PROJECT

UNDERGROUND ELECTRICAL CONSTRUCTION PROJECT, HANNAH'S REST PHASE 1, (FEEDER 8B) ST CROIX, USVI

DRAWINGS INCLUDED IN THIS PACKAGE

DRAWING #	DRAWING NAME	ISSUE A: 08.09.2021	ISSUE B: 12.01.2021	ISSUE C: 06.24.2022	ISSUE D: 11.08.2022	ISSUE E: 12.30.2022
		ISSUE FOR REVIEW	ISSUE FOR 100% BID REVIEW	ISSUE FOR EHP REVIEW	ISSUE FOR CZM APPLICATION	ISSUE FOR FEMA REVIEW
ELECTRICAL						
STX-20131-HR-G-100	GENERAL CONSTRUCTION NOTES & ABBREVIATIONS	○	○	○	○	●
STX-20131-HR-G-101	GENERAL CONSTRUCTION DETAILS	○	○	○	○	●
STX-20131-HR-E-100	MANHOLE & HANDHOLE DETAILS	○	○	○	○	●
STX-20131-HR-E-101	SWITCHGEAR / TRANSFORMER / MISC. ELECTRICAL DETAILS	○	○	○	○	●
STX-20131-HR-E-102	DUCT BANK SECTIONS & GROUNDING PLANS / DETAILS	○	○	○	○	●
STX-20131-HR-E-200	ONE LINE DIAGRAM	○	○	○	○	●
STX-20131-HR-E-300	PRIMARY DUCT BANK PLAN - NORTHWEST	○	○	○	○	●
STX-20131-HR-E-301	PRIMARY DUCT BANK PLAN - NORTHEAST	○	○	○	○	●
STX-20131-HR-E-302	PRIMARY DUCT BANK PLAN - SOUTHWEST	○	○	○	○	●
STX-20131-HR-E-303	PRIMARY DUCT BANK PLAN - SOUTHEAST	○	○	○	○	●
STX-20131-HR-E-400	ELECTRICAL EQUIPMENT SCHEDULES	○	○	○	○	●
STX-20131-HR-E-401	DUCT BANK SCHEDULES & MV CABLE SCHEDULES					●
STX-20131-HR-E-500	ELECTRICAL ENLARGED PLANS	○	○	○		●
STX-20131-HR-E-501	ELECTRICAL ENLARGED PLANS					●
STX-20131-HR-TC-100	TRAFFIC CONTROL SYMBOLS & DETAILS	○	○	○		
STX-20131-HR-TC-101	TRAFFIC CONTROL SYMBOLS & DETAILS	○	○	○		

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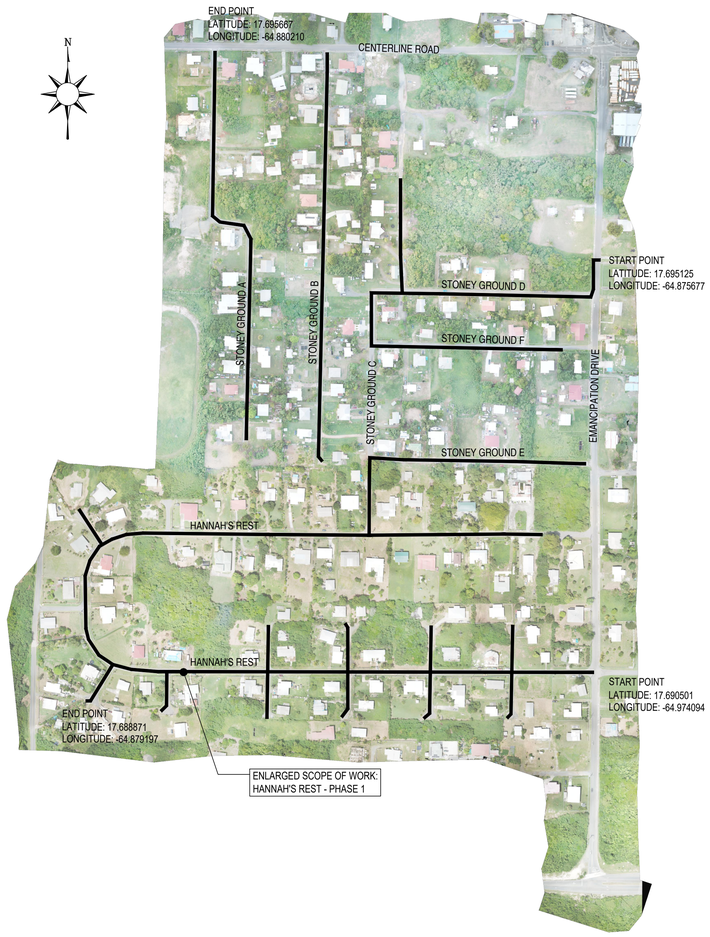
PROJECT LOCATION MAP:
HANNAH'S REST - PHASE 1

ENLARGED PROJECT
LOCATION MAP:
HANNAH'S REST - PHASE 1



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	SECONDIARY
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
		VB	VISIBLE BREAK
		VFI	VACUUM FAULT INTERRUPTER

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-2021 SECTION 7.1)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.1.A
  2. PROVIDE ELECTRICAL TESTS IN ACCORDANCE WITH 7.1.B
* MEDIUM VOLTAGE CABLES (REFERENCE: ANSI/NETA ATS-2021 SECTION 7.3.3)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.3.3.A
  2. PERFORM ELECTRICAL TESTS IN ACCORDANCE WITH ANSI/NETA ATS-2021 SECTION 7.3.3.B AND IEEE STANDARD 400.2
* TRANSFORMERS, LIQUID FILLED (REFERENCE: ANSI/NETA ATS-2021 SECTION 7.2.2)
  1. PROVIDE VISUAL AND MECHANICAL INSPECTION IN ACCORDANCE WITH 7.2.2.A
  2. PERFORM ELECTRICAL TESTS IN ACCORDANCE WITH ANSI/NETA ATS-2021 SECTION 7.2.2.B 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.
3. OFFLOAD EQUIPMENT AND SET IN PLACE IN ITS FINAL LOCATION
4. ANCHOR EQUIPMENT IN PLACE IN ACCORDANCE WITH DRAWINGS & MANUFACTURERS INSTALLATION INSTRUCTIONS/SHOP DWGS.
5. INSTALL ANY COMPONENTS THAT SHIPPED LOOSE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
6. PROVIDE VISUAL INSPECTION AND TESTS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
7. PROVIDE SUPPORT DURING START UP & TESTING SUCH AS RE-TORQUING, PHASE ROTATION CHECK, OPEN TRANSFORMER & SWITCHGEAR DOORS, ETC.

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 UTLIITIES 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 REPOUTED UTLITIES 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 MIMUM 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 UTLITIES 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 UNLESS NOTED OTHERWISE. THE WARRANTY PERIOD SHALL BEGIN AT THE DATE OF SUBSTANTIAL COMPLETION OF WORK UNLESS NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS.
5. 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.
6. CONTRACTOR SHALL LOCATE ALL HANDHOLES, SWITCHGEARS, AND TRANSFORMERS VIA GPS COORDINATES ON RECORD DRAWINGS.
7. 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.

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 DURIGN 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" PHTOGRAPHS, 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 COMPLETETY 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.
11. PRIOR TO EXCAVATION, EXISTING PAVED ROADWAYS & DRIVEWAYS, SHALL BE NEATLY SAW CUT. THE USE OF JACK HAMMERS IS PROHIBITED FOR THIS PURPOSE.
12. 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 THE CONTRACT DRAWINGS FOR SPECIFIC REQUIREMENTS.

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 MATERIAIS.	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, 21.2.8; 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 ANCIORS 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	

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
	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

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5 Christy Drive, Suite 307
Chadds Ford, PA 19317
610.558.3464 office
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Virgin Islands Water and Power Authority U.S. Virgin Islands

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

#	Date	Description
A	08/09/21	Issue For Review
B	12/01/21	Issue For 100% Bid Review
C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

GENERAL CONSTRUCTION NOTES & ABBREVIATIONS

Drawing Number:

STX-20131-HR-G-100

SHEET # 1 OF X

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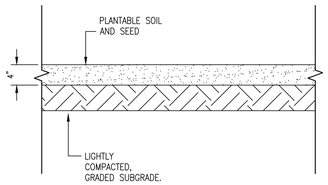
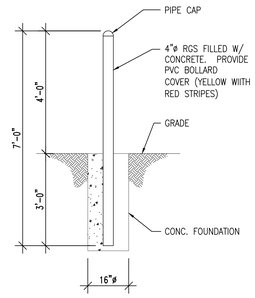


LOAN & SEED DETAIL

SCALE: NONE

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.

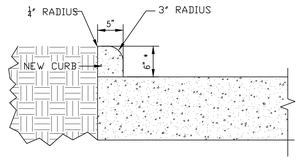


BOLLARD DETAIL

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

EXCAVATION AND ROAD RESTORATION 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 / COMFIRMED 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.

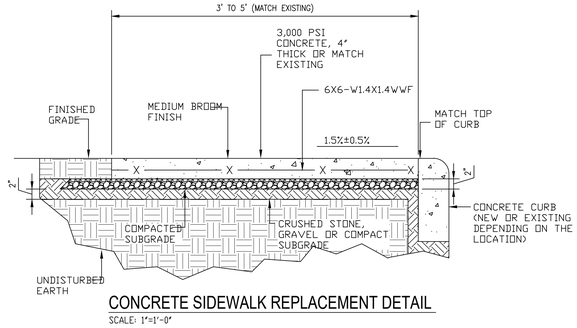


CONCRETE CURB REPLACEMENT

NTS

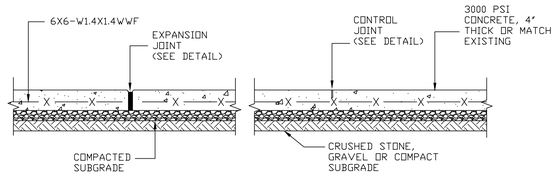
NOTE:
1. REPLACE CONCRETE CURB WITH A MINIMUM OF 48' SECTIONS.

2. CURB DIMENSIONS ARE INDICATED AS 5' WIDE AND 6' HIGH FOR REFERENCE. CONTRACTOR SHALL MATCH THE EXISTING CURB SIZE.



CONCRETE SIDEWALK REPLACEMENT DETAIL

SCALE: 1"=1'-0"

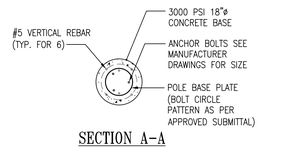


CONCRETE SIDEWALK REPLACEMENT DETAIL LONGITUDINAL VIEW

SCALE: 1"=1'-0"

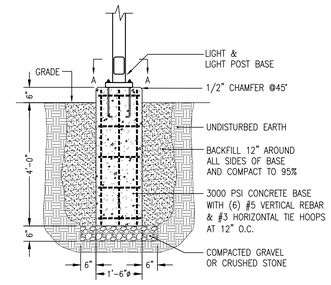
NOTES:

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.



