OF EXISTING BUILD NG UT LIT ES, STREETS, EQUIPMENT ETC. DURING CONSTRUCTION. PROVIDE TEMPORARY PROTECTION AS REQUIRED.
- FELD VERIFY ALL EXIST NG CONDITIONS, D MENSIONS AND ELEVATIONS PRIOR TO FABRICATION.
- ANY HOLES CUT N THE EXIST NG OR NEW STRUCTURE WHICH ARE NOT DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED PRIOR TO CONSTRUCTION WITH THE ENGINEER.
- CONTRACTOR TO VER FY ALL EQU PMENT D MENSIONS AND FASTEN NG REQUIREMENTS WITH MANUFACTURER.
- STRUCTURAL DRAW NGS SHALL NOT BE SCALED FOR DIMENSIONS, COORD NATE WITH THE ENG NEER IF D MENSIONS ARE NOT CLEAR.
- ANY CLAMPING-STYLE FRICTION CONNECTIONS INCLUDING U-BOLTS SHOULD INCLUDE A NEOPRENE BARRIER (WITH A GALVANIZED METAL SH M) BETWEEN THE CLAMP / U-BOLT AND THE BASE MATERIAL TO PROTECT THE COAT NG AND PREVENT CORROSION.

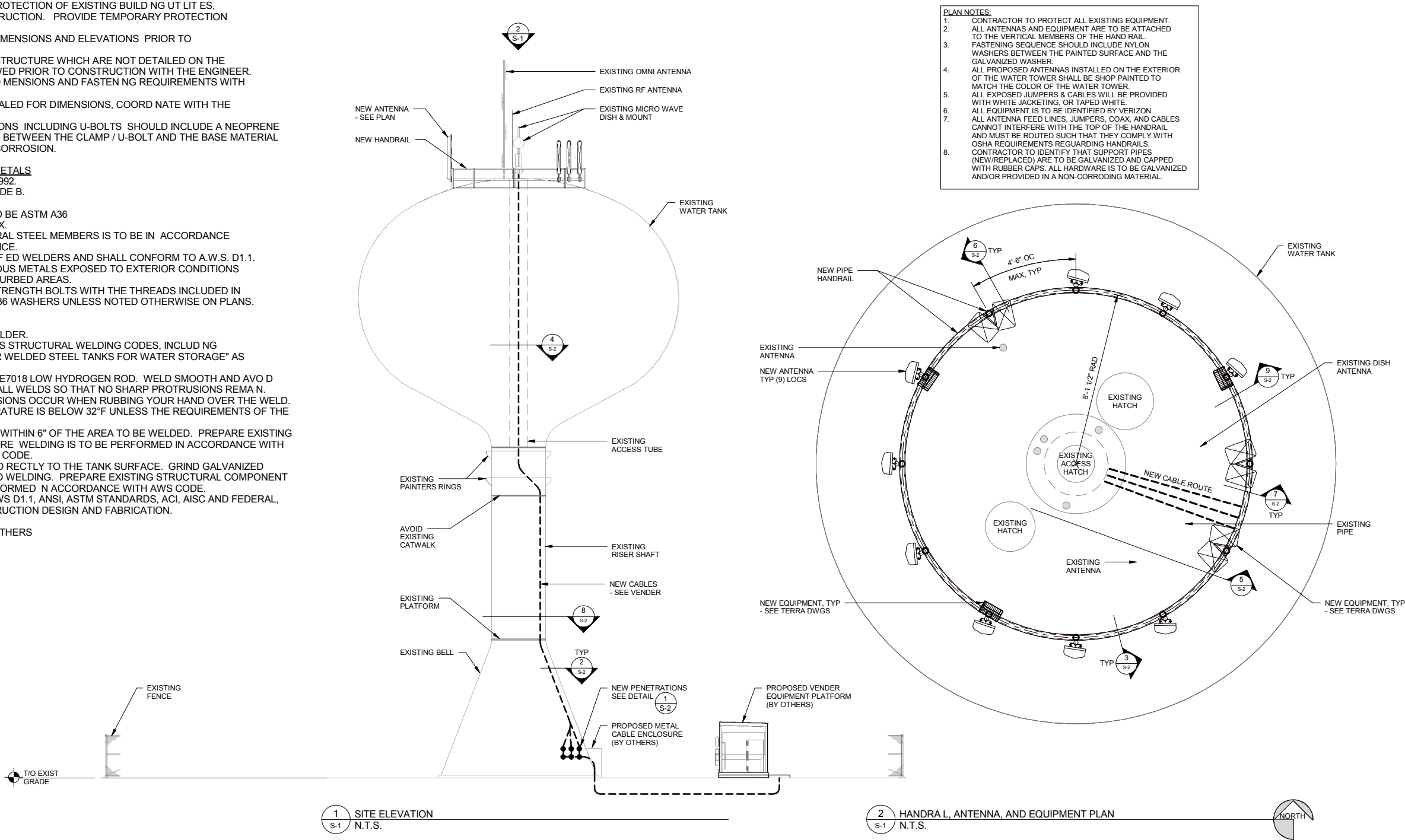
STRUCTURAL STEEL AND MISCELLANEOUS METALS

- ALL WIDE FLANGE MEMBERS TO BE ASTM A992.
- HSS STRUCTURAL TUBING TO BE A500, GRADE B.
- P PE TO BE A53, GRADE B.
- ALL OTHER STRUCTURAL STEEL SHAPES TO BE ASTM A36
- ALL WELDING ELECTRODES SHALL BE E70XX.
- FABRICATION AND ERECTION OF STRUCTURAL STEEL MEMBERS IS TO BE IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE.
- ALL WELDING TO BE PERFORMED BY QUALIF ED WELDERS AND SHALL CONFORM TO A.W.S. D1.1.
- ALL STRUCTURAL STEEL AND MISCELLANEOUS METALS EXPOSED TO EXTERIOR CONDITIONS SHALL BE GALVANIZED. TOUCH UP ALL DISTURBED AREAS.
- BOLTED CONNECTION TO USE A325 HIGH STRENGTH BOLTS WITH THE THREADS INCLUDED IN THE SHEAR PLANE WITH A563 NUTS AND F436 WASHERS UNLESS NOTED OTHERWISE ON PLANS.

WELDING

- ALL WELDING SHALL BE BY A CERTIFIED WELDER.
- ALL WELDING SHALL COMPLY WITH THE AWS STRUCTURAL WELDING CODES, INCLUD NG ANSIAWWA D100-96 "AWWA STANDARD FOR WELDED STEEL TANKS FOR WATER STORAGE" AS MOD FIED TO DATE.
- MAKE ALL WELDS TO THE TANK WALL WITH E7018 LOW HYDROGEN ROD. WELD SMOOTH AND AVO D UNDERCUTS AND BURRS. GRIND SMOOTH ALL WELDS SO THAT NO SHARP PROTRUSIONS REMA N. SMOOTH IS DEF NED AS NO CUTS OR ABRASIONS OCCUR WHEN RUBBING YOUR HAND OVER THE WELD.
- DO NOT WELD WHEN THE AMB ENT TEMPERATURE IS BELOW 32°F UNLESS THE REQUIREMENTS OF THE AWWA D100 SEC. 10.2.1 ARE FOLLOWED.
- BEFORE WELD NG REMOVE ALL COAT NGS WITHIN 6" OF THE AREA TO BE WELDED. PREPARE EXISTING STRUCTURAL COMPONENT SURFACES WHERE WELDING IS TO BE PERFORMED IN ACCORDANCE WITH SSPC-SP-10 WHITE METAL BLAST CLEANING CODE.
- DO NOT WELD GALVANIZED COMPONENTS D RECTLY TO THE TANK SURFACE. GRIND GALVANIZED SURFACES FREE OF GALVANIZING PRIOR TO WELDING. PREPARE EXISTING STRUCTURAL COMPONENT SURFACES WHERE WELDING IS TO BE PERFORMED N ACCORDANCE WITH AWS CODE.
- COMPLY WITH APPLICABLE AWWA D-100, AWS D1.1, ANSI, ASTM STANDARDS, ACI, AISC AND FEDERAL, STATE, AND LOCAL CODES DURING CONSTRUCTION DESIGN AND FABRICATION.

PAINTING & COAT NG SPECIFICATIONS: BY OTHERS



- PLAN NOTES:
1. CONTRACTOR TO PROTECT ALL EXISTING EQUIPMENT.
 2. ALL ANTENNAS AND EQUIPMENT ARE TO BE ATTACHED TO THE VERTICAL MEMBERS OF THE HAND RAIL.
 3. FASTENING SEQUENCE SHOULD INCLUDE NYLON WASHERS BETWEEN THE PAINTED SURFACE AND THE GALVANIZED WASHER.
 4. ALL PROPOSED ANTENNAS INSTALLED ON THE EXTERIOR OF THE WATER TOWER SHALL BE SHOP PAINTED TO MATCH THE COLOR OF THE WATER TOWER.
 5. ALL EXPOSED JUMPERS & CABLES WILL BE PROVIDED WITH WHITE JACKETING, OR TAPED WHITE.
 6. ALL EQUIPMENT IS TO BE IDENTIFIED BY VERIZON.
 7. ALL ANTENNA FEED LINES, JUMPERS, COAX, AND CABLES CANNOT INTERFERE WITH THE TOP OF THE HANDRAIL AND MUST BE ROUTED SUCH THAT THEY COMPLY WITH OSHA REQUIREMENTS REGARDING HANDRAILS.
 8. CONTRACTOR TO IDENTIFY THAT SUPPORT PIPES (NEW/REPLACED) ARE TO BE GALVANIZED AND CAPPED WITH RUBBER CAPS. ALL HARDWARE IS TO BE GALVANIZED AND/OR PROVIDED IN A NON-CORRODING MATERIAL.

CHICAGO
SMSA

limited partnership
d/b/a VERIZON WIRELESS

TERRA
CONSULTING ENGINEERS, LTD.

600 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH: 847-698-6400
FAX: 847-698-6401

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR CONSTRUCTION	12/22/17	JTF
2			
3			
4			
5			
6			
7			
8			
9			
10			

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

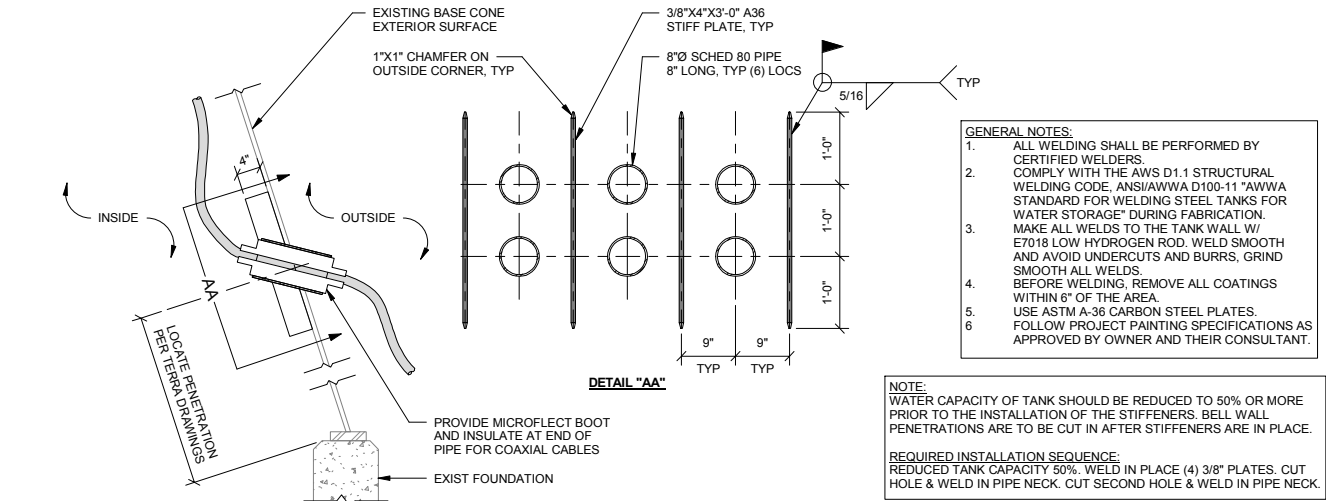
DRAWN BY:	JTF
CHECKED BY:	LBL
DATE:	12/22/17
PROJECT #:	172002.65

SHEET TITLE

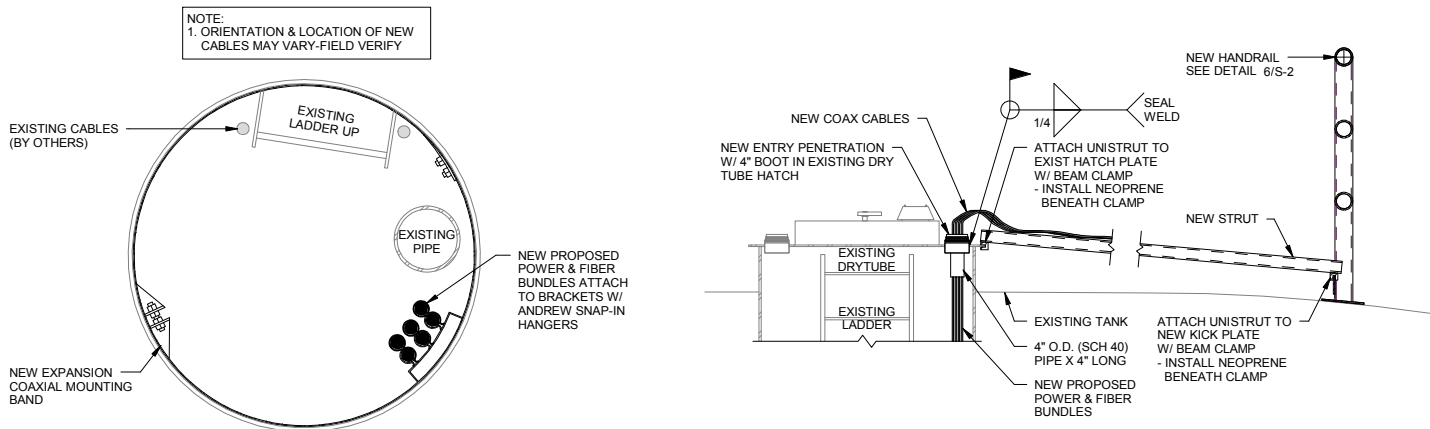
STRUCTURAL NOTES,
ELEVATION, & PLAN

SHEET NUMBER

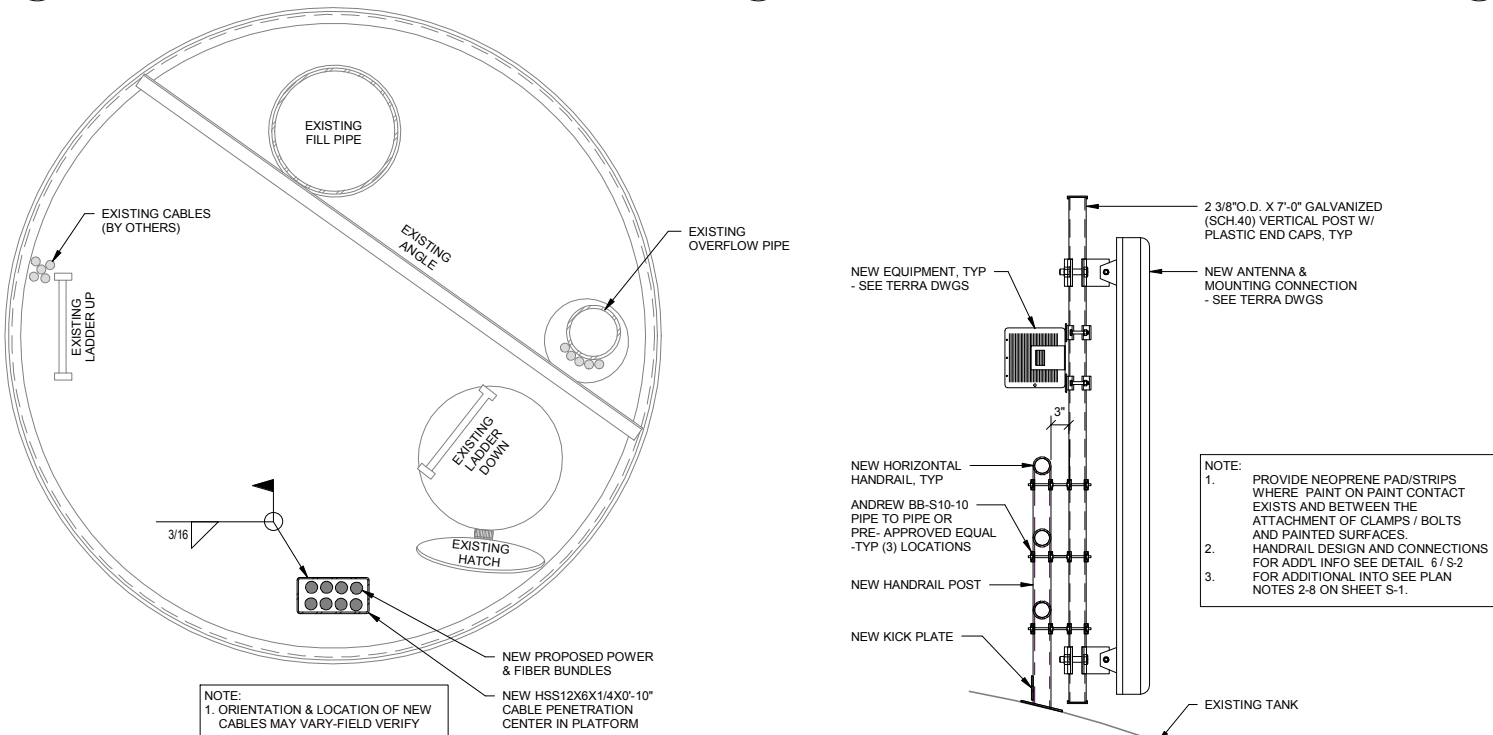
S-1



1 TYPICAL COAX CABLE PENETRATION DETAIL
S-2 3/4" = 1'-0"



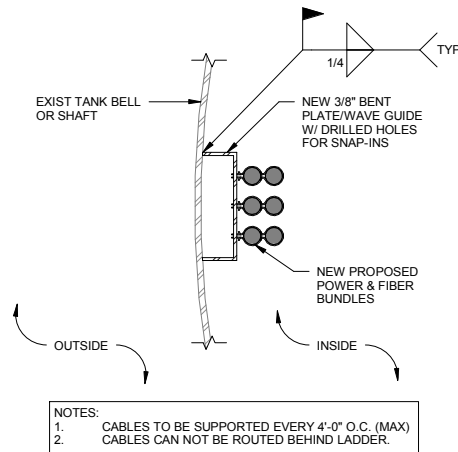
4 VERTICAL CABLE DRYTUBE ACCESS DETAIL - PLAN
S-2 N.T.S.



