STAFF REPORT 10-9-2019 MEETING **PREPARED BY**: J. ROSS
APPLICATION NUMBER 19-6495
ADDRESS: 4440 E. CANFIELD
HISTORIC DISTRICT: SWEETEST HEART OF MARY
APPLICANT: TJ GARRETT
DATE OF COMPLETE APPLICATION: 8/30/2019
DATE OF STAFF SITE VISIT: 10/1/2019

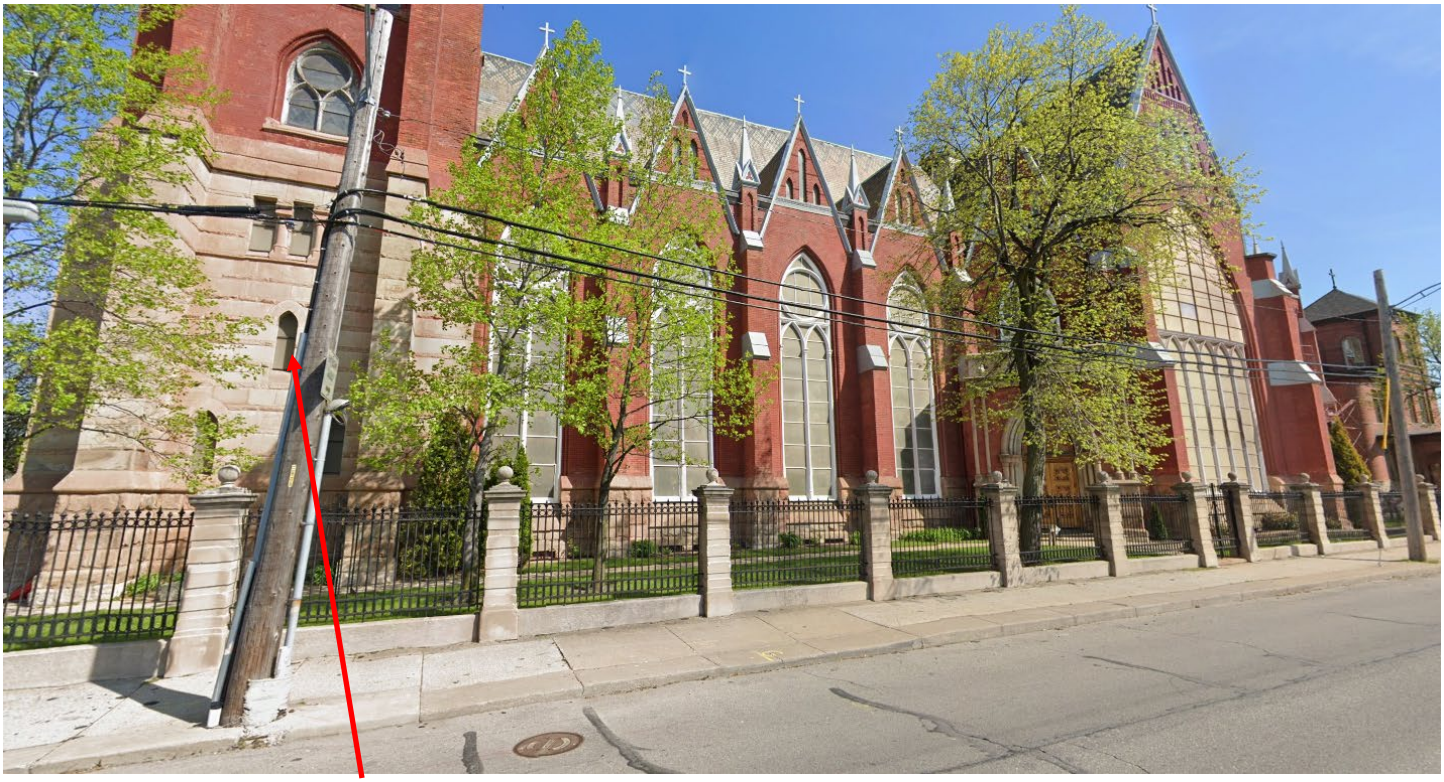
SCOPE: INSTALL NEW CELLPHONE EQUIPMENT/VENTS AT TOWER

EXISTING CONDITIONS

As per the Detroit Historic Designation Advisory Board:

> Sweetest Heart of Mary is a typical cruciform plan church built of painted red brick with stone trim and a patterned slate roof. The main west facade is distinguished by a stone base topped by a quatrefoil frieze over the main portal and twin buttressed towers surmounted by octagonal spires. Sweetest Heart's 217 spires house three large bells, cast in St. Louis in 1889 to be placed in the bell tower of the school. A smaller spire marks the intersection of the nave with the transept. Several motifs unify the composition of the edifice: alternating patterns of pinnacles and decorated gables define the bases of the main spires; the gable ornamentation, consisting primarily of blind serrated lancets, is repeated on the four larger gables which mark the ends of the nave and transepts: the pointed gable shape is echoed not only on the spires and the roof, but also on the side buttressing and above all of the portals; lancet windows fenestrate the towers, the gables, and the main three-portal facade; and circles dominate the tracery of the tower windows and the smaller windows of the north and south facades. Gables, pinnacled buttresses, and angled side entrances provide the nave facades with a multiplicity of line and form. Much of this detailing derives from northern European precedents; the combination a French front and a German nave reflects the late Victorian propensity towards the use of a multiplicity of forms.

4440 E. Canfield, current conditions



The lower pane of this window will be removed and replaced with new louvers

PROPOSAL

The project involves the installation of new cellphone equipment within the building's southwest tower. The majority of the work associated with this project will be undertaken within the building's interior space/within the portion of the building which is not covered under the building's interior designation. However, one element of the project involves the replacement of one exterior window. Specifically, the exterior work item associated with this project includes the following:

- At the north elevation, second story window at the tower, remove the lower light from the sash in install. replaced with (2) 13"x22" intake and exhaust louvers. Louver color to match beige stonework (Greenheck manufacturer, color: sierra tan/ color code: GF118)

STAFF OBSERVATIONS AND RESEARCH

- The air exhaust and intake vents are proposed for installation are necessary in order to maintain proper air flow and temperature control for the new equipment
- The window pane proposed for replacement is an opaque glass and is likely not original/historic age
- It is staff's opinion that the new louvers will be minimally visible and will not detract from the building's historic appearance

ISSUES

- None

RECOMMENDATION

As noted aboe, it is HDC staff''s opinion that the new louvers will be minimally visible and will not detract from the building's historic appearance. HDC staff therefore recommeds that the Commission issue a Certificate of Appropriateness for the work as proposed because it meets the Secretary of the Interior's Standards for Rehabilitation, standard #9) *New additions, exterior alterations, or related new construction*

shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

SWEETEST HEART OF MARY CATHOLIC CHURCH

T-Mobile site DE04229B

4440 E Canfield Street, d/b/a 4440 Russell Street
Detroit, Michigan 48207
(Landtech #18323064)

Panoramic view of the church from the south side of Canfield Street.

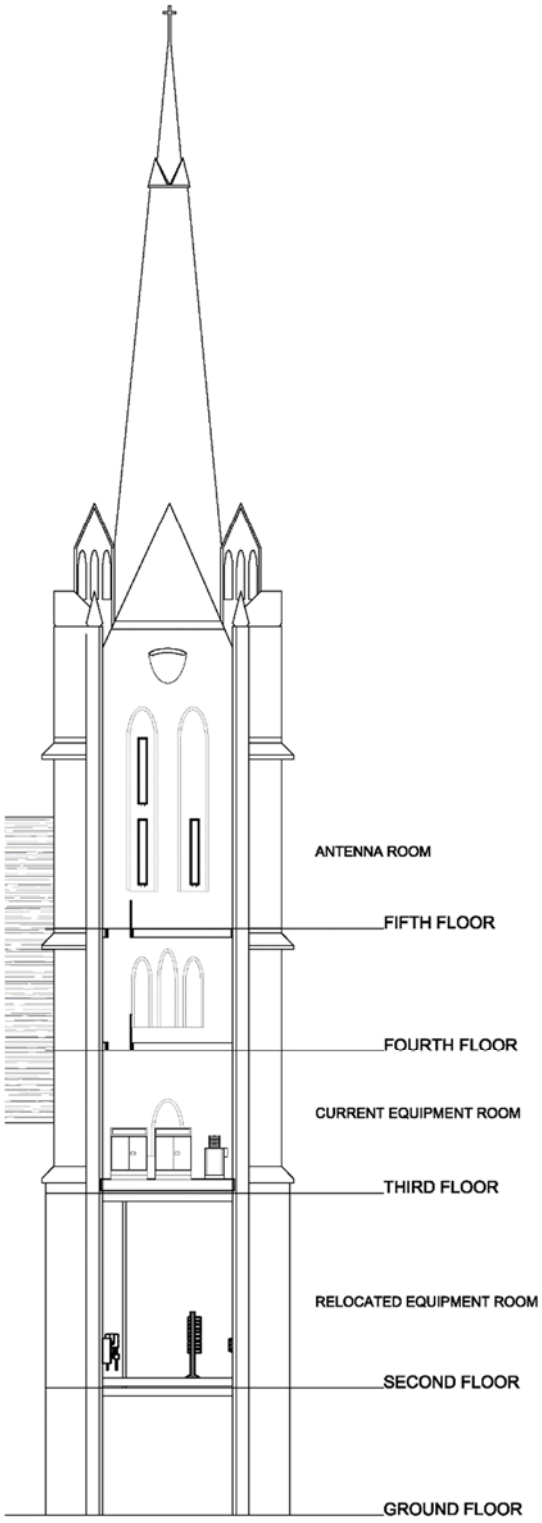
Background

The Sweetest Heart of Mary Catholic church was built in 1893. In 2004 T-Mobile installed their equipment in the south steeple of the church. Antennas are mounted in the open window bays on the fifth floor of the south steeple. The auxiliary T-Mobile telecom equipment are housed on the third floor of the south steeple.

Over time water seeped inside both steeples. Water entered the fifth, fourth, and thirds floors of the south steeple. The water has affected T-Mobile's equipment and operations. As the parish began structural repairs to both steeples, T-Mobile and the church agreed to move the auxiliary equipment from the third to second floor of the south steeple. (The second floor of the steeple did not suffer any water damage.) The following outlines design requirements necessary to relocate T-Mobile's equipment.

Design Requirement Outline

- Structural Design – Provide structural support for new equipment on second floor.
- HVAC – Air exhaust and Intake to maintain proper air flow and temperature control for equipment
- Electric – Provide electric service to T-Mobile equipment
- Fiber Optic – Provide fiber optic service to T-Mobile equipment
- Sound Level – Install low noise AirScale equipment so not to disturb the congregation.
- Grounding – Ground new equipment.

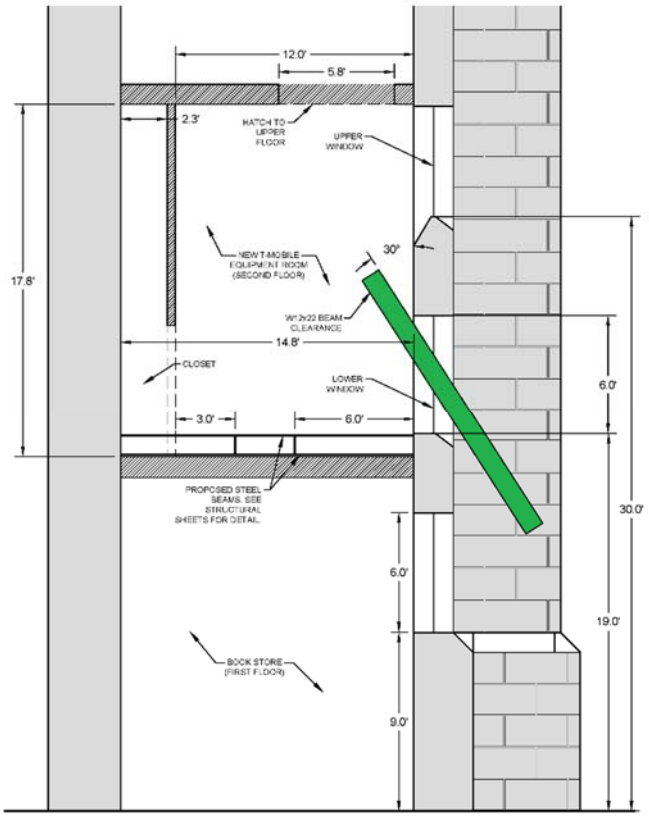


Structural Design

Provide structural support for new equipment on second floor.

- Bolt steel beams into masonry walls of steeple to suspend galvanized steel platform over wood flooring.
  - Lower window on the 2nd floor steeple room to be removed temporarily.
  - Beams to be hoisted into 2nd floor room through lower window on south wall of steeple (right)
  - W10 beam required to penetrate non-load bearing closet wall (see "PROPOSED EQUIPMENT ROOM" sheet 2 of 2 from site sketch) to tie into structural wall.
  - Organ air pump & ductwork will not be affected with installation. Platform has been designed around air pump.

Note: lower windowpane replacement to be discussed under HVAC.



HVAC

Air exhaust and intake to maintain proper air flow and temperature control for equipment

- Replace lower windowpane with intake and exhaust louvers.

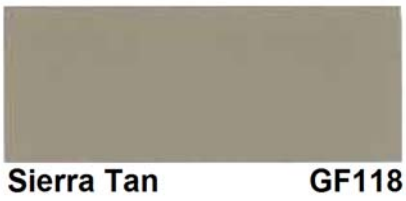
o Upper Windows are stained glass and are not to be touched or affected by the relocation. (see left)

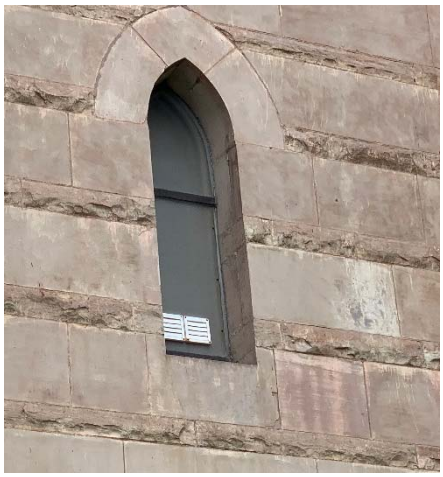
o Lower Window (to be replaced) has opaque glass (see left).

o From the street outside the window appears milky white against a light beige stone (below)

HVAC (cont.)

- Normally there are no lights turned on in the proposed emits through the upper or lower windows outside.
- New ductwork to be installed overhead and suspended from overhead ceiling with Unistrut and hanging spring isoloators.
- Lower window glass to be replaced with (2) 13”x22” intake and exhaust louvers. Louver color to match beige stonework (Greenheck manufacturer, color: sierra tan/ color code: GF118.)
- Proposed louver color match building color/style better than existing louver in the same window symmetrical to the proposed window exhaust on the north steeple (right) and above the North facing Rose Window (below).
- Exhaust fan rated at 6.4 Sones (approx. 55 dB)





Electric

Provide electric service to T-Mobile equipment

- Existing 200A service on 3rd floor to be relocated to 2nd floor, including: 200A Tap Box & 50 KVA stepdown transformer (right). Existing disconnect and meter to remain. Existing Power from disconnect runs up access (ladder) room from 2nd to 3rd floor. Power to be rerouted through existing conduit to 2nd floor room. All utility equipment to be installed in existing closet.

Fiber Optic

Provide fiber optic service to T-Mobile equipment

- Existing Ciena Fiber demarcation box to be relocated with Electric equipment in closet of 2nd floor. Fiber to follow similar path with power conduit rerouted from 3rd floor to 2nd floor.

Sound Level

Install low noise AirScale equipment so not to disturb the congregation.

- All new T-Mobile equipment to be installed shall be 5G AirScale equipment (or newer) from Nokia. Nokia equipment to be installed on Equipment FIF racks. Due to the organ air intake located in the new equipment room, all equipment is rated at or below 65 dB.

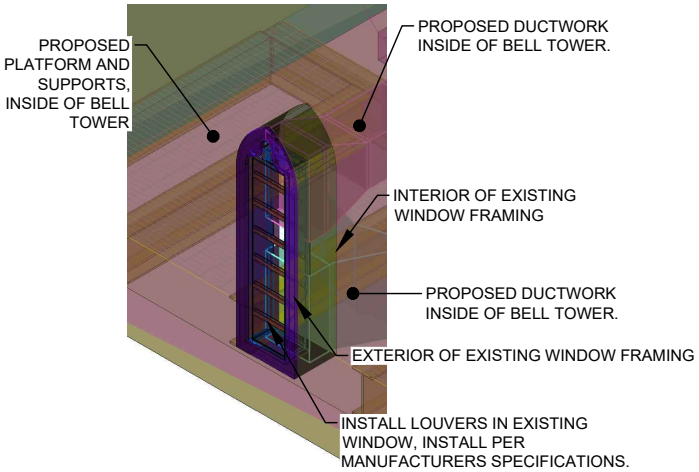
Grounding

- All Equipment shall be grounded to a master ground bar on the 2nd floor. The master ground bar shall be grounded to the existing building ground on the 3rd floor following the conduit chase up in the 3RD floor access (ladder) room.

SITE SKETCH

EXISTING WINDOW

EXISTING WINDOW LOCATION



PROPOSED LOUVERS

N

T-Mobile

28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150

PAGE 1 OF 2

SITE NAME:
SWEETEST HEART OF MARY
SITE NUMBER:
DE04229B
STREET ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

REV	DESCRIPTION	BY	DATE
0	PRELIMINARY	CDR	08/20/19

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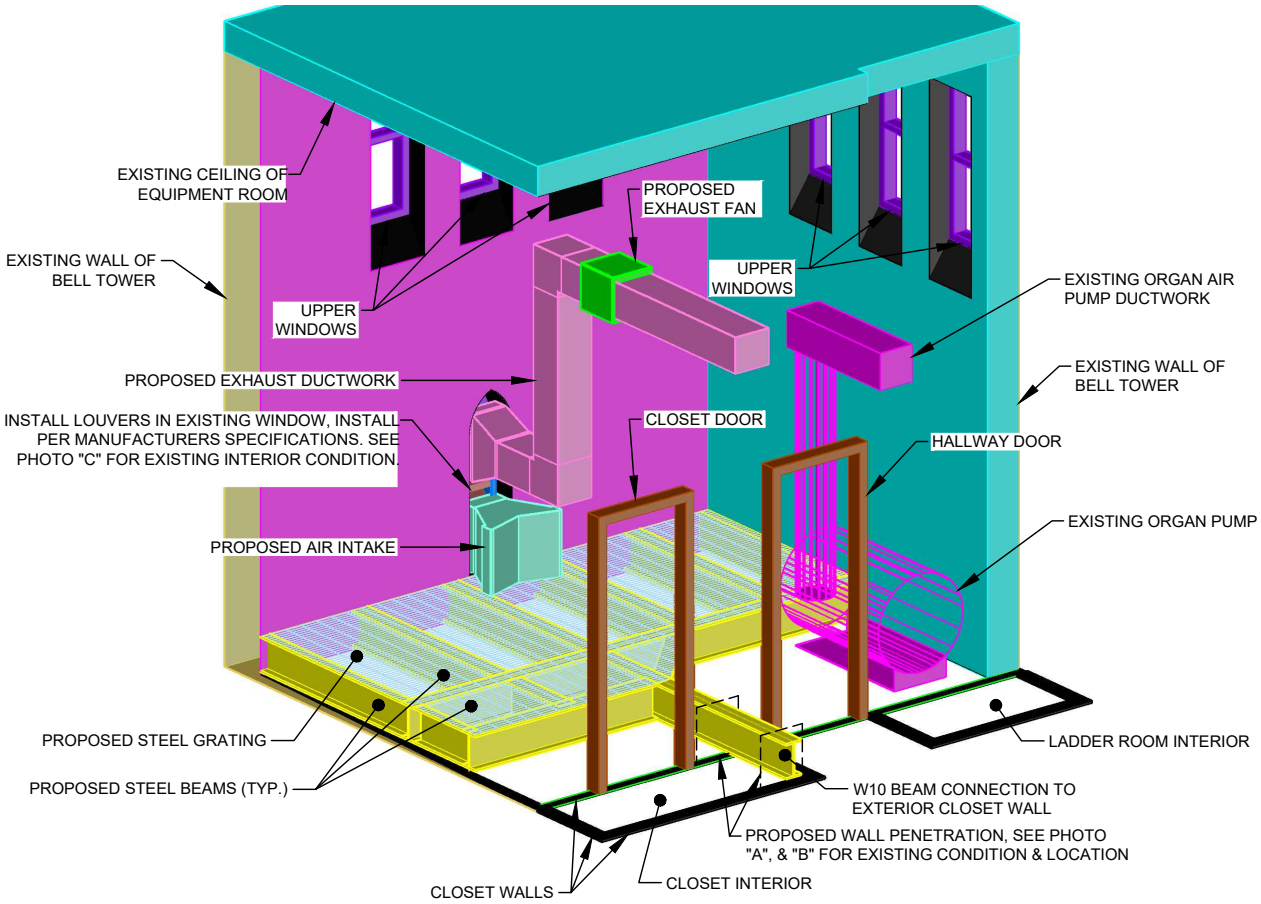
PROJECT NUMBER: 18323064

SITE SKETCH



PROPOSED EQUIPMENT ROOM

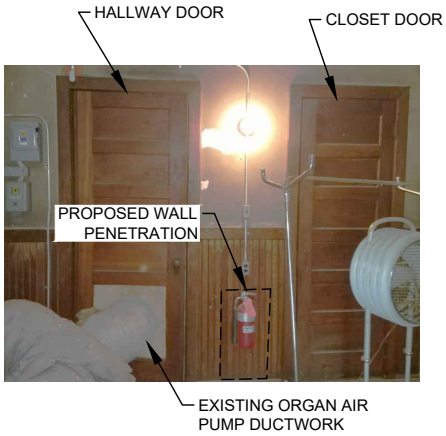


PHOTO "A"

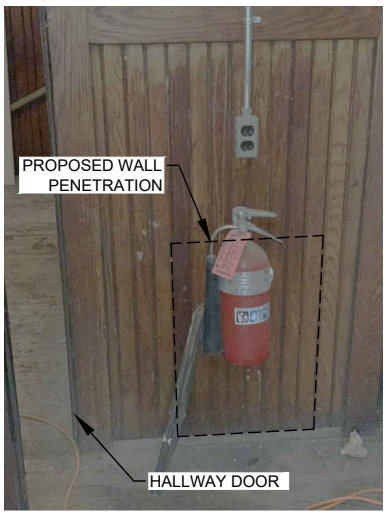


PHOTO "B"

PHOTO "C"

T-Mobile

28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150

PAGE 2 OF 2

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2018 RELOCATION

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DE04229B

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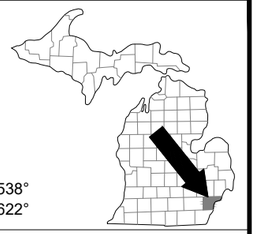
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.

DETROIT, MICHIGAN 48207

FROM T-MOBILE OFFICE HEAD NORTH ON MERRIMAN ROAD TO I-96; TURN EAST ON I-96 AND CONTINUE TO I-75; TURN SOUTH ON I-75 AND PROCEED TO WARREN AVENUE; TURN EAST ON WARREN AVENUE AND CONTINUE TO RUSSELL STREET; TURN SOUTH ON RUSSELL STREET AND PROCEED TO CANFIELD STREET; SITE IS LOCATED AT THE NORTHEAST CORNER OF RUSSELL STREET AND CANFIELD STREET.

DRIVING DIRECTIONS



LATITUDE: 42.35805538°
LONGITUDE: -83.0480622°

FAA INFORMATION

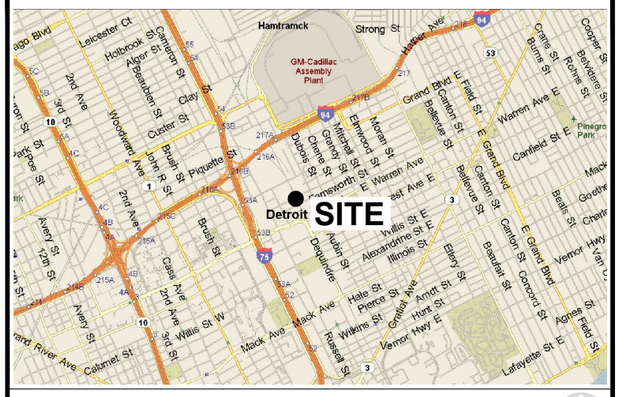
THE UTILITIES SHOWN ON THESE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. OTHER UTILITIES THAT ARE NOT SHOWN MAY BE PRESENT AT THE SITE. LANDTECH ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF THE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

THIS SEAL CERTIFIES ONLY THE CIVIL ENGINEERING DESIGN AND RELATED DETAILS SHOWN ON THESE PLANS. THIS SEAL DOES NOT CERTIFY ANY ARCHITECTURAL, ELECTRICAL, MECHANICAL, STRUCTURAL DESIGN, AND RELATED DETAILS INCLUDED IN THESE PLANS.

UTILITY NOTICE

SHEET	DESCRIPTION
T-1	TITLE SHEET
C-1	SITE PLAN
C-1.1	SITE PLAN
C-2	EQUIPMENT ROOM
C-2.1	FLOOR PLANS
C-3	EXISTING ANTENNA PLAN
C-4	PROPOSED ANTENNA PLAN
C-5	ELEVATION VIEW
C-5.1	PICTORIAL VIEWS
C-5.2	PICTORIAL VIEWS
C-6	EQUIPMENT DETAILS
C-6.1	EQUIPMENT DETAILS
C-6.2	ANTENNA DETAILS
C-6.3	MOUNTING DETAILS
SK-1	PLATFORM STRUCTURAL PLAN
SK-2	ANTENNA STRUCTURAL DETAIL
SK-3	PLATFORM STRUCTURAL DETAIL
E-1	CONDUIT CABLE SCHEMATIC
E-1.1	CABLE DETAILS
E-1.2	ELECTRIC DETAILS
E-2	ONE-LINE DIAGRAM
E-3	GROUNDING PLAN
E-3.1	GROUNDING DETAILS
E-3.2	GROUNDING SCHEMATIC
M-1	HVAC DETAILS
M-1.1	HVAC GENERAL NOTES
M-1.2	EXHAUST FAN & LOUVER SCHEDULE
N-1	GENERAL NOTES
N-2	GENERAL NOTES

SHEET INDEX



LOCATION MAP

TITLE	NAME	DATE
OPERATIONS		
RF ENGINEER		
ZONING ADMINISTRATOR		
CONSTRUCTION MANAGER		
POWER APPROVAL		
FIBER/AAV APPROVAL		

T-MOBILE APPROVALS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES:

1. 2015 MICHIGAN BUILDING CODE
2. 2015 MICHIGAN MECHANICAL CODE
3. ANSI / TIA-222-H
4. NATIONAL ELECTRIC CODE 2017
5. LOCAL BUILDING CODE
6. CITY/COUNTY ORDINANCES
7. 2015 MICHIGAN PLUMBING CODE
8. INTERNATIONAL FIRE CODE
9. 2015 MICHIGAN UNIFORM ENERGY CODE
10. MIOSHA RULES AND REGULATIONS
11. NFPA-101 LIFE SAFETY CODE

CITY OF DETROIT HAD ADOPTED MICHIGAN BUILDING CODE 2015 AND MICHIGAN REHABILITION, PL FOLLOW.

USE GROUP: A-3
CONSTRUCTION TYPE: A-1

CODE COMPLIANCE

APPLICANT/LESSEE

NAME: T-MOBILE
ADDRESS: 28505 SCHOOLCRAFT ROAD, BLDG #6
LIVONIA, MI 48150
CONTACT: KEN KALOUSEK
PHONE: (734) 444-0181

PROPERTY INFORMATION

PROPERTY OWNER: CATHOLIC ARCHDIOCESE OF DETROIT
ADDRESS 12 STATE STREET,
DETROIT, MI 48226

CONTACT:
PHONE:

AREA OF CONSTRUCTION: 165 SQ. FT.
PRESENT OCCUPANCY TYPE: ASSEMBLY
PROPOSED OCCUPANCY TYPE: ASSEMBLY
CURRENT ZONING:
PARCEL NUMBER: WARD 7, ITEM 001241
HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

CIVIL ENGINEER & SURVEYOR:

NAME LANDTECH PROFESSIONAL SURVEYING & ENGINEERING
ADDRESS 1275 McGREGOR WAY
GRAWN, MI 49637
CONTACT: MATTHEW MOKANYK, P.S., P.E.
PHONE: (231) 943-0050

PROJECT SUMMARY

ATTENTION GC:
THESE DRAWINGS ARE PREPARED BASED ON RFDS DATED: 3/26/18

GENERAL CONTRACTOR TO CHECK WITH CONSTRUCTION TO VERIFY THAT THE RFDS IS CORRECT.

RFDS DESIGN

SIGNATURE DATE

PRINTED NAME

☐ NO CHANGES ☐ CHANGES NEEDED SEE COMMENTS

LESSOR APPROVAL

811 Know what's below. Call before you dig.

T-Mobile
28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
Phone: 734.367.7200
Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.

STATE OF MICHIGAN
MATTHEW J MOKANYK
ENGINEER
NO. 51424
LICENSED PROFESSIONAL ENGINEER

LANDTECH
Professional Surveying & Engineering
231.943.0050 www.landtechps.com 877.520.LAND

SITE #: DE04229B
SITE NAME: SWEETEST HEART OF MARY
SITE ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

Sheet Title: TITLE SHEET

Sheet Number: T-1

CATCH BASIN	IRON PIPE
SQUARE CATCH BASIN	CONTROL IRON L.T.
SANITARY MANHOLE	IRON FOUND
TELCO. MANHOLE	IRON SET
ELECTRIC METER	P.K. NAIL FOUND
LIGHT POLE	P.K. NAIL SET
STORM MANHOLE	NAIL LANDTECH
WATER VALVE	MONUMENT FOUND
GAS METER	RECORD
GAS VALVE	MEASURED
HYDRANT	FIBER PEDESTAL
TRANSFORMER	FIBER VAULT
GAS MANHOLE	POWER POLE
BENCHMARK	GUY
OT	O/H TELCO
UT	U/G TELCO
OE	O/H ELEC
UE	U/G ELEC
W	WATER
G	GAS
F	FIBER
X	FENCE

LEGEND

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA.

