



HISTORIC PRESERVATION COMMISSION

Marc Elrich
County Executive

Robert K. Sutton
Chairman

Date: February 18, 2022

MEMORANDUM

TO: Mitra Pedoeem
Department of Permitting Services

FROM: Michael Kyne
Historic Preservation Section
Maryland-National Capital Park & Planning Commission

SUBJECT: Historic Area Work Permit # 978966: Installation of new telecommunications equipment

The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **Approved with one (1) condition** at the February 16, 2022 HPC meeting.

- 1. The proposed new RF Friendly Canister will be painted matte blue, with final review and approval delegated to staff.**

The HPC staff has reviewed and stamped the attached construction drawings.

THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant: Leigh Dukatt
Address: 17800 Bowie Mill Road, Derwood

This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once work is complete the applicant will contact Michael Kyne at 301.563.3403 or michael.kyne@montgomeryplanning.org to schedule a follow-up site visit.





**APPLICATION FOR
HISTORIC AREA WORK PERMIT**
HISTORIC PRESERVATION COMMISSION
301.563.3400

FOR STAFF ONLY:

HAWP# 978966

DATE ASSIGNED _____

APPLICANT:

Name: Leigh Dukatt (T-Mobile)
Address: 7151 Columbia Gateway Dr Ste A
Daytime Phone: 602-692-9996

E-mail: LDukatt@advantageengineers.com
City: Columbia Zip: 21046
Tax Account No.: 00706980

AGENT/CONTACT (if applicable):

Name: _____
Address: _____
Daytime Phone: _____

E-mail: _____
City: _____ Zip: _____
Contractor Registration No.: _____

LOCATION OF BUILDING/PREMISE: MIHP # of Historic Property 22/017-000A

Is the Property Located within an Historic District? Yes No

Is there an Historic Preservation/Land Trust/Environmental map, and documentation from the East...

REVIEWED

By Michael Kyne at 3:12 pm, Feb 18, 2022

Are other Planning and/or Hearing Examiner Approvals (Conditional Use, Variance, Record Plat, etc.?) If YES, include supplemental information.

APPROVED
Montgomery County
Historic Preservation Commission

Building Number: 17800 Street: BOWEN BLVD

Town/City: Derwood Nearest Cross Street: Fraley Farm Rd

Lot: _____ Block: _____ Subdivision: _____ Parcel: _____

TYPE OF WORK PROPOSED: See the checklist on Page 4 to verify that all supporting items for proposed work are submitted with this application. Incomplete Applications will not be accepted for review. Check all that apply:

- | | | |
|---|--|--|
| <input type="checkbox"/> New Construction | <input type="checkbox"/> Deck/Porch | <input type="checkbox"/> Shed/Garage/Accessory Structure |
| <input type="checkbox"/> Addition | <input type="checkbox"/> Fence | <input type="checkbox"/> Solar |
| <input type="checkbox"/> Demolition | <input type="checkbox"/> Hardscape/Landscape | <input type="checkbox"/> Tree removal/planting |
| <input type="checkbox"/> Grading/Excavation | <input type="checkbox"/> Roof | <input type="checkbox"/> Window/Door |
| | | <input checked="" type="checkbox"/> Other: <u>Telecommunications</u> |

I hereby certify that I have the authority to make the foregoing application, that the application is correct and accurate and that the construction will comply with plans reviewed and approved by all necessary agencies and hereby acknowledge and accept this to be a condition for the issuance of this permit.

12/30/21

Signature of owner or authorized agent

Date

5

Adjacent and Confronting Properties:

Rockville, MD 20855

17834 Fraley Farm Road

5612 Silver Oak Court

17821 Fraley Farm Road

17813 Fraley Farm Road

5617 Silo Hill Court

5612 Silo Hill Court

17801 Fraley Farm Road

17805 Bowie Mill Road

17801 Bowie Mill Road

17709 Bowie Mill Road

17705 Bowie Mill Road

18405 Muncaster Road

REVIEWED

By Michael Kyne at 3:12 pm, Feb 18, 2022

APPROVED

Montgomery County

Historic Preservation Commission



Robert G. Patton

Description of Property: Please describe the building and surrounding environment. Include information on significant structures, landscape features, or other significant features of the property:

Silo on a farm with various buildings & structures

Description of Work Proposed: Please give an overview of the work to be undertaken:

Remove (3) & add (3) antennas, add (9) RRUs, remove (1) & add (1) equipment cabinet and (1) battery cabinet, and other associated equipment at existing silo

REVIEWED

By Michael Kyne at 3:12 pm, Feb 18, 2022

APPROVED

Montgomery County

Historic Preservation Commission



Robert H. Potter

Work Item 1: Telecommunications

Description of Current Condition: Existing Site for T-Mobile

Proposed Work: Proposed equipment upgrades at existing site for T-Mobile

Work Item 2: _____

Description of Current Condition:

Proposed Work:

REVIEWED
By Michael Kyne at 3:12 pm, Feb 18, 2022

APPROVED
Montgomery County
Historic Preservation Commission


Work Item 3: _____

Description of Current Condition:

Proposed Work:

**HISTORIC AREA WORK PERMIT
CHECKLIST OF
APPLICATION REQUIREMENTS**

	Required Attachments						
Proposed Work	I. Written Description	2. Site Plan	3. Plans/Elevations	4. Material Specifications	5. Photographs	6. Tree Survey	7. Property Owner Addresses
New Construction	*	*	*	*	*	*	*
Additions/Alterations	*	*	*	*	*	*	*
Demolition	*	*	*		*		*
Deck/Porch	*	*	*	*	*	*	*
Fence/Wall	*	*	*	*	*	*	*
Driveway/Parking Area	*	*		*	*	*	*
Grading/Excavation/Landscaping	*	*		*	*	*	*
Tree Removal	*	*		*	*	*	*
Siding/ Roof Changes	*	*	*	*	*		*
Window/ Door Changes	*	*	*	*	*		*
Masonry Repair/ Repoint	*	*	*	*	*		*
Signs	*	*	*	*	*		*

REVIEWED
By Michael Kyne at 3:12 pm, Feb 18, 2022

APPROVED
Montgomery County
Historic Preservation Commission



REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022

T-MOBILE NORTHWEST LLC

FRALEY FAMILY - ROCKVILLE

7WAN162B

67D5A997DB HYBRID

17800 BOWIE MILL ROAD DERWOOD, MARYLAND 28055

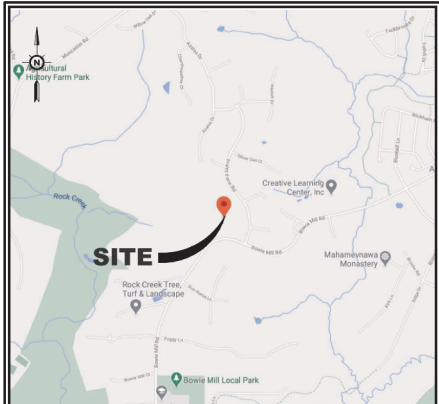
APPROVED

Montgomery County
Historic Preservation Commission



advantage engineers
7151 COLUMBIA GATEWAY DRIVE SUITE A
COLUMBIA, MARYLAND 21046
PHONE: (410) 367-0033
FAX: (410) 397-3548

SITE INFORMATION	
SITE NUMBER:	7WAN162B
SITE NAME:	FRALEY FAMILY - ROCKVILLE
SITE ADDRESS:	17800 BOWIE MILL ROAD DERWOOD, MARYLAND 28055
ZONING DISTRICT:	RE-1
TAX MAP:	HT22P222
JURISDICTION:	MONTGOMERY COUNTY, MARYLAND
SITE COORDINATES:	N 39° 00' 04.9" (NAD 83) W 77° 00' 51.56" (NAD 83)
GROUND ELEVATION:	498± (NAVD 88)
STRUCTURE TYPE:	SILO
STRUCTURE HEIGHT:	73± AGL (TOP OF EXISTING SILO)
ANTENNA RAD CENTER:	79±± AGL
TENANT:	T-MOBILE NORTHWEST LLC 12000 BALTIMORE AVENUE BELTSVILLE, MARYLAND 20705
OWNER'S NAME:	HARRY FRALEY ET AL
OWNER'S ADDRESS:	17800 BOWIE MILL ROAD ROCKVILLE, MARYLAND 20855-1609



AREA MAP
DERWOOD, MARYLAND 28055

DIRECTIONS

HEAD NORTHWEST TOWARD US-1 N/BALTIMORE AVE, TURN RIGHT ONTO US-1 N/BALTIMORE AVE, USE THE LEFT 2 LANES TO TURN LEFT ONTO THE MD-200 W RAMP TO I-83/I-270, CONTINUE ONTO MD-200 W, USE THE RIGHT 2 LANES TO TAKE EXIT 98 FOR GEORGIA AVENUE/MD-87 N TOWARD OLNEY, MERGE ONTO MD-87/GEORGIA AVE, TURN LEFT ONTO EMORY LN, TURN RIGHT ONTO CASHELL RD, TURN LEFT ONTO BREADY RD, TURN LEFT ONTO BOWIE MILL RD, ARRIVE AT, DERWOOD MARYLAND 28055.

