PROJECT INFORMATION:

Project Name: **Replace Switch and Repair Underground Electric near B293**

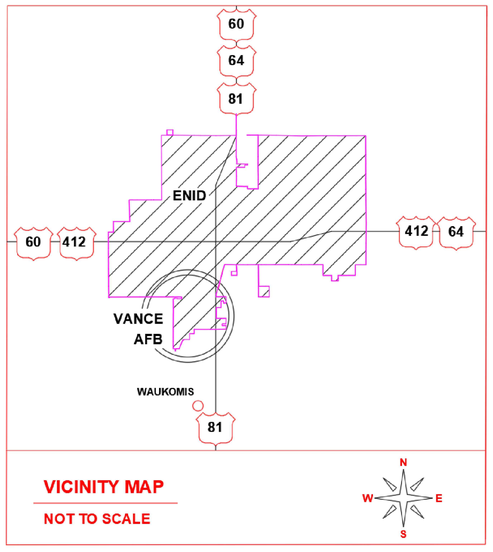
Project No: **XTLF 26-1019**

Project Location: VANCE AFB, ENID OKLAHOMA

Project Status: FOR CONSTRUCTION Issue Date: 30 SEP 2025 G001

RELEVANT CODE DOCUMENTS

DOCUMENT TITLE	
UFC 3-501-01 ELECTRICAL ENGINEERING	2024
UFC 3-550-01 EXTERIOR ELECTRICAL POWER DISTRIBUTION	2016
NFPA 70 - NATIONAL ELECTRIC CODE	2023



VICINITY MAP

NOT TO SCALE

SHEET INDEX

SHEET NUMBER	SHEET NAME	REVISIONS	DATE
G001	TITLE, INDEX & COORDINATION		
G002	PROJECT LOCATION & HAUL ROUTE		
G003	GENERAL NOTES AND LEGENDS		
E101	SWITCH SW4-293 REPLACEMENT LAYOUT AND ONE-LINE		
E102	SWITCH SW4-410 INSTALLATION AND WIRE REPLACEMENT LAYOUT AND ONE-LINE		
E301	DEMOLITION ONE LINE DIAGRAM		
E302	NEW CONSTRUCTION ONE LINE DIAGRAM		
E501	SWITCH DETAILS		

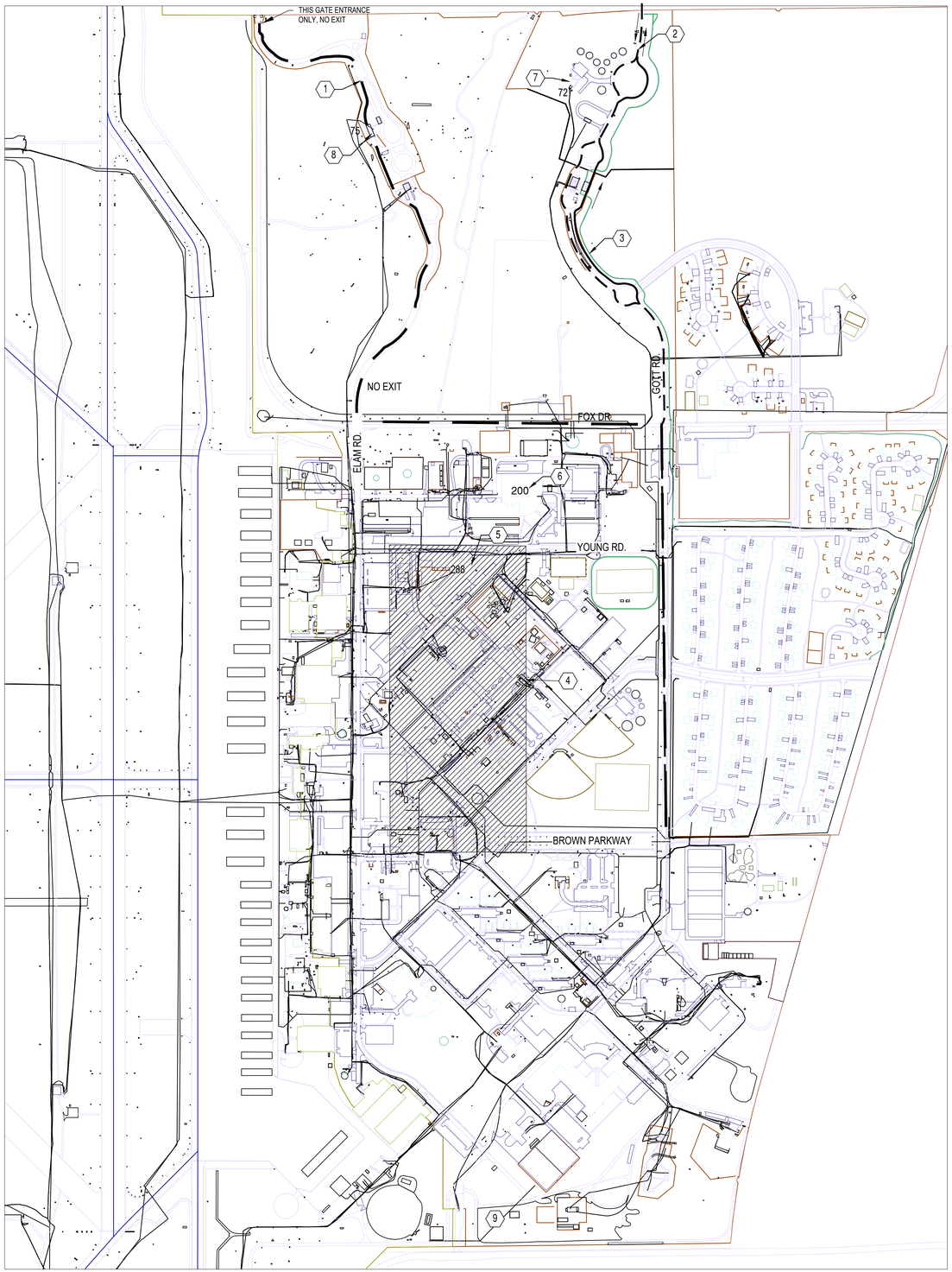
Buy American Act Compliant

EXECUTION OF WORK DESCRIBED WITHIN THIS PLAN SET SHALL BE IAW 48 CFR SUBPART 25.2 - BUY AMERICAN - CONSTRUCTION MATERIALS AND ALL SUBSEQUENT PARTS RELATED TO SUCH REFERENCE.

UNITED STATES AIR FORCE AIR EDUCATION TRAINING COMMAND
VANCE AFB, OKLAHOMA

LICENSED PROFESSIONAL ENGINEER
RYAN SUDLOW
31220
OKLAHOMA
30 SEP 2025

ASRC FEDERAL
Field Services
140 Channel Street, Suite 205
Vance AFB, Oklahoma 73705
(580) 213-7787
Certificate of Authorization# 8716
Expires: June 30, 2026



A G002 LOCATION AND HAUL ROUTE

NTS FOR LOCATION GENERAL REFERENCE ONLY

N

GENERAL NOTES

1. APPROVED HAUL AND ACCESS ROUTES ARE NOTED ON THE PLAN. THE CONTRACTOR SHALL USE ONLY ACCESS ROUTES THAT ARE PREVIOUSLY APPROVED BY CONSTRUCTION MANAGEMENT.
2. CONSTRUCTION MANAGERS OFFICE IS LOCATED ON THE FIRST FLOOR NORTH-WEST CORNER OF BUILDING 288.
3. CONTRACTING IS LOCATED IN BUILDING 500.
4. REFER TO SPECIFICATION SECTION 010000 - GENERAL PROVISIONS FOR BASE ACCESS PROCEDURES AND RULES.