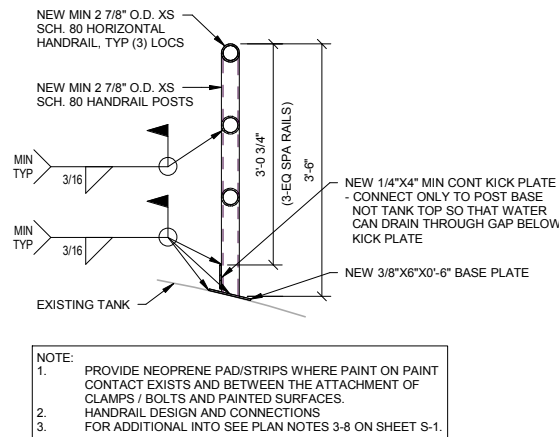
8 TYPICAL PLATFORM PENETRATION DETAIL - PLAN
S-2 N.T.S.

5 ENTRY PORT & CABLE SUPPORT DETAIL
S-2 3/4" = 1'-0"

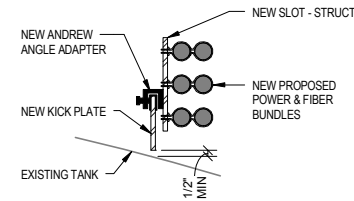
9 TYPICAL ANTENNA P PE SUPPORT DETAIL
S-2 3/4" = 1'-0"



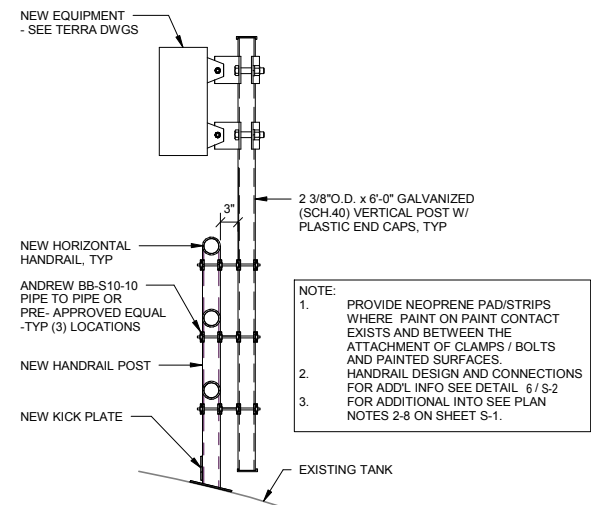
2 TYPICAL VERTICAL COAX CABLE DETAIL
S-2 1 1/2" = 1'-0"



6 TYPICAL PIPE HANDRAIL DETAIL
S-2 3/4" = 1'-0"



3 TYPICAL COAX CABLE TO KICKER DETAIL
S-2 1 1/2" = 1'-0"



7 TYPICAL EQUIPMENT PIPE SUPPORT DETAIL
S-2 3/4" = 1'-0"

CHICAGO SMSA
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FAX: 847-698-6401

NO.	REVISIONS		DESCRIPTION	ISSUED FOR CONSTRUCTION	DATE	BY
					12/22/17	JTF

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	JTF
CHECKED BY:	SMB
DATE:	12/22/17
PROJECT #:	172002.65

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S-2



REVISIONS				
NO.	DESCRIPTION	DATE	BY	DMS
1	ISSUED FOR REVIEW	12/27/17	JTM	
2	ISSUED FOR FINALS	01/22/18	JTM	
	UPDATE CABLE LENGTHS	02/02/18		

LOC. # 187771

RTE 7 & WEST

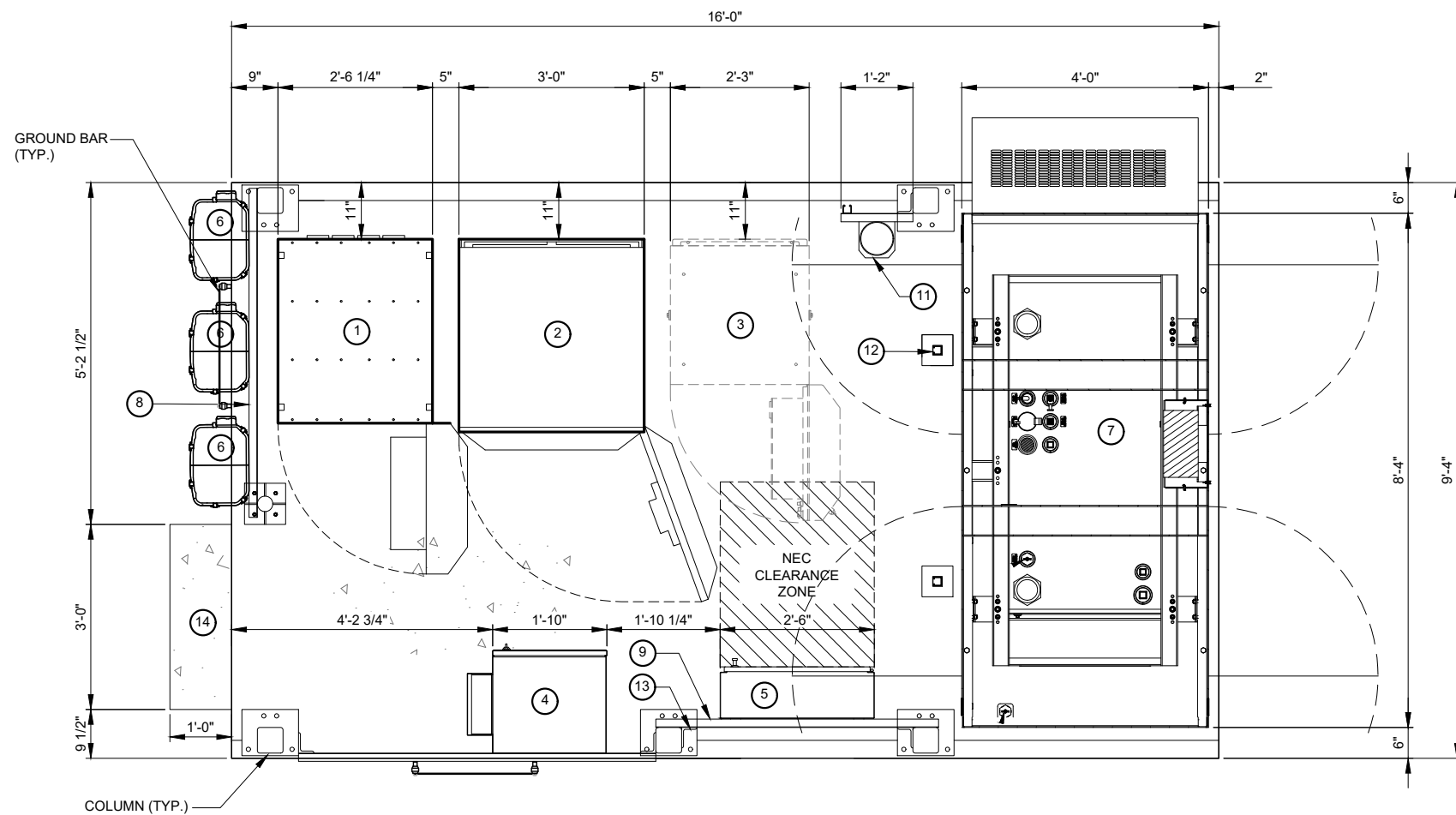
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
**EQUIPMENT
SKID
PLAN & NOTES**

SHEET NUMBER

B-1



1 EQUIPMENT SKID - LAYOUT PLAN
SCALE: 3/4" = 1'-0"

KEY NOTES

- COMMSCOPE RBA72-30 EQUIPMENT CABINET (72"x31.3"x44")
- COMMSCOPE RBA72-36 BATTERY CABINET (72"x36.3"x40.6")
- ERICSSON 61220 ENODE B CABINET IF REQUIRED (6'-6"x2'-3"x2'x3")
- CHARLES CUBE RL1003 FIBER ENCLOSURE
- INTEGRATED LOAD CENTER
- RAYCAP SURGE SUPPRESSION UNIT (VERIFY QUANTITY AND LOCATION WITH CONSTRUCTION DRAWINGS AND LOCATION OF ICE BRIDGE)
- GENERATOR MODEL #; TRIPLE CONFORMANCE DIESEL - 30KW MTU DG03RJ096V1M22
SEE EX-1 PAGE FOR GENERATOR DETAILS
- UNI-STRUT (P1000T) OVP MOUNTING RACK
- UNI-STRUT (P1000T) ILC MOUNTING RACK
- 3" O.D. PIPE W/ 8"x8" MOUNTING PLATE
- FIRE EXTINGUISHER BRACKET ON UNI-STRUT (P1000T) SUPPORT
- UNI-STRUT (P1000T) SUPPORT BASE FOR CONDUITS BETWEEN LC AND GENERATOR.
- 3"x4"x3/8" THK. SLOTTED ANGLE
- 12"x36" CONCRETE STEP

NOTES:

- EQUIPMENT SKID PRE MANUFACTURED BY OTHERS
- THIS IS UNMANNED STORAGE AND EQUIPMENT SKID ONLY.
- SKID SHALL BE PLACED ACCORDING TO STATE AND LOCAL CODE FROM ANY PROPERTY LINE, INTERIOR LOT LINE OR ANY OTHER BUILDING.
- ALL ITEMS NOTED AS "FIELDWORK" SHALL BE INSTALLED AND TESTED AT THE FACTORY THEN REMOVED FOR TRANSPORT AND REINSTALLED AT THE FINAL SITE.
- SKID NOT DESIGNED FOR INSTALLATION IN A FLOOD PRONE AREA.
- FIRE EXTINGUISHER INSTALLED BY OTHERS WHEN NOT SUPPLIED BY SABRE.
- THIS SKID DOES NOT CONTAIN PLUMBING FACILITIES.
- THIS ENCLOSURE IS CLASSIFIED AS USE S-2 (IBC, FBC), U (OBC)
2006-2015 INTERNATIONAL BUILDING CODE
2009-2012 UNIFORM MECHANICAL CODE
2006-2015 INTERNATIONAL MECHANICAL CODE
2004 CHICAGO BUILDING CODE
- DESIGN PARAMETERS**
USE GROUP: S-2 (IBC, FBC)
U (OBC)
CONSTRUCTION TYPE: V-B (IBC, FBC)

OCCUPANCY CATEGORY: II

ROOF LIVE LOAD: 81 PSF

FLOOR LIVE LOAD: 986 PSF

GROUND SNOW LOAD: 96 PSF (N/A FOR FBC 2014)

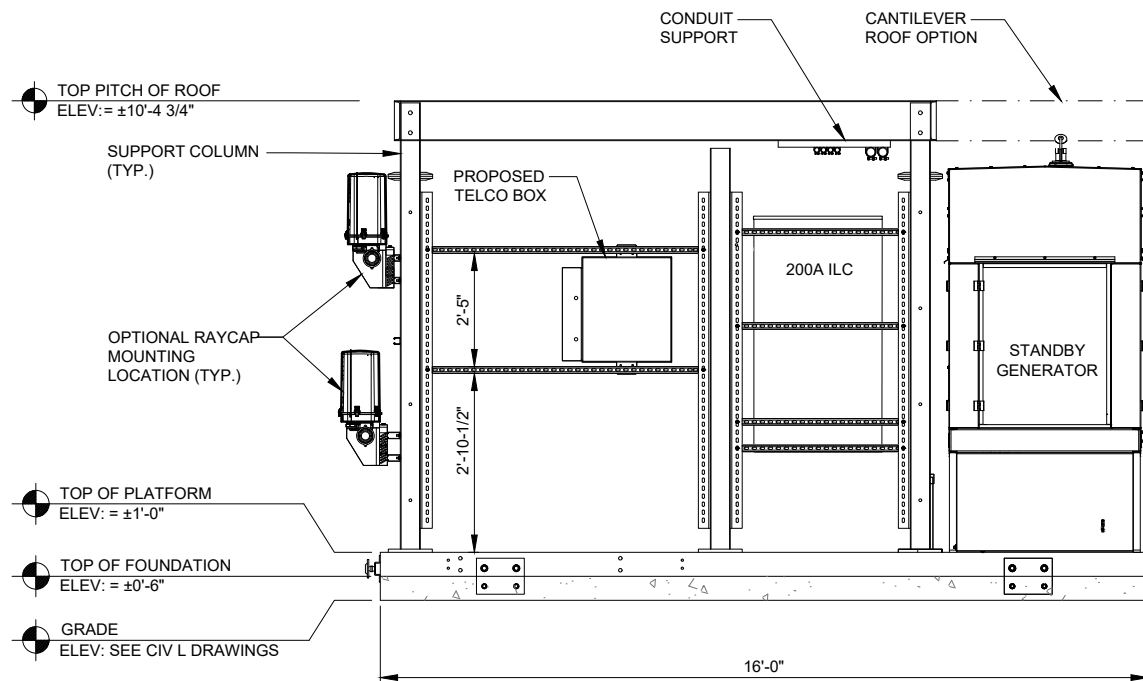
WIND SPEED: 150 MPH/EXPOSURE C

SEISMIC ZONE FOR SBC & UBC: 4
SEISMIC DESIGN CATEGORY FOR IBC: E (IBC)

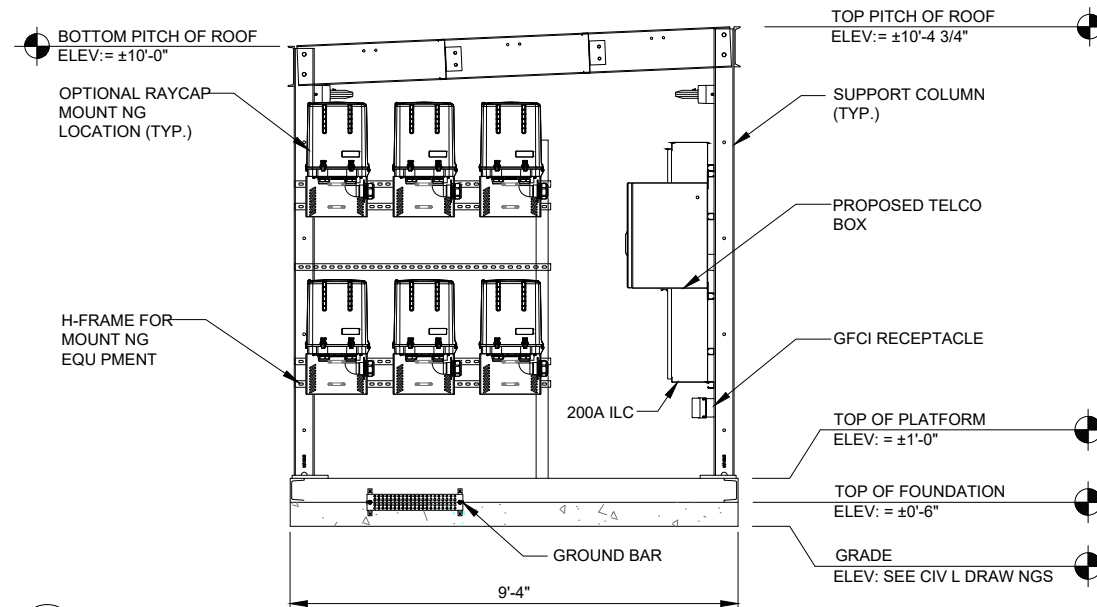
BULLET RESISTANCE LEVEL 4 FOR 4" CONCRETE PER IBC
CONCRETE f_c : 5000 PSI AT 28 DAYS
CONCRETE UNIT WEIGHT: 115 PCF

USE GROUP-III (OBC)
SITE CLASS-D (OBC)

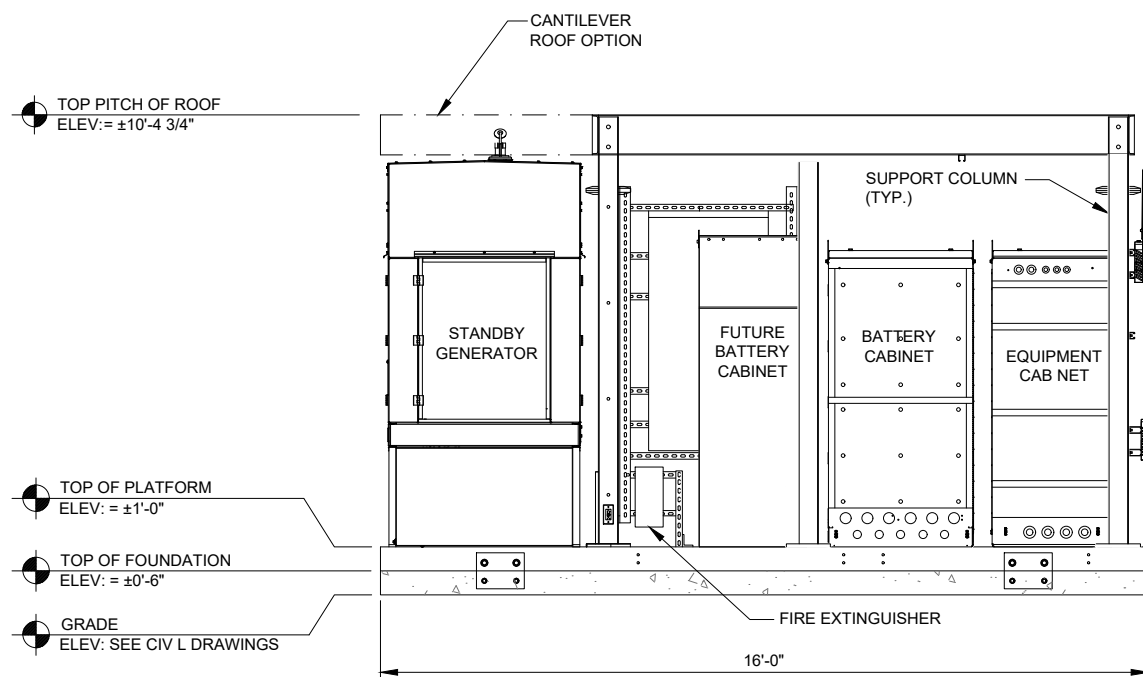
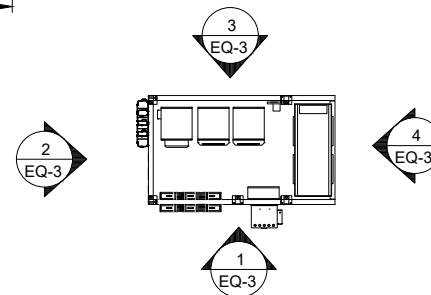
10. SKID AND ASSOCIATED EQUIPMENT IS PROVIDED BY OWNER UNDER SEPARATE CONTRACT. EQUIPMENT SKID INFORMATION INDICATED HEREIN IS PROVIDED FOR REFERENCE ONLY AND IS TAKEN FROM MANUFACTURER'S AVAILABLE DATA. REFER TO CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR WORK TO BE PERFORMED UNDER THIS CONTRACT.



