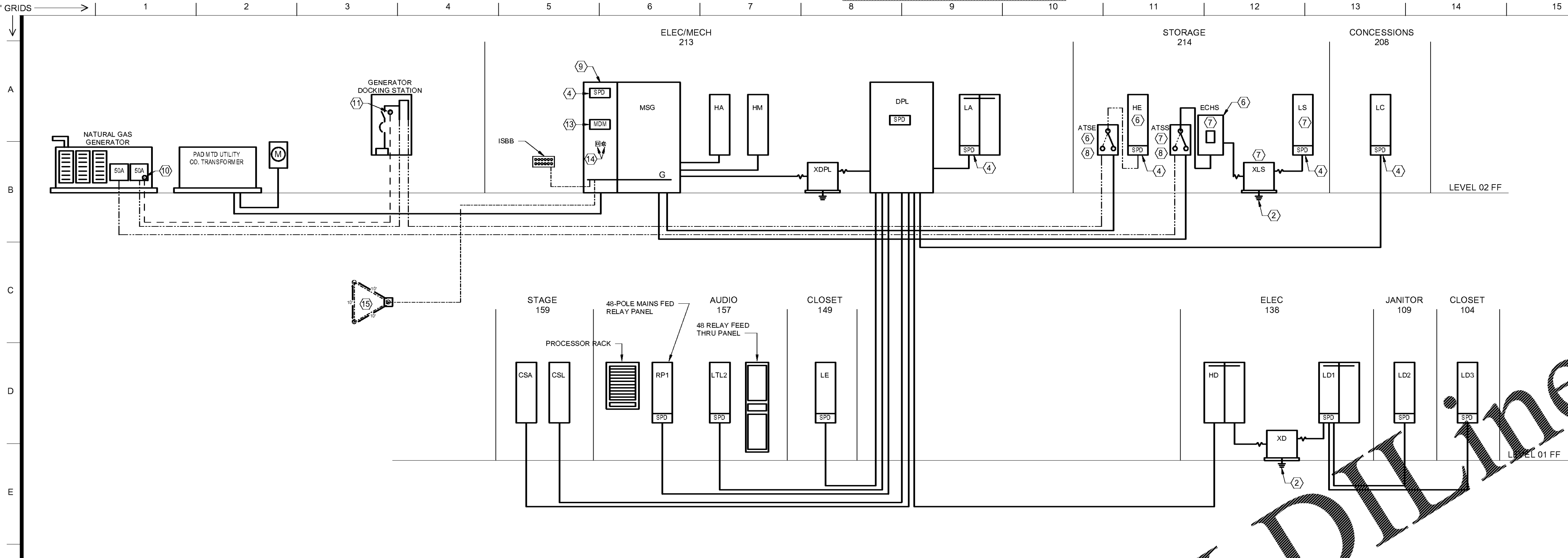
CLICK TO JUMP TO INDEX



3 POWER RISER DIAGRAM

NO SCALE

480Y/277V 3-Phase 4-Wire SWITCHBOARD — Name: MSG

Mains: 1200A Main solid state breaker — Min Sym IC: 65000
Branch OCP: Molded case breaker — Fed from: UTILITY
Neutral: S/N — Provide UL SE Label
Ground bar: As required for service entrance equipment — Feeder: Note 1

CIR	DESCRIPTION	TRIP	POLES	PHASE LOADS A	B	C	CONDUITS	PHASES	NEUTRAL	GROUND	WIRE TYPE
1	HM	400	3	87943	87939	83943	(2) 3"	3#4/0	4/0	#2	THWN Copper
2	HA	100	3	7480	7253	8601	(1)1-1/2"	3#2	#2	#6	THWN Copper
3	HD	300	3	75478	75823	74748	(1)3-1/2"	3#400kcm	400kcm	#3	THWN Copper
4	XDPL	250	3	43564	45684	43686	(1) 3"	3#300kcm	-	#3	THWN Copper
5	ATSE	50	3	8813	5327	6596	1"	3#6	#6	#8	THWN Copper
6	ATSS	50	3	4535	4680	4105	1"	3#6	-	#8	THWN Copper
7	RTU-1	60	3	12692	12692	12692	3/4"	3#6	-	#10	THWN Copper
8	RTU-2	60	3	12692	12692	12692	3/4"	3#6	-	#10	THWN Copper
9	RTU-3	60	3	12692	12692	12692	3/4"	3#6	-	#10	THWN Copper
10	RTU-4	60	3	12692	12692	12692	3/4"	3#6	-	#10	THWN Copper
11	RTU-5	70	3	14272	14272	14271	1"	3#4	-	#8	THWN Copper
12	RTU-6	70	3	14272	14272	14271	1"	3#4	-	#8	THWN Copper
13	SPACE ONLY	225	3	---	---	---	-				
14	SPACE ONLY	100	3	---	---	---	-				
15	SPACE ONLY	100	3	---	---	---	-				
	Phase load totals			307125	306018	300989					

