PROJECT

UNDERGROUND ELECTRICAL CONSTRUCTION PROJECT
VITEMA ST CROIX, USVI

DRAWINGS INCLUDED IN THIS PACKAGE						
DRAWING #	DRAWING NAME	ISSUE A: 10.03.2022 ISSUE FOR 75% REVIEW	ISSUE B: 11.09.2022 ISSUE FOR CZM APPLICATION			
ELECTRICAL						
STX-20131-V-G-100	GENERAL CONSTRUCTION NOTES , ABBREVIATIONS & DETAILS	○	●			
STX-20131-V-E-100	SWITCHGEAR / TRANSFORMER / MISC. ELECTRICAL DETAILS	○	●			
STX-20131-V-E-101	GROUNDING / MISC. DETAILS & DUCTBANK SECTIONS	○	●			
STX-20131-V-E-200	ONE LINE DIAGRAM & SCHEDULES	○	●			
STX-20131-V-E-300	DUCT BANK PLAN	○	●			
STX-20131-V-E-301	DUCT BANK PLAN	○	●			
STX-20131-V-E-302	DUCT BANK PLAN	○	●			
STX-20131-V-TC-100	TRAFFIC CONTROL SYMBOLS & DETAILS	○				
STX-20131-V-TC-101	TRAFFIC CONTROL SYMBOLS & DETAILS	○				

ENGINEER:

FXB PARTNERSHIPS THROUGH ENGINEERING

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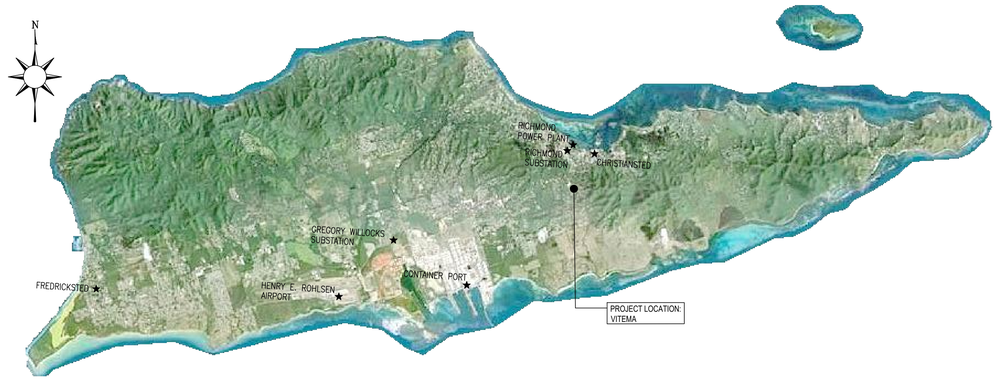
OWNER:

Virgin Islands Water & Power Authority St. Thomas U.S. Virgin Islands

VIRGIN ISLANDS WATER AND POWER AUTHORITY

PROJECT LOCATION MAP:
VITEMA



ENLARGED PROJECT
LOCATION MAP:
VITEMA

GENERAL CONSTRUCTION NOTES

GENERAL CONSTRUCTION NOTES:

1. ALL CONSTRUCTION WORK SHALL COMPLY WITH THE LATEST ADOPTED VERSION OF ALL RELEVANT CODES, REGULATIONS AND REQUIREMENTS INCLUDING FEMA, HUD, IBC, OSHA, NESC, NFPA 70, DPW, VISHPO, DPNR, CZM, FISH & WILDLIFE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ON SITE SAFETY AND SECURITY OF EMPLOYEES, SUBCONTRACTORS, OUTSIDE CONSULTANTS, OWNERS REPRESENTATIVE AND THE PUBLIC, FROM MOBILIZATION THRU CONTRACT CLOSEOUT. ALL WORK SHALL BE IN COMPLETE COMPLIANCE WITH THE LATEST OSHA REQUIREMENTS, AND ALL LOCAL AND FEDERAL AGENCIES.
3. THE CONTRACTOR MUST MAINTAIN A FULL SIZE SET OF THE LATEST SET OF WORKING DRAWINGS, AND SPECIFICATION, ON THE PROJECT JOBSITE AT ALL TIMES.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL MEASURES, AND DEVICES AND ROAD CLOSURE PERMITS (WHERE REQUIRED) AND ASSOCIATED COSTS. THE CONTRACTOR SHALL REFER TO THE TRAFFIC CONTROL DRAWINGS AND SPECIFICATIONS CONTAINED WITHIN THE CONTRACT DOCUMENTS FOR ADDITIONAL INFORMATION.

COORDINATION/PROTECTION OF EXISTING UTILITIES AND STRUCTURES:

1. THE CONTRACT DRAWINGS INDICATE GENERAL LOCATIONS OF EXISTING UTILITIES BASED ON AVAILABLE DRAWINGS AND NON-INVASIVE FIELD SURVEYS. HOWEVER, PRECISE LOCATIONS, SIZES AND TYPES OF UTILITIES HAVE NOT BEEN CONFIRMED. THIS INFORMATION SHALL BE VERIFIED BY THE CONTRACTOR BY MEANS OF GROUND PENETRATING RADAR (GPR), TEST PITS, AND CLOSE COORDINATION WITH DPW, VINGN AND OTHER COMMUNICATIONS CARRIERS, VIWAPA'S WATER DEPARTMENT, THE DEPARTMENT OF PUBLIC WORKS, AND WASTE MANAGEMENT.
2. THE CONTRACTOR SHALL AVOID INTERFERENCE WITH EXISTING UTILITIES TO THE EXTENT THAT IS PRACTICAL. IF IT IS DETERMINED BY THE CONTRACTOR THAT AN EXISTING UTILITY MUST BE REWORKED/REROUTED IN ORDER TO ACCOMMODATE THE NEW WORK, WRITTEN APPROVAL FROM VIWAPA, THE PROJECT MANAGEMENT COMPANY, AND THE OWNER OF THE EXISTING UTILITY IS REQUIRED, PRIOR TO PERFORMING ANY OF THE RELOCATION WORK. ALL REROUTED UTILITIES MUST BE RECONNECTED AND PLACED BACK INTO SERVICE.
3. THE CONTRACTOR IS RESPONSIBLE TO PROTECT EXISTING UTILITIES, AND STRUCTURES, PRIOR TO PERFORMING EXCAVATION. WHERE NEWLY PROPOSED DUCT BANKS ARE TO CROSS BELOW EXISTING WATER, SANITARY, COMMUNICATIONS DUCTS, ELECTRIC DUCTS, OR STORM SEWER PIPING OR DRAINAGE, THE EXISTING UTILITY MUST BE PROPERLY PROTECTED AND SUPPORTED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE UTILITY, AND UTILIZING MEANS AND METHODS AS APPROVED BY THE PROJECT MANAGEMENT TEAM.
4. WHERE POSSIBLE AND PRACTICAL, ALL NEW ELECTRICAL DUCT BANKS RUNS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 5'-0" AND VERTICAL SEPARATION OF 18" FROM FROM POTABLE WATER LINES. MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 2'-0" AND VERTICAL SEPARATION OF 12" FROM ALL OTHER UTILITIES. WHERE A MINIMUM OF 12" VERTICAL SEPARATION CANNOT BE MAINTAINED, CONCRETE ENCASEMENT OF THE PROPOSED DUCT BANK IS REQUIRED AND WRITTEN APPROVAL OF THE PROJECT MANAGER IS REQUIRED.
5. WHERE NECESSARY, THE CONTRACTOR SHALL UTILIZE TEMPORARY RETAINING STRUCTURES TO PROTECT ADJACENT STRUCTURES, AND UTILITIES DURING CONSTRUCTION.
6. ALL EXCAVATION IN CLOSE PROXIMITY TO EXISTING UTILITIES SHALL BE PERFORMED BY HAND IN ORDER TO DETERMINE THE PRECISE UTILITY LOCATION, PRIOR TO MACHINE EXCAVATION.
7. ANY EXISTING UTILITIES THAT ARE DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PROCESS SHALL BE REPAIRED AND FULLY RESTORED AND PLACED BACK INTO SERVICE, AT THE CONTRACTORS EXPENSE. ALL REPAIRS SHALL BE CLOSELY COORDINATED WITH THE APPROPRIATE UTILITY COMPANY AND THE PROJECT MANAGEMENT TEAM. ALL DAMAGED UTILITIES MUST BE RESTORED AND PLACED BACK INTO SERVICE AS QUICKLY AS POSSIBLE IN ORDER TO MITIGATE THE DURATION OF THE INTERRUPTION.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
2. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH LATEST VERSION OF THE NESC, NEC AND VIWAPA STANDARDS.
3. ALL ELECTRICAL EQUIPMENT, INCLUDING, BUT NOT LIMITED TO CONDUIT, WIRE, BOXES, AND FITTINGS, SHALL BE NEW AND FREE OF DEFECTS, SHALL BEAR THE THE UL LABEL, AND SHALL MEET NEMA AND ANSI STANDARDS.
4. ALL WORK AND MATERIALS SHALL BE GUARANTEED FREE FROM DEFECTS FOR A MINIMUM PERIOD OF ONE YEAR
5. UNLESS NOTED OTHERWISE. THE WARRANTY PERIOD SHALL BEGIN AT THE DATE OF SUBSTANTIAL COMPLETION OF WORK UNLESS NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS.
6. ELECTRICAL CONTRACTOR MUST SUBMIT A METHOD OF PROCEDURE "MOP" FOR ALL POWER TRANSITIONS AND SHUTDOWNS. MOPS WILL BE REVIEWED & APPROVED BY THE ENGINEER AND VIWAPA. REFER TO "MOP" REQUIREMENTS ON THIS DRAWING.
7. CONTRACTOR SHALL LOCATE ALL HANDHOLES, SWITCHGEARS, AND TRANSFORMERS VIA GPS COORDINATES ON RECORD DRAWINGS. CONTRACTOR SHALL PROVIDE AUTOCAD GENERATED AS BUILT PLANS TO SHOW ACTUAL DUCT BANK AND HANDHOLE LOCATIONS. CONTRACTOR SHALL PROVIDE GPS LOCATIONS OF DUCT BANKS ON AS BUILT PLANS. GPS LOCATIONS SHALL BE INDICATED EVERY 25'-0" ON PLANS. USE THE CENTER OF THE DUCT BANK TO INDICATE THE GPS LOCATIONS.
8. MV CABLE LABELING: CONTRACTOR SHALL FURNISH & INSTALL LABELS ON ALL PRIMARY CABLES IN MANHOLES, PRIMARY HANDHOLES , IN SWITCHGEAR ENCLOSURES, IN TRANSFORMER ENCLOSURES, IN METERING CABINETS, AND IN SECTIONALIZING CABINETS. THE LABELS SHALL INDICATE PHASE, THE PRIMARY FEEDER NUMBER, AND THE PRIMARY NOMINAL VOLTAGE. CONTRACTOR SHALL PROVIDE SUBMITTALS OF ALL LABELS FOR REVIEW AND APPROVAL.

