



State of Utah

GARY R. HERBERT
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Lt. Governor

Department of Administrative Services

KIMBERLY K. HOOD
Executive Director

Division of Facilities Construction and Management

P. JOSHUA HAINES
Director

Addendum No. 3

Date: July 15, 2014

To: Contractors

From: Wayne Smith – Project Manager, DFCM

Reference: South Garrison Infrastructure Phase II Camp Williams
Utah National Guard
DFCM Project No. 13240480

Subject: **Addendum No. 3**

Pages	Addendum Cover Sheet	1 page
	Revised Project Schedule	1 page
	Revised Cost Proposal	3 pages
	Unit Price Cost Form	1 page
	<u>Architects Addendum</u>	<u>34 pages</u>
	Total	40 pages

Note: *This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to Disqualification.*

3.1 SCHEDULE CHANGES: Revised Schedule Attached.

3.2 GENERAL ITEMS:

Revised Cost Proposal includes Base Bid and Additive Alternates 1-4.
Unit Price Cost Form, which should be submitted along with Cost Proposal.
Architects Addendum dated July 14, 2014



**PROJECT SCHEDULE
REVISED PER ADDENDUM #3 DATED JULY 15, 2014**

PROJECT NAME:	SOUTH GARRISON INFRASTRUCTURE PHASE II CAMP WILLIAMS UTAH NATIONAL GUARD-RIVERTON, UTAH			
DFCM PROJECT NO.	13240480			
Event	Day	Date	Time	Place
Request for Proposals and Construction Documents Available	Wednesday	May 14, 2014	6:00 PM	DFCM web site *
Mandatory Pre-Proposal Site Meeting	Wednesday	May 28 2014	8:00AM	BLDG 6050 Camp Williams 17800 South Redwood Rd. Riverton, Utah
Last Day to Submit Questions prior to submittal of Statements of Qualifications	Wednesday	June 4, 2014	5:00 PM	Wayne Smith- DFCM E- mail: wsmith@utah.gov
Addendum Deadline	Monday	June 9, 2014	4:00 PM	DFCM web site *
Prime Contractors turn in References, Statements of Qualifications, Management Plans (including Schedule), and Termination/Debarment Certifications	Monday	June 16, 2014	5:00 PM	DFCM 4110 State Office Bldg SLC, UT
Short Listing by Selection Committee (if applicable)	Tuesday	June 24, 2014	TBD	TBD
Last Date to Submit Questions for Final Addendum	Tuesday	July 1, 2014	5:00 PM	Wayne Smith- DFCM E- mail: wsmith@utah.gov
Final Addendum Deadline (exception for bid delays)	Tuesday	July 15, 2014	4:00 PM	DFCM web site *
Prime Contractors Turn In Cost Proposals and Cost Reduction Proposals	Tuesday	July 22, 2014	12:00 NOON	DFCM
Subcontractor List Due	Wednesday	July 23, 2014	12:00 NOON	E- mail: dfcmcontracts@utah.gov □
Interviews	Wednesday	July 30, 2014	TBD	TBD
Announcement	Thursday	July 31, 2014	5:00 PM	DFCM web site *
Substantial Completion Date	Monday	November 30, 2015		

* DFCM's web site address is <http://dfcm.utah.gov>.



COST PROPOSAL FORM

REVISED PER ADDENDUM #3 DATED JULY 15, 2014

NAME OF PROPOSER _____ DATE _____

To the Division of Facilities Construction and Management
4110 State Office Building
Salt Lake City, Utah 84114

The undersigned, responsive to the "Notice to Contractors" and in accordance with the "Request for Proposals" for the **SOUTH GARRISON INFRASTRUCTURE PHASE II CAMP WILLIAMS-UTAH NATIONAL GUARD- RIVERTON, UTAH-DFCM PROJECT NO. 13240480** and having examined the Contract Documents and the site of the proposed Work and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of labor, hereby proposes to furnish all labor, materials and supplies as required for the Work in accordance with the Contract Documents as specified and within the time set forth and at the price stated below. This price is to cover all expenses incurred in performing the Work required under the Contract Documents of which this bid is a part:

I/We acknowledge receipt of the following Addenda: _____

BASE BID:

1. Run new conduit and conductors shown on plans from Electrical House to lower garrison roundabout.
2. Install conduit for Teledata continuing from Officers Way to lower garrison roundabout.
3. Remove existing power pole in Patriot Way and add (2) power poles to support existing overhead conductors.
4. Install conduit for power to switch SG405 from SG501.
5. Install conduit for lighting from Officers Way to lower garrison roundabout switch GS503. Provide j-boxes in place of pole bases.
6. Demolish overhead conductors from SG502A northward.
7. Replace existing 4-way switch SG405 with a new 6-way switch.
8. Relocate existing 4-way switch SG405 to SG502A location.
9. Stub out (2) 5" conduits form SG501 to east side of Officers Way.
10. Provide 600 amp breaker in new head-end Unit for future solar farm

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)

(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 1: Install transformer for Future Solar Farm project.

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 2:

1. Run power and telecom conduit from lower garrison roundabout to Mink Rd.
2. Install conduits for lighting from lower garrison roundabout to Mink Rd. Provide jboxes in place of pole bases.
3. Install conductors for power from SG503 to SG504.
4. Demolish overhead power from SG502A to SG504.
5. Relocate existing 4-way switch SG405 to SG504.
6. Install conductors from new SG405 to SG501.

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 3: Furnish and install pole lights and bases, and run conductors at lower garrison roundabout going north on Officers Way.

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

ADDITIVE ALTERNATE NO. 4: Furnish and install pole lights and bases, and run conductors from lower garrison roundabout to Mink Road.

For all work shown on the Drawings and described in the Specifications and Contract Documents, I/we agree to perform for the sum of:

_____ DOLLARS (\$ _____)
(In case of discrepancy, written amount shall govern)

I/We guarantee that the Work will be Substantially Complete by _____ **(specific date to be provided by contractor)**, should I/we be the successful proposer, and agree to pay liquidated damages in the amount of **\$750.00** per day for each day after expiration of the Contract Time as stated in Article 3 of the Contractor's Agreement.

This bid shall be good for 45 days after bid opening.

Enclosed is a 5% bid bond, as required, in the sum of _____

The undersigned Contractor's License Number for Utah is _____.
Upon receipt of notice of award of this bid, the undersigned agrees to execute the contract within ten (10) days, unless a shorter time is specified in the Contract Documents, and deliver acceptable Performance and Payment bonds in the prescribed form in the amount of 100% of the Contract Sum for faithful performance of the contract. The Bid Bond attached, in the amount not less than five percent (5%) of the above bid sum, shall become the property of the Division of Facilities Construction and Management as liquidated damages for delay and additional expense caused thereby in the event that the contract is not executed and/or acceptable 100% Performance and Payment bonds are not delivered within the time set forth.

Type of Organization: _____ (Corporation, Partnership, Individual, etc.)

Any request and information related to Utah Preference Laws: _____

Respectfully submitted,

Name of Proposer

ADDRESS:

Authorized Signature

**UNIT PRICING FORM
 UTAH NATIONAL GUARD
 SOUTH GARRISON INFRASTRUCTURE PHASE II –CAMP WILLIAMS
 BID ITEMS
 DFCM PROJECT NO. 13240480**

Contractor Name: _____

Date: _____

<u>Item No.</u>	<u>Work or Materials</u>	<u>Approximate Quantities/Units</u>	<u>Unit Price</u>
1.	Curb and Gutter Type "E"	4,920 LF	\$_____ \$_____
2.	Curb and Gutter Type "Q"	4,410 LF	\$_____ \$_____
3.	Asphalt Paving	125,775 SF	\$_____ \$_____
4.	Pavement Striping	4,740 LF	\$_____ \$_____
5.	Landscape	9,450 SF	\$_____ \$_____
Total			\$_____

ESTIMATED quantities provided above are for magnitude information only,
 and **are not** quantity allowances to be included in the Base Bid. These
 ESTIMATED quantities are not guaranteed.
Refer to drawings for detailed information.

ADDENDUM #3
UNG-South Garrison Infrastructure Phase II
DFCM PROJECT # 13240480

July 14, 2014

This addendum is being issued to provide clarifications to the Bid Documents (Drawings and Project Manual) dated June 23, 2014, and to respond to bidder questions.

CLARIFICATION OF DFCM WEBSITE

The DFCM Website has previously posted two addenda. The first addendum served primarily to issue a limited package of drawings dated May 29, 2014, which were issued for REFERENCE ONLY during the prequalification stage of the 2-stage selection process and were specifically not to be used for bidding. DFCM has also issued other documents were not issued via addendum, but have direct links on the website, including the Project Manual, Drawings, Mandatory Meeting Attendees and the Short Listed Firms. All short listed firms, submitting pricing should use the link for the Drawings and Project Manual linked for the bidding documents (Drawings and Project Manual – Permit Set) dated June 23, 2014, and as modified by this addendum.

DRAWINGS:

The following drawings have been revised to reflect clarifications being provided under this addendum.

Civil

1. Sheet C-002
2. Sheet C-200
3. Sheet C-300
4. Sheet C-400
5. Sheet PP-6

Electrical

Sheet EG100

1. Add the following under Base Bid Narrative:
“Provide 600 Amp breaker in New Head End Unit for future solar farm.”
2. Remove the following from Alternate #1 Narrative and add to Base Bid:
“Stub out (2) 5” conduits from SG501 to east side of Officer’s Way.”
3. Remove the following from Alternate #1 Narrative:
“Install (1) 5" Conduit for future photovoltaic system in base bid ductbank from existing manhole east of MH-1 to SG501.”
4. Add the following under Alternate #1 Narrative:
 - a. “Install transformer for Future Solar Farm project.”
5. Changed all references to SG502 to SG502A in the Bid Narrative.

Sheet ED101-R

1. Added location of existing switch feeding existing overhead power pole.
2. Added Keyed Note 4.

Sheet ED601

1. Added sheet.

Sheet EL101-V

1. Change Keyed Note 3 to say: "Run 3#6 wires in 1"C for lighting circuit. Tie to a 30 Amp, 2 pole dedicated breaker in Panel. (Alt #3)"
2. Added Keyed Note 4.
3. Added stub out conduits from lighting panel board and pole light.

Sheet EP101-I, M, Q

1. Removed the (1) 5" Conduit for Solar from Alternate #1 and added it to Base Bid.
2. Modified Keyed Note identifying the additional 5" conduit for future solar as part of Alternate #1 to now be in Base Bid.

Sheet EP101-R

3. Added Keyed Notes 6 and 7.
4. Modified conduit route near existing generator.
5. Added Switch SG502 and 2.5 MVA Transformer for Future Solar Farm.
6. Added (9) 4" conduits from PV Transformer across Officer's Way.

Sheet EP101-U

1. Added Keyed Note 6
2. Realigned conduits to match road alignment.
3. Renamed Switch SG502 to SG502A.

Sheet EP101-V

1. Modified Keyed Note 3 to say "Conduit and conductors to be provided as part of Alternate #2."

Sheet EP101-Y

1. Identified telecom conduits as "(6) 4"C".
2. Modified Keyed Note 2 to say "Conduit and conductors to be provided as part of Alternate #2."

Sheet EP101-BB

1. Identified telecom conduits as "(6) 4"C".
2. Modified Keyed Note 4 to say "Run conduits and provide pull rope as part of Alternate #2. Conductors to be provided in future."
3. Renumbered Keyed Notes.

Sheet EP101-EE

1. Identified telecom conduits as “(6) 4”C”.
2. Modified Keyed Note 3 to say “Run conduits and provide pull rope as part of Alternate #2. Conductors to be provided in future.”
3. Renumbered Keyed Notes.

Sheet EP601

1. Added (2) 1”C for SCADA.

Sheet EX101

1. Changed “300XL” feeder callouts on One Line to “300XC”
2. Changed model from “SEL 351A” to “SEL 751A” on the Relay Setting Table.
3. Changed the quantity of conduits for 6”C Concrete Ductbank feeding the New Head-End Unit from “2” to “3”.
4. Clarified scope of work for SG502 if Alternate #2 is accepted.
5. Added Keyed Note #10.
6. Changed spare 600 Amp breaker in New Head End Unit to be Base Bid.
7. Added feeders, Switch, and transformer on One-Line for Future Solar Farm.
8. Updated Feeder Schedule

Sheet EX103

1. Updated Luminaire Schedule with approved manufacturers and catalog numbers.

Sheet EX104

1. Add Note 3 on all Manhole details stating:
“Provide 10’ minimum rigid conduits typical at each manhole entry with rigid to PVC adapter as needed.”
2. Modified Details 5 and 6 to reflect addition of Solar Farm conductors.

Sheet EX105

1. Change circuit 1 and 2 on Street Lighting Panel to 2 pole, 30 Amp breakers.
2. Added 30 Amp, 2 pole spare breakers.

SPECIFICATIONS

1. SECTION 012600. Revised – see attached.
2. SECTION 012300. Revised – see attached.

SECTION 26 12 19

1. Change paragraph 2.2M to read:
“Transformer impedance shall be supplied in the range of 4-1/2% to 5-1/2% for sizes 300KVA and larger.

SECTION 26 13 19

2. Delete paragraph 1.3C

RESPONSES TO BIDDER QUESTIONS:

1. *Can we obtain a CAD disk for the project?*

CAD drawings will not be provided to bidders. However the following earthwork information is provided for the bidder's use. The earthwork estimate is the calculated difference between the surveyed existing surface to the proposed finish design surface. The earthwork estimate does NOT take into account asphalt paving, concrete curb & gutter, road-base, grubbing of existing top soils, utility trenching and spoils, inconsistencies between the actual site and the field survey, etc. The bidder is responsible to verify all earthwork volumes.

Volumes are broken into two parts, 1) The roundabout and all work to the north and west, 2) Patriot Way from the south side of the roundabout to Mink Road.

1) The roundabout and all work to the north and west

Cut =	28,190 CY
Fill =	<u>13,920 CY</u>
Net Cut =	14,270 CY

2) Patriot Way from the south side of the roundabout to Mink Road

Cut =	10,670 CY
Fill =	<u>12,020 CY</u>
Net Fill =	1,350 CY

2. *Can we do the Canal Sleeve by surface excavation or do we have to bore under the existing Canal?*

The steel sleeve, for the proposed sanitary sewer pipe shown on sheets C-301.V, PP-6 and PP-19, is designed to be bored below the existing canal.

3. *Note 5 on sheets C-101BB, C-101.Y, C-101.V AND C101.U state that existing road base material to be re compacted as necessary to meet specs.*

As the road alignment and elevation is changing in these areas are we to salvage this material and re use it, or specifically what does re compact as necessary to meet specs refer to?

Existing road base material, where proposed roads are to be constructed, will need to be re-compacted as noted on the plans and specifications. Existing road base material that is not within the proposed roadway does not require salvaging.

4. Sheet C-002, General Notes, Legend & Abbreviations. The following note #27 will be added to the Utility Notes:

CONTRACTOR SHALL INSTALL JOINT RESTRAINTS AND THRUST BLOCKING AT ALL WATER LINE ANGLE POINTS AND TEES WHERE SLOPES EXCEED 30 DEGREES.

5. *Question regarding the telecom conduits for alternate bid #2. It calls out (6) 4" conduits from existing telecom manhole to the lower Garrison roundabout for the base bid but it doesn't show what is to be installed south of there for bid #2. It also shows a lesser amount, (4) 4" conduits going out easterly from the telecom manhole at the roundabout. Can I safely assume there are (6) 4" conduits for telecom raceways in alternate bid #2 as there were in the base bid or is there a lesser amount to be installed heading south of the roundabout? *

The contractor is to run (6) 4" conduits for telecom from the lower garrison roundabout to Mink Rd as part of Alt#2.

7. *on the one line Print EX101.*

There is a relocated 4 way switch, shown in two different locations. One in the new switch SG502 position and one for the Alternate #2 new switch location SG504. If the Alternate #2 switch location is used, what happens to the SG502 relocated switch? The keyed notes only reference one existing switch to be relocated.

If alternate #2 is accepted, switch SG502 will not be installed and the 300XL feeders from SG501 will run to SG503.

8. *On the addendum #1 print EX101.*

The feeder conduit/wire reference refers to 300XL. On the feeder schedule symbol conduit and wire size chart. There is no reference for the 300XL. Can you please clarify the 300XL conduit, wire, quantity and size?

Refer to Sheet EX101 under Drawings on DFCM website. 300XC on the Feeder Schedule should read 300XL.

9. *The addendum #1 print EX101 has encryptions that are not readable.*

Refer to Sheet EX101 under Drawings on DFCM website.

10. *The addendum #1 print EX101 does not specify the conduit size, wire, or quantities for the new 600 A 3P circuit to re feed the existing Main Camp switch gear.*

Refer to Sheet EX101 under Drawings on DFCM website.

11. *26 05 00 3.5 J specifically what tests are to be performed on the wood poles to determine treatment substances and who are some laboratories that perform these tests?*

The intent of sampling and testing prior to pole disposal is to do so in a lawful manner. In order to dispose of the poles, the contractor needs to be aware of the types of chemicals used in original treatment, and any chemicals and /or fumigants used after the fact to control bacteria. The most common types of original wood treatment (preservatives) for oil-borne preservatives are creosote, pentachlorophenol, or copper or zinc naphthenate. The common types of water-borne preservatives include Ammonical Copper Arsenate (ACA), Ammonical Copper Zinc Arsenate (ACZA), and Chromated Copper Arsenate (CCA). Some of these chemicals are not regulated by the EPA, but many are.

Standard landfills must not be used where regulated chemicals are used. Burn plants must only be used if they can contain the chemicals under their burning regulations.

The contractor has the option of using a pole Recycling service. A reputable, licensed utility recycling facility such as National, nsscorp.com may recycle the wood for a new purpose. If recycling is proposed, where the licensed recycler will take on all liability for disposal or recycling and provide required paperwork indicating such, the contractor may avoid lab testing to determine exact wood treatment preservatives used.

12. EX103 Are transverse rebar ties required? If so what is the spacing?

Yes. 18" on center spacing with #3 bars. See spec 26 05 39, 3.1, J.

13. EX103 Is the concrete backfill for the power trench required to be red? If so can the dye be broadcast on the surface in lieu of throughout the mix?

Red dye sprinkled over the top of the Ductbank is approved. See spec 26 05 39, 2.3, C.

14. EX103 What strength of concrete backfill is required for the power ductbank and also the concrete cap over the telecom ducts?

2500 psi. See Spec 26 05 39, 2.3, B.

15. 26 05 00 3.6 E Please provide a basis for bid or at least a number of occurrences to include in our bids for this item of temporary power for FA and T/D Systems?

Provide a 150KW trailer generator set and associated cords needed for outages lasting more than 4 hours. Buildings requiring temporary power to be determined by Owner.

16. Is arc/fire tape required on 15kv conductors in Manholes and Switches?

Yes. See Spec 26 05 13, 3.1, F and 26 05 36, 3.1, E

17. 26 13 19 1.3 C This paragraph does not seem to fit this project, the manufacturers who build this type of gear are more than 50 miles from the project site, is this requirement really applicable?

This paragraph does not apply to the project. Remove this paragraph from specs.

18. Are cables passing through manholes required to wrap the manhole at least 360 degrees before exiting?

Yes. See Spec 26 05 13, 3.1, B

19. Is Genesco/Testing and/or Western Electrical Services, Inc. Approved for Independent Testing?

Genesco/Testing and Western Electrical Services, Inc. are approved for independent testing.

20. 26 13 19 2.1 A is the comparable G&W and Cooper SF-6 Load Break Switches an approved equal?

Cooper SF-6 is not approved. G&W may be considered for approval barring the following:

- a. Contractor to provide breakout pricing on the switch within 24 hours after bid.
- b. Vendor shall provide sample switch for A/E and Guard review on trailer during shop drawing process. Demonstrate the features and operation of the switch to the Guard.
- c. All aspects of the switch will be considered in determining whether it is equal, including capability of 3 position switch, view windows, quality of gas containment, seismic ratings, volume of SF6 gas, physical size, ease of operation, electrical characteristics, warranty, history of leakage, etc.
- d. Guard and A/E team reserve the right to reject after bid if it is determined that the switch is not equal to the S&C Vista as determines above.

21. *Will there be any topsoil and/or seeding of the slopes required? If so, do you have a specification for this?*

The erosion control drawings and specifications call for the installation of an erosion control mat on slopes greater than 3:1

22. *Is it possible to extend the bid time to at least 5 PM on July 10, 2014?*

DFCM to respond.

End of Addendum #3

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- C. List of Unit Prices: A schedule of unit prices is included in Part 3.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1, Unit Pricing for Patriot Way: Area limited to Patriot Way, south of the roundabout to Mink Road (Refer to Road Section 1/C200). Includes curbing and gutters, pavement, pavement striping, and landscaping/irrigation as shown on drawings.

1. Description: Base bid includes all road base and grading, paving, grading, retention ponds, drainage and utility improvements shown on the drawings. Excludes curbing and gutters, pavement, pavement striping, and landscaping/irrigation in Patriot Way, south of the roundabout to Mink Road as shown on drawings. Unit price No.1 is for costs for the following elements of finished road section as described above.

- a. Curb and Gutter Type "E" per linear foot (4,920 LF estimated).
- b. Curb and Gutter Type "Q" per linear foot (4,410 LF estimated).
- c. Asphalt Paving per square foot (125,775 SF estimated).
- d. Pavement striping per linear foot (4,740 LF estimated).
- e. Landscaping per square foot (9,450 SF estimated).

Estimated quantities provided above are for magnitude information only, and **are not** quantity allowances to be included in the Base Bid. These estimated quantities are not guaranteed. Refer to drawings for detailed information.

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost for each alternate is the net addition to the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Refer to drawings and specifications for detailed information on Alternates.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Base Bid:

1. Run new conduit and conductors shown on plans from Electrical House to lower garrison roundabout.
2. Install conduit for Teledata continuing from Officers Way to lower garrison roundabout.
3. Remove existing power pole in Patriot Way and add (2) power poles to support existing overhead conductors.
4. Install conduit for power to switch SG405 from SG501.
5. Install conduit for lighting from Officers Way to lower garrison roundabout switch GS503. Provide j-boxes in place of pole bases.
6. Demolish overhead conductors from SG502A northward.
7. Replace existing 4-way switch SG405 with a new 6-way switch.
8. Relocate existing 4-way switch SG405 to SG502A location.
9. Stub out (2) 5" conduits from SG501 to east side of Officers Way.
10. Provide 600 amp breaker in new head-end Unit for future solar farm

B. Additive Alternate No. 1:

1. Install transformer for Future Solar Farm project.

C. Additive Alternate No. 2:

1. Run power and telecom conduit from lower garrison roundabout to Mink Rd.
2. Install conduits for lighting from lower garrison roundabout to Mink Rd. Provide j-boxes in place of pole bases.
3. Install conductors for power from SG503 to SG504.
4. Demolish overhead power from SG502A to SG504.
5. Relocate existing 4-way switch SG405 to SG504.
6. Install conductors from new SG405 to SG501.

D. Additive Alternate No. 3:

1. Furnish and install pole lights and bases, and run conductors at lower garrison roundabout going north on Officers Way.

