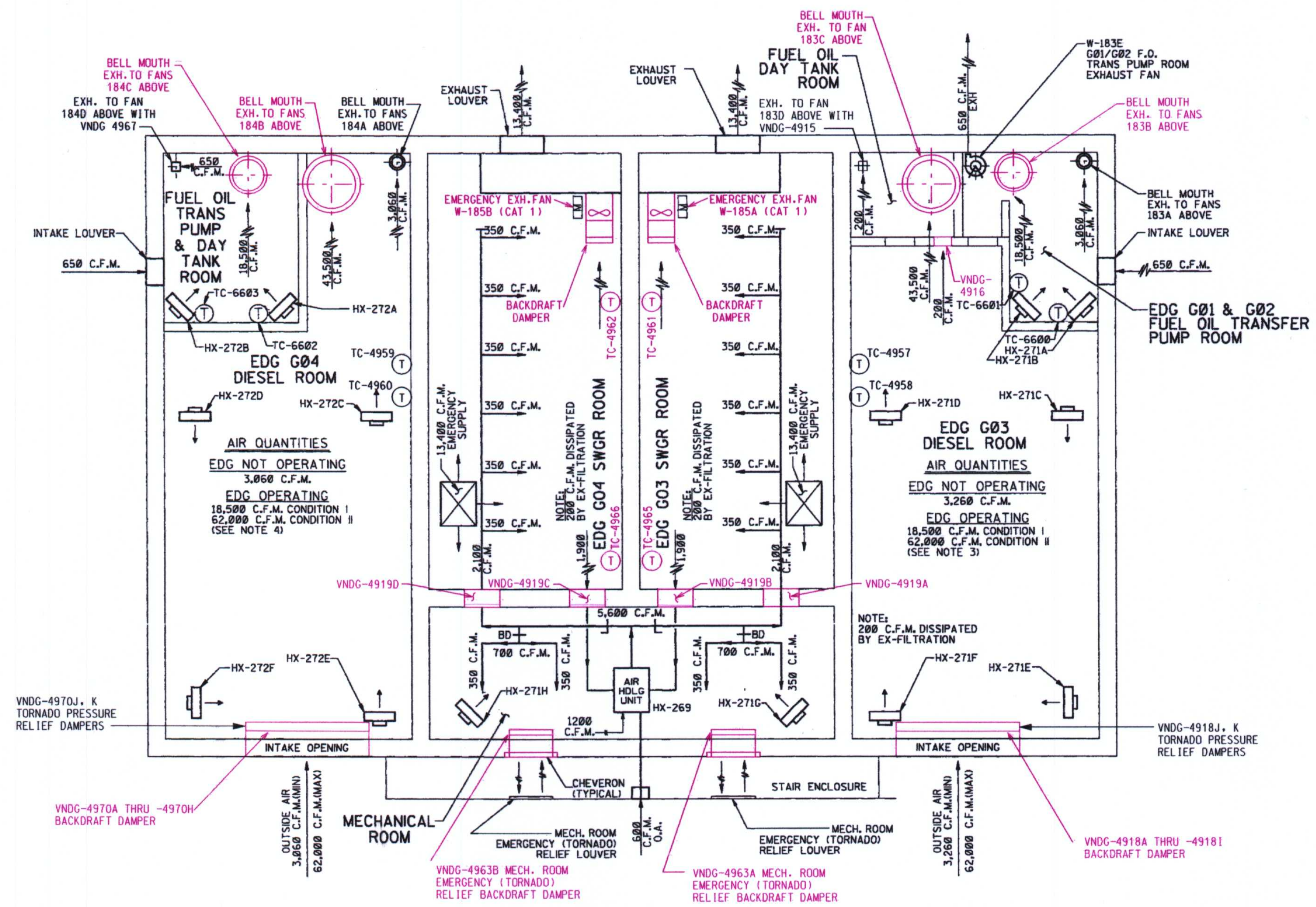