SCOPE OF WORK	
•	REMOVE EXISTING RF FRIENDLY CANISTER
•	INSTALL (1) NEW RF FRIENDLY CANISTER
•	REMOVE (3) EXISTING ANTENNAS
•	REMOVE (3) EXISTING TMA's
•	REMOVE (12) 1-1/4" CP COAX
•	INSTALL (3) PROPOSED ANTENNAS
•	INSTALL (9) PROPOSED RRUN
•	REMOVE (1) EXISTING 2100 EQUIPMENT CABINET
•	INSTALL (1) PROPOSED 6180 EQUIPMENT CABINET
•	INSTALL (1) PROPOSED 6180 BATTERY CABINET
•	INSTALL (6) PROPOSED 6x24 HYBRID CABLES 3XM
•	INSTALL (1) PSU 4813

SHEET INDEX	
DRAWING SHEET	DRAWING TITLE
T-1	TITLE SHEET
Z-1	SITE PLAN
S-1	COMPOUND PLAN
S-2	SILO ELEVATION
A-1	ANTENNA PLAN & NOTES
A-2	PLUMBING DIAGRAM & CABLES
A-3	PROPOSED & EXISTING EQUIPMENT CABINET LAYOUT
A-4	DETAILS
D-1	6180 EQUIPMENT CABINET DETAIL
D-2	6180 BATTERY CABINET DETAIL
G-1	GROUNDING DIAGRAM & DETAILS
E-1	ELECTRICAL DETAILS
E-2	ELECTRICAL NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR IS TO VERIFY ALL PLANS, EXISTING DIMENSIONS & CONDITIONS RELATING TO THIS PROJECT. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF THERE ARE ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

APPROVALS	
T-MOBILE PROJECT MANAGER	DATE: _____
T-MOBILE RF ENGINEER	DATE: _____
LANDLORD	DATE: _____

SCHEDULE OF REVISIONS	
1	
4	
3	
2	01-07-2022 NEW CANISTER DESIGN
1	11-17-2021 ZONING COMMENTS
1	11-05-2021 ISSUED FOR CONSTRUCTION

REV NO.	DATE	DESCRIPTION OF CHANGES


DRAWN BY: EDZ
CHECKED BY: MRL
SCALE: NOTED
JOB NO: 19E0047.01
DRAWING TITLE:

TITLE SHEET

T-1

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

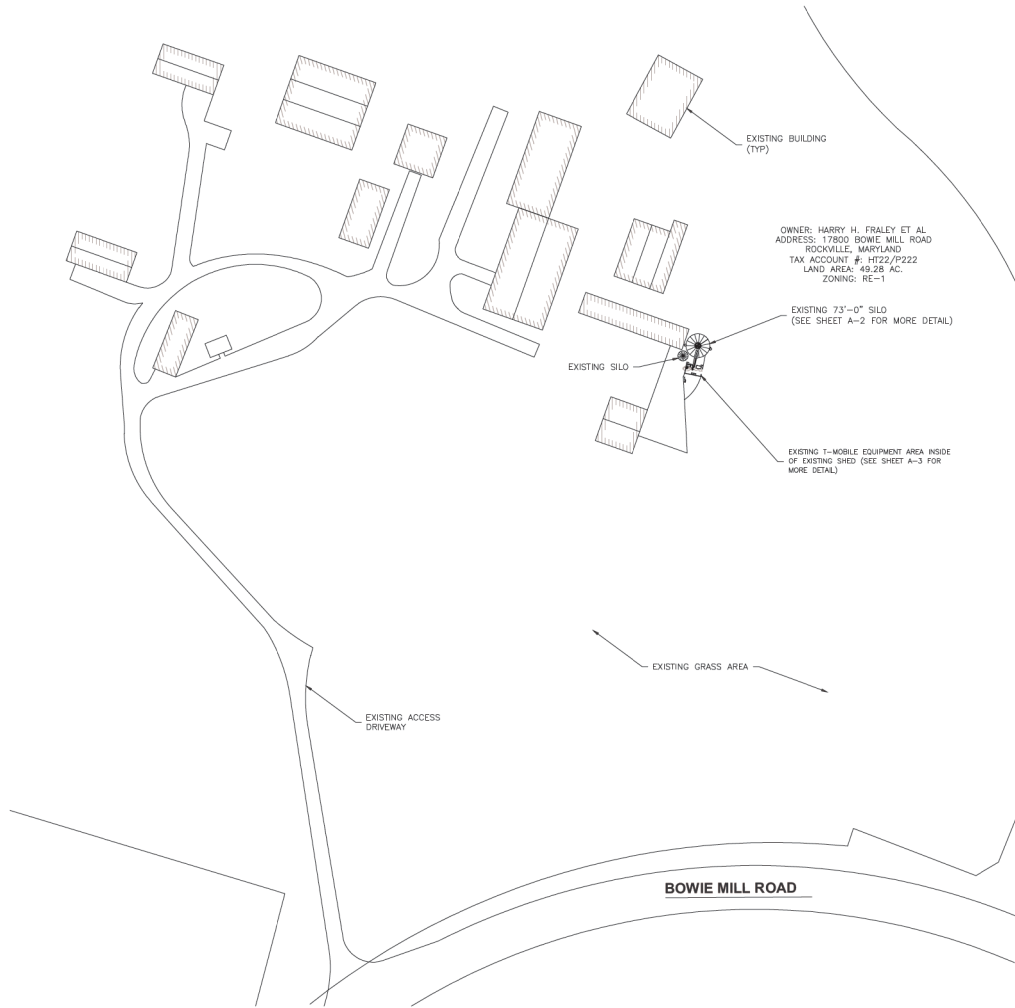
SHEET NO. 1 OF 13



ANDREW M. MILLER, P.E.
"PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 44847, EXPIRATION DATE: 9/28/24"

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022



OWNER: HARRY H. FRALEY ET AL
 ADDRESS: 17800 BOWIE MILL ROAD
 ROCKVILLE, MARYLAND
 TAX ACCOUNT #: HT22/P222
 LAND AREA: 43.28 AC.
 ZONING: RE-1

EXISTING 73'-0" SILO
 (SEE SHEET A-2 FOR MORE DETAIL)

EXISTING T-MOBILE EQUIPMENT AREA INSIDE
 OF EXISTING SILO (SEE SHEET A-3 FOR
 MORE DETAIL)

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ANTENNA RAD CENTER:	73± AGL
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OWNER'S NAME:	HARRY FRALEY ET AL
OWNER'S ADDRESS:	17800 BOWIE MILL ROAD ROCKVILLE, MARYLAND 20855-1609

GENERAL NOTES:

- PROPERTY LINE INFORMATION WAS PREPARED USING AVAILABLE SITE PLANS, DEEDS, TAX MAPS, AND PLANS OF RECORD. INFORMATION SHOWN SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
- THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
- THE PROPOSED FACILITY WILL CAUSE NO INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
- THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
- ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE. NO SIGNS WILL BE POSTED EXCEPT THOSE REQUIRED.
- THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.

APPROVED
 Montgomery County
 Historic Preservation Commission

Robert A. Potter

SITE PLAN

SCALE: 1"=50'-0"

GRAPHIC SCALE



(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)
 (DO NOT USE SCALE ON OTHER SIZED DRAWINGS)

T-Mobile
 NORTHEAST LLC
 T-MOBILE NORTHEAST LLC
 12050 BALTIMORE AVENUE
 BELTSVILLE, MARYLAND 20705
 PHONE: (240) 364-8600
 FAX: (240) 364-8610



advantage engineers

7151 COLUMBIA GATEWAY DRIVE, SUITE A
 COLUMBIA, MARYLAND 21046
 PHONE: (410) 367-0203
 FAX: (410) 367-3548

SCHEDULE OF REVISIONS

NO.	DATE	DESCRIPTION OF CHANGES
1		
2	01-07-2022	NEW CANISTER DESIGN
3	11-17-2021	ZONING COMMENTS
4	11-05-2021	ISSUED FOR CONSTRUCTION

DRAWN BY:	EDZ
CHECKED BY:	MRL
SCALE:	NOTED
JOB NO:	19E0047.001

DRAWING TITLE:

SITE PLAN

DRAWING SHEET:

Z-1

FRALEY FAMILY - ROCKVILLE
 7WAN162B
 17800 BOWIE MILL ROAD
 DERWOOD, MARYLAND 28055

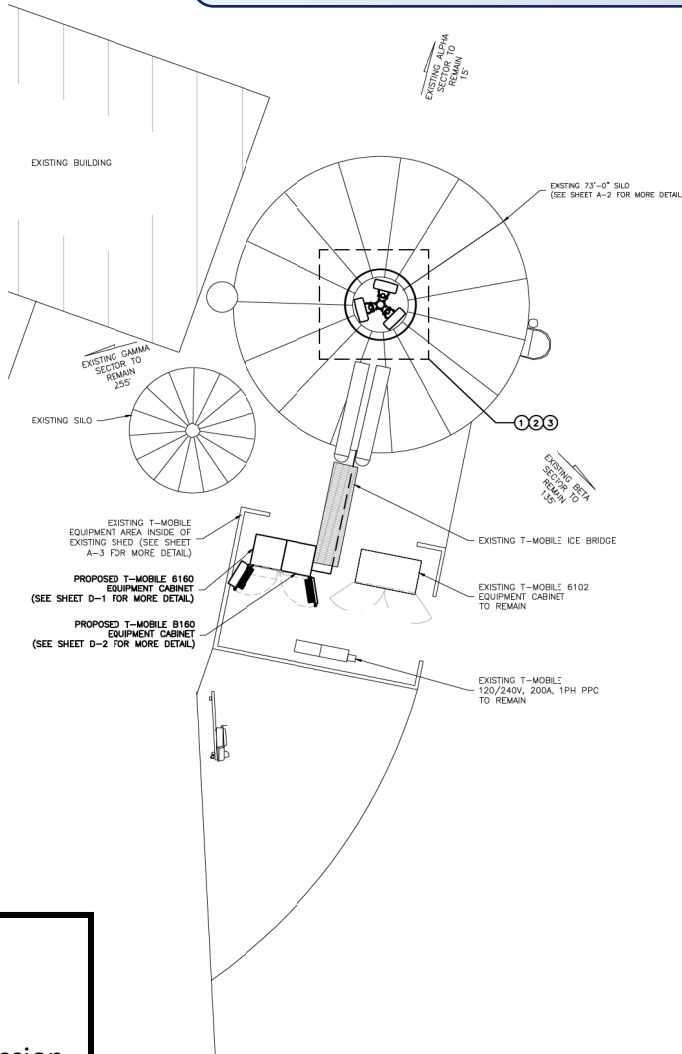
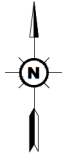
SHEET NO. 2 OF 13



ANDREW M. MILLER, P.E.
 "PROFESSIONAL CERTIFICATION: I HEREBY
 CERTIFY THAT THESE DOCUMENTS WERE
 PREPARED OR APPROVED BY ME, AND THAT I
 AM A DULY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE OF
 MARYLAND, LICENSE NO. 41467, EXPIRATION
 DATE 11-08-24"