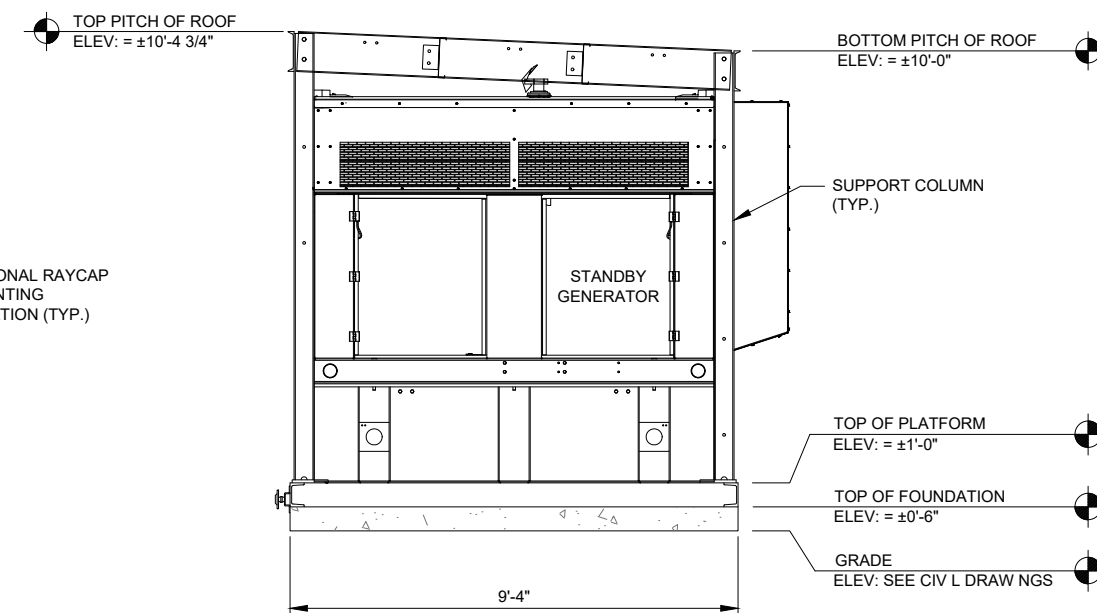
1 EQUIPMENT PLATFORM ELEVATION
SCALE: N.T.S.



2 EQUIPMENT PLATFORM ELEVATION
SCALE: N.T.S.



3 EQUIPMENT PLATFORM ELEVATION
SCALE: N.T.S.



4 EQUIPMENT PLATFORM ELEVATION
SCALE: N.T.S.

NOTE: FOR REFERENCE ONLY

CHICAGO SMTA
limited partnership
d/b/a VERIZON WIRELESS



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	UPDATE CABLE LENGTHS		02/02/18		

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
EQUIPMENT PLATFORM
ELEVATIONS

SHEET NUMBER

B-2

UTILITY NOTES:

WORK INCLUDES:
THESE NOTES AND ACCOMPANY NG DRAW NGS COMPLEMENT THE PROVISIONS AND NSTALLATIONS BY THE ELECTRICAL CONTRACTOR, OF ALL LABOR, MATERIALS AND EQU PMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS VERIZON WIRELESS SITE AND SHALL INCLUDE, BUT NOT BE L MITED TO THE FOLLOWING:

1. THE PROVISIONS, NSTALLATION, AND CONNECTION OF A GROUNDING ELECTRODE SYSTEM COMPLETE WITH A BUILD NG AND SECONDARY GROUND NG, CELLULAR TELEPHONE COMMUNICATIONS TOWER AND CONNECTIONS TO THE INCOM NG ELECTRICAL DISTR BUTION EQU PMENT.
2. THE PROVISION AND INSTALLATION OF AN OVERHEAD ELECTRICAL SERVICE OR UNDERGROUND ELECTRICAL SERVICE AND ALL ASSOCIATED W RE AND CONDUIT AS REQUIRED AND/OR NDICATED ON PLANS.
3. THE PROVISION, NSTALLATION OF CONDUIT AND CONNECTIONS FOR LOCAL TELEPHONE SERVICE.
4. THE FURNISH NG AND INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUITS, METER SOCKET, AND CONNECTIONS TO THE SERVICE EQUIPMENT WITHIN THE ENCLOSURE.
5. TWO NCH (2") AND THREE NCH (3") DIAMETER PVC CONDUITS SCHEDULE 40.
6. ALL PVC CONDUITS SHOULD BE LEFT WITH NYLON PULL CORD FOR FUTURE USE.
7. EXCAVATION, TRENCHING, AND BACKF LLING FOR CONDUIT(S), CABLE(S), AND EXTERNAL GROUND NG SYSTEM.

CODES, PERMITS, AND FEES:

1. ALL REQUIRED PERMITS, LICENSES, NSPECTIONS AND APPROVALS SHALL BE SECURED AND ALL FEES FOR SAME PAID BY CONTRACTOR.
2. THE NSTALLATION 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 AUTHORIT ES:

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 WIR NG:

1. W RING OF EVERY K ND MUST BE INSTALLED N CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER.
2. UNLESS OTHERWISE SPEC F ED, ALL W RING SHALL BE COPPER (CU) TYPE THWN, SIZED N 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 PROV DED AS REQU RED TO FAC LITATE INSTALLATION OF RACEWAYS AND W RING. PROVIDE JUNCTION AND PULLBOXES FOR CONDUIT RUNS WITH MORE THAN (360) DEGREES OF BENDS.
5. PROVIDE A COMPLETE RACEWAY AND WIR NG INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUND E N ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
6. ELECTRICAL PANELBOARD SHALL BE FURNISHED AND NSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL F EL D VERIFY EXACT LOCATION.
7. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUND NG BUSHING.

GENERAL NOTES:

SEE DET A LS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQU REMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAW NGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL NFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO ENG NEER BEFORE SUBMITT NG B D. ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPEC FICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY W RE ALL ASSOCIATED EQU PMENT IN ACCORDANCE WITH MANUFACTURER'S W RE DIAGRAMS AND AS REQU RED FOR A COMPLETE OPERAT NG INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQU REMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND W RING TO AVO D CONFLICTS.

COORD NATION WITH UT LITY COMPANY:

THE ELECTRICAL CONTRACTOR SHALL COORD NATE COMPLETE ELECTRICAL SERVICE WITH LOCAL UT LITY COMPANY FOR A COMPLETE OPERATIONS SYSTEM, INCLUD NG TRANSFORMER CONNECTIONS, CONCRETE TRANSFORMER PADS, IF REQU RED, METER SOCKETS, PRIMARY CABLE RACEWAY REQUIREMENTS, SECONDARY SERVICE, ETC. PRIOR TO SUBMITT NG B D TO NCLUDE ALL LABOR AND MATERIALS. THE ELECTRICAL CONTRACTOR SHALL NCLUDE IN THE B D ANY OPTIONAL OR EXCESS FACILITY CHARGES ASSOCIATED WITH PROV DING ELECTRICAL SERVICE FROM LOCAL UTILITY COMPANY. VER FY BEFORE B DDING TO NCLUDE ALL COSTS. THE ELECTRICAL CONTRACTOR SHALL VER FY THE AVAILABLE FAULT CURRENT WITH THE LOCAL UT LITY COMPANY PRIOR TO SUBMITTING BID. ADJUST A.I.C. RAT NGS OF ALL OVER CURRENT PROTECTION DEVICES IN DISTRIBUTION EQUIPMENT AS REQU RED TO COORDINATE WITH AVA LABLE FAULT CURRENT FROM LOCAL UTILITY COMPANY. ALL GROUNDING RODS PROV DED BY THE POWER OR TELEPHONE UTILITY COMPAN ES MUST BE TIED INTO THE MA N EXTERNAL GROUND RING.

UTILITY CONTACTS:

POWER: COMED
WARREN TAYLOR (708) 235-2328
ACCT # 03540-83159

FIBER: ONEFIBER
ALLEN BROTHERSON
(630) 464-1590

ELECTRICAL CONTRACTOR SHALL COORD NATE WITH POWER COMPANY FOR ENTRY INTO FENCED AREA BY EITHER MA LING A KEY TO A SLAVE LOCKED CHA N AT THE FENCE GATE OR CALL NG AND LEAV NG A COMB NATION.

FOR CONT NUATION AND CONNECTION OF ELECTRIC AND F BER SERVICE. COORD NATE WITH ELECTRIC AND F BER COMPANY.

NOTE:
SEE SHEET LP FOR
ENT RE UT LITY ROUTE.

PROPOSED (2) 4" Ø CONDUIT W/
(2) 1-1/4" INNERDUCTS FROM LESSEE
HANDHOLE AT COMPOUND TO LESSEE
HANDHOLE AT ROW ,BY G.C. (315'± L.F.)

PROPOSED F BER CONDUIT
BY F BER PROVIDER

PROPOSED (2) 4" Ø CONDUIT W/
(2) 1-1/4" NNERDUCTS FROM FIBER
HANDHOLE TO FIBER BOX AT
PLATFORM BY G.C. (110'± L.F.)

PROPOSED FIBER CONDUIT
BY FIBER PROVIDER

PROPOSED (2) 4" Ø CONDUIT W/
(2) 1-1/4" NNERDUCTS FROM FIBER
HANDHOLE TO FIBER BOX AT
PLATFORM BY G.C. (42'± L.F.)

PROPOSED UNDERGROUND
COAX ROUTE TO TOWER

PROPOSED (9'-4" X 16'-0")
LESSEE EQUIPMENT PLATFORM

PROPOSED LESSEE GENERATOR
MOUNTED ON PLATFORM

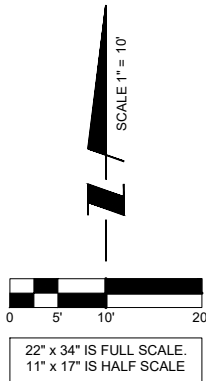
EXIST NG TRANSFORMER

PROPOSED 3" CONDUIT W/ (3) #4/0,
BY G.C. (110'± L.F.)

OPERATES 24 HOURS
A DAY 365 DAYS A YEAR



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



NOTE:
CONTRACTOR TO VERIFY ROUTES WITH LOCAL
UT LITY COMPANY PRIOR TO NSTALLATION.

CHICAGO SMTA
limited partnership
d/b/a VERIZON WIRELESS



REVISIONS

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR REVIEW	12/27/17	DMS
2	ISSUED FOR FINALS	01/22/18	JTM
	UPDATE CABLE LENGTHS	02/02/18	JTM

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: DMS

CHECKED BY: TAZ

DATE: 12/27/17

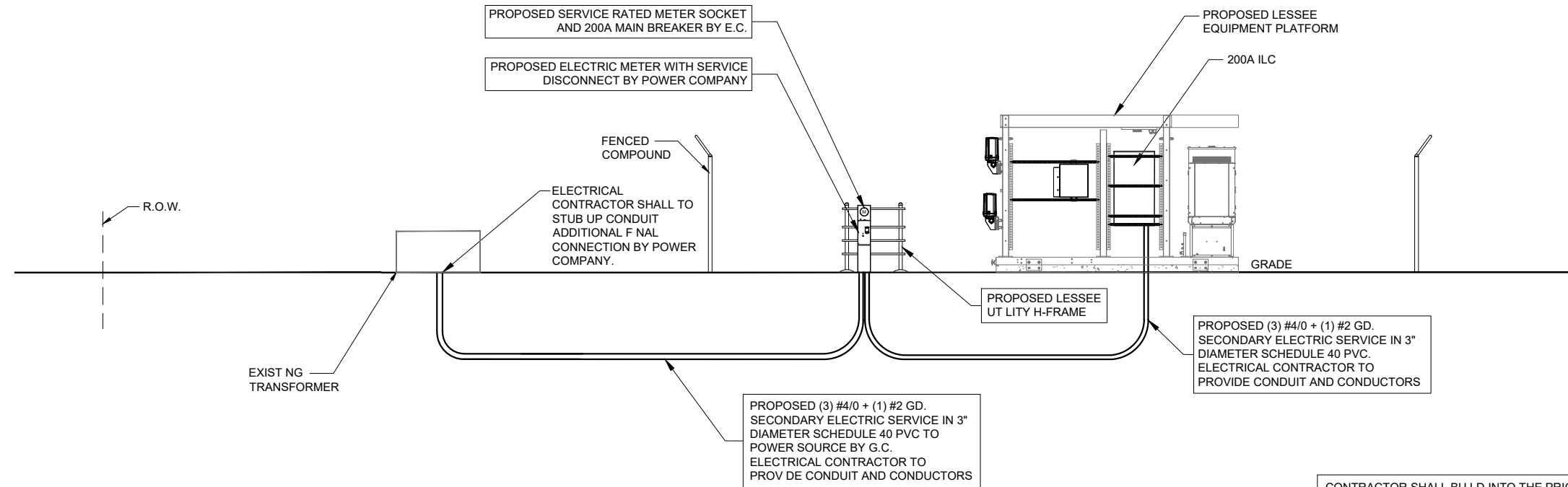
PROJECT #: 33-2531

SHEET TITLE

UTILITY ROUTING PLAN

SHEET NUMBER

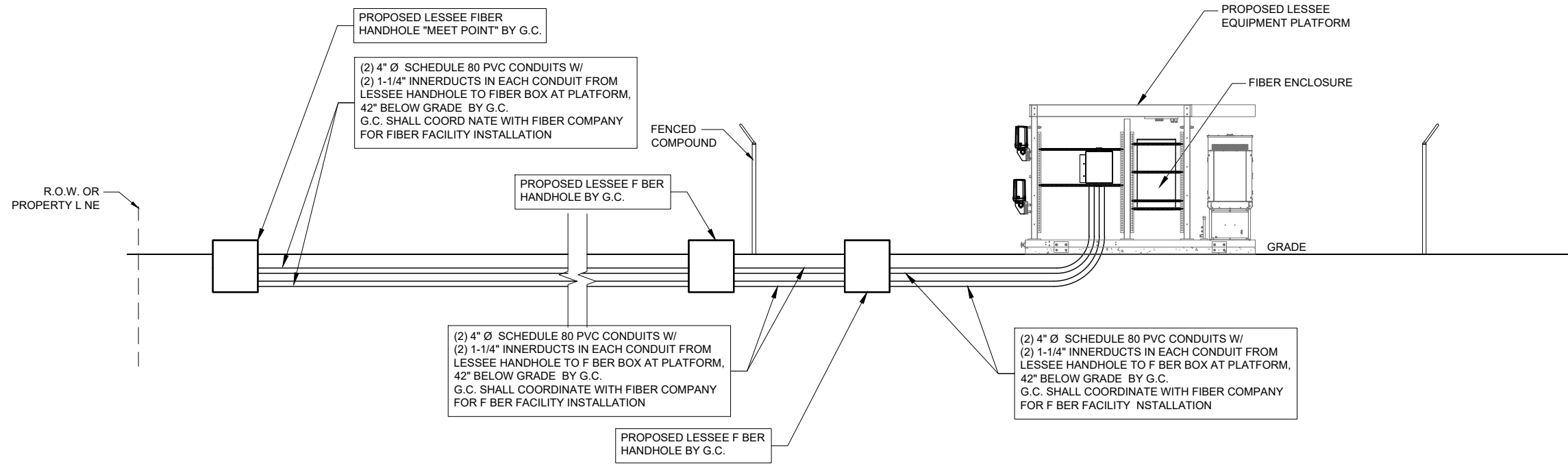
E-1



ELECTRICAL SERVICE: 200 AMP 120/240V SINGLE PHASE 3 WIRE

1 POWER RISER DIAGRAM
SCALE: N.T.S.

CONTRACTOR SHALL BUILD INTO THE PRICE OF THE B D 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: VERIFY FIBER ROUTING REQUIREMENTS WITH FIBER COMPANY

2 FIBER RISER DIAGRAM
SCALE: N.T.S.



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		DESCRIPTION	
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ORLAND PARK, IL 60462

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CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
UTILITY RISER
DIAGRAMS

SHEET NUMBER

E-1A

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
4. FENCE/GATE: GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 25 FEET OF TOWER AS INDICATED ON DRAWINGS. GROUND EACH GATE POST AND CORNER POST. GROUND CONNECTIONS TO FENCE POSTS SHALL BE MADE BY THE EXOTHERMIC PROCESS AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.
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:

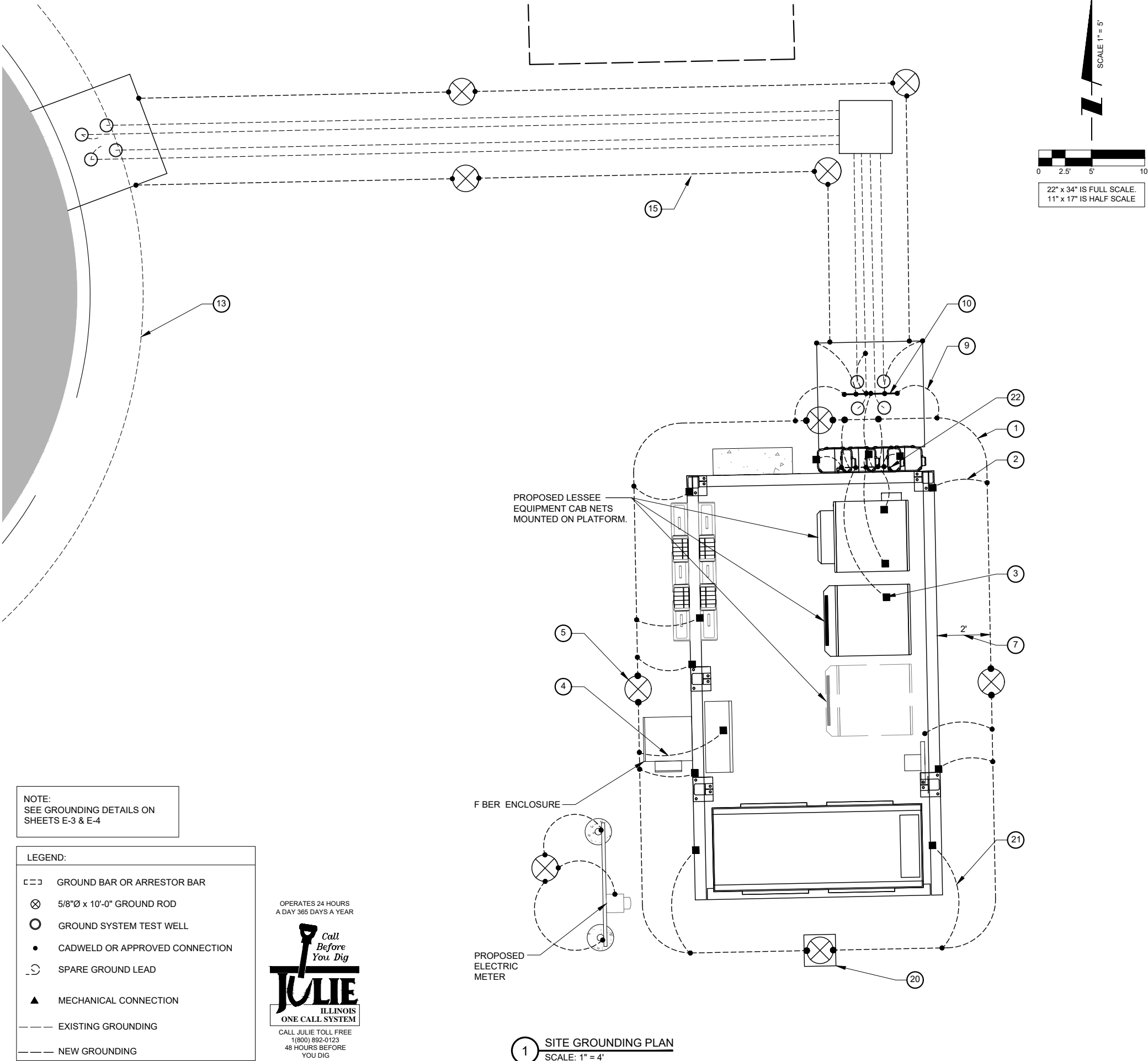
1. ONE (1) COPY TO OWNER REPRESENTATIVE

2. ONE (1) COPY TO ENGINEER

3. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE

TYPICAL KEYED GROUNDING NOTES

- 1 #2 AWG TNNND SOLID BARE COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS
- 2 PLATFORM CORNER POST, STEEL COLUMN, STEEL BEAM & CANOPY GROUND
- 3 CAB NET GROUND BOLTED TO UNIT HOUS NG
- 4 DISCONNECT AND ELECTRIC SERVICE GROUND TO GROUND ROD
- 5 5/8" x 10' COPPER CLAD GROUND ROD
- 6 GROUND CHAIN LINK FENCE (TYPICAL) EXOTHERMIC CONNECTION (TYPE VS) GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 25 FEET OF TOWER. (SEE DETA L, SHEET E-5.)
- 7 MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.
- 8 GROUND COAXIAL ANTENNA CABLES TO GROUND BAR BY ANTENNA CONTRACTOR TERM NATE CABLES 1'-0" FROM PLATFORM AND NSTALL LIGHTNING SURGE ARRESTORS ON EACH CABLE GROUND.
- 9 EXOTHERMICALLY WELD COPPER GROUND BAR TAIL TO HALO GROUND RING (EXOTHERMIC CONNECTION TYPE TA) BY ANTENNA CONTRACTOR. F NAL CONNECTION BY ELECTRICAL CONTRACTOR.
- 10 4"x20"x1/4" TNNND INSULATED COPPER GROUND BAR, NON ISOLATED WITH 10 0' LONG #2 AWG TNNND SOLID COPPER W RE WELDED TA LS (HARGER GBIT 14420VVW)
- 11 GROUND CABLE WAVEGUIDE BRIDGE (TYP.) BY ELECTRICAL CONTRACTOR.
- 12 PROPOSED PERIPHERAL GROUND R NG SHOULD BE NSTALLED 1' TO 2' INSIDE THE FENCE LINE, THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM 2' OFF OF ANY STRUCTURES.
- 13 EXIST NG TOWER OR COMPOUND GROUND RING (V.I.F.)
- 14 GATE JUMPERS (SEE DETA L, SHEET E-4)
- 15 BOND EXIST NG/ PROPOSED TOWER GROUND R NG TO PROPOSED PLATFORM GROUND R NG WITH #2 AWG TNNND SOLID COPPER CONDUCTOR IN 2 LOCATIONS.
- 16 TWO #2 LEADS FROM THE EGR TO THE GROUND BAR AT UT LITY FRAME LOCATED ON PLATFORM STEEL. CADWELD AT EGR AND DOUBLE HOLE LUGS ON PLATFORM.
- 17 BOND RAYCAP TO MGB.
- 18 EACH TOWER FOUNDATION TO HAVE AT LEAST ONE ANCHOR BOLT BONDED TO TOWER GROUND R NG WITH #2 TINNED SOL D COPPER CONDUCTOR
- 19 EACH TOWER FOUNDATION TO HAVE AT LEAST ONE ANCHOR BOLT BONDED TO TOWER GROUND R NG WITH #2 TINNED SOL D COPPER CONDUCTOR
- 20 COPPER CLAD GROUND ROD WITH NSPECTION WELL TOP OF GROUND ROD MAX 24" BURY.
- 21 EXTEND GROUND CONDUCTORS IN 1/2" RIGID H.W. CONDUIT ADJACENT TO PAD, OFFSET AND ATTACH TO EXTERIOR OF GENERATOR HOUS NG AND EXTEND TO GROUND LUGS AS REQU RED, VERIFY LOCATION WITH GENERAC.
- 22 MGB MOUNTED UNDER PERIMETER BEAM



1 SITE GROUNDING PLAN
SCALE: 1" = 4'

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NO.		BY		DATE		DMS		JTM		JTM					
		DESCRIPTION		ISSUED FOR REVIEW		ISSUED FOR FINALS		UPDATE CABLE LENGTHS							
1				12/27/17		01/22/18		02/02/18							
2															

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
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DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
SITE
GROUNDING PLAN

SHEET NUMBER

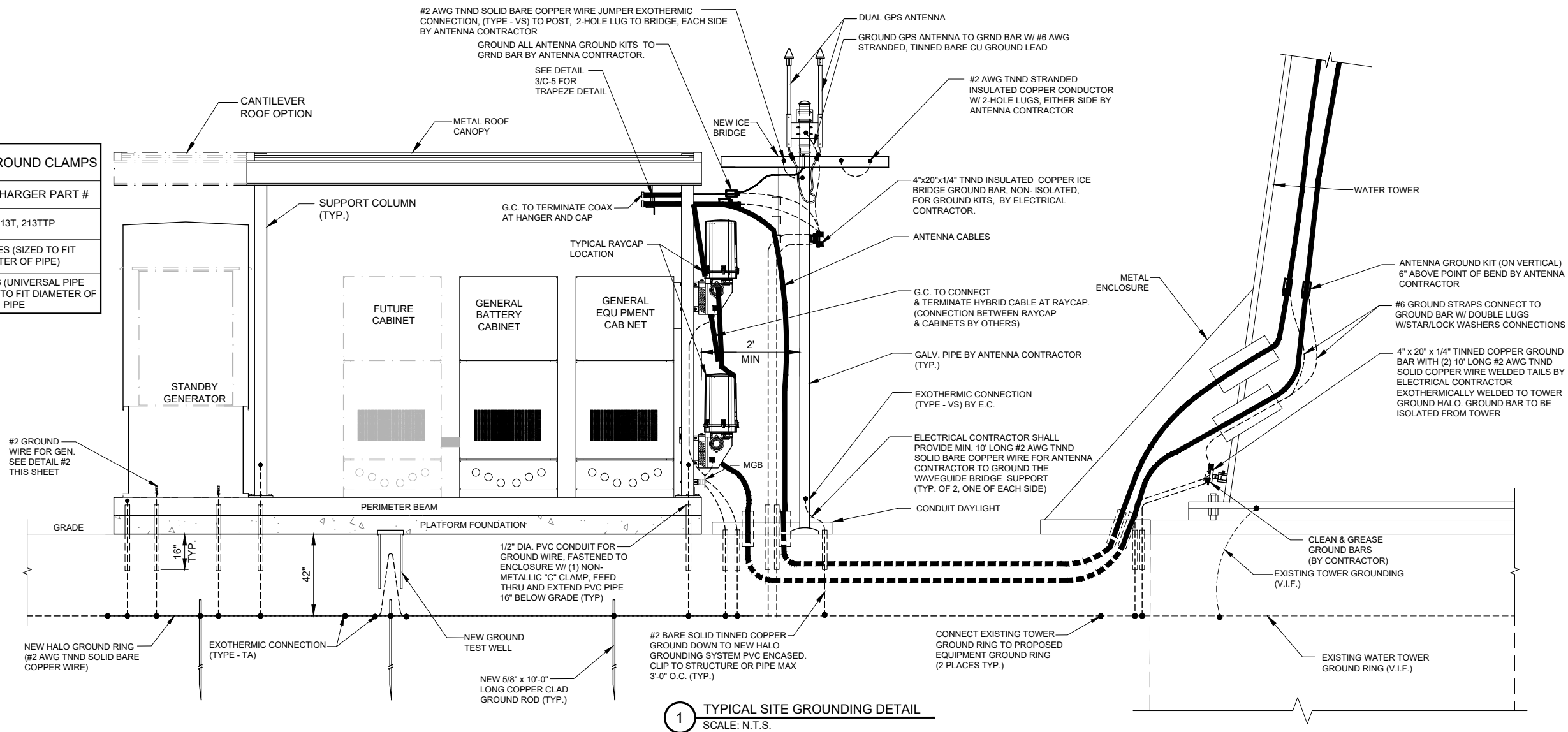
E-2

NOTE:
ANTENNA CABLES SHALL BE
GROUNDED AT THE
ANTENNA HEIGHT OF TOWER

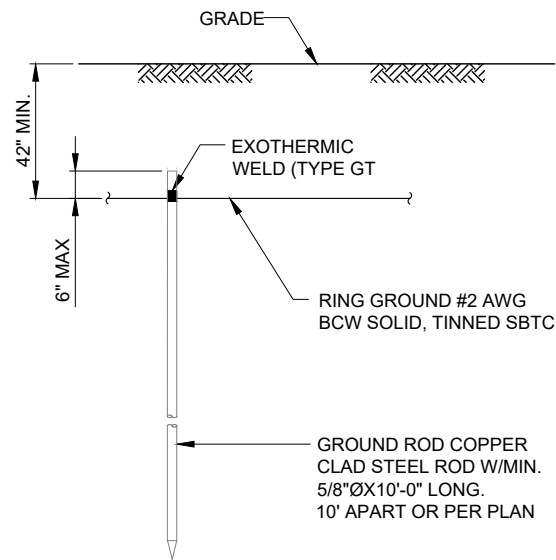
NOTE:
ALL CABINET GROUND
CONNECTION BY OTHERS.

APPROVED UL LISTED GROUND CLAMPS

APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
P PE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER P PE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE

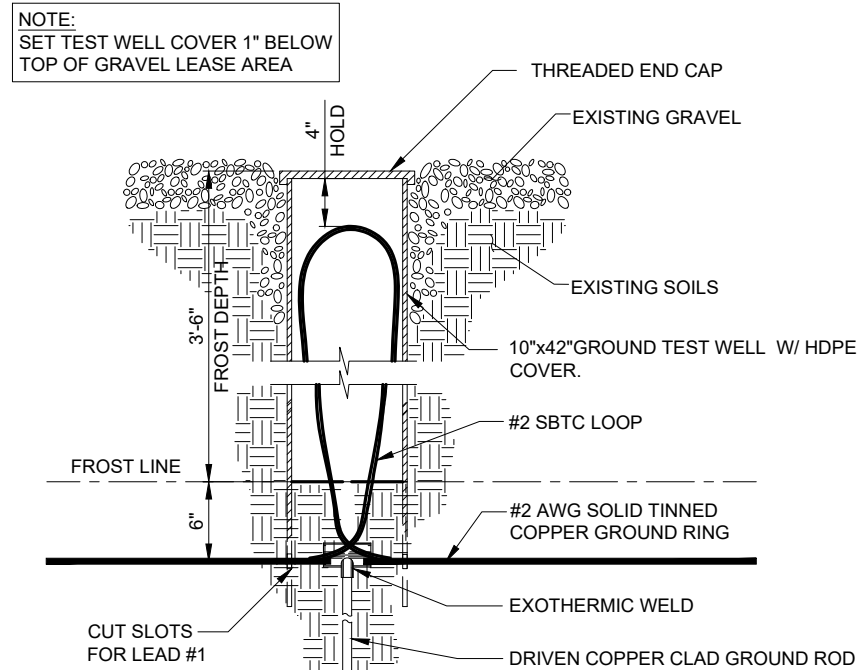


1 TYPICAL SITE GROUNDING DETAIL
SCALE: N.T.S.



NOTE:
GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT
TO EXCEED 45 DEGREES FROM THE VERTICAL.

2 GROUND ROD DETAIL
SCALE: N.T.S.



3 TEST WELL DETAIL
SCALE: N.T.S.

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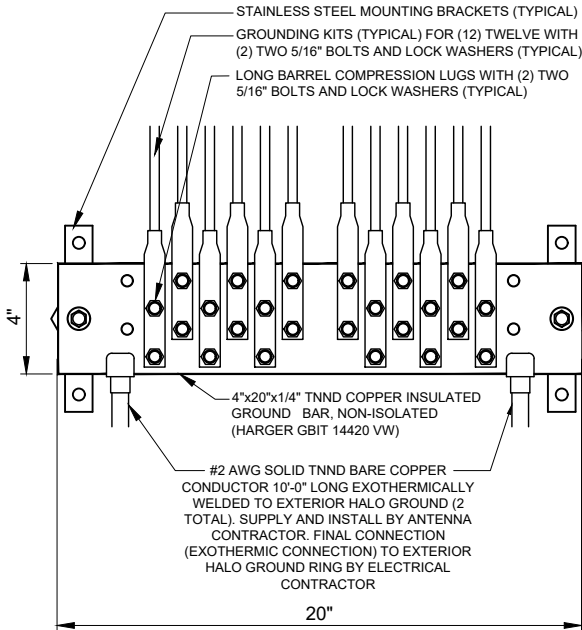
DRAWN BY:	DMS
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PROJECT #:	33-2531

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-3

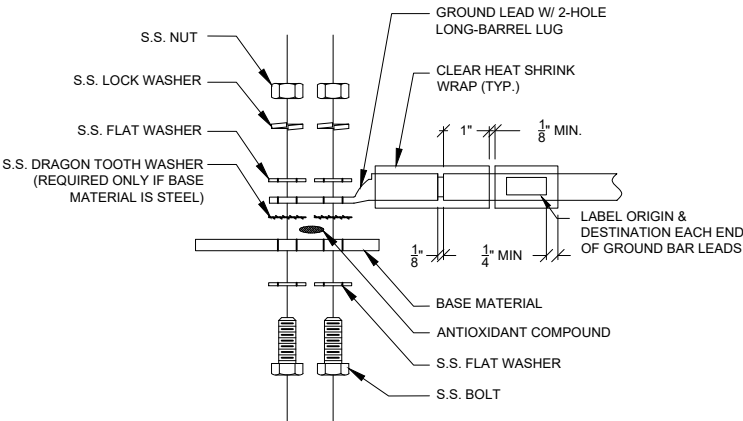
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5. AFTER INSTALLATION OF THE CANOPY AT THE DOOR, GC/EC IS TO BOND THE CANOPY TO THE DOOR FRAME WITH A #2 CONDUCTOR. USE DOUBLE-LUG CONNECTION. PREP AND PAINT SURFACE TO MATCH AFTER INSTALLATION.
6. UTILITY COMPANY COORDINATION: ELECTRICAL CONTRACTOR 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.
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 2. ONE (1) COPY TO ENGINEER
 3. ONE (1) COPY TO KEEP INSIDE EQUIPMENT ENCLOSURE



1 EXTERIOR GROUND BAR DETAIL
N.T.S.

- NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MOUNTING.
 2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
 3. GROUND BARS, INSTALL BOLT HEAD TOWARD WALL
 4. ENCLOSURES, INSTALL BOLT HEAD ON OUTSIDE OF ENCLOSURE



2 GROUND LUG INSTALLATION DETAIL
N.T.S.



Type GT
THROUGH CABLE TO TOP OF GROUND ROD.



Type VN
HORIZONTAL CABLE TAP TO VERTICAL STEEL SURFACE OR THE SIDE OF HORIZONTAL PIPE



Type TA
TEE OF HORIZONTAL RUN AND TAP CABLES.



Type VS
CABLE TAP DOWN AT 45° TO VERTICAL STEEL SURFACE OR SIDE OF HORIZONTAL OR VERTICAL PIPE.



Type HS
HORIZONTAL CABLE TAP TO HORIZONTAL STEEL SURFACE OR PIPE. CABLE OFF SURFACE.