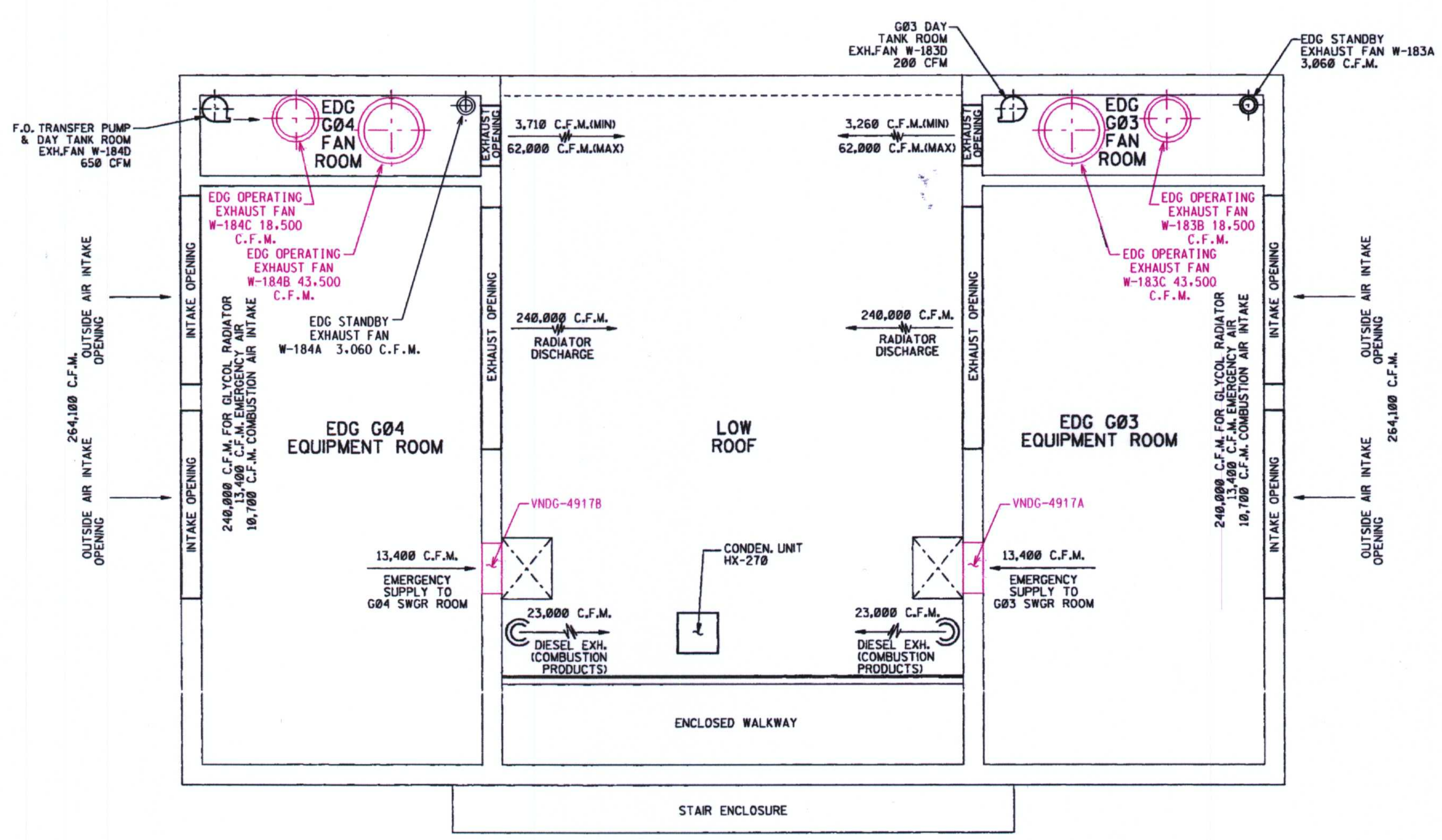


