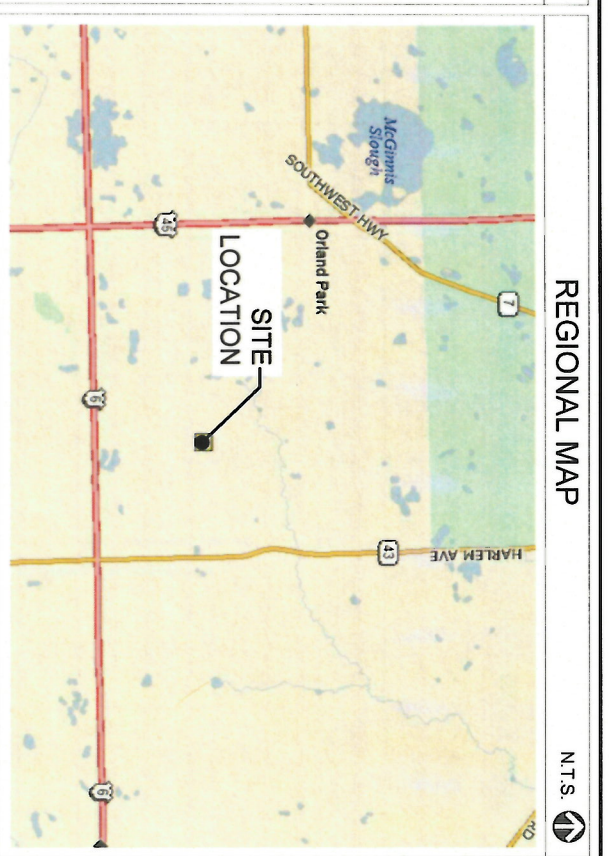


<b>CONSULTANT TEAM</b>	
<b>PROJECT CONSULTANT:</b> TERRA CONSULTING GROUP, LTD. 600 BUSSE HIGHWAY PARK RIDGE, IL 60068 (847) 698-6400	<b>PROJECT TYPE</b> PROPOSED LESSEE ANTENNAS MOUNTED ON A NEW MONOPOLE TOWER WITH PROPOSED 9'-4" X 16'-0" EQUIPMENT PLATFORM AT BASE.
<b>SURVEYOR:</b> ASM CONSULTANTS, INC. P.O. BOX 7 PLANO, IL 60545 (630) 273-2500	<b>SITE COORDINATES:</b> LATITUDE: 41° 36' 58.54" N (1A CERTIFICATION) LONGITUDE: 87° 48' 53.39" W (1A CERTIFICATION) ELEVATION: ±704 (1A) <b>DRIVING DIRECTIONS:</b> FROM LESSEE OFFICE: START OUT GOING EAST ON E WOODFIELD RD TOWARD MALL DR. TURN RIGHT ONTO W FRONTAGE RD. MERGE ONTO I-290 E VIA THE RAMP ON THE LEFT. KEEP RIGHT TO TAKE I-290 E TOWARD CHICAGO. MERGE ONTO I-294 S/RTI STATE TOLLWAY S VIA EXIT 15A TOWARD INDIANA (PORTIONS TOLL). MERGE ONTO I-55 NADLA E STEVENSON EXPY N TOWARD CHICAGO. MERGE ONTO US-45 S/S LA GRANGE RD VIA EXIT 279A. TURN LEFT ONTO W 151ST ST. DESTINATION WILL BE ON THE RIGHT.
<b>APPROVALS</b> REAL ESTATE: _____ RF: _____ CONSTRUCTION: _____ EQUIPMENT ENGINEERING: _____ OPERATIONS: _____	

<b>PROJECT TYPE</b> PROPOSED LESSEE ANTENNAS MOUNTED ON A NEW MONOPOLE TOWER WITH PROPOSED 9'-4" X 16'-0" EQUIPMENT PLATFORM AT BASE.	<b>SITE COORDINATES:</b> LATITUDE: 41° 36' 58.54" N (1A CERTIFICATION) LONGITUDE: 87° 48' 53.39" W (1A CERTIFICATION) ELEVATION: ±704 (1A) <b>DRIVING DIRECTIONS:</b> FROM LESSEE OFFICE: START OUT GOING EAST ON E WOODFIELD RD TOWARD MALL DR. TURN RIGHT ONTO W FRONTAGE RD. MERGE ONTO I-290 E VIA THE RAMP ON THE LEFT. KEEP RIGHT TO TAKE I-290 E TOWARD CHICAGO. MERGE ONTO I-294 S/RTI STATE TOLLWAY S VIA EXIT 15A TOWARD INDIANA (PORTIONS TOLL). MERGE ONTO I-55 NADLA E STEVENSON EXPY N TOWARD CHICAGO. MERGE ONTO US-45 S/S LA GRANGE RD VIA EXIT 279A. TURN LEFT ONTO W 151ST ST. DESTINATION WILL BE ON THE RIGHT.
--	---



**GENERATOR TYPE:** NATURAL GAS  
MAKE: GENERAC  
MODEL: SGNG-35-EV-1P 35KW NAT GAS 120/240  
1-PH OUTDOOR STANDARD CONFIGURATION

**PROJECT INFORMATION**  
P.I.N. #: 27-14-201-010-0000  
ADDRESS: 15100 S 80TH AVE  
ORLAND PARK, IL 60462  
UTILITIES: POWER: COMED FIBER: ONE FIBER  
LEONARD ANDERSON WADE BOWERS  
(708) 235-2346 (512)618-3411  
GAS: NICOR  
KEVIN DOWNEY  
(708) 441-6745  
JURISDICTION: UNINHABITED  
OCCUPANCY: COMMERCIAL/RESIDENTIAL  
CONSTRUCTION TYPE: RAWLAND  
PROPERTY OWNER: ORLAND FIRE DISTRICT  
15100 SOUTH 80TH AVE  
ORLAND PARK, IL 60462  
TOWER OWNER: VILLAGE OF ORLAND PARK  
CONTACT PERSON: MARK WILLIAMS (847) 273-0488  
APPLICANT: CHICAGO SMSA  
limited partnership  
d/b/a Verizon Wireless  
1515 WOODFIELD ROAD  
SCHAUMBURG, IL 60173  
CONSTRUCTION MANAGER: RONALD PAULY (630) 534-4094  
REAL ESTATE MANAGER: DANNY PEREZ (847) 706-1765

No error, omission, or discrepancy of any sort in either the plans and/or supporting documents (whether said plans or documents have been reviewed by the Municipal Engineer or not) shall permit or release the applicant from constructing this work in any other manner than that provided for in the ordinance of this Municipality relating thereto.

TOWER TO BE BUILT AND OWNED  
BY DRA PROPERTIES LLC.

These plans and/or supporting documents have been reviewed for compliance with the applicable portions of the municipal codes of the City/Village of **Orland Park**  
This approval does not serve to amend, modify or waive any zoning or other development related requirements.  
CHRISTOPHER B. BURKE ENGINEERING LTD.  
BY: *Paul R. Burke*  
DATE: **10-19-2018**

# CHICAGO SMSA

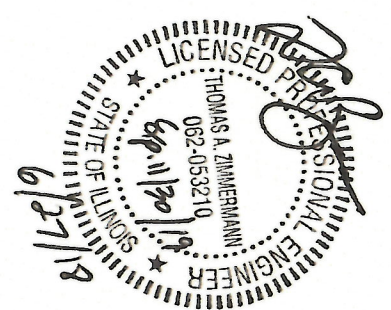
## limited partnership

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

**DOLAN REALTY SITE #: DRA IL-1014**

**LOCATION NUMBER: 311466**

**SITE NAME: W 151st ST & S 80th AVE**  
**15100 S 80TH AVE**  
**ORLAND PARK, IL 60462**



SHEET	DRAWING INDEX	REVISION
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REVISIONS			
NO.	DESCRIPTION	DATE	BY
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9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/29/18	TJS
11	UPDATE WITH NEW ECR	06/27/18	TJS

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

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

SHEET TITLE	TITLE SHEET
DRAWN BY:	PP
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DATE:	07/23/15
PROJECT #:	33-1466

**T-1**  
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REVISIONS			
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DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
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DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
LOCATION PLAN

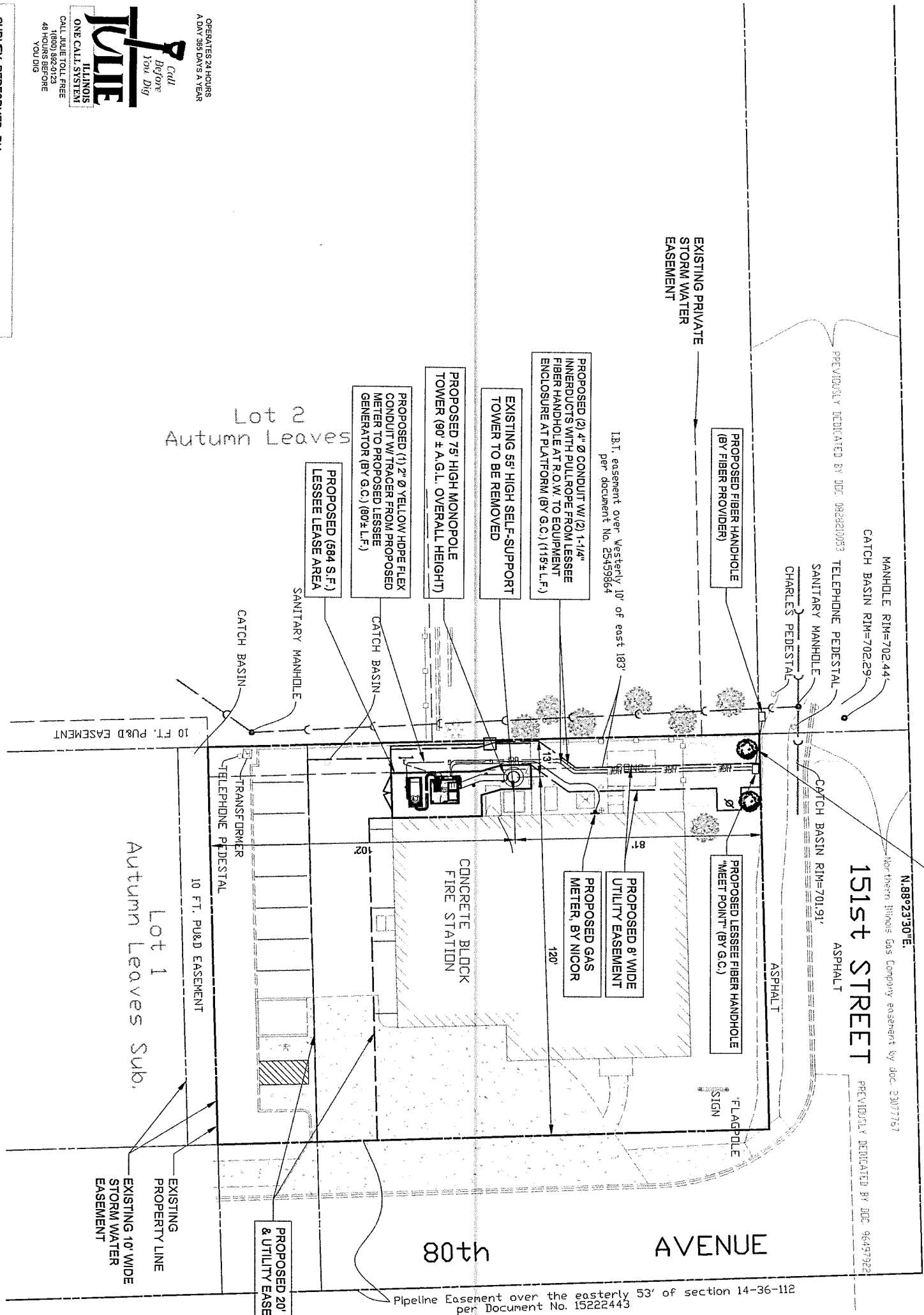
SHEET NUMBER

LP



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

- DRA PROPERTIES LLC TO INSTALL:**
- TOWER, TOWER FOUNDATION & TOWER GROUND FENCE & GATE
  - H-FRAME AND GROUNDING
  - ELECTRIC CONDUITS AND CONDUCTOR FROM METER TO COMED DEMARC
  - FIBER CONDUITS WITH PULL ROPE FROM FIBER HANDHOLE IN THE R.O.W. TO THE COMPOUND



1 LOCATION PLAN  
SCALE: 1" = 20'

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

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.

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.

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 CATCHBASINS SUSCEPTIBLE TO EROSION. EROSION CONTROL MEASURES SHALL BE PERIODICALLY INSPECTED TO ENSURE PROPER FUNCTION. EROSION CONTROL SHALL BE REMOVED UPON COMPLETION OF WORK.

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



OPERATES 24 HOURS  
A DAY, 365 DAYS A YEAR



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DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
ENLARGED  
SITE PLAN

SHEET NUMBER

C-1

1 ENLARGED SITE PLAN  
SCALE: 1" = 10'



OPERATES 24 HOURS  
A DAY 365 DAYS A YEAR

PROPOSED 20' WIDE ACCESS  
& UTILITY EASEMENT

PROPOSED 12' WIDE DOUBLE  
SWING GATE

73 L.F. SAWCUT OF EXISTING  
PAVEMENT

PROPOSED 75' HIGH MONOPOLE  
(60' ± A.G.L. OVERALL HEIGHT)

PROPOSED (584 S.F.)  
LESSEE LEASE AREA

EXISTING DOOR

EXISTING SELF-SUPPORT TOWER  
TO BE REMOVED, TOWER  
FOUNDATION TO REMAIN.

EXISTING TRANSFORMER, TYP.

EXISTING METAL POST

PROPOSED GAS  
METER, BY NICOR

EXISTING CONCRETE STAIRS  
BUILDING

EXISTING SHRUBS

PROPOSED UTILITY POLE, G.C. TO SECURE  
EXISTING POWERLINE TO POLE PRIOR TO  
REMOVAL OF EXISTING SELF-SUPPORT TOWER

PROPOSED LANDSCAPING  
(SEE SHEET L-1)

EXISTING CATCH BASIN, TYP.

EXISTING ASPHALT SIDEWALK

PROPOSED 8' WIDE UTILITY  
EASEMENT

PROPOSED LESSEE FIBER HANDHOLE  
"MEET POINT" (BY G.C.)

EXISTING VINYL FENCE

EXISTING TREE, TYP.

EXISTING SANITARY  
SEWER LINE

EXISTING WAVE GUIDE & ICE  
BRIDGE FROM ENCLOSURE TO  
ANTENNA TOWER

EXISTING 9' WIDE MAIN  
GATE

PROPOSED (6'-0" X 9'-4")  
LESSEE EQUIPMENT ON  
CONCRETE PAD

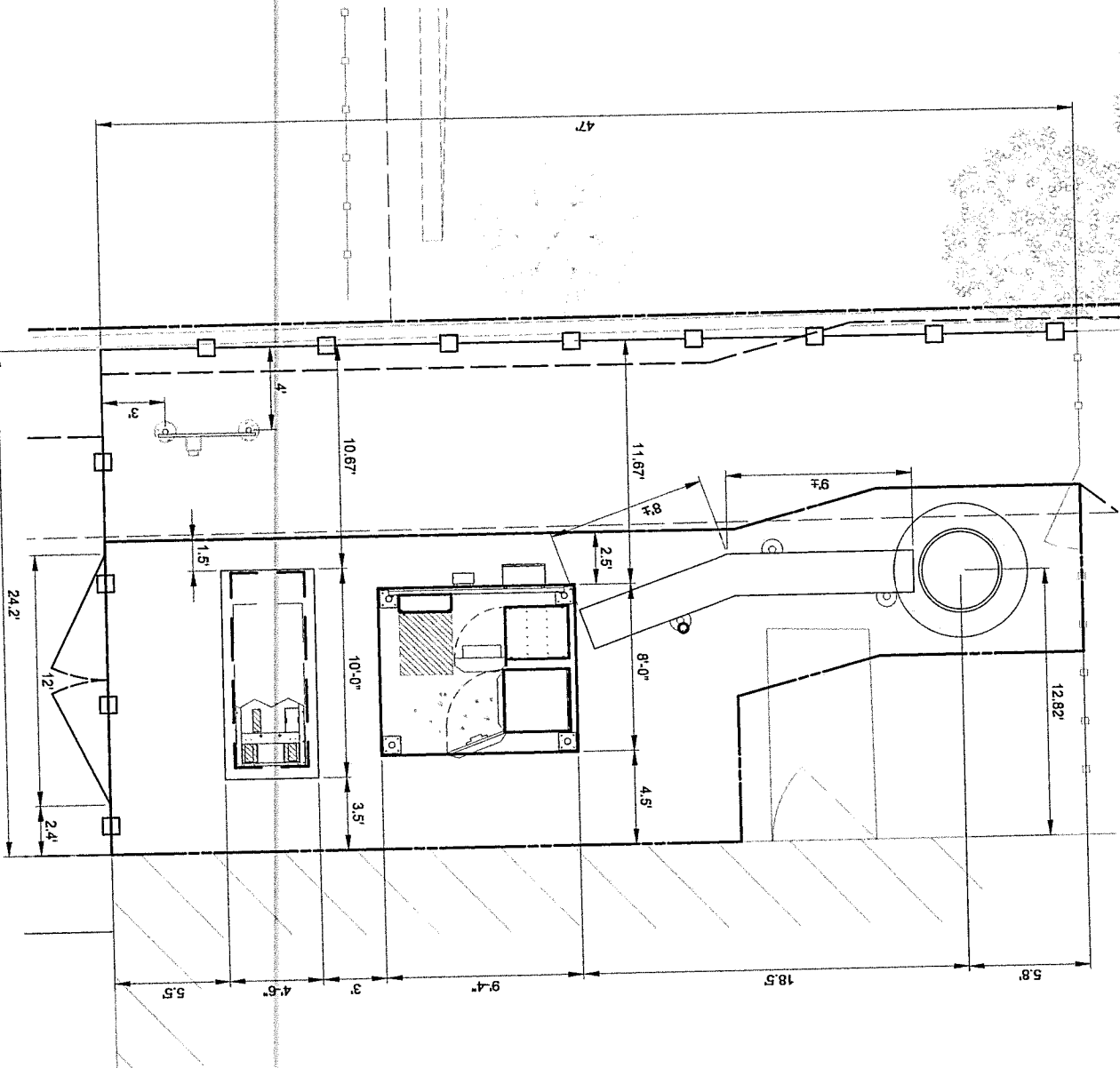
PROPOSED LESSEE  
UTILITY H-FRAME

PROPOSED LESSEE GENERATOR  
MOUNTED ON (4.5' X 10') CONC. PAD

PROPOSED FENCED COMPOUND  
EXPANSION, 24.2' X 47'

PROPOSED VINYL FENCE TO  
MATCH EXISTING

1 SITE DIMENSION PLAN  
SCALE: 1" = 4'



SURVEY PERFORMED BY:  
**Advanced Surveying & Mapping**  
Telephone (630) 273-2500  
Fax (630) 273-2600  
E-MAIL [asmc@advct.com](mailto:asmc@advct.com)

- DRA PROPERTIES LLC TO INSTALL:**
- TOWER, TOWER FOUNDATION & TOWER GROUND FENCE & GATE
  - H-FRAME AND GROUNDING
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LEASE SITE  
50 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  
71 L.F. OF FENCING

PAVEMENT MATERIAL

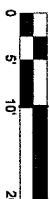
THE CONTRACTOR SHALL INCLUDE AS PART OF THE BID, THE COST OF REMOVAL OF ANY SURFACE VEGETATION AND ORGANIC SOILS OR OTHER DELETERIOUS MATERIALS AND THE REPLACEMENT WITH ENGINEERED BACKFILL FOR THE AGGREGATE ACCESS DRIVE AND LEASE SITE, IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.



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SCALE 1" = 10'

REVISIONS			
NO.	DESCRIPTION	DATE	BY
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**TERRA**  
CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

**CHICAGO  
SMSA**

*limited partnership*  
d/b/a VERIZON WIRELESS

DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY: PP

CHECKED BY: TAZ

DATE: 07/23/15

PROJECT #: 33-1466

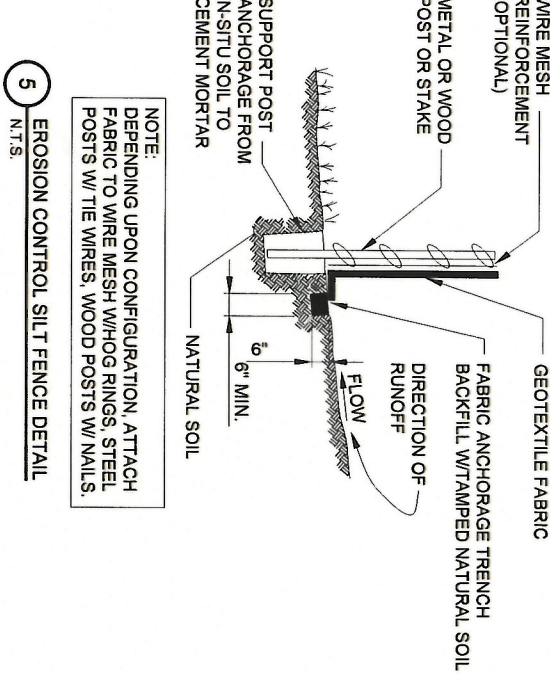
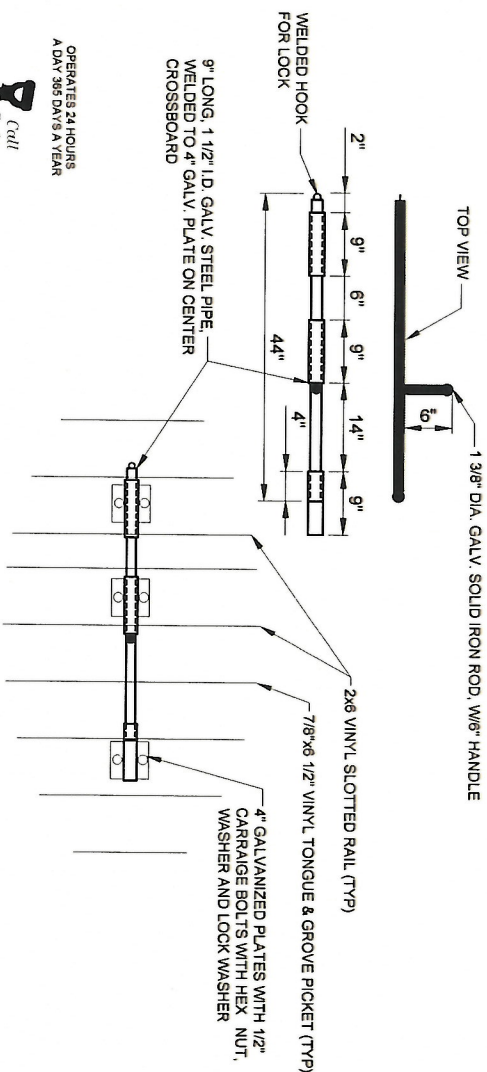
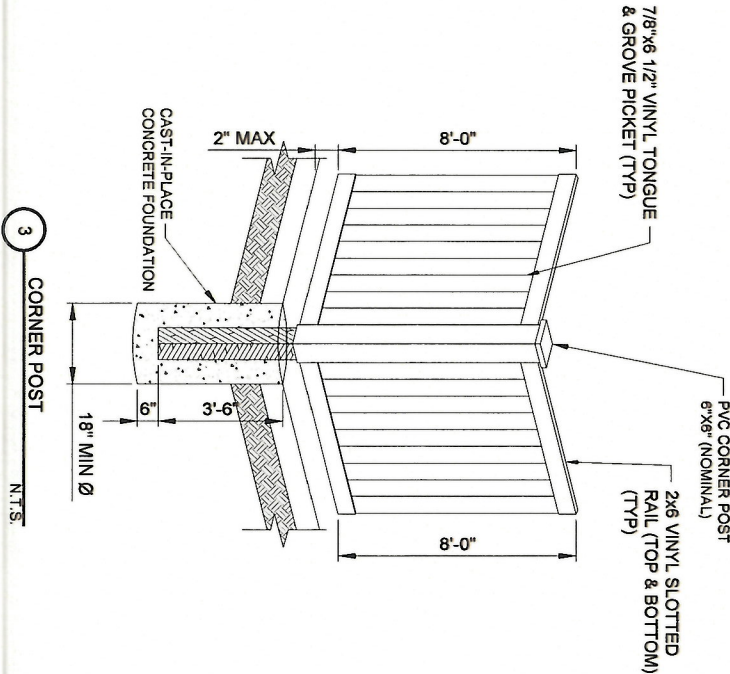
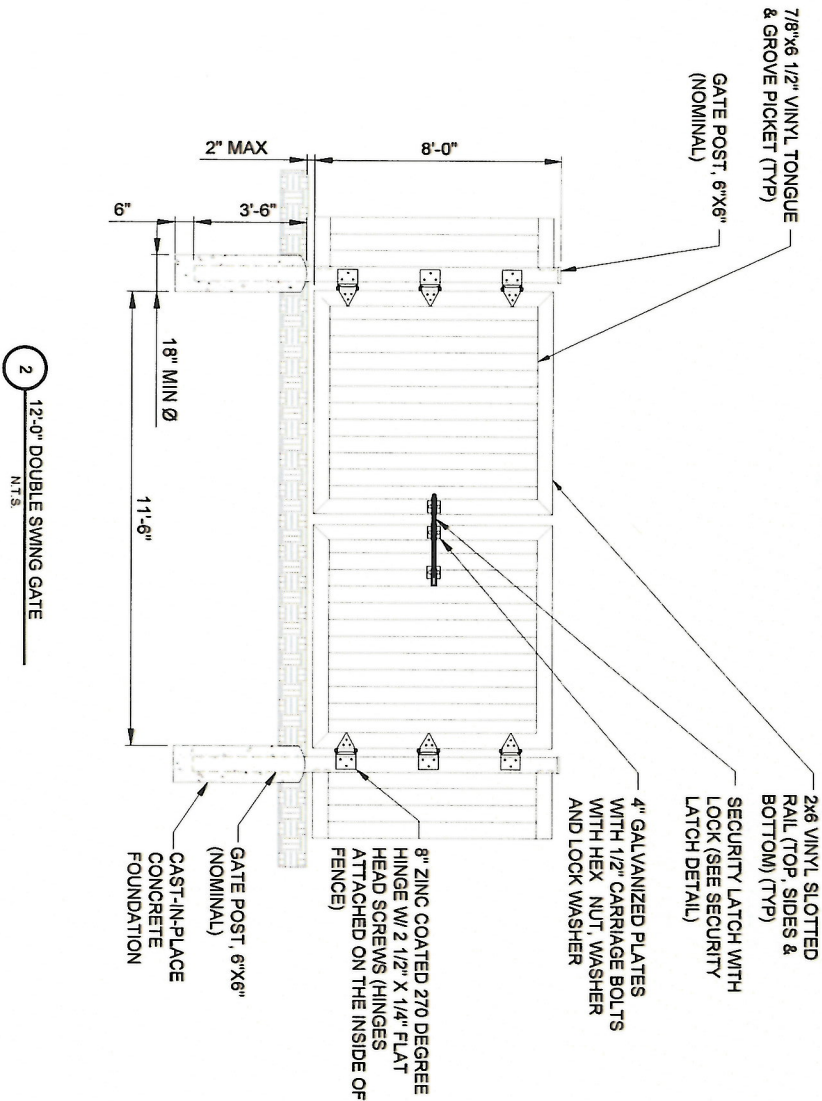
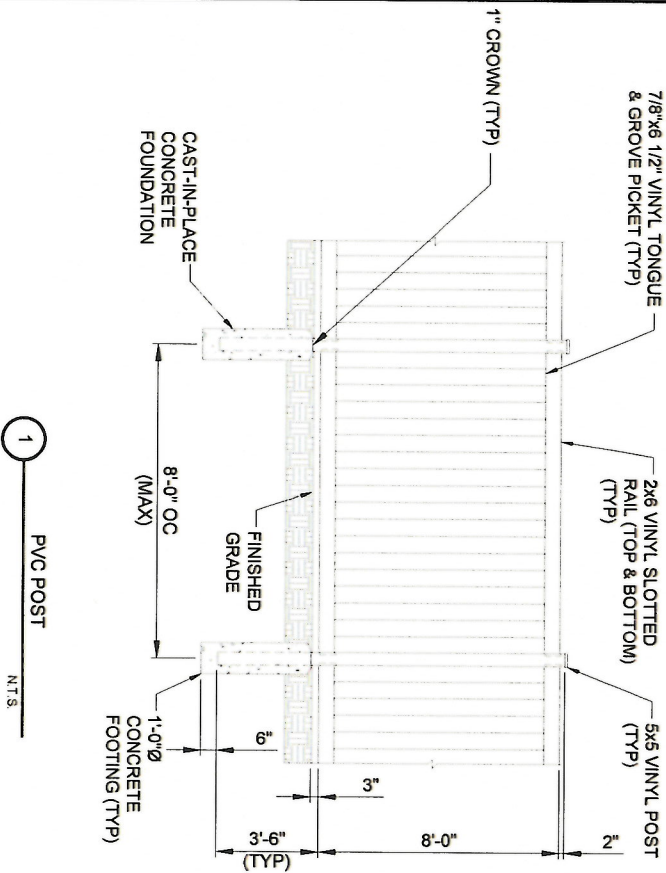
**SITE GRADING PLAN  
(SHEET 1 OF 1)**

**SHEET NUMBER**

Q-2



NOTES:  
WOOD GRAIN STYLE TONGUE & GROVE VINYL PRIVACY FENCE. INSTALL FENCING PER MANUFACTURERS RECOMMENDATIONS.  
CONCRETE FOOTINGS SHALL BE 3000 PSI.