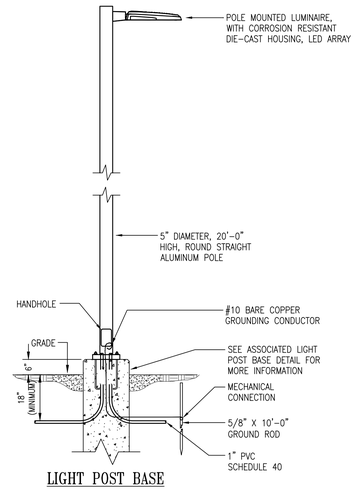
SECTION A-A

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



LIGHT POST BASE DETAIL "SL"

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



LIGHT POST BASE DETAIL "SL"

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

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Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B)
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Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

GENERAL CONSTRUCTION DETAILS

Drawing Number:

STX-20131-HR-G-101

SHEET # 2 OF X

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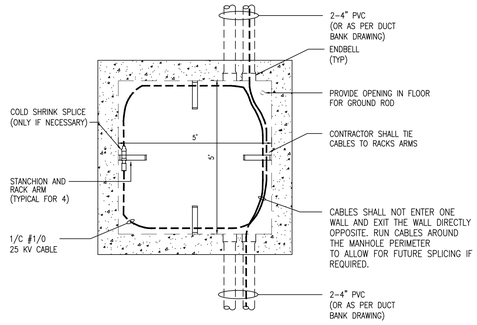
MANHOLE GENERAL NOTES

1. INSTALL #1/0 AWG COPPER GROUND RING AROUND ENTIRE INTERIOR. STRAP @ 2 FT. INTERVALS.
2. MANHOLE FRAME & COVER TO BE HEAVY DUTY TYPE FOR H-20 HIGHWAY LOADING, MARKED "ELECTRIC", U.S. FOUNDRY & MFG. CORP. #USF 648 RING & Y COVER, OR APPROVED EQUAL
3. CONDUIT LOCATIONS ENTERING MANHOLE SHALL BE ADJUSTED FOR EACH MANHOLE AS REQUIRED TO COORDINATE WITH DUCT BANK ELEVATIONS..
4. EXCAVATION SHALL PROCEED WITH EXTREME CARE TO PREVENT ANY DAMAGE TO ANY UNDERGROUND UTILITY LINES OR OTHER UNDERGROUND ITEMS NOT SHOWN ON DRAWINGS. EXCAVATION IN CAUTION AREAS SHALL BE PERFORMED BY HAND.
5. ALL EXTERIOR SURFACES OF MANHOLES TO BE SEALED WITH TWO COATS OF WATERPROOFING TREATMENT. CONTRACTOR SHALL SUBMIT PRODUCT FOR APPROVAL.
6. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE STARTING WORK.
7. MANHOLES FOR THIS PROJECT ARE FURNISHED BY VIWAPA. CONTRACTOR SHALL TRANSPORT MANHOLES TO THE JOBSITE FROM THEIR PRESENT LOCATION IN ST. CROIX.
8. SUBMITTALS ARE REQUIRED FOR THE FOLLOWING:
   - MANHOLE FRAME & COVER
   - MANHOLE STANCHIONS, RACK ARMS AND ACCESSORIES
   - END BELLS
   - WATERPROOFING TREATMENT

HANDHOLE GENERAL NOTES

1. MANHOLE FRAME & COVER TO BE HEAVY DUTY TYPE FOR H-20 HIGHWAY LOADING, MARKED "ELECTRIC", U.S. FOUNDRY & MFG. CORP. #USF 648 RING & Y COVER, OR APPROVED EQUAL
2. SLOPE HANDHOLE FLOORS 1/8" PER FOOT TO SUMP.
3. CONDUIT LOCATIONS ENTERING HANDHOLES SHALL BE ADJUSTED FOR EACH HANDHOLE AS REQUIRED TO COORDINATE WITH DUCT BANK ELEVATIONS.
4. EXCAVATION SHALL PROCEED WITH EXTREME CARE TO PREVENT ANY DAMAGE TO ANY UNDERGROUND UTILITY LINES OR OTHER UNDERGROUND ITEMS NOT SHOWN ON DRAWINGS. EXCAVATION IN CAUTION AREAS SHALL BE PERFORMED BY HAND.
5. ALL EXTERIOR SURFACES OF HANDHOLES TO BE SEALED WITH TWO COATS OF WATERPROOFING TREATMENT. CONTRACTOR SHALL SUBMIT PRODUCT FOR APPROVAL.
6. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE STARTING WORK.
7. FOR ALL CONCRETE WORK A.C.I. STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (A.C.I. 318-) WILL BE APPLICABLE UNLESS NOTED.
8. ALL CONCRETE SHALL BE POURED IN FORMS CONFORMING TO THE DIMENSIONS SHOWN ON THE DRAWINGS.
9. NO CONCRETE SHALL BE POURED UNTIL ALL REINFORCING STEEL IS IN PLACE AND ALL FORMWORK IS INSPECTED AND APPROVED BY VIWAPA.
10. HANDHOLES ARE DETAILED AS PRE-CAST. CAST IN PLACE HANDHOLES ARE ALSO ACCEPTABLE WITH APPROVED SUBMITTAL.
11. ALL CONCRETE MUST INCLUDE A CORROSION-INHIBITING ADMIXTURE. CONTRACTOR MUST SUBMIT MIX DESIGN FOR APPROVAL.
12. SUBMITTALS ARE REQUIRED FOR THE FOLLOWING:
    - HANDHOLE FRAME & COVER
    - PULLING IRONS
    - HANDHOLE SUMP FRAME & GRATING
    - END BELLS
    - WATERPROOFING TREATMENT
    - CYLINDER BREAK (FOR CAST IN PLACE HANDHOLES)
    - CONCRETE DESIGN MIX (FOR CAST IN PLACE HANDHOLES)
    - HANDHOLE SECTIONS, PLAN VIEW & ISOMETRIC VIEWS.

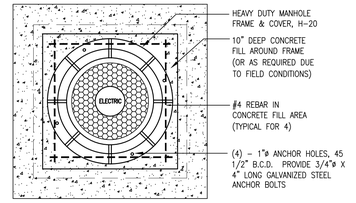


TYPICAL ELECTRIC MANHOLE PLAN VIEW - STRAIGHT PULL TOP REMOVED

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

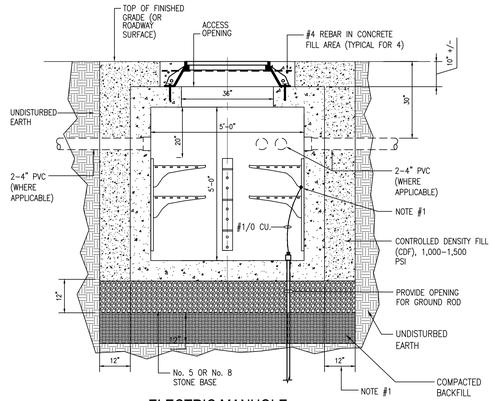
NOTES:

1. ONLY ONE CABLE IS SHOWN FOR CLARITY.
2. MANHOLE BASE AND LID IS FURNISHED BY VIWAPA.
3. ALL MANHOLE ACCESSORIES, INCLUDING FRAME AND COVER IS FURNISHED BY THE CONTRACTOR.



ELECTRIC MANHOLE TOP VIEW OF FRAME & COVER

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



ELECTRIC MANHOLE SECTION VIEW

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

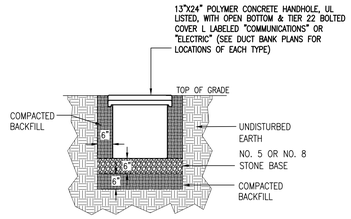
NOTES:

1. OVEREXCAVATE BY 12" ON ALL SIDES OF MANHOLE (WHERE POSSIBLE) AND AND PROVIDE CONTROLLED DENSITY FILL

TYPICAL MANHOLE ACCESSORY BILL OF MATERIAL				
ITEM NUMBER	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	QTY. REQ. (PER MANHOLE)
1	UNDERGROUND DEVICES	FSRM-12	1/2"-13 DROP-IN ANCHOR MATERIAL: 18-8 STAINLESS STEEL	20
2	UNDERGROUND DEVICES	FFW316-18-40	FLAT WASHER I.D.=.562 O.D.=1.25, THK.=.078 MATERIAL: 316 STAINLESS STEEL	20
3	UNDERGROUND DEVICES	FHC316-16-044	1/2"-13 X 1 -3/8" LG. HEX HEAD CAP SCREW MATERIAL: 316 STAINLESS STEEL	20
4	UNDERGROUND DEVICES	CR36-B	36" LONG X 4" WIDE STANCHION MATERIAL: 50% GLASS REINFORCED NYLON	4
5	UNDERGROUND DEVICES	RA20	RA20 ARM (20" LONG) MATERIAL: 50% GLASS REINFORCED NYLON	8
6	UNDERGROUND DEVICES	HDL	HDL LOCK MATERIAL: POLYCARBONATE	8
NOT SHOWN	UNDERGROUND DEVICES	FRT-112	SETTING TOOL TO INSTALL DROP-IN ANCHORS	1

NOTES:

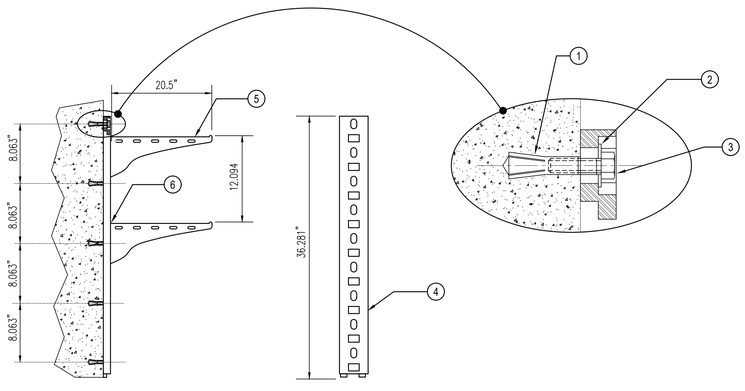
1. ALL MATERIAL LISTED ABOVE SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR.
2. ALL MATERIAL LISTED ABOVE SHALL BE AS SPECIFIED, OR APPROVED EQUAL. THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR REVIEW AND APPROVAL.



HANDHOLE INSTALLATION DETAIL

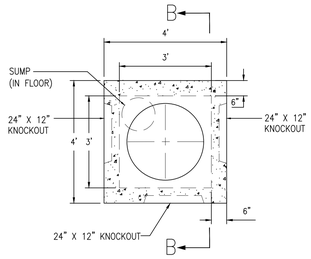
SCALE: NONE

NOTE: DO NOT LOCATE HANDHOLES DIRECTLY IN THE MAIN ROADWAY. THE BOXES AND COVERS ARE RATED FOR OFF-ROADWAY APPLICATIONS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICLE TRAFFIC (ANSI/SCTE 77 TIER 22 RATING)



ENLARGED PLAN NON-METALLIC CABLE RACK

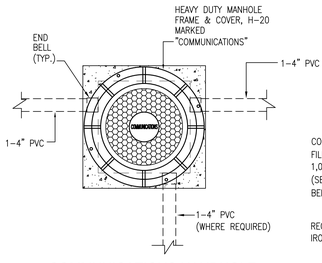
SCALE: NONE



TYPICAL COMMUNICATIONS HANDHOLE PLAN VIEW

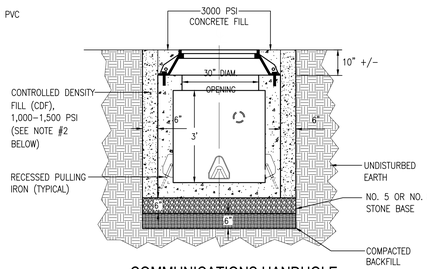
SCALE: 1/2" = 1'-0"

NOTE: PROVIDE PULLING IRONS AS REQUIRED (NOT SHOWN)



COMMUNICATIONS HANDHOLE TOP VIEW

NTS



COMMUNICATIONS HANDHOLE SECTION B-B

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

NOTES:

1. QTY. AND ORIENTATION OF CONDUITS ARE SHOWN FOR REFERENCE ONLY AND MAY VARY WITH EACH MANHOLE.
2. OVEREXCAVATE BY 12" ON ALL SIDES OF MANHOLE (WHERE POSSIBLE) TO ACCOMMODATE CONTROLLED DENSITY FILL.
3. IN LIEU OF CONTROLLED DENSITY FILL, CONTRACTOR MAY USE APPROVED BACKFILL COMPACTED IN 12" LIFTS AROUND THE PERIMETER OF THE MANHOLE.

