



DEN HAILEN  
XCEL ENERGY TOWER #57, LINE 9174/9866  
WIRELESS FACILITY ZONING DRAWING

**SITE ADDRESS**

TBD S HELENA ST  
AURORA, CO 80017

**SITE COORDINATES  
(FROM SATELLITE IMAGERY)**

LATITUDE: 39.682415      LONGITUDE: -104.807835

**PROJECT TEAM**



KIMLEY HORN AND ASSOCIATES, INC.  
6200 SOUTH SYRACUSE WAY, SUITE #300  
GREENWOOD VILLAGE, CO 80111  
ATTN: MATT FLECK - (720) 647-6159



VERIZON WIRELESS  
10000 PARK MEADOWS DRIVE, SUITE 200  
LONE TREE, CO 80124

RF ENGINEER:  
HAMAD MUNEEB  
HAMAD.MUNEEB@VERIZONWIRELESS.COM

CONSTRUCTION:  
MARK WILSON  
CONSTRUCTION ENGINEER  
MARK.WILSON2@VERIZONWIRELESS.COM

VZW REAL ESTATE:  
MAUREEN LOPEZ  
MAUREEN.LOPEZ@VERIZONWIRELESS.COM

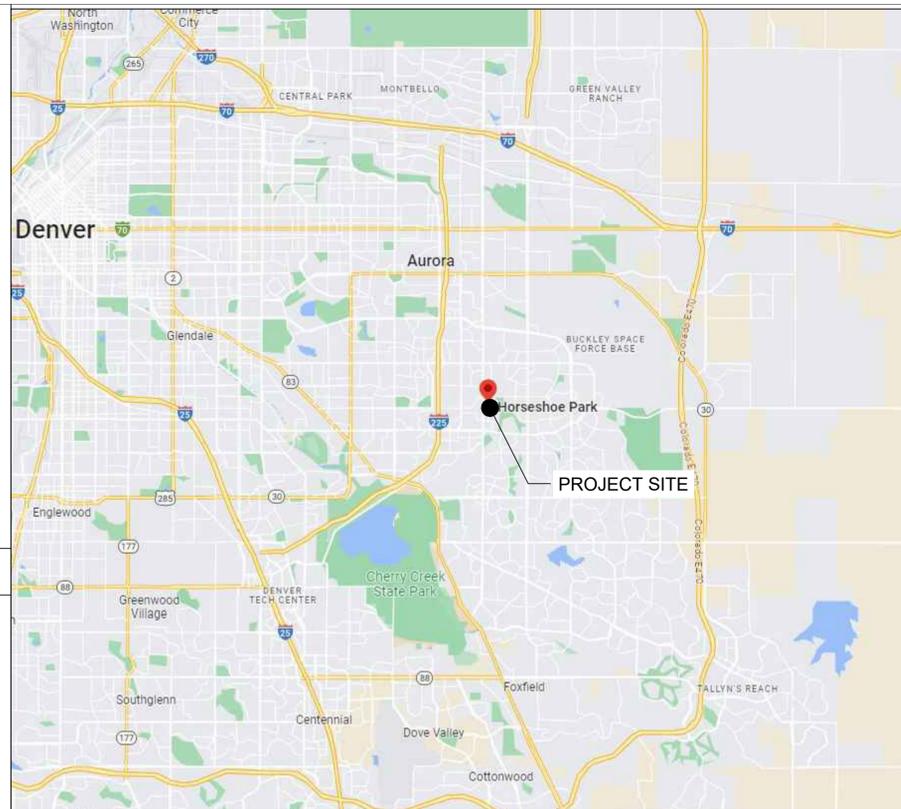
SITE ACQUISITION:  
KELLY HARRISON  
KAPPA CONSULTING  
KHARRISON@YMAIL.COM

**PROJECT INFORMATION**

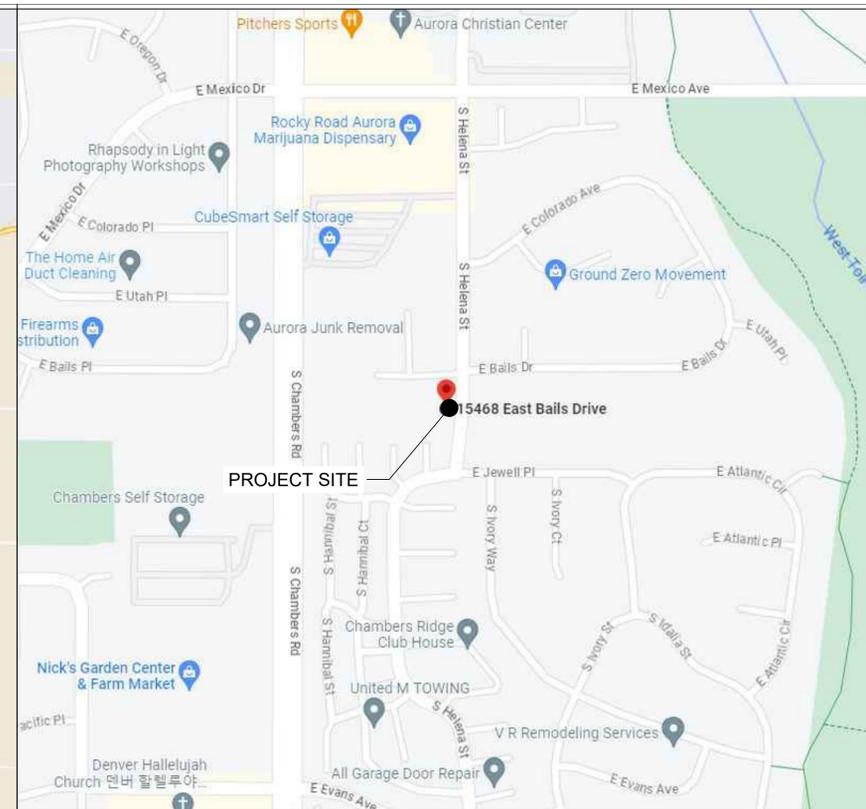
JURISDICTION: CITY OF AURORA  
ZONING: R-1 LOW DENSITY SINGLE FAMILY RESIDENTIAL  
PARCEL NUMBER: 1975-20-3-00-013  
ELEVATION: (NAVD 88) ±5540.0'  
STRUCTURE TYPE: XCEL TRANSMISSION TOWER  
STRUCTURE HEIGHT: 99'-3"  
ANTENNA RAD CENTER: ±46'-0" (TIP AT LEAST 15' BELOW TRANSMISSION LINE)  