GROUND FLOOR VENTILATION



2nd FLOOR VENTILATION

AIR CONDITIONING UNITS BY CONTRACTOR

EQUIP. NUMBER	MFR OR EQUIV	MODEL NUMBER	COOLING CAPACITY TOTAL BTUH	COOLING CAPACITY SENSIB BTUH	COIL EAT F DB	COIL EAT F WB	COIL LAT F DB	COIL LAT F WB	APPROX COMPRESSOR KW	V-φ-HZ	FANS AIR FLOW CFM	EXT SP In.W.G.	MOTOR QTY/HP	APPROX KW	V-φ-HZ	OUTSIDE AIR CFM	CONDENSER AMBIENT TEMP F DESIGN	CONDENSER AMBIENT TEMP F MIN	HEATING (NOTE 9) ELECTRIC KW	HEATING ELECTRIC V-φ-Hz	APPROX TOTAL KW	ACCESSORIES REQUIRED
HX-269	CARRIER	40RE015	173600	128300	85	67	65	58			5,600	.700	1/5	5.5	480-3-60	600	95	-15	36	480-3-60	41.46	1-11
HX-270	CARRIER	38AE016							17.2	480-3-60	8,800		2/0.5	1.4	480-3-60						18.6	

ACCESSORIES DESCRIPTION
1. DRY BULB ECONOMIZER
2. THERMOSTATS W/LOCKING GUARDS (SEE NOTE 8)
3. PAROMETER RELIEF DAMPER
4. CENTRAL CONTROL PANEL
5. SUPPLY & RETURN CASING
6. ELECTRIC RESISTANCE HEATER
7. HINGED ACCESS DOORS
8. ADJUSTABLE BELT DRIVE
9. FARR 30/30 FILTERS
10. ECONOMIZER SECTION (SHALL BE DISABLED)
11. MIST ELIMINATOR

EXHAUST FANS BY CONTRACTOR EXCEPT IF MARKED SR

EQUIP. NUMBER	MFR OR EQUIV	MODEL NUMBER	FAN TYPE	SR/SEIS (SEE NOTE 6)	AIR FLOW CFM	SP In.W.G.	FAN RPM	MOTOR HP	TYPE DRIVE	UNIT VOLTAGE V/φ/Hz	ACCESSORIES REQUIRED	AREA SERVED
W-183E	BUFFALO FORGE	17MW	CENTR	SEIS	650	.75	1347	.5	BELT	480-3-60	1, 3, 5, 8	EDG G01 & G02 F.O. TRANS PUMP RM
W-183D	BUFFALO FORGE	BV-E	CENTR	SEIS	200	.5	1140	.25	DIRECT DRIVE	120-1-60	1	EDG G03 F.O. DAY TANK ROOM
W-184D	BUFFALO FORGE	17MW	CENTR	SEIS	650	.75	1347	.5	BELT	480-3-60	1, 3, 5	F.O. TRANS PUMP & DAY TANK RM
W-183B	BUFFALO FORGE	42MB	VANEAX	SR	18,500	.7	658	5	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G03 DIESEL ROOM
W-184C	BUFFALO FORGE	42MB	VANEAX	SR	18,500	.7	658	5	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G04 DIESEL ROOM
W-183C	BUFFALO FORGE	60MB	VANEAX	SR	43,500	.7	502	10	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G03 DIESEL ROOM
W-184B	BUFFALO FORGE	60MB	VANEAX	SR	43,500	.7	502	10	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G04 DIESEL ROOM
W-183A	BUFFALO FORGE	15MB	VANEAX	SEIS	3,060	.5	1734	.5	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G03 DIESEL ROOM
W-184A	BUFFALO FORGE	15MB	VANEAX	SEIS	3,060	.5	1734	.5	BELT	480-3-60	1, 2, 3, 4, 5, 8	EDG G04 DIESEL ROOM
W-185A	BUFFALO FORGE	36MB	VANEAX	SR	13,400	.5	720	3	BELT	480-3-60	1, 3, 4, 5	EDG G03 SWGR ROOM
W-185B	BUFFALO FORGE	36MB	VANEAX	SR	13,400	.5	720	3	BELT	480-3-60	1, 3, 4, 5	EDG G04 SWGR ROOM

ACCESSORIES DESCRIPTION
1. SAFETY SCREEN
2. GRAVITY BACKDRAFT DAMPER
3. BELT GUARD
4. SPARK PROOF WHEEL-TYPE'A'
5. ARRANGEMENT 9
6. N/A
7.
8. BELLMOUTH