GENERAL NOTES		
1) REFER TO THE PROJECT MANUAL FOR ADDITIONAL INFORMATION AND REQUIREMENTS RELATED TO CONSTRUCTION.		
2) THE OWNER HAS CAUSED A GEOTECHNICAL EXPLORATION TO BE PERFORMED AT THE SITE.		
3) THE CONTRACTOR SHALL NOTIFY THE CLIENT'S GEOTECHNICAL ENGINEER TO COORDINATE HAVING A FIELD REPRESENTATIVE ON SITE FOR TESTING AND INSPECTION.		
COPIES OF THE REPORT ARE ISSUED TO THE CONTRACTOR FOR CONVENIENCE ONLY. THE REPORT IS NOT A PART OF THE CONTRACT DOCUMENTS. NEITHER THE OWNER NOR THE ENGINEER/ARCHITECT GUARANTEE THE ACCURACY OR VALIDITY OF THE DATA CONTAINED THEREIN, NOR DO THEY ASSUME ANY RESPONSIBILITY FOR THE CONTRACTOR'S USE OR INTERPRETATION OF THE DATA CONTAINED THEREIN.		
GEOTEXTILE PARAMETERS		
PROPERTY	MINIMUM VALUE (a)	TEST METHOD
GRAB STRENGTH	180 LBS.	ASTM D-4832-91
PUNCTURE STRENGTH	75 LBS.	ASTM D-4833-98
BURST STRENGTH	290 LBS.	ASTM D-3786
TRAPEZOIDAL TEAR	50 LBS.	ASTM D-4571-87
(a) ALL VALUES REPRESENT MINIMUM ROLL VALUES		

NOTES:  
THE FABRIC SHOULD BE PLACED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. INTERSECTIONS OF SHEETS MUST BE SEWN OR SUFFICIENTLY OVERLAPPED (AT LEAST 24 INCHES) OR AS SPECIFIED BY THE MANUFACTURER. THE GEOTEXTILE SHEETS SHOULD ALSO BE PLACED TAUT TO REDUCE WRINKLES OR FOLDS. CARE MUST BE EXERCISED TO PREVENT PHYSICAL DAMAGE OF THE GEOTEXTILE PRIOR TO, DURING AND AFTER INSTALLATION. UTILITIES SHOULD BE INSTALLED BEFORE PLACING THE FABRIC.

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

**TERRA**  
CONSULTING GROUP, LLC  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60069  
PH: 847-698-6400  
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11	UPDATE WITH NEW ECR	06/27/18	TJS

**DOLAN REALTY**

**SITE #**  
**DRA IL-1014**

**LOC. # 311466**

**W 151st ST**  
**& S 80th AVE**

**15100 S 80TH AVE**  
**ORLAND PARK, IL 60462**

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

**SHEET TITLE**  
**FENCE DETAIL**

**SHEET NUMBER**

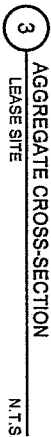
**C-3**

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**CHICAGO  
SMSA**  
*limited partnership*  
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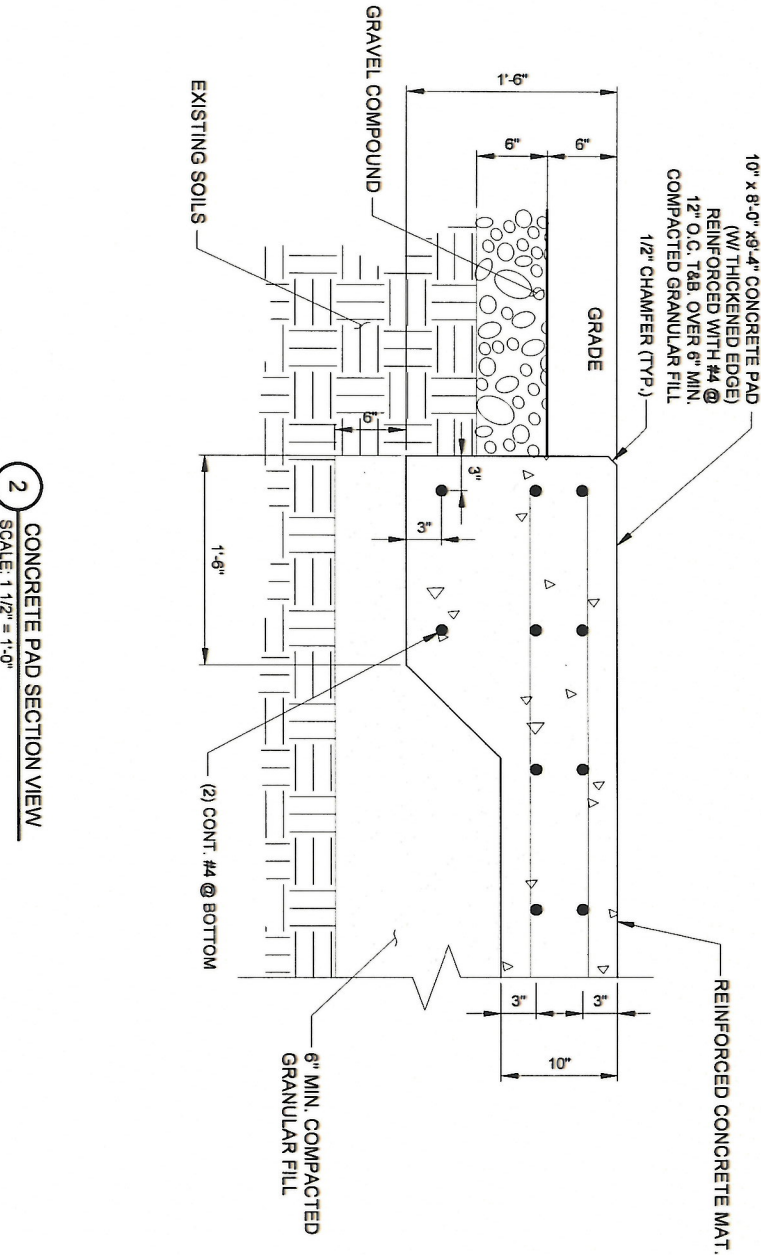
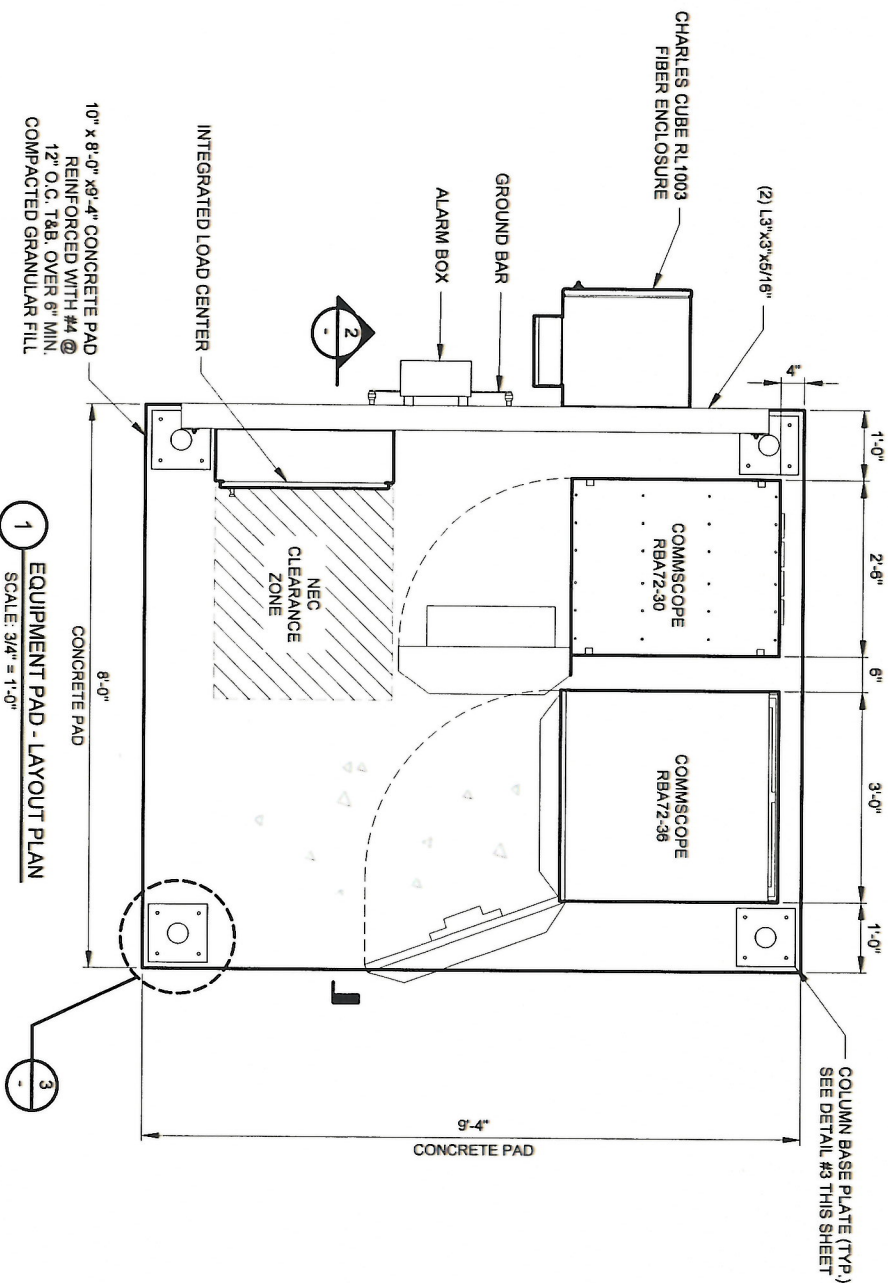
PROJECT #: 33-1468

**SHEET TITLE**  
**SITE DETAILS**

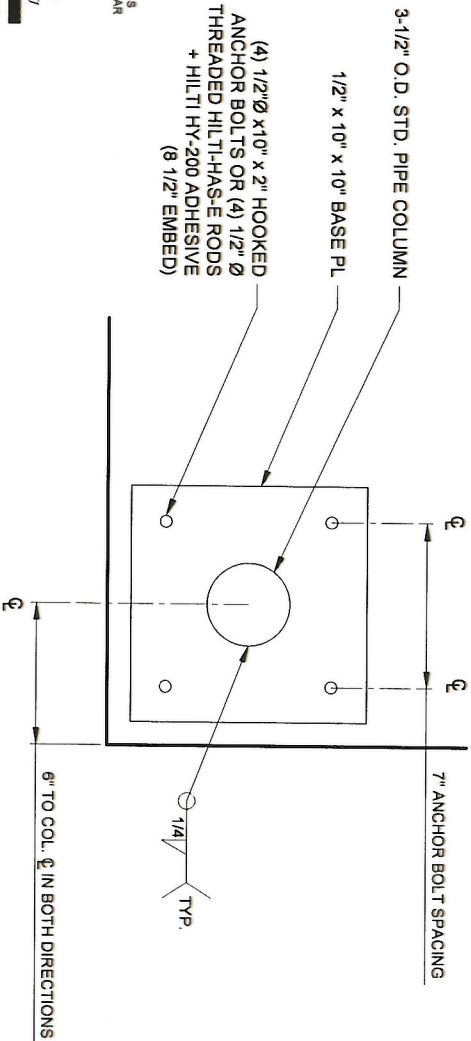
**SHEET NUMBER**

94





NOTE:  
ANCHOR BOLTS TO BE INSTALLED AT TIME OF  
CANOPY INSTALLATION BY THE CONTRACTOR  
INSTALLING BASE PLATES. PRE-INSTALLING THE  
ANCHOR BOLTS AT THE TIME OF FOUNDATION  
INSTALLATION MAY RESULT IN BOLT PATTERNS NOT  
MATCHING UP WITH BASE PLATE OF PLATFORM



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TODAY  
OR  
48 HOURS BEFORE  
YOU DIG

3 COLUMN BASE PLATE DETAILS  
SCALE: 3/4" = 1'-0"

CONCRETE NOTES:

1. 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.
2. EXCEPT WHERE OTHERWISE INDICATED, CONCRETE SHALL BE NORMAL WEIGHT AND WITH MINIMUM 28-DAY COMPRESSIVE STRENGTHS OF FC=4000 PSI. ALL EXTERIOR EXPOSED CONCRETE SHALL BE AIR ENTRAINED WITH 6% AIR CONTENT.
3. REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
5. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO ARCHITECT / ENGINEER FOR REVIEW.

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 IF FIELD CONDITIONS INDICATE LOOSE GRANULAR SOILS. THE SOILS MAY REQUIRE REMOVAL AND REPLACEMENT WITH AN APPROVED ENGINEERED FILL. FOUNDATION DEPTH AND OVER DIG REQUIREMENTS SHALL BE VERIFIED WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND INCLUDED IN THE BID BEFORE CONSTRUCTION. THE EVALUATION OF THE SUB GRADE AND SELECTION OF FILL MATERIALS SHALL BE MONITORED AND TESTED BY A QUALIFIED REPRESENTATIVE OF THE SOILS ENGINEER.



CHICAGO  
SMSA  
limited partnership  
d/b/a VERIZON WIRELESS

REVISIONS			
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6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
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9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/29/18	TJS
11	UPDATE WITH NEW ECR	09/27/18	TJS

DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE  
ORLAND PARK, IL 60462

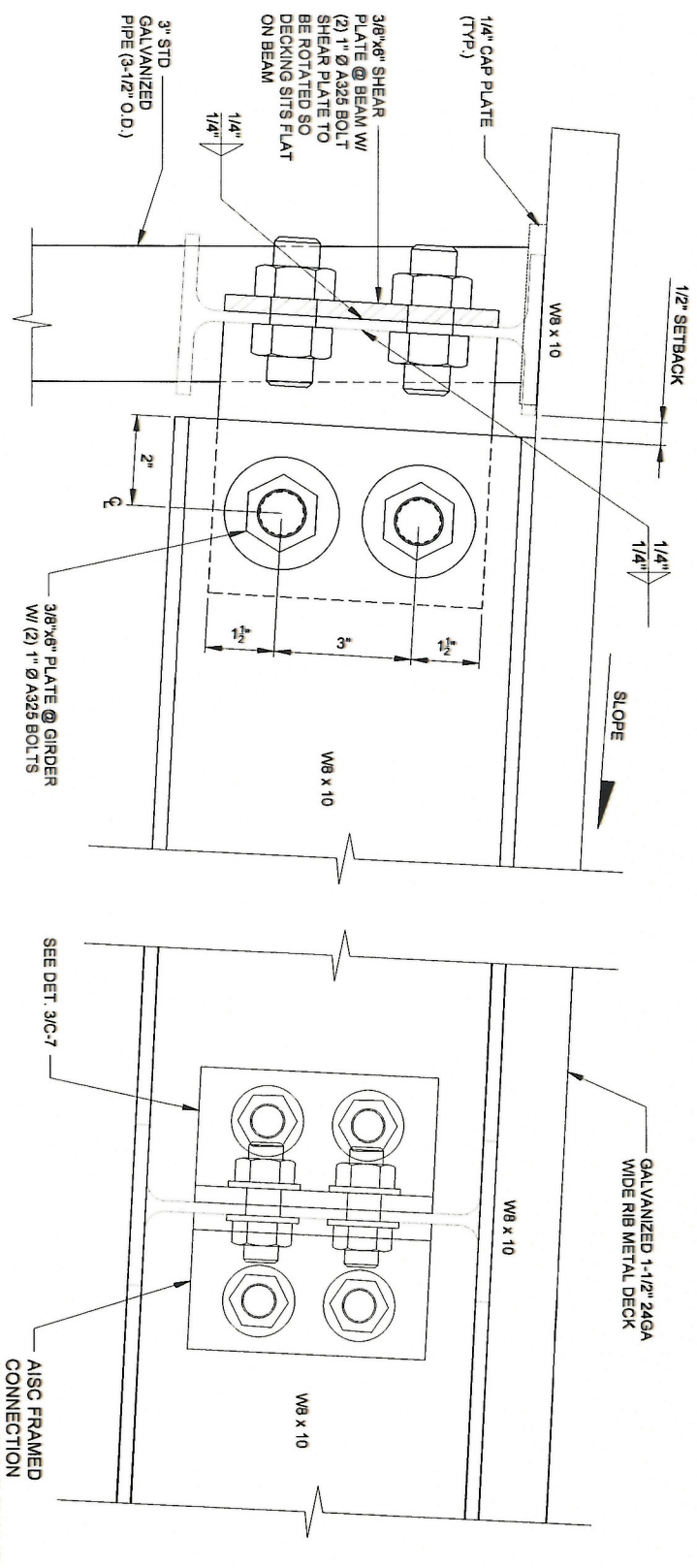
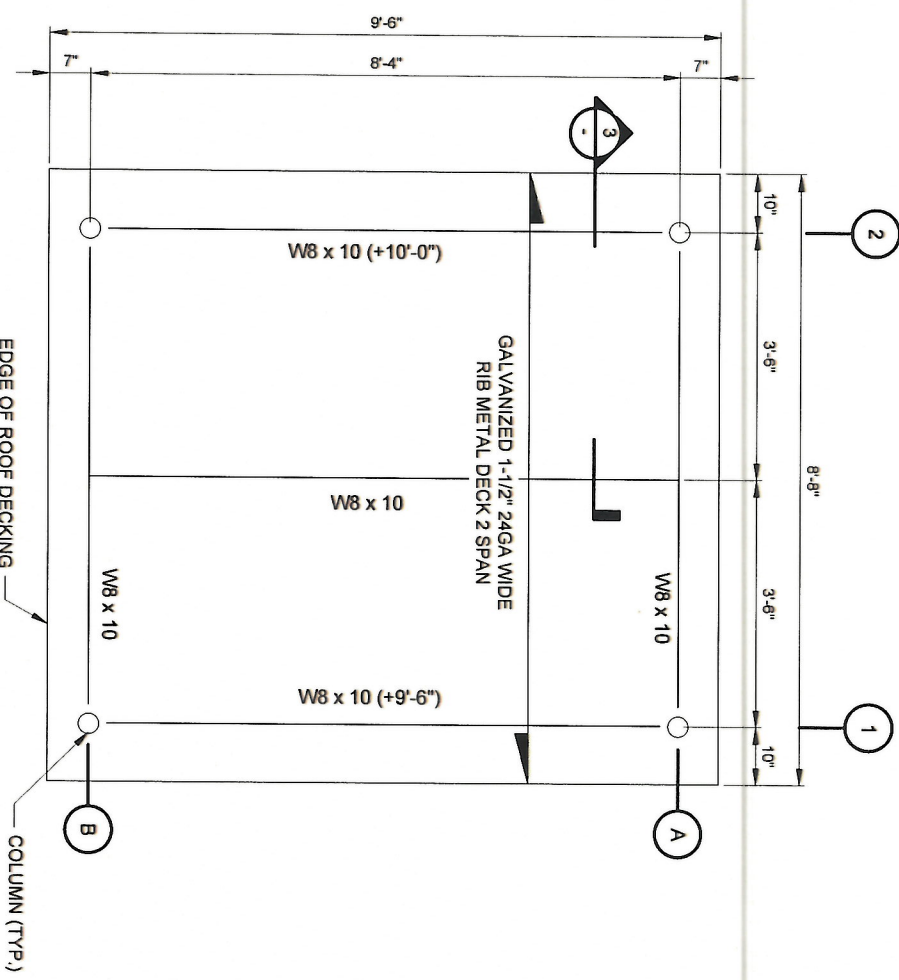
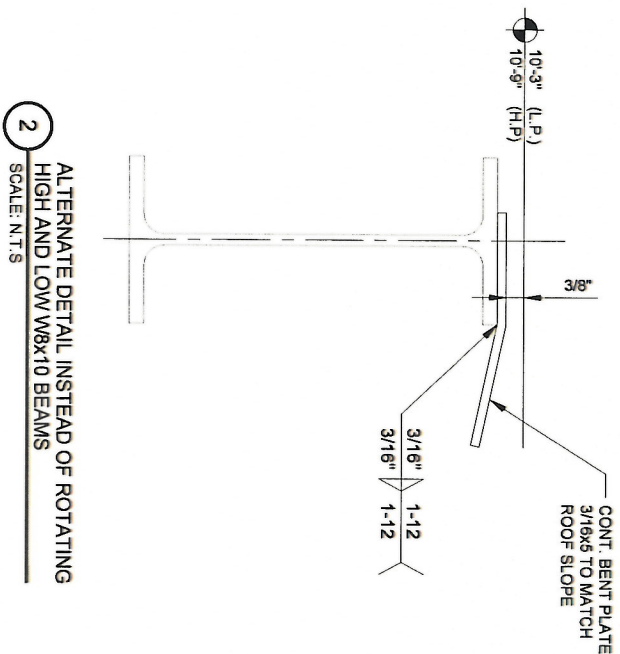
DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1486

SHEET TITLE  
EQUIPMENT PAD  
FOUNDATION PLAN

SHEET NUMBER

C-5





**METAL DECK NOTES:**

1. METAL ROOF DECK SHALL BE GALVANIZED. GALVANIZED SHEET STEEL SHALL CONFORM TO ASTM A446 GRADE A AND ASTM A525 WITH A MINIMUM G30 COATING UNLESS OTHERWISE NOTED.
2. METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS". THE MINIMUM THICKNESS OF ROOF DECK SHALL BE 22 GAUGE.
3. FASTENING OF METAL DECK TO THE STRUCTURAL STEEL, THE FOLLOWING LIMITS SHALL NOT BE EXCEEDED:  
A.) ALL METAL DECKING SHALL BE FASTENED AT 12" (9" AT THE PERIMETER) MAXIMUM ON CENTER TO THE SUPPORTING STEEL WITH #12 TEK SCREWS.  
B.) # 12 GALVANIZED TEK SCREWS IN 36/4 PATTERN.  
C.) SEE PLAN FOR ADDITIONAL PLAN FASTENING REQUIREMENTS.
4. NO LOADS EXCEEDING 50 LBS SHALL BE PERMITTED TO BE HUNG FROM ANY METAL DECKING. ALL HANGERS FOR DUCTWORK, PIPING, ETC. SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL WORK OR SUPPLEMENTARY MEMBERS OR ANCHORS EMBEDDED IN THE CONCRETE. ALL HANGING LOAD DETAILS SHALL BE SUBMITTED FOR REVIEW.

**GENERAL STEEL NOTES:**

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION, AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", LATEST EDITION, EXCEPT AS MODIFIED BELOW OR IN THE SPECIFICATIONS.
2. ALL STRUCTURAL STEEL W SHAPES SHALL CONFORM TO THE ASTM A572 OR A992 GRADE 50. ALL OTHER STRUCTURAL STEEL SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A500 GRADE B. PIPES SHALL CONFORM TO ASTM A53 TYPE E OR S. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 GRADE 36 AND BE COMPATIBLE WITH E70XX ELECTRODES.
3. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO AWS D1.1 "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING ELECTRODES SHALL BE E70X.
4. THE CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS.
5. IF CONDITIONS VARY FROM THOSE ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
6. THE CONTRACTOR SHALL OBSERVE ALL SAFETY RULES DICTATES BY CODE AND GOOD PRACTICE.
7. SHOULD UNFORESEEN CONDITIONS OR OTHER CAUSE NECESSITATE THE CONSTRUCTION DETAILS TO BE MODIFIED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PERFORMING THESE CHANGES.

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

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

REVISIONS			
NO	DESCRIPTION	DATE	BY
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**DOLAN REALTY**  
SITE #  
DRA IL-1014  
LOC. # 311466

**W 151st ST**  
**& S 80th AVE**  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

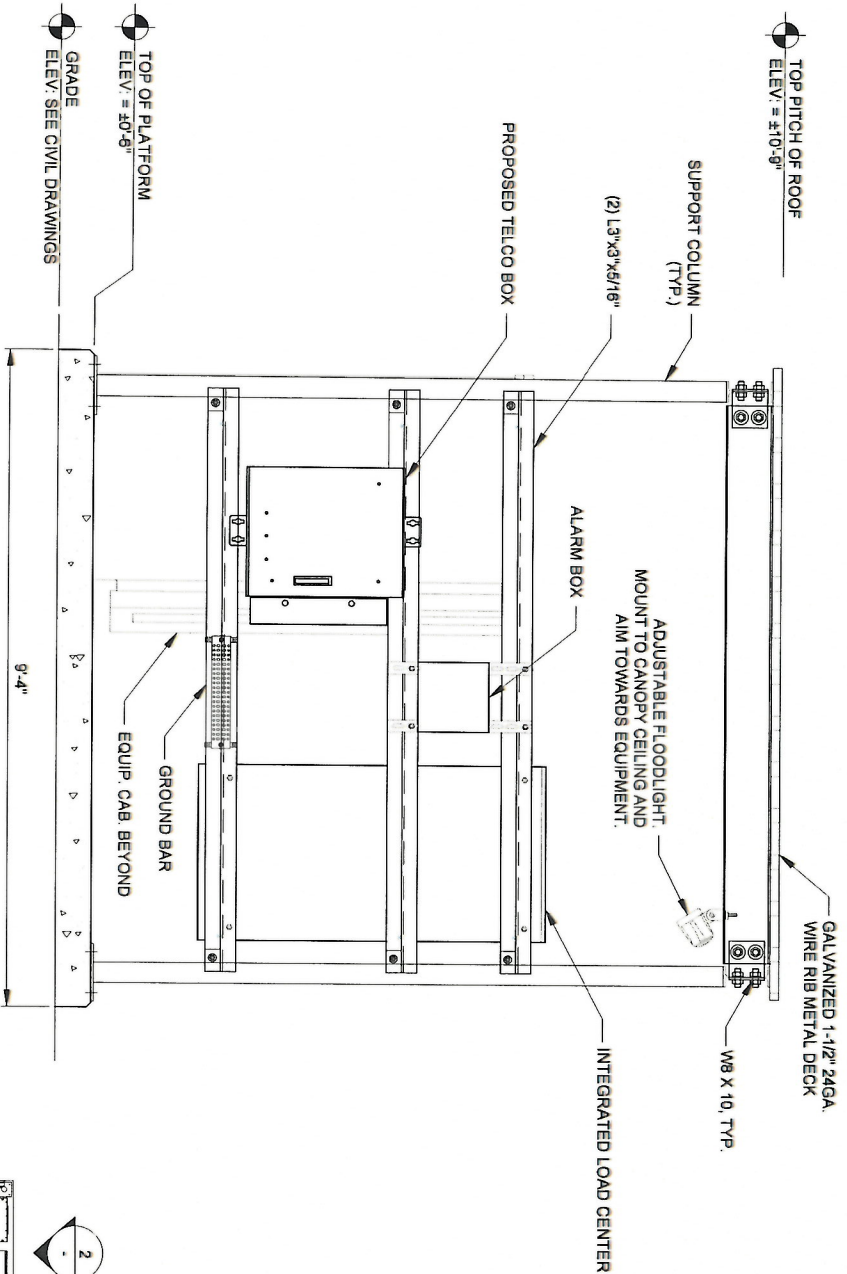
DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
**EQUIPMENT PAD**  
**ROOF FRAMING PLAN**

