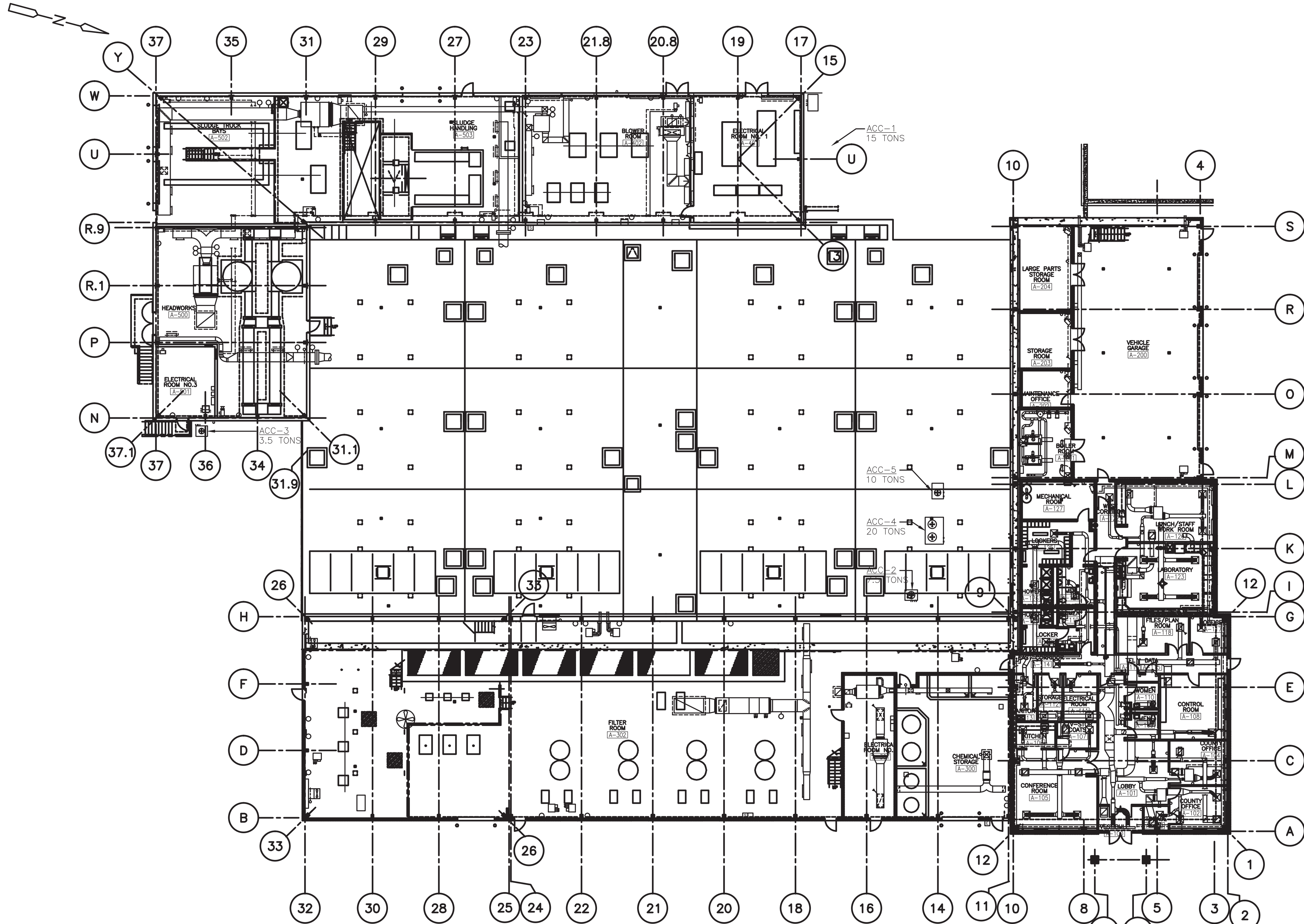


J:\30447\48248\REC_DWG\HVAC\ HPRPL000 10/20/08 15:02 larsonej XREFS: STPW002, BDR22x34, HPRWP000, AFRWP100, HPRWP100, AFRWP200

ON
DWG



OVERALL FLOOR PLAN
PLAN
1/16" = 1'-0"

RECORD DRAWING
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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008
CDM

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2	04/10	JJS			REVISED FOR THE RECORD
1	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.					

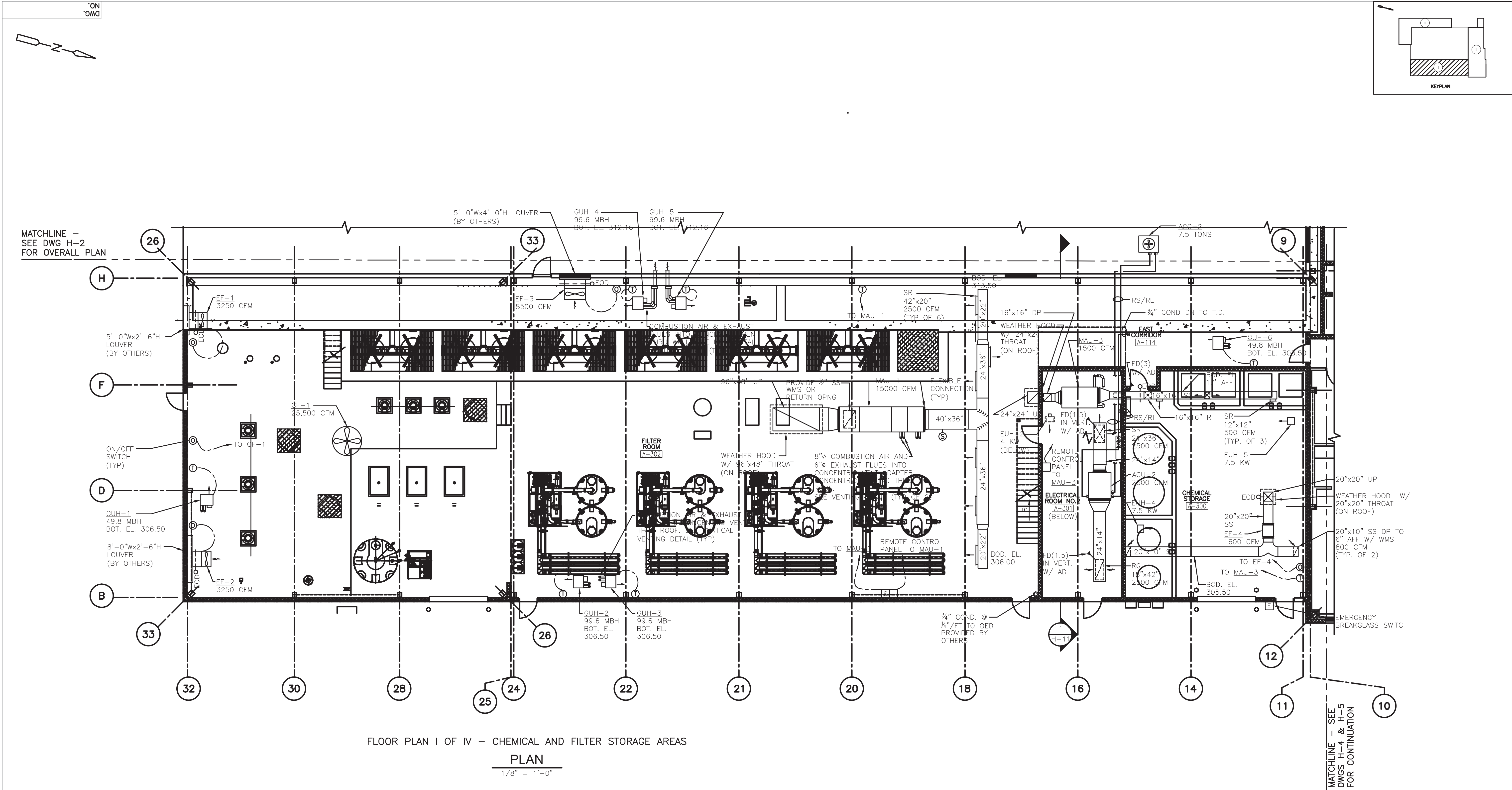


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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/16"=1'-0"		
CHECKER D. WERME	DATE 1/07	TITLE OVERALL FLOOR PLAN		
ENGINEER D. FLAHERTY	DATE 12/06			
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
FILENAME: HPRPL000		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1		
		CONTRACT NO. 01-H	DWG. NO. H-2	REV A

J:\30447\48248\REC_DWG\HVAC\ HPRPL100 10/20/08 15:07 larsonej XREFS: BDR22x34, APRWP100, MTPPL1LF, APRWP200, HPRWP000



FLOOR PLAN I OF IV - CHEMICAL AND FILTER STORAGE AREAS
PLAN
1/8" = 1'-0"

RECORD DRAWING
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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008
CDM

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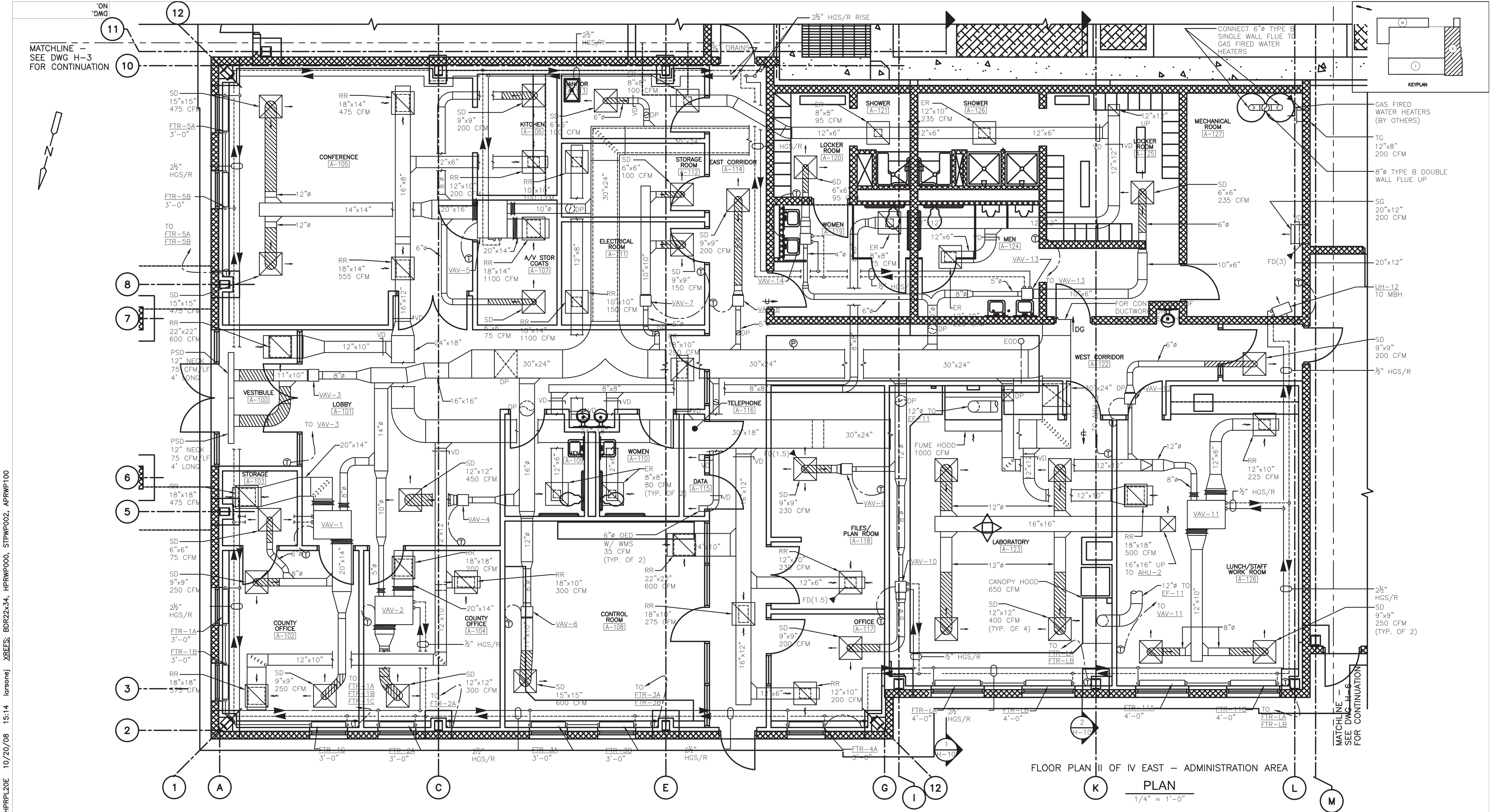
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JSS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
0	3/07	DF	DF	JJ	CLOUDS INDICATE CHANGES SINCE EFC APPROVAL DWG ISSUANCE
		DRAFTING	ENGINEERING		

DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.

NA Water Systems PROJECT NUMBER 0600904	CDM Camp Dresser & McKee consulting engineering construction operations	DESIGNER D. FLAHERTY CHECKER D. WERME ENGINEER D. FLAHERTY MANAGER J. JACOBS	DATE 12/06 DATE 1/07 DATE 12/06 DATE 4/07	SCALE 1/8" = 1'-0"	TITLE FLOOR PLAN I OF III CHEMICAL AND FILTER STORAGE AREAS	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	CONTRACT NO. 01-H	DWG. NO. H-3	REV A
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FILENAME: HPRPL100

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FLOOR PLAN II OF IV EAST - ADMINISTRATION AREA

PLAN

1/4" = 1'-0"

RECORD DRAWING
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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008
CDM

WARNING
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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JSS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
		DRAWN BY	CHECKED BY	APPROVED BY	
		DRAFTING	ENGINEERING		

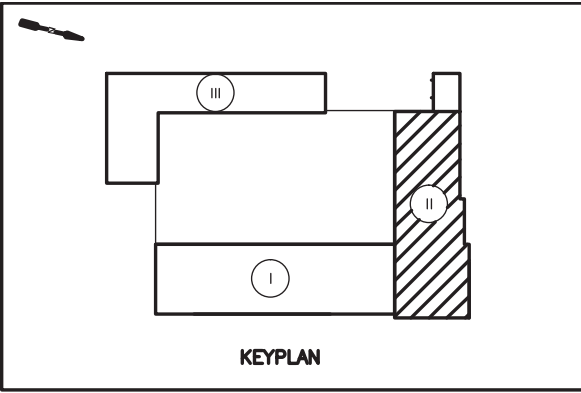
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/4" = 1'-0"
CHECKER D. WERME	DATE 1/07	TITLE FLOOR PLAN II OF III - EAST
ENGINEER D. FLAHERTY	DATE 12/06	
MANAGER J. JACOBS	DATE 4/07	
FILENAME: HPRPL20E		
PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1		
CONTRACT NO. 01-H	DWG. NO. H-4	REV A



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NA Water Systems
PROJECT NUMBER 56006894

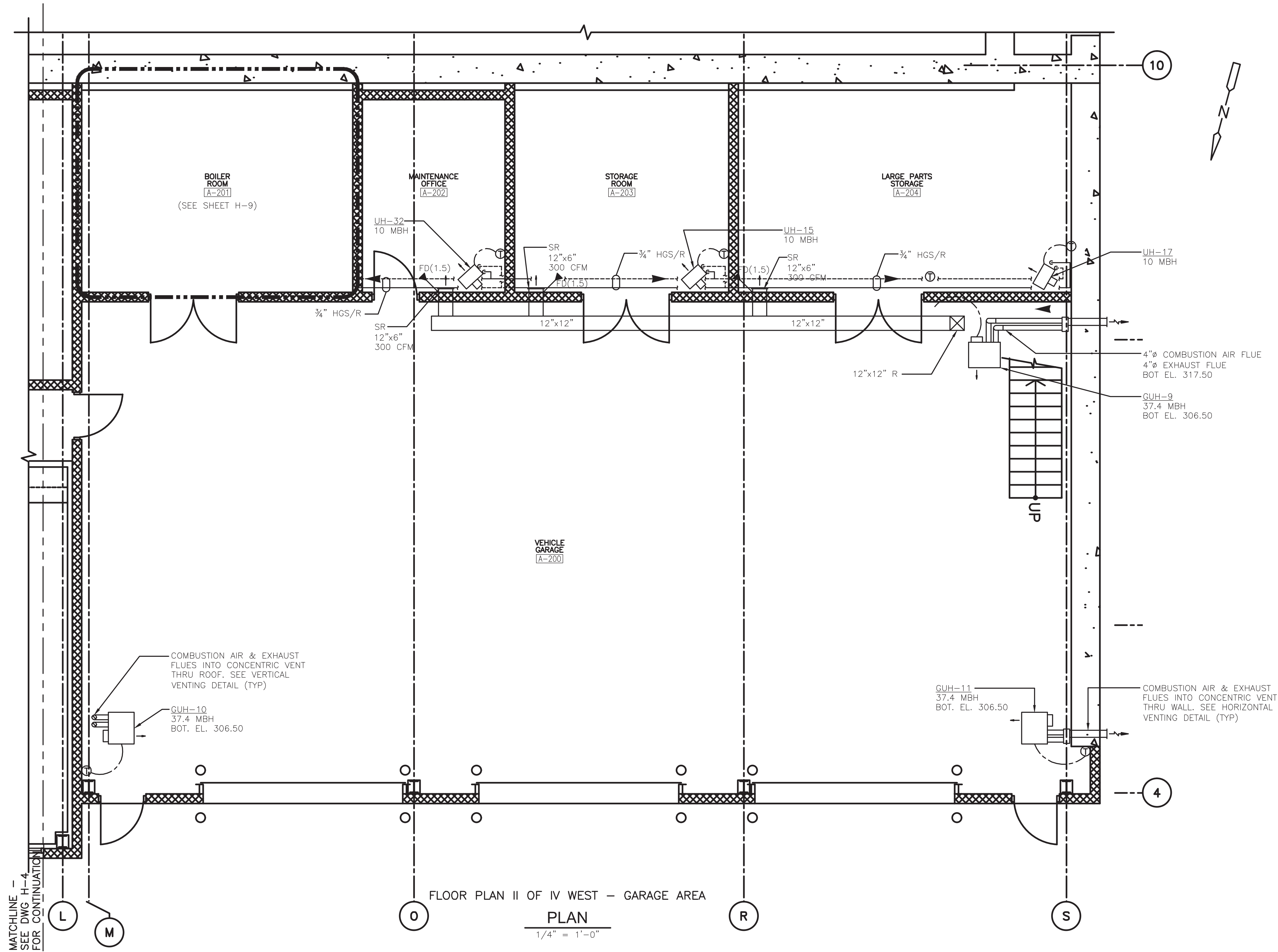
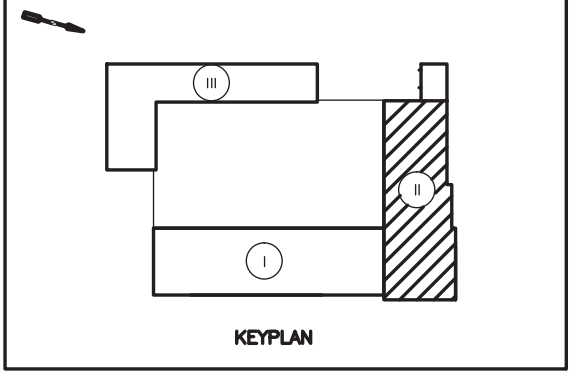
CDM Camp Dresser & McKee
consulting
engineering
construction
operations

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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/4" = 1' - 0"	
CHECKER D. WERME	DATE 1/07	TITLE FLOOR PLAN II OF III - MEZZANINE LEVEL - EAST	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07		
PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT			
CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1			
FILENAME: HPRPL21E		CONTRACT NO. 01-H	DWG. NO. H-5
			REV. A

J:\30447\48248\REC-DWG\HMAC\ HPRPL20W 10/20/08 15:52 larsonej XREFS: BDR22x34, HPRWP000, APRWP100, APRWS100

DWG.
NO.



RECORD DRAWING

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BY: CAMP DRESSER & MCKEE DATE: OCTOBER 2008
CDM

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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
0	3/07	DF	DF	JJ	CLOUDS INDICATE CHANGES SINCE EFC APPROVAL DWG ISSUANCE
		DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
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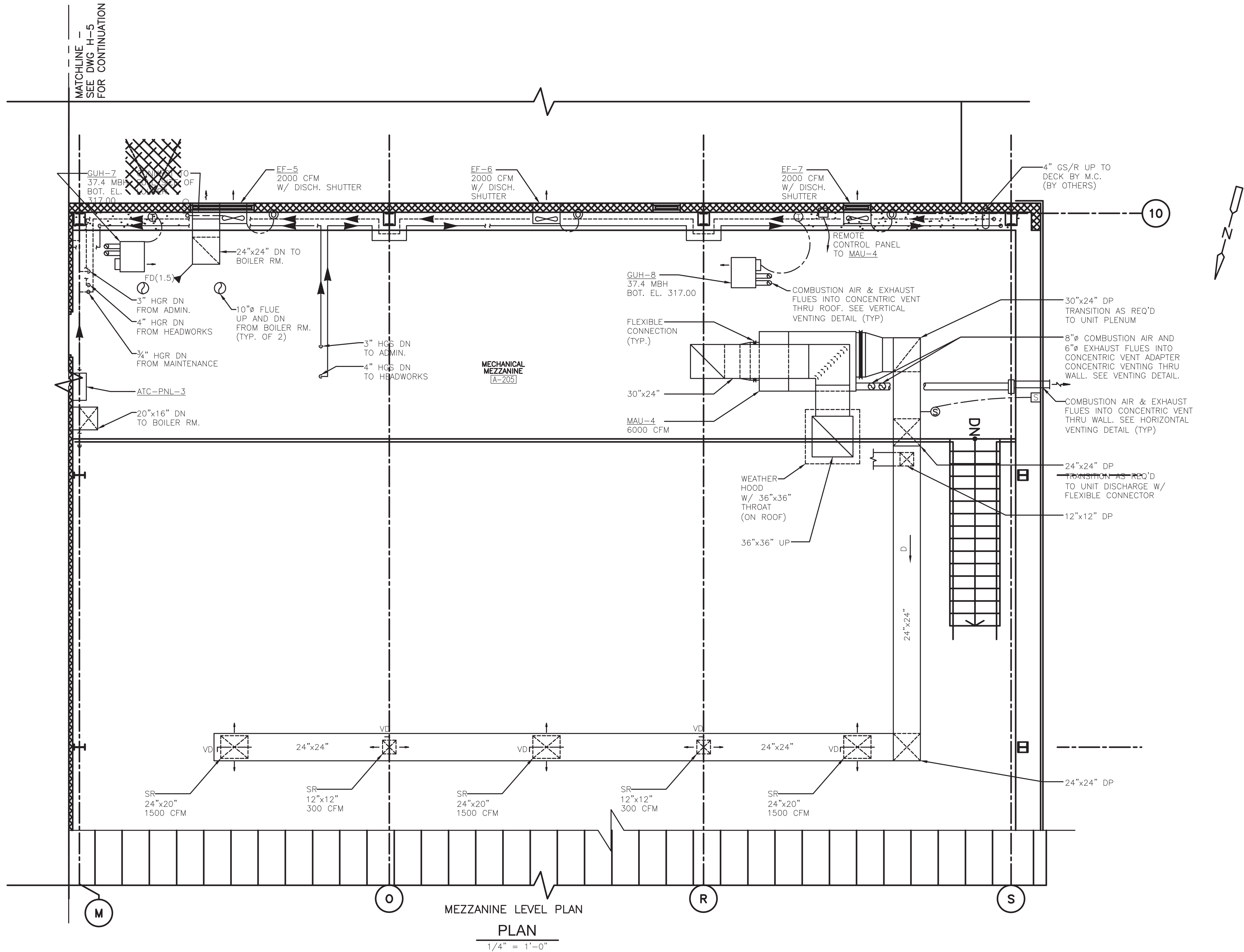


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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/4" = 1'-0"
CHECKER D. WERME	DATE 1/07	TITLE FLOOR PLAN II OF III - WEST
ENGINEER D. FLAHERTY	DATE 12/06	
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT
FILENAME: HPRPL20W		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1
CONTRACT NO.	01-H	DWG. NO. H-6 REV. A

J:\30447\48248\REC_DWG\HMAC\ HPRPL21W 10/20/08 15:55 larsonej XREFS: BDR22a34, HPRWP100, APRWP200

DWG. NO.



