



Original  
WSUP 19-0004

April 10, 2019

Washoe County  
Planning and Development Division  
1001 E. Ninth Street  
Reno, NV 89512  
Attn: Jacob Parker

**RE: Application for Special Use Permit and Director's Modification – Fox Mountain, NV 10140A Fox Mountain Road, Gerlach, NV 89412**

Please find attached a Special Use Permit and Director's Modification submittal applications for a new Commnet Wireless telecommunications facility located at the above referenced location. The submittal contains the following documents.

**This application is for the April 15, 2109 submittal.**

1. Filing Fee Check
2. Development Application
3. Owner's Affidavit
4. Project Support Statement
5. Director's Modification Application and Memorandum
5. Site Plans (Note pages A-4.0 through A-4.3 were removed from the site plans as they are not relevant to zoning and they contain proprietary information).
6. Photosimulations
7. Coverage Maps
8. Radio Frequency Statement
9. Treasurer Statement
10. Site Photos
11. Recorded Easement Agreement with private land owners for site access
12. Flash Drive containing Application materials

If you have any questions or need additional materials, I can be reached at (314) 640-5182.

Sincerely,

A handwritten signature in blue ink, appearing to read "Julie Krekeler", is written over a circular blue stamp or seal.

Julie Krekeler  
General Manager

Attachments



April 10, 2019

Washoe County  
Planning and Development Division  
1001 E. Ninth Street  
Reno, NV 89512  
Attn: Jacob Parker

**RE: Application for Special Use Permit and Director's Modification – Fox Mountain, NV 10140A Fox Mountain Road, Gerlach, NV 89412**

On behalf of Commnet of Nevada, LLC (dba Commnet Wireless), I am submitting a Special Use Permit and Director's Modification submittal application for a new telecommunications facility located at the above referenced location on April 10, 2109 prior to the April 15 submittal date. Please accept this waiver for the submittal time frames and the 3 day completeness check.

If you have any questions or need additional materials, I can be reached at (314) 640-5182.

Sincerely,

A handwritten signature in blue ink that reads "Julie Krekeler". The signature is fluid and cursive, with the first name "Julie" being more prominent than the last name "Krekeler".

Julie Krekeler  
General Manager

Attachments

# Memorandum

**To:** Washoe County, NV  
**CC:** Commnet of Nevada, LLC  
**From:** Julie M. Hall, Senior RF Engineer, Centerline Solutions  
**Date:** 03/27/19  
**Re:** RF Emissions Analysis of Proposed Facility-Fox Mountain, NV

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Commnet of Nevada is proposing to install a wireless telecommunications facility at Fox Mountain, NV, in Washoe County, at the following coordinates: 41° 1' 31.25" N, 119° 33' 30.09" W. The proposed installation was evaluated for RF Emissions compliance. The computations, analysis, and conclusions were based on applicable FCC guidelines and regulations for maximum permissible exposure to humans consistent with FCC OET Bulletin 65. At the time of installation, this facility will be transmitting at less than 2% of the applicable RF Emissions limits, thus the facility will be in compliance with applicable FCC regulations for RF Emissions. In addition, the analysis was completed with both existing capacity and future capacity, to insure compliance as the site grows in capacity.

Re-evaluation of the site for compliance would happen if other carriers locate at the facility, if the site grows beyond the capacity that the initial evaluation was completed for, or antennas at the site are changed or added to.

I certify that the analysis is correct to the best of my knowledge, and all calculations, assumptions and conclusions are based on generally acceptable engineering practices.



[Julie M. Hall](#)  
[Senior RF Engineer](#)  
[Centerline Solutions](#)

# Property Owner Affidavit

**Applicant Name:** Commnet of Nevada, LLC

The receipt of this application at the time of submittal does not guarantee the application complies with all requirements of the Washoe County Development Code, the Washoe County Master Plan or the applicable area plan, the applicable regulatory zoning, or that the application is deemed complete and will be processed.

STATE OF NEVADA     )  
                                  )  
COUNTY OF WASHOE    )

I, CRAIG R. DRAKE  
(please print name)

being duly sworn, depose and say that I am the owner\* of the property or properties involved in this application as listed below and that the foregoing statements and answers herein contained and the information herewith submitted are in all respects complete, true, and correct to the best of my knowledge and belief. I understand that no assurance or guarantee can be given by members of Planning and Building.

(A separate Affidavit must be provided by each property owner named in the title report.)

Assessor Parcel Number(s): 066-080-33

Printed Name CRAIG R. DRAKE

Signed Craig R. Drake

Address 708 W. 12<sup>th</sup> St.

ALTURAS, CA 96101

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Notary Stamp)

See att. Jurat  
Notary Public in and for said county and state

My commission expires: \_\_\_\_\_

\*Owner refers to the following: (Please mark appropriate box.)

- Owner
- Corporate Officer/Partner (Provide copy of record document indicating authority to sign.)
- Power of Attorney (Provide copy of Power of Attorney.)
- Owner Agent (Provide notarized letter from property owner giving legal authority to agent.)
- Property Agent (Provide copy of record document indicating authority to sign.)
- Letter from Government Agency with Stewardship





Community Services Department  
Planning and Building  
DIRECTOR'S MODIFICATION OF  
PARKING/LANDSCAPING  
MINOR DEVIATION  
STANDARDS APPLICATION



Community Services Department  
Planning and Building  
1001 E. Ninth St., Bldg. A  
Reno, NV 89512-2845

Telephone: 775.328.6100

## Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

<b>Project Information</b>		Staff Assigned Case No.: _____	
Project Name: <b>Commnet Wireless, Fox Mountain, NV</b>			
Project Description: Commnet Wireless proposed the construction of a new unmanned wireless communication facility serving Fox Mountain			
Project Address: Washoe County 911 Assigned address: 10140 A Fox Mountain Road, Gerlach, NV 89412			
Project Area (acres or square feet): 1,459 sf for tower and ground space and approx 500 sf for propane tanks			
Project Location (with point of reference to major cross streets <b>AND</b> area locator): From intersection of County Road 447, turn right onto Old Camp Road, then turn left to stay on Old Camp Road/Rox Mountain Road			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
066-080-33	23,299.211 acres		
<b>Indicate any previous Washoe County approvals associated with this application:</b> Case No.(s). NA			
<b>Applicant Information</b> (attach additional sheets if necessary)			
<b>Property Owner:</b>		<b>Professional Consultant:</b>	
Name: United States of America - BLM		Name: CIS Communications, LLC	
Address: 2550 Riverside Drive		Address: 749 Old Ballas Road	
Susanville, CA	Zip: 96130	Creve Coeur, MO	Zip: 63141
Phone: (530) 252-5321	Fax:	Phone: (314) 569-2275	Fax:
Email: dryan@blm.gov		Email: julie@ciscomm.com	
Cell: (530) 252-5321	Other:	Cell: (314) 640-5182	Other:
Contact Person: Daniel Ryan - Realty Specialist		Contact Person: Julie Krekeler - General Manager	
<b>Applicant/Developer:</b>		<b>Other Persons to be Contacted:</b>	
Name: Commnet of Nevada, LLC (dba Commnet Wireless)		Name:	
Address: 1562 North Park Street		Address:	
Castle Rock, CO	Zip: 80109		Zip:
Phone: (720) 733-7854	Fax:	Phone:	Fax:
Email: cphillips@atni.com		Email:	
Cell: (720) 733-7854	Other:	Cell:	Other:
Contact Person: Cindy Phillips - Director of Real Estate/Regulatory		Contact Person:	
<b>For Office Use Only</b>			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

# Director's Modification of Standards Supplemental Information

(All required information may be separately attached)

1. What modification or deviation are you requesting? **Be specific.**

Parking Standards - Article 110.410.00  
Landscaping Standards - Article 110.412.00  
Noise and Lighting Standards - Section 110.414.00 Noise and Lighting  
Minor Deviation Standards - Section 110.804.35

2. Why is the modification or deviation necessary to the success of the project/development? **Be specific.** Are there any extenuating circumstances or physical conditions on the proposed project/development site?

Please refer to the attached Director's Memorandum for explanation

3. Are you proposing to mitigate the effect of the modification or reduction?

Please refer to the attached Director's Memorandum for explanation

4. What section of code are you requesting to modify or deviate? **Be specific.** List the code section and if there are specific requirements for the modification, provide detailed information. For deviation, provide the percentage of the deviation.

Parking Standards - Whole Section  
Landscaping Standards - Whole Section  
Noise and Lighting Standards - Whole Section  
Minor Deviation Standards - maximum standards allowed as stated by Washoe County Planning Department

5. For Minor Deviation request; list what properties/parcels are affected by the deviation? Explain if there will be any impacts to the affected neighboring properties. (At a minimum, affected property owners are those owners of parcels that immediately abut the location of the proposed minor deviation.)

Please refer to the attached Director's Memorandum for list of adjoining parcels and impact explanation.

## MEMORANDUM

To: Washoe County

CC: Commnet of Nevada, LLC (Commnet Wireless)

From: Julie Krekeler, Site Acquisition, CIS Communications, LLC

Date: April 10, 2019

**Re: DIRECTOR'S MODIFICATION REQUEST CLARIFICATION – Special Use Permit - APN: 066-080-33  
(Fox Mountain, NV)**

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Dear Washoe County,

The subject application is for a Special Use Permit for the construction of a telecommunications facility consisting of a 150' monopole, solar arrays, outdoor shelter with an interior generator room, and three (3) propane tanks within an irregular lease area situated at Fox Mountain, Nevada. The parcel is located on property owned by the United States of America and is managed by the Bureau of Land Management. The parcel consists of 23,299.211 acres.

Upon review of Washoe County's Development Code Section 110, Commnet Wireless is hereby requesting certain specific conditions to be considered for Director's Modification due to the following.

**Article 110.410.00 Parking** –Commnet Wireless would like to modify Section 110.410.00 to allow for the request to waive the whole section of parking. Due to the unusual nature of the establishment and the remote rural location of this proposed unmanned facility that will be visited by a cell tech once or twice a month, the standards set forth in this section such as parking design and access width would be excessive and unreasonable for Commnet Wireless. Furthermore, the proposed facility is at an established communications site where there is an existing access road. The proposed facility is not for the general public access and there is ample space for the technician to park at the lease area.

**Article 110.412.00 Landscaping** - Commnet Wireless would like to modify Section 110.412.00 to allow for the request to waive the whole section of landscaping. The subject site is located in a remote area. In addition to being remote, the site is located over nine miles from Highway 447 and the adjoining parcel is also owned by the United States of America, where there will be minimal visibility. Because this remote location is an unmanned facility, Commnet Wireless' policy is to avoid any landscaping to conserve water as well as the need for routine landscape maintenance. Additionally, because of the vast size of the parcel (23,299 acres), it is unreasonable for Commnet Wireless to meet Washoe County's requirement of landscape coverage of a minimum twenty (20) percent of the total developed land area as well as landscaped buffers at least one (1) tree every twenty (20) linear feet of property frontage as outlined in Sections 110.412.40 (a) and (c). This location has a natural barrier of trees surrounding the mountain top.



**Section 110.414.00 Noise and Lighting** - Commnet Wireless would like to modify the Section 110.414.00 to allow for the request to waive the entire section of Noise and Lighting. The site will be powered by solar arrays/batteries along with a generator. The generator will be situated inside the shelter and any noise would be at a minimum. First Net responder equipment is proposed at this site. Per Section 110.414.20 (b) emergency equipment is exempt from this section.

Unless lighting is required by the FAA, no lighting is proposed at the unmanned facility. Commnet proposes Washoe County’s current best practice of “dark-sky” standards and Commnet will conserve any solar power usage for powering the site. There will be lighting inside the shelter that is turned on only during a technician’s site visit.

**Section 110.804.35 Minor Deviations –** Commnet Wireless is proposing a 150’ monopole and is seeking approval for the height deviation per table 110.324.55.1 . As stated, this site is located in a remote area where there is currently limited to no cellular service. This site will include First Net responder emergency equipment as well as future users and due to the diverse topography and the remoteness of the area, the height is needed to overcome that terrain to obtain optimal coverage when connecting to their other sites that are part of the network design.

The following is a list of parcels that abut the subject property parcel. The closest parcel to the proposed facility is parcel # 066-060-26, which is at a distance of ~120 feet, and is owned by the United States. Parcels indicated below with an asterisk are private landowners. All other parcel numbers belong to the United States. There does not appear to be a residence within the adjoining parcels. The impact this proposed facility will have is a communication source that is vital to today’s safety and quality of life within rural Nevada.

	066	060	26		*	066	030	48
*	066	80	1			066	030	34
	066	100	19		*	066	080	21
	066	110	15		*	066	080	22
	066	080	12		*	066	080	25
	066	080	37		*	066	080	24
	066	080	39			066	080	46
	066	080	38			066	080	42
*	066	080	16			066	080	41
	066	080	47			066	080	44
	066	080	15		*	066	080	40
	066	080	48			066	080	4
*	066	020	17					

Community Services Department

Planning and Building

**SPECIAL USE PERMIT**

(see page 7)

**SPECIAL USE PERMIT FOR GRADING**

(see page 9)

**SPECIAL USE PERMIT FOR STABLES**

(see page 12)

**APPLICATION**



Community Services Department  
Planning and Building  
1001 E. Ninth St., Bldg. A  
Reno, NV 89512-2845

Telephone: 775.328.6100

## Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

<b>Project Information</b>		Staff Assigned Case No.: _____	
Project Name: <b>Commnet Wireless - Fox Mountain, NV</b>			
Project Description: Commnet Wireless proposes the construction of a new unmanned wireless communication facility serving the Fox Mountain			
Project Address: Washoe County E911 Assigned address: 10140 A Fox Mountain Road, Gerlach, NV 89412			
Project Area (acres or square feet): 1,459 sf for tower and ground space and approx 500 sf for propane tanks			
Project Location (with point of reference to major cross streets <b>AND</b> area locator): From intersection of County Road 447, turn right onto Old Camp Canyon Road, then turn left to stay on Old Camp Road/Fox Mountain Road			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
066-080-33	23,299.211 Acre		
Indicate any previous Washoe County approvals associated with this application: Case No.(s). NA			
<b>Applicant Information (attach additional sheets if necessary)</b>			
<b>Property Owner:</b>		<b>Professional Consultant:</b>	
Name: United States of America - BLM		Name: CIS Communications, LLC	
Address: 2550 Riverside Drive		Address: 749 Old Ballas Road	
Susanville, CA	Zip: 96130	Creve Coeur, MO	Zip: 63141
Phone: (530) 252-5321	Fax:	Phone: (314) 569-2275	Fax:
Email: dryan@blm.gov		Email: julie@ciscomm.com	
Cell: (530) 252-5321	Other:	Cell: (314) 640-5182	Other:
Contact Person: Daniel Ryan - Realty Specialist		Contact Person: Julie Krekeler - General Manager	
<b>Applicant/Developer:</b>		<b>Other Persons to be Contacted:</b>	
Name: Commnet of Nevada, LLC (dba Commnet Wireless)		Name:	
Address: 1562 North Park Street		Address:	
Castle Rock, CO	Zip: 80109		Zip:
Phone: (720) 733-7854	Fax:	Phone:	Fax:
Email: cphillips@atni.com		Email:	
Cell: (720) 733-7854	Other:	Cell:	Other:
Contact Person: Cindy Phillips - Director of Real Estate/Regulatory		Contact Person:	
<b>For Office Use Only</b>			
Date Received:	Initial:	Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

## Special Use Permit Application Supplemental Information

(All required information may be separately attached)

1. What is the project being requested?

Commnet Wireless' proposed installation of a new unmanned telecommunications facility consisting of a 150' monopole with antennas/dishes, equipment shelter, solar arrays and LP tanks.

2. Provide a site plan with all existing and proposed structures (e.g. new structures, roadway improvements, utilities, sanitation, water supply, drainage, parking, signs, etc.)

Refer to construction drawings attached.

3. What is the intended phasing schedule for the construction and completion of the project?

One phase - Construction would take between one and two months.

4. What physical characteristics of your location and/or premises are especially suited to deal with the impacts and the intensity of your proposed use?

Location is needed from an RF standpoint. Location is ideal from an impact standpoint as there is minimal to no visibility from any existing populated areas.

5. What are the anticipated beneficial aspects or affects your project will have on adjacent properties and the community?

Improved wireless coverage as well as wireless broadband coverage for the First Net emergency responders.

6. What are the anticipated negative impacts or affect your project will have on adjacent properties? How will you mitigate these impacts?

There are no negative impacts on adjacent properties or communities. Project is located in remote rural area.

7. Provide specific information on landscaping, parking, type of signs and lighting, and all other code requirements pertinent to the type of use being purposed. Show and indicate these requirements on submitted drawings with the application.

No landscaping, parking, or lighting proposed. All required signage to be attached to shelter door. Please refer to Project Support Statement for explanations.

8. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that apply to the area subject to the special use permit request? (If so, please attach a copy.)

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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9. Utilities:

a. Sewer Service	NA
b. Electrical Service	NA
c. Telephone Service	NA
d. LPG or Natural Gas Service	NA
e. Solid Waste Disposal Service	NA
f. Cable Television Service	NA
g. Water Service	NA

For most uses, Washoe County Code, Chapter 110, Article 422, Water and Sewer Resource Requirements, requires the dedication of water rights to Washoe County. Please indicate the type and quantity of water rights you have available should dedication be required.

h. Permit #		acre-feet per year	
i. Certificate #		acre-feet per year	
j. Surface Claim #		acre-feet per year	
k. Other #		acre-feet per year	

Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

**Not applicable.**

10. Community Services (provided and nearest facility):

a. Fire Station	Washoe Rural - Station T40
b. Health Care Facility	Nevada Health Center, Inc., Gerlach NV
c. Elementary School	Gerlach K-12
d. Middle School	Gerlach K-12
e. High School	Gerlach K-12
f. Parks	Gerlach Community Park
g. Library	Gerlach Community Library
h. Citifare Bus Stop	NA



## **COMMNET WIRELESS PROJECT SUPPORT STATEMENT**

Project Name: Fox Mountain

Project Address: 10140 A Fox Mountain Road Gerlach, NV 89412

Project APN: 066-080-33

### **Introduction**

Commnet Wireless (Commnet) focuses on connecting rural America with affordable, carrier grade communications networks to improve safety and quality of life, and to promote economic development. The areas of focus are predominately small communities, state and national parks, seasonal areas, and the roadways that connect these areas to mainstream America. Commnet is seeking to improve cellular coverage within the Fox Mountain range as well as Highway 447 northwest of Gerlach for approximately 35 miles. In addition, this site is needed to cover Hwy 34, north of the site, for approximately 9 miles, as well as small roads reservoirs near the site. Furthermore, this site will be utilized for the FirstNet nationwide emergency broadband network dedicated to first responders.

### **Location**

Commnet proposes the construction of a new wireless communications facility that consists of a 150' monopole located at Fox Mountain, Nevada. The property is zoned General Rural (GR) and is owned by the United States of America and is managed by the Bureau of Land Management. The adjacent parcels are also owned by the United States of America. The nearest residentially zoned property of medium density suburban residential development, is located mainly on the outskirts of the town of Gerlach, Nevada, which is approximately 28 miles away from the proposed facility.

### **Project Description/Design**

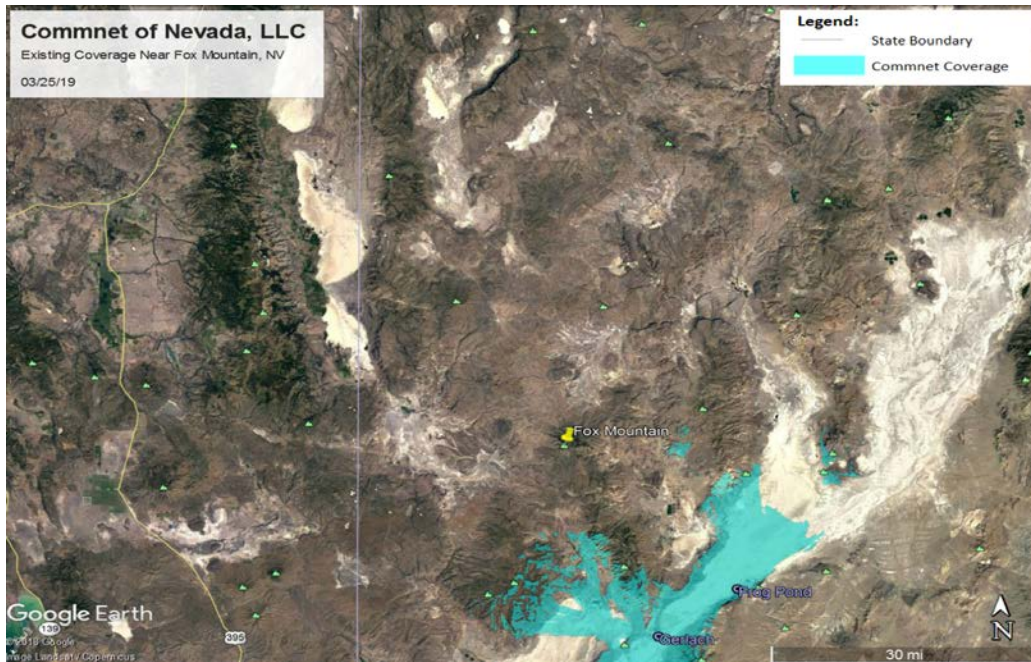
Commnet will be adding (12) antennas, (9) RRU's, (2) surge suppressors, (2) Fiber lines, (3) DC power lines, (4) microwave dishes along with (8) ½" coax lines on the tower. An outdoor shelter with an interior generator room and solar arrays will be situated within an irregular shaped lease area of consisting of 1,459 square feet and ground space for (3) propane tanks consisting of 500 square feet surrounded with protective bollards. The propane tanks will be placed to the east of the facility and will meet all regulatory safety guidelines. Gas lines will be installed underground from the tank(s) point of connection to the point of termination at the shelter. This will be an unmanned facility providing cellular and First Net responders coverage 24 hours a day, 7 days a week.

### **Public and Safety Benefits of Improved Wireless Service**

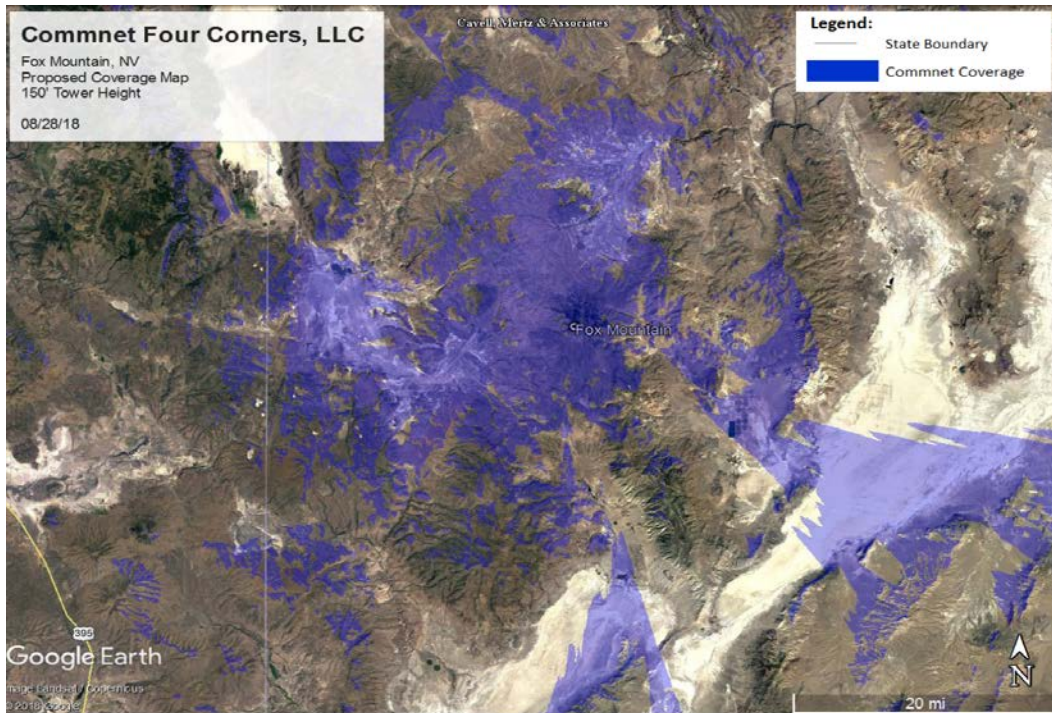
Today, more people are relying on wireless phones as their main form of communication; whether it be in their homes, businesses, and/or vehicles. This site will allow Commnet's customers to maintain cellular coverage as shown in the coverage map referenced below.

Additionally, this site is also being utilized for the FirstNet nationwide emergency broadband network dedicated to first responders (ie Fire, Police, EMT) for the ability to communicate on a single network for any public safety needs in this area.

### Existing Coverage



### Coverage with Proposed Tower





### **Aesthetic Impacts**

Commnet proposes to install a 150' monopole which is similar to the existing structures at Fox Mountain. The proposed height was required due to the surrounding topography and meets the County's requirements for facilities in this zoning code. The facility will not have any negative impacts on this project or adjacent properties in the community as there is currently minimal visibility of the existing facilities from public roadways. The facility will be placed between two existing structures, and will be in line with the layout of the other structures.

### **Alternative Site Analysis**

When searching for any new communication site location, Commnet's first goal is to try and secure space on an existing tower or tall structure at the height required. With this philosophy in mind, Commnet first evaluated the collocation opportunities in the search area that offered the height, ground space, access and utilities and other needs required for their system. It was determined there were three (3) individual tower sites at Fox Mountain. The possibility of using any of the existing towers was ruled out due to insufficient height, insufficient structural capacity, and an unresponsive/unwilling tower owner.



In order to meet the required coverage objective, Commnet concluded that the construction of a new facility would be required. Commnet and the BLM worked together to layout an approved location for the proposed facility.

Below is a detailed explanation of why each existing facility at Fox Mountain would not be a viable collocation candidate.

1. Washoe County Tower at Fox Mountain (Option #1) – Washoe County has a tower located on the north side of the proposed site that Commnet Wireless pursued as a potential collocation candidate; however, Washoe County was not allowing collocation for reasons of their land lease with BLM does not allow a non-governmental entity in their facility, lack of enough power to support a collocator as well as Washoe County had only enough tower structural capacity to accommodate their current equipment as well as their projected future equipment.
2. Los Angeles Department of Water and Power at Fox Mountain (Option #2) – Commnet pursued this tower as a potential collocation candidate. Commnet Wireless left multiple detailed messages with the LADWP’s realty department without receiving any responses.
3. Bureau of Land Management at Fox Mountain (Option #3) – The BLM has a small repeater tower on the north side of site that was neither tall enough nor structurally viable for collocation.

### **Statement of Commitment to Allow Collocation**

In addition to Commnet’s antenna loadings as proposed, this tower is also structurally designed to accommodate additional communication collocators.

### **Lighting and Signage**

Unless required by the Federal Aviation Administration (FAA), no lighting is proposed at this facility. All required FCC and other regulatory notification signage will be attached to the shelter door.

### **Access/Utilities/Parking**

Access to the facility is by way of Old Camp Canyon Road /Fox Mountain Road which is located off of County Road 447, approximately 31 miles northwest of Gerlach. No road improvements are planned as Commnet will utilize the existing gravel road. The facility will be powered by solar arrays/batteries along with a generator and propane tanks as back-up power supply. Parking is not proposed as this is an unmanned facility that will be visited by a cell tech once or twice a month. There is sufficient parking at the facility location.

**Maintenance and equipment back-up power**

The proposed wireless communications facility is located in a remote rural location. Because First Net responder emergency equipment will be located at this facility, it is imperative that the facility is operable in the event of a power outage or a natural disaster. In the event of an outage, the battery power will operate the system. If the power outage is for an extended period, and the batteries are no longer effective, the generator will automatically power the site. This multi-layer back-up system is important for communications sites to ensure continued operation. A cell technician will visit the site approximately once or twice a month to perform regular equipment maintenance.

**Fencing**

Commnet is not proposing fencing at this facility as currently, all other existing facilities do not have fencing. In lieu of fencing, Commnet’s tower will be designed in accordance to OSHA safety regulations, which incorporate anti-climbing security measures.

**Landscaping Variance**

Commnet is not proposing landscaping at this facility and is seeking a variance to obtain relief from the landscaping requirements. The subject property is located in a remote rural location, has restricted access to water resources, and will have limited monthly technician visits. The site is located approximately 9 miles from the nearest public roadway and landscaping would not be visible to the general public. There is a natural landscape of trees at the mountain top that surrounds the existing facilities that acts as a buffer to public visibility. Commnet is requesting the Board of Adjustments to specifically waive landscaping requirements for the above stated reasons.

**Grading**

Not applicable. Grading is not anticipated for this project.

**Significant Hydrological Resources**

The subject site is located in the High Desert planning area. Per section Section 110.418.05 (e), the provisions of this article do not apply for development in the High Desert planning area.



Washoe County Treasurer  
 Tammi Davis

Account Detail

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CollectionCart		
Collection Cart	Items	Total
Collection Cart	0	\$0.00

[Checkout](#)

[View](#)

**Pay Online**

No payment due for this account.

**Washoe County Parcel Information**

Parcel ID	Status	Last Update
06608033	Active	3/20/2019 2:06:50 AM

**Current Owner:**  
 UNITED STATES OF AMERICA  
 NONE  
 RENO, NV 00000

**SITUS:**  
 10130 OLD CAMP RD  
 WASHOE COUNTY NV

**Taxing District**  
 9000

**Geo CD:**

Legal Description

Township 36 Section Lot Block Range 22 SubdivisionName \_UNSPECIFIED

**Tax Bill (Click on desired tax year for due dates and further details)**

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
<a href="#">2018</a>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<a href="#">2017</a>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<a href="#">2016</a>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<a href="#">2015</a>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
<a href="#">2014</a>	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total					\$0.00

**Disclaimer**

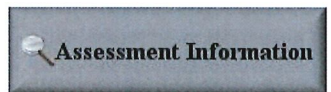
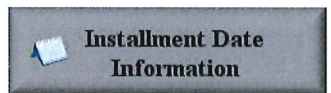
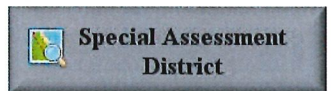
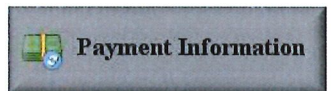
- ALERTS:** If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

**Pay By Check**

Please make checks payable to:  
**WASHOE COUNTY TREASURER**

**Mailing Address:**  
 P.O. Box 30039  
 Reno, NV 89520-3039

**Overnight Address:**  
 1001 E. Ninth St., Ste D140  
 Reno, NV 89512-2845





This instrument was prepared by  
and after recording return to:  
Commnet of Nevada, LLC  
1562 Park Street  
Castle Rock, CO 80109  
Attn: Cindy Phillips  
Ref: Fox Mountain, NV

**MEMORANDUM OF EASEMENT AGREEMENT**

THIS MEMORANDUM OF EASEMENT AGREEMENT ("Memorandum") is made this 29  
day of August, 2018 ("Effective Date"), by and between Estill Ranches, LLC, with  
an address of 1875 Plumas Street, Suite 3, Reno, NV 89509 ("Grantor") and Commnet of Nevada, LLC,  
with an address of 1562 Park St., Castle Rock, CO 80109 ("Grantee").

Grantor and Grantee have entered into an Easement Agreement (the "Easement Agreement") which sets forth, among other things, the terms of an easement granted by Grantor to Grantee on, over, to, through, and across an existing road which is located on property owned and controlled by Grantor (the "Property") which Property is described on Exhibit A attached hereto and incorporated herein by this reference.

The term of the Easement, unless sooner terminated under provisions of the Easement Agreement, shall be perpetual, with the provisions regarding the Easement set forth in detail in the Easement Agreement.

This Memorandum of Easement is not intended to amend, modify, supplement, or supersede any of the provisions of the Easement Agreement and, to the extent there may be any conflict or inconsistency between the Easement Agreement. The provisions of and covenants contained in this Memorandum shall run with the land and shall bind and inure to the benefit of the Grantor and Grantee and their respective successors and assigns.

IN WITNESS WHEREOF, the parties have duly executed this Memorandum.

GRANTOR:  
Estill Ranches, LLC,  
a Nevada limited liability company

GRANTEE:  
Commnet of Nevada, LLC,  
a Delaware limited liability company

By: [Signature]

By: [Signature]

Print Name: John Estill

Print Name: Mark Hansen

Title: Estill Ranches LLC  
manager

Title: V. P. Network Support

**[ACKNOWLEDGEMENTS ARE ON THE FOLLOWING PAGE]**

GRANTOR ACKNOWLEDGMENT

STATE OF Nevada

COUNTY OF Washoe

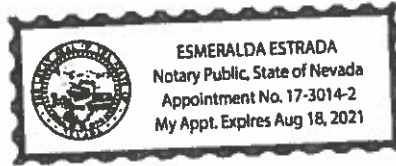
The foregoing instrument was acknowledged before me this 29<sup>th</sup> day of August, 20 18,

by John Sstill as the Manager  
of Estill Ranches, LLC.

WITNESS my hand and official seal.

[Signature]  
Notary Public

My Commission Expires: Aug 18, 2021



GRANTEE ACKNOWLEDGMENT

STATE OF Colorado

COUNTY OF Douglas

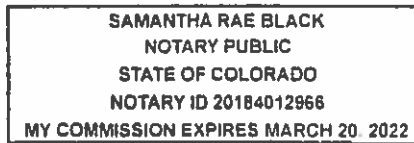
The foregoing instrument was acknowledged before me this 16<sup>th</sup> day of October, 20 18,

by [Signature] as the V.P. N/SS  
of Commnet of Nevada, LLC.

WITNESS my hand and official seal.

[Signature]  
Notary Public

My Commission Expires: 3/20/2022



**EXHIBIT A**

**Property Description**

**LEGAL DESCRIPTION**

The land referred to herein is situated in the State of Nevada, County of Washoe, described as follows:

TOWNSHIP 36 NORTH, RANGE 21 EAST, M.D.B.M.

Section 19: South Half of the Northeast Quarter; Southeast Quarter of the Northwest Quarter

Section 20: North Half of the South Half

Section 21: Southwest Quarter of the Northwest Quarter

APN: 066-060-16, 17 and 18



# Commnet of Nevada, LLC

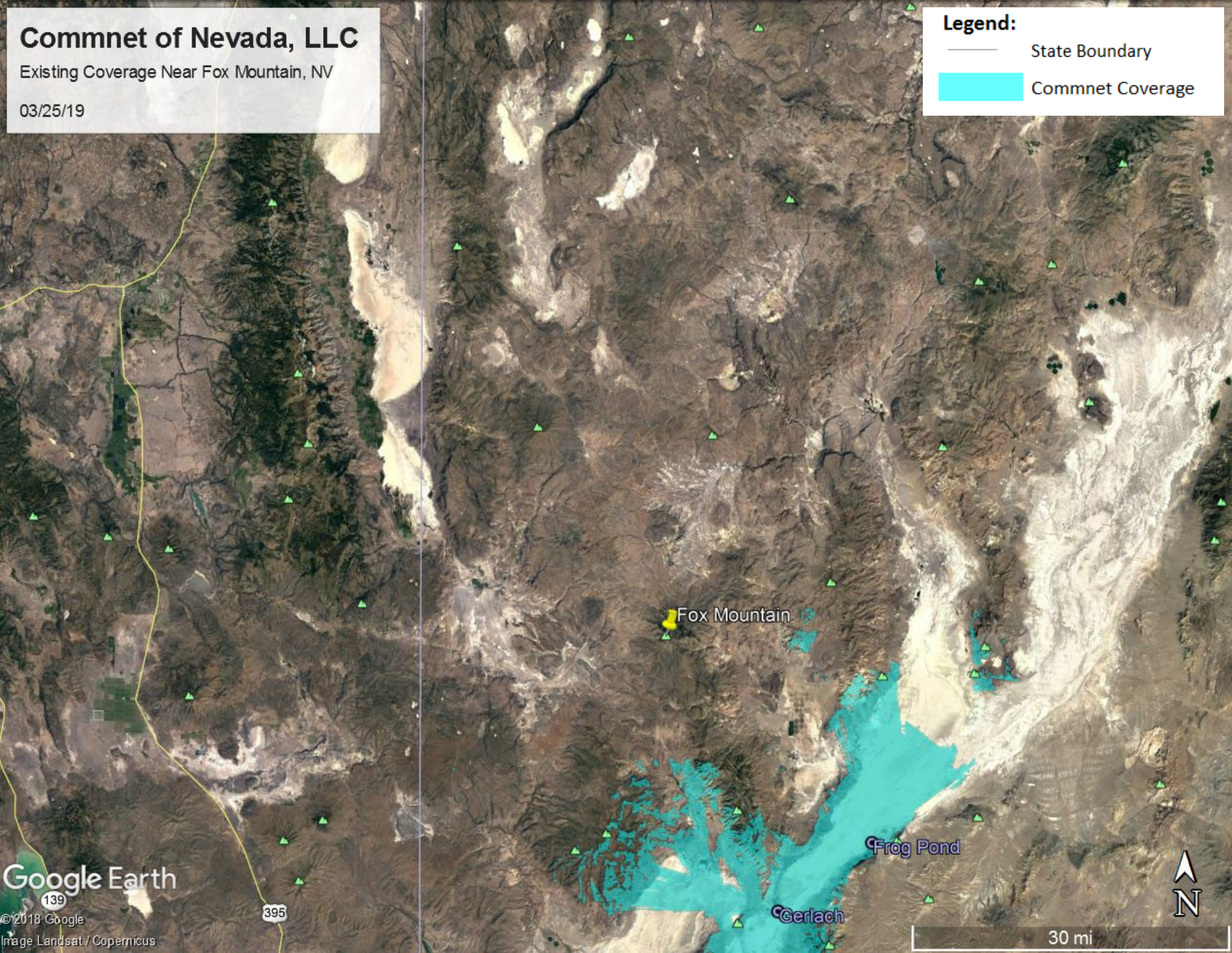
Existing Coverage Near Fox Mountain, NV

03/25/19

## Legend:

— State Boundary

■ Commnet Coverage



Fox Mountain

Frog Pond

Gerlach

Google Earth

© 2018 Google  
Image Landsat / Copernicus

395

139

30 mi

N



# Commnet Four Corners, LLC

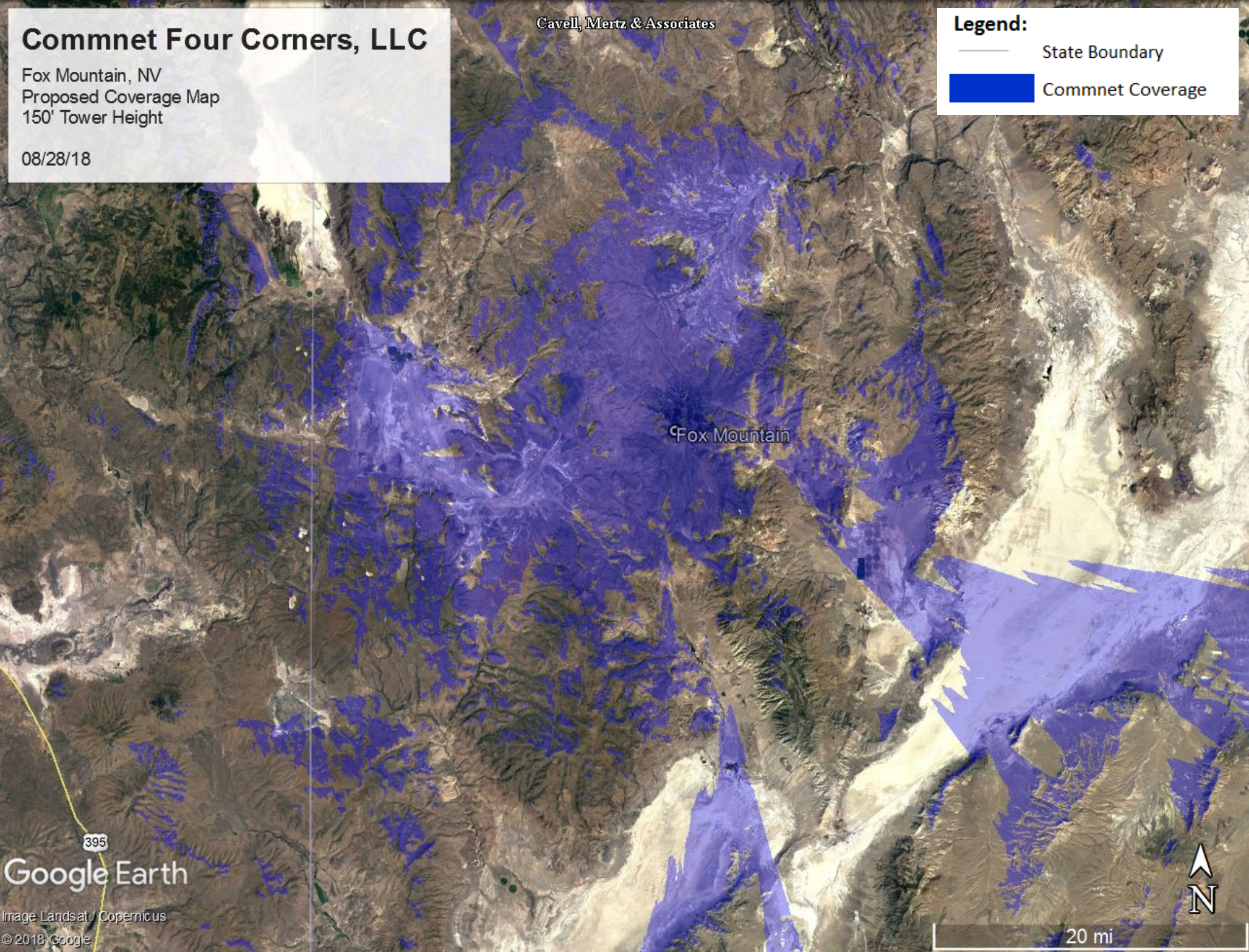
Fox Mountain, NV  
Proposed Coverage Map  
150' Tower Height

08/28/18

Cavell, Mertz & Associates

**Legend:**

- State Boundary
- Commnet Coverage



Fox Mountain

395

Google Earth

Image Landsat / Copernicus

© 2018 Google

20 mi





**PROJECT INFORMATION**

RAW LAND BUILD

FOX MOUNTAIN, NV

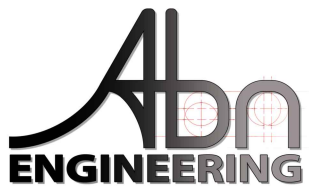
10140 A FOX MOUNTAIN RD  
GERLACH, NV 89412

**PROJECT OWNER**

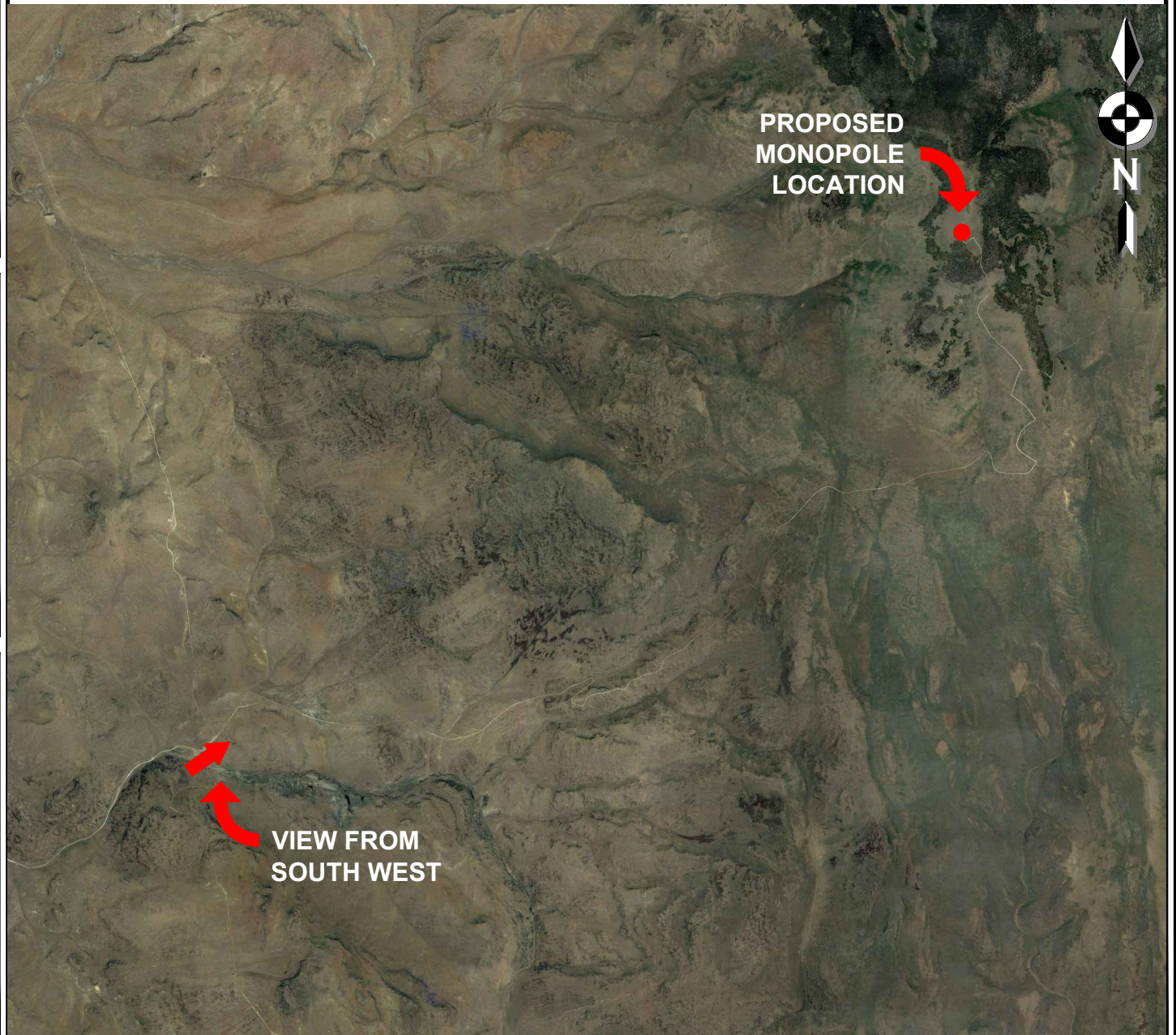


**Commnet**  
Connecting Rural America

**ENGINEER**



**LOCATION MAP**



**PROJECT INFORMATION**

RAW LAND BUILD

FOX MOUNTAIN, NV

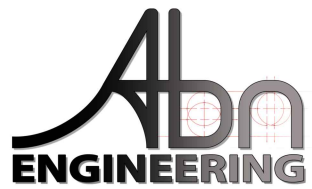
10140 A FOX MOUNTAIN RD  
GERLACH, NV 89412

**PROJECT OWNER**



**Commnet**  
Connecting Rural America

**ENGINEER**



Looking North East Toward  
Proposed Monopole (Before)





**PROJECT INFORMATION**

RAW LAND BUILD

FOX MOUNTAIN, NV

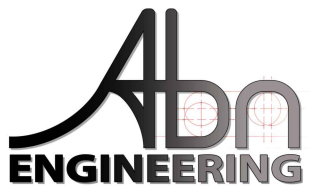
10140 A FOX MOUNTAIN RD  
GERLACH, NV 89412

**PROJECT OWNER**



**Commnet**  
Connecting Rural America

**ENGINEER**



Looking North East Toward  
Proposed Monopole (After)



**Fox Mountain, NV Photos**

\*Note that all photos may have not been attained due to exceptional conditions prohibiting travel to the site

**Fox MT Tower Center Looking North**



**Fox MT South Looking North**





**Fox Mt East Looking West**



**Fox MT Tower Center Looking South**





**LEGAL DESCRIPTIONS**

BEING A PORTION OF SECTIONS 6 AND 7, TOWNSHIP 36 NORTH, RANGE 22 EAST, SECTIONS 12 THRU 16, AND 19 THRU 22 TOWNSHIP 36 NORTH, RANGE 21 EAST, AND SECTIONS 23, 24, 26 AND 35, TOWNSHIP 36 NORTH, RANGE 20 EAST, M.D.B.&M., WASHOE COUNTY, NEVADA, DESCRIBED AS FOLLOWS:

\*PARCEL A\* (LEASE AREA)

COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 6, TOWNSHIP 36 NORTH, RANGE 22 EAST, M.D.B.&M.;

THENCE NORTH 03°40'43" EAST, 1554.74 FEET TO THE POINT OF BEGINNING;

THENCE NORTH 79°39'47" EAST, 8.02 FEET;

THENCE NORTH 12°23'22" EAST, 81.05 FEET;

THENCE SOUTH 60°10'55" EAST, 30.39 FEET;

THENCE SOUTH 28°42'26" WEST, 74.67 FEET TO THE POINT OF BEGINNING.

CONTAINING 1,459 SQ.FT. MORE OR LESS.

