

EL PASO



COUNTY

COMMISSIONERS:
DARRYL GLENN (PRESIDENT)
MARK WALLER (PRESIDENT PRO TEMPORE)

STAN VANDERWERF
LONGINOS GONZALEZ
PEGGY LITTLETON

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
CRAIG DOSSEY, EXECUTIVE DIRECTOR

**TO: El Paso County Planning Commission
Jim Egbert, Chair**

**FROM: Nina Ruiz, PM/Planner II
Jeff Rice, PE Engineer III
Craig Dossey, Executive Director**

**RE: Project File #: VA-17-006
Project Name: Falcon School Tower
Parcel No.: 52253-00-002**

OWNER:	REPRESENTATIVE:
Falcon School District No. 49 10850 E Woodmen Road Peyton, CO 80831	Centerline Solutions 16035 Table Mountain Parkway Golden, CO 80403

Commissioner District: 2

Planning Commission Hearing Date:	12/5/2017
Board of County Commissioners Hearing Date	12/28/2017

EXECUTIVE SUMMARY

A request by Centerline Solutions for approval of a variance of use for a 100 foot tall freestanding commercial mobile radio service facility (CMRS) located on 39.08 acres zoned RR-5 (Residential Rural) on which the Falcon Middle School is located. There is an existing 100 foot tall freestanding commercial mobile radio service facility onsite that does not allow for co-location. The existing tower was not approved by El Paso County. The applicant is requesting to replace that facility with a new 100 foot tall facility that is capable of co-location. The property is located east of Towner Avenue and north of Stapleton Drive and is within Section 25, Township 12 South, Range 65 West of the 6th P.M. The property is included within the Falcon/Peyton Small Area Master Plan (2008).

2880 INTERNATIONAL CIRCLE, SUITE 110
PHONE: (719) 520-6300



COLORADO SPRINGS, CO 80910-3127
FAX: (719) 520-6695

A. REQUEST/WAIVERS/AUTHORIZATION

Request: A request by Centerline Solutions for approval of a variance of use for a 100 foot tall freestanding commercial mobile radio service facility (CMRS).

Waiver(s): There are no waivers requested with this application.

Authorization to Sign: There are no documents associated with this application that require signing.

B. PLANNING COMMISSION SUMMARY

Request Heard:

Recommendation:

Waiver Recommendation:

Vote:

Vote Rationale:

Summary of Hearing:

Legal Notice:

C. APPROVAL CRITERIA

In approving a variance of use, the following criteria may be considered:

- The strict application of any of the provisions of this Code would result in peculiar and exceptional practical difficulties or undue hardship.
- The proposed use is compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the surrounding area, not detrimental to the future development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and County;
- The proposed use will be able to meet air, water, odor or noise standards established by County, State or federal regulations during construction and upon completion of the project;
- The proposed use will comply with all applicable requirements of this Code and all applicable County, State and federal regulations except those portions varied by this action;
- The proposed use will not adversely affect wildlife or wetlands;
- The applicant has addressed all off-site impacts;
- The site plan for the proposed variance of use will provide for adequate parking, traffic circulation, open space, fencing, screening, and landscaping;
and/or
- Sewer, water, storm water drainage, fire protection, police protection, and roads will be available and adequate to serve the needs of the proposed variance of use as designed and proposed.

D. LOCATION

North: RS-20000 (Residential Suburban)	Residential
South: RS-5000 (Residential Suburban)	Residential
East: RS-20000 (Residential Suburban)	Residential
West: RS-6000 (Residential Suburban)	Vacant

E. BACKGROUND

The property was zoned A-4 (Agricultural) in 1984. Due to changes in the nomenclature of the El Paso County Land Development Code, the A-4 zoning district was renamed as the RR-5 (Rural Residential) zoning district. There is an existing 100 foot freestanding CMRS facility on the subject parcel.

The subject parcel is also the location of the Falcon Middle School. Schools may not need to obtain a building permit from the local jurisdiction if they have otherwise obtained approval from the State Board of Education. This exemption does not extend to CMRS facilities located on the same property as a school. The existing 100 foot tall freestanding CMRS facility was constructed around the same time as the school but was not approved by El Paso County prior to being constructed.

The existing tower no longer has the structural capacity for additional carriers. The applicant is proposing to remove this existing tower and replace it with a 100 foot tall freestanding CMRS facility designed to allow for additional co-location. The proposed tower would meet all setback requirements. Should the variance of use request be approved, a site development plan will be required prior to authorization of a building permit to construct the tower and associated equipment.

F. ANALYSIS

1. Land Development Code Analysis

The property is currently zoned RR-5 (Residential Rural). The RR-5 zoning district is primarily rural residential in nature. There is an existing approximately 100 foot tall freestanding CMRS facility on the subject parcel. Section 5.2.19 of the Code allows for a CMRS facility to exceed the allowed height of the zoning district up to 120 feet in height. The proposed tower will replace the existing tower, which has become a part of the visual landscape in the area.

2. Zoning Compliance

The property is within the RR-5 (Residential Rural) zoning district, which does not allow for a freestanding CMRS facility. Only if the variance of use and site development plan are approved will the proposed CMRS facility be allowed and authorized for construction.

3. Policy Plan Analysis

Consistency with the El Paso County Policy Plan (1998) is not a required review criteria for a variance of use request. For background, the El Paso County Policy

Plan (1998) has a dual purpose; it serves as a guiding document concerning broader land use planning issues, and provides a framework to tie together the more detailed sub-area elements of the County master plan. Relevant policies are as follows:

Policy 6.3.8 *Recognize the need and allow for the reasonable accommodation of adequate amounts of land with sufficient infrastructure for land uses of a heavy industrial nature and/or considered to be “locally undesirable” within all subareas of the County provided the adequate facilities and services will be available. Consider the environmental, visual and land use compatibility impacts and incorporate, where possible, buffering and screening techniques to address compatibility with surrounding uses.*

Goal 7.1 *Reasonably accommodate unique and special uses which provide value to the greater community and which can be made consistent with surrounding uses.*

Policy 7.1.2 *Consider future combined impact of potential additional land use requests when considering individual applications for special or unique land uses.*

Goal 7.5 *Allow for towers, transmission lines, and related facilities that provide a benefit to County residents in a manner which balances considerations of economics, equity, and environmental sensitivity and provides equitable compensation to private land owners for impacts caused by these facilities.*

A tower is identified as one of several uses listed in the Policy Plan that may be considered “ancillary to traditional land uses” (General Policies page 45). Other “ancillary uses” identified in the Plan include institutional uses, mining operations, agriculture-oriented business, and outdoor recreational facilities. The Plan recognizes the difficulties in siting these types of special or unique land uses. These uses can sometimes be considered “locally undesirable” and can be controversial in nature. The Plan also recognizes that “the location of these lines and facilities is often governed by geographic factors such as the need to respond to topography, make linear connections or serve defined areas” (Minimizing Impacts of Towers, Transmission Facilities and Related Facilities Page 50).

As demonstrated in the applicant’s coverage maps, there is no coverage for T-Mobile subscribers in the vicinity of the proposed tower. The proposed tower will provide coverage for T-Mobile’s customers and allow for co-location of other carriers. The applicant has submitted photo simulations to demonstrate the potential visual impact to surrounding parcels. The proposed 100 foot tall

freestanding CMRS facility will be visible to most surrounding parcels in the vicinity. Attempts at a stealth design for a facility of this height are not practical.

Should the Board of County Commissioners determine the freestanding CMRS facility provides a benefit to County residents in a manner which balances considerations of economics, equity, and environmental sensitivity, consistency with the Plan could be found.

4. Small Area Plan Analysis

The property is within the Falcon/Peyton Small Area Master Plan (2008). The surrounding area has been developed as residential suburban lots with lot sizes averaging one-half acre in size. The Plan does not include any discussion or recommendations specific to commercial towers or other similar uses.

5. Other Master Plan Elements

The El Paso County Wildlife Habitat Descriptors (1996) identifies the property as having a low wildlife impact potential. The proposed freestanding CMRS facility is not expected to have an impact upon the wildlife in the area.

The Master Plan for Mineral Extraction (1996) identifies potential upland deposits in the area of the subject property. A mineral rights certification was prepared by the applicant indicating that, upon researching the records of El Paso County, no severed mineral rights exist.

G. PHYSICAL SITE CHARACTERISTICS

1. Hazards

No physical hazards were identified in the review of the variance of use.

2. Wildlife

The El Paso County Wildlife Habitat Descriptors (1996) identifies the property as having a low wildlife impact potential. The proposed freestanding CMRS facility is not expected to have an impact upon the wildlife in the area.

3. Floodplain

As indicated on FEMA Flood Insurance Rate Map (FIRM) panel number 08041C0575F, the tower lease area is located entirely outside of the current 100-year regulatory floodplain.

4. Drainage And Erosion

The property is located within the Falcon drainage basin. Since the property is not being platted with this application, drainage and bridge fees are not applicable. A

drainage report was not required since the proposed freestanding CMRS facility is anticipated to have no significant drainage impact.

5. Transportation

The property is accessed via Towner Avenue. A traffic impact study was not required and the County road impact fee does not apply to this request because the variance of use is not expected to generate 100 more daily vehicle trips than the property would be expected to generate currently. If the variance is approved, the applicant will be required to obtain an access permit.

H. SERVICES

1. Water

The existing school is served by Paint Brush Hills Metropolitan District for water. There is no need for additional water as the proposed freestanding CMRS facility is to be unmanned.

2. Sanitation

The existing school is served by Paint Brush Hills Metropolitan District for sanitation. There is no need for additional sanitation as the proposed freestanding CMRS facility is to be unmanned.

3. Emergency Services

The parcel is located within the Falcon Fire Protection District. The District was sent a referral and has no outstanding comments.

4. Utilities

Mountain View Electrical Association will serve the freestanding CMRS facility.

5. Metropolitan Districts

The property is within the Paint Brush Hills Metropolitan District. The district was sent a referral and did not respond.

6. Parks/Trails

There are no planned parks/trails on the subject parcel. No park fees or land dedication in lieu of fees are required for this application.

7. Schools

The property is located within Falcon School District No. 49. No school fees or land dedication in lieu of fees are required with this application.

I. APPLICABLE RESOLUTIONS

Approval Page 51

Disapproval Page 52

J. STATUS OF MAJOR ISSUES

There are no outstanding issues.

K. CONDITIONS AND NOTATIONS

Should the Planning Commission and Board of County Commissioners find that the request meets the criteria for approval outlined in 5.3.4 (Variance of Use) of the El Paso County Land Development Code (2016), staff recommends the following conditions and notations:

CONDITIONS

1. Approval is limited to the one (1) freestanding CMRS facility 100 feet in height as discussed and depicted in the applicant's letter of intent and site plan drawings.
2. The freestanding CMRS facility shall remain designed to allow for co-location of other antennae.
3. Any subsequent co-location or additional antenna on the Freestanding CMRS Facility other than that shown on the site plan shall be subject to administrative review, and if it is the opinion of the Planning and Community Development Director it constitutes a substantial increase in the size of the Freestanding CMRS Facility, it shall be subject to review and approval by the Board of County Commissioners. The Variance of Use approval for the tower also includes giving the Planning and Community Development Director the authority to administratively approve minor modifications and a non-substantial increase in the size of the tower as provided by the Nationwide Collocation Agreement, as amended.
4. Prior to authorization of a building permit, a guarantee of financial surety shall be provided to El Paso County for the removal of the tower in the event of abandonment.
5. The freestanding CMRS facility shall not be lighted except in accordance with the requirements of the Federal Aviation Administration (FAA).
6. The tower shall be painted and maintained in a suitable color to fit the natural surroundings, as determined by the Planning and Community Development Department.

NOTATIONS

1. Variance of Use approval includes conditions of approval and the accompanying site plan and elevation drawings. No substantial expansion, enlargement, intensification or modification shall be allowed except upon reevaluation and public hearing as specified in the El Paso County Land Development Code.
2. The Board of County Commissioners may consider revocation and/or suspension if zoning regulations and/or Variance of Use conditions/standards are being violated, preceded by notice and public hearing.
3. If the Variance of Use is discontinued or abandoned for two (2) years or longer, the Variance of Use shall be deemed abandoned and of no further force and effect.

L. PUBLIC COMMENT AND NOTICE

The Planning and Community Development Department notified 41 adjoining property owners on November 14, 2017, for the Planning Commission meeting. Responses will be provided at the hearing.

M. ATTACHMENTS

Vicinity Map
Letter of Intent
Site Development Plan
Coverage Maps

El Paso County Parcel Information

File Name: VA-17-005

PARCEL	NAME
4306102001	FALCON SCHOOL DISTRICT NO 49

Zone Map No.: --

ADDRESS	CITY	STATE
10850 E WOODMEN RD	PEYTON	CO

ZIP	ZIPLUS
80831	8127

Date: November 14, 2017



Please report any parcel discrepancies to:
 El Paso County Assessor
 1675 W. Garden of the Gods Rd.
 Colorado Springs, CO 80907
 (719) 520-6600



COPYRIGHT 2017 by the Board of County Commissioners, El Paso County, Colorado. All rights reserved. No part of this document or data contained herein may be reproduced, used to prepare derivative products, or distributed without the specific written approval of the Board of County Commissioners, El Paso County, Colorado. This document was prepared from the best data available at the time of printing. El Paso County, Colorado, makes no claim as to the completeness or accuracy of the data contained herein.