E. Additive Alternate No. 4:

1. Furnish and install pole lights and bases, and run conductors from lower garrison roundabout to Mink Road.

END OF SECTION 012300

GENERAL NOTES

- ALL CONSTRUCTION MUST STRICTLY FOLLOW THE STANDARDS AND SPECIFICATIONS SET FORTH BY: THE DESIGN ENGINEER, UTAH NATIONAL GUARD, APWA (2012 EDITION), AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.) (2009 EDITION). THE ORDER LISTED ABOVE IS ARRANGED BY SENIORITY. THE LATEST EDITION OF ALL STANDARDS AND SPECIFICATIONS MUST BE ADHERED TO. ALL CONSTRUCTION MUST ALSO STRICTLY ADHERE TO THE FOLLOWING: THE INTERNATIONAL PLUMBING CODE (2012 EDITION), UTAH DRINKING WATER REGULATIONS, THE INTERNATIONAL BUILDING CODE (IBC) (2012 EDITION), ADA AND ADAAG (2010 EDITION). IF A CONSTRUCTION PRACTICE IS NOT SPECIFIED BY ANY OF THE LISTED SOURCES, CONTRACTOR MUST CONTACT DESIGN ENGINEER FOR DIRECTION.
- CONTRACTOR TO STRICTLY FOLLOW THE MOST CURRENT COPY OF THE SOILS REPORT FOR THIS PROJECT, PREPARED BY GSH GEOTECHNICAL REPORT DATED JUNE 29, 2007 AS FOUND IN DFCM RFP DESIGN GUIDE DOCUMENT DATED AUGUST 8, 2013. ALL GRADING INCLUDING BUT NOT LIMITED TO CUT, FILL, COMPACTION, ASPHALT SECTION, SUBBASE, TRENCH EXCAVATION/BACKFILL, SITE GRUBBING, AND FOOTINGS MUST BE COORDINATED DIRECTLY WITH SOILS REPORT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL, WET DRY DIRT MATERIALS AND RUBBISH TO PREVENT BLOWING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT SURFACE IMPROVEMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF OR DAMAGE TO EXISTING UTILITIES.
- THE CONTRACTOR IS RESPONSIBLE TO FURNISH ALL MATERIALS TO COMPLETE THE PROJECT.
- UNLESS OTHERWISE NOTED, ALL ON-GRADE CONCRETE WILL BE PLACED ON A MINIMUM 4" GRAVEL BASE OVER A WELL COMPACTED (95% DENSITY PER ASTM D-1557) SUB GRADE.
- THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE. CONTRACTOR SHALL START INSTALLATION AT LOW POINT OF ALL NEW GRAVITY UTILITY LINES.
- ALL DIMENSIONS, GRADES, AND UTILITY DESIGN SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO THE DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS, IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- NO CHANGE IN DESIGN LOCATION OR GRADE WILL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN APPROVAL OF THE PROJECT ENGINEER.
- NATURAL VEGETATION AND SOIL COVER SHALL NOT BE DISTURBED PRIOR TO ACTUAL CONSTRUCTION OF A REQUIRED FACILITY OR IMPROVEMENT. MASS CLEARING OF THE SITE IN ANTICIPATION OF CONSTRUCTION SHALL BE AVOIDED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, MAINTAINING, OR RESTORING ALL MONUMENTS AND MONUMENT REFERENCE MARKS WITHIN THE PROJECT SITE.
- CONTRACTOR TO LAYOUT AND POT HOLE FOR ALL POTENTIAL CONFLICTS WITH UTILITY LINES ON- OR OFF-SITE AS REQUIRED PRIOR TO ANY CONSTRUCTION, AND THE CONTRACTOR WILL VERIFY DEPTHS OF UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF 300 FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR'S NEGLIGENCE TO POT HOLE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER OR ENGINEER.
- ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.
- CONSULT ALL OF THE DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BEFORE COMMENCING CONSTRUCTION.
- AT ALL LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MOST RECENT, ADOPTED EDITION OF ADA ACCESSIBILITY GUIDELINES.
- CONTRACTOR SHALL, THROUGHOUT THE PERIOD OF THE CONTRACT, BE LICENSED IN THE STATE OF UTAH AND SHALL BE BONDABLE FOR AN AMOUNT REQUIRED BY THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL WATER, POWER, SANITARY FACILITIES AND TELEPHONE SERVICES AS REQUIRED FOR THE CONTRACTOR'S USE DURING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY SCHEDULING INSPECTION AND TESTING OF ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT. ALL TESTING SHALL CONFORM TO THE REGULATORY AGENCIES STANDARD SPECIFICATIONS. ALL RE-TESTING AND/OR RE-INSPECTION SHALL BE PAID FOR BY THE CONTRACTOR.
- IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING OR REPAIRING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND/OR REPLACEMENT. THERE WILL BE NO EXTRA COST DUE TO THE CONTRACTOR FOR REPLACING OR REPAIRING EXISTING IMPROVEMENTS.
- WHENEVER EXISTING FACILITIES ARE REMOVED, DAMAGED, BROKEN, OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE PLANS OR SPECIFICATIONS, SAID FACILITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE WITH MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL EXISTING FACILITIES. THE FINISHED PRODUCT SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER, THE ENGINEER, AND THE RESPECTIVE REGULATORY AGENCY.
- CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL STRUCTURES AND OTHER FACILITIES. RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS, AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR. PRIOR TO ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL DELIVER TO THE ENGINEER ONE SET OF NEATLY MARKED RECORD DRAWINGS SHOWING THE INFORMATION REQUIRED ABOVE. RECORD DRAWINGS SHALL BE REVIEWED AND THE COMPLETE RECORD DRAWING SET SHALL BE CURRENT WITH ALL CHANGES AND DEVIATIONS REDEFINED AS A PRECONDITION TO THE FINAL PROGRESS PAYMENT APPROVAL AND/OR FINAL ACCEPTANCE.
- WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
- CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 4' OR MORE. FOR EXCAVATIONS 4 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL COMPLY WITH INDUSTRIAL COMMISSION OF UTAH SAFETY ORDERS SECTION 88 - EXCAVATIONS AND SECTION 89 - TRENCHES, ALONG WITH ANY LOCAL CODES OR ORDINANCES.
- ALL EXISTING GATES AND FENCES TO REMAIN UNLESS OTHERWISE NOTED ON PLANS. PROTECT ALL GATES AND FENCES FROM DAMAGE.
- ALL EXISTING TREES ARE TO REMAIN UNLESS OTHERWISE NOTED ON PLANS. PROTECT ALL TREES FROM DAMAGE.
- CONTRACTORS ARE RESPONSIBLE FOR ALL OSHA REQUIREMENTS ON THE PROJECT SITE.

DEMOLITION NOTES

- EXISTING UTILITY INFORMATION SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. IT IS DERIVED FROM RECORD DRAWINGS AND MAY NOT BE LOCATED CORRECTLY AND IS NOT ALL INCLUSIVE. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES BEFORE BEGINNING DEMOLITION/CONSTRUCTION.
- THERE MAY BE BURIED UTILITIES WITHIN THE LIMITS OF DISTURBANCE THAT ARE NOT SHOWN ON THE PLANS DUE TO LACK OF MAPPING OR RECORD INFORMATION. CONTRACTOR SHALL NOTIFY ENGINEER WHEN UNEXPECTED UTILITIES ARE DISCOVERED.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING AND PROTECTING FROM DAMAGE ALL EXISTING UTILITIES AND IMPROVEMENTS WHETHER OR NOT SHOWN ON THESE PLANS. THE FACILITIES AND IMPROVEMENTS ARE BELIEVED TO BE CORRECTLY SHOWN BUT THE CONTRACTOR IS REQUIRED TO SATISFY HIMSELF AS TO THE COMPLETENESS AND ACCURACY OF THE LOCATIONS. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY, OR INDIRECTLY, FROM THEIR OPERATIONS, WHETHER OR NOT SAID FACILITIES ARE SHOWN ON THESE PLANS.

UTILITY NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS, CITY AND STATE REQUIREMENTS AND THE MOST RECENT EDITIONS OF THE FOLLOWING: THE INTERNATIONAL PLUMBING CODE (2012 EDITION), UTAH DRINKING WATER REGULATIONS, APWA MANUAL OF STANDARD PLANS AND SPECIFICATIONS (2012 EDITION), IBC (2012 EDITION), ADA AND ADAAG (2010 EDITION). THE CONTRACTOR IS REQUIRED TO ADHERE TO ALL OF THE ABOVE-MENTIONED DOCUMENTS UNLESS OTHERWISE NOTED AND APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL COORDINATE LOCATION OF NEW "DRY UTILITIES" WITH THE APPROPRIATE UTILITY COMPANY, INCLUDING BUT NOT LIMITED TO: TELEPHONE & INTERNET SERVICE, GAS SERVICE, CABLE, AND POWER.
- EXISTING UTILITIES HAVE BEEN SHOWN ON THE PLANS USING A COMBINATION OF FIELD MAINTENANCE STAFF AND ON-SITE SURVEY. PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY BLUE STAKES AT 1-800-662-4114 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL RECORD THE BLUE STAKES RECORD NUMBER AND FURNISH ORDER NUMBER TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DIRECTLY CONTACT ANY OTHER UTILITY COMPANIES THAT ARE NOT MEMBERS OF BLUE STAKES. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE TO THE PROJECT.
- CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT CONTRACTOR'S EXPENSE.
- TRENCH BACKFILL MATERIAL AND COMPACTION TESTS ARE TO BE TAKEN PER APWA STANDARD SPECIFICATIONS (2012 EDITION), SECTION 02320 - BACKFILLING TRENCHES, OR AS REQUIRED BY THE GEOTECHNICAL REPORT FOR NATIVE MATERIALS ARE USED. NO NATIVE MATERIALS ARE ALLOWED IN THE PIPE ZONE. THE MAXIMUM LIFT FOR BACKFILLING EXCAVATIONS IS 8-INCHES.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMING TO LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR THE PROTECTION OF WORKERS.
- THE CONTRACTOR IS REQUIRED TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE APPROVED PROJECT LIMITS. THIS INCLUDES, BUT IS NOT LIMITED TO VEHICLE AND EQUIPMENT STAGING, MATERIAL STORAGE AND LIMITS OF TRENCH EXCAVATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PERMISSION AND/OR EASEMENTS FROM THE APPROPRIATE GOVERNING ENTITY AND/OR INDIVIDUAL PROPERTY OWNER(S) FOR WORK OR STAGING OUTSIDE OF THE PROJECT LIMITS.
- THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE, CAUSED BY ANY CONDITION INCLUDING SETTLEMENT, TO EXISTING UTILITIES FROM WORK PERFORMED AT AT OR NEAR EXISTING UTILITIES. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT ALL EXISTING PUBLIC AND PRIVATE ROADWAY AND UTILITY FACILITIES. DAMAGE TO EXISTING FACILITIES CAUSED BY THE CONTRACTOR MUST BE REPAIRED BY THE CONTRACTOR AT HISHER EXPENSE TO THE SATISFACTION OF THE OWNER OF SAID FACILITIES.
- ALL WATER LINE AND SEWER LINE INSTALLATION AND TESTING TO BE IN ACCORDANCE WITH ALL APPLICABLE AWWA, UPWS, ASTM, ANSI, & APWA SPECIFICATIONS.
- ALL NEW PIPE, VALVES, FITTINGS, THRUST BLOCKS, JOINT RESTRAINTS, ETC. SHALL BE RATED FOR 150 PSI WORKING PRESSURE AND 200 PSI TEST PRESSURE, UNLESS NOTED OTHERWISE.
- ALL POTABLE WATER SYSTEM PIPE, FITTINGS, VALVES, ETC SHALL CONFORM TO NSF 61 REQUIREMENTS.
- CONTRACTOR SHALL PERFORM THE CHLORINATION TEST, PRESSURE TEST, LEAKAGE TEST, AND BACTERIA TESTS. ALL WATER LINES INSTALLED SHALL BE DISINFECTED IN ACCORDANCE WITH THE "AMERICAN WATER WORKS ASSOCIATION STANDARD FOR DISINFECTING WATER MAINS" (AWWA C651). ALL CHLORINATED WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE UTAH DEPT OF ENVIRONMENTAL QUALITY RULES AND REQUIREMENTS FOR SURFACE DISCHARGE AND COORDINATED WITH OTHER PERSONNEL. ALL WATER LINES INSTALLED SHALL BE PRESSURE AND LEAK TESTED IN ACCORDANCE WITH THE "AMERICAN WATER WORKS ASSOCIATION STANDARD FOR INSTALLATION OF WATER MAINS" (AWWA C600-10 FOR DUCTILE IRON AND AWWA C605-05 FOR PVC).
- IN THE CASE OF PIPELINES THAT FAIL TO PASS THE LEAKAGE TEST IN ACCORDANCE WITH AWWA STANDARD 600-10 AND 605-05, THE CONTRACTOR SHALL DETERMINE THE CAUSE OF THE EXCESSIVE LEAKAGE, SHALL TAKE CORRECTIVE MEASURES NECESSARY TO REPAIR THE LEAKS, AND SHALL AGAIN TEST THE PIPELINES, ALL AT NO COST TO THE OWNER.
- ALL MANHOLES, HYDRANTS, VALVES, CLEANOUT BOXES, CATCH BASINS, METERS, ETC. MUST BE RAISED OR LOWERED TO FINAL GRADE PER APWA (2012 EDITION) STANDARDS AND INSPECTOR REQUIREMENTS. CONCRETE COLLARS MUST BE CONSTRUCTED ON ALL MANHOLES, CLEANOUT BOXES, CATCH BASINS, AND VALVES PER APWA STANDARDS. ALL MANHOLE, CATCH BASIN, OR CLEANOUT BOX CONNECTIONS MUST BE MADE WITH THE PIPE CUT FLUSH WITH THE INSIDE OF THE BOX AND GROUTED OR SEALED.
- CONTRACTOR SHALL NOT ALLOW ANY GROUNDWATER OR DEBRIS TO ENTER THE NEW OR EXISTING PIPE DURING CONSTRUCTION.
- WATER LINES SHALL BE CAPPED AND/OR SEALED AT THE END OF EACH WORKING DAY.
- CONTRACTOR TO LOOP NEW WATERLINE AROUND GRAVITY UTILITIES IF CONFLICT DOES OCCUR. NOTE ALL CONFLICTS AND LOOPS ON AS-BUILT DRAWINGS.
- SILT AND DEBRIS ARE TO BE CLEANED OUT OF ALL STORM DRAIN BOXES, CATCH BASINS ARE TO BE MAINTAINED IN A CLEANED CONDITION AS NEEDED UNTIL AFTER THE FINAL BOND RELEASE INSPECTION.
- CONTRACTOR SHALL CLEAN ASPHALT, TAR OR OTHER ADHESIVES OFF OF ALL MANHOLE LIDS AND INLET GRATES TO ALLOW ACCESS.
- EACH TRENCH SHALL BE EXCAVATED SO THAT THE PIPE CAN BE LAID TO THE ALIGNMENT AND GRADE AS REQUIRED. THE TRENCH WALL SHALL BE SO BRACED THAT THE WORKMEN MAY WORK SAFELY AND EFFICIENTLY. ALL TRENCHES SHALL BE DRAINED SO THE PIPE LAYING MAY TAKE PLACE IN DEWATERED CONDITIONS.
- CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES AMPLE MEANS AND DEVICES WITH WHICH TO REMOVE PROMPTLY AND TO PROPERLY DISPOSE OF ALL WATER ENTERING THE TRENCH EXCAVATION.
- CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION OF 10 HORIZONTAL FEET BETWEEN ALL WATER LINES AND SEWER LINES UNLESS OTHERWISE SHOWN AND APPROVED BY UTAH DOW. IF A 10 FOOT SEPARATION CAN NOT BE MAINTAINED, THE SEWER LINE AND WATER LINE SHALL BE LAID IN SEPARATE TRENCHES AND THERE SHALL BE A MINIMUM 18" VERTICAL SEPARATION BETWEEN THE PIPES. ROUTE WATER LINES ABOVE SEWER LINES.
- CONTRACTOR SHALL INSTALL THRUST BLOCKING OR JOINT RESTRAINTS AT ALL WATERLINE ANGLE POINTS AND TEES.
- WATER LINE DEFLECTIONS SHALL NOT EXCEED 50% OF MANUFACTURER RECOMMENDATIONS.
- ALL UNDERGROUND UTILITIES SHALL BE IN PLACE PRIOR TO INSTALLATION OF CURB, GUTTER, SIDEWALK AND STREET PAVING.
- CONTRACTOR SHALL INSTALL MAGNETIC LOCATING TAPE CONTINUOUSLY OVER ALL NONMETALLIC PIPE.
- CONTRACTOR SHALL INSTALL JOINT RESTRAINTS AND THRUST BLOCKING AT ALL WATER LINE ANGLE POINTS AND TEES WHERE SLOPES EXCEED 30 PERCENT.

TRAFFIC CONTROL AND SAFETY NOTES

- TRAFFIC CONTROL AND STRIPING TO CONFORM TO CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
- BARRICADING AND DETOURING SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
- NO STREET SHALL BE CLOSED TO TRAFFIC WITHOUT WRITTEN PERMISSION FROM THE UTAH NATIONAL GUARD, EXCEPT WHEN DIRECTED BY LAW ENFORCEMENT OR FIRE OFFICIALS.
- THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE FOR SMOOTH TRAFFIC FLOW AND SAFETY. ACCESS SHALL BE MAINTAINED FOR ALL PROPERTIES ADJACENT TO THE WORK.
- DETOURING OPERATIONS FOR A PERIOD OF SIX CONSECUTIVE CALENDAR DAYS, OR MORE, REQUIRE THE INSTALLATION OF TEMPORARY STREET STRIPING AND REMOVAL OF INTERFERING STRIPING BY SANDBLASTING. THE DETOURING STRIPING PLAN OR CONSTRUCTION TRAFFIC CONTROL PLAN MUST BE SUBMITTED TO THE CITY TRAFFIC ENGINEER FOR REVIEW AND APPROVAL.
- ALL TRAFFIC CONTROL DEVICES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE END OF THE WORK TO THE SATISFACTION OF THE CITY TRAFFIC ENGINEER.
- TRAFFIC CONTROL DEVICES (TCDs) SHALL REMAIN VISIBLE AND OPERATIONAL AT ALL TIMES.
- ALL PERMANENT TRAFFIC CONTROL DEVICES CALLED FOR HEREON SHALL BE IN PLACE AND IN FINAL POSITION PRIOR TO ALLOWING ANY PUBLIC TRAFFIC ONTO THE PORTIONS OF THE ROAD(S) BEING IMPROVED HEREUNDER, REGARDLESS OF THE STATUS OF COMPLETION OF PAVING OR OTHER OFF-SITE IMPROVEMENTS CALLED FOR BY THESE PLANS.
- THE CONTRACTOR SHALL PROVIDE BARRICADES, SIGNS, FLASHERS, OTHER EQUIPMENT AND FLAG PERSONS NECESSARY TO INSURE THE SAFETY OF WORKERS AND VISITORS.

GRADING AND DRAINAGE NOTES

- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT BY GSH DATED JUNE 29, 2007 AS FOUND IN DFCM'S RFP DESIGN GUIDE DOCUMENT DATED AUGUST 8, 2013.
- CONTRACTOR TO STRIP AND CLEAR THE TOPSOIL, MAJOR ROOTS AND ORGANIC MATERIAL FROM ALL PROPOSED BUILDING AND PAVEMENT AREAS PRIOR TO SITE GRADING. (THE TOPSOIL MAY BE STOCKPILED FOR LATER USE IN LANDSCAPED AREAS.)
- CONTRACTOR SHALL REMOVE ALL ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIALS PRIOR TO PLACING GRADING FILL OR BASE COURSE. THE AREA SHOULD BE PROOF ROLLED TO IDENTIFY ANY SOFT AREAS. WHERE SOFT AREAS ARE ENCOUNTERED THE CONTRACTOR SHALL REMOVE THE SOIL AND REPLACE WITH COMPACTED FILL.
- ALL DEBRIS PILES AND BERMS SHOULD BE REMOVED AND HAULED AWAY FROM SITE OR USED AS GENERAL FILL IN LANDSCAPED AREAS.
- CONTRACTOR TO GRADE PROJECT SITE TO PROVIDE A SMOOTH TRANSITION BETWEEN NEW AND EXISTING ASPHALT, CURB AND GUTTER, AND ADJOINING SITE IMPROVEMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE AND DEBRIS ON ADJACENT STREETS WHEN EQUIPMENT IS TRAVELING THOSE STREETS.
- CONTRACTOR SHALL BE FAMILIAR WITH ALL CONDITIONS AND RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL REPORT AND TAKE ALL NECESSARY PRECAUTIONS AND RECOMMENDED PROCEDURES TO ASSURE SOUND GRADING PRACTICES.
- CONTRACTOR SHALL TAKE APPROPRIATE GRADING MEASURES TO DIRECT STORM SURFACE RUNOFF TOWARDS CATCH BASINS.
- THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO PROCEEDING WITH CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM ALL NECESSARY CUTS AND FILLS WITHIN THE LIMITS OF THIS PROJECT AND THE RELATED OFF-SITE WORK, SO AS TO GENERATE THE DESIRED SUBGRADE, FINISH GRADES, AND SLOPES SHOWN.
- THE CONTRACTOR IS WARNED THAT AN EARTHWORK BALANCE WAS NOT NECESSARILY THE INTENT OF THIS PROJECT. ANY ADDITIONAL MATERIAL REQUIRED OR LEFTOVER MATERIAL FOLLOWING EARTHWORK OPERATIONS BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
- THE GRADING CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER TO PROVIDE FOR THE REQUIREMENTS OF THE PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ASSOCIATED PERMIT. ALL CONTRACTOR ACTIVITIES 1 ACRE OR MORE ARE REQUIRED TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN.
- ALL CUT AND FILL SLOPES SHALL BE PROTECTED UNTIL EFFECTIVE EROSION CONTROL HAS BEEN ESTABLISHED.
- THE USE OF POTABLE WATER WITHOUT A SPECIAL PERMIT FOR BUILDING OR CONSTRUCTION PURPOSES INCLUDING CONSOLIDATION OF BACKFILL OR DUST CONTROL, IS PROHIBITED. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR CONSTRUCTION WATER FROM THE GOVERNING AGENCY.

ABBREVIATIONS

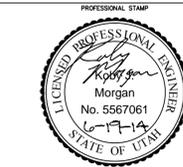
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BOF	BOTTOM OF PIPE
BS	BOTTOM OF STEP
BVC	BEGIN VERTICAL CURVE
BW	BOTTOM OF WALL
C	CURVE
CB	CATCH BASIN
CO	CLEANOUT
COMM	CONCRETE
CONC	CONCRETE
CONT	CONTINUOUS
D	DUMPSTER
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
EA	EDGE OF ASPHALT
EB	EDGE OF BUILDING
ELEC	ELECTRICAL
ELEV	ELEVATION
EVC	END OF VERTICAL CURVE
EX EXIST	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOWLINE OR FLANGE
GB	GRADE BREAK
GV	GATE VALVE
HC	HANDICAP
HP	HIGH POINT
INV	INVERT ELEVATION
IRR	IRRIGATION
K	RATE OF VERTICAL CURVATURE
LF	LINEAR FOOT OR FEET
LP	LOW POINT
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
NIC	NOT IN CONTRACT
NS	NATURAL GROUND
NO	NUMBER
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OHP	OVERHEAD POWER
PC	POINT OF CURVATURE OR PRESSURE CLASS
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
PV	POST INDICATOR VALVE
POW	POWER
PRC	POINT OF REVERSE CURVATURE
PRO	PROPOSED
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
ROW	RIGHT OF WAY
S	SLOPE
SAN SWR	SANITARY SEWER
SD	STORM DRAIN
SEC	SECONDARY WATER
SIM	SMILAR
SS	SANITARY SEWER
STA	STATION
SW	SIDEWALK
TA	TOP OF ASPHALT
TBO	TOP BACK OF CURB
TC	TOP OF CONCRETE
TG	TOP OF GRATE
TOF	TOP OF FOUNDATION
TOP	TOP OF PIPE
TOW, TW	TOP OF WALL
TS	TOP OF STEP
TYP	VERTICAL
UNO	UNLESS NOTED OTHERWISE
VC	VERTICAL CURVE
WV	WALL INDICATOR VALVE
WL	WATER LINE

NOTE: MAY CONTAIN ABBREVIATIONS THAT ARE NOT USED IN THIS PLAN SET.

