

January 3, 2022

Waukesha Landmarks Commission  
Attn: Mr. Charlie Giffith  
201 Delafield Street, Room 200  
Waukesha, Wisconsin, 53188  
Phone: (262) 524-3529  
Email: cgriffith@waukesha-wi.gov

Subject: Invitation to Comment  
616520796 / DT Waukesha  
222 Park Place, Waukesha, Waukesha County, Wisconsin  
EBI Project #6121010776

Dear Mr. Charlie Griffith:

Pursuant to Section 106 of the National Historic Preservation Act, the regulations promulgated thereunder and interagency agreements developed thereto, EBI Consulting, Inc., on behalf of Cellco Partnership and its controlled affiliates doing business as Verizon Wireless (Verizon Wireless), provides this notice of a proposed telecommunications facility installation at the address listed above.

EBI would like to inquire if you would be interested in commenting on this proposed project. Verizon Wireless proposes to collocate antennas at 79-feet on an existing 87-foot, 2-inch building. Please refer to the attached project plans for additional details regarding this proposed project.

Please note that we are requesting your review of the attached information as part of the Section 106 process only and not as part of the local zoning process. We are only seeking comments related to the proposed project's potential effect to historic properties.

Please submit your comments regarding the proposed project's potential effect on historic properties to EBI Consulting, to my attention at 6876 Susquehanna Trail South, York, PA 17403 or contact me via telephone at the number listed below. Please reference the EBI project number. We would appreciate your comments as soon as possible within the next 30 days. Please do not hesitate to contact me if you have any questions or concerns about the proposed project.

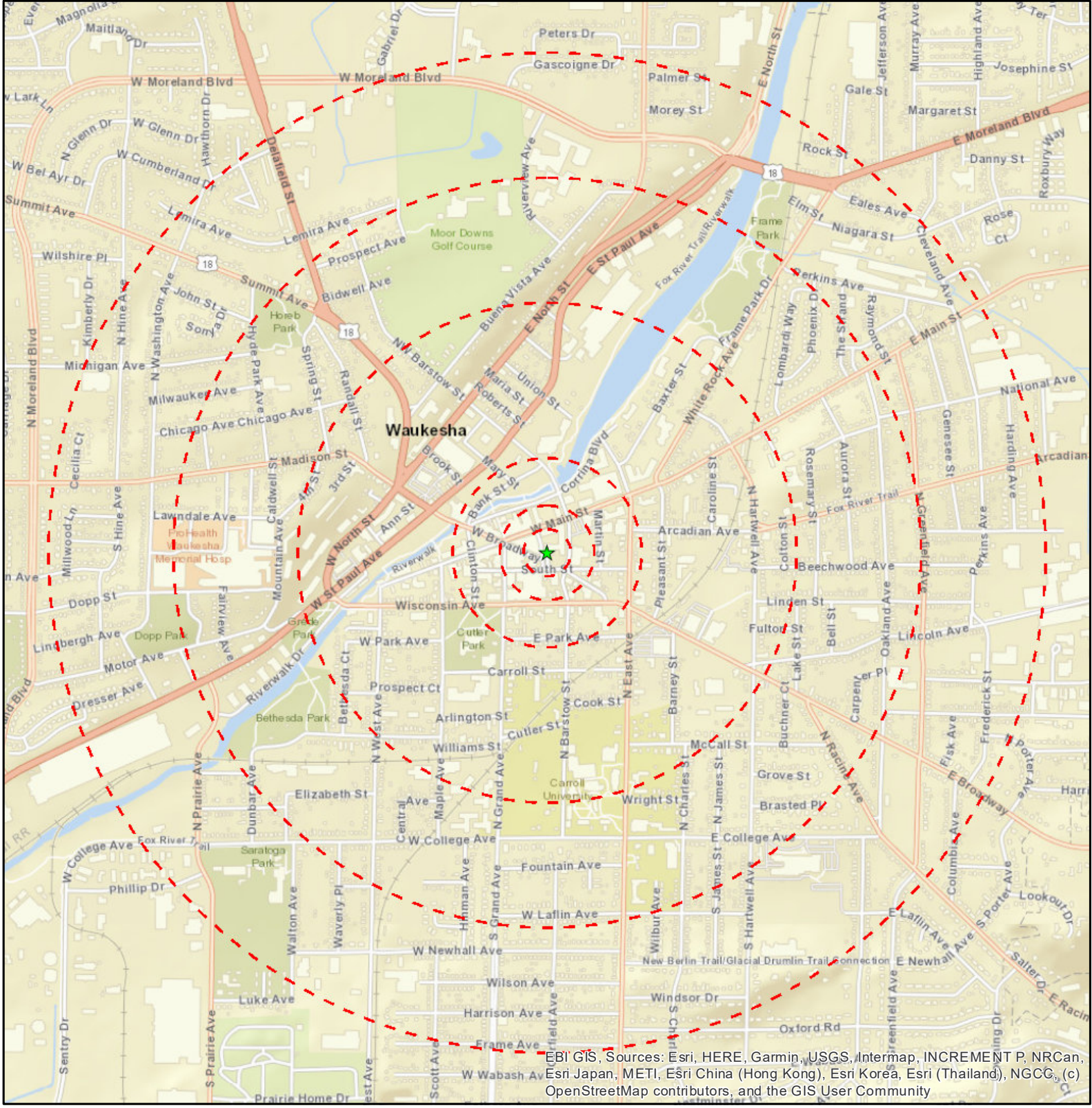
Please note that this project will be entered into the Federal Communication Commission's e106 System, which will send notifications of the project throughout the Section 106 process.

Respectfully Submitted,



Sarah Addleman  
Architectural Historian  
saddleman@ebiconsulting.com  
757-354-7566

Attachments - Drawings and Maps



EBCI GIS, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

**Legend**

- ★ Project Site
- Site Radius at 250', 500', 1000', 1/2, 3/4 & 1 mile

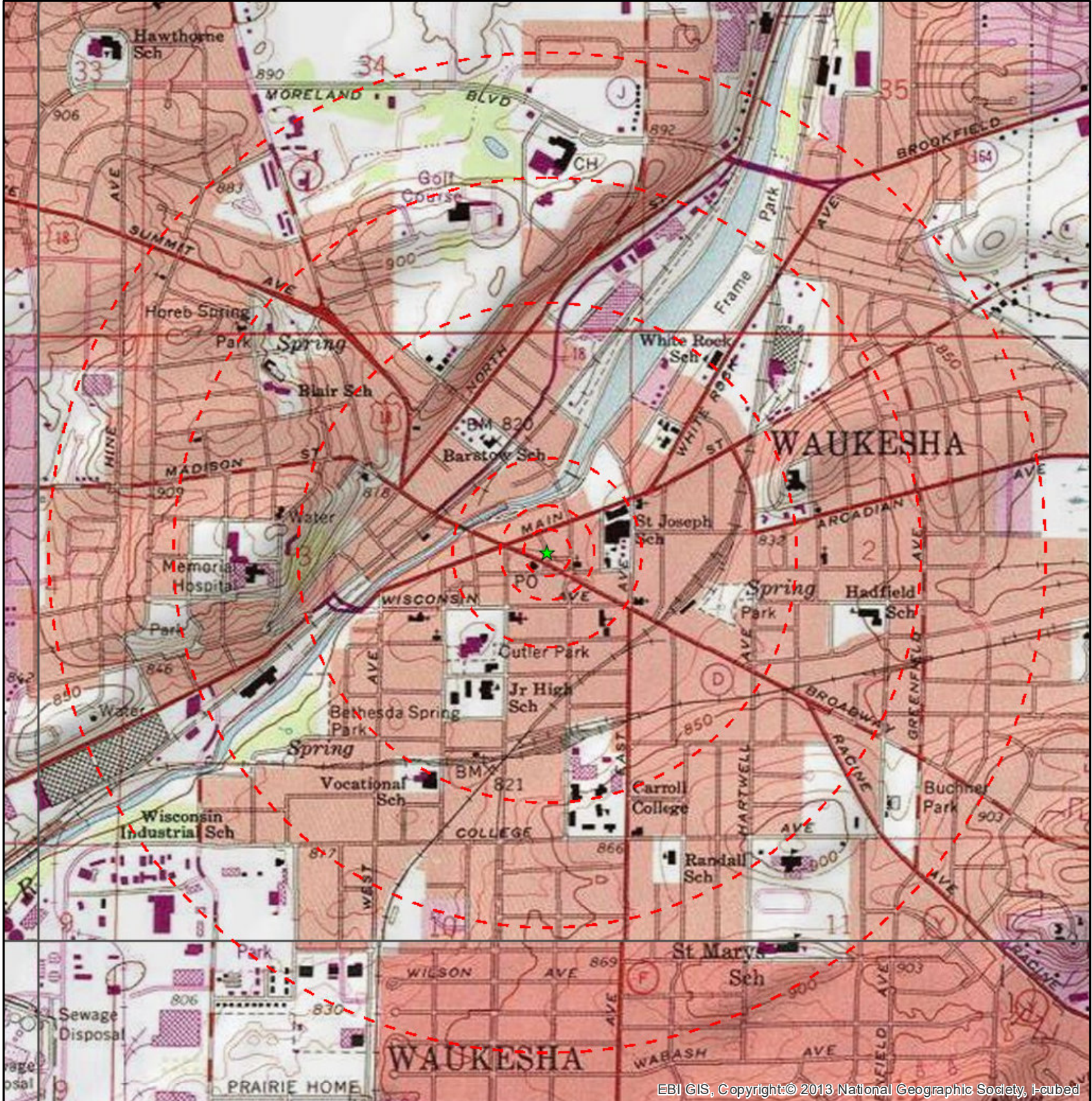
Date: 12/16/2021

**Figure 1: Site Location Map**

**616520796 DT WAUKESHA - C**  
**222 PARK PLACE**  
**WAUKESHA, WI 53186**

PN: 6121010776

**EBI Consulting**  
environmental | engineering | design



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**Legend**

- ★ Project Site
- Site Radius at 250', 500', 1000', 1/2, 3/4 & 1 mile

USGS 24K Quad: Waukesha, WI 1986

Date: 12/16/2021

**Figure 2 - Topographic Map**

**616520796 DT WAUKESHA - C**  
**222 PARK PLACE**  
**WAUKESHA, WI 53186**

PN: 6121010776



**CONSULTANT TEAM**

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

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

STRUCTURAL:

**APPROVALS**

REAL ESTATE: \_\_\_\_\_

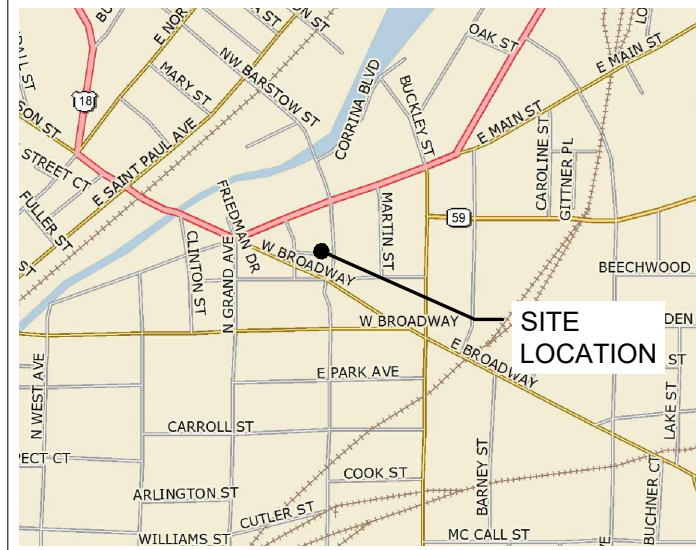
RF: \_\_\_\_\_

CONSTRUCTION: \_\_\_\_\_

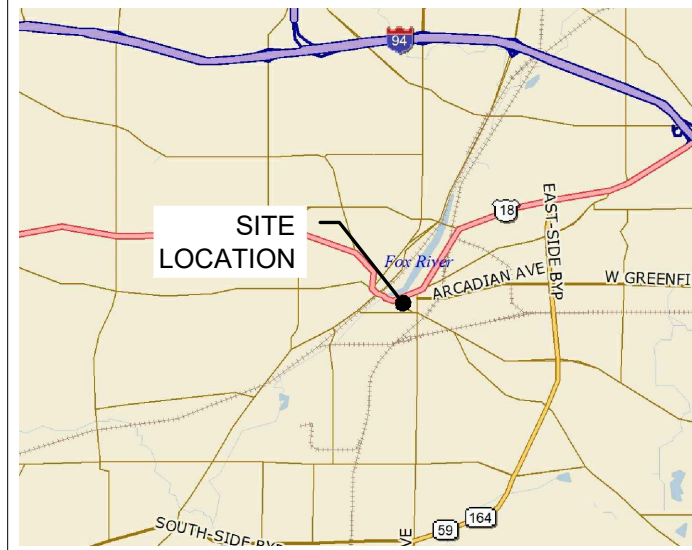
EQUIPMENT ENGINEERING: \_\_\_\_\_

OPERATIONS: \_\_\_\_\_

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



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



**PROJECT TYPE**

PROPOSED ANTENNAS AND EQUIPMENT PLATFORM INSTALLATION ON EXISTING BUILDING.

**PROJECT INFORMATION**

SITE COORDINATES: LATITUDE: 43° 00' 40.47" N (1A CERTIFICATION)  
LONGITUDE: 88° 13' 47.48" W (1A CERTIFICATION)

ELEVATION: ±821.5' (1A)

ADDRESS: 222 PARK PL  
WAUKESHA, WI 53186

UTILITIES: POWER: T.B.D. FIBER: T.B.D.

JURISDICTION: CITY OF WAUKESHA

OCCUPANCY: UNINHABITED

ZONING: B-2

CONSTRUCTION TYPE: ROOF TOP

PROPERTY OWNER: PRESBYTERIAN HOMES & SERVICES  
222 PARK PL  
WAUKESHA, WI 53186

CONTACT PERSON: LISA FLECKENSTEIN (262) 446-9301

APPLICANT: VERIZON WIRELESS  
1701 GOLF ROAD, TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008

CONSTRUCTION MANAGER: DOUG OHLSON (847) 706-7668

REAL ESTATE MANAGER: DANNY PEREZ (847) 706-1765



1701 GOLF ROAD, TOWER 2, SUITE 400  
ROLLING MEADOWS, ILLINOIS 60008  
PHONE: (847) 619-5397 FAX: (847) 706-7415

**LOCATION NUMBER: 54436I**

**SITE NAME: DT WAUKESHA**

**222 PARK PL  
WAUKESHA, WI 53186**

**FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.**

SHEET	DRAWING INDEX	REVISION
T-1	TITLE SHEET	-
LP	LOCATION PLAN	-
A-1	ROOF PLAN	-
A-1A	ENLARGED ROOF PLAN AT ANTENNAS	-
A-2	EQUIPMENT LAYOUT PLAN	-
A-3	EQUIPMENT DETAILS	-
A-4	SITE DETAILS	-
A-5	SITE DETAILS	-
A-6	CABLE ROUTING AT FIRST FLOOR	-
A-6A	CABLE ROUTING AT 2ND THRU 5TH FLOORS	-
EQ-1	EQUIPMENT DETAILS	-
EQ-2	EQUIPMENT DETAILS	-
ANT-1	SITE ELEVATION	-
ANT-1A	SITE ELEVATION	-
ANT-2	ANTENNA INFORMATION	-
ANT-2A	ANTENNA INFORMATION	-
ANT-3	ANTENNA LAYOUT PLAN	-
ANT-4	SITE DETAILS	-
E-1	UTILITY ROUTING PLAN (AT PARKING LEVEL)	-
E-2	GROUNDING PLAN AT EQUIPMENT	-
E-2A	GROUNDING PLAN AT ANTENNAS	-
E-3	ELECTRICAL AND GROUNDING DETAILS	-
E-4	LIGHTING PLAN AT EQUIPMENT	-
E-5	SINGLE LINE DIAGRAM AND PANEL SCHEDULE	-
SP-1	SPECIFICATIONS	-
SP-2	SPECIFICATIONS	-
P-1	SITE PHOTOS	-
P-2	SITE PHOTOS	-
22" x 34" IS FULL SCALE. 11" x 17" IS HALF SCALE.		
ATTACHMENTS		
S-1	GENERAL NOTES AND ROOF PLAN	-
S-2	PLATFORM FRAMING PLAN	-
S-3	PLATFORM DETAILS	-
L-1	SITE SURVEY	-
L-2	ROOF SURVEY	-
L-3	ROOF SURVEY	-
-	RFDS (BY OTHERS)	-



NO.	DESCRIPTION	BY	DATE
		KSS	08/19/20
1	REVISED ANTENNA LOCATIONS	RC	10/17/21

**LOC. # 54436I**

**DT WAUKESHA**

222 PARK PL  
WAUKESHA, WI 53186

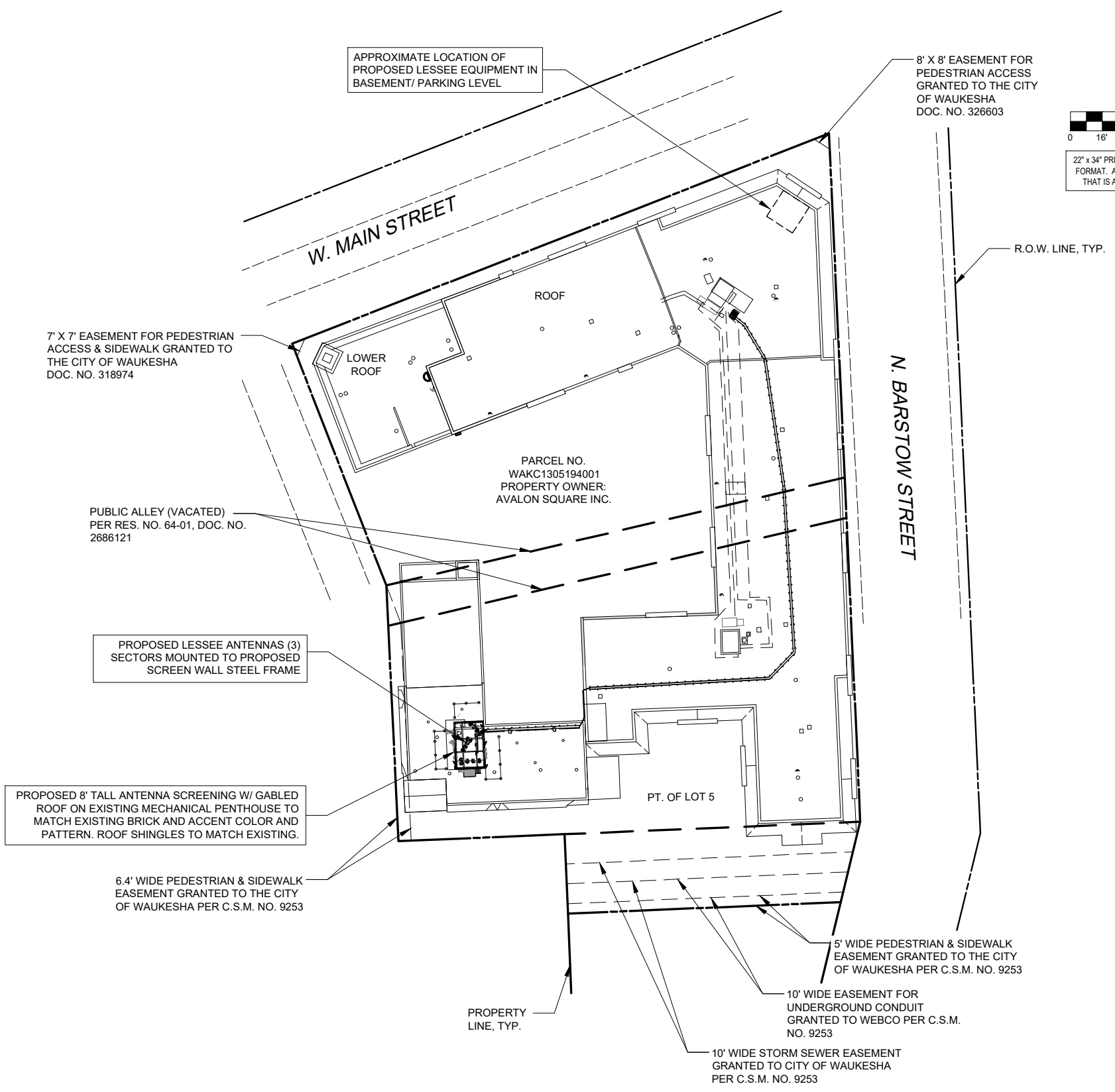
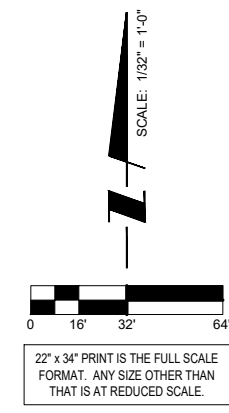
DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**

**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

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



SURVEY PERFORMED BY:

**MERIDIAN**  
**SURVEYING, LLC**

N8774 Firelane 1 Office: 920-993-0881  
 Menasha, WI 54952 Fax: 920-273-6037

**LEGEND**

- 4" ROOF VENT
- ⌒ DOOR
- ⊕ ROOF DRAIN
- ⊗ WATER SPIGOT

PROPERTY LINE ————

FENCE — X — X —

OVERHEAD POWER LINE — OHE — OHE —

UNDERGROUND TELCO — UGT — UGT —

UNDERGROUND POWER — UGE — UGE —



OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

**1** LOCATION PLAN  
 SCALE: 1/32" = 1'-0"

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
**LOCATION PLAN**

SHEET NUMBER  
**LP**

NOTE:  
 \* CONTRACTOR TO X-RAY WALL,  
 PRIOR TO PENETRATIONS. DO NOT  
 CUT REINFORCEMENT.

\* FIRE STOP ALL PENETRATIONS.  
 \* CORE DRILL FLOOR, WALL & SEAL  
 AFTER CONDUITS INSTALLATION.  
 \* INSTALL PULL/JUNCTION BOXES  
 AS NECESSARY PER CODE.

NOTE:  
 PROPOSED RF TRANSPARENT ENCLOSURE  
 ON EXISTING PENTHOUSE TO MATCH  
 EXISTING PENTHOUSE BRICK, ACCENT  
 COLOR AND PATTERN. ROOF SHINGLES TO  
 MATCH EXISTING.

PROPOSED 10' TALL RF TRANSPARENT  
 SCREENWALL W/ GABLED ROOF AND  
 SUPPORT STRUCTURE AT ANTENNA  
 PLATFORM TO BE DESIGNED AND  
 ENGINEERED BY OTHERS (4 WALLS  
 AND ROOF)

PROPOSED LESSEE BETA SECTOR  
 ANTENNAS MOUNTED TO PROPOSED  
 SCREEN WALL STEEL FRAME.  
 PENDING STRUCTURAL ANALYSIS.

PROPOSED LESSEE GAMMA SECTOR  
 ANTENNAS MOUNTED MOUNTED TO  
 PROPOSED SCREEN WALL STEEL  
 FRAME.

PROPOSED LESSEE ALPHA SECTOR  
 ANTENNAS MOUNTED TO PROPOSED  
 SCREEN WALL STEEL FRAME. PENDING  
 STRUCTURAL ANALYSIS.

PROPOSED HORIZONTAL CABLE TRAY  
 PAINTED TO MATCH EXISTING  
 MECHANICAL PENTHOUSE

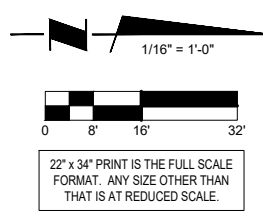
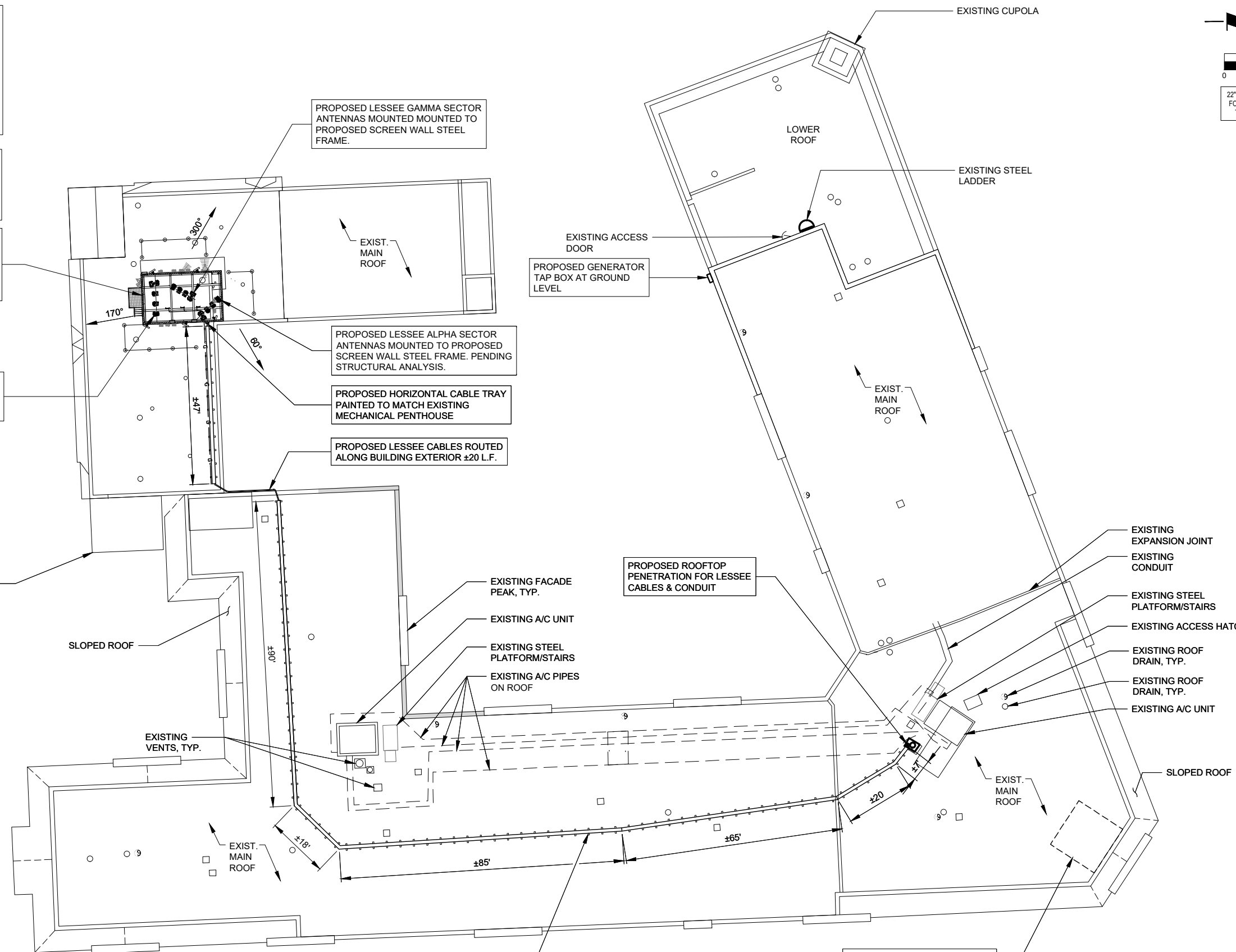
PROPOSED LESSEE CABLES ROUTED  
 ALONG BUILDING EXTERIOR ±20 L.F.

PROPOSED GENERATOR  
 TAP BOX AT GROUND  
 LEVEL

PROPOSED ROOFTOP  
 PENETRATION FOR LESSEE  
 CABLES & CONDUIT

PROPOSED NON-PENETRATING  
 ROOF TOP CABLE TRAY (TYP.)

APPROXIMATE LOCATION OF  
 PROPOSED LESSEE EQUIPMENT  
 AT BASEMENT/ PARKING LEVEL



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

**TERRA**  
 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
 PH: 847-498-6400  
 FAX: 847-698-6401

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY: KSS  
 CHECKED BY: DS  
 DATE: 08/03/20  
 PROJECT #: 33-3301

SHEET TITLE  
**ROOF PLAN**

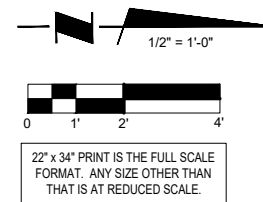
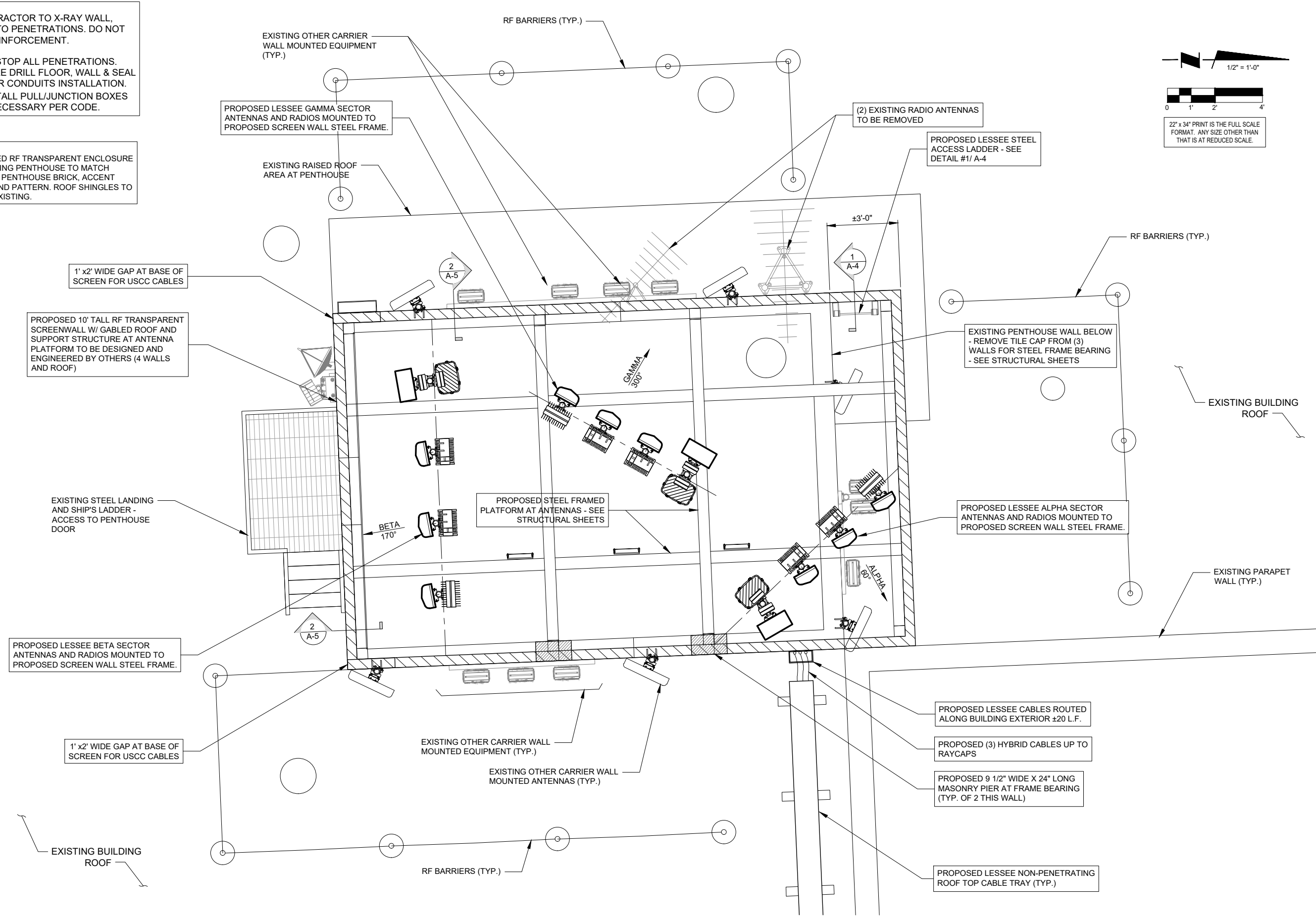
SHEET NUMBER  
**A-1**

1 ROOF TOP PLAN  
 SCALE: 1/16" = 1'-0"

NOTE:  
 \* CONTRACTOR TO X-RAY WALL,  
 PRIOR TO PENETRATIONS. DO NOT  
 CUT REINFORCEMENT.