16035 Table Mountain Pkwy.
Golden, CO 80403
303-993-3293

10/12/2017

Letter of Intent

Applicant on behalf of property and tower owner:

Centerline Solutions
16035 Table Mtn. Pkwy, Golden, CO 80403
Darren Hunter 913-634-1245
dhunter@centerlinesolutions.com

Property Owner:

Falcon School District No 49
10850 E. Woodmen Rd., Peyton, CO 80831
Jim Rohr 719-495-1166

Tower Owner:

Vertical Bridge
750 Park of Commerce Dr., Ste. 200, Boca Raton, FL 33478
Matthew Grugan 678-488-1866

Re: Proposed CMRS Facility at Woodmen Hills Elementary School 8308 Del Rio Rd., Falcon, CO 80831. The lot size is 30.79 acres and the property is zoned RR-0.5. The new address for the proposed tower is 12119 McClure Rd.

To whom it may concern,

In an effort to improve telecommunications quality and capacity, Vertical Bridge has identified the above-named property for which it desires to replace an existing monopole tower with a new 90' telecommunications facility to service Falcon, CO and the surrounding areas of El Paso County. The proposed site is located near the intersection of Del Rio and McClure Rd. on property owned by Falcon School District No 49. This site will provide wireless coverage to the steady-growing population of residents in this vicinity as well as provide improved E911 services to the area.

It was determined by T-Mobile that they need a site located in this area to meet the objectives noted above. We studied the area and identified the subject property, Woodmen Hills Elementary School, where an existing tower exists, as an ideal location for servicing the community's wireless needs and the coverage objectives of T-Mobile. Vertical Bridge then entered into an agreement with the property owner to lease land to construct a 90' monopole tower to replace the existing tower of similar height with one that has greater capacity for T-Mobile and additional cellular carriers. Please refer to the propagation maps included in the application that show how we greatly improve coverage to the area by replacing the old tower with a new tower of the same height vs a shorter, 65' tower. With the 90' tower we're able to tie into T-Mobile's network to the south where they have an existing site and we can't accomplish this with a shorter structure. Lowering the height of the tower also reduces the number of other carriers that can collocate on the tower, requiring more towers in the future. The leased area for the tower is .052 acres. The closest residence to the proposed structure is approximately 455'. This structure is not located on a ridgeline and does not obstruct any views to significant landforms or impact scenic viewsheds from any residence. The entire structure will be made of non-reflective galvanized steel (the same as a standard monopole or self-support tower) and the equipment compound will be screened with a 6' chain link fence.



16035 Table Mountain Pkwy.
Golden, CO 80403
303-993-3293

The site will be unmanned and will require electrical and telephone and/or fiber optic services if available. It will not require potable water or wastewater services. There were no other existing towers or structures with similar height within the search ring that meet the objectives for T-Mobile to collocate on. Additional details regarding our proposed tower location are noted below:

- 35'x70' Tower Lease Area totaling 2,450 S.F.
- Proposed 35'x70' chain link fenced compound to secure the tower and equipment
- Proposed 15' wide access road to the property's existing access road

Respectfully,

Darren Hunter

Darren Hunter
913-634-1245

Centerline Solutions, Inc. on behalf of Vertical Bridge
& Falcon School District No 49, Property Owner

PLANS PREPARED FOR



INFINIGY
FROM ZERO TO INFINIGY
The solutions are endless
12119 McClure Road
Falcon, CO 80831
Office # (303) 218-1178
Fax # (303) 218-1178
www.infinigy.com



ENGINEERING NOTICE
THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR USED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT OF MOBILE.

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR PERMIT	08/15/16	JW	1
2	REVISED FOR CONSTRUCTION	08/15/16	JW	2
3	REVISED FOR CONSTRUCTION	01/27/17	JW	3
4	REVISED FOR CONSTRUCTION	01/27/17	JW	4

VERTICAL BRIDGE SITE NAME
WOODMEN ELEMENTARY

MOBILE SITE #
DN04333A

VERTICAL BRIDGE SITE #
US-CO-5052

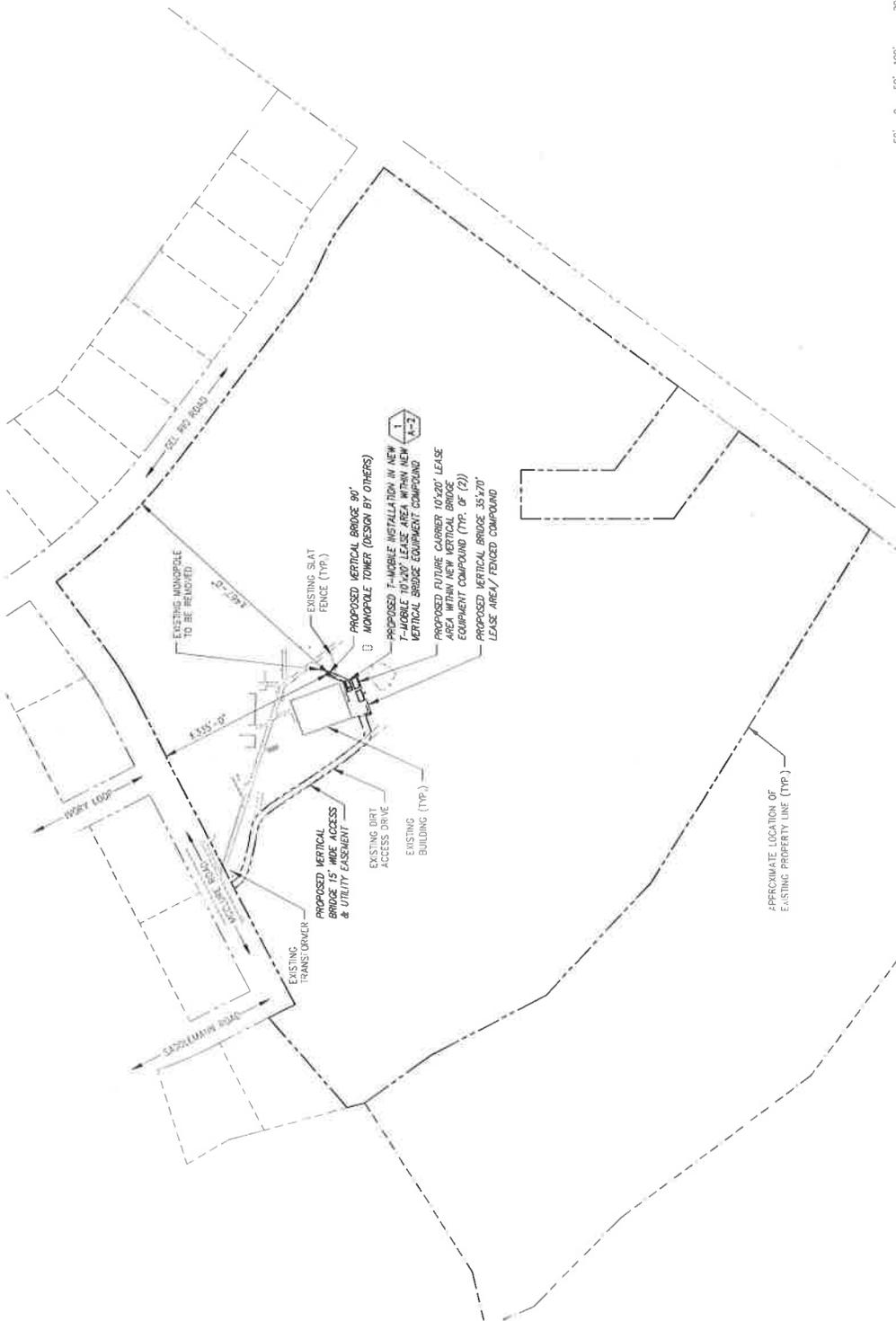
SITE ADDRESS
12119 McCLURE ROAD
FALCON, CO 80831

SHEET DESCRIPTION
OVERALL SITE PLAN

SHEET NUMBER
A-1

INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND A DESIGN WALK SURVEY. THE INFORMATION IS NOT A LAND SURVEYING, DATED 06/15/16.

TOWER & FOUNDATION DESIGNS NOT AVAILABLE AT TIME OF ISSUANCE OF THESE PLANS. CLIENTS SHOULD REFER TO TOWER & FOUNDATION DESIGNS PRIOR TO CONSTRUCTION.



Scale: AS NOTED
Scale: 1" = 200'-0"
Scale: 1" = 100'-0"
Scale: 1" = 50'-0"
Scale: 1" = 25'-0"
Scale: 1" = 12'-6"
Scale: 1" = 6'-3"
Scale: 1" = 3'-1 1/2"
Scale: 1" = 1'-6"
Scale: 1" = 0'-6"
Scale: 1" = 0'-3"
Scale: 1" = 0'-1 1/2"
Scale: 1" = 0'-0"



50' 0" 50' 100' 200'

1" = 200'-0"

1" = 100'-0"

1" = 50'-0"

1" = 25'-0"

1" = 12'-6"

1" = 6'-3"

1" = 3'-1 1/2"

1" = 1'-6"

1" = 0'-6"

1" = 0'-3"

1" = 0'-1 1/2"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

1" = 0'-0"

OVERALL SITE PLAN

SCALE: AS NOTED

1

PLANS PREPARED FOR
T-Mobile
 2323 Delagany Street
 Denver, CO 80216

PLANS PREPARED BY
INFINIGY
 FROM ZERO TO INFINIGY
 The solutions are endless
 3222 E. Colfax Ave. Suite 101
 Westminster, CO 80030
 Office # 303.721.1178
 Fax # 303.721.1179
 E-MAIL # INFO@INFINIGY.COM
 WEBSITE # WWW.INFINIGY.COM

verticalbridge
 150 Park of Commerce Drive
 Suite 200
 West 10407
 Office # 971.246.5367



DISCLAIMER NOTICE
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T-MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE WRITTEN CONSENT OF T-MOBILE.

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR CONSTRUCTION	08/27/17	302	1
2	REVISED FOR CONSTRUCTION	08/27/17	302	2
3	REVISED FOR CONSTRUCTION	08/27/17	302	3
4	REVISED FOR CONSTRUCTION	08/27/17	302	4
5	REVISED FOR CONSTRUCTION	08/27/17	302	5
6	REVISED FOR CONSTRUCTION	08/27/17	302	6
7	REVISED FOR CONSTRUCTION	08/27/17	302	7
8	REVISED FOR CONSTRUCTION	08/27/17	302	8
9	REVISED FOR CONSTRUCTION	08/27/17	302	9
10	REVISED FOR CONSTRUCTION	08/27/17	302	10

VERTICAL BRIDGE SITE NAME
WOODMEN ELEMENTARY

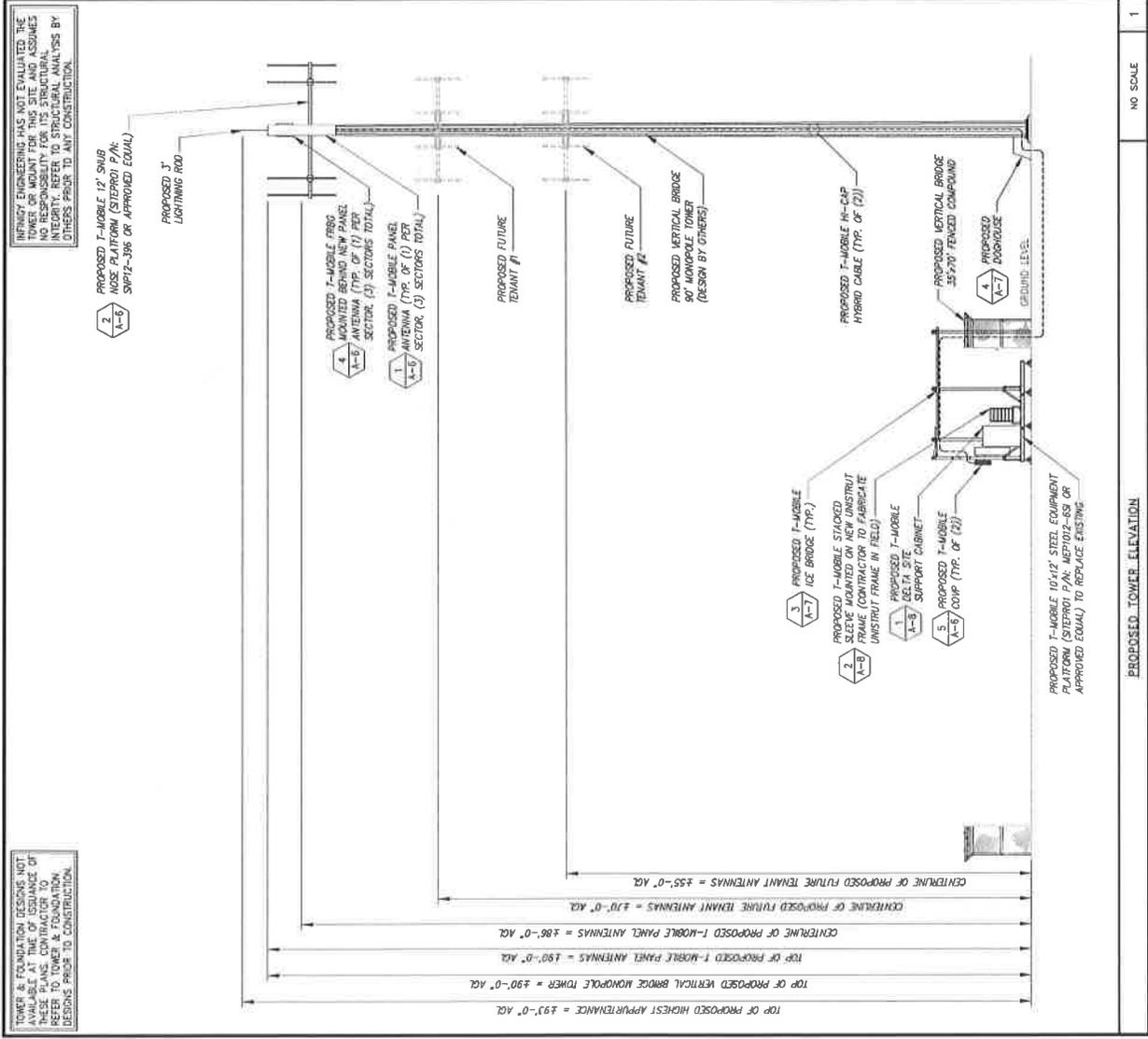
T-SHAPE SITE #
 DN04333A

VERTICAL BRIDGE SITE #
 US-CO-5052

SITE ADDRESS
 12119 McCURE ROAD
 FALCON, CO 80831

SHEET DESCRIPTION
PROPOSED TOWER ELEVATION

SHEET NUMBER
A-4



INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR FOUNDATION DESIGN. THE USER SHALL BE RESPONSIBLE FOR THE INTEGRITY OF THE DESIGN AND ASSUMES ALL LIABILITY FOR ANY DAMAGE OR OTHERS PRIOR TO ANY CONSTRUCTION.