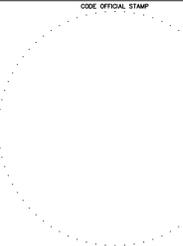
LEGEND

	SECTION CORNER		EXIST MINOR CONTOURS
	EXIST MONUMENT		EXIST MAJOR CONTOURS
	PRO MONUMENT		PRO MINOR CONTOURS
	EXIST REBAR AND CAP		PRO MAJOR CONTOURS
	SET ENSIGN REBAR AND CAP		EXIST BUILDING
	EXIST WATER METER		PRO BUILDING
	PRO WATER METER		EXIST ASPHALT
	EXIST WATER MANHOLE		PRO ASPHALT
	PRO WATER MANHOLE		EXIST CURB AND GUTTER
	EXIST WATER BOX		PRO CURB AND GUTTER
	EXIST WATER VALVE		PRO REVERSE CURB AND GUTTER
	PRO WATER VALVE		EXIST SIDEWALK
	EXIST FIRE HYDRANT		PRO SIDEWALK
	PRO FIRE HYDRANT		BUILDABLE AREA WITHIN SETBACKS
	EXIST SECONDARY WATER VALVE		PUBLIC DRAINAGE EASEMENT
	PRO SECONDARY WATER VALVE		EXIST DITCH FLOW LINE
	EXIST IRRIGATION BOX		PRO DITCH FLOW LINE
	EXIST IRRIGATION VALVE		EXIST EDGE OF ASPHALT
	PRO IRRIGATION VALVE		PRO EDGE OF ASPHALT
	EXIST SANITARY SEWER MANHOLE		EXIST STRIPING
	PRO SANITARY SEWER MANHOLE		PRO STRIPING
	EXIST SANITARY CLEAN OUT		EXIST FENCE
	PRO SANITARY CLEAN OUT		EXIST FLOW LINE
	EXIST STORM DRAIN CLEAN OUT BOX		PRO FLOW LINE
	PRO STORM DRAIN CLEAN OUT BOX		GRADE BRAKES
	EXIST STORM DRAIN INLET BOX		EXIST STORM DRAIN LINE
	PRO STORM DRAIN INLET BOX		PRO STORM DRAIN LINE
	EXIST STORM DRAIN CATCH BASIN		CATCHMENTS
	PRO STORM DRAIN CATCH BASIN		EXIST SANITARY SEWER
	EXIST STORM DRAIN COMBO BOX		PRO SANITARY SEWER LINE
	PRO STORM DRAIN COMBO BOX		EXIST LAND DRAIN LINE
	EXIST STORM DRAIN CLEAN OUT		PRO LAND DRAIN LINE
	EXIST STORM DRAIN CULVERT		EXIST HIGH PRESSURE WATER LINE
	PRO STORM DRAIN CULVERT		EXIST WATER LINE
	EXIST ELECTRICAL MANHOLE		PRO CULINARY WATER SERVICE LINE
	EXIST ELECTRICAL BOX		EXIST SECONDARY WATER LINE
	EXIST ELECTRICAL VAULT		PRO SECONDARY WATER LINE
	EXIST TRANSFORMER		EXIST TELEPHONE MANHOLE
	EXIST UTILITY POLE		EXIST IRRIGATION LINE
	EXIST LIGHT POLE		EXIST POWER LINE
	EXIST GAS MANHOLE		EXIST GAS LINE
	EXIST GAS VALVE		EXIST TELEPHONE LINE
	EXIST TELEPHONE MANHOLE		STRAW WATTLE
	EXIST TRAFFIC SIGNAL BOX		TEMPORARY BERM
	EXIST BOLLARD		LIMITS OF DISTURBANCE
	EXIST PARKING METER		TEMPORARY SAG INLET PROTECTION
	EXIST SIGN		TEMPORARY IN-LINE INLET PROTECTION
	EXIST TREE		
	DENSE VEGETATION PREVENTION ACCESS FOR ACCURATE SURVEY		
	EXIST WALL		
	EXIST SPOT ELEVATION		
	PRO SPOT ELEVATION		
	STORM DRAIN PIPE NUMBER		
	EXIST FLOW DIRECTION		

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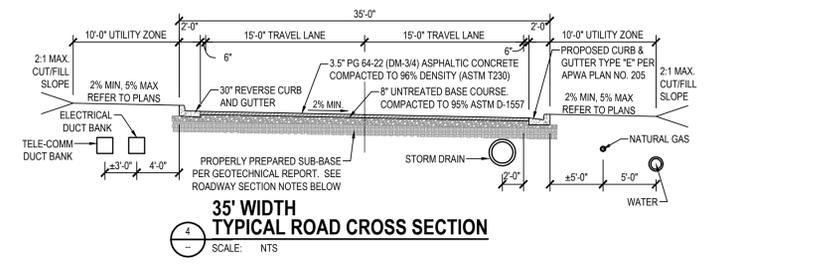
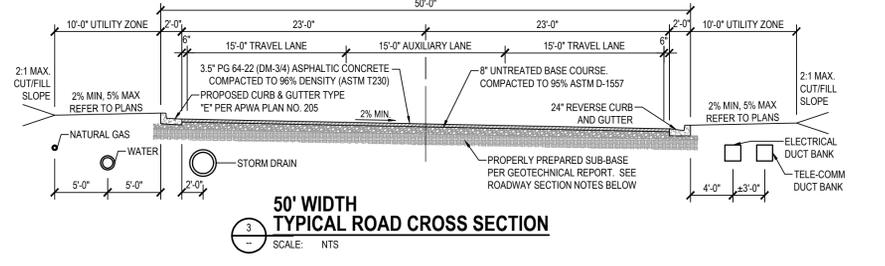
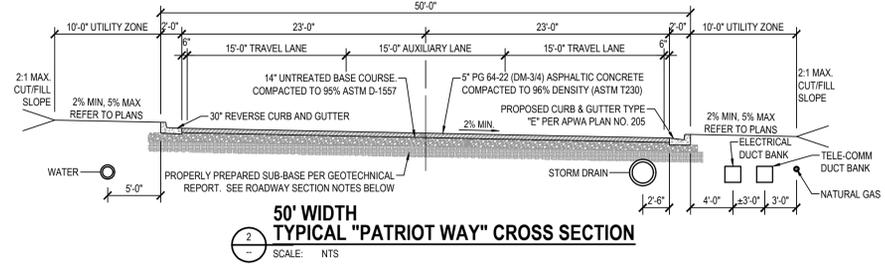
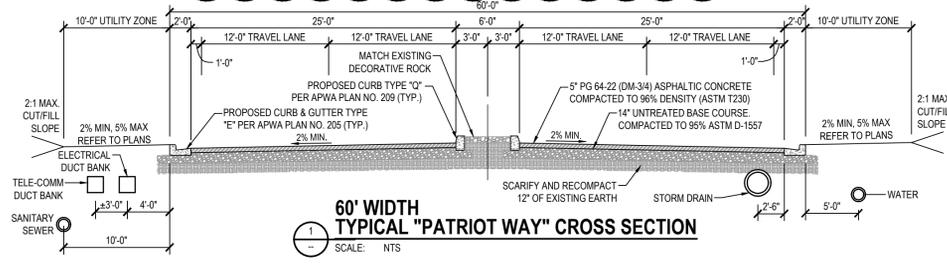
PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
ADDENDUM #3	7/09/2014

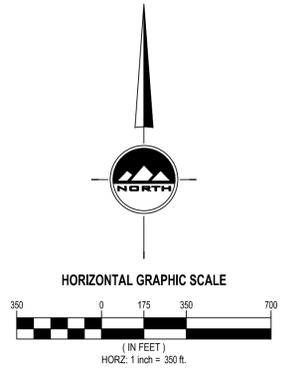
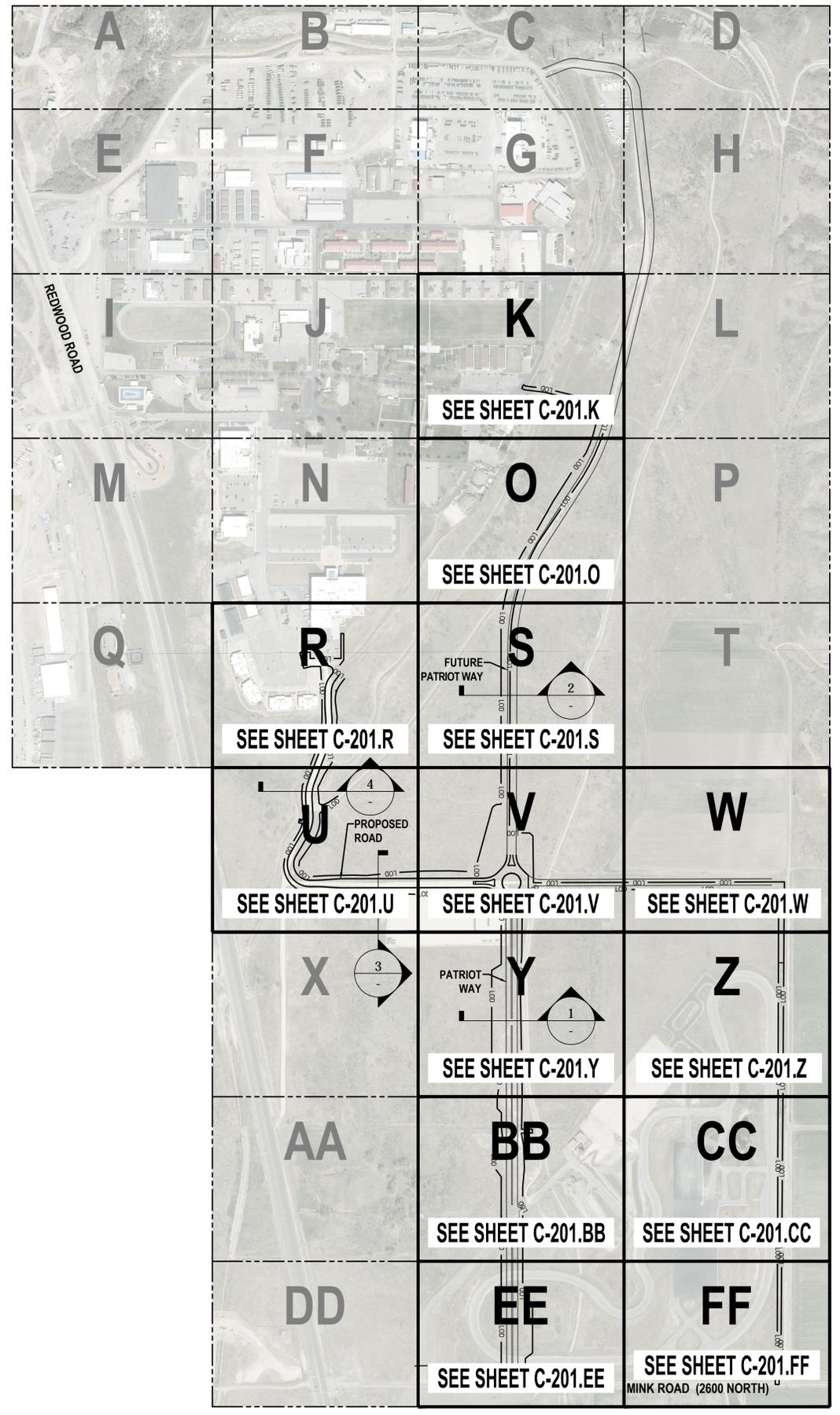
ISSUED DATE	06.19.14	PLOTTED DATE	7.9.2014
EFT PROJECT NO.	1		

BASE BID FOR PATRIOT WAY
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UNIT PRICING FOR PATRIOT WAY
 AREA LIMITED TO PATRIOT WAY, SOUTH OF THE ROUNDABOUT. INCLUDES CURBING, ASPHALT PAVEMENT, PAVEMENT STRIPING AND LANDSCAPING AS SHOWN ON PLANS.



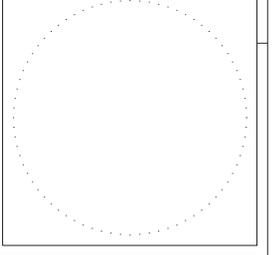
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DTP PROJECT NO. 13013	DPM PROJECT NO. 13240480
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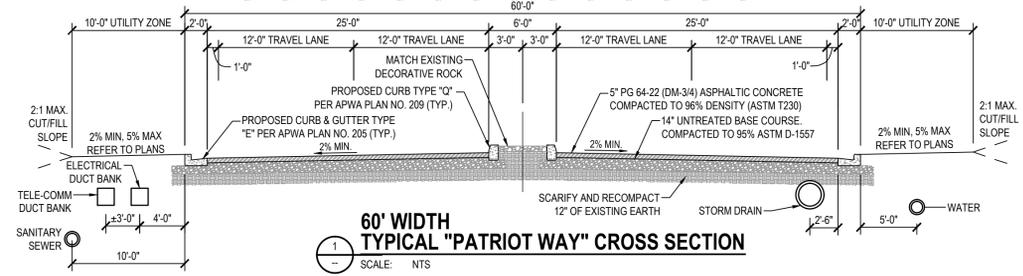
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 @ 801-878-5768 AT LEAST 48
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OVERALL SITE PLAN

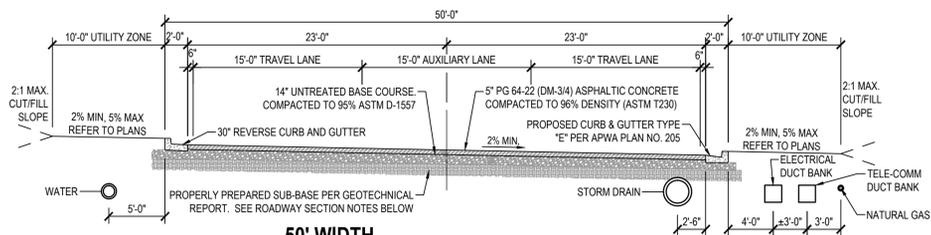
SHEET NUMBER
C-200

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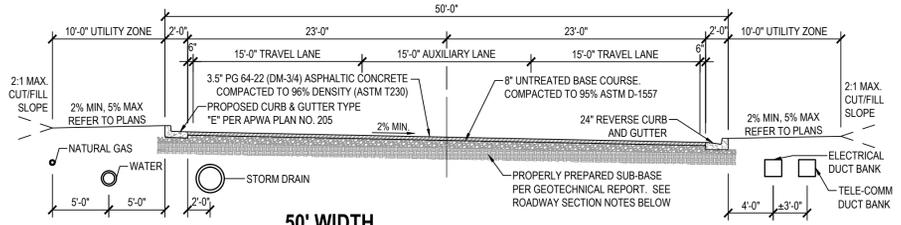
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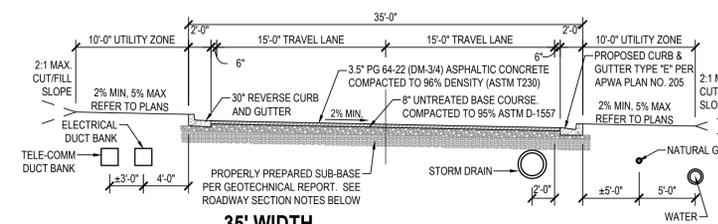
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 SCALE: NTS



50' WIDTH TYPICAL "PATRIOT WAY" CROSS SECTION
 SCALE: NTS

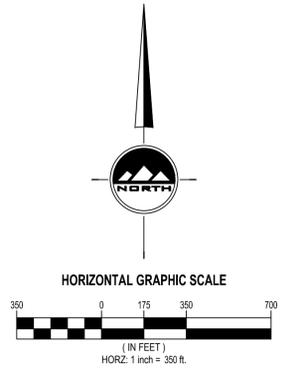
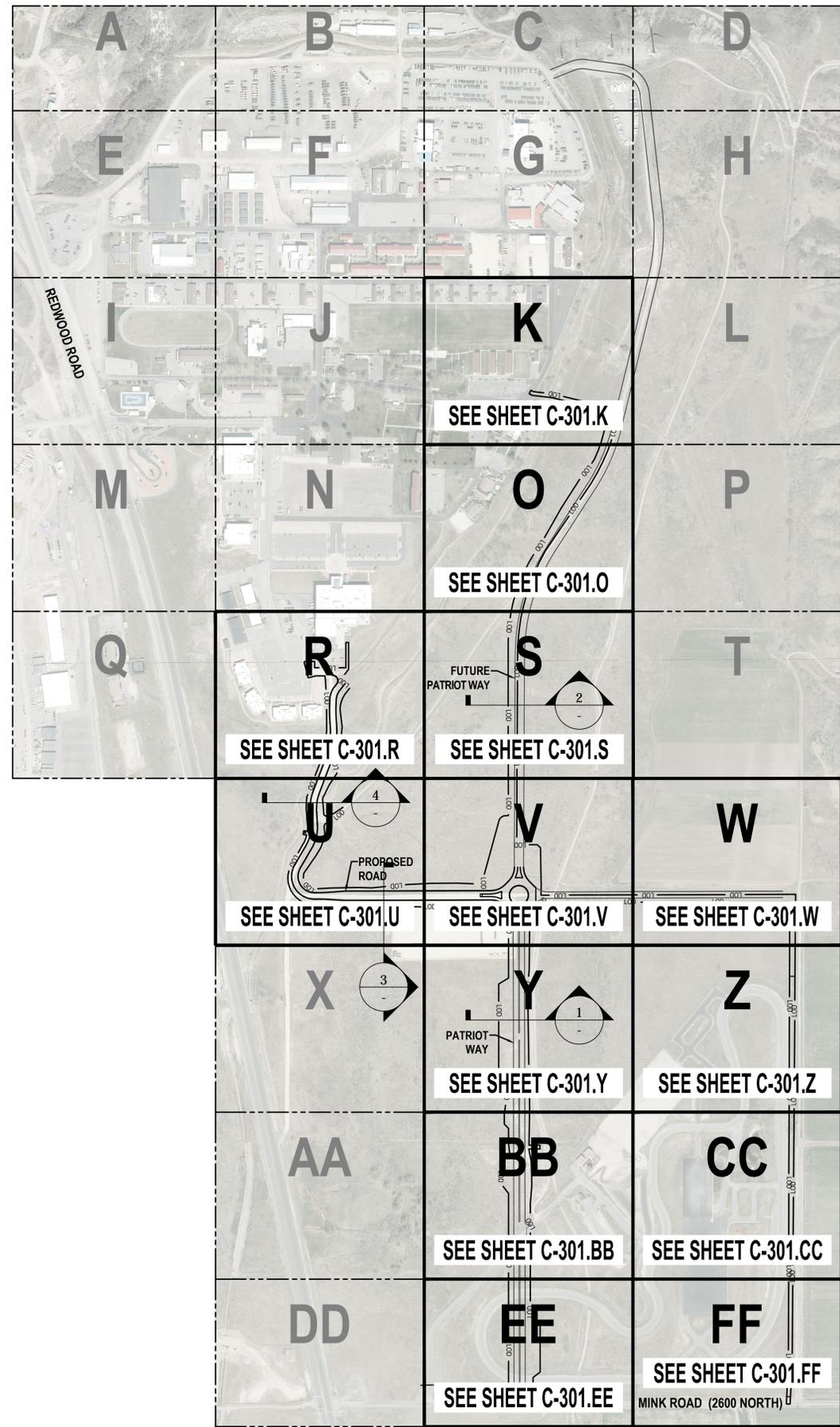


50' WIDTH TYPICAL ROAD CROSS SECTION
 SCALE: NTS



35' WIDTH TYPICAL ROAD CROSS SECTION
 SCALE: NTS

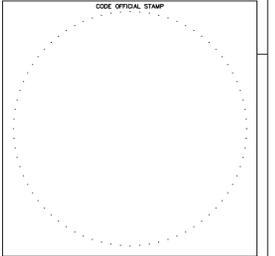
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 RIVERTON, UTAH

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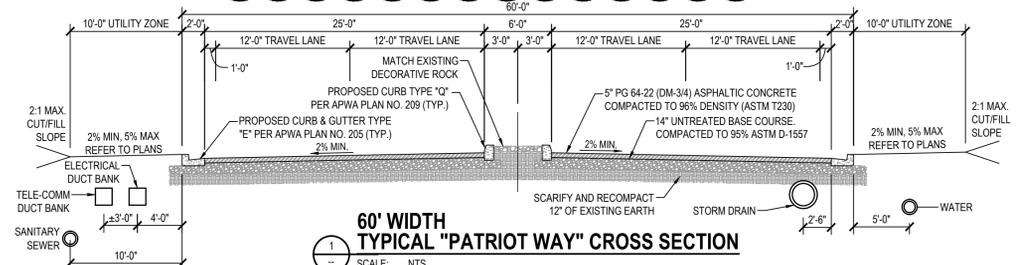
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OVERALL UTILITY PLAN

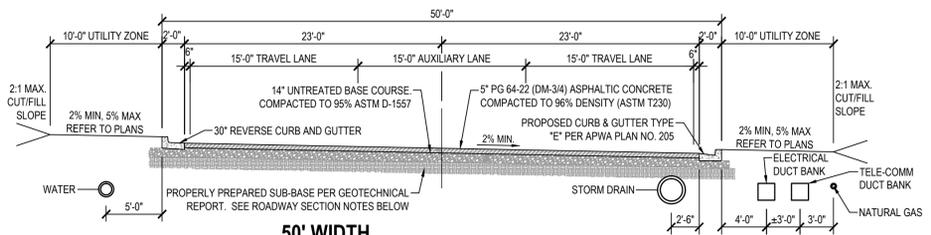
SHEET NUMBER
C-300

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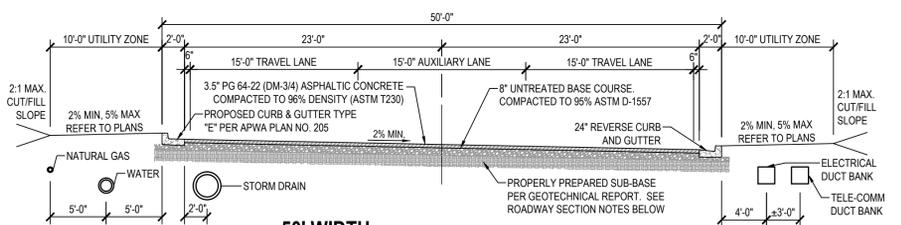
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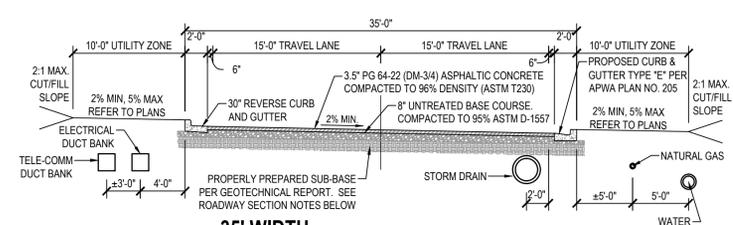
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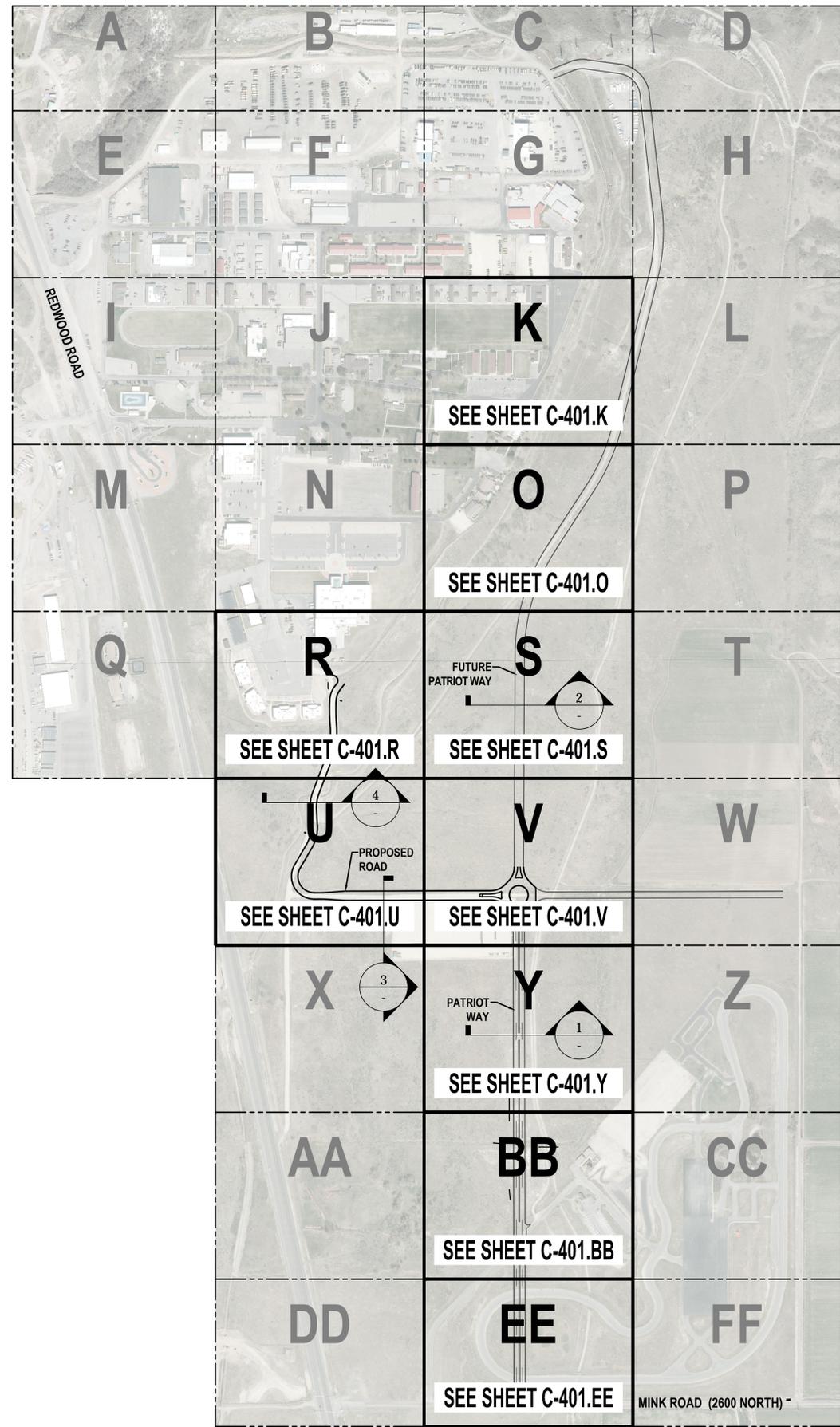


