TETRA TECH EC, INC.

California Energy Commission
DOCKETED
11-AFC-3
TN # 68317
NOV 02 2012

November 1, 2012

Eric Solorio, Project Manager
California Energy Commission
Docket No. 11-AFC-3
1516 9th St.
Sacramento, CA 95814

Cogentrix Quail Brush Generation Project - Docket Number 11-AFC-03: Responses to CEC Staff Data Requests 87 through 89

Docket Clerk:

Pursuant to the provisions of Title 20, California Code of Regulations, and on behalf of Quail Brush Genco, LLC, a wholly owned subsidiary of Cogentrix Energy, LLC, Tetra Tech hereby submits the *Responses to CEC Staff Data Requests 87 through 89.* The Quail Brush Generation Project is a 100 megawatt natural gas fired electric generation peaking facility to be located in the City of San Diego, California.

The topics addressed in this letter include the following:

- Transmission System Engineering

If you have any questions regarding this submittal, please contact Rick Neff at (704) 525-3800 or me at (303) 980-3653.

Sincerely,

Constance E. Farmer
Project Manager/Tetra Tech

cc: Lori Ziebart, Cogentrix
John Collins, Cogentrix
Rick Neff, Cogentrix
Proof of Service List

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE QUAIL BRUSH GENERATION PROJECT

DOCKET NO. 11-AFC-03
PROOF OF SERVICE
(Revised 10/29/2012)

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*indicates change

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DECLARATION OF SERVICE

I, Constance Farmer, declare that on November 1, 2012, I served and filed copies of the attached Responses to CEC Staff Data Requests 87 through 89, dated November 1, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/quailbrush/index.html.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

_x_ Served electronically to all e-mail addresses on the Proof of Service list;

___ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked *"hard copy required" or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

_x_ by sending an electronic copy to the e-mail address below (preferred method); *OR*

___ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-03
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

___ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
michael.levy@energy.ca.gov

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Constance C. Farmer

QUAIL BRUSH GENERATION PROJECT (11-AFC-3)

Responses to Energy Commission Staff's Data Requests 87 through 89

November 1, 2012

TECHNICAL AREA – TRANSMISSION SYSTEM ENGINEERING

87. Data Request: Please provide a complete one-line electrical diagram (final or tentative pending final) of the proposed SDG&E 138 kV switchyard with the transmission outlets showing configuration of buses, breakers with disconnect switches along with their respective sizes, ampere and voltage ratings. Also mention the name of the builder (the applicant or SDG&E) for the proposed SDG&E switchyard.

Response:

The attached drawing "Exhibit 4A: Quail Brush Key One Line Diagram" depicts the proposed four (4) element, single-bus, single-breaker switching arrangement of the SDG&E 138 kV Switchyard. This exhibit is intended to supersede Exhibit 4 from Supplement 1 to the AFC. This is a preliminary drawing that includes the radial bus switching scheme with transmission outlets (3), high voltage circuit breakers and associated disconnect switches, along with their ampere and voltage ratings. The Applicant will construct the SDG&E Switchyard in compliance with SDG&E requirements.

88. Data Request: Please provide a physical layout drawing (final or tentative) showing distinctly (in a larger scale) the preferred and alternate #1 routes (along any roads, land or overhead line corridor) of the proposed 138 kV overhead loop lines between the proposed SDG&E 138 kV switchyard and the existing Mission-Carlton Hills 138 kV line. The drawing should show the existing or proposed road widths, ROW widths and any proposed extended (spur) road widths along with alignment of the proposed loop lines. Describe whether the ROWs would be through any private and/or public lands.

Response:

As the result of progress made in ongoing design effort, a new route has been developed for the loop lines between the SDG&E Switchyard and the 138 kV line break of TL13822. This revised route contains improvements over the previously submitted Preferred Route and Alternate 1 described in Supplement 3 Figures 1.1-3 and 1.1-4. These improvements include reduced pole heights that reduce visual impacts. This final route is shown on Figure 1.1-3A and Figure 1.1-3B in Attachment A of this submittal. These figures are intended to supersede Figures 1.1-3 and 1.1-4 from Supplement 3 to the AFC. This plan and profile drawing contains a scaled plan view of the proposed route with main and spur access roads highlighted in green, a 100-foot right-of-way (ROW) highlighted in pink, and property lines highlighted in orange. All ROWs will be through private land.

89. Data Request: For single circuit loop lines construction, submit tangent steel pole design diagram (or resubmit Figure 2.3-1) showing configuration (vertical or triangular) of insulators, phase and ground conductors with their respective position measurements on the pole including ground clearance from the lowest conductor and height of the pole above ground. Also include design diagrams of dead-end and angle steel poles with the above mentioned information (or resubmit Figures 2.3-2 and 2.3-3).

For the double-circuit loop line construction with vertical configuration of insulators and conductors, provide design diagrams for tangent, dead-end and angle steel poles with the information as stated above. Also mention the name of the builder (the applicant or SDG&E) for the proposed loop lines.