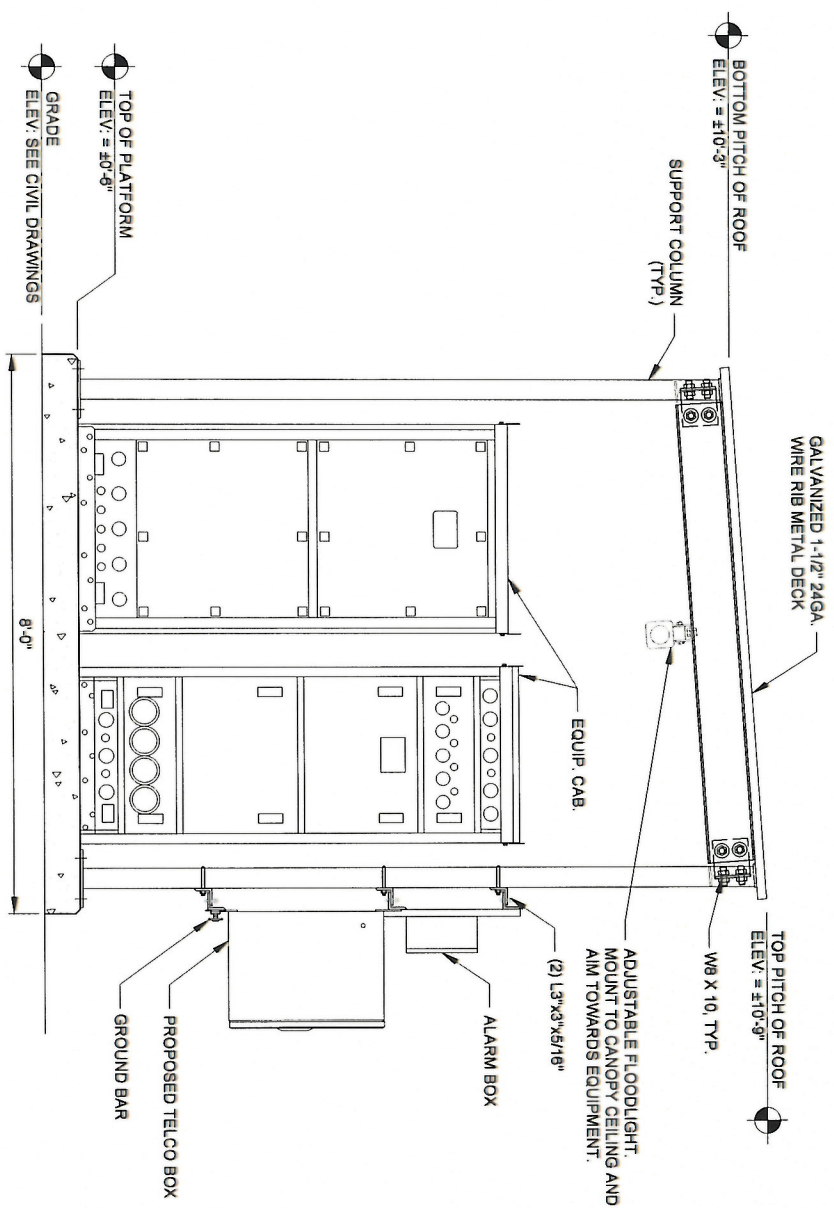
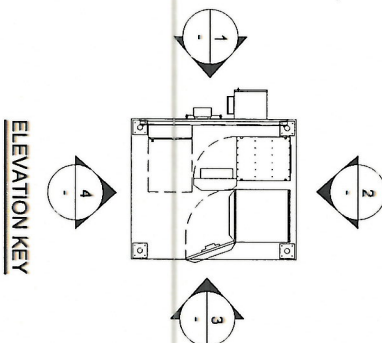
SHEET NUMBER

**C-6**

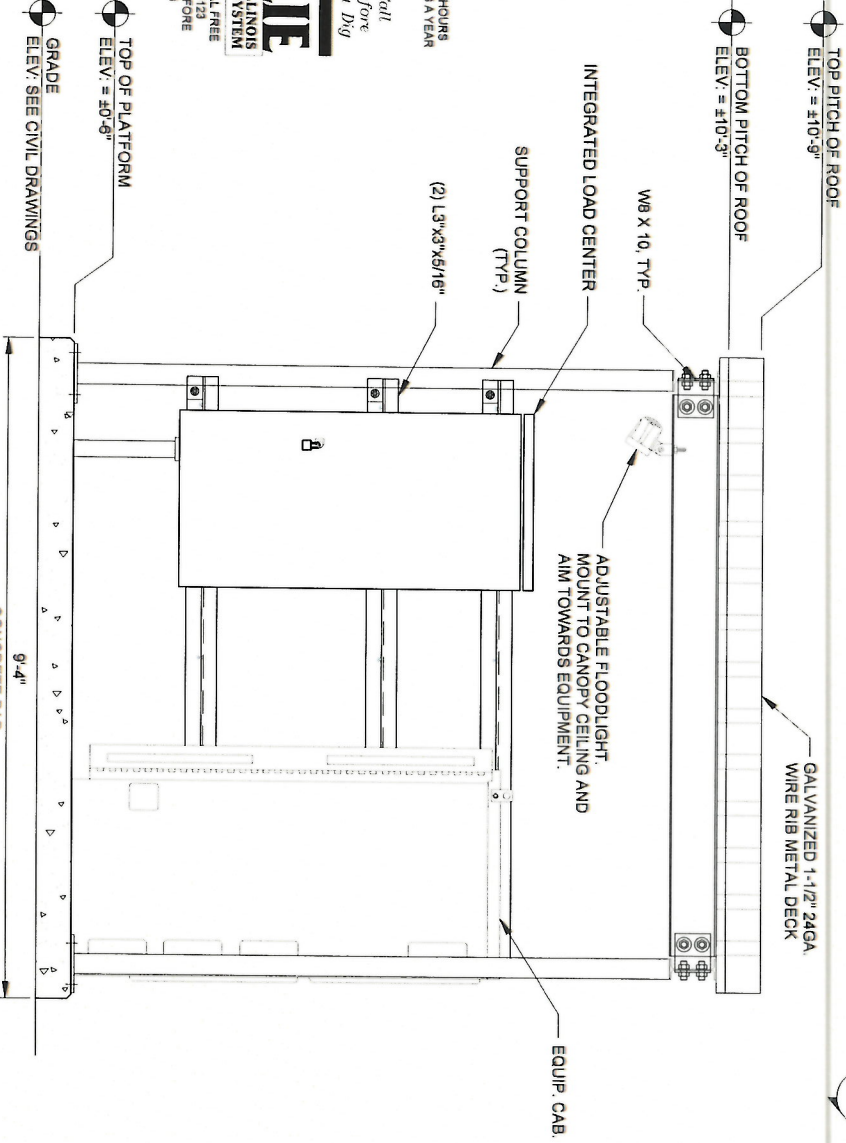




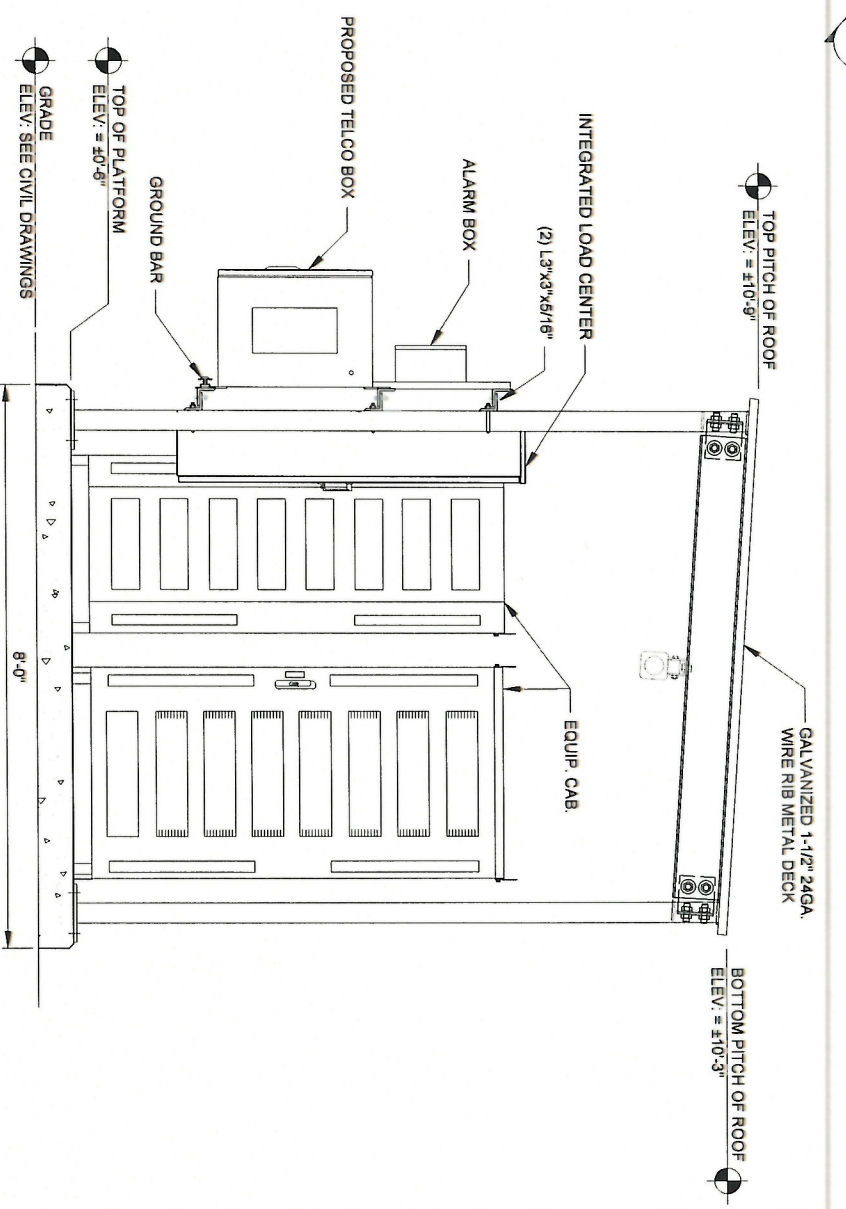
1 EQUIPMENT PAD ELEVATION  
SCALE: 3/4" = 1'-0"



2 EQUIPMENT PAD ELEVATION  
SCALE: 3/4" = 1'-0"



3 EQUIPMENT PAD ELEVATION  
SCALE: 3/4" = 1'-0"



4 EQUIPMENT PAD ELEVATION  
SCALE: 3/4" = 1'-0"

NOTE: FOR REFERENCE ONLY

OPERATES 24 HOURS  
A DAY 365 DAYS A YEAR  
**Before You Dig**  
**Call 800-4-A-DIG**  
ILLINOIS  
ONE CALL SYSTEM  
CALL 800-4-A-DIG  
1-800-892-0173  
48 HOURS BEFORE  
YOU DIG

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

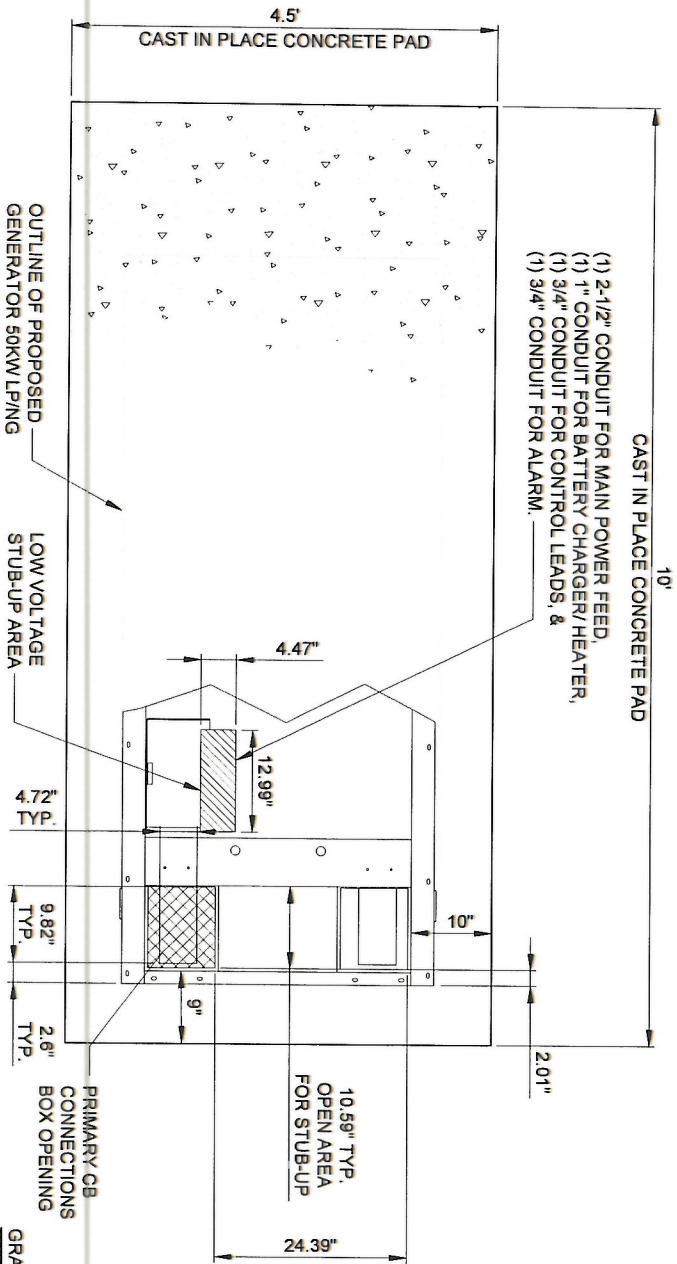
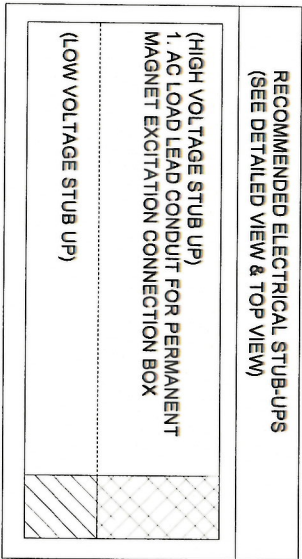
**DOLAN REALTY**  
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DRA IL-1014  
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W 151st ST  
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15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
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SHEET TITLE  
**EQUIPMENT PAD ELEVATIONS**

SHEET NUMBER  
**C-7**





1 TYPICAL GENERAC FOUNDATION DETAIL  
SCALE: 1" = 1'

E.C. TO SET ANCHOR  
BOLTS AS REQUIRED  
PER GENERATOR  
SPECIFICATIONS.

8" GRANULAR FILL PER  
EARTHWORK SPECIFICATIONS  
COMPACTED TO 95%  
MODIFIED PROCTOR

FRONT SIDE VIEW

EXISTING SOILS  
MINIMUM 12" BELOW GRADE

WWF 6x6 - W4.0xW4.0  
WIRE MESH

PROPOSED GENERATOR  
50KW LIQUID PROPANE/NG

NATURAL GAS/LP VAPOR INLET  
ENGINE SERVICE CONNECTIONS:  
FUEL INLET NG/LPV = 1-1/4" NPT COUPLING  
FUEK INLET LPL = 1/4" NPT COUPLING

GENERATOR STAND

OUTLINE OF STUB-UP AREA FOR  
(1) 2-1/2" CONDUIT FOR MAIN POWER FEED,  
(1) 1" CONDUIT FOR BATTERY CHARGER/HEATER,  
(1) 3/4" CONDUIT FOR CONTROL LEADS, &  
(1) 3/4" CONDUIT FOR ALARM.

1" CHAMFER (TYP.)

(2) #5 REBAR CONTIGUES  
3" COVER ALL SIDES (TYP.)

39.9"

28.7"

71.1"

9.31'

92.9"

3"

GRADE



- NOTES:
1. SEE GENERATOR MANUFACTURER'S DRAWINGS FOR PHYSICAL LOCATION OF FUEL LINES, CONTROL AND POWER INTERCONNECTIONS AND OTHER INTERFACES THAT ARE TO CAST INTO THE CONCRETE. THE PREFERRED METHOD IS TO BRING THE CONDUIT THROUGH THE PAD TO THE UNDERSIDE OF THE GENERATOR (MINIMIZES RODENT DAMAGE). FINISH CONNECTIONS WITH FLEXIBLE CONDUIT PER GENERATOR MANUFACTURER'S SPECS. RIGID CONDUITS SHALL BE SECURED TO THE EXISTING SLAB, THEN BURIED BETWEEN SLAB AND SHELTER.
  2. -THE GENERATOR SHALL BE LOCATED A MIN 10' AWAY FROM A COMBUSTIBLE WALL.  
-THE GENERATOR SHALL BE LOCATED A MIN OF 3' AWAY FROM A NON-COMBUSTIBLE WALL.

2 TYPICAL GENERAC FOUNDATION DETAIL  
SCALE: 1" = 1'

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**CHICAGO  
SMSA**  
limited partnership  
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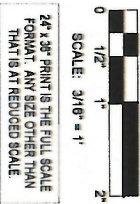
SHEET TITLE  
GENERATOR  
FOUNDATION DETAILS

DRAWN BY:	PP
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DOLAN REALTY  
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15100 S 80TH AVE  
ORLAND PARK, IL 60462

SHEET NUMBER  
**C-8**





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



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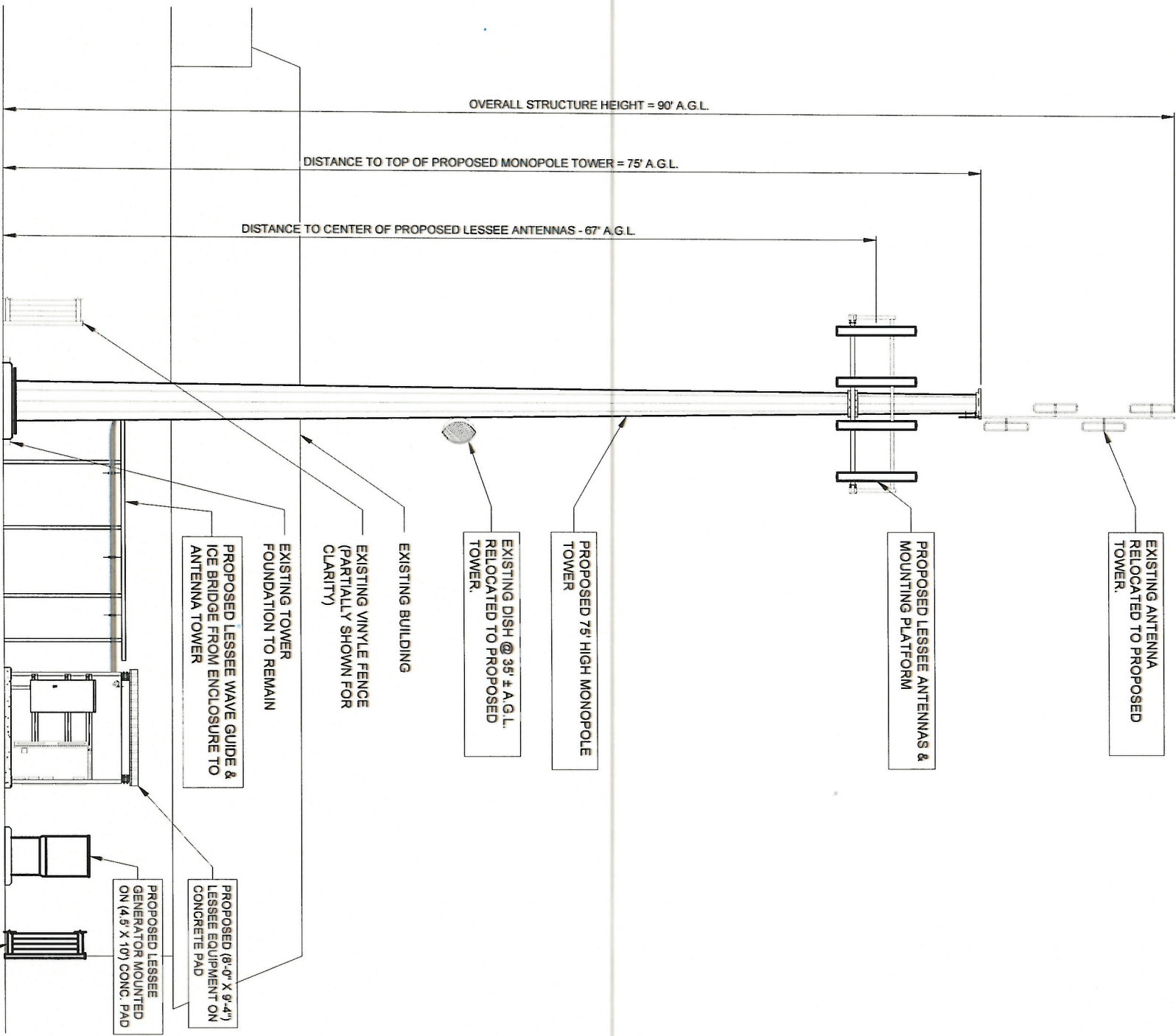
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ORLAND PARK, IL 60462

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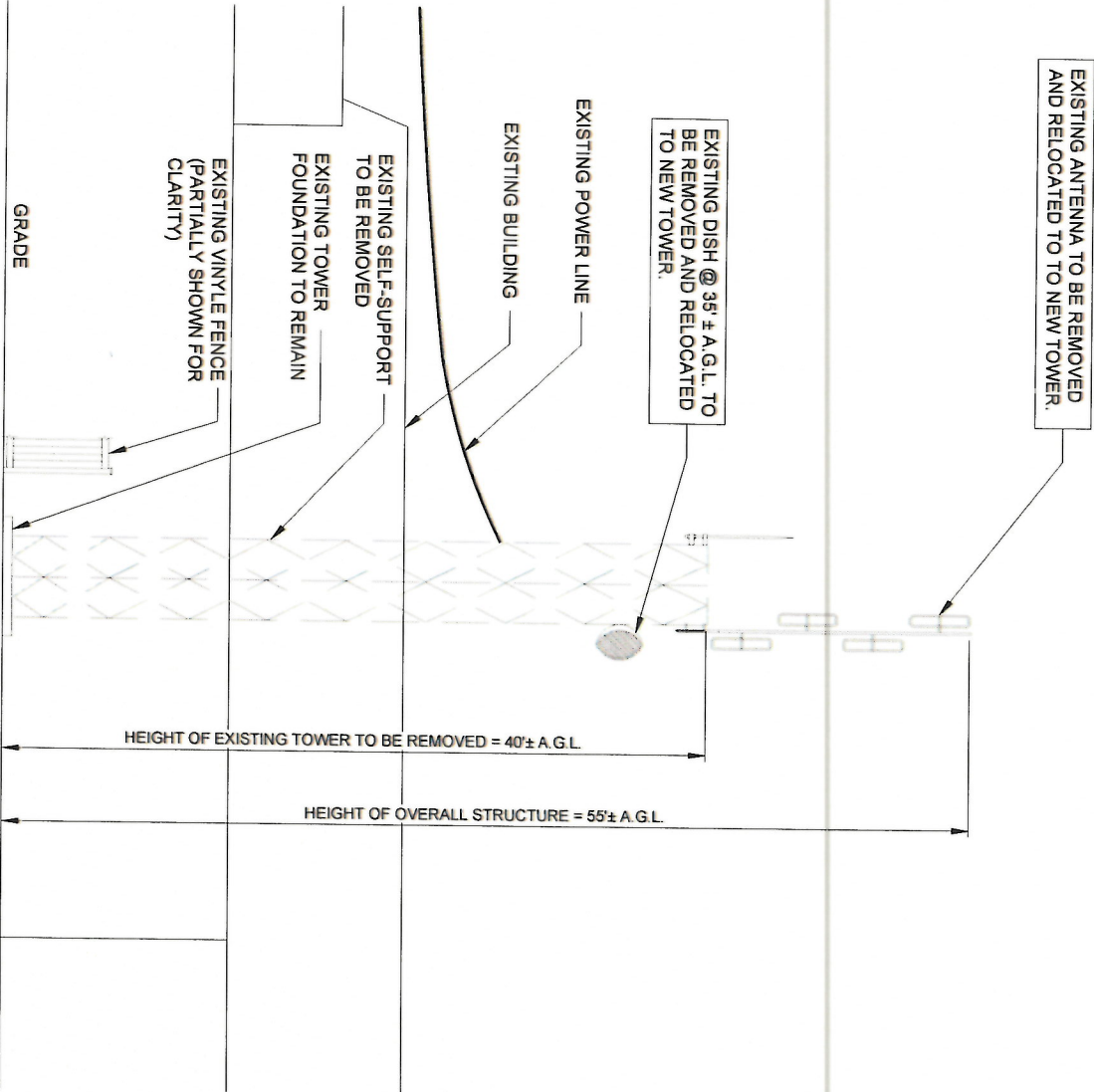
SHEET TITLE  
SITE ELEVATION

SHEET NUMBER

ANT-1



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



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



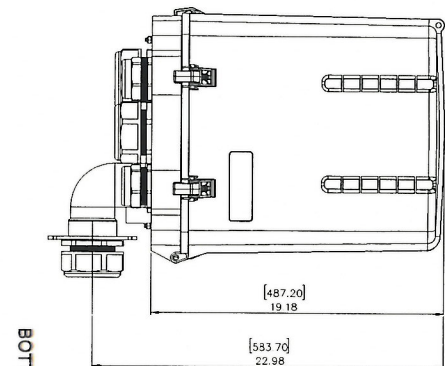




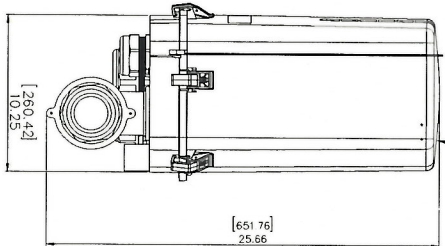
SPECIFICATIONS  
DC SURGE PROTECTION FOR RR/INTEGRATED ANTENNA RADIO HEAD  
APPLICATION: TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS  
WEIGHT: 32LBS (14.51 KG)

[mm]  
INCHES

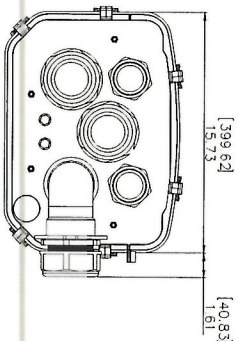
FRONT



SIDE



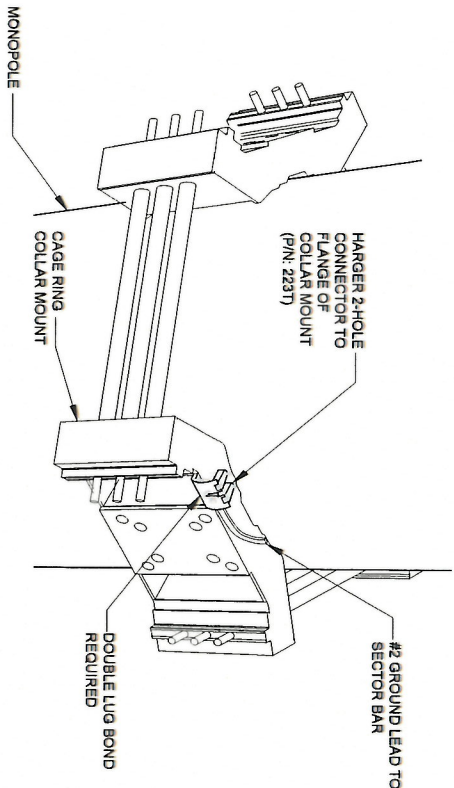
BOTTOM



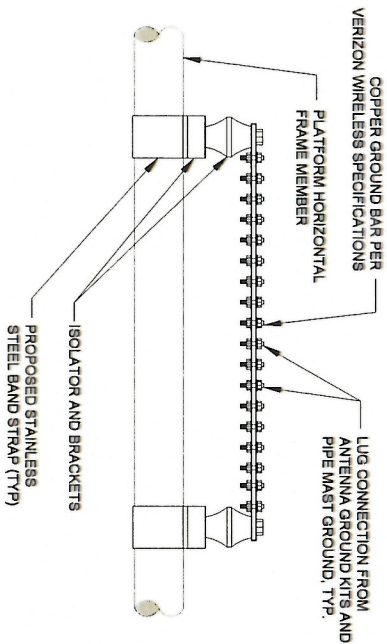
1 RAYCAP JUNCTION BOX DETAIL  
SCALE: N.T.S.