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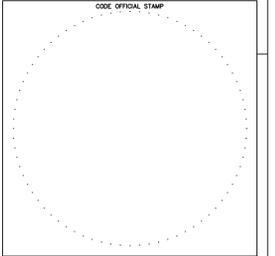
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OVERALL GRADING & DRAINAGE PLAN
 SHEET NUMBER
C-400

SYMBOL LIST

NOT ALL SYMBOLS ARE USED IN THIS PROJECT

- GROUND MOUNTED LIGHT FIXTURE
- POLE MOUNTED LIGHT FIXTURE
- DUAL POLE MOUNTED LIGHT FIXTURE
- POLE TOP MOUNTED LIGHT FIXTURE
- SINGLE POLE SWITCH
- KEY SWITCH
- MOMENTARY CONTACT SWITCH
- MOMENTARY CONTACT KEY SWITCH
- 3-WAY KEY SWITCH
- 3-WAY SWITCH
- PUSHBUTTON SWITCH
- REMOTE CONTROL
- LOW VOLTAGE SWITCH
- DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE ISOLATED GROUND
- DUPLEX RECEPTACLE (EMERGENCY POWER)
- DUPLEX RECEPTACLE GFI
- SINGLE RECEPTACLE
- DUPLEX RECEPTACLE, FLUSH CEILING
- DUPLEX RECEPTACLE, FLUSH CEILING ISO GROUND
- QUADRAPLEX RECEPTACLE
- QUADRAPLEX RECEPTACLE ISOLATED GROUND
- QUADRAPLEX RECEPTACLE GFI
- DUPLEX RECEPTACLE, FLUSH IN FLOOR
- COMBO FLOORBOX WITH QUADRAPLEX RECEPT. AND DATA
- COMBO QUADRAPLEX FLUSH IN FLOOR WITH INTERCOM
- COMBO FLOORBOX WITH DUP. RECEPT. AND DATA
- DUPLEX RECEPTACLE, PEDESTAL MOUNTED
- QUADRAPLEX RECEPTACLE, PEDESTAL MOUNTED
- POKE-THRU DEVICE
- RANGE RECEPTACLE
- SPECIAL OUTLET TO MATCH EQUIPMENT PLUG
- SPECIAL OUTLET TO MATCH EQUIPMENT PLUG, FLUSH IN FLOOR
- JUNCTION BOX
- JUNCTION BOX, FLUSH FLOOR MOUNTED
- MULTI OUTLET ASSEMBLY
- SURFACE EQUIPMENT CABINET AS NOTED
- RECESSED EQUIPMENT CABINET AS NOTED
- SURFACE ELECTRICAL PANELBOARD
- RECESSED ELECTRICAL PANELBOARD
- RELAY
- LIGHTNING ARRESTER
- SPLICEBOX
- PULLBOX
- PHOTO CONTROL
- POWER SUPPLY
- TRANSFORMER (FLOOR PLAN)
- THERMOSTAT
- METER BASE
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- MANUAL STARTER
- MAGNETIC STARTER
- CONTACTOR
- COMBINATION STARTER/NON-FUSED DISCONNECT SWITCH
- COMBINATION STARTER/FUSED DISCONNECT SWITCH
- MOTOR CONNECTION
- PUSH BUTTON
- MEDIUM VOLTAGE SWITCH

- DRAWING NOTE DESIGNATION
- LIGHT FIXTURE DESIGNATION
- FLEXIBLE CONDUIT
- CONDUIT CONCEALED IN WALLS, CEILING OR FLOOR
- CONDUIT CONCEALED IN SLAB, UNDERGROUND OR UNDERFLOOR
- EXISTING CONDUIT
- GROUND WIRE
- STUB UP
- STUB DOWN
- STUB OUT
- ISOLATED GROUND CONDUCTOR
- EQUIPMENT GROUND CONDUCTOR
- PHASE CONDUCTOR
- NEUTRAL CONDUCTOR
- PHASE CONDUCTOR NEUTRAL CONDUCTOR PROVIDE GREEN GROUND WIRE SIZED PER NEC IN ALL RACEWAYS
- MECHANICAL EQUIPMENT DESIGNATION
- CABLE TRAY FOR DATA TELEPHONE AND SOUNDPAGING ONLY (NO CONTROL WIRING)
- TRANSFORMER (ONE-LINES)
- BREAKER
- MANHOLE
- 600A DEADBREAK MOLDED PRODUCT TERMINATION (15KV)
- 600A DEADBREAK MOLDED PRODUCT SPLICE (15KV)
- G&W UNIVERSAL CE TERMINATION (15KV)
- G&W UNIVERSAL CE SPLICE (15KV)
- 200A LOADBREAK MOLDED PRODUCT TERMINATION (15KV)
- MEDIUM VOLTAGE SPLICE (15KV HEATSHRINK OR LOADSHRINK)

ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- AIC AMP INTERRUPTING CURRENT (SYMMETRICAL)
- AL ALUMINUM
- BG BELOW GRADE
- C CONDUIT
- CFCI CONTRACTOR FURNISHED CONTRACTOR INSTALLED
- CLG CEILING
- CTR ABOVE COUNTER DEVICE
- CKT CIRCUIT
- CO CONDUIT ONLY
- CU COPPER
- EM EMERGENCY
- (E) EXISTING
- EWG ELECTRIC WATER COOLER
- EWH ELECTRIC WATER HEATER
- (F) FUTURE
- FA FIRE ALARM
- FACP FIRE ALARM CONTROL PANEL
- FLA FULL LOAD AMPS
- GFI GROUND FAULT INTERRUPTER
- GFP GROUND FAULT PROTECTOR
- GND GROUND
- GRC GALVANIZED RIGID CONDUIT
- IG ISOLATED GROUND
- LTG LIGHTING
- MCB MAIN CIRCUIT BREAKER
- MCC MOTOR CONTROL CENTER
- MLO MAIN LUGS ONLY
- (N) NEW
- NAC NOTIFICATION APPLIANCE CIRCUIT
- NIC NOT IN CONTRACT
- NL NIGHT LIGHT
- NTS NOT TO SCALE
- OFCI OWNER FURNISHED CONTRACTOR INSTALLED
- OFOI OWNER FURNISHED OWNER INSTALLED
- PNL PANEL
- (R) RELOCATE
- S SWITCHED
- SPD SURGE PROTECTIVE DEVICE
- ST SHUNT TRIP
- TYP TYPICAL
- UNO UNLESS NOTED OTHERWISE
- VR VANDAL RESISTANT
- WG WIRE GUARD
- WP WEATHER PROOF
- (X) DEMOLISH/DELETE
- XFMR TRANSFORMER

DRAWING INDEX

EG001	SYMBOLS, ABBREVIATIONS AND DRAWING INDEX
ES101	UPPER AND LOWER ELECTRICAL SITE PLAN
ED101-R	DEMOLITION SITE PLAN AREA 'R' PHASE 2
ED101-U	DEMOLITION SITE PLAN AREA 'U' PHASE 2
ED101-X	DEMOLITION SITE PLAN AREA 'X' PHASE 2
ED101-AA	DEMOLITION SITE PLAN AREA 'AA' PHASE 2
ED101-BB	DEMOLITION SITE PLAN AREA 'BB' PHASE 2
ED101-EE	DEMOLITION SITE PLAN AREA 'EE' PHASE 2
ED601	EQUIPMENT BUILDING DEMOLITION PLAN PHASE 2
EL101R	LIGHTING SITE PLAN AREA 'R' PHASE 2
EL101-U	LIGHTING SITE PLAN AREA 'U' PHASE 2
EL101-V	LIGHTING SITE PLAN AREA 'V' PHASE 2
EL101-Y	LIGHTING SITE PLAN AREA 'Y' PHASE 2
EL101-BB	LIGHTING SITE PLAN AREA 'BB' PHASE 2
EL101-EE	LIGHTING SITE PLAN AREA 'EE' PHASE 2
EP101-E	POWER SITE PLAN AREA 'E' PHASE 2
EP101-I	POWER SITE PLAN AREA 'I' PHASE 2
EP101-M	POWER SITE PLAN AREA 'M' PHASE 2
EP101-Q	POWER SITE PLAN AREA 'Q' PHASE 2
EP101-R	POWER SITE PLAN AREA 'R' PHASE 2
EP101-U	POWER SITE PLAN AREA 'U' PHASE 2
EP101-V	POWER SITE PLAN AREA 'V' PHASE 2
EP101-Y	POWER SITE PLAN AREA 'Y' PHASE 2
EP101-BB	POWER SITE PLAN AREA 'BB' PHASE 2
EP101-EE	POWER SITE PLAN AREA 'EE' PHASE 2
EP601	EQUIPMENT BUILDING POWER PLAN PHASE 2
EX101	NEW ONE-LINE DIAGRAM PHASE 2
EX102	ELECTRICAL DETAILS PHASE 2
EX103	ELECTRICAL DETAILS PHASE 2
EX104	ELECTRICAL DETAILS PHASE 2
EX105	ELECTRICAL DETAILS PHASE 2
EX106	ELECTRICAL DETAILS PHASE 2

Base bid
Run new conduit and conductors shown on plans from Electrical House to lower garrison roundabout. Install conduit for Teledata continuing from Officers Way to lower garrison roundabout. Remove existing power pole in Patriot Way and add (2) power poles to support existing overhead conductors. Install conduit for power to switch SG405 from SG501. Install conduit for lighting from Officers Way to lower garrison roundabout switch GS503. Provide j-boxes in place of pole bases. Demolish overhead conductors from SG502A northward. Replace existing 4-way switch SG405 with new 6-way switch. Relocate existing 4-way switch SG405 to SG502A northward. Stub out (2) 5" conduits from SG501 to east side of Officers Way. Provide 600 Amp breaker in New Head-End Unit for future solar farm.

Alternate #1
Install transformers for Future Solar Farm project.

Alternate #2
Run power and telecom conduit from lower garrison roundabout to Mink Rd. Install conduits for lighting from lower garrison roundabout to Mink Rd. Provide j-boxes in place of pole bases. Install conductors for power from SG503 to SG504. Demolish overhead power from SG502A to SG504. Relocate existing 4-way switch SG405 to SG504. Install conductors from new SG405 to SG501.

Alternate #3
Furnish and install pole lights and bases, and run conductors at lower garrison roundabout going north on Officers Way.

Alternate #4
Furnish and install pole lights and bases, and run conductors from lower garrison roundabout to Mink Road.

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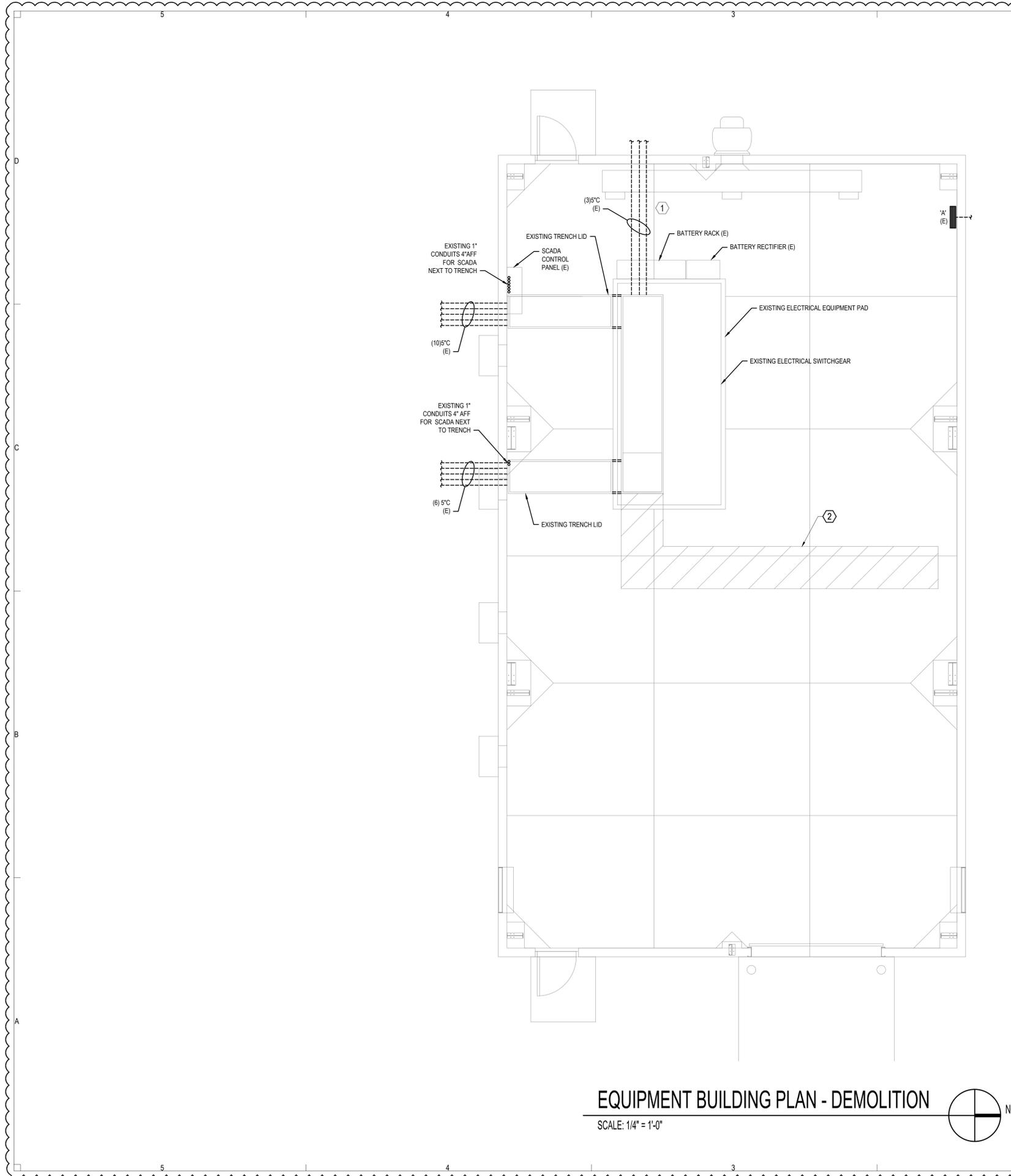
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06.19.14	7.14.2014
DFT PROJECT NO.	DCFM PROJECT NO.
13013	13240480
DRAWN BY	CHECKED BY
SW	LW

Ken Garner Engineering, Inc.
ELECTRICAL CONSULTING ENGINEERS
420 East South Temple, Suite 370
Salt Lake City, Utah 84101
Telephone: 801.328.8800
Fax: 801.328.8802
Contact: LEWIS WONG
Email: LEWIS@KENGARNER.COM
Project #: 2013-082.00

SYMBOLS, ABBREVIATIONS AND DRAWING INDEX
SHEET NUMBER
EG001



EQUIPMENT BUILDING PLAN - DEMOLITION

SCALE: 1/4" = 1'-0"



1

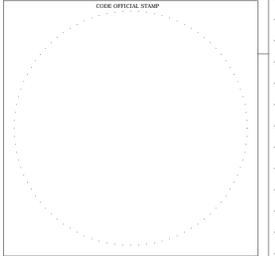
KEYED NOTES

- ① DEMOLISH MAIN SERVICE WIRE AFTER NEW SERVICE IS INSTALLED. SEE SHEET EP601.
- ② SAWCUT FLOOR FOR NEW TRENCH. SEE DETAIL 1/EP601.

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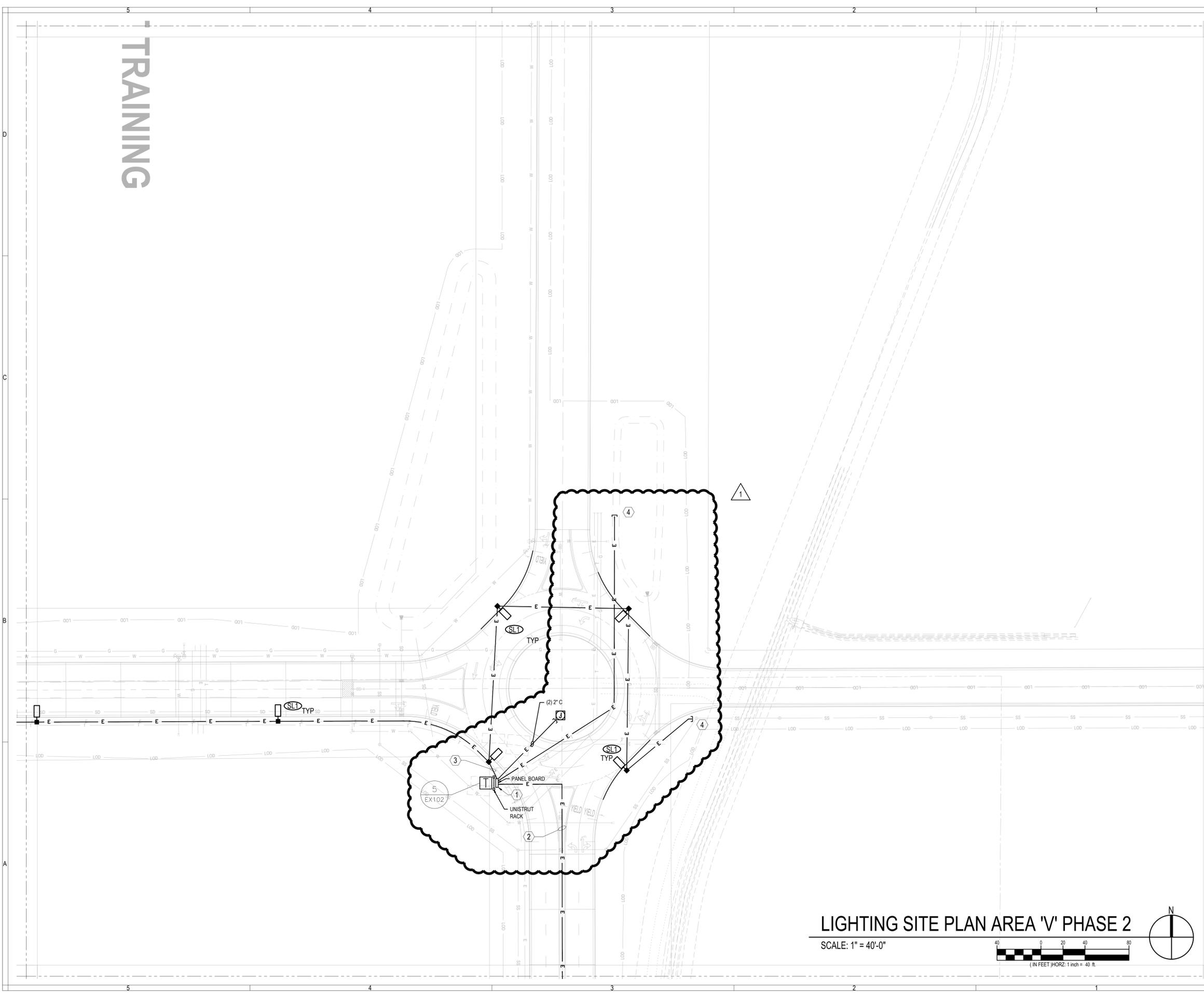
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06.19.14	7.14.2014
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EQUIPMENT BUILDING DEMOLITION PLAN PHASE 2

ED601

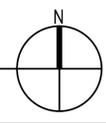
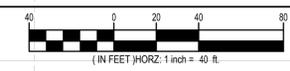
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 Contact: LEWIS WONG
 Email: LEWIS@KENGARNER.COM
 Project #: 2013-082.00

TRAINING



LIGHTING SITE PLAN AREA 'V' PHASE 2

SCALE: 1" = 40'-0"



KEYED NOTES

- 1 PROVIDE ENGRAVED LABEL STATING 'STREET LIGHTING'
- 2 RUN 3#4 WIRES IN 1" FOR LIGHTING CIRCUIT. TIE TO A 30 A, 1P DEDICATED BREAKER IN PANEL (ALT #4)
- 3 RUN 3#6 WIRES IN 1" FOR LIGHTING CIRCUIT. TIE TO A 30A, 1P DEDICATED BREAKER IN PANEL (ALT #3)
- 4 STUB UP AND CAP CONDUIT FOR FUTURE EXTENSION.

GENERAL NOTES

- A. ALL LIGHTING CONDUIT TO SHARE DUCT BANK WITH DISTRIBUTION LINES WHEN POSSIBLE. OTHERWISE DIRECT BURY CONDUIT.
- B. FIELD VERIFY LOCATIONS OF CURBS, ROADS, AND OTHER POTENTIAL LUMINAIRE OBSTRUCTIONS AND ADJUST LOCATIONS AS NEEDED.

BASE BID

INSTALL LIGHTING CONDUIT AT LOWER GARRISON ROUNDABOUT TO THE NORTH. PROVIDE PULL ROPE AND J-BOXES WHERE LIGHTS ARE SHOWN.

ALTERNATE #2

INSTALL LIGHTING CONDUIT FROM LOWER GARRISON ROUNDABOUT TO MINK ROAD. PROVIDE PULL ROPE AND J-BOXES WHERE LIGHTS ARE SHOWN.

ALTERNATE #3

INSTALL LIGHTS AND BASES AND RUN CONDUCTORS FOR POLE LIGHTS AT LOWER GARRISON ROUNDABOUT TO THE NORTH.

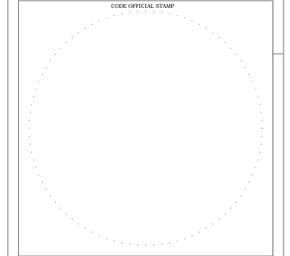
ALTERNATE #4

INSTALL LIGHTS AND BASES AND RUN CONDUCTORS FOR POLE LIGHTS FROM LOWER GARRISON ROUNDABOUT TO MINK ROAD.

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 PHONE: 801.538.3018



DRAWINGS ARE IN COMPLIANCE WITH DFCM STANDARDS

CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P
Q	R	S	T
U	V	W	
X	Y	Z	
AA	BB	CC	
DD	EE	FF	

KEYPLAN

SCALE: NTS

ISSUE DESCRIPTION	DATE
ADDENDUM	07.14.14

ISSUED DATE	PLOTTED DATE
06.19.14	7.14.2014
EFT PROJECT NO. 13013	DFCM PROJECT NO. 13240480
DRAWN BY SW	CHECKED BY LW

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 Project #: 2013-082.00

LIGHTING SITE PLAN
 AREA 'V' PHASE 2
 SHEET NUMBER
EL101-V



POWER SITE PLAN AREA 'M' PHASE 2

SCALE: 1" = 40'-0"



KEYED NOTES

1 PROVIDE AN ADDITIONAL 5°C IN DUCTBANK FOR FUTURE SOLAR AS PART OF BASE BID, FOR A TOTAL OF (4)5°C +(1) 1°C IN THE DUCTBANK.