Response:

The attached plan and profile drawing (Figure 1.1-3A) shows the new proposed route for loop lines between the SDG&E switchyard and the 138 kV line break. This drawing contains a profile of the route with pole locations, pole and conductor elevations, and identifies each pole by structure number. The following drawings provide design details for each of the poles utilized along the route.

1. Figure 2.3-1A: design diagram for Structure #1, a double-circuit X-type steel pole
2. Figure 2.3-1B: design diagram for Structure #2, double-circuit steel tangent pole
3. Figure 2.3-1C: design diagram for Structure #3, double-circuit X-type steel pole
4. Figure 2.3-1D: design diagram for Structure #4, single-circuit Y-type steel pole
5. Figure 2.3-1E: design diagram for Structure #5, single-circuit YPI-type steel pole
6. Figure 2.3-1F: design diagram for Structure #6, single-circuit YPI-type steel pole

These figures are intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC. The design basis for loop lines is to maintain minimum ground clearance of 30 feet from the lowest phase conductor. The Applicant shall be the builder for the loop lines in compliance with SDG&E requirements.

FIGURES

Printing Date: 11/1/2012 10:32:35 AM
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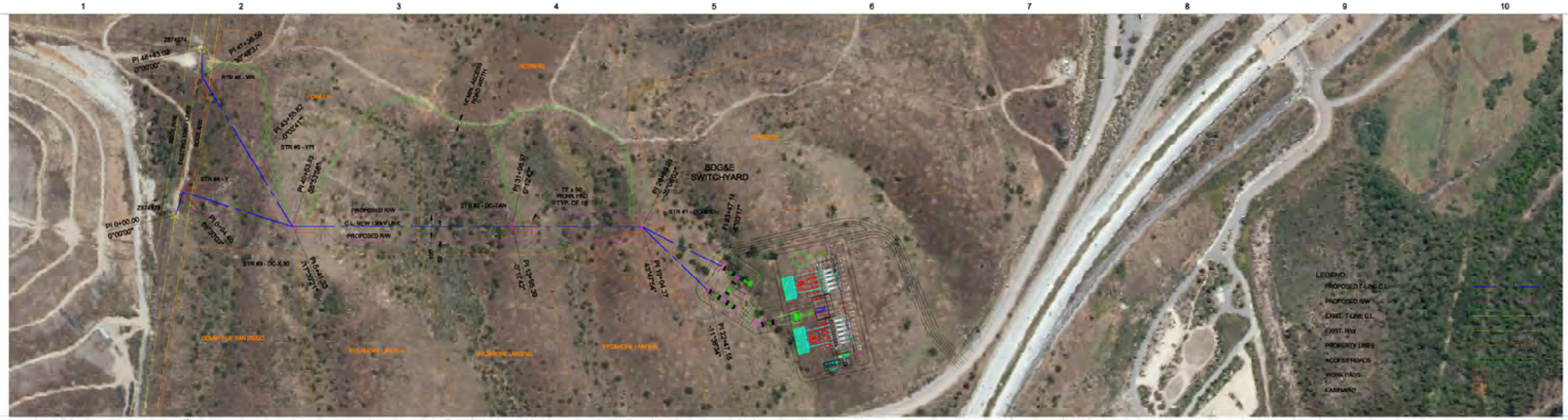
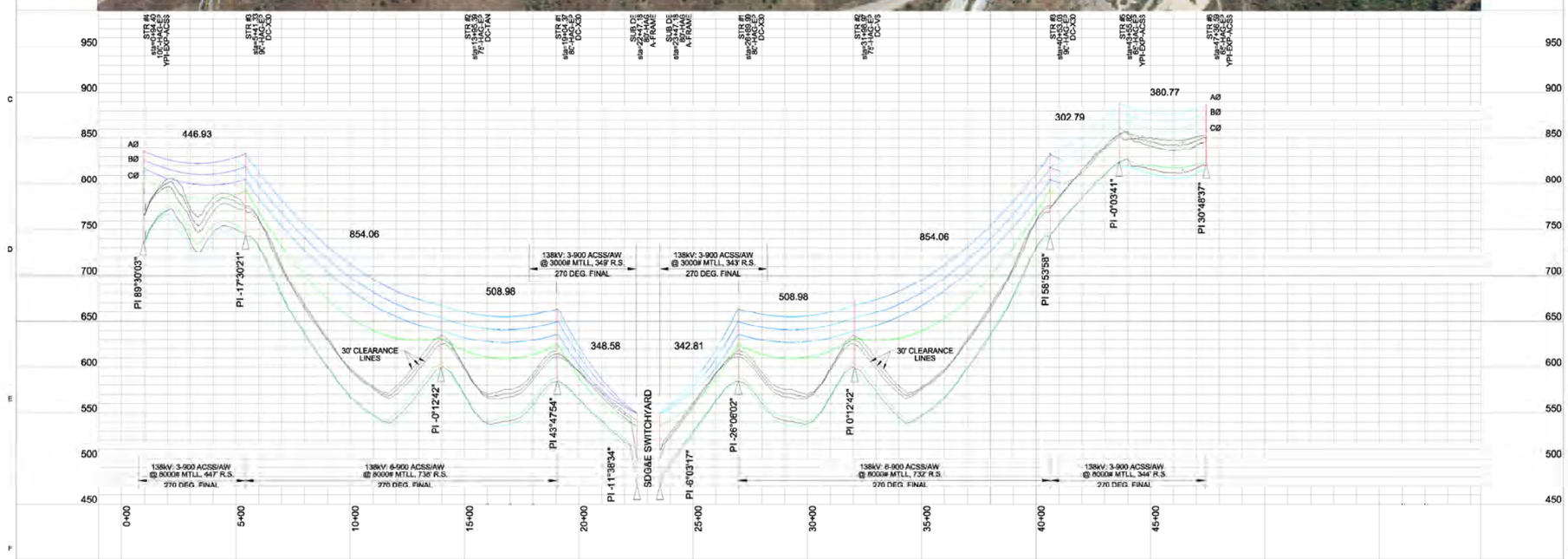
PLS-CADD Drawing