SCALE: 1"=20'

0 20' 40'

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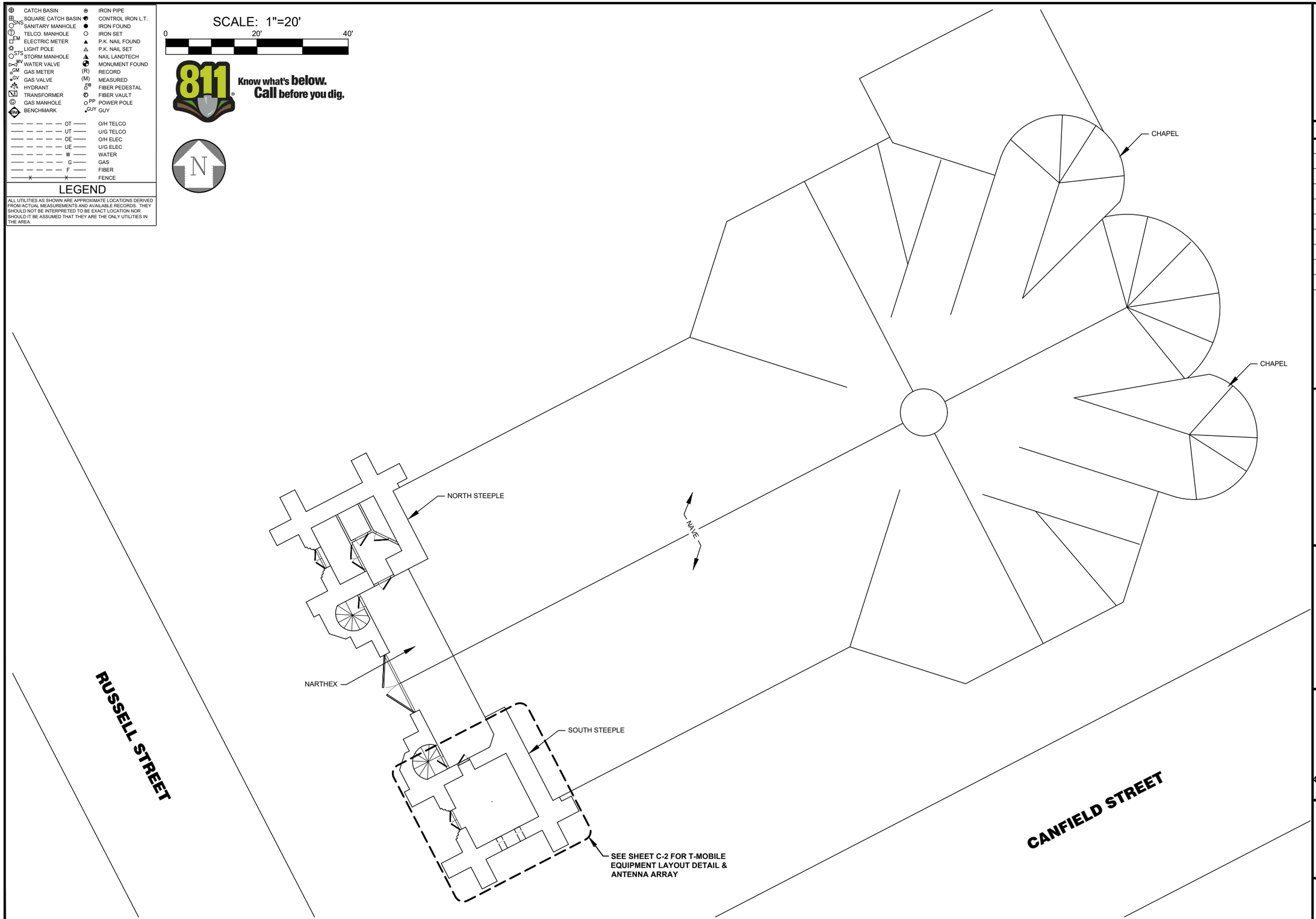
N



SITE PLAN 1"-20' | **1**

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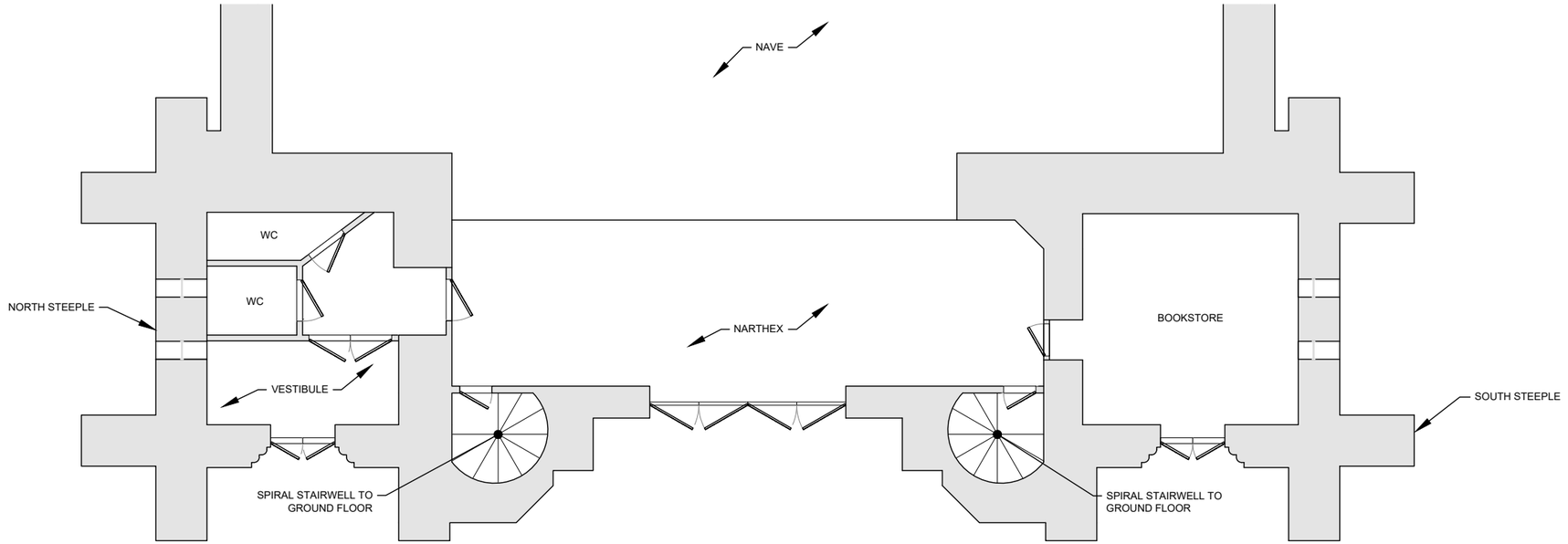
SITE PLAN

Sheet Number:
C-1



GROUND FLOOR 1"=10' — 1

CATCH BASIN		IRON PIPE	
SQUARE CATCH BASIN		CONTROL IRON L.T.	
SANITARY MANHOLE	SNS	IRON FOUND	
TELCO. MANHOLE	T	IRON SET	
ELECTRIC METER	EM	P.K. NAIL FOUND	
LIGHT POLE		P.K. NAIL SET	
STORM MANHOLE	STS	NAIL LANDTECH	
WATER VALVE	WV	MONUMENT FOUND	
GAS METER	GM	(R) RECORD	
GAS VALVE	GV	(M) MEASURED	
HYDRANT		FIBER PEDESTAL	FP
TRANSFORMER	T	FIBER VAULT	
GAS MANHOLE	G	POWER POLE	PP
BENCHMARK	BM	GUY	GUY
	OT	O/H TELCO	
	UT	U/G TELCO	
	OE	O/H ELEC	
	UE	U/G ELEC	
	W	WATER	
	G	GAS	
	F	FIBER	
X	X	FENCE	

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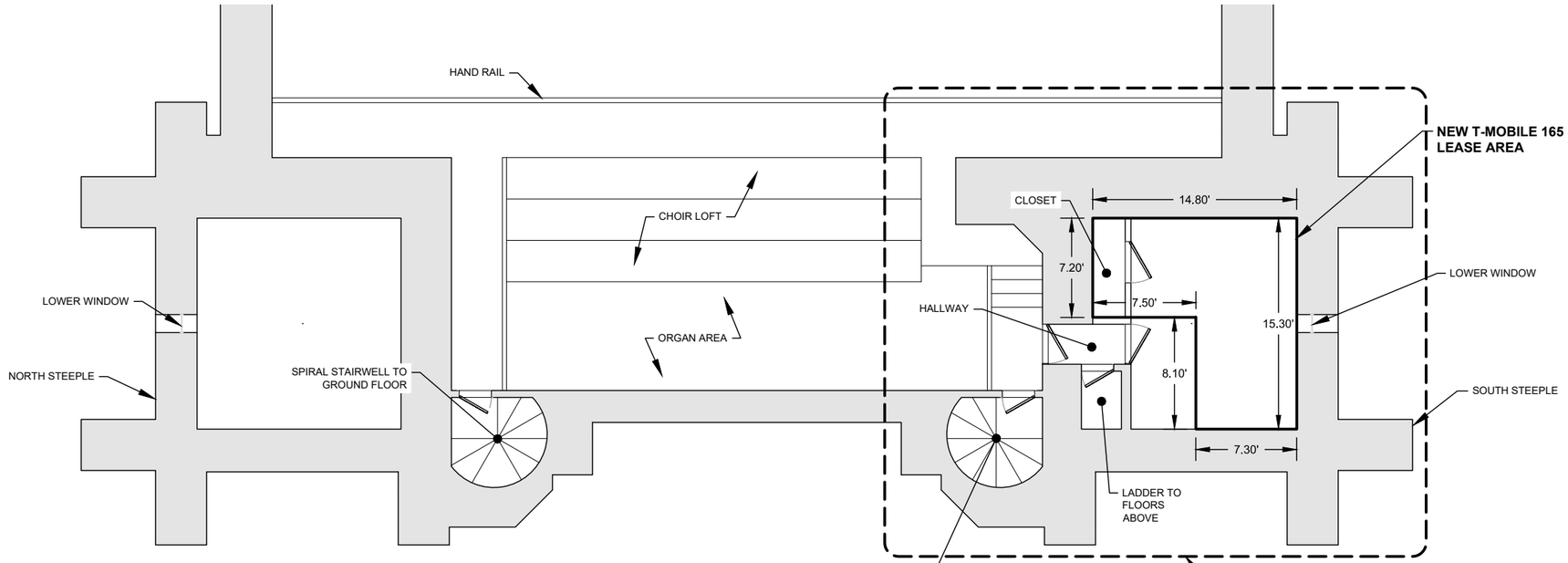

SECOND FLOOR LOFT AND STEEPLE PLAN 1"=10' — 1

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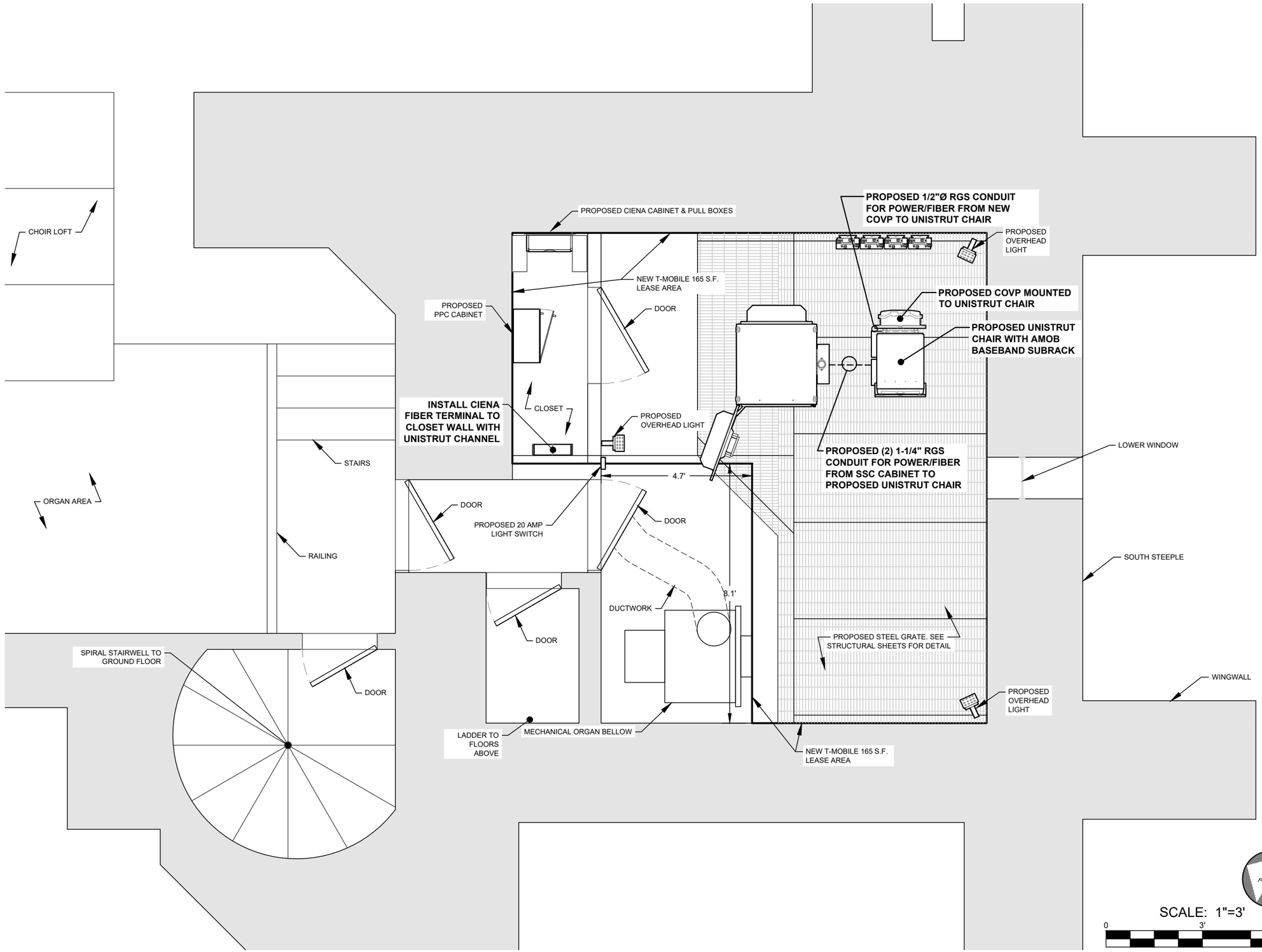
Sheet Title: SITE PLAN

Sheet Number: C-1.1



2nd FLOOR SOUTH STEEPLE NEW EQUIPMENT ROOM 1"=3' | **1**

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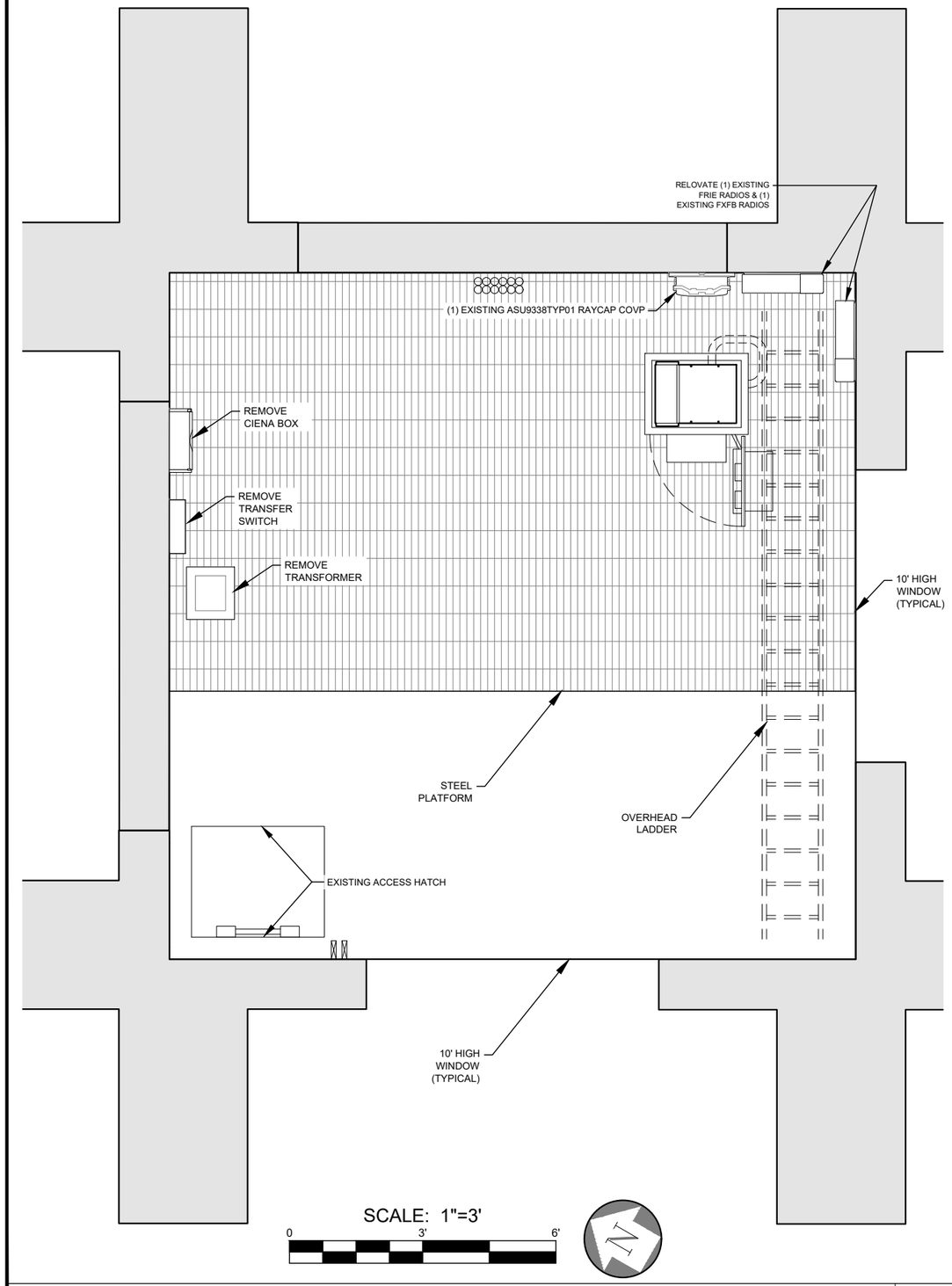
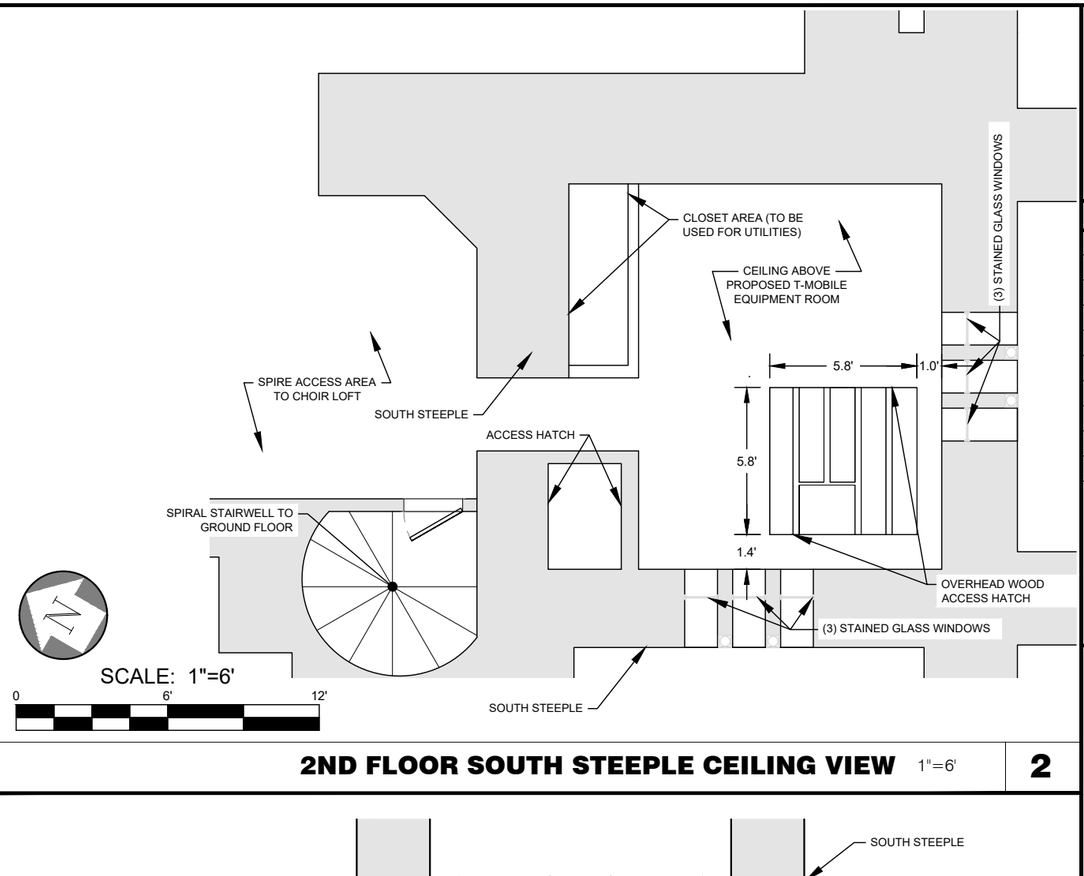
DETROIT, MICHIGAN 48207

Sheet Title:
EQUIPMENT ROOM

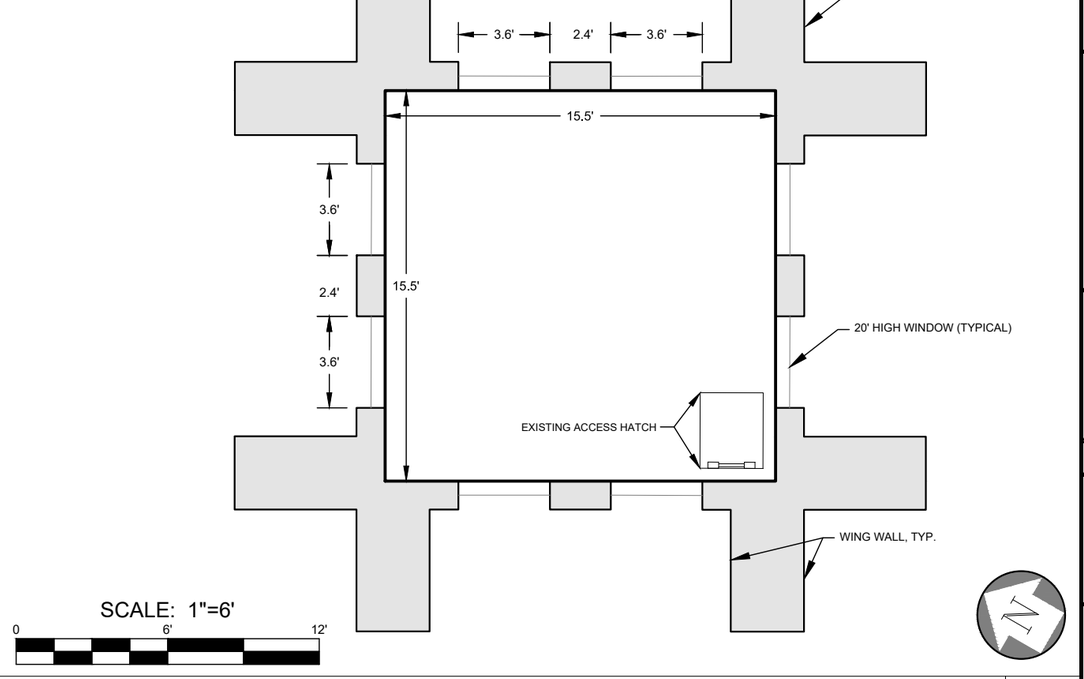
Sheet Number:
C-2



3rd FL. SOUTH STEEPLE - OLD EQUIPMENT ROOM DEMO PLAN 1"=3' | 1



2ND FLOOR SOUTH STEEPLE CEILING VIEW 1"=6' | 2



5th FLOOR SOUTH STEEPLE - ANTENNA ROOM 1"=6' | 3

T-Mobile
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LIVONIA, MICHIGAN 48150
Phone: 734.367.7200
Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.

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SITE #: DE04229B
SITE NAME: SWEETEST HEART OF MARY
SITE ADDRESS:
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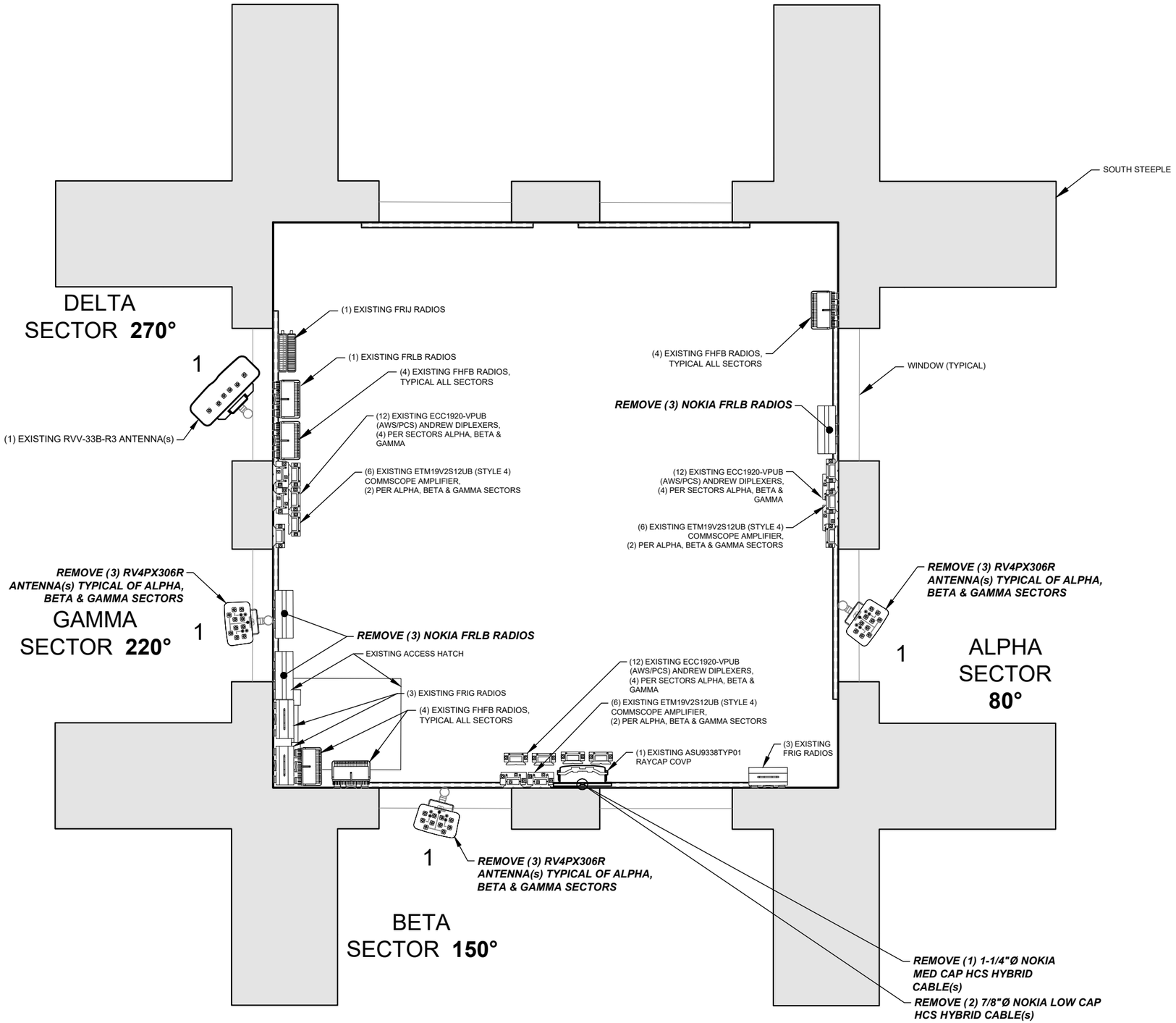
DETROIT, MICHIGAN 48207

Sheet Title: FLOOR PLANS

Sheet Number: C-2.1

NOTE: ANTENNA AND RADIO LAYOUT AS OBSERVED DURING SITE VISIT DOES NOT MATCH RFDS PROVIDED BY T-MOBILE. FIELD VISIT DATA SHOWN HEREON.