GENERAL NOTES

A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION.

B. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.

C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.

D. COORDINATE DEMOLITION OF OVERHEAD LINES AND CONSTRUCTION OF UNDERGROUND SYSTEM TO MINIMIZE DOWN TIME.

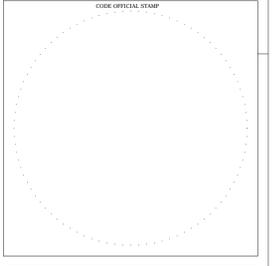
E. ALL PRIMARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 36 IN. BELOW GRADE WITH MAGNETIC RIBBON AT 12" BELOW GRADE. RUN DEEPER THAN 36" IN THE EVENT OF A CONFLICTING CROSSING.

F. ALL SECONDARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 24 IN. BELOW GRADE UNLESS RUNNING PARALLEL WITH THE PRIMARY VOLTAGE CONDUIT, THEN RUN THE SECONDARY VOLTAGE CONDUIT IN THE SAME CONCRETE DUCTBANK AS THE PRIMARY. SEE ELECTRICAL DETAILS.

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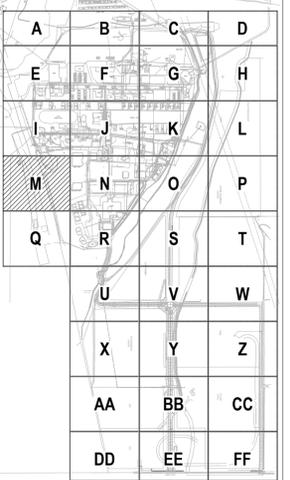
CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
ADDENDUM	07.14.14

ISSUED DATE	ISSUED BY	PLOTTED DATE	PLOTTED BY
06.19.14	SW	7.14.2014	LW
EFT PROJECT NO.	13013	DFCM PROJECT NO.	13240480
DRAWN BY	SW	CHECKED BY	LW

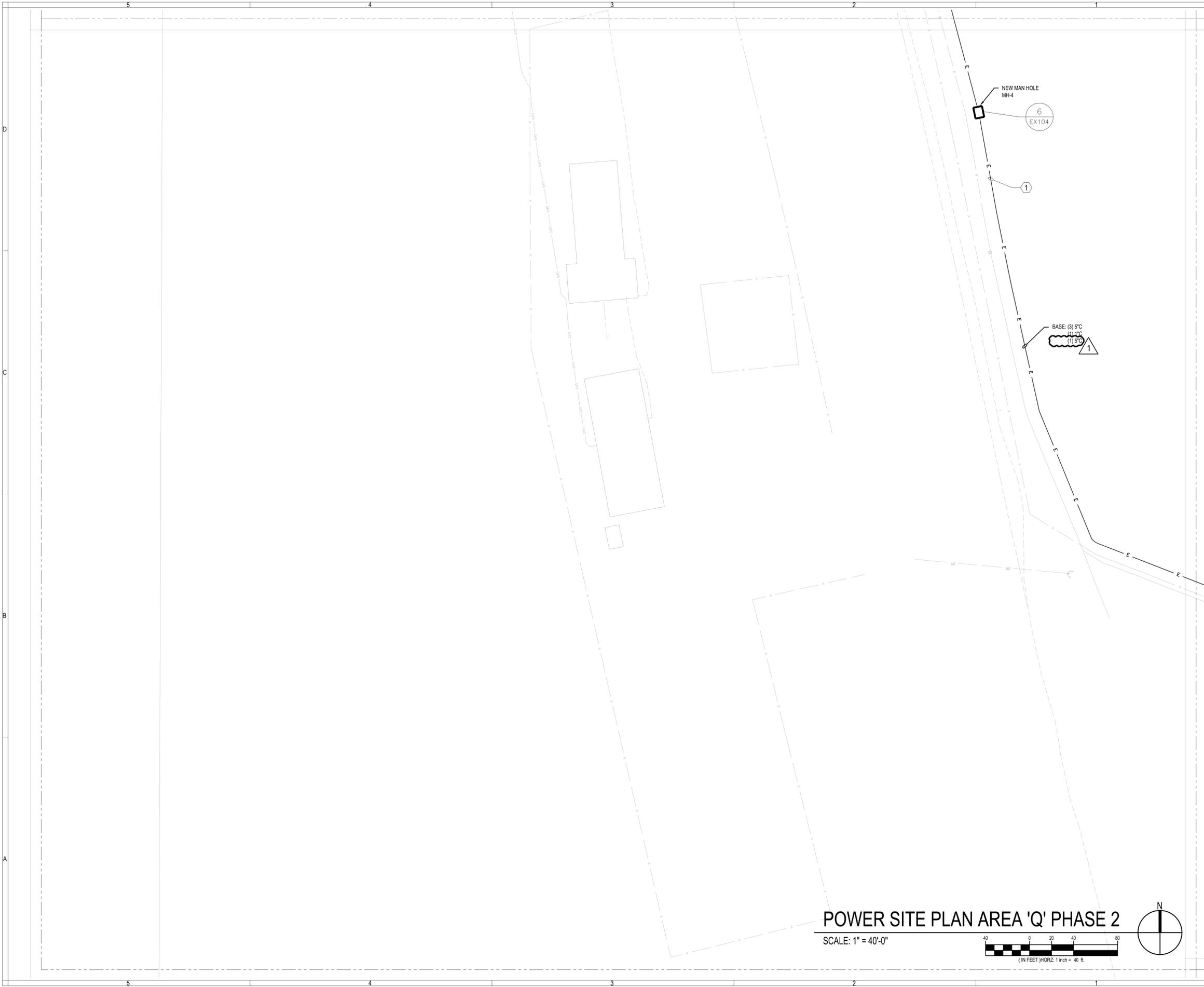


KEYPLAN
 SCALE: NTS

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 Project #: 2013-082.00

POWER SITE PLAN AREA 'M' PHASE 2

SHEET NUMBER
EP101-M



KEYED NOTES

- 1 PROVIDE AN ADDITIONAL 5°C IN DUCTBANK FOR FUTURE SOLAR AS PART OF BASE BID, FOR A TOTAL OF (4)5°C +(1) 1°C IN THE DUCTBANK.

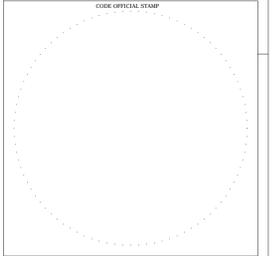
GENERAL NOTES

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- B. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
- D. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.
- E. COORDINATE DEMOLITION OF OVERHEAD LINES AND CONSTRUCTION OF UNDERGROUND SYSTEM TO MINIMIZE DOWN TIME.
- F. ALL PRIMARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 36 IN. BELOW GRADE WITH MAGNETIC RIBBON AT 12" BELOW GRADE. RUN DEEPER THAN 36" IN THE EVENT OF A CONFLICTING CROSSING.
- G. ALL SECONDARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 24 IN. BELOW GRADE UNLESS RUNNING PARALLEL WITH THE PRIMARY VOLTAGE CONDUIT, THEN RUN THE SECONDARY VOLTAGE CONDUIT IN THE SAME CONCRETE DUCTBANK AS THE PRIMARY. SEE ELECTRICAL DETAILS.

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DRAWINGS ARE IN COMPLIANCE WITH DFCM STANDARDS

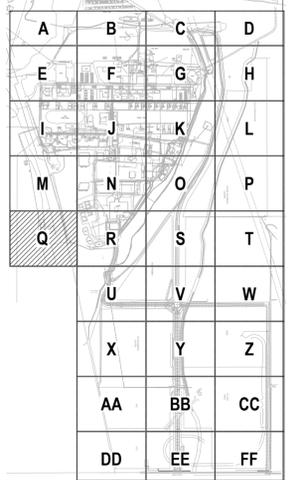
CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
ADDENDUM	07.14.14

ISSUED DATE	ISSUED DATE
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DRAWN BY SW	CHECKED BY LW



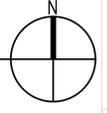
KEYPLAN

SCALE: NTS

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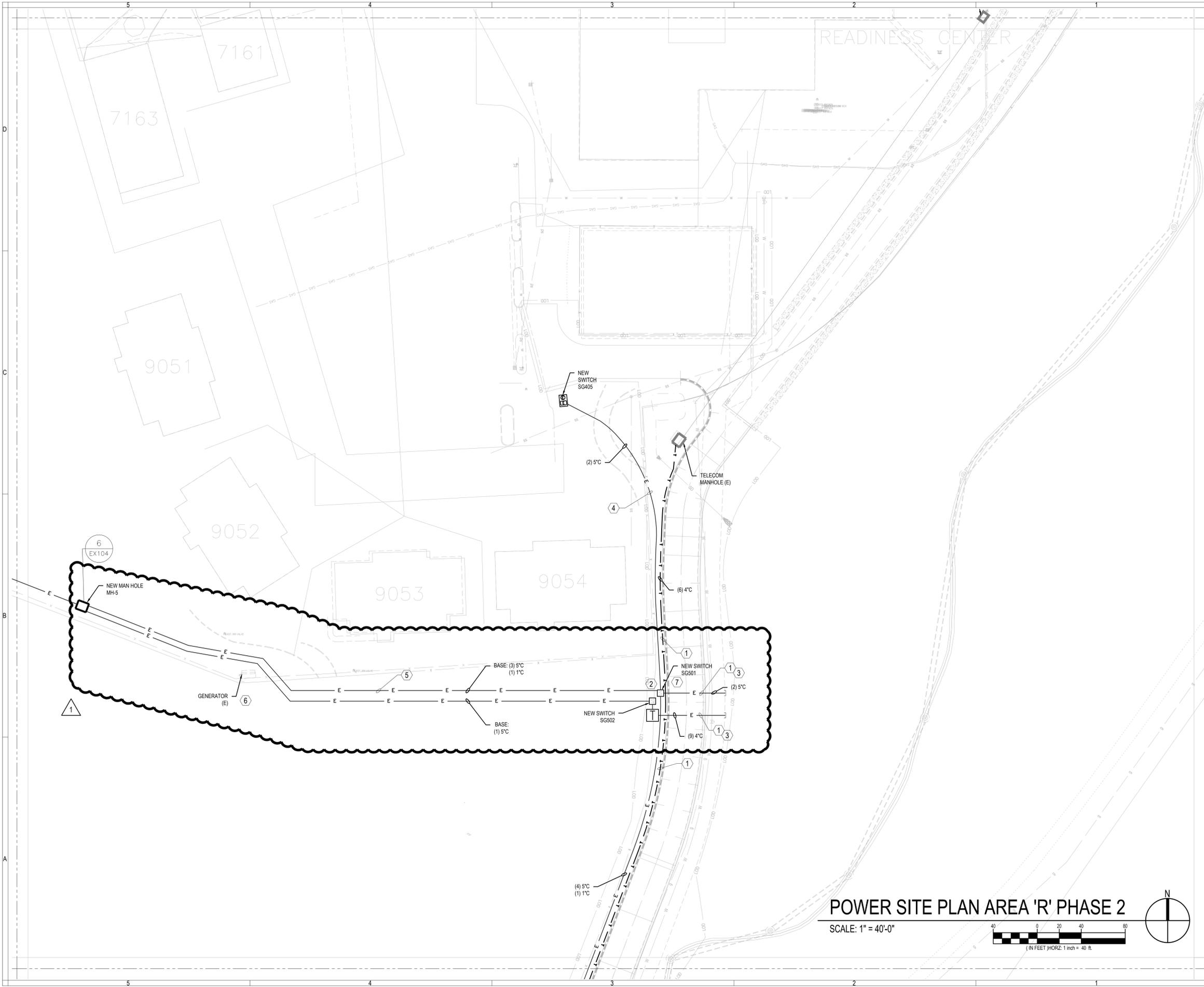
POWER SITE PLAN AREA 'Q' PHASE 2

SCALE: 1" = 40'-0"

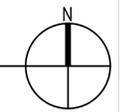
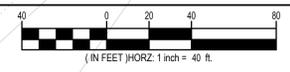


POWER SITE PLAN AREA 'Q' PHASE 2

EP101-Q



POWER SITE PLAN AREA 'R' PHASE 2
SCALE: 1" = 40'-0"



KEYED NOTES

- ① RUN CONDUITS AND PROVIDE PULL ROPE CONDUCTORS TO BE PROVIDED IN FUTURE.
- ② PLACE BOLLARDS TO PROTECT EQUIPMENT FROM DAMAGE IN HIGH TRAFFIC AREAS. SEE DETAILS 6, 7, AND 8 ON SHEET EX303.1 FOR INSTALLATION AND PLACEMENT.
- ③ STUB UP SPARE CONDUITS 4" ABOVE GRADE. PROVIDE PULL ROPE AND CAP.
- ④ RUN CONDUITS AND PROVIDE PULL ROPE IN BASE BID. CONDUCTORS TO BE PROVIDED IN ALTERNATE.
- ⑤ PROVIDE AN ADDITIONAL 5°C IN DUCTBANK FOR FUTURE SOLAR AS PART OF BASE BID, FOR A TOTAL OF (4)5°C -(1) 1°C IN THE DUCTBANK.
- ⑥ LOCATE AND AVOID GENERATOR FEEDER AND AUXILIARY CONTROLS, AND CIRCUITS.
- ⑦ COORDINATE EXACT LOCATION OF SWITCH WITH GATE ACCESS AND FUTURE SOLAR ARRAY.

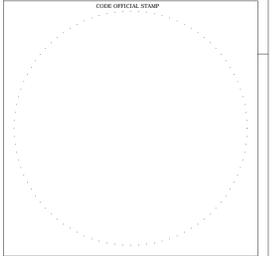
GENERAL NOTES

- A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION.
- B. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
- D. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.
- E. COORDINATE DEMOLITION OF OVERHEAD LINES AND CONSTRUCTION OF UNDERGROUND SYSTEM TO MINIMIZE DOWN TIME.
- F. ALL PRIMARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 36 IN. BELOW GRADE WITH MAGNETIC RIBBON AT 12" BELOW GRADE. RUN DEEPER THAN 36" IN THE EVENT OF A CONFLICTING CROSSING.
- G. ALL SECONDARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 24 IN. BELOW GRADE UNLESS RUNNING PARALLEL WITH THE PRIMARY VOLTAGE CONDUIT. THEN RUN THE SECONDARY VOLTAGE CONDUIT IN THE SAME CONCRETE DUCTBANK AS THE PRIMARY. SEE ELECTRICAL DETAILS.

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CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
17800 SOUTH CAMP WILLIAMS ROAD
RIVERTON, UTAH

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P
Q	R	S	T
U	V	W	
X	Y	Z	
AA	BB	CC	
DD	EE	FF	

KEYPLAN

SCALE: NTS

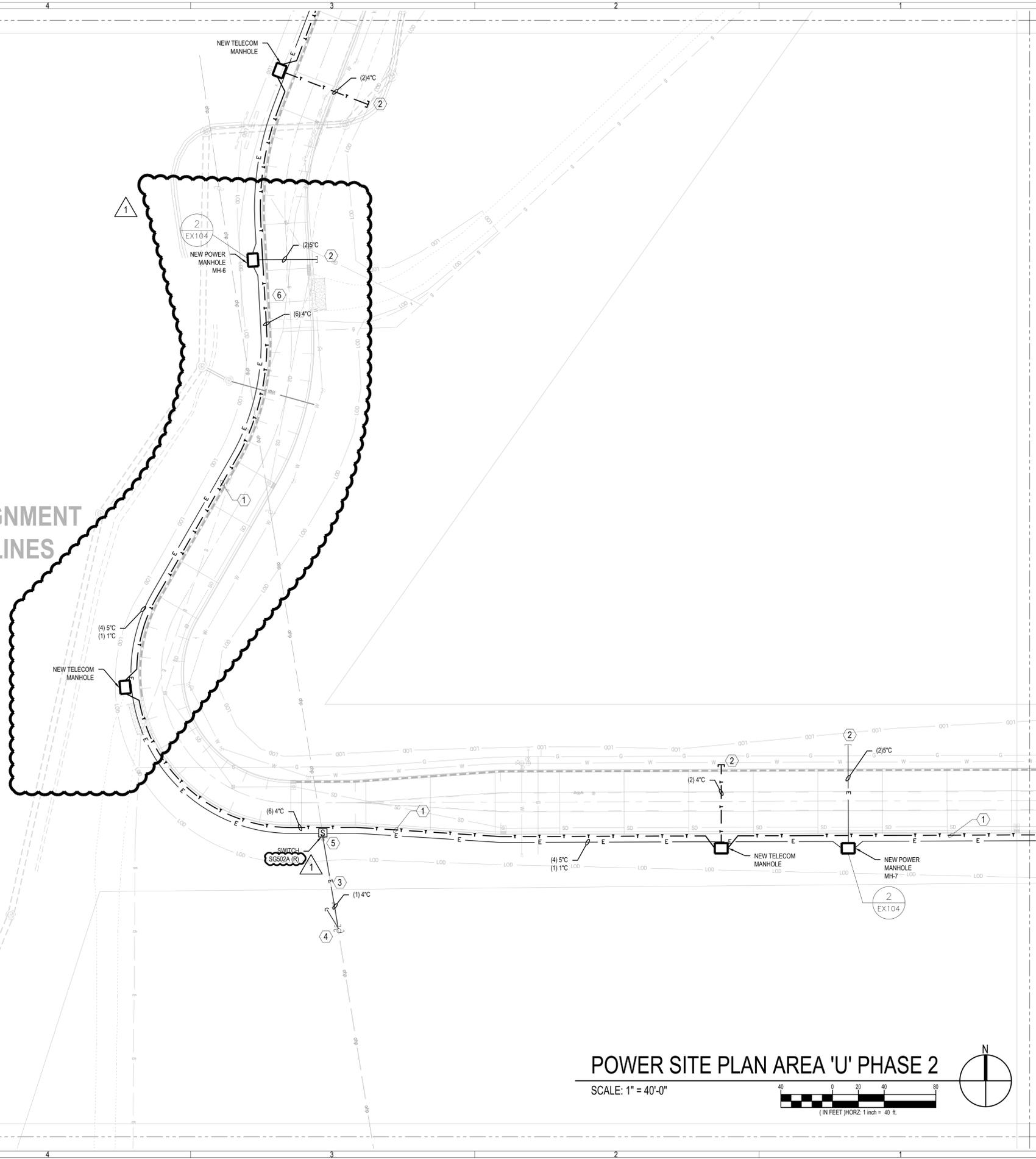
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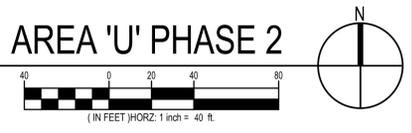
POWER SITE PLAN AREA 'R' PHASE 2

EP101-R



FIX ALIGNMENT
LABEL LINES

POWER SITE PLAN AREA 'U' PHASE 2
SCALE: 1" = 40'-0"



KEYED NOTES

- 1 RUN CONDUITS AND PROVIDE PULL ROPE. CONDUCTORS TO BE PROVIDED IN FUTURE.
- 2 STUB UP SPARE CONDUITS 4" ABOVE GRADE. PROVIDE PULL ROPE AND CAP.
- 3 RELOCATE EXISTING SG405 TO NEW LOCATION SHOWN TO FEED EXISTING OVERHEAD POWER. SEE DETAILS ON SHEET EX106 FOR SWITCH VAULTS.
- 4 FURNISH AND INSTALL A NEW DEAD END POWER POLE TO MAINTAIN EXISTING OVERHEAD POWER LINES. DO NOT PROVIDE IF ALTERNATE #2 IS ACCEPTED.
- 5 DO NOT INSTALL SWITCH IF ALTERNATE #2 IS ACCEPTED.
- 6 UTILIZE AVAILABLE SLEEVES AT CANAL CROSSING.

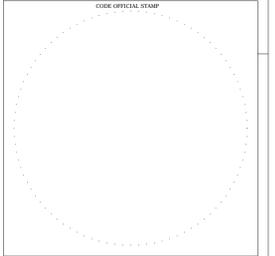
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CAMP WILLIAMS

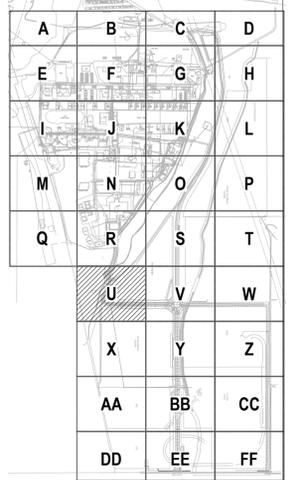
PHASE II SOUTH GARRISON INFRASTRUCTURE
17800 SOUTH CAMP WILLIAMS ROAD
RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
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POWER SITE PLAN AREA 'U' PHASE 2

SHEET NUMBER
EP101-U

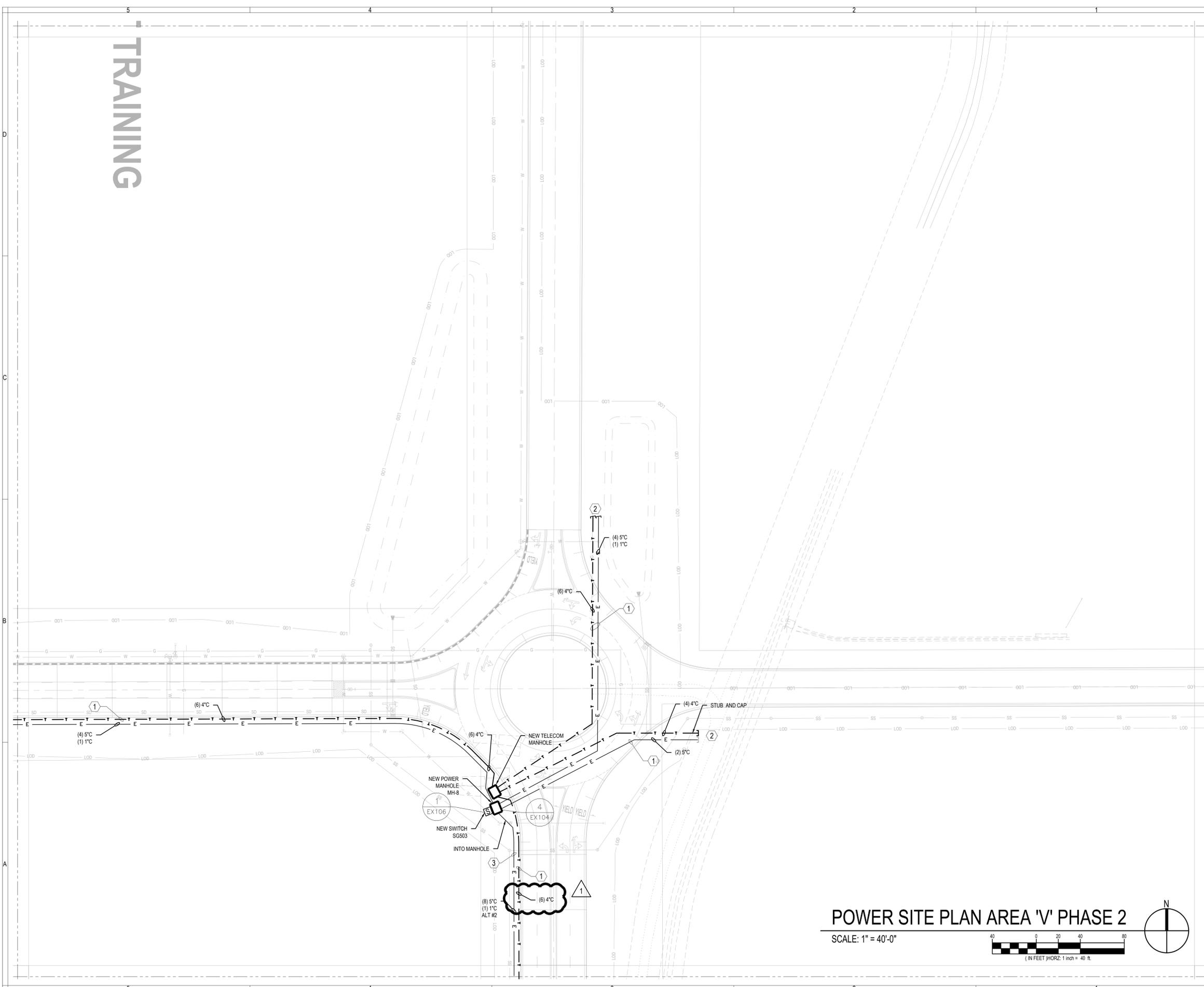


KEYPLAN

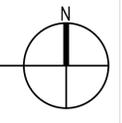
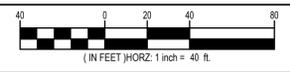
SCALE: NTS

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TRAINING



POWER SITE PLAN AREA 'V' PHASE 2
SCALE: 1" = 40'-0"



KEYED NOTES

- ① RUN CONDUITS AND PROVIDE PULL ROPE. CONDUCTORS TO BE PROVIDED IN FUTURE.
- ② STUB UP SPARE CONDUITS 4" ABOVE GRADE. PROVIDE PULL ROPE AND CAP.
- ③ CONDUITS AND CONDUCTORS TO BE PROVIDED IN ALTERNATE #2.