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022



COMPOUND PLAN
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE



(IN FEET)
1/4" (40') = 1 R.
(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)

T-MOBILE SECTOR KEY PLAN	
T-MOBILE ALPHA SECTOR ①	(0) EXISTING ANTENNAS TO REMAIN
	(0) EXISTING ANTENNAS TO BE RELOCATED
	(1) EXISTING ANTENNA TO BE REMOVED
	(1) PROPOSED ANTENNA TO BE INSTALLED
	(0) EXISTING RRUs TO REMAIN
T-MOBILE BETA SECTOR ②	(0) EXISTING ANTENNAS TO REMAIN
	(0) EXISTING ANTENNAS TO BE RELOCATED
	(1) EXISTING ANTENNA TO BE REMOVED
	(1) PROPOSED ANTENNA TO BE INSTALLED
	(0) EXISTING RRUs TO REMAIN
T-MOBILE GAMMA SECTOR ③	(0) EXISTING ANTENNAS TO REMAIN
	(0) EXISTING ANTENNAS TO BE RELOCATED
	(1) EXISTING ANTENNA TO BE REMOVED
	(1) PROPOSED ANTENNA TO BE INSTALLED
	(0) EXISTING RRUs TO REMAIN
PRE CONSTRUCTION TOTALS	
(3) ANTENNAS (0) RRUs (3) TMs	
POST CONSTRUCTION TOTALS	
(3) ANTENNAS (0) RRUs (0) TMs	

GENERAL NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
- THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
- THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
- THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE. NO SIGNS WILL BE POSTED EXCEPT THOSE REQUIRED.
- NO SIGNIFICANT NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY.
- ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO BE PERFORMED BY ADVANTAGE ENGINEERS.

T-Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST LLC
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advantage engineers
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SCHEDULE OF REVISIONS	
5	
4	
3	
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DRAWN BY: EDZ	
CHECKED BY: MRL	
SCALE: NOTED	
JOB NO: 19E0047.001	
DRAWING TITLE:	

COMPOUND PLAN

S-1

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 20855

SHEET NO. 3 OF 13

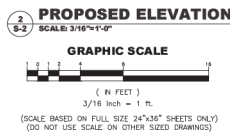
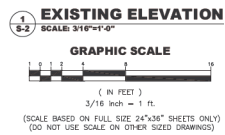
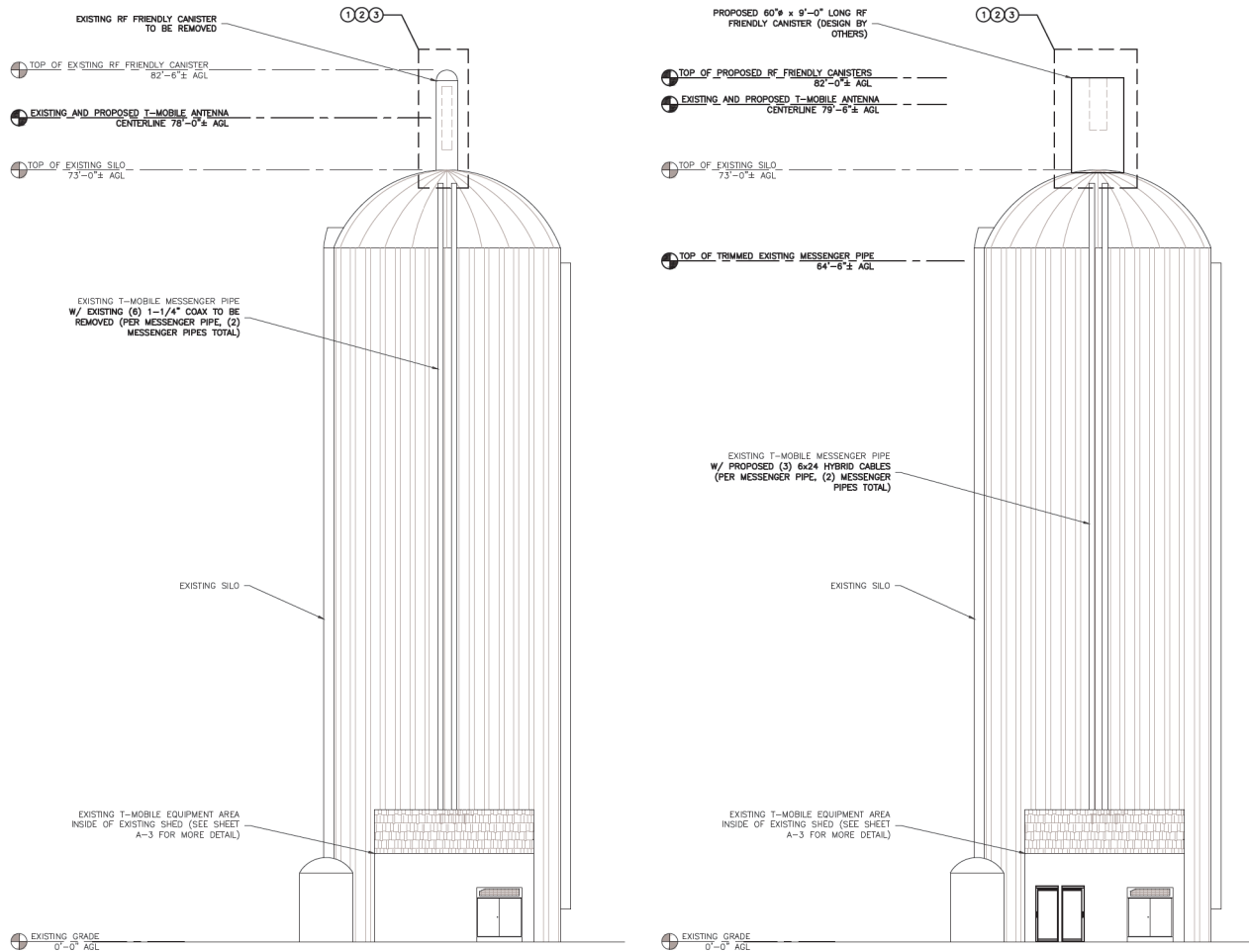


ANDREW M. MILLER, P.E.
PROFESSIONAL CERTIFICATION LIBRARY
CERTIFY THAT THESE DOCUMENTS WERE
PREPARED OR APPROVED BY ME, AND THAT I
AM A FULLY LICENSED PROFESSIONAL
ENGINEER UNDER THE LAWS OF THE STATE OF
MARYLAND. LICENSE NO. 41407, EXPIRATION
DATE: 01-05-27

APPROVED
Montgomery County
Historic Preservation Commission

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022



T-MOBILE SECTOR KEY PLAN	
T-MOBILE ALPHA SECTOR ①	(0) EXISTING ANTENNAS TO REMAIN (0) EXISTING ANTENNAS TO BE RELOCATED (1) EXISTING ANTENNA TO BE REMOVED (1) PROPOSED ANTENNA TO BE INSTALLED
	(0) EXISTING TMA TO REMAIN (0) EXISTING TMA TO BE RELOCATED (1) EXISTING TMA TO BE REMOVED (0) PROPOSED TMA TO BE INSTALLED
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(3) ANTENNAS (0) RRUs (3) TMAs	
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7. THE FACILITY IS UNMANNED. HANDICAP ACCESS REQUIRED.
8. THE FACILITY IS UNMANNED. SANITARY SERVICE.
9. THE PROPOSED DEVELOPMENT SHALL NOT RECEIVE ANY SOLID WASTE RECEPTANCE.
10. THE PROPOSED DEVELOPMENT SHALL NOT RECEIVE ANY SIGNAGE.
11. NO SIGNIFICANT NOISE, SMELL OR VIBRATION SHALL BE GENERATED BY THIS FACILITY.
12. ELEVATIONS REFER TO THE FINISHED GRADE (F&G).
13. CONSTRUCTION TO COMPLY WITH STRUCTURAL ANALYSIS, SEE ADVANTAGE ENGINEERS.

T-Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST LLC
12000 BALTIMORE AVENUE
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PHONE: (240) 264-8600
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advantage engineers

7151 COLUMBIA GATEWAY DRIVE SUITE A
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PHONE: (443) 367-0003
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SCHEDULE OF REVISIONS

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3		
4		
5		
6	11-17-2021	ZONING COMMENTS
7	11-05-2021	ISSUED FOR CONSTRUCTION

DRAWN BY:	EDZ
CHECKED BY:	MRL
SCALE:	NOTED
JOB NO.:	19E0047.01
DRAWING TITLE:	

SILO ELEVATION

DRAWING SHEET:

S-2

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

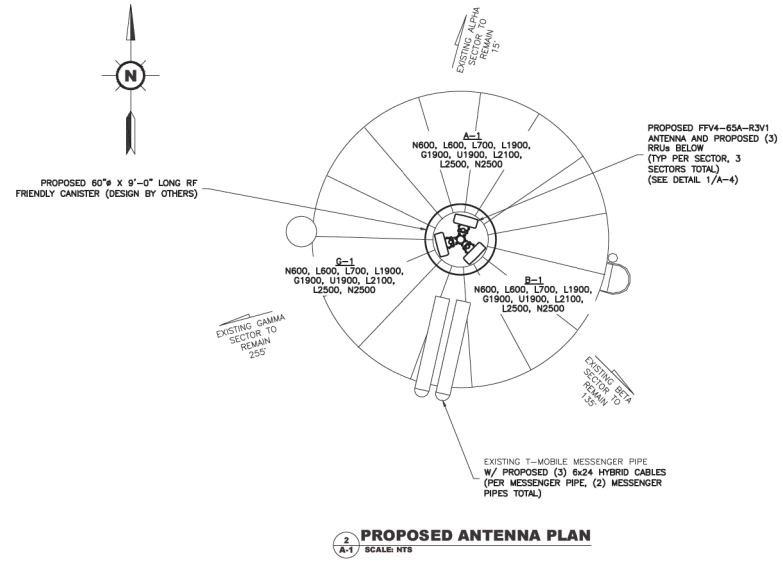
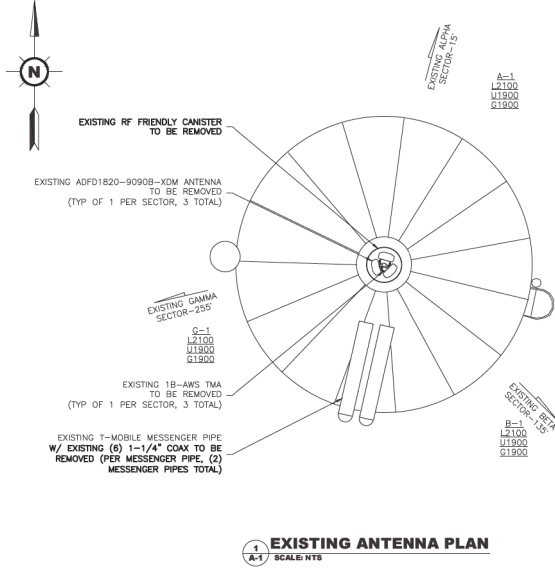
APPROVED