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Drawn By:	BEM
Chkd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

MANHOLE & HANDHOLE DETAILS

Drawing Number:

STX-20131-HR-E-100

SHEET # 3 OF X

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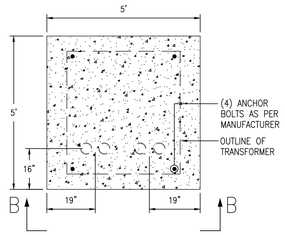
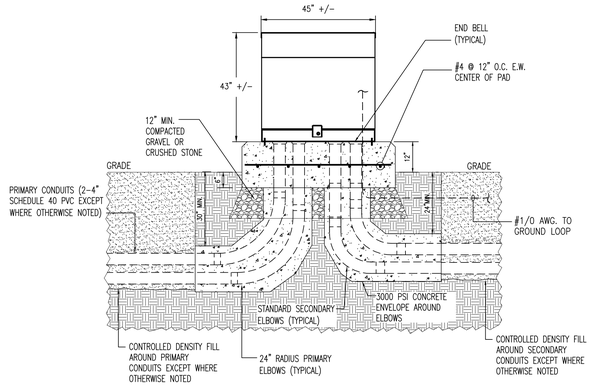
CONCRETE PAD NOTES

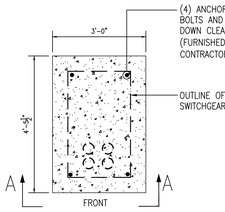
1. CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS BEFORE STARTING WORK.
2. CONTRACTOR SHALL VERIFY SUB-SURFACE CONDITIONS BEFORE ANY FOUNDATIONS ARE PLACED. ASSUMED SOIL BEARING CAPACITY 3000 P.S.F.
3. FOR ALL CONCRETE WORK A.C.I. STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (A.C.I. 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.



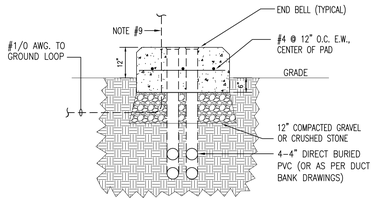
TRANSFORMER PAD SINGLE PHASE (100KVA AND OVER)- PLAN VIEW
SCALE: ½" = 1'-0"



SECTION B-B THRU SINGLE PHASE (100KA AND OVER) TRANSFORMER PAD

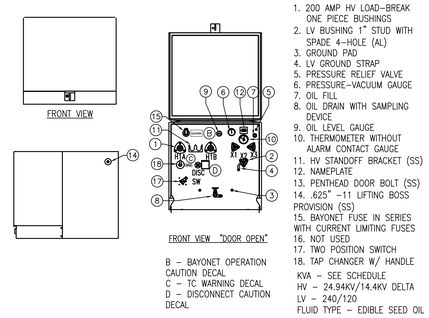


1Ø SWITCHGEAR PAD DETAIL
SCALE: ½" = 1'-0"



SECTION "A-A" 1Ø SWITCHGEAR PAD
SCALE: ½" = 1'-0"

TRANSFORMER AND SWITCHGEAR NOTES:
1. TAMP DIRT BEFORE POURING CONCRETE.
2. CHAMFER ALL EDGES OF EXPOSED CONCRETE.
3. PROVIDE END CAPS FOR ALL SPARE CONDUITS.
4. BOLT EQUIPMENT 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. PRIMARY ELBOWS ARE FURNISHED BY VIWAPA.
8. TRANSFORMER SECONDARY LUGS SHALL BE COMPRESSION TYPE AND SHALL BE FURNISHED BY THE CONTRACTOR.
9. CONNECT #1/0 BARE COPPER WIRE TO HO & XO OF TRANSFORMER & TO CONCENTRIC NEUTRAL CABLES.

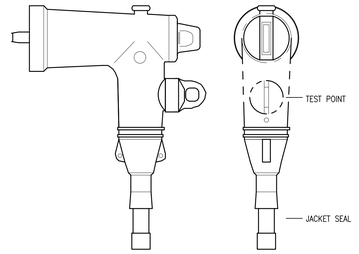


1. 200 AMP HV LOAD-BREAK ONE PIECE BUSHINGS
2. LV BUSHING 1" STUD WITH SPADE 4-HOLE (AL)
3. GROUND PAD
4. LV GROUND STRAP
5. PRESSURE RELIEF VALVE
6. PRESSURE-VACUUM GAUGE
7. OIL FILL
8. OIL DRAIN WITH SAMPLING DEVICE
9. OIL LEVEL GAUGE
10. THERMOMETER WITHOUT ALARM CONTACT GAUGE
11. HV STANDOFF BRACKET (SS)
12. NAMEPLATE
13. PENTHEAD DOOR BOLT (SS)
14. .625" -11 LIFTING BOSS PROVISION (SS)
15. BAYONET FUSE IN SERIES WITH CURRENT LIMITING FUSES
16. NOT USED
17. TWO POSITION SWITCH
18. TAP CHANGER W/ HANDLE

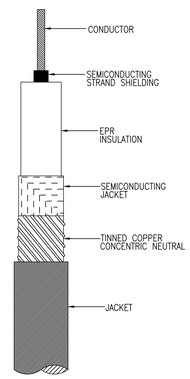
KVA - SEE SCHEDULE
HV - 24.94KV/14.4KV DELTA
LV - 240/120
FLUID TYPE - EDIBLE SEED OIL

TYPICAL SINGLE PHASE TRANSFORMER
SCALE: NO SCALE

NOTES:
1. THIS DETAIL IS FOR REFERENCE ONLY AND WILL CHANGE BASED ON TRANSFORMER KVA RATING, FINAL OPTIONS SELECTED AND MANUFACTURER.
2. CONTRACTOR MUST REFER TO THE APPROVED TRANSFORMER SUBMITTALS FOR ACTUAL DETAILS PRIOR TO PURCHASING BOX PADS.
3. DIMENSIONS INDICATED MUST NOT BE CONSIDERED ACCURATE. REFER TO APPROVED SUBMITTALS FOR ACTUAL DIMENSIONS.



25kV LOADBREAK ELBOW W/JACKET SEAL
SCALE: NO SCALE



CONCENTRIC NEUTRAL CABLE DETAIL
(PRIMARY CABLE IS FURNISHED BY VIWAPA)
SCALE: NO SCALE

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SWITCHGEAR / TRANSFORMER / MISC. ELECTRICAL DETAILS

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STX-20131-HR-E-101

SHEET # 4 OF X

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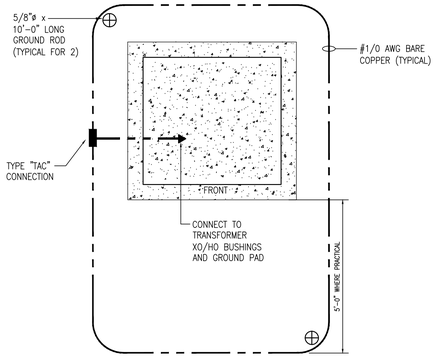
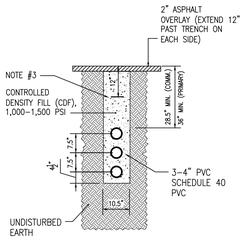


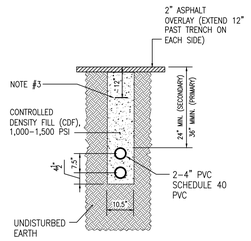
1ø PAD MOUNTED TRANSFORMER GROUNDING PLAN

SCALE: NONE



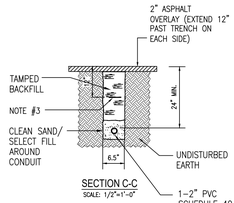
SECTION A-A

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



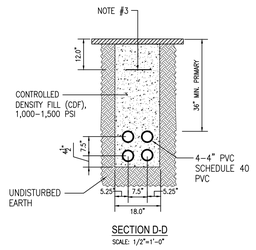
SECTION B-B

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



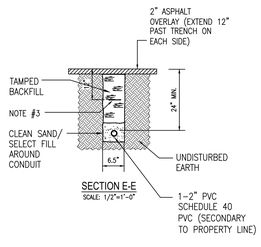
SECTION C-C

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



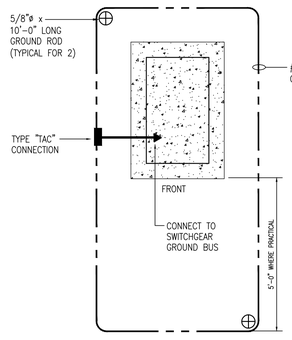
SECTION D-D

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



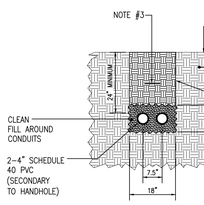
SECTION E-E

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



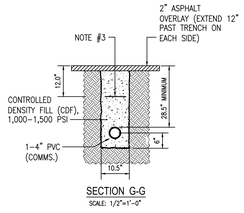
1ø PAD MOUNTED SWITCHGEAR GROUNDING PLAN

SCALE: NONE



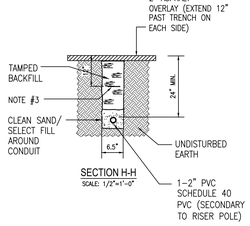
SECTION F-F

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



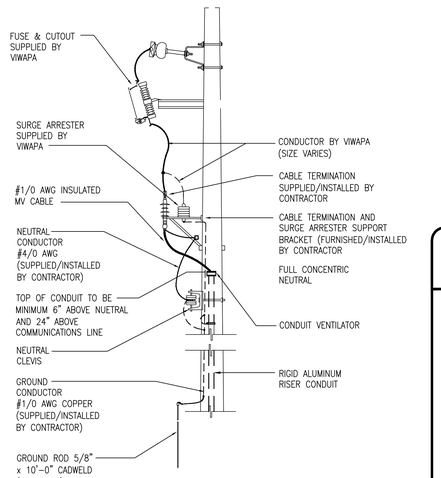
SECTION G-G

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



SECTION H-H

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



PRIMARY 1ø RISER POLE DETAIL

NOT TO SCALE

NOTES:

1. CONTRACTOR TO RUN #1/0 AWG INSULATED COPPER GROUND CONDUCTOR TO SURGE ARRESTER, AND TO METAL CONDUIT RISER, AND BOND TO SYSTEM NEUTRAL.
2. CONTRACTOR TO CONNECT MV CABLE CONCENTIRC NEUTRALS TO SYSTEM NEUTRAL WITH #4/0 AWG BARE COPPER CONDUCTOR.