APPLICANT: VERIZON WIRELESS  
ENGINEER: KIMLEY-HORN AND ASSOCIATES, INC.  
ENGINEERING CONTACT: MATT FLECK  
6200 SOUTH SYRACUSE WAY, SUITE #300  
GREENWOOD VILLAGE, CO 80111  
(720) 647-6159

**CODE ANALYSIS**

BUILDING CODE: IBC 2021  
ELECTRICAL CODE: NEC 2023  
FIRE SAFETY CODE: IFC 2021  
USE GROUP: U-UTILITY  
CONSTRUCTION TYPE: IIB



REGIONAL MAP



VICINITY MAP

**SHEET INDEX**

NAME	DESCRIPTION	NAME	DESCRIPTION
T-1	TITLE SHEET		
Z-1	OVERALL SITE PLAN		
Z-2	SITE PLAN		
Z-3	ENLARGED SITE PLAN		
Z-4	ELEVATION		
Z-5	ANTENNA PLAN		
Z-6	BATTERY DETAILS AND QUANTITY		
Z-7	BATTERY DETAILS		

**PROJECT SUMMARY**

THIS PROJECT CONSISTS OF THE INSTALLATION OF:

- INSTALL (3) ANTENNA MOUNTS ON EXISTING XCEL TOWER
- INSTALL (3) NHH-65C-R2B, (3) NHHSS-65C-R2BT4 ANTENNAS
- INSTALL (3) AIR 6419 ANTENNAS
- INSTALL (1) NEW EQUIPMENT COMPOUND WITH 4 CABINETS
- INSTALL NEW CEDAR FENCE COMPOUND
- RUN NEW FIBER, ELECTRIC CABLES, AND OTHER ASSOCIATED UTILITIES TO THE PROJECT SITE AND PROPOSED MOUNTS LOCATION

REFERENCED DOCUMENTS:  
RFDS: 07/12/2023      EME: N/A      MACRO CALC: N/A  
VERIFY THE MOST CURRENT DOCUMENTS PRIOR TO CONSTRUCTION

