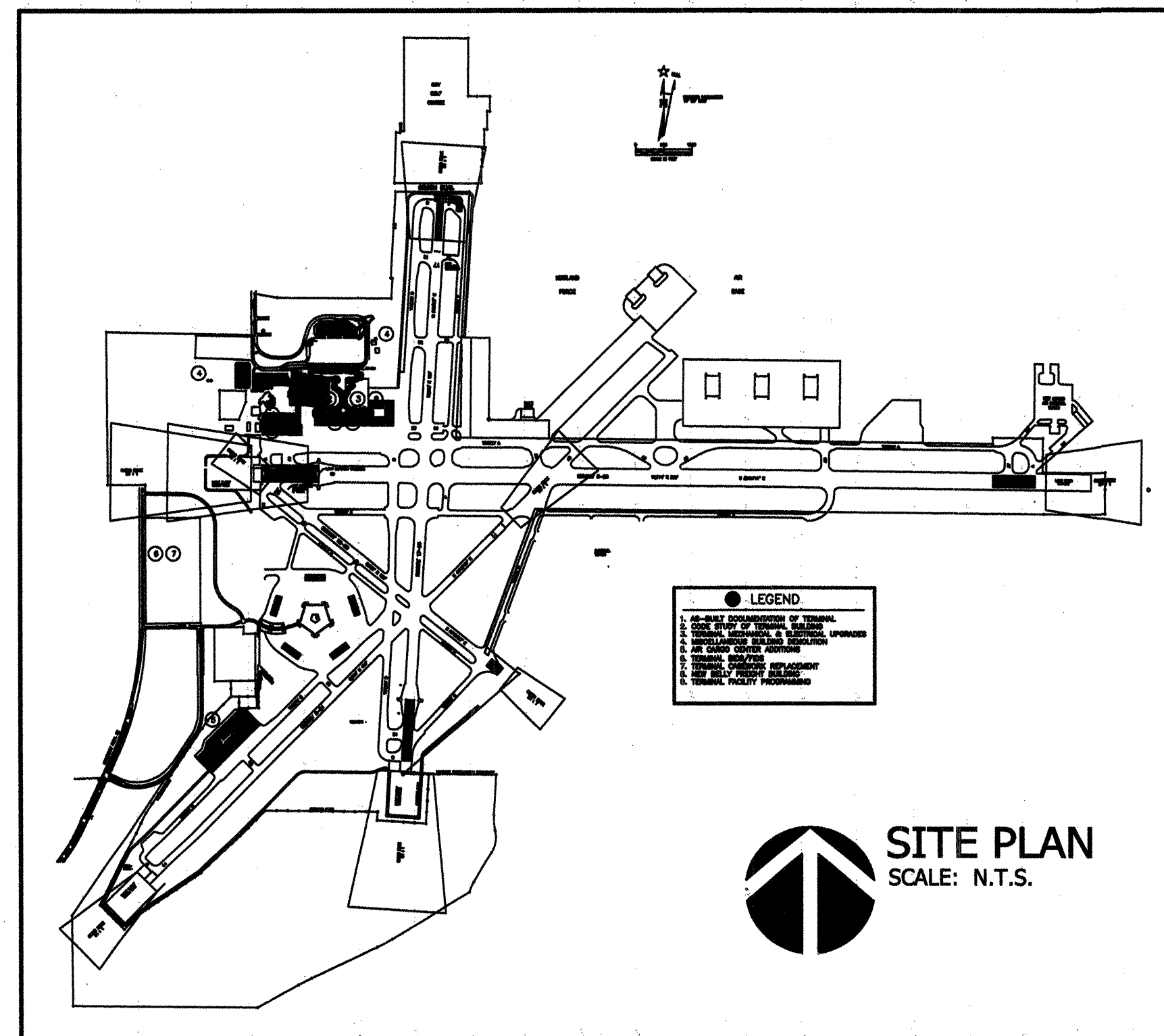


# ALBUQUERQUE INTERNATIONAL SUNPORT MECHANICAL - BOILER INSTALLATION

BPLW PROJECT No. A04008 - A05



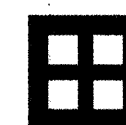
**SITE PLAN**  
SCALE: N.T.S.

**BPLW**

Architects & Engineers, Inc.

6200 Uptown Blvd. NE  
Suite 400  
Albuquerque, New Mexico 87110  
(505) 881-2759

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49 West First Street  
Suite 100  
Mesa, Arizona 85201  
(480) 827-2759

## LANDFILL PROXIMITY DISCLOSURE STATEMENT

THE SUBJECT PROPERTY IS LOCATED NEAR A FORMER LANDFILL. DUE TO THE SUBJECT PROPERTY BEING NEAR A FORMER LANDFILL, CERTAIN PRECAUTIONARY MEASURES MAY NEED TO BE TAKEN TO ENSURE THE HEALTH AND SAFETY OF THE PUBLIC. RECOMMENDATIONS MADE BY A PROFESSIONAL ENGINEER WITH EXPERTISE IN LANDFILLS AND LANDFILL GAS ISSUES (AS REQUIRED BY THE MOST CURRENT VERSION OF THE INTERIM GUIDELINES FOR DEVELOPMENT WITHIN CITY DESIGNATED LANDFILL BUFFER ZONES) SHALL BE CONSULTED PRIOR TO DEVELOPMENT OF THE SITE.

*William Paul Waters*  
August 2, 2005  
ALBUQUERQUE ENVIRONMENTAL HEALTH DEPARTMENT DATE

## INDEX OF DRAWINGS

### GENERAL

1 G0.1 COVER SHEET

### MECHANICAL

2 M1.1 BOILER ROOM - DEMOLITION / NEW WORK  
3 M2.1 BOILER ROOM SCHEMATIC

### ELECTRICAL

4 E1.1 BOILER ROOM DEMOLITION / NEW WORK PLAN  
5 E1.2 PANEL SCHEDULES AND EQUIPMENT ELEVATION

*Dennis C. Parker*  
AVIATION DEPARTMENT  
Dennis C. Parker  
7-3-05  
DATE

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE
		APPROVALS		ENGINEER	DATE	*****	
		DRC Chairman		<i>[Signature]</i>	8-4-05	APPROVED FOR CONSTRUCTION	
		Transportation		N/A		<i>[Signature]</i> 8/3/05	
		Water/Wastewater		N/A		City Architect Date	
		Hydrology		N/A		<i>[Signature]</i> 8-04-05	
		Aviation		N/A		City Engineer Date	
		Constr. Mngnt.		N/A			
		City Project No.		Drawing No.	Sheet	of	
		725913		G0.1	1	5	



REMOVAL NOTES:

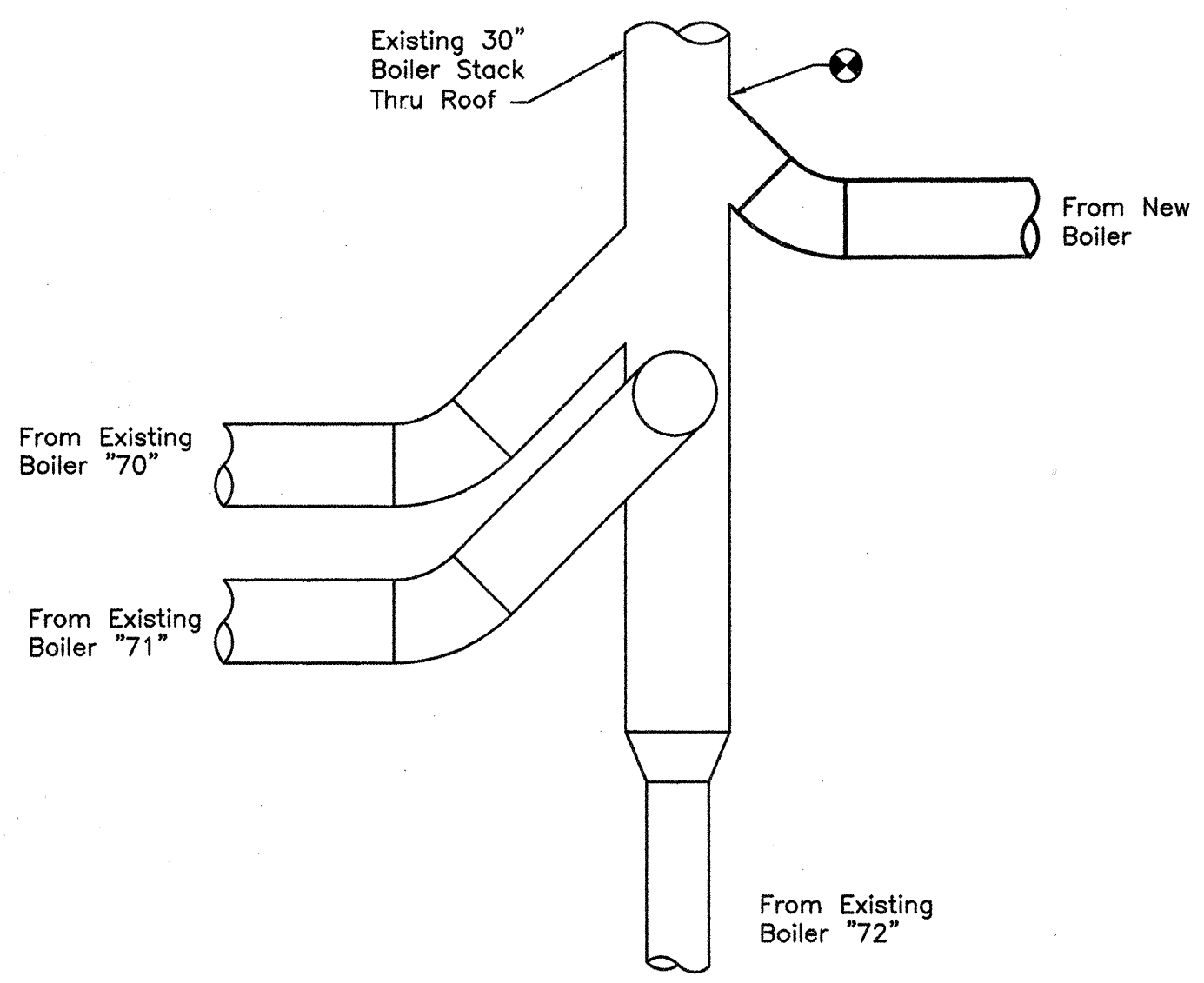
- A THE DRAWINGS WERE GENERATED FROM EXISTING CONSTRUCTION DRAWINGS ISSUED FOR THE INSTALLATION OF THE SYSTEMS AS THEY ARE NOW INSTALLED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN DOCUMENTS AND FIELD CONDITIONS.
- B ALL SUPPORTS, HANGERS, BRACKETS AND MOUNTING ASSEMBLIES FOR ALL SYSTEMS REQUIRED TO BE DEMOLISHED OR REMOVED SHALL ALSO BE REMOVED COMPLETELY.
- C ALL EQUIPMENT/MATERIALS REMOVED SHALL BE TRANSPORTED FROM THIS SITE AND DISPOSED OF BY THIS CONTRACTOR.
- D ALL WORK INVOLVED WITH THE REMOVAL AND DEMOLITION OF THE MECHANICAL SYSTEM SHALL BE CAREFULLY COORDINATED TO AVOID DAMAGE TO THE REMAINING SYSTEMS AND EXISTING FINISHES.

WALL LEGEND

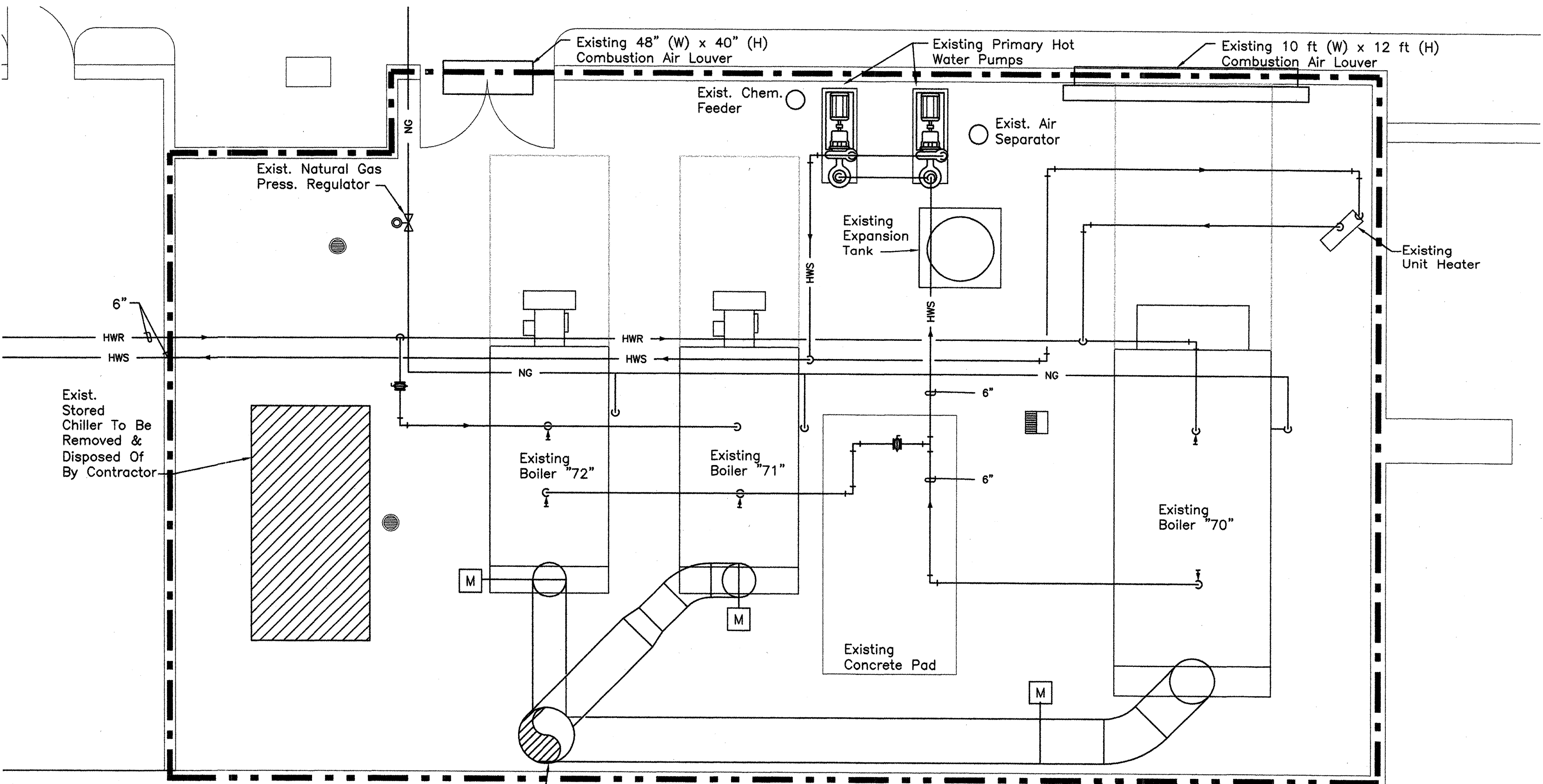
- 2 HR. PARTITION 8" EXISTING CMU UL #: U906
- 2 HR. PARTITION 12" EXISTING C.I.P. CONCRETE