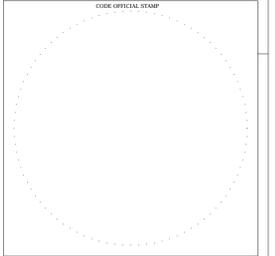
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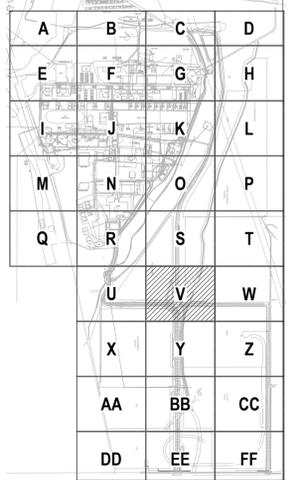


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CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
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RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
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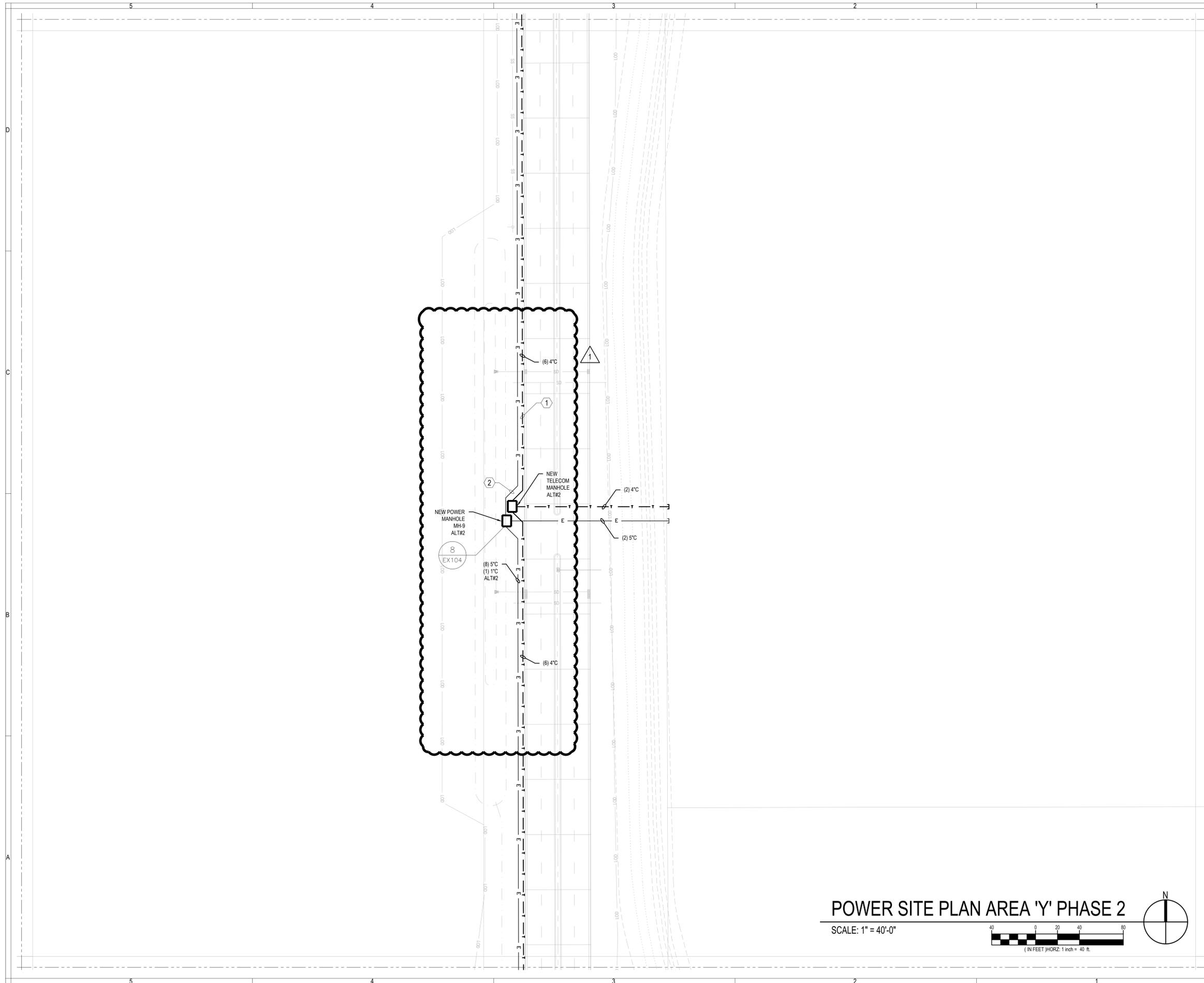
KEYPLAN

SCALE: NTS

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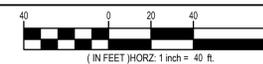
POWER SITE PLAN AREA 'V' PHASE 2

SHEET NUMBER
EP101-V



POWER SITE PLAN AREA 'Y' PHASE 2

SCALE: 1" = 40'-0"



KEYED NOTES

- ① RUN CONDUITS AND PROVIDE PULL ROPE. CONDUCTORS TO BE PROVIDED IN FUTURE.
- ② CONDUITS AND CONDUCTORS TO BE PROVIDED IN ALTERNATE #2.

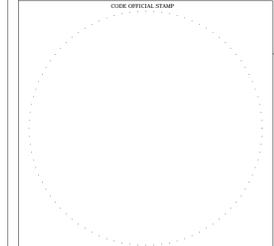
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- B. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- C. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
- D. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.
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CAMP WILLIAMS



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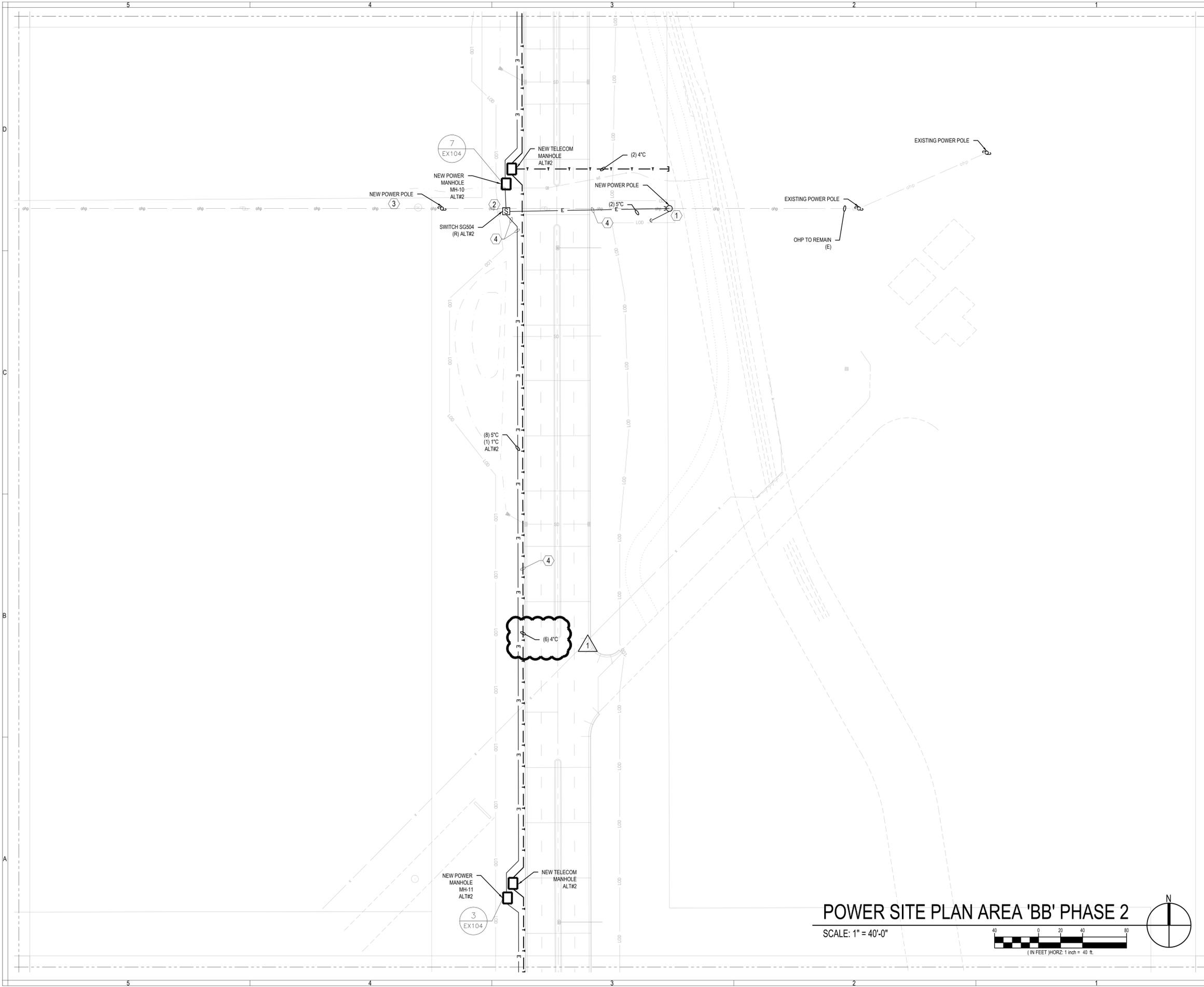
POWER SITE PLAN AREA 'Y' PHASE 2

EP101-Y

KEYPLAN

SCALE: NTS

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POWER SITE PLAN AREA 'BB' PHASE 2
 SCALE: 1" = 40'-0"



KEYED NOTES

- ① FURNISH AND INSTALL DEAD END POWER POLE WITH GUY WIRES AT LOCATION SHOWN AS ALTERNATE #2. EXTEND (1) 5" UP POLE TO 20' AFG. SEE SHEET EX105 FOR DETAILS. PROVIDE STANDARD POWER POLE IN BASE BID.
- ② RELOCATE EXISTING SG405 TO NEW LOCATION SHOWN TO FEED EXISTING OVERHEAD POWER. SEE DETAILS ON SHEET EX106 FOR SWITCH VAULTS.
- ③ REMOVE FROM BASE BID IF ALTERNATE #2 IS ACCEPTED.
- ④ RUN CONDUITS AND PROVIDE PULL ROPE. CONDUCTORS TO BE PROVIDED IN ALTERNATE #2

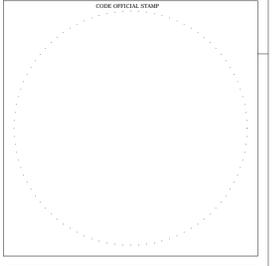
GENERAL NOTES

- A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION. CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
- B. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE.
- C. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.
- D. COORDINATE DEMOLITION OF OVERHEAD LINES AND CONSTRUCTION OF UNDERGROUND SYSTEM TO MINIMIZE DOWN TIME.
- E. ALL PRIMARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 36 IN. BELOW GRADE WITH MAGNETIC RIBBON AT 12" BELOW GRADE. RUN DEEPER THAN 36" IN THE EVENT OF A CONFLICTING CROSSING.
- F. ALL SECONDARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 24 IN. BELOW GRADE UNLESS RUNNING PARALLEL WITH THE PRIMARY VOLTAGE CONDUIT. THEN RUN THE SECONDARY VOLTAGE CONDUIT IN THE SAME CONCRETE DUCTBANK AS THE PRIMARY. SEE ELECTRICAL DETAILS.

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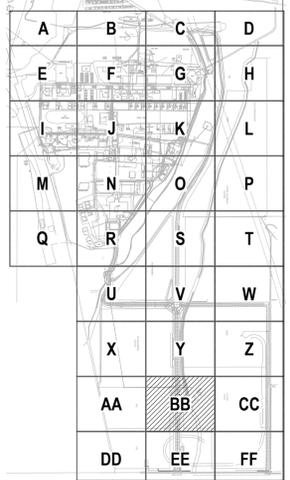


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DRAWINGS ARE IN COMPLIANCE WITH DFCM STANDARDS

CAMP WILLIAMS



KEYPLAN

SCALE: NTS

Ken Garner Engineering, Inc.
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 Email: LEWIS@KENGARNER.COM
 Project #: 2013-082.00



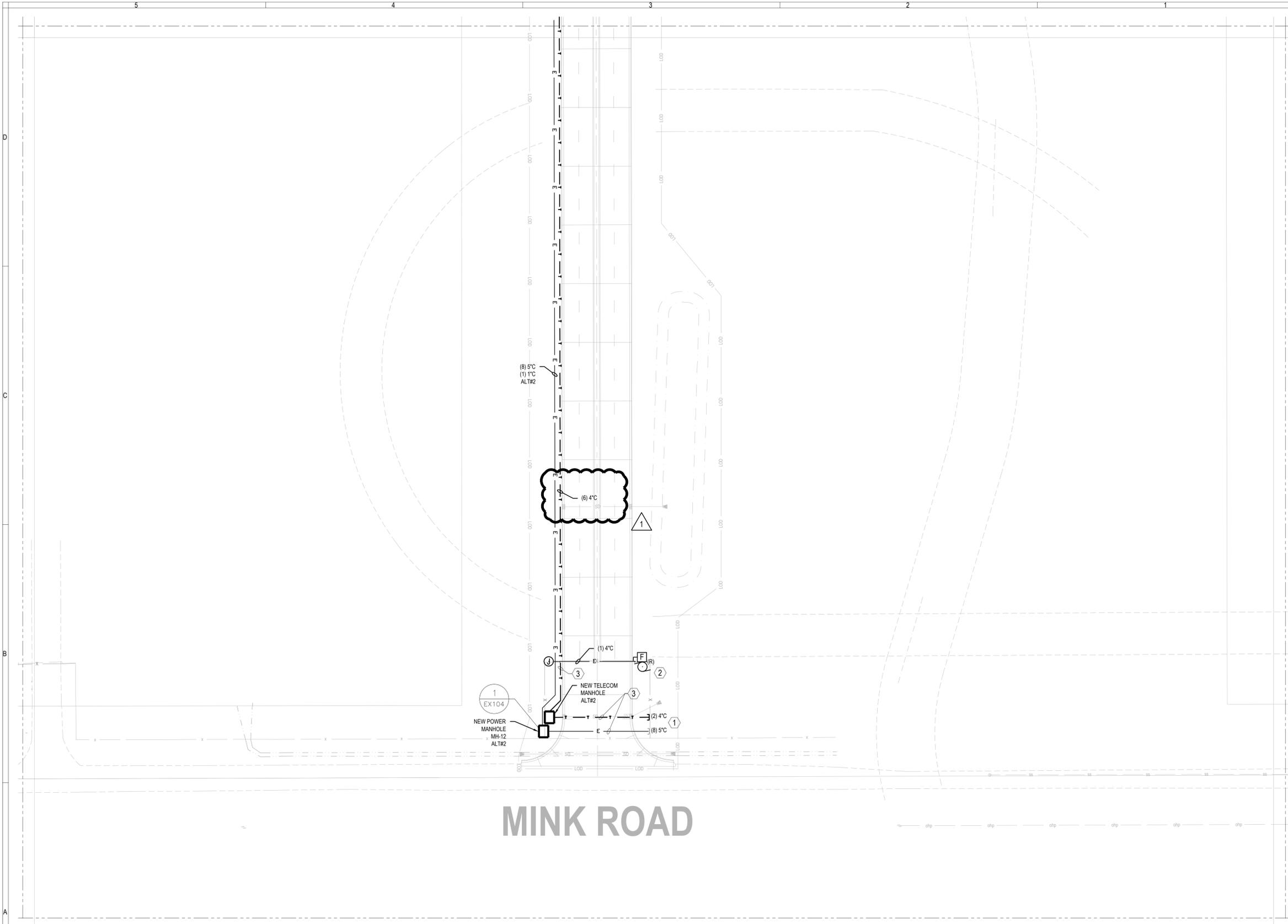
PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
ADDENDUM	07.14.14

ISSUED DATE	PLOTTED DATE
06.19.14	7.14.2014
EFT PROJECT NO.	DFCM PROJECT NO.
13013	13240480
DRAWN BY	CHECKED BY
SW	LW

POWER SITE PLAN AREA 'BB' PHASE 2

EP101-BB



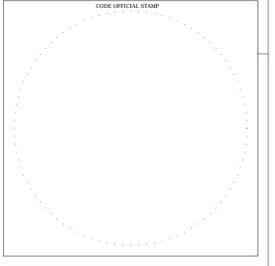
- KEYED NOTES**
- 1 STUB UP SPARE CONDUITS 4" ABOVE GRADE. PROVIDE PULL ROPE AND CAP.
 - 2 RELOCATE EXISTING DISCONNECT FOR MOTORIZED GATE TO NEW LOCATION SHOWN. EXTEND CONDUITS AND CONDUCTORS FROM EXISTING SOURCE FOR A COMPLETE INSTALLATION. CIRCUIT TO BE FED FROM EXISTING UHP BUILDING.
 - 3 RUN CONDUITS AND PROVIDE PULL ROPE. CONDUCTORS TO BE PROVIDED IN ALTERNATE #2

- GENERAL NOTES**
- A. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS, MATERIALS, FINISHES, AND DIMENSIONS BEFORE AND AFTER DEMOLITION CONTRACTOR TO ENSURE THAT ALL SIDEWALKS AND ROADS OUTSIDE OF CONSTRUCTION AREA ARE KEPT CLEAN AND CLEAR OF DEBRIS AND OBSTRUCTIONS AT ALL TIMES.
 - B. PROTECT ALL ITEMS TO REMAIN FROM DAMAGE. COORDINATE ALL PLANNED POWER OUTAGES WITH BASE OPERATIONS PRIOR TO DISCONNECTING.
 - C. COORDINATE DEMOLITION OF OVERHEAD LINES AND CONSTRUCTION OF UNDERGROUND SYSTEM TO MINIMIZE DOWN TIME.
 - D. ALL PRIMARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 36 IN. BELOW GRADE WITH MAGNETIC RIBBON AT 12' BELOW GRADE. RUN DEEPER THAN 36" IN THE EVENT OF A CONFLICTING CROSSING.
 - E. ALL SECONDARY VOLTAGE CONDUIT TO BE ENCASED IN CONCRETE AT A MINIMUM OF 24 IN. BELOW GRADE UNLESS RUNNING PARALLEL WITH THE PRIMARY VOLTAGE CONDUIT, THEN RUN THE SECONDARY VOLTAGE CONDUIT IN THE SAME CONCRETE DUCTBANK AS THE PRIMARY. SEE ELECTRICAL DETAILS.

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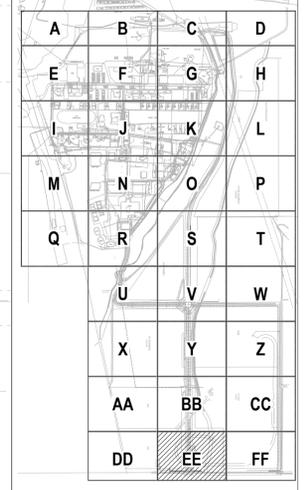
PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

ISSUE DESCRIPTION	DATE
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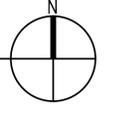
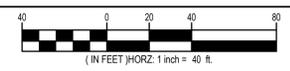
POWER SITE PLAN AREA 'EE' PHASE 2

EP101-EE



KEYPLAN
 SCALE: NTS

POWER SITE PLAN AREA 'EE' PHASE 2
 SCALE: 1" = 40'-0"

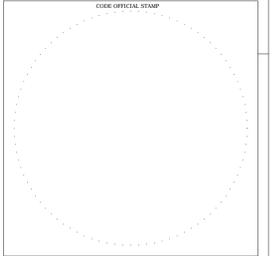


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 Project #: 2013-082.00

- KEYED NOTES - SHEET EP601.1B**
1. CONDUIT CONTINUES TO PADMOUNT SWITCH.
 2. CONDUIT CONTINUES TO TRANSFORMER.
 3. TOP OF TRENCH TO BE FLUSH WITH FINISHED FLOOR.
 4. TOP OF TRENCH TO BE FLUSH WITH TOP OF EQUIPMENT PAD.
 5. CONDUIT FOR MAIN SERVICE ENTRANCE.