RECORD DRAWING

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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008
CDM

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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
0	3/07	DF	DF	JJ	CLOUDS INDICATE CHANGES SINCE EFC APPROVAL DWG ISSUANCE

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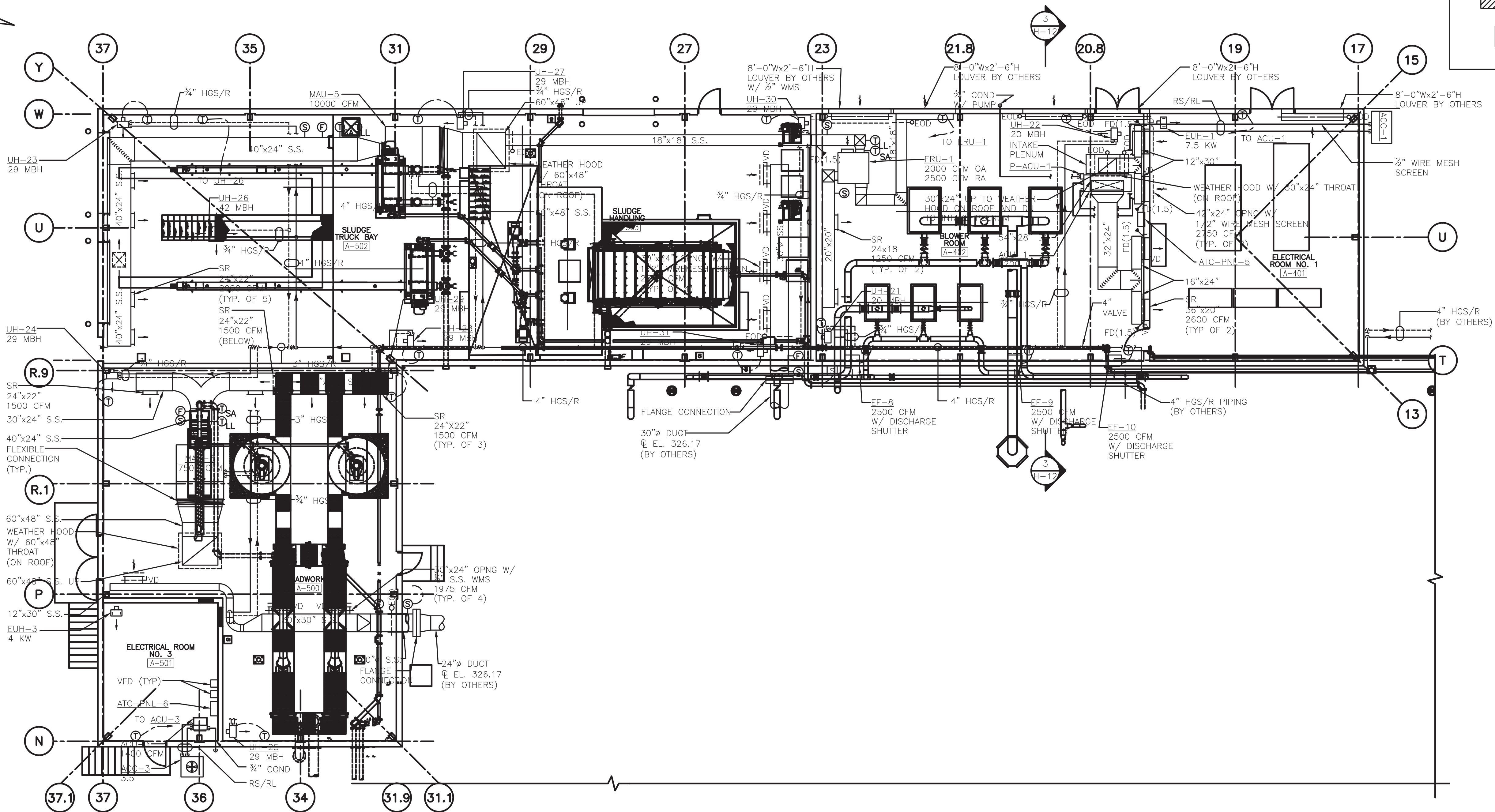
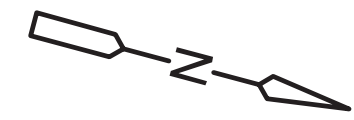
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/4" = 1'-0"
CHECKER D. WERME	DATE 1/07	TITLE FLOOR PLAN II OF III - MEZZANINE LEVEL - WEST
ENGINEER D. FLAHERTY	DATE 12/06	
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT
FILENAME: HPRPL21W		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1
		CONTRACT NO. 01-H
		DWG. NO. H-7
		REV A

J:\30447\48248\REC_DWG\HMAC\HRRPL400 10/23/08 09:07 [arsonej] XREFS: BDR222-34, HRRWP000, MTPPL11-F, APRWP200, STPW002

DWG. NO.



FLOOR PLAN IV OF IV – HEADWORKS AREA

PLAN

1/8" = 1'-0"

RECORD DRAWING

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BY: CAMP DRESSER & MCKEE DATE: OCTOBER 2008

CDM

WARNING

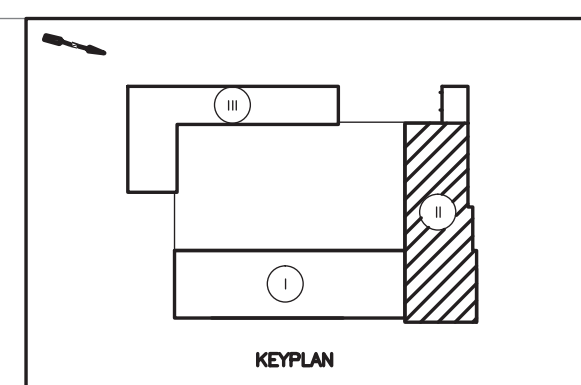
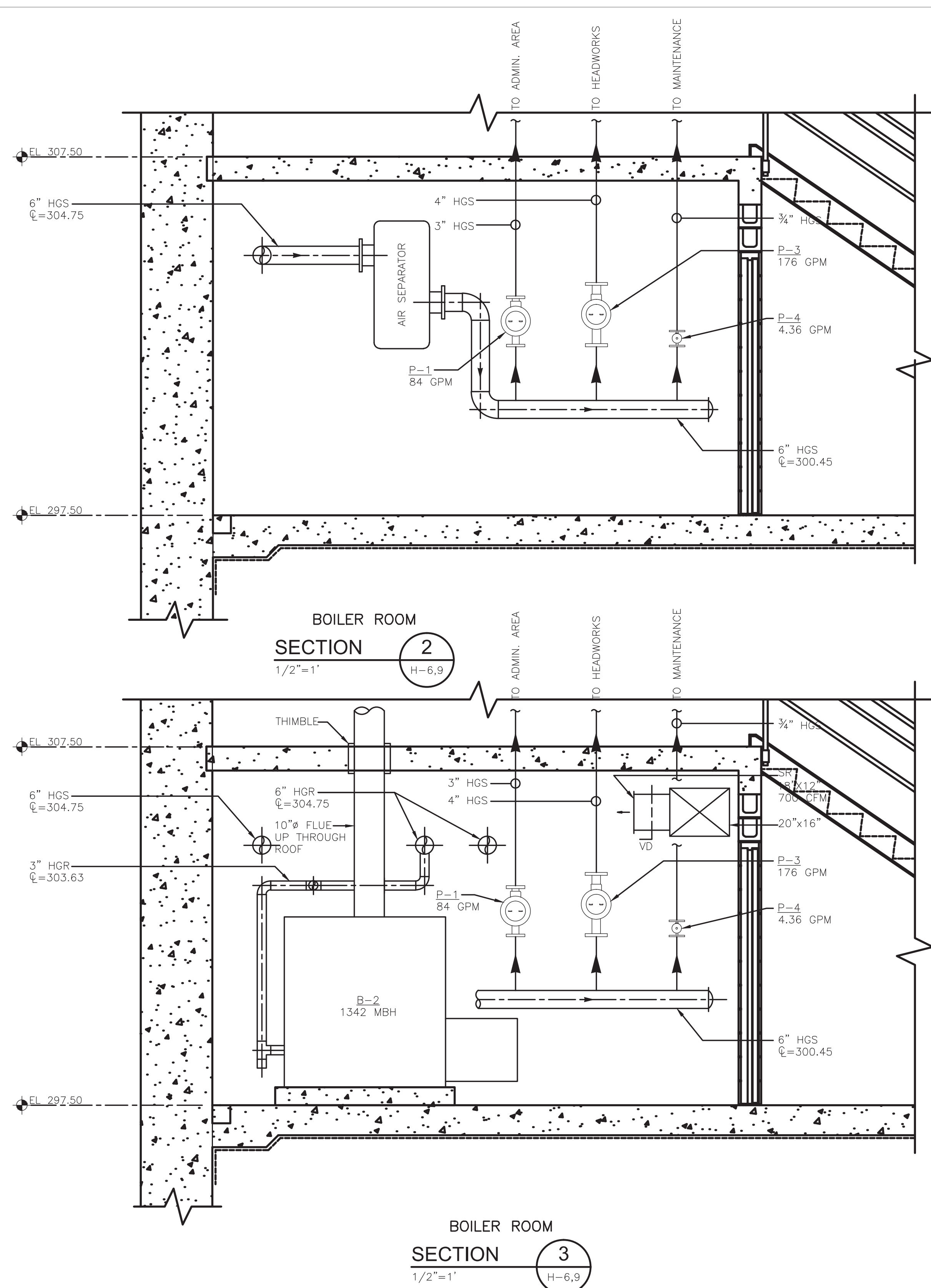
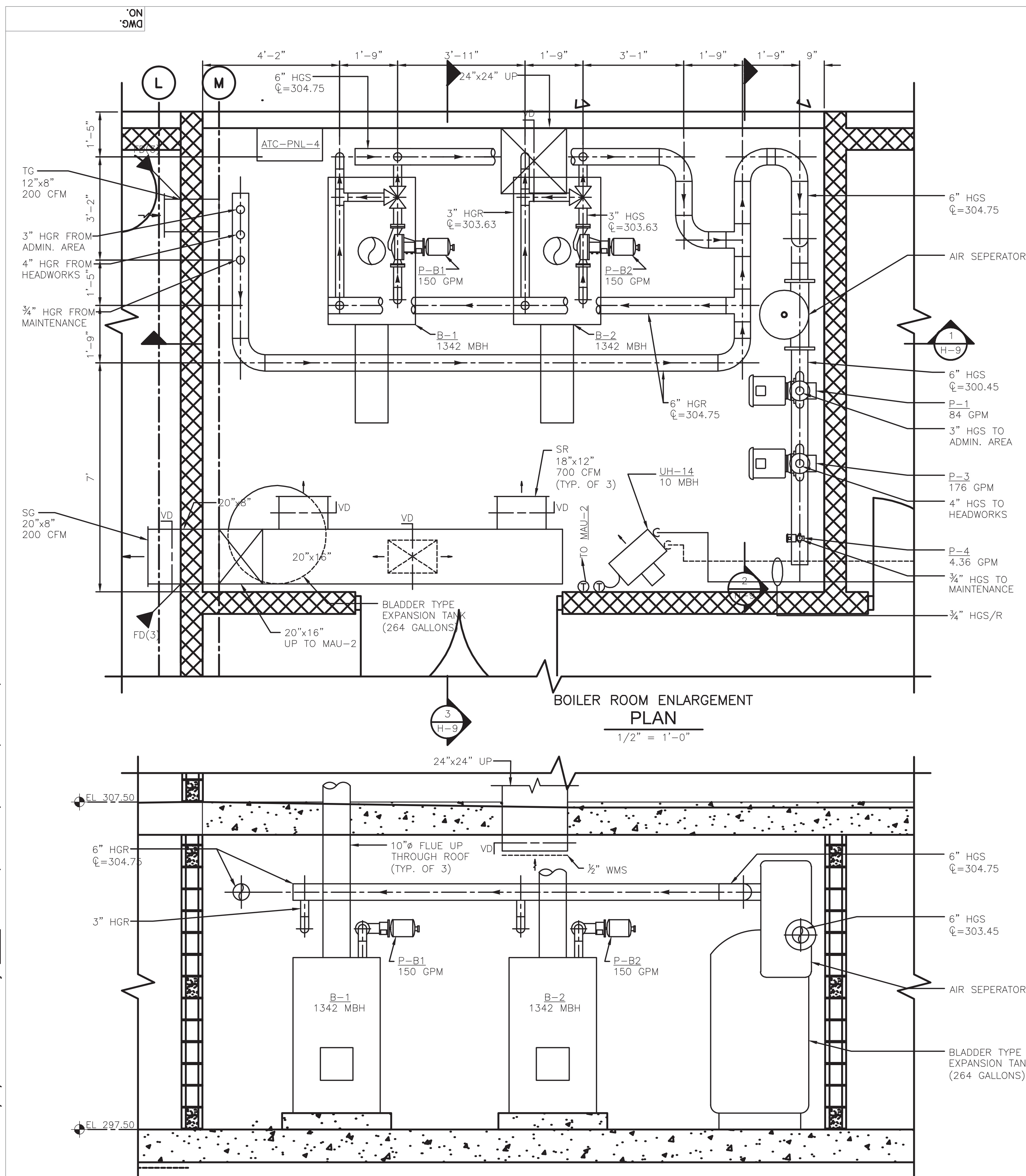
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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
0	3/07	DF	DF	JJ	CLOUDS INDICATE CHANGES SINCE EFC APPROVAL DWG ISSUANCE
		DRAWN BY	CHECKED BY	APPROVED BY	
		DRAFTING		ENGINEERING	
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE 1/8"=1'-0"
CHECKER D. WERME	DATE 1/07	TITLE FLOOR PLAN III OF III HEADWORKS AREA
ENGINEER D. FLAHERTY	DATE 12/06	
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT
FILENAME: HRRPL400		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1
CONTRACT NO.	01-H	DWG. NO. H-8
		REV A



BOILER ROOM

SECTION

1

H-6,9

1/2"=1'

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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008



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REV.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES

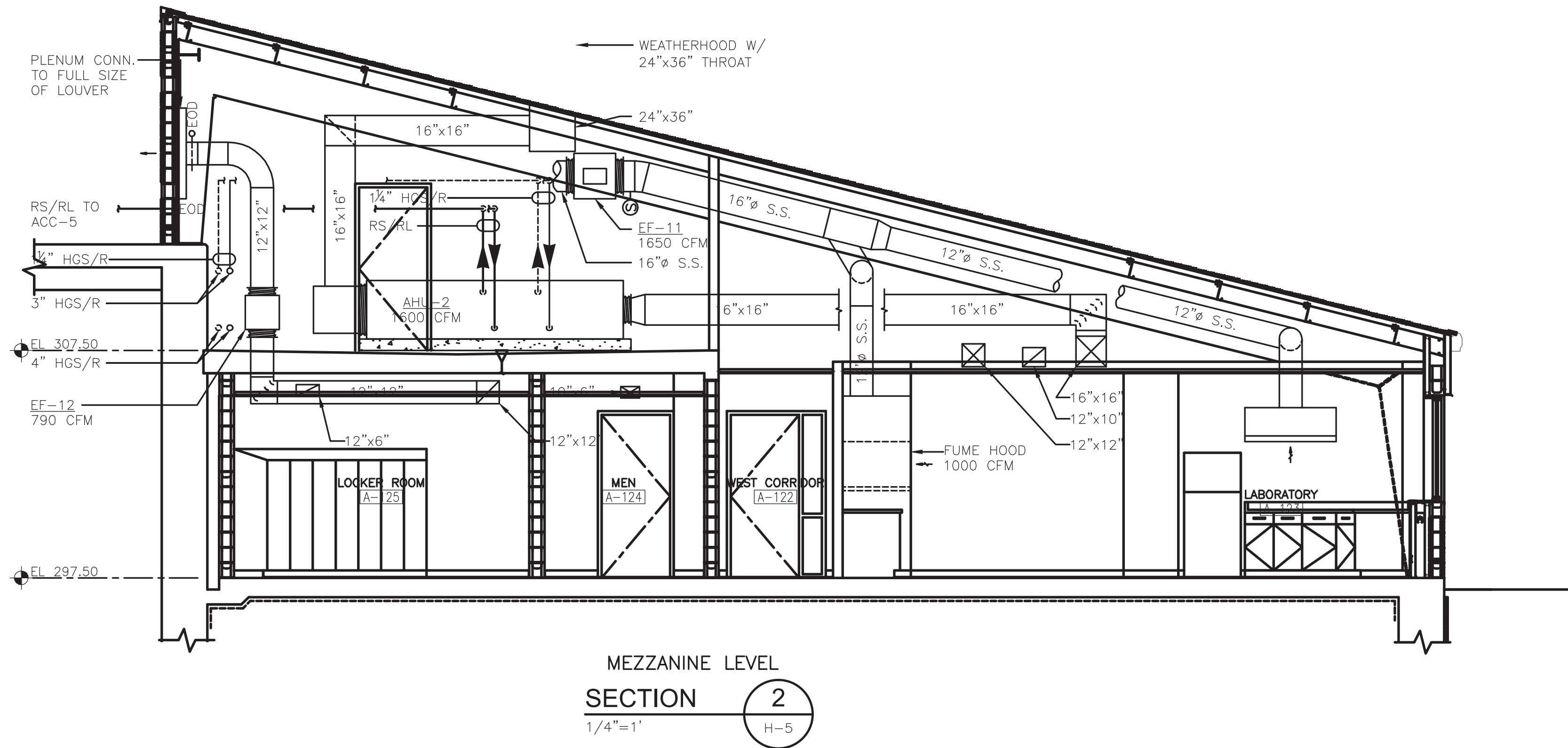
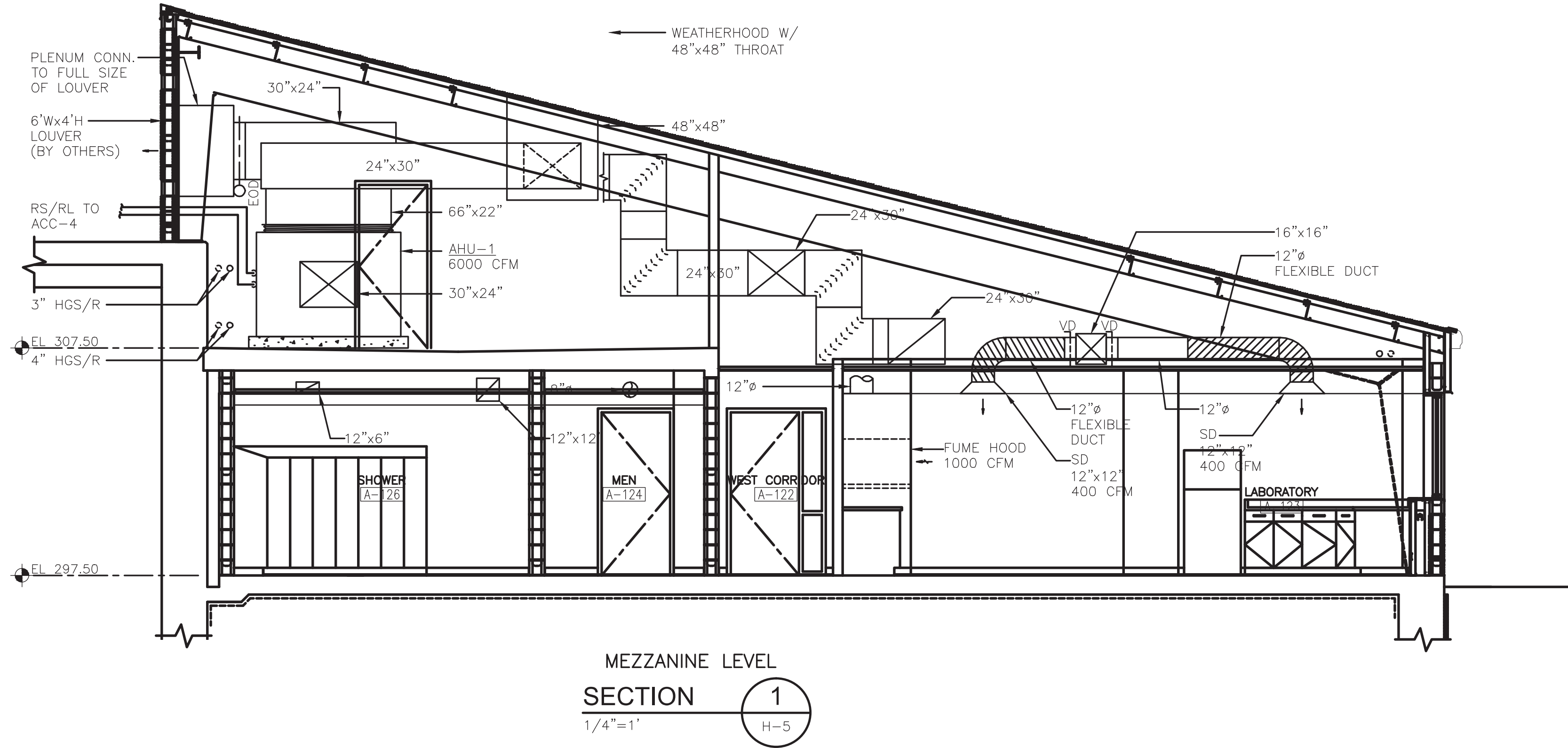
CDM

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 PROJECT NUMBER 20000044	 Camp Dresser & McKee <div>consulting engineering construction operations</div>	DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED			
		CHECKER D. WERME	DATE 1/07	TITLE BOILER ROOM – ENLARGED PLAN & SECTIONS			
		ENGINEER D. FLAHERTY	DATE 12/06				
		MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT			
<p>ALL INFORMATION CONTAINED ON THIS DOCUMENT IS THE PROPERTY OF N.A. WATER SYSTEMS. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO N.A. WATER SYSTEMS AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE DOCUMENT IS EXPRESSLY SUBMITTED. ANY OTHER USE OR REUSE OF THIS DOCUMENT WITHOUT THE EXPRESS WRITTEN CONSENT OF N.A. WATER SYSTEMS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR THE USE OF THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN FOR ANOTHER PROJECT, OR IN A MANNER THAT DOES NOT RELATE TO THE FITNESS OR PURPOSE OF THIS DOCUMENT. IN NO EVENT SHALL THIS DOCUMENT OR THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF N.A. WATER SYSTEMS. ALL PATENT RIGHTS ARE RESERVED. THE ACCEPTANCE OF THE DELIVERY OF THIS DOCUMENT CONSTITUTES AGREEMENT TO THESE TERMS AND CONDITIONS.</p>		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	FILENAME: HPRSC000	CONTRACT 01—H NO.	DWG. NO.	H—9	
						R V A	

J:\30447\49248\REC_DWG\HVAC\ HPRSC100 10/20/08 16:08 larsonej XREFS: BDR22x34, HPRWS00, APRWS100

ON
DWG.



RECORD DRAWING

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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008
CDM

WARNING

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3	04/10	JJS				REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL		REVISED FOR THE RECORD
1	1/08	MM	DF	JJ		CLOUDS INDICATE VALUE ENGINEERING CHANGES
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION	
					DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.	