LEGEND

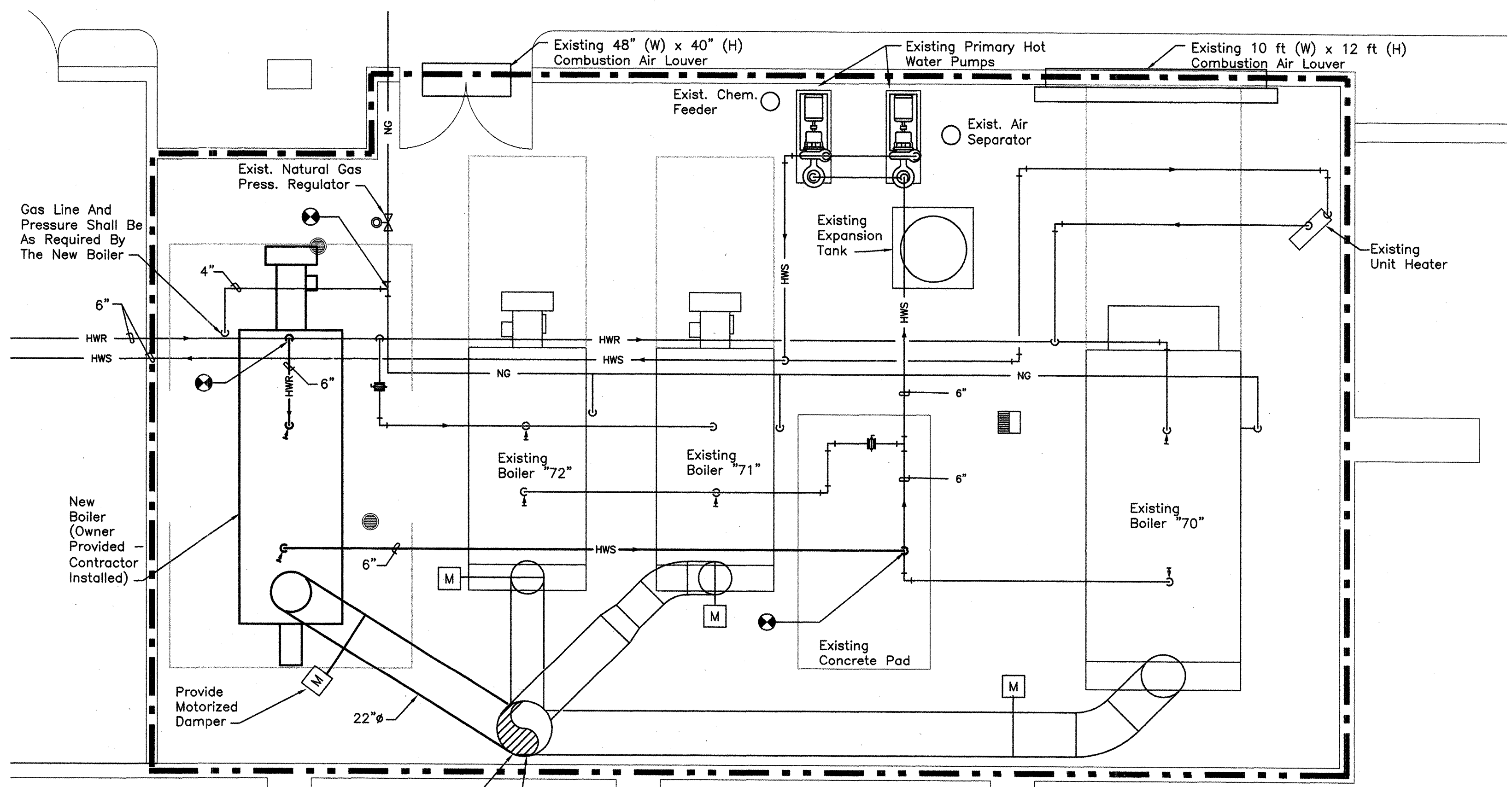
- BUTTERFLY VALVE
- POINT OF CONNECTION TO EXISTING
- HWR HEATING WATER RETURN
- HWS HEATING WATER SUPPLY
- NG NATURAL GAS
- EQUIPMENT, PIPING, ETC. TO BE REMOVED



FLUE CONNECTION DETAIL  
SCALE: NONE



BOILER ROOM - DEMOLITION  
SCALE: 1/4" = 1'-0"



BOILER ROOM - NEW WORK  
SCALE: 1/4" = 1'-0"