EARTHWORK

1. THE CONTRACTOR SHALL ENSURE THAT ALL TEMPORARY EROSION & SEDIMENT CONTROL, DUST CONTROL MEASURES, AND POLLUTION CONTROL MEASURES ARE IN PLACE PRIOR TO PERFORMING ANY EXCAVATION WORK. ALL TEMPORARY CONTROLS MEANS AND METHODS SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND ALL LOCAL AND FEDERAL AGENCY REQUIREMENTS.
2. THE CONTRACTOR SHALL ENSURE THAT ALL TEMPORARY TREE AND PLANT PROTECTION MEASURES ARE IN PLACE PRIOR TO PERFORMING ANY EXCAVATION WORK. THE CONTRACTOR SHALL SUBMIT A TREE PROTECTION PLAN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND EHP REQUIREMENTS, FOR REVIEW AND APPROVAL.
3. THE CONTRACTOR SHALL LOCATE AND MARK OUT ALL PROPOSED MANHOLES & HANDHOLES, AND MARK OUT ALL PROPOSED DUCT BANK STATION NUMBERS (EVERY 50'-0") PRIOR TO PERFORMING ANY EXCAVATION WORK. THE MARKED LOCATIONS SHALL BE REVIEWED AND APPROVED BY THE PROJECT MANAGEMENT TEAM PRIOR TO EXCAVATION.
4. THE CONTRACTOR SHALL EMPLOY DEWATERING METHODS WHERE NECESSARY, AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGEMENT TEAM WHEN DEWATERING METHODS ARE REQUIRED. ALL GROUND WATER REMOVED FROM EXCAVATED TRENCHES, MANHOLES AND HANDHOLES MUST BE DISCHARGED IN ACCORDANCE WITH LOCAL AND FEDERAL REGULATORY AGENCIES. DISCHARGES TO STORM DRAINS MUST BE PROPERLY FILTERED.
5. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGEMENT TEAM WHEN "ROCK" IS ENCOUNTERED DURING THE EXCAVATION PROCESS. REFER TO THE CONTRACT DOCUMENTS FOR THE DEFINITION OF "ROCK" AS IT RELATES TO THIS PROJECT.
6. AN ONSITE "PRE-EXCAVATION" CONFERENCE IS REQUIRED, AS DESCRIBED IN THE PROJECT SPECIFICATIONS PRIOR TO COMMENCEMENT OF EXCAVATION WORK.
7. THE CONTRACTOR SHALL PREPARE "PRE-EXCAVATION" PHOTOGRAPHS, AND/OR VIDEO TAPES, AS DESCRIBED IN THE PROJECT SPECIFICATIONS.
8. EXCEPT WHERE OTHERWISE INDICATED IN THE CONTRACT BOOK SPECIFICATIONS, BACKFILL SHALL BE COMPACTED IN 6" MAXIMUM LIFTS. BACKFILL SHALL BE VOID OF ALL FOREIGN DEBRIS. COMPACTION SHALL BE TO 95% DENSITY OF THEORETICAL DRY DENSITY.
9. TRENCH PROTECTION: THE CONTRACTOR SHALL INSTALL AND MAINTAIN SUITABLE TRENCH PROTECTION, INCLUDING BUT NOT LIMITED TO SHEETING AND BRACING, TO ENSURE SAFETY OF PERSONNEL OR THE PUBLIC, AND TO PREVENT EROSION, CAVING, OR LOSS OF GROUND. WHERE STRUCTURAL TRENCH PROTECTION IS NECESSARY, DETAILS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL, SIGNED & SEALED BY A USVI LICENSED CIVIL, STRUCTURAL OR GEOTECHNICAL ENGINEER.
10. ALL EXPOSED TRENCHES, MANHOLES, AND HANDHOLES MUST BE COMPLETELY COVERED WITH SOLID STEEL PLATING AT THE END OF EACH CONSTRUCTION DAY, IN ORDER TO ENSURE PROTECTIONS TO THE PUBIC AND TO PREVENT UNAUTHORIZED ACCESS.

    PRIOR TO EXCAVATION, EXISTING PAVED ROADWAYS & DRIVEWAYS, SHALL BE NEATLY SAW CUT. THE USE OF JACK HAMMERS IS PROHIBITED FOR THIS PURPOSE.
11. THE CONTRACTOR SHALL REMOVE AND REPLACE, OR COMPLETELY REPAIR, ALL CURBS, SIDEWALKS, PAVED AREAS, TREES, PLANTS, GRASS AREAS, ETC. THAT ARE AFFECTED DURING THE EXCAVATION PROCESS. REFER TO CONTRACT SPECIFICATIONS AND DETAILS ON
12. THE CONTRACT DRAWINGS FOR SPECIFIC REQUIREMENTS.

ELECTRICAL SYMBOLS

ONE LINE DIAGRAM

	TRANSFORMER
	SWITCH, AIR INSULATED UNLESS NOTED OTHERWISE
	FUSED CUTOUT
	FUSE
	SURGE ARRESTER
600:5A	CURRENT TRANSFORMER; 3 INDICATES QUANTITY; 600:5A INDICATES PRIMARY/SECONDARY RATINGS
7E2:120V	POTENTIAL TRANSFORMER; 2 INDICATES QUANTITY; 13,200:120V INDICATES PRIMARY/SECONDARY RATINGS
LL	LIVE LINE INDICATOR
M	METER OR MOTOR OPERATOR
	GROUND
	DELTA -CONNECTED WINDING
	WYE-CONNECTED WINDING
	GROUNDED WYE-CONNECTED WINDING
	DEAD FRONT CABLE TERMINATION/CONNECTION
	PREPARED DEAD FRONT CONNECTION
	LIVE FRONT CABLE TERMINATION/CONNECTION
	PREPARED LIVE FRONT CONNECTION
A	ELECTRICAL EQUIPMENT TAG. IDENTIFIED ON EQUIPMENT SCHEDULE
1	RACEWAY TAG FOR MEDIUM VOLTAGE FEEDER; IDENTIFIED ON MEDIUM VOLTAGE RACEWAY SCHEDULE
	COLD SHRINK MEDIUM VOLTAGE SPLICE
	GROUNDED DELTA-CONNECTED WINDING
VFI	VACUUM FAULT INTERRUPTER

ABBREVIATIONS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	AMPERES	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISH FLOOR	MCC	MOTOR CONTROL CENTER
AFG	ABOVE FINISH GRADE	KCMIL	THOUSAND CIRCULAR MILS
AHU	AIR HANDLING UNIT	MCP	MOTOR CIRCUIT PROTECTOR
AL	ALUMINUM	MISC	MISCELLANEOUS
ARCH	ARCHITECT	MLO	MAIN LUGS ONLY
ATC	AIR TERMINAL CHAMBER	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	N.C.	NORMALLY CLOSED
AWG	AMERICAN WIRE GAUGE	N.O.	NORMALLY OPEN
BIL	BASIC IMPULSE LEVEL	NEC	NATIONAL ELECTRICAL CODE
BLDG	BUILDING	NFSS	NON-FUSED SAFETY SWITCH
C	CONDUIT - RACEWAY	NGR	NEUTRAL GROUNDING RESISTOR
CC1	CLOSE COIL 1	NL	NIGHT LIGHT
CKT	CIRCUIT	NTS	NOT TO SCALE
C/L	CENTERLINE	P	POLE
COL	COLUMN	(PH1)	PHASE 1
CU	COPPER	(PH2)	PHASE 2
C/B	CIRCUIT BREAKER	PNL	PANEL OR PANELBOARD
CT	CURRENT TRANSFORMER	PVC	POLYVINYL CHLORIDE
DWG	DRAWING	PWR	POWER
DN	DOWN	PT	POTENTIAL TRANSFORMER
EC	ELECTRICAL CONTRACTOR	PRIM	PRIMARY
ECB	ENCLOSED CIRCUIT BREAKER	(R)	TO BE REMOVED
EM	EMERGENCY	RTU	ROOF TOP UNIT
(EX)	EXISTING TO REMAIN	SA	SURGE ARRESTER
F	FUSE	SEC	SECONDARY
FA	FIRE ALARM	SP	SPARE
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SW	SWITCH
FACP	FIRE ALARM CONTROL PANEL	TC1	TRIP COIL 1
FBO	FURNISHED BY OTHERS	TC2	TRIP COIL 2
F/S	FUSED SWITCH	TEL	TELEPHONE
FT	FEET	V	VOLT
FU.	FUSES	W	WIRE
G	GROUND OR GROUNDING	WP	WEATHERPROOF
GRD	GROUND OR GROUNDING	WG	WITH WIREGUARD
KVA	KILOVOLT AMPERES	TRANSF	TRANSFORMER
KW	KILOWATTS	ø	PHASE
LTG	LIGHTING	%Z	PERCENT IMPEDANCE

PVC CONDUIT ACCESSORIES BILL OF MATERIALS

TAG	QUANTITY	DESCRIPTION
1	TBD	HIGH IMPACT DUCT SPACERS FOR 3" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP3W30-2
2	TBD	2" SNAP-LOC REDUCER, CARLON #5287J
3	TBD	HIGH IMPACT DUCT SPACERS FOR 6" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP6W3030-2
4	TBD	HIGH IMPACT DUCT SPACERS FOR 4" DUCTS, 2" SPACING BETWEEN DUCTS, CARLON #SP4W20-2
5	TBD	GREY SOLVENT CEMENT, CARLON #VC9922
6	TBD	CLEAR PRIMER, CARLON #VC9902
7	TBD	SCHEDULE 40 PVC CONDUIT AND ELBOWS - CONTRACTOR TO DETERMINE QUANTITIES

NOTES:

1. PVC CONDUIT ACCESSORIES SHALL BE AS SPECIFIED, OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE SUBMITTALS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY CONDUIT ACCESSORIES.
3. ALL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR.