Type GY
THROUGH CABLE TO SIDE OF GROUND ROD



Type VV
THROUGH VERTICAL CABLE TO VERTICAL STEEL SURFACE OR TO THE SIDE OF EITHER HORIZONTAL OR VERTICAL PIPE



Type GR
CABLE TAP TO TOP OF GROUND ROD



Type XB
CROSS OF HORIZONTAL CABLES. LAPPED AND NOT CUT



Type NC
THROUGH AND TAP CABLES TO GROUND ROD

3 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL

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REVISIONS

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ORLAND PARK, IL 60462

DRAWN BY:	DMS
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DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

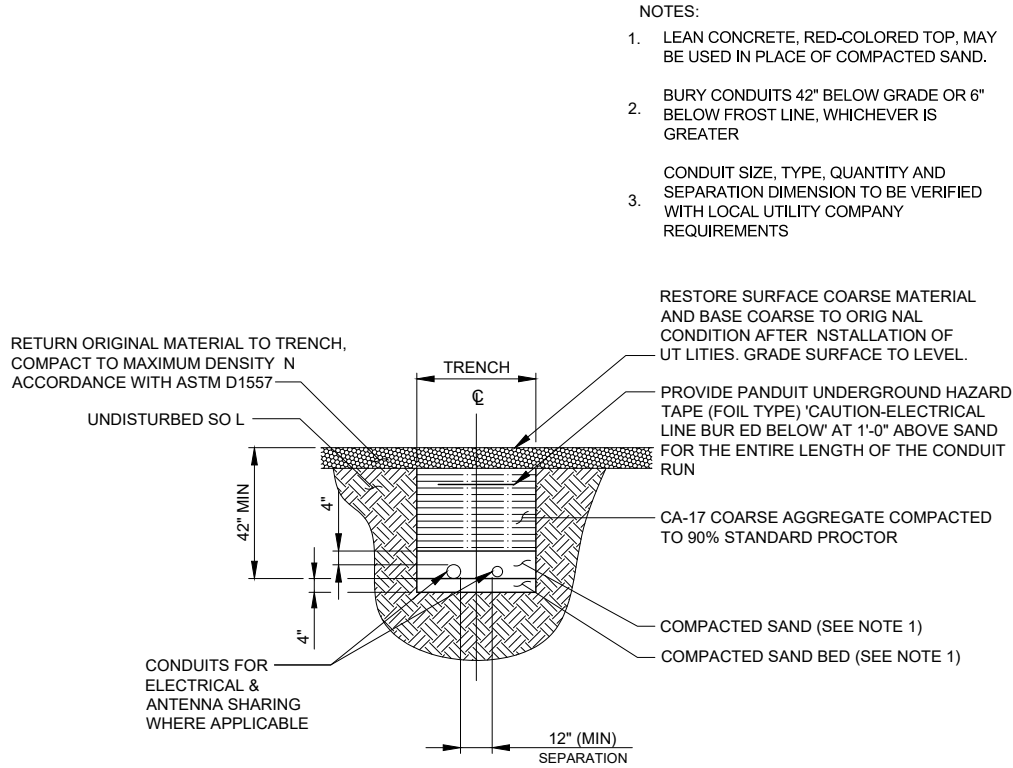
E-4

OPERATES 24 HOURS
A DAY 365 DAYS A YEAR

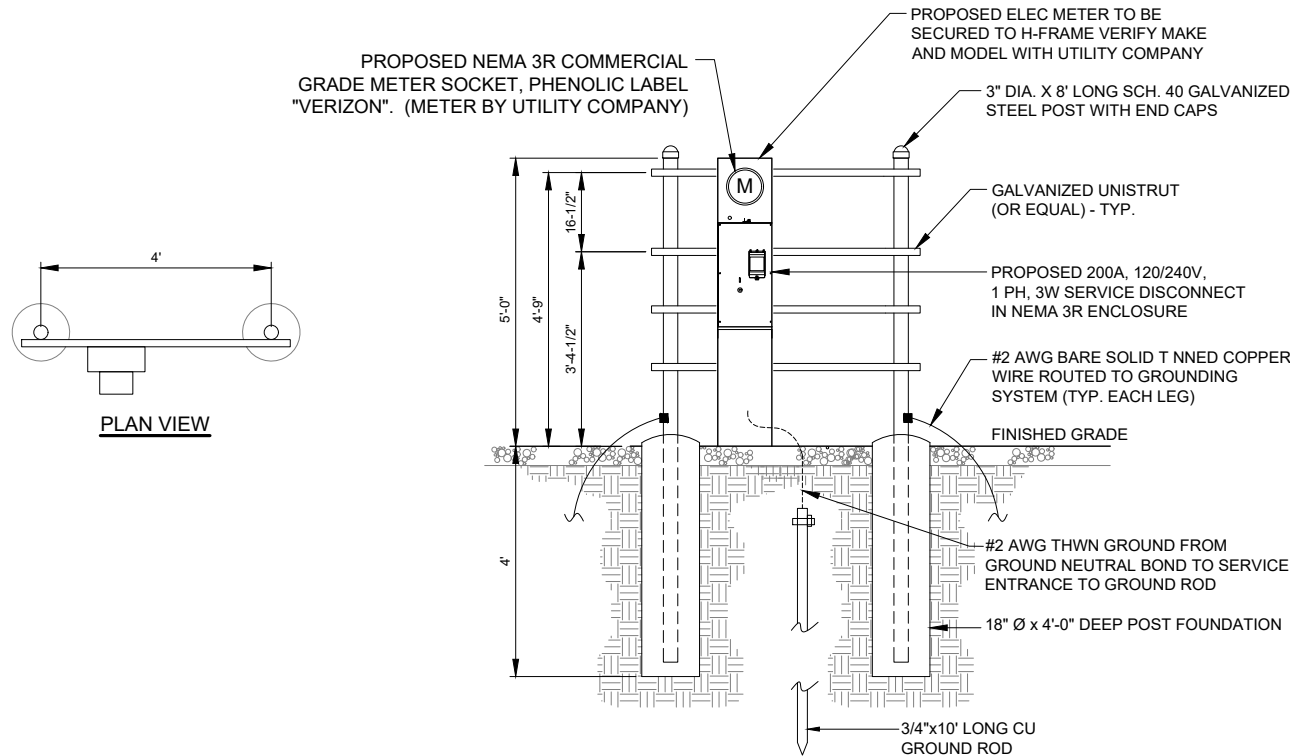
**Call
Before
You Dig**

JULIE
ILLINOIS
ONE CALL SYSTEM

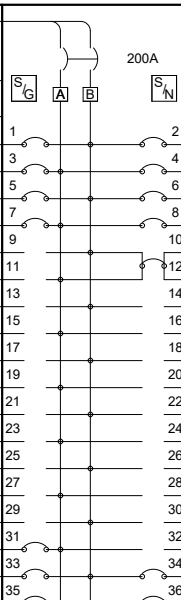
CALL JULIE TOLL FREE
1(800) 892-0123
48 HOURS BEFORE
YOU DIG



3 UTILITY TRENCH DETAIL
SCALE: N.T.S.



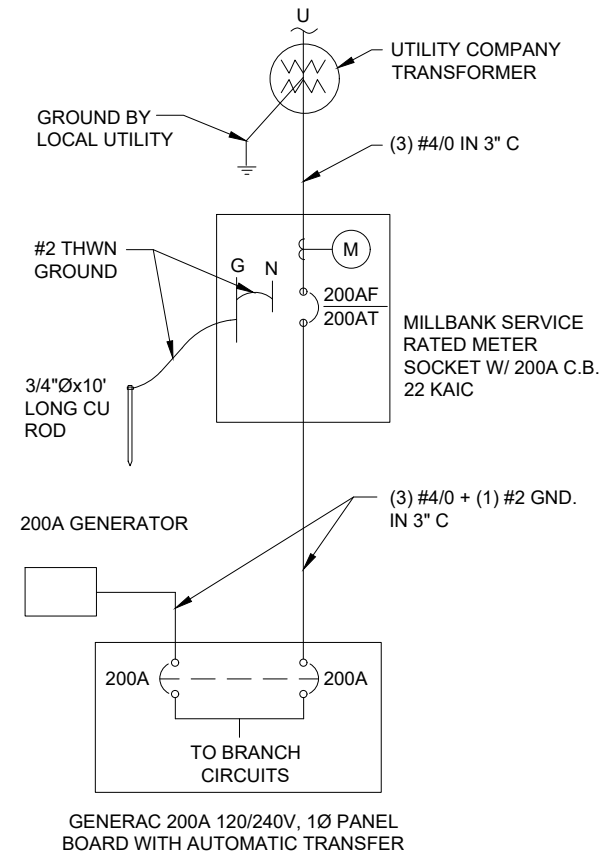
1 H-FRAME WITH METER
N.T.S.

VERIZON WIRELESS PANEL "A" SCHEDULE															
MAIN:		200/2		VOLTAGE:		120/240		PHASE:		1		WIRE:		3	
TO AUTOMATIC TRANSFER SWITCH															
DESCRIPTION			BRKR.	WATTS					WATTS	BRKR.	DESCRIPTION				
RECTIFIER 1			20/1	1000	1				2	1000	20/1	RECTIFIER 5			
RECTIFIER 2			20/1	1000	3				4	1000	20/1	RECTIFIER 6			
RECTIFIER 3			20/1	1000	5				6	1000	20/1	RECTIFIER 7			
RECTIFIER 4			20/1	1000	7				8	1000	20/1	RECTIFIER 8			
SPACE					9				10						
SPACE					11				12	3000	30/1	HVAC			
SPACE					13				14			SPACE			
SPACE					15				16			SPACE			
SPACE					17				18			SPACE			
SPACE					19				20			SPACE			
SPACE					21				22			SPACE			
SPACE					23				24			SPACE			
SPACE					25				26			SPACE			
SPACE					27				28			SPACE			
SPACE					29				30			SPACE			
EXTERIOR LIGHTS *			20/1	1800	31				32			SPACE			
GFCI RECEPTACLE *			20/1	1800	33				34	1800	20/1	GFCI RECEPTACLE *			
GEN BATTERY CHARGER *			20/1	1800	35				36	1850	20/1	GEN. BLOCK HEATER& CHARGER *			
										SURGE ARRESTOR					

SURFACE MOUNTED NEMA 3R w/DOOR
22K AIC BREAKERS
(CONTRACTOR SHALL VERIFY AIC RATINGS W/LOCAL POWER CO.)

NOTE:
1. VERIZON WIRELESS EQUIPMENT ENGINEERING TO SUPPLY BREAKER FOR RADIO AND POWER CAB NETS
2. GENERAL CONTRACTOR TO SUPPLY BREAKERS NOTED WITH " * "

4 PANEL BOARD SCHEDULE
N.T.S.



2 SINGLE LINE DIAGRAM
N.T.S.

CHICAGO SMSA
limited partnership
d/b/a VERIZON WIRELESS



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LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER

E-5

DIVISION 5: METALS

PART 1 - GENERAL

1. SECTION INCLUDES:
STRUCTURAL STEEL FRAMING MEMBERS, BASE PLATES, PLATES, BARS, AND GROUTING UNDER BASE PLATES.
2. SUBMITTALS:
SHOP DRAWINGS: INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED SECTIONS.
3. QUALITY ASSURANCE
A. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
B. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE.

PART 2 - PRODUCTS

1. MATERIALS:
A. STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
B. STRUCTURAL TUBING: ASTM A500, GRADE B
C. PIPE: ASTM A53, TYPE E OR S, GRADE B
D. BOLTS, NUTS, AND WASHERS: ASTM A325
E. ANCHOR BOLTS: ASTM A307
F. WELDING MATERIALS: AWS 01.1, TYPE REQUIRED FOR MATERIALS BEING WELDED

G. GROUT: NON - SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS.

H. SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE

I. TOUCH-UP PRIMER FOR GALV. SURFACES ZINC RICH TYPE
2. FABRICATION:
CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.
3. FINISH:
A. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCEWITH SSPC SP-1 TO SP-10 PROCEDURES.
B. STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 - EXECUTION

1. EXAMINATION AND PREPARATION:
VERIFY THAT THE FIELD CONDITIONS ARE ACCEPTABLE.
2. ERECTION:
A. ALLOW FOR ERECTION LOADS. PROVIDE TEMPORARY BRACING TO MAINTAIN FRAMING IN ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
B. FIELD WELD COMPONENTS INDICATED ON SHOP DRAWINGS.
C. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.
D. AFTER ERECTION, TOUCH-UP WELDS, ABRASIONS, AND SURFACES NOT SHOP PRMED OR GALVANIZED WITH TOUCH-UP PRMERS AS SPECIFIED UNDER SECTION 05000, 0METALS, PART 2 - PRODUCTS, H & I. SURFACES TO BE IN CONTACT WITH CONCRETE NOT INCLUDED.
3. FIELD QUALITY CONTROL:
FIELD INSPECTION OF MEMBERS, CONNECTIONS, WELDS, AND TOURQUING

DIVISION 16: ELECTRICAL

SECTION 16050 - BASIC ELECTRICAL MATERIALS AND METHODS

1. CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS PRIOR TO ORDERING THE ELECTRICAL EQUIPMENT AND STARTING THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ARCHITECT LISTING ANY DISCREPANCIES OR CONFLICTING INFORMATION.
2. ELECTRICAL PLANS, DETAILS AND DIAGRAMS ARE DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.
3. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, JUNCTION BOX, SWITCH BOX, ETC. THE TYPE OF TAGGING METHODS SHALL BE IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A).
4. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD WORKING CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED "J" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU, AND "UL" LISTED.
5. ALL CONDUIT SHALL HAVE A PULL CORD.
6. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF TH JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
7. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
8. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
9. PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
10. PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVERPLATES.

SECTION 1640 - SERVICE AND DISTRIBUTION

1. WIRE AND CABLE CONDUCTORS SHALL BE COPPER, 600V, TYPE THHN OR THWN, WITH A MIN. SIZE OF #12 AWG, COLOR CODED. ALL RECTIFIER DROPS SHALL BE STRANDED TO ACCEPT CRIMP CONNECTORS.
2. ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
3. METER SOCKET AMPERES, VOLTAGE, NUMBER OF PHASES SHALL BE AS NOTED ON THE DRAWINGS. MANUFACTURED BY MILBANK OR APPROVED EQUAL, AND SHALL BE UTILITY COMPANY APPROVED.
4. CONDUIT:
A. RIGID CONDUIT SHALL BE U.L LABEL GALVANIZED ZINC COATED WITH GALVANIZED ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE ½ LAPPED WRAPPED WITH HUNT'S WRAP PROCESS NO. 3.
B. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.
C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.
D. ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 42" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY J.U.L.I.E. AT 1-800-892-0123 OR OTHER SUCH NOTIFYING AGENCY FORTY-EIGHT (48) HOURS PRIOR TO DIGGING.
5. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS ARE TO BE PAID BY THE CONTRACTOR.
6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS WITH WHITE ON BLUE BACKGROUND LETTERING (MINIMUM LETTER HEIGHT SHALL BE ONE FORTH INCH (1/4"). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS, NOT ADHESIVE.
7. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL POTENTIAL GROUNDING TESTS BY AN INDEPENDENT TESTING SERVICE ENGAGED BY THE CONTRACTOR SHALL BE SUBMITTED FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
8. GROUNDING ELECTRODE SYSTEM
A. PREPARATION
1. SURFACE PREPARATION:
ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTS SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUND. ALL CONNECTIONS ARE TO HAVE A NO-OXIDIZING GENT APPLIED PRIOR TO INSTALLATION.
2. GROUND BAR PREPARATION
ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
3. SLEEVES:
ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
B. GROUND BARS
1. ALL GROUND BARS SHALL BE ONE FORTH INCH (1/4" THICK TINNED COPPER PLATE AND OF AND OF SIZE INDICATED ON DRAWINGS.
2. ALL CONNECTIONS TO THE GROUND BAR SHALL OBSERVE THE FOLLOWING SEQUENCE:
A. BOLT-HEAD
B. 2-HOLE LUG
C. TINNED COPPER BUSS BAR
D. STAR WASHER
E. NUT
C. EXTERNAL CONNECTIONS
1. ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEE'S, CROSSES, ETC. ALL CABLE TO GROUND RODS, GROUND ROD SPLICES AND LIGHTNING PROTECTION SYSTEMS ARE TO BE AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
2. ALL ABOVE GRADE GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACEG AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDIER SHALL NOT BE USED. ALL CABLE TO CABLE CONNECTIONS SHALL BE HIGH PRESSURE DOUBLE CRIMP TYPE CONNECTIONS. CONNECTIONS TO STRUCTURAL STEEL SHALL BE EXOTHERMIC WELDS.
- D. GROUND RODS
ALL GROUND RODS SHALL BE 5/8 -INCH DIAMETER X 10' -0" LONG "COPPERWELD" OR APPROVED EQUAL, OF THE NUMBER AND LOCATIONS INDICATED. GROUND RODS SHALL BE DRIVEN FULL LENGTH VERTICAL IN UNDISTURBED EARTH.
- E. GROUND RODS
ALL GROUND RODS SHALL BE STANDARD TINNED SOLID BARE COPPER ANNEALED, AND OF SIZE INDICATED ON DRAWINGS UNLESS NOTED OTHERWISE.
- F. LUGS
1. LUGS SHALL BE 2 - HOLE, LONG BARREL, STRAND COPPER UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. LUGS SHALL BE THOMAS AND BETTS SERIES #548 _BE OR EQUIVALENT
A. 535 MCM DLO 54880BE
B. 262 MCM DLO 54872BE
C. #1/0 DLO 54862BE
D. #4/0 THWN AND BARE 54866BE
E. #2/0 THWN 54862BE
F. #2 THHN 54207BE
G. #6 DLO 54205BE

2. WHEN THE DIRECTION OF THE CONDUCTOR MUST CHANGE, IT SHALL BE DONE GRADUALLY. THE CURVATURE OF THE TURN SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING CHART:

	<u>GROUNDING CONDUCTOR SIZE</u>	<u>MINIMUM BENDING RADIUS TO INSIDE EDGE</u>
NO.	6 AWG TO NO. 4 AWG	6 INCHES
NO.	2 AWG TO NO. 1/0 AWG	8 INCHES
NO.	2/0 AWG TO 4/0 MCM	12 INCHES
	250 MCM TO 750 MCM	24 INCHES
G. GROUND RING		
1.	THE EXTERNAL GROUND RING ENCIRCLING THE TOWER (IF APPLICABLE) AND BETWEEN BETWEEN THE EQUIPMENT SHELTER PLATFORM ANCHORS SHALL BE MINIMUM NO. 2 A.W.G SOLID TINNED BARE COPPER CONDUCTOR IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT INCHES (8").	
2.	ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS MUST BE CADWELDED. NO LUNGS OR CLAMPS WILL BE ACCEPTED.	
H. FENCE/GATE		
	GROUND EACH GATE POST, CORNER POST AND GATE AS INDICATED ON DRAWING GROUND CONNECTIONS TO FENCE POST AND ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY EXOTHERMIC WELD PROCESS, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES, AND SPRAYED WITH COLD-GALVANIZED PAINT.	
3.	I.E.E.E. FALL POTENTIAL TESTS	

- A. FOR RAW LAND SITE
1. GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDDLE GROUND OHMER OR THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.E.E.E. METHOD REQUIRES THE USE OF AN A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST BE SUFFICIENTLY FAR AWAY FROM THE ROD UNDER TEST SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED SO NOT OVERLAP. THE TEST POINT WILL BE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MEGGER TEST METHOD, USING THE BIDDLE NULL-BALANCE EARTH TESTER (MEGGER #250220-2 OR EQUIVALENT)
2. CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:
B. EQUIPMENT PAD
1. FIRST TEST - SHALL BE WITH FOUR GROUND RODS INSTALLED, ONE AT EACH CORNER OF THE PAD BUT NOT CONNECTED TO THE MAIN GROUNDING BUS. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL FOUR GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 35 OHMS OR MORE, THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL FOUR RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST- SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS. THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.

C. TOWER

1. FIRST TEST - SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
2. SECOND TEST- SHALL BE WITH THE GROUND RODS CONNECTED, WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST (10) DAYS, THE MAXIMUM ALLOWABLE READING IS 5 OHMS THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.
D. EQUIPMENT PAD AND TOWER
1. AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
2. AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPETE A MEGGER CHECKER OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND.

10. GROUNDING RESISTANCE TEST REPORT

UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS AREA OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.

SECTION 16503 - POLES, POSTS, AND STANDARDS
(SINGLE MAST AND SELF SUPPORTING TOWERS)

1. GENERAL
A. LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED
B. PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.
- C. GROUNDING:
GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER BASE PLATE.

