

PANEL: GLD (EXISTING)		NEUTRAL BUS: 100%		VOLTAGE: 208Y/120V 3Ø 4 WIRE + GND										
FED FROM: TRANSFORMER 112.5KVA		GROUND BUS: YES		MOUNTING: SURFACE										
		ISOL. GND. BUS: NO		SSC RATING: 42 KAIC										
				MAIN PROT. DEVICE: 400A, MCB										
CIR. NO.	DESCRIPTION	FEEDER CONFIG.	KVA LOAD			BREAKER amps/poles	BREAKER amps/poles	KVA LOAD			FEEDER CONFIG.	DESCRIPTION	CIR. NO.	
			A	B	C			A	B	C				
1	PANEL GLV	EXISTING	5.1			200/3	200/3	4.7			EXISTING	PANEL WLW	2	
			6.1		7.0			3.2		4.1				
3	GENERATOR G1	3#4AWG+1#8(G), 1-1/2" C	5.0			60/2	60/2	0.0			3#4AWG+1#8(G), 1-1/2" C	GENERATOR G2	4	
			5.0					5.0		5.0				
					0.0					5.0				
SUBTOTAL			10.1	11.1	7.0	EST. LOAD (kVA)			4.7	8.2	9.1	SUBTOTAL		
						60.2KVA (CONNECTED)			14.8			TOTAL		
						60.2KVA (DEMAND)								

PHASES OF INSTALLATION:

GENERAL: THE PROPOSED WORK SHOULD BE DONE SUCH THAT THE FACILITY EXPERIENCES THE MINIMUM AMOUNT OF SERVICE INTERRUPTION AS POSSIBLE. THE FOLLOWING IS THE PROPOSED PHASING (REFER TO DRAWINGS E-601 THRU E-604 FOR POWER RISER DEMOLITION AND NEW WORK):

PHASE I

- REMOVE EXISTING FENCE AND PREPARE THE MECHANICAL COURT YARD FOR INSTALLATION OF CONCRETE PADS FOR GENERATORS, DISTRIBUTION PANEL AND TRANSFER SWITCHES.
- LOCATE THE STUB-UPS FOR CONDUITS AT GENERATORS, TRANSFER SWITCHES AND DISTRIBUTION PANEL. COORDINATE STUB-UPS LOCATION WITH BUILDING FOOTINGS.
- INSTALL UNDERGROUND CONDUITS FROM GENERATORS, TRANSFER SWITCHES AND DISTRIBUTION PANEL AS INDICATED ON DRAWING E101.
- INSTALL GROUNDING SYSTEM FOR GROUNDING OF NEW GENERATORS AND THE EXISTING 500KW GENERATOR.
- PROVIDE WIRE TROUGH ON BUILDING EXTERIOR WALL FOR INTERCONNECTION OF CONDUITS FROM OUTSIDE TO CONDUITS INSIDE THE BUILDING.
- EXTEND CONDUITS FROM STUB-UP OUTSIDE TO TERMINATE AT WIRE TROUGH.
- INSTALL CONCRETE PADS FOR GENERATORS, TRANSFER SWITCHES AND DISTRIBUTION PANELS.
- INSTALL TWO 600 KW GENERATORS.
- INSTALL SWITCHBOARD EDP.
- INSTALL TRANSFER SWITCHES ATS-1, ATS-2, ATS-3 AND ATS-4 ON CONCRETE PADS.
- INSTALL NEW PANELBOARD GDP IN MAIN ELECTRICAL ROOM AND NEW PULL BOX FOR GENERATOR AND TRANSFER SWITCHES CONTROL WIRING.
- INSTALL NEW POWER WIRING FROM NEW GENERATORS TO SWITCHBOARD EDP AND FROM SWITCHBOARD EDP TO TRANSFER SWITCHES ATS-1, ATS-2, ATS-3 AND ATS-4.
- INSTALL NEW CIRCUIT BREAKERS IN PANEL GLD TO PROVIDE POWER TO GENERATOR LOAD CENTERS.
- INSTALL ANNUNCIATOR PANELS FOR GENERATOR AND TRANSFER SWITCHES IN MAIN ELECTRICAL ROOM.
- INSTALL EMT CONDUITS FROM PULL BOX OUTSIDE OF BUILDING TO TERMINATE AT PULL BOX ADJACENT TO MAIN SWITCHBOARD MDP, AT PANEL GDP, AT EXISTING TRANSFER SWITCHES ATS-5 & ATS-6, AT PANEL GLD AND AT NEW CONTROL BOX IN MAIN ELECTRICAL ROOM.
- TEST GENERATORS AND DIGITAL PARALLELING USING LOAD BANK AT EACH ATSS.