LEGEND

- PROJECT LOCATION
- PRIMARY INDUSTRIAL INSPECTION ENTRY
- SECONDARY BASE ENTRY AND ALL VEHICLE EXIT ROUTE

KEYNOTES

1. PRIMARY HAUL ROUTE.
2. SECONDARY HAUL ROUTE TO BE USED ONLY WHEN PRIMARY ROUTE GATE IS CLOSED.
3. MAIN GATE ENTRANCE ONLY AND ALL VEHICLE EXIT
4. PROJECT LOCATION.
5. FACILITY 288 CIVIL ENGINEERING INCLUDING CONSTRUCTION MANAGEMENT.
6. FACILITY 200 PROCUREMENT.
7. FACILITY 72 VISITOR'S CENTER, USE FOR PASS APPROVAL PRIOR TO BEGINNING WORK.
8. FACILITY 75 COMMERCIAL VEHICLE INSPECTION.
9. LAYDOWN AREA, COORDINATE WITH CONSTRUCTION MANAGER.

71st FLYING TRAINING WING

UNITED STATES AIR FORCE
AIR EDUCATION
TRAINING COMMAND
VANCE AIR FORCE BASE
ENID, OKLAHOMA

ASRC FEDERAL
Field Services
140 Channel St., Suite 205
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(580) 213-7772
CA# 8716 EXPIRES
JUNE 30, 2026

Revision Number	Description	Date

LICENSED PROFESSIONAL ENGINEER
RYAN SUDLOW
31220
OKLAHOMA
30 SEPTEMBER 2025

DRAWN BY: RLS CHECKED BY: RLS

PROJECT NO.: XTLF 26-1019

DATE: 30 SEP 2025

DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

PROJECT LOCATION & HAUL ROUTE

G002

1 1/2"(ACTUAL SIZE)

DRAWING SIZE INTENDED TO BE 24" x 36"

LEGEND

NEW PRIMARY

- EU — ELEC. PRIMARY UNDERGROUND (U/G)
- PAD MOUNTED TRANSFORMER (T)
- SW — PAD MOUNTED SWITCH (SW)
- S — SECTIONALIZER (PAD MOUNTED JUNCTION BOX)
- DIRECTIONAL BORE
- CUT & REPLACE CONCRETE

EXISTING

- ELECTRICAL PRIMARY U/G
- ELECTRICAL SECONDARY (U/G)
- G_x — NATURAL GAS LINE
- SS_x — SEWER LINE
- SD_x — STORM DRAIN LINE
- COMM LINE
- EXISTING FACILITY
- PAVED SURFACE
- PAD MOUNTED TRANSFORMER
- LIGHT POLE
- Em — ELECTRIC MANHOLE
- Eh — ELECTRIC HANDHOLE
- Ej — ELECTRIC JUNCTION BOX
- ES — ELECTRIC SUBSTATION
- SW — ELECTRIC SWITCH
- ELECTRIC CAPACITOR
- ELECTRIC SECTIONALIZER
- m — ELECTRIC METER
- ELECTRIC POLE
- G — GENERATOR
- GV — GIANT VOICE TOWER
- EP — CATHODIC PROTECTION RECTIFIER
- TREE

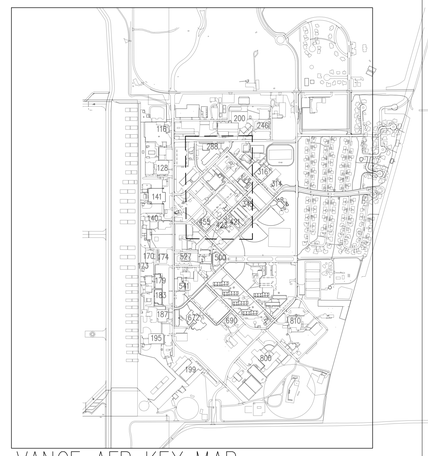
A G003 EXISTING UTILITIES
1" = 100'

N

0 100' 200'
SCALE: 1" = 100'

OVERALL PROJECT GENERAL NOTES

1. SECTIONS OF THE NEW DISTRIBUTION SYSTEM ARE TO BE IN PLACE AND FULLY TESTED ACCORDING TO THE PROJECT SPECIFICATIONS PRIOR TO DEMOLITION OF THE EXISTING DISTRIBUTION SYSTEM TO BE REPLACED.
2. PROVIDE A 21 DAY NOTICE INCLUDING A LIST OF AFFECTED FACILITIES AND AREAS TO VANCE AFB CONSTRUCTION MANAGEMENT PRIOR TO ELECTRICAL SERVICE DISCONNECTS OR DISRUPTIONS.
3. EXISTING UTILITIES WERE TAKEN INTO CONSIDERATION DURING THE DESIGN PROCESS HOWEVER FOR CLARITY ONLY EXISTING AND PROPOSED ELECTRICAL LINES ARE SHOWN ON THE FOLLOWING PLAN SHEETS. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO CONTACT APPROPRIATE AGENCIES TO LOCATE ALL UNDERGROUND UTILITIES AND LOCATIONS PRIOR TO DIGGING.
4. DURING THE DURATION OF THIS PROJECT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN MARKINGS AND FLAGS FOR EXISTING UTILITY LOCATIONS AND TO NOTIFY CONSTRUCTION MANAGEMENT PRIOR TO ANY CUTTING OR DISTURBANCE OF EXISTING UTILITIES.
5. UNLESS INDICATED ON PLANS, ALL OPEN TRENCHING OF ROADWAYS AND PARKING AREAS MUST BE APPROVED BY BASE CIVIL ENGINEERING. OPEN TRENCHING OR ROADWAY CUTS WILL NOT BE PERMITTED FOR CROSSING OF WHITTINGTON RD. .
6. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS.
7. THE CONTRACTOR SHALL RESTORE SOD IN ALL DISTURBED TURF AREAS.
8. ALL WASTE PRODUCTS EXCEPT HAZARDOUS WASTE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OFF SITE IN ACCORDANCE WITH THE SPECIFICATIONS. HAZARDOUS WASTE DISPOSAL SHALL BE COORDINATED THROUGH THE CONSTRUCTION MANAGER.
9. ALL EQUIPMENT IS TO BE PROVIDED NEW UNLESS NOTED OTHERWISE.
10. THE LOCATION OF PROPOSED SWITCHGEAR AND SECTIONALIZERS MAY BE ADJUSTED TO AVOID CONFLICTS AS REQUIRED, FOLLOWING APPROVAL BY THE ENGINEER AND CONSTRUCTION MANAGER.
11. INTERCEPTION LOCATIONS OF EXISTING UNDERGROUND PRIMARY AND SECONDARY MAY BE ADJUSTED TO AVOID CONFLICTS AS REQUIRED, FOLLOWING APPROVAL BY THE ENGINEER AND CONSTRUCTION INSPECTION MANAGER.
12. BASIS OF DESIGN FOR THE EQUIPMENT IN THIS PROJECT IS AS FOLLOWS:
    12.1. EATON'S COOPER POWER: VFI UNDERGROUND DISTRIBUTION SWITCHGEAR, SINGLE AND THREE PHASE SECTIONALIZING CABINETS, SINGLE AND THREE PHASE PAD MOUNTED COMPARTMENTAL TYPE TRANSFORMERS, METAL ENCLOSED, PAD MOUNTED CAPACITOR BANKS.