\*PARCEL B\* (ACCESS EASEMENT)

BEING A STRIP OF LAND 15.00 FEET IN WIDTH, LYING 7.50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

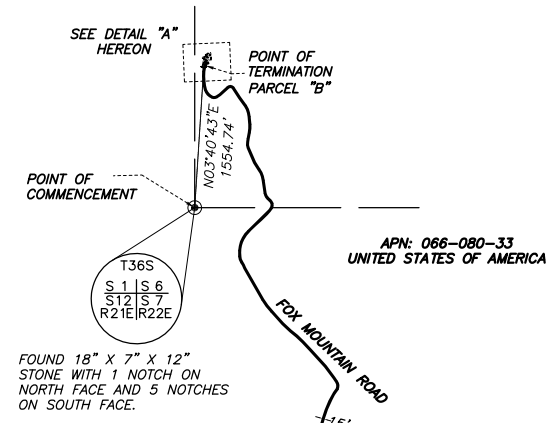
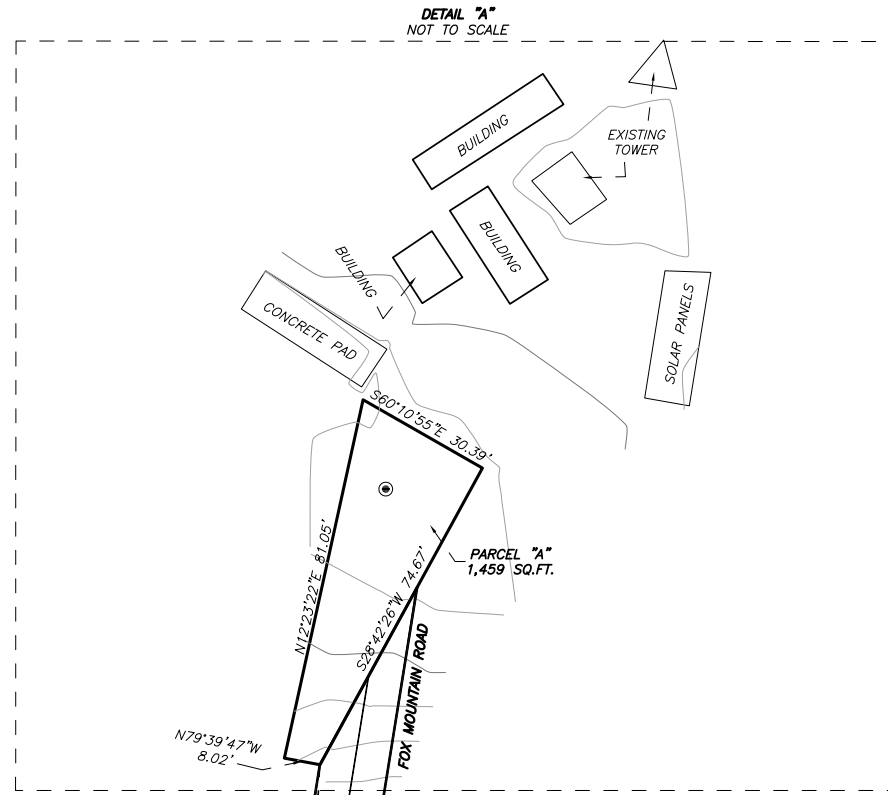
BEGINNING AT THE POINT OF INTERSECTION OF THE CENTERLINE OF FOX MOUNTAIN ROAD AND THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NEVADA STATE ROUTE 447;

THENCE NORTHEASTERLY ALONG THE CENTERLINE OF SAID FOX MOUNTAIN ROAD FOR APPROXIMATELY 11.73 MILES TO THE EAST LINE OF \*PARCEL A\* BEING THE POINT OF TERMINATION.

THE SIDELINES OF THIS STRIP OF LAND ARE TO BE LENGTHENED OR SHORTENED TO INTERSECT AT ALL ANGLE POINTS, AND TO BEGIN ON THE NORTHEASTERLY RIGHT-OF-WAY LINE OF NEVADA STATE ROUTE 447 AND TERMINATE ON THE EAST LINE OF \*PARCEL A\*.

CONTAINING 21.33 ACRES MORE OR LESS.

END OF DESCRIPTION.



**LEGEND**

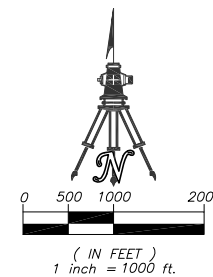
APN	ASSESSORS PARCEL NUMBER
—	PROPOSED EASEMENT LINE
- - -	EXISTING EASEMENT LINE
—	SECTION LINE
●	FOUND MONUMENTATION AS DESCRIBED

**PROPOSED TOWER COORDINATES**

NAD 83 LATITUDE =	41°01'31.25374" N
LONGITUDE =	119°33'30.09025" W
SITE GROUND ELEVATION =	8181.23
STATE PLANE COORDINATES NAD 83, NEVADA WEST ZONE	
METERS (GROUND) =	NORTHING = 4696902.456
	EASTING = 718011.703
FEET (GROUND) =	NORTHING = 15409754.14
	EASTING = 2355676.73

**BASIS OF BEARINGS**

GRID NORTH BASED UPON THE NORTH AMERICAN DATUM OF 1983/94 (2011), NEVADA WEST ZONE (2703) COORDINATES PROVIDED BY OPUS SOLUTION; THE DISTANCES ARE BASED ON A GROUND SCALE FACTOR OF 1.0002506172 REFERENCED FROM A POINT NEAR THE PROJECT WITH A LATITUDE OF 41°35'30.19834" N AND A LONGITUDE OF 119°52'47.01529" W AND A NORTH AMERICAN VERTICAL DATUM OF 1988 HEIGHT OF 6167.50 FEET USING GEOID12A



**OWNERSHIP INFORMATION**

OWNER = UNITED STATES OF AMERICA  
 CONTACT = N/A  
 ASSESSOR'S PARCEL NUMBER = 066-080-33  
 VESTING DOCUMENT = N/A

**TITLE REPORT DATA AND EXCEPTIONS**

NO TITLE REPORT PROVIDED.

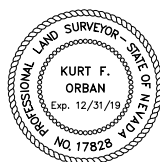
**PARENT PARCEL LEGAL DESCRIPTION**

LYING WITHIN SECTIONS 6 AND 7, TOWNSHIP 36 NORTH, RANGE 22 EAST, SECTIONS 12 THRU 16, AND 19 THRU 22 TOWNSHIP 36 NORTH, RANGE 21 EAST, AND SECTIONS 23, 24, 26 AND 35, TOWNSHIP 36 NORTH, RANGE 20 EAST, M.D.B.&M., WASHOE COUNTY, NEVADA

MATCH LINE SEE LOWER RIGHT

MATCH LINE SEE LOWER LEFT

KURT F. ORBAN  
 PROFESSIONAL LAND SURVEYOR  
 NEVADA LICENSE NO. 17828



WALLACE MORRIS ORBAN  
 SURVEYING, LLC.  
 LAND SURVEY CONSULTING  
 1250 LAMOLLE HIGHWAY, UNIT 628  
 ELKO, NEVADA 89801  
 PH: 775.753.3610 FX: 775-753-7078



DESCRIPTION:	
REV:	
DATE:	

DATE:	05/23/18
DRAFTER:	KFO
FIELD:	BH/CH
CHECKED:	KFO
JOB NO.	ECOM-18020
SHEET	1
OF 1 SHEETS	

COMMNET WIRELESS, LLC  
 VYA SITE, WASHOE COUNTY, NEVADA  
 066-080-33  
 TOPOGRAPHY MAP

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**GENERAL NOTES**

THE ARCHITECTS/ENGINEERS HAVE MADE EVERY EFFORT AS SET FORTH IN THE CONSTRUCTION DRAWINGS, CONTRACT DOCUMENTS AND THE COMPLETE SCOPE OF WORK. CONTRACTORS BIDDING THE JOB ARE NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS. THE BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE ARCHITECT/ENGINEER OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK UNLESS OTHERWISE DIRECTED.

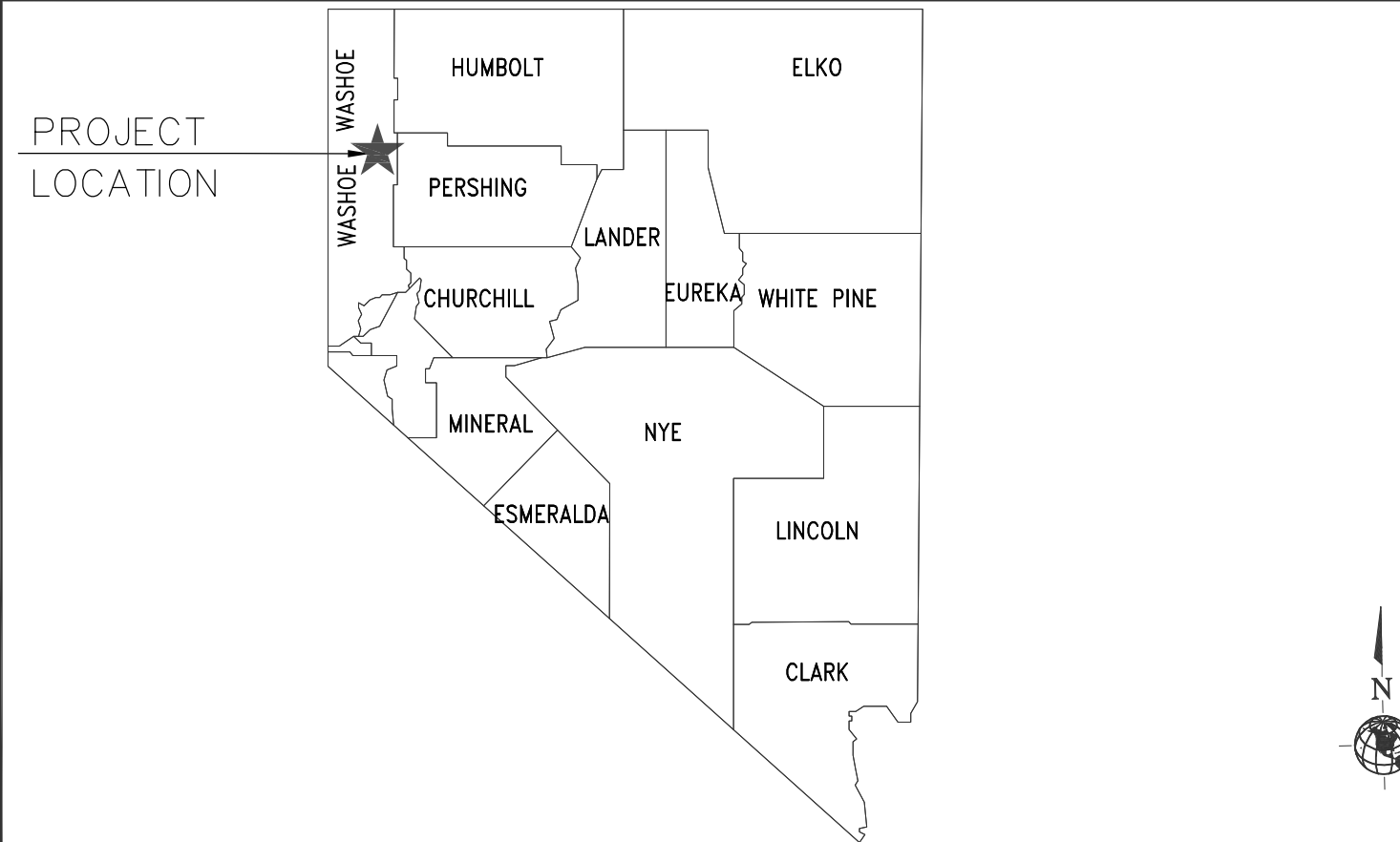
**CODE COMPLIANCE**

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

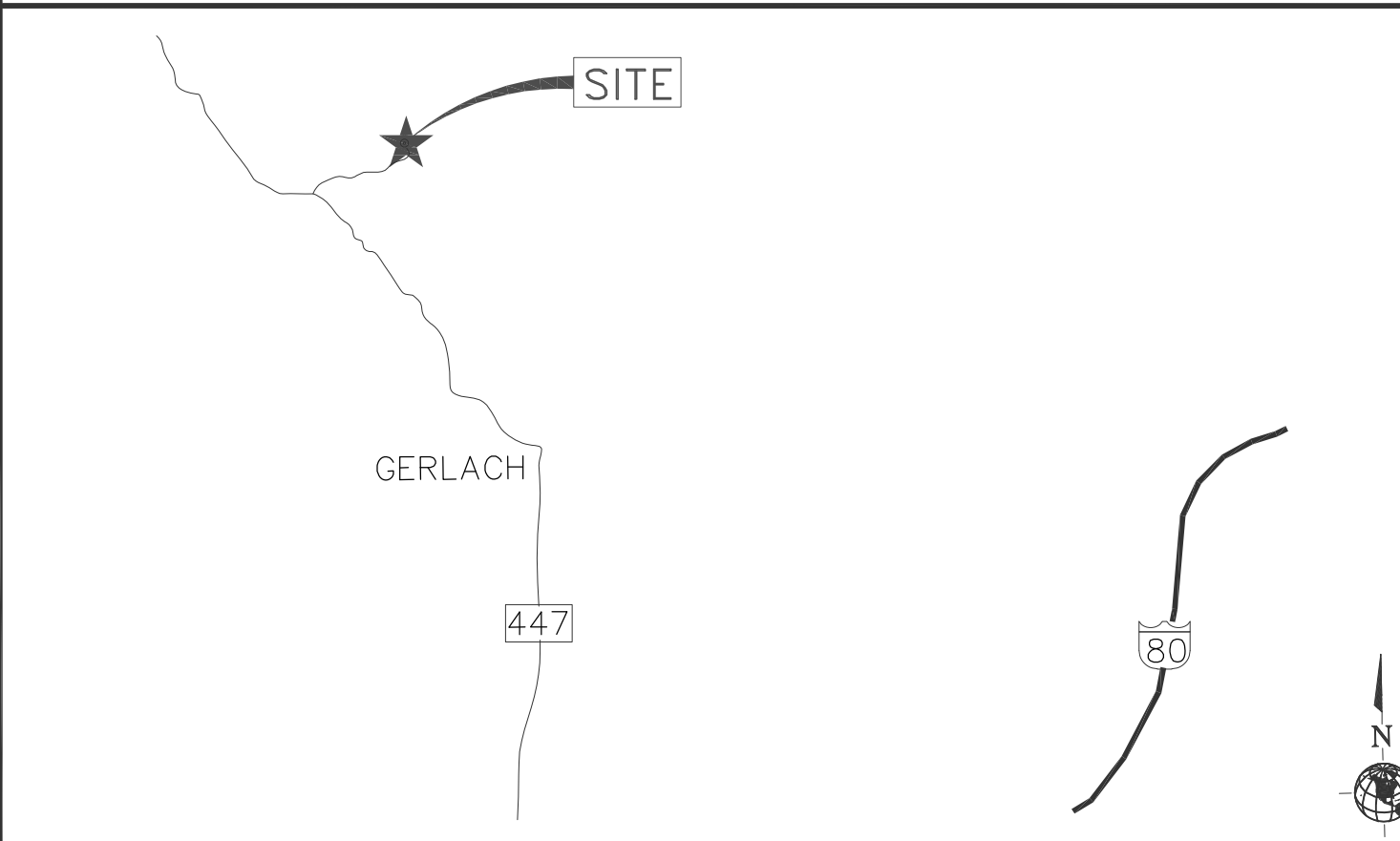
- 2012 INTERNATIONAL BUILDING CODE (IBC)
- 2012 INTERNATIONAL MECHANICAL CODE (IMC)
- 2012 INTERNATIONAL PLUMBING CODE (IPC)
- 2011 NATIONAL ELECTRICAL CODE (NEC)
- TIA-222-G STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNA
- LOCAL BUILDING CODE(S)
- CITY AND/OR COUNTY AMENDED

**JURISDICTION: WASHOE COUNTY**

**STATE MAP**



**VICINITY MAP**

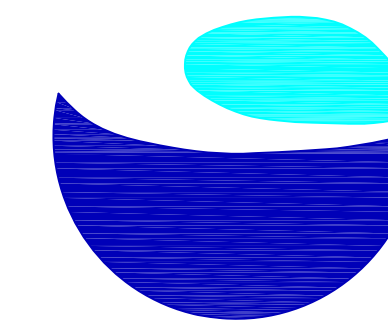


**DRIVING DIRECTIONS**

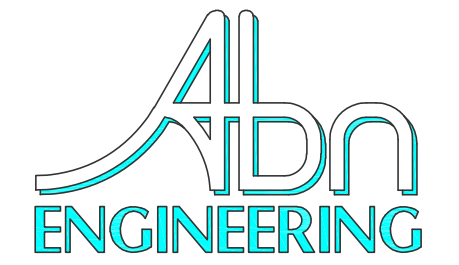
FROM GERLACH, HEAD NORTHWEST ON COUNTY RD. 447. (31.4 MILES). TURN RIGHT ONTO OLD CAMP CANYON RD. THEN TURN LEFT TO STAY ON OLD CAMP CANYON RD. TO DESTINATION.

SITE NAME:  
**FOX MOUNTAIN, NV**

PROJECT:  
**RAW LAND BUILD**

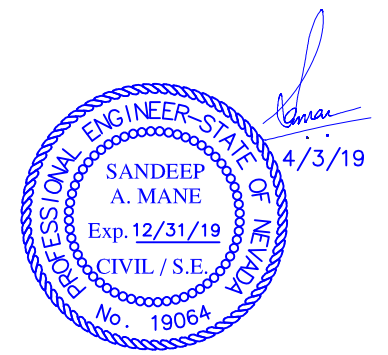


**Commnet**  
Connecting Rural America



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



**PROJECT TEAM**

**PROJECT OWNER:** COMMNET WIRELESS, LLC  
1562 NORTH PARK STREET  
CASTLE ROCK, COLORADO 80109

**PROJECT MANAGER:** 1562 NORTH PARK STREET  
CASTLE ROCK, COLORADO 80109  
CONTACT: POLLEY WIESE  
PHONE: (720) 733-5399  
EMAIL: pwiese@atni.com

**CONSTRUCTION MANAGER:** 1562 N. PARK STREET  
CASTLE ROCK, CO 80104  
CONTACT: DAVE TILLER, CM  
PHONE: (720) 357-5384  
EMAIL: DTiller@atni.com

**LEASE ACQUISITION:** 1562 N. PARK STREET  
CASTLE ROCK, CO 80104  
CONTACT: ALEXIS LEIDIGH  
PHONE: (501) 448-1545  
EMAIL: ALeidigh@atni.com

**CIVIL ENGINEER:** Abn ENGINEERING, LLC  
1337 E. DESERT FLOWER LANE  
PHOENIX, AZ 85048  
CONTACT: SANDEEP A. MANE, P.E.  
PHONE: (480) 213-8524  
EMAIL: smane@abneng.com

**ELECTRICAL ENGINEERING:** EE LLC  
12005 ANTELOPE TRAIL  
PARKER, CO 80138  
PHONE: (303) 748-1189

**PROJECT INFORMATION**

**SITE NAME:** FOX MOUNTAIN, NV

**SITE ADDRESS:** 10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

**SITE COORDINATES:** LATITUDE: 41°01'31.25374"N (NAD 83)  
LONGITUDE: 119°33'30.09025"W (NAD 83)  
ELEVATION: ±8,181.23' (AMSL) (NAVD 88)

**APPLICANT:** COMMNET WIRELESS, LLC  
1562 NORTH PARK STREET  
CASTLE ROCK, COLORADO 80109

**CONTACT:** DAVE TILLER  
(720) 357-5384

**PROPERTY OWNER:** BLM  
UNITED STATES OF AMERICA

**APN NUMBER:** 066-080-33

**CURRENT ZONING:** TBD

**CONSTRUCTION TYPE:** VB

**NEW USE:** U

**OCCUPANCY:** VACANT LAND

**CURRENT USE:** UNMANNED TELECOMMUNICATIONS FACILITY

**LEASE AREA:** 1459 SF

**SHEET INDEX**

TITLE:	DESCRIPTION:
T-1	TITLE SHEET & PROJECT INFORMATION
GN-1	GENERAL NOTES
SN-1	SITE SIGNATE DETAILS
A-1	OVERALL SITE PLAN
A-2.0	ENLARGED SITE PLAN
A-2.1	EQUIPMENT LAYOUT
A-3	SITE ELEVATION & DETAILS
A-4.0	COMMNET'S ENGINEERING DATA SHEET
A-4.1	COMMNET'S PLUMBING DIAGRAM
A-4.2	FIRSTNET'S ENGINEERING DATA SHEET
A-4.3	FIRSTNET'S PLUMBING DIAGRAM
A-5	ZTE CABINET & DETAILS
A-6.0	CONSTRUCTION DETAILS
A-6.1	CONSTRUCTION DETAILS
A-7	CONSTRUCTION DETAILS
A-8	CONSTRUCTION DETAILS
E-1	OVERALL ELECTRICAL PLAN & ELECTRICAL NOTES
E-2	ONE-LINE DIAGRAM & DETAILS
G-1	GROUNDING PLAN
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
S-1	STRUCTURAL NOTES
S-2	MASONRY DETAILS
S-3	BUILDING FOUNDATION & ROOF FRAMING PLAN
S-4	ROOF PLAN, BUILDING ELEVATIONS & SECTION
S-5	CONSTRUCTION DETAILS
S-6	CONSTRUCTION DETAILS

DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO COMMNET WIRELESS IS STRICTLY PROHIBITED.

SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

**PROJECT DESCRIPTION**

INSTALLATION OF A NEW MONOPOLE WITH ANTENNAS, IDENTIFIED IN THE SDP, EQUIPMENT SHELTER, LP TANKS AND SOLAR ARRAYS

**UTILITY TABLE**

UTILITY:	PROVIDER:
WATER	N/A
SEWER	N/A
ELECTRICAL	N/A - SOLAR SITE
TELEPHONE/FIBER	TBD
POLICE	WASHOE COUNTY
FIRE	WASHOE COUNTY

**APPROVAL BOX**

DEPARTMENT:	SIGNATURE:	DATE:
PROJECT MANAGER		
CONSTRUCTION MANAGER		
RF MANAGER		
PROPERTY OWNER REPRESENTATIVE		



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**GENERAL NOTES – SCOPE OF WORK REVISION 9-19-16**

THE CONTRACTOR SHALL CONDUCT ALL ACTIVITIES WHETHER CONSTRUCTION RELATED OR AFTER-HOURS WITH A HIGH DEGREE OF ETHICS AND APPROPRIATE BEHAVIOR.

THE CONTRACTOR SHALL PROVIDE A COMPLETE INSTALLATION IN ACCORDANCE WITH THE CONSTRUCTION PLANS PROVIDED AND DIRECTION OF THE CONSTRUCTION/PROJECT MANAGERS.

THE GC WILL NOT START CONSTRUCTION UNTIL EACH OF THE FOLLOWING HAS BEEN COMPLETED: PRE-CONSTRUCTION MEETING HAS BEEN HELD; BUILDING PERMIT HAS BEEN SECURED, AND THE PROJECT ENGINEER HAS AUTHORIZED START OF CONSTRUCTION.

THE CONTRACTOR SHALL NOT BE EXPECTED TO POWER-UP, COMMISSION OR BRING ON-LINE ANY EQUIPMENT.

THE CONTRACTOR SHALL ENSURE SITE AREA IS CLEAN AND FREE OF CONSTRUCTION DEBRIS ON A DAILY BASIS.

THE CONTRACTOR MAY BE REQUIRED TO ASSIST WITH PERMIT APPLICATIONS AND PLAN SUBMITTALS.

THE CONTRACTOR SHALL CALL-IN AND COORDINATES ALL NECESSARY INSPECTIONS WITH THE PROPER CITY, COUNTY, STATE AUTHORITY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IDENTIFIED BY OSHA REGULATIONS. UPON REQUEST, THE CONTRACTOR SHALL PROVIDE DOCUMENTS SHOWING COMPLIANCE.

THE CONTRACTOR SHALL SUPPLY ALL TOOLS NECESSARY TO COMPLETE CONSTRUCTION INCLUDING INSTALLATION OF GROUNDING SYSTEM, IN ACCORDANCE WITH THE PLANS.

THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS THAT DEMONSTRATE COMPLETION OF CONSTRUCTION AND THAT NOTE ANY DEVIATIONS FROM THE PLANS.

**BID WALK**

A BID WALK WILL BE HELD ON-SITE TO DISCUSS ANY QUESTIONS OR POSSIBLE SUGGESTIONS THAT GC'S MAY HAVE IN REGARDS TO THIS INSTALLATION. BID WALK IS OPTIONAL BUT NO CHANGE ORDERS WILL BE ALLOWED UNLESS APPROVED CM. BID WALK IS DESIGNED TO CLEAR UP ANY CONCERNS OR QUESTIONS THAT GC'S MAY HAVE ABOUT THE INSTALLATION.

DATE:  
TIME:

GENERAL CONTRACTOR'S PROJECT MANAGER (CONTRACTOR PM) BEFORE THE COMMENCEMENT OF ANY WORK, THE GC WILL ASSIGN A CONTRACTOR PROJECT MANAGER (CONTRACTOR PM) WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS CONTRACTOR PM WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT, WHICH WILL BE SUBMITTED TO THE CWL CM PRIOR TO THE COMMENCEMENT OF ANY WORK. THIS CONTRACTOR PM WILL ALSO:

SCHEDULE AN ON-SITE MEETING PRIOR TO PROJECT START, WITH ALL MAJOR PARTIES PRESENT. APPROPRIATE PARTIES INCLUDE (BUT ARE NOT LIMITED TO) CWL CM, CWL LOCAL OPERATIONS POC (MANAGER, SUPERVISOR OR TECHNICIAN), LOCAL POWER COMPANY, DESIGNATED ELECTRICIAN, LOCAL TELEPHONE COMPANY, GC CREW CHIEF / FOREMAN.

THE CONTRACTOR PM WILL PROVIDE DAILY VERBAL UPDATES ON SITE WORK PROGRESS TO THE CWL CM.

**CIVIL**

THE CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND PIPES/CONDUITS USING AN INDEPENDENT UNDERGROUND LOCATOR SERVICE.

THE CONTRACTOR SHALL COORDINATE EXCAVATION WORK WITH CM/OWNER SO AS NOT TO INTERFERE WITH COMPOUND ACCESS BY SITE OWNER AND/OR CURRENT TENANTS.

ALL EXCAVATION SHALL BE DONE WITH CARE TO AVOID DAMAGING UNDERGROUND PIPES/CONDUITS. ANY DAMAGE CAUSED BY CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY AND MONITORED BY THE CONTRACTOR UNTIL REPAIRS ARE COMPLETED. THE CONTRACTOR SHALL NOTIFY THE CM BY PHONE IMMEDIATELY IF DAMAGE TO UNDERGROUND FACILITIES IS CAUSED BY CONSTRUCTION AND THE CONTRACTOR SHALL SUBMIT A WRITTEN REPORT OF THE INCIDENT TO THE CM AND TO THE OWNER OF THE DAMAGED FACILITIES WITHIN 24 HOURS.

THE CONTRACTOR SHALL ENSURE THAT THE SITE IS GRADED PROPERLY DURING CONSTRUCTION TO AVOID STANDING WATER AND USE APPROVED BACKFILL METHODS FOR ANY TRENCH WORK REQUIRED. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITIONS USING LIKE MATERIALS.

**ELECTRICAL**

THE CONTRACTOR SHALL INSTALL SECONDARY ELECTRICAL SERVICES ACCORDING TO THE PLANS AND CURRENT NEC AND LOCAL CODES. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED ELECTRICAL INSPECTIONS.

**TELCO – SHELTER (IF APPLICABLE)**

IT IS THE CONTRACTOR RESPONSIBILITY TO PROVIDE AND RUN TELEPHONE CABLE FROM THE TELCO BOX ON THE H-FRAME TO THE TELCO TERMINATION POINT INSIDE THE EQUIPMENT SHELTER. CABLE SHALL CONSIST OF TWO (2) EACH 25-PAIR SHIELDED TELEPHONE CABLES AND 1 PULL STRING. CABLE WILL BE RUN INSIDE A 3" PVC PIPE. CONDUITS WILL BE OUTFITTED WITH ABOVE-GROUND FROST-SLEEVES ON BOTH ENDS, AND INTERNAL CABLES MUST BE INSTALLED WITH ABOUT 8" OF SLACK TO ALLOW FOR POTENTIAL FROST-HEAVE RELIEF. ALSO, LEAVE ONE PULL-STRING INSIDE THE CONDUIT – TIED OFF AT BOTH ENDS – FOR POTENTIAL FUTURE USE.

**TELCO – OUTDOOR EQUIPMENT (IF APPLICABLE)**

IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL 2 TELEPHONE CABLE (CAT5) AND A PULL STRING FROM THE TELCO BOX ON THE H-FRAME TO THE TELCO TERMINATION POINT INSIDE THE EQUIPMENT CABINET OR DSX LOCATION.

**EQUIPMENT SHELTER (IF APPLICABLE)**

THE CONTRACTOR PM MUST PREPARE A "SPREAD-FOOTING AND PERIMETER-TYPE" (OR PERIMETER WITH SLAB) FOUNDATION FOR THE SHELTER BASED ON SITE PLANS. DIMENSIONS AND SPECIFICATIONS (INCLUDING REBAR PLAN) WILL BE AS INDICATED ON APPROVED FINAL SITE DRAWINGS.

ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH AS SPECIFIED IN THE BUILDING SPECIFICATIONS. CONCRETE SAMPLES ARE TO BE TESTED AND THE RESULTS PROVIDED TO THE SITE DEVELOPMENT ENGINEER. IF THE RESULTS DO NOT MEET MINIMUM REQUIREMENTS AND IS DETERMINED TO BE UNACCEPTABLE, CONTRACTOR IS RESPONSIBLE FOR CORRECTING THE DEFICIENCIES.

THE GC'S FOUNDATION INSTALLATION SHALL INCLUDE:

- FOUNDATION LAYOUT
- EXCAVATION
- REINFORCING STEEL
- CONCRETE
- CONCRETE TESTING
- PITCHING TO PREVENT WATER COLLECTION ON THE 4' X 4' SHELTER ENTRANCE
- BACK FILL AND COMPACTION

COORDINATION OF SHELTER DELIVERY, OFFLOAD, AND SET, ALONG WITH ALL NECESSARY PERMITS TO TRAVERSE PUBLIC ROADS AND GAIN ACCESS TO THE SITE, AND APPROPRIATE OFFLOAD TOOLS, ARE THE RESPONSIBILITY OF THE CONTRACTOR PM (THIS APPLIES TO THINGS SUCH AS: SHELTER DELIVERY VEHICLE(S), CRANE, CULVERTS, CURB-CUTS, TRAFFIC CONTROL, ROAD RESTRICTIONS, ETC).

THE CONTRACTOR PM WILL COMMUNICATE DIRECTLY WITH THE DRIVER OF THE SHELTER DELIVERY VEHICLE TO VERIFY ACTUAL SHELTER AND CONTENTS WEIGHT – AS WEIGHED BY HIGHWAY SCALES. THE CONTRACTOR PM IS RESPONSIBLE TO COORDINATE THE APPROPRIATELY SIZED / RATED CRANE AND LIFTING EQUIPMENT (IE: SPREADER BARS, LIFTING CABLES, LIFTING SHACKLES, ETC), BASED ON THE ACTUAL WEIGHT OF SHELTER AND CONTENTS.

**POWER AND EQUIPMENT BAYS (IF APPLICABLE)**

THE CONTRACTOR SHALL INSTALL ALL INTER-BAY CONNECTIONS ACCORDING TO THE PLANS, WHICH INCLUDE TELCO, DC CIRCUITS, ALARM CABLES, AND BATTERIES.

ALL EQUIPMENT BAY CONTACT AND SECURE POINTS ARE MADE OF ALUMINUM. IT IS EXPECTED THAT NO POWER TOOLS SHALL BE UTILIZED TO SECURE THE CARDS AND CABLES IN TO PLACE.

**ANTENNAS/COAX/POWER/FIBER**

THE CONTRACTOR SHALL USE TRUE NORTH TO SET ALL ANTENNA AZIMUTHS.

THE CONTRACTOR, IN ORDER TO MEET THE PERFORMANCE REQUIREMENTS FOR E-911 FOR COMMNET, AND OTHER PERFORMANCE/QUALITY CONTROL, SHALL USE AN ANTENNA ALIGNMENT TOOL IN ORDER TO ACCURATELY CAPTURE ALIGNMENT IN AZIMUTH, TILT, ROLL AND (OPTIONALLY) AGL HEIGHT. THE CONTRACTOR SHOULD USE EQUIPMENT OF GOOD QUALITY AND PREFERRED THOUGHT THE WIRELESS INDUSTRY.

THE CONTRACTOR SHALL TRANSPORT ANTENNAS IN A MANNER THAT WILL NOT DAMAGE OR EFFECT THE ANTENNAS PERFORMANCE AND PRE-SWEEP OR IF AVAILABLE PIM TEST PRIOR TO INSTALL.

THE CONTRACTOR SHALL INSPECT, CLEAN AND TEST FIBER CABLES PRIOR TO INSTALLING AND RECORD THE RESULTS TO CWL CM.

THE CONTRACTOR SHALL, BY USE OF A TORQUE WRENCH, PROPERLY TORQUE JUMPER, COAX ANTENNAS, CONNECTIONS TO INSURE A SECURE CONNECTION AND TO AVOID OVER TIGHTENING.

THE CONTRACTOR WILL ATTACH ANTENNAS USING PROPER MOUNTING BRACKETS.

THE CONTRACTOR SHALL VERIFY THAT PIPE MOUNTS ARE VERTICAL (PLUMB).

THE CONTRACTOR SHALL COLD GALVANIZE SPRAY ALL DAMAGED PARTS OF THE HOT DIP GALVANIZATION.

THE CONTRACTOR SHALL INSTALL GROUNDING IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S RECOMMENDATIONS. GROUNDING KITS TO BE INSTALLED AT INTERVALS OF 100' ON TOWER.

THE CONTRACTOR SHALL INSTALL ICE-BRIDGE FROM TOWER TO THE APPROPRIATE RF BAY OR EQUIPMENT SHELTER, IF REQUIRED.

THE CONTRACTOR SHALL ROUTE SPECIFIED COAX/POWER/FIBER CABLES ALONG CABLE TRAY/ICE-BRIDGE USING HANGERS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL MARK EACH COAXIAL/POWER/FIBER CABLE IN ACCORDANCE WITH THE ANTENNA/FEEDLINE COLOR CODE SHEET AS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL INSTALL HOISTING GRIPS, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS (AS APPLICABLE).

THE CONTRACTOR SHALL INSTALL SURGE ARRESTORS/BIAS-T, IF REQUIRED, AND BUSS BARS IN APPROVED LOCATIONS.

THE CONTRACTOR SHALL WEATHERPROOF ALL COAX CONNECTIONS IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL PERFORM A "TAPE DROP" MEASUREMENT TO CONFIRM / VALIDATE ANTENNA CENTER LINE (ACL) HEIGHT.

**GROUNDING**

THE CONTRACTOR SHALL INSTALL THE GROUNDING SYSTEM IN ACCORDANCE WITH THE PLAN.

THE CONTRACTOR SHALL ROUTE GROUND LEADS TO ALL GROUNDING POINTS AND GROUND LEADS BY USING EXOTHERMIC WELDS OR APPROVED MECHANICAL COMPRESSION CONNECTIONS.

THE CONTRACTOR SHALL APPLY OXIDE-INHIBITING COMPOUND IN ALL REQUIRED LOCATIONS.

FOR NEW CONSTRUCTION, THE CONTRACTOR SHALL PERFORM A MEGGER TEST AFTER ALL ATTACHMENTS HAVE BEEN MADE TO THE EQUIPMENT AND PROVIDE READINGS TO THE CM FOR CLOSE OUT REPORTS.

IF REQUIRED, THE CONTRACTOR SHALL PROVIDE PHOTOS VERIFYING THAT ALL GROUND LEADS ARE IN PLACE AND CONNECTED TO SUBSURFACE GROUND RING PRIOR TO BACKFILLING GROUND SYSTEM EXCAVATION (CAD WELD OR BURNDY HY-GROUND CONNECTIONS BELOW GRADE).

**MATERIALS**

SECURITY AND PRESERVATION OF SITE MATERIALS AND EQUIPMENT ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL PRESERVE THE ORIGINAL CONTAINER AND CONTACT CWL/CWL CM IMMEDIATELY.

THE CONTRACTOR SHALL COMPLETE INVENTORY VERIFICATION NO LATER THAN ONE (1) BUSINESS DAY AFTER RECEIPT OF MATERIALS. TO INDICATE COMPLETION OF INVENTORY, THE CONTRACTOR SHALL SIGN AND DATED A COPY OF MATERIAL LIST AND GIVE TO THE CM. ANY MISSING MATERIAL SHALL BE REPORTED THE CM IMMEDIATELY.

**NOTE:** FAILURE TO PERFORM INVENTORY VERIFICATION AS REQUIRED INDICATES ACKNOWLEDGEMENT FROM THE CONTRACTOR THAT THE MATERIALS AND EQUIPMENT WERE RECEIVED IN THEIR ENTIRETY AND THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY AND REPLACEMENT COSTS FOR EQUIPMENT SHORTAGES.

**MISCELLANEOUS NOTES**

THE CONTRACTOR SHALL REQUEST APPROVAL FROM THE CM FOR ANY CHANGES OR DEVIATIONS FROM THE PLANS.

FOR CHANGES THAT REQUIRED ADDITIONAL COSTS, THE CM WILL COMPLETE A CHANGE ORDER FORM OUTLINE THE REASON FOR THE CHANGE AND ITS COSTS.

**SWEEP/PIM/FIBER TEST**

AFTER THE INSTALLATION OF ANTENNAS & LINES, THE GENERAL CONTRACTOR SHALL SWEEP AND TEST ALL COMPONENTS AND PROVIDE A HARD COPY REPORT OF THE RESULTS. A GRAPH PRINTOUT IS TO BE PROVIDED TO THE LOCAL NETWORK OPERATIONS MANAGER AND CM BY THE GC FOR APPROVAL. SWEEP TESTS SHOULD BE PERFORMED BY THE GC TERMINATING EACH RUN OF COAX WITH A SHORT, 50 OHM LOAD, AND ANTENNA WITH JUMPER AND PROVIDING RETURN LOSS RESULTS.

AFTER THE INSTALLATION OF FIBER TRUNKS AND JUMPERS, THE GC SHOULD PROPERLY RE-TEST THE FIBER TO CONFIRM THE RESULTS ARE WITHIN TOLERANCE OF THE MANUFACTURES SUGGESTED LIMITS.

IF CONTRACTORS OFFER PIM TESTING, PIM TEST SHOULD BE CONDUCTED ON JUMPERS AND ANTENNAS TO CONFIRM THEY ARE IN TOLERANCE AND WORKING PROPERLY.

**PIM TESTING STANDARD REQUIREMENTS FOR PIM TESTING TO A LOAD**

PASSING: -103DBM OR -146DBC TO A LOAD

REQUIRES APPROVAL: -102DBM TO -97DBM (-145DBC TO -140DBC) TO A LOAD

FAILING: BELOW -96DBM (-139DBC) TO A LOAD

**SWEEP TEST REQUIRED PER EACH COAXIAL CABLE/ANTENNA SYSTEM**

-ANTENNA ON GROUND BEFORE INSTALLING ON TOWER

-RETURN LOSS WITH 50 OHM LOAD CONNECTED TO MAIN COAXIAL LINE AND JUMPER

-DISTANCE TO FAULT (DTF) WITH 50 OHM LOAD CONNECTED TO MAIN COAXIAL LINE AND JUMPER

-RETURN LOSS WITH PRECISION SHORT CONNECTED TO MAIN COAXIAL LINE AND JUMPER




















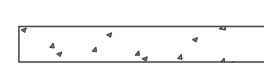

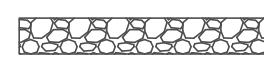
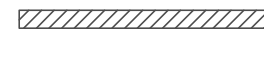


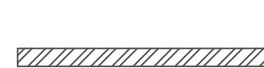







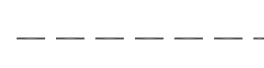
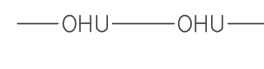









-DISTANCE TO FAULT (DTF) WITH PRECISION SHORT CONNECTED TO MAIN COAXIAL LINE AND JUMPER

-RETURN LOSS SYSTEM W/ANTENNA CONNECTED TO MAIN COAXIAL LINE AND JUMPER

-DISTANCE TO FAULT (DTF) SYSTEM W/ANTENNA CONNECTED TO MAIN COAXIAL LINE AND JUMPER

-18 IS THE PASS / FAIL LINE - ALL TESTS PERFORMED FROM THE POINT AT WHICH THE JUMPERS CONNECT TO THE DVPAS INSIDE THE GSM CABINET AND AT THE JUMPER GOING INTO THE CDMA CABINET. ALL LINES, REGARDLESS OF USE, ARE TO BE TESTED.

**LEGEND**

-  NORTH ARROW
-  ANTENNA
-  GROUND ACCESS WELL
-  GROUND ROD
-  GROUND BUSS BAR
-  MECHANICAL GRND. CONN.
-  EXOTHERMIC WELD
-  ELECTRIC BOX
-  TELEPHONE BOX
-  LIGHT POLE
-  FND. MONUMENT
-  SPOT ELEVATION
-  SET POINT
-  REVISION
-  KEYED NOTE
-  DETAIL REFERENCE
-  ELEVATION REFERENCE
-  SECTION REFERENCE
-  GROUT OR PLASTER
-  EXISTING BRICK
-  EXISTING MASONARY
-  CONCRETE
-  EARTH
-  GRAVEL
-  PLYWOOD
-  SAND
-  WOOD CONT.
-  WOOD BLOCKING
-  STEEL
-  CENTERLINE
-  PROPERTY/LEASE LINE
-  RIGHT OF WAY
-  MATCH LINE
-  WORK POINT
-  GROUND CONDUCTOR
-  TELEPHONE CONDUIT
-  ELECTRICAL CONDUIT
-  COAXIAL CABLE
-  OVERHEAD SERVICE CONDUCTORS
-  CHAIN LINK FENCING
-  RET (REMOTE ELECTRICAL TILT)
-  PDU (POWER DISTRIBUTION UNIT)
-  ALARM
-  RAILROAD TRACKS



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
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SITE NAME  
**FOX MOUNTAIN, NV**

PROJECT  
**RAW LAND BUILD**

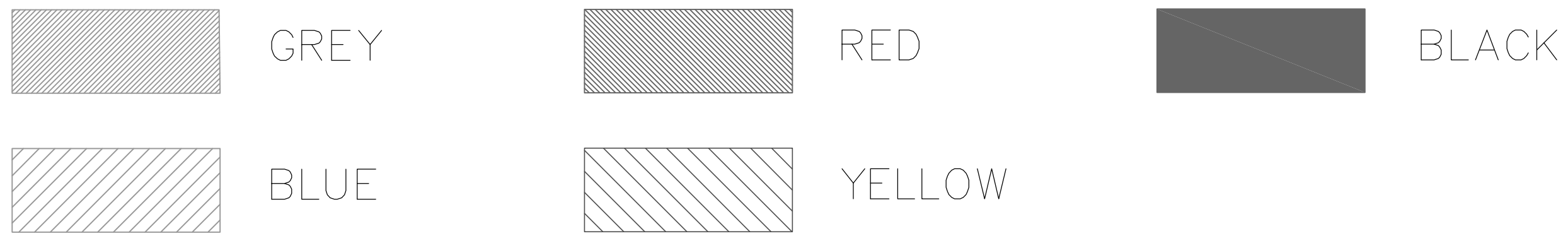
SITE ADDRESS  
LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE  
**GENERAL NOTES**

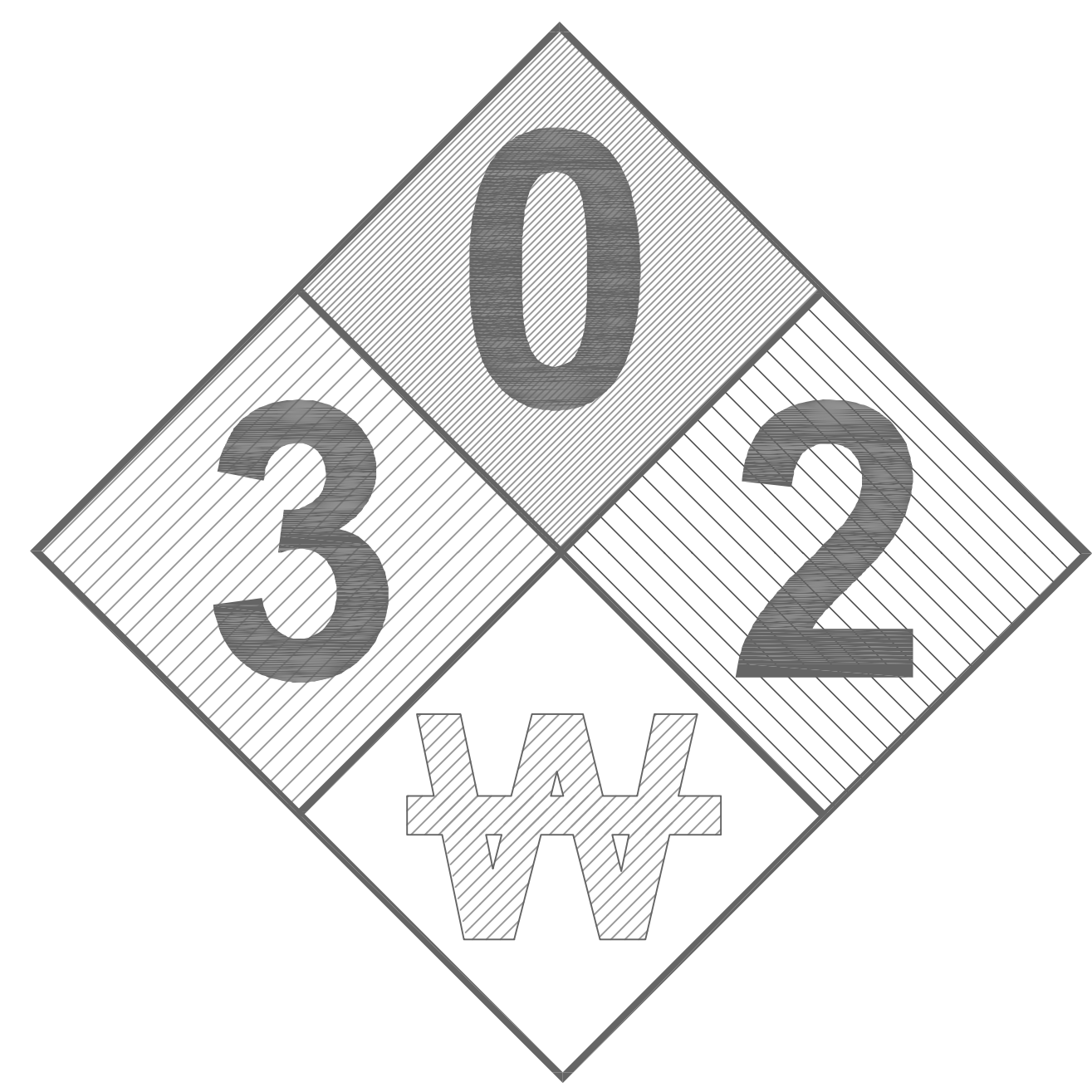
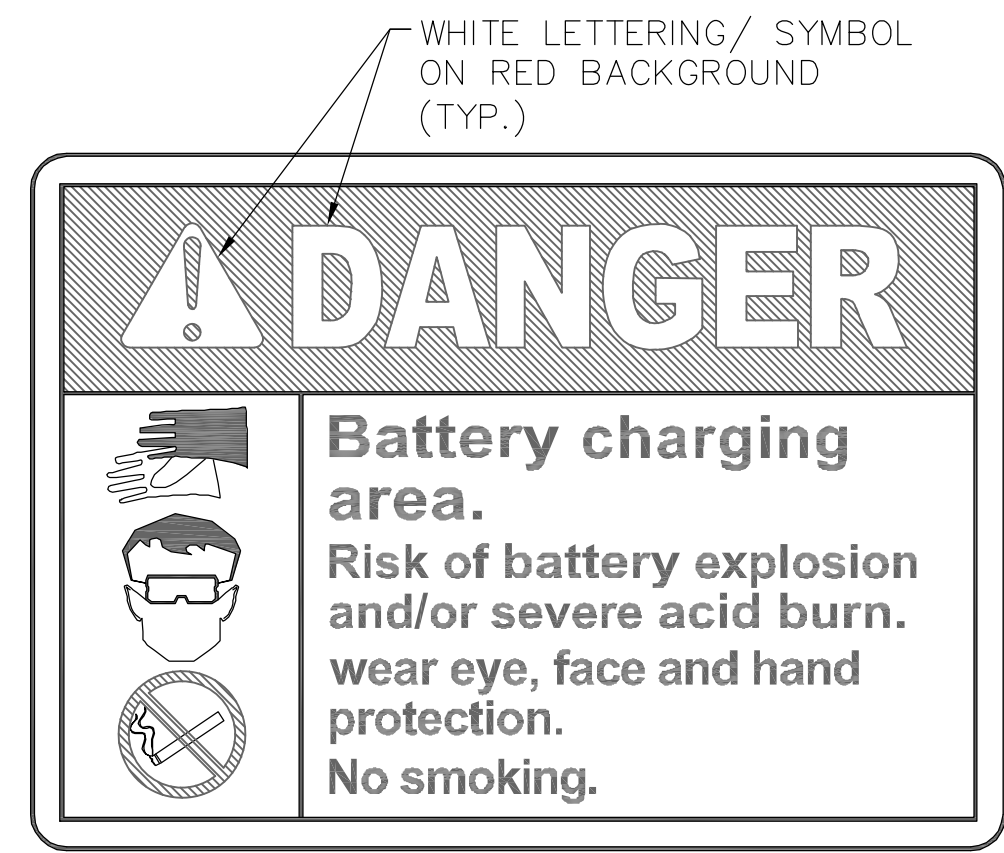
SHEET NUMBER  
**GN-1**



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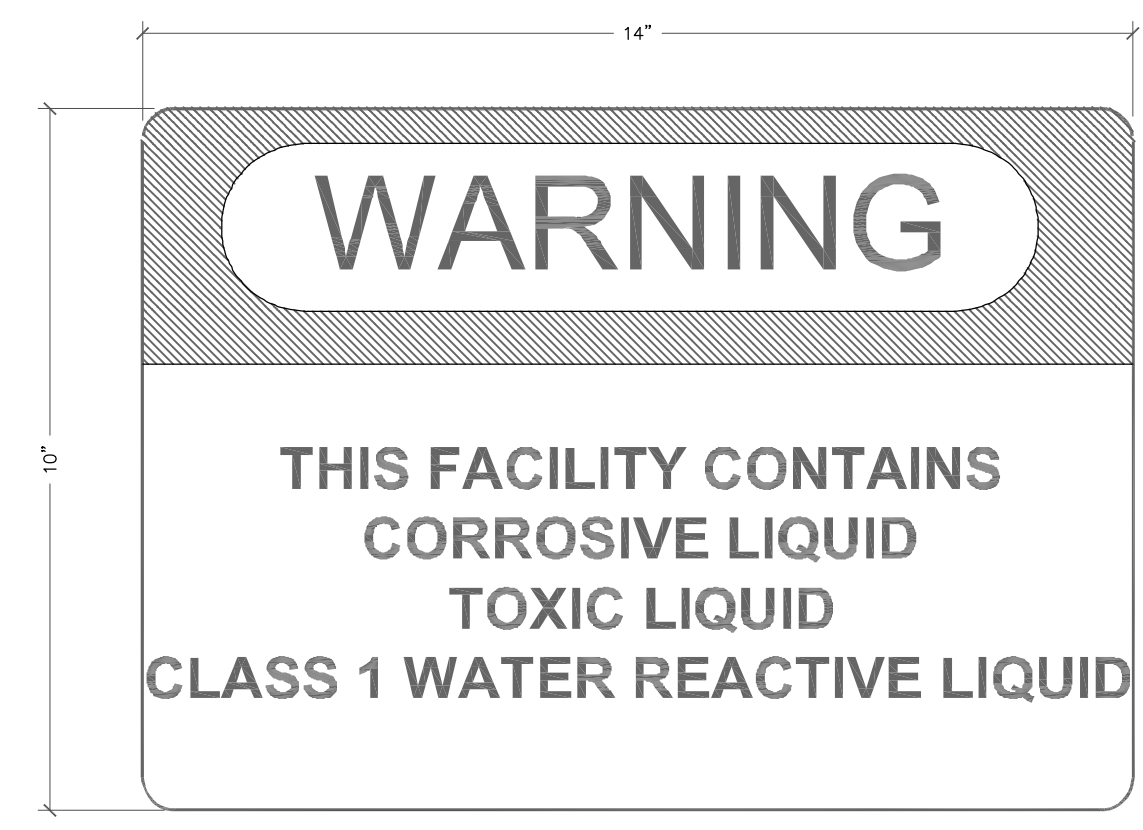
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**REQUIRED NFPA SIGNAGE** SCALE: NTS **2**