METHOD OF PROCEDURE ("M.O.P.")

WHERE CALLED FOR THROUGHOUT THE CONSTRUCTION DOCUMENTS, OR AS REQUESTED THROUGH THE CONSTRUCTION PROCESS, THE CONTRACTOR SHALL SUBMIT A M.O.P. FOR ANY ACTIVITY DEEMED BY THE OWNER/ENGINEER TO POTENTIALLY IMPACT UTILITY CUSTOMERS. CONTRACTOR TO RELEASE M.O.P. TO THE ENGINEER FOR REVIEW AND COMMENT A MINIMUM OF TWO WEEKS PRIOR TO THE SCHEDULED ACTIVITY. THE M.O.P. SHALL INCLUDE ITEMS SUCH AS, BUT NOT LIMITED TO:

1. SHORT DESCRIPTION OF ACTIVITY
2. PROPOSED SCHEDULE/ CALENDAR DAY(S) OF ACTIVITY
3. ESTIMATED START AND END TIME
4. IDENTIFICATION AND REQUIRED ACTION FOR CRITICAL PATH MILESTONES, INCLUDING OWNER DEPENDENCIES
5. LENGTH OF ANY PLANNED DOWNTIME OF LIVE POWER SYSTEMS
6. STEP BY STEP PROCEDURE WITH ITEMIZED TIME ESTIMATE FOR EACH MAJOR STEP
7. EMERGENCY BACK OUT PROCEDURE WHERE APPLICABLE
8. SAFETY EQUIPMENT AND/OR ANY OTHER SPECIAL SAFETY MEASURES TO BE TAKEN
9. IDENTIFY LEAD PERSONNEL INVOLVED, INCLUDING 24 HR. CONTACT INFORMATION
10. IDENTIFY REQUIRED TRADES TO PARTICIPATE AND TASKS TO BE PERFORMED

ELECTRICAL TESTING REQUIREMENTS

CONTRACTOR SHALL RETAIN THE SERVICES OF A NETA CERTIFIED TESTING AGENCY TO PERFORM THE FOLLOWING ELECTRICAL ACCEPTANCE TESTING:

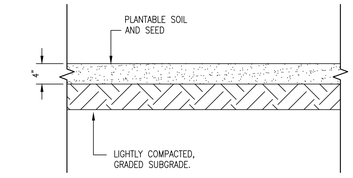
ACCEPTANCE TESTING RESPONSIBILITIES

- SWITCHGEAR (REFERENCE: ANSI/NETA ATS-2013 SECTION 7.1)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.1.1
  2. PROVIDE ELECTRICAL TESTS IN ACCORDANCE WITH 7.1.2.
- MEDIUM VOLTAGE CABLES (REFERENCE: ANSI/NETA ATS-2013 SECTION 7.3.3)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.3.3.1
  2. PERFORM ELECTRICAL TESTS IN ACCORDANCE WITH ANSI/NETA ATS-2009 SECTION 7.3.3.2 AND IEEE STANDARD 400.2
- TRANSFORMERS, LIQUID FILLED (REFERENCE: ANSI/NETA ATS-2013 SECTION 7.2.2)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.2.2.1
  2. PERFORM ELECTRICAL TESTS IN ACCORDANCE WITH ANSI/NETA ATS-2013 SECTION 7.2.2.2 AND IEEE STANDARD 400.2
  3. REFER TO SPECIFICATION 260800.01 "ELECTRICAL INSPECTION & TESTING" FOR ADDITIONAL INFORMATION.

OWNER FURNISHED EQUIPMENT

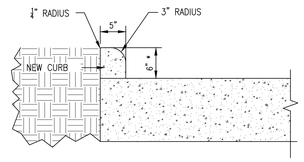
THIS PROJECT INCLUDES OWNER FURNISHED EQUIPMENT. REFER TO ELECTRICAL EQUIPMENT SCHEDULE ON DRAWING #E400. FOR ALL OWNER FURNISHED EQUIPMENT THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:

1. RECEIVE EQUIPMENT AT THE RANDOLPH HARLEY POWER PLANT SITE IN ST. THOMAS UNLESS SPECIFICALLY NOTED OTHERWISE.
2. TRANSPORT EQUIPMENT, AS NEEDED, TO THE JOB SITE.
2. OFFLOAD EQUIPMENT AND SET IN PLACE IN ITS FINAL LOCATION
3. ANCHOR EQUIPMENT IN PLACE IN ACCORDANCE WITH DRAWINGS & MANUFACTURERS INSTALLATION INSTRUCTIONS/SHOP DWGS.
4. INSTALL ANY COMPONENTS THAT SHIPPED LOOSE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
5. PROVIDE VISUAL INSPECTION AND TESTS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
6. PROVIDE SUPPORT DURING START UP & TESTING SUCH AS RE-TORQUING, PHASE ROTATION CHECK, OPEN TRANSFORMER & SWITCHGEAR DOORS, ETC.



LOAN & SEED DETAIL
NTS

NOTE:
1. LOAM SHALL BE FRIABLE TOPSOIL STRIPPED FROM ON-SITE.
2. LOAM SHALL BE FREE FROM REFUSE, STONES LARGER THAN 2 INCH AND ROOTS LARGER THAN 1 INCH.



CONCRETE CURB REPLACEMENT
NTS

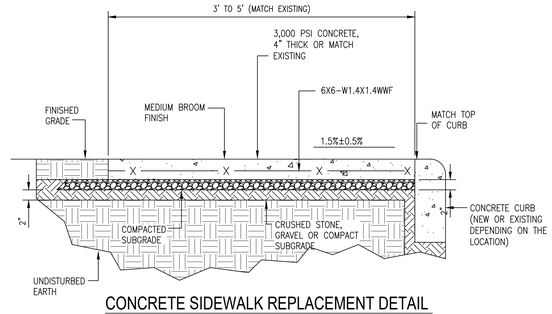
NOTE:
1. REPLACE CONCRETE CURB WITH A MINIMUM OF 48" SECTIONS.
2. CURB DIMENSIONS ARE INDICATED AS 5" WIDE AND 6" HIGH FOR REFERENCE. CONTRACTOR SHALL MATCH THE EXISTING CURB SIZE.

EXCAVATION NOTES

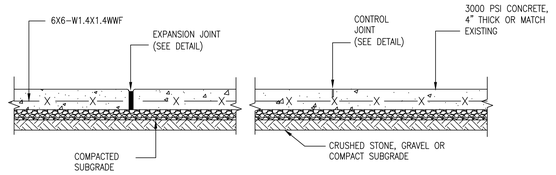
1. ALL UTILITIES MUST BE IDENTIFIED AND MARKED PRIOR TO COMMENCEMENT OF EXCAVATION WORK.
2. ALL KNOWN UTILITY COMPANIES MUST BE CONTACTED, AND COORDINATED WITH, PRIOR TO COMMENCEMENT OF EXCAVATION WORK.
3. ALL DRAINAGE CROSSINGS MUST BE IDENTIFIED / CONFIRMED PRIOR TO EXCAVATION. KNOWN DRAINAGE LOCATIONS ARE INDICATED ON THE DRAWINGS.
4. CONTRACTOR SHALL ENSURE THAT THERE IS ADEQUATE SPACE BETWEEN CONDUITS AND TRENCH WALL SUCH THAT THE CONCRETE WILL COMPLETELY ENCASE THE CONDUIT WITHOUT ANY VOIDS. USE CONCRETE VIBRATORS AS REQUIRED.

SCHEDULE OF SPECIAL INSPECTIONS:
SPECIAL INSPECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH THE TABLE BELOW.