VANCE AFB KEY MAP
NOT TO SCALE

CONCRETE GENERAL NOTES

1. DESIGN IS IN ACCORDANCE WITH THE FOLLOWING DOCUMENTS:
   - UFC 1-200-01 DOD BUILDING GUIDE
   - UFC 1-200-02 HIGH PERFORMANCE AND SUSTAINABLE BUILDING REQUIREMENTS
   - UFC 3-201-01 CIVIL ENGINEERING
   - UFC 3-301-01-2013-C4 STRUCTURAL ENGINEERING.
   - UFC 3-220-01 GEOTECHNICAL ENGINEERING
   - UFC 3-260-01 SAFETY AND SECURITY
   - UFC 4-010-01 DOD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS
   - UFC 4-020-01-2008 DOD SECURITY ENGINEERING FACILITIES PLANNING MANUAL.
   - AMERICAN SOCIETY OF CIVIL ENGINEERS, ASCE 7-16, PROVISIONS AND COMMENTARY.
   - AMERICAN CONCRETE INSTITUTE, ACI 318-08.
2. VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS PRIOR TO STARTING CONSTRUCTION. NOTIFY THE ENGINEER IF ANY DISCREPANCIES OR INCONSISTENCIES ARE FOUND.
3. SUBMITTALS SHALL CONFORM TO REQUIREMENTS OF CONTRACT DOCUMENTS AND SHALL BE CHECKED BY THE CONSTRUCTION CONTRACTOR'S QUALITY CONTROL REPRESENTATIVE PERSON TO SUBMISSION TO CONSTRUCTION MANAGER.
4. COORDINATE ALL DIMENSIONS WITH OTHER SECTIONS OF THIS PLAN SET. NOTIFY CONSTRUCTION MANAGER OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
5. PROJECT SPECIFICATIONS ARE PART OF THE CONSTRUCTION DOCUMENT AND ARE TO BE USED IN CONJUNCTION WITH THE DRAWINGS.
6. VERIFY ALL CONDITIONS, EXISTING AND NEW, SHOWN ON THE CONSTRUCTION DOCUMENTS PRIOR TO PROCEEDING WITH WORK. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER. AFFS IS NOT RESPONSIBLE FOR WORK DONE IN THESE AREAS WITHOUT CLARIFICATION IN WRITING FROM THE CONSTRUCTION MANAGER.
7. ALL PHASES OF CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS OF THE BUILDING CODES NOTED ON THIS SHEET.
8. DIMENSIONS SHOWN ON CONSTRUCTION DOCUMENTS TAKE PRIORITY OVER SCALED DIMENSIONS. IN SOME CASES, PLANS AND DETAILS MAY NOT BE DRAWN TO SCALE FOR CLARITY.
9. DO NOT LOAD THE CONCRETE SLAB-ON-GRADE WITH EQUIPMENT UNTIL SUFFICIENT CONCRETE STRENGTH HAS BEEN OBTAINED AND VERIFIED BY TESTING.
10. THIS PLAN SECTION TO BE USED IN CONJUNCTION WITH THE OTHER SECTION FOR THIS PROJECT. CONTRACTOR RESPONSIBLE FOR IMPLEMENTING THE INFORMATION SHOWN ON ALL REFERENCED PLANS.
11. CONTRACTOR IS RESPONSIBLE FOR MEANS AND METHODS OF DEMOLITION AND CONSTRUCTION. THE CONSTRUCTION SEQUENCE SHOULD NOT IMPACT THE FINAL DESIGN SHOWN ON THESE DOCUMENTS AND APPROVED SUBMITTALS.

GENERAL CAST-IN-PLACE CONCRETE NOTES

1. ALL CONCRETE WORK SHALL CONFORM TO THE CURRENT ACI 318 BUILDING CODE AND COMMENTARY. REFER TO PROJECT SPECIFICATIONS SECTION 03 30 00 CAST-IN-PLACE CONCRETE FOR ADDITIONAL INFORMATION.
2. CONCRETE SLAB SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28-DAYS.
3. FORMWORK TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 347 SPECIFICATIONS.
4. CONCRETE SHALL BE PROPORTIONED SUCH THAT THE WATER-CEMENT RATIO (BY WEIGHT) DOES NOT EXCEED 0.5. CONCRETE MUST CONTAIN A MINIMUM OF SIX SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
5. CEMENT MUST BE PORTLAND CEMENT IN ACCORDANCE WITH ASTM C150, TYPE I/II OR TYPE III.
6. AGGREGATES SHALL BE GRADED IN ACCORDANCE WITH ASTM C33 SPECIFICATIONS. COURSE AGGREGATE SHALL BE NO GREATER THAN 3/4" NOMINAL DIAMETER. FINE AGGREGATE SHALL BE NATURAL SAND FREE FROM MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.
7. WATER SHALL BE IN ACCORDANCE WITH ASTM C94 AND POTABLE.
8. AIR CONTENT SHALL BE BETWEEN 5% AND 7% (BY VOLUME).
9. ADMIXTURES ARE ALLOWED.
10. CURING SHALL BE ACCOMPLISHED BY WET CURING OR APPLICATION OF TYPE 2 MEMBRANE.
11. REINFORCING STEEL SHALL BE DEFORMED, NEW BILLET BARS PER ASTM A615 SPECIFICATIONS AND MEET GRADE 60 REQUIREMENTS.
12. FABRICATION OF REINFORCING STEEL SHALL BE CHAPTER 7 OF THE CONCRETE REINFORCING STANDARDS INSTITUTE MANUAL FOR STANDARD PRACTICE.
13. REINFORCING STEEL SHALL BE BLOCKED AND TIED TO PROPER LOCATION AND SECURELY WIRED AGAINST DISPLACEMENT. TIE WIRES SHALL BE INSTALLED AT EVERY OTHER BAR INTERSECTION SO THAT AT LEAST 50% OF THE INTERSECTIONS ARE TIED IN THE FOOTINGS AND SLABS. TACK WELDING OF REINFORCING IS PROHIBITED.
14. ALL REINFORCING SHALL BE CONTINUOUS. LAP REINFORCING BARS FOR A MINIMUM LENGTH OF 40 TIMES THE BAR DIAMETER. ALTERNATE SPLICE LOCATIONS WHERE POSSIBLE. LAPS IN VERTICAL BARS IN WALL ARE ALLOWED AT THE BOTTOM AND AT THE MID WALL HEIGHT. ALTERNATE SPLICE LOCATIONS.
15. MINIMUM CONCRETE REINFORCING SHALL BE AS FOLLOWS:
    a. 3" CLEAR WHEN CONCRETE IS AGAINST EARTH OR GRADE.
    b. 2" AT ALL OTHER LOCATIONS.
16. DO NOT WORK ON NEW SLAB UNTIL CONCRETE HAS REACHED SUFFICIENT STRENGTH, AS DETERMINED BY CONCRETE STRENGTH TESTS TO SUPPORT NEW EQUIPMENT.

SLAB PREPARATION

1. PREPARE SOIL IN ACCORDANCE WITH PLANS AND PROJECT SPECIFICATIONS SECTION 31 00 00 EARTH MOVING.
2. DESIGN FROST DEPTH: 22 INCHES (PER UFC 3-301-01 TABLE E-2).
3. REMOVE FREE WATER FROM EXCAVATIONS AND DRY OUT BEFORE PLACING CONCRETE.
4. DESIGN BEARING PRESSURE IS 2000 PSF FOR SLAB BEARING ON ODOT TYPE "A" AGGREGATE BASE COMPACTED TO 95% ASTM D-1557 DENSITY. ALLOWABLE BEARING PRESSURE TO BE DETERMINED BY PROFESSIONAL GEOTECHNICAL ENGINEER.
5. GEOTEXTILE SEPARATION FABRIC SHALL HAVE PROPERTIES EQUIVALENT TO HEAVY DUTY WOVEN FABRICS SUCH AS MIRAFI RS600 OR TERRATEX HPG-57.
6. FLOOR SLAB REINFORCING SHALL BE SUPPORTED AT 24"ON CENTER SPACING BY FLAT BOTTOMED CHAIRS OR CONCRETE BRIQUETTES OF 4000 PSI CONCRETE.