UNIT HEATERS BY CONTRACTOR

EQUIP. NUMBER	MFR	MODEL NUMBER	KW	MOTOR & FAN HP	RPM	V-φ-Hz	LOCATION
HX-271A	NOTE 10	--	7.5	--	--	480-3-60	FUEL OIL TRANS PMP RM.
HX-271B	NOTE 10	--	7.5	--	--	480-3-60	FUEL OIL TRANS PMP RM.
HX-271C	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G03 DIESEL RM.
HX-271D	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G03 DIESEL RM.
HX-271E	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G03 DIESEL RM.
HX-271F	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G03 DIESEL RM.
HX-271G	Q MARK	--	7.5	--	--	480-3-60	MECHANICAL ROOM
HX-271H	Q MARK	--	7.5	--	--	480-3-60	MECHANICAL ROOM
HX-272A	NOTE 10	--	7.5	--	--	480-3-60	F.O. TRANS PUMP & DAY TK. RM.
HX-272B	NOTE 10	--	7.5	--	--	480-3-60	F.O. TRANS PUMP & DAY TK. RM.
HX-272C	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G04 DIESEL RM.
HX-272D	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G04 DIESEL RM.
HX-272E	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G04 DIESEL RM.
HX-272F	Q MARK	MUH-25-4	25	1/4	1600	480-3-60	EDG G04 DIESEL RM.

ACCESSORIES DESCRIPTION
1. DISCHARGE LOUVERS
2. THERMOSTAT
3. SAFETY FAN GUARD
4. MOUNTING BRACKETS TYPE MMB FOR ALL NON-SAFETY RELATED UNIT HEATERS. MOUNT MMB HEATER BRACKET, MODEL MMB-30, USING (2) 3/8" DIA HILTI KWIK BOLT II, MINIMUM EMBEDMENT 2 1/2".

LOUVER SCHEDULE BY CONTRACTOR (NOTE 12)

ITEM NO.	BASIC MATERIAL	SIZE	CFM	MAX PRESSURE DROP	SCREEN DOWNSTREAM	LOCATION	STATIONARY /DAMPER
INTAKE LOUVER	GALV STEEL	2'-0" x 1'-0"	650	.125	YES-ALUMINUM	F.O. TRANS PUMP RM SOUTH WALL	STATIONARY W/ SECURITY BARS
MECH. RM EMERG RELIEF	GALV STEEL	5'-0" x 5'-0"	TORNADO OPENING	.125	YES-ALUMINUM	STAIR ENCLOSURE WEST WALL	STATIONARY W/ SECURITY BARS
MECH. RM EMERG RELIEF	GALV STEEL	5'-0" x 5'-0"	TORNADO OPENING	.125	YES-ALUMINUM	STAIR ENCLOSURE WEST WALL	STATIONARY W/ SECURITY BARS
INTAKE LOUVER	GALV STEEL	2'-0" x 1'-0"	650	.125	YES-ALUMINUM	F.O. TRANS PUMP & DAY TANK RM NORTH WALL	STATIONARY W/ SECURITY BARS
EXHAUST LOUVER	GALV STEEL	5'-0" x 4'-0"	13,400	.125	YES-ALUMINUM	EAST WALL EDG G03 SWGR ROOM	STATIONARY W/ SECURITY BARS
EXHAUST LOUVER	GALV STEEL	5'-0" x 4'-0"	13,400	.125	YES-ALUMINUM	EAST WALL EDG G03 SWGR ROOM	STATIONARY W/ SECURITY BARS

REGISTERS & GRILLES BY CONTRACTOR

SIZE	NO. REQ'D	MFR OR EQUIV	MFR MODEL NO.	THROW (SUPPLY)	AIR FLOW CFM	LOCATION	REMARKS
12x6	4	TITUS	272RL	18	350	MECH ROOM	REGISTER
12x6	6	TITUS	272RL	12	300/350	EDG G03 SWGR ROOM	REGISTER
12x6	6	TITUS	272RL	12	300/350	EDG G04 SWGR ROOM	REGISTER
14x18	1	--	--	RETURN	1,900	EDG G03 SWGR ROOM	GRILLE
14x18	1	--	--	RETURN	1,900	EDG G04 SWGR ROOM	GRILLE
9x15	1	--	--	--	600	O.A. INTAKE	GRILLE W/ BIRD SCREEN