EXISTING ANTENNA PLAN N.T.S. | **1**

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Sheet Title:
EXISTING ANTENNA PLAN

Sheet Number:
C-3

ANTENNA SCHEDULE							
SECTOR	ALPHA		BETA		GAMMA		DELTA
ANTENNA POSITION	A-1	A-2	B-1	B-2	C-1	C-2	D-1
AZIMUTH	80°	80°	150°	150°	220°	220°	270°
RAD CENTER (AGL)	110'	110'	110'	110'	110'	110'	110'
MODEL	TMBXX-6517-R2M	FFHH-65C-R3	TMBXX-6517-R2M	FFHH-65C-R3	TMBXX-6517-R2M	FFHH-65C-R3	RVV-33B-R3
FEEDER LENGTH	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"

APPURTENANCE LIST
EXISTING

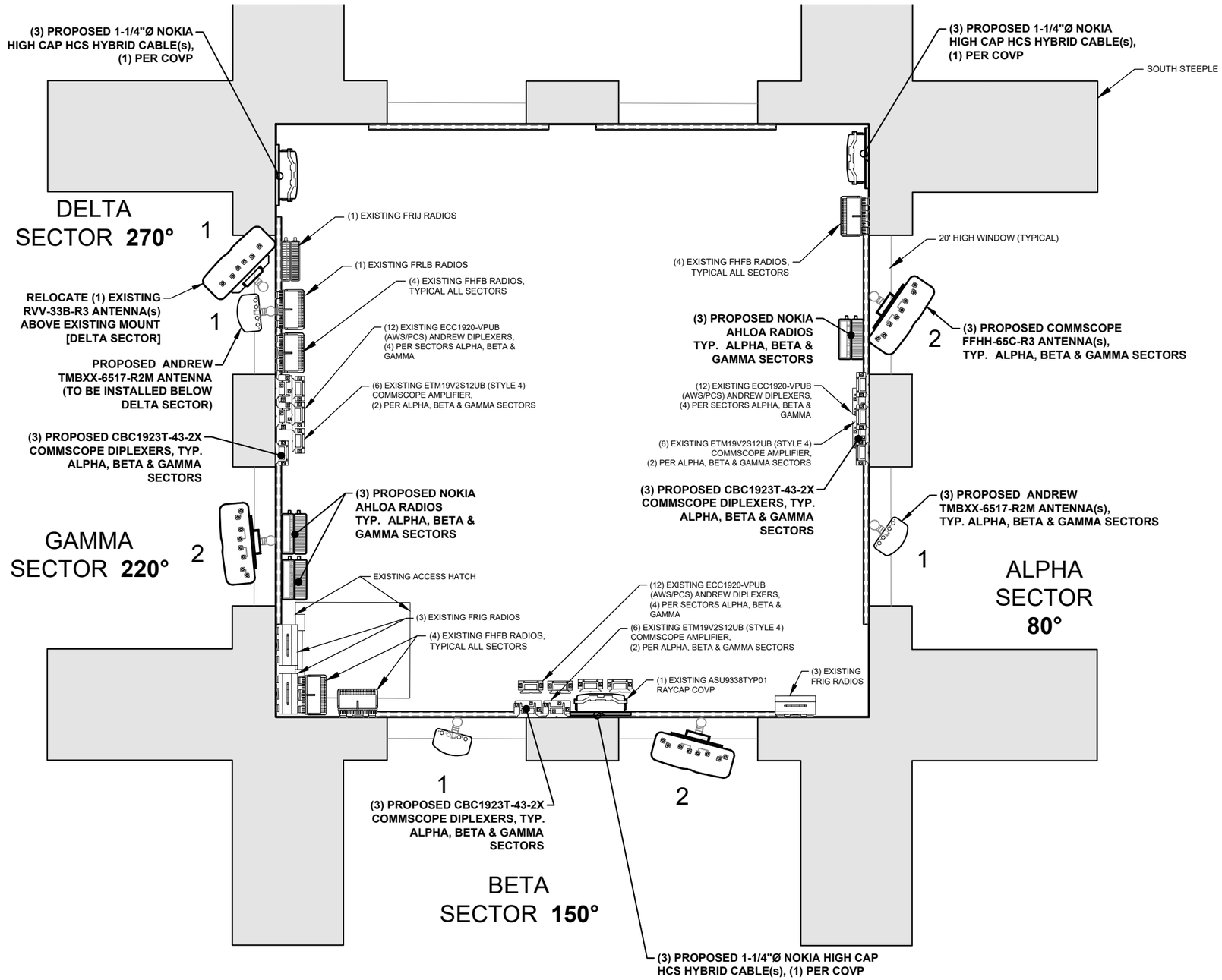
(1) COMMSCOPE RVV-33B-R3 ANTENNA(s)
[72"l x25.2"w x9.3"d 94.8lb(s)]
(1) NOKIA FRIE RADIOS (@PLATFORM)
[5.2"l x19.3"w x22"d 55.1lb(s)]
(1) NOKIA FXFB RADIOS (@PLATFORM)
[5.2"l x19.3"w x22"d 55.1lb(s)]
(3) NOKIA FRIG RADIOS (@SECTOR)
[18.9"l x 15.2"w x 6"d 57.32lb(s)]
(4) NOKIA FHFB RADIOS (@SECTOR)
[34.3"l x12.6"w x7.8"d 52.9lb(s)]
(1) NOKIA FRIJ RADIOS (@)
[23.1"l x12.6"w x5.8"d 44.1lb(s)]
(6) ETM19V2S12UB (STYLE 4) COMMSCOPE AMPLIFIER (@SECTOR)
[10"l x8"w x2.2"d 11lb(s)]
(1) ASU9338TYP01 RAYCAP COVP (@PLATFORM)
[20.38"l x18.86"w x5.83"d 19lb(s)]
(1) ASU9338TYP01 RAYCAP COVP (@SECTOR)
[20.38"l x18.86"w x5.83"d 19lb(s)]
(12) ECC1920-VPUB (AWS/PCS) ANDREW DIPLEXERS (@SECTOR)
[7.6"l x7.3"w x2.6"d 7.9lb(s)]
(6) ECC1920-VPUB (AWS/PCS) ANDREW DIPLEXERS (@PLATFORM)
[7.6"l x7.3"w x2.6"d 7.9lb(s)
(6) 7/8"Ø [1.03" OD] ANDREW LDF5-50A COAX CABLE(s)

REMOVING

(3) COMMSCOPE RV4PX306R ANTENNA(s)
[63"l x13.9"w x8.2"d 52.9lb(s)]
(3) NOKIA FRLB RADIOS (@)
[15.75"l x15.75"w x5.9"d 59.52lb(s)]
(1) 1-1/4"Ø [1-1/4"OD] NOKIA MED CAP HCS HYBRID CABLE(s)
(2) 7/8"Ø [7/8"OD] NOKIA LOW CAP HCS HYBRID CABLE(s)

INSTALLING

(3) ANDREW TMBXX-6517-R2M ANTENNA(s)
[82.9"l x11.9"w x6.3"d 44.4lb(s)]
(3) COMMSCOPE FFHH-65C-R3 ANTENNA(s)
[95.9"l x25.2"w x9.3"d 127.6lb(s)]
(3) NOKIA AHLOA RADIOS (@SECTOR)
[22.1"l x12.2"w x7.5"d 83.9lb(s)]
(3) CBC1923T-43-2X COMMSCOPE DIPLEXERS (@SECTOR)
[4.6"l x8.3"w x3.7"d 9.5lb(s)]
(2) ASU9338TYP01 RAYCAP COVP (@SECTOR)
[20.38"l x18.86"w x5.83"d 19lb(s)]
(3) 1-5/8"Ø [1-5/8"OD] **NOKIA HIGH CAP HCS HYBRID CABLE(s)**



PROPOSED ANTENNA PLAN N.T.S.

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LIVONIA, MICHIGAN 48150
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Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

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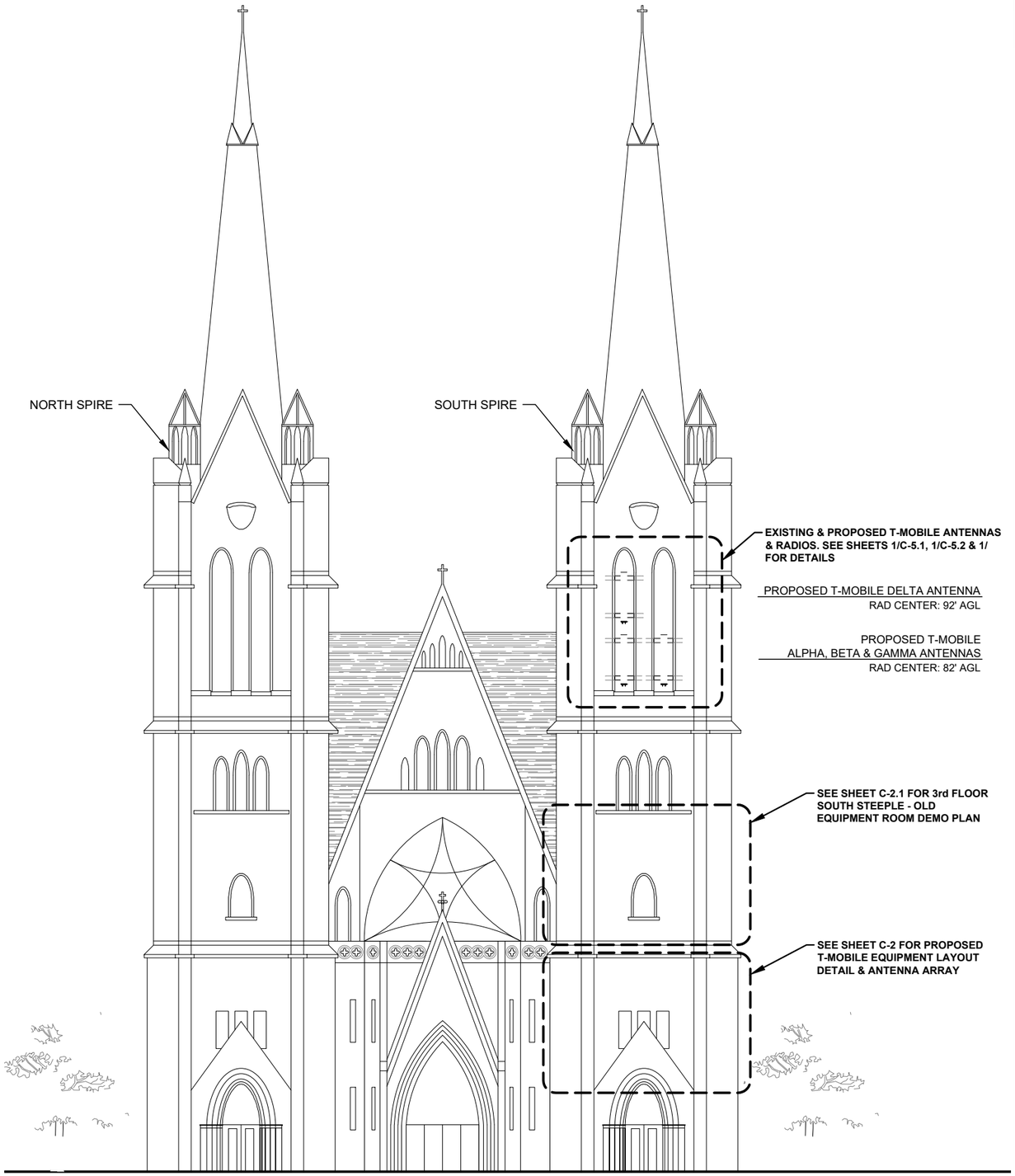
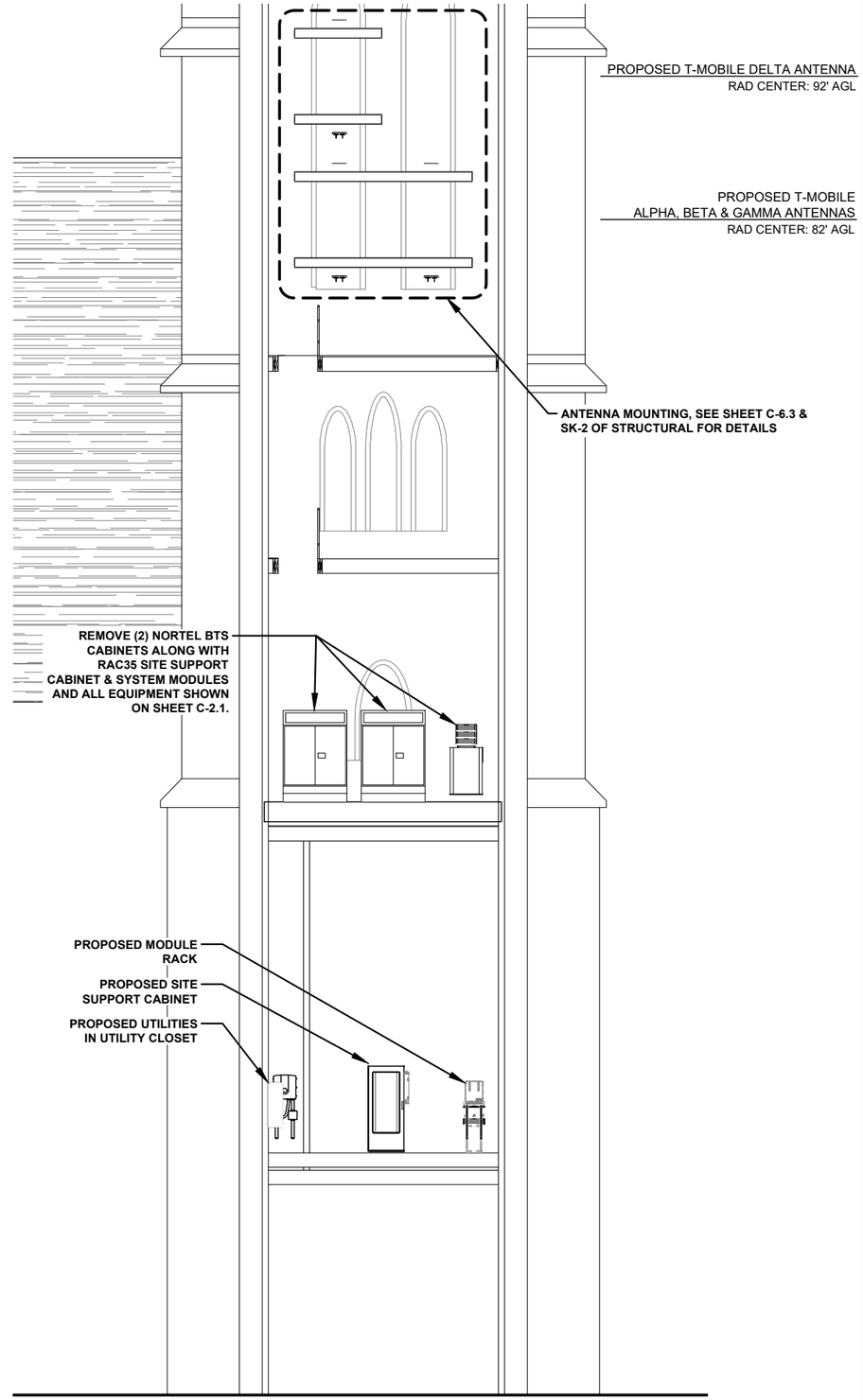
Sheet Title:
PROPOSED ANTENNA PLAN

Sheet Number:
C-4



WEST ELEVATION VIEW N.T.S. | **1**



NOTE: SOME EQUIPMENT OMITTED FROM ELEVATION VIEW FOR CLARITY

INTERIOR SOUTH SPIRE ELEVATION N.T.S. | **2**

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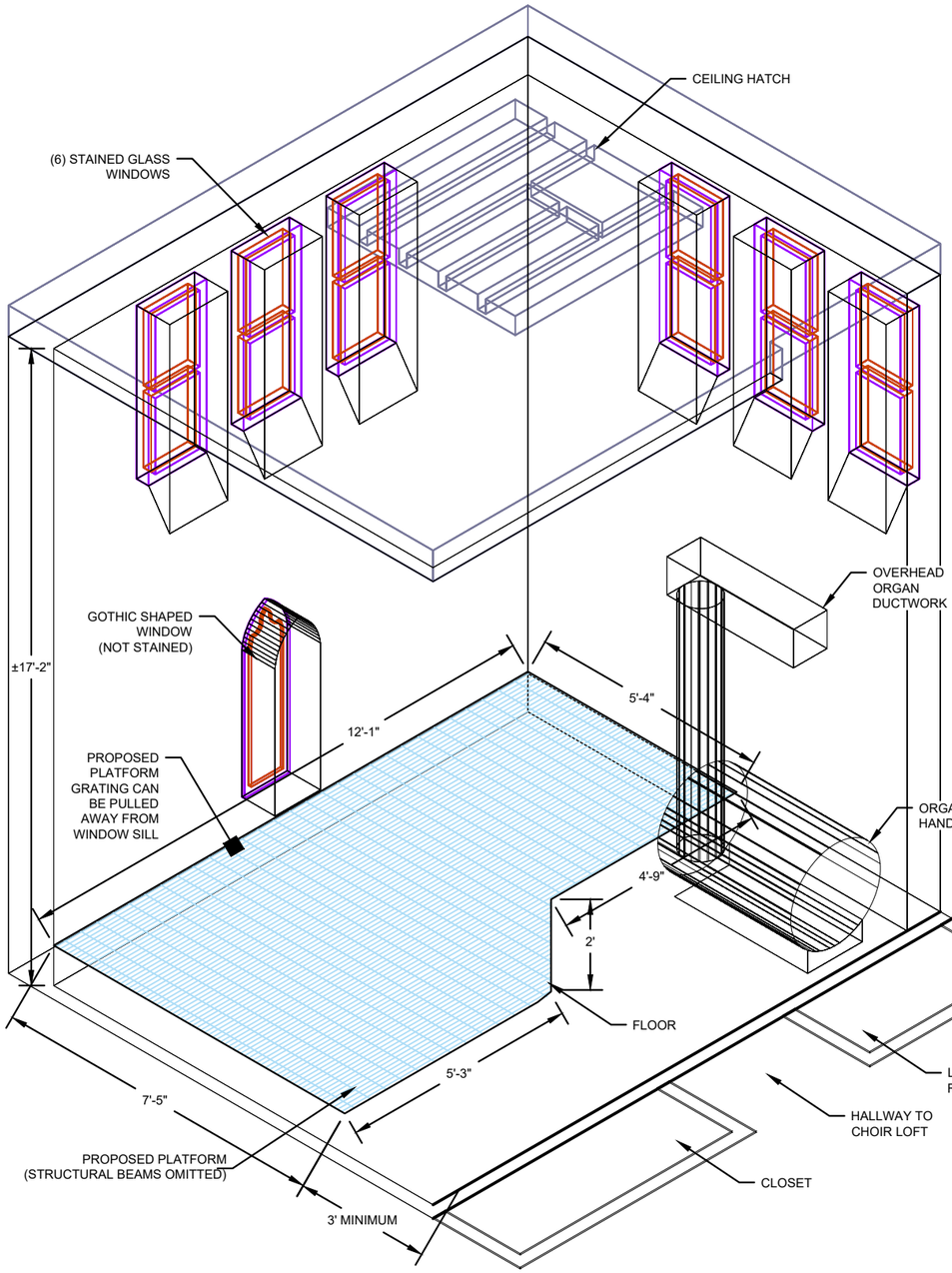
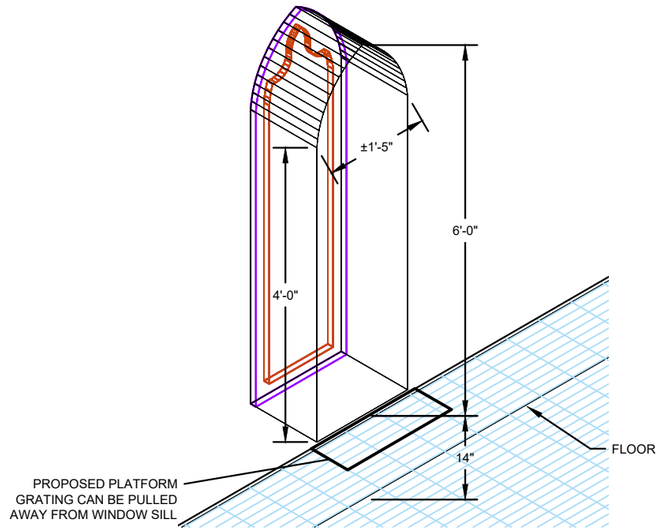
Sheet Title:
ELEVATION VIEW

Sheet Number:
C-5



WIREFRAME VIEW N.T.S. | **1**



WINDOW DETAIL N.T.S. | **2**

ISOMETRIC VIEW N.T.S. | **3**

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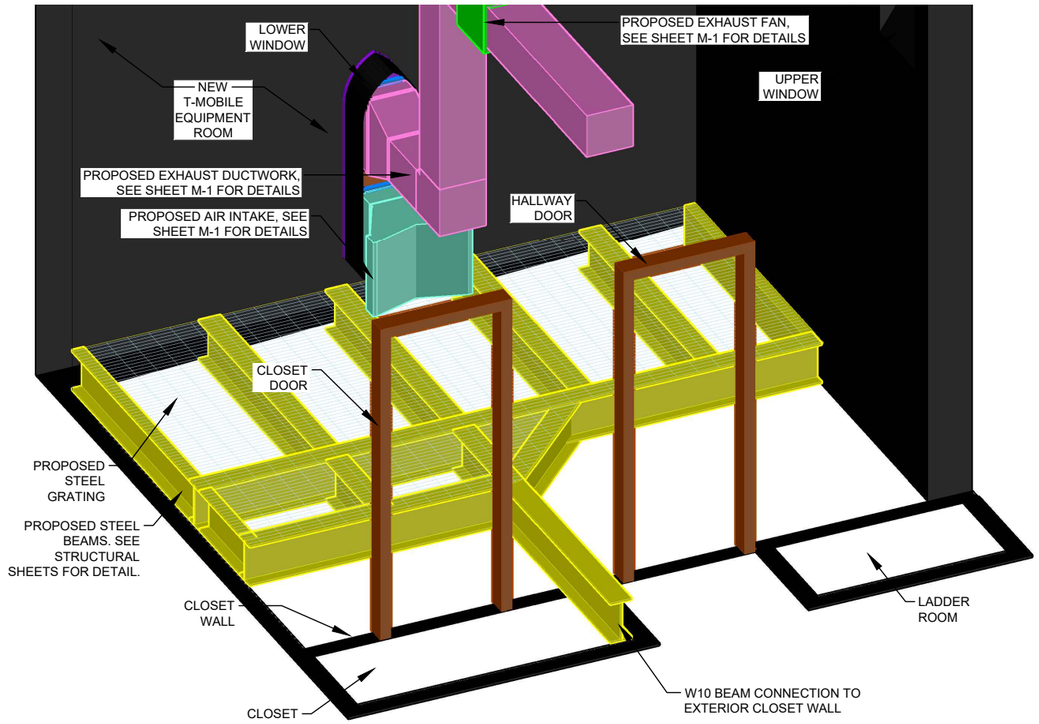
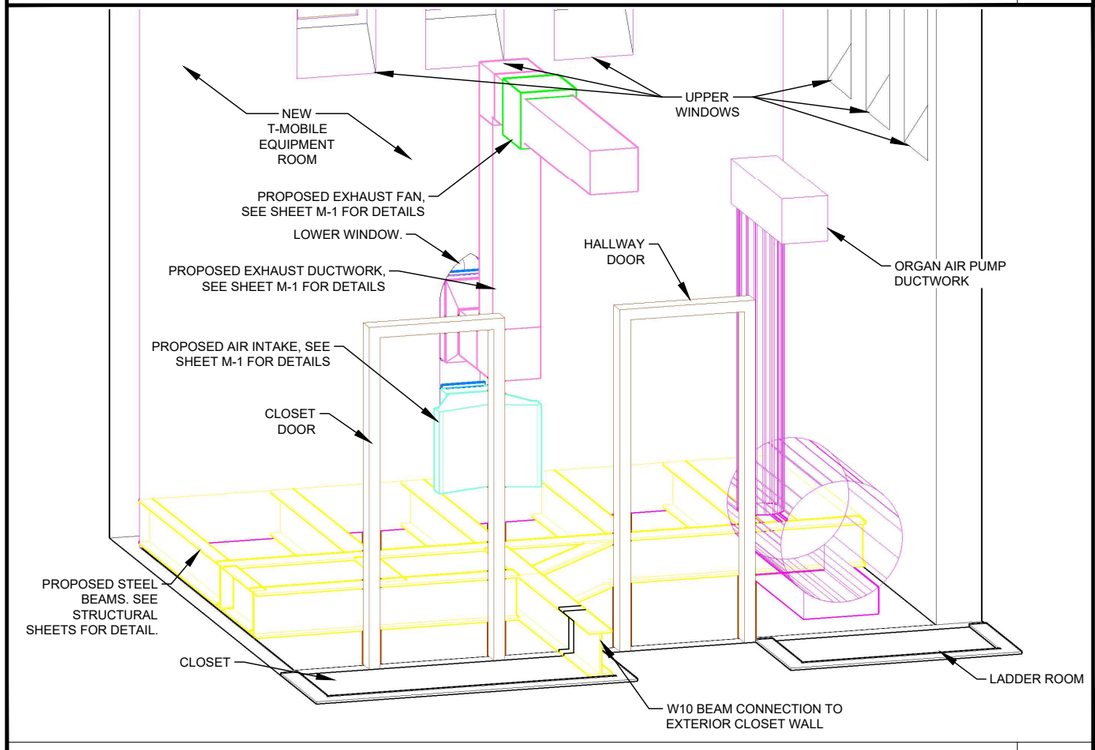
Sheet Title: PICTORIAL VIEWS

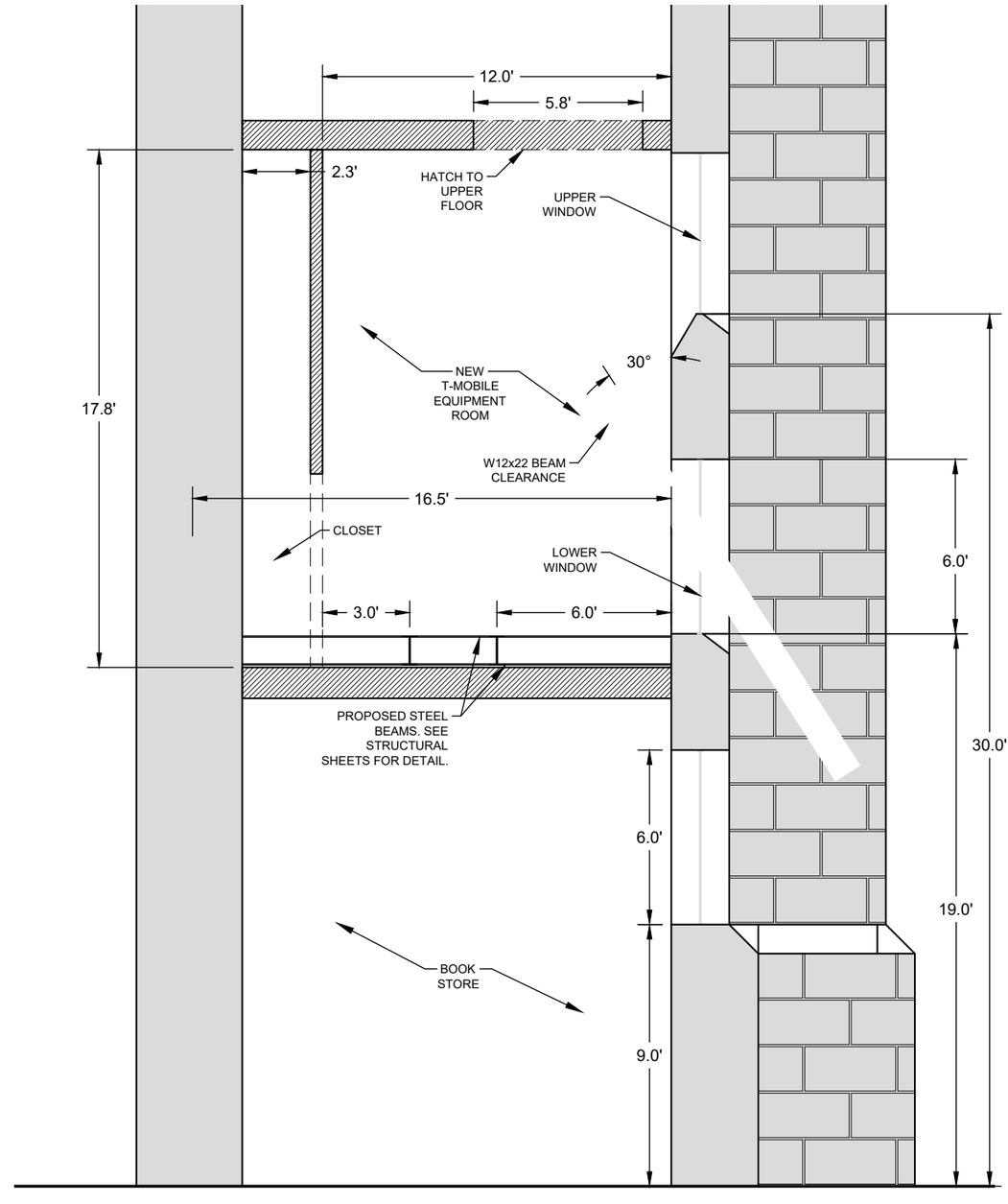
Sheet Number: C-5.1



PLATFORM DETAIL N.T.S. **1**



PLATFORM PICTORIAL N.T.S. **2**



CROSS-SECTION DETAIL A-A 1"=5' **3**

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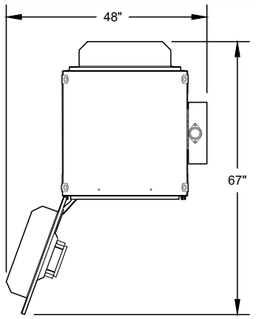
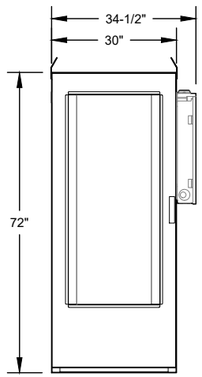
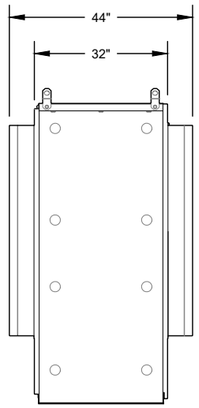
Sheet Title: PICTORIAL VIEWS

Sheet Number: C-5.2



PROPERTY	VALUE	PROPERTY
HEIGHT	72 in (876 mm)	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/OUT LIFTING BRACKETS
WIDTH	30 in 762 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT
WIDTH W/AC LOAD CENTER	34-1/2 in 835 mm	BASIC CABINET: ENCLOSURE, DC POWER PLANT W/ AC SIDE MOUNTED LOAD CENTER
DEPTH	32 in 813 mm	BASIC CABINET: ENCLOSURE, DC POWERPLANT
DEPTH WITH SHROUNDS	44 in 1118 mm	BASIS CABINET: ENCLOSURE, W/ FRONT AND REAR DAC SHROUDS





PURCELL SSC (MERV 13) N.T.S. **1**

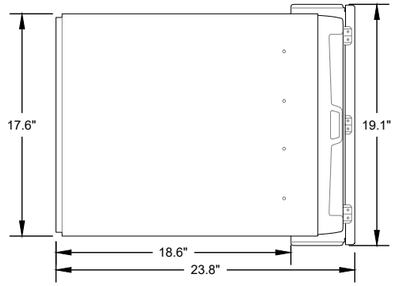
MANUFACTURER: NOKIA
MODEL: AMOB SUBRACK

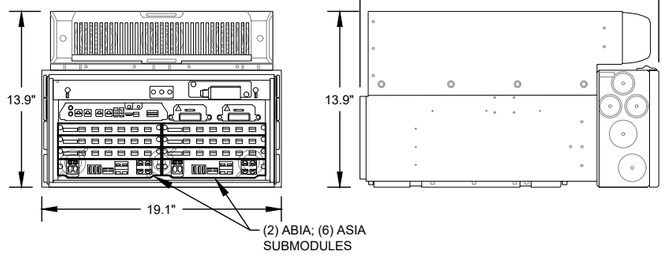
SUBMODULE CAPACITY: (2) ASIA
(6) ABIA

DIMENSIONS: 23.8"x19.1"x13.9"

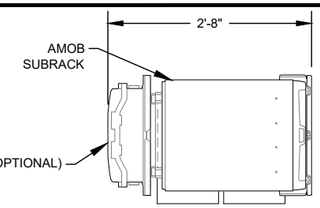
WEIGHT: 23 kg ENCLOSURE
41 kg FULL CAPACITY