SPECIAL INSPECTIONS	FREQUENCY	STANDARD
SOILS:		GEOTECHNICAL ENGINEERING REPORT; IBC 1705.6
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	PERIODIC	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL Moterials.	PERIODIC	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	CONTINUOUS	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	PERIODIC	
CONCRETE:		
1. INSPECTION OF REINFORCING STEEL AND PLACEMENT.	PERIODIC	ACI 318: 3.5, 7.1-7.7
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1704.3, ITEM 5B.		AWS D1.4; ACI 318: 3.5.2
3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE, PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.	CONTINUOUS	ACI 318: 8. 1 .3, 21.Z.8; IBC 1908.4, 1908.S
4. INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE.	PERIODIC	ACI 318: 3.8.6, 8.1.3, 21.2.8; IBC 1908.S
5. VERIFYING USE OF REQUIRED DESIGN MIX.	PERIODIC	ACI 318: CH. 4, 5.2-5.4; IBC 1905
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONTINUOUS	ASTM C172; ASTM C31; ACI 318: 5.6, 5.8
7. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONTINUOUS	ACI 318: 5,9, 5.10:
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC	ACI 318: 5.11-5.13
9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC	ACI 318: 6.1.1
ADHESIVE ANCHORS:		
1. DURING PLACEMENT OF ADHESIVE ANCHORS EMBEDDED WITH ADHESIVE (AS SPECIFIED ON THE CONSTRUCTION DOCUMENTS) IN CONCRETE:		
a. SIZE AND EMBEDMENT OF ANCHORS.	CONTINUOUS	
b. ANCHORS INSTALLED PER MANUFACTURERS RECOMMENDATIONS.	CONTINUOUS	

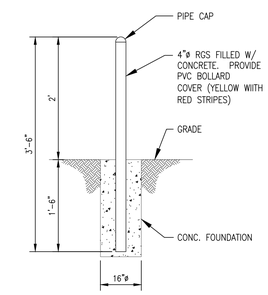


CONCRETE SIDEWALK REPLACEMENT DETAIL
SCALE: 1"=1'-0"



CONCRETE SIDEWALK REPLACEMENT DETAIL LONGITUDINAL VIEW
SCALE: 1"=1'-0"

NOTES:
1. PROVIDE CONTROL JOINTS AT 5' O.C. (6' MAX) UNLESS SHOWN OTHERWISE.
2. CONSTRUCT FULL-DEPTH EXPANSION JOINTS AT 25' O.C. (30' MAX).
3. JOINTS SHALL BE SAW CUT 4 TO 12 HOURS AFTER CONCRETE HAS BEEN FINISHED.



BOLLARD DETAIL
SCALE: 1/2"=1'-0"

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Client:

Virgin Islands Water and Power Authority
U.S. Virgin Islands

Project Name:

Underground Electrical Construction Project
Vitema
St. Croix, USVI

Issue / Revisions:

#	Date	Description
A	10/03/22	Issue For 75% Review
B	11/09/22	Issue For CZM Application

Drawn By:	BEM
Chkd By:	PJB
Date:	11/09/22
Scale:	As Noted
Project Number:	VIT 20131

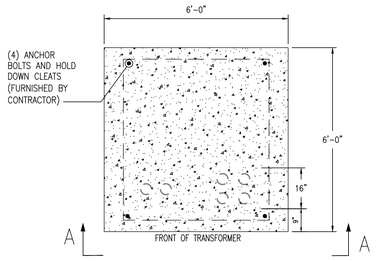
Drawing Title:

GENERAL CONSTRUCTION NOTES, ABBREVIATIONS & DETAILS

Drawing Number:

ST-20131-V-G-100

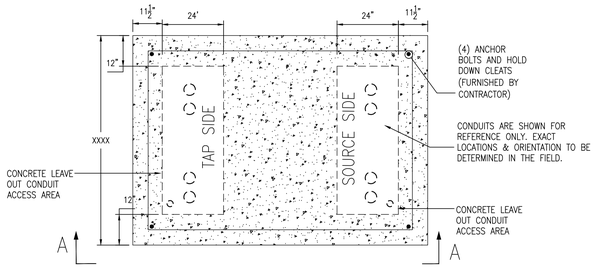
SHEET # 1 OF X



3Ø TRANSFORMER PAD: PLAN VIEW

SCALE: ½" = 1'-0"

NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
4. BOLT TRANSFORMER TO CONCRETE PAD WITH 'HOLD DOWN' CLEATS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. VERIFY EQUIPMENT DIMENSIONS WITH APPROVED EQUIPMENT SUBMITTALS FROM EQUIPMENT SUPPLIER PRIOR TO FORMING PAD, PLACING REBAR AND I INSTALLING CONDUITS AND POURING CONCRETE.
6. ALL PRIMARY AND SECONDARY CONDUITS SHALL BE SEALED WITH "DUCT SEAL" OR "SPRAY FOAM" AFTER CABLES ARE PULLED AND TERMINATED.
7. TRANSFORMER SECONDARY LUGS SHALL BE COMPRESSION TYPE AND SHALL BE FURNISHED BY THE CONTRACTOR.
8. CONNECT #1/0 BARE COPPER WIRE TO XO OF TRANSFORMER & TO CONCENTRIC NEUTRAL CABLES.

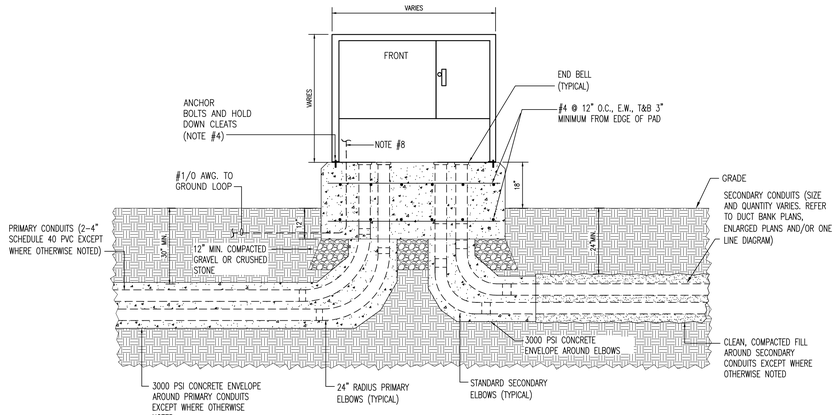


SOURCE TRANSFER SWITCH: PLAN VIEW

SCALE: ½" = 1'-0"

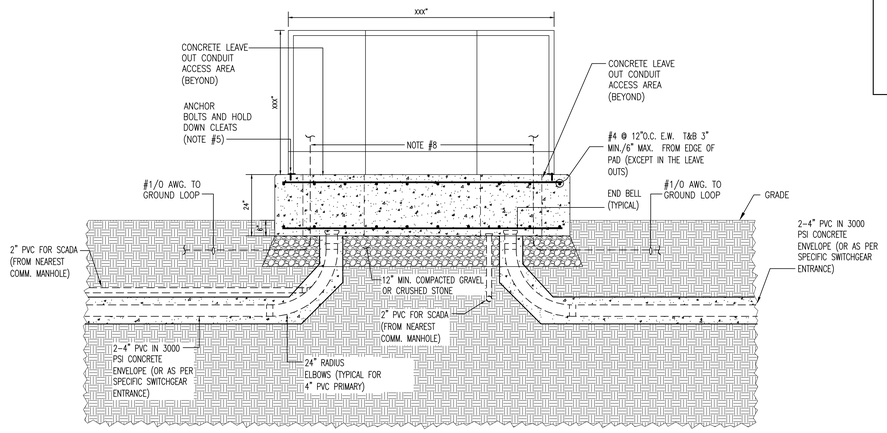
CONCRETE PAD NOTES

1. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE STARTING WORK.
2. CONTRACTOR SHALL VERIFY SUB-SURFACE CONDITIONS BEFORE ANY FOUNDATIONS ARE PLACED. ASSUMED SOIL BEARING CAPACITY 3000 P.S.F.
3. FOR ALL CONCRETE WORK A.C.I. STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (A.C.I. 318-) WILL BE APPLICABLE UNLESS NOTED.
4. ALL CONCRETE SHALL BE POURED IN FORMS CONFORMING TO THE DIMENSIONS INDICATED ON THE DRAWINGS (AFTER CONFIRMING DIMENSIONS WITH MANUFACTURERS APPROVED EQUIPMENT SUBMITTALS.
5. NO CONCRETE SHALL BE POURED UNTIL ALL REINFORCING STEEL IS IN PLACE.
6. ALL CONCRETE TO DEVELOP 3500 P.S.I. IN 28 DAYS.
7. ALL DETAILING, FABRICATION & PLACEMENT OF REINFORCING BARS SHALL FOLLOW THE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES A.C.I. 315. HIGH CHAIRS WILL BE REQUIRED UNDER ALL TOP REINFORCING.
8. REINFORCING BARS TO BE GRADE 60 DEFORMED NEW BILLET STEEL MEETING ASTM SPECS A-615 AND HAVING DEFORMATION MEETING ASTM A-305.
9. PROVIDE 3/4" CHAMFER ON EXPOSED EDGES OF ALL CONCRETE PADS.
10. CONTRACTOR SHALL PROVIDE SUBMITTALS FOR CONCRETE MIX DESIGN FOR REVIEW AND APPROVAL.
11. FORMWORK SHALL REMAIN IN PLACE UNTIL CONCRETE HAS OBTAINED AT LEAST 90% OF ITS 28 DAY COMPRESSIVE STRENGTH.
12. THE FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 301, TYPE A.



SECTION A-A: THREE PHASE PAD MOUNTED TRANSFORMER

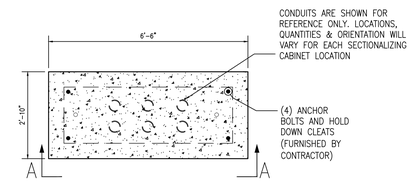
SCALE: ½" = 1'-0"



SECTION A-A: SOURCE TRANSFER SWITCH

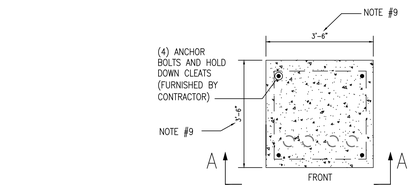
SCALE: ½" = 1'-0"

NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. DO NOT POUR CONCRETE IN CABLE ACCESS AREA.
4. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
5. BOLT SWITCHGEAR TO CONCRETE PAD WITH 'HOLD DOWN' CLEATS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
6. VERIFY EQUIPMENT DIMENSIONS WITH APPROVED EQUIPMENT SUBMITTALS FROM EQUIPMENT SUPPLIER PRIOR TO FORMING PAD, PLACING REBAR AND I INSTALLING CONDUITS AND POURING CONCRETE.
7. ALL CONDUITS SHALL BE SEALED WITH "DUCT SEAL" OR "SPRAY FOAM" AFTER CABLES ARE PULLED AND TERMINATED.
8. PRIMARY ELBOWS ARE FURNISHED BY VIWAPA.
9. CONNECT #1/0 BARE COPPER WIRE TO SWITCHGEAR GROUND PAD & TO CONCENTRIC NEUTRAL CABLES.