PRELIMINARY

NOTES:

200.0 ft. Horiz. Scale
50.0 ft. Vert. Scale

North

Mexico

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APVD.
A	11/01/12	ISSUED FOR APPROVAL	MDB	BMT	MAB

REVISIONS

PROPRIETARY NOTICE

DSN:
DRN:
CKD:
ENG'D:
STAMPED BY:
REGISTRATION NO:
STATE:
C.O.A.:
STATE:

AMPIRICAL SOLUTIONS LLC
6911 RIVER HIGHLANDS BLVD. COVINGTON, LA 70433
PHONE: (985) 809-5240, FAX: (985) 809-5250

COGENTRIX QUAIL BRUSH
138kV LINE BREAK (TL 13822)
PREFERRED ROUTE PLAN & PROFILE

SCALE: | DRAWING NO: QB138-PREF-PP1 | SHEET: 1 of 1

Cogentrix

QUAIL BRUSH GENERATION PROJECT

* THIS FIGURE IS INTENDED TO SUPERSEDE FIGURES 1.1-3 AND 1.1-4 FROM SUPPLEMENT 3 TO THE AFC.

FIGURE 1.1-3A
138 KV LINE BREAK (TL13822)
PREFERRED ROUTE PLAN
AND PROFILE

TETRA TECH EC, INC.

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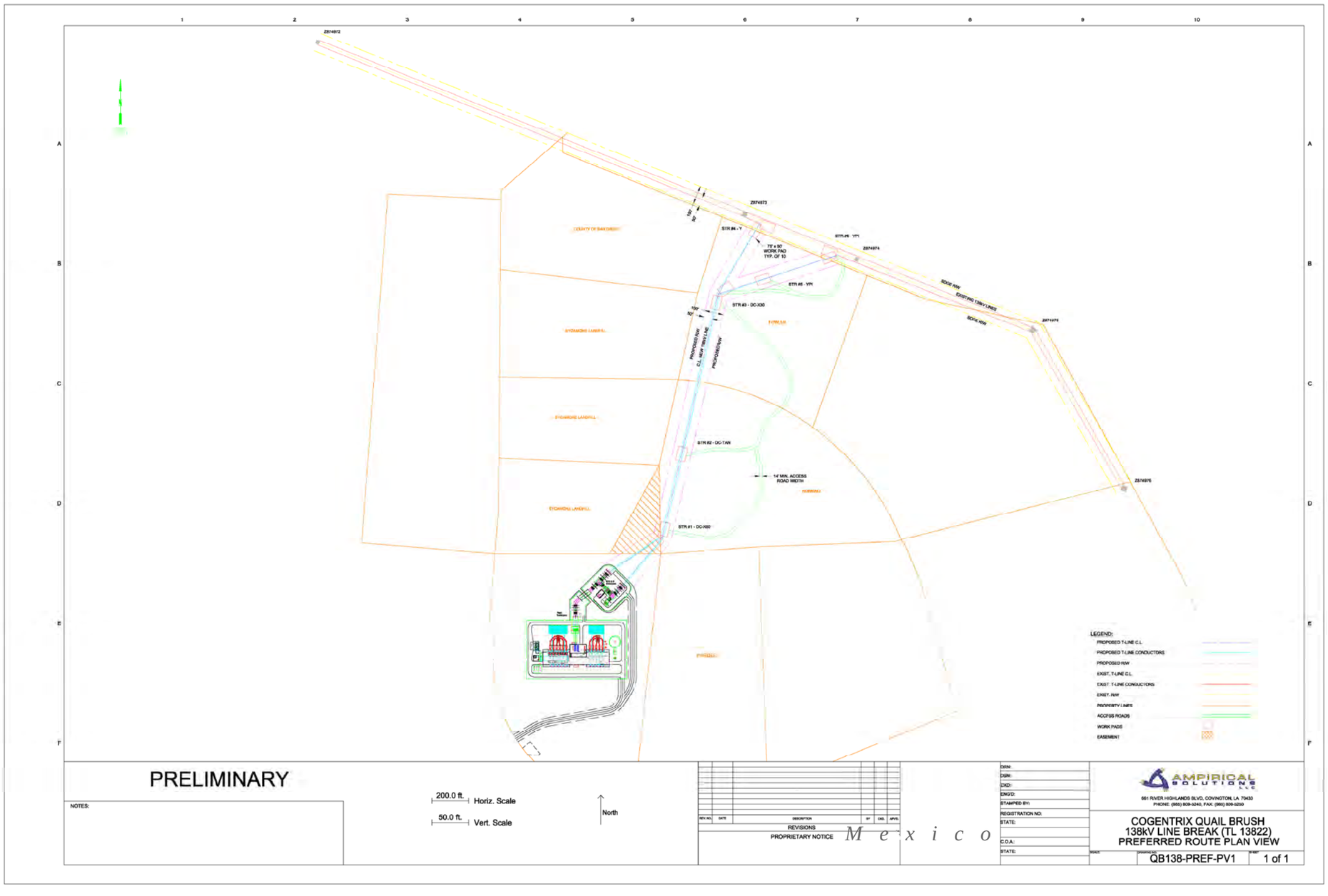
Path: P:\GIS\Projects\4346_QuailBrush\MXD\AFC_Supplement_3\1.1-3_PreferredRoute_PlanView.mxd



