U.S. Army Environmental Center
Environmental Technology Division
Edgewood Area
Aberdeen Proving Ground, Maryland

EVALUATION OF A TRANSPORTABLE HOT-GAS DECONTAMINATION SYSTEM FOR THE DECONTAMINATION OF EXPLOSIVES - CONTAMINATED DEBRIS & PIPING

Operations & Maintenance Manual

AS-BUILT DRAWINGS

VOLUME II

WESTON® MANAGERS DESIGNERS/CONSULTANTS 96P-2943

DISCLAIMER NOTICE

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FURNACE EQUIPMENT

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRIPTI
F928-01 (Sheet 1)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 2)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 3)	B	8/1/96	WIRING DIAGRAM: M
F298-01 (Sheet 4)	B	8/1/96	WIRING DIAGRAM: M
F298-02 (Sheet 1)	B	8/1/96	MODEL FBG5610: GE
F298-02 (Sheet 2)	B	8/1/96	MODEL FBG5610: GE
F298-03	B	8/1/96	COMBUSTION SCHEM
1300-01	-	12/27/95	INTERCONNECT DUC
1300-02	-	1/1/96	EXHAUST PLENUM AS
1300-03	-	1/8/96	EXHAUST PLENUM DE

FURNACE EQUIPMENT

EQUIPMENT

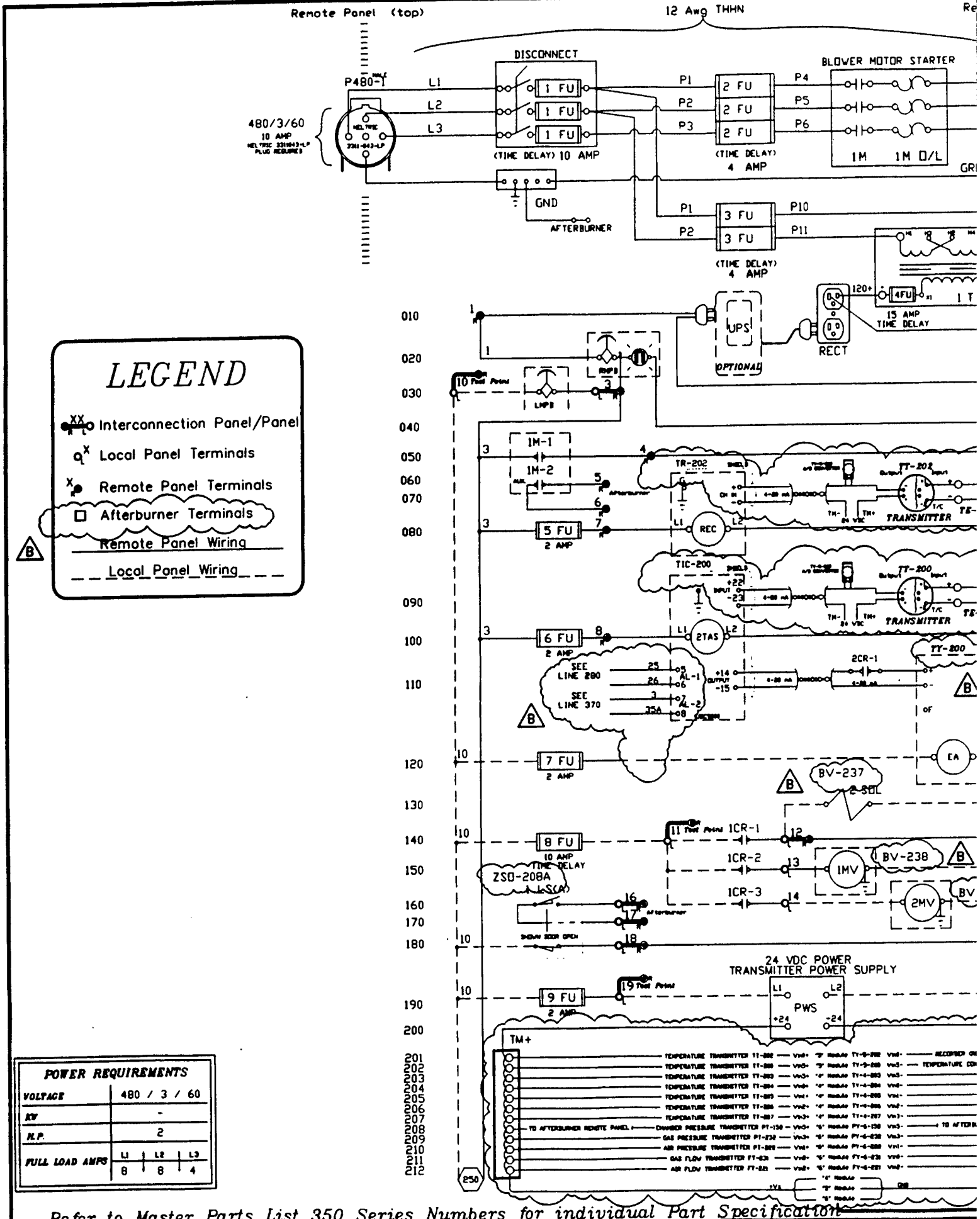
DRAWING DESCRIPTION

WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE
WIRING DIAGRAM: MODEL FBG5610 GAS FIRED FURNACE

MODEL FBG5610: GENERAL DIMESION & ASSEMBLY
MODEL FBG5610: GENERAL DIMESION & ASSEMBLY

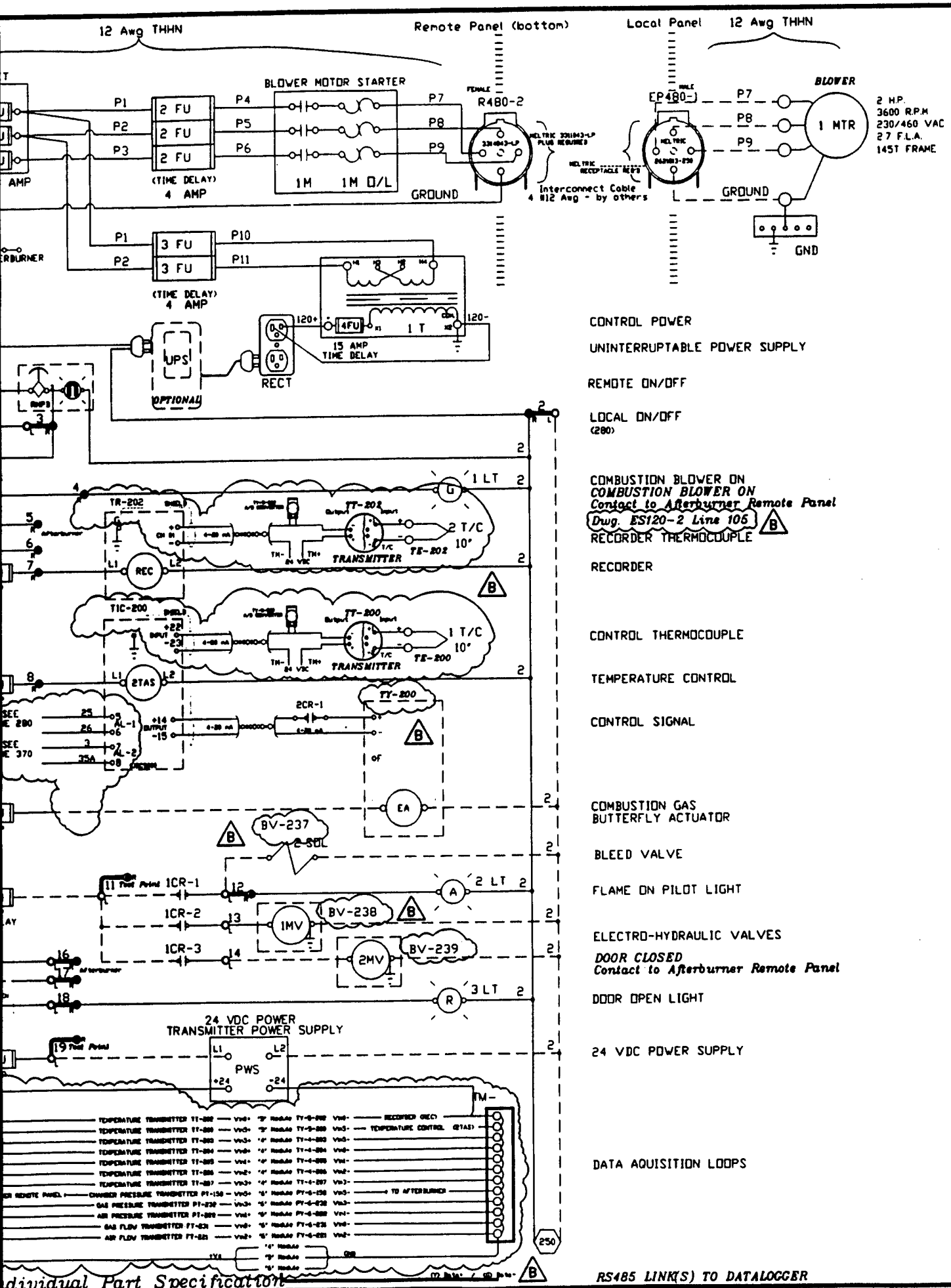
COMBUSTION SCHEMATIC

INTERCONNECT DUCT
EXHAUST PLENUM ASSEMBLY
EXHAUST PLENUM DETAILS



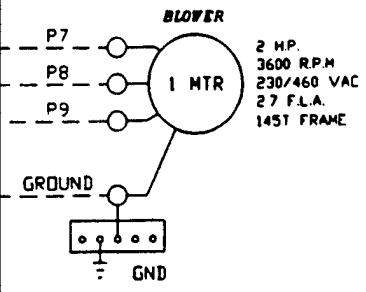
POWER REQUIREMENTS			
VOLTAGE	480 / 3 / 60		
KW	-		
H.P.	2		
FULL LOAD AMPS	L1	L2	L3
	8	8	4

Refer to Master Parts List 350 Series Numbers for individual Part Specification



Individual Part Specification

12 Awg THHN



POWER SUPPLY

ER ON
TER ON
rner Remote Panel
e 105
B
COUPLE

UPLE

ROL

OR

IGHT

C VALVES

rner Remote Panel

PPLY

OOPS

DATALOGGER

CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBC5610-1 (1294LL)

DATE : 9/28/94 *BY :* S.N.L.

APPROVED BY : COLLEEN A. PARKER (CUSTOMER)

DATE : 8/1/96

REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	5.25.95	AS BUILT

L & L SPECIAL FURNACE CO, INC.

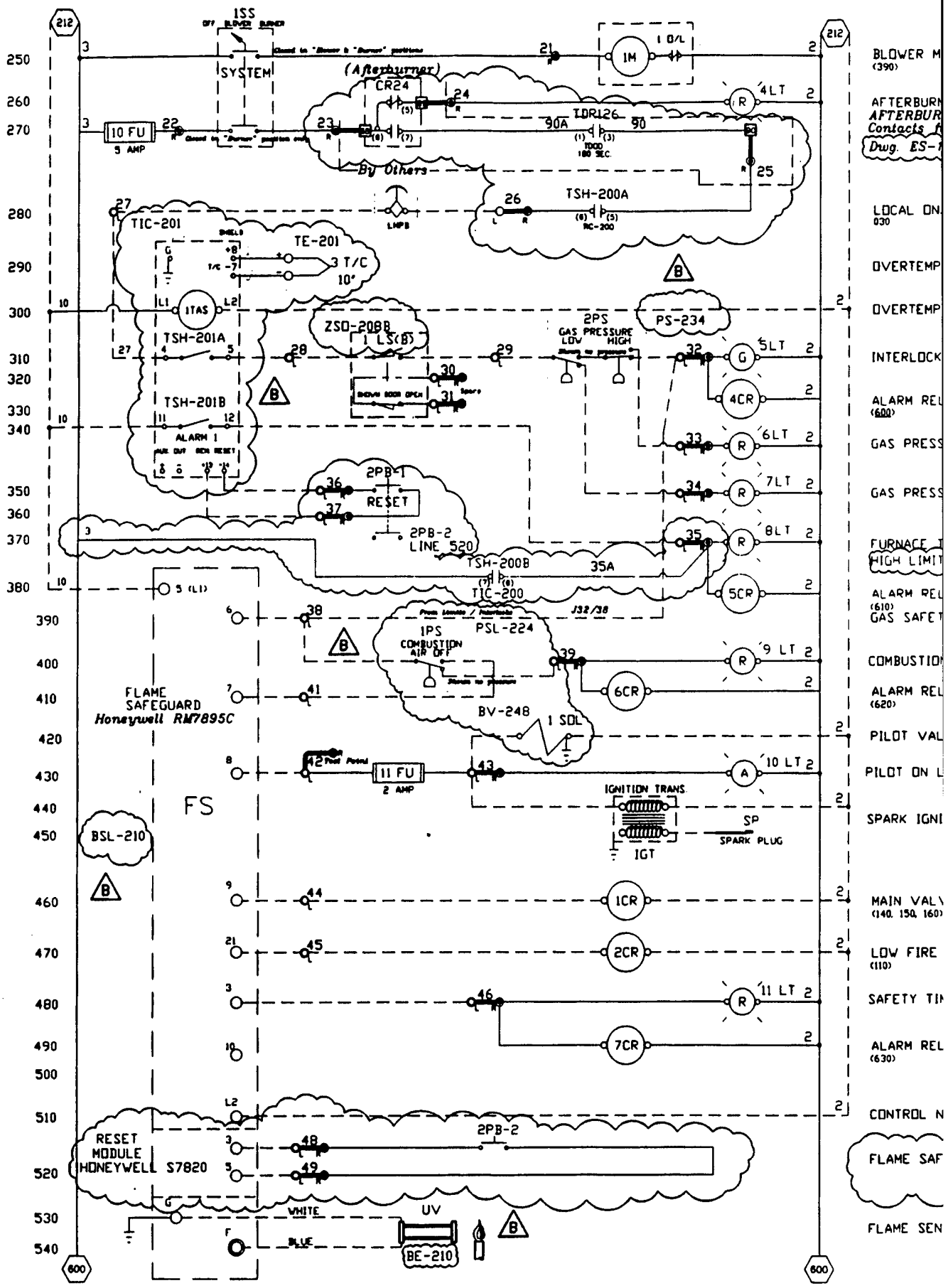
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

TITLE

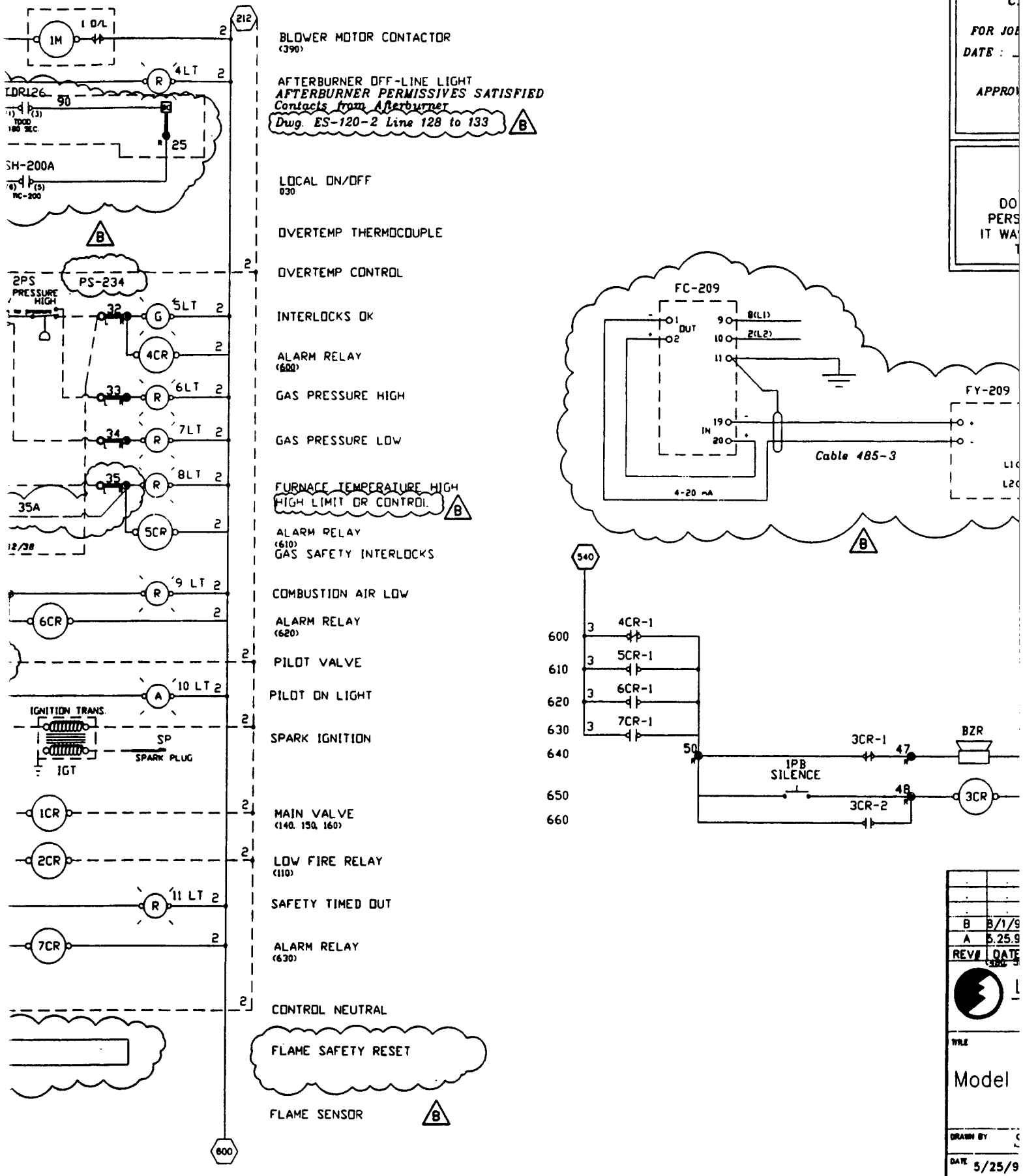
WIRING DIAGRAM
Model FBG5610 Gas Fired Furnace

DRAWN BY S.N.L.		REV. CODE	DRAWING NO.
DATE 5/25/95	SCALE .125	B	F928-01
CHK .	APP .		
JOB NO WES-FBG5610	SER NO 1294LL		SHEET NO. 1 OF 4
FILE NAME F:\L\W\WESTON\F928-01.DWG		MADE FROM F928-01 (Hamilton Standard)	

(3)



Refer to Master Parts List 350 Series Numbers for individual Part Specification



REV#	DATE
B	8/1/9
A	5.25.9

TITLE: Model

DRAWN BY

DATE 5/25/9

CHK

JOB NO WES-FB

FILE NAME

dual Part Specification

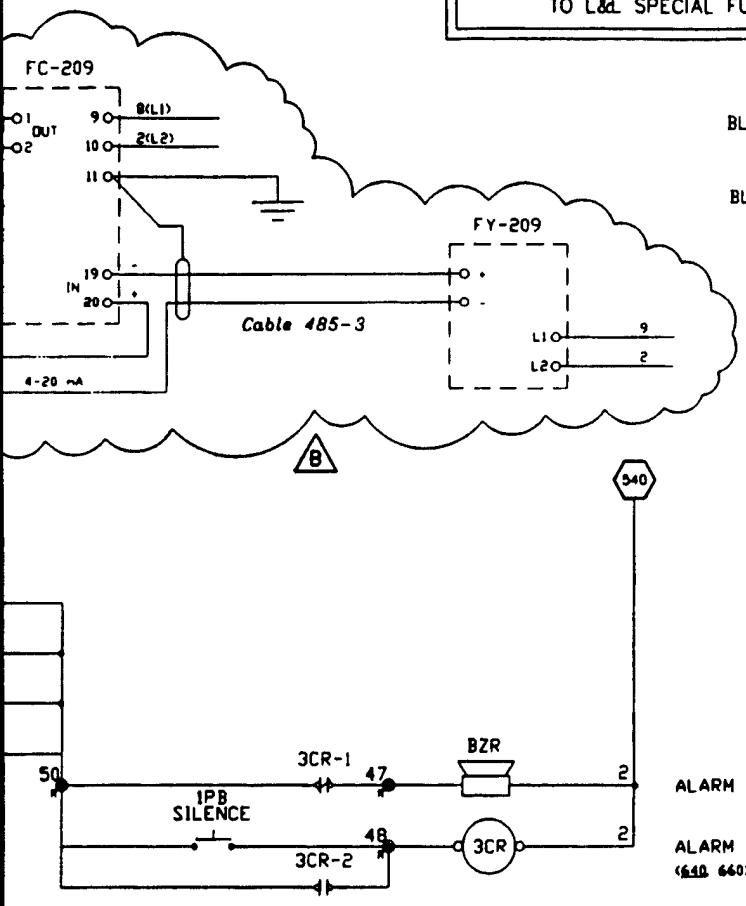
CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1 (1294LL)

DATE : 9/28/94 BY : S.N.L.

APPROVED BY : COLLEEN A PARKER (CUSTOMER)

DATE : 8/1/96



BLEED AIR CONTROLLER

BLEED AIR ACTUATOR

ALARM BUZZER

ALARM ACKNOWLEDGE RELAY

(640 660)

REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	5.25.95	AS BUILT

L & L SPECIAL FURNACE CO, INC.

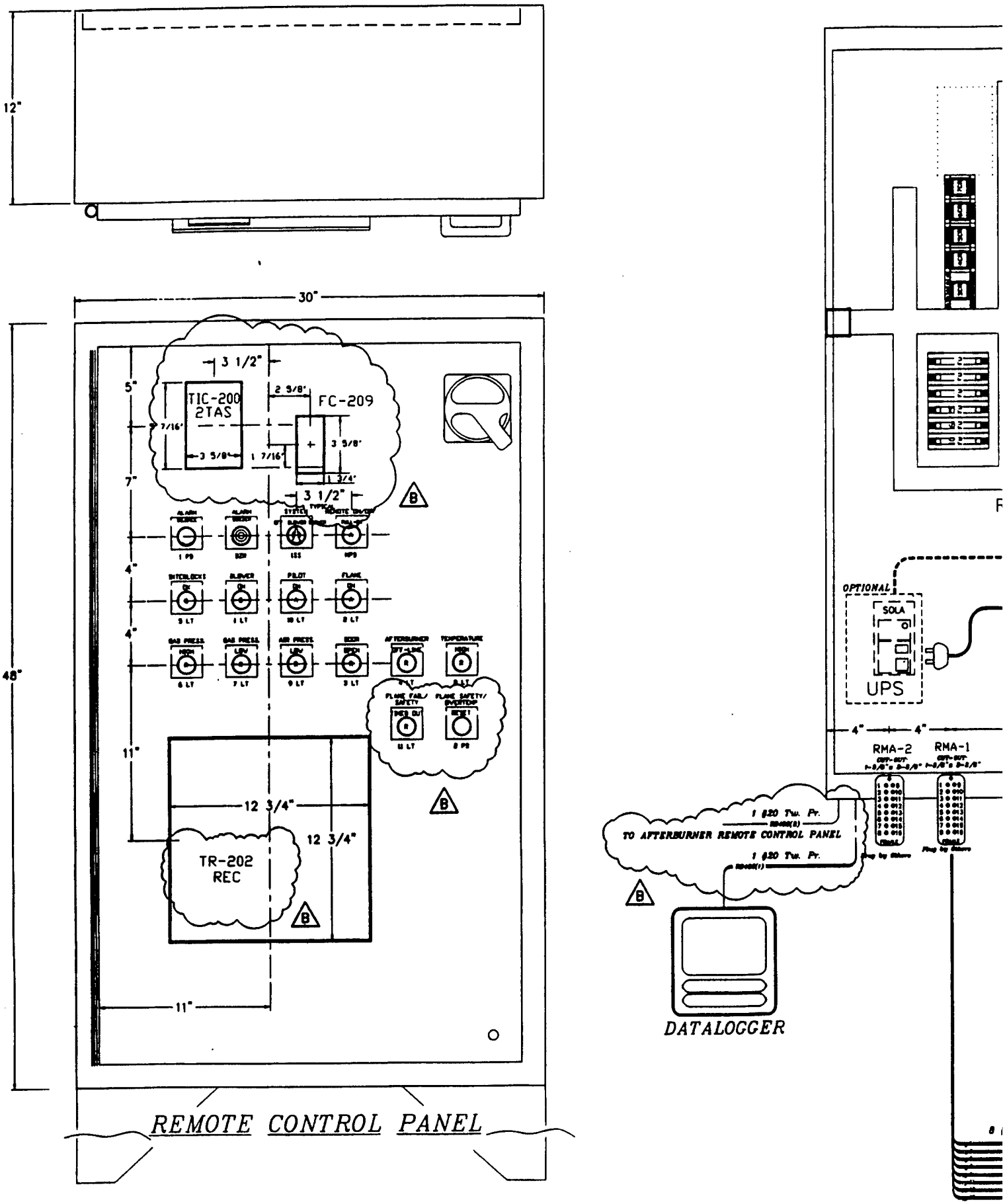
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

TITLE

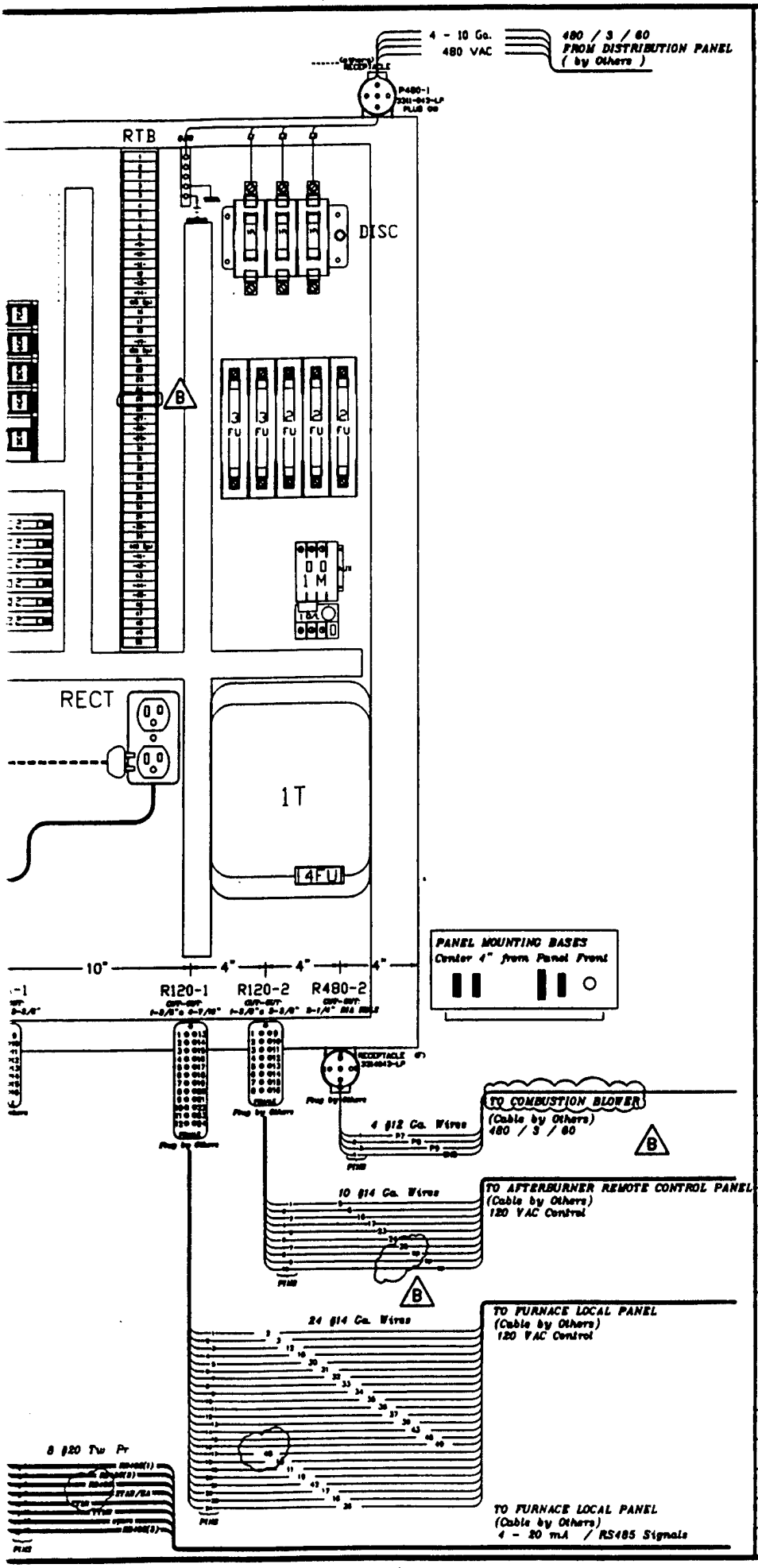
WIRING DIAGRAM
Model FBG5610 Gas Fired Furnace

DRAWN BY: S.N.L.		REV. CODE: B	DRAWING NO: F928-01
DATE: 5/25/95	SCALE: .125		
CHK:	APP:		
JOB NO: WES-FBG5610	SER NO: 1294LL		SHEET NO: 2 OF 4
FILE NAME: F:\E\W\WESTON\F928-01.DWG		MADE FROM: F928-01 (Hamilton Standard)	

(3)



Refer to Master Parts List 350 Series Numbers for individual Part Specification



CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1 (1294LL)

DATE : 9/28/94 BY : S.N.L.

APPROVED BY : COLLEEN A. PARKER (CUSTOMER)

DATE : 8/1/96

REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	6.25.95	AS BUILT

L & L SPECIAL FURNACE CO, INC.

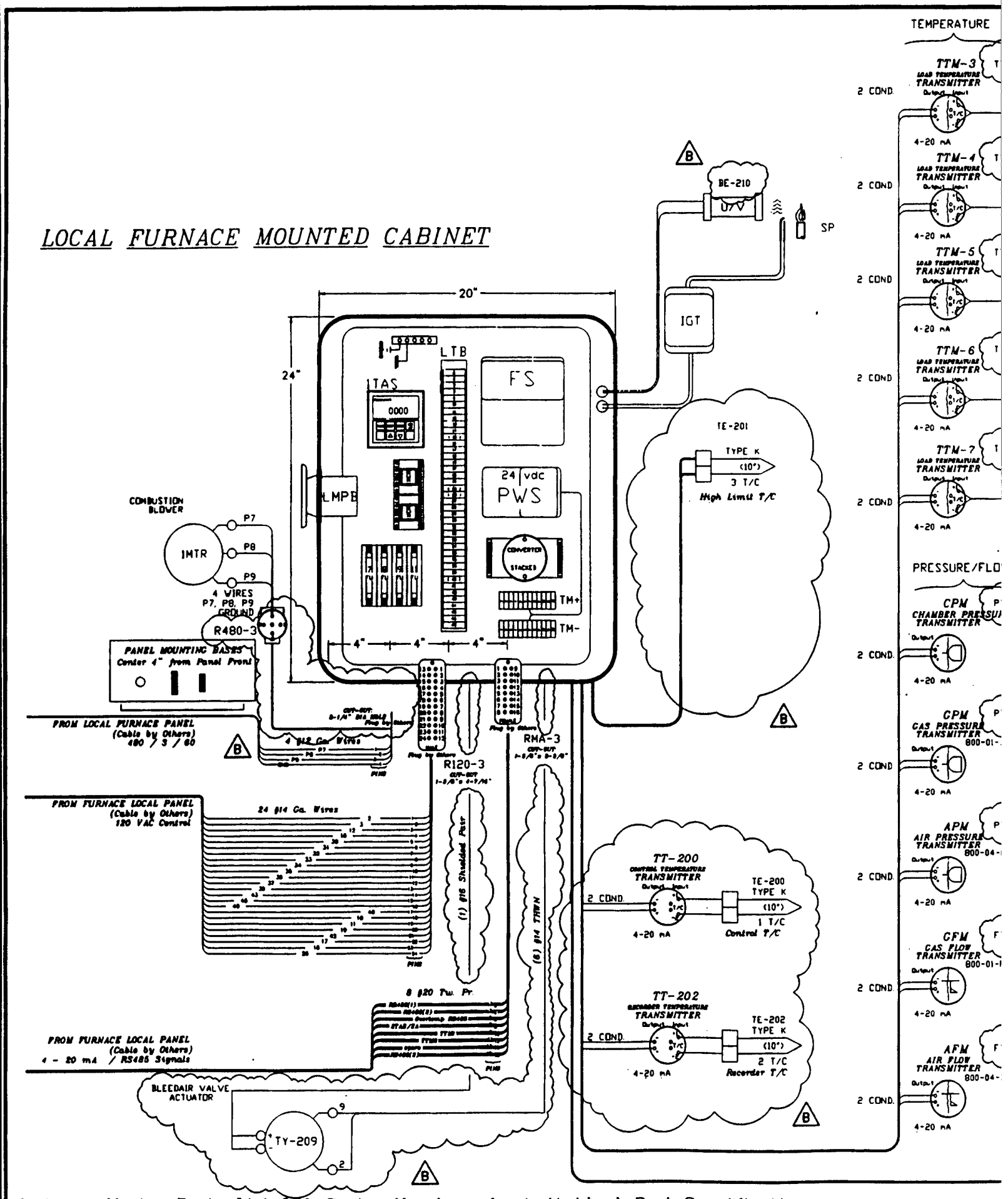
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

TITLE

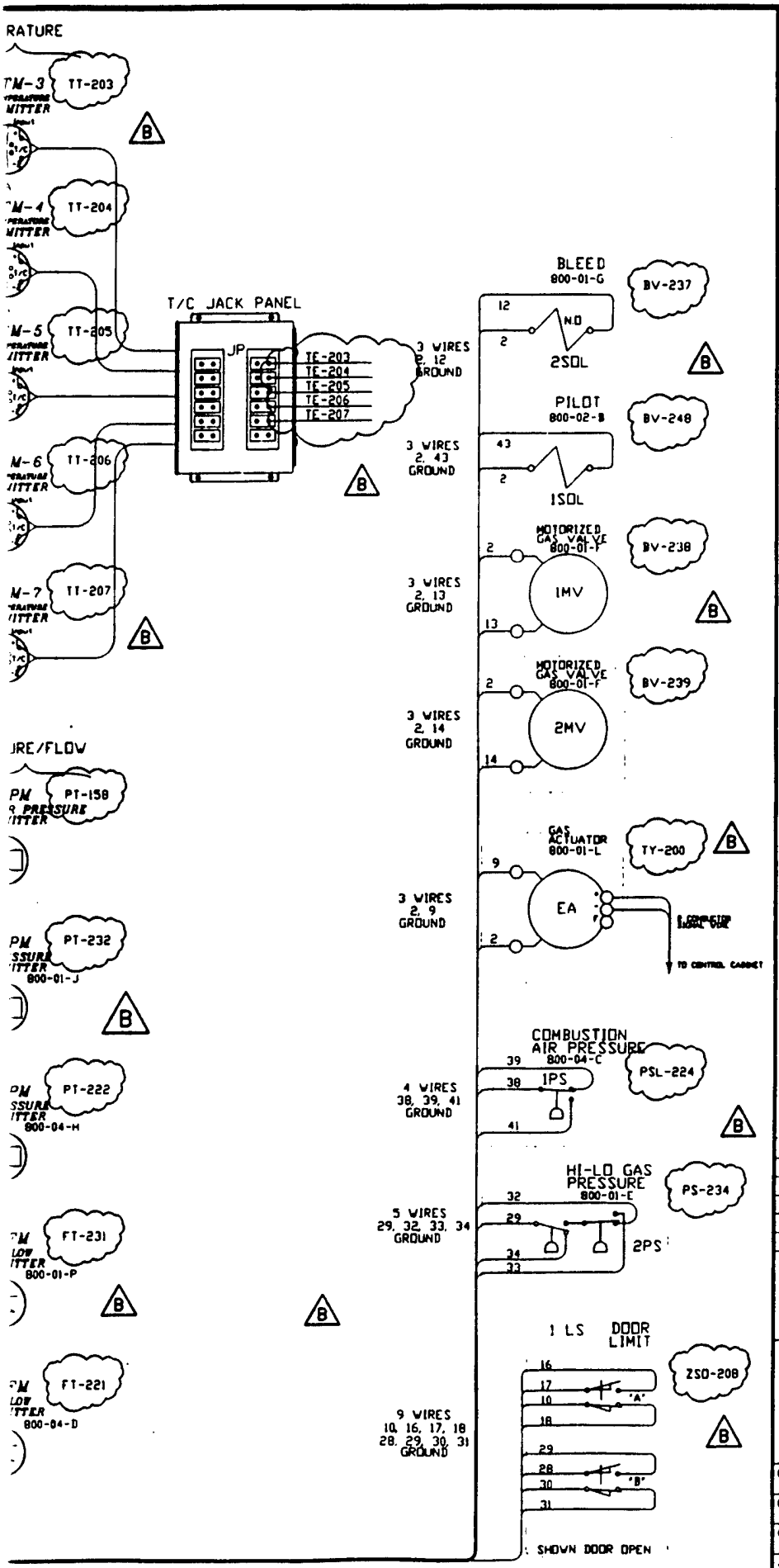
WIRING DIAGRAM
Model FBG5610 Gas Fired Furnace

DRAWN BY S.N.L.		REV. CODE B	DRAWING NO F928-01
DATE 5/25/95	SCALE .25		
CHK	APP		
JOB NO WES-FBG5610	SER NO 1294LL		SHEET NO. 3 OF 4
FILE NAME F:\E\W\WESTON\F928-01.DWG		MADE FROM F878-01 (Hamilton Standard)	

(2)



Refer to Master Parts List 350 Series Numbers for individual Part Specification



CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1 (1294LL)

DATE : 9/28/94 BY : S.N.L.

APPROVED BY . COLLEEN A. PARKER (CUSTOMER)

DATE : 8/1/96

REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	6.25.95	

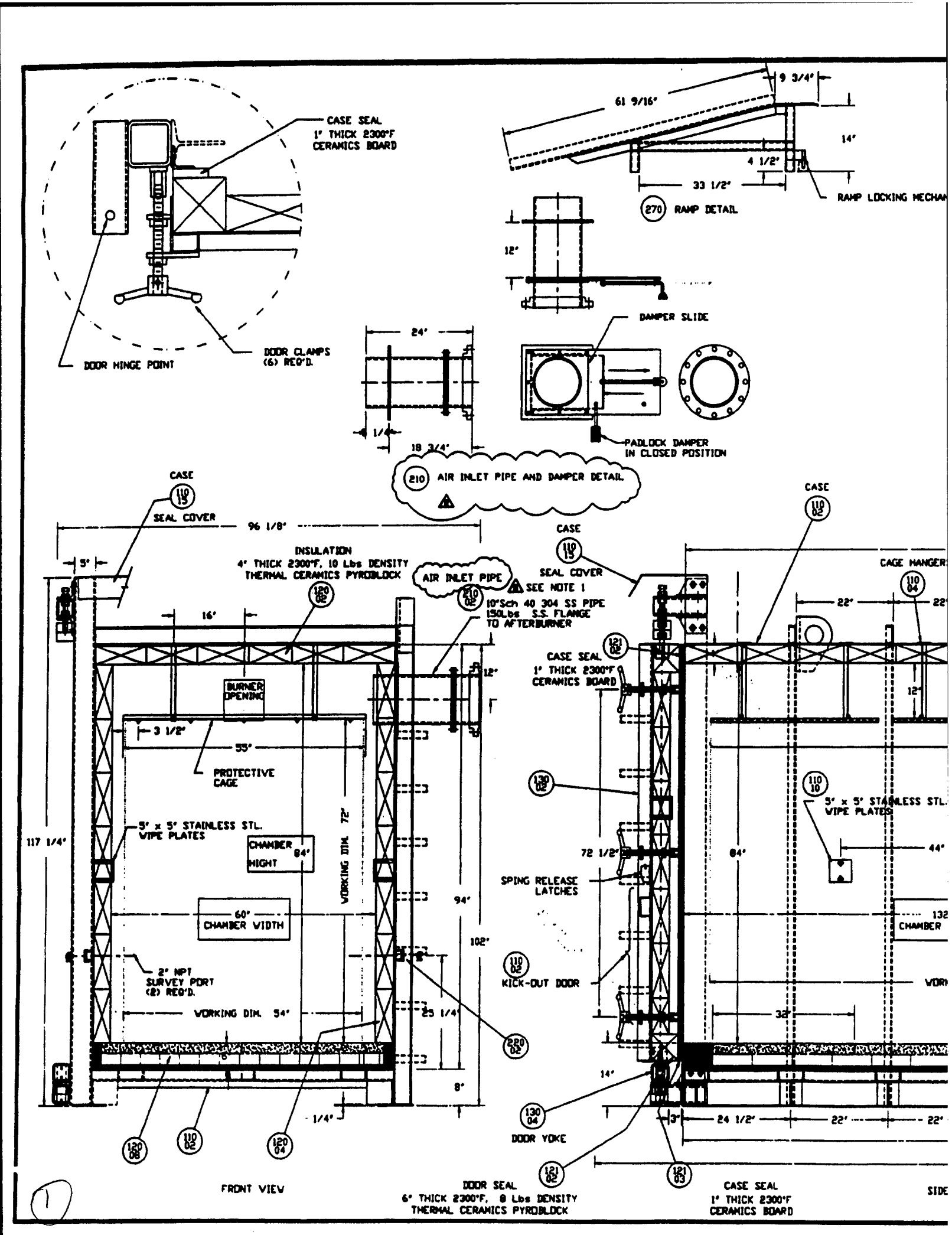
L & L SPECIAL FURNACE CO, INC.
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

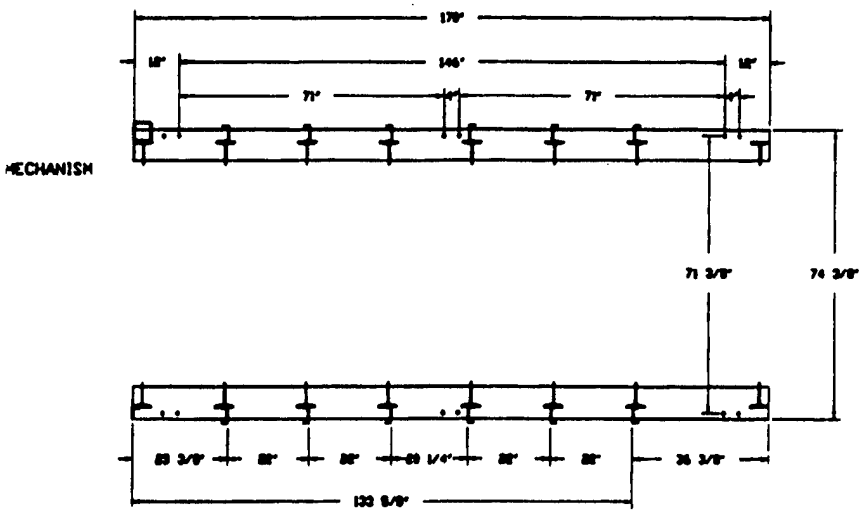
TITLE

WIRING DIAGRAM
Model FBG5610 Gas Fired Furnace

DRAWN BY S.N.L.		REV. CODE	DRAWING NO.
DATE 5/25/95	SCALE .125	B	F928-01
CHK .	APP .		
JOB NO WES-FBG5610	SER NO 1294LL		SHEET NO. 4 OF 4
FILE NAME		MADE FROM	

(2)


CASE SEAL
1" THICK 2300°F
CERAMICS BOARD
DOOR HINGE POINT
DOOR CLAMPS
(6) REQ'D.
61 9/16"
9 3/4"
14"
4 1/2"
33 1/2"
RAMP LOCKING MECHAN
270 RAMP DETAIL
12"
DAMPER SLIDE
24"
1/4"
18 3/4"
PADLOCK DAMPER
IN CLOSED POSITION
210 AIR INLET PIPE AND DAMPER DETAIL
CASE
110 15
SEAL COVER
96 1/8"
5"
INSULATION
4" THICK 2300°F, 10 Lbs DENSITY
THERMAL CERAMICS PYROBLOCK
AIR INLET PIPE
210 02
SEE NOTE 1
10"Sch 40 304 SS PIPE
150Lbs S.S. FLANGE
TO AFTERBURNER
120 02
16"
12"
BURNER OPENING
3 1/2"
55"
PROTECTIVE CAGE
5" x 5" STAINLESS STL.
WIPE PLATES
117 1/4"
CHAMBER HIGHT 84"
WORKING DIM. 72"
94"
60"
CHAMBER WIDTH
102"
2" NPT
SURVEY PORT
(2) REQ'D.
WORKING DIM. 54"
23 1/4"
220 02
8"
1/4"
120 08
110 02
120 04
FRONT VIEW
CASE
110 02
CASE
110 15
SEAL COVER
CAGE HANGER
110 04
22"
22"
121 02
CASE SEAL
1" THICK 2300°F
CERAMICS BOARD
12"
130 02
110 10
5" x 5" STAINLESS STL.
WIPE PLATES
44"
72 1/2"
84"
SPING RELEASE
LATCHES
132
CHAMBER
110 02
KICK-OUT DOOR
WORK
32"
14"
130 04
DOOR YOKE
3"
24 1/2"
22"
22"
121 02
121 03
DOOR SEAL
6" THICK 2300°F, 8 Lbs DENSITY
THERMAL CERAMICS PYROBLOCK
CASE SEAL
1" THICK 2300°F
CERAMICS BOARD
SIDE



FOUNDATION LAYOUT

MAJOR SPECIFICATIONS	
VOLTAGE	480 VAC/ 3/ 60
HP / AMPS	2 HP / 10 AMPS
MAXIMUM BTUS/HOUR	1,000,000
GAS INLET PRESSURE	5 PSI
MAX TEMP	1200°F
WORKING DIMENSIONS	54" W x 72" H x 120" D
CHAMBER DIMENSIONS	60" W x 84" H x 132" D
HEARTH	CASTABLE SECTIONS
MAX LOAD	3000 Lbs
GAS BURNER SYSTEM	ECLIPSE HVTA 104
ATMOSPHERE	AIR
CIRCULATION	BURNER VELOCITY
DOOR	DOUBLE PIVOTED HORIZONTAL
PAINT / FINISH	BLACK HIGH TEMP PRIMER WITH GREY-GREEN ENAMEL

CERTIFIED FOR CONSTRUCTION

FOR JOB #: WES-FBG5610-1

SERIAL NO: S/N 1294LL

DATE: 10.11.94 BY: Gregory D. Lewicki

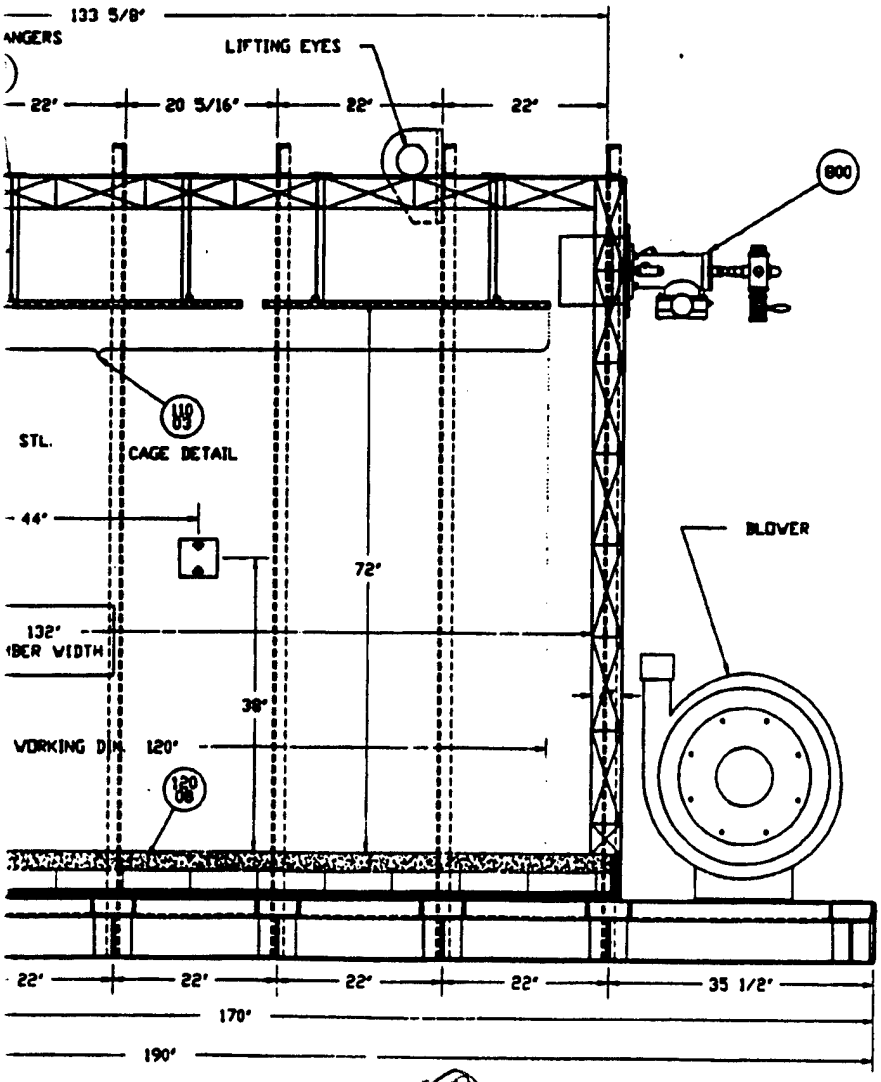
APPROVED BY: COLLEEN A. PARKER

DATE: 8/1/96 (CONTROLLER)

NOTES:

1. SEE WESTON DRAWINGS 1300-01, 02, & 03 FOR EXHAUST DUCT MODIFICATIONS.

DO NOT SCALE THIS DRAWING.
REFERENCED SCALE WAS CHANGED IN ORDER TO FIT THE DRAWING ON THE STANDARD SIZE DRAWING SHEET



SIDE VIEW

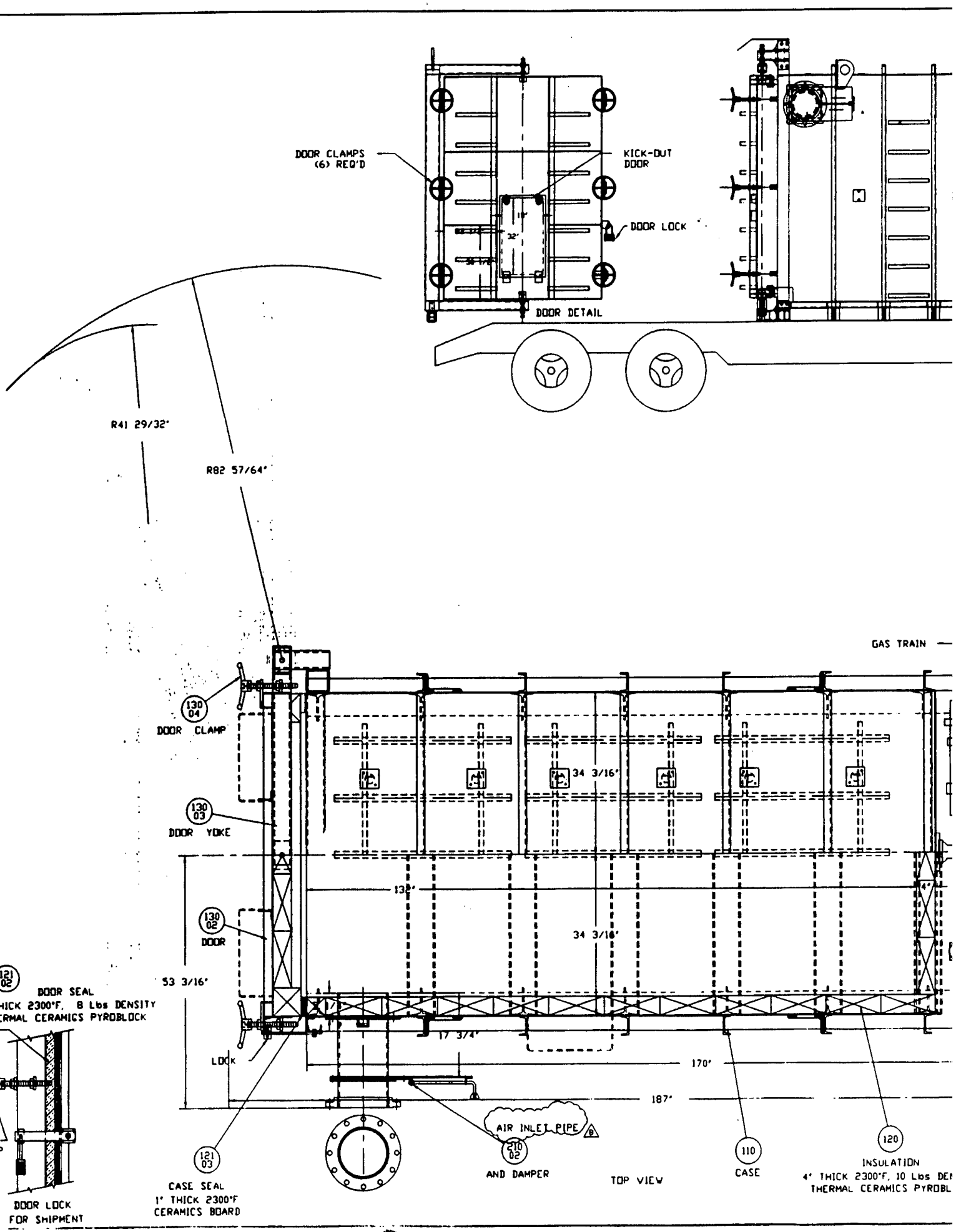
(2)

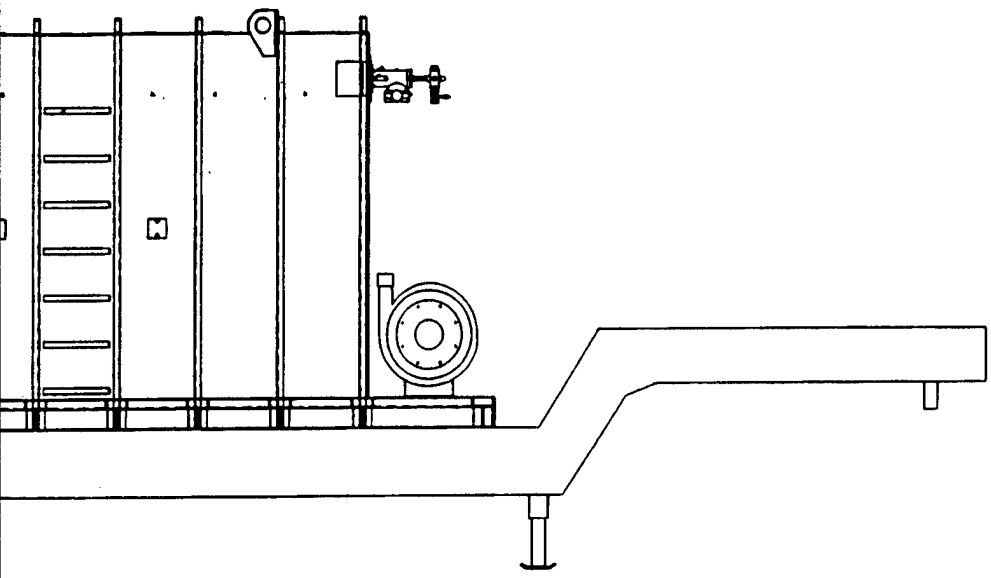
REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	8/1/95	AS BUILT

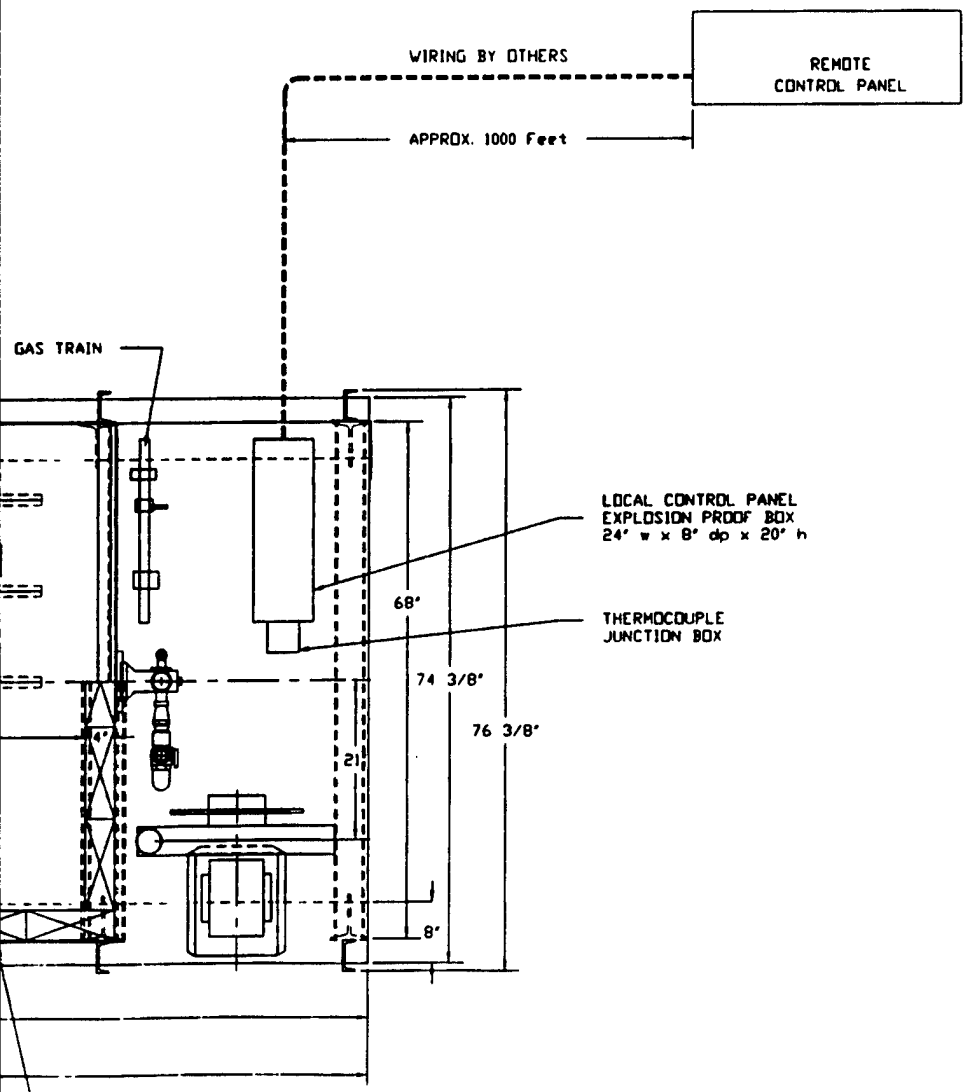
L & L SPECIAL FURNACE CO, INC
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

TITLE: MODEL FBG5610 GENERAL DIMENSION AND ASSEMBLY

DRAWN BY: Andre Merdjanian		REV. CODE: B	DRAWING NO.: F928-02
DATE: 9-28-94	SCALE: -		
CHK:	APP:		
JOB NO.: WES-FBG5610-1	SER NO: 1294LL		SHEET NO.: 1 OF 2
FILE NAME: F:\L\PJ\WESTON\FBG5610\F928-02		MADE FROM: SCRATCH	


DOOR CLAMPS
(6) REQ'D
KICK-OUT
DOOR
DOOR LOCK
DOOR DETAIL
R41 29/32"
R82 57/64"
GAS TRAIN
130
04
DOOR CLAMP
130
03
DOOR YOKE
130
02
DOOR
34 3/16"
34 3/16"
53 3/16"
17 3/4"
LOCK
170"
187"
121
02
DOOR SEAL
6" THICK 2300°F, 8 Lbs DENSITY
THERMAL CERAMICS PYROBLOCK
DOOR
CLAMP
DOOR LOCK
FOR SHIPMENT
121
03
CASE SEAL
1" THICK 2300°F
CERAMICS BOARD
AIR INLET PIPE
210
02
AND DAMPER
TOP VIEW
110
CASE
120
INSULATION
4" THICK 2300°F, 10 Lbs DE
THERMAL CERAMICS PYROBL





NSULATION
00°F, 10 Lbs DENSITY
ERAMICS PYROBLOCK

MAJOR SPECIFICATIONS	
VOLTAGE	480 VAC/ 3/ 60
HP / AMPS	2 HP / 10 AMPS
MAXIMUM BTUS/HOUR	1,000,000
GAS INLET PRESSURE	5 PSI
MAX TEMP	1200°F
WORKING DIMENSIONS	54" W x 72" H x 120" D
CHAMBER DIMENSIONS	60" W x 84" H x 132" D
HEARTH	CASTABLE SECTIONS
MAX LOAD	3000 Lbs
GAS BURNER SYSTEM	ECLIPSE HVTA 104
ATMOSPHERE	AIR
CIRCULATION	BURNER VELOCITY
DOOR	DOUBLE PIVOTED HORIZONTAL
PAINT / FINISH	BLACK HIGH TEMP PRIMER WITH GREY-GREEN ENAMEL

CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1
SERIAL NO S/N 1294LL
DATE 10.11.94 BY Gregory D. Lewicki

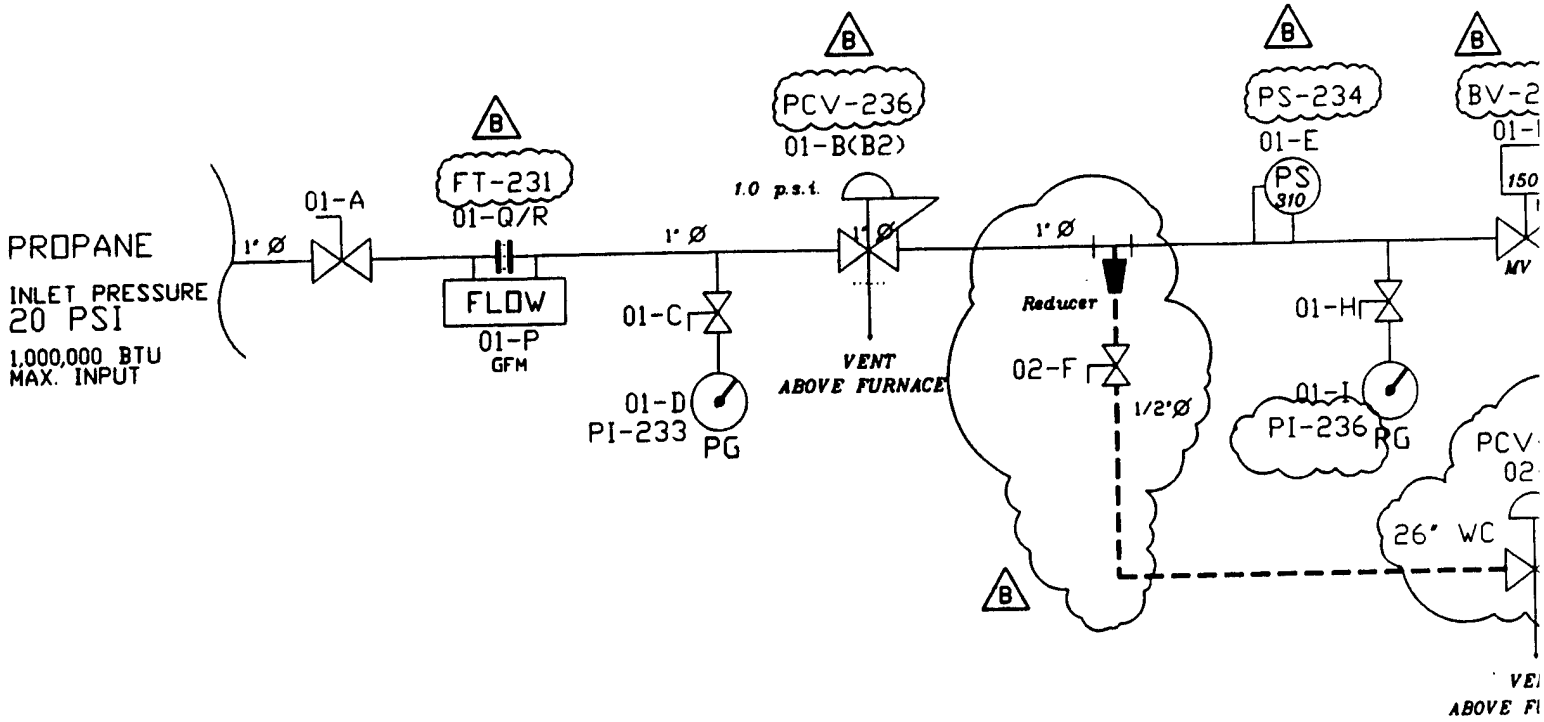
APPROVED BY C.A. Parke
DATE 8/1/96 (CUSTOMER)

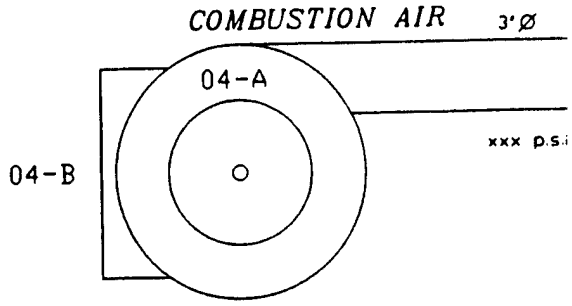
REV#	DATE	REVISION DESCRIPTION
B	8/1/96	FIELD MODIFICATIONS
A	5/1/95	AS BUILT

L & L SPECIAL FURNACE CO, INC
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

TITLE
MODEL FBG5610 GENERAL DIMENSION AND ASSEMBLY

DRAWN BY Andre Merdjanian		REV CODE B	DRAWING NO F928-02
DATE 9-28-94	SCALE -		
CHK .	APP .		
JOB NO WES-FBG5610-1	SER NO 1294LL		SHEET NO 2 OF 2
FILE NAME F:\E\W\WESTON\FBG5610\F928-02		MADE FROM SCRATCH	





COMBUSTION AIR BLOWER

LEGEND:

800-01-..... ------ MAIN GAS TRAIN
800-02-..... ------ PILOT GAS TRAIN
800-03-..... ------ HVTA SYSTEM
800-04-..... ------ COMBUSTION AIR SYSTEM
800-05-..... ------ FLAME SAFETY & IGNITION SYSTEM

150 GFM } *Cross Reference to Electrical Drawing (F928-01)*

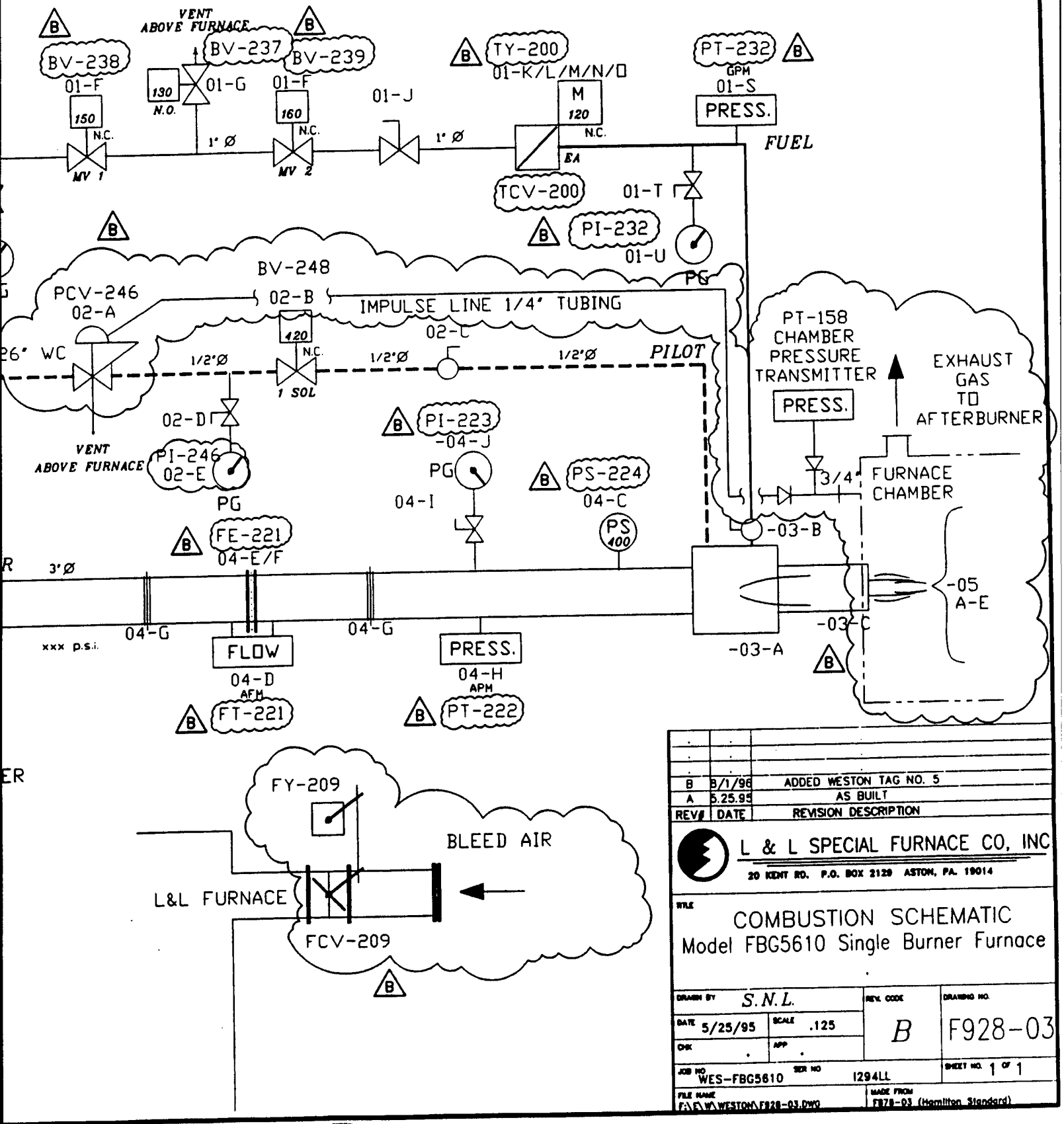
CERTIFIED FOR CONSTRUCTION

FOR JOB # WES-FBG5610-1 (1294LL)

DATE : 9/28/94 BY : S.N.L

APPROVED BY _____ (CUSTOMER)

DATE : _____



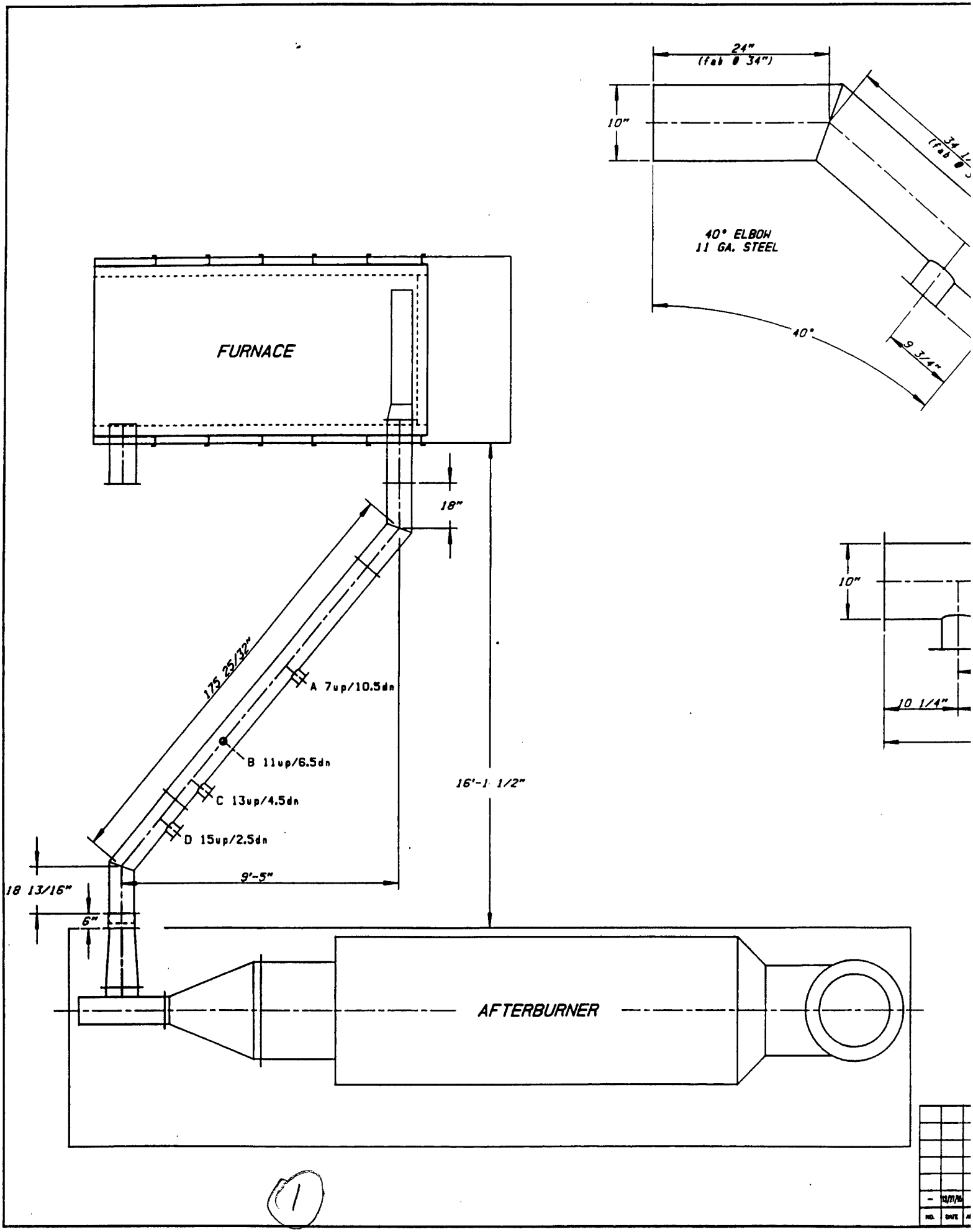
REV#	DATE	REVISION DESCRIPTION
B	8/1/96	ADDED WESTON TAG NO. 5
A	5.25.95	AS BUILT

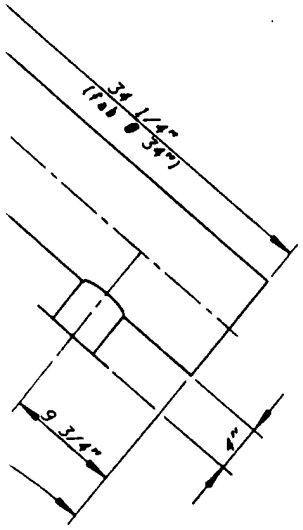
L & L SPECIAL FURNACE CO, INC
20 KENT RD. P.O. BOX 2129 ASTON, PA. 19014

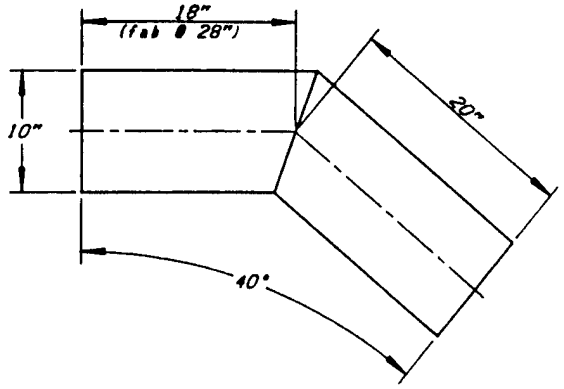
TITLE
COMBUSTION SCHEMATIC
Model FBG5610 Single Burner Furnace

DRAWN BY S.N.L.		REV. CODE	DRAWING NO.
DATE 5/25/95	SCALE .125	B	F928-03
CHK .	APP .		
JOB NO WES-FBG5610	SER NO 1294LL		SHEET NO. 1 OF 1
FILE NAME F:\E\WA\WESTON\F928-03.DWG		MADE FROM F928-03 (Hamilton Standard)	

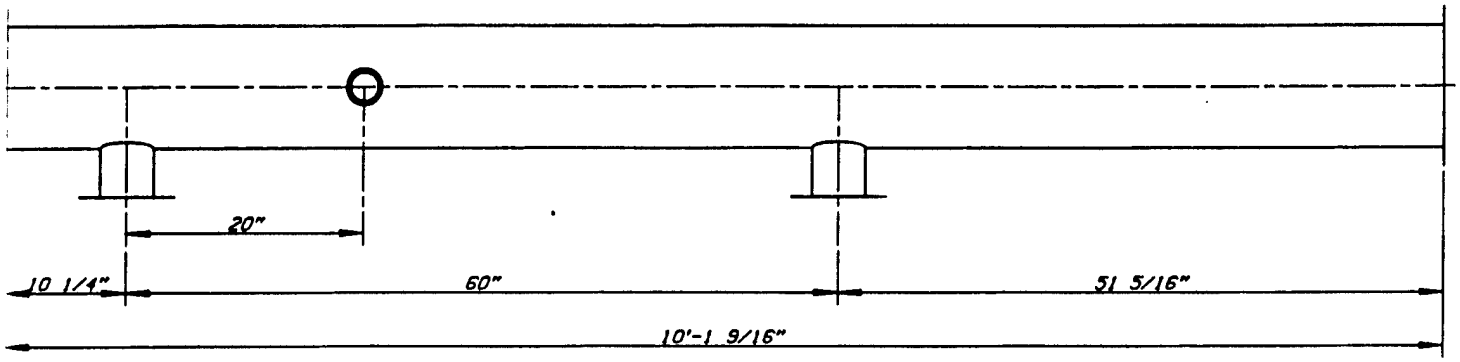
(2)


24"
(fab @ 34")
10"
34 1/2"
(fab @
40° ELBOW
11 GA. STEEL
40°
9 3/4"
FURNACE
18"
10"
10 1/4"
175 25/32"
A 7up/10.5dn
B 11up/6.5dn
C 13up/4.5dn
D 15up/2.5dn
16'-1 1/2"
9'-5"
18 13/16"
6"
AFTERBURNER





40° ELBOW
11 GA. STEEL



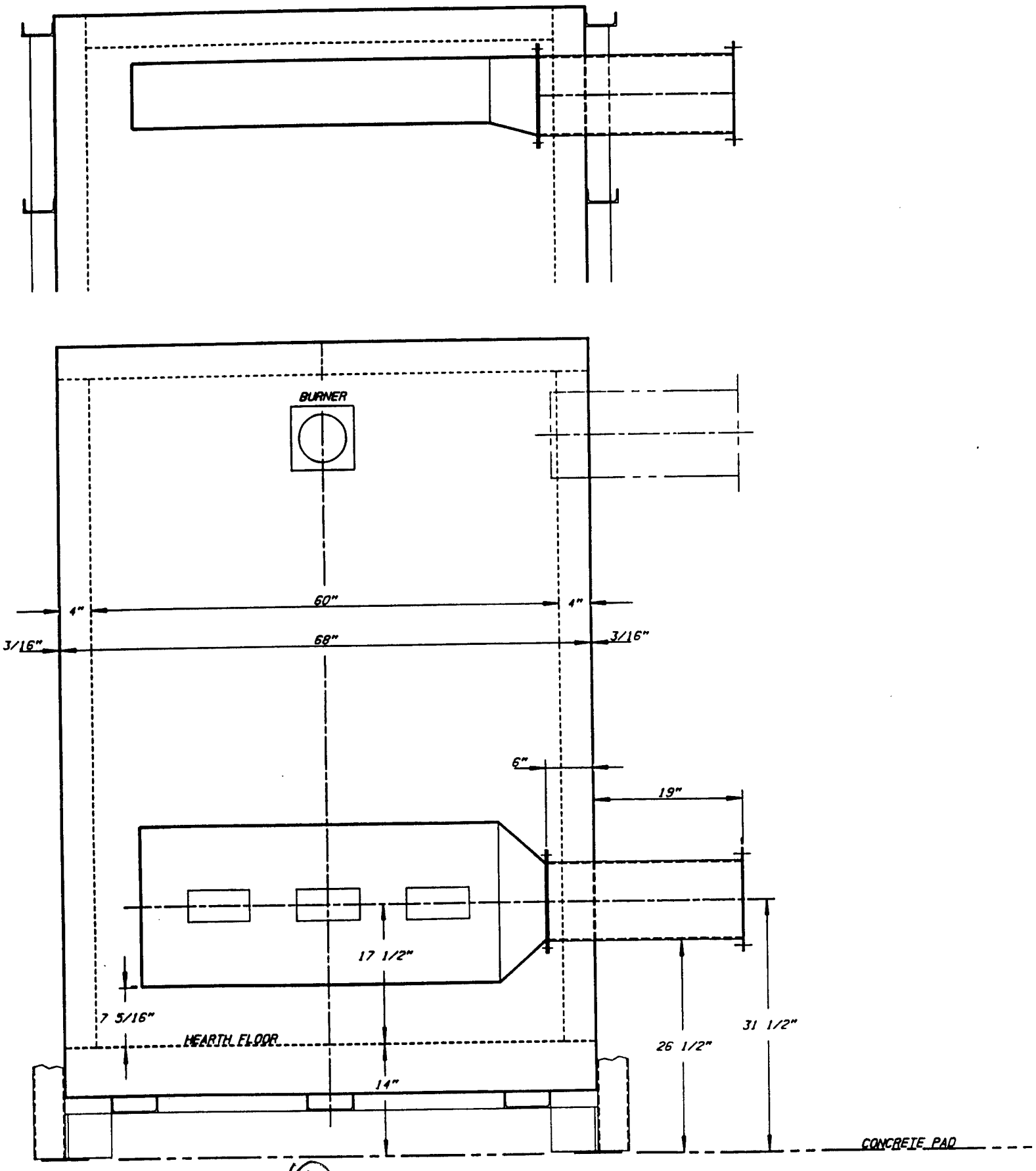
NO.	DATE	APPR.	REVISION
–	12/11/96		AS-BUILT DRAWING

HOT-GAS DECONTAMINATION SYSTEM

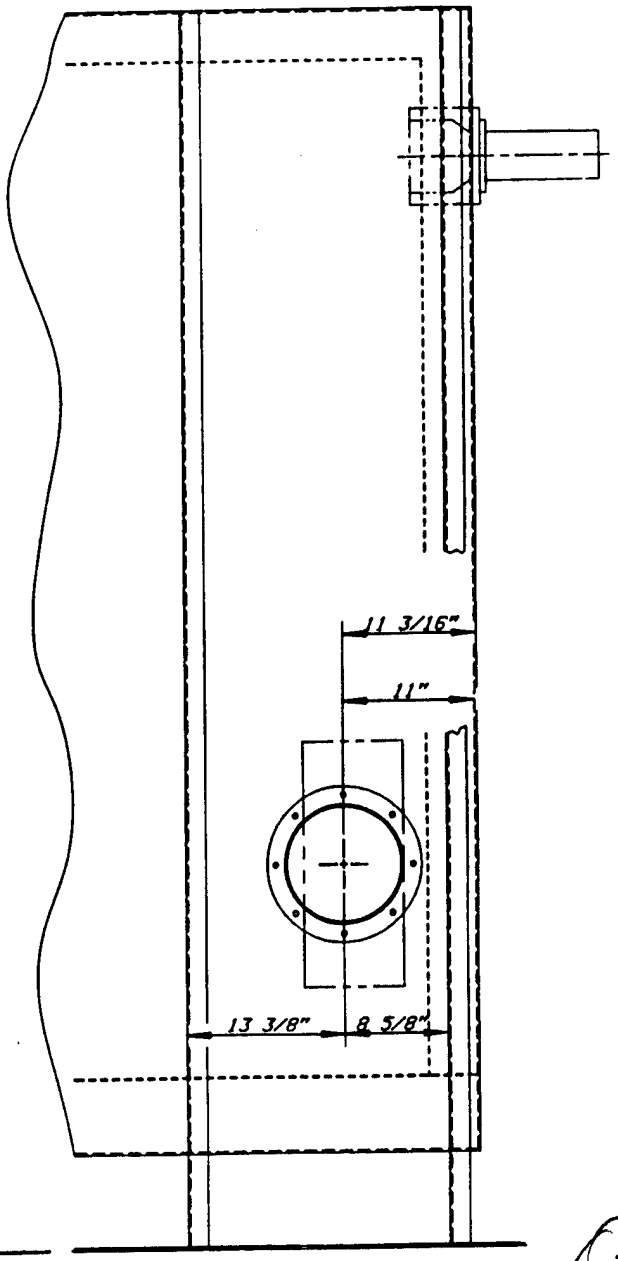
WESTON
ENGINEERS DESIGNERS/CONSULTANTS
WEST CHESTER PENNSYLVANIA

INTERCONNECT DUCT

DRAWN	DATE	DWG. NO.	REV. NO.
J. HYRE	12/27/95	1300-01	–
SCALE: 1/2" = 1'-0"	W.O. NO.: 02281-012-012	SHT. 1 OF 1	


BURNER
4"
60"
4"
3/16"
68"
3/16"
6"
19"
17 1/2"
7 5/16"
HEARTH FLOOR
14"
26 1/2"
31 1/2"
CONCRETE PAD

(1)



(2)

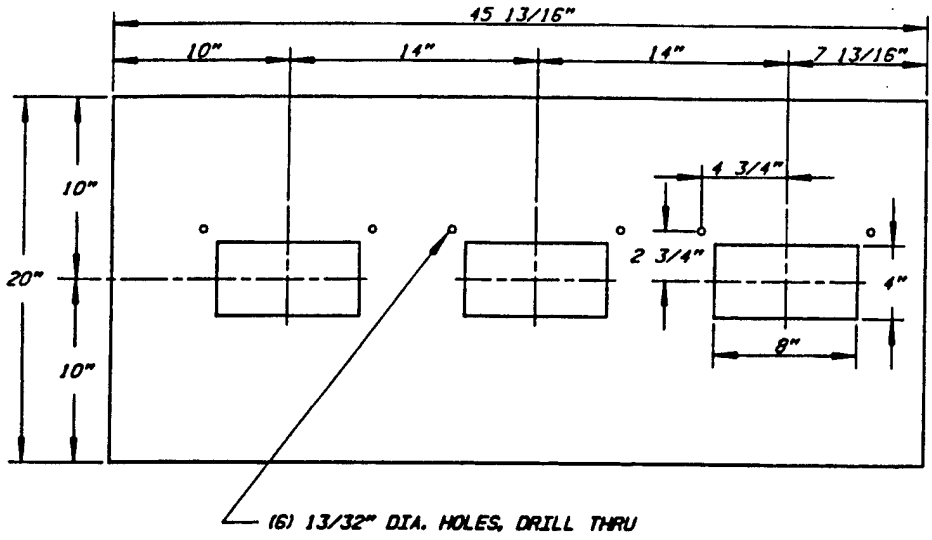
HOT-GAS DECONTAMINATION SYSTEM

WESTON MANAGERS ENGINEERS/CONSULTANTS WEST CHESTER PENNSYLVANIA

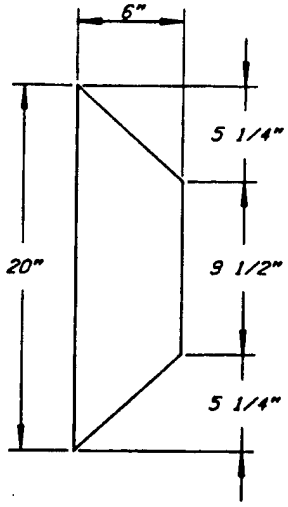
EXHAUST PLENUM ASSEMBLY

DRAWN	DATE	DWG. NO.	REV. NO.
J. HYRE	1/1/96	1300-02	-
SCALE: 1/8" = 1"	W.O. NO.: 02281-012-012	SHT 1 OF 1	

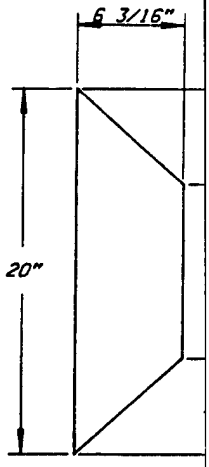
NO.	DATE	APPR.	REVISION
-	1/1/96		AS-BUILT DRAWING



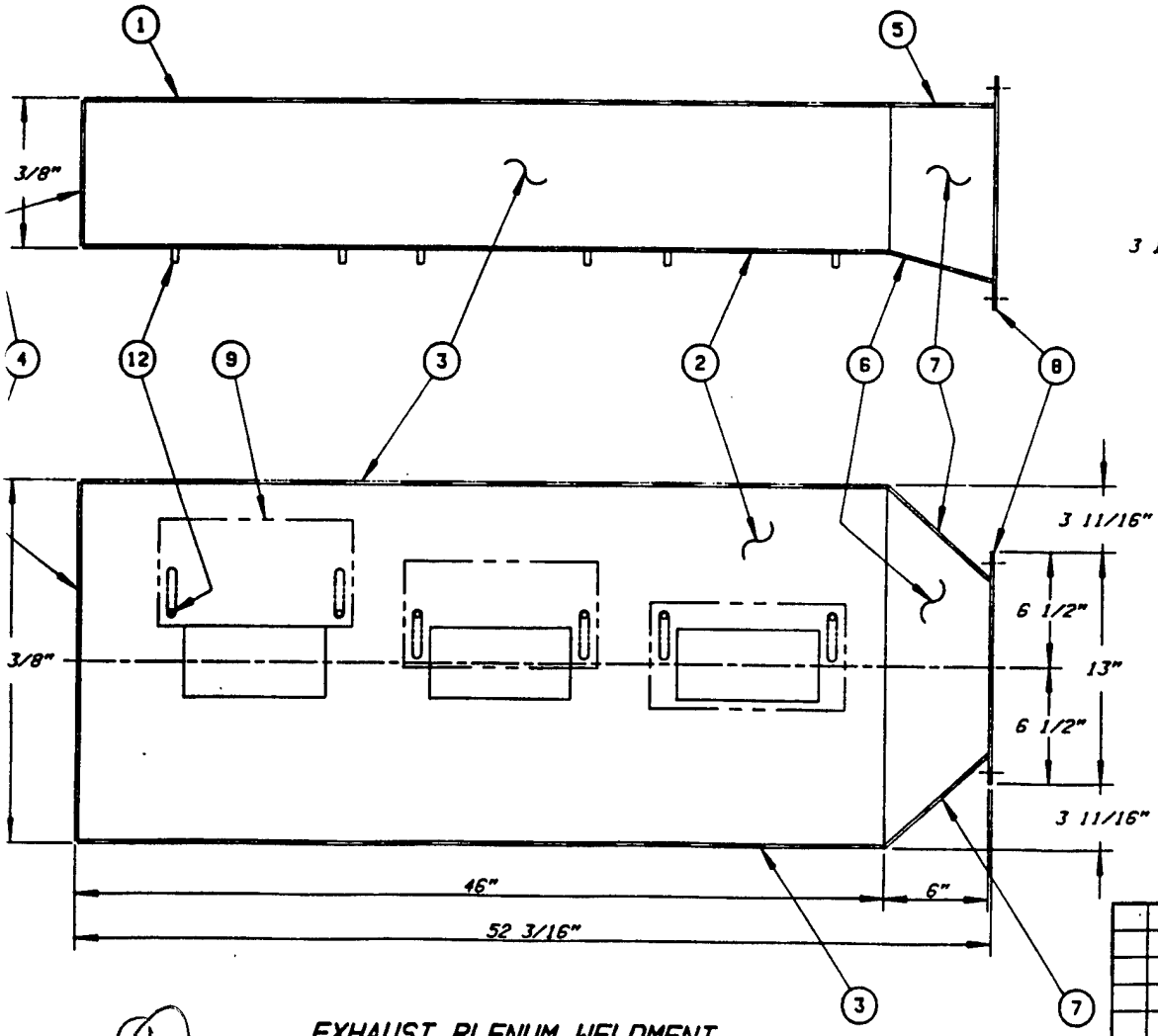
DETAIL ITEM 2
(1) REQ'D

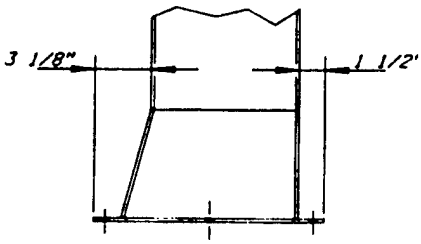


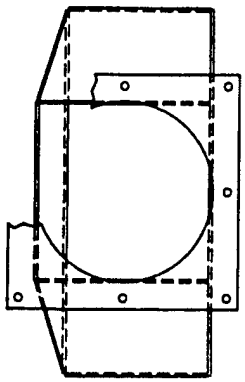
DETAIL ITEM 5
(1) REQ'D



DETAIL ITEM
(1) REQ'D

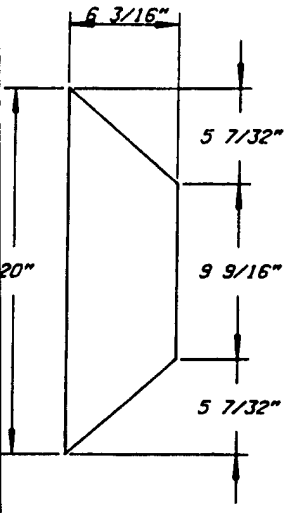




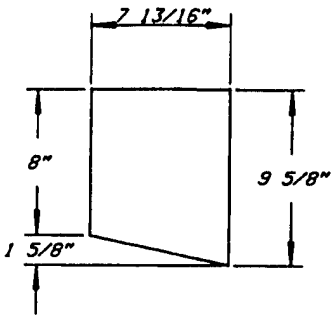


EXHAUST PLENUM WELDMENT

NO	DATE	APPR.	REVISION
-	1/1/96		AS-BUILT DRAWING



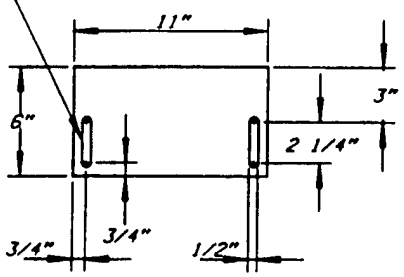
DETAIL ITEM 6
(1) REQ'D



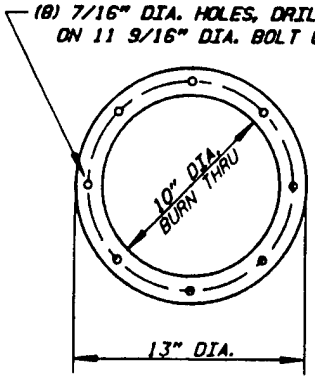
DETAIL ITEM 7
(2) REQ'D

BILL OF MATERIAL

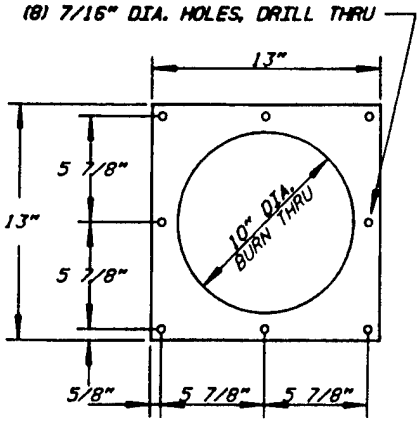
ITEM	REQD	DESCRIPTION	WGHT
1	1	3/16" X 20" X 45 13/16" LG, HRS PLATE, A-36	
2	1	3/16" X 20" X 45 13/16" LG, HRS PLATE, A-36,(SEE DETAIL)	
3	2	3/16" X 8" X 45 13/16" LG, HRS PLATE, A-36	
4	1	3/16" X 8" X 20" LG, HRS PLATE, A-36	
5	1	3/16" X 6" X 20" LG, HRS PLATE, A-36,(SEE DETAIL)	
6	1	3/16" X 6 3/16" X 20" LG, HRS PLATE, A-36,(SEE DETAIL)	
7	2	3/16" X 7 13/16" X 9 5/8" LG,HRS PLATE,A-36,(SEE DETAIL)	
8	2	3/16" X 13" X 13" LG, HRS PLATE, A-36,(SEE DETAIL)	
9	3	3/16" X 6" X 11" LG, HRS PLATE, A-36,(SEE DETAIL)	
10	1	3/16" X 10"ID X 13"OD, HRS PLATE, A-36,(SEE DETAIL)	
11	1	9 5/8"ID X 10"OD X 25" LG,ROLLED DUCT, HRS PLATE, A-36	
12	6	3/8-16 X 1" LG, SS HEX BOLTS w/NUTS	
13	8	3/8-16 X 1 1/2" LG, SS HEX BOLTS w/NUTS	
		TOTAL	



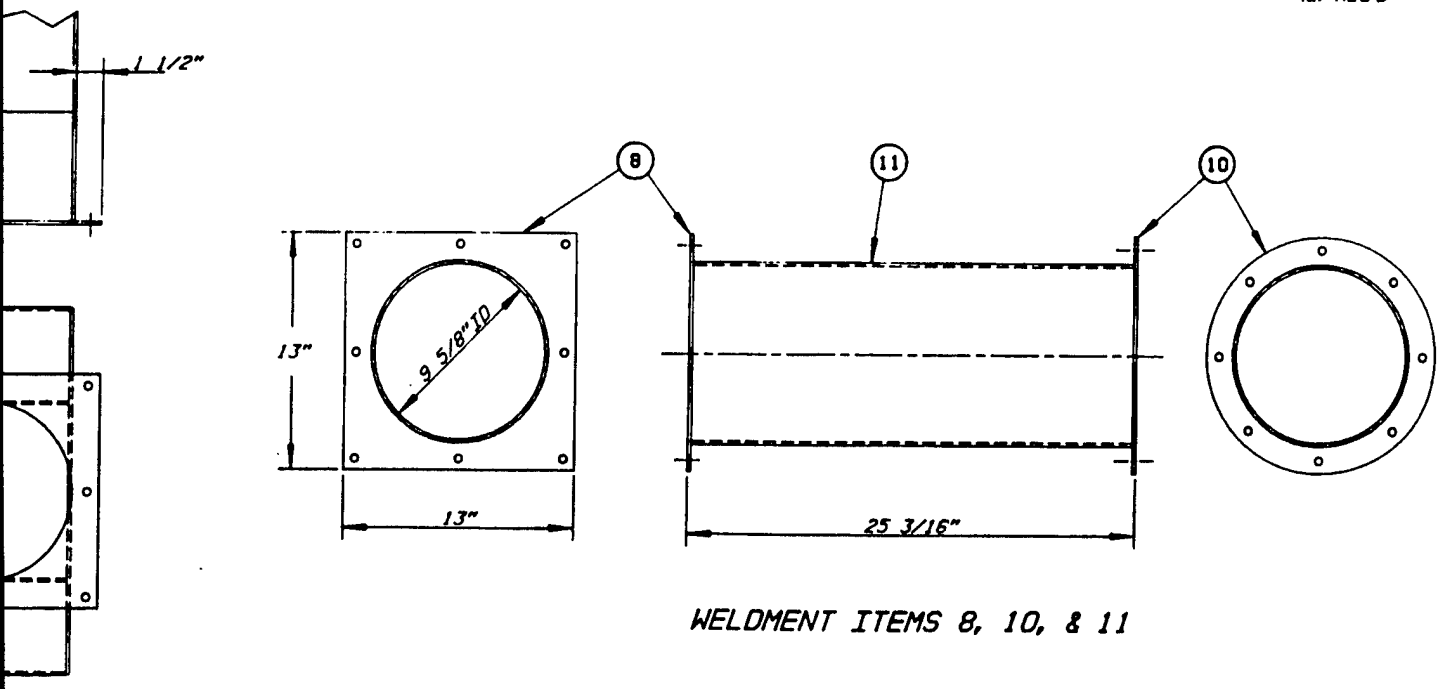
DETAIL ITEM 9
(3) REQ'D



DETAIL ITEM 10
(1) REQ'D



DETAIL ITEM 8
(2) REQ'D



WELDMENT ITEMS 8, 10, & 11

2	HOT-GAS DECONTAMINATION SYSTEM	EXHAUST PLENUM DETAILS		
REVISION	WESTON MANAGERS, ENGINEERS/CONSULTANTS WEST CHESTER PENNSYLVANIA	DRAWN J. HYRE	DATE 1/6/96	DWG NO 1300-03 REV NO -
		SCALE 3/16" = 1"	W.O. NO 02281-012-012	SHT 1 OF 1

THERMAL OXIDIZER EQUIPMEI

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRIP
OA	4	8/1/96	COVER SHEET
1X	2	3/10/95	SHIPPING CLEARAN
2X	1	3/10/95	SHIPPING CLEARAN
1A	3	8/17/96	GENERAL ARRANGE
1B	2	8/17/96	GENERAL ARRANGE
1SA	1	3/10/95	STEEL ARRANGEMEI
1SB	2	6/1/96	STEEL ARRANGEMEI
1SC	2	5/26/95	STEEL ARRANGEMEI
1SD	1	3/10/95	STEEL ARRANGEMEI
2A	2	3/10/95	FOUNDATION PLAN
FTA120-1	3	8/1/96	FUEL TRAIN ASSEMI
FTA120-2	3	8/1/96	FUEL TRAIN ASSEMI
AES -5-53	0	1/11/95	SIGHT PORT w/ VAI

THERMAL OXIDIZER EQUIPMENT

ER EQUIPMENT

DRAWING DESCRIPTION

COVER SHEET
SHIPPING CLEARANCES
SHIPPING CLEARANCES
GENERAL ARRANGEMENT: PLAN & ELEV.
GENERAL ARRANGEMENT: SECTIONS

STEEL ARRANGEMENT: AFTERBURNER
STEEL ARRANGEMENT: STACK & DETAIL
STEEL ARRANGEMENT: DETAILS
STEEL ARRANGEMENT: SKID & DETAILS
FOUNDATION PLAN

FUEL TRAIN ASSEMBLY - AFTERBURNER
FUEL TRAIN ASSEMBLY - AFTERBURNER
SIGHT PORT w/ VALVE - 4" DIAMETER

(2)

JOB: IJ-

SERVICE: AFTER

CUSTOMER: ROY H

LOCATION: ALP

DRAWING INDEX

DWG. NO.	REV	TITLE
0A	3	COVER SHEET
1X	2	SHIPPING CLEARANCE
2X	1	SHIPPING CLEARANCE
1A	2	GENERAL ARRANGEMENT - PLAN & ELEV.
1B	1	GENERAL ARRANGEMENT - SECTIONS
1SA	1	STEEL ARRANGEMENT - AFTER BURNER
1SB	1	STEEL ARRANGEMENT - STACK & DETAILS
1SC	1	STEEL ARRANGEMENT - DETAILS
1SD	1	STEEL ARRANGEMENT - SKID & DETAILS
2A	2	FOUNDATION PLAN
PID120	0	P & I D AFTERBURNER
LCP120-1	0	LOCAL CONTROL PANEL ASSEMBLY
LCP120-2	0	LOCAL CONTROL PANEL ASSEMBLY
LCP120-3	0	LOCAL CONTROL PANEL ASSEMBLY
RCP120-1	0	REMOTE CONTROL PANEL ASSEMBLY
RCP120-2	0	REMOTE CONTROL PANEL ASSEMBLY
ES120-1	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-2	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-3	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-4	0	ELECTRICAL SCHEMATIC AFTERBURNER
ES120-5	0	ELECTRICAL SCHEMATIC AFTERBURNER
IC120-1	0	INTERCONNECTION DIAGRAM AFTERBURNER
IC120-2	0	INTERCONNECTION DIAGRAM AFTERBURNER
IC120-3	0	INTERCONNECTION DIAGRAM AFTERBURNER
FTA120-1	3	FUEL TRAIN ASSEMBLY AFTERBURNER
FTA120-2	3	FUEL TRAIN ASSEMBLY AFTERBURNER
FTF120	0	FUEL RACK FABRICATION

STANDARD DRAWING IN

AES-5-53	4"ø SIGHT PORT W

NO.	BY	DATE	CHK'D
9			
8			
7			
6			
5			
4	CAP	8/1/96	JLB
3	OU	3/17/96	JLB
2	OU	2/15/95	JLB
1	OU	1/11/95	JLB

(1)

PLOTTED 06/25/96 11:44 am
PLT. SC. 1=1

IJ-120

R BURNER SYSTEM

DY F. WESTON, INC.

ALPINE, ALABAMA

DRAWING INDEX

4"ø SIGHT PORT W/VALVE

GENERAL NOTES

1. ALL STRUCTURAL STEEL TO BE ASTM A36 UNLESS NOTED.
2. FABRICATE PER AISC 9th. EDITION
3. ALL STRUCTURAL WELDING TO BE PER AWS D1.1

BY	DATE	CHK'D	REVISION DESCRIPTION
CAP	8/1/96	JLB	AS-BUILT DRAWINGS
OU	3/17/96	JLB	REVISED LOCATION & ADDED DWG'S FTA120-1,2
OU	2/15/95	JLB	ADDED DWG FRF120 & ADDED REV NUMBERS
OU	1/11/95	JLB	REVISED DRAWING LIST

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC

P.O. NO.: 43366

JOBSITE: ALPINE, AL.

END USER: U.S. ARMY ENVIRONMENTAL CENTER

SERVICE: AFTER BURNER SYSTEM

ARRTECH JOB NO.: IJ-120

Arrtech ENVIRONMENTAL SYSTEMS, INCORPORATED

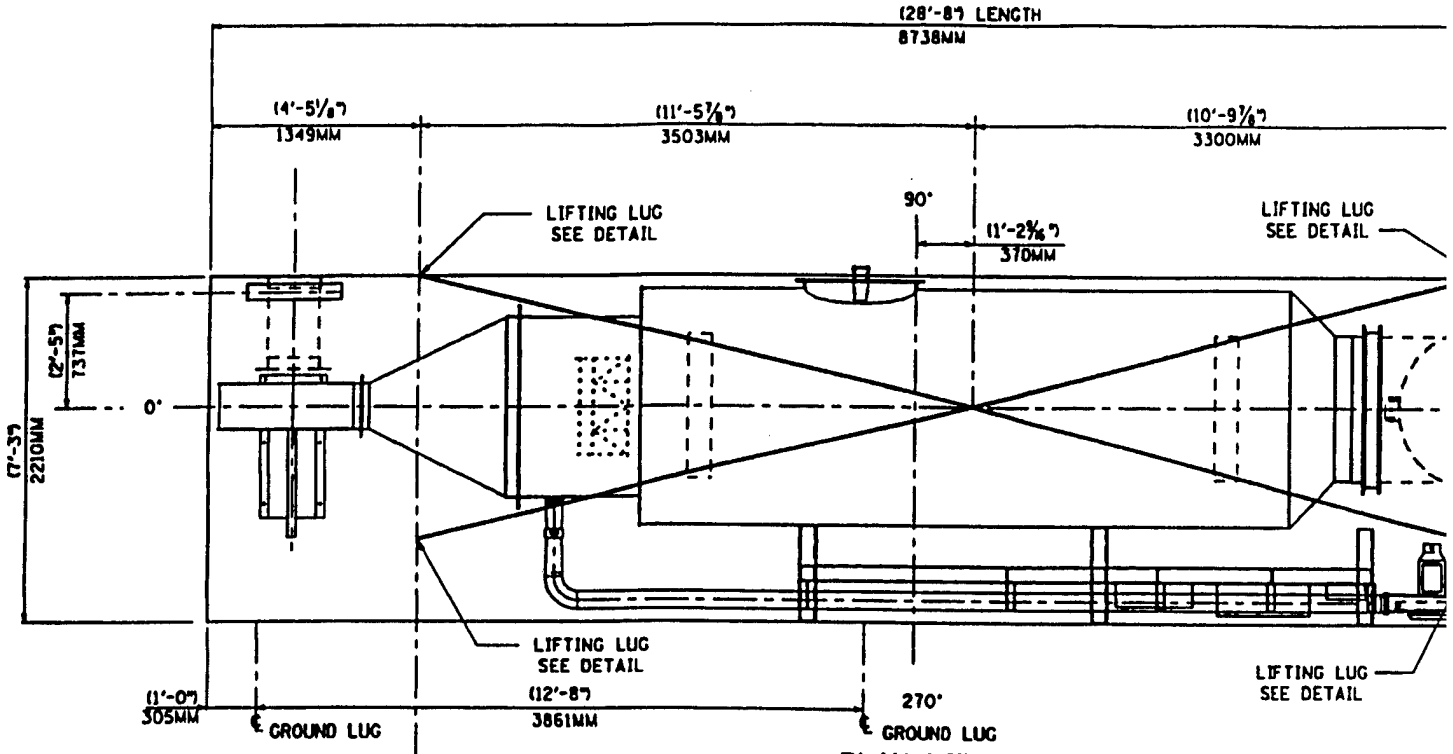
TULSA OKLAHOMA — BLOOMINGTO MINNESOTA

DRAWING TITLE: COVER SHEET

DRAWN BY OU	DATE 10/13/94	JOB NO IJ-120
CHK'D BY JLB	DATE 1/11/95	DRAWING NO 0A
APPR'D BY	DATE	REVISION NO 4

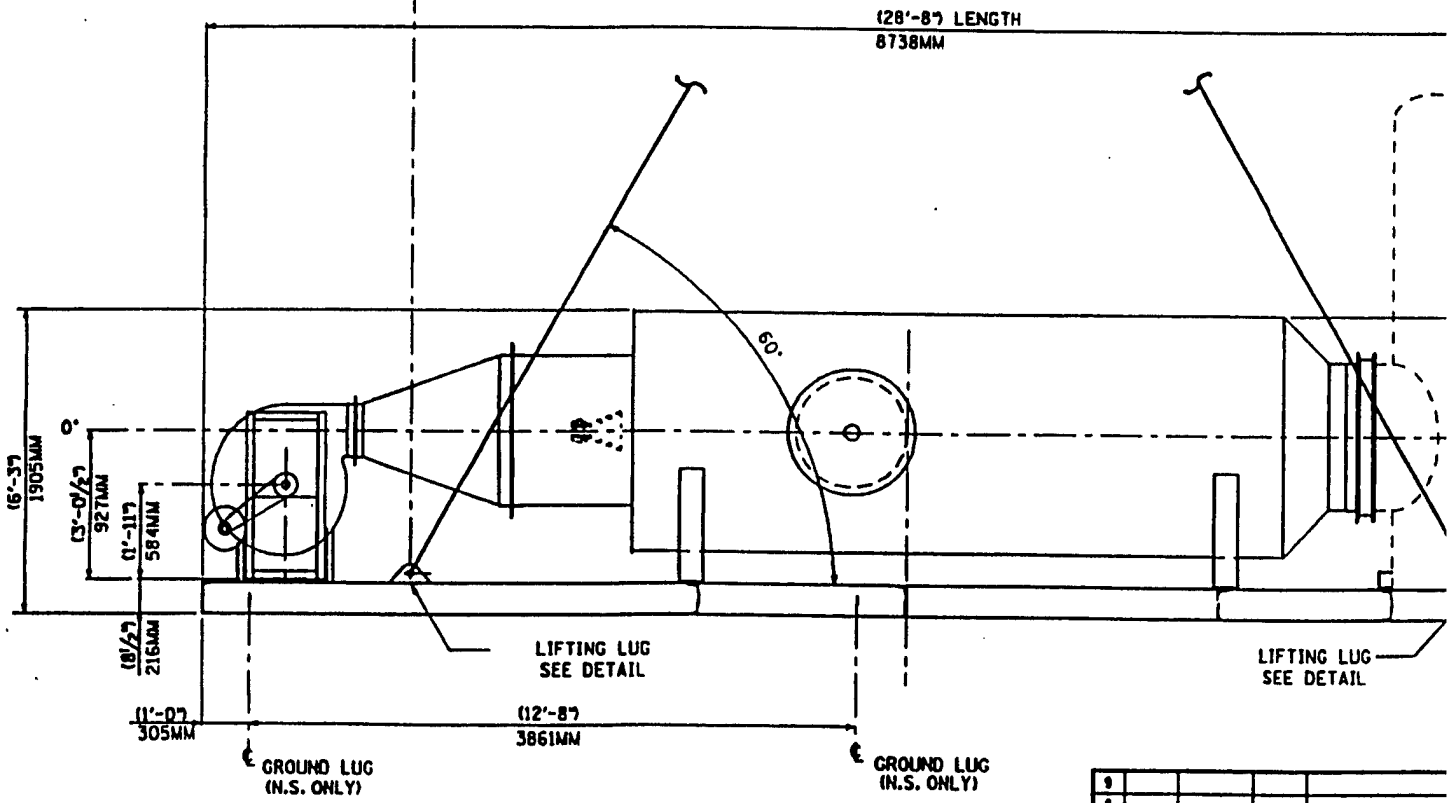
CADD DWG: IJ120-0A.DGN
CADD DWG: IJ1200A.DWG

(2)



PLAN VIEW

ESTIMATED SHIPPING WEIGHT
(9,000 #)

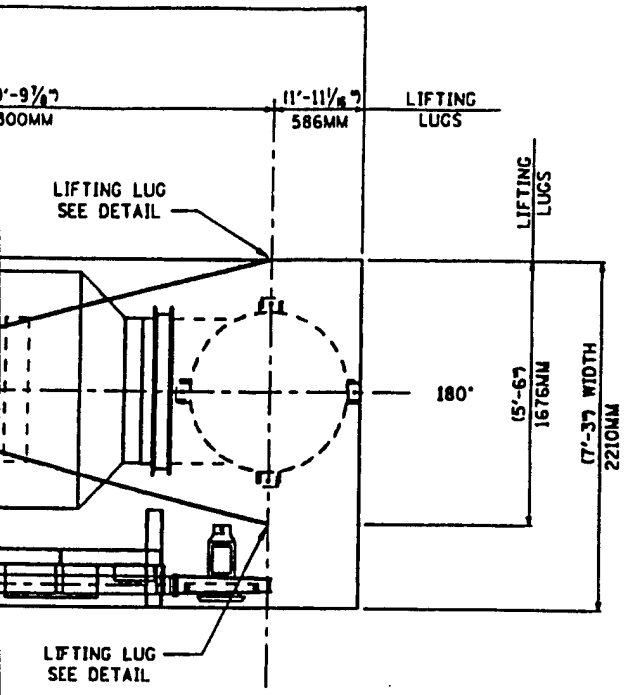


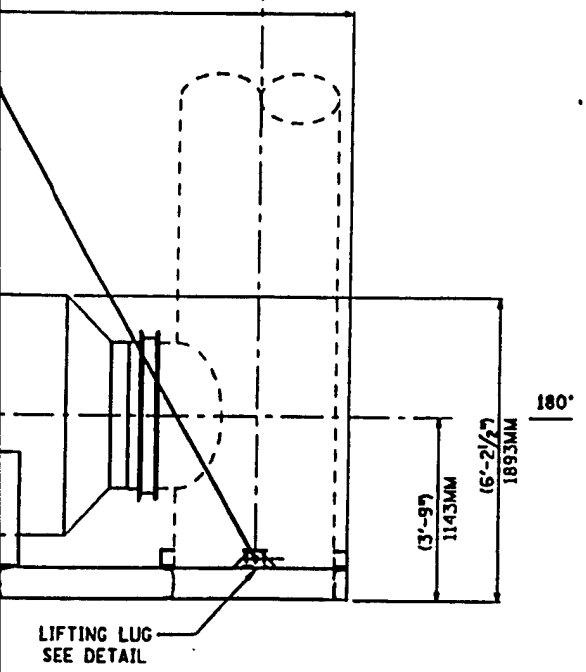
NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

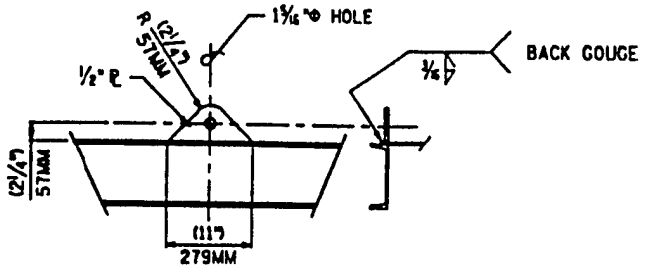
ELEVATION VIEW

(270°)

NO.	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2	OU	3/10/95	JLB	REVISED INLET DU
1	OU	1/10/95	JLB	REVISED PER CUS

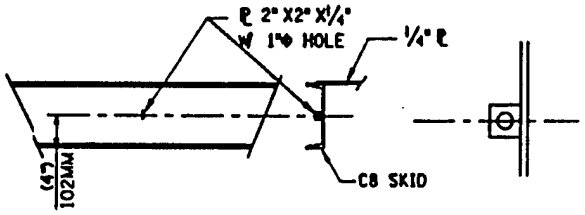






LIFTING LUG

(4 THUS)



GROUND LUG

(2 THUS)

NOTES:

1. FOR LIFTING PURPOSES, WEIGHTS OF SECTIONS SHALL BE AS SHIPPED WEIGHT TAKEN FROM THE FREIGHT BILL OF LADING FOR THE PARTICULAR SECTION. ALL OTHER WEIGHTS ARE TO BE CONSIDERED ESTIMATES ONLY AND NOT SUITABLE FOR THIS PURPOSE. IF THE BILL OF LADING DOES NOT INCLUDE THIS WEIGHT, ARRTECH ENGINEERING MUST BE CONTACTED FOR THE AS SHIPPED WEIGHT.
2. LENGTH, WIDTH AND HEIGHT SHOWN ARE APPROXIMATE DIMENSIONS. ACTUAL SHIPPING DIMENSIONS ARE TO BE VERIFIED BY SHIPPING AGENT AT FINAL FABRICATION SITE. OVERALL DIMENSIONS FOR PERMITS SHALL BE MEASURED BY THE SHIPPING AGENT AFTER SECTIONS ARE LOADED FOR SHIPMENT.
3. ESTIMATED WEIGHTS INCLUDE ALL SHOP INSTALLED REFRACTORY.

'95	J.B	REVISED INLET DUCT / ADD PANEL LOCATION & GROUND LUGS
'95	J.B	REVISED PER CUSTOMER COMMENTS
E	CHK'D	REVISION DESCRIPTION

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC.

P.O. NO.: 43366

JOBSITE: ALPINE, AL.

END USER: U.S. ARMY ENVIRONMENTAL CENTER

SERVICE: AFTER BURNER SYSTEM

ARRTECH JOB NO.: IJ-120

Arrtech

TULSA OKLAHOMA — ENVIRONMENTAL SYSTEMS, INCORPORATED — BLOOMINGTON MINNESOTA

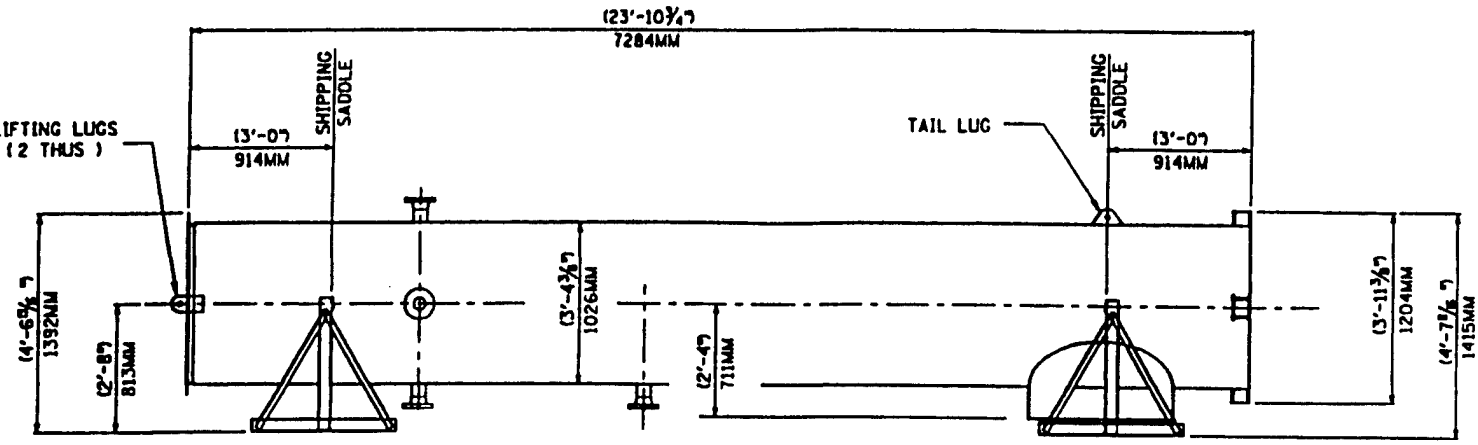
DRAWING TITLE

SHIPPING CLEARANCES

DRAWN BY DU	DATE 10/13/94	JOB NO. IJ-120
CHK'D BY J.B	DATE 1/10/95	DRAWING NO. 1X
APPR'D BY	DATE / /	REVISION NO. 2

CADD DWG: IJ120-1X.DGN

(2)

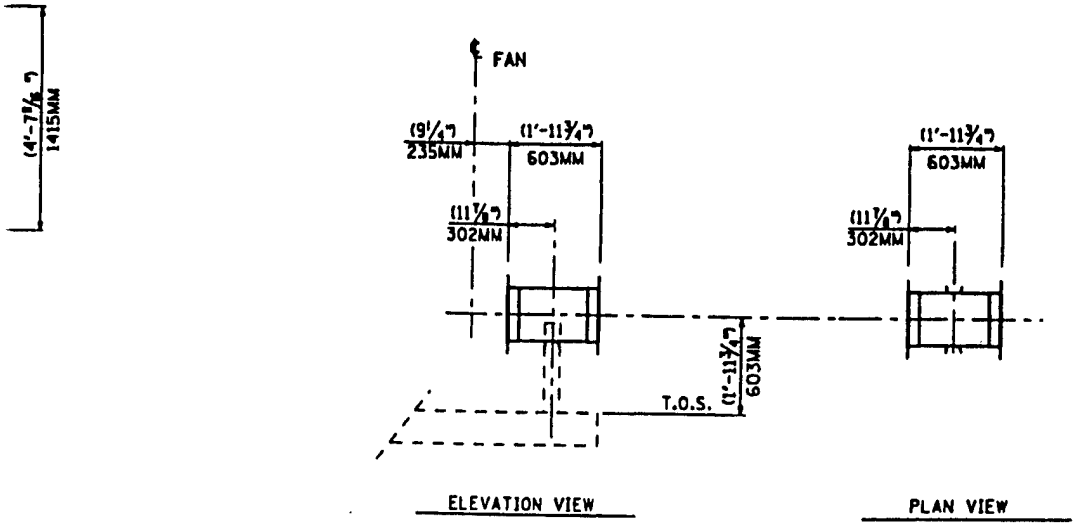


STACK SECTION

ESTIMATED SHIPPING WEIGHT
(4,500 ±)

NO.	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2				
1	OU	3/10/95	JLB	REV

(1)



AIR INLET DUCT

ESTIMATED SHIPPING WEIGHT
(175 ±)

NOTES:

1. FOR LIFTING PURPOSES, WEIGHTS OF SECTIONS SHALL BE AS SHIPPED WEIGHT TAKEN FROM THE FREIGHT BILL OF LADING FOR THE PARTICULAR SECTION. ALL OTHER WEIGHTS ARE TO BE CONSIDERED ESTIMATES ONLY AND NOT SUITABLE FOR THIS PURPOSE. IF THE BILL OF LADING DOES NOT INCLUDE THIS WEIGHT, ARRTECH ENGINEERING MUST BE CONTACTED FOR THE AS SHIPPED WEIGHT.
2. LENGTH, WIDTH AND HEIGHT SHOWN ARE APPROXIMATE DIMENSIONS. ACTUAL SHIPPING DIMENSIONS ARE TO BE VERIFIED BY SHIPPING AGENT AT FINAL FABRICATION SITE. OVERALL DIMENSIONS FOR PERMITS SHALL BE MEASURED BY THE SHIPPING AGENT AFTER SECTIONS ARE LOADED FOR SHIPMENT.
3. ESTIMATED WEIGHTS INCLUDE ALL SHOP INSTALLED REFRACTORY.

CHK'D	REVISION DESCRIPTION
JLB	REMOVED ACCESS DOOR & REVISED INLET DUCT

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC.
P.O. NO.: 43366
JOBSITE: ALPINE, AL.
END USER: U.S. ARMY ENVIRONMENTAL CENTER
SERVICE: AFTER BURNER SYSTEM
ARRTECH JOB NO.: IJ-120

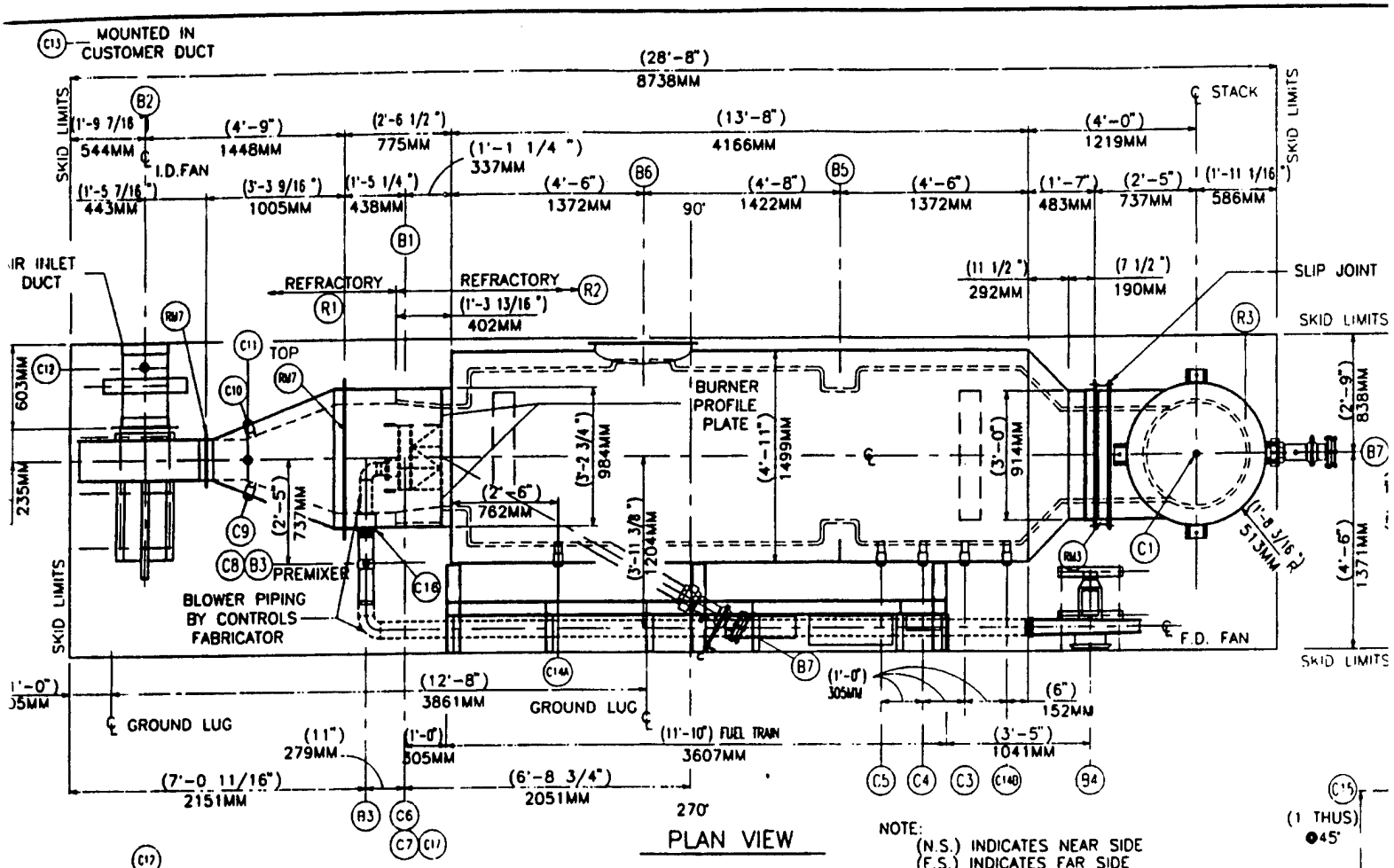
Arrtech
TULSA OKLAHOMA — ENVIRONMENTAL SYSTEMS, INCORPORATED — BLOOMINGTON MINNESOTA

DRAWING TITLE
SHIPPING CLEARANCES

DRAWN BY OU	DATE 1/10/95	JOB NO. IJ-120	As Built
CHK'D BY JLB	DATE 1/11/95	DRAWING NO. 2X	
APPR'D BY	DATE / /	REVISION NO. (1)	

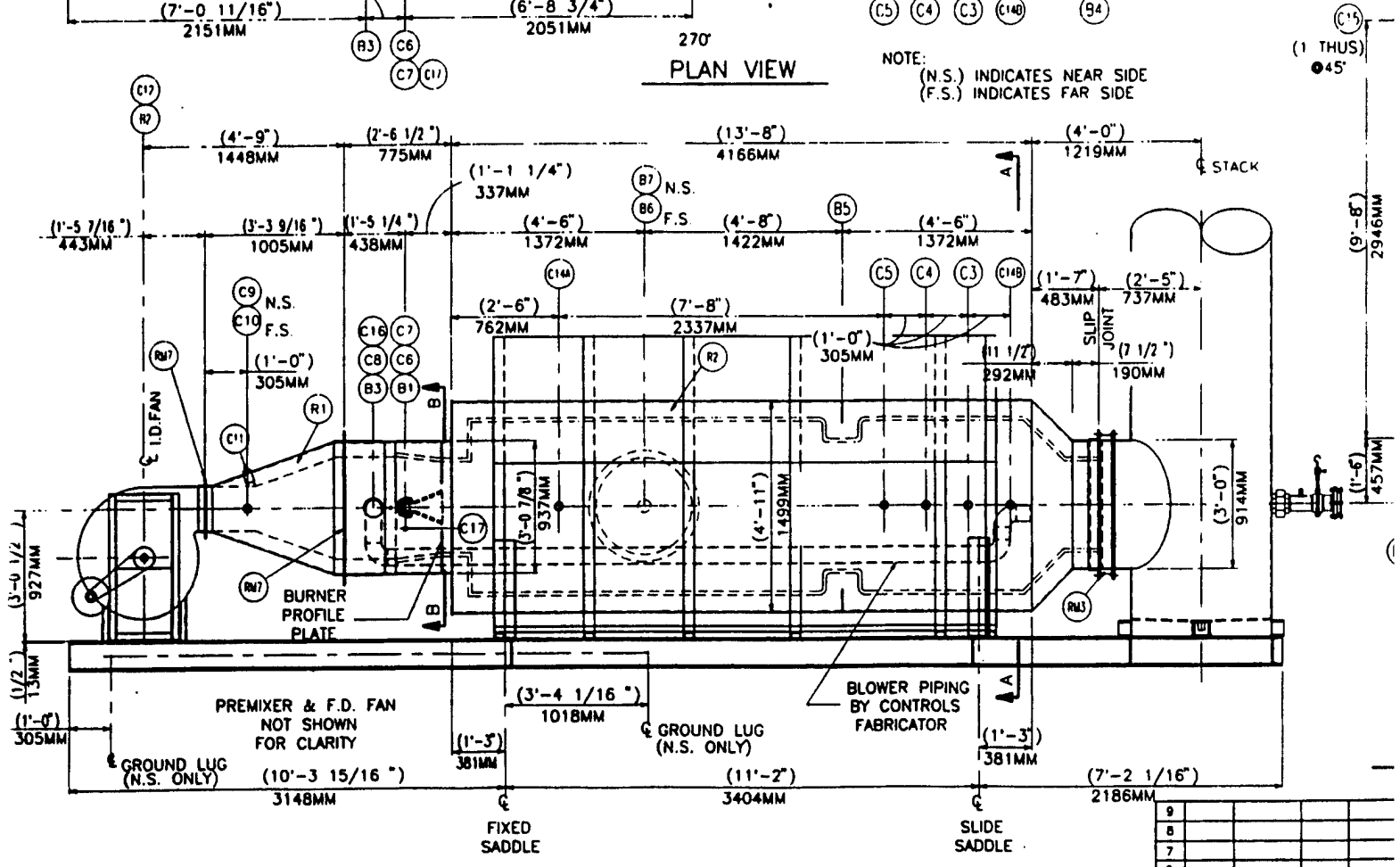
(2)

CADD DWG: IJ120-2X.DGN



PLAN VIEW

NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

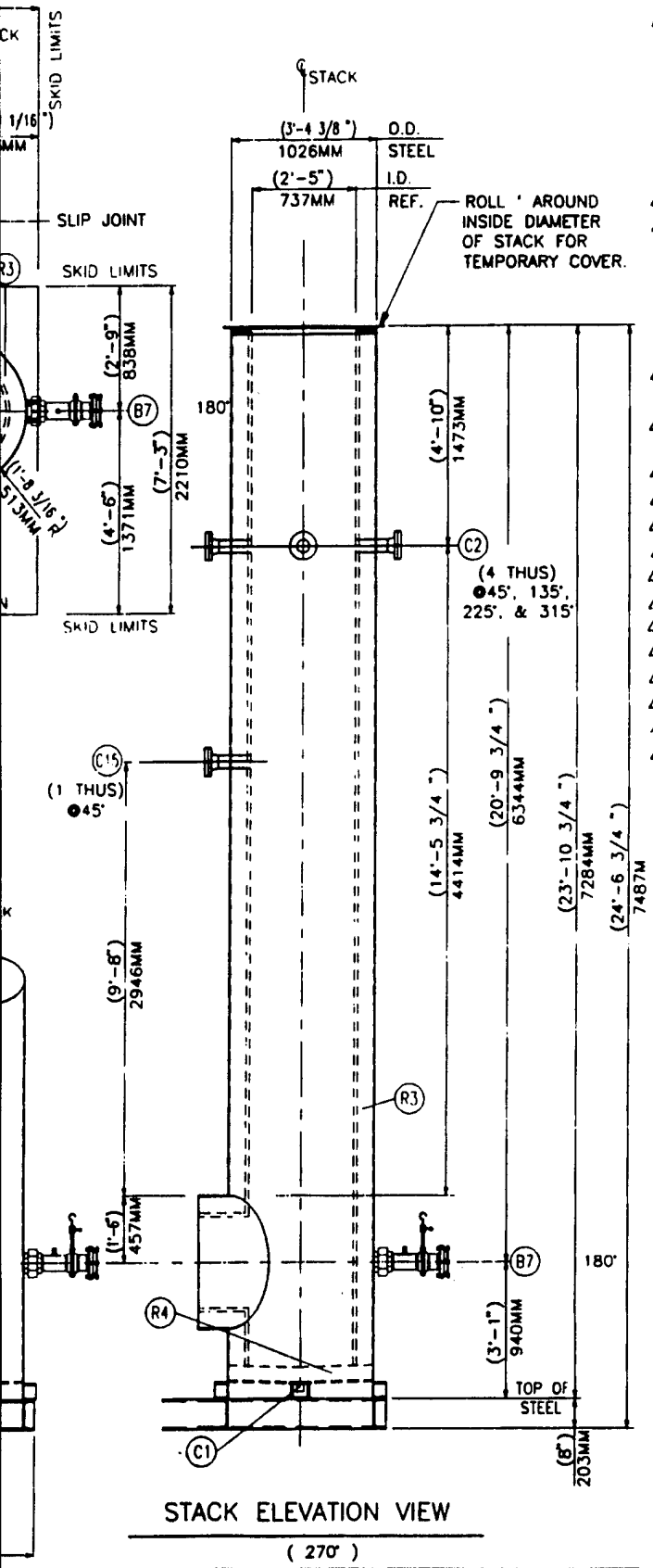


ELEVATION VIEW
(270°)

NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

NO.	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3	AH	8/17/98		FIELD
2	OU	3/10/95	JLB	ADDED
1	OU	1/10/95	JLB	REVISI

1



STACK ELEVATION VIEW

(270°)

MISCELLANEOUS COMPONENTS

MK	QTY	DESCRIPTION
B1	ONE	MAXON AIRFLO BURNER - LV5-B-24-120
		W/1 - 12" & 1 - 6" STRAIGHT SECTIONS (SEE DATA SHEETS)
B2	ONE	I.D. FAN - CHICAGO BLOWER - SIZE "13D" (SEE DATA SHEETS)
B3	ONE	MAXON - PREMIXING TUBE - HG SERIES - SIZE 4" (SEE DATA SHEETS)
B4	ONE	F.D. FAN - MAXON FG SERIES - C-1450-12 (SEE DATA SHEETS)
B5	ONE	10 GA. CORBEL (304SS)
B6	ONE	27"ø BOLTED ACCESS DOOR - AFTER BURNER
B7	2	4"ø SIGHT PORT - AES-5-53
B8	ONE	3/16 " DISTRIBUTION PLATE

MISCELLANEOUS CONNECTIONS

MK	QTY	DESCRIPTION	
C1	ONE	1 1/2"ø (SCH 20) PIPE (304SS)	STACK FLOOR DRAIN
C2	4	4"ø - 300# RFWN W/BLIND & 310SS PIPE	EPA SAMPLE PORTS
C3	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	TW-(145) 3
C4	ONE	1 1/2 " 3000# CPLG W/PLUG & 310SS PIPE	SPARE
C5	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	TW-(131) 3
C6	ONE	3/8 " 3000# CPLG W/PLUG & 310SS PIPE	PILOT IGNITOR
C7	ONE	1" 3000# CPLG W/PLUG & 310SS PIPE	UV SCANNER
C8	ONE	1 1/2"ø NPT ON PREMIXER	FUEL GAS
C9	ONE	1/2 " 3000# CPLG W/PLUG & 310SS PIPE	PSH 153
C10	ONE	1/2 " 3000# CPLG W/PLUG & 310SS PIPE	PSL 155
C11	ONE	1/2 " 3000# CPLG W/PLUG & 310SS PIPE	PT 151
C12	ONE	1 1/2 " 300# RFWN (BY SENSOR SUPPLIER)	3
C13	ONE	CONNECTION INCLUDED IN CUSTOMER PIPING	PT 158
C14A	ONE	1/2 " 3000# CPLG W/PLUG & 310SS PIPE	3
C14B	ONE	1/2 " 3000# CPLG W/PLUG & 310SS PIPE	
C15	ONE	4"ø - 300# RFWN W/BLIND & 310SS PIPE	CEM SAMPLE PORT
C16	ONE	4" X 3" 3000# REDUCING CPLG	PREMIXER
C17	ONE	3/8 " 3000# CPLG	PILOT GAS

REFRACTORIES

MK NO	AREA	MATERIAL	INSTALLED
R1	INLET DUCT	4"-6# C.F.B. < 304SS PINS & CLIPS (WET PACK	SHOP
R2	COMBUSTOR	1"-8# & 4 1/2 " -6# C.F.B < 310SS PINS & CLIPS	SHOP
R3	STACK	1"-8# & 4 1/2 " -6# C.F.B. < 310SS PINS & CLIPS	SHOP
R4	STACK FLOOR	1"-8# & 4 1/2 " -6# C.F.B < 310SS PINS & CLIPS	SHOP
RM3	SLIP JOINT	1" - 8# C.F.N.B	FIELD
RM7	BOLTED JOINT	0.065" THK GASKET, "GORE-TEX" OR EQUAL TAPE	SHOP

NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES W/(1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH W/(2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EPOXY"
3. ALL CASING MAT'L A36 W/MINIMUM THK. AS FOLLOWS : COMBUSTOR WALLS : 3/16 " THK. STACK : 3/16 " THK. DUCT WALLS : 3/16 " THK.
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SEE BURNER DRAWINGS FOR BURNER INFORMATION.
6. SKID FLOOR PLATE - 1/4 " GALV. CHK'D PLATE.
7. STACK & AIR INLET DUCT SHIPPED SEPARATE

DATE	CHK'D	REVISION DESCRIPTION
/17/96	AP	FIELD MODIFICATIONS
/10/95	JLB	ADDED FUEL TRAIN & BURNER INLET PIPING
10/95	JLB	REVISED PER CUSTOMER COMMENTS

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC.

P.O. NO.: 43366

JOBSITE: ALPINE, AL.

END USER: U.S. ARMY ENVIRONMENTAL CENTER

SERVICE: AFTER BURNER SYSTEM

ARRTECH JOB NO.: IJ-120

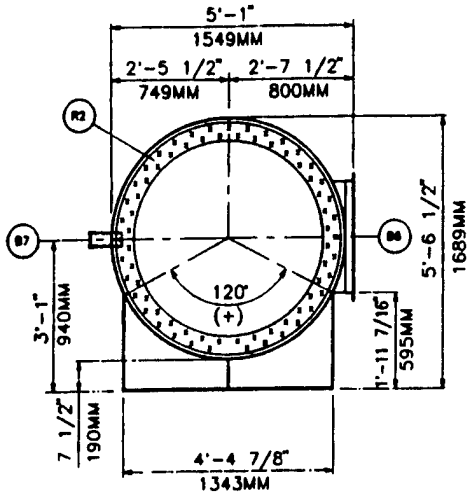
Arrtech

TULSA OKLAHOMA — ENVIRONMENTAL SYSTEMS, INCORPORATED — BLOOMINGTON MINNESOTA

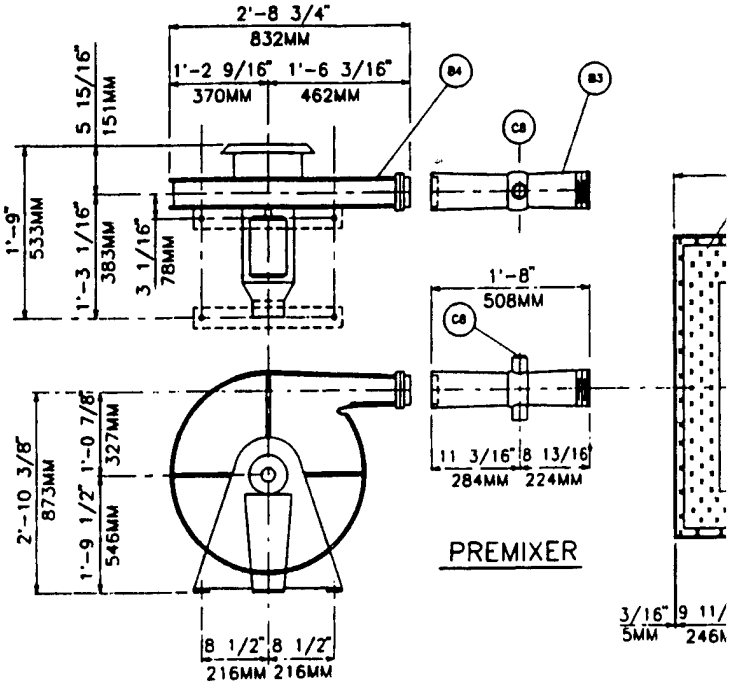
DRAWING TITLE: GENERAL ARRANGEMENT - PLAN & ELEV.

DRAWN BY OU	DATE 9/25/94	JOB NO. IJ-120	
CHK'D BY JLB	DATE 1/11/95	DRAWING NO. 1A	
APPR'D BY	DATE	REVISION NO 3	

CADD DWG IJ120-1A.DGN

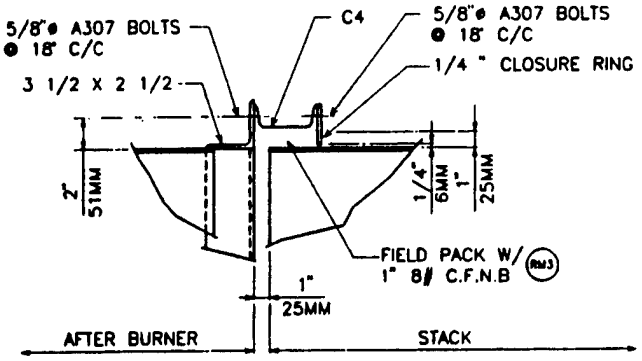


SECTION A-A

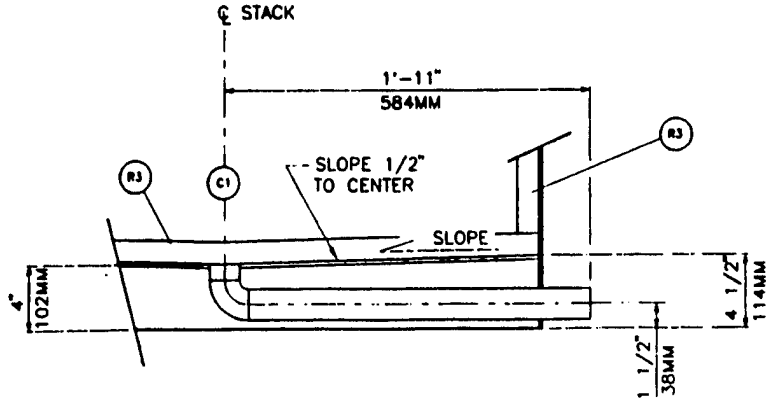


PREMIXER

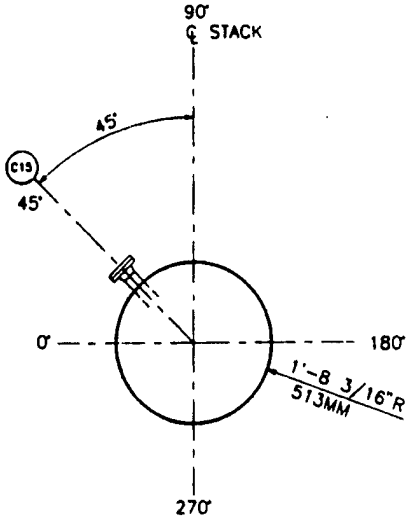
F.D. FAN



SLIP JOINT DETAIL

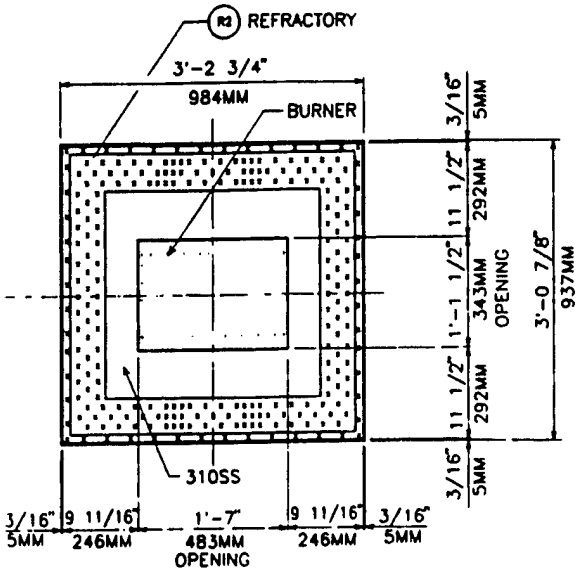


STACK FLOOR DRAIN DETAIL



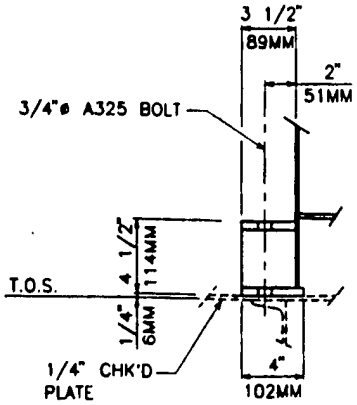
CEM SAMPLE PORT

NO	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2	AH	8/17/98	CHD	FIELD
1	OU	3/10/95	JLB	ADDE

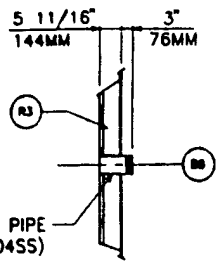


BURNER PROFILE PLATE

SECTION B-B

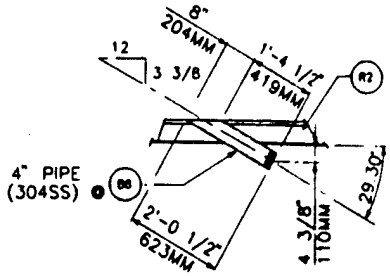


STACK BASE DETAIL



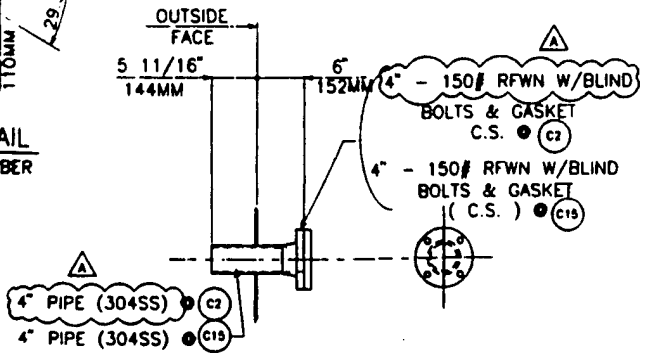
SITE PORT DETAIL

IN STACK

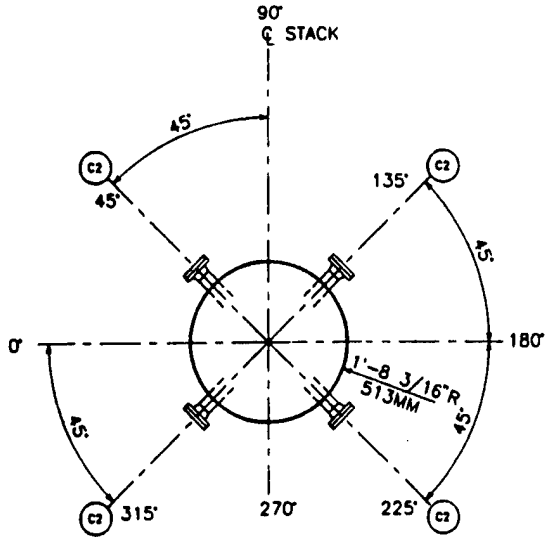


SITE PORT DETAIL

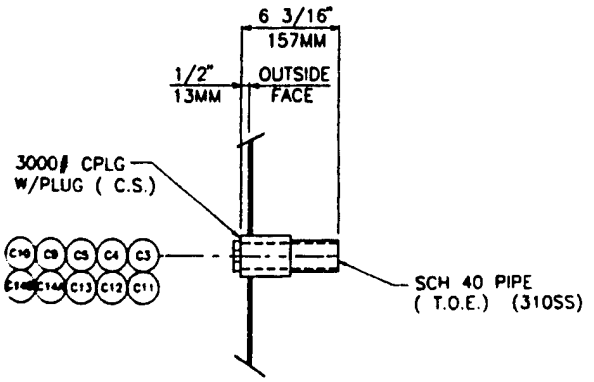
IN COMBUSTION CHAMBER



FLANGED CONNECTION DETAIL (TYPICAL)



EPA SAMPLE PORTS



CONNECTION DETAIL (TYPICAL)

CHD	FIELD MODIFICATIONS	
JLB	ADDED NOTES TO CONN. & DETAILS & REVISED DIMENSION	
CHK'D	REVISION DESCRIPTION	

JOB INFORMATION

CUSTOMER: ROY F WESTON, INC
P.O NO: 43366
JOBSITE: ALPINE, AL
END USER: U.S ARMY ENVIRONMENTAL CENTER
SERVICE: AFTER BURNER SYSTEM
ARRTECH JOB NO: U-120

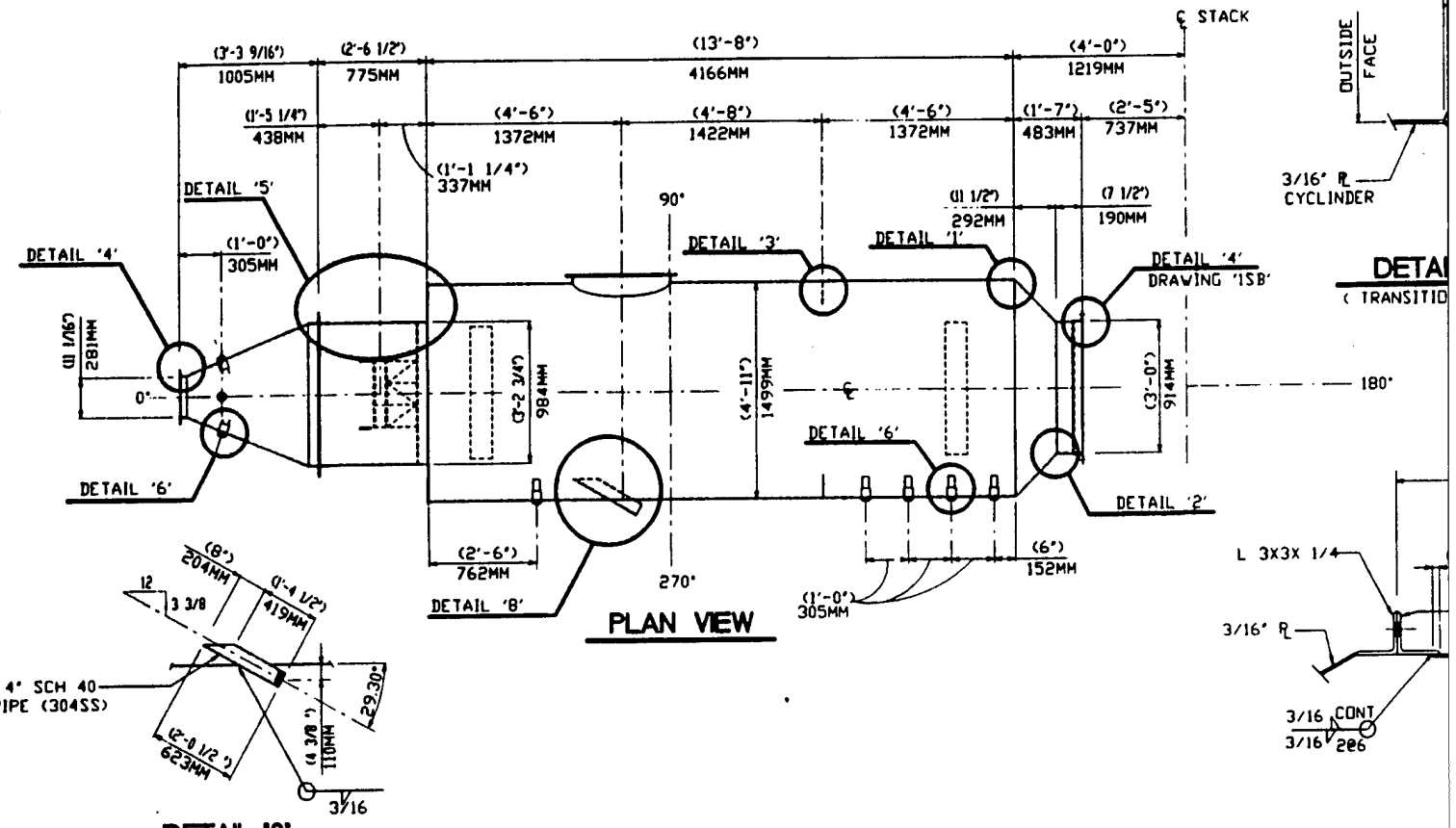
Arrtech ENVIRONMENTAL SYSTEMS, INCORPORATED
6508 S. Lewis, Suite 230
Tulsa, OK 74136

DRAWING TITLE
GENERAL ARRANGEMENTS - SECTIONS

DRAWN BY OU	DATE 1/10/95	JOB NO U-120	
CHK'D BY JLB	DATE 1/11/95	DRAWING NO 1B	
APPR'D BY	DATE	REVISION NO 2	

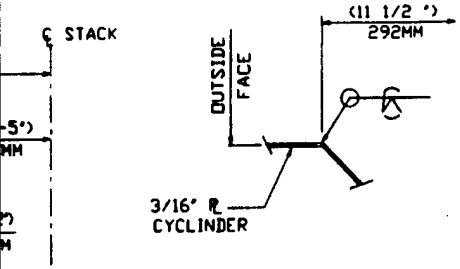
CADD DWG: U1201B.DWG

(2)

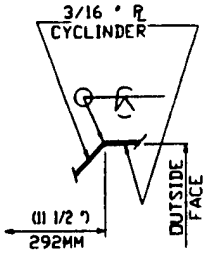


NO	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2				
1	DU	3/10/95	JI B	REVISED PER

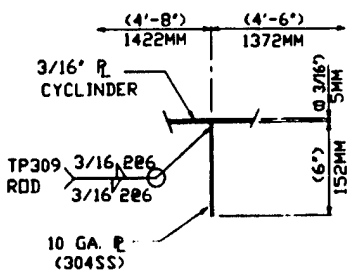
(1)



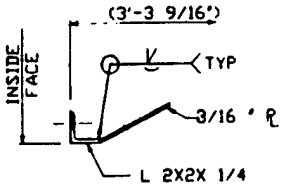
DETAIL "1"
(TRANSITION DETAIL)



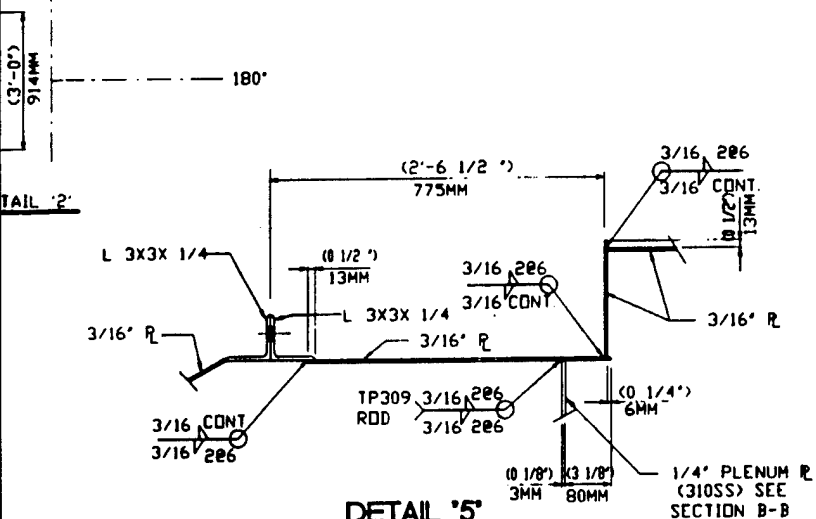
DETAIL "2"
(TRANSITION DETAIL)



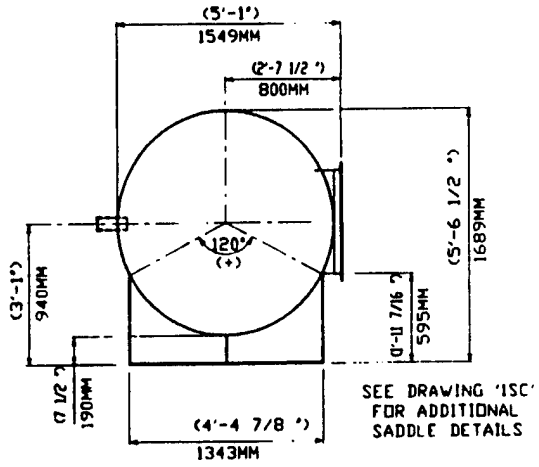
DETAIL "3"
(CORBEL DETAIL)



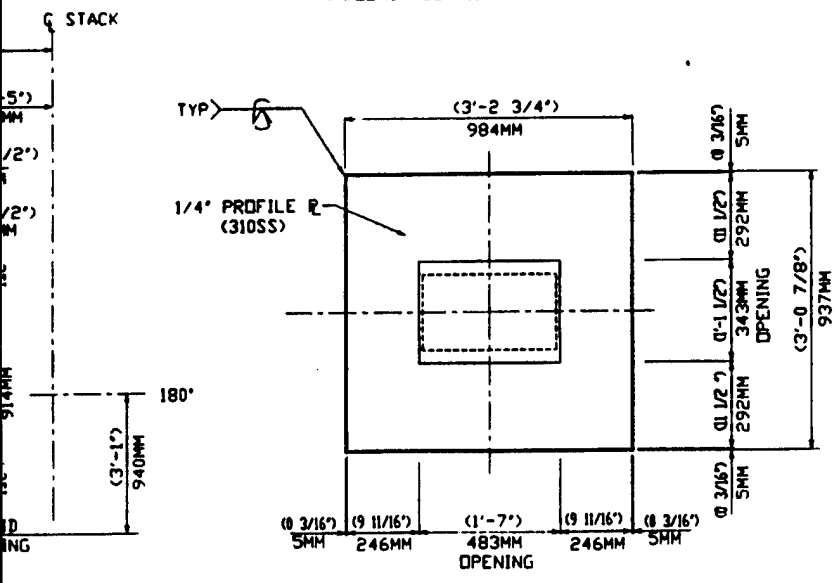
DETAIL "4"
(TRANSITION DETAIL)



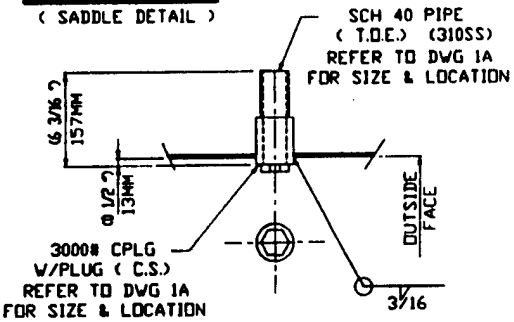
DETAIL "5"
(PLENUM DETAIL)



SECTION A-A
(SADDLE DETAIL)



SECTION B-B
BURNER PROFILE PLATE



DETAIL "6"
(CONNECTION DETAIL)
(9 THUS)

NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES ((1) COAT
   (3 - 4) MILS DFT CARBOZINC 11.
   FINISH COAT ((2) COATS (4 MILS EACH) DFT
   "SHERMAN WILLIAMS - ALL WEATHER EXPOXY"
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4 " GALV. CHK'D PLATE.

NO	BY	DATE	CHK'D	REVISION DESCRIPTION
9				
8				
7				
6				
5				
4				
3				
2				
1	OU	3/10/95	JLB	REVISED PER CUSTOMER COMMENTS

JOB INFORMATION

CUSTOMER: ROY F WESTON INC
P.O. NO 43366
JOBSITE ALPINE, AL
END USER U.S. ARMY ENVIRONMENTAL CENTER
SERVICE AFTER BURNER SYSTEM
ARRTECH JOH NO 1J-120

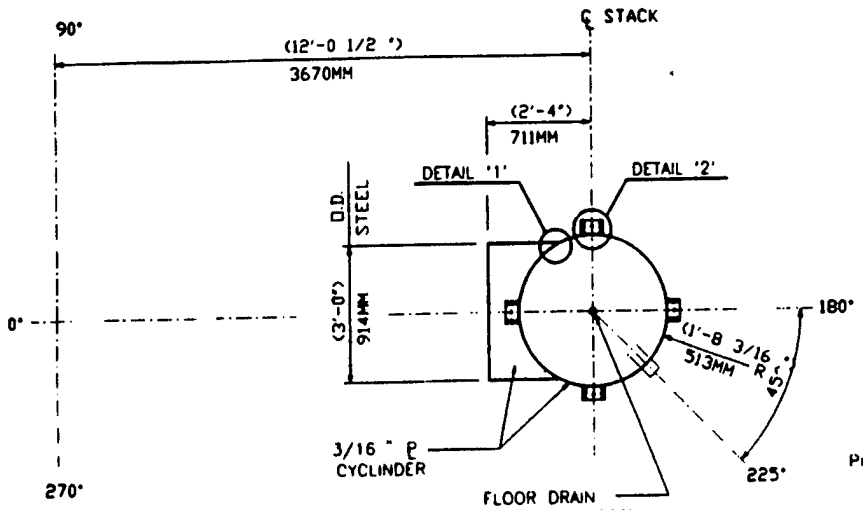
Arrtech
ENVIRONMENTAL SYSTEMS, INCORPORATED
6506 S. Lewis, Suite 230
Tulsa, OK 74136

DRAWING TITLE
STEEL ARRANGEMENT AFTER BURNER

DRAWN BY OU	DATE 12/14/94	JOB NO 1J-120
CHK'D BY JLB	DATE 1/1/95	DRAWING NO 1SA
APPR'D BY	DATE / /	REVISION NO 1

CADD DWG: 1J120ISA.DGN
CADD DWG: 1J120ISA.DWG

(2)

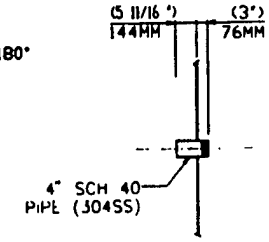


SECTION C-C

@ STACK FLOOR

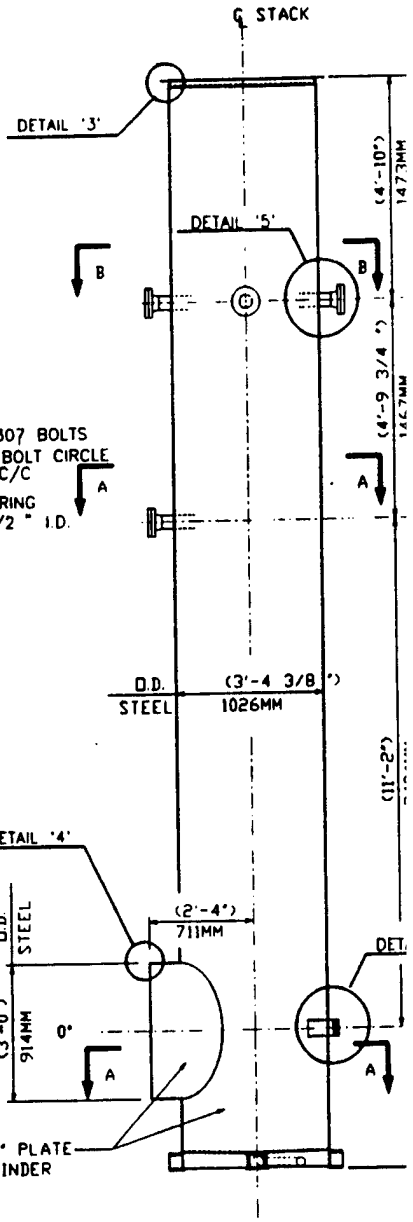
NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES WITH (1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH COAT WITH (2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4 " GALV. CHK'D PLATE.



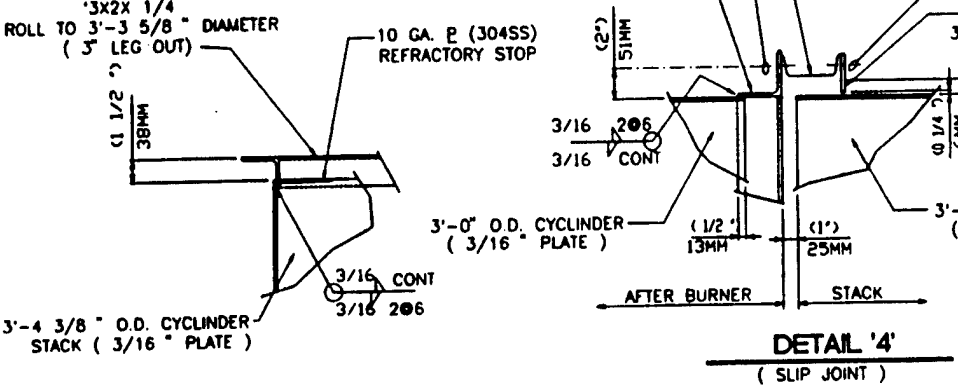
DETAIL '8'

@ SITE PORT



ELEVATION VIEW

(270°)

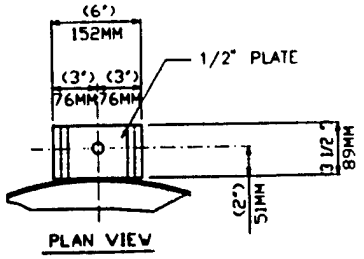


DETAIL '4'

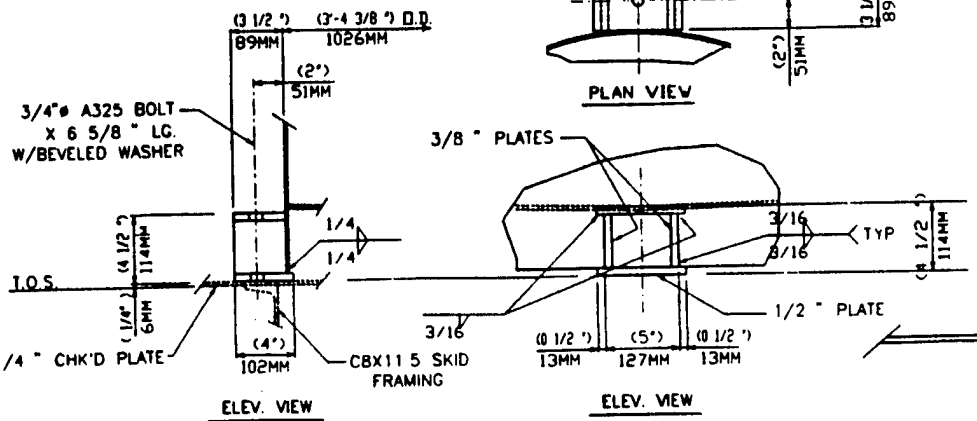
(SLIP JOINT)

DETAIL '3'

(STACK CAP RING)



PLAN VIEW

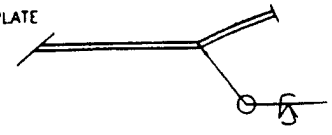


ELEV. VIEW

ELEV. VIEW

DETAIL '2'

(BASE DETAIL)



DETAIL '1'

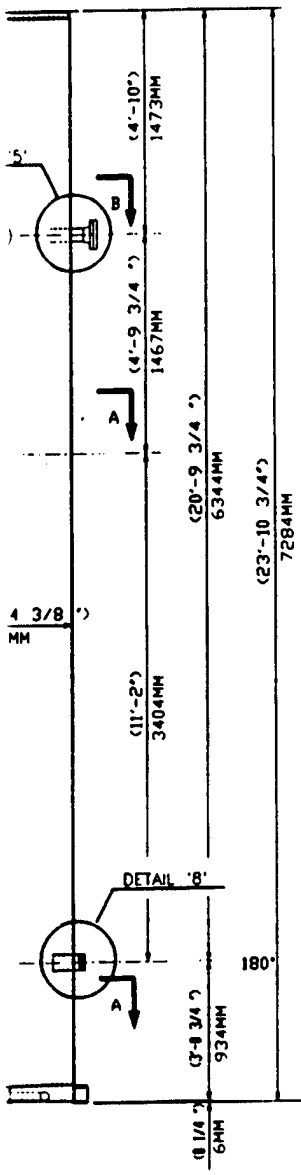
(CYCLINDER DETAIL)

NO	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2	AH	6/17/96		FIELD MODIFICA
1	DU	3/10/95	SLB	REMOVED BOLTS

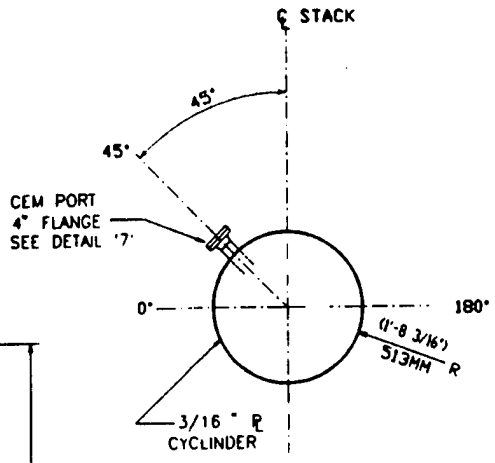
(1)

HERWISE.

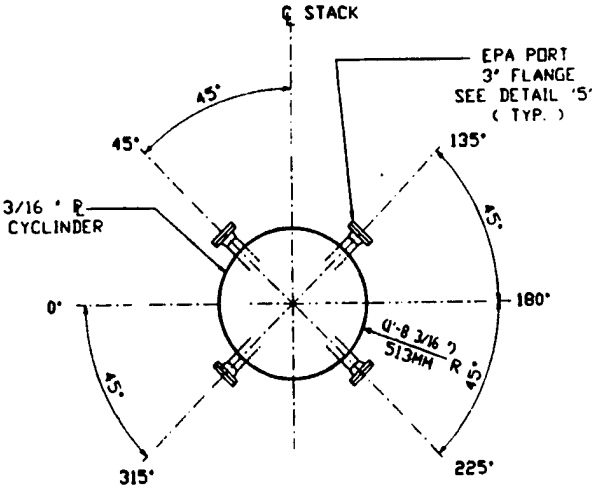
STACK



TION VIEW
270°)

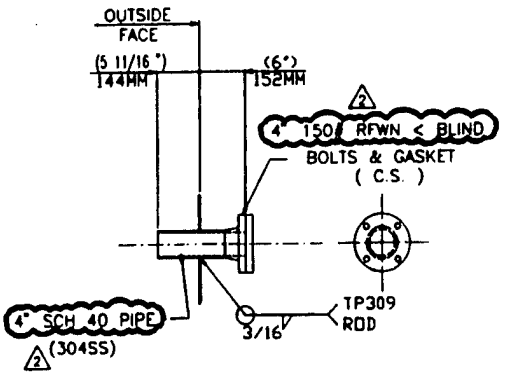


SECTION A-A
CEM SAMPLE PORT

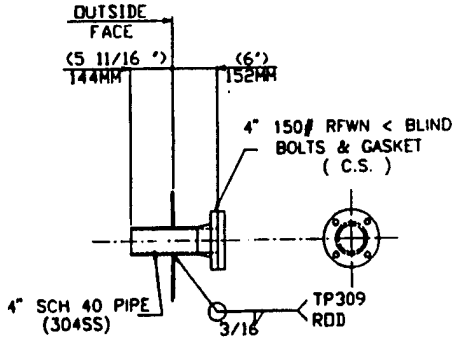


SECTION B-B
EPA SAMPLE PORTS

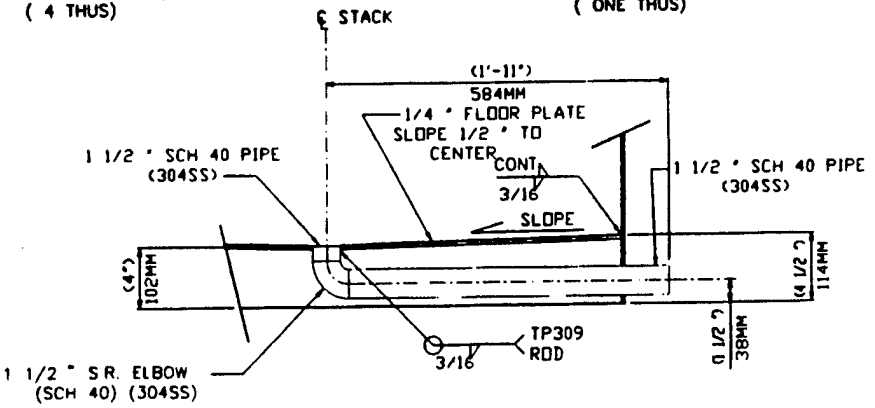
SAMPLE PORTS PLAN VIEW



DETAIL '5'
(EPA CONNECTIONS)
(4 THUS)



DETAIL '7'
(CEM CONNECTION)
(ONE THUS)



DETAIL '6'
(STACK FLOOR DRAIN)
(ONE THUS)

	JOB INFORMATION	
	CUSTOMER ROY F WESTON, INC	
	P.O. NO. 43366	
	JOBSITE ALPINE, AL	
	END USER U.S. ARMY ENVIRONMENTAL CENTER	
	SERVICE AFTER BURNER SYSTEM	
	ARRTECH JOB NO. 1J-120	
FIELD MODIFICATIONS		
B REMOVED BOLTED ACCESS DOOR & ADDED SITE PORT		
D REVISION DESCRIPTION		

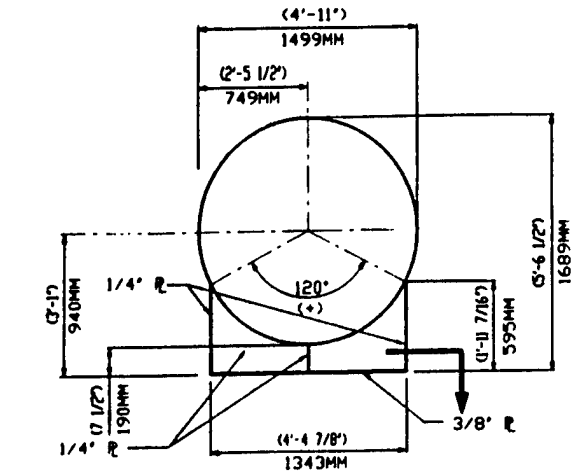
Arrtech
6506 S. Lewis, Suite 230
Tulsa, OK 74136
ENVIRONMENTAL SYSTEMS, INCORPORATED

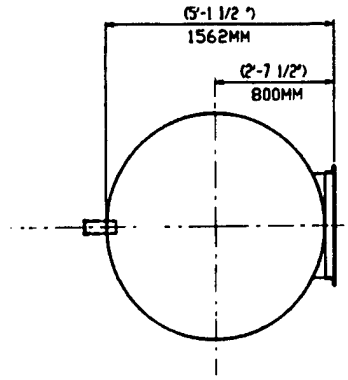
DRAWING TITLE
STEEL ARRANGEMENT - STACK & DETAIL

DRAWN BY DU	DATE 12/14/94	JOB NO 1J-120	
CHK'D BY JLB	DATE 1/11/95	DRAWING NO 1SB	
APPR'D BY	DATE / /	REVISION NO 2	

CADD DWG 1J1201SB.DGN
CADD DWG 1J1205B.DWG

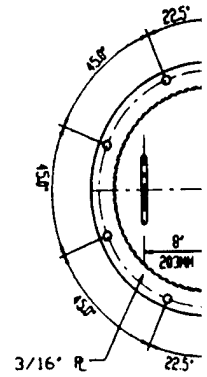
(2)



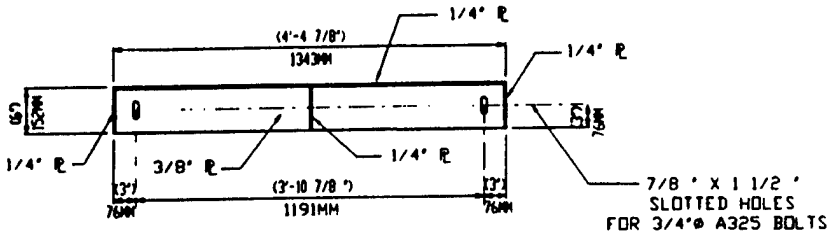


27"ϕ BOLTED ACCESS

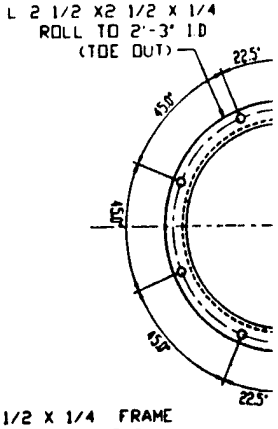
CROSS-SECTION

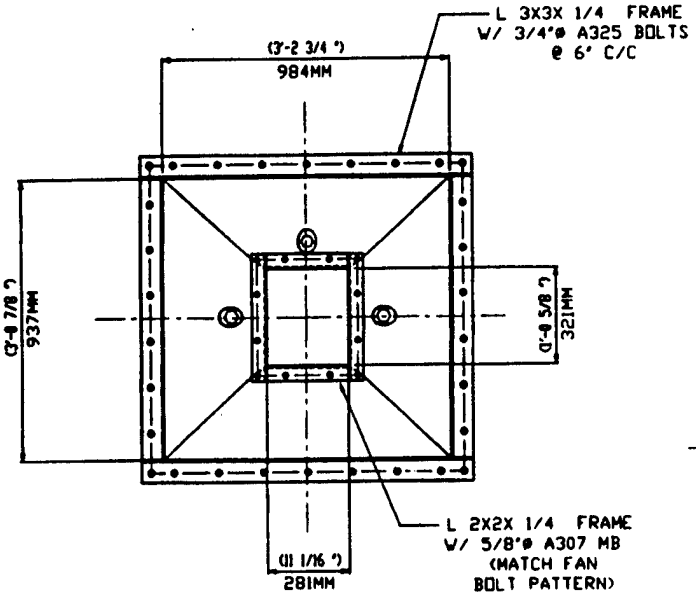


27



SADDLE DETAILS

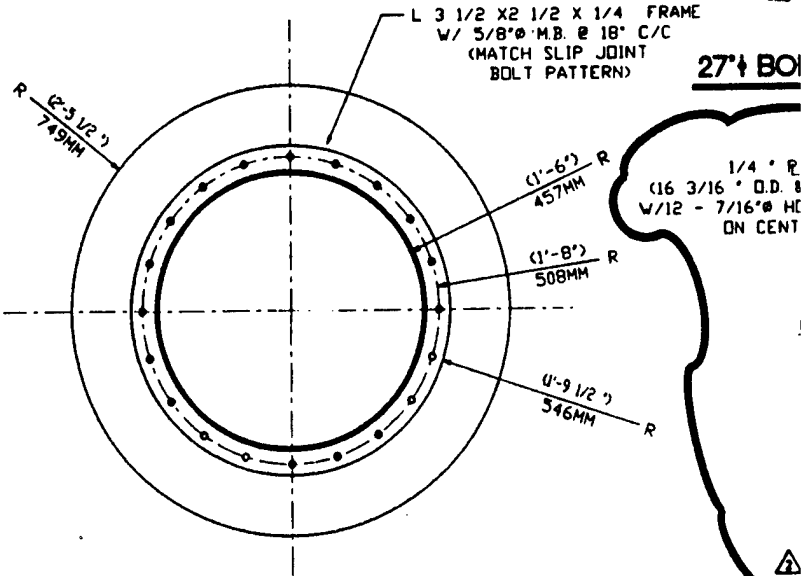




INLET TRANSITION

SECTION C-C

FROM DWG. 1SA



OUTLET TRANSITION

SECTION D-D

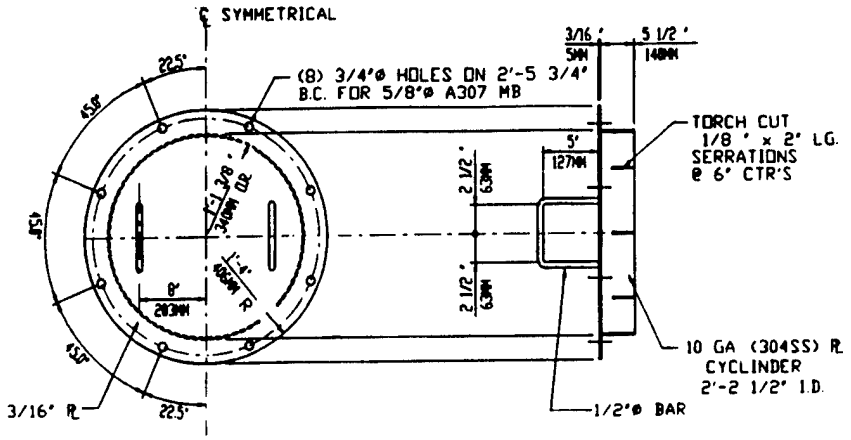
FROM DWG. 1SA

NOTES:

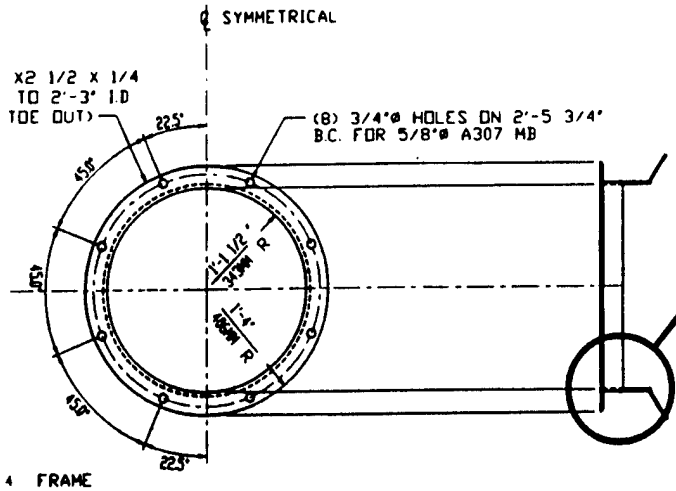
1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES W/ (1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH COAT W/ (2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4" GALV. CHK'D PLATE.

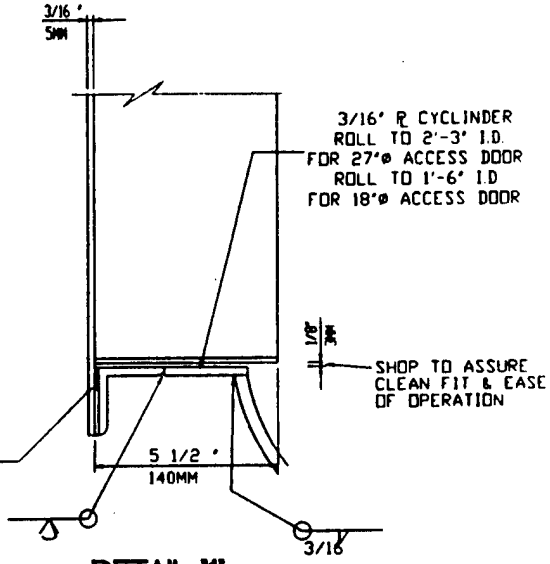
NO	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2	DU	5/26/95	JLB	REVISED INLET
1	JU	7/10/95	JLB	REMOVED 18" A

(1)



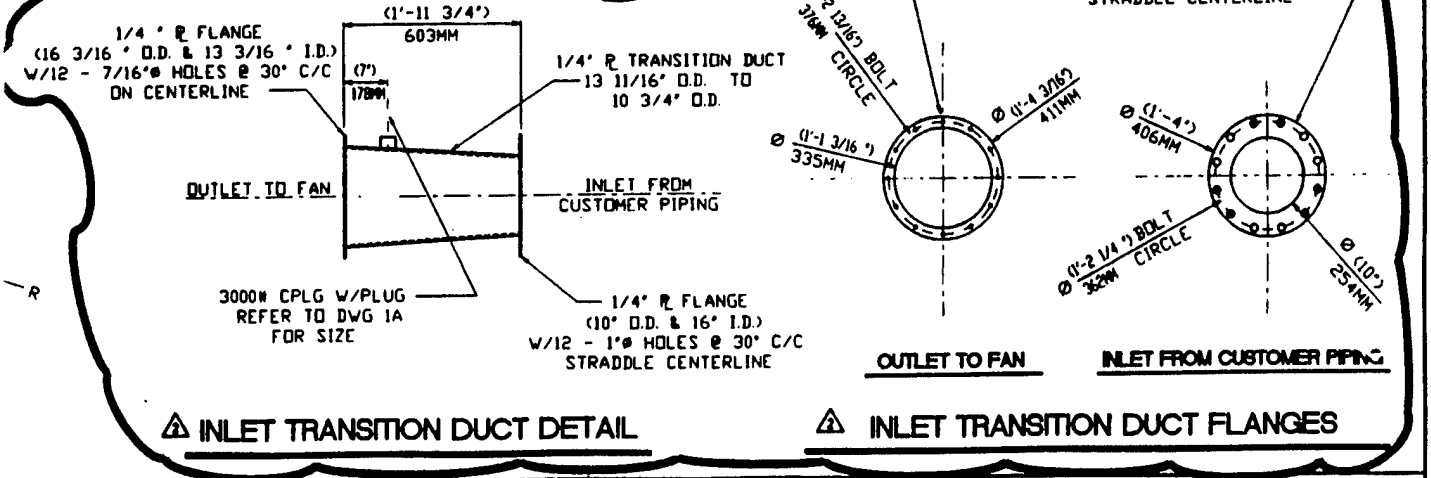
27"ϕ BOLTED ACCESS DOOR DETAIL





DETAIL "1"
DOOR LINING

27"ϕ BOLTED ACCESS DOOR FRAME DETAIL



⚠ INLET TRANSITION DUCT DETAIL

⚠ INLET TRANSITION DUCT FLANGES

JLB	REVISED INLET DUCT SIZE & FLANGES	
JLB	REMOVED 18" ACCESS DOOR & ADDED INLET DUCT	
CHK'D	REVISION DESCRIPTION	

JOB INFORMATION

CUSTOMER	ROY F WESTON, INC
P.O. NO	43366
JOBSITE	ALPINE, AL
END USER	U.S. ARMY ENVIRONMENTAL CENTER
SERVICE	AFTER BURNER SYSTEM
ARRTECH JOB NO	1J-120

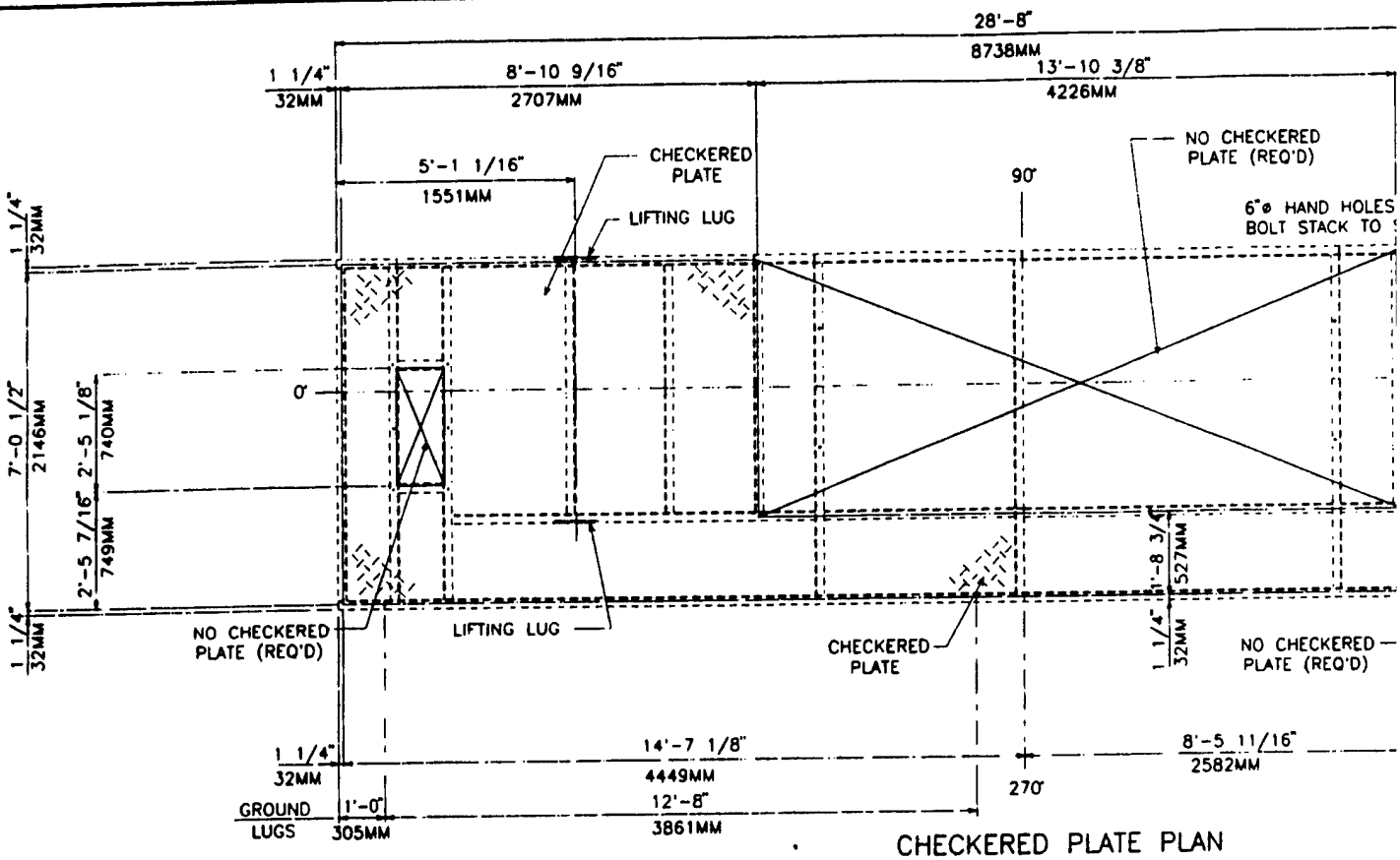
Arrtech
ENVIRONMENTAL SYSTEMS INCORPORATED
6506 S. Lewis, Suite 230
Tulsa, OK 74136

DRAWING TITLE
STEEL ARRANGEMENT - DETAILS

DRAWN BY DU	DATE 12/14/94	JOB NO 1J-120
CHK'D BY JLB	DATE 1/2/95	DRAWING NO 1SC
APPR'D BY	DATE / /	REVISION NO 2

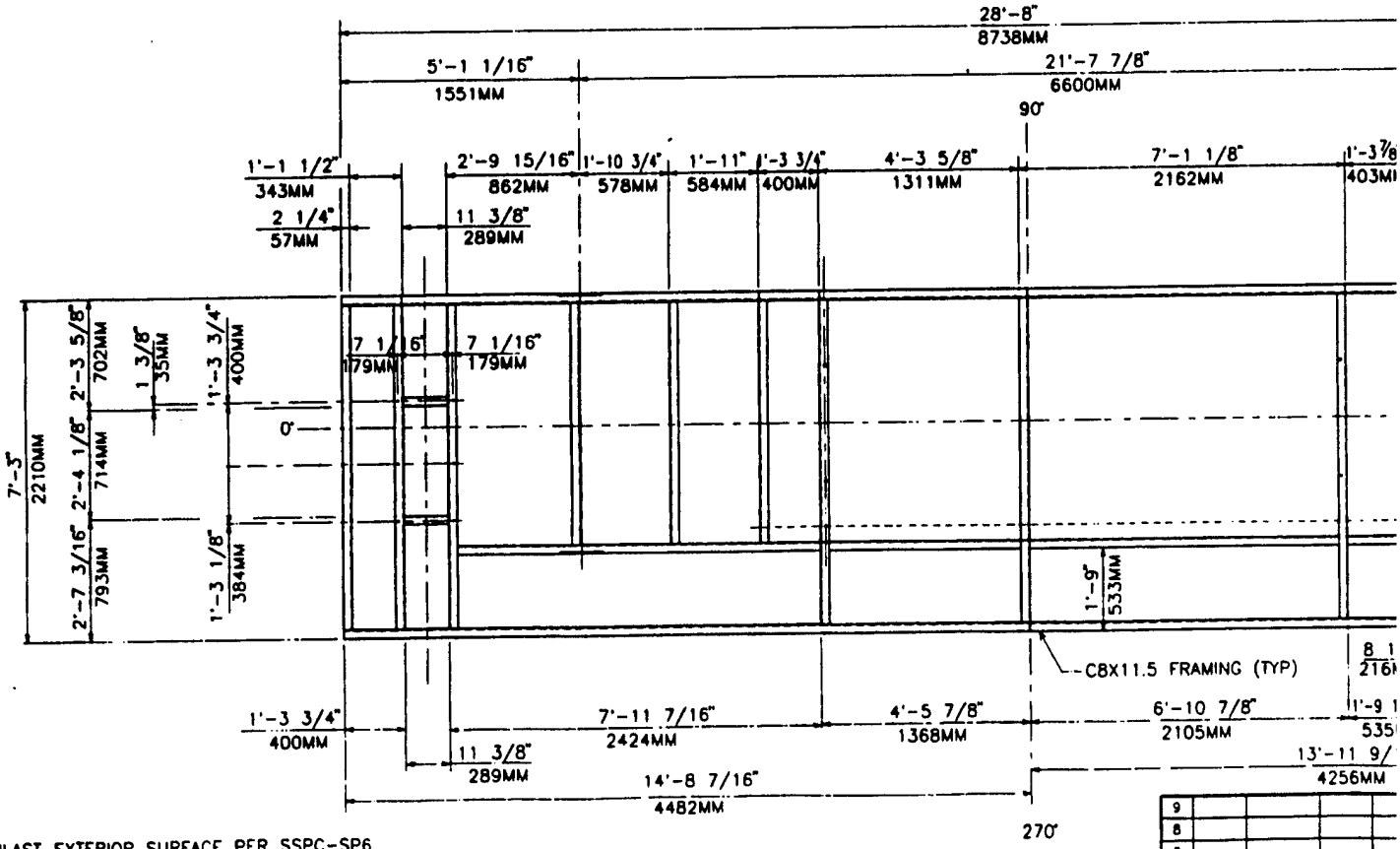
CADD DWG: 1J120ISC.DWN
CADD DWG: 1J120SC.DWG

(2)



CHECKERED PLATE PLAN

SKID FRAMING PLAN



SKID STEEL PLAN

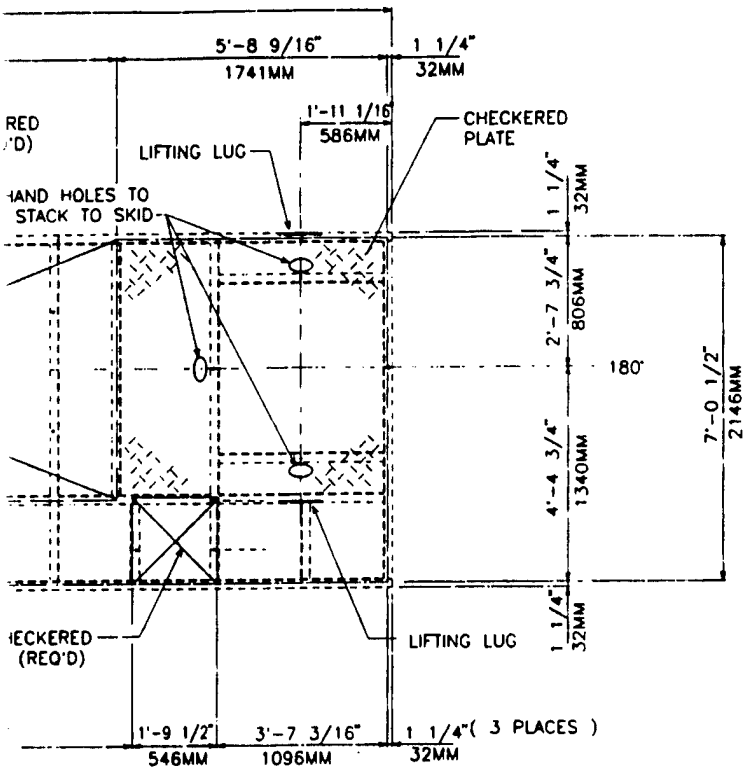
SKID FRAMING PLAN

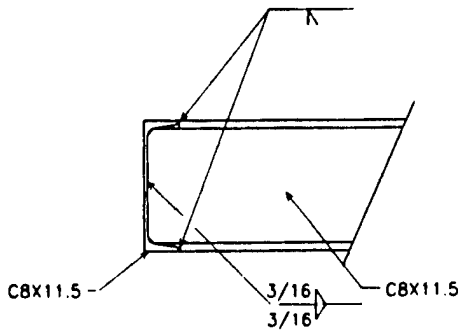
NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES W/(1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH COAT W/(2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - 1/4 " GALV. CHK'D PLATE.

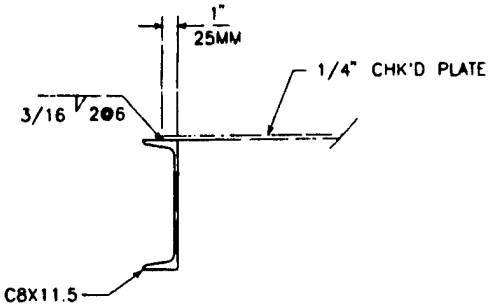
NO.	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2				
1	OU	3/10/95	JLB	R

(1)

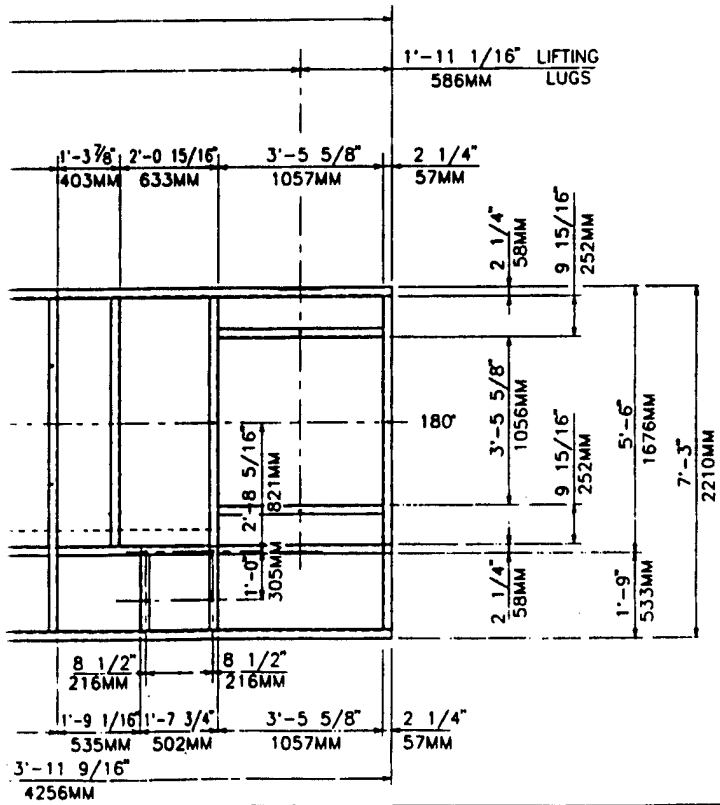


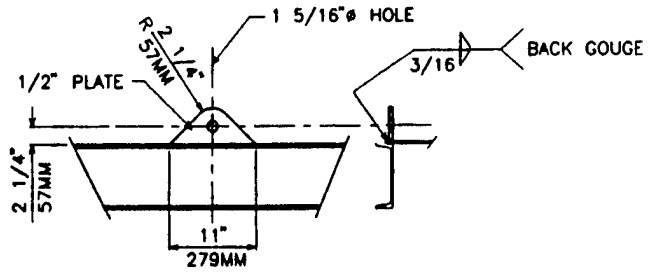


DETAIL '1'

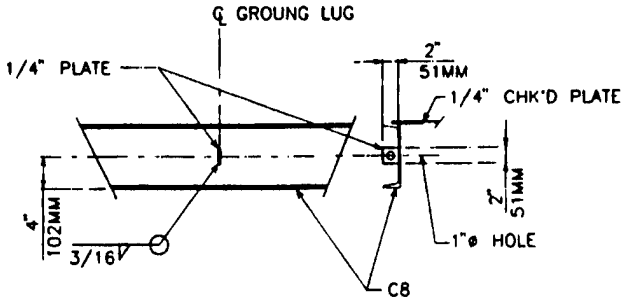


DETAIL '2'





LIFTING LUG
(4 THUS)



GROUND LUGS
(2 THUS)

JLB	REVISED SKID & ADDED GROUND LUGS	
CHK'D	REVISION DESCRIPTION	

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC
P.O. NO.: 43366
JOBSITE: ALPINE, AL.
END USER: U.S. ARMY ENVIRONMENTAL CENTER
SERVICE: AFTER BURNER SYSTEM
ARRTECH JOB NO.: U-120

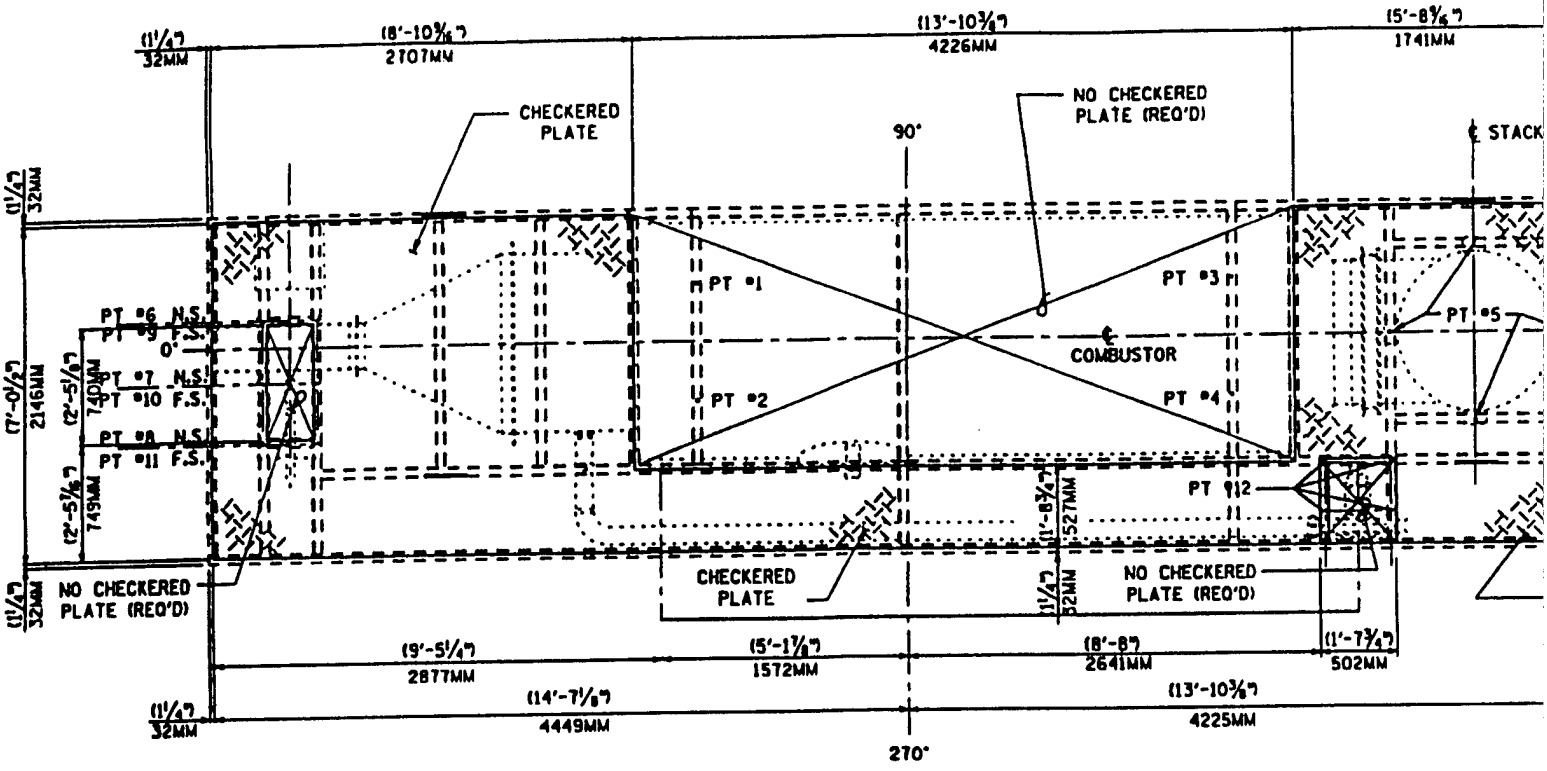
Arrtech ENVIRONMENTAL SYSTEMS, INCORPORATED
6506 S. Lewis, Suite 230
Tulsa, OK 74136

DRAWING TITLE
STEEL ARRANGEMENT - SKID & DETAILS

DRAWN BY OU	DATE 12/14/94	JOB NO U-120
CHK'D BY JLB	DATE 1/12/95	DRAWING NO. 1SD
APPR'D BY	DATE	REVISION NO. 1

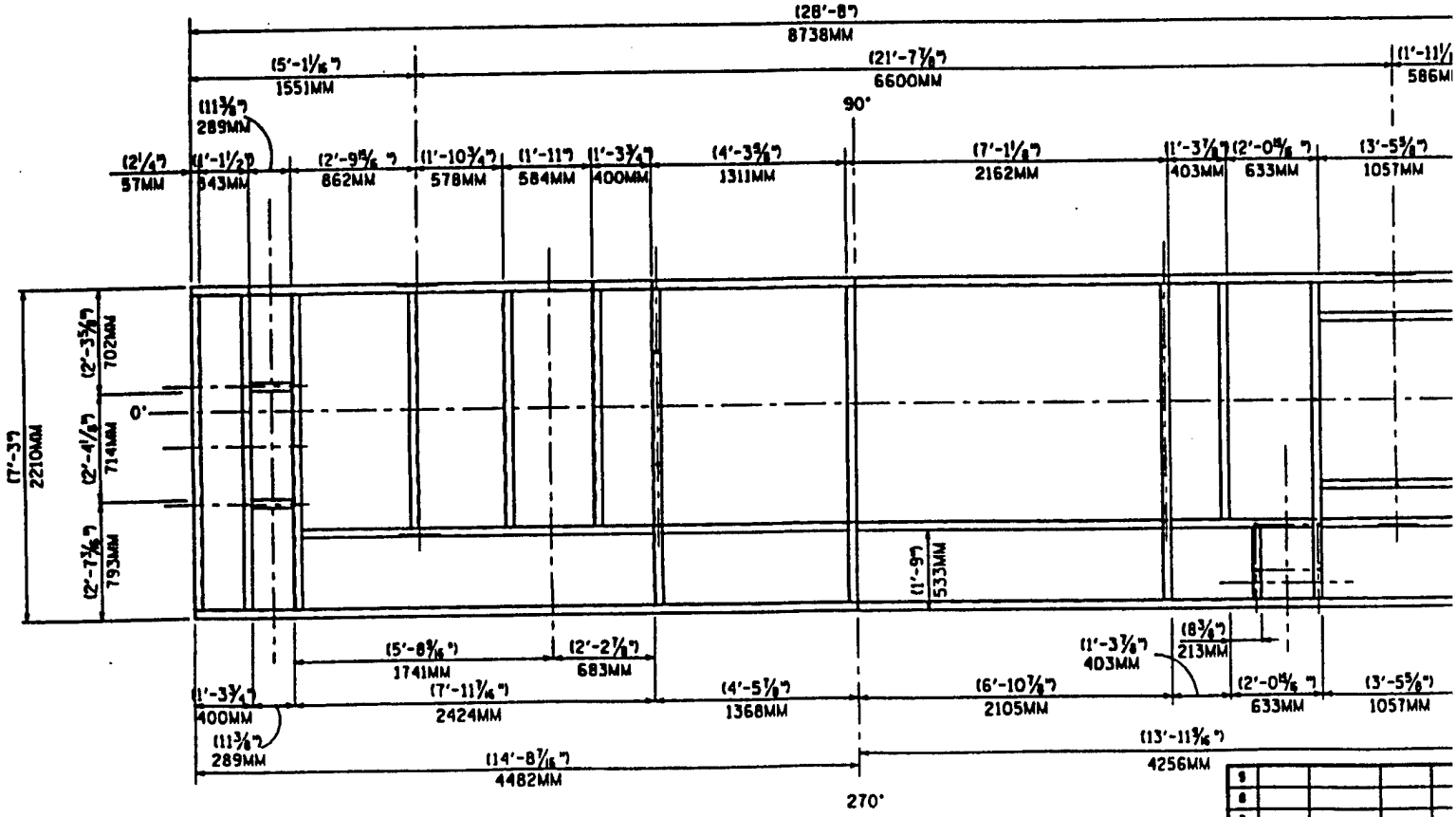
CADD DWG: U1201SD.DGN

(2)



NOTE:
(N.S.) INDICATES NEAR SIDE
(F.S.) INDICATES FAR SIDE

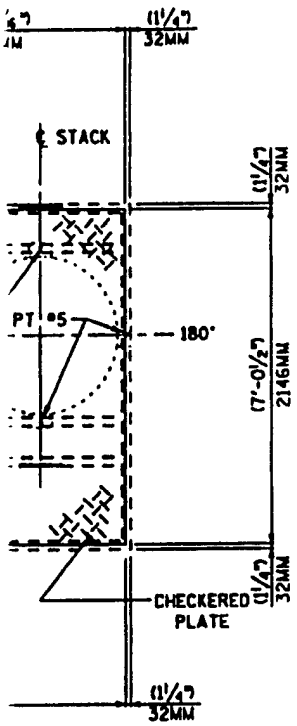
FOUNDATION PLAN

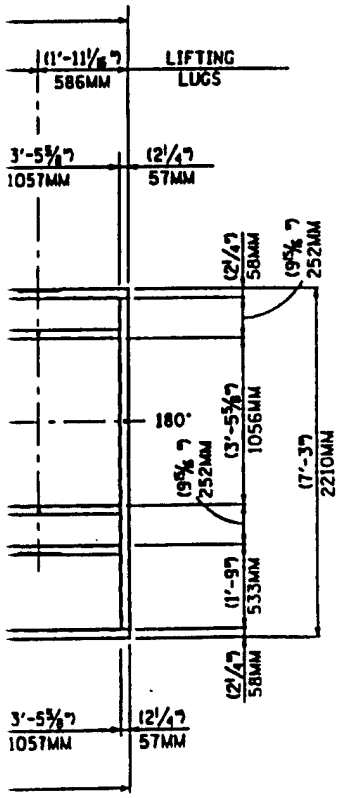


SKID FRAMING PLAN

NO.	BY	DATE	CHK'D	
9				
8				
7				
6				
5				
4				
3				
2	OU	3/10/95	J.B	R
1	OU	1/12/95	J.B	R

(1)





FOUNDATION LOADS

	DEAD LOAD	WIND (0° - 180°)			WIND (90°-270°)			EARTHQUAKE (ALL)		
AFTER BURNER		SHEAR	OTM	P•	SHEAR	OTM	P•	SHEAR	OTM	P•
TOTAL	5,500	1,194	6,567		284	1,930		1,205	6,628	
FIXED BEARING	3,582	712	3,916	(±) 1,003	142	965	(±) 87	785	4,318	(±) 387
MAXIMUM = DL + P•		PT #1, #2		2,794	PT #1, #2		1,780	PT #1, #2		2,178
MINIMUM = 90%DL - P•		PT #1, #2		609	PT #1, #2		1,519	PT #1, #2		1,225
SLIDE BEARING	1,918	482	2,651	(±) 679	142	965	(±) 87	120	2,310	(±) 207
MAXIMUM = DL + P•		PT #3, #4		1,638	PT #3, #4		1,057	PT #3, #4		1,166
MINIMUM = 90%DL - P•		PT #3, #4		184	PT #3, #4		869	PT #3, #4		656
STACK										
TOTAL	4,352	1,356	16,161		1,356	16,161		954	15,198	
PER BOLT	1,088	339		(±) 4,370	339		(±) 4,370	477		(±) 4,110
MAXIMUM = DL + P•		PT #5		5,458	PT #5		5,458	PT #5		5,198
MINIMUM = 90%DL - P•		PT #5		-3,391	PT #5		-3,391	PT #5		-3,131
FANS										
ID FAN	360	152	310		60	120	(±) 70	79	237	(±) 139
PER BOLT	60	25		(±) 59	10		(±) 18	13		(±) 70
MAXIMUM = DL + P•		PT #6, #8, #9, #11		119	PT #7, #10		130	PT #6, #8, #9, #11		130
MINIMUM = 90%DL - P•		PT #6, #8, #9, #11		-5	PT #7, #10		-16	PT #6, #8, #9, #11		-16
		PT #7, #10		60	PT #6, #8, #9, #11		78	PT #7, #10		199 -85
FD FAN	300	230	345		115	173		66	132	
PER BOLT	75	58		(±) 173	29		(±) 60	16		66
MAXIMUM = DL + P•		PT #12		248	PT #12		135	PT #12		141
MINIMUM = 90%DL - P•		PT #12		-106	PT #12		7	PT #12		1
SKID										
TOTAL	3,300									

ALL LOADS IN POUNDS (#) EXCEPT OTM FOOT-POUNDS (FT-#)

(-) INDICATES UPLIFT
OTM = OVERTURNING MOMENT
P• = VERTICAL LOAD DUE TO OTM

CODE:

ANSI A58.1, 1982

WIND VELOCITY = 90 MPH
IMPORTANCE FACTOR = 1.07

EARTHQUAKE ZONE = 4
IMPORTANCE FACTOR = 1.25

NOTES:

1. SANDBLAST EXTERIOR SURFACE PER SSPC-SP6 .
2. PAINT EXTERIOR HTR. SURFACES W (1) COAT (3 - 4) MILS DFT CARBOZINC 11. FINISH COAT W (2) COATS (4 MILS EACH) DFT "SHERMAN WILLIAMS - ALL WEATHER EXPOXY".
3. ALL C. S. MATERIAL SHALL BE A36
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.
5. SKID FLOOR PLATE - ¼" GALV. CHK'D PLATE.

CHK'D	REVISION DESCRIPTION
JLB	REVISED WIND VELOCITY & ADDED EARTHQUAKE LOADING
JLB	REVISED STACK LOADING

JOB INFORMATION

CUSTOMER: ROY F. WESTON, INC.
P.O. NO.: 43366
JOBSITE: ALPINE, AL.
END USER: U.S. ARMY ENVIRONMENTAL CENTER
SERVICE: AFTER BURNER SYSTEM
ARRTECH JOB NO.: IJ-120

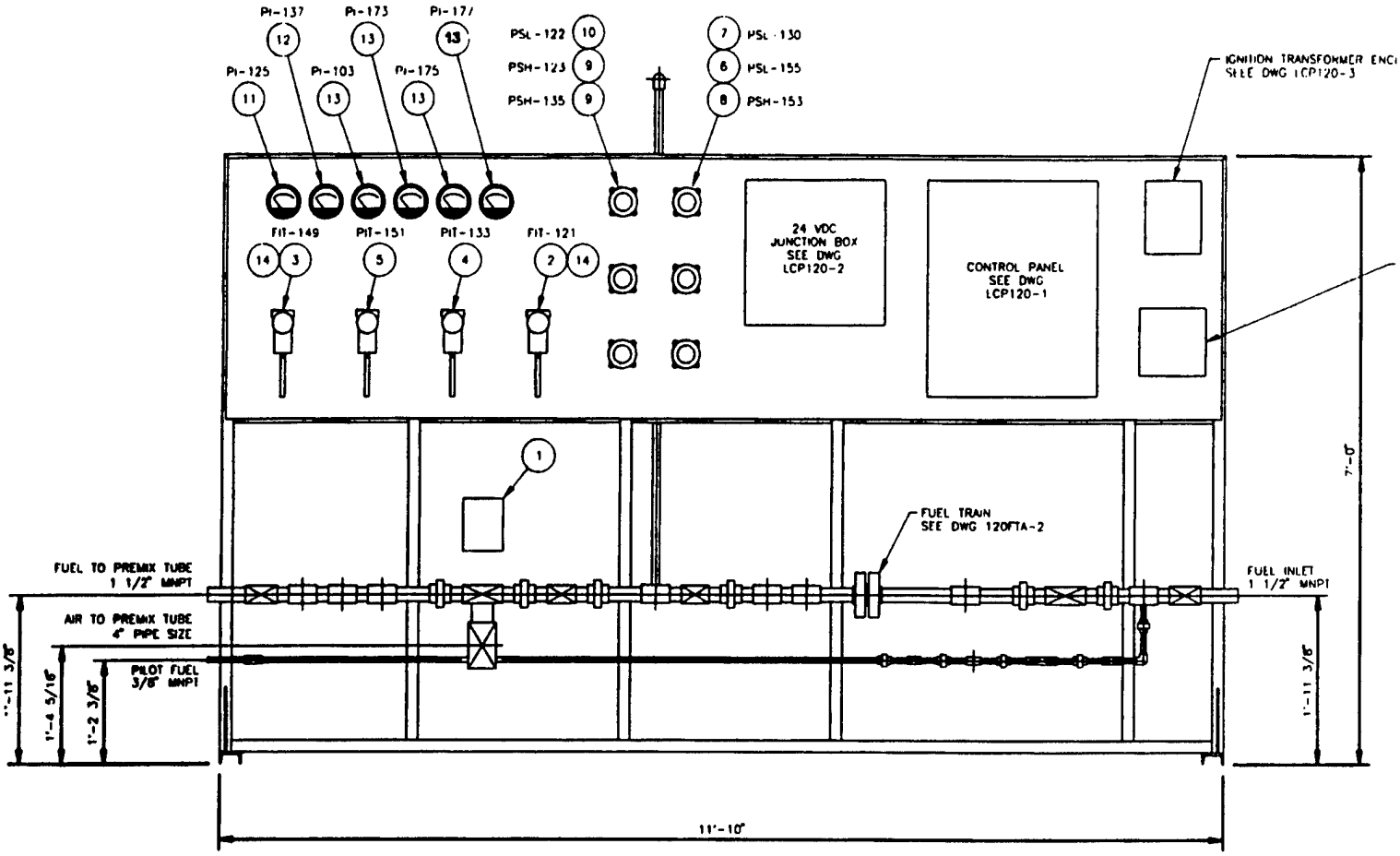
Arrtech ENVIRONMENTAL SYSTEMS, INCORPORATED
TULSA OKLAHOMA — BLOOMINGTON MINNESOTA

DRAWING TITLE: FOUNDATION PLAN

DRAWN BY OU	DATE 10/13/94	JOB NO. IJ-120	As Built
CHK'D BY JLB	DATE 1/12/95	DRAWING NO. 2A	11/21/96
APPR'D BY	DATE / /	REVISION NO. 2	

CADD Dwg: IJ120-2A.DGN

(2)



FRONT ELEVATION

GENERAL NOTES

1. FUEL RACK FINISH: GREY ENAMEL
2. TUBING SHALL BE COPPER WITH BRASS FITTINGS
3. CONDUIT SHALL BE RIGID GALVANIZED STEEL (3/4" MINIMUM). INSTALL FLEXIBLE CONDUIT AT EACH DEVICE AS REQUIRED FOR MAINTENANCE PURPOSES (18" MINIMUM). CONDUIT FITTINGS SHALL BE CROUSE-HINDS FORM 7 OR EQUAL. INSTALL CONDUIT SEALS AS REQUIRED FOR CLASS I, DIVISION 2, GROUP D AREA
4. ITEMS 15 & 16 SHALL BE INSTALLED IN PRESSURE TAPS ON FF-121

REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
FRF120	FUEL RACK FABRICATION

BILL OF MATERIAL		
ITEM	QTY	DESCRIPTION
1	1	MOTOR, FIRING RATE CONTROL, SEE Arltech SPECIFICATION 120-5
2	1	TRANSMITTER, DP, SEE Arltech SPECIFICATION 120-7
3	1	TRANSMITTER, DP, SEE Arltech SPECIFICATION 120-16
4	1	TRANSMITTER, PRESSURE, SEE Arltech SPECIFICATION 120-8
5	1	TRANSMITTER, PRESSURE, SEE Arltech SPECIFICATION 120-11
6	1	SWITCH, PRESSURE SEE Arltech SPECIFICATION 120-10
7	1	SWITCH, PRESSURE, SEE Arltech SPECIFICATION 120-12
8	1	SWITCH, PRESSURE, SEE Arltech SPECIFICATION 120-15
9	2	SWITCH, PRESSURE, SEE Arltech SPECIFICATION 120-17
10	1	SWITCH, PRESSURE, SEE Arltech SPECIFICATION 120-18
11	1	GAUGE, PRESSURE; DWYER 2210 (0-10 PSI)
12	1	GAUGE, PRESSURE, DWYER 2205 (0-5 PSI)
13	4	GAUGE, PRESSURE, DWYER 2030 (0-30" WC)
14	2	VALVE, MANIFOLD, AGCO MHC-4
15	2	VALVE, GAUGE, AGCO M5VDC-44
16	2	PLUG, BLEED, AGCO VAC-4

3

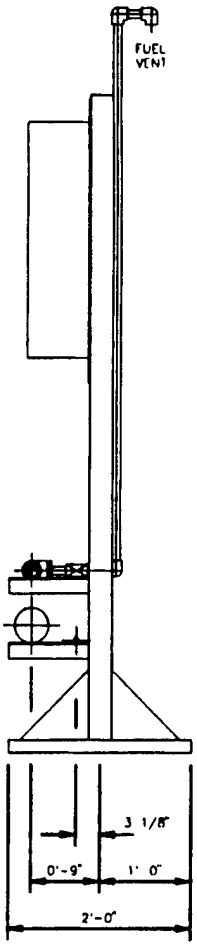
NITION TRANSFORMER ENCLOSURE
LE DWG LCP120-3

FLAME SAFEGUARD ENCLOSURE
SEE DWG LCP120-3

7'-0"

FUEL INLET
1 1/2" MNPT

1'-11 3/8"



SIDE ELEVATION

REVISIONS						
NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	5-6-95		
1	REVISED AIR & PILOT PIPE ELEVATION	JW	6-28-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	cdp	5/11/96		

ENGINEERING RECORD			
SCALE 1" = 1'-0"			
DWN JW	DATE 1-11-95	CKD	DATE
ENGR	DATE		

Arltech ENVIRONMENTAL SYSTEMS

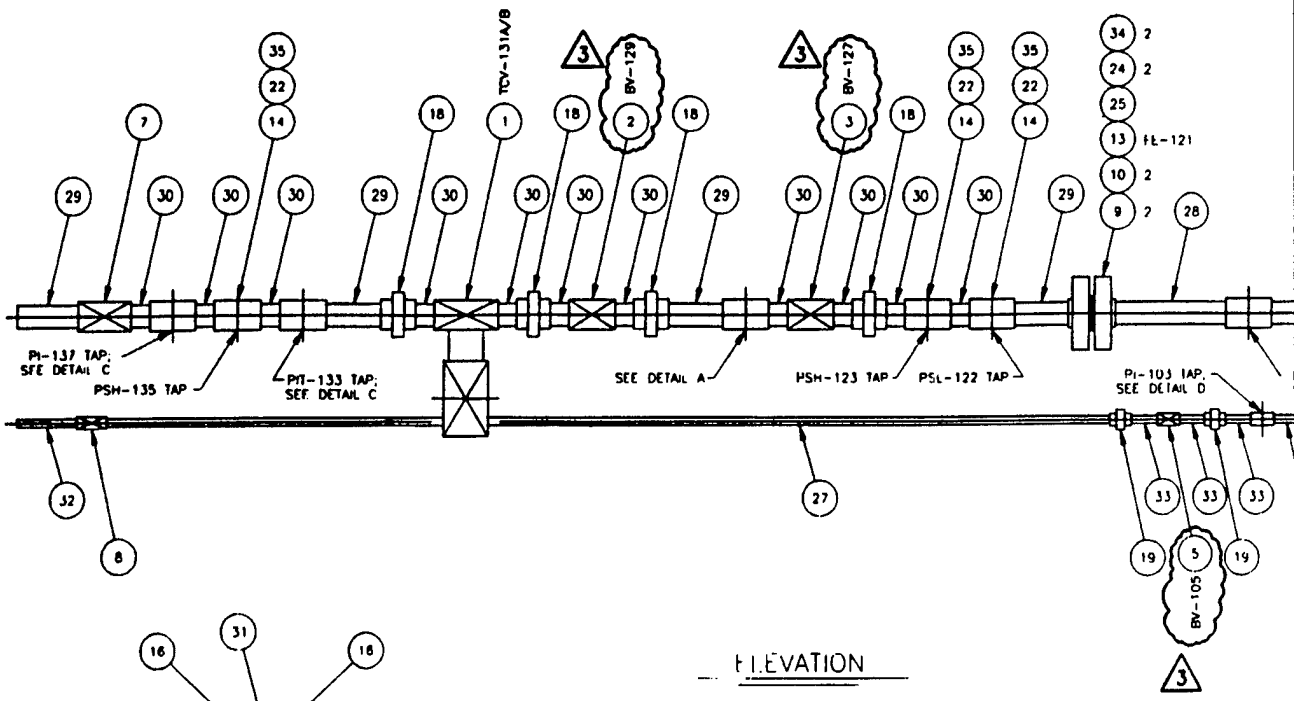
PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

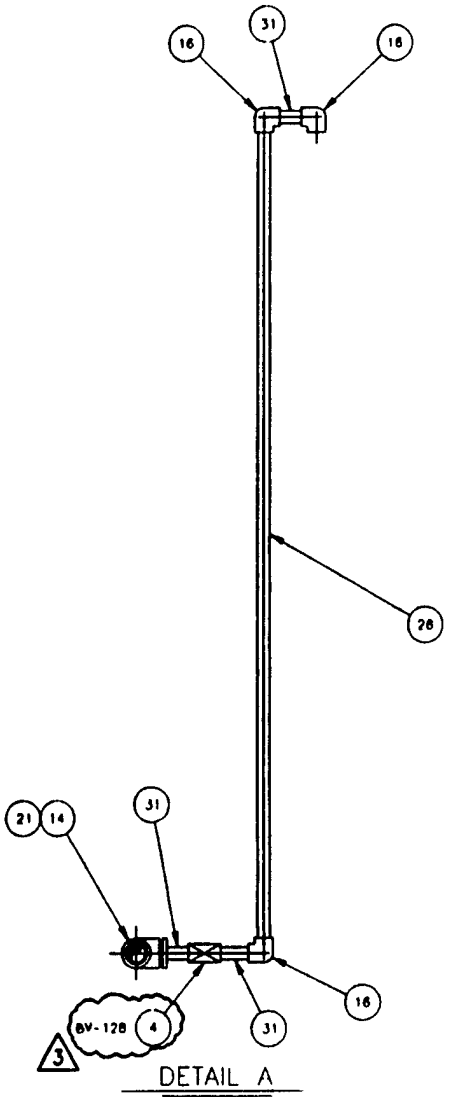
FUEL TRAIN ASSEMBLY AFTERBURNER

APPROVED		DWG. #: FTA120-1	REVISION 3

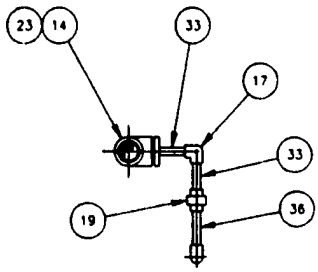
2



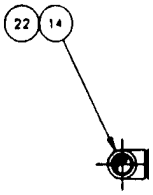
ELEVATION



DETAIL A



DETAIL B



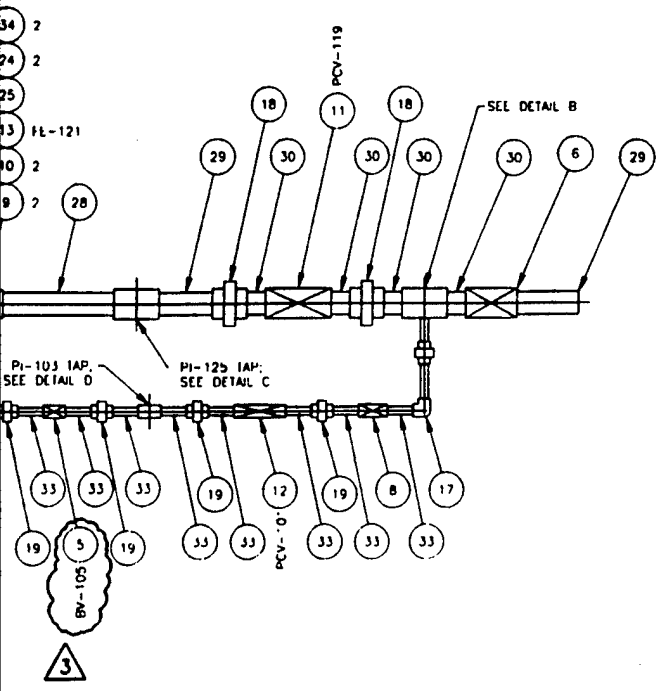
DETA

TYPICAL

GENERAL NOTES

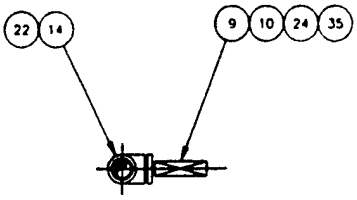
1. FINISH: ALL PIPE, NIPPLES AND PIPE FITTINGS SHALL BE PAINTED WITH GREY ENAMEL.
2. TWO (2) EACH OF ITEMS 9, 10 & 24 ARE MOUNTED ON PREMIX AIR DUCT

REFERENCE DRAWINGS	
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM



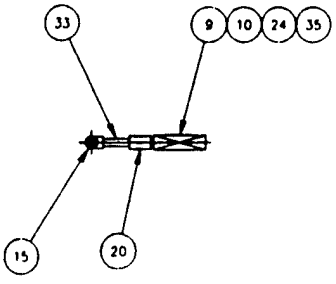
BILL OF MATERAIL

ITEM	QTY	DESCRIPTION
1	1	VALVES, CONTROL; MAXON M-4 x 1 1/2-P w/ CB & L
2	1	VALVE, SHUTOFF; MAXON 1 1/2-5100-HS w/ VCS-1 SW
3	1	VALVE, SHUTOFF; MAXON 1 1/2-5100-HS
4	1	VALVE, SOLENOID; ASCO EF8210C35, 3/4"
5	1	VALVE, SOLENOID; ASCO EF8030G8, 3/8"
6	1	VALVE, BALL; WORCESTER 1 1/2"-K411BSF
7	1	VALVE, BALL; WORCESTER 1 1/2"-411BSE
8	2	VALVE, BALL; WORCESTER 3/8"-411BSE
9	6	VALVE, GAUGE; AGCO M5VDC-44
10	6	PLUG, BLEED; AGCO VAC-4
11	1	REGULATOR, PRESSURE; MAXON 1 1/2" 234 B-1
12	1	REGULATOR, PRESSURE; MAXON 3/8" 043-180
13	1	PLATE, ORIFICE; SEE ArrTech SPECIFICATION 120-6
14	8	TEE, THD; 1 1/2" 2000#, CSTL
15	1	TEE, THD; 3/8" 2000#, CSTL
16	3	ELBOW, 90° THD; 3/4" 2000#, CSTL
17	2	ELBOW, 90° THD; 3/8" 2000#, CSTL
18	6	UNION, THD; 1 1/2" 2000#, CSTL
19	5	UNION, THD, 3/8" 2000#, CSTL
20	1	COUPLING, THD REDUCING; 1/2" x 3/8", CSTL
21	1	BUSHING, THD REDUCING; 1 1/2" x 3/4", CSTL
22	7	BUSHING, THD REDUCING; 1 1/2" x 1/2", CSTL
23	1	BUSHING, THD REDUCING; 1 1/2" x 3/8", CSTL
24	6	PLUG, PIPE, 1/2", CSTL
25	1	SET, ORIFICE FLANGE, 1 1/2" 300# RF THD, CSTL
26	1	PIPE, TBE, 3/4" STD WT x 5'-10" LG, CSTL
27	1	PIPE, TBE, 3/8" EXSTG x 7' 4" LG, CSTL
28	1	NIPPLE, TBE; 1 1/2" STD WT x 11 1/8", CSTL
29	6	NIPPLE, TBE; 1 1/2" STD WT x 6" LG, CSTL
30	15	NIPPLE, TBE; 1 1/2" STD WT x 3" LG, CSTL
31	3	NIPPLE, TBE, 3/4" STD WT x 3" LG, CSTL
32	1	NIPPLE, TBE; 3/8" EXSTG x 6" LG, CSTL
33	11	NIPPLE, TBE; 3/8" EXSTG x 3" LG, CSTL
34	2	GASKET, FLG; 1 1/2" 300# RING TYPE x 1/8", BUNA-N
35	7	FITTING, TUBE; 3/8" TUBE x 1/2" MNPT, BRASS
36	1	NIPPLE, TBE; 3/8" EXSTG x 3 5/8" LG, CSTL



DETAIL C

TYPICAL 4 PLACES



DETAIL D

NO	DESCRIPTION	BY	DATE	CHD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	REVISED AIR & PILOT PIPE LOCATION	JW	4-28-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	CAT	8/15/96		

ENGINEERING RECORD

SCALE 1 1/2" = 1'-0"

DWN JW DATE 1-13-95 CHD DATE

ENGR DATE

ArrTech ENVIRONMENTAL SYSTEMS

PREPARED FOR ROY F. WESTON, INC.

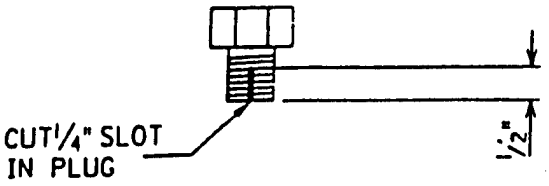
CLIENT JOB

FUEL TRAIN ASSEMBLY AFTERBURNER

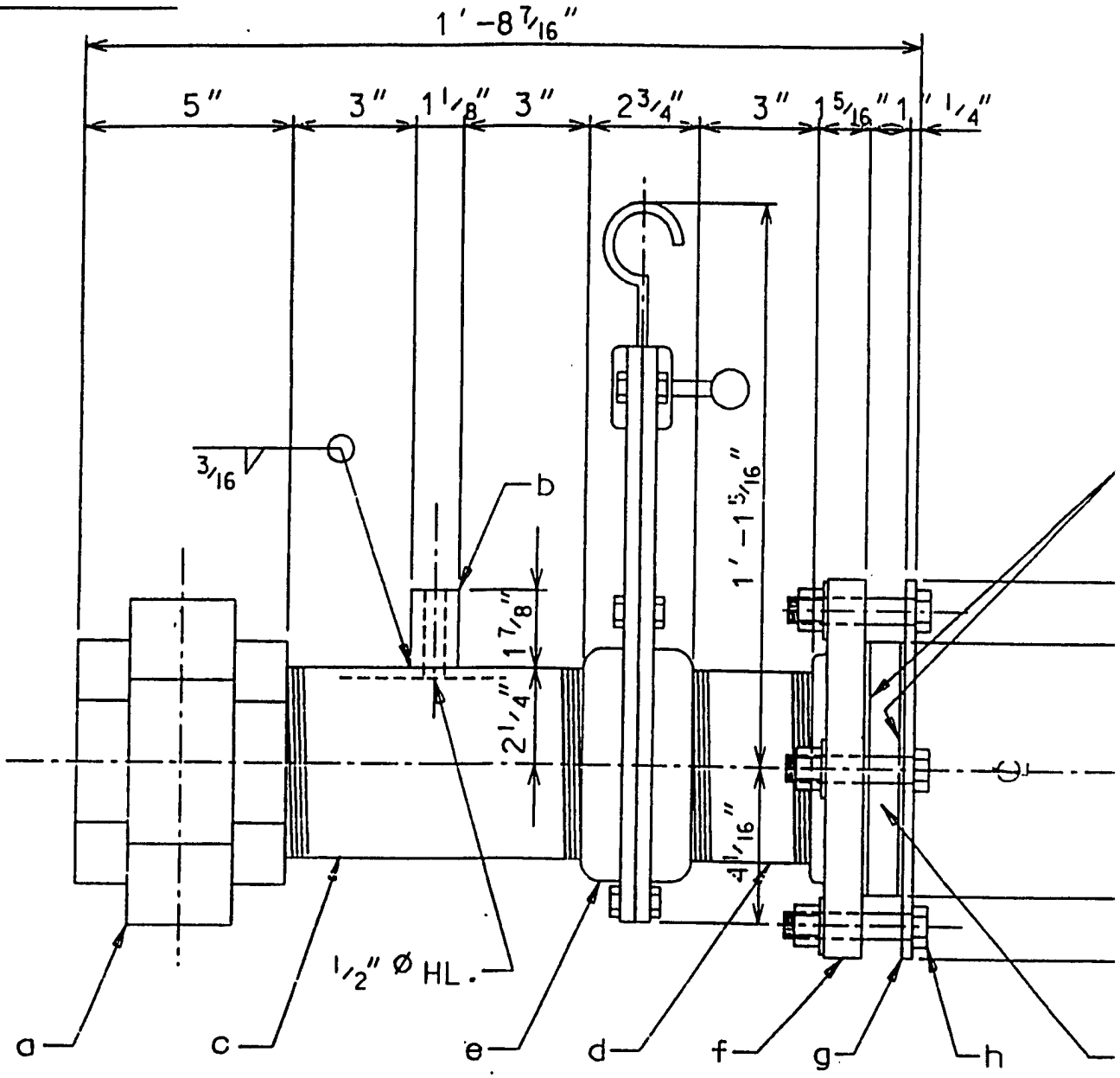
(2)

APPROVED

DWG. #: FTA120-2 REVISION 3



COUPLING PLUG



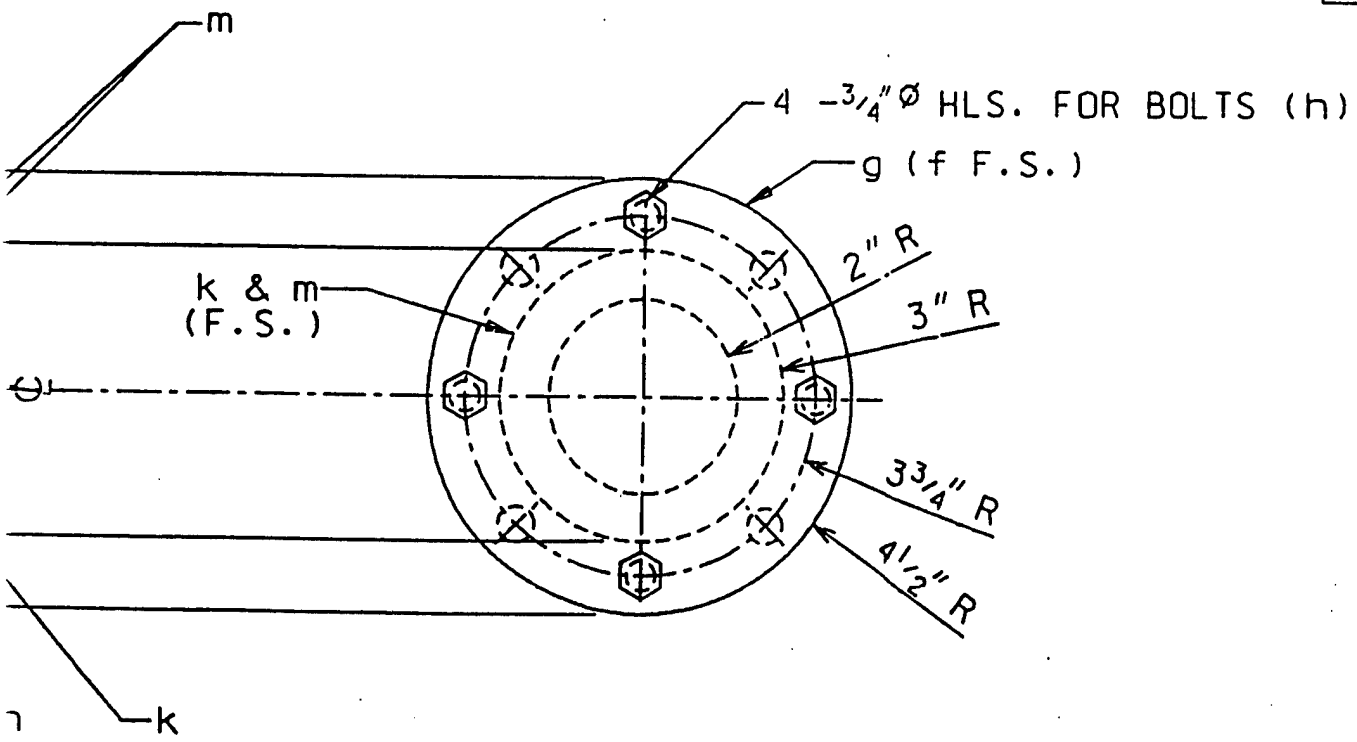
REV	DATE	BY	CKD	REVISION	REV	DATE	BY	CKD	REVISION
6					3				
5					2				
4					1				

(1)

BILL OF MATERIAL

MK.	QTY.	DESCRIPTION	LENGTH FT	LENGTH IN	MAT'L.	C.S. WT.	S.S WT.
a	1	4"Ø 3000# THREADED PIPE UNION			A105	30	
b	1	1/2" Ø 3000# THREADED PIPE CPLG W/ PLUG			A105	1	
c	1	4"Ø SCH40 PIPE (T.B.E.)	0	9 3/8	A106	8	
d	1	4"Ø SCH40 PIPE (T.B.E.)	0	5 1/4	A106	5	
e	1	4" MOSSER TYPE GT SLIDE VALVE					
f	1	4"Ø 150# R.F. THREADED FLANGE			A105	13	
g	1	PL 1/4" x 4" I.D. x 9" O.D.			A36	4	
h	4	5/8"Ø H.S.B.W/ NUT & WASH.	0	2 1/4	A325	1	
k	1	3/4" THK. x 6"Ø PYREX GLASS. P/N 692540					
m	2	1/8" THK. x 4" I.D. x 6" O.D.					
		COMPRESS. GASKET (KLINGER #C-4401)					

C.S. WT. 62



Arrtech
ENVIRONMENTAL SYSTEMS, INCORPORATED
6506 S. Lewis, Suite 230
Tulsa, OK 74136

SIGHT PORT W/ VALVE - 4"Φ

DRAWN: OU	DATE: 1/10/95	JOB: STANDARD
CHECKED: JLB	DATE: 1/11/95	DWG NO: AES-5-53
CERTIFIED:	DATE: / /	REVISION: 0 - As Built 2/8/1996

CAD Filename : AES-5-53.DGN

(2)

THERMAL OXIDIZER EQUIPMENT (CO

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRIPTION
ES120-1	3	8/1/96	ELECTRICAL SCHEMATI
ES120-2	3	8/1/96	ELECTRICAL SCHEMATI
ES120-3	3	8/1/96	ELECTRICAL SCHEMATI
ES120-4	3	8/1/96	ELECTRICAL SCHEMATI
ES120-5	3	8/1/96	ELECTRICAL SCHEMATI
LCP120-1	2	8/1/96	LOCAL CONTROL PANEL
LCP120-2	3	8/1/96	LOCAL CONTROL PANEL
LCP120-3	2	8/1/96	LOCAL CONTROL PANEL
IC120-1	3	8/1/96	INTERCONNECTION DIA
IC120-2	3	8/1/96	INTERCONNECTION DIA
IC120-3	3	8/1/96	INTERCONNECTION DIA
PID120	4	8/1/96	PROCESS & INSTRUME
RCP120-1	3	8/1/96	REMOTE CONTROL PANI
RCP120-2	3	8/1/96	REMOTE CONTROL PANI

THERMAL OXIDIZER EQUIPMENT (continued)

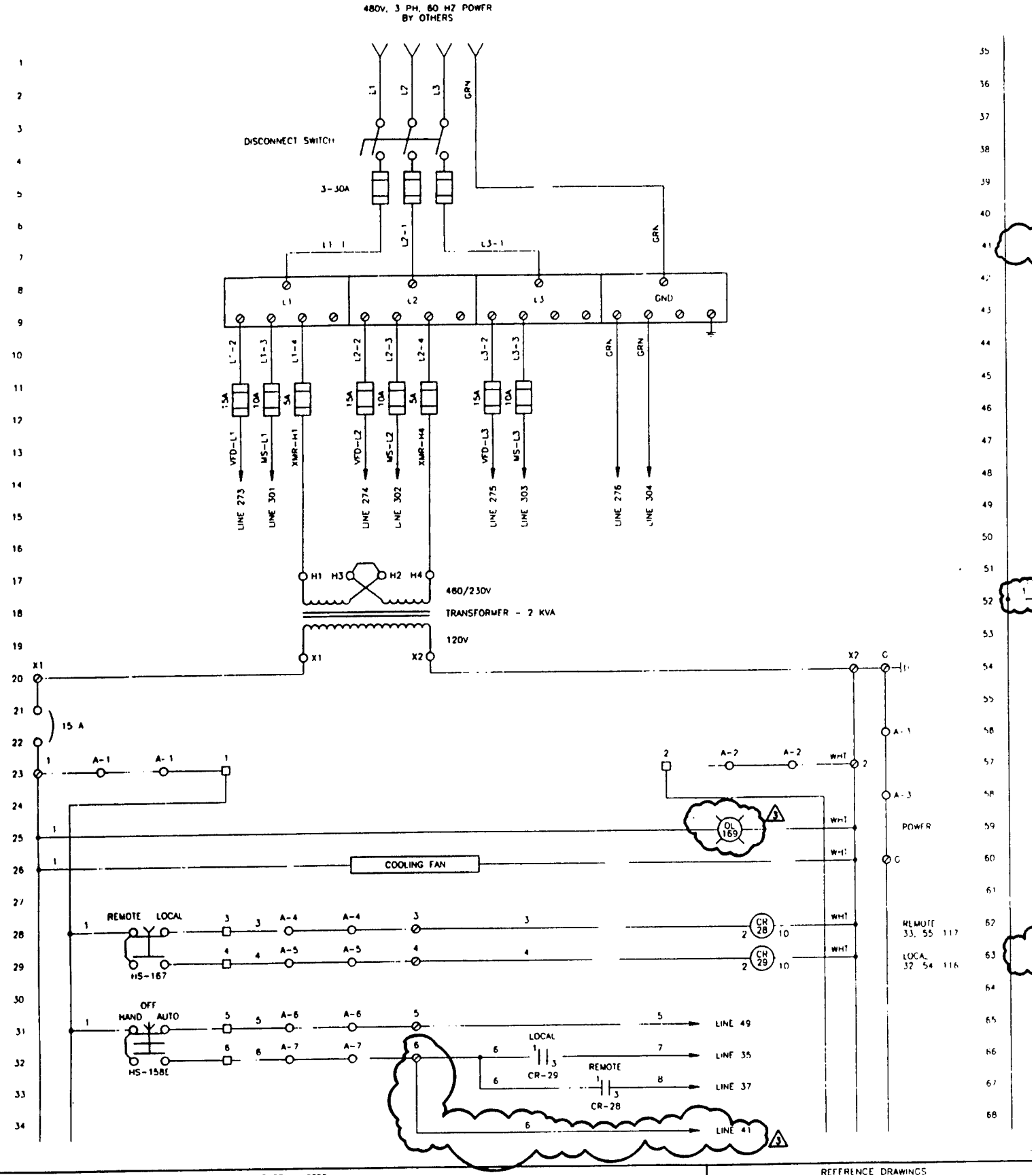
EQUIPMENT (CONTINUED)

DRAWING DESCRIPTION

ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER
ELECTRICAL SCHEMATIC - AFTERBURNER

LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
LOCAL CONTROL PANEL ASSEMBLY - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
INTERCONNECTION DIAGRAM - AFTERBURNER
PROCESS & INSTRUMENTATION DIAGRAM - AFTERBURNER

REMOTE CONTROL PANEL ASSEMBLY - AFTERBURNER
REMOTE CONTROL PANEL ASSEMBLY - AFTERBURNER



GENERAL NOTES

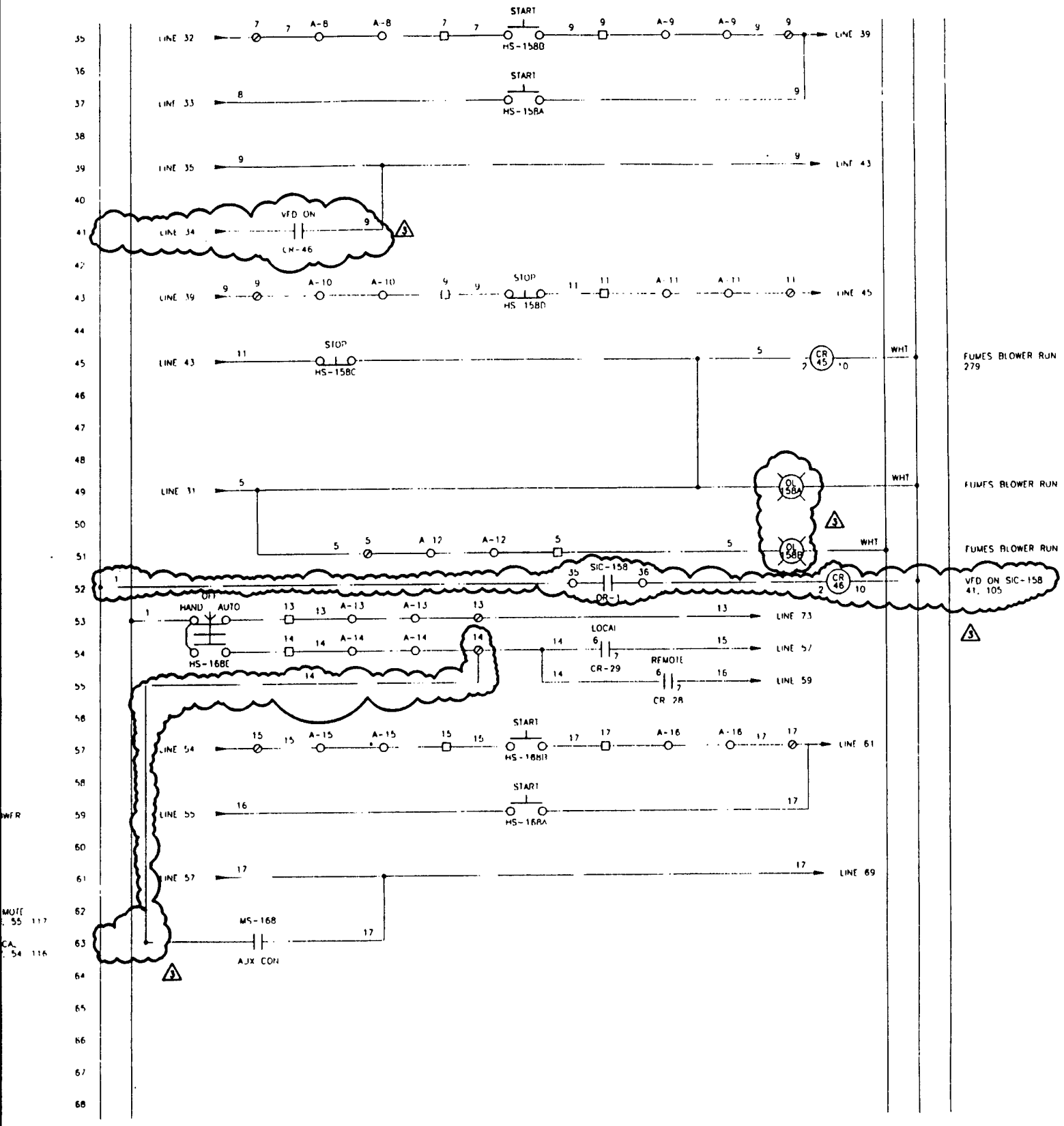
1 SEE LEGEND ON DWG ES120-5

PLOTTED 08/02/96
PLT. SC. 1=1

(1)

REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY



CONTINUED ON DWG ES120-2

REVISIONS						
NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	1-6-95		
1	REVISED LINES 28 & 29	JW	6-28-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	DWP	8/1/96		

ENGINEERING RECORD

SCALE NONE

DWN JW DATE 9-28-94 CKD DATE

ENGR DATE

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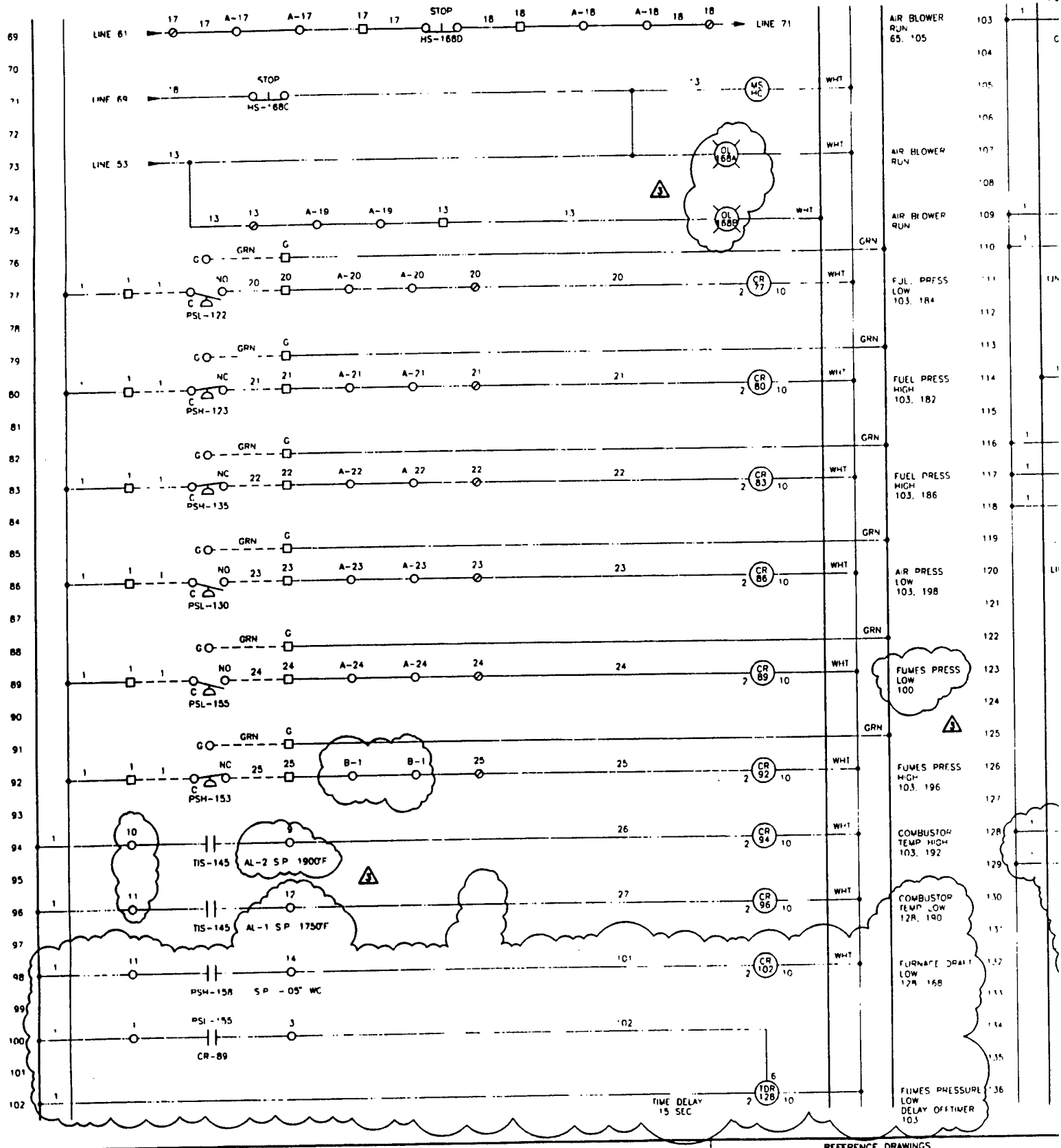
PREPARED FOR
ROY F. WESTON, INC.

CLIENT JOB

ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED

DWG. #: ES120-1 REVISION 3

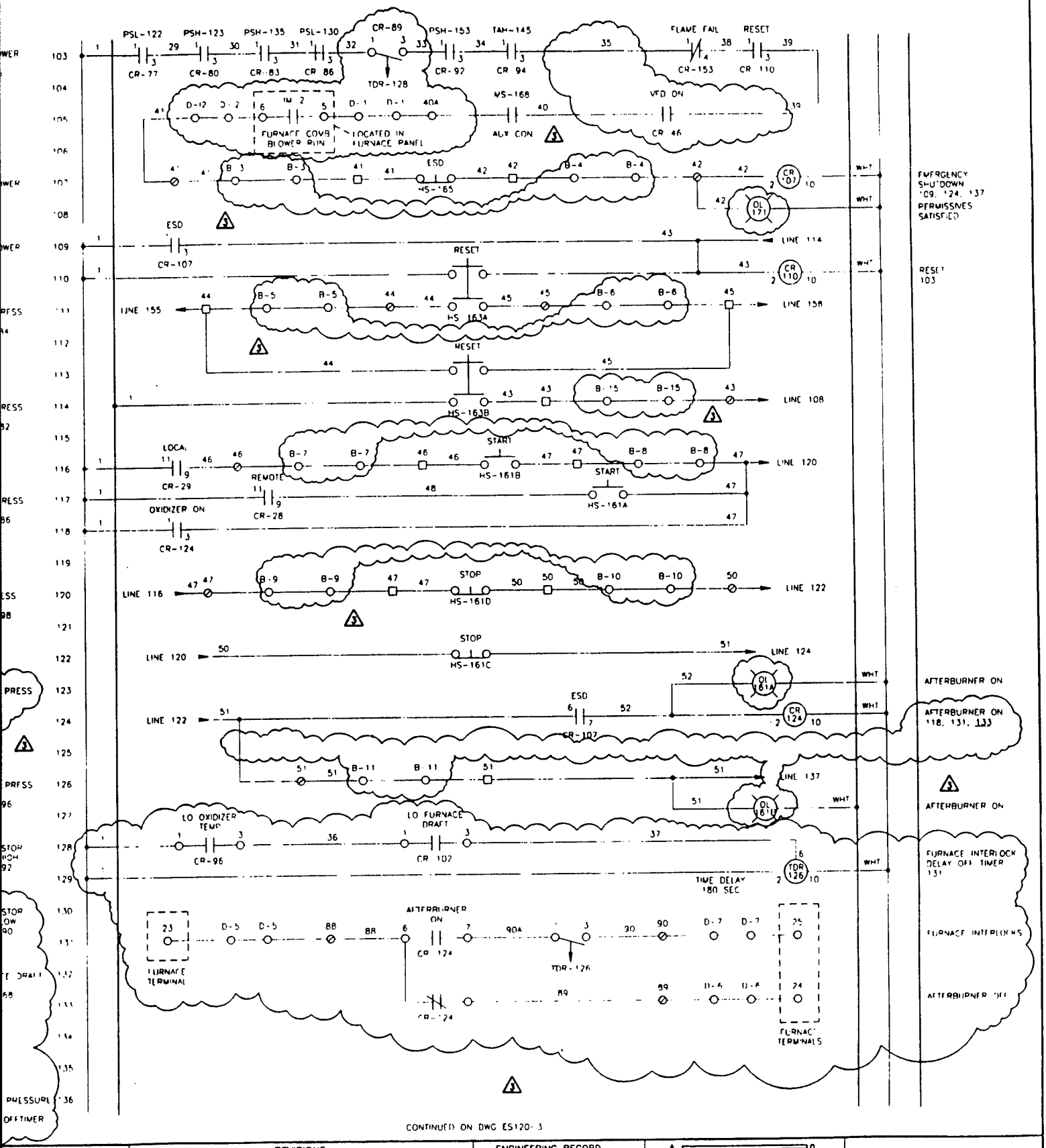


GENERAL NOTES

SEE LEGEND ON DWG ES120-5

REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY



NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	ADDED HS-163B	JW	6-26-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	WESTON	8-1-96	QP	9/24/96

ENGINEERING RECORD

SCALE NONE

DSN JW DATE 9-28-94 CKD DATE

ENGR DATE

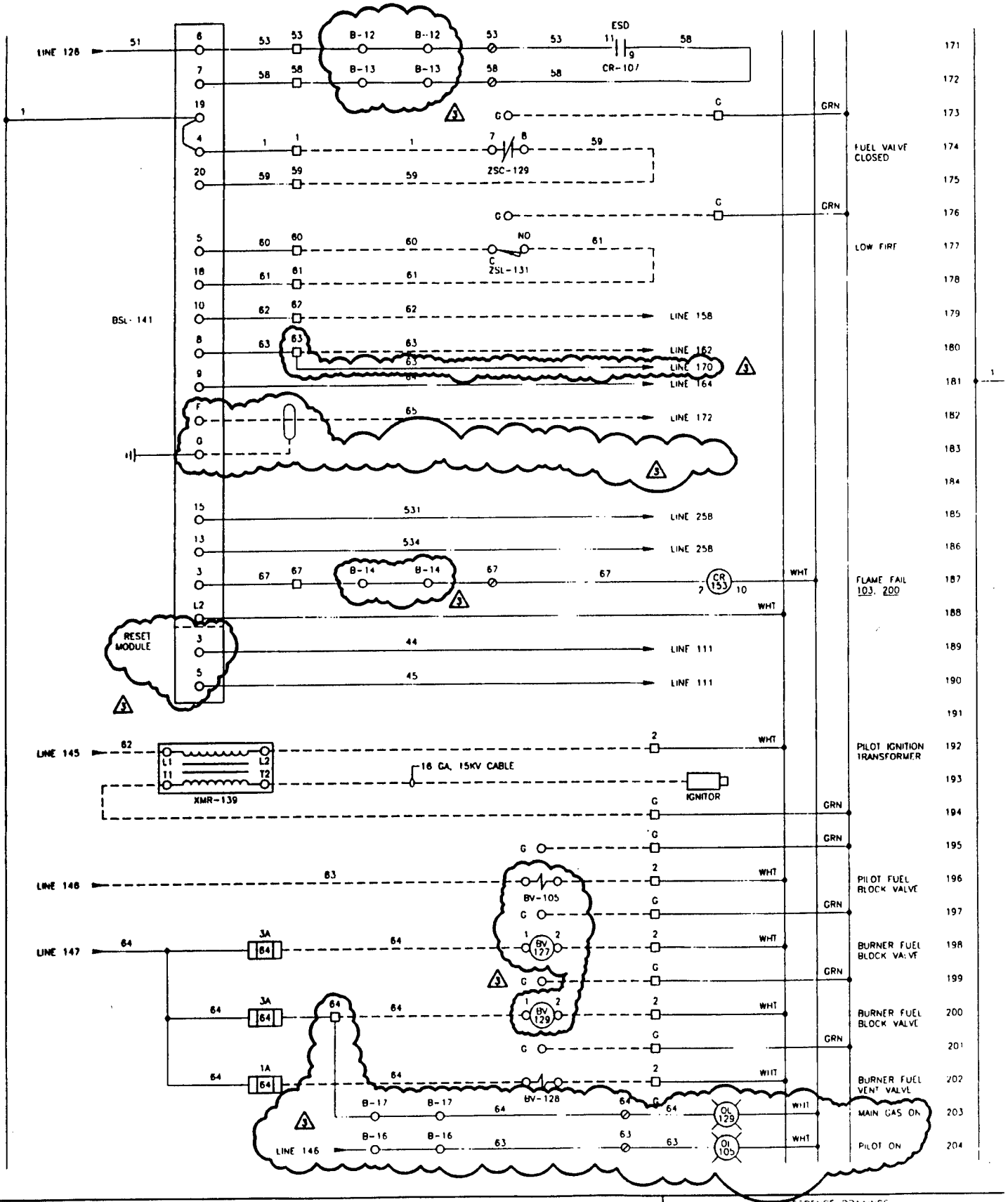
Arrtech ENVIRONMENTAL SYSTEMS

PREPARED FOR ROY F. WESTON, INC.

CLIENT JOB

ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED | DWG. #: ES120-2 | REVISION 3



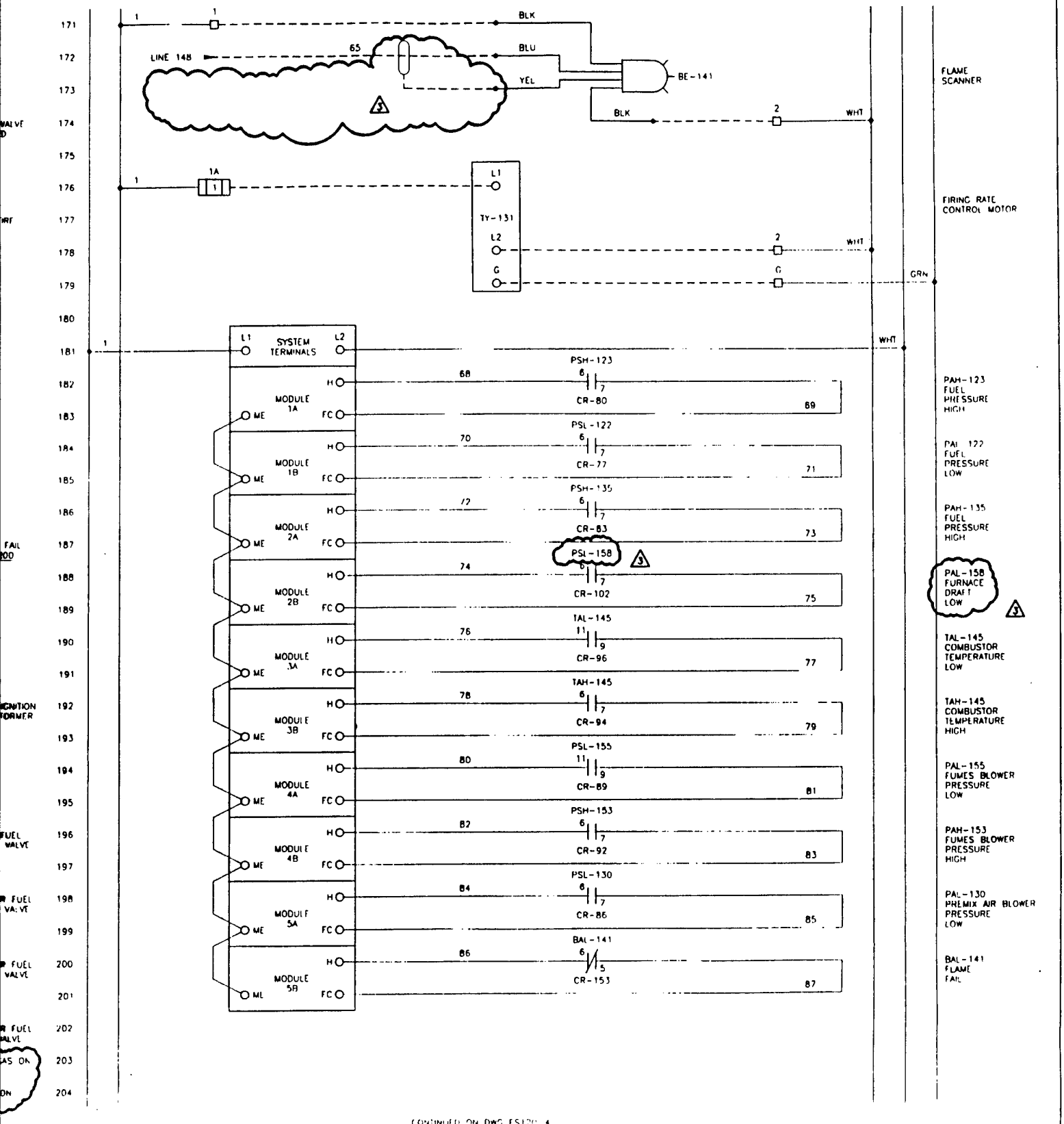
GENERAL NOTES

1 SEE LEGEND ON DWG ES120-5

REFERENCE DRAWINGS	
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY

PLOTTED 08/02/96
PLT. SC. 1=1

(1)



CONTINUED ON DWG ES120-4

NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	REVISED LINES 155 & 158	JW	4-26-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	JW	8/1/96		

ENGINEERING RECORD
SCALE NONE
DWN JW DATE 12-31-94
ENGR DATE
CHK DATE

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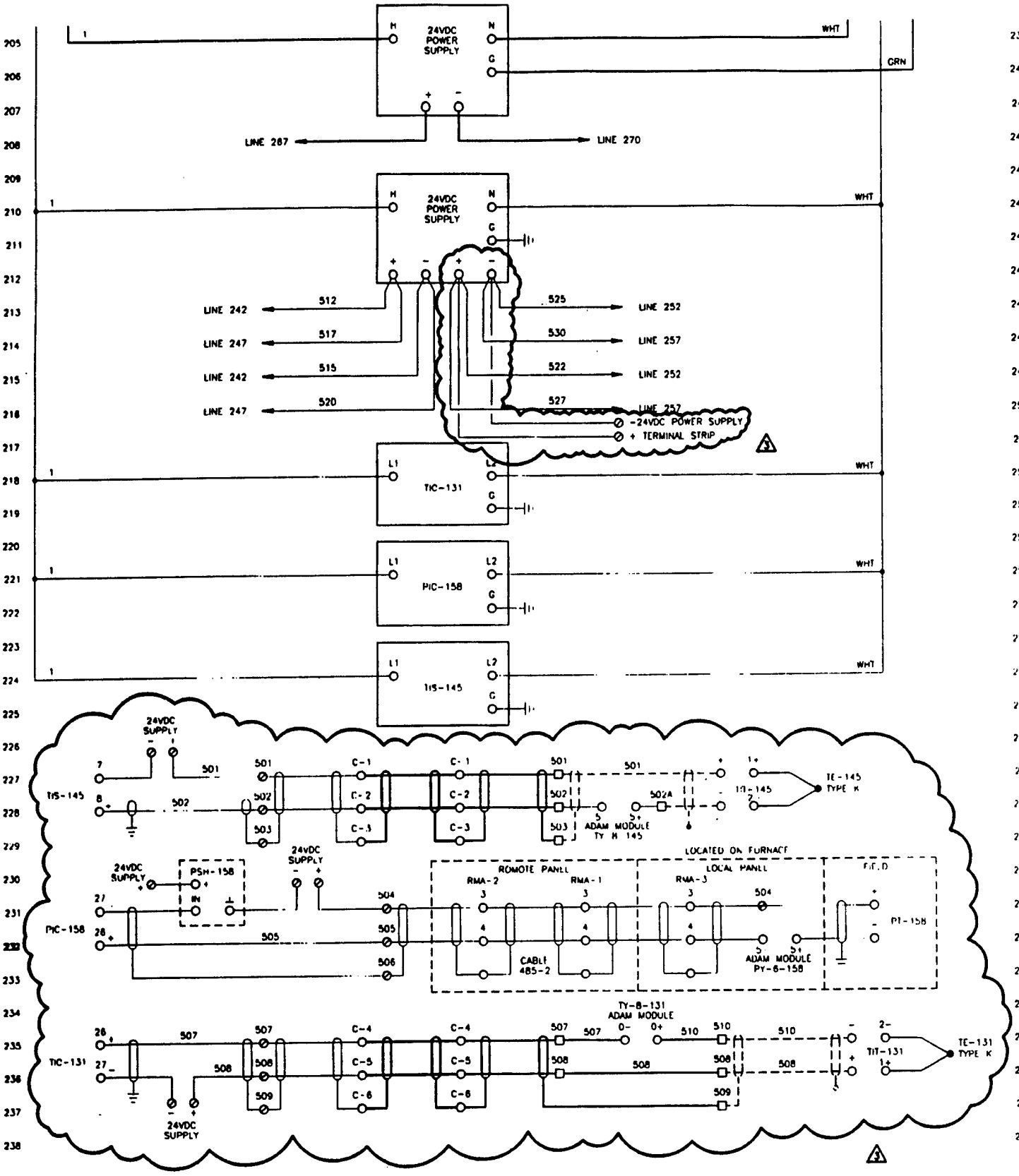
PREPARED FOR
ROY F WESTON, INC

CLIENT JOB

ELECTRICAL SCHEMATIC AFTERBURNER

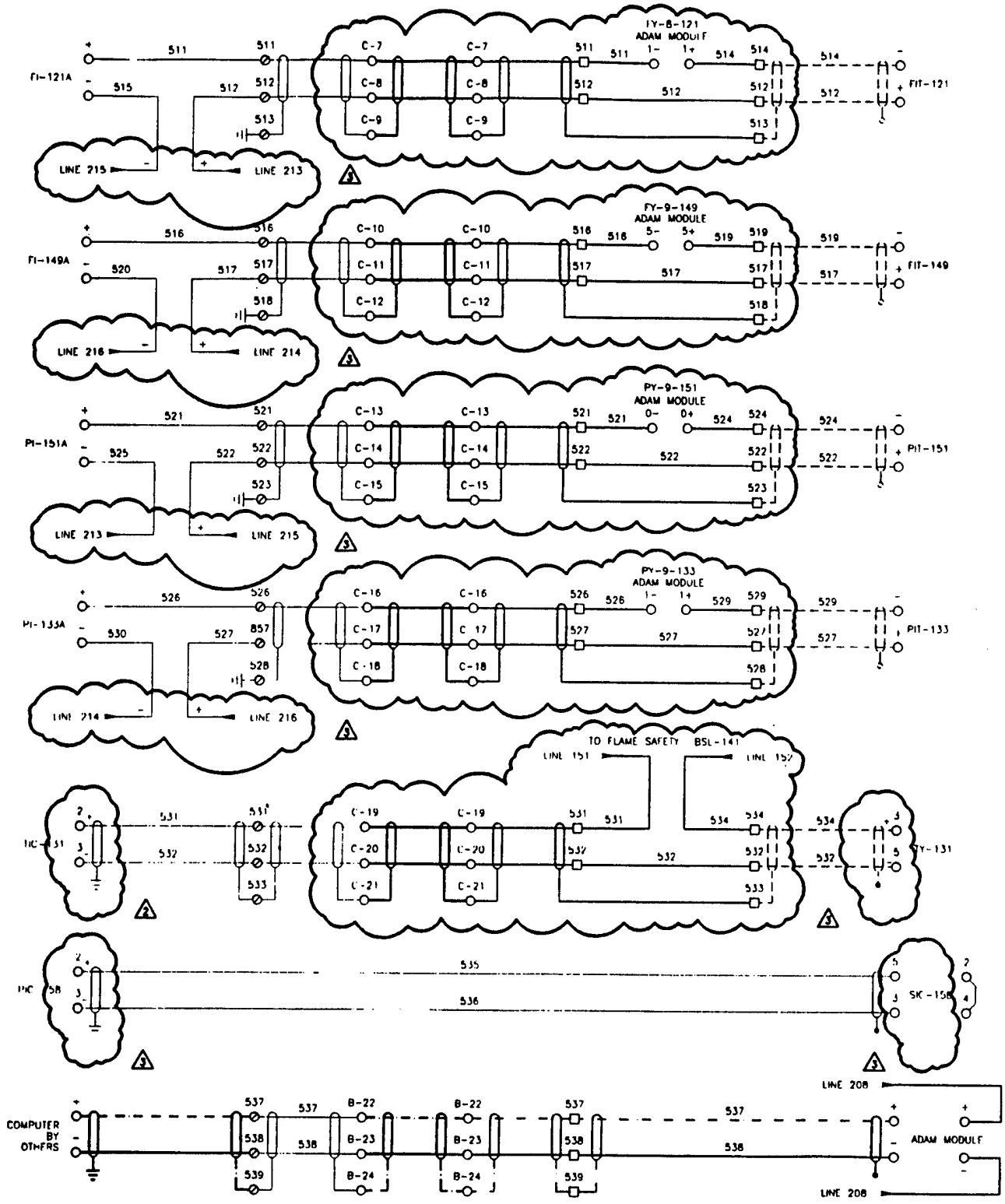
APPROVED

DWG. #: ES120-3 REVISION 3



GENERAL NOTES
1 SEE LEGEND ON DWG ES120-5

REFERENCE DRAWINGS	
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY



CONTINUED ON DWG ES120-5

NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	REVISED ES120-1, 2, 3 & 5	JW	4-26-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	CLP	8/1/96		

ENGINEERING RECORD

SCALE NONE

DWN JW DATE 1-3-95 CKD DATE

ENGR DATE

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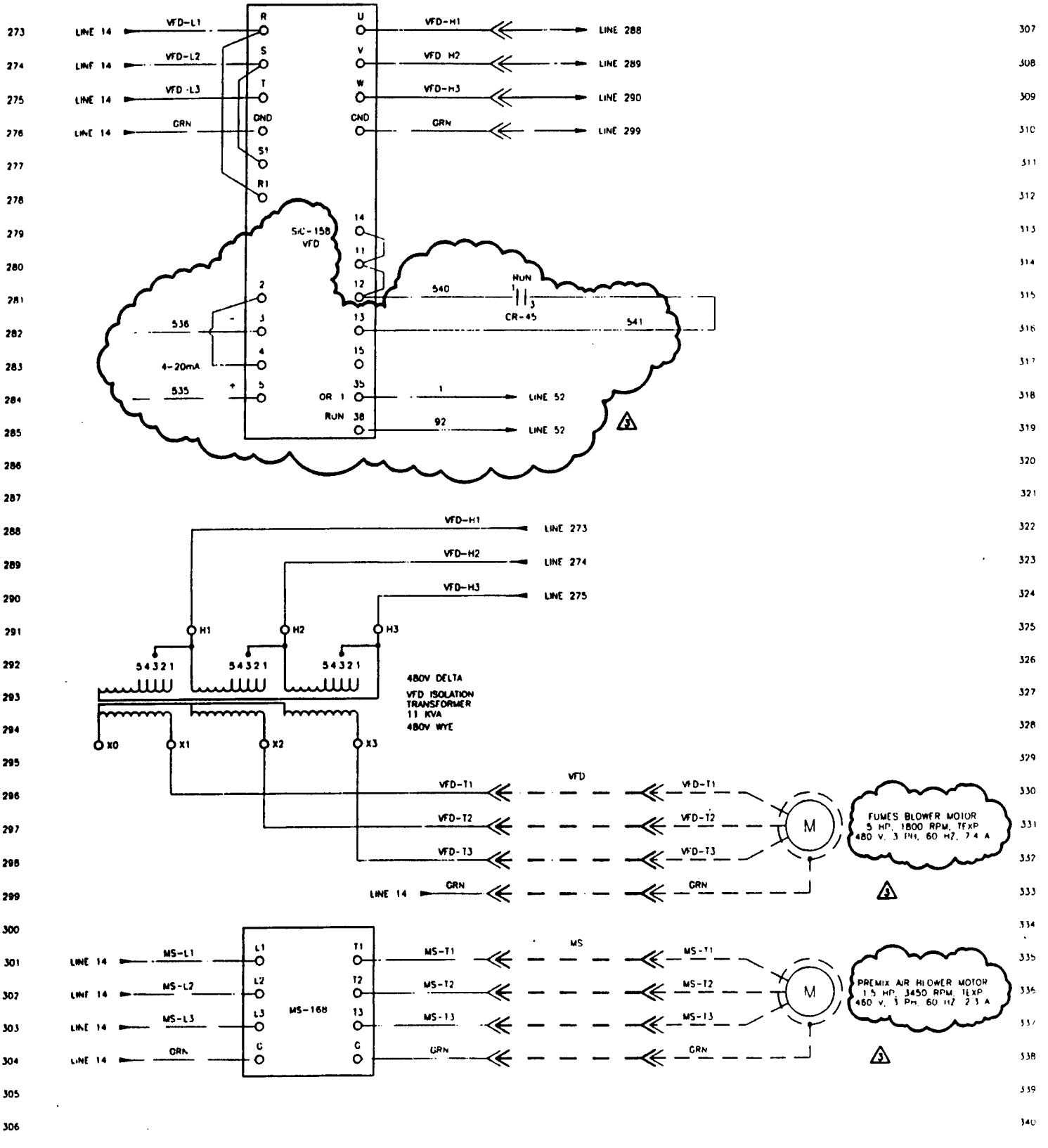
PREPARED FOR ROY F. WESTON, INC.

CLIENT JOB

ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED

DWG. #: ES120-4 REVISION 3



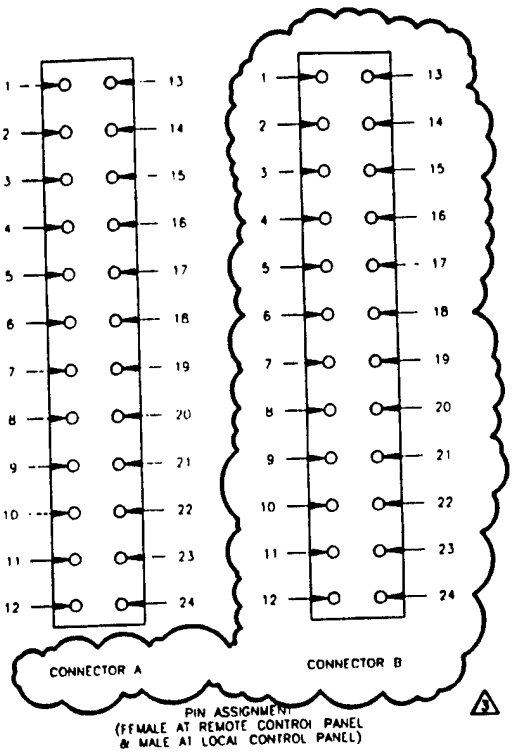
LAST WIRE USED 120VAC 90. 24VDC - 541

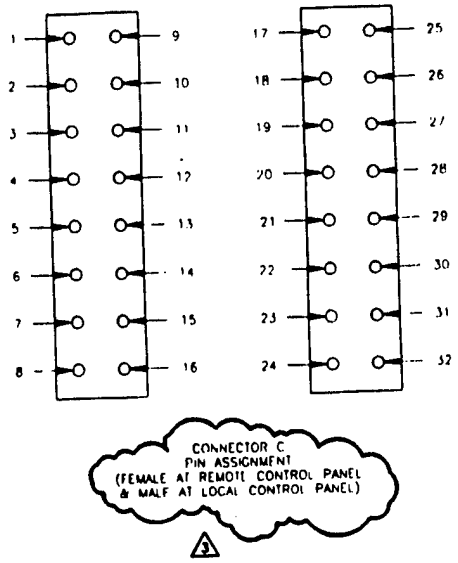
GENERAL NOTES

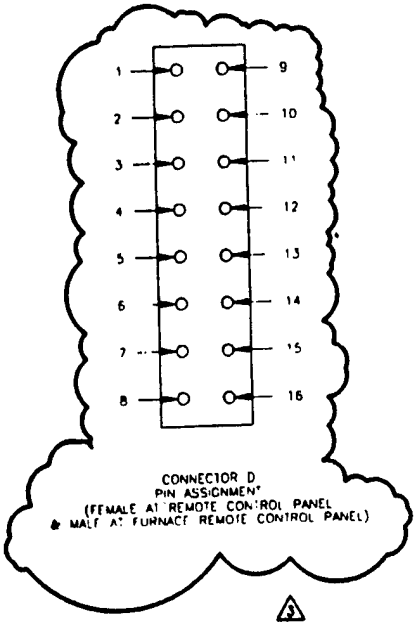
REFERENCE DRAWINGS	
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
FTA120	FUEL TRAIN ASSEMBLY

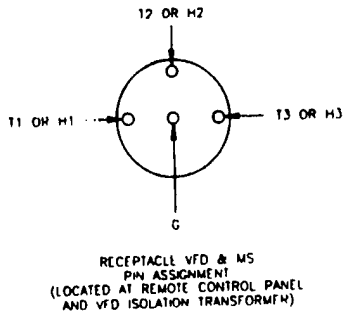
1

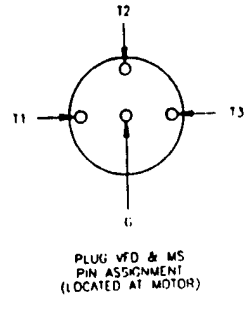
PLOTTED 08/01/96 4:47 PM
PLT SZ: 1=1











LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- ⊘ REMOTE CONTROL PANEL TERMINAL
- □ LOCAL CONTROL PANEL TERMINAL
- ○ DEVICE PIN OR TERMINAL

REVISIONS						ENGINEERING RECORD				
NO	DESCRIPTION	BY	DATE	CKD	DATE	SCALE NONE				
0	FOR CONSTRUCTION	JW	3-6-95			DWN JW	DATE 1-3-95	CKD	DATE	
1	ADDED VFD ISOLATION XMR	JW	4-27-95			ENGR	DATE			
2	RECORD	JW	7-6-95							
3	FIELD MODIFICATIONS	CLP	8/14/96							

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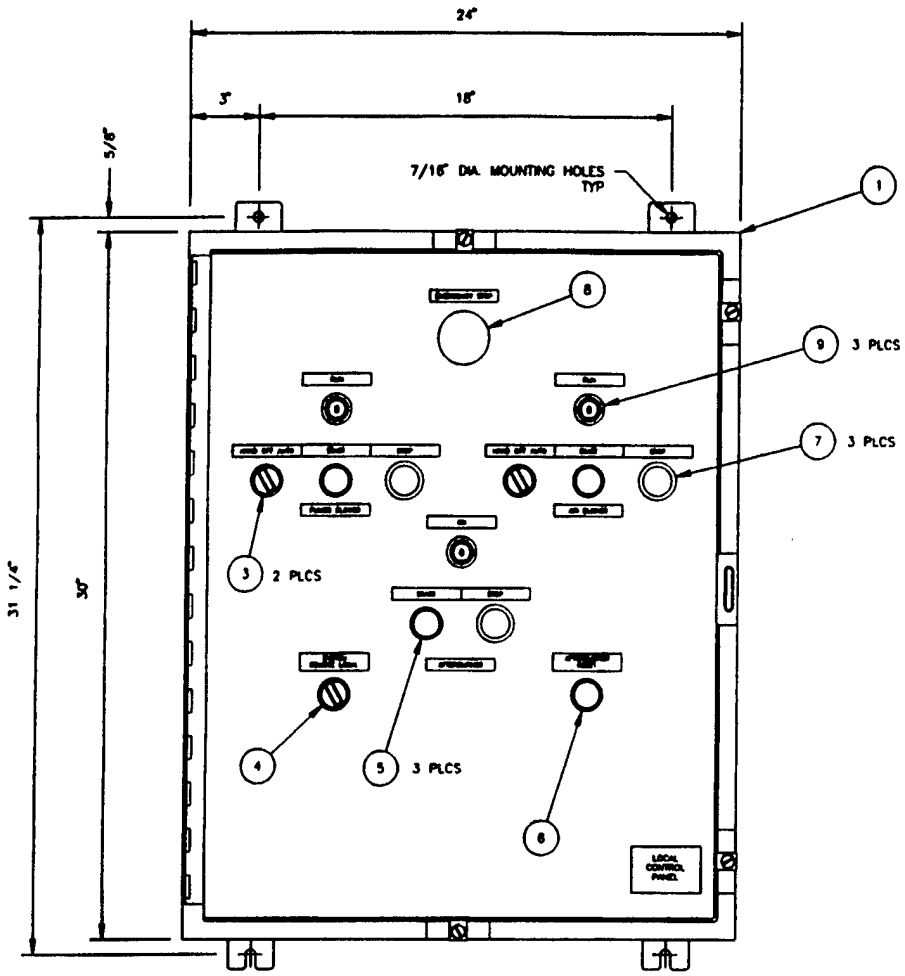
PREPARED FOR
ROY F. WESTON, INC.

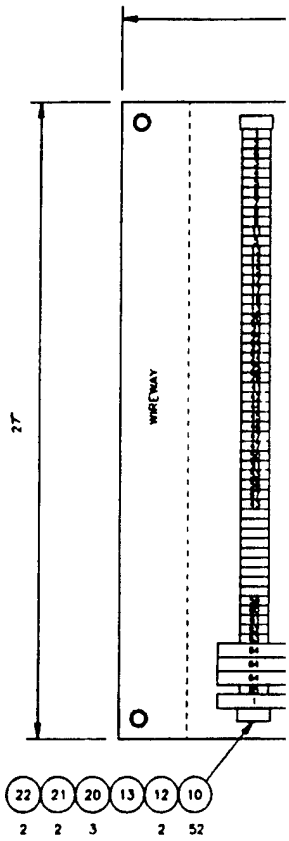
CLIENT JOB

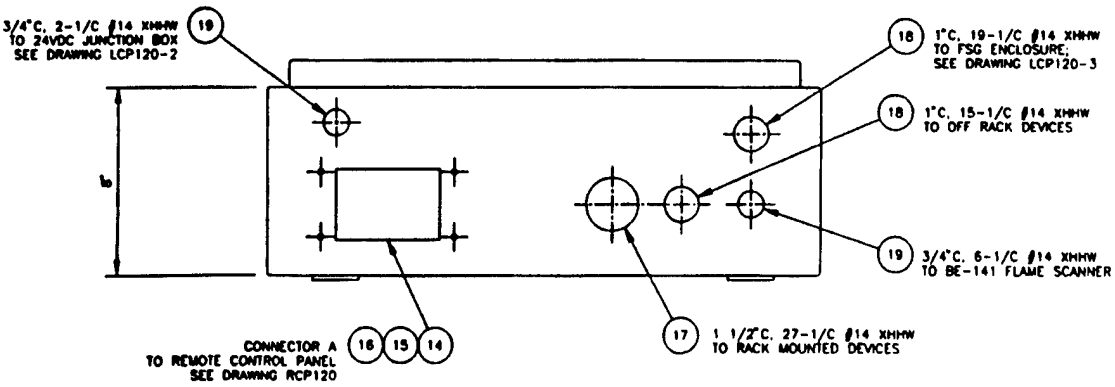
ELECTRICAL SCHEMATIC AFTERBURNER

APPROVED | DWG. #: ES120-5 | REVISION 3



FRONT





BOTTOM

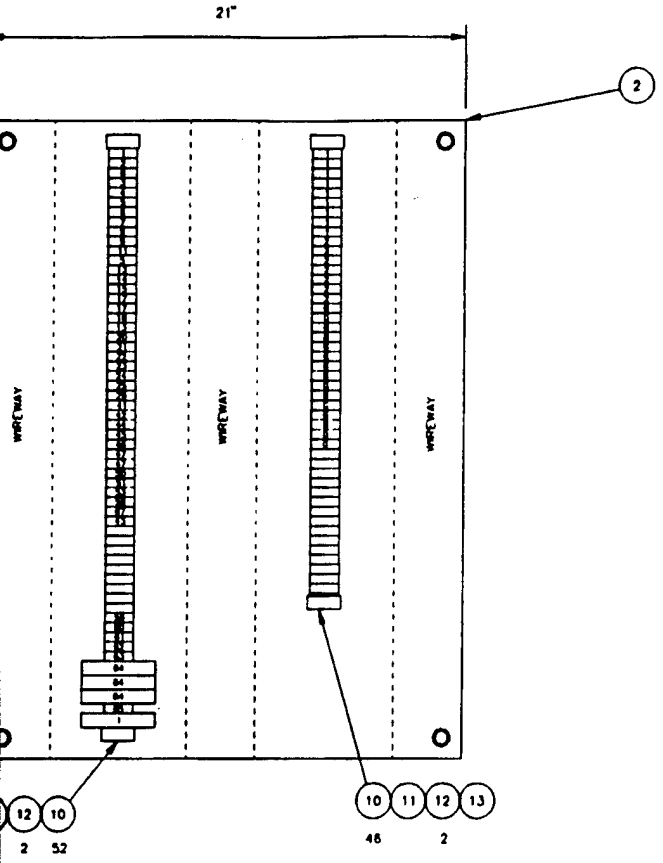
LOCAL CONTROL PANEL

GENERAL NOTES

1. CONDUIT & CONNECTOR LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
2. ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
3. NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS.
4. WIRE TERMINATIONS TO TERMINAL BLOCKS TO BE BY HOOK FORK TYPE CONNECTORS.

REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY



BACK PANEL

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-30H24BLP
2	1	PANEL; HOFFMAN A-30P24
3	2	SWITCH, SELECTOR; ALLEN-BRADLEY 800H-JR4AP
4	1	SWITCH, SELECTOR; ALLEN-BRADLEY 800H-HR2AP
5	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-R2D1P
6	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-R2D1PD1P
7	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-FRXT2D2P
8	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800H-FRXJT6D2P
9	3	INDICATOR; ALLEN-BRADLEY 800H-PRL16G
10	98	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F3
11	1	END BARRIER, TERMINAL; ALLEN-BRADLEY 1492-N18
12	4	END STOP, TERMINAL; ALLEN-BRADLEY 1492-N23
13	A/R	MOUNTING RAIL, TERMINAL; ALLEN-BRADLEY 1492-N22
14	1	BASE, CONNECTOR; T & B PB448
15	1	CONNECTOR; T & B FS124 (1-24)
16	1	CONNECTOR; T & B FS148 (25-48)
17	1	HUB, CONDUIT; CROUSE-HINDS HUB5 (1 1/2")
18	2	HUB, CONDUIT; CROUSE-HINDS HUB3 (1")
19	1	HUB, CONDUIT; CROUSE-HINDS HUB2 (3/4")
20	3	BLOCK, FUSE; ALLEN-BRADLEY 1492-UF8
21	2	FUSE; 13/32" x 1 1/2", 3 AMP
22	2	FUSE, 13/32" x 1 1/2", 1 AMP

REVISIONS						ENGINEERING RECORD
NO	DESCRIPTION	BY	DATE	CKD	DATE	SCALE 3"=1'-0"
0	FOR CONSTRUCTION	JW	5-6-95			DWN JW DATE 10-2-94 CKD DATE
1	ADDED RESET SWITCH	JW	6-27-95			ENGR DATE
2	RECORD	JW	7-6-95			
2	As-Built	CAP	9/1/96			

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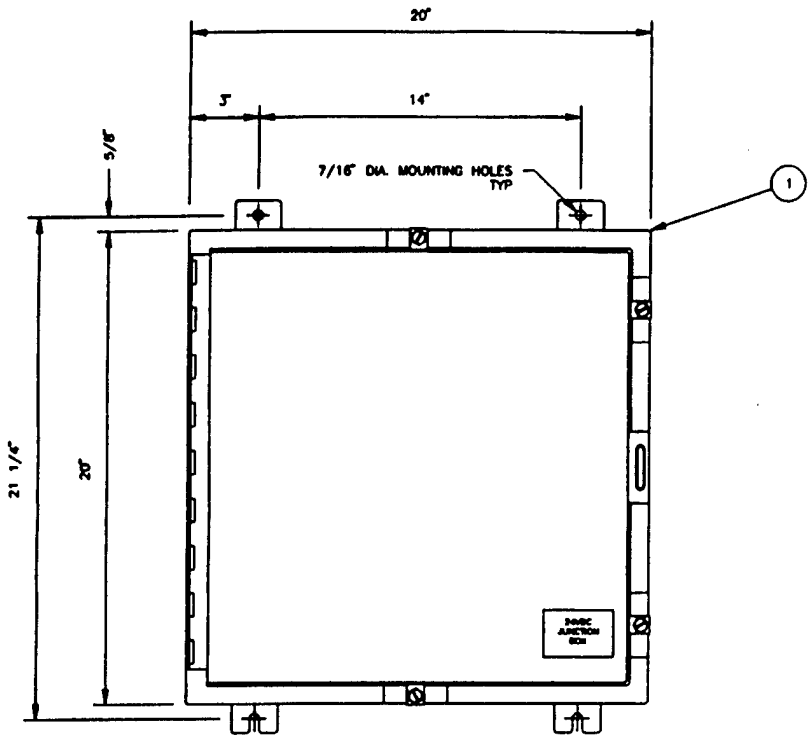
PREPARED FOR
ROY F. WESTON, INC

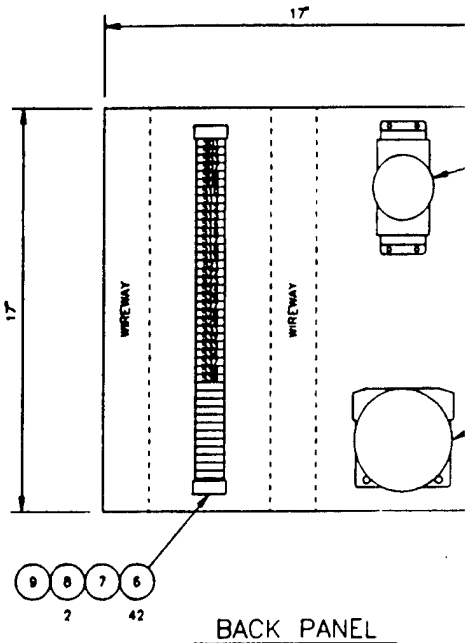
CLIENT JOB

LOCAL CONTROL PANEL ASSY AFTERBURNER

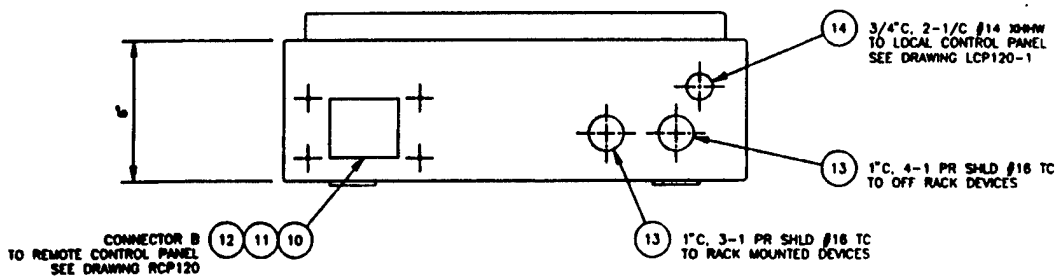
APPROVED _____ DWG #: LCP120-1 REVISION 2



FRONT



BACK PANEL



BOTTOM

24VDC JUNCTION BOX

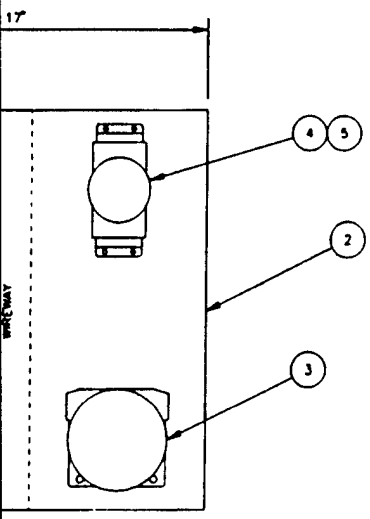
GENERAL NOTES
1. CONDUIT & CONNECTOR LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
2 ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
3. NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS

REFERENCE DRAWINGS	
NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-20H20ALP
2	1	PANEL; HOFFMAN A-20P20
3	1	SUPPLY, POWER; EIT MODEL RP1072-24 24VDC/3A
4	1	MODULE, INTERFACE; ADVANTECH ADAM 4017
5	1	BRACKET, PANEL MOUNTING; FOR ITEM 4
6	42	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F1
7	1	END BARRIER, TERMINAL; ALLEN-BRADLEY 1492-N18
8	2	END STOP, TERMINAL; ALLEN-BRADLEY 1492-N23
9	A/R	MOUNTING RAIL, TERMINAL; ALLEN-BRADLEY 1492-N22
10	1	BASE, CONNECTOR; T & B PB132
11	1	CONNECTOR; T & B FS116 (1-16)
12	1	CONNECTOR; T & B FS132 (17-32)
13	2	HUB, CONDUIT; CROUSE-HINDS HUB3 (1")
14	1	HUB, CONDUIT; CROUSE-HINDS HUB2 (3/4")

△3



PANEL

NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	1-6-95		
1	REVISED LCP120-1	JW	1-17-95		
2	RECORD	JW	1-6-95		
3	FIELD MODIFICATIONS	JWP	8/1/96		

ENGINEERING RECORD

SCALE 3"=1'-0"

DWN	DATE	CKD	DATE
JW	1-7-95		
ENGR	DATE		

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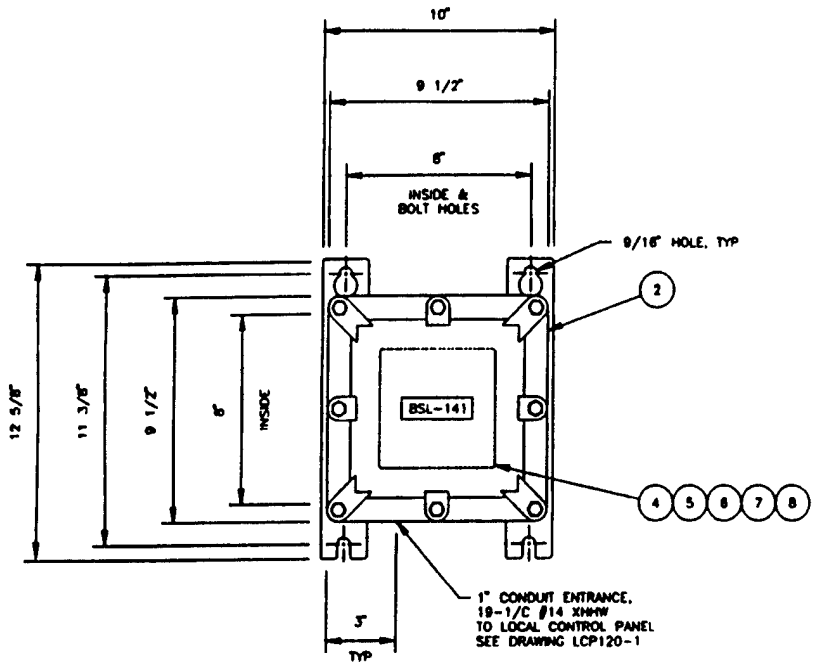
PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

LOCAL CONTROL PANEL ASSY AFTERBURNER

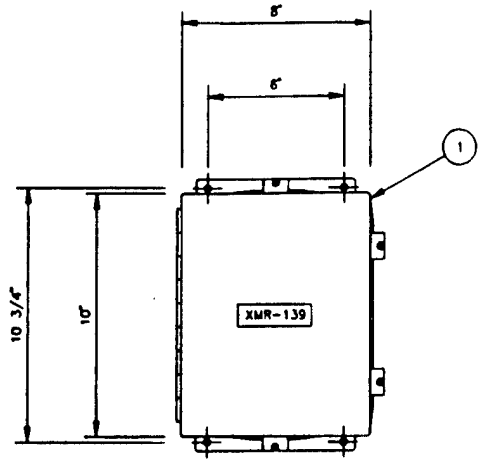
APPROVED | DWG. #: LCP120-2 | REVISION 3

2

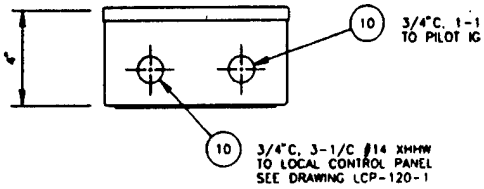


FLAME SAFEGUARD ENCLOSURE

NOTE: INSTALL VENT (C-H ECD13) IN TOP OF ENCLOSURE & DRAIN (C-H ECD11) IN BOTTOM OF ENCLOSURE



FRONT



BOTTOM

IGNITION TRANSFORI

GENERAL NOTES

1. CONDUIT LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY DUE TO INSTALLATION PARAMETERS.
2. FSG ENCLOSURE FINISH: NONE
3. TRANSFORMER FINISH: # 61 GREY POLYESTER POWDER COATING
4. NAMEPLATES TO BE WHITE LAMINATE PLASTIC WITH BLACK CHARACTERS.

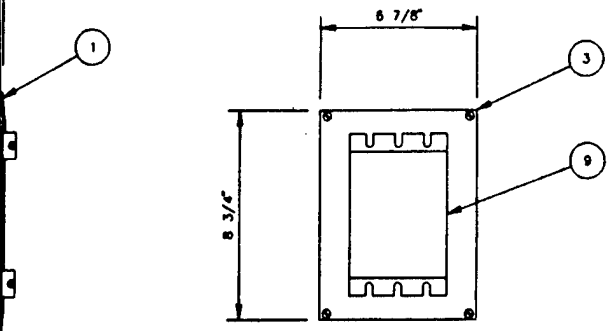
(1)

REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
RCP120	REMOTE CONTROL PANEL ASSEMBLY

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-100BCHNF
2	1	ENCLOSURE; CROUSE-HINDS EJB886-SA
3	1	PANEL; HOFFMAN A-10P8
4	1	PROGRAMMER, FLAME; HONEYWELL RM7840L1018
5	1	AMPLIFIER, FLAME; HONEYWELL R7847A1033
6	1	CARD, PURGE TIMER; HONEYWELL ST7800A1039 (30 SEC)
7	1	MODULE, REMOTE RESET; HONEYWELL ST7820A1007
8	1	BASE, MOUNTING; HONEYWELL Q7800A1005
9	1	TRANSFORMER, IGNITION; HONEYWELL Q624A1014
10	2	HUB, CONDUIT; CROUSE-HINDS HUB2 (3/4")



BACK PANEL

10 3/4"C, 1-1/C #16 15KV TO PILOT IGNITOR

3-1/C #14 XHHW
CAL CONTROL PANEL
RAWING LCP-120-1

ON TRANSFORMER ENCLOSURE

NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	1-6-95		
1	REVISED LCP120-1	JW	1-17-95		
2	RECORD	JW	1-6-95		
2	As Built	JW	8/1/96		

ENGINEERING RECORD

SCALE 3"=1'-0"

DWN	DATE	CKD	DATE
JW	1-7-95		
ENGR	DATE		

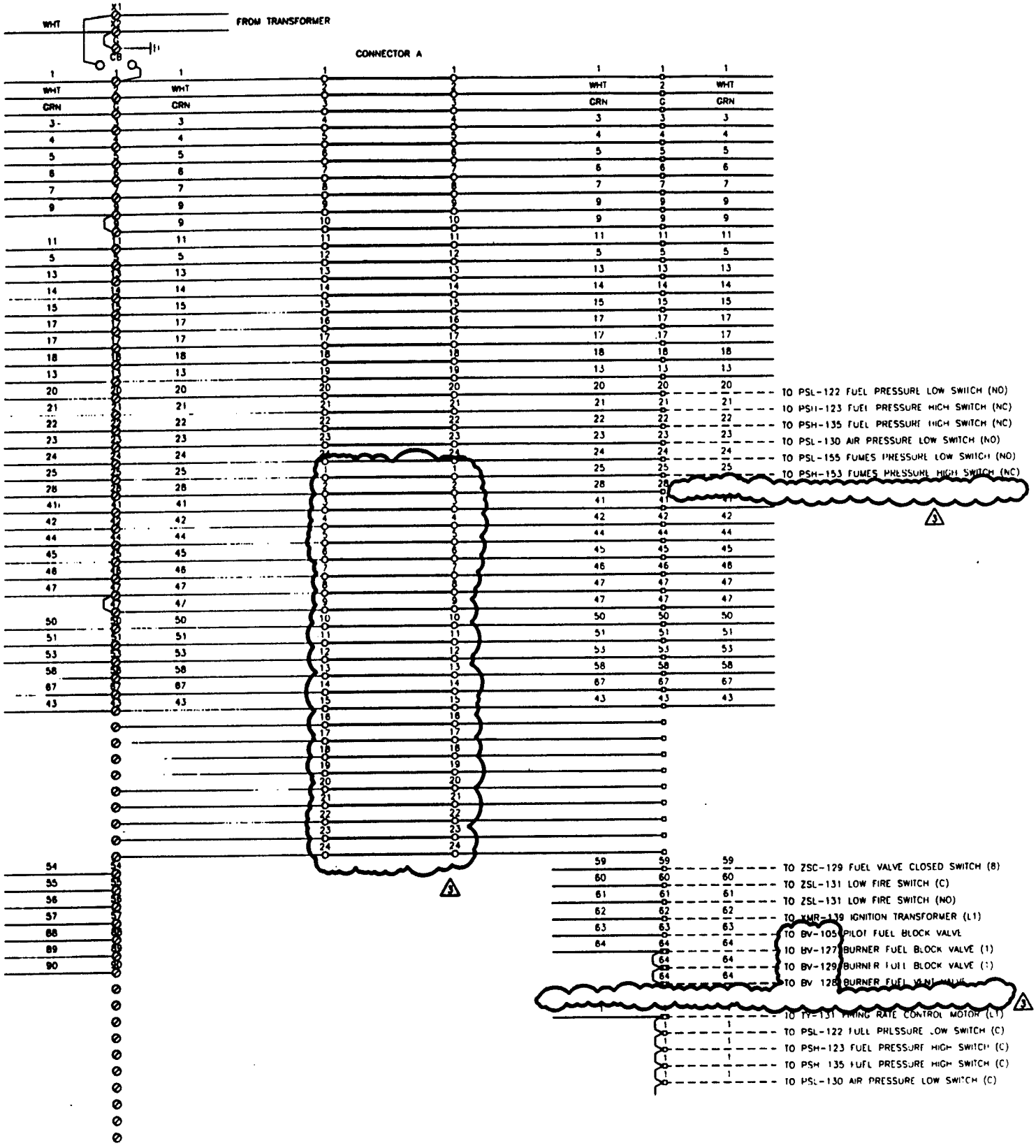
Arrtech ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

LOCAL CONTROL PANEL ASSY AFTERBURNER

APPROVED | DWG. #: LCP120-3 | REVISION 2

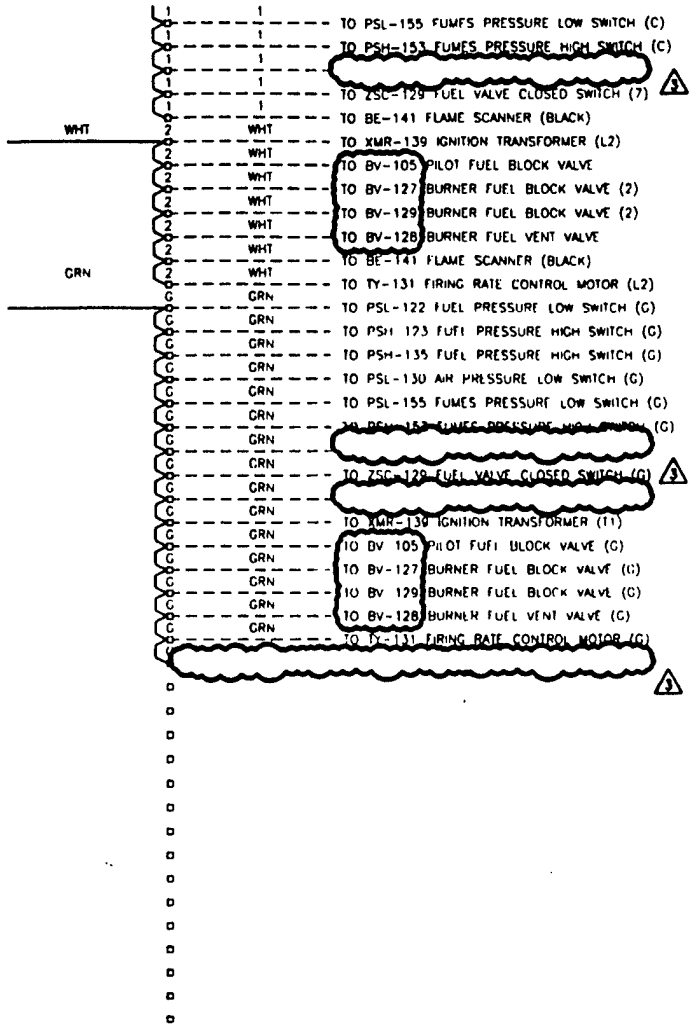


GENERAL NOTES

REFERENCE DRAWINGS	
NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
ES120	ELECTRIC SCHEMATIC
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY

PLOTTED 08/01/96 5:15 pm
PLT SC 1=1

1



120 VOLT WIRING

LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- REMOTE CONTROL PANEL TERMINAL
- LOCAL CONTROL PANEL TERMINAL
- DEVICE PIN OR TERMINAL

REVISIONS							ENGINEERING RECORD
NO	DESCRIPTION	BY	DATE	CHD	DATE	SCALE NONE	
0	FOR CONSTRUCTION	JW	3-6-95			DWN DATE: JW 10-1-94	CHD DATE
1	ADDED WIRE 43	JW	4-27-95			ENGR DATE	
2	RECORD	JW	7-6-95				
3	FIELD MODIFICATIONS	JW	8/96				

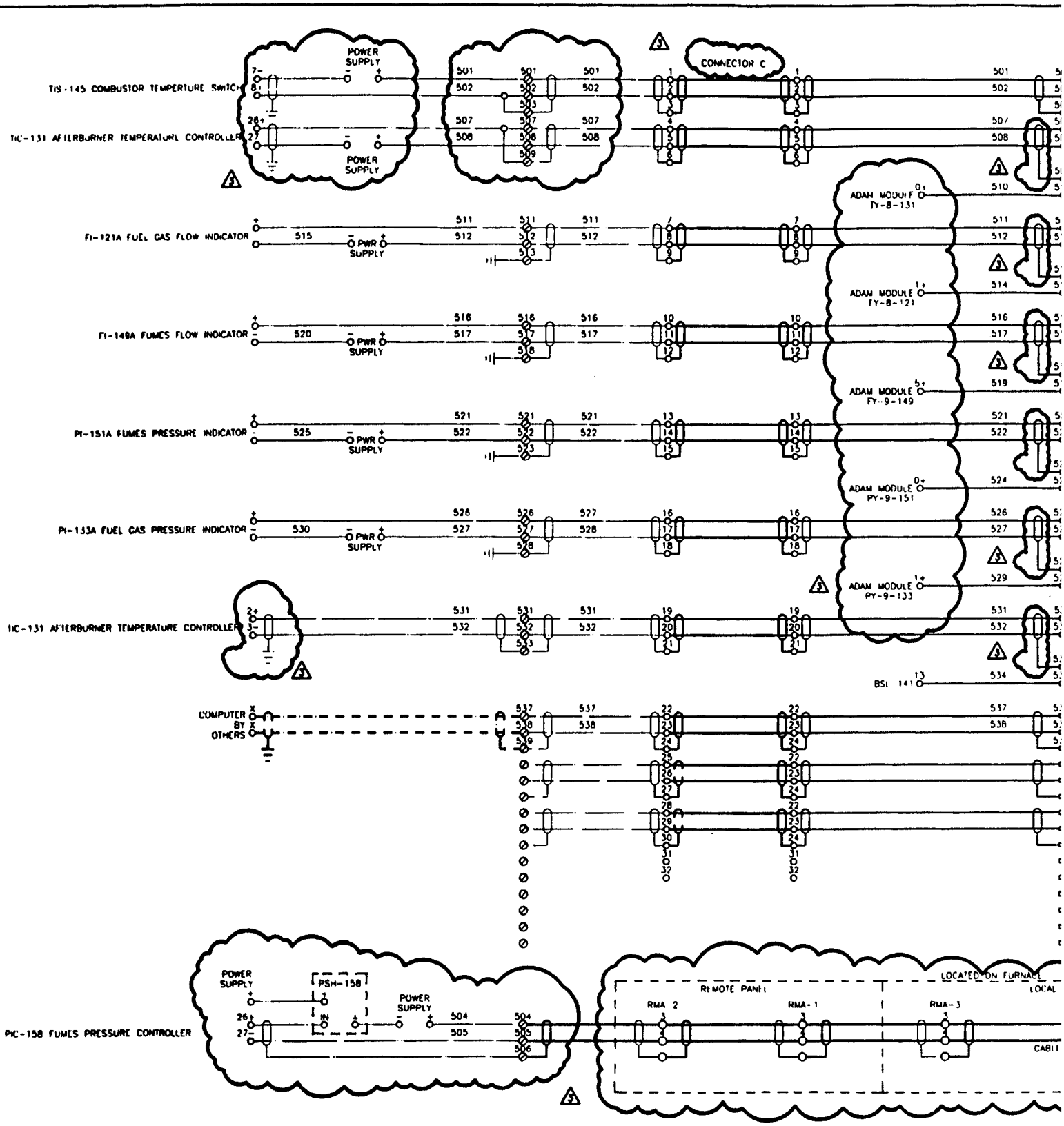
Arctech ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC.

CLIENT JOB

INTERCONNECTION DIAGRAM AFTERBURNER

APPROVED | DWG. #: IC120-1 | REVISION 3

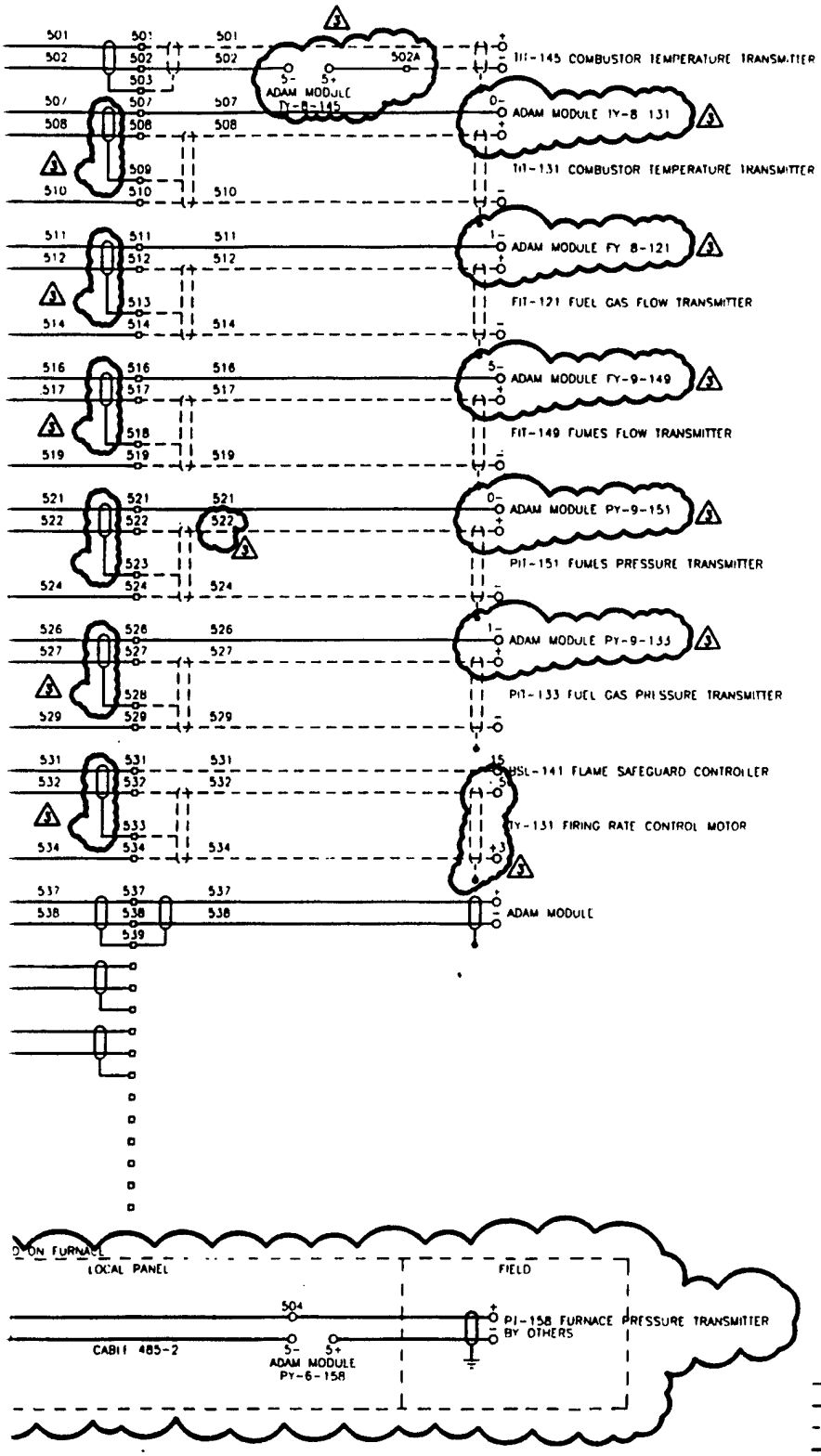


ANALOG WIRING

GENERAL NOTES	REFERENCE DRAWINGS	
	NUMBER	TITLE
	PID120	PIPING & INSTRUMENT DIAGRAM
	ES120	ELECTRIC SCHEMATIC
	LCP120	LOCAL CONTROL PANEL ASSEMBLY
	RCP120	REMOTE CONTROL PANEL ASSEMBLY

PLOTTED 08/02/96 @ 9:33 am
PLT. SC. 1=1

(1)



LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- ⊘ REMOTE CONTROL PANEL TERMINAL
- □ LOCAL CONTROL PANEL TERMINAL
- ○ DEVICE PIN OR TERMINAL

REVISIONS						
NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	REVISED IC120-1 & 3	JW	4-17-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	CJP	8/1/96		

ENGINEERING RECORD			
SCALE NONE			
DWN JW	DATE 1-5-95	CKD	DATE
ENGR	DATE		

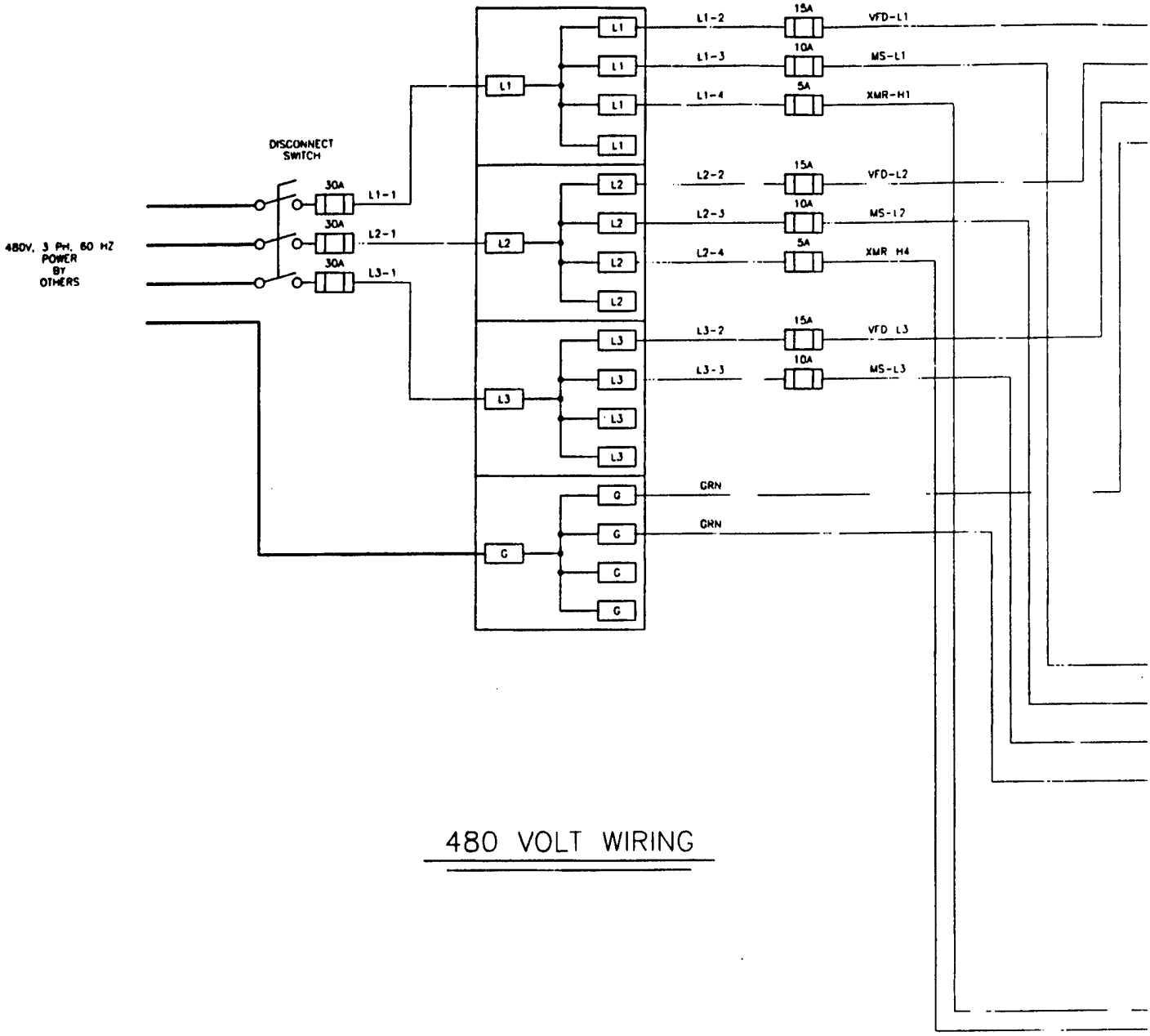
ArrTech ENVIRONMENTAL SYSTEMS

PREPARED FOR ROY F. WESTON, INC.

CLIENT JOB

INTERCONNECTION DIAGRAM AFTERBURNER

APPROVED		DWG. #: IC120-2	REVISION 3



480 VOLT WIRING

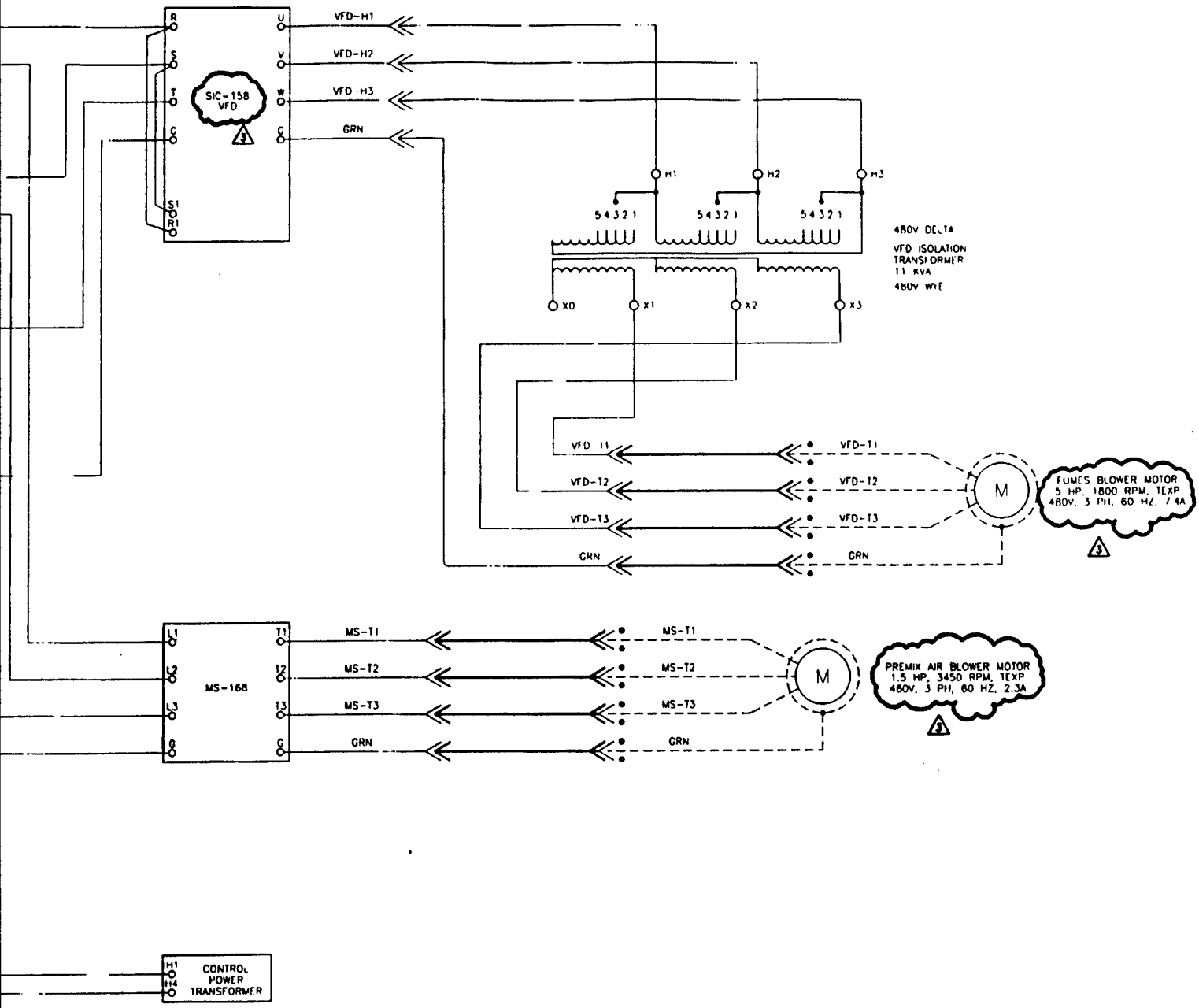
PLOTTED 08/02/96 9:35 am
PLT SC 1=1

GENERAL NOTES

1

REFERENCE DRAWINGS

NUMBER	TITLE
PID120	PIPING & INSTRUMENT DIAGRAM
ES120	ELECTRIC SCHEMATIC
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY



LEGEND

- INTERCONNECTING WIRING INSIDE REMOTE CONTROL PANEL
- INTERCONNECTING WIRING INSIDE LOCAL CONTROL PANEL
- INTERCONNECTING WIRING ON AFTERBURNER SKID
- INTERCONNECTING WIRING BY OTHERS
- ⊘ REMOTE CONTROL PANEL TERMINAL
- □ LOCAL CONTROL PANEL TERMINAL
- ○ DEVICE PIN OR TERMINAL

NO	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	ADDED VFD ISOLATION XMR	JW	4-17-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	[illegible]	[illegible]		

ENGINEERING RECORD

SCALE NONE

DWN JW DATE 1-5-95 CKD DATE

ENGR DATE

Aritech ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC.

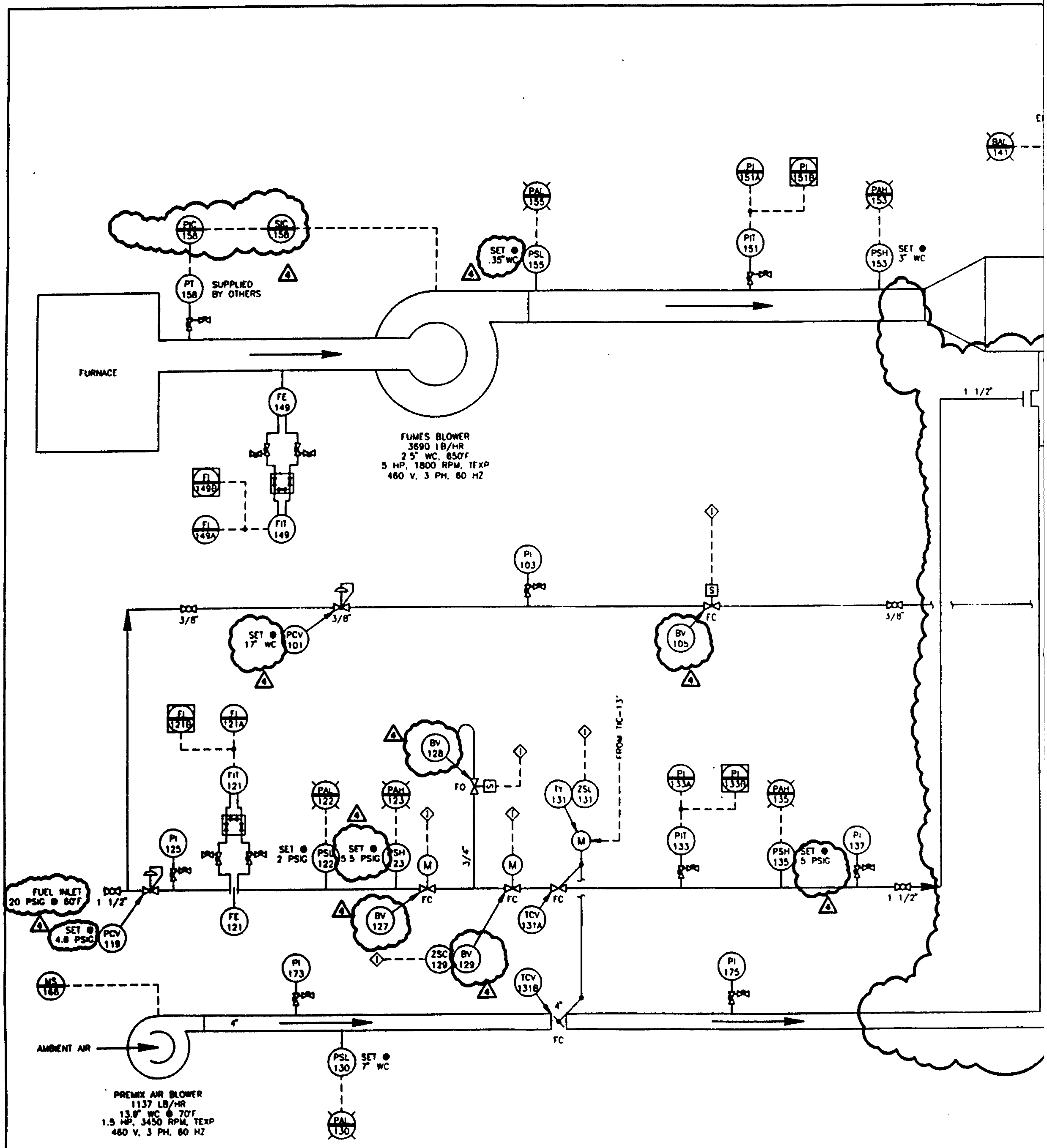
CLIENT JOB

INTERCONNECTION DIAGRAM AFTERBURNER

APPROVED

DWG. #: IC120-3

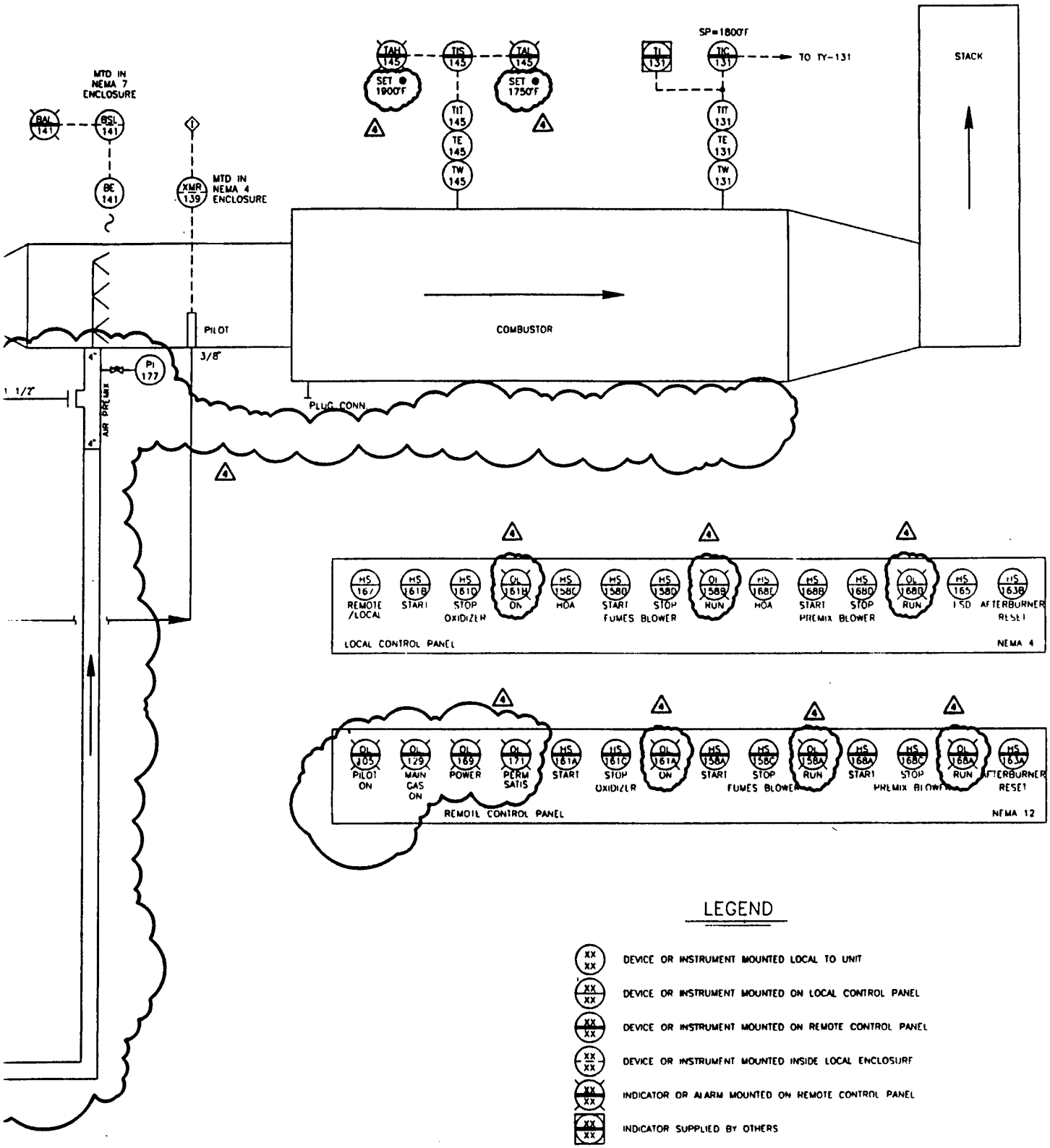
REVISION 3



GENERAL NOTES
1. THE BURNER MANAGEMENT SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH THE INTENT OF IRI GUIDELINES.
2. EQUIPMENT AREA CLASSIFICATION LOCAL EQUIPMENT - CLASS 1, DIVISION 2, GROUP D; REMOTE EQUIPMENT - UNCLASSIFIED
3. ALL LOCAL ELECTRICAL ENCLOSURES SHALL BE SUITABLE FOR OUTDOOR INSTALLATION
4. ALL ELECTRICAL INTERCONNECTIONS BETWEEN THE LOCAL CONTROL PANEL AND THE REMOTE CONTROL PANEL SHALL BE BY OTHERS
5. ALL LOCAL INTERCONNECTIONS, ELECTRICAL AND MECHNICAL, SHALL BE BY AirTech

REFERENCE DRAWINGS	
NUMBER	TITLE
LCP120	LOCAL CONTROL PANEL ASSEMBLY
RCP120	REMOTE CONTROL PANEL ASSEMBLY
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
FTA120	FUEL TRAIN ASSEMBLY

1



LEGEND

- DEVICE OR INSTRUMENT MOUNTED LOCAL TO UNIT
- DEVICE OR INSTRUMENT MOUNTED ON LOCAL CONTROL PANEL
- DEVICE OR INSTRUMENT MOUNTED ON REMOTE CONTROL PANEL
- DEVICE OR INSTRUMENT MOUNTED INSIDE LOCAL ENCLOSURE
- INDICATOR OR ALARM MOUNTED ON REMOTE CONTROL PANEL
- INDICATOR SUPPLIED BY OTHERS
- SYSTEM CONTROL ELECTRICAL INTERLOCK

REVISIONS						ENGINEERING RECORD			
NO	DESCRIPTION	BY	DATE	CKD	DATE	SCALE NONE			
0	FOR CONSTRUCTION	JW	1-6-95			DWN JW	DATE 9-28-94	CKD	DATE
1	ADDED HS-163B	JW	1-26-95			ENGR	DATE		
2	RECORD	JW	7-6-95						
3	REROUTE DPSL-147	CM	8-6-95						
4	FIELD MODIFICATIONS	CMP	8/1/96						

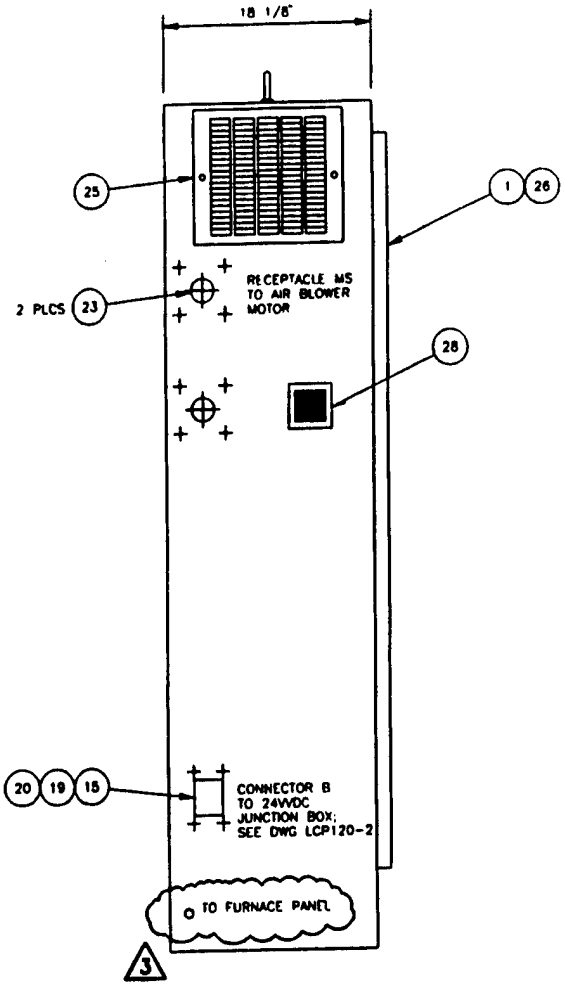
ARTECH ENVIRONMENTAL SYSTEMS

PREPARED FOR ROY F. WESTON, INC

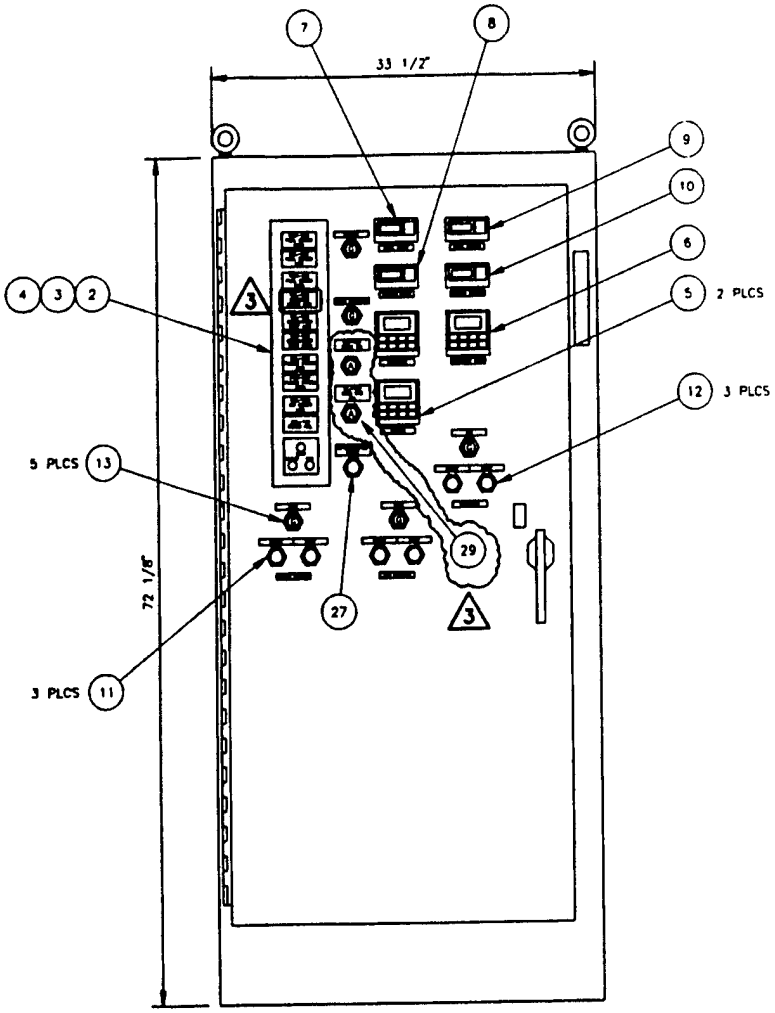
CLIENT JOB

P & ID AFTERBURNER

APPROVED		DWG. #: PID120	REVISION 4



LEFT SIDE



FRONT

REMOTE CONTROL PANEL

PLOTTED 08/01/96 5:03 pm
PLT. SC. 1=1

GENERAL NOTES

1. CONNECTOR & RECEPTACLE LOCATIONS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION MAY VARY FROM THAT SHOWN DUE TO INSTALLATION PARAMETERS.
2. ENCLOSURE FINISH: #61 GREY POLYESTER POWDER COATING.
3. NAMEPLATES TO BE WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS.

(1)

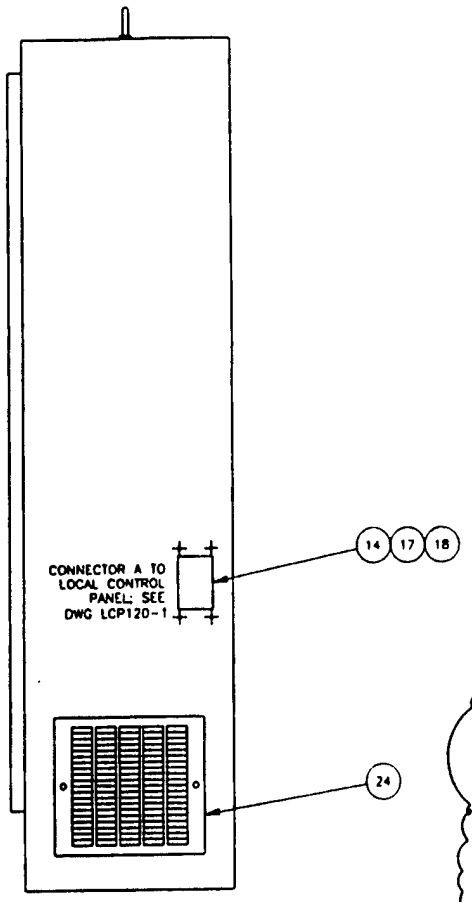
REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL

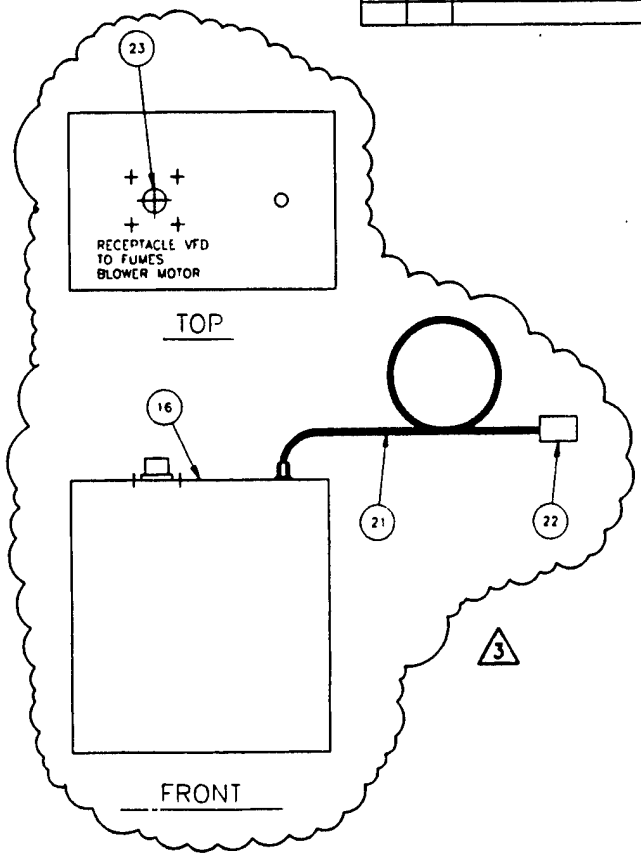
BILL OF MATERAIL

ITEM	QTY	DESCRIPTION
1	1	ENCLOSURE; HOFFMAN A-72XM3418
2	1	CABINET, ANNUNCIATOR; FONAN 1.6X3LR-2000
3	10	MODULE, ALARM; RONAN X3-2004GP-115VAC
4	1	MODULE, PB & FLASHER; RONAN X3-5002-115VAC
5	2	CONTROLLER; HONEYWELL DC300C-0-0A0-20-0000-0
6	1	SWITCH; HONEYWELL DC2001-2-000-100000-0
7	1	METER; MOORE IND DSX/4-20MA/0-1000/1.0VLP [P]
8	1	METER; MOORE IND DSX/4-20MA/0-4000/1.0VLP/DZ [P]
9	1	METER; MOORE IND DSX/4-20MA/0-6/1.0VLP [P]
10	1	METER; MOORE IND DSX/4-20MA/0-3/1.0VLP [P]
11	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-A2D1
12	3	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-FX2D4
13	5	INDICATOR; ALLEN-BRADLEY 800T-PL16G
14	1	BASE, CONNECTOR; T & B PB448
15	1	BASE, CONNECTOR; T & B PB132
16	1	TRANSFORMER, ISOLATION; SQUARE D 11T105HDIT
17	1	CONNECTOR; T & B MS224 (1-24)
18	1	CONNECTOR; T & B MS 248 (25-48)
19	1	CONNECTOR; T & B MS216 (1-16)
20	1	CONNECTOR; T & B MS232 (17-32)
21	1	CABLE; TYPE SO, 4-#8 AWG x 10' LG, 600V, 28 A
22	1	PLUG; MELTRIC 33-11043 (20 AMP)
23	3	RECEPTACLE; MELTRIC 33-14043 (20 AMP)
24	1	PACKAGE, COOLING FAN; HOFFMAN A-PA10AXFN
25	1	GRILLE, EXHAUST; HOFFMAN A-EXGR10
26	1	ADAPTER, OPERATOR; HOFFMAN A-21ABVA
27	1	SWITCH, PUSHBUTTON; ALLEN-BRADLEY 800T-A2A2
28	1	HORN, ALARM; EDWARDS 120VAC
29	2	INDICATOR; ALLEN BRADLEY 800T-PL16A

△3 (16, 17, 29)



RIGHT SIDE



VFD ISOLATION TRANSFORMER

NO.	DESCRIPTION	BY	DATE	CKD	DATE
0	FOR CONSTRUCTION	JW	3-6-95		
1	ADDED VFD ISOLATION XMR	JW	4-27-95		
2	RECORD	JW	7-6-95		
3	FIELD MODIFICATIONS	CAP	8-1-95	9/8/95	CAP

ENGINEERING RECORD

SCALE 1 1/2" = 1'-0"

DSN JW DATE 1-9-95 CKD DATE

DWGR DATE

Arrtech ENVIRONMENTAL SYSTEMS

PREPARED FOR ROY F. WESTON, INC.

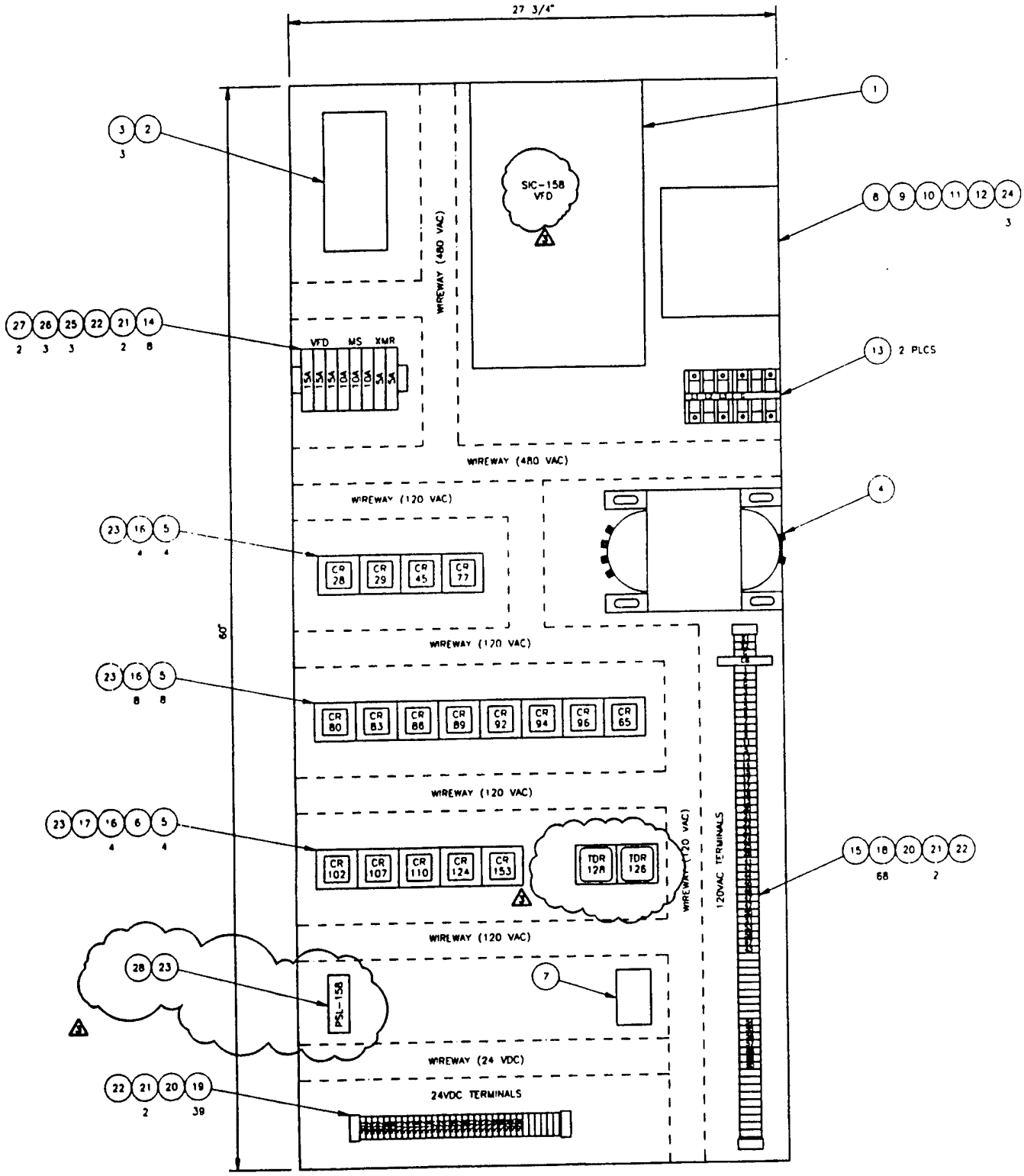
CLIENT JOB:

REMOTE CONTROL PANEL ASSY AFTERBURNER

APPROVED

DWG. #: RCP120-1 REVISION 3

120RCP12.DWG



BACK PANEL

GENERAL NOTES

1 WIRE TERMINATIONS TO 120 VAC TERMINALS BLOCKS TO BE BY HOOK FORK TYPE CONNECTORS.

2 NAMEPLATES TO WHITE PLASTIC LAMINATE WITH BLACK CHARACTERS

REFERENCE DRAWINGS

NUMBER	TITLE
ES120	ELECTRICAL SCHEMATIC
IC120	INTERCONNECTION DIAGRAM
LCP120	LOCAL CONTROL PANEL ASSEMBLY

BILL OF MATERIAL

ITEM	QTY	DESCRIPTION
1	1	CONTROLLER, AC MOTOR; RELIANCE 2GU41005
2	1	STARTER, MOTOR; ALLEN-BRADLEY 509-AOD-90-90
3	3	ELEMENT, HEATER; ALLEN-BRADLEY W38 (2.51 A)
4	1	TRANSFORMER, CONTROL; ALLEN-BRADLEY 1497-N43
5	18	RELAY, CONTROL; ALLEN-BRADLEY 700-HA33A1-4
6	2	RELAY, TIME DELAY; ALLEN-BRADLEY 700-HR52TA17
7	1	SUPPLY, POWER; MOORE IND DPS/24DC/240MA/U DIN
8	1	SWITCH, DISCONNECT; ALLEN-BRADLEY 1494V-DS30
9	1	ROD, CONNECTING; ALLEN-BRADLEY 1494V-RA2
10	1	HANDLE, SWITCH; ALLEN-BRADLEY 1494V-H1
11	1	BLOCK, FUSE; ALLEN-BRADLEY 1494V-FS30
12	1	CLIPS, FUSE; ALLEN-BRADLEY 1401-N41
13	2	BLOCK, POWER DISTRIB; ALLEN-BRADLEY 1492-PD3141
14	8	BLOCK, FUSE; ALLEN-BRADLEY 1492-UF8
15	1	BREAKER, CIRCUIT; ALLEN-BRADLEY 1492-GH150 (15 A)
16	20	SOCKET, RELAY; ALLEN-BRADLEY 700-HN126
17	1	SOCKET, RELAY; ALLEN-BRADLEY 700-HN128
18	68	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F3
19	39	BLOCK, TERMINAL; ALLEN-BRADLEY 1492-F1
20	2	BARRIER, END; ALLEN-BRADLEY 1492-N18
21	6	ANCHOR, END; ALLEN-BRADLEY 1492-N23
22	A/R	RAIL, MOUNTING; ALLEN-BRADLEY 1492-N22
23	A/R	RAIL, MOUNTING; ALLEN-BRADLEY 100-DR1
24	3	FUSE; TYPE H, 30 AMP
25	3	FUSE; 13/32" x 1 1/2", 15 AMP
26	3	FUSE; 13/32" x 1 1/2", 10 AMP
27	2	FUSE; 13/32" x 1 1/2", 5 AMP
28	1	CURRENT SENSING RELAY WIELAND CSR 4-20mA

(24)
3

REVISIONS						ENGINEERING RECORD
NO	DESCRIPTION	BY	DATE	CKD	DATE	SCALE 3"=1'-0"
0	FOR CONSTRUCTION	JW	3-6-95			DWN JW DATE 1-9-95 CKD DATE
1	REVISED CR-110 & TERM 43	JW	4-27-95			ENGR DATE
2	RECORD	JW	7-6-95			
3	FIELD MODIFICATIONS	CAP	8/1/96	GP	9/16/96	

BLY

ArrTech ENVIRONMENTAL SYSTEMS

PREPARED FOR
ROY F. WESTON, INC

CLIENT JOB

REMOTE CONTROL PANEL ASSY AFTERBURNER

APPROVED | DWG. # RCP120-2 | REVISION 3

INDUCED DRAFT (I.D.) FAN

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRIPTIO
195978-1 (SHEET 1)	-	11/11/94	DESIGN 16A INDUSTRI ARRANGEMENT NO. 1 & SISW CLASSES II & III FIXED DISCHARGE - SI
195978-1 (SHEET 2)	-	-	DESIGN 16A ACCESSORIES
195978-2	-	11/11/94	INSULATION STUD

INDUCED DRAFT (I.D.) FAN

(I.D.) FAN

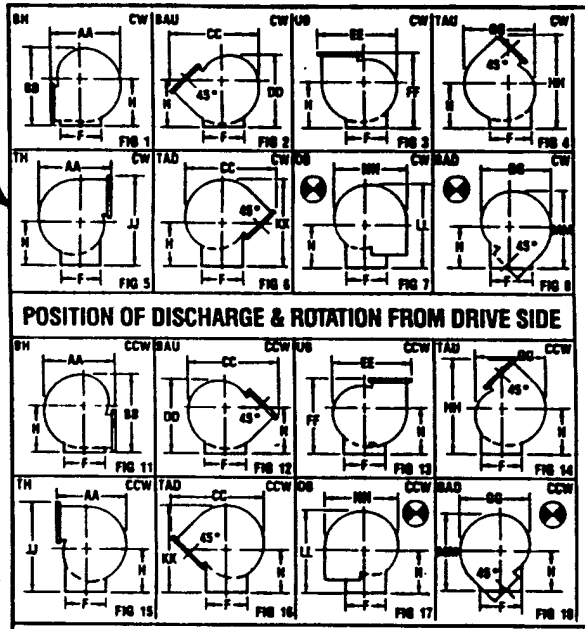
RAWING DESCRIPTION

IGN 16A INDUSTRIAL FANS
ANGEMENT NO. 1 & 9
V CLASSES II & III
ED DISCHARGE - SIZES 11 thru 21

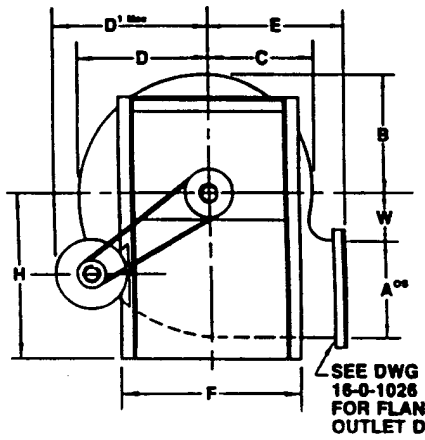
IGN 16A
ESSORIES

ULATION STUD

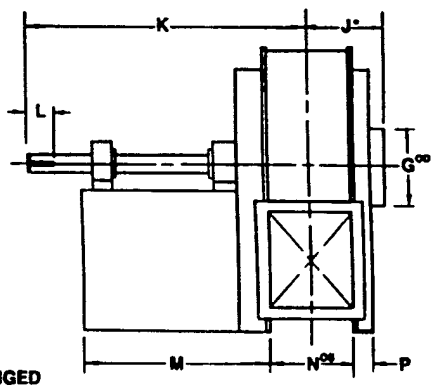
(2)



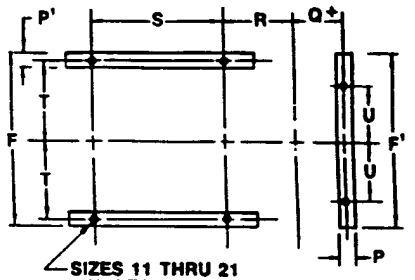
ARRANGEMENT 9 ILLUSTRATED (9L SHOWN, 9R OPP. HAND). ARRANGEMENT 1 SAME AS ILLUSTRATED BUT WITHOUT MOTOR.



SIDE ELEVATION (drive side) ■



FRONT ELEVATION



FOUNDATION (plan) ▲

DIMENSIONS - INCHES (DOUBLE LETTER DIMENSIONS ARE FOR OVERALL REFERENCE ONLY)

FAN SIZE	WHL DIA.	SHAFT DIA. CL II	SHAFT DIA. CL III	KEYWAY SIZE CL II	KEYWAY SIZE CL III	A	B	C	D	D¹	E	F	F¹	G	H	K	L	M	N	P	P¹	Q+
11	19⅛	1 7/16	1 11/16	3/8 x 3/16	3/8 x 3/16	10⅝	14 7/16	13 1/16	15 13/16	18½	15	16⅞	13½	11	20	26 5/16	4	17⅜	9 5/16	1½	1⅝	5 17/32
13	22⅝	1 7/16	1 11/16	3/8 x 3/16	3/8 x 3/16	12⅝	17 1/16	15 7/16	18 11/16	20½	17 7/16	15⅞	17	13	23	32 7/16	4½	22⅛	11 1/16	2	2⅛	6 23/32
15	26⅛	1 15/16	2 3/16	½ x ¼	½ x ¼	14½	19 9/16	17 11/16	21 7/16	23¼	19⅞	18⅛	18½	15	26	35⅜	5¼	23½	12¾	2	2⅛	7½
17	29⅝	1 15/16	2 3/16	½ x ¼	½ x ¼	16 7/16	22 1/16	19 15/16	24 3/16	27	22¼	20⅛	21	17	29	38 9/16	5¼	25⅛	14⅜	2	2⅛	8 5/16
19	33	2 3/16	2 7/16	½ x ¼	5/8 x 5/16	18¼	24½	22⅛	26⅞	28⅛	24 11/16	22¼	23	19	32	41⅜	5¾	27⅜	16	2	2⅛	9⅛
21	36½	2 3/16	2 7/16	½ x ¼	5/8 x 5/16	20 3/16	27 1/16	24 7/16	29 11/16	29⅛	27⅛	24¼	25	21	35	42¼	5¾	27⅜	17 11/16	2	2⅛	9 31/32

+ FOR TYPE "C" SPARK RESISTANT CONSTRUCTION 200°F. AND ABOVE, ADD 3/8" TO DIMENSIONS SHOWN.

FAN SIZE	R	S	T	U	V	W	LS WHEEL* J	AM WHEEL J	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN
11	8 3/32	10½	7 13/16	4½	9/16	6 1/16	8 3/32*	7 23/32	30 13/16	34 7/16	38⅝	33¾	32⅝	35	30¼	43½	38 5/16	36½	35 13/16	35⅛	31⅛
13	9 1/32	15⅛	7 1/16	7 1/16	9/16	7 3/16	9 7/32*	8¾	36⅛	40 1/16	45¼	39¼	38⅜	40 7/16	35¾	50 7/16	44 5/16	42½	41 11/16	40⅞	36⅞
15	9⅞	16½	8 3/16	8 3/16	9/16	8 5/16	10⅛*	9 9/32	41 5/16	45 9/16	51¾	44⅝	43⅞	45⅞	41	57¼	50 5/16	48⅜	47 1/16	46½	42⅜
17	10 11/16	18⅞	9 3/16	9 3/16	9/16	9⅜	11 1/16	10⅞	46 1/16	51 1/16	58 3/16	50	49⅜	51¼	46¼	64 1/16	56 5/16	54¼	53 3/16	52⅛	47⅜
19	11½	20⅜	10¼	10¼	9/16	10½	12	11⅜	51 9/16	56½	64 9/16	55 5/16	54¾	56 11/16	51⅜	70⅞	62¼	60 1/16	58⅞	57 11/16	53¼
21	12 11/32	20⅜	11¼	11¼	9/16	11⅝	14 1/32	13⅜	56 13/16	62 1/16	71⅛	60¾	60⅜	62⅛	56¾	77¾	68 5/16	66	64 11/16	63⅜	58⅞

FAN SIZE	MAXIMUM MOTOR T-FRAMES ODP & TEFC	MAXIMUM MOTOR U-FRAMES ODP	MAXIMUM MOTOR U-FRAMES TEFC	ARRANGEMENT 9 DRIVE CENTERS FRAME 56 MIN.	FRAME 56 MAX.	FRAME 143-145 MIN.	FRAME 143-145 MAX.	FRAME 182-184 MIN.	FRAME 182-184 MAX.	FRAME 213-215 MIN.	FRAME 213-215 MAX.	FRAME 254-256 MIN.	FRAME 254-256 MAX.	FRAME 284-286 MIN.	FRAME 284-286 MAX.	FRAME 324-326 MIN.	FRAME 324-326 MAX.	FRAME 364-365 MIN.	FRAME 364-365 MAX.
11	215T	215	215	14.7	16.8	14.7	16.8	15.8	17.8	16.5	18.6								
13	256T	286U	284U	15	17.2	15	17.2	16	18.1	16.5	19	17.3	20	17.8	20.8				
15	284T	286U	286U	17	19.2	17	19.2	18	20.1	18.5	21	19.3	22	19.8	22.8				
17	324T	364U	364U	18.7	21	18.7	21	19.6	21.8	20.2	22.3	21	23.7	21.4	24.4	22.4	25.7	23	26.7

13	22⅝	1 7/16	1 11/16	⅜ x ⅜	⅜ x ⅜	12⅝	17 1/16	15 7/16	18 1/16	20½	17 7/16	15⅞	17	13	23	32 7/16	4½	22⅛	11 1/16	2	2⅛	6 23/32
15	26⅛	1 5/16	2 3/16	½ x ¼	½ x ¼	14½	19 9/16	17 11/16	21 7/16	23¼	19⅞	18⅛	18½	15	26	35⅜	5¼	23½	12¾	2	2⅛	7½
17	29⅝	1 9/16	2 3/16	½ x ¼	½ x ¼	16 7/16	22 1/16	19 15/16	24 3/16	27	22¼	20⅛	21	17	29	38 9/16	5¼	25⅞	14⅜	2	2⅛	8 5/16
19	33	2 3/16	2 7/16	½ x ¼	⅝ x ⅝	18¼	24½	22⅛	26⅞	28⅛	24 11/16	22¼	23	19	32	41⅜	5¾	27⅜	16	2	2⅛	9⅛
21	36½	2 3/16	2 7/16	½ x ¼	⅝ x ⅝	20 3/16	27 1/16	24 7/16	29 11/16	29⅛	27⅛	24¼	25	21	35	42¼	5¾	27⅜	17 11/16	2	2⅛	9 31/32

+FOR TYPE "C" SPARK RESISTANT CONSTRUCTION 200°F. AND ABOVE, ADD 3/8" TO DIMENSIONS SHOWN.

FAN SIZE	R	S	T	U	V	W	LS WHEEL* J	AM WHEEL J	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	LL	MM	NN
11	8 3/32	10½	7 13/16	4½	9/16	6 1/16	8 3/32*	7 23/32	30 13/16	34 7/16	38⅝	33¾	32⅝	35	30¼	43½	38 3/16	36½	35 13/16	35⅛	31⅛
13	9 1/32	15⅛	7 1/16	7 1/16	9/16	7 3/16	9 1/32*	8¾	36⅛	40 1/16	45¼	39¼	38⅜	40 7/16	35¾	50 7/16	44 5/16	42½	41 11/16	40⅞	36⅞
15	9⅞	16½	8 3/16	8 3/16	9/16	8 5/16	10⅛*	9 9/32	41 5/16	45 9/16	51¾	44⅝	43⅞	45⅞	41	57¼	50 5/16	48⅜	47 1/16	46½	42⅜
17	10 11/16	18⅞	9 3/16	9 3/16	9/16	9⅜	11 1/16	10½	46 7/16	51 1/16	58 3/16	50	49⅜	51¼	46¼	64 1/16	56 5/16	54¼	53 3/16	52⅛	47⅜
19	11½	20⅜	10¼	10¼	9/16	10½	12	11⅜	51 9/16	56½	64 9/16	55 5/16	54¾	56 11/16	51⅜	70⅞	62¼	60 1/16	58⅞	57 11/16	53¼
21	12 11/32	20⅜	11¼	11¼	9/16	11⅝	14 1/32	13⅜	56 13/16	62 1/16	71⅛	60¾	60⅜	62⅛	56¾	77¾	68 5/16	66	64 11/16	63⅜	58⅞

FAN SIZE	MAXIMUM MOTOR T-FRAMES ODP & TEFC	MAXIMUM MOTOR U-FRAMES ODP	MAXIMUM MOTOR U-FRAMES TEFC	ARRANGEMENT 9 DRIVE CENTERS FRAME 56 MIN.	FRAME 56 MAX.	FRAME 143-145 MIN.	FRAME 143-145 MAX.	FRAME 182-184 MIN.	FRAME 182-184 MAX.	FRAME 213-215 MIN.	FRAME 213-215 MAX.	FRAME 254-256 MIN.	FRAME 254-256 MAX.	FRAME 284-286 MIN.	FRAME 284-286 MAX.	FRAME 324-326 MIN.	FRAME 324-326 MAX.	FRAME 364-365 MIN.	FRAME 364-365 MAX.
11	215T	215	215	14.7	16.8	14.7	16.8	15.8	17.8	16.5	18.6								
13	256T	286U	284U	15	17.2	15	17.2	16	18.1	16.5	19	17.3	20	17.8	20.8				
15	284T	286U	286U	17	19.2	17	19.2	18	20.1	18.5	21	19.3	22	19.8	22.8				
17	324T	364U	364U	18.7	21	18.7	21	19.6	21.8	20.2	22.3	21	23.7	21.4	24.4	22.4	25.7	23	26.7
19	326T	365U	365U	20.6	22.9	20.6	22.9	21.5	23.7	22	24.6	22.9	25.6	23.3	26.3	24.1	27.6	24.8	28.6
21	326T	365U	365U	22.8	25.1	22.8	25.1	23.6	25.9	24.2	26.7	24.9	27.8	25.3	28.4	26.5	29.9	26.8	30.7

ITEM NO.	IDENTIFICATION	ARRG'T	NO. REQ'D	FAN SIZE	FIG. NO.	WHL. TYPE	CL	PERFORMANCE C.F.M.	O.V.	S.P.	R.P.M.	B.H.P.	TEMP.	ELEV.	MOTOR DATA H.P.	R.P.M.	CURRENT	FRAME	TYPE
1	SN195978	9SR	1	13	5	LS	3	2250	2445	2.5	1545	1.39	650		5	1800	3/60/460	184T	TEFC
	Tag: Arrtech Job IJ-120							Den. .027 Elv. up to 7000'									Severe Duty		XP

ITEM NO.	SLIDE BASE 7-2-94	DRIVE DATA MTR PULLEY	FAN PULLEY	BELTS	CENTER	MOTOR POS.	VIBR. BASE TYPE	PADS TYPE	OPTIONAL ACCESS.
1	7					9SR			A,E,D,
									L,Q,H
									R,G,S,
									P,W,F

OPTIONAL ACCESSORIES

A = FLANGED INLET #16-0-1026 PUNCHED ☐ UNPUNCHED ☐
B = CLEANOUT DOOR - BOLTED #16-0-1026
C = CLEANOUT DOOR - QUICK CLAMP #16-0-1026
D = CLEANOUT DOOR - PLUG TYPE #16-0-1026 @9:00
E = DRAIN OPENING #16-0-1026 w/plug
F = SPECIAL FINISH - SEE NOTES
G = SHAFT SEAL
H = SPARK RESIST. CONST. 'C'
J = OUTLET DAMPER #16-0-1045
K = HEAVY DUTY HOUSING
L = COOLING WHEEL
M = INLET SCREEN
N = HEAVY DUTY L.S. WHEEL
P = BELT GUARD
Q = SHAFT/BEARING GUARD
R = EXT. GREASE FITTINGS
S = MOUNT MOTOR & DRIVES
T = INLET BOX #16-0-1061
U = INLET BOX DAMPER #16-0-1062
W-Insulation stnda

NOTES

■ Dwg. 16-0-1026 must accompany customer dwg.

⊗ Flanged outlet is not std. on DB & BAD units. When flanged outlet (punched) is required on DB (Fig. 7 & 17) or BAD (Fig. 8 & 18) units, See Dwg. 16-0-1027 for

CUSTOMER Arrtech Environmental Systems

Tulsa, Ok.

P.O.# IJ120-0023

NO.	BASE 7-2-94	MTR PULLEY	FAN PULLEY	BELTS	CENTER	MOTOR POS.	BASE TYPE	PULLEY TYPE	ACCESS.
1	7					9SR			A,E,D,
									L,Q,H
									R,G,S,
									P,W,F

A = FLANGED INLET #16-0-1026 PUNCHED ☒ UNPUNCHED ☐
B = CLEANOUT DOOR - BOLTED #16-0-1026
C = CLEANOUT DOOR - QUICK CLAMP #16-0-1026
D = CLEANOUT DOOR - PLUG TYPE @9:00 #16-0-1026
E = DRAIN OPENING #16-0-1026 w/plug
F = SPECIAL FINISH - SEE NOTES
G = SHAFT SEAL
H = SPARK RESIST. CONST. 'C'
J = OUTLET DAMPER #16-0-1045
K = HEAVY DUTY HOUSING
L = COOLING WHEEL
M = INLET SCREEN
N = HEAVY DUTY L.S. WHEEL
P = BELT GUARD
Q = SHAFT/BEARING GUARD
R = EXT. GREASE FITTINGS
S = MOUNT MOTOR & DRIVES
T = INLET BOX #16-0-1061
U = INLET BOX DAMPER #16-0-1062
W-Insulation studs

NOTES

■ Dwg. 16-0-1026 must accompany customer dwg.

⊗ Flanged outlet is not std. on DB & BAD units. When flanged outlet (punched) is required on DB (Fig. 7 & 17) or BAD (Fig. 8 & 18) units, See Dwg. 16-0-1027 for details of outlet flange extension.

▲ When vibration or unitary base is furnished disregard foundation plan shown above and refer to vibration or unitary base Dwg.

Refer to order acknowledgment for shipping details.

Special hi temp, silicon aluminum on pedestal only.

CBC to furnish motor, belt guard, c/s drive and variable speed drive for motor.

*WHEEL TYPES: LS = Long Shavings, ~~AM = Air Material~~

CUSTOMER Arrtech Environmental Systems

Tulsa, Ok. P.O.# IJ120-0023

JOB NAME

LOCATION

ARCH./ENGINEER CITY

DESIGN 16A INDUSTRIAL FANS
ARRANGEMENT NO. 1 & 9 SISW CLASSES II & III
FIXED DISCHARGE — SIZES 11 THRU 21

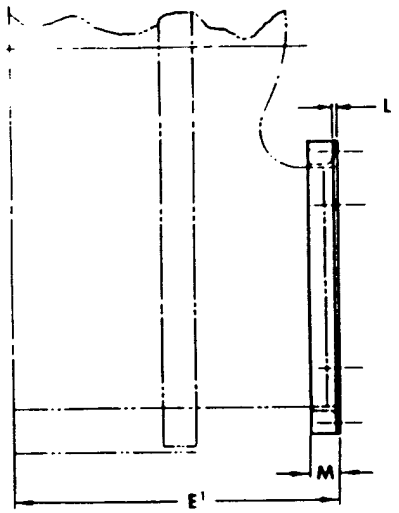
CHICAGO BLOWER CORPORATION

1675 GLEN ELLYN ROAD, GLENDALE HEIGHTS, IL 60139

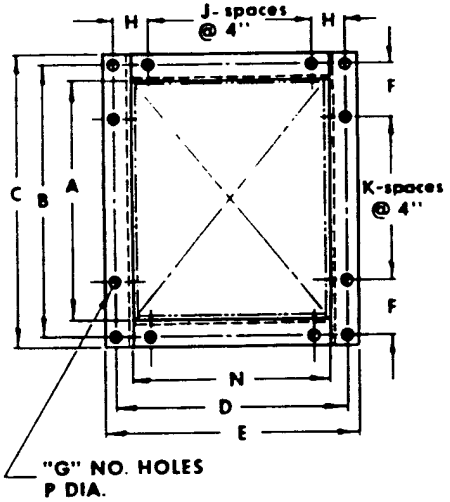
FURNISHED FOR SALES PURPOSE - DIMENSIONS NOT CERTIFIED BY CBC	DATE	SUBMITTED BY	SALES OFFICE
DRAWING CERTIFIED BY CBC - FURNISHED FOR APPROVAL - NOT RELEASED FOR PRODUCTION	DATE	CBC ENGINEER	SO# 195978
DRAWING CERTIFIED BY CBC - APPROVAL NOT REQUIRED - RELEASED FOR PRODUCTION	DATE 11/11/94	CBC ENGINEER HS/JC	DWG # 195978-1

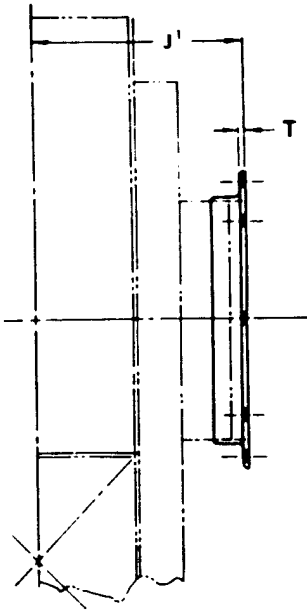
DIMENSION TOLERANCES ± 1/8 - DO NOT USE FOR GENERAL CONSTRUCTION UNLESS CERTIFIED BY C.B.C. ENG. DEPT.

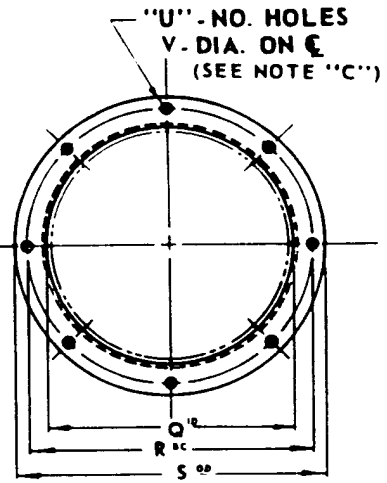
Form 16-0-1023H



Note: Outlet Flange is furnished as Std. on all D/16A Fans.







OUTLET FLANGE PUNCHING

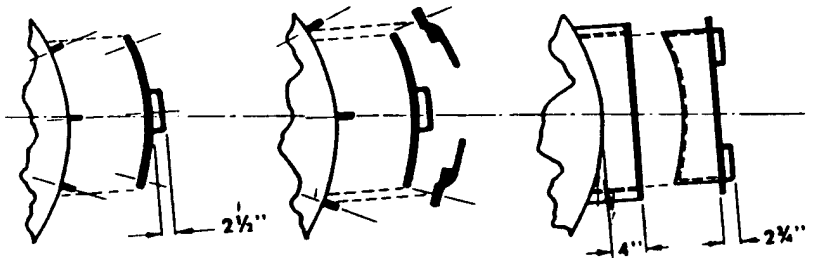
All Sizes Except DB & BAD Sizes 23 - 45
See 16-0-1021 (BAD), 16-0-1022 (DB)

NOTE D

FAN SIZE	OUTLET FLANGE (DIMENSIONS — INCHES)															INLET FLANGE (DIM. — INCHES)						
	A	B	C	D	E	E'	F	G	H	J	K	L	M	N	P	J' LS	J' AM	Q	R	S*	T GA.	U	V
11	10-5/8	12-3/8	13-5/8	11-1/16	12-5/16	15	4-3/16	10	5-17/32	0	1	3/16	1-1/2	9-5/16	1/2	8-19/32	NA	11-1/8	12-1/2	13-5/8	1/8	8	3/8
13	12-5/8	14-3/8	15-5/8	12-13/16	14-1/16	17-7/16	5-3/16	12	4-13/32	1	1	↑	↑	11-1/16	↑	9-23/32	↑	13-3/16	14-13/16	16-3/16	1/8	12	7/16
15	14-1/2	16-1/4	17-1/2	14-1/2	15-3/4	19-7/8	4-1/8	14	5-1/4	1	2	↑	↑	12-3/4	↑	10-5/8	↑	15-3/16	16-13/16	18-3/16	1/8	16	↕
17	16-7/16	18-3/16	19-7/16	16-1/8	17-3/8	22-1/4	5-3/32	16	4-1/16	2	2	↑	↑	14-3/8	↑	11-9/16	↑	17-3/16	19-1/8	20-3/16	3/16	16	↕
19	18-1/4	20	21-1/4	17-3/4	19	24-11/16	4	18	4-7/8	2	3	↑	↓	16	↓	12-1/2	↓	19-3/16	21-1/8	22-3/16	↑	16	↕
21	20-3/16	21-15/16	23-3/16	19-7/16	20-11/16	27-1/8	4-31/32	20	3-23/32	3	3	↑	1-1/2	17-11/16	1/2	14-17/32	NA	21-3/16	23-1/8	24-3/16	↑	20	↕
23	22-1/8	24-3/8	26-1/8	21-9/16	23-5/16	30-1/8	4-3/16	22	4-25/32	3	4	↑	2	19-5/16	5/8	16-5/32	15-5/8	23-3/16	25-1/8	26-3/16	↑	20	7/16
26	24-15/16	27-3/16	28-15/16	24-7/16	26-3/16	33-11/16	5-19/32	24	4-7/32	4	4	↑	↑	22-3/16	↑	17-23/32	17-1/8	26-3/16	28-1/2	30-3/16	↑	24	9/16
29	27-3/4	30	31-3/4	26-3/4	28-1/2	37-1/2	5	26	5-3/8	4	5	↑	↑	24-1/2	↑	18-23/32	18-1/16	29-3/16	31-1/2	33-3/16	↑	24	↕
33	31-3/4	34	35-3/4	29-15/16	31-11/16	42-7/16	5	30	4-31/32	5	6	↑	↓	27-11/16	↑	20-13/32	19-21/32	33-3/16	35-3/8	37-3/16	↑	16	9/16

13	12-5/8	14-3/8	15-5/8	12-13/16	14-1/16	17-7/16	5-3/16	12	4-13/32	1	1				11-1/16		9-23/32		13-3/16	14-13/16	16-3/16	1/8	12	7/16
15	14-1/2	16-1/4	17-1/2	14-1/2	15-3/4	19-7/8	4-1/8	14	5-1/4	1	2				12-3/4		10-5/8		15-3/16	16-13/16	18-3/16	1/8	16	
17	16-7/16	18-3/16	19-7/16	16-1/8	17-3/8	22-1/4	5-3/32	16	4-1/16	2	2				14-3/8		11-9/16		17-3/16	19-1/8	20-3/16	3/16	16	
19	18-1/4	20	21-1/4	17-3/4	19	24-11/16	4	18	4-7/8	2	3				16		12-1/2		19-3/16	21-1/8	22-3/16		16	
21	20-3/16	21-15/16	23-3/16	19-7/16	20-11/16	27-1/8	4-31/32	20	3-23/32	3	3		1-1/2	17-11/16	1/2	14-17/32	NA	21-3/16	23-1/8	24-3/16		20	
23	22-1/8	24-3/8	26-1/8	21-9/16	23-5/16	30-1/8	4-3/16	22	4-25/32	3	4		2	19-5/16	5/8	16-5/32	15-5/8	23-3/16	25-1/8	26-3/16		20	7/16
26	24-15/16	27-3/16	28-15/16	24-7/16	26-3/16	33-11/16	5-19/32	24	4-7/32	4	4			22-3/16		17-23/32	17-1/8	26-3/16	28-1/2	30-3/16		24	9/16
29	27-3/4	30	31-3/4	26-3/4	28-1/2	37-1/2	5	26	5-3/8	4	5			24-1/2		18-23/32	18-1/16	29-3/16	31-1/2	33-3/16		24	
33	31-3/4	34	35-3/4	29-15/16	31-11/16	42-7/16	5	30	4-31/32	5	6			27-11/16		20-13/32	19-21/32	33-3/16	35-3/8	37-3/16		16	9/16
37	35-1/2	37-3/4	39-1/2	33-1/4	35	47-5/16	4-7/8	34	4-5/8	6	7		2	31		23-11/16	22-27/32	37-3/16	39-1/2	41-3/16			5/8
41	39-1/4	42	44-1/4	37-1/4	39-1/2	52-9/16	5	38	4-5/8	7	8		2-1/2	34-1/2		25	23-3/4	41-3/16	43-7/8	45-3/16			3/4
45	43-1/16	45-13/16	48-1/16	40-1/2	42-3/4	57-1/2	4-29/32	42	4-1/4	8	9	3/16	2-1/2	37-3/4	5/8	—	25-17/32	45-3/16	47-7/8	49-3/16	3/16	16	3/4

CLEANOUT DOORS



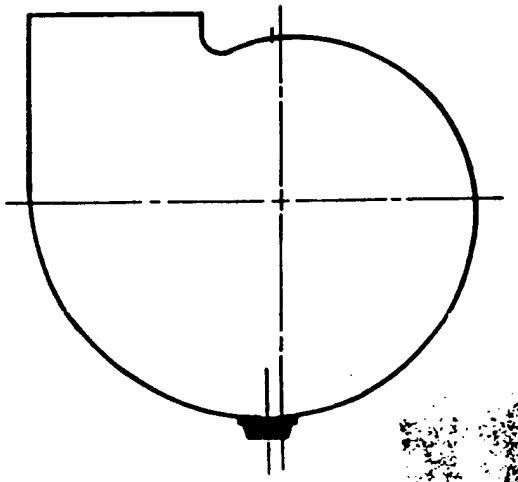
BOLTED TYPE CLAMP TYPE PLUG TYPE

Cleanout door locations must be specified on order by "o'clock" position. These locations are as viewed from drive side and doors are symmetrical on o'clock centerline.

On units with horizontal split housings 3:00 and 9:00 o'clock positions are prohibited.

FAN SIZE	SIZE OPENING		
	BOLTED TYPE	CLAMP TYPE	PLUG TYPE
11, 13,	6 x 10	6 x 10	8
15	10 x 10	10 x 10	8
17	10 x 10	10 x 10	12
19	10 x 10	10 x 10	12
21	10 x 10	10 x 10	12
23	14 x 14	10 x 10	12
26	14 x 14	10 x 16	18
29	14 x 14	16 x 16	22
33	20 x 20	16 x 16	22
37, 41, 45	20 x 20	22 x 22	22

DRAIN OPENING



DRAIN CONNECTION IS 1½" NPT HALF COUPLING AND IS LOCATED AT LOWEST POINT ON SCROLL.

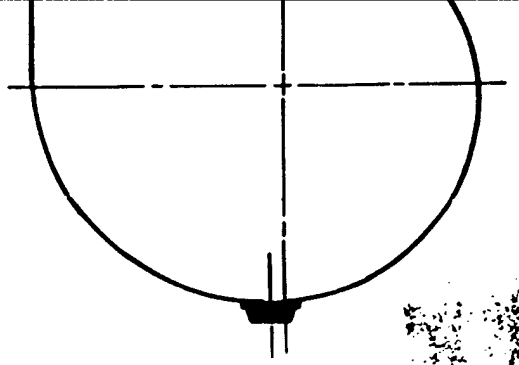
NOTES:
A. OUTLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
B. INLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
C. FOR TYPE 'C' SPARK RESIST. CONSTRUCTION USE VALUES

BOLTED TYPE **CLAMP TYPE** **PLUG TYPE**

Cleanout door locations must be specified on order by "o'clock" position. These locations are as viewed from drive side and doors are symmetrical on o'clock centerline.

On units with horizontal split housings 3:00 and 9:00 o'clock positions are prohibited.

17	10 x 10	10 x 10	12
19	10 x 10	10 x 10	12
21	10 x 10	10 x 10	12
23	14 x 14	10 x 10	12
26	14 x 14	10 x 16	18
29	14 x 14	16 x 16	22
33	20 x 20	16 x 16	22
37, 41, 45	20 x 20	22 x 22	22



DRAIN CONNECTION IS 1½" NPT HALF COUPLING AND IS LOCATED AT LOWEST POINT ON SCROLL.

NOTES:
A. OUTLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
B. INLET FLANGES ARE FURNISHED PUNCHED AS STANDARD
C. FOR TYPE 'C' SPARK RESIST. CONSTRUCTION USE VALUES FOR TYPE L.S. WHEEL
D. FOR TYPE 'C' SPARK RESISTANT CONSTRUCTION AT 200° F AND ABOVE, ADD 3/8" TO DIMENSION SHOWN, FAN SIZES 11-15 ONLY

DESIGN 16A
ACCESSORIES

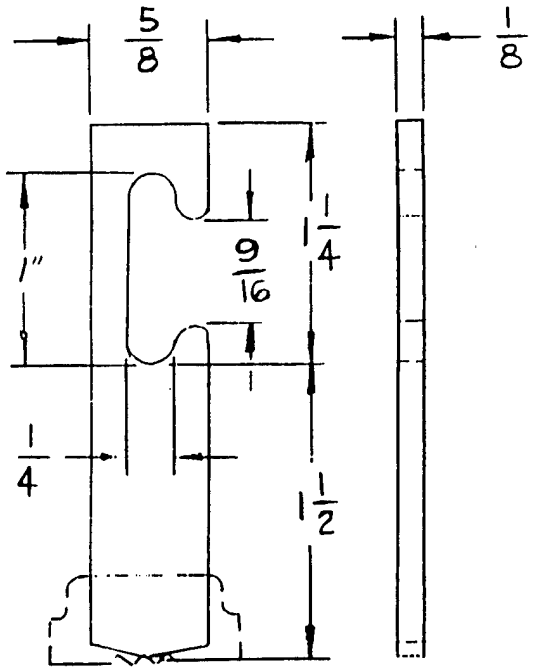
CHICAGO BLOWER CORPORATION

1675 GLEN ELLYN ROAD, GLENDALE HEIGHTS, IL 60139

DIMENSION TOLERANCE ± 1/8

16-0-1026S

MISC.	
SOAP	
HEX	
HDL	
GEN	
FAB	
ENG	
CAD	
AUG	
	NO.
PUST	
AGNT	
ENGR	
SALE	
PNCH	
PROD	
COST	
INSP	
STKR	
LAY	
SUB	
WELD	
CHWL	
BAL	
MCHN	
THWL	
ARWL	
VANE	
ASSM	
FNSH	
SHIP	
FARM	



INSULATI

CHICAGO

CHI
1675 GLEN EL

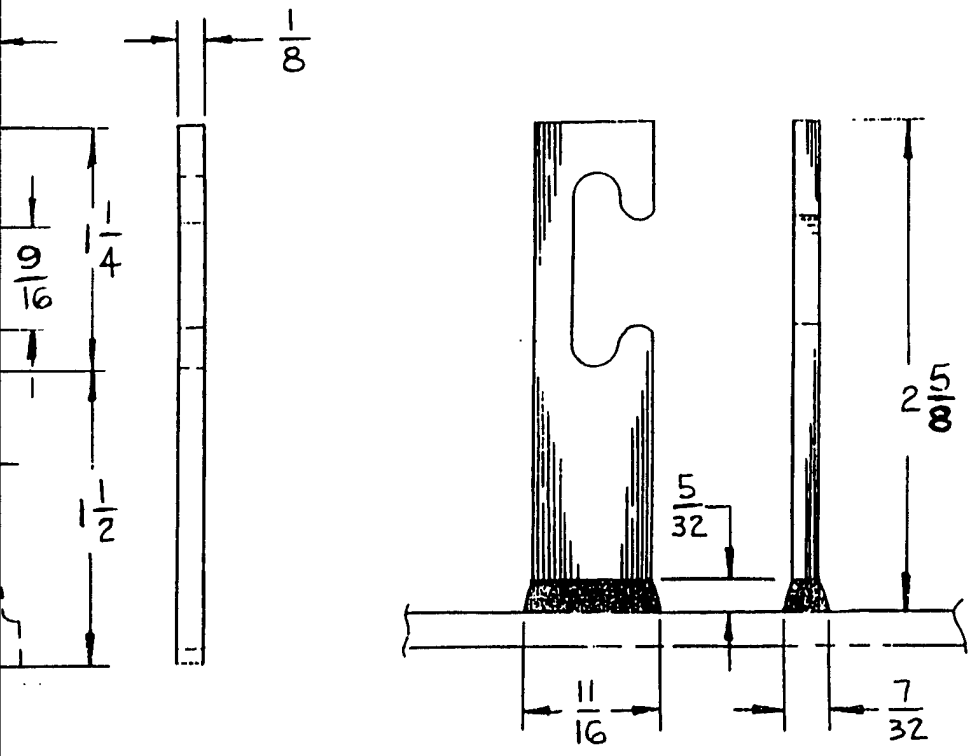
CUSTOMER	Arrtech Environmental Systems
	Tulsa, Ok. P O # IJ120-0023
JOB NAME	
LOCATION	
ARCH. / ENGINEER	CITY

FURNISHED FOR SALES PURPOSES-DIMENSIONS NOT CERTIFIED BY CBC

DRAWING CERTIFIED BY CBC - FURNISHED FOR APPROVAL - NOT RELEASED FOR PRODUCTION

DRAWING CERTIFIED BY CBC - APPROVAL NOT REQUIRED - RELEASED FOR PRODUCTION

1



INSULATION STUD

CHICAGO

CHICAGO BLOWER CORPORATION
1675 GLEN ELLYN ROAD, GLENDALE HEIGHTS, ILL. 60137
PHONE A C 312 858-2600

FURNISHED FOR SALES PURPOSES-DIMENSIONS NOT CERTIFIED BY CBC	DATE	SUBMITTED BY	SALES OFFICE
DRAWING CERTIFIED BY CBC - FURNISHED FOR APPROVAL - NOT RELEASED FOR PRODUCTION	DATE	CBC ENGINEER	SO# 195978
DRAWING CERTIFIED BY CBC - APPROVAL NOT REQUIRED - RELEASED FOR PRODUCTION	DATE 11/11/94	CBC ENGINEER HS/JC	DWG. NO. 195978-2

ns

IJ120-0023

Y

(2)

PROPANE DELIVERY SYSTEM

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRI
9508-112 (SHEET 1)	1	10/13/95	SITE PLAN
9508-112 (SHEET 2)	-	2/27/95	PIPING DIAGRAM
9508-112 (SHEET 3)	-	9/18/95	BILL OF MATERIA

PROPANE DELIVERY SYSTEM DRAWINGS

VERY SYSTEM DRAWINGS

DRAWING DESCRIPTION

ITE PLAN
IPING DIAGRAM
ILL OF MATERIALS & GENERAL NOTES

(2)

Suburba
Propan

WHIPPANY

ROY WESTON, INC. - WEST CHESTER, PA.
ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL.

DRAWING	NUMBER	SHEET	REV.
SITE PLAN	9508-112	1 OF 3	
PIPING DIAGRAM	9508-112	2 OF 3	
BILL OF MATERIAL & GENERAL NOTES	9508-112	3 OF 3	

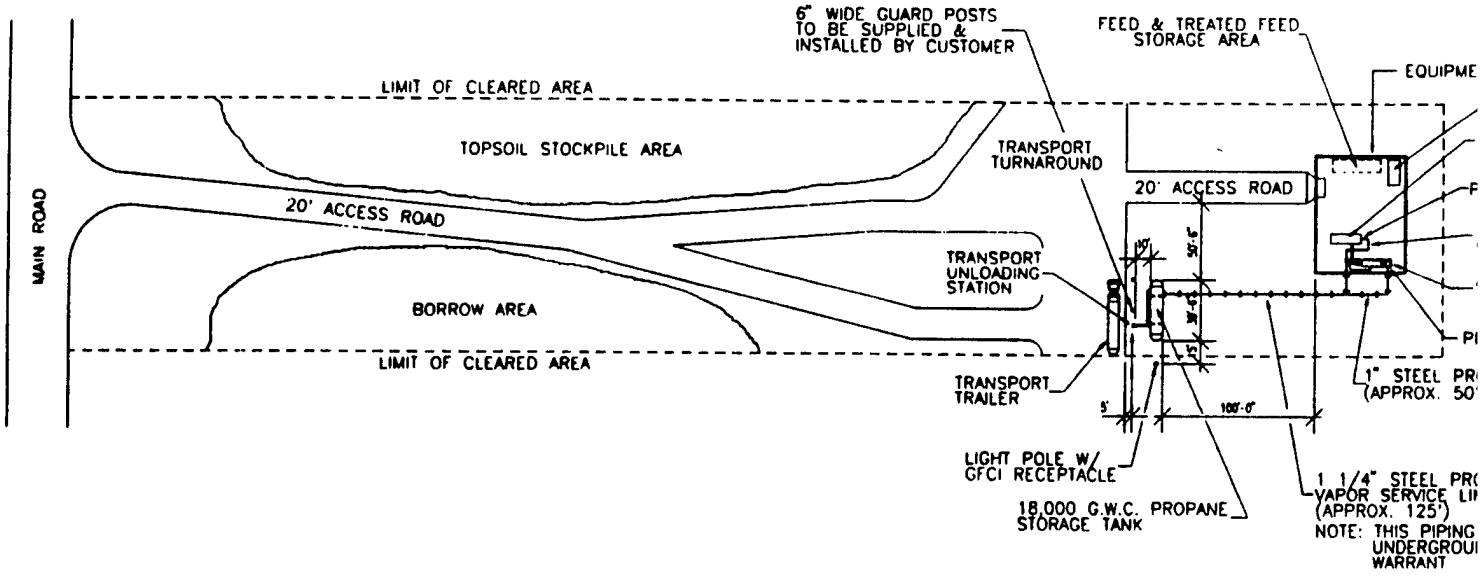
(1)

ban
ane

NEW JERSEY

ESTER, PA.
T - ALPINE, AL.

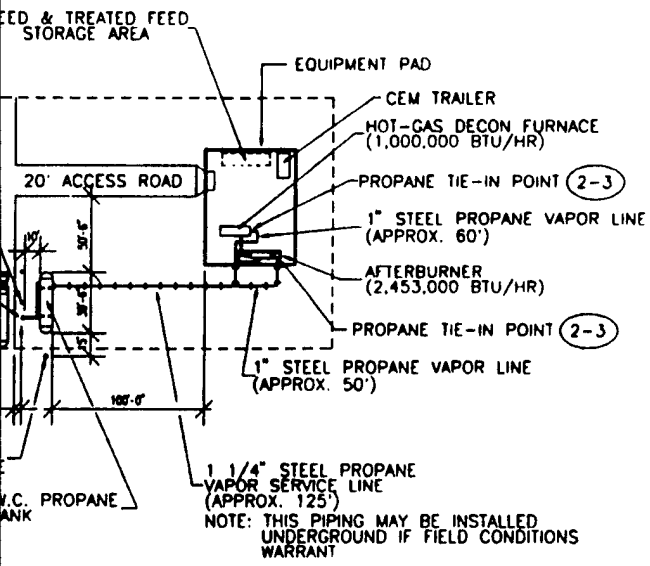
MBER	SHEET	REV.
3-112	1 OF 3	
3-112	2 OF 3	
3-112	3 OF 3	



SITE PLAN

SCALE: 1" = 60'-0"

1



(2)

SUBURBAN PROPANE – WHIPPANY, N.J.

SITE PLAN

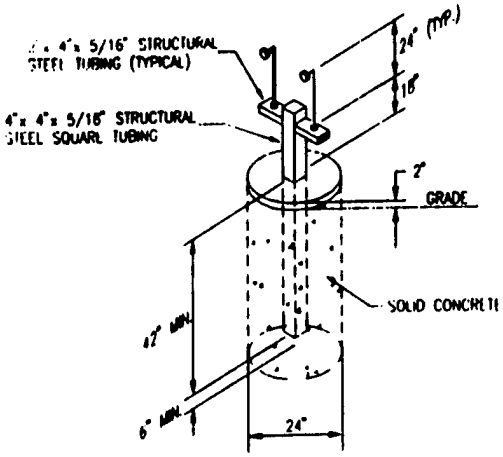
ROY WESTON, INC. – WEST CHESTER, PA.
ALABAMA ARMY AMMUNITION PLANT – ALPINE, AL

DWG. NO. 9508-112 Sheet 1 of 3

J. YAPAOLA

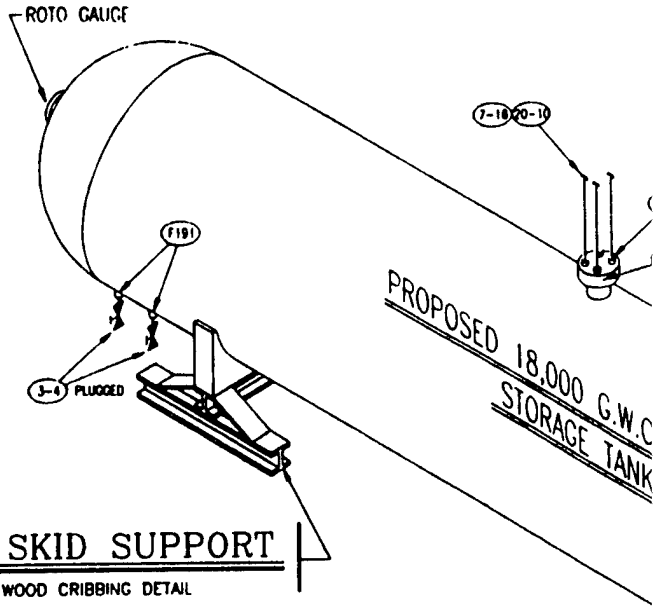
Suburban Propane

1. 10/3/88 JPY REVISED PER ROY WESTON, INC. (NJ HUMM) COMMENTS



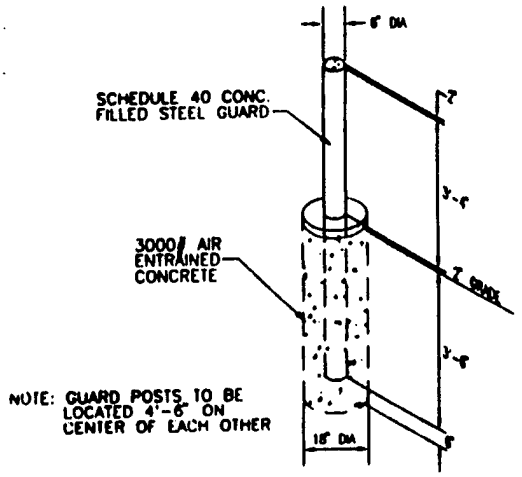
BREAKAWAY STANCHION DETAIL

SCALE: NONE



TANK SKID SUPPORT

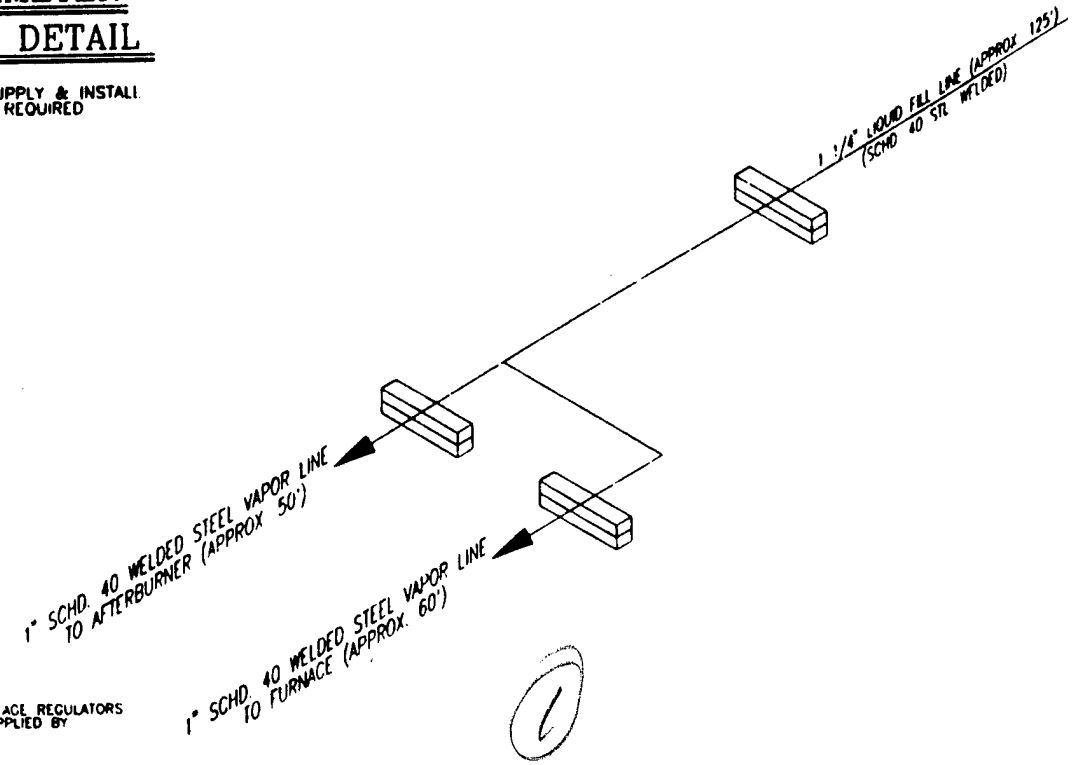
SEE WOOD CRIBBING DETAIL



TYP. 6" DIAMETER GUARD POST DETAIL

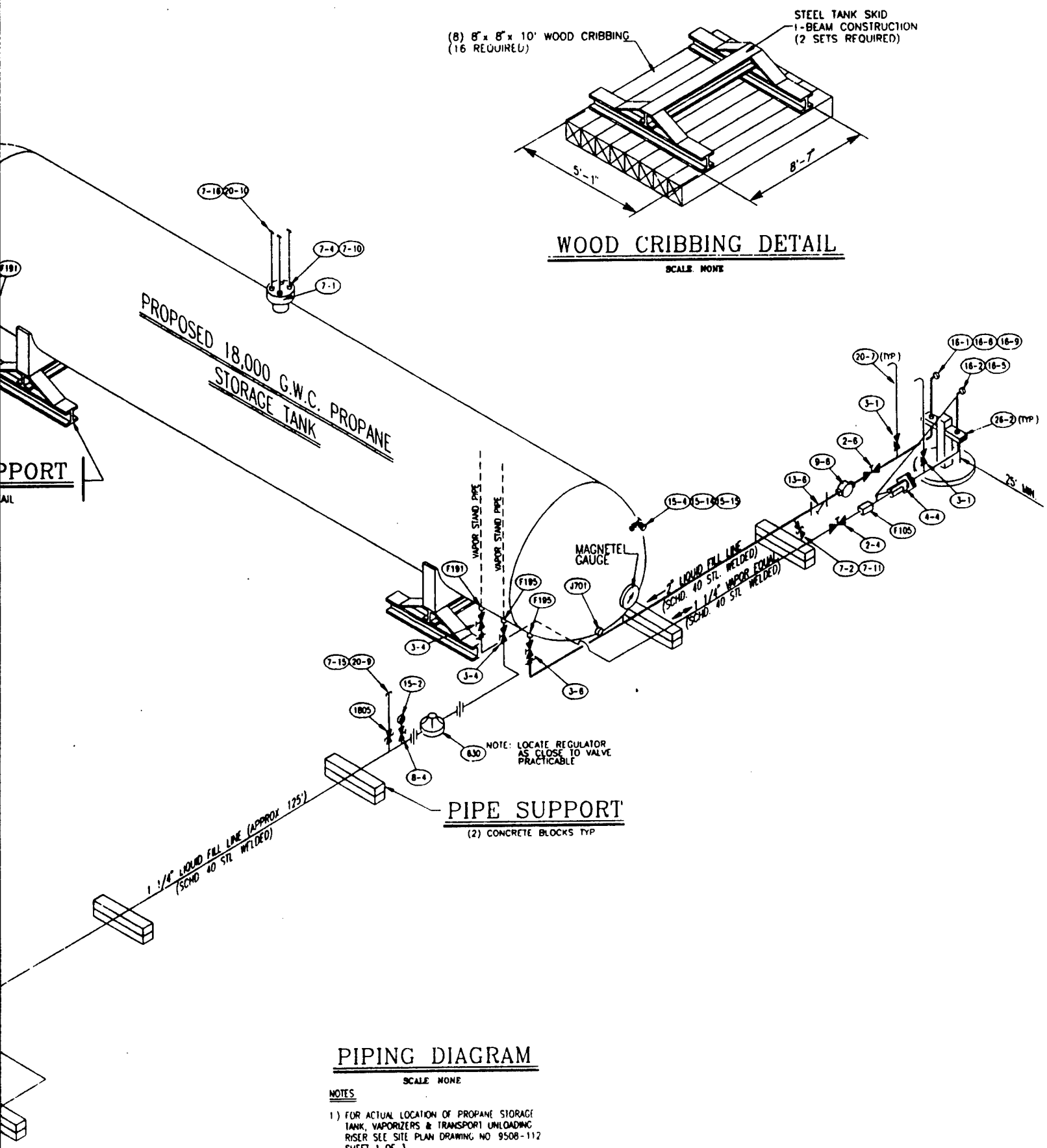
SCALE: NONE

NOTE: CUSTOMER TO SUPPLY & INSTALL GUARD POSTS IF REQUIRED



NOTE: SECOND STAGE REGULATORS TO BE SUPPLIED BY CUSTOMER

1



WOOD CRIBBING DETAIL

SCALE NONE

PIPING DIAGRAM

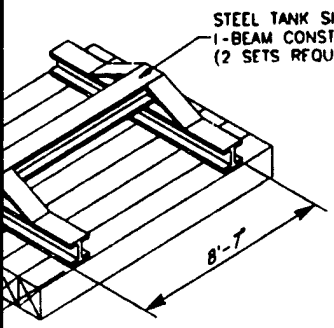
SCALE NONE

NOTES

1) FOR ACTUAL LOCATION OF PROPANE STORAGE TANK, VAPORIZERS & TRANSPORT UNLOADING RISER SEE SITE PLAN DRAWING NO 9508-112 SHEET 1 OF 3

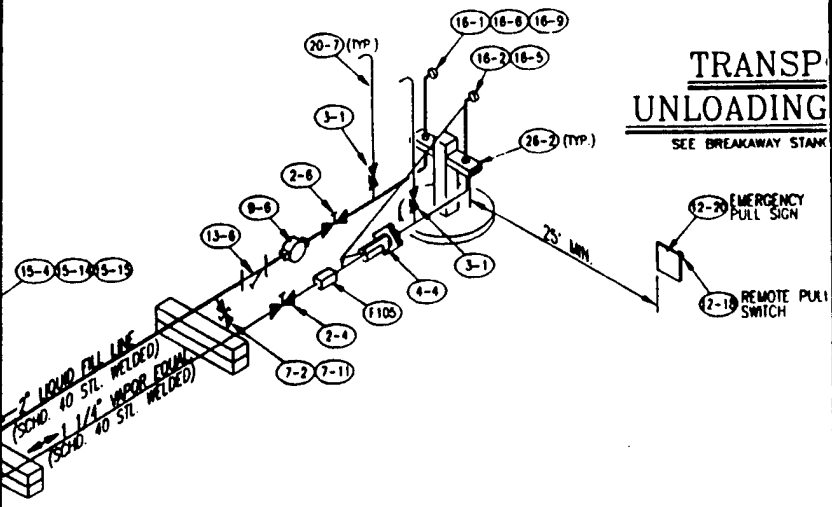
2) SEE BILL OF MATERIALS DRWG NO 9508-112 SHT. 3 OF 3 FOR ALL MATERIAL SPECIFICATIONS & GENERAL NOTES

2



RIBBING DETAIL

SCALE: NONE



TRANSP

UNLOADING

SEE BREAKAWAY STANK

Suburban Propane

SUBURBAN PROPANE – WHIPPANY, N.J.	
PIPING DIAGRAM ROY WESTON, INC. – WEST CHESTER, PA ALABAMA ARMY AMMUNITION PLANT – ALPINE, AL.	YAPAOLA 2-27-95 1/2" = 1' CHECKED
DWG.NO. 9508-112 Sheet 2 of 3	

(3)

STEEL PIPE - GENERAL NOTES:

1) PIPE SPECIFICATIONS:
   - BLACK WELDED & SEAMLESS PIPE ANSI/ASTM A53
   - SEAMLESS CARBON STEEL PIPE ANSI/ASTM A106
   - BLACK WELDED & SEAMLESS STEEL PIPE ANSI/ASTM A120

2) ALL ABOVEGROUND PIPE SHALL BE PRIMED AND PAINTED.

3.) ALL UNDERGROUND PIPE SHALL BE X-TRU COATED OR EQUIVALENTLY WRAPPED (THIN FILM EPOXY-LT. GREEN)

4) ALL UNDERGROUND PIPING SHALL BE ELECTRICALLY ISOLATED AND CATHODICALLY PROTECTED WITH HIGH POTENTIAL MAGNESIUM ANODES

5.) ALL UNDERGROUND PIPE JOINTS SHALL BE MASTIC COATED AND/OR WRAPPED WITH UNDERGROUND TAPE WRAP.

6) ALL ABOVEGROUND PIPE SHALL BE SECURELY SUPPORTED AND PROTECTED FROM PHYSICAL DAMAGE. SPACINGS OF A/G PIPE SUPPORTS SHALL NOT EXCEED THE FOLLOWING.

STEEL PIPE SIZE (INCHES)	SPACING OF SUPPORTS (FEET)
1/2"	6'
3/4" OR 1"	8'
1 1/4" OR LARGER (HORIZONTAL)	10'
1 1/4" OR LARGER (VERTICAL)	EVERY FLOOR LEVEL

7.) JOINT COMPOUND (PIPE DOPE) FOR ALL THREADED JOINTS SHALL BE LABELED FOR USE ON LP GAS AND LIQUID.

8.) ALL HIGH AND LOW PRESSURE FLANGE GASKETS SHALL BE ASBESTOS FIRE RATED OR WHEN REQUIRED NON ASBESTOS "GARLOCK" TYPE. FLANGED GASKETS SHALL BE RATED FOR THE GIVEN PRESSURE OF THE PIPELINE AND OR VALVE FLANGE.

9.) ALL PIPE WELDING SHALL MEET WITH THE LATEST A.P.I. STANDARD 1104.

10.) ALL HIGH PRESSURE PIPING SHALL BE SCHEDULE 80 WHEN THREADED OR SCHEDULE 40 OR 80 WHEN WELDED.

11.) ALL LOW PRESSURE PIPING SHALL BE AT LEAST SCHEDULE 40 WHEN THREADED OR WELDED.

12.) ALL HIGH PRESSURE FITTINGS SHALL BE FORGED STEEL RATED 600# OR GREATER. CAST IRON PIPE FITTINGS (ELLS, TEES, CROSSES,UNIONS, FLANGES OR PLUGS) SHALL NOT BE USED.

13.) ALL LOW PRESSURE FITTINGS SHALL BE RATED 250# OR GREATER MADE OF MALIABLE IRON OR EQUIVALENT. CAST IRON PIPE FITTINGS (ELLS, TEES, CROSSES, UNIONS, FLANGES OR PLUGS) SHALL NOT BE USED.

14.) PRIOR TO PRESSURE TEST, PIPE SHALL BE CLEANED OF ALL FOREIGN MATERIAL.

15.) ALL NEW PIPING SHALL BE PRESSURE TESTED AFTER CONNECTIONS HAVE BEEN COMPLETED. PRESSURIZATION OF HIGH PRESSURE LINES WITH AIR OR NITROGEN TO 350 P.S.I.G. ALL LOW PRESSURE LINES WILL BE TESTED TO 50 P.S.I.G. HOLD PRESSURE ON SYSTEM FOR MINIMUM 15 MINUTES WHILE CHECKING ALL WELDS, THREADED JOINTS, VALVE PACKING JOINTS, ETC. WITH SOAP CHECK.

16.) ALL PIPE LEAVING TANK (MANWAY AND/OR OPENINGS) AREA SHALL INCORPORATE SWING JOINT ELLS TO RELIEVE PIPE STRESSES ON TANK FITTINGS, ADDITIONALLY, ANY PIPE SUBJECT TO MOVEMENT WITH RELATION TO ANY FIXED OBJECT MUST INCORPORATE SWING JOINT ELLS

17) SUPPLY PIPE REDUCERS WHERE NECESSARY. (ONE PIECE CONCENTRIC WELD OR THREADED BUSHING TYPE).

18) SUPPLY UNIONS WHERE NECESSARY FOR EASY REMOVAL OF EQUIPMENT (TAKE SPECIAL NOTE OF WHERE INSULATED UNIONS HAVE BEEN SPECIFIED)

19.) 6" DIAMETER CONCRETE FILLED SCHEDULE 40 STEEL GUARD POSTS TO BE INSTALLED WHERE NECESSARY (SUPPLIED BY CUSTOMER)

20) INSTALLATION TO MEET THE FOLLOWING CODE REQUIREMENTS: N.F.P.A. #58 AND N.F.P.A. PAMPHLET #70 COVERING HAZARDOUS LOCATIONS CLASSIFICATIONS

(1)

BILL OF MATERIAL

SYMBOL	QTY	DESCRIPTION	INLET/OUTLET	PIPE SIZE	MANUFACTURER/ PART NO
2-3	2	BALL VALVE	UNION ENDS	1"	MARPAC CS-B790-TT
2-4	1	BALL VALVE	UNION ENDS	1 1/4"	MARPAC CS-B790-TT
2-6	1	BALL VALVE	UNION ENDS	2"	MARPAC CS-B790-TT
3-1	2	GLOBE VALVE	FNPT/FNPT	1/2"	FISHER N301-04
3-4	4	GLOBE VALVE	FNPT/FNPT	1 1/4"	FISHER N310-10
3-6	1	GLOBE VALVE	FNPT/FNPT	2"	FISHER N310-16
4-4	1	EMERGENCY VALVE	FNPT/FNPT	1 1/4"	REGO 7781AF
F191	3	EXCESS FLOW VALVE	MNPT/FNPT	2"x1 1/4"	FISHER F191-105GPM
F195	2	EXCESS FLOW VALVE	MNPT	3"x2"	FISHER F195-260GPM
7-1	1	MULTIPORT RELIEF VALVE	FLANGE	3"	REGO A8560
7-2	1	HYDRO. RELIEF VALVE	MNPT	1/2"	FISHER H144
7-4	3	TANK RELIEF VALVE	MNPT	2"	REGO A3149MG
7-10	3	PIPEAWAY ADAPTOR	-	-	FISHER P104-24
7-11	1	RAIN CAP	-	1/2"	FISHER P206
7-15	1	RAIN CAP	-	2"	P770 - 2 3/8"
7-16	3	RAIN CAP	-	3"	P770 - 3 1/2"
8-4	1	NEEDLE VALVE	MNPT/FNPT	1/4"	V335
9-6	1	BACKCHECK VALVE	FNPT/FNPT	2"	REGO A7794
12-18	1	EMERG. PULL TO CLOSE	-	-	FISHER P184B W/ CABLE
12-20	1	EMERG. PULL SIGN	-	-	P-81
13-6	1	STRAINER	FNPT/FNPT	2"	PACET PG200 (N260-16)
15-2	2	PRESSURE GAUGE (0-30#)	-	1/4"	FISHER J501 (GS30)
15-4	1	PRESSURE GAUGE (0-300#)	-	1/4"	FISHER J506 (GS300)
15-14	1	VENT/PRESSURE VALVE	MNPT/FNPT	3/4"x1/4"	FISHER J415
15-15	1	SPIT VENT	FNPT	1/4"	FISHER J400
16-1	1	ACME ADAPTOR	MACME/MNPT	3 1/4"x2"	FISHER 503-16
16-2	1	ACME ADAPTOR	MACME/MNPT	1 3/4"x1"	FISHER M216
16-5	1	BRASS CAP W/ CHAIN	FACME	1 3/4"	FISHER M229
16-6	1	STEEL CAP	FACME	3 1/4"	FISHER M443
16-9	1	CHAIN W/ HOOKS	-	-	FISHER P167
20-9	1	STAND PIPE	SCHD.40 GALV	2"x7'	BY CONTRACTOR
20-10	3	STAND PIPE	SCHD.40 GALV	3"x7'	BY CONTRACTOR
1805	1	RELIEF VALVE	FNPT/FNPT	2"	FISHER 1805-52
26-2	2	BREAKAWAY EAR	-	-	-
27-6	2	INSULATED UNION	FNPT/FNPT	2"	3000# (HIGH PRESSURE)
J701	1	6" THERMOMETER	MNPT	1/2"	FISHER J701
630	2	REGULATOR	FNPT/FNPT	2"	FISHER 630-104/78

(2)

SUBURBAN PROPANE - WHIPPANY, N.J.

BILL OF MATERIALS

ROY WESTON, INC. - WEST CHESTER, PA.
ALABAMA ARMY AMMUNITION PLANT - ALPINE, AL.

J. YAPAOLA | DATE 9/18/95 | SCALE NONE

REFERENCES

Suburban Propane

JWC.NO. 9508-112 Sheet 3 of 3

MISCELLANEOUS HGD SYSTEM EQ

DRAWING NO.:	REV. NO.:	DRAWING DATE	DRAWING DESCRIPTI
400	1	8/3/96	HGD SYSTEM: GENER
401	1	7/25/96	HGD SYSTEM: SECTI
1000	-	8/8/95	STACK MODIFICATIOI TESTING
1001	2	5/2/96	HGD SYSTEM: PROCE
1002	2	5/10/96	HGD SYSTEM: PIPING
C100	3	1/10/96	HGD SYSTEM: SITE L
C2000	3	9/6/96	HGD SYSTEM: OVERA
C2001	2	9/6/96	HGD SYSTEM: OVERA

MISCELLANEOUS HGD SYSTEM EQUIPMENT

HGD SYSTEM EQUIPMENT

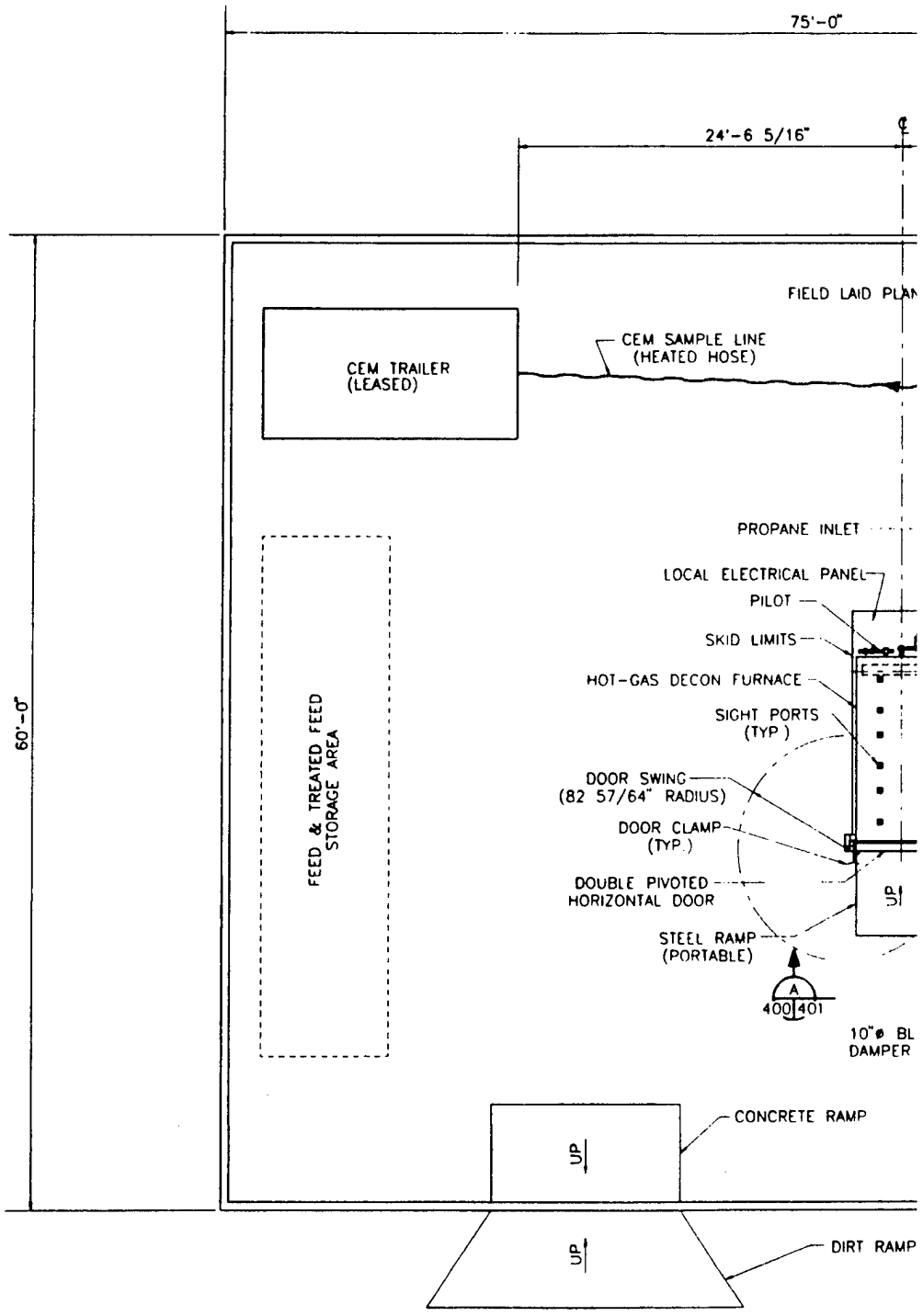
DRAWING DESCRIPTION

HGD SYSTEM: GENERAL ARRANGEMENT PLAN
HGD SYSTEM: SECTIONS & DETAILS

STACK MODIFICATION TO SUPPORT EMISSIONS TESTING
HGD SYSTEM: PROCESS FLOW DIAGRAM
HGD SYSTEM: PIPING & INSTRUMENTATION DIAGRAM

HGD SYSTEM: SITE LAYOUT
HGD SYSTEM: OVERALL SITE LAYOUT @ ALAAP
HGD SYSTEM: OVERALL SITE LAYOUT: DETAIL A

(2)



NO	DATE	APPR	REVISION
1	[illegible]	CLP	REVISED INTERCONNECTING DUCT ARRANGEMENT
0	12/4/96	CAP	ISSUED FOR CONSTRUCTION

HC
DECONTAM
ALAAP

WEST CHESTER

PLOTTED 07/31/96 11:35 am
PLT. SC. 1=64 FILE NO 12104000

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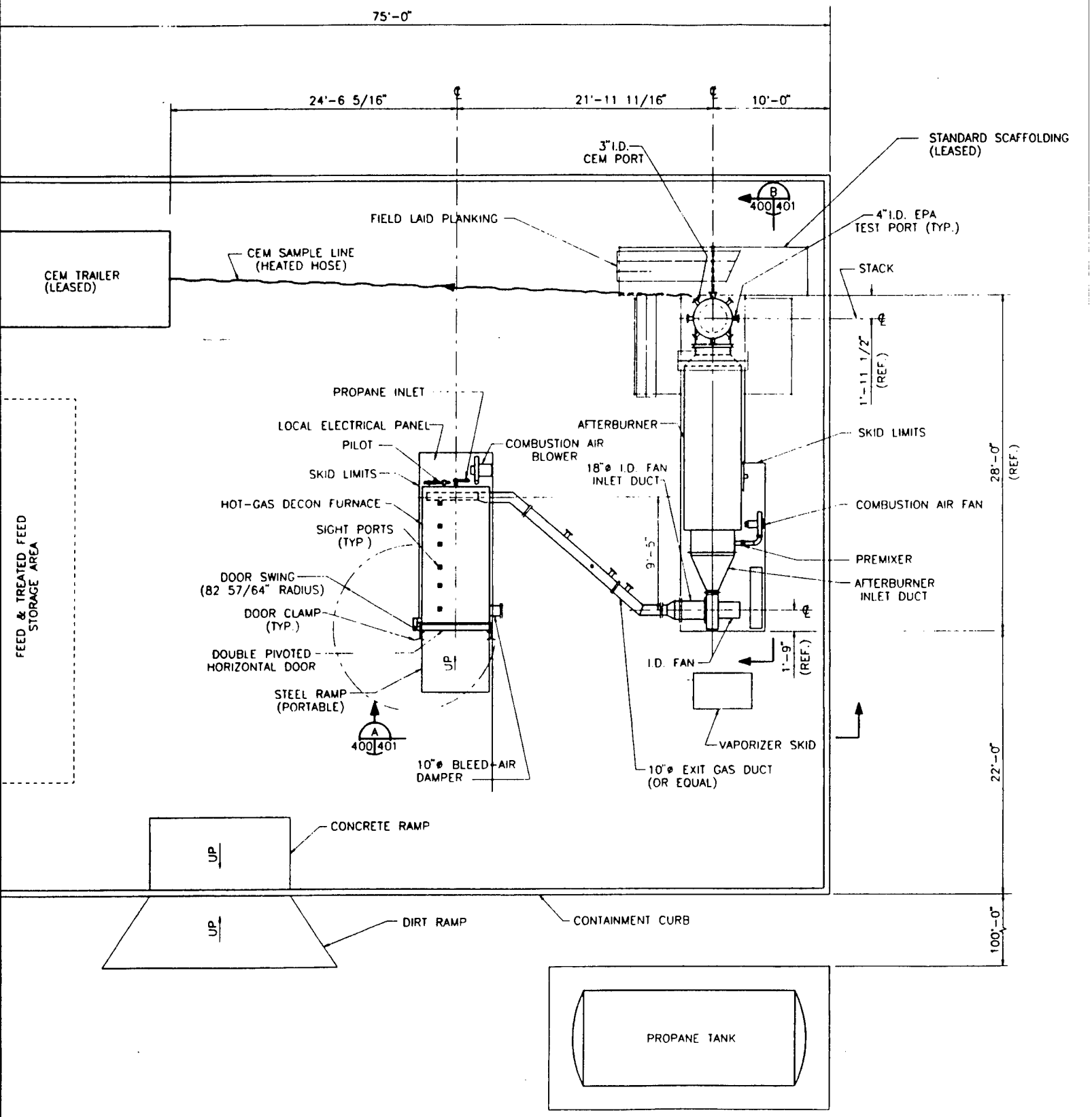


HOT-GAS DECONTAMINATION SYSTEM

ALAAP ALPINE, ALABAMA

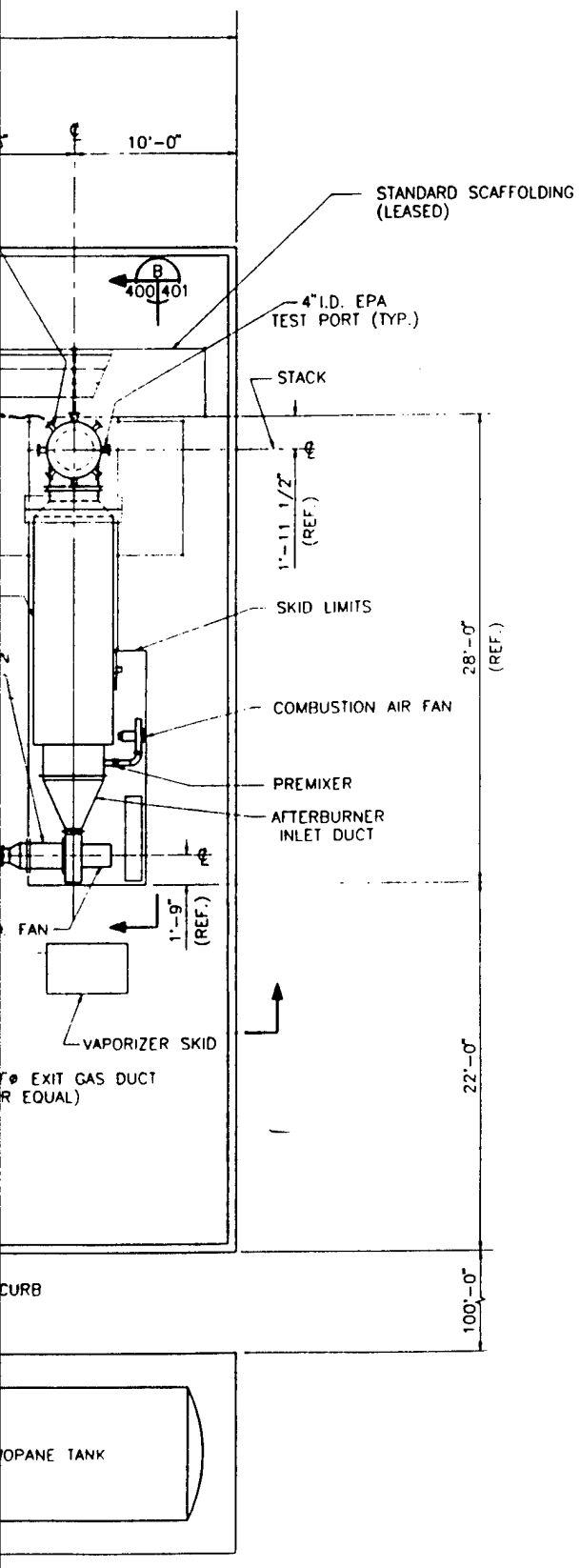
WESTON

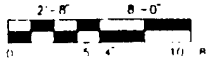
CHECKED	DATE	CLIENT APPROVALS	DATE
DES. ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED			

ED FOR CONSTRUCTION

REVISION

2