Montgomery County
Historic Preservation Commission

[Signature]

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022



STRUCTURAL NOTES

- DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2015 AND THE ANSI/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT AND FROM THE EXISTING STRUCTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN INCLUDING THE COMMENTARY AND THE AISC CODE FOR STANDARD PRACTICE.
- STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A992. ALL STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODE - STEEL WELD ELECTRODES SHALL BE E70XX.
- ALL COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL FURNISH ALL CONNECTION HARDWARE REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO ASTM A307 OR ASTM A36. ALL STRUCTURAL FASTENERS FOR STRUCTURAL STEEL FRAMING SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8\"/>
- NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH AND INFORM CONSTRUCTION MANAGER OF ANY DISCREPANCY BEFORE STARTING CONSTRUCTION.
- CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO BE PERFORMED BY ADVANTAGE ENGINEERS.

GENERAL CONTRACTOR NOTES

- THE ANTENNA MOUNTS AND CONNECTIONS THAT ARE USED TO SUPPORT THE PROPOSED INSTALLATION ARE TO BE INSPECTED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT. IF THE CONDITIONS OF THE MOUNTS AND CONNECTIONS ARE FOUND TO BE UNACCEPTABLE, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND THE UNACCEPTABLE ELEMENTS OF THE MOUNT OR HARDWARE SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR.
- ANTENNA RAD CENTER IS IN REFERENCE TO ELEVATION 0'-0\"/>
- CONTRACTOR IS TO VERIFY ALL ANTENNA AZIMUTHS WITH THE T-MOBILE CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.

EXISTING ANTENNA SCHEDULE

POSITION	ANTENNA RAD CENTER	EXISTING AZIMUTH	EXISTING TECH	ANTENNA MANUFACTURER	EXISTING ANTENNA MODEL #	EXISTING RRU/TMA	EXISTING RRU/TMA	EXISTING MDT	EXISTING EDT
A-1	78°-0"	1'	L2100, L1900, G1900	ANDREW	ADFD1820-9090B-XDM	1B-AWS	N/A	0'	3/3
B-1	78°-0"	1'	L2100, L1900, G1900	ANDREW	ADFD1820-9090B-XDM	1B-AWS	N/A	0'	5/5
G-1	78°-0"	1'	L2100, L1900, G1900	ANDREW	ADFD1820-9090B-XDM	1B-AWS	N/A	0'	5/5

PROPOSED ANTENNA SCHEDULE

POSITION	ANTENNA RAD CENTER	PROPOSED AZIMUTH	PROPOSED TECH	ANTENNA MANUFACTURER	PROPOSED ANTENNA MODEL #	PROPOSED RRU/TMA	PROPOSED RRU/TMA	PROPOSED MDT	PROPOSED EDT
A-1	79°-6"	15'	N600, L800, L700, L1900, G1900, L2500, N2500	COMSCOPE	FFV4-65A-R3V1	4480 B71+B85 8863 B41	4460 B25+B86	0'	3/3/3/3
B-1	79°-6"	135'	N600, L800, L700, L1900, G1900, L2100, L2500, N2500	COMSCOPE	FFV4-65A-R3V1	4480 B71+B85 8863 B41	4460 B25+B86	0'	3/3/3/3
G-1	79°-6"	255'	N600, L800, L700, L1900, G1900, L2100, L2500, N2500	COMSCOPE	FFV4-65A-R3V1	4480 B71+B85 8863 B41	4460 B25+B86	0'	3/3/3/3

ANTENNA/RRU/TMA SPECS

EXISTING ANTENNAS	MANUFACTURER	ANTENNA MODEL #	QUANTITY	HEIGHT	WIDTH	DEPTH	WEIGHT
	ANDREW	ADFD1820-9090B-XDM TO BE REMOVED	3	51.7"	12.1"	4.5"	22.05 LBS
FINAL PROPOSED ANTENNA CONFIGURATION	MANUFACTURER	ANTENNA MODEL #	QUANTITY	HEIGHT	WIDTH	DEPTH	WEIGHT
	COMSCOPE	FFV4-65A-R3V1	3	48.2"	25.2"	9.3"	79.4 LBS
EXISTING TMAs	MANUFACTURER	TMA MODEL #	QUANTITY	HEIGHT	WIDTH	DEPTH	WEIGHT
	GENERIC	TWIN STYLE 1B-AWS TO BE REMOVED	3	10.04"	9.29"	4.84"	22.5 LBS
FINAL PROPOSED RRU CONFIGURATION	MANUFACTURER	RRU MODEL #	QUANTITY	HEIGHT	WIDTH	DEPTH	WEIGHT
	ERICSSON	4480 B71+B85	3	21.8"	15.7"	7.5"	84 LBS
	ERICSSON	4460 B25+B86	3	19.6"	15.7"	12.1"	109 LBS
	ERICSSON	8863 B41	3	18.82"	14.76"	5.71"	49.8 LBS

T-Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST LLC
12000 BALTIMORE AVENUE
BELTSVILLE, MARYLAND 20705
PHONE: (240) 264-8600
FAX: (240) 264-8610



advantage engineers

7151 COLUMBIA GATEWAY DRIVE SUITE A
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV NO.	DATE	DESCRIPTION OF CHANGES
1		
2		
3		
4		
5		
6	01-07-2022	NEW CANISTER DESIGN
7	11-17-2021	ZONING COMMENTS
8	11-05-2021	ISSUED FOR CONSTRUCTION

DRAWN BY: EDZ
CHECKED BY: MRL
SCALE: NOTED
JOB NO.: 19E0047.01

ANTENNA PLAN & NOTES

DRAWING SHEET:

A-1

FRALEY FAMILY - ROCKVILLE
72M162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

SHEET NO. 5 OF 13



ANDREW M. MILLER, P.E.
"PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41487, EXPIRATION DATE 03-31-2027"

APPROVED
Montgomery County
Historic Preservation Commission

Robert H. ...

PROPOSED CABLES

DESCRIPTION	QUANTITY	LENGTH
6x24 HYBRID CABLE (ALPHA SECTOR)	2	30M
6x24 HYBRID CABLE (BETA SECTOR)	2	30M
6x24 HYBRID CABLE (GAMMA SECTOR)	2	30M
PSU 4813	1	30M

REVIEWED

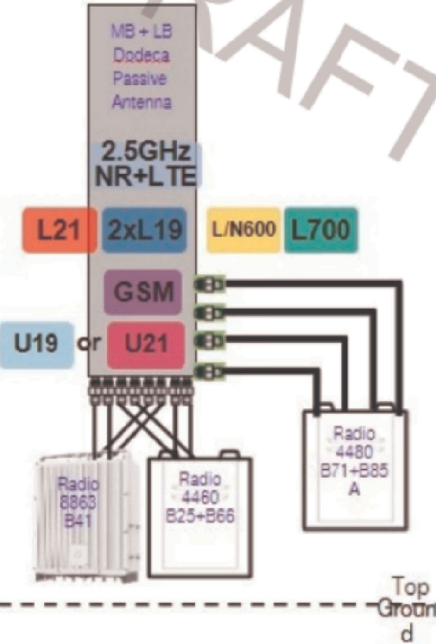
By Michael Kyne at 3:13 pm, Feb 18, 2022

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Montgomery County
Historic Preservation Commission



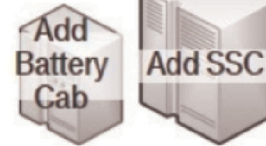
Final Config: 67E5C998E



BB6648 for TDD MB (n41/B41)

BB6648 for FDD MB & LB (B2/B25/B66/B12/B71/n7)

BB6630 for GSM+UMTS



1 PLUMBING DIAGRAM
A-2 SCALE: N.T.S.

T-Mobile
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BELTSVILLE, MARYLAND 20705
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advantage engineers

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CHECKED BY: MRL
SCALE: NOTED
JOB NO: 19E0047.001

DRAWING TITLE:
PLUMBING DIAGRAM & CABLES

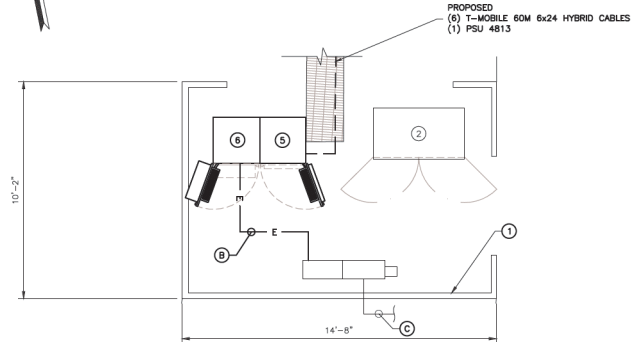
DRAWING SHEET:
A-2

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

SHEET NO. 6 OF 13



ANDREW M. MILLER, P.E.
"PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 41487, EXPIRATION DATE: 11-08-24"



1 PROPOSED EQUIPMENT CABINET LAYOUT
SCALE: N.T.S.

T-MOBILE CABINET PLAN KEY		
IDENTIFIER	CABINET AND STATUS	DETAIL
①	EXISTING 14'-0"x10'-2" EQUIPMENT AREA TO REMAIN	N/A
②	EXISTING 6102 EQUIPMENT CABINET TO REMAIN	N/A
③	EXISTING 120/240V, 200A, 1PH PPC TO REMAIN	N/A
④	EXISTING RBS 2106 EQUIPMENT CABINET TO BE REMOVED	N/A
⑤	PROPOSED B160 BATTERY CABINET TO BE INSTALLED	D-2
⑥	PROPOSED 6160 EQUIPMENT CABINET TO BE INSTALLED	D-1

- CABINET INSTALLATION NOTES**
- SEE SHEET D-1 FOR 6160 EQUIPMENT CABINET SPECIFICATIONS AND ERICSSON SUGGESTED INSTALLATION INSTRUCTIONS.
 - SEE SHEET D-2 FOR B160 BATTERY CABINET SPECIFICATIONS AND ERICSSON SUGGESTED INSTALLATION INSTRUCTIONS.