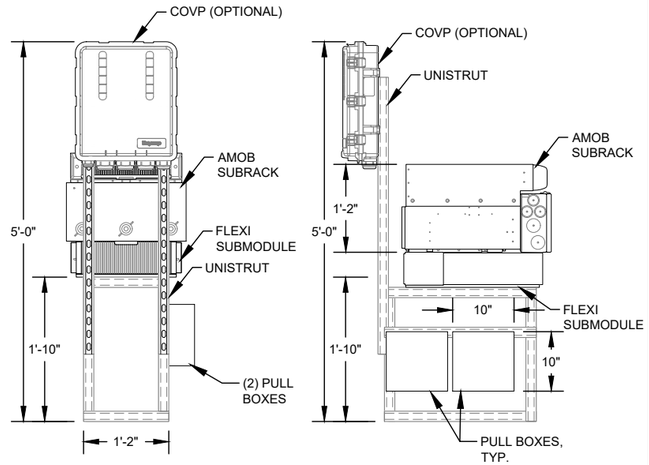
POWER
TYPICAL MAX: 265 WATTS
COLD START: 600 WATTS





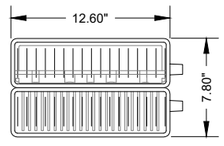
AMOB AIRSCALE SUBRACK N.T.S. **2**





UNISTRUT CHAIR N.T.S. **3**

INTENTIALLY OMITTED N.T.S. **4**

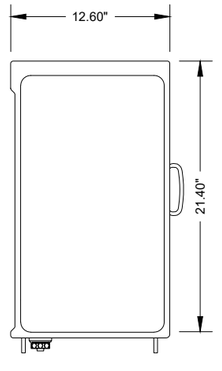


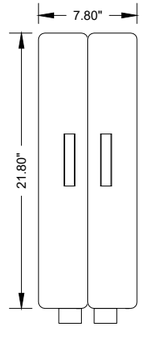
MANUFACTURER: NOKIA
MODEL: AHLOA
FREQUENCY: 600 MHz

DIMENSIONS
w/ SOLAR SHIELD: 22.1" x 12.2" x 7.5"

WEIGHT w/ BRACKET
& SOLAR SHIELD: 83.9 lbs

CONNECTORS: (2) OPTICAL
(1) DIN FEMALE (DC POWER)





AHLOA RADIO UNIT N.T.S. **5**

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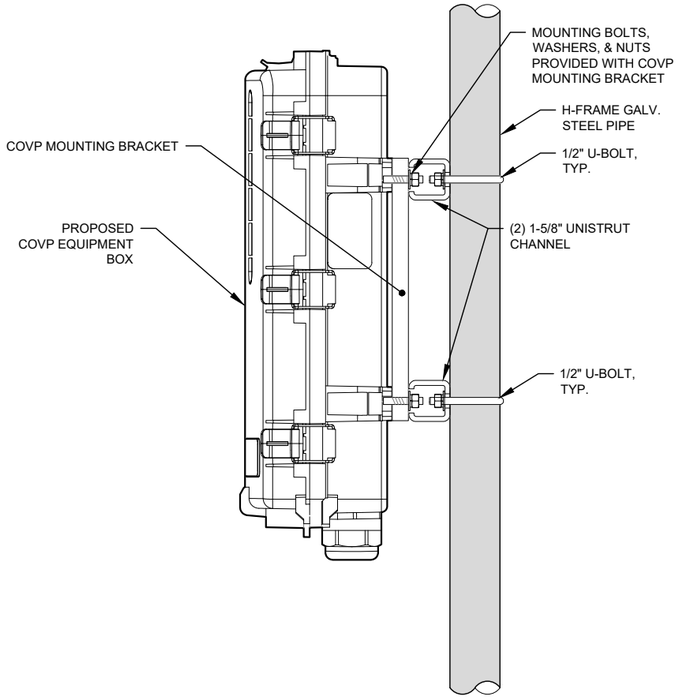
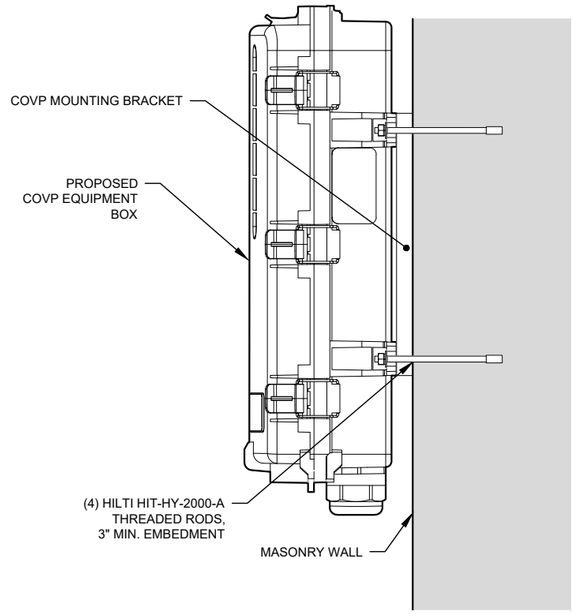
Sheet Title:
EQUIPMENT DETAILS

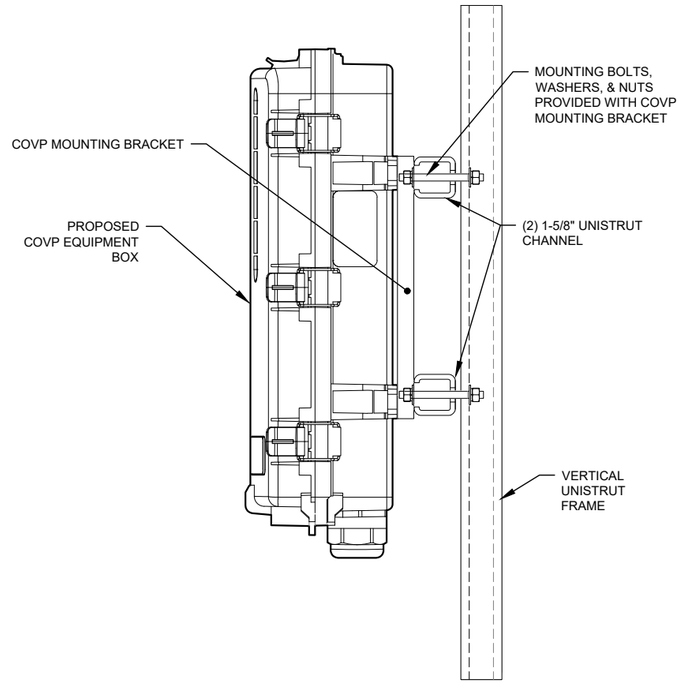
Sheet Number:
C-6



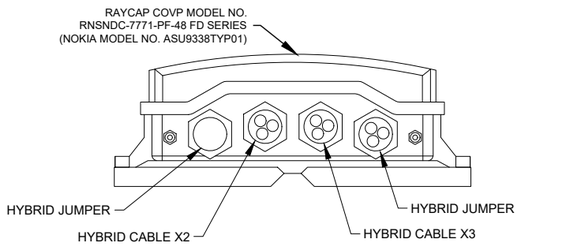
COVP MOUNTING DETAIL N.T.S. **1**

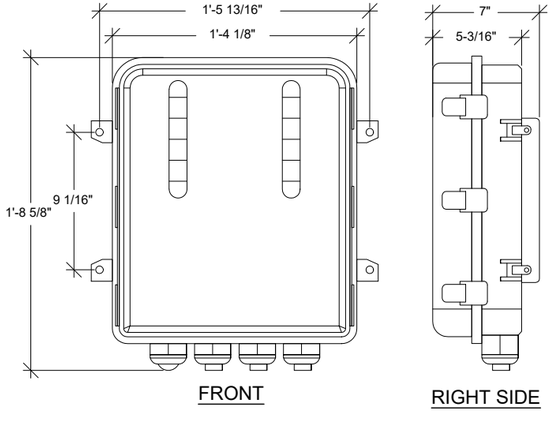


COVP MOUNTING DETAIL N.T.S. **2**

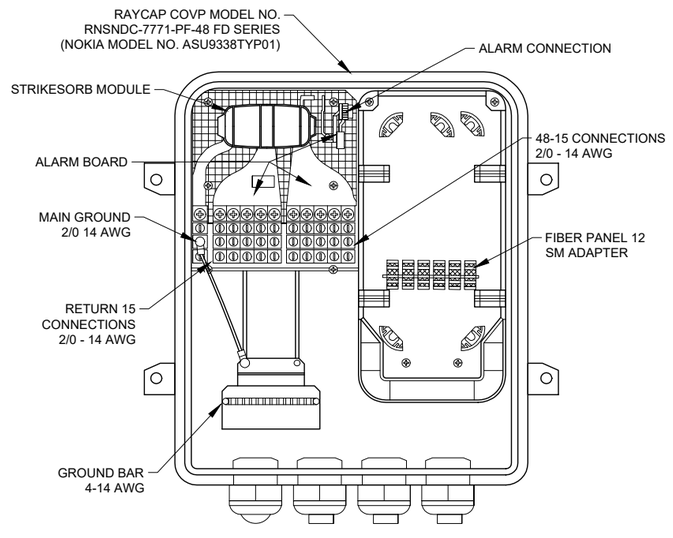


COVP MOUNTING DETAIL N.T.S. **3**



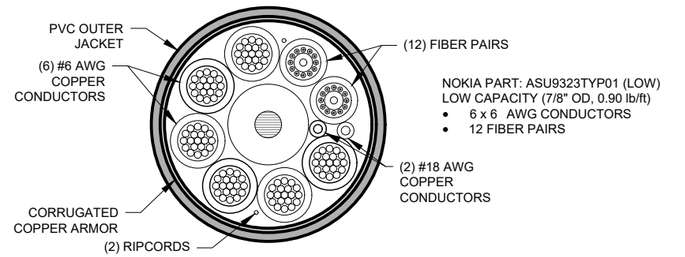


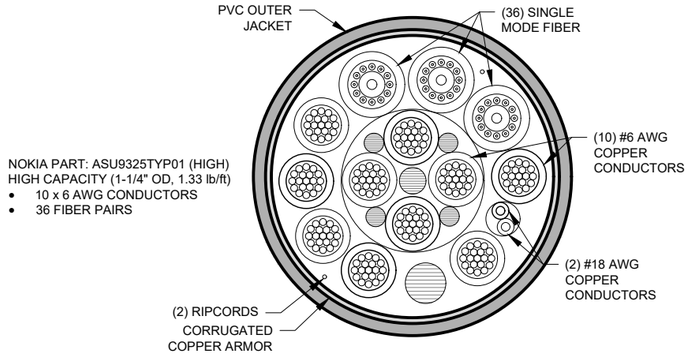
COVP DETAILS N.T.S. **4**



NOTE: FIBER BEND RADIUS NOT TO EXCEED 3 INCHES

COVP WIRING DIAGRAM N.T.S. **5**





HYBRID CABLE SECTION N.T.S. **6**

T-Mobile
28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
Phone: 734.367.7200
Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

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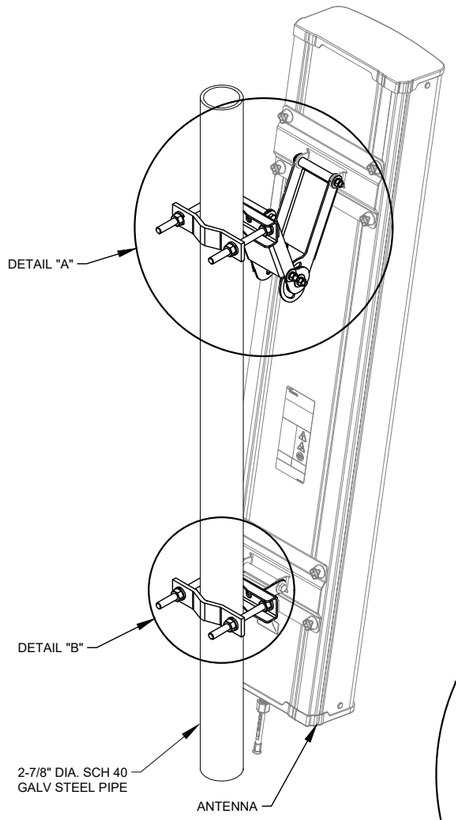
SITE #: DE04229B
SITE NAME: SWEETEST HEART OF MARY
SITE ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

Sheet Title: EQUIPMENT DETAILS

Sheet Number: C-6.1

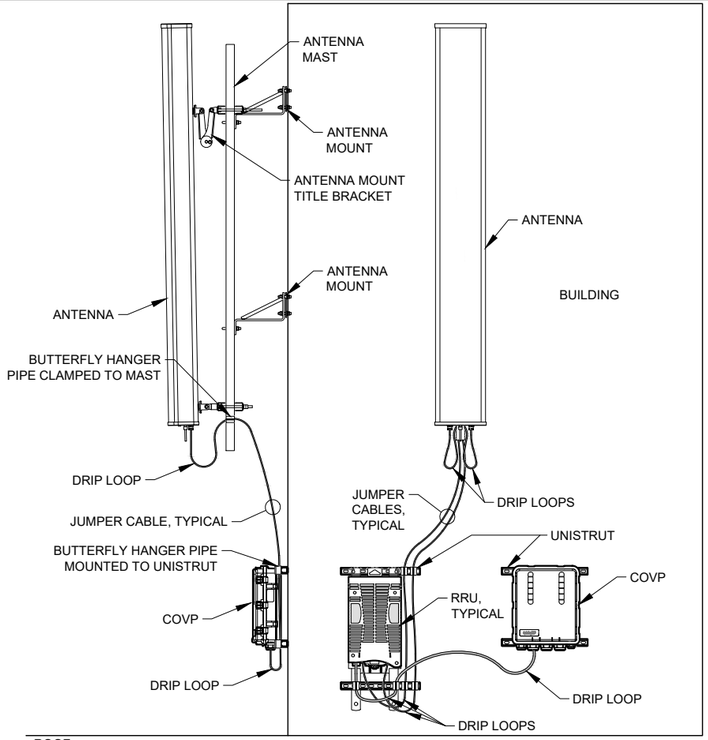
PARTS LIST

ITEM #	QUANTITY	PART NUMBER	DESCRIPTION
1	2	601257	ANGLE ARM
2	2	601256	MOUNTING CLAMP
3	2	601235-1	BRACKET
4	2	601235-2	BRACKET
5	1	601258	LABEL, ANGLE
6	4	600679-3	SPACER TUBE
7	14	100525-24	ME FLAT WASHER (STAINLESS STEEL)
8	2	600419-8	M8x1.25x25mm LARGE CARRIAGE BOLT (STAINLESS STEEL)
9	6	6/1/7395	M8 LOCK WASHER (STAINLESS STEEL)
10	4	600419-10	M8x1.25x110mm LARGE HEX HEAD SCREW (STAINLESS STEEL)
11	6	204001-15	M8x1.25 HEX NUT (STAINLESS STEEL)
12	2	225244	CLAMP PLATE
13	8	600419-24	LARGE LOCK WASHER (STAINLESS STEEL)
14	8	204001-21	M12x1.75 HEX NUT (STAINLESS STEEL)
15	4	600419-12	M12x1.75x150mm LARGE CARRIAGE BOLT (STAINLESS STEEL)
17	1	601584	MOLYBDENUM DISULFIDE GREASE

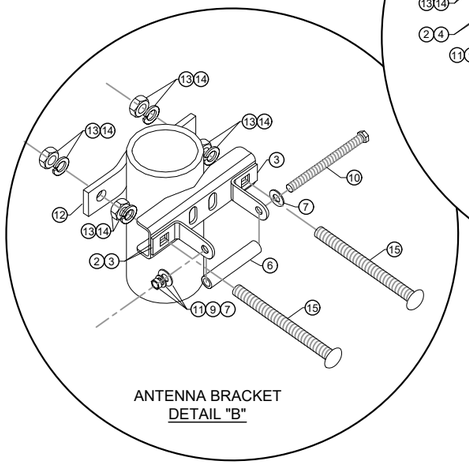


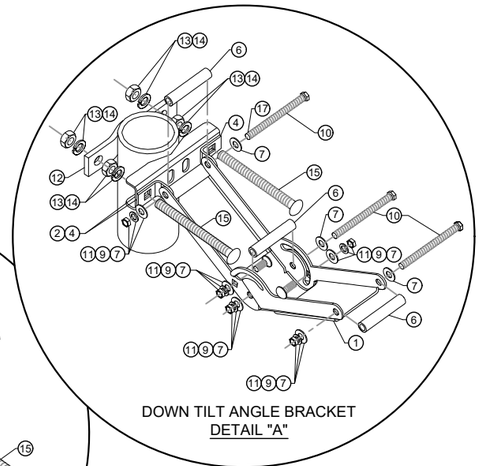
ANTENNA ATTACHMENT DETAIL
NOT TO SCALE

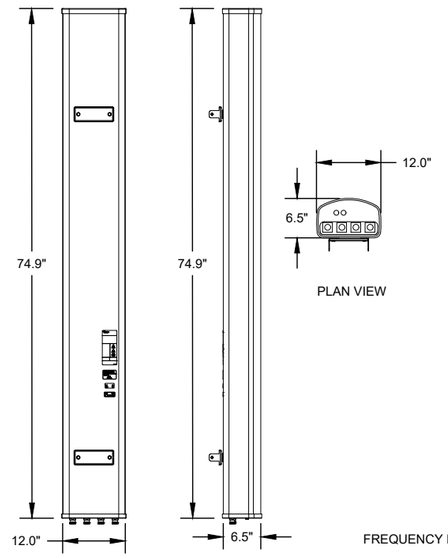
NOTE: TORQUE ALL HARDWARE
M8 HARDWARE: 18 Nm (160 lbf-in.)
M12 HARDWARE: 30 Nm (266 lbf-in.)



ANTENNA CABLE DETAIL
NOT TO SCALE

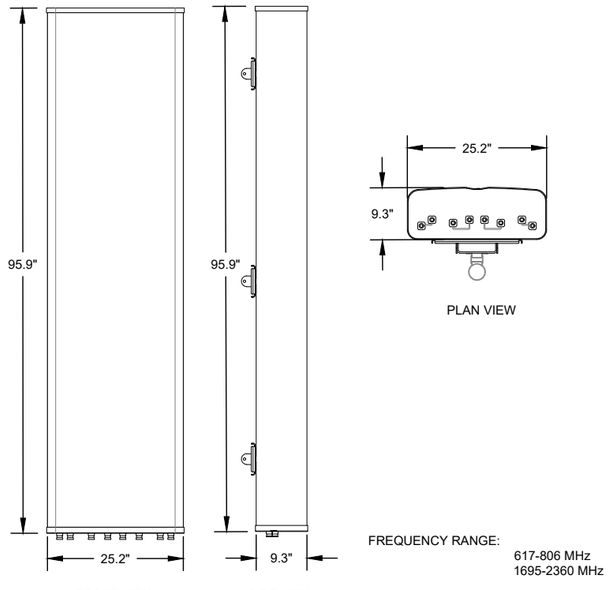






FREQUENCY RANGE: 1710-1990 MHz, 1850-1990 MHz, 1920-2155 MHz
WEIGHT: 44.4 lbs

ANDREW TMBXX-6517-R2M ANTENNA
NOT TO SCALE



FREQUENCY RANGE: 617-806 MHz, 1695-2360 MHz
WEIGHT: 127.6 lbs

COMMSCOPE FFHH-65C-R3 ANTENNA
NOT TO SCALE

T-Mobile
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(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
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B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

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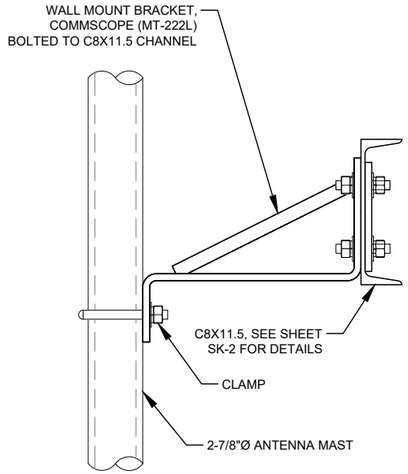
SITE ADDRESS: 4440 E. CANFIELD D/B/A 4440 RUSSELL ST. DETROIT, MICHIGAN 48207

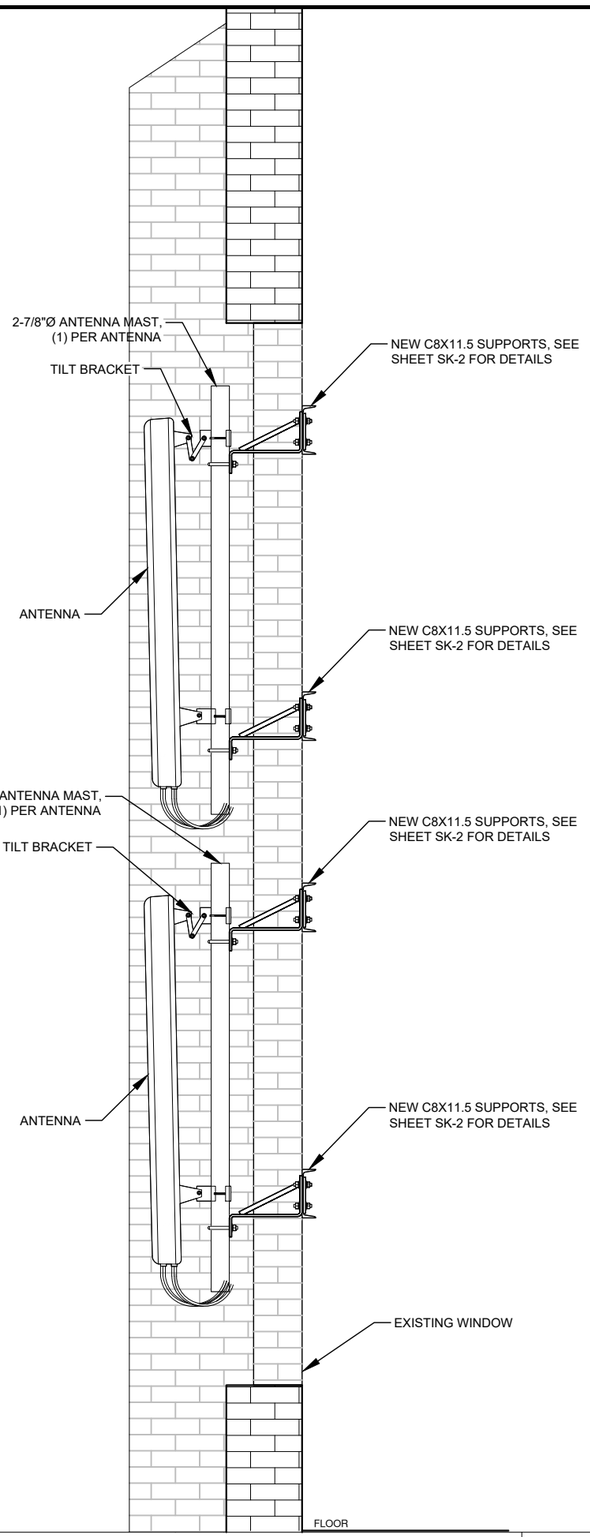
Sheet Title: ANTENNA DETAILS

Sheet Number: C-6.2

PAINT ALL ANTENNAS, CABLING & HARDWARE VISIBLE OUTSIDE BLACK.

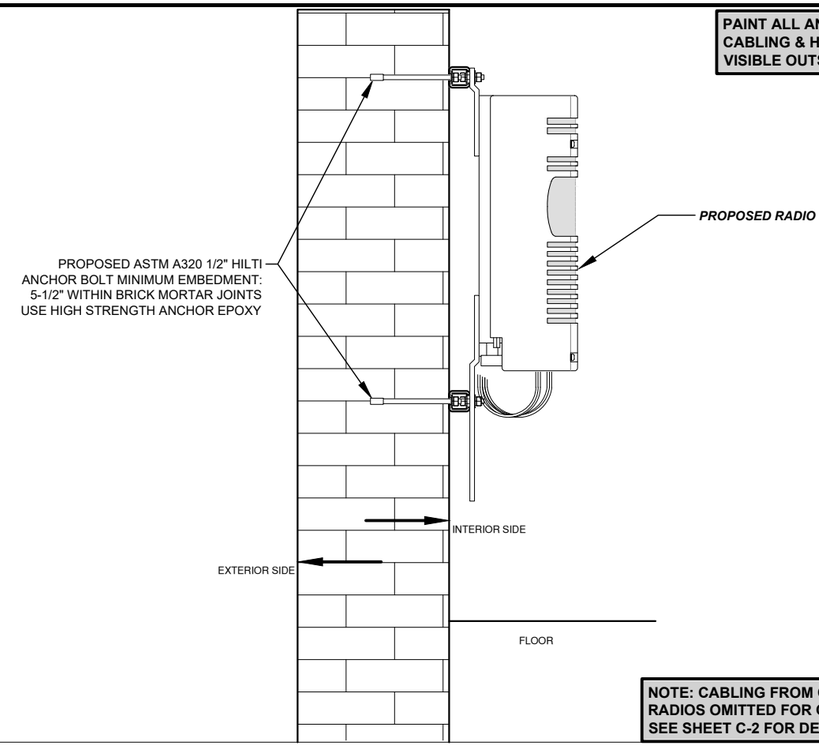


TYP. MAST BRACKET



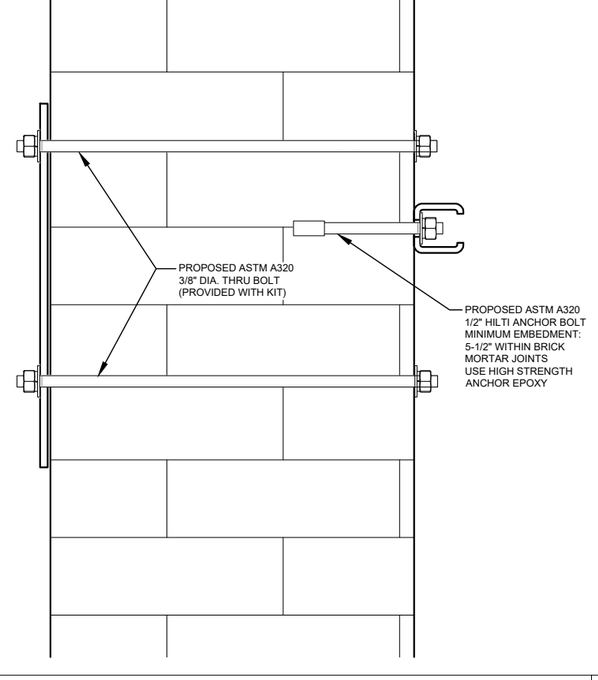
ANTENNA MOUNT N.T.S. **1**

PAINT ALL ANTENNAS, CABLING & HARDWARE VISIBLE OUTSIDE BLACK.



NOTE: CABLING FROM COVP TO RADIOS OMITTED FOR CLARITY. SEE SHEET C-2 FOR DETAILS.

