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10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

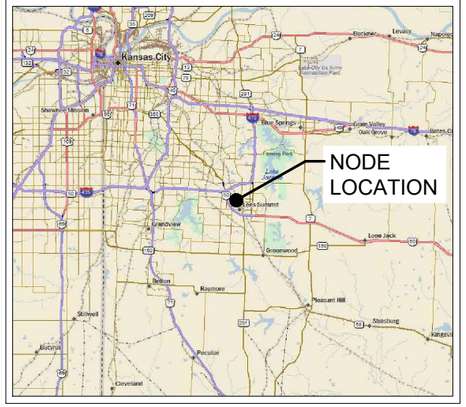
SITE NAME: KCYC SUMMIT WOODS 05SC

SITE ADDRESS: 560 NW CHIPMAN RD
LEE'S SUMMIT, MO 64086

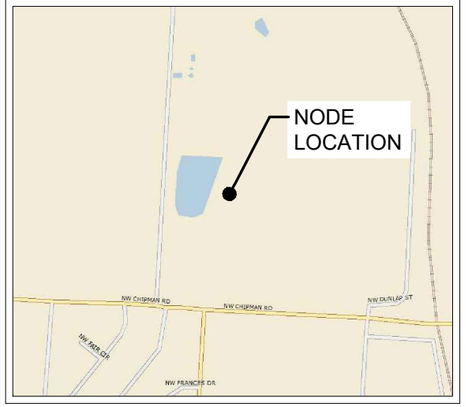
PROJECT TYPE

EXISTING MUNICIPAL POLE TO BE REMOVED. PROPOSED VERIZON WIRELESS SMALL CELL EQUIPMENT ON REPLACEMENT MUNICIPAL POLE. POWER TO BE DELIVERED VIA UNDERGROUND. FIBER TO BE DELIVERED VIA UNDERGROUND (BY OTHERS).

REGIONAL MAP N.T.S.



AREA MAP N.T.S.



PROJECT DESCRIPTION

REMOVAL:

EXISTING STREET LIGHT POLE & FOUNDATION.

VERIZON WIRELESS

- INSTALL LESSEE EQUIPMENT ON REPLACEMENT METAL POLE IN PUBLIC R.O.W.
- INSTALL TYPE-2 JUNCTION BOX OVER EXISTING LIGHT POLE LOCATION FOR CIRCUIT LIGHTING INTERCEPT.
- INSTALL LESSEE GROUND EQUIPMENT CABINET IN PUBLIC R.O.W.
- INSTALL LESSEE FIBER BOX IN PUBLIC R.O.W.
- INSTALL LESSEE POWER CONDUITS, CONDUCTORS, AND PULL BOXES IN PUBLIC.R.O.W.

EVERGY

- SUPPLY AND INSTALL NEW ELECTRICAL SERVICE AT PROPOSED POWER SOURCE LOCATION

SITE INFORMATION

JURISDICTION:	CITY OF LEE'S SUMMIT
OCCUPANCY:	UNINHABITED
UTILITY COMPANY:	POWER: EVERGY 4400 E FRONT ST. KANSAS CITY, MO 64120 PHONE: (816)732-4160
CONSTRUCTION TYPE:	CO-LOCATION ON MUNICIPAL LIGHT POLE
APPLICANT / LESSEE:	VERIZON WIRELESS 10740 NALL AVENUE OVERLAND PARK, KS 66211 PHONE: (913) 344-2800
PROPERTY LOCATION:	PUBLIC RIGHT-OF-WAY
POLE OWNER:	LEE'S SUMMIT
POLE I.D#:	4G132-7
POLE PART #:	N/A
(E) OVERALL STRUCTURE HT:	40'-6"
(P) OVERALL STRUCTURE HT:	43'-10"

SITE COORDINATES:

LATITUDE: 38° 55' 40.52" N (1A CERTIFICATION)
LONGITUDE: 94° 23' 35.39" W (1A CERTIFICATION)
ELEVATION: ±1006.1' (1A CERTIFICATION)

CONSULTANT TEAM

PROJECT CONSULTANT:	TERRA CONSULTING GROUP, LTD. 600 BUSSE HIGHWAY PARK RIDGE, IL 60068 (847) 698-6400
SURVEYOR:	LOVELACE & ASSOCIATES 929 SE 3RD STREET LEE'S SUMMIT, MO 64063 PHONE: (816) 347-9997 FAX: (816) 347-9979
POLE MANUFACTURER:	VALMONT INDUSTRIES, INC. 20805 EATON AVE. FARMINGTON, MI 55024 (651) 463-8990
VZW REAL ESTATE:	BRENDA CLEMONS (brenda.clemons@verizonwireless.com)
VZW CONSTRUCTION:	CHRIS BROCK (chris.brock@verizonwireless.com)
VZW RF ENGINEER:	JEFF NOVOTNY (jeff.novotny@verizonwireless.com)

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL JURISDICTION:

- INTERNATIONAL BUILDING CODE
- INTERNATIONAL MECHANICAL CODE
- NATIONAL ELECTRIC CODE
- INTERNATIONAL FIRE CODE
- NATIONAL ELECTRIC SAFETY CODE (NESC)
- NATIONAL FIRE PROTECTION AGENCY (NFPA) 70
- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 6TH EDITION.
- AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND ANY SUPPLEMENTAL CHANGES.
- AMERICAN WITH DISABILITIES ACT (ADA) OF 1990.
- AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES STANDARD.
- EVERGY, ELECTRICAL SERVICE STANDARD (LATEST EDITION)
- OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) OF 1970
- NATIONAL FIRE PROTECTION AGENCY (NFPA) 70E, STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (LATEST EDITION)
- SECTION 9.5 - INTERSECTION SIGHT DISTANCE, IN THE AASHTO GREEN BOOK, 6TH EDITION

DRAWING NOTICE

THESE SITE PLANS ADHERE TO ALL OF THE REQUIREMENTS CALLED OUT IN THE JURISDICTION PLANNING AND ZONING FOR ANTENNAS AND SUPPORT STRUCTURES WHERE SITE IS LOCATED

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS / CONDITIONS ON SITE, IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PERFORMING ANY WORK OR BE RESPONSIBLE FOR THE SAME

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FULL SCALE PRINT IS ON 22"x34" MEDIA

ATTACHMENTS

1	POLE SPEC	-
2	FOUNDATION DESIGN	-
3	LUMINAIRE SPEC	-

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STATE OF MISSOURI
JOHN ZIMMERMANN
NUMBER E-30437
PROFESSIONAL ENGINEER
9/11/2025

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10740 NALL AVE, SUITE 400
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TERRA CONSULTING GROUP
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COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

REVISION LOG

NO.	BY	DATE	DESCRIPTION
A	JV	07/18/2025	ISSUED FOR REVIEW
B	MD	09/11/25	ISSUED FOR PERMITTING

REVISION NOTES

REV A DESCRIPTION:

- PRELIM DRAWINGS ISSUED FOR CLIENT REVIEW

REV B DESCRIPTION:

- ISSUED WITH CONCRETE FOUNDATION DESIGN, TRAFFIC PLANS, REVISED 6672 BASEBAND UNIT, EME SIGNAGE & POLE SPEC.

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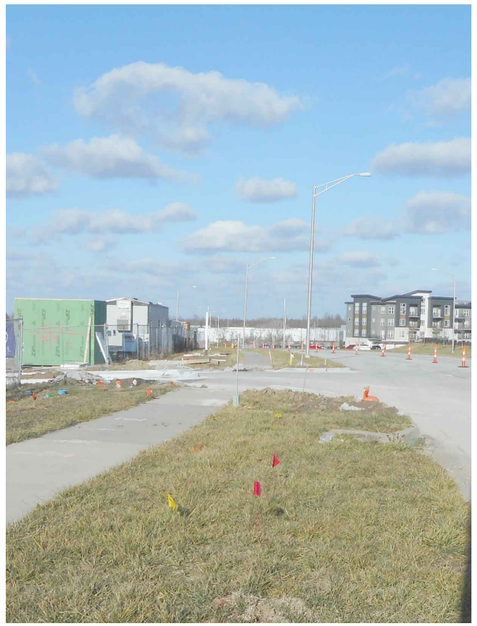
REVISION LOG

SHEET NUMBER

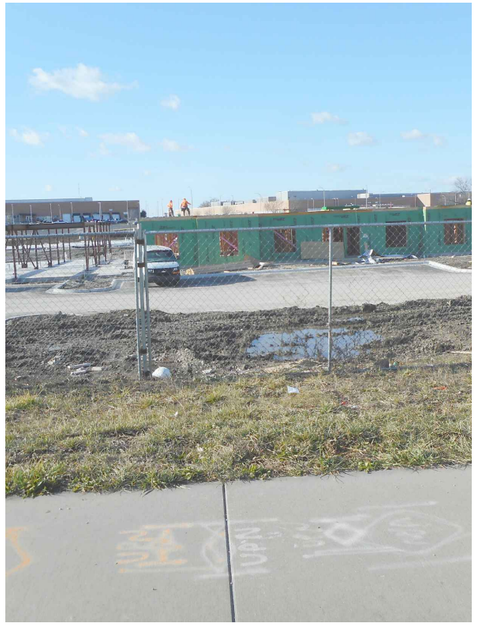
R-1



LOOKING NORTH

LOOKING EAST

LOOKING SOUTH



LOOKING WEST

1 DIRECTIONAL VIEWS FROM POLE

NORTH FACE

EAST FACE

SOUTH FACE

WEST FACE

2 EXISTING POLE ELEVATION VIEWS

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SHEET TITLE

EXHIBIT PHOTOS

SHEET NUMBER

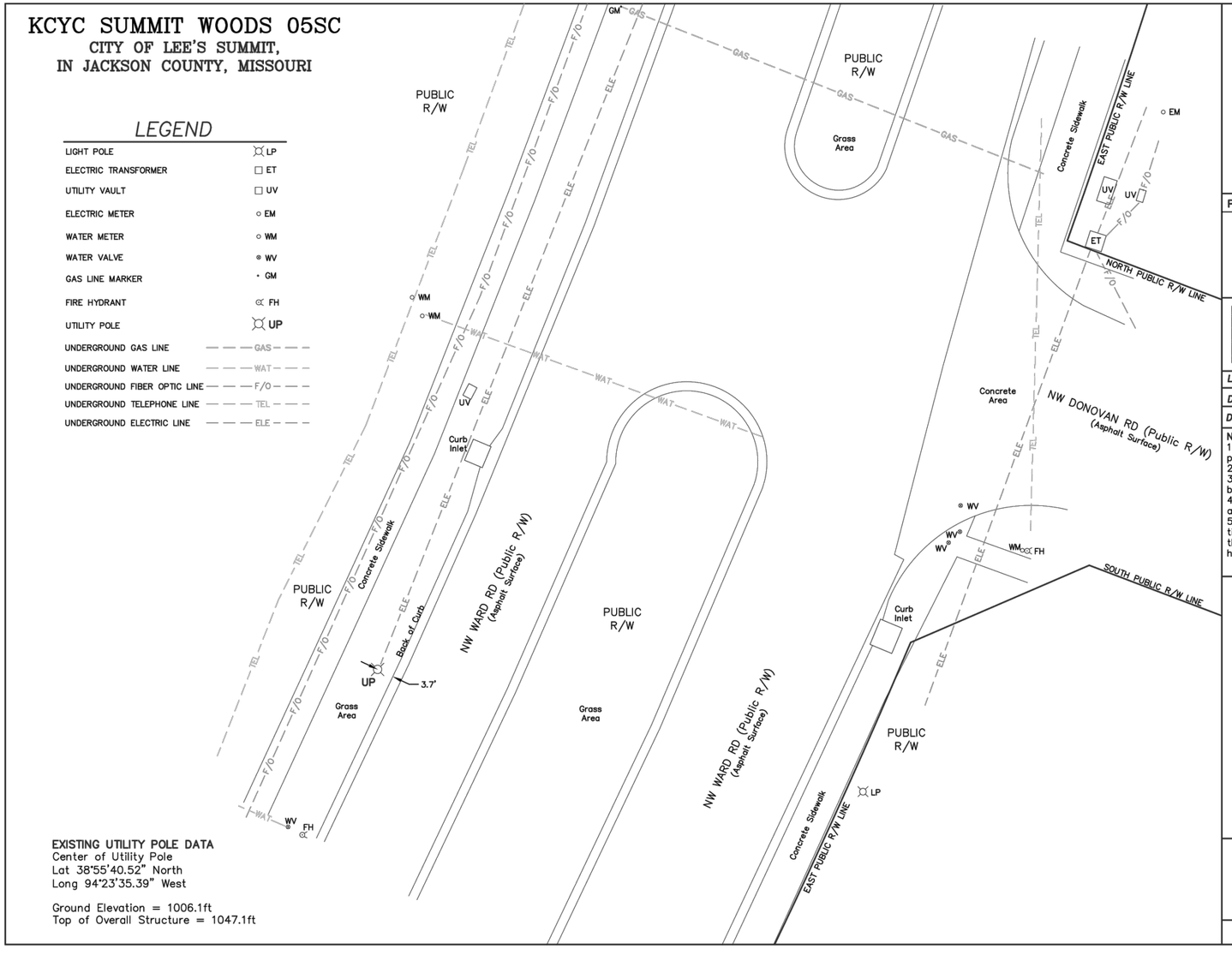
EX-1

KCYC SUMMIT WOODS 05SC

CITY OF LEE'S SUMMIT, IN JACKSON COUNTY, MISSOURI

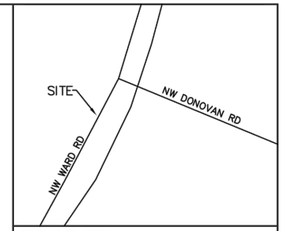
LEGEND

LIGHT POLE	LP
ELECTRIC TRANSFORMER	ET
UTILITY VAULT	UV
ELECTRIC METER	EM
WATER METER	WM
WATER VALVE	WV
GAS LINE MARKER	GM
FIRE HYDRANT	FH
UTILITY POLE	UP
UNDERGROUND GAS LINE	GAS
UNDERGROUND WATER LINE	WAT
UNDERGROUND FIBER OPTIC LINE	F/O
UNDERGROUND TELEPHONE LINE	TEL
UNDERGROUND ELECTRIC LINE	ELE



EXISTING UTILITY POLE DATA
Center of Utility Pole
Lat 38°55'40.52" North
Long 94°23'35.39" West

Ground Elevation = 1006.1ft
Top of Overall Structure = 1047.1ft



PROVIDED FOR:

TERRA CONSULTING GROUP, LTD

LOVELACE & ASSOCIATES
Land Surveying - Land Planning
Telecommunications Surveys
929 SE 3rd Street Lee's Summit, Missouri 64063
Phone: (816) 347-9997 Fax: (816) 347-9979

LA PROJECT NO.: 22218-5

DRAWN BY: A.C.T. CHECKED BY: J.B.L.

DATE: 09-19-22 FIELDWORK: 09-06-22

NOTES:
1. No subsurface investigation was performed to locate underground utilities.
2. Vertical Datum=NAVD88 using GEOID12B.
3. This survey does not represent a boundary survey.
4. Utilities shown hereon are limited to and are per observed evidence only.
5. An utility locate was requested under ticket #222341817 with Missouri One Call, the markings of said locate are shown hereon.

SCALE: 1" = 20'
0 20' 40'

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MISSOURI ONE CALL SYSTEM, INC.

SHEET 1 OF 1

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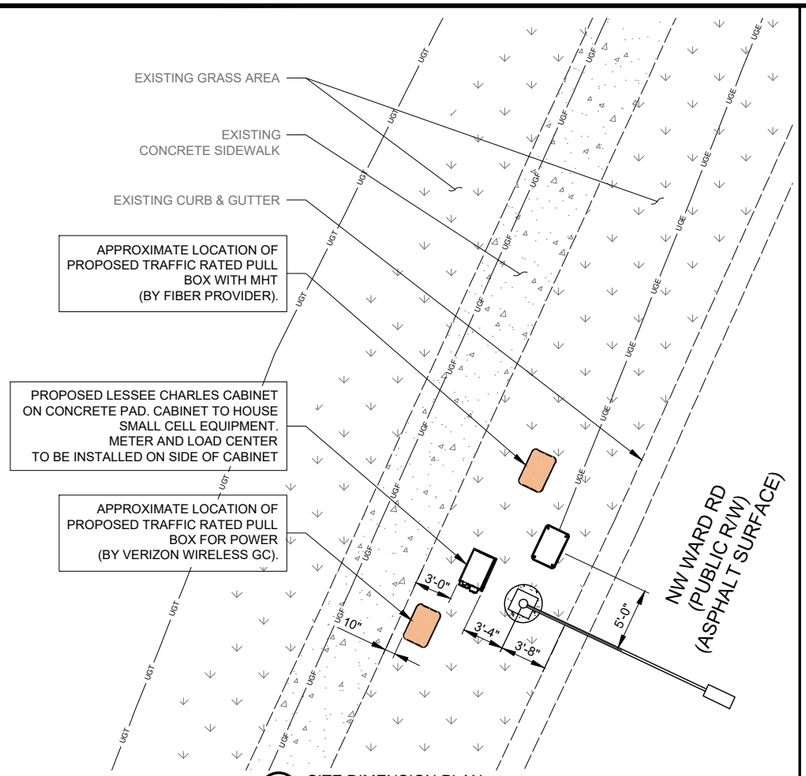
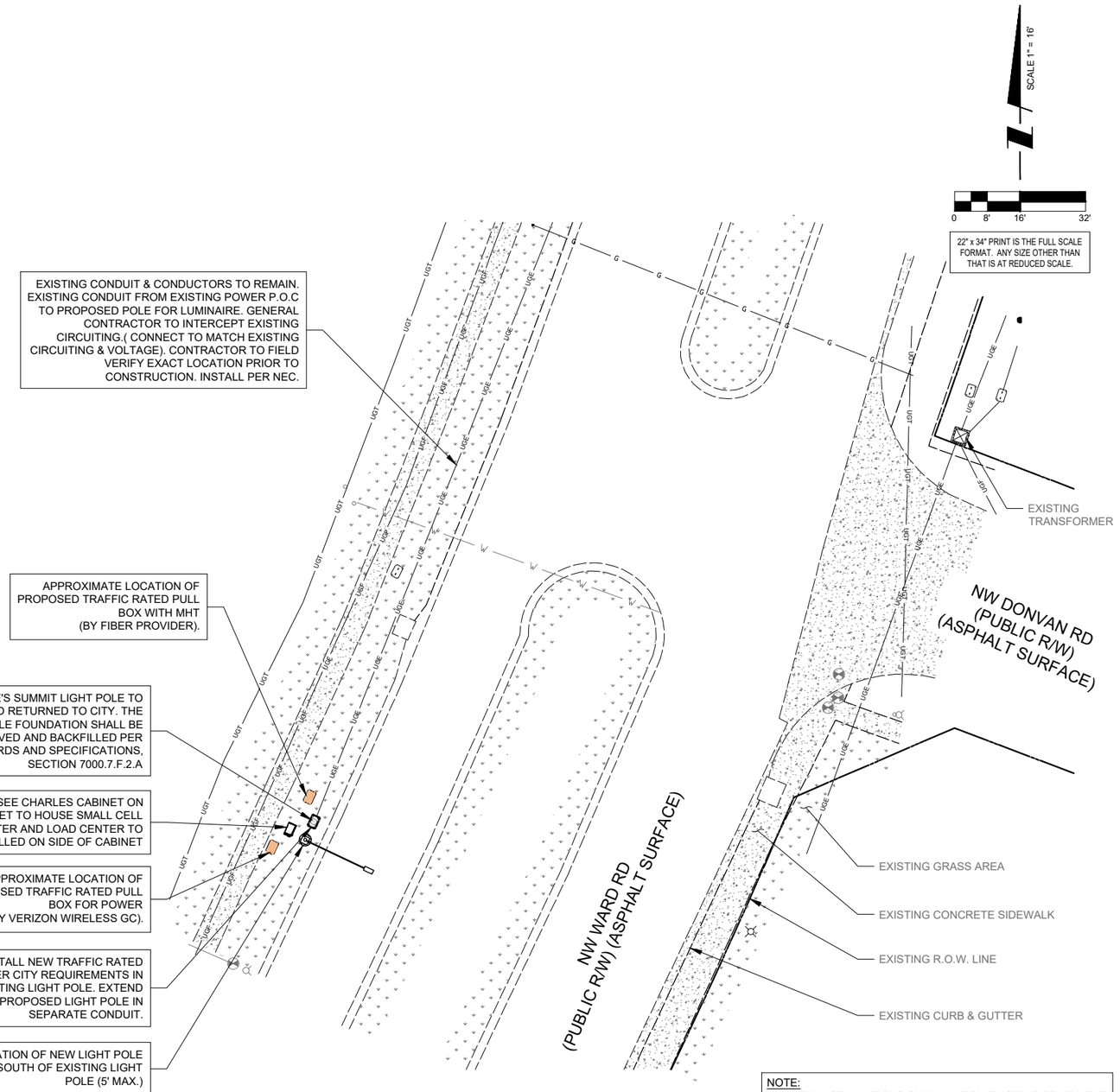
SHEET TITLE
SITE SURVEY

SHEET NUMBER
C-1



2 SITE DIMENSION PLAN
SCALE: 1" = 6'



1 SITE PLAN
SCALE: 1" = 16'

NOTE:
1. NEW INSTALLATIONS SHALL MATCH EXISTING EQUIPMENT (POLE TYPES, SETBACK AND CONDUCTOR LOCATION)

CONTRACTOR NOTES:
1. SITE PLAN MAY NOT CONTAIN ALL SUBSURFACE UTILITIES. VERIZON WIRELESS G.C. TO FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO CONSTRUCTION.
2. G.C. SHALL RESTORE ALL AREAS OF THE RIGHT-OF-WAY IMPACTED BY THE SMALL CELL FACILITIES AND/OR WIRELESS SUPPORT STRUCTURE INSTALLATION AND/OR REMOVAL TO EQUAL OR BETTER CONDITION.
3. CONTRACTOR SHALL COORDINATE SITE ACCESS AND STAGING LOCATIONS WITH LANDLORD.
4. ALL STREET LIGHT POLES WILL REQUIRE A NEW FOUNDATION. REFERENCE TO STRUCTURAL PLANS PROVIDED BY OTHERS.
5. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EQUIPMENT TO MEET SYSTEM REQUIREMENTS.