SECTIONALIZING CABINET - PLAN VIEW

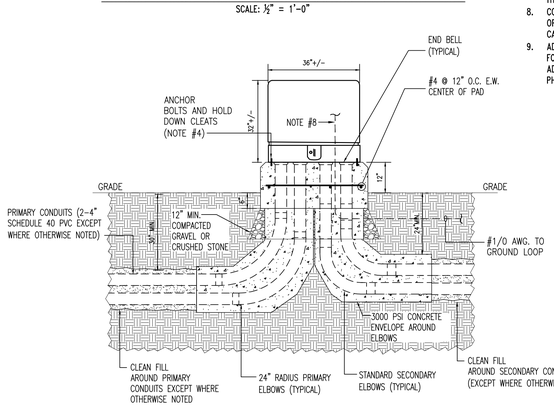
SCALE: ½" = 1'-0"



SINGLE PHASE TRANSFORMER POURED PAD PLAN VIEW

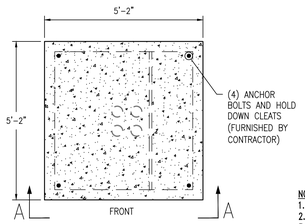
SCALE: ½" = 1'-0"

NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
4. BOLT TRANSFORMER TO CONCRETE PAD WITH 'HOLD DOWN' CLEATS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. VERIFY EQUIPMENT DIMENSIONS WITH APPROVED EQUIPMENT SUBMITTALS FROM EQUIPMENT SUPPLIER PRIOR TO FORMING PAD, PLACING REBAR AND INSTALLING CONDUITS AND POURING CONCRETE.
6. ALL PRIMARY AND SECONDARY CONDUITS SHALL BE SEALED WITH "DUCT SEAL" OR "SPRAY FOAM" AFTER CABLES ARE PULLED AND TERMINATED.
7. TRANSFORMER SECONDARY LUGS SHALL BE COMPRESSION TYPE AND SHALL BE FURNISHED BY THE CONTRACTOR.
8. CONNECT #1/0 BARE COPPER WIRE TO HO & XO OF TRANSFORMER & TO CONCENTRIC NEUTRAL CABLES.
9. ADJUST PAD SIZE TO 6'-0" WIDE X 5'-0" LONG FOR 167KVA PAD MOUNTED TRANSFORMERS AND ADJUST PAD THICKNESS TO MATCH THAT OF A 3 PHASE TRANSFORMER PAD.



SECTION A-A: SINGLE PHASE PAD MOUNTED TRANSFORMER

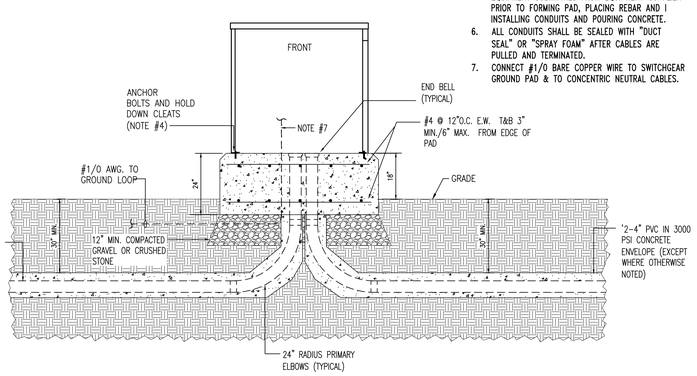
SCALE: ½" = 1'-0"



15kV METERING SWITCHGEAR PAD - PLAN VIEW

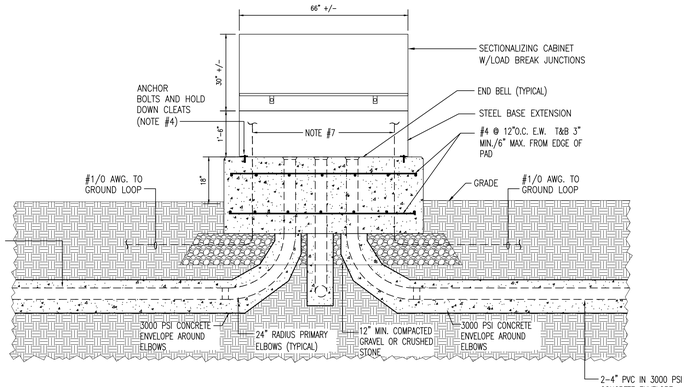
SCALE: ½" = 1'-0"

NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
4. BOLT PRIMARY METERING SWITCHGEAR TO CONCRETE PAD WITH 'HOLD DOWN' CLEATS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. VERIFY EQUIPMENT DIMENSIONS WITH APPROVED EQUIPMENT SUBMITTALS FROM EQUIPMENT SUPPLIER PRIOR TO FORMING PAD, PLACING REBAR AND I INSTALLING CONDUITS AND POURING CONCRETE.
6. ALL CONDUITS SHALL BE SEALED WITH "DUCT SEAL" OR "SPRAY FOAM" AFTER CABLES ARE PULLED AND TERMINATED.
7. CONNECT #1/0 BARE COPPER WIRE TO SWITCHGEAR GROUND PAD & TO CONCENTRIC NEUTRAL CABLES.



SECTION A-A THRU 15kV METERING SWITCHGEAR PAD

SCALE: ½" = 1'-0"



SECTION A-A SECTIONALIZING CABINET PAD

SCALE: ½" = 1'-0"

NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
4. BOLT SECTIONALIZING CABINETS TO CONCRETE PAD WITH 'HOLD DOWN' CLEATS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. VERIFY EQUIPMENT DIMENSIONS WITH APPROVED EQUIPMENT SUBMITTALS FROM EQUIPMENT SUPPLIER PRIOR TO FORMING PAD, PLACING REBAR AND INSTALLING CONDUITS AND POURING CONCRETE.
6. ALL CONDUITS SHALL BE SEALED WITH "DUCT SEAL" OR "SPRAY FOAM" AFTER CABLES ARE PULLED AND TERMINATED.
7. CONNECT #1/0 BARE COPPER WIRE TO GROUND PAD & TO CONCENTRIC NEUTRAL CABLES.

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Drawn By:	BEM
Chkd By:	PJB
Date:	11/09/22
Scale:	As Noted
Project Number:	VIT 20131

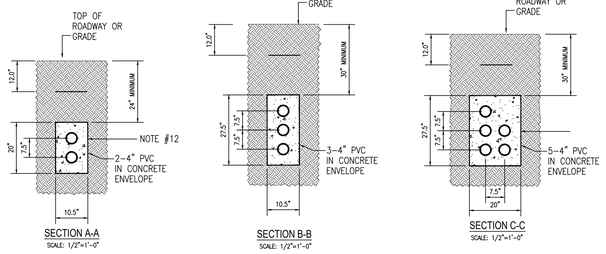
Drawing Title:

SWITCHGEAR / TRANSFORMER / MISC. ELECTRICAL DETAILS

Drawing Number:

STX-20131-V-E-100

SHEET # 2 OF X



DUCT BANK NOTES

1. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. THE CONTRACTOR IS RESPONSIBLE TO CALL ALL UTILITIES BEFORE THEY DIG, AND PROVIDE WRITTEN DOCUMENTATION OF UTILITY CORRESPONDENCE.
2. UNDERGROUND DUCTS SHALL CLEAR ALL EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE TO UTILIZE GROUND PENETRATING RADAR EQUIPMENT TO LOCATE ALL EXISTING UTILITIES IN THE VICINITY OF NEW DUCT BANKS, MANHOLES AND HANDHOLES.
3. PROVIDE TRACEABLE UNDERGROUND HAZARD TAPE, 6" WIDE CONTINUOUS BLACK WITH YELLOW BACKGROUND TO READ "CAUTION-CAUTION-CAUTION ELECTRIC LINE BURIED BELOW." TYPICAL FOR ALL NEW DUCT BANK RUNS AND AS SHOWN ON DRAWINGS.
4. THE ENTIRE PATH OF THE PROPOSED DUCT BANK ROUTING SHALL BE MARKED OUT "WITH RED PAINT", ALONG THE STREETS. THE CONTRACTOR SHALL INCLUDE STATION NUMBERS AT EVERY 50'-0".
5. PROVIDE HIGH IMPACT SPACERS AT 5 FOOT INTERVALS (CARLON OR EQUAL). TYPICAL FOR ALL CONDUITS IN DUCT BANKS.
6. IF EXCAVATED TRENCH WALLS ARE SUITABLE TO ACCOMMODATE THE TRENCH MATERIAL (SAND, COMPACT SUBGRADE, TAMPED BACKFILL, ETC.) THAN FORMS SHALL NOT BE REQUIRED. THE CONTRACTOR SHALL UTILIZE FORMS WHERE THE TRENCH WALLS ARE UNSTABLE.

ADDITIONAL NOTES FOR CONCRETE DUCT BANKS

1. FOR ALL CONCRETE WORK A.C.I. STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (A.C.I. 318-) WILL BE APPLICABLE UNLESS NOTED.
2. IF EXCAVATED TRENCH WALLS ARE SUITABLE FOR A CLEAN CONCRETE POUR, FORMS SHALL NOT BE REQUIRED. THE CONTRACTOR SHALL UTILIZE FORMS WHERE TRENCH WALLS ARE UNSTABLE.
3. WHERE REINFORCEMENT IS REQUIRED, OR SPECIFICALLY INDICATED, NO CONCRETE SHALL BE POURED UNTIL ALL REINFORCING STEEL IS IN PLACE.
4. ALL CONCRETE TO DEVELOP 3,000 P.S.I. IN 28 DAYS, EXCEPT UNDER SPECIFIC CONDITIONS WHERE CONTROLLED DENSITY FILL (CDF) IS SPECIFIED.
5. ALL DETAILING, FABRICATION & PLACEMENT OF REINFORCING BARS SHALL FOLLOW THE A.C.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES A.C.I. 315. HIGH CHAIRS WILL BE REQUIRED UNDER ALL TOP REINFORCING.
6. REINFORCING BARS TO BE GRADE 60 DEFORMED NEW BILLET STEEL MEETING ASTM SPECS A-615 AND HAVING DEFORMATION MEETING ASTM A-305.