TOWER & FOUNDATION DESIGNING NOT BE RESPONSIBLE FOR THE INTEGRITY OF THE DESIGN AND ASSUMES ALL LIABILITY FOR ANY DAMAGE OR OTHERS PRIOR TO ANY CONSTRUCTION.

NO SCALE	1	NO SCALE	2
PROPOSED TOWER ELEVATION	PROPOSED TOWER PHOTO	NO SCALE	NO SCALE

Mobile-
2332 Delaware Street
Denver, CO 80216

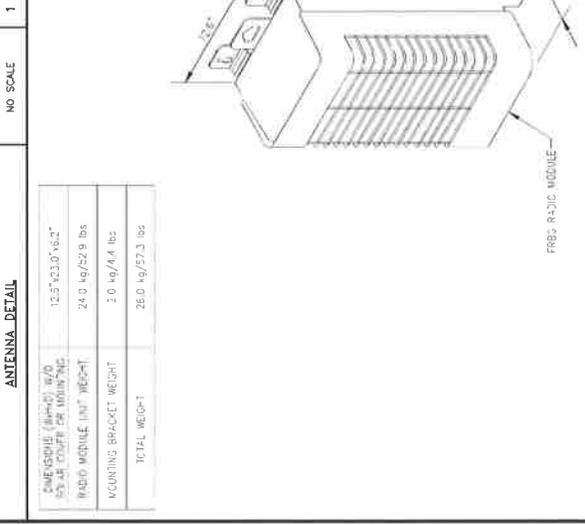
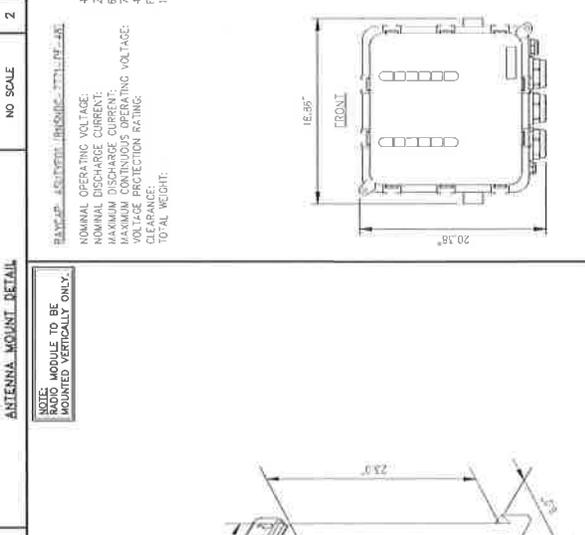
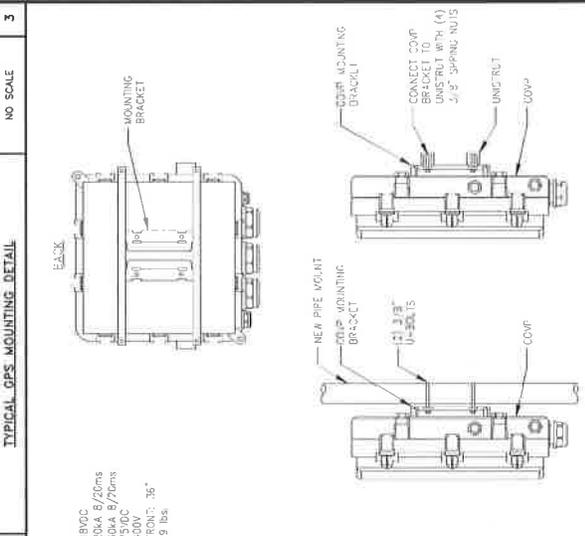
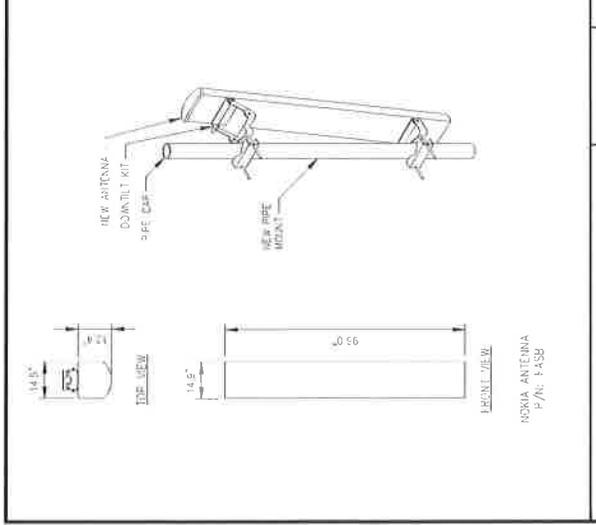
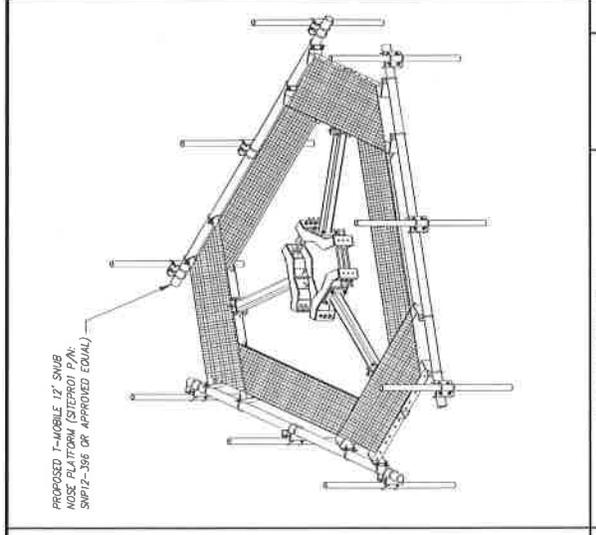
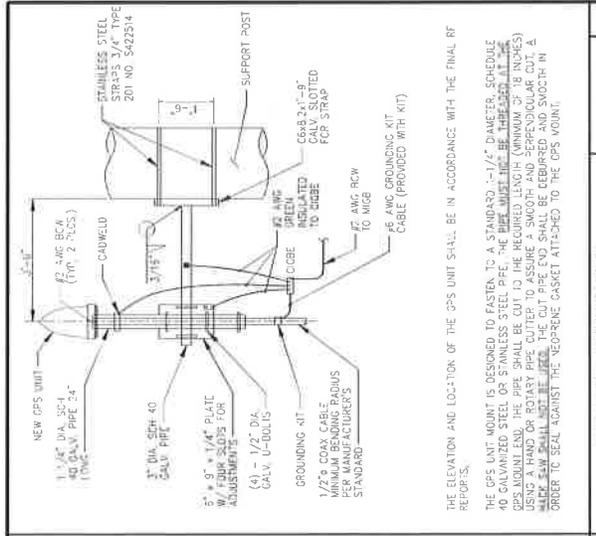
INFINIGY
FROM ZERO TO INFINITY
The solutions are endless
2345 W. 1st Avenue, Suite 100
Westminster, CO 80031
Office # (303) 216-1178
Fax # (303) 216-1176
www.infinigy.com

verticalbridge
750 Park of Commerce Drive
Suite 200
Boulder, CO 80501
Office # (970) 442-3537

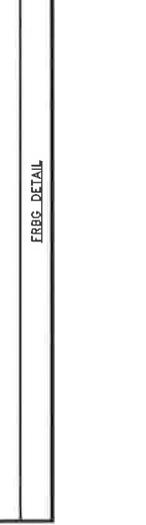
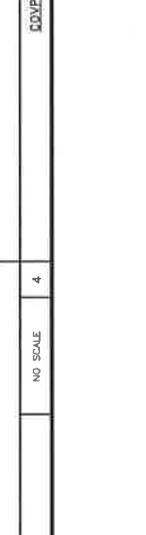
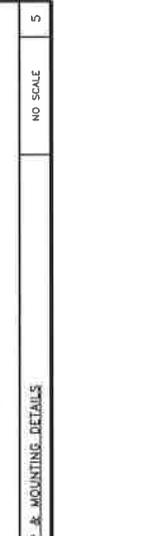


WOODMEN ELEMENTARY
WOODMEN ELEMENTARY
12119 McCLURE ROAD
FALCON, CO 80831

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR CONSTRUCTION	8/17/17	TRB	1
2	REVISED FOR CONSTRUCTION	8/23/17	TRB	2
3	REVISED FOR CONSTRUCTION	8/23/17	TRB	3
4	REVISED FOR CONSTRUCTION	8/23/17	TRB	4
5	REVISED FOR CONSTRUCTION	8/23/17	TRB	5



DESCRIPTION (PART) W/O	QTY	UNIT	WEIGHT
FRBS RADIO MODULE	1	EA	19.3
MOUNTING BRACKET	1	EA	19.3
TOTAL WEIGHT			38.6



DESCRIPTION (PART) W/O	QTY	UNIT	WEIGHT
FRBS RADIO MODULE	1	EA	19.3
MOUNTING BRACKET	1	EA	19.3
TOTAL WEIGHT			38.6

2323 Delaware Street

 Denver, CO 80216

INFINIGY

 FROM ZERO TO INFINITY

 the solutions are endless

 750 Park of Commerce Drive

 Suite 200

 Westminster, CO 80030

 Office # 303.216.1178

 Fax # 303.216.1178

 2015 AIA AIA-2015

verticalbridge

 750 Park of Commerce Drive

 Suite 200

 Westminster, CO 80030

 Office # 303.216.1178

 Fax # 303.216.1178



THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T-MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF T-MOBILE.

REVISION	DESCRIPTION	DATE	BY	CHK
1	ISSUED FOR CONSTRUCTION	10/27/14	SM	Y
2	REVISED FOR CONSTRUCTION	11/20/14	SM	Y
3	REVISED FOR CONSTRUCTION	12/22/14	SM	Y
4	ISSUED FOR CONSTRUCTION	1/29/15	SM	Y

WOODMEN ELEMENTARY

 MOBILE SITE #

 DN04333A

US-CO-5052

12119 McCURE ROAD

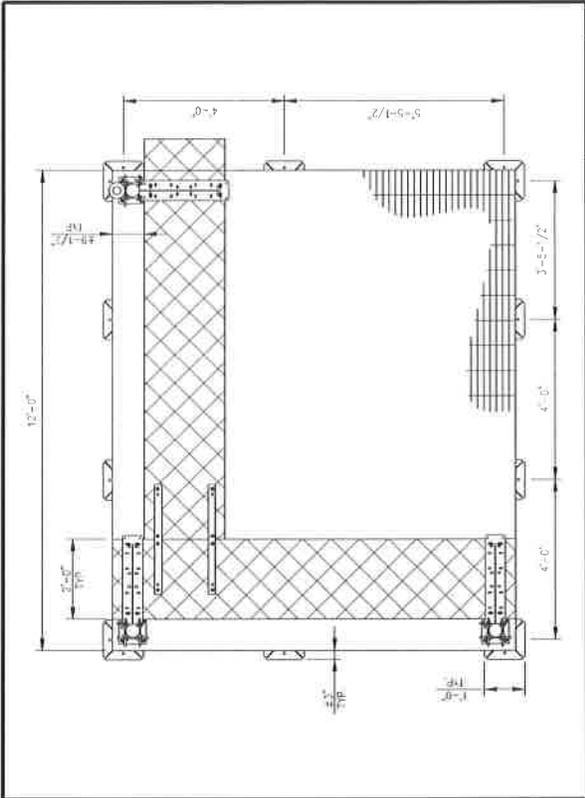
 FALCON, CO 80831

SHEET DESCRIPTION:

EQUIPMENT LAYOUT & DETAILS

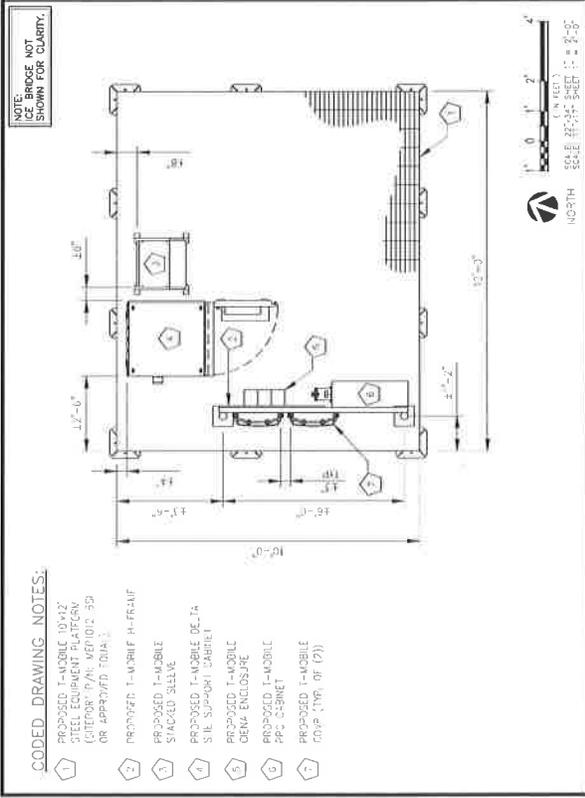
SHEET NUMBER:

A-7



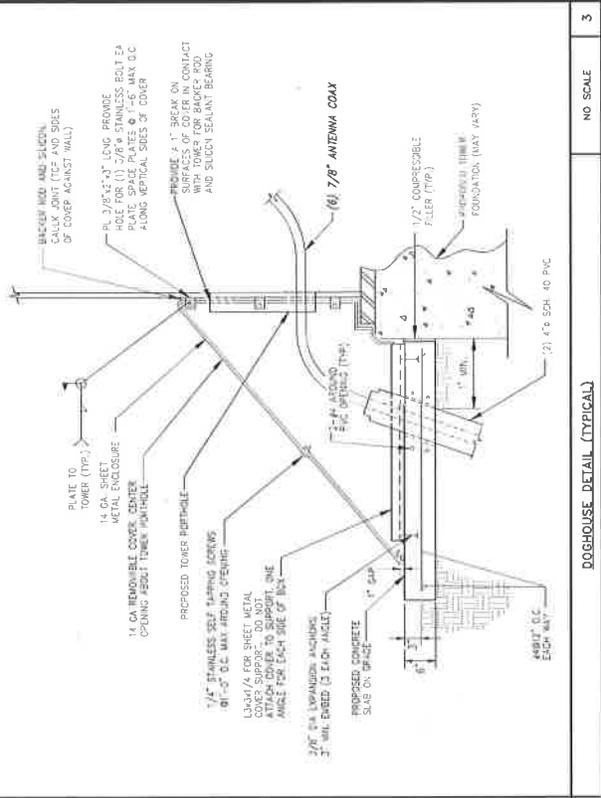
STEEL EQUIPMENT CABINET PLATFORM

 SCALE, AS NOTED



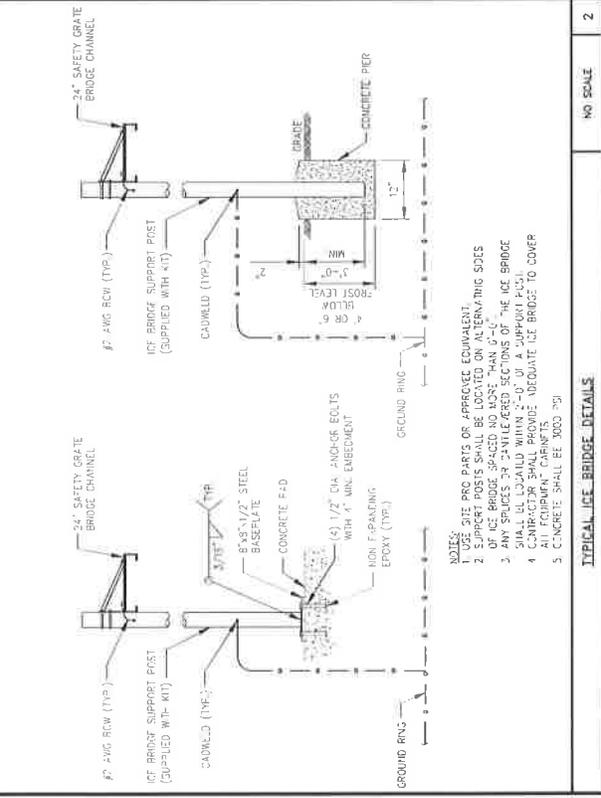
PLATFORM EQUIPMENT LAYOUT

 SCALE, AS NOTED



DOGHOUSE DETAIL (TYPICAL)

 NO SCALE



TYPICAL ICE BRIDGE DETAILS

 NO SCALE

- CODED DRAWING NOTES:**
- 1 PROPOSED T-MOBILE ON-SITE STEEL EQUIPMENT PLATFORM (GENERAL PLAN - VERTICAL - SD OR APPROVED TOPIA.)
 - 2 PROPOSED T-MOBILE AIR-RAIL SPACED SILLING
 - 3 PROPOSED T-MOBILE DELTA SILL SUPPORT CABINET
 - 4 PROPOSED T-MOBILE DELTA ENCL-ENCLOSURE PPG CABINET
 - 5 PROPOSED T-MOBILE TRIP (TYP. OF 17)

- NOTES:**
- 1 USE 3/16\"/>

PRINTED FOR:



2322 Delgany Street
Denver, CO 80216

DESIGNED BY:



FROM ZERO TO INFINIGY
the solutions are endless

1705 S. University Blvd. #101
Westminster, CO 80030
Office # (303) 215-1178
Fax # (303) 441-4433
JOB NUMBER: 407-102

FOR MASTER:



750 Park of Commerce Drive
Suite 200
Boulder, CO 80502
Office # (970) 441-3367

ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REGIS- TERED WITHOUT THE EXPRESS WRITTEN CONSENT OF MOBILE.

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR CONSTRUCTION	01/27/11	BOB	1
2	REVISED FOR CONSTRUCTION	01/27/11	BOB	1
3	REVISED FOR CONSTRUCTION	01/27/11	BOB	1
4	ISSUED FOR CONSTRUCTION	01/27/11	BOB	1

VERTICAL BRIDGE SYSTEMS
WOODMEN ELEMENTARY

PACKAGE SITE #
DN04333A

VERTICAL BRIDGE SITE #
US-CO-5052

SITE ADDRESS
12119 McCURE ROAD
FALCON, CO 80831

SHEET DESCRIPTION
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER
A-8

TYPICAL H-FRAME FABRICATION DETAIL

FRONT: 23.6"
BACK: 6"
TOP: 30.1"
SIDE: 24.8"
DEPTH: 4.8"
WEIGHT: 44 LBS.
NOTE: MODULE CAN BE INSTALLED VERTICALLY AND HORIZONTALLY

FRONT VIEW
SIDE VIEW
TOP VIEW
BOTTOM VIEW



DELTA SITE SUPPORT CABINET DETAIL

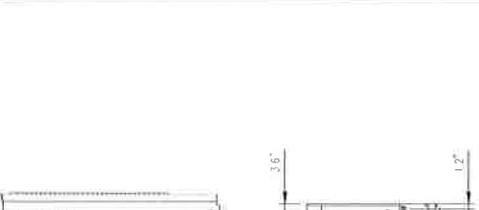
NO SCALE

NO SCALE

NO SCALE

TYPICAL H-FRAME FABRICATION DETAIL

FRONT VIEW
SIDE VIEW
TOP VIEW
BOTTOM VIEW



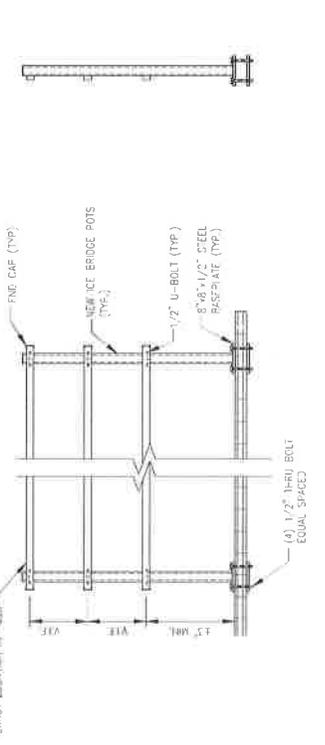
RADIO MODULE DETAIL

NO SCALE

NO SCALE

NO SCALE

1-1/2" GALV. SQUARE TUBO UNDRUT FLAT DR., (TYP.) SCORPATE EXACT LOCATION IN FEET



ELEVATION

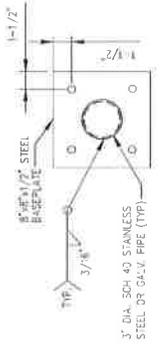
END VIEW

BASEPLATE VIEW

1'-0" MAX. TO EACH POST
CONTRACTOR TO VERIFY OVERALL LENGTH REQUIRED TO ACCOMMODATE EQUIPMENT



PLAN VIEW



BASEPLATE VIEW

TYPICAL H-FRAME FABRICATION DETAIL

FRONT VIEW
SIDE VIEW
TOP VIEW
BOTTOM VIEW



DELTA SITE SUPPORT CABINET DETAIL

NO SCALE

NO SCALE

NO SCALE

PLANS PREPARED BY
Mobile-
 2322 Delagany Street
 Denver, CO 80216

PLANS PREPARED BY
INFINIGY
 FROM ZERO TO INFINIGY
 the solutions are endless
 7901 E. Colfax, Suite 400
 Westminster, CO 80003
 Office # (303) 215-1178
 Fax # (303) 426-1178
 www.infinigy.com

verticalbridge
 110 Park of Commerce Drive
 Suite 200
 Broomfield, CO 80020
 Office # (303) 440-3307



Engineering License
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REPHRASED WITHOUT THE WRITTEN CONSENT OF MOBILE.

REVISION	DESCRIPTION	DATE	BY	APP'D
1	ISSUED FOR CONSTRUCTION	8/12/17	JB	
2	REVISED FOR CONSTRUCTION	8/27/17	JB	
3	REVISED FOR CONSTRUCTION	9/11/17	JB	
4	REVISED FOR CONSTRUCTION	9/11/17	JB	
5	REVISED FOR CONSTRUCTION	9/11/17	JB	

VERTICAL BRIDGE SITE NAME
 WOODMEN ELEMENTARY

PROJECT SITE #
 DN04333A

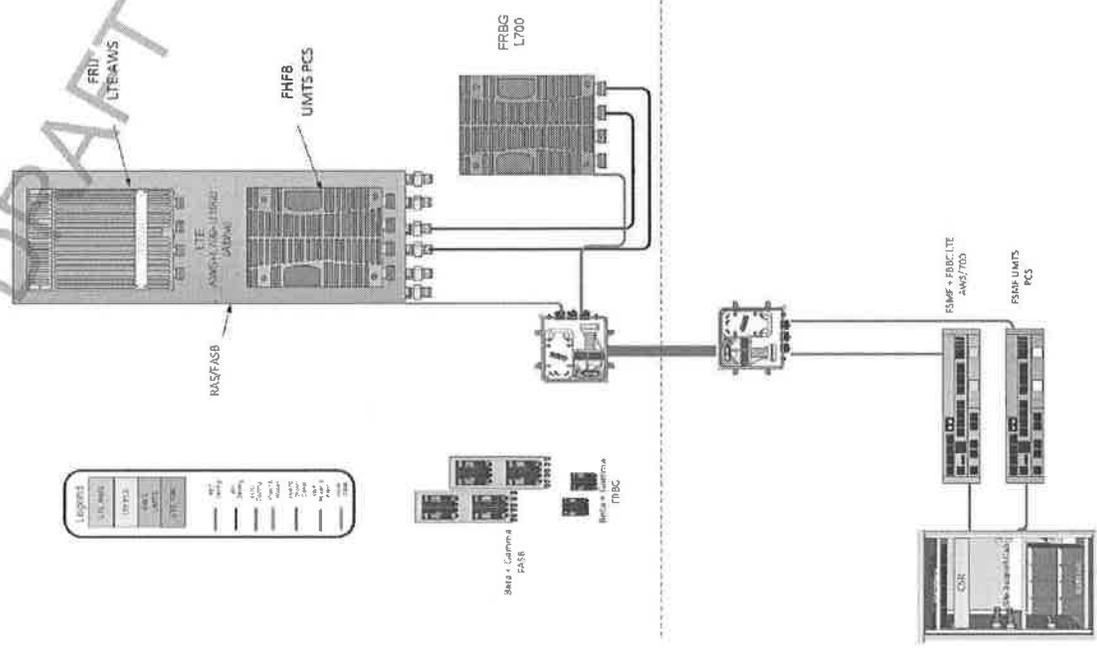
VERTICAL BRIDGE #
 US-CO-5052

VERTICAL BRIDGE #
 12119 McCURE ROAD
 FALCON, CO 80831

SHEET DESCRIPTION
 PLUMBING DIAGRAM

SHEET NUMBER
 A-9

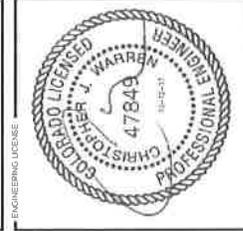
NSD custom RAS configuration 716R (L700/L2100/U1900)