HYBRID CABLE ELEV. N.T.S. **2**



MORTOR JOINT DETAIL N.T.S. **3**

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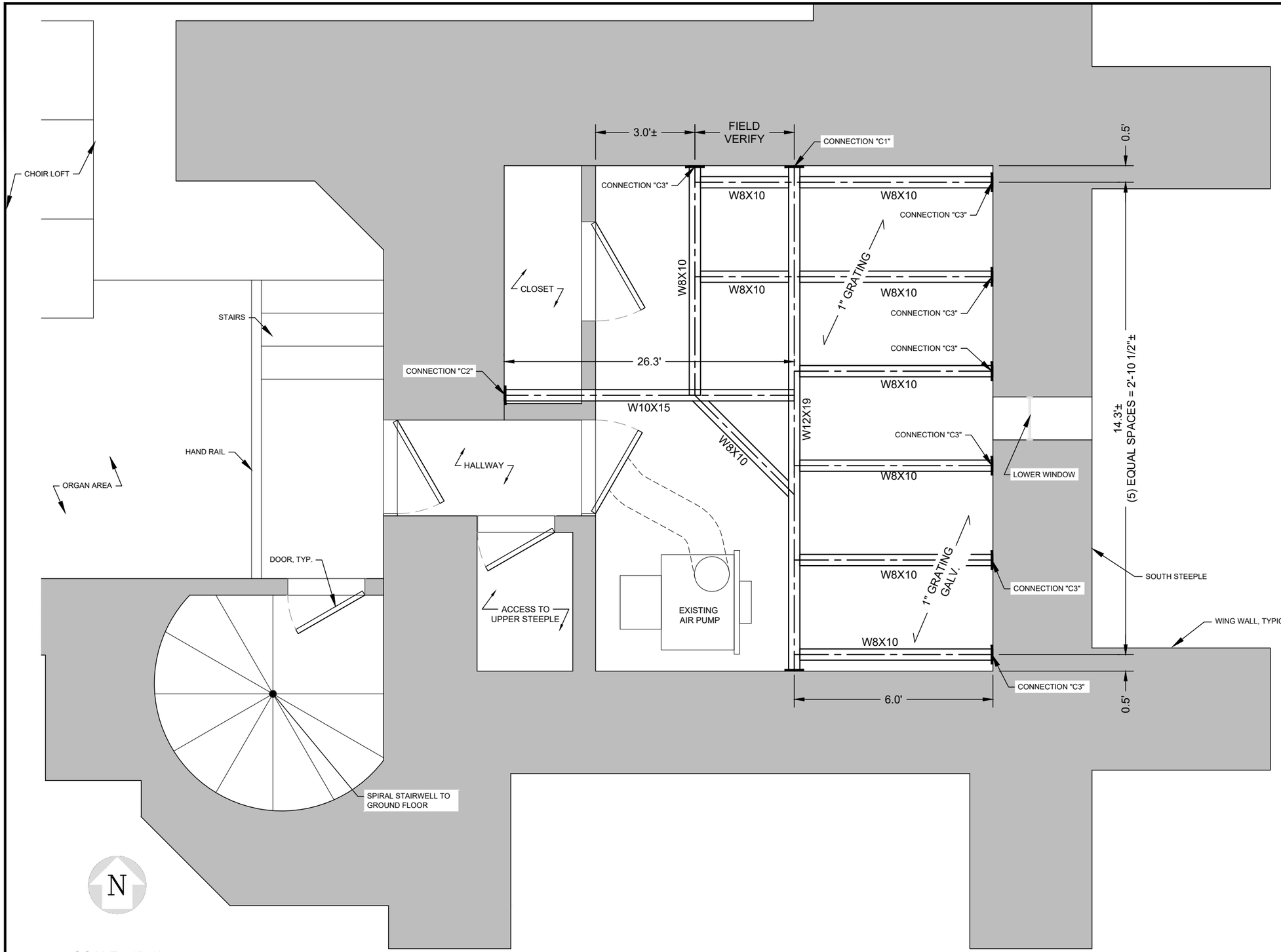
SITE ADDRESS: **4440 E. CANFIELD D/B/A 4440 RUSSELL ST. DETROIT, MICHIGAN 48207**

Sheet Title: MOUNTING DETAILS

Sheet Number: C-6.3



STRUCTURAL PLAN 1"=3' | **1**

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Fax: 734.367.7242
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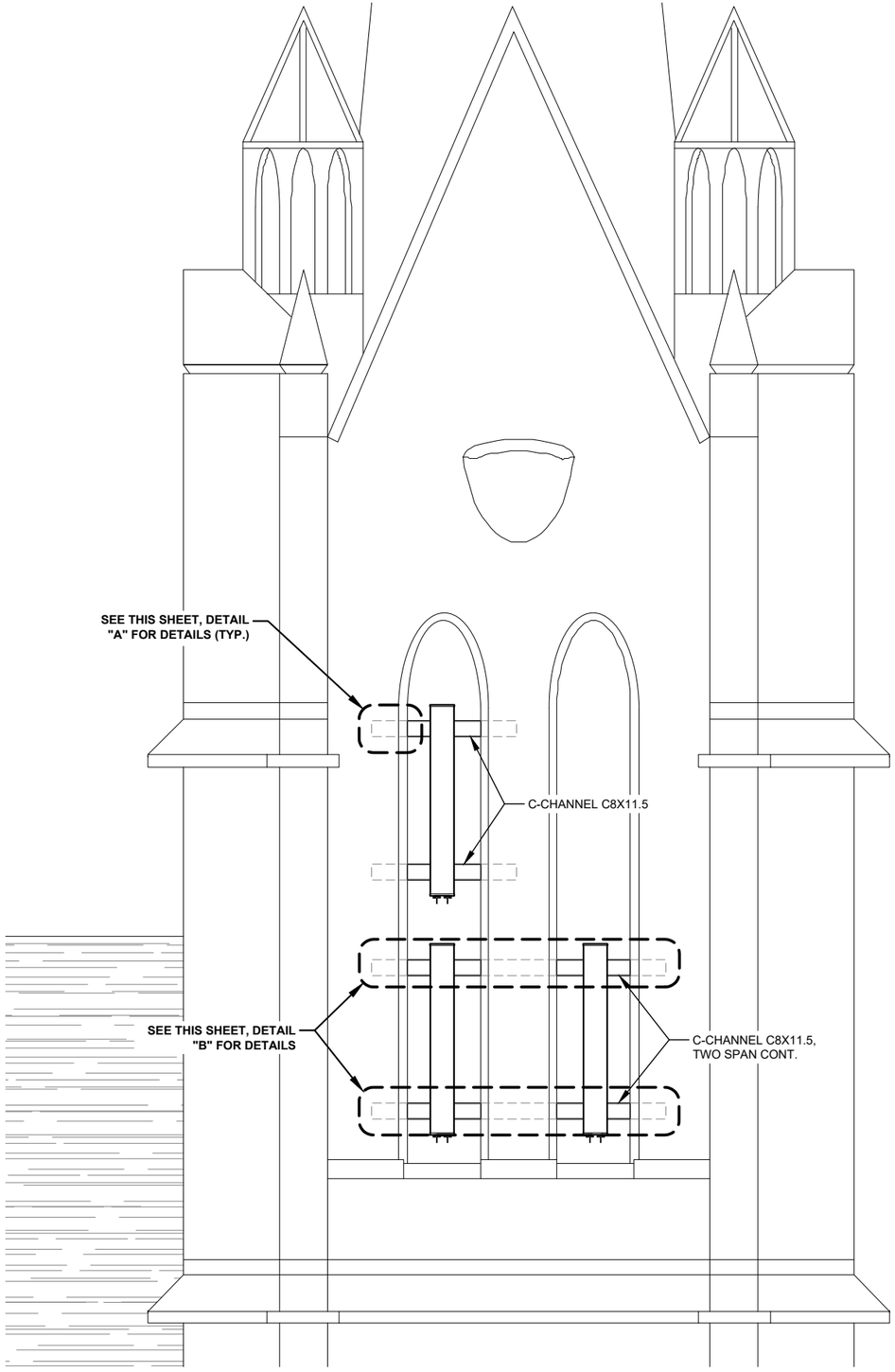
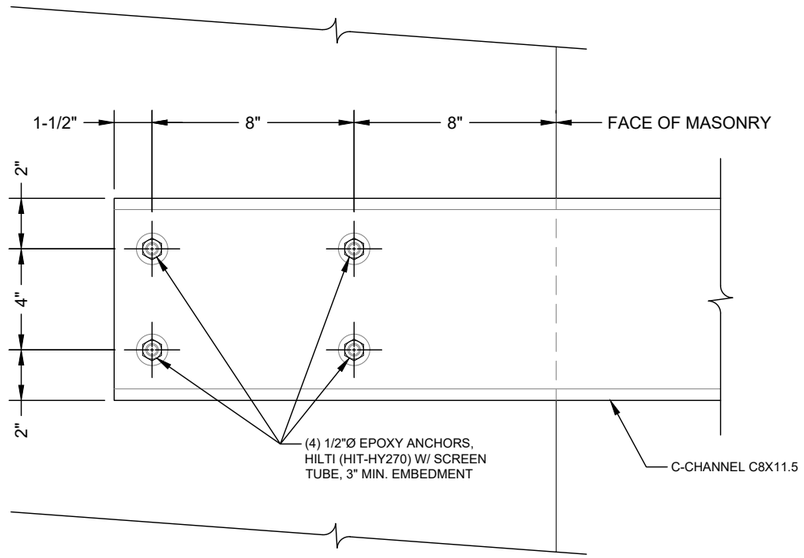
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

Sheet Title:
PLATFORM STRUCTURAL PLAN

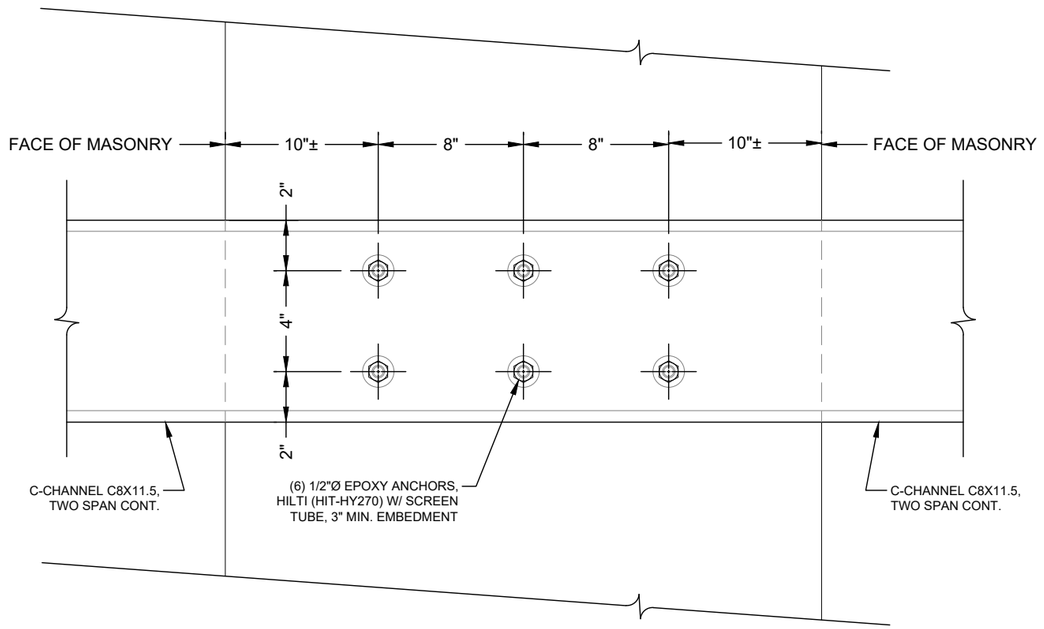
Sheet Number:
SK-1



PLATFORM DETAILS N.T.S. | **1**



DETAIL "A" N.T.S. | **2**



DETAIL "B" N.T.S. | **3**

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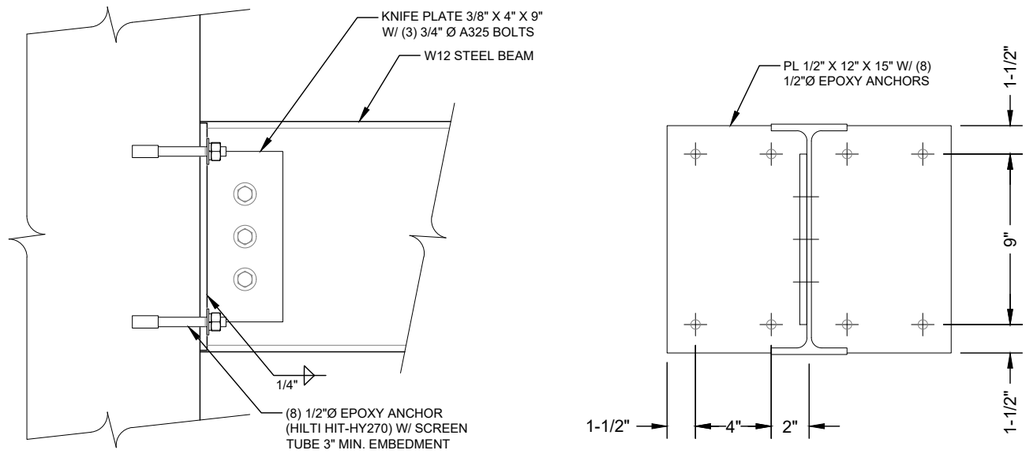
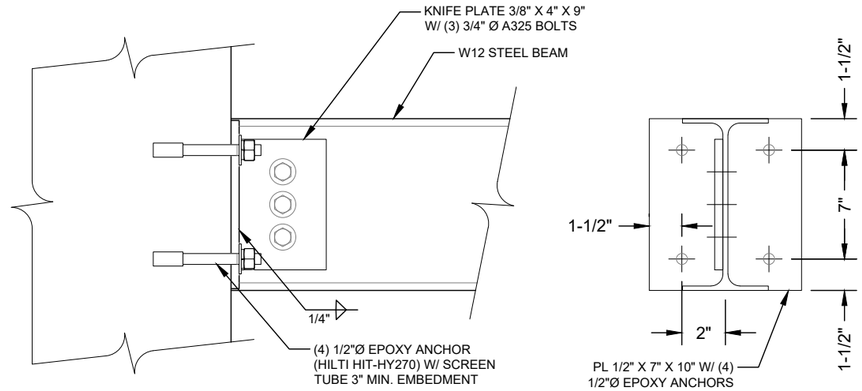
Sheet Title: ANTENNA STRUCTURAL DETAIL

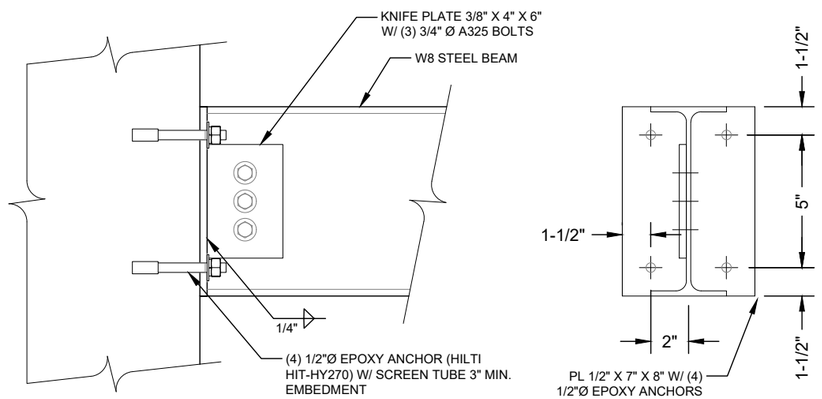
Sheet Number: SK-2



CONNECTION "C1" N.T.S | **1**



CONNECTION "C2" N.T.S | **2**



CONNECTION "C3" N.T.S | **3**

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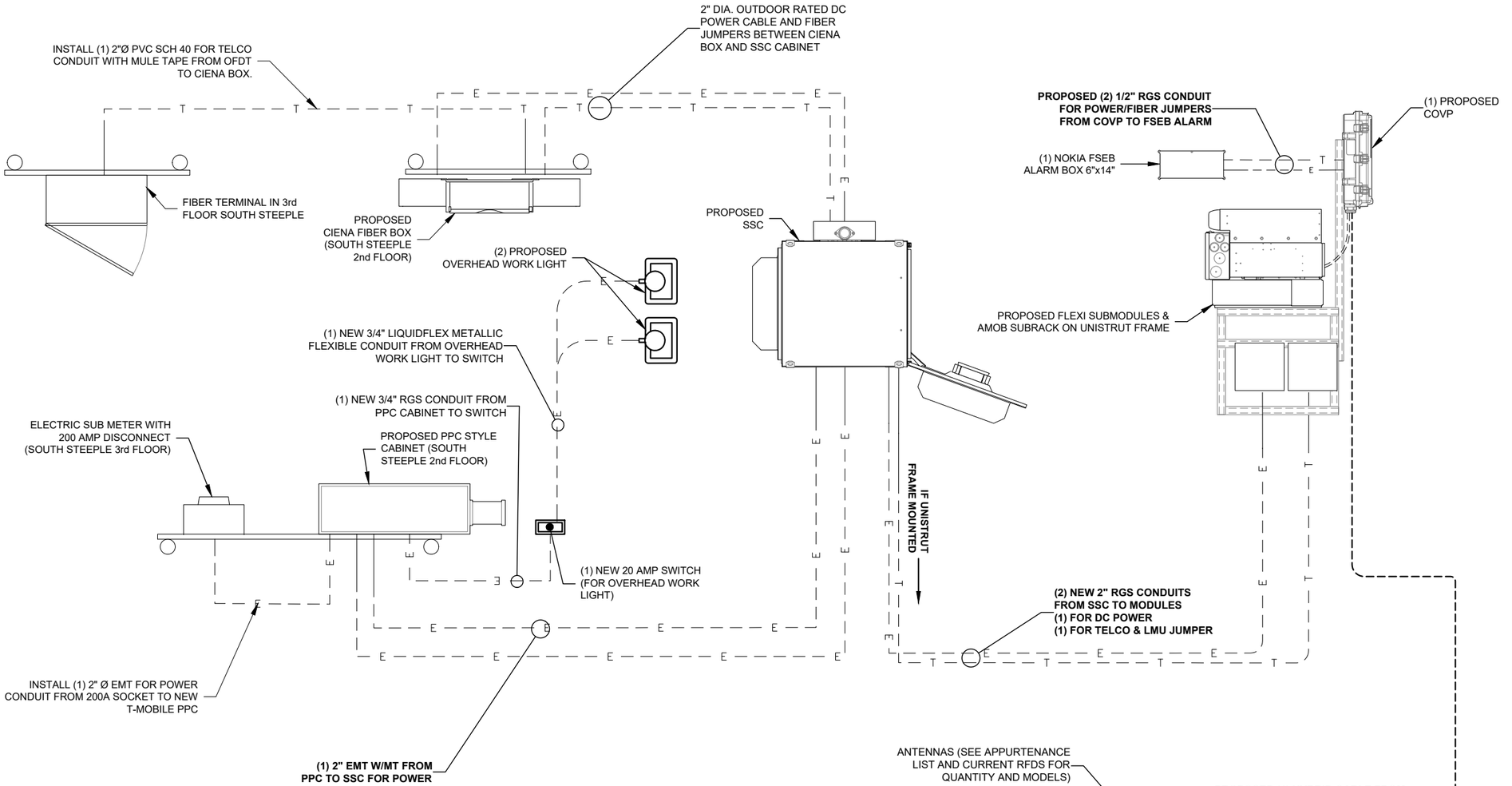
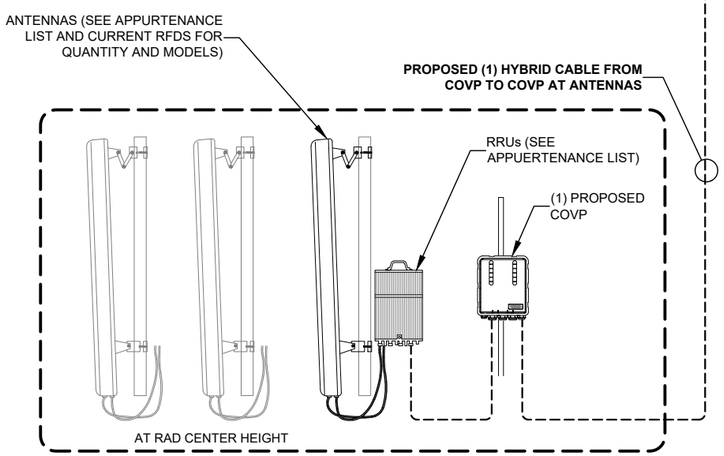
DETROIT, MICHIGAN 48207

Sheet Title:
PLATFORM STRUCTURAL DETAIL

Sheet Number:
SK-3





LIGHTING NOTES

- THE LFMC SHALL BE CONNECTED TO THE PLATFORM AND ICE BRIDGE WITH MANUFACTURER APPROVED METALLIC PIPE STRAPS OR "MINIS" USING STAINLESS STEEL BANDING, OUTDOOR RATED METALLIC PIPE CLAMPS, AND/OR MANUFACTURER APPROVED OUTDOOR RATED ROUTING PRODUCTS.
- THE LIGHT SWITCH AND ANY JUNCTION BOXES SHALL BE DIE-CAST METALLIC WEATHER RATED BOXES AND MOUNTED WITH 100% WEATHERPROOF INSTALLATION METHODS. THE MOUNTING CLIPS SHALL BE USED AND NO BOXES SHALL BE DRILLED WITH SELF-TAPPING SCREWS FOR INSTALLATION.
- EACH LIGHT SHALL BE AN LED FLOOD LIGHT (NOT SPOT) RATED AT A MINIMUM OF 1,200 LUMEN BRIGHTNESS FACTOR AND SHALL BE OUTDOOR RATED TO A MINIMUM OF -30 DEGREES FAHRENHEIT (BELOW ZERO) OPERATING RANGE.

SEE SHEETS C-1 & C-1.2 FOR EQUIPMENT LOCATION.

CONDUIT CABLE SCHEMATIC N.T.S.

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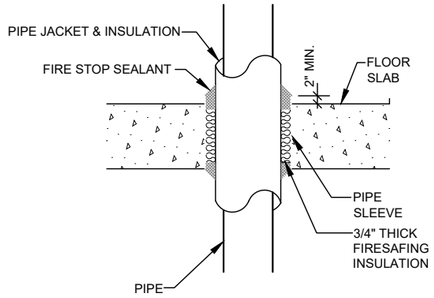
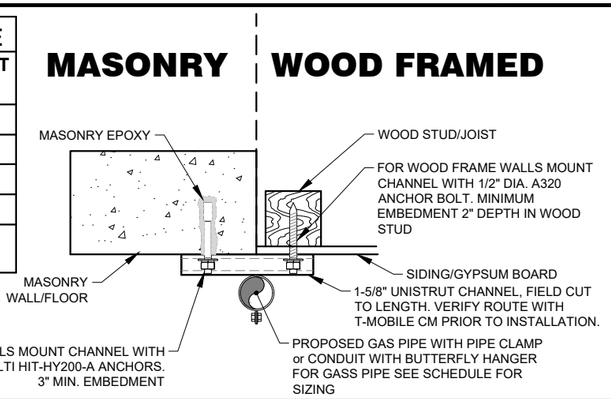
Sheet Title:
CONDUIT CABLE SCHEMATIC

Sheet Number:
E-1

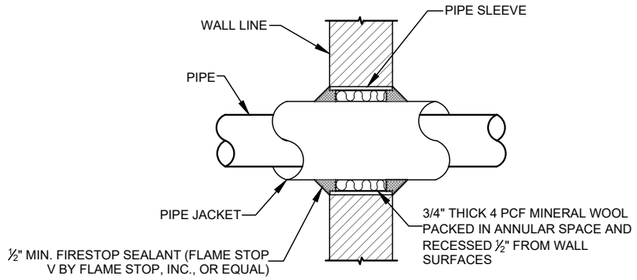


FLOOR PENETRATION DETAIL N.T.S. 1

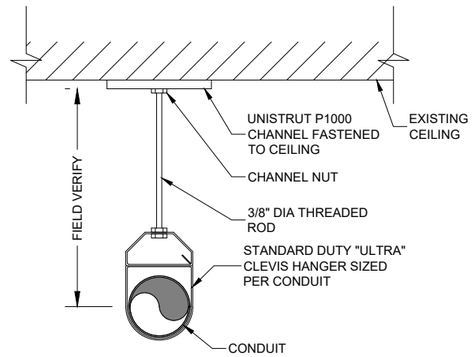
RIGID STEEL CLAMP SIZING SCHEDULE	
PIPE SIZE	UNISTRUT RIGID STEEL CONDUIT CLAMP P/N
3/4"	P1112
1"	P1113
1-1/4"	P1114
1-1/2"	P1115
2" AND GREATER	CONTACT ENGINEER



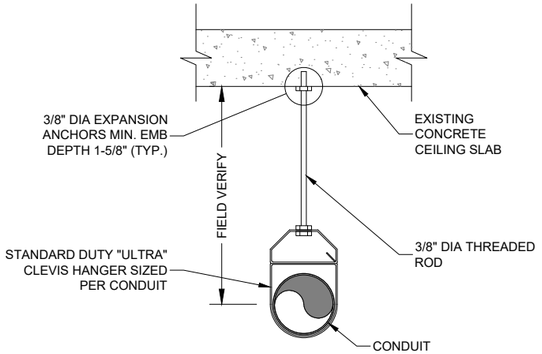
CEILING/WALL CONDUIT HANGER DETAIL N.T.S. 2



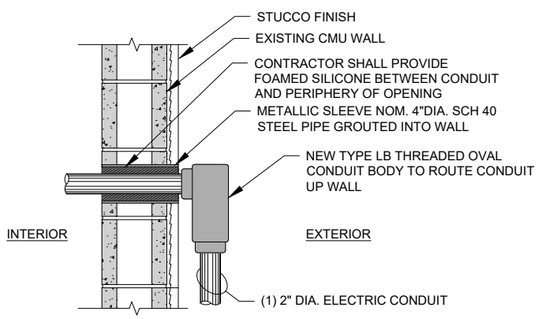
WALL PENETRATION DETAIL N.T.S. 3



CEILING HANGER DETAIL N.T.S. 4



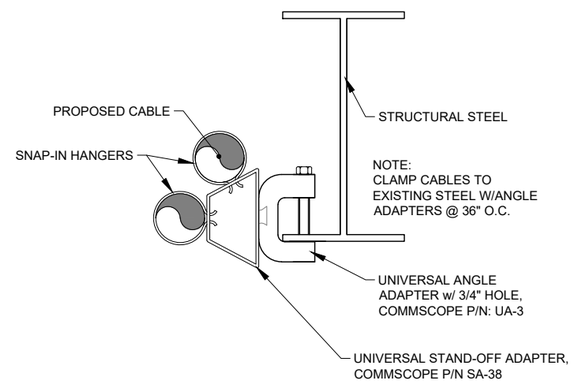
CEILING HANGER DETAIL N.T.S. 5



THROUGH PENETRATION FIRESTOP SYSTEMS 2 HOUR
UL SYSTEM No. W-J-1001 (F-RATING - 2 HR.)
UL FIRE RESISTANCE DIRECTORY - 2000 Vol. 2, PG. 1804

CONDUIT WALL PENETRATION DETAIL N.T.S. 6

INTENTIONALLY OMITTED N.T.S. 7



CABLE HANGER DETAIL N.T.S. 8

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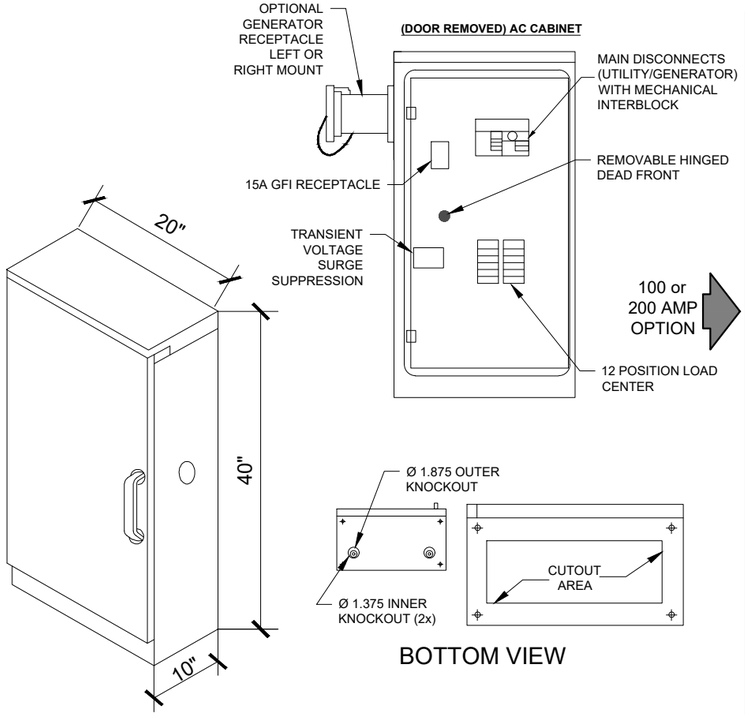
DETROIT, MICHIGAN 48207

Sheet Title:
CABLE DETAILS

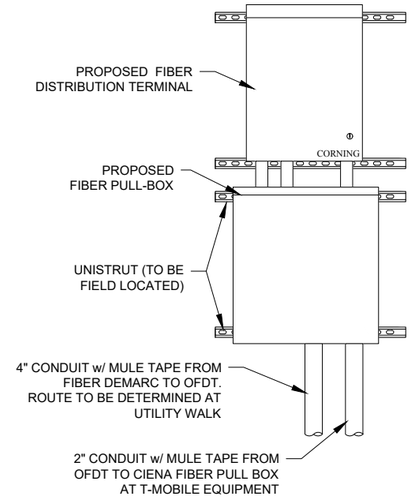
Sheet Number:
E-1.1



Specifications – CAC Model	
Enclosure	AC Cabinet
Cabinet Dimensions	39.00" H x 20.00" W x 10.00" D
Weight Approx.	75 lbs.
External Material	0.1" thick aluminum
Mounting	Wall or pad-mount (with optional pad-mounting base)
Cabinet Enclosure Type	One AC Power TVSS cabinet (NEMA 3R type enclosure)
Weather Protection	Rain/drip hood, rain tested per UL 891
Electrical	
Operating Voltage	120/240 VAC, single phase, 3 wire and ground
Service	100 Amp or 200 Amp. utility/standby
Disconnect	Slide bar mechanical interlock
AIC Rating	10kAIC, 22kAIC, 65kAIC
Load	Center 200 Amp, 24 position
	1-30 Amp double pole (AC TVSS)
	1-15 Amp single pole (GFI receptacles)
Bonding Jumper	Optional N-G bonding jumper
Standby Power Receptacle	Appleton AR20044RS Standard (100A or 200A), 10kAIC
TVSS with Indicator Lights	Metal Oxide Varistors (MOV) (160kA/Phase)
	Remote alarm contacts
Grounding	
Security (padlockable)	3-point door closure with 1/4 turn handle, SS hinge
Safety Compliance	UL 891, dead front switchboards
Options	10,000 or 22,000, 65,000 AIC series rated
	Pad-mounting base (8" thick)
	Various generator receptacles

100 or 200 AMP OPTION

POWER PEDESTAL CABINET N.T.S. **1**



FIBER DEMARCATION DETAIL N.T.S. **2**

1. FROM TAP BOX: THE TWO (2) FOUR-INCH (4") CONDUIT WILL RETURN TO THE LOCATION DETERMINED BY "DTE" AND EXTEND OUT OF THE FINISHED GRADE 12" AND 36" RESPECTIVELY (SEE DETAIL). BOTH CONDUITS SHALL BE INSTALLED WITH PULL-STRINGS AND WATERPROOF CAPS.

2. CABINET AND CONDUCTORS FURNISHED & INSTALLED BY CUSTOMER, 350 KCMIL SERVICE CONDUCTORS FURNISHED & INSTALLED BY UTILITY.

3. EQUIPMENT ASSEMBLY DRAWINGS AND RISER DIAGRAMS MUST BE SUBMITTED TO A UTILITY PLANNER FOR ACCEPTANCE PRIOR TO INSTALLATION.

4. CABINETS AND CONDUITS SHOWN SHALL CONTAIN ONLY UNMETERED LINE CONDUCTORS. CABINET SHALL BE SEALABLE WITH ACCEPTABLE SEALING HASP.

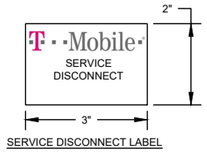
5. TRANSMISSION TOWER SERVICES WILL UTILIZE A STANDARD 200 AMP SERVICE W/ CONTINUOUS CONDUIT TO THE SOURCE.

6. SUBSTATION CELLULAR SERVICES WILL BE A SINGLE 200-AMP SERVICE OR BUILT TO THIS SPECIFICATION. NO SERVICE SHALL BE TAKEN OUT OF THE SUBSTATION HOUSE SERVICE.

7. ALL CONDUIT AND NIPPLE ENTRIES TO CABINET AND METER BOXES WILL BE MADE WITH WEATHERPROOF HUBS, CONNECTORS OR LOCKNUTS LISTED FOR THE APPLICATIONS. NON-METALLIC BUSHINGS.