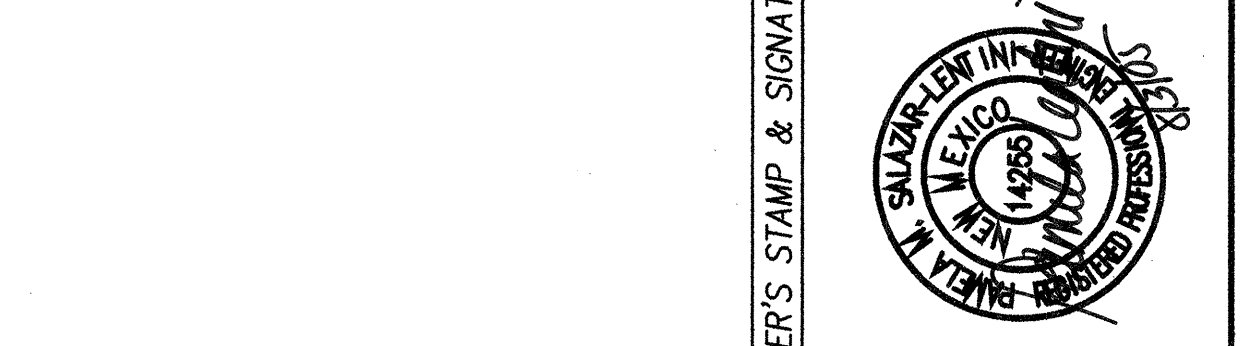


GENERAL NOTES:

- A. SEE PIPING SCHEMATIC ON SHEET M1.2.
- B. ALL NEW CONTROLS SHALL BE COMPATIBLE WITH EXISTING CONTROL SYSTEM.
- C. ALL UTILITY OUTAGES SHALL BE COORDINATED WITH THE AIRPORT PERSONNEL.
- D. SEE ELECTRICAL FOR EMERGENCY BOILER SHUT-DOWN BUTTON.
- E. ALL BOILER CONNECTIONS AND REQUIREMENTS SHALL BE VERIFIED WITH ACTUAL MODEL SUPPLIED BY OWNER.

KEYED NOTES:

- 1. FABRICATE BOILER STACKS AND BREECHING FROM 10 GA. BLACK IRON WITH ALL FITTINGS, SEAMS AND JOINTS CONTINUOUSLY WELDED. PROVIDE A CLEANOUT DOOR AT EVERY CHANGE IN DIRECTION. PAINT BREECHING BEFORE ASSEMBLY INSIDE AND OUT WITH HEAT RESISTANT ALUMINUM PAINT DESIGNED FOR 500 DEG. F FLUE GAS. ALL PROVISIONS OF NFPA STANDARD 211 SHALL BE COMPLIED WITH. EXPOSED STACKS AND BREECHING IN BOILER ROOM SHALL BE INSULATED. SEE DETAIL THIS SHEET FOR CONNECTION TO EXISTING.



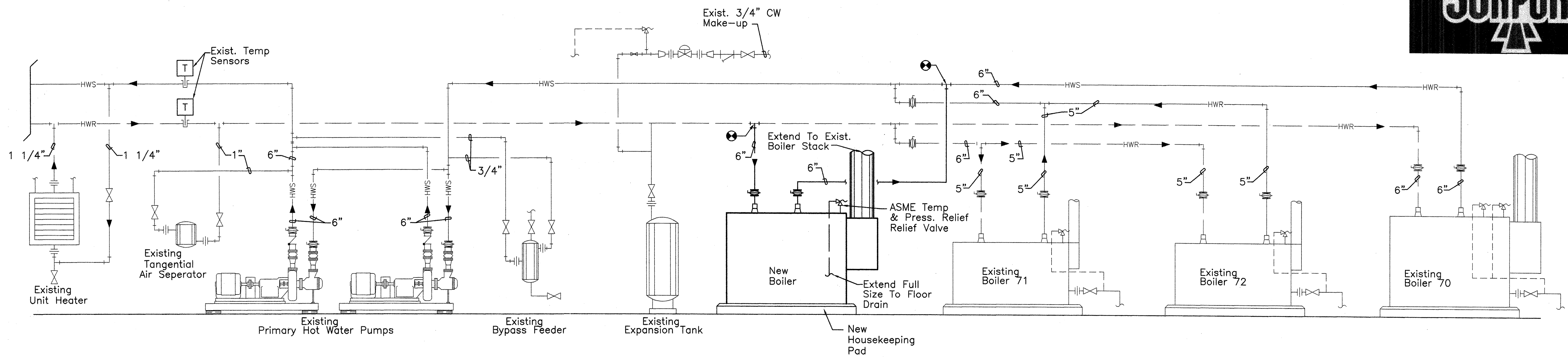
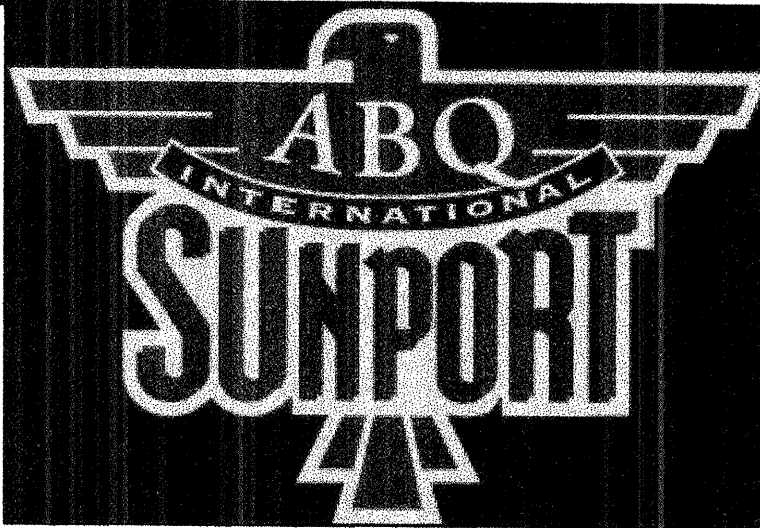
**BPLW**  
Architects & Engineers, Inc.  
8200 Uptown Blvd. NE  
Suite 400  
Albuquerque, New Mexico 87110  
(505) 891-2759

48 West First Street  
Suite 100  
Albuquerque, New Mexico 85501  
(480) 827-2759

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CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP			
TITLE: <b>ALBUQUERQUE INTERNATIONAL AIRPORT BOILER ROOM DEMO &amp; NEW WORK PLANS</b>			
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No. <b>72591X</b>	Zone Map No. <b>M-16</b>	Drawing No. <b>M1.1</b>	Sheet <b>2</b> of <b>5</b>





## BOILER SCHEMATIC

SCALE: NONE

## BOILER SEQUENCE OF OPERATION

### SEQUENCE OF OPERATION:

Upon a call for heating, boiler 71 shall be automatically started. If the heating load is not met by boiler 71, boiler 70 shall be automatically started. The associated motorized stack damper shall be opened automatically when its associated boiler is started.

Boiler 72 is a back-up boiler for boiler 71. The New Boiler is a back-up boiler for boiler 70. If boiler 71 or 70 fails, their back-up boiler will automatically be started. A maximum of 2 boilers will be on at one time.

Boiler control module to tie into the existing DDC system. Boiler status shall report to the DDC. Existing supply water, return water and outside air temperature sensors shall be used similar to existing to cycle all boilers, including New Boiler.