ELECTRICAL AT T-MOBILE CABINETS KEY			
IDENTIFIER	ITEM AND STATUS	ROUTING/LOCATION	DETAIL
Ⓐ	EXISTING (3) #1/0 & (1) #6 GND IN EXISTING CONDUIT TO BE REMOVED (SEE NOTE)	FROM EXISTING T-MOBILE 200A PPC TO EXISTING 6102 EQUIPMENT CABINET	N/A
Ⓑ	PROPOSED (3) #2 & (1) #8 GND IN PROPOSED 1-1/2" CONDUIT	FROM EXISTING T-MOBILE 200A PPC TO PROPOSED 6160 EQUIPMENT CABINET	N/A
Ⓒ	EXISTING CONDUIT & CONDUCTORS TO REMAIN	FROM EXISTING 200A ENCLOSED BREAKER TO EXISTING PPC	N/A

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NORTHEAST LLC
T-MOBILE NORTHEAST LLC
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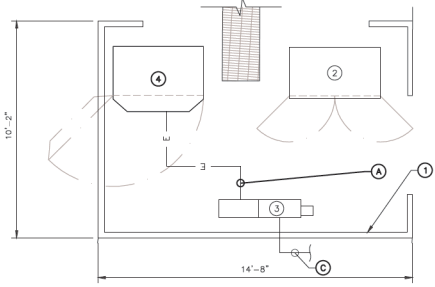


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REVIEWED
By Michael Kyne at 3:13 pm, Feb 18, 2022

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Historic Preservation Commission

2 EXISTING EQUIPMENT CABINET LAYOUT
SCALE: N.T.S.

PROPOSED & EXISTING EQUIPMENT CABINET LAYOUT

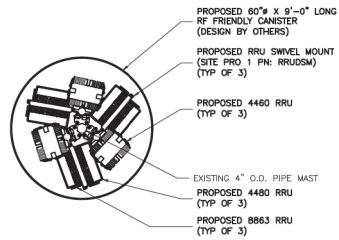
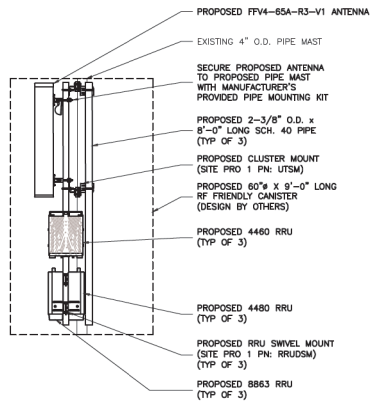
A-3

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

SHEET NO. 7 OF 13



ANDREW M. MILLER, P.E.
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FFV4-65A-R3-V1 ANTENNA AND RRU MOUNTING DETAIL
 1/A-4 SCALE: NOT TO SCALE

REVIEWED
 By Michael Kyne at 3:13 pm, Feb 18, 2022

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DRAWN BY: EDZ
CHECKED BY: MRL
SCALE: NOTED
JOB NO: 19E0047.001

DRAWING TITLE:
DETAILS

DRAWING SHEET:
A-4

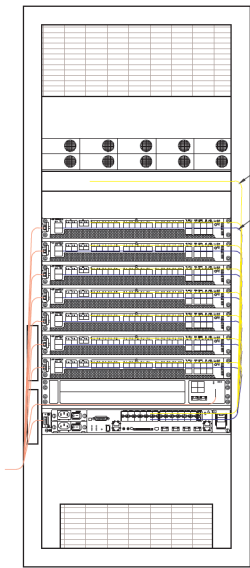
FRALEY FAMILY - ROCKVILLE
 7WAN162B
 17800 BOWIE MILL ROAD
 DERWOOD, MARYLAND 28055

SHEET NO. 8 OF 13

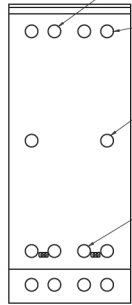


ANDREW M. MILLER, P.E.
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 By Michael Kyne at 3:13 pm, Feb 18, 2022



INTERNAL ROUTING



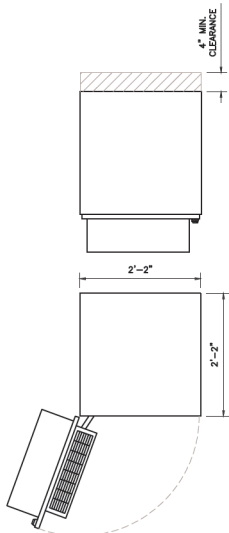
REAR VIEW

2" KNOCKOUTS WITH RIGID CONDUIT AND LB FOR 3/0 BATTERY CABLE INSTALL AND AUX POWER CABLE. OUTSIDE KNOCKOUTS WORK BEST FOR EASER OF INSTALL.

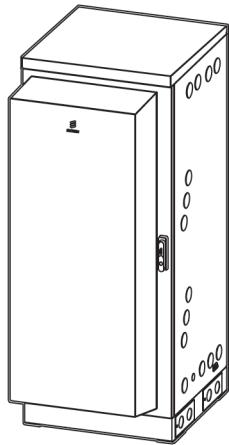
2" KNOCKOUTS WITH LBS FOR ALARM CABLE AND TEMPO SENSOR ROUTING. UPPER REAR CENTER WORK BEST FOR THIS INSTALL FOR EASE OF INSTALL REPLACEMENT IN THE EVENT OF FAILURE.

2" KNOCKOUTS FOR AAV AND FIBER ROUTING BETWEEN MACRO CABINETS ON SITE. LB WITH RIGID CONDUIT IS PREFERRED.

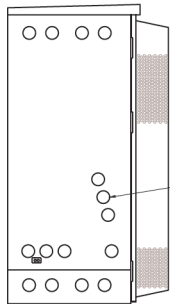
2" KNOCKOUTS AT LOWER REAR OF THE CABINET PROVIDE A CLEANER INSTALL AND EASER FIBER AND D.C CABLE ROUTING. PROTECTION AND TRIP HAZARD PREVENTION SHOULD BE ADDED FOR SAFETY OF CABLES AND TECHNICIANS.



PLAN VIEW

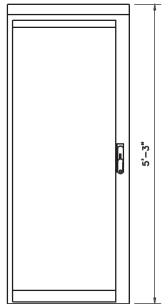


ISOMETRIC VIEW

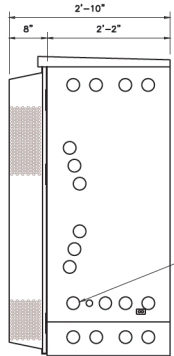


LEFT SIDE VIEW

2" KNOCKOUT ON LEFT HAND SIDE OF CABINET USED AC POWER WITH RIGID CONDUIT AND LB. PENETRATIONS DIRECTLY BELOW ACCU

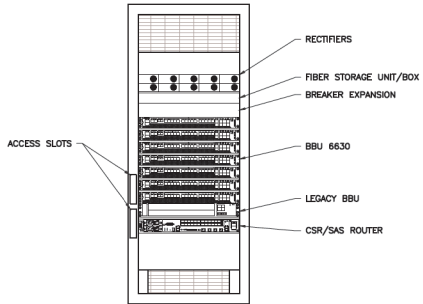


FRONT VIEW



RIGHT SIDE VIEW

UNUSABLE 2" KNOCKOUTS DUE TO CLOSE PROXIMITY TO B160 CABINET



FRONT VIEW (DOOR NOT SHOWN FOR CLARITY)

MANUFACTURER: ERICSSON
 MODEL: 6160
 SKU: 33953
 DIMENSIONS (HxWxD): 63"x26"x34"
 WEIGHT: 295 LBS (WITHOUT EQUIPMENT), 605 LBS (MAX)

NOTES:
 1. CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS DO NOT DRILL KNOCKOUTS THROUGH.
 2. CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND/OR CABLING.

1 6160 EQUIPMENT CABINET DETAIL (ERICSSON SKU #33953)
 D-1 SCALE: N.T.S.

T-Mobile
 NORTHEAST LLC
 T-MOBILE NORTHEAST LLC
 12050 BALTIMORE AVENUE
 BELTSVILLE, MARYLAND 20705
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advantage engineers
 7151 COLUMBIA GATEWAY DRIVE SUITE A
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6160 EQUIPMENT CABINET DETAIL

DRAWING SHEET:

D-1

FRALEY FAMILY - ROCKVILLE
 7WAN162B
 17800 BOWIE MILL ROAD
 DERWOOD, MARYLAND 28055

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 Historic Preservation Commission

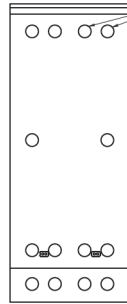
Ronald W. Potter

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022

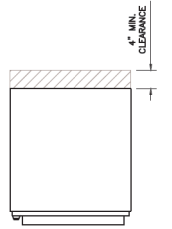
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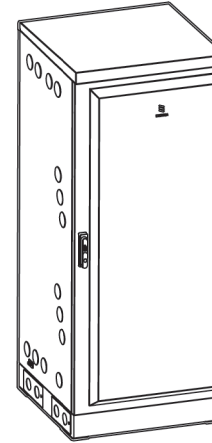



REAR VIEW

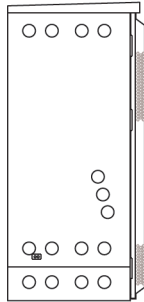
2" KNOCKOUTS WITH LBS FOR ALARM CABLE AND TEMPO SENSOR ROUTING. UPPER REAR CENTER RECOMMENDED FOR THIS INSTALL FOR EASE OF INSTALL REPLACEMENT IN THE EVENT OF FAILURE.