PVC CONDUIT ACCESSORIES BILL OF MATERIALS

	QUANTITY	DESCRIPTION
1	TBD	HIGH IMPACT DUCT SPACERS FOR 2" DUCTS, 2" SPACING BETWEEN DUCTS, CARLON #SP2W20-2
2	TBD	2" SNAP-LOC REDUCER, CARLON #S287J
3	TBD	HIGH IMPACT DUCT SPACERS FOR 6" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP6W3030-2
4	TBD	HIGH IMPACT DUCT SPACERS FOR 4" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP4W30-2
5	TBD	GREY SOLVENT CEMENT, CARLON #VC9922
6	TBD	CLEAR PRIMER, CARLON #VC9902
7	TBD	SCHEDULE 40 PVC CONDUIT AND ELBOWS - CONTRACTOR TO DETERMINE QUANTITIES

NOTES:

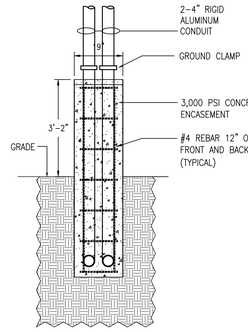
1. PVC CONDUIT ACCESSORIES SHALL BE AS SPECIFIED, OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE SUBMITTALS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY CONDUIT ACCESSORIES.
3. ALL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR.

BILL OF MATERIAL FOR GROUNDING SYSTEM

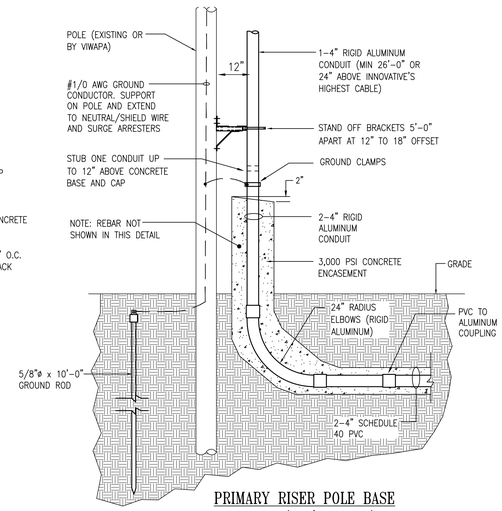
ITEM NO.	QUANTITY	DESCRIPTION
1	TBD	#4/0 19 STRAND BARE SOFT DRAWN COPPER, CLASS B STRANDING, ASTMB8
2	TBD	#1/0 7 STRAND BARE SOFT DRAWN COPPER, CLASS A STRANDING, ASTMB8
3	TBD	COPPER BONDED GROUND ROD, 5/8" DIA. X 10'-0" LONG, ERITECH #615800 (OR EQUAL)
4	TBD	CADWELD MOLD #GTC-162Q (OR EQUAL) CONNECTOR, 5/8" DIA. COPPER OR COPPER CLAD GROUND ROD TO #4/0 BARE COPPER
5	TBD	CADWELD MOLD #GTC-162C (OR EQUAL) CONNECTOR, 5/8" DIA. COPPER OR COPPER CLAD GROUND ROD TO #1/0 BARE COPPER
6	TBD	CADWELD MOLD #TAC-2Q2Q (OR EQUAL) TEE CONNECTOR, THERMOWELD, #4/0 COPPER
7	TBD	CADWELD MOLD #TAC-2C2C (OR EQUAL) TEE CONNECTOR, THERMOWELD, #1/0 COPPER
8	TBD	CABLE RUN TO #4/0 COPPER CABLE TAP
9	TBD	CABLE RUN TO #1/0 COPPER CABLE TAP
10	TBD	TWO HOLE COMPRESSION LUG FOR #4/0 CU.
11	TBD	TWO HOLE COMPRESSION LUG FOR #1/0 CU.
12	TBD	MECHANICAL TEE CONNECTOR, #4/0 COPPER CABLE RUN TO #4/0 COPPER TAP
13	TBD	MECHANICAL TEE CONNECTOR, #1/0 COPPER CABLE RUN TO #1/0 COPPER TAP
14	TBD	CADWELD PLUS WELDING MATERIAL #150PLUSF20 (OR EQUAL) (FOR #4/0 RUN TO #4/0 TAP)
15	TBD	CADWELD PLUS WELDING MATERIAL #90PLUSF20 (OR EQUAL) (FOR #1/0 RUN TO #1/0 TAP)
16	TBD	CADWELD PLUS WELDING MATERIAL #115PLUSF20 (OR EQUAL) (FOR #4/0 TO GROUND ROD)
17	TBD	CADWELD PLUS WELDING MATERIAL #90PLUSF20 (OR EQUAL) (FOR #1/0 TO GROUND ROD)
18	TBD	CLEANING BRUSH, CADWELD CAT. NO. T394. (OR EQUAL)
19	TBD	CADWELD PLUS CONTROL UNIT PLUSCU (OR EQUAL)

NOTES:

1. GROUNDING MATERIALS SHALL BE AS SPECIFIED, OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE A SUBMITTAL FOR REVIEW AND APPROVAL BY ENGINEER FOR ALL GROUNDING MATERIALS PRIOR TO ORDERING.
3. ALL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR.



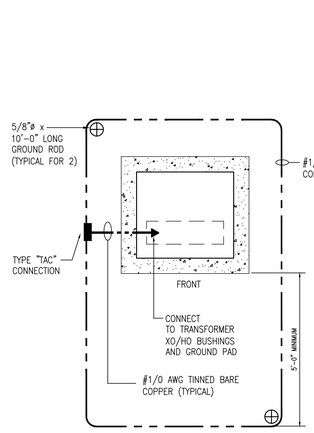
PRIMARY RISER POLE BASE DETAIL - FRONT VIEW (#1/0 CABLE)
SCALE: ½" = 1'-0"



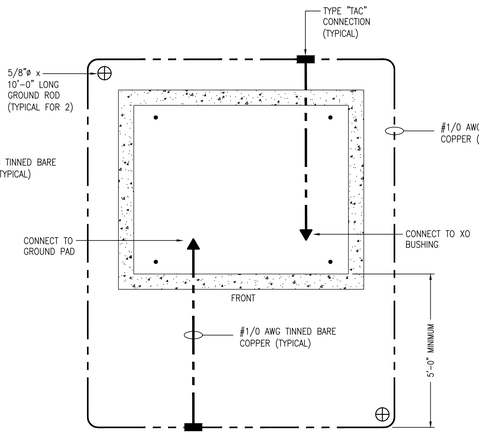
PRIMARY RISER POLE BASE DETAIL (#1/0 CABLE)
SCALE: ½" = 1'-0"

NOTES:

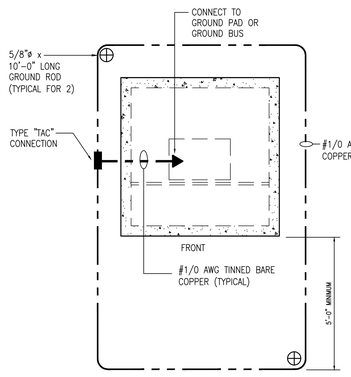
1. ASCENDING PVC CONDUIT SHALL BE INSTALLED PARALLEL TO THE STREET.
2. CONTRACTOR SHALL WRAP RIGID ALUMINUM CONDUIT THAT IS ENCASED IN CONCRETE WITH 2" WIDE ELECTRICAL TAPE, HALF LAPPED.