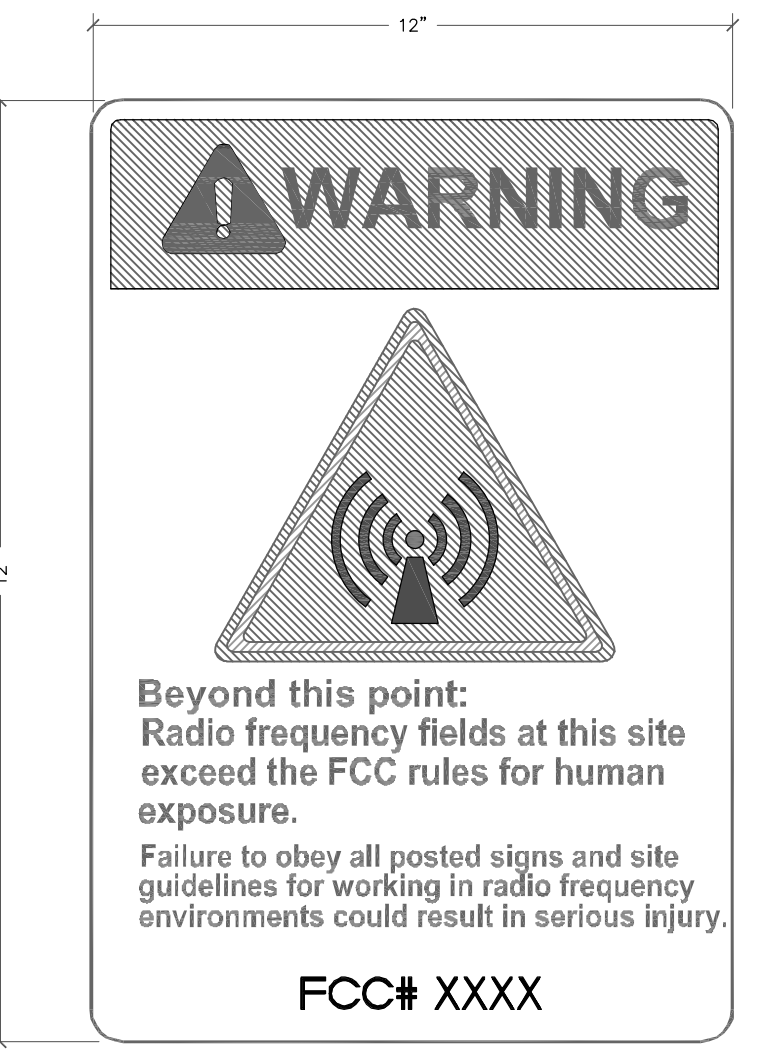
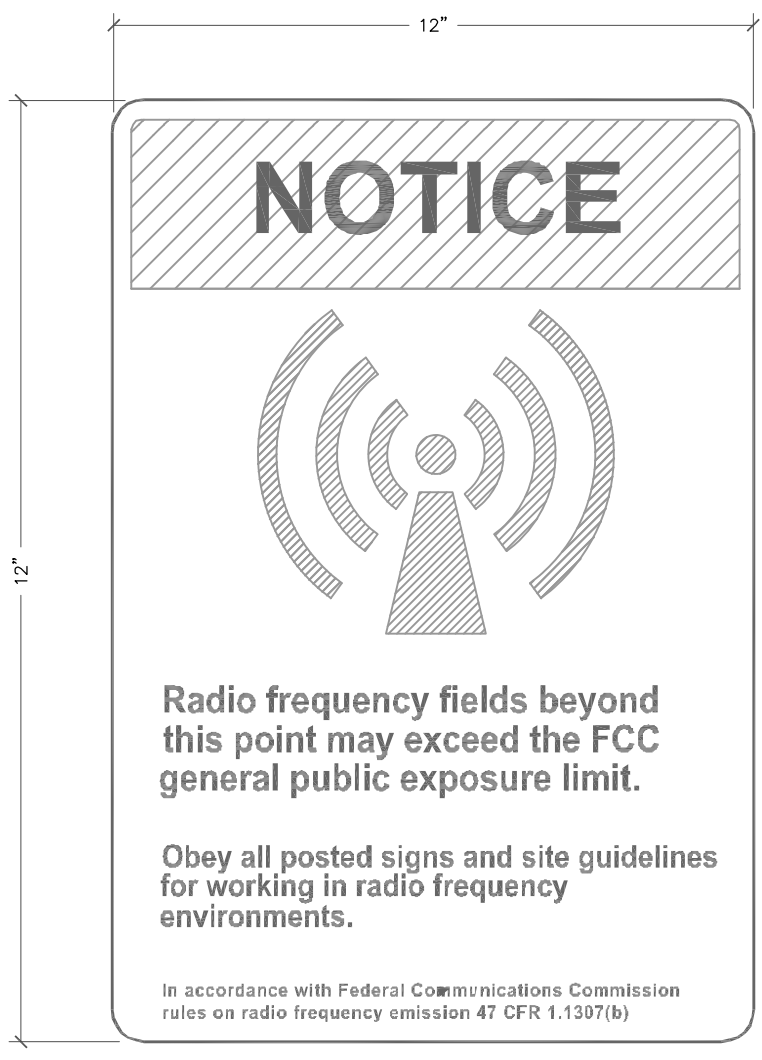
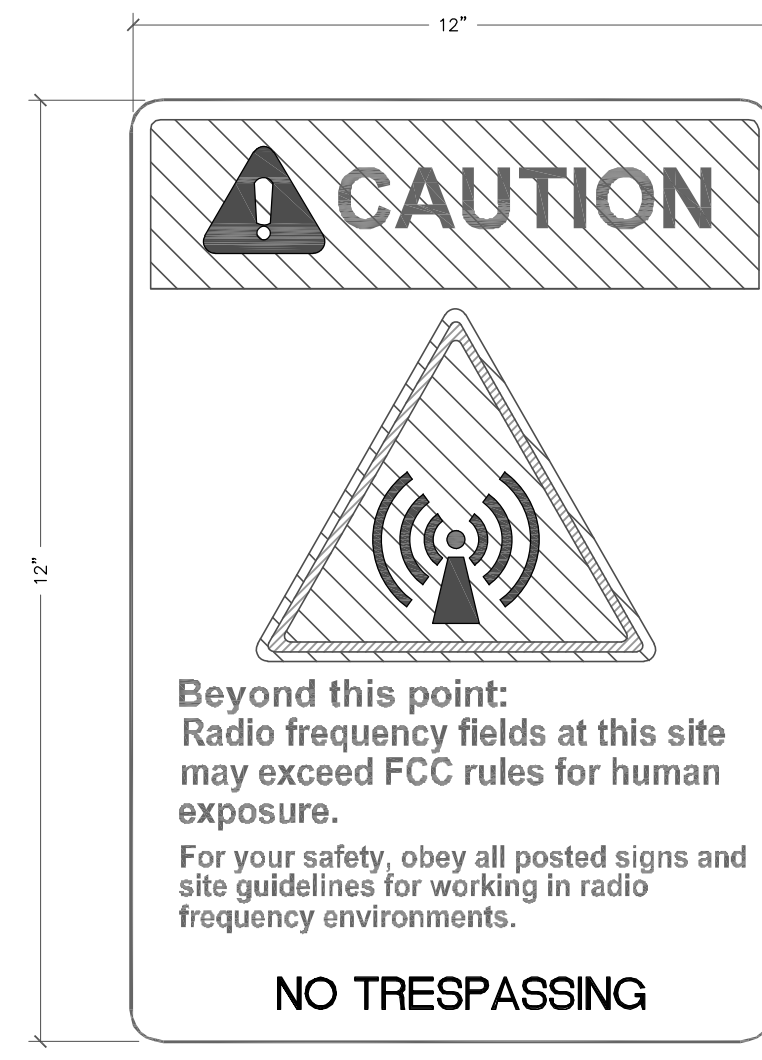


**FENCE SIGNAGE** SCALE: NTS **3**

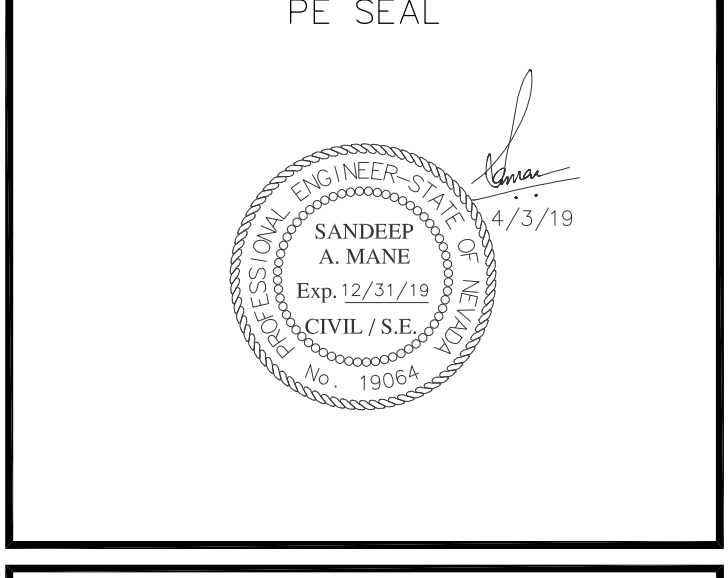


**HAZARDOUS MATERIALS SIGNAGE** SCALE: NTS **4**

**NOTES:**  
 1. SIGN MATERIAL: 18 GA SHEET ALUMINUM ALLOY 6061-T6, 5052-H38, 5154-H38 OR EQUIVALENT.  
 2. LETTERING COLOR: NON REFLECTIVE BLACK SCREENED, CUT OUT PERMANENT OR REMOVABLE LEGEND.  
 3. BACKGROUND COLORS: REFLECTIVE WHITE: SILVER WHITE ASTM TYPE III OR TYPE IV SHEETING U.N.O. NON REFLECTIVE YELLOW RED BLUE AND GREY TRANSPARENT PASTE APPLIED OVER THE SILVER WHITE SHEETING.  
 4. REFERENCE ANSI C95.2 FOR COLOR, SYMBOLS AND CONTENT CONVENTIONS  
 5. SIGNS SHALL BE POSTED ON ACCESS GATE AND SHELTER DOOR OR OUTDOOR EQUIPMENT CABINETS



**RF SIGNAGE** SCALE: NTS **5**



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
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SITE NAME  
FOX MOUNTAIN, NV

PROJECT  
RAW LAND BUILD

SITE ADDRESS  
LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE  
SITE SIGNAGE DETAILS

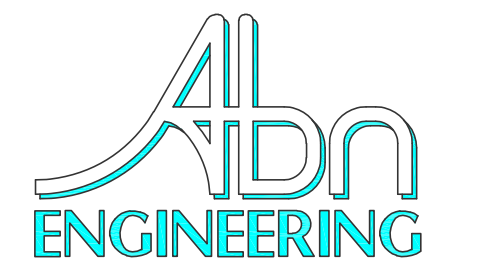
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SN-1



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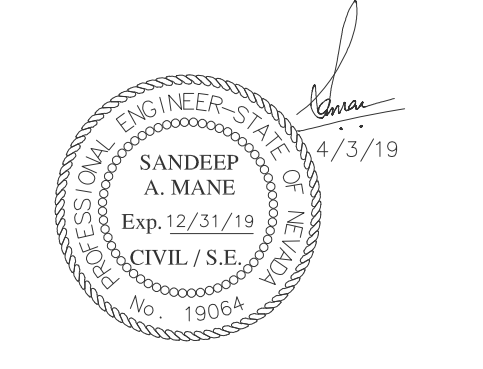


- COMPOUND PLAN KEYED NOTES: #
1. APPROXIMATE VALLEY GRADE DROP (TYP.)
  2. (E) DIRT ACCESS ROAD
  3. (E) BUILDING (TYP.)
  4. (E) SELF-SUPPORT TOWER (TYP.)
  5. (E) PROPANE TANK
  6. (E) SOLAR PANELS (TYP.)



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

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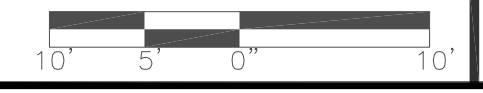
OVERALL SITE PLAN

SHEET NUMBER

A-1



22"x34" SCALE: 1" = 10'-0"  
11"x17" SCALE: 1" = 20'-0"



OVERALL SITE PLAN



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COMPOUND PLAN KEYED NOTES: #

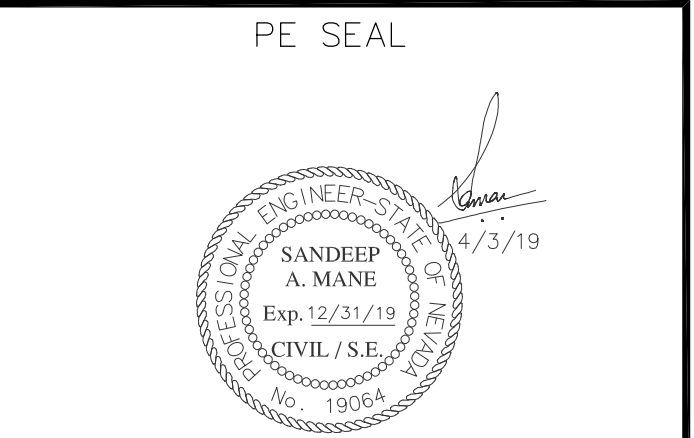
1. (N) ACCESS DOOR
2. (N) NEMA 4 J-BOX FOR POWER WIRES TRANSITION FROM U.G. TO SHELTER
3. (N) EQUIPMENT SHELTER
4. (N) BREAKER PANEL
5. (N) FIRSTNET ALU CABINET
6. (N) ZTE CABINET
7. (N) MW RACK
8. (N) CABLE LADDER, SUPPLIED BY GC
9. (N) DC GENERATOR
10. (N) GPS ANTENNA, SEE DETAIL 6 ON SHEET A-5
11. (N) ICE BRIDGE, SEE DETAIL 5 ON SHEET A-5
12. (N) 150' TALL MONOPOLE, SEE SHEET A-3 FOR MORE DETAILS
13. NOT USED
14. NOT USED
15. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #1 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2
16. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #2 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2
17. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #3 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2
18. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #4 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2
19. (N) SOLAR ARRAY #1
20. (N) COMBINER BOX MOUNTED A BASE (TYP.)
21. (N) SOLAR ARRAY #2
22. (N) SOLAR ARRAY #3
23. (N) SOLAR ARRAY #4
24. (N) 1000 GALLON PROPANE TANK (TYP. OF 2) MOUNTED ON NEW INTERLOCK PAVERS
25. (N) SUPPORT PIPE (TYP.), SEE DETAIL 2 ON SHEET A-8
26. (N) 1000 GALLON PROPANE TANK MOUNTED ON NEW INTERLOCK PAVERS
27. (N) BOLLARD (TYP. OF 7), SEE DETAIL 1 ON SHEET A-8
28. (N) U.G. CONDUIT FOR POLYETHYLENE FLEXIBLE GAS TUBING FROM PROPANE TANKS TO MOISTURE SLIP SEAL TEE, SEE DETAIL 4 ON SHEET A-8
29. (N) MOISTURE SLIP SEAL TEE
30. (N) U.G. CONDUIT FOR POLYETHYLENE FLEXIBLE GAS TUBING FROM MOISTURE SLIP SEAL TEE TO GENERATOR, SEE DETAIL 4 ON SHEET A-8
31. APPROXIMATE VALLEY GRADE DROP

NOTE:  
SOLAR ARRAYS TO FACE SOUTH

- LEGEND:
- EXISTING CONTOUR LINE
  - ← GRADE TO DRAIN
  - F.G. 8181.33 ● FINISHED GRADE
  - T.C. 8181.83 ● TOP OF CONCRETE



**Abn ENGINEERING**  
1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524



DESIGNER: JASON NGO  
LEAD EE: SB  
LEAD CE/SE: SAM

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D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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SITE NAME  
FOX MOUNTAIN, NV

PROJECT  
RAW LAND BUILD

SITE ADDRESS  
LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE  
ENLARGED SITE PLAN

SHEET NUMBER  
A-2.0

ENLARGE SITE PLAN

22"x34" SCALE: 3/8" = 1'-0"  
11"x17" SCALE: 3/16" = 1'-0"  
1" = 0' 2"

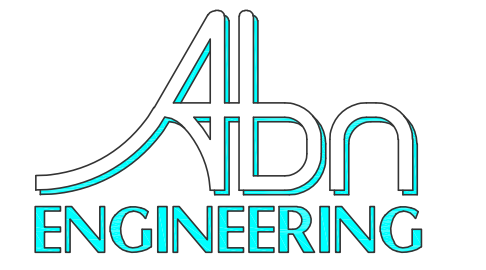
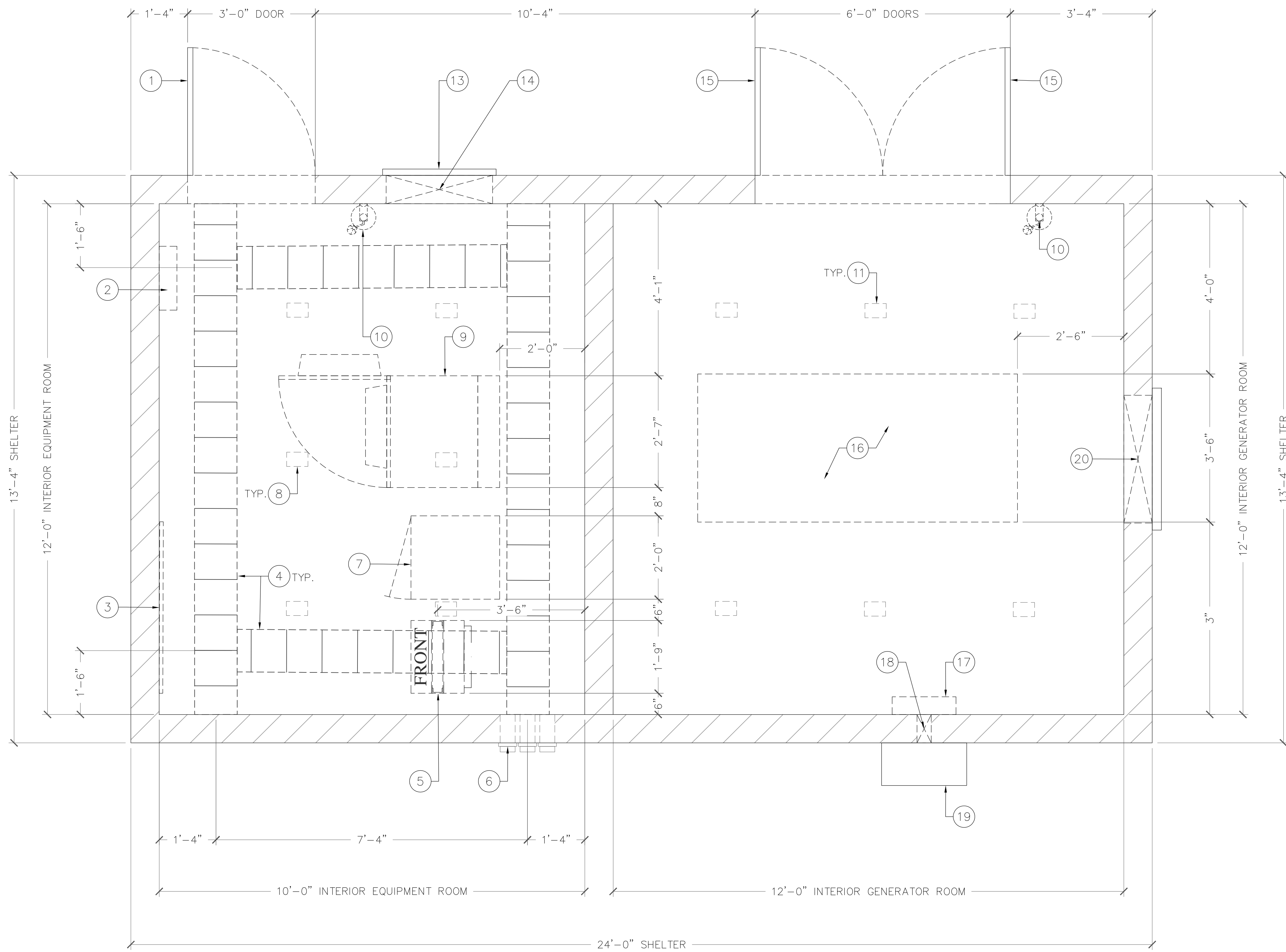




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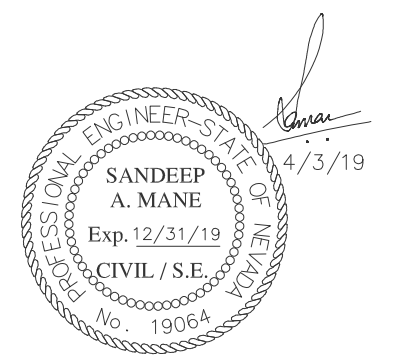
COMPOUND PLAN KEYED NOTES: #

1. (N) 3' WIDE ACCESS DOOR, SEE DOOR SCHEDULE ON STRUCTURAL DRAWINGS
2. (N) BREAKER PANEL
3. (N) 48" TELCOBOARD
4. (N) CABLE LADDER, SUPPLIED BY GC
5. (N) MW RACK
6. (N) 4"Ø ENTRY PORTS (TYP. OF 6)
7. (N) ZTE CABINET
8. (N) DC LIGHT (TYP. OF 6 IN EQUIPMENT ROOM)
9. (N) FIRSTNET ALU CABINET
10. (N) FIRE EXTINGUISHER (TYP.)
11. (N) DC LIGHT (TYP. OF 6 IN GENERATOR ROOM)
12. NOT USED
13. (N) VENT UNIT, COORDINATE WITH CUSTOMER
14. (N) OPENING FOR HVAC AIR SUPPLY & RETURN, SEE STRUCTURAL DRAWINGS AND VERIFY THE OPENING SIZE AND LOCATION WITH HVAC SPECIFICATIONS
15. (N) (2) 3' WIDE ACCESS DOORS
16. (N) DC GENERATOR, REFER MANUFACTURER'S SPECIFICATIONS
17. (N) COMBINER BOX, SEE DC ONE-LINE DIAGRAM
18. (N) OPENING FOR ELECTRIC WIRE ENTRY. COORDINATE WITH CUSTOMER AND SOLAR DESIGN FOR SIZE AND LOCATION
19. (N) NEMA 4 J-BOX FOR POWER WIRES TRANSITION FROM U.G. TO SHELTER
20. (N) OPENING FOR EXHAUST AND INTAKE VENTS, SEE STRUCTURAL DRAWINGS AND VERIFY THE OPENING SIZE AND LOCATION WITH EXHAUST MANUFACTURER'S SPECIFICATIONS
21. (N) EQUIPMENT SHELTER, SEE STRUCTURAL DRAWINGS



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
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SHEET TITLE

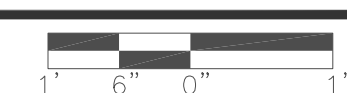
SHELTER LAYOUT

SHEET NUMBER

A-2.1

SHELTER LAYOUT

22"x34" SCALE: 3/4" = 1'-0"  
11"x17" SCALE: 3/8" = 1'-0"



1

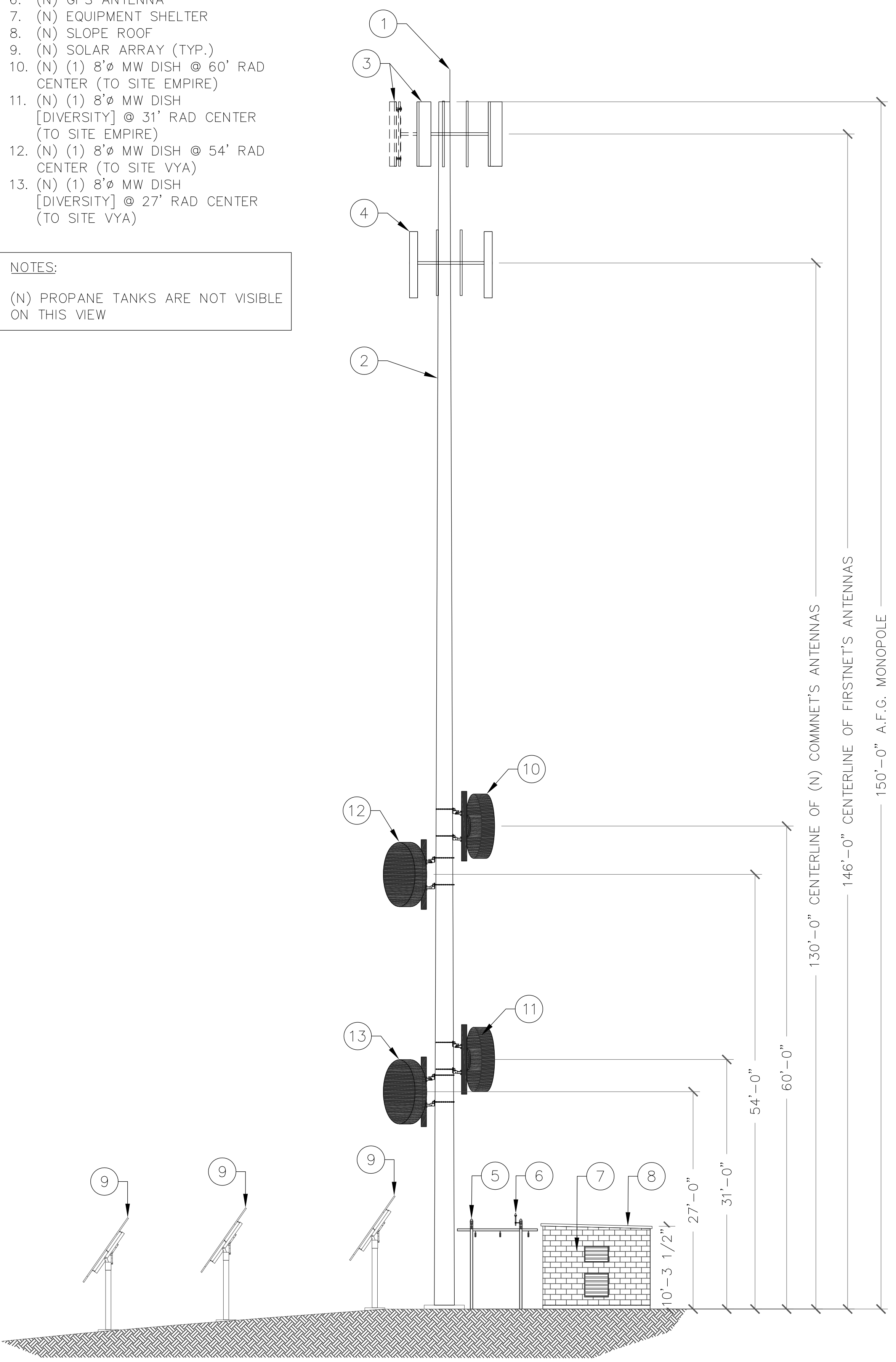


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**ELEVATION KEYED NOTES: #**

- (N) 4' LIGHTING ROD
- (N) 150' TALL MONOPOLE
- (N) FIRSTNET'S ANTENNAS
- (N) COMMNET'S ANTENNAS
- (N) ICE BRIDGE
- (N) GPS ANTENNA
- (N) EQUIPMENT SHELTER
- (N) SLOPE ROOF
- (N) SOLAR ARRAY (TYP.)
- (N) (1) 8" MW DISH @ 60' RAD CENTER (TO SITE EMPIRE)
- (N) (1) 8" MW DISH [DIVERSITY] @ 31' RAD CENTER (TO SITE EMPIRE)
- (N) (1) 8" MW DISH @ 54' RAD CENTER (TO SITE VYA)
- (N) (1) 8" MW DISH [DIVERSITY] @ 27' RAD CENTER (TO SITE VYA)

**NOTES:**  
(N) PROPANE TANKS ARE NOT VISIBLE ON THIS VIEW



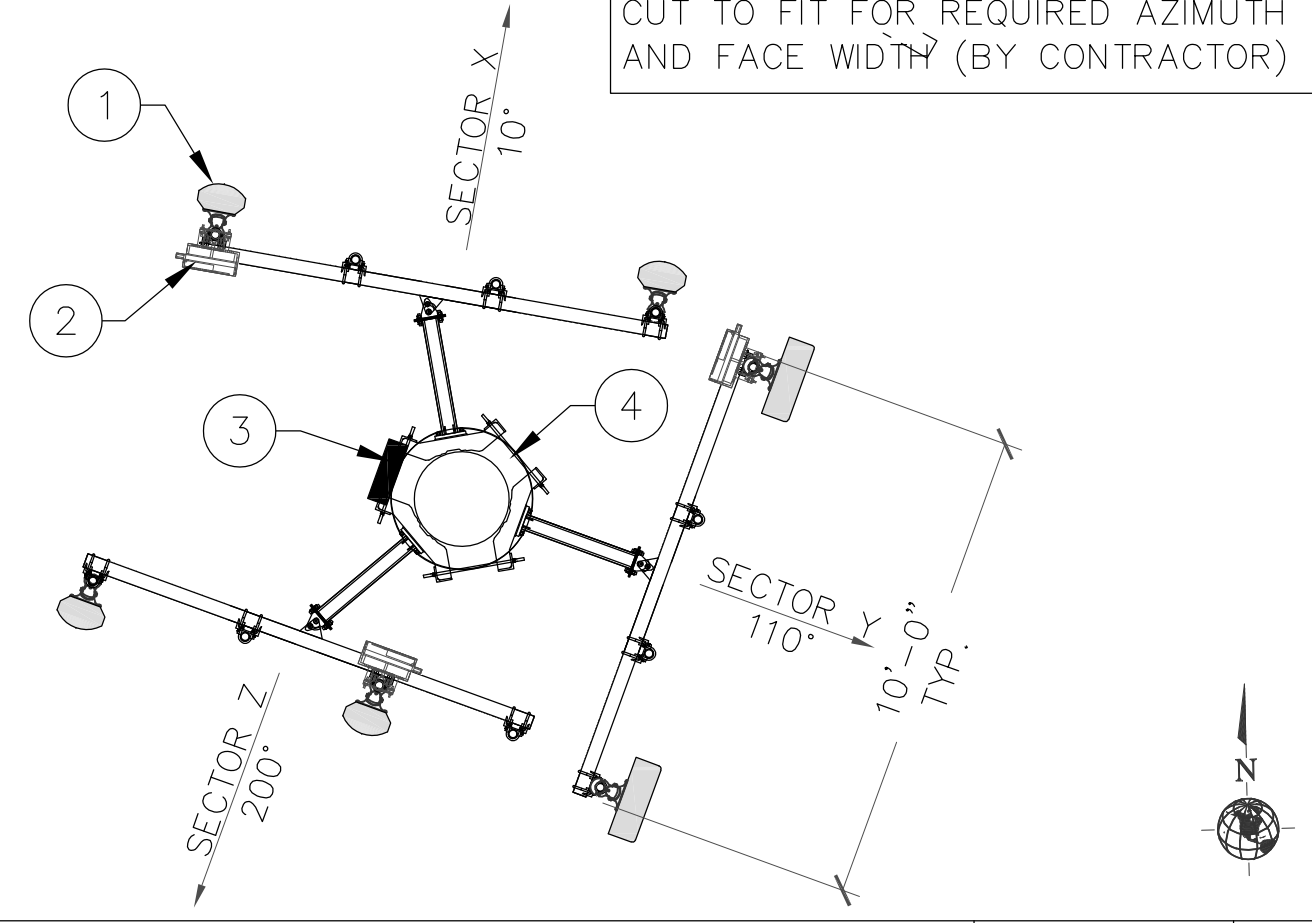
**SITE ELEVATION**

22"x34" SCALE: 1/8" = 1'-0"  
11"x17" SCALE: 1/16" = 1'-0"  
8" 6" 4" 2" 0" 8"

**COMMNET'S ANTENNA LAYOUT KEYED NOTES: #**

- (N) (2) RET DUAL BAND QUAD PANEL ANTENNAS, (3) SECTORS, TOTAL OF (6) ANTENNAS @ 10', 110' & 200' AZIMUTH, MOUNTED ON (3) NEW PIPE FRAME STAND-OFF BRACKETS @ 130'-0" RAD CENTER. REFER TO SHEET A-4 FOR ANTENNA MODEL DETAILS
- (N) (1) RRU PER SECTOR. TOTAL OF (3) RRUs, SEE DETAILS 1, 2 & 3 ON SHEET A-6
- (N) (1) FTTA DISTRIBUTION BOX
- (N) 150' TALL MONOPOLE

**NOTE:**  
AS NEEDED, THE T-ARM FACE LENGTH CAN BE FIELD MODIFIED, CUT TO FIT FOR REQUIRED AZIMUTH AND FACE WIDTH (BY CONTRACTOR)

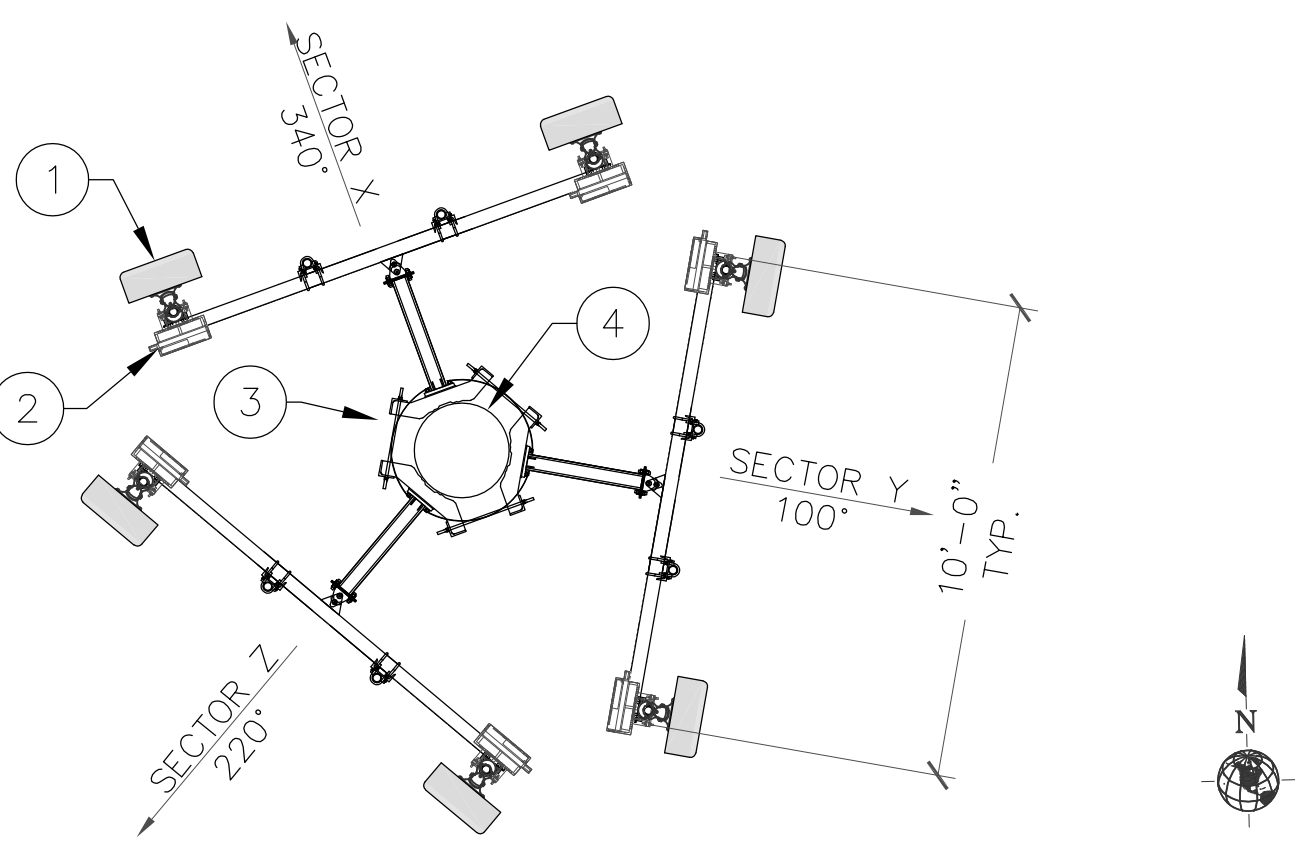


**COMMNET'S ANTENNA LAYOUT**

SCALE: NTS **2**

**FIRSTNET'S ANTENNA LAYOUT KEYED NOTES: #**

- (N) (2) RET OCTOPORT PANEL ANTENNAS, (3) SECTORS, TOTAL OF (6) ANTENNAS @ 340', 100' & 220' AZIMUTH, MOUNTED ON (3) NEW PIPE FRAME STAND-OFF BRACKETS @ 146' RAD CENTER. REFER TO SHEET A-4 FOR ANTENNA MODEL DETAILS
- (N) (2) RRHS PER SECTOR. TOTAL OF (6) RRUs, SEE DETAILS 1, 2 & 3 ON SHEET A-6
- (N) (1) FTTA DISTRIBUTION BOX
- (N) 150' TALL MONOPOLE

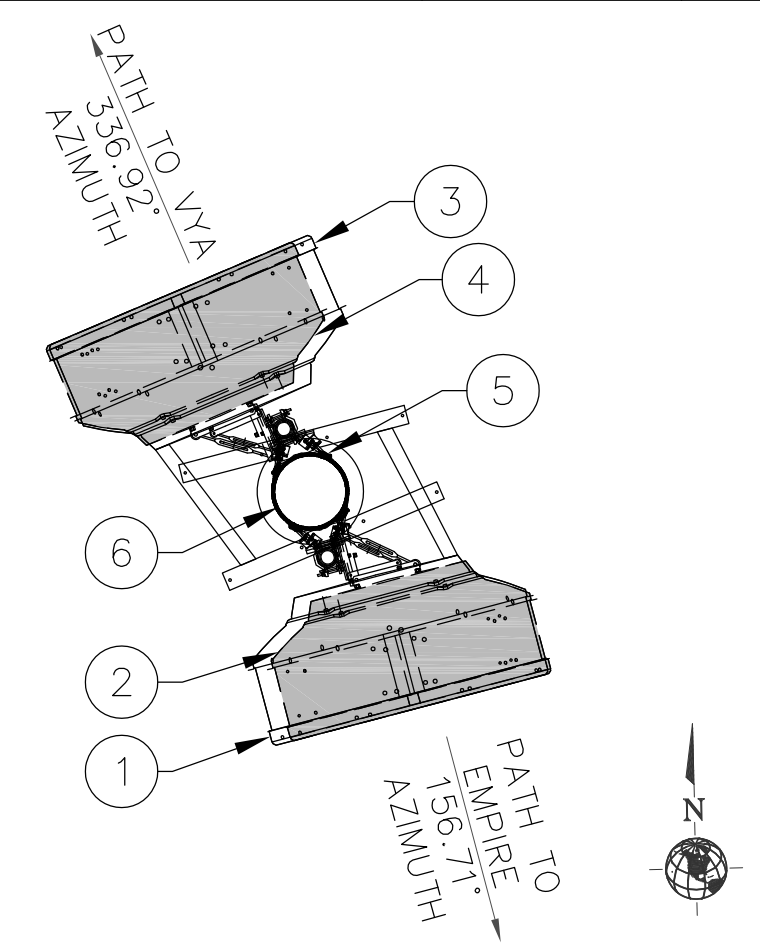


**FIRSTNET'S ANTENNA LAYOUT**

SCALE: NTS **3**

**MW DISH LAYOUT KEYED NOTES: #**

- (N) (1) 8" MW DISH @ 60' RAD CENTER (336.92' AZIMUTH) (TO SITE EMPIRE)
- (N) (1) 8" MW DISH [DIVERSITY] @ 31' RAD CENTER (336.92' AZIMUTH) (BELOW) (TO SITE EMPIRE)
- (N) (1) 8" MW DISH @ 54' RAD CENTER (165.26' AZIMUTH) (TO SITE VYA)
- (N) (1) 8" MW DISH [DIVERSITY] @ 27' RAD CENTER (165.26' AZIMUTH) (BELOW) (TO SITE VYA)
- DISH MOUNT WITH SUPPORT BRACKET FOR TIE-BACK ARMS (TYP.)
- (N) 150' TALL MONOPOLE

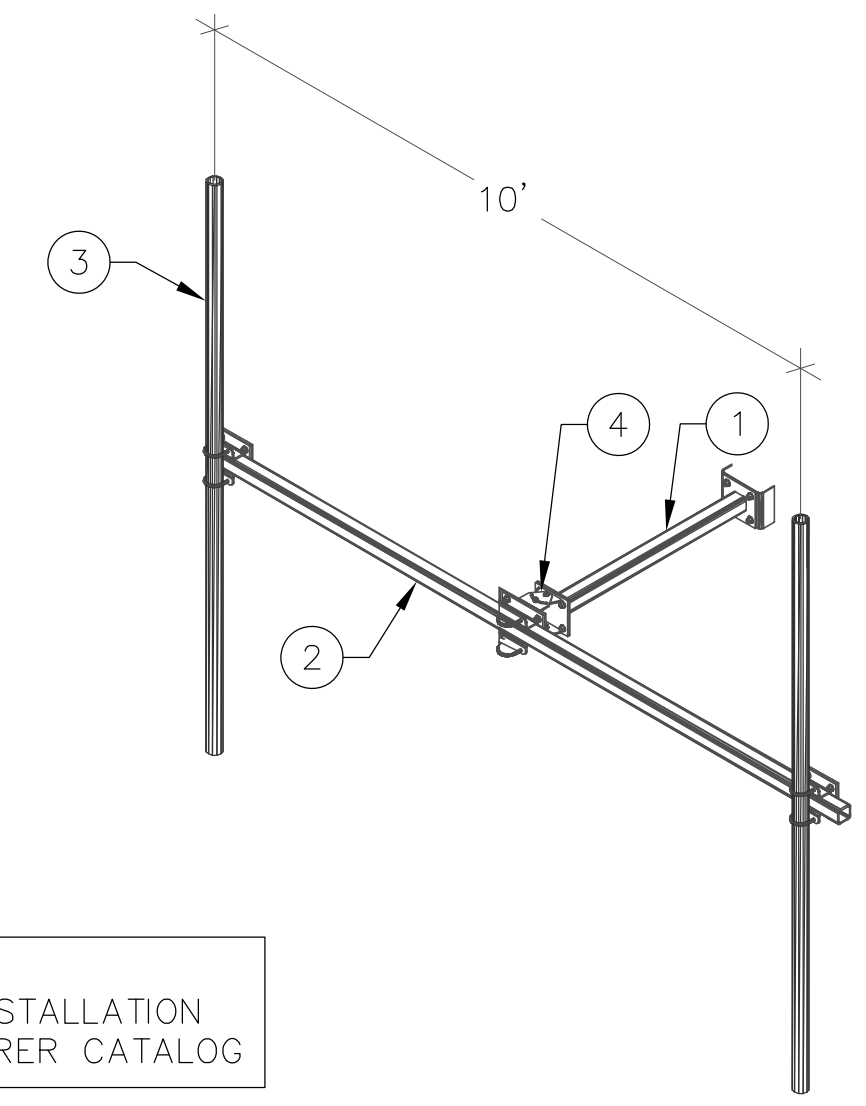


**MV DISH LAYOUT**

SCALE: NTS **4**

**STANDOFF KEYED NOTES: #**

- 3' STANDOFF
- T-ARM
- PIPE MOUNT (TYP.)
- SWIVEL ASSEMBLY



**NOTE:**  
FOR MORE INFORMATION AND INSTALLATION PLEASE REFER THE MANUFACTURER CATALOG

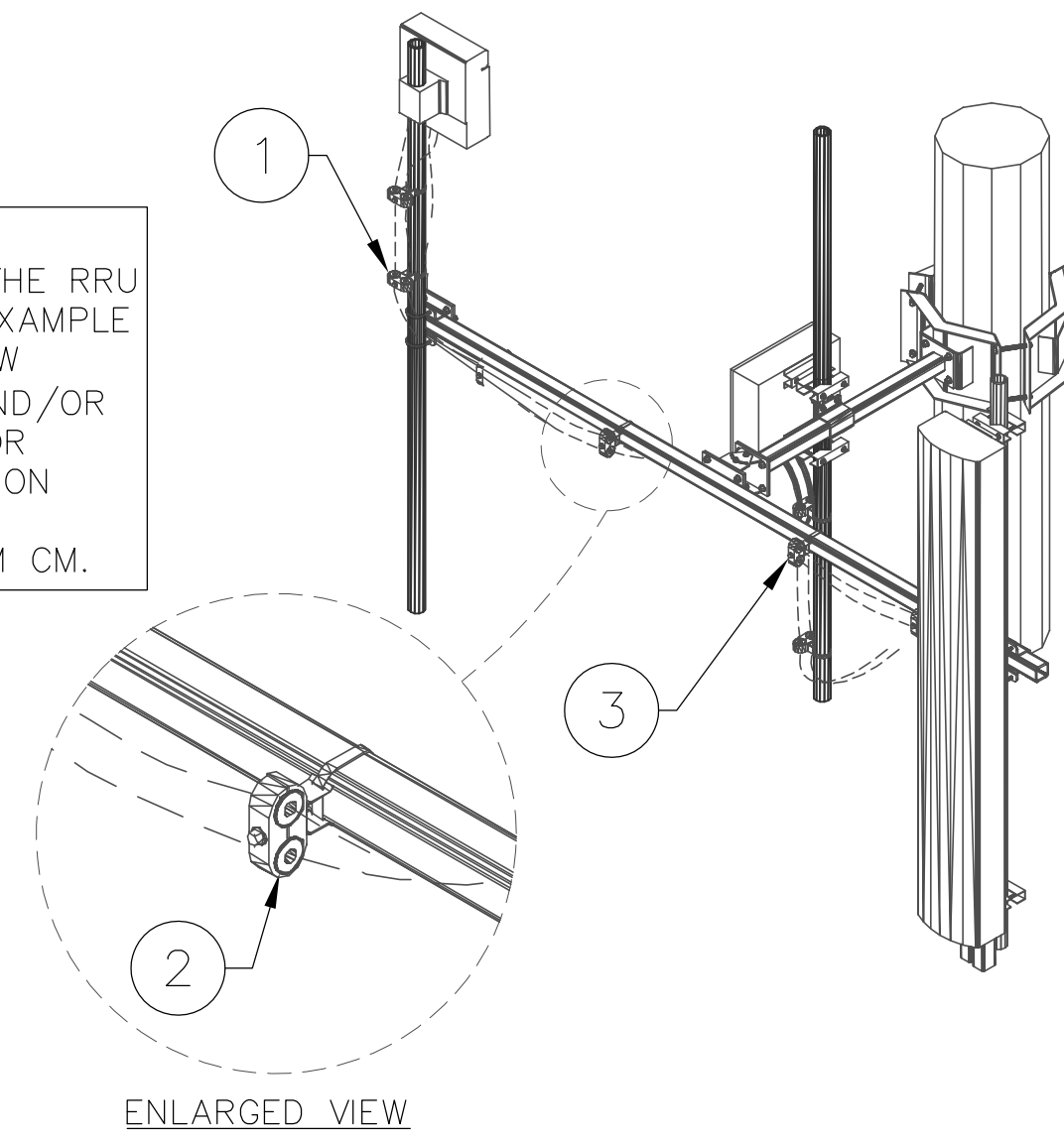
**TYPICAL STANDOFF**

SCALE: NTS **5**

**CABLE SECURED KEYED NOTES: #**

- TYPICAL CABLE DRESSING ALONG MOUNTING PIPE
- CABLE BLOCK WITH UNIVERSAL SNAP-IN STANDOFF AND BANDING STRAP/ROUND MEMBER ADAPTER (TYP.)
- TYPICAL CABLE DRESSING ALONG SECTOR GATE

**NOTE:**  
THE LOCATION OF THE RRU IS SHOWN AS AN EXAMPLE ONLY. GC TO REVIEW ANTENNA DETAIL AND/OR SCOPE OF WORK FOR SPECIFIC INSTALLATION DETAIL OR SEEL CLARIFICATION FROM CM.