PROPOSED RAYCAP JUNCTION  
BOX MODEL # RCMDC-3315-PF-48

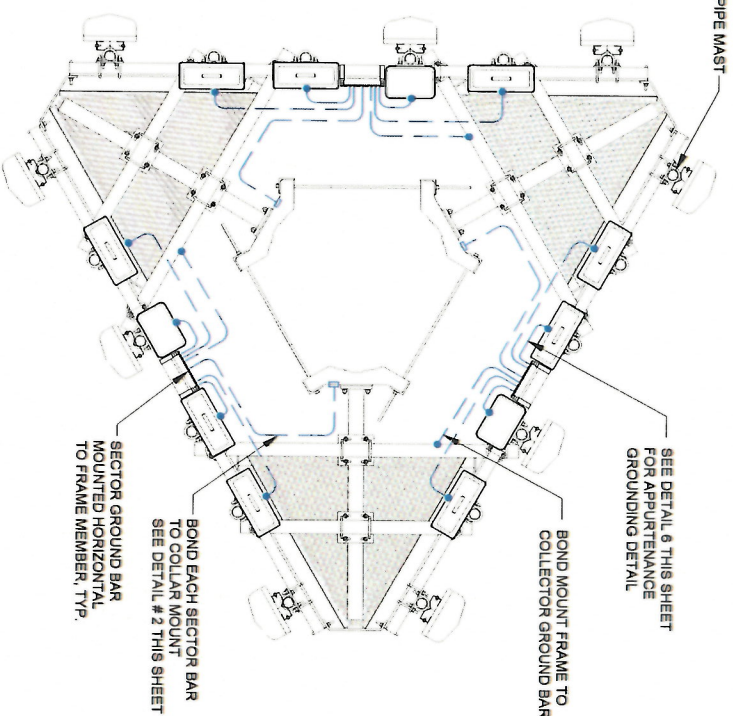
NOTE: EACH SECTOR BAR TO HAVE TO HAVE  
SEPARATE GROUND LEAD TO COLLAR MOUNT



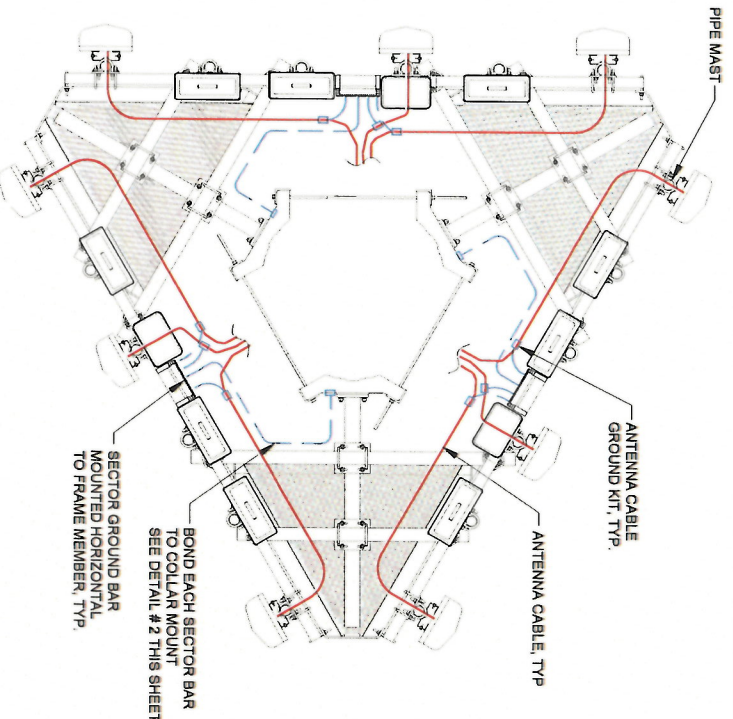
2 MONOPOLE GROUND AT ANTENNA LEVEL  
SCALE: N.T.S.



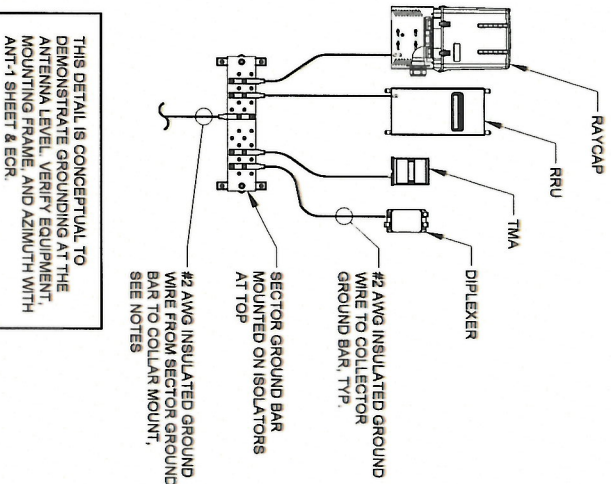
3 GROUND BAR AT SECTOR  
SCALE: N.T.S.



4 EQUIPMENT GROUNDING AT ANTENNA ELEVATION  
SCALE: N.T.S.



5 ANTENNA CABLE GROUNDING AT ANTENNA ELEVATION  
SCALE: N.T.S.



THIS DETAIL IS CONCEPTUAL TO  
DEMONSTRATE GROUNDING AT THE  
ANTENNA LEVEL. VERIFY EQUIPMENT  
MOUNTING FRAME AND AZIMUTH WITH  
ANT-1 SHEET & ECR.

APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPC SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE
TO COLLAR MOUNT	233T

- NOTES:
- THE BOND BETWEEN THE SECTOR BAR AND THE TOWER IS TO BE MECHANICALLY BONDED TO BE A UL APPROVED MECHANICAL CONNECTION CLAMP.
  - GROUND CONNECTIONS MUST BE DOUBLE HOLE CONNECTION. SPECIAL EXCEPTION ONLY TO EQUIPMENT THAT WILL NOT ALLOW FOR A DOUBLE HOLE CONNECTION.



**CHICAGO SMSA**  
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**DOLAN REALTY**  
SITE #  
DRA IL-1014  
LOC. # 311466  
W 151st ST  
& S 80th AVE  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

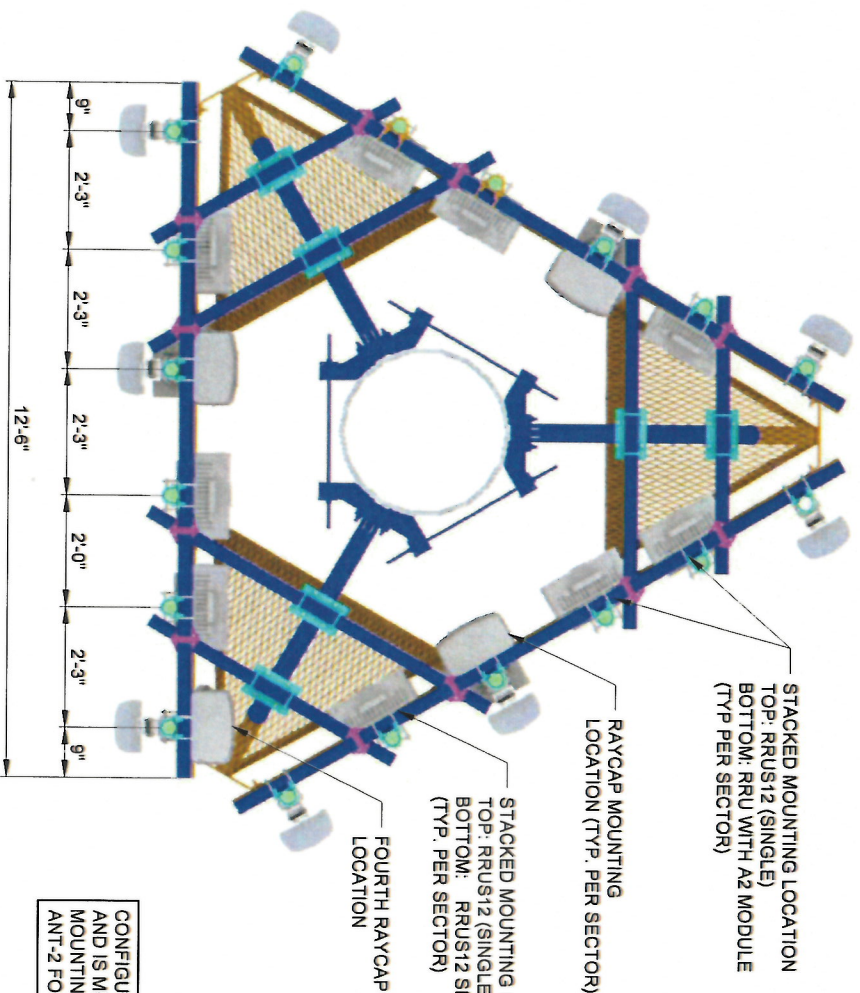
DRAWN BY:	PP
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PROJECT #:	33-1466

SHEET TITLE  
SITE  
DETAILS

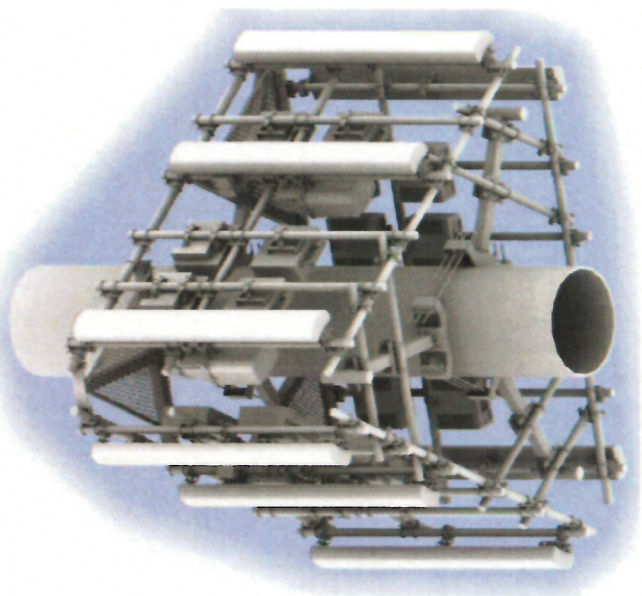
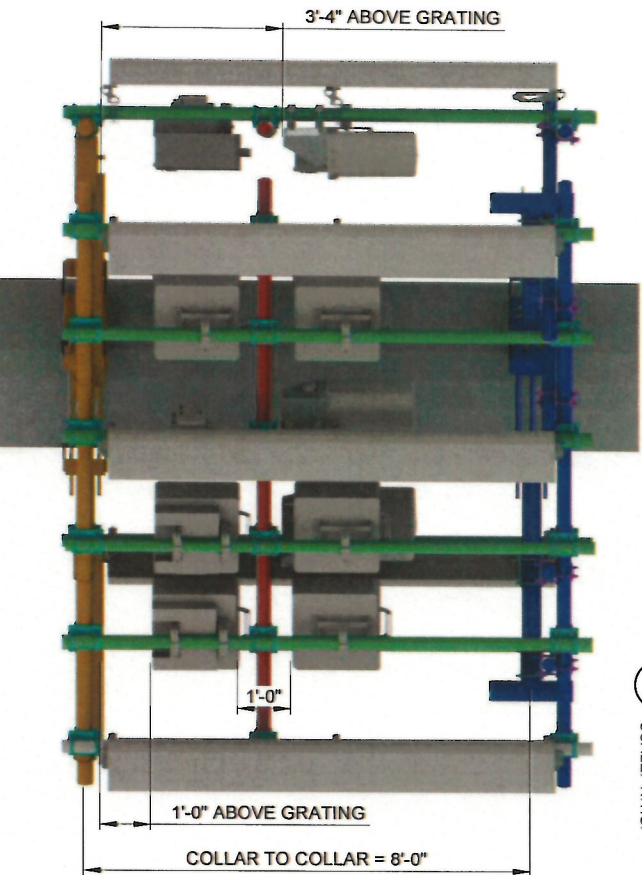
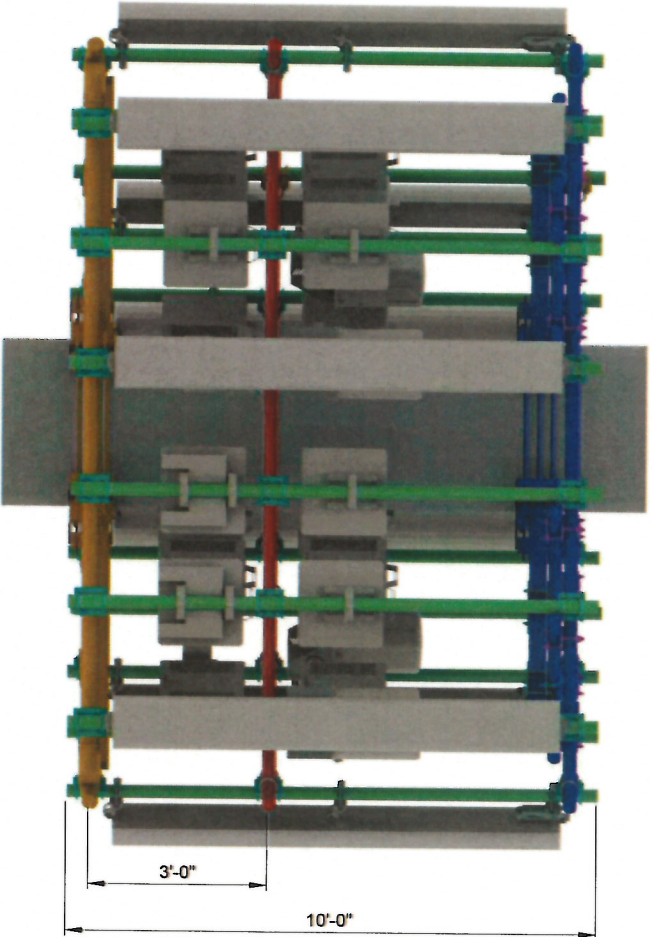
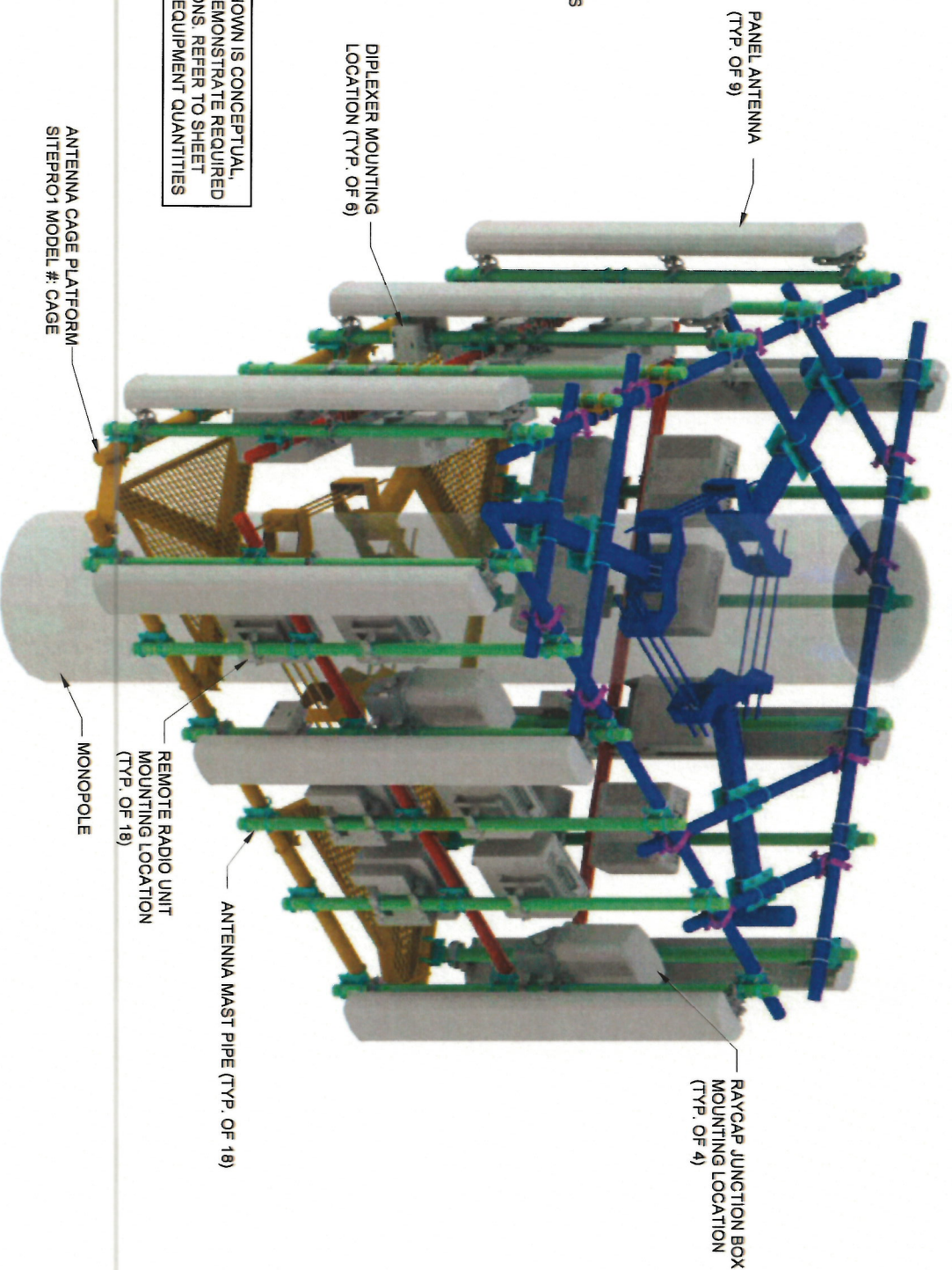
SHEET NUMBER

**ANT-3**





CONFIGURATION SHOWN IS CONCEPTUAL,  
AND IS MEANT TO DEMONSTRATE REQUIRED  
MOUNTING LOCATIONS. REFER TO SHEET  
ANT-2 FOR ACTUAL EQUIPMENT QUANTITIES



REVISIONS			
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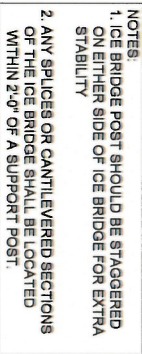
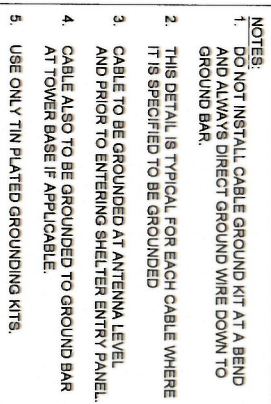
DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
ANTENNA  
MOUNTING  
DETAILS

SHEET NUMBER

**ANT-3A**





3 ICE BRIDGE DETAIL  
N.T.S.



**TERRA**  
 ENVIRONMENTAL SERVICES CORPORATION, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
 PH: 847-498-6400  
 FAX: 847-498-6401

**CHICAGO  
SMSA**  
*limited partnership*  
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DOLAN REALTY

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ORLAND PARK, IL 60462

DRAWN BY:	PP
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DATE:	07/23/15
PROJECT #:	33-1406

**SHEET TITLE**  
**SITE**  
**DETAILS**

**SHEET NUMBER**

# ANT-4



UTILITY NOTES:

- WORK INCLUDES:  
THESE NOTES AND ACCOMPANYING DRAWINGS COMPLEMENT THE PROVISIONS AND INSTALLATIONS BY THE ELECTRICAL CONTRACTOR, OF ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL THE ELECTRICAL WORK COMPLETE IN CONNECTION WITH THIS VERIZON WIRELESS SITE AND SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
1. THE PROVISIONS, INSTALLATION AND CONNECTION OF A GROUNDING ELECTRODE SYSTEM COMPLETE WITH A BUILDING AND SECONDARY GROUNDING, CELLULAR TELEPHONE COMMUNICATIONS TOWER AND CONNECTIONS TO THE INCOMING ELECTRICAL DISTRIBUTION EQUIPMENT.
  2. THE PROVISION AND INSTALLATION OF AN OVERHEAD ELECTRICAL SERVICE OR UNDERGROUND ELECTRICAL SERVICE AND ALL ASSOCIATED WIRE AND CONDUIT AS REQUIRED AND/OR INDICATED ON PLANS.
  3. THE PROVISION, INSTALLATION OF CONDUIT AND CONNECTIONS FOR LOCAL TELEPHONE SERVICE.
  4. THE FURNISHING AND INSTALLATION OF THE ELECTRICAL SERVICE ENTRANCE CONDUCTORS, CONDUITS, METER SOCKET, AND CONNECTIONS TO THE SERVICE EQUIPMENT WITHIN THE ENCLOSURE.
  5. TWO INCH (2") AND THREE INCH (3") DIAMETER PVC CONDUITS SCHEDULE 40.
  6. ALL PVC CONDUITS SHOULD BE LEFT WITH NYLON PULL CORD FOR FUTURE USE.
  7. EXCAVATION, TRENCHING, AND BACKFILLING FOR CONDUIT(S), CABLE(S), AND EXTERNAL GROUNDING SYSTEM.
- CODES, PERMITS, AND FEES:  
1. ALL REQUIRED PERMITS, LICENSES, INSPECTIONS AND APPROVALS SHALL BE SECURED AND ALL FEES FOR SAME PAID BY CONTRACTOR.
2. THE INSTALLATION SHALL COMPLY WITH ALL APPLICABLE CODES: STATE, LOCAL AND NATIONAL, AND THE DESIGN, PERFORMANCE CHARACTERISTICS AND METHODS OF CONSTRUCTION OF ALL ITEMS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF THE VARIOUS APPLICABLE STANDARD SPECIFICATIONS OF THE FOLLOWING AUTHORITIES:

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

- RACEWAYS AND WIRING:
1. WIRING OF EVERY KIND MUST BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE, OR AS APPROVED BY THE ENGINEER.
  2. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE COPPER (CU) TYPE THWN, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
  3. RACEWAYS SHALL BE GALVANIZED STEEL, SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE NOTED. ALL RACEWAYS SHALL BE APPROVED FOR THE INSTALLATION.
  4. PULL OR JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO FACILITATE INSTALLATION OF RACEWAYS AND WIRING. PROVIDE JUNCTION AND PULLBOXES FOR CONDUIT RUNS WITH MORE THAN (360) DEGREES OF BENDS.
  5. PROVIDE A COMPLETE RACEWAY AND WIRING INSTALLATION, PERMANENTLY AND EFFECTIVELY GROUNDING IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE AND LOCAL CODES.
  6. ELECTRICAL PANELBOARD SHALL BE FURNISHED AND INSTALLED BY OTHERS.
  7. ALL STEEL CONDUIT SHALL BE BONDED AT BOTH ENDS WITH GROUNDING BUSHING.
- GENERAL NOTES:  
SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT ANY DISCREPANCIES, CONFLICTS, ETC. TO ENGINEER BEFORE SUBMITTING BID. ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WIRE DIAGRAM AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS.

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

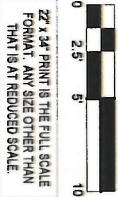
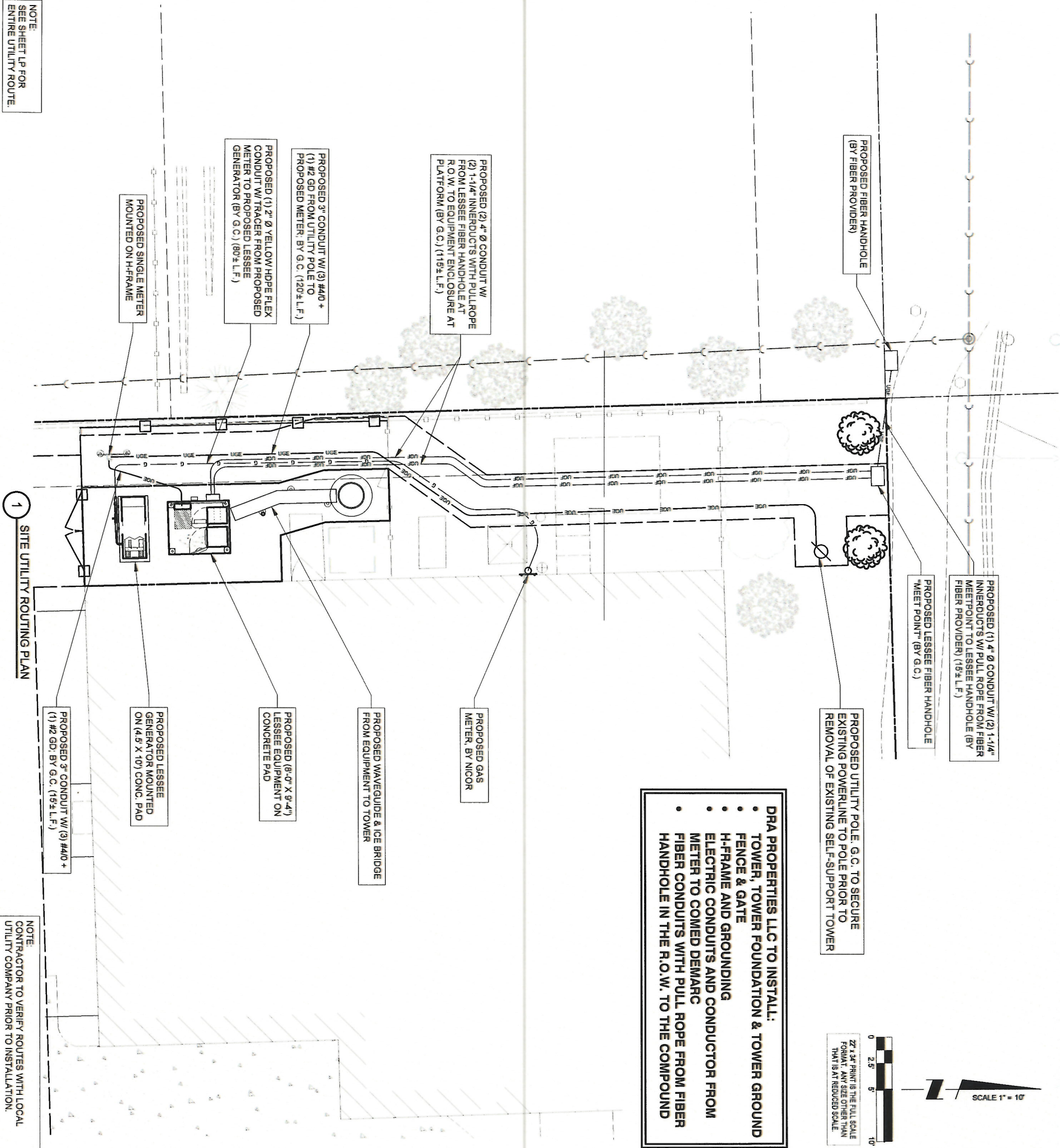
UTILITY CONTRACTS:

POWER: COMED  
LEONARD ANDERSON  
(708) 235-2346

FIBER: ONE FIBER  
WADE BOWERS  
(612)618-3411

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

FOR CONTINUATION AND CONNECTION OF ELECTRICAL AND FIBER SERVICE, COORDINATE WITH ELECTRIC AND FIBER COMPANY.



DRA PROPERTIES LLC TO INSTALL:  
• TOWER, TOWER FOUNDATION & TOWER GROUND  
• FENCE & GATE  
• H-FRAME AND GROUNDING  
• ELECTRIC CONDUITS AND CONDUCTOR FROM  
• METER TO COMED DEMARC  
• FIBER CONDUITS WITH PULL ROPE FROM FIBER  
• HANDHOLE IN THE R.O.W. TO THE COMPOUND

REVISIONS

NO	DESCRIPTION	DATE	BY
5	UPDATE WITH NEW LAYOUT	09/08/17	DMS
6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
8	UPDATE PER GAS COORDINATION	01/31/18	DMS
9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/26/18	TJS
11	UPDATE WITH NEW ECR	06/27/18	TJS



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

DOLAN REALTY

SITE #  
DRA IL-1014  
LOC. # 311466

W 151st ST  
& S 80th AVE  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	23-1466

UTILITY ROUTING PLAN

SHEET NUMBER

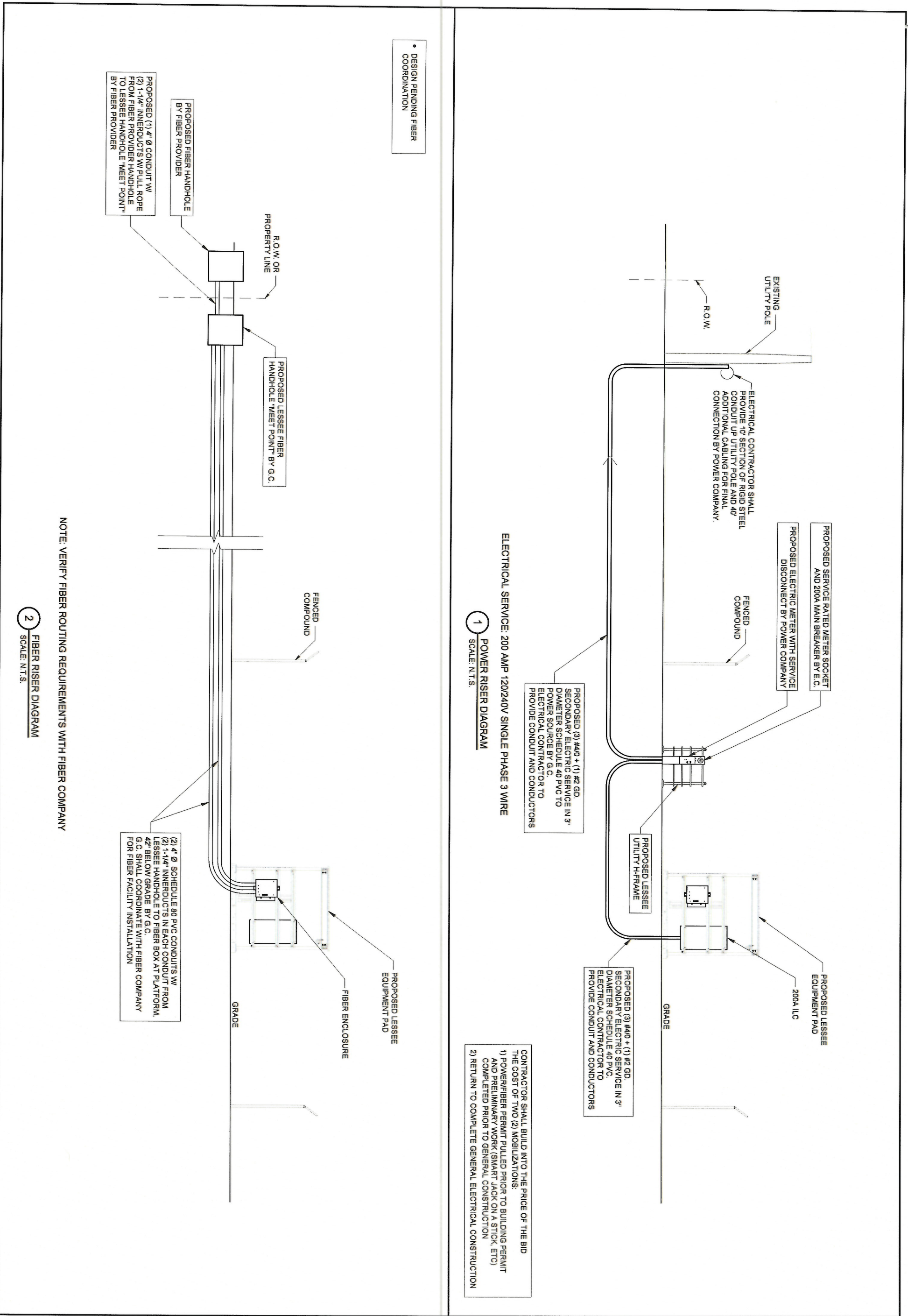
E-1

NOTE:  
SEE SHEET UP FOR  
ENTIRE UTILITY ROUTE.