**DRIVING DIRECTIONS**

- START FROM 10000 PARK MEADOWS DRIVE LONE TREE, CO 80124
- DEPART AND TURN LEFT ONTO PARK MEADOWS DRIVE
- TURN RIGHT ONTO S YOSEMITE ST
- TURN RIGHT ONTO CHESTER ST
- TURN RIGHT ONTO E COUNTY LINE RD
- USE THE RIGHT 2 LANES TO TAKE THE RAMP ONTO I-25 N
- MERGE ONTO I-25 N
- USE THE RIGHT LANE TO TAKE EXIT 200 FOR I-225 N TOWARD I-70/AIRPORT/AURORA/LIMON
- KEEP LEFT TO CONTINUE TOWARD I-225 N
- CONTINUE ONTO I-225 N
- USE THE RIGHT 2 LANES TO TAKE EXIT 5 FOR ILIFF AVENUE
- KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR BLACKHAWK ST AND MERGE ONTO E ILIFF AVE
- MERGE ONTO E ILIFF AVE
- TURN LEFT ONTO S IDALIA ST
- TURN LEFT ONTO S IVORY ST
- TURN LEFT ONTO S IVORY WAY
- TURN LEFT ONTO E JEWELL PL
- TURN RIGHT ONTO S HELENA ST
- SITE WILL BE ON THE LEFT AFTER 200 FEET



10000 PARK MEADOWS DRIVE,  
SUITE 200, LONE TREE, CO 80124

PLANS PREPARED BY:



6200 SOUTH SYRACUSE WAY #300  
GREENWOOD VILLAGE, CO 80111  
PHONE (303) 228-2300  
WWW.KIMLEY-HORN.COM

REV:    DATE:    DESCRIPTION:    BY:

REV	DATE	DESCRIPTION	BY
B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HAILEN B ZDs	MAK

DRAWN BY:    CHECKED BY:

**MAK**      **MFF**

KHA PROJECT NUMBER:

**196015076.1.300**

ENGINEER SEAL:



PROJECT INFORMATION:

**DEN HAILEN**

TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:

**TITLE SHEET**

SHEET NUMBER:

**T-1**





PLANS PREPARED BY:

REV: DATE: DESCRIPTION: BY:

B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HAILEN B ZDs	MAK

DRAWN BY: **MAK** CHECKED BY: **MFF**

KHA PROJECT NUMBER:

**196015076.1.300**

ENGINEER SEAL:



PROJECT INFORMATION:

**DEN HAILEN**

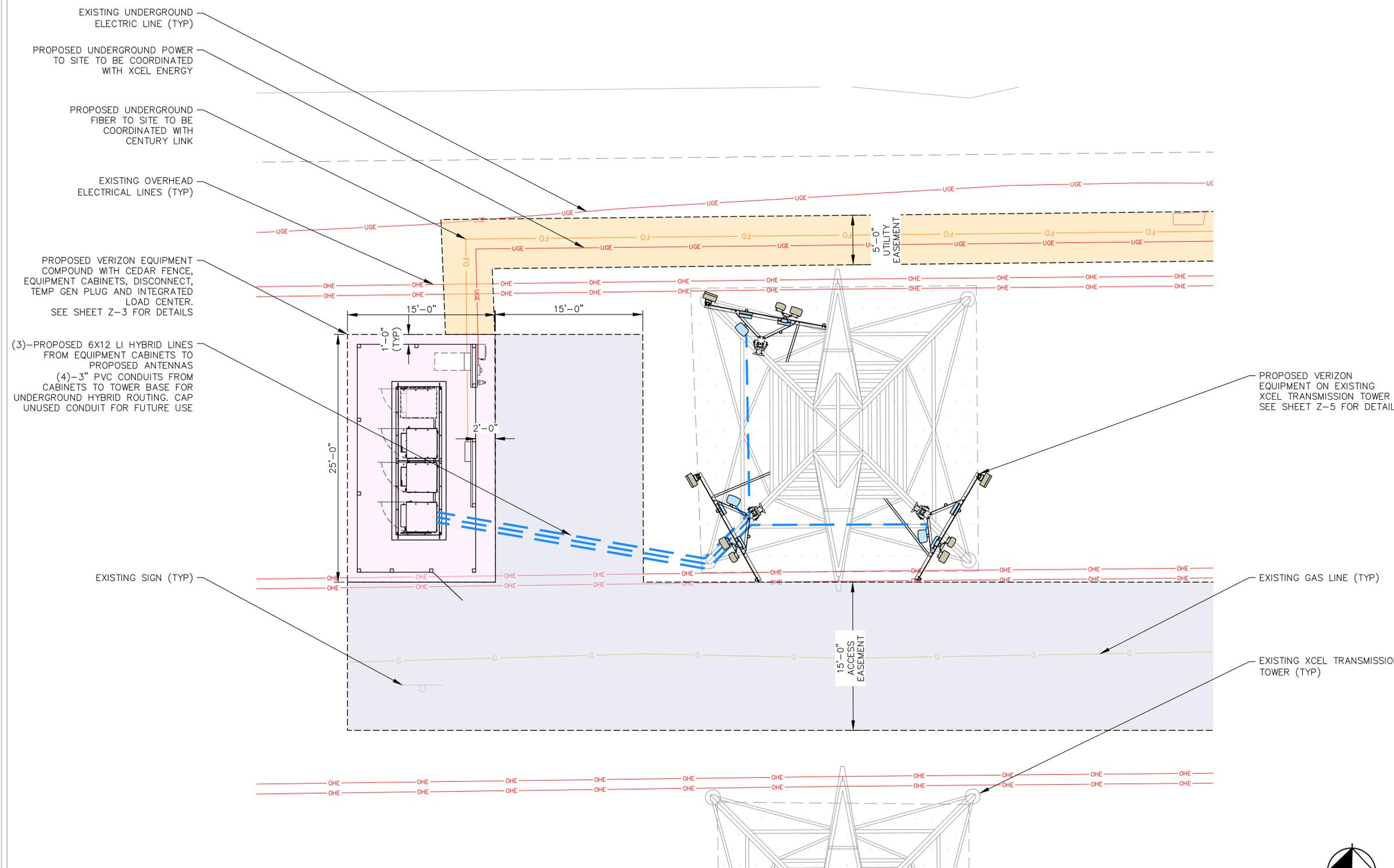
TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:

**SITE PLAN**

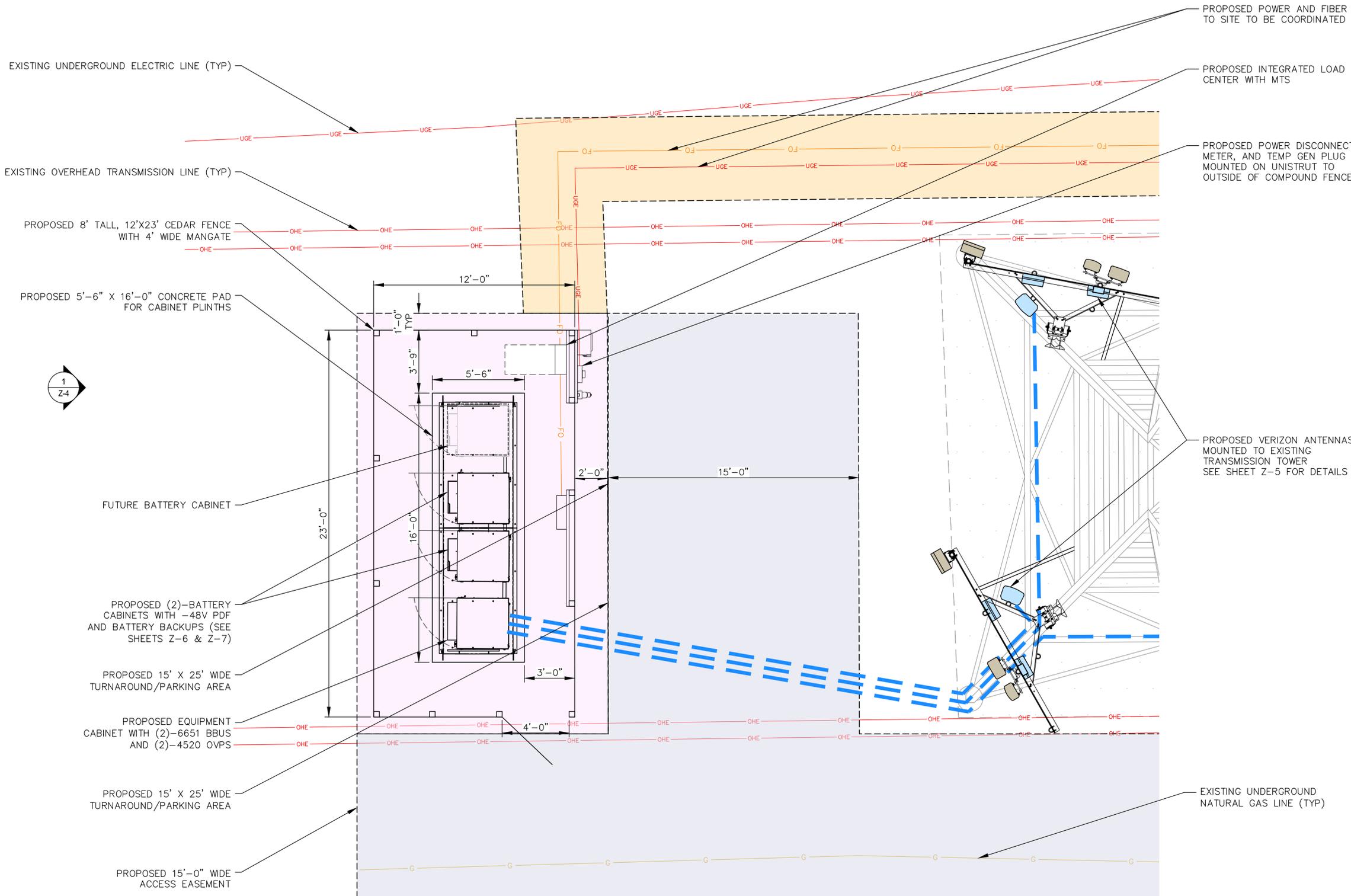
SHEET NUMBER:

**Z-2**

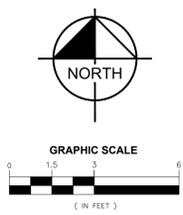


**1**  
**Z-2**  
**SITE PLAN**  
SCALE: 1" = 5'  
SCALE BASED ON 24"X36" ONLY





**1**  
Z-3 **ENLARGED SITE PLAN**  
SCALE: 1" = 3'  
SCALE BASED ON 24"X36" ONLY



10000 PARK MEADOWS DRIVE,  
SUITE 200, LONE TREE, CO 80124

PLANS PREPARED BY:



6200 SOUTH SYRACUSE WAY #300  
GREENWOOD VILLAGE, CO 80111  
PHONE (303) 228-2300  
WWW.KIMLEY-HORN.COM

REV: DATE: DESCRIPTION: BY:

REV	DATE	DESCRIPTION	BY
B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HAILEN B ZDs	MAK

DRAWN BY: **MAK** CHECKED BY: **MFF**

KHA PROJECT NUMBER:  
**196015076.1.300**



PROJECT INFORMATION:

**DEN HAILEN**  
TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:  
**ENLARGED SITE PLAN**

SHEET NUMBER:  
**Z-3**





10000 PARK MEADOWS DRIVE,  
SUITE 200, LONE TREE, CO 80124

PLANS PREPARED BY:



6200 SOUTH SYRACUSE WAY #300  
GREENWOOD VILLAGE, CO 80111  
PHONE (303) 228-2300  
WWW.KIMLEY-HORN.COM

REV: DATE: DESCRIPTION: BY:

REV	DATE	DESCRIPTION	BY
B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HAILEN B ZDs	MAK

DRAWN BY:	CHECKED BY:
MAK	MFF

KHA PROJECT NUMBER:  
**196015076.1.300**

ENGINEER SEAL:



PROJECT INFORMATION:

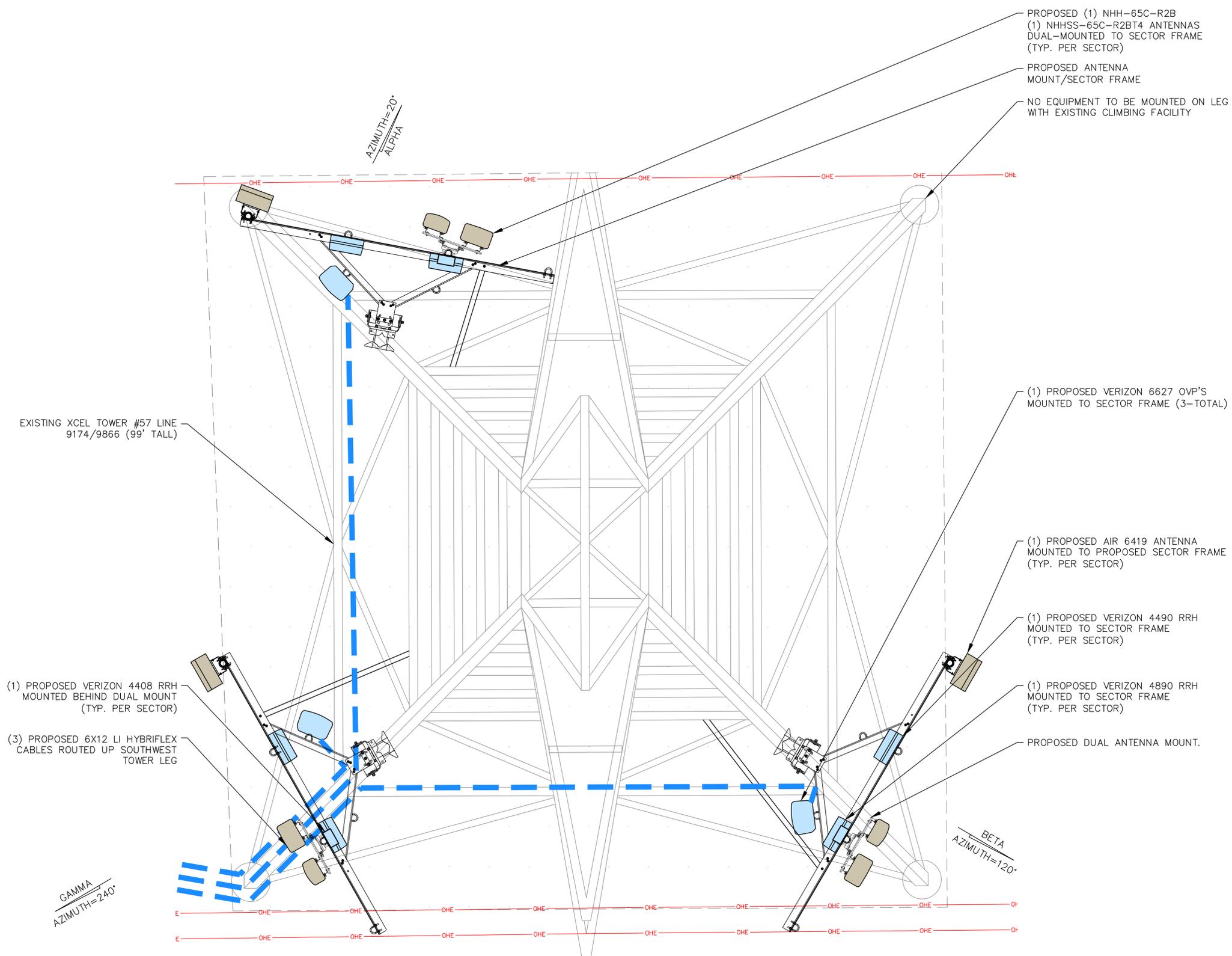
**DEN HAILEN**  
TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:

**ANTENNA  
LAYOUT**

SHEET NUMBER:

**Z-5**



**1 ANTENNA PLAN**  
Z-5  
SCALE: 1" = 2'  
SCALE BASED ON 24"X36" ONLY



SOME LIKE IT HOT



**HT200ET**

- Helios™ Additive reduces float current up to 75% enhancing high temperature life
- THT™ Plastic specifically formulated heat resistant plastic case and cover optimizes compression
- Microcat® Catalyst lowers float current, mitigates thermal buildup and cell dryout
- Exclusive IPF® Technology optimizes power capacity, cell consistency, and long-term reliability
- TempX™ Alloy inhibits corrosion under the highest temperature extremes
- Advanced AGM technology for superior power
- Puncture resistant micro-porous glass mat separators extend life
- Front access design for easy installation and maintenance
- Reinforced case resists bulging and meets safety requirements (UL 94 V-0)
- Case & cover heat sealed and 100% tested to prevent leaks
- Epoxy-sealed posts eliminate leaks
- Flame arresting, low pressure, self-sealing valves are 100% factory tested
- Computer-aided design and manufacturing control processes and standards to ensure quality products
- All batteries meet or exceed IEEE recommended practices
- Battery design and construction meet UL recognition requirements