\* FIRE STOP ALL PENETRATIONS.  
 \* CORE DRILL FLOOR, WALL & SEAL  
 AFTER CONDUITS INSTALLATION.  
 \* INSTALL PULL/JUNCTION BOXES  
 AS NECESSARY PER CODE.

NOTE:  
 PROPOSED RF TRANSPARENT ENCLOSURE  
 ON EXISTING PENTHOUSE TO MATCH  
 EXISTING PENTHOUSE BRICK, ACCENT  
 COLOR AND PATTERN. ROOF SHINGLES TO  
 MATCH EXISTING.



1 ENLARGED ROOFTOP PLAN  
 SCALE: 1/2" = 1'-0"

**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

**TERRA**  
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 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
 PH: 847-498-6400  
 FAX: 847-698-6401

NO.	DESCRIPTION	DATE	BY
1	REVISED ANTENNA LOCATIONS	10/17/21	RC
	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS

LOC. # 544361

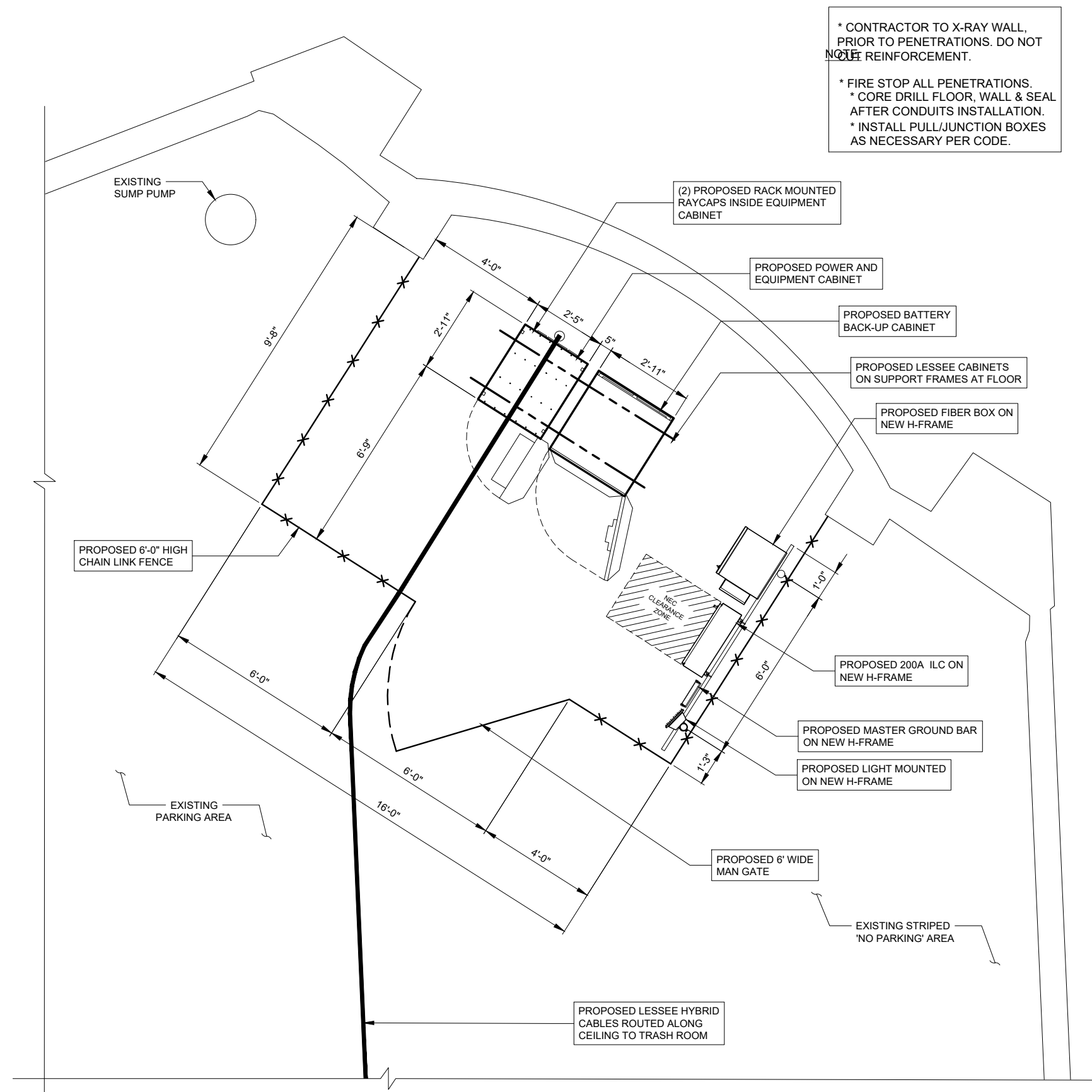
DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

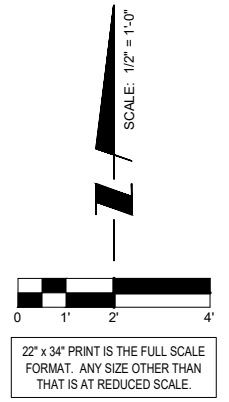
DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
 ENLARGED  
 ROOFTOP PLAN

SHEET NUMBER  
**A-1A**



\* CONTRACTOR TO X-RAY WALL, PRIOR TO PENETRATIONS. DO NOT ~~NOTE~~ REINFORCEMENT.  
 \* FIRE STOP ALL PENETRATIONS.  
 \* CORE DRILL FLOOR, WALL & SEAL AFTER CONDUITS INSTALLATION.  
 \* INSTALL PULL/JUNCTION BOXES AS NECESSARY PER CODE.



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
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**TERRA**  
 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
 PH: 847-698-6400  
 FAX: 847-698-6401

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
**EQUIPMENT LAYOUT PLAN**

SHEET NUMBER  
**A-2**

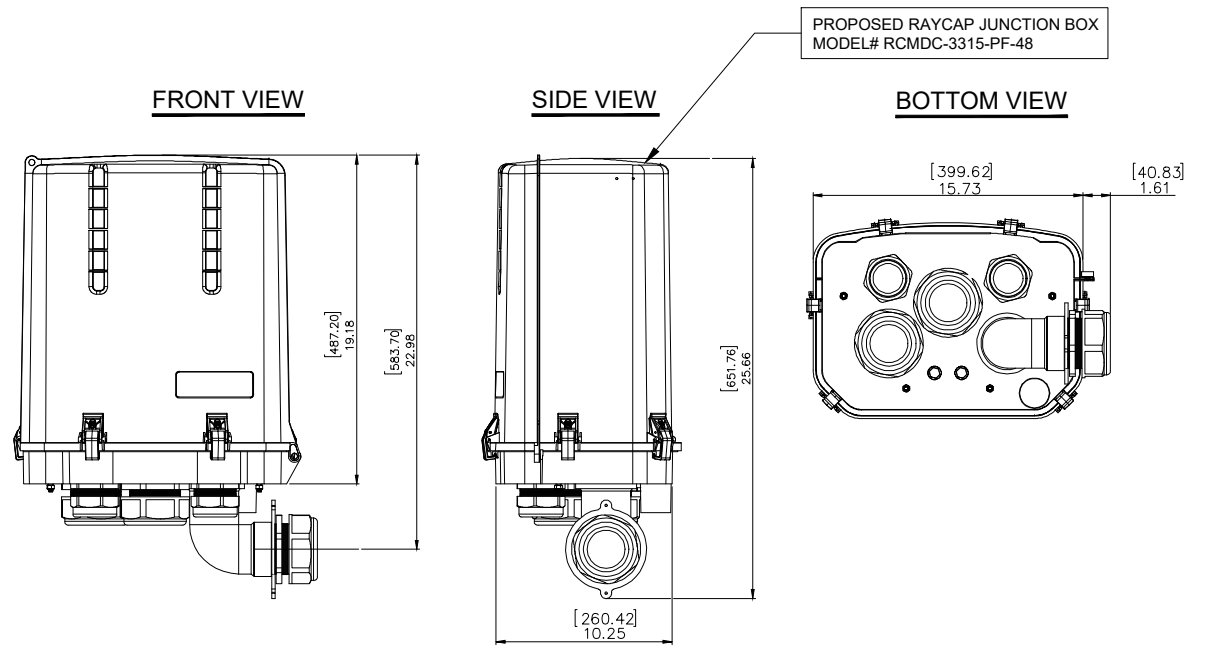
**1** EQUIPMENT LAYOUT PLAN (AT BASEMENT/ PARKING LEVEL)  
 SCALE: 1/2" = 1'-0"

**NOTE:**  
 VERIZON WIRELESS SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE DURING CONSTRUCTION AND ANY DAMAGES TO ROOF SURFACE DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION

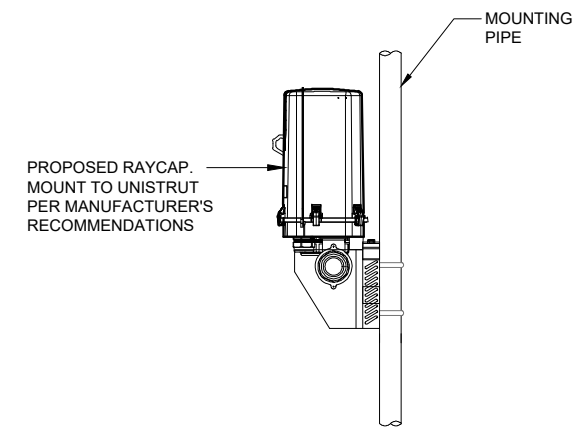


SPECIFICATIONS DC SURGE PROTECTION FOR RRU/INTEGRATED ANTENNA RADIO HEAD  
 APPLICATION: TOWER / BASE / ROOFTOP / ROOFTOP DISTRIBUTION MODELS  
 WEIGHT: 32LBS (14.51 KG)

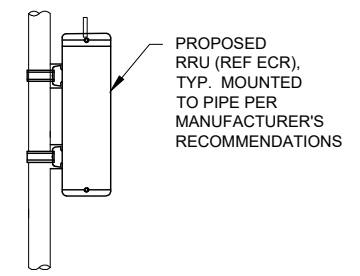
[mm]  
 INCHES



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



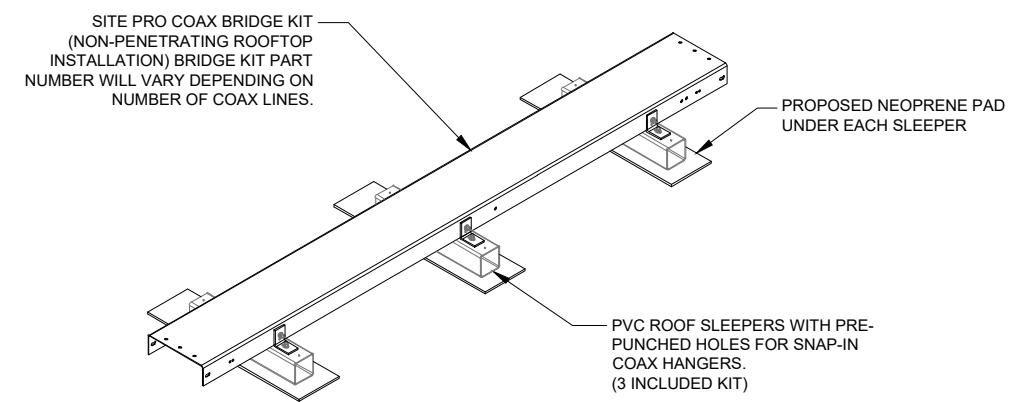
2 RAYCAP MOUNT DETAIL AT SECTOR  
 SCALE: N.T.S.



3 RRU MOUNT DETAIL AT SECTOR  
 SCALE: N.T.S.

BRIDGE KIT SITEPRO 1 P/N	# OF RUNS	COVER SIZE
SP1542 SP1542D (STACKABLE)	4	11-1/2" x 8'-0"
S1543 SP1542D (STACKABLE)	8	21 1/2" x 8'-0"
SP1595 SP1542D (STACKABLE)	12	33" x 8'-0"

- NOTE:
- AT TURNS USE SITE PRO ADJUSTABLE SPLICES FOR 0° TO 45° BENDS AND 45° TO 90° BENDS
  - CONTRACTOR TO SUPPLY SUFFICIENT SLACK AT BOTH ENDS OF CABLE TRAY. CABLE TRAY SHOULD BE ABLE TO BE TEMPORARILY SHIFTED FOR ROOF MAINTENANCE.
  - IF CABLE BRIDGE REQUIRES TEMPORARY RELOCATION (DUE TO ROOF MAINTENANCE) REMOVE THE BRIDGE COVER TO EASE THE MOVEMENT OF THE NON-PENETRATING SLEEPERS.



6 ROOF MOUNTED COAX SUPPORT  
 SCALE: N.T.S.

**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
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		08/19/20	KSS
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LOC. # 544361

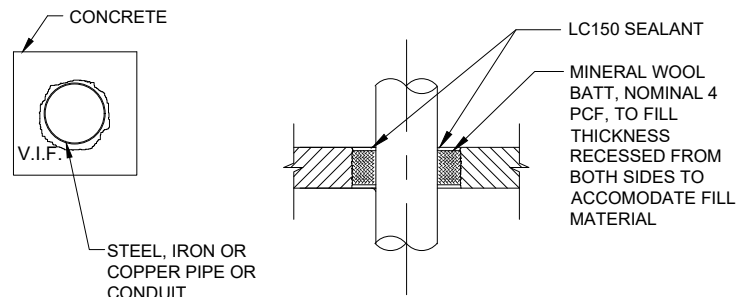
DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

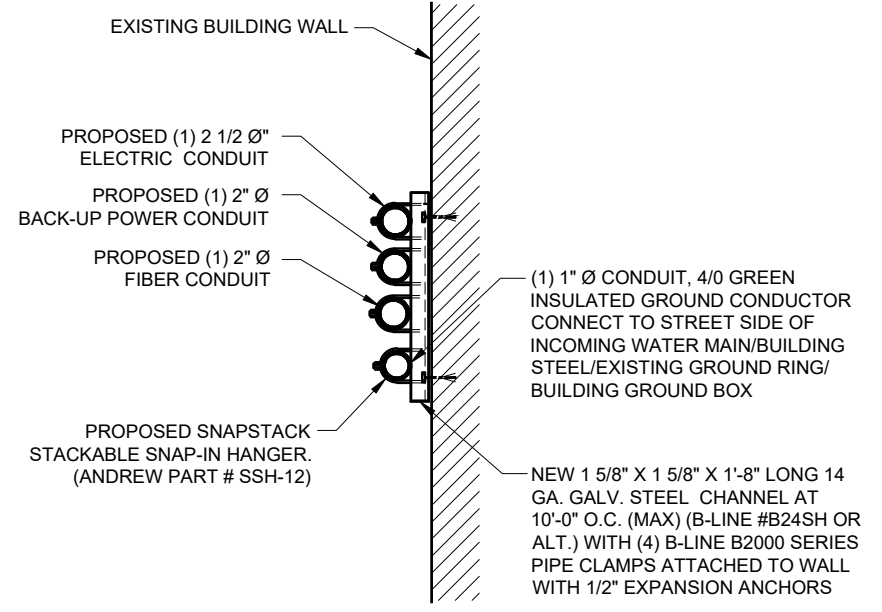
SHEET TITLE  
 EQUIPMENT  
 DETAILS

SHEET NUMBER  
**A-3**

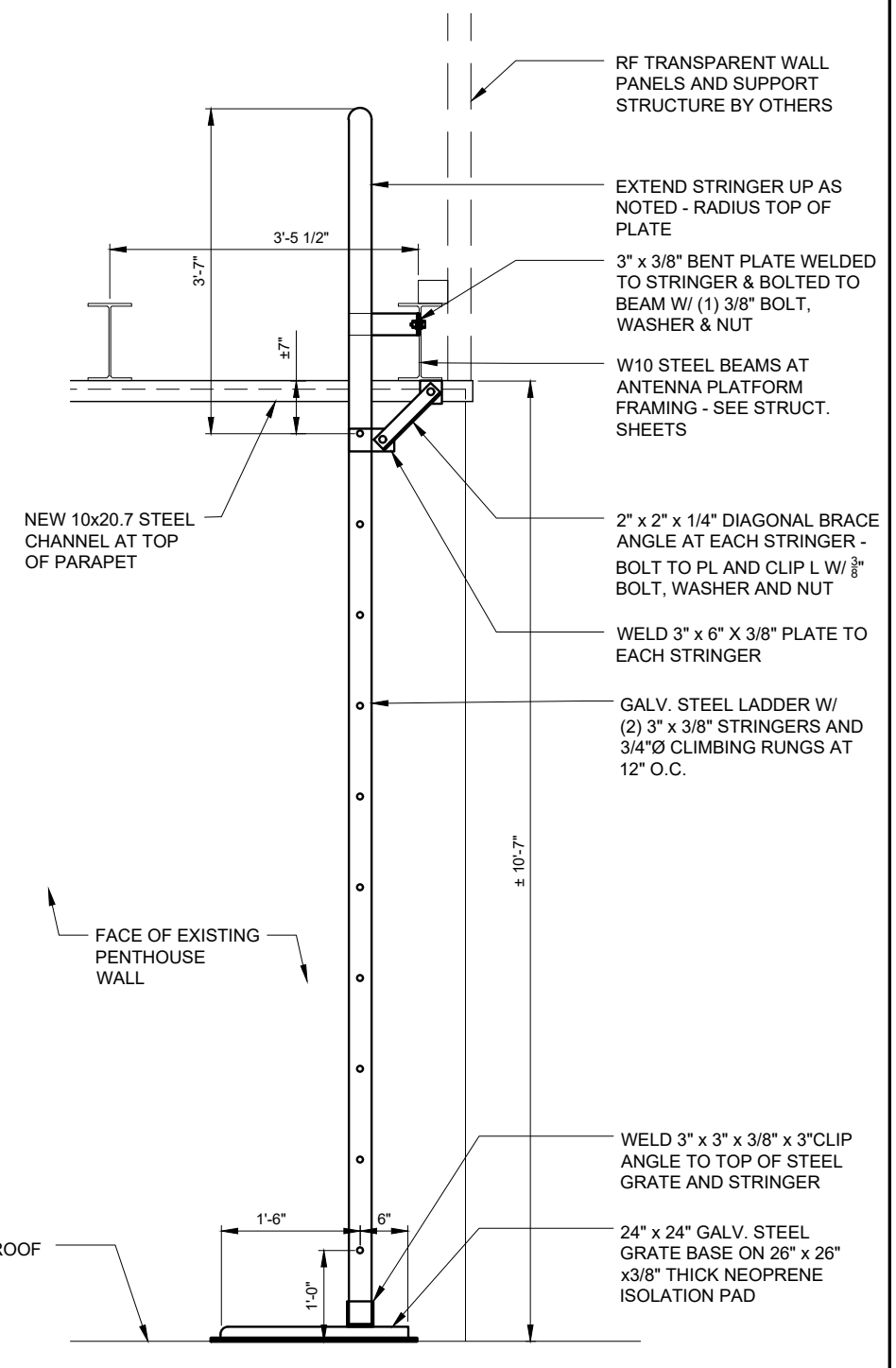


PENETRANT	MAXIMUM TRADE SIZE (IN.)	SEALANT DEPTH (IN.)	MINERAL WOOL (IN.)	ANNULUS (IN.)	
				MINIMUM	MAXIMUM
STEEL OR IRON	24	1/2	3	POINT CONTACT	2
STEEL OR IRON	4	1	NONE REQ'D.	POINT CONTACT	1-1/2
COPPER	4	1/2	3	POINT CONTACT	2

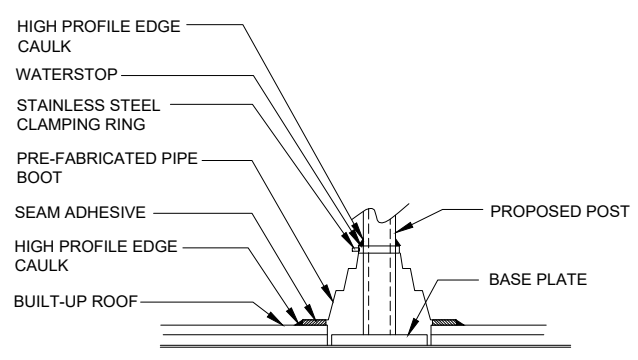
**4** UL C-AJ-1213 FIRE STOP DETAIL (FOR ALL PENETRATIONS)  
N.T.S.



**6** WALL MOUNTED CONDUIT SUPPORT  
N.T.S.

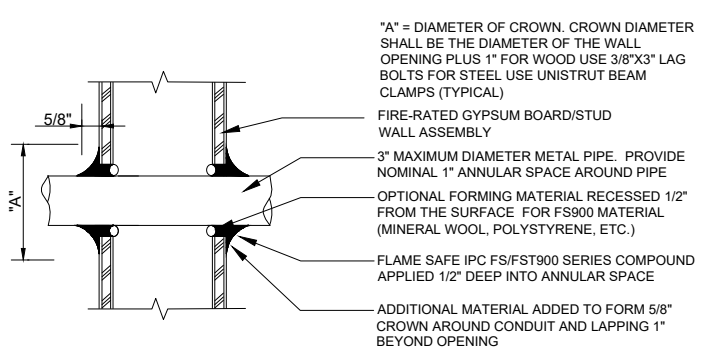


**1** ACCESS LADDER TO PENTHOUSE ROOF  
SCALE: 1" = 1'-0"

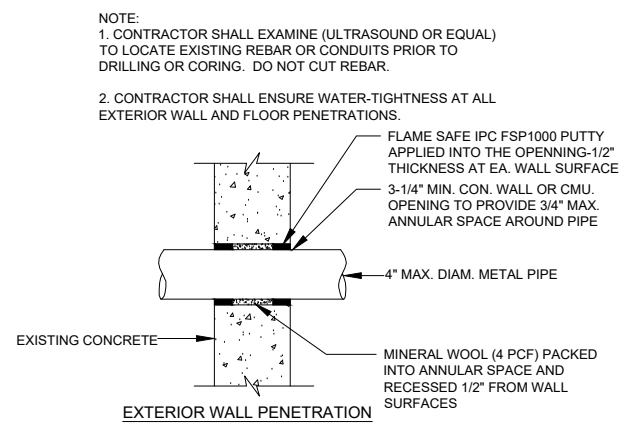


NOTE:  
G.C. TO CONTRACT WITH BUILDING APPROVED ROOFING CONTRACTOR FOR ALL ROOF REPAIRS.  
  
FLASHING SHOWN HERE AS GUIDE. ROOFING CONTRACTOR TO UTILIZE BEST METHODS FOR REPAIRS.

**3** TYPICAL PIPE COLUMN FLASHING DETAIL  
SCALE: N.T.S.



FRAMED WALL PENETRATION



EXTERIOR WALL PENETRATION

**2** CONDUIT WALL PENETRATION  
N.T.S.

NO.	DESCRIPTION	DATE	BY	RC
			KSS	
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21		

LOC. # 544361

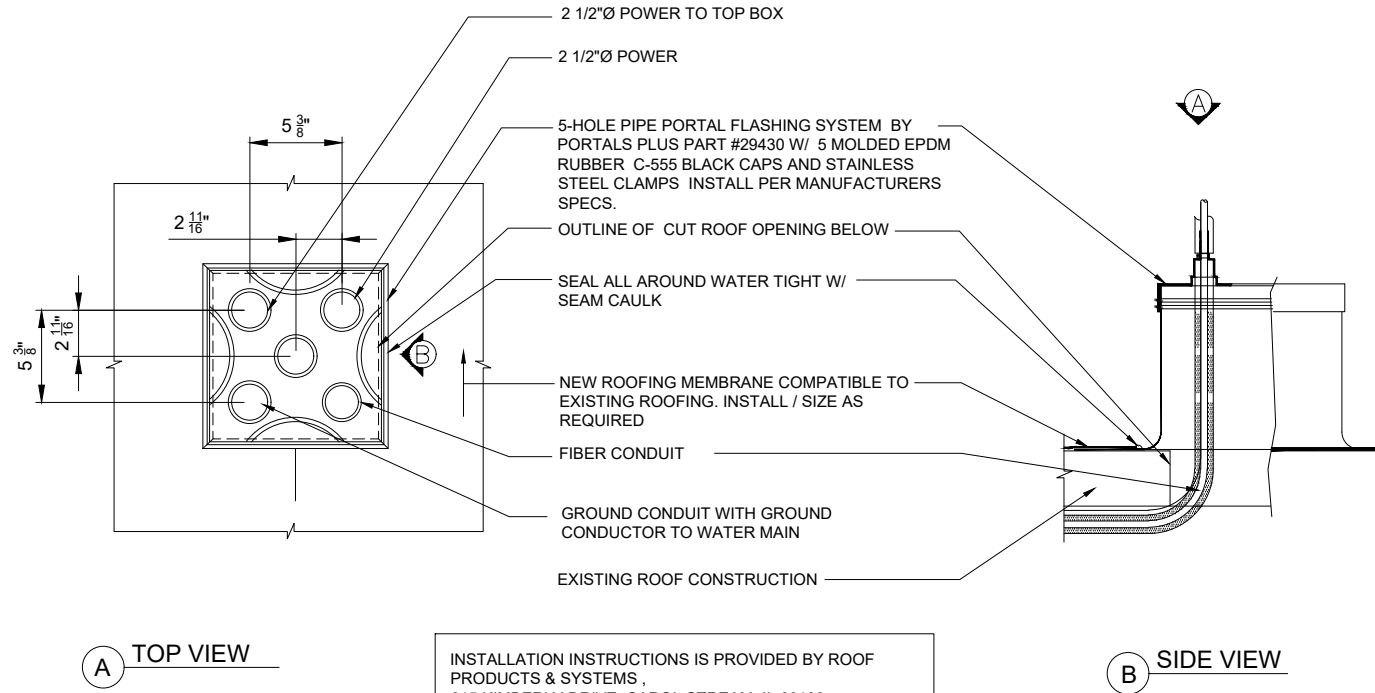
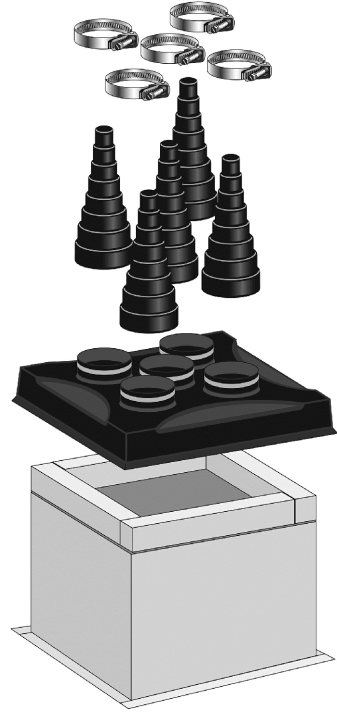
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WAUKESHA, WI 53186

DRAWN BY:	KSS
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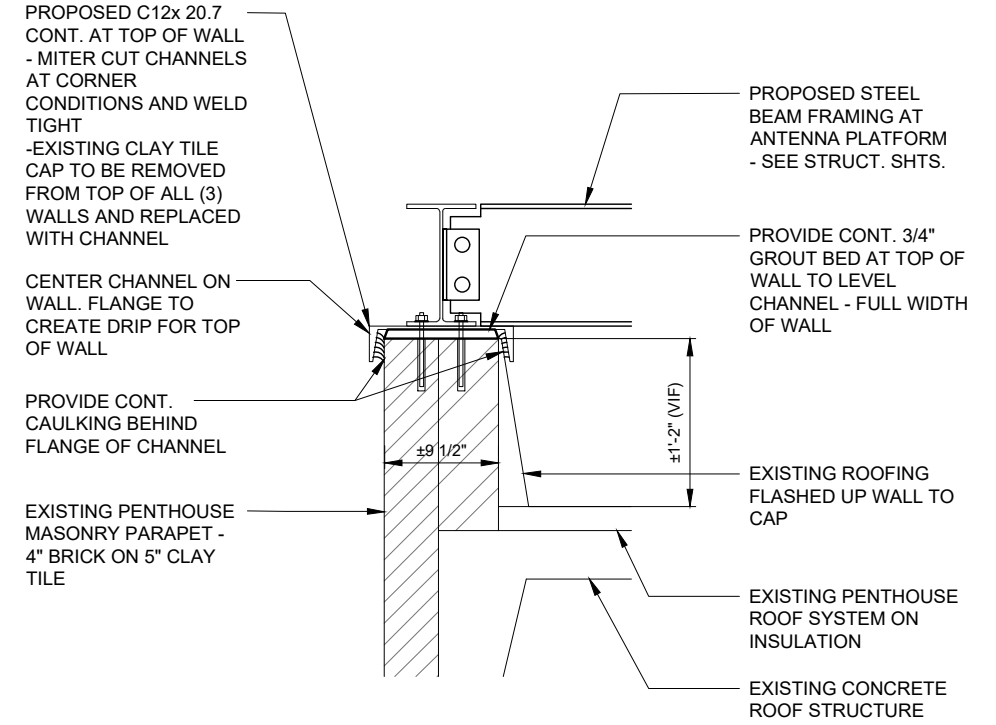
SHEET TITLE  
**SITE DETAILS**

SHEET NUMBER  
**A-4**



INSTALLATION INSTRUCTIONS IS PROVIDED BY ROOF PRODUCTS & SYSTEMS ,  
 815 KIMBERLY DRIVE, CAROL STREAM, IL 60188  
 PHONE: (800) 624-8642 (OR EQUAL FOR MANUFACTURER  
 INSTALLATION SPECIFICATIONS AND REQUIREMENTS

**1 CONDUIT FLASHING DETAIL**  
 N.T.S.



**2 PENTHOUSE PARAPET DETAIL**  
 SCALE: 1-1/2" = 1'-0"

**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

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

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

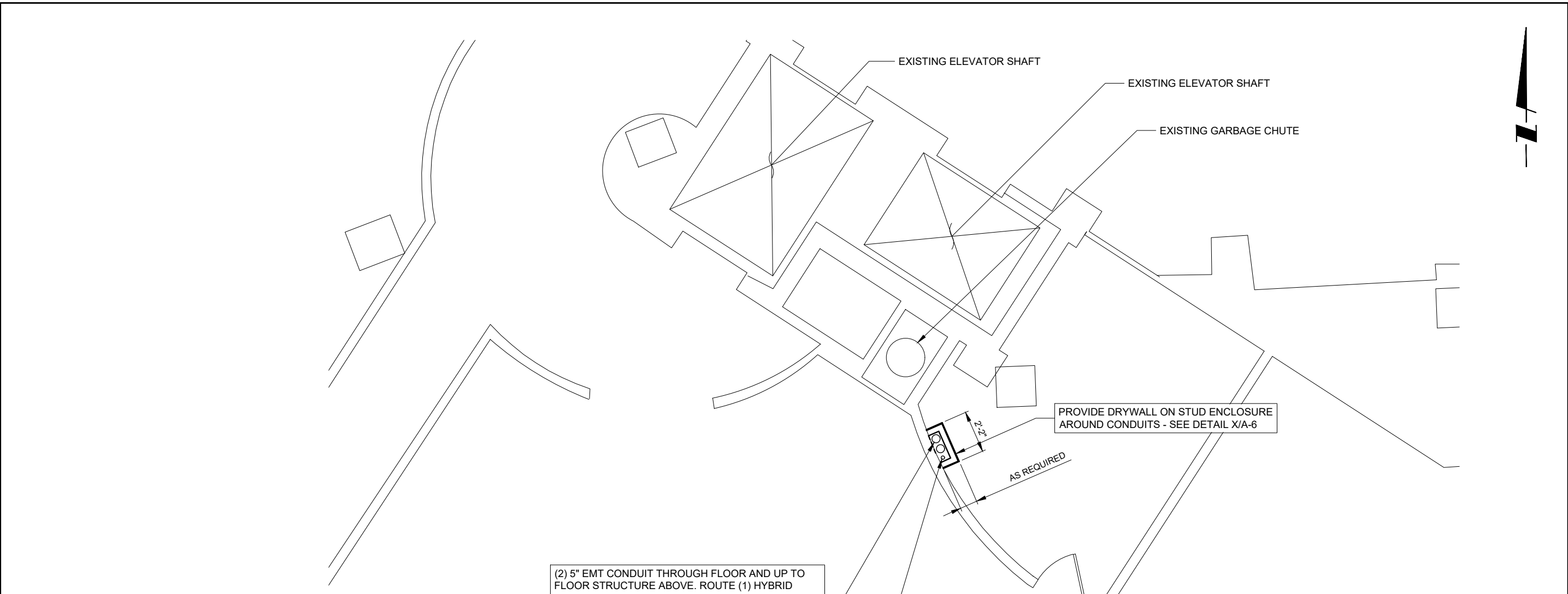
DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
 SITE  
 DETAILS