1 SITE UTILITY ROUTING PLAN

NOTE:  
CONTRACTOR TO VERIFY ROUTES WITH LOCAL  
UTILITY COMPANY PRIOR TO INSTALLATION.





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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

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DRA IL-1014  
LOC. # 311466  
W 151st ST  
& S 80th AVE  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY: PP  
CHECKED BY: TAZ  
DATE: 07/23/15  
PROJECT #: 33-1486

SHEET TITLE  
UTILITY RISER  
DIAGRAMS

SHEET NUMBER  
**E-1A**



NOTES:

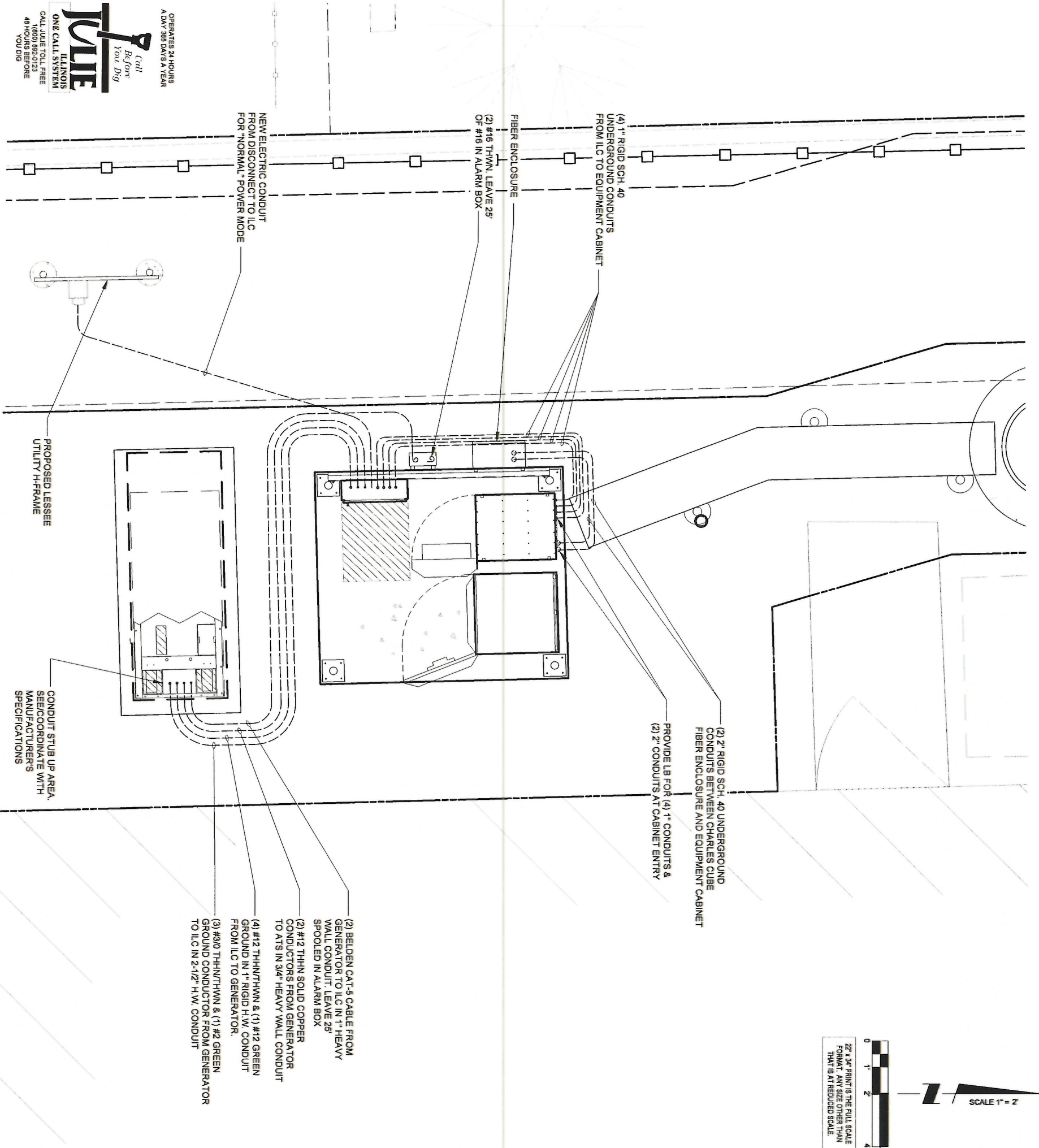
- 1) EXISTING MANUAL TRANSFER SWITCH TO BE REMOVED BY THE ELECTRICAL CONTRACTOR (E.C.) AND TURNED OVER TO LESSEE. REMOVED EXTERNAL GROUND TERMINATION AND RECONNECT TO NEW TRANSFER SWITCH USING EXISTING GROUND LUG.
- 2) ALL UNDERGROUND GROUND TERMINATIONS AND TERMINATIONS TO EXISTING BUILDING GROUND GRID TO BE HEAVY DUTY EXOTHERMIC (CAD WELD).
- 3) NEW AUTOMATIC TRANSFER SWITCH, INSTALLED AND WIRED BY E.C. CONNECT EXTERNAL GROUND LUG AND GROUNDING CONDUCTOR THAT WAS REMOVED FROM MANUAL TRANSFER SWITCH.
- 4) EXISTING BUILDING GROUND GRID IS INDICATED ON THE NEW PLAN. HOWEVER, EXACT LOCATION IS NOT KNOWN. E.C. MUST LOCATE THIS GROUND GRID TO PROVIDE THE ATTACHMENT OF THE GENERATOR GROUND GRID. ALSO THE UNDERGROUND CONDUITS FROM THE GENERATOR TO THE BUILDING WILL CROSS OVER THIS GROUND GRID. CARE MUST BE TAKEN NOT TO DAMAGE THE GROUND GRID. IF ANY DAMAGE OCCURS IT MUST BE REPAIRED SO THAT THE COMPLETE GRID SYSTEM REMAINS INTACT.
- 5) E.C. TO EXTEND #2 TINNED SOLID COPPER GROUND CONDUCTORS FROM (2) LOCATIONS ON GENERATOR FRAME (SEE MANUFACTURERS RECOMMENDATIONS) PROVIDE GROUND LUGS ON GENERATOR AS REQUIRED. EXTEND #10 STRANDED GROUND CONDUCTOR AND CONNECT TO COPPER CLAD GROUND RODS VIA HEAVY DUTY EXOTHERMIC TERMINATIONS AND THEN EXTENDED AND ATTACH TO BUILDING GROUND GRID VIA EXOTHERMIC TERMINATIONS.
- 6) NEW GENERATOR FURNISHED BY LESSEE. INSTALLED AND WIRED BY E.C. DELIVERED AND SET BY CONTRACTOR.
- 7) EXISTING PANEL BOARD - E.C. TO PROVIDE (2) IP20A BREAKERS AND EXTEND CIRCUITS OUT TO GENERATOR LOCATIONS FOR WIRING OF 1800 WATT WATER JACKET HEATER, AND BATTERY CHARGER. PROVIDE RECEPTACLES OR TERMINATIONS AS REQUIRED. VERIFY EXACT LOCATIONS WITH GENERAC.
- 8) E.C. MUST MONITOR DC POWER WHEN ON BATTERY BACK-UP DURING PORTIONS OF CONSTRUCTION. IF LEVEL FALLS BELOW RECOMMENDED LEVEL 2256 DC, E.C. MUST TURN ON THE MAIN POWER. THE CELL SITE CANNOT GO OFF LINE AT ANYTIME.

NOTE:

CONTRACTOR TO VERIFY ROUTES WITH LOCAL UTILITY COMPANY PRIOR TO INSTALLATION.

NOTES:

- 1) SEE DETAILS ON EXISTING GROUND GRID AND GENERATOR GROUND GRID FOR REQUIRED GROUNDING SYSTEM.
- 2) PROVIDE NEW FEEDER CONDUCTORS FROM MAIN SERVICE SWITCH TO TRANSFER SWITCH FROM TRANSFER SWITCH TO EXISTING TAP BOX AND FROM TAP BOX TO EXISTING PANELBOARD.
- 3) CARE MUST BE TAKEN IN THE PLACEMENT OF NEW AUTOMATIC TRANSFER SWITCH SO THAT ENTRANCE OF THE FEEDER THRU THE BACK OF THE TRANSFER SWITCH DOES NOT INTERFERE WITH EQUIPMENT INSIDE TRANSFER SWITCH OR WITH TRANSFER SWITCH OPERATION.



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

**TERRA**  
COMMERCIAL DESIGN, LLC  
800 BUSSE ROAD, SUITE 200  
PARK RIDGE, IL 60068  
PH: 847-636-6400  
FAX: 847-636-6401

REVISIONS			
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11	UPDATE WITH NEW ECR	06/27/18	TJS

DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

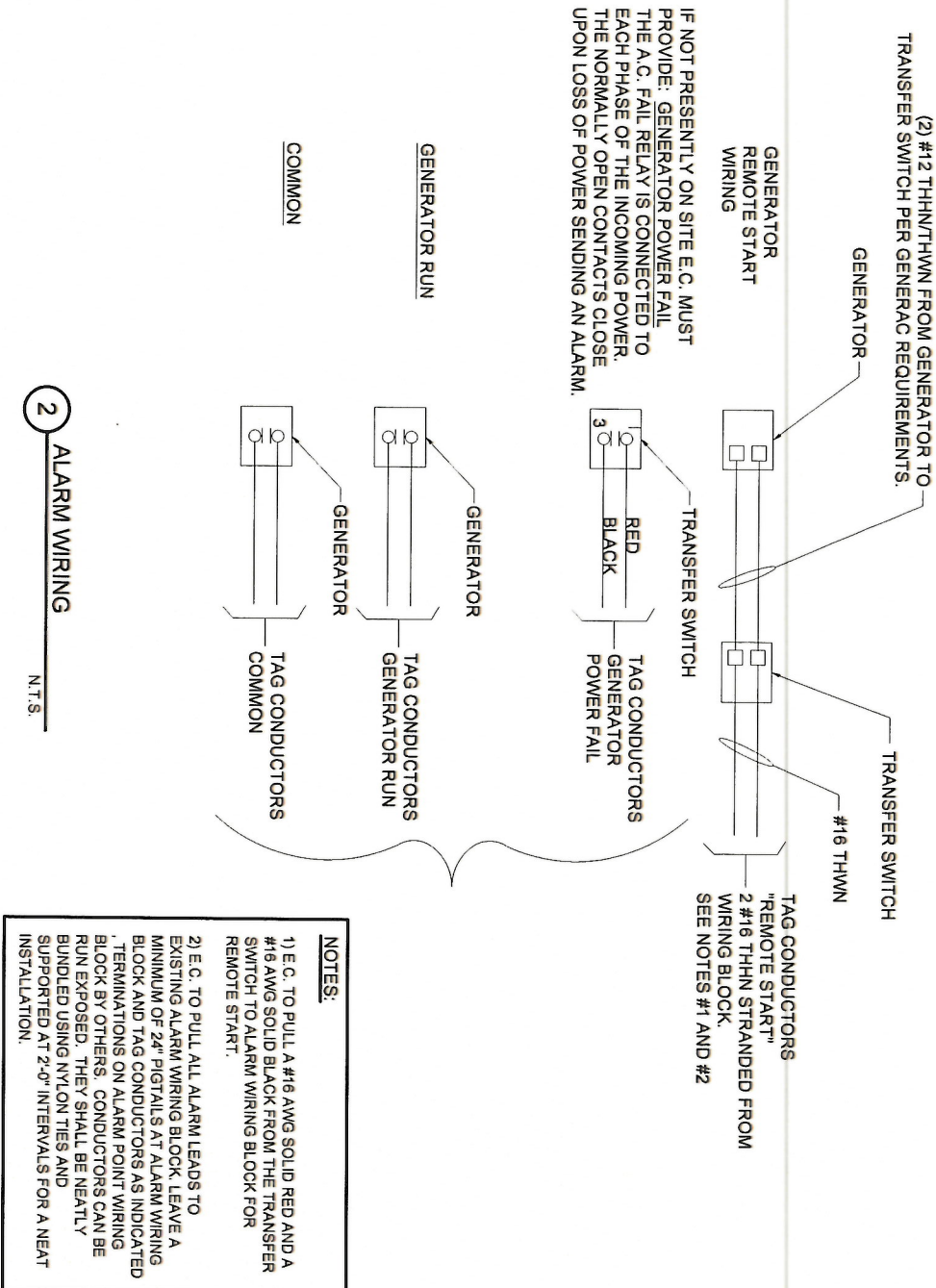
15100 S 80TH AVE  
ORLAND PARK, IL 60462

SHEET TITLE  
GENERATOR  
UTILITY ROUTING PLAN

SHEET NUMBER

E-1B



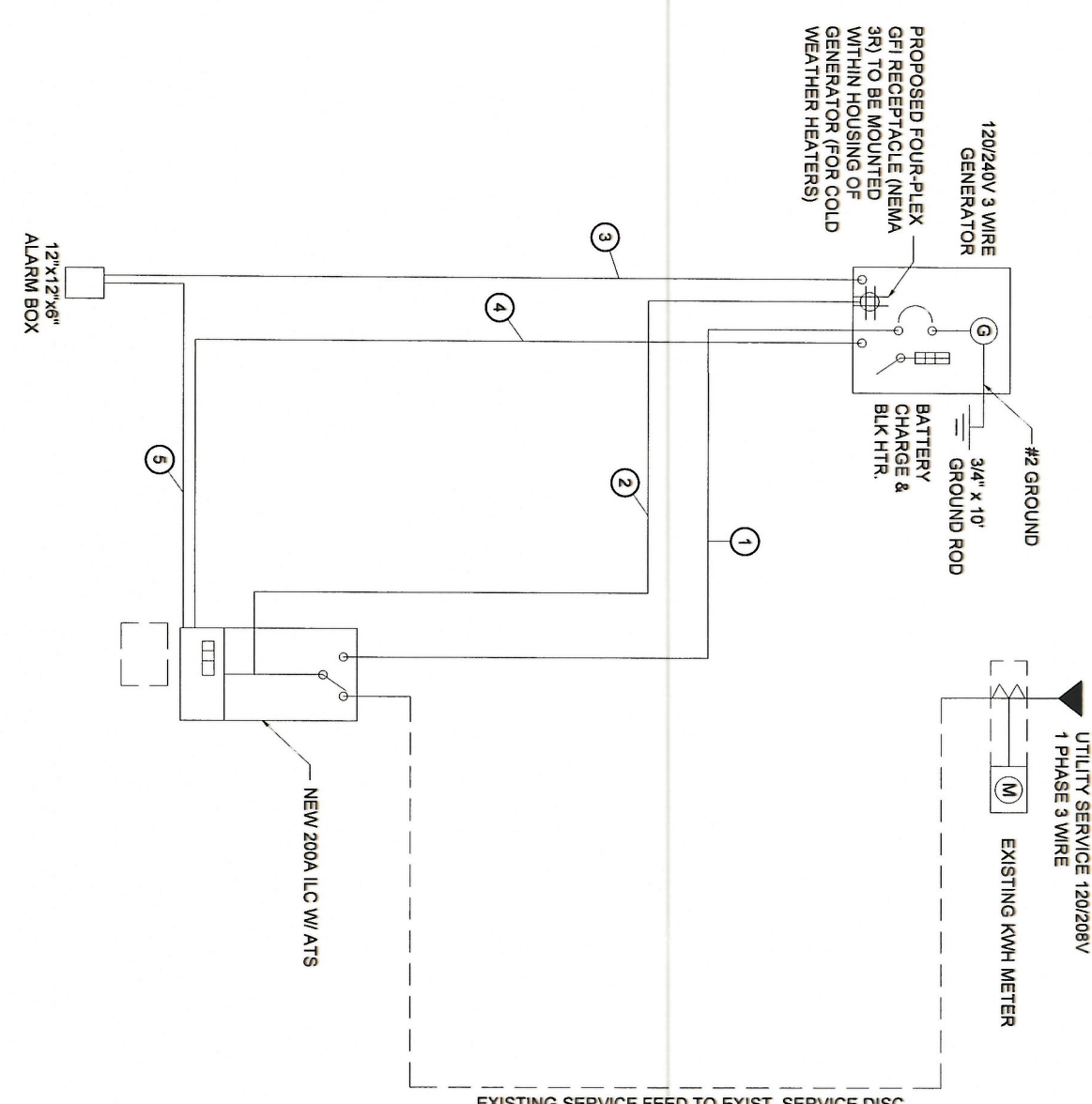


**NOTES:**

1) E.C. TO PULL A #16 AWG SOLID RED AND A #16 AWG SOLID BLACK FROM THE TRANSFER SWITCH TO ALARM WIRING BLOCK FOR REMOTE START.

2) E.C. TO PULL ALL ALARM LEADS TO EXISTING ALARM WIRING BLOCK. LEAVE A MINIMUM OF 24" PIGTAILS AT ALARM WIRING BLOCK AND TAG CONDUCTORS AS INDICATED. TERMINATIONS ON ALARM POINT WIRING BLOCK BY OTHERS. CONDUCTORS CAN BE RUN EXPOSED. THEY SHALL BE NEATLY BUNDLED USING NYLON TIES AND SUPPORTED AT 2'-0" INTERVALS FOR A NEAT INSTALLATION.

- KEY**
- 1 (3) #4/0 & (1) #2 GND IN 3" C
  - 2 (4) #12 & (1) #12 GND IN 1" C (SEE NOTE)
  - 3 (2) CAT-5 BELDEN IN 1" C FROM GENERATOR TO ALARM BOX. LEAVE 25' SPOOLED IN ALARM BOX
  - 4 (2) #12 THWN IN 3/4" C
  - 5 (2) #16 THWN. LEAVE 25' OF #16 IN ALARM BOX
- NOTE:**  
E.C. TO PROVIDE (2) 20A 1-POLE CIRCUIT BREAKERS FOR BATTERY CHARGER AND JACKET HEATER



1 NEW SINGLE LINE DIAGRAM N.T.S.



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d/b/a VERIZON WIRELESS

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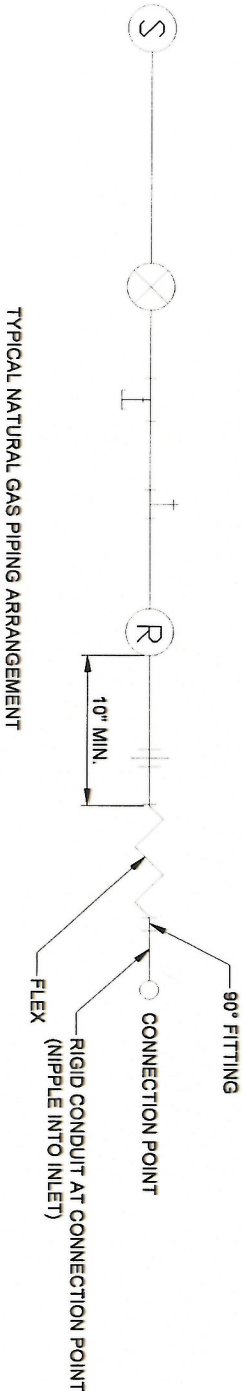
DRAWN BY: PP  
CHECKED BY: TAZ  
DATE: 07/23/15  
PROJECT #: 33-1466

SHEET TITLE  
GENERATOR SINGLE  
LINE DIAGRAM &  
ALARM WIRING

SHEET NUMBER

**E-1C**





# 1 PIPING SCHEMATIC

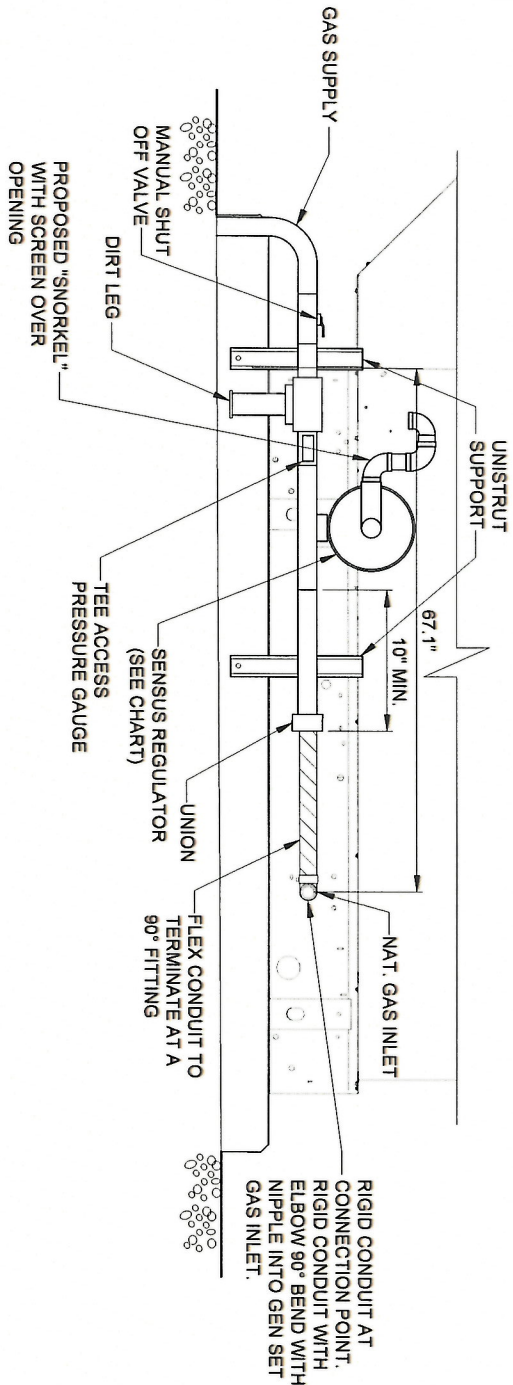
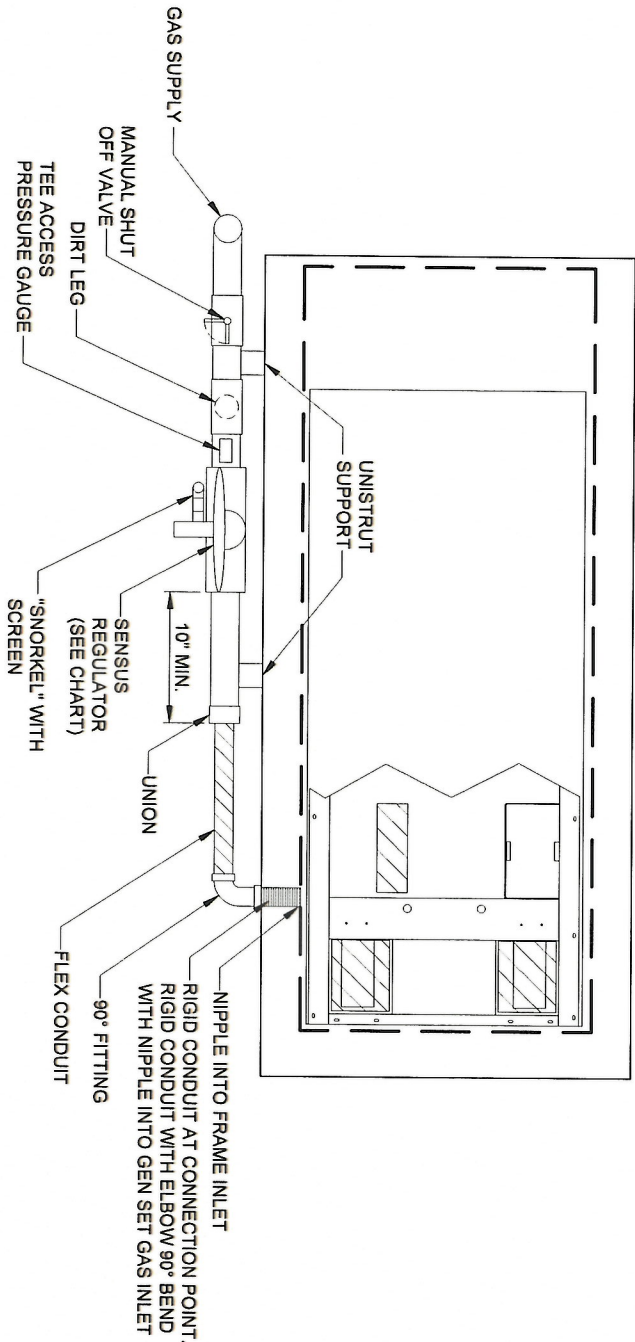
N.T.S.

PIPE SIZING & REGULATOR MODEL CHART		
GENERATOR MODEL	PIPE SIZE	REGULATOR MODEL
SG035 (35KW)	1-1/4"	SENSUS MODEL 143-80-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES
SG050 (50KW)	1-1/4"	SENSUS MODEL 143-80-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES
SG100 (100KW)*	1-1/4"	SENSUS MODEL 243-12-2 W/ GREEN SPRING & 3/4" ORIFICE AT 10 DEGREES
	1-1/2"	SENSUS MODEL 243-12-2 W/ GREEN SPRING & 1/2" ORIFICE AT 10 DEGREES

\*FOR 400A SITES

- NOTES:
1. ALL PIPING SHALL BE 1-1/4" BLACK PIPE SCHEDULE 40 (UNLESS OTHERWISE SPECIFIED).
  2. ALL FITTING SHALL BE 1-1/4" BLACK MALLEABLE IRON (UNLESS OTHERWISE SPECIFIED).

NOTE:  
THE GENERAL CONTRACTOR IS TO VERIFY REGULATOR SIZE BASED ON THE SIZE OF THE GENERATOR. THIS IS BASED ON HAVING A 2 PSI GAS (INLET) PRESSURE SUPPLY FROM THE GAS METER TO THE SENSUS REGULATOR & GENERATOR OUTLET PRESSURE OF 11"-14" W.C.



# 2 GAS PIPING PLAN AT GENERATOR

N.T.S.

# 3 GAS PIPING PROFILE AT GENERATOR

N.T.S.