NO EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT

SECTION 16745- TELECOMMUNICATIONS WIRING COMPONENT
(COAXIAL ANTENNA CABLE)

1. GENERAL

- A. ALL MATERIALS, PRODUCTS OR PROCEDURES INCORPORATED INTO WORK SHALL BE NEW AND OF STANDARD COMMERCIAL QUALITY.
- B. CERTAIN MATERIALS AND PRODUCTS WILL BE SUPPLIED BY THE OWNER (REFER TO GENERAL CONDITIONS FOR THE LIST OF OWNER FURNISHED EQUIPMENT, MATERIALS AND SUPPLIES FOR THESE ITEMS). THE CONTRACTOR IS RESPONSIBLE FOR PICKUP AND DELIVERY OF ALL SUCH MATERIALS
- C. ALL OTHER MATERIALS AND PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL BE SUPPLIED BY THE CONTRACTOR.

2. MATERIALS

- a. COAXIAL CABLE:
1. INSTALL COAXIAL CABLE AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS WITH COAXIAL CABLES SUPPORTED AT NO MORE THAN 3'-0" O.C. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE FEET (3') IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
2. ALL COAX RUN LENGTHS GREATER THAN 175 FEET SHALL BE 1-5/8", ALL COAX. RUN LENGTH BETWEEN 101 FEET AND 174 FEET SHALL BE 1-1/4", AND IN LENGTH LESS THAN OR EQUAL TO 100 FEET SHALL BE 7/8".
3. ANTENNA AND COAXIAL CABLE GROUNDING
a. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
4. COAXIAL CABLE IDENTIFICATION
a. TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, PLASTIC TAGS SHALL BE USED AT THE FOLLOWING LOCATIONS:
1. FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
2. SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT.
b. USE ANDREW CABLE TIES (PT. # 7290) TO SECURE IDENTIFICATION TAGS.
5. TESTING
LESSEE SHALL PROVIDE AN INDEPENDENT TESTING AGENCY TO PERFORM THE COAXIAL SWEEP TEST & REPORT. THE CONTRACTOR IS TO PROVIDE ONE CLIMBER / QUALIFIED PERSONNEL TO ASSIST IN ANY REPAIRS AND WEATHERPROOFING ONCE THE TEST IS COMPLETE. THE CONTRACTOR IS TO PROVIDE LESSEE WITH A MINIMUM OF 48 HOURS NOTICE PRIOR TO THE TIME OF THE SWEEP TEST.

CHICAGO SMSA
limited partnership
d/b/a VERIZON WIRELESS



NO.	DESCRIPTION	DATE	BY	DMS	JTM	JTM			
1	ISSUED FOR REVIEW	12/27/17							
2	ISSUED FOR FINALS	01/22/18							
	UPDATE CABLE LENGTHS	02/02/18							

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

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SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

SP-2



1 EXISTING OVERALL TOWER
SCALE: N.T.S.



2 EXISTING PAVED ACCESS DRIVE
SCALE: N.T.S.



3 EXISTING PAVED ACCESS DRIVE
SCALE: N.T.S.



4 EXISTING DRAINAGE PIPE
SCALE: N.T.S.



5 EXISTING TRANSFORMER
SCALE: N.T.S.



6 EXISTING TELCO PEDESTAL
SCALE: N.T.S.



7 EXISTING METER
SCALE: N.T.S.



8 PROPOSED LESSEE EQUIPMENT LOCATION
SCALE: N.T.S.

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



REVISIONS		NO.	DESCRIPTION	DATE	BY
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	ISSUED FOR FINALS	2	01/22/18	JTM	
	UPDATE CABLE LENGTHS		02/02/18		

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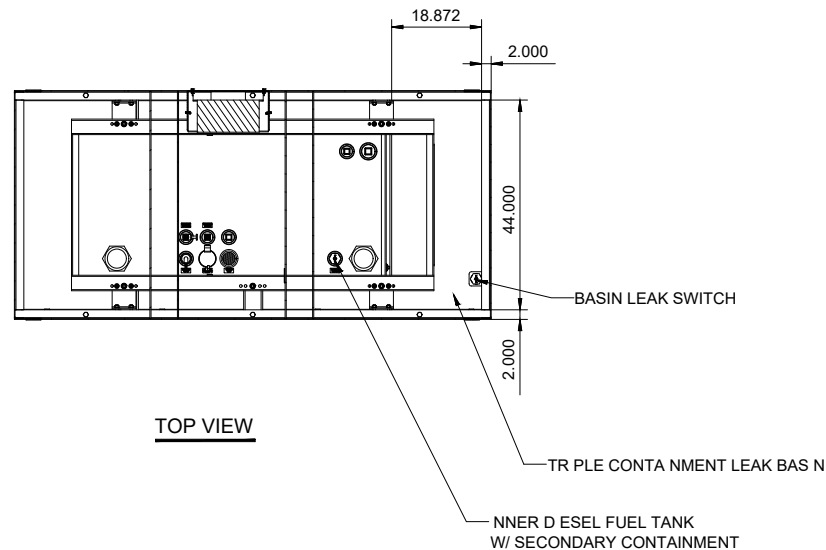
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ORLAND PARK, IL 60462

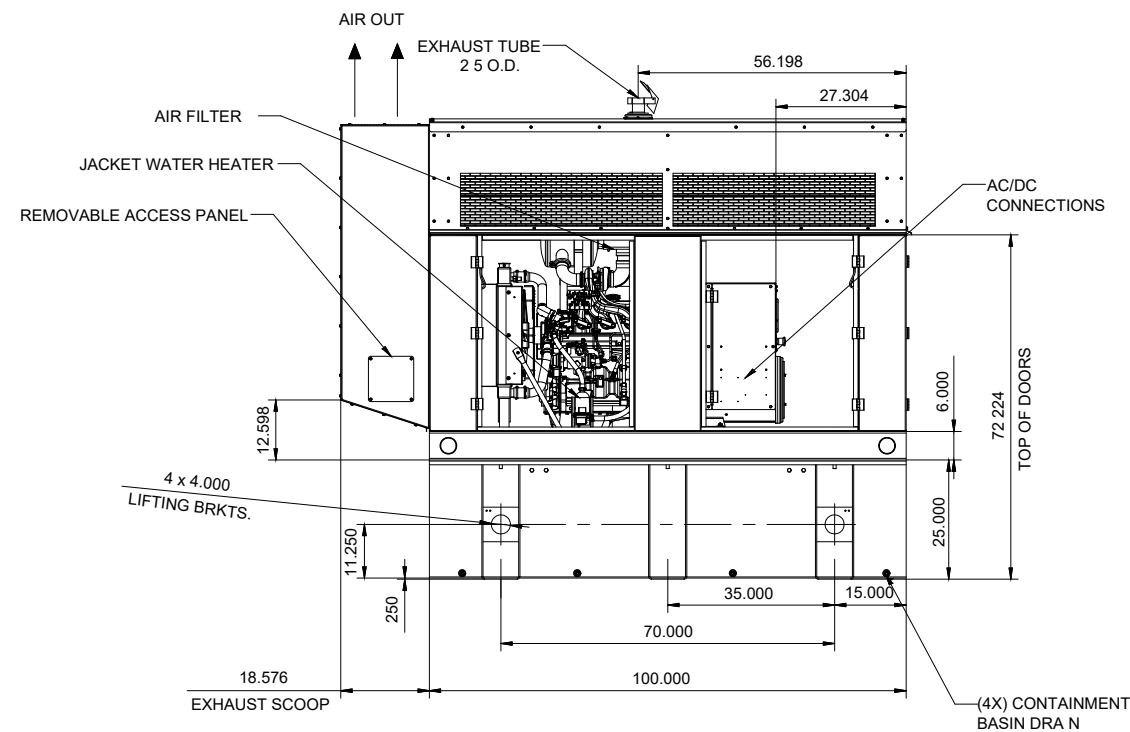
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SHEET TITLE
EXISTING SITE PHOTOS

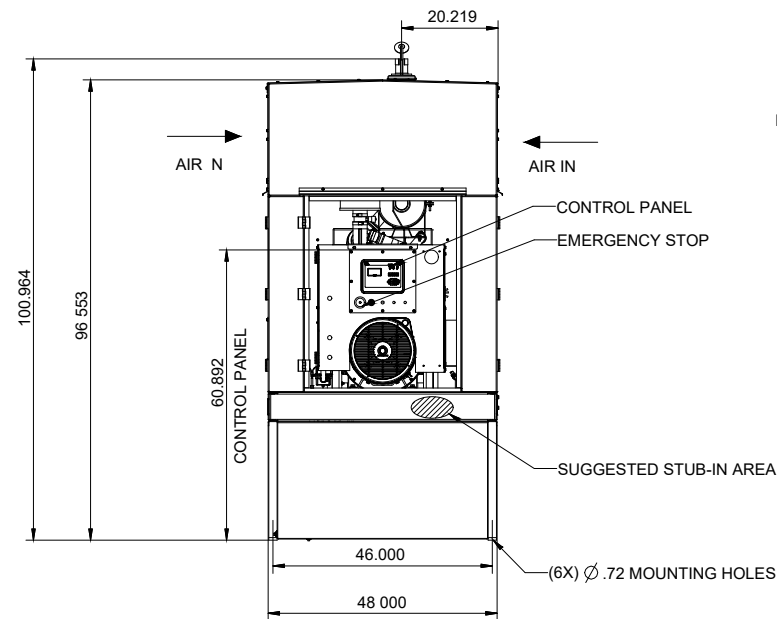
SHEET NUMBER
P-1



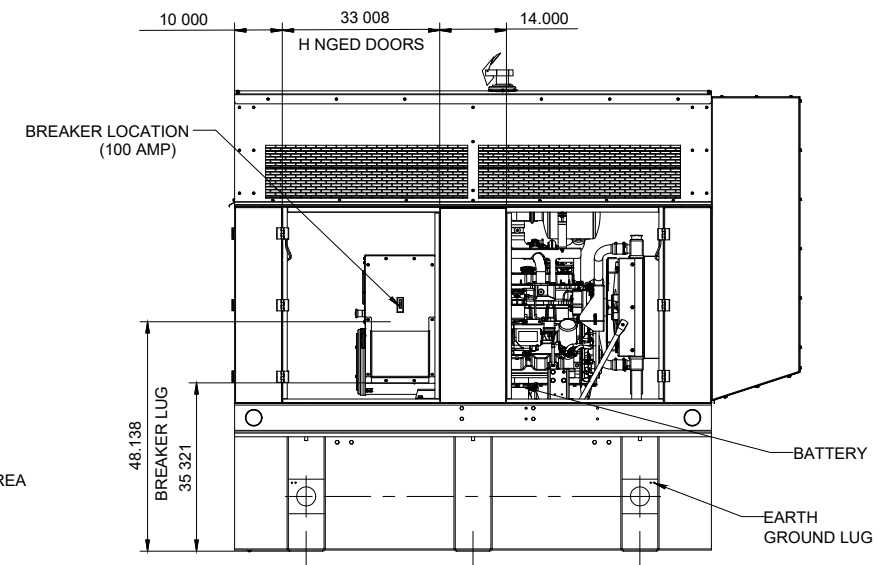
TOP VIEW



LEFT SIDE VIEW



BACK VIEW



RIGHT SIDE VIEW SERVICE SIDE

NOTE:
 1. APPROXIMATE WEIGHT (WET): 3920#
 2. FUEL TANK: UL LISTED DOUBLE WALL WITH 125% CONTAINMENT
 3. FUEL TANK CAPACITY: 210 GALLONS
 4. ENCLOSURE: SINGLE SIDE SERVICE RIGHT SIDE, STEEL, 190 MPH WIND RATED
 5. SOUND LEVEL: dB(A) AT m
 6. VERIZON PART NUMBER
 DG03RJ096V1M22

1 TRIPLE CONTAINMENT DIESEL 30KW
 MTU ONSITE ENERGY GENERATOR
 SCALE: N.T.S. MODEL:DG03RJ096V1M22

CHICAGO SMTA
 limited partnership
 d/b/a VERIZON WIRELESS



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SHEET TITLE
 GENERATOR DETAILS

SHEET NUMBER

EX-1

verizon
Radio Frequency Exposure
FCC Compliance Assessment

☒ Pre-Activation ☐ Post-Activation

SITE SPECIFIC INFORMATION			
Site Name	RTE7 & WEST	Multi-License Facility	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Street Address	15501 Park Station Blvd.	Is Verizon a Significant Contributor to Co-Locator Areas Requiring Mitigation?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
City, State, Zip	Orland Park, IL 60461		<input type="checkbox"/> N/A
Verizon's Max % MPE (Measured - Occupational)	N/A	Verizon's Max % MPE (Predictive - Occupational)	1286.4%
Structure Type	WATER TANK	Assessment Date	N/A
Broadcast (AM/FM/TV) Co-Locators	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Assessment Purpose	MODIFICATION
Total Access Points	2	Total Report Revisions	1
Original Report Date	01/09/2018	Report Revision Date	N/A
Compliance Status	<input type="checkbox"/> COMPLIANT AS DESIGNED <input type="checkbox"/> COMPLIANT PER RF SAFETY PLAN SUBMISSION <input checked="" type="checkbox"/> MITIGATION IS REQUIRED		

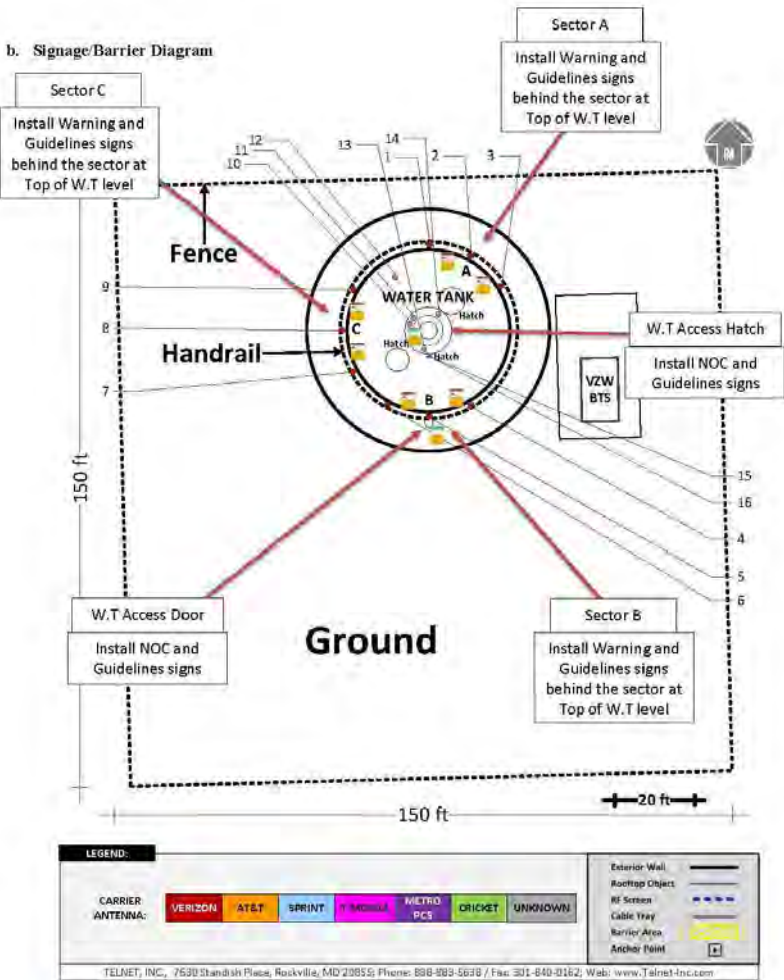
VERIZON'S WORST-CASE RF EMISSIONS IN ACCESSIBLE AREAS AT THIS FACILITY	
<input type="checkbox"/>	BELOW the General Population MPE limit
<input type="checkbox"/>	ABOVE the General Population MPE limit and BELOW the Occupational MPE limit
<input type="checkbox"/>	ABOVE the Occupational MPE limit and BELOW 10x the Occupational MPE limit
<input checked="" type="checkbox"/>	ABOVE 10x the Occupational MPE limit

Final Compliant Configuration	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> dimensions
Alpha	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location: also in Sec. 4 (B)

Additional Compliance Requirements(s):			
N/A			
Consultant Legal Name	Telnet Inc.	Phone/Fax	301-840-7110
Address	7630 Standish Place, Rockville, MD 20855		

b. Signage/Barrier Diagram



14

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Final Compliant Configuration	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> dimensions
Alpha	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions

NOTE: The table above represents EVERY compliance item that MUST be implemented at this location.

c. Signage/Barrier Installation Detail

Mitigation Actions Required/Taken	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER
Access Point(s)	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> dimensions
Alpha	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Beta	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
Gamma	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [2]	<input type="checkbox"/> [#]	<input type="checkbox"/> dimensions
	ADD REM	ADD REM	ADD REM	ADD REM	ADD REM	ADD ONLY

NOTE: The table represents either the signage/barriers installed / removed OR items required by the market (if mitigation is not installed by consultant/vendor).

SPECIAL MITIGATION INSTRUCTIONS	
Items to be Installed	Water Tank Access Door: Install NOC and Guidelines signs Top of Water Tank Access Hatch: Install NOC and Guidelines signs Sector A: Install Warning and Guidelines signs behind the sector at Top of W.T level Sector B: Install Warning and Guidelines signs behind the sector at Top of W.T level Sector C: Install Warning and Guidelines signs behind the sector at Top of W.T level
Items to be Removed	N/A
Items to be Repaired/Replaced	N/A

15

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



REVISIONS		BY	DMS	JTM	JTM				
NO.	DESCRIPTION	DATE	ISSUED FOR REVIEW	ISSUED FOR FINALS	UPDATE CABLE LENGTHS				
1		12/27/17		01/22/18					
2				02/02/18					

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
PRE-EME
REPORT

SHEET NUMBER

RF-1



NO.	DESCRIPTION	DATE	BY	DMS	JTM	JTM			
1	ISSUED FOR REVIEW	12/27/17							
2	ISSUED FOR FINALS	01/22/18							
	UPDATE CABLE LENGTHS	02/02/18							

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
NOTICE TO
CONTRACTOR

SHEET NUMBER

NTC-1

NOTICE TO CONTRACTOR – ENVIRONMENTAL CONDITIONS/RESTRICTIONS AT
Rt 7 and West – ILW

Note: Verizon Wireless makes no representation or warranty as to the accuracy or completeness of the information below. Company is fully responsible for its own compliance with all applicable laws and regulations. To the extent that Company becomes aware of any additional environmental conditions, it agrees to immediately inform Verizon Wireless.

The Company's response to this construction bid shall constitute the Company's acknowledgment and acceptance of the stated conditions and restrictions at the site.