**SPECIFICATIONS**

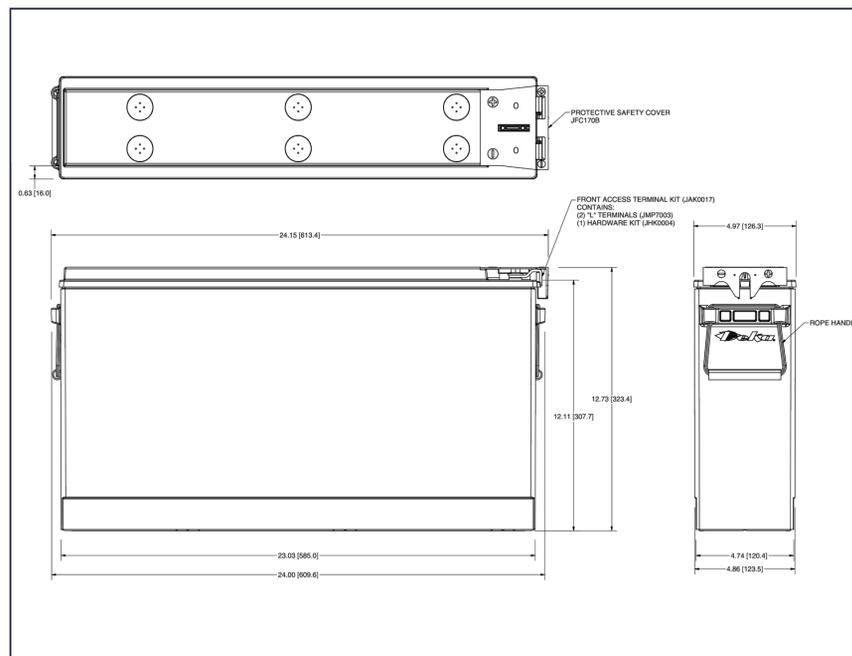
**Nominal Voltage:** 12-Volts  
**Rating:** 190 Ampere-Hours @ 8 hr. rate to 1.75 V.P.C.  
**Positive Plate:** >98% Pure lead with tin-calcium alloy  
**Negative Plate:** Pure lead, calcium alloy  
**Post Seal:** Epoxy-sealed  
**Terminal:** Front access, 1/4" – 20 threaded insert  
**Case/Cover:** Flame-retardant, THT™ – UL 94 V-0/>39% L.O.I.

**Catalyst:** Microcat®  
**Safety Vent:** Low positive pressure, self-sealing w/ flame arrestor  
**Float Voltage:** 2.25 V.P.C. ± 0.01 V.P.C. @ 77°F (25°C) Range: (13.44V to 13.56V per battery)  
**Design life:** 12 years in float applications @ 77°F (25°C)  
**Dimensions:** Length - 24.15" (613.4 mm) Width - 4.97" (126.3 mm) Height - 12.74" (323.5 mm)  
**Weight:** 151 lbs. (68.5 kg)

**DISCHARGE RATE IN AMPS @ 77°F (25°C)<sup>1</sup>**

Volts per Cell (V.P.C.)	1 HR.	2 HR.	3 HR.	4 HR.	5 HR.	8 HR.	12 HR.	20 HR.	24 HR.
1.75	144	82.0	57.3	44.4	36.4	23.8	16.3	10.1	8.4
1.80	136	79.1	55.4	43.1	35.4	23.2	16.0	9.9	8.3
1.85	124	73.1	51.9	40.6	33.5	22.1	15.2	9.4	7.9
1.88	113	68.0	48.7	38.3	31.7	21.0	14.5	9.0	7.6
1.90	105	63.9	46.2	36.4	30.1	20.0	13.9	8.6	7.2

<sup>1</sup>Subject to change without notice.



**INSTALLATION AND OPERATING INSTRUCTIONS**

<http://www.eastpennmanufacturing.com/wp-content/uploads/Fahrenheit-10-Manual-2100.pdf>

**PROPOSITION 65 WARNING:** Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. **WASH HANDS AFTER HANDLING.**



[www.dekabatteries.com](http://www.dekabatteries.com)



East Penn Manufacturing Co. Lyon Station, PA 19536-0147 Phone: 610-682-3263 Fax: 610-682-0891 e-mail: [reservecpowersales@dekabatteries.com](mailto:reservecpowersales@dekabatteries.com)

E.P.M. Form No. 2201 2/20

© 2020 by EPM Printed in U.S.A.

All data subject to change without notice. No part of this document may be copied or reproduced, electronically or mechanically, without written permission from the company.



10000 PARK MEADOWS DRIVE,  
SUITE 200, LONE TREE, CO 80124

PLANS PREPARED BY:



6200 SOUTH SYRACUSE WAY #300  
GREENWOOD VILLAGE, CO 80111  
PHONE (303) 228-2300  
WWW.KIMLEY-HORN.COM

REV: DATE: DESCRIPTION: BY:

REV	DATE	DESCRIPTION	BY
B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HALEN B ZDs	MAK

DRAWN BY: CHECKED BY:

MAK MFF

KHA PROJECT NUMBER:

196015076.1.300

ENGINEER SEAL:



PROJECT INFORMATION:

DEN HALEN

TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:

BATTERY DETAILS  
AND QUANTITY

SHEET NUMBER:

Z-6

TOTAL BATTERY QUANTITIES

CABINET/RACK	STRINGS	BATTERIES PER STRING	TOTAL	ELECTROLYTE PER BATTERY (GAL/BAT)	ELECTROLYTE (GAL)	ELECTROLYTE (LB)
(1)–PROPOSED CMC 74–36B (2)–EXISTING CABINETS	8	4	32	2.59	82.88	724.8

**DANGER**

**LEAD ACID BATTERIES**

**CORROSIVE LIQUIDS (ELECTROLYTE)**  
**ENERGIZED ELECTRICAL CIRCUITS**

**NO SMOKING**

1  
Z-7 VRLA CHEMICAL HAZARD IDENTIFICATION SIGNAGE  
SCALE: N.T.S.

DEKA  
FAHRENHEIT HT200ET

BATTERY STRINGS: 8 STRINGS  
ELECTRICAL RATING  
VOLTAGE: -48V  
CURRENT: 144 AMPS  
ENERGY STORAGE CAPACITY: 63.8 KWH

NOTE:  
-EXTERIOR SIGNAGE ON THE CABINET SHALL IDENTIFY THE MANUFACTURER & MODEL NUMBER OF THE SYSTEM & ELECTRICAL RATING (VOLTAGE & CURRENT) OF THE CONTAINED BATTERY SYSTEM  
-INTERIOR SIGNAGE ON THE CABINET SHALL INDICATE THE RELEVANT ELECTRICAL AND CHEMICAL HAZARDS PER 2015 IFC CHAPTER 6 SECTION 608 OR THE 2021 IFC CHAPTER 12.

2  
Z-7 BATTERY MANUFACTURER SIGNAGE  
SCALE: N.T.S.

**HAWK™ SYSTEM**  
Liner-Based for Cabinets, VRLA & NiCd Battery Applications

Part Number: HAWK-WW-LLL

**Features**

- Fast and easy installation
- Non-metallic components
- Minimal floor preparation necessary
- Corrosive-resistant liner with Class 1 fire rating (NFPA 101)
- Can be configured to fit most applications
- Optional floor anchors for easy installation on computer floors
- Quick-slip barrier walls for easy battery access
- Spill containment for stationary lead-acid battery systems
- Available in gray
- UL Listed

**Part Number**  
HAWK - WW-LLL  
(i.e. HAWK 30-120) WW=Width in inches, LLL=Length in inches

**Regulations In Compliance With**

- NFPA
- International Fire Code (IFC)
- OSHA
- Underwriters Laboratories (UL)

**Specifications**

- 4" x 1/2" Polypropylene Barriers
- 80 mil Polymeric Liner
- System includes 12"x12" Neutralization and Absorption Pads (VRLAPADs)
- KOH VRLAPADs substituted for NiCd Battery Applications

**Recommended Products**

Battery Room Aisle Mat

Compliance Package

*Protecting Mission-Critical Facilities Since 1993.™*

5534 Olive Street, Montclair, CA 91763 • 800.206.9884 Fax 909.624.1772 • www.EnviroGuard.com  
EnviroGuard is an ISO 9001-2008 Certified Manufacturer of UL Listed and UL Recognized products

S-SC-V-HWK
Rev B 06/10

NOTE:  
UTILIZE ABOVE MENTIONED POLYMERIC LINER AND VRLAPADS AS THEY FIT WITHIN PROPOSED AND EXISTING CABINETS.

3  
Z-7 PROPOSED HAWKGUARD SPILL PROTECTION  
SCALE: N.T.S.

**verizon**

10000 PARK MEADOWS DRIVE,  
SUITE 200, LONE TREE, CO 80124

PLANS PREPARED BY:

**Kimley»Horn**

6200 SOUTH SYRACUSE WAY #300  
GREENWOOD VILLAGE, CO 80111  
PHONE (303) 228-2300  
WWW.KIMLEY-HORN.COM

REV: \_\_\_\_\_ DATE: \_\_\_\_\_ DESCRIPTION: \_\_\_\_\_ BY: \_\_\_\_\_

B	04/10/24	REVISED: BATTERY UPDATE	WSG
A	08/01/23	DEN HAILEN B ZDs	MAK

DRAWN BY: **MAK** CHECKED BY: **MFF**

KHA PROJECT NUMBER:  
**196015076.1.300**

ENGINEER SEAL:

FOR REVIEW

PROJECT INFORMATION:

**DEN HAILEN**  
TBD S HELENA ST  
AURORA, CO 80017  
ARAPAHOE COUNTY

SHEET TITLE:  
**BATTERY DETAILS**

SHEET NUMBER:  
**Z-7**