



July 17, 2018

Ms. Barbara Kooiman, CLG Contact
La Crosse Historic Preservation Commission
City Hall, 400 LaCrosse Street
La Crosse, Wisconsin 54601

RE: **T-Mobile – A1Q0860G – LaCrosse-Ryan**
318 Main Street, La Crosse, WI 54601
Lat 43° 48' 44.4" N, Long 91° 15' 07.9" W
Impact7G, Inc. Project: 2015353 Phase 149

Dear Ms. Kooiman,

Impact7G, Inc. (Impact7G) is in the process of completing a compliance review for the proposed telecommunications facility referenced above. T-Mobile proposes to collocate telecommunications equipment on an existing building. Antennas will be licensed by the Federal Communications Commission (FCC).

This investigation includes determining whether "the site is located in, on, or within the viewshed of a building, site, district, structure or object, significant in American history, architecture, archaeology, engineering or culture, that is listed, or eligible for listing on the State or National Register of Historic Places, or located in or on an Indian Religious Site."

Impact7G is requesting information regarding the potential effect on any historic properties within the vicinity of the proposed project location, as noted above. Additional project information is enclosed. If you wish to comment or be considered as a consulting party, please respond within thirty (30) days of the date of this letter. If a response is not received within thirty (30) days, it will be assumed that you have no objections to this undertaking.

If you have any questions or require additional information, please contact me via phone at 515-473-6256 or email at msarcone@impact7g.com.

Sincerely,

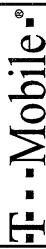
A handwritten signature in cursive script that reads "Madeline Sarcone".

Madeline Sarcone
Impact7G, Inc.

Enclosure



T-Mobile®



T-MOBILE USA, INC.
8000 WEST 78TH STREET
SUITE 400
EDINA, MN 55439
OFFICE: 612.701.2069

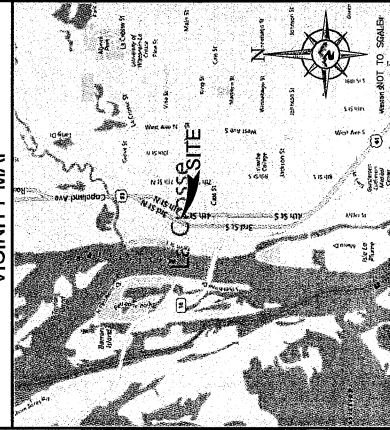


POWDER RIVER
Engineering Services, LLC
www.powderriverdev.com

LOCATION MAP



VICINITY MAP



APPROVALS

PENDING APPROVAL OF JURISDICTION, THE FOLLOWING PARTIES HAVE REVIEWED THE DESIGN WITH THEIR FUNCTIONAL RESPONSIBILITIES AND HAVE APPROVED OR REJECTED THIS PROJECT FOR CONSTRUCTION. CONTRACTORS MAY NOT START CONSTRUCTION WITHOUT A NOTICE TO PROCEED (NTP) FROM T-MOBILE.

REAL ESTATE PM:

PRINT NAME: _____ SIGNATURE: _____ DATE: _____

CONSTRUCTION PM:

PRINT NAME: _____ SIGNATURE: _____ DATE: _____

RF ENGINEER:

PRINT NAME: _____ SIGNATURE: _____ DATE: _____

OPERATIONS:

PRINT NAME: _____ SIGNATURE: _____ DATE: _____

T-MOBILE PROJECT OVERLAY 2018

SITE INFORMATION

T-MOBILE SITE NUMBER: A1Q0860G
T-MOBILE SITE NAME: LACROSSE-RYAN
SITE TYPE: 83'-10" BUILDING
SITE ADDRESS: 318 MAIN STREET
LA CROSSE, WI 54601
COUNTY: WISCONSIN
JURISDICTION: CITY OF LA CROSSE

PROJECT DESCRIPTION

STRUCTURE HEIGHT: 83'-10"
BUILDING TYPE: (9) EXISTING ANTENNA PANELS
ANTENNA QUANTITY: (9) EXISTING ANTENNA PANELS
ANTENNA HEIGHT (CL): 100'-0" RAD CENTER
RADIO QUANTITY: (9) PROPOSED RADIOS
OTHER EQUIPMENT: (8) TMAS TO BE REMOVED
EQUIPMENT MOUNTING: ROOFTOP MOUNT

COORDINATES

LATITUDE: 43.91233337
LONGITUDE: -92.25203507
(PER MOST RECENT RFDS)

PROPERTY LOCATION

PROPERTY ADDRESS: 318 MAIN STREET
LA CROSSE, WI 54601
TOWER OWNER: RYAN PROPERTIES, LLC.

APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:
- 2012 INTERNATIONAL BUILDING CODE
- 2015 MINNESOTA BUILDING CODE
- 2015 MINNESOTA ELECTRICAL CODE
IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV
T-1	TITLE SHEET	B
C-1	SITE PLAN	B
C-2	ENLARGED SITE PLAN	B
C-3	EQUIPMENT DETAILS	B
C-4	EQUIPMENT DETAILS	B
C-5	EQUIPMENT DETAILS	B
A-1	TOWER ELEVATION	B
A-2	ANTENNA CONFIGURATION	B
GN-1	GENERAL NOTES	B
GN-2	GENERAL NOTES	B

STRUCTURAL REVIEW NOTE

TOWER STRUCTURAL ANALYSIS COMPLETED BY OTHERS. CONTRACTORS TO REVIEW STRUCTURAL REPORT IN ITS ENTIRETY. DISCREPANCIES OR DISAGREEMENTS BETWEEN THE REPORT AND THESE PLANS SHOULD BE RESOLVED PRIOR TO CONSTRUCTION.

CALL BEFORE YOU DIG



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

TO OBTAIN LOCATION OF PARTICIPANTS
UNDERGROUND UTILITIES, CALL 811 IN
MINNESOTA CALL GOPHER STATE ONE CALL
TOLL FREE
1.800.552.6868
FAX A LOCATE 1.800.236.4967
MN STATUTE REQUIRES MIN. OF 48 HOURS
NOTICE BEFORE YOU EXCAVATE.

PRELIMINARY
NOT FOR
CONSTRUCTION

REVIEWED BY:

BUSINESS LICENSE #:		N/A
REV		DESCRIPTION
A	04/19/18	ISSUED FOR REVIEW 90%
B	06/12/18	ISSUED FOR REVIEW 90%
C		
D		
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THIS PLAN AND SPECIFICATIONS, AS SUBMITTED BY APPLICANT, ARE APPROVED FOR CONSTRUCTION. THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND CONDITIONS OF THE PERMITS. THE PERMITTEE SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND NOTICES PRIOR TO ANY CONSTRUCTION. THE PERMITTEE SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND NOTICES PRIOR TO ANY CONSTRUCTION.

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T-MOBILE SITE #:
A1Q0860G

T-MOBILE SITE NAME:
LACROSSE-RYAN

318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

T-MOBILE USA, INC.
000 WEST 78TH STREET
SUITE 400
EDINA, MN 55439
OFFICE: 612.701.2069



POWDER RIVER
Engineering Services, LLC
www.powderriverdev.com

[illegible]

REVIEWED BY:

**PRELIMINARY
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CONSTRUCTION**

THESE PLANS AND SPECIFICATIONS, AS INSTRUMENTS OF SERVICE, ARE TO REMAIN THE PROPERTY OF POWDER RIVER DEVELOPMENT COMPANY, LLC. THE PROJECTS FOR WHICH THEY ARE MADE ARE TO BE EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANY PERSON OR ENTITY ON OTHER PROJECTS WITHOUT PRIOR WRITTEN CONSENT OF THE ENGINEER.