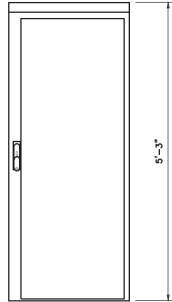
PLAN VIEW



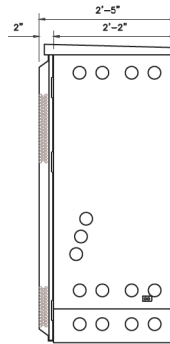
ISOMETRIC VIEW



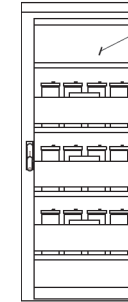
LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW



FRONT VIEW
(DOOR NOT SHOWN FOR CLARITY)

- 25A AUX BREAKERS
 - FANS
 - LIGHTS
 - ANCILLARY EQUIPMENT
 - ALARM BOX (PRE-LABELED)
-
- BATTERY TRAY W/ BRACKETS
 - VIBRATION MOUNTS
 - PRE-INSTALLED HEATERS (TYP OF 3)

MANUFACTURER: ERICSSON
MODEL: B160
SKU: 33954
DIMENSIONS (HxWxD): 63"x26"x29"
WEIGHT: 295 LBS (WITHOUT BATTERIES)
1833 LBS (MAX)

NOTES:
1. CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL KNOCKOUTS THROUGH.
2. CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND/OR CABLING.

B160 BATTERY CABINET DETAIL (ERICSSON SKU #33954)
SCALE: N.T.S.

T-Mobile
NORTHEAST LLC
T-MOBILE NORTHEAST LLC
12050 BALTIMORE AVENUE
BELTSVILLE, MARYLAND 20705
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COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
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SCHEDULE OF REVISIONS	
REV. NO.	DESCRIPTION OF CHANGES
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11	01-07-2022 NEW CANISTER DESIGN
12	11-17-2021 ZONING COMMENTS
13	11-05-2021 ISSUED FOR CONSTRUCTION
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B160 BATTERY CABINET DETAIL

D-2

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

SHEET NO. 10 OF 13



ANDREW M. MILLER, P.E.
PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 41487, EXPIRATION DATE: 01-01-2027

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022

APPROVED

Montgomery County
Historic Preservation Commission




advantage engineers

7151 COLUMBIA GATEWAY DRIVE SUITE A
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
1	01-07-2022	NEW CANISTER DESIGN
2	11-17-2021	ZONING COMMENTS
3	11-05-2021	ISSUED FOR CONSTRUCTION

DRAWN BY:	EDZ
CHECKED BY:	MRL
SCALE:	NOTED
JOB NO:	19E0047.001

DRAWING TITLE:
GROUNDING DIAGRAM & DETAILS

DRAWING SHEET:

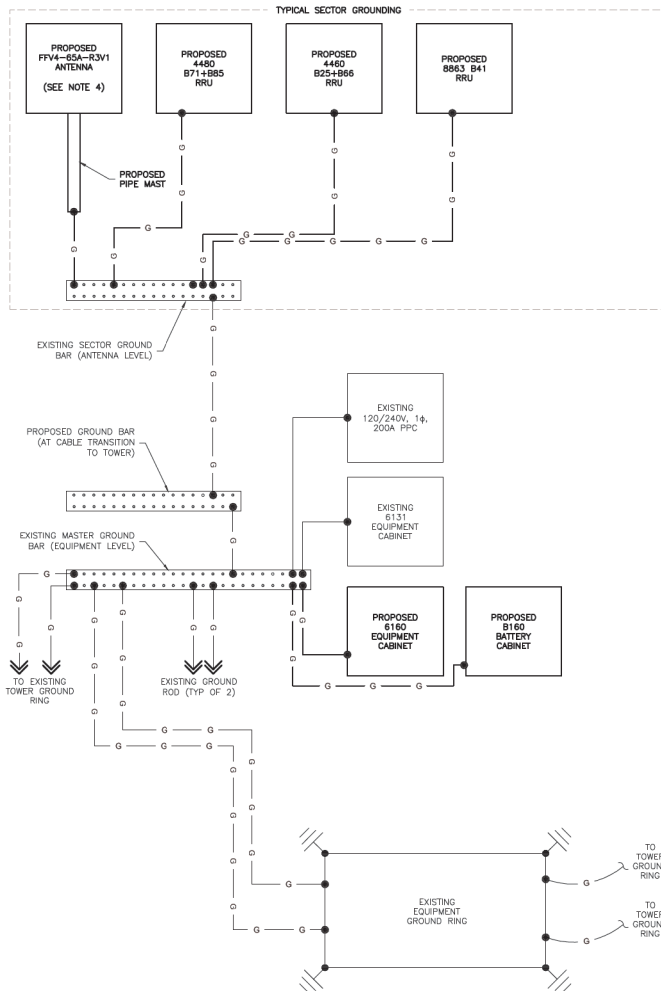
G-1

**FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055**

SHEET NO. 11 OF 13

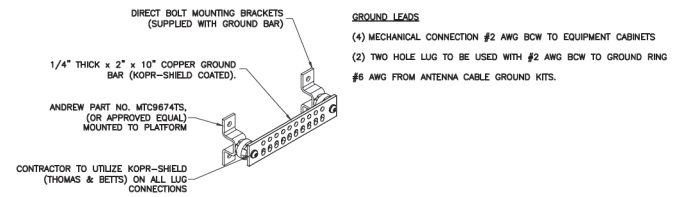


ANDREW M. MILLER, P.E.
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ENGINEER UNDER THE LAWS OF THE STATE OF
MARYLAND, LICENSE NO. 41487, EXPIRATION
DATE: 01-08-2027"



GROUNDING NOTES:

- ALL GROUNDING SYSTEM CONDUCTORS AND CONNECTIONS BELOW GRADE SHALL BE THERMAL WELDS AT GROUND RODS AND AT A MINIMUM OF 36" BELOW GRADE.
- ALL INSTALLATIONS SHALL BE FIELD VERIFIED.
- ALL GROUND WIRE SHALL BE #2 AWG BARE COPPER TINNED UNLESS NOTED OTHERWISE.
- ALL GROUND WIRES SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
- THE CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
- EACH EQUIPMENT CABINET SHALL BE CONNECTED WITH (2) #2 AWG INSULATED SOLID TINNED COPPER WIRE TO GROUND BAR. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
- ANTENNA GROUND KITS SHALL BE FURNISHED BY SPRINT AND INSTALLED BY ELECTRICAL CONTRACTOR.
- KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL GROUNDING CONNECTIONS.
- EXOTHERMIC WELDS (CADWELD) SHALL NOT BE USED ON ROOFTOPS, AT SECTOR LEVEL OR ON WATER TANKS.
- ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH A LOCK WASHER UNDER THE NUT. HARDWARE FOR BOLTED CONNECTIONS SHALL BE A MINIMUM OF 3/4" DIAMETER AND SHALL BE STAINLESS STEEL.
- GROUNDING WIRE SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS OR SUPPORTS TO PRECLUDE ESTABLISHING A "CHOKE" POINT.
- PLASTIC CLIPS OR METAL CLIPS WHICH DO NOT COMPLETELY SURROUND THE GROUNDING CONDUCTORS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERRULOUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
- STANDARD BUS BARS (CIGBE AND MIGB) SHALL BE FURNISHED AND INSTALLED. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD.
- THE GROUNDING CONNECTION TO THE POWER AND TELCO SECTIONS OF THE PPC CABINET SHALL BE MADE BY CONNECTING A CONDUCTOR FROM THE GROUND RING TO THE FACTORY FURNISHED BUS BAR IN EACH COMPARTMENT.



GROUND BAR DETAIL
SCALE: N.T.S.

- GROUNDING DIAGRAM NOTES:**
- EQUIPMENT SHOWN DIAGMATICALLY. REFER TO LAYOUT PLANS FOR EXACT EQUIPMENT LOCATION.
 - NO EXOTHERMIC WELDS (CADWELD) ALLOWED AT ANTENNA LEVEL.
 - GROUND CABLES SHALL BE #2 AWG, GREEN, TINNED, SOLID COPPER CONDUCTORS UNLESS OTHERWISE NOTED.
 - ANTENNA GROUNDED BY RF CONNECTOR INNER CONDUCTOR AND BODY GROUNDED TO REFLECTOR AND MOUNTING BRACKET.

GROUNDING DIAGRAM
SCALE: N.T.S.