Notes for MSG:

1 Feeder is (4) 3-1/2" - 4#400kcmil XHHW Copper
2 Provide Ground fault protection for 1200A Main solid state breaker
3 Terminal Ratings: All 75C

480Y/277V 3-Phase 4-Wire LIGHTING PANEL — Name: HE

Mains: 100A MLO — Min Sym IC: 18000
Trim: Surface Door: Yes — Fed from: ATSE
Neutral: S/N — Feeder: Note 1
Ground bar: Yes

CIR	DESCRIPTION	CONDUIT	PHASE	NEUT	GND	TRIP	POLES	PHASE LOADS A	B	C	POLES	TRIP	CONDUIT	PHASE	NEUT	GND	DESCRIPTION	CIR
1	LTS EXT BLDG	1/2"	#10	#10	#10	20	1	1800										
								628			1	20	Note 2	#12	#12	#12	ENTRY, RD[illegible]	2
3	LTS TOIL,LOBBY	Note 2	#12	#12	#12	20	1		457									
									921		1	20	Note 2	#12	#12	[illegible]	[illegible] GRN RM,[illegible]	[illegible]
5	LTS AUDI ENTRY	Note 2	#12	#12	#12	20	1			556								
										2594	1	20	Note 2	#12	[illegible]	#12	LT[illegible] ENTRY	6
7	LTS EXT ENTRY	Note 2	#12	#12	#12	20	1	2552										
								2033			1	20	Note 2	#12	#12	#12	LTS GYM [illegible]	8
9	LTS GYM COURT	Note 2	#12	#12	#12	20	1		2448									
									1501		1	20	[illegible]	[illegible]	#12	[illegible]	LTS LOBBY,LVL [illegible]	10
11	DMX EMER	Note 2	#12	#12	#12	20	1			100								
										3346	1	[illegible]	Note 2	[illegible]	#12	[illegible]	LTS TRACK,GYM	12
13	LTS EXT BLDG	1/2"	#10	#10	#10	20	1	1800										
								---			1	--					Space only	14
15	SPARE	-				20	1		---									
									---		1	--	-				Space only	16
17	SPARE	-				20	1			---								
										---	1	--	-				Space only	18
19	SPARE	-				20	1	---										
								---			1	--	-				Space only	20
21	SPARE	-				20	1		---									
									---		1	--	-				Space only	22
23	Space only	-				--	1			---								
										---	1	--	-				Space only	24
25	Space only	-				--		---										
								---			1	--	-				Space only	26
27	Space only	-				--												
									---		1	--	-				Space only	28
29	Space only	-					1			---								
										---		--	-				Space only	30
	Phase load totals						A	8813										
							B		[illegible]									
							C			6596								

Notes for HE:

1 Feeder [illegible] 1" - 4[illegible] #8 G[illegible] THWN [illegible]opper from Transfer switch ATSE
2 A maxim[illegible] phases, [illegible] 1 ground may be combined per conduit without derating

[illegible] 3-Phase 4-Wire LIGHTING PANEL — Name: HM

Mains: 400A MLO — Min Sym IC: 65000
Trim: S[illegible]face Door: Yes — Fed from: MSG
Neutral: [illegible]/N — Feeder: Note 1
Ground bar: Yes