FROM ZERO TO INFINITY
the solutions are endless

verticalbridge
750 Park of Commerce Drive
Suite 200, Lakewood
Colorado 80122
Phone # (303) 278-1178
Fax # (303) 278-1179
www.verticalbridge.com



WOODMEN ELEMENTARY
FALCON, CO 80831

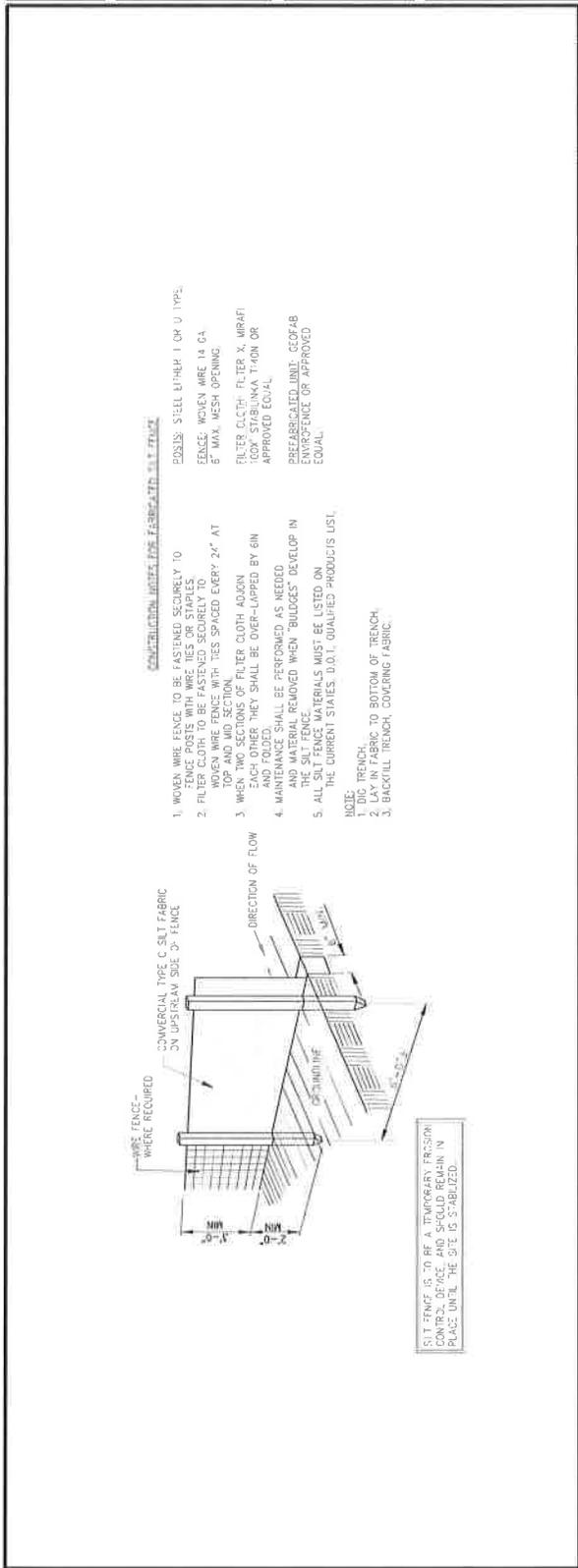
REVISION	DESCRIPTION	DATE	BY	CHK
1	ISSUED FOR CONSTRUCTION	12/10/11	JK	JK
2	REVISED FOR CONSTRUCTION	12/10/11	JK	JK
3	REVISED FOR CONSTRUCTION	12/10/11	JK	JK
4	REVISED FOR CONSTRUCTION	12/10/11	JK	JK
5	REVISED FOR CONSTRUCTION	12/10/11	JK	JK

WOODMEN ELEMENTARY
FALCON, CO 80831

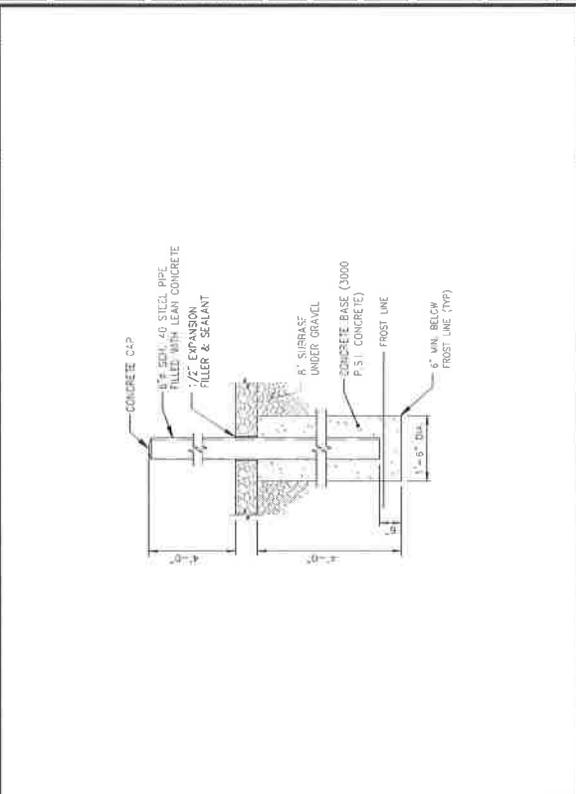
12119 McCLURE ROAD
FALCON, CO 80831

CIVIL DETAILS

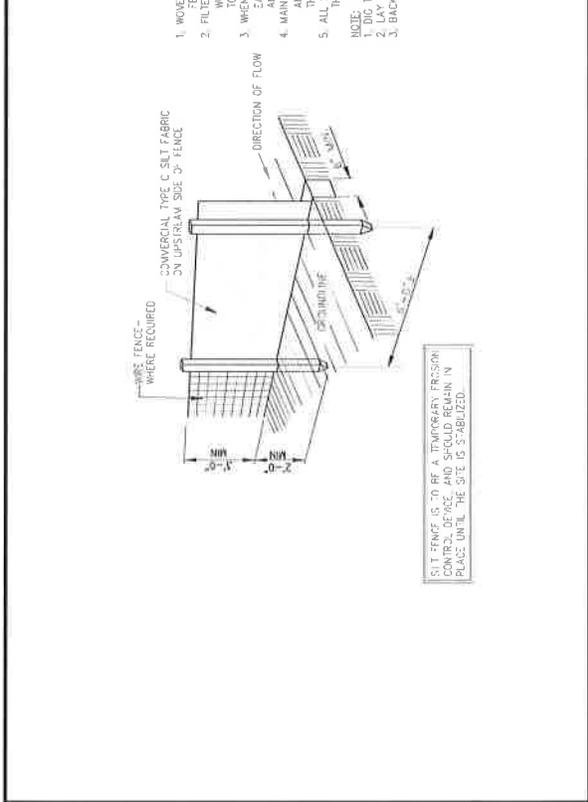
A-11



SILT FENCE DETAIL



BOLLARD DETAIL



DRIVEWAY SECTION - CROWNED

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO ENDPOSTS.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6IN APPROVED EQUAL.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- ALL SILT FENCE MATERIALS MUST BE LISTED ON THE CURRENT STATES "D.O.L. QUALIFIED" PRODUCT LIST.

NOTE:

1. TRENCH
2. 1/2" IN. FABRIC TO BOTTOM OF TRENCH, BACKFILL TRENCH, COVERING FABRIC.

NO SCALE



THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T-MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF T-MOBILE.

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR PERMITS	10/21/14	DM	1
2	REVISED FOR T-MOBILE COMMENTS	11/17/14	DM	2
3	REVISED FOR T-MOBILE COMMENTS	12/22/14	DM	3
4	REVISED FOR T-MOBILE COMMENTS	02/27/15	DM	4
5	REVISED FOR T-MOBILE COMMENTS	03/10/15	DM	5

VERTICAL BRIDGE RITE MAKE
 WOODMEN ELEMENTARY
 MOBILE SITE #
 DN04333A
 VERTICAL BRIDGE RITE #
 US-CO-5052

12119 McCURE ROAD
 FALCON, CO 80831

PROJECT DESCRIPTION
OVERALL UTILITY LAYOUT

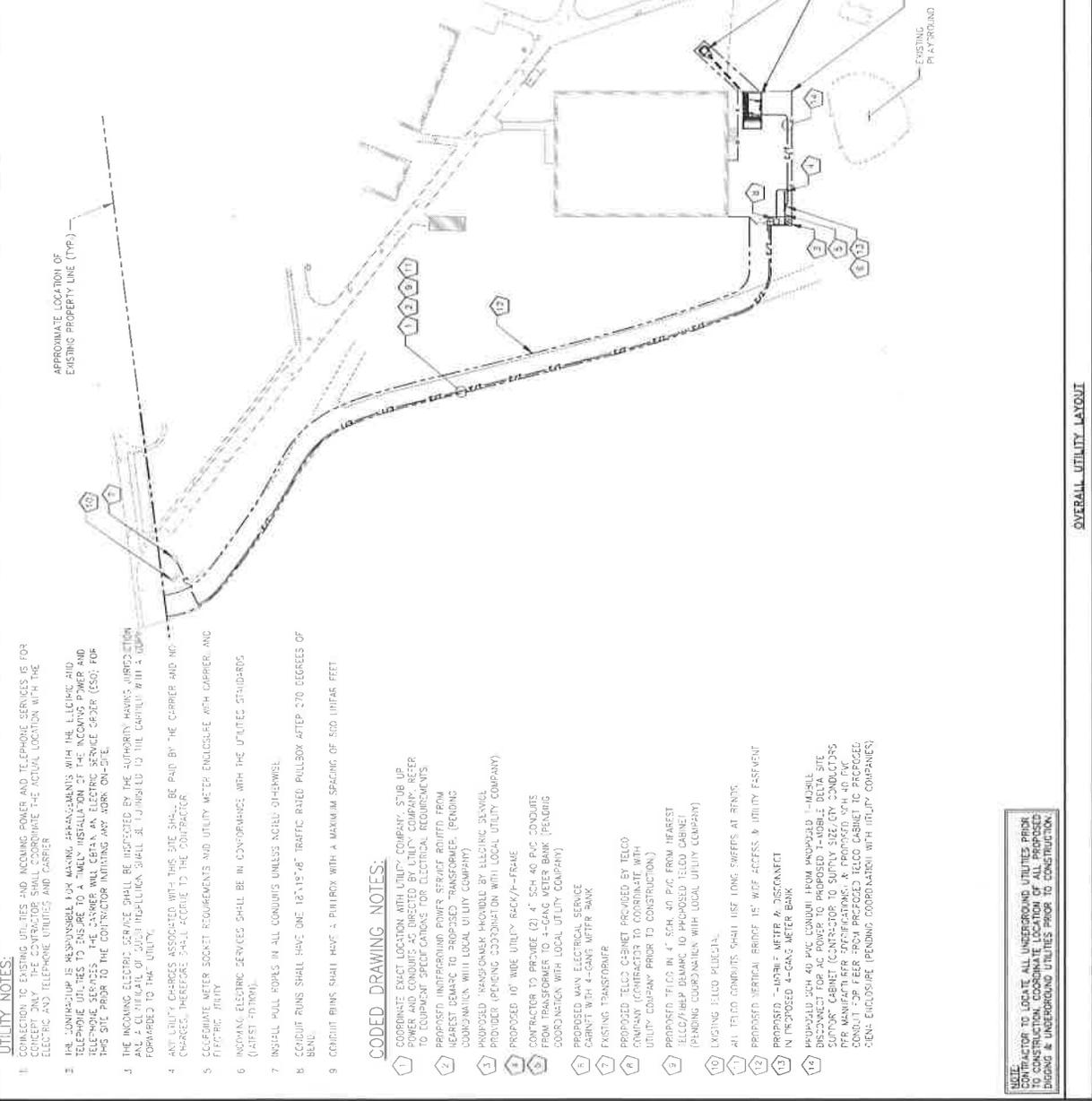
SHEET NUMBER
E-1

GENERAL ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
- ALL UNDERGROUND CONDUIT SHALL BE IN PAC SCHEDULE 40 RIGID POLYETHYLENE (RPE) CONDUIT UNLESS OTHERWISE SPECIFIED. CONDUIT SHALL BE INSTALLED AT LEAST 18" BELOW GRADE UNLESS OTHERWISE SPECIFIED. UNDERGROUND CONDUIT SHALL BE INSTALLED AT LEAST 18" BELOW GRADE UNLESS OTHERWISE SPECIFIED. PROVIDE 3" SEPARATION BETWEEN UNDERGROUND PUMP AND TELEPHONE CONDUITS. SUPPLY UNDERGROUND PUMP AND TELEPHONE CONDUITS ALONG ENTIRE LENGTH OF UNDERGROUND CONDUITS.
- ALL CONDUCTORS SHALL BE COPPER WITH THRU/THIN INSULATION. CONTROL CONDUCTORS SHALL BE SOLID FOR #10 THROUGH #14. ALL OTHER CONDUCTORS SHALL BE STRANDED FOR ALL OTHER SIZES.
- ELECTRICAL DRAWINGS ARE IN PART DIAGNOSTIC. COORDINATE ELECTRICAL WORK WITH SITE CONDITIONS.
- LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. IF CONFLICTS ARISE, CONTACT UTILITY COMPANY AND ENGINEER IMMEDIATELY.
- ALL EXPOSED CONDUITS SHALL HAVE WEATHERPROOF CAPS AND DUCT TAPE.
- PROVIDE 500 LB TEST FULL PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
- PULL BOXES SHALL BE INSTALLED AS NEEDED PER NEC AND UTILITY REQUIREMENTS.