The following environmental conditions have been identified at the project site:

Environmental Condition	Description and Location of Contaminant																																	
<input checked="" type="checkbox"/> Check All That Apply Contaminated soil	<p>Soil Sampling Investigation ~ The soil sampling investigation scope of work included the manual advancement of two soil borings, which was advanced in the location of the proposed equipment platform and utility route. The results of the analysis of the soil sample is illustrated below:</p> <table><tr><th colspan="3">SOIL SCREENING RESULTS</th></tr><tr><th>Sample No.</th><th>Sample Location</th><th>Total Lead Content (µg/g)</th></tr><tr><td>SS-1</td><td>Proposed equipment platform</td><td>44</td></tr><tr><td>SS-2</td><td>Proposed utility easement</td><td><25</td></tr></table> <table><tr><th colspan="3">SOIL SCREENING RESULTS</th></tr><tr><th>Sample No.</th><th>Sample Location</th><th>TCLP Lead Result</th></tr><tr><td>SS-3</td><td>Proposed equipment platform and utility easement</td><td><0.5 ppm</td></tr></table> <table><tr><th colspan="3">SOIL SCREENING RESULTS</th></tr><tr><th>Sample No.</th><th>Sample Location</th><th>TCLP Lead Content (mg/L)</th></tr><tr><td>SS-1</td><td>Proposed equipment lease area</td><td><0.40</td></tr><tr><td>SS-2</td><td>Proposed utility easement</td><td><0.40</td></tr></table> <p>Note: < (Lab non-detect)</p> <p>As presented above, levels of Total Lead was detected in soil sample SS-1 at levels above regional background levels (36 mg/kg). Therefore, the sampled soil is lead-containing. Total Lead was not detected in soil sample SS-2, taken from the proposed utility easement. The levels of Total Lead detected in soil sample SS-1 was below IEPA construction worker soil remediation objectives (700 mg/kg). Additionally, the results of the TCLP Lead analysis indicated the TCLP Lead levels were below the TCLP standard for lead. As such, from a disposal or soil relocation standpoint, the soil is acceptable for TCLP Lead content.</p>	SOIL SCREENING RESULTS			Sample No.	Sample Location	Total Lead Content (µg/g)	SS-1	Proposed equipment platform	44	SS-2	Proposed utility easement	<25	SOIL SCREENING RESULTS			Sample No.	Sample Location	TCLP Lead Result	SS-3	Proposed equipment platform and utility easement	<0.5 ppm	SOIL SCREENING RESULTS			Sample No.	Sample Location	TCLP Lead Content (mg/L)	SS-1	Proposed equipment lease area	<0.40	SS-2	Proposed utility easement	<0.40
SOIL SCREENING RESULTS																																		
Sample No.	Sample Location	Total Lead Content (µg/g)																																
SS-1	Proposed equipment platform	44																																
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SOIL SCREENING RESULTS																																		
Sample No.	Sample Location	TCLP Lead Content (mg/L)																																
SS-1	Proposed equipment lease area	<0.40																																
SS-2	Proposed utility easement	<0.40																																

David
Schmidt

Page | 1

	See attached Figure 3 Site Plan provided by EBI Consulting.
	Contaminated groundwater
	Presence of asbestos
	Presence of lead
<input checked="" type="checkbox"/> Other: Vicinity Well	<p>Vicinity Well – An abandoned well located adjacent to the water tower, approximately 30-ft southwest of the equipment platform, and in close proximity to the proposed utility easement.</p> <p>Lead-Based Paint Sampling Investigation – The lead paint sampling investigation did not identify concentrations of lead in the paint samples.</p>

Applicable legal requirements or Verizon Wireless policies and procedures may require that these conditions be communicated to all parties involved in the construction activities at the project site. To the extent that the scope of the project work includes measures to address these conditions, details of the work to be performed shall be as specified in the project documents and/or the Authorization Letter.

Environmental conditions affecting scope of work: Well & Lead in Soils

Vicinity Well –

- Contractors are advised of the location of an abandoned well located adjacent to the water tower, approximately 30-ft southwest of the equipment platform, and in close proximity to the proposed utility easement.
- To prevent any negative impact to the vicinity well, the appropriate use of silt fences and other soil erosion control best management practices (as appropriate) and best practices for stormwater management must be implemented prior to and maintained throughout construction activities at the site.
- Construction related staging and stockpiling of excavated soils may not occur to the south or west of the project site, or near the proposed utility easement and must occur in a manner that will not cause impact the vicinity well.

Confirmed Lead in Soils -

- Contractors/personnel must be advised of the presence of concentrations of lead in shallow soils at the Project Site. Contractors must be advised to take appropriate precautions during construction activities.
- If excavated soil is not to be shipped off-site, then no further action is recommended. Soil may be reused on site in the location from which it was excavated.
- Excess Soils** – If construction activities will cause soils to be excavated and transported off-site then **excess** soils should be handled in accordance with applicable state and federal guidelines. The construction contractor is responsible for determining if the analytical results contained within the Phase I ESA are sufficient to meet disposal parameters at the specific disposal facility. TCLP (Toxicity Characterization Leaching Procedure) analysis for Lead via EPA method SW846-1311/7420 is required for disposal of materials containing detectable concentrations of lead. Disposal facility standards and costs vary, and it is the responsibility of the construction contractor to determine the applicable standards of the specific disposal facility.
- Contractors must be required to comply with applicable regulations including the OSHA Lead in construction standard during any disturbance of the lead-containing soils. Worker protection will be required consistent with the OSHA Lead in Construction standard (29 CFR 1926) during the penetration of areas with lead-containing paint.

Page | 2

* Verizon Wireless' environmental consultant (EBI Consulting) must be notified three weeks (3) in advance of initiation of construction so that they can properly mobilize to perform oversight of soil disposal. EBI Consulting (Contact Ms. Elaine Langer, Program Manager, 347.415.5453).
Diesel Sensitive Site – Tertiary Containment Generator – Diesel Enhanced Enclosure (DEE) [Meets NSTD399 generator solution]

Company is required to comply fully with all applicable environmental, industrial hygiene, and worker health and safety laws and regulations; Verizon Wireless' directions and/or instructions contained in this Notice To Contractors. Company shall retain qualified, appropriately specialized (and/or licensed, as required) and adequately insured environmental firms for the completion of specialized work as applicable. Company shall evaluate whether a Health and Safety Plan (HASP) is warranted. Verizon Wireless shall have the final authority to approve the selection of such environmental firms performing services on its behalf. The construction bid package shall include qualifications of proposed firms with respect to the following required services:

Environmental Services Required	
Check All That Apply	
<input type="checkbox"/> Asbestos abatement	
<input type="checkbox"/> Lead based paint abatement	
<input checked="" type="checkbox"/> Hazardous or special waste transportation and disposal. Verizon Wireless--Approved Waste Transporter and Disposal Facilities:	
Soil Transportation Contractor	
Environmental Management Specialists Inc. 1949 N. Woodlawn Ave Griffith, IN 46319 219.314.0367 -Or-	
Kestrel Hawk LF 1989 Oakes Rd. Racine, WI 53406 DNR Fac. ID: 252076090 EPA ID: WID076171008 (Chrissy Chapman Email Approval December 21, 2017)	
Soil Disposal Facilities	
Laraway Landfill 21233 W Laraway Rd Joliet, IL 60436	
Five Oaks RDF 890 E. 1500 North Rd. Taylorville, IL 62568 EPA ID: ILD984852509 (Chrissy Chapman Email Approval December 21, 2017)	
LESSOR CONTACT to sign the waste manifest(s) or other shipping documentation: Village of Orland Park Ken Dado Public Works Utilities Manager 15655 S. Ravinia Ave. Orland Park, IL 60462 Phone: 708-403-6350 kdado@orlandpark.org	

Page | 3

	Consult Verizon Wireless' environmental consultant (EBI Consulting)
<input checked="" type="checkbox"/>	Excavation, drilling or advancement through and staging/stockpiling of contaminated media.
<input checked="" type="checkbox"/>	Other: Environmental oversight for coordination of soil excavation activities - Verizon Wireless' environmental consultant (EBI Consulting) must be notified three weeks (3) in advance of initiation of construction so that they can properly mobilize for the coordination of offsite excess soil disposal. EBI Consulting (Contact Ms. Elaine Langer, Program Manager, 347.415.5453.

Company shall ensure at all times that only appropriately trained qualified, and licensed workers perform the required environmental services. It is the responsibility of Company to adhere to the following restrictions in response to the above environmental conditions:

An outside environmental "oversight" consultant is required if transportation and disposal of wastes is carried out in accordance with applicable laws, regulations and the Verizon Wireless Environmental Compliance Program. THE USE OF SUCH CONSULTANT IS MANDATORY.

Site Restrictions	
Check All That Apply	
<input checked="" type="checkbox"/>	Restrictions on excavations/construction methods. Description: Construction related staging and stockpiling of excavated soils may not occur to the south or west of the project site, or near the proposed utility easement and must occur in a manner that will not cause impact the vicinity well.
	Diesel fuel prohibited at construction site except in fuel tank of vehicle.
	Gasoline prohibited at construction site except in fuel tank of vehicle.
<input checked="" type="checkbox"/>	Other: Diesel Sensitive Site – Tertiary Containment Generator – Diesel Enhanced Enclosure (DEE) [Meets NSTD399 generator solution]

Contractor's Signature _____

Print Name: _____

Witness: _____

Name: Rt 7 and West

Site Address: 15501 Park Station Blvd

City: Orland Park State: Illinois

NOTE: This signed original is to be returned to Territory Compliance along with the EES Closeout Report.



Figure 3 – Site Plan
Rte 7 & West / P 20130662262, L 187771
15501 Park Station Boulevard
Orland Park, Illinois

Not to scale



REVISIONS		BY	DATE	DMS	JTM	JTM			
		NO.	DESCRIPTION	ISSUED FOR REVIEW	ISSUED FOR FINALS	UPDATE CABLE LENGTHS			
		1		12/27/17	01/22/18	02/02/18			
		2							

LOC. # 187771

RTE 7 & WEST

15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY:	DMS
CHECKED BY:	TAZ
DATE:	12/27/17
PROJECT #:	33-2531

SHEET TITLE
NOTICE TO
CONTRACTOR

SHEET NUMBER

NTC-2

LEGEND

Light Post	Found Section Corner Monument
Power Pole	Found or Set Monument
Telephone Pedestal	Found or Set Cut Cross
Manhole	59.75' Measured
Water Valve Vault	(60.00') Record
Water Service Valve	DOC. NO. Document Number
Fire Hydrant	
Electrical Meter	Building
Gas Meter	Asphalt
Fence	Concrete
Centerline	PROPOSED
Section Line	Lease Lease Area
Underground Sanitary Line	Access Easement
Underground Electric Line	Utility Easement
Underground Fiber Optic Line	AGL Above Ground Level
Underground Gas Line	P.O.C. Point of Commencement
Underground Storm Line	P.O.B. Point of Beginning
Underground Water Line	
Underground Communication Line	



SURVEY NOTES

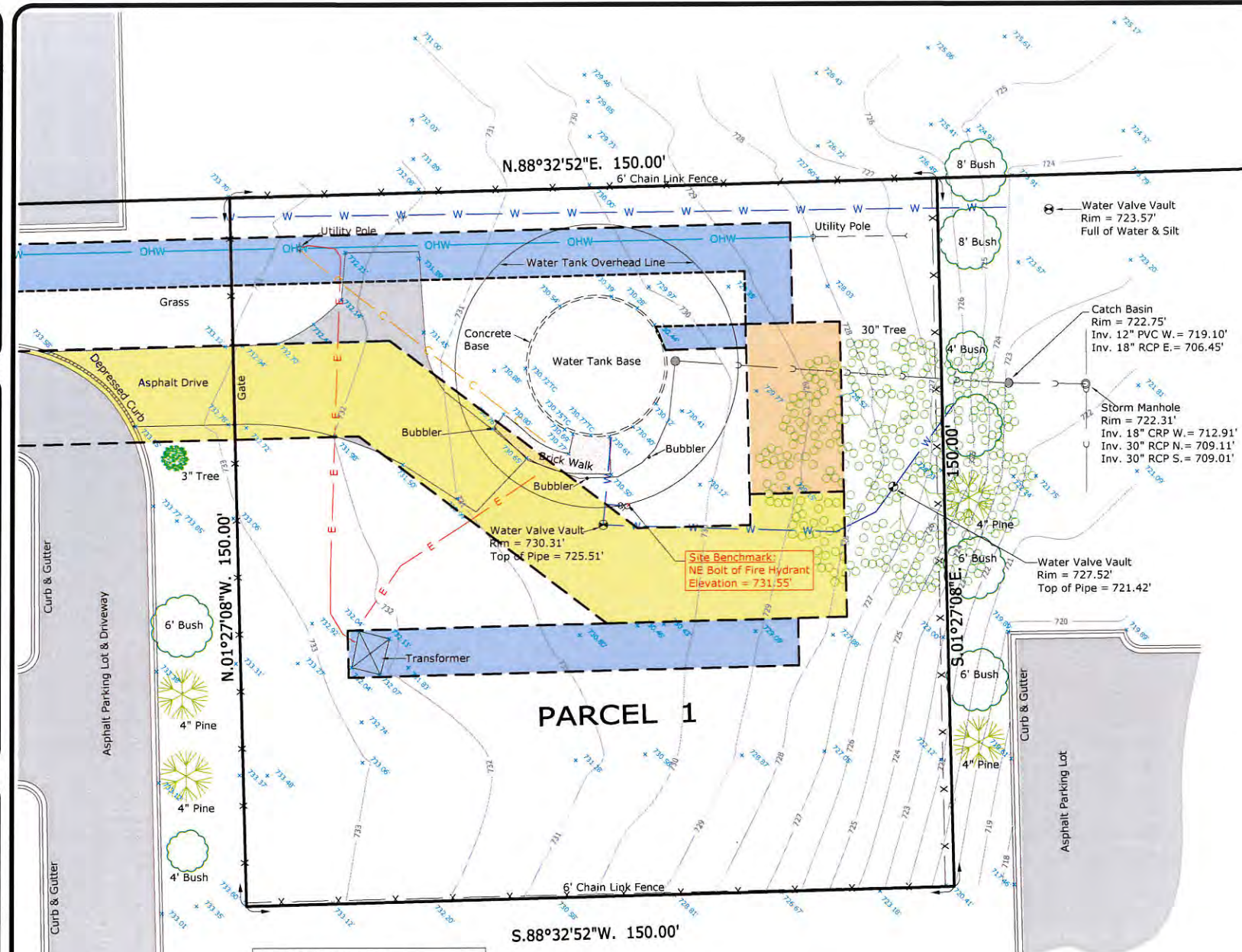
EASEMENTS AND SETBACKS SHOWN HEREON ARE BASED UPON THE RECORDED SUBDIVISION PLAT UNLESS NOTED OTHERWISE.

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 ENCUMBERED BY THE LEASE AREA HEREON IS 27-17-401-004-0000.

THE FLOOD INSURANCE RATE MAP SHOWS THAT THE PROPERTY DESCRIBED HEREON IS FALLING WITHIN ZONE "X", ACCORDING TO THE COMMUNITY PANEL NUMBER 170389 0039 K, VILLAGE OF ROUND LAKE BEACH, MAP NUMBER 17097C0039K, LAKE COUNTY, ILLINOIS AND INCORPORATED AREAS, MAP REVISED SEPTEMBER 18, 2013. ZONE "X" IS AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

EASEMENTS AND SERVITUDES SHOWN HEREON ARE BASED UPON A TITLE COMMITMENT ISSUED BY CHICAGO TITLE INSURANCE COMPANY, AND IDENTIFIED AS FILE ORDER NO.: 1401 008454370 D1, EFFECTIVE DATE OF MARCH 16, 2017.



HEIGHTS INFORMATION:

Top of Omni Antenna	= 134.2' AGL
Top of RF Antenna	= 125.0' AGL
Top of Micro Dish Mount	= 121.9' AGL
Top of Micro Dish	= 119.8' AGL
Bottom of Micro Dish	= 117.7' AGL
Top of Beacon Light	= 115.2' AGL
Top of Hatch	= 111.7' AGL
Top of Tower	= 112.2' AGL
Upper Painter Ring	= 61.1' AGL
Bottom Painter Ring	= 56.1' AGL

BENCHMARK INFO

SOURCE BENCHMARK: NGS MONUMENT
DESIGNATION: CO06
PID: AJ2796
STATE / COUNTY: IL / COOK
USGS QUAD: MOKENA (1993)
ELEVATION = 715' (NAVD88)

UNDERGROUND UTILITY LOCATE

LUCKY LOCATORS (PRIVATE LOCATE)
ORDERED 3/31/2017
MARKED

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 TINGLEY PARK QUADRANGLE STATE OF ILLINOIS

LATITUDE: N 41° 36' 29.25"
LONGITUDE: W 087° 52' 32.82"
AT EXISTING CENTERLINE OF TOWER
COMPLIES WITH F.A.A. 1/A ACCURACY REQUIREMENTS
SCALE: 1" = 30'

UTM GRID AND 1993 MAGNETIC NORTH DECLINATION AT CENTER OF QUAD MAP

SEE, SHEET L-2 (SHEET 2 OF 4) FOR PARENT PARCELS DETAIL.

SHEET L-3 (SHEET 3 OF 4) FOR LESSEE LEASE AREA AND EASEMENT DETAILS.

AND SHEET L-4 (SHEET 4 OF 4) FOR ALL LEGAL DESCRIPTIONS.

SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS }
COUNTY OF KANE } SS

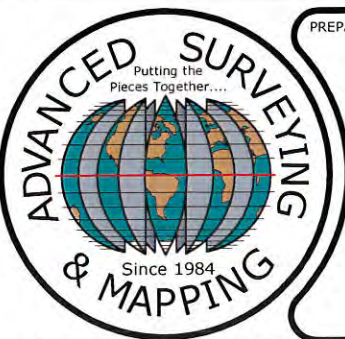
I, CHARLES S. MARSHALL, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON, BEING COMPLETED IN THE FIELD ON 4/10/2017 IS A CORRECT REPRESENTATION OF A SURVEY PERFORMED AT AND UNDER MY DIRECTION.

THIS SURVEY MEETS THE MINIMUM TECHNICAL STANDARDS FOR TOPOGRAPHIC 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 30TH DAY OF JANUARY, A.D. 2018.