SHEET NUMBER  
**A-5**



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

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

NO.	DESCRIPTION	DATE	BY
1	REVISED ANTENNA LOCATIONS	10/17/21	RC
	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS

LOC. # 544361

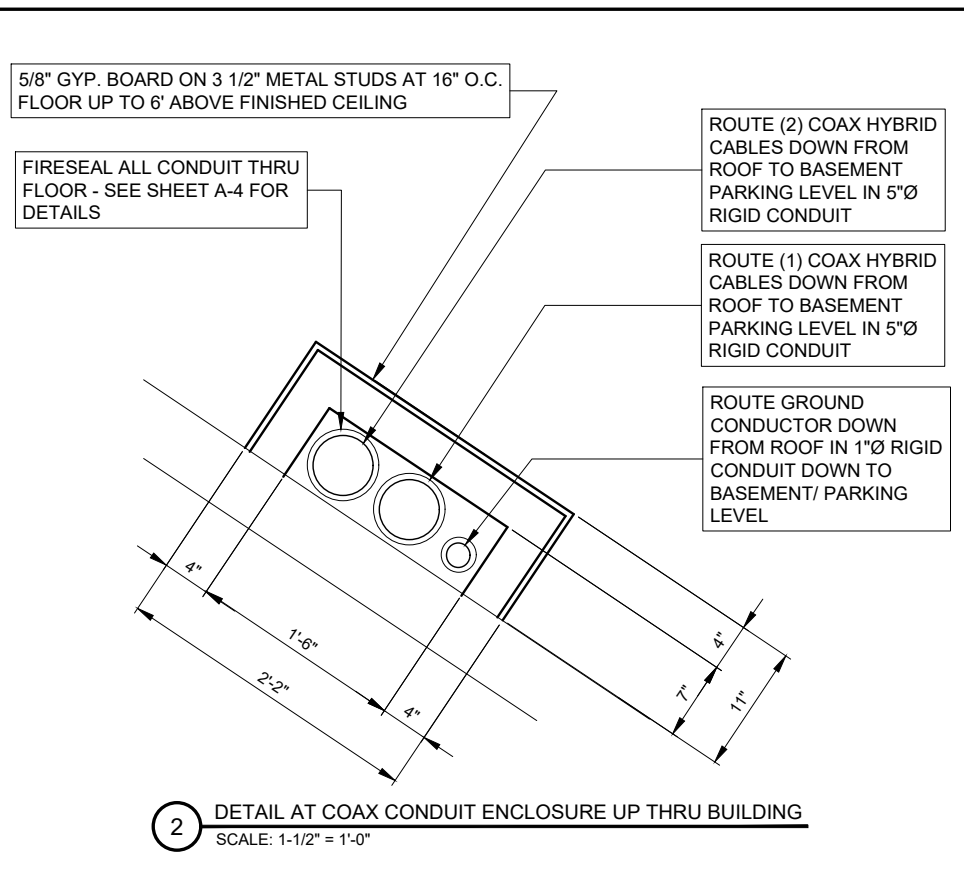
DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
 UTILITY ROUTING PLAN  
 AT 1ST FLOOR

SHEET NUMBER  
**E-1A**



(2) 5" EMT CONDUIT THROUGH FLOOR AND UP TO FLOOR STRUCTURE ABOVE. ROUTE (1) HYBRID CABLE AND (2) HYBRID CABLE IN CONDUIT. CORE DRILL 6" HOLE THROUGH CONCRETE FLOOR. REFER TO DETAIL #4 ON SHEET A-4 FOR FIRESTOP DETAIL

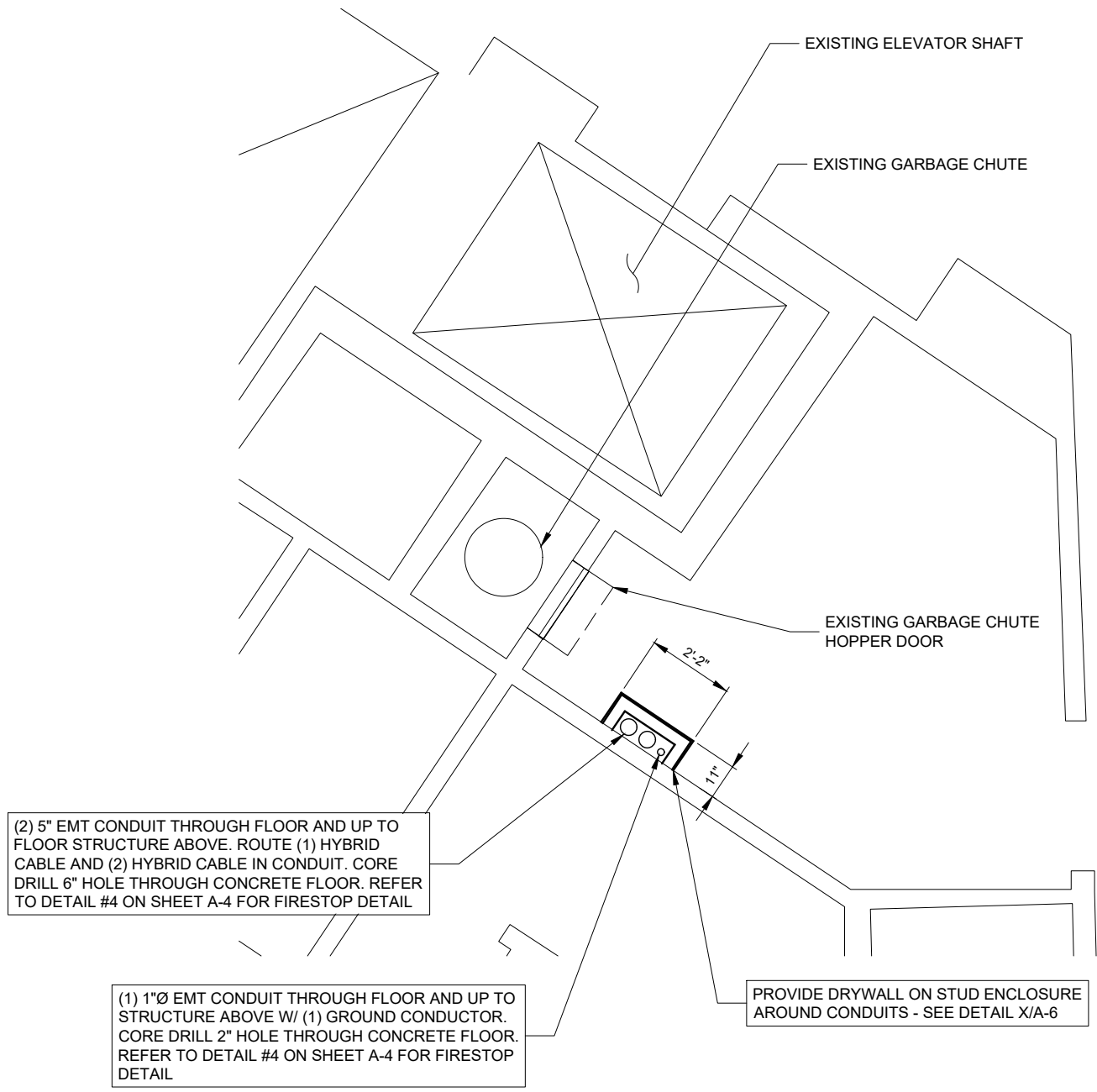
(1) 1"Ø EMT CONDUIT THROUGH FLOOR AND UP TO STRUCTURE ABOVE W/ (1) GROUND CONDUCTOR. CORE DRILL 2" HOLE THROUGH CONCRETE FLOOR. REFER TO DETAIL #4 ON SHEET A-4 FOR FIRESTOP DETAIL

**1** OVERALL UTILITY ROUTING PLAN AT FIRST FLOOR LEVEL  
 SCALE: 3/8" = 1'-0"

NOTE:  
 CONTRACTOR TO FIREPROOF ALL PENETRATIONS. SEE DETAILS ON SHEET A-4

**FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.**

**2** DETAIL AT COAX CONDUIT ENCLOSURE UP THRU BUILDING  
 SCALE: 1-1/2" = 1'-0"



**1** ENLARGED UTILITY ROUTING PLAN THRU GARBAGE CHUTE ROOM  
 SCALE: 1/2" = 1'-0"  
 FLOORS 2 THRU 5

NOTE:  
 CONTRACTOR TO FIREPROOF ALL PENETRATIONS. SEE DETAILS ON SHEET A-4

**FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.**

NO.	DESCRIPTION	DATE	BY
1	REVISED ANTENNA LOCATIONS	10/17/21	RC
	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS

LOC. # 544361

DT WAUKESHA

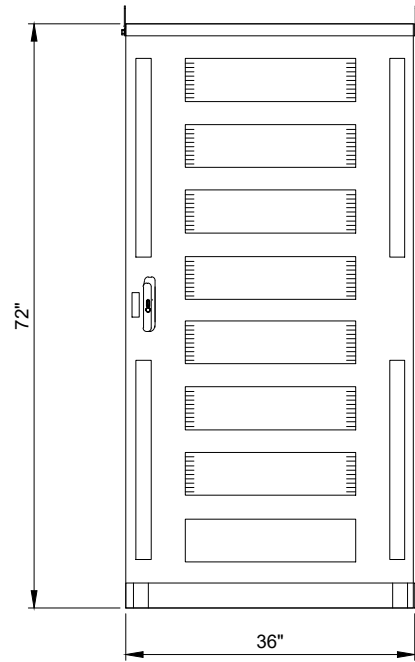
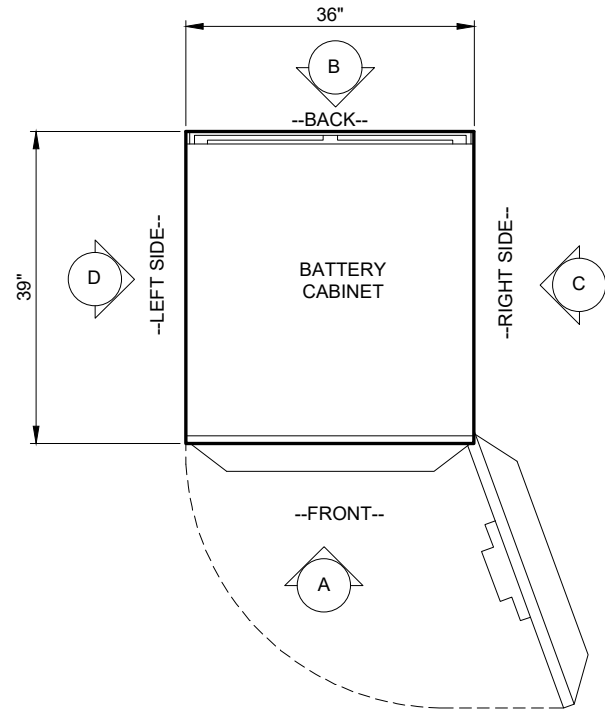
222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

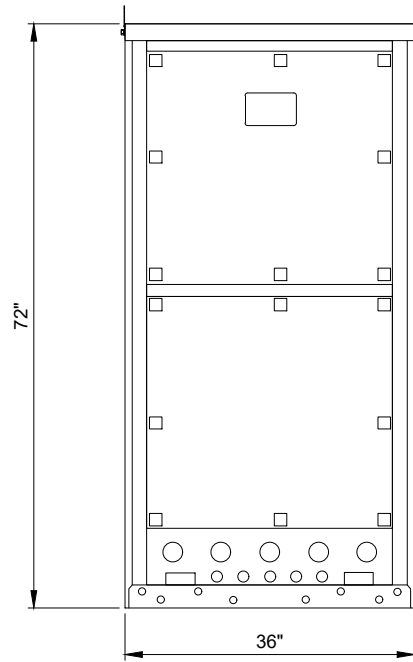
SHEET TITLE  
 UTILITY ROUTING PLAN  
 AT 2ND - 5TH FLOOR

SHEET NUMBER  
**E-1B**

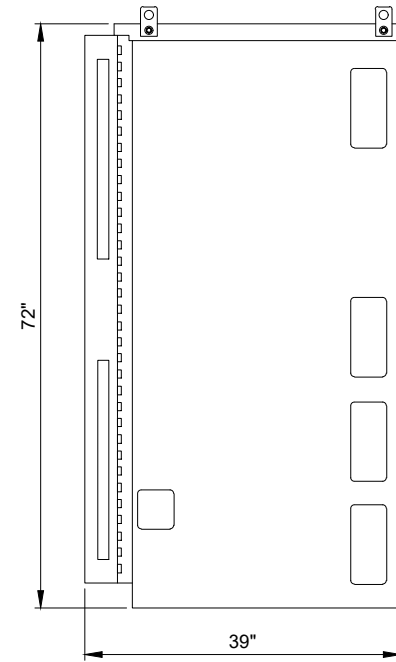
COMMSCOPE RBA72-36	
DIMENSIONS	36"W x 39"D x 72"H
WEIGHT	650 LBS (EMPTY)
WEIGHT W/BATT	2,500 LBS (TYP.)



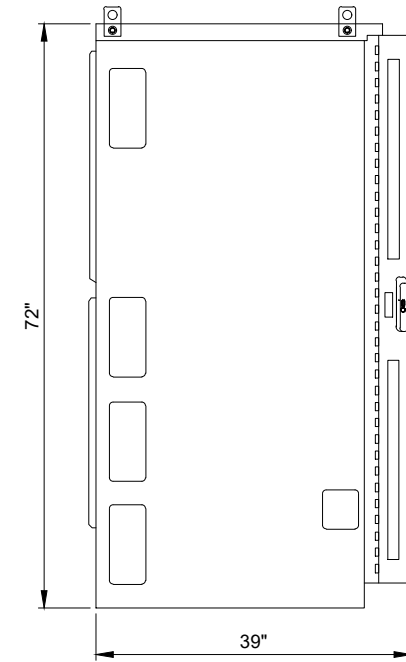
CABINET ELEVATION A



CABINET ELEVATION B



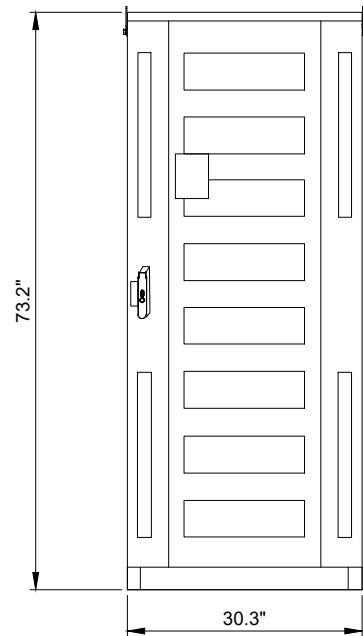
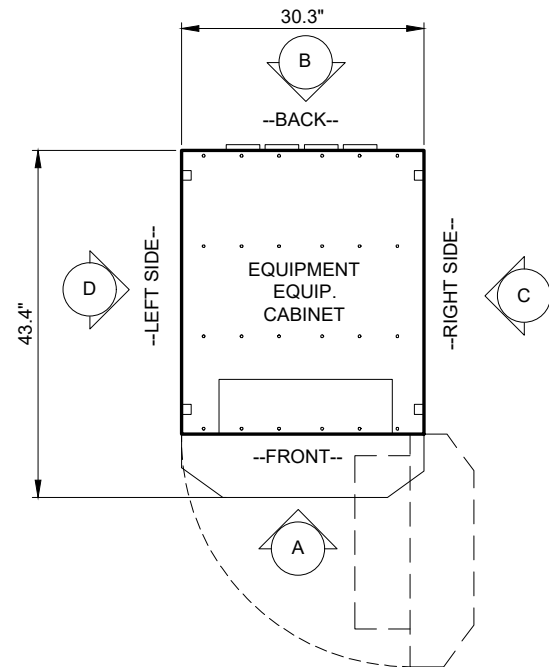
CABINET ELEVATION C



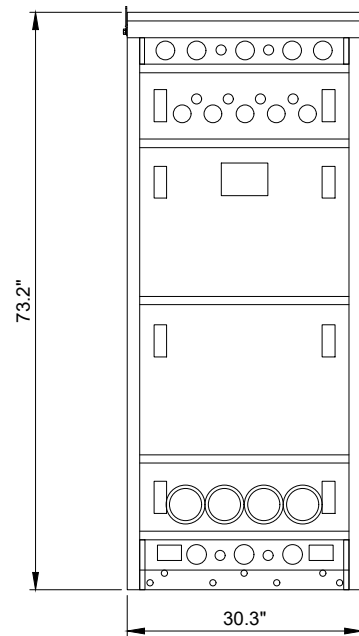
CABINET ELEVATION D

1 COMMSCOPE RBA72-36 CABINET DIMENSIONS  
N.T.S.

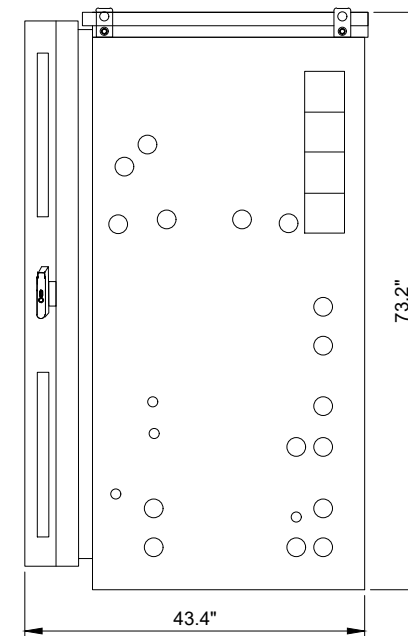
COMMSCOPE RBA72-30	
DIMENSIONS	30.3"W x 43.4"D x 73.2"H
WEIGHT	565 - 670 LBS



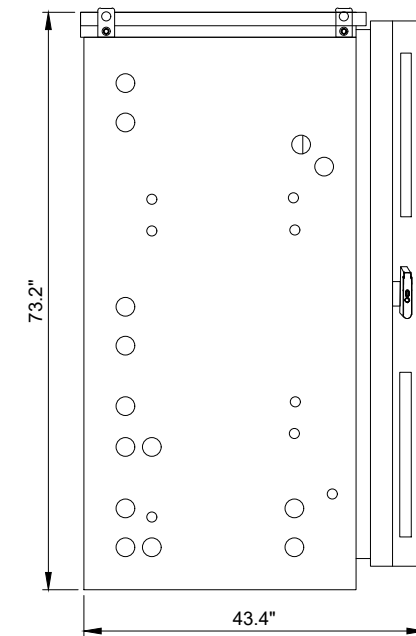
CABINET ELEVATION A



CABINET ELEVATION B



CABINET ELEVATION C



CABINET ELEVATION D

2 COMMSCOPE RBA72-30 EQUIPMENT CABINET DIMENSIONS  
N.T.S.

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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

REVISIONS		BY	DATE
NO.	DESCRIPTION	KSS	08/19/20
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	RC	10/17/21

LOC. # 544361

DT WAUKESHA

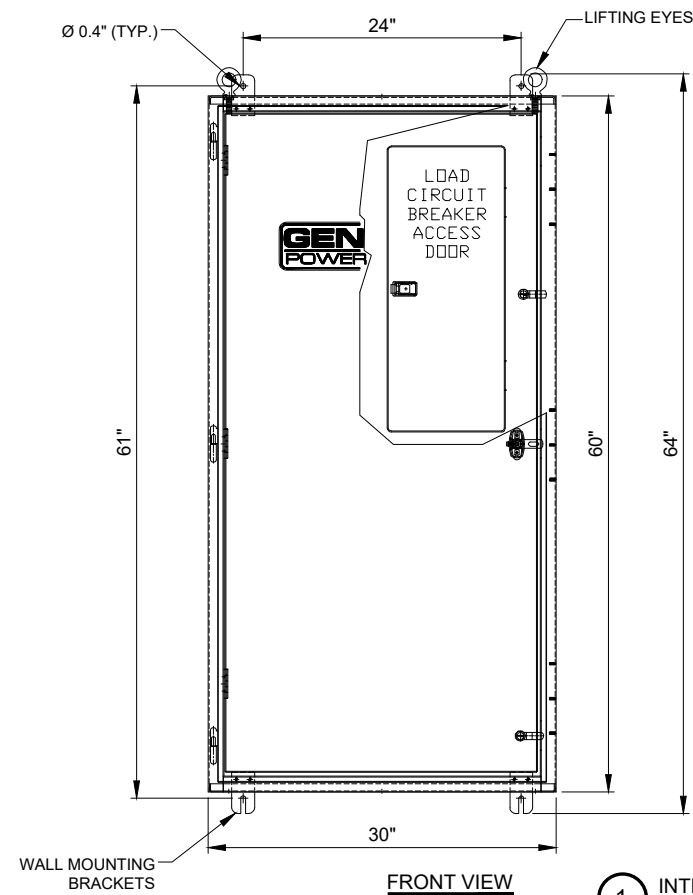
222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

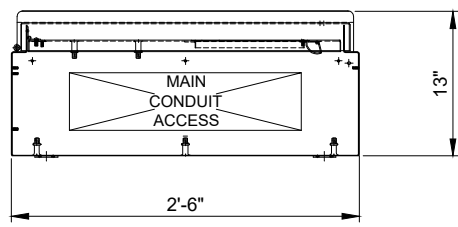
SHEET TITLE  
EQUIPMENT  
DETAILS

SHEET NUMBER

**EQ-1**

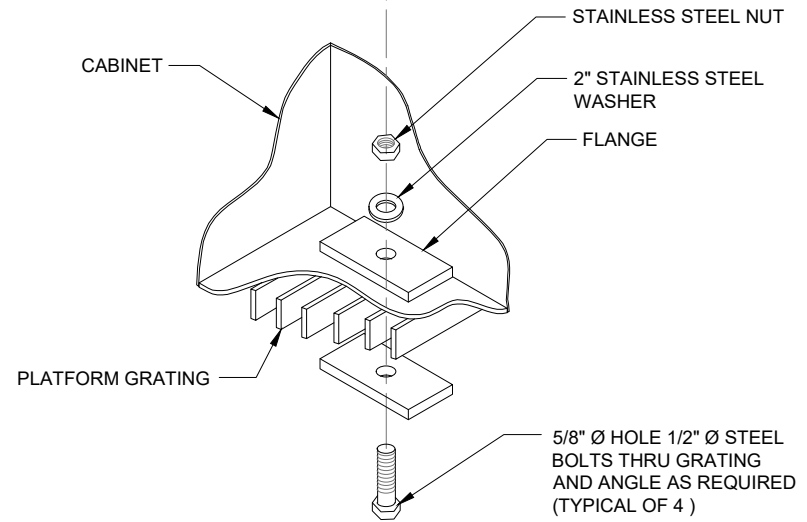


ILC RATED AMPS	Voltage	Phase	Enclosure Height	Enclosure Width	Enclosure Depth	Weight (lbs.)
200	120/240	1	60"	30"	10"	350
200	120/208	3	60"	30"	10"	350



1 INTEGRATED LOAD CENTER  
SCALE: N.T.S

VERIFY LOCATION AND QUANTITY OF ANCHORS WITH EQUIPMENT CABINET INSTALLATION MANUAL



2 TYPICAL CABINET ANCHORING DETAIL  
SCALE: N.T.S

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

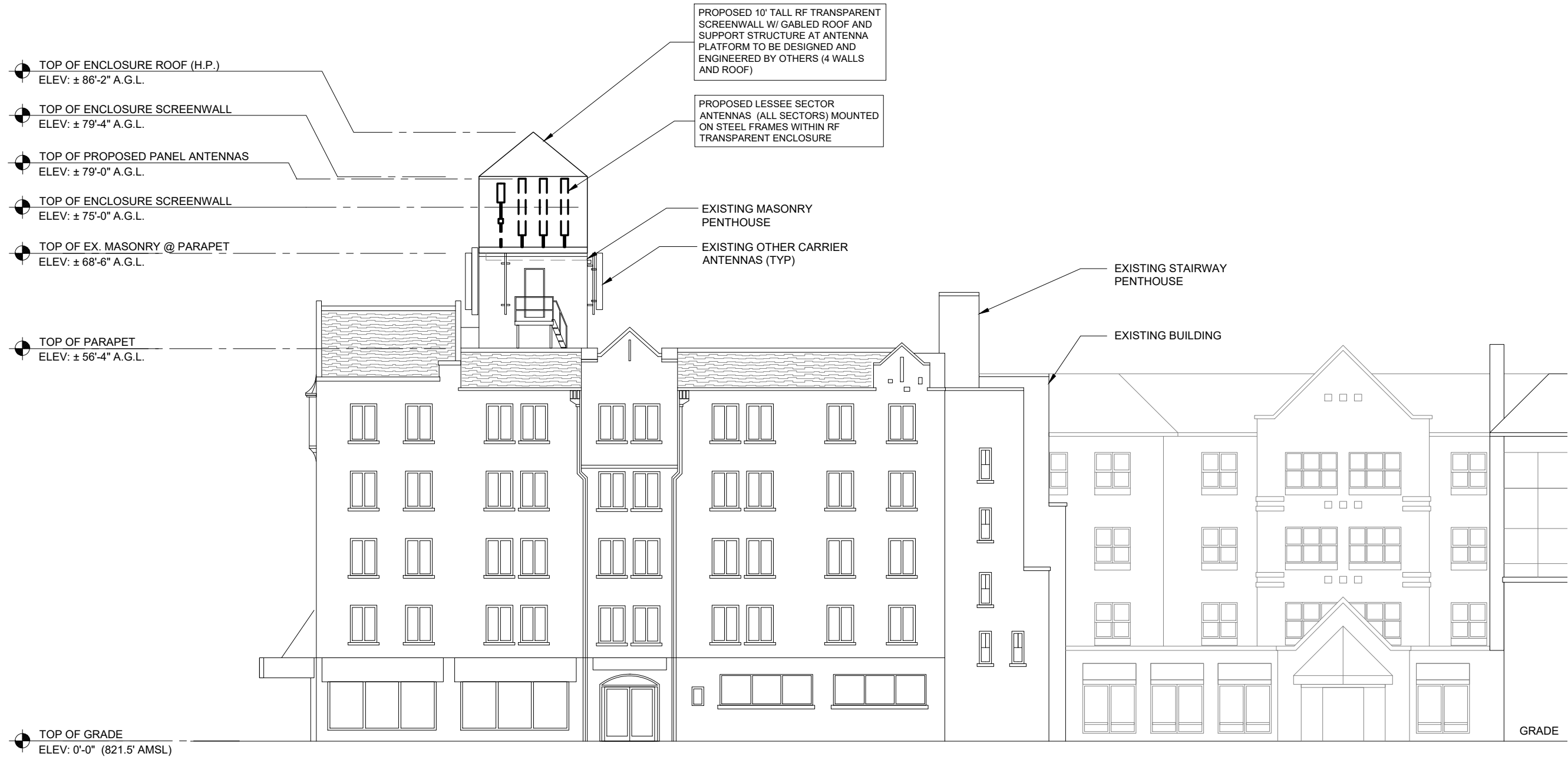
SHEET TITLE  
EQUIPMENT  
DETAILS

SHEET NUMBER  
**EQ-2**



SCALE: 1/8" = 1'-0"

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



1 SOUTH ELEVATION  
SCALE: 1/8" = 1'-0"

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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

NO.	DESCRIPTION	DATE	BY	
			KSS	RC
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21		

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SITE ELEVATION

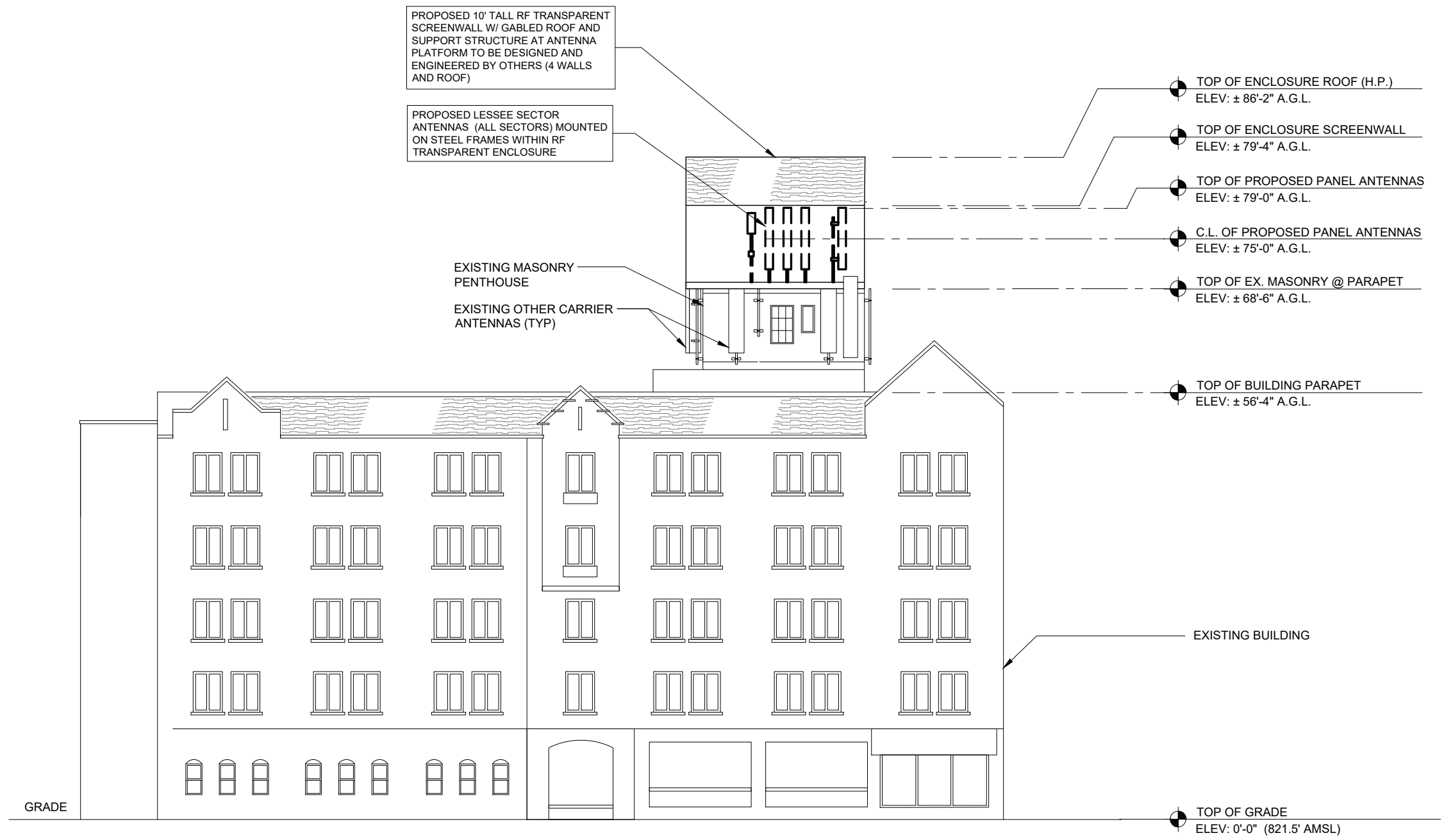
SHEET NUMBER  
**ANT-1**





SCALE: 1/8" = 1'-0"

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



1 WEST ELEVATION  
SCALE: 1/8" = 1'-0"

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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

REVISIONS		NO.	DESCRIPTION	DATE	BY
	DESCRIPTION				
	FAILED STRUCTURAL ANALYSIS		08/19/20	KSS	
	REVISED ANTENNA LOCATIONS	1	10/17/21	RC	

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY: KSS  
CHECKED BY: DS  
DATE: 08/03/20  
PROJECT #: 33-3301

SHEET TITLE  
SITE ELEVATION

SHEET NUMBER  
**ANT-1A**

**RF EMISSIONS REPORT REQUIRED**

YES  NO

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

**HYBRID LENGTH ESTIMATE**

SECTOR	AT EQ ROOM		EQ RM UP TO ROOF		ON ROOF		TOTAL (±)
	HOR (±)	VER (±)	HOR (±)	VER (±)	HOR (±)	VER (±)	
ALPHA	10'	5'	95'	50'	365'	15'	540'
BETA	10'	5'	95'	50'	365'	15'	540'
GAMMA	10'	5'	95'	50'	365'	15'	540'



**Antenna Summary**

Added														
700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
LTE	LTE 5G	LTE	LTE			COMMSCOPE	NHH-65C-R2B	70.5	74.5	60(01) 170(02) 300(03)	false	false	PHYSICAL	9
					LTE	ERICSSON	KRE105281/1	68.5	68.8	60(19) 170(20) 300(21)	false	false	PHYSICAL	3
					5G	Ericsson	AIR6449	72.5	73.8	60(0001) 170(0002) 300(0003)	false	false	PHYSICAL	3
Removed														
700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
No data available.														
Retained														
700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
No data available.														