PHASE II

- INSTALL NEW FEEDER FOR NORMAL POWER FROM FROM ATS-1 TO TERMINATE AT PULL BOX ADJACENT TO MAIN SWITCHBOARD.
- INSTALL NEW FEEDER FROM FROM THE OUTPUT SIDE OF ATS-1 TO TERMINATE AT PULL BOX ADJACENT TO MAIN SWITCHBOARD.
- COORDINATE POWER OUTAGE WITH COTR TO DISCONNECT CA BUILDING. (SIX HOURS ESTIMATED POWER OUTAGE).
- DISCONNECT FEEDER SERVING CA BUILDING AT MDP 1200A CIRCUIT BREAKER AND CONNECT NEW NORMAL FEEDER FROM ATS-1 TO EXISTING CIRCUIT BREAKER 1200A.

- EXTEND EXISTING FEEDER SERVING CA BUILDING TO NEW FEEDER FROM THE OUTPUT SIDE OF ATS-1 IN EXISTING PULL BOX.

PHASE III

- INSTALL NEW CIRCUIT BREAKER 800A AT EXISTING SWITCHBOARD MDP IN ELECTRICAL ROOM. COORDINATE POWER OUTAGE OF THE FACILITY TO CONNECT THE NEW CIRCUIT BREAKER. (2 HOURS ESTIMATED POWER OUTAGE).
- INSTALL NEW FEEDER FOR NORMAL POWER FROM ATS-2 TO NEW CIRCUIT BREAKER 800A.
- INSTALL NEW FEEDER FROM THE LOAD SIDE OF ATS-2 TO NEW PANEL GDP.
- INSTALL NEW FEEDER FROM PANEL GDP TO PANEL WHV.
- DISCONNECT CURRENT FEEDER SERVING PANEL WHV AND RECONNECT TO NEW FEEDER FROM PANEL GDP. COORDINATE WITH COTR THE POWER OUTAGE TO PANEL WHV. (4 HOURS ESTIMATED POWER OUTAGE).
- INSTALL NEW FEEDER FROM PANEL GDP TO EXISTING PANEL GHV.
- DISCONNECT CURRENT FEEDER SERVING PANEL GHV AND RECONNECT TO NEW FEEDER FROM PANEL GDP. COORDINATE WITH COTR THE POWER OUTAGE TO PANEL GHV. (4 HOURS ESTIMATED POWER OUTAGE).
- INSTALL NEW FEEDER FROM PANEL GDP TO EXISTING TRANSFORMER.
- DISCONNECT CURRENT FEEDER SERVING TRANSFORMER 225KVA AND RECONNECT TO NEW FEEDER FROM PANEL GDP. COORDINATE WITH COTR THE POWER OUTAGE OF THE PANELS CONNECTED TO THE TRANSFORMER. (4 HOURS ESTIMATED POWER OUTAGE)

PHASE IV

- INSTALL NEW FEEDER FOR NORMAL POWER FROM THE PULL BOX ADJACENT TO THE MAIN SWITCHBOARD TO ATS-3.
- INSTALL NEW FEEDER FROM THE LOAD SIDE OF ATS-3 TO THE NORMAL POWER SIDE OF TRANSFER SWITCH ATS-5
- COORDINATE POWER OUTAGE WITH THE COTR TO DISCONNECT POWER TO LIFE SAFETY OF THE FACILITY. (4 HOURS ESTIMATED POWER OUTAGE).
- REPLACE EXISTING ATS-5 WITH NEW ATS-5 WITH FOUR POLES.
- DISCONNECT FEEDER AT EXISTING 400A CIRCUIT BREAKER IN MAIN SWITCHBOARD, CURRENTLY SERVING NORMAL POWER TO EXISTING ATS-5. CONNECT NEW FEEDER FOR NORMAL POWER TO ATS-3 AT EXISTING 400A CIRCUIT BREAKER. REMOVE NORMAL POWER FEEDER TO EXISTING ATS-5 FROM MAIN SWITCHBOARD.
- CONNECT NEW FEEDER FROM THE LOAD SIDE OF ATS-3 TO THE NORMAL SIDE OF NEW ATS-5.

PHASE V

- INSTALL NEW FEEDER FOR NORMAL POWER FROM THE PULL BOX ADJACENT TO THE MAIN SWITCHBOARD TO ATS-4.
- INSTALL NEW FEEDER FROM THE LOAD SIDE OF ATS-4 TO THE NORMAL POWER SIDE OF TRANSFER SWITCH ATS-6
- COORDINATE POWER OUTAGE WITH THE COTR TO DISCONNECT POWER TO THE HOUSING FACILITY. (4 HOURS ESTIMATED POWER OUTAGE).
- DISCONNECT FEEDER AT EXISTING 400A CIRCUIT BREAKER IN MAIN SWITCHBOARD, CURRENTLY SERVING NORMAL POWER TO EXISTING ATS-6. CONNECT NEW FEEDER FOR NORMAL POWER TO ATS-4 AT EXISTING 400A CIRCUIT BREAKER. REMOVE NORMAL POWER FEEDER TO EXISTING ATS-6 FROM MAIN SWITCHBOARD.
- CONNECT NEW FEEDER FROM THE LOAD SIDE OF ATS-4 TO THE NORMAL SIDE OF NEW ATS-6.
- TEST NEW EMERGENCY SYSTEM INCLUDING GENERATORS, FUEL OIL SYSTEM, TRANSFER SWITCHES, DIGITAL PARALLELING SYSTEM AND GENERATORS & TRANSFER SWITCHES REMOTE MONITORING.