EXISTING SYMBOLS & UTILITIES LEGEND

	POWER POLE		ANCHOR
	LIGHT POLE		SIGN
UC	UTILITY CABINET		MANHOLE
UV	UTILITY VAULT		FIRE HYDRANT
IV	IRRIGATION VAULT		DECIDUOUS TREE
WM	WATER METER		
GM	GAS METER		
EM	ELECTRIC METER		
WV	WATER VALVE		
GV	GAS VALVE		

	FENCE LINE
UGE	UNDERGROUND ELECTRIC
UGF	UNDERGROUND FIBER
UGT	UNDERGROUND TELCO
GAS	UNDERGROUND GAS LINE
OHE	OVERHEAD ELECTRIC
OHF	OVERHEAD FIBER
OHT	OVERHEAD TELCO
	UTILITY LINE
	STORM SEWER LINE
	SANITARY SEWER LINE
W	WATERMAIN LINE

PROPOSED SYMBOLS

	LIGHT POLE		QUAZITE BOX
	UTILITY POLE		METER

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COLOR CODE LEGEND

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DC POWER & GROUNDING	
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EXISTING EASEMENT	
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HYBRID CABLES / COAX	
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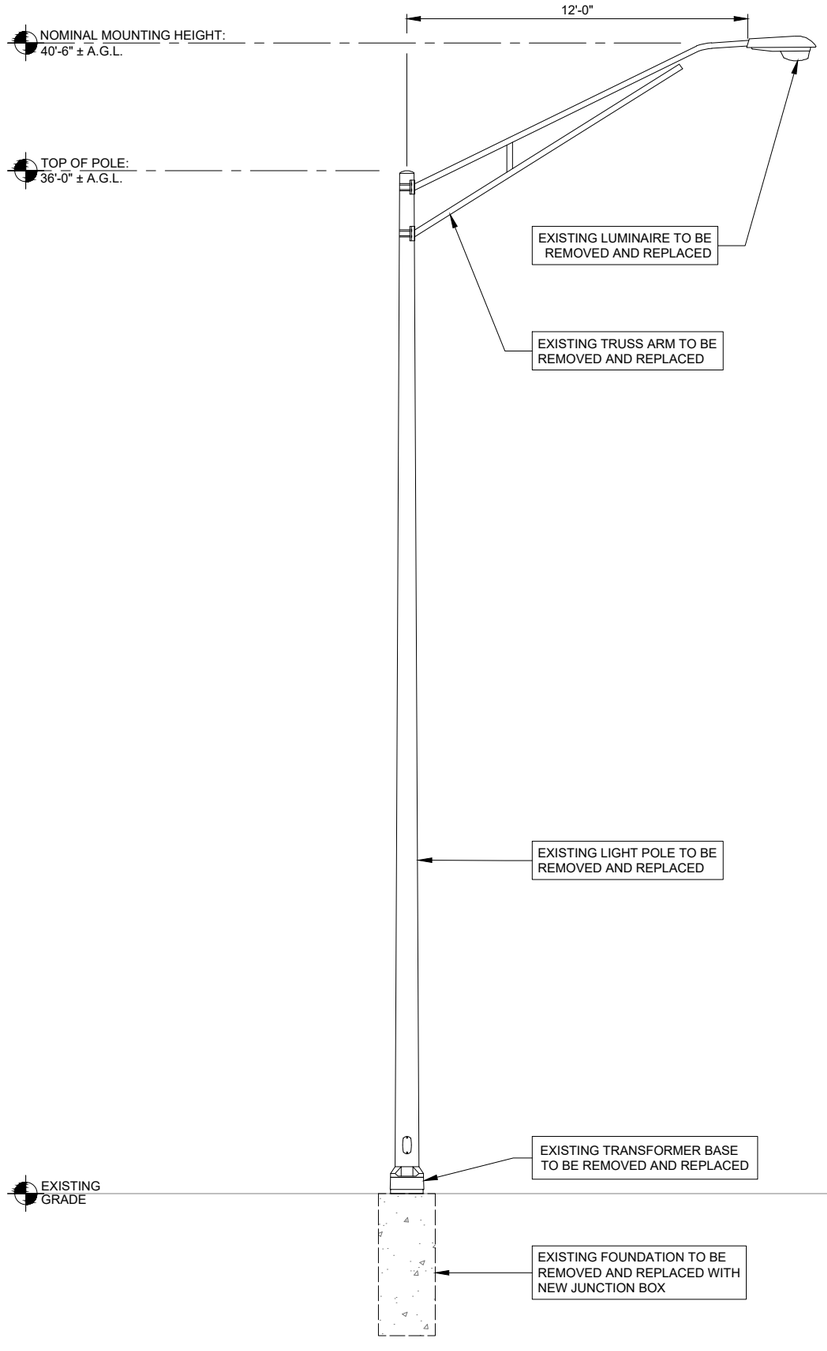
SHEET TITLE
SITE PLAN

SHEET NUMBER
C-2



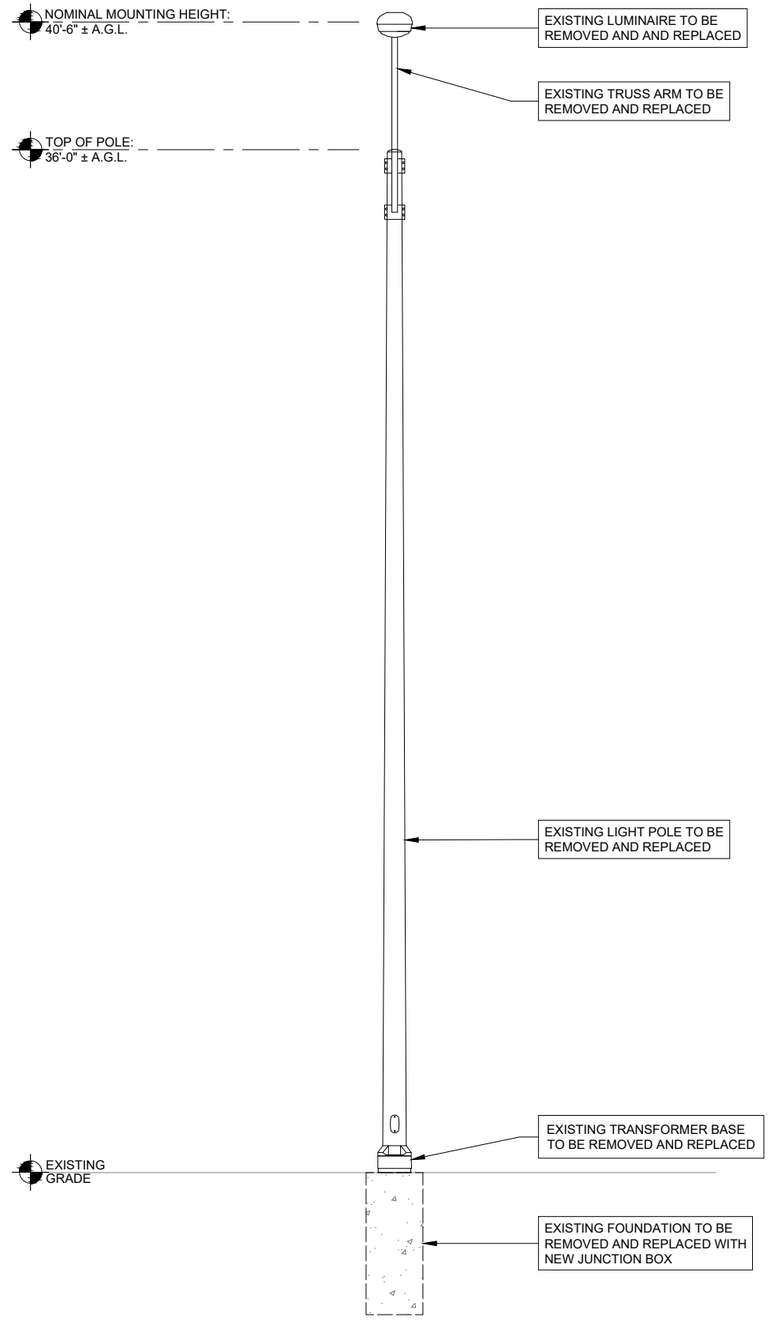
1 EXISTING SOUTH ELEVATION
SCALE: 3/8" = 1'-0" ±

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

NOTE:
EXISTING LIGHT POLE TO BE REMOVED AND RETURNED TO THE CITY.

NOTE:
THIS DRAWING IS FOR EXHIBIT AND LAYOUT PURPOSES ONLY.

ELEVATIONS WERE CREATED OFF OF FIELD MEASUREMENTS BY THE ENGINEER.



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

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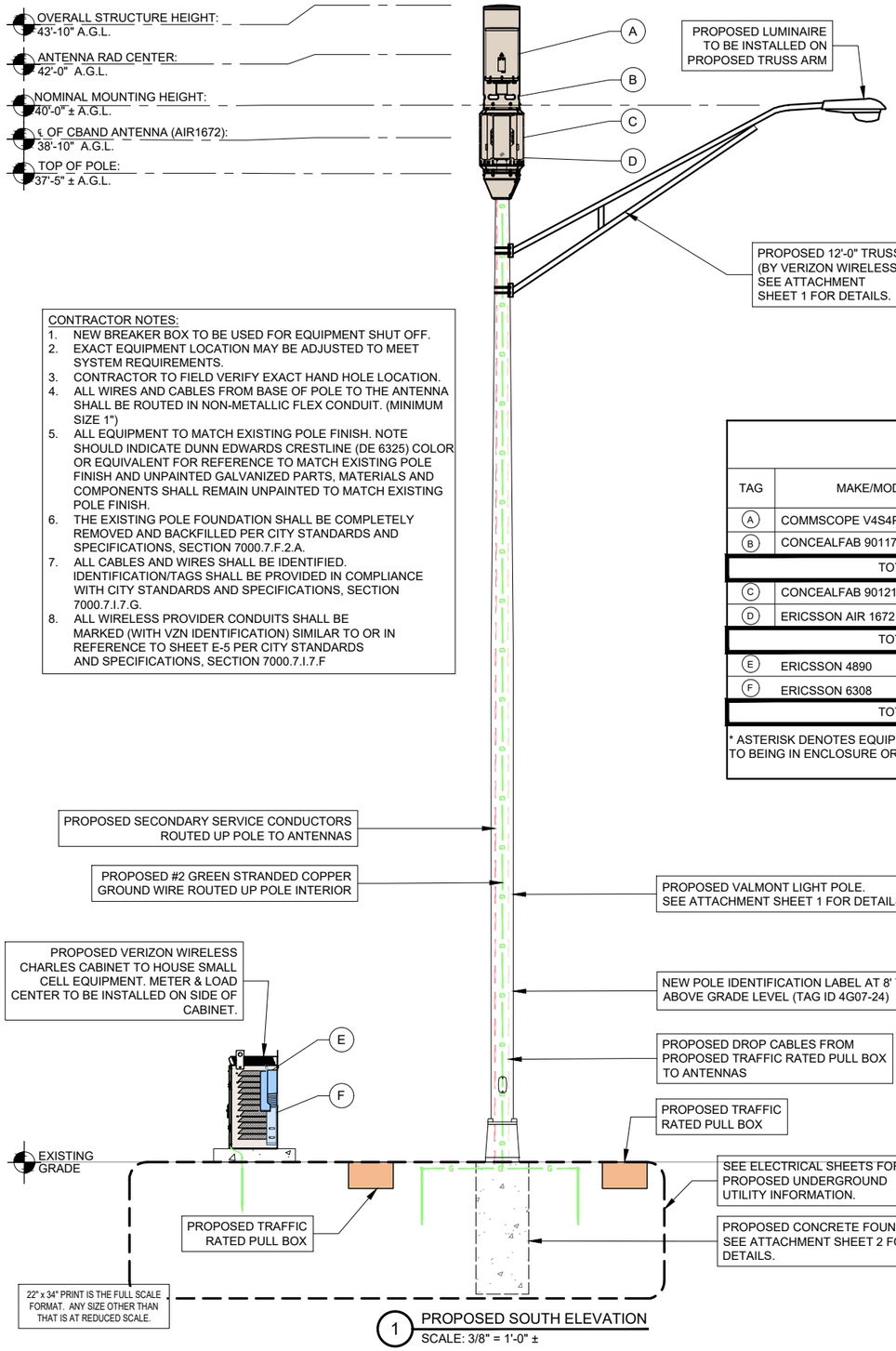
SHEET TITLE
EXISTING SITE ELEVATIONS

SHEET NUMBER
ANT-1

NOTE:
GENERAL CONTRACTOR TO PAINT PROPOSED EQUIPMENT DUNN EDWARDS CRESTLINE (DE 6325), OR EQUIVALENT.



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

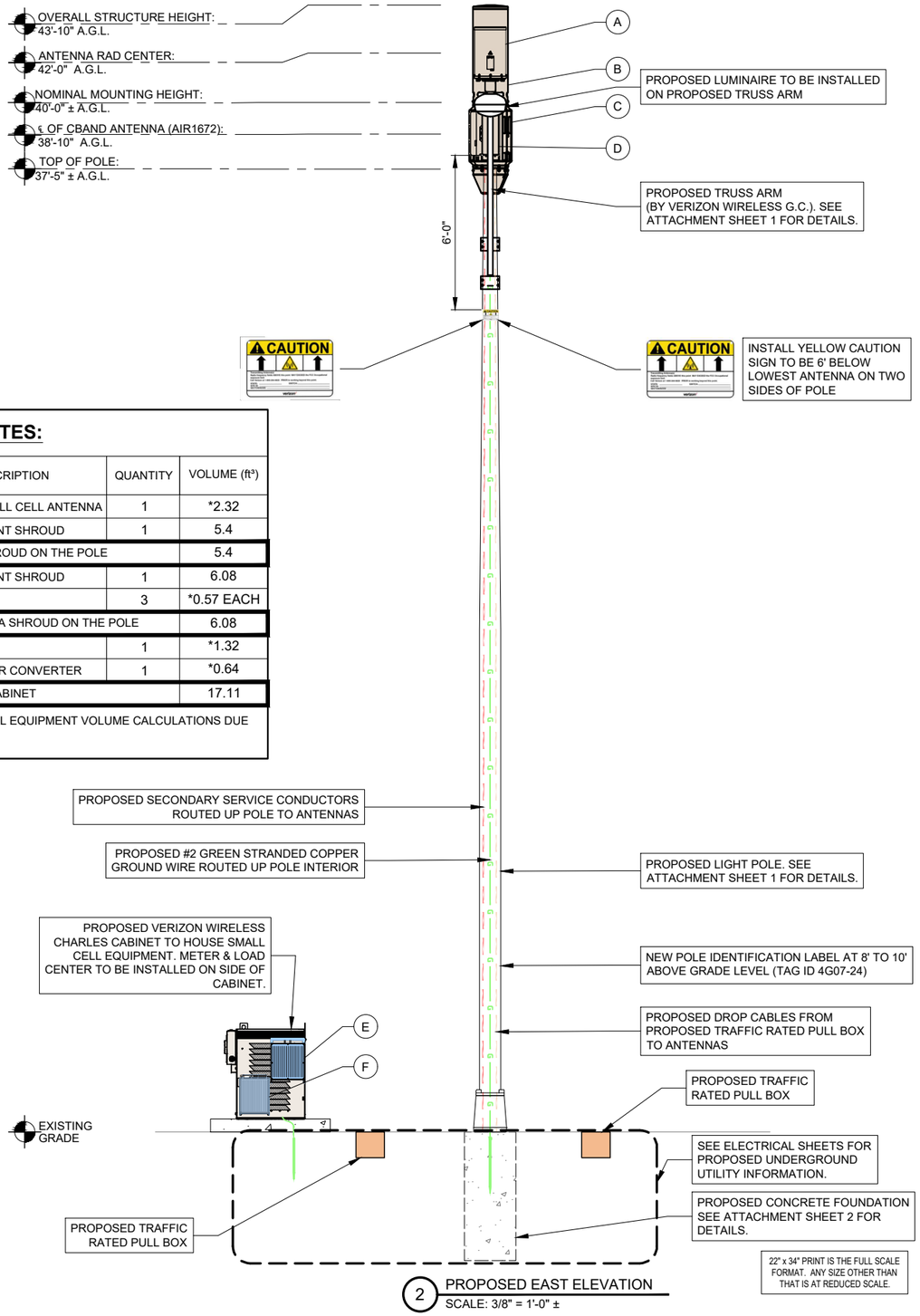
CONTRACTOR NOTES:
1. NEW BREAKER BOX TO BE USED FOR EQUIPMENT SHUT OFF.
2. EXACT EQUIPMENT LOCATION MAY BE ADJUSTED TO MEET SYSTEM REQUIREMENTS.
3. CONTRACTOR TO FIELD VERIFY EXACT HAND HOLE LOCATION.
4. ALL WIRES AND CABLES FROM BASE OF POLE TO THE ANTENNA SHALL BE ROUTED IN NON-METALLIC FLEX CONDUIT. (MINIMUM SIZE 1")
5. ALL EQUIPMENT TO MATCH EXISTING POLE FINISH. NOTE SHOULD INDICATE DUNN EDWARDS CRESTLINE (DE 6325) COLOR OR EQUIVALENT FOR REFERENCE TO MATCH EXISTING POLE FINISH AND UNPAINTED GALVANIZED PARTS, MATERIALS AND COMPONENTS SHALL REMAIN UNPAINTED TO MATCH EXISTING POLE FINISH.
6. THE EXISTING POLE FOUNDATION SHALL BE COMPLETELY REMOVED AND BACKFILLED PER CITY STANDARDS AND SPECIFICATIONS, SECTION 7000.7.F.2.A.
7. ALL CABLES AND WIRES SHALL BE IDENTIFIED. IDENTIFICATION/TAGS SHALL BE PROVIDED IN COMPLIANCE WITH CITY STANDARDS AND SPECIFICATIONS, SECTION 7000.7.I.7.G.
8. ALL WIRELESS PROVIDER CONDUITS SHALL BE MARKED (WITH VZN IDENTIFICATION) SIMILAR TO OR IN REFERENCE TO SHEET E-5 PER CITY STANDARDS AND SPECIFICATIONS, SECTION 7000.7.I.7.F

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

KEYED NOTES:

TAG	MAKE/MODEL	DESCRIPTION	QUANTITY	VOLUME (ft³)
A	COMMSCOPE V4S4P-360S-F2	18-PORT SMALL CELL ANTENNA	1	*2.32
B	CONCEALFAB 901171_461N	CONCEALMENT SHROUD	1	5.4
TOTAL VOLUME FOR TOP 4G SHROUD ON THE POLE				5.4
C	CONCEALFAB 901216_T	CONCEALMENT SHROUD	1	6.08
D	ERICSSON AIR 1672 (B77D)	5G ANTENNA	3	*0.57 EACH
TOTAL VOLUME FOR 5G ANTENNA SHROUD ON THE POLE				6.08
E	ERICSSON 4890	RRU	1	*1.32
F	ERICSSON 6308	AC/DC POWER CONVERTER	1	*0.64
TOTAL VOLUME FOR GROUND CABINET				17.11

* ASTERISK DENOTES EQUIPMENT NOT INCLUDED IN TOTAL EQUIPMENT VOLUME CALCULATIONS DUE TO BEING IN ENCLOSURE OR CHARLES CABNET.



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A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
PROPOSED SITE ELEVATIONS

SHEET NUMBER
ANT-2

verizon
NPP RFDS

WEST > Desert Mountain Plains > Mountain Plains > Kansas City > KCYC SUMMIT WOODS 05SC

Ringor, Benedict - benedict.ringor@verizonwireless.com - 20250826_165301

Project Details		Location Information	
Carrier Aggregation	N	Site Id	616774283
Ecip	N	Search Ring#	
Project Name	KCYC SUMMIT WOODS 05SC - CANDIDATE ANALYSIS	E-NodeB ID#	null
Project Alt Name	KCYC SUMMIT WOODS 05SC	PSLC#	438336
Project Id	2469571	Switch Name	Kansas City
Designed Sector Carrier 4G	1	Tower Type	
Designed Sector Carrier 5G	4	Site Type	SMALL-CELL
Additional Sector Carrier 4G	0	Street Address	560 NW CHIPMAN RD
Additional Sector Carrier 5G	0	City	Lees Summit
Suffix		State	MO
FP Solution Type & Tech Type	SC;4G_AWS;5G_L-Sub6;5G_PCS	Zip Code	64086
		County	Jackson
		Latitude	38.927931/ 38° 55' 40.552"
		Longitude	-94.393178/ 94° 23' 35.441"

Project Scope

- Rev 3 (Benny update 8/26/25) - Updated the RFDS centerlines to match with the latest prelim CD.
- Rev 2 (Benny update 7/28/25) - Updated the RFDS centerlines to match with the prelim CD.
- Rev 1 (Benny update 11/21/24) - Changed C-band AIR1652 to AIR1672 and removed CBRS. Changed BBU 6648 to 6651. Removed top concealment.
- New small cell. C-band, AWS 1 and PCS LTE
- (3) Ericsson 5G AIR1672 AC for C-band
- (1) DB-4890 radio for AWS 1 and PCS LTE
- (1) 6651
- (1) Commscope canister antenna V4S4P-360S-F2
- (8) 1/2" coax for the DB-4890
- Fiber, power cables, top concealment and ancillary parts to be specified by EE/CE

Antenna Summary

Added Antenna

1900	AWS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	Install Type	Quantity
		5G	Ericsson	AIR1672	38.33	39.3	0(A),120(B),240(C	PHYSICAL	3
5G	LTE		COMMSCOPE	V4S4P-360S-F2	42	43	0(A)	PHYSICAL	1

Removed Antenna

1900	AWS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	Install Type	Quantity

Retained Antenna

1900	AWS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	Install Type	Quantity

Added: 4	Removed: 0	Retained: 0

Non Antenna Summary

Added Non Antenna

Equipment Type	Location	1900	AWS	L-Sub6	Make	Model	Install Type	Quantity
Coaxial Cables	Tower				Coax	1/4" Coax	PHYSICAL	8
RRU	Tower	5G	LTE		Ericsson	4890	PHYSICAL	1
BBU	Shelter				Ericsson	6672	PHYSICAL	1
RRU	Tower			5G	Ericsson	AIR1672	PHYSICAL	0

Removed Non Antenna

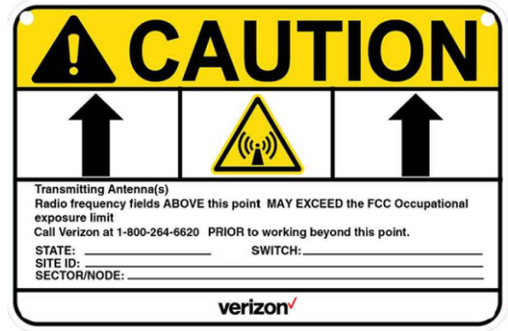
Equipment Type	Location	1900	AWS	L-Sub6	Make	Model	Install Type	Quantity

Retained Non Antenna

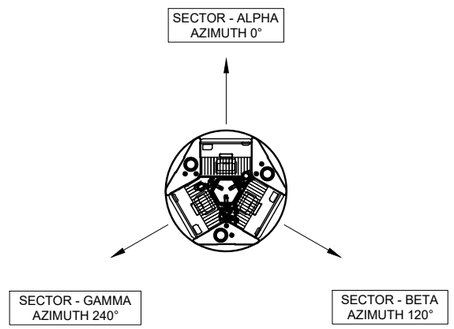
Equipment Type	Location	1900	AWS	L-Sub6	Make	Model	Install Type	Quantity

Added: 10	Removed: 0	Retained: 0

1 PROPOSED ANTENNA CONFIGURATION
N.T.S.



2 RF CAUTION SIGNAGE
N.T.S.



3 ANTENNA AZIMUTH
SCALE: N.T.S.

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COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

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FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

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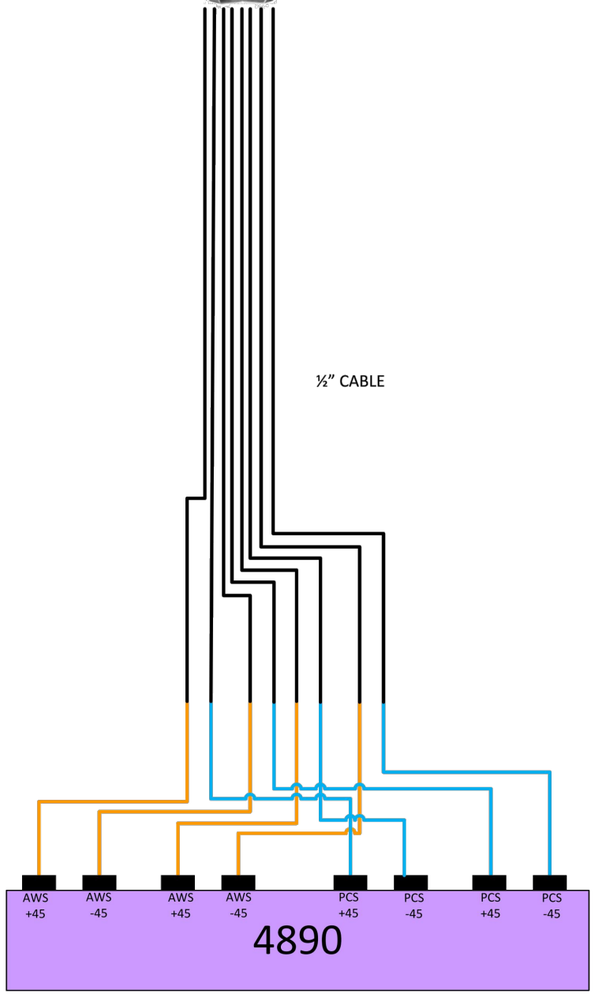
SHEET TITLE
PROPOSED ANTENNA CONFIGURATION

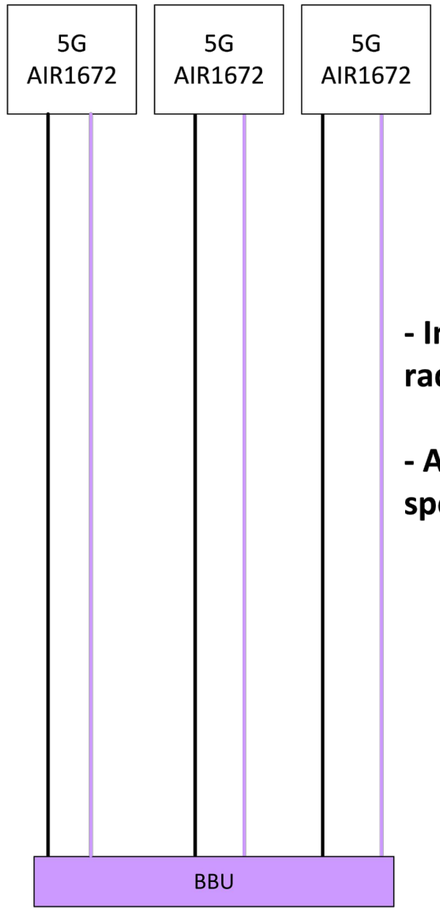
SHEET NUMBER
ANT-3

CANISTER ANTENNA

½" CABLE



C-BAND



- Integrated antenna and radio

- AC & fibers cables to be specified by EE/CE

- (1) 4890 to be installed 10-15 ft above the ground up on the pole
- (3) 5G radios to be installed below the canister antenna, they come with integrated antenna

1 ANTENNA PLUMBING DIAGRAM
SCALE: N.T.S.

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WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

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SHEET TITLE
PROPOSED ANTENNA CONFIGURATION

SHEET NUMBER
ANT-3A

V4S4P-360S-F2

18-port small cell antenna, 8x 1695-2690, 8x 3100- 4200,2x 5150-5925 MHz, 360° Horizontal Beamwidth, fixed tilt.