## BOILER SCHEDULE

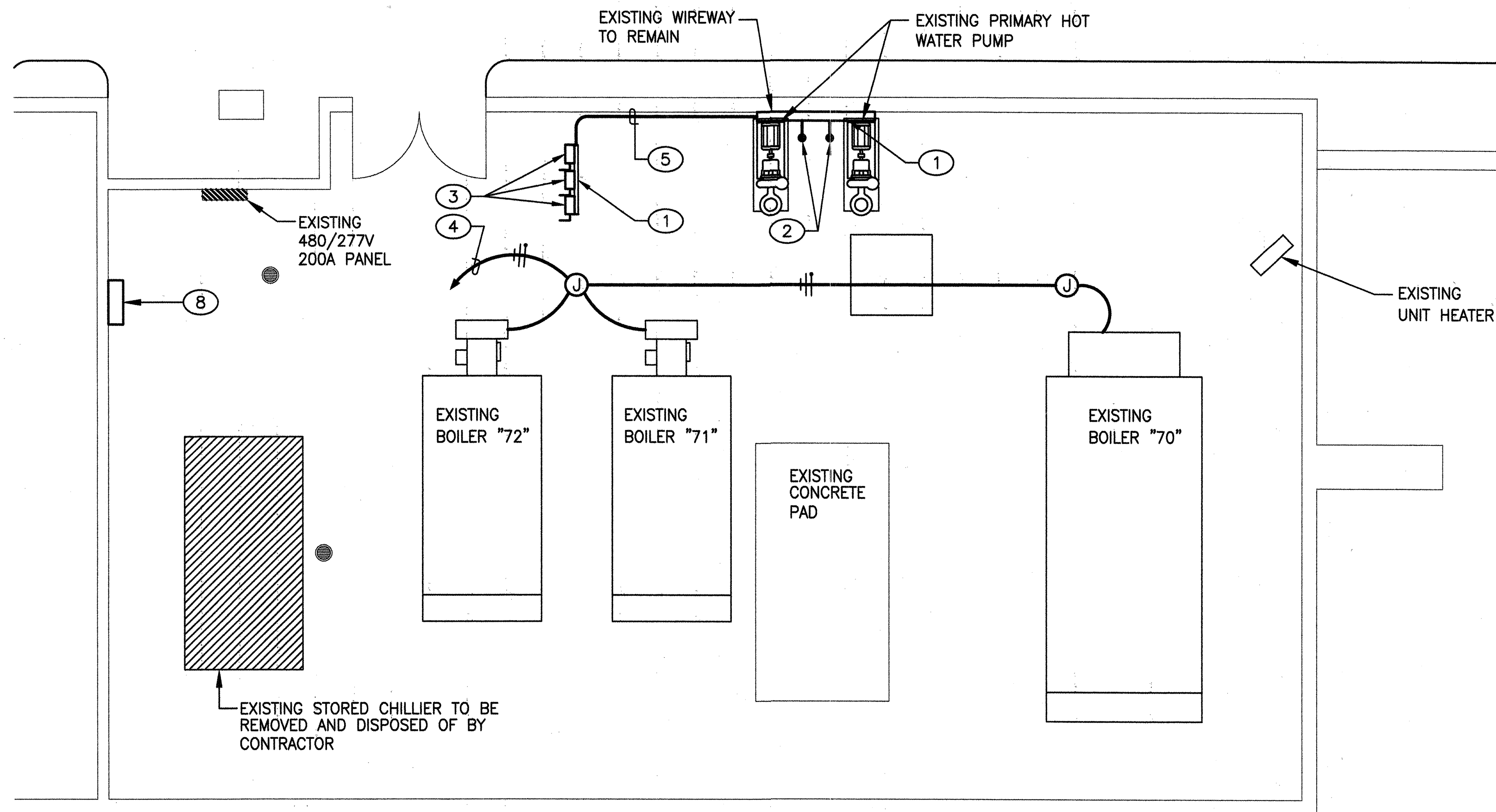
SYMBOL	LOCATION	FUEL	INPUT (MBH)	OUTPUT (MBH)	HEATING WATER FLOW RATE (GPM)	WATER TEMPERATURE (°F)		PRESSURE DROP (psig)	ELECTRICAL					OPERATING WEIGHT (POUNDS)	REMARKS
						EWT	LWT		HP	V	PH	HZ	CONTROL		
New Boiler	Boiler Room	NG	12,000	10,200	408	150	200	5	7.5	460	3	60	BAS	18,625	Owner provided, Contractor installed

**BPLW**  
Architects & Engineers, Inc.  
8200 Uptown Blvd. NE  
Suite 400  
Albuquerque, New Mexico 87110  
(505) 861-2750

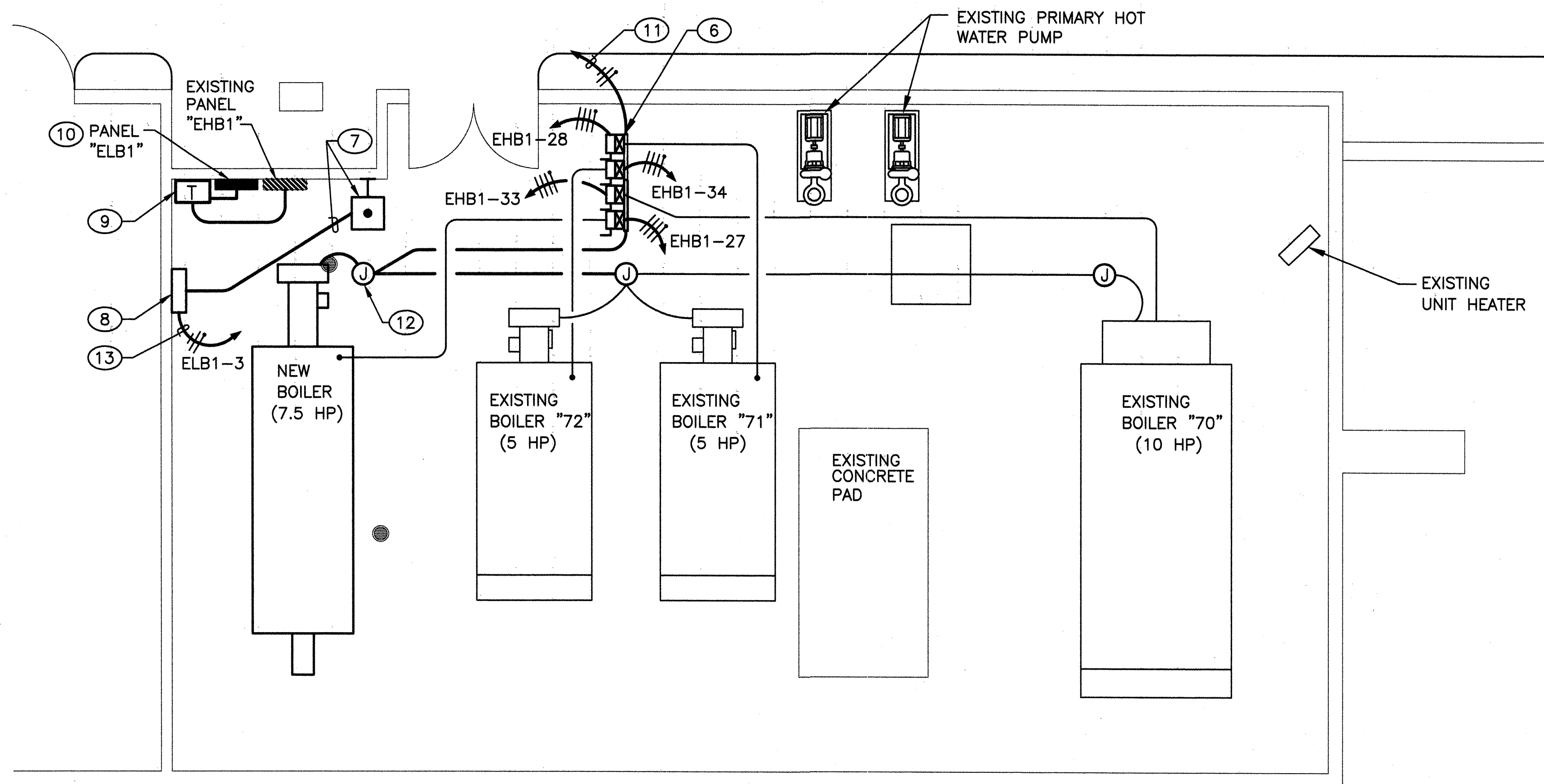
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Albuquerque, New Mexico 85201  
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CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP	
TITLE: <b>ALBUQUERQUE INTERNATIONAL AIRPORT BOILER INSTALLATION BOILER SCHEMATIC</b>	
Design Review Committee AUG - 4 2005 DESIGN REVIEW COMMITTEE	City Engineer Approval AUG - 4 2005 CITY ENGINEER
City Project No. <b>72591X3</b>	Zone Map No. <b>M-16</b>
Drawing No. <b>M2.1</b>	Sheet <b>3</b> Of <b>5</b>