PROJECT NUMBER 9600694

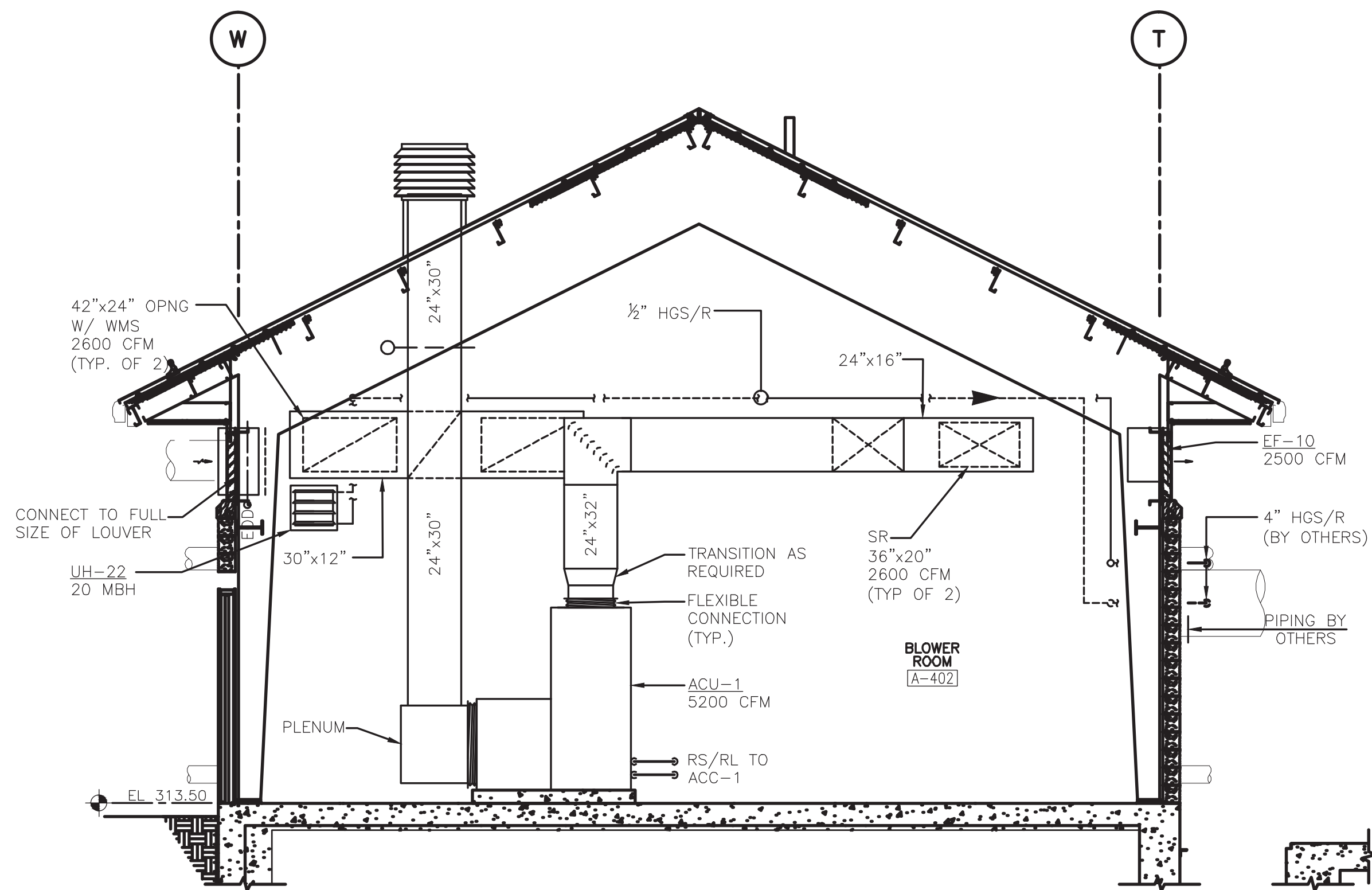
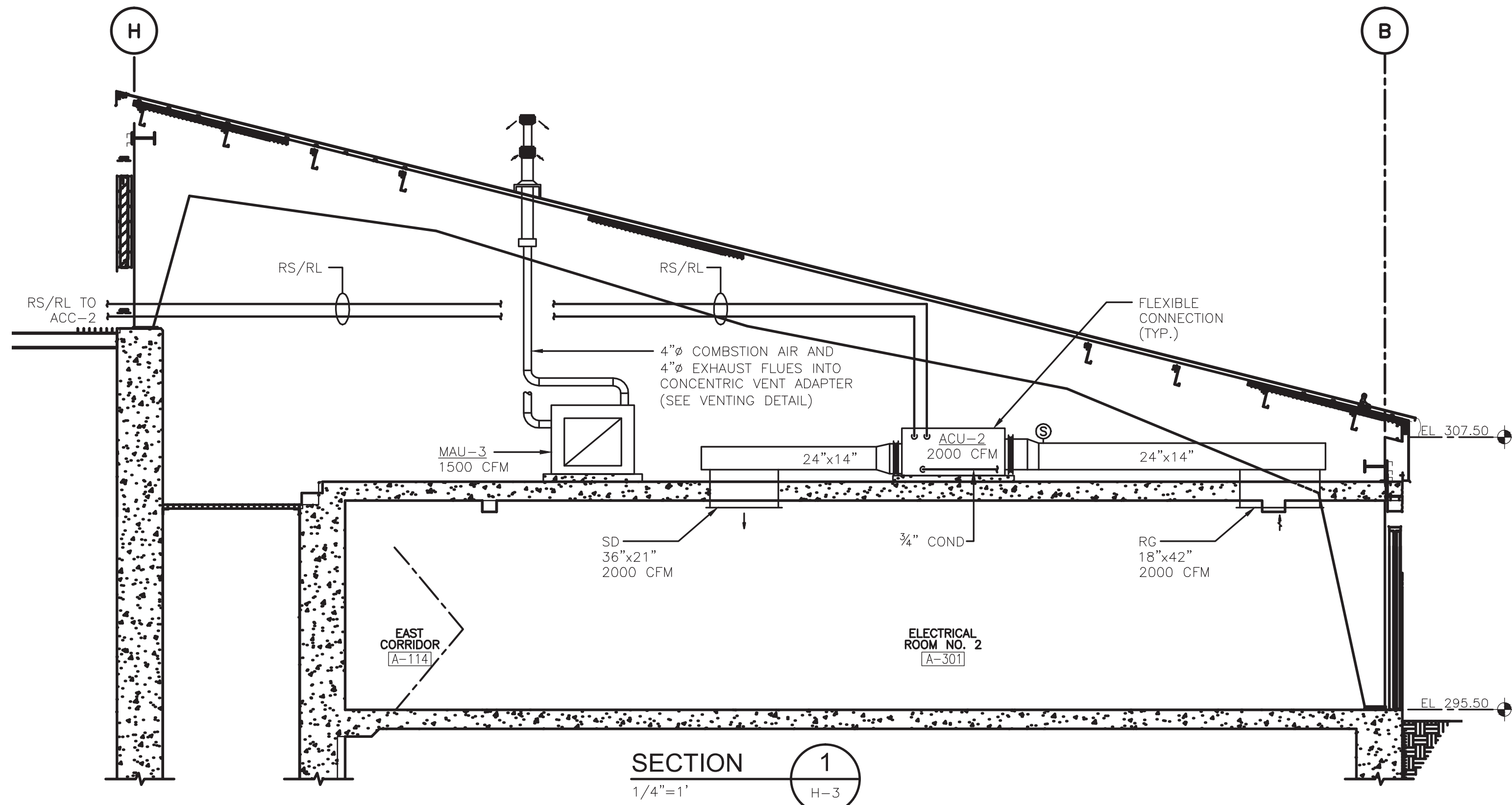


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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED
CHECKER D. WERME	DATE 1/07	TITLE SECTIONS I
ENGINEER D. FLAHERTY	DATE 12/06	
MANAGER J. JACOBS	DATE 4/07	
FILENAME: HPRSC100		PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT
		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1
CONTRACT NO.	01-H	DWG. NO. H-10
		REVISION A

J:\30447\48248\REC_DWG\HVAC\ HPRSC300 10/21/08 08:16 larsonej_XBREES: BDR22-34, APRWS100, HPRWS000

ON
DWG.



RECORD DRAWING
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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008
CDM

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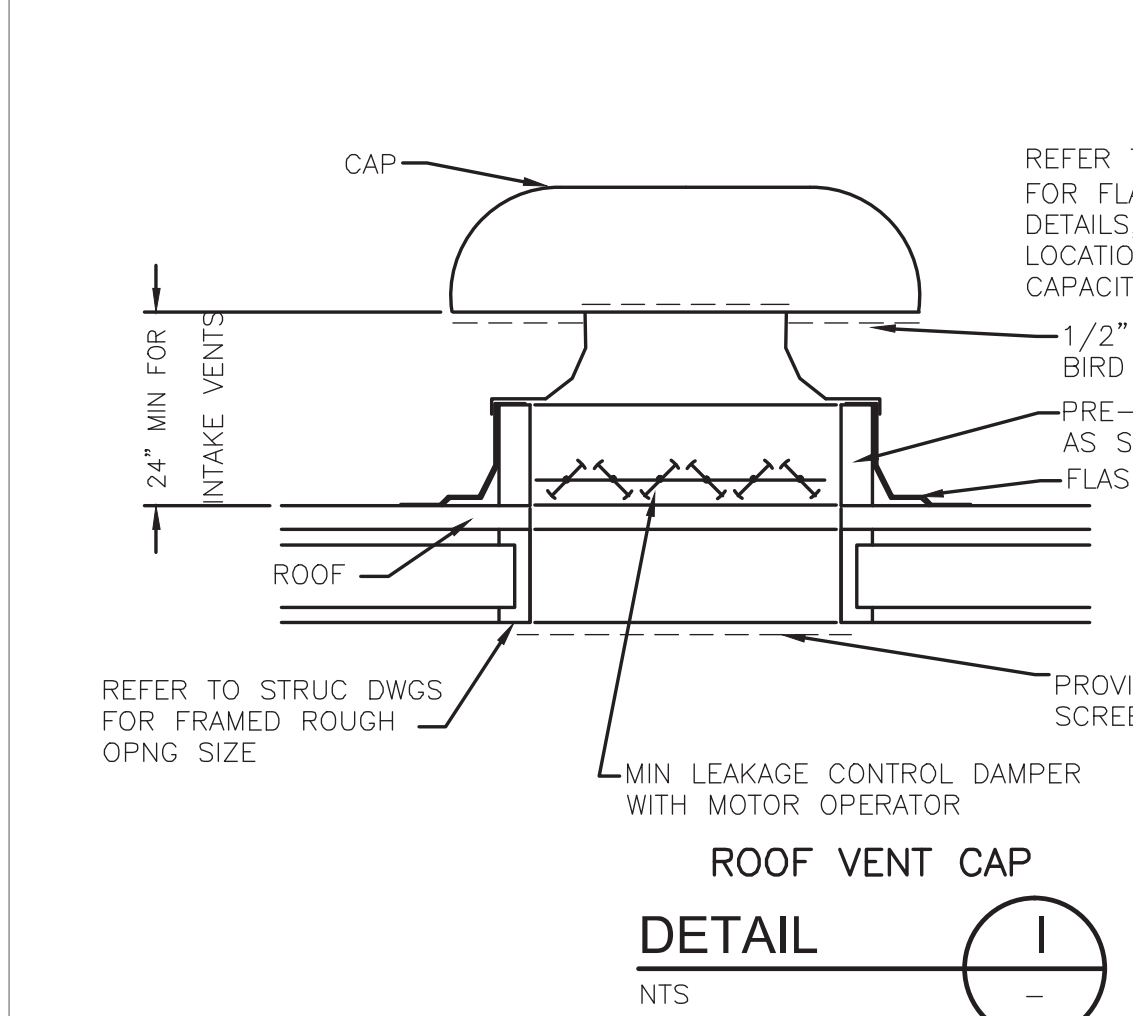
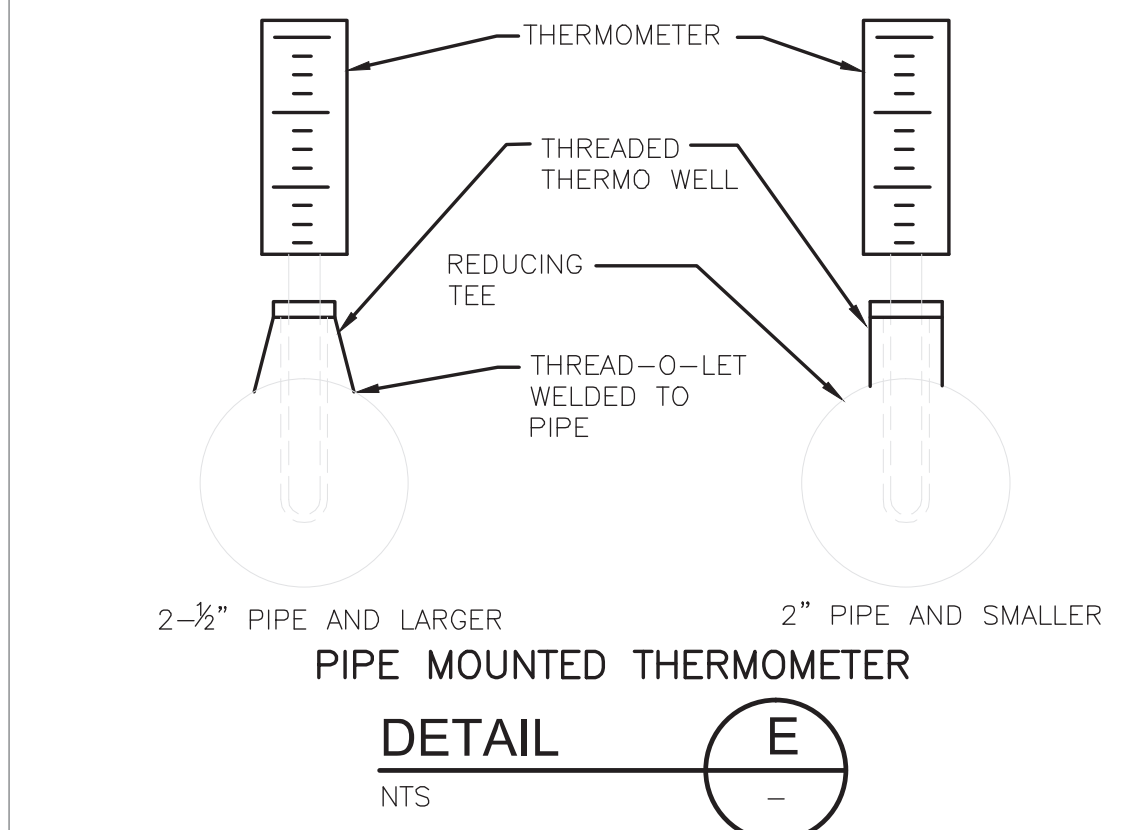
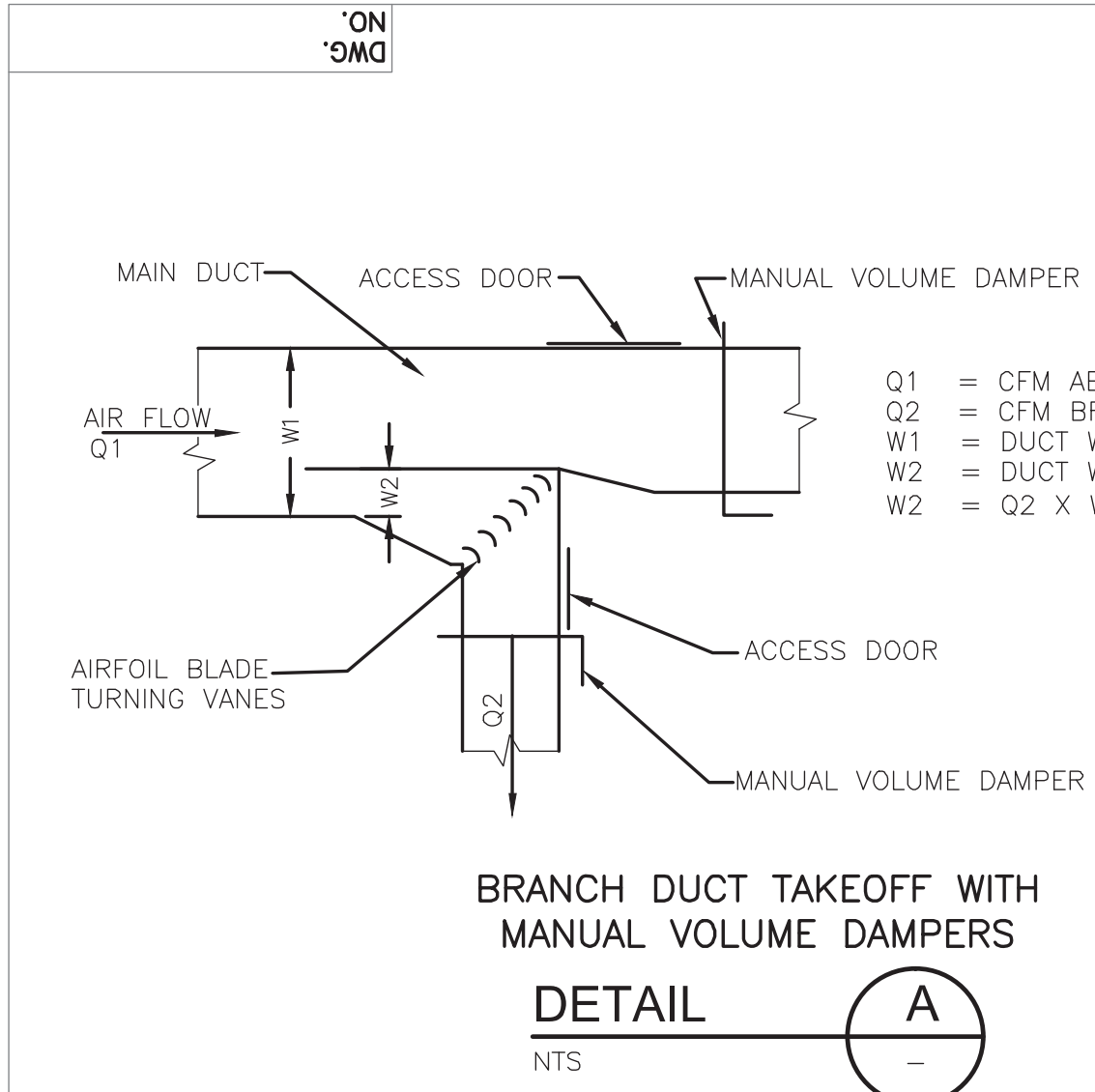
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
0	3/07	DF	DF	JJ	CLOUDS INDICATE CHANGES SINCE EFC APPROVAL DWG ISSUANCE
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING			
		ENGINEERING			
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	TITLE	
CHECKER D. WERME	DATE 1/07	SECTIONS II		
ENGINEER D. FLAHERTY	DATE 12/06			
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
FILENAME: HPRSC300		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1		
		CONTRACT NO. 01-H	DWG. H-11	REV A