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Revision Number	Description	Date

LICENSED PROFESSIONAL ENGINEER
RYAN SUDLOW
31220
OKLAHOMA
30 SEPTEMBER 2025

DRAWN BY: RLS CHECKED BY: RLS
PROJECT NO.: XTLF 26-1019
DATE: 30 SEP 2025
DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

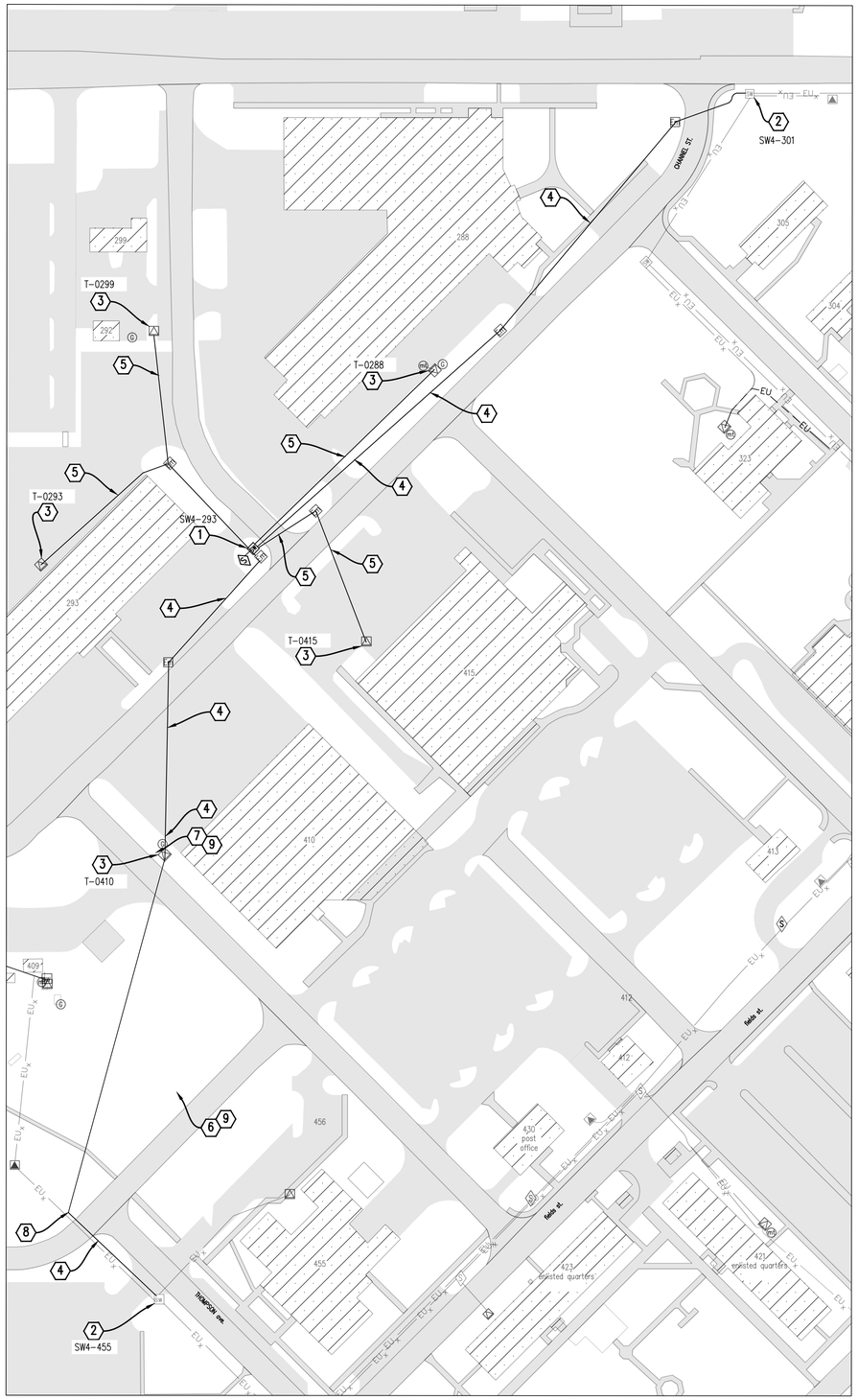
GENERAL NOTES AND LEGENDS

3

G003

1 1/2"(ACTUAL SIZE)

DRAWING SIZE INTENDED TO BE 24" x 36"



A E101 SWITCH 293 REPLACEMENT LAYOUT

1" = 75'

N

0 75 150'

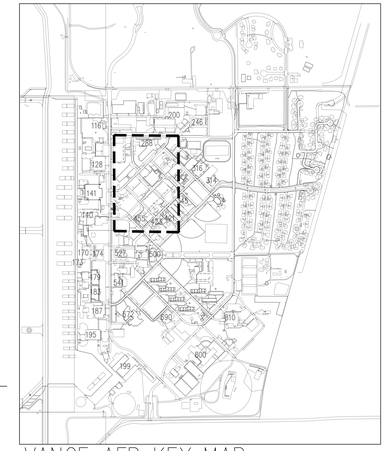
SCALE: 1" = 75'

GENERAL NOTES

1. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND/ OR 600A SECTIONALIZERS SHALL BE 250 MCM CU 15KV CABLE..
2. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND TRANSFORMERS SHALL BE #2AWG CU 15KV CABLE.
3. NEW CONDUIT SHALL BE 5-IN SCHEDULE 40 PVC CONDUIT FOR OPEN TRENCH INSTALLATION OR 5-IN SDR9 HDPE PIPE FOR HORIZONTAL DIRECTIONAL DRILL INSTALLATION.
4. MATCH CONDUIT SIZE WHEN CONNECTING TO EXISTING CONDUIT.
5. ALL CONDUIT INSTALLED IN THIS PROJECT SHALL HAVE A MINIMUM OF AT LEAST ONE SPARE EMPTY CONDUIT INSTALLED OF THE SAME SIZE, CONNECTING TO THE SAME EQUIPMENT. PULL STRING SHALL BE INCLUDED IN ALL SPARE DUCTS.
6. SWITCHES AND SECTIONALIZERS DEMOLISHED IN THE COURSE OF THIS PROJECT REMAIN PROPERTY OF THE GOVERNMENT AND ARE TO BE TURNED IN TO ASRC CONSTRUCTION MANAGER.
7. OUTAGES TO BUILDINGS TO BE PLANNED AND SCHEDULED TO MINIMIZE OUTAGE LENGTH AND IMPACT TO BASE OPERATIONS.

KEYNOTES

1. NEW COOPER 15KV TYPE 6W2 PAD MOUNTED SWITCH SW4-293
2. EXISTING PAD MOUNTED SWITCH
3. EXISTING TRANSFORMER
4. EXISTING 250MCM CU CABLE IN EXISTING CONDUIT
5. EXISTING 15KV #2AWG CU CABLE IN EXISTING CONDUIT
6. EXISTING MANHOLE
7. EXISTING SECTIONALIZER
8. INTERCEPT EXISTING CONDUIT AND CONNECT NEW CONDUIT
9. NEW 2X1 5-IN SCH 40 PVC CONDUIT DUCT BANK
10. HORIZONTAL DIRECTIONAL DRILL DUCT WITH 2X1 5-IN SDR9 HDPE PIPE.
11. EXISTING PAD MOUNTED SWITCH
12. DEMOLISH EXISTING ELECTRICAL DUCT BANK AFTER POWER RE-ROUTED