PVC CONDUIT ACCESSORIES BILL OF MATERIALS

	QUANTITY	DESCRIPTION
1	TBD	HIGH IMPACT DUCT SPACERS FOR 2" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP2W30-2
2	TBD	2" SNAP-LOC REDUCER, CARLON #5287J
3	TBD	HIGH IMPACT DUCT SPACERS FOR 4" DUCTS, 3" SPACING BETWEEN DUCTS, CARLON #SP4W30-2
4	TBD	GREY SOLVENT CEMENT, CARLON #VC9922
5	TBD	CLEAR PRIMER, CARLON #VC9902
6	TBD	SCHEDULE 40 PVC CONDUIT AND ELBOWS – CONTRACTOR TO DETERMINE QUANTITIES

NOTES:

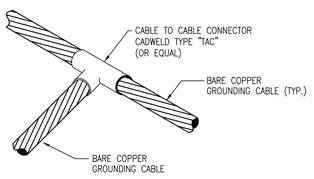
1. PVC CONDUIT ACCESSORIES SHALL BE AS SPECIFIED, OR APPROVED EQUAL.
2. CONTRACTOR SHALL PROVIDE SUBMITTALS TO ENGINEER FOR APPROVAL PRIOR TO ORDERING ANY CONDUIT ACCESSORIES.
3. ALL QUANTITIES SHALL BE DETERMINED BY THE CONTRACTOR.

BILL OF MATERIAL FOR GROUNDING SYSTEM

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

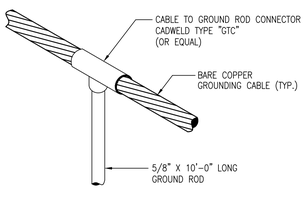
NOTES:

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.



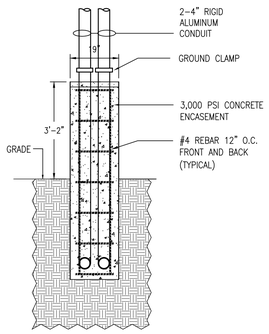
CABLE TO CABLE GROUND CONNECTION

SCALE: NONE



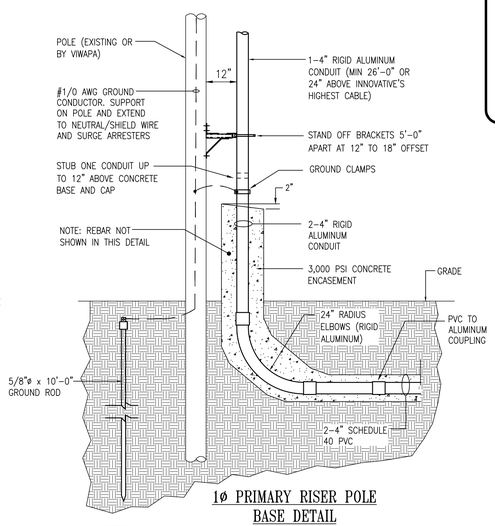
CONTINUOUS CABLE TO GROUND ROD CONNECTION

SCALE: NONE



PRIMARY RISER POLE BASE DETAIL - FRONT VIEW

SCALE: ½" = 1'-0"



1ø PRIMARY RISER POLE BASE DETAIL

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.
3. THIS DETAIL ONLY APPLIES TO WOOD POLES.

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.

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 SPACES 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.

Engineer

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Chadds Ford, PA 19317
610.558.3464 office
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Engineering Excellence Since 1968

Engineers Seal

Client:

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

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

#	Date	Description
A	08/09/21	Issue For Review
B	12/01/21	Issue For 100% Bid Review
C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

DUCT BANK SECTIONS & GROUNDING PLANS / DETAILS

Drawing Number:

STX-20131-HR-E-102

SHEET # 5 OF X

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ELECTRICAL SYMBOLS

SINGLE LINE DIAGRAM

	TRANSFORMER
	SWITCH, AIR INSULATED UNLESS NOTED OTHERWISE
	FUSED CUTOUT
	FUSE
	SURGE ARRESTOR
	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

ONE LINE DIAGRAM

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Client:

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Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

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E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

ONE LINE DIAGRAM

Drawing Number:

STX-20131-HR-E-200

SHEET # 6 OF X

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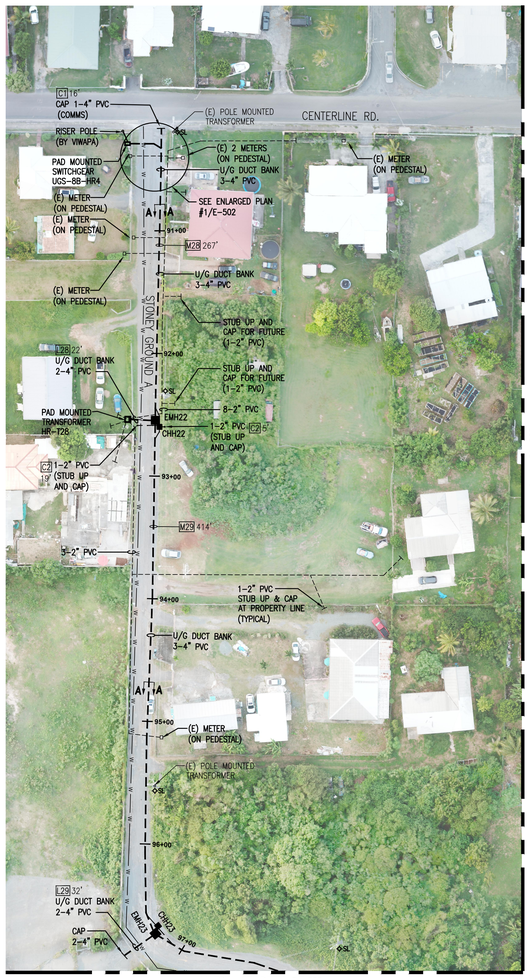
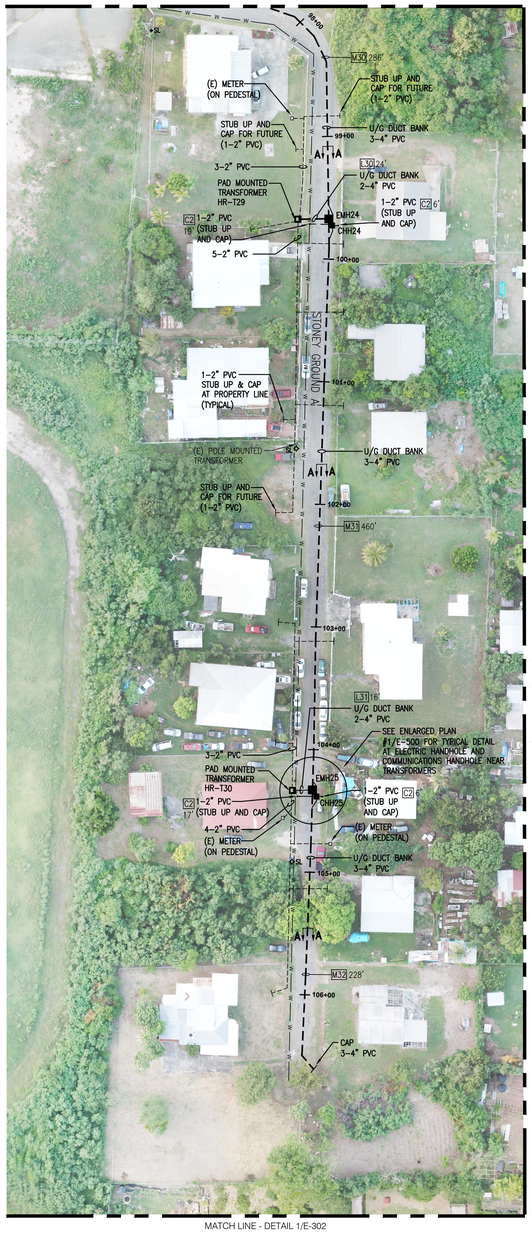


1 E-300 DUCT BANK PLAN
SCALE: 1" = 50'-0"

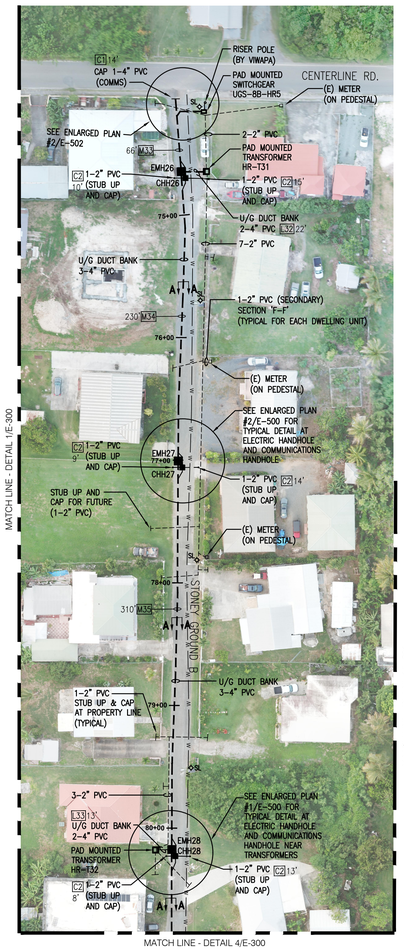
0 50' 100'
GRAPHIC SCALE: 1" = 50'-0"

DRAWING NOTES

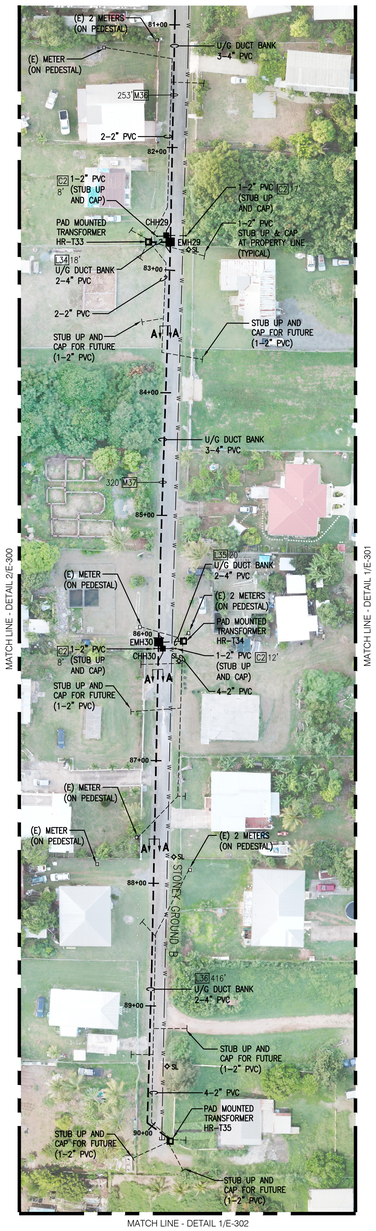
1. EXTENSIONS OF CONDUIT TO PROPERTY LINE WILL BE PERFORMED UNDER THIS SCOPE OF WORK. CONTRACTOR SHALL STUB UP & CAP CONDUITS WITH PULL STRING AT EACH PROPERTY LINE & MARK LOCATION WITH GPS COORDINATES ON "AS BUILT" DRAWINGS



2 E-300 DUCT BANK PLAN
SCALE: 1" = 50'-0"



3 E-300 DUCT BANK PLAN
SCALE: 1" = 50'-0"



4 E-300 DUCT BANK PLAN
SCALE: 1" = 50'-0"

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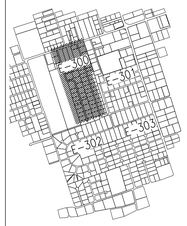

KEY PLAN
NO SCALE

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

Project Name:
Underground
Electrical
Construction Project,
Hannah's Rest -
Phase 1, (Feeder 8B)
St. Croix, USVI

Issue / Revisions:

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C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:
PRIMARY
DUCT BANK PLAN
NORTHWEST