TRANSFER SWITCH SCHEDULE

SWITCH NUMBER	AMPERE RATING	AIC RATING	VOLTS	PHASE	No OF POLES	TYPE	TRANSITION SCHEME	ENCLOSURE TYPE	PRIORITY
ATS-1	1200A	65KA	480V	3-PHASE	4	AUTOMATIC	CLOSE TRANSITION	NEMA 3R	(20 SECONDS)
ATS-2	800A	65KA	480V	3-PHASE	4	AUTOMATIC	CLOSE TRANSITION	NEMA 3R	(15 SECONDS)
ATS-3	400A	65KA	480V	3-PHASE	4	AUTOMATIC	CLOSE TRANSITION	NEMA 3R	(LIFE SAFETY - LESS THAN 10 SECONDS)
ATS-4	400A	65KA	480V	3-PHASE	3	AUTOMATIC	CLOSE TRANSITION	NEMA 3R	(30 SECONDS)
ATS-5	400A	65KA	480V	3-PHASE	4	AUTOMATIC	CLOSE TRANSITION	NEMA 1	(LIFE SAFETY - LESS THAN 10 SECONDS)

PANEL: GDP (NEW)		NEUTRAL BUS: 100%		ENCLOSURE: NEMA 1		VOLTAGE: 480Y/277V 3Ø 4 WIRE + GND	
FED FROM: ATS-5		GROUND BUS: YES		MOUNTING: SURFACE		MAINS BUS: 800A, COPPER	
		ISOL. GND. BUS: NO		SSC RATING: 65 KAIC		MAIN PROT. DEVICE: 800A, MCB (*)	
SEC NO.	DESCRIPTION	KVA LOAD	OVERCURRENT	PROTECTIVE DEVECE	WIRE	REMARKS	
1	PANEL WHV	125	225A	3	225	4#4/OAWG+1#4WG, 2-1/2" C.	
2	PANEL GHV	125	225A	3	225	4#4/OAWG+1#4WG, 2-1/2" C.	
3	TRANSFORMER 112.5KVA	112.5	225A	3	175	3#2/OAWG+1#6WG, 2" C.	
4	SPARE	-	100	3	100	-	
5	SPARE	-	100	3	100	-	
6	SPARE	-	100	3	100	-	
7	SPARE	-	100	3	100	-	
8	SPARE	-	100	3	100	-	
	TVSS	-	100	3	50	4#6+1#10 IN 1" C	
TOTAL		-	-		KVA (CONNECTED)		

* PROVIDE DISTRIBUTION WITH TVSS.

PANEL: EDP (NEW)		NEUTRAL BUS: 100%		ENCLOSURE: NEMA 3R (WEATHERPROOF)		VOLTAGE: 480Y/277V 3Ø 4 WIRE + GND	
FED FROM: GENERATORS		GROUND BUS: YES		MOUNTING: SELF-STANDING		MAINS BUS: 2000A, COPPER	
		ISOL. GND. BUS: NO		SSC RATING: 65 KAIC		MAIN PROT. DEVICE: 2000A, MLO	
SEC NO.	DESCRIPTION	KVA LOAD	OVERCURRENT	PROTECTIVE DEVECE	WIRE	REMARKS	
1	ATS-1	-	1200A	3	1200	4-4#350KCMIL+1#3/OAWG, 3" C.	
2	ATS-2	-	800A	3	800A	4-4#350KCMIL+1#3/OAWG, 3" C.	
3	ATS-3	-	400A	3	400A	4#500KCMIL+1#3AWG, 3" C.	
4	ATS-4	-	400A	3	400A	4#500KCMIL+1#3AWG, 3" C.	
5	SPACE	-					
6	SPACE	-					
7	SPACE	-					
8	SPACE	-					
	TVSS	-	100	3	50	4#6+1#10 IN 1" C	
TOTAL		-	-		KVA (CONNECTED)		

POWER ELECTRICAL KEY NOTES

- NEW CIRCUIT BREAKER 60A, 208V, 2-POLE IN EXISTING SPACE OF PANEL GLD. SHORT CIRCUIT CAPACITY TO MATCH EXISTING.

11/06/2014
BID ISSUE

DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES

NEW BEGINNINGS YOUTH CENTER
8400 RIVER ROAD
LAUREL, MD. 20742

DYRS NEW GENERATOR INSTALLATION
ELECTRICAL PANEL SCHEDULES -
CONSTRUCTION PHASES

SCALE: AS SHOWN DATE: 08/15/2014
DRAWING NO. SHEET 26 OF 27

DRAWN BY: AL
DESIGNED BY: AL
REVIEWED BY: MB

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 45509 EXPIRATION DATE: 06-04-2016

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