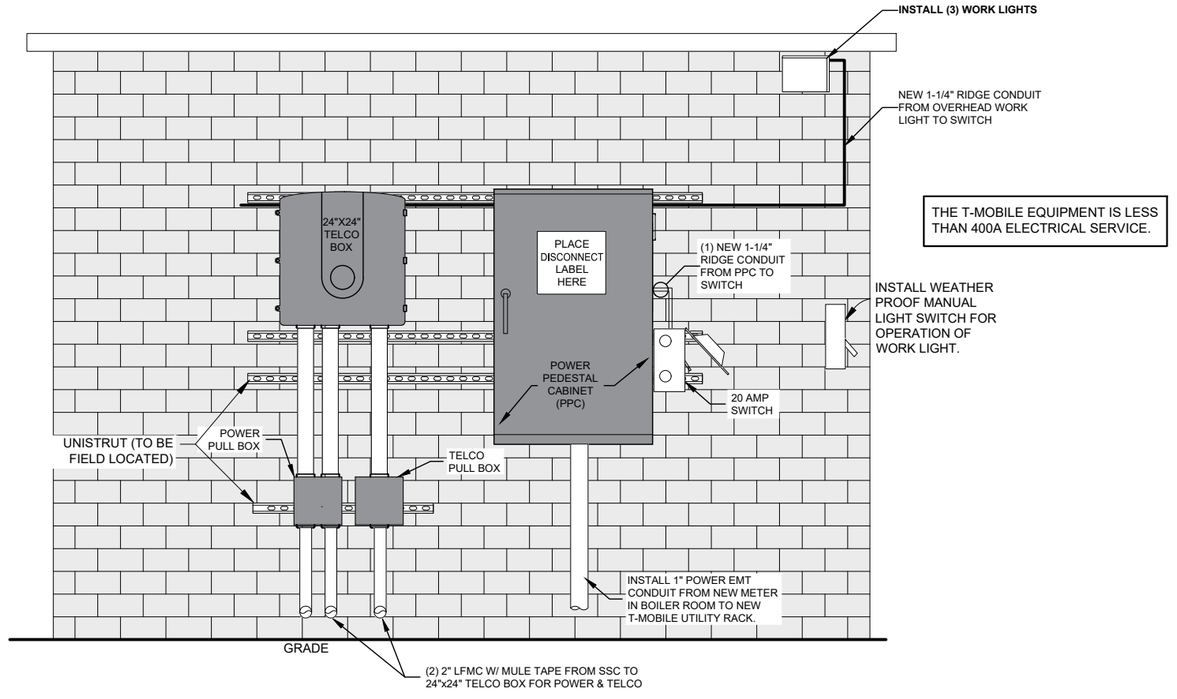
8. FOR INACCESSIBLE LOCATIONS CONSULT WITH METER ENGINEERING FOR POSSIBLE ERT METER INSTALLATION.

9. ONLY ONE SERVICE ALLOWED PER LUG. ALL GROUNDING AND BONDING MUST COMPLY WITH NEC 250 REQUIRED.



SERVICE DISCONNECT LABEL

- THE LFMC SHALL BE CONNECTED TO THE ICE BRIDGE WITH MANUFACTURER APPROVED METALLIC PIPE STRAPS OR "MINIS" USING STAINLESS STEEL BANDING, OUTDOOR RATED METALLIC PIPE CLAMPS, AND/OR MANUFACTURER APPROVED OUTDOOR RATED ROUTING PRODUCTS.
- THE LIGHT SWITCH AND ANY JUNCTION BOXES SHALL BE DIE-CAST METALLIC WEATHER RATED BOXES AND MOUNTED WITH 100% WEATHERPROOF INSTALLATION METHODS. THE MOUNTING CLIPS SHALL BE USED AND NO BOXES SHALL BE DRILLED WITH SELF-TAPPING SCREWS FOR INSTALLATION.
- EACH LIGHT SHALL BE AN LED FLOOD LIGHT (NOT SPOT) RATED AT A MINIMUM OF 1,200 LUMEN BRIGHTNESS FACTOR AND SHALL BE OUTDOOR RATED TO A MINIMUM OF -30 DEGREES FAHRENHEIT (BELOW ZERO) OPERATING RANGE.



THE T-MOBILE EQUIPMENT IS LESS THAN 400A ELECTRICAL SERVICE.

UTILITY EQUIPMENT N.T.S. **3**

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LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

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SITE ADDRESS:
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Sheet Title:
ELECTRIC DETAILS

Sheet Number:
E-1.2

ONE LINE DIAGRAM FORTHCOMING

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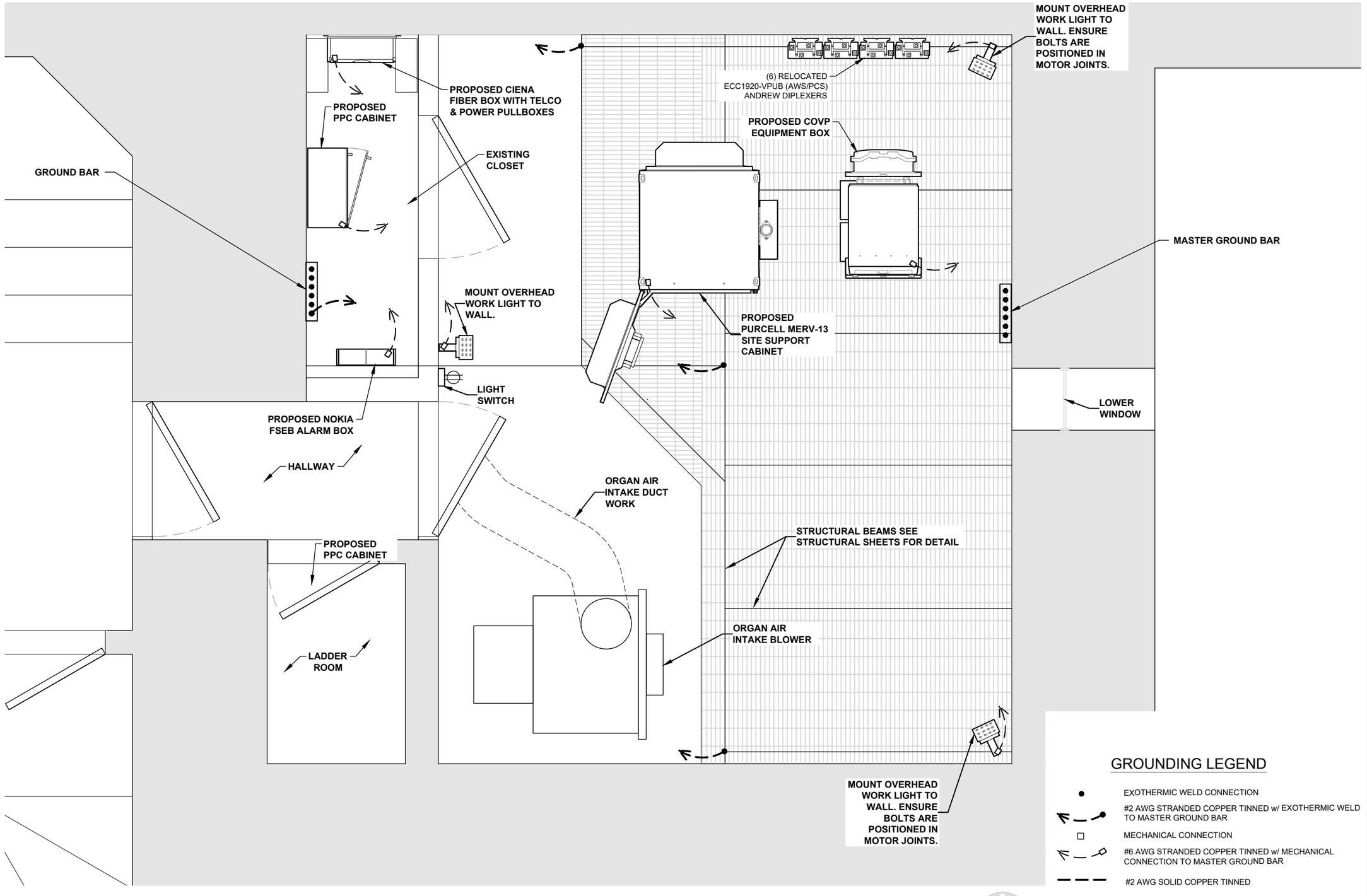
Sheet Title:
ONE-LINE DIAGRAM

Sheet Number:
E-2



SCALE: 1"=60'

0 60' 120'

GROUNDING LEGEND

- EXOTHERMIC WELD CONNECTION
- #2 AWG STRANDED COPPER TINNED w/ EXOTHERMIC WELD TO MASTER GROUND BAR
- MECHANICAL CONNECTION
- #6 AWG STRANDED COPPER TINNED w/ MECHANICAL CONNECTION TO MASTER GROUND BAR
- #2 AWG SOLID COPPER TINNED
- #6 AWG SOLID COPPER TINNED
- GROUND BUS BAR

N

GROUNDING PLAN SCALE: NTS | **1**

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Sheet Title:
GROUNDING PLAN

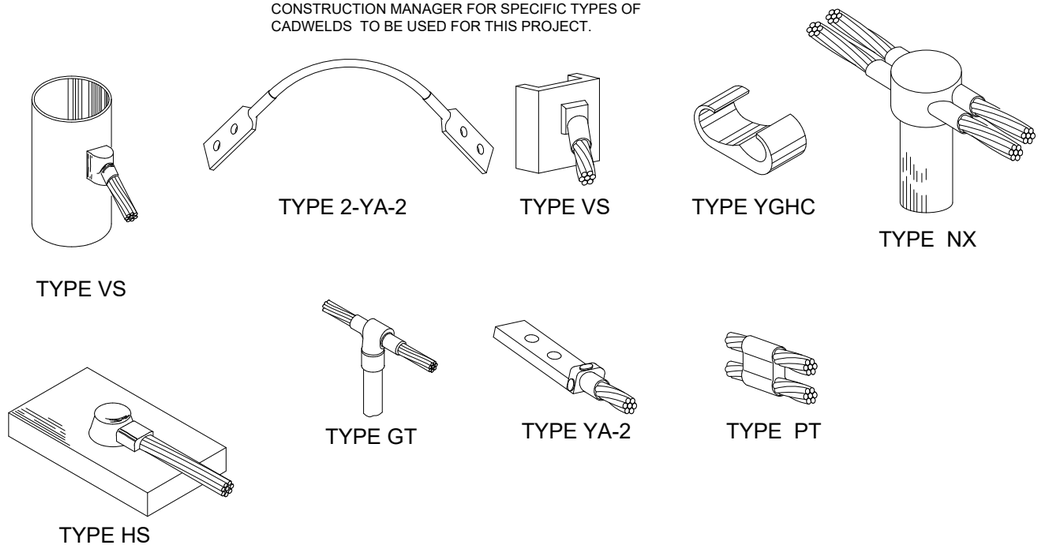
Sheet Number:
E-3

IMPORTANT GROUNDING / CABLE NOTES:

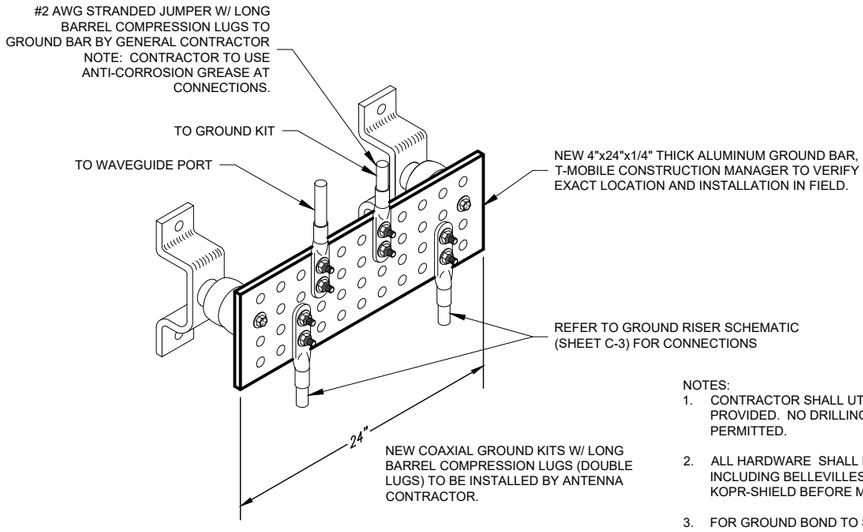
1. T-MOBILE IS ELIMINATING THE HOME RUN GROUND WIRE FROM TOP BUSS BAR AND THE BOTTOM BUSS BAR ON TOWER SITES. ROOFTOPS ARE STILL REQUIRED TO HAVE SECTORIZED GROUND AND #2 INSULTED GROUND WIRE. FROM SECTOR GROUNDS TO MAIN BUSS BARS AND BUILDING STEEL. 4 GROUND BARS, 3 ISOLATED ONE FOR EACH SECTOR, ONE AS COLLECTION POINT MOUNTED WITHOUT CHERRIES.
2. REMOVE INSULATORS (CHERRIES) FROM THE BUSS BARS AND GROUND TO TOWER, TOP AND BOTTOM ON TOWER SITES ONLY.
3. ALL EXPOSED GROUNDS TO BE DRESSED WITH SEAL TIGHT. (ONLY AT GRADE)
4. THE DISTANCE BETWEEN BUTTERFLIES AND CABLE STAND OFFS IS 36".
5. THE DISTANCE BETWEEN CONVENTIONAL AND/OR SNAP-HANGERS ON 1/2" JUMPERS SHALL BE NO MORE THAN 3 FEET AT THE TOP AND 2 FEET ON THE BOTTOM JUMPERS PER MANUFACTURER'S RECOMMENDATION.
6. NO HYBRID CABLES SHOULD TOUCH METAL OR STEEL. THE USE OF STANDOFF BRACKETS ARE REQUIRED. USE OF GROMMETS AS SUPPLIED BY T-MOBILE. (EXCEPT 1-5/8" SNAP-IN FOR CABLE MANAGEMENT)
7. HYBRID AND JUMPER LINES SHOULD BE DRESSED IN ON THE SIDE OR BOTTOM OF SECTOR FRAMES / MONOPOLES. NEVER ON TOP WERE SOMEONE WOULD WALK.
8. PARALLEL #2 TINNED PATH RUNS, WIDTH, DEPTH, BACKFILL, COMPACTION SPECS.
9. ALL MECHANICAL GROUND CONNECTIONS NEED TO BE SCRAPED IF PAINTED TO BARE METAL AND NO-OX APPLIED ON ALL CONNECTIONS ABOVE GROUND.
10. GROUND BARS NEED TO BE COPPER.
11. GROUNDING HARDWARE NEEDS TO BE STAINLESS STEEL.

GROUNDING / CABLE NOTES 1

NOTE:
CADWELD "TYPES" SHOWN ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT.



CADWELD CONNECTION TYPES N.T.S. 2



NOTES:
1. CONTRACTOR SHALL UTILIZE LUGGED HOLES PROVIDED. NO DRILLING OF THE BAR WILL BE PERMITTED.
2. ALL HARDWARE SHALL BE 18-8 STAINLESS STEEL INCLUDING BELLEVILLES. COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH KOPR-SHIELD.

GROUNDING BAR DETAIL N.T.S. 3

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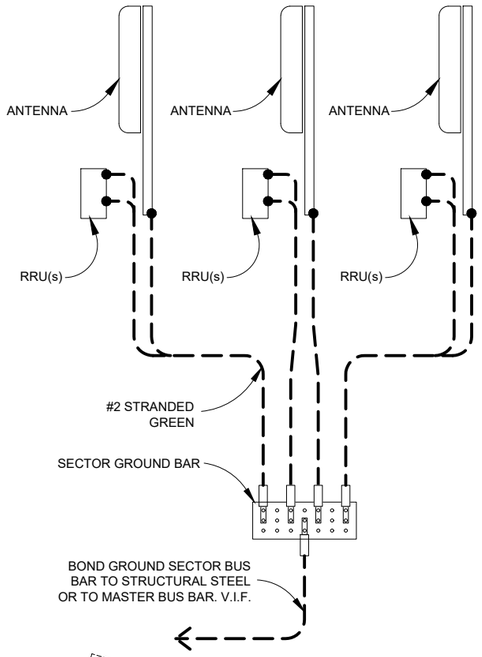
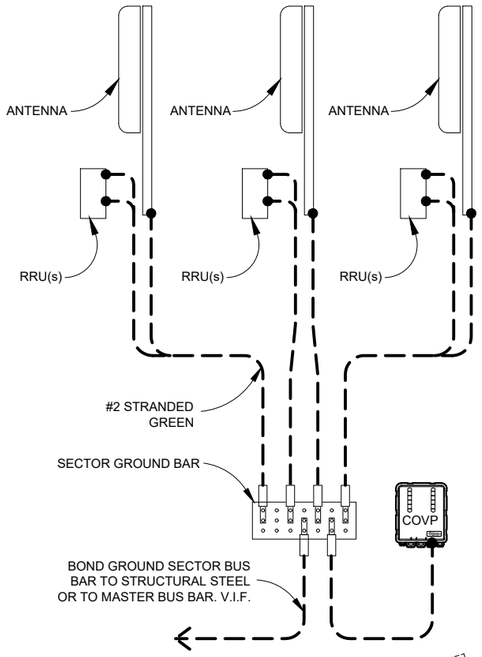
Sheet Title: GROUNDING DETAILS

Sheet Number: E-3.1

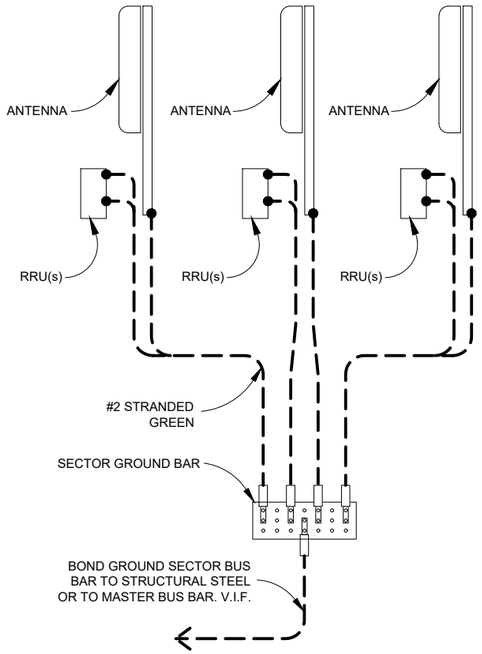
SECTOR A

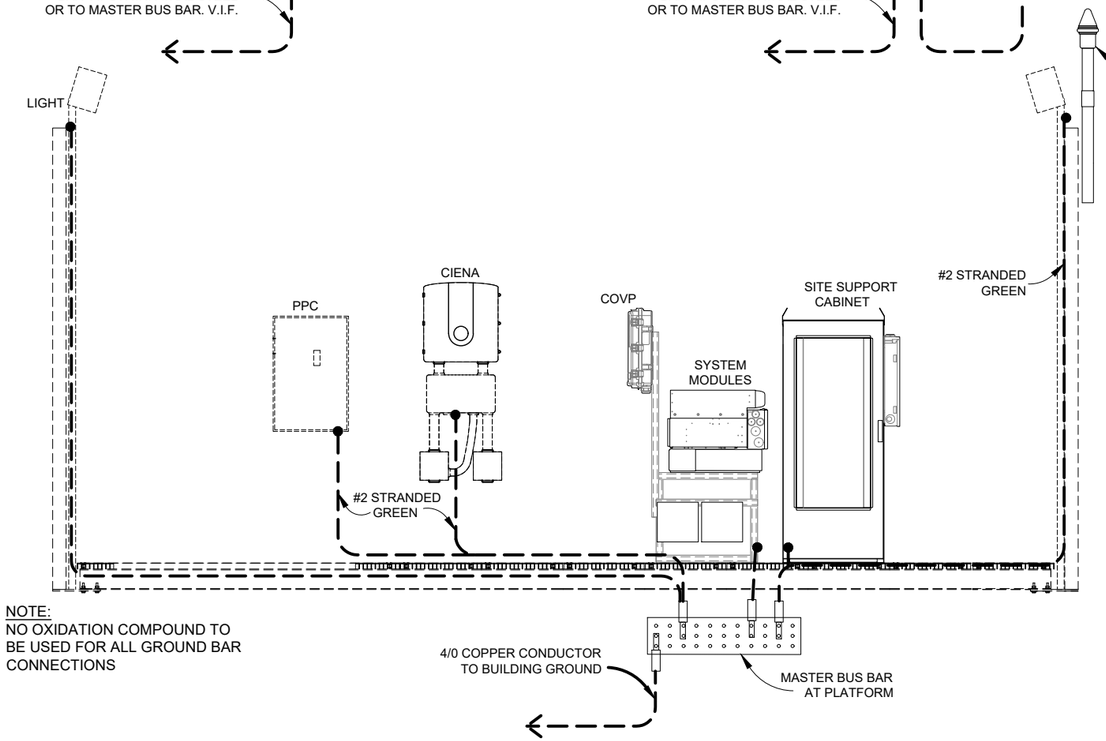


SECTOR B



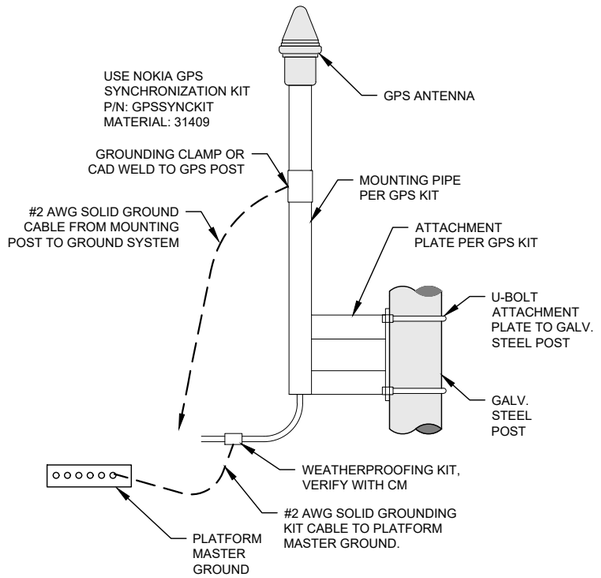
SECTOR C





NOTE:
NO OXIDATION COMPOUND TO BE USED FOR ALL GROUND BAR CONNECTIONS

● = MECHANICAL CONNECTION
■ = CAD WELD CONNECTION



GPS ANTENNA DETAIL

SCHEMATIC DIAGRAM EQUIPMENT & ANTENNA GROUNDING SYSTEM

1

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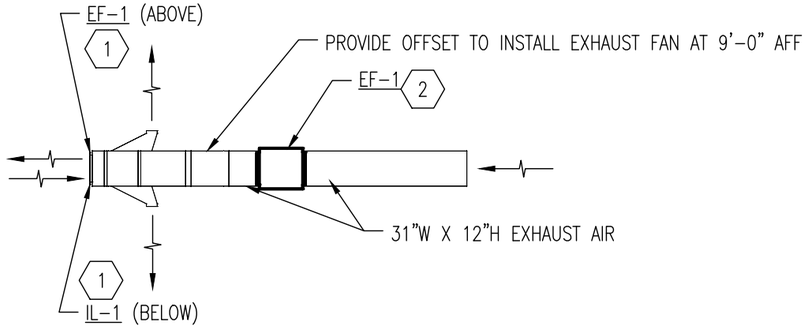
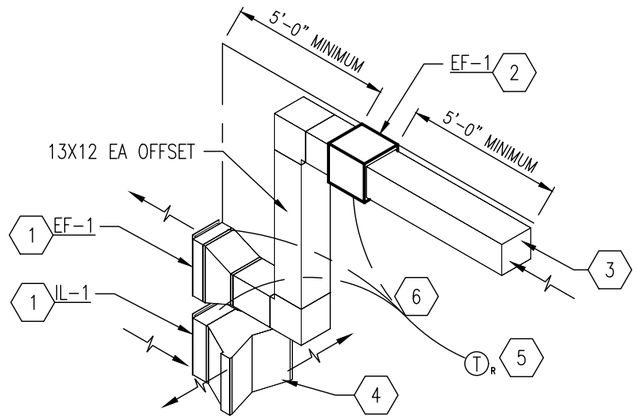
Sheet Title: GROUNDING SCHEMATIC

Sheet Number: E-3.2



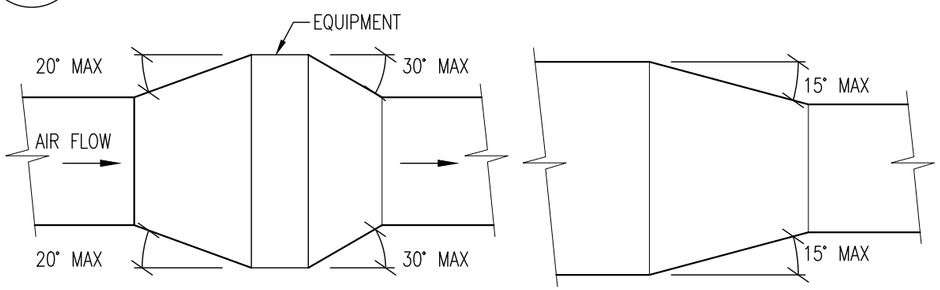
1 / M-1 FLOOR PLAN - HVAC

SCALE: NOT TO SCALE



2 / M-1 ISOMETRIC DETAIL - HVAC

SCALE: NOT TO SCALE



DUCT TRANSITION W/EQUIPMENT

DUCT TRANSITION

NOTES:

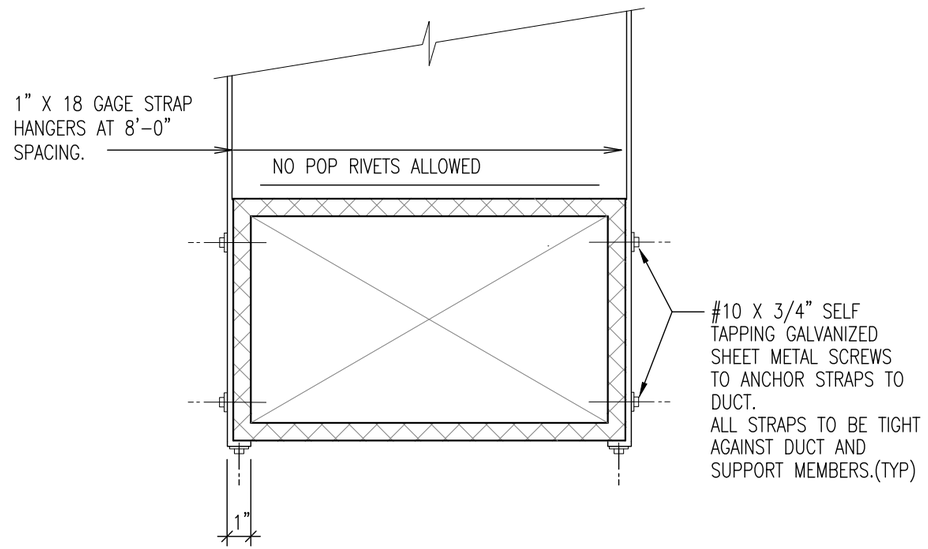
1. UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

3 / M-1 TYPICAL DUCT TRANSITION DETAIL

SCALE: NOT TO SCALE

HVAC KEY NOTES

1. PROVIDE INTAKE OR EXHAUST LOUVER WITH FACTORY OPTIONS/FINISH AS SCHEDULED.
2. PROVIDE EXHAUST FAN WITH FACTORY OPTIONS AS SCHEDULED. INSTALL AT 9'-0" ABOVE FINISH FLOOR.
3. EXTEND 13" WIDE X 12" HIGH EXHAUST DUCT 10'-0" INTO THE ROOM AND TERMINATE WITH GALVANIZED 16-GAUAGE 1x1 WIRE MESH GRILLE ON END.
4. PROVIDE A FIELD FABRICATED FITTING TO TRANSITION FROM THE INTAKE LOUVER TO TWO 22x4 OPENINGS TO DIRECT AIR INTO THE SPACE AT A 90° ANGLE.
5. PROVIDE A 120V REVERSE ACTING THERMOSTAT, INSTALL AT 4'-0" ABOVE FINISH FLOOR BETWEEN THE TWO DOORS.
6. INTERLOCK THE EXHAUST FAN WITH THE NORMALLY CLOSED INTAKE AND NORMALLY CLOSED EXHAUST LOUVER TO OPEN WHEN THE EXHAUST FAN IS ON.



4 / M-1 TYPICAL DUCT STRAP HANGER DETAIL

SCALE: NOT TO SCALE

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Sheet Title: HVAC DETAILS

Sheet Number: M-1

SECTION 23 0000 - HVAC

THE REQUIREMENTS OF THE "GENERAL CONDITIONS" AND "DIVISION 1" SECTIONS OF THE SPECIFICATIONS SHALL APPLY TO THIS SECTION OF THE SPECIFICATIONS.

PART 1 – GENERAL

1.01 SUMMARY

A. THE CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERATIONAL HVAC SYSTEM AS SHOWN ON THE DRAWINGS INCLUDING EQUIPMENT, MATERIAL, LABOR, DUCTWORK, PIPING, DIFFUSERS, GRILLES AND REQUIRED ELECTRICAL. THE CONTRACTOR SHALL PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS TO THE OWNER FOR ALL EQUIPMENT. ALL COMPRESSORS SHALL BE PROVIDED WITH A FIVE (5) YEAR EXTENDED WRITTEN WARRANTY ON PARTS AND, WHERE APPLICABLE, ALL GAS FIRED HEAT EXCHANGERS SHALL BE PROVIDED WITH AN EXTENDED TEN (10) YEAR PARTS WARRANTY. THE CONTRACTOR SHALL PROVIDE AN UNCONDITIONAL WARRANTY OF ONE YEAR FOR ALL OTHER ASSOCIATED EQUIPMENT AND DEVICES.
B. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE LOCAL BUILDING, MECHANICAL, AND ENERGY CODES ASHRAE, SMACNA, AND ALL OTHER APPLICABLE STATE AND FEDERAL CODES.
C. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED FOR THE EXECUTION OF THIS WORK.
D. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND SHALL DISPLAY A UL LABEL WHERE APPLICABLE.
E. ALL INTERIOR INSULATION MATERIALS, JACKETS, COVERINGS, SEALS AND MASTICS SHALL HAVE A FLAME SPREAD INDEX OF 25 OR LESS AND SMOKE DEVELOPED INDEX OF 50 OR LESS PER ASTM E84 (NFPA 255).

1.02 SUBMITTALS

A. PRODUCT DATA: INCLUDE MANUFACTURER'S TECHNICAL DATA FOR EACH MODEL INDICATED, INCLUDING RATED CAPACITIES, DIMENSIONS, REQUIRED CLEARANCES, CHARACTERISTICS, FURNISHED SPECIALTIES, ACCESSORIES, AND OPERATION AND MAINTENANCE DATA.

1.03 QUALITY ASSURANCE

A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

PART 2 – PRODUCTS

2.01 DUCTWORK AND SPECIALTIES

A. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL OF GAUGES AND JOINT TYPES AS SPECIFIED IN THE SMACNA MANUAL FOR THE APPLICABLE SIZES. VOLUME DAMPERS SHALL BE MANUAL LOCKING, BLADE–TYPE, TWO GAUGES HEAVIER THAN DUCT. DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS FOR TWO–INCH STATIC PRESSURE. ALL DUCTWORK SHALL BE SEALED WITH MASTIC. ACCESS DOORS SHALL BE PROVIDED IN DUCTWORK AT FIRE DAMPERS OR OTHER CONTROL DEVICES AS REQUIRED FOR MAINTENANCE. DOUBLE–THICKNESS TURNING VANES SHALL BE PROVIDED AT ALL RECTANGULAR ELBOWS. FLEXIBLE CONNECTIONS TO AIR HANDLING UNITS SHALL BE PROVIDED.