FIRE DAMPERS BY CONTRACTOR

ITEM NUMBER	MFR OR EQUIV	MAX CFM	SIZE A WIDE	SIZE B HIGH	ARRG'T	STYLE	TYPE	LOCATION
VNDG-4915	RUSKIN	200	6"	--	HORIZ	CR	CURTAIN 1BD23	F.O. DAY TANK ROOM EXH DUCT
VNDG-4916	RUSKIN	200	27.5"	29.5"	VERT	A	CURTAIN 1BD23	F.O. DAY TANK ROOM WALL
VNDG-4917A	RUSKIN	13,400	75.5"	69"	VERT	A	CURTAIN 1BD23	EDG G03 EQUIP ROOM WALL
VNDG-4919A	RUSKIN	2,100	18"	14"	VERT	B	CURTAIN 1BD23	EDG G03 SWGR ROOM WALL
VNDG-4919B	RUSKIN	1,900	18"	14"	VERT	B	CURTAIN 1BD23	EDG G03 SWGR ROOM WALL
VNDG-4919C	RUSKIN	1,900	18"	14"	VERT	B	CURTAIN 1BD23	EDG G04 SWGR ROOM WALL
VNDG-4919D	RUSKIN	2,100	18"	14"	VERT	B	CURTAIN 1BD23	EDG G04 SWGR ROOM WALL
VNDG-4917B	RUSKIN	13,400	75.5"	69"	VERT	A	CURTAIN 1BD23	EDG G04 EQUIP ROOM WALL
VNDG-4967	RUSKIN	650	8"	--	HORIZ	CR	CURTAIN 1BD23	F.O. TRANS PUMP & DAY TANK ROOM EXH DUCT

BACKDRAFT DAMPERS BY CONTRACTOR

ITEM NO.	MFR OR EQUIV	MODEL	SIZE	No. OF SECT	OVER ALL OPENING SIZE	PRESS LOSS	DIFF PRESS	LOCATION	REMARKS
VNDG-4918A THRU VNDG-4918H	RUSKIN	CBS8	3'-1" W x 5'-7" H	8		.25 WG	20" WG	WEST WALL EDG G03	SEE DET 8 REF [4] & NOTE 11
VNDG-4970A THRU VNDG-4970H	RUSKIN	CBS8	3'-1" W x 5'-7" H	8		.25 WG	20" WG	WEST WALL EDG G04	SEE DET 8 REF [4] & NOTE 11
VNDG-4963A	RUSKIN	CBS8	2'-6" W x 4'-0" H	2		.1 WG	20" WG	WEST WALL OF MECHANICAL ROOM	SEE DET 9 REF [4] & NOTE 11
VNDG-4963B	RUSKIN	CBS8	2'-6" W x 4'-0" H	2		.1 WG	20" WG	WEST WALL OF MECHANICAL ROOM	SEE DET 9 REF [4] & NOTE 11
VNDG-4964A	RUSKIN	CBS8	3'-0" W x 3'-0" H	1		.1 WG	1" WG	EAST END EDG G03 SWGR ROOM	REF NOTE 11
VNDG-4964B	RUSKIN	CBS8	3'-0" W x 3'-0" H	1		.1 WG	1" WG	EAST END EDG G04 SWGR ROOM	REF NOTE 11
VNDG-4918J	RUSKIN	CBS8	5'-7"W x 10"H	1		–	8.3" WG	WEST WALL EDG G03	SEE REF. [4] & NOTE 15
VNDG-4918K	RUSKIN	CBS8	5'-7"W x 10"H	1		–	8.3" WG	WEST WALL EDG G03	SEE REF. [4] & NOTE 15
VNDG-4970J	RUSKIN	CBS8	5'-7"W x 10"H	1		–	8.3" WG	WEST WALL EDG G04	SEE REF. [4] & NOTE 15
VNDG-4970K	RUSKIN	CBS8	5'-7"W x 10"H	1		–	8.3" WG	WEST WALL EDG G04	SEE REF. [4] & NOTE 15

NOTES:

1. ALL DESIGN CONDITIONS CONFORM TO UE&C SPEC.No.6704-001-SP-M-006 OR 6704-1-1, SECTION 15012.
2. INTAKE & EXHAUST OPENINGS ARE SIZED FOR A MAXIMUM FACE VELOCITY OF 500 FT/MIN., BEFORE INTRODUCTION OF OBSTRUCTIONS, OR TO ALLOW EACH ROOM TO COME TO EQUILIBRIUM WITH DESIGN BASIS TORNADO CONDITIONS.(3 psi DROP IN 1.5 SECONDS)
3. OPERATING MODES FOR EDG G03 DIESEL ROOM VENTILATING EXH. FANS
   CONDITION I ONLY FAN W-183B OPERATES TO MAINTAIN ROOM TEMPERATURE BELOW MAXIMUM TEMPERATURE (100 DEG.F))
   CONDITION II FANS W-183B & 183C OPERATE TO MAINTAIN ROOM TEMPERATURE BELOW MAXIMUM TEMPERATURE (120 DEG.F))
4. OPERATING MODES & CONDITIONS ARE THE SAME FOR EDG G04 DIESEL ROOM EXCEPT FANS NUMBERED AS 184C & B.
5. ALL VENTILATION EQUIPMENT NO.S ARE PRECEDED BY
   VNDG: FOR DIESEL & MECHANICAL ROOMS
   VNEERM: FOR SWITCHGEAR ROOMS.
6. SR=SAFETY RELATED; SEIS=SEISMIC DESIGN ONLY. THOSE FANS DESIGNATED AS SEIS ARE NOT REQUIRED WHEN THE EDG'S ARE RUNNING
7. THERMOSTATS (INDICATING TEMP SWITCHES) ARE INDICATED THUS (T) & ARE SAFETY RELATED/SEISMICALLY DESIGNED & ARE TO OPERATE THE DESIGNATED FANS & HEATERS AS FOLLOWS:

FANS	THERMOSTAT	ON	OFF	HEATERS	THERMOSTAT	ON	OFF
183B	TC-4957	90°F	80°F	HX-271A	TC-6600	65°F	70°F
183C	TC-4958	100°F	90°F	HX-271B	TC-6601	60°F	65°F
184B	TC-4959	100°F	90°F	HX-272A	TC-6602	65°F	70°F
184C	TC-4960	90°F	80°F	HX-272B	TC-6603	60°F	65°F
185A	TC-4961	90°F	80°F				
185B	TC-4962	90°F	80°F				

8. CONNECT THERMOSTATS TC-4965 & TC-4966 TO THE AIR HANDLING UNIT CONTROLLER SUCH THAT THE AIR HANDLING UNIT WILL RESPONDED TO EITHER THERMOSTAT AS APPROPRIATE TO EITHER HEAT OR COOL.
9. ELECTRIC HEAT CAN ONLY BE APPLIED BETWEEN 5600 & 6200 C.F.M. ON MODEL No. 40RE015 (PER MFG).
10. THE NOTED UNIT HEATERS (HX-271 A/B AND HX-272 A/B) ARE DESIGNATED AS SAFETY RELATED AND ARE TO BE AS SUPPLIED BY NUTHERM INTERNATIONAL, INC. OR OWNER APPROVED EQUIVALENT. HEATERS SHALL MEET THE REQUIREMENTS OF SPECIFICATION 6704-1-1, SECTION 15012 AND THIS DRAWING.
11. DAMPERS ARE TO BE MOUNTED IN A VERTICAL POSTION AND WILL OPEN TO ACCOMMODATE ROOM EXHAUST.
12. ALL INTAKE/EXHAUST OPENINGS NOT PROVIDED WITH LOUVERS ARE PROVIDED WITH CHEVRONS FOR MISSILE PROTECTION.
13. [XX] KEY TO REFERENCES NO. REFERS TO THE REF DRAWING (A-10).
14. ALL LOUVERS ARE NON-SAFETY RELATED.
15. AFTER 45 DEGREE MAX. DEFLECTION, DAMPERS WILL LOCK IN THE OPEN POSITION & MUST BE MANUALLY UNLOCKED AND RESET TO THE CLOSED POSITION.

D083

LEGEND
MAGENTA - IN SCOPE LR
BLACK - NOT IN SCOPE LR

LR-M-211 SH-3
UNIT 1 & 2
DIESEL GENERATOR BUILDING
AIR FLOW DIAGRAM
HVAC SYSTEM
REV. 1 DATE: 10-17-03