ABBREVIATIONS:

A	AND
B	BASE
CON	CONDUIT
CO	COPPER
CS	CROSS
DI	DIESEL
DR	DRAWING
EXT	EXTENDED
FL	FLAT
FR	FRAMING
GR	GROUND
INS	INSULATION
INT	INTERNAL
LOC	LOCATION
M	MOBILE
MSC	MOBILE SWITCHING CENTER
MSC	MOBILE SWITCHING CENTER
PVC	POLYVINYL CHLORIDE
R	RIGID
SS	STAINLESS STEEL
STR	STEEL
T	TOWER
W	WITH



UTILITY NOTES:

- CONNECTION TO EXISTING UTILITIES AND INCOMING POWER AND TELEPHONE SERVICES IS FOR CONTRACTOR TO VERIFY. THE CONTRACTOR SHALL CORROBORATE THE ACTUAL LOCATION WITH THE LOCAL AND TELEPHONE UTILITIES AND CARRIER.
- THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS WITH THE ELECTRIC AND TELEPHONE UTILITIES TO INSURE TO A TIMELY INSTALLATION OF THE INCOMING POWER AND TELEPHONE SERVICES. THE CARRIER WILL CERTAIN AN ELECTRIC SERVICE ORDER (ESO) FOR THIS SITE PRIOR TO THE CONTRACTOR INITIATING ANY WORK ON-SITE.
- THE INCOMING ELECTRICAL SERVICE SHALL BE PROVIDED BY THE AUTHORITY HAVING JURISDICTION AND A CLERICAL OF SUCH INSTALLATION SHALL BE TURNED TO THE CARRIER WITH A COPY FORWARDED TO THE UTILITY.
- ANY UTILITY CHARGES ASSOCIATED WITH THIS SITE SHALL BE PAID BY THE CARRIER AND NOT CHARGES. THEREFORE SHALL ACCRUE TO THE CONTRACTOR.
- COORDINATE METER SOCKET REQUIREMENTS AND UTILITY METER ENCLOSURE WITH CARRIER AND PROPERTY OWNER.
- INCOMING ELECTRIC SERVICES SHALL BE IN CONFORMANCE WITH THE UTILITIES STANDARDS (LATEST EDITION).
- INSTALL PULL BOXES IN ALL CONDUITS UNLESS NOTED OTHERWISE.
- CONDUIT RUNS SHALL HAVE ONE 18"x18" 48" TRAFFIC RATED PULLBOX AFTER 270 DEGREES OF BEND.
- CARRIER BINS SHALL HAVE 4" PULLBOX WITH A MAXIMUM SPACING OF 500 LINEAR FEET.

CODED DRAWING NOTES:

- COORDINATE EXACT LOCATION WITH UTILITY COMPANY, STUB UP POWER AND CONDUITS AS DIRECTED BY UTILITY COMPANY. REFER TO EQUIPMENT SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS.
- PROPOSED UNDERGROUND POWER SERVICE ROUTED FROM NEAREST DEMARC TO PROPOSED TRANSFORMER. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PROPOSED TRANSFORMER PROVIDED BY ELECTRIC SERVICE PROVIDER. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PROPOSED 10" WIRE UTILITY RACK/F-RAME CONTRACTOR TO PROVIDE (2) 4" SCH. 40 RIGID CONDUITS FROM TRANSFORMER TO TOWER METER BANK. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PROPOSED MAIN ELECTRICAL SERVICE CABINET WITH 4-CIRCUIT METER BANK
- EXISTING TRANSFORMER
- PROPOSED TELCO CABINET PROVIDED BY TELCO COMPANY (CONTRACTOR TO COORDINATE WITH UTILITY COMPANY PRIOR TO CONSTRUCTION)
- PROPOSED TELCO IN 4" SCH. 40 RIGID FROM NEAREST TELCO/HELP DEMARC TO PROPOSED TELCO CABINET. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- EXISTING TELCO RACK/CABINET
- ALL TELCO CABINETS SHALL USE LONG SWEEPS AT RIMS.
- PROPOSED VERTICAL BRIDGE 15' W/EF ACCESS & UTILITY ESSENT
- PROPOSED 10" WIRE METER & DISCONNECT IN PROPOSED 4-CIRCUIT METER BANK
- PROPOSED 200 40 PVC CONDUIT FROM PROPOSED T-MOBILE DISCONNECT TO PROPOSED T-MOBILE DELTA SITE. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY) AFTER MANUFACTURER APPROVAL AND APPROVAL FROM LOCAL UTILITY COMPANY.

NOTE:
 CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. COORDINATE LOCATION OF ALL PROPOSED DIGGING & UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.



INFINIGY
 FROM ZERO TO INFINITY
 The solutions are endless
 7000 South Broadway, Suite 100
 Westminster, CO 80030
 Phone: (303) 426-1178
 Fax: (303) 426-1179
 Web: www.infinigy.com
 888 NUMBER 404-363



DRAWING NOTICE:
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T-MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF T-MOBILE.

REVISION	DESCRIPTION	DATE	BY	APP'D
1	ISSUED FOR CONSTRUCTION	01/27/10	AW	AW
2	ISSUED FOR CONSTRUCTION	01/27/10	AW	AW
3	ISSUED FOR CONSTRUCTION	01/27/10	AW	AW
4	ISSUED FOR CONSTRUCTION	01/27/10	AW	AW

VERTICAL BRIDGE SITE NAME:
 WOODMEN ELEMENTARY
PROJECT SITE #:
 DN04-333A
VERTICAL BRIDGE SITE #:
 U.S.-CO-5052

SITE ADDRESS:
 12119 McCLURE ROAD
 FALCON, CO 80831

SHEET DESCRIPTION:
 COMPOUND UTILITY LAYOUT

SHEET NUMBER:
 E-2

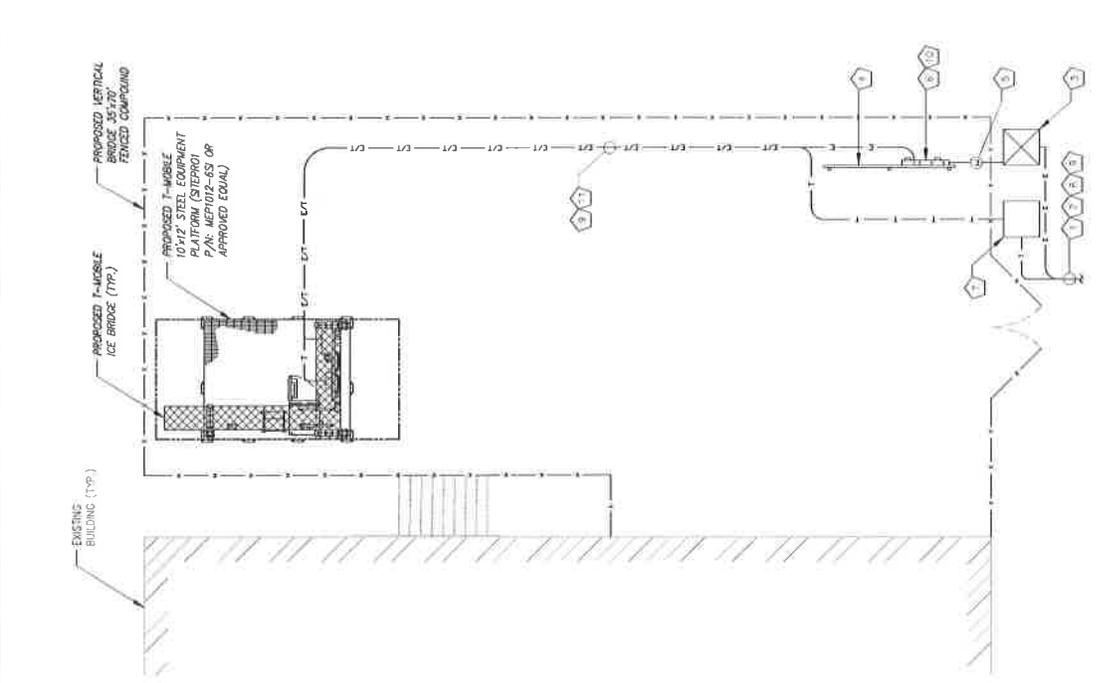
ABBREVIATIONS:

AND ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.

A	AND
AW	AWG
BW	BROWN
BFD	BELOW FINISH GRADE
BTS	BARE TINNED STRANDED
C	CONDUIT
CB	COAXIAL
COB	COAX ISOLATED GROUND BAR EXTERNAL
DLO	DRAWING
DWG	EXTERIOR GROUND RING
EDB	EXTERIOR ISOLATED GROUND BAR
EGP	GLOBAL POSITIONING SYSTEM
GPS	GROUND
HALO	INTERIOR GROUND RING
HCB	MULTI-GROUNDING CENTER BAR
MSC	MULTI-GROUNDING CENTER BAR
MSC	MOBILE SWITCHING CENTER
MTSO	MOBILE TELEPHONE SWITCHING OFFICE
PVC	POLYVINYL CHLORIDE
POS	POINT
ROS	ROOF
SS	STAINLESS STEEL
SST	SELF SUPPORT TOWER
TOR	TOWER GROUND RING
TP	TYPE
W	WITH

ELECTRICAL SYMBOLS:

○	RECEPTACLE
—●—	BURIED POWER CONDUIT
—●—	BURIED TELCO CONDUIT
○	ELECTRICAL METER
□	INDICATES CODED NUMBER
□	SAFETY SWITCH
□	UTILITY POLE



GENERAL ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
- ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE NOTED. CONDUITS SHALL BE INSTALLED AT LEAST 18" BELOW GRADE, ALONG ENTIRE LENGTH OF UNDERGROUND CONDUITS.
- ALL CONDUITS SHALL BE PROPERLY MARKED WITH TYPICAL IDENTIFICATION. CONDUITS SHALL BE INSTALLED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE (NEC) AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
- ELECTRICAL DRAWINGS ARE IN PART AUTOMATICALLY GENERATED. VERIFY ALL CONDITIONS, INCLUDING CONDUIT SIZES, BEFORE PROCEEDING WITH CONSTRUCTION. CONTACT THE DESIGNER IMMEDIATELY IF ANY DISCREPANCIES ARE NOTED.
- ALL GROUNDING CONDUITS SHALL HAVE WEATHERPROOF CAPS NOT DUCT TAPE.
- PROVIDE 200 LB. TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
- PULL 200 LB. TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.

CODED DRAWING NOTES:

- COORDINATE EXACT LOCATION WITH UTILITY COMPANY, STATE UP POWER AND CONDUITS AS DIRECTED BY UTILITY COMPANY. REFER TO EQUIPMENT SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS.
- PROPOSED UNDERGROUND POWER STRAIGHT ROUTED FROM NEAREST DEMARC TO PROPOSED TRANSFORMER. (PENDING LOCAL UTILITY WITH LOCAL UTILITY COMPANY)
- PROPOSED TRANSFORMER PROVIDED BY ELECTRIC SERVICE PROVIDER. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PROPOSED 10" WIDE UTIL. RACK/P--FRAME
- CONTRACTOR TO PROVIDE (0) 4" SCH. 40 PVC CONDUITS FROM TRANSFORMER TO 4-GANG METERS BANK. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PROPOSED MAIN ELECTRICAL SERVICE CABINET WITH 4-GANG METER BANK
- PROPOSED TELCO CABINET PROVIDED BY TELCO COMPANY. (CONTRACTOR TO COORDINATE WITH UTILITY COMPANY PRIOR TO CONSTRUCTION.)
- PROPOSED TELCO IN 4" SCH. 40 PVC FROM NEAREST TELCO/FIBER DEMARC TO PROPOSED TELCO CABINET. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- ALL TELCO CONDUITS SHALL USE LONG SWIFFETS AT BENDS.
- PROPOSED T-MOBILE METER & DISCONNECT IN PROPOSED 4 GANG METER BANK
- PROPOSED 50# 40 PVC CONDUIT FROM PROPOSED T-MOBILE DISCONNECT TO 4-GANG METER BANK. (PENDING COORDINATION WITH LOCAL UTILITY COMPANY)
- PER MANUFACTURER SPECIFICATIONS, 4 PROPOSED 50# 40 PVC CONDUIT FOR FEED FROM PROPOSED TELCO CABINET TO PROPOSED DEMARC ENCLOSURE. (PENDING COORDINATION WITH UTILITY COMPANIES)



NOTE:
 CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. COORDINATE LOCATION OF ALL PROPOSED DIGGING & UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

SCALE AS NOTED

1

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR CONSTRUCTION	12/17/13	DL	1
2	ISSUED FOR CONSTRUCTION	12/17/13	DL	2
3	ISSUED FOR CONSTRUCTION	12/17/13	DL	3
4	ISSUED FOR CONSTRUCTION	12/17/13	DL	4
5	ISSUED FOR CONSTRUCTION	12/17/13	DL	5