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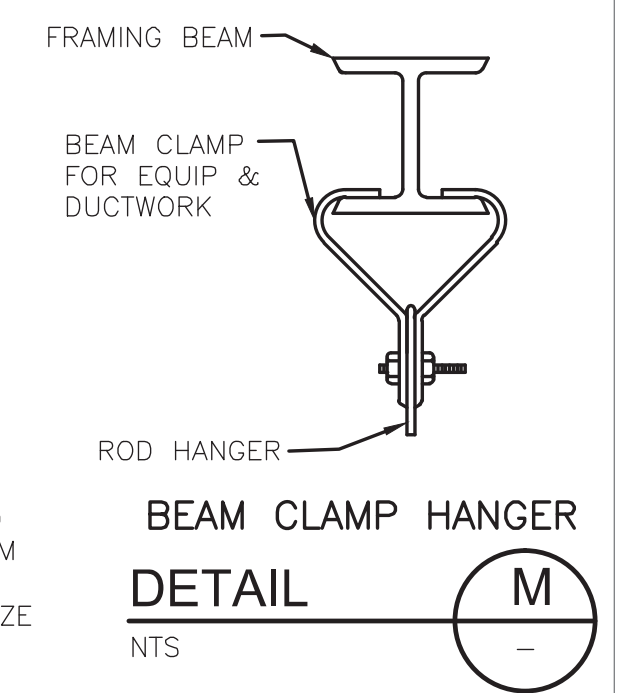
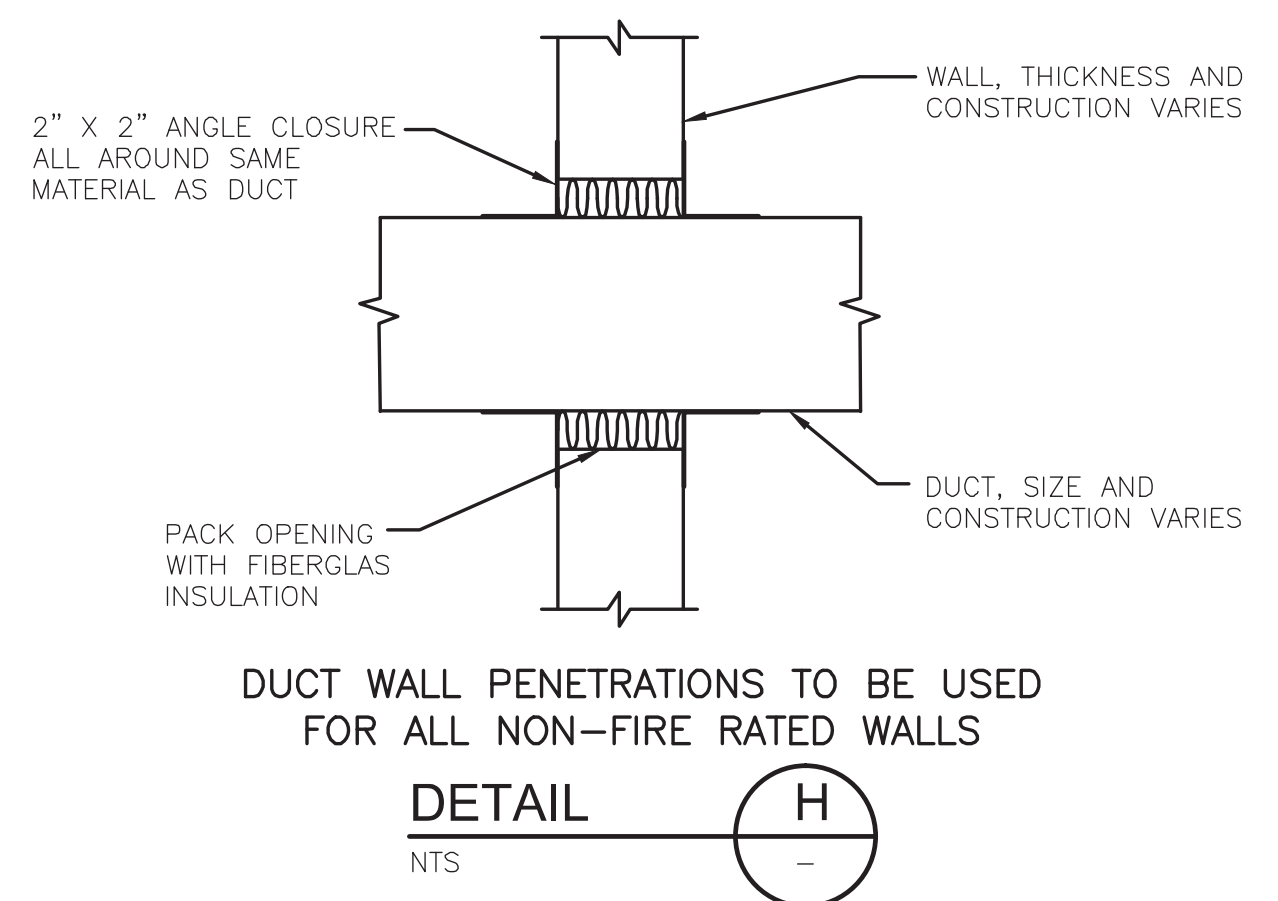
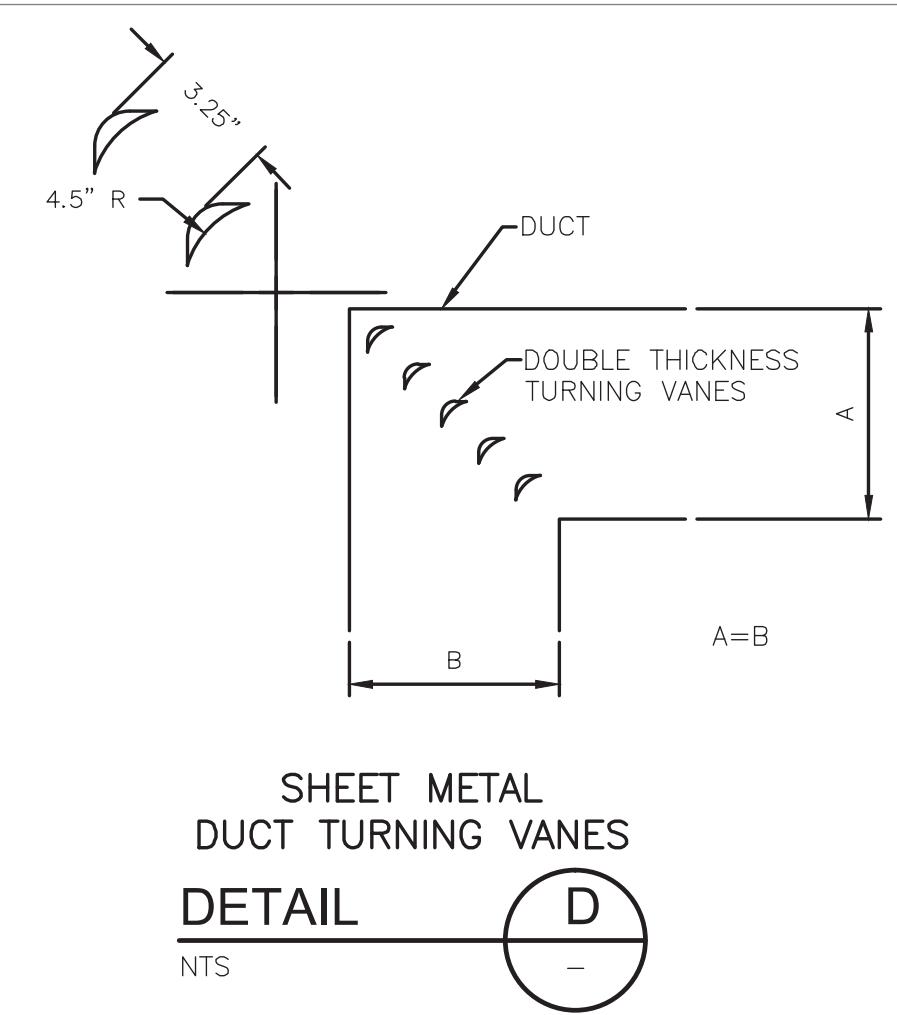
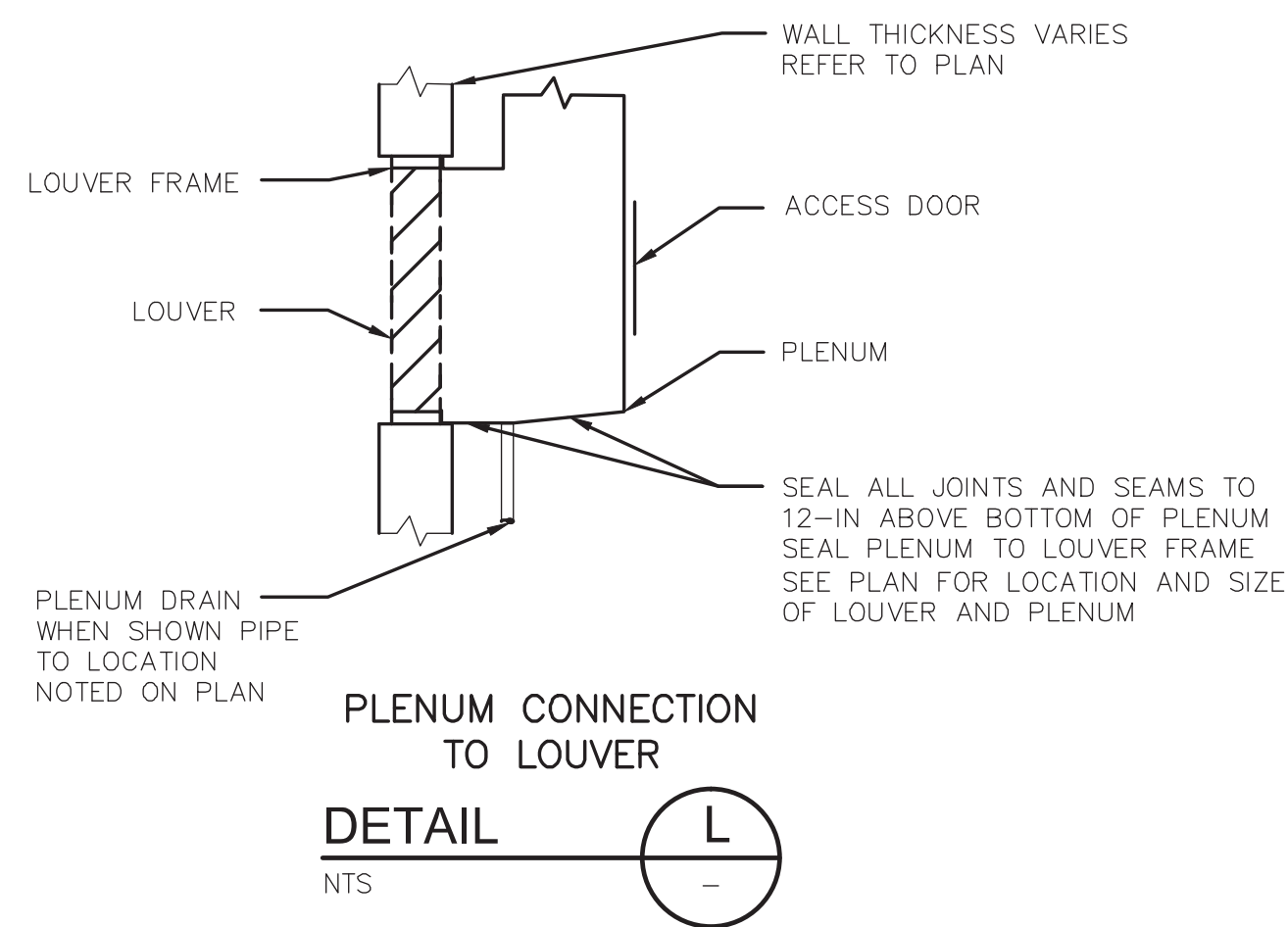
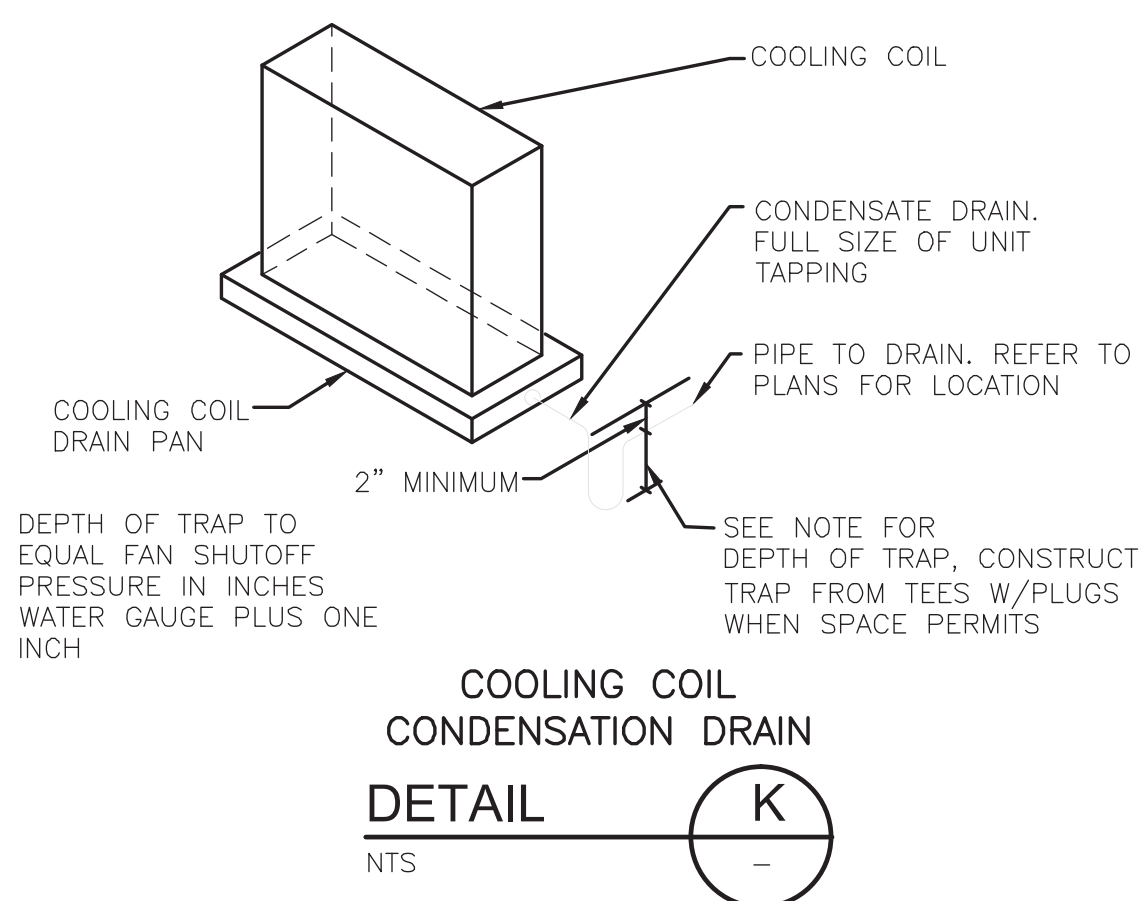
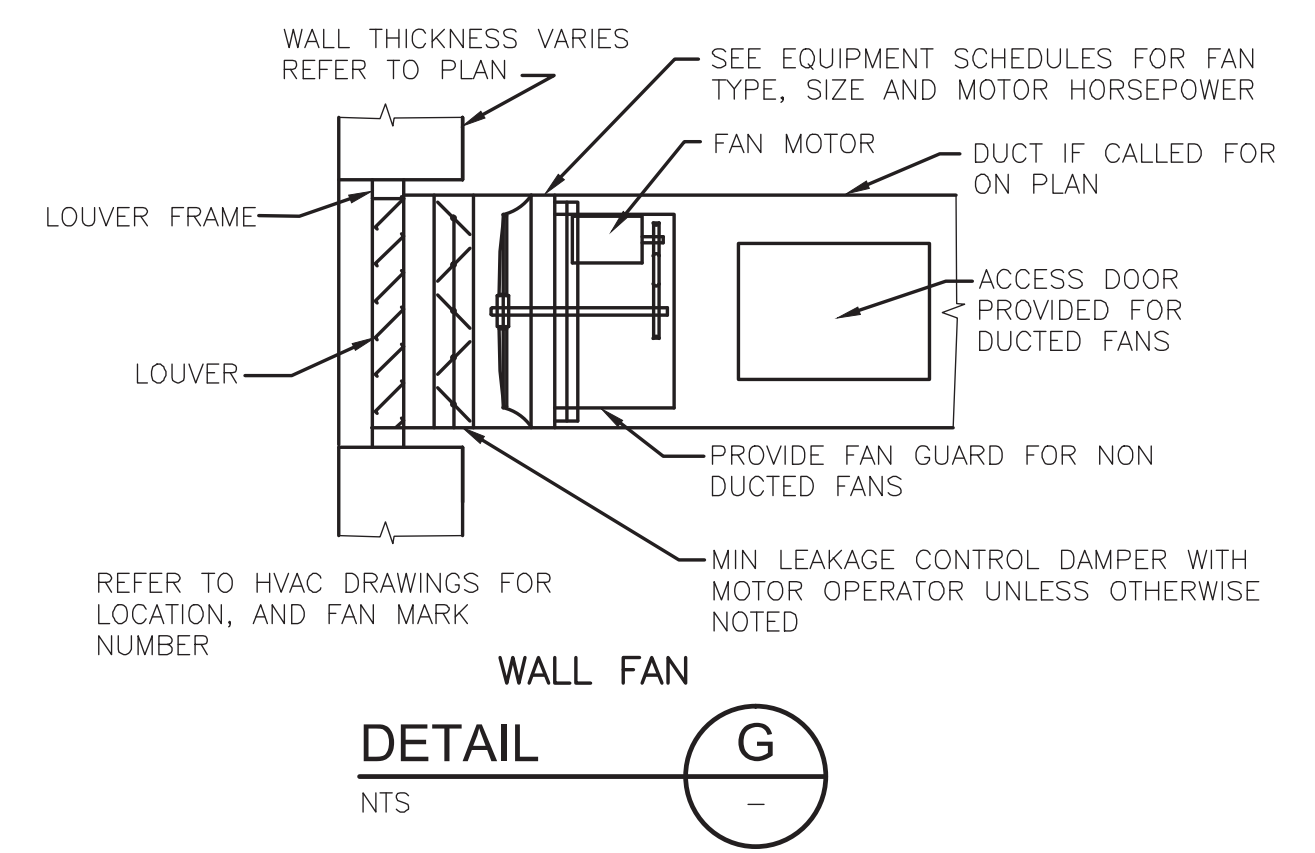
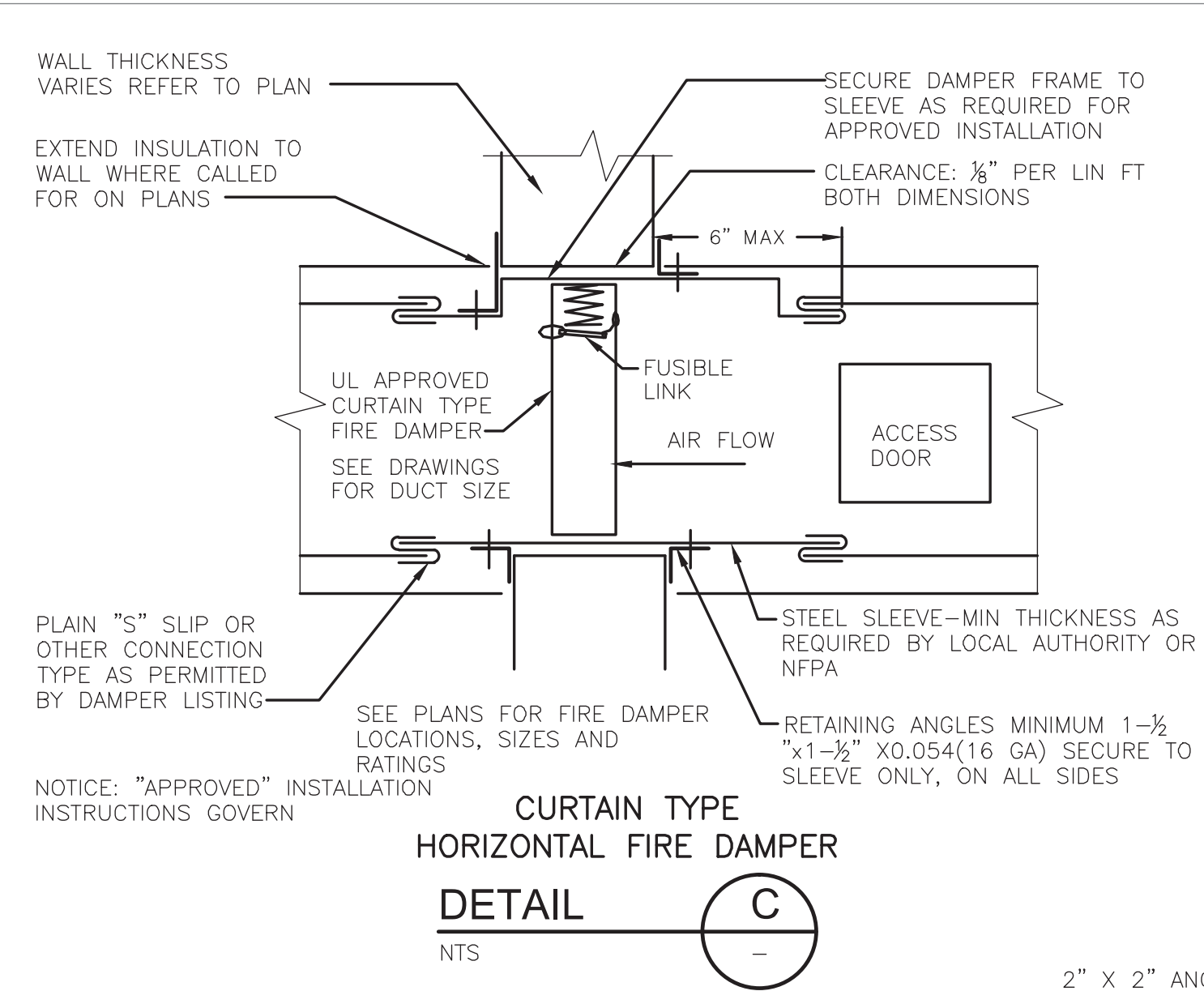
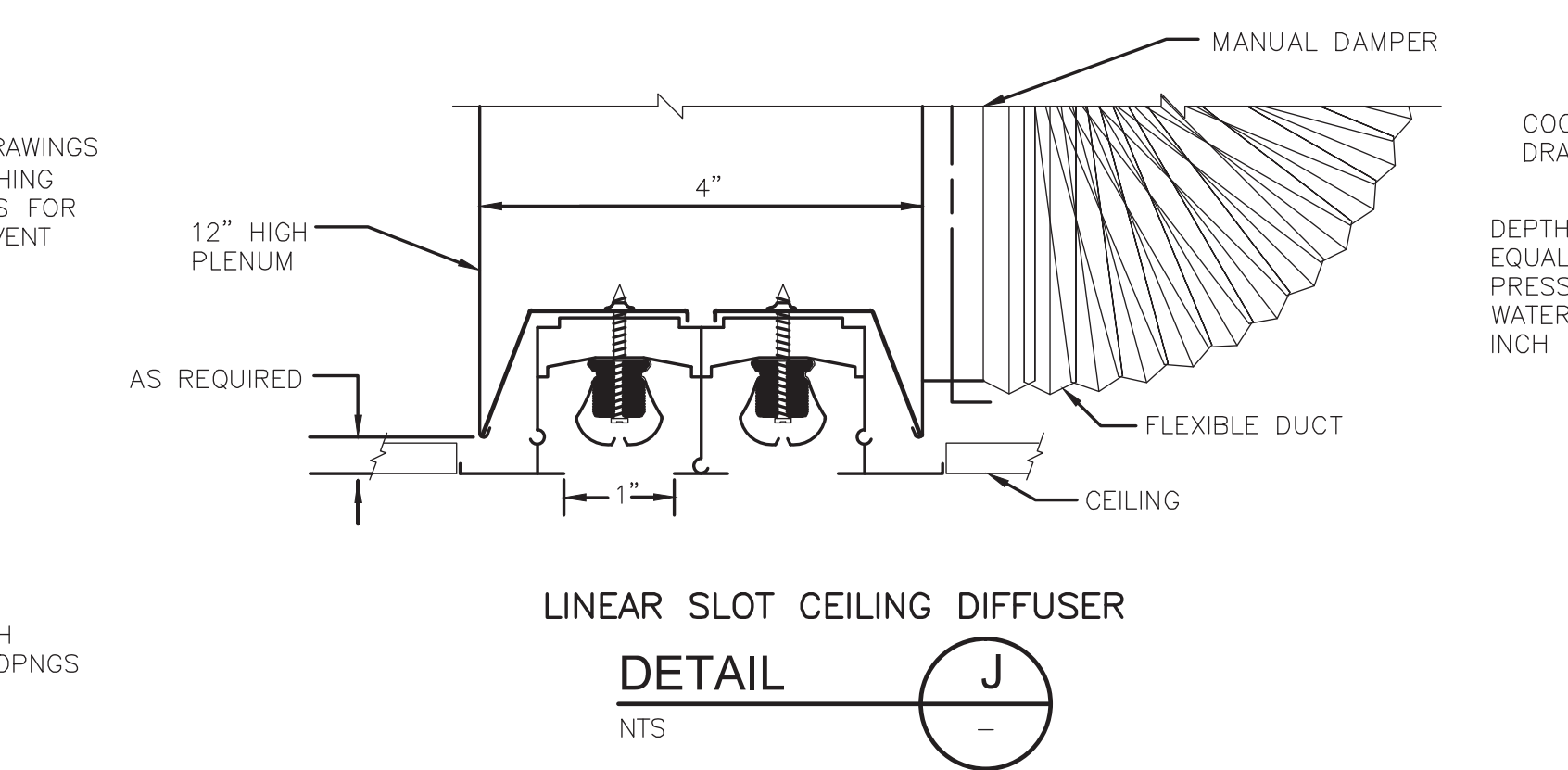
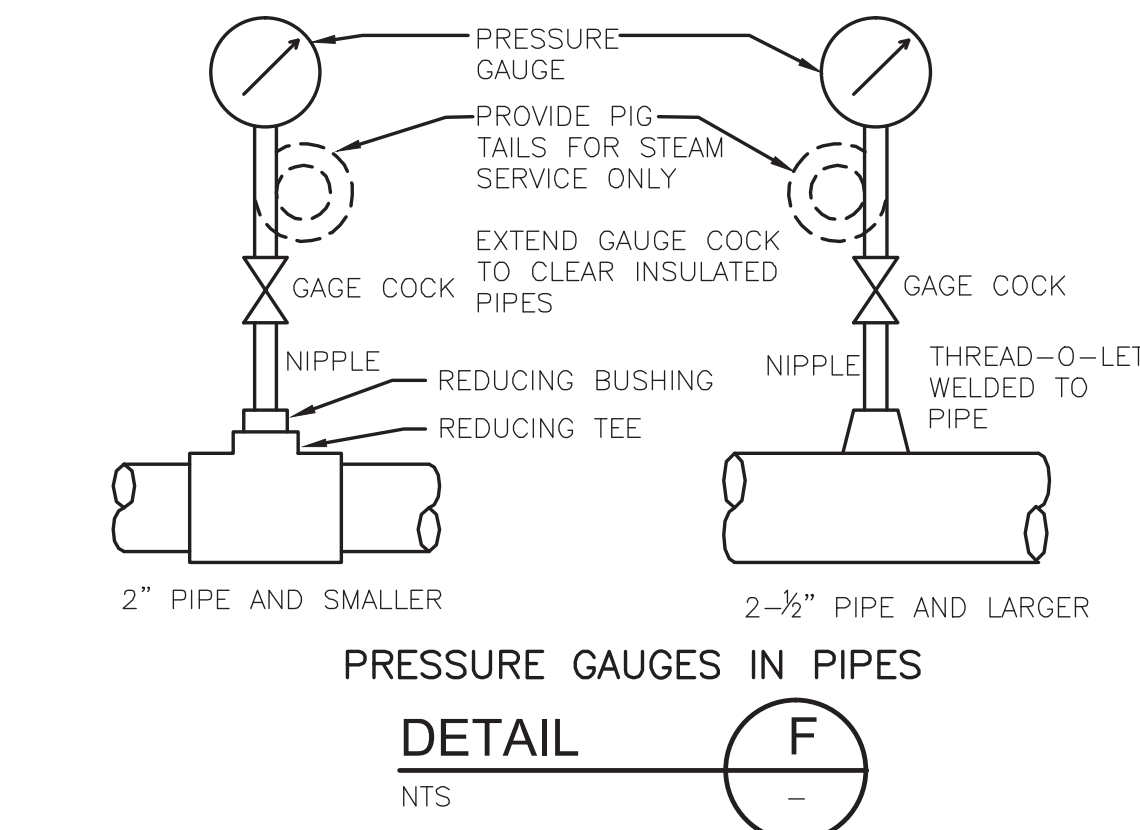
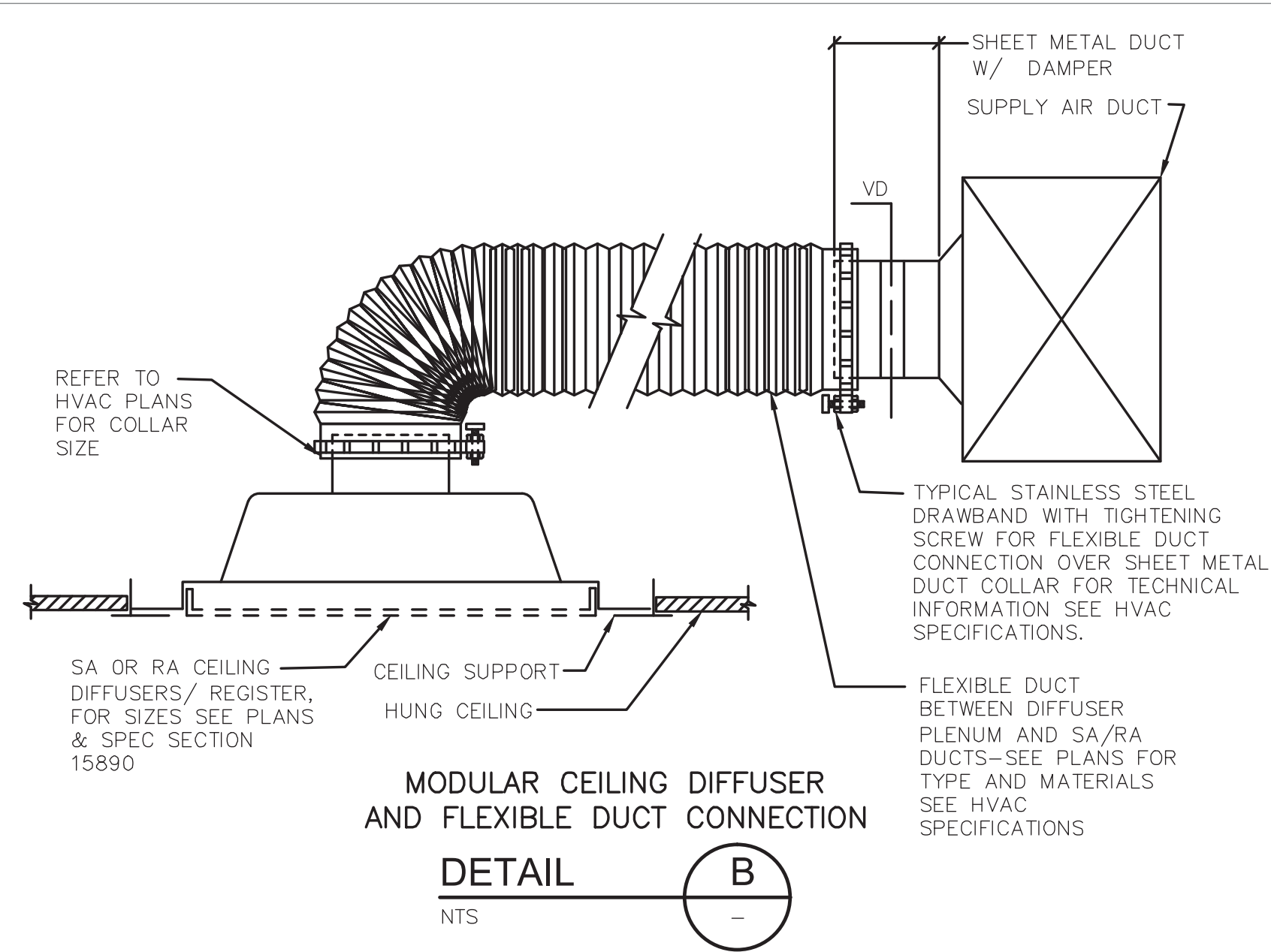
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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008

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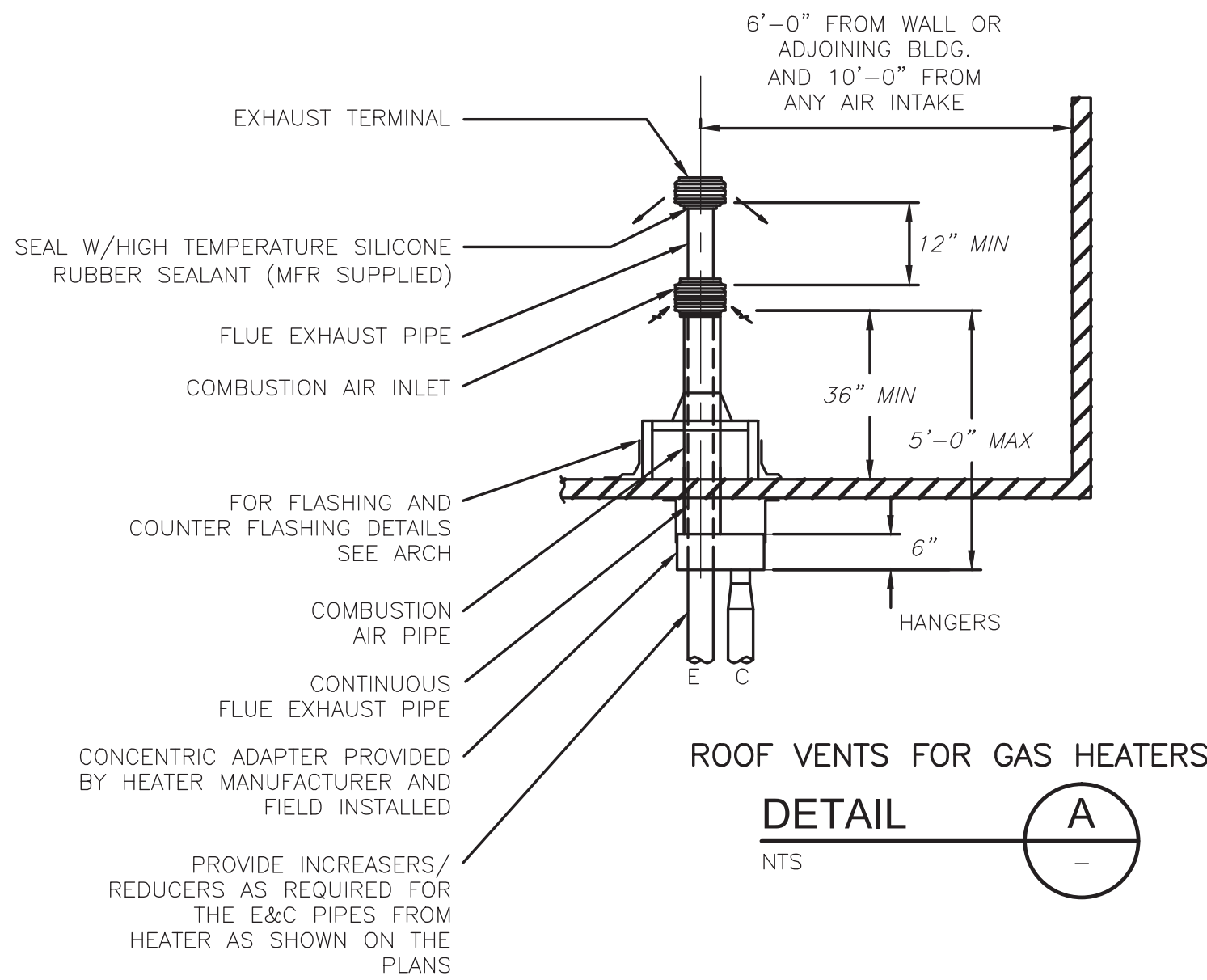