CIR	DESCRIPTION	CONDUIT	PHASE	NEUT	GND	TRIP	POLES	PHASE LOADS A	B	C	POLES	TRIP	CONDUIT	PHASE	NEUT	GND	DESCRIPTION	CIR
1	EH-[illegible]RISER 214	Note 2	#12	#12	#12	20	1	4000										
								9132			3	45	3/4"	#6	-	#8	RTU-8	2
3	EH-2 STOR 215	Note 2	#12	#12	#12	20	1		4000									
									9131		-			#6			-	4
5	ERU-4	3/4"	#8	-	#10	35	3			7677								
										9131	-			#6			-	6
7	-		#8				-	7677										
								11362			3	50	3/4"	#6	-	#8	RTU-10	8
9	-		#8				-		7676									
									11362		-			#6			-	10
11	RTU-9	3/4"	#6	-	#8	45	3			9132								
										11361	-			#6			-	12
13	-		#6				-	9131										
								7912			3	40	3/4"	#8	-	#10	RTU-12	14
15	-		#6				-		9131									
									7912		-			#8			-	16
17	RTU-11	3/4"	#6	-	#8	50	3			11362								
										7912	-			#8			-	18
19	-		#6				-	11362										
								7912			3	40	3/4"	#8	-	#10	RTU-7	20
21	-		#6				-		11361									
									7912		-			#8			-	22
23	ERU-1	1/2"	#10	-	#10	30	3			5599								
										7912	-			#8			-	24
25	-		#10				-	5598										
								6929			3	40	3/4"	#8	-	#10	ERU-2	26
27	-		#10				-		5598									
									6928		-			#8			-	28
29	ERU-3	3/4"	#8	-	#10	40	3			6929								
										6928	-			#8			-	30
31	-		#8				-	6928										
								---			1	20	-				SPARE	32
33	-		#8				-		6928									
									---		1	20	-				SPARE	34
35	Space only	-				--	1			---								
										---	1	20	-				SPARE	36
37	Space only	-				--	1	---										
								---			1	--	-				Space only	38
39	Space only	-				--	1		---									
									---		1	--	-				Space only	40
41	Space only	-				--	1			---								
										---	1	--	-				Space only	42
	Phase load totals						A	87943										
							B		87939									
							C			83943								

Notes for HM:

1 Feeder is (2) 3" - 4#4/0 + #2 GND THWN Copper
2 A maximum of 3 phases, 1 neutral and 1 ground may be combined per conduit without derating
3 Use breaker suitable for 75C conductors for circuits 2 8 11 17

208Y/120V 3-Phase 4-Wire POWER PANEL — Name: DPL

Mains: 600A Main molded case breaker — Min Sym IC: 10000
Trim: Surface Door: Yes — Fed from: XDPL
Branch OCP: Molded case breaker — Feeder: Note 1
Neutral: S/N
Ground bar: Yes

CIR	DESCRIPTION	TRIP	POLES	PHASE LOADS A	B	C	CONDUITS	PHASES	NEUTRAL	GROUND	WIRE TYPE
1	LA	175	3	15816	15215	12[illegible]	(1)2-1/[illegible]	3#3/0	3/0	#4	THWN Copper
2	LE	125	3	8212	6660	[illegible]852	[illegible])2-1/[illegible]	3#2/0	2/0	#4	THWN Copper
3	RP1	200	3	9600	8700	8100	[illegible] 3"	[illegible]	250kcm	#4	THWN Copper
4	LTL2	150	3	3633	[illegible]633	2434	([illegible]-1/2"	[illegible]	3/0	#4	THWN Copper
5	CSA	200	3	---	[illegible]	---	(1) [illegible]	3#3/0	3/0	#6	THWN Copper
6	CSL	200	3	---	---	---	(1) [illegible]	3#3/0	3/0	#6	THWN Copper
7	LC	150	[illegible]	[illegible]	11637	[illegible]	(1)[illegible]-1/2"	3#3/0	3/0	#4	THWN Copper
8	SPACE ONLY	225	[illegible]	---	---	---	-				
9	SPACE ONLY	125	3	---	---	---	-				
	Phase load totals			[illegible]537	[illegible]	41552					

Notes for DPL:

1 Feeder is (2) 3-1/2" - 4#400kcm[illegible] #3/0 GND THWN [illegible]pper from 150 KVA Transformer XDPL
2 Terminal Ratings: All 75C

208Y/120V 3-Phase 4-Wire LIGHTING PANEL — Name: LS

Mains: 110A Main molded case breaker — Min Sym IC: 10000
Trim: Surface Door: Yes — Fed from: XLS
Neutral: S/N — Feeder: Note 1
Ground bar: Yes