Added: 15    Removed: 0    Retained: 0

1 PROPOSED ANTENNA SCHEDULE  
N.T.S.

NO.	DESCRIPTION	DATE	BY
		08/19/20	KSS
1	REVISED ANTENNA LOCATIONS	10/17/21	RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

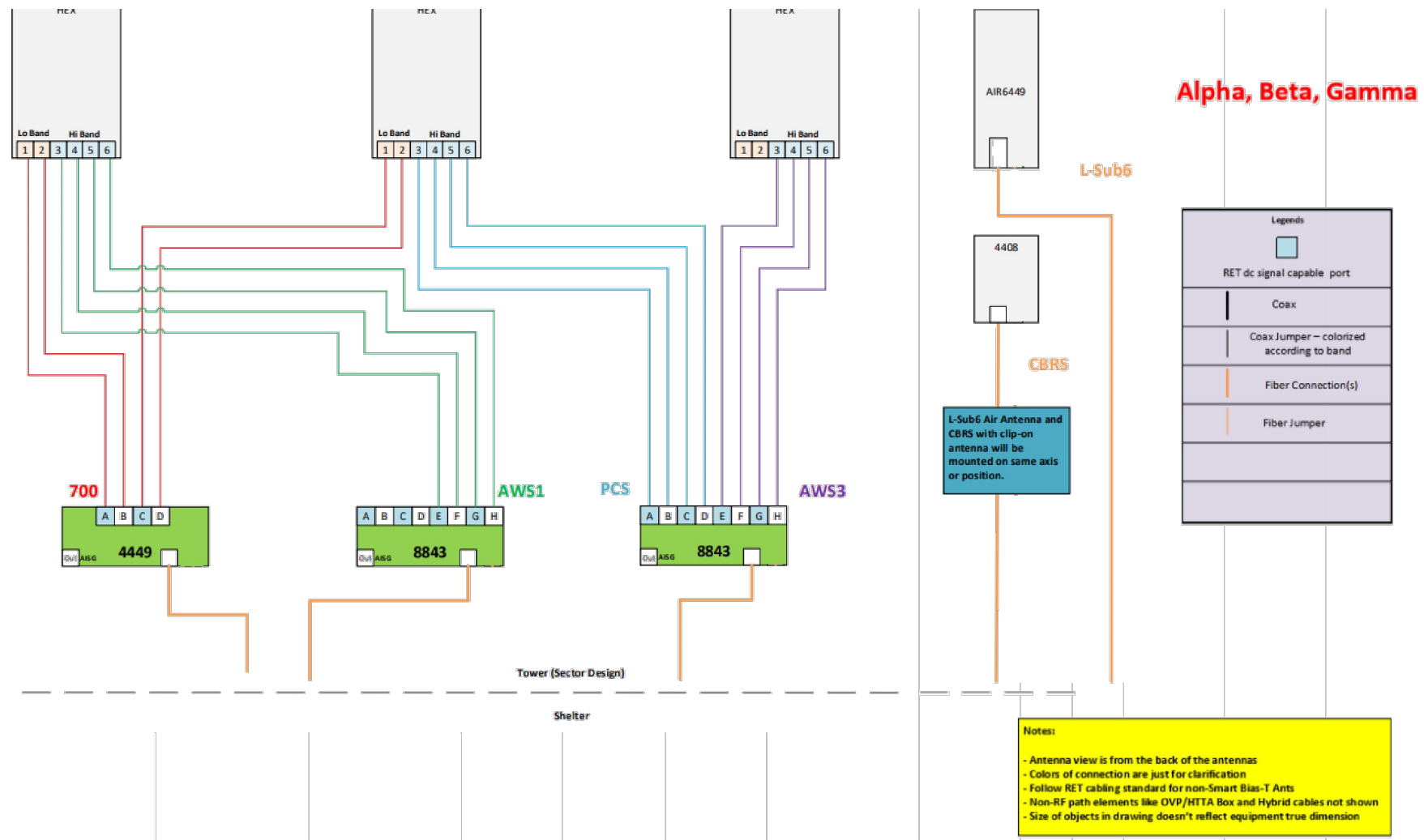
SHEET TITLE  
ANTENNA INFORMATION

SHEET NUMBER  
**ANT-2**

**Equipment Summary**

Added													
Equipment Type	Location	700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
RRU	Tower					LTE		Ericsson	4408 B48 DC			PHYSICAL	3
RRU	Tower	LTE						Ericsson	4449			PHYSICAL	3
RRU	Tower		LTE 5G	LTE	LTE			Ericsson	8843			PHYSICAL	6
RRU	Tower					5G		Ericsson	AIR6449			PHYSICAL	3
Removed													
Equipment Type	Location	700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
No data available.													
Retained													
Equipment Type	Location	700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
No data available.													

2 PROPOSED EQUIPMENT SCHEDULE  
N.T.S.



1 CABLE DIAGRAM  
N.T.S.

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

2 RAYCAP TABLE  
N.T.S.

NO.	DESCRIPTION	DATE	BY
1	REVISED ANTENNA LOCATIONS	10/17/21	RC
	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS

LOC. # 544361

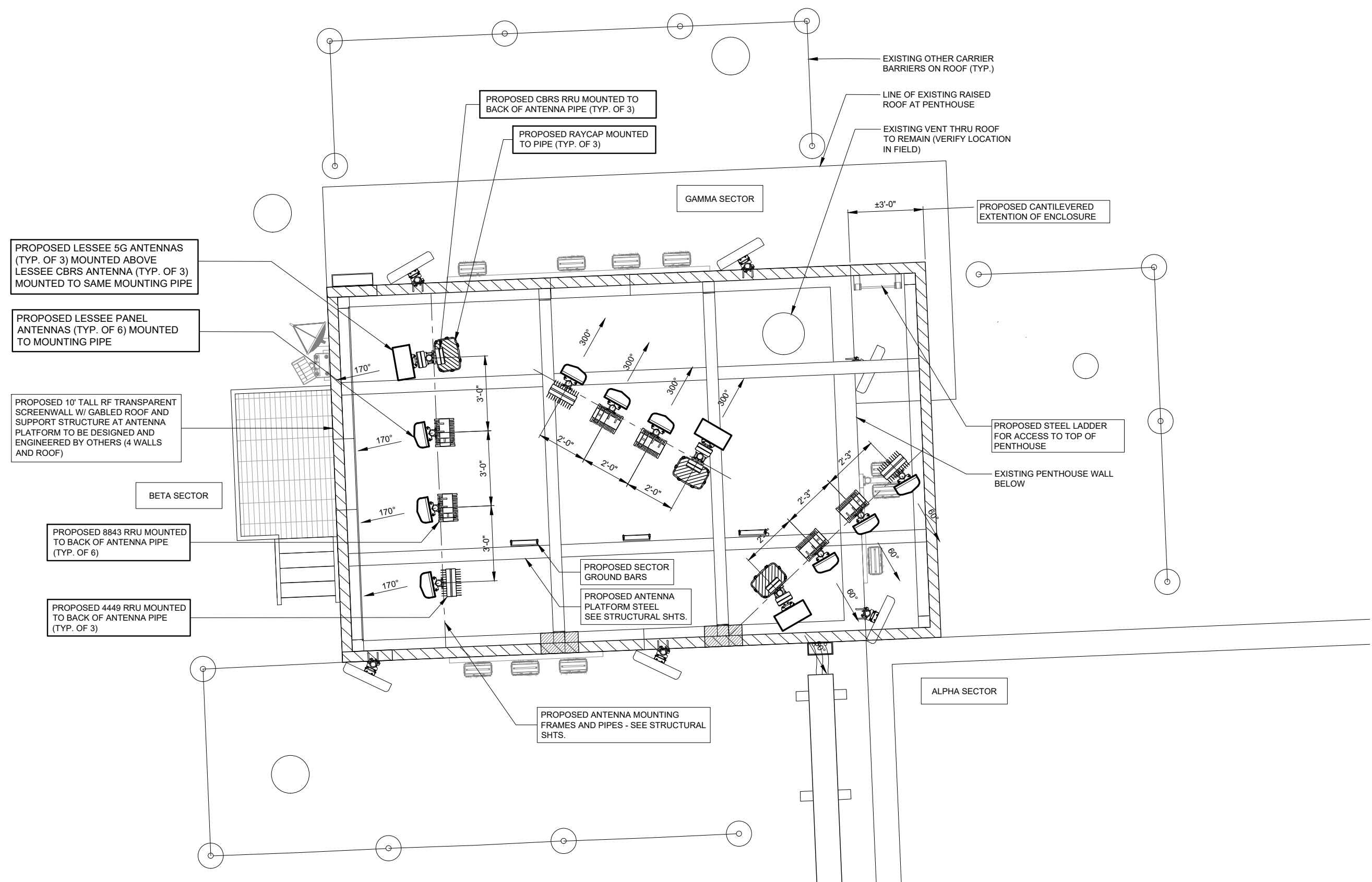
DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
ANTENNA INFORMATION

SHEET NUMBER  
**ANT-2A**



**1** PROPOSED ANTENNA LAYOUT @ PENTHOUSE  
 1/2" = 1'-0"

REVISIONS	
NO.	DESCRIPTION
1	REVISED ANTENNA LOCATIONS
	FAILED STRUCTURAL ANALYSIS

DATE	BY
08/19/20	KSS
10/17/21	RC

LOC. # 544361

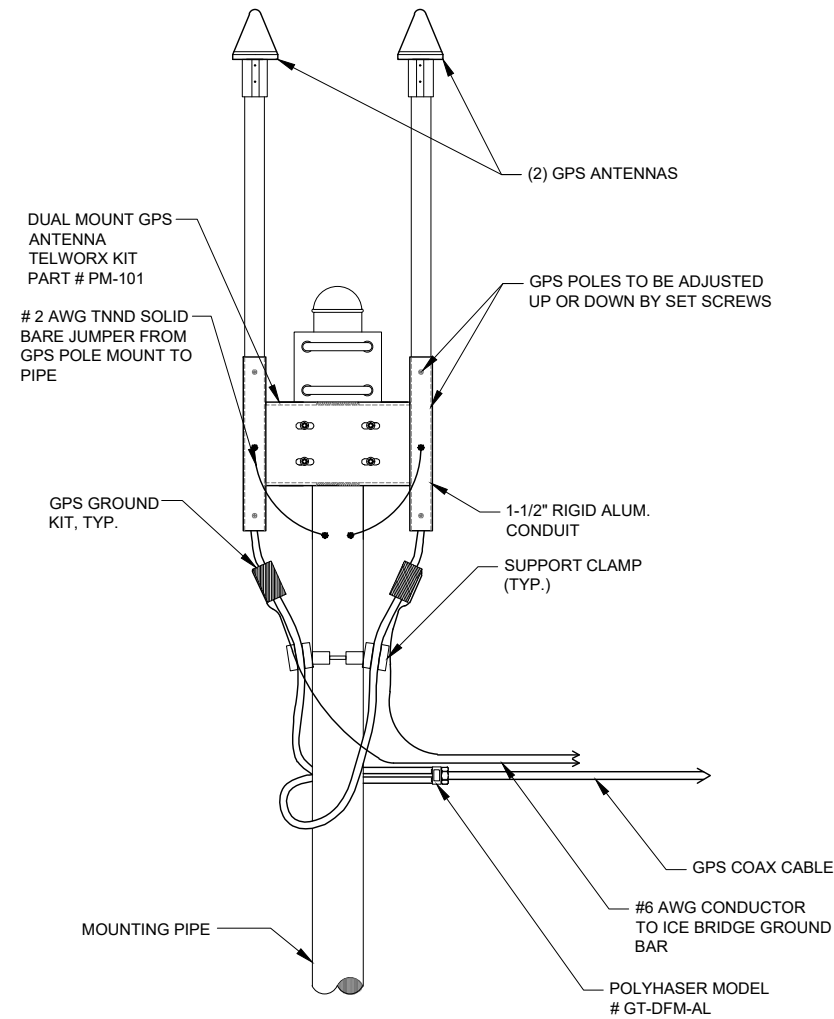
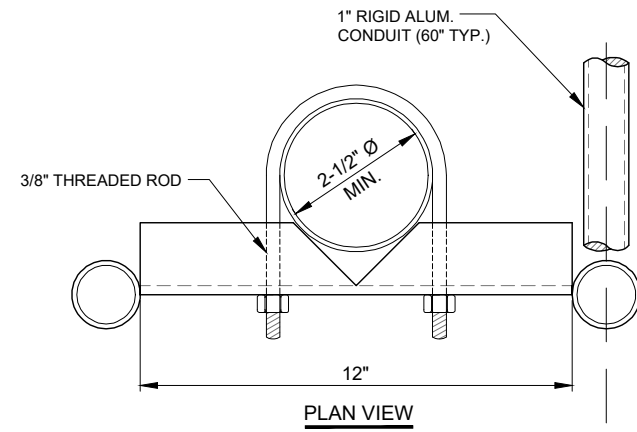
DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
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DATE:	08/03/20
PROJECT #:	33-3301

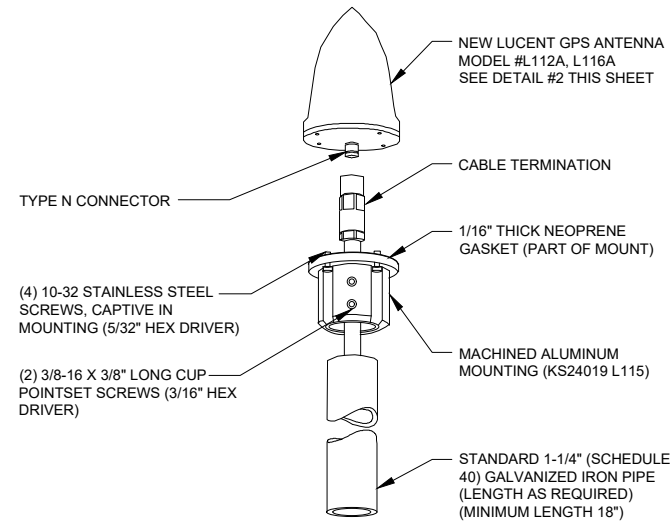
SHEET TITLE  
 ANTENNA LAYOUT PLAN

SHEET NUMBER  
**ANT-3**



1 GPS MOUNTING DETAIL  
N.T.S.

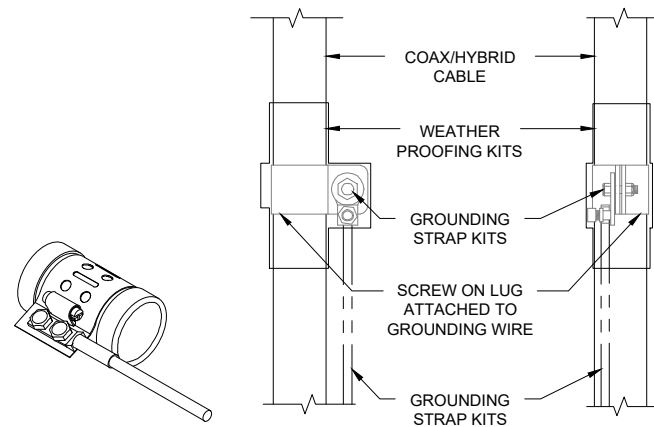
NOTE:  
INSTALL EACH GPS ON THE  
CLOSEST ICE BRIDGE POSTS TO  
SHELTER (TYP. AT 2 LOCATIONS).



2 TYPICAL GPS DETAIL  
N.T.S.

NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- THIS DETAIL IS TYPICAL FOR EACH CABLE WHERE IT IS SPECIFIED TO BE GROUNDED
- CABLE TO BE GROUNDED AT ANTENNA LEVEL AND PRIOR TO ENTERING EQUIPMENT ROOM/ PLATFORM ENTRY PANEL.
- CABLE ALSO TO BE GROUNDED TO GROUND BAR AT TOWER BASE IF APPLICABLE.
- USE ONLY TIN PLATED GROUNDING KITS.



4 COAX / HYBRID CABLE GROUND KIT DETAIL  
SCALE: N.T.S.

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

**TERRA**  
CONSULTING GROUP, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
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REVISIONS		BY	DATE	DESCRIPTION
		KSS	08/19/20	FAILED STRUCTURAL ANALYSIS
		RC	10/17/21	REVISED ANTENNA LOCATIONS
NO.	1			

LOC. # 544361

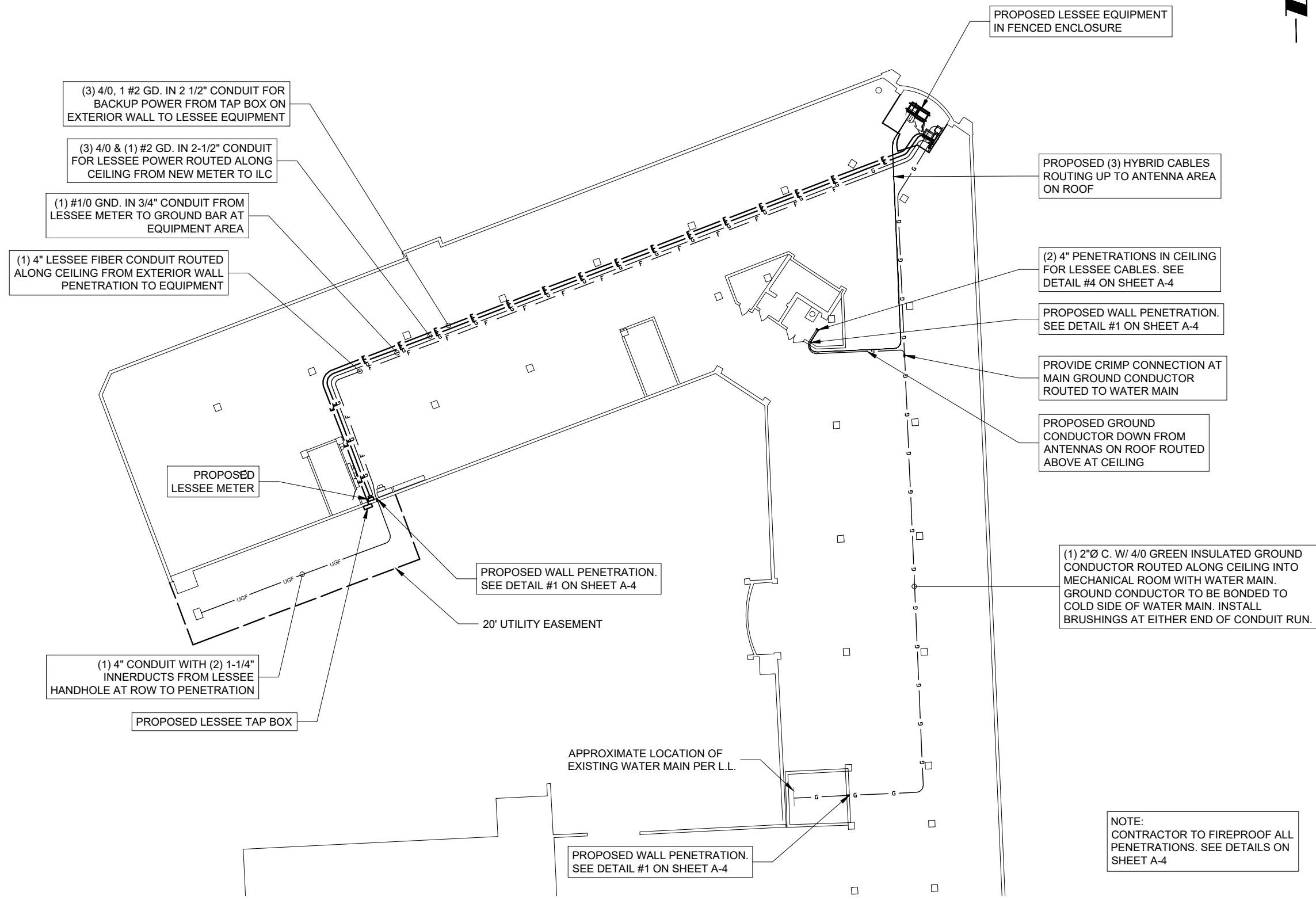
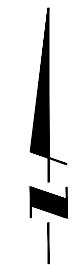
DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SITE DETAILS

SHEET NUMBER  
**ANT-4**



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

**TERRA**  
 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
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NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

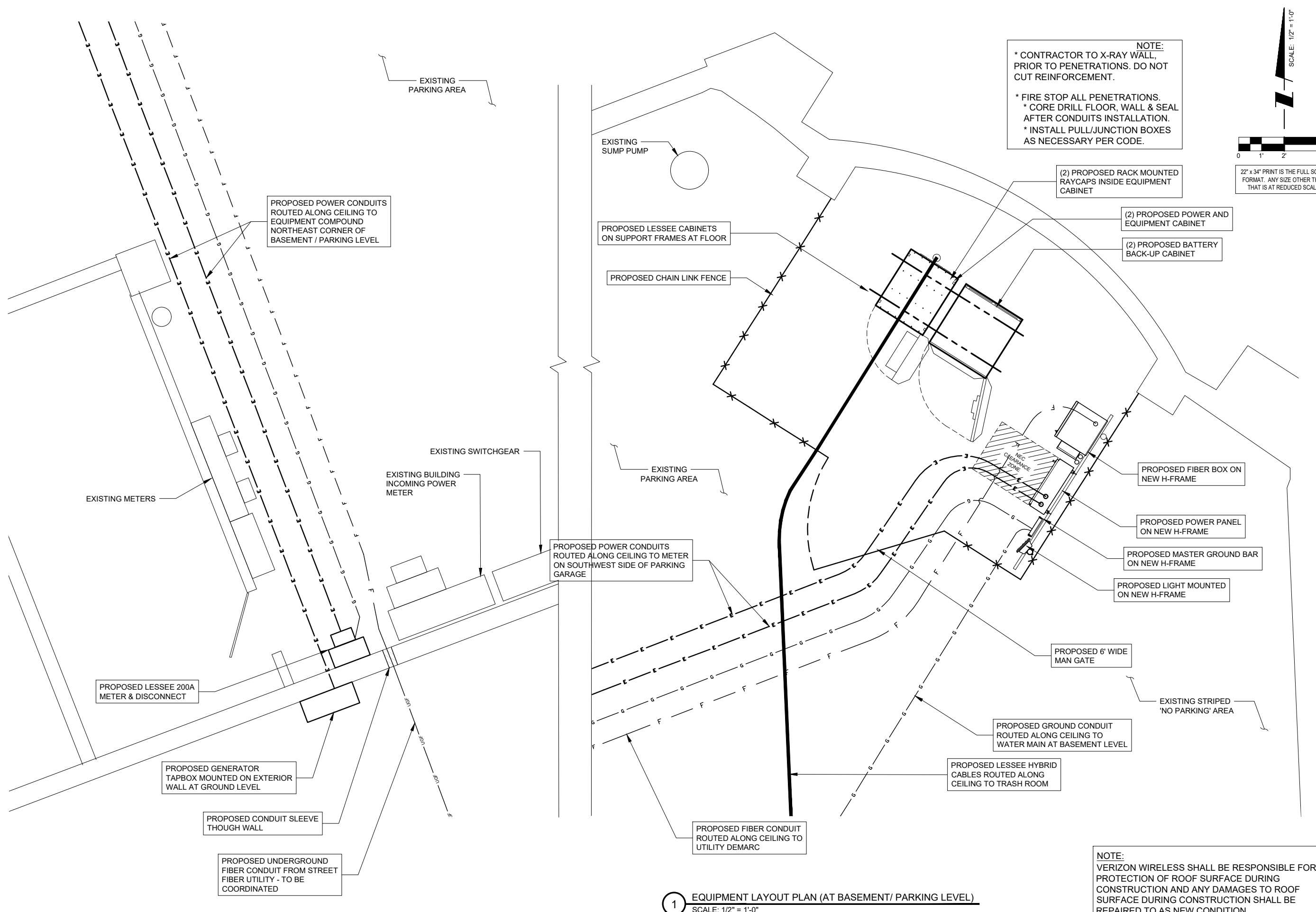
DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
 UTILITY ROUTING PLAN  
 AT PARKING LEVEL

SHEET NUMBER  
**E-1**

1 PARTIAL UTILITY ROUTING PLAN AT PARKING LEVEL  
 SCALE: 1/2" = 1'-0"

**FIBER COORDINATION IS NOT COMPLETE (PENDING FIBER CONTACT). PRIOR TO CONSTRUCTION, CONTACT DESIGNER FOR UPDATE.**



**1** EQUIPMENT LAYOUT PLAN (AT BASEMENT/ PARKING LEVEL)  
 SCALE: 1/2" = 1'-0"

NOTE:  
 VERIZON WIRELESS SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE DURING CONSTRUCTION AND ANY DAMAGES TO ROOF SURFACE DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION

**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
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NO.	DESCRIPTION	DATE	BY
1	REVISED ANTENNA LOCATIONS	10/17/21	RC
	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS

LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
**ENLARGED UTILITY ROUTING PLANS**

SHEET NUMBER  
**E-1A**

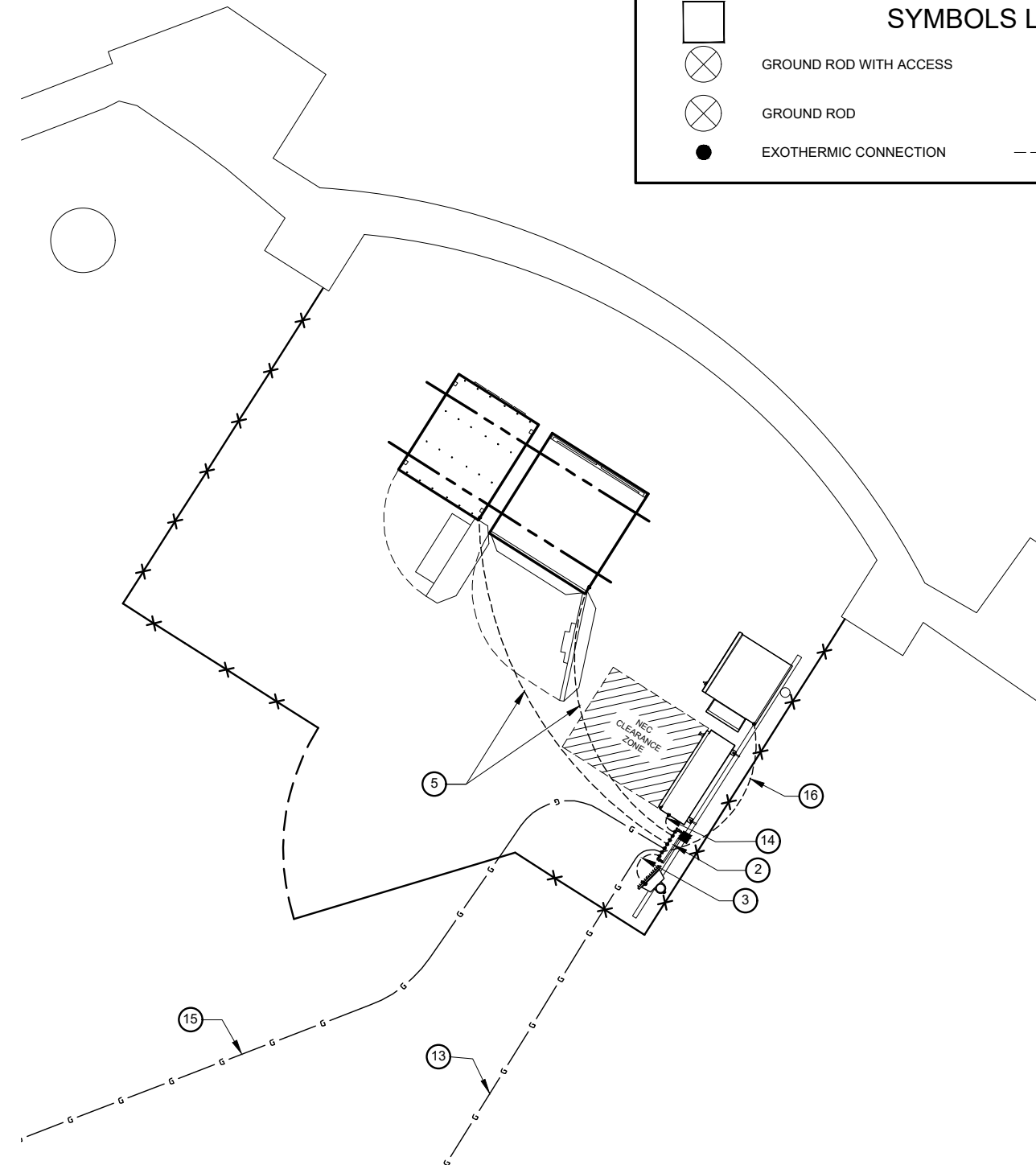
# GROUNDING REFERENCE NOTES

- ① REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ANTENNA(S), PLATFORM AND ANTENNA SUPPORT FRAMES.
- ② PROVIDE MASTER GROUND BAR (HARGER 1/4"x4"x24") AT EQUIPMENT AREA.
- ③ #2 AWG INSULATED GROUND WIRE FROM MASTER GROUND BAR TO LIGHT
- ④ #2 AWG INSULATED GROUND WIRE FROM MASTER GROUND BAR TO GPS ANTENNA
- ⑤ (2) #2 AWG INSULATED GROUND WIRES TO EQUIPMENT CABINET FROM MASTER GROUND BAR.