- Broadband Mid Band arrays (AWS/PCS/WCS/Band 41) with 4T4R (4X MIMO) capability
- Broadband performance – optimized for CBRS and C-bands
- 8 high gain ports for the 3GHz band

General Specifications

Antenna Type	Small Cell
Band	Multiband
Color	Light Gray (RAL 7035)
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
Radome Material	ASA, UV stabilized
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	18
RF Connector Quantity, low band	0
RF Connector Quantity, total	18

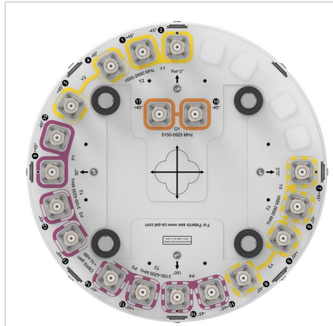
DIMENSIONS & WEIGHT	
LENGTH	24.016 in
DIAMETER	14.567 in
VOLUME	2.32 ft³
WEIGHT	35.274 lbs

Dimensions

Length	610 mm | 24.016 in
Net Weight, without mounting kit	16 kg | 35.274 lb
Outer Diameter	370 mm | 14.567 in

5 GHz Port Power Table

V4S4P-360S-F2



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2690 MHz | 3100 – 4200 MHz | 5150 – 5925 MHz
Polarization	±45°
Total Input Power, maximum	1,000 W

Electrical Specifications

Frequency Band, MHz	**1695–1920**	**1920–2200**	**2300–2690**	**3100–3550**	**3550–3700**	**3700–4200**	**5150–5925**
Gain, dBi	8	9.3	8.7	9.5	10.4	10	3.9
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360
Beamwidth, Vertical, degrees	21.9	19.5	16	10.2	9.2	8.1	23.6

V4S4P-360S-F2

Beam Tilt, degrees	2	2	2	2	2	2	2
Isolation, Cross Polarization, dB	25	25	25	25	25	25	25
Isolation, Inter-band, dB	28	28	28	28	28	28	28
VSWR | Return loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-145	-145	-145	
Input Power per Port, maximum, watts	200	200	200	150	150	150	10
Input Power per Port at 50°C, maximum, watts	150	150	150	100	100	100	5

Electrical Specifications, BASTA

Frequency Band, MHz	**1695–1920**	**1920–2200**	**2300–2690**	**3100–3550**	**3550–3700**	**3700–4200**	**5150–5925**
Gain by all Beam Tilts, average, dBi	7.4	8.3	8	9.1	9.5	9.4	2.8
Gain by all Beam Tilts Tolerance, dB	±0.8	±1.2	±1.1	±0.7	±0.7	±0.6	±1.6
Beamwidth, Vertical Tolerance, degrees	±2.5	±2	±1.7	±1.9	±0.9	±1.1	±4.9

Mechanical Specifications

Wind Loading @ Velocity, frontal	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	129.0 N @ 150 km/h (29.0 lbf @ 150 km/h)
Wind Speed, maximum	241 km/h | 149.75 mph

Packaging and Weights

Width, packed	478 mm | 18.819 in
Depth, packed	464 mm | 18.268 in
Length, packed	894 mm | 35.197 in
Weight, gross	20.4 kg | 44.974 lb

Regulatory Compliance/Certifications

Agency	**Classification**
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

V4S4P-360S-F2

5 GHz FCC Power Requirements				
U-NII Band	**U-NII 1**	**U-NII 2A**	**U-NII 2C**	**U-NII 3**
Frequency (MHz)	**5150 - 5250**	**5250 - 5350**	**5470 - 5725**	**5725 - 5850**
Max Input power per port to align with FCC Title 47 Part 15 (Watts)	**0.5**	**0.125**	**0.125**	**0.5**

Port Configuration

1 4G ANTENNA SPECS
N.T.S.

SIZE AND WEIGHT:				
AIR1672 B77D	HEIGHT	WIDTH	DEPTH	WEIGHT
WO PROTRUDING ITEMS	20.5"	7.9"	5.7"	26.5 LBS
W/ PROTRUDING ITEMS	21.0"	8.0"	5.9"	

NOTE:
G.C. TO APPLY 3M FILM TO NR ANTENNAS TO MATCH COLOR OF POLE.

ERICSSON AIR1672

2 AIR1672 INFORMATION
N.T.S.

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ACCESS / UTILITY EASEMENT	
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DC POWER & GROUNDING	
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EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
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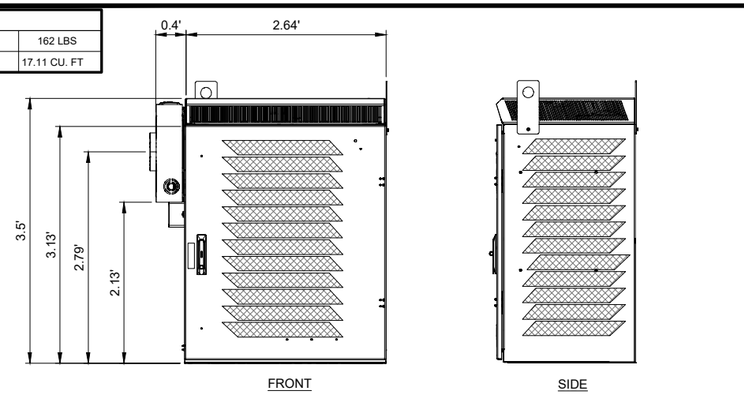
SHEET TITLE

ANTENNA SPECIFICATIONS

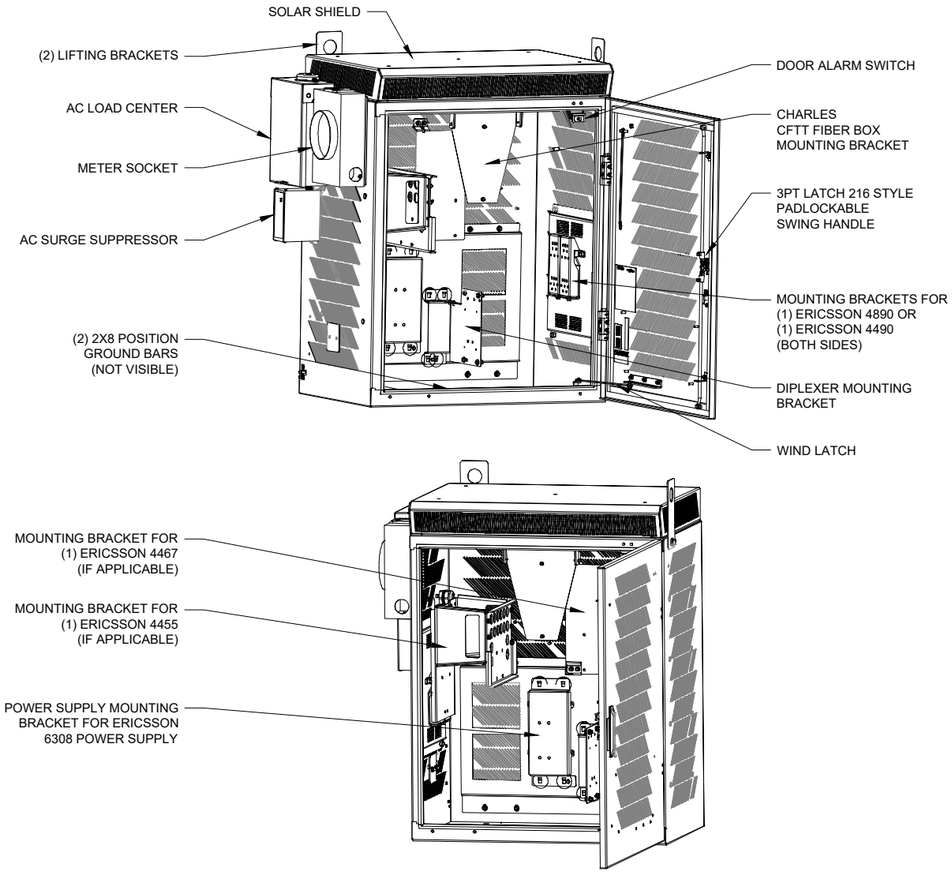
SHEET NUMBER

ANT-4

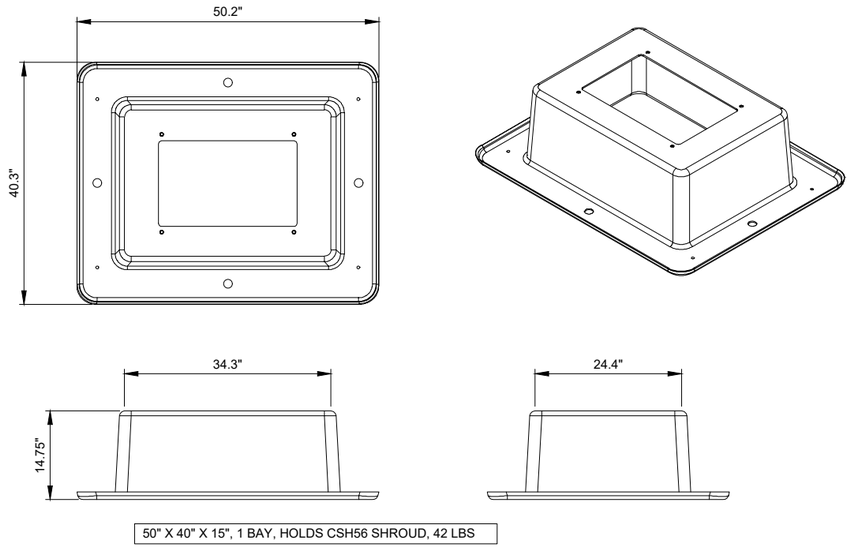
WEIGHT & VOLUME:	
WEIGHT EMPTY:	162 LBS
VOLUME:	17.11 CU. FT



1 CHARLES CABINET SHRD56-601AFGB1
N.T.S.



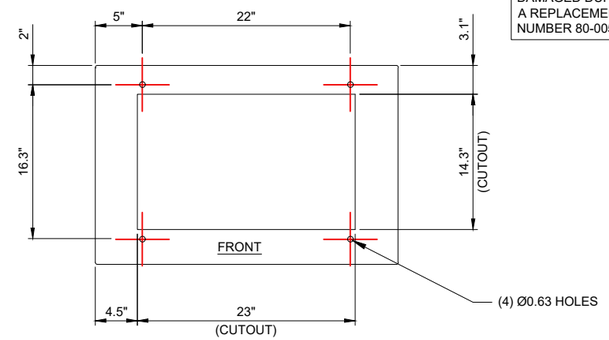
2 ISOMETRIC INSTALLATION
N.T.S.



50" X 40" X 15", 1 BAY, HOLDS CSH56 SHROUD, 42 LBS

3 CPAD -CHARLES COMPOSITE PAD FOR SHRD56 (#CPAD15EXCSH56)
N.T.S.

NOTE:
A LOOSE GASKET IS PROVIDED INSIDE SHRD56 FOR PLACING THE SHRD56 ON A CONCRETE PAD. IF THE GASKET BECOMES DAMAGED DURING INSTALLATION, ORDER A REPLACEMENT UNDER PART NUMBER 80-005172-A



4 MOUNTING PATTERN DIMENSIONS
N.T.S.

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EXISTING EASEMENT	
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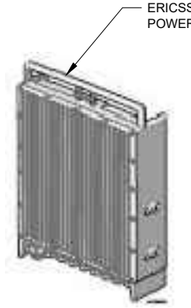
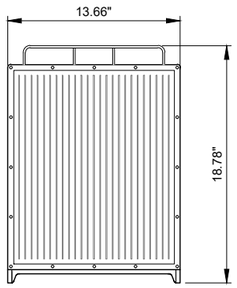
SHEET TITLE
CHARLES CABINET AND CPAD DETAILS

SHEET NUMBER
ANT-5



DESCRIPTION	VALUE
POWER INPUT	10-127 V AC OR 200-240 V AC (LINE-NEUTRAL OR LINE- LINE)
TOTAL POWER OUTPUT	100-127 V AC 3000 W 200-240 V AC 6000 W
MAXIMUM POWER ON ONE OUTPUT PORT	2000 W
HEIGHT	13.66"
WIDTH	18.78"
DEPTH	4.33"
WEIGHT	30.9 LBS
COLOR	NCS S 1002-B



FRONT VIEW

SIDE VIEW

1 ERICSSON 6308 POWER CONVERTER INFORMATION
N.T.S.

Radio 4890HP 48B2 48B66 S

- 8 RF ports, 4TBR per band (5 for TX)
- B2: 4x60W, B66: 4x60W
- Up to 480W in total RF power
- L, NR, NB-IoT
- 2x 2.5/4.9/9.8/10.1/24.3 Gbps CPRI/eCPRI

Radio 4890HP 48B2 48B66 S	Height	Width	Depth	Weight
wo protruding items	17.5 in (444 mm)	15.2 in (384 mm)	7.0 in (178 mm)	~67.5 lbs (~30.5 Kg)
w protruding items	20.6 in (523 mm)	15.7 in (398 mm)	7.05 in (179 mm)	

- -48 VDC 2-wire (single DC-connector),
- AISG v3.0 TMA & RET support via RS-485 or RF connectors
- Type 4.3-10 RF + connectors
- 2 external alarm
- Convectional cooling
  - Optional fan for increased site flexibility
- Power consumption with 100% Load @ 25C
  - Output Power 480W: 1370W
  - Output Power 320W: 970W
- IP65, -40 to +55°C

VOLUME : 1.32 FT³
WEIGHT: 67.5 lbs

Pending Commercial Agreements

Same order as Radio 8843

Now confirmed
max measurements/ will not exceed

3 RADIO 4890 INFORMATION
N.T.S.

Technical specification for Router 6672

Connectivity

Interfaces:	8x GE / 10GE SFP+ ports 8x GE SFP ports 4x 100 / 1000 Base-T RJ45 ports 1x 100 / 1000 Base-T Ethernet for Out-of-Band Management 1x RJ45 console port 1x RJ45 Alarm port for 3 input and 1 output alarm contacts 1x USB 2.0 port
Synchronization interfaces:	1x RJ45 port 1PPS+TOD (ITU-T G.703 Amd1) 1x RJ48C port for 2.048 MHz, E1/T1 (BITS) input/output

VOLUME : 0.166 FT³
WEIGHT: 13.2 lbs

Mechanical

System weight:	6kg / 13.2lbs
Dimension (H x W x D):	1RU 43.6mm x 442.4mm x 250mm
Air flow:	Filter-less design, Front to Back with field swappable fan tray

Electrical

Power supply DC:	-48 V, dual feed
Power supply AC:	100-240 V, single feed
Power consumption:	Typical 110 Watts, Max 165 Watts

Environmental

Operating Temperature:	-40°C to 65°C
Relative Humidity:	5 - 95% Non-condensing
GR-3108-CORE Class 1:	Controlled Protected Environments
GR-3108-CORE Class 2:	Protected Equipment in Outside Environments
EN 300 019-1-3 Class 3.3:	Not temperature-controlled locations

2 BASEBAND 6672 INFORMATION
N.T.S.

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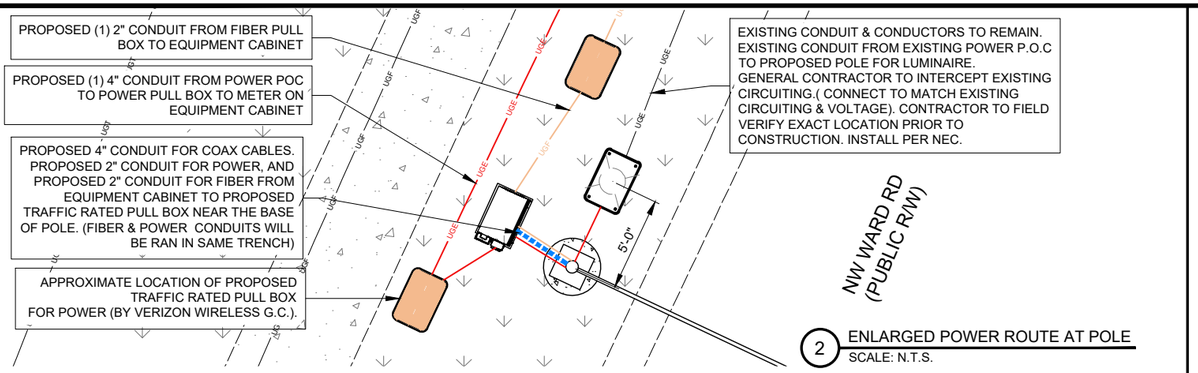
EQUIPMENT DETAILS

SHEET NUMBER
ANT-6



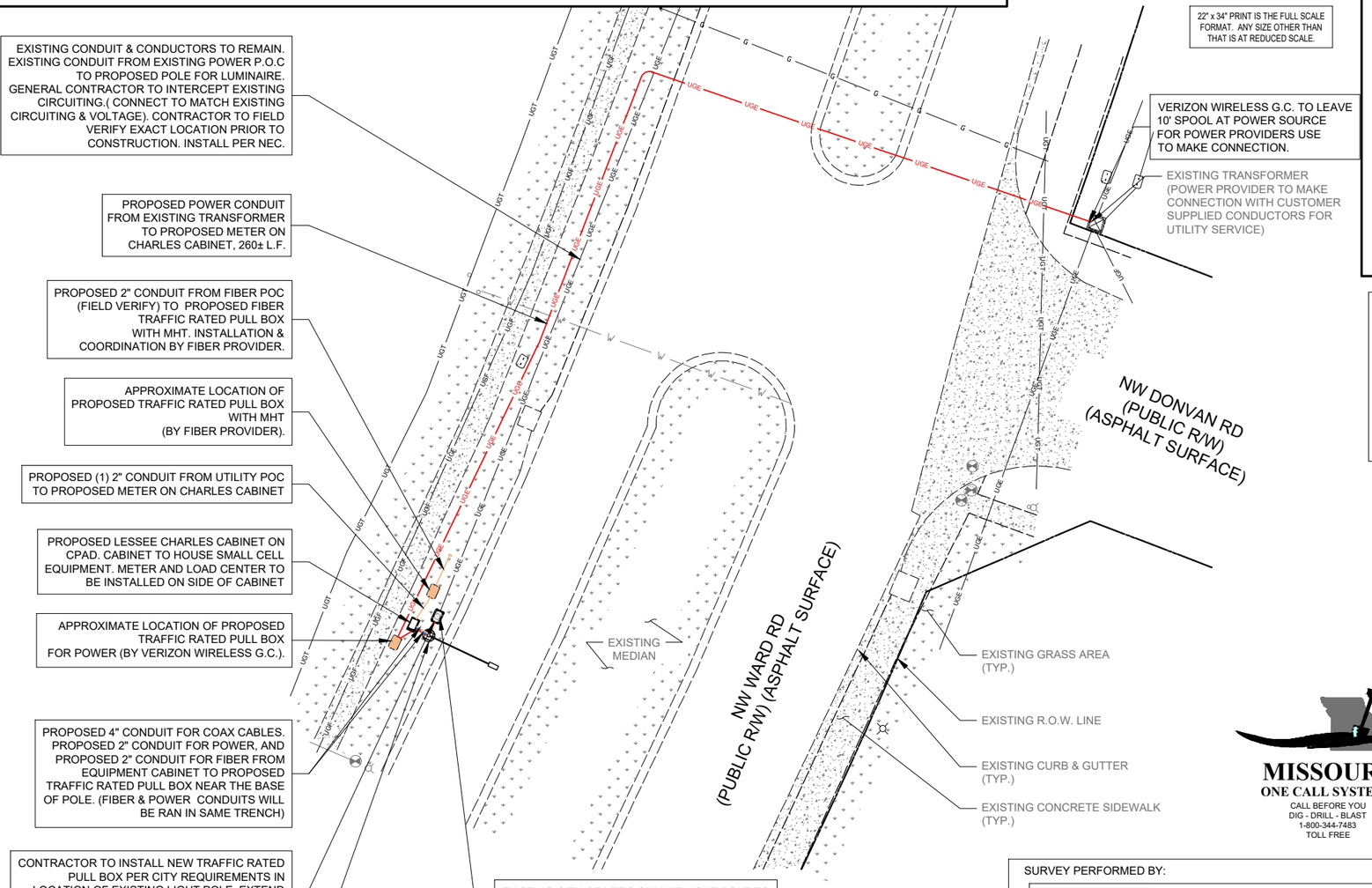
2 ENLARGED POWER ROUTE AT POLE
SCALE: N.T.S.

SCALE 1" = 16'

0 8' 16' 32'

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

3 PHOTO OF THE EXISTING POWER SOURCE
SCALE: N.T.S.



1 UTILITY ROUTING PLAN
SCALE: 1" = 16'

MISSOURI ONE CALL SYSTEM
CALL BEFORE YOU DIG - DRILL - BLAST
1-800-344-7483
TOLL FREE

SURVEY PERFORMED BY:

LOVELACE & ASSOCIATES
Land Surveying - Land Planning
Telecommunications Surveys
929 SE 3rd Street Lee's Summit, Missouri 64063
Phone: (816) 347-9997 Fax: (816) 347-9979

CONTRACTOR NOTES:
1. SITE PLAN MAY NOT CONTAIN ALL SUBSURFACE UTILITIES. VERIZON WIRELESS G.C. TO FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO CONSTRUCTION.
2. G.C. SHALL RESTORE ALL AREAS OF THE RIGHT-OF-WAY IMPACTED BY THE SMALL CELL FACILITIES AND/OR WIRELESS SUPPORT STRUCTURE INSTALLATION AND/OR REMOVAL TO EQUAL OR BETTER CONDITION
3. CONTRACTOR SHALL COORDINATE SITE ACCESS AND STAGING LOCATIONS WITH LANDLORD.
4. ALL STREET LIGHT POLES WILL REQUIRE A NEW FOUNDATION. REFERENCE TO STRUCTURAL PLANS PROVIDED BY OTHERS.
5. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF ALL EQUIPMENT TO MEET SYSTEM REQUIREMENTS.