PRELIMINARY

NOTES:

200.0 ft. Horiz. Scale

50.0 ft. Vert. Scale

North

REVISIONS

PROPRIETARY NOTICE

M e x i c o

DRN:
DSN:
CKD:
ENG'D:
STAMPED BY:
REGISTRATION NO.
STATE:
C.O.A.:
STATE:

AMPIRICAL SOLUTIONS L.L.C.
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PHONE: (985) 809-0240, FAX: (985) 809-0250

COGENTRIX QUAIL BRUSH
138kV LINE BREAK (TL 13822)
PREFERRED ROUTE PLAN VIEW

SCALE: | DRAWING NO.: QB138-PREF-PV1 | SHEET: 1 of 1

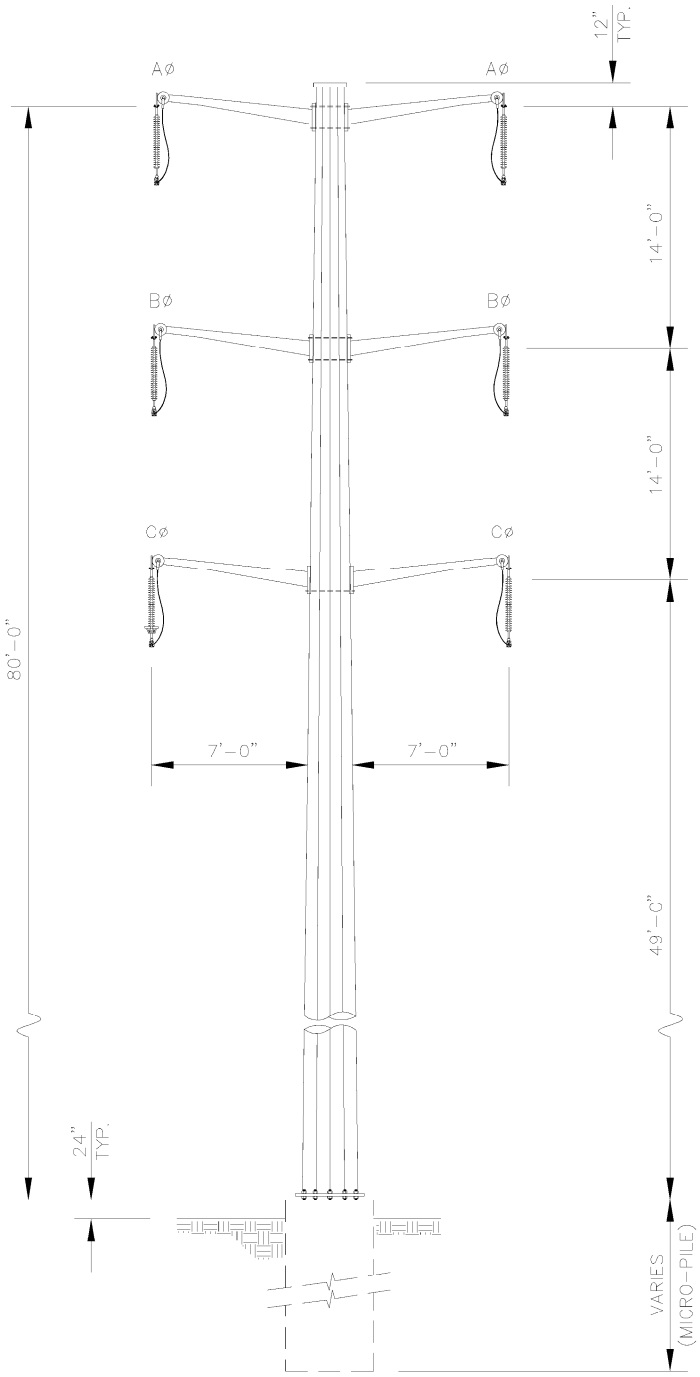
Cogentrix

QUAIL BRUSH GENERATION PROJECT

* THIS FIGURE IS INTENDED TO SUPERSEDE FIGURES 1.1-3 AND 1.1-4 FROM SUPPLEMENT 3 TO THE AFC.