3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING			
		ENGINEERING			
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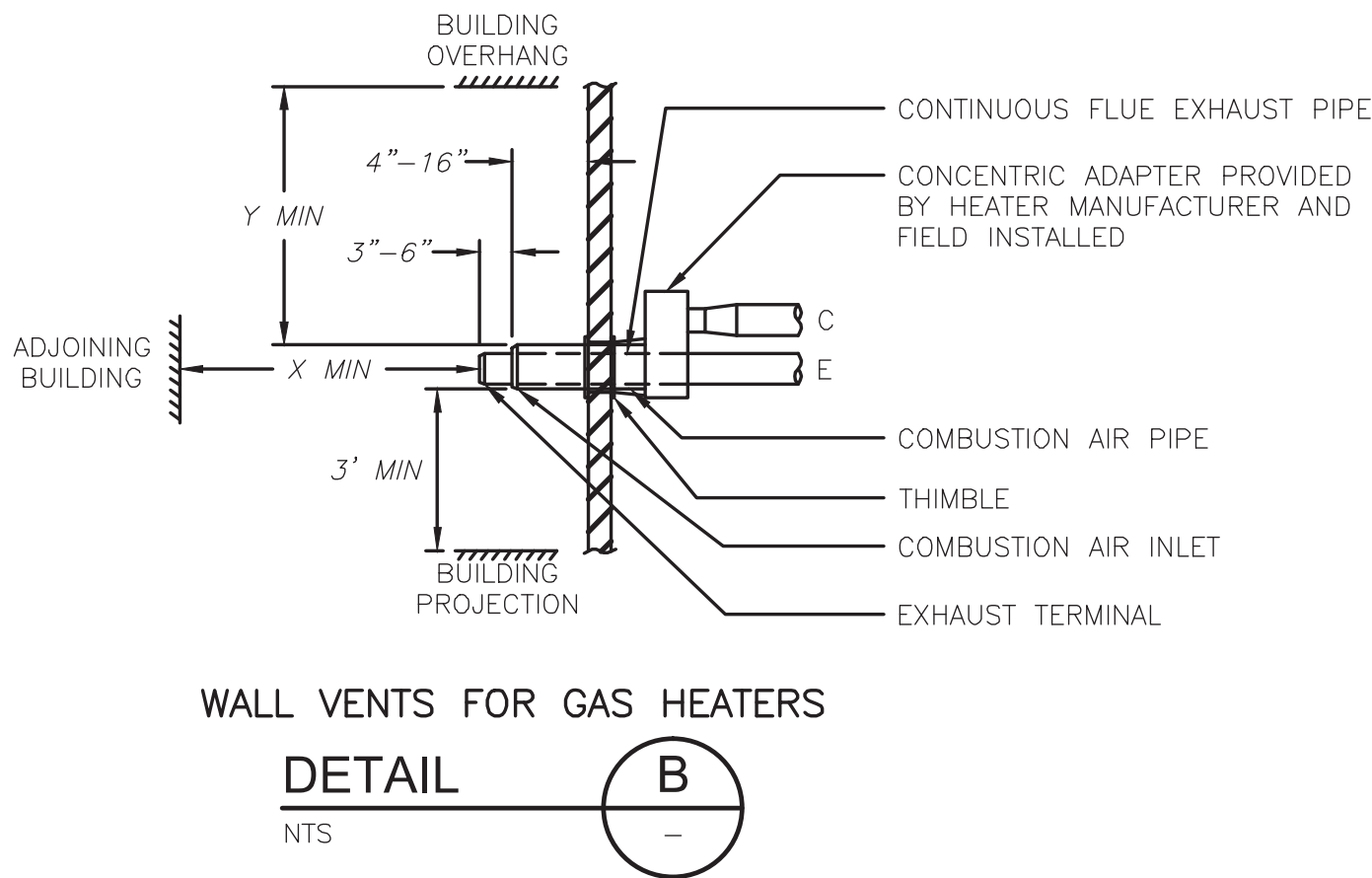
 PROJECT NUMBER 2000904	 Camp Dresser & McKee <small>consulting engineering construction operations</small>	DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED			
		CHECKER D. WERME	DATE 1/07	TITLE HVAC DETAILS II			
		ENGINEER D. FLAHERTY	DATE 12/06				
		MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT			
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		CONTRACT NO. 01-H	DWG. NO. H-13	REV A			

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DWG.



GAS FIRED EQUIPMENT VENT SIZES					
UNITS	FURNACE SIZE (MBH)	NON CONCENTRIC SIDE VENT DIAMETER		CONCENTRIC SIDE VENT DIAMETER	
		EXHAUST	COMB. AIR	EXHAUST	COMB. AIR
MAU	75 TO 175	4"	4"	4"	6"
	200 TO 400	6"	6"	6"	8"
UH	30 TO 60	3"	3"	3"	4"
	75 TO 125	4"	4"	4"	6"
	150 TO 250	5"	6"	5"	8"
	300 TO 400	6"	6"	6"	8"



GAS FIRED EQUIPMENT VENT SIZES		
UDAS/UDBS SIZES	X	Y
30,45,60,75,100	4'	18"
125,150,175,200,225	4'	24"
250,300,350,400	6'	36"

GAS FIRED EQUIPMENT VENT SIZES					
UNITS	FURNACE SIZE (MBH)	NON CONCENTRIC SIDE VENT DIAMETER		CONCENTRIC SIDE VENT DIAMETER	
		EXHAUST	COMB. AIR	EXHAUST	COMB. AIR
MAU	75 TO 175	4"	4"	4"	6"
	200 TO 400	6"	6"	6"	8"
UH	30 TO 60	3"	3"	3"	4"
	75 TO 125	4"	4"	4"	6"
	150 TO 250	5"	6"	5"	8"
	300 TO 400	6"	6"	6"	8"

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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008
CDM

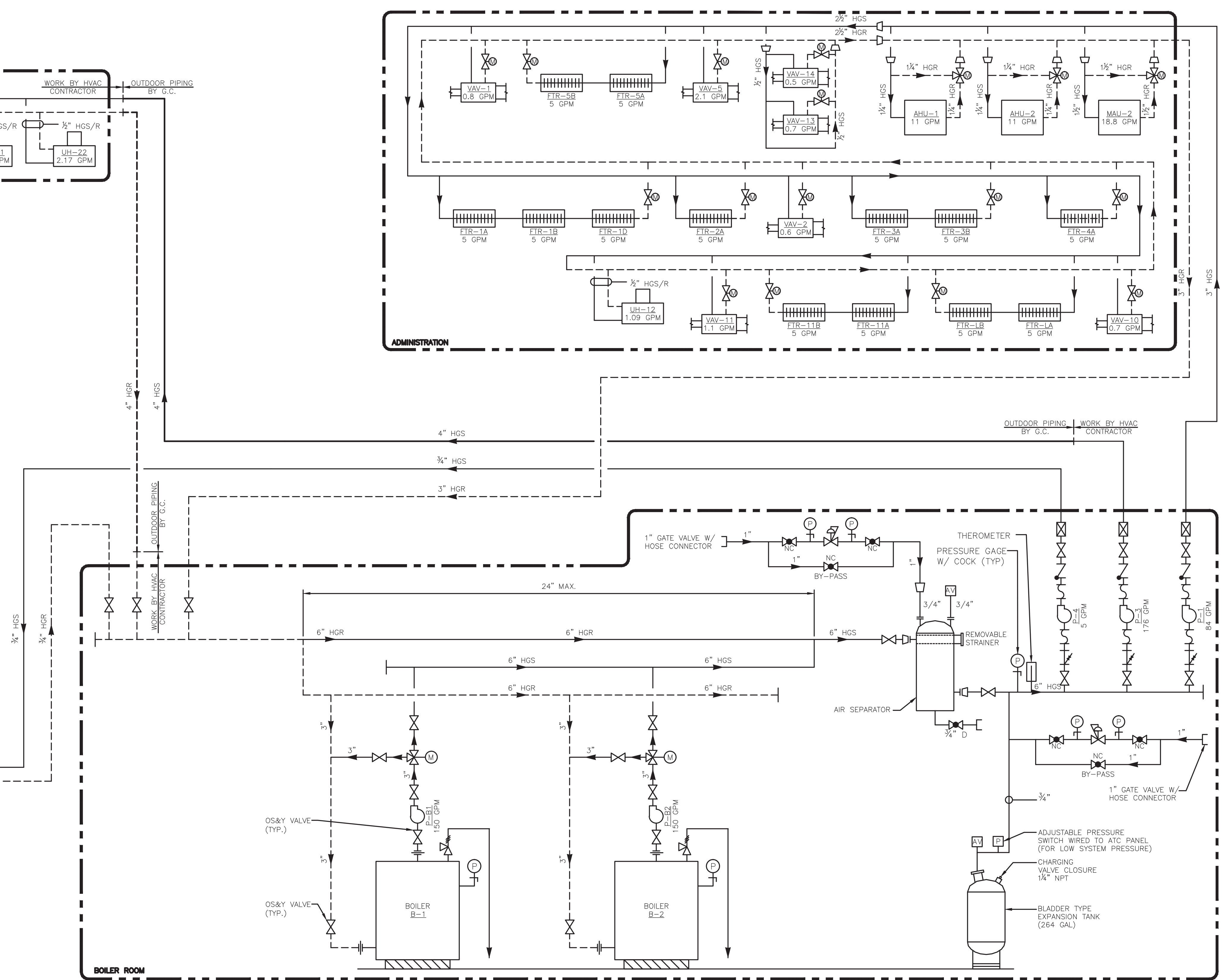
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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE HVAC DETAILS III	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRDT300		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
CONTRACT NO.		01-H	DWG. NO. H-14 REV A



 <p>PROJECT NUMBER 00000000</p>	 <p>Camp Dresser & McKee</p> <p>consulting engineering construction operations</p>	DESIGNER	D. FLAHERTY	DATE	12/06	SCALE	AS NOTED		
		CHECKER	D. WERME	DATE	1/07	TITLE	HOT WATER/GLYCOL FLOW SCHEMATICS		
		ENGINEER	D. FLAHERTY	DATE	12/06				
		MANAGER	J. JACOBS	DATE	4/07	PROJECT	WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
				FILENAME:	HSSDI001	CLIENT	ROCKLAND COUNTY SEWER DISTRICT No. 1		
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		CONTRACT NO.	01-H	DWG.	H-15				

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ON
DWG

HYDRONIC MAKE-UP AIR UNITS																		
UNIT	LOCATION	AREA SERVED	SUPPLY FAN			SUPPLY FAN MOTOR		HEATING COIL				FILTERS	ELECTRICAL			MANUFACTURER MODEL #	NOTES	
								AIR SIDE		WATER SIDE								MBH
			CFM	TYPE	BHP	HP	TYPE	EAT (F)	PD	EWT (F)	GPM		TYPE	VOLTS	PHASE			
			RPM	DISCH.	ESP	RPM	DRIVE	LAT (F)	(IN WC)	LWT (F)	PD (FT)							
MAU-2	HVAC MEZZANINE	BOILER ROOM	2300 672	FC VERT.	0.584 —	0.75 —	ODP BELT	13 83.29	0.12	180 160	18.82 1.59	175.32	ANGLE	460	3	90	TRANE LPCAB06F	1,3,4,6
MAU-5	SLUDGE HANDLING	SLUDGE HANDLING	10000 642	FC HORIZ.	5.567 —	7.5 —	XP BELT	13 79.70	0.22	180 160	77.6 6.92	723.41	ANGLE	460	3	60	TRANE LPCAA17F	1,2,3,4,5,7
MAU-6	HEADWORKS	HEADWORKS	7500 725	FC HORIZ.	3.684 —	7.5 —	XP BELT	13 84.07	0.18	180 160	62.05 5.37	578.06	ANGLE	460	3	60	TRANE LPCAA14F	1,2,3,4,5,7

- NOTES:
1. SEE SPECIFICATION SECTION 15855.
2. PROVIDE COATINGS AS SCHEDULED IN SECTION 15500.
3. PROVIDE DIFFERENTIAL PRESSURE SENSORS ACROSS FILTERS.
4. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
5. PROVIDE A VARIABLE FREQUENCY DRIVE AS SPECIFIED IN SECTION 01174 AND LOCATE IN ELECTRICAL ROOM NO. 3.
6. PROVIDE UNIT MOUNTED CONTROLLER W/ LCD SCREEN.
7. CONTROLLER MOUNTED IN LOCAL ATC PANEL.

FANS																
FAN	LOCATION	AREA SERVED	CONFIGURATION	FAN					MOTOR					MANUFACTURER MODEL #	NOTES	
				TYPE	DIAMETER	CFM	RPM	BHP	HP	TYPE	ELECTRICAL					
				ROTATION	ARRANGMENT	(HI)	(HI)	ESP (IN WC)	RPM	DRIVE	VOLTS	PHASE	HZ			
				DISCHARGE	CLASS	(LOW)	(LOW)									
EF-1	FITLER ROOM	FILTER ROOM	WALL	PROP — —	24.0 — —	3250 — —	603 — —	0.15 0.1	1/4 1725	TEFC BELT	120	1	60	GREENHECK SBCE-3L24-4	1,2,3	
EF-2	FILTER ROOM	FILTER ROOM	WALL	PROP — —	24.0 — —	3250 — —	603 — —	0.15 0.1	1/4 1725	TEFC BELT	120	1	60	GREENHECK SBCE-3L24-4	1,2,3	
EF-3	FILTER ROOM	FILTER ROOM	WALL	PROP — —	36.0 — —	8500 — —	591 — —	0.38 0.1	1/2 1725	TEFC BELT	460	3	60	GREENHECK SBCE-3H36-5	1,2,3	
EF-4	CHEMICAL STORAGE	CHEMICAL STORAGE	INLINE	CENTRIFUGAL — —	13.5 — —	1600 — —	1363 — —	0.36 0.50	1/2 1725	TEFC BELT	460	3	60	LOREN COOK 13SSQIB	1,2	
EF-5	STORAGE MEZZANINE	STORAGE MEZZANINE	WALL	PROP — —	20.0 — —	2000 — —	782 — —	0.216 0.20	1/3 1050	TEFC DIRECT	120	1	60	LOREN COOK 20S10D	1,2,3	
EF-6	STORAGE MEZZANINE	STORAGE MEZZANINE	WALL	PROP — —	20.0 — —	2000 — —	782 — —	0.216 0.2	1/3 1050	TEFC DIRECT	120	1	60	LOREN COOK 20S10D	1,2,3	
EF-7	STORAGE MEZZANINE	STORAGE MEZZANINE	WALL	PROP — —	20.0 — —	2000 — —	782 — —	0.216 0.2	1/3 1050	TEFC DIRECT	120	1	60	LOREN COOK 20S10D	1,2,3	
EF-8	BLOWER ROOM	BLOWER ROOM	WALL	PROP — —	20.0 — —	2500 — —	846 — —	0.27 0.2	1/3 1050	TEFC DIRECT	120	1	60	LOREN COOK 20S10D	1,2,3	
EF-9	BLOWER ROOM	BLOWER ROOM	WALL	PROP — —	20.0 — —	2500 — —	846 — —	0.27 0.2	1/3 1050	TEFC DIRECT	120	1	60	LOREN COOK 201S10D	1,2,3	
EF-10	BLOWER ROOM	BLOWER ROOM	WALL	PROP — —	20.0 — —	2500 — —	846 — —	0.27 0.2	1/3 1050	TEFC DIRECT	120	3	60	LOREN COOK 20S10D	1,2,3	
EF-11	LABORATORY	LABORATORY	INLINE	CENTRIFUGAL — —	15.0 — —	1650 — —	1585 — —	0.60 1.0	3/4 1725	TEFC BELT	460	3	60	M.K. PLASTICS AXCL 1500	1,2	
EF-12	STORAGE MEZZANINE	TOILETS	INLINE	CENTRIFUGAL — —	12.0 — —	790 — —	1179 — —	0.129 0.50	1/6 1140	TEFC BELT	115	1	60	LOREN COOK 120SQN-B	1,2	

- NOTES:
1. SEE SPECIFICATION SECTION 15860.
2. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
3. PROVIDE WALL COLLAR, MOTORIZED DISCHARGE SHUTTER, AND INLET GUARD.

GAS FIRED MAKE-UP AIR UNITS																
UNIT	LOCATION	AREA SERVED	SUPPLY FAN		SUPPLY FAN MOTOR		HEATER				FILTERS	ELECTRICAL			MANUFACTURER MODEL #	NOTES
			CFM	BHP	HP	TYPE	FUEL	INPUT MBH	CONTROL	EAT (F)		TYPE	VOLTS	PHASE		
			RPM	ESP	RPM	DRIVE	INLET PRESS.	OUTPUT MBH	TURNDOWN	LAT (F)						
MAU-1	FILTER ROOM	FILTER ROOM	15000 940	15.0 3/4	15 1725	TEFC BELT	NATURAL GAS 5" W.C.	500 400	STAGED 16:1	40 65	2" ANGLE	460	3	60	GREENHECK IGX-120-H32	1,2,3,4,5,7
MAU-3	FILTER ROOM	CHEMICAL ROOM	1500 1075	0.5 1/2	1/2 1725	TEFC BELT	NATURAL GAS 5" W.C.	100 80	STAGED 8:1	13 62	2" ANGLE	460	3	60	GREENHECK IG-109-H10	1,2,3,4,6,7
MAU-4	HVAC MEZZANINE	TRUCK BAYS	6000 1050	4.6 3/4	5 1725	TEFC BELT	NATURAL GAS 5" W.C.	400 320	STAGED 8:1	13 62	2" ANGLE	460	3	60	GREENHECK IG-115-H30	1,2,3,4,6,7

- NOTES:
1. SEE SPECIFICATION SECTION 15855.
2. PROVIDE TYPE 409 STAINLESS STEEL HEAT EXCHANGER.
3. PROVIDE REMOTE CONTROL PANEL SUPPLIED BY UNIT MANUFACTURER.
4. PROVIDE VERTICAL SEPARATED COMBUSTION CONCENTRIC VENTING KIT.
5. PROVIDE FILTER/MIXING BOX W/ OUTSIDE AND RETURN AIR DAMPERS, MODULATING DAMPER MOTER AND REMOTE POTENTIOMETER.
6. PROVIDE V-BANK FILTER SECTION AND INLET DAMPER.
7. PROVIDE INUDSTRIAL MAKEUP AIR TEMPERATURE CONTROL WITH MANUAL HEATING SWITCH AND ROOM OVERRIDE.

RECORD DRAWING

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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008

CDM

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3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
		DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.			



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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE SCHEDULES I	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRSH000		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
		CONTRACT NO. 01-H	DWG. NO. H-16 REV A

ENERGY RECOVERY UNIT																									
UNIT	LOCATION	AREA SERVED	OA FAN			OA FAN MOTOR		RA FAN			RA FAN MOTOR		ENERGY RECOVERY					FILTERS		ELECTRICAL				MANUFACTURER MODEL #	NOTES
			CFM	BHP	ESP	HP	TYPE	CFM	BHP	ESP	HP	TYPE	OA		RA		EFFECTIVENESS	TYPE	VOLTS	PHASE	HZ	MCA			
			RPM	CLASS	(IN WC)	RPM	DRIVE	RPM	CLASS	(IN WC)	RPM	DRIVE	EAT (F)	LAT (F)	EAT (F)	LAT (F)	PERCENT								
ERU-1	BLOWER ROOM	BLOWER ROOM	2000 939	0.61 —	0.5	3/4 1725	TEFC BELT	2500 1088	1.18 —	0.25	1.5 1725	TEFC BELT	13	58	70	35	80	2" THICK 30%	460	3	60	6.65	LOREN COOK ERV-2500	SEE BELOW	

NOTES:

1. PROVIDE RETURN AIR INTAKE HOOD.
2. UNIT SHALL BE DOUBLE WALL CONSTRUCTION.
3. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCT CONNECTIONS.
4. PROVIDE HEAT RECOVERY WHEEL ROTATION SENSOR AND DIRTY FILTER SENSORS.
5. PROVIDE UNIT MOUNTED CONTROLLER W/ LCD SCREEN.

SPLIT SYSTEM AIR CONDITIONING UNITS																								
UNIT	AREA SERVED	EVAPORATOR UNIT — ACU											AIR COOLED CONDENSER — ACC								MFR.	MODEL #	NOTES	
		EVAPORATOR FAN			EVAP. FAN MOTOR		EVAPORATOR COIL			ELECTRICAL	MIN. OUTSIDE AIR (CFM)	WEIGHT (LBS)	NOMINAL CAPACITY (TONS)	AMBIENT TEMP. (°F)	NO. FANS	COMPRESSORS		ELECTRICAL		EER				WEIGHT (LBS)
		CFM	TYPE	BHP	HP	TYPE	EAT DB/WB	SUCTION TEMP.	SENSIBLE (MBH)	V/P/H			REFRIGERANT	MIN. OPERATING TEMP. (°F)	TYPE	TYPE	HP	MCA	V/P/H					
RPM	DISCH.	ESP (IN WC)	RPM	DRIVE	LAT DB/WB	CIRCUITS	TOTAL (MBH)	REFRIGERANT	MIN. OPERATING TEMP. (°F)	TYPE	TYPE													
ACU-1 ACC-1	ELECTRICAL RM. NO. 1	5200 727	CENT. TOP	1.7 0.5	3 1750	— BELT	80/67 59.8/56.6	45 2	116 170	480/3/60	0	660	15 R-22	105 50	2 PROP	2 SCROLL	7.5 EA.	32.9	480/3/60	9.7	700	TRANE	2TWE180B4 2TTA180B4	1,2,5
ACU-2 ACC-2	ELECTRICAL RM. NO. 2	2500 622	CENT. FRONT	0.7 0.5	1.5 1725	— BELT	80/67 58.9/55.9	45 1	58.4 86.6	480/3/60	0	316	7.5 R-22	105 50	1 PROP	1 SCROLL	7.5	18.1	480/3/60	10.3	350	TRANE	2TWE090A1 2TTA090A4	1,2,3,4
ACU-3 ACC-3	ELECTRICAL RM. NO. 3	1400 727	CENT. TOP	— 0.4	0.50 1050	— DIRECT	80/67 60/57.4	45 1	29.8 41.0	230/1/60	0	150	3.5 R-22	105 0	1 PROP	1 SCROLL	—	13	230/3/60	13	225	TRANE	2TEC3F42B 2TTA3042A3	1,2,3,4

NOTES:

1. SEE SPECIFICATION SECTION 15855.
2. PROVIDE DIFFERENTIAL PRESSURE SENSORS ACROSS FILTERS, PRESSURE INDICATOR SHALL BE UNIT MOUNTED.
3. PROVIDE ANTI-SHORT CYCLE TIMER, EVAPORATOR DEFROST CONTROL, RUBBER ISOLATORS AND HARD START KIT.
4. PROVIDE MANUFACTURER SUPPLIED SPACE THERMOSTAT.
5. PROVIDE RELIABLE MICROPROCESSOR CONTROLS WITH SPACE THERMOSTAT.

UNIT HEATERS – HOT WATER/GLYCOL																	
UNIT	AREA SERVED	CAPACITY (MBH)	AIR		WATER			FAN				ELECTRICAL			MANUFACTURER MODEL #	NOTES	
			FLOW (CFM)	ENT/LVG (F)	ENT/LVG (F)	FLOW (GPM)	PD (FT H2O)	TYPE	DISCHARGE	HP	RPM	MOTOR ENCLOSURE	VOLTS	PHASE			HZ
UH-12	MECHANICAL ROOM	10	340	60/87.0	180/160	1.09	0.5	PROP	HORIZ.	1/60	1550	TEFC	120	1	60	MODINE HC-18	1,2,4
UH-14	BOILER ROOM	10	340	60/87.0	180/160	1.09	0.5	PROP	HORIZ.	1/60	1550	TEFC	120	1	60	MODINE HC-18	1,2,4
UH-15	STORAGE ROOM	10	340	60/87.0	180/160	1.09	0.5	PROP	HORIZ.	1/60	1550	TEFC	120	1	60	MODINE HC-18	1,2,4
UH-17	LARGE PARTS STORAGE	10	340	60/87.0	180/160	1.09	0.5	PROP	HORIZ.	1/60	1550	TEFC	120	1	60	MODINE HC-18	1,2,4
UH-21	BLOWER ROOM	20	730	60/85.1	180/160	2.17	0.4	PROP	HORIZ.	1/12	1550	TEFC	120	1	60	MODINE HC-47	1,2,4
UH-22	BLOWER ROOM	20	730	60/85.1	180/160	2.17	0.4	PROP	HORIZ.	1/12	1550	TEFC	120	1	60	MODINE HC-47	1,2,4
UH-23	SLUDGE TRUCK BAY	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-24	HEADWORKS	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-25	HEADWORKS	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-26	SLUDGE TRUCK BAY	42	1200	60/92.3	180/160	4.67	0.4	PROP	VERT.	1/6	1150	XP	120	1	60	TRANE 102-P	1,2,3,4,5
UH-27	SLUDGE TRUCK BAY	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-28	SLUDGE TRUCK BAY	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-29	HEADWORKS	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-30	SLUDGE HANDLING	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-31	SLUDGE HANDLING	29	1100	60/84.2	180/160	3.30	0.21	PROP	HORIZ.	1/8	1550	XP	120	1	60	TRANE 70-S	1,2,3,4,5
UH-32	MAINTENANCE OFFICE	10	340	60/87.0	180/160	1.09	0.5	PROP	HORIZ.	1/60	1550	TEFC	120	1	60	MODINE HC-18	1,2,4

NOTES:

1. SEE SPECIFICATION SECTION 15550.
2. PROVIDE UNIT WITH MANUFACTURER'S STANDARD CORROSION RESISTANT COATING.
3. HEATING COILS SHALL BE CONSTRUCTED OF 0.049" THICK CUPRO-NICKEL TUBES AND ALUMINUM FINS.
4. PROVIDE AND MOUNT WALL THERMOSTAT TO BE WIRED BY ELECTRICAL CONTRACTOR.
5. PROVIDE OSHA FAN GUARD.