EXISTING SYMBOLS & UTILITIES LEGEND

	POWER POLE		ANCHOR
	LIGHT POLE		SIGN
UC	UTILITY CABINET		MANHOLE
UV	UTILITY VAULT		FIRE HYDRANT
IV	IRRIGATION VAULT		DECIDUOUS TREE
WM	WATER METER		
GM	GAS METER		
EM	ELECTRIC METER		
WV	WATER VALVE		
GV	GAS VALVE		

	FENCE LINE
UGE	UNDERGROUND ELECTRIC
UGF	UNDERGROUND FIBER
UGT	UNDERGROUND TELCO
GAS	UNDERGROUND GAS LINE
OHE	OVERHEAD ELECTRIC
OHF	OVERHEAD FIBER
OHT	OVERHEAD TELCO
	UTILITY LINE
	STORM SEWER LINE
	SANITARY SEWER LINE
W	WATERMAIN LINE

PROPOSED SYMBOLS

	LIGHT POLE		QUAZITE BOX
	UTILITY POLE		METER

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COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
UTILITY ROUTING PLAN

SHEET NUMBER
E-1

UTILITY NOTES:

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

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

CODES, PERMITS, AND FEES:

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

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

RACEWAYS AND WIRING:

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

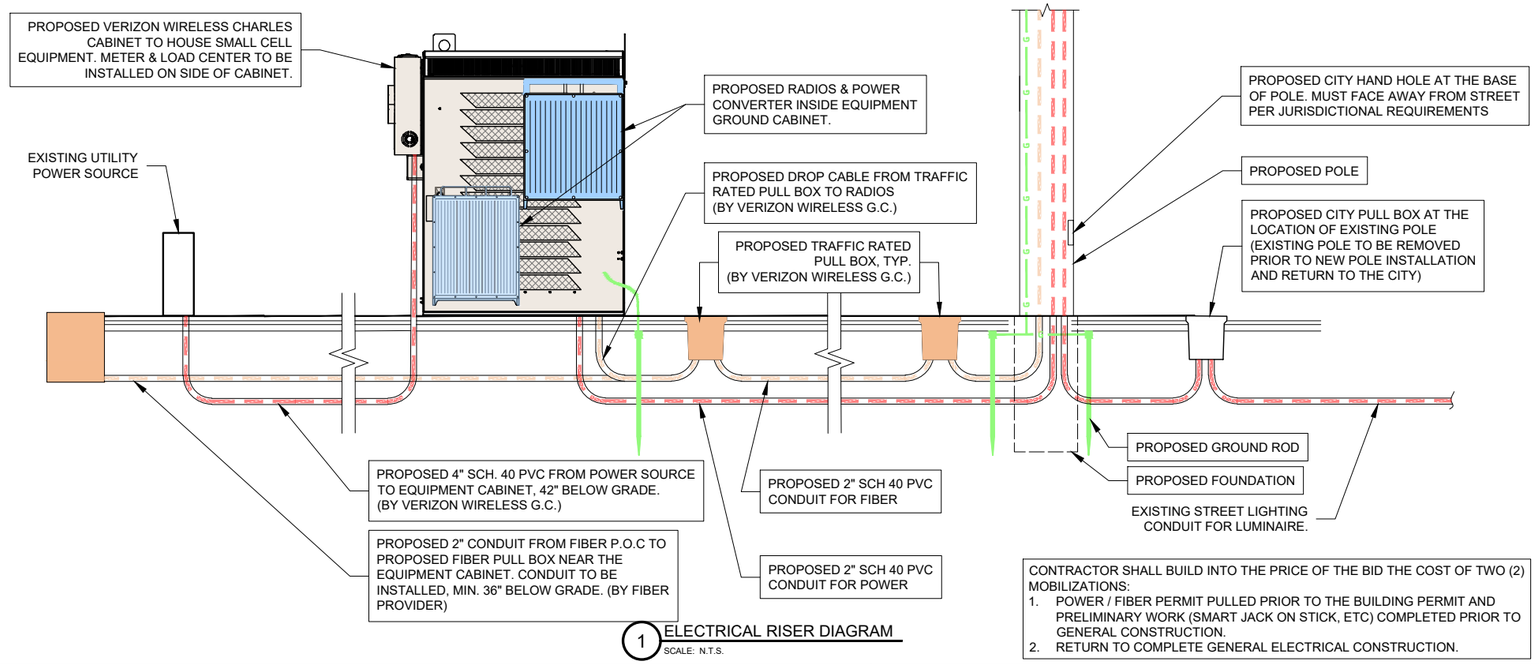
GENERAL NOTES:
SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, COORDINATION, AND ADDITIONAL INFORMATION, ETC. REPORT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

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

UTILITY CONTACTS:

EVERGY
GREG BULLINGTON
PHONE: 816-410-8624
E-MAIL:
GBULLINGTON@BLACKANDMCDONALD.COM

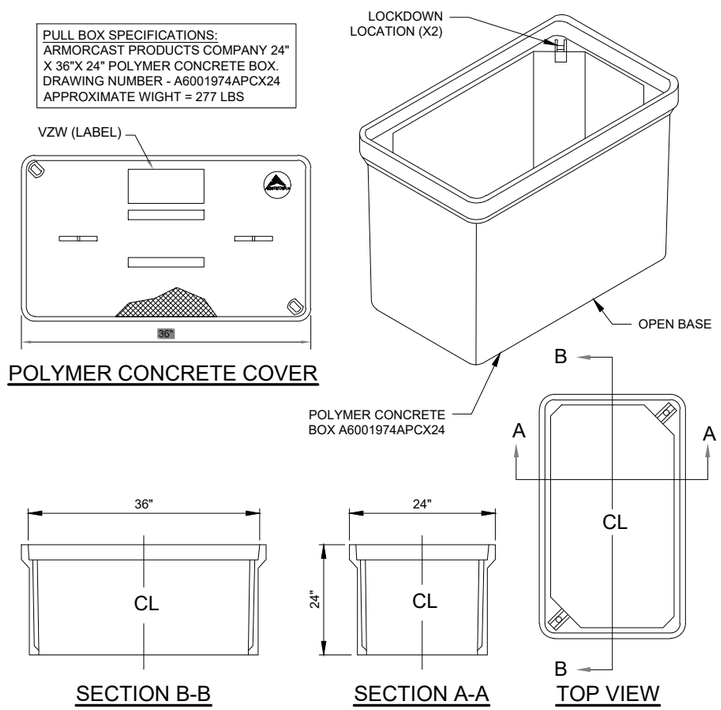
FIBER: NOT COORDINATED
BY TERRA CONSULTING GROUP



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

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

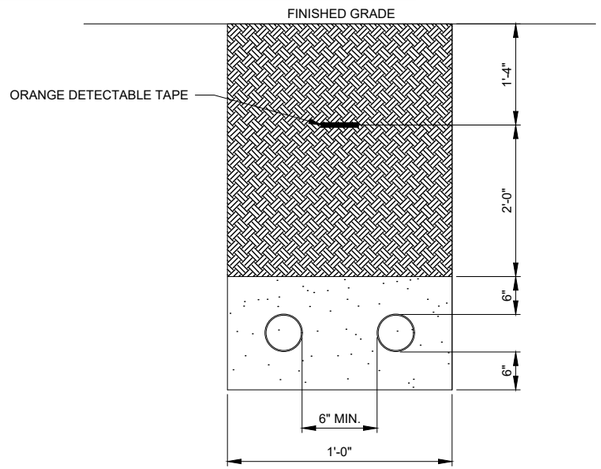
PULL BOX SPECIFICATIONS:
ARMORCAST PRODUCTS COMPANY 24" X 36"X 24" POLYMER CONCRETE BOX.
DRAWING NUMBER - A6001974APCX24
APPROXIMATE WIGHT = 277 LBS



2 TRAFFIC RATED PULL BOX DETAIL
SCALE: N.T.S.

NOTES:
1. CONTRACTOR TO REFER TO PLAN FOR CONDUIT SIZE

NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS WITH SERVING UTILITIES.
3. CALL BEFORE YOU DIG. CONTACT SERVING UTILITIES.
4. FIBER AND POWER CONDUITS MAY BE RUN IN SEPARATE TRENCHES. CONDUITS SHALL MAINTAIN 6" MINIMUM SEPARATION.



3 UTILITY TRENCH DETAIL
N.T.S.

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COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
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B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

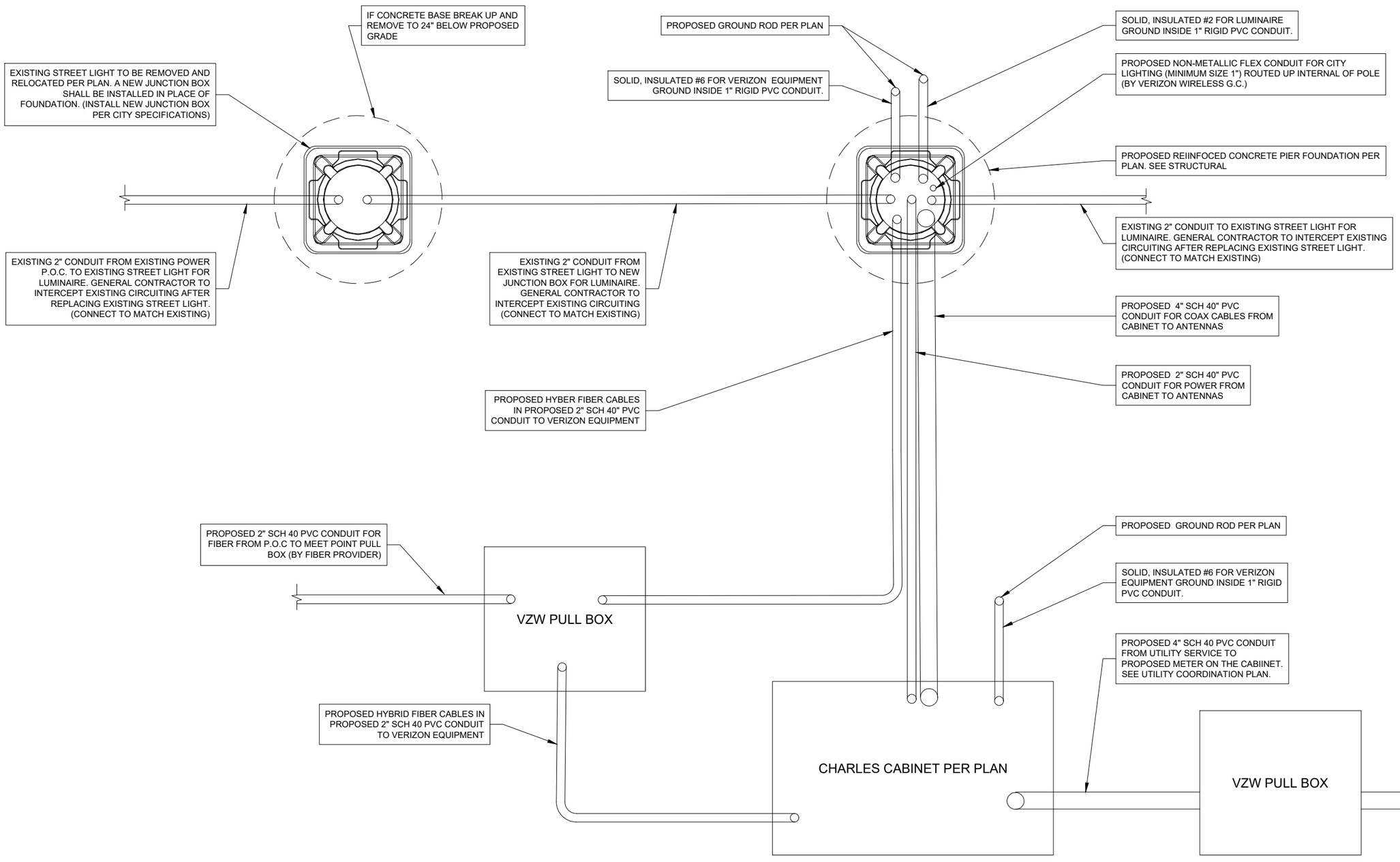
KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
UTILITY DETAILS

SHEET NUMBER
E-2



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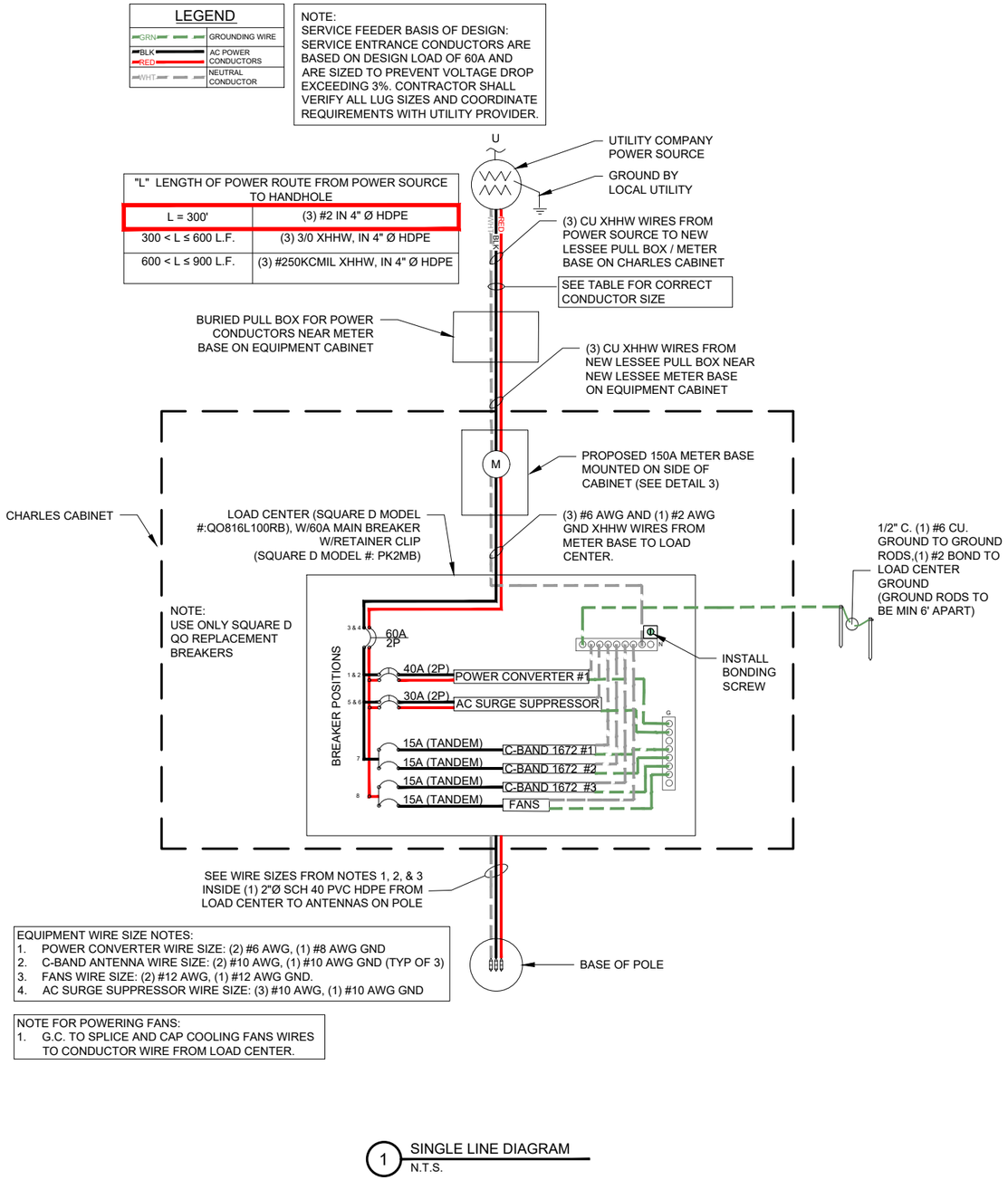
560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

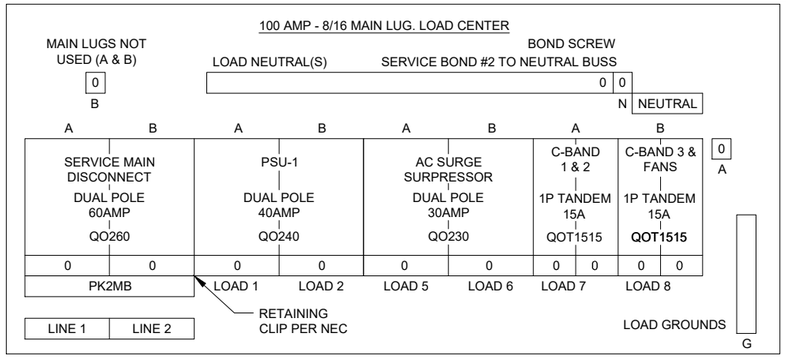
DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

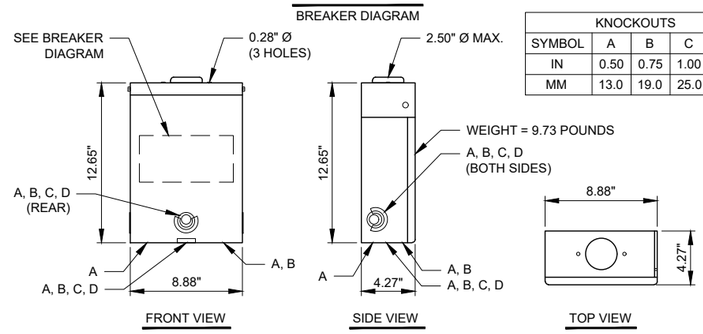
SHEET TITLE
STREET LIGHT CIRCUIT PLAN

SHEET NUMBER
E-3



1 SINGLE LINE DIAGRAM
N.T.S.





KNOCKOUTS				
SYMBOL	A	B	C	D
IN	0.50	0.75	1.00	1.25
MM	13.0	19.0	25.0	32.0

2 Q08-16L100RB LOAD CENTER SPECS
N.T.S.

3 MILLBANK U7262-RL-TG METER

SPECIFICATIONS	
BRAND NAME	MILLBANK
HEIGHT	15 1/2 IN.
LENGTH	4 1/8 IN.
TYPE	RINGLESS
APPLICATION	METER SOCKET
WIDTH	8 IN.
STANDARD	UL LISTED; 3R
VOLTAGE RATING	600 VOLTS; A.C.
AMPERAGE RATING	150 CONTINUOUS AMPERE
PHASE	1 PHASE
FREQUENCY RATING	60 HERTZ
# OF MAIN BREAKERS	0
MAIN BREAKER SIZE	NO MAIN BREAKER
CABLE ENTRY	OH
TERMINAL	LAY IN
INSULATION	GLASS POLYESTER
MOUNTING	SURFACE MOUNT
MATERIAL	G90 GALV. STEEL W/ POWDER COAT FINISH
# OF JAWS	5 TERMINAL
BYPASS PROVISION	LEVER BYPASS
# OF METERED POS.	1 POSITION
EQUIPMENT GROUND	GROUNDING LUG
HUB/CLOSING PLATE	LARGE HUB OPENING ADAPTED TO SMALL CLOSING PLATE
LINE SIDE WIRE RANGE	6 AWG - 350 KCMIL
# OF RECEPTACLES	0

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ANTENNAS	
DC POWER & GROUNDING	
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FUZE # 2469571

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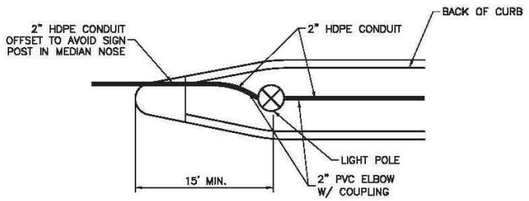
KCYC SUMMIT
WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

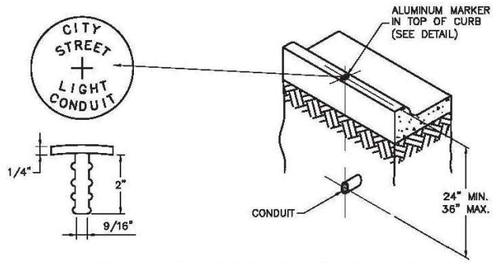
DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-4



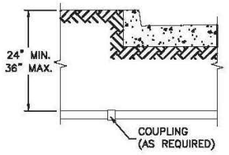
STREET LIGHT POLE IN MEDIAN



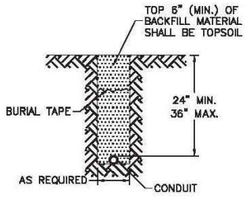
CONDUIT MARKING DETAIL

NOTES:

1. AN ALUMINUM MARKER SHALL BE PLACED IN THE TOP OF THE CURB DIRECTLY OVER THE CONDUIT.
2. MARKERS SHALL BE INSTALLED BY DRILLING THE CURB AND EXPOXYING THE MARKER IN PLACE. IF INSTALLED IN A SIDEWALK OR CURB RAMP, THE TOP OF THE MARKER SHALL BE FLUSH WITH THE CONCRETE SURFACE.
3. NO DIRECT PAYMENT SHALL BE MADE FOR CONDUIT MARKERS; THEY ARE SUBSIDIARY TO THE INSTALLATION OF CONDUIT.



BORED CONDUIT

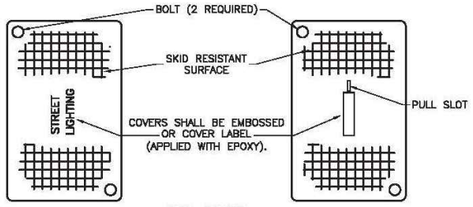


TRENCHED OR
PLOWED CONDUIT

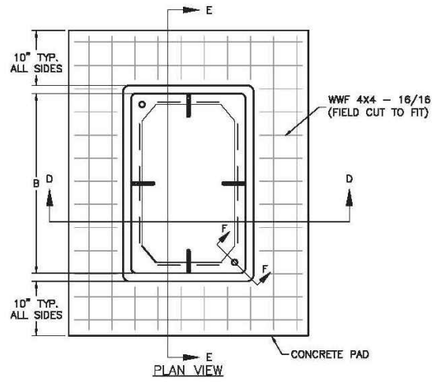
CONDUIT LOCATIONS

NOTES:

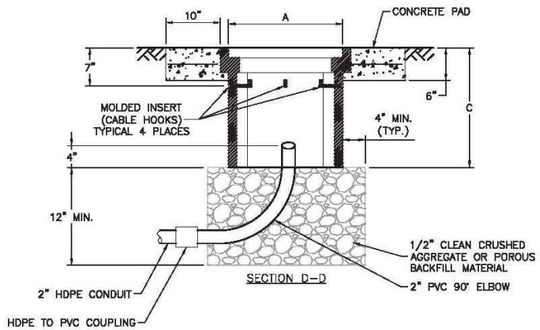
1. BACKFILL UNDER PAVED SURFACES SHALL BE FLOWABLE FILL.
2. THE CONDUIT SHALL NOT BE COVERED UNLESS INSPECTED AND APPROVED BY THE CITY ENGINEER, SO AS TO ENSURE PROPER DEPTH, CORRECT CONDUIT MATERIAL, AND PROPER CONDUIT END TREATMENT.



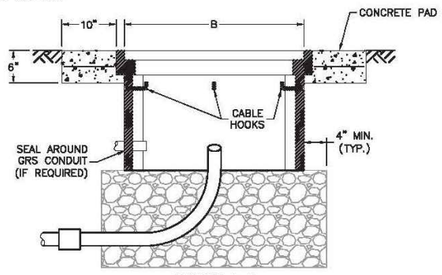
BOX COVER



PLAN VIEW

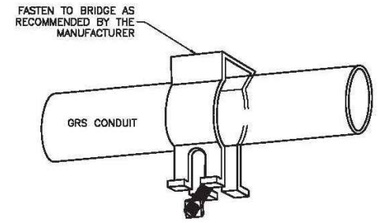


SECTION D–D

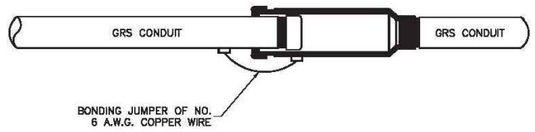


SECTION E–E

PULL OR JUNCTION BOX DETAILS



CONDUIT HANGER



EXPANSION
FITTING

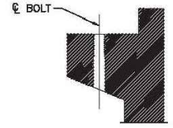
GRS CONDUIT DETAILS

NOTES:

1. ALL CONDUITS INSTALLED ABOVE GROUND SHALL BE GRS.
2. CONDUIT ATTACHED TO BRIDGES SHALL HAVE EXPANSION FITTINGS INSTALLED AT EACH END OF THE BRIDGE AND AT EACH EXPANSION JOINT ON THE BRIDGE.
3. ALL GRS CONDUITS SHALL BE ELECTRICALLY BONDED BY A GROUNDING BUSHING AND GROUND WIRE AS DETAILED.
4. INSTALL THE CONDUIT AND CONNECTOR ASSEMBLY TO PERMIT A 1/2" MINIMUM LONGITUDINAL TRAVEL IN EITHER DIRECTION.

NUMBER OF ENTERING/EXITING CONDUITS	BOX TYPE	MINIMUM BOX DIMENSIONS		
		A	B	C
1 – 2	TYPE 1 JUNCTION BOX	12"	12"	12"
3 – 4	TYPE 2 JUNCTION BOX	12"	18"	12"
> 4	CLASS 1 PULL BOX	17"	30"	22"

ALL DIMENSIONS SHOWN ARE NOMINAL



SECTION F–F

NOTES:

1. LIFT OPENING REQUIRED ON ALL COVERS.
2. PREFORMED BOX WALLS MAY BE EITHER FLARED OR VERTICAL. THE BOTTOM OF BOXES SHALL BE OPEN TO BELOW.
3. IF AN EXTENSION IS USED WITH A PREFORMED BOX, THE LIP OF THE EXTENSION MAY BE INTERIOR OR EXTERIOR. THE EXTENSION SHALL BE COMPATIBLE AND FROM THE SAME MANUFACTURER.
4. CABLE HOOKS ARE TO BE INCLUDED WITH CLASS 1 PULL BOXES ONLY.
5. A CLASS 1 PULL BOX SHALL BE INSTALLED ADJACENT TO EACH 4–CIRCUIT POWER SUPPLY.

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LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: BOX AND CONDUIT DETAILS

Drawn By: BWC
Checked By: MP
Date: 01/2020
Proj. #:

SL-3

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
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KCYC SUMMIT
WOODS 05SC

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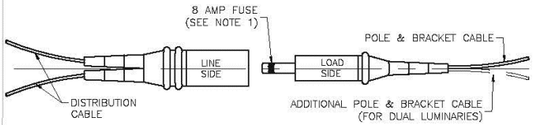
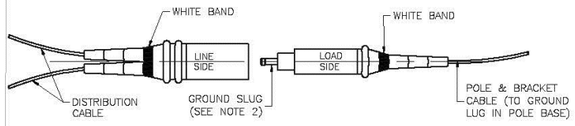
SHEET TITLE
CITY ELECTRICAL DETAILS

SHEET NUMBER
E-5



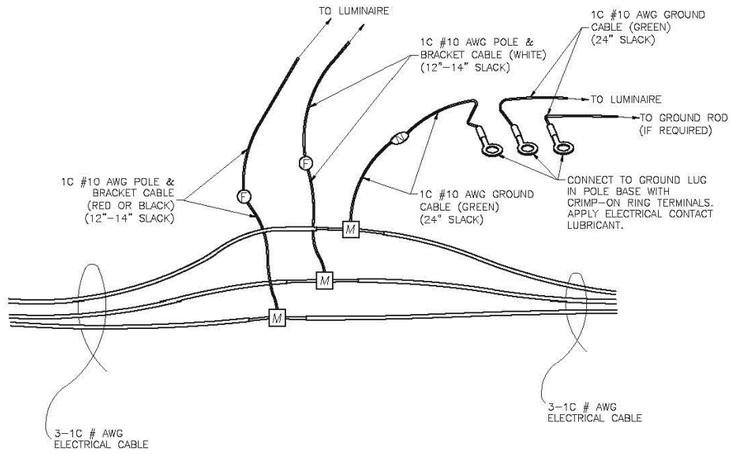
BREAK–AWAY FUSED ELECTRICAL CONNECTORS



BREAK–AWAY NON FUSED ELECTRICAL CONNECTOR

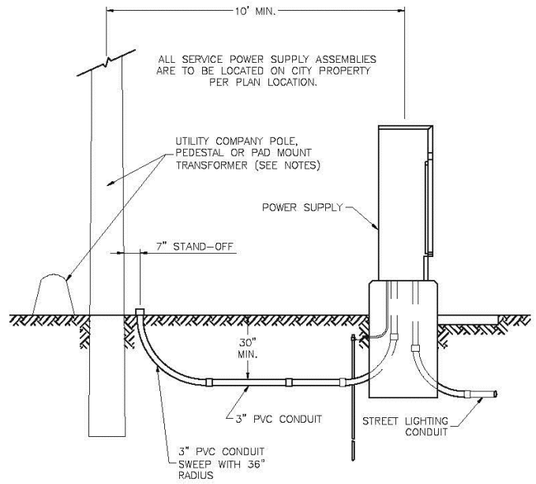
NOTES:

1. FUSE REMAINS IN "LOAD SIDE" AFTER BREAK–AWAY.
2. GROUND "SLUG" REMAINS IN "LOAD SIDE" AFTER BREAK–AWAY.
3. CONNECTORS SHALL HAVE SET SCREW TYPE TERMINALS TO ATTACH CABLES.