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



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**DOLAN REALTY**  
SITE #  
DRA IL-1014  
LOC. # 311466

W 151st ST  
& S 80th AVE  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
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DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
GAS PIPING  
DETAILS

SHEET NUMBER

**E-1D**



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 (WOLDS, 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 GALVATE (WHITE) PAINT BRWG (OR EQUAL) OR SHERWIN WILLIAMS SILVERMATE (ALUMINUM) B5511 (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 26 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 MANUFACTURERS RECOMMENDATIONS AND PROCEDURES. ALL OTHER CONNECTIONS FOR THE GROUND GRID SYSTEM SHALL BE MADE BY THE EXOTHERMIC PROCESS, AND INSTALLED PER MANUFACTURERS 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

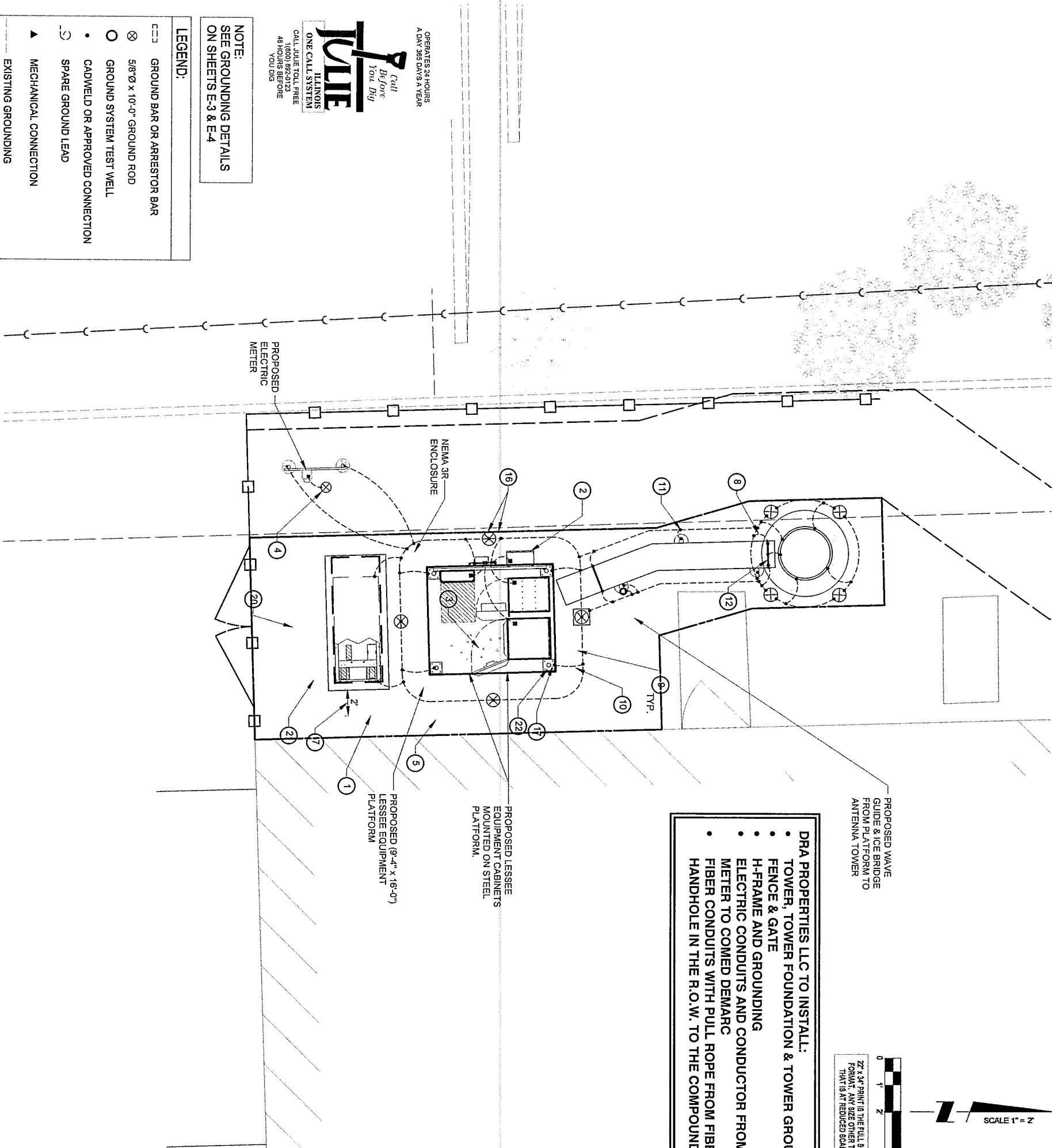
TYPICAL KEYED GROUNDING NOTES

- 1 #2 AWG TINNED SOLID BARE COPPER CONDUCTOR 42" BELOW GRADE (TYPICAL) MINIMUM 24" BENDING RADIUS
- 2 PLATFORM CORNER POST, STEEL COLUMN, STEEL BEAM & CANOPY GROUND
- 3 CABINET GROUND BOLTED TO UNIT HOUSING
- 4 DISCONNECT AND ELECTRIC SERVICE GROUND TO GROUND ROD
- 5 5/8" x 10" COPPER CLAD GROUND ROD
- 6 (TYPE VS) GROUND FENCE POSTS WITHIN 6 FEET OF PLATFORM AND 26 FEET OF TOWER. (SEE DETAIL, SHEET E-5)
- 7 MAINTAIN TWO FOOT DISTANCE OFF OF STRUCTURES.
- 8 GROUND COAXIAL ANTENNA CABLES TO GROUND BAR BY ANTENNA CONTRACTOR TERMINATE CABLES 1'-0" FROM PLATFORM AND INSTALL 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. FINAL CONNECTION BY ELECTRICAL CONTRACTOR.
- 10 4"x20"x1/4" TINNED INSULATED COPPER GROUND BAR, NON ISOLATED WITH 100' LONG #2 AWG TINNED SOLID COPPER WIRE WELDED TAILS (HARGER GBIT 14420VV)
- 11 GROUND CABLE WAVEGUIDE BRIDGE (TYP.) BY ELECTRICAL CONTRACTOR.
- 12 PROPOSED PERIPHERAL GROUND RING SHOULD BE INSTALLED 1' TO 2' INSIDE THE FENCE LINE. THE TOWER GROUND RING SHOULD BE INSTALLED A MINIMUM 2' OFF OF ANY STRUCTURES.
- 13 EXISTING TOWER OR COMPOUND GROUND RING (V.I.F.)
- 14 GATE JUMPERS (SEE DETAIL, SHEET E-4)
- 15 BOND EXISTING/PROPOSED TOWER GROUND RING TO PROPOSED PLATFORM GROUND RING WITH #2 AWG TINNED SOLID COPPER CONDUCTOR IN 2 LOCATIONS.
- 16 TWO #2 LEADS FROM THE EGR TO THE GROUND BAR AT UTILITY FRAME LOCATED ON PLATFORM STEEL. CADWELDED AT EGR AND DOUBBLE HOLE LUGS ON PLATFORM.
- 17 BOND RAYCAP TO MGB.
- 18 EACH TOWER FOUNDATION REBAR MESH/CAGE TO BE BONDED TO TOWER GROUND RING WITH #2 TINNED SOLID COPPER CONDUCTOR
- 19 EACH TOWER FOUNDATION TO HAVE AT LEAST ONE ANCHOR BOLT BONDED TO TOWER GROUND RING WITH #2 TINNED SOLID COPPER CONDUCTOR
- 20 COPPER CLAD GROUND ROD WITH INSPECTION 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 HOUSING AND EXTEND TO GROUND LUGS AS REQUIRED, VERIFY LOCATION WITH GENERAC.
- 22 MGB MOUNTED UNDER PERIMETER BEAM

- LEGEND:
- GROUND BAR OR ARRESTOR BAR
  - 5/8"Ø x 10'-0" GROUND ROD
  - GROUND SYSTEM TEST WELL
  - CADWELDED OR APPROVED CONNECTION
  - SPARE GROUND LEAD
  - MECHANICAL CONNECTION
  - EXISTING GROUNDING
  - NEW GROUNDING

OPERATES 24 HOURS  
A DAY 365 DAYS A YEAR  
**Call Before You Dig**  
**ILLINOIS ONE CALL SYSTEM**  
CALL JULIE TOLL FREE  
1 (800) 892-0123  
48 HOURS BEFORE  
YOU DIG

NOTE:  
SEE GROUNDING DETAILS  
ON SHEETS E-3 & E-4



- DRA PROPERTIES LLC TO INSTALL:
- TOWER, TOWER FOUNDATION & TOWER GROUND
  - FENCE & GATE
  - H-FRAME AND GROUNDING
  - ELECTRIC CONDUITS AND CONDUCTOR FROM
  - METER TO COMED DEMARC
  - FIBER CONDUITS WITH PULL ROPE FROM FIBER HANDHOLE IN THE R.O.W. TO THE COMPOUND

27'-34" PRINT IS THE FULL SCALE  
FORMAT, ANY SIZE OTHER THAN  
THAT IS AT REDUCED SCALE.

SCALE 1" = 2'

**CHICAGO SMSA**  
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600 BUSSE HIGHWAY  
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**DOLAN REALTY**  
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ORLAND PARK, IL 60462

DRAWN BY: PP  
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SHEET TITLE  
SITE  
GROUNDING PLAN

SHEET NUMBER

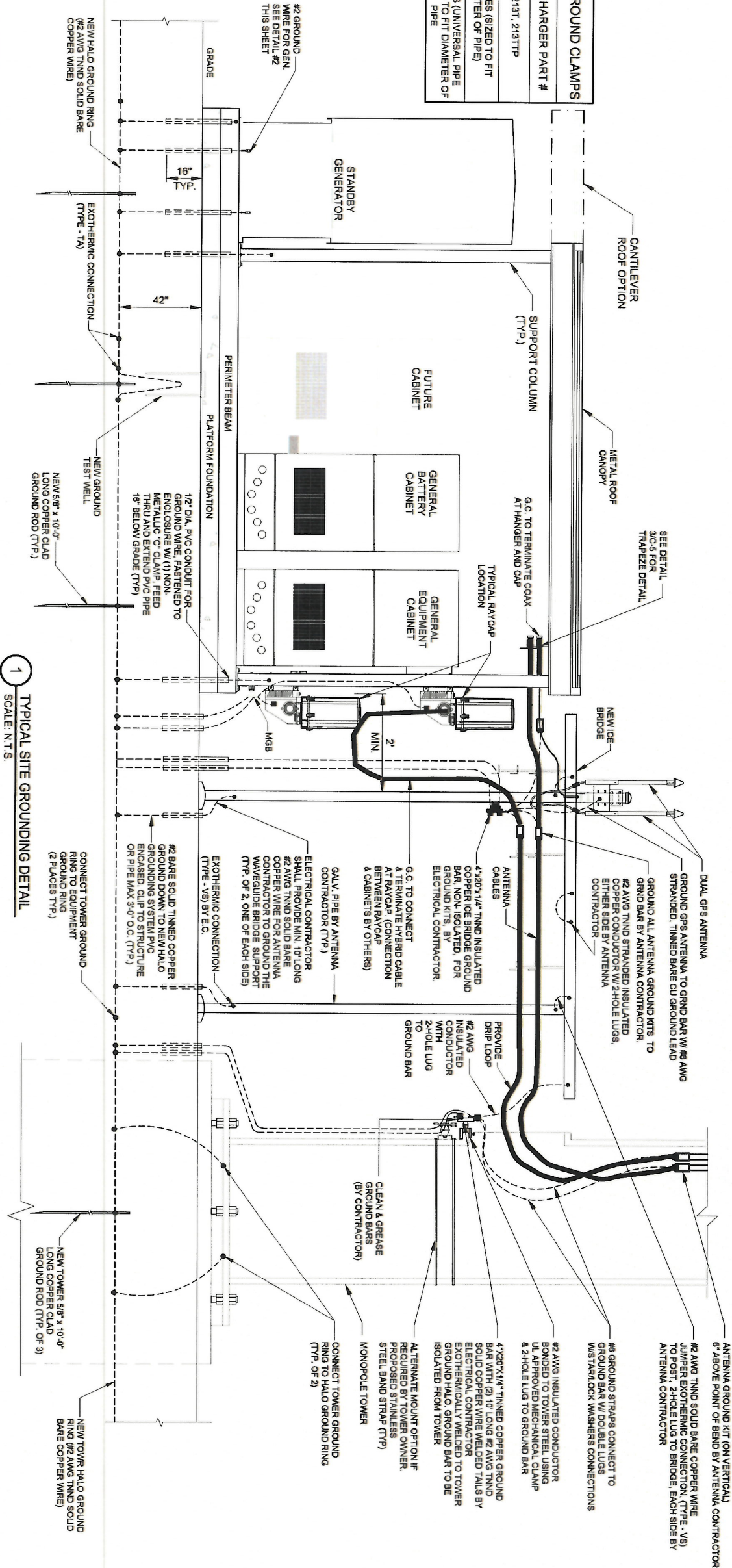
**E-2**



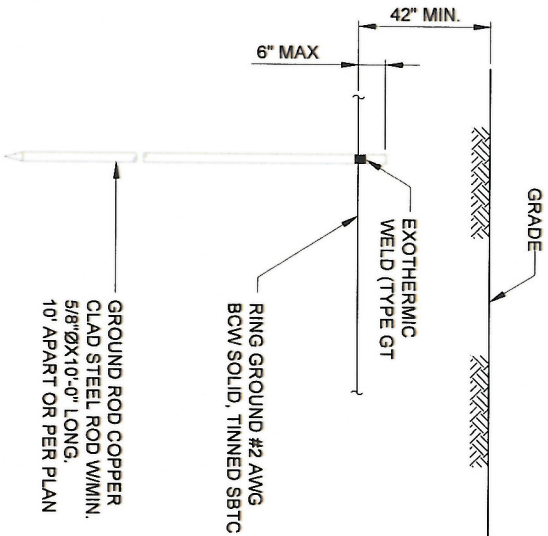
NOTE:  
ANTENNA CABLES SHALL BE  
GROUNDED AT THE  
ANTENNA HEIGHT OF TOWER

NOTE:  
ALL CABINET GROUND  
CONNECTION BY OTHERS.

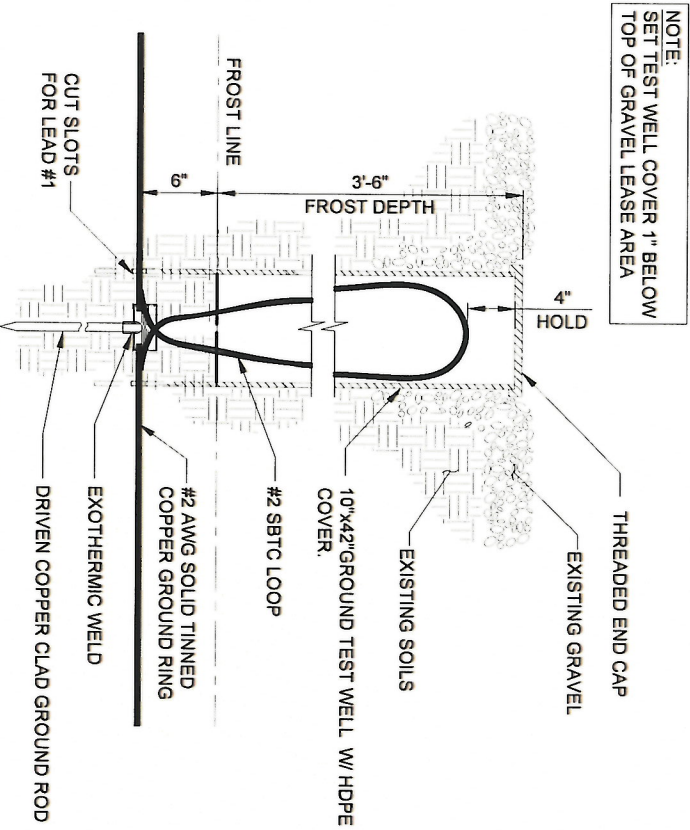
APPROVED UL LISTED GROUND CLAMPS	
APPLICATION	UL LISTED HARGER PART #
METAL FLANGE	213, 213T, 213TTP
PIPE MEMBER	CPO SERIES (SIZED TO FIT DIAMETER OF PIPE)
LARGER PIPE MEMBER	UPC SERIES (UNIVERSAL PIPE CLAMP) SIZED TO FIT DIAMETER OF PIPE



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



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



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

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



REVISIONS			
NO.	DESCRIPTION	DATE	BY
5	UPDATE WITH NEW LAYOUT	09/08/17	DMS
6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
8	UPDATE PER GAS COORDINATION	01/31/18	DMS
9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/29/18	TJS
11	UPDATE WITH NEW ECR	06/27/18	TJS

DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

GROUNDING DETAILS

E-3







GENERAL

THE CONSTRUCTION DOCUMENT DRAWINGS ARE INTERRELATED. WHEN PERFORMING THE WORK, EACH CONTRACTOR MUST REFER TO ALL DRAWINGS. COORDINATION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

DIVISION 1: GENERAL REQUIREMENTS  
SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

- A. OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES. INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES.
- B. SUBMIT RECORD DRAWINGS, DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND SIMILAR FINAL RECORD INFORMATION.
- C. COMPLETE FINAL CLEAN UP REQUIREMENTS. TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARKED EXPOSED FINISHES.

PART 2 - FINAL CLEANING

- 1. COMPLETE THE FOLLOWING CLEANING OPERATIONS BEFORE REQUESTING INSPECTION FOR CERTIFICATION OF COMPLETION.
  - a. CLEAN THE PROJECT SITE, YARD AND GROUNDS, IN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPE DEVELOPMENT AREAS, OF RUBBISH, WASTE MATERIALS, LITTER AND FOREIGN SUBSTANCES. SWEEP PAVED AREAS BROOM CLEAN, REMOVE PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS, RAKE GROUNDS THAT ARE NEITHER PLANTED NOR PAVED, TO A SMOOTH EVEN-TEXTURED SURFACE.
  - b. REMOVE TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY AND SURPLUS MATERIAL FROM THE SITE
  - c. REMOVE SNOW AND ICE TO PROVIDE SAFE ACCESS TO THE SITE AND EQUIPMENT ENCLOSURE.
  - d. CLEAN EXPOSED EXTERIOR AND INTERIOR HARD-SURFACED FINISHES TO A DIRT-FREE CONDITION, FREE OF STAINS, FILMS AND SIMILAR FOREIGN SUBSTANCES. AVOID DISTURBING NATURAL WEATHERING OF EXTERIOR SURFACES.
  - e. REMOVE DEBRIS FROM LIMITED ACCESS SPACES, INCLUDING ROOFS, EQUIPMENT ENCLOSURE, MANHOLES, AND SIMILAR SPACES.
  - f. TOUCH-UP AND OTHERWISE REPAIR AND RESTORE MARKED EXPOSED FINISHES AND SURFACES. REPLACE FINISHES AND SURFACES THAT CAN NOT BE SATISFACTORILY REPAIRED OR RESTORED, OR THAT SHOW EVIDENCE OF REPAIR OR RESTORATION. DO NOT PAINT OVER "U.V." AND SIMILAR LABELS, INCLUDING ELECTRICAL NAME PLATES.
  - g. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY
- 2. REMOVAL OF PROTECTION: REMOVE TEMPORARY PROTECTION AND FACILITIES INSTALLED DURING CONSTRUCTION TO PROTECT PREVIOUSLY COMPLETED INSTALLATIONS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

DIVISION 2: SITE WORK

SECTION 02200 - EARTHWORK AND DRAINAGE

PART 1 - GENERAL

- 1. WORK INCLUDED: SEE SITE PLAN.
- 2. SEQUENCING
  - a. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG EAST FENCE LINE.
  - b. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS) IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH

PART 2 - EXECUTION

- 1. INSPECTIONS: LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.
- 2. PREPARATION
  - a. CLEAR TREES, BRUSH AND DEBRIS FROM SITE AS REQUIRED.
  - b. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX INCHES (6") BELOW GRADE.
  - c. UNLESS OTHERWISE INSTRUCTED BY OWNER, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
  - d. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL, e. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
- 3. INSTALLATION
  - a. GRADE OR FILL THE SITE AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
  - b. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
  - c. AVOID CREATING DEPRESSIONS WHERE WATER MAY POOL.
  - d. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
  - e. PLACE FILL OR STONE IN SIX INCH (6") MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
  - f. THE TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF ONE FOOT (1') BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
  - g. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAP.

- h. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
- i. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAP.
- j. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
- k. IN DITCHES WITH SLOPES GREATER THAN 10% MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAN THAT 60° OF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX FEET (6') ABOVE THE CULVERT ENTRANCE.

- l. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
- m. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
- n. ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO NETWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

- 4. FIELD QUALITY CONTROL: COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.
- 5. PROTECTION
  - a. PROTECT SEEDDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATIVE.
  - b. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS, WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

SECTION 02300 - FENCING AND GATES(S)

PART 1 - GENERAL

- 1. WORK INCLUDED - SEE PLAN FOR SITE AND LOCATION OF FENCE
- 2. QUALITY ASSURANCE
  - a. ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE "E" ZINC, 18 OUNCES PER SQUARE FOOT.
- 3. SEQUENCING
  - a. IF THE SITE AREA HAS BEEN BROUGHT UP TO SURFACE COURSE ELEVATION (PRIOR TO THE FENCE CONSTRUCTION), FENCE POST EXCAVATION SPOILS MUST BE CONTROLLED TO PRECLUDE CONTAMINATION OF SAID SURFACE COURSE.
- 4. SUBMITTALS
  - a. MANUFACTURER'S DESCRIPTIVE LITERATURE.
  - b. CERTIFICATE OR STATEMENT OF COMPLIANCE WITH THE SPECIFICATIONS.

PART 2 - PRODUCTS

- 1. FENCE MATERIAL
  - a. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
  - b. FABRIC SHALL BE SEVEN-FOOT (7') HIGH OR TO MATCH EXISTING FENCE TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A RIVOLKED FINISH FOR THE TOP SEVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
  - c. ALL POSTS SHALL BE SCHEDULE - 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A-128 AND OF THE FOLLOWING DIAMETER
    - i. LINE 2" SCHEDULE 40 (2 3/8" O.D.)
    - ii. CORNER 3" SCHEDULE 40 (3 1/2" O.D.)
    - iii. GATE 3" SCHEDULE 40 (3 1/2" O.D.)
  - d. ALL TOP AND BRACE RAILS SHALL BE 1 DIAMETER SCHEDULE - 40 MECHANICAL - SERVICE PIPE.
  - e. GATE FRAMES AND BRACES SHALL BE 1.50 INCH DIAMETER SCHEDULE 40 MECHANICAL - SERVICE PIPE. FRAMES SHALL HAVE WELDED CONNERS.
  - f. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
  - g. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
  - h. A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
  - i. A SIX-INCH BY 1/2-INCH DIAMETER TYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
  - j. STRETCHER BARS SHALL BE 3/4-INCH BY 3/4-INCH OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.

- k. ALL CORNER GATE AND PANELS SHALL HAVE A 3/8-INCH TRUSS ROD WITH TURNBUCKLES.
- l. ALL POST EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
- m. OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO THE CLIPS, BAND CLIPS, AND TENSION BAND CLIPS.
- n. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.

PART 3 - EXECUTION

- 1. INSPECTION: TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS, ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS,
- 2. INSTALLATION
  - a. FOUNDATIONS SHALL HAVE A MINIMUM SIX INCH (6") CONCRETE COVER UNDER POST.
  - b. ALL FENCE POSTS SHALL BE VERTICALLY PLUMB, ON QUARTER INCH (1/4") c. AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
  - d. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND-CLIPS AT FIFTEEN (15) INCH INTERVALS.
  - e. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH THE CLIPS AT TWO FOOT (2') INTERVALS.
  - f. A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN THE CHAIN LINE FABRIC AND THE FINAL GRADE.
  - g. GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
  - h. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
  - i. CONCRETE TO BE A MINIMUM OF 4,000 PSI AT 7 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.
- 3. PROTECTION - UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC-BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL. APPLICABLE STANDARDS:
  - ASTM-A420 SPECIFICATION FOR PIPE, STEEL, BLACK AND HOT-DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
  - ASTM-A423 ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
  - ASTM-A453 STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
  - ASTM-A492 SPECIFICATION FOR ZINC-COATED STEEL CHAIN LINK FENCE FABRIC.
  - ASTM-A491 SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC
  - ASTM-A525 STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT-DIPPED PROCESS.
  - ASTM-A570 SPECIFICATION FOR HOT-ROLLED CARBON STEEL SHEET AND STRIP, STRUCTURAL QUALITY.
- A. FEDERAL SPECIFICATION RR-F-393-FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)

DIVISION 3: CONCRETE

SECTION 03000 - BASIC CONCRETE MATERIALS AND METHODS

PART 1 - GENERAL

- 1. WORK INCLUDED: FORMWORK, REINFORCEMENT, ACCESSORIES, CAST-IN-PLACE CONCRETE, FINISHING, AND CURING.
- 2. INSPECTIONS
  - a. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
  - b. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE LESSER'S CONSTRUCTION MANAGER PRIOR TO PLACEMENT OF CONCRETE.
  - c. THE LESSER'S CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.
- 3. QUALITY ASSURANCE
  - a. CONSTRUCT AND ERECT CONCRETE FORMWORK IN ACCORDANCE WITH ACI 301 AND ASTM 318.
  - b. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 318, AND ASTM A184.
  - c. PERFORM CAST-IN-PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117-90.
  - d. OPEN FOUNDATION TRENCHES SHALL BE INSPECTED BY MES PRIOR TO CONCRETE INSTALLATION.

- 4. SUBMITTALS: SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY LESSEE CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWING SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUELINE DRAWINGS FOR REINFORCING STEEL.

PART 2 - PRODUCTS

- 1. REINFORCEMENT MATERIALS
  - a. REINFORCEMENT STEEL, ASTM A615, 60 KI YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
  - b. WELDED STEEL WIRE FABRIC ASTM A485 PLAIN TYPE IN FLAT SHEETS, PLAIN FINISH.
  - c. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS, SIZED AND SHAPED FOR SUPPORTS OR REINFORCING.

- d. FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, ACI 318, ASTM A184.

2. CONCRETE MATERIALS

- a. CEMENT: ASTM C150, PORTLAND TYPE
- b. FINE AND COARSE AGGREGATES: ASTM C33 - MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED ONE INCH (1") SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR ONE-THIRD (1/3) CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
- c. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE
- d. AIR ENTRAINING ADMIXTURE: ASTM C260
- e. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
- f. NON-SHRINK GROUT: PREMIKED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICISING AGENTS.
- 3. CONCRETE MIX
  - a. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
  - b. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ART. 3.
  - c. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
    - 1. COMPRESSIVE STRENGTH: 4000 psi AT 7 DAYS. SEE SHEET 2-1 FOR CAISSON CONCRETE COMPRESSIVE STRENGTH.

PART 3 - EXECUTION

- 1. INSERTS, EMBEDDED COMPONENTS AND OPENINGS
  - a. THE CONTRACTOR SHALL COORDINATE AND CROSS-CHECK ARCHITECTURAL, BUILDING & ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, AND OTHER ITEMS RELATED TO CONCRETE WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THE PROPER LOCATION BEFORE PLACING CONCRETE.
  - b. PROVIDE FORMED OPENINGS WHERE REQUIRED FOR WORK TO BE EMBEDDED IN AND PASSING THROUGH CONCRETE MEMBERS.
  - c. COORDINATE WORK OF OTHER SECTIONS IN FORMING AND SETTING OPENING, SLOTS, RECESSES, CHASES, SLEEVES, BOLTS, ANCHORS, AND OTHER INSERTS.
- 2. REINFORCEMENT PLACEMENT
  - a. PLACEMENT REINFORCEMENT, SUPPORTED AND SECURED AGAINST DISPLACEMENT.
    - b. ENSURE REINFORCING IS CLEAN, FREE OF LOOSE SCALE, DIRT, OR OTHER FOREIGN COATINGS.
    - c. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.
    - d. MINIMUM CONCRETE COVER FOR REINFORCING SHALL BE THREE INCHES (3") UNLESS OTHERWISE NOTED.
    - e. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED THREE INCHES (3") NOR BE LESS THAN TWO INCHES (2").
- 3. PLACING CONCRETE
  - a. VIBRATE ALL CONCRETE.
  - b. ALL CONCRETE WORK SHALL ADHERE TO THE LATEST A.C.I. STANDARDS FOR WINTER POURING AND CURING PROCEDURES IF SEASONAL CONDITIONS APPLY.
- 4. CURING
  - a. AFTER PLACEMENT, PROTECT CONCRETE FROM PREMATURE DRYING.
  - b. MAINTAIN CONCRETE WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
  - 5. PROVIDE HAND RUBBED SMOOTH FINISH TO ALL EXPOSED VERTICAL FORMED CONCRETE SURFACES.
- 6. FIELD QUALITY CONTROL
  - a. SUBMIT THREE (3) CONCRETE TEST CYLINDERS - TAKEN FOR EVERY 15 CUBIC YARD OR LESS. SUBMIT CONCRETE TESTS TO THE PROJECT MANAGER IN ACCORDANCE WITH ASTM, C-31 AND C-39.
  - b. SUBMIT ONE (1) ADDITIONAL TEST CYLINDER - TAKEN DURING COOLD WEATHER POURS, AND CURED ON JOB SITE UNDER SAME CONDITIONS AS CONCRETE IT REPRESENTS.
  - c. SUBMIT ONE (1) SLUMP TEST - TAKEN FOR EACH SET OF TEST CYLINDERS TAKEN.
- 7. DEFECTIVE CONCRETE: MODIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LINES, DETAILS OR ELEVATIONS AT COST OF GC, AS DIRECTED BY ARCHITECT/ENGINEER.