SITE INFORMATION:
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A1Q0860G

T-MOBILE SITE NAME:
LACROSSE-RYAN

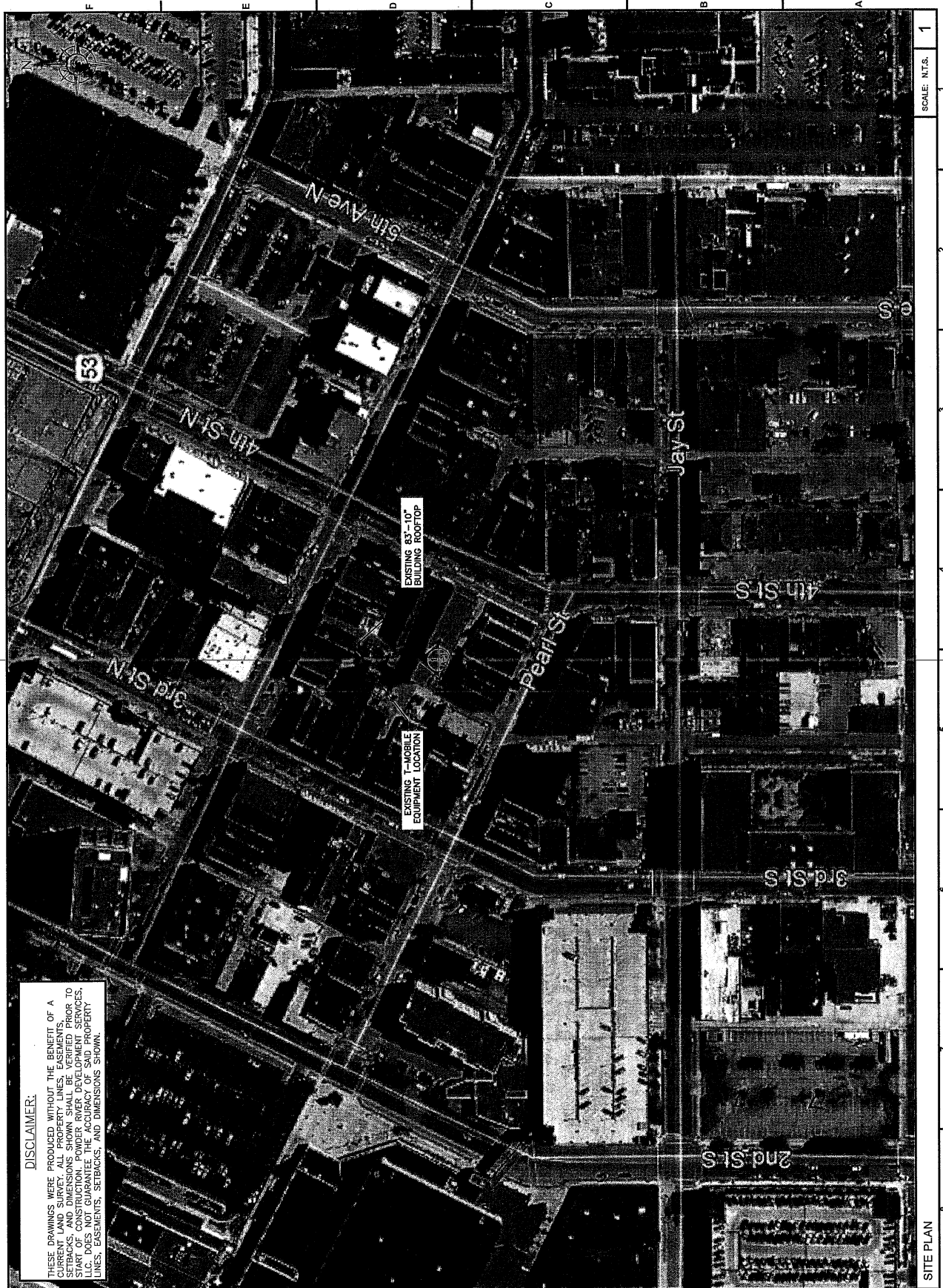
318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

1-



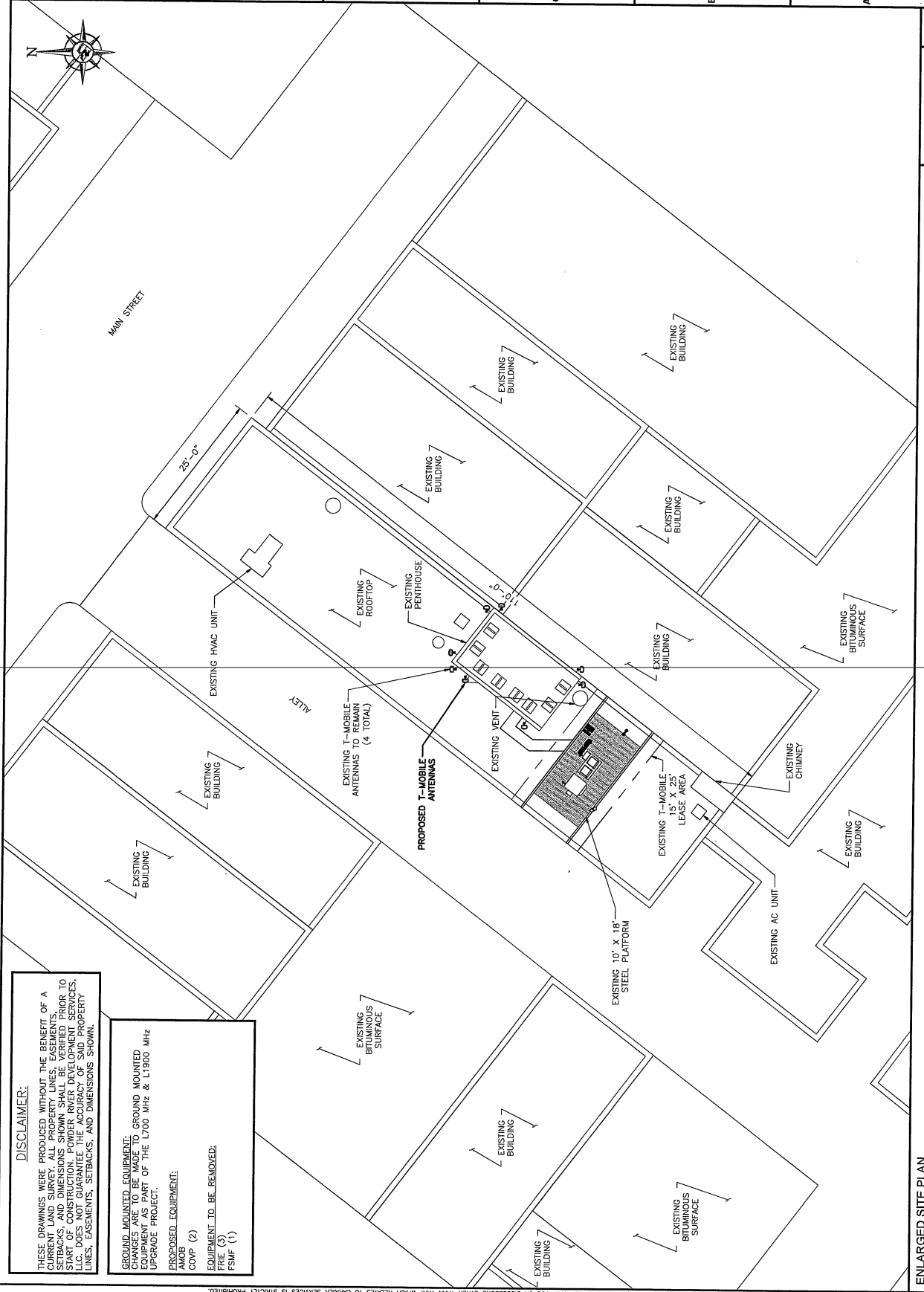
DISCLAIMER:

THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A CURRENT LAND SURVEY. ALL PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION. POWDER RIVER DEVELOPMENT SERVICES, LLC, DOES NOT GUARANTEE THE ACCURACY OF SAID PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN.

THE INFORMATION CONTAINED IN THIS SET OF CONSTRUCTION DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CARRIER SERVICES IS SIMPLY PROHIBITED.

DISCLAIMER:
THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A SURVEY. THE EXISTING CONDITIONS, SETBACKS, AND DIMENSIONS SHOWN SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION. POWDER RIVER DEVELOPMENT SERVICES, LLC, DOES NOT GUARANTEE THE ACCURACY OF SAID PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN.