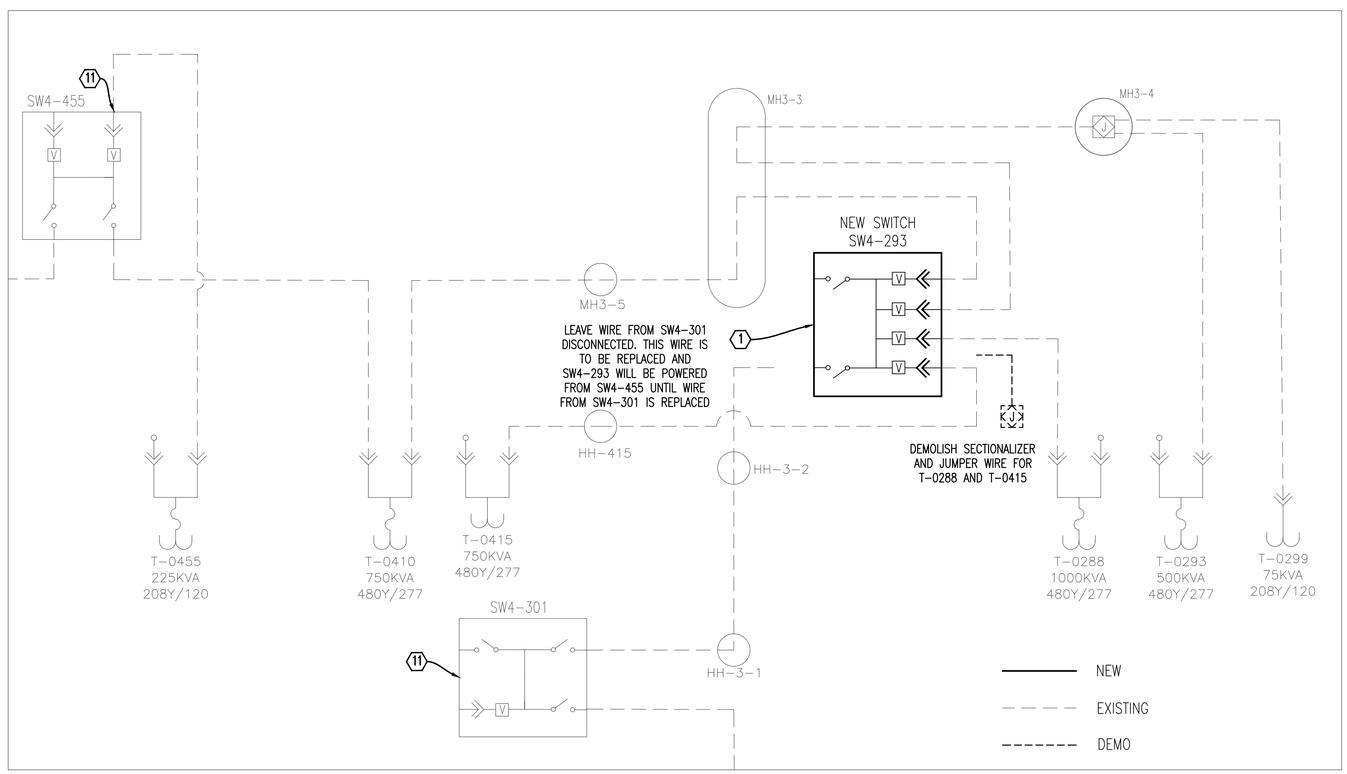


VANCE AFB KEY MAP

NOT TO SCALE

RECOMMENDED SEQUENCE OF OPERATION FOR SWITCH SW4-293 REPLACEMENT

1. ENSURE EQUIPMENT PAD AT SW4-293 IS READY FOR NEW TYPE 6W2 SWITCH TO BE INSTALLED.
2. PARK CABLES TO SWITCH SW4-0293 IN T-0410. MINIMIZE OUTAGE TIMES ON T-0410 IF TRANSFORMER TURNED OFF TO PARK CABLES.
3. TAKE OUTAGE ON SW4-0293 BY SHUTTING OFF AT SWITCH SW4-301.
4. REMOVE ALL CONNECTIONS FROM EXISTING SWITCH SW4-293.
5. REMOVE EXISTING SWITCH SW4-293.
6. RE-WORK CABLES FROM T-0410 BY REMOVING STRESS CONE AND INSTALL 200A LOAD BREAK ELBOWS.
7. RE-WORK CABLES TO T-0292, T-0293, T-299 BY REMOVING STRESS CONE AND INSTALL 200A LOAD BREAK ELBOWS.
8. REMOVE LOAD BREAK ELBOWS FOR T-0288 AND T-0415 FROM SECTIONALIZER BUSHINGS ADJACENT TO SWTICH AND PULL BACK TO SWITCH VAULT
9. REMOVE JUMPER CABLES FROM SWITCH TO SECTIONALIZER.
10. SET NEW TYPE 6W2 SWITCH SW4-293
11. CONNECT CABLES FROM T-0410 TO 200A VFI TAP ON SW4-293
12. CONNECT CABLES FROM T-0288 TO 200A VFI TAP ON SW4-293
13. CONNECT CABLES FROM T-0415 TO 200A VFI TAP ON SW4-293
14. CONNECT CABLES FROM T-0292, T-0293, T-0299 TO 200A VFI TAP ON SW4-293
15. UN-PARK CABLES TO SW4-293 AT TRANSFORMER T-0410
16. RESTORE POWER TO SW4-293 BY CLOSING VFI TAP FROM T-0410
17. RESTORE POWER TO THE OTHER BUILDINGS CONNECTED BY CLOSING THEIR RESPECTIVE VFI TAPS.
18. REPLACEMENT OF FEEDER CABLES TO TRANSFORMERS AND INSTALLATION OF NEW SWITCH SW4-410 TO BE SCHEDULED WITH CONSTRUCTION MANAGER. OUTAGES TO BE SCHEDULED SUCH THAT THEY MINIMIZE IMPACT TO BUILDING OPERATIONS.



B E101 SWITCH 293 REPLACEMENT ONE-LINE DIAGRAM

NOT TO SCALE

UNITED STATES AIR FORCE
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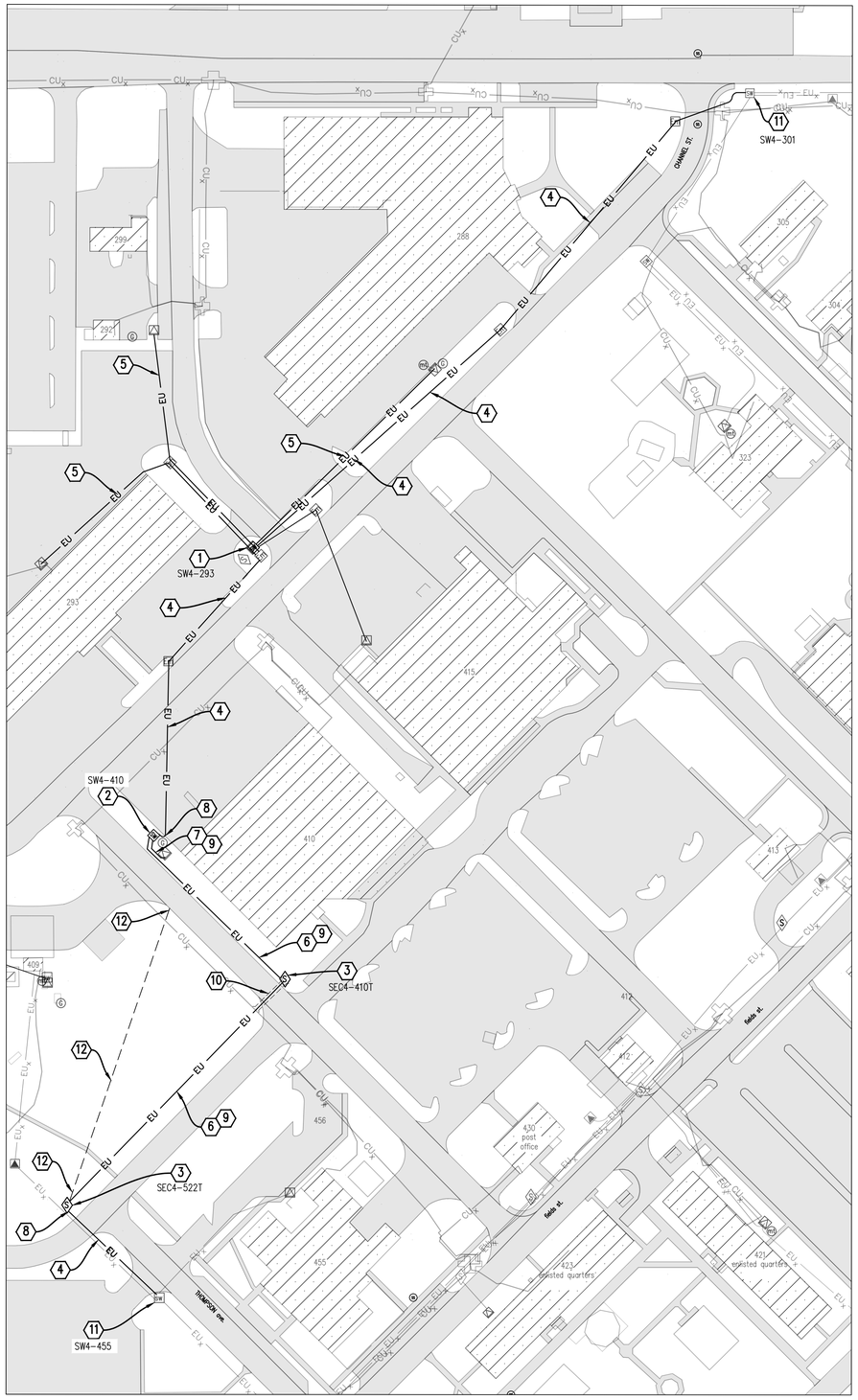
DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