FIGURE 1.1-3B
138 KV LINE BREAK (TL13822)
PREFERRED ROUTE PLAN VIEW

TETRA TECH EC, INC.



NOTE:
ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #1
DC-X TYPE

*This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.

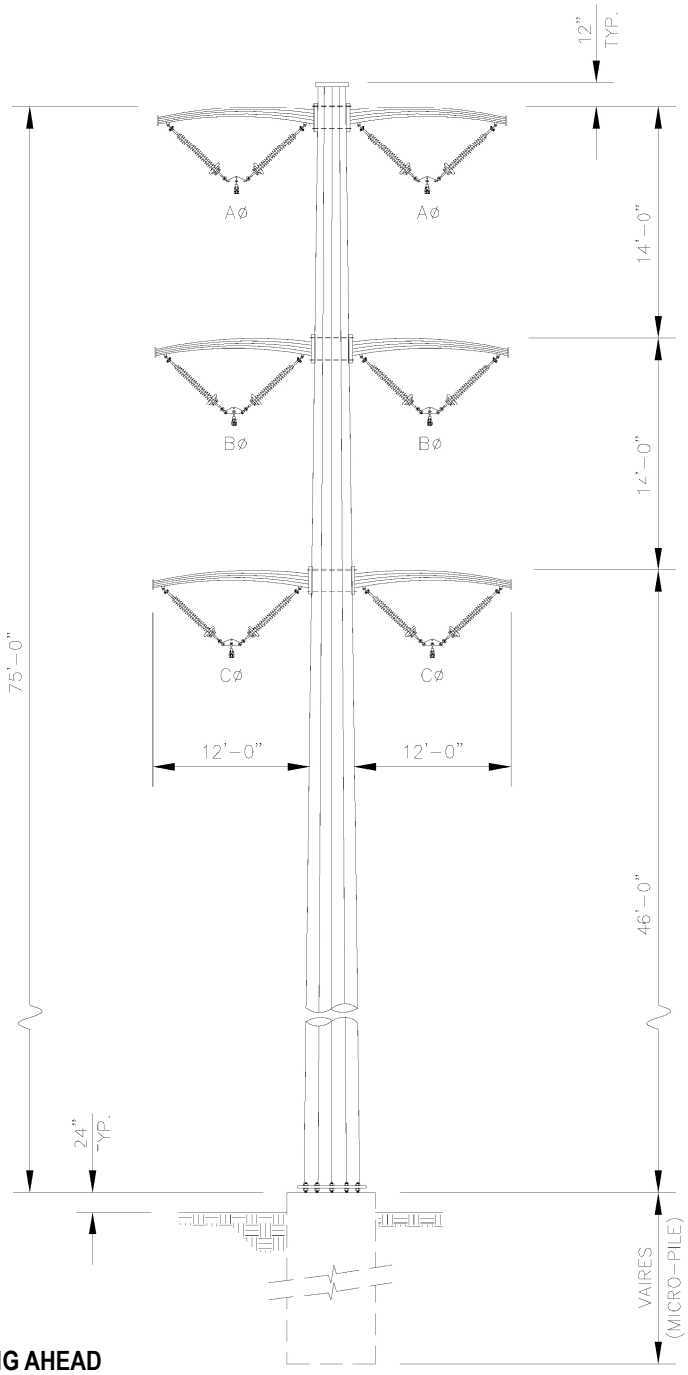
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1A
138 KV LINE BREAK
STR. #1 DC-X TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



NOTE:
ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #2
DC-TANGENT TYPE

*This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.