GROUND MOUNTED EQUIPMENT:
EQUIPMENT TO BE REMOVED:
FIRE (3)
AUX (1)
COMP (2)
FSMF (1)
PROPOSED EQUIPMENT:
T-MOBILE (1)



T-Mobile
T-MOBILE USA, INC.
8000 WEST 78TH STREET
SUITE 400
EDINA, MN 55439
OFFICE: 612.701.2069

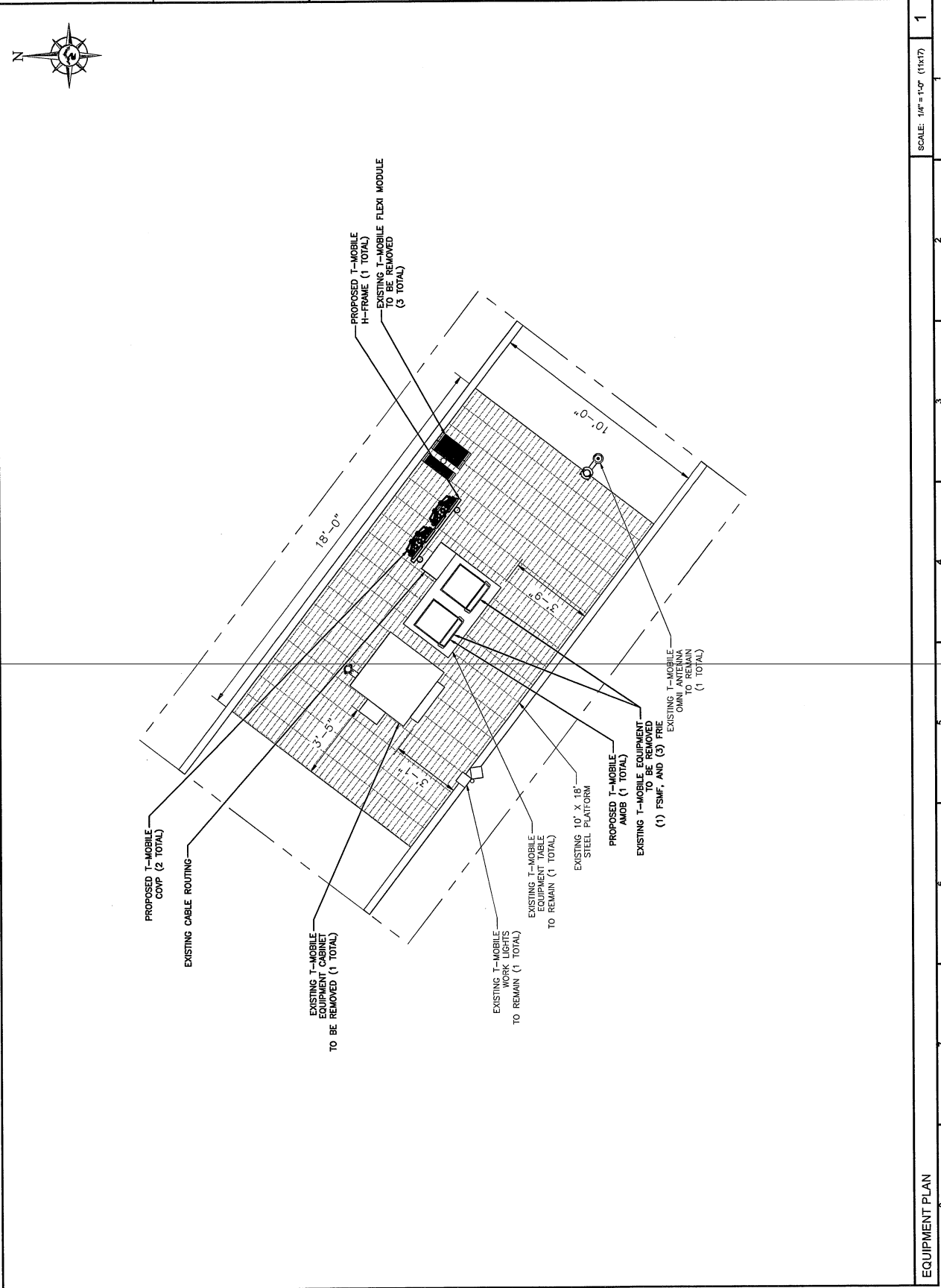
POWDER RIVER
Engineering Services, LLC
www.powderriverdev.com

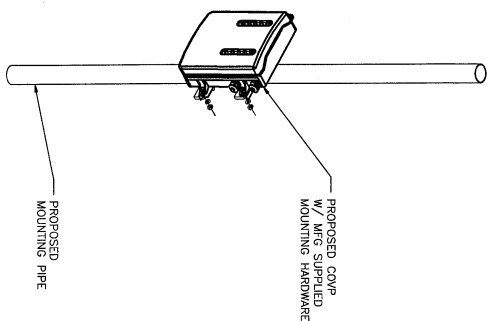
BUSINESS LICENSE #:			N/A
REVISED:			INIT
REV	DATE	DESCRIPTION	JHT
A	04/19/18	ISSUED FOR REVIEW BOOK	RUP
B	06/12/18	ISSUED FOR REVIEW BOOK	

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C-2-1





NOT USED

5

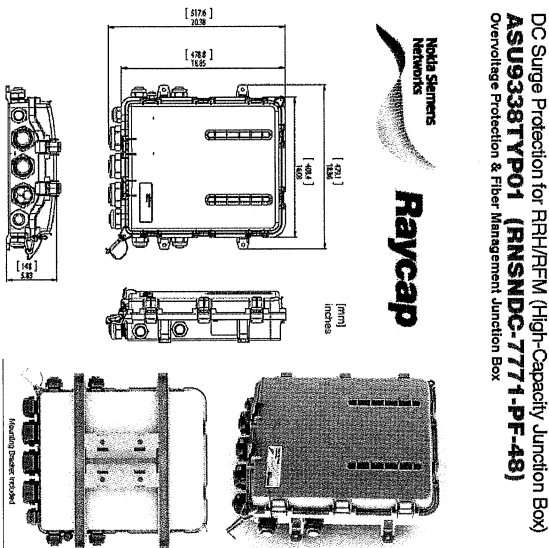
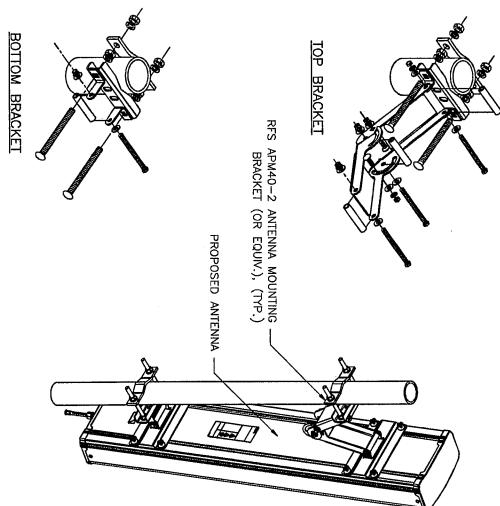
COMP MOUNTING DETAIL

3

ANTENNA ATTACHMENT

SCALE: N.T.S.

1



DC Surge Protection for R/H/R/F/M (High-Capacity Junction Box)
ASU9338TYP01 (RNSNDC-7771-PF-48)
Overvoltage Protection & Fiber Management Junction Box

NOT USED

6

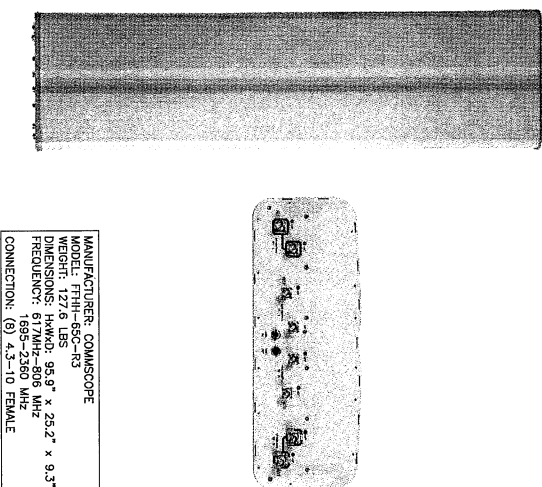
COMP DETAIL

4

ANTENNA INFORMATION

SCALE: N.T.S.