Drawing Number:
STX-20131-HR-E-300

SHEET # 7 OF X

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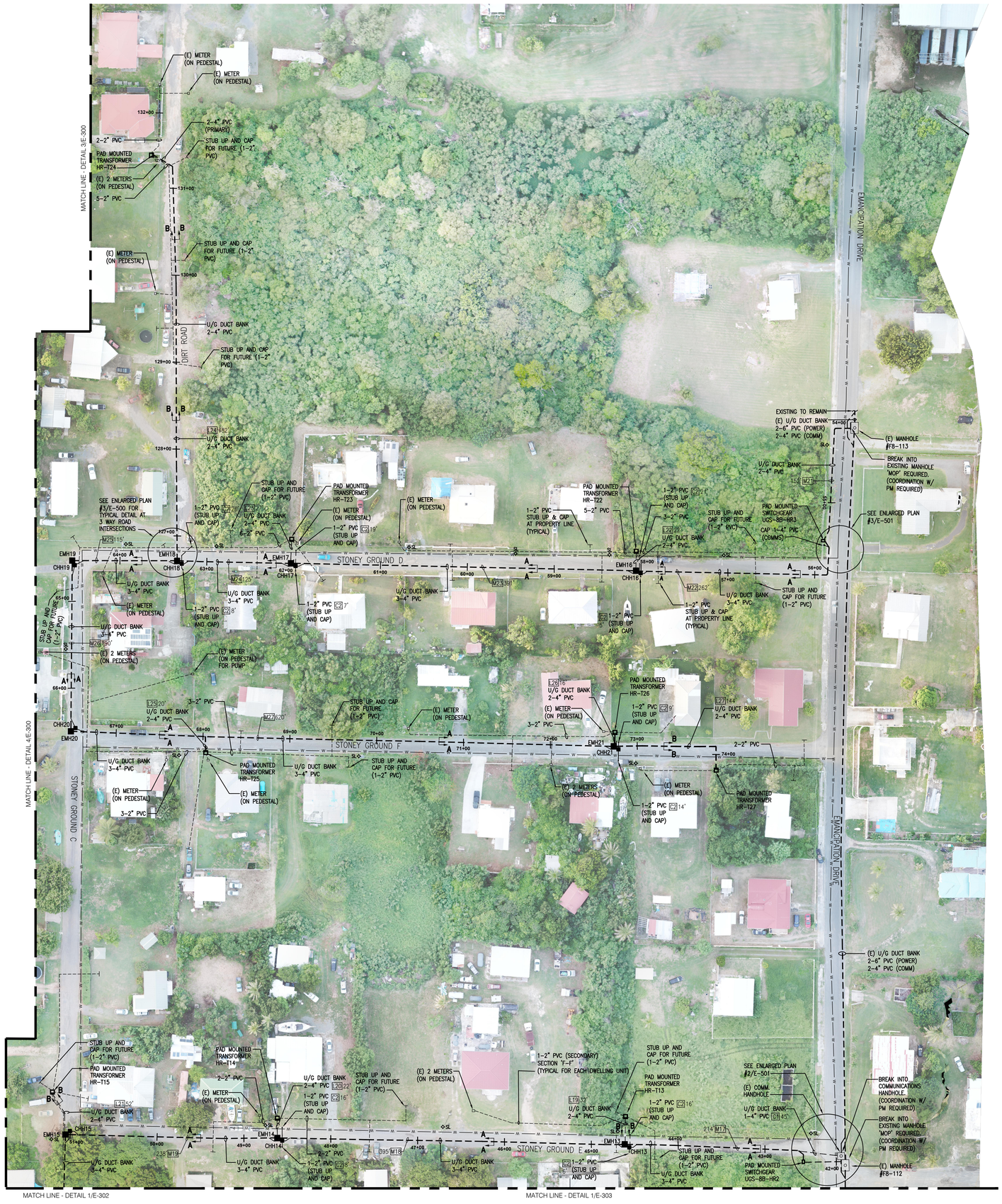

1 E-301 DUCT BANK PLAN
SCALE: 1" = 50'-0"

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

DRAWING NOTES

1. EXTENSIONS OF CONDUIT TO PROPERTY LINE WILL BE PERFORMED UNDER THIS SCOPE OF WORK. CONTRACTOR SHALL STUB UP & CAP CONDUITS WITH PULL STRING AT EACH PROPERTY LINE & MARK LOCATION WITH GPS COORDINATES ON "AS BUILT" DRAWINGS

Engineer

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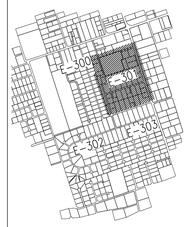

KEY PLAN
NO SCALE

Client:

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

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

#	Date	Description
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B	12/01/21	Issue For 100% Bid Review
C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

PRIMARY DUCT BANK PLAN NORTHEAST

Drawing Number:

STX-20131-HR-E-301

SHEET # 8 OF X

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1 E-302 DUCT BANK PLAN
SCALE: 1" = 50'-0"

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

DRAWING NOTES

1. EXTENSIONS OF CONDUIT TO PROPERTY LINE WILL BE PERFORMED UNDER THIS SCOPE OF WORK. CONTRACTOR SHALL STUB UP & CAP CONDUITS WITH PULL STRING AT EACH PROPERTY LINE & MARK LOCATION WITH GPS COORDINATES ON "AS BUILT" DRAWINGS

Engineer

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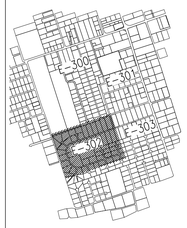

KEY PLAN
NO SCALE

Client:

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

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

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C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

PRIMARY DUCT BANK PLAN SOUTHWEST

Drawing Number:

STX-20131-HR-E-302

SHEET # 9 OF X

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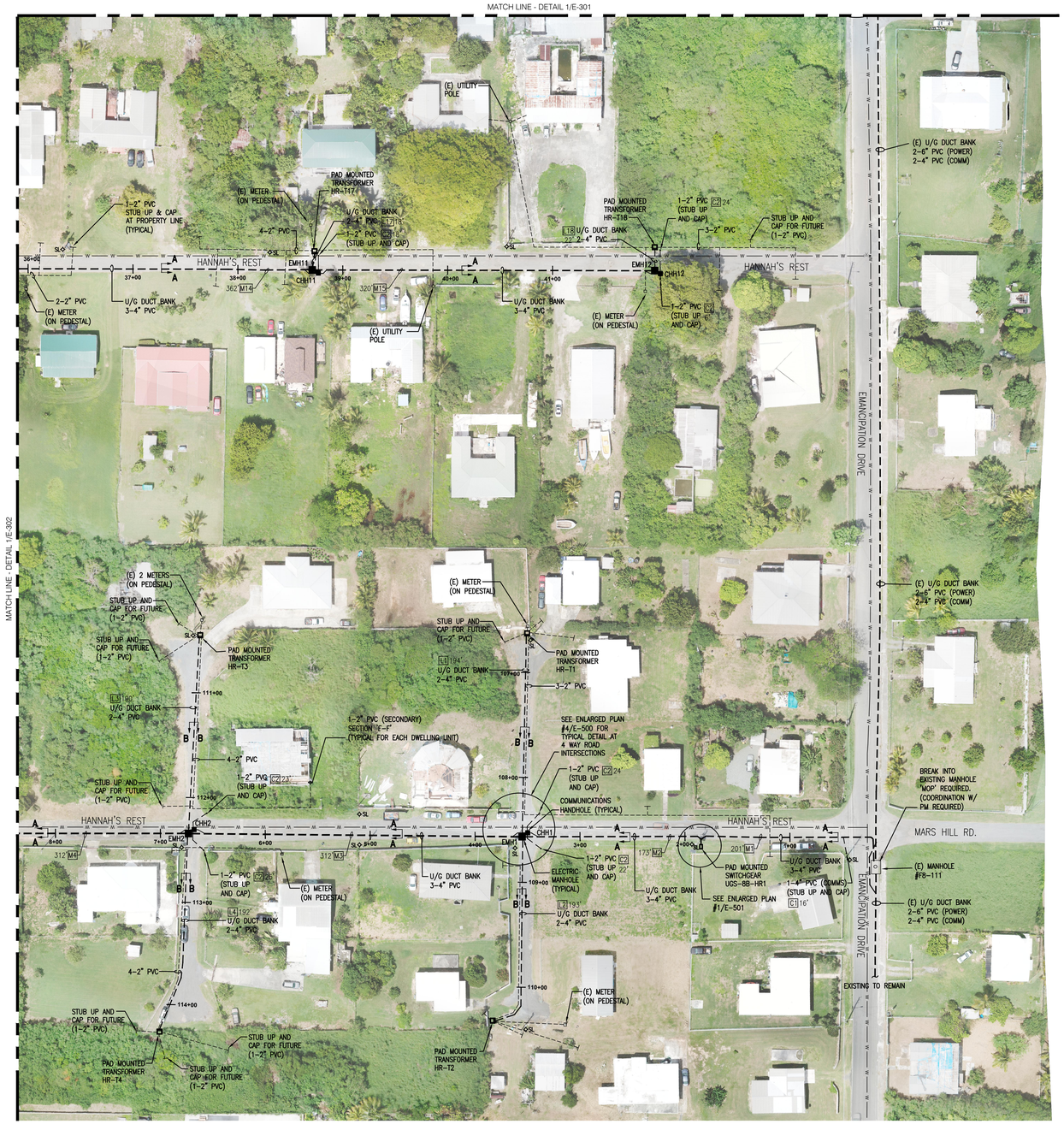

1 E-303 DUCT BANK PLAN
SCALE: 1" = 50'-0"

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

DRAWING NOTES

1. EXTENSIONS OF CONDUIT TO PROPERTY LINE WILL BE PERFORMED UNDER THIS SCOPE OF WORK. CONTRACTOR SHALL STUB UP & CAP CONDUITS WITH PULL STRING AT EACH PROPERTY LINE & MARK LOCATION WITH GPS COORDINATES ON "AS BUILT" DRAWINGS

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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, Hannah's Rest - Phase 1, (Feeder 8B)
St. Croix, USVI

Issue / Revisions:

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C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chkd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

PRIMARY DUCT BANK PLAN SOUTHEAST

Drawing Number:

STX-20131-HR-E-303

SHEET #10 OF X

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HANNAHS REST- PAD MOUNTED TRANSFORMER SCHEDULE

TAG	LABEL	RATING	PRIMARY	SECONDNARY	QUANTITY	DESCRIPTION	BASIS OF DESIGN	DIMENSIONS	WEIGHT	ACCESS REQUIRED	INSTALLED BY	CABLE ENTRY / EXIT	FURNISHED BY
(A)	HR-T1, HR-T2, HR-T3, HR-T4, HR-T5, HR-T6, HR-T7, HR-T8, HR-T9, HR-T10, HR-T12, HR-T14, HR-T15, HR-T16, HR-T17, HR-T20, HR-T21, HR-T24, HR-T31, HR-T35	50kVA;1ø TRANSFORMER	24.97/14.4kV	120/240V	20	50kVA; 1ø PAD MOUNTED TRANSFORMER, 24.97/14.4kV-120/240V. 65°C RISE, CLASS KNAN, DEAD FRONT, LOOP FEED, DOE 2016 EFFICIENCY, STAINLESS STEEL TANK, COPPER WINDINGS, EXPULSION FUSES AND CURRENT LIMITING FUSES, DE-ENERGIZED TAP CHANGER, ELBOW TYPE SURGE ARRESTERS	REFER TO SPECIFICATIONS	TBD	TBD	6' FRONT 3' REAR/SIDES	E.C.	BOTTOM	VIWAPA
(B)	HR-T11, HR-T13, HR-T18, HR-T19, HHR-T22, HR-T23, HR-T25, HR-T26, HR-T27, HR-T28, HR-T29, HR-T30, HR-T32, HR-T33, HR-T34	75kVA;1ø TRANSFORMER	24.97/14.4kV	120/240V	15	75kVA; 1ø PAD MOUNTED TRANSFORMER, 24.97/14.4kV-120/240V. 65°C RISE, CLASS KNAN, DEAD FRONT, LOOP FEED, DOE 2016 EFFICIENCY, STAINLESS STEEL TANK, COPPER WINDINGS, EXPULSION FUSES AND CURRENT LIMITING FUSES, DE-ENERGIZED TAP CHANGER, ELBOW TYPE SURGE ARRESTERS	REFER TO SPECIFICATIONS	TBD	TBD	6' FRONT 3' REAR/SIDES	E.C.	BOTTOM	VIWAPA

NOTE: TRANSFORMERS ARE SUPPLIED BY VIWAPA AND RECEIVED / TRANSPORTED / TESTED / INSTALLED BY CONTRACTOR.