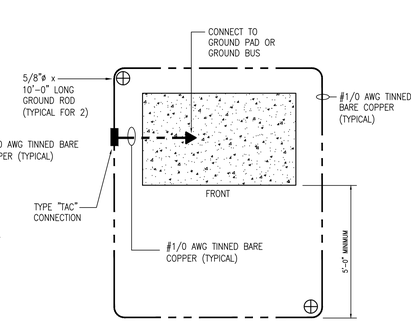
1ø PAD MOUNTED TRANSFORMER GROUNDING PLAN
SCALE: NONE



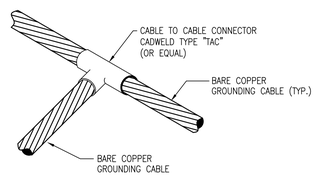
3ø PAD MOUNTED TRANSFORMER GROUNDING PLAN
SCALE: NONE



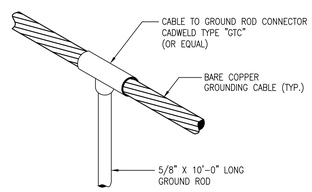
PAD MOUNTED METERING SWITCHGEAR GROUNDING PLAN
SCALE: NONE



PAD MOUNTED SECTIONALIZING CABINET GROUNDING PLAN
SCALE: NONE



CABLE TO CABLE GROUND CONNECTION
SCALE: NONE



CONTINUOUS CABLE TO GROUND ROD CONNECTION
SCALE: NONE

GROUNDING NOTES

1. ALL BURIED GROUNDING CONDUCTORS AND CONNECTED RISERS SHALL HAVE A MINIMUM BURIAL DEPTH OF 18" BELOW GRADE AND SHALL BE TINNED BARE, STRANDED COPPER UNLESS OTHERWISE NOTED.
2. ALL UNDERGROUND GROUNDING SYSTEM CONNECTIONS SHALL BE EXOTHERMICALLY WELDED, INCLUDING ALL CABLE CONNECTIONS, GROUND ROD CONNECTIONS AND SPLICES AND CABLE TO STEEL CONNECTIONS. ALL WELDING MATERIALS USED SHALL BE CADWELD MATERIALS AS MANUFACTURED BY ERICO PRODUCTS, INC. OR APPROVED EQUAL.
3. ALL ABOVE GROUND CONNECTIONS SHALL BE BOLTED CONNECTORS. (BURNDY OR APPROVED EQUAL).
4. TOP OF GROUND RODS SHALL BE 8" MINIMUM BELOW GRADE.
5. ALL BURIED GROUND CONDUCTORS SHALL BE LAID SLACK IN TRENCHES TO PREVENT STRESS AND BREAKAGE.
6. ALL GROUND CONNECTION AREAS SHALL BE PREPARED BY GRINDING OR WIRE BRUSH CLEANING. ALL SURFACES AFFECTED SHALL BE PAINTED WITH RUST INHIBITING PAINT, AFTER WELDING IS COMPLETED.
7. GROUND BED RESISTANCE TO EARTH SHALL BE TESTED UNDER DRY SOIL CONDITIONS AT GROUND TEST WELL. THE THREE-POINT FALL METHOD SHALL BE USED FOR TESTING TO BE DONE USING A BIDDLE "MEGGER" EARTH RESISTANCE TESTER (OR EQUIVALENT) IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE WRITTEN TEST REPORT TO ENGINEER.

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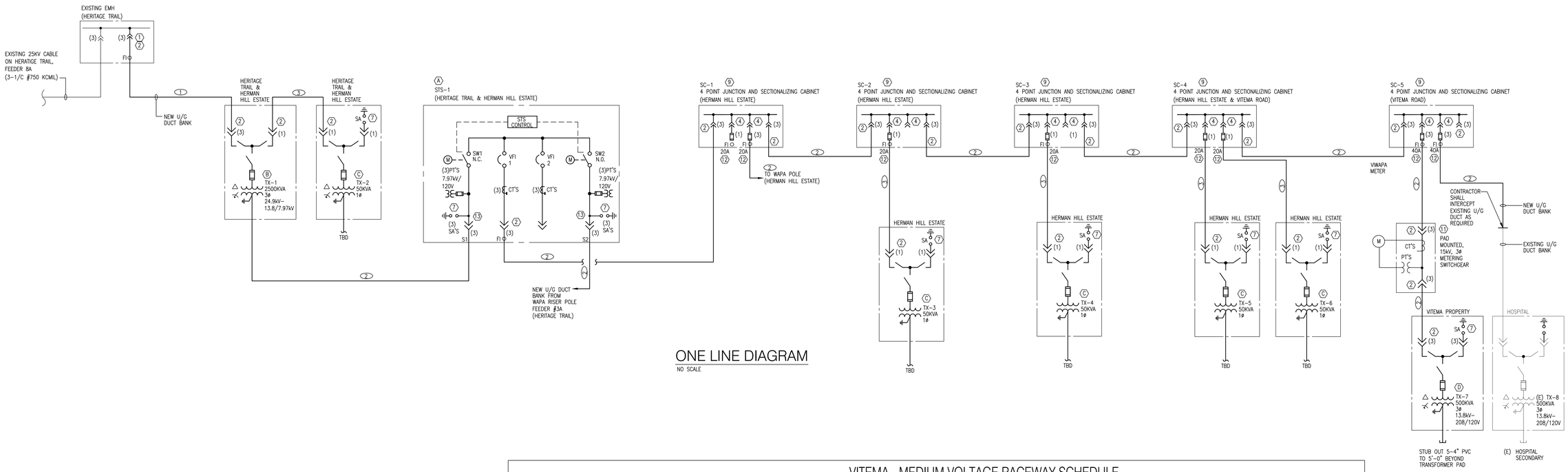
Drawing Title:
GROUNDING / MISC. DETAILS & DUCT BANK SECTIONS

Drawing Number:
STX-20131-V-E-101

SHEET # 3 OF X



ONE LINE DIAGRAM

NO SCALE

VITEMA - MEDIUM VOLTAGE RACEWAY SCHEDULE

TAG	FROM	TO	CABLES / CONDUCTORS PER CONDUIT						CONDUIT			NOTES
			VOLTAGE	PHASE	NEUTRAL	GROUND	INSULATION	TEMP/ RATING	QUANTITY	SIZE	TYPE	
1	EXISTING MANHOLE	TRANSFORMER	25kV	3-1/C #1/0 CU.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	FEEDER 8E
2	SECTIONALIZING CABINET, SWITCHGEAR, METERING SWG., OR TRANSFORMER	SWITCHGEAR, METERING SWG., OR TRANSFORMER	15kV	3-1/C #1/0 CU.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	3ø DISTRIBUTION FEEDER
3	SECTIONALIZING CABINET	TRANSFORMER	15kV	1-1/C #1/0 CU.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	1ø DISTRIBUTION FEEDER

MEDIUM VOLTAGE CABLE IS SUPPLIED BY VIWAPA & RECEIVED, TRANSPORTED, TESTED AND INSTALLED BY CONTRACTOR

VITEMA - PAD MOUNTED SWITCHGEAR SCHEDULE

TAG	LABEL	NAME	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL/TYPE	SC RATING	DIMENSIONS	WEIGHT	ACCESS REQUIRED	INSTALLED BY	CABLE ENTRY / EXIT	FURNISHED BY
A	STS-1	PAD MOUNTED AUTOMATIC SOURCE TRANSFER SWITCHGEAR	1	PAD MOUNTED OUTDOOR AUTOMATIC SOURCE TRANSFER SWITCHGEAR, 200A; 15kV; 95kV BIL; 12.5KA SYMMETRICAL, 2 SOURCE WAYS & 2 VFI TAP WAYS, ELECTRONIC TRIP CONTROL & SCADA/ACCESSORY BOARD AND STAINLESS STEEL ENCLOSURE	REFER TO SPECIFICATIONS	REFER TO SPECIFICATIONS	12.5KA SYM.	TBD	TBD	6' FRONT 3' REAR/SIDES	CONTRACTOR	BOTTOM	CONTRACTOR

NOTE: SWITCHGEAR IS TO BE SUPPLIED, TRANSPORTED, TESTED AND INSTALLED BY CONTRACTOR.

VITEMA - PAD MOUNTED TRANSFORMER SCHEDULE

TAG	LABEL	RATING	PRIMARY	SECONDNARY	QUANTITY	DESCRIPTION	MANUFACTURER	DIMENSIONS	TOTAL WEIGHT	ACCESS REQUIRED	INSTALLED BY	CABLE ENTRY / EXIT	FURNISHED BY
B	TX-1	2500KVA;3ø TRANSFORMER	24.9kV △	13.8kV ⋌	1	3ø PAD MOUNTED TRANSFORMER, 65°C RISE, CLASS KNAN, DEAD FRONT, LOOP FEED, UL LISTED, DOE 2016 EFFICIENCY, STAINLESS STEEL TANK, COPPER WINDINGS, BAY-O-NET FUSES AND CURRENT LIMITING FUSES, DE-ENERGIZED TAP CHANGER (1 ABOVE, 3 BELOW) 2 POSITION LOAD BREAK SWITCH, INSERTS, 95kV BIL	TBD	TBD	TBD	6' FRONT 3' REAR/SIDES	CONTRACTOR	BOTTOM	VIWAPA
C	TX-2,3,4,5,6	50KVA;1ø TRANSFORMER	13.8/7.97kV	120/240V ⋌	5	1ø PAD MOUNTED TRANSFORMER, 65°C RISE, CLASS KNAN, DEAD FRONT, LOOP FEED, UL LISTED, DOE 2016 EFFICIENCY, STAINLESS STEEL TANK, COPPER WINDINGS, BAY-O-NET FUSES AND CURRENT LIMITING FUSES, DE-ENERGIZED TAP CHANGER (1 ABOVE, 3 BELOW) 2 POSITION LOAD BREAK SWITCH, INSETS, 5.5% IMPEDANCE, 95KV BIL	TBD	TBD	TBD	6' FRONT 3' REAR/SIDES	CONTRACTOR	BOTTOM	VIWAPA
D	TX-7	500KVA;3ø TRANSFORMER	13.8kV △	208/120V ⋌	1	3ø PAD MOUNTED TRANSFORMER, 65°C RISE, CLASS KNAN, DEAD FRONT, LOOP FEED, UL LISTED, DOE 2016 EFFICIENCY, STAINLESS STEEL TANK, COPPER WINDINGS, BAY-O-NET FUSES AND CURRENT LIMITING FUSES, DE-ENERGIZED TAP CHANGER (1 ABOVE, 3 BELOW) 2 POSITION LOAD BREAK SWITCH, INSETS, 5.5% IMPEDANCE, 95KV BIL	TBD	TBD	TBD	6' FRONT 3' REAR/SIDES	CONTRACTOR	BOTTOM	VIWAPA

NOTE: TRANSFORMERS ARE SUPPLIED BY VIWAPA AND RECEIVED, TRANSPORTED, TESTED AND NSTALLED BY CONTRACTOR.