REVIEWED

By Michael Kyne at 3:13 pm, Feb 18, 2022

ELECTRICAL SYMBOLS			
	TRANSFORMER		PHASE
	METER		POWER WIRE
	CIRCUIT BREAKER		TELCO WIRE
	DISCONNECT SWITCH		

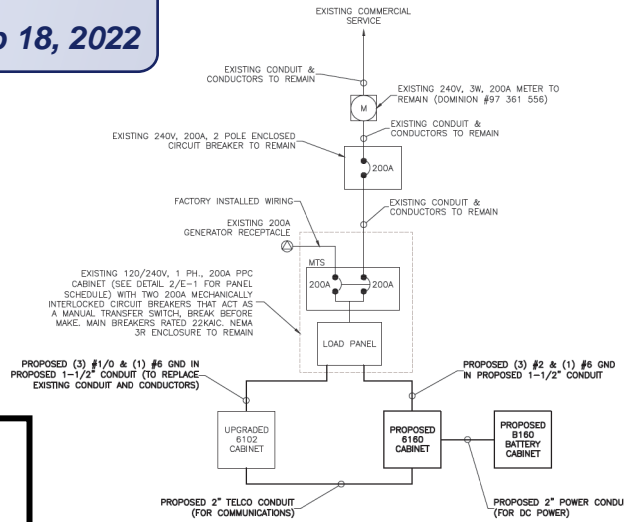
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APPROVED
Montgomery County
Historic Preservation Commission

Robert A. Miller



- NOTES:**
- ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT ADOPTED NATIONAL ELECTRIC CODES AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC.
 - UNDERGROUND POWER AND TELCO SERVICE LINES SHALL BE ROUTED IN A COMMON TRENCH. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 AND CONDUIT EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL. INTERIOR CONDUIT SHALL BE EMT UNLESS OTHERWISE INDICATED. POWER CONDUIT LINES SHALL BE SIZED AS REQUIRED PER CABLE SIZING AND NEC REQUIREMENTS.
 - CONDUITS INSTALLED AT BTS EQUIPMENT ENDS PRIOR TO THE EQUIPMENT INSTALLATION SHALL BE STUBBED AND CAPPED AT 6" ABOVE GRADE OR PLATFORM. IF SERVICE LINES CAN'T BE INSTALLED INITIALLY, PROVIDE NYLON PULL CORD IN CONDUITS.

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

Panel Circuit and Load Schedule

Description	QTY.	Unit V.A.	Load per phase (VA)		Continous	Non-Continous	Trip	Poles	Wire Size	A.I.C.	Wire Type
			A	B							
1 PROPOSED 6160 CABINET	1	8200	8,200	8,200	X		100	2	2	10,000	THWN-2
2 LIGHT	1	150	150	150	X		20	1		10,000	THWN-2
3 GFI	1	150		150		X				10,000	THWN-2
4 SPACE		0		0						10,000	THWN-2
5 FAN	1	200		200		X	10	1		10,000	THWN-2
Sub-Total Continous			8,200	8,200							
Sub-Total Non-Continous			150	350							
Voltage: 120/240		Cycle: 60		Phase: 1		Wire: 3					
Main Breaker: 200 Amp Frame		A.I.C.: 22,000		Trip: 200 Amps							
Main Lugs: 200 Amps		Main Bus: 200 Amps									

2 PANEL SCHEDULE
SCALE: N.T.S.

SERVICE: 120/240 VAC
DESIGNATION: T-MOBILE PANEL
LOCATION: T-MOBILE PLATFORM

Wire Type	A.I.C.	Wire Size	Poles	Trip	Non-Continous	Continous	Load per phase (VA)		Unit V.A.	QTY.	Description
							A	B			
THWN-2	10,000		2	60			0	0			SURGE SUPPRESSOR
THWN-2	10,000						0	0			
THWN-2	10,000						0	0			
THWN-2	10,000	#1/0	2	150	X		10,250	10250	1		UPGRADED 6160 CABINET
THWN-2	10,000	#1/0					10,250	10250	1		
THWN-2	10,000						0	0			Sub-Total Continous
THWN-2	10,000						0	0			Sub-Total Non-Continous
										TOTAL CONTINUOUS x125	
										TOTAL NON-CONTINUOUS	
										TOTAL KVA	
										TOTAL AMPS	

ELECTRICAL
DETAILS

E-1

FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055

SHEET NO. 12 OF 13

ANDREW M. MILLER, P.E.
PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41487, EXPIRATION DATE: 01-01-2027

GENERAL ELECTRICAL NOTES & BASIC ELECTRICAL REQUIREMENTS

- THE DRAWINGS ARE PROVIDED TO DEPICT DESIGN INTENT AND ARE NOT TO BE CONSIDERED INSTALLATION DRAWINGS. NOT ALL COMPONENTS OR CONNECTIONS ARE SHOWN. EQUIPMENT PART NUMBERS ARE SHOWN TO PROVIDE PERFORMANCE CRITERIA AND LEVEL OF PRODUCT STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING, INSTALLATION OF ALL ELECTRICAL EQUIPMENT, COMPONENTS AND MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSTALLATION MEANS AND METHODS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING, ENERGIZING AND TESTING OF ALL ELECTRICAL COMPONENTS PER THE MANUFACTURER'S INSTRUCTIONS.
- CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE ADVANTAGE ENGINEERS PROJECT MANAGER OR CONSTRUCTION MANAGER FOR CLARIFICATION. NOT AFTER THE CONTRACT HAS BEEN AWARDED.
- CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE DESIGN PROFESSIONAL LISTING ANY AND ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
- THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN PROFESSIONAL, OF ANY UNFORESEEN SITE CONDITIONS THAT MAY IMPACT THE DESIGN.
- THE CONTRACTOR IS IN NO WAY PERMITTED TO MODIFY OR CHANGE THE DESIGN WITHOUT THE EXPRESS, WRITTEN CONSENT OF THE DESIGN PROFESSIONAL. SHOULD THE CONTRACTOR MAKE MODIFICATIONS TO THE DESIGN WITHOUT THE CONSENT OF THE DESIGN PROFESSIONAL, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR SUCH CHANGES.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANIES, THE AUTHORITY HAVING JURISDICTIONS OR OTHER PUBLIC AUTHORITIES.
- ALL ELECTRICAL WORK SHALL CONFORM TO THE CURRENTLY ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE AND OTHER APPLICABLE STANDARDS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR LOCAL MUNICIPAL AUTHORITIES.
- CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION CONSTRUCTION TOOLS, TRANSPORTATION, ETC. FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AS INDICATED IN THE CONSTRUCTION DOCUMENTS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF THE WORK SITE AND REMOVING ALL TRASH AND DEBRIS ON A DAILY BASIS.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITERS LABORATORIES (UL) AND SHALL BEAR THE INSPECTION LABEL. IF WHERE SUBJECT TO SUCH APPROVAL, MATERIALS SHALL MEET WITH THE APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NFPA, IBC, IMC, IECC, ETC. NEC, IEEE, ASTM, NEMA, ILL, AND NIBEL.
- LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUTING.
- THE CONDUIT RUNS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING EQUAL TO OR GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 ACI MINIMUM FOR MAINS AND 10,000 ACI MINIMUM FOR BRANCH DEVICES. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT.
- ALL NEW INSTALLED ELECTRICAL EQUIPMENT SHALL BE FURNISHED WITH ARC FLASH HAZARD LABELS AS REQUIRED BY THE NEC.
- ALL ELECTRICAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO: DISCONNECT SWITCHES, TRANSFORMERS, PANELBOARDS, POWER PROTECTION CABINET (PPC), AUTOMATIC TRANSFER SWITCH (ATS), MANUAL TRANSFER SWITCH (MTS), POWER TRANSFER LOAD CENTER (PTLC), ETC., SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS. LABELS SHALL INDICATE EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
- THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, INCLUDING MANUFACTURER'S AND PART NUMBERS FOR PANELBOARDS, TRANSFORMERS, POWER PROTECTION CABINETS (PPC) AND DISCONNECTS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE DESIGN PROFESSIONAL AT THE COMPLETION OF THE PROJECT.
- UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE DEBRIS, CRATING AND CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.
- THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER FIVE (5) BUSINESS DAYS PRIOR TO ANY PLANNED POWER OR OTHER SERVICE OUTAGE. THE OWNER SHALL RESERVE THE RIGHT TO REFUSE SUCH OUTAGE AND HAVE IT RESCHEDULED.
- ANY CODE VIOLATIONS DUE TO THE CONTRACTOR'S WORK SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

ELECTRICAL SPECIFICATIONS: ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT

- RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND WHERE INDICATED ON THE DRAWINGS, FOR UNDERGROUND AND RIGID CONDUIT AND FLEXIBLE CONDUIT WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1. FEDERAL SPECIFICATION WW-6-581 AND SHALL BE LISTED WITH THE UNDERWRITERS LABORATORIES. FITTINGS SHALL BE THREADED - SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTED.
- UNDERGROUND CONDUIT SHALL BE POLYVINYLCHLORIDE SCHEDULE 40 (PVC), SCHEDULE 40 PVC SHALL NOT BE PERMITTED ABOVE GRADE. WHERE CONDUIT PASSES UNDER A ROAD OR DRIVE, IT SHALL BE SCHEDULE 80 PVC. SUITABLE FOR DIRECT BURIAL. JOINTS SHALL BE BELLED, AND FULSH, SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED INTERIOR SPACES, CONCEALED IN WALLS AND CEILING. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3. FEDERAL SPECIFICATION WW-6-583, AND SHALL BE U.L. LISTED. FITTING SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS ARE NOT PERMITTED.
- LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC CLAMP TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS ARE NOT PERMITTED.
- MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED SIX (6) FEET, EXCEPT WHERE PERMITTED BY THE NEC. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRED BY THE NEC.
- MINIMUM SIZE CONDUIT SHALL BE 1/2 INCH.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY THE NEC.
- PROVIDE VERTICAL CABLE SUPPORTS IN ALL VERTICAL CONDUITS WHERE SHOWN OR REQUIRED BY THE NEC.
- PROVIDE EXPANSION FITTINGS IN CONDUIT WHERE SHOWN OR REQUIRED BY THE NEC.
- ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12 INCH MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2 INCH OR LARGER.
- THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) BETWEEN PULL BOXES, CONDUIT BODIES AND BOXES. CONTRACTOR SHALL FURNISH AND INSTALL ANY/ALL JUNCTION BOXES IN ACCORDANCE WITH THE NEC REQUIREMENTS AS REQUIRED FOR THE INSTALLATION.
- ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROTTLING INSULATING GROUND BUSHINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION.
- TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLOUGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
- ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATELY SIZED MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
- INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
- INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUIT AND CONDUCTORS, OR AS INDICATED ON THE DRAWINGS.
- CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO ENSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
- PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING; DO NOT PENETRATE STRUCTURAL MEMBERS, SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION (WALLS AND FLOORS) SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL, FLOOR OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE U.L. APPROVED FOR THIS PURPOSE.
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE ARE NOT PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO THE STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE TIGHTLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
- SPARE CONDUITS SHALL BE FURNISHED WITH PULL LINES AND CAPPED WITH FACTORY CAPS.