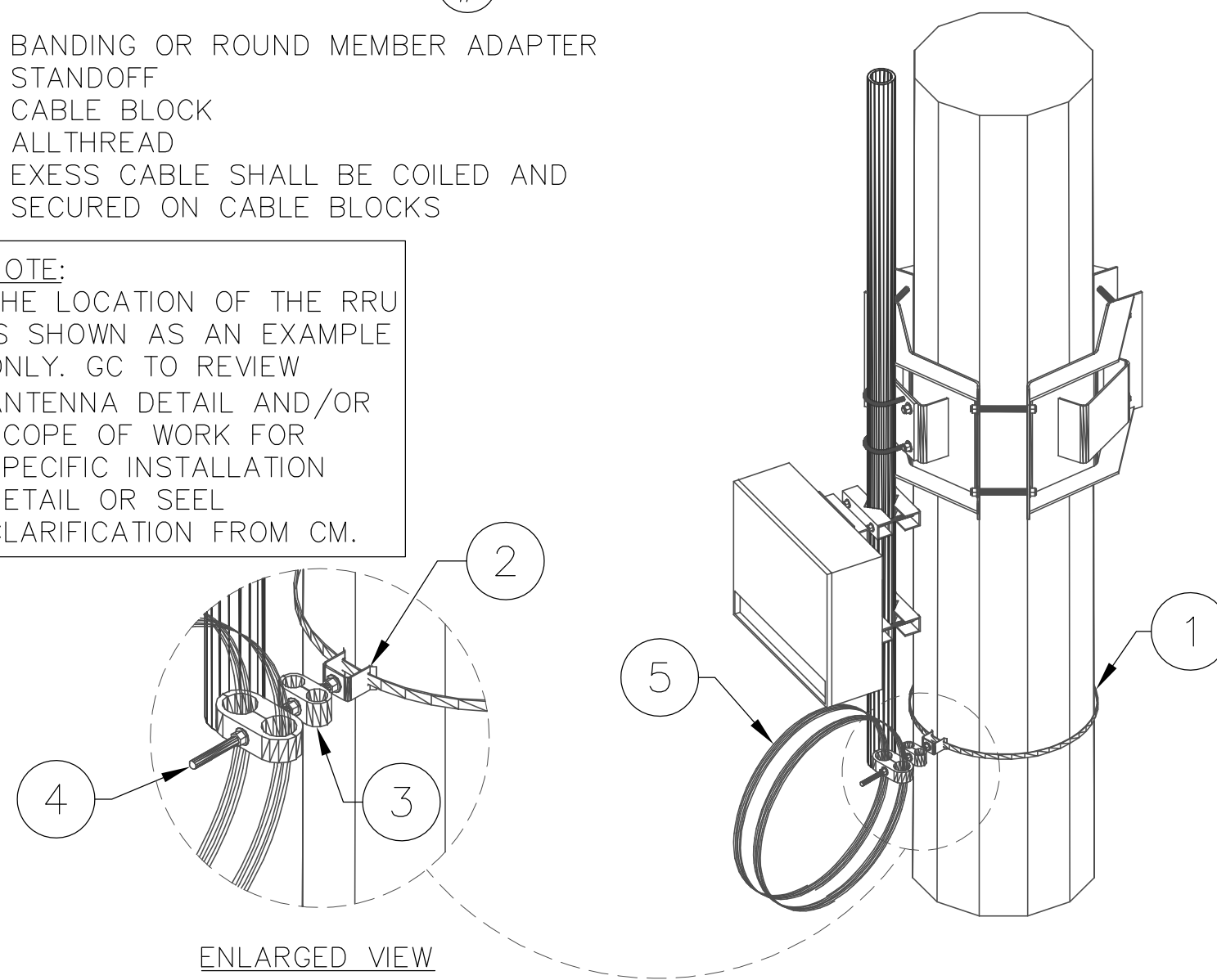
**CABLE SECURED DETAIL**

SCALE: NTS **6**

**CABLE SECURED KEYED NOTES: #**

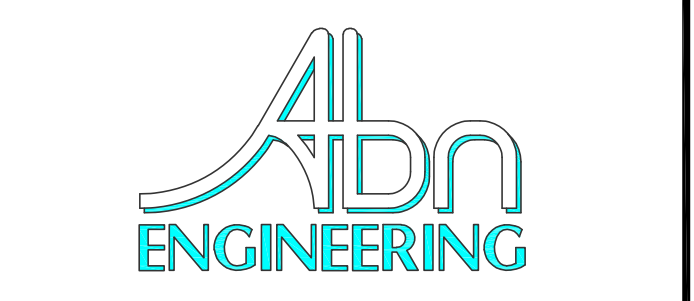
- BANDING OR ROUND MEMBER ADAPTER
- STANDOFF
- CABLE BLOCK
- ALLTHREAD
- EXCESS CABLE SHALL BE COILED AND SECURED ON CABLE BLOCKS

**NOTE:**  
THE LOCATION OF THE RRU IS SHOWN AS AN EXAMPLE ONLY. GC TO REVIEW ANTENNA DETAIL AND/OR SCOPE OF WORK FOR SPECIFIC INSTALLATION DETAIL OR SEEL CLARIFICATION FROM CM.

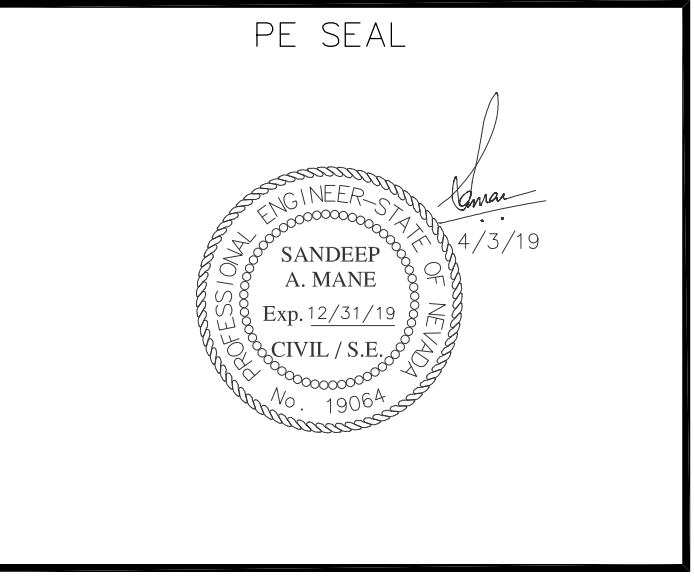


**EXCESS CABLE SECURED DETAIL**

SCALE: NTS **7**



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

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PROJECT  
RAW LAND BUILD

SITE ADDRESS  
LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE  
SITE ELEVATION & DETAILS

SHEET NUMBER  
A-3



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**SUMMARY:**  
WARNING WHEN DRILLING, WEAR THE NECESSARY PROTECTIVE GEAR, SUCH AS GLOVES AND SAFETY GLASSES.

**CAUTION:**  
UNEVEN BOLT INSTALLATION CAN DAMAGE CABINET FLOOR.

**NOTE:**

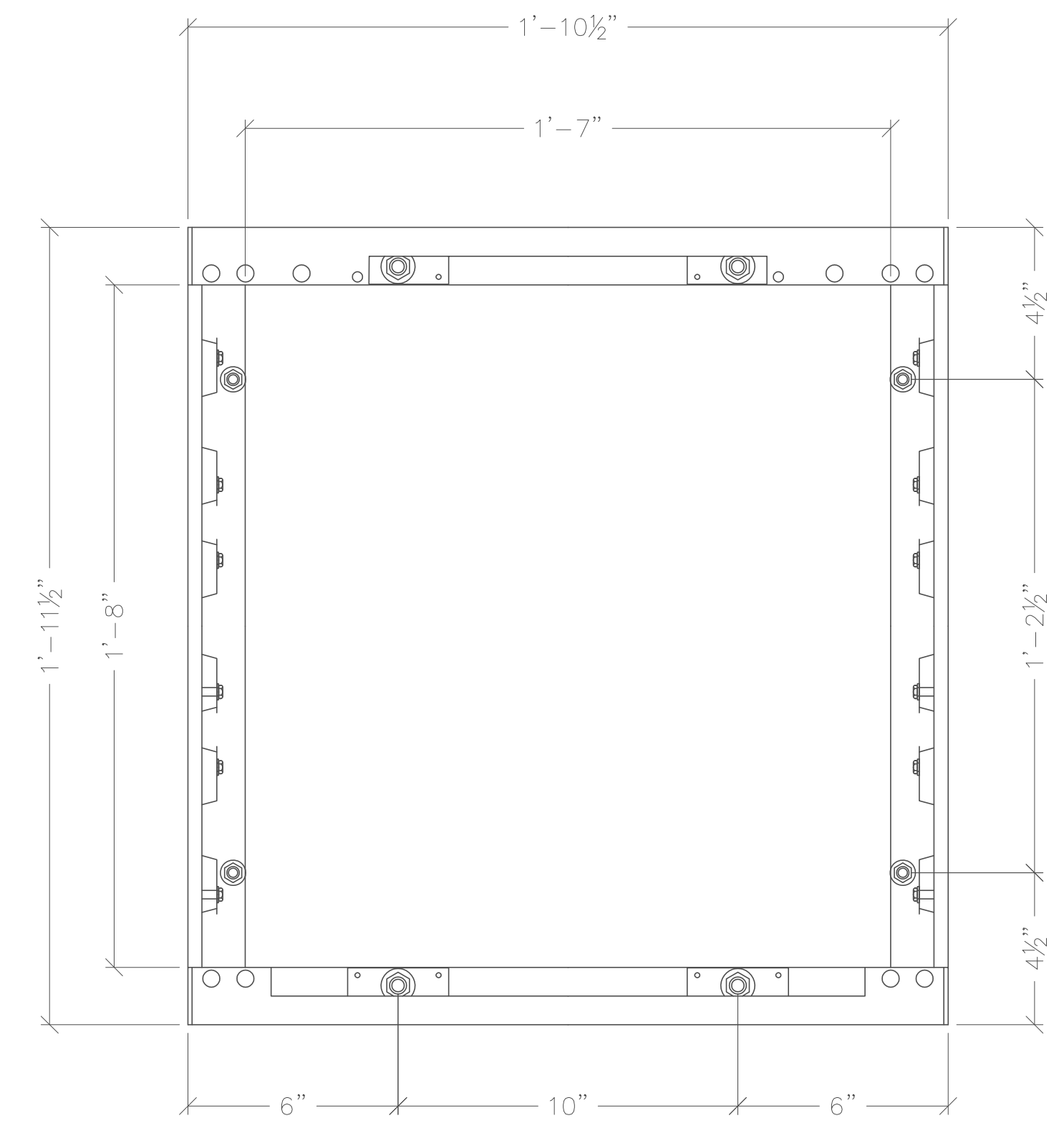
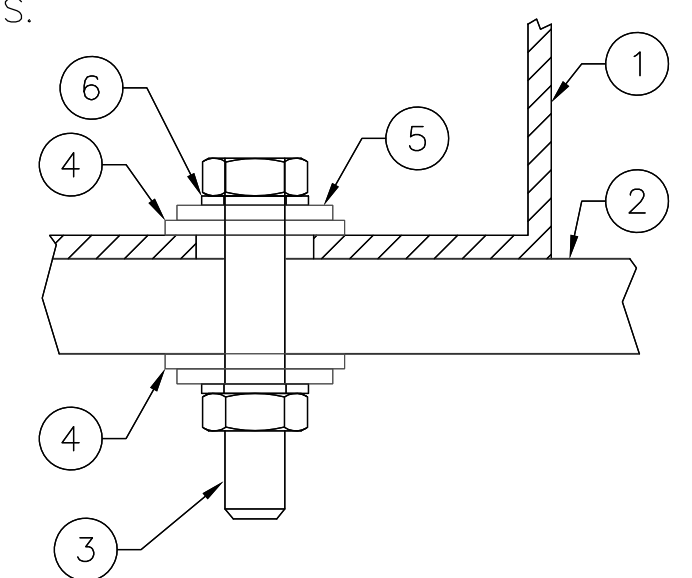
- THE DIAMETER OF THE ANCHOR HOLE IN THE CABINET FLOOR IS 9/16" THE ANCHOR BOLT SIZE IS 1/2" X 2" - 13 TPI (N.C.)
- CONTRACTOR CAN MARK ANCHOR HOLE LOCATIONS THROUGH THE FLOOR WITH THE CABINET IN PLACE OR USING A CARDBOARD TEMPLATE. CONTRACTOR CAN MAKE THE TEMPLATE BY TRACING THE OUTLINE OF THE CABINET BOTTOM INCLUDING THE ANCHOR HOLES.

**MOUNTING THE CABINET STEPS:**

- LIFT THE CABINET INTO PLACE ON THE STEEL PLATFORM TO MARK BOLT HOLE LOCATIONS.
- MARK THE BASE THROUGH THE MOUNTING BOLT HOLES.
- MOVE THE CABINET OFF THE BASE, IF NECESSARY.
- DRILL THE ANCHOR HOLES MARKED ON THE PLATFORM AND CLEAR ANY DEBRIS.
- LIFT THE CABINET INTO PLACE AND ALIGN IT OVER THE DRILLED HOLES.
- INSERT WASHER ON BOLT AND INSERT BOLT/ WASHER THROUGH HOLE.
- ON EACH BOLT (UNDERNEATH) INSTALL A FLAT WASHER AND SECURE IT WITH A NUT.
- TIGHTEN THE NUTS.

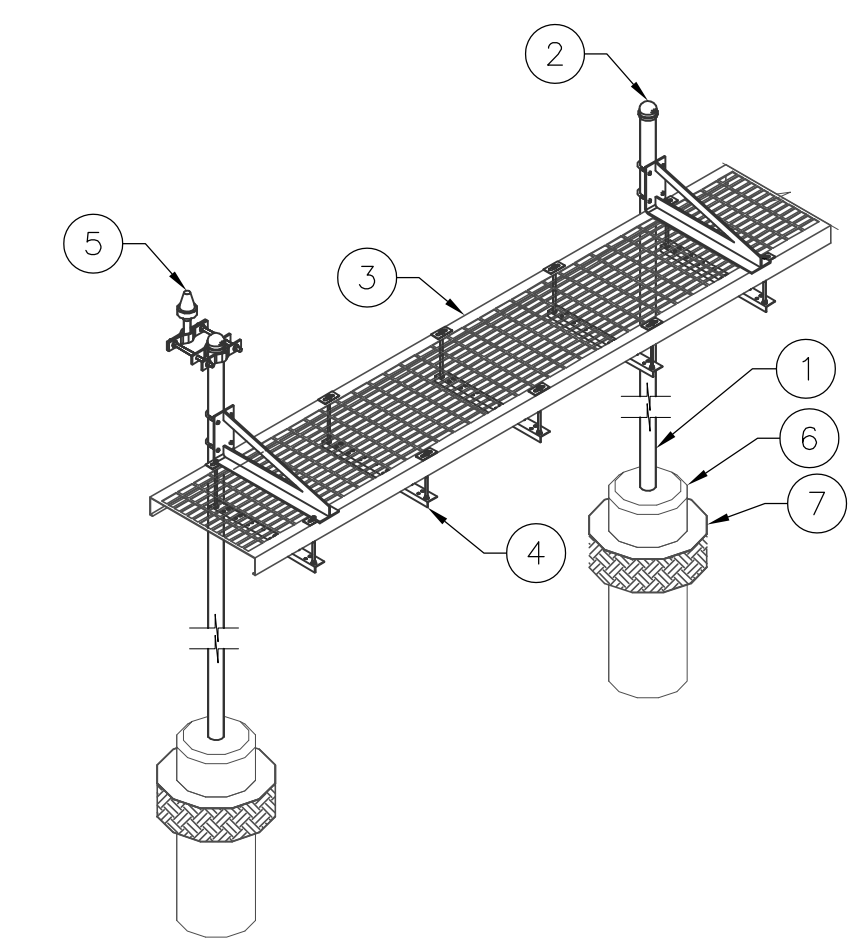
**EQUIPMENT ANCHORAGE KEYED NOTES: (#)**

- CABINET FRAMING
- FLOOR
- 1/2" DIA. THRU BOLT (TOTAL 4); VERIFY SIZE W/ MANUFACTURER SPECS.
- 1/2" WASHER (SERIES W)
- FLAT WASHER
- LOCK WASHER



**ICE BRIDGE KEYED NOTES: (#)**

- 3" SCH. 40 PIPE COLUMN,
- 3/2" FENCE POST CAP
- 24"X10" GRIP SPAN BRIDGE CHANNEL
- TRAPEZE KIT (TYP.)
- GPS ANTENNA
- 18" Ø CONCRETE FORM TUBE 4" ABOVE GRADE & 36" BELOW GRADE (CONCRETE 3000 PSI COMP. STRENGTH MINIMUM)
- FINISHED GRADE MATCH EXISTING SURFACING



**NOTE:**

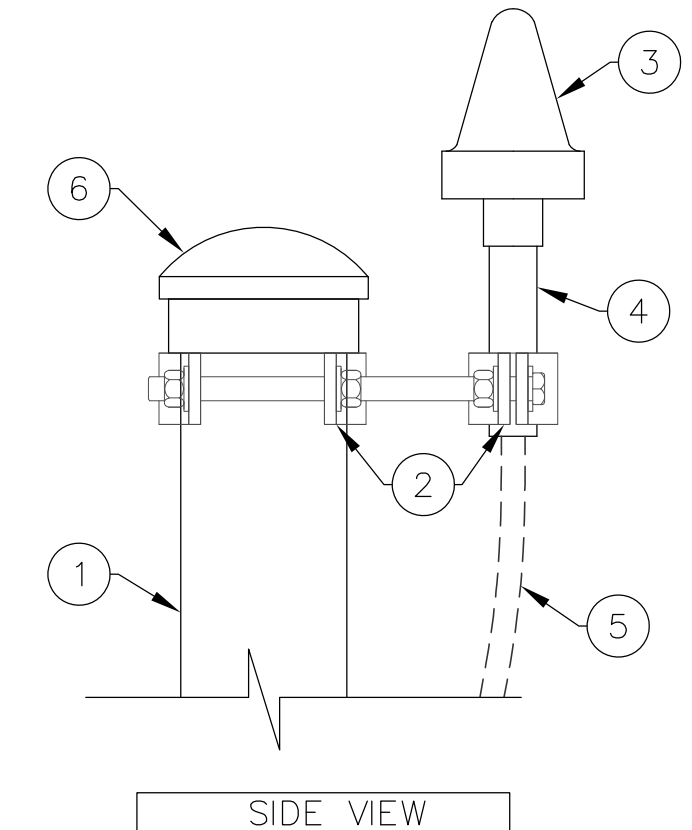
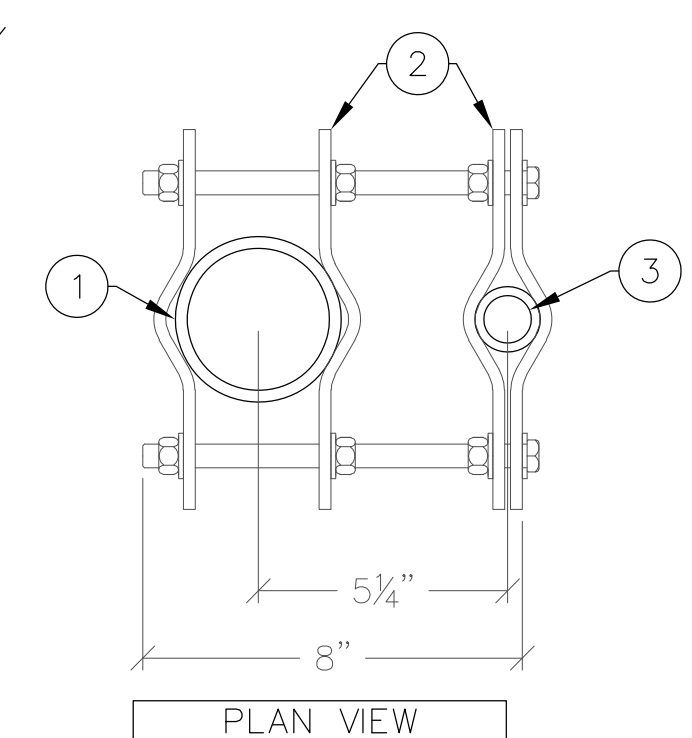
- FOR MORE INFORMATION AND INSTALLATION PLEASE REFER THE MANUFACTURER

**ICE BRIDGE DETAILS**

SCALE: N.T.S. **5**

**GPS ANTENNA MOUNT KEYED NOTES: (#)**

- ICEBRIDGE SUPPORT PIPE
- PIPE TO PIPE MOUNTING KIT BY SUPPLIER
- GPS ANTENNA
- GPS ANTENNA MOUNTING PIPE
- GPS ANTENNA COAXIAL CABLE
- SUPPORT PIPE CAP



SCALE: N.T.S. **6**

**CABINET BOLTING DETAIL**

SCALE: N.T.S. **1**

**ZTE CABINET BOLTING**

SCALE: N.T.S. **3**

**GPS ANTENNA MOUNTING DETAIL**

DESIGNER: JASON NGO  
LEAD EE: SB  
LEAD CE/SE: SAM

SUBMITTALS			
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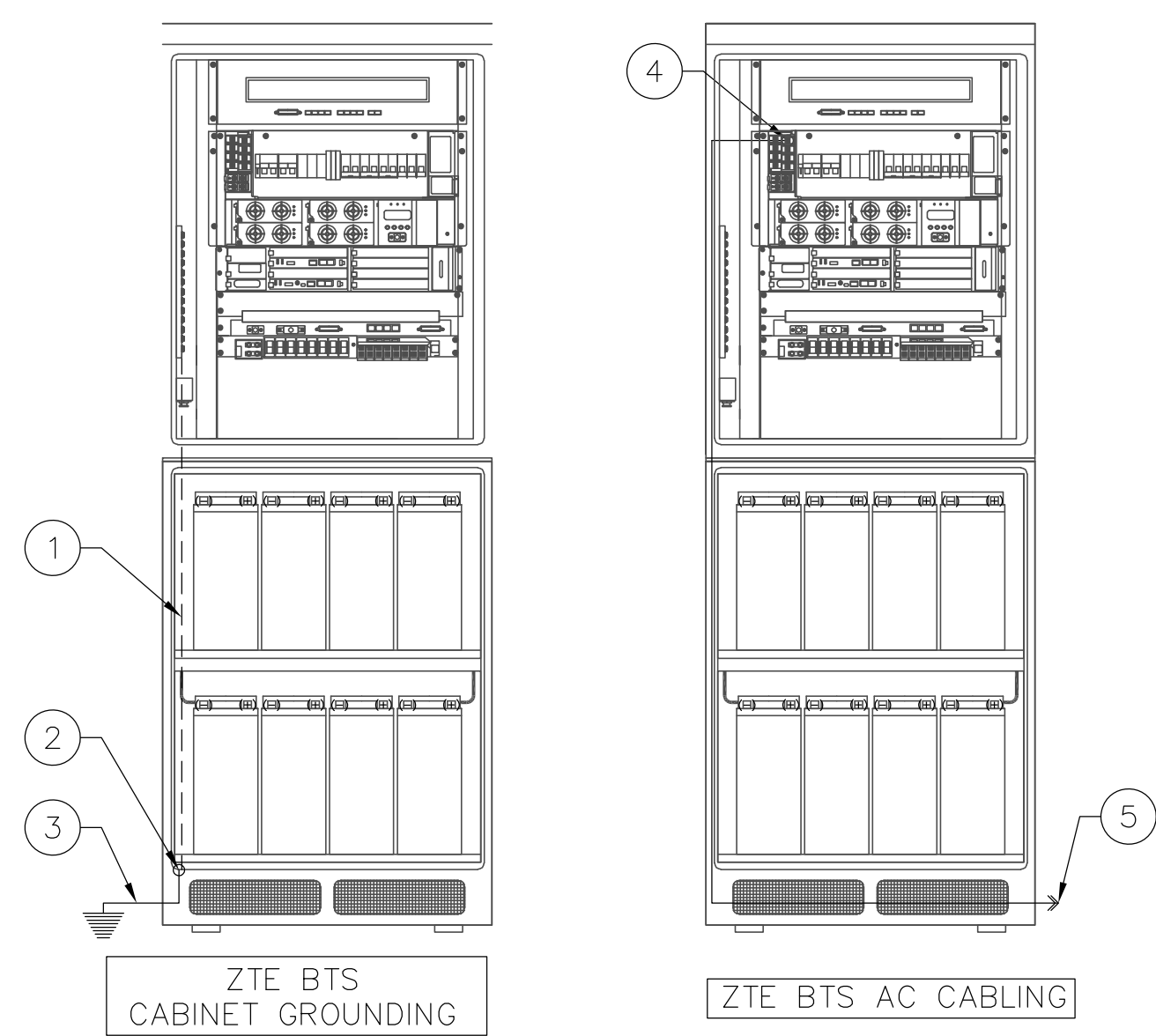
SHEET TITLE  
ZT CABINET & DETAILS

SHEET NUMBER  
A-5

**ZTE CABINET WIRING KEYED NOTES: (#)**

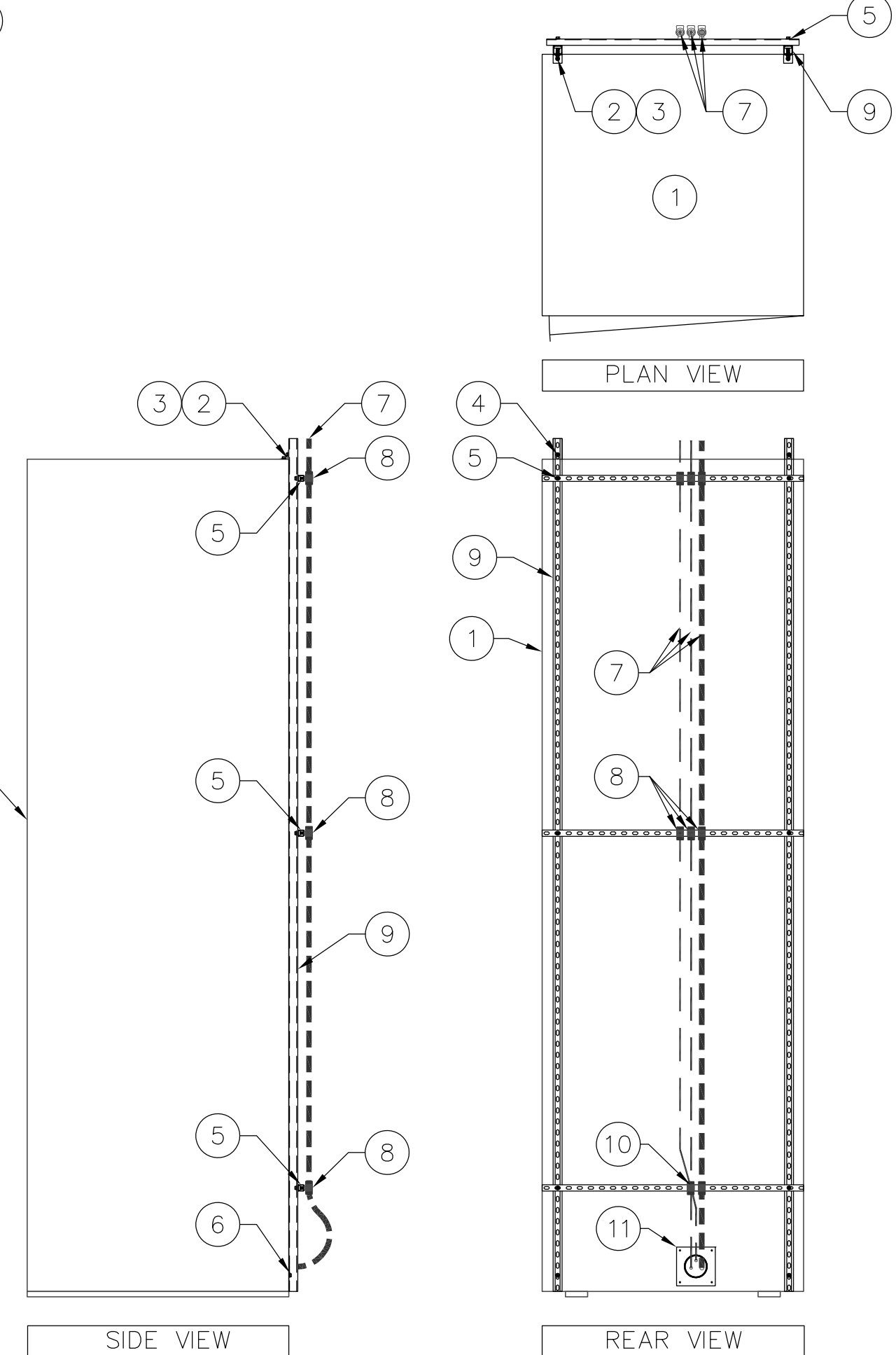
- #2 AWG STRANDED GROUND WIRE TO CABINET BUSS BAR
- #2 AWG SOLID TINNED GROUND RING TAIL
- SINGLE HOLE GROUND TERMINATION- USE STAR WASHERS
- AC CONNECTION
- 3 X #8 AWG CABLES INSTALLED INSIDE A 1" L/T FLEX CONDUIT FROM A 40 AMP BREAKER/ AC PANEL

**ALL INSTALLS**  
AC WIRE FROM BREAKER PANEL TO ZTE CABINET IN 1 INCH LT FLEX CONDUIT



**COAX SUPPORT AT EQUIPMENT CABINET KEYED NOTES: (#)**

- ZTE CABINET
- 3/8"Øx16 TPI ALL W/ NUT & WASHERS THROUGH CABINET TOP
- UNISTRUT P1068 L BRACKET
- 3/8"Øx16 TPI ALL THREAD W/ WASHERS & BOLTS
- UNISTRUT P3300T 24" LONG MIN. W/ CHANNEL NUT, BOLT & SPRING ATTACHED TO VERTICAL UNISTRUT (TYP.)
- 3/8"Øx16 TPI ALL W/ NUT & WASHERS THROUGH PREDRILLED HOLES IN CABINET BASE FRAME
- FIBER / JUMPER / COAXIAL CABLE
- UNIVERSAL SNAP IN HANGER WITH RUBBER CABLE GROMMET (TYP.)
- VERTICAL UNISTRUT P1068L (TYP.)
- UNIVERSAL DOUBLE SNAP IN HANGER WITH RUBBER CABLE GROMMET
- SINGLE ENTRY PORT WITH ENTRY PORT BOOT



SCALE: N.T.S. **7**

**CABINET ELEVATION**

SCALE: N.T.S. **2**

**ZTE CABINET WIRING**

SCALE: N.T.S. **4**

**COAX SUPPORT AT EQUIPMENT CABINET**

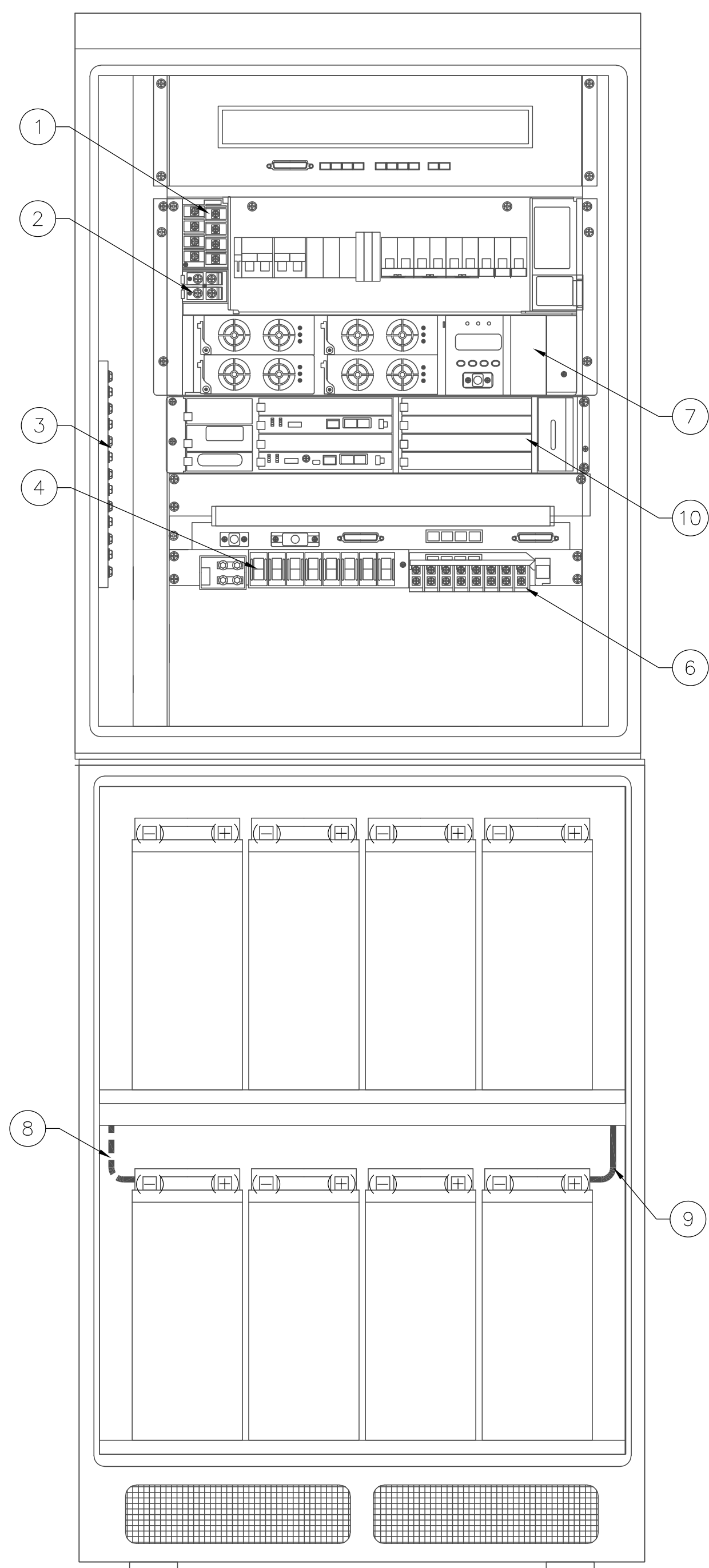
SCALE: N.T.S. **7**



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ZTE CABINET KEYED NOTES: #

1. AC CIRCUIT – NOT USED
2. BATTERY CONNECTIONS FROM BATTERY STRING – NOT USED
3. GROUND BAR
4. RRU BREAKERS
5. GPS CONNECTION
6. RRU CONNECTION
7. ALARM CONNECTION
8. BLUE WIRE GOING TO THE -48 VOLT
9. BLACK WIRE GOING TO THE -48 VOLT RETURN
10. UMTS BBU



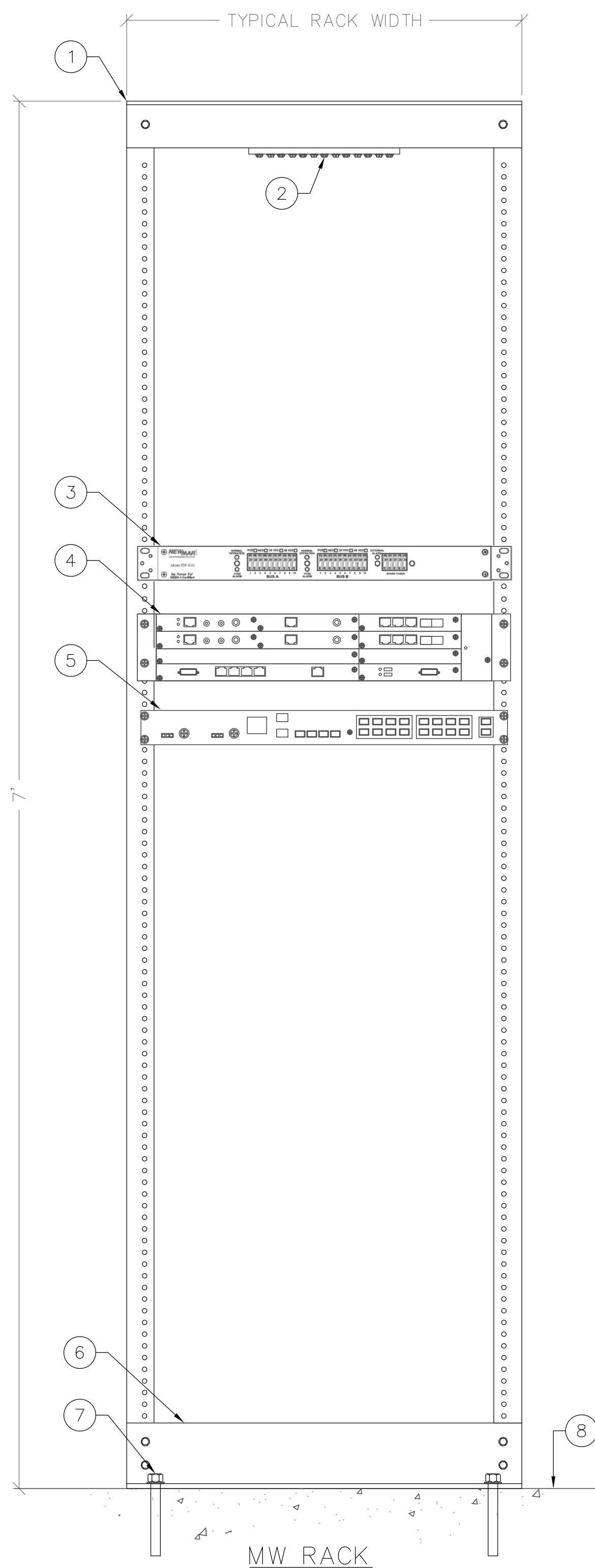
UMTS

UMTS/LTE CABINET LAYOUT

SCALE: N.T.S. 1

MW RACK KEYED NOTES: #

1. RACK
2. GROUND BAR
3. GMT FUSE PANEL
4. MICROWAVE RADIO RACK
5. ROUTER INSTALLED BY GC
6. RACK ASSEMBLY
7. ATTACHED RACK TO FLOOR PER MANUFACTURER'S SPECIFICATIONS
8. FLOOR



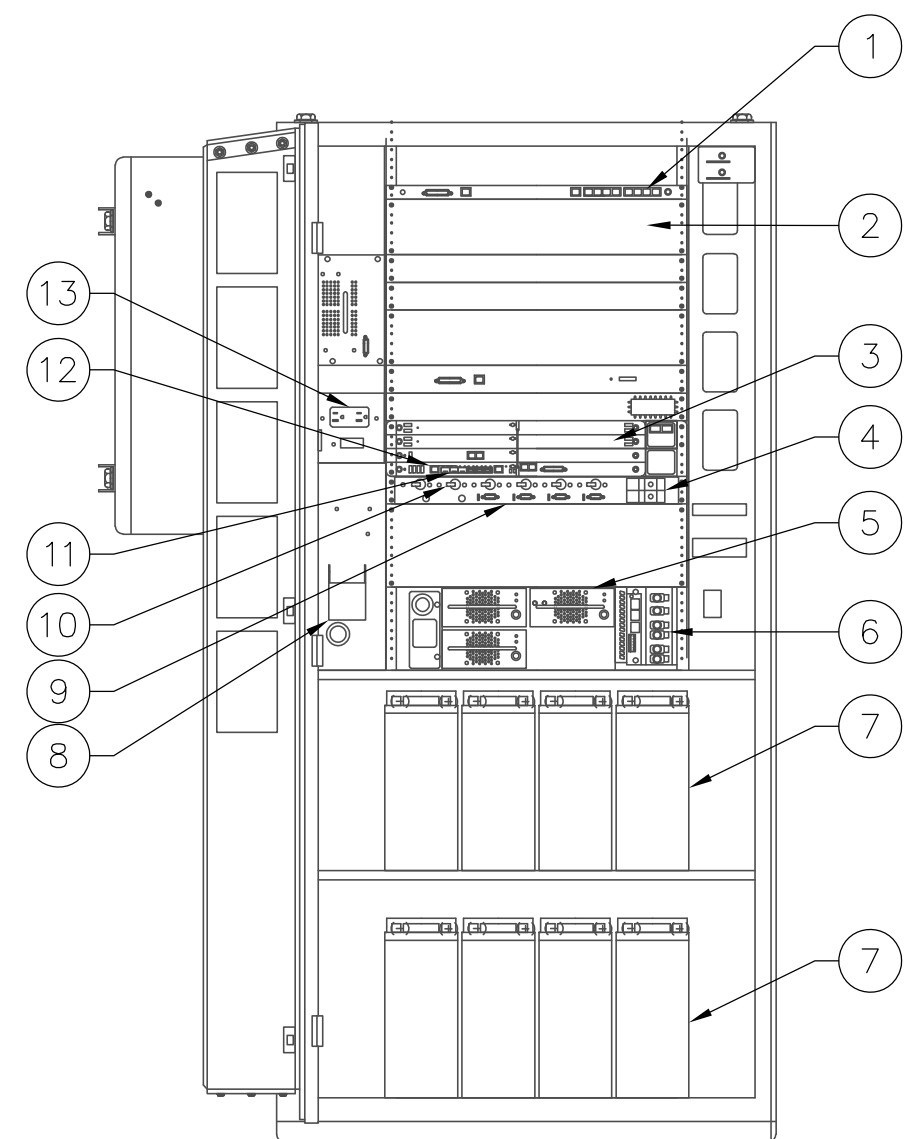
MW RACK

MW RACK DETAIL

SCALE: N.T.S. 2

ALU 9929 CABINET KEYED NOTES: #

1. ALARM SHELF: EXTERNAL ALARMS
2. EMPTY EXPANSION BBU RACK
3. BBU SHELF
4. RRU POWER BLOCK
5. RECTIFIERS (TYP.)
6. BATTERY CONNECTIONS
7. BATTERY SHELF (TYP.)
8. AC POWER CONNECTION – NOT USED
9. PDP
10. RRU BREAKERS
11. FIBER OPTIC PORTS
12. DAT CABLE CONNECTION
13. AC OUTLET

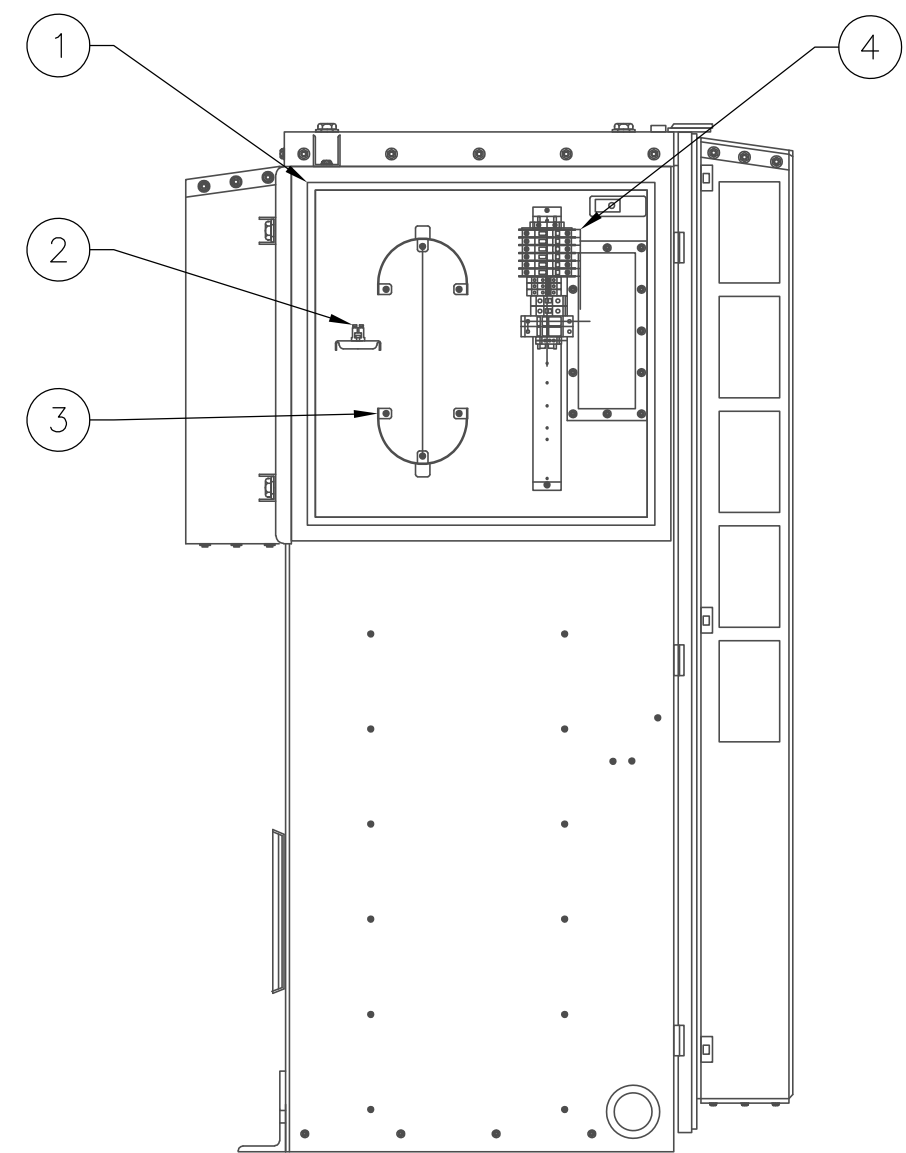


FRONT – DOOR OPEN

ALU 9929 CABINET - FRONT ELEVATION SCALE: N.T.S. 3

ALU 9929 CABINET KEYED NOTES: #

1. DC DISTRIBUTION/FIBER MANAGEMENT BOX
2. FIBER PATCH PANEL
3. EXCESS FIBER OPTIC CABLE STORAGE
4. RRU DC BLOCK



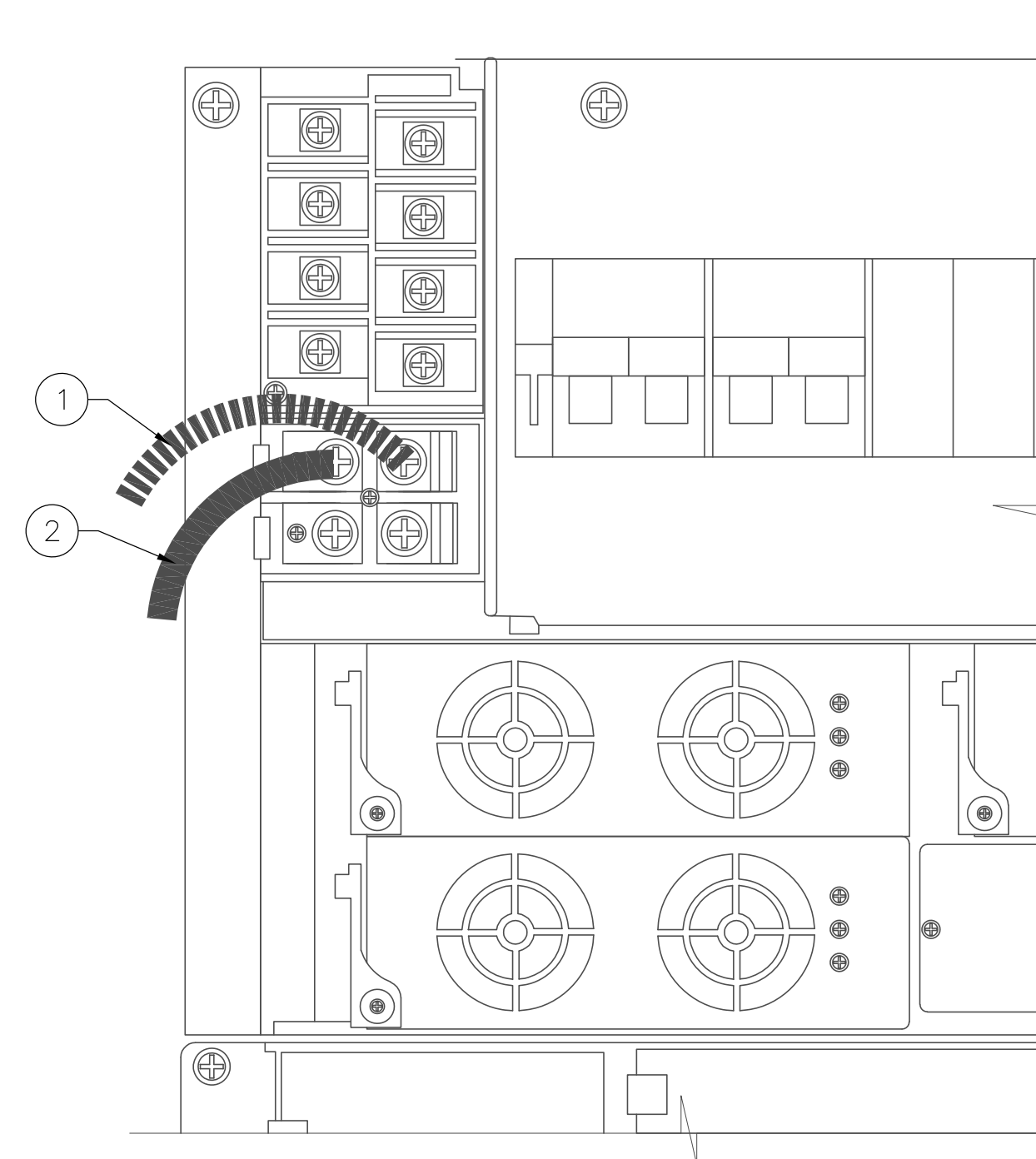
RIGHT SIDE – DOOR OPEN

ALU 9929 CABINET - SIDE ELEVATION SCALE: N.T.S. 4

ZTE BATTERY HOOKUPS KEYED NOTES: #

1. BLUE WIRE FROM (-) SIDE OF BATTERY
2. BLACK WIRE FROM (+) SIDE OF BATTERY

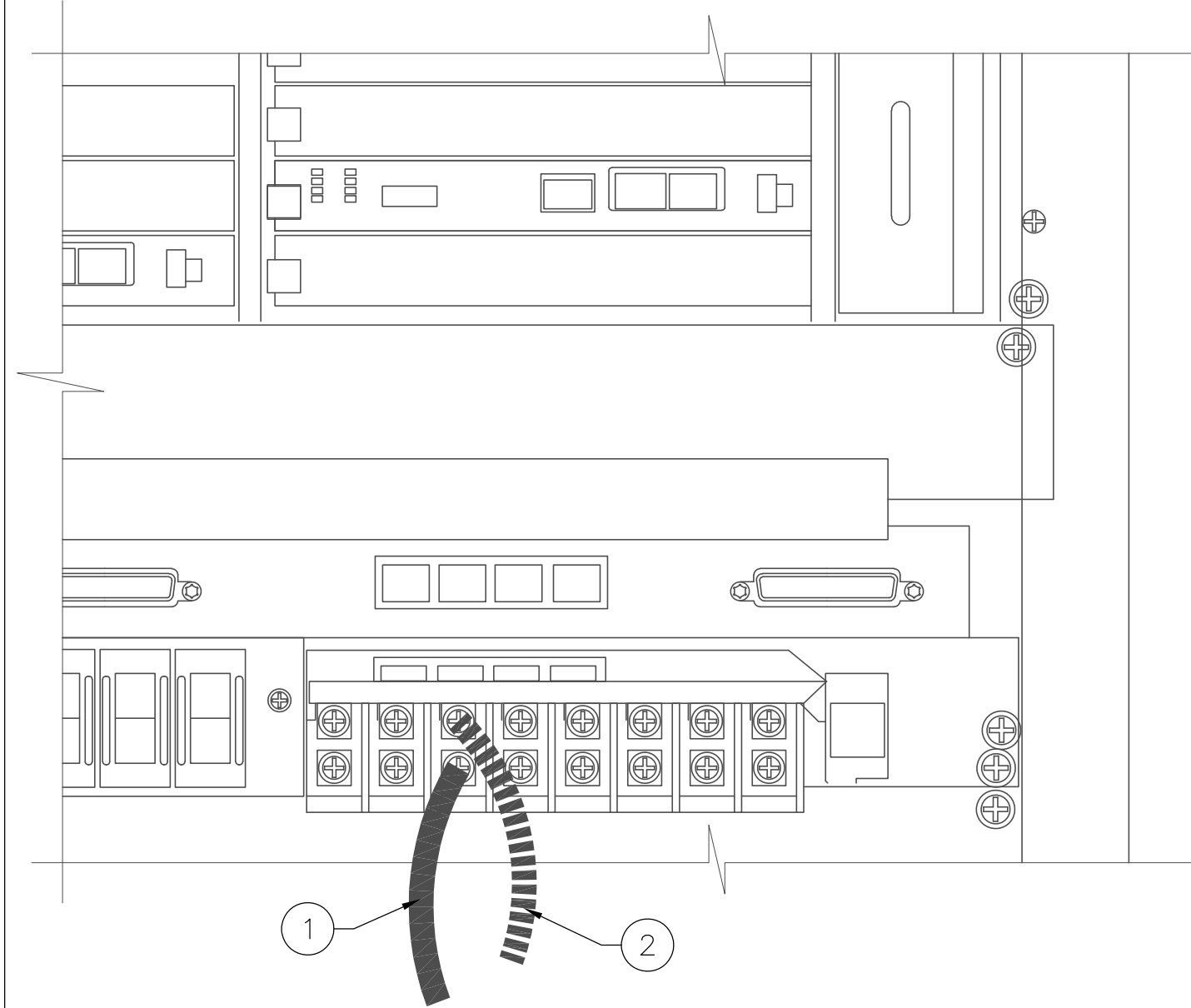
NOTE – CONTRACTOR SHALL VERIFY VOLTAGE PRIOR TO MAKING CONNECTIONS



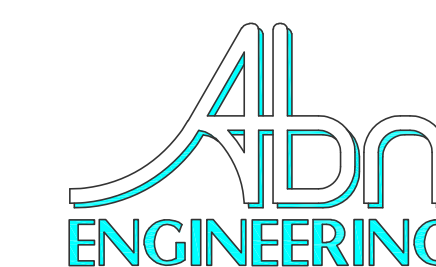
ZTE BATTERY HOOKUPS SCALE: N.T.S. 5

ZTE DCPD4 CONNECTION KEYED NOTES: #

1. BLACK WIRE -48V RETURN GOING UP TOWER TO FTTA BOX AND LANDED ON BLACK BLOCK IN FTTA BOX
2. RED WIRE -48V GOING UP TOWER TO FTTA BOX AND LANDED ON RED BLOCK IN FTTA BOX