HANNAHS REST - 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
(B)	UGS-8B-HR1, UGS-8B-HR2, UGS-8B-HR3, UGS-8B-HR4, UGS-8B-HR5	PAD MOUNTED DISTRIBUTION SWITCHGEAR	5	SINGLE PAHSE PAD MOUNTED OUTDOOR DISTRIBUTION SWITCHGEAR, 2WAY, 600A; 25kV; 12.5KA SYMMETRICAL, 1 SOURCE WAY & 1 VFI TAP WAY, 3 POSITION VISIBLE BREAK SOURCE SWITCH, MOTOR OPERATED SOURCE SWITCH, VFI TAP SWITCH, WITH INTERNAL PT, 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	E.C.	BOTTOM	E.C.

NOTE: SWITCHGEAR IS SUPPLIED / TRANSPORTED / TESTED / INSTALLED BY CONTRACTOR.

HANNAH' REST - MEDIUM VOLTAGE RACEWAY SCHEDULE

TAG	FROM	TO	CABLES / CONDUCTORS PER CONDUIT						CONDUIT			PURPOSE
			VOLTAGE	PHASE	NEUTRAL	GROUND	INSULATION	TEMP/ RATING	QUANTITY	SIZE	TYPE	
(1)	NOT USED	NOT USED	25kV	3-1/C #1/0 CU.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	FEEDER 8B
(2)	MANHOLE OR RISER POLE	1 PHASE SWITCHGEAR	25kV	1/C #1/0 AL.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	1 PHASE TRANSFORMER FEEDER
(3)	1 PHASE PAD MOUNTED TRANSORMER	1 PHASE PAD MOUNTED TRANSFORMER	25kV	1/C #1/0 AL.	FULL NEUTRAL	N/A	100% EPR	MV105	1	4"	SCHEDULE 40 PVC	1 PHASE TRANSFORMER FEEDER

NOTE: MEDIUM VOLTAGE CABLE IS SUPPLIED BY VIWAPA & RECEIVED / TRANSPORTED / TESTED / INSTALLED BY CONTRACTOR

HANNAHS REST - MEDIUM VOLTAGE SPLICE/TERMINATION SCHEDULE

ITEM	QUANTITY	DETAILS	BASIS OF DESIGN	MODEL #	DESCRIPTION	INSTALLED BY	FURNISHED BY
(1A)	30	25KV, COLD SHRINK CABLE SPLICE FOR #1/0 CU. CABLE, (XX" O.D., W/CONC. NEUTRAL 133% EPR INSULATION (SEE APPROVED CABLE DATA SHEET)	3M KIT QS-III RAYCHEM	5523A CSJA-2822M5	EPDM STRAIGHT THROUGH CABLE SPLICE	E.C.	E.C.
(2)	78	25KV, 200 AMP LOADBREAK ELBOW CONNECTOR FOR 25KV, #1/0 CU, 100% INSULATION, CONCENTRIC NEUTRAL CABLE (SEE APPROVED CABLE DATA SHEET), WITH SEAL KIT	HUBBELL	228LE35TJ	200A LOADBREAK ELBOW CONNECTOR AT TRANSFORMERS AND AT JUINCTIONS	E.C.	E.C.
(7)	7	18KV/15.3KV MCOV METAL OXIDE VARISTOR ELBOW TYPE SURGE ARRESTER	HUBBELL	225ELA18	MOV ELBOW ARRESTER	E.C.	E.C.
(11)	38	CABLE FAULT INDICATOR, SELF POWERED, LOCAL LED INDICATION WITH 8 HOUR AUTOMATIC RESET, AND DETACHABLE 6' REMOTE FIBER-OPTIC DISPLAY LEAD	SEL	SEL ARU 1BARUZR8GY2	FAULT INDICATOR	E.C.	E.C.
(16)	2	OUTDOOR TYPE, SILICON POLYMER COLD SHRINK, 25kV CABLE TERMINATION KIT, CABLE SIZE #1/0 KCMIL CU., 100% EPR INSULATION, CONCENTRIC NEUTRAL CABLE (SEE APPROVED CABLE DATA SHEET), WITH MOUNTING BRACKET (COMPLY WITH IEEE 48 CLASS 1)	BURNDY	CSUD0252814OJ	TERMINATION AT 25kV RISER POLES	E.C.	E.C.
(18)	2	25KV FEED-THRU INSERT	HUBBELL	228FTI	25KV FEED THRU INSERT	E.C.	E.C.

NOTE: EQUIPMENT LISTED ABOVE IS SUPPLIED / TRANSPORTED / TESTED / INSTALLED BY CONTRACTOR. ALL EQUIPMENT SHALL BE THE BASIS OF DESIGN OR EQUAL.

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5 Christy Drive, Suite 307
Chadds Ford, PA 19317
610.558.3464 office
www.fxbinc.com

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Client:

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

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

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Drawn By:	BEM
Chkd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

ELECTRICAL EQUIPMENT SCHEDULES

Drawing Number:

STX-20131-HR-E-400

SHEET #11 OF X

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HANNAH'S REST - MAIN DUCT BANK SCHEDULE (4" PRIMARY)

TAG	FROM	TO	LENGTH OF DUCT BANK (FEET)	DUCT BANK PVC QUANTITY	SECTION TAG
M1	MANHOLE #F8-111	UGS-8B-HR1	50	2-4" PVC	B-B
			136	3-4" PVC	A-A
			15	4-4" PVC	D-D
M2	UGS-8B-HR1	EMH2	173	3-4" PVC	A-A
M3	EMH1	EMH2	312	3-4" PVC	A-A
M4	EMH2	EMH3	312	3-4" PVC	A-A
M5	EMH3	EMH4	316	3-4" PVC	A-A
M6	EMH4	EMH31	247	3-4" PVC	A-A
M7	EMH31	EMH5	139	3-4" PVC	A-A
M8	EMH5	EMH6	214	3-4" PVC	A-A
M9	EMH6	PULL BOX	252	3-4" PVC	A-A
M10	PULL BOX	EMH7	P	3-4" PVC	A-A
M11	EMH7	EMH8	263	3-4" PVC	A-A
M12	EMH8	EMH9	448	3-4" PVC	A-A
M13	EMH9	EMH10	307	3-4" PVC	A-A
M14	EMH10	EMH11	362	3-4" PVC	A-A
M15	EMH11	EMH12	320	3-4" PVC	A-A
M16	MANHOLE #F8-112	UGS-8B-HR2	45	2-4" PVC	B-B
M17	UGS-8B-HR2	EHM13	18	2-4" PVC	B-B
			196	3-4" PVC	A-A
M18	EMH13	EMH14	395	3-4" PVC	A-A
M19	EMH14	EMH15	238	3-4" PVC	A-A
M20	EMH15	EMH10	295	3-4" PVC	A-A
M21	MANHOLE #F8-113	UGS-8B-HR3	152	2-4" PVC	B-B
M22	UGS-8B-HR3	EMH16	262	3-4" PVC	A-A
M23	EMH16	EMH17	391	3-4" PVC	A-A
M24	EMH17	EMH18	125	3-4" PVC	A-A
M25	EMH18	EMH19	115	3-4" PVC	A-A
M26	EMH19	EMH20	190	3-4" PVC	A-A
M27	EMH20	EMH21	620	3-4" PVC	A-A
M28	UGS-8B-HR4	EMH22	32	2-4" PVC	B-B
			235	3-4" PVC	A-A
M29	EMH22	EMH23	414	3-4" PVC	A-A
M30	EMH23	EMH24	286	3-4" PVC	A-A
M31	EMH24	EMH25	460	3-4" PVC	A-A
M32	EMH25	CAP	228	3-4" PVC	A-A
M33	UGS-8B-HR5	EMH26	24	2-4" PVC	B-B
			42	3-4" PVC	A-A
M34	EMH26	EMH27	230	3-4" PVC	A-A
M35	EMH27	EMH28	310	3-4" PVC	A-A
M36	EMH28	EMH29	253	3-4" PVC	A-A
M37	EMH29	EMH30	320	3-4" PVC	A-A
M38	Riser Pole on Centerline Rd.	UGS-8B-HR4	20	2-4" PVC	B-B
M39	Riser Pole on Centerline Rd.	UGS-8B-HR5	20	2-4" PVC	B-B
		TOTAL LENGTH (FEET)	9,782		

HANNAH'S REST - LATERAL DUCT BANK SCHEDULE (4" PRIMARY)

TAG	FROM	TO	LENGTH OF DUCT BANK (FEET)	DUCT BANK PVC QUANTITY	SECTION TAG
L1	EMH1	HR-T1	194	2-4" PVC	B-B
L2	EMH1	HR-T2	193	2-4" PVC	B-B
L3	EMH2	HR-T3	190	2-4" PVC	B-B
L4	EMH2	HR-T4	192	2-4" PVC	B-B
L5	EMH3	HR-T5	202	2-4" PVC	B-B
L6	EMH3	HR-T6	189	2-4" PVC	B-B
L7	EMH4	HR-T7	195	2-4" PVC	B-B
L8	EMH4	HR-T8	188	2-4" PVC	B-B
L9	EMH31	HR-T9	24	2-4" PVC	B-B
L10	EMH5	HR-T10	147	2-4" PVC	B-B
L11	EMH6	HR-T11	182	2-4" PVC	B-B
L12	PULL BOX	HR-T12	17	2-4" PVC	B-B
L13	EMH7	HR-T21	177	2-4" PVC	B-B
L14	EMH8	HR-T20	39	2-4" PVC	B-B
L15	EMH9	HR-T19	22	2-4" PVC	B-B
L16	EMH10	HR-T16	17	4-4" PVC	D-D
L17	EMH11	HR-T17	18	2-4" PVC	B-B
L18	EMH12	HR-T18	22	2-4" PVC	B-B
L19	EMH13	HR-T13	32	2-4" PVC	B-B
L20	EMH14	HR-T14	22	2-4" PVC	B-B
L21	EMH15	HR-T15	52	2-4" PVC	B-B
L22	EMH16	HR-T22	22	2-4" PVC	B-B
L23	EMH17	HR-T23	27	4-4" PVC	D-D
L24	EMH18	HR-T24	482	2-4" PVC	B-B
L25	STA 68+02	HR-T25	21	2-4" PVC	B-B
L26	EMH21	HR-T26	16	2-4" PVC	B-B
L27	EMH21	HR-T27	144	2-4" PVC	B-B
L28	EMH22	HR-T28	22	2-4" PVC	B-B
L29	EMH23	CAP	32	2-4" PVC	B-B
L30	EMH24	HR-T29	24	2-4" PVC	B-B
L31	EMH25	HR-T30	16	2-4" PVC	B-B
L32	EMH26	HR-T31	22	2-4" PVC	B-B
L33	EMH28	HR-T32	13	2-4" PVC	B-B
L34	EMH29	HR-T33	18	2-4" PVC	B-B
L35	EMH30	HR-T34	20	2-4" PVC	B-B
L36	EMH30	HR-T35	416	2-4" PVC	B-B
		TOTAL LENGTH (FEET)	3,609		