ELECTRICAL CONNECTOR KIT SCHEMATIC

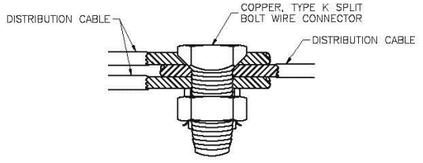
(SINGLE LUMINAIRE)



SECONDARY SERVICE CONNECTION DETAILS

NOTES:

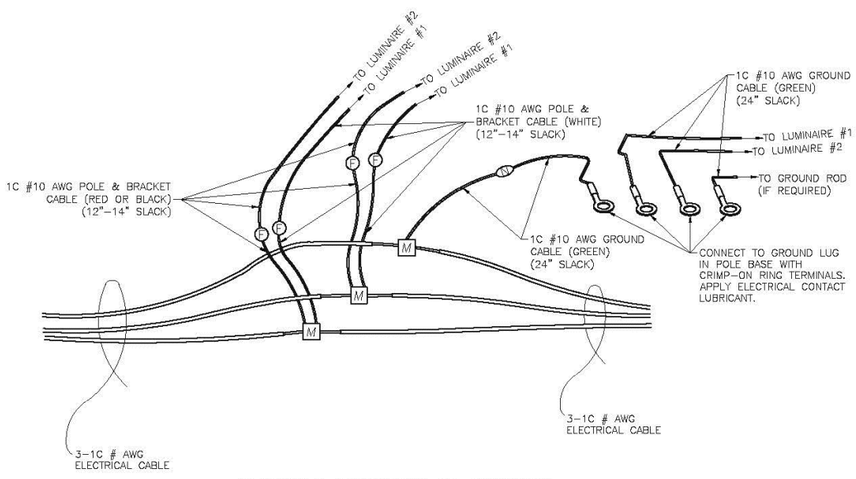
1. CONTRACTOR SHALL INSTALL A CONDUIT STUB 24" TO 6" ABOVE GROUND AT UTILITY POLES. CONDUIT SHALL BE STUBBED TO THE SIDE OF THE POLE THAT WILL ALLOW A DIRECT RUN UP THE POLE TO THE TRANSFORMER WITHOUT CROSSING OTHER UTILITY LINES OR CABLES. THE END OF THE CONDUIT SHALL BE CAPPED.
2. CONTRACTOR SHALL INSTALL CONDUIT IN A TRENCH TO WITHIN 24" OF PEDESTALS OR PAD MOUNT TRANSFORMERS AND LEAVE A 36" X 36" X 36" ACCESS HOLE IN THE GROUND. CONTRACTOR SHALL KEEP OPEN TRENCH COVERED AND PROMPTLY BACKFILL ACCESS HOLE WHEN SERVICE IS COMPLETED.



SPLICE KIT DETAILS

NOTES:

1. TO BE USED ONLY IN JUNCTION OR PULL BOXES WHERE CIRCUITS BRANCH OR "TEE".
2. ALL SPLICES SHALL BE PROTECTED WITH A RESIN SPLICE KIT (NOT SHOWN) INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



ELECTRICAL CONNECTOR KIT SCHEMATIC

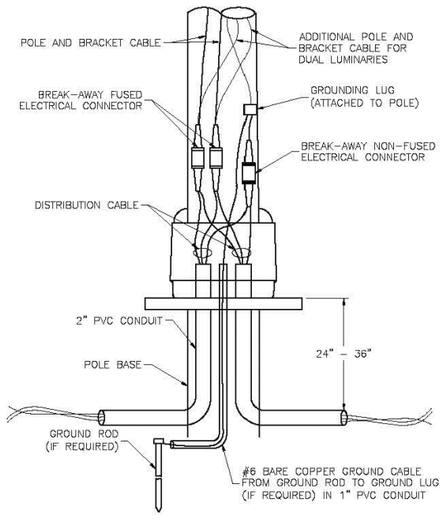
(TWIN LUMINAIRES)

LEGEND

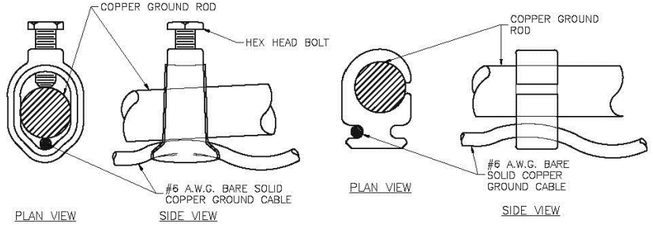
- M — MULTI–TAP ELECTRICAL CONNECTOR
- F — BREAK–AWAY FUSED ELECTRICAL CONNECTOR WITH 8 AMP FUSE
- N — BREAK–AWAY NON–FUSED ELECTRICAL CONNECTOR WITH GROUND "SLUG"
- S — SPLICE KIT

NOTES:

1. RED CABLES SHALL BE CONNECTED TO WEST OR NORTH ORIENTED LUMINAIRE. BLACK CABLES SHALL BE CONNECTED TO EAST OR SOUTH ORIENTED LUMINAIRE.
2. THE SPECIFIED CABLE SLACK SHALL BE PROVIDED ON EACH SIDE OF THE FUSED AND UN–FUSED CONNECTORS.
3. ADDITIONAL SLACK SHALL BE PROVIDED FOR THE #4 AWG CABLE SUCH THAT WHEN EXTENDED UPWARD, THE TOP OF THE MULTI–TAP CONNECTORS ARE NO LESS THAN 1" AND NO MORE THAN 3" ABOVE THE TOP OF THE HAND HOLE OPENING.



POLE WIRING DETAILS



GROUND ROD CONNECTION DETAILS

verizon

10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

LS LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

Project: POLE AND LUMINAIRE DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: ELECTRICAL DETAILS

Drawn By: BWC
Checked By: MP
Date: 01/2020
Proj. #:

SL-5

FUZE # 2469571

MDG# 5000203412

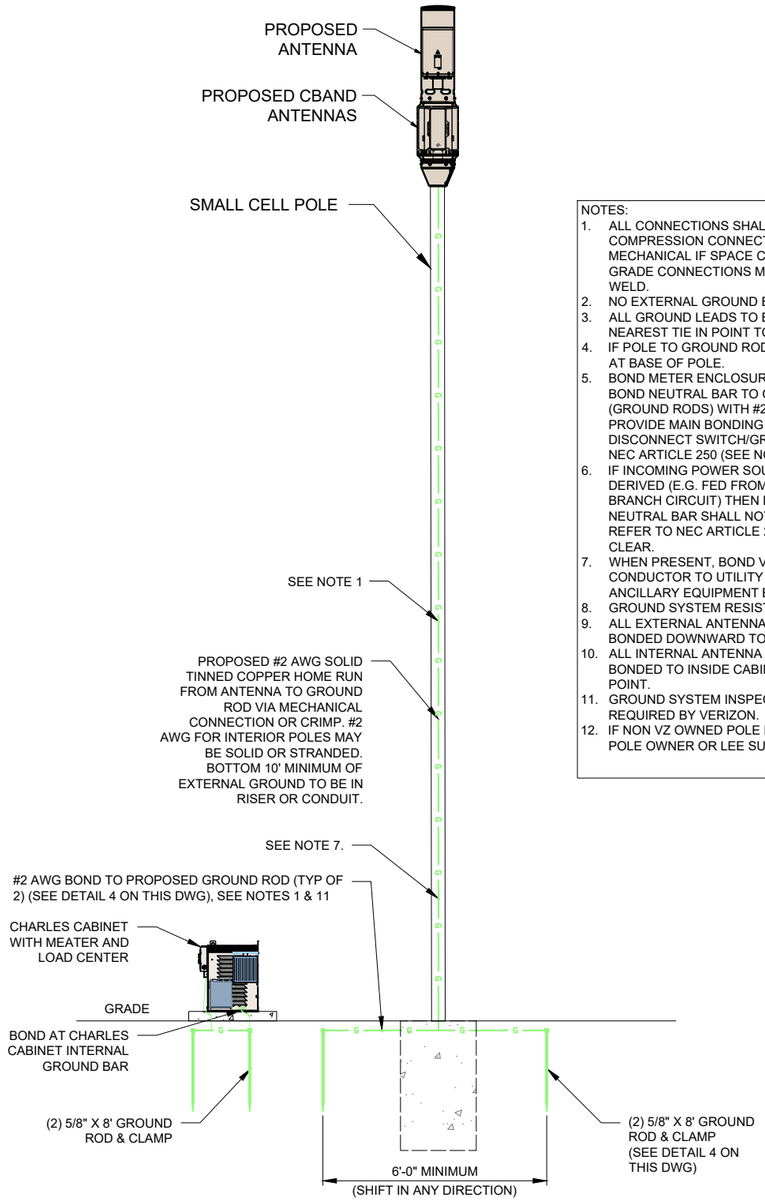
KCYC SUMMIT
WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
CITY ELECTRICAL DETAILS

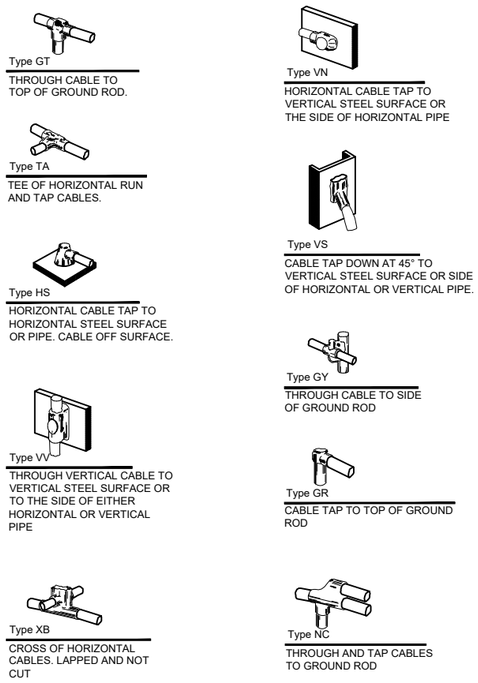
SHEET NUMBER
E-6



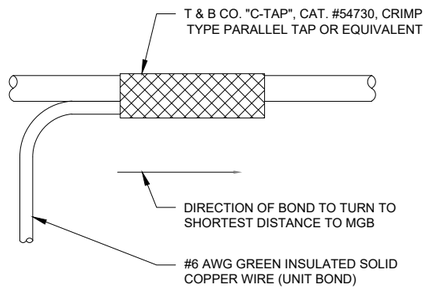
NOTES:
1. ALL CONNECTIONS SHALL BE MADE USING UL RATED COMPRESSION CONNECTIONS AS FIRST PREFERRED OR MECHANICAL IF SPACE CONSTRAINTS EXIST. BELOW GRADE CONNECTIONS MAY BE COMPRESSION OR CAD WELD.
2. NO EXTERNAL GROUND BARS.
3. ALL GROUND LEADS TO BE ROUTED DOWNWARDS TO NEAREST TIE IN POINT TO MAIN HOME RUN GROUND.
4. IF POLE TO GROUND ROD IS >6' ADD 3RD GROUND ROD AT BASE OF POLE.
5. BOND METER ENCLOSURE PER UTILITY REQUIREMENTS. BOND NEUTRAL BAR TO GROUNDING ELECTRODES (GROUND RODS) WITH #2 AWG PER NEC ARTICLE 250. PROVIDE MAIN BONDING JUMPER BETWEEN SERVIVCE DISCONNECT SWITCH/GROUND BAR AND NEUTRAL PER NEC ARTICLE 250 (SEE NOTE 6).
6. IF INCOMING POWER SOURCE IS NON-SEPARATELY DERIVED (E.G. FED FROM ANOTHER BUILDING OR A BRANCH CIRCUIT) THEN DISCONNECT / PANELBOARD NEUTRAL BAR SHALL NOT BE BONDED TO GROUND. REFER TO NEC ARTICLE 250 IF APPLICATION IS NOT CLEAR.
7. WHEN PRESENT, BOND VERIZON GROUND DOWN CONDUCTOR TO UTILITY POLE GROUND BELOW ANY ANCILLARY EQUIPMENT BOND.
8. GROUND SYSTEM RESISTANCE 25 OHMS OR LESS.
9. ALL EXTERNAL ANTENNA AND EQUIPMENT SHALL BE BONDED DOWNWARD TO HOME RUN GROUND WIRE.
10. ALL INTERNAL ANTENNA AND EQUIPMENT SHALL BE BONDED TO INSIDE CABINET OR SHROUD GROUND POINT.
11. GROUND SYSTEM INSPECTION/TEST WELLS NOT REQUIRED BY VERIZON.
12. IF NON VZ OWNED POLE MAY MODIFY GROUNDING PER POLE OWNER OR LEE SUMMIT REQUIREMENTS.

1 GROUNDING FOR POLE MOUNTED EQUIPMENT & CHARLES CABINET

MISSOURI ONE CALL SYSTEM
CALL BEFORE YOU DIG - DRILL - BLAST
1-800-344-7483
TOLL FREE



2 EXOTHERMIC WELD DETAILS
EXOTHERMIC AND HARGER ULTRAWELD OR APPROVED EQUAL



3 GROUNDING WIRE CONNECTION

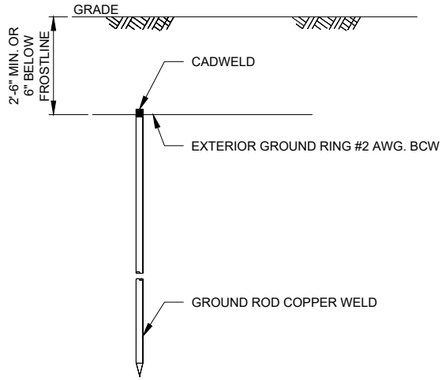
GROUNDING ELECTRODE SYSTEM NOTES:

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

LEGEND:

UGE	UNDERGROUND POWER LINE
UGF	UNDERGROUND FIBER LINE
OHE	OVERHEAD POWER LINE
OHT	OVERHEAD TELCO LINE
GAS	GAS LINE
⊗	5/8" DIAMETER x 8'-0" LONG COPPER CLAD GROUND ROD (HARGER-5810)
◎	5/8" DIAMETER X 8'-0" LONG COPPER CLAD GROUND ROD WITH INSPECTION WELL
- - - - - - - - -	#2 AWG TNND SOLID BARE COPPER WIRE MINIMUM 42" BELOW GRADE (HARGER-L2)
●	EXOTHERMIC WELD
■	MECHANICAL CONNECTION

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



4 GROUND ROD DETAIL

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
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COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT
WOODS 05SC

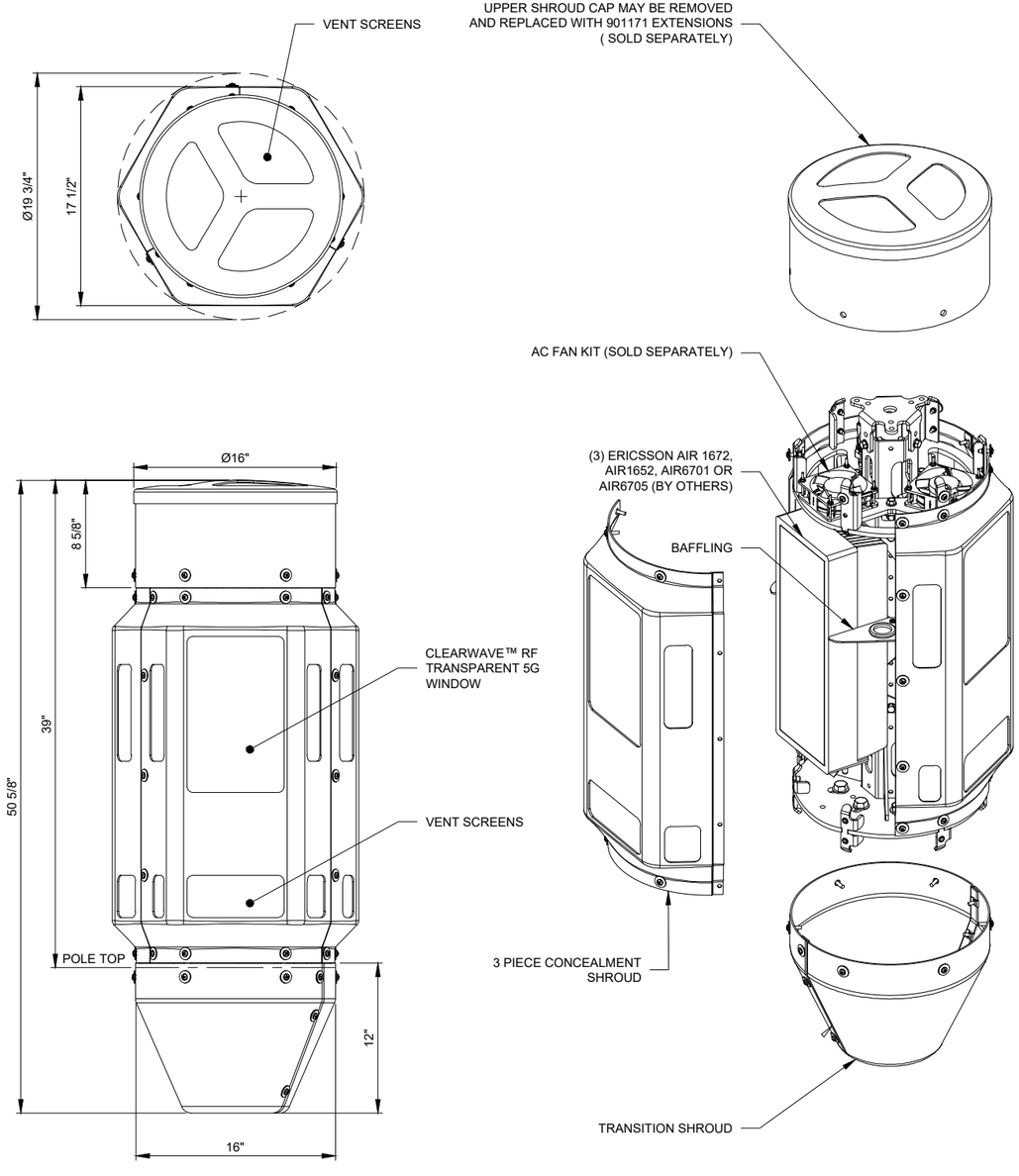
560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
GROUNDING DETAILS

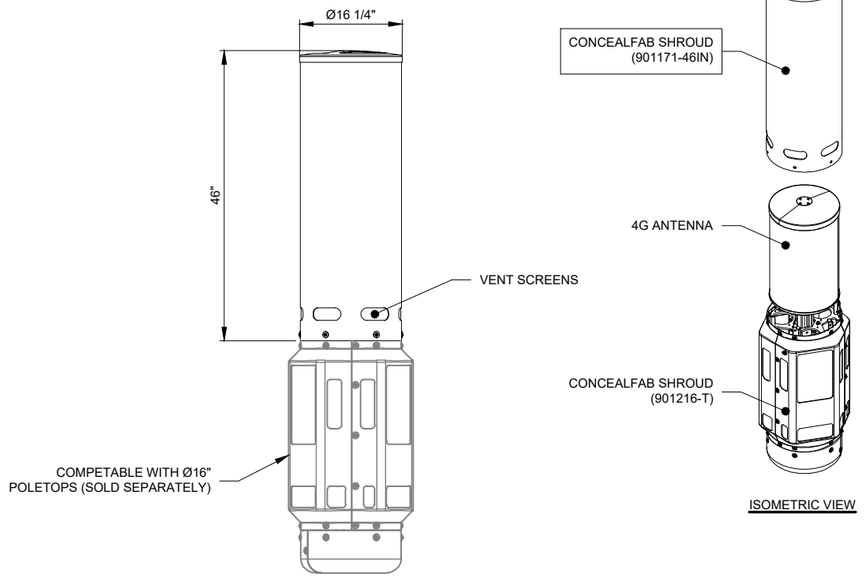
SHEET NUMBER
E-7

APPROXIMATE WEIGHT (DOES NOT INCLUDE RF EQUIPMENT) =166 LBS
APPROXIMATE VOLUME (DOES NOT INCLUDE RF EQUIPMENT = 6.08 FT³

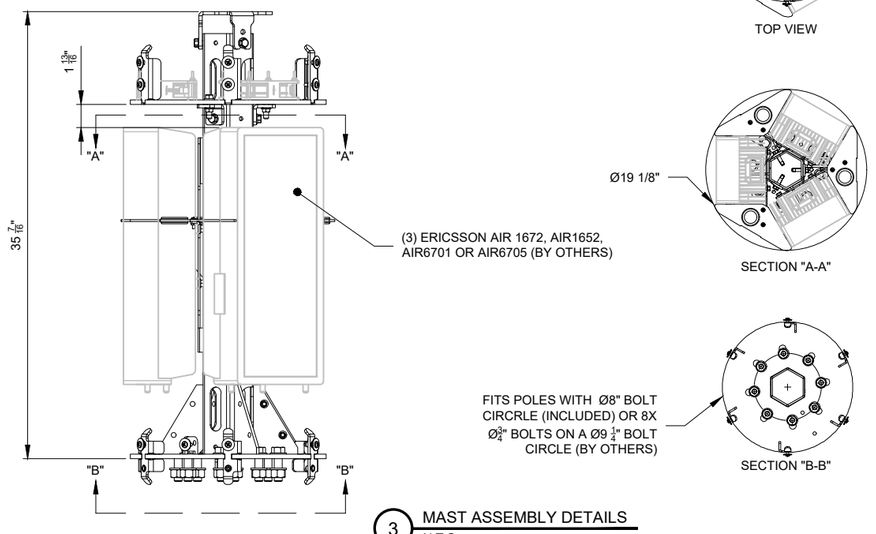


1 CONCEALFAB SHROUD (901216-T)
N.T.S.

APPROXIMATE WEIGHT (DOES NOT INCLUDE RF EQUIPMENT) =16.62 LBS
APPROXIMATE VOLUME (DOES NOT INCLUDE RF EQUIPMENT =5.4 FT³



2 CONCEALFAB SHROUD (901171-46IN)
N.T.S.



3 MAST ASSEMBLY DETAILS
N.T.S.

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
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LEES SUMMIT, MO 64086

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PROJECT #:	132-358

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S-1

GENERAL

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

DIVISION 1: GENERAL REQUIRMENTS

SECTION 01700 – PROJECT CLOSEOUT

PART 1 – GENERAL

A. OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES; INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES.

B. SUBMIT RECORD DRAWINGS, DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND SIMILAR FINAL RECORD INFORMATION.

C. COMPLETE FINAL CLEAN UP REQUIREMENTS, INCLUDING TOUCH–UP PAINTING. TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES.

PART 2 – FINAL CLEANING

1. COMPLETE THE FOLLOWING CLEANING OPERATIONS BEFORE REQUESTING INSPECTION FOR CERTIFICATION OF COMPLETION.
   A. CLEAN THE PROJECT SITE, YARD AND GROUNDS, IN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPE DEVELOPMENT AREAS, OF RUBBISH, WASTE MATERIALS, LITTER AND FOREIGN SUBSTANCES. SWEEP PAVED AREAS BROOM CLEAN. REMOVE PETRO–CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS THAT ARE NEITHER PLANTED NOR PAVED, TO A SMOOTH EVEN–TEXTURED SURFACE.
   B. REMOVE TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY AND SURPLUS MATERIAL FROM THE SITE.
   C. REMOVE SNOW AND ICE TO PROVIDE SAFE ACCESS TO THE SITE AND EQUIPMENT ENCLOSURE.
   D. CLEAN EXPOSED EXTERIOR AND INTERIOR HARD–SURFACED FINISHES TO A DIRT–FREE CONDITION, FREE OF STAINS, FILMS AND SIMILAR FOREIGN SUBSTANCES. AVOID DISTURBING NATURAL WEATHERING OF EXTERIOR SURFACES.
   E. REMOVE DEBRIS FROM LIMITED ACCESS SPACES, INCLUDING ROOFS, EQUIPMENT ENCLOSURE, MANHOLES, AND SIMILAR SPACES.
   F. REMOVE LABELS THAT ARE NOT PERMANENT LABELS.
   G. TOUCH–UP AND OTHERWISE REPAIR AND RESTORE MARRED EXPOSED FINISHES AND SURFACES. REPLACE FINISHES AND SURFACES THAT CAN NOT BE SATISFACTORILY REPAIRED OR RESTORED, OR THAT SHOW EVIDENCE OF REPAIR OR RESTORATION. DO NOT PAINT OVER "UL" AND SIMILAR LABELS, INCLUDING ELECTRICAL NAME PLATES.
   H. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY.
   I. DUST–OFF ALL EQUIPMENT, INCLUDING BATTERY PACKS, WITHIN EQUIPMENT ENCLOSURE.
   J. WASH AND WAX FLOOR WITHIN EQUIPMENT ENCLOSURE.