CHICAGO  
SMSA  
limited partnership  
d/b/a VERIZON WIRELESS



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

REVISIONS			
NO.	DESCRIPTION	DATE	BY
5	UPDATE WITH NEW LAYOUT	08/08/17	DMS
6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
8	UPDATE PER GAS COORDINATION	01/01/18	DMS
9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/29/18	TJS
11	UPDATE WITH NEW ECR	06/27/18	TJS

DOLAN REALTY  
SITE #  
DRA IL-1014  
LOC. # 311466  
W 151st ST  
& S 80th AVE  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY: PP

CHECKED BY: TAZ

DATE: 07/23/15

PROJECT #: 33-1466

SHEET TITLE  
SPECIFICATIONS

SHEET NUMBER  
SP-1



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  
ASTM A500, GRADE B  
B. STRUCTURAL TUBING:  
ASTM A53, TYPE E OR S, GRADE B  
C. PIPE:  
ASTM A53, TYPE E OR S, GRADE B  
D. BOLTS, NUTS, AND WASHERS:  
ASTM A307  
ASTM A307  
E. ANCHOR BOLTS:  
AWS 01.1, TYPE REQUIRED FOR MATERIALS BEING WELDED  
F. WELDING MATERIALS:  
AWS 01.1, TYPE REQUIRED FOR MATERIALS BEING WELDED  
G. GROUT:  
NON - SHRINK TYPE, PREMIXED CONCRETE 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 ACCORDANCE WITH 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 PRIMED OR GALVANIZED WITH TOUCH-UP PRIMERS AS SPECIFIED UNDER SECTION 0509.00, 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 TOURING

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, NBPJ, AND UL, LISTED.
- 5. ALL CONDUIT SHALL HAVE A PULL CORO.
- 6. PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE 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 HAMPD-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 HUNTS 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 "KACE" 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 U.L.L.E. AT 1-800-892-0123 ON 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 FORTTH 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 DISCLOSED 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 EMV, 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 FORTTH 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, TEES, 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 "CAWDEWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
- 2. ALL ABOVE GRADE GROUNDING AND BOUNDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACES AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON SOLDER 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 548808E  
B. 362 MCM DLO 548728E  
C. #1/0 DLO 548628E  
D. #4/0 THWN AND BARE 548688E  
E. #2/0 THWN 548628E  
F. #2 THHN 542078E  
G. #6 DLO 542058E

- 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:

GROUNDING CONDUCTOR SIZE		MINIMUM BENDING RADIUS TO INSIDE EDGE
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 CADDWELDED. NO LUGS 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. FALL POTENTIAL TESTS  
A. FOR RAW LAND SITE  
1. GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDOLE GROUND OHMMER ON THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.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 DO NOT OVERLAP. THE TEST POINT WILL BE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MESSEGER TEST METHOD, USING THE BIDOLE 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 35 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 THE 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, COMPLETE A MEGGER CHECKER OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE READING 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 3 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE MEETING THE REQUIREMENTS AND ALSO MORE THAN 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUNDING 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 CADDWELDED 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 END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).  
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.

REVISIONS			
NO.	DESCRIPTION	DATE	BY
5	UPDATE WITH NEW LAYOUT	09/08/17	DMS
6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
8	UPDATE PER GAS COORDINATION	01/31/18	DMS
9	REVISED LANDSCAPE PLAN PER VILLAGE	04/05/18	JTM
10	UPDATE SITE WITH THICKENED EDGE SLAB DESIGN	05/29/18	TJS
11	UPDATE WITH NEW ECR	06/27/18	TJS



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

CHICAGO SMSA  
limited partnership  
d/b/a VERIZON WIRELESS

DOLAN REALTY

SITE #

DRA IL-1014

LOC. # 311466

W 151st ST  
& S 80th AVE

15100 S 80TH AVE

ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/29/15
PROJECT #:	33-1466

SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

SP-2



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

**TERRA**  
CONSULTING ENGINEERS, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
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REVISIONS			
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**DOLAN REALTY**  
SITE #  
DRA IL-1014  
LOC. # 311466

**W 151st ST  
& S 80th AVE**  
15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
**EXISTING SITE PHOTOS**

SHEET NUMBER

**P-1**



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



3 EXISTING SITE COMPOUND  
SCALE: N.T.S.



4 EXISTING FENCED COMPOUND  
SCALE: N.T.S.



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



5 EXISTING ACCESS GATE  
SCALE: N.T.S.



6 EXISTING TRANSFORMER  
SCALE: N.T.S.



7 EXISTING GENERATOR  
SCALE: N.T.S.

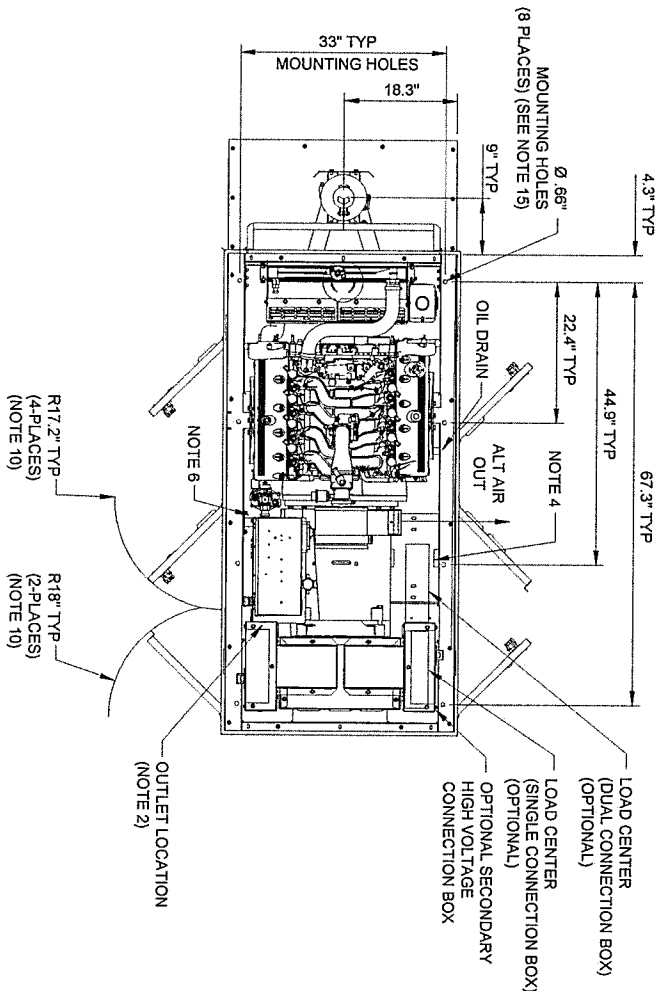


8 EXISTING TOWER FOUNDATION  
SCALE: N.T.S.

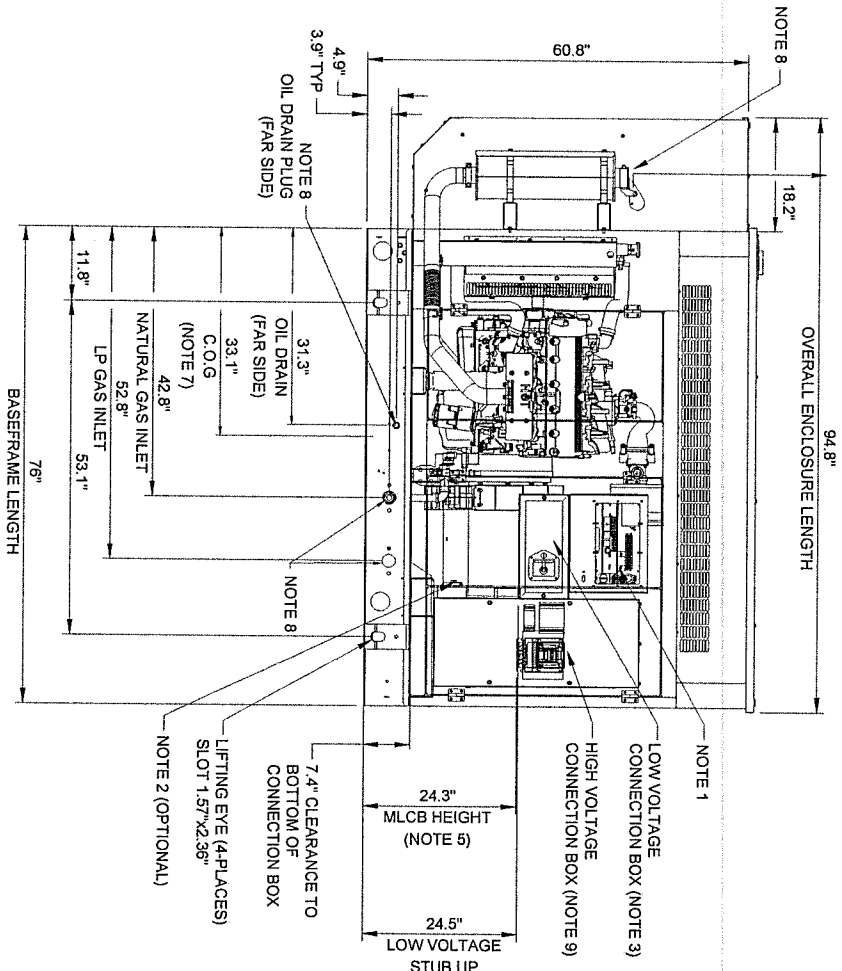


9 EXISTING TOWER TAG  
SCALE: N.T.S.





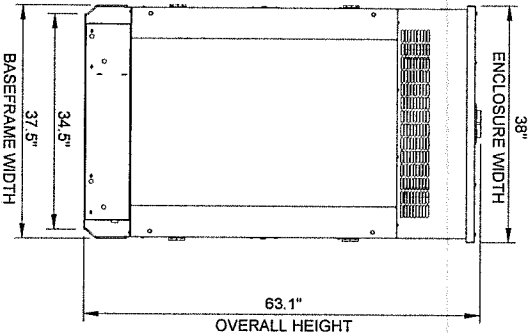
TOP OR PLAN VIEW



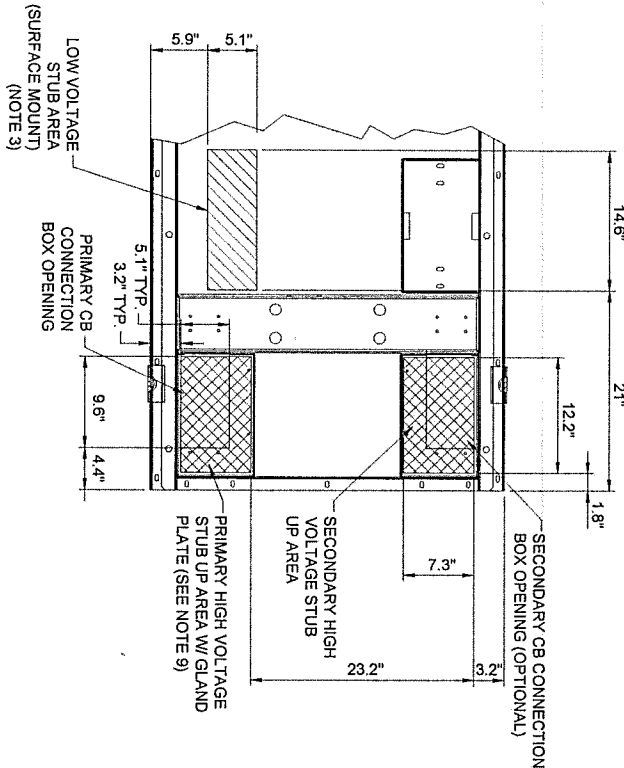
FRONT SIDE VIEW

RECOMMENDED ELECTRICAL STUB-UPS (SEE DETAILED VIEW & TOP VIEW)	
(HIGH VOLTAGE STUB UP) AC LOAD LEAD CONDUIT FOR PERMANENT MAGNET EXCITATION CONNECTION BOX	
LOW VOLTAGE STUB UP	

- NOTES**
- CONTROL PANEL, (OPTIONAL CHARGER INSIDE).
  - 120V, 20A GFCI & 250V, 15A OUTLET (OPTIONAL).
  - CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN THE LOW VOLTAGE CONNECTION BOX (USE LOW VOLTAGE STUB UP AREA)
  - BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
  - MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEADS CONNECT DIRECTLY TO MLCB. (MLCB HEIGHT MAY VARY WITH CB SELECTION).
  - BLOCK HEATER.
  - CENTER OF GRAVITY AND WEIGHT MAY SHIFT SLIGHTLY DUE TO UNIT OPTIONS.
  - ENGINE SERVICE CONNECTIONS:
    - FUEL INLET LP GAS = 1-1/4" NPT FEMALE COUPLING
    - FUEL INLET NATURAL GAS = 1-1/4" NPT FEMALE COUPLING
    - OIL DRAIN = 1/2" NPT FEMALE COUPLING
    - EXHAUST OUTLET = 3" O.D. MUFFLER
  - AUXILIARY AC CONNECTIONS FOR UNIT OPTIONS ARE LOCATED IN HIGH VOLTAGE CONNECTION BOX, UNLESS AN OPTIONAL LOAD CENTER IS INSTALLED.
  - DOORS MUST BE ABLE TO OPEN AT LEAST 90° TO BE REMOVED.
  - BOTTOM OF GENERATOR SET MUST BE CLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
  - GENERATOR SET MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM THE RADIATOR IS NOT RECIRCULATED.
  - CIRCUIT BREAKER
    - AC LOAD LEADS CONNECT DIRECTLY TO BOTTOM BREAKER
    - REFER TO LUG SIZING CHART AVAILABLE ON GEN CONNECT
  - EPA AIR QUALITY REGULATION REQUIRE THE CATALYST TO REMAIN MOUNTED WITHIN THE SPECIFIED MOUNTING POSITION DETAILED ON THIS DRAWING.
  - MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8"-11 GRADE 5. (USE STANDARD SAE TORQUE SPECS.)



REAR VIEW



STUB-UP AREA DETAILED VIEW

1 GENERAC GAS & LP GENERATOR MODEL SG35  
SCALE: N.T.S. GENERAC MODEL: SGNG

SG35, 40, 45 & 50
5.4L DIRECT DRIVE
SOUND ATTENUATED
LEVEL 2 ENCLOSURE -Y02

WEIGHT DATA:
OPEN SET: 2195 LBS
STEEL ENCLOSURE: 753 LBS
ALUMINUM ENCLOSURE: 298 LBS (SEE NOTE 7)

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

SHEET TITLE  
GENERATOR  
CUT-SHEET

SHEET NUMBER

EX-1

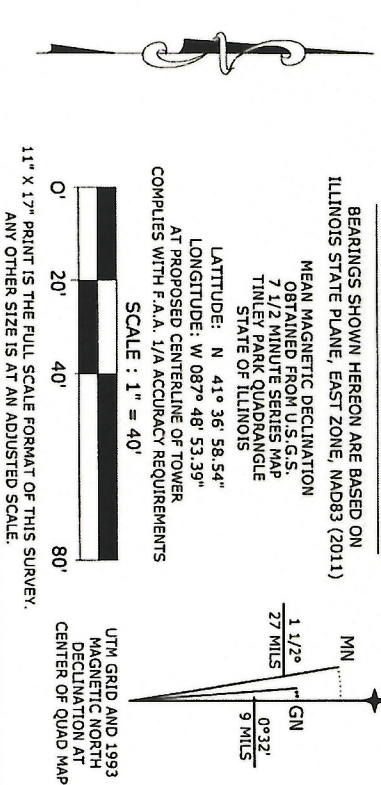
**DOLAN REALTY**  
SITE #  
DRA IL-1014  
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W 151st ST  
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ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466



ALT/ANSPS LAND TITLE SURVEY

BASIS OF BEARING



THE NORTH 233.0 FEET OF THE EAST 183.0 FEET OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN (EXCEPT HIGHWAYS), IN COOK COUNTY, ILLINOIS.

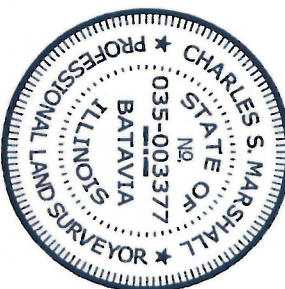
SURVEYOR'S CERTIFICATE

STATE OF ILLINOIS } S.S.  
COUNTY OF KANE }  
TO: Chicago SMSA  
and Chicago Title Insurance Company

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED, BEING COMPLETED IN THE FIELD ON 1/10/2018, WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAILED REQUIREMENTS FOR ALTA/ANSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY THE AMERICAN LAND TITLE ASSOCIATION AND THE NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS, AND INCLUDES ITEMS 2, 3, 4, 7(a), 8, 9, 11, 14 AND 18 OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA/ANSPS, AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, UNDERSIGNED FURTHER CERTIFIES THAT PROPER FIELD PROCEDURES, INSTRUMENTATION AND ADEQUATE SURVEY PERSONNEL WERE EMPLOYED IN ORDER TO ACHIEVE RESULTS COMPARABLE TO THOSE OUTLINED IN THE "MINIMUM ANGLE, DISTANCE AND CLOSURE REQUIREMENTS FOR SURVEY MEASUREMENTS WHICH CONTROL LAND BOUNDARIES FOR ALTA/ANSPS LAND TITLE SURVEYS."

DATED AT BATAVIA, ILLINOIS ON THIS 11TH DAY OF JANUARY, A.D., 2018.

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



NO.	DATE	REVISION
1.	1/10/2018	FIELD SURVEY COMPLETED
2.	1/11/2018	FINAL SURVEY COMPLETED
3.		

W 151st ST & S 80th AVE  
Location No.: 278765  
Project No.: 20130972076  
15100 S 80th AVE  
ORLAND PARK, IL 60462

DRAWN BY: PS  
CHECKED BY: CSM  
PROJECT NO. 720290B  
L-1

LEGEND

- Light Post
- Power Pole
- Telephone Pedestal
- Manhole
- Water Valve Vault
- Water Service Valve
- Fire Hydrant
- Electric Meter
- Gas Meter
- Fence
- Centerline
- Section Line
- Underground Sanitary Line
- Underground Electric Line
- Underground Fiber Optic Line
- Underground Storm Line
- Underground Water Line
- Underground Communication Line

Found Section Corner Monument

Found or Set Monument

Measured

Record

Document Number

DOC. NO.

Building

Asphalt

Concrete

PROPOSED

Lease Site Area

Access Easement

Utility Easement

AGL

Above Ground Level

P.O.C. Point of Commencement

P.O.B. Point of Beginning



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.

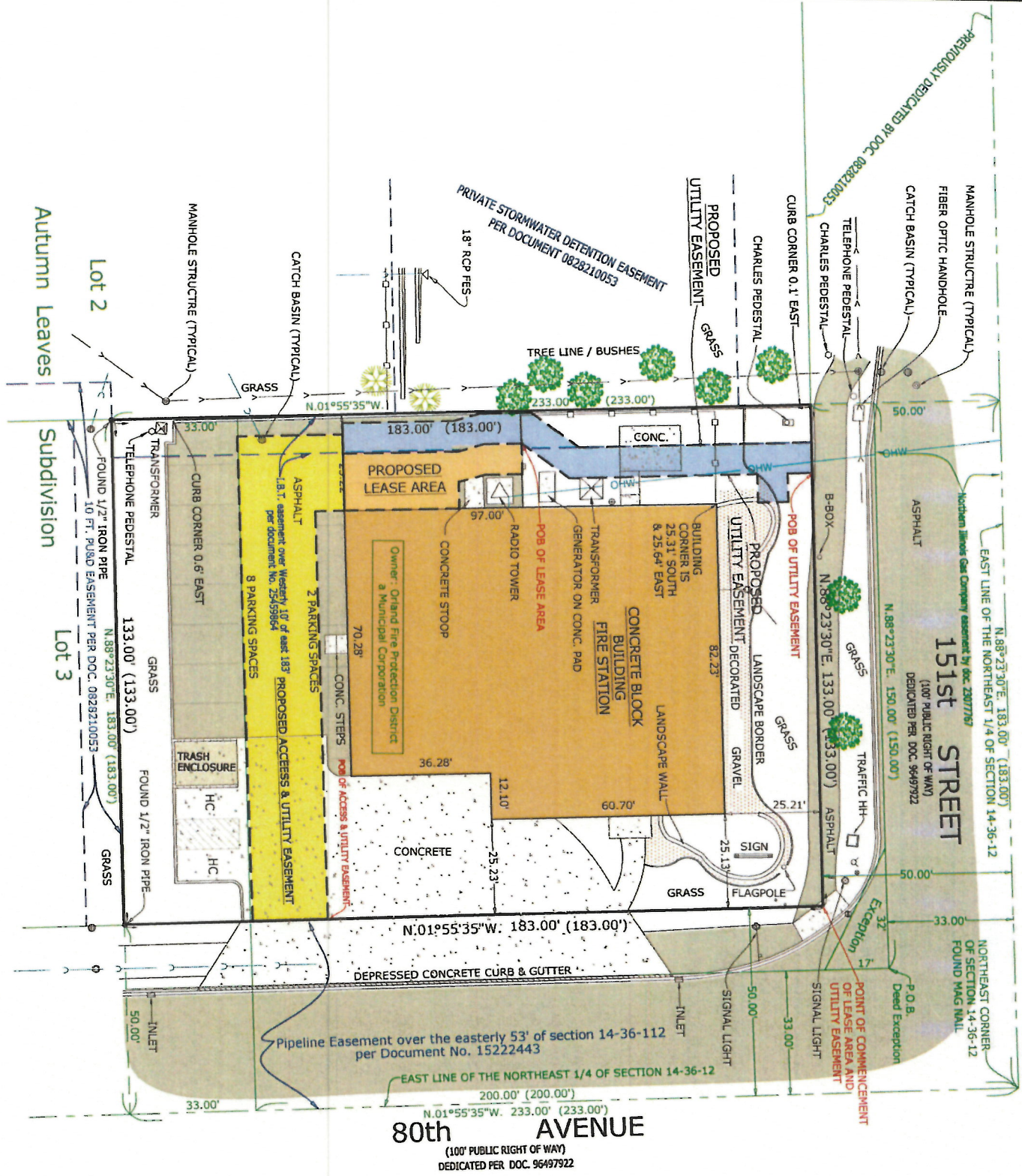
THE PERMANENT PARCEL INDEX NUMBERS FOR THE PROPERTY ENCUMBERED BY THE LEASE SITE AND EASEMENT HEREON ARE 27-14-201-010 & 011.

THE FLOOD INSURANCE RATE MAP SHOWS THAT THE PROPERTY DESCRIBED HEREON IS FALLING WITHIN ZONE "X". ACCORDING TO THE COMMUNITY PANEL NUMBER 170140 0702 1 VILLAGE OF ORLAND PARK, MAP NUMBER 17031007021, COOK COUNTY, ILLINOIS AND INCORPORATED AREAS, MAP REVISED AUGUST 19, 2008, ZONE "X" IS AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

NO WETLAND MARKERS WERE OBSERVED DURING FIELD SURVEY, DATED 1/10/2018.

EASEMENTS AND SERVITUDES SHOWN HEREON ARE BASED UPON A TITLE COMMITMENT ISSUED BY CHICAGO TITLE INSURANCE COMPANY, AND IDENTIFIED AS ORDER NO.: 1401 008962542 D1, WITH AN EFFECTIVE DATE OF JULY 11, 2017.

SEE SHEET L-2 (SHEET 2 OF 2) FOR LEASE AREA AND EASEMENTS DETAIL AND LEGAL DESCRIPTIONS



NUMBER OF PARKING STALLS:

REGULAR	10
HANDICAP	2
TOTAL	12

PARENT TRACT

PREPARED FOR:

Chicago SMSA

CHICAGO SMSA LIMITED PARTNERSHIP  
4700 WILSON STREET, SUITE 1400  
SCHAEFERSBURG, ILLINOIS 60173  
PHONE: 847-619-5387 FAX: 847-708-7415

TERRA Consulting Group, LTD.  
600 Busse Highway  
Park Ridge, IL 60068  
(847) 698-6400

ADVANCED SURVEYING & MAPPING

Since 1984

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



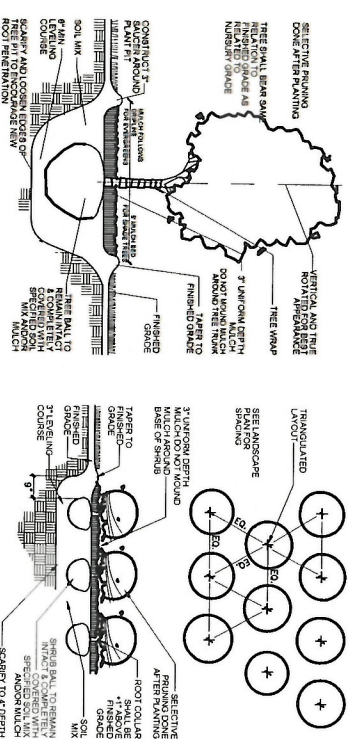




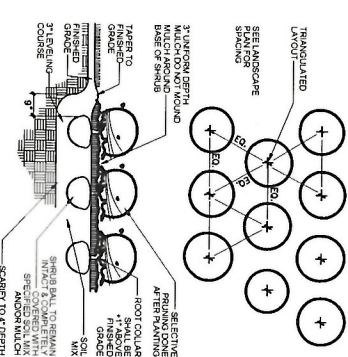
Master Plant List			
Symbol	Quantity	Botanical Name	Common Name
Evergreen Trees			
TOT	4	THUJA OCCIDENTALIS 'TECHNIV'	TECHNIV ARBORVITAE
Deciduous Shrubs			
PF	12	POTENTILLA FRUTICOSA 'GOLD DROP'	GOLD DROP POTENTILLA
			5 GAL

GENERAL CONSTRUCTION NOTES

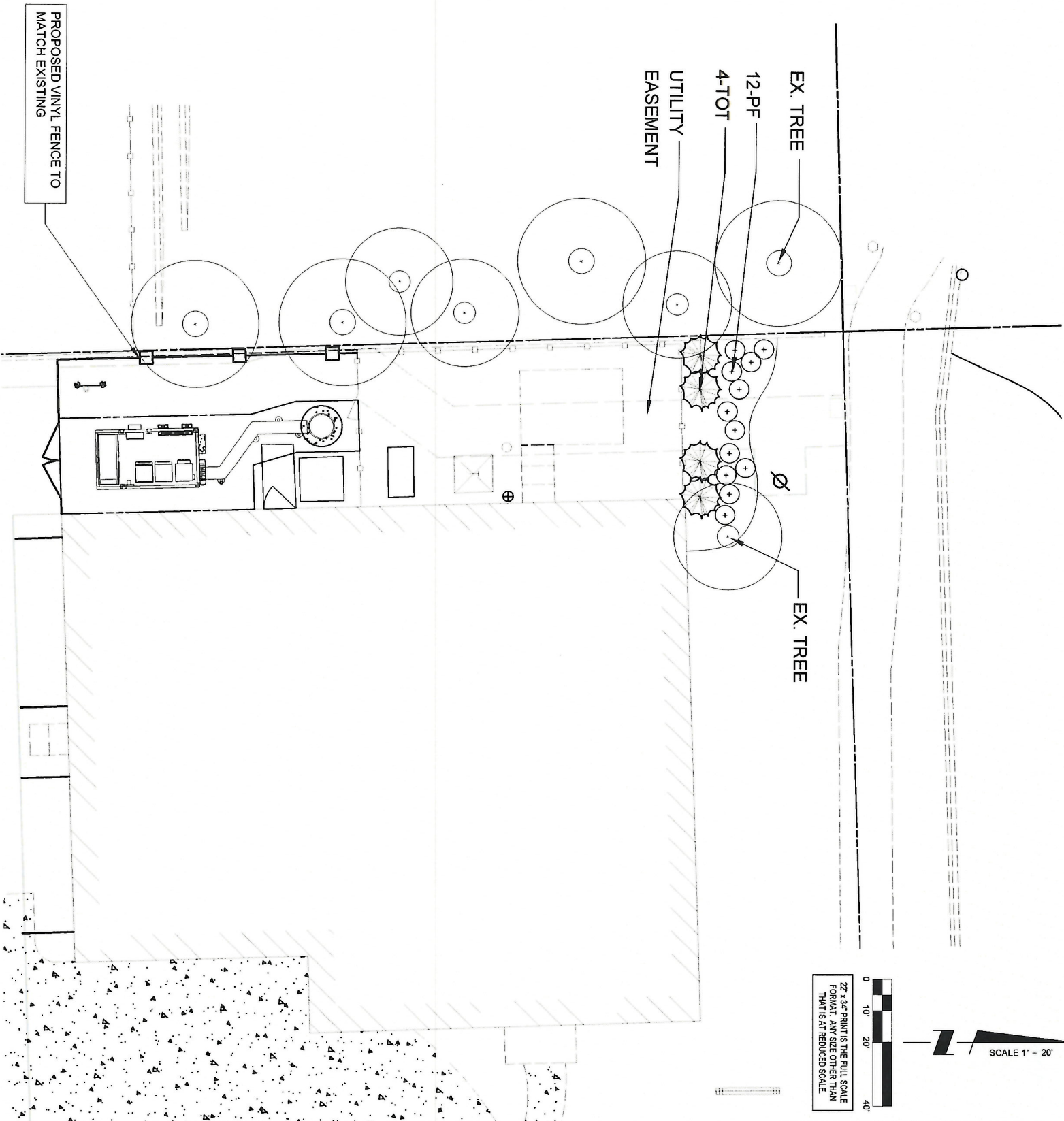
1. REQUIRED LANDSCAPE MATERIAL SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND BE STAKED, WRAPPED, WATERED AND MULCHED PER ORDINANCE.
2. BEFORE ANY EXCAVATION ON THE SITE, CALL TO LOCATE ANY EXISTING UTILITIES ON THE SITE. THE CONTRACTOR SHALL FAMILIARIZE HIM/HERSELF WITH THE LOCATIONS OF ALL BURIED UTILITIES IN THE AREAS OF WORK BEFORE STARTING OPERATIONS. THE CONTRACTOR SHALL BE LIABLE FOR THE COST OF REPAIRING OR REPLACING ANY BURIED CONDUITS, CABLES OR PIPING DAMAGED DURING THE INSTALLATION OF THIS WORK.
3. FENCING OR OTHER RIGID MATERIAL IS TO BE ERRECTED AROUND THE DRIPLINE OF ALL TREES TO BE SAVED.
4. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT UPON DELIVERY OF PLANT MATERIAL TO THE SITE. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL THAT DOESN'T MEET STANDARDS OR SPECIFICATIONS OF THE PROJECT.
5. ALL SPECIFIED LANDSCAPE MATERIAL INDICATED ON THE CONSTRUCTION DOCUMENTS WILL BE REQUIRED TO BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT AND MUST BE REPLACED SHOULD IT DIE OR BECOME DAMAGED.
6. ALL PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE FROM SUBSTANTIAL COMPLETION AS DETERMINED BY THE LANDSCAPE ARCHITECT, AND SHALL BE REPLACED SHOULD IT DIE WITHIN THAT PERIOD.
7. PROTECT STRUCTURES, SIDEWALKS, PAVEMENTS AND UTILITIES TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUTS AND OTHER HAZARDS CAUSED BY SITE IMPROVEMENT OPERATIONS.
8. CAREFULLY MAINTAIN PRESENT GRADE AT BASE OF ALL EXISTING TREES TO REMAIN. PREVENT ANY DISTURBANCE OF EXISTING TREES INCLUDING ROOT ZONES. USE TREE PROTECTION BARRICADES WHERE INDICATED. PROTECT EXISTING TREES TO REMAIN AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, BRUISING OF BARK OR SMOTHERING OF TREES. DRIVING, PARKING, DUMPING, STOCKPILING AND/OR STORAGE OF VEHICLES, EQUIPMENT, SUPPLIES, MATERIALS OR DEBRIS ON TOP THE ROOT ZONES AND/OR WITHIN THE DRIPLINE OF EXISTING TREES OR OTHER PLANT MATERIAL TO REMAIN IS STRICTLY PROHIBITED.
9. THE CONTRACTOR AT ALL TIMES SHALL KEEP THE PREMISES ON WHICH WORK IS BEING DONE CLEAR OF RUBBISH AND DEBRIS. ALL PAVEMENT AND DEBRIS REMOVED FROM THE SITE SHALL BE DISPOSED OF LEGALLY.
10. ALL WORK AND OPERATIONS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.