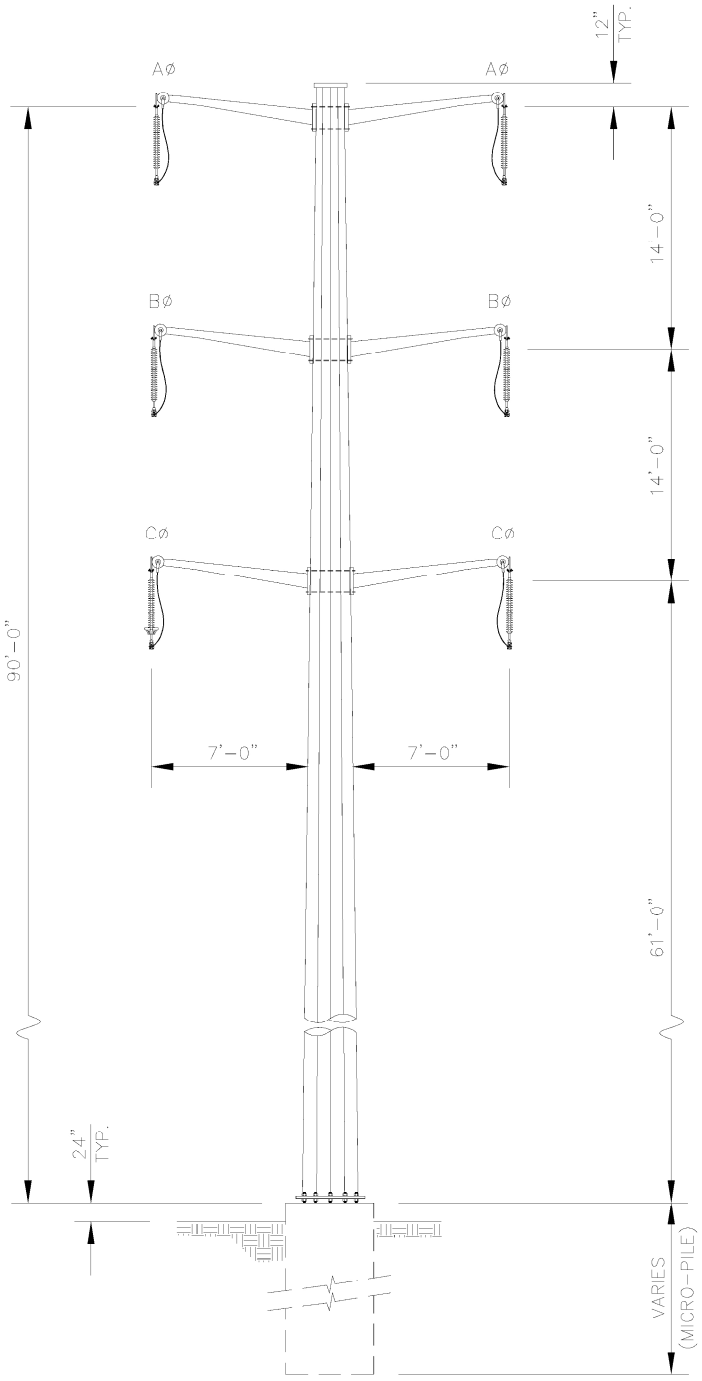
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1B
138 KV LINE BREAK
STR. #2 DC-TANGENT TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



NOTE:

ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #3

DC-X TYPE

***This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.**

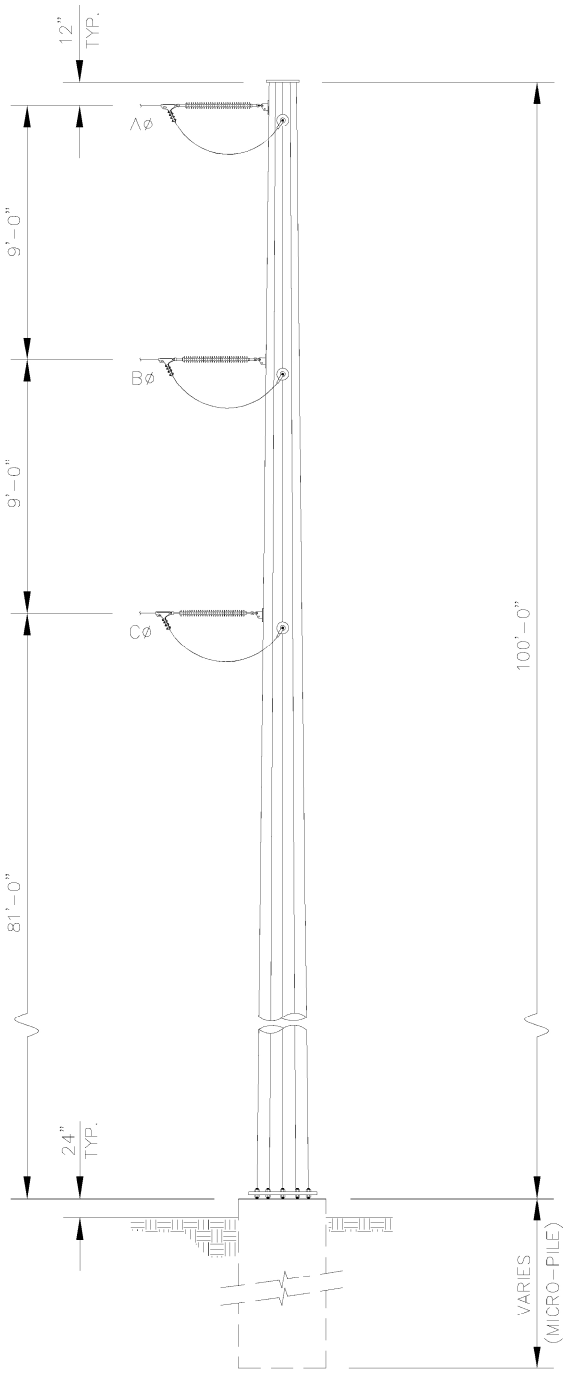
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1C
138 KV LINE BREAK
STR. #3 DC-X TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



NOTE:

ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #4

Y TYPE

***This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.**

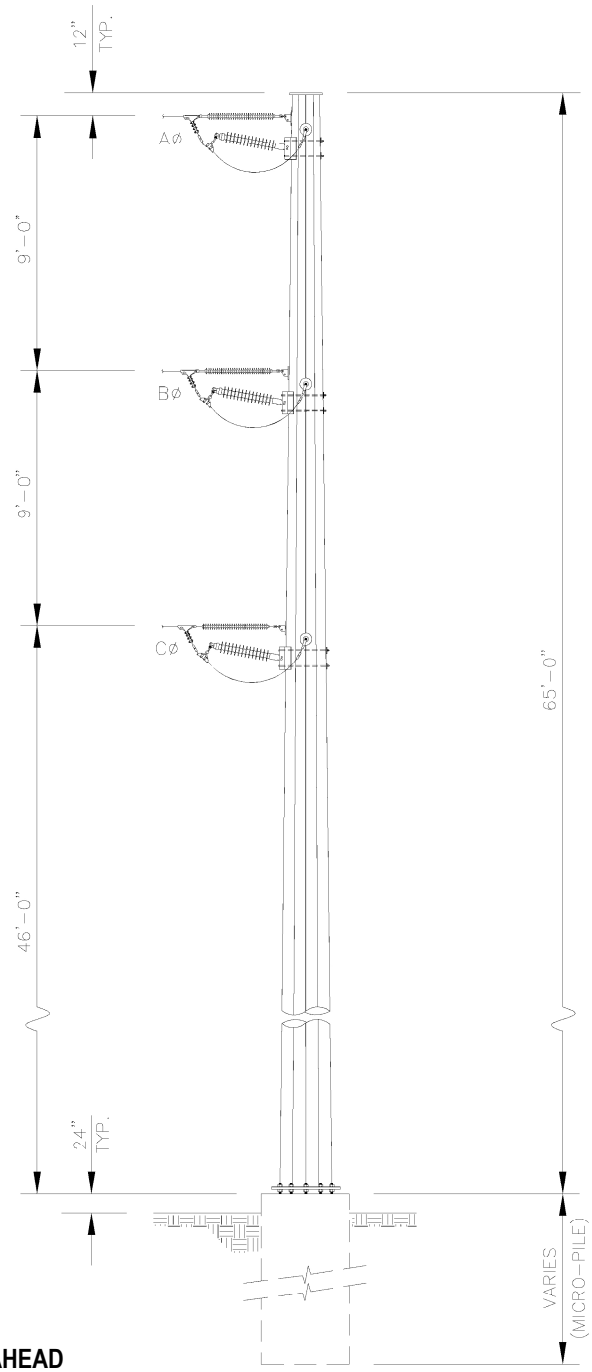
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1D
138 KV LINE BREAK
STR. #4 Y TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



NOTE:
ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #5
YPI TYPE

*This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.

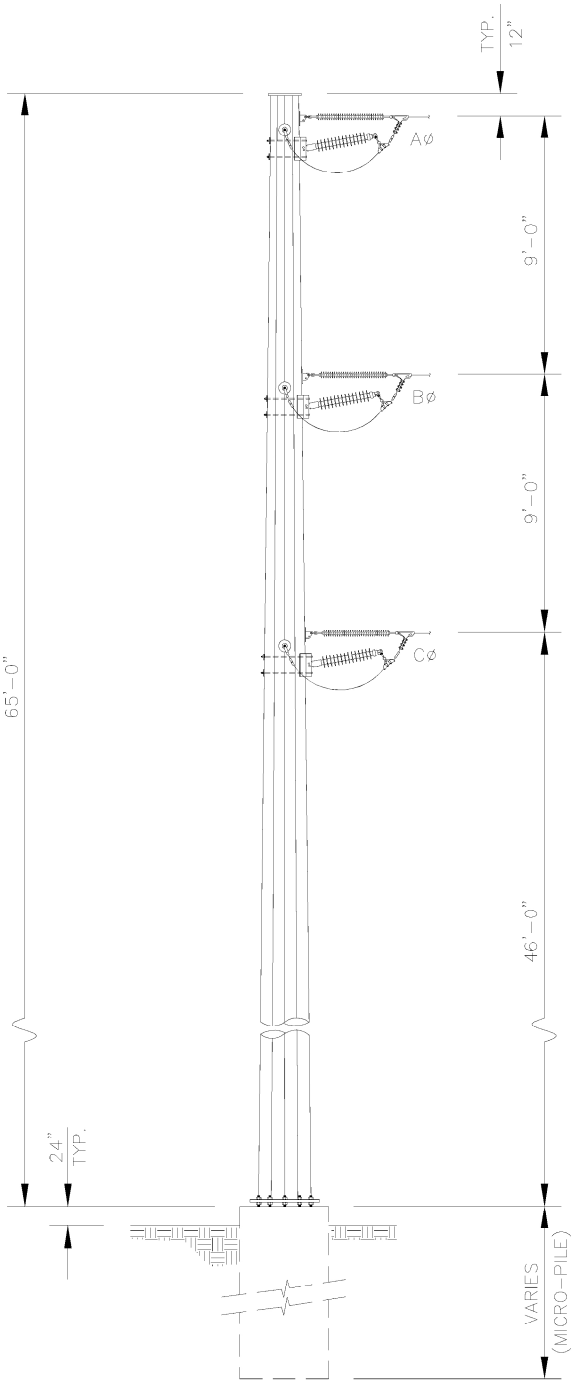
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1E
138 KV LINE BREAK
STR. #5 YPI TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



NOTE:
ALL STR.'S VIEWED LOOKING AHEAD WITH BACK TO SWITCHYARD.