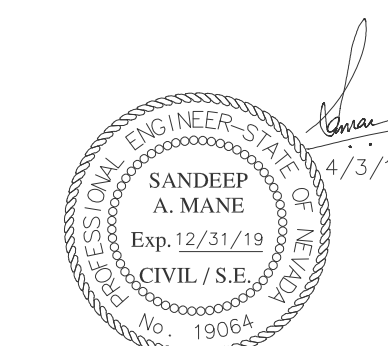


ZTE DCPD4 CONNECTIONS SCALE: N.T.S. 6



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

CONSTRUCTION DETAILS

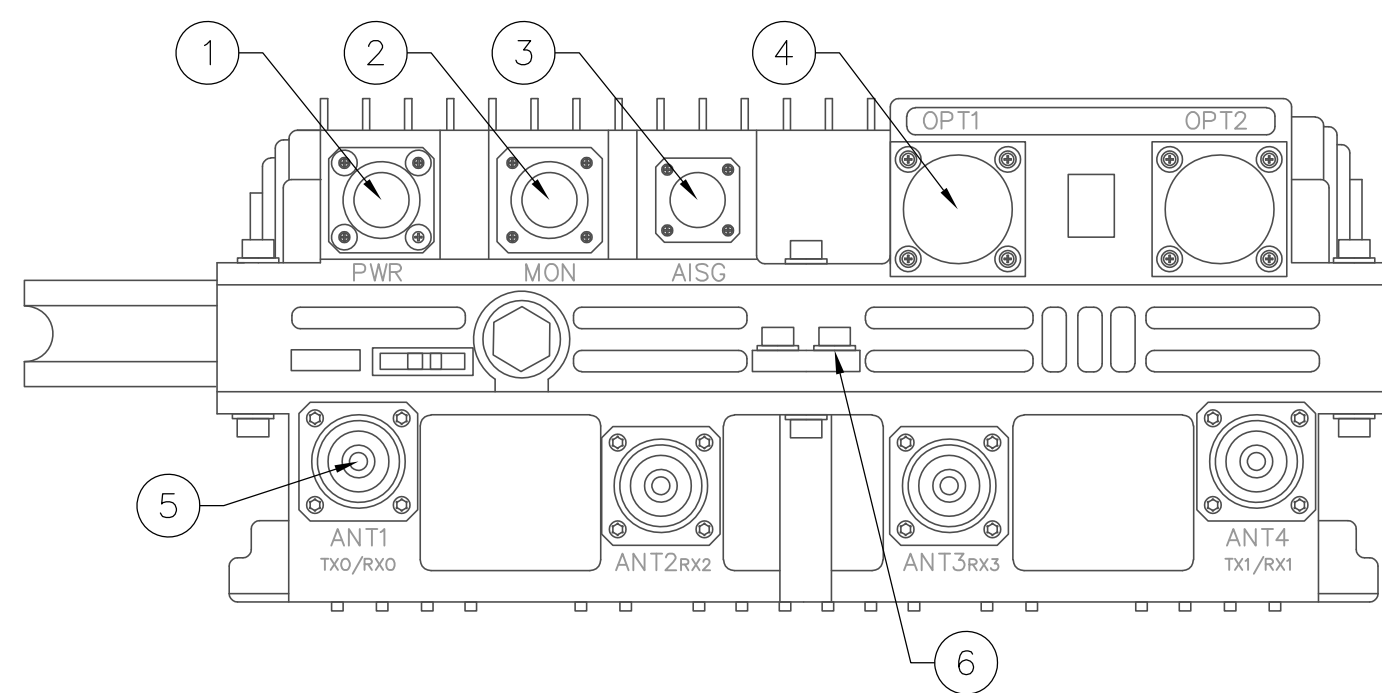
SHEET NUMBER

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**RRU JUMPER & FIBER CONNECTION KEYED NOTES: #**

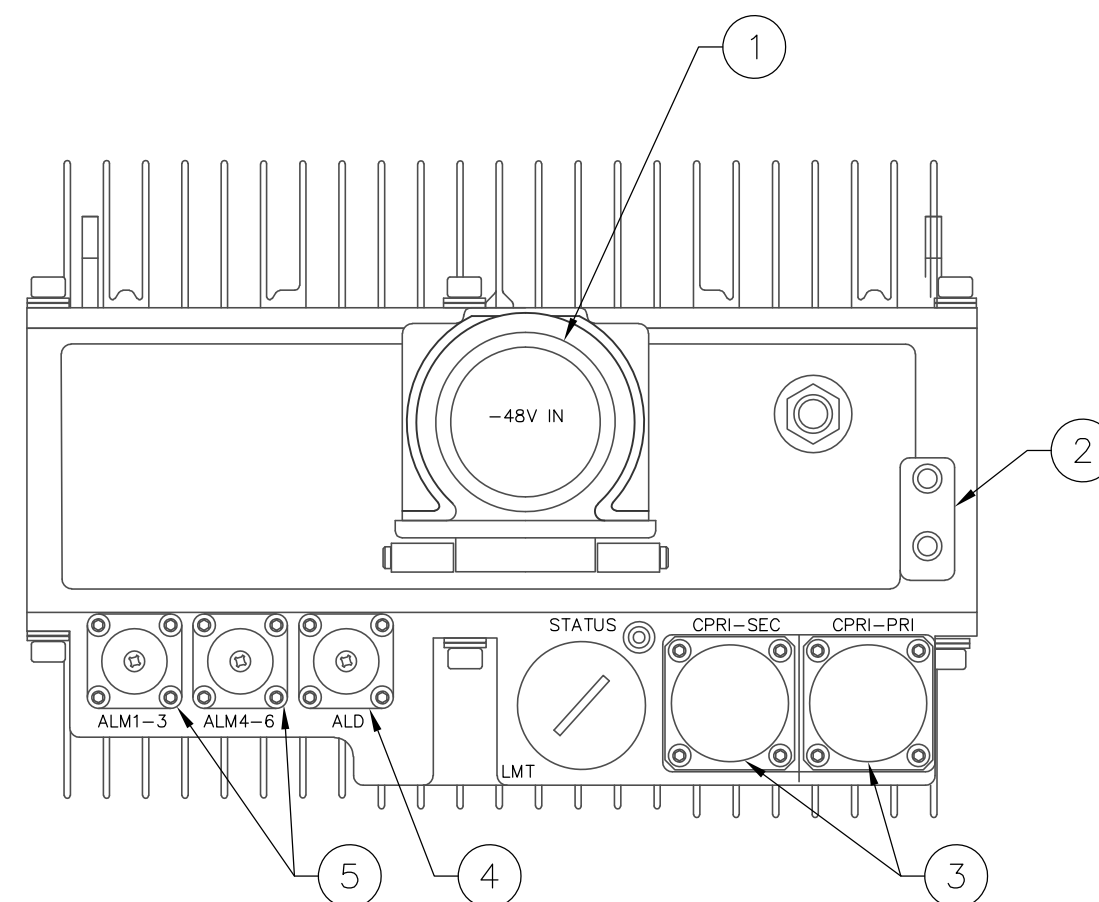
1. POWER WIRE WITH GROUND TO FTTA BOX (TOWER MOUNTED) OR TO DCPD4 (BASE MOUNTED)
2. EXTERNAL ALARMS (IF REQUIRED)
3. RET CONNECTIONS
4. FIBER CONNECTION FROM FTTA BOX (TOWER MOUNTED) OR INSIDE OF ZTE CABINET (BASE MOUNTED)
5. JUMPER CONNECTION - SEE SDP
6. #2 GROUND WIRE TO EITHER TOWER TOP BUSS BAR (IF TOWER MOUNTED) OR BASE MOUNTED BUSS BAR (IF BASE MOUNTED)



BOTTOM VIEW OF UMTS/LTE REMOTE RADIO UNIT (RRU)

**RRH KEYED NOTES: #**

1. RRH DC POWER CONNECTION (UNDER RED CAP) - SEE DETAIL 4 ON THIS SHEET
2. GROUND CONNECTION
3. FIBER OPTIC CONNECTION FROM FTTA BOX (TOWER MOUNTED) OR INSIDE OF LTE CABINET (BASE MOUNTED)
4. RET CONNECTIONS
5. EXTERNAL ALARMS (IF REQUIRED)



BOTTOM VIEW OF LTE REMOTE RADIO HEAD (RRH)

**RRU JUMPER & FIBER CONNECTIONS**

SCALE: N.T.S. **1**

**LTE RRH - BOTTOM VIEW**

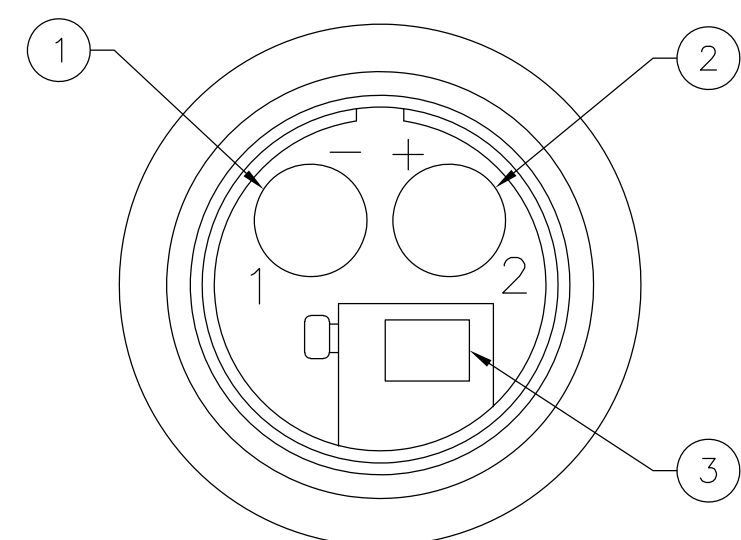
SCALE: N.T.S. **3**

**NOT USED**

SCALE: N.T.S. **5**

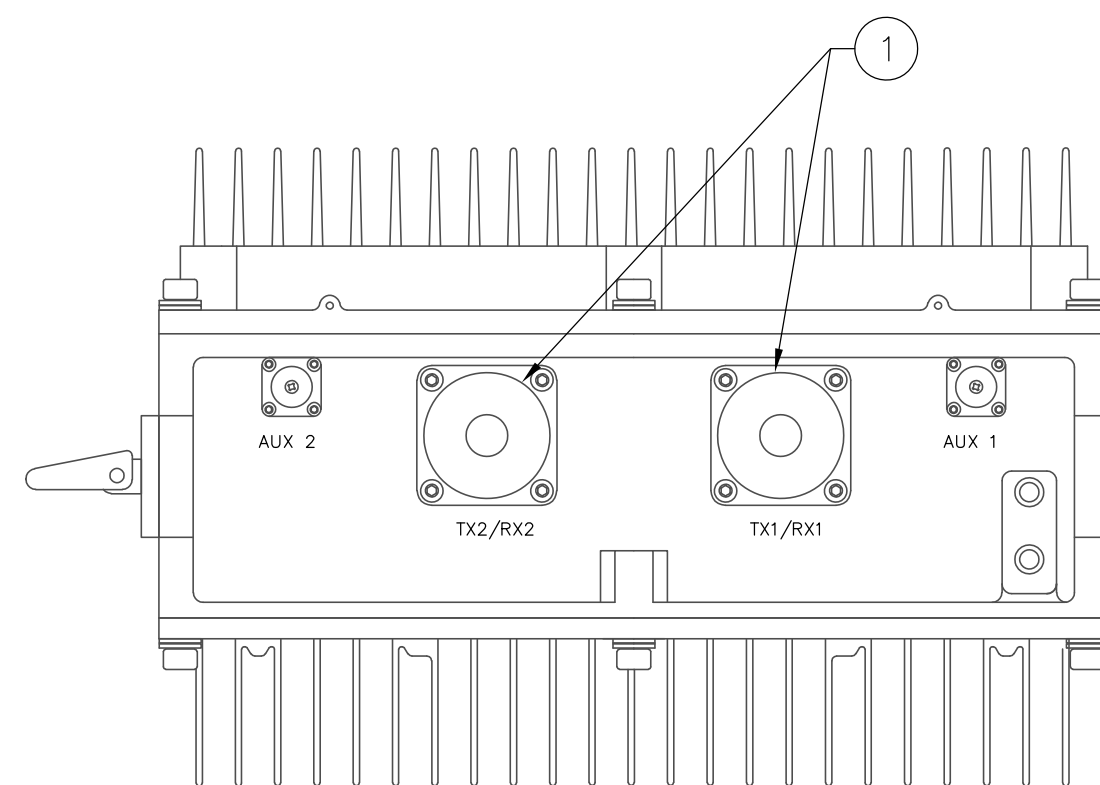
**R8882 RRU POWER CONNECTOR KEYED NOTES: #**

1. BLUE WIRE FROM THE FTTA BOX ON RED BLOCK TO HERE
2. BLACK WIRE FROM FTTA BOX ON BLACK BLOCK TO HERE
3. GROUND WIRE



**RRH KEYED NOTES: #**

1. ANTENNA JUMPER CONNECTIONS



TOP VIEW OF LTE REMOTE RADIO HEAD (RRH)

**R8882 RRU POWER CONNECTOR**

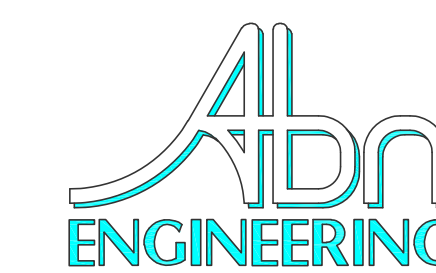
SCALE: N.T.S. **2**

**LTE RRH - TOP VIEW**

SCALE: N.T.S. **4**

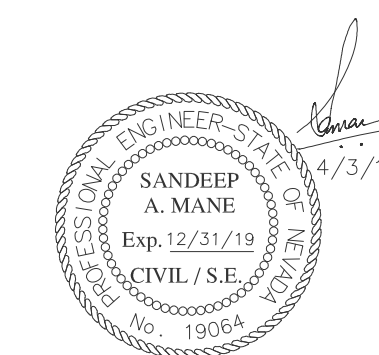
**NOT USED**

SCALE: N.T.S. **6**



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

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CONSTRUCTION DETAILS

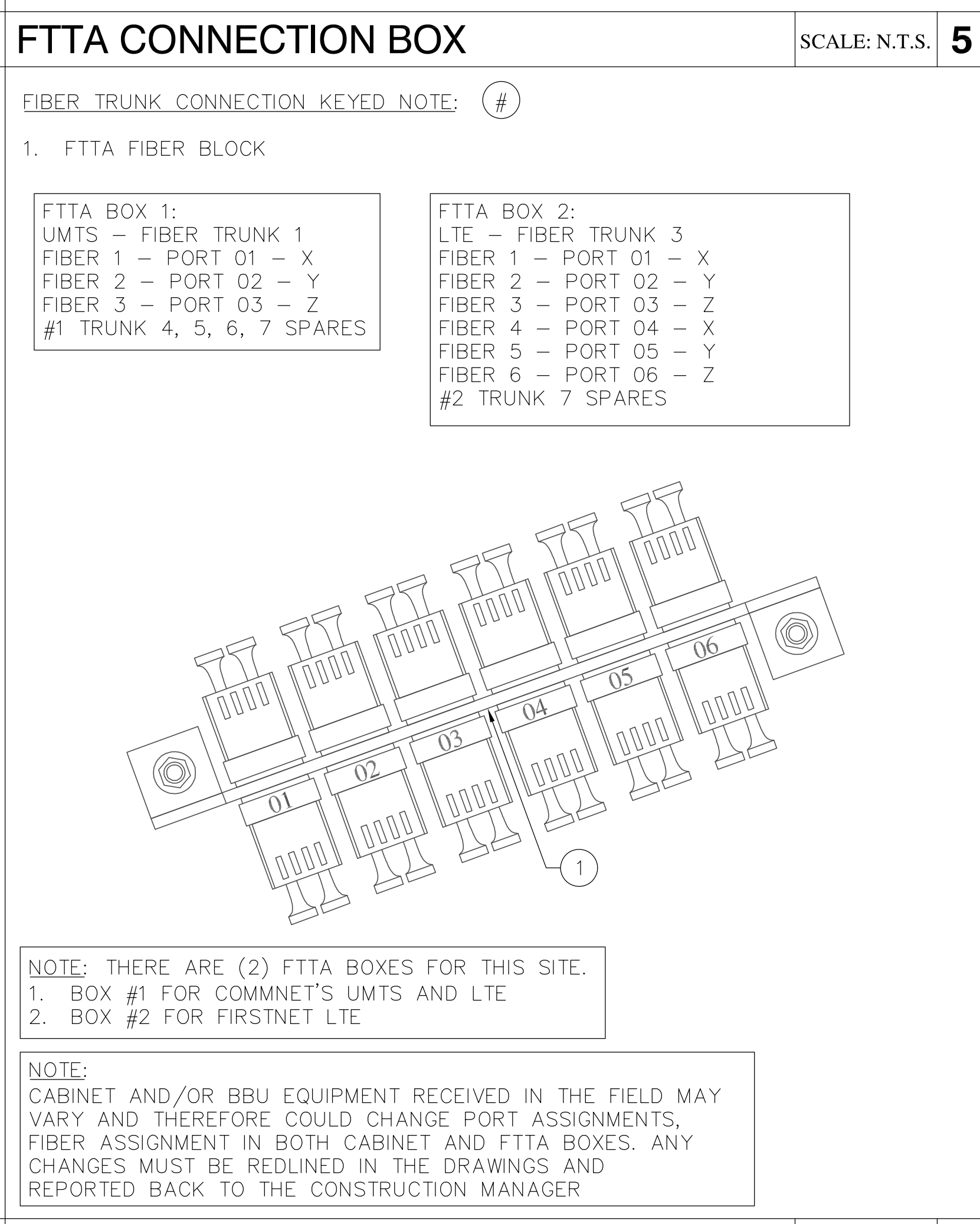
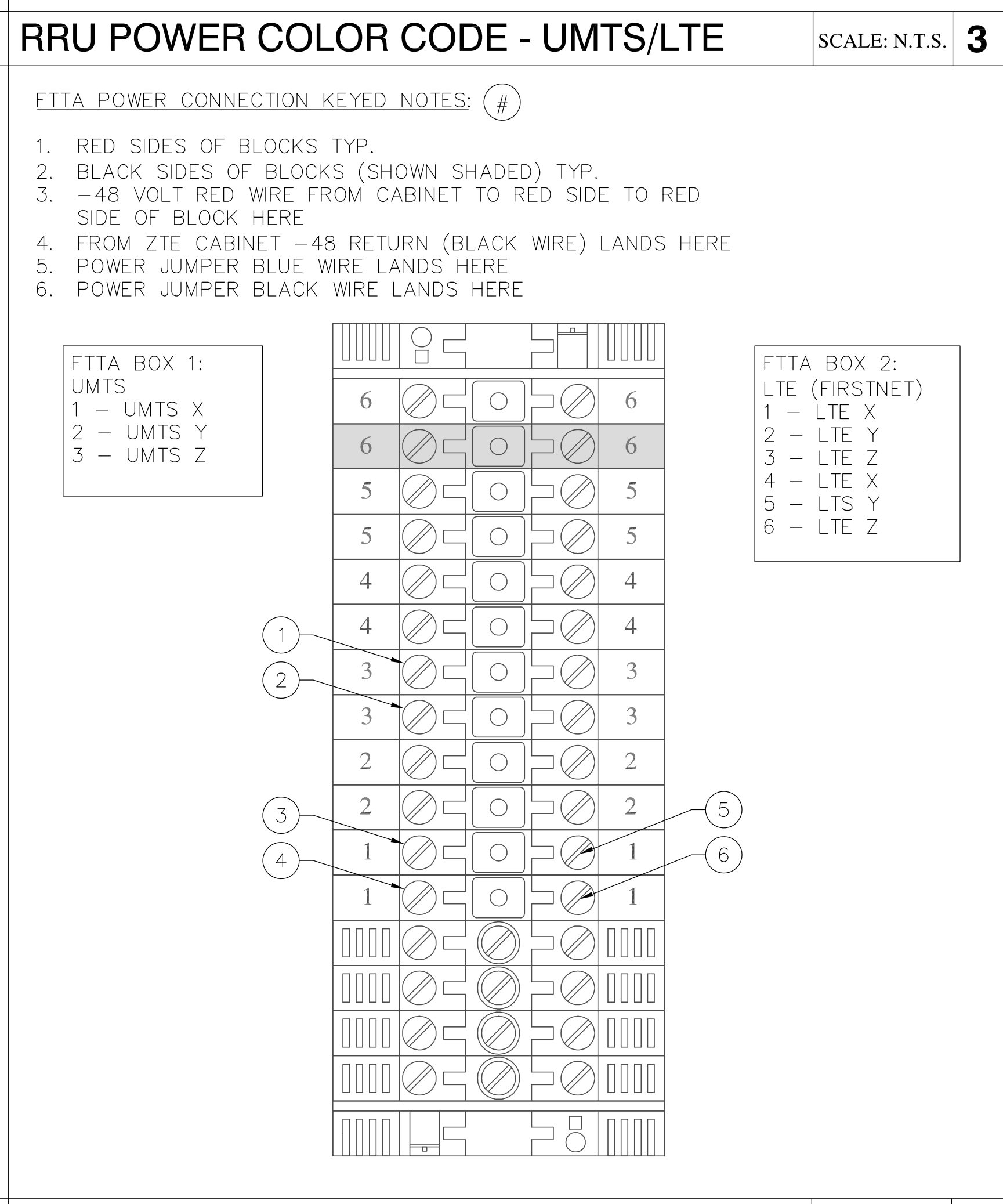
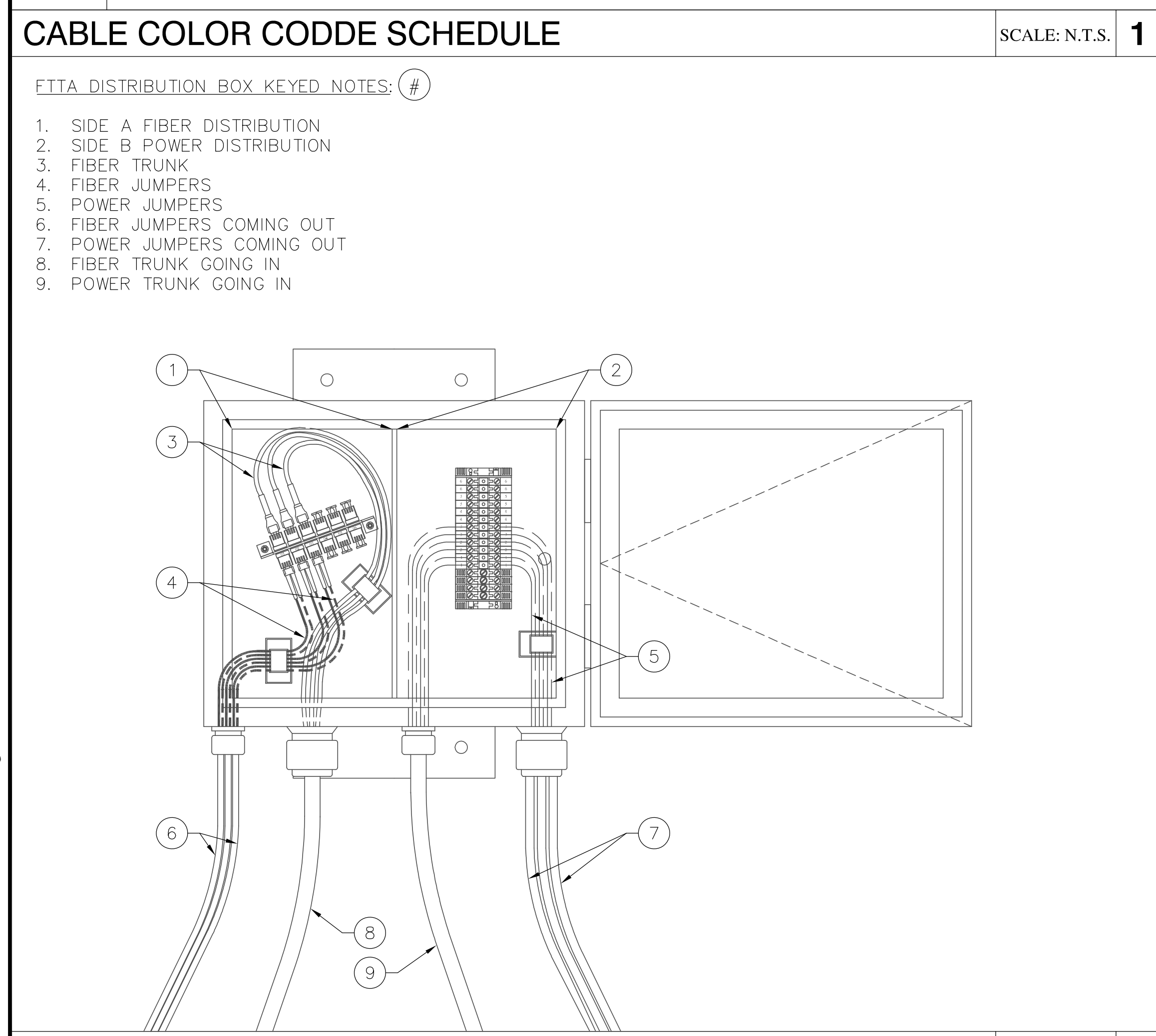
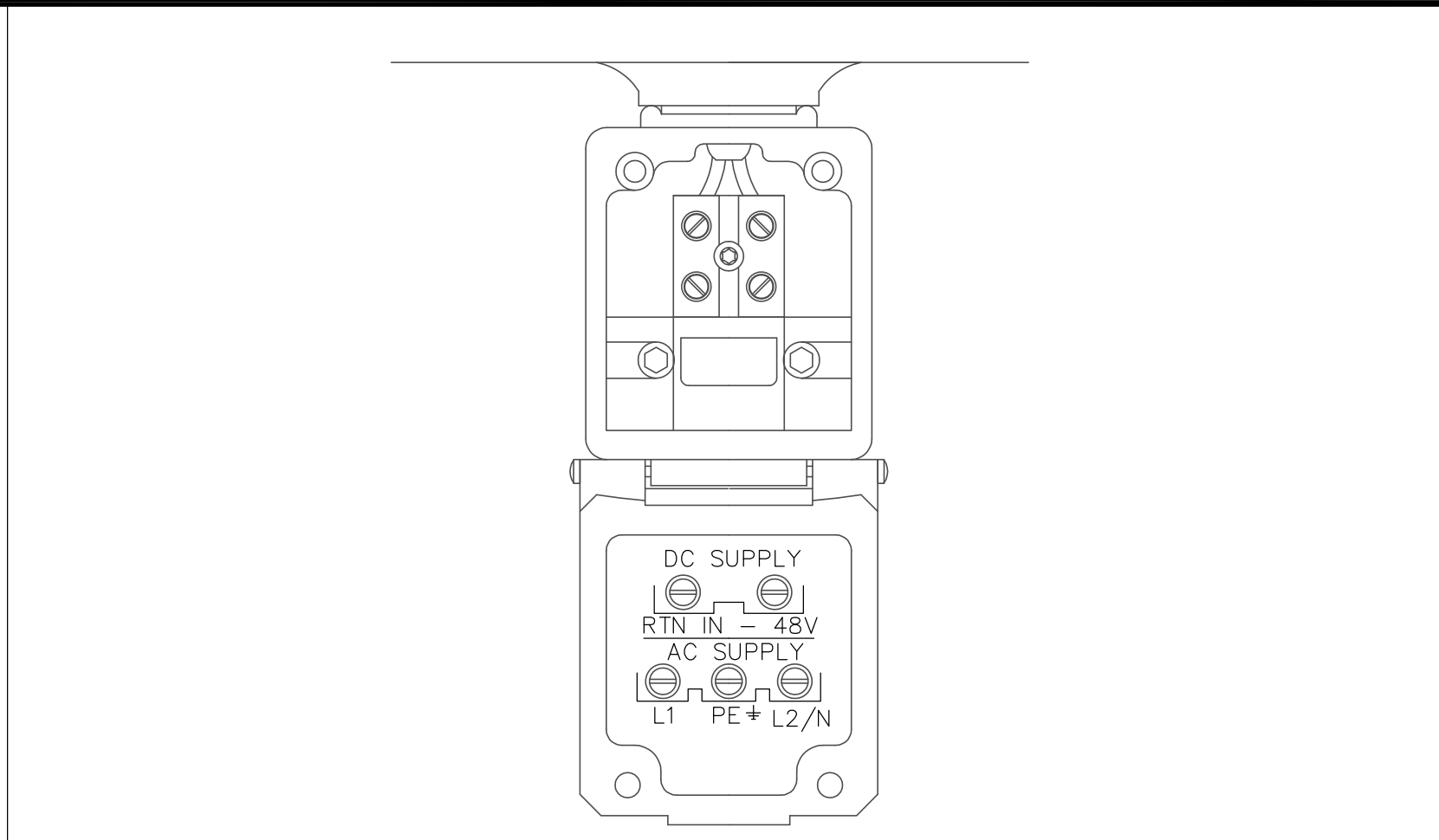
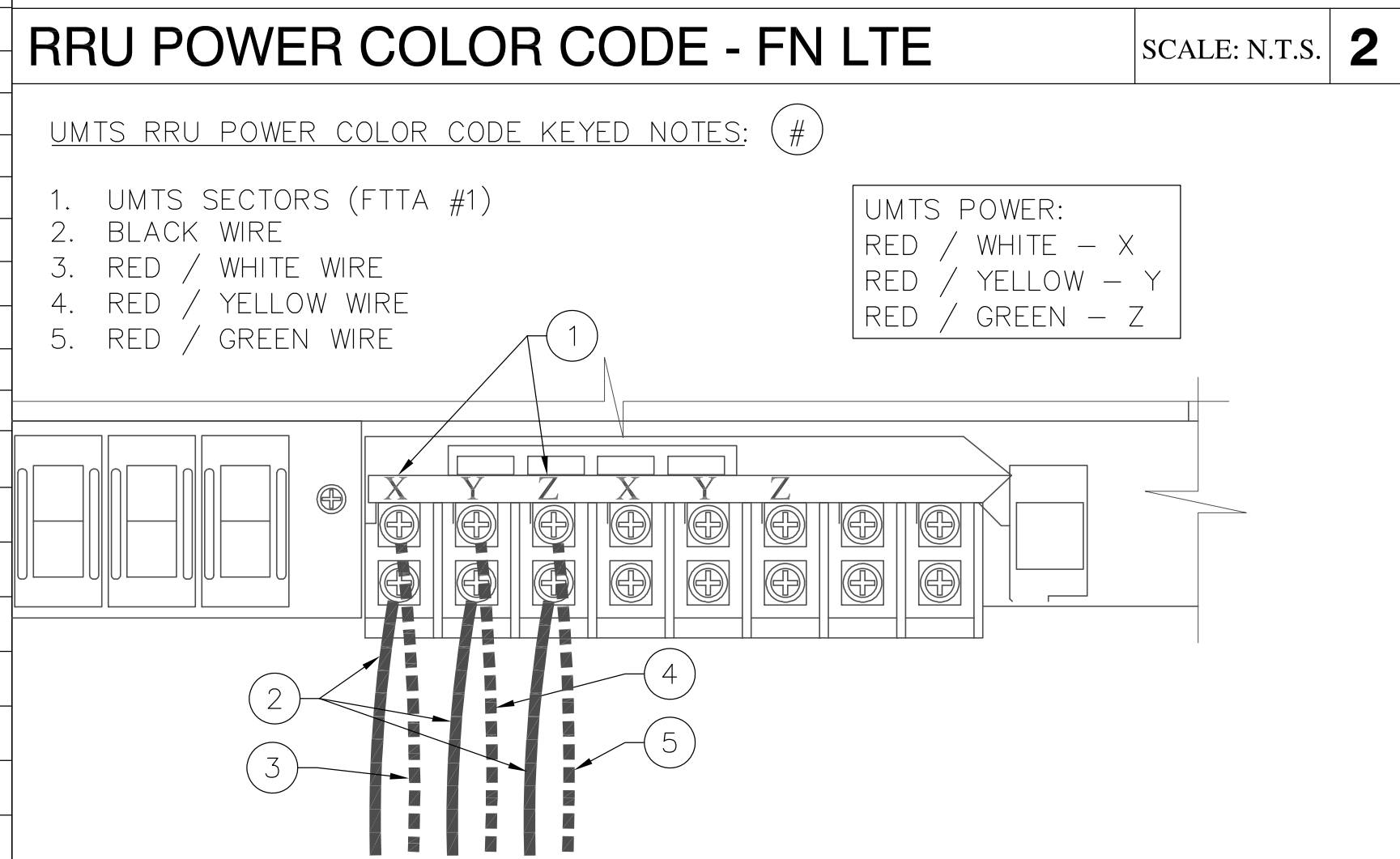
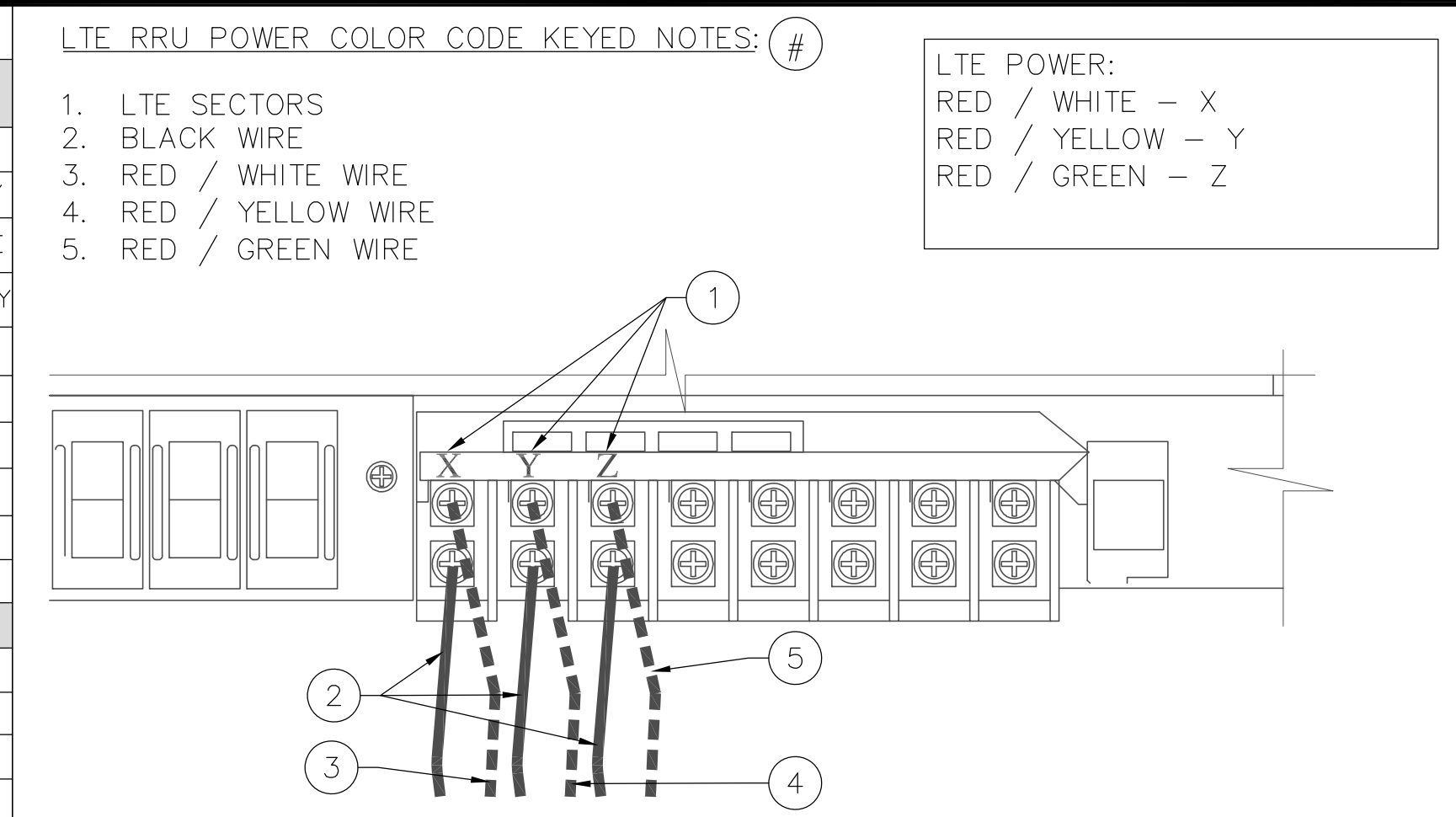
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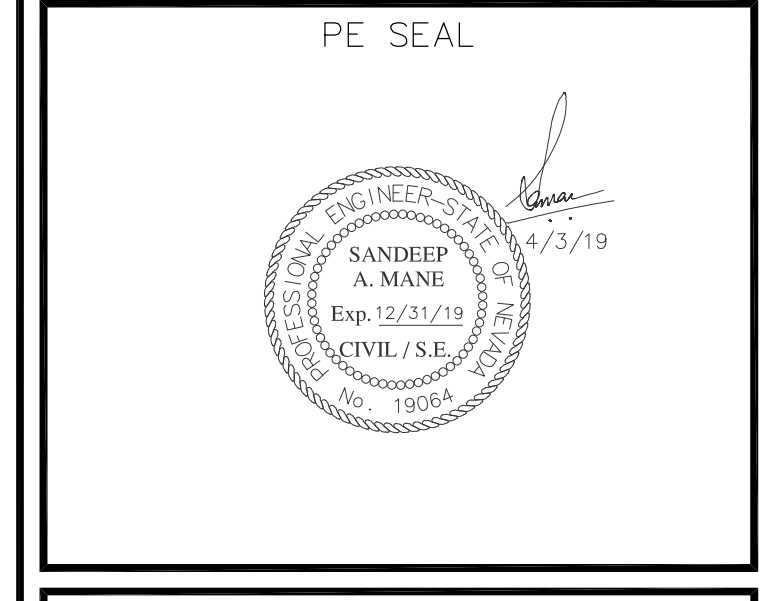
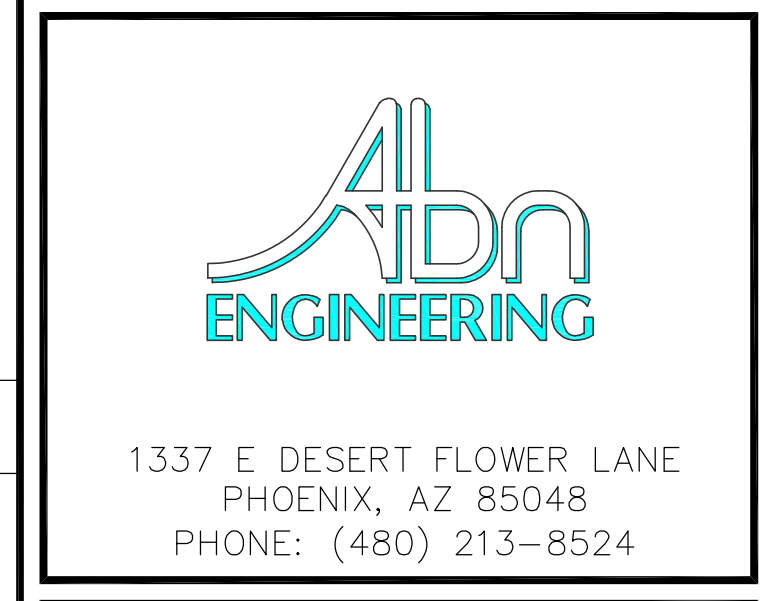
CABLE COLOR CODE SCHEDULE				
TECHNOLOGY	CABLE TYPE	TAPE COLOR	COMMENTS	RRU P/N CODE (LOCATED ON RRU TAG)
LTE	POWER TRUNK	1 ORANGE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR LTE, ADD 1 ADDITIONAL WRAP	12955731012 ZXSDR R88 S8500 (B6B) 850 CDMA&LTE DUAL MODE
LTE	FIBER TRUNK	1 ORANGE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR LTE, ADD 1 ADDITIONAL WRAP	12955731009 ZXSDR R88 S8500 (B6A) 850 STANDARD CDMA ONLY
GSM/UMTS	POWER TRUNK	1 YELLOW WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR GSM/UMTS, ADD 1 ADDITIONAL WRAP	12955731011 ZXSDR R88 S1900 (B6B) 1900 CDMA&LTE DUAL MODE
GSM/UMTS	FIBER TRUNK	1 YELLOW WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR GSM/UMTS, ADD 1 ADDITIONAL WRAP	12955731010 ZXSDR R88 S8500 (B6B) 1900 STANDARD CDMA ONLY
CDMA	POWER TRUNK	1 GREEN WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR CDMA, ADD 1 ADDITIONAL WRAP	12955731037 850 CDMA R8882 NEW SINGLE MODE
CDMA	FIBER TRUNK	1 GREEN WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR CDMA, ADD 1 ADDITIONAL WRAP	12955731035 1900 CDMA R8882 NEW SINGLE MODE
UMTS	POWER TRUNK	1 PURPLE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR UMTS, ADD 1 ADDITIONAL WRAP	12955731023 ZXSDR R8882 S8500(B6B) - 850 GSM/UMTS
UMTS	FIBER TRUNK	1 PURPLE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR UMTS, ADD 1 ADDITIONAL WRAP	12955731024 ZXSDR R8882 S1900(B6B) - 1900 GSM/UMTS
DO	POWER TRUNK	1 WHITE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR DO, ADD 1 ADDITIONAL WRAP	
DO	FIBER TRUNK	1 WHITE WRAP	ADDITIONAL POWER OR FIBER TRUNKS FOR DO, ADD 1 ADDITIONAL WRAP	
TECHNOLOGY	CABLE TYPE	TAPE COLOR	COMMENTS	
LTE	POWER TRUNK	1 ORANGE+FREQ+SECTOR		
LTE	FIBER TRUNK	1 ORANGE+FREQ+SECTOR		
GSM/UMTS	POWER TRUNK	1 YELLOW+FREQ+SECTOR		
GSM/UMTS	FIBER TRUNK	1 YELLOW+FREQ+SECTOR		
CDMA	POWER TRUNK	1 GREEN+FREQ+SECTOR		
CDMA	FIBER TRUNK	1 GREEN+FREQ+SECTOR		
UMTS	POWER TRUNK	1 PURPLE+FREQ+SECTOR		
UMTS	FIBER TRUNK	1 PURPLE+FREQ+SECTOR		
DO	POWER TRUNK	1 WHITE+FREQ+SECTOR		
DO	FIBER TRUNK	1 WHITE+FREQ+SECTOR		
FREQUENCY	COLOR			
700	BLACK/BLANK			
850	GREY			
1900	BROWN			
SECTOR	CABLE TYPE	COLOR		
X	COAX JUMPER	RED		
Y	COAX JUMPER	WHITE		
Z	COAX JUMPER	BLUE		
EXAMPLE	COLOR CODE FOR LTE FOR 700MHz - 1 ORANGE WRAP, 1 BLACK OR LEAVE BLANK (CABLE COLOR IS ALREADY BLACK) ON POWER / FIBER TRUNK			
COLOR CODE FOR GSM/UMTS FOR 850 MHz - 1 YELLOW WRAP, 1 GREY				



FTTA DISTRIBUTION BOX CONNECTION DETAIL SCALE: N.T.S. 6

FTTA POWER CONNECTION SCALE: N.T.S. 7

FIBER TRUNK CONNECTION SCALE: N.T.S. 8



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS			
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PROJECT  
 RAW LAND BUILD

SITE ADDRESS  
 LAT: 41°01'31.25374"N  
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 GERLACH, NV 89412

SHEET TITLE  
 CONSTRUCTION DETAILS

SHEET NUMBER  
 A-7







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BUILDING CODE:  
2012 EDITION OF THE INTERNATIONAL BUILDING CODE WITH WASHOE COUNTY AMENDMENTS

GENERAL:  
ENTIRE CONTRACT DOCUMENTS SHALL BE USED TO BUILD BUILDING. SOME CRITICAL ITEMS REQUIRED BY OTHER DISCIPLINES MAY NOT BE SHOWN ON STRUCTURAL DRAWING.

ITEMS SHOWN BY OTHER DISCIPLINES WITH REFERENCE TO THESE DRAWING BUT NOT SHOWN IN THIS SET SHALL BE CONSIDERED DESIGN BUILD ITEMS. SUB-CONTRACTOR SHALL SUBMIT DESIGN BY OTHERS FOR REVIEW.

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS).

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & COORDINATE SITE CONDITIONS WITH THE DRAWINGS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES & OMISSIONS SHALL BE RESOLVED WITH THE PROJECT OWNER. DO NOT USE SCALED DIMENSIONS. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

APPROVED EQUAL OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

ALL DIMENSIONS SHOWN (INCLUDING ELEVATIONS) ON STRUCTURAL DRAWINGS ARE TO ASSIST CONTRACTOR IN VERIFICATION. SCALING DIMENSIONS FROM DRAWINGS IS NOT PERMITTED. LOCATION OF ALL ITEMS SHALL BE DETERMINED BY DIMENSIONS OR NOTES ONLY; DO NOT USE GRAPHIC APPEARANCE TO ASSUME SPECIFIC LOCATIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH DRAWINGS AND FINISHED GRADE WITH CIVIL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE RECORD ENGINEER.

ALL DETAILS SHOWN SHALL BE INCORPORATED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS, WHETHER SPECIFICALLY INDICATED OR NOT. TYPICAL DETAILS MAY OR MAY NOT BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN. WHERE NO SPECIFIC DETAIL IS SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. FOR BIDDING PURPOSE, WHERE ANY MEMBER OR STRUCTURE/ELEMENT SHOWN BUT NOT CALLED OUT ON THE PLANS OR DETAILS, THE LARGEST SIMILAR MEMBER OR ELEMENT USED IN THE PROJECT SHALL BE UTILIZED.

ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF NEVADA.

DESIGN LOADS:  
ROOF LIVE LOAD = 20 PSF (REDUCIBLE)  
ROOF SNOW LOAD = 83 PSF  
DESIGN ROOF LOAD = 143 PSF (TOTAL)  
WIND LOAD = 130 MPH WIND SPEED WITH 3 SECOND GUST  
EXPOSURE = C  
SEISMIC DESIGN CATEGORY = D, R = 2  
SOIL SITE CLASS D  
RISK CATEGORY II

FOUNDATIONS:  
THE FOUNDATION DESIGN IS BASED UPON THE PARAMETERS AND RECOMMENDATIONS IN THE GEOTECHNICAL REPORT BY PEZONELLA GEOTECHNICAL SERVICES, JOB# PG-18-001.  
THE BUILDING WALL FOUNDATION IS DESIGNED FOR MAXIMUM SOIL BEARING PRESSURE = 4,000 PSF.  
THE SOIL UNSUITABLE FOR SUPPORTING FOUNDATION SHALL BE REMOVED AS DIRECTED BY GEOTECHNICAL ENGINEER AND BACKFILLED TO DESIGN BEARING ELEVATION WITH ENGINEERED FILL OR WITH LEAN CONCRETE.  
THE FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL (CONTROLLED COMPACTED FILL). FOR BOTTOM OF FOOTING ELEVATIONS, SEE FOUNDATION PLAN AND ACTUAL ELEVATIONS MAY VARY TO SUIT SUBSURFACE SOIL CONDITIONS.  
ALL BEARING SURFACES SHALL BE UNDISTURBED LEVEL AND SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF CONCRETE.  
FINISHED GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND LOWEST ADJACENT GRADE WITHIN 5 FEET FOR PERIMETER FOOTINGS. FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY SOILS ENGINEER PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE:  
MINIMUM 28 DAY STRENGTH 4,500 PSI UNLESS NOTED OTHERWISE:  
SLABS ON GRADE AND FOUNDATION -----4,500 PSI  
CONCRETE SLAB ON METAL DECK -----4,500 PSI NORMAL WEIGHT

MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. MAXIMUM SLUMP 5" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL.  
CONCRETE SHALL BE FREE OF CHLORIDE, FLY ASH ADDITIVES SHALL CONFORM TO ASTM A618, CLASS F AND FLY ASH SHALL NOT REPLACE MORE THAN 20% CEMENT BY WEIGHT. AIR ENTRAINMENT ADMIXTURE SHALL BE ADDED TO PROVIDE 3% TO 5% OR AIR ENTRAINMENT AT ALL CONCRETE CAST IN CONTACT WITH SOIL. ALL CONCRETE SLAB ON GRADE SHALL CONTAIN A WATERPROOFING ADMIXTURE PER SPECIFICATIONS.  
PROVIDE SLEEVES FOR UTILITY OPENINGS IN CONCRETE BEFORE CONCRETE PLACEMENT, DO NOT CUT ANY CONFLICTING REINFORCING.  
NO CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE INSTALLED WITHOUT APPROVAL OF THE EOR.  
CONCRETE SHALL NOT BE DROPPED MORE THAN FIVE FEET VERTICALLY WITHOUT USE OF TREMIES.  
CONCRETE FOUNDATION AND PADS MAY BE POURED AGAINST NEAT EXCAVATIONS PROVIDED THE REQUIRED CONCRETE COVERAGE FOR REINFORCING IS MAINTAINED.