2.02 INSULATION

A. ALL DUCTWORK SHALL BE WRAPPED WITH INSULATION WITH A MINIMUM R VALUE OF R–3.5.

2.03 EXHAUST FAN

A. EXHAUST FAN TO BE SUPPLIED AS INDICATED ON THE DRAWINGS.
B. FAN SPEED CONTROLLER INSTALLATION LOCATION SHALL BE COORDINATED WITH ELECTRICAL CONTRACTOR AND BE INSTALLED AT OR BY THE FAN FOR ADJUSTMENT BY BALANCE CONTRACTOR.

PART 3 – EXECUTION

3.01 INSTALLATION

A. INSTALL UNITS LEVEL AND PLUMB, MAINTAINING MANUFACTURER'S RECOMMENDED CLEARANCES. INSTALL ACCORDING TO ARI GUIDELINE B.
B. ALL DUCTWORK AND EXHAUST FANS SHALL BE SUPPORTED PROPERLY FROM THE TOP CHORD OF ROOF JOISTS. NO DUCTWORK OR DEVICES SHALL BE ATTACHED DIRECTLY TO ROOF DECK.
C. THE HVAC SYSTEM SHALL OPERATE WITHOUT OBJECTIONABLE VIBRATION, PULSATION, OR RATTLE. MOTORS SHALL BE MOUNTED ON RUBBER VIBRATION ISOLATORS OR THE COMPLETE UNIT SHALL BE ISOLATED FROM THE BUILDING WITH ISOLATION PADS. ALL DAMPERS, GRILLES, AND ACCESSORIES SHALL HAVE NO MOVEMENT UNDER OPERATING CONDITIONS AND SHALL OPERATE WITHOUT NOISE. ALL DUCTWORK INSTALLED EXTERNAL TO THE BUILDING SHALL BE COMPLETELY WEATHERPROOF AND INSULATED.

3.04 CONNECTIONS

A. ELECTRICAL SYSTEM CONNECTIONS: COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 16 SECTIONS FOR POWER WIRING, SWITCHES, AND MOTOR CONTROLS.
B. GROUND EQUIPMENT ACCORDING TO DIVISION 16 SECTIONS "GROUNDING AND BONDING".
C. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE–TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A AND UL 486B.

3.05 TESTING ADJUSTING AND BALANCING

A. TEST, ADJUST, AND BALANCE THE EXHAUST AIR SYSTEMS:.
B. MAKE ADJUSTMENTS AND RE–TEST SYSTEM TO ACHIEVE THE REQUIRED FLOW WITHIN 10% OF SPECIFIED FLOW FOR AIR SYSTEMS.
C. WHEN DEFICIENCIES ARE IDENTIFIED, RE–TEST AND ADJUST FLOWS AFTER CORRECTIVE MEASURES ARE TAKEN.
D. PERMANENTLY IDENTIFY POSITION OF SPEED CONTROLLER AND DAMPERS FOR FUTURE REFERENCE.

END OF SECTION 23 0000

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Sheet Title:
HVAC GENERAL NOTES

Sheet Number:
M-1.1

EXHAUST FAN SCHEDULE

TAG	BASIS OF DESIGN		FLOW RATE (CFM)	E.S.P.	FAN SPEED (RPM)	DRIVE TYPE	BLADE TYPE	WEIGHT (LBS)	SONES	ELECTRICAL DATA		DISCONNECT DATA		NOTES
	MANUFACTURER	MODEL								HP	VOLTAGE	M.T.C.	E.T.C.	
EF-1	GREENHECK	SQ-95-G	530	0.25	1,300	DIRECT	BACKWARDS INCLINED	49	6.4	1 / 15	115 / 1 / 60	√		①②③

① SUSPEND FROM STRUCTURE WITH UNISTRUT AND HANGING SPRING ISOLATORS
② PROVIDE WITH 120V REVERSE-ACTING THERMOSTAT, COORDINATE SET POINT WITH OWNER
③ INTERLOCK WITH LOUVERS, COORDINATE WITH LOUVER SCHEDULE AND FLOOR PLAN

LOUVER SCHEDULE

TAG	BASIS OF DESIGN		SERVICE	FLOW RATE (CFM)	LOUVER WIDTH	LOUVER HEIGHT	LOUVER DEPTH	FREE AREA (FT^2)	VELOCITY (FPM)	ELECTRIC ACUTATOR		DISCONNECT DATA		NOTES
	MANUFACTURER	MODEL								TYPE	VOLTAGE	M.T.C.	E.T.C.	
IL-1	GREENHECK	EAD-635	INTAKE LOUVER	530	13"	22"	6"	0.8	782	NORMALLY CLOSED	115 / 1 / 60	√		①②③
EL-1	GREENHECK	EAD-635	INTAKE LOUVER	530	13"	22"	6"	0.8	782	NORMALLY CLOSED	115 / 1 / 60	√		①②③

① PROVIDE WITH FACTORY GREENHECK 70% KYNAR 500 / HYLAR 5000 IN SIERRA TAN (COLOR CODE GF118)
② PROVIDE WITH FACTORY INSECT SCREEN
③ INTERLOCK TO OPEN WHEN THE EXHAUST FAN IS RUNNING

T-Mobile
28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
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LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.

LANDTECH
Professional Surveying & Engineering
231.943.0050 www.landtechps.com 877.520.LAND

SITE #: DE04229B
SITE NAME:
SWEETEST HEART OF MARY
SITE ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

Sheet Title:
EXHAUST FAN & LOUVER SCHEDULE

Sheet Number:
M-1.2

DIVISION 1 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 Intent

A. These specifications and construction drawings accompanying them describe the work to be done and the materials to be furnished for the construction of this project.
B. The drawings and specifications are intended to be fully explanatory and supplementary. However, should anything be shown, indicated or specified on one and not the other, it shall be done the same as if shown, indicated or specified in both.
C. The intention of the documents is to include all labor and materials reasonably necessary for the proper execution and completion of the work as stipulated in the contract.
D. The purpose of the specifications is to interpret the intent of the drawings and to designate the method of the procedure, type and quality of material required to complete the work.
E. Minor deviations from the design layout are anticipated and shall be considered as part of the work. No changes that alter the character of the work will be made or permitted by the Owner without issuing a change order.

1.2 Conflicts

A. The Contractor shall be responsible for verification of all measurements at the site before ordering any materials or doing any work. No extra charge or compensation shall be allowed due to difference between actual dimensions and dimensions indicated on the construction drawings. Any such discrepancy in dimension which may be found shall be submitted to the Owner for consideration before the Contractor proceeds with the work in the affected areas.

B. The Bidder, if awarded the contract, will not be allowed any extra compensation by reason of any matter or thing concerning the work which the Bidder might have fully discovered prior to the bidding.

C. No plea of ignorance of conditions that exist, or of difficulties or conditions that may be encountered or of any other related matter concerning the work to be performed in the execution of the work will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill every detail of all the requirements.

1.3 Contracts and Warranties

A. Each Contractor is responsible for obtaining the building permit at the local jurisdiction as the Contractor of record, and provide local jurisdiction with all proof required to operate as a Contractor in that jurisdiction. The Contractor shall be reimbursed only the amount of any fee paid as follows:

1. Plan review fee.
2. Building permit fee.
3. Connections and inspections fee.
4. Development fee.

B. Contractor is responsible for application and payment of Contractor licenses and bonds.

1.4 Storage

All materials must be stored in a level and dry fashion in a manner that does not necessarily obstruct the flow of other work. Any storage method must meet all recommendations of the associated manufacturer.

1.5 Clean Up

The Contractor shall at all times keep the site free from accumulation of waste, material or rubbish at the work site and, at completion of the work, shall remove all rubbish from and about the building area, including all tools, equipment, and surplus materials and shall leave the work area clean and ready for use.

1.6 Change Order Procedure

Change order may be initiated by the Owner and/or the Contractor involved. The Contractor, upon verbal request from the Owner shall prepare a written proposal describing the change in work or materials and any changes in the contract amount and present to the Owner for approval. Submit requests or substitutions in the form and in accordance with procedures required for change order proposals. Any changes in scope of work or materials which are performed by the Contractor without a written change order as described and approved by the Owner shall place full responsibility of these actions on the Contractor.

1.7 Related Documents And Coordination

General Carpentry, electrical, and antenna drawings are interrelated. In performance of the work, the Contractor must refer to all drawings. All coordination to be the responsibility of the Contractor.

1.8 Products And Substitutions

A. Submit 3 copies of each request for substitution. In each request identify the product or fabrication or installation method to be replaced by the substitution. Include related specification section and drawing numbers and complete documentation showing compliance with the requirements for substitutions.

B. Submit all necessary product data and cut sheets which properly indicate and describe the items, products, and materials being installed. The Contractor shall, if deemed necessary by the Owner, submit actual samples to the Owner for approval in lieu of cut sheets.

1.9 Quality Assurance

All work shall be in accordance with applicable local, state and federal regulations. These shall include but not be limited to the latest version of the following:

ANSI/EIA - 222 - E
International Building Code
National Electrical Code (NEC) with local Amendments
UnderWriter Laboratories Approved Electrical Products
American Institute of Steel Construction Specifications (AISC)
Life Safety Code NFPA - 101
Minimum design criteria for steel antenna towers and supporting structures will be TIA / EIA - 222 - F

1.10 Administration

A. Prior to the commencement of any work, the Contractor will assign a Project Manager who will act as a single point of Contact for all personnel involved in this project. This Project Manager will develop a master schedule for the project which will be submitted to the Owner prior to the commencement of any work.

B. Submit a bar chart type progress not more than 3 days after the date established for commencement of the work on the schedule. Indicate a time bar for each major category or unit of work to be performed at site, property sequenced and coordinated with other elements of work. Show completion of the work sufficiently in advance of the date established for substantial completion of the work.

C. Prior to commencing construction, the Owner will schedule an "on-site" meeting with all major parties. This would include (though not limited to) the Owner, local telephone company, Tower Erection foreman (if subcontracted).

D. Contractor shall be equipped with some means of constant communications, such as a mobile phone or a pager. This equipment will NOT be supplied or paid for by the Owner nor will cellular service be arranged.

E. During construction, Contractor must ensure that employees and Subcontractors wear OSHA Level D personal protective equipment at all times. The Contractor must comply with all applicable OSHA requirements.

D. Contractor shall be equipped with some means of constant communications, such as a mobile phone or a pager. This equipment will NOT be supplied or paid for by the Owner nor will cellular service be arranged.

E. During construction, Contractor must ensure that employees and Subcontractors wear OSHA Level D personal protective equipment at all times. The Contractor must comply with all applicable OSHA requirements.

F. Contractor shall provide DAILY updates on site progress, either verbal or written.

G. A complete inventory of construction materials and equipment is required prior to start of construction.

1.11 Insurance And Bonds

A. Contractor shall at his own expense carry and maintain for the duration of the project all insurance as required and shall not commence with his work until he has presented a certificate of insurance stating all coverage to the Contractor who shall, in turn, forward a copy of all certificates to the Owner.

DIVISION 2 - SITE WORK

PART 1 - GENERAL

1.1 Work Included

Refer to the survey and architectural site plan for work included.

1.2 Related Work

A. Installation of antenna system
B. Erection of fence
C. Access road
D. Parking area

1.3 Descriptions

Access road, turnaround areas, and sites are constructed to provide a well drained, easily maintained, even surface for material and equipment deliveries and maintenance personnel access.

1.4 References

A. ASTM - American Society of Testing Materials, latest edition.

1.5 Quality Assurances

A. Contractor shall apply soil sterilizer in accordance with manufacturer's recommendations, as needed.
B. Vegetation and landscaping, if required within the contract, shall be placed and maintained as recommended by nursery industry standards.

1.6 Sequencing

A. Contractor shall confirm survey stakes and set elevation stakes prior to any construction.
B. The complete road and site area shall be cleared of heavy growth of grass, trees, shrub and topsoil prior to foundation construction or placement of backfill or subbase material.
C. Construct temporary construction zone along access drive.
D. The site area shall be brought to subbase course elevation and the access road to base course elevation prior to forming foundations.
E. Contractor shall apply soil herbicide prior to placing base materials.
F. If required, grade, seed, fertilize and mulch disturbed area immediately after bringing the site and access road to base course elevation. Water to ensure growth.
G. Remove gravel from temporary construction zone.
H. After applications of final surfaces, soil herbicide shall be applied to the stone surfaces.

1.7 Submittals

A. Prior to Construction
1. If landscaping is applicable to the contract, submit two copies of the landscaping plan under nursery letterhead. If a landscape allowance was included in the contract, submit an itemized listing of proposed costs under nursery letterhead (Refer to site plan for landscaping requirement).
2. Submit for approval 1/2 cubic feet of the proposed surface course material.
B. Following Construction
1. Manufacturer's description of product and warranty statement on soil herbicide treatment.
2. Manufacturer's description of product on grass seed and fertilizer, if needed.
3. Landscaping warranty statement, if required.

1.8 Warranty

A. In addition to the warranty on all construction covered in the contract documents, the Contractor shall repair all damage of surrounding property caused by construction.
B. Soil herbicide application will guarantee vegetation free road and site area for one year from the date of final inspection.
C. Disturbed areas shall reflect growth of new grass cover prior to final inspection.
D. Landscaping, if included within the scope of the contract, shall be guaranteed for one year from date of final inspection.

PART 2 - PRODUCTS

2.1 Material

A. Subbase: Granular material
B. Aggregate Base Course:
1. For bases to be surfaced with concrete or bituminous mixtures, use Aggregate 22A unless otherwise specified.
2. For bases to be surfaced with aggregate, use Aggregate 6A or 3-4" crushed concrete (no rerod).
C. Aggregate Surface Course: Use Aggregate 21AA when the Aggregate surface course is to be constructed without a bituminous surface.

2.2 Equipment

A. Compaction shall be accomplished by mechanical means.
1. Larger areas shall be compacted by sheeps foot, vibratory or rubber tired rollers weighing at least five tons.
2. Smaller areas shall be compacted by power-driver, hand held tampers.

PART 3 - EXECUTION

3.1 Preparation

A. Clear trees, brush and debris from site area and access road right of way (if required).

B. Prior to other excavation and construction efforts clear site of organic material to a minimum of six inches below original ground level.

C. Unless otherwise instructed by the Owner, remove trees, brush, and debris from the property to an authorized landfill.

D. Prior to placement of fill or base materials, proof roll the soil.

E. Where unstable soil conditions are encountered, cover cleared areas with stabilizer mat prior to placement of fill or base material.

3.2 Installation

A. The site and turnaround area shall be at the subbase course elevation prior to forming foundations. Grade or fill the site and access road as required such that there is an even distribution of spoils resulting from foundation excavations. The resulting grade shall correspond with said subbase course; elevations shall be calculated from finished grades or slopes indicated.

B. Excess spoils, if any, shall be cleared from job site and not spread beyond the limits of Owner/leased property unless authorized by project manager.

C. The access road shall be brought to base course elevation prior to foundation construction to permit use. Compaction shall be performed during construction of the site.

D. Avoid creating depressions where water may pond.

E. The Contract shall be assumed to include grading, banking, ditching and unless otherwise indicated, covering with two inches of surface course all roads or routes utilized for access to the Owner site, commencing at the point of intersection with the nearest public thoroughfare.

F. When improving an existing access road, the existing road shall be graded to remove any organic matter and smooth the surface before placing fill or stone.

G. Fill material or stone shall be placed in six-inch maximum lifts and compacted as described in Section 2.10 prior to placement of next lift.

H. The finish grade, including top surface course, shall extend a minimum of three feet beyond the site fence and shall cover the area as indicated.

I. Subbase:
1. Thickness: Conform to design cross section.
2. Construction method: Place in layers not exceeding 15 inches loose measure. Spread evenly and compact to not less than ninety-five percent (95%) maximum density

J. Aggregate Base Course:
1. Thickness: Compacted in place in two (2) equal courses.

K. Aggregate Surface Course:
1. Thickness: Compacted in place in two (2) equal courses.

O. Riprap shall be applied to the side slopes of all fenced site areas, parking areas and to all other slopes greater than 2:1.

P. Riprap shall be applied to the side of ditches or drainage swales.

Q. Riprap entire ditch for six feet in all directions at culvert openings.

R. Seed, fertilizer and straw cover shall be applied to all other disturbed areas and ditches, drainage, swales, not otherwise riprapped.

S. Under no circumstances will ditches, swales or culverts be placed such that they direct water towards, or permit standing water immediately adjacent to the site. If Owner designs or elevations conflict with this guidance the Owner should be advised immediately.

T. If any ditch lies with slopes greater than ten percent, mound diversionary headwalls in the ditch at the culvert entrances 45 degrees off the ditch line. Riprap the upstream side of the headwall as well as the ditch for six feet above the culvert entrance.

U. Seed and fertilizer shall be applied to surface conditions that will encourage rooting. Rake areas to be seeded to even the surface and loosen the soil.

V. Saw seed in two directions in twice the quantity recommended by the seed producer.

W. Contractor is responsible for the growth of seeded and landscaped areas by watering up to the point of release from the Contract. Continue to rework bare areas until complete coverage is obtained.

DIVISION 3 - CONCRETE

PART 1 - GENERAL

1.1 Inspections

A. LOCAL BUILDING INSPECTION SHALL RECEIVE ADEQUATE NOTIFICATION IN ADVANCE OF CONCRETE POURS.

1.2 Summary

A. The work includes all cast-in-place concrete.

1.3 References

ASTM - American Society Testing Materials, latest edition. ACI - American Concrete Institute, latest edition.
ACI 318. Building Code Requirements for Reinforced Concrete.
ACI 301. Specifications for Structural Concrete for Buildings.

1.4 Submittals

A. Proposed mix design prepared by an approved independent testing firm for each class of concrete. Select proportions according to ACI 301-05, Section 3.8, Method 1 or Method 2.

B. Shop drawings showing fabrication dimensions and locations for placing the reinforcing steel and accessories. Details of reinforcement and accessories shall be in accordance with ACI 315.

C. Certifications for the following:
1. Cement.
2. Aggregates.
3. Admixtures.
4. Reinforcement.

PART 2 - PRODUCTS

2.1 Materials

A. Concrete:
1. Cement: ASTM C150 or ASTM C595 (maximum fly ash content shall be 20% by weight). All cement used in exposed concrete shall be of the same brand from the same mill.
2. Course aggregates: ASTM C33.
3. Fine aggregate: ASTM C33.
4. Mixing water: Clean, fresh, and potable.
5. Admixtures: Air-entraining: ASTM C260. Water-reducing, retarding, and accelerating: ASTM C494. Calcium chloride will not be permitted as an admixture. Pozzolanic admixtures: ASTM C618, Type F, loss on ignition limited to 4 percent (4%).

B. Reinforcement: Refer to tower foundation design or tower manufacturer for type for material type and configuration of reinforcement bars.

C. Curing Compound, if needed: ASTM C309

2.15 Field Quality Control

A. Compaction shall be at least 95% of maximum density and within 2% of optimum moisture content in accordance with ASTM D-1557. Areas of settlement shall be excavated and refilled at Contractor's expense.
B. All trees placed in conjunction with a landscape contract will be wrapped, tied with hose protected wire and secured to 2- inch x 2-inch x 4-inch wooden stakes extending two feet into the ground on four sides of the tree.

C. All exposed areas shall be protected against washouts and soil erosion. Straw bales will be placed at the inlet approach to all new or existing culverts. Where the site or road areas have been elevated immediately adjacent to a rail line, erosion control fabric will be staked full length in the swale between the site and the rail bed to prevent contamination of the rail ballast.

D. Field inspection and testing is to be performed by a firm appointed and paid for by the Owner. When additional testing of materials or concrete is necessary because of their failure by test or inspection to meet specification requirements, the cost of the additional testing shall be paid for by the Contractor. Additional testing for early form removal shall also be paid for by the Contractor.

E. Acceptance Testing: If initial testing indicates failed or non-conformance to specification, perform additional test. If further testing verifies non-conformance, additional testing shall be paid by CONTRACTOR. Replace non-conforming material at no additional cost to OWNER.

1. Aggregates:
A. Sampling and Analysis: Michigan Testing Methods, Series 100.
B. Exception: Provide certification of approved stockpiled material.

2.2 Proportioning Concrete

A. Proportions and Materials:
Permissible Cement Types: I, IP, I-A, IP-A
Minimum Cement Content: 5.5 sacks/cu.yd. for 3500 psi, 6.0 sacks/cu.yd. for 4000 psi.
Maximum Water-Cement Ratio: 5.0 gal./sack
Entrained Air Content: five percent (5%) to eight percent (8%).
Maximum Slump:3½-inch for floors and slabs on grade, 4 inches otherwise (individual batches may be ± ½ inch as long as the average of all batches is at or below maximum).
Minimum Compressive Strength, fc' (28 day) 4000 psi floors and slabs on grade, all other 3500 psi.

B. Admixtures: Approval of ENGINEER required. Use in accordance with the manufacturer's instructions.

C. If the CONTRACTOR intends to place concrete by pumping, the mix design shall be prepared in accordance with these specifications and the recommendations of ACI 304.

2.3 Fabricating Reinforcement

Fabricate in accordance with approved shop drawings and ACI 315.

Reinforcing splices: Class B unless otherwise shown.

PART 3 - EXECUTION

3.1 Performance

In accordance with the requirements of ACI 301, Chapters 4 through 13, 17 and 18.

3.2 Concrete Work For Drilled Piers

All concrete piers shall be drilled and poured on the same day to prevent any migration of water into the hole and to prevent debris from collecting in the hole.

3.3 Field Quality Control

A. Provide access to all portions of the work and any necessary assistance in obtaining and handling samples at the project or other material sources. Three concrete test cylinders will be taken for every 50 cubic yards, or fraction thereof, for each class of concrete place in any one day. One additional cylinder will be taken during cold weather concreting and be cured on the project site under the same conditions as the concrete it represents. One slump test will be taken for each set of cylinders taken.

NOTE: THESE NOTES ARE OF A GENERAL NATURE AND ARE NOT SITE-SPECIFIC. SOME NOTES MAY NOT APPLY TO THIS SITE. CROSS-REFERENCE NOTES WITH OTHER SHEETS AND T-MOBILE SCOPE OF WORK TO VERIFY WORK TO BE COMPLETED.

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LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

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LANDTECH
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SITE #: DE04229B
SITE NAME: SWEETEST HEART OF MARY
SITE ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST. DETROIT, MICHIGAN 48207

Sheet Title: GENERAL NOTES

Sheet Number: N-1

Division 15 - MECHANICAL

PART 1 - GENERAL

1. Included - Work of this section generally includes provisions of labor, materials, equipment, accessories, necessary for installation of mechanical systems shown on the contract drawings and specified in the General Notes. Intent of construction documents is to provide the Owner with a complete and operating facility, and any minor items omitted but obviously necessary to accomplish intent shall be provided whether or not shown or specified.

2. Related - The General Requirements division of the General Notes is hereby made a part of the work of this specification. The requirements of this specification apply to the work of all sections of division 15.
A. Work performed by others includes installation of electrical equipment, except as noted otherwise on drawings or in specification.
B. Electrical division 16

3. Ordinances and Codes
A. All work shall be executed and inspected in accordance with all underwriter's, public utilities, local and state codes and regulations applicable to the trade affected. Recommendations of AFA, NFPA, OSHA and ASHRAE and applicable state energy code compliance shall be rigidly followed.
B. Should any change in the plans and specifications be required to comply with these regulations, the contractor shall notify the Owner before submitting his bid. After entering into contract with the Owner, the contractor will be held accountable to complete all work necessary to meet these requirements at his own expense.
C. Where the work required by the drawings and specifications is above the standard required, it shall be done as shown or specified.

4. Permits - The contractor shall arrange and pay for all permits in connection with the work hereinafter specified and at completion of the work furnish the Owner with the final certificate of inspection.

5. Drawings - The drawings indicate the general arrangement of the proposed work. Details of proposed departures due to actual field conditions or other causes shall be provided for. No extras will be paid for correcting faulty, poorly arranged, or poorly coordinated work.

6. Site Examination - The contractor shall visit the premises so as to ascertain the existing conditions before submitting his bid. No extras will be allowed for his lack of knowledge of these conditions.

7. Complete Installation - The contractor shall furnish and install all incidental parts, valves, fittings, pumps, control valves and control wiring required for the proper function of all component parts. The complete installation shall function smoothly and noiselessly to the full extent of the plans and specifications. The contractor shall complete his installation as rapidly as general construction permits. All filters, strainers, and safety devices shall be properly installed before starting equipment. The Owner shall be left with a new set of filters at final acceptance.

8. Coordination - Before any equipment is purchased or fabricated and before running and/or fabricating any lines of piping or ductwork, the mechanical contractor and his subcontractors shall assure themselves that they can be run as contemplated. Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings and accessories that may be required. The mechanical contractor and his subcontractors shall carefully investigate all other mechanical, and electrical and structural drawings and finish conditions affecting all of their work accordingly, furnishing such fittings, valves, duct transitions, offsets and accessories as may be required to meet such conditions, at no additional cost.

9. Temporary Heat - Arrangements for usage of system for temporary heat shall be coordinated with general contractor. System shall not be used for temporary heat unless all temporary filters are installed. Temporary filters and operation of units shall be provided by the general contractor.

10. Submittals - Within 5 days after proposal acceptance the contractor shall submit to the Owner for approval two (2) copies of shop drawings on each item of equipment whether as specified or substituted. Shop drawings shall give overall dimensions, weights, metal gauges, materials, certified capacities, brake HP, motor HP, tube diameters friction drop and nameplate data. The contractor shall be responsible for checking shop drawings before submitting for approval. The Owner's check shall be general and does not relieve the contractor of final responsibility for a complete job to the intent of plans and specifications. All control diagrams and equipment should be assembled in one submittal.

11. Substitution of Equipment
A. Bids shall be based on providing all equipment mentioned by brand name in plans and specifications. No substitutions shall be considered before bidding.
B. The contractor shall attach a list of proposed substitutions, giving the amount to be added or deducted to contract price for each item. Complete engineering data shall be submitted on each request for substitution item. Substitute items shall be equal or better than items mentioned in regard to all accessories, capacities, durability and appearance. Contractor shall pay all costs incurred to make substitute items fit required space with maintenance clearances - piping, sheet metal, electrical or building alteration shall be included in said costs.
C. All standard accessories as well as specified extras shall be provided with equipment.

12. Guarantee - All material and workmanship installed and/or furnished under this section of work shall be guaranteed against defects for a period of one year from date of acceptance by Owner. Any defects or faulty workmanship shall be the contractor's responsibility and shall be corrected entirely at his expense.

PART 2 - PRODUCTS

1. Approved manufacturers - approval by name listed in this specification does not imply that the manufacturer standard product meets the intent of the drawings and specification. It is the contractors responsibility to provide all necessary alterations, materials, labor, etc., as approved by the Owner to meet the full intent of the drawings and specifications. This is to include, but not necessarily be limited to electrical, structural, mechanical, and architectural alterations and revisions necessary to provide a complete and operating facility at no additional costs to the Owner.

2. Materials - Materials throughout shall be new and of the best grades specified. They shall be standard catalog items and manufactured by nationally known manufacturers of the items specified. Contractor shall receive and be responsible for all Owner furnished equipment and provide rough-in and final connections for all mechanical equipment furnished under this contract or by others. The contractors shall provide a suitable shed for the storage of all materials during progress of the job.

3. Solder - All solder used on sweat fittings shall be 95-5 hard solder unless brazing or silver solder is specified. All buried copper piping shall be silver soldered.

4. Floor, Ceiling Plates, Flanges - Provide tight fitting floor and ceiling plates on pipes passing through walls, ceilings, floors, nickel or chrome plate in finished areas. Provide wall and ceiling flanges for ducts in finished areas.

5. Pipe Hangers, Supports - Provide hangers, supports, braces by Grinnell, Fee and Mason, Grabler, Elcen, Unistrut, Basin Engineers, Inc. to prevent undue strain, stresses, noise, vibration.

PART 3 - EXECUTION

1. Workmanship
A. Work throughout shall be performed by men skilled in the installation of the various trades of the work herein specified.
B. All piping and ductwork shall be run concealed in finished areas except where noted otherwise or as chrome plated plumbing fixture connections.
2. Curbs, Bases, Supports - Major curbs, openings, and equipment supports will be provided under the general section of this contract only where shown on engineering or structural plans. All other supports, anchors, and bases shall be provided by mechanical contractor for all mechanical equipment. Equipment shall be supported per manufacturer's written recommendations for noise-free installation.
3. Removal of Existing Work - All existing mechanical equipment, piping, etc., removed by the contractor shall be the property of the building. Such items will be disposed of at the building owner's direction.
4. Removal of Rubbish - On completion of his work, the contractor shall remove all of his tools, scaffolding, debris, etc., from the grounds and leave the premises perfectly clean.
5. Operating and Maintenance Instructions - Upon completion, the contractors shall make up a set of operating and maintenance instructions covering all mechanical equipment with moving or moveable parts including general operating or heating, plumbing and cooling systems and shall give the Owner four (4) copies of these instructions. Manufacturer's printed operations and maintenance instructions shall also be provided for each piece of equipment.
A. Name, address, and telephone number of party to be contacted for 24 hour service for each item of equipment.
B. Starting, stopping, lubrication, and adjustment shall be clearly indicated for each piece of equipment.
C. Prepare 8-1/2"x11" blueprints with binding edge of appropriate scale to indicate all equipment, respective switches, and valve locations. Bind in instruction book.

DIVISION 5 - FENCE

PART 1 - GENERAL

3.1 Work Included

A. Refer to the site plans for size and location of fence and gates to be installed.

3.2 Related Work

A. Coordinate fence grounding with Electrical Contractor.
B. Refer to Fence Detail Plan - concrete for specification of concrete and grout.
C. Refer to Fence Detail Plan for applicable locations of access road gates.

3.3 Description

A. A security fence is provided in order to inhibit unauthorized access to the site area.

3.4 Quality Assurance

Refer to Fence Detail Plan.

3.5 Sequencing

A. If the site area has been brought up to surface course elevation prior to fence construction, fence post excavation spoils must be controlled to preclude contamination of surface course.

3.6 Submittals

A. Manufacturer's descriptive literature.
B. Certificate of compliance that specifications have been met.

3.7 Fence Material

Refer to Fence Detail Plan.

DIVISION 7 - ANTENNA SYSTEM

PART 1 - GENERAL

1.1 Work Included

A. Erect furnished tower as indicated in the drawings.
B. Install antennas as indicated on drawings and Owner specifications.
C. Install antenna platform as indicated on drawings.
D. Install furnished galvanized steel waveguide ladder.
E. Install waveguide bridge as indicated on drawings.
F. Install coax cable, connectors, jumpers, grounding kits as indicated in drawings.
G. Sweep test result.