SWITCH SW4-293 REPLACEMENT LAYOUT AND ONE-LINE

E101



A E102 SWITCH 293 REPLACEMENT LAYOUT

1" = 75'

N

0 75 150'

SCALE: 1" = 75'

GENERAL NOTES

1. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND/ OR 600A SECTIONALIZERS SHALL BE 250 MCM CU 15KV CABLE..
2. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND TRANSFORMERS SHALL BE #2AWG CU 15KV CABLE.
3. NEW CONDUIT SHALL BE 5–IN SCHEDULE 40 PVC CONDUIT FOR OPEN TRENCH INSTALLATION OR 5–IN SDR9 HDPE PIPE FOR HORIZONTAL DIRECTIONAL DRILL INSTALLATION.
4. MATCH CONDUIT SIZE WHEN CONNECTING TO EXISTING CONDUIT.
5. ALL CONDUIT INSTALLED IN THIS PROJECT SHALL HAVE A MINIMUM OF AT LEAST ONE SPARE EMPTY CONDUIT INSTALLED OF THE SAME SIZE, CONNECTING TO THE SAME EQUIPMENT. PULL STRING SHALL BE INCLUDED IN ALL SPARE DUCTS.

KEYNOTES

1. NEW COOPER 15KV TYPE 6W2 PAD MOUNTED SWITCH SW4–293
2. NEW COOPER 15KV TYPE 9 PAD MOUNTED SWITCH SW4–410
3. NEW COOPER 15KV 600A 4WAY 3ϕ SECTIONALIZER
4. NEW 15KV 250MCM CU CABLE IN EXISTING CONDUIT
5. NEW 15KV #2AWG CU CABLE IN EXISTING CONDUIT
6. NEW 15KV 250MCM CU CABLE IN NEW CONDUIT
7. NEW 15KV #2AWG CU CABLE IN NEW CONDUIT
8. INTERCEPT EXISTING CONDUIT AND CONNECT NEW CONDUIT
9. NEW 2X1 5–IN SCH 40 PVC CONDUIT DUCT BANK
10. HORIZONTAL DIRECTIONAL DRILL DUCT WITH 2X1 5–IN SDR9 HDPE PIPE.
11. EXISTING PAD MOUNTED SWITCH
12. DEMOLISH EXISTING ELECTRICAL DUCT BANK AFTER POWER RE–ROUTED

RECOMMENDED SEQUENCE OF OPERATION

1. ENSURE EQUIPMENT PAD AT SW4–293 IS READY FOR NEW TYPE 6W2 SWITCH TO BE INSTALLED.
2. PARK CABLES TO SWITCH SW4–0293 IN T–0410. MINIMIZE OUTAGE TIMES ON T–0410 IF TRANSFORMER TURNED OFF TO PARK CABLES.
3. TAKE OUTAGE ON SW4–0293 BY SHUTTING OFF AT SWITCH SW4–301.
4. REMOVE ALL CONNECTIONS FROM EXISTING SWITCH SW4–293.
5. REMOVE EXISTING SWITCH SW4–293.
6. RE–WORK CABLES FROM T–0410 BY REMOVING STRESS CONE AND INSTALL 200A LOAD BREAK ELBOWS.
7. RE–WORK CABLES TO T–0292, T–0293, T–299 BY REMOVING STRESS CONE AND INSTALL 200A LOAD BREAK ELBOWS.
8. REMOVE LOAD BREAK ELBOWS FOR T–0288 AND T–0415 FROM SECTIONALIZER BUSHINGS ADJACENT TO SWTICH AND PULL BACK TO SWITCH VAULT
9. REMOVE JUMPER CABLES FROM SWITCH TO SECTIONALIZER.
10. SET NEW TYPE 6W2 SWITCH SW4–293
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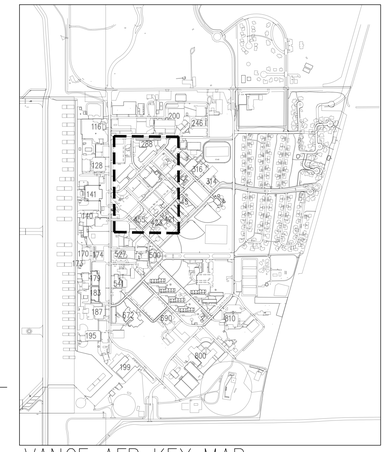
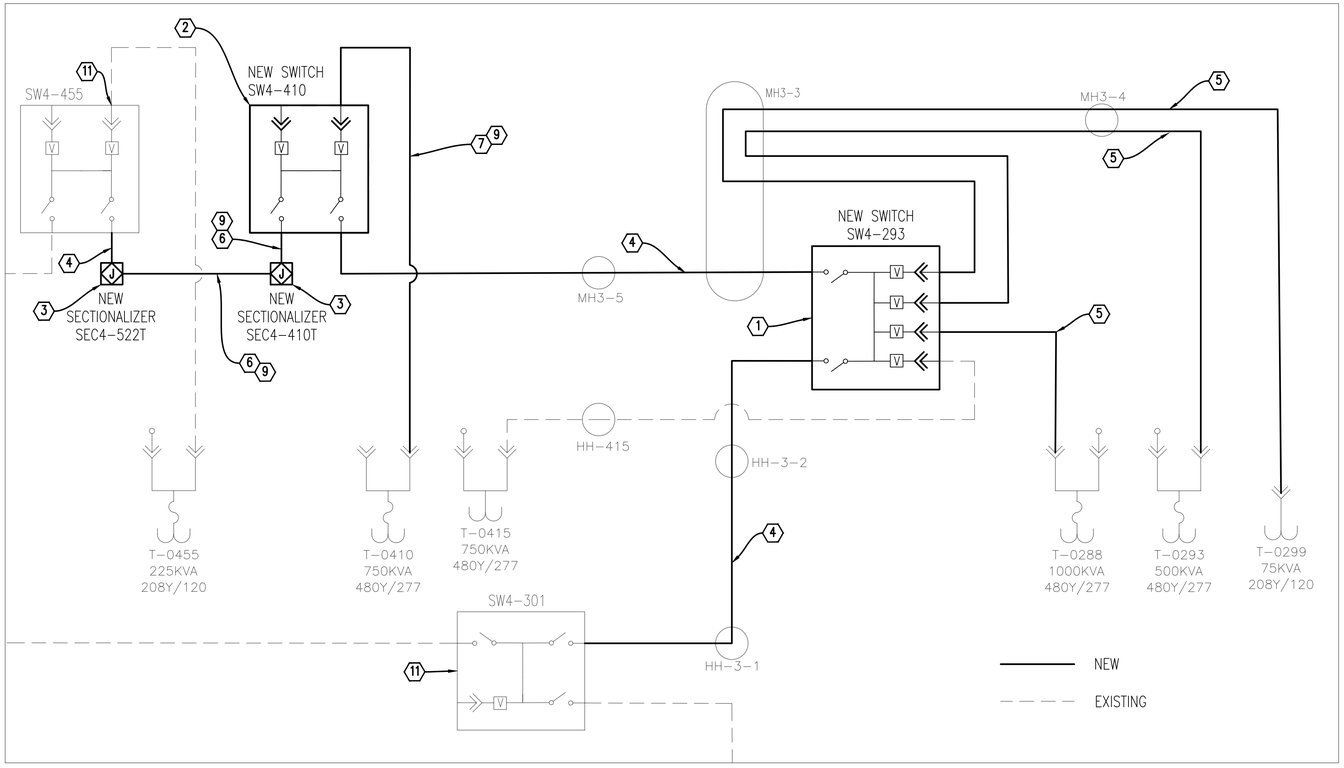
13. CONNECT CABLES FROM T–0415 TO 200A VFI TAP ON SW4–293
14. CONNECT CABLES FROM T–0292, T–0293, T–0299 TO 200A VFI TAP ON SW4–293
15. UN–PARK CABLES TO SW4–293 AT TRANSFORMER T–0410
16. RESTORE POWER TO SW4–293 BY CLOSING VFI TAP FROM T–0410
17. RESTORE POWER TO TEH OTHER BUILDINGS CONNECTED BY CLOSING THEIR RESPECTIVE VFI TAPS.
18. REPLACEMENT OF INDIVIDUAL FEEDER CABLES TO TRANSFORMERS TO BE SCHEDULED WITH CONSTRUCTION MANAGER. OUTAGES TO BE SCHEDULED SUCH THAT THEY MINIMIZE IMPACT TO BUILDING OPERATIONS.