MASONRY:  
HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE 1, F'm = 1,500 PSI, RUNNING BOND, MORTAR TYPE S, 1,800 PSI. GROUT 2,000 PSI. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING & AGAIN ABOUT 5 MINUTES LATER. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 8'-0". UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0". CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 24" OF CONCENTRATED POINTS OF BEARING OR JAMBS, OR OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID. LAP SPLICES SHALL BE AS FOLLOWS:  
BAR PLACEMENT  
SINGLE BAR PER CELL CENTERED (INCHES) #3 19 #4 25 #5 32 #6 48

VERTICAL REINFORCING:  
PLACE 1 # 5 IN CENTER OF GROUTED CELL AT CENTER OF WALL, CONTINUOUS FOR FULL HEIGHT OF WALL AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARINGS, JAMBS, EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48" O.C. UNLESS NOTED OTHERWISE. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY A.A. WIRE PRODUCTS COMPANY. LAP SPLICES SHALL CONFORM TO THE SCHEDULE UNDER "MASONRY" SECTION. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING.  
HORIZONTAL REINFORCING:  
PLACE 2 # 5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT ROOFLINE. 1 #5 IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT TOP OF PARAPET OR TOP OF A FREESTANDING WALL. PLACE THESE BARS CONTINUOUS THRU CONTROL JOINTS PER TYPICAL DETAIL. PROVIDE BENT BARS PER TYPICAL DETAILS, TO MATCH HORIZONTAL BOND BEAM REINFORCING, AT CORNERS & WALL INTERSECTION TO MAINTAIN BOND BEAM CONTINUITY. LAP SPLICES SHALL BE AS PER SCHEDULE UNDER "MASONRY" SECTION DO NOT SPLICE WITHIN 8'-0" OF CONTROL JOINTS. PLACE STANDARD WEIGHT (NO. 9 GAGE WIRE) DUR-0-WAL OR DUR-0-WIRE (OR EQUIVALENT) LADDER TYPE JOINT REINFORCEMENT AT 16" O.C. IN ALL MASONRY WALLS.

REINFORCING:  
ASTM A615 (Fy = 60 KSI) DEFORMED BARS FOR ALL BARS. ALL GRADE 60 REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC PER ASTM A185, WIRE PER ASTM A82. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY. CLEAR CONCRETE COVERAGE AS FOLLOWS:  
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ----- 3"  
EXPOSED TO EARTH OR WEATHER  
#6 OR LARGER ----- 2"  
#5 AND SMALLER ----- 1 1/2"  
ALL OTHER PER LATEST EDITION OF ACI 318.

LAP SPLICES IN CONCRETE:  
LAP SPLICES, UNLESS NOTED OTHERWISE, SHALL BE CLASS "B" TENSION LAP SPLICES PER LATEST EDITION OF ACI 318. LAP SPLICES IN CONCRETE COLUMNS SHALL BE STANDARD COMPRESSION LAP SPLICES. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SO THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES. ALL WELDED WIRE FABRIC SHALL BE CHAIRED TO ENSURE PROPER CLEARANCES.  
ALL SPLICE LOCATIONS SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. ALL BARS PER CRSI SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90-DEGREE HOOKS UNLESS NOTED OTHERWISE. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. CONCRETE COLUMN DOWEL EMBEDMENT SHALL BE A STANDARD COMPRESSION DOWEL WITH EMBEDMENT LENGTH ACCORDING TO THE LATEST EDITION OF THE ACI 318. (UNLESS NOTED OTHERWISE ON PLANS OR DETAILS).

DRYPACK:  
DRYPACK SHALL BE 5,000 PSI NON-SHRINK GROUT, FIVE STAR OR EQUIVALENT. INSTALL DRYPACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED.

STRUCTURAL STEEL:  
ALL STRUCTURAL STEEL SHALL BE ASTM A992 (Fy = 50 KSI). ALL CHANNELS, ANGLES, AND PLATES SHALL BE ASTM A36 (Fy = 36 KSI). ALL PIPE STEEL SHALL BE ASTM A501 (Fy = 36 KSI) OR ASTM A53, TYPE E OR S, GRADE B (Fy = 35 KSI). (NOTE: ALL PLATE IN MOMENT CONNECTIONS AND WHERE OTHERWISE NOTED SHALL BE Fy = 50 KSI STEEL). ALL TUBE STEEL SHALL BE ASTM A500 (Fy = 46 KSI). ALL BOLTS SHALL BE ASTM A325, UNLESS NOTED OTHERWISE. ALL CONSTRUCTION PER LATEST AISC HANDBOOK. ALL EXPANSION AND EPOXY BOLTS TO HAVE I.C.C. RATING FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE. ALL BOLTS, ANCHOR BOLTS, EXPANSION BOLTS, ETC. SHALL BE INSTALLED WITH STEEL WASHERS AT FACE OF WOOD OR AT SLOTTED HOLES IN STEEL SECTIONS. ALL HIGH STRENGTH BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY. ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70XX SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E60 SERIES. ALL WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. WHEN STRUCTURAL STEEL IS FURNISHED TO A SPECIFIED MINIMUM YIELD POINT GREATER THAN 36 KSI, THE ASTM OR OTHER SPECIFICATION DESIGNATION SHALL BE INCLUDED NEAR THE ERECTION MARK ON EACH SHIPPING ASSEMBLY OR IMPORTANT CONSTRUCTION COMPONENT, OVER ANY SHOP COAT OF PAINT, PRIOR TO SHIPMENT FROM THE FABRICATOR'S PLANT.

HIGH STRENGTH BOLTS:  
ALL HIGH STRENGTH BOLTS SHALL BE ASTM A325 AND SHALL BE INSTALLED AS BEARING-TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE (i. e. A TYPE "N" CONNECTION). BOLTS MAY BE TIGHTENED USING ANY AISC APPROVED METHOD. USE SC (SLIP CRITICAL) AT ALL MOMENT FRAMES AND BRACED FRAMES. ALL HIGH STRENGTH BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY TO ENSURE BOLT TENSION.

STEEL DECKING:  
ROOF DECK:  
DECK SHALL BE 1 1/2" DEEP, 36" WIDE, 22 GAGE PAINTED (GALVANIZED) STEEL, WITH MINIMUM YIELD STRESS OF 50 KSI, WITH MINIMUM S = 0.19 IN3 AND I = 0.192 IN4 PER FOOT OF WIDTH. DECK SHALL BE DEFORMED/INDENTED TO PROVIDE A MECHANICAL BOND WITH THE CONCRETE. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 3 SPAN MINIMUM. DECK SHALL BE CONTINUOUSLY SHORED WHEN SPAN EXCEEDS 5 FEET. DECK SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF 1,787 PLF USING THE FOLLOWING MINIMUM ATTACHMENTS:  
WELD DECK TO SUPPORTING MEMBERS WITH 7 - 1/2" DIAMETERS OR 3/8" X 3/4" PUDDLE WELDS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAMS AND OPENING EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE BUTTON PUNCHES AT 12" O.C.  
ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAGE STEEL DECK WORK AND A.W.S. CERTIFIED FOR LIGHT GAGE STEEL WORK. DECK WELDING MAY BE ACHIEVED WITH E60 SERIES LOW HYDROGEN RODS. ALL EXPOSED WELDS SHALL BE DE-SLAGGED, CLEANED AND PRIMED WITH A ZINC-RICH PRIMER AND TOUCHED UP WITH PAINT. CONTRACTOR SHALL DE-SLAG AND CLEAN ALL PUDDLE WELDS PRIOR TO INSPECTION

PRE-ENGINEERED STRUCTURE DESIGN CRITERIA:  
1. PRE-ENGINEERED STRUCTURE MANUFACTURER SHALL BE RESPONSIBLE FOR THE ENTIRE DESIGN OF THE STRUCTURE, SUPPORT, BRACING, LATERAL ANALYSIS AND ALL RELATED WORK.  
2. THE PRE-ENGINEERED STRUCTURE SHALL BE DESIGNED TO SUPPORT SELF WEIGHT PLUS SUPERIMPOSED DEAD, LIVE, WIND OR SEISMIC LOADING, WHICHEVER COMBINATION PRODUCES THE MOST SEVERE CONDITION, IN ACCORDANCE WITH THE LATEST RECOMMENDATIONS OF THE METAL BUILDING MANUFACTURERS ASSOCIATION.

ELECTRICAL CONDUIT IN CONCRETE SLABS:  
ELECTRICAL CONDUIT SHALL BE RIGID STEEL CONDUIT OR FLEXIBLE PLASTIC CONDUIT. ALUMINUM CONDUIT IS PROHIBITED, CONDUIT WITH A MAXIMUM OUTSIDE DIAMETER OF 1/6 TIMES THE SLAB THICKNESS MAY BE EMBEDDED IN ONE LAYER AT THE MID-DEPTH OF SLABS. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE 3 TIMES CONDUIT DIAMETER. CONDUIT SHALL BE FIRMLY CHAIRED AND TIED TO PREVENT DISPLACEMENT DURING POURING. PLACE #3 AT 12 INCHES ADDITIONAL REINFORCING ABOVE AND BELOW, PERPENDICULAR TO THE CONDUIT. THE ADDED REINFORCING SHALL EXTEND 1'-0" PAST THE CONDUIT ON BOTH SIDES. FOR CONDUIT PLACED IN SLABS ON METAL DECKING, CONDUIT SHALL RUN IN THE METAL DECK FLUTES PER THE TYPICAL CONDUIT IN SLAB ON METAL DECK DETAIL.

EXPANSION BOLTS:  
EXPANSION BOLTS USED IN CONCRETE SHALL BE A HILTI KWIK BOLT TZ WITH APPROVED ICC-ESR REPORT

EPOXY ANCHORS IN MASONRY:  
ALLOWABLE EPOXY ADHESIVES USED FOR BOLT AND DOWEL INSTALLATION IN GROUTED CELL OF MASONRY SHALL BE HILTI HY-70 OR APPROVED EQUAL, THE PRODUCTS SHALL HAVE APPROVED ICC-ESR REPORT.

STRUCTURAL FILL:  
ALL FILL PLACED TO SUPPORT SLABS ON GRADE, BEHIND PERMANENT WALLS, AND AROUND ALL DRAINS SHALL CONSIST OF WELL GRADED, GRANULAR MATERIAL PER THE SPECIFICATIONS. SOILS FOR STRUCTURAL FILL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER. STRUCTURAL FILL SHALL BE PLACED ON SOUND NATIVE MATERIAL, PROOF-ROLL CUT AREAS WHICH PROVIDE SUPPORT FOR PERMANENT STRUCTURES, AREAS WHICH ARE EXCESSIVELY YIELDING, AS DETERMINED BY THE CONTINUOUS OBSERVATION OF THE GEOTECHNICAL ENGINEER, SHALL BE OVER-EXCAVATED AND REPLACED WITH STRUCTURAL FILL. STRUCTURAL FILL SHALL BE PLACED PER THE SPECIFICATION.

NOTES ON CRACKING OF CONCRETE STRUCTURES:  
CRACKING IS INHERENT TO THE MATERIAL PROPERTIES OF CONCRETE CONSTRUCTION (INCLUDING POST-TENSIONED CONCRETE STRUCTURES), WHILE EVERY EFFORT HAS BEEN MADE TO MINIMIZE THE EFFECTS OF UNSIGHTLY CRACKING, THE PRESENCE OF CRACKS ARE NORMAL AND UNAVOIDABLE. THE DESIGN OF THE CONCRETE STRUCTURAL ITEMS HAVE BEEN ANALYZED USING A "CRACKING SECTION;" THE PRESENCE OF THE CRACKING SHOULD NOT BE CONSIDERED DETRIMENTAL TO THE STRUCTURE. CRACKS LARGER THAN 20 MILS SHALL BE FILLED AND SEALED WITH AN APPROVED CRACK FILLER TO PREVENT FUTURE DETERIORATION. ALLOWANCE SHALL BE MADE IN THE CONSTRUCTION BUDGET FOR SEALING OF SUCH CRACKS. IN SOME CASE, CRACKS DO NOT APPEAR UNTIL WELL AFTER CONSTRUCTION HAS BEEN COMPLETED. IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE STRUCTURE PROPERLY OVER THE LIFE OF THE STRUCTURE. CONCRETE CRACKS, SHOULD THEY OCCUR, SHALL BE FILLED AND SEALED TO PREVENT PREMATURE DETERIORATION OF THE STRUCTURE.

SHOP DRAWINGS:  
SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY PROJECT SPECIFICATIONS.

THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DOCUMENTS SHALL BE FLAGGED UPON HIS REVIEW.

VERIFY ALL DIMENSIONS WITH DRAWINGS AND ALL FINISHED GRADE WITH CIVIL DRAWINGS.

ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE CLOUDED BY MANUFACTURER OR FABRICATOR. ANY OF THE AFOREMENTIONED WHICH ARE NOT TO BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS, SHALL NOT BE CONSIDERED APPROVED AFTER ENGINEER'S REVIEW, UNLESS NOTED ACCORDINGLY.

THE ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO CONTRACT DOCUMENTS AT ANYTIME BEFORE OR AFTER SHOP DRAWING REVIEW.

THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. ITEMS OMITTED OR SHOWN INCORRECTLY AND ARE NOT FLAGGED BY THE STRUCTURAL ENGINEER OR OWNER ARE NOT TO BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE SURE ITEMS ARE CONSTRUCTED TO CONTRACT DOCUMENTS.

THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY.

REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.

BUILDING TOLERANCES:

STANDARD TOLERANCES SHALL BE BASED ON THE REQUIREMENTS OF THE AISC CODE OF STANDARD PRACTICE AND ACI 117, STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.

EXISTING STRUCTURE:

EXISTING STRUCTURAL DIMENSIONS AND MEMBER SIZES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO FABRICATION. THE CONTRACTOR SHALL VERIFY THE ACTUAL CONFIGURATION OF EXISTING CONSTRUCTION AND THE CONDITION OF THE STRUCTURE BEFORE BEGINNING WORK. ANY DISCREPANCIES OR UNSOUND CONDITIONS SHALL BE REPORTED TO THE EOR FOR RESOLUTION BEFORE BEGINNING WORK. REFER TO A&E PLANS FOR DIMENSIONS, EMBEDMENT, AND OPENINGS NOT SHOWN. REFER TO MECHANICAL AND ELECTRICAL PLANS FOR DUCTS, PIPING, EMBEDMENT, AND OPENINGS NOT SHOWN.

TEMPORARY SHORING AND BRACING MAY BE NECESSARY IN ORDER TO PERFORM THE NECESSARY STRUCTURAL MODIFICATIONS TO THE EXISTING STRUCTURE SHOWN ON THE STRUCTURAL AND ENGINEERING PLANS AND DETAILS. THE CONTRACTOR MUST RETAIN A LICENSED STRUCTURAL ENGINEER WHO SHALL INVESTIGATE WHERE THIS TEMPORARY SHORING/BRACING IS REQUIRED, AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING.

SEQUENCING CONSTRUCTION AND LATERAL STABILITY:

THE STRUCTURAL COMPONENTS BY THEMSELVES ARE A NON-SELF-SUPPORTING STRUCTURE. LATERAL FORCES DUE TO WIND, EARTHQUAKE, OR SOIL ARE CARRIED BY THE ROOF AND FLOOR DIAPHRAGMS TO THE LATERAL SYSTEM. CERTAIN ELEMENTS SHOWN ON OR LOCAL STABILITY OF OTHER ELEMENTS (SUCH AS BEAMS, COLUMNS, AND WALLS). IF, DUE TO SEQUENCING OF CONSTRUCTION, THESE STABILITY ELEMENTS ARE NOT IN PLACE, THE CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL ENGINEER WHO SHALL INVESTIGATE WHERE TEMPORARY SHORING/BRACING IS REQUIRED, AND SHALL DESIGN THIS TEMPORARY SHORING/BRACING. THE CONTRACTOR SHALL PROVIDE THIS SHORING/BRACING UNTIL THE REQUIRED STRUCTURAL ELEMENTS AND THEIR CONNECTIONS HAVE BEEN INSTALLED AND REACH THEIR FINAL DESIGN STRENGTHS.

MISCELLANEOUS:

REFER TO ENTIRE SET OF ENGINEERING DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING BUT NOT LIMITED TO: SIZE AND LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL AND FLOOR OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, ANCHOR BOLTS, EMBEDDED ITEMS, ETC. CONTRACTOR SHALL VERIFY DIMENSIONS AND RESOLVE DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION. WHERE SECTIONS ARE INDICATED ON THE PLAN BY A NUMBER AND A DRAWING NUMBER SUCH, 1/C5, THE INDICATED SECTION (1) IS SHOWN ON C5.

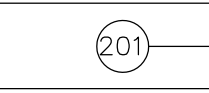
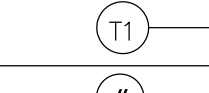
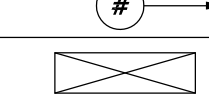
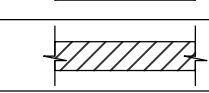
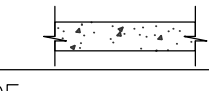
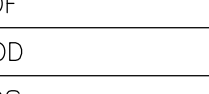
SPECIAL INSPECTION:

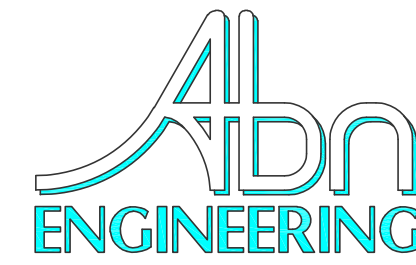
PER IBC SECTION 1701, SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING ITEMS:

- CONCRETE (CONTINUOUS)
- BOLTS IN CONCRETE (PERIODIC)
- REINFORCING STEEL (PERIODIC)
- HIGH STRENGTH BOLTING (PERIODIC)
- STRUCTURAL MASONRY (PERIODIC)
- EXPANSION BOLTS (PERIODIC)
- DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
  - THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.
  - THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER.
  - UPON COMPLETION OF THE ASSIGNED WORK THE ENGINEER OR OWNER SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF HIS KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

TYPICAL NOTES:

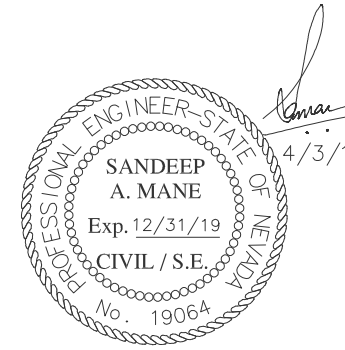
- FOR APPLICABLE CODES AND STANDARD MATERIAL STRENGTHS AND CONSTRUCTION REQUIREMENTS, SEE GENERAL STRUCTURAL NOTES AND SPECIFICATIONS
- VERIFY ALL DIMENSIONS WITH A&E DRAWINGS PRIOR TO START OF CONSTRUCTIONS - RESOLVE ANY DISCREPANCY WITH EOR. FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINTS AND SCOPE LINES, SEE A&E DRAWINGS.
- FOR CLARITY, ALL ROOF, AND WALL OPENINGS MAY NOT BE SHOWN ON STRUCTURAL DRAWINGS, FOR EXACT SIZE NUMBER AND LOCATION OF OPENINGS, SEE A&E MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR FRAMING AT OPENINGS, SEE TYPICAL STRUCTURAL DETAILS. VERIFY ALL SIZES, WEIGHTS AND LOCATIONS OF MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTS, ETC. WITH MECHANICAL AND ELECTRICAL ENGINEERS THROUGH EOR.
- DETAILS MARKED "TYPICAL" MAYOR MAY NOT BE CUT ON PLANS, BUT SHALL APPLY UNLESS NOTED OTHERWISE.

PLAN LEGEND (STRUCTURAL)		
	DETAIL CUT SHOWN ON PLAN	SEE S4 SERIES SHEETS FOR FOUNDATION DETAILS SEE S5 SERIES SHEETS F FRAMING DETAILS
	TYPICAL DETAIL	SEE S1 SERIES SHEETS FOR TYPICAL DETAILS
	PLAN NOTE	SEE PLAN NOTES FOR EACH PLAN SHEET
	OPENING IN FLOOR OR ROOF	SEE TYPICAL NOTE 4 ABOVE
	8" THICK CMU WALL, U.N.O.	
	CAST-IN- PLACE CONCRETE WALL U.N.O.	SEE FOUNDATION/FRAMING PLANS
TOF	TOP OF FOOTING	
BOD	BOTTOM OF DECK	
TOS	TOP OF STEEL	SEE FOUNDATION/FRAMING PLANS
TOW	TOP OF WALL	



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

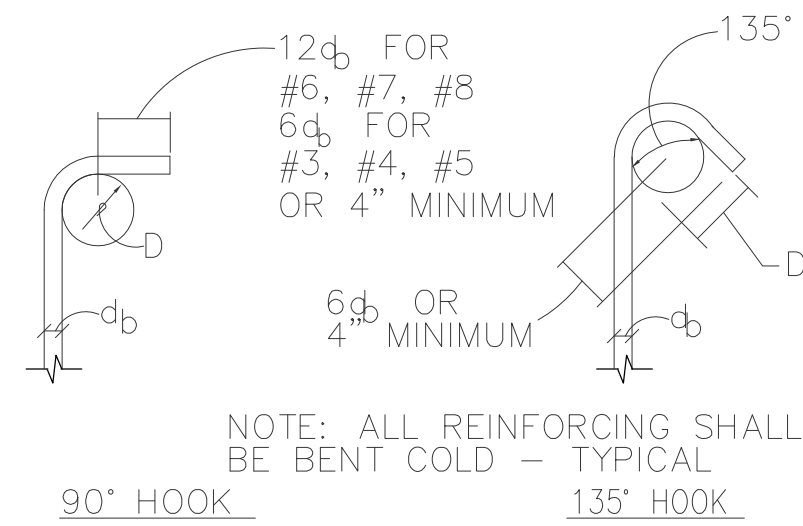
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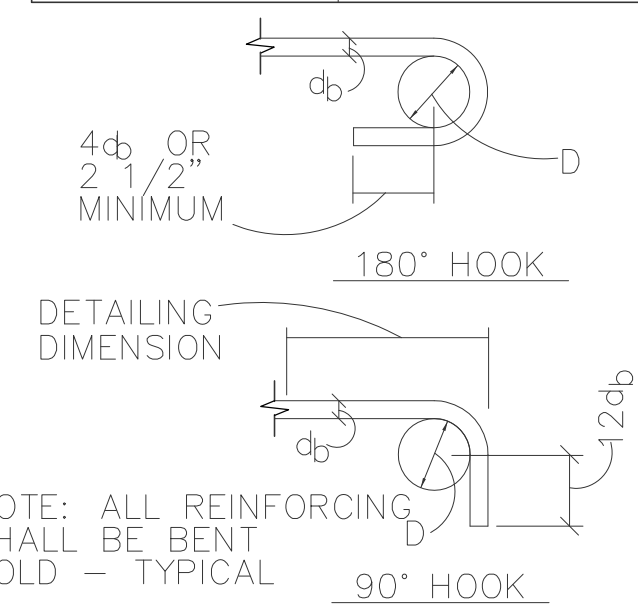
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BAR SIZE	BEND DIA "D" (INSIDE OF BAR)
#3 THRU #5	4db
#6 THRU #8	6db

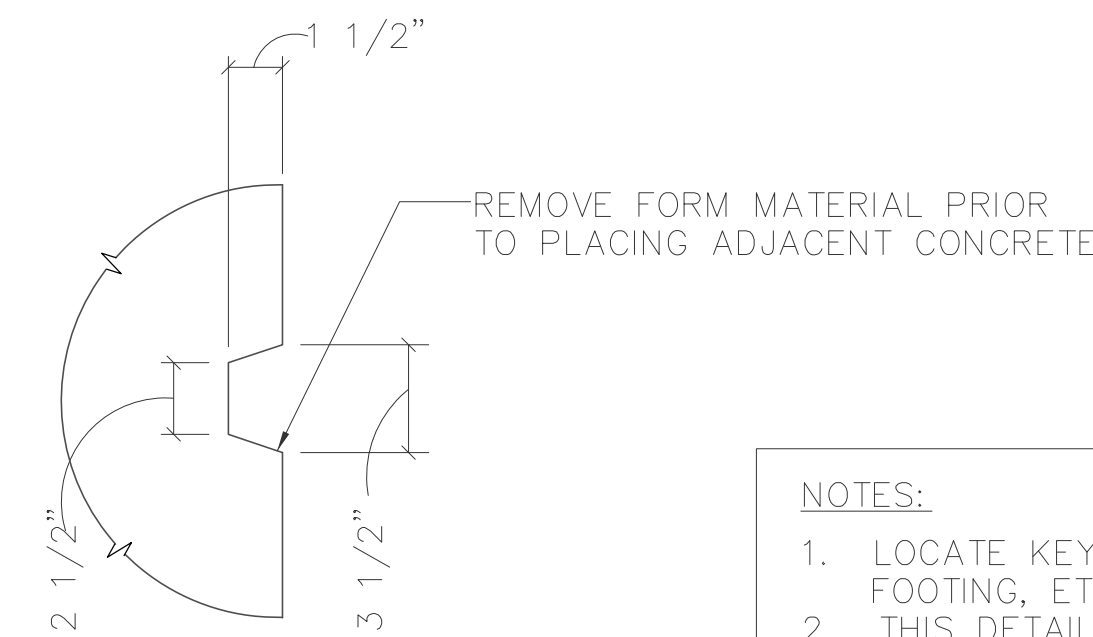
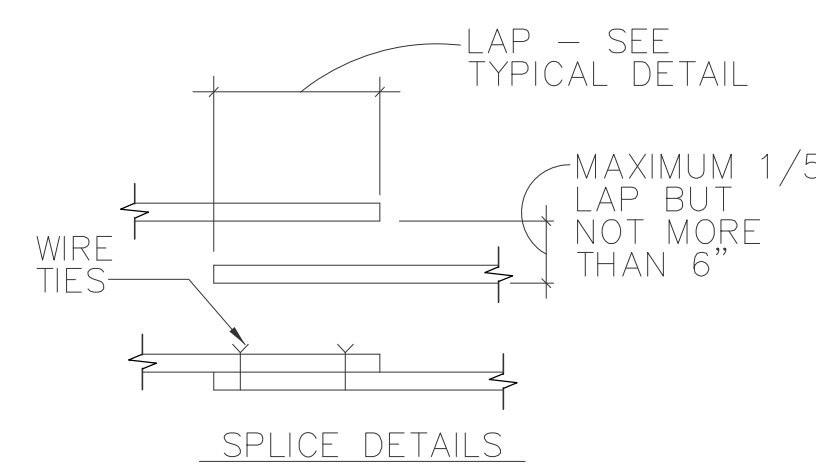
BAR SIZE	BEND DIA "D" (INSIDE OF BAR)
#3 THRU #8	6db
#9, #10, #11	8db
#14 AND #18	10db



STANDARD HOOKS FOR STIRRUPS AND TIE REINFORCING



STANDARD HOOKS FOR PRIMARY REINFORCING



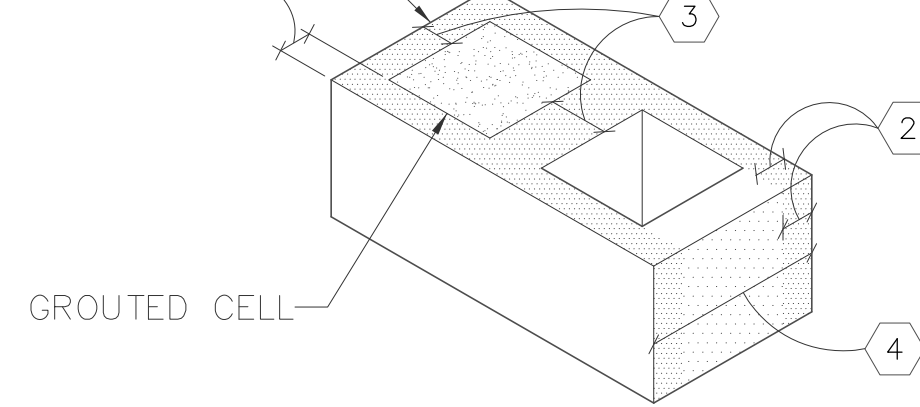
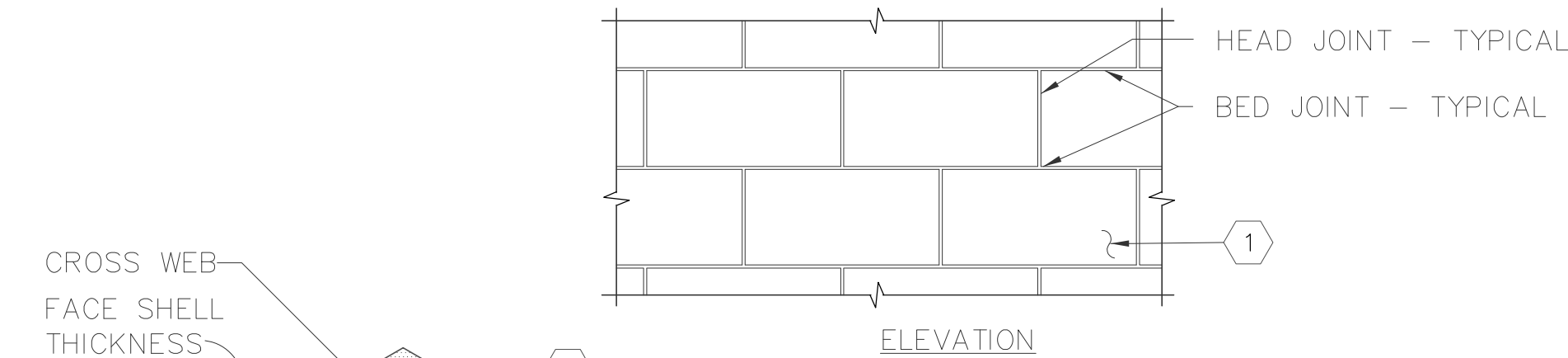
NOTES:  
 1. LOCATE KEY AT MID-DEPTH OF CONCRETE SLAB, WALL, FOOTING, ETC.  
 2. THIS DETAIL APPLIES AT ALL CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.

**TYPICAL REINFORCING BAR DETAILS**

N.T.S. 1

**TYPICAL KEY IN CONCRETE**

N.T.S. 2

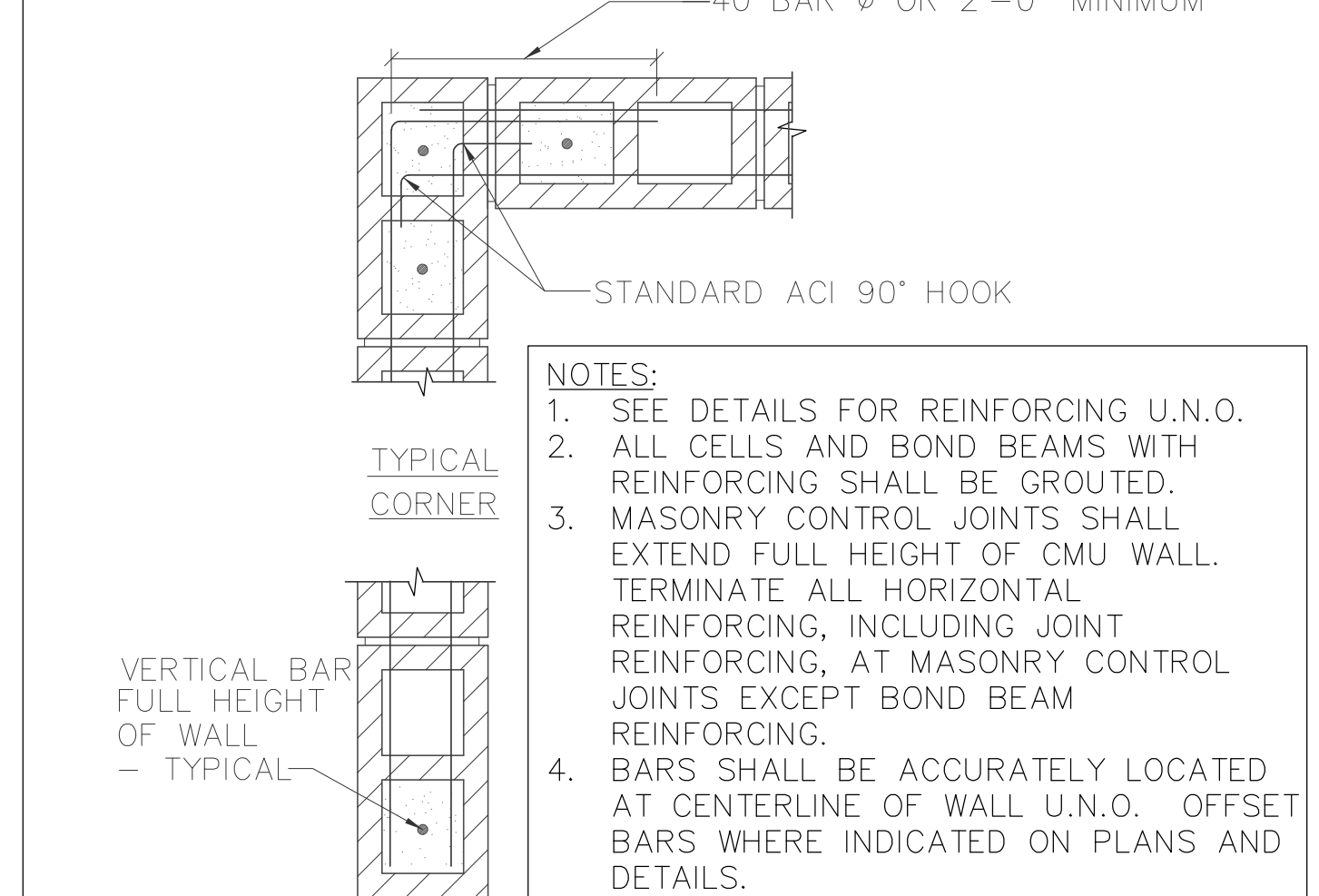


ISOMETRIC - TYPICAL BLOCK

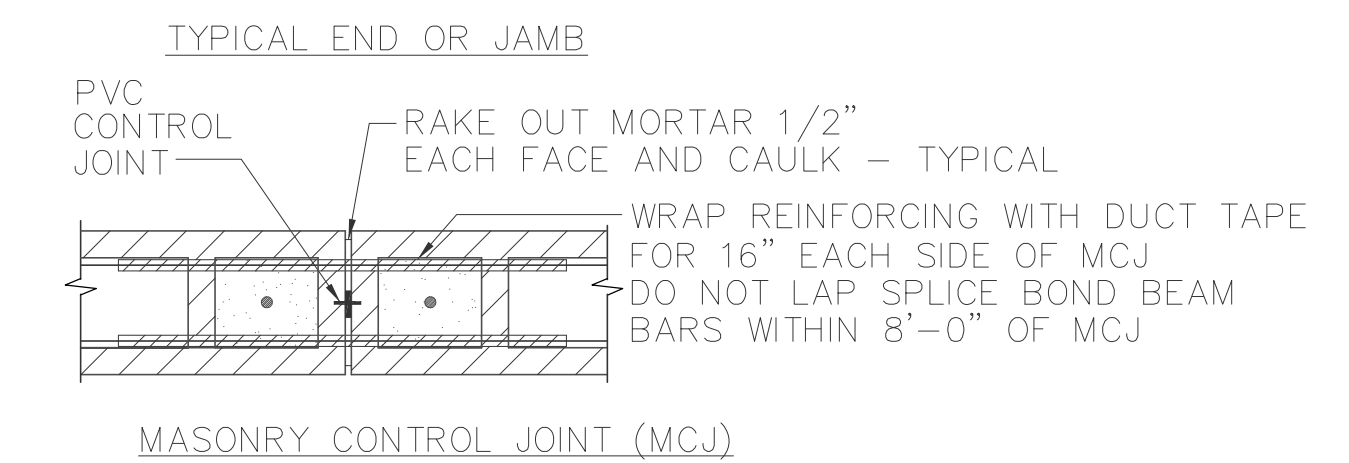
- NOTES: (#)
- LAY CMU IN RUNNING BOND U.N.O. ON DRAWINGS.
  - ALL HEAD AND BED JOINTS SHALL BE FILLED SOLIDLY WITH MORTAR FOR THE FULL THICKNESS OF THE FACE SHELL EXCEPT WHERE JOINTS ARE RAKED.
  - SPREAD OUT FULL MORTAR BED AT CROSS WEBS IN STARTING COURSE ON FOOTINGS AND IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS, AND IN WALLS WHERE WEBS ARE ADJACENT TO CELLS OR CAVITIES TO BE REINFORCED OR FILLED WITH GROUT. FOR STARTING COURSE ON FOOTINGS WHERE CELLS ARE NOT GROUTED, SPREAD OUT FULL MORTAR BED INCLUDING AREAS UNDER CELLS.
  - FOR SOLID GROUTED WALLS, THE HEAD JOINTS SHALL BE COMPLETELY FILLED OR BUTTERED FOR FULL WIDTH OF THE WALL AND UNIT SHOVED INTO PLACE. DO NOT SLUSH HEAD JOINTS.

**MORTAR REQUIREMENTS AT TYPICAL CMU CONSTRUCTION**

N.T.S. 3



- NOTES:
- SEE DETAILS FOR REINFORCING U.N.O.
  - ALL CELLS AND BOND BEAMS WITH REINFORCING SHALL BE GROUTED.
  - MASONRY CONTROL JOINTS SHALL EXTEND FULL HEIGHT OF CMU WALL. TERMINATE ALL HORIZONTAL REINFORCING, INCLUDING JOINT REINFORCING, AT MASONRY CONTROL JOINTS EXCEPT BOND BEAM REINFORCING.
  - BAR SHALL BE ACCURATELY LOCATED AT CENTERLINE OF WALL U.N.O. OFFSET BARS WHERE INDICATED ON PLANS AND DETAILS.



**PLAN VIEW - TYPICAL CMU WALL REINFORCING**

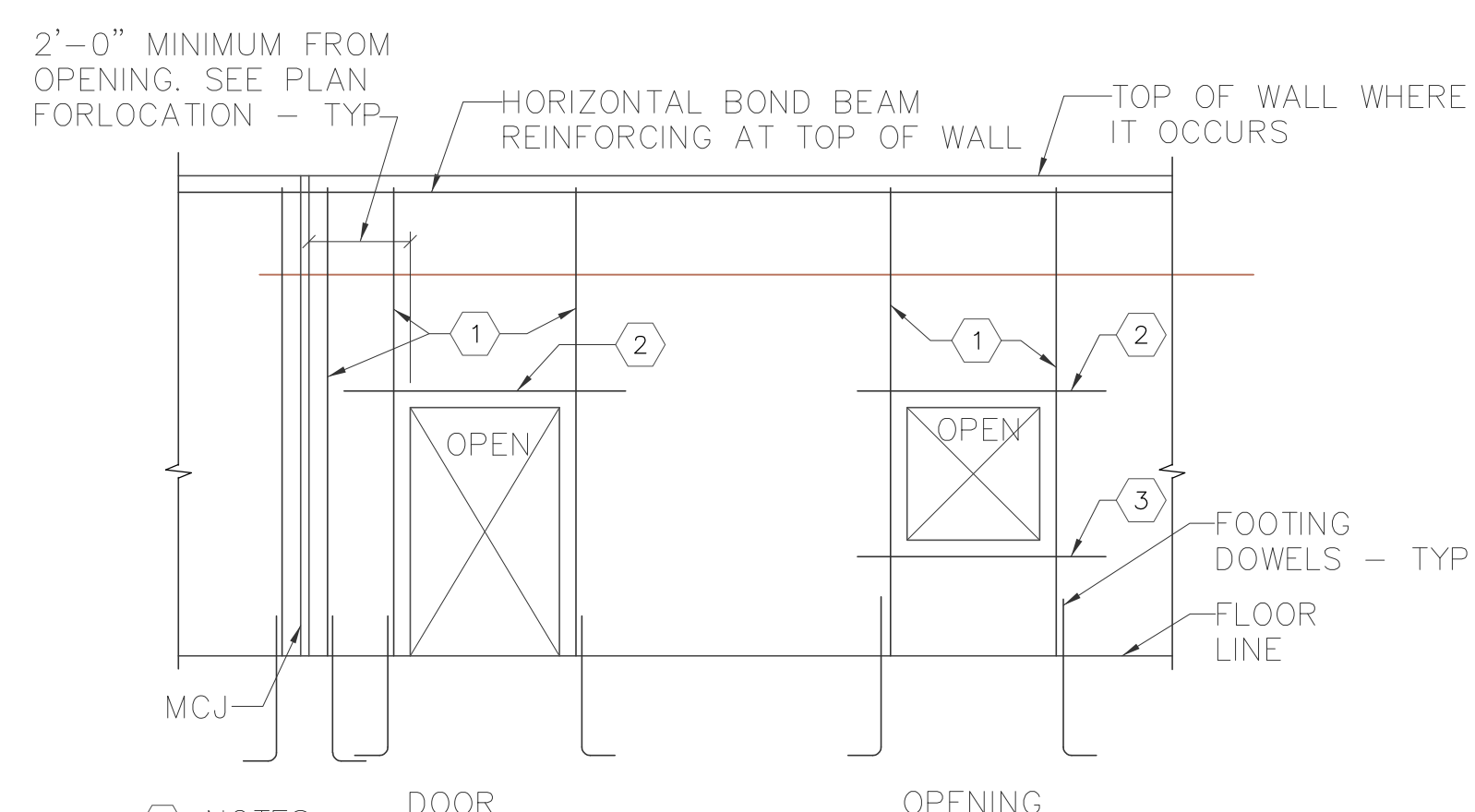
N.T.S. 4

BAR SIZE	POSITION	CONCRETE f'c (PSI) AND LAP CLASS					
		3000 CLASS B	4000 CLASS B	5000 CLASS B	6000 CLASS B	7000 CLASS B	8000 CLASS B
#3	TOP	28	24	22	20	18	17
	OTHER	22	19	17	16	16	16
#4	TOP	37	32	29	26	25	23
	OTHER	29	25	22	20	19	18
#5	TOP	47	40	36	33	31	29
	OTHER	36	31	28	25	24	22
#6	TOP	56	48	43	40	37	34
	OTHER	43	37	33	31	28	26
#7	TOP	81	70	63	58	53	50
	OTHER	63	54	49	44	41	38
#8	TOP	93	80	72	66	61	57
	OTHER	72	62	55	51	47	44
#9	TOP	105	91	81	74	69	64
	OTHER	81	70	63	57	53	49
#10	TOP	118	102	91	83	77	72
	OTHER	91	79	70	64	59	56
#11	TOP	131	113	101	93	86	80
	OTHER	101	87	78	71	66	62
#14	TOP	121	105	94	86	79	74
	OTHER	93	81	72	66	61	57
#18	TOP	161	139	125	114	106	99
	OTHER	124	107	96	88	81	76

- REBAR LAP SPLICE TABLE NOTES:
- "d" DENOTES BAR DIAMETER.
  - TABLE IS BASED ON ASTM A615 GRADE 60 REINFORCING STEEL/UNCOATED BARS. MULTIPLY TABULATED LAP LENGTHS BY 1.2 FOR EPOXY COATED BARS.
  - TOP BARS ARE HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE BELOW THEM.
  - MULTIPLY TABULATED LAP LENGTHS BY 1.5 WHEN THE CLEAR SPACE BETWEEN BARS IS LESS THAN 2d
  - MULTIPLY TABULATED LAP LENGTH BY 1.3 FOR UTILITY WEIGHT CONCRETE.

**REINFORCING BAR LAP SPLICE TABLE**

N.T.S. 5

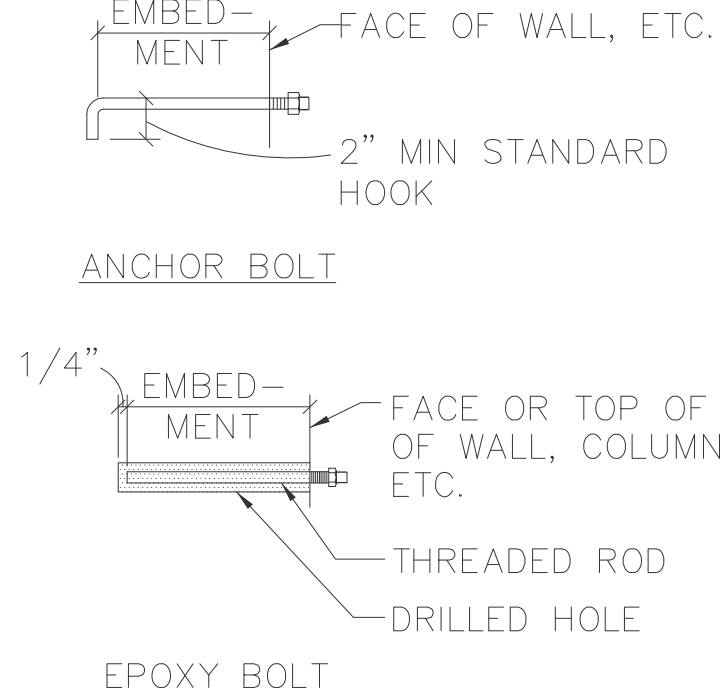


- NOTES:
- JAMB BARS PER PLANS.
  - REINFORCING PER LINTEL SCHEDULE OR LINTEL DETAILS.
  - 2 #5 SILL BARS. EXTEND 2'-0" PAST OPENING.

**TYPICAL CMU WALL REINFORCING AT OPENINGS**

N.T.S. 6

BOLT DIAMETER	VERT BOLT EMBEDMENT LENGTH	HORIZ BOLT EMBEDMENT LENGTH
1/2"	7"	5"
5/8"	7"	5"
3/4"	8"	5"
7/8"	8"	6"
1"	9"	6"
1 1/8"	12"	9"



- NOTES:
- PROVIDE ANCHOR BOLTS AND EPOXY BOLTS PER THIS SCHEDULE IN CONCRETE OR MASONRY UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
  - ANCHOR BOLTS AND EPOXY BOLTS SHALL BE INSTALLED WITH STEEL WASHERS. EPOXY BOLTS SHALL BE USED ONLY WHERE SPECIFICALLY SHOWN ON THE DRAWINGS OR WHEN APPLICATION IS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

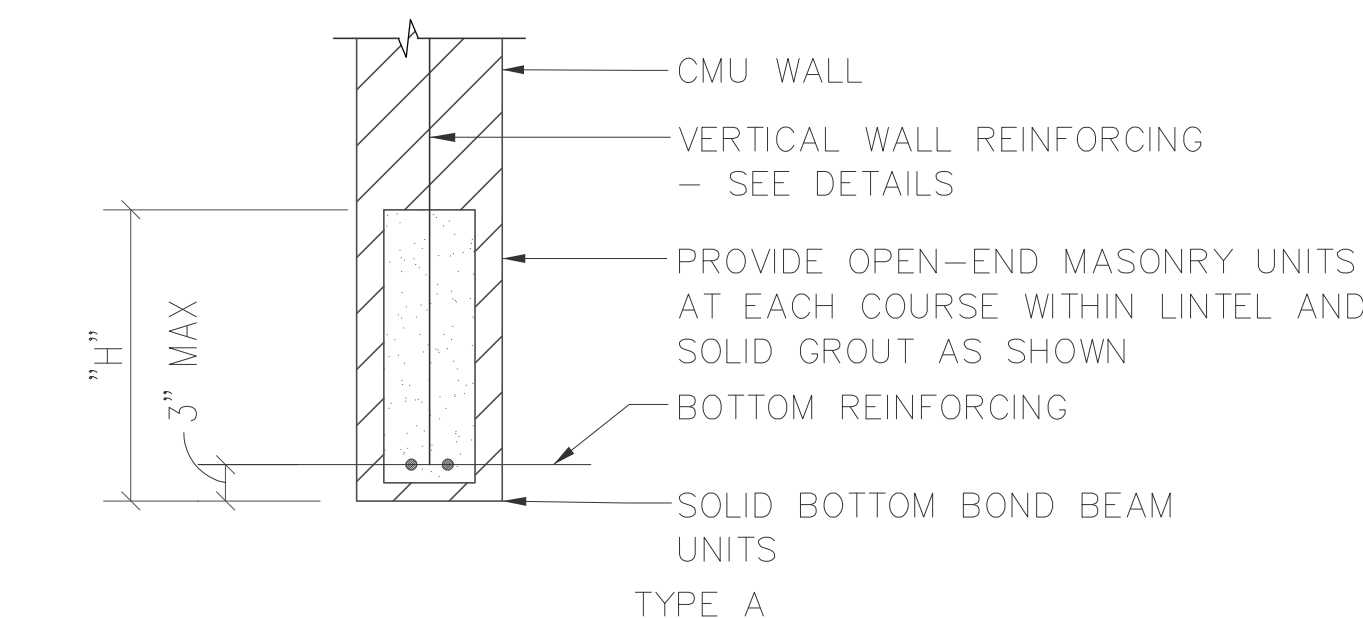
**TYPICAL EPOXY BOLT AND ANCHOR BOLT EMBEDMENT SCHEDULE**

N.T.S. 7

**MASONRY LINTEL (ML) SCHEDULE**

MARK	TYPE	LINTEL SIZE	REMARKS
ML1	A	H = 16"; 2 #5 BOTTOM REINFORCING	---

- NOTES:
- GROUT LINTEL IN ONE CONTINUOUS POUR.
  - SHORE LINTEL UNTIL GROUT REACHES DESIGN STRENGTH.
  - EXTEND REINFORCING, GROUT AND OPEN-END MASONRY UNITS FOR 24" PAST JAMB.