**BOILER ROOM - DEMOLITION**  
SCALE: 1/4" = 1'-0"



**BOILER ROOM - NEW WORK**  
SCALE: 1/4" = 1'-0"

# KEYED NOTES CONTINUED:

- PROVIDE 15KVA, 480V DELTA-208/120Y DRY TYPE TRANSFORMER MOUNTED ON WALL AT 7'-0" AFF TO BOTTOM. PROVIDE 15A-3P BREAKER IN 480V PANEL. ROUTE 3-#12 AND 1-#12 GND IN 1/2" CONDUIT TO PRIMARY OF TRANSFORMER. PROVIDE 1-#8 GND IN 1/2" CONDUIT TO NEAREST BUILDING STEEL.
- PROVIDE 208/120V PANELBOARD, 100A, 24 CKT, 40A MAIN BREAKER. ROUTE 4-#8 AND 1-#8 GND, 1" CONDUIT TO SECONDARY OF TRANSFORMER.
- 2-#12 AND 1-#12 GND, 1/2" CONDUIT TO 20A-1P BREAKER IN NEW 208/120V PANELBOARD "ELB1".
- PROVIDE J-BOX AND INTERCEPT EXISTING CONTROL CIRCUITS TO EXISTING BOILERS, PICK UP CONTROL CIRCUIT TO NEW BOILER AND ROUTE CONTROL CIRCUIT IN 1" CONDUIT TO EXISTING WIREWAY. ROUTE CONTROL CABLES TO COM. STARTER/DISC. 70, 71 & 72 USING EXISTING RACEWAY SYSTEM. ROUTE CONTROL CABLES TO NEW BOILER IN 1/2" CONDUIT.
- INTERCEPT EXISTING 120V POWER CIRCUIT SERVING CONTROL PANEL AND ROUTE TO NEW EMERGENCY PANEL.

## GENERAL NOTES:

- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS IN ORDER TO ALLOW HIM TO SUBMIT A COMPLETE BID FOR REMOVALS WITHIN THE SCOPE OF THE DRAWINGS. ANY QUESTIONS OR DISCREPANCIES ARISING DURING THE BID PERIOD IN REGARD TO THE INTENT OF THE DRAWINGS SHALL BE BROUGHT UP FOR CLARIFICATION WITH THE PROJECT ENGINEER.
- WHERE NECESSARY, THE CONTRACTOR SHALL REMOVE AND/OR RECONNECT CIRCUIT RUNS TO MAINTAIN THE CONTINUITY OF THE EXISTING CIRCUIT.
- ALL CONTROL WIRE SHALL BE RATED FOR 600V.
- REFER TO DRAWING E1.2 FOR PANEL SCHEDULE AND EQUIPMENT ELEVATION.
- ALL CONDUCTORS SHALL BE #12 COPPER IN 1/2" CONDUIT UNLESS INDICATED OTHERWISE.

## KEYED NOTES:

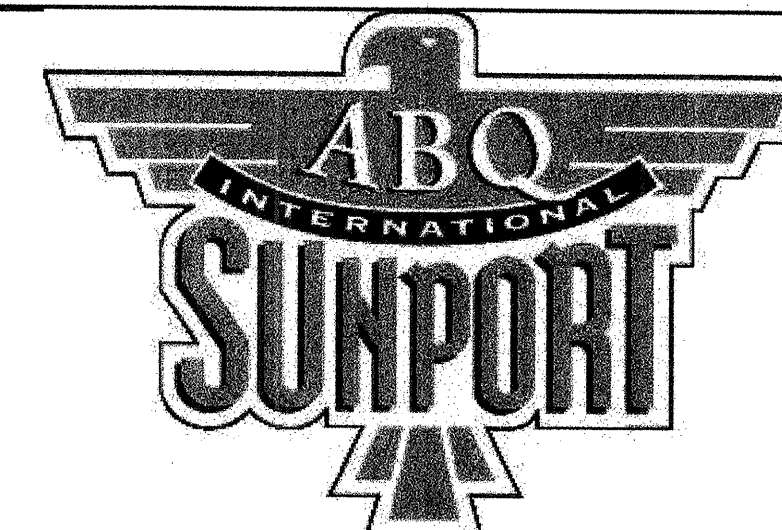
- EXISTING WIREWAY TO REMAIN.
- REMOVE TWO (2) 3/4" CONDUITS BACK TO WIREWAY. REMOVE CONDUCTORS BACK TO "MCC1" LOCATED IN POWER CENTER 6 (SERVING PUMP 11 AND PUMP 12).
- REMOVE THREE (3) 600V, 60A/3P DISCONNECT SWITCHES. CONDUIT AND CONDUCTORS TO BOILERS TO REMAIN FOR RE-INSTALLATION.
- REMOVE 120V CONTROL CIRCUIT (CONDUIT AND WIRE) BACK TO "MCC1". JUNCTION BOXES AND CONDUIT TO BOILER CONTROLLERS TO REMAIN FOR CONNECTION TO NEW EMERGENCY PANEL.
- REMOVE 1 1/2' CONDUIT AND CONDUCTORS BACK TO WIREWAY. REMOVE CONDUCTORS TO "MCC1" (SERVING BOILERS 70, 71 AND 72).
- REFER TO ELEVATION ON SHEET E1.2 FOR DESCRIPTION OF EQUIPMENT.
- PROVIDE RED, MUSHROOM HEAD TYPE, PUSH-BUTTON FOR EMERGENCY SHUTDOWN OF ALL BOILERS. ROUTE 1/2" CONDUIT WITH CONTROL WIRES TO DX-9100 CONTROLLER AS INDICATED.
- EXISTING METASYS DX-9100 CONTROLLER.