2



MANUFACTURER: COMUSCOPE
MODEL: FTTH-65C-R3
WEIGHT: 127.6 LBS
DIMENSIONS: HWWD: 95.9" x 25.2" x 9.3"
FREQUENCY: 617MHz-806 MHz
CONNECTION: (6) 4.3-10 FEMALE

T-Mobile®

T-MOBILE USA, INC.
8000 WEST 78TH STREET
SUITE 400
EDINBURGH, IL 60126-5459
OFFICE: 612.701.2069

POWDER RIVER
Engineering Services, LLC
www.powderriver.com

BUSINESS LICENSE #:

N/A

REVISIONS

REV	DATE	DESCRIPTION	INT
A	06/19/18	ISSUED FOR REVIEW 805	JMT
B	06/12/18	ISSUED FOR REVIEW 805	RMP

REVIEWED BY:

NAM

PRELIMINARY
NOT FOR
CONSTRUCTION

SITE INFORMATION:
T-MOBILE SITE #:
A1Q0860G

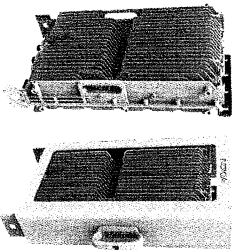
T-MOBILE SITE NAME:
LACROSSE-RYAN
318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

EQUIPMENT DETAILS

SHEET NUMBER:
C-3

Nokia Dual Low Band Radio Specification

AHLOA: 600MHz/700MHz Radio (41x48x RRRH)



Configuration	
Carrier Power	41x48 Dual Band
IMW/CBW	4200W
PIM Cancellation	Fdd Band/Fdd Band
Power Sharing	Yes (Multi Band)
Weight	Yes
Size	83.7 lbs with no covers & brackets
Dimensions	680mm x 320mm x 189mm
Connector	4.3-10+ (4 ports)

- AHLOA
- Based on Airscale Platform
- Tower installation only (No Ground Installation)
- License requirement for MIMO Functions and Dual Band
- Utilizes 4.3-10 RF Connector
- CPR1 fiber front haul
- Product expected Q2 2018

T-Mobile Confidential

T-Mobile

AHLOA RRU DETAIL

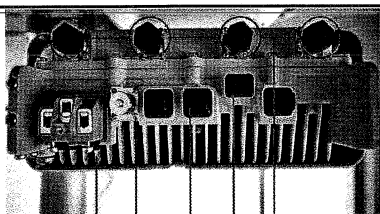
SCALE: N.T.S.

3

FRU DETAIL

SCALE: N.T.S.

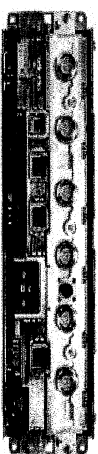
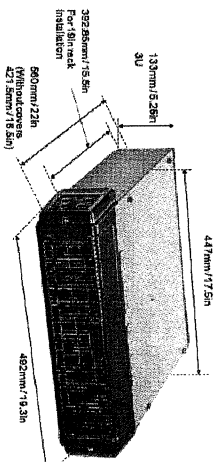
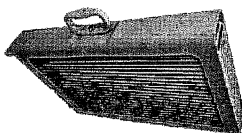
1



MANUFACTURER: NOKIA
MODEL: RRU 4x4x4W 1700MHz / 2100MHz FRU
DIMENSIONS: 184x184x184mm
WEIGHT: 18.5kg

- RF Connectors
4x 4.3-10
- External Alarm Connector
USB3 Type-A: Up to 4 Alarms
- Fiber Optic Interface
3x Connectors 600p GSSM
- Remote Electrical Tilt Connector
RS-485, 14.5 VDC, steady state load max 30 W
- DC Power Connector
Nominal -57.76 -40.5 V
Separate Ground point on the unit
- Optional Fan Connector (Side of Unit)
Required for Horizontal Mounting. Optional for vertical

Confidential Construction



MANUFACTURER: NOKIA
MODEL: FLEX MULTIRADIO RF MODULE (FXFC)
WEIGHT: 55 LBS

NOT USED

NOT USED

FXFC DETAIL

SCALE: N.T.S.

2

T-Mobile®

T-MOBILE USA, INC.
8000 WEST 8TH STREET
EDINA, MN 55439
OFFICE: 612.701.2069



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Engineering Services, LLC
www.powderrivereng.com

BUSINESS LICENSE #:

REV	DATE	REVISIONS
1	04/17/18	ISSUED FOR REVIEW 2018
2	05/12/18	ISSUED FOR REVIEW 2018

REVIEWED BY: MAU

PRELIMINARY
NOT FOR
CONSTRUCTION

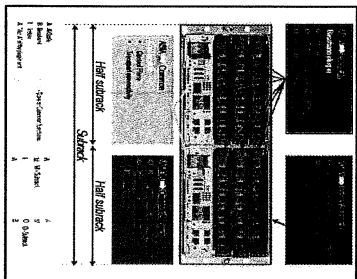
THIS DRAWING AND SPECIFICATIONS ARE THE PROPERTY OF T-MOBILE USA, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN CONSENT OF THE CARRIER.

SITE INFORMATION:
T-MOBILE SITE #:
A1Q0860G

T-MOBILE SITE NAME:
LACROSSE-RYAN
318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

EQUIPMENT DETAILS

SHEET NUMBER:
C-4



One Subrack Indoor Maximum configuration:

- 6 ABIA +2 ASIA +1 AMIA
- IP20 rating (Indoor)

One Subrack Outdoor Maximum configuration:

- 6 ABIA +2 ASIA +1 AMOB
- IP65 rating

No boots on ASIA and ABIA fiber/power/Ethernet connectors

NOTE: No power connections for Radio Module

UNITS

ASIA

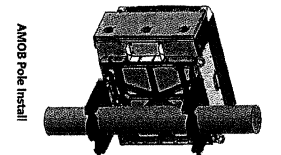
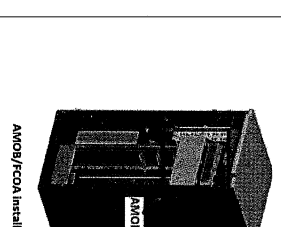
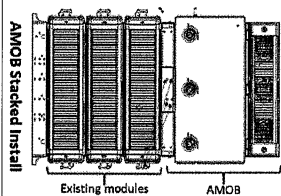
ABIA

- The AirScale System Module is an indoor unit and requires environmental considerations for installation
- AMOB is primary for all outdoor sites
 - H-frame or Wall – requires FMFA (SKU# 33451) with AMOB on top of up to three radios
 - Stack – requires FMFA (SKU# 33451) and install kit (SKU# 33451)
 - Pole – requires FMFA (SKU# 33451) and two FMFA (SKU# 33451) and install kit (SKU# 33451)
 - FCOA – some temperature concerns, cable entry on left only, needs FCOA installation kit (SKU#33450)
 - AMIA is primary for indoor (environmentally controlled) sites and sites with small cell hub cabinets
 - AMIA installation inside Site Support Cabinet
 - Needs 3U space and 19" rack installation (adapters/support needed for 23" rack)
 - For Medium/Large/HP Large Delta SSC – Fan/filter kit required (SKU# 32168) to support medium config (HP needs 2)
 - For Medium Purcell SSC – Nothing required to support minimal config (single LTE layer)
 - For Medium Purcell SSC – Door upgrade kit required (SKU# 33401) to support large config
 - For Medium/Large HP Large Delta SSC – To support full config, door upgrade kit design started but not completed

AIRSCALE SYSTEM MODULE OVERVIEW

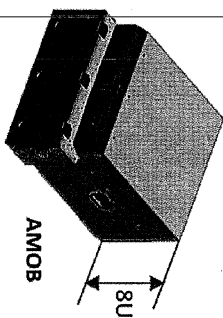
SCALE: N.T.S.

2



AMOB is an outdoor enclosure for the AirScale Baseband cards (ASIA/ABIA). The AMOB is primary for all outdoor sites.