CIR	DESCRIPTION	CONDUIT	PHASE	NEUT	GND	TRIP	POLES	PHASE LOADS A	B	C	POLES	TRIP	CONDUIT	PHASE	NEUT	GND	DESCRIPTION	CIR
1	DATA RACK 156	1/2"	#10	#10	#10	20	1	600										
								900			1	20	Note 2	#12	#12	#12	FACP ELEC 213	2
3	DATA RACK 156	1/2"	#10	#10	#10	20	1		600									
									900		1	20	Note 2	#12	#12	#12	FA EVAC ELEC 213	4
5	DATA BACKBRD 156	1/2"	#10	#10	#10	20	1			600								
										900	1	20	Note 2	#12	#12	#12	FA FCPS ELEC 213	6
7	DATA BACKBRD 156	1/2"	#10	#10	#10	20	1	600										
								1500			1	20	3/4"	#10	#10	#10	GENSET BASINHEAT	8
9	DATA REC 156	1/2"	#10	#10	#10	20	1		360									
									1200		1	20	3/4"	#10	#10	#10	GENSET BAT CHARG	10
11	DATA REC 156	1/2"	#10	#10	#10	20	1			360								
										600	1	20	Note 2	#12	#12	#12	STANDBY ELEC 213	12
13	ACS PANEL 156	1/2"	#10	#10	#10	20	1	600										
								900			1	20	3/4"	#8	#8	#8	FA FCPS DATA 203	14
15	DATA RACK 203	3/4"	#8	#8	#8	20	1		600									
									600		1	20	3/4"	#8	#8	#8	GEN REC DATA 203	16
17	DATA RACK 203	3/4"	#8	#8	#8	20	1			600								
										900	1	20	1/2"	#10	#10	#10	ETC CTRL RACK	18
19	SPARE	-				20	1	---										
								---			1	--	-				Space only	20
21	SPARE	-				20	1		---									
									---		1	--	-				Space only	22
23	SPARE	-				20	1			---								
										---	1	--	-				Space only	24
25	SPARE	-				20	1	---										
								---			1	--	-				Space only	26
27	Space only	-				--	1		---									
									---		1	--	-				Space only	28
29	Space only	-				--	1			---								
										---	1	--	-				Space only	30
	Phase load totals						A	5100										
							B		4260									
							C			3960								

Notes for LS:

1 Feeder is (1) 1-1/2" - 4#1 + #4 GND THWN Copper from 30 KVA Transformer XLS
2 A maximum of 3 phases, 1 neutral and 1 ground may be combined per conduit without derating

ELECTRICAL RISER DIAGRAM NOTES:

1. REFER TO SWITCHBOARD AND PANELBOARD SCHEDULES FOR CONDUIT AND CONDUCTOR SIZES.

2. PROVIDE A DRIVEN GROUND ROD FIVE FEET BEYOND THE BUILDING EXTERIOR WALL FOR EACH TRANSFORMER SECONDARY NEUTRAL . PROVIDE GROUNDING CONDUCTOR SIZED PER SECTION 260526 FROM TRANSFORMER GROUND BAR TO GROUND ROD. REFER TO GROUNDING SCHEMATIC.

3. REFER TO SHEET E004 AND 1 /8" SCALE DRAWINGS FOR LOCATIONS OF PANELS

4. SURGE PROTECTIVE DEVICE (SPD) PER SECTION 262413 AND/OR 262416. SPD SHALL INSTALLED BY AND SHIPPED FROM THE PANELBOARD AND/OR SWITCHBOARD MANUFACTURER'S FACTORY.

5. IN ANY INSTANCE WHERE THE SECONDARY FEEDER OF A TRANSFORMER EXCEEDS 10 FEET LENGTH, CHANGE PANEL TO MAIN LUGS ONLY AND LOCATE BREAKER IN AN ENCLOSURE NEAR TRANSFORMER.

6. 50A/3 CIRCUIT BREAKER IN NEMA 1 EN[illegible]URE. FEEDER FROM TRANSFER SWITCH 'ATSS' TO ENCLOSED CIRCUIT BREAKER AND [illegible]EDER FROM ENCLOSED CIRCUIT BREAKER TO TRANSFORMER 'XLS' [illegible]L BE 3#[illegible]CU + #8 CU GND IN A 1"C.

6. PROVIDE ENGRAVED PHE[illegible]C PLAC[illegible]D AFF[illegible]D TO THIS PIECE OF EQUIPMENT THAT HAS WHITE LETTERING AN[illegible]A RED [illegible]CKGROUND. ENGRAVING SHOULD INCLUDE 'EMERGENCY POW[illegible] EQ[illegible]MEN[illegible] ALONG [illegible]TH WHERE POWER FED FOR THIS EQUIPMENT ORIGI[illegible]ATES. [illegible] EQ[illegible]MENT INSTALLED OUTSIDE OF BUILDING, PROVIDE PLACARD THAT IS [illegible]ATED FO[illegible]NSTA[illegible]LATION OUTDOORS.