- ⑥ PROVIDE SECTOR GROUND BAR (HARGER 1/4"x4x12). BOND ANTENNA CABLE GROUNDING KITS TO SECTOR GROUND BAR. CONNECTION SHALL BE RESPONSIBILITY OF THE ANTENNA CABLE INSTALLER. BOND SECTOR GROUND BAR TO MASTER GROUND BAR AT EQUIPMENT PLATFORM USING #2 AWG INSULATED HOME RUN GROUND WIRE. SECURE GROUND BAR TO STEEL BEAM.
- ⑦ #2 AWG INSULATED GROUND WIRE FROM SECTOR GROUND BAR TO RAYCAP OR RRU MODULE.
- ⑧ #2 AWG INSULATED GROUND WIRE FROM SECTOR GROUND BAR TO ANTENNA PIPE AND ANTENNA MOUNTING BRACKET.
- ⑨ EXOTHERMIC WELD AT ANTENNA SUPPORT FRAME. SUPPORT CONDUCTOR AS REQUIRED EVERY TWO (2) FEET MINIMUM.
- ⑩ #2 AWG INSULATED GROUND WIRE FROM SECTOR GROUND BAR TO STEEL FRAMING AT ANTENNA ENCLOSURE

- ⑪ 4/0 GREEN INSULATED GROUND CONDUCTOR ROUTED ALONG BEAMS ON ISOLATED CONNECTORS. TIE EACH SECTOR GROUND BAR TO LINE.
- ⑫ 1" CONDUIT, 4/0 GREEN INSULATED GROUND CONDUCTOR ROUTED ALONG BUILDING ROOF ON PROPOSED NON-PENETRATING CABLE TRAY ON PVC SLEEPERS
- ⑬ 1" CONDUIT, 4/0 GREEN INSULATED GROUND CONDUCTOR ROUTED ALONG EXTERIOR/INTERIOR BUILDING WALL TO EXISTING WATER MAIN AT BASEMENT LEVEL
- ⑭ #2 AWG INSULATED GROUND WIRE CONNECTION TO PROPOSED ILC
- ⑮ #2 AWG INSULATED GROUND WIRE CONNECTION TO METER
- ⑯ #2 AWG INSULATED GROUND WIRE CONNECTION TO PROPOSED FIBER BOX

SYMBOLS LEGEND	
	GROUND ROD WITH ACCESS
	GROUND ROD
	EXOTHERMIC CONNECTION
	MECHANICAL CONNECTION
	GROUND BAR
	GROUND WIRE



1 PROPOSED EQUIPMENT AREA GROUNDING PLAN  
SCALE: N.T.S.

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60088  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS	08/19/20	KSS
	REVISED ANTENNA LOCATIONS	10/17/21	RC

LOC. # 544361  
DT WAUKESHA  
222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
GROUNDING PLAN  
AT EQUIPMENT

SHEET NUMBER  
**E-2**



# GROUNDING REFERENCE NOTES

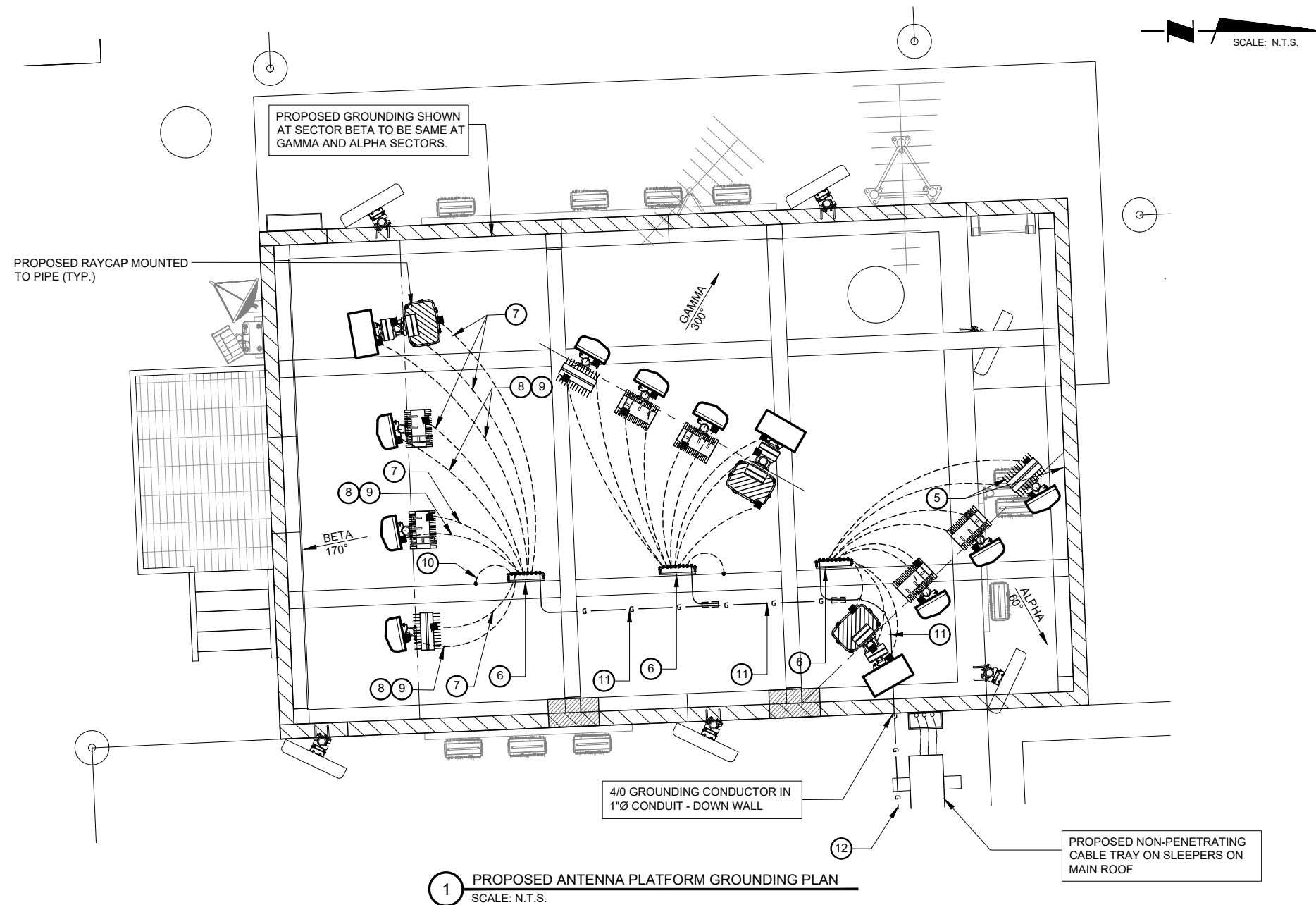
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- ⑭ #2 AWG INSULATED GROUND WIRE CONNECTION TO PROPOSED ILC
- ⑮ #2 AWG INSULATED GROUND WIRE CONNECTION TO METER
- ⑯ #2 AWG INSULATED GROUND WIRE CONNECTION TO PROPOSED FIBER BOX

## SYMBOLS LEGEND

- ⊗ GROUND ROD WITH ACCESS
- MECHANICAL CONNECTION
- ⊘ GROUND ROD
- ▬ GROUND BAR
- EXOTHERMIC CONNECTION
- - - - GROUND WIRE



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
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 FAX: (847) 706-7415

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 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
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 FAX: 847-698-6401

NO.	DESCRIPTION	DATE	BY
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LOC. # 544361

DT WAUKESHA

222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
**GROUNDING PLAN  
 AT ANTENNAS**

SHEET NUMBER  
**E-2A**

## SPQ Lug-lug Tap Box

Square D PaCS has also developed the SPQ lug-lug (SPQTB) tap box that provides the capabilities to connect to a portable generator. This solution incorporates power distribution blocks for the generator breaker cable connections using mechanical lugs in lieu of cam-lock connectors for the generator cable connections.

This version of the SPQ tap box is designed, manufactured and tested under the UL 1773 Standard for Termination Boxes. The SPQTB tap box comes with labeled lugs marked for safe connection sequence.

### Design Features

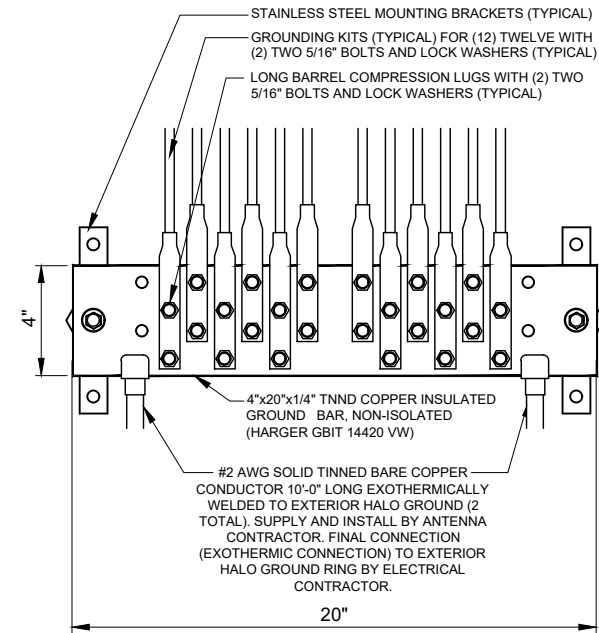
- > UL listed - UL 1773
- > cUL listed
- > NEMA Type 3R Enclosure (can be used for NEMA Type 1 installations)
  - 30 in. wide X 36 in. tall X 13 in. deep
  - Lockable door for safety and controlled access
  - Mechanical lugs to standby power disconnect
  - Generator connection lugs rated for Type W cable
  - Lugs are labeled for connection sequence
- > Application
  - 600 A and 800 A available
  - 600 V maximum
  - Three-phase + neutral + ground



Generator lugs rated for Type W cable.

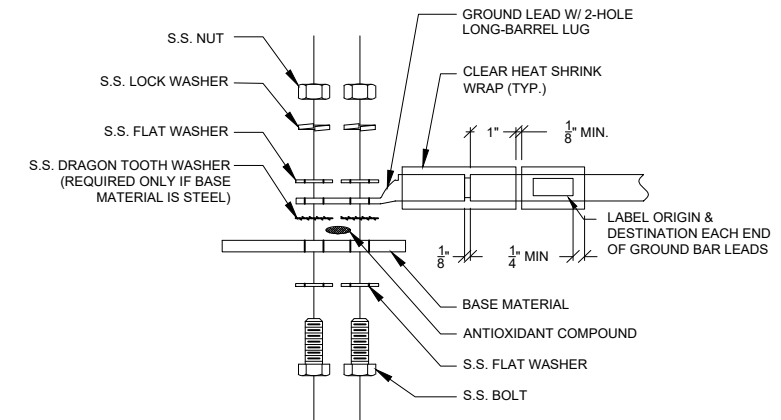
Lugs are labeled for connection sequence.

**1 SQUARE D TAP BOX DETAILS**  
SCALE: N.T.S.

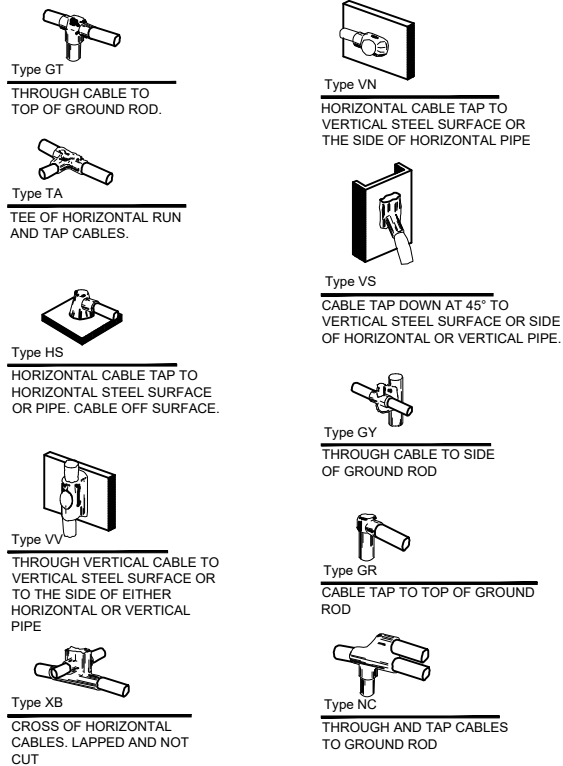


**2 EXTERIOR GROUND BAR DETAIL**  
N.T.S.

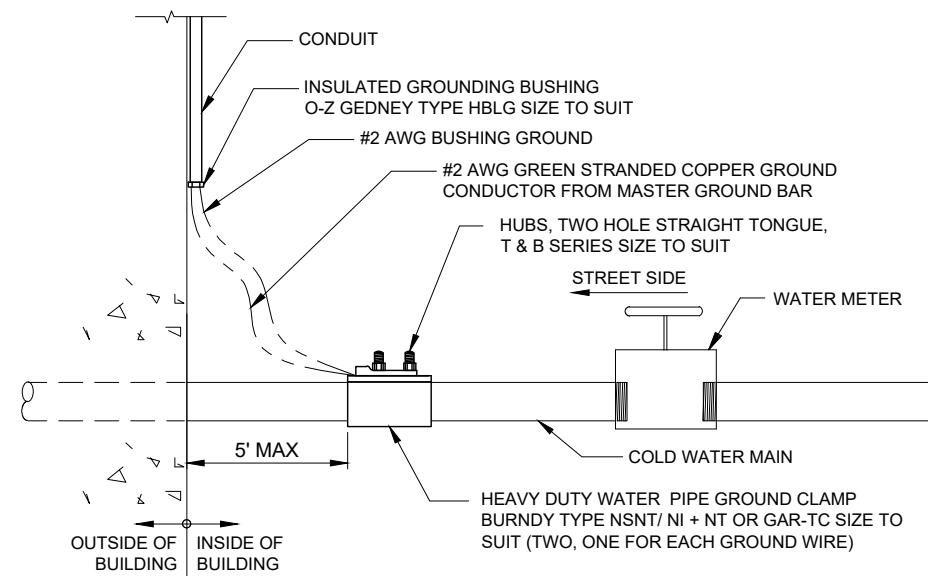
- NOTES:
1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING BELLEVLLES. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
  2. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.
  3. GROUND BARS, INSTALL BOLT HEAD TOWARD WALL
  4. ENCLOSURES,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



**3 GROUND LUG INSTALLATION DETAIL**  
N.T.S.



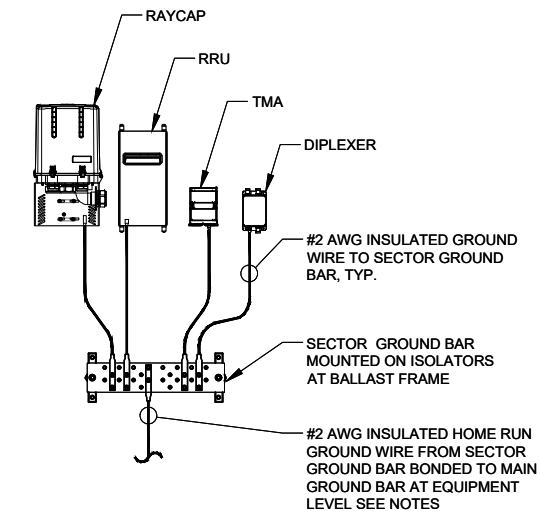
**4 EXOTHERMIC WELD DETAILS**  
EXOTHERMIC AND HARGER ULTRAWELDED OR APPROVED EQUAL



**5 SYSTEM GROUND TO COLD WATER MAIN**  
SCALE: N.T.S.

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

- NOTES:
1. GROUND CONNECTIONS MUST BE DOUBLE HOLE CONNECTION. SPECIAL EXCEPTION ONLY TO EQUIPMENT THAT WILL NOT ALLOW FOR A DOUBLE HOLE CONNECTION.



**6 TYPICAL APPURTENANCE GROUNDING AT ANTENNA LEVEL**  
N.T.S.

**verizon**  
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TOWER 2, SUITE 400  
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**TERRA**  
COMMUNICATIONS CORPORATION, LTD.  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60068  
PH: 847-698-6400  
FAX: 847-698-6401

NO.	DESCRIPTION	BY		DATE	
		KSS	RC	08/19/20	10/17/21
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS				

LOC. # 544361  
DT WAUKESHA  
222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY: KSS  
CHECKED BY: DS  
DATE: 08/03/20  
PROJECT #: 33-3301

SHEET TITLE  
**ELECTRICAL & GROUNDING DETAILS**

SHEET NUMBER  
**E-3**



**verizon**  
 1701 GOLF ROAD,  
 TOWER 2, SUITE 400  
 ROLLING MEADOWS, IL 60008  
 PHONE: (847) 619-5397  
 FAX: (847) 706-7415

**TERRA**  
 CONSULTING GROUP, LTD.  
 600 BUSSE HIGHWAY  
 PARK RIDGE, IL 60068  
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NO.	DESCRIPTION	DATE	BY
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LOC. # 544361

DT WAUKESHA

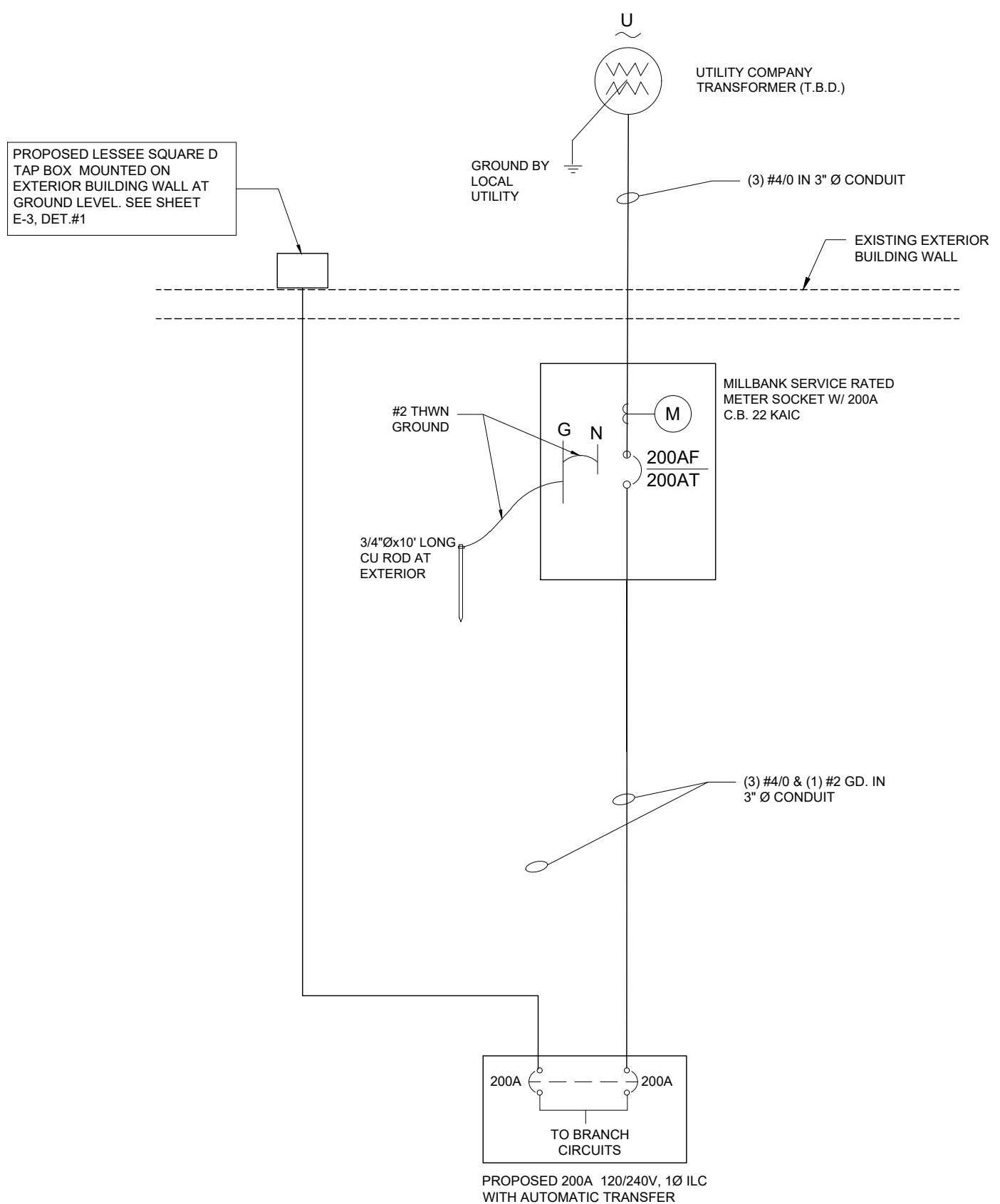
222 PARK PL  
 WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

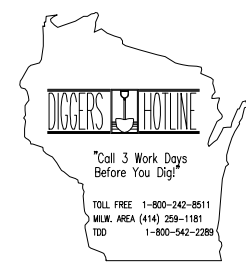
SHEET TITLE  
**LIGHTING PLAN  
 AT EQUIPMENT**

SHEET NUMBER  
**E-4**

**1** PLATFORM LIGHTING PLAN  
 SCALE: N.T.S.

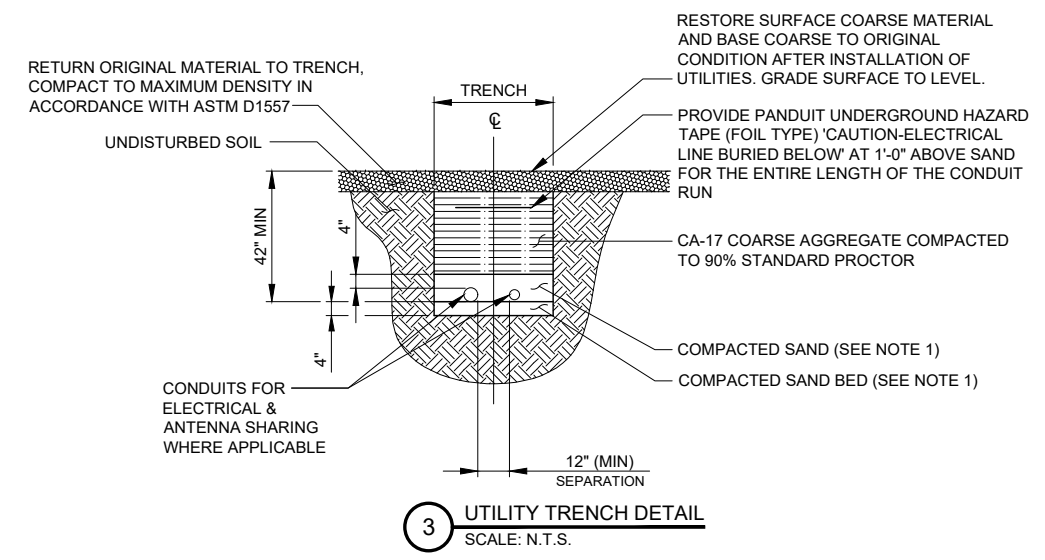


1 ONE LINE DIAGRAM  
SCALE: N.T.S.



OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED

- NOTES:
- LEAN CONCRETE, RED-COLORED TOP, MAY BE USED IN PLACE OF COMPACTED SAND.
  - BURY CONDUITS 42" BELOW GRADE OR 6" BELOW FROST LINE, WHICHEVER IS GREATER
  - CONDUIT SIZE, TYPE, QUANTITY AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS

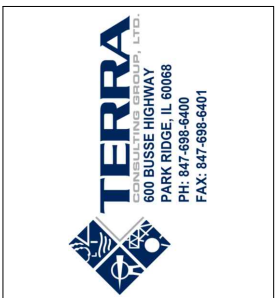


VERIZON WIRELESS PANEL "A" SCHEDULE										
MAIN: 200/2		VOLTAGE: 120/240			PHASE: 1		WIRE: 3			
TO AUTOMATIC TRANSFER SWITCH ←										
DESCRIPTION	BRKR.	WATTS	S/G	A	B	S/N	WATTS	BRKR.	DESCRIPTION	
RECTIFIER 1	40/2	1250	1	2	3	4	1250	40/2	RECTIFIER 5	
RECTIFIER 2	40/2	1250	5	6	7	8	1250	40/2	RECTIFIER 6	
RECTIFIER 3	40/2	1250	9	10	11	12	1250	40/2	RECTIFIER 7	
RECTIFIER 4	40/2	1250	13	14	15	16	1250	40/2	RECTIFIER 8	
SPACE			17	18				20/1	SPARE	
SPACE			19	20				20/1	SPARE	
SPACE			21	22					SPACE	
SPACE			23	24					SPACE	
SPACE			25	26					SPACE	
SPACE			27	28					SPACE	
SPACE			29	30					SPACE	
SPACE			31	32					SPACE	
SPACE			33	34					SPACE	
SPACE			35	36					SPACE	
SPARE	20/1		37	38			360	20/1	GFCI RECEPTACLE *	
SPARE	20/1		39	40			1200	20/1	EQUIPMENT	
GEN BATTERY CHARGER *	20/1	1000	41	42			1000	20/1	GEN. GFCI RECEPTACLE *	
SURGE ARRESTOR										
SUBTOTALS:		6000	5000			6360		6200		
TOTAL:						23.56kW (98.2A)				

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

2 PANEL BOARD SCHEDULE  
N.T.S.

- NOTE:
- VERIZON WIRELESS EQUIPMENT ENGINEERING TO SUPPLY BREAKER FOR RADIO AND POWER CABINETS
  - GENERAL CONTRACTOR TO SUPPLY BREAKERS NOTED WITH \*\*\*



NO.	DESCRIPTION	DATE	BY
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LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SINGLE LINE DIAGRAM  
& PANEL SCHEDULE

SHEET NUMBER  
**E-5**



DIVISION 5: METALS

SECTION 16400 – SERVICE AND DISTRIBUTION

SECTION 05000 – METALS

PART 1 – GENERAL

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

PART 2 – PRODUCTS

- MATERIALS:
  - STRUCTURAL STEEL MEMBERS: ASTM A572, GRADE 50
  - STRUCTURAL TUBING: ASTM A500, GRADE B
  - PIPE: ASTM A53, TYPE E OR S, GRADE B
  - BOLTS, NUTS, AND WASHERS: ASTM A325
  - ANCHOR BOLTS: ASTM A307
  - WELDING MATERIALS: AWS D1.1, TYPE REQUIRED FOR MATERIALS BEING WELDED
  - GROUT: NON-SHRINK TYPE, PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE, CEMENT, WATER REDUCING AND PLASTICIZING ADDITIVES, CAPABLE OF DEVELOPING A MINIMUM COMPRESSIVE STRENGTH OF 7000 psi AT 28 DAYS.
  - SHOP AND TOUCH-UP PRIMER: SSPC 15, TYPE 1, RED OXIDE
  - TOUCH-UP PRIMER FOR GALV. SURFACES: ZINC RICH TYPE
- FABRICATION: CONTINUOUSLY SEAL JOINTED MEMBERS BY CONTINUOUS WELDS. GRIND EXPOSED WELDS SMOOTH.
- FINISH:
  - PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-1 TO SP-10 PROCEDURES.
  - STRUCTURAL STEEL MEMBERS SHALL BE HOT DIPPED GALVANIZED.

PART 3 – EXECUTION

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

DIVISION 16: ELECTRICAL

SECTION 16050 – BASIC ELECTRICAL MATERIALS AND METHODS

- 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.
- ELECTRICAL PLANS, DETAILS AND DIAGRAMS ARE DIAGRAMMATIC ONLY. VERIFY EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT WITH OWNER PRIOR TO INSTALLATION.
- 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.).
- 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 "U" WHERE APPLICABLE. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, NBFU AND "UL" LISTED.
- ALL CONDUIT SHALL HAVE A PULL CORD.
- PROVIDE PROJECT MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
- 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.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY UBC, NEC AND ALL APPLICABLE CODES.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- PLASTIC PLATES FOR ALL SWITCHES, RECEPTACLES, TELEPHONE AND BLANKED OUTLETS SHALL HAVE ENGRAVED LETTERING WHERE INDICATED ON THE DRAWINGS. WEATHERPROOF RECEPTACLES SHALL HAVE SIERRA #WPD-8 LIFT COVERPLATES.

- 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.
- ALL CHEMICAL GROUND RODS SHALL BE "UL" APPROVED.
- 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.
- CONDUIT:
  - 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 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
  - ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL, FITTING SHALL BE GLAND RING COMPRESSION TYPE.
  - FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. ALL FLEXIBLE CONDUITS SHALL HAVE FULL LENGTH GROUND WIRE.
  - ALL UNDERGROUND CONDUIT SHALL BE AS NOTED ON THE DRAWINGS AT A MINIMUM DEPTH OF 42" BELOW GRADE. IT IS REQUIRED AND WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO NOTIFY J.U.L.I.E. AT 1-800-892-0123 OR OTHER SUCH NOTIFYING AGENCY FORTY-EIGHT (48) HOURS PRIOR TO DIGGING.
- 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.
- ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS WITH WHITE ON BLUE BACKGROUND LETTERING (MINIMUM LETTER HEIGHT SHALL BE ONE FORTH INCH (1/4"). NAMEPLATES SHALL BE FASTENED WITH STAINLESS STEEL SCREWS, NOT ADHESIVE.
- 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.
- GROUNDING ELECTRODE SYSTEM
  - PREPARATION
    - SURFACE PREPARATION: ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FIELD INSPECTED AND MODIFIED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
    - GROUND BAR PREPARATION: ALL COPPER GROUND BARS SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
    - SLEEVES: ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
  - GROUND BARS
    - ALL GROUND BARS SHALL BE ONE FORTH INCH (1/4") THICK TINNED COPPER PLATE AND OF SIZE INDICATED ON DRAWINGS.
    - ALL CONNECTIONS TO THE GROUND BAR SHALL OBSERVE THE FOLLOWING SEQUENCE:
      - BOLT-HEAD
      - 2-HOLE LUG
      - TINNED COPPER BUSS BAR
      - STAR WASHER
      - NUT
  - EXTERNAL CONNECTIONS
    - ALL BURIED GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO CABLE, SPLICES, TEE'S, CROSSES, ETC. ALL CABLE TO GROUND RODS, GROUND ROD SPLICES AND LIGHTNING PROTECTION SYSTEMS ARE TO BE AS INDICATED. ALL MATERIALS USED (MOLDS, WELDING METAL, TOOLS, ETC.) SHALL BE BY "CADWELD" AND INSTALLED PER MANUFACTURER'S RECOMMENDED PROCEDURES.
    - ALL ABOVE GRADE GROUNDING AND BONDING CONDUCTORS SHALL BE CONNECTED BY TWO HOLE CRIMP TYPE (COMPRESSION) CONNECTIONS (EXCEPT FOR THE ACEG AND GROUND ROD) MECHANICAL CONNECTIONS, FITTINGS OR CONNECTIONS THAT DEPEND SOLELY ON 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.
  - 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.
  - GROUND CONDUCTORS
    - ALL GROUND CONDUCTORS SHALL BE STANDARD TINNED SOLID BARE COPPER ANNEALED, AND OF SIZE INDICATED ON DRAWINGS UNLESS NOTED OTHERWISE.
  - LUGS
    - LUGS SHALL BE 2-HOLE, LONG BARREL, STRAND COPPER UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. LUGS SHALL BE THOMAS AND BETTS SERIES #548\_\_BE OR EQUIVALENT
 

A.	535 MCM DLO	54880BE
B.	262 MCM DLO	54872BE
C.	#1/0 DLO	54862BE
D.	#4/0 THWN AND BARE	54866BE
E.	#2/0 THWN	54862BE
F.	#2 THHN	54207BE
G.	#6 DLO	54205BE

- 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

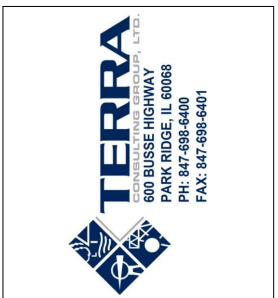
- GROUND RING
  - THE EXTERNAL GROUND RING ENCIrcLING THE TOWER (IF APPLICABLE) AND BETWEEN THE EQUIPMENT SHELTER PLATFORM ANCHORS SHALL BE MINIMUM NO. 2 A.W.G. SOLID TINNED BARE COPPER CONDUCTOR IN DIRECT CONTACT WITH THE EARTH AT THE DEPTH INDICATED ON THE DRAWINGS. CONDUCTOR BENDS SHALL HAVE A MINIMUM BENDING RADIUS OF EIGHT INCHES (8").
  - ALL EXTERNAL GROUND RINGS ARE TO BE JOINED TOGETHER AND ALL CONNECTIONS MUST BE CADWELDED. NO LUGS OR CLAMPS WILL BE ACCEPTED.
- FENCE/GATE
  - GROUND EACH GATE POST, CORNER POST AND GATE AS INDICATED ON DRAWING GROUND CONNECTIONS TO FENCE POSTS 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.
- I.E.E.E. FALL POTENTIAL TESTS
  - FOR RAW LAND SITE
    - GROUND TESTS SHALL BE PERFORMED AS INDICATED ON DRAWINGS. A BIDDLE GROUND OHMMER OR THE METHOD OF USING TWO AUXILIARY GROUND RODS (AS DESCRIBED IN I.E.E.E. STANDARDS NO. 81-1983, PART 1) MAY BE USED. THE I.E.E.E. METHOD REQUIRES THE USE OF AN A.C. TEST CURRENT. THE AUXILIARY TEST RODS MUST BE SUFFICIENTLY FAR AWAY FROM THE ROD UNDER TEST SO THAT THE REGIONS IN WHICH THEIR RESISTANCE IS LOCALIZED DO NOT OVERLAP. THE TEST POINT WILL BE ON THE GROUND ROD AND WILL CONSIST OF THE THREE POINT FALL OF POTENTIAL MEGGER TEST METHOD, USING THE BIDDLE NULL-BALANCE EARTH TESTER (MEGGER #250220-2 OR EQUIVALENT)
    - CONTRACTOR TO CONDUCT GROUND RESISTANCE TEST IN THE FORMAT AS FOLLOWS:
      - 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 25 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.
      - 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.
  - TOWER
    - FIRST TEST – SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
    - 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 THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.
  - EQUIPMENT PAD AND TOWER
    - AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL TIE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
    - AFTER ALL THE EXTERNAL GROUND RINGS ARE TIED TOGETHER, COMPLETE A MEGGER CHECK OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND.
- GROUNDING RESISTANCE TEST REPORT
  - UPON COMPLETION OF THE TESTING FOR EACH SITE, A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE 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)

- GENERAL
  - LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED.
  - PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED.
  - GROUNDING:
    - GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER BASE PLATE.
    - NO EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT.
- MATERIALS:
  - COAXIAL CABLE:
    - 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 MANUFACTURERS' REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE FEET (3') IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
    - 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".
  - ANTENNA AND COAXIAL CABLE GROUNDING
    - ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
  - COAXIAL CABLE IDENTIFICATION
    - TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, PLASTIC TAGS SHALL BE USED AT THE FOLLOWING LOCATIONS:
      - FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
      - SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT.
    - USE ANDREW CABLE TIES (PT.# 27290) TO SECURE IDENTIFICATION TAGS.
  - 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.