- It is 8U high and a 19" Rack Mount



AMOB Stacking Options				
Stacking Option	FCOA	Wall/H-Frame	Pole	Standard Rack
Stacking Option for AMOB	✓	✓	✓	✓
FCOA Installation	✓	✓	✓	✓
Cable Entry	✓	✓	✓	✓
Temperature/Humidity/Altitude	✓	✓	✓	✓
Power	✓	✓	✓	✓
Water	✓	✓	✓	✓

NOT USED

SCALE: N.T.S.

1

T-Mobile

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8000 WEST 78TH STREET
EDINA, MN 55439
OFFICE: 612.701.2069

POWDER RIVER
Engineering Services, LLC
www.powderriverdev.com

BUSINESS LICENSE #:

REVISIONS

REV	DATE	DESCRIPTION	INT
A	04/19/18	ISSUED FOR REVIEW DOCS	INT
B	06/12/18	ISSUED FOR REVIEW DOCS	INT
C			
D			
E			
F			

REVIEWED BY: MAM

PRELIMINARY
NOT FOR
CONSTRUCTION

THESE DRAWINGS AND SPECIFICATIONS, AS SUBMITTED BY SERVICE, ARE APPROVED BY THE ARCHITECT FOR THE PROJECTS AND SHALL BE USED AS SUCH. THE ARCHITECT'S REVIEW IS LIMITED TO THE PROJECTS AND SHALL NOT BE USED FOR ANY OTHER PROJECTS OR FOR ANY OTHER PURPOSES.

SITE INFORMATION:

T-MOBILE SITE #:
A1008606

T-MOBILE SITE NAME:
LACROSSE-RYAN

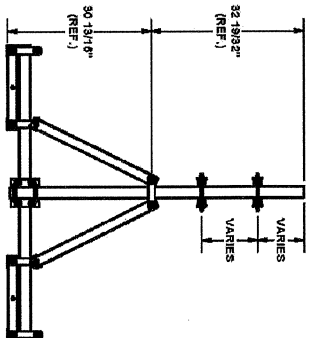
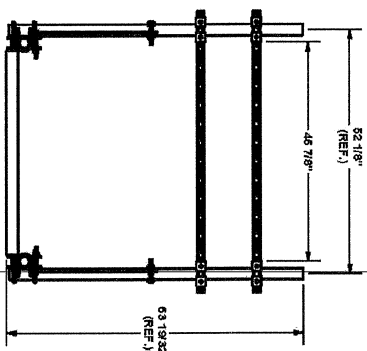
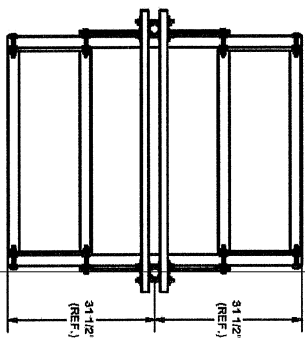
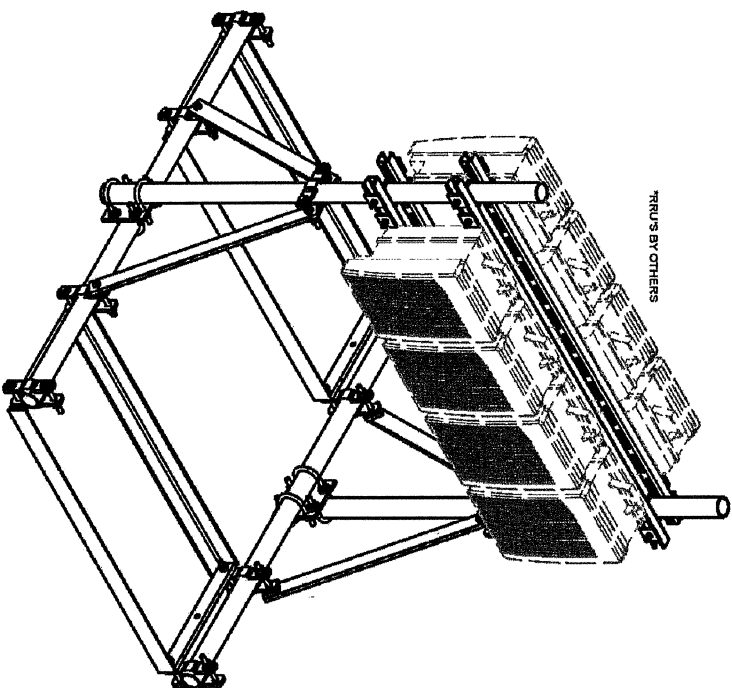
318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

SHEET TITLE:

EQUIPMENT DETAILS

SHEET NUMBER:

C-5



TOLERANCE NOTES

TO BEAWARE ON DIMENSIONS, UNLESS OTHERWISE NOTED, ARE
SAWED, SHEARED AND GAS CUT EDGES (# 0.6507)
DRILLED AND GAS CUT HOLES (# 0.6097) - NO COMING OF HOLES
LASER CUT EDGES AND HOLES (# 0.6107) - NO COMING OF HOLES
BEDS ARE ±1/2 DEGREE
ALL OTHER MACHINING (# 0.6097)
ALL OTHER ASSEMBLY (# 0.6067)

PROPRIETARY NOTE:
THE DATA AND RESULTS CONTAINED IN THE DRAWING ARE PROPRIETARY INFORMATION OF WALLACE TECHNOLOGIES, INC. AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM WALLACE TECHNOLOGIES, INC.

DESCRIPTION

**5' HEAVY DUTY ROOFTOP
FOR REMOTE RADIO UNITS**

ОБЪЕМ РАБОТЫ

DRAWING B1	CEK	3/16/2015
DRAWING ISSUE		

PRINTING USAGE
CUSTOMER

2

PRO
Engineering
Support Team
1-888-753-7444

A valuation statement

PART NO.	RT-RRU5HD
QWANT NO.	

RT-RRU5HD

SCALE: N.T.S.

1

T-Mobile®

T-MOBILE USA, INC.
8000 WEST 78TH STREET
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EDINA, MN 55439
OFFICE: 612.701.2069



POWDER RIVER
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www.powderriverdev.com

BUSINESS LICENSE #: N/A

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REVIEWED BY:	MAM
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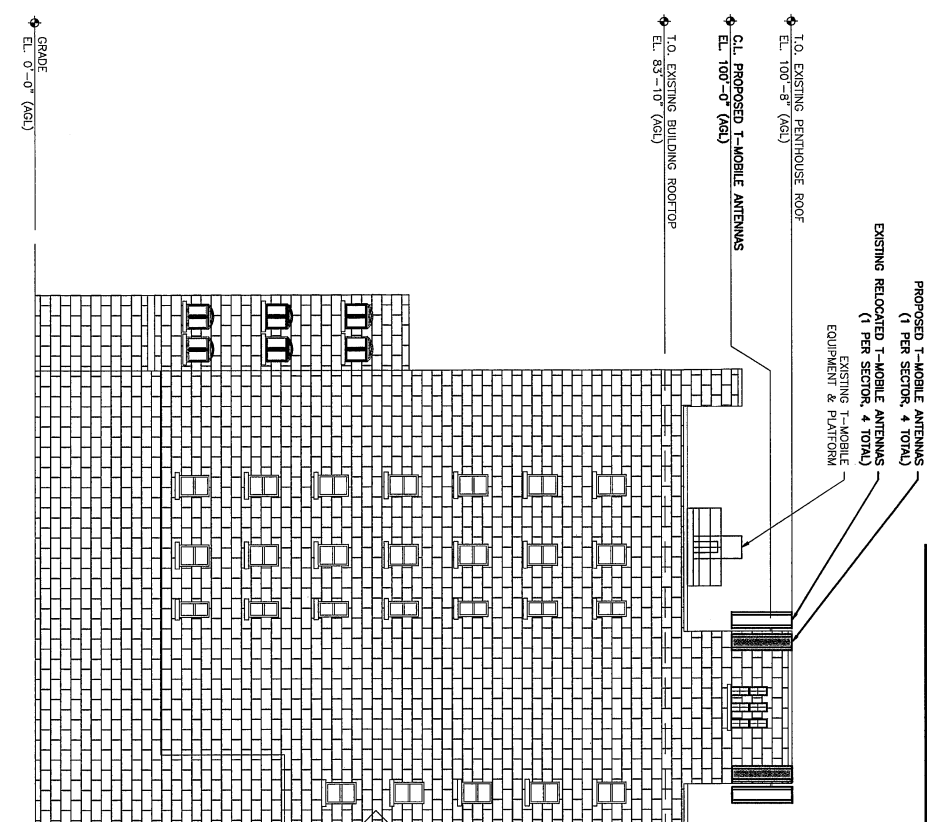
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LACROSSE-RYAN