2. REMOVAL OF PROTECTION: REMOVE TEMPORARY PROTECTION AND FACILITIES INSTALLED DURING CONSTRUCTION TO PROTECT PREVIOUSLY COMPLETED INSTALLATIONS DURING THE REMAINDER OF THE CONSTRUCTION PERIOD.

DIVISION 2: SITE WORK

SECTION 02200 – EARTHWORK AND DRAINAGE

PART 1 – GENERAL

1. WORK INCLUDED: SEE SITE PLAN.
2. DESCRIPTIONS
   ACCESS DRIVE W/ TURNAROUND AREA, LEASE AREA, AND IF APPLICABLE UNDERGROUND UTILITY EASEMENTS ARE TO BE CONSTRUCTED TO PROVIDE A WELL DRAINED, EASILY MAINTAINED, EVEN SURFACE FOR MATERIAL AND EQUIPMENT DELIVERIES AND MAINTENANCE PERSONNEL ACCESS.
3. QUALITY ASSURANCE
   A. APPLY SOIL STERILIZER IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (AS NEEDED).
   B. APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
   C. PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, AS RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
4. SEQUENCING
   A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
   B. COMPLETELY GRUB THE ACCESS DRIVE W/ TURNAROUND, UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB–BASE MATERIAL.
   C. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
   D. BRING THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION PRIOR TO INSTALLING FOUNDATION.
   E. APPLY SOIL STERILIZER PRIOR TO PLACING BASE MATERIALS.
   F. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS) IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
   G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY PROJECT MANAGER.
   H. AFTER APPLICATIONS OF FINAL SURFACES, APPLY SOIL STERILIZER TO STONE SURFACES.
5. SUBMITTALS
   A. BEFORE CONSTRUCTION
      IF LANDSCAPING IS APPLICABLE TO THE CONTRACT, SUBMIT TWO COPIES OF THE LANDSCAPE PLAN UNDER NURSERY LETTERHEAD. IF A LANDSCAPE ALLOWANCE WAS INCLUDED IN THE CONTRACT, PROVIDE AN ITEMIZED LISTING OF PROPOSED COSTS ON NURSERY LETTERHEAD (REFER TO PLANS FOR LANDSCAPING REQUIREMENTS).
   B. AFTER CONSTRUCTION
      1. MANUFACTURER'S DESCRIPTION OF PRODUCT AND WARRANTY STATEMENT ON SOIL STERILIZED.
      2. MANUFACTURER'S DESCRIPTION OF PRODUCT ON GRASS SEED AND FERTILIZER
      3. LANDSCAPING WARRANTY STATEMENT.
6. WARRANTY
   A. IN ADDITION TO THE WARRANTY ON ALL CONSTRUCTION COVERED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REPAIR ALL DAMAGE AND RESTORE AREA AS CLOSE TO ORIGINAL CONDITION AS POSSIBLE AT SITE AND SURROUNDINGS.
   B. SOIL STERILIZATION APPLICATION TO GUARANTEE VEGETATION FREE ROAD AND SITE AREAS FOR ONE YEAR FROM DATE OF FINAL INSPECTION.
   C. DISTURBED AREAS WILL REFLECT GROWTH OF NEW GRASS COVER PRIOR TO FINAL INSPECTION.
   D. LANDSCAPING, IF INCLUDED WITHIN THE SCOPE OF THE CONTRACT, WILL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL INSPECTION.

PART 2 – PRODUCTS

1. MATERIALS
   A. SOIL STERILIZER SHALL BE EPA–REGISTERED, PRE–EMERGENCE LIQUID:

TOTAL KILL PRODUCT 910 EPA 10292–7	PHASAR CORPORATION P.O. BOX 5123 DEARBORN, MI 48128 (313) 563–8000
AMBUSH HERBICIDE EPA REGISTERED	FRAMAR INDUSTRIAL PRODUCTS 1435 MORRIS AVE. UNION, NJ 07083 (800) 526–4924

   B. ROAD AND SITE MATERIALS SHALL CONFORM TO IDOT SPECIFICATIONS FILL MATERIAL (UNLESS OTHERWISE NOTED) – ACCEPTABLE SELECT FILL SHALL BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION STANDARD SPECIFICATIONS..
   C. SOIL STABILIZER FABRIC SHALL BE MIRAFI – 500X.

PART 3 – EXECUTION

1. INSPECTIONS
   LOCAL BUILDING INSPECTORS SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, UNLESS OTHERWISE SPECIFIED BY JURISDICTION.
2. PREPARATION
   A. CLEAR TREES, BRUSH AND DEBRIS FROM LEASE AREA, ACCESS DRIVE W/ TURN–AROUND AND UNDER GROUND UTILITY EASEMENTS AS REQUIRED FOR CONSTRUCTION.
   B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION, GRUB ORGANIC MATERIAL TO A MINIMUM OF SIX INCHES (6") BELOW GRADE.
   C. UNLESS OTHERWISE INSTRUCTED BY LESSEE, TRANSPORT ALL REMOVED TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED LANDFILL.
   D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.
   E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
3. INSTALLATION
   A. GRADE OR FILL THE LEASE AREA AND ACCESS DRIVE W/ TURNAROUND AS REQUIRED IN ORDER THAT UPON DISTRIBUTION OF SPOILS, RESULTING FROM EXCAVATIONS, THE RESULTING GRADE WILL CORRESPOND WITH SAID SUB–BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
   B. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
   C. BRING THE ACCESS DRIVE W/ TURNAROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
   D. AVOID CREATING DEPRESSIONS WHERE WATER MAY POND.
   E. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
   F. WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
   G. PLACE FILL OR STONE IN SIX INCH (6") MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
   H. THE TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF ONE FOOT (1') BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
   I. APPLY RIPRAP TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS, AND ALL OTHER SLOPES GREATER THAN 2:1.
   J. APPLY RIPRAP TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
   K. RIPRAP ENTIRE DITCH FOR SIX FEET (6') IN ALL DIRECTIONS AT CULVERT OPENINGS.
   L. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, DITCHES, AND DRAINAGE SWALES, NOT OTHERWISE RIPRAPPED.
   M. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SHELTER OR EQUIPMENT. IF DESIGNS OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
   N. IN DITCHES WITH SLOPES GREATER THAN 10%, MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAT 60° OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX FEET (6') ABOVE THE CULVERT ENTRANCE.
   O. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND LOOSEN THE SOIL.
   P. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.
   Q. ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS, BY WATERING, UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK THE BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.
4. FIELD QUALITY CONTROL
   COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D–1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS–BUILT DRAWINGS.
5. PROTECTION
   A. PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1–2 INCHES, STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATE.
   B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURED TO 2" X 2" X 4'–0" WOODEN STAKES EXTENDING TWO–FEET INTO THE GROUND ON FOUR SIDES OF THE TREE.
   C. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

SECTION 02830 – FENCING AND GATE(S)

PART 1 – GENERAL

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

PART 2 – PRODUCTS

1. FENCE MATERIAL
   A. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT–DIPPED GALVANIZED.
   B. FABRIC SHALL BE SEVEN–FOOT (7') HIGH OR TO MATCH EXISTING FENCE TWO–INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A–392 CLASS 1.
   C. BARBED WIRE SHALL BE DOUBLE–STRAND, 12–1/2 GAUGE TWISTED WIRE, WITH 14–GAUGE, 4–POINT ROUND BARBS SPACED ON FIVE–INCH CENTERS.
   D. ALL POSTS SHALL BE SCHEDULE – 40 MECHANICAL SERVICE PIPE AND SHALL BE TYPE 1 ASTM A–128 AND OF THE FOLLOWING DIAMETER

LINE	2" SCHEDULE 40 (2 3/8" O.D.)
CORNER	3" SCHEDULE 40 (3 1/2" O.D.)
GATE	3" SCHEDULE 40 (3 1/2" O.D.)

   E. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
   F. ALL TOP AND BRACE RAILS SHALL BE 1| DIAMETER SCHEDULE – 40 MECHANICAL–SERVICE PIPE.
   G. GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL–SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
   H. GATE FRAMES SHALL HAVE A FULL–HEIGHT VERTICAL BRACE, AND A FULL–WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
   I. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188–DEGREE ATTACHMENT.
   J. THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL.
   K. LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
   L. PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
   M. ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE LEAF IN THE OPEN POSITION
   N. A NO. 7 GAUGE ZINC COATED TENSION WIRE SHALL BE USED AT THE BOTTOM OF THE FABRIC, TERMINATED WITH BAND CLIPS AT CORNER AND GATE POSTS.
   O. A SIX–INCH BY 1/2–INCH DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
   P. STRETCHER BARS SHALL BE 3/16–INCH BY 3/4–INCH OR HAVE EQUIVALENT CROSS–SECTIONAL AREA.
   Q. ALL CORNER GATE AND PANELS SHALL HAVE A 3/8–INCH TRUSS ROD WITH TURNBUCKLES.
   R. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM. GATE POSTS SHALL HAVE A DOME CAP.
   S. OTHER HARDWARE INCLUDES BUT MAY NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
   T. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
   U. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
   V. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
   W. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24–INCH DIAMETERS COIL BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL

      BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX(6) WIRE BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.

PART 3 – EXECUTION

1. INSPECTION
   TO CONFIRM PROPER DEPTH AND DIAMETER OF POST HOLE EXCAVATIONS. ALL POST HOLES WILL BE EXCAVATED AS PER CONSTRUCTION DOCUMENTS.
2. INSTALLATION
   A. FOUNDATIONS SHALL HAVE A MINIMUM SIX INCH (6") CONCRETE COVER UNDER POST.
   B. ALL FENCE POSTS SHALL BE VERTICALLY PLUMB ; ONE QUARTER INCH (1/4")
   C. AT CORNER POSTS, GATE POSTS, AND SIDES OF GATE FRAME, FABRIC SHALL BE ATTACHED WITH STRETCHER AND TENSION BAND–CLIPS AT FIFTEEN(15) INCH INTERVALS.
   D. AT LINE POSTS, FABRIC SHALL BE ATTACHED WITH BAND–CLIPS AT FIFTEEN INCH (15") INTERVALS.
   E. FABRIC SHALL BE ATTACHED TO BRACE RAILS, TENSION WIRE AND TRUSS RODS WITH TIE–CLIPS AT TWO FOOT (2') INTERVALS.
   F. A MAXIMUM GAP OF ONE INCH WILL BE PERMITTED BETWEEN TIE CHAIN LINE FABRIC AND THE FINAL GRADE.
   G. GATE SHALL BE INSTALLED SO LOCKS ARE ACCESSIBLE FROM BOTH SIDES.
   H. GATE HINGE BOLTS SHALL HAVE THEIR THREADS PEENED OR WELDED TO PREVENT UNAUTHORIZED REMOVAL.
   I. CONCRETE TO BE A MINIMUM OF 4,000 PSI AT 7 DAYS. CEMENT SHALL EXCEED ASTM C150, TYPE IIIA.
3. PROTECTION
   UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC–BASED PAINT, COLOR TO MATCH THE GALVANIZED METAL.

   APPLICABLE STANDARDS

ASTM–A120	SPECIFICATION FOR PIPE, STEEL BLACK AND HOT–DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
ASTM–A123	ZINC (HOT–DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
ASTM–A153	STANDARD SPECIFICATION FOR ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE.
ASTM–A392	SPECIFICATION FOR ZINC–COATED STEEL CHAIN LINK FENCE FABRIC.
ASTM–A491	SPECIFICATION FOR ALUMINUM–COATED STEEL CHAIN LINK FENCE FABRIC
ASTM–A525	STANDARD SPECIFICATION FOR STEEL SHEET ZINC COATED (GALVANIZED) BY THE HOT–DIPPED PROCESS.
ASTM–A570	SPECIFICATION FOR HOT–ROLLED CARBON STEEL SHEET AND STRIP. STRUCTURAL QUALITY.
ASTM–A535	SPECIFICATION FOR ALUMINUM COATED STEEL BARBED WIRE.

   FEDERAL SPECIFICATION RR–F–191– FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)

DIVISION 3: CONCRETE

SECTION 03000 – BASIC CONCRETE MATERIALS AND METHODS

PART 1 – GENERAL

1. WORK INCLUDED
   FORMWORK, REINFORCEMENT, ACCESSORIES, CAST–IN–PLACE CONCRETE, FINISHING, AND CURING.
2. INSPECTIONS
   A. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING BUILDING DEPARTMENT INSPECTIONS REQUIRED FOR HIS SCOPE OF WORK.
   B. ALL REINFORCING STEEL SHALL BE INSPECTED AND APPROVED BY THE LESSEE'S CONSTRUCTION MANAGER PRIOR TO PLACEMENT OF CONCRETE.
   C. THE LESSEE'S CONSTRUCTION MANAGER SHALL BE NOTIFIED NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS.

   QUALITY ASSURANCE
3. A. CONSTRUCT AND ERECT CONCRETE FORMWORK IN ACCORDANCE WITH ACI 301 AND ACI 318.
   B. PERFORM CONCRETE REINFORCING WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ASTM A184.
   C. PERFORM CAST–IN–PLACE CONCRETE WORK IN ACCORDANCE WITH ACI 301, ACI 318, AND ACI 117–90.
   D. OPEN FOUNDATION TRENCHES SHALL BE INSPECTED BY MES PRIOR TO CONCRETE INSTALLATION.
4. SUBMITTALS
   SUBMIT CONCRETE MIX AND REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL BY LESSEE CONSTRUCTION MANAGER/ENGINEER. THE SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF TWO (2) CONCRETE MIX DESIGN INFORMATION SHEETS AND TWO (2) BLUELINE DRAWINGS FOR REINFORCING STEEL.

PART 2 – PRODUCTS

1. REINFORCEMENT MATERIALS
   A. REINFORCEMENT STEEL, ASTM A615, 60 ksi YIELD GRADE, DEFORMED BILLET STEEL BARS, PLAIN FINISH.
   B. WELDED STEEL WIRE FABRIC ASTM A185 PLAIN TYPE, IN FLAT SHEETS, PLAIN FINISH.
   C. CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS. SIZED AND SHAPED FOR SUPPORTS OF REINFORCING.
   D. FABRICATE CONCRETE REINFORCING IN ACCORDANCE WITH ACI 315, ACI 318, ASTM A184
2. CONCRETE MATERIALS
   A. CEMENT: ASTM C150, PORTLAND TYPE
   B. FINE AND COURSE AGGREGATES: ASTM C33 – MAXIMUM SIZE OF CONCRETE AGGREGATE SHALL NOT EXCEED ; ONE INCH (1") SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR ONE–THIRD (1/3) CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING.
   C. WATER: CLEAN AND NOT DETRIMENTAL TO CONCRETE
   D. AIR ENTRAINING ADMIXTURE: ASTM C260
   E. BONDING AGENT: LATEX EMULSION FOR BONDING NEW TO OLD CONCRETE AS MANUFACTURED BY DAYTON SUPERIOR.
   F. NON–SHRINK GROUT: PREMIXED COMPOUND CONSISTING OF NONMETALLIC AGGREGATE. CEMENT, WATER REDUCING AND PLASTICISING AGENTS.
3. CONCRETE MIX
   A. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE A.C.I. REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
   B. MIX AND DELIVER CONCRETE IN ACCORDANCE WITH ASTM C94, ALT. 3.
   C. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENTS OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. PROVIDE CONCRETE AS FOLLOWS:
      1. COMPRESSIVE STRENGTH: 4000 psi AT 28 DAYS. SEE SHEET S–1 FOR CAISSON CONCRETE COMPRESSIVE STRENGTH
      2. SLUMP: 3 INCHES

PART 3 – EXECUTION

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

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT
WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

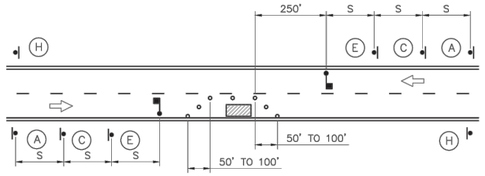
DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
SPECIFICATIONS

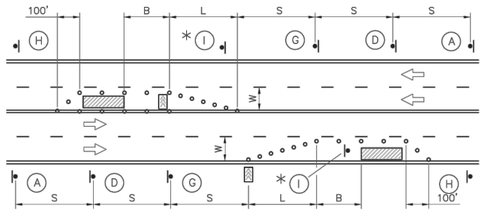
SHEET NUMBER
SP-1

SYMBOL LEGEND

– WORK AREA
– SIGN
– BARRICADE
– DIRECTION OF TRAVEL
– CHANNELIZER
– ARROW PANEL
– FLAGGER

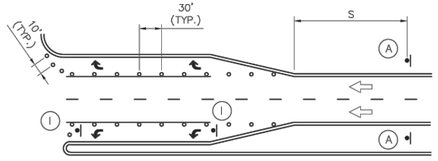


LANE CLOSURE – TWO LANE STREET

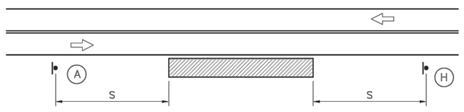


LANE CLOSURE – FOUR LANE STREET

*INSTALL SIGNS EVERY 200 FEET THROUGHOUT THE CLOSED LANE OR AS NEEDED



TURN LANE CLOSURE



TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET

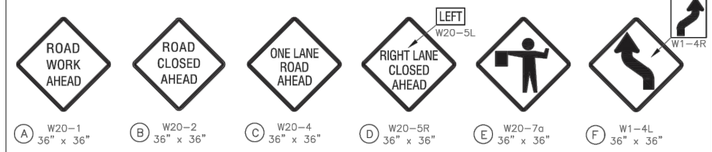
GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE "B"	
SPEED LIMIT (MPH)	LENGTH (FEET)
25	35
30	55
35	85
40	120
45	170

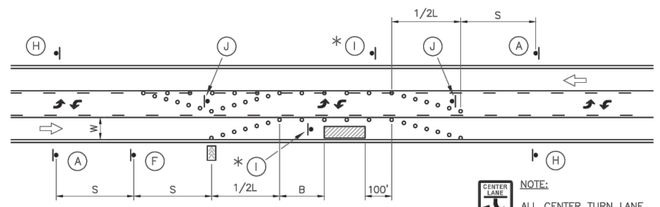
MAXIMUM CHANNELIZER SPACING		
SPEED LIMIT (MPH)	WITHIN TAPER (FEET)	OUTSIDE TAPER (FEET)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90

TAPER DIMENSIONS (FEET)				
SPEED LIMIT (MPH)	MINIMUM TAPER LENGTH "L", PER LANE WIDTH "W"			MINIMUM NUMBER OF CHANNELIZERS
	10	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

SIGN SPACING "S"	
SPEED LIMIT (MPH)	SPACING (FEET)
25	100
30–35	250
•• 40	350

SIGN LEGEND



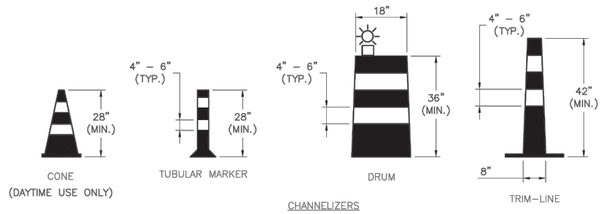


CENTER LANE ONLY R3–9b

NOTE:
ALL CENTER TURN LANE SIGNS (MUTCD NO. R3–9B) SHALL BE COVERED DURING LANE CLOSURE

LANE CLOSURE – THREE LANE STREET

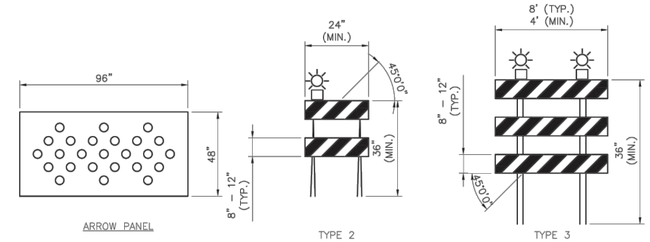
*INSTALL SIGNS EVERY 200 FEET THROUGHOUT THE CLOSED LANE OR AS NEEDED



CHANNELIZERS

NOTE:

WHITE BANDS ON BARRICADES AND CHANNELIZERS SHALL BE MADE FROM HIGH INTENSITY SHEETING MATERIAL.

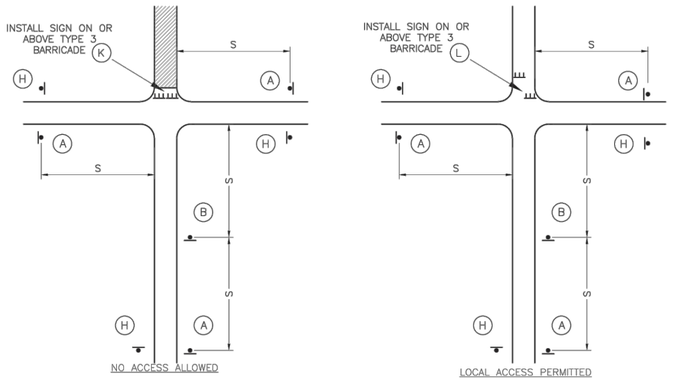


(OPTIONAL ON TWO LANE AND THREE LANE STREETS WITH SPEEDS LESS THAN 35 MPH)

BARRICADES

GENERAL NOTES:

1. ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. ALL TRAFFIC CONTROL DEVICES SHALL BE STANDARD IN SIZE, SHAPE, COLOR, AND MESSAGE, IN GOOD CONDITION, AND RETRO–REFLECTORIZED. ALL SIGNS SHALL BE SECURELY MOUNTED WITH HEIGHT AND LATERAL LOCATION AS DESCRIBED IN THE MUTCD.
3. WARNING LIGHTS SHALL BE USED ON BARRICADES IN PLACE AT NIGHT AND ON WARNING SIGNS WHICH ALERT DRIVERS ABOUT A CHANGE IN ALIGNMENT, TRAFFIC CONTROL, LANE CLOSURE, OR ROAD CLOSURE.
4. FLAGGERS SHALL BE USED WHERE INDICATED ON THE PLANS, WHERE CONSTRUCTION VEHICLES INTERACT WITH NORMAL TRAFFIC, OR WHERE CONSTRUCTION ACTIVITIES IMPOSE A RESTRICTION ON TRAFFIC, AS DIRECTED BY THE CITY TRAFFIC ENGINEER. WHERE FLAGGERS ARE USED, ADVANCE SIGNING SHALL BE ERECTED AS SHOWN IN THE DETAILS OR AS SPECIFIED IN THE MUTCD. FLAGGERS SHALL MEET THE REQUIREMENTS IN THE MUTCD IN REGARD TO CHARACTER, TRAINING, ATTIRE, AND BEHAVIOR.
5. TRIM–LINES ARE THE CITY'S PREFERRED CHANNELIZING DEVICE. CONES MAY NOT BE USED AT NIGHTTIME.
6. TRAFFIC CONTROL DEVICES NOT IN USE OR NOT APPLICABLE SHALL BE EITHER COVERED OR REMOVED FROM THE WORK AREA.
7. THE CONTRACTOR SHALL USE BARRICADES, STREET PLATES, OR FENCING AS NEEDED TO EFFECTIVELY SHIELD PEDESTRIAN AND VEHICULAR TRAFFIC FROM EXPOSED OBJECTS, EXCAVATIONS, AND CONSTRUCTION ACTIVITIES.
8. ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS AND SIDE STREETS UNLESS NOTED OTHERWISE ON THE PLANS.
9. NO STREET SHALL BE CLOSED WITHOUT THE APPROVAL OF THE CITY TRAFFIC ENGINEER. THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER AT LEAST 7 DAYS IN ADVANCE OF ANY STREET CLOSURE. IF A DETOUR ROUTE AROUND THE CLOSURE IS TO BE PROVIDED, ALL DETOUR SIGNING SHALL BE AS SHOWN ON A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
10. CONSTRUCTION VEHICLES PARKED ALONG STREETS SHALL BE LOCATED WITHIN THE WORK AREA (TRAFFIC CONTROL) OR WHERE OTHERWISE NORMALLY PERMITTED. CONSTRUCTION MATERIALS, INCLUDING TRAFFIC CONTROL AND VEHICLES SHALL NOT RESTRICT SIGHT DISTANCE FOR VEHICLES EXITING AT STREETS OR DRIVES.
11. CONSTRUCTION MATERIALS SHALL BE KEPT OFF OF SIDEWALKS, CONSOLIDATED IN ONE LOCATION WITHIN CITY RIGHT–OF–WAY, AND REMOVED DAILY UNLESS OTHERWISE APPROVED BY THE INSPECTOR. DIRT, MUD, AND OTHER CONSTRUCTION DEBRIS ON STREETS AND SIDEWALKS SHALL BE REMOVED IMMEDIATELY.
12. THE CONTRACTOR SHALL NOT PERFORM ANY WORK THAT WILL RESTRICT VEHICULAR TRAFFIC IN ANY WAY BETWEEN THE HOURS OF 7:00 A.M. AND 9:00 A.M. OR 4:00 P.M. AND 6:00 P.M. MONDAY THROUGH FRIDAY UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS.
13. ALL TRAVEL LANES SHOULD BE AT LEAST 11 FEET WIDE UNLESS OTHERWISE AUTHORIZED BY THE CITY TRAFFIC ENGINEER. A "NARROW LANES" SIGN SHALL BE INSTALLED IN ADVANCE OF A LANE WIDTH REDUCTION TO LESS THAN 11 FEET.
14. ALL EDGE DROP–OFFS OF MORE THAN 2 INCHES AND LESS THAN 4 INCHES SHOULD BE PROTECTED BY A WEDGE OR BARRIER AND ALL EDGE DROP–OFFS GREATER THAN 4 INCHES SHALL HAVE EDGE PROTECTION (SEE TRAFFIC CONTROL SPECIFICATIONS FOR EDGE TREATMENT REQUIREMENTS).
15. THE "WORKERS" SYMBOLIC SIGN (MUTCD NO. W21–1A) MAY BE USED INSTEAD OF THE "ROAD WORK AHEAD" SIGN FOR WORK WITH A DURATION OF 12 HOURS OR LESS. THE "END ROAD WORK" SIGN IS NOT REQUIRED TO BE INSTALLED AFTER THE "WORKERS" SIGN.
16. NO TRAFFIC SIGNAL SHALL BE ALTERED OR MODIFIED IN ANY WAY WITHOUT A PLAN APPROVED BY THE CITY TRAFFIC ENGINEER.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND–THE–CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVELY BEING PURSUED AND ANY DEFICIENCIES NOTED SHALL BE CORRECTED IMMEDIATELY.
18. THE TRAFFIC CONTROL REQUIREMENTS SHOWN ON THESE PLANS ARE MINIMUM REQUIREMENTS ONLY AND DO NOT ATTEMPT TO ADDRESS IN DEPTH THE VARIETY OF SITUATIONS THAT MAY OCCUR ONCE CONSTRUCTION HAS STARTED. IN NO WAY DO THE REQUIREMENTS SHOWN ON THESE PLANS RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR SELECTING THE PROPER TRAFFIC CONTROL DEVICES AND IMPLEMENTATION PROCEDURES THAT WILL ASSURE THE SAFETY OF DRIVERS, PEDESTRIANS, AND WORKERS AT ALL TIMES.
19. SHOULD THE CONTRACTOR FAIL TO ENFORCE THE TRAFFIC CONTROL PLAN OR FAIL TO CLEAN, REPLACE OR OTHERWISE MAINTAIN THE TRAFFIC CONTROL DEVICES WHEN DIRECTED TO DO SO BY THE CITY TRAFFIC ENGINEER OR REPRESENTATIVE, THE CITY MAY TAKE ONE OR MORE OF THE FOLLOWING ACTIONS:
    A. EMPLOY ANOTHER AGENCY TO CORRECT DEFICIENCIES IN TRAFFIC CONTROL DEVICES AND DEDUCT THE COST FROM THE CONTRACTOR'S PAY ESTIMATE.
    B. STOP THE WORK UNTIL DEFICIENCIES ARE CORRECTED.
    C. SUSPEND ALL PAY ESTIMATES UNTIL DEFICIENCIES ARE CORRECTED, OR
    D. PLACE THE CONTRACTOR IN DEFAULT.



TYPICAL STREET CLOSURE

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

LS LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: POLE AND LUMINAIRE DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: TRAFFIC CONTROL DETAILS

Drawn By: BWC
Checked By: MP
Date: 01/2020
Proj. #:

TC-1

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

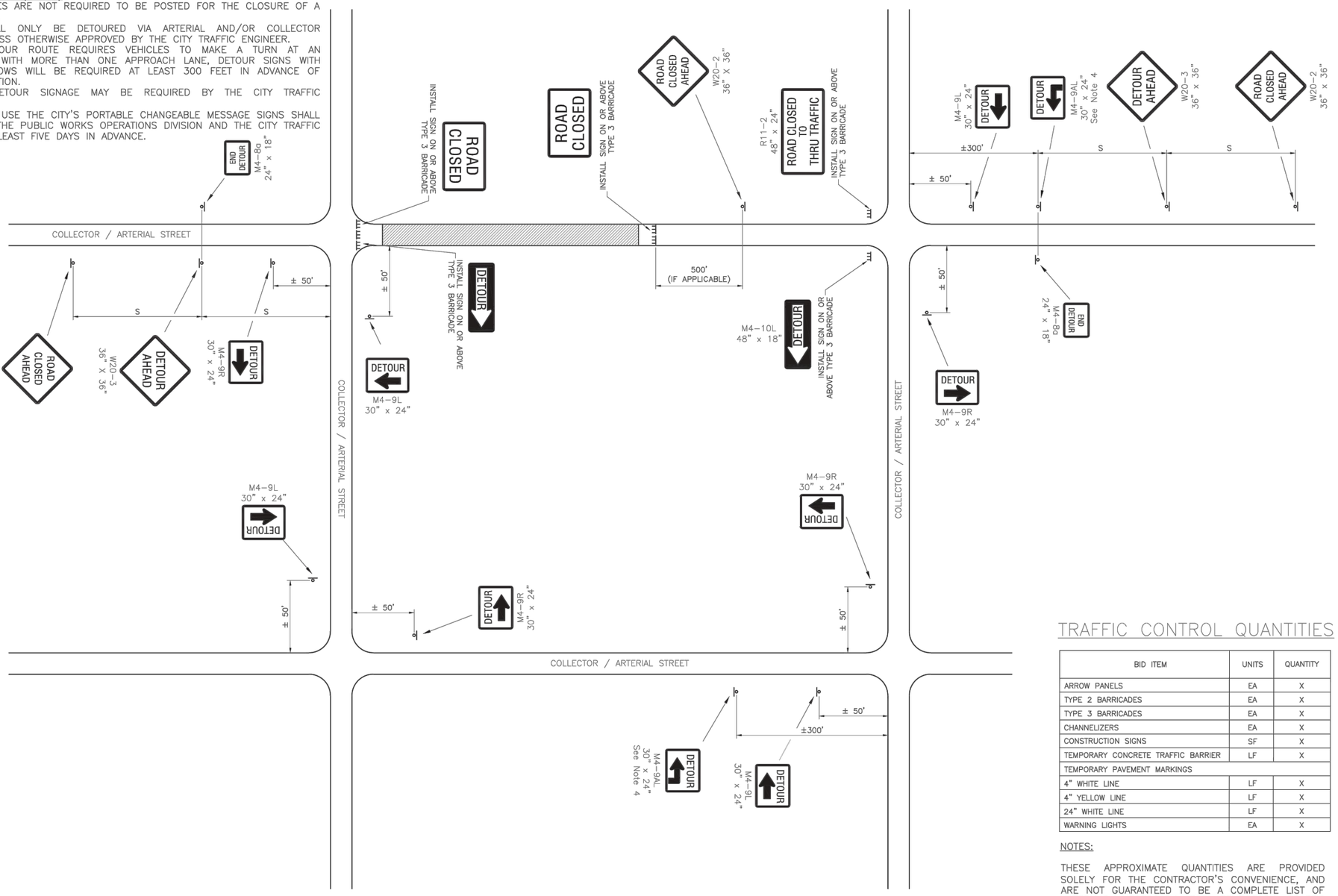
DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
TRAFFIC CONTROL DETAILS

SHEET NUMBER
TC-1

NOTES:

1. ALL SIGNS, BARRICADES, CHANNELIZERS, MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. DETOUR ROUTES ARE NOT REQUIRED TO BE POSTED FOR THE CLOSURE OF A LOCAL STREET.
3. TRAFFIC SHALL ONLY BE DETOURED VIA ARTERIAL AND/OR COLLECTOR STREETS UNLESS OTHERWISE APPROVED BY THE CITY TRAFFIC ENGINEER.
4. WHEN A DETOUR ROUTE REQUIRES VEHICLES TO MAKE A TURN AT AN INTERSECTION WITH MORE THAN ONE APPROACH LANE, DETOUR SIGNS WITH ADVANCE ARROWS WILL BE REQUIRED AT LEAST 300 FEET IN ADVANCE OF THE INTERSECTION.
5. ADDITIONAL DETOUR SIGNAGE MAY BE REQUIRED BY THE CITY TRAFFIC ENGINEER.
6. REQUESTS TO USE THE CITY'S PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE MADE TO THE PUBLIC WORKS OPERATIONS DIVISION AND THE CITY TRAFFIC ENGINEER AT LEAST FIVE DAYS IN ADVANCE.



TRAFFIC CONTROL QUANTITIES

BID ITEM	UNITS	QUANTITY
ARROW PANELS	EA	X
TYPE 2 BARRICADES	EA	X
TYPE 3 BARRICADES	EA	X
CHANNELIZERS	EA	X
CONSTRUCTION SIGNS	SF	X
TEMPORARY CONCRETE TRAFFIC BARRIER	LF	X
TEMPORARY PAVEMENT MARKINGS		
4" WHITE LINE	LF	X
4" YELLOW LINE	LF	X
24" WHITE LINE	LF	X
WARNING LIGHTS	EA	X

NOTES:

THESE APPROXIMATE QUANTITIES ARE PROVIDED SOLELY FOR THE CONTRACTOR'S CONVENIENCE, AND ARE NOT GUARANTEED TO BE A COMPLETE LIST OF MATERIALS NECESSARY FOR TEMPORARY TRAFFIC CONTROL DURING ALL CONSTRUCTION ACTIVITIES.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: POLE AND LUMINAIRE DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: TYPICAL DETOUR DETAILS

Drawn By: BWC
Checked By: MP
Date: 01/2020
Proj. #:

TC-2

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

KCYC SUMMIT WOODS 05SC

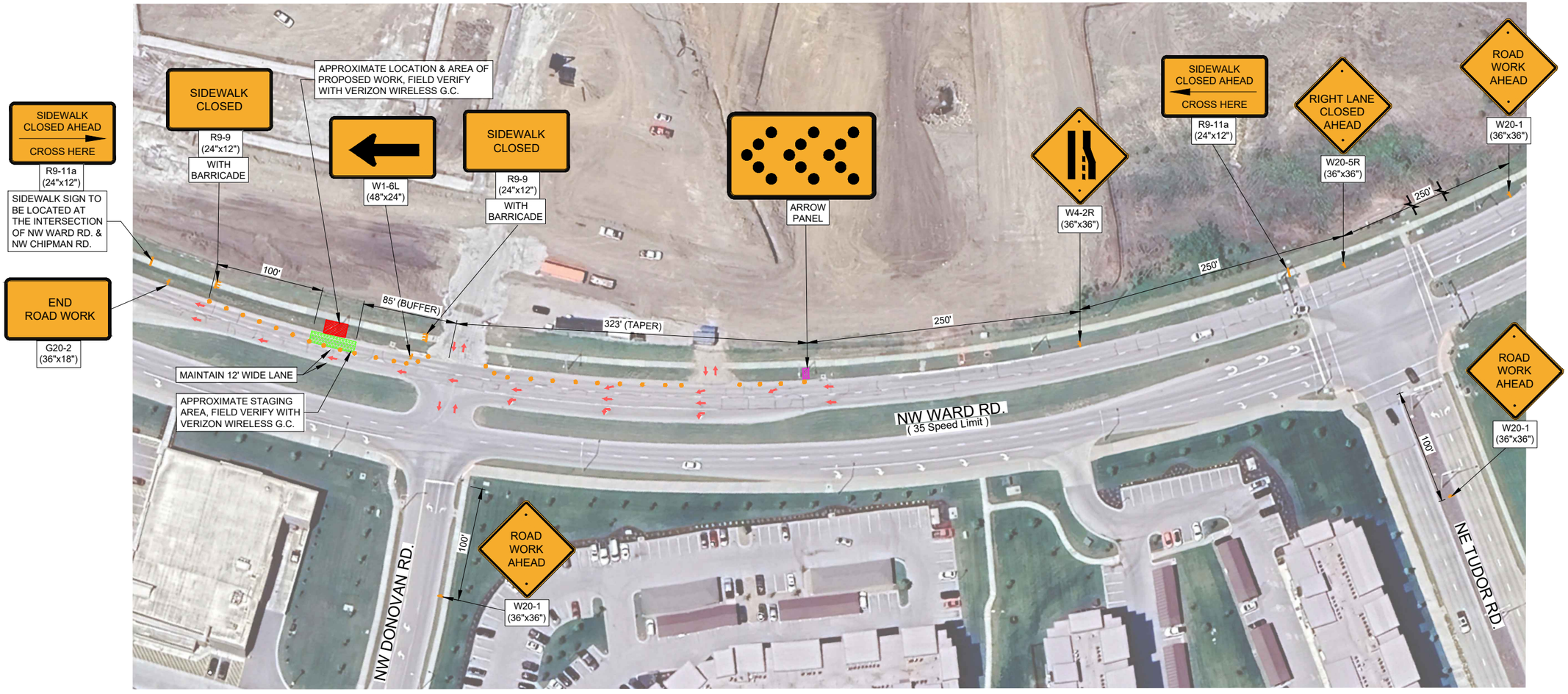
560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
TRAFFIC CONTROL DETAILS

SHEET NUMBER
TC-2

SCALE 1" = 50'
22" x 34" IS FULL SCALE
11" x 17" IS HALF SCALE
0 25' 50' 100'



NOTES:

1. PLAN PROVIDED IS FOR REFERENCE ONLY. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE *LEE'S SUMMIT MISSOURI TRAFFIC CONTROL DETAILS & NOTES ON SHEETS TC-1 & TC-2.*
2. VERIZON WIRELESS G.C. IS RESPONSIBLE FOR MEANS AND METHODS IN MAINTAINING ADEQUATE SIGNS, BARRICADES, FENCING, TRAFFIC CONTROL MEASURES AND ALL OTHER MEASURES THAT ARE NECESSARY TO PROTECT THE SAFETY OF THE SITE AT ALL TIMES.

BLOCKING PERMIT INFO:
CITY OF LEE SUMMIT
DEPARTMENT OF STREETS

1 TRAFFIC CONTROL PLAN
SCALE: 1" = 50'

verizon
10740 NALL AVE, SUITE 400
OVERLAND PARK, KS 66211

TERRA CONSULTING GROUP
has joined Colliers Engineering & Design

COLOR CODE LEGEND

DESCRIPTION	COLOR
ACCESS / UTILITY EASEMENT	
ANTENNAS	
DC POWER & GROUNDING	
EXISTING	
EXISTING EASEMENT	
FIBER	
HYBRID CABLES / COAX	
LEASE AREA	
NEW WORK / UTILITY	
PENETRATIONS / POWER	
RRHS	
WALL HATCH	

REVISIONS

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR REVIEW	07/18/25	JV
B	ISSUED FOR PERMITTING	09/11/25	MD

FUZE # 2469571

MDG# 5000203412

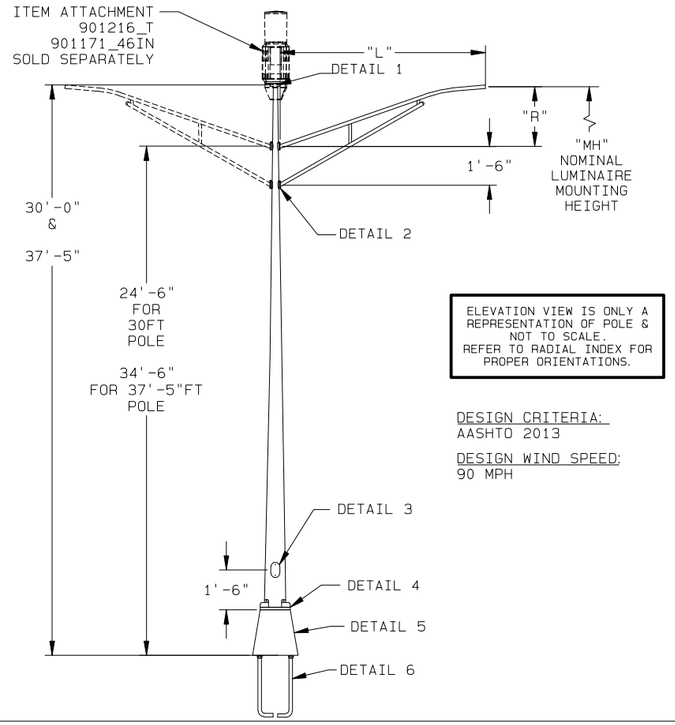
KCYC SUMMIT WOODS 05SC

560 NW CHIPMAN RD
LEES SUMMIT, MO 64086

DRAWN BY:	JV
CHECKED BY:	MP
DATE:	07/15/2025
PROJECT #:	132-358

SHEET TITLE
TRAFFIC CONTROL PLAN

SHEET NUMBER
TC-3



ELEVATION VIEW IS ONLY A REPRESENTATION OF POLE & NOT TO SCALE. REFER TO RADIAL INDEX FOR PROPER ORIENTATIONS.

DESIGN CRITERIA:
AASHTO 2013

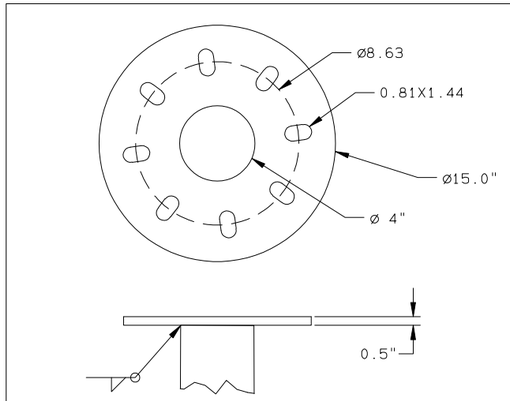
DESIGN WIND SPEED:
90 MPH

MATERIAL DATA

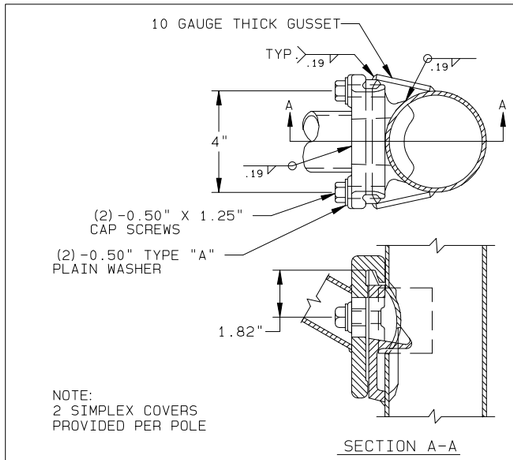
COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE TUBE	A595 GR.A	55
BASE PLATE	A36	36
LUMINAIRE PIPE ARM	A500,A501, 513,618	36
LUMINAIRE ATTACHMENT	A27 GR.70-36	36
LUMINAIRE CONN. BOLTS	SAE GR. 5	--
ANCHOR BOLTS	F1554 GR.55	55
GALVANIZING-HARDWARE	HOT DIP ZINC	--

FINISH DATA

SYSTEM: FINISH PAINT/GALVANIZED (FPGV)
BASE COAT: HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT: NONE
FINISH COAT: TGIC OR URETHANE POLYESTER POWDER
COLOR: LIGHT GRAY RAL 7035
SPEC: F-283DY



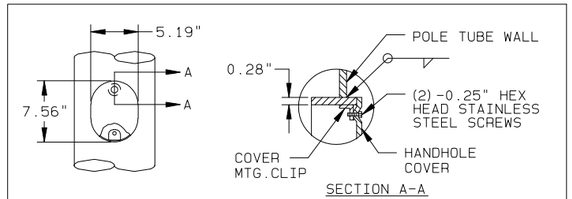
DETAIL 1 | POLE TOP PLATE



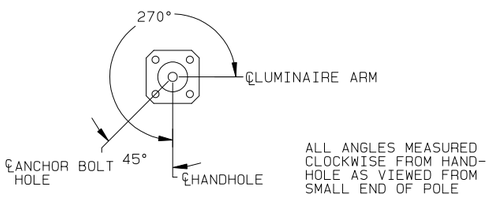
NOTE:
2 SIMPLEX COVERS
PROVIDED PER POLE

SECTION A-A

DETAIL 2 | LUMINAIRE ARM ATTACHMENT

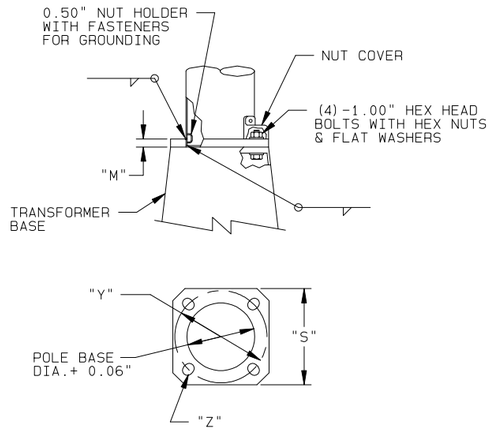


DETAIL 3 | 4"x6.5" HANDHOLE

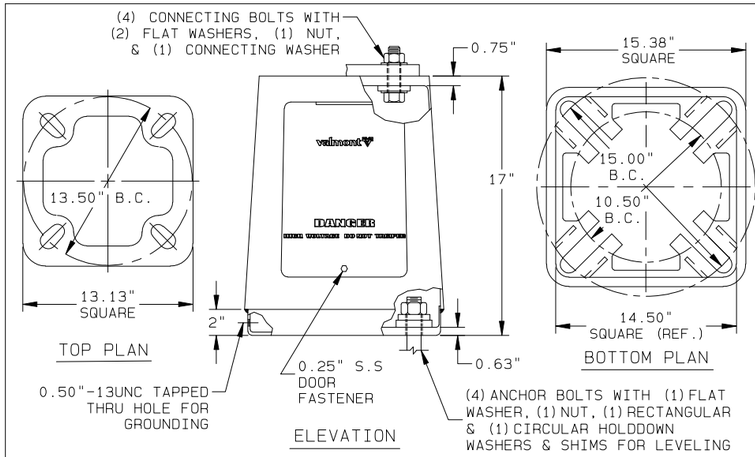


ALL ANGLES MEASURED CLOCKWISE FROM HAND-HOLE AS VIEWED FROM SMALL END OF POLE

RADIAL INDEX



DETAIL 4 | POLE BASE



TRANSFORMER BASE NOTES:

DOOR OPENING APPROXIMATELY 8.56" X 8.94" X 11".

TOP BOLT HOLES WILL ACCOMMODATE MAXIMUM 1.00" DIA. BOLTS.

(4)-2.75"X4.25"X0.63"THK. RECTANGULAR WASHERS ALONG WITH 2.50"O.D. X 0.38" THK. HOLDDOWN WASHERS FINISHED TO ASTM: B695 CLASS 50 PROVIDED FOR INSTALLATION UNDER ANCHOR BOLT HEX NUTS AS SHOWN.

(4)-2.50" O.D. X 0.38" THK. CONNECTING WASHERS FINISHED TO ASTM: B695 CLASS 50 PROVIDED FOR INSTALLATION UNDER THE TRANSFORMER BASE TOP PLATE AS SHOWN.

MATERIAL SHALL CONFORM TO ASTM DESIGNATION B108 ALLOY 356.0 T6.

BASE CONFORMS TO BREAKAWAY CRITERIA OF AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORT FOR HIGHWAY SIGNS,LUMINAIRES AND TRAFFIC SIGNALS IN ACCORDANCE WITH THE GUIDELINES OF NCHRP REPORT 350. FHWA'S ACCEPTANCE OF THE BASE IS RESTRICTED TO "WITHIN THE RANGE OF CONDITIONS TESTED" AS SHOWN.

DETAIL 5 | M107 T-BASE (TB1-17 MOD)

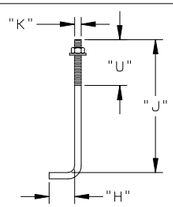
POLE DATA

ITEM	POLE TUBE				POLE BASE				ANCHOR BOLT					FIXTURE MOUNTING HEIGHT "MH" (FT)
	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	HOOK "H" (IN)	THREAD LENGTH "U" (IN)	Foundation Bolt Circle (IN)	
902149_40FT	10.00	4.96	36.00	11	13.13	13.50	1.25	1.25	1.25	42.00	6.00	6.00	15.00	40
902149_30FT	9.00	5.00	28.58	11	13.13	13.50	1.25	1.25	1.25	42.00	6.00	6.00	15.00	30

LUMINAIRE ARM DATA

ITEM	BASE DIA. (IN)	END DIA. (IN)	SPAN "L" (FT)	THK.	RISE HEIGHT "R"
902149_06FT	2.38	2.38	8.00	0.154	5'-6"
902149_08FT	2.38	2.38	8.00	0.154	5'-6"
902149_10FT	2.38	2.38	10.00	0.154	5'-6"
902149_12FT	2.38	2.38	12.00	0.154	5'-6"
902149_15FT	2.38	2.38	15.00	0.154	5'-6"
902149_16FT	2.38	2.38	16.00	0.154	5'-6"

(4)-ANCHOR BOLTS WITH (1) HEX NUT AND (1) WASHER PER BOLT WITH THREADED END GALVANIZED AT LEAST 12".