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



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 4/30/2019

PLAT OF SURVEY OF LEASE AREA AND EASEMENTS

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.: 33-2531

NO.	DATE	REVISION
1.	4/10/2017	FIELD SURVEY COMPLETED
2.	4/18/2017	ISSUED PRELIMINARY SURVEY
3.	1/23/2018	FINAL SURVEY COMPLETED

SITE DESIGNATION INFORMATION:

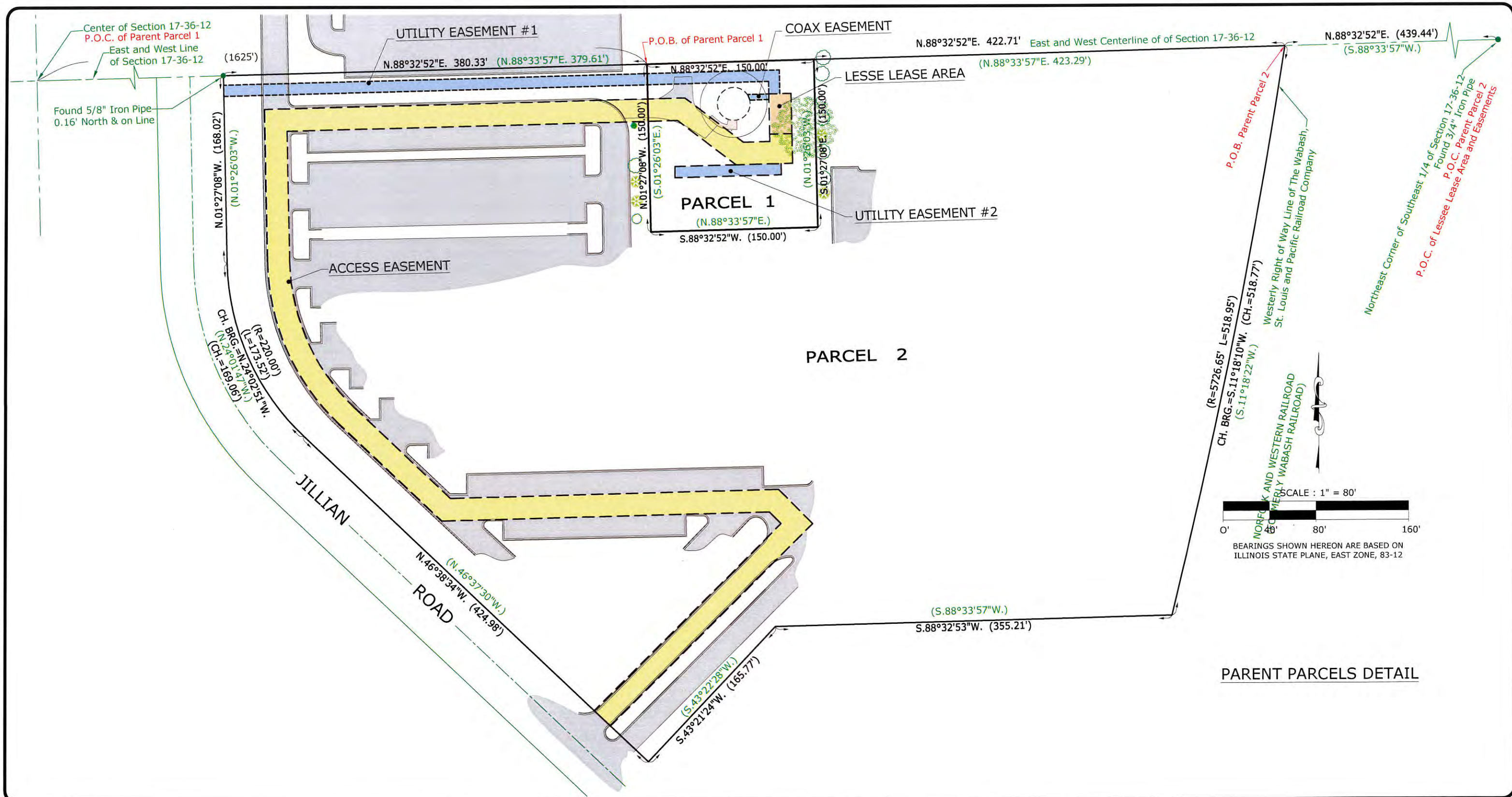
Rte 7 & West
LOCATION NO.: 187771
PROJECT NO.: 20130862262
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: EM
CHECKED BY: CSM

PROJECT NO. 720600

L-1

SHEET 1 OF 4



PREPARED BY:



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 4/30/2019

PLAT OF SURVEY OF LEASE AREA AND EASEMENTS

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.: 33-2531

NO.	DATE	REVISION
1.	4/10/2017	FIELD SURVEY COMPLETED
2.	1/30/2018	FINAL SURVEY COMPLETED

SITE DESIGNATION INFORMATION:

Rte 7 & West
LOCATION NO.: 187771
PROJECT NO.: 20130862262
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: EM
CHECKED BY: CSM

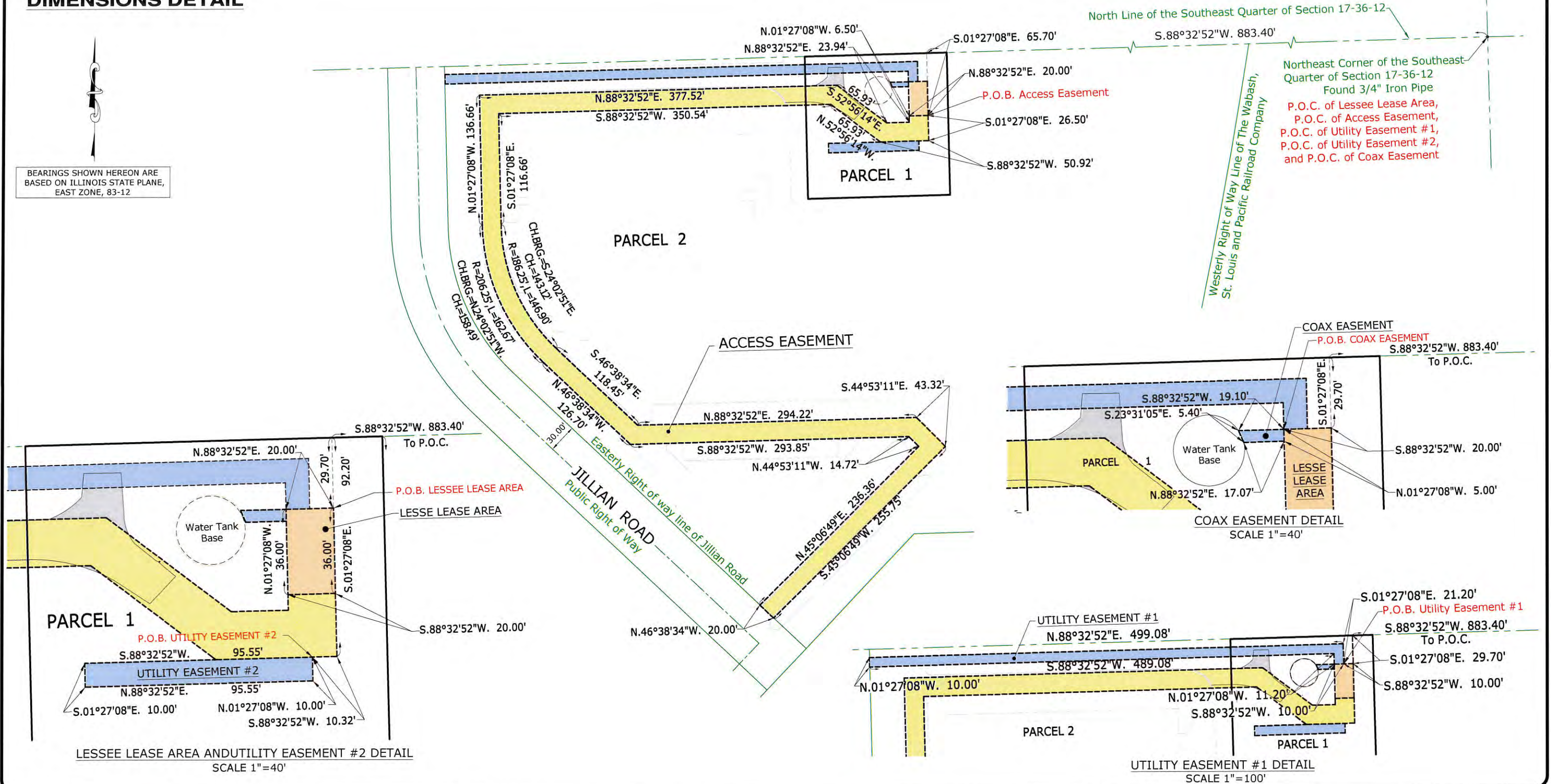
PROJECT NO.
720600

L-2

SHEET 2 OF 4

DIMENSIONS DETAIL

BEARINGS SHOWN HEREON ARE
BASED ON ILLINOIS STATE PLANE,
EAST ZONE, 83-12



LESSEE LEASE AREA AND UTILITY EASEMENT #2 DETAIL
SCALE 1"=40'

COAX EASEMENT DETAIL
SCALE 1"=40'

UTILITY EASEMENT #1 DETAIL
SCALE 1"=100'



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 4/30/2019

PLAT OF SURVEY OF LEASE AREA AND EASEMENTS

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.: 33-2531

NO.	DATE	REVISION
1.	4/10/2017	FIELD SURVEY COMPLETED
2.	1/30/2018	FINAL SURVEY COMPLETED

SITE DESIGNATION INFORMATION:

Rte 7 & West
LOCATION NO.: 187771
PROJECT NO.: 20130862262
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: EM
CHECKED BY: CSM

PROJECT NO.
720600

L-3

SHEET 3 OF 4

LEGAL DESCRIPTIONS

PARENT PARCELS:

(CHICAGO TITLE INSURANCE COMPANY, ORDER NO.: 1401 008454370 D1, EFFECTIVE DATE OF MARCH 16, 2017.)

PARCEL 1:

PART OF THE SOUTHEAST 1/4 OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, LYING WEST OF THE WESTERLY LINE OF THE NORFOLK AND WESTERN RAILROAD (FORMERLY WABASH RAILROAD) RIGHT OF WAY, BEING BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER OF SAID SECTION 17 AND RUNNING THENCE EAST ALONG THE EAST AND WEST CENTER LINE OF SAID SECTION, A DISTANCE OF 1625 FEET FOR A PLACE OF BEGINNING; THENCE CONTINUING EAST ALONG THE SAID EAST AND WEST CENTERLINE OF SECTION 17, A DISTANCE OF 150 FEET TO A POINT; THENCE SOUTH AT RIGHT ANGLES TO THE LAST DESCRIBED COURSE, 150 FEET; THENCE WEST AT RIGHT ANGLES TO THE LAST DESCRIBED COURSE 150 FEET; THENCE NORTH AT RIGHT ANGLES TO THE LAST DESCRIBED COURSE, 150 FEET TO THE PLACE OF BEGINNING, ALL IN COOK COUNTY, ILLINOIS.

PARCEL 2:

PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST, THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST, THIRD PRINCIPAL MERIDIAN; THENCE SOUTH 88 DEGREES 33 MINUTES 57 SECONDS WEST, ON THE SOUTH LINE OF SAID NORTHEAST QUARTER, AS MONUMENTED, 439.44 FEET TO THE WESTERLY RIGHT OF WAY OF THE WABASH, ST. LOUIS AND PACIFIC RAILROAD COMPANY AS SHOWN ON DOCUMENT NUMBER 356991 RECORDED NOVEMBER 3, 1881 AND NOW OCCUPIED, SAID POINT ALSO BEING THE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED PARCEL: THENCE SOUTHWESTERLY 518.95 FEET ON SAID WESTERLY RIGHT OF WAY, BEING A CURVE TO THE RIGHT, HAVING A RADIUS OF 5726.65 FEET, THE CHORD OF SAID CURVE BEARS SOUTH 11 DEGREES 18 MINUTES 22 SECONDS WEST, 518.77 FEET; THENCE SOUTH 88 DEGREES 33 MINUTES 57 SECONDS WEST, 355.21 FEET THENCE SOUTH 43 DEGREES 22 MINUTES 28 SECONDS WEST, 165.77 FEET TO THE WESTERLY LINE OF LOT 401 IN HUGUELET'S COLETTE HIGHLANDS SUBDIVISION RECORDED MAY 7, 2004 AS DOCUMENT NUMBER 0412818075; THENCE NORTH 46 DEGREES 37 MINUTES 30 SECONDS WEST, ON SAID WESTERLY LOT LINE, 424.98 FEET TO THE BEGINNING OF A CURVE; THENCE NORTHWESTERLY 173.52 FEET CONTINUING ON SAID WESTERLY LOT LINE, BEING A CURVE TO THE RIGHT, HAVING A RADIUS OF 220.00 FEET, THE CHORD OF SAID CURVE BEARS NORTH 24 DEGREES 01 MINUTES 47 SECONDS WEST, 169.09 FEET; THENCE NORTH 1 DEGREE 26 MINUTES 3 SECONDS WEST, CONTINUING ON SAID WESTERLY LOT LINE, 168.02 FEET TO THE NORTH LINE OF SAID SOUTHEAST QUARTER, AS MONUMENTED; THENCE NORTH 88 DEGREES 33 MINUTES 57 SECONDS EAST, ON SAID NORTH LINE, 379.61 FEET; THENCE SOUTH 1 DEGREE 26 MINUTES 03 SECONDS EAST, 150 FEET; THENCE NORTH 88 DEGREES 33 MINUTES 57 SECONDS EAST, 150.00 FEET; THENCE NORTH 1 DEGREE 26 MINUTES 03 SECONDS, 150 FEET TO THE NORTH LINE OF SAID SOUTHEAST QUARTER; THENCE NORTH 88 DEGREES 33 MINUTES 57 SECONDS EAST, ON SAID NORTH LINE, 423.29 FEET TO THE POINT OF BEGINNING.

PROPOSED ACCESS EASEMENT LEGAL DESCRIPTION:

A PARCEL OF LAND FOR ACCESS EASEMENT PURPOSES BEING A PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 883.40; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 65.70 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, 26.50 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 50.92 FEET; THENCE NORTH 52 DEGREES 56 MINUTES 14 SECOND WEST, 65.93 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 350.54 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 116.66 FEET TO A POINT OF CURVATURE; THENCE ALONG A CURVE TO THE LEFT, HAVING A RADIUS OF 186.25 FEET AND A CHORD THAT BEARS SOUTH 24 DEGREES 02 MINUTES 51 SECONDS EAST 143.12 FEET, AN ARC LENGTH OF 146.90 FEET TO A POINT OF TANGENCY; THENCE SOUTH 46 DEGREES 38 MINUTES 34 SECONDS EAST, 118.45 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, 294.22 FEET; THENCE SOUTH 44 DEGREES 53 MINUTES 11 SECONDS EAST 43.32 FEET; THENCE SOUTH 45 DEGREES 06 MINUTES 49 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 255.75 FEET TO THE NORTHEASTERLY RIGHT OF WAY LINE OF JILLIAN ROAD; THENCE NORTH 46 DEGREES 38 MINUTES 34 SECONDS WEST, ALONG SAID RIGHT OF WAY LINE, 20.00 FEET; THENCE NORTH 45 DEGREES 06 MINUTES 49 SECONDS EAST, 236.36 FEET; THENCE NORTH 44 DEGREES 53 MINUTES 11 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 14.72 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 293.85 FEET; THENCE NORTH 46 DEGREES 38 MINUTES 34 SECONDS WEST, 126.70 FEET TO A POINT OF CURVATURE; THENCE ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 206.25 FEET AND A CHORD THAT BEARS NORTH 24 DEGREES 02 MINUTES 51 SECONDS WEST 158.49 FEET, AN ARC LENGTH OF 162.67 FEET TO A POINT OF TANGENCY; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, 136.66 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 377.52 FEET; THENCE SOUTH 52 DEGREES 56 MINUTES 14 SECONDS EAST, 65.93 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST 23.94 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 6.50 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, 20.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 29140.4 SQUARE FEET OR 0.669 ACRES, MORE OR LESS.

PROPOSED LESSEE LEASE AREA LEGAL DESCRIPTION:

A PARCEL OF LAND FOR LESSEE LEASE AREA PURPOSES BEING A PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 883.40 FEET; THENCE SOUTH 01 DEGREE 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 29.70 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, 36.00 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 20.00 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, 36.00 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, 20.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 720.0 SQUARE FEET OR 0.016 ACRES, MORE OR LESS.

PROPOSED COAX EASEMENT LEGAL DESCRIPTION:

A PARCEL OF LAND FOR COAX EASEMENT PURPOSES BEING A PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 883.40 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 29.70 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 20.00 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 19.10 FEET; THENCE SOUTH 23 DEGREES 31 MINUTES 05 SECONDS EAST, 5.40 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, 17.07 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 5.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 90.4 SQUARE FEET OR 0.002 ACRES, MORE OR LESS.

PROPOSED UTILITY EASEMENT #1 LEGAL DESCRIPTION:

A PARCEL OF LAND FOR UTILITY EASEMENT PURPOSES BEING A PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 883.40 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 29.70 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 10.00 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 10.00 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 11.20 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 489.08 FEET TO THE EASTERLY RIGHT OF WAY LINE OF JILLIAN ROAD; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, ALONG SAID RIGHT OF WAY LINE, 10.00 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, PARALLEL TO SAID NORTH LINE OF SAID SOUTHEAST QUARTER, 499.08 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE 21.20 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 5102.8 SQUARE FEET OR 0.117 ACRES, MORE OR LESS.

PROPOSED UTILITY EASEMENT #2 LEGAL DESCRIPTION:

A PARCEL OF LAND FOR UTILITY EASEMENT PURPOSES BEING A PART OF THE SOUTHEAST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN IN COOK COUNTY, ILLINOIS, FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SOUTHEAST QUARTER; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, 883.40 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 92.20 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, PERPENDICULAR TO THE LAST DESCRIBED COURSE, 10.32 FEET FOR A POINT OF BEGINNING; THENCE CONTINUING SOUTH 88 DEGREES 32 MINUTES 52 SECONDS WEST, 95.55 FEET; THENCE SOUTH 01 DEGREES 27 MINUTES 08 SECONDS EAST, 10.00 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 52 SECONDS EAST, 95.55 FEET; THENCE NORTH 01 DEGREES 27 MINUTES 08 SECONDS WEST, 10.00 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 955.6 SQUARE FEET OR 0.022 ACRES, MORE OR LESS.



PREPARED BY:



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PLAT OF SURVEY OF LEASE AREA AND EASEMENTS

PREPARED FOR:

Chicago SMSA

CHICAGO SMSA LIMITED PARTNERSHIP
d/b/a VERIZON WIRELESS
1515 WOODFIELD ROAD, SUITE 1400
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JOB No.: 33-2531

NO.	DATE	REVISION
1.	4/10/2017	FIELD SURVEY COMPLETED
2.	1/30/2018	FINAL SURVEY COMPLETED

SITE DESIGNATION INFORMATION:

Rte 7 & West
LOCATION NO.: 187771
PROJECT NO.: 20130862262
15501 PARK STATION BLVD
ORLAND PARK, IL 60462

DRAWN BY: EM
CHECKED BY: CSM

PROJECT NO.
720600

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SHEET 4 OF 4