EQUIPMENT DETAILS

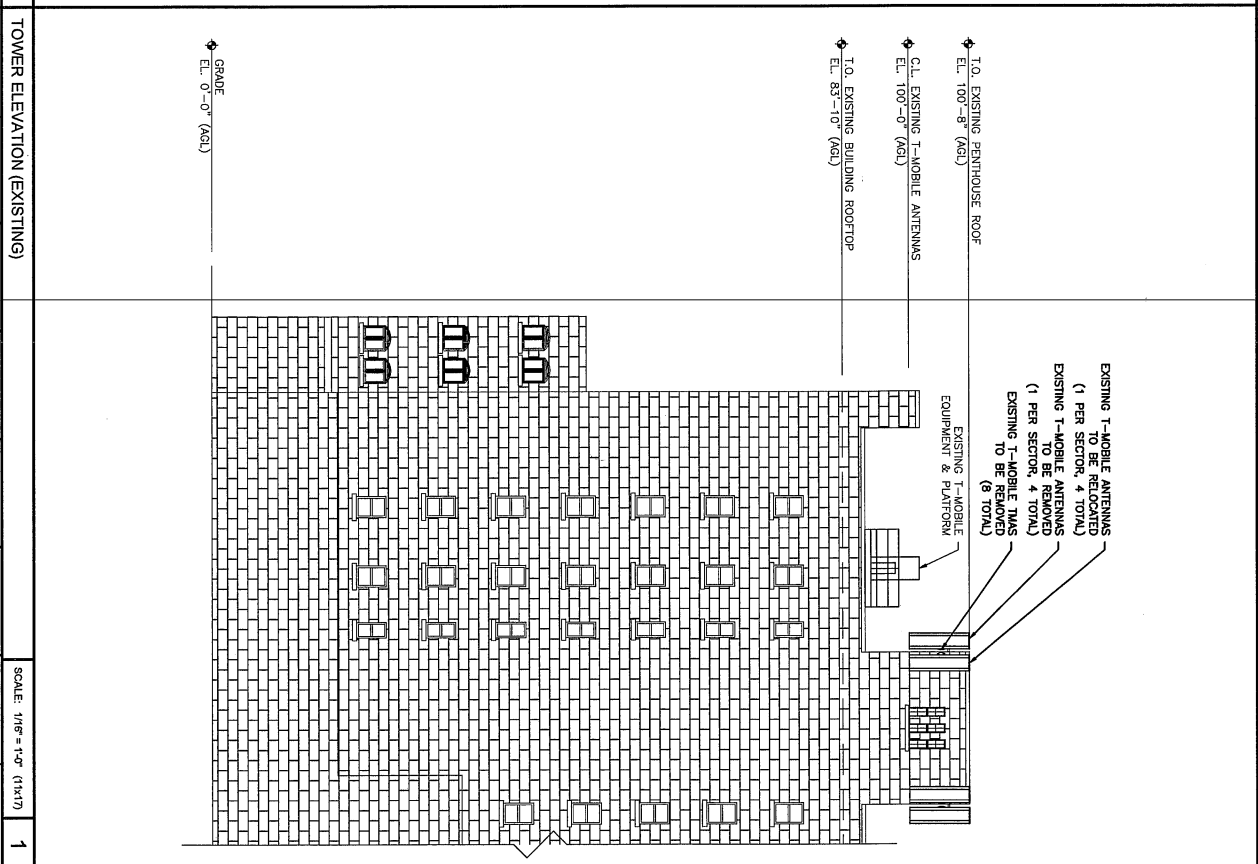
C-6

NOTE:
TOWER ELEVATION BASED ON PHOTOS, RFDS, AND PREVIOUS DRAWINGS. CONTRACTOR TO VERIFY EXISTING EQUIPMENT AND MOUNTING HEIGHTS.

POWDER RIVER ENGINEERING SERVICES HAS NOT PERFORMED STRUCTURAL ANALYSES FOR THE PROPOSED T-MOBILE ANTENNAS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED MODIFICATIONS, PRIOR TO THE PROPOSED CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED MODIFICATIONS, PRIOR TO THE PROPOSED CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPOSED MODIFICATIONS, PRIOR TO THE PROPOSED CONSTRUCTION.



TOWER ELEVATION (PROPOSED)



TOWER ELEVATION (EXISTING)

T-Mobile

T-MOBILE USA, INC.
8000 WEST 78TH STREET
EDINA, MN 55425-1139
OFFICE: 612.701.2669

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BUSINESS LICENSE #		N/A
REVISIONS		
REV	DATE	DESCRIPTION
A	04/19/16	ISSUED FOR REVIEW 0005
B	09/12/16	ISSUED FOR REVIEW 0005
REVIEWED BY:		MAA

**PRELIMINARY
NOT FOR
CONSTRUCTION**

T-MOBILE SITE NAME:
LACROSSE, RYAN

T-MOBILE SITE #:
A1008606

SITE INFORMATION:

T-MOBILE SITE NAME:
LACROSSE, RYAN

**318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY**

SHEET TITLE:
TOWER ELEVATION

SHEET NUMBER:
A-1

NOTE:
RETURN ALL OLD / UNUSED EQUIPMENT TO THE CTDI
WAREHOUSE PRIOR TO PICKING UP NEXT SITE PACK.

POWDER RIVER ENGINEERING SERVICES HAS
NOT PERFORMED STRUCTURAL ANALYSES FOR
THE NEW EQUIPMENT MOUNTS, NOR THE
SUPPORTING STRUCTURE. AND ASSUMES NO
RESPONSIBILITY FOR ANY DAMAGE TO THE
BUILDING OR EQUIPMENT. PRIOR TO
CONSTRUCTION, STRUCTURAL ANALYSIS (BY
OTHERS) SHALL BE PERFORMED FOR ALL
TOWERS, ROOFTOPS, FLAGPOLES, LIGHT POLES
AND ASSOCIATED EQUIPMENT MOUNTS.

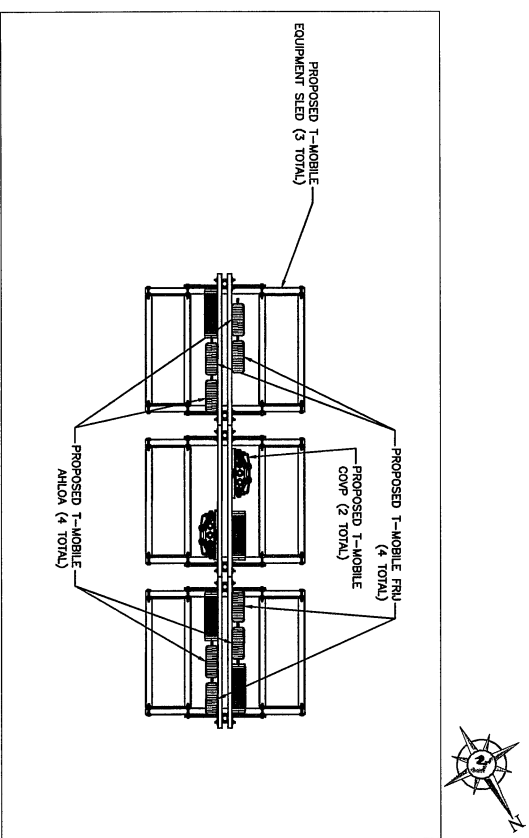
ANTENNA NUMBER	TECHNOLOGY	ANTENNA VENDOR	MODEL NUMBER	ANTENNA CENTER	AZIMUTH	TWA	DIPLEXER TYPE	RFD TYPE	CABLE TYPE / SIZE	HHB0 CABLE LENGTH
A-1	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	0°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
A-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	0°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
B-1	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	90°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
B-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	90°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
G-1	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	180°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
G-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	180°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
D-1	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	270°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
D-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	270°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'