1.2 Requirements of Regulatory Agencies

A. Furnish U.L. listed equipment were such label is available, install in conformance with U.L. standards where applicable.

B. Install antenna, antenna cables, grounding system in accordance with drawings and specification in effect at project location and recommendations of state and local building codes, special codes having jurisdiction over specific portions of work. This includes, but is not limited to, the following:

1. EIA - Electrical Industries Association RE - 222, structural standards for steel antenna towers and antenna supporting structures.
2. FAA - Federal Aviation Administration advisory circular AC 70/7460-IH, obstruction marking and lighting.
3. FCC - Federal Communications Commission rules and regulations form 715 "obstruction marking and lighting specifications for antenna structures", and form 715A, "high intensity obstruction lighting specification for antenna structures".
4. DISC - American Institute of Steel Construction specifications for structural joints using ASST. A325 or A490 bolts.
5. NECK - National Electrical Code - on tower lighting kits.
6. UL - Underwriter's Laboratories approved.
7. In all cases part 77 or the FAA rules and parts 17 and 22 of the FCC rules are applicable and in the event of conflict, supersede any other standards or specifications. 1990 Life Safety code NAPA - 101.

DIVISION 16 - GENERAL ELECTRIC

PART 1 - GENERAL ELECTRICAL PROVISION

1. Submittal of bid indicates Contractor is cognizant of all job site conditions and work to be performed under this contract.
2. Contractor shall perform all verification, observations, 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 architect listing all malfunctions, faulty equipment and discrepancies.
3. Heights shall be verified with Owner prior to installation.
4. These plans are diagrammatic only.
5. Electrical Service 120/240 V.A.C. single phase 3-wire 100 AMP service.
6. Contractor shall provide all labor, materials, insurance, equipment, installation, construction tools, transportation, etc. for a complete and properly operative system energized throughout and as indicated on drawings, as specified herein and/or as otherwise required.
7. Contractor shall carry out all work in accordance with all governing state, county, and local codes and O.S.H.A.
8. Contractor shall secure all necessary building permits and pay all required fees.
9. Complete job shall be guaranteed by the Contractor for a period of one (1) year after the date of job acceptance by Owner. Any work, material, or equipment found to be faulty during that period shall be corrected at once, upon written notification, at the expense of the Contractor.
10. Provide project manager with one set of complete electrical "as installed" drawings at the completion of the job, showing actual dimensions, routings and circuits.
11. The entire electrical installation shall be grounded as required by all applicable codes.
12. Upon completion of work, conduct continuity, short circuit and fall potential ground tests for approval. Submit test reports to project manager. Clean premises or all debris resulting from work and leave work in a complete and undamaged condition.

PART 2 - PRODUCTS

A. 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. Material shall be listed "J" where subject to such approval. Materials shall meet with approval of the division of industrial safety and all governing bodies having jurisdiction. Materials shall be manufactured in accordance with applicable standards established by ANSI, NEMA and NBFU.
B. All conduit only (C.O.) shall have a pull wire or rope.
C. All conductors shall be copper.
D. All circuit breakers, fuses and electrical equipment shall have an interrupting short circuit to which they may be subjected, and a minimum of 10,000 A.I.C.
E. Wire and cable conductors shall be copper 12 AWG Minimum unless specifically noted otherwise on drawings.
F. Grounding conductors shall be solid tinned copper and annealed +2.
G. Meter socket amperes, voltage, number of phases shall be as noted on the drawings, manufactured by Square D Company or approved equal.
H. All material shall be U.L. listed.
I. All underground conduit shall be PVC schedule 40 (unless noted otherwise) at a minimum depth of 24" below grade.
J. Cables
1. All ground cable shall be standard TND solid bare copper plate and of size indicated on drawings.
2. When the direction of the conductor must change it shall be done gradually. The curvature of the turn shall be done in accordance with the following table:

Grounding Conductor Size

Min Bending Radius to Inside Edge:

No. 6 awg. to no. 4 awg	3"
No. 6 awg to no. 1/0 awg	8"
No. 2/0 awg. to 750 mcm	1"
Bus Bar	No Restrictions

PART 3 - UNDERGROUND ELECTRICAL SERVICE

A. Coordinate the electrical service with the utility company.
B. Contractor to coordinate with utility company connection of temporary and permanent power to the site. The temporary power and all hookup costs to be paid by contractor.
C. The service shall be installed in accordance with all applicable codes and standards to be acceptable to the governing authorities exercising legal jurisdiction over electrical installations.

PART 4 - GROUNDING CONNECTIONS

A. External Connections:
1. All external grounding connections shall be made by the "cadweld" process. Connections shall include all cable to cable splices, Tees, Xs, etc. All cable to ground rods, ground rod splices and lightning protection system as indicated. All materials used (molds, welding, metal, tools, etc.) shall be by "cadweld" and installed per manufacturer's recommendation and procedures. 2. All interior grounding and bonding conductors shall be connected by two holes crimp type (compression) connections (except for the ACEG and ground rod) mechanical connections, fitting or connections that depend solely on solder shall not be used.

B. Ground Rods:
All ground rods shall be 5/8" diameter x 10'-0" long "Copperweld" or approved equal of the number and at locations indicated. Ground rods shall be driven full length vertical in undisturbed earth. All ground rods to be 10' apart unless otherwise

C. Ground Bars:
All ground bars shall be 1/4" thick bare copper plate and of size indicated on drawings.

D. Ground Ring:
1. The ground ring encircling the building shall be minimum size of no. 2 awg bare copper conductor in direct contact with the earth at a depth of not less than 42 inches (min) conductor bends shall have a minimum radius of 8 inches.

2. All external ground rings shall be joined together and all connections shall be "cadweld". NO LUGS OR CLAMPS WILL BE ACCEPTED.

E. Fence/Gate All sections of fence and gate shall be grounded as indicated on drawings. Ground each gate post and corner post. All other connections for the ground grid system shall be made by the "cadweld" process, and installed per manufacturer's recommendations and procedures.

F. Ground test pit A ground test pit shall consist of 6" diameter SCH 40 PVC with 6" cleanout plug & cleanout adapter fitting. Plug threads shall be coated with anti-seize lubricant prior to installation. 6" PVC will be 18" long, buried 12" underground with 6" above finished grade. Top of Ground rod cadwelded to ground ring will be 12" from top of cleanout adapter.

PART 5 - ASTM Fall Potential Tests

A. Ground tests shall be performed as indicated on drawings. A biddle ground ohm meter or the method of using two auxiliary ground rods (as described in I.E.E.E. standard no. 81-1983, part 1) may be used. The I.E.E.E. method requires the use of an a.c. test current. The auxiliary test rods must be sufficiently far away from the rod under test so that the regions in which their resistance is localized do not overlap.

B. Contractor to conduct ground resistance test in the format as follows:
1. Equipment Building
A. First test - shall be with four ground rods installed, one at each corner of the building but not connected to the main grounding bus. Furnish wire to connect (temporary clamp) all four ground rods together to make a system test after each rod is individually tested. If any individual rod tests 25 OHMS or more, the electrical contractor and owner's representative should be notified so that the rod can be driven deeper until all four rods have a resistance of 10 OHMS or less on a dry day.
B. Second test - shall be with the ground rods connected with dry soil and when no standing water has been present for the past ten days. The maximum allowable reading is 5 OHMS to ground. If the resistance of the entire system exceeds 5 OHMS, the electrical contractor and owner's representative should be notified so that either additional and/or deeper rods can be installed.
2. Tower
A. First test - shall be with nine (9) ground rods installed (min.) equally spaced around the tower foundation, but not connected to the equipment building external ground ring. Furnish wire to connect (temporary clamp) all three ground rods together to make a system test after each rod is OHMS or more, the electrical engineer and the owner's representative should be notified so that the rod can be driven deeper until all three rods have a resistance of 10 OHMS or less on a dry day.
B. Second test - shall be with the grounds connected, with dry soil and when no standing water has been present for the past ten days, the maximum allowable reading is 5 OHMS to ground. If the resistance of the entire system exceeds 5 OHMS the electrical contractor and owner's representative should be notified so that either additional and/or deeper rods can be installed.
3. Equipment Building and Tower
A. After the equipment building and tower ground resistance test is completed, electrical contractor shall tie equipment building external ground ring together. After first and second test, all connections shall be "cadweld". No lugs or clamps will be accepted.
B. After all the external ground rings are tied together but before the equipment building is tied down, a megger check of the ground system should be done. The maximum allowable reading is 5 OHMS to ground.
C. Ground Resistance Test Report
Upon completion of the testing for each site, Contractor shall submit a test report showing resistance in OHMS with auxiliary potential electrodes at 5-foot and 10-foot intervals until the average resistance starts increasing; 10-15 photos must be taken to proof entire external ground ring system before backfill or project manager must be notified no less than 48 hours in advance of backfill. Testing shall be completed by general contractor and two (2) sets of test documents are to be bound and submitted within one week of work of completion.

NOTE: THESE NOTES ARE OF A GENERAL NATURE AND ARE NOT SITE-SPECIFIC. SOME NOTES MAY NOT APPLY TO THIS SITE. CROSS-REFERENCE NOTES WITH OTHER SHEETS AND T-MOBILE SCOPE OF WORK TO VERIFY WORK TO BE COMPLETED.

T-Mobile
28505 SCHOOLCRAFT RD, BLDG#6
LIVONIA, MICHIGAN 48150
Phone: 734.367.7200
Fax: 734.367.7242
CONTACT: KEN KALOUSEK
(734) 444-0181

LANDTECH PROJECT NUMBER: 18323064

REV.	DATE	DESCRIPTION	BY
A	09/18/18	PRELIMINARY RELEASE	CJL
B	11/02/18	HVAC & STRUCTURAL ADD	CDR

2018 RELOCATION

NOTE: THESE DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"x17" SHEETS. REFER TO GRAPHIC SCALES ON REPRODUCTIONS.

LANDTECH
Professional Surveying & Engineering
231.943.0050 www.landtechps.com 877.520.LAND

SITE #: DE04229B
SITE NAME:
SWEETEST HEART OF MARY
SITE ADDRESS:
4440 E. CANFIELD D/B/A 4440 RUSSELL ST.
DETROIT, MICHIGAN 48207

Sheet Title:
GENERAL NOTES

Sheet Number:
N-2

HISTORIC DISTRICT COMMISSION
PROJECT REVIEW REQUEST

CITY OF DETROIT
PLANNING & DEVELOPMENT DEPARTMENT
2 WOODWARD AVENUE, ROOM 808, DETROIT, MI 48226

DATE: 8-27-19

PROPERTY INFORMATION

ADDRESS: 4440 E. Canfield Street **AKA:** 4440 Russell Street

HISTORIC DISTRICT: Sweetest Heart of Mary Roman Catholic Parish

APPLICANT IDENTIFICATION

☐ Property Owner/ Homeowner ☐ Contractor ☐ Tenant or Business Occupant ☒ Architect/ Engineer/ Consultant

NAME: T.J. Garrett COMPANY NAME: Haley Law Firm, PLC

ADDRESS: 10059 Bergin Road CITY: Howell STATE: MI ZIP: 48843

PHONE: 517-518-8623 MOBILE: 810-772-1275 EMAIL: tgarrett@haleylawfirm.com

PROJECT REVIEW REQUEST CHECKLIST

Please attach the following documentation to your request:

☒ **Photographs** of ALL sides of existing building or site
****Project only concerns one window on one side of building, shown in photos.****

☒ **Detailed photographs** of location of proposed work (photographs to show existing condition(s), design, color, & material)

☒ **Description of existing conditions** (including materials and design)

NOTE:
Based on the scope of work, additional documentation may be required.
See www.detroitmi.gov/hdc for scope-specific requirements.

☒ **Description of project** (if replacing any existing material(s), include an explanation as to why replacement--rather than repair--of existing and/or construction of new is required)

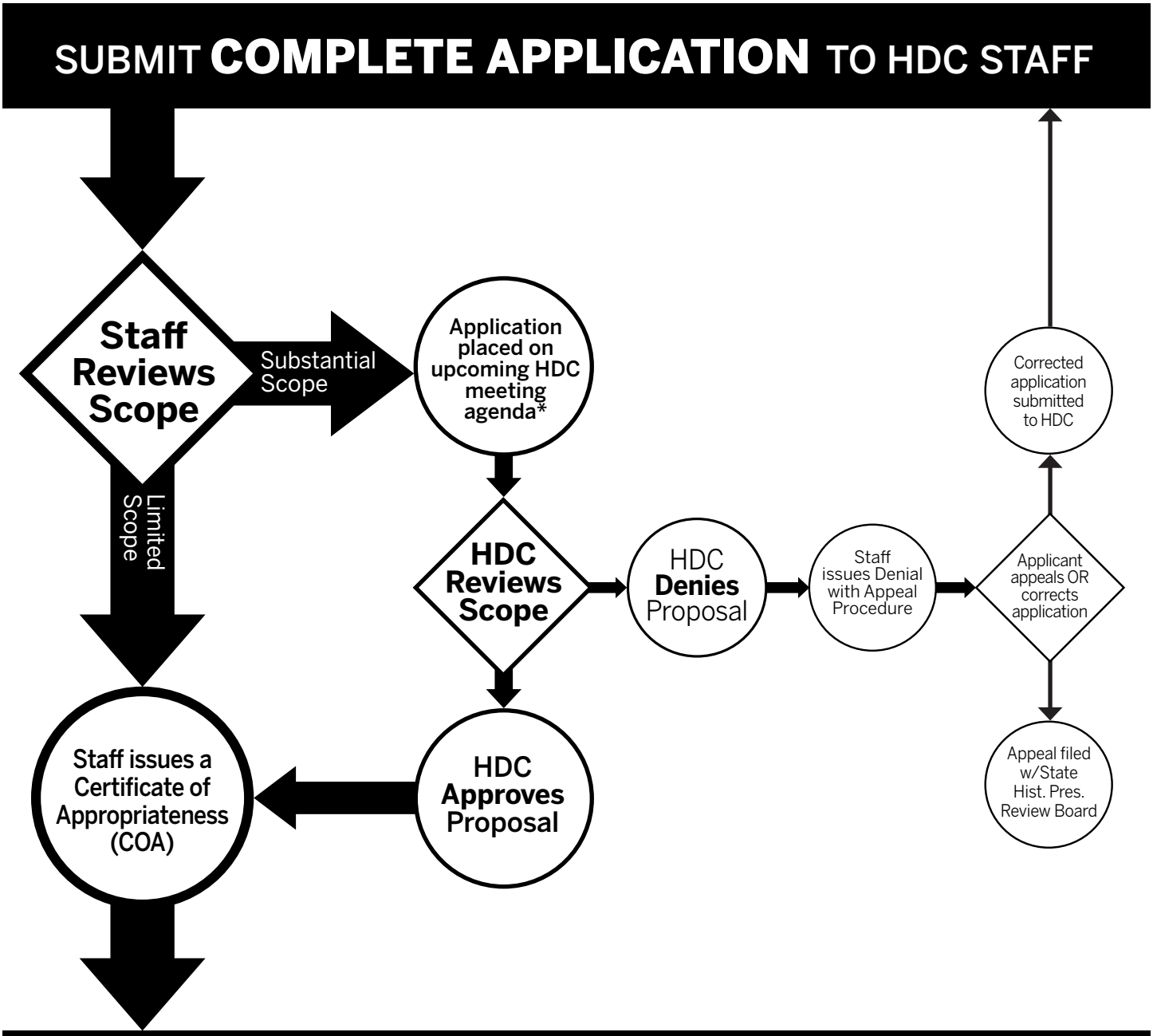
☒ **Detailed scope of work** (formatted as bulleted list)

☒ **Brochure/cut sheets** for proposed replacement material(s) and/or product(s), as applicable

Upon receipt of this documentation, staff will review and inform you of the next steps toward obtaining your building permit from the Buildings, Safety Engineering and Environmental Department (BSEED) to perform the work.

SUBMIT COMPLETED REQUESTS TO HDC@DETROITMI.GOV

HISTORIC DISTRICT COMMISSION
REVIEW & PERMIT PROCESS



* THE **COMMISSION MEETS REGULARY AT LEAST ONCE PER MONTH,** TYPICALLY ON THE SECOND WEDNESDAY OF THE MONTH.
(SEE WEBSITE FOR MEETING SCHEDULE/AGENDAS)

FIND OUT MORE AT www.detroitmi.gov/hdc

Sec. 21-2-125. - Sweetest Heart of Mary Roman Catholic Parish Historic District.

(a) An historic district to be known as the Sweetest Heart of Mary Roman Catholic Parish Historic District is hereby established in accordance with the provisions of this article.

(b) This historic district designation is hereby certified as being consistent with the Detroit Master Plan of Policies.

(c) The boundaries of the Sweetest Heart of Mary Roman Catholic Parish Historic District, as shown on the map on file in the Office of the City Clerk, are as follows:

Beginning at a point of intersection of the center line of East Canfield and Russell proceeding northerly along the center line of Russell to its intersection with the north boundary (extended westward and eastward) of Lot 4 of the subdivision of Lots 12, 13, 14, and 15 of E. Robinson's Subdivision of Out Lots 15 and 16 of the Guoin Farm, (L18 P35) to its intersection with the center line of the alley running north-south between the east boundary of Lots 1, 2, and 3 of the aforementioned subdivision and the west boundary of Lot 2 of the subdivision of Lots from 1 to 11 and 16 to 22 inclusive and the private alley in re thereof of E. Robinson's Sub of Out Lots 15 and 16 of the Guoin Farm (L13 P62); from that point of intersection north along said center line of alley to its intersection with the center line of the alley running east-west between the north boundary of Lot 1 and the south boundaries of Lots 2 through 7 of the subdivision cited above as being found at L13 P62; thence westerly along the center line of said alley to its intersection with the center line of the alley running north-south between the east boundaries of Lots 1 and 7 of the subdivision cited above as being found at L13 P62 and the west boundaries of Lots 6 through 13 of Freud and Schulte's Subdivision of Lots 1 through 5 of the Riopelle Farm between Fremont and Farnsworth Streets (L7 P17); thence proceeding southerly along the center line of said alley (extended southward) to its intersection with the north boundary of Lot 1 of Freud and Schulte's Sub aforementioned; thence eastward along said north boundary of Lot 1; thence southerly along the east boundary (extended southward) of Lot 1 of Freud and Schulte's Subdivision to its intersection with the center line of East Canfield; thence westerly along the center line of West Canfield to the point of beginning. (The property included within these boundaries consists of Lot 1 of the Sub of Lots from 1 to 11 inclusive and 16 to 22 inclusive and private alley in re thereof of E. Robinson's sub of Out Lots 15 and 16 of Guoin Farm (l13 P62); Lot 4 of Sub of Lots 12, 13, 14, and 15 of E. Robinson's Subdivision of Out Lots 15 and 16 of Guoin Farm (L18 P35); and Lot 1 of Freud and Schulte's Subdivision of the Riopelle Farm lying between Fremont and Farnsworth Streets.) (L7 P17.)

(d) The elements of design, as defined in Section 21-2-2 of this Code, shall be as follows:

(1) *Height.* Sweetest Heart of Mary Roman Catholic Church is a tall single-story space; its two spires are 217 feet high. The old school, facing East Canfield, is two stories tall on a high basement, with a three-story central tower (originally four stories). The sisters' house, three stories tall, is 38 feet in height. The rectory facing Russell is 26 feet high and is 2½ stories tall.

(2) *Proportion of buildings' front façade.* The church façade is approximately as wide from side to side as it is to the gable, although the two spires dramatically emphasize the vertical. The front façade of the old school is slightly wider than it is tall to the eaves. The façade of the sisters' house is approximately twice as wide as it is tall to the gables. The façade of the rectory is approximately as wide from gable to gable as it is tall to the peak of the gabled dormer. The church is the predominant building in the parish complex; the other buildings range from two to three stories and are compatible with one another in the proportions of the front elevations.

(3) *Proportion of openings within the façades.* Openings in the main façade of the church constitute approximately ten percent. The secondary façade, along East Canfield, is heavily fenestrated with large pointed-arched window openings. All window and door openings are emphatically taller than wide; the entrance openings are composed of recessed arches; windows are divided by tracery. The old school fronting on East Canfield contains approximately 25 percent openings. The sisters' house front façade is

composed of approximately 15 to 20 percent window and door openings; the front façade of the rectory facing Russell consists of 20 percent openings. The openings in all of the buildings' front façades are symmetrically arranged.

(4) *Rhythm of solids to voids in front façade.* The main façade of the church is divided horizontally into two distinct sections. The bottom section is distinguished by its light gray limestone and the top by the red painted brick. The church façade is divided vertically into the central portion and its two flanking bays with towers and spires above. Voids are arranged symmetrically, with the most prominent voids—the central arched entrance, the pointed arched window with six-pointed star motif, and the three lancet windows above in the gable end—located in the central section. Voids in the old schoolhouse are also placed symmetrically within the façade. To each side of the slightly projecting tower pavilion is a pair of narrow sash windows with transoms above. The central bay has an arched opening leading onto a porch; above are two double-hung sash windows with transoms. In the tower are two round-arched sash windows. The sisters' house is composed of symmetrically arranged six-over-six double-hung sash windows, two per bay, with three on the two end bays of the first floor. The window openings are two times taller than they are wide. The fenestration of the rectory includes paired double-hung sash with shared sills on the outer bays and a single double-hung sash window above the entrance on the central bay. The arrangement of openings is symmetrical; a palladian window motif is in the dormer.

(5) *Rhythm of spacing of buildings on street.* Inapplicable due to single-complex district.

(6) *Rhythm of entrance and/or porch projections.* Inapplicable due to single-complex district.

(7) *Relationship of materials.* The light gray limestone base of the church contrasts with the painted red brick of the central gable and bell towers. The roofs are covered in patterned slate. Tracery, crocketts, pinnacles, and trim are wood. The old school facing East Canfield is a brick building with a high limestone basement and stone details. The sisters' home is brick with stone cresting, sills, steps, door hood and spandrels, and window hoods; its roof is slate and the downspouts are copper. The rectory is painted brick with stone keystones and sills and wooden window frames, porch and dormer.

(8) *Relationship of textures.* The regular pattern of coursed ashlar, in which wide smooth-faced courses alternate with narrow rock-faced courses, comprising the foundations of the church façade contrasts with the smoother painted surface of the brick with plain-cut mortar joints, the slate roofs and the wood elements above. The same can be said of the old school, with its rough stone base and brick façade. The sisters' house has a more rustic appearance due to the color and texture of the brick, thus providing a contrast with other buildings seen from the courtyard. The pressed brick and wood of the rectory provide a smooth texture.

(9) *Relationship of color.* The base of the church and the old school are of light gray stone, which contrasts with the brick, now painted red, of the church and the red brick of the school. Architectural elements and details are in stone and/or of light gray painted wood, and contrast with the gray patterned roofs. Copper flashing on the church and old school provides a bright contrast. The ribs of the church spires are painted a cream color. The ionic portico still remaining of the brick school addition is of light gray masonry. The sisters' house is the only building that departs from the red brick precedent set by the other buildings in its use of orange/brown brick and a light-to-medium gray slate roof with green copper downspouts. The rectory consists of red painted brick and light gray wood trim.

(10) *Relationship of architectural details.* Victorian Gothic ecclesiastical architectural details accentuate the church structure. The stone base is topped by a quatrefoil frieze over the main portal and twin buttressed towers surmounted by octagonal spires. Alternating patterns of pinnacles and decorated gables define the bases of the main spires. The gable ornamentation, consisting primarily of serrated

lancets, is repeated on the four larger gables, which make the ends of the nave and transepts; the pointed gable shape is echoed not only on the spires and the roof but also on the side buttressing and above all the portals. Lancet windows fenestrate the towers, gables, and the main three-portal façade, and circles dominate the tracery of the tower windows and the pointed-arch windows of the north and south elevations. The six-pointed star motif of the stained glass window above the central portal on the west façade is discernible from the exterior. Architectural detail of the old school is limited to architectural elements, which were present at the time of designation, and consists of the stone quoins at the two corners and foliated pillaster capitals, brick banding, and corbelling. The original detailing of the north elevation of the old school is no longer present; at the time of designation this wall was exposed by the demolition of the circa 1902 addition and indicates evidence of plaster walls, paneling, paint, stairs, doors and trim. Detailing on the sisters' house is restrained and confined to the surrounds and spandrels of the central entranceway and the window hoods. The conductor boxes on the copper downspouts contain reliefs. The rectory has the Neo-Georgian-style window keystones, porch details, stone sills, denticulation, and a palladian window dormer.

(11) *Relationship of roof shapes.* The church has a pitched roof with gabled ends; the transept arms from a cross gable. Angled side entrances have gabled ends and gables project between buttresses. The towers are crowned with octagonal spires. The spire over the crossing has been dismantled except for the base. Hipped roofs predominate on the other parish buildings; the old school is covered with a hipped roof, as is its central tower. The sisters' house has a truncated hipped roof over the central block with eyebrow dormers while the end bays have transverse gables. The rectory is covered with a hipped roof with traverse gable roof and a gabled dormer.

(12) *Walls of continuity.* Originally, the arrangement of the five-building elevations comprising the parish complex formed an interior courtyard. At the time of designation, the east end of the courtyard was open.

(13) *Relationship of significant landscape features and surface treatments.* The wrought iron fence with concrete pillars sets apart the church complex from the streets. Low bushes are sparsely planted in front of the church and the school. The grass turf lawn of the courtyard is divided by concrete sidewalks and is planted primarily with evergreens. Evergreens are also planted on the landscaped lawn in front of the rectory. Of the schoolhouse addition, only the ionic portico, which was the dominant feature of the west façade of this Classically-inspired building, remains.

(14) *Relationship of open space to structure.* Open space to the sidewalk exists in front of the church and the rectory on Russell, and to the south of the church and old school on East Canfield. To the east of the school is an open field, created by urban renewal clearance, as was the area to the north of the complex and rectory. An internal courtyard space open to Russell Street and now open to the east is created by the siting of the four freestanding buildings, which have grass turf and/or concrete walks between them.

(15) *Scale of façade and façade elements.* The scale of Sweetest Heart of Mary Church is monumental. Its tripartite compound pointed-arched portal, spires, and tall elongated windows contribute to this overall effect, as do the more moderately sized details within the composition. The modest scale of the façade of the old school facing East Canfield is articulated with large forceful elements, such as the central projecting tower, the projecting front façade with curved sides, and the entrance porch. Ornamentation is on a small scale. The scale of the façade of the sisters' house is substantial, with restrained and small elements within. The rectory is on the scale of a residence of moderate size. Elements within are small and refined in detail.

(16) *Directional expression of front elevation.* The directional expression of the church is emphatically vertical,

and emphasized by the twin spires. Likewise, the vertical aspect of the old school is emphasized by its central projecting tower. The sisters' home is emphatically horizontal, with two vertical elements, the transverse gables, at either end. The rectory presents a directionally balanced composition.

(17) *Rhythm of building setbacks.* The setbacks of buildings from the street do not relate to each other. See site plan on file in the Office of the City Clerk.

(18) *Relationship of lot coverages.* The buildings occupy the perimeter of the site; a central courtyard was created by this arrangement of buildings.

(19) *Degree of complexity within the façade.* The façade of the church is symmetrical yet complex in its use of an extensive Gothic vocabulary. The façade of the old school is complex, due to its massing and projections, although ornamentation is minimal. The sisters' house is symmetrical and straightforward in its arrangement of windows, dormers and end gables, as is the rectory.

(20) *Orientation, vistas, overviews.* The complex of buildings is oriented toward the west, or Russell. The church and the rectory front on Russell; the courtyard is entered into between these buildings. The secondary orientation is towards East Canfield (the south), to which the old school faces. The sisters' house is entered through the courtyard. The church, and its spires in particular, provide a landmark from all directions at a distance.

(21) *Symmetrical or asymmetrical appearance.* All buildings in the parish complex are intended to appear symmetrical, although the façade of the rectory is slightly asymmetrical.

(22) *General environmental character.* The Sweetest Heart of Mary Roman Catholic Parish is a very visible special use element in a primarily residential redevelopment area. As one of the major focal points in the Forest Park Community, it is a visible reminder of the historic ethnic community ties. It remains one of the City's most striking examples of Late Gothic revival church architecture in an ethnic urban neighborhood.

(e) In accordance with Section 21-2-76 of this Code, the Historic District Commission is hereby authorized to consider interior features in certain portions of Sweetest Heart of Mary Roman Catholic Church, located within the Sweetest Heart of Mary Roman Catholic Parish Historic District, and permits shall be required for such interior work in those portions of Sweetest Heart of Mary Roman Catholic Church as provided for in Sections 21-2-71 through 21-2-81 of this Code, as if such interior work were exterior work:

(1) The interior spaces of Sweetest Heart of Mary Roman Catholic Church, which are hereby made subject to the Historic District Commission's consideration, are those spaces normally open to or seen by the public, including the narthex, nave, choir loft, chancel and side altars. Areas not open to and not ordinarily seen by the public, including sacristies, vesting rooms, basement and attic areas, closets, service areas, and the entire interior of the rectory, schoolhouse, and sisters' house, are not hereby made subject to the Historic District Commission's consideration.

(2) In considering proposals for the alteration, demolition, partial demolition, removal, or addition to any or all of the architectural features and permanent furniture within the designated areas of Sweetest Heart of Mary Roman Catholic Church, the Historic District Commission shall use the following criteria:

a. Subsections (d)(1) through (22) of this section, as applicable;

b. The architectural or historical significance of the existing or proposed structure, feature, permanent furniture, or furnishings traditionally associated with the building, and its relationship to the architectural and historical value of the Sweetest Heart of Mary Roman Catholic Parish Historic District;

c. The purpose of the designated spaces within Sweetest Heart of Mary Roman Catholic Church and

the needs of its owners, provided, that such considerations shall not bind the Historic District Commission's to permit any alteration solely on the basis of use;

d. The provisions of Section 21-2-76 of this Code; and

e. Any other factor, including aesthetic, which the Historic District Commission deems to be pertinent.

(3) As a guide in considering proposals affecting the interior of Sweetest Heart of Mary Roman Catholic Church, the Historic District Commission shall make use of a set of 37 35-millimeter color slides, which were taken by the staff of the Historic Designation Advisory Board on July 10, 1981 and represent the state of the interior as of that date. Copies of this set of slides, together with a list describing each slide and a diagram showing the designated interior areas, are on file in the Office of the City Clerk, the Historic District Commission, the Historic Designation Advisory Board, and the Burton Historical Collection of the Detroit Public Library.

(Code 1964, § 28A-1-31; Code 1984, § 25-2-84; Ord. No. 473-H, § 1(28A-1-31), eff. 10-23-1981)