WOODMEN ELEMENTARY
 MOBILE SITE #
 DN04333A
 US-CO-5052

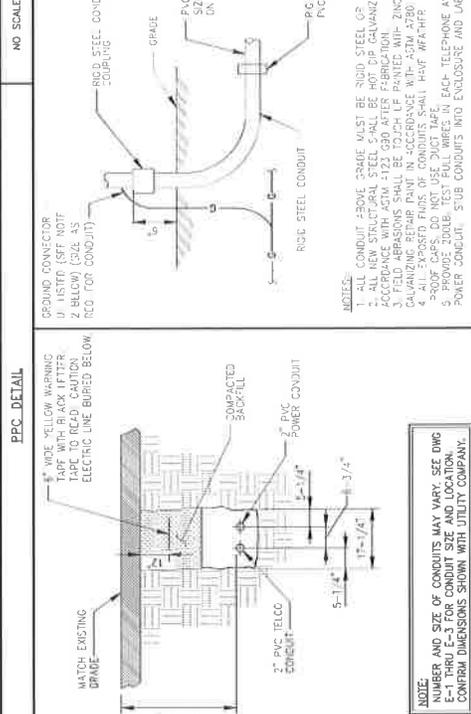
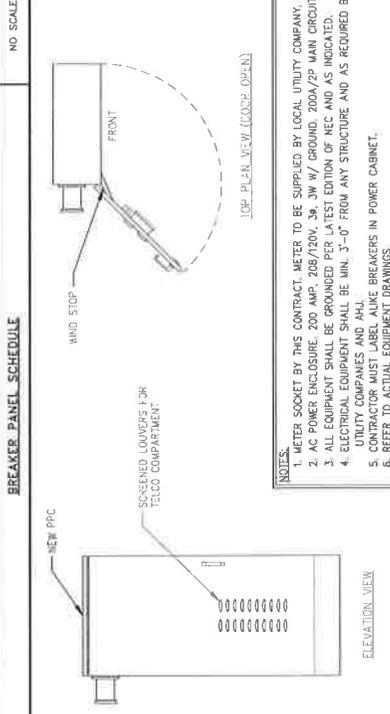
12119 McCURE ROAD
 FALCON, CO 80831

ELECTRICAL DETAILS

SHEET NUMBER
E-4

PANEL SCHEDULE

NO.	QTY	DESCRIPTION	LI	LS	LSL	LSL2	LL	DESCRIPTION	QTY	AMPS	POLES
1	1	120V RECEPTACLE	120	120	120	120	120	NBS	2	20	2
2	1	120V	120	120	120	120	120	120	1	20	2
3	1	120V	120	120	120	120	120	120	1	20	2
4	1	120V	120	120	120	120	120	120	1	20	2
5	1	120V	120	120	120	120	120	120	1	20	2
6	1	120V	120	120	120	120	120	120	1	20	2
7	1	120V	120	120	120	120	120	120	1	20	2
8	1	120V	120	120	120	120	120	120	1	20	2
9	1	120V	120	120	120	120	120	120	1	20	2
10	1	120V	120	120	120	120	120	120	1	20	2
11	1	120V	120	120	120	120	120	120	1	20	2
12	1	120V	120	120	120	120	120	120	1	20	2
13	1	120V	120	120	120	120	120	120	1	20	2
14	1	120V	120	120	120	120	120	120	1	20	2
15	1	120V	120	120	120	120	120	120	1	20	2
16	1	120V	120	120	120	120	120	120	1	20	2
17	1	120V	120	120	120	120	120	120	1	20	2
18	1	120V	120	120	120	120	120	120	1	20	2
19	1	120V	120	120	120	120	120	120	1	20	2
20	1	120V	120	120	120	120	120	120	1	20	2
21	1	120V	120	120	120	120	120	120	1	20	2
22	1	120V	120	120	120	120	120	120	1	20	2
23	1	120V	120	120	120	120	120	120	1	20	2
24	1	120V	120	120	120	120	120	120	1	20	2
25	1	120V	120	120	120	120	120	120	1	20	2
26	1	120V	120	120	120	120	120	120	1	20	2
27	1	120V	120	120	120	120	120	120	1	20	2
28	1	120V	120	120	120	120	120	120	1	20	2
29	1	120V	120	120	120	120	120	120	1	20	2
30	1	120V	120	120	120	120	120	120	1	20	2
31	1	120V	120	120	120	120	120	120	1	20	2
32	1	120V	120	120	120	120	120	120	1	20	2
33	1	120V	120	120	120	120	120	120	1	20	2
34	1	120V	120	120	120	120	120	120	1	20	2
35	1	120V	120	120	120	120	120	120	1	20	2
36	1	120V	120	120	120	120	120	120	1	20	2
37	1	120V	120	120	120	120	120	120	1	20	2
38	1	120V	120	120	120	120	120	120	1	20	2
39	1	120V	120	120	120	120	120	120	1	20	2
40	1	120V	120	120	120	120	120	120	1	20	2
41	1	120V	120	120	120	120	120	120	1	20	2
42	1	120V	120	120	120	120	120	120	1	20	2
43	1	120V	120	120	120	120	120	120	1	20	2
44	1	120V	120	120	120	120	120	120	1	20	2
45	1	120V	120	120	120	120	120	120	1	20	2
46	1	120V	120	120	120	120	120	120	1	20	2
47	1	120V	120	120	120	120	120	120	1	20	2
48	1	120V	120	120	120	120	120	120	1	20	2
49	1	120V	120	120	120	120	120	120	1	20	2
50	1	120V	120	120	120	120	120	120	1	20	2
51	1	120V	120	120	120	120	120	120	1	20	2
52	1	120V	120	120	120	120	120	120	1	20	2
53	1	120V	120	120	120	120	120	120	1	20	2
54	1	120V	120	120	120	120	120	120	1	20	2
55	1	120V	120	120	120	120	120	120	1	20	2
56	1	120V	120	120	120	120	120	120	1	20	2
57	1	120V	120	120	120	120	120	120	1	20	2
58	1	120V	120	120	120	120	120	120	1	20	2
59	1	120V	120	120	120	120	120	120	1	20	2
60	1	120V	120	120	120	120	120	120	1	20	2
61	1	120V	120	120	120	120	120	120	1	20	2
62	1	120V	120	120	120	120	120	120	1	20	2
63	1	120V	120	120	120	120	120	120	1	20	2
64	1	120V	120	120	120	120	120	120	1	20	2
65	1	120V	120	120	120	120	120	120	1	20	2
66	1	120V	120	120	120	120	120	120	1	20	2
67	1	120V	120	120	120	120	120	120	1	20	2
68	1	120V	120	120	120	120	120	120	1	20	2
69	1	120V	120	120	120	120	120	120	1	20	2
70	1	120V	120	120	120	120	120	120	1	20	2
71	1	120V	120	120	120	120	120	120	1	20	2
72	1	120V	120	120	120	120	120	120	1	20	2
73	1	120V	120	120	120	120	120	120	1	20	2
74	1	120V	120	120	120	120	120	120	1	20	2
75	1	120V	120	120	120	120	120	120	1	20	2
76	1	120V	120	120	120	120	120	120	1	20	2
77	1	120V	120	120	120	120	120	120	1	20	2
78	1	120V	120	120	120	120	120	120	1	20	2
79	1	120V	120	120	120	120	120	120	1	20	2
80	1	120V	120	120	120	120	120	120	1	20	2
81	1	120V	120	120	120	120	120	120	1	20	2
82	1	120V	120	120	120	120	120	120	1	20	2
83	1	120V	120	120	120	120	120	120	1	20	2
84	1	120V	120	120	120	120	120	120	1	20	2
85	1	120V	120	120	120	120	120	120	1	20	2
86	1	120V	120	120	120	120	120	120	1	20	2
87	1	120V	120	120	120	120	120	120	1	20	2
88	1	120V	120	120	120	120	120	120	1	20	2
89	1	120V	120	120	120	120	120	120	1	20	2
90	1	120V	120	120	120	120	120	120	1	20	2
91	1	120V	120	120	120	120	120	120	1	20	2
92	1	120V	120	120	120	120	120	120	1	20	2
93	1	120V	120	120	120	120	120	120	1	20	2
94	1	120V	120	120	120	120	120	120	1	20	2
95	1	120V	120	120	120	120	120	120	1	20	2
96	1	120V	120	120	120	120	120	120	1	20	2
97	1	120V	120	120	120	120	120	120	1	20	2
98	1	120V	120	120	120	120	120	120	1	20	2
99	1	120V	120	120	120	120	120	120	1	20	2
100	1	120V	120	120	120	120	120	120	1	20	2



PLEASE REPAIR PIPE

T-Mobile
 3333 Delaplane Street
 Denver, CO 80216

INFINIGY
 the solutions are endless
 7001 Federal Blvd, Suite 301
 Westminster, CO 80020
 Phone: 303.442.8278
 Fax: 303.442.8038
 JIM BLANK - PE

verticalbridge
 750 Park of Commerce Drive
 Suite 300 - 30457
 Office: 303.744.8067

PROFESSIONAL ENGINEER
 CHRISTOPHER J. WARRREN
 47849
 LICENSED IN THE STATE OF COLORADO

DISCLAIMER NOTICE
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF T-MOBILE AND MAY NOT BE REPRODUCED, COPIED, OR DISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF T-MOBILE.

REVISION	DESCRIPTION	DATE	BY	REV
1	ISSUED FOR CONSTRUCTION	10/27/11	202	3
2	REVISED FOR CONSTRUCTION	10/27/11	202	2
3	REVISED FOR CONSTRUCTION	10/27/11	202	1

WOODMEN ELEMENTARY
 DENO4333A

US-CO-5052

12119 McCLURE ROAD
 FALCON, CO 80831

GROUNDING PLANS
 COMPOUND

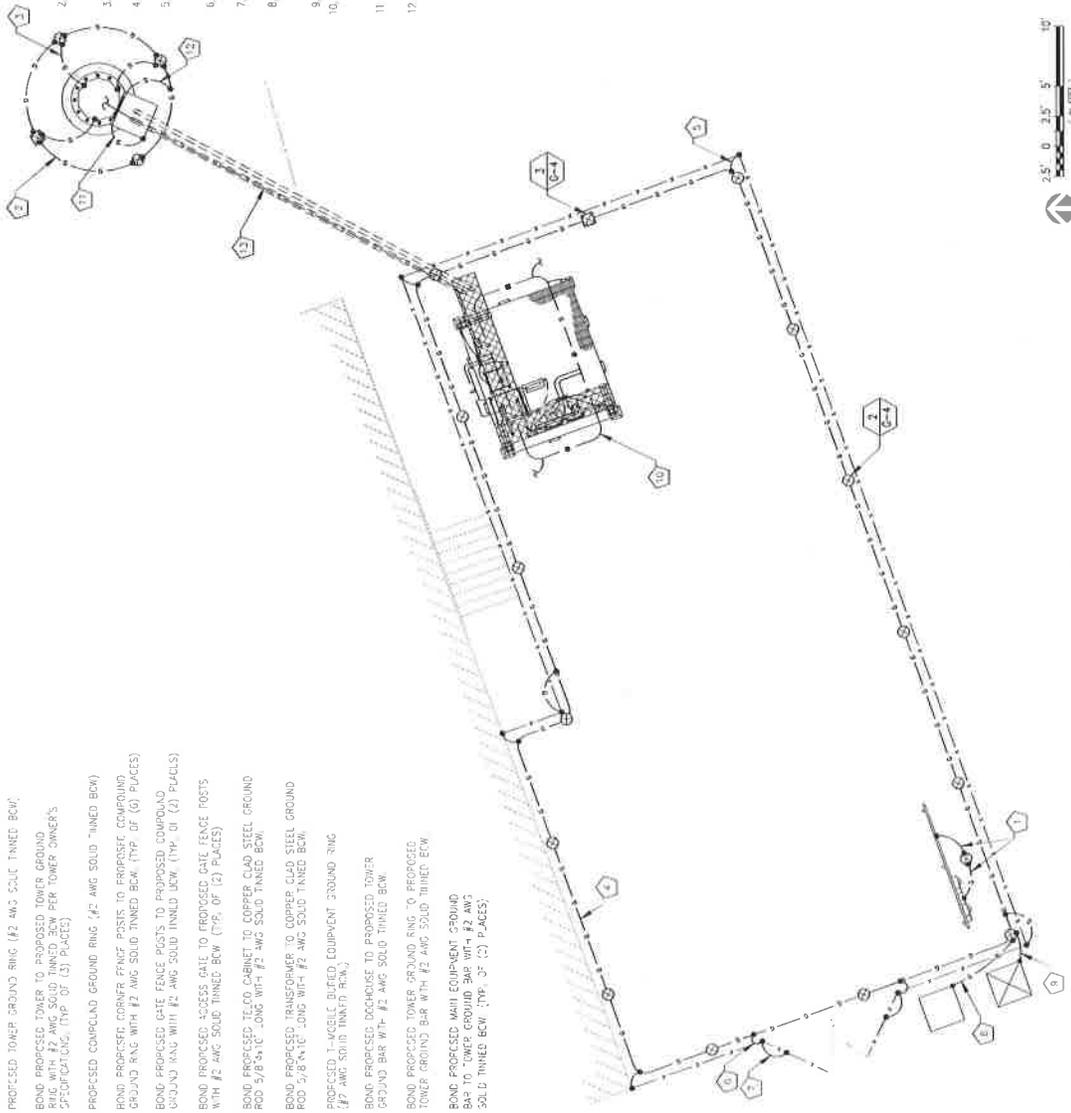
G-1

GENERAL GROUNDING NOTES:

- TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
 #2 AWG BONDING AND SOLID COPPER CONDUCTOR: ELECTROWELD TO WELDS AND SUEZ BAR (UNLESS NOTED OTHERWISE). SANGED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLLUD FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
 ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" CONCRETE OR METAL WALLS. ALL CONDUITS SHALL BE RIGID PVC CONDUIT. CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
 OWNER'S REPRESENTATIVE WILL INSPECT EXISTING WELDS AND CONTACT WEGGER TEST PRIOR TO BURIAL. MAXIMUM 3 OHMS RESISTANCE IS REQUIRED. PL-1 FORM OK PAU.
 CONTRACTOR TO INSTALL GROUNDING IN CLOSE PROXIMITY TO EQUIPMENT.
 MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
 ALL CABLES TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
 BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS.
 DO NOT ELECTROWELDM WELD TO CONDUITS.
 THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
 THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'-0" (MAX. 15'-0").
 BOND JOBS TO EXTERNAL GROUND RING WITH 2 RUNS 3"-#2 AWG BARE, RIGID, SOLID COPPER CONDUCTOR TO EACH GROUND ROD. CONDUIT SHALL BE 1/2" RIGID PVC AND "C" CHANNEL THE OTHER END TO THE EXTERNAL GROUND ROD.
 THE PREFFERED LOCATION FOR EACH GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND.
 BONDING OF THE PROPOSED CONDUCTOR (NEUTRAL) AND THE GROUNDING SYSTEM SHALL BE PERFORMED BY THE CONTRACTOR. BONDING JUMPS SHALL BE INSTALLED PER N.E.C. ARTICLE 250-30.