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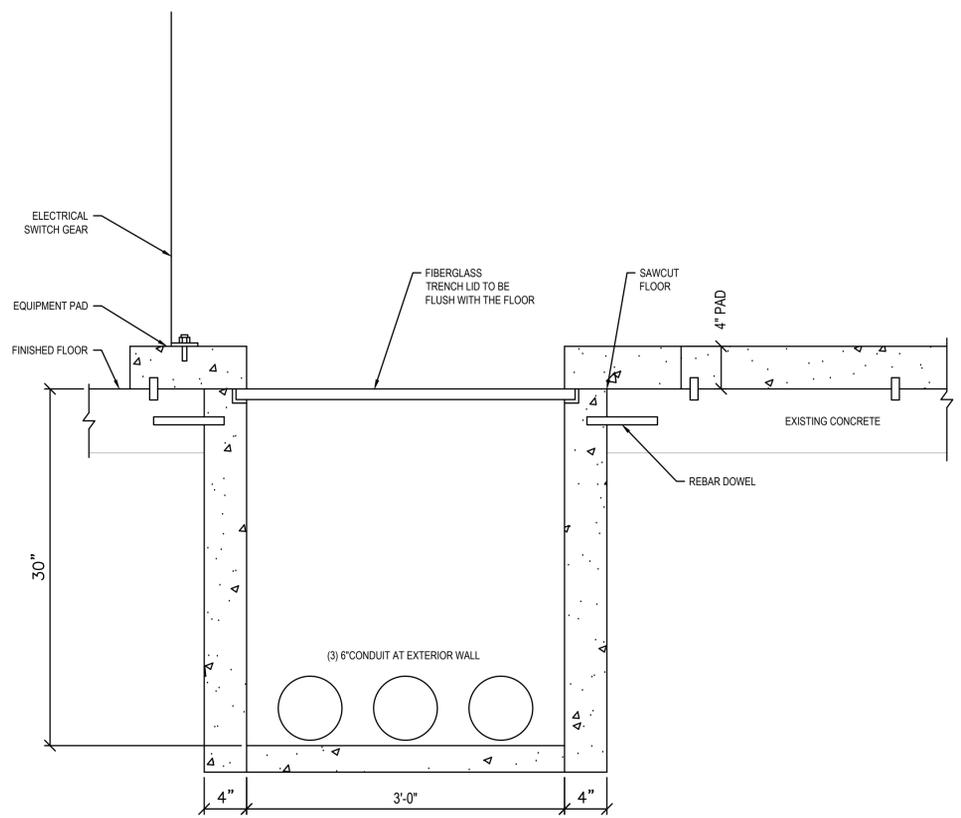
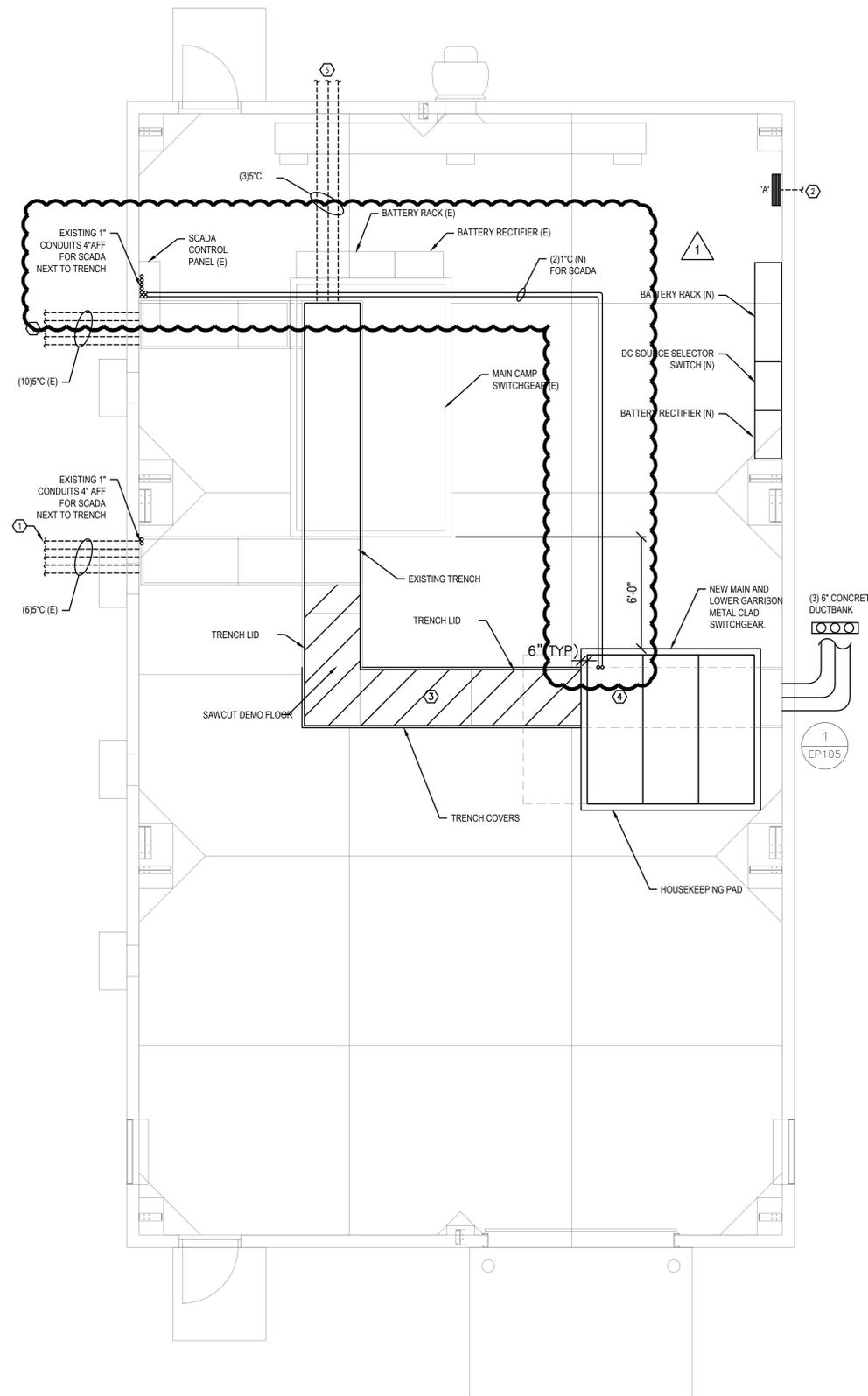
ISSUE DESCRIPTION	DATE
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ISSUED DATE	PLOTTED DATE
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DRAWN BY SW	CHECKED BY LW

EQUIPMENT BUILDING POWER PLAN PHASE 2

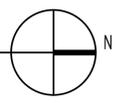
EP601

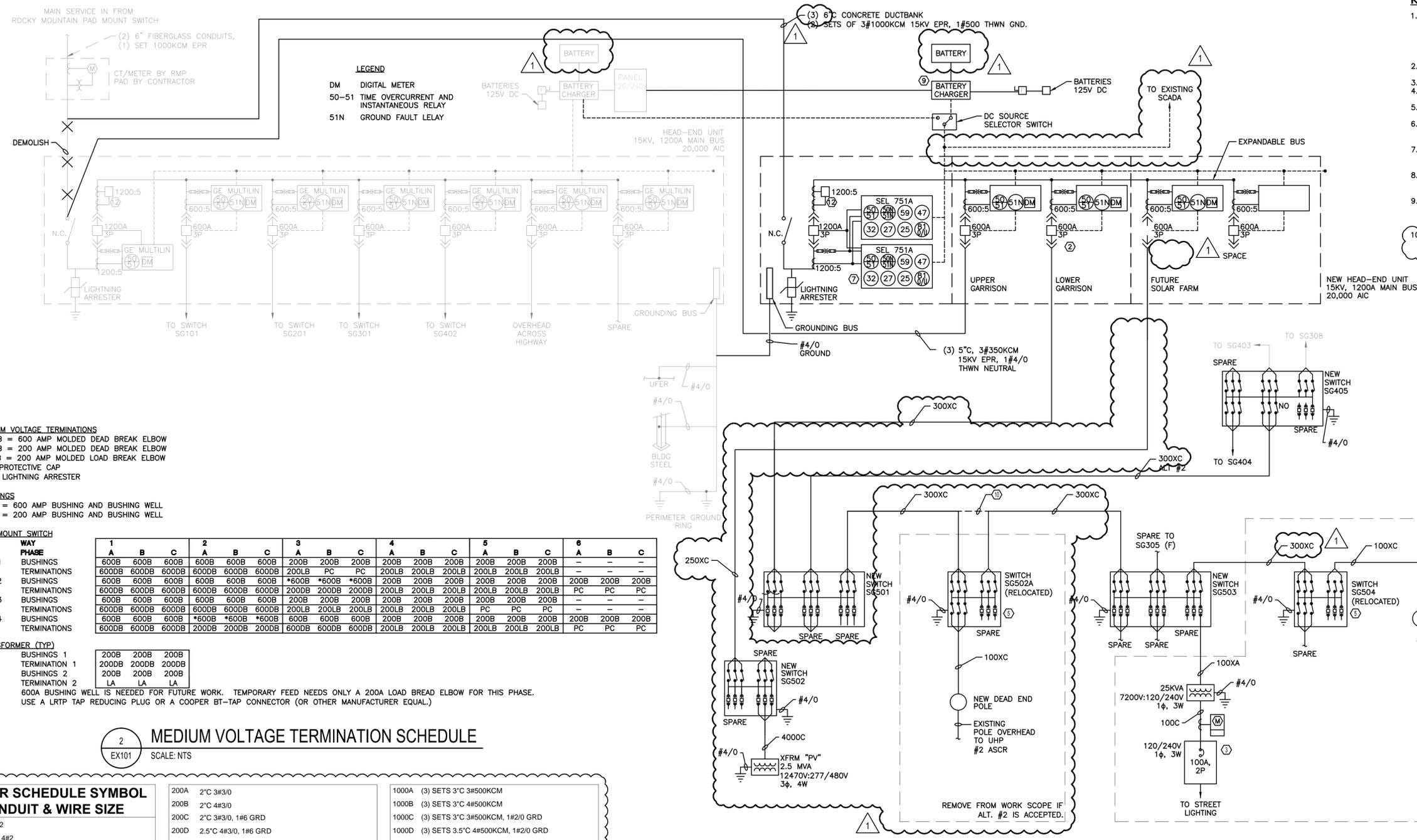
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1
 EP601 **EQUIPMENT BUILDING NEW TRENCH DETAIL**
 SCALE: NTS

2
 EP601 **EQUIPMENT BUILDING TRENCH/CONDUIT LAYOUT**
 SCALE: 1/4" = 1'-0"





KEYED NOTES - SHEET EX101

- (2) 10' LONG, 5/8" DIAMETER COPPER ROD BENEATH PANEL BURIED 24" BELOW GRADE TO TOP OF ROD. CADWELD CONNECTION TO CONDUCTOR LEAVING 8" SLACK IN CONDUCTOR BETWEEN RODS.
- PROVIDE ENGRAVED LABEL STATING WHAT EACH BREAKER LABELS. PROVIDE PANEL WITH INTEGRAL TVSS FOR CONDUCTOR LEAVING 8" SLACK IN CONDUCTOR BETWEEN RODS.
- USE OLD 4-WAY SWITCH SG405 FOR NEW SWITCH SHOWN. DO NOT BOND THE NEUTRAL AND GROUND BUS AT THIS PANEL/DISCONNECT.
- MULTI FUNCTION METER AND RELAY. SEE SPECIFICATIONS FOR MORE DETAIL.
- PROVIDE (1) 5/8" X 10' GROUND ROD BURIED 24" BELOW GRADE FOR DISCONNECT.
- CONNECT BATTERY CHARGER TO THE EQUIPMENT BUILDING 120/240V PANEL. VERIFY BREAKER AND FEEDER SIZE PRIOR TO ORDERING.
- RUN FEEDER DIRECTLY FROM SG501 TO SG503 IF ALTERNATE #2 IS ACCEPTED.

MEDIUM VOLTAGE TERMINATIONS
 600DB = 600 AMP MOLDED DEAD BREAK ELBOW
 200DB = 200 AMP MOLDED DEAD BREAK ELBOW
 200LB = 200 AMP MOLDED LOAD BREAK ELBOW
 PC = PROTECTIVE CAP
 LA = LIGHTNING ARRESTER

BUSHINGS
 600B = 600 AMP BUSHING AND BUSHING WELL
 200B = 200 AMP BUSHING AND BUSHING WELL

PAD MOUNT SWITCH

WAY	PHASE	1	2	3	4	5	6
SG501	BUSHINGS	600B	600B	600B	600B	600B	600B
	TERMINATIONS	600DB	600DB	600DB	600DB	600DB	600DB
SG502	BUSHINGS	600B	600B	600B	600B	600B	600B
	TERMINATIONS	600DB	600DB	600DB	600DB	600DB	600DB
SG503	BUSHINGS	600B	600B	600B	600B	600B	600B
	TERMINATIONS	600DB	600DB	600DB	600DB	600DB	600DB
SG504	BUSHINGS	600B	600B	600B	600B	600B	600B
	TERMINATIONS	600DB	600DB	600DB	600DB	600DB	600DB

TRANSFORMER (TYP)

BUSHINGS 1	200B	200B	200B
TERMINATION 1	200DB	200DB	200DB
BUSHINGS 2	200B	200B	200B
TERMINATION 2	LA	LA	LA

* 600A BUSHING WELL IS NEEDED FOR FUTURE WORK. TEMPORARY FEED NEEDS ONLY A 200A LOAD BREAK ELBOW FOR THIS PHASE. USE A LRTP TAP REDUCING PLUG OR A COOPER BT-TAP CONNECTOR (OR OTHER MANUFACTURER EQUAL).

2 MEDIUM VOLTAGE TERMINATION SCHEDULE
 EX101 SCALE: NTS

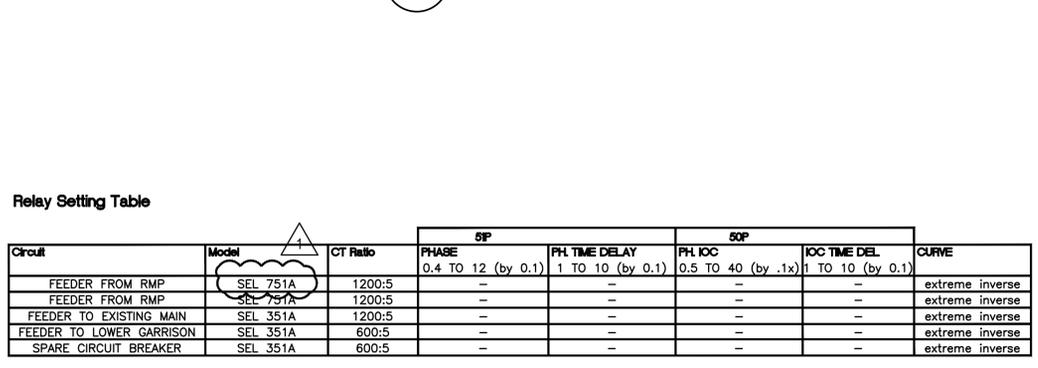
FEEDER SCHEDULE SYMBOL CONDUIT & WIRE SIZE

100A	1" C 3#2
100B	1.25" C 4#2
100C	1.25" C 3#2, 1#6 GRD
100D	1.25" C 4#2, 1#8 GRD
100E	1.25" C 4#2, 1#8 GRD, 1#8 ISOLATED GRD
100XA	2" C 1#2 15KV EPR AL, 1#2 CU THWN NEUTRAL
100XC	3" C 3#2 15KV EPR AL, 1#2 CU THWN NEUTRAL
125A	1.25" C 3#1
125B	1.5" C 4#1
125C	1.5" C 3#1, 1#6 GRD
125D	2" C 4#1, 1#6 GRD
125E	2" C 4#1, 1#6 GRD, 1#6 ISOLATED GRD
150A	1.5" C 3#1/0
150B	2" C 4#1/0
150C	2" C 3#1/0, 1#6 GRD
150D	2" C 4#1/0, 1#6 GRD
150E	2" C 4#1/0, 1#6 GRD, 1#6 ISOLATED GRD
175A	1.5" C 3#2/0
175B	2" C 4#2/0
175C	2" C 3#2/0, 1#6 GRD
175D	2" C 4#2/0, 1#6 GRD
175E	2" C 4#2/0, 1#6 GRD, 1#6 ISOLATED GRD

200A	2" C 3#3/0
200B	2" C 4#3/0
200C	2" C 3#3/0, 1#6 GRD
200D	2.5" C 4#3/0, 1#6 GRD
200E	2.5" C 4#3/0, 1#6 GRD, 1#6 ISOLATED GRD
225A	2" C 3#4/0
225B	2.5" C 4#4/0
225C	2.5" C 3#4/0, 1#4 GRD
225D	2.5" C 4#4/0, 1#4 GRD
225E	2.5" C 4#4/0, 1#4 GRD, 1#4 ISOLATED GRD
250A	2.5" C 3#250KCM
250B	2.5" C 4#250KCM
250C	2.5" C 3#250KCM, 1#4 GRD
250D	3" C 4#250KCM, 1#4 GRD
250E	3" C 4#250KCM, 1#4 GRD, 1#4 ISOLATED GRD
250XC	5" C 3#2/0KCM 15 KV EPR AL, 1#4/0 CU THWN NEUTRAL
300A	2.5" C 3#350KCM
300B	3" C 4#350KCM
300C	3" C 3#350KCM, 1#4 GRD
300D	3" C 4#350KCM, 1#4 GRD
300E	3" C 4#350KCM, 1#4 GRD, 1#4 ISOLATED GRD
300XC	5" C 3#350KCM 15 KV EPR AL, 1#4/0 CU THWN NEUTRAL

1000A	(3) SETS 3" C 3#500KCM
1000B	(3) SETS 3" C 4#500KCM
1000C	(3) SETS 3" C 3#500KCM, 1#2/0 GRD
1000D	(3) SETS 3.5" C 4#500KCM, 1#2/0 GRD
1000E	(3) SETS 3.5" C 4#500KCM, 1#2/0 GRD, 1#2/0 ISOLATED GRD
1600A	(5) SETS 3" C 3#500KCM
1600B	(5) SETS 3" C 4#500KCM
1600C	(5) SETS 3" C 3#500KCM, 1#4/0 GRD
1600D	(5) SETS 3.5" C 4#500KCM, 1#4/0 GRD
1600E	(5) SETS 3.5" C 4#500KCM, 1#4/0 GRD, 1#4/0 ISOLATED GRD
2000A	(6) SETS 3" C 3#500KCM
2000B	(6) SETS 3" C 4#500KCM
2000C	(6) SETS 3" C 3#500KCM, 1#250 GRD
2000D	(6) SETS 3.5" C 4#500KCM, 1#250 GRD
2000E	(6) SETS 3.5" C 4#500KCM, 1#250 GRD, 1#250 ISOLATED GRD
2500D	(8) SETS 3.5" C 4#500KCM, 1#350 GRD
2500E	(8) SETS 4" C 4#500KCM, 1#350 GRD, 1#350 ISOLATED GRD
3000D	(9) SETS 3.5" C 4#500KCM, 1#400 GRD
3000E	(9) SETS 4" C 4#500KCM, 1#400 GRD, 1#400 ISOLATED GRD
4000C	(12) SETS 4" C 3#500KCM, 1#500 GRD
4000D	(12) SETS 4" C 4#500KCM, 1#500 GRD
4000E	(12) SETS 4" C 4#500KCM, 1#500 GRD, 1#500 ISOLATED GRD

1 ONE-LINE DIAGRAM PHASE 2
 EX101 SCALE: NTS



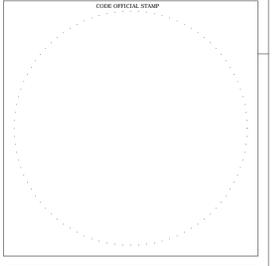
Relay Setting Table

Circuit	Model	CT Ratio	5P		50P		CURVE
			PHASE	PH. TIME DELAY	PH. IOC	IOC TIME DEL	
FEEDER FROM RMP	SEL 751A	1200:5	0.4 TO 12 (by 0.1)	1 TO 10 (by 0.1)	0.5 TO 40 (by .1x)	1 TO 10 (by 0.1)	extreme inverse
FEEDER FROM RMP	SEL 751A	1200:5	-	-	-	-	extreme inverse
FEEDER TO EXISTING MAIN	SEL 351A	1200:5	-	-	-	-	extreme inverse
FEEDER TO LOWER GARRISON	SEL 351A	600:5	-	-	-	-	extreme inverse
SPARE CIRCUIT BREAKER	SEL 351A	600:5	-	-	-	-	extreme inverse

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PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

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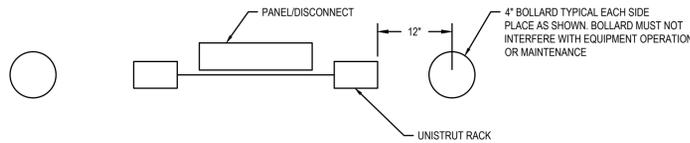
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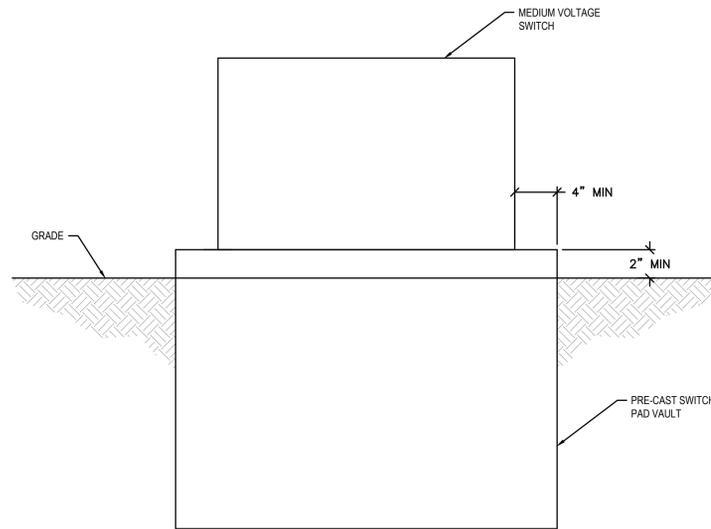
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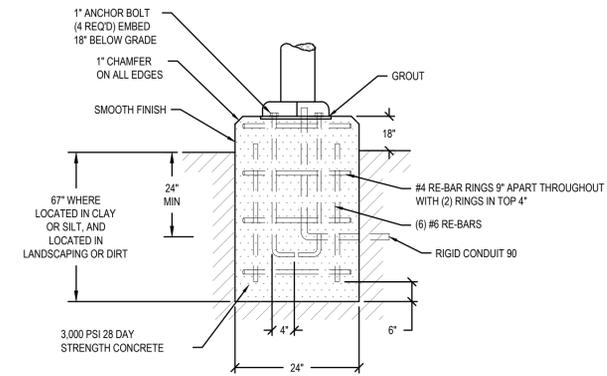
NEW ONE-LINE DIAGRAM PHASE 2
 SHEET NUMBER
EX101



1 RACK PROTECTION
EX103 SCALE: NTS

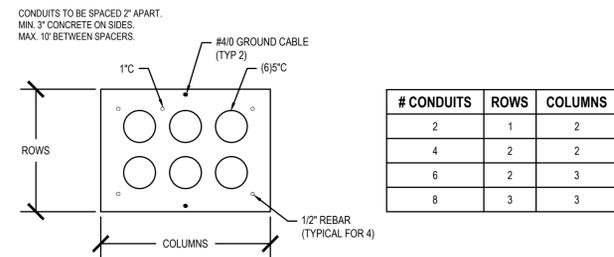


2 MEDIUM VOLTAGE PAD MOUNT SWITCH PAD VAULT
EX103 SCALE: NTS

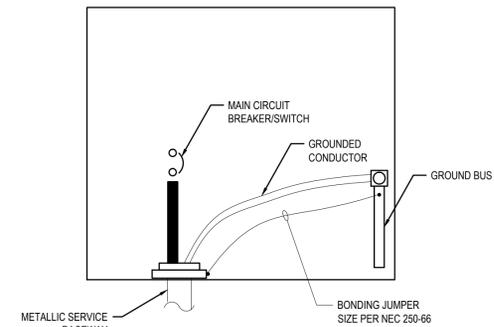


- NOTES:
- ANCHOR BOLTS SUPPLIED WITH POLE. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
 - BOND GROUND CONDUCTOR TO POLE.
 - SEAL CONDUIT TO PREVENT WATER INFILTRATION.
 - PROVIDE SPARE CONDUIT 36" BEYOND LAST POLE ON CIRCUIT AND CAP FOR FUTURE EXTENSION.

3 POLE BASE DETAIL UNCONSTRAINED (LANDSCAPING SURROUNDING BASE)
EX103 SCALE: NTS



4 SECTION THROUGH POWER DUCT BANK
EX103 SCALE: NTS



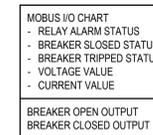
5 BONDING AT SERVICE CONDUCTOR RACEWAY
EX103 SCALE: NTS

LUMINAIRE SCHEDULE						
TYPE	DESCRIPTION	LAMP(S) AND BALLASTS	INPUT (VA)	VOLTAGE (V)	MANUFACTURER(S)	CATALOG #
SL2	DESCRIPTION:	2-HEAD POLE MOUNTED FIXTURE, TYPE II DIST.	LED	404	240	
	SIZE:	24"L X 16"W 8'H	13,500 LUMENS/HEAD			(2) CSX1 LED 700 40K T2M MVOLT SPA PER DDBXD/ STS 30 6-4B DM28 DDB/BANNER ARMS DDB
	MOUNTING:	POLE MOUNTED WITH STRAIGHT ARM				
	HOUSING:	DIE-CAST ALUMINUM W MATCHING DOOR	4100K			LITHONIA
	REFLECTOR:	INJECTION - MOULDED ARCLIC - TYPE 3 WITH SPILL LIGHT CONTROL				CREE/ULS
	LENS:	FLAT TEMPERED GLASS				SPAUDLING/US POLE
SL1	DESCRIPTION:	SINGLE HEAD POLE MOUNTED FIXTURE, TYPE III DIST.	LED	202	240	
	SIZE:	24"L X 16"W 8'H	13,500 LUMENS			CSX1 LED 700 40K T3M MVOLT SPA PER DDBXD/ STS 30 6-4B DM19 DDB
	MOUNTING:	POLE MOUNTED WITH STRAIGHT ARM				
	HOUSING:	DIE-CAST ALUMINUM W MATCHING DOOR	4100K			LITHONIA
	REFLECTOR:	INJECTION - MOULDED ARCLIC - TYPE 3 WITH SPILL LIGHT CONTROL				CREE/ULS
	LENS:	FLAT TEMPERED GLASS				SPAUDLING

NOTES:

- ALL LIGHT FIXTURES SHALL HAVE A MINIMUM 5 YEAR WARRANTY.
- ALL LED LIGHT FIXTURES SHALL HAVE REPLACEABLE AND UPGRADABLE LED MODULES, LM79 AND LM80 LISTED, WITH 50,000 HR MIN. L70 RATING.
- LIGHT FIXTURE DESCRIPTION TAKES PRECEDENCE OVER CATALOG NUMBER. LIGHT FIXTURES SHALL MEET DESCRIPTION REQUIREMENTS.