SECTION 16745 – TELECOMMUNICATIONS WIRING COMPONENTS  
(COAXIAL ANTENNA CABLE)

- GENERAL
  - ALL MATERIALS, PRODUCTS OR PROCEDURES INCORPORATED INTO WORK SHALL BE NEW AND OF STANDARD COMMERCIAL QUALITY.
  - 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
  - ALL OTHER MATERIALS AND PRODUCTS SPECIFIED IN THE CONTRACT DOCUMENTS SHALL BE SUPPLIED BY THE CONTRACTOR.
- MATERIALS:
  - COAXIAL CABLE:
    - 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 MANUFACTURERS' REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE FEET (3') IN EXCESS OF EQUIPMENT LOCATION UNLESS OTHERWISE STATED.
    - 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".
  - ANTENNA AND COAXIAL CABLE GROUNDING
    - ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
  - COAXIAL CABLE IDENTIFICATION
    - TO PROVIDE EASY IDENTIFICATION AND UNIFORM MARKING OF ANTENNA CABLING, PLASTIC TAGS SHALL BE USED AT THE FOLLOWING LOCATIONS:
      - FIRST LOCATION IS AT THE END OF THE COAX NEAREST THE ANTENNA (WHERE THE COAXIAL CABLE AND JUMPER ARE CONNECTED).
      - SECOND LOCATION IS INSIDE THE EQUIPMENT SHELTER NEAR THE WAVEGUIDE ENTRY PORT.
    - USE ANDREW CABLE TIES (PT.# 27290) TO SECURE IDENTIFICATION TAGS.
  - 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.



NO.	DESCRIPTION	DATE	BY	
			KSS	RC
1	FAILED STRUCTURAL ANALYSIS	08/19/20		
	REVISED ANTENNA LOCATIONS	10/17/21		

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SPECIFICATIONS

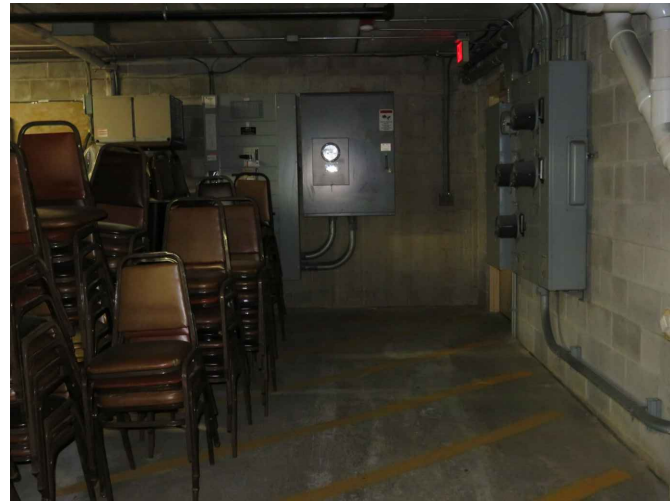
SHEET NUMBER  
**SP-2**



1 EXISTING OVERALL SITE  
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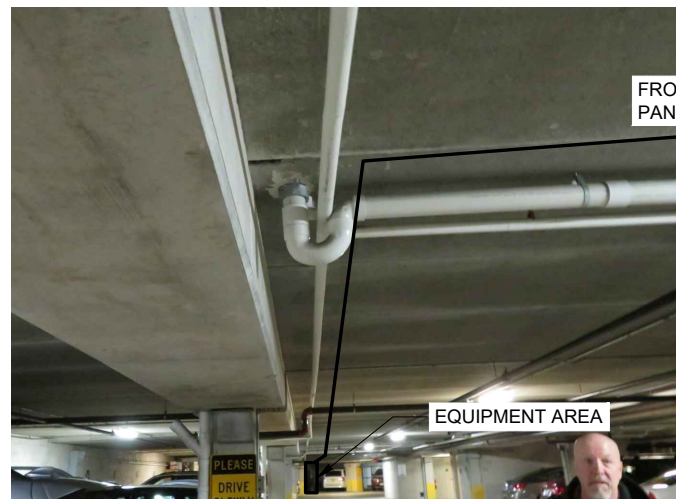
2 PROPOSED TAP BOX LOCATION  
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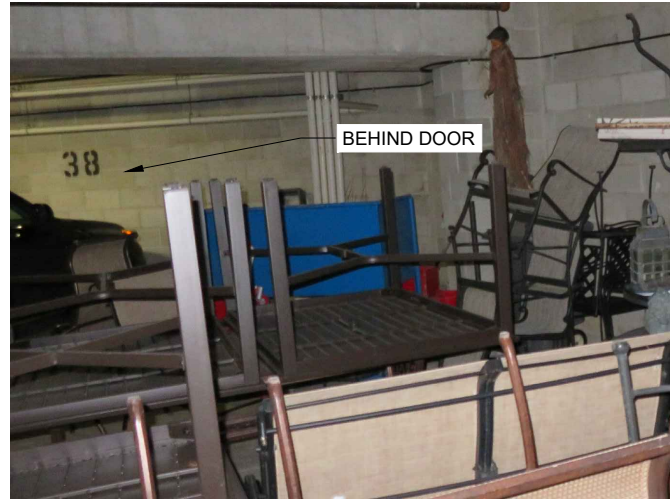
3 EXISTING METER CENTER  
SCALE: N.T.S.



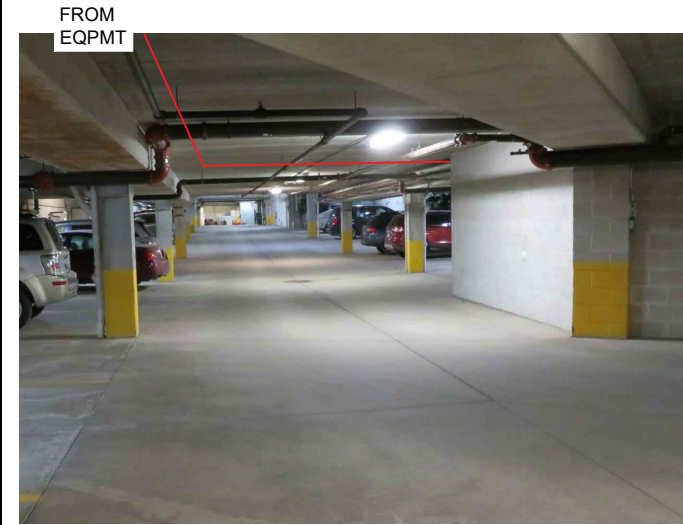
4 PROPOSED FIBER ENTRY TO BUILDING  
SCALE: N.T.S.



5 PROPOSED UTILITIES ROUTE TO EQUIPMENT  
SCALE: N.T.S.



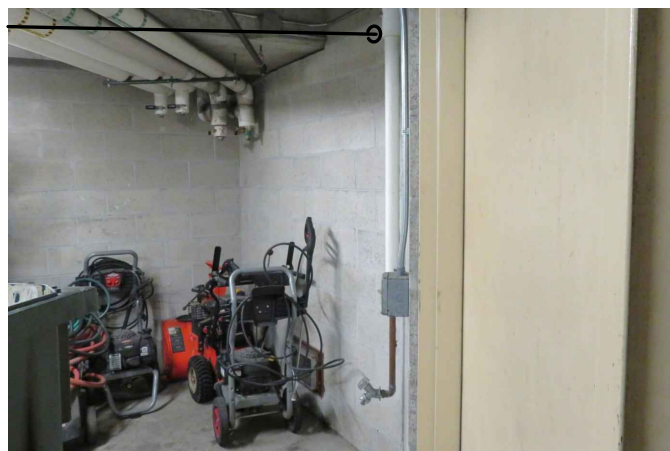
6 PROPOSED EQUIPMENT AREA  
SCALE: N.T.S.



7 PROPOSED COAX ROUTE TO SHAFT UP TO ROOF  
SCALE: N.T.S.



8 ENTRY TO STOREROOM / COAX UP IN ROOM  
SCALE: N.T.S.



9 INSIDE STOREROOM/ PROPOSED COAX UP TO ROOF  
SCALE: N.T.S.

**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

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

NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SITE PHOTOS

SHEET NUMBER  
**P-1**



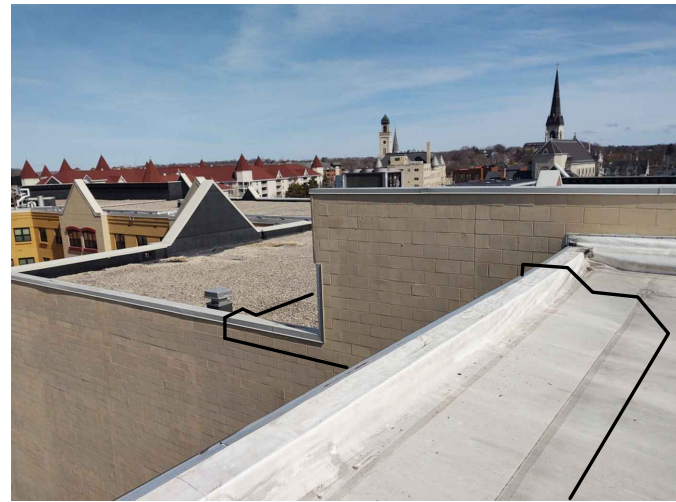
1 PROPOSED COAX ENTRY ONTO ROOF  
SCALE: N.T.S.



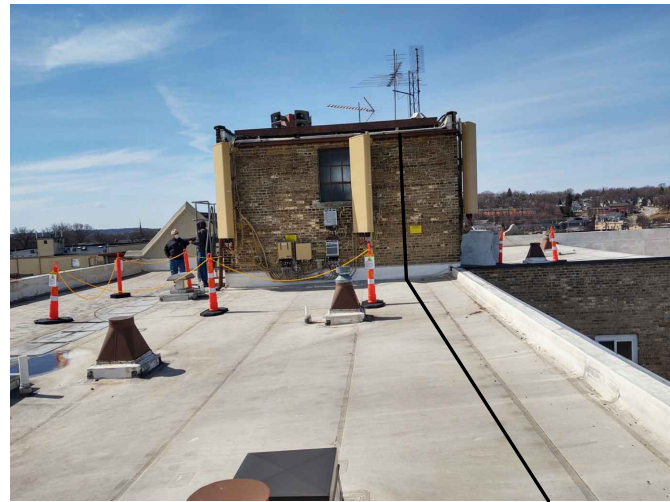
2 PROPOSED COAX ROUTE ACROSS ROOF  
SCALE: N.T.S.



3 PROPOSED COAX ROUTE ACROSS ROOF  
SCALE: N.T.S.



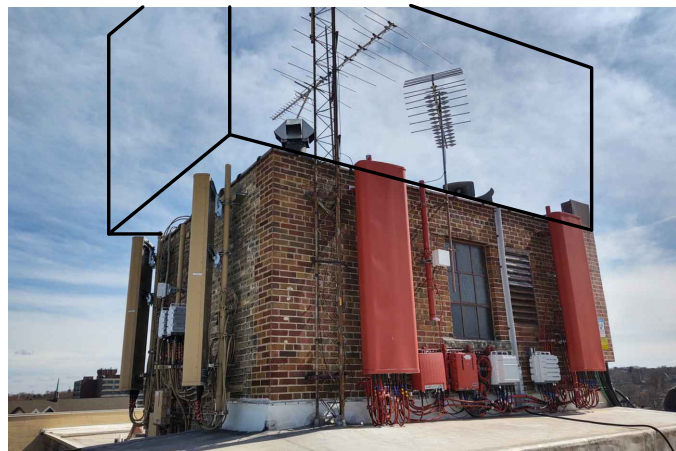
4 PROPOSED COAX TRANSITION FROM NEW / OLD BUILDING  
SCALE: N.T.S.



5 PROPOSED COAX ROUTE TO PENTHOUSE  
SCALE: N.T.S.



6 EXISTING PENTHOUSE /PROPOSED ANTENNA LOCATION  
SCALE: N.T.S.



7 EXISTING PENTHOUSE /PROPOSED ANTENNA LOCATION  
SCALE: N.T.S.

**verizon**  
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TOWER 2, SUITE 400  
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NO.	DESCRIPTION	DATE	BY
1	FAILED STRUCTURAL ANALYSIS REVISED ANTENNA LOCATIONS	08/19/20 10/17/21	KSS RC

LOC. # 544361

DT WAUKESHA

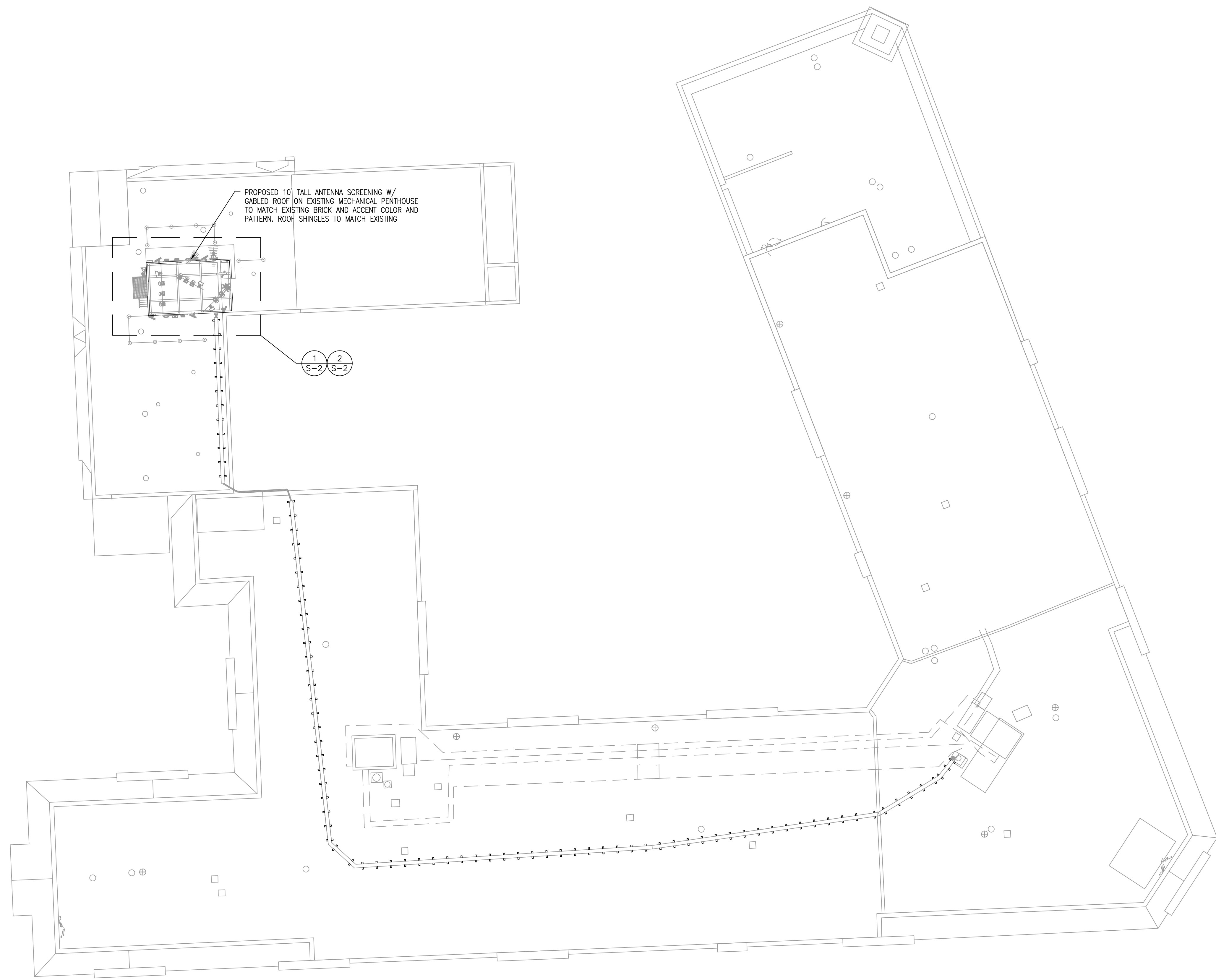
222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	KSS
CHECKED BY:	DS
DATE:	08/03/20
PROJECT #:	33-3301

SHEET TITLE  
SITE PHOTOS

SHEET NUMBER  
**P-2**





**1 ROOF PLAN**  
 SCALE: 1/16"=1'-0"  
 • VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS

**DESIGN LOADS:**

CODE: INTERNATIONAL BUILDING CODE 2015  
 SNOW LOAD = 30 PSF  
 WIND LOAD = 22 PSF (MIN, ASD)  
 WIND SPEED = 115 MPH (ULT.)  
 EXPOSURE = C  
 I = 1.0

**GENERAL STEEL NOTES:**

- 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.
- ALL STRUCTURAL STEEL W SHAPES SHALL CONFORM TO ASTM A572 OR A992 GRADE 50. ALL OTHER STRUCTURAL STEEL SHAPES, PLATES AND BARS SHALL CONFORM TO ASTM A36 GR 36, UNLESS NOTED OTHERWISE. COLD FORMED TUBING SHALL CONFORM TO ASTM A500 GRADE C. 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. ALL STEEL SHALL BE HOT DIPPED GALVANIZED.
- 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 E70XX.
- THE CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS.
- IF CONDITIONS VARY FROM THOSE ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- THE CONTRACTOR SHALL OBSERVE ALL SAFETY RULES DICTATED BY CODE AND GOOD PRACTICE.
- SHOULD UNFORESEEN CONDITIONS OR OTHER CAUSE NECESSITATE THE CONSTRUCTION DETAILS TO BE MODIFIED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PERFORMING THESE CHANGES.
- TAKE NECESSARY PRECAUTIONS WHEN WELDING TO GALVANIZED SURFACES.
- GALVANIZED TOUCH-UP ALL SURFACES AFTER WELDING.

**MISCELLANEOUS NOTES:**

- STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS OF ALL DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.
- NO OPENINGS, OTHER THAN THOSE SHOWN ON DESIGN DRAWINGS AND APPROVED SHOP DRAWINGS, SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.
- NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT.
- THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY BRACING AND / OR SUPPORTS REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND / OR SEQUENCES.
- DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
- THE CONTRACTOR SHALL INFORM THE ARCHITECT IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY THE ARCHITECT'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE ARCHITECT HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
- ALL THINGS WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS AND AMBIGUITIES, IN THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. PLANS AND / OR SPECIFICATIONS WILL BE CORRECTED, OR A WRITTEN INTERPRETATION OF THE ALLEGED DEFICIENCY, OMISSION, CONTRADICTION OR AMBIGUITY WILL BE MADE BY THE ARCHITECT BEFORE THE EFFECTED WORK PROCEEDS.

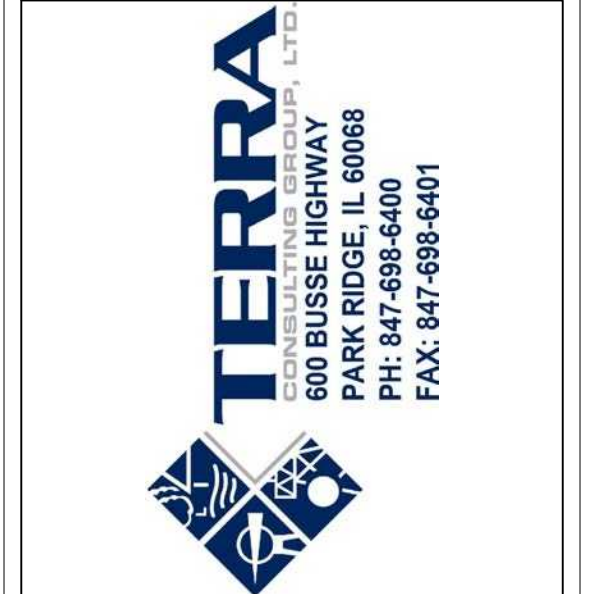
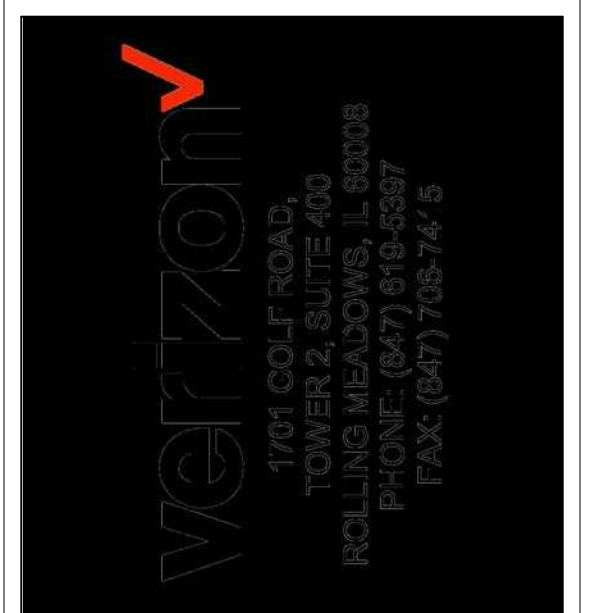
**FIBER REINFORCED PLASTIC NOTES (FRP)**

- FIBER REINFORCED PLASTIC TO HAVE THE FOLLOWING DESIGN PROPERTIES:  
 $E = 2,800,000$  PSI  
 $F_t = 10,000$  PSI  
 $F_v = 1,500$  PSI
- ALL FIBER REINFORCED PLASTIC SHALL BE MANUFACTURED BY BEDFORD PLASTICS OR APPROVED EQUAL.
- REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.+
- CALCULATIONS & DRAWINGS BY FRP MANUFACTURER TO BE SIGNED AND SEALED BY FRP'S PROFESSIONAL ENGINEER LICENSED IN THE STATE OF WISCONSIN AND SUBMITTED TO PROJECT ENGINEER FOR REVIEW AND COMMENT.
- ALL FRP WALL PANELS SHALL BE FROM STEALTH ®
- ALL FRP BOLTS SHALL BE FIBREBOLTS.



**HUTTER TRANKINA ENGINEERING**  
 CONSULTING STRUCTURAL ENGINEERS  
 HTE JOB # 19597B  
 32W273 Army Trail Road, Suite #100, Wayne, Illinois 60184  
 Tel: (630) 513-6711  
 E-mail: gen@htedesign.com  
 WEB SITE: www.htedesign.com

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NO.	DESCRIPTION	REVISIONS	
		DATE	BY
4			

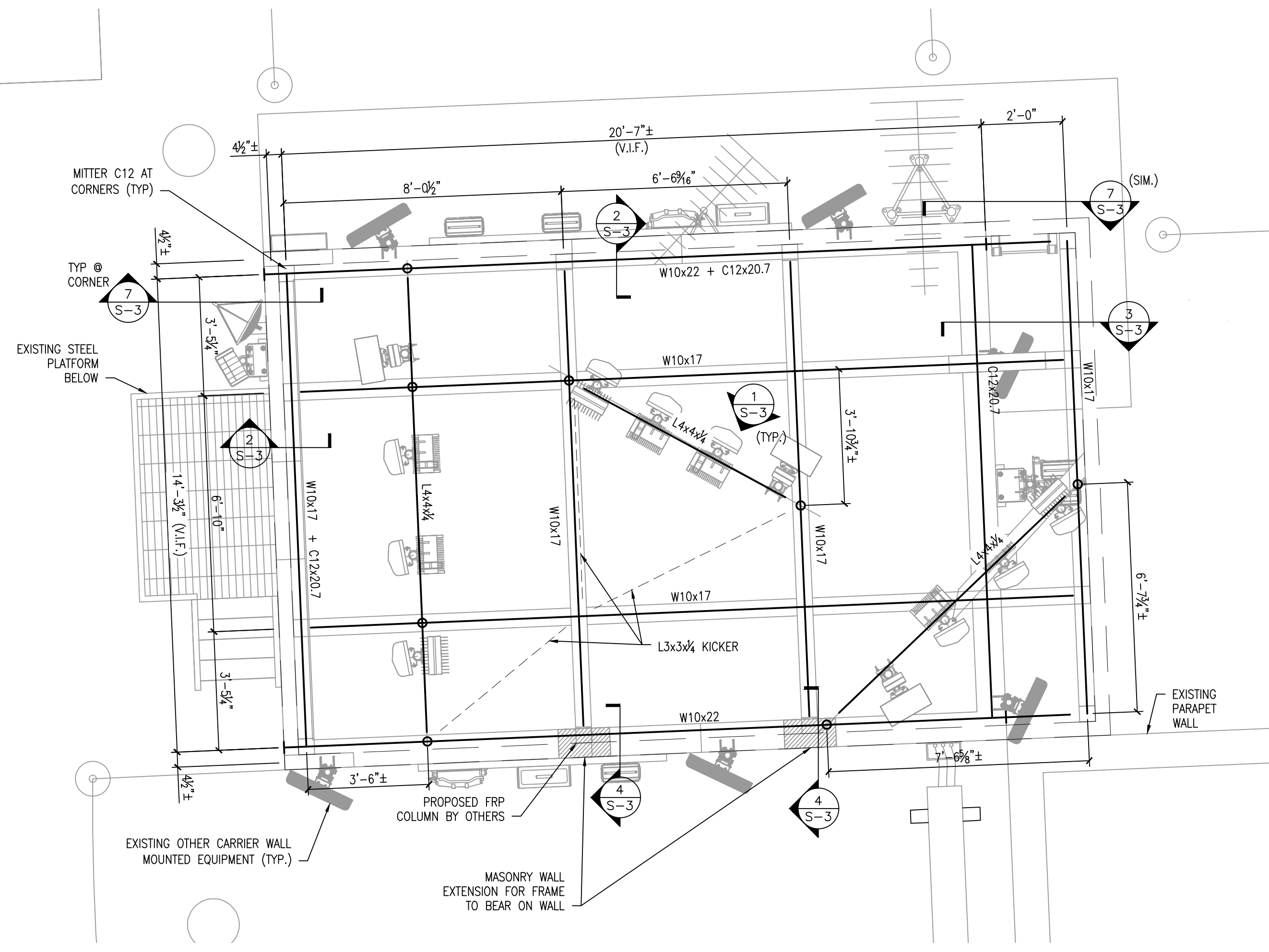
**LOC. # 544361**  
**DT WAUKESHA (AVALON SQUARE)**

222 PARK PL  
 WAUKESHA, WI 53186

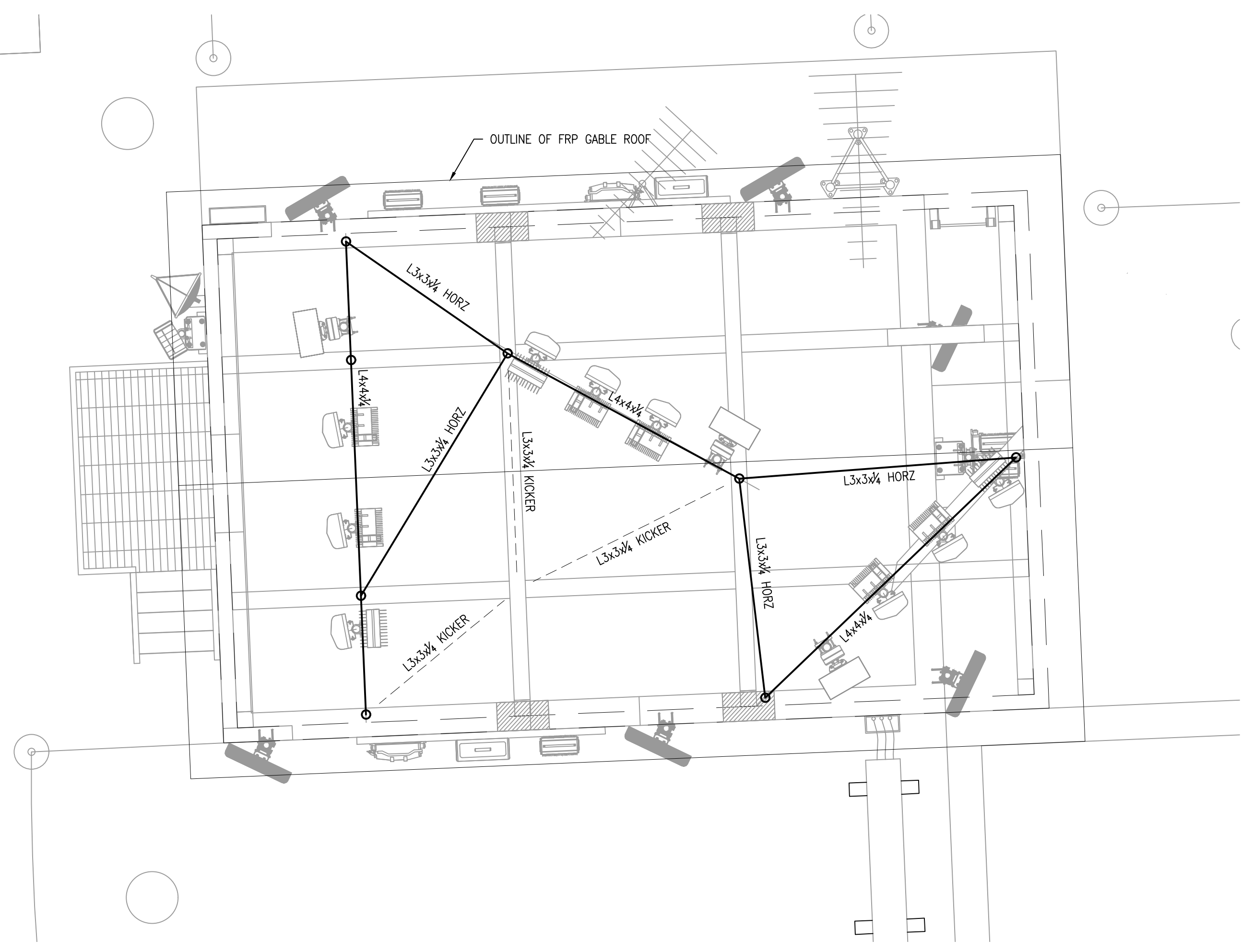
DRAWN BY:	JDR
CHECKED BY:	UV
DATE:	10/7/21
PROJECT #:	33-3301