UNIT HEATERS — ELECTRIC														
UNIT	AREA SERVED	CAPACITY (KW)	AIR		FAN					ELECTRICAL			MANUFACTURER MODEL #	NOTES
			FLOW (CFM)	ENT/LVG (F)	TYPE	DISCHARGE	HP	RPM	MOTOR ENCLOSURE	VOLTS	PHASE	HZ		
EUH-1	ELECTRIC RM. 1	7.5	850	60/88	PROP	HORIZ.	1/15	1725	TEFC	480	3	60	CHROMALOX LUH-07-43-32	1,2,3
EUH-2	ELECTRIC RM. 2	4.0	380	60/93	PROP	HORIZ.	1/35	1550	TEFC	480	3	60	CHROMALOX KUH-04-43-32	1,2,3
EUH-3	ELECTRIC RM. 3	4.0	380	60/93	PROP	HORIZ.	1/35	1550	TEFC	480	3	60	CHROMALOX KUH-04-43-32	1,2,3
EUH-4	CHEMICAL ROOM	7.5	590	60/97	PROP	HORIZ.	1/15	1050	TEFC	480	3	60	CHROMALOX HD3D-750	1,2,3
EUH-5	CHEMICAL ROOM	7.5	590	60/97	PROP	HORIZ.	1/15	1050	TEFC	480	3	60	CHROMALOX HD3D-750	1,2,3

NOTES:

1. PROVIDE MFR'S UNIT MOUNTED THERMOSTAT AND CONTROLS.
2. SEE SPECIFICATION SECTION 15550.
3. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.

UNIT HEATERS – GAS															
UNIT	AREA SERVED	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	AIR		FAN					ELECTRICAL			MANUFACTURER MODEL #	NOTES
				FLOW (CFM)	TEMP. RISE (F)	TYPE	DISCHARGE	HP	RPM	MOTOR ENCLOSURE	VOLTS	PHASE	HZ		
GUH-1	FILTER ROOM	60.0	49.8	769	60	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-60	1,2,3
GUH-2	FILTER ROOM	125.0	99.6	1537	60	PROP	HORIZ.	0.25	1050	TEFC	120	1	60	REZNOR UDAS-125	1,2,3
GUH-3	FILTER ROOM	125.0	99.6	1537	60	PROP	HORIZ.	0.25	1050	TEFC	120	1	60	REZNOR UDAS-125	1,2,3
GUH-4	FILTER ROOM	125.0	99.6	1537	60	PROP	HORIZ.	0.25	1050	TEFC	120	1	60	REZNOR UDAS-125	1,2,3
GUH-5	FILTER ROOM	125.0	99.6	1537	60	PROP	HORIZ.	0.25	1050	TEFC	120	1	60	REZNOR UDAS-125	1,2,3
GUH-6	FILTER ROOM	60.0	49.8	769	60	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-60	1,2,3
GUH-7	STORAGE MEZZANINE	45.0	37.4	629	55	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-45	1,2,3
GUH-8	STORAGE MEZZANINE	45.0	37.4	629	55	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-45	1,2,3
GUH-9	VEHICLE GARAGE	45.0	37.4	629	55	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-45	1,2,3
GUH-10	VEHICLE GARAGE	45.0	37.4	629	55	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-45	1,2,3
GUH-11	VEHICLE GARAGE	45.0	37.4	629	55	PROP	HORIZ.	0.06	1550	TEFC	120	1	60	REZNOR UDAS-45	1,2,3

NOTES:

1. SEE SPECIFICATION SECTION 15550.
2. PROVIDE UNIT WITH MANUFACTURER'S STANDARD CORROSION RESISTANT COATING.
3. PROVIDE AND MOUNT WALL THERMOSTAT TO BE WIRED BY ELECTRICAL CONTRACTOR.

RECORD DRAWING

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BASED ON A COMBINATION OF INFORMATION
PROVIDED BY OTHERS AND BY CDM. THEREFORE,
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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008

CDM

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2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED		
CHECKER D. WERME	DATE 1/07	TITLE SCHEDULES II		
ENGINEER D. FLAHERTY	DATE 12/06			
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
FILENAME: HPRSH100		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1		
		CONTRACT NO. 01-H	DWG. NO. H-17	REV A

J:\30447\48248\REC_DWG\HVAC\ HPRSH300 10/21/08 08:28 larsonej XREES: BDR22-34

ON
DWG

AIR HANDLING UNITS																																
UNIT	LOCATION	AREA SERVED	MIN. OA CFM	SUPPLY FAN				SUPPLY FAN MOTOR		HEATING COIL						COOLING COIL					RETURN FAN				RETURN FAN MOTOR		ELECTRICAL			MODULES	MANUFACTURER MODEL #	NOTES
				CFM	TYPE	BHP	ESP	HP	TYPE	EAT (F)	PD	EWT (F)	GPM	PERCENT GLYCOL	MBH	TYPE	EAT DB/WB	SUCTION TEMP.	CIRCUITS	SENS. MBH	CFM	TYPE	BHP	ESP	HP	TYPE	VOLTS	PHASE	HZ			
				RPM	DISCH.	CLASS	(IN WC)	RPM	DRIVE	LAT (F)	(IN WC)	LWT (F)	PD (FT)		LAT DB/WB			TOTAL MBH		RPM	DISCH.	CLASS	(IN WC)	RPM	DRIVE							
AHU-1	MEZZANINE	ADMIN AREA	840	6000 888	DC HORIZ.	4.868 -	2.00	5.00 1800	TEFC BELT	63.15 78.00	0.04	180 160	10.9 0.11	40	96.63	DX	81.4/66.8 55.0/54.2	45°F	2	174 233	6000 1226	FC HORIZ.	2.96 -	2.00	3.0 1800	TEFC BELT	460	3	60	RF-EC-AF-HC-CC-SF	TRANE M-SEIRES SIZE 21	1,2,3,4,5,6,7,8,10
AHU-2	MEZZANINE	LAB	1600	1600 1866	FC HORIZ.	1.688 -	1.00	2.00 -	TEFC BELT	13.00 72.00	0.16	180 160	11.0 14.9	40	102.4	DX	89.0/73.0 55.0/54.9	45°F	2	59 98	-	-	-	-	-	460	3	60	IN-AF-CD-SF-HC	REZNOR AHDA SIZE 30	1,2,3,4,5,6,7,8,9	

- NOTES:
1. SEE SPECIFICATION SECTION 15855.
2. PROVIDE DIFFERENTIAL PRESSURE SENSORS ACROSS FILTERS.
3. PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
4. PROVIDE SPACER AND ACCESS SECTIONS AS RECOMMENDED BY THE MANUFACTURER.
5. EACH AHU SHALL INCLUDE ALL THE MODULES LISTED.
6. THE MODULES SHALL BE ARRANGED IN THE ORDER LISTED WITH THE FIRST MODULE LISTED AT UNIT INTAKE AND THE LAST MODULE LISTED AT THE UNIT DISCHARGE.
7. UNITS SHALL BE DOUBLE WALL CONSTRUCTION.
8. UNITS SHALL HAVE INTERNAL VIBRATION ISOLATION.
9. PROVIDE MANUFACTURER OPTIONS: AR8, BN10, CL51, RC28.
10.PROVIDE UNIT MOUNTED CONTROLLER W/ LCD SCREEN.
- MODULE ABBREVIATIONS
AF ANGLE FILTERS
EC ECONOMIZER
CD COOLING/DEHUMIDIFICATION COILS
HC HEATING COIL
IN INTAKE
RF RETURN FAN
SF SUPPLY FAN

BOILERS																
UNIT	SERVICE	TYPE	CAPACITY	HEATING FLUID			BURNER							MANUFACTURER MODEL #	NOTES	
			GROSS OUTPUT MBH	ENT/LVG (F)	FLOW (GPM)	PERCENT GLYCOL	INPUT CFH	FUEL TYPE	MIN. PRESS. (IN H2O)	HP	VOLTS	PHASE	HZ			MANUFACTURER MODEL #
			I=B=R OUTPUT MBH													
B-1	HOT WATER/ GLYCOL	CAST IRON	1342 1167	180/160	145	40	1674	NATURAL GAS	5.8	1	460	3	60	GORDON PIATT R8.2-G	BURNHAM V909A-W-G	1
B-2	HOT WATER/ GLYCOL	CAST IRON	1342 1167	180/160	145	40	1674	NATURAL GAS	5.8	1	460	3	60	GORDON PIATT R8.2-G	BURNHAM V909A-W-G	1

- NOTES:
1. SEE SPECIFICATION SECTION 15555.

DIRECT EXPANSION AIR COOLED CONDENSING UNITS													
UNIT	UNIT SERVED	AIR COOLED CONDENSER — ACC									MFR.	MODEL #	NOTES
		NOMINAL CAPACITY (TONS)	AMBIENT TEMP. (°F)	NO. FANS	COMPRESSORS		ELECTRICAL		EER	WEIGHT (LBS)			
					NUMBER	HP	MCA	V/P/H					
REFRIGERANT	MIN. OPERATING TEMP. (°F)	TYPE											
ACC-4	AHU-1	20 R-22	105 50	2 DIRECT	2 SCROLL	2	44.0	460/3/60	10.9	1720	TRANE	RAUCC204BA00A	
ACC-5	AHU-2	10 R-22	105 50	1 DIRECT	2 SCROLL	5	23.9	460/3/60	10.3	427	TRANE	TTA120B400AA	

PUMPS												
UNIT I.D.	LOCATION	SERVICE	TYPE	FLUID			MOTOR				MANUFACTURER MODEL #	REMARKS
			MOUNTING	GPM	HEAD 'H2O	% GLYC	TYPE	HP	RPM	ELEC. V/PH/HZ		
P-1	BOILER ROOM	HEATING ADMINISTRATION	CENTRIFUGAL INLINE	84	36.8	40	ODP	2.0	1750	460/3/60	BELL & GOSSETT SERIES 80: 2x2x7	1
P-3	BOILER ROOM	HEATING HEADWORKS	CENTRIFUGAL INLINE	176	46.6	40	ODP	5.0	1750	460/3/60	BELL & GOSSETT SERIES 80: 2.5x2.5x9.5B	1
P-4	BOILER ROOM	HEATING MAINTENANCE	CENTRIFUGAL INLINE	4.36	11.5	40	ODP	0.12	3000	120/1/60	BELL & GOSSETT NBF-1BS	1
P-B1	BOILER ROOM	HEATING B-1	CENTRIFUGAL INLINE	150	-	40	ODP	0.5	1750	460/3/60	BELL & GOSSETT SERIES 60: 2x2x5.25	1,2
P-B2	BOILER ROOM	HEATING B-2	CENTRIFUGAL INLINE	150	-	40	ODP	0.5	1750	460/3/60	BELL & GOSSETT SERIES 60: 2x2x5.25	1,2
P-ACU-1	BLOWER ROOM	ACU-1 CONDENSATE PUMP	CENTRIFUGAL INLINE	0.4	15	40	ODP	1/30	-	120/1/60	LITTLE GIANT CURP-20ULS-577425	1

- NOTES:
1. SEE SPECIFICATION SECTION 15541.
2. PROVIDED AS PART OF RETURN TEMPERATURE CONTROL SYSTEM WITH BOILERS.

RECORD DRAWING

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BY: CAMP DRESSER & McKEE Date: OCTOBER 2008
CDM

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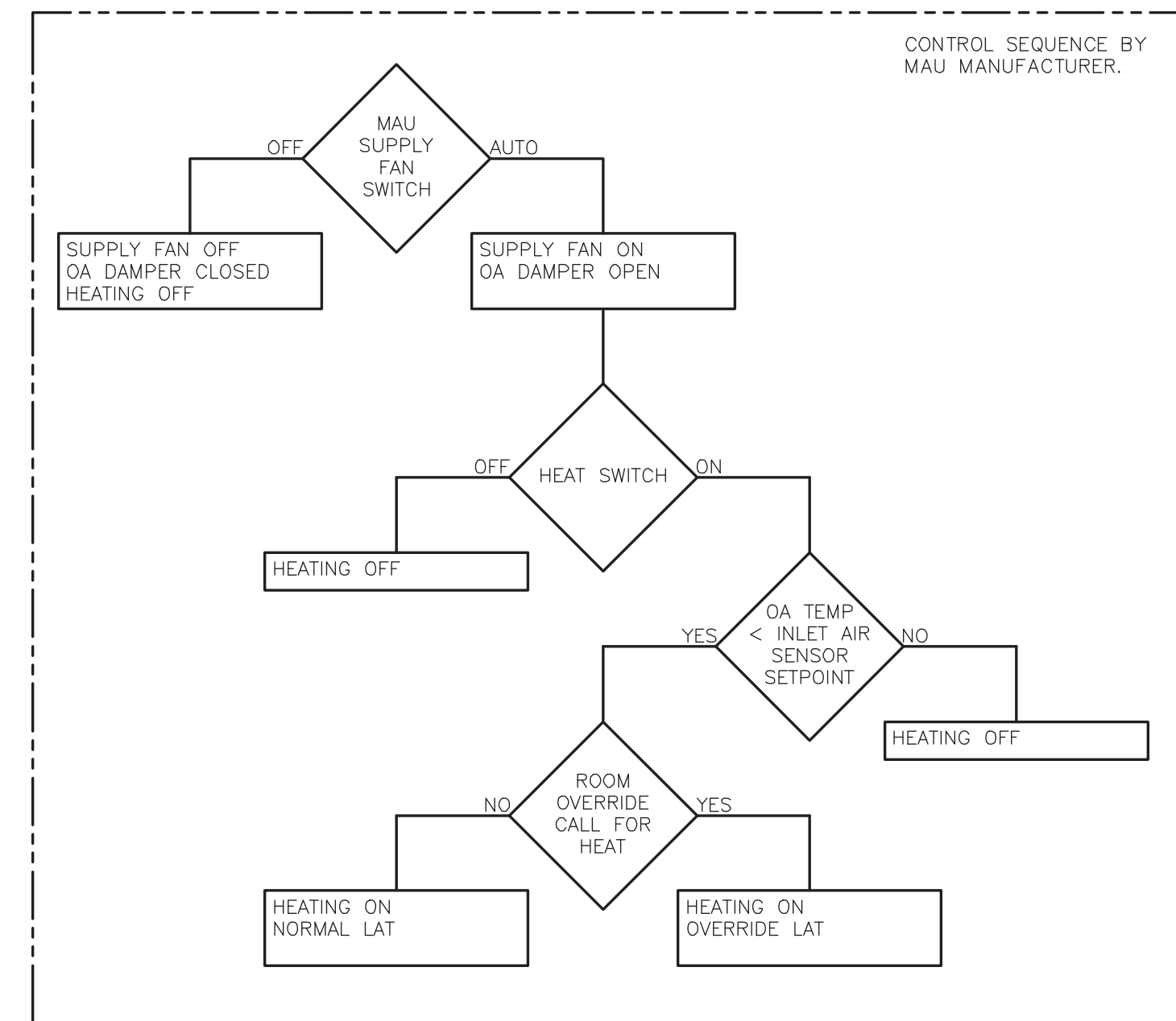
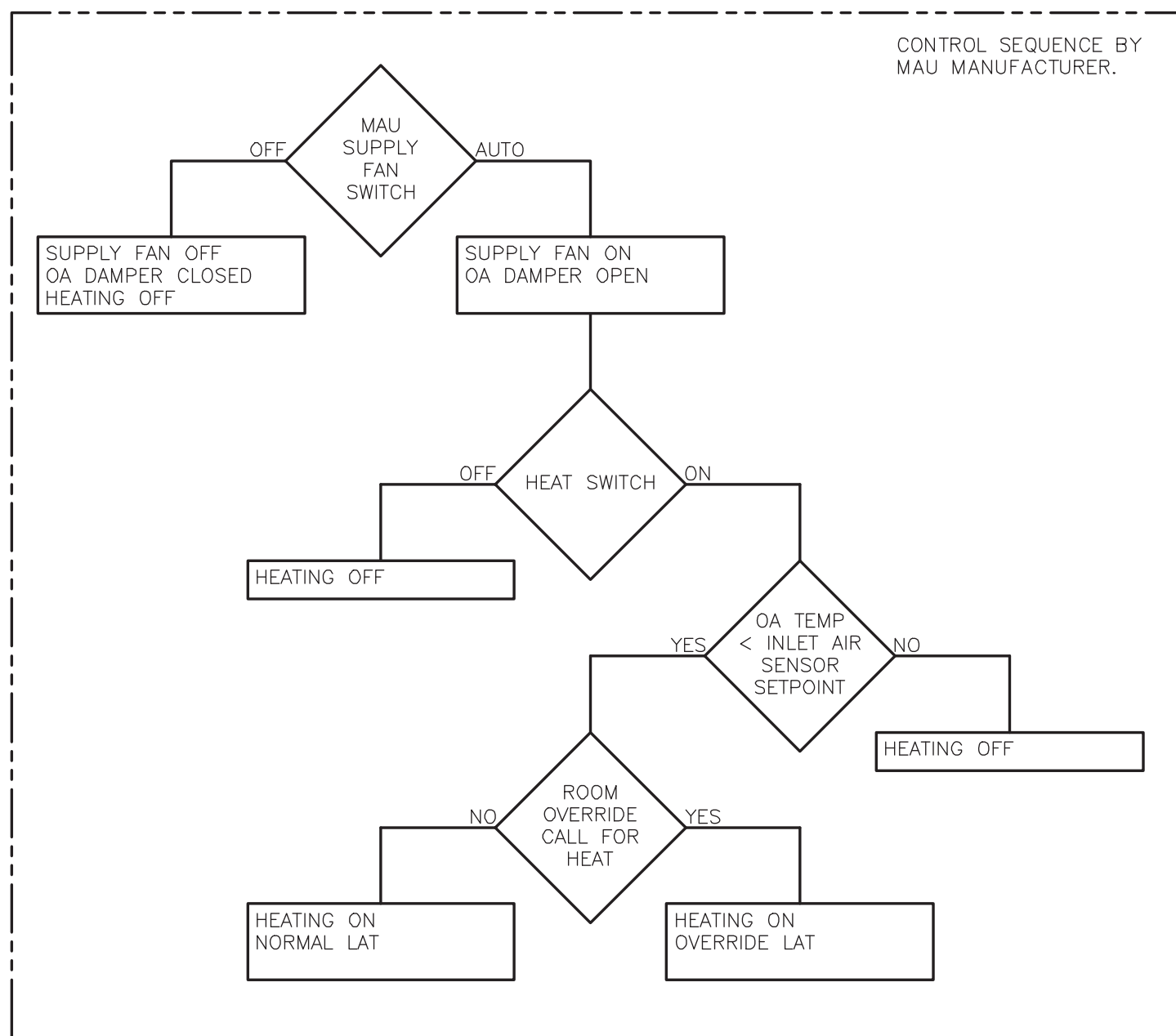
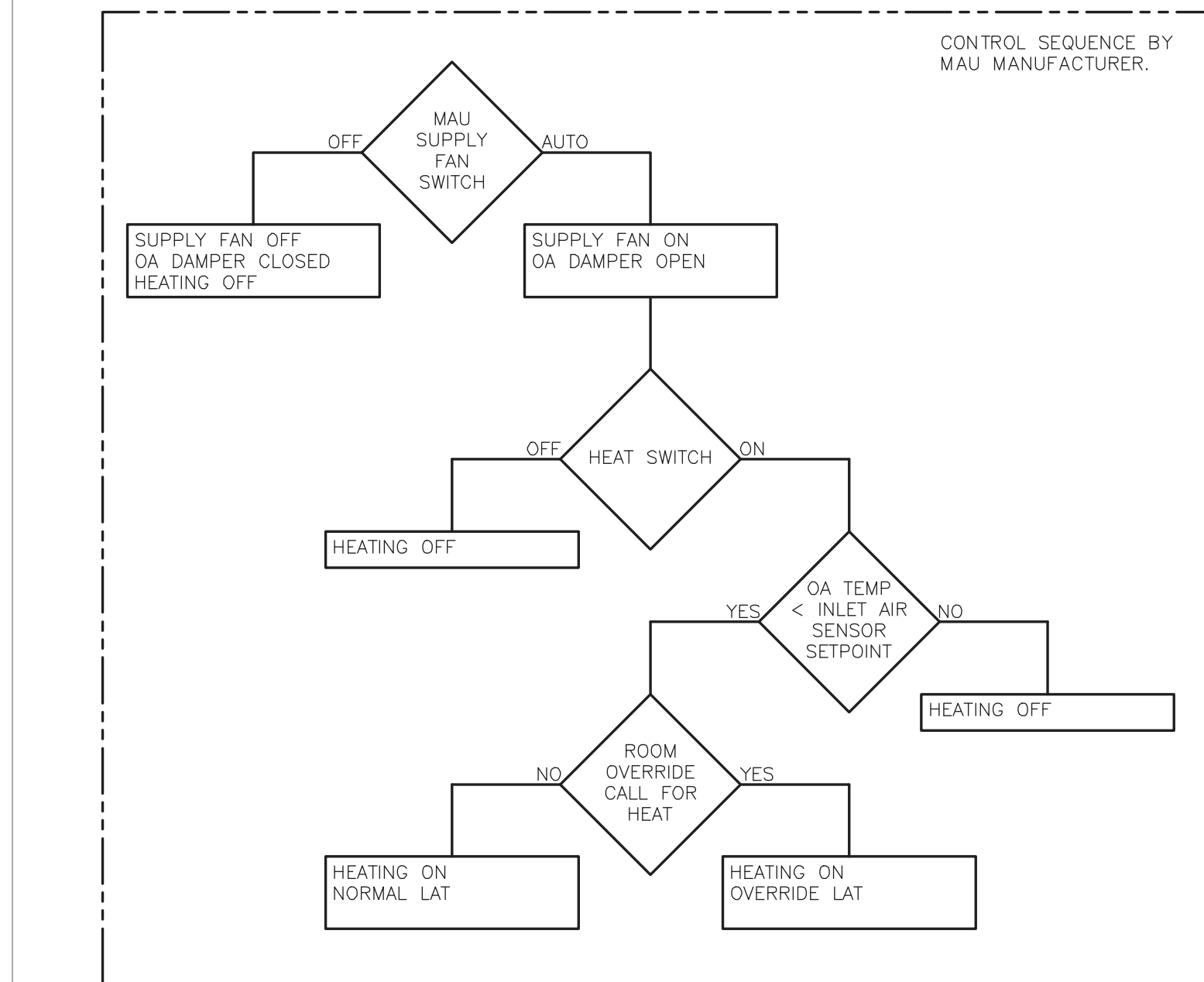
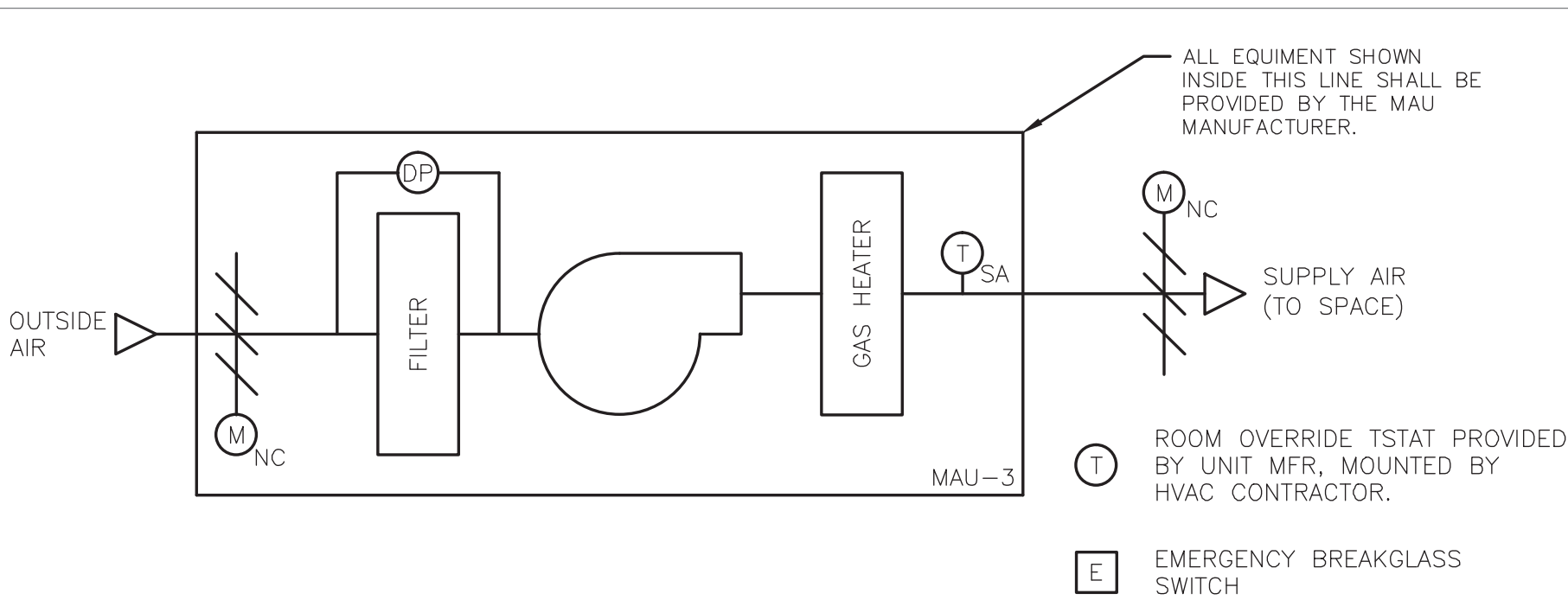
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	CLOUDS INDICATE VALUE ENGINEERING CHANGES
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
		DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.			