EXISTING ANTENNA AND COAXIAL CABLE SCHEDULE

ANTENNA NUMBER	TECHNOLOGY	ANTENNA VENDOR	MODEL NUMBER	ANTENNA CENTER	AZIMUTH	TWA	DIPLEXER TYPE	RFD TYPE	CABLE TYPE / SIZE	HHB0 CABLE LENGTH
A-1	LTE L6/L7/L12 COMSCOPE	ANDREW	FRU-6016-40M	100'	0°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
A-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	0°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
B-1	LTE L6/L7/L12 COMSCOPE	ANDREW	FRU-6016-40M	100'	90°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
B-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	90°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
G-1	LTE L6/L7/L12 COMSCOPE	ANDREW	FRU-6016-40M	100'	180°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
G-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	180°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
D-1	LTE L6/L7/L12 COMSCOPE	ANDREW	FRU-6016-40M	100'	270°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'
D-2	GSM-LTE PCS	ANDREW	TWR-6016-40M	100'	270°	N/A	FRU	4 x 7/8" OM3 CBL	100'	15'

PROPOSED ANTENNA AND COAXIAL CABLE SCHEDULE

ANTENNA AND COAXIAL CABLE SCHEDULE



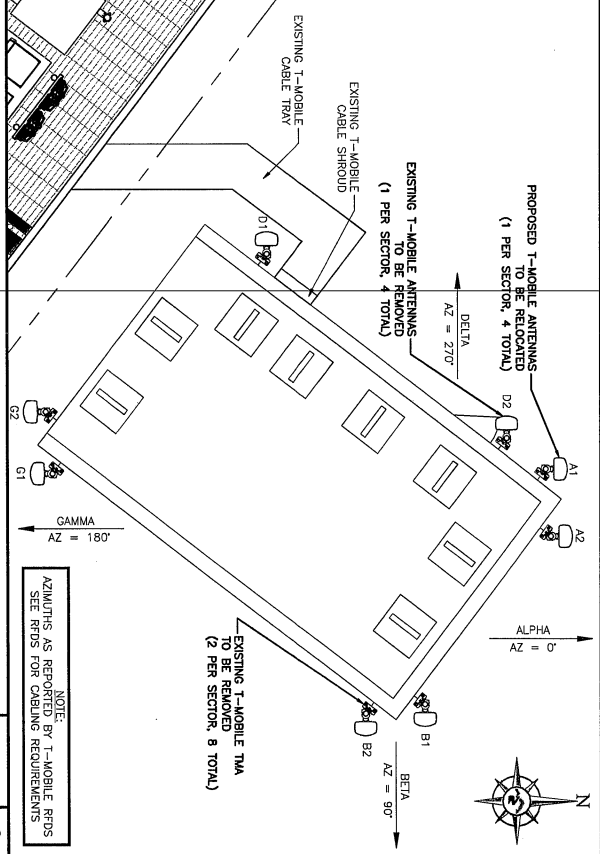
PROPOSED SLED EQUIPMENT LAYOUT

SCALE: N.T.S.

2

4

EXISTING ANTENNA PLAN

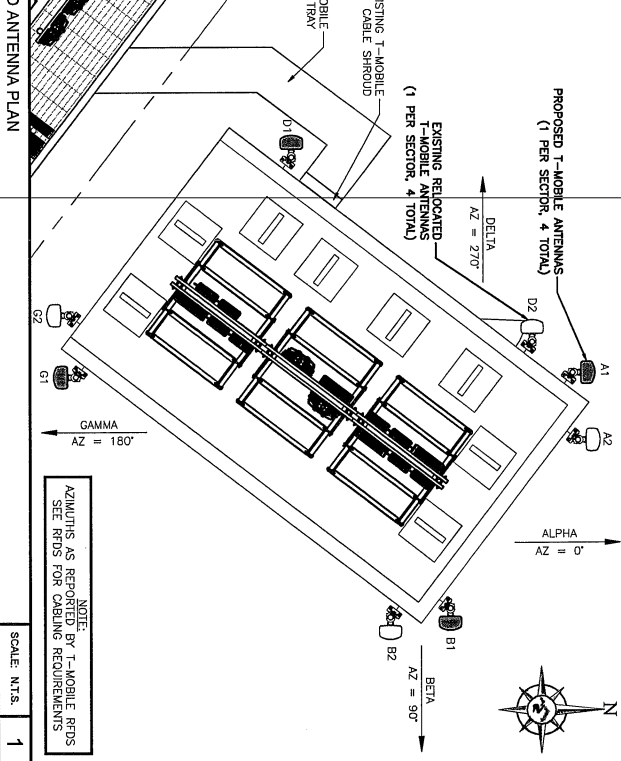


NOTE:
AZIMUTHS AS REPORTED BY T-MOBILE RFDs
SEE RFDs FOR CABLE REQUIREMENTS

SCALE: N.T.S.

3

PROPOSED ANTENNA PLAN



NOTE:
AZIMUTHS AS REPORTED BY T-MOBILE RFDs
SEE RFDs FOR CABLE REQUIREMENTS

SCALE: N.T.S.

1

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Engineering Services, LLC
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BUSINESS LICENSE #:

REVISIONS:

REV. DATE DESCRIPTION

A 04/19/18 ISSUED FOR REVIEW R001

B 06/12/18 ISSUED FOR REVIEW R002

REVIEWED BY:

MAI

PRELIMINARY
NOT FOR
CONSTRUCTION

SITE INFORMATION:
T-MOBILE SITE #:
A100860G

T-MOBILE SITE NAME:
LACROSSE-RYAN

318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

ANTENNA
CONFIGURATION

A-2

[illegible]

1. GENERAL NOTES: THE ABOVE CONTRACT SHALL APPLY TO ALL PARTS OF THE JOB EXCEPT WHERE THE CONTRACTOR HAS SPECIFICALLY NOTED OTHERWISE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
2. WORK SHALL CONFORM TO THE REQUIREMENTS, AS AMENDED TO DATE, OF THE FEDERAL, STATE, AND ALL OTHER LOCAL, STATE AND FEDERAL REGULATIONS.
3. OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK INVOLVED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
5. THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERSEDE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND SCHEDULING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
6. THE CONTRACTOR SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OF THE CONSTRUCTION PROCEDURES, ANY SUPPORT SERVICES PERFORMED BY THE CONTRACTOR, THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER, WHETHER OF MATERIAL OR WORK, ARE FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DOCUMENTS, BUT DO NOT SUPERSEDE OR REPLACE THE NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. NEITHER THE OWNER NOR ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN THE STRUCTURE TO BE CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
8. THE CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE ALL ITEMS DEFINED IN THE CONTRACT DOCUMENTS, THE CONTRACT SPECIFICATIONS AND CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, LICENSES, AND APPROVALS FROM THE APPROPRIATE AGENCIES AND AGENCIES.
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SITE WORK NOTES

- [illegible]