**BPLW**  
Architects & Engineers, Inc.  
6200 Uptown Blvd. NE  
Suite 400  
Albuquerque, New Mexico 87110  
(505) 861-2750

48 West First Street  
Suite 100  
Albuquerque, New Mexico 87102  
(505) 827-2750

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CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP			
TITLE: <b>ALBUQUERQUE INTERNATIONAL AIRPORT BOILER ROOM DEMO &amp; NEW WORK PLAN</b>			
Design Review Committee APPROVED AUG - 4 2005 DESIGNER	City Engineer Approval APPROVED AUG - 4 2005 CITY ENGINEER	City Project No. <b>72591X</b>	Zone-Map No. <b>M-16</b>
Drawing No. <b>E1.1</b>		Sheet <b>4</b>	Of <b>5</b>



AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S STAMP & SIGNATURE	
Contractor	Work	Field Notes	By	No.	Date	By	Date
Checked By	Accepted By					REVISIONS	DESIGN
Drawn By	Reviewed By					Designed By: BPLW	Date:
Recorded By	Micro-Film					Drawn By: BPLW	Date:
						Checked By: BPLW	Date:

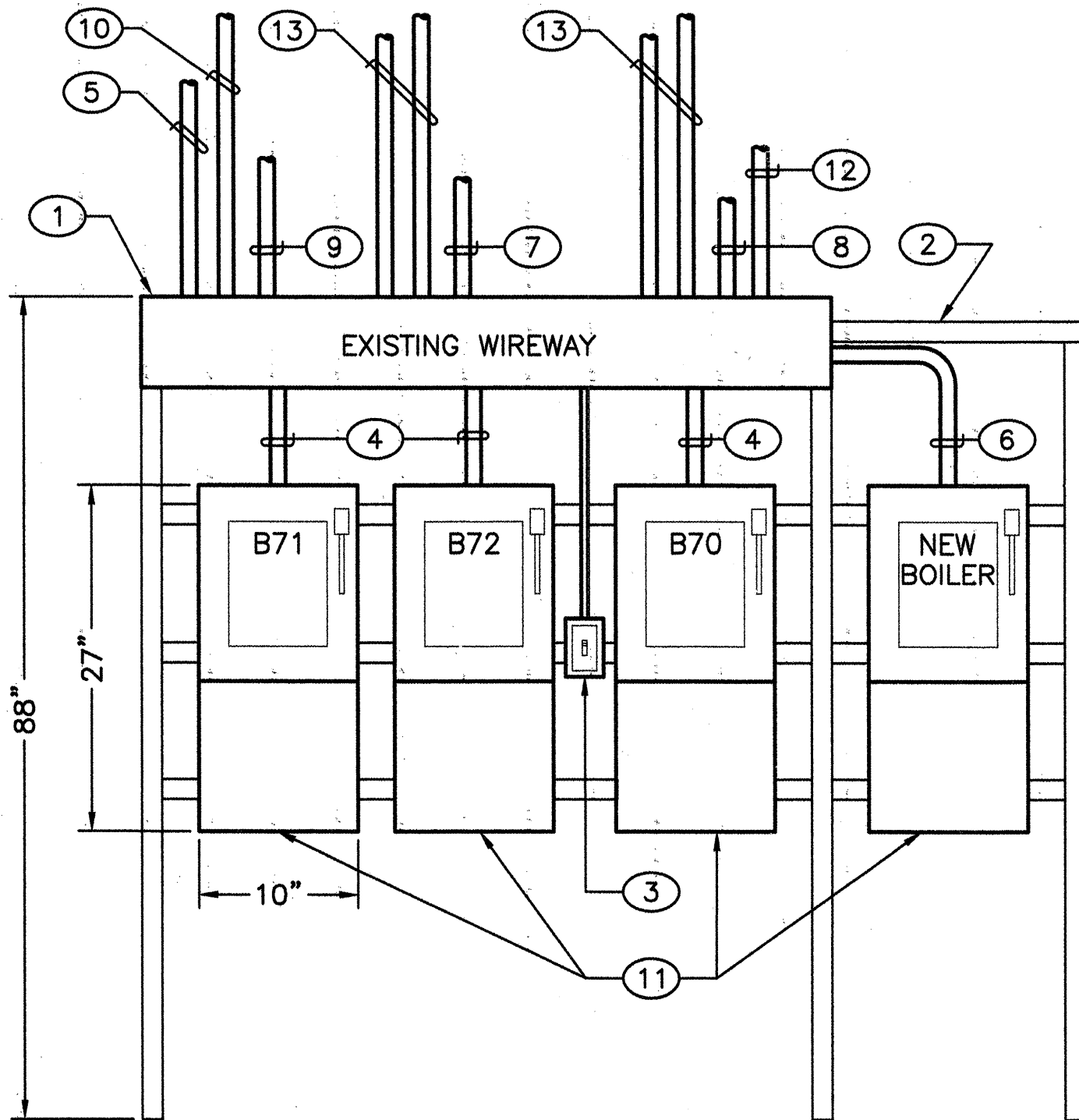




PANEL "EHB1" (EXISTING)													
480/277V	3	4	250A	200A	YES	NO	SURFACE	BOTTOM	NO	YES	10,000		
VOLTAGE	PHASES	WIRES	MAINS	MAIN C.B.	GRD. BUS	S.U.S.E.	MTG.	FEED	SKIRTS	DOOR-IN-DOOR	A.I.C. RMS SYM.		
LOCATION: BOILER ROOM, ADJACENT TO 480V PANEL													
FED FROM: 480V PANEL VIA XFMR.													
CCT. NO.	DESCRIPTION	VA	BKR AMP/POLE	#A	#B	#C	BKR AMP/POLE	VA	DESCRIPTION	CCT. NO.			
1		7479	60	13296			40	5817		2			
3	PUMP #10	7479			13296			5817	PUMP #12	4			
5		7479	3P				3P	5817		6			
7		7479	60	13296			40	5817		8			
9	PUMP #9	7479			13296			5817	PUMP #11	10			
11		7479	3P			13296	3P	5817		12			
13			40				30			14			
15	SPARE								SPARE	16			
17			3P				3P			18			
19			30				30			20			
21	SPARE								SPARE	22			
23			3P				3P			24			
25		3047	20	5152			15	2105		26			
27	NEW BOILER	3047			5152			2105	BOILER #71	28			
29		3047	3P				3P	2105		30			
31		3878	25	5983			15	2105		32			
33	BOILER #70	3878			5983			2105	BOILER #72	34			
35		3878	3P				3P	2105		36			
37			15						SPACE	38			
39	PANEL "ELB1"	500			500				SPACE	40			
41			3P						SPACE	42			
CONNECTED LOAD (VA) PER PHASE 37727 38227 37727 113681 TOTAL CONNECTED LOAD (VA)													
CONNECTED LOAD (AMPS) ON MAX PHASE = 138													