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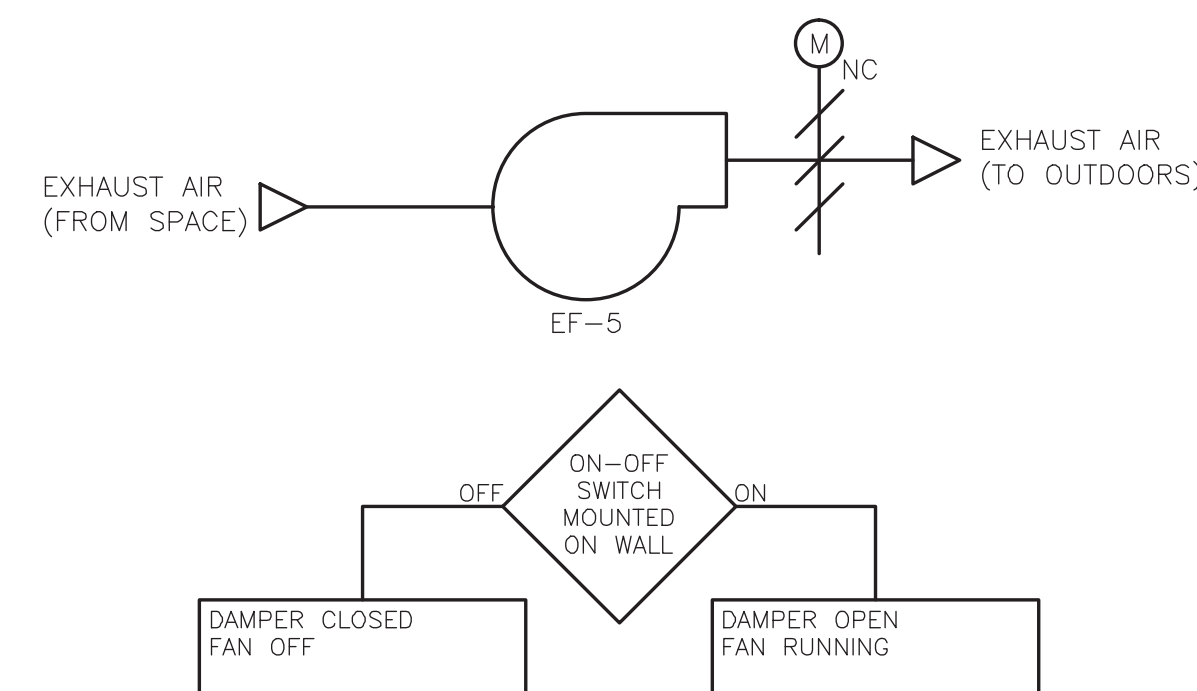
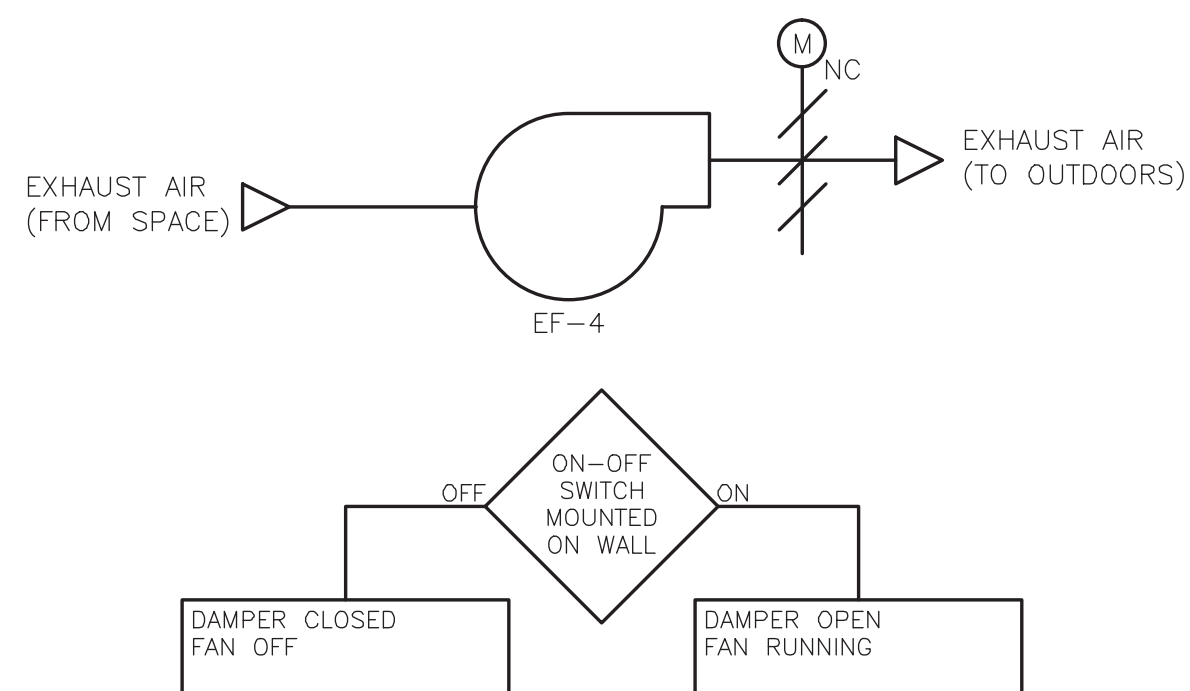
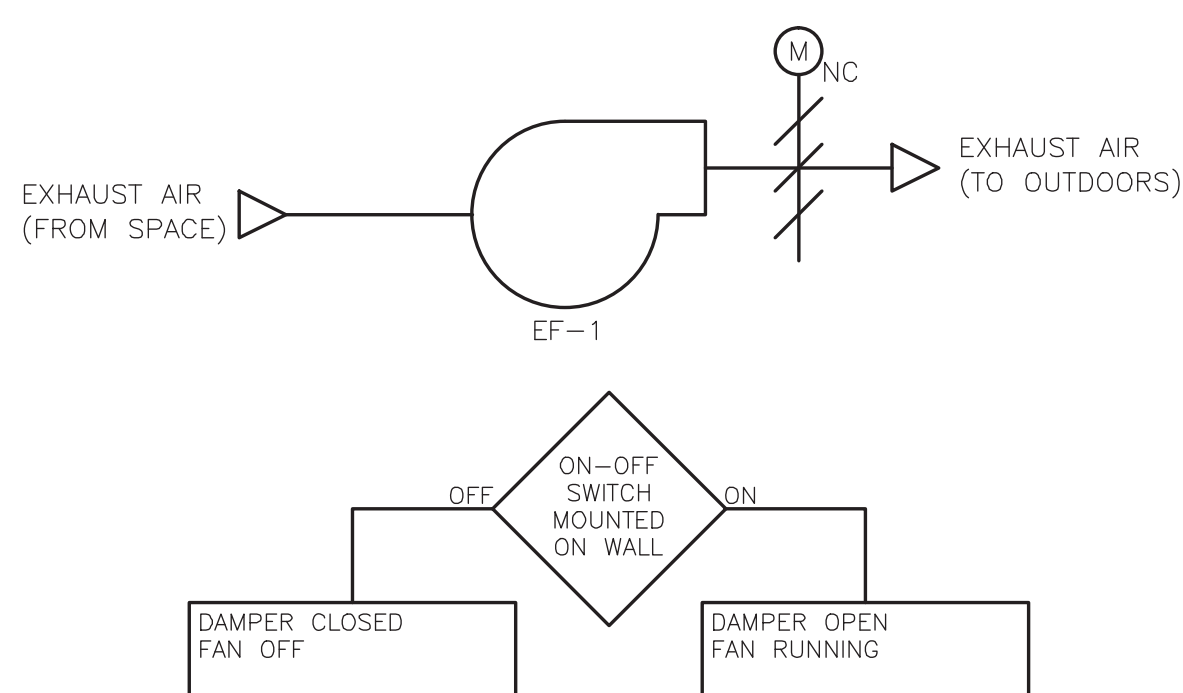
DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE SCHEDULES III	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRSH300		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
		CONTRACT NO. 01-H	DWG. NO. H-18 REV A



- NOTES:**
1. RETURN AIR AND OUTSIDE AIR DAMPERS WHEN CALLED TO BE OPEN ARE POSITIONED BY A POTENTIOMETER DIAL MOUNTED IN THE UNIT REMOTE CONTROL PANEL.
 2. PROVIDE A PANEL MOUNTED MAU SUPPLY FAN SWITCH AND HEAT SWITCH.
 3. PROVIDE PANEL LIGHTS FOR BLOWER STATUS, HEAT AND DIRTY FILTER. ALL PANEL SWITCHES AND PANEL LIGHTS SHALL BE MOUNTED IN THE UNIT REMOTE CONTROL PANEL SUPPLIED BY UNIT MANUFACTURER.
 5. WHEN THE SMOKE DETECTOR SENSES SMOKE THE SUPPLY FAN AND HEATING SHALL BE OFF.

- NOTES:**
1. PROVIDE A PANEL MOUNTED MAU SUPPLY FAN SWITCH AND HEAT SWITCH.
 2. PROVIDE PANEL LIGHTS FOR BLOWER STATUS, HEAT AND DIRTY FILTER.
 3. ALL PANEL SWITCHES AND PANEL LIGHTS SHALL BE MOUNTED IN THE UNIT REMOTE CONTROL PANEL SUPPLIED BY UNIT MANUFACTURER.
 4. UPON A FIRE DETECTED SIGNAL FROM THE CHEMICAL ROOM FIRE SUPPRESSION SYSTEM OR ACTIVATION OF THE EMERGENCY BREAKGLASS SWITCH, MAU-3 SHALL STOP RUNNING AND THE DAMPER IN THE DISCHARGE AIR DUCTWORK SHALL BE CLOSED.

- NOTES:
1. PROVIDE A PANEL DETECTOR MAU SUPPLY FAN SWITCH AND HEAT SWITCH.
 2. PROVIDE PANEL LIGHTS FOR BLOWER STATUS, HEAT AND DIRTY FILTER
 3. ALL PANEL SWITCHES AND PANEL LIGHTS SHALL BE MOUNTED IN THE UNIT REMOTE CONTROL PANEL SUPPLIED BY UNIT MANUFACTURER.
 4. WHEN THE SMOKE DETECTOR SENSES SMOKE THE SUPPLY FAN AND HEATING SHALL BE OFF.



3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
		DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.			



PROJECT NUMBER 56006994

CDM Camp Dresser & McKee
consulting
engineering
construction
operations

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DESIGNER D. FLAHERTY	DATE 12/06
CHECKER D. WERME	DATE 1/07
ENGINEER D. FLAHERTY	DATE 12/06
MANAGER J. JACOBS	DATE 4/07

FILENAME:
HSDDI002

SCALE	AS NOTED
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TITLE	AUTOMATIC TEMPERATURE CONTROL DIAGRAMS
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PROJECT	WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT
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CONTRACT NO. 01-H

DWG. NO.	H-19
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REV	A
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RECORD DRAWING

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BASED ON A COMBINATION OF INFORMATION
PROVIDED BY OTHERS AND BY CDM. THEREFORE,
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OF ALL THE INFORMATION. TO THE BEST OF THE
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INCLUDED RECORD INFORMATION IS REASONABLY
ACCURATE.

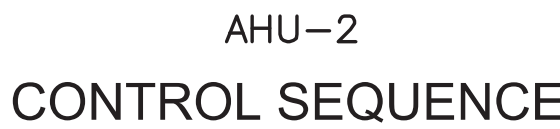
BY: CAMP DRESSER & McKEE Date: OCTOBER 2008
CDM

WARNING

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OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL
ENGINEER OR LAND SURVEYOR HAS BEEN ATTACHED.



1. PROVIDE GENERAL ALARM LIGHT IN ATC-PNL-6 WHICH WILL BE ACTIVATED WHEN ANY ALARM IN THE SEQUENCE IS ACTIVATED.
2. EQUIPMENT STATUS, ON-OFF SWITCHING, SENSOR READINGS AND SETPOINTS SHALL BE AVAILABLE VIA A LCD SCREEN IN THE EQUIPMENT CONTROLLERS.



1. PROVIDE GENERAL ALARM LIGHT IN ATC-PNL-2 WHICH WILL BE ACTIVATED WHEN ANY ALARM IN THE SEQUENCE IS ACTIVATED.
2. EQUIPMENT STATUS, ON-OFF SWITCHING, SENSOR READINGS AND SETPOINTS SHALL BE AVAILABLE VIA A LCD SCREEN IN THE EQUIPMENT CONTROLLERS.

3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
		DRAWINGS WITH ALPHA REVISIONS ARE PRELIMINARY AND SHALL NOT BE USED FOR FINAL DESIGN WORK OR FABRICATION.			

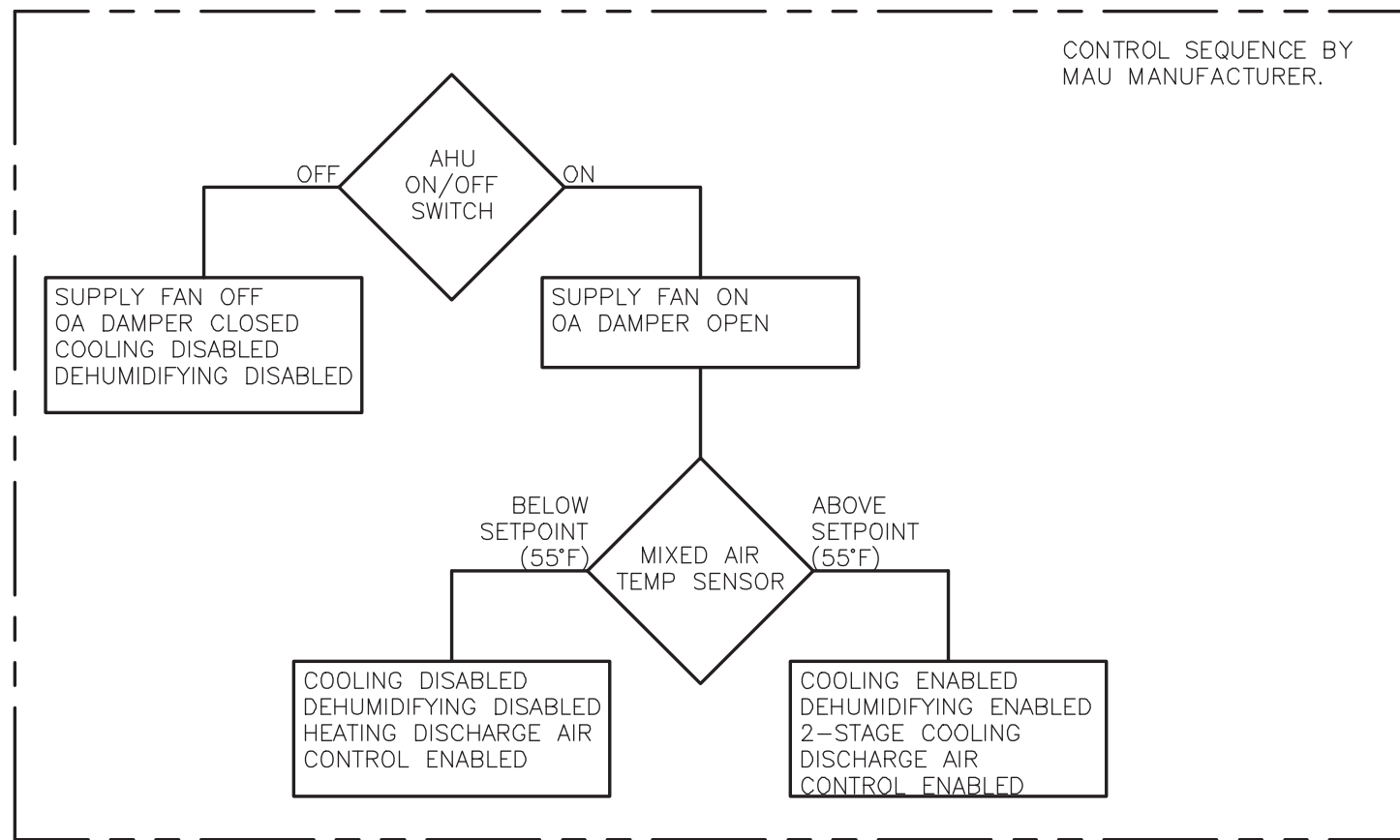
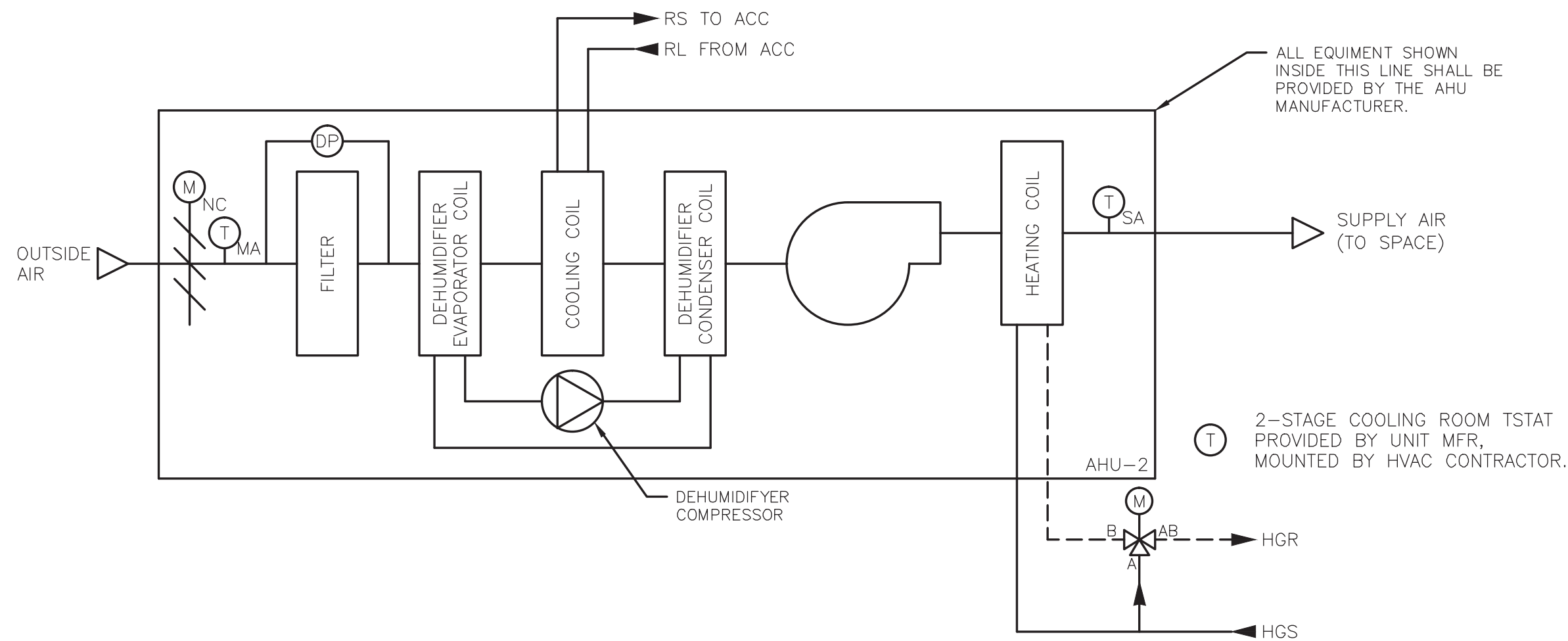


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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED		
CHECKER D. WERME	DATE 1/07	TITLE AUTOMATIC TEMPERATURE CONTROL DIAGRAMS II		
ENGINEER D. FLAHERTY	DATE 12/06			
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT		
FILENAME: HPRDI201		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1		
		CONTRACT NO. 01-H	DWG. H-20	REV A

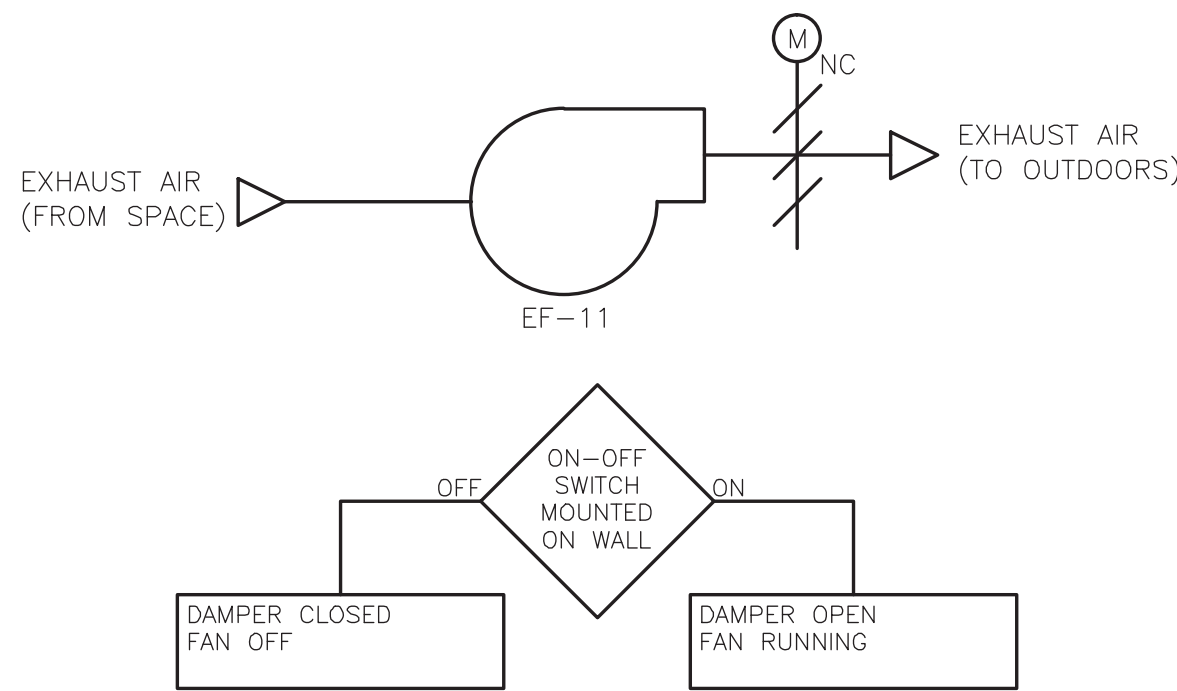
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DWG.
NO.