SHEET TITLE  
**GENERAL NOTES AND ROOF PLAN**

SHEET NUMBER  
**S-1**



**1 PLATFORM FRAMING PLAN**  
 SCALE: 3/8"=1'-0"  
 • VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS



**2 TOP FRAMING PLAN**  
 SCALE: 3/8"=1'-0"  
 • VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS



**HUTTER TRANKINA ENGINEERING**  
 CONSULTING STRUCTURAL ENGINEERS  
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 WEB SITE: www.htedesign.com  
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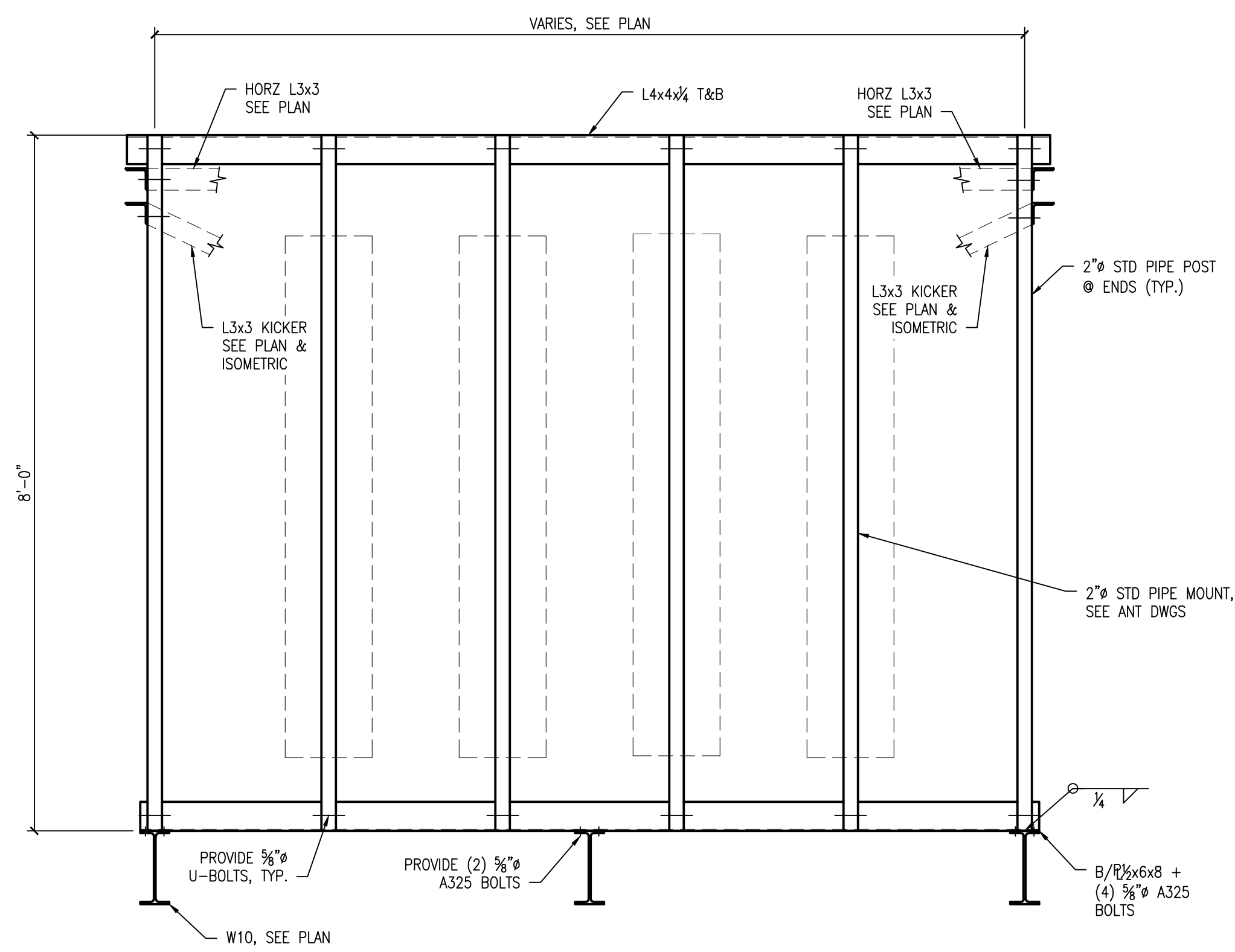
NO.	DESCRIPTION	DATE	BY
4			

LOC. # 544361  
 DT WAUKESHA (AVALON SQUARE)  
 222 PARK PL  
 WAUKESHA, WI 53186

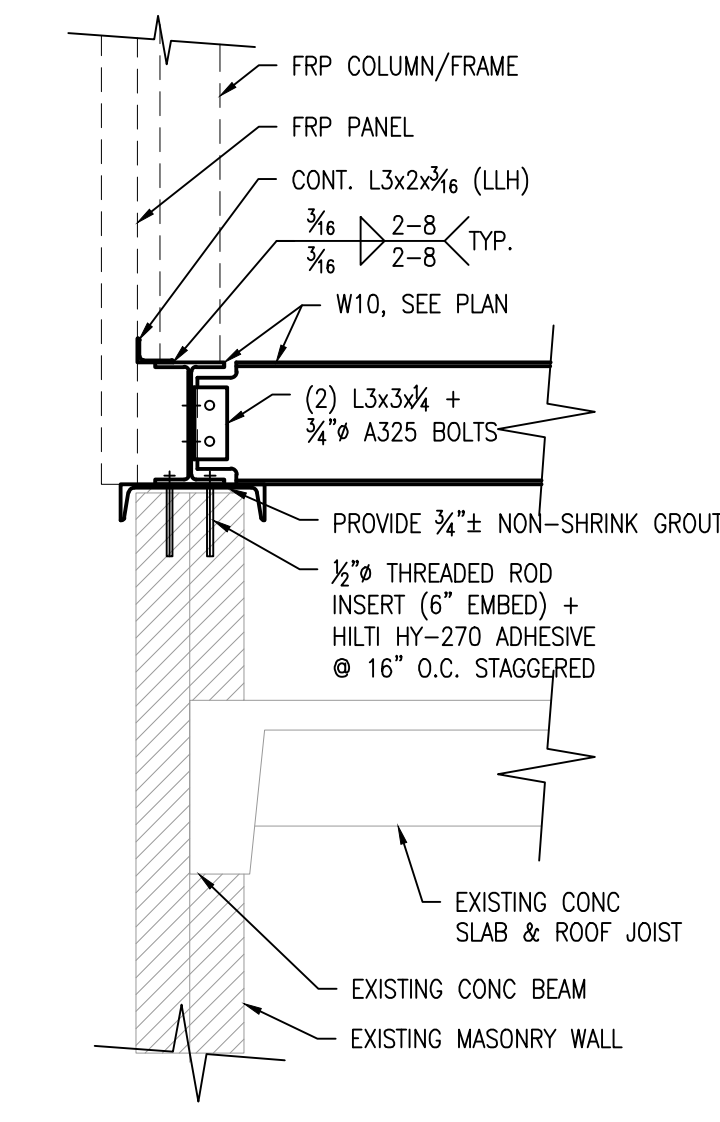
DRAWN BY:	JDR
CHECKED BY:	UV
DATE:	10/7/21
PROJECT #:	33-3301

SHEET TITLE  
**PLATFORM FRAMING PLAN**

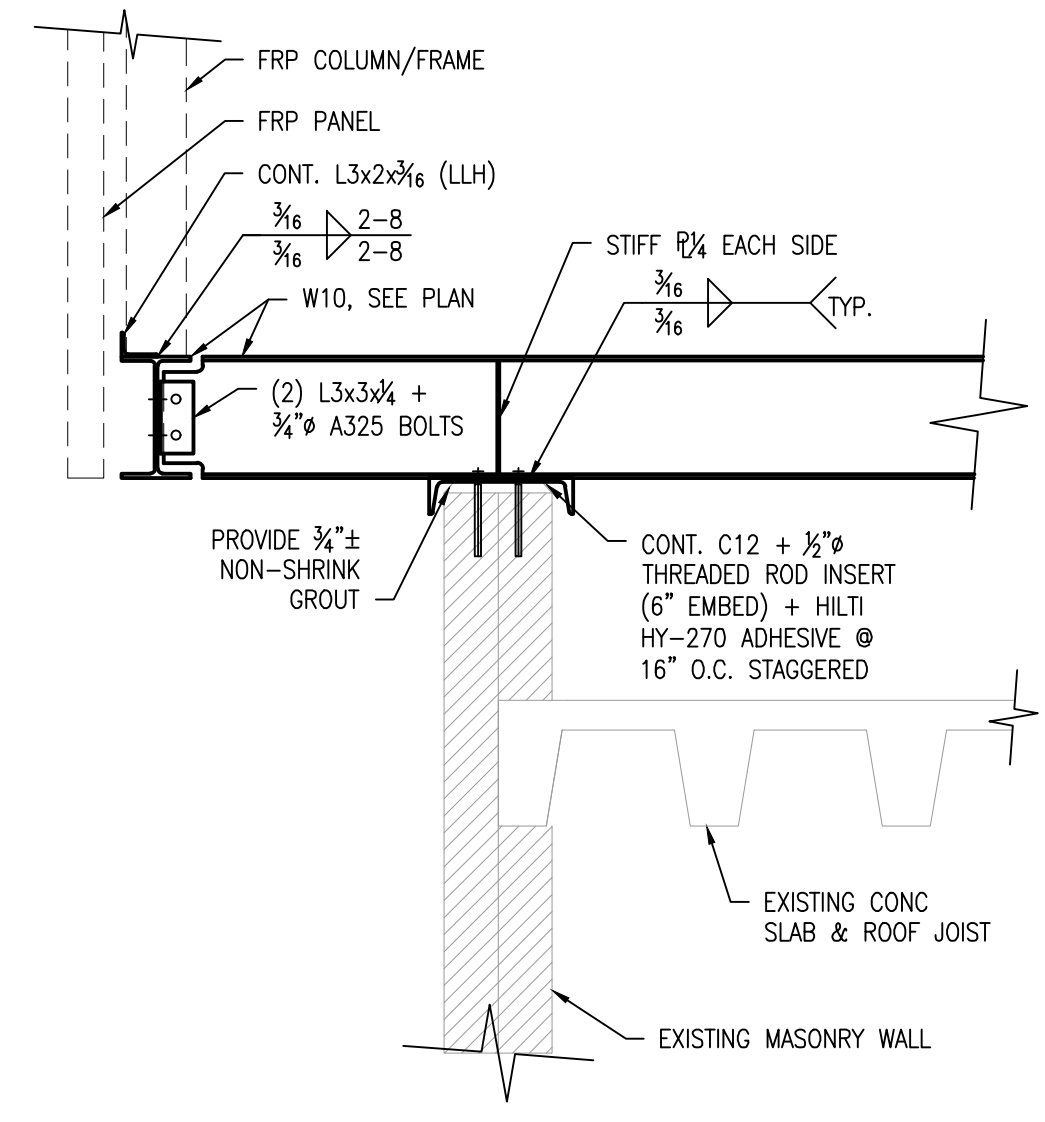
SHEET NUMBER  
**S-2**



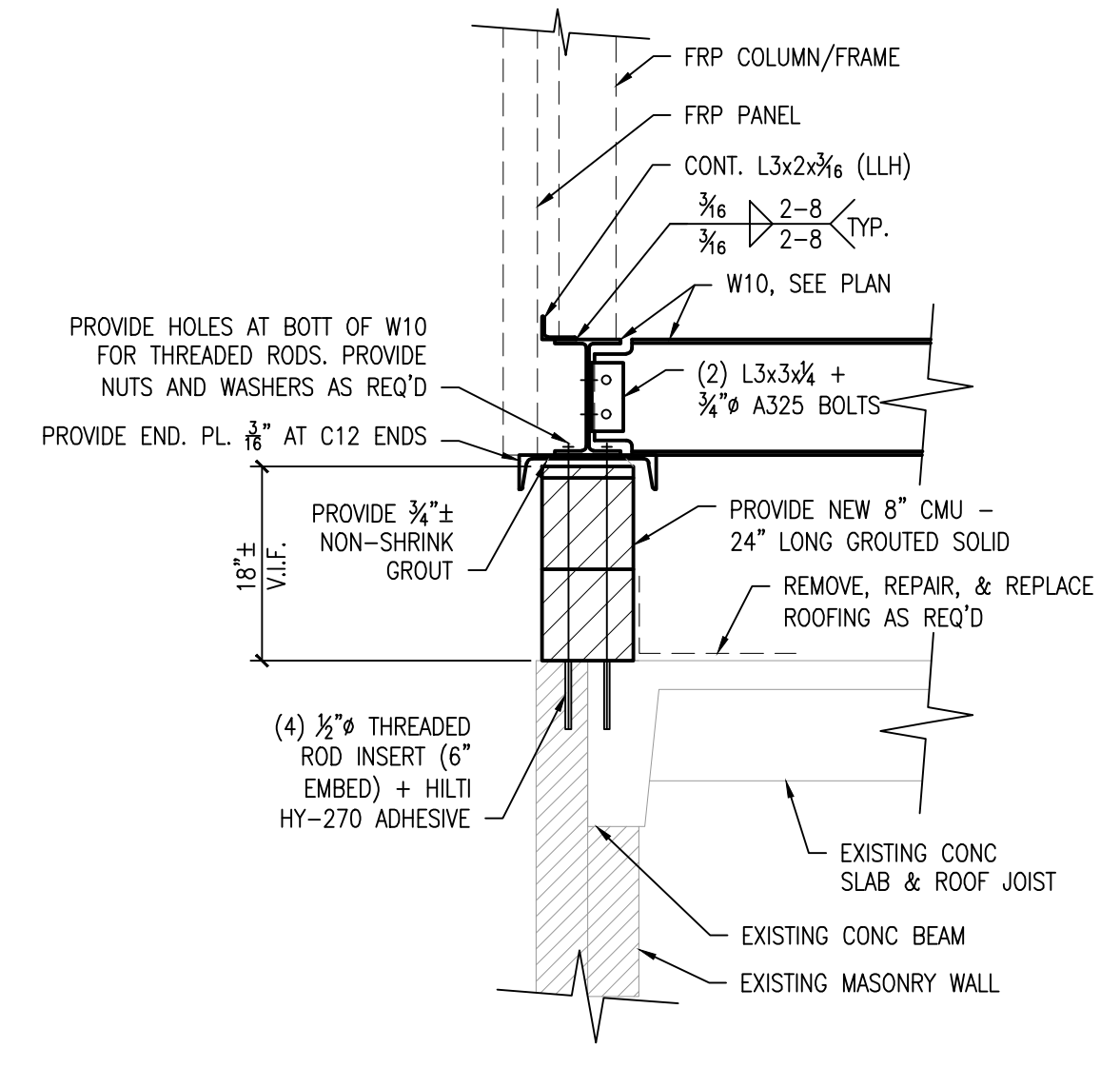
**1 ANTENNA FRAME ELEVATION**  
SCALE: 3/4"=1'-0"



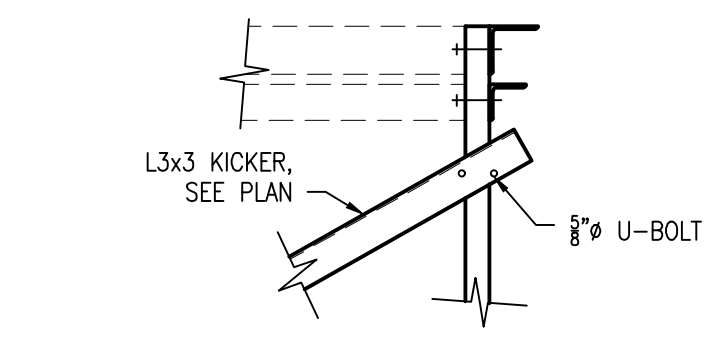
**2 CONNECTION DETAIL**  
SCALE: 3/4"=1'-0"



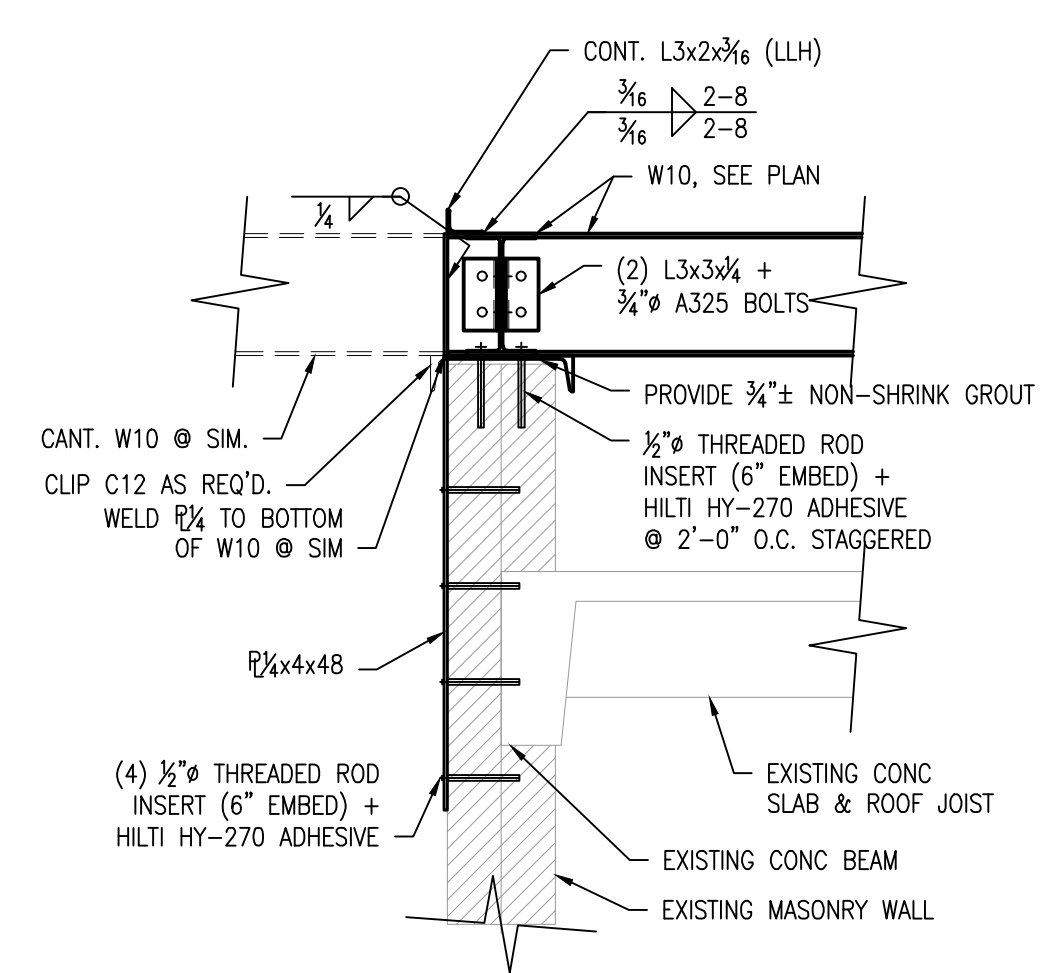
**3 CANTILEVER BEAM SECTION**  
SCALE: 3/4"=1'-0"



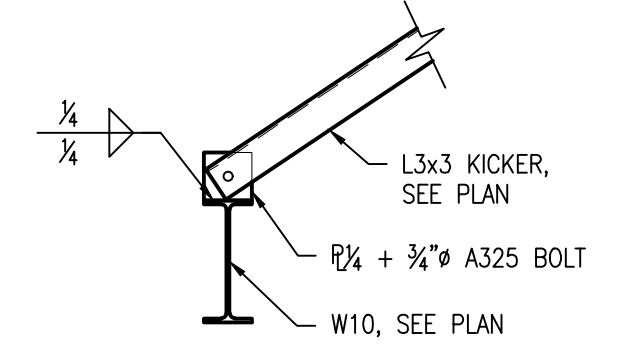
**4 CMU WALL EXTENSION**  
SCALE: 3/4"=1'-0"



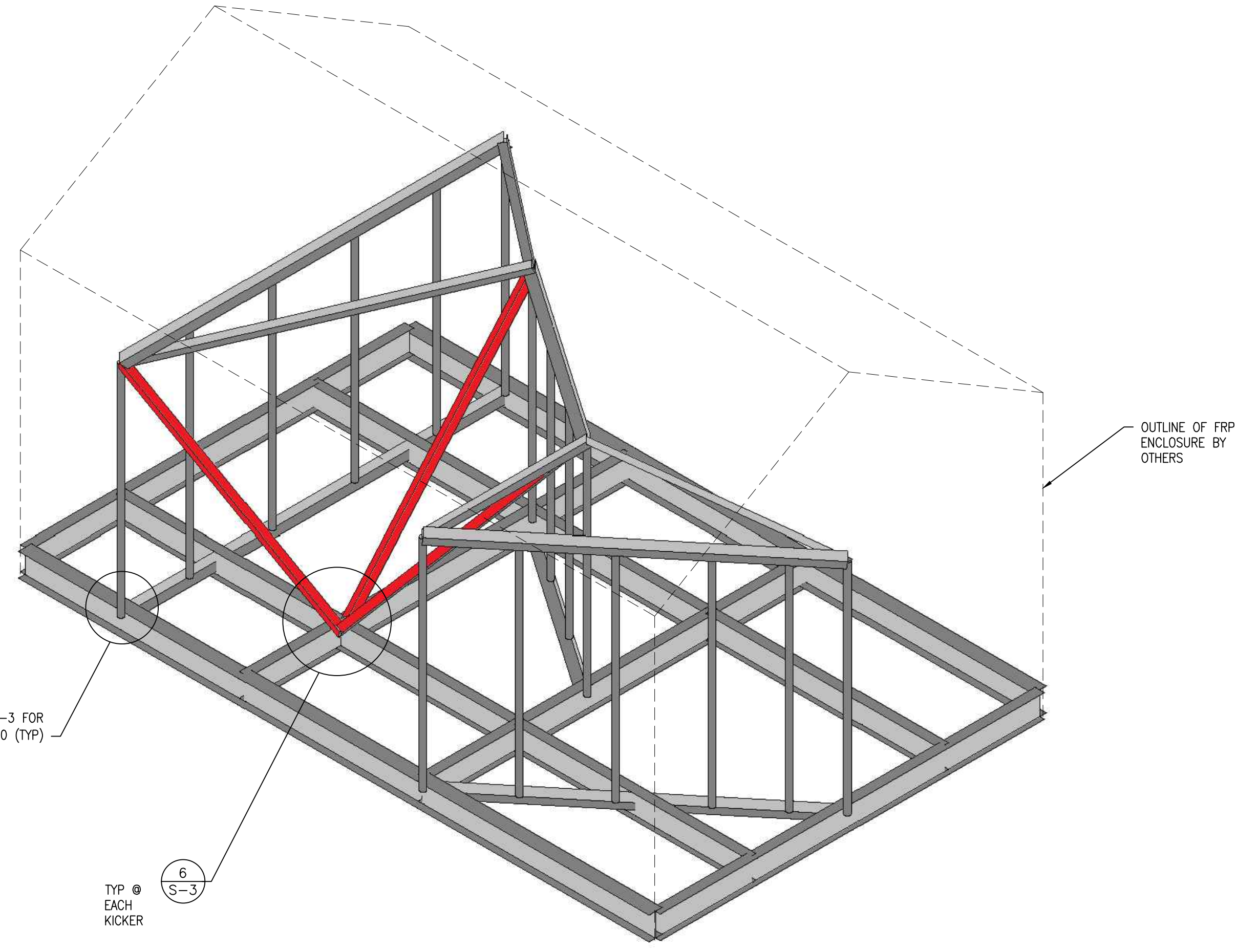
**5 KICKER TOP CONN DETAIL**  
SCALE: 3/4"=1'-0"



**7 CONNECTION DETAIL**  
SCALE: 3/4"=1'-0"



**6 KICKER BOTT CONN DETAIL**  
SCALE: 3/4"=1'-0"



**8 ISOMETRIC VIEW**  
SCALE: N.T.S.



**HUTTER TRANKINA ENGINEERING**  
CONSULTING STRUCTURAL ENGINEERS  
HTE JOB # 19597B  
32W273 Army Trail Road, Suite #100, Wayne, Illinois 60184  
Tel: (630) 513-6711  
E-mail: gen@htedesign.com  
WEB SITE: www.htedesign.com

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**verizon**  
1701 GOLF ROAD,  
TOWER 2, SUITE 400  
ROLLING MEADOWS, IL 60008  
PHONE: (847) 619-5397  
FAX: (847) 706-7415

**TERRA**  
600 BUSSE HIGHWAY  
PARK RIDGE, IL 60088  
PH: 847-698-6400  
FAX: 847-698-6401

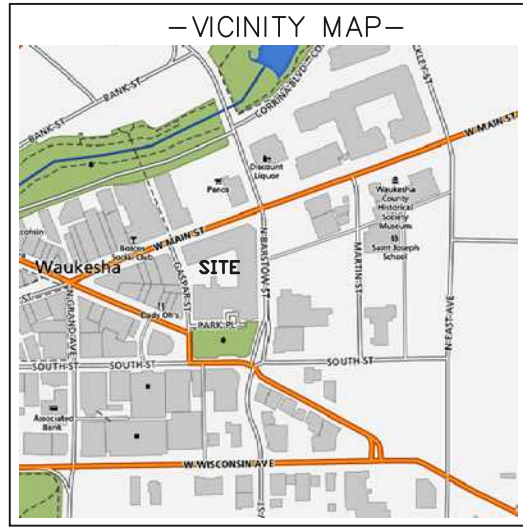
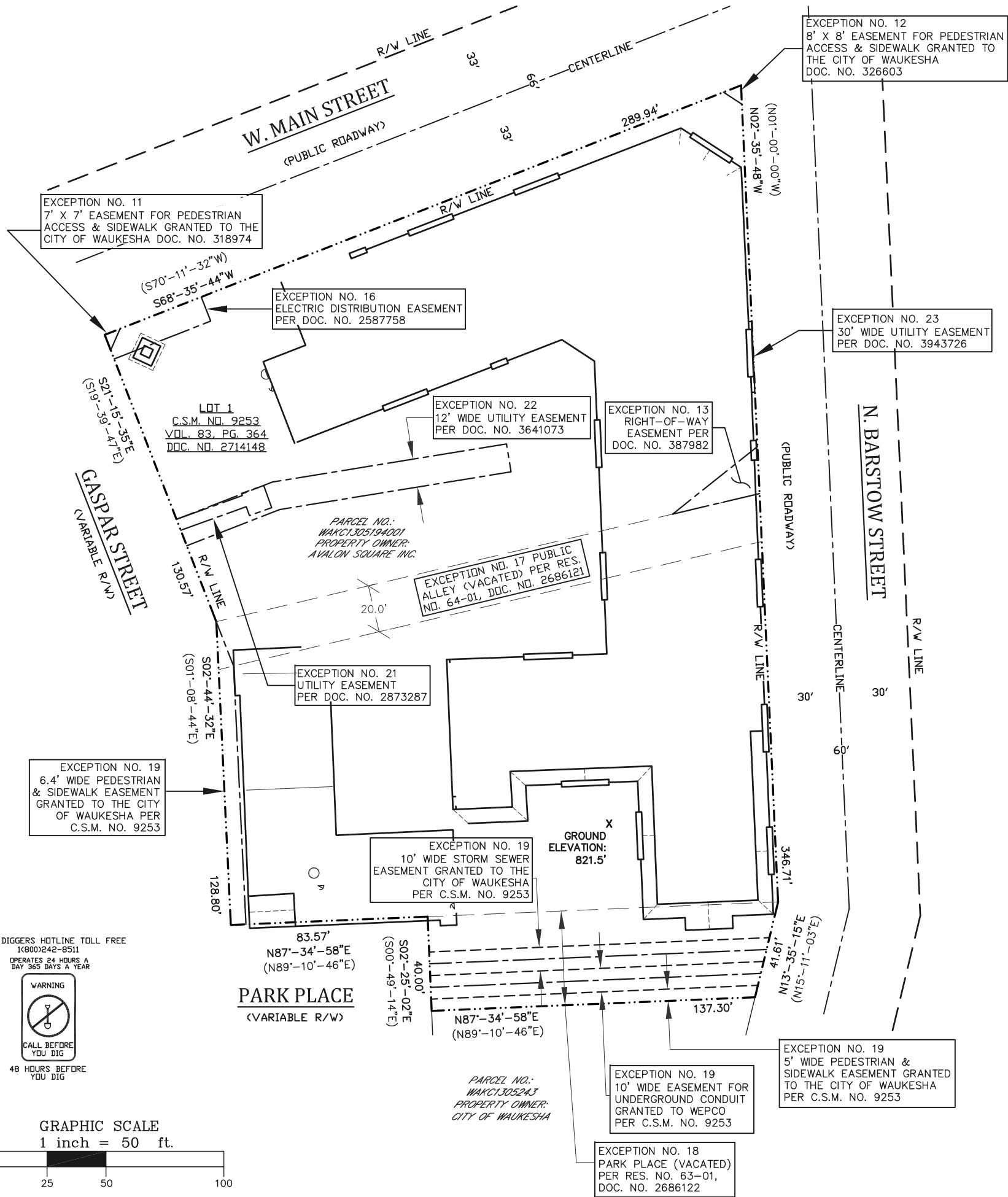
NO.	REVISIONS	DESCRIPTION	BY	
			DATE	
4				

LOC. # 544361  
**DT WAUKESHA (AVALON SQUARE)**  
222 PARK PL  
WAUKESHA, WI 53186

DRAWN BY:	JDR
CHECKED BY:	UV
DATE:	10/7/21
PROJECT #:	33-3301

SHEET TITLE  
**PLATFORM DETAILS**

SHEET NUMBER  
**S-3**

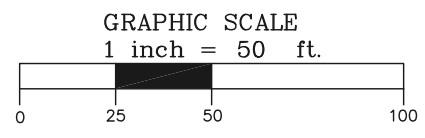


**CENTER OF PENTHOUSE**  
 LATITUDE: 43°-00'-40.47"  
 LONGITUDE: 88°-13'-47.48"  
 (Per North American Datum of 83/2011)  
 Top of Penthouse Elevation: 889.0'  
 Top of Roof Surface Elevation: 875.6'  
 Ground Elevation: 821.5'  
 (Per North American Vertical Datum of 1988)

BEARINGS REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM (NAD27) - SOUTH ZONE AND THE EAST LINE OF LOT 1, C.S.M. NO. 9253; WHICH BEARS: N02°-35'-48"W (N01°-00'-00"W)

CALL DIGGERS HOTLINE TOLL FREE  
 1(800)242-8511  
 OPERATES 24 HOURS A DAY 365 DAYS A YEAR

**WARNING**  
 CALL BEFORE YOU DIG  
 48 HOURS BEFORE YOU DIG



**SURVEYOR'S CERTIFICATE**  
 I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

WISCONSIN PROFESSIONAL LAND SURVEYOR  
 Craig A. Keach, S-2333

SURVEYED FOR:

600 Busse Highway  
 Park Ridge, IL 60068  
 OFFICE: (847) 698-6400  
 FAX: (678) 444-4472

SURVEYED FOR:

1515 WOODFIELD ROAD  
 SUITE 1400  
 SCHAUMBURG, IL 60173

**MERIDIAN**  
 SURVEYING, LLC

N9637 Friendship Drive Office: 920-993-0881  
 Kaukauna, WI 54130 Fax: 920-273-6037

**SITE NAME:**  
 DT WAUKESHA (AVALON SQUARE)

**SITE NUMBER:**  
 544368

**SITE ADDRESS:**  
 222 PARK PLACE  
 WAUKESHA, WI 53186

**PROPERTY OWNER:**  
 AVALON SQUARE INC.  
 222 PARK PLACE  
 WAUKESHA, WI 53186

**PARCEL NO.:** WAKC 1305194001

**ZONED:** B-2

**DEED REFERENCE:**  
 DOC. NO. 2714145, 2714146 & 2714147

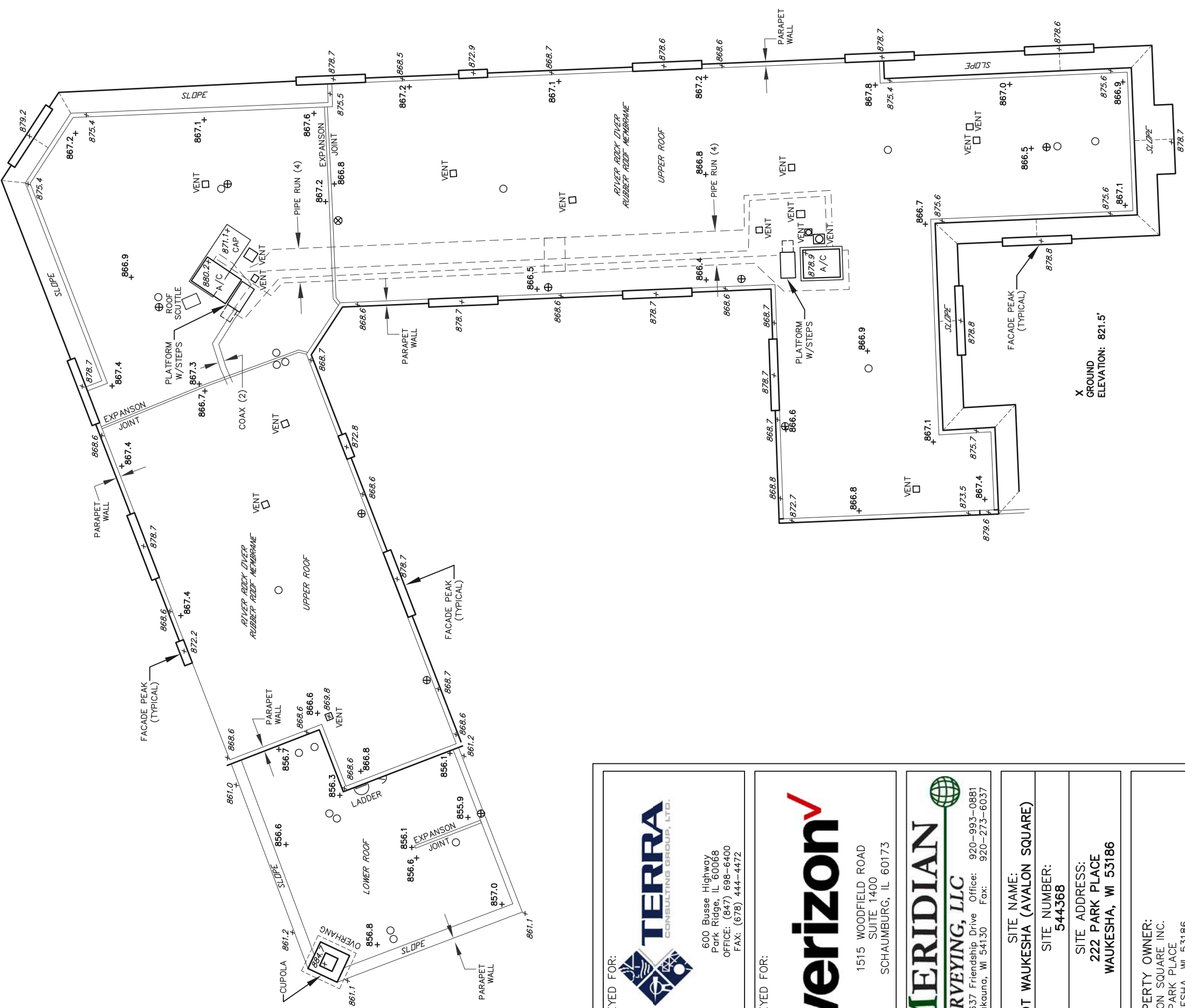
**LEASE EXHIBIT**  
 FOR  
 VERIZON WIRELESS PERSONAL COMMUNICATIONS LP d/b/a VERIZON WIRELESS  
 BEING A PART OF THE SE1/4 OF THE NE1/4, SECTION 3, T.6N., R.19E., CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	8-6-21	Additional Locates	JB
2	3-13-20	Added Title Report	JB
1	1-23-20	Preliminary Survey	JD