VITEMA - MEDIUM VOLTAGE SPLICE/TERMINATION SCHEDULE

ITEM	QUANTITY	DETAILS	BASIS OF DESIGN	MODEL #	DESCRIPTION	INSTALLED BY	FURNISHED BY
2	20	15kV, 200 AMP LOADBREAK ELBOW CONNECTOR, WITH INTEGRAL JACKET SEAL AND TEST POINT FOR 15kV, #1/0 CU, 133% EPR INSULATION, CONCENTRIC NEUTRAL CABLE (SEE APPROVED CABLE DATA SHEET), 10 KAIC SYMMETRICAL	EATON COOPER POWER SERIES	LEJ215 AB 05 T	200A LOADBREAK ELBOW CONNECTOR	CONTRACTOR	CONTRACTOR
4	30	15kV, 200 AMP FUSED LOADBREAK ELBOW CONNECTOR, WITH TEST POINTS FOR 15kV, #1/0 CU, 133% EPR INSULATION, CONCENTRIC NEUTRAL CABLE (SEE APPROVED CABLE DATA SHEET), 10 KAIC SYMMETRICAL, WITH LOADBREAK BUSHING INSERT	EATON COOPER POWER SERIES	LFEP215TFEC B 05 AT WITH LBI215 INSERT	200A FUSED LOADBREAK ELBOW CONNECTOR W/ INSERT	CONTRACTOR	CONTRACTOR
7	5	10KV MCOV POSI-BREAK METAL OXIDE VARISTOR ELBOW TYPE SURGE ARRESTER	EATON COOPER POWER SERIES	PLEA225N10	POSI-BREAK MOV ELBOW ARRESTER	CONTRACTOR	CONTRACTOR
9	5 CABINETS 15 JUNCTIONS	STAINLESS STEEL SECTIONALIZING CABINET, 30"H X 66"W X 22"D WITH 3 – 4 WAY, 200 AMP LOAD BREAK JUNCTIONS, 3 PHASE	EATON COOPER POWER SERIES W/ COOPER SECTER CABINET	LJ215C4B SEC366623F0000S0G		CONTRACTOR	CONTRACTOR
11	1	PAD MOUNTED, 15kV METERING CABINET, DEAD FRONT, RADIAL FEED, NEMA 3R ENCLOSURE, WITH PROVISIONS FOR VIWAPA SUPPLIED CT'S AND PT'S	FEDERAL FACIFIC	PMDF-315-R6-200	PRIMARY METERING CABINET	CONTRACTOR	CONTRACTOR
12	5	20 AMP, 15.5KV CURRENT LIMITING FUSES IN FUSED ELBOW	COOPER	FEF155A020	FUSE	CONTRACTOR	CONTRACTOR
	1	40 AMP, 15.5KV CURRENT LIMITING FUSES IN FUSED ELBOW	COOPER	FEF155A040	FUSE		

NOTE: ALL MATERIALS TO BE SUPPLIED, TRANSPORTED, TESTED AND INSTALLED BY CONTRACTOR.

SINGLE LINE DIAGRAM	
	TRANSFORMER
	SF6 TWO-POSITION SWITCH (OPEN, CLOSED)
	SF6 THREE-POSITION SWITCH (OPEN, CLOSED, GROUND)
52	DRAWOUT POWER CIRCUIT BREAKER
	SWITCH, AIR INSULATED UNLESS NOTED OTHERWISE
	FUSED CUTOUT
	FUSE
	SURGE ARRESTOR
3 600:5A	CURRENT TRANSFORMER; 3 INDICATES QUANTITY; 600:5A INDICATES PRIMARY/SECONDARY RATINGS
2 4200:120V	POTENTIAL TRANSFORMER; 2 INDICATES QUANTITY; 4200:120V INDICATES PRIMARY/SECONDARY RATINGS
K LL	LIVE LINE INDICATOR
M	METER
	GROUND
△	DELTA -CONNECTED WINDING
⋌	WYE-CONNECTED WINDING
⋌	GROUNDED WYE-CONNECTED WINDING
	DEAD FRONT CABLE TERMINATION/CONNECTION
	PREPARED DEAD FRONT CONNECTION
▲	LIVE FRONT CABLE TERMINATION/CONNECTION
△	PREPARED LIVE FRONT CONNECTION
SCTB	SHORT-CIRCUITING TERMINAL BLOCK

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Client:

Virgin Islands Water and Power Authority U.S. Virgin Islands

Project Name:

Underground Electrical Construction Project
Vitema
St. Croix, USVI

Issue / Revisions:

#	Date	Description
A	10/03/22	Issue For 75% Review
B	11/09/22	Issue For CZM Application

Drawn By:	BEM
Chk'd By:	PJB
Date:	11/09/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

ONE LINE DIAGRAM & SCHEDULES

Drawing Number:

STX-20131-V-E-200

SHEET # 4 OF X

MATCH LINE - DRAWING STX-20131-HR-E-301

DUCT BANK PLAN
SCALE: 1" = 50'-0"

0 50' 100'

GRAPHIC SCALE: 1" = 50'-0"

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KEY PLAN
NO SCALE

Client:

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U.S. Virgin Islands

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Underground Electrical Construction Project
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Drawing Title:

DUCT BANK PLAN

Drawing Number:

STX-20131-V-E-300

SHEET # 5 OF X

DUCT BANK PLAN
SCALE: 1" = 50' - 0"

0 50' 100'

GRAPHIC SCALE: 1" = 50'-0"

N

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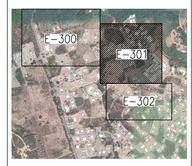

KEY PLAN
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Client:

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U.S. Virgin Islands

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Chk'd By:	PJB
Date:	11/09/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

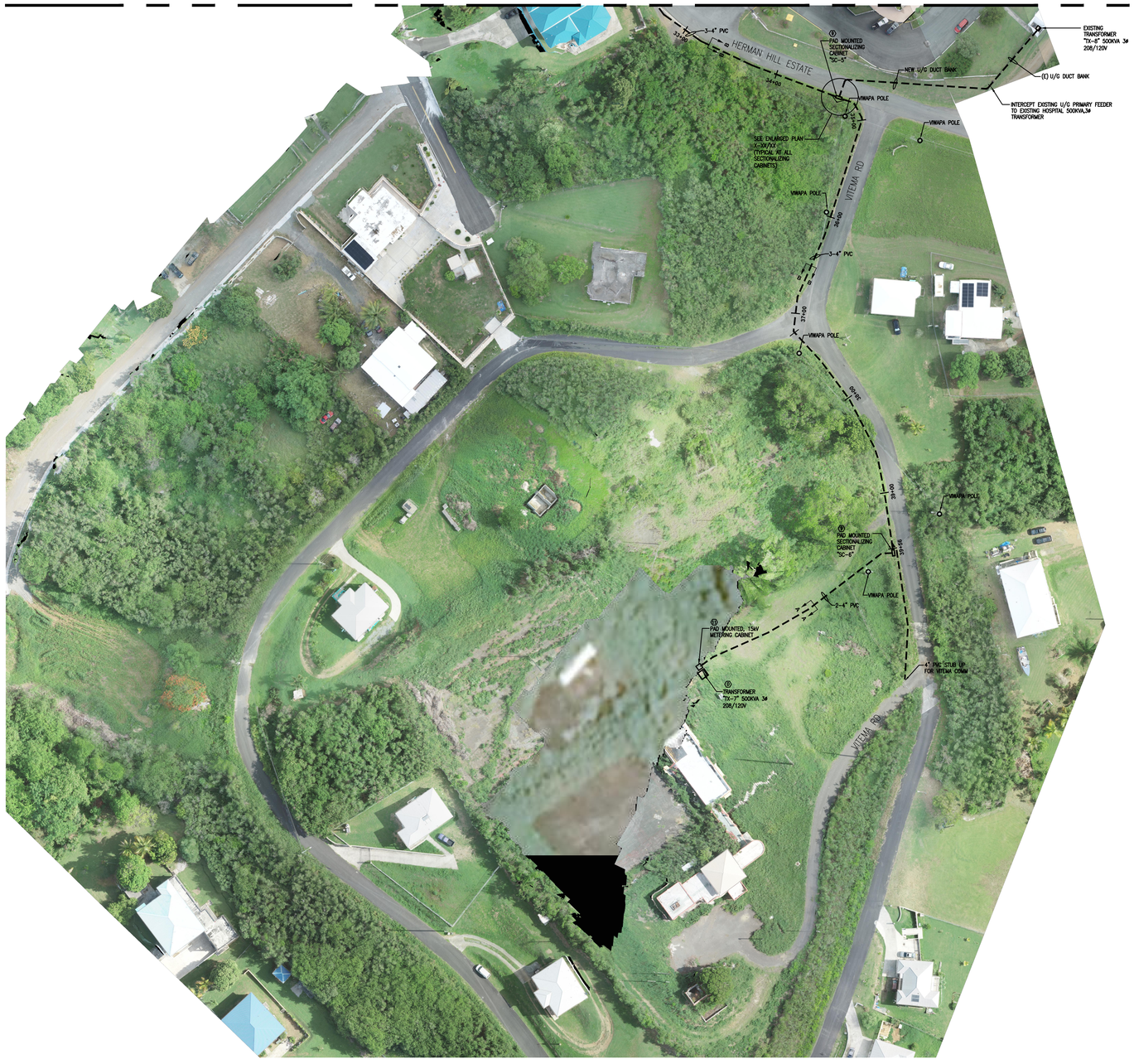
DUCT BANK PLAN

Drawing Number:

STX-20131-V-E-301

SHEET # 6 OF X

MATCH LINE - DRAWING STX-20131-HR-E-301



DUCT BANK PLAN
SCALE: 1" = 50' - 0"

0 50' 100'
GRAPHIC SCALE: 1" = 50'-0"

N

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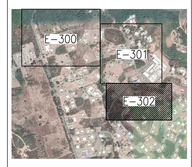

KEY PLAN
NO SCALE

Client:
Virgin Islands Water and Power Authority
U.S. Virgin Islands

Project Name:
Underground Electrical Construction Project
Vitema
St. Croix, USVI

Issue / Revisions:

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B	11/09/22	Issue For CZM Application

Drawn By: BEM
Chkd By: PJB
Date: 11/09/22
Scale: As Noted
Project Number: VIT 20131

Drawing Title:
DUCT BANK PLAN

Drawing Number:
STX-20131-V-E-302
SHEET # 7 OF X