HANNAH'S REST - COMMS. ONLY DUCT BANK SCHEDULE (4" OR 2" PVC)

TAG	FROM	TO	LENGTH OF DUCT BANK (FEET)	DUCT BANK PVC QUANTITY	SECTION TAG
C1	COMM HANDHOLE	STUB OUT, ETC.	91	1-4" PVC	
C2	COMM HANDHOLE	STUB OUT	726	1-2" PVC	
		TOTAL LENGTH (FEET)	817		

HANNAH'S REST - MV CABLE SCHEDULE (1/C #1/0 CU, 25KV, MV 105 CABLE)

TAG	FROM	TO	Cable Length (Feet)
MV1	MANHOLE #F8-111	UGS-8B-HR1	250
MV2	UGS-8B-HR1	HR-T1 (VIA EMH1)	430
MV3	HR-T1	HR-T2 (VIA EMH1)	465
MV4	HR-T2	HR-T3 (VIA EMH1/EMH2)	825
MV5	HR-T3	HR-T4 (VIA EMH2)	450
MV6	HR-T4	HR-T5 (VIA EMH2/EMH3)	835
MV7	HR-T5	HR-T6 (VIA EMH3)	460
MV8	HR-T6	HR-T7 (VIA EMH3/EMH4)	830
MV9	HR-T7	HR-T8 (VIA EMH4)	445
MV10	HR-T8	HR-T9 (VIA EMH4)	540
MV11	HR-T9	HR-T10 (VIA EMH5)	345
MV12	HR-T10	HR-T11 (VIA EMH6)	635
MV13	HR-T11	HR-T12 (VIA EMH6)	535
MV14	MANHOLE #F8-112	UGS-8B-HR2	60
MV15	UGS-8B-HR2	HR-T13 (VIA EMH-13)	310
MV16	HR-T13	HR-T14 (VIA EMH13/EMH14)	510
MV17	HR-T14	HR-T15 (VIA EMH14/EMH15)	340
MV18	HR-T15	HR-16 (VIA EMH15/EMH10)	440
MV19	HR-T16	HR-17 (VIA EMH10/EMH11)	470
MV20	HR-T17	HR-18 (VIA EMH11/EMH12)	430
MV21	HR-T16	HR-19 (VIA EMH10/EMH11)	420
MV22	HR-T19	HR-T210 (VIA EMH9/EMH8)	575
MV23	HR-T20	HR-T21 (VIA EMH8/EMH7)	550
MV24	MANHOLE #F8-113	UGS-8B-HR3	200
MV25	UGS-HR3	HR-T22 (VIA EMH16)	330
MV26	HR-T22	HR-T23 (VIA EMH16/EMH17)	505
MV27	HR-T23	HR-T24 (VIA EMH17/EMH18)	700
MV28	HR-T23	HR-T25 (VIA EMH17,EMH18,EMH19,EMH 20)	710
MV29	HR-T25	HR-T26 (VIA EMH21)	560
MV30	HR-T26	HR-T27 (VIA EMH21)	195
MV31	Riser Pole (Centerline Road)	UGS-8B-HR4	90
MV32	UGS-8B-HR4	HR-T28 (VIA EMH22)	335
MV33	HR-T28	HR-T29 (VIA EMH22/EMH23/EMH24)	835
MV34	HR-T29	HR-T30 (VIA EMH24/EMH25)	565
MV35	Riser Pole (Centerline Road)	UGS-8B-HR5	90
MV36	UGS-8B-HR5	HR-T31 (VIA EMH26)	135
MV37	HR-T31	HR-T32 (VIA EMH26/EMH27/EMH28)	660
MV38	HR-T32	HR-T33 (VIA EMH28/EMH29)	350
MV39	HR-T33	HR-T34 (VIA EMH29/EMH30)	425
MV40	HR-T34	HR-T35 (VIA EMH30)	485
		TOTAL LENGTH (FEET)	**18,320**

HANNAH'S REST - SECONDARY ONLY DUCT BANK SCHEDULE (2" PVC)

TAG	FROM	TO	TRANSFORMER KVA	# of Feeds from Transformer	LENGTH OF DUCT BANK (FEET)	DUCT BANK PVC QUANTITY
S-T1	HR-T1 Secondary Handhole	Property Lines T1-1 thru T1-7	50	7	630	1-2" PVC
S-T2	HR-T2 Secondary Handhole	Property Line T2-1 thru T2-7	50	7	630	1-2" PVC
S-T3	HR-T3 Secondary Handhole	Property Line T3-1 thru T3-6	50	6	540	1-2" PVC
S-T4	HR-T4 Secondary Handhole	Property Line T4-1 thru T4-6	50	6	540	1-2" PVC
S-T5	HR-T5 Secondary Handhole	Property Line T5-1 thru T5-6	50	6	540	1-2" PVC
S-T6	HR-T6 Secondary Handhole	Property Line T6-1 thru T6-6	50	6	540	1-2" PVC
S-T7	HR-T7 Secondary Handhole	Property Line T7-1 thru T7-6	50	6	540	1-2" PVC
S-T8	HR-T8 Secondary Handhole	Property Line T8-1 thru T8-6	50	6	540	1-2" PVC
S-T9	HR-T9 Secondary Handhole	Property Line T9-1 thru T9-5	50	5	450	1-2" PVC
S-T10	HR-T10 Secondary Handhole	Property Line T10-1 thru T10-4	50	4	360	1-2" PVC
S-T11	HR-T11 Secondary Handhole	Property Line T11-1 thru T11-8	75	8	720	1-2" PVC
S-T12	HR-T12 Secondary Handhole	Property Line T12-1 thru T12-7	50	7	630	1-2" PVC
S-T13	HR-T13 Secondary Handhole	Property Line T13-1 thru T13-8	75	8	720	1-2" PVC
S-T14	HR-T14 Secondary Handhole	Property Line T14-1 thru T14-6	50	6	540	1-2" PVC
S-T15	HR-T15 Secondary Handhole	Property Line T15-1 thru T15-5	50	5	450	1-2" PVC
S-T16	HR-T16 Secondary Handhole	Property Line T16-1 thru T16-6	50	6	540	1-2" PVC
S-T17	HR-T17 Secondary Handhole	Property Line T17-1 thru T17-6	50	6	540	1-2" PVC
S-T18	HR-T18 Secondary Handhole	Property Line T18-1 thru T18-8	75	8	720	1-2" PVC
S-T19	HR-T19 Secondary Handhole	Property Line T19-1 thru T19-10	75	10	900	1-2" PVC
S-T20	HR-T20 Secondary Handhole	Property Line T20-1 thru T20-6	50	6	540	1-2" PVC
S-T21	HR-T21 Secondary Handhole	Property Line T21-1 thru T21-5	50	5	450	1-2" PVC
S-T22	HR-T22 Secondary Handhole	Property Line T22-1 thru T22-8	75	8	720	1-2" PVC
S-T23	HR-T23 Secondary Handhole	Property Line T23-1 thru T23-8	75	8	720	1-2" PVC
S-T24	HR-T24 Secondary Handhole	Property Line T24-1 thru T24-5	50	5	450	1-2" PVC
S-T25	HR-T25 Secondary Handhole	Property Line T25-1 thru T25-9	75	9	810	1-2" PVC
S-T26	HR-T26 Secondary Handhole	Property Line T26-1 thru T26-10	75	10	900	1-2" PVC
S-T27	HR-T27 Secondary Handhole	Property Line T27-1 thru T27-9	75	9	810	1-2" PVC
S-T28	HR-T28 Secondary Handhole	Property Line T28-1 thru T28-9	75	9	810	1-2" PVC
S-T29	HR-T29 Secondary Handhole	Property Line T29-1 thru T29-10	75	10	900	1-2" PVC
S-T30	HR-T30 Secondary Handhole	Property Line T30-1 thru T30-11	75	11	990	1-2" PVC
S-T31	HR-T31 Secondary Handhole	Property Line T31-1 thru T31-7	50	7	630	1-2" PVC
S-T32	HR-T32 Secondary Handhole	Property Line T32-1 thru T32-8	75	8	720	1-2" PVC
S-T33	HR-T33 Secondary Handhole	Property Line T33-1 thru T33-8	75	8	720	1-2" PVC
S-T34	HR-T34 Secondary Handhole	Property Line T34-1 thru T34-8	75	8	720	1-2" PVC
S-T35	HR-T35 Secondary Handhole	Property Line T35-1 thru T35-7	50	7	630	1-2" PVC
		TOTAL LENGTH (FEET)			22,590	

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5 Christy Drive, Suite 307
Chadds Ford, PA 19317
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Drawn By:	BEM
Chkd By:	PJB
Date:	12/30/22
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Project Number:	VIT 20131

Drawing Title:

DUCT BANK AND MV CABLE SCHEDULES

Drawing Number:

STX-20131-HR-E-401

SHEET #12 OF X

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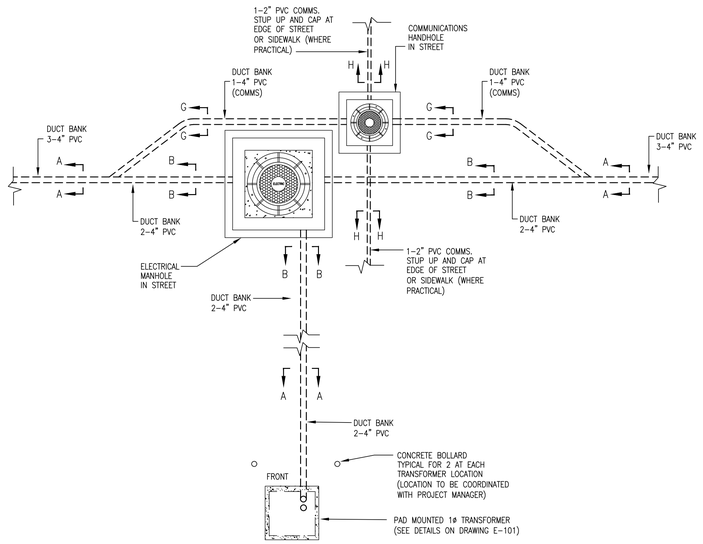
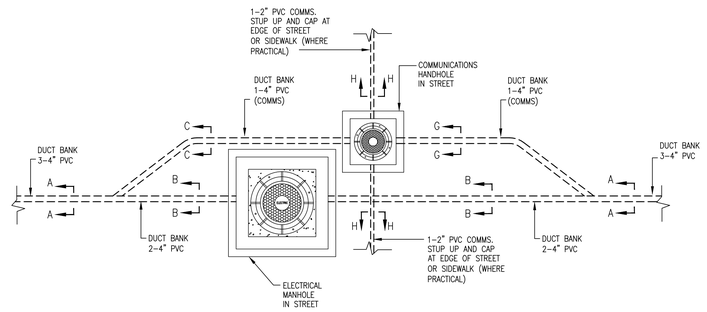