SECURITY FENCE NOTES

- ## SECURITY FENCE NOTES
1. PROVIDE AND INSTALL THE GALVANIZED FENCE WITH ASSOCIATED POSTS, RAILS, BRACES, FABRIC, TERMINAL POST, GATES, DROP BAR AND BARBED WIRE, U.S. APPLICABLE PROVISIONS OF ASTM FOR MATERIALS.
 2. FABRIC SHALL BE HEAVY GALVANIZED CHAIN LINK FENCE, CONFORMING TO ASTM A392 2-INCH MESH 9 GAUGE WIRE (0.148 INCHES IN DIAMETER) WITH THE TOP AND BOTTOM STRIPS TWISTED AND BARRIED.
 3. ALINE POST FOR FABRIC UP TO 8 FEET HIGH SHALL BE 2-3/8" INCH O.D., 8' END CORNER, PULL POST AND GATE POST SHALL BE 2-7/8" INCH O.D.. ALL POSTS SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ALL APPLICABLE ASME STANDARDS FOR FENCES OVER 8 FEET HIGH, SIZE POST ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 4. TOP RAILS SHALL CONFORM TO 1-1/4" INCH (1.66-INCH O.D.), SCHEDULE 40 GALVANIZED STEEL PIPE IN ACCORDANCE WITH ASTM A102.
 5. THROUGH STAYS IN LONGSPAN AREAS, STEEL WIRE GALVANIZED IN ACCORDANCE WITH ASTM A116, COATING CLASS III.
 6. BRACE BANDS, TENSION BANDS AND TENSION BARS SHALL BE FABRICATED OF 1/8" INCH BY 7/8" INCH GALVANIZED STEEL WITH GALVANIZED STEEL CARRIAGE BOLTS AND NUTS IN ACCORDANCE WITH ASTM A123. TENSION BARS SHALL BE 1/4" INCH BY 3/4" INCH GALVANIZED STEEL BAR IN ACCORDANCE WITH ASTM A153.
 7. FABRIC TIES SHALL BE CLASS I GALVANIZED STEEL WIRE NO LESS THAN .8-GAUGE. GALVANIZED PERAST STEEL OR VALDEBULO IRON AND SHALL BE GALVANIZED PERAST STEEL.
 8. SPACING BETWEEN TENSION BARS SHALL BE 12'-0" ON CENTER.
 9. BARRIED WIRE SHALL CONSIST OF DOUBLE STRANDED 12-1/2" GAUGE WIRE ASTM A192, CLASS 3 WITH 4-POINT BARS SPACED 5 INCHES APART. THE TOP 1 FOOT OF THE FENCE SHALL CONSIST OF 3 STANDS OF BARRIED WIRE ATTACHED TO 45-DEGREE ANGLE HEAVY-PRESSED PLANS CAPABLE OF WITHSTANDING WITHOUT FAILURE THE MAXIMUM ALLOWABLE TENSILE LOADS OF THE FENCE MATERIALS WITHOUT RAIL GATE MATERIALS SUCH AS FABRIC, BOLTS, NUTS, TENSION BARS AND BARRIED WIRE SHALL BE CONSISTENT WITH FENCE MATERIALS.
 11. THE BOTTOM OF THE FENCE SHALL BE 2 INCHES BELOW THE TOP OF THE COMPOUND GRAVEL IF THE SITE CROSSERS FEATURES SUCH AS DRAINAGE DITCHES, BOTTOM OF THE FENCE WITH EXTRA FENCE FABRIC OR BARRIED WIRE AS DIRECTED BY THE CARRIER CONSTRUCTION SUPERVISOR. PRIOR TO PLACING COMPONENTS SUCH AS FABRIC, RAILS, TENSION WIRE AND GATES, ENSURE THAT THE CONCRETE CURED FOUNDATION HAS REACHED AT LEAST 75% OF ITS DESIGN STRENGTH OR HAS BEEN FULLY CURED.
 12. FLUSHING GATES WITH NECESSARY FITTINGS AND HARDWARE, HINERS SHALL ALLOW SWING GATES TO SWING 180 DEGREES, PLUNGER BARS SHALL HAVE TOP, BOTTOM AND MIDDLE LOCKING POINTS WITH THE MIDDLE POINT ARRANGED FOR AUTOMATICALLY LATCHING. PROVIDE TWO (2) GALVANIZED STEEL PLUNGER BARS DAMAGED IN THE FIELD WITH METHODS AND TECHNIQUES AS RECOMMENDED BY THE MANUFACTURER.

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SUITE 400
EDINA, MN 55439
OFFICE: 612.701.2069



POWDER RIVER
Engineering Services, LLC
www.powderriverdev.com

BUSINESS LICENSE #:	N/A
REVISIONS	

[illegible]

BY

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CONSTRUCTION**

T-MOBILE SITE #:
A1Q0860G

318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY


GENERAL NOTES & SPECIFICATIONS

SHEET NUMBER
GN-1

- ON PROPOSED GROUND TEST WELLS SHOWN ON THE CONSTRUCTION DRAWINGS.
- C. GROUND CONDUCTORS EXPOSED TO CORROSION SHALL BE TINNED SOLID (#2 T. AND) WIRE. BURIED GROUND CONDUCTOR SHALL BE INSTALLED AT MINIMUM DEPTH OF 36" BELOW GRADE.
- II. ALL SUB GRADE GROUND CONNECTIONS SHALL BE MADE USING EXOTHERMIC WELD PROCESS. CONNECTIONS SHALL INCLUDE ALL CABLE TO SPICES, TESTS AND ALL GROUND ROD CONNECTIONS. GROUND CABLE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. SHALL BE 1 STRAIGHTEST DISTANCES POSSIBLE TO MINIMIZE TRANSMIT VOLTAGE RISES.
- III. GROUND CONDUCTORS SHALL BE INSTALLED AS FOLLOWS:
- IV. ALL GROUND CONDUCTORS SHALL FOLLOW A CONTINUOUS DOWNWARD PATTERN TO THE GROUND SOURCE. (NEVER RUN GROUND CONDUCTOR IN PATTERN TO THE GROUND SOURCE.)
- V. CONDUCTORS SHALL BE INSTALLED WITH A MINIMUM OF 12-INCH MINIMUM BENDING RADIUS.
- VI. WHEN THE MINIMUM BENDING RADIUS CANNOT BE ACHIEVED, GROUND CABLES SHALL BE ROUTED AT 90-DEGREE BENDS WITH THE USE OF EXOTHERMIC CONNECTIONS AT 90 DEGREES. WITH THE INTENT IS TO MINIMIZE THE BENDING RADIUS AND REPLACE THE RADIUS WITH AN EXOTHERMIC CONNECTION.
5. PREPARATION:
- A. ALL SURFACES TO WHICH GROUND CONNECTIONS WILL BE MADE SHALL BE FREE OF PAINT, GALVANIZING DIRECT CORROSION, ETC.
- B. ALL METAL SURFACES EXPOSED ON ORIGINAL SURFACE GALVANIZE, OR PAINTED TO MATCH ORIGINAL SURFACE.
6. EXAMINE THE CONSTRUCTION DRAWINGS FOR GROUNDING AND BONDING CONNECTIONS ARE TO BE MADE AND NOTIFY CARRIER CONSTRUCTION SUPERVISOR AND ENGINEER OF RECORD IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES PRIOR TO TRENCH BACK FILL. ALL WORK DONE BELOW FINISHED GRADE SHALL BE INSPECTED BY THE CONSTRUCTION SUPERVISOR DURING THAT PERIOD.
7. GROUND TESTING:
- A. THE CONTRACTOR SHALL TEST THE GROUND ELECTRODE ROD RESISTANCE IN ACCORDANCE WITH THE METHODS OF MEASUREMENT DEFINED IN THE FALL OF 1997.
- B. TEST RESULTS SHALL OPERATE AT A FREQUENCY OTHER THAN 60 HERTZ AND SHALL CONTAIN STRAY CURRENT AND DC FILTERS. FAULT CURRENT PROTECTION AND HAVE SENSITIVITY TO OPERATE A LOW SIGNAL STRENGTH.
- C. PRIOR TO TESTING, THE CONTRACTOR SHALL DE-ENERGIZE ALL POWER SOURCES, DISCONNECT THE ELECTRODE CONDUCTOR FROM THE GROUND, ROD, WEAR HIGH VOLTAGE SHOES BE PERFORMED BY QUALIFIED PERSONS FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE EQUIPMENT AND THE HAZARDS INVOLVE.
- D. THE CONSTRUCTION SUPERVISOR SHALL BE NOTIFIED OF THE RESULTS OF THE TESTS.
- E. AN INDEPENDENT APPROVED OUTSIDE FIRM SHALL PERFORM THE GROUND TESTS AS OUTLINED. ALL TEST RESULTS SHALL BE FORWARDED TO THE CARRIER CONSTRUCTION SUPERVISOR FOR APPROVAL.

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8000 WILLOW CREEK STREET
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OFFICE: 612.701.2069



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BUSINESS LICENSE #: N/A

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B	09/12/18	ISSUED FOR REVIEW 90%		

REVIEWED BY: MAM

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A100860G

SITE INFORMATION:
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LACROSSE-RYAN
318 MAIN STREET
LA CROSSE, WI 54601
WISCONSIN COUNTY

GENERAL NOTES & SPECIFICATIONS

SHEET NUMBER:
GN-2

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