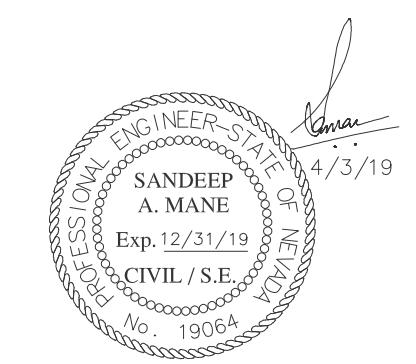
**MASONRY LINTEL (ML) SCHEDULE**

N.T.S. 8



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 PHOENIX, AZ 85048  
 PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
 LONG: 119°33'30.09025"W  
 10140 A FOX MOUNTAIN ROAD  
 GERLACH, NV 89412

SHEET TITLE

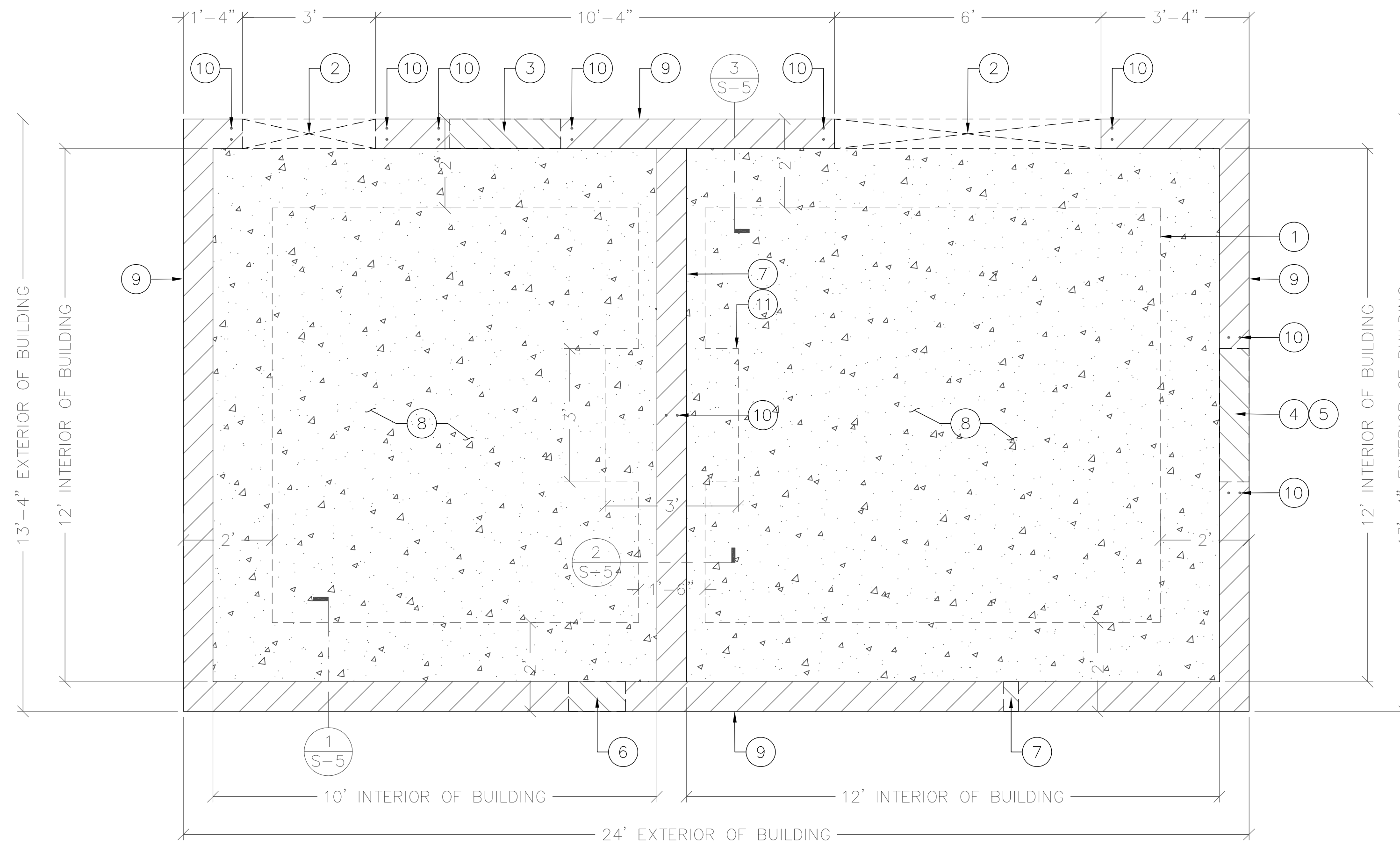
MASONRY DETAIL

SHEET NUMBER

S-2



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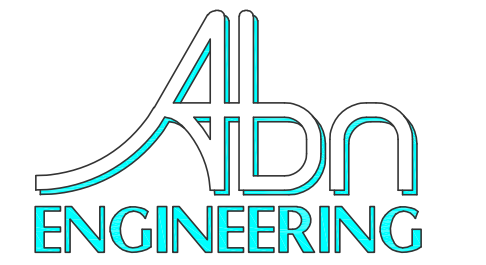


EQUIPMENT SHELTER KEYED NOTES: #

1. WALL FOOTING (TYP.)
2. DOOR OPENING, SEE DETAIL 6 ON SHEET S-2
3. VENT OPENING ABOVE, SEE DETAIL 6 ON SHEET S-2
4. EXHAUST AIR SUPPLY OPENING ABOVE, SEE DETAIL 6 ON SHEET S-2
5. EXHAUST VENT OPENING ABOVE, SEE DETAIL 6 ON SHEET S-2
6. ENTRY PORT OPENING, SEE DETAIL 6 ON SHEET S-2
7. POWER WIRE ENTRY OPENING, SEE DETAIL 6 ON SHEET S-2
8. 8" THK. SLAB W/ #4 @ 12" O.C. EACH WAY (TYP.)
9. 8" THK. BEARING CMU WALL (TYP.)
10. (2) #5 VERTICAL SLAB BARS (TYP.)
11. 3'x3' FOOTING AT BEAM BEARING LOCATION, EXTEND WALL FOOTER REINFORCING ACROSS ENTIRE FOOTING WIDTH

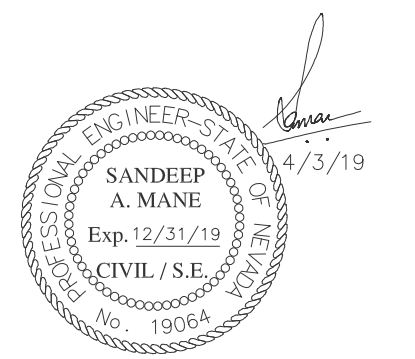
NOTE:

1. PRIOR TO ANY WORK, VERIFY DOOR OPENING SIZE WITH GENERATOR SPECS, ADJUST THE OPENING SIZE AND DOOR SIZE AS NECESSARY. ALSO VERIFY OTHER OPENINGS FOR VENT AND EXHAUST WITH RESPECTIVE MANUFACTURER FOR SIZE AND LOCATIONS.



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PHONE: (480) 213-8524

PE SEAL



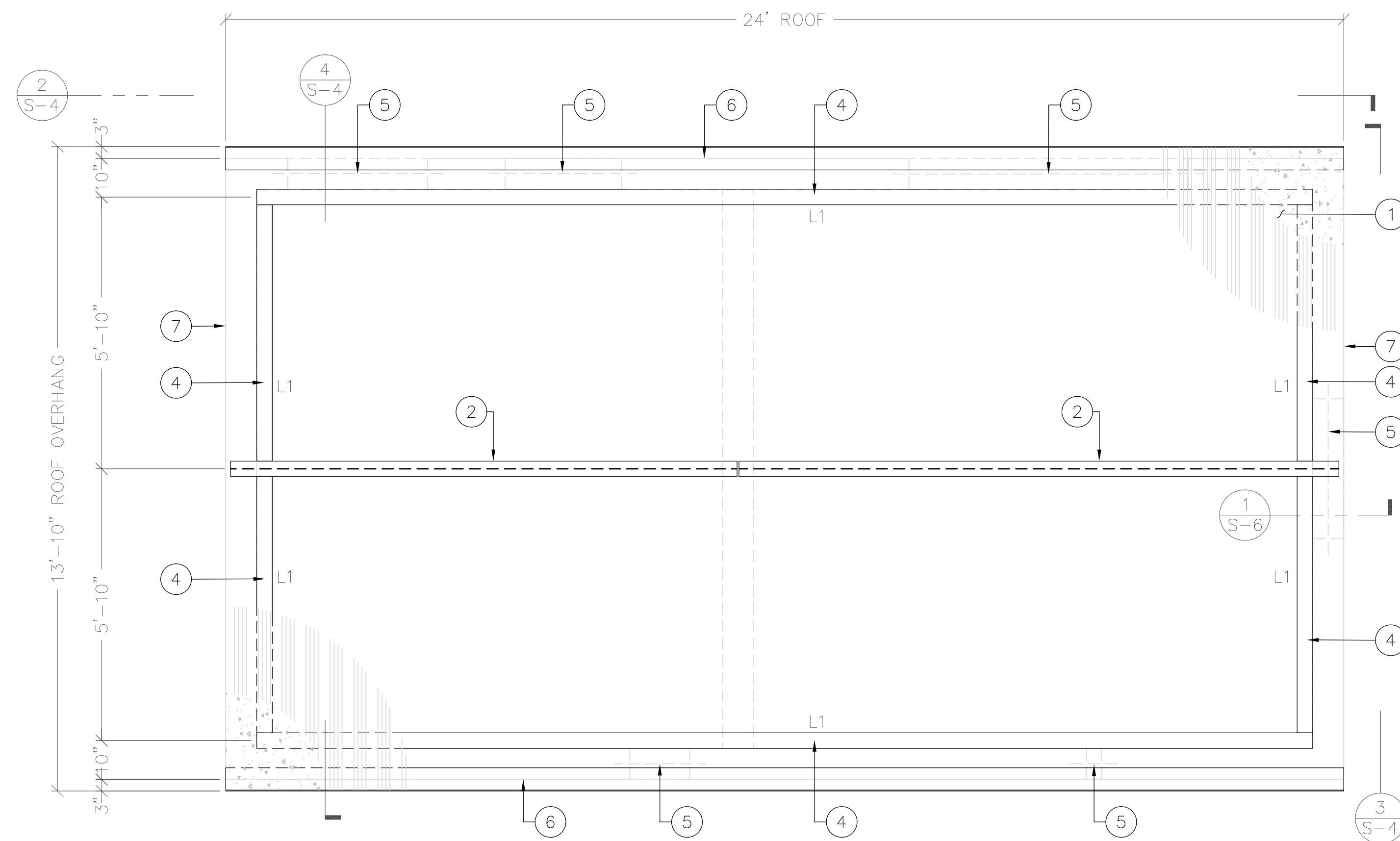
DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

N.T.S. 1

FOUNDATION PLAN & WALL LAYOUT



ROOF FRAMING KEYED NOTES: #

1. 2" CONCRETE TOPPING WITH W.W.F. 6X6 - W2.9X2.9 OVER 1-1/2" X 22 GAGE STEEL DECK PER GENERAL STRUCTURAL NOTES, TOTAL SLAB THICKNESS = 3-1/2"
2. STEEL BEAM
3. 8" THICK CMU WALL BELOW
4. L1 IS THE ANGLE LEDGER ATTACHED TO WALL
5. MASONRY LINTEL, SEE SCHEDULE FOR DETAIL
6. CLOSURE BENT PLATE PER DETAIL SHEET S-5
7. ALONG SHORT SIDES, USE 3/16" CLOSURE PLATE TO SEAL THE CONCRETE AND DECK

STEEL LEDGER (L) SCHEDULE

MARK	LEDGER SIZE	CONNECTION	REMARKS
L1	STEEL ANGLE 4x4x1/4 CONTINUOUS	SEE ANCHORAGE DETAIL ON SHEET S-5	---

SUBMITTALS

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

BUILDING FOUNDATION  
& ROOF FRAMING PLAN

SHEET NUMBER

S-3

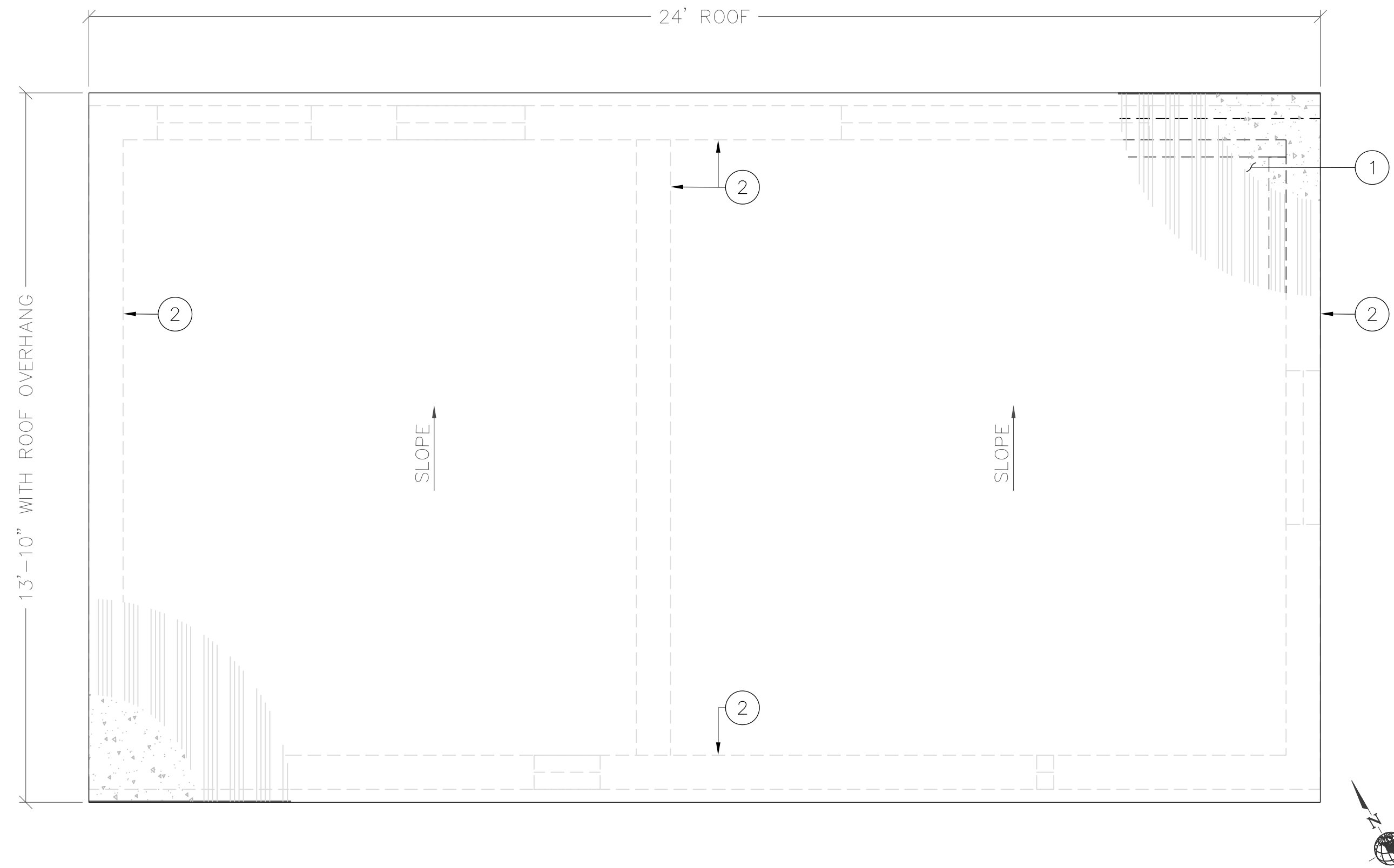
ROOF FRAMING PLAN

N.T.S. 2

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**ROOF KEYED NOTES: #**

1. CONCRETE ROOF DECK
2. 8" THICK CMU WALL BELOW



**ROOF PLAN**

N.T.S. 1

**NORTHEAST ELEVATION**

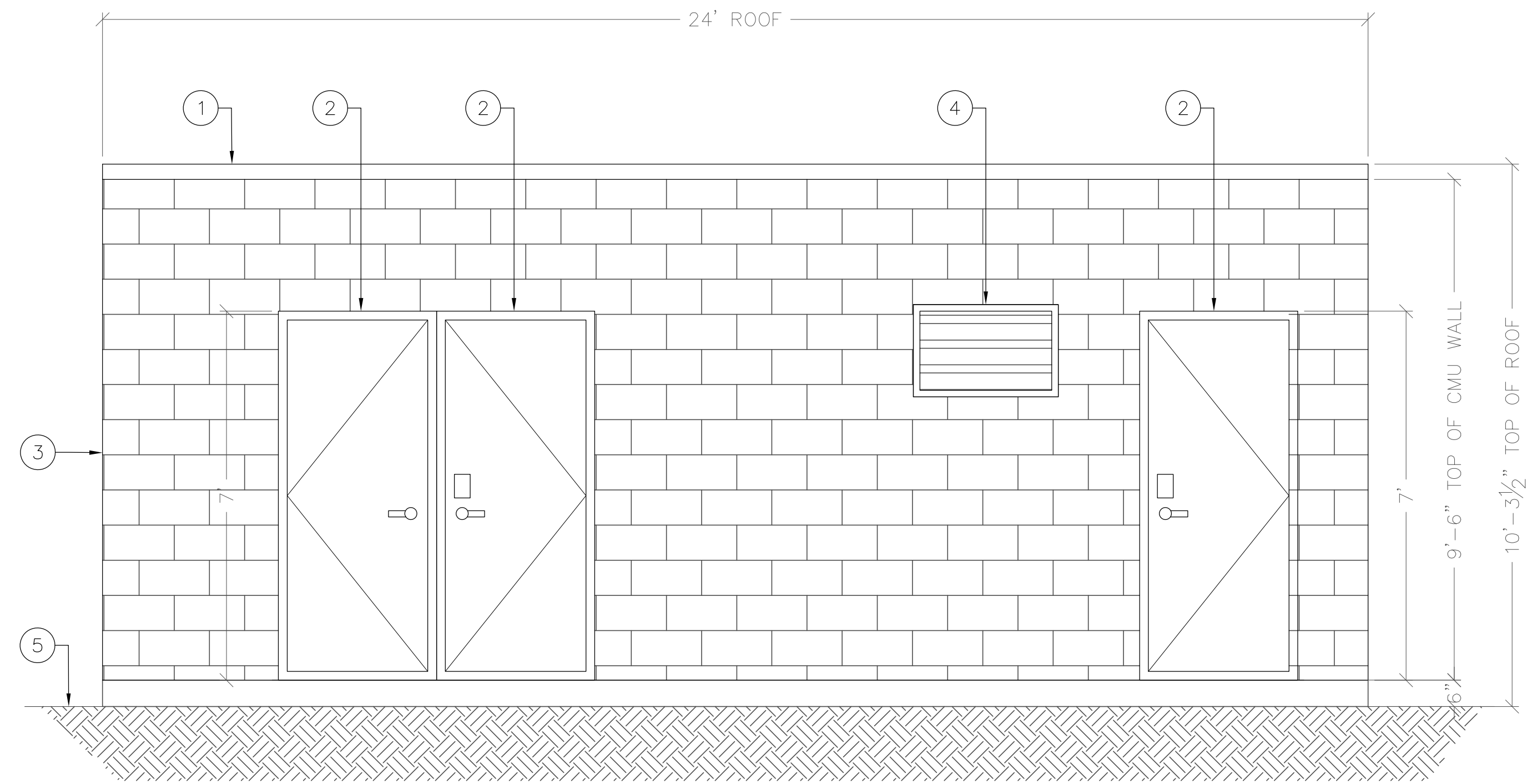
N.T.S. 2

**ELEVATION KEYED NOTES: #**

1. CONCRETE ROOF DECK
2. ACCESS DOOR (TYP.)
3. CMU BLOCK BUILDING
4. VENT FAN, REFER MANUFACTURER SPECIFICATIONS
5. FINISHED GRADE

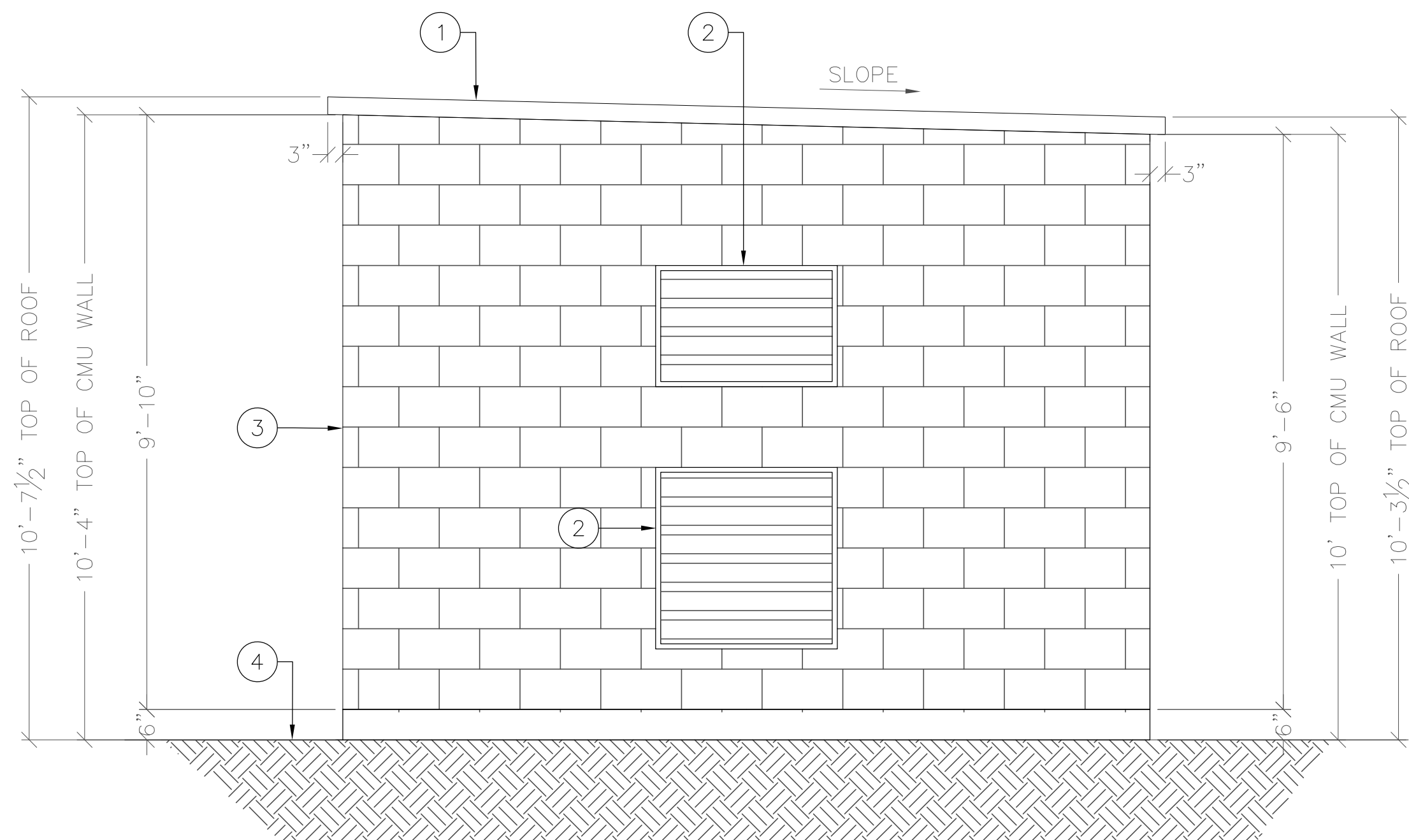
**NOTE:**

1. PRIOR TO ANY WORK, VERIFY DOOR OPENING SIZE WITH GENERATOR SPECS, ADJUST THE OPENING SIZE AND DOOR SIZE AS NECESSARY. ALSO VERIFY OTHER OPENINGS FOR VENT AND EXHAUST WITH RESPECTIVE MANUFACTURER.



**ELEVATION KEYED NOTES: #**

1. CONCRETE ROOF DECK
2. SCREEN VENT LOUVER
3. CMU BLOCK BUILDING
4. FINISHED GRADE

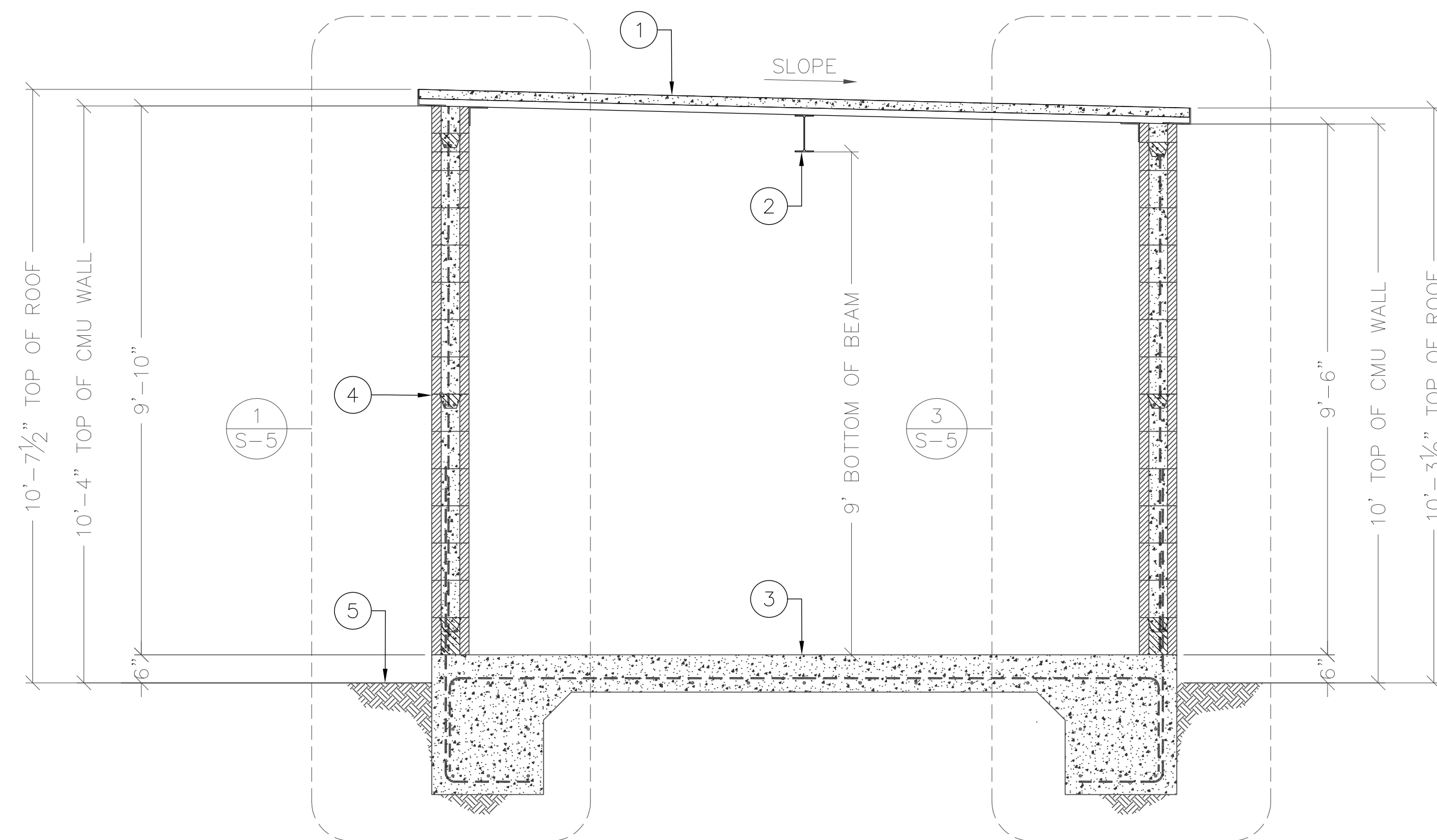


**SOUTHEAST ELEVATION**

N.T.S. 3

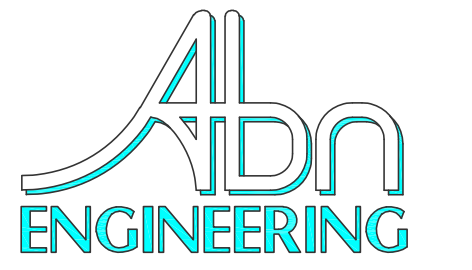
**ELEVATION KEYED NOTES: #**

1. CONCRETE ROOF DECK
2. STEEL BEAM PER PLAN
3. 8" THK. SLAB W/ #4 @ 12" O.C. EACH WAY (TYP.)
4. CMU BLOCK BUILDING
5. FINISHED GRADE



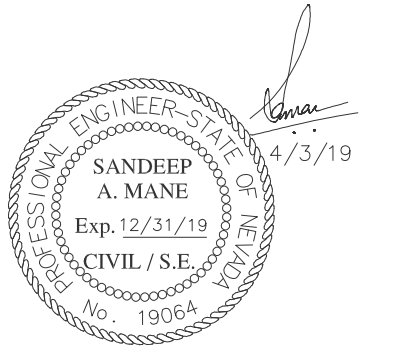
**BUILDING SECTION**

N.T.S. 4



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

ROOF PLAN, BUILDING  
ELEVATIONS AND  
SECTION

SHEET NUMBER

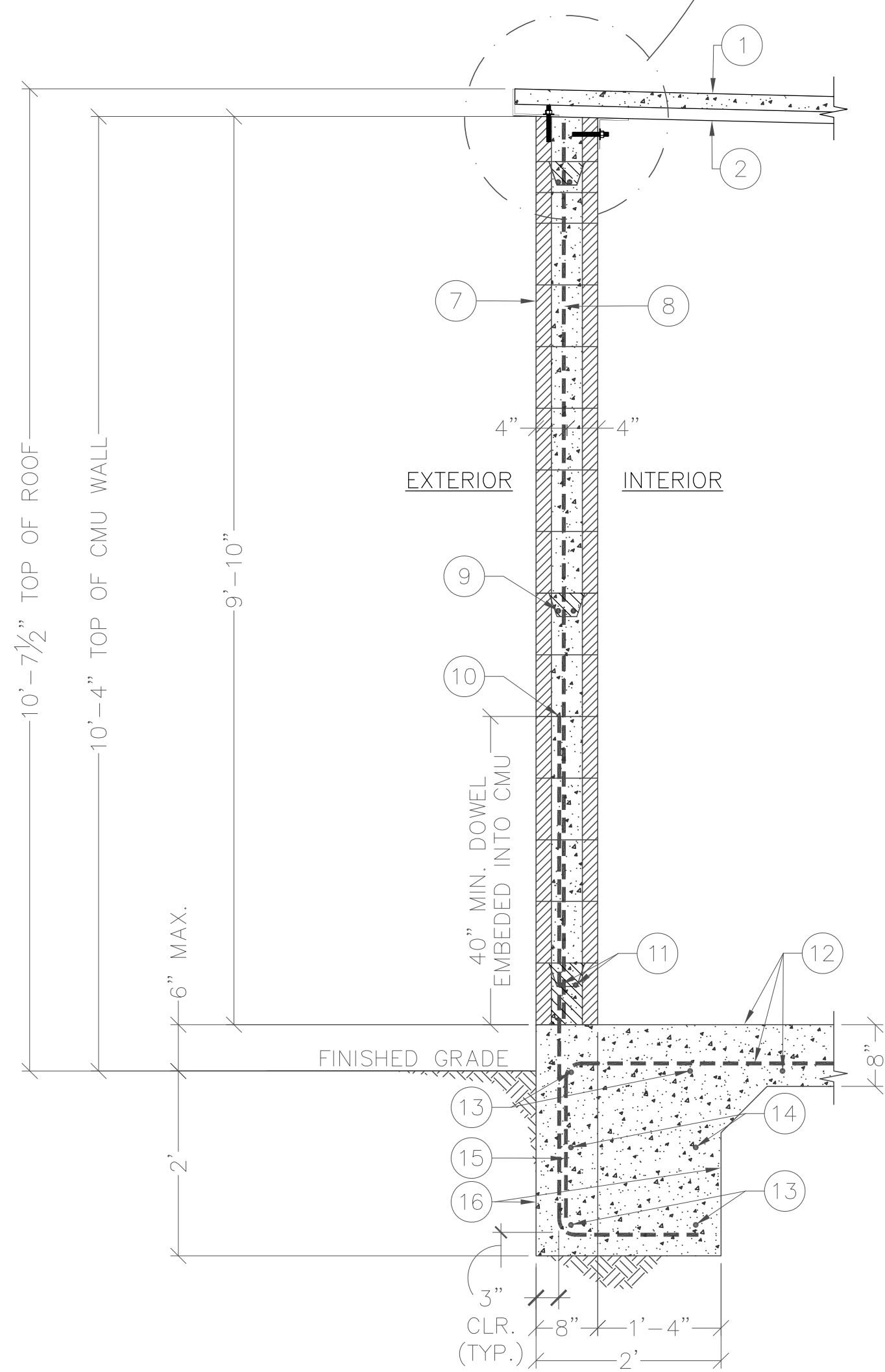
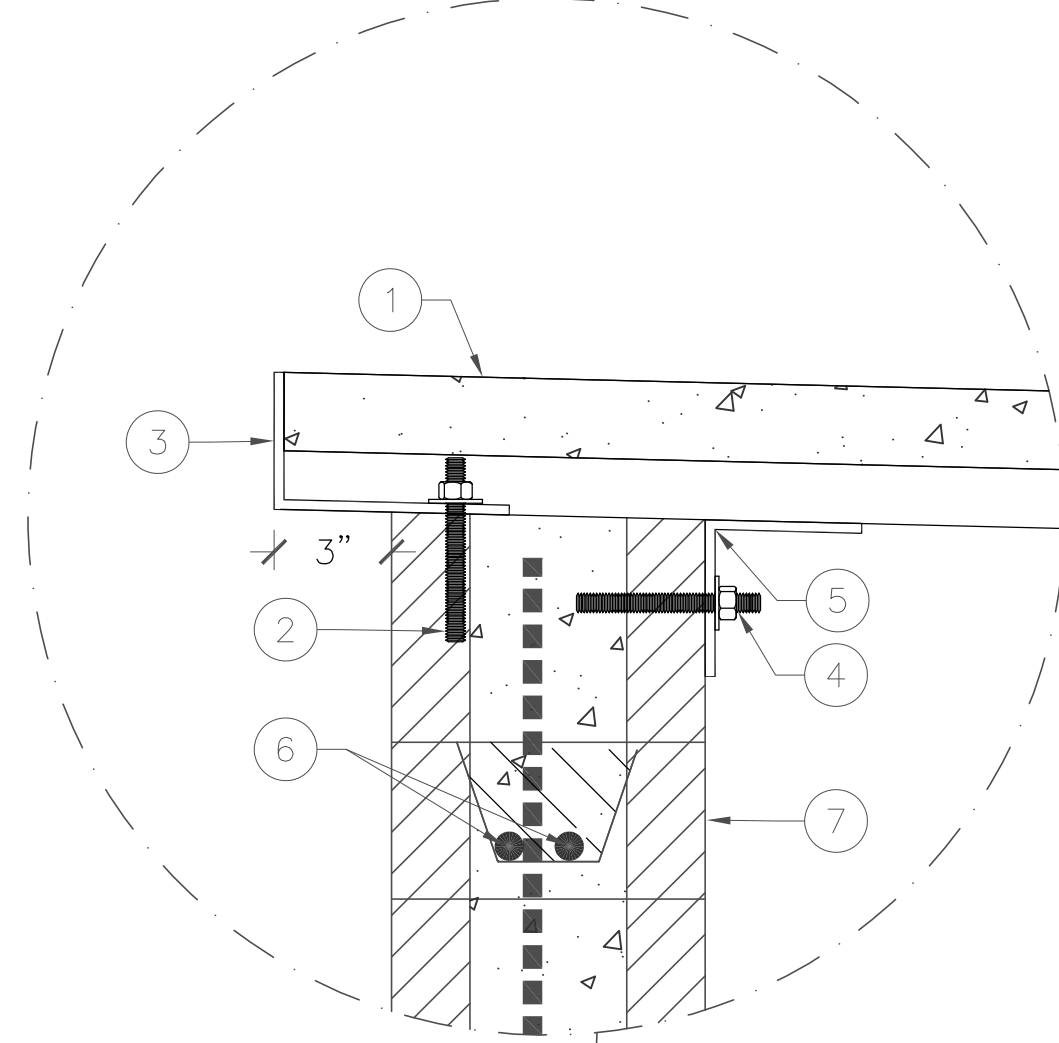
S-4



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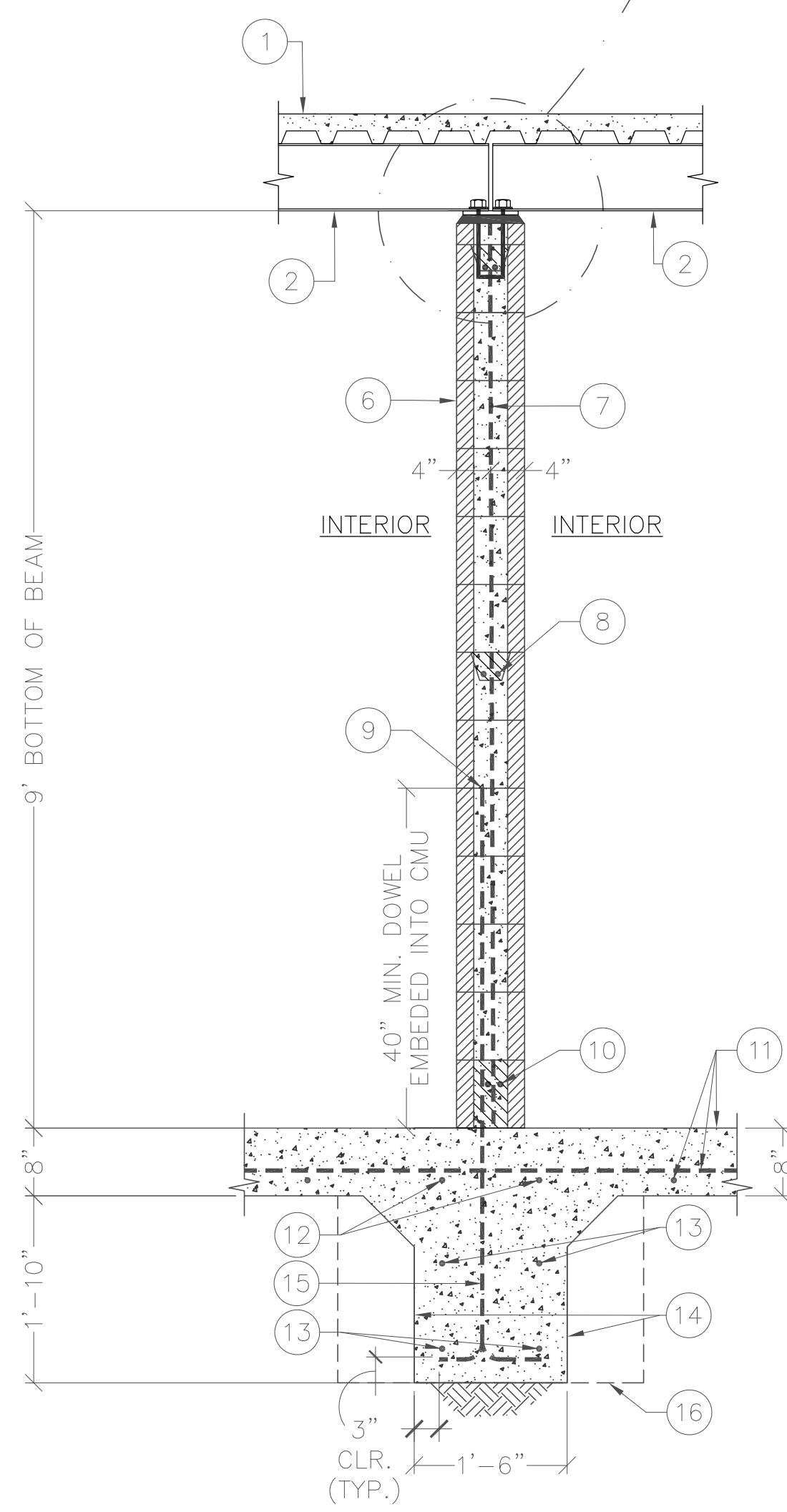
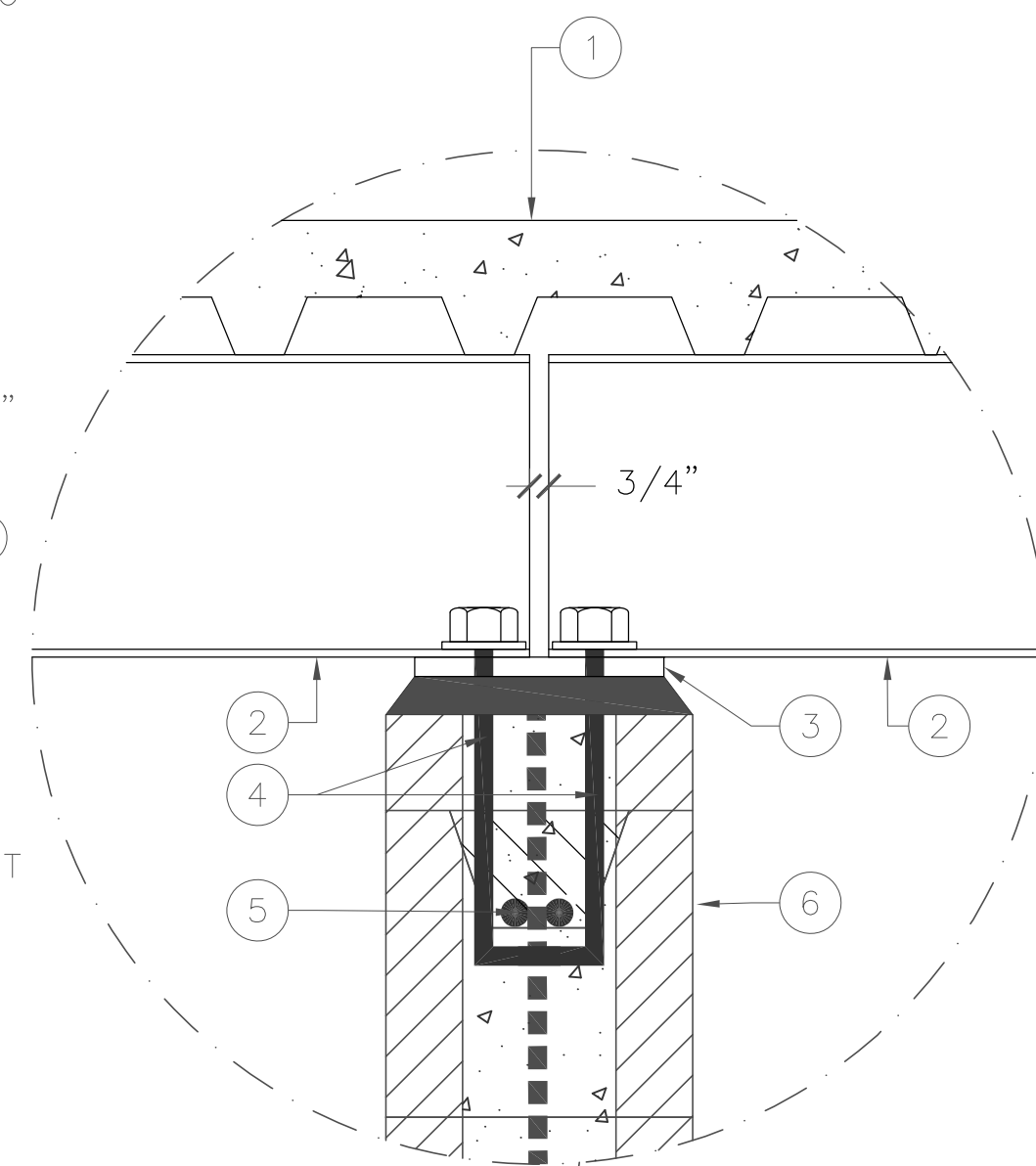
KEYED NOTES: #

1. CONCRETE ROOF DECK
2. 1/2" DIA. ANCHOR BOLTS AT 36" O.C. INTO TOP BOND BEAM, 3-1/4" MIN. EMBEDMENT. USE C.I.P. OR EXPANSION ANCHORS AT GC'S PREFERENCE
3. 6x3-1/2x3/16" THICK BENT PLATE (SLV)
4. 1/2" DIA. ANCHOR BOLTS AT 36" O.C. INTO TOP BOND BEAM, 3-1/4" MIN. EMBEDMENT. USE C.I.P. OR EXPANSION ANCHORS AT GC'S PREFERENCE
5. LEDGER ANGLE
6. (2) #5 CONTINUOUS GROUDED BOND BEAM
7. MASONRY WALL
8. #5 VERTICAL BARS @ 48" O.C. (AT CENTER)
9. #5 CONTINUOUS BAR IN BOND BEAM
10. VERTICAL LAP 40"
11. (2) #5 CONTINUOUS GROUDED BOND BEAM
12. 8" THK. CONCRETE PAD W/ #4 @ 12" O.C. EACH WAY, 20" HOOK AT THE END IN TURNDOWN
13. (2) #4 CONTINUOUS (TOP & BOTTOM)
14. (2) #4 CONTINUOUS AT MID HEIGHT OF TURNDOWN
15. DOWELS TO MATCH WALL REINFORCING, 18" HOOK AT THE END
16. TYPICAL TURNDOWN AT PERIMETER



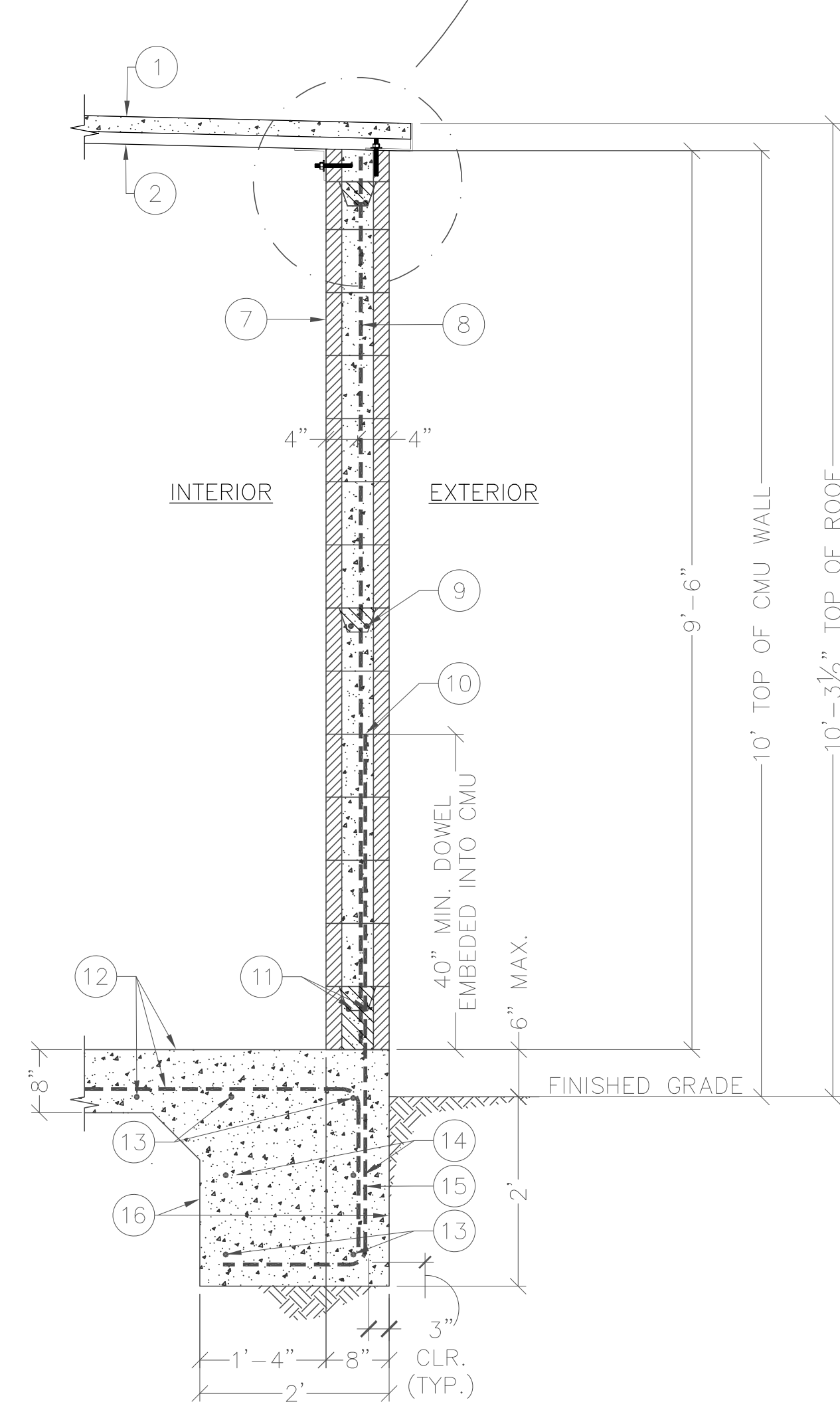
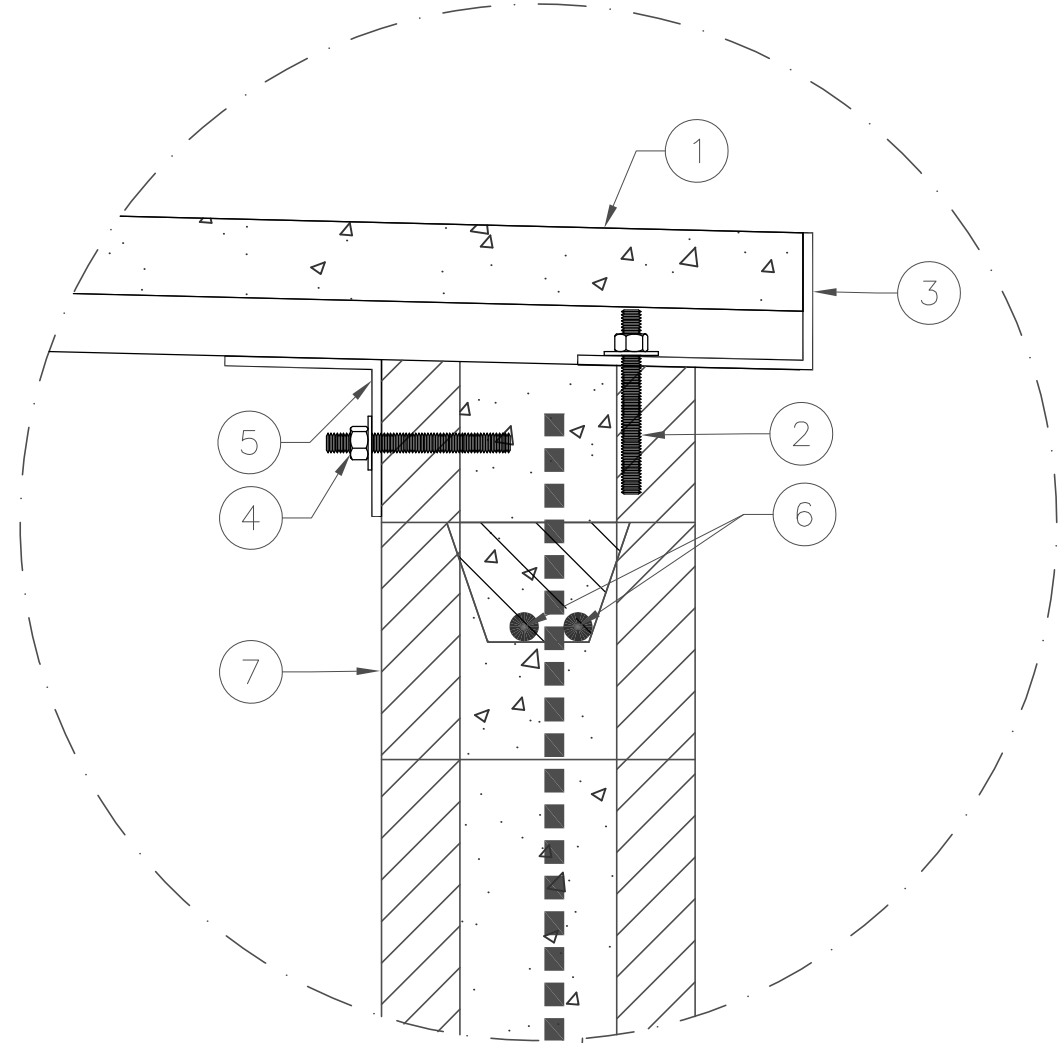
KEYED NOTES: #

1. CONCRETE ROOF DECK
2. STEEL BEAM
3. 1/2" THICK PLATE
4. 3/4" DIA. ANCHOR BOLTS AT 24" O.C.
5. (2) #5 CONTINUOUS GROUDED BOND BEAM
6. MASONRY WALL
7. #5 VERTICAL BARS @ 48" O.C. (AT CENTER)
8. #5 CONTINUOUS BAR IN BOND BEAM
9. VERTICAL LAP 40"
10. (2) #5 CONTINUOUS GROUDED BOND BEAM
11. 8" THK. CONCRETE PAD W/ #4 @ 12" O.C. EACH WAY, 20" HOOK AT THE END IN TURNDOWN
12. (2) #4 CONTINUOUS (TOP & BOTTOM)
13. (2) #4 CONTINUOUS AT MID HEIGHT OF TURNDOWN
14. DOWELS TO MATCH WALL REINFORCING, 18" HOOK AT THE END
15. TYPICAL TURNDOWN AT PERIMETER
16. 3'x3' FOOTING AT BEAM BEARING (BEYOND). SEE FOUNDATION PLAN. EXTEND WALL FOOTER REINFORCEMENT WITH (1) #4 CONT. ALL AROUND



KEYED NOTES: #

1. CONCRETE ROOF DECK
2. 1/2" DIA. ANCHOR BOLTS AT 36" O.C. INTO TOP BOND BEAM, 3-1/4" MIN. EMBEDMENT. USE C.I.P. OR EXPANSION ANCHORS AT GC'S PREFERENCE
3. 6x3-1/2x3/16" THICK BENT PLATE (SLV)
4. 1/2" DIA. ANCHOR BOLTS AT 36" O.C. INTO TOP BOND BEAM, 3-1/4" MIN. EMBEDMENT. USE C.I.P. OR EXPANSION ANCHORS AT GC'S PREFERENCE
5. LEDGER ANGLE
6. (2) #5 CONTINUOUS GROUDED BOND BEAM
7. MASONRY WALL
8. #5 VERTICAL BARS @ 48" O.C. (AT CENTER)
9. #5 CONTINUOUS BAR IN BOND BEAM
10. VERTICAL LAP 40"
11. (2) #5 CONTINUOUS GROUDED BOND BEAM
12. 8" THK. CONCRETE PAD W/ #4 @ 12" O.C. EACH WAY, 20" HOOK AT THE END IN TURNDOWN
13. (2) #4 CONTINUOUS (TOP & BOTTOM)
14. (2) #4 CONTINUOUS AT MID HEIGHT OF TURNDOWN
15. DOWELS TO MATCH WALL REINFORCING, 18" HOOK AT THE END
16. TYPICAL TURNDOWN AT PERIMETER

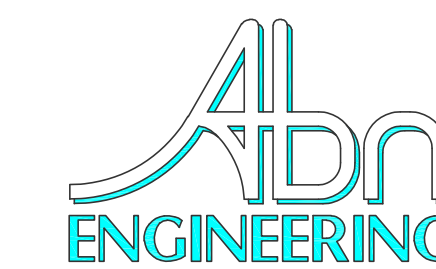


ROOF DECK AT MASONRY WALL - BEARING WALL

N.T.S. 1 ROOF DECK AND BEAM AT INTERIOR-BEARING WALL

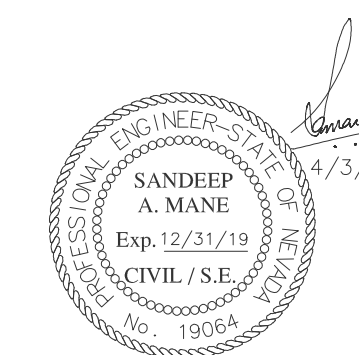
N.T.S. 2 ROOF DECK AT-BEARING WALL

N.T.S. 3



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

CONSTRUCTION DETAILS

SHEET NUMBER

S-5



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**KEY NOTES:**

- BOND BEAM REINFORCING CONTINUOUS FROM BEYOND MASONRY WALL.
- 1 #5 X 3'-6" IN 8" DEEP X 4'-0" LONG GROUDED BOND BEAM.
- STEEL BEAM.
- 2 - 3/4" Ø AUTOMATIC WELDED THREADED STUDS ON BEAM GAGE.
- 1 1/2" LONG HORIZONTALLY SLOTTED HOLE ON BEAM GAGE - EACH SIDE OF WEB.
- STEEL BEARING PLATE WITH 2 - 3/4" Ø ANCHORS OVER 1" ± DRYPACK.