CONDUCTORS

- CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, OR TYPE XHHW, 600V OR XHHW-2, 600V. SIZE AS INDICATED. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR.
- #10 AWG AND SMALLER CONDUCTORS SHALL BE SOLID AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
- SOLDERLESS COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
- ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, JUNCTION BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS.
- CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND ALSO RET CABLES. CABLE STRAIN-RELIEF & CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. ZIP TIES OR VELCO STRAPS ARE NOT PERMITTED.

ELECTRICAL SPECIFICATIONS: ELECTRICAL MATERIALS AND EQUIPMENT, CONTINUED

DISCONNECT SWITCHES

- DISCONNECT SWITCHES SHALL BE HEAVY DUTY, FUSIBLE, DEAD FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, VOLTAGE, AMPERAGE AND NEMA RATING AS INDICATED.
- INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.
- PROVIDE A WHITE PHENOLIC SIGN WITH #12 ENGRAVED LETTERING LABELING EACH SERVICE DISCONNECT AS SERVICE DISCONNECT. IF SOURCE IS HOUSE POWER, INCLUDE LOCATION AND LABEL OF PANEL FEEDING EQUIPMENT. HVAC DISCONNECTS SHALL BE LABELED "HVAC DISCONNECT" AND INCLUDE PANEL AND CIRCUIT NUMBER OF CIRCUIT SERVING THE HVAC EQUIPMENT.
- ALL FUSIBLE DISCONNECTS SHALL BE FURNISHED WITH CLASS RK-1 FUSES, SIZED AS INDICATED.

PANELBOARDS

- RATED FOR USE AT 120/240V, SINGLE PHASE, THREE WIRE PLUS GROUND, OR 120/208V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, THREE PHASE, FOUR WIRE PLUS GROUND AS REQUIRED FOR THE INTENDED APPLICATION OR AS INDICATED ON THE DRAWINGS.
- ALUMINUM OR COPPER BUS, RATED FOR 200 AMPERES OR AS INDICATED ON THE DRAWINGS, AND HAVE A SHORT CIRCUIT WITHSTAND RATING OF 22,000 ACI MINIMUM.
- MAIN CIRCUIT BREAKER SHALL BE 200 AMPERES OR AS INDICATED ON THE DRAWINGS AND HAVE A SHORT CIRCUIT RATING OF 22,000 ACI MINIMUM. THE MAIN BREAKER SHALL NOT BE INSTALLED SO AS TO BACKFEED THE PANEL BUS.
- PANEL SHALL HAVE A NUMBER OF BRANCH CIRCUITS AS INDICATED ON THE DRAWINGS. THE MAIN BREAKER SHALL NOT USE ANY OF THESE SPACES.
- BRANCH CIRCUIT BREAKERS SHALL BE PLUG-IN OR BOLT-ON TYPE.
- BRANCH CIRCUIT BREAKERS SHALL HAVE A MINIMUM RATING OF 10,000 ACI.
- TANDEM BRANCH CIRCUIT BREAKERS ARE NOT PERMITTED.
- PANEL ENCLOSURE SHALL BE NEMA 1 FOR INTERIOR APPLICATIONS OR NEMA 3R FOR EXTERIOR APPLICATIONS OR AS INDICATED ON THE DRAWINGS.
- DO NOT INSTALL PANEL UPSIDE DOWN.
- WHERE A PANELBOARD IS INSTALLED, AN EXTERNAL SURGE PROTECTION DEVICE MUST ALSO BE INSTALLED ADEQUATELY AND CONNECTED TO THE LOADS.
- QUALITY PRODUCT CIRCUIT BREAKERS ARE NOT PERMITTED.
- BRANCH CIRCUIT SPACES SHALL HAVE PANEL MANUFACTURER'S BLANK SPACE INSERTS INSTALLED.
- ALL PANEL DIRECTORIES SHALL BE TYPED/WRITTEN, NOT HANDWRITTEN.
- PANEL DIRECTORIES SHALL BE UPDATED TO ACCURATELY REFLECT THE FINAL CIRCUITING.
- ALL UNUSED CIRCUIT BREAKERS SHALL BE SWITCHED OFF AND LABELED "SPARE".

EXTERNALLY MOUNTED SURGE PROTECTION DEVICES

- RATED FOR THE INTENDED APPLICATION AND AS INDICATED ON THE DRAWINGS: 120/240V, SINGLE PHASE, OR 120/208V, SINGLE PHASE, OR 120/208V, THREE PHASE, OR 480/277V, SINGLE PHASE OR 480/277V, THREE PHASE.
- RATED FOR 100KA PEAK SURGE CURRENT PER PHASE.
- INDICATOR LEDS FOR NORMAL AND FAULT CONDITION FOR EACH PHASE.
- U.L. LISTED 1449.
- ENCLOSURE SHALL BE INTERIOR APPLICATIONS, NEMA 1. EXTERIOR APPLICATIONS: NEMA 3R OR NEMA 4X STAINLESS STEEL.

POWER PROTECTION CABINET (PPC)

- RATED FOR USE AT 120/240V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, SINGLE PHASE, THREE WIRE PLUS GROUND OR 120/208V, THREE PHASE, FOUR WIRE PLUS GROUND AS REQUIRED FOR THE INTENDED APPLICATION OR AS INDICATED ON THE DRAWINGS.
- ALUMINUM OR COPPER BUS, RATED FOR 200 AMPERES OR AS INDICATED ON THE DRAWINGS, AND HAVE A SHORT CIRCUIT WITHSTAND RATING OF 22,000 ACI MINIMUM.
- TWO MAIN CIRCUIT BREAKERS MECHANICALLY INTERLOCKED, THAT ACT AS A MANUAL TRANSFER SWITCH, BREAK BEFORE MAKE, ALLOW FOR A NORMAL AND PORTABLE GENERATOR STANDBY FEEDS, MAIN BREAKER SHALL BE 200 AMPERES AND HAVE A SHORT CIRCUIT RATING OF 22,000 ACI MINIMUM. CONTRACTOR SHALL ENSURE THAT THE MECHANICAL INTERLOCK HAS BEEN INSTALLED.
- INTERNAL PANEL SHALL HAVE A MINIMUM OF 24 BRANCH CIRCUITS AVAILABLE.
- BRANCH CIRCUIT BREAKERS SHALL BE PLUG-IN OR BOLT-ON.
- BRANCH CIRCUIT BREAKERS SHALL HAVE A MINIMUM RATING OF 10,000 ACI.
- TANDEM BRANCH CIRCUIT BREAKERS ARE NOT PERMITTED.
- CLASSIFIED PRODUCT BRANCH CIRCUIT BREAKERS ARE NOT PERMITTED.
- FURNISHED WITH INTERNAL, FACTORY INSTALLED, INTEGRATED SURGE SUPPRESSION.
- FINISHED WITH STANDBY GENERATOR INLET (RECEPTACLE), REVERSE SERVICE RATED, VOLTAGE AND AMPERAGE AS INDICATED ON THE DRAWINGS. GENERATOR RECEPTACLE SHALL BE FACTORY INSTALLED ON SIDE OF PPC UNLESS SHOWN AS REMOTE MOUNTED ON THE DRAWINGS.
- UNUSED BRANCH CIRCUIT BREAKERS SHALL HAVE PANEL MANUFACTURER'S BLANK SPACE INSERTS INSTALLED.
- ENCLOSURE SHALL BE NEMA 1 FOR INTERIOR APPLICATIONS OR NEMA 3R FOR EXTERIOR APPLICATIONS OR AS INDICATED ON THE DRAWINGS.
- IF AN EXISTING PPC IS MISSING THE MECHANICAL INTERLOCK, THE CONTRACTOR SHALL FURNISH AND RETAIL THE CORRECT FACTORY MECHANICAL INTERLOCK ON THE MAIN CIRCUIT BREAKERS.
- ALL PANEL DIRECTORIES SHALL BE TYPED/WRITTEN, NOT HANDWRITTEN.
- PANEL DIRECTORIES SHALL BE UPDATED TO ACCURATELY REFLECT THE FINAL CIRCUITING.
- ALL UNUSED CIRCUIT BREAKERS SHALL BE SWITCHED OFF AND LABELED "SPARE".

EXTERIOR COMBINATION GFCI/SWITCH UNIT

- WEATHERPROOF EQUIPMENT WHICH INCLUDES A 120V, 20A GFCI RECEPTACLE AND A 120V, 20A TOGGLE SWITCH.
- "H"-USE COVER, CORROSION RESISTANT, GALVANIZED STEEL ENCLOSURE.
- GFCI RECEPTACLE AND LIGHT SWITCH SHALL BE WIRED ON SEPARATE CIRCUITS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- GE-# U10105101GRP OR APPROVED EQUAL.



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SCHEDULE OF REVISIONS

NO.	DATE	DESCRIPTION OF CHANGES
1	01-07-2022	NEW CANISTER DESIGN
2	11-17-2021	ZONING COMMENTS
3	11-05-2021	ISSUED FOR CONSTRUCTION
REV NO.	DATE	DESCRIPTION OF CHANGES
DRAWN BY:	EDZ	
CHECKED BY:	MRL	
SCALE:	NOTED	
JOB NO.:	19E047.001	

ELECTRICAL NOTES

E-2

**FRALEY FAMILY - ROCKVILLE
7WAN162B
17800 BOWIE MILL ROAD
DERWOOD, MARYLAND 28055**

SHEET NO. 13 OF 13



ANDREW M. MILLER, P.E.
"PROFESSIONAL CERTIFICATION I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41487, EXPIRATION DATE 01-01-2027"

APPROVED

Montgomery County
Historic Preservation Commission

REVIEWED
By Michael Kyne at 3:13 pm, Feb 18, 2022



REVIEWED

By Michael Kyne at 3:12 pm, Feb 18, 2022

APPROVED

Montgomery County

Historic Preservation Commission

Robert H. [Signature]