7. PRO[illegible]IDE ENGRA[illegible] PHE[illegible]OLIC PLACARD AFFIXED TO THIS PIECE OF EQUIPMENT THAT H[illegible]S WHITE [illegible]ETT[illegible]G AND A RED BACKGROUND. ENGRAVING SHOULD INCLUDE 'STAND[illegible]Y POWE[illegible] EQUIPMENT' ALONG WITH WHERE POWER FED FOR THIS EQUIPM[illegible] ORI[illegible]NATES. FOR EQUIPMENT INSTALLED OUTSIDE OF BUILDING, PROVIDE PLACARD [illegible]S RATED FOR INSTALLATION OUTDOORS.

8. PR[illegible]IDE LOCKING COVERS FOR TRANSFER SWITCHES.

[illegible]. PER NEC ARTICLE 110.24, PROVIDE BLACK PHENOLIC NAMEPLATE WITH WHITE LETTERING WITH MAXIMUM AVAILABLE FAULT CURRENT AND THE DATE IT WAS CALCULATED AND PERMANENTLY AFFIX TO SERVICE ENTRANCE EQUIPMENT. REFER TO SPECIFICATION SECTIONS 26 05 53 FOR DETAILS.

10. GENERATOR DOCKING STATION W/ KIRK KEY INTERLOCK BREAKER. REFER TO SECTION 26 36 00 FOR ADDITIONAL REQUIREMENTS.

11. PROVIDE KIRK KEY INTERLOCK ON BREAKER IN GENERATOR DOCKING STATION & EMERGENCY BREAKER IN GENERATOR.

12. GENSET TO GENERATOR DOCKING STATION EMERGENCY FEEDER SIZE SHALL BE ONE SET OF 4#6 CU XHWN + #8 CU XHWN GND IN A 1"C.

13. MULTI-FUNCTION DIGITAL POWER METER. REFER TO SECTION 26 24 13. PROVIDE DIGITAL CONNECTION FROM DIGITAL METER TO BUILDING MANAGEMENT SYSTEM, COORDINATE TIE-IN REQUIRMENTS WITH BMS CONTRACTOR PRIOR TO ORDERING EQUIPMENT.

14. PROVIDE A REMOTE SWITCH AND LED LIGHT INSTALLED ON THE FRONT PANEL OF THE SWITCHBOARD FOR 'MAINTENANCE MODE' OPERATION/ NOTIFICATION AS A FUNCTION OF THE ARC FLASH REDUCTION SYSTEM. PROVIDE ENGRAVED NAMEPLATE THAT READS 'MAINTENANCE MODE'.

15. MAIN GROUNDING SYSTEM TRAID. REFER TO GROUNDING & BONDING SECTION 26 05 26 FOR ADDITIONAL REQUIREMENTS.

PANEL SCHEDULES THIS SHEET:

MSG HE HM
DPL LS

NOTE:
ON PANELBOARD DIRECTORIES, CONTRACTOR SHALL ADD SUFFICIENT TEXT TO EACH CIRCUIT DESCRIPTION SO AS TO DIFFERENTIATE EACH CIRCUIT FROM ALL OTHERS, IN COMPLIANCE WITH 2014 NEC ARTICLE 408

PANELBOARD SCHEDULES WERE UPDATED AS PART OF AD#1

SA&E PROJECT NUMBER	01-615-056
BID PACKAGE	BP-1
ISSUED FOR CONSTRUCTION	10/15/2019

REVISIONS

R #	Doc #	Date
1	AD1	11.4.2019

Southern A&E LLC
7951 Troon Circle
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architects & engineers

FACILITY CODE NUMBER: 674-0110
GYMNASIUM/AUDITORIUM FOR:
HEARD COUNTY SCHOOLS
545 MAIN STREET, FRANKLIN, GA 30217
HEARD COUNTY SCHOOL SYSTEM
FRANKLIN, GEORGIA

POWER SYSTEM - RISER DIAGRAMS

STATE OF GEORGIA REGISTERED ARCHITECT
GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 27057

DRAWING NUMBER
E601