CODED DRAWING NOTES:

- BOND PROPOSED UTILITY BARS & MAIN ELECTRICAL SERVICE CABINET TO COPPER CLAD STEEL GROUND ROD 5/8" x 10' LONG PER MANUFACTURER'S SPECIFICATIONS WITH #2 AWG SOLID TINNED BOW.
- PROPOSED TOWER GROUND RING (#2 AWG SOLID TINNED BOW).
- BOND PROPOSED TOWER TO PROPOSED TOWER GROUND RING WITH #2 AWG SOLID TINNED BOW PER TOWER OWNER'S SPECIFICATIONS. (TYP. OF (3) PLACES)
- PROPOSED COMPOUND GROUND RING (#2 AWG SOLID TINNED BOW).
- BOND PROPOSED CORNER FENCE PISTS TO PROPOSED COMPOUND GROUND RING WITH #2 AWG SOLID TINNED BOW. (TYP. OF (6) PLACES)
- BOND PROPOSED GATE FENCE PISTS TO PROPOSED COMPOUND GROUND RING WITH #2 AWG SOLID TINNED BOW. (TYP. OF (2) PLACES)
- BOND PROPOSED GATE FENCE TO PROPOSED GATE FENCE PISTS WITH #2 AWG SOLID TINNED BOW. (TYP. OF (2) PLACES)
- BOND PROPOSED TOWER CABINET TO COPPER CLAD STEEL GROUND ROD 5/8" x 10' LONG WITH #2 AWG SOLID TINNED BOW.
- BOND PROPOSED TRANSFORMER TO COPPER CLAD STEEL GROUND ROD 5/8" x 10' LONG WITH #2 AWG SOLID TINNED BOW.
- PROPOSED T-WELDED BUREAU EQUIPMENT GROUND RING (#2 AWG SOLID TINNED BOW).
- BOND PROPOSED DOORHOUSE TO PROPOSED TOWER GROUND BAR WITH #2 AWG SOLID TINNED BOW.
- BOND PROPOSED TOWER GROUND RING TO PROPOSED TOWER GROUND BAR WITH #2 AWG SOLID TINNED BOW.
- BOND PROPOSED MAIN EQUIPMENT GROUND BAR TO TOWER GROUND BAR WITH #2 AWG SOLID TINNED BOW. (TYP. OF (2) PLACES)



GROUNDING SYMBOLS:

- ⊗ GROUND ROD
- ⊠ ACCESS WELL
- ⊞ GROUND ROD WITH ACCESS
- ⊞ COMPRESSION TYPE CONNECTION
- ELECTROWELD WELD TYPE CONNECTION
- G — #2 B16 COPPER CONDUCTOR
- B — BURIED GROUND CABLE
- ⚡ INDICATES CODED NOTE

2.5' 0' 2.5' 5' 10'
 1" = 5 FEET
 NORTH
 SCALE: 1/4" = 5'-0"
 SHEET 1 OF 1

COMPOUND GROUNDING PLANS

SCALE AS NOTED 1

PLEASE REFER TO:

F-Mobile
 333 Delaware Street
 Denver, CO 80216

DESIGNED BY:
INFINIGY
 FROM ZERO TO INFINITY
 the solutions are endless
 7301 Federal Blvd, Suite 301
 Westminster, CO 80030
 Office # (303) 425-5436
 Cell # (303) 425-5434
 AS NUMBER: 04-02

vertical bridge
 750 Park Commerce Drive
 Suite 200, 33487
 Broomfield, CO 80020
 Office # (303) 944-6367

ENGINEERING LICENSE
 EXPIRES 12/31/2014
 47849
 CHRISTOPHER J. WARREN
 PROFESSIONAL ENGINEER

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF F-MOBILE AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE WRITTEN CONSENT OF F-MOBILE.

REVISION	DESCRIPTION	DATE	BY	FILED
1	REVISED FOR CONSTRUCTION	08/17/11	SEE 1	
2	REVISED FOR CONSTRUCTION	05-21-07	SEE 1	
3	REVISED FOR CONSTRUCTION	11/17/04	AGE 1	
4	REVISED FOR CONSTRUCTION	1/10/04	AGE 1	

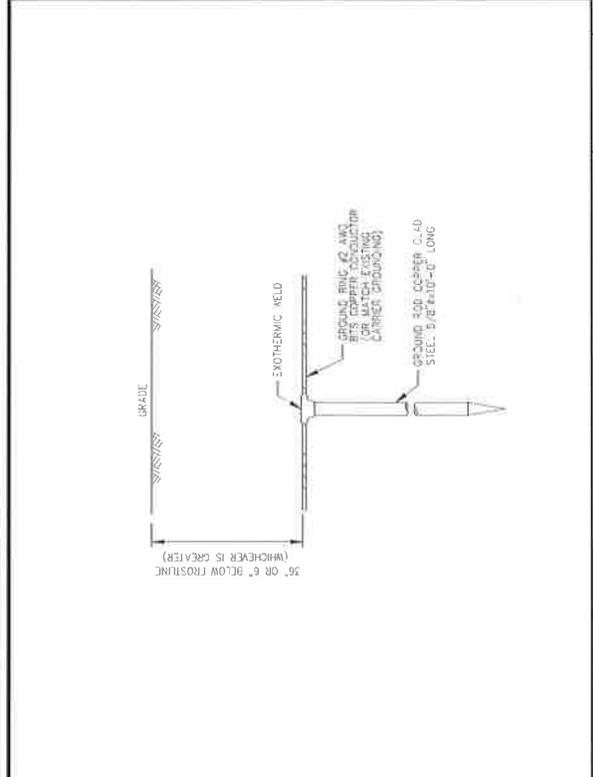
WOODMEN ELEMENTARY
 FACHSILE SITE #
 DN04333A

VERTICAL BRIDGE #
 US-CO-5052

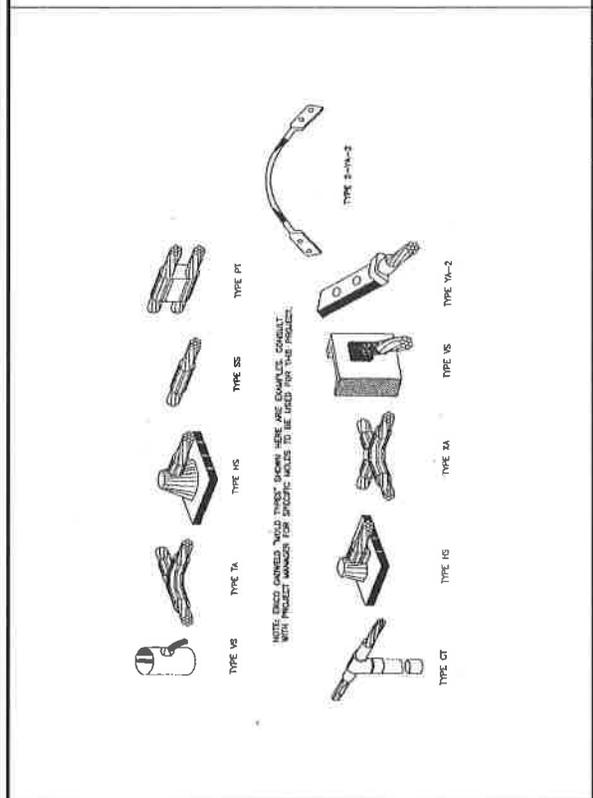
SITE ADDRESS:
 12119 McCLURE ROAD
 FALCON, CO 80831

SHEET DESCRIPTION:
 GROUNDING DETAILS

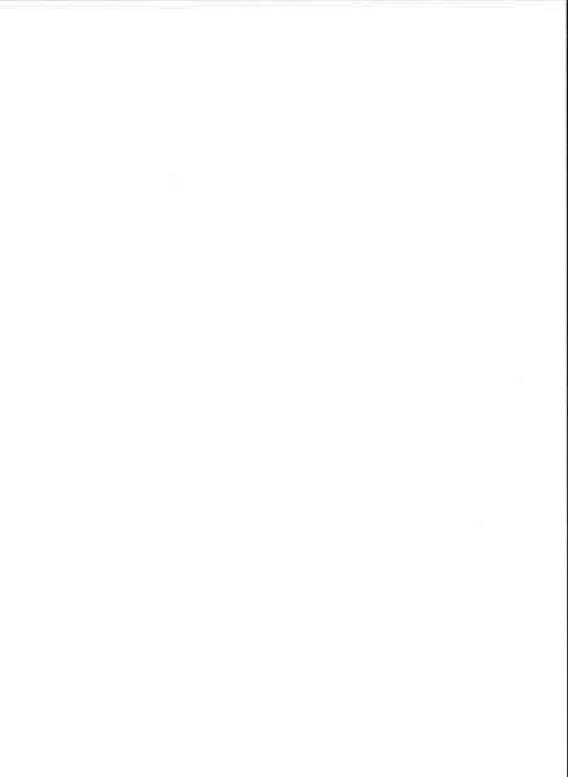
SHEET NUMBER:
 G-4



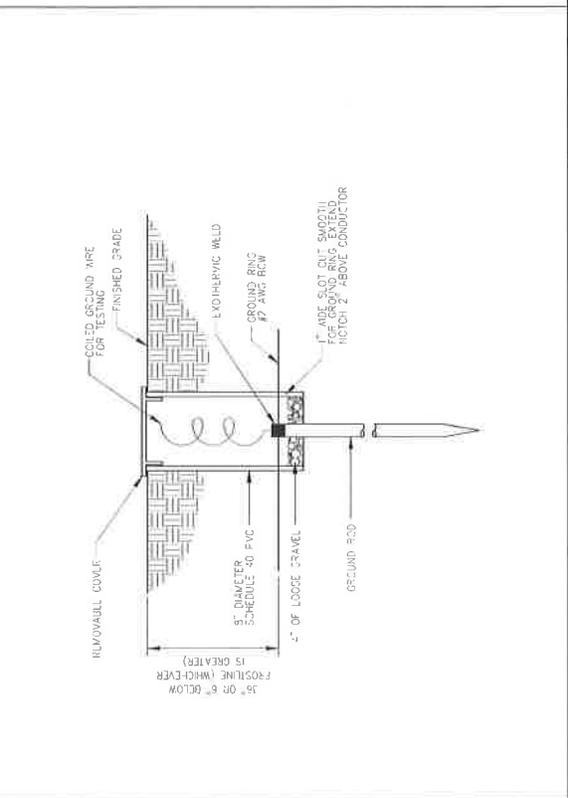
TYPICAL GROUND ROD NO SCALE 2



TYPICAL EQUIPMENT GROUND CONNECTIONS NO SCALE 1



TYPICAL INSPECTION SLEEVE NO SCALE 3



DETAIL NOT USED NO SCALE 4

T-Mobile®

**DN04333 WOODMEN ELEMENTARY
RF PROPOGATION STUDY**

The Right Results
The Right Way™



T-Mobile

Vertical Bridge is requesting to build a site at 8308 Del Rio Road with an overall height of 93' and a T-Mobile antenna centerline of 86' AGL to add coverage and improve existing service in the Falcon residential areas near Hwy 24. The accompanying coverage prediction plots exhibit the need for this height. The colored shade shows "In building" quality coverage.

The Right Results
The Right Way™



**EXISTING T-MOBILE COVERAGE - WITHOUT T-Mobile®
SITE DN04333 WOODMEN ELEMENTARY**

Existing T-Mobile Coverage



There is no in-building coverage currently in the area of the proposed tower.

**PROPOSED T-MOBILE COVERAGE - AT 60' RAD T-Mobile
SITE DN04333 WOODMEN ELEMENTARY**

Proposed Coverage at 60'



There is improvement in service quality around the proposed site but coverage gaps still exist in the residential areas along Hwy 24.

PROPOSED T-MOBILE COVERAGE - AT 86' RAD T-Mobile
SITE DN04333 WOODMEN ELEMENTARY

Proposed Coverage at 86'



The greater height (86') provides an improved area of service in all directions but the largest area of improvement can be seen along Highway 24 and adjacent residential neighborhoods near Meridian Road.