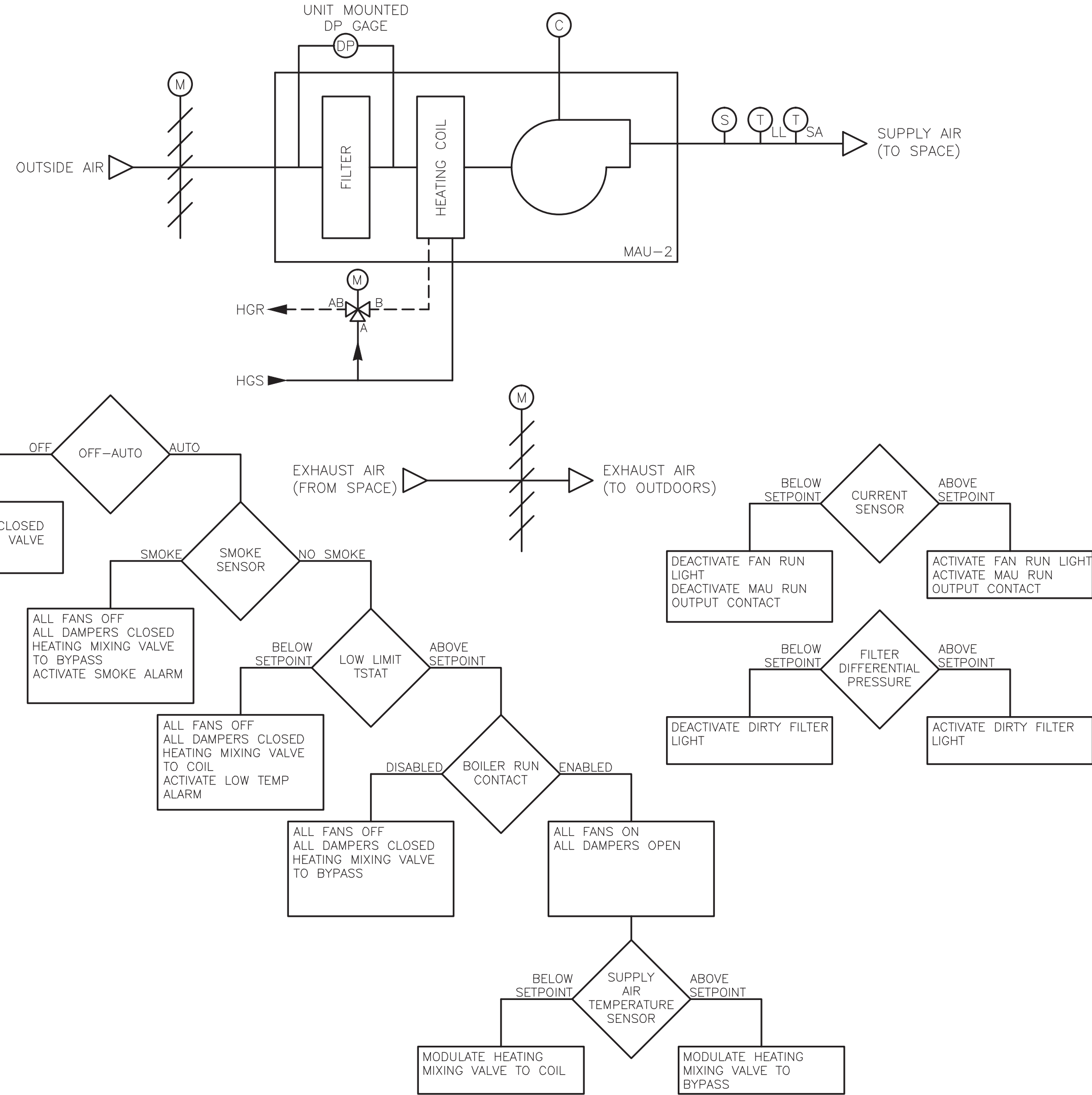


- NOTES:
1. PROVIDE A PANEL MOUNTED ON/OFF SWITCH.
 2. PROVIDE PANEL LIGHTS FOR BLOWER STATUS, COOLING STATUS AND DIRTY FILTER INDICATION.
 3. ALL PANEL SWITCHES AND PANEL LIGHTS SHALL BE MOUNTED IN THE UNIT REMOTE CONTROL PANEL SUPPLIED BY UNIT MANUFACTURER.
 4. IN FIRST STAGE OF COOLING BOTH COOLING AND DEHUMIDIFYING SHALL BE ENABLED. IN SECOND STAGE OF COOLING ONLY COOLING SHALL BE ENABLED AND DEHUMIDIFYING SHALL BE DISABLED.

AHU-2 CONTROL SEQUENCE



EF-11 CONTROL SEQUENCE



MAU-7 CONTROL SEQUENCE

- NOTES:
1. PROVIDE GENERAL ALARM LIGHT IN ATC-PNL-2 WHICH WILL BE ACTIVATED WHEN ANY ALARM IN THE SEQUENCE IS ACTIVATED.
 2. EQUIPMENT STATUS, ON-OFF SWITCHING, SENSOR READINGS AND SETPOINTS SHALL BE AVAILABLE VIA A LCD SCREEN IN THE EQUIPMENT CONTROLLERS.

RECORD DRAWING

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BY: CAMP DRESSER & MCKEE DATE: OCTOBER 2008

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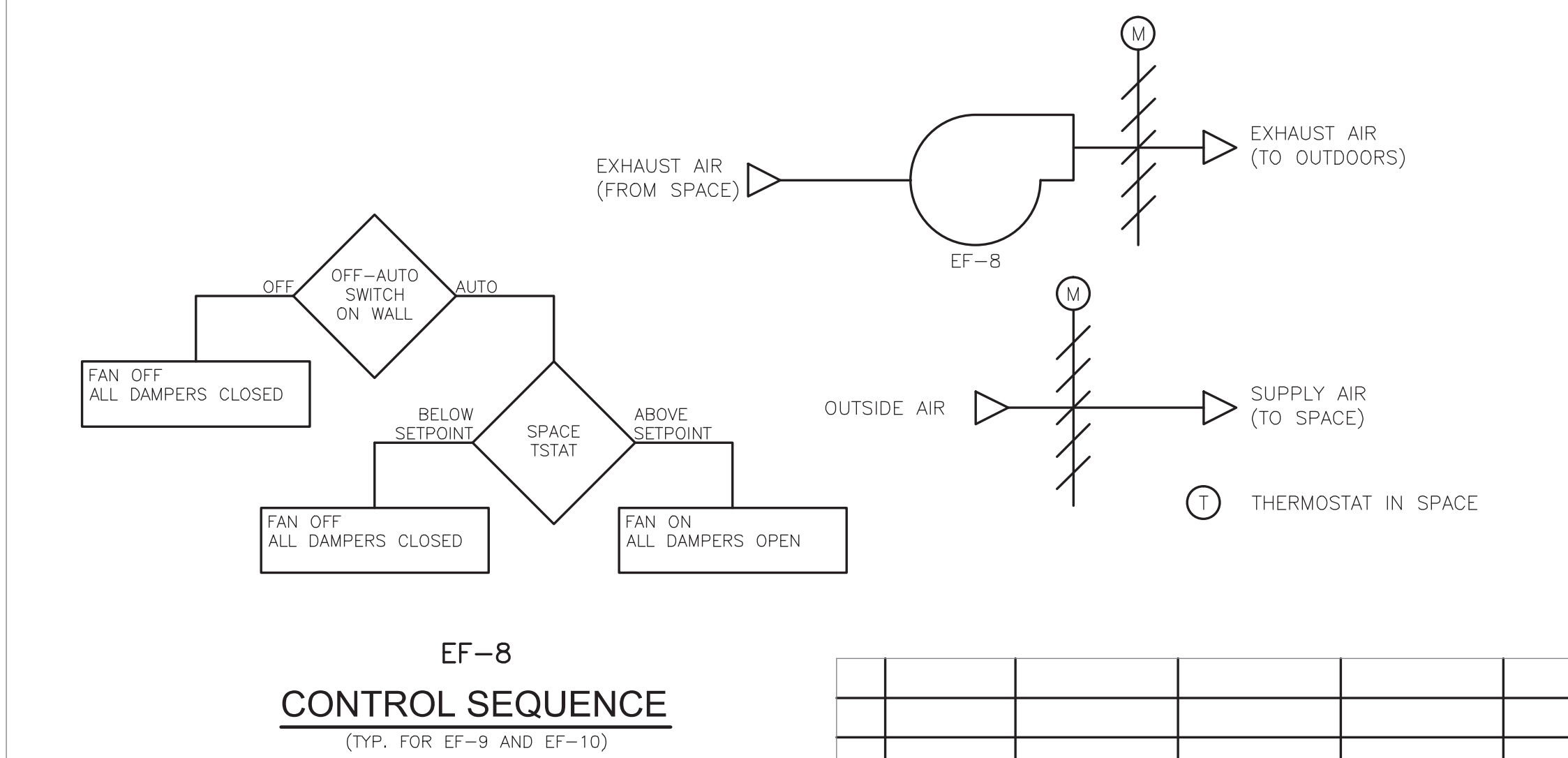
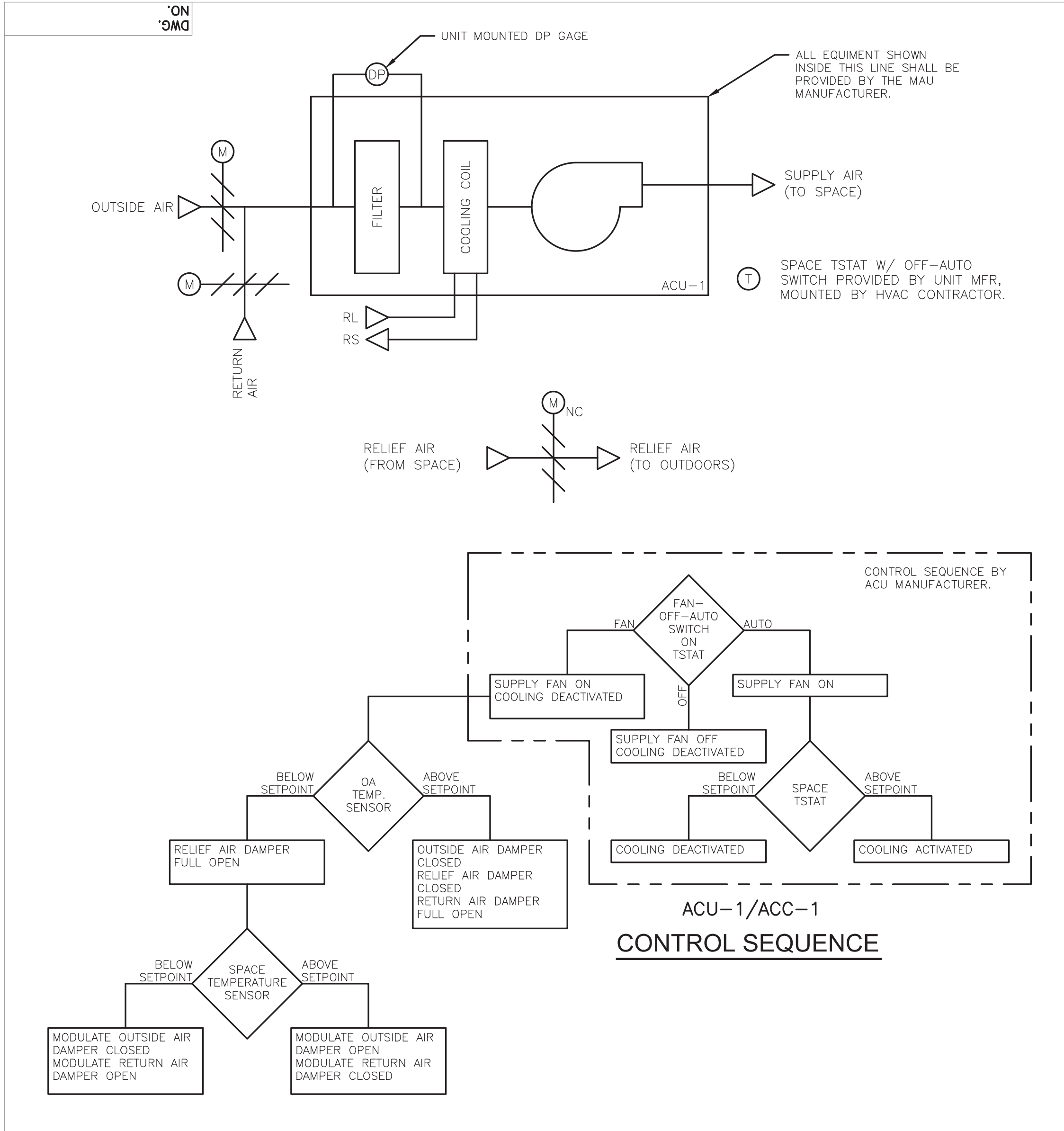
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
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2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE AUTOMATIC TEMPERATURE CONTROL DIAGRAMS III	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRD1202		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
CONTRACT NO.	01-H	DWG. NO.	H-21 REV A

J:\30447\48248\REC_DWG\HVAC\ HPRD\203 10/21/08 08:32 larsonej XREFS: BDR22-34



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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008

CDM

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REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
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PROJECT NUMBER 2600904

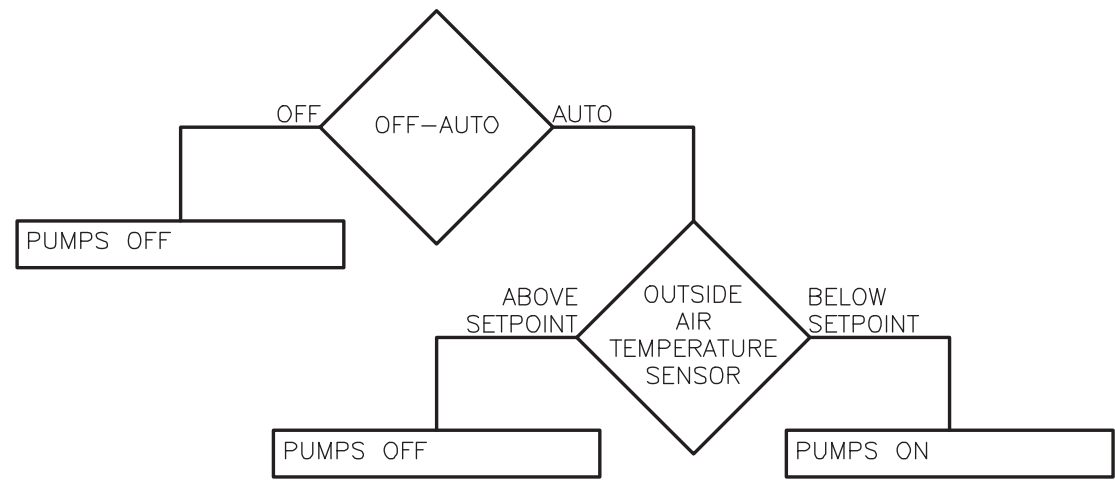
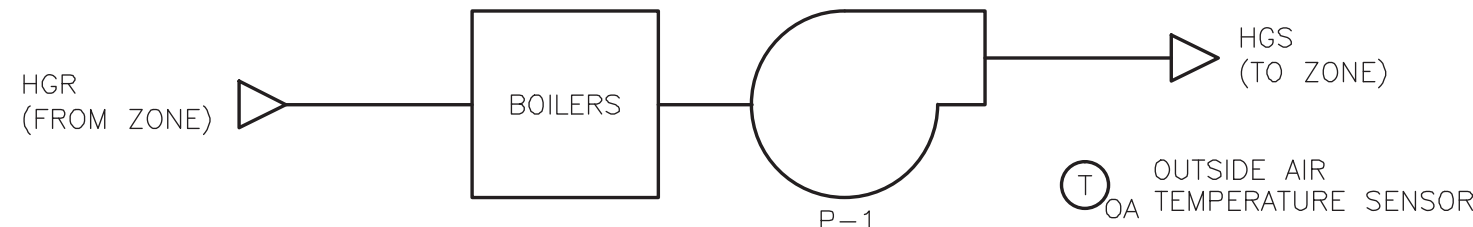


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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE AUTOMATIC TEMPERATURE CONTROL DIAGRAMS IV	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRD1203		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
CONTRACT NO.	01-H	DWG. NO.	H-22 REV A

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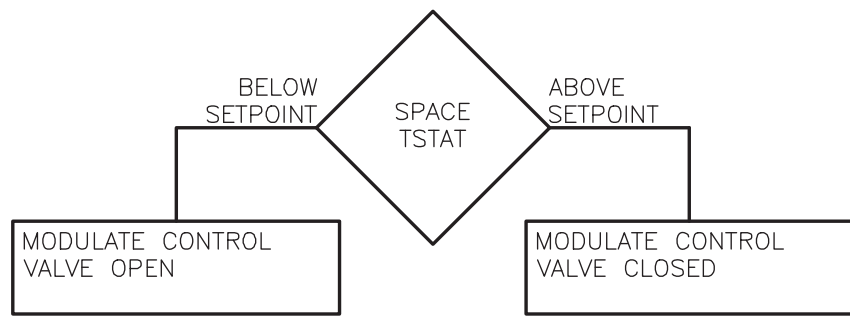
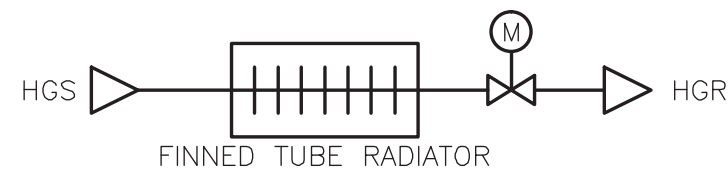
DWG. NO.



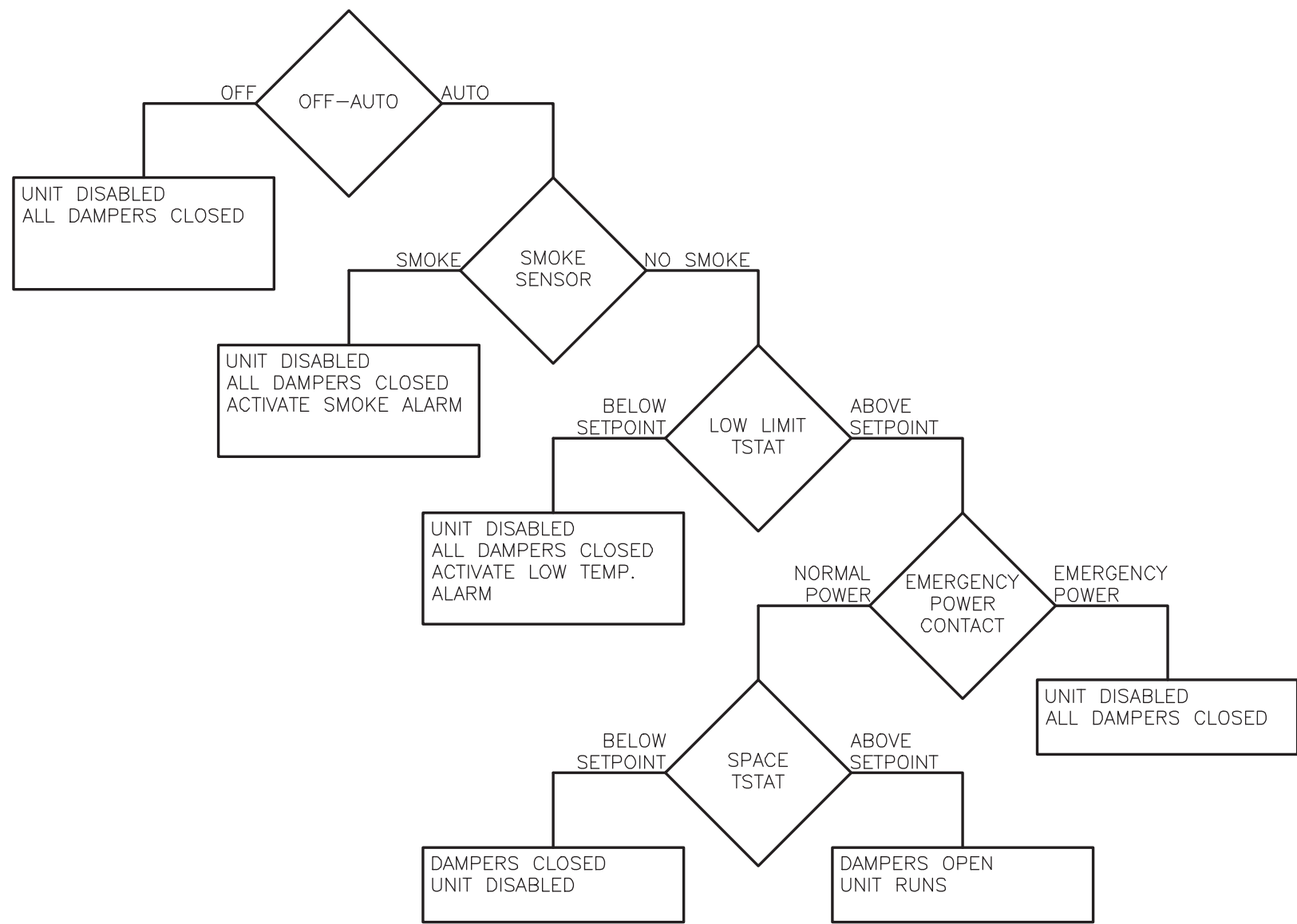
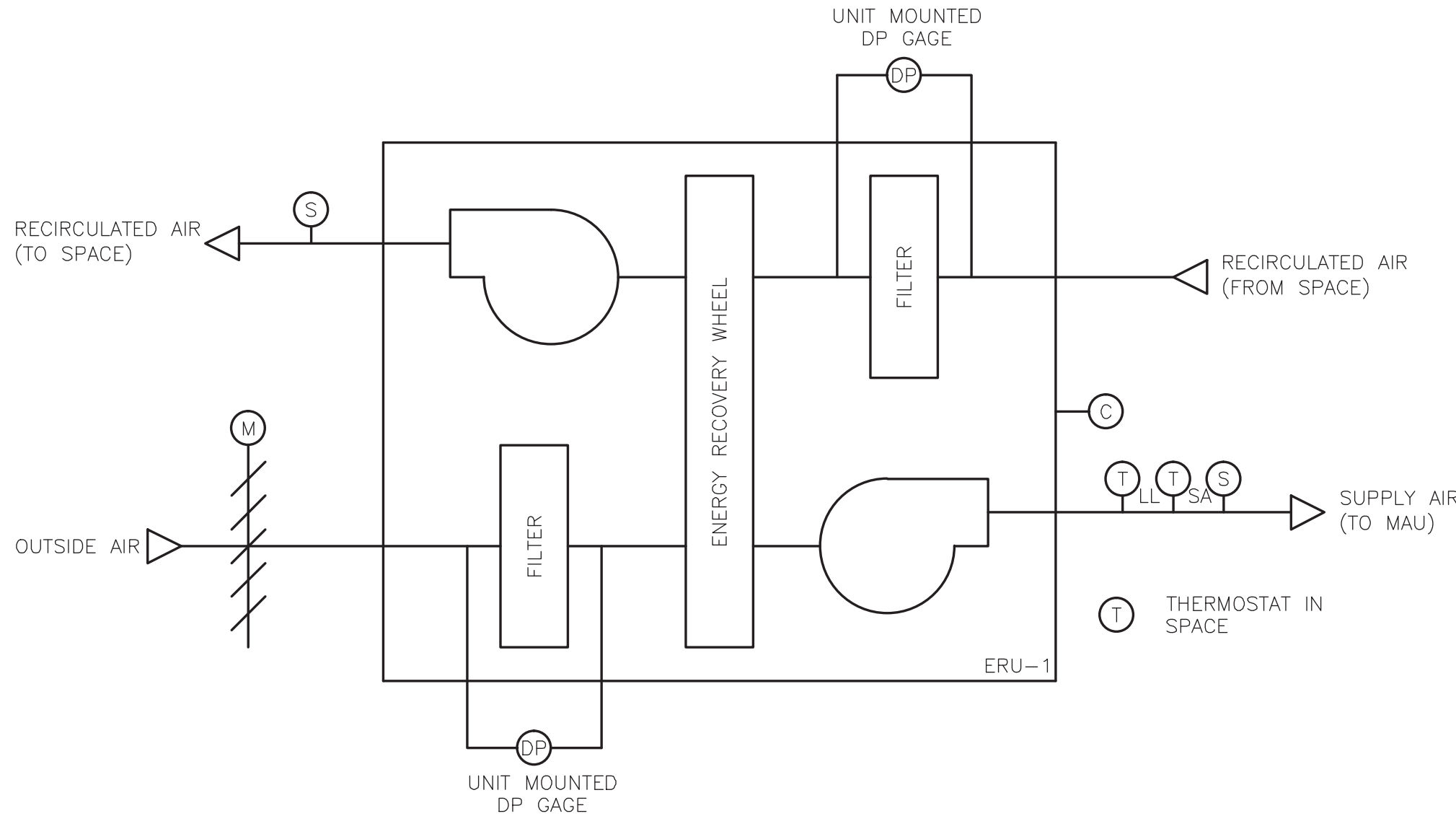
P-1
CONTROL SEQUENCE
(TYP. FOR P-3 & P-4)

NOTES:

1. PROVIDE GENERAL ALARM LIGHT IN ATC-PNL-4 WHICH WILL BE ACTIVATED WHEN ANY ALARM IN THE SEQUENCE IS ACTIVATED.
2. EQUIPMENT STATUS, ON-OFF SWITCHING, SENSOR READINGS AND SETPOINTS SHALL BE AVAILABLE VIA A LCD SCREEN IN THE EQUIPMENT CONTROLLERS.



**FINNED TUBE RADIATORS
CONTROL SEQUENCE**



ERU-1
CONTROL SEQUENCE

NOTES:

1. PROVIDE GENERAL ALARM LIGHT IN ATC-PNL-5 WHICH WILL BE ACTIVATED WHEN ANY ALARM IN THE SEQUENCE IS ACTIVATED.
2. EQUIPMENT STATUS, ON-OFF SWITCHING, SENSOR READINGS AND SETPOINTS SHALL BE AVAILABLE VIA A LCD SCREEN IN THE EQUIPMENT CONTROLLERS.

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BY: CAMP DRESSER & MCKEE Date: OCTOBER 2008
CDM

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3	04/10	JJS			REVISED FOR THE RECORD
2	10/08	EJL	TAL	TAL	REVISED FOR THE RECORD
1	1/08	MM	DF	JJ	SHEET REVISED PER VALUE ENGINEERING RECOMMENDATIONS
REV. NO.	ISSUE DATE	DRAWN BY	CHECKED BY	APPROVED BY	DESCRIPTION
		DRAFTING		ENGINEERING	
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DESIGNER D. FLAHERTY	DATE 12/06	SCALE AS NOTED	
CHECKER D. WERME	DATE 1/07	TITLE AUTOMATIC TEMPERATURE CONTROL DIAGRAMS V	
ENGINEER D. FLAHERTY	DATE 12/06		
MANAGER J. JACOBS	DATE 4/07	PROJECT WESTERN RAMAPO ADVANCED WASTEWATER TREATMENT PLANT PROJECT	
FILENAME: HPRD1204		CLIENT ROCKLAND COUNTY SEWER DISTRICT No. 1	
CONTRACT NO.	01-H	DWG. NO.	H-23 REV A