STR. #6
YPI TYPE

*This figure is intended to supersede Figures 2.3-1, 2.3-2, and 2.3-3 from Supplement 3 to the AFC.

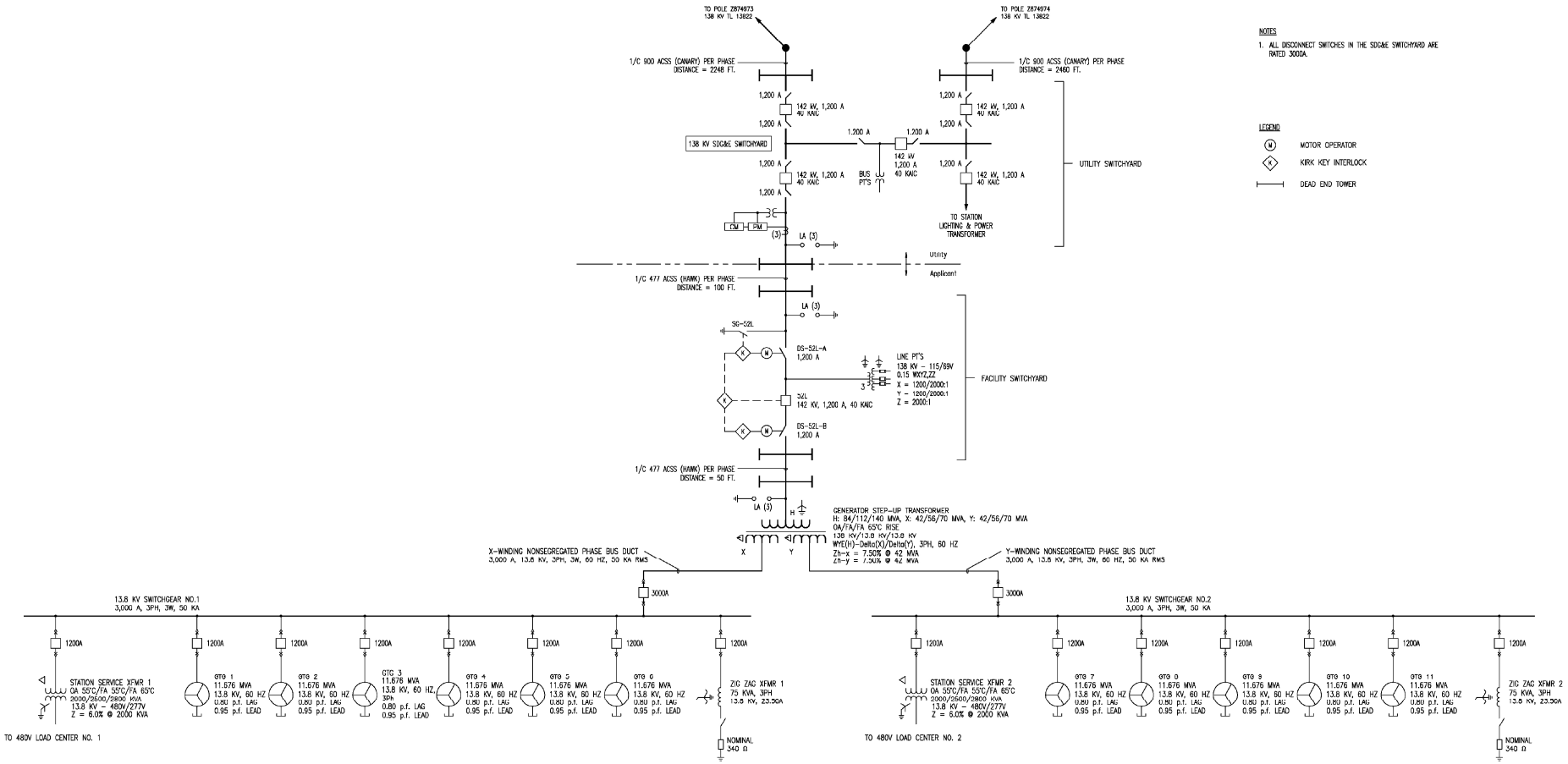
QUAIL BRUSH GENERATION PROJECT

FIGURE 2.3-1F
138 KV LINE BREAK
STR. #6 YPI TYPE

Cogentrix

SOURCE: AMPIRICAL SOLUTIONS, LLC

TETRA TECH EC, INC.



***This exhibit is intended to supersede Exhibit 4 from AFC Supplement 1.**

QUAIL BRUSH GENERATION PROJECT

FIGURE 4A
QUAIL BRUSH KEY ONE-LINE DIAGRAM

Cogentrix

TETRA TECH EC, INC.