1 TREE PLANTING DETAIL  
SCALE: NO SCALE

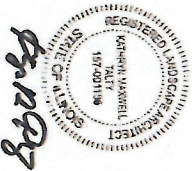


2 SHRUB PLANTING DETAIL  
SCALE: NO SCALE



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

**K M TALT** DESIGN  
LANDSCAPE ARCHITECTURE  
Winnetka, Illinois 60093  
847.612.5154 www.kmtaltdesign.com



REVISIONS			
NO.	DESCRIPTION	DATE	BY
2	UPDATE WITH NEW PLATFORM	10/06/16	TJS
3	FINAL PENDING FIBER	08/21/17	DMS
4	UPDATE WITH NEW ECR	08/31/17	JTM
5	UPDATE WITH NEW LAYOUT	09/06/17	DMS
6	FINALS WITH FIBER	10/20/17	RA
7	ADDITION OF LANDSCAPING PLAN	12/29/17	JTM
8	UPDATED PER GAS ROUTE	01/31/18	DMS



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

LOC. # 311466  
W 151ST  
& S 80TH

15100 S 80TH AVE  
ORLAND PARK, IL 60462

DRAWN BY:	PP
CHECKED BY:	TAZ
DATE:	07/23/15
PROJECT #:	33-1466

SHEET TITLE  
LANDSCAPE PLAN


SHEET NUMBER

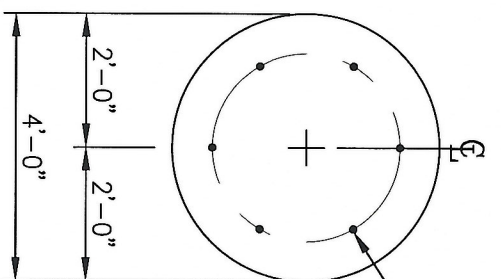
L-1







REINFORCING STEEL SCHEDULE							
LOCATION	NO REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
PIER VERTICAL REINFORCING	16	NOTED ON DWG.	#7	18'-0"	288'-0'	589 LBS.	STRAIGHT
PIER TIES	20	NOTED ON DWG.	#5	12'-6"	250'-0"	261 LBS.	
TOTAL REBAR WT.						850 LBS.	



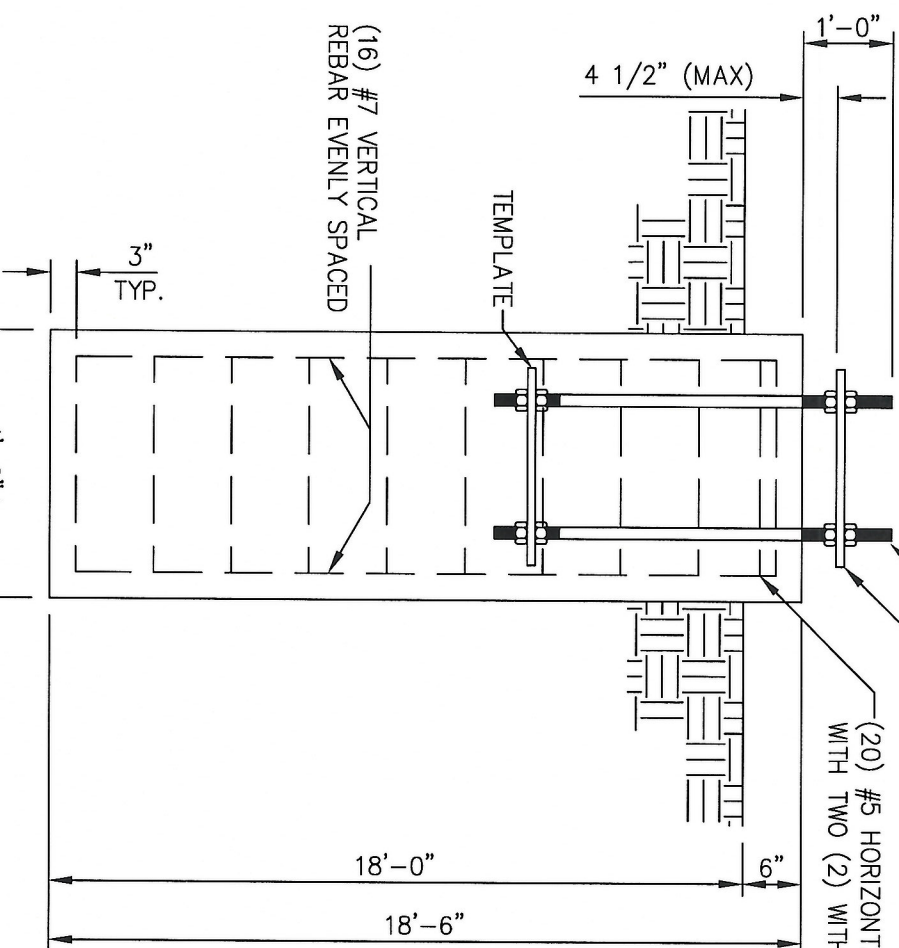
-(6) - ANCHOR BOLTS 2 1/4"  $\phi$  X 7'-0"  
(#18J A615 GR. 75 OR EQUAL) ON A 31.5"  $\phi$  B.C.

PLAN VIEW

(6) - ANCHOR BOLTS 2 1/4"Ø X 7'-0" (#18J A615 GR. 75 OR EQUAL) W/(5) GALV. HHN & (2) GALV. FW. EACH AT TOP

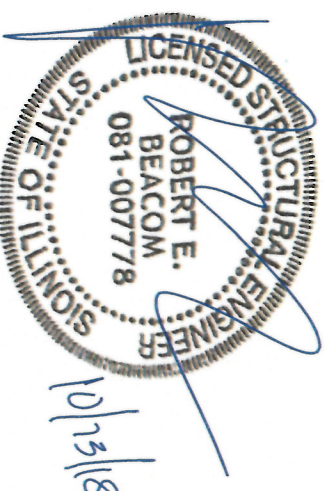
- TEMPLATE

-(20) #5 HORIZONTAL TIES @ 12" C/C  
WITH TWO (2) WITHIN TOP 5" OF CONCRETE




PIER TIES TO HAVE  
20" OVERLAP OR 5 3/4"  
HOOK AS SHOWN

- GENERAL NOTES:
1. ALL ANCHOR BOLTS AND VERTICAL REINFORCING BARS ARE TO BE SECURELY TIED BEFORE CONCRETE IS PLACED SO THEY WILL REMAIN PARALLEL TO THE CENTERLINE OF THE PIER.
  2. THE GROUND ELEVATION SHALL BE A MAXIMUM OF 6" BELOW THE TOP OF THE PIER.
  3. ALL EXPOSED CONCRETE CORNERS ARE TO BE CHAMFERED 3/4 INCH.
  4. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 DEFORMED BARS.
  5. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI, IN ACCORDANCE WITH ACI 318-11.
  6. REINFORCING STEEL TO HAVE A 3" MINIMUM CONCRETE COVER.
  7. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY G2, PROJECT NO. 162457, DATED 12/21/16.
  8. ANCHOR BOLTS 2 1/4"Ø X 7'-0" (#18U A615 GR. 75 OR EQUAL) ON A 31.5"Ø BOLT CIRCLE (6 REQ'D).
  9. CONCRETE REQUIRED 8.61 CUBIC YARDS.
  10. SEE THE GEOTECHNICAL REPORT FOR DRILLED PIER INSTALLATION REQUIREMENTS, IF SPECIFIED.
  11. THE FOUNDATION IS BASED ON THE FOLLOWING FACTORED LOADS:  
MOMENT (KIP-FT) = 705.52  
AXIAL (KIPS) = 18.03  
SHEAR (KIPS) = 10.93
  12. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE & THE CENTER OF PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.

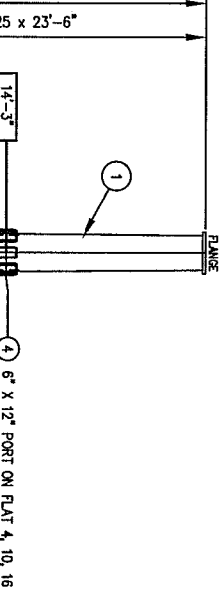


License Expires: 11-30-18

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:		
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL		
<div><b>Sabre Industries™</b> Towers and Poles</div>				
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JOB NO. 404472		SIZE	DRAWING NO.	REV
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CHECKED BY	WJ	None		1 OF 1

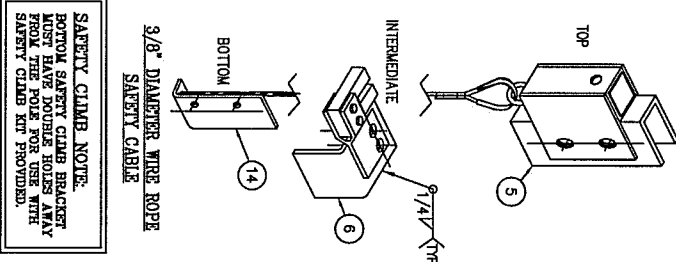
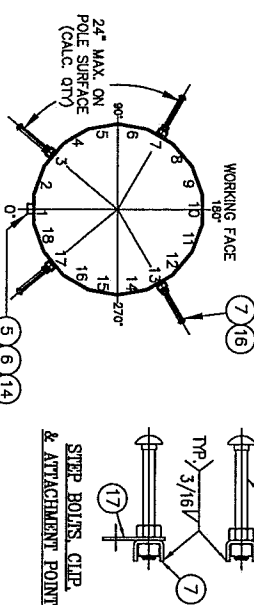


R-14 = BOTTOM OF SECTION TO STAND OFF BRACKET  
R-14 = C-LINE OF BUSS BAR LUG



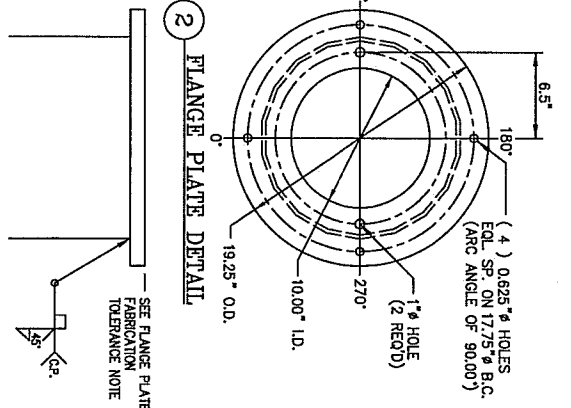
- CLIMBING FACILITY IS CENTERED ON FACE 1 STARTING AT 15" BELOW TOP TO 10'-0" FROM BASE WITH 15" ALTERNATE SPACING.
- WORKING STEP CLIPS ARE PLACED AT THE NEAREST CLIMBING STEP LEVEL DOWN 12" FROM THE APPROPRIATE CENTER LINE SPACED ON THE CIRCUMFERENCE AT A DISTANCE NOT TO EXCEED 24" ON CENTER.
- SAFETY CLIMB SYSTEM IS CENTERED ON FACE 1.
- SAFETY CLIMB STAND OFF BRACKET IS 12" FROM THE TOP MAX.
- INTERMEDIATE STAND OFF BRACKET IS 10'-0" FROM THE BASE.
- BOTTOM

### CLIMBING AND SAFETY DETAILS



SAFETY CLIMB NOTE:  
BOTTOM SAFETY CLIMB BRACKET MUST HAVE DOUBLE HOLES ANYWHERE FROM THE POLE FOR USE WITH SAFETY CLIMB KIT PROVIDED.

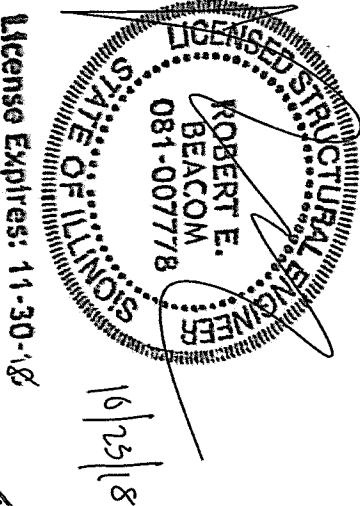
3/8" DIAMETER WIRE ROPE SAFETY CABLE



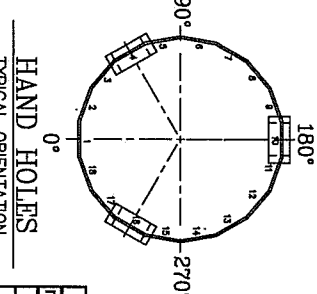
FLANGE PLATE FABRICATION TOLERANCE NOTE  
FLANGE PLATES ARE TO BE WELDED PERPENDICULAR TO THE AXIS OF THE POLE TO WITHIN (+) OR (-) 1/8 DEGREE

18-SIDED POLE				LIST OF MATERIAL		TAPER= .1500 IN/FT	
ITEM QTY	MARK NO.	DESCRIPTION	MATERIAL	WEIGHT			
1	404472-0120	TUBE 1/4" x 18.77 x 15.25 x 23'-6"	A572-65	1060			
2	1	FLANGE PLATE 19.25 x 1.50" THICK	A572-65	89			
3	5 ft	FLAT 1/4" x 1 1/2"	A588	4			
4	6	C30138101 ACCESS PORT (6" x 12" x 3 1/2" x 5/8") WITH 2 HOOKS	A-500-C	123			
5	1	MWS00001 TOP STAND OFF SAFETY BRACKET	A-36	1			
6	1	MWS00002 MIDDLE STAND OFF SAFETY BRACKET	A-36	1			
7	25	TWS00001 STEP BOLT CLIP	A-36	8			
8	4	C40999001 1"-8 HEAVY HEX JACKING NUT (BLACK)	A-563	2			
				ASSEMBLY WEIGHT: 1288			
9	1	404472-0130 TUBE 1/4" x 25.85 x 17.86 x 53'-3"	A572-65	3099			
10	1	404472-5001 BASE PLATE 1 3/4" x 37.25" ROUND	A572-50	453			
11	7 ft	L770016 FLAT 1/4" x 1 1/2"	A588	6			
12	1	C30138106 ACCESS PORT (6" x 8" x 3 1/2" x 5/8") WITH 2 HOOKS	A-500-C	13			
13	3	C30138005 ACCESS PORT (10 1/2" x 25 1/2" x 4" x 3/4") WITHOUT HOOKS	A-572-65	165			
6	1	MWS00002 MIDDLE STAND OFF SAFETY BRACKET	A-36	1			
14	1	MWS00003 BOTTOM STAND OFF SAFETY BRACKET	A-36	1			
7	37	TWS00001 STEP BOLT CLIP	A-36	12			
8	4	C40999001 1"-8 HEAVY HEX JACKING NUT (BLACK)	A-563	2			
15	3	MWS00004 (GROUND LUG ANGLE	A-36	3			
				ASSEMBLY WEIGHT: 3755			
				STRUCTURE BLACK WEIGHT: 5043			
				SHIP LOOSE MISC.			
16	62	C40044017 5/8"-11 x 7" STEP BOLT (GALV)	A-449	62			
17	5	C40011001 STEP BOLT ATTACHMENT POINT - STAINLESS STEEL	A302	1			
18	6	C30138002 8.5" x 12.5" x 0.1875" ACCESS COVER (GALV)	A-36	31			
19	1	C30138005 8.5" x 8.5" x 0.1875" ACCESS COVER (GALV)	A-36	4			
20	3	C30138001 11.0" x 28.0" x 0.1875" ACCESS COVER (GALV)	A-36	49			
21	1	404472-5002 FLANGE PLATE COVER	A-36	32			
22	1	C30012032 SAFETY CLIMB SYSTEM-SELECT-KIT 100"	---	48			
23	1	C30108011 LIGHTNING-ROD-EXTENSION-KIT 2 7/8" x 15"	---	130			
24	1	C30986006 LIGHTNING ROD CCS 5/8" x 6" & STIFFENER	---	11			
25	1	C40098001 130Z CAN OF GOLD GALT SPRAY	---	2			
26	1	C300350 NAME PLATE	---	1			

NOTE:  
SECTION ID TAG NUMBER TO MATCH TUBE MARK NO.



NOTE:  
REFER TO DRAWING 9028280 FOR MONOPOLE LONGSEAM WELD DETAILS.



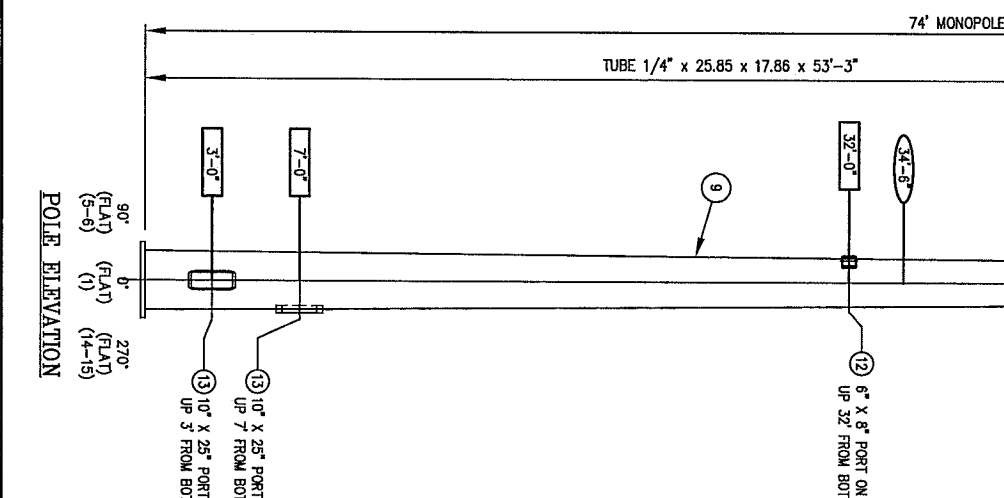
HAND HOLES  
TYPICAL ORIENTATION

ACCESS PORT DATA TABLE					
ITEM	PART NUMBER	WTH	HEGT	DEPTH	THICK
4	C30138101	6"	12"	2 3/4"	3/8"
12	C30138106	6"	8"	3 1/2"	5/8"
13	C30138005	10 1/2"	25 1/2"	4"	3/4"

DOLAN REALTY ADVISORS LLC  
W 151ST & S 80TH, IL  
#311466  
75.00' / 85.00' MONOPOLE

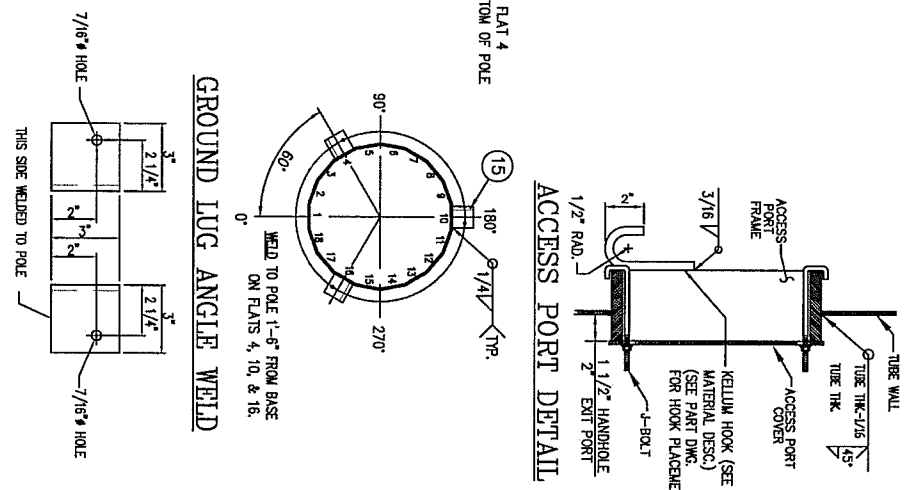
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
Rev		DATE	DRW/CHK
JOB		404472	SIZE
DATE		10/11/18	B
DRAWN BY		JKW	404472-01
CHECKED BY		WJ	SCALE
			N.T.S.
			PAGE
			1 of 1

NOTE: THIS MONOPOLE HAS BEEN DESIGNED FOR A MINIMUM BEND RADIUS OF 5/8."



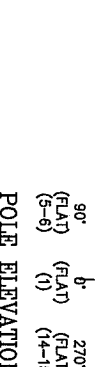
### GROUND LUG ANGLE WELD

### ACCESS PORT DETAIL



MARK: MWS00004

### POLE ELEVATION



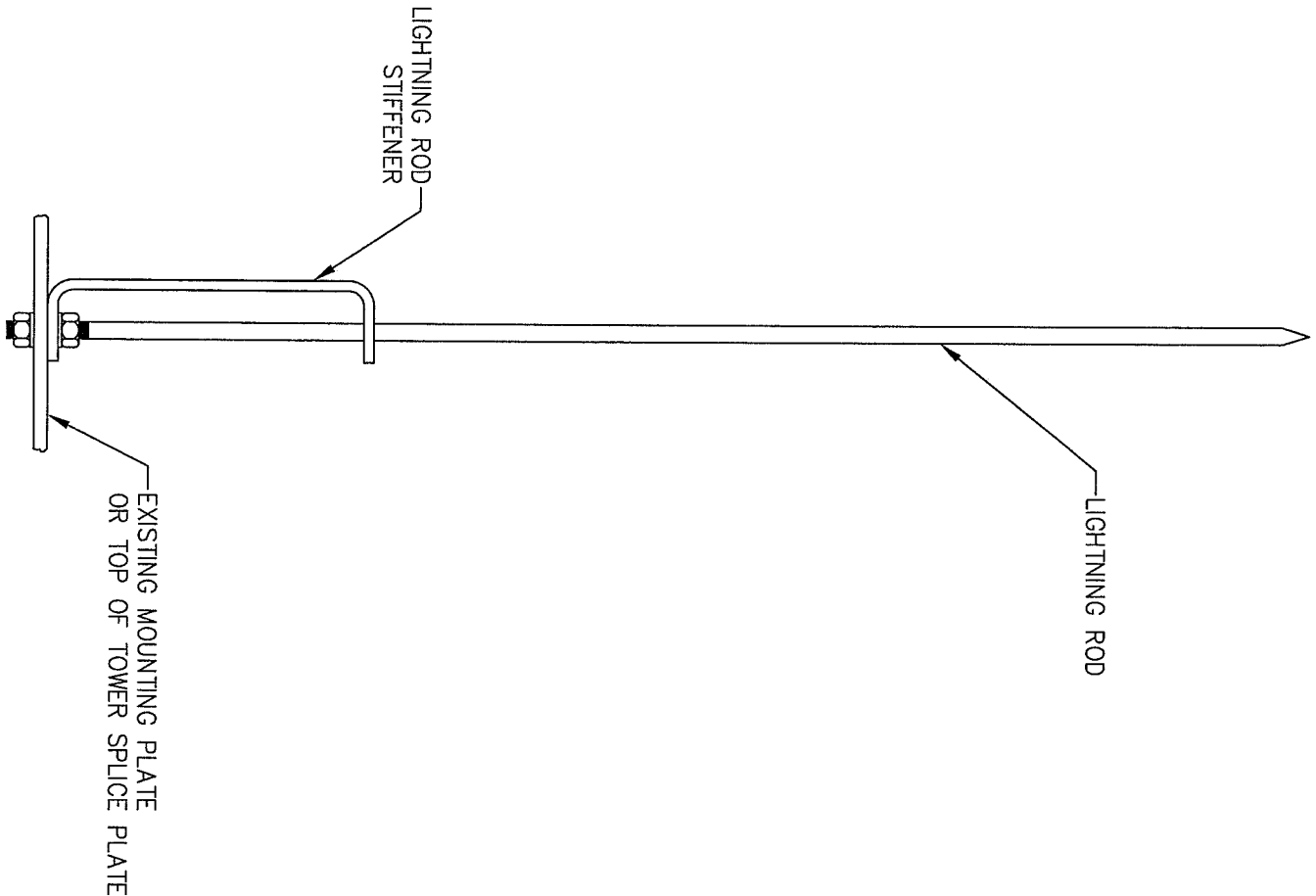







LIGHTNING ROD/STIFFENER KITS				
KIT NUMBER	LIGHTNING ROD	LIGHTNING ROD DIMENSIONS	STIFFENER	KIT WEIGHT LBS.
C30986010	C30086010	5/8" x 2'-0"	CS00675	8
C30986011	C30086011	5/8" x 3'-0"	CS00675	10
C30986001	C30086001	5/8" x 4'-0"	CS00675	10
C30986008	C30086008*	5/8" x 4'-0"	CS00675	10
C30986005	C30086005	5/8" x 5'-0"	CS00675	11
C30986006	C30086006	5/8" x 6'-0"	CS00675	11
C30986017	C30086017**	5/8" x 6'-0"	CS00675	12
C30986002	C30086002	5/8" x 8'-0"	CS00675	13
C30986027	C30086027*	5/8" x 8'-0"	CS00675	14
C30986016	C30086016	5/8" x 10'-0"	CS00675	16
C30986007	C30086007	3/4" x 6'-0"	CS00676	12
C30986003	C30086003	3/4" x 8'-0"	CS00676	19
C30986004	C30086004	3/4" x 10'-0"	CS00676	22

\* THIS LIGHTNING ROD IS STAINLESS STEEL.  
\*\* THIS LIGHTNING ROD IS GALVANIZED.



ELEVATION

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES		MATERIAL:	
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"		TOLERANCES DO NOT APPLY TO RAW MATERIAL	
5	1/20/16	DLK	KD ADDED 5/8" X 8 STAINLESS STEEL LIGHTNING ROD
4	12/21/15	RWM	MMWR REMOVED 5/8" X 12 L/R C30986009, 3/4" X 13"
			L/R C30986012 AND 3/4" X 15 L/R C30986013.
3	12/9/15	RWM	MMWR REMOVED 3/4" X 20 L/R C30986014.
2	6/15/07	DLK	PSB ADDED 5/8" X 6 GALVANIZED LIGHTNING ROD
1	12/06/06	KTW	PSB ADDED 5/8" X 10 LIGHTNING ROD TO LIST
REV	DATE	DRW	CHK DESCRIPTION



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Towers and Poles

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LIGHTNING ROD/STIFFENER KITS

DATE	7/11/06	SIZE	B	DRAWING NO.	C30986	REV	5
DRAWN BY	DLK						
CHECKED BY	RWM					SCALE	None
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