**NOTE:**  
CONCRETE ROOF DECK NOT SHOWN FOR CLARITY.

**NOTES:**

- ALL DOOR HARDWARE SHALL BE LEVER TYPE, PUSH TYPE OR PANIC HARDWARE
- VERIFY THIS DETAIL WITH CUSTOMER AND MANUFACTURER AND FOLLOW MANUFACTURER'S SPECIFICATIONS FOR ACTUAL INSTALLATION

DOOR SCHEDULE						
DR #	OPENING SIZE	THK.	DOOR TYPE	MATERIAL		HINGE
				DOOR	FRAME	
1	(1) 3'-0" x 7'-0"	1 3/4"	NEW	COORDINATE WITH PROJECT OWNER		CONT. GEAR
2	(2) 3'-0" x 7'-0"	1 3/4"	NEW	COORDINATE WITH PROJECT OWNER		CONT. GEAR



**STEEL BEAM AT EXTERIOR MASONRY WALL** N.T.S. 1

**DETAIL KEYED NOTES: #**

- CONDUIT TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY
- FILL, VOID OR CAVITY MATERIAL SEALANT - MIN. 1" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE \*ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SIDES OF WALL.
- HILTI CONSTRUCTION CHEMICALS, INC. - FS601, FS604 OR FS-ONE SEALANT
- WALL
- PACKING MATERIAL - MIN. 2-1/2" THICKNESS OF MIN. 4.0 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FROM BOTH SURFACES OD WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

**DOOR SCHEDULE** N.T.S. 2

**INDOOR CABLE TRAY KEYED NOTES: #**

- (2) 4" Ø CONDUITS
- CUT THROUGH CEILING TILE (TYP.)
- EXISTING CEILING DROP
- ARRESTOR TRAPEZE KIT; REFER TO ANDREW AT-K306-U
- SYSTEM BUS BAR
- WALL MOUNTED CABLE TRAY
- EQUIPMENT RACK
- EQUIPMENT ROOM FLOOR
- CMU WALL
- 3/8" Ø TITEN HD W/ 3/4" EMBEDMENT PER ESR-2713 REPORT
- SB-165
- AUXILIARY STRINGER TUBE OF CABLE RUNWAY SB-155
- SB-166
- #6 AWG GREEN STANDARD
- 2-HOLE W/ 1/4" BOLTS & STAR WASHERS
- NUT
- BOLT
- SPLICE CLAMP
- CORNER CLAMP

**DETAIL 1**  
CLOSING END OF CABLE LADDER

**DETAIL 2**  
CABLE LADDER JUNCTION

**DETAIL 3**  
CONNECTING TWO CABLE LADDERS BY "T" JUNCTION

**DETAIL 4**  
SUPPORTING CABLE TRAY AT CMU WALL

**NOTES:**

- ALL CABLE TRAY MEASUREMENTS ARE ACCURATE WITHIN ± 1/4"
- CABLE TRAY SYSTEMS SHALL BE COOPER B-LINE OR EQUAL. VERIFY PRIOR TO CONSTRUCTION

**PIPE PENETRATION AT WALL** N.T.S. 3

**ENTRY PORT KEYED NOTES: #**

- ASSEMBLED PORT
- ENTRY PORT COVER 4" Ø
- #14X1-1/2" SS PHILLIPS OVAL TAP SCREW

**CABLE TRAY DETAIL INSIDE EQUIPMENT ROOM** N.T.S. 4

DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
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FOX MOUNTAIN, NV

PROJECT  
RAW LAND BUILD

SITE ADDRESS  
LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE  
CONSTRUCTION DETAILS

SHEET NUMBER  
S-6

**ENTRY PANEL DETAIL** N.T.S. 5 NOT USED

N.T.S. 6



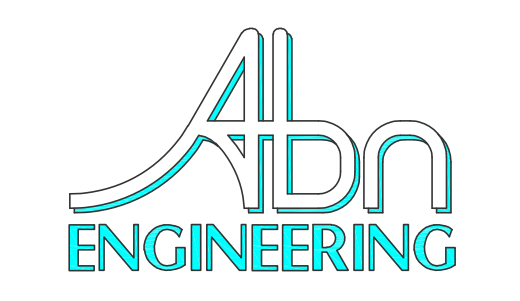
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- |  |   |
|--|---|
| 1. (N) ACCESS DOOR   | 21. (N) SOLAR ARRAY #2  |
| 2. (N) NEMA 4 J-BOX FOR POWER WIRES TRANSITION FROM U.G. TO SHELTER  | 22. (N) SOLAR ARRAY #3  |
| 3. (N) EQUIPMENT SHELTER   | 23. (N) SOLAR ARRAY #4  |
| 4. (N) BREAKER PANEL   | 24. (N) 1000 GALLON PROPANE TANK (TYP. OF 2) MOUNTED ON NEW INTERLOCK PAVERS  |
| 5. (N) FIRSTNET ALU CABINET  | 25. (N) SUPPORT PIPE (TYP.), SEE DETAIL 2 ON SHEET A-8  |
| 6. (N) ZTE CABINET   | 26. (N) 1000 GALLON PROPANE TANK MOUNTED ON NEW INTERLOCK PAVERS  |
| 7. (N) MW RACK   | 27. (N) BOLLARD (TYP. OF 7), SEE DETAIL 1 ON SHEET A-8  |
| 8. (N) CABLE LADDER, SUPPLIED BY GC  | 28. (N) U.G. CONDUIT FOR POLYETHYLENE FLEXIBLE GAS TUBING FROM PROPANE TANKS TO MOISTURE SLIP SEAL TEE, SEE DETAIL 4 ON SHEET A-8 |
| 9. (N) DC GENERATOR  | 29. (N) MOISTURE SLIP SEAL TEE  |
| 10. (N) GPS ANTENNA, SEE DETAIL 6 ON SHEET A-5   | 30. (N) U.G. CONDUIT FOR POLYETHYLENE FLEXIBLE GAS TUBING FROM MOISTURE SLIP SEAL TEE TO GENERATOR, SEE DETAIL 4 ON SHEET A-8     |
| 11. (N) ICE BRIDGE, SEE DETAIL 5 ON SHEET A-5  | 31. APPROXIMATE VALLEY GRADE DROP   |
| 12. (N) 150' TALL MONOPOLE, SEE SHEET A-3 FOR MORE DETAILS   |   |
| 13. NOT USED   |   |
| 14. NOT USED   |   |
| 15. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #1 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2 |   |
| 16. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #2 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2 |   |
| 17. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #3 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2 |   |
| 18. (N) U.G. CONDUIT FOR DC POWER RUN FROM COMBINER BOX #4 TO COMBINER BOX IN SHELTER, SEE DETAIL 4 ON SHEET E-2 |   |
| 19. (N) SOLAR ARRAY #1   |   |
| 20. (N) COMBINER BOX MOUNTED A BASE (TYP.)   |   |

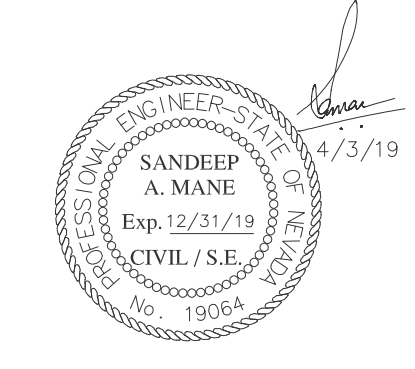
**ELECTRICAL GENERAL NOTES:**

- SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ALL FIELD VERIFICATION.
- THESE PLANS ARE DIAGRAMMATIC ONLY, AND ARE NOT TO BE SCALED.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC. AS REQUIRED FOR A COMPLETE AND PROPERLY OPERABLE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY (UL) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF THE DIVISION OF INDUSTRIAL SAFETY AND ALL GOVERNING BODIES HAVING JURISDICTION (AHJ). MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, AND NBFU. ALL CONDUIT INSTALLED SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
- ELECTRICAL CONTRACTOR SHALL CARRY OUT HIS WORK IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY, LOCAL CODES AND O.S.H.A.
- ELECTRICAL CONTRACTOR SHALL SECURE ALL NECESSARY ELECTRICAL PERMITS, AND PAY ALL REQUIRED FEES.
- COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF NO LESS THAN ONE YEAR AFTER THE DATE OF JOB COMPLETION. DATE OF JOB COMPLETION SHALL BE THE DATE ON THE CONTRACTOR'S "NOTICE OF COMPLETION" SUBMITTED TO THE OWNER. ANY WORK, MATERIAL, OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
- ALL CONDUIT ONLY (C.O.) SHALL HAVE A PULL WIRE OR ROPE, AND TRUE TAPE.
- ELECTRICAL CONTRACTOR SHALL PROVIDE THE OWNER WITH ONE SET OF COMPLETE ELECTRICAL "AS BUILT" DRAWINGS, SHOWING ACTUAL DIMENSIONS AND CIRCUITS, WITHIN 10 WORKING DAYS OF PROJECT COMPLETION.
- ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO PROJECT MANAGER AT JOB COMPLETION.
- USE T-TAP CONNECTIONS ON ALL MULTI-CIRCUITS WITH COMMON NEUTRAL CONDUCTOR FOR LIGHTING FIXTURE. ALL CONDUCTORS SHALL BE COPPER.
- THE EXTERIOR GROUND RING SHALL BE TESTED PER COMMNET WIRELESS SPECIFICATIONS USING A 3-POINT FALL OF POTENTIAL TEST. IF THE GROUNDING SYSTEM RESISTANCE TO EARTH IS GREATER THAN 5 OHMS, THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE RESPONSIBLE ENGINEER.
- ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN AMP INTERRUPT RATING (AIC) NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C.
- THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
- PATCH, REPAIR AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
- IN DRILLING HOLES INTO CONCRETE (WHETHER FOR FASTENING OR ANCHORING PURPOSES OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, PIPE RUNS, ETC.) IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND REBARS WILL NOT BE DRILLED INTO, CUT, OR DAMAGED UNDER ANY CIRCUMSTANCES.
- LOCATION OF TENDONS AND REBARS ARE NOT DEFINITELY KNOWN AND THEREFORE MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY, OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING STEEL TENDONS.
- PENETRATIONS IN FIRE RATED WALLS SHALL BE FIRE STOPPED IN ACCORDANCE WITH APPLICABLE LOCAL BUILDING CODES, USING U.L. RATED MATERIALS.
- ELECTRICAL CONTRACTOR IS TO COORDINATE WITH UTILITY COMPANY FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOK-UP COSTS SHALL BE PAID BY THE CONTRACTOR.
- ELECTRICAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND/OR CATALOG CUT-SHEETS ON ALL NON-SPECIFIED ORIGINAL MATERIALS AND EQUIPMENT, TO PROJECT MANAGER PRIOR TO COMMENCEMENT OF THE WORK.
- ALL GROUNDING SYSTEM LEADS SHALL BE TESTED FOR CONTINUITY WITH THE GROUND LOOP CONDUCTOR. ALL FAULTY CONNECTIONS OR CONDUCTORS SHALL BE REPAIRED OR REPLACED AS REQUIRED.
- CLEAN PREMISES DAILY OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK PREMISES IN A COMPLETE AND UNDAMAGED CONDITION.
- ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED WITH POLYSEAM SEALANT.
- ALL #2 TINNED BARE COPPER DOWNLEADS TO BE PROTECTED BY 1/2" P.V.C. PIPE AND SECURED.
- COMPRESSION FITTINGS TO BE USED ON ALL CONDUITS (NO SETSCREWS).
- ALL #6 STRANDED COPPER WITH GREEN INSULATION TO BE ATTACHED WITH CRIMPED DOUBLE LUG, ATTACHED WITH NUTS, BOLTS AND STAR WASHERS TYPICAL AND NO-OX GREASE BETWEEN LUG AND BUSS BAR.
- ALL ABOVE GROUND CONDUIT SHALL BE SCHEDULE 80 PVC WITH UV PROTECTION OR GRC.



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

OVERALL ELECTRICAL  
PLAN & ELECTRICAL  
NOTES

SHEET NUMBER

E-1

**OVERALL ELECTRICAL PLAN**

22"x34" SCALE: 1/4" = 1'-0"  
11"x17" SCALE: 1/8" = 1'-0"  
4' 3' 2' 1' 0'

**ELECTRICAL NOTES**

SCALE: NTS **2**

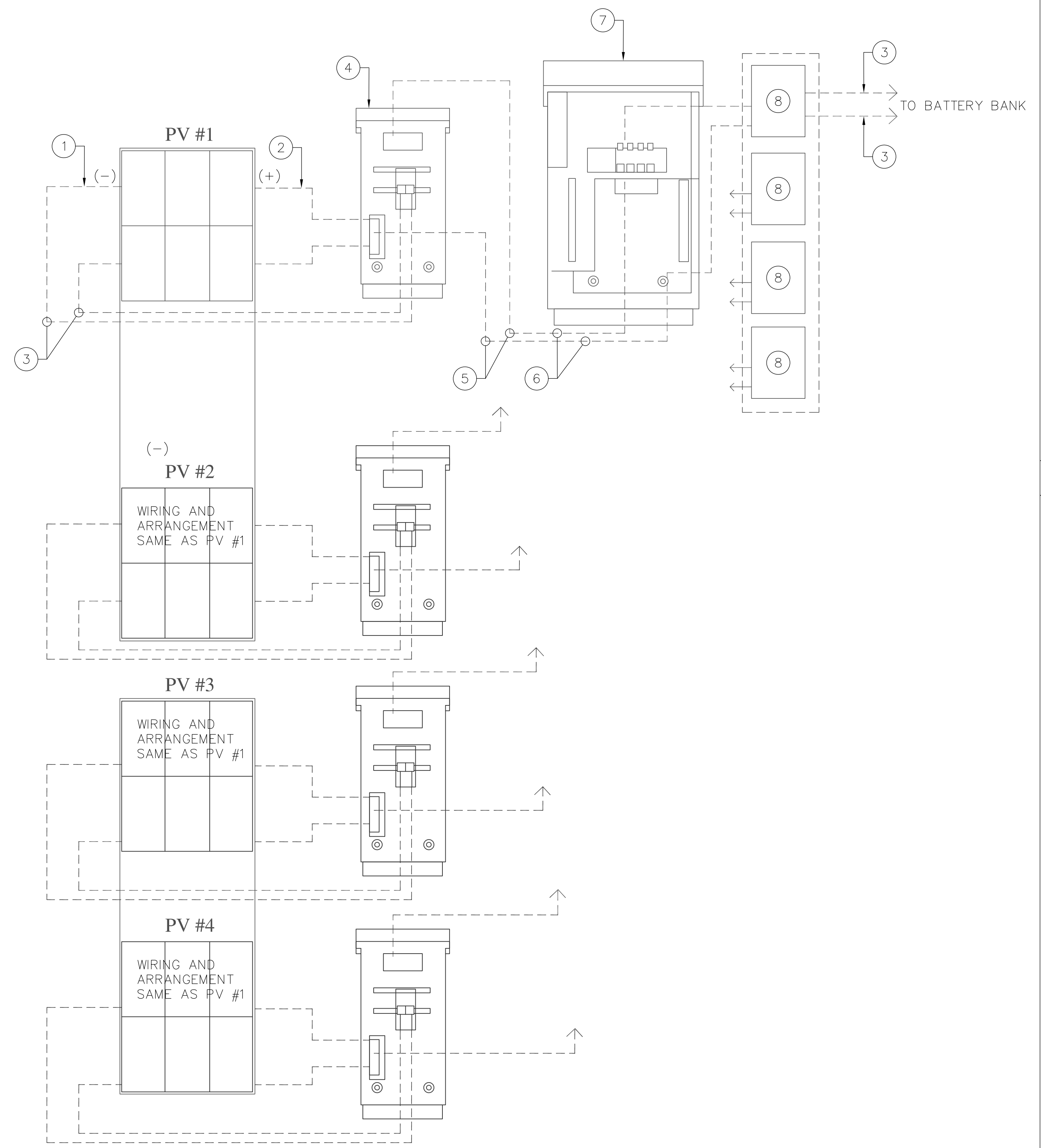


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DETAIL KEYED NOTES: (#)

1. NEGATIVE
2. POSITIVE GROUND
3. INTERNAL WIRING BY MANUFACTURER (TYP.)
4. COMBINER 60A, 150VDC (4X) -15A BREAKERS, 150VDC (8X) BEHIND EACH OF (4) PV ARRAY STRUCTURES
5. (2) #4 WIRES PROVIDED BY GC
6. CONDUIT EXISTS TO DC GENERATOR STUB UPS AT BASE OF SHELTER
7. COMBINER 120A, 150VDC -20A BREAKERS, 150VDC (4X)
8. XANTREX CHARGE CONTROLLERS (4X) LOCATED IN DC GENERATOR

NOTE:  
VERIFY AND CONFIRM THIS DC ONE-LINE DIAGRAM WITH THE MANUFACTURER



NOT USED

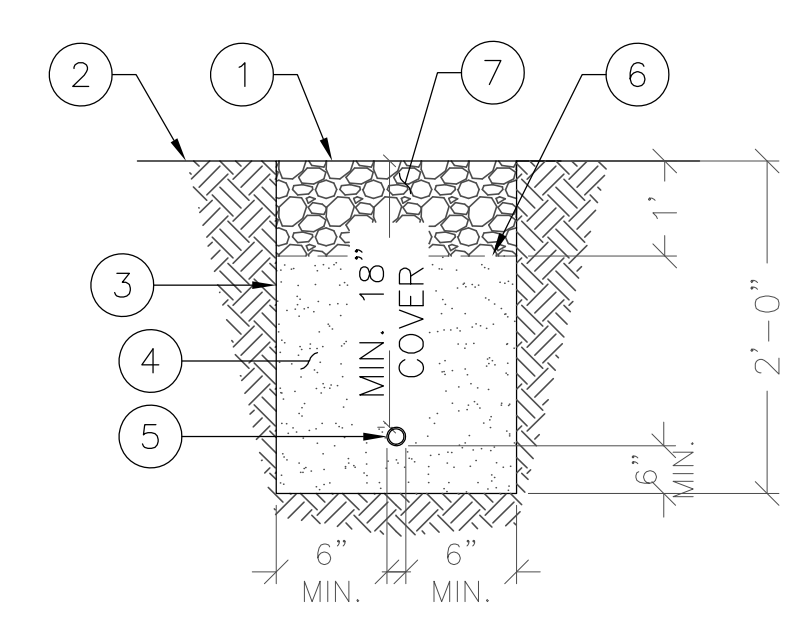
SCALE: N.T.S. 2

NOT USED

SCALE: N.T.S. 3

UTILITY TRENCH KEYED NOTES: (#)

1. MATCH EXISTING SURFACE
2. FINISHED GRADE
3. VERT. DEPTH W/O SHORING PER GOVERNING CODES
4. CLEAR BEDDING W/ MIN. 12" COVERAGE OVER CONDUIT
5. PVC CONDUIT FOR SOLAR POWER RUN. COORDINATE WITH SOLAR MANUFACTURER FOR CONDUIT SIZE
6. WARNING TAPE 12" ABOVE CONDUIT
7. ENGINEERING FILL MATERIAL



NOTE:  
THIS DETAIL NOT APPLICABLE TO WATER LINE(S)

UTILITY TRENCH DETAIL

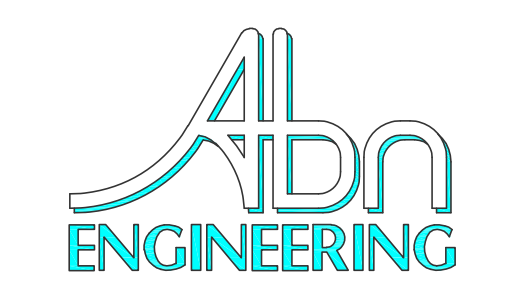
SCALE: N.T.S. 4

NOT USED

SCALE: N.T.S. 5

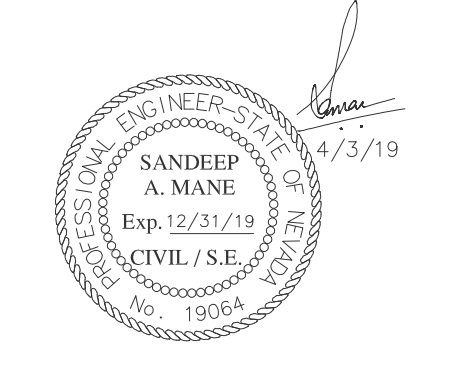
DC ONE-LINE DIAGRAM

SCALE: N.T.S. 1



1337 E DESERT FLOWER LANE  
PHOENIX, AZ 85048  
PHONE: (480) 213-8524

PE SEAL



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS

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SITE NAME

FOX MOUNTAIN, NV

PROJECT

RAW LAND BUILD

SITE ADDRESS

LAT: 41°01'31.25374"N  
LONG: 119°33'30.09025"W  
10140 A FOX MOUNTAIN ROAD  
GERLACH, NV 89412

SHEET TITLE

ONE-LINE DIAGRAM & DETAILS

SHEET NUMBER

E-2



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**LEGEND:**

- TGB— TINNED SOLID ALLOY 110 COPPER TOWER BUSS BAR BONDED TO TOWER STEEL.
- ⊗ TEST WELL, SEE DETAIL 5 ON SHEET G-2
- 5/8" DIA. x 10' COPPER CLAD GROUND ROD. SEE DETAIL 4 ON SHEET G-2. (TYP. OF 16)
- G— GROUND RING, REFER TO DETAIL 3 ON SHEET G-2.
- EXOTHERMIC WELD OR IRREVERSIBLE HIGH-COMPRESSION CRIMP.
- MECHANICAL CONNECTION.

**GENERAL NOTES:**

- A. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS, BUT ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS. COORDINATE WITH OTHER TRADES, AND PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
- B. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
- C. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
- D. REFER TO G-2 & G-3 FOR GROUNDING DETAILS.
- E. ALL METALLIC SURFACES SHALL BE PREPARED PRIOR TO BONDING, COLD GALV. SPRAY SHALL BE USED ON ANY EXOTHERMIC WELD TO PREVENT CORROSION, ANY AREA TO BE COLD GALV. SPRAY SHALL BE TAPED OFF PRIOR TO APPLICATION.

- CONSTRUCTION KEYED NOTES: #**
1. GROUNDING ELECTRODE CONDUCTOR SYSTEM (GROUND RING), #2 AWG SOLID BARE TINNED COPPER CONDUCTOR. GROUNDING ELECTRODE CONDUCTOR SHALL BE BURIED 30" BELOW GRADE WHERE APPLICABLE. ABOVE GRADE GROUNDING ELECTRODE CONDUCTOR TO BE ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT & FASTENED TO CONCRETE SURFACE EVERY 3' MAX. FASTENERS SHALL BE FLEXIBLE CONDUIT HALF STRAPS W/ 1/4"φ x 2" (L) RED HEAD HAMMER-SET NAIL DRIVE ANCHOR OR EQUIV. (TYP.)
  2. 5/8" DIA. x 10' LONG COPPER CLAD GROUND ROD PLACED MINIMUM EVERY 10' APART (TYP.). SEE DETAIL 4 ON SHEET G-2.
  3. BOND METAL DOOR FRAMING TO GROUND HALO, SEE DETAIL 9 ON SHEET G-3
  4. TEST WELL, SEE DETAIL 5 ON SHEET G-2
  5. BOND #2 AWG STRANDED NON-JACKETED INTERIOR GROUNDING HALO TO MAIN GROUND BAR (MGB)
  6. BOND #2 AWG STRANDED NON-JACKETED GENERATOR ROOM GROUNDING HALO TO MGB
  7. HORSESHOE HALO BREAK LOCATION, 6" CLEARANCE MINIMUM (TYP.)
  8. MAIN GROUND BUS BAR (MGB) INSTALLED BY SHELTER MANUFACTURER
  9. EXTERIOR GROUND BUS BAR (EGB). BOND TO GROUND RING WITH (2) #2 AWG SOLID TINNED BARE COPPER CONDUCTORS. IN ADDITION, BOND ENTRY PANEL TO EGB WITH #2 AWG THHN COPPER CONDUCTOR, SEE DETAIL 8 ON SHEET G-2
  10. BOND CABINETS AND MW RACK TO #2 AWG GREEN JACKET EQUIPMENT GROUND CONDUCTOR PER MANUFACTURER'S SPECS (TYP.)
  11. BOND CABLE LADDER TO MGB WITH #6 AWG THHN COPPER CONDUCTOR (TYP.), SEE DETAIL 8 ON SHEET G-3
  12. INSTALL #2 AWG JUMPER AT CABLE LADDER CORNER (TYP.)
  13. BOND GENERATOR TO GROUND RING PER MANUFACTURER SPECS
  14. BOND VENT METAL FRAMING TO GROUND RING WITH #2 AWG (TYP.), SEE DETAIL 10 ON SHEET G-2
  15. BOND EXHAUST VENT METAL FRAMING TO GROUND RING WITH #2 AWG
  16. INSTALL A #2 AWG SOLID BARE TINNED COPPER CONDUCTOR GROUND RADIAL BETWEEN SHELTER AND POLE, SEE DETAIL 3 ON SHEET G-2
  17. BOND POLE BASEPLATE TO GROUND RING AT MANUFACTURER SPECIFIED LOCATIONS WITH #2 AWG SOLID BARE TINNED COPPER CONDUCTOR (TYP. OF 3 BONDING), SEE DETAIL 11 ON SHEET G-2
  18. TOWER GROUND BUS BAR (TGB) TOP AND BOTTOM, SEE DETAIL 6 ON SHEET G-2
  19. ANTENNA GROUND BUS BAR (AGB) AT ANTENNA LEVEL, SEE DETAIL 9 ON SHEET G-2
  20. BOND RRU/RRH TO AGB (TYP.)
  21. BOND AIR HANDLER METAL FRAMING TO GROUND HALO WITH #2 AWG
  22. #2 AWG SOLID BARE TINNED COPPER CONDUCTOR (TYP.)
  23. BOND SOLAR RACKING AND SOLAR PANEL TO GROUND RADIAL WITH #2 AWG (TYP.)
  24. BOND COMBINER BOX TO GROUND RADIAL WITH #2 AWG (TYP.)
  25. BOND BOLLARD TO GROUND RADIAL WITH #2 AWG (TYP.)
  26. BOND SUPPORT PIPE TO GROUND RADIAL WITH #2 AWG (TYP.), SEE DETAIL 3 ON SHEET G-3
  27. MECHANICALLY BOND PROPANE TANK LEG TO GROUND RADIAL WITH #2 AWG (TYP.), SEE DETAIL 3 ON SHEET G-3

**GROUNDING PLAN**

22"x34" SCALE: 1/4" = 1'-0"  
 11"x17" SCALE: 1/8" = 1'-0"  
 4' 3' 2' 1' 0' 4'



**Abn ENGINEERING**

1337 E DESERT FLOWER LANE  
 PHOENIX, AZ 85048  
 PHONE: (480) 213-8524

PE SEAL

DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

SUBMITTALS			
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SITE NAME  
 FOX MOUNTAIN, NV

PROJECT  
 RAW LAND BUILD

SITE ADDRESS  
 LAT: 41°01'31.25374"N  
 LONG: 119°33'30.09025"W  
 10140 A FOX MOUNTAIN ROAD  
 GERLACH, NV 89412

SHEET TITLE  
 GROUNDING PLAN

SHEET NUMBER  
 G-1



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**NOTE:**  
 ERICO CADWELD "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH PROJECT MANAGER OR CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.

TYPE VS    TYPE TA    TYPE HS    TYPE SS    TYPE PT  
 TYPE GT    TYPE HS    TYPE XA    TYPE VS    TYPE YA-2  
 TYPE 2-YA-2

**GROUND ROD INSTALLATION KEYED NOTES: #**

1. FINISHED GRADE
2. EXOTHERMIC CONNECTION (TYPE GT)
3. 5/8"Øx10' LONG COPPER CLAD GROUND ROD WITH EXOTHERMIC CONNECTION TO GROUND RING
4. #2 AWG SOLID TINNED BARE COPPER WIRE (GROUND RING 30" BELOW GRADE)
5. EXOTHERMIC CONNECTION TO GROUND RING (TYPE PT)
6. #2 AWG SOLID TINNED BARE COPPER WIRE ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT (CARFLEX)

**NOTES:**  
 1. ALL GROUNDING AND BONDING AT THE SERVICE ENTRANCE SHALL COMPLY WITH NEC 250.28, 250.50, 250.66, 250.92, 250.102(C) & 250.56  
 2. GROUNDING SYSTEM RESISTANCE IS 25 OHMS OR LESS

**MAIN GROUND BUS BAR (MGB) KEYED NOTES: #**

1. GROUND LEADS FROM CABINETS & RACKS
2. SECOND OUTSIDE POSITION SHALL ALWAYS BE THE SURGE SUPPRESSION RACK GROUND
3. OUTSIDE POSITION OF IGB SHALL ALWAYS BE TAKEN BY HALO GROUND RING
4. CAD WELD #2 AWG TINNED SOLID BARE COPPER WIRE OR APPROVED 2-HOLE LUG TO OUTSIDE GROUND; WALL PENETRATION TO BE 45°
5. 4"x20" COPPER GROUND BUS BAR
6. HEX BOLTS W/ FLAT AND LOCK WASHERS; TWO HOLES PER LUG CONNECTION

**METALLIC BONDING KEYED NOTES: #**

1. SHELTER
2. EXTERIOR METALLIC EQUIPMENT
3. MECHANICAL BONDING CONNECTION (TYPE YA-2)
4. #2 AWG SOLID TINNED BARE COPPER WIRE GROUND CONDUCTOR ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT (CARFLEX)
5. FASTENED CARFLEX W/ HALF STRAPS & 1/4"Ø X 2" (L) RED HEAD HAMMER-SET NAIL DRIVE ANCHOR OR APPROVAL EQUAL
6. GROUND RING
7. EXOTHERMIC CONNECTION TO GROUND RING (TYPE PT)
8. FINISHED GRADE

**EXOTHERMIC WELD DETAILS**

SCALE: N.T.S. **1**

**GROUND ROD DETAIL**

SCALE: N.T.S. **4**

**MAIN GROUND BUS BAR**

SCALE: N.T.S. **7**

**METALLIC BONDING DETAIL**

SCALE: N.T.S. **10**

GROUNDING CONDUCTOR SIZING	
CONDUCTOR LENGTH IN LINEAR FT	CONDUCTOR SIZE IN AWG/MCM
< 33	2
34 - 41	1
42 - 53	1/0
54 - 66	2/0
67 - 84	3/0
85 - 105	4/0
106 - 125	250 MCM
126 - 150	300 MCM
151 - 175	350 MCM
176 - 250	500 MCM
251 - 300	600 MCM
> 300	750 MCM

**TEST WELL KEYED NOTES: #**

1. 10"Øx42" DEEP PVC SLOTTED GROUND TEST WELL WITH 3/16" THICK STEEL COVER (HARGER #360P42 OR EQUIVALENT)
2. FINISHED GRADE
3. 5/8"Øx10' LONG COPPER CLAD GROUND ROD
4. #2 AWG SOLID TINNED BARE COPPER WIRE
5. EXOTHERMIC WELD (TYPE PT)
6. GROUND LEADS TO BE ROUTED THRU SLOTTED WELL
7. #2 AWG SOLID TINNED BARE COPPER WIRE TEST LOOP "OMEGA" (Ω) EXTENSION; CADWELD AS CLOSE TO THE GROUND ROD AS POSSIBLE

**EXTERNAL GROUND BUS BAR KEYED NOTES: #**

1. RF TRANSMISSION LINE (COAX)
2. COAX GROUNDING KIT
3. PORT ENTRY SHALL BE GROUNDED TO EXTERNAL GROUND BUS BAR (EGB)
4. OUTSIDE POSITION OF EGB SHALL ALWAYS BE GPS #2 AWG SOLID TINNED BARE COPPER CONDUCTOR (IF MOUNTED TO SHELTER)
5. CAD WELD #2 AWG SOLID TINNED BARE COPPER CONDUCTOR OR APPROVED IRREVERSIBLE CRIMPING PER R56 STANDARDS
6. 4"x20" BARE OR TINNED SOLID ALLOY 110 COPPER GROUND BUS BAR
7. HEX BOLTS W/ FLAT AND LOCK WASHERS; 2-HOLES PER LUG CONNECTION
8. OUTSIDE POSITION OF EGB SHALL ALWAYS BE GPS #2 AWG SOLID TINNED BARE COPPER CONDUCTOR (IF MOUNTED TO SHELTER)
9. SECOND OUTSIDE POSITION SHALL ALWAYS BE THE ICE BRIDGE CONNECTION (IF APPLICABLE)

**TYPICAL TOWER/ICE BRIDGE GROUNDING KEYED NOTES: #**

1. "SUREGROUND" GROUND KIT
2. TINNED SOLID ALLOY 110 COPPER GROUND BUS BAR AT BOTTOM OF POLE (TGB); BOND DIRECTLY TO MONOPOLE STEEL
3. RF TRANSMISSION LINE (COAX)
4. MONOPOLE
5. EXOTHERMIC WELD TO MANUFACTURER INSTALLED BONDING TAB (TYP.)
6. FINISHED GRADE
7. OUTLINE OF TOWER FOUNDATION
8. EXOTHERMIC WELD (TYP.)
9. ICE BRIDGE
10. #6 AWG THHN COPPER WIRE W/ MECHANICAL CONNECTION TO EACH ICE BRIDGE SECTION (TYP.)
11. COAX CABLE AND HANGERS
12. "SUREGROUND" GROUND KIT
13. 4X20 COPPER EXTERNAL GROUND BUS BAR (EGB)
14. CONDUCTOR ROUTED IN PVC OR FLEXIBLE NON-CONDUCTIVE CONDUIT (CARFLEX) (TYP.)
15. #2 AWG SOLID TINNED BARE COPPER WIRE TO SUPPORT POST (TYP.)
16. OUTSIDE EDGE OF SHELTER FOUNDATION
17. #2 AWG SOLID TINNED BARE COPPER WIRE (GROUND RING) MIN. 30" BELOW GRADE
18. 5/8"Øx10' LONG COPPER CLAD GROUND ROD (TYP.)
19. NOT USED
20. OUTLINE OF EQUIPMENT SHELTER
21. ARRESTOR TRAPEZE KIT IF NEEDED
22. CABLE ENTRY PORT
23. MAIN GROUND BUS BAR (MGB)
24. #2 AWG SOLID TINNED BARE COPPER GROUND CONDUCTOR TO GROUND RING
25. FINISHED FLOOR OF SHELTER
26. BOND BASE OF GROUNDING STRAP TO GROUND RING

**GRND. CONDUCTOR SIZE DETAIL**

SCALE: N.T.S. **2**

**TEST WELL DETAILS**

SCALE: N.T.S. **5**

**EXTERIOR GROUND BUS BAR**

SCALE: N.T.S. **8**

**ANTENNA GROUND BAR (AGB) (TOP) KEYED NOTES: #**

SCALE: N.T.S. **9**

**TOWER/ICE BRIDGE DETAIL**

SCALE: N.T.S. **11**

**GROUND RING TRENCHING KEYED NOTES: #**

1. BACKFILL PER SPECIFICATIONS
2. FINISHED GRADE
3. #2 AWG SOLID TINNED BARE COPPER WIRE

**NOTES:**  
 1. DEPTH TO BE 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.  
 2. GROUND RINGS SHOULD CONSIST OF AT LEAST 20' OF #2 AWG OR LARGER BARE COPPER CONDUCTOR.  
 3. BURY THE RINGS IN DIRECT CONTACT WITH SOIL.

**TOWER GROUNDING KEYED NOTES: #**

1. HYBRID
2. HYBRID GROUNDING KIT
3. HEX BOLTS; APPROVED TWO HOLE LUG CONNECTION WITH STAINLESS HARDWARE
4. EXOTHERMIC WELD #2 AWG STRANDED BARE TINNED COPPER
5. TINNED COPPER TOWER GROUND BUSS BAR

**ANTENNA GROUND BAR (AGB) (TOP) KEYED NOTES: #**

1. #2 AWG FROM GROUNDING POINT ON EACH RRU (TYP.), SEE SDP FOR NUMBER OF RRUs
2. GROUND BUS BAR RSS GRB2212 OR APPROVED EQUAL
3. RSS UNIVERSAL ANGLE ADAPTER TH511-U03 OR APPROVED EQUAL

**NOTES:**  
 1. GROUND BAR SHALL CLAMP TO BOTTOM BOOM GATE HORIZONTAL ANGLE OR SIMILAR  
 2. NO INSULATORS REQUIRED - GROUND BUS BAR SHALL CONTACT TOWER STEEL

**GROUND RING TRENCH**

SCALE: N.T.S. **3**

**TOWER GROUND BUS BAR**

SCALE: N.T.S. **6**

**ANTENNA BUS BAR DETAIL**

SCALE: N.T.S. **9**

**TOWER/ICE BRIDGE DETAIL**

SCALE: N.T.S. **11**

1337 E DESERT FLOWER LANE  
 PHOENIX, AZ 85048  
 PHONE: (480) 213-8524

PE SEAL

DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
B	7/8/18	REVISED	JN
C	2/19/19	REVISED	JN
D	2/22/19	REVISED	JN
E	2/25/19	FINAL CD	JN
F	4/2/19	REVISED CD	JN

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 FOX MOUNTAIN, NV

PROJECT  
 RAW LAND BUILD

SITE ADDRESS  
 LAT: 41°01'31.25374"N  
 LONG: 119°33'30.09025"W  
 10140 A FOX MOUNTAIN ROAD  
 GERLACH, NV 89412

SHEET TITLE  
 GROUNDING DETAILS

SHEET NUMBER  
 G-2



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**GROUND LUG KEYED NOTES: (#)**

- NUT
- LOCK WASHER
- FLAT WASHER
- BOLT
- BURNDY GROUND LUG (SEE TABLE FOR SIZE AND MODEL)
- HEAT SHRINK (CLEAR)
- GROUNDING CONDUCTOR
- GROUND BUSS BAR OR METALLIC BONDING SURFACE
- BURNDY 2-HOLE LUG W/ LONG BARREL FOR #6 AWG STRANDED
- BARE WIRE TO BE NO-OXED AT BOTH ENDS
- HEAT SHRINK
- #6 AWG THHN COPPER WIRE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG	YA6C-2TC38	3/8" - 16 NC S 3 BOLT
#2 AWG SOLID	YA3C-2TC38	3/8" - 16 NC S 3 BOLT
#2 AWG STRANDED	YA2C-2TC381	3/8" - 16 NC S 3 BOLT
#2/0 AWG	YA26-2TC38	3/8" - 16 NC S 3 BOLT
#4/0 AWG	YA28-2N	1/2" - 16 NC S 3 BOLT

**WEATHERPROOFING KEYED NOTES: (#)**

- COAX
- COAX TO JUMPER CONNECTION (TYP.)
- JUMPER (TYP.)
- 3M SCOTCH SUPER 33+ VINYL ELECTRICAL TAPE (OR EQUIVALENT)
- VAPOR WRAP SEALANT

**BONDING TO GROUND BUS CONDUCTOR KEYED NOTES: (#)**

- SPLIT BOLT
- TO IGB
- EQUIPMENT GROUNDING CONDUCTORS
- SPLIT BOLT CONNECTION
- IRREVERSIBLE CRIMP CONNECTION (MUST BE LISTED FOR MULTIPLE CONNECTIONS)

**NOTE:**  
ROUTE ALL CONDUCTORS TOWARDS THE IGB.

**GROUNDING LUG DETAIL** SCALE: N.T.S. **1**

**BONDING CONNECTION KEYED NOTES: (#)**

- 2-HOLE LUG
- #6 AWG THHN COPPER CONDUCTOR OR COARSER (AS NOTED), FOR ANCILLARY CONNECTIONS
- PRIMARY GROUND BAR/METAL ENCLOSURE
- 1/4" -20 HEX BOLT
- 1/4" FLAT WASHER
- 1/4" LOCK WASHER
- 1/4" -20 HEX NUT
- NO-OX TO BE APPLIED BETWEEN LUG AND GROUND BAR

**NOTE:**

- SELECT BOLT LENGTH TO PROVIDE A MINIMUM OF TWO EXPOSED THREADS
- BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF LUG CONTACT
- APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE CLEAN EXCESS COMPOUND
- ONLY ONE LUG PER SET OF BOLTS

**WEATHERPROOF DETAIL** SCALE: N.T.S. **4**

**HALO AROUND TAP KEYED NOTES: (#)**

- C-TAP T&B #54730
- #2 AWG STRANDED NON-JACKETED
- #6 GRN, 8" MIN BEND RADIUS AT ALL AXES
- GROUND CONDUCTOR OR "LEAD"

**BONDING TO GROUND BUS CONDUCTOR DETAIL** SCALE: N.T.S. **7**

**CABLE LADDER CORNER BONDING KEYED NOTES: (#)**

- 2-HOLE LUG (355027-405)
- #6 AWG THHN COPPER CONDUCTOR
- CABLE RACK
- CORNER CLAMP
- 1/4" LOCK WASHER & 1/4" WASHER
- SS 1/4" -20 HEX NUT
- SS 1/4" -20 BOLT

**NOT USED** SCALE: N.T.S. **10**

**BONDING CONNECTION DETAIL** SCALE: N.T.S. **2**

**PROPANE TANK BONDING KEYED NOTES: (#)**

- STEEL PIPE
- EXOTHERMIC WELD (TYPE VS)
- #2 AWG SOLID TINNED BARE COPPER CONDUCTOR ROUTED IN FLEXIBLE NON-METALLIC LIQUID TIGHT CONDUIT (CARFLEX) (TYP.)
- EXOTHERMIC WELD
- GROUND RING
- FASTENED CARFLEX W/ HALF STRAPS & 1/4" x 2" (L) RED HEAD HAMMER-SET NAIL DRIVE ANCHOR OR APPROVAL EQUAL
- MECHANICAL BONDING CONNECTION (TYPE YA-2)
- PROPANE TANK SUPPORT LEG

**ACCEPTABLE GROUND CONDUCTOR BEND DETAIL** SCALE: N.T.S. **5**

GROUND CONDUCTOR OR "LEAD"

8" MIN RADIUS AT ALL AXES

≥ 8"

90° MIN.

THE RADIUS OF ANY BEND SHALL NOT BE LESS THAN 203 MM (8 IN.)

THE ANGLE OF ANY BEND SHALL NOT BE LESS THAN 90 DEGREES

**CABLE LADDER CORNER BONDING** SCALE: N.T.S. **8**

**FLEXIBLE BONDING JUMPER KEYED NOTES: (#)**

- #6 AWG THHN COPPER WIRE TO IPGB
- 2-HOLE LUG T&B 54205
- 2/0 AFLEXIBLE BONDING JUMPER
- HINGE LINE
- 1/4"x1 BOLT & 1/4" FLAT WASHER
- METAL DOOR FRAME
- DOOR TRIM

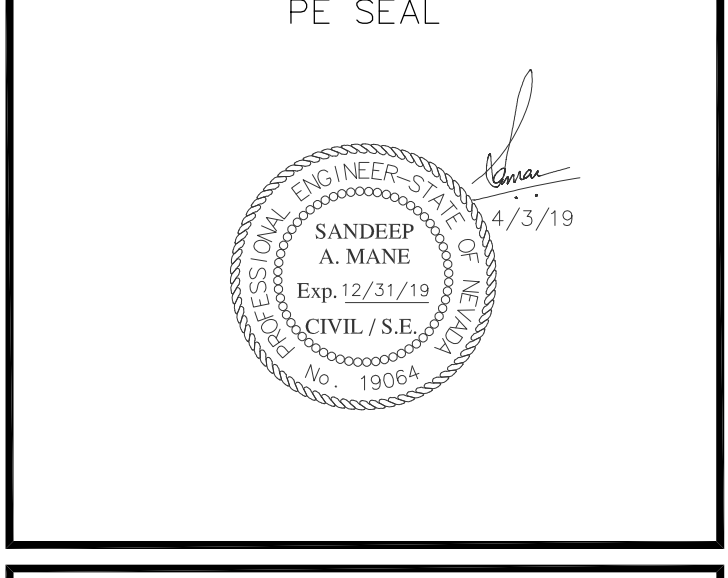
**NOT USED** SCALE: N.T.S. **11**

**TANK GROUNDING DETAIL** SCALE: N.T.S. **3**

**ACCEPTABLE GROUND CONDUCTOR BEND DETAIL** SCALE: N.T.S. **6**

**WEATHERPROOF DETAIL** SCALE: N.T.S. **9**

**NOT USED** SCALE: N.T.S. **12**



DESIGNER: JASON NGO

LEAD EE: SB

LEAD CE/SE: SAM

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