

# T-Mobile® stick together®



8550 W. Bryn Mawr Ave.  
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FAX: (773) 444-5521



624 Water Street  
Prairie du Sac, WI 53578  
608.644.1449 voice  
608.644.1549 fax  
www.edgeconsult.com



*[Handwritten Signature]*

PROJECT NO: 7438

DRAWN BY: CV

CHECKED BY: DCL

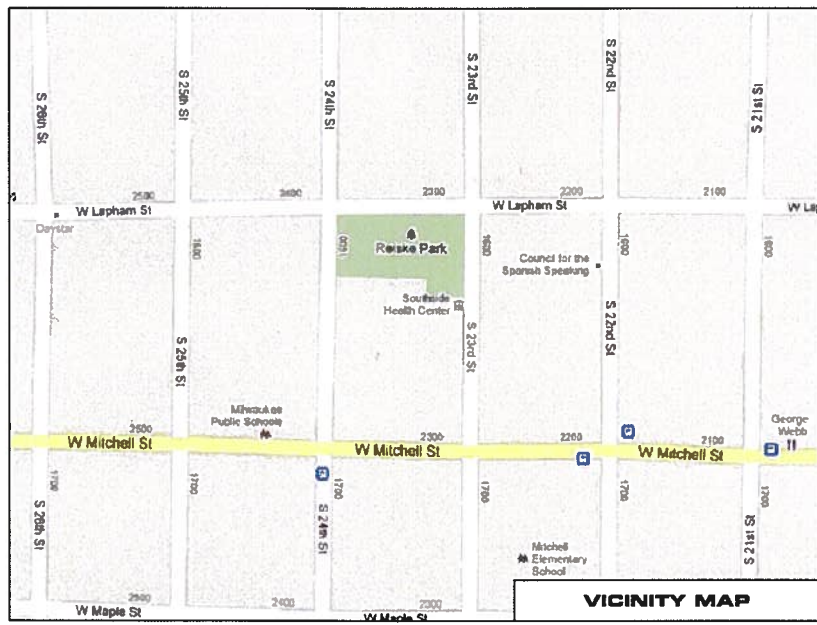
REV.	DATE	DESCRIPTION
A	6/19/12	PERMIT CD's
B		
C		
0	7/24/12	FINAL CD's
1		
2		

## SOUTHSIDE HEALTH CENTER ML10014C

SITE ADDRESS  
1640 S. 24TH STREET  
MILWAUKEE, WI 53204

## TITLE SHEET

T-1



## SITE MODERNIZATION

**SITE NUMBER:** ML10014C  
**SITE NAME:** SOUTHSIDE HEALTH CENTER  
**SITE TYPE:** ROOFTOP  
**SITE ADDRESS:** 1640 S. 24TH STREET  
**MILWAUKEE, WI 53204**  
**COUNTY:** MILWAUKEE COUNTY  
**JURISDICTION:** CITY OF MILWAUKEE

**PROJECT DESCRIPTION:**  
 STRUCTURE HEIGHT: +/- 46.7'  
 STRUCTURE TYPE: ROOFTOP MOUNT  
 ANTENNA QUANTITY: (9) EXISTING UMTS/GSM ANTENNA PANELS TO BE REPLACED  
 (9) PROPOSED GSM/UMTS/LTE ANTENNA PANELS  
 ANTENNA HEIGHT (CL): 51'  
 LEASE AREA: 15'-0" x 20'-0"  
 EQUIPMENT MOUNTING: EQUIPMENT CABINETS ON CONCRETE PAD

**COORDINATES:**  
 LATITUDE: 43.0134°  
 LONGITUDE: -87.9433°  
 A.G.L.: 682.2'

**PROPERTY SUMMARY:**  
**PROPERTY ADDRESS:**  
 1640 S. 24ST  
 MILWAUKEE, WI 53204  
**ASSESSOR'S PARCEL NUMBER (APN):** 459-1101-100-3

**APPLICABLE CODES**  
 IN ABSENCE OR CONFLICT WITH LOCAL CODES ALL WORK SHALL COMPLY WITH:  
 - INTERNATIONAL BUILDING CODE 2010  
 - NEC 2010

**CONTACTS:**  
**APPLICANT:**  
 8550 W. BRYN MAWR AVE., SUITE 100  
 CHICAGO, ILLINOIS 60631  
 CONTACT: STERLING MCMATH  
 OFFICE: (469) 360-0026  
**PROPERTY OWNER CONTACT:**  
 CITY OF MILWAUKEE  
 809 N. BROADWAY  
 MILWAUKEE, WI 53202

**PROJECT TEAM:**  
**CONSTRUCTION MANAGER:**  
 SURESITE CONSULTING GROUP, LLC  
 CONTACT: SARAH K. RYZNER  
 OFFICE: 216.593.0400 (EX. 17)  
 MOBILE: 216.544.9089  
**A/E FIRM:**  
 EDGE CONSULTING ENGINEERS, INC  
 624 WATER STREET  
 PRAIRIE DU SAC, WI 53578  
 OFFICE: 608.644.1449  
 CONTACT: DAVID LYSHEK

**APPROVALS:**

	PRINT NAME:	SIGNATURE:	DATE:
PROPERTY OWNER:			
SAC/ ZONING:			
CONSTRUCTION:			
REAL ESTATE:			
R.F. ENGINEER:			
GENERAL MANAGER:			
OPERATIONS:			
UTILITIES:			

**SHEET INDEX:**

SHEET #	DESCRIPTION:	REV
T-1	TITLE SHEET	0
C-1	SITE PLAN	0
C-2	SITE AND UTILITY PLAN	0
C-3	EQUIPMENT DETAILS	0
C-4	LAYOUT CHANGE PLAN	0
A-1	BUILDING ELEVATION	0
A-2	ANTENNA CONFIGURATION	0
A-3	ANTENNA DETAILS	0
A-4*	RF DATA CONFIGURATION SHEET	0
RF-1	ANTENNA AND GROUNDING CONFIGURATION	0
GN-1	GENERAL NOTES AND SPECIFICATIONS	0
	* PROVIDED BY OTHERS	N/A

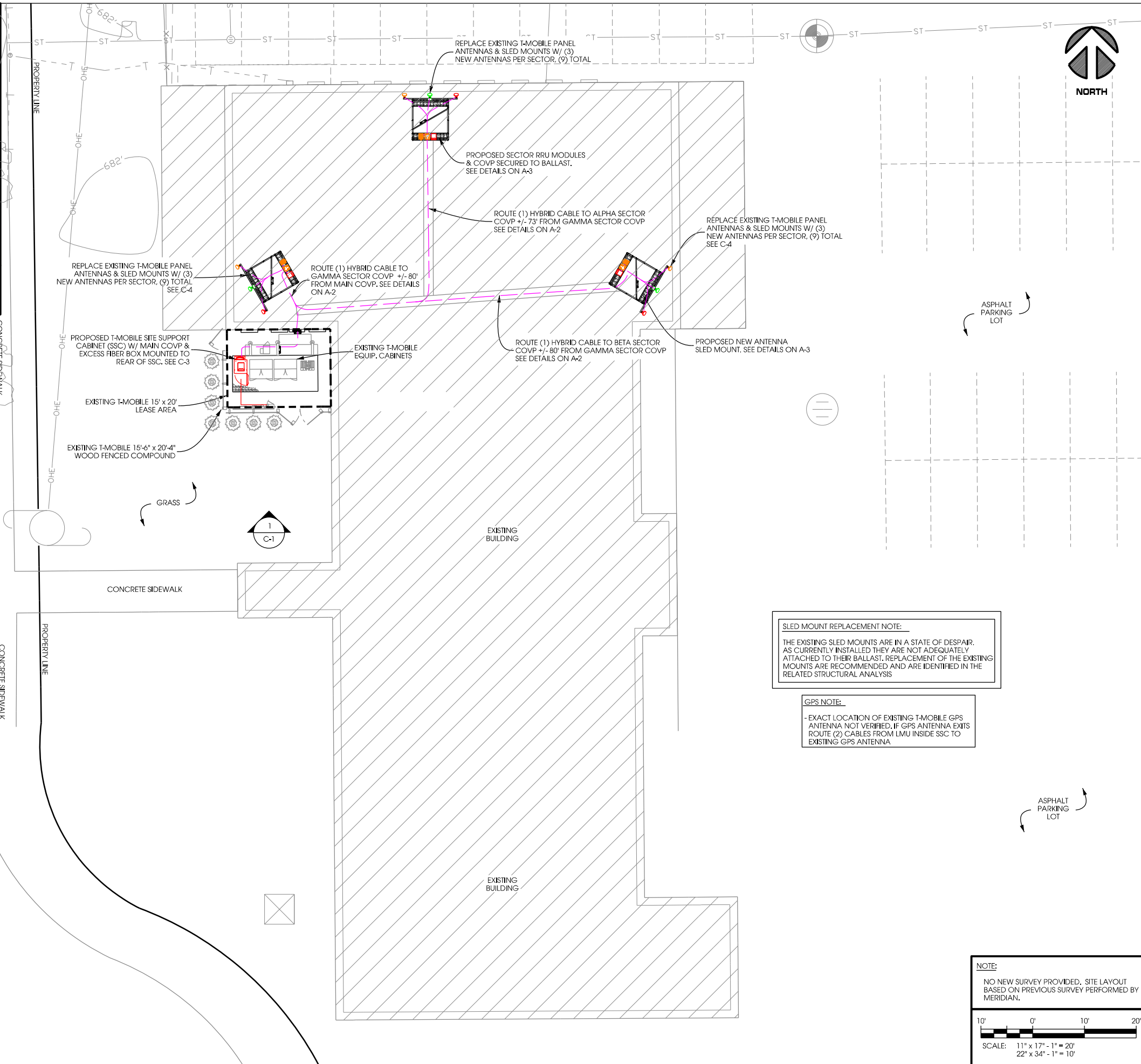
**STRUCTURAL REVIEW NOTE:**  
 STRUCTURAL ANALYSIS COMPLETED BY EDGE CONSULTING ENGINEERS, INC. CONTRACTOR TO REVIEW STRUCTURAL REPORT IN ITS ENTIRETY. ANY DISCREPANCIES OR DISAGREEMENTS BETWEEN THE REPORT AND THESE PLANS SHOULD BE RESOLVED PRIOR TO CONSTRUCTION.