DETAIL 6 | ANCHOR BOLT

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

VIBRATION DISCLAIMER

REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION
—	CM1 08/12/25	GGL 08/13/25	— — — — — — — — — — — — — — — —

SOLD TO:
SHIP TO:
P.O. #:
AGENT:

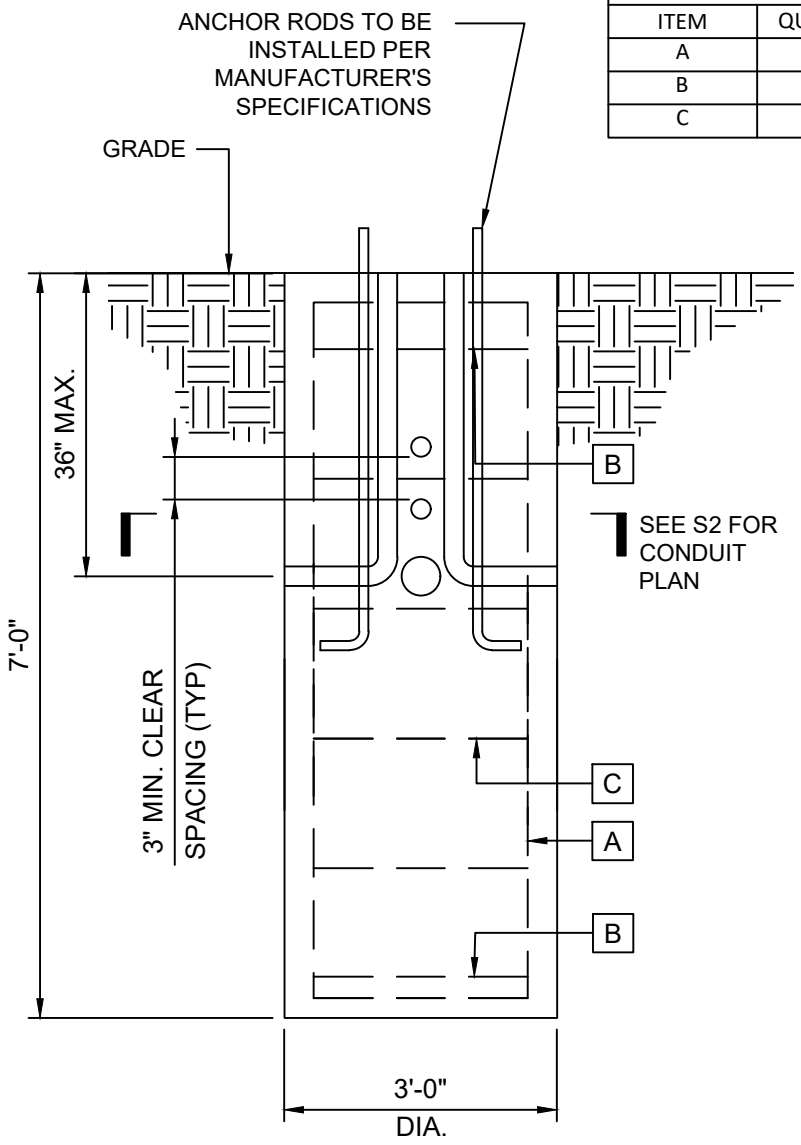
JOB: LEES SUMMIT
SMALL CELL PORTFOLIO

TITLE: SMALL CELLS STRUCTURES

ConcealFab
A valmont COMPANY.

ORDER NUMBER: 902149
PAGE NUMBER: 1 OF 1
DRAWING NUMBER: 902149
REV:

REINFORCING BAR SCHEDULE			
ITEM	QUANTITY	SIZE	SPACING
A	8	#6	EQUALLY
B	2	#3	(2) BARS WITHIN TOP/BOTTOM 5"
C	9 +/-	#3	9" O.C.



ELEVATION VIEW

FOUNDATION NOTES:

1. TOWER AND FOUNDATION DESIGN HAS BEEN COMPLETED IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE AND THE TIA-222-H STANDARD.
2. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, IN ACCORDANCE WITH ACI 318-11.
3. REBAR TO CONFORM TO ASTM A615 GRADE 60.
4. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
5. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
6. THE FOUNDATION DESIGN IS BASED ON THE FOLLOWING FACTORED LOADS:

   MOMENT = 36.0 K-FT

   AXIAL = 1.0 K

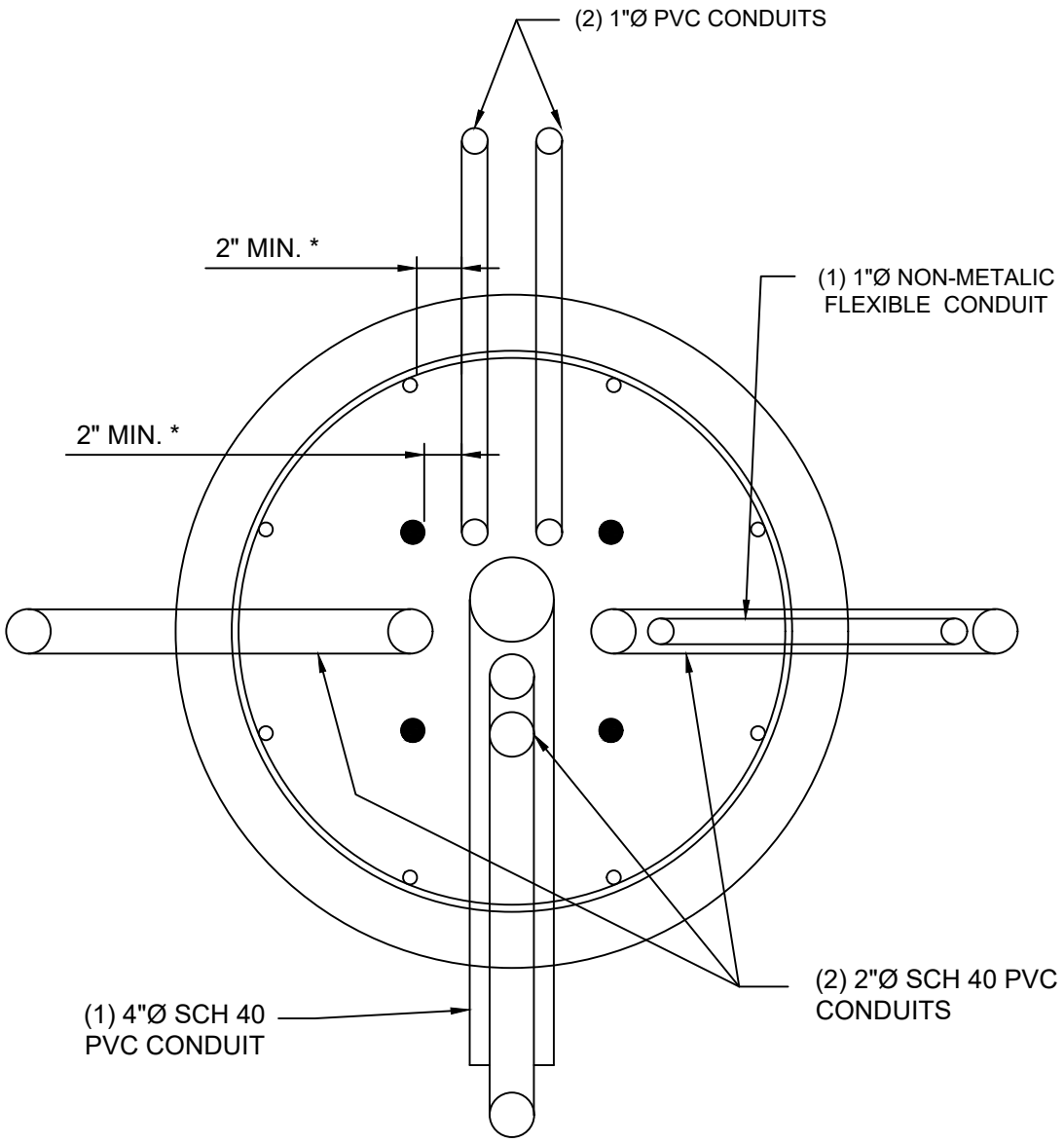
   SHEAR = 1.0 K
7. TOTAL CONCRETE VOLUME: 2.0 CUBIC YARDS
8. FOUNDATION HAS BEEN DESIGNED USING THE USING THE FOLLOWING PRESUMPTIVE SOIL PROPERTIES PROVIDED IN ANNEX F OF TIA-222 H STANDARD:

   UNIT SOIL WEIGHT: 110 PCF

   FRICTION ANGLE: 30 DEGREES

   ULTIMATE SKIN FRICTION: 500 PSF

   ULTIMATE NET BEARING CAPACITY: 4000 PSF



CONDUIT PLAN

* MINIMUM CLEAR SPACING BETWEEN CONDUITS AND ANCHOR RODS/ REBAR /CONDUITS SHALL BE 2".

Project	LSMO 120-277V	**Catalog #**	ARCH-M-PA2-150-740-U-T3-AP-10K-K-PSC-PR7	**Type**	120-277V
Prepared by	GSC LIGHTING	**Notes**	MEDIUM HOUSING 21,189 LUMENS 120-277V 4000K W/SHORTING CAP	**Date**	8-16-23

Streetworks

Archeon Medium

Roadway Luminaire

Product Features

Light ARchitect™

Product Certifications

Interactive Menu

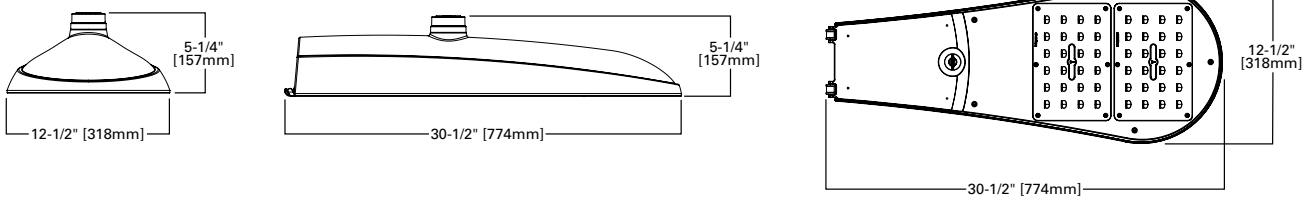
Quick Facts

- Die-cast aluminum construction; Single latch tool-less entry
- Replaces up to 400W equivalent HID; -40°C to 40°C operating range
- Pole-mounted; Optional arm and offset adjustable arm mounting
- 120-277V, 347V, or 480V 50/50Hz operation; IP66 rated

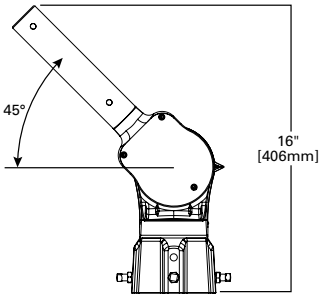
Connected Systems

- WaveLinx
- Telensa

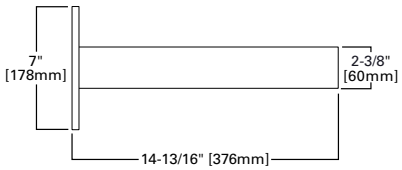
Dimensional Details



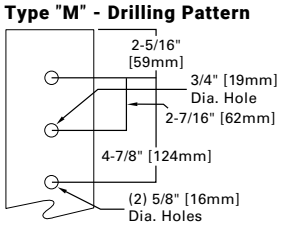
Adjustable Slipfitter Offset Arm



15" Straight Arm



Type "M" - Drilling Pattern



Ordering Information

SAMPLE ORDER NUMBER: **ARCH-M-PA2-40-740-U-T2R-A15-AP-10K-PR**

Product Family [1, 2]	Light Engine	Wattage Bucket	Color Temperature	Voltage	Distribution	Mounting	Finish
ARCH-M=Archeon Medium **BAA-ARCH-M**=Archeon Medium Buy American Act Compliant [29] **TAA-ARCH-M**=Archeon Medium Trade Agreements Act Compliant [29]	**PA2**=(2) Direct Mount Rectangle (48 LED)	**40** **50** **60** **70** **80** **90** **100** **110** **120** **130** **140** **150** **160**	**722**=70CRI, 2200K **727**=70CRI, 2700K **730**=70CRI, 3000K **735**=70CRI, 3500K **740**=70CRI, 4000K **750**=70CRI, 5000K **827**=80CRI, 2700K [6] **AMB**=Amber, 590nm [18, 25]	**U**=Universal (120-277V) **8**=480V [4, 5] **9**=347V [4] **DV**=277-480V DuraVolt Drivers [4, 5, 31]	**T2R**=Type II Roadway **T2U**=Type II Urban **T3**=Type III **T4W**=Type IV Wide **5WQ**=Type V Square Wide	**[Blank]**=None **A15**=15" Straight Mast Arm [14] **ASJS15**=Adjustable Slipfitter (Factory set at 15° degrees) **ASJS25**=Adjustable Slipfitter (Factory set at 25° degrees) **ASJS45**=Adjustable Slipfitter (Factory set at 45° degrees)	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **WH**=White

Options (Add as Suffix)

10K=Series 10kV UL 1449 Surge Protective Device
20K=Series 20kV UL 1449 Surge Protective Device
20KI=Series 20kV UL 1449 Surge Protective Device with light indicator
10MSP=Parallel 10kV MOV Surge Protective Device
20MSP=Parallel 20kV MOV Surge Protective Device
K=Level Indicator
HA=50°C High Ambient Temperature
HSS=Factory Install House Side Shield [13]
PSC=Photocontrol Shorting Cap
NPC=NEMA Photocontrol - Multi-Tap
LLPC=Longlife Photocontrol Included
IP66=IP66 Rated Housing
FADC=Field Adjustable Dimming Controller [26]
CC=Coastal Construction [27]
DXXXXX=Department of Transportation - Customer specific details [32]
UXXXXX=Utility - Customer specific details [32]

Controls

PR=NEMA 3-PIN Twistlock Photocontrol Receptacle [7]
PR7=NEMA 7-PIN Twistlock Photocontrol Receptacle
SPB1=Dimming Occupancy Sensor with Bluetooth Interface, <8' Mounting [28]
SPB2=Dimming Occupancy Sensor with Bluetooth Interface, 8'-20' Mounting [28]
SPB4=Dimming Occupancy Sensor with Bluetooth Interface, 21'-40' Mounting [28]
MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height [8, 9]
MS/DIM-L20=Motion Sensor for Dimming Operation, Maximum 9' - 20' Mounting Height [8, 9]
MS/DIM-L40=Motion Sensor for Dimming Operation, Maximum 21' - 40' Mounting Height [8, 9]
LWR-LW=Enlighted Wireless Sensor, Wide Lens for 8' - 16' Mounting Heights [8, 10, 11]
LWR-LN=Enlighted Wireless Sensor, Narrow Lens for 16' - 40' Mounting Heights [8, 10, 11]
5LTD=DALI [3]
ZD=DALI-enabled 4-PIN Twistlock Receptacle [19, 20]
ZW=WaveLinx-enabled 4-PIN Twistlock Receptacle [19, 20]
SWPD4XX=WaveLinx Wireless Sensor, 7' - 15' Mounting Height [21, 22, 23, 24]
SWPD5XX=WaveLinx Wireless Sensor, 15' - 40' Mounting Height [21, 22, 23, 24]

Accessories (Order Separately) [17,30]

OA / RA1013=Photocontrol Shorting Cap OA1223=10kV Surge Module Replacement
OA/RA1014=NEMA Photocontrol - 120V
OA/RA1016=NEMA Photocontrol - Multi-Tap
OA/RA1027=NEMA Photocontrol - 480V
OA/RA1201=NEMA Photocontrol - 347V
OA1223=10kV Surge Module Replacement
A15-XX=Arm (15" Straight Arm) [14, 16]
ASJS15-XX=Adjustable slipfitter (Factory set at 15 degrees) [16]
ASJS25-XX=Adjustable slipfitter (Factory set at 25 degrees) [16]
ASJS45-XX=Adjustable slipfitter (Factory set at 45 degrees) [16]
FSIR-100=Wireless Configuration Tool for Occupancy Sensor [17]
HS-ARCH=Field Install ARCH House Side Shield [13, 15]
SWPD4XX=WaveLinx Wireless Sensor, 7' - 15' Mounting Height [21, 22, 23, 24]
SWPD5XX=WaveLinx Wireless Sensor, 15' - 40' Mounting Height [21, 22, 23, 24]
VGS-ARCH=Short Vertical Drop Shield
VGL-ARCH=Long Vertical Drop Shield

NOTES:

1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. Nominal wattage values will be labeled on fixture as per ANSI C136.15. For specific fixture wattage, refer to Power and Lumens table.
3. Only available in universal voltage.
4. Not available at 40W or 50W.
5. 480V not to be used with ungrounded or impedance grounded systems.
6. Extended lead times may apply.
7. If "PR" selected, dimming functionality not available. Dimming leads will be capped.
8. Only available in Universal voltage.
9. The FSIR-100 accessory is required to adjust parameters.
10. Enlighted wireless system is not available with photocontrol receptacle (not required)
11. Enlighted wireless sensors are factory installed and require network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See website for Enlighted application information.
12. HA option not available with the following configurations, 347/480V 150W and 160W if paired with HS-ARCH or 5TLD 140 160W.
13. HSS not available with 5WQ distribution.
14. Round pole adapter and mounting hardware included. "M" drill pattern.
15. Archeon Medium requires two house side shields.
16. Replace XX with color designation.
17. This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
18. Amber 590nm +/- 5nm for wildlife and observatory use. Supplied in PA2-60 wattage bucket only.
19. Utilizes internal step-down transformer when 347V or 480V is selected.
20. Controls system is not available with photocontrol (BPC), photocontrol receptacle (PR or PR7), or other controls systems (MS, ZD, ZW, LWR, DALI, or DIM).
21. Requires 4-PIN twistlock receptacle (ZD or ZW) option.
22. Replace XX with sensor color (WH, BZ or BK).
23. Sensor passive infrared (PIR) may be overly sensitive with operating below -20°C (-4°F).
24. For this device to be field-configurable, requires WAC Gateway components WAC-PoE and WPOE-120 in appropriate quantities. Only compatible with WaveLinx system and software and requires system components to be installed for operation. See website for more WaveLinx application information.
25. Not available with HA option.
26. Cannot be used with PR7 or other motion response control options.
27. Coastal construction finish salt spray tested to over 5,000-hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
28. Smart device with Sensor Configuration mobile application by Wattstopper required to change system defaults.
29. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
30. Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
31. DuraVolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.signify.com/duravolt for more information. Not available in 70W or below. Not available with any control option except SPB.
32. Customer specific specifications utilizes standard products with small adjustments to meet unique requirements such as packaging, labels, wattage adjustments, etc.

Product Specifications

Construction
- Heavy-duty die-cast aluminum housing and door
- Tool-less entry, hinged removable door for easy maintenance
- 3G vibration rated

Optics
- Choice of four patented, high efficiency AccuLED Optics
- Available in Type IIR, IIU, III, IV wide and V square wide the optics are precisely designed to shape the distribution maximizing efficiency and application spacing
- Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 2200K, 2700K,3000K, and 5000K CCT
- For the ultimate level of spill light control, an optional house side shield accessory is available and can be field or factory installed
- Optics are IP66 enclosure rated
- IDA Certified for 3000K CCT and warmer only.

Electrical
- 120-277V, 347V, or 480V 50/50Hz operation
- Standard 0-10V dimming
- 10kV/10kA common- and differential- mode surge protection available
- Ambient operating temperature from -40°C to 40°C; 50°C HA, high ambient, capability available
- Standard with three position tunnel type compression terminal block
- Greater than 98% lumen maintenance expected at 60,000 hours
- Replaces 150W to 400W HID
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected.

Mounting
- Four-bolt / two-bracket slipfitter with cast-in pipe stop and 2.5° leveling steps
- Fixed-in-place bird guard seals around 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) mounting arms)
- Optional 15" pole mount arm available with round pole adapter and mounting hardware included

Finish
- Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear
- Consult your lighting representative at Cooper Lighting Solutions for a complete selection of standard colors

Shipping Data
- Approximate Net Weight: 18 lbs. (8.16 kgs.)
- Effective Projected Area: 0.71 (Sq. Ft.)

Warranty
- Five year limited warranty, consult website for details. www.cooperlighting.com/legal
- Optional ten-year warranty, please see your CLS Streetworks sales representative for more information

Energy and Performance Data

Power and Lumens (PA2 Light Engine)

Supplemental Performance Guide

Light Engine - PA2*		PA2-40	PA2-50	PA2-60	PA2-70	PA2-80	PA2-90	PA2-100	PA2-110	PA2-120	PA2-130	PA2-140	PA2-150	PA2-160
Power (Watts)		38	48	63	73	83	92	101	111	122	131	141	151	161
Wattage Label		40	50	60	70	80	90	100	110	120	130	140	150	160
Input Current @ 120V (A)		0.318	0.399	0.527	0.609	0.693	0.768	0.846	0.925	1.020	1.100	1.180	1.260	1.340
Input Current @ 277V (A)		0.145	0.178	0.243	0.275	0.309	0.342	0.374	0.407	0.453	0.486	0.518	0.553	0.586
Input Current @ 347V (A)		--	--	0.188	0.216	0.245	0.271	0.298	0.325	0.371	0.400	0.428	0.458	0.487
Input Current @ 480V (A)		--	--	0.146	0.165	0.185	0.203	0.222	0.240	0.286	0.304	0.323	0.344	0.363
Optics														
T2R	4000K/5000K Lumens	6,489	8,063	10,434	11,891	13,299	14,714	15,925	17,033	18,278	19,311	20,317	21,323	22,189
	Bug Rating	B1-U0- G1	B1-U0- G2	B1-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3
	3000K Lumens	5,911	7,342	9,502	10,829	12,111	13,400	14,501	15,512	16,646	17,586	18,502	19,418	20,206
	Bug Rating	B1-U0- G1	B1-U0- G2	B1-U0- G2	B1-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3
T2U	4000K/5000K Lumens	6,411	7,965	10,306	11,747	13,138	14,535	15,731	16,826	18,056	19,076	20,070	21,064	21,918
	Bug Rating	B2-U0- G2	B2-U0- G2	B2-U0- G2	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3
	3000K Lumens	5,838	7,253	9,385	10,698	11,963	13,238	14,325	15,323	16,443	17,373	18,277	19,182	19,961
	Bug Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B3-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2
T3	4000K/5000K Lumens	6,649	8,013	10,367	11,816	13,216	14,621	15,825	16,926	18,164	19,190	20,190	21,189	22,050
	Bug Rating	B1-U0- G2	B1-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3
	3000K Lumens	5,873	7,297	9,441	10,761	12,036	13,317	14,410	15,415	16,542	17,476	18,388	19,297	20,081
	Bug Rating	B1-U0- G2	B1-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B3-U0- G3	B3-U0- G3
T4W	4000K/5000K Lumens	6,416	7,971	10,313	11,756	13,147	14,547	15,742	16,839	18,070	19,091	20,085	21,080	21,936
	Bug Rating	B1-U0- G2	B1-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G4	B3-U0- G4
	3000K Lumens	5,843	7,259	9,392	10,706	11,973	13,247	14,336	15,334	16,455	17,385	18,292	19,197	19,977
	Bug Rating	B1-U0- G2	B1-U0- G2	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B2-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3	B3-U0- G3
5WQ	4000K/5000K Lumens	6,619	8,223	10,640	12,127	13,563	15,007	16,241	17,372	18,642	19,694	20,721	21,747	22,629
	Bug Rating	B3-U0- G1	B3-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G3	B4-U0- G3	B4-U0- G3	B4-U0- G3	B5-U0- G3	B5-U0- G3	B5-U0- G3
	3000K Lumens	6,029	7,489	9,690	11,043	12,353	13,666	14,789	15,820	16,977	17,935	18,870	19,804	20,609
	Bug Rating	B3-U0- G1	B3-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G2	B4-U0- G3	B4-U0- G3	B4-U0- G3	B4-U0- G3	B4-U0- G3	B5-U0- G3	B5-U0- G3

Energy and Performance Data

Lumen Maintenance

Light Engine	Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
PA2	Up to 40°C	> 98%	> 800,000

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

FADC Settings

FADC Position	Percent of Typical Lumen Output
1	25%
2	48%
3	56%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: +/-5% typical value

View Archeon Medium IES files

Cooper Lighting Solutions
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com