VANCE AFB KEY MAP

NOT TO SCALE



B E102 SWITCH SW4–410 INSTALLATION AND WIRE REPLACEMENT ONE–LINE DIAGRAM

NOT TO SCALE

UNITED STATES AIR FORCE
AIR EDUCATION
TRAINING COMMAND
VANCE AIR FORCE BASE
ENID, OKLAHOMA

ASRC FEDERAL
Field Services
140 Channel St., Suite 205
Vance AFB, OK 73705
(580) 213-7772
CA# 8716 EXPIRES
JUNE 30, 2026

Revision Number	Description	Date

DRAWN BY: RLS CHECKED BY: RLS

PROJECT NO.: XTLF 26-1019

DATE: 30 SEP 2025

DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

SWITCH SW4-410 INSTALLATION AND WIRE REPLACEMENT LAYOUT AND ONE-LINE

E102

1 1/2"(ACTUAL SIZE)

DRAWING SIZE INTENDED TO BE 24" x 36"

GENERAL NOTES

1. ALL TRANSFORMERS ARE 3-PHASE UNLESS SHOWN OTHERWISE.
2. ALL SWITCHES ARE NORMALLY CLOSED (N.C.) UNLESS NOTED OTHERWISE.
3. TWO OR MORE TRANSFORMERS SERVING A SINGLE BUILDING ARE SO DESIGNATED WITH A SUFFIX LETTER OF A,B,C, ETC. AFTER THE BUILDING NUMBER.
4. ALL CONDUCTORS ARE COPPER (cu) UNLESS NOTED OTHERWISE.
5. NUMBER AND SIZE OF CONDUCTORS ARE PER PHASE.
6. SWITCHES ARE RATED 600A UNLESS OTHERWISE NOTED.

LEGEND

- PAD-MOUNT TRANSFORMER DEAD FRONT, FUSED, FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, NOT FUSED, FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, FUSED, NO FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, NOT FUSED, NO FEED-THROUGH
- PAD-MOUNT TRANSFORMER LIVE FRONT, FUSED
- PAD-MOUNT TRANSFORMER LIVE FRONT, NOT FUSED
- FUSE OR FUSE CUTOUT
- LOAD BREAK TERMINATION POINT
- POLE
- CIRCUIT BREAKER
- xxxAT VACUUM INTERRUPTER WITH AMPERE TRIP SETTING
- J JUNCTION BOX
- MANHOLE OR HANDHOLE
- CAPACITOR
- SPST SWITCH (BLADE SWITCH))
- N.C. NORMALLY CLOSED
- N.O. NORMALLY OPEN
- UNDERGROUND LINE
- CIRCUIT 1
- CIRCUIT 2
- CIRCUIT 3
- CIRCUIT 4
- CIRCUIT 5
- MAIN CIRCUIT
- DEMOLITION

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(580) 213-7772
CA# 8716 EXPIRES
JUNE 30, 2026

Revision Number	Description	Date

RYAN SUDLOW 31220 LICENSED PROFESSIONAL ENGINEER OKLAHOMA 30 SEP 2025

DRAWN BY: RLS CHECKED BY: RLS

PROJECT NO.: XTLF 26-1019

DATE: 30 SEP 2025

DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

DEMOLITION ONE LINE DIAGRAM

E301

1 1/2"(ACTUAL SIZE)

DRAWING SIZE INTENDED TO BE 24" x 36"

GENERAL NOTES

1. ALL TRANSFORMERS ARE 3-PHASE UNLESS SHOWN OTHERWISE.
2. ALL SWITCHES ARE NORMALLY CLOSED (N.C.) UNLESS NOTED OTHERWISE.
3. TWO OR MORE TRANSFORMERS SERVING A SINGLE BUILDING ARE SO DESIGNATED WITH A SUFFIX LETTER OF A,B,C, ETC. AFTER THE BUILDING NUMBER.
4. ALL CONDUCTORS ARE COPPER (CU) UNLESS NOTED OTHERWISE.
5. NUMBER AND SIZE OF CONDUCTORS ARE PER PHASE.
6. SWITCHES ARE RATED 600A UNLESS OTHERWISE NOTED.

LEGEND

- PAD-MOUNT TRANSFORMER DEAD FRONT, FUSED, FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, NOT FUSED, FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, FUSED, NO FEED-THROUGH
- PAD-MOUNT TRANSFORMER DEAD FRONT, NOT FUSED, NO FEED-THROUGH
- PAD-MOUNT TRANSFORMER LIVE FRONT, FUSED
- PAD-MOUNT TRANSFORMER LIVE FRONT, NOT FUSED
- FUSE OR FUSE CUTOUT
- LOAD BREAK TERMINATION POINT
- POLE
- CIRCUIT BREAKER
- xxxAT VACUUM INTERRUPTER WITH AMPERE TRIP SETTING
- JUNCTION BOX
- MANHOLE OR HANDHOLE
- CAPACITOR
- SPST SWITCH (BLADE SWITCH))
- N.C. NORMALLY CLOSED
- N.O. NORMALLY OPEN
- UNDERGROUND LINE
- CIRCUIT 1
- CIRCUIT 2
- CIRCUIT 3
- CIRCUIT 4
- CIRCUIT 5
- MAIN CIRCUIT
- NEW ELECTRICAL

71st FLYING TRAINING WING

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CA# 8716 EXPIRES
JUNE 30, 2026

Revision Number	Description	Date

RYAN SUDLOW
LICENSED PROFESSIONAL ENGINEER
31220
OKLAHOMA
SCOTT

DRAWN BY: RLS CHECKED BY: RLS

PROJECT NO.: XTLF 26-1019

DATE: 30 SEP 2025

DESIGN STAGE: FOR CONSTRUCTION

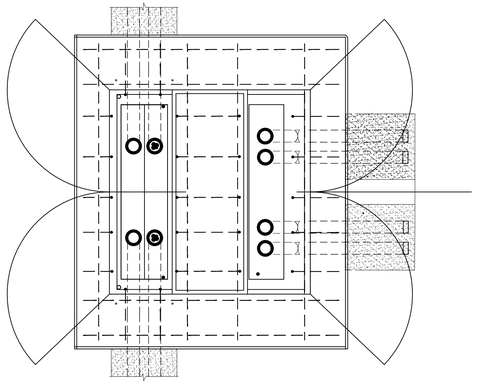
REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

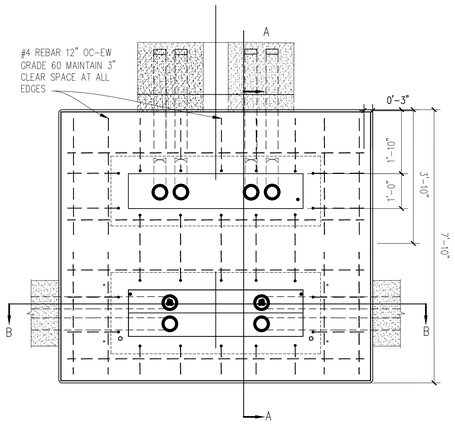
NEW CONSTRUCTION ONE LINE DIAGRAM (FINAL CONFIGURATION)