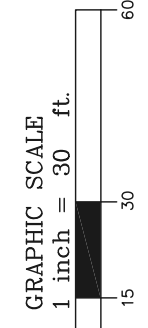
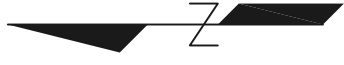
**DRAWN BY:** J.D. **FIELD WORK DATE:** 8-3-21

**CHECKED BY:** C.A.K. **FIELD BOOK:** X

**JOB NO.:** 13027 **SHEET** 1 OF 4



BEARINGS REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM (NAD27) - SOUTH ZONE WHICH BEARS: N02-35-48"W (N01-00-00"W)



- LEGEND—**
- = EXISTING 4" ROOF VENT
  - ◡ = DOOR
  - ⊕ = EXISTING ROOF DRAIN
  - ⊗ = WATER SPIGOT
  - ⊙ = EXISTING SATELLITE DISH

**SURVEYOR'S CERTIFICATE**  
 I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

WISCONSIN PROFESSIONAL LAND SURVEYOR  
 Craig A. Keach, S-2333

SURVEYED FOR:




600 Busse Highway  
 Park Ridge, IL 60068  
 OFFICE: (847) 698-6400  
 FAX: (678) 444-4472

SURVEYED FOR:



1515 WOODFIELD ROAD  
 SUITE 1400  
 SCHAUMBURG, IL 60173

**MERIDIAN SURVEYING, LLC**



N9637 Friendship Drive Office: 920-993-0881  
 Kaukauna, WI 54130 Fax: 920-273-6037

SITE NAME:  
**DT WAUKESHA (AVALON SQUARE)**

SITE NUMBER:  
**544368**

SITE ADDRESS:  
**222 PARK PLACE  
 WAUKESHA, WI 53186**

PROPERTY OWNER:  
 AVALON SQUARE INC.  
 222 PARK PLACE  
 WAUKESHA, WI 53186

PARCEL NO.: WAKC 1305194001

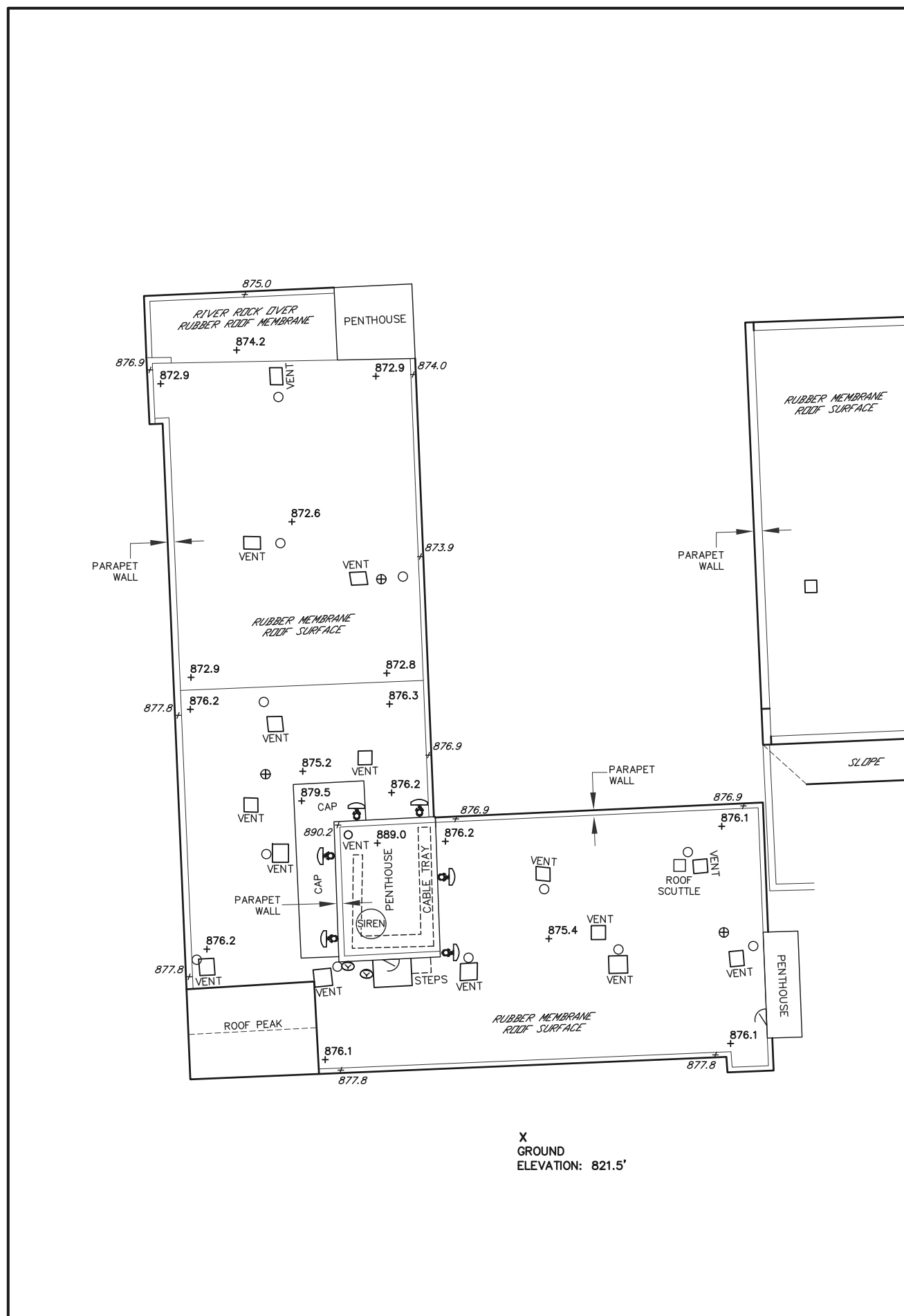
ZONED: B-2

DEED REFERENCE:  
 DOC. NO. 2714145, 2714146 & 2714147

**LEASE EXHIBIT**  
 FOR  
 VERIZON WIRELESS PERSONAL  
 COMMUNICATIONS LP d/b/a VERIZON WIRELESS  
 BEING A PART OF THE SE1/4 OF THE  
 NE1/4, SECTION 3, T.6N., R.19E.,  
 CITY OF WAUKESHA,  
 WAUKESHA COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	8-6-21	Additional Locates	JB
2	3-13-20	Added Title Report	JB
1	1-23-20	Preliminary Survey	JD

DRAWN BY:	J.D.	FIELD WORK DATE:	1-22-20
CHECKED BY:	C.A.K.	FIELD BOOK:	X
JOB NO.:	11806	SHEET	2 OF 4

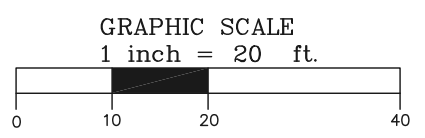


X  
GROUND  
ELEVATION: 821.5'

**-LEGEND-**

- = EXISTING 4" ROOF VENT
- ◻ = DOOR
- ⊕ = EXISTING ROOF DRAIN
- ⊗ = WATER SPIGOT
- Ⓢ = EXISTING SATELLITE DISH

BEARINGS REFERENCED TO THE WISCONSIN STATE  
 PLANE COORDINATE SYSTEM (NAD27) - SOUTH ZONE  
 AND THE EAST LINE OF LOT 1, C.S.M. NO. 9255;  
 WHICH BEARS: N02°-35'-48"W (N01°-00'-00"W)



**SURVEYOR'S CERTIFICATE**  
I, Craig A. Keach, Professional Land Surveyor of Meridian Surveying, LLC., certify that I have surveyed the described property and that the map shown is a true and accurate representation thereof to the best of my knowledge and belief.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

WISCONSIN PROFESSIONAL LAND SURVEYOR  
Craig A. Keach, S-2333

SURVEYED FOR:

600 Busse Highway  
Park Ridge, IL 60068  
OFFICE: (847) 698-6400  
FAX: (678) 444-4472

SURVEYED FOR:

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SUITE 1400  
SCHAUMBURG, IL 60173

**MERIDIAN**  
**SURVEYING, LLC**

N9637 Friendship Drive Office: 920-993-0881  
Kaukauna, WI 54130 Fax: 920-273-6037

**SITE NAME:**  
DT WAUKESHA (AVALON SQUARE)

**SITE NUMBER:**  
544368

**SITE ADDRESS:**  
222 PARK PLACE  
WAUKESHA, WI 53186

**PROPERTY OWNER:**  
AVALON SQUARE INC.  
222 PARK PLACE  
WAUKESHA, WI 53186

**PARCEL NO.:** WAKC 1305194001

**ZONED:** B-2

**DEED REFERENCE:**  
DOC. NO. 2714145, 2714146 & 2714147

**LEASE EXHIBIT**  
FOR  
VERIZON WIRELESS PERSONAL  
COMMUNICATIONS LP d/b/a VERIZON WIRELESS  
BEING A PART OF THE SE1/4 OF THE  
NE1/4, SECTION 3, T.6N., R.19E.,  
CITY OF WAUKESHA,  
WAUKESHA COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	8-6-21	Additional Locates	JB
2	3-13-20	Added Title Report	JB
1	1-23-20	Preliminary Survey	JD

<b>DRAWN BY:</b> J.D.	<b>FIELD WORK DATE:</b> 8-3-21
<b>CHECKED BY:</b> C.A.K.	<b>FIELD BOOK:</b> x
<b>JOB NO.:</b> 13027	<b>SHEET</b> 3 OF 4

PARENT PARCEL

ALL THAT PARCEL OF LAND IN THE IN THE COUNTY OF WAUKESHA AND STATE OF WISCONSIN AS MORE FULLY DESCRIBED IN DEED DOCUMENT NUMBER 2714147 DOCUMENT NUMBER 2714146 DOCUMENT NUMBER 2714145 AND PARCEL # WAKC1305194001, BEING KNOWN AND DESIGNATED AS:

LOTS 1 THROUGH 10, BLOCK D, GALE, BARSTOW & LOCKWOOD'S PLAT OF PRAIRIEVILLE (NOW WAUKESHA), BEING A PART OF THE NORTHEAST 1/4 OF SECTION 3, TOWN 6 NORTH, RANGE 19 EAST, IN THE CITY OF WAUKESHA, COUNTY OF WAUKESHA, STATE OF WISCONSIN.

PARCEL NUMBER: WAKC1305194001

BEING THE SAME PROPERTY ACQUIRED BY AVALON SQUARE, INC. BY DEED OF PRESBYTERIAN HOMES FOUNDATION A/K/A PRESBYTERIAN HOMES FOUNDATIONS, INC., DATED 10/11/2001 AND RECORDED 10/26/2001 IN DOCUMENT NUMBER : 2714147

BEING THE SAME PROPERTY ACQUIRED BY AVALON SQUARE, INC. BY DEED OF NATIONAL HOTEL, LLC, DATED 10/11/2001 AND RECORDED 10/26/2001 IN DOCUMENT NUMBER : 2714146

BEING THE SAME PROPERTY ACQUIRED BY AVALON SQUARE, INC. BY DEED OF THE CITY OF WAUKESHA, DATED 10/10/2001 AND RECORDED 10/26/2001 IN DOCUMENT NUMBER : 2714145

TITLE REPORT REVIEW

TITLE REPORT: AMC SETTLEMENT SERVICES

COMMITMENT NO. 50008311

EFFECTIVE DATE: JANUARY 31, 2020

FEE SIMPLE TITLE VESTED IN: AVALON SQUARE, INC.

NOTE: THE STATEMENT OF APPLICABILITY REFERS TO THE LEASE SITE AND ANY EASEMENTS PERTINENT THEREUNTO WHERE SPECIFIC ENCUMBRANCES AFFECT THE LEASE SITE AND/OR A PERTINENT EASEMENT, THEY ARE IDENTIFIED AS SUCH.

SCHEDULE B-II

- (1-8) THESE ARE GENERAL STATEMENTS AND NOT SURVEY RELATED MATTERS.
- (10) SUBJECT TO GALE, BARSTOW & LOCKWOOD'S PLAT OF PRAIRIEVILLE RECORDED 12/29/1890 IN PLAT BOOK 6, PAGE 26, WAUKESHA COUNTY RECORDS. **DOES NOT APPLY.**
- (11) SUBJECT TO EASEMENT FROM JOHN NICHOLAS WEBER TO THE CITY OF WAUKESHA RECORDED 10/11/1948, DOC # 318974, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (12) SUBJECT TO EASEMENT FROM ROBERT B. DUNLAP AND GWYNDOLINE V. S. DUNLAP, HIS WIFE, TO THE CITY OF WAUKESHA RECORDED 6/16/1949, DOC # 326603, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (13) SUBJECT TO EASEMENT FROM ARCHIE M. PAINE TO THE CITY OF WAUKESHA RECORDED 10/22/1953, DOC # 387982, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (14) SUBJECT TO ORDINANCE APPROVING REDEVELOPMENT PLAN NO. 1 - AMENDED BY THE CITY OF WAUKESHA RECORDED 2/5/1985, DOC # 1285651, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (15) SUBJECT TO ORDINANCE REGARDING "ADPT RESOLUTION" - REDEVELOPMENT DISTRICT NO. 3 BY THE CITY OF WAUKESHA RECORDED 10/11/1990, DOC # 1617130, WAUKESHA COUNTY RECORDS; AS AMENDED BY DOCUMENT RECORDED 1/20/1999, DOC # 2409010, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (16) SUBJECT TO WISCONSIN ELECTRIC DISTRIBUTION EASEMENT UNDERGROUND FROM PRESBYTERIAN HOMES FOUNDATION, INC. TO WISCONSIN ELECTRIC POWERCOMPANY RECORDED 9/1/2000, DOC # 2587758, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (17) SUBJECT TO RESOLUITON BY THE COMMON COUNCIL OF THE CITY OF WAUKESHA TO DISCONTINUE AND VACATE A PORTION OF PUBLIC ALLEY NUMBER 15 RECORDED 8/8/2001, DOC # 2686121, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (18) SUBJECT TO RESOLUITON BY THE COMMON COUNCIL OF THE CITY OF WAUKESHA TO DISCONTINUE AND VACATE A PORTION OF PARK PLACE RECORDED 8/8/2001, DOC # 2686122, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (19) SUBJECT TO CERTIFIED SURVEY MAP NO. 9253 RECORDED 10/26/2001, DOC # 2714148, WAUKESHA COUNTY RECORDS. **SEVERAL ENCUMBRANCES DISCLOSED IN THE CSM APPLY TO PARENT PARCEL AND ARE PLOTTED AND SHOWN.**
- (20) SUBJECT TO REGULATORY AGREEMENT FOR MULTIFAMILY HOUSING PROJECTS RECORDED 10/29/2001, DOC # 2714243, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (21) SUBJECT TO LIMITED EASEMENT FROM AVALON SQUARE, INC. TO WISCONSIN BELL, INC. D.B.A. SBC AMERITECH WISCONSIN RECORDED 11/6/2002, DOC # 2873287, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (22) SUBJECT TO DISTRIBUITON EASEMENT UNDERGROUND FROM AVALON SQUARE, INC. TO WISCONSIN ELECTRIC POWER COMPANY RECORDED 3/30/2009, DOC # 3641073, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**


- (23) SUBJECT TO MEMORANDUM OF LEASE BETWEE AVALON SQUARE, INC. AND UNITED STATES CELLULAR OPERATING COMPANY, LLC, RECORDED 8/22/2012, DOC # 3943726, WAUKESHA COUNTY RECORDS. **APPLIES TO PARENT PARCEL AND IS PLOTTED AND SHOWN.**
- (24) SUBJECT TO REGULATORY AGREEMENT FOR MULTIFAMILY HOUSING PROJECTS RECORDED 10/1/2012, DOC # 3954339, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (25) SUBJECT TO SUBORDINATION, NON-DISTUBANCE AND ATTORMENT AGREEMENT BETWEEN AVALON SQUARE, INC., UNITED STATES CELLULAR OPERATING COMPANY, LLC, AND OAK GROVE COMMERCIAL MORTGAGE, LLC, RECORDED 10/1/2012, DOC # 3954694, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (26) SUBJECT TO SUBORDINATION, NON-DISTUBANCE AND ATTORMENT AGREEMENT BETWEEN AVALON SQUARE, INC., SUBWAY REAL ESTAYTE CORP., AND OAK GROVE COMMERCIAL MORTGAGE, LLC, RECORDED 10/1/2012, DOC # 3954695, WAUKESHA COUNTY RECORDS. **THIS IS NOT A SURVEY RELATED ITEM.**
- (27) THESE ARE GENERAL STATEMENTS AND NOT SURVEY RELATED MATTERS.

SURVEYED FOR:



600 Busse Highway  
Park Ridge, IL 60068  
OFFICE: (847) 698-6400  
FAX: (678) 444-4472

SURVEYED FOR:



1515 WOODFIELD ROAD  
SUITE 1400  
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**MERIDIAN**  
**SURVEYING, LLC**



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SITE NAME:  
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**222 PARK PLACE  
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222 PARK PLACE  
WAUKESHA, WI 53186

PARCEL NO.: WAKC 1305194001

ZONED: B-2

DEED REFERENCE:  
DOC. NO. 2714145, 2714146 & 2714147

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FOR  
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COMMUNICATIONS LP d/b/a VERIZON WIRELESS  
BEING A PART OF THE SE1/4 OF THE  
NE1/4, SECTION 3, T.6N., R.19E.,  
CITY OF WAUKESHA,  
WAUKESHA COUNTY, WISCONSIN

NO.	DATE	DESCRIPTION	BY
3	8-6-21	Additional Locates	JB
2	3-13-20	Added Title Report	JB
1	1-23-20	Preliminary Survey	JD

DRAWN BY:	J.D.	FIELD WORK DATE:	8-3-21
CHECKED BY:	C.A.K.	FIELD BOOK:	x
JOB NO.:	13027	SHEET	4 OF 4

**Project Details**

<b>FUZE Project ID:</b> 16630075
<b>Project Name:</b> TRADITIONAL
<b>Project Alt Name:</b>
<b>Project Type:</b> Initial Build
<b>Modification Type:</b>
<b>Designed Sector Carrier 4G:</b> 24
<b>Designed Sector Carrier 5G:</b> 3
<b>Additional Sector Carrier 4G:</b> N/A
<b>Additional Sector Carrier 5G:</b> N/A
<b>FP Solution Type &amp; Tech Type:</b> MCR;4G_700,4G_AWS,4G_AWS3,4G_CBRS,4G_PCS,5G_L-Sub6-Prep
<b>Carrier Aggregation:</b> false
<b>MPT Id:</b>
<b>eCIP-O:</b> false
<b>Suffix:</b>

**Location Information**

<b>Site ID:</b> 616520796
<b>E-NodeB ID:</b> 209671,2099671
<b>PSLC:</b> 544368
<b>Switch Name:</b>
<b>Tower Owner:</b>
<b>Tower Type:</b>
<b>Site Type:</b> MACRO
<b>Site Sub Type:</b> TRADITIONAL
<b>Street Address:</b> 222 Park Place
<b>City:</b> Waukesha
<b>State:</b> WI
<b>Zip Code:</b> 53186
<b>County:</b> Waukesha
<b>Latitude:</b> 43.01183056 / 43° 0' 42.59" N
<b>Longitude:</b> -88.22970556 / 88° 13' 46.94" W

**RFDS Project Scope:**

**Antenna Summary**

**Added**

700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
LTE	LTE 5G	LTE	LTE			ERICSSON	NHH-65C-R2B	70.5	74.5	60(01) 170(02) 300(03)	false	false	PHYSICAL	9
				LTE		ERICSSON	KRE105281/1	68.5	68.8	60(19) 170(20) 300(21)	false	false	PHYSICAL	3
				5G		Ericsson	AIR6449	72.5	73.8	60(0001) 170(0002) 300(0003)	false	false	PHYSICAL	3

**Removed**

No data available.

**Retained**

No data available.

Added: 15    Removed: 0    Retained: 0

**Equipment Summary**

**Added**

Equipment Type	Location	700	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
RRU	Tower					LTE		Ericsson	4408 B48 DC			PHYSICAL	3
RRU	Tower	LTE						Ericsson	4449			PHYSICAL	3
RRU	Tower		LTE 5G	LTE	LTE			Ericsson	8843			PHYSICAL	6
RRU	Tower					5G		Ericsson	AIR6449			PHYSICAL	3

**Removed**

No data available.

**Retained**

No data available.

**Service Info**

AWS3 LTE	Sector	RFDS		
		01	02	03
	Azimuth	60	170	300
	Cell / ENode B ID	209671	209671	209671
	Antenna Model	NHH-65C-R2B	NHH-65C-R2B	NHH-65C-R2B
	Antenna Make	ERICSSON	ERICSSON	ERICSSON
	Antenna Centerline(Ft)	70.5	70.5	70.5
	Mechanical Down-Tilt(Deg.)	0	0	0
	Electrical Down-Tilt	1	1	1
	Tip Height	74.5	74.5	74.5
	Regulatory Power	398.6	398.6	398.6
	DLEARFCN	67086	67086	67086
	Channel Bandwidth(MHz)	10	10	10
	Total ERP (W)	2186.65	2186.65	2186.65
	TMA Make			
	RRU Make	Ericsson	Ericsson	Ericsson
	RRU Model	8843	8843	8843
	Number of Tx, Rx Lines	4,4	4,4	4,4
	Position			
	Transmitter Id	3703886	3703887	3703888
	Source	ATOLL_API	ATOLL_API	ATOLL_API



CBRS 3.5 GHz			
	RFDS		
	19	19	19
Sector	60	60	60
Azimuth	209671	209671	209671
Cell / ENode B ID	KRE105281/1	KRE105281/1	KRE105281/1
Antenna Model	ERICSSON	ERICSSON	ERICSSON
Antenna Make	68.5	68.5	68.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	8	8	8
Electrical Down-Tilt	68.8	68.8	68.8
Tip Height	28.03	28.03	28.03
Regulatory Power	55790	55890	55990
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	38.44	38.44	38.44
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	4408 B48 DC	4408 B48 DC	4408 B48 DC
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10970300	10970301	10970302
Source	ATOLL_API	ATOLL_API	ATOLL_API
	20	20	20
Sector	170	170	170
Azimuth	209671	209671	209671
Cell / ENode B ID	KRE105281/1	KRE105281/1	KRE105281/1
Antenna Model	ERICSSON	ERICSSON	ERICSSON
Antenna Make	68.5	68.5	68.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	8	8	8
Electrical Down-Tilt	68.8	68.8	68.8
Tip Height	28.03	28.03	28.03
Regulatory Power	55790	55890	55990
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	38.44	38.44	38.44
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	4408 B48 DC	4408 B48 DC	4408 B48 DC
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10970303	10970304	10970305
Source	ATOLL_API	ATOLL_API	ATOLL_API
	21	21	21
Sector	300	300	300
Azimuth	209671	209671	209671
Cell / ENode B ID	KRE105281/1	KRE105281/1	KRE105281/1
Antenna Model	ERICSSON	ERICSSON	ERICSSON
Antenna Make	68.5	68.5	68.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	8	8	8
Electrical Down-Tilt	68.8	68.8	68.8
Tip Height	28.03	28.03	28.03
Regulatory Power	55790	55890	55990
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	38.44	38.44	38.44
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	4408 B48 DC	4408 B48 DC	4408 B48 DC
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10970306	10970307	10970308
Source	ATOLL_API	ATOLL_API	ATOLL_API

700 MHz LTE			
	RFDS		
	01	02	03
Sector	170	170	300
Azimuth	209671	209671	209671
Cell / ENode B ID	NHH-65C-R2B	NHH-65C-R2B	NHH-65C-R2B
Antenna Model	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Make	70.5	70.5	70.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	2	2	2
Electrical Down-Tilt	74.5	74.5	74.5
Tip Height	145.09	145.09	145.09
Regulatory Power	5230	5230	5230
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	1305.81	1305.81	1305.81
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	4449	4449	4449
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	3532415	3532418	3532421
Source	ATOLL_API	ATOLL_API	ATOLL_API
	01	02	03
Sector	60	170	300
Azimuth	209671	209671	209671
Cell / ENode B ID	NHH-65C-R2B	NHH-65C-R2B	NHH-65C-R2B
Antenna Model	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Make	70.5	70.5	70.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	1	1	1
Electrical Down-Tilt	74.5	74.5	74.5
Tip Height	358.9	358.9	358.9
Regulatory Power	850	850	850
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	1968.87	1968.87	1968.87
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	8843	8843	8843
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	3532416	3532419	3532422
Source	ATOLL_API	ATOLL_API	ATOLL_API

1900 MHz 5G NR			
	RFDS		
	0001	0002	0003
Sector	60	170	300
Azimuth	2099671	2099671	2099671
Cell / ENode B ID	NHH-65C-R2B	NHH-65C-R2B	NHH-65C-R2B
Antenna Model	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Make	70.5	70.5	70.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	1	1	1
Electrical Down-Tilt	74.5	74.5	74.5
Tip Height	358.9	358.9	358.9
Regulatory Power	850	850	850
DLEARFCN	10	10	10
Channel Bandwidth(MHz)	1968.87	1968.87	1968.87
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	8843	8843	8843
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	3532416	3532419	3532422
Source	ATOLL_API	ATOLL_API	ATOLL_API
	01	02	03
Sector	60	170	300
Azimuth	209671	209671	209671
Cell / ENode B ID	NHH-65C-R2B	NHH-65C-R2B	NHH-65C-R2B
Antenna Model	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Make	70.5	70.5	70.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	1	1	1
Electrical Down-Tilt	74.5	74.5	74.5
Tip Height	265.73	265.73	265.73
Regulatory Power	2325	2325	2325
DLEARFCN	15	15	15
Channel Bandwidth(MHz)	2186.65	2186.65	2186.65
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	8843	8843	8843
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	3532417	3532420	3532423
Source	ATOLL_API	ATOLL_API	ATOLL_API

nl-Sub6			
	RFDS		
	0001	0002	0003
Sector	60	170	300
Azimuth	2099671	2099671	2099671
Cell / ENode B ID	AIR6449	AIR6449	AIR6449
Antenna Model	Ericsson	Ericsson	Ericsson
Antenna Make	72.5	72.5	72.5
Antenna Centerline(F)	0	0	0
Mechanical Down-Tilt(Deg.)	6	6	6
Electrical Down-Tilt	73.8	73.8	73.8
Tip Height	1368.31	1368.31	1368.31
Regulatory Power	648672	648672	648672
DLEARFCN	60	60	60
Channel Bandwidth(MHz)	11885.02	11885.02	11885.02
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Ericsson	Ericsson	Ericsson
RRU Model	AIR6449	AIR6449	AIR6449
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10970288	10970289	10970290
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments

**Callsigns Per Antenna**

Sector	Antenna M	Antenna M	Ant CL Height AGL	Tip Height	Azimuth (T)	Electrical Tilt	Mechanical Tilt	Gain	Beamwidth	Regulatory Power	Callsigns								
											700	850	1900	2100	28 GHz	31 GHz	39 GHz		
No data available.																			

**Callsigns**

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs/Sq Mi	Status	Action	Approved for Insvc
WQJQ691	Great Lakes	WU	REA003	C	WI	Waukesha	Celco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000	145.09	1000	709.44	Active	added	Yes
KNLF240	Milwaukee	CW	MTA020	B	WI	Waukesha	Celco Partnership	Yes	30.000	1870.000-1885.000	1950.000-1965.000	.000-.000	.000-.000	358.9	1640	709.44	Active	added	Yes
WQVW958	Milwaukee-Racine, WI	AT	BEA063	J	WI	Waukesha	Celco Partnership	Yes	20.000	1770.000-1780.000	2170.000-2180.000	.000-.000	.000-.000	398.6	1640	709.44	Active	added	Yes
CBRS_CALL	UNLICENSED	3.5 GHz	UNLICENSED	UNLICENSED	WI	Waukesha	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	28.03		709.44	Active	added	No
WQPZ950	Great Lakes	AW	REA003	E	WI	Waukesha	Celco Partnership	Yes	10.000	1740.000-1745.000	2140.000-2145.000	.000-.000	.000-.000	265.73	1640	709.44	Active	added	Yes
WQGA717	Great Lakes	AW	REA003	F	WI	Waukesha	Celco Partnership	Yes	20.000	1745.000-1755.000	2145.000-2155.000	.000-.000	.000-.000	265.73	1640	709.44	Active	added	Yes
WRBB506	Milwaukee, WI	UU	BTA297	L1	WI	Waukesha	Celco Partnership	Yes	425.000	27500.000-27925.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRBB507	Milwaukee, WI	UU	BTA297	L2	WI	Waukesha	Celco Partnership	Yes	425.000	27925.000-28350.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE224	Milwaukee, WI	UU	PEA038	M1	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE225	Milwaukee, WI	UU	PEA038	M2	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE226	Milwaukee, WI	UU	PEA038	M3	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE227	Milwaukee, WI	UU	PEA038	M4	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE228	Milwaukee, WI	UU	PEA038	M5	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE229	Milwaukee, WI	UU	PEA038	M6	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE230	Milwaukee, WI	UU	PEA038	M7	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes

WRHE231	Milwaukee, WI	UU	PEA038	M8	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRHE232	Milwaukee, WI	UU	PEA038	M9	WI	Waukesha	Straight Path Spectrum, LLC	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000			709.44	Active		Yes
WRNE867	Milwaukee, WI	PM	PEA038	A1	WI	Waukesha	Celco Partnership	Yes	20.000	3700.000-3720.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE868	Milwaukee, WI	PM	PEA038	A2	WI	Waukesha	Celco Partnership	Yes	20.000	3720.000-3740.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE869	Milwaukee, WI	PM	PEA038	A3	WI	Waukesha	Celco Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE870	Milwaukee, WI	PM	PEA038	A4	WI	Waukesha	Celco Partnership	Yes	20.000	3760.000-3780.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE871	Milwaukee, WI	PM	PEA038	A5	WI	Waukesha	Celco Partnership	Yes	20.000	3780.000-3800.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE872	Milwaukee, WI	PM	PEA038	B1	WI	Waukesha	Celco Partnership	Yes	20.000	3800.000-3820.000	.000-.000	.000-.000	.000-.000			709.44	Active		No
WRNE873	Milwaukee, WI	PM	PEA038	B2	WI	Waukesha	Celco Partnership	Yes	20.000	3820.000-3840.000	.000-.000	.000-.000	.000-.000			709.44	Active		No