6 TELECOM DUCT BANK DETAIL
EX103 SCALE: NTS



- SEQUENCE OF OPERATION
- PLC CONTROLS - MONITORS, INCOMING WIND, GENERATOR, UTILITY AND SOLAR POWER.
 - LOAD ADD OR LOAD SHED TO MAINTAIN RELIABLE POWER.
 - CAMP WILL PURSUE FUTURE NET METERING AGREEMENT AS PART OF SOLAR PROJECT.

NOTE: ORIGINAL CONTACT FOR MICROGRID CONTROL PANEL IS ICETECH IGOR KOVALENKO, 801-571-6740

7 SCADA BLOCK DIAGRAM
EX103 SCALE: NTS

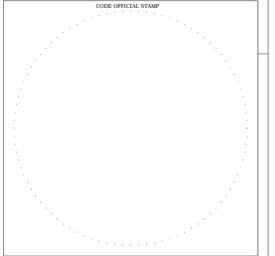


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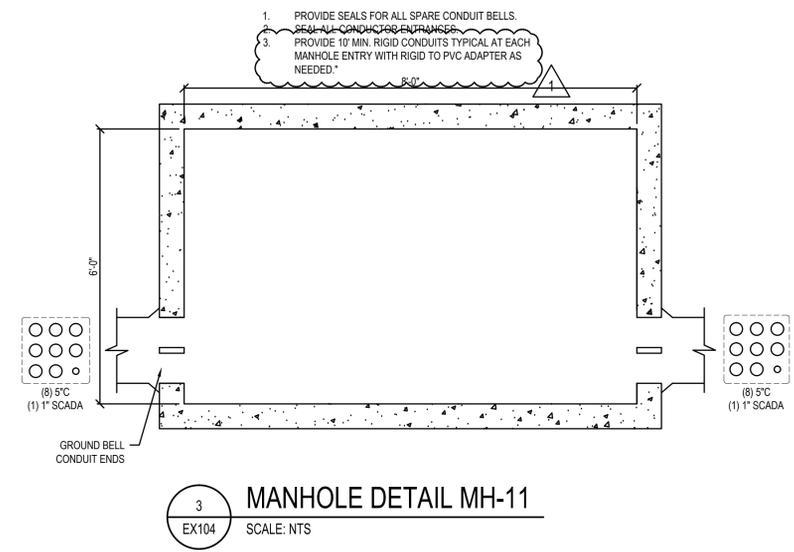
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DFT PROJECT NO. 13013	DFCM PROJECT NO. 13240480
DRAWN BY SW	CHECKED BY LW

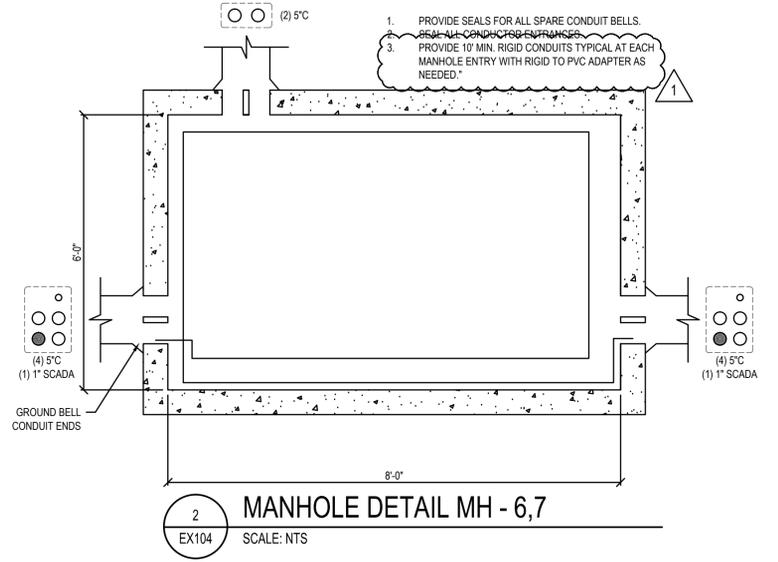
ELECTRICAL DETAILS
 PHASE 2

EX104

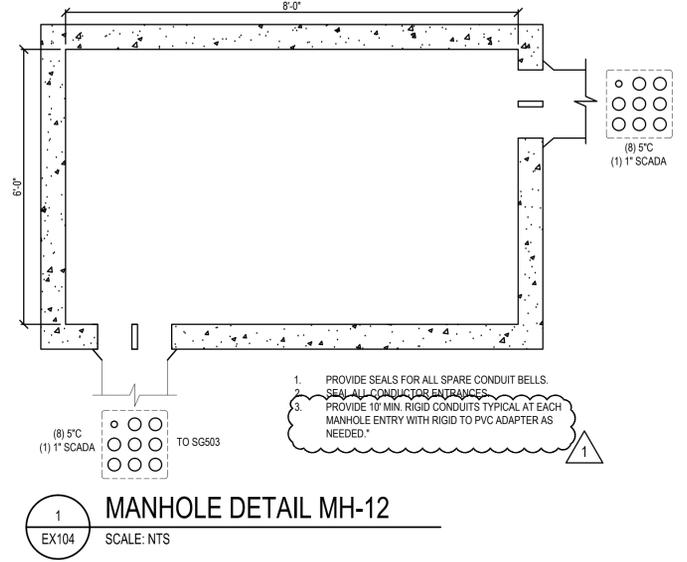
Ken Garner Engineering, Inc.
 ELECTRICAL CONSULTING ENGINEERS
 420 East South Temple, Suite 370
 Salt Lake City, Utah 84101
 Telephone: 801.328.8800
 Fax: 801.328.8802
 Contact: LEWIS WONG
 Email: LEWIS@KENGARNER.COM
 Project #: 2013-082.00



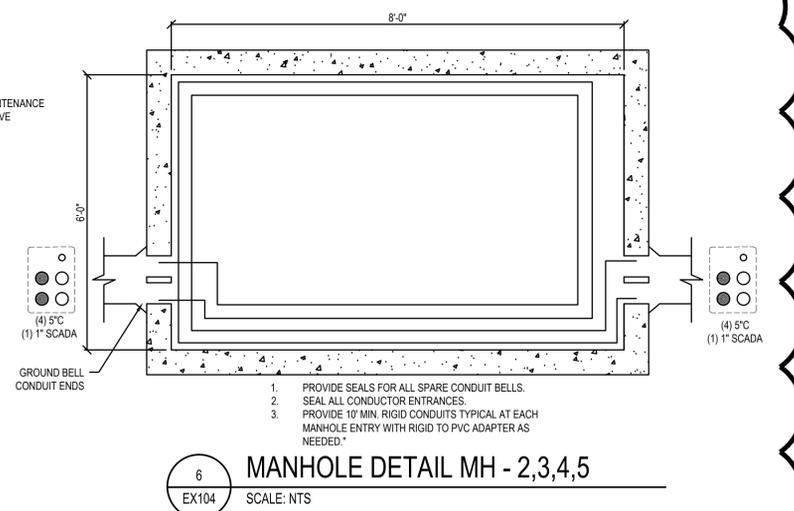
3 MANHOLE DETAIL MH-11
 EX104 SCALE: NTS



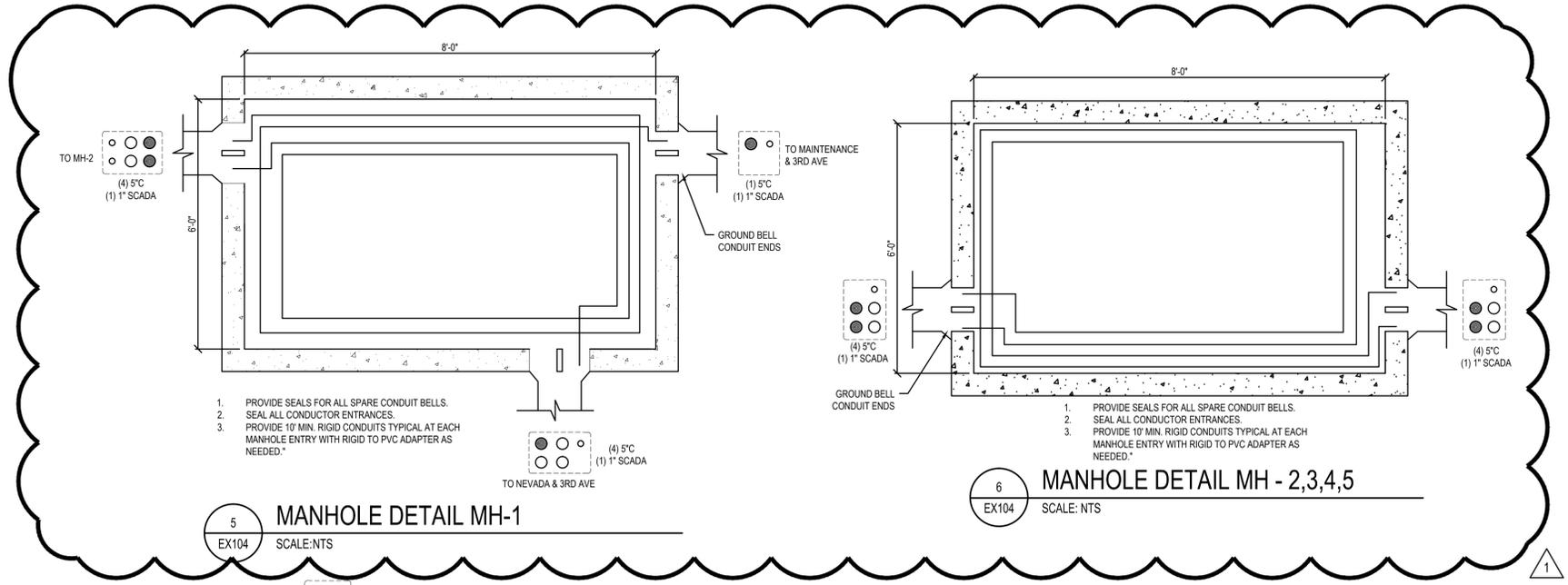
2 MANHOLE DETAIL MH - 6,7
 EX104 SCALE: NTS



1 MANHOLE DETAIL MH-12
 EX104 SCALE: NTS



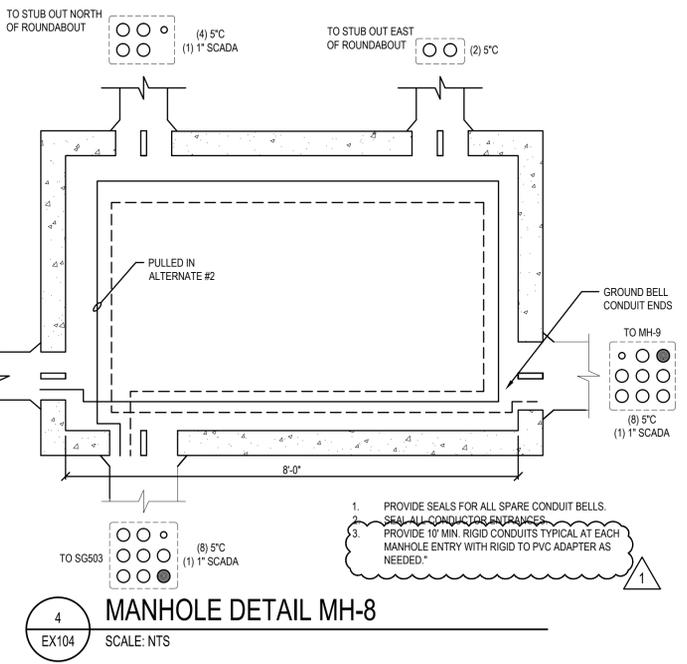
6 MANHOLE DETAIL MH - 2,3,4,5
 EX104 SCALE: NTS



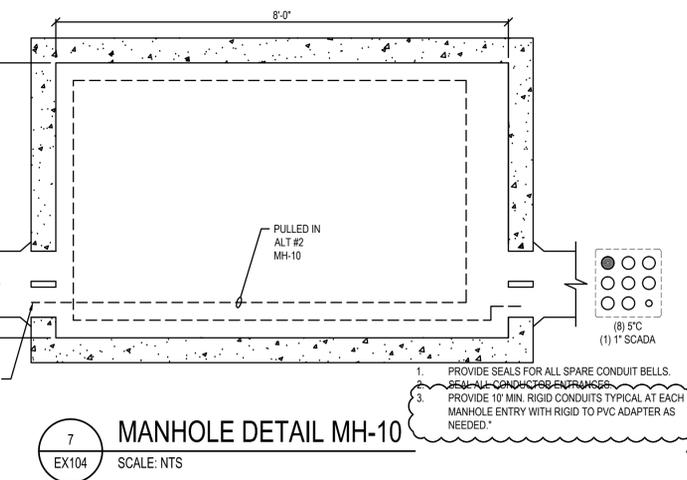
5 MANHOLE DETAIL MH-1
 EX104 SCALE: NTS



8 MANHOLE DETAIL MH-9
 EX104 SCALE: NTS



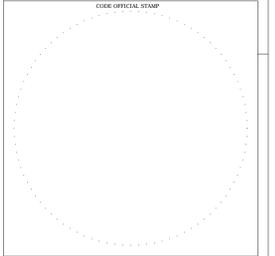
4 MANHOLE DETAIL MH-8
 EX104 SCALE: NTS



7 MANHOLE DETAIL MH-10
 EX104 SCALE: NTS



DFCM
 4110 STATE OFFICE BUILDING
 SALT LAKE CITY, UTAH 84114
 PHONE: 801.538.3018



DRAWINGS ARE IN COMPLIANCE WITH DFCM STANDARDS

CAMP WILLIAMS



PHASE II SOUTH GARRISON INFRASTRUCTURE
 17800 SOUTH CAMP WILLIAMS ROAD
 RIVERTON, UTAH

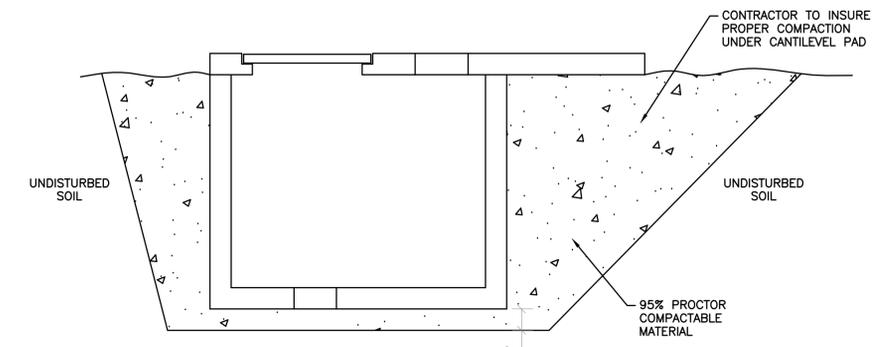
ISSUE DESCRIPTION	DATE
ADDENDUM	07.14.14

ISSUED DATE	PLOTTED DATE
06.19.14	7.14.2014
DWG PROJECT NO. 13013	DWG PROJECT NO. 13240480
DRAWN BY SW	CHECKED BY LW

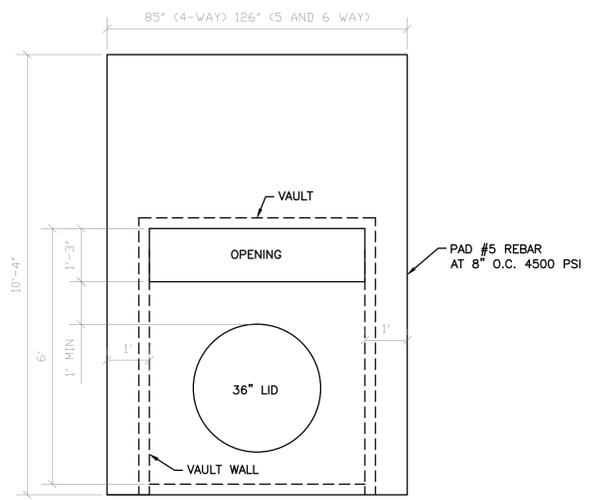
ELECTRICAL DETAILS
 PHASE 2

EX105

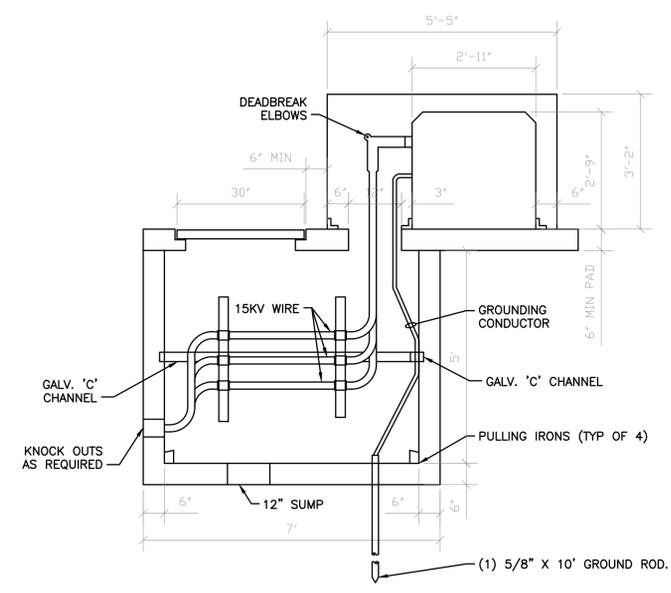
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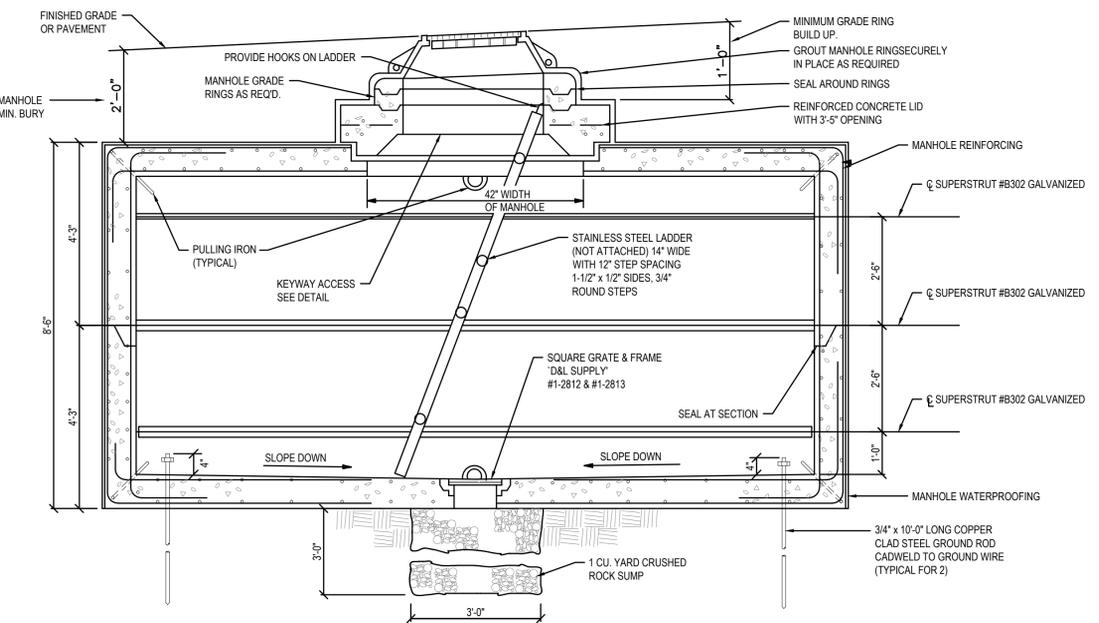
3 PAD/VAULT EXCAVATION AND BACKFILL
 EX106 SCALE: NTS



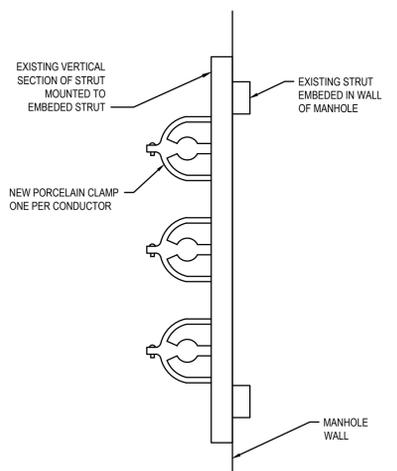
2 SWITCH VAULT TOP VIEW
 EX106 SCALE: 1/2" = 1'-0"



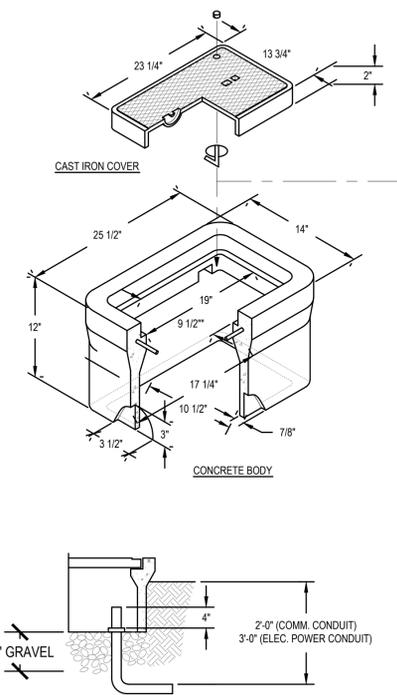
1 SWITCH VAULT SIDE VIEW
 EX106 SCALE: 1/2" = 1'-0"



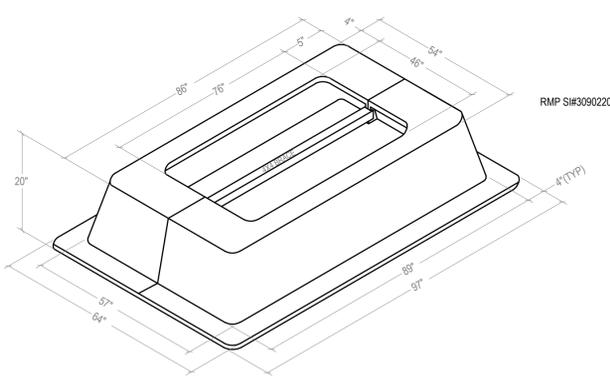
4 MANHOLE DETAIL (TYP)
 EX104 SCALE: NTS



5 CONDUCTOR SUPPORT DETAIL
 EX104 SCALE: NTS



7 POLYMER CONCRETE J-BOX DETAIL
 EG002 SCALE: NTS



6 RMP CT METER FIBERCRETE BOX PAD DIMENSIONS
 EX104 SCALE: NTS

PANEL: STREET LIGHTING											
DESCRIPTION	QTY	CON	3 W	1 PH	100 Amps	Main Breaker	10	KAIC	DESCRIPTION	QTY	CON
OFFICERS WAY ST LTG SOUTH	L	1414	30	2	1	1414	2	30	2	SPARE	
	L	1414	-	3	3	1414	4	-	-		
PATRIOT WAY STREET LIGHTING SOUTH	L	1616	30	2	5	1616	6	30	2	SPARE	
	L	1616	-	7	7	1616	8	-	-		
SPARE	L		30	1	5		10	30	1	SPARE	
SPARE			30	1	11		0	12	20	1	
BLANK			1	13	0		14	1		BLANK	
BLANK			1	15	0		16	1		BLANK	
BLANK			1	17	0		18	1		BLANK	
BLANK			1	19	0		20	1		BLANK	
CONNECTED LOAD			6.1 KVA			3030	3030			25.3 Amps	
NEC DEMAND LOAD			7.6 KVA							31.6 Amps	

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