\* PROVIDE NEW BREAKER

PANEL "ELB1"													
208/120V VOLTAGE	3 PHASES	4 WIRES	100A MAINS	40A MAIN C.B.	YES GRD. BUS	NO S.U.S.E.	SURFACE MTG.	BOTTOM FEED	NO SKIRTS	YES DOOR-IN-DOOR	10,000 A.I.C. RMS SYM.		
LOCATION: BOILER ROOM, ADJACENT TO 480V PANEL													
FED FROM: 480V PANEL VIA XFMR.													
CCT. NO.	DESCRIPTION		VA	BKR. AMP/POLE	#A	#B	#C	BKR. AMP/POLE	VA	DESCRIPTION		CCT. NO.	
1	BOILER CONTROLS		500	20/1	500			20/1		SPARE		2	
3	METASYS CONTROLLER		500	20/1		500		20/1		SPARE		4	
5	SPARE			20/1				20/1		SPARE		6	
7	SPARE			20/1				20/1		SPARE		8	
9	SPACE									SPACE		10	
11	SPACE									SPACE		12	
13	SPACE									SPACE		14	
15	SPACE									SPACE		16	
17	SPACE									SPACE		18	
19	SPACE									SPACE		20	
21	SPACE									SPACE		22	
23	SPACE									SPACE		24	
CONNECTED LOAD (VA) PER PHASE					500	500	0	1000 TOTAL CONNECTED LOAD (VA)					
CONNECTED LOAD (AMPS) ON MAX PHASE = 4													



## EQUIPMENT RACK ELEVATION

SCALE: NONE

### KEYED NOTES CONTINUED:

- 600V, 3 PHASE, COMBINATION STARTER/ DISCONNECT SWITCH IN NEMA 1 ENCLOSURE WITH H-O-A AND GREEN PILOT LIGHT, SIZE 0 STARTER, SOLID STATE OVER LOADS, 120V CONTROLS. ALLEN BRADLEY # 512-BACD-B1H-3-4G-24R.
- 120V CONTROL CIRCUIT TO NEW 208/120V PANEL.
- HOME RUNS TO NEW BREAKERS IN EXISTING PANEL "EHB1".



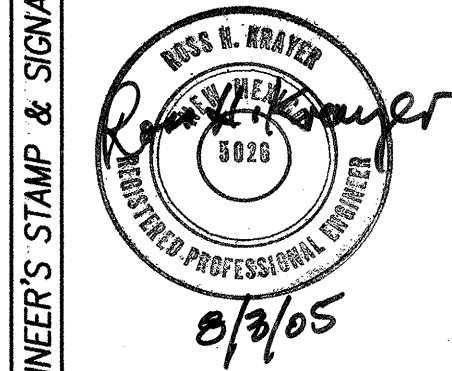
### GENERAL NOTES:

- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS IN ORDER TO ALLOW HIM TO SUBMIT A COMPLETE BID FOR REMOVALS WITHIN THE SCOPE OF THE DRAWINGS. ANY QUESTIONS OR DISCREPANCIES ARISING DURING THE BID PERIOD IN REGARD TO THE INTENT OF THE DRAWINGS SHALL BE BROUGHT UP FOR CLARIFICATIONS WITH THE PROJECT ENGINEER.
- WHERE NECESSARY, THE CONTRACTOR SHALL REMOVE AND/OR RECONNECT CIRCUIT RUNS TO MAINTAIN THE CONTINUITY OF THE EXISTING CIRCUIT.
- ALL CONTROL WIRE SHALL BE RATED FOR 600V.
- REFER TO DRAWING E1.1 FOR BOILER ROOM PLANS.

### KEYED NOTES:

- EXISTING WIREWAY TO REMAIN. PROVIDE WARNING LABEL INDICATING: "WARNING ALL 120 VAC POWER IS SUPPLIED FROM AN EXTERNAL SOURCE".
- EXTEND EXISTING UNISTRUT RACK TO ACCOMMODATE NEW STARTER/DISCONNECT SWITCHES.
- EXISTING SWITCH TO REMAIN.
- PROVIDE 1" CONDUIT FROM STARTER/DISCONNECT TO WIRE WAY. EXTEND 3-#12 AND 1-#12 GND TO EXISTING BOILERS. ROUTE CONTROL WIRING FROM STARTERS TO EXISTING CONTROLLER ON WEST WALL.
- PROVIDE 1" CONDUIT TO EXISTING METASYS DX-9100 CONTROLLER FOR ROUTING OF CONTROL WIRING.
- 3-#12 AND 1-#12 GND, AND CONTROL WIRING IN 1" CONDUIT.
- EXISTING CONDUIT AND CONDUCTORS TO BOILER #71 AND #72.
- EXISTING CONDUIT AND CONDUCTORS TO BOILER #70.
- 3-#12 AND 1-#12 GND, AND 3/4" CONDUIT TO NEW BOILER.
- 1" CONDUIT WITH CONTROL WIRING TO BOILERS. (SEE NOTE 17).

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S STAMP & SIGNATURE	
Contractor	Date	Field Notes	Date	No.	By	Signature	Date
Checked By	Date						
Reviewed By	Date						
Approved By	Date						
MICRO-FILM INFORMATION							
Contractor	Date	Field Notes	Date	No.	By	Signature	Date
Checked By	Date						
Reviewed By	Date						
Approved By	Date						



**BPLW**  
Architects & Engineers, Inc.  
6500 Uptown Blvd. NE  
Suite 400  
Albuquerque, New Mexico 87110  
(505) 881-2758

48 West First Street  
Suite 100  
Albuquerque, New Mexico 85201  
(505) 827-2758

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TITLE: <b>ALBUQUERQUE INTERNATIONAL AIRPORT BOILER INSTALLATION</b>			
PANEL SCHEDULE AND EQUIPMENT ELEVATION			
Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
AUG -4 2005	AUG -4 2005		
City Project No. 72591	Zone Map No. M-16	Drawing No. E1.2	Sheet 5