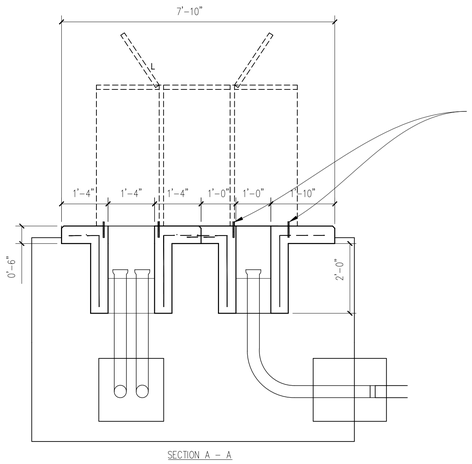
E302

1 1/2"(ACTUAL SIZE)

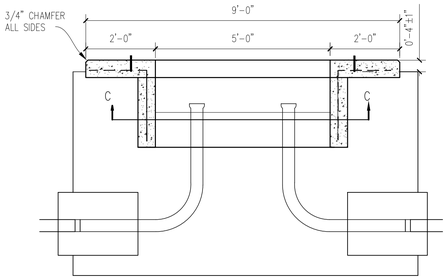
DRAWING SIZE INTENDED TO BE 24" x 36"



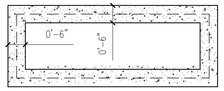




SECTION A – A



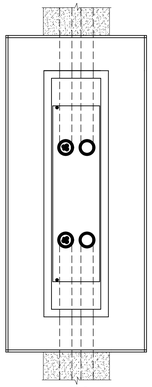
SECTION B – B

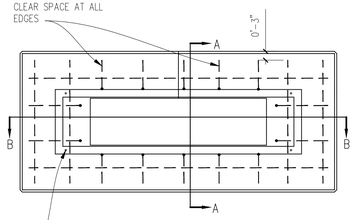


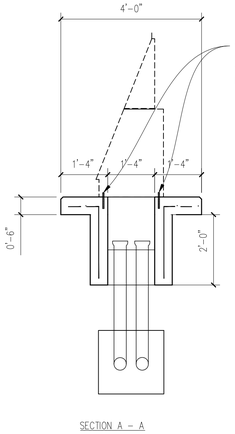
SECTION C – C

A E501 SWITCH PAD DETAILS

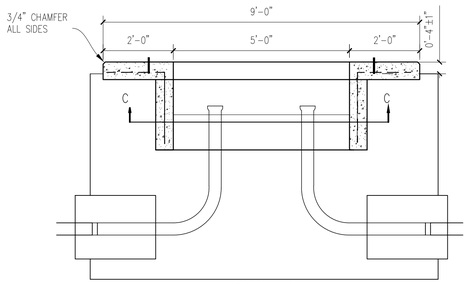
NOT TO SCALE



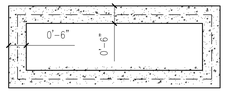




SECTION A – A



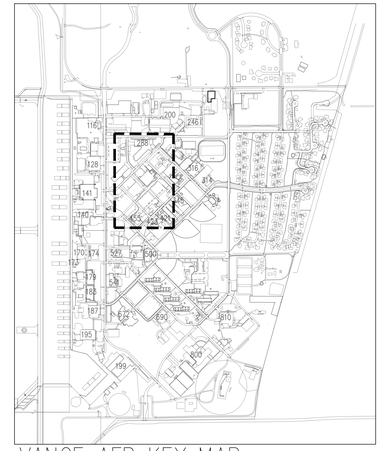
SECTION B – B



SECTION C – C

B E501 SECTONALIZER PAD DETAIL

NOT TO SCALE

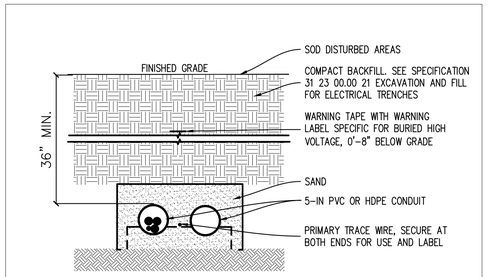


VANCE AFB KEY MAP

N.T.S.

GENERAL NOTES

1. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND/ OR 600A SECTIONALIZERS SHALL BE 250 MCM CU 15KV CABLE..
2. WIRE SHOWN ON THIS SHEET BETWEEN SWITCHES AND TRANSFORMERS SHALL BE #2AWG CU 15KV CABLE.
3. NEW CONDUIT SHALL BE 5-IN SCHEDULE 40 PVC CONDUIT FOR OPEN TRENCH INSTALLATION OR 5-IN SDR9 HDPE PIPE FOR HORIZONTAL DIRECTIONAL DRILL INSTALLATION.
4. MATCH CONDUIT SIZE WHEN CONNECTING TO EXISTING CONDUIT.
5. ALL CONDUIT INSTALLED IN THIS PROJECT SHALL HAVE A MINIMUM OF AT LEAST ONE SPARE EMPTY CONDUIT INSTALLED OF THE SAME SIZE, CONNECTING TO THE SAME EQUIPMENT. PULL STRING SHALL BE INCLUDED IN ALL SPARE DUCTS.

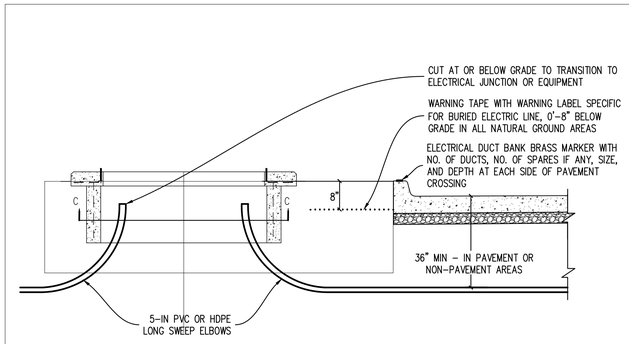


NOTES:

1. WHEN MORE THAN ONE DUCT/CONDUIT IS INSTALLED, MAINTAIN A 4" MINIMUM SEPARATION BETWEEN CONDUITS.
2. WHERE SOIL IS CONSIDERED HIGHLY CORROSIVE (less than 10,000 OHM-CM RESISTANBCE), THE SIZE OF THE COUNTERPOISE SHALL BE #1/0 AWG.

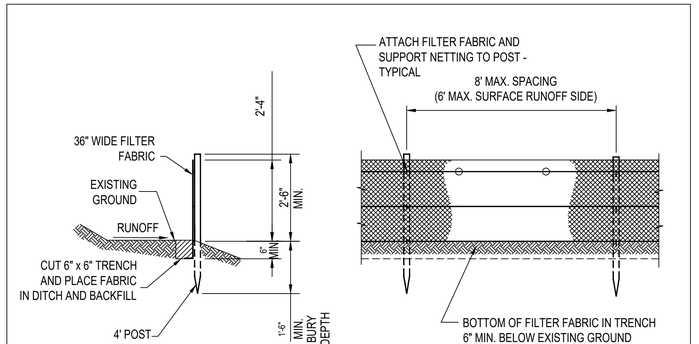
C E501 DUCT BANK DETAIL

NOT TO SCALE



D E501 DUCT BANK TO SECTIONALIZER DETAIL

NOT TO SCALE



E E501 STORM WATER POLLUTION PREVENTION SILT FENCE

NOT TO SCALE

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LICENSED PROFESSIONAL ENGINEER
RYAN SUDLOW
31220
OKLAHOMA
30 SEP 2025

DRAWN BY: RLS CHECKED BY: RLS

PROJECT NO.: XTLF 26-1019

DATE: 30 SEP 2025

DESIGN STAGE: FOR CONSTRUCTION

REPLACE SWITCH AND REPAIR UNDERGROUND ELECTRIC NEAR B293

SWITCH DETAILS

E501