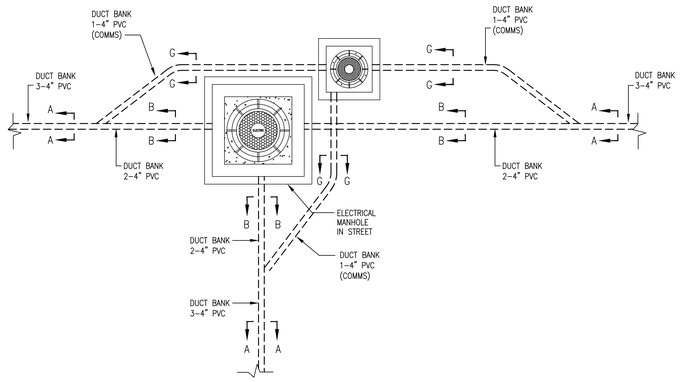
1 / E500 ENLARGED PLAN: TYPICAL ELECTRIC & COMMUNICATIONS HANDHOLE (NEAR TRANSFORMERS)
SCALE: :1/4"=1'-0"



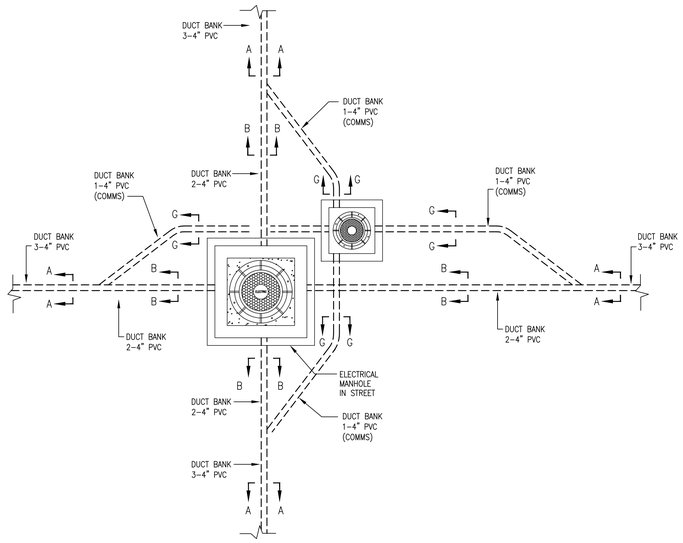
2 / E500 ENLARGED PLAN: TYPICAL ELECTRIC & COMMUNICATIONS HANDHOLE
SCALE: :1/4"=1'-0"

ENLARGED PLAN NOTES

1. THE ENLARGED PLANS ARE TO INDICATE THE INTENT OF THE CONDUIT ROUTING AND NOT TO SHOW PRECISE LOCATIONS OF PAD MOUNTED SWITCHGEAR, MANHOLES, HANDHOLES AND TRANSFORMERS.
2. LOCATIONS OF ALL PADS, MANHOLES, HANDHOLES, DUCTBANKS AND BOLLARDS MUST BE COORDINATED WITH EXISTING UTILITIES AND MUST BE APPROVED/COORDINATED WITH VIWAPA PROJECT MANAGER.
3. SOME PAD AND EQUIPMENT LOCATIONS REQUIRE UTILITY RIGHT OF WAYS. VIWAPA WILL SECURE ALL REQUIRED RIGHT OF WAYS. IN THE EVENT A RIGHT OF WAY IS DENIED, AN ALTERNATE LOCATION WILL BE REQUIRED.
4. CONTRACTOR SHALL PROVIDE 1/4"=1'-0" SCALED (AUTOCAD GENERATED) RECORD DRAWINGS FOR EACH ENLARGED PLAN TO INDICATE AS BUILT CONDITIONS.
5. CONTRACTOR SHALL LOCATE ALL MANHOLES, HANDHOLES, SWITCHGEARS, AND TRANSFORMERS VIA GPS COORDINATES ON RECORD DRAWINGS. REFER TO ADDITIONAL NOTES ON G-100



3 / E500 ENLARGED PLAN: TYPICAL ELECTRIC & COMMUNICATIONS HANDHOLE (@ 3 WAY ROAD INTERSECTIONS)
SCALE: :1/4"=1'-0"



4 / E500 ENLARGED PLAN: TYPICAL ELECTRIC & COMMUNICATIONS HANDHOLE (@ 4 WAY ROAD INTERSECTIONS)
SCALE: :1/4"=1'-0"

NOTE: THIS DETAIL ALSO APPLIES AT THE LOCATION OF TRANSFORMER HR-T16

Engineer

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5 Christy Drive, Suite 307
Chadds Ford, PA 19317
610.558.3464 office
www.fxbinc.com

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Client:

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

Project Name:

Underground Electrical Construction Project, Hannah's Rest - Phase 1, (Feeder 8B) St. Croix, USVI

Issue / Revisions:

#	Date	Description
A	08/09/21	Issue For Review
B	12/01/21	Issue For 100% Bid Review
C	06/24/22	Issue For EHP Review
D	11/08/22	Issue For CZM Application
E	12/30/22	Issue For FEMA Review

Drawn By:	BEM
Chk'd By:	PJB
Date:	12/30/22
Scale:	As Noted
Project Number:	VIT 20131

Drawing Title:

ELECTRICAL ENLARGED PLANS

Drawing Number:

STX-20131-HR-E-500

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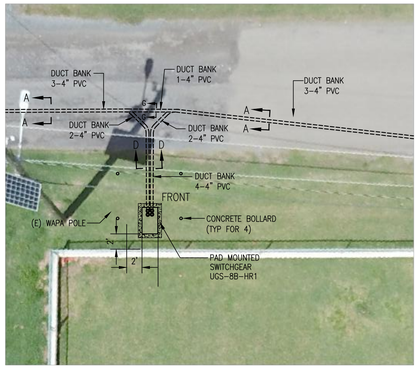
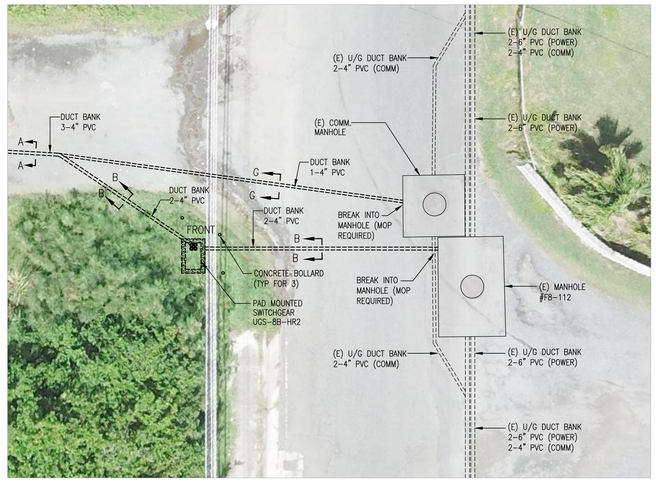
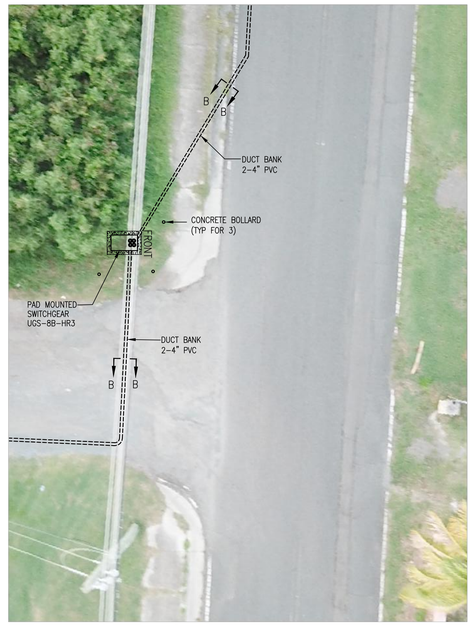


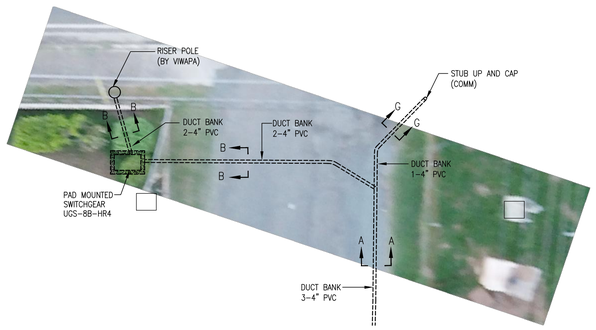
1 E501 ENLARGED PLAN: PAD MTD. SWITCHGEAR "USG-HR1" (HANNAS REST & EMANCIPATION DRIVE)
SCALE: :1/8"=1'-0"



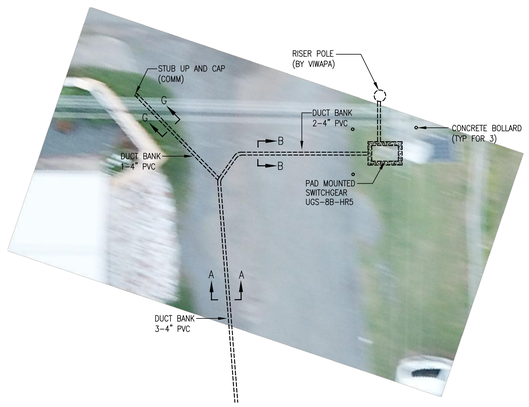
2 E501 ENLARGED PLAN: PAD MTD. SWITCHGEAR "USG-HR2" (STONEY GROUND E & EMANCIPATION DRIVE)
SCALE: :1/8"=1'-0"



3 E501 ENLARGED PLAN: PAD MTD. SWITCHGEAR "USG-HR3" (STONEY GROUND D & EMANCIPATION DRIVE)
SCALE: :1/8"=1'-0"



1 E502 ENLARGED PLAN: PAD MOUNTED SWITCHGEAR "USG-HR4" (STONEY GROUND A & CENTERLINE ROAD)
SCALE: :1/8"=1'-0"



2 E502 ENLARGED PLAN: PAD MOUNTED SWITCHGEAR "USG-HR5" (STONEY GROUND B & CENTERLINE ROAD)
SCALE: :1/8"=1'-0"

ENLARGED PLAN NOTES

1. THE ENLARGED PLANS ARE TO INDICATE THE INTENT OF THE CONDUIT ROUTING AND NOT TO SHOW PRECISE LOCATIONS OF PAD MOUNTED SWITCHGEAR, MANHOLES, HANDHOLES AND TRANSFORMERS.
2. LOCATIONS OF ALL PADS, MANHOLES, HANDHOLES, DUCTBANKS AND BOLLARDS MUST BE COORDINATED WITH EXISTING UTILITIES AND MUST BE APPROVED/COORDINATED WITH VIWAPA PROJECT MANAGER.
3. SOME PAD AND EQUIPMENT LOCATIONS REQUIRE UTILITY RIGHT OF WAYS. VIWAPA WILL SECURE ALL REQUIRED RIGHT OF WAYS. IN THE EVENT A RIGHT OF WAY IS DENIED, AN ALTERNATE LOCATION WILL BE REQUIRED.
4. CONTRACTOR SHALL PROVIDE 1/8"=1'-0" SCALED (AUTOCAD GENERATED) RECORD DRAWINGS FOR EACH ENLARGED PLAN TO INDICATE AS BUILT CONDITIONS.
5. CONTRACTOR SHALL LOCATE ALL MANHOLES, HANDHOLES, SWITCHGEARS, AND TRANSFORMERS VIA GPS COORDINATES ON RECORD DRAWINGS. REFER TO ADDITIONAL NOTES ON G-100

Engineer

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Chadds Ford, PA 19317
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ELECTRICAL ENLARGED PLANS

Drawing Number:

STX-20131-HR-E-501

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