**UTILITY INFORMATION:**

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN, CALL  
 DIGGER'S HOTLINE  
 TOLL FREE  
 1-800-242-8511  
 FAX A LOCATE 1-800-338-3860  
 WI STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE



1  
C-1  
**EXISTING SITE OVERVIEW  
(LOOKING NORTH)**



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624 Water Street  
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**SLED MOUNT REPLACEMENT NOTE:**  
THE EXISTING SLED MOUNTS ARE IN A STATE OF DESPAIR. AS CURRENTLY INSTALLED THEY ARE NOT ADEQUATELY ATTACHED TO THEIR BALLAST. REPLACEMENT OF THE EXISTING MOUNTS ARE RECOMMENDED AND ARE IDENTIFIED IN THE RELATED STRUCTURAL ANALYSIS

**GPS NOTE:**  
- EXACT LOCATION OF EXISTING T-MOBILE GPS ANTENNA NOT VERIFIED, IF GPS ANTENNA EXISTS ROUTE (2) CABLES FROM LMU INSIDE SSC TO EXISTING GPS ANTENNA

**NOTE:**  
NO NEW SURVEY PROVIDED. SITE LAYOUT BASED ON PREVIOUS SURVEY PERFORMED BY MERIDIAN.  
SCALE: 11" x 17" - 1" = 20'  
22" x 34" - 1" = 10'

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**SOUTHSIDE HEALTH CENTER ML10014C**  
SITE ADDRESS  
1640 S. 24TH STREET  
MILWAUKEE, WI 53204

**SITE PLAN**

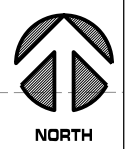
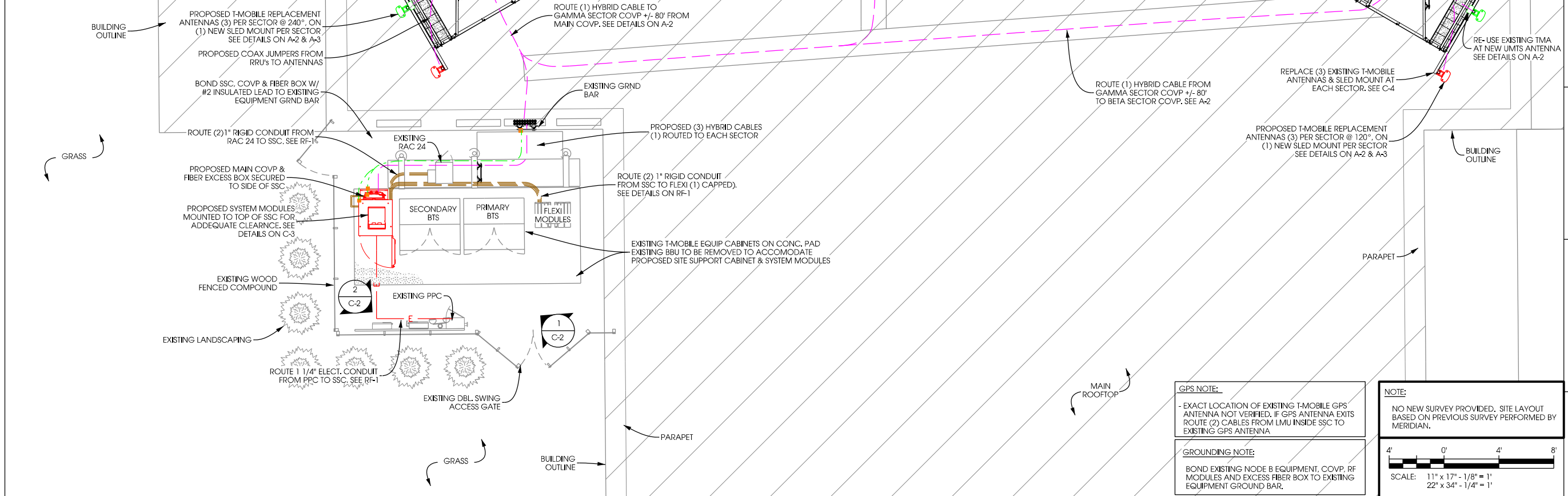
**C-1**



1  
C-2  
**EXISTING SITE OVERVIEW  
[LOOKING NW]**



2  
C-2  
**EXISTING SITE OVERVIEW  
[LOOKING SOUTH]**



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HEALTH CENTER  
ML10014C**

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**SITE AND  
UTILITY  
PLAN**

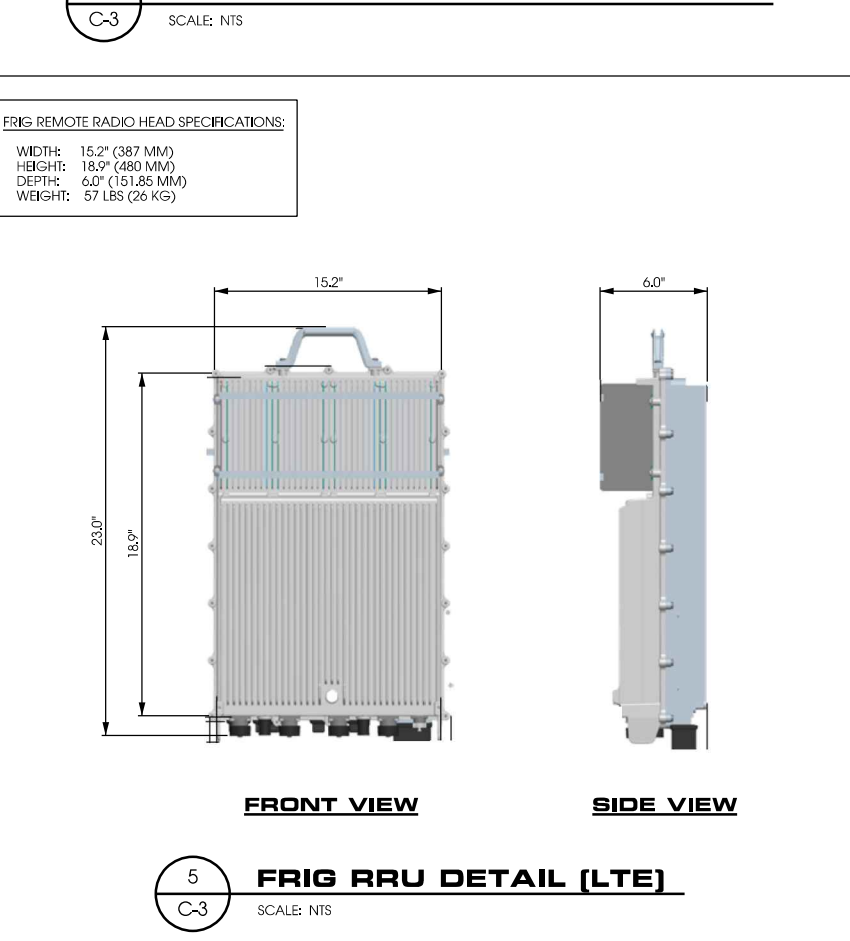
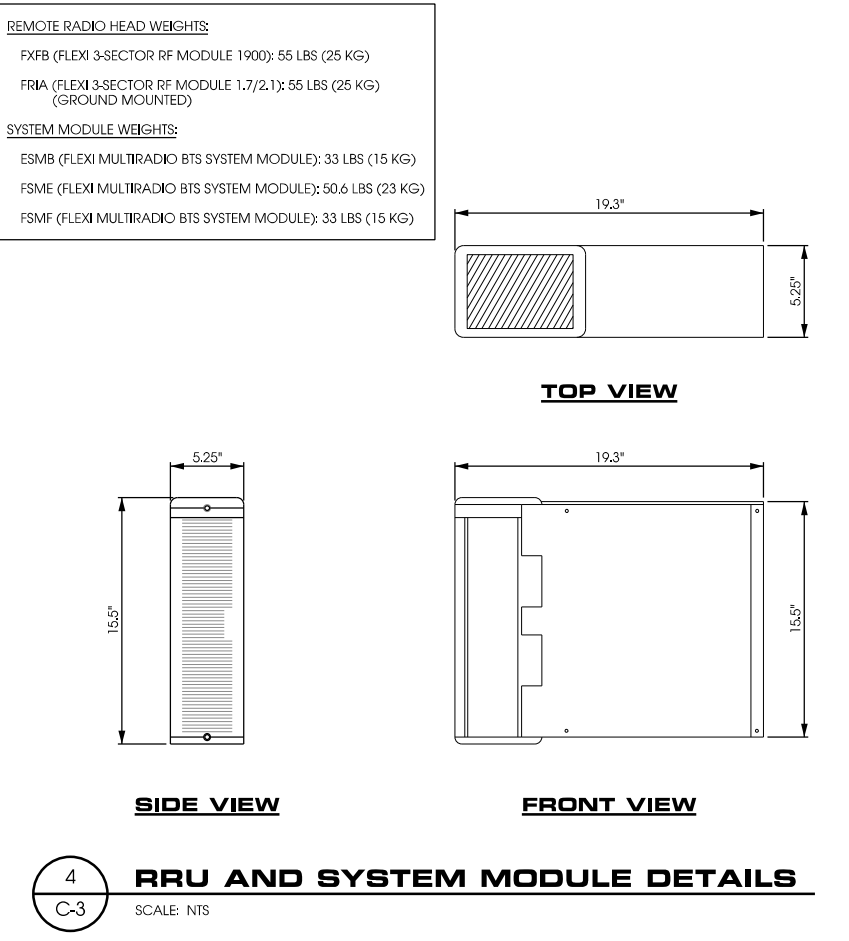
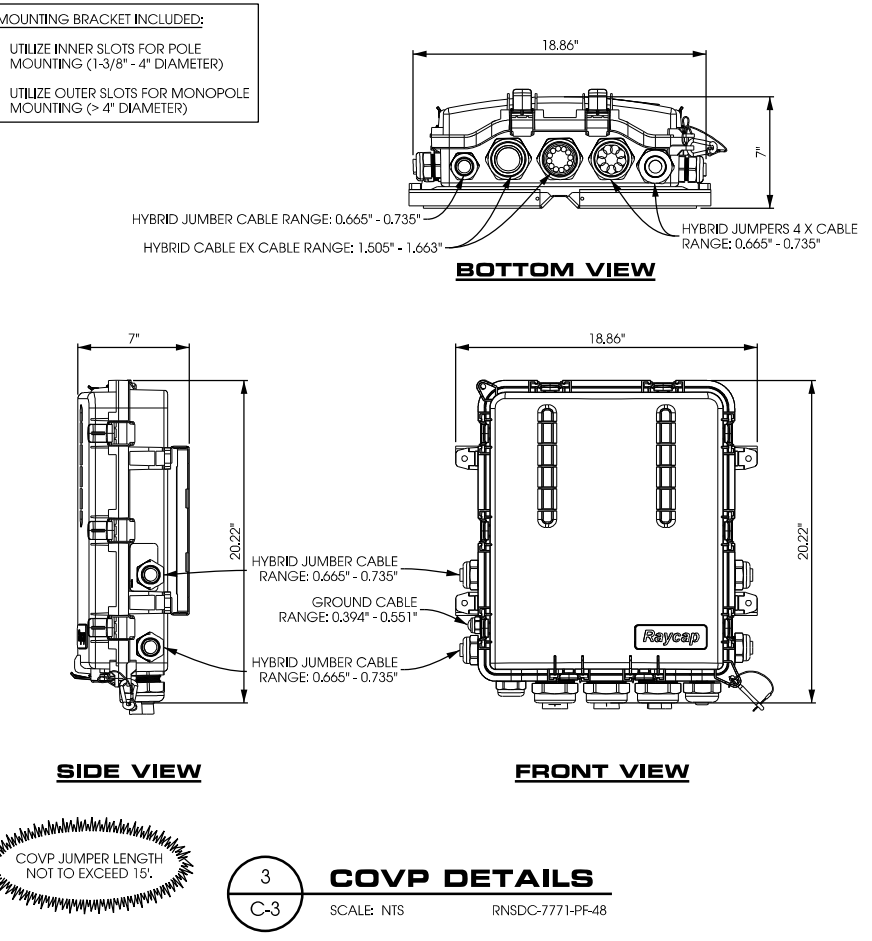
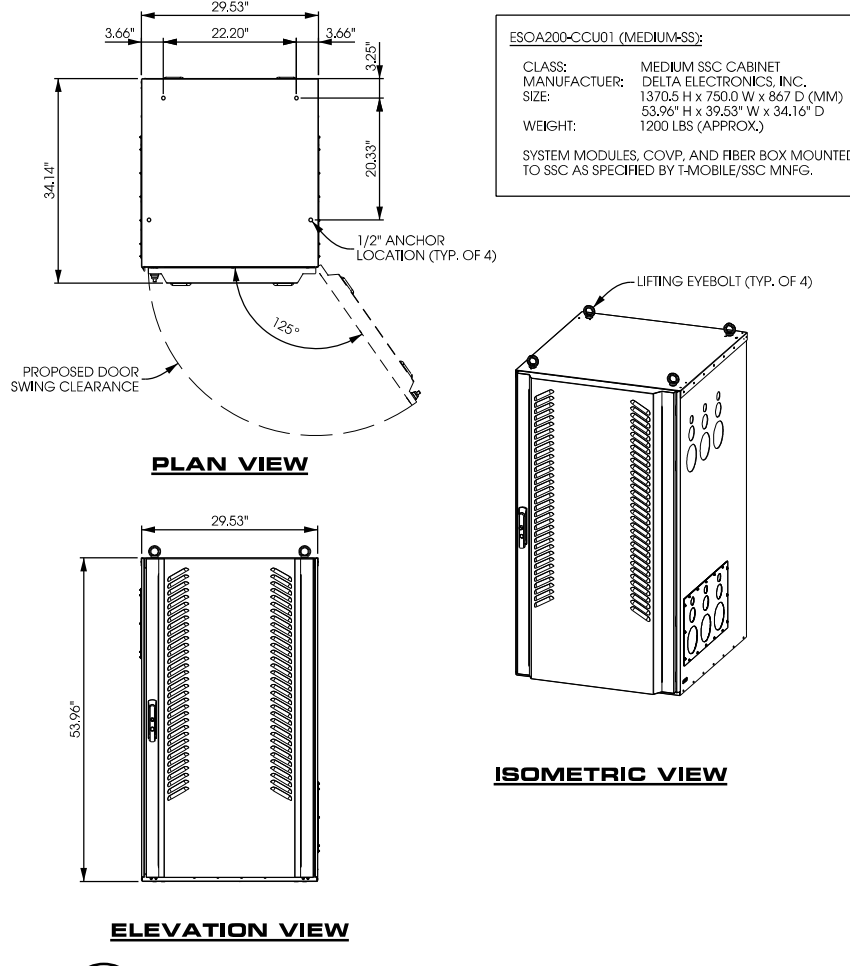
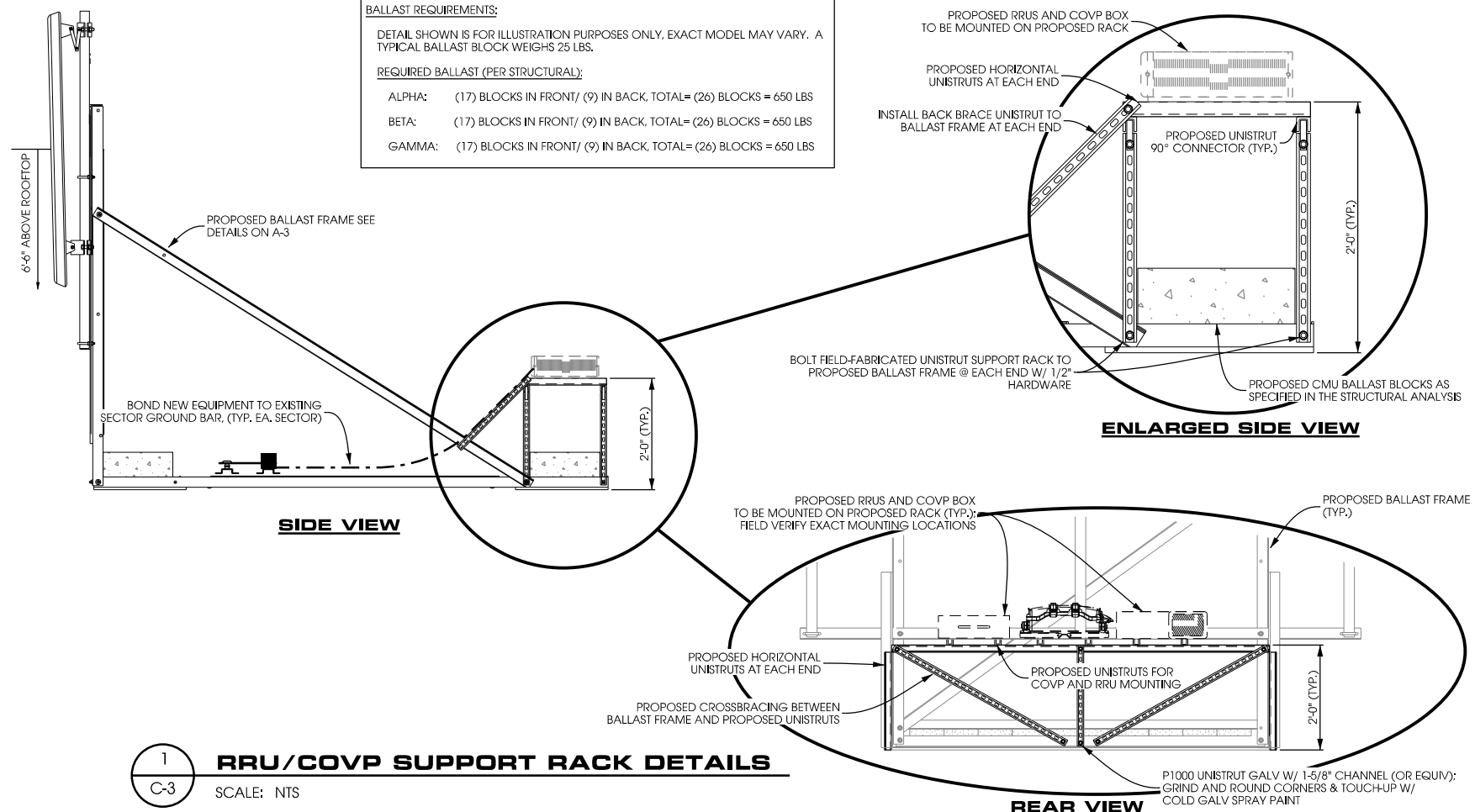
**C-2**

**GPS NOTE:**  
- EXACT LOCATION OF EXISTING T-MOBILE GPS ANTENNA NOT VERIFIED. IF GPS ANTENNA EXISTS ROUTE (2) CABLES FROM LMU INSIDE SSC TO EXISTING GPS ANTENNA

**GROUNDING NOTE:**  
BOND EXISTING NODE B EQUIPMENT, COVP, RF MODULES AND EXCESS FIBER BOX TO EXISTING EQUIPMENT GROUND BAR.

**NOTE:**  
NO NEW SURVEY PROVIDED. SITE LAYOUT BASED ON PREVIOUS SURVEY PERFORMED BY MERIDIAN.

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22" x 34" - 1/4" = 1"



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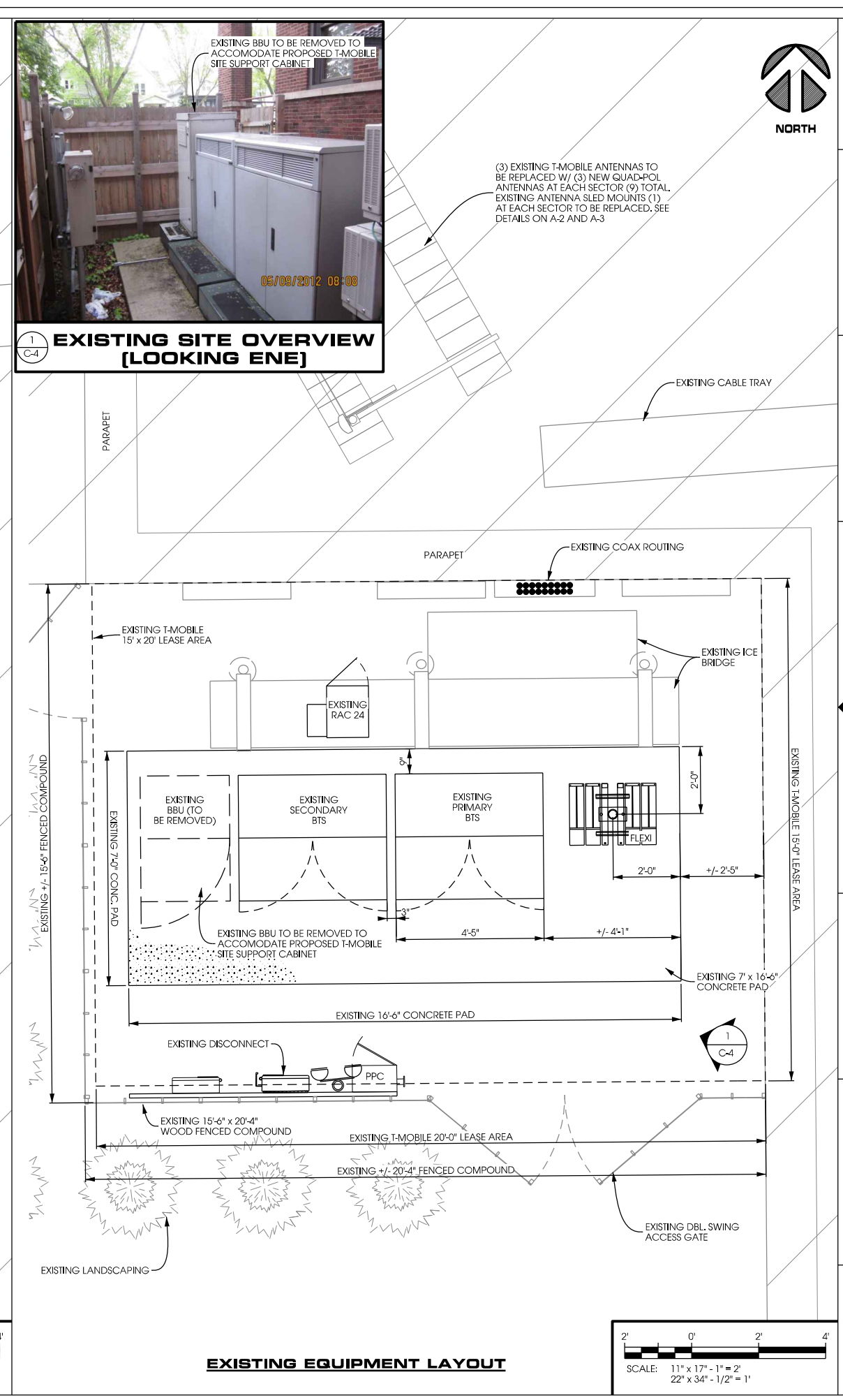
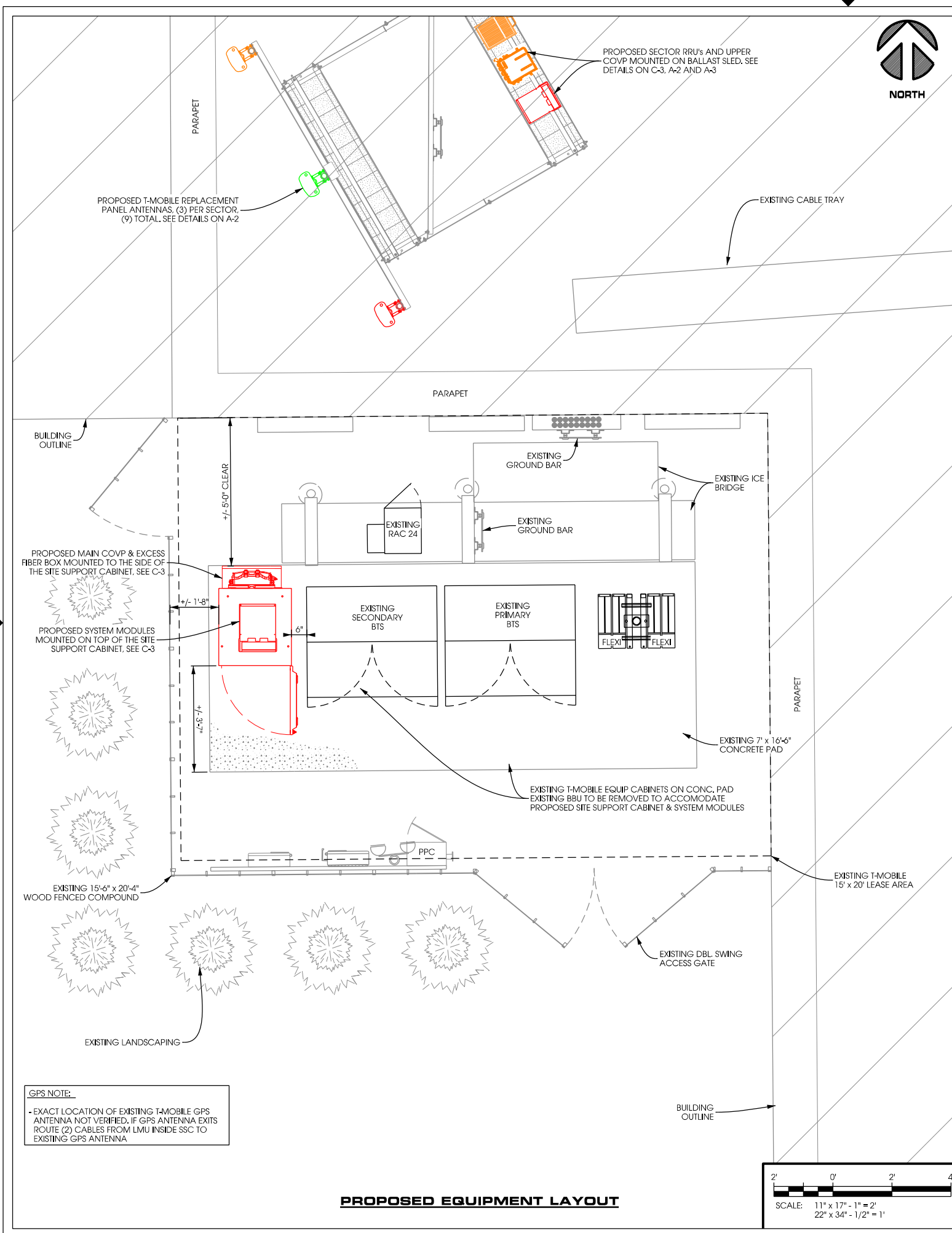
**Edge Consulting Engineers, Inc.**  
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**SOUTHSIDE HEALTH CENTER ML10014C**  
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**EQUIPMENT DETAILS**  
**C-3**



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**SITE CHANGE LAYOUT**

**C-4**



**EXISTING BUILDING ELEVATION & ANTENNAS**



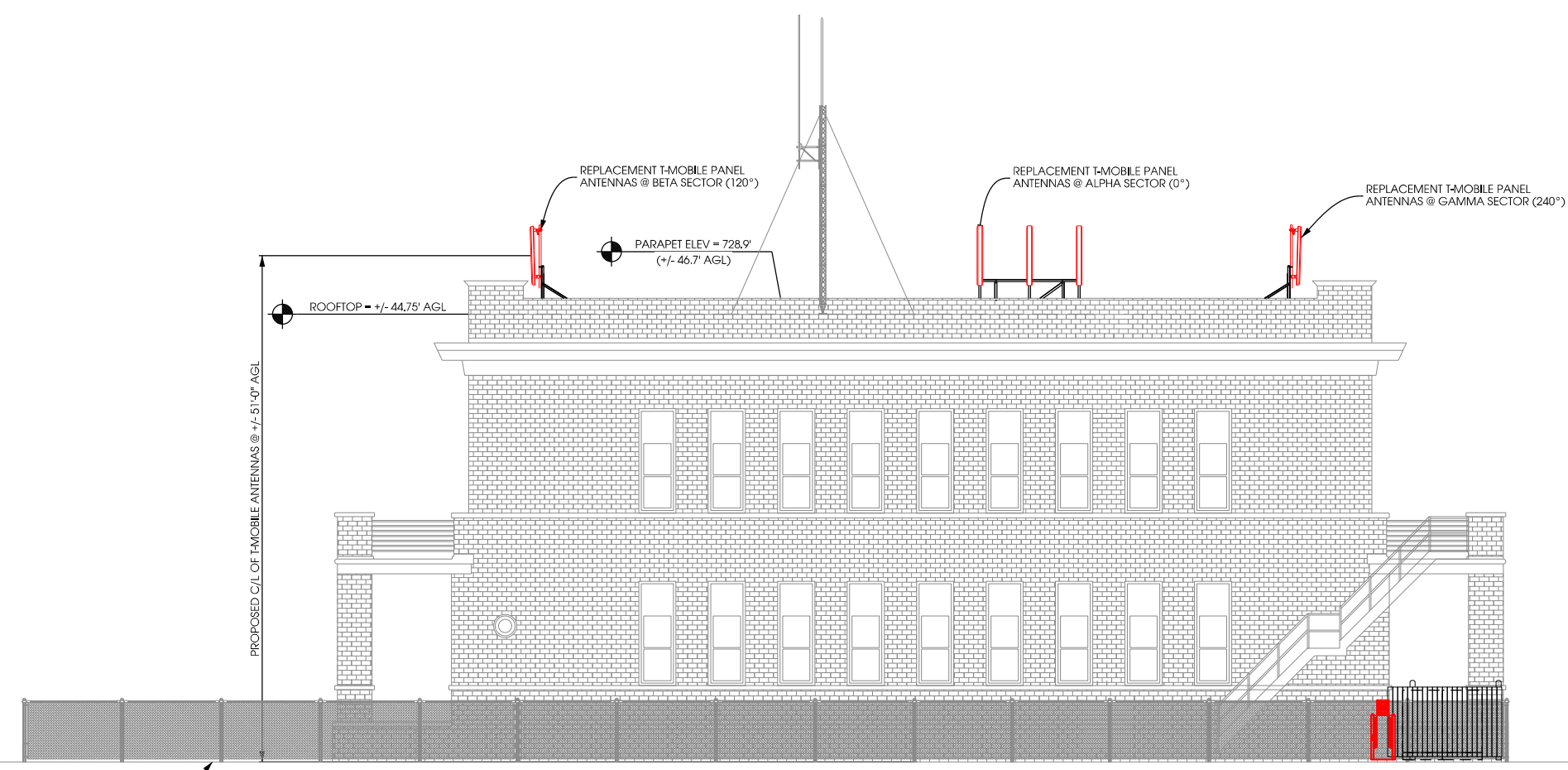
**EXISTING T-MOBILE ANTENNAS  
- ALPHA SECTOR -**



**EXISTING T-MOBILE ANTENNAS  
- BETA SECTOR -**



**EXISTING T-MOBILE ANTENNAS  
- GAMMA SECTOR -**



**BUILDING ELEVATION (NORTH ELEVATION)**  
SCALE: 11" x 17" - 1/4" = 16'-0"  
22" x 34" - 1/4" = 8'-0"



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**SOUTHSIDE  
HEALTH CENTER  
ML10014C**

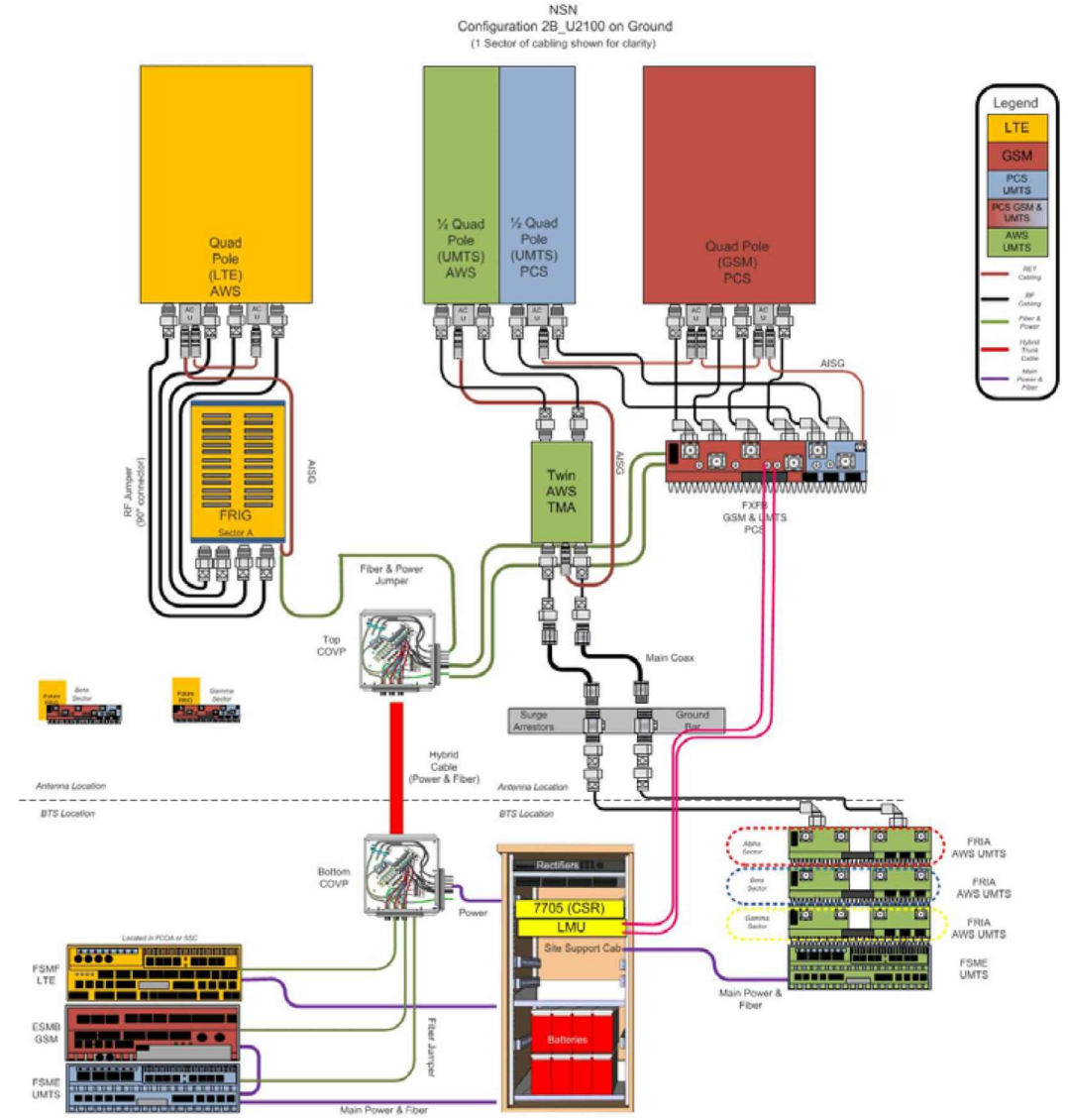
SITE ADDRESS  
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MILWAUKEE, WI 53204

**BUILDING  
ELEVATION**

**A-1**

Site: ML10014C - Configuration Drawing

(ANTENNA VIEW FROM REAR)

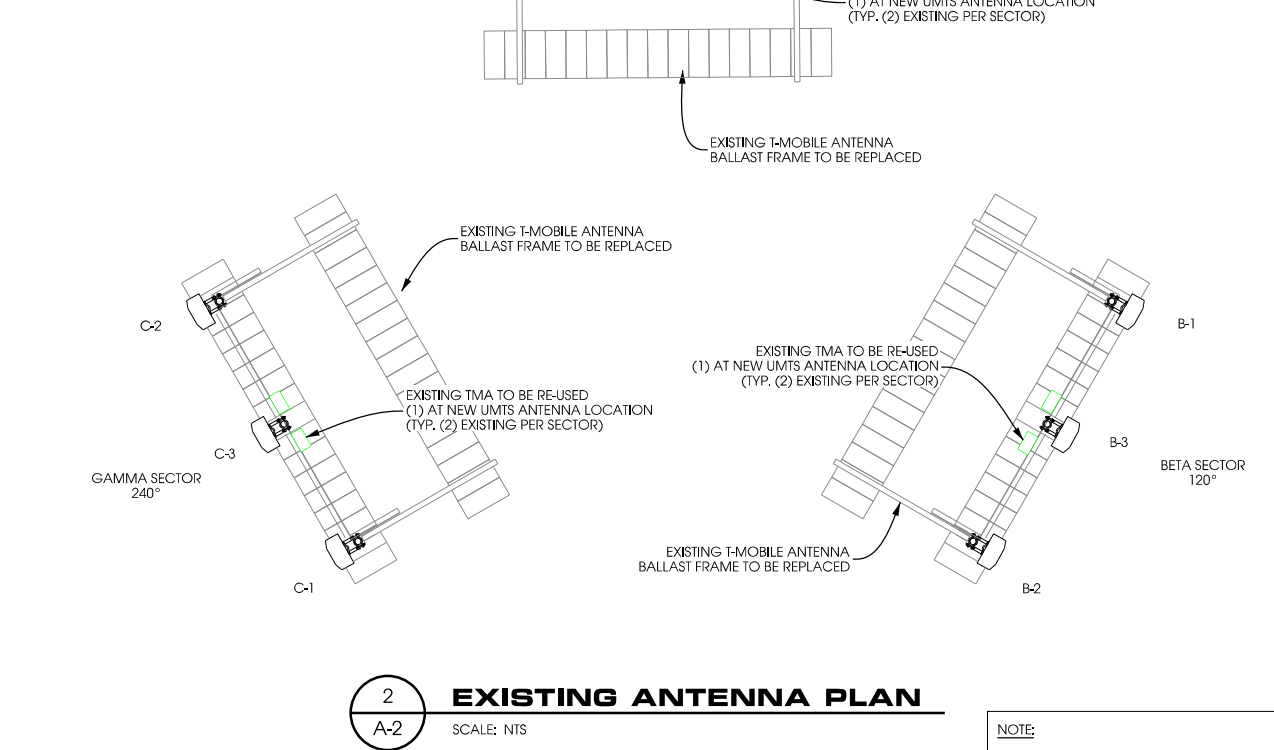


**HCS CABLE NOTE:**  
 - ROUTE (1) 1 1/4" HYBRID CABLE FROM MAIN COVP TO GAMMA SECTOR COVP  
 - ROUTE (1) 7/8" HYBRID CABLE FROM GAMMA SECTOR COVP TO ALPHA & BETA SECTOR COVP'S. (2) TOTAL

ANTENNA NUMBER	TECHNOLOGY	ANTENNA VENDOR	MODEL NUMBER	ANTENNA RAD CENTER	AZIMUTH	TMA	DIPLEXER	RRU TYPE	HCS CABLE/ SIZE	HYBRID CABLE LENGTHS		
										CABLE	JUMPER	
ALPHA SECTOR	A-1	LTE	ANDREW	TMBXX-6517-A2M	51'	0°	N/A	N/A	FRIG	7/8" HYBRID	73' ROUND TO 100'	15'
	A-3	UMTS	ANDREW	TMBXX-6517-A2M	51'	0°	RE-USE EXISTING	N/A	N/A	SHARED W/ ALPHA LTE	N/A	15'
	A-2	GSM	ANDREW	TMBXX-6517-A2M	51'	0°	N/A	N/A	FXFB	SHARED W/ ALPHA LTE	N/A	15'
BETA SECTOR	B-1	LTE	ANDREW	TMBXX-6517-A2M	51'	120°	N/A	N/A	FRIG	7/8" HYBRID	80' ROUND TO 100'	15'
	B-3	UMTS	ANDREW	TMBXX-6517-A2M	51'	120°	RE-USE EXISTING	N/A	N/A	SHARED W/ BETA LTE	N/A	15'
	B-2	GSM	ANDREW	TMBXX-6517-A2M	51'	120°	N/A	N/A	FXFB	SHARED W/ BETA LTE	N/A	15'
GAMMA SECTOR	C-1	LTE	ANDREW	TMBXX-6517-A2M	51'	240°	N/A	N/A	FRIG	1-1/4" HYBRID	80' ROUND TO 100'	15'
	C-3	UMTS	ANDREW	TMBXX-6517-A2M	51'	240°	RE-USE EXISTING	N/A	N/A	SHARED W/ GAMMA LTE	N/A	15'
	C-2	GSM	ANDREW	TMBXX-6517-A2M	51'	240°	N/A	N/A	FXFB	SHARED W/ GAMMA LTE	N/A	15'

**1 PROPOSED ANTENNA AND COAXIAL CABLE SCHEDULE**  
 SCALE: NTS  
 COLOR CODING TO BE VERIFIED BY T-MOBILE

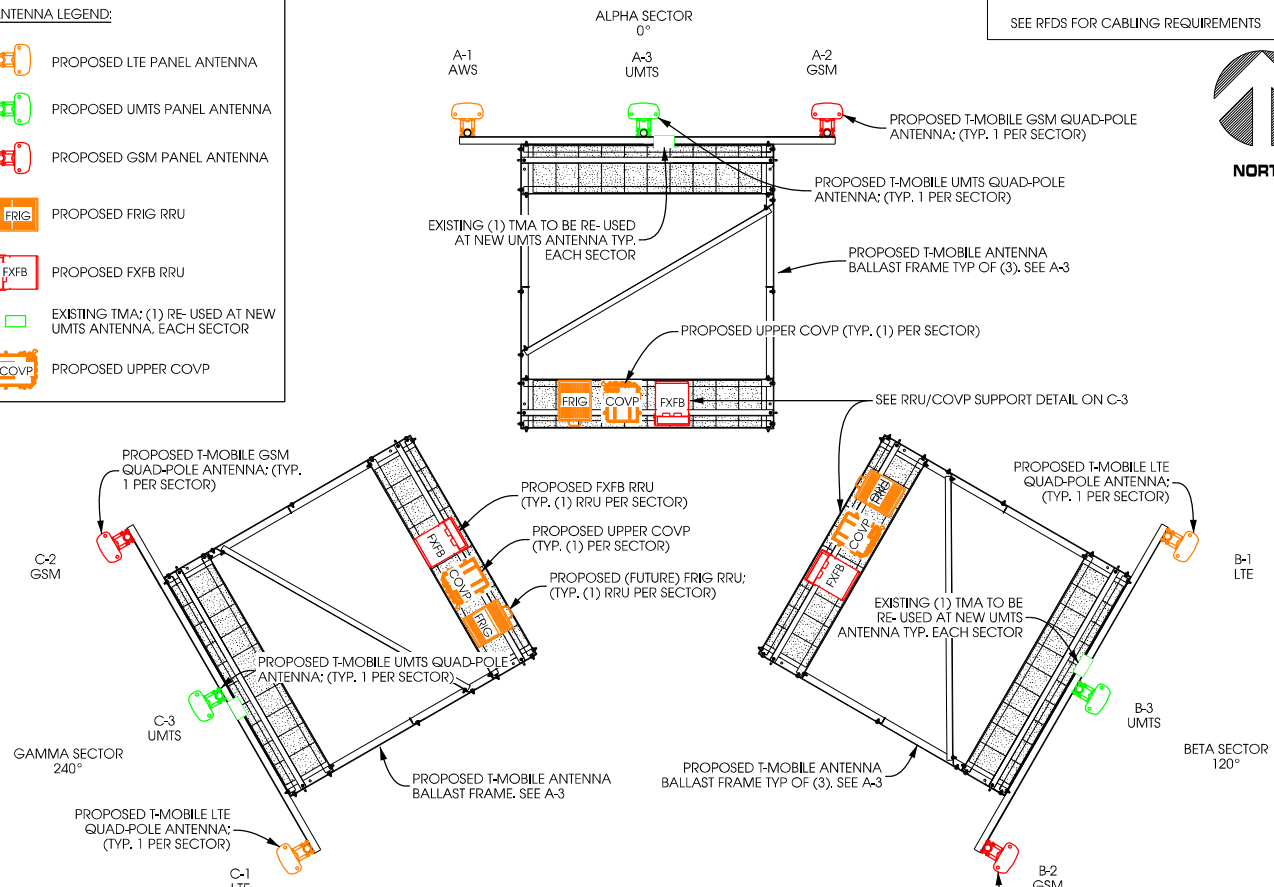
**ANTENNA LEGEND:**  
 EXISTING PANEL ANTENNA: TO BE REPLACED  
 EXISTING TMA: (1) TO BE RE-USED AT NEW UMTS ANTENNA EC. SECTOR. REMOVE ALL OTHERS



**2 EXISTING ANTENNA PLAN**  
 SCALE: NTS

**NOTE:**  
 AZIMUTHS AS REPORTED BY T-MOBILE RFDS  
 SEE RFDS FOR CABLING REQUIREMENTS

**ANTENNA LEGEND:**  
 PROPOSED LTE PANEL ANTENNA  
 PROPOSED UMTS PANEL ANTENNA  
 PROPOSED GSM PANEL ANTENNA  
 PROPOSED FRIG RRU  
 PROPOSED FXFB RRU  
 EXISTING TMA: (1) RE-USED AT NEW UMTS ANTENNA, EACH SECTOR  
 PROPOSED UPPER COVP



**3 PROPOSED ANTENNA PLAN**  
 SCALE: NTS  
 (TYPE 2B RF CONFIG)

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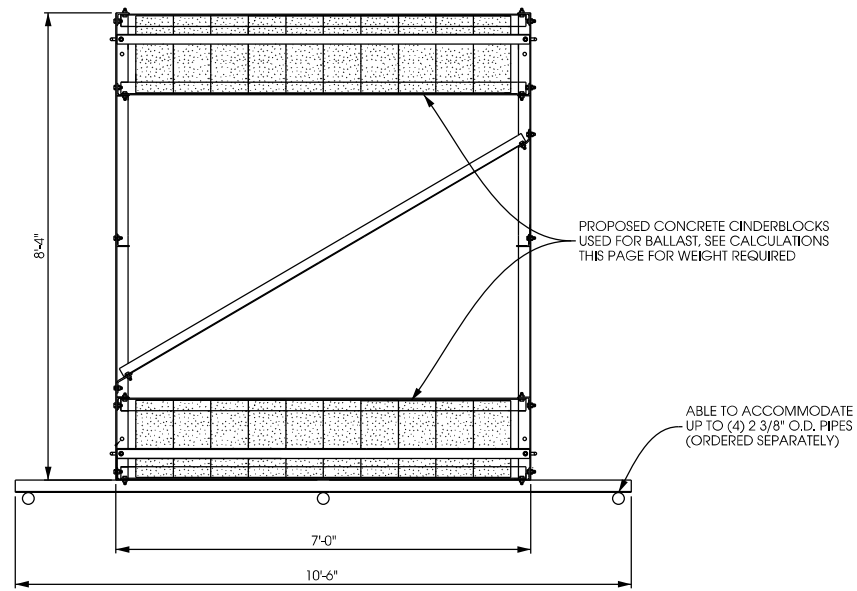
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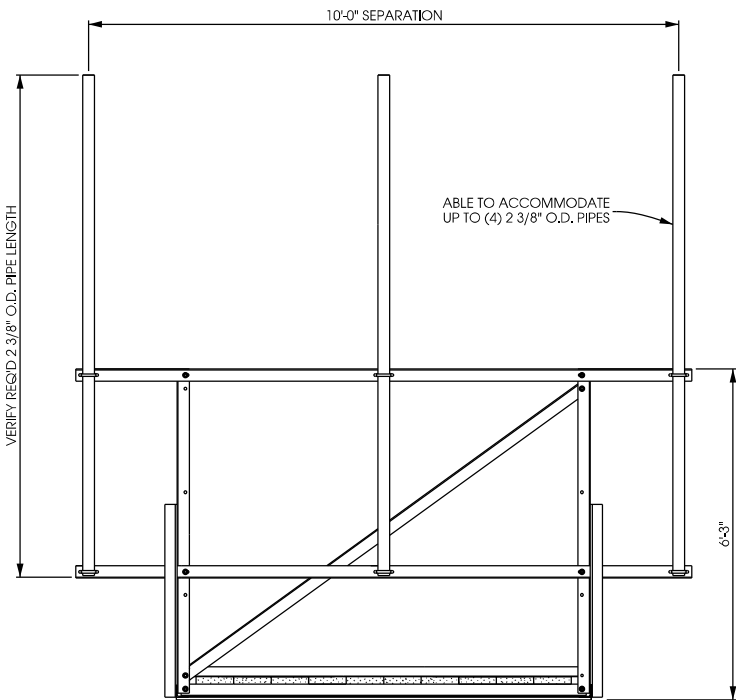
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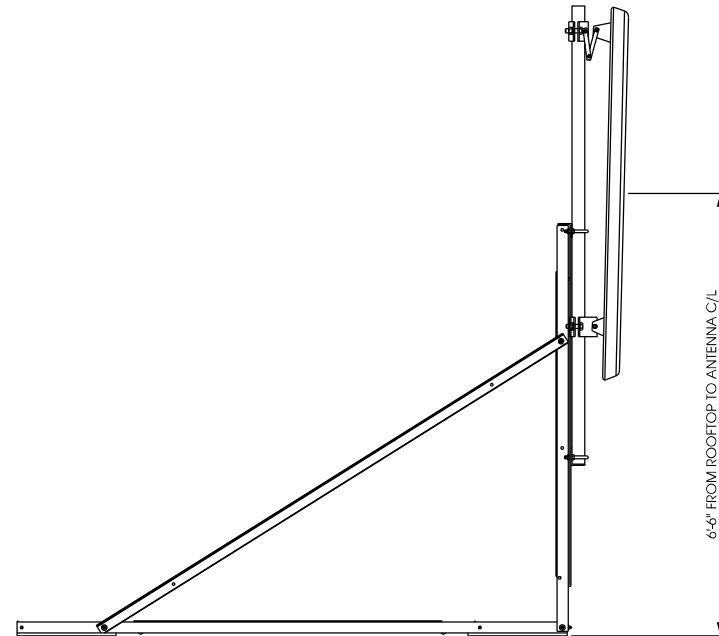
**ANTENNA CONFIGURATION**  
**A-2**



**PLAN VIEW**



**FRONT VIEW**



**SIDE VIEW**

**1 ANTENNA MOUNTING FRAME**  
NTS ANDREW P/N: RF-N10-3-96 ROOFTOP FRAME

**BALLAST REQUIREMENTS:**  
DETAIL SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. EXACT MODEL MAY VARY. A TYPICAL BALLAST BLOCK WEIGHS 25 LBS.  
**REQUIRED BALLAST (PER STRUCTURAL):**  
ALPHA: (17) BLOCKS IN FRONT/ (9) IN BACK, TOTAL= (26) BLOCKS = 650 LBS  
BETA: (17) BLOCKS IN FRONT/ (9) IN BACK, TOTAL= (26) BLOCKS = 650 LBS  
GAMMA: (17) BLOCKS IN FRONT/ (9) IN BACK, TOTAL= (26) BLOCKS = 650 LBS

**SLED MOUNT REPLACEMENT NOTE:**  
THE EXISTING SLED MOUNTS ARE IN A STATE OF DISPAIR. AS CURRENTLY INSTALLED THEY ARE NOT ADEQUATELY ATTACHED TO THEIR BALLAST. REPLACEMENT OF THE EXISTING MOUNTS ARE RECOMMENDED AND ARE IDENTIFIED IN THE RELATED STRUCTURAL ANALYSIS

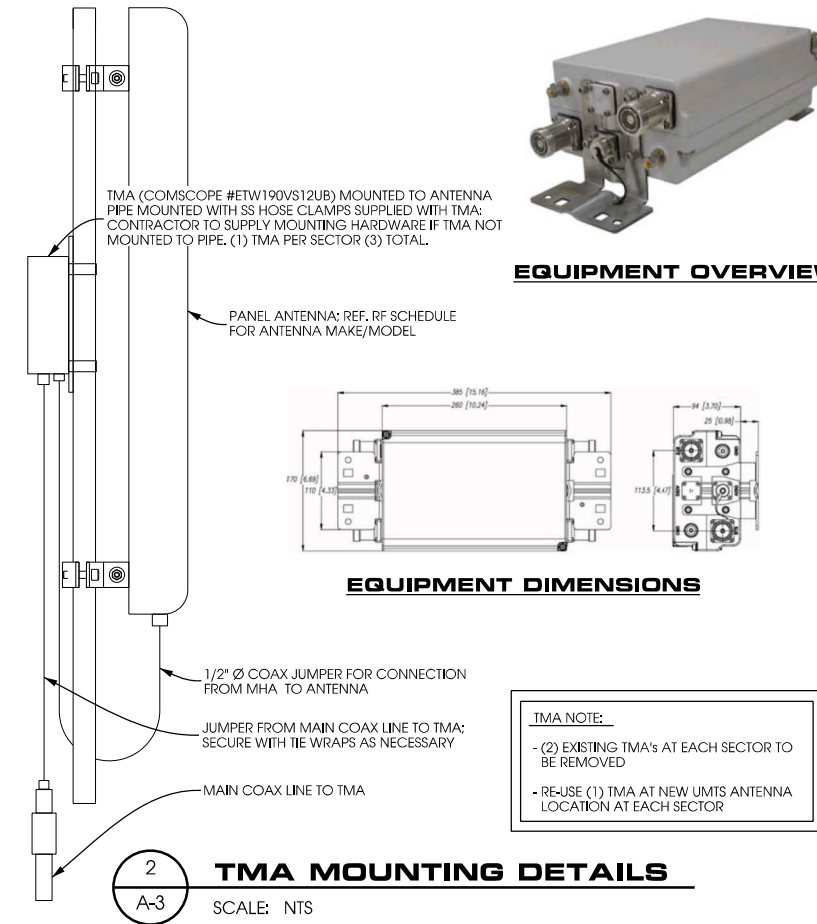
ANDREW NON-PENETRATING ROOF FRAME  
RF-N10-3-96 - ROOFTOP FRAME 10' MAX. SEPARATION

PROPOSED CONCRETE CINDERBLOCKS USED FOR BALLAST. SEE CALCULATIONS THIS PAGE FOR WEIGHT REQUIRED

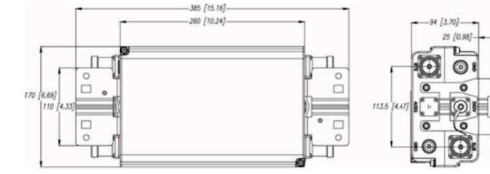
ABLE TO ACCOMMODATE UP TO (4) 2 3/8" O.D. PIPES (ORDERED SEPARATELY)

ABLE TO ACCOMMODATE UP TO (4) 2 3/8" O.D. PIPES

NEOPRENE PAD REQUIRED UNDER BALLAST. ORDER SEPARATELY



**EQUIPMENT OVERVIEW**

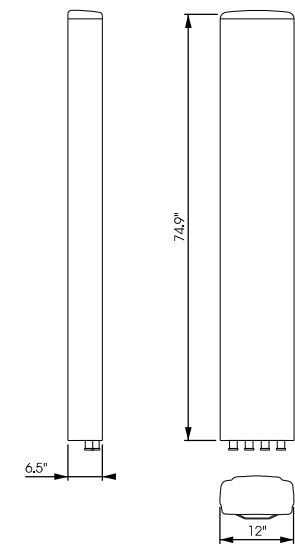


**EQUIPMENT DIMENSIONS**

**TMA NOTE:**  
- (2) EXISTING TMA's AT EACH SECTOR TO BE REMOVED  
- RE-USE (1) TMA AT NEW UMTS ANTENNA LOCATION AT EACH SECTOR

**2 TMA MOUNTING DETAILS**  
SCALE: NTS

ANDREW ANTENNA TMBXX-6517-R2M OR TMBXX-6517-A2M  
DIMENSIONS, H x W x D: 1903 x 305 x 166 mm (74.9" x 12.0" x 6.5")  
WEIGHT: 40.8 lbs  
CONNECTOR: (4) 7/16 DIN FEMALE



**3 ANTENNA DETAIL**  
SCALE: NTS



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MILWAUKEE, WI 53204

**ANTENNA DETAILS**

**A-3**



RF DATA CONFIGURATION SHOWN ON THIS PAGE PROVIDED BY OTHERS. CONTRACTOR TO VERIFY EQUIPMENT MODELS AND SPECIFICATIONS WITH MOST RECENT T-MOBILE DATA SHEET PRIOR TO INSTALLATION

User: DSHAH6 Date: 7/17/2012

**T-Mobile**  
RFDS Data Configuration Sheet

[Back to RFDS home](#) [Print RFDS](#)

[Go Back](#)

---

**Site Information:**

Market:	ML	Radio Vendor:	NSN	Plan Year:	2012
Site Id:	ML10014C	Site Name:	Southside Health Center R	Type/Class:	Building / Roof Top Mount
Address:	1640 S. 24th Street	City:	Milwaukee	State:	WI Zip: 53204
Latitude:	43.0134002	Longitude:	-87.943264	Created Date:	May 10 2012
RF Manager:		RF Engineer:		Last Save Date:	Jul 17 2012 9:32AM

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**Cell Site Configuration**

Configuration Type: Configuration 2B\_U2100 on Ground    Final Configuration (Antenna/Line/TMA/RRU): 9/12/3/6    Solution Type: Rooftop    RFDS Status: Final

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**Sector Information**

	A	B	C	D	E	F
<b>PCS GSM Design</b>						
Antenna RAD Center:	50	50	50	0	0	0
Antenna Azimuth:	0	120	240	0	0	0
Mechanical Tilt:	1	1	1	0	0	0
Electrical Tilt:	2	2	2	0	0	0
<b>PCS UMTS Design</b>						
Antenna RAD Center:	50	50	50	0	0	0
Antenna Azimuth:	0	120	240	0	0	0
Mechanical Tilt:	0	0	0	0	0	0
Electrical Tilt:	4	4	4	0	0	0
<b>AWS UMTS Design</b>						
Antenna RAD Center:	50	50	50	0	0	0
Antenna Azimuth:	0	120	240	0	0	0
Mechanical Tilt:	0	0	0	0	0	0
Electrical Tilt:	4	4	4	0	0	0
<b>AWS LTE Design</b>						
Antenna RAD Center:	50	50	50	0	0	0
Antenna Azimuth:	0	120	240	0	0	0
Mechanical Tilt:	0	0	0	0	0	0
Electrical Tilt:	4	4	4	0	0	0

---

**Antenna Configuration (Site Level)**

	PCS GSM	PCS UMTS	AWS UMTS	AWS LTE
Antenna ReUse Existing:				
Antenna ReUse Existing Qty:				
Antenna Model:	Andrew - TMBXX-6517-A2M		Andrew - TMBXX-6517-A2M	Andrew - TMBXX-6517-A2M
Antenna Qty:	3	0	3	3
Antenna and (or) Ports Shared:	No	Antenna Shared with AWS UMTS	Antenna Shared with PCS UMTS	No

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**TMA Configuration (Site Level)**

	PCS GSM	PCS UMTS	AWS UMTS	AWS LTE
TMA(Re-use existing TMA/New/Not Needed):			Re-use Existing	
TMA Model:			Andrew Twin AWS - ETW200VS12UB	
TMA Qty:	0	0	3	0

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**Diplexer/Combiner Configuration**

	A	B	C	D	E	F
Diplexer Model (1):						
Diplexer Qty (1):						
Diplexer Model (2):						
Diplexer Qty (2):						
Combinere/Duplexer Model:						
Combinere/Duplexer Qty:						

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**Antenna Fiber/ Coax Solution (Site Level)**

Use HCS (Yes/No)? Yes

Use NSN Fiber & OVP for Rooftop (Yes/No)? No

Use Coax Cable (Yes/No)? Yes

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**Hybrid Cable Configuration (Site Level)**

Hybrid Cable Type:

Hybrid Cable Length:

Hybrid Cable Qty:

---

**Hybrid Cable Config(Sector Level)**

	A	B	C	D	E	F
HCS run between Sectors (e.g. Rooftop/Watertank etc.):	Low Capacity HCS-7/8"	Low Capacity HCS-7/8"	High Capacity HCS-1 1/4"			
Hybrid Cable Length (ft):	75	75	75	0	0	0

---

**COVP Configuration (Site Level)**

COVP Type (1):	Large COVP			COVP Qty (1):	4
COVP Type (2):				COVP Qty (2):	

---

**Coax Configuration**

	A	B	C	D	E	F
Re-use existing coax for TDOA (Yes/No)?	Yes	Yes	Yes			
Qty. of excess coax lines to remove?						
New Coax Type:						
New Coax Length/Line:						
New Coax Qty:						
RET Home-Run Cable:						
RET Home-Run Cable Length(ft):						

---

**System Modules (Site Level)**

	PCS GSM	PCS UMTS	AWS UMTS	AWS LTE
System Module Type:	ESMB	FSME	FSME	FSMF
System Module Qty:	1	1	1	1

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**RF Modules (Site Level)**

	PCS GSM	PCS UMTS	AWS UMTS	AWS LTE
RF Module Type:	FXFB	FXFB	FR1A	FR1G
RF Module Qty:	3	0 (Module Shared with PCS GSM, different PAs)	3	3

---

**Comments/Notes**

4/18/2012 - Swap existing dual pole antenna with quad pole antenna. Total of 3 quad pole antenna per sector. PCS UMTS antenna tilts were matched with AWS UMTS. PCS GSM antenna tilts were kept the same.

07/10/2012:LowCapHCSType=Sector A=75 (From Gamma), Sector B=75 (From Gamma)07/10/2012:HighCapHCSType=Sector C=75 ( From Equipment)



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PROJECT NO: 7438

DRAWN BY: CV

CHECKED BY: DCL

REV.	DATE:	DESCRIPTION:
A	6/19/12	PERMIT CD's
B		
C		
0	7/24/12	FINAL CD's
1		
2		

**SOUTHSIDE  
HEALTH CENTER  
ML10014C**

SITE ADDRESS  
1640 S. 24TH STREET  
MILWAUKEE, WI 53204

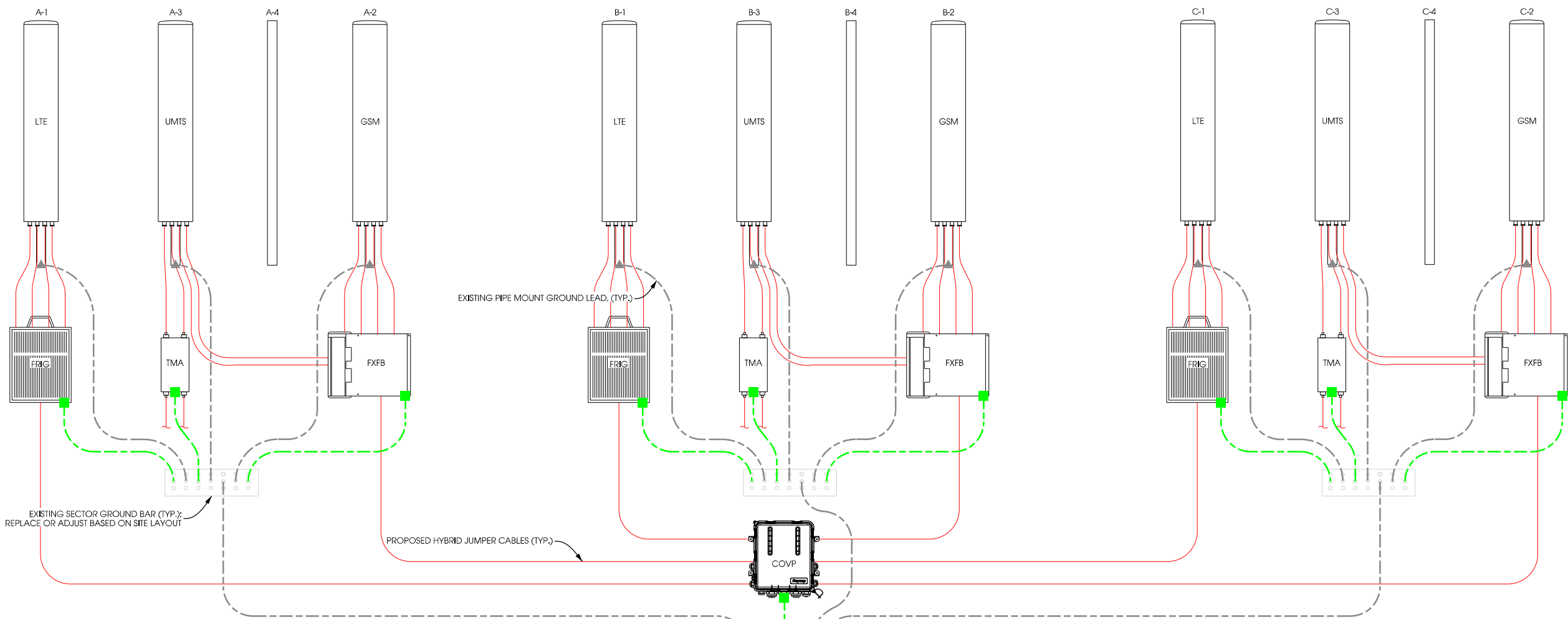
**RF DATA  
CONFIGURATION  
SHEET**

**A-4**

**ALPHA SECTOR**

**BETA SECTOR**

**GAMMA SECTOR**



**GROUNDING LEGEND:**

- EXISTING GROUNDING
- PROPOSED #2 SOLID TINNED GROUND LEAD
- PROPOSED #2 INSULATED GROUND LEAD
- EXOTHERMIC WELD CONNECTION
- ▲ DOUBLE LUG MECHANICAL CONNECTION

**GENERAL NOTES:**

RISE DIAGRAM FOR CONCEPTUAL PURPOSES ONLY. SEE SITE PLAN FOR SITE SPECIFIC REQUIREMENTS AND LAYOUT.

SINGLE TYPICAL SECTOR DISPLAYED ONLY. SEE RF DATA SHEET FOR SITE SPECIFIC REQUIREMENTS.

**GROUNDING NOTES:**

BOND NEW ANTENNA END RRU'S AND COVP TO EXISTING SECTOR GROUND BAR OR UPPER ANTENNA GROUND BAR AS SITE LAYOUT DICTATES. VERIFY CAPACITY OF EXISTING GROUND BAR AND REPLACE AS REQUIRED.

ALL NON-INSULATED GROUND LEADS EXTENDING 4" OR MORE ABOVE GRADE TO BE SLEAVED IN CAR-FLEX OR EQUIVALENT.

GROUND SSC AS SPECIFIED BY MANUFACTURER.

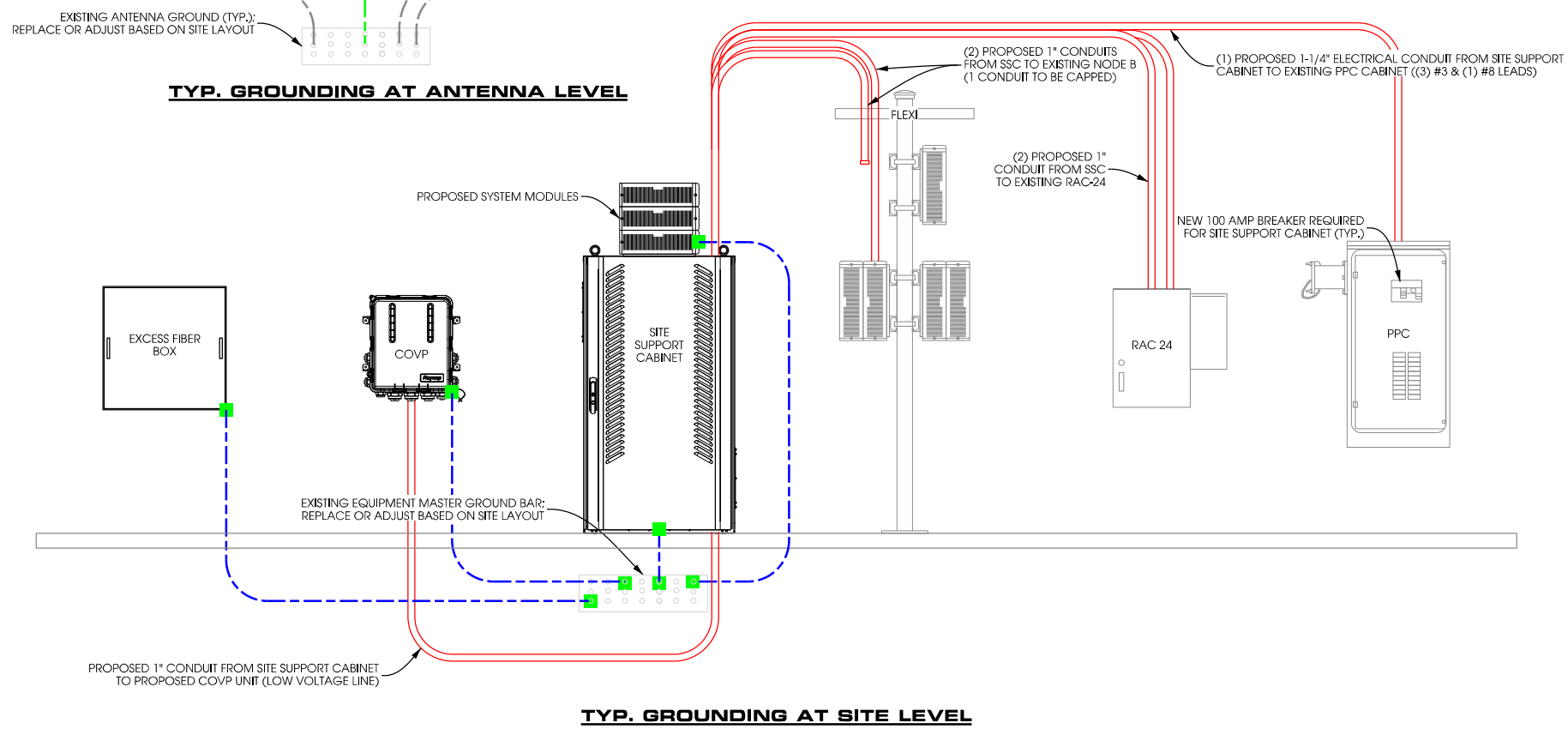
**UTILITY NOTES:**

MOUNT ALL CONDUITS OVERHEAD WHERE FEASIBLE.

ALL ABOVE GRADE CONDUITS EXPOSED TO FOOT TRAFFIC TO BE EXTERIOR RATED GALVANIZED RIGID CONDUITS. SUCH ANCHORS TO BE ANCHORED TO CONCRETE, FOLLOW EXISTING CONDUIT PATHS, AND BE PLACED OUTSIDE OF THE SERVICE/WORK ZONE PATH.

EXTERIOR GRADE LIQUID TIGHT FLEXIBLE CONDUIT ALLOWED FOR CONDUIT TRANSITIONING AT LAST 2' OF ROUTE IF LOCATED ON EXISTING SUPPORT, CHASE, OR WALL. NOT ALLOWED ALONG FINISHED GROUND SURFACE.

VERIFY ALL MATERIALS AND INSTALLATION PROCEDURES WITH LOCAL INSPECTOR REQUIREMENTS.



**TYP. GROUNDING AT ANTENNA LEVEL**

**TYP. GROUNDING AT SITE LEVEL**

PROJECT NO: 7438

DRAWN BY: CV

CHECKED BY: DCL

REV.	DATE	DESCRIPTION:
A	6/19/12	PERMIT CD'S
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0	7/24/12	FINAL CD'S
1		
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**ANTENNA AND GROUNDING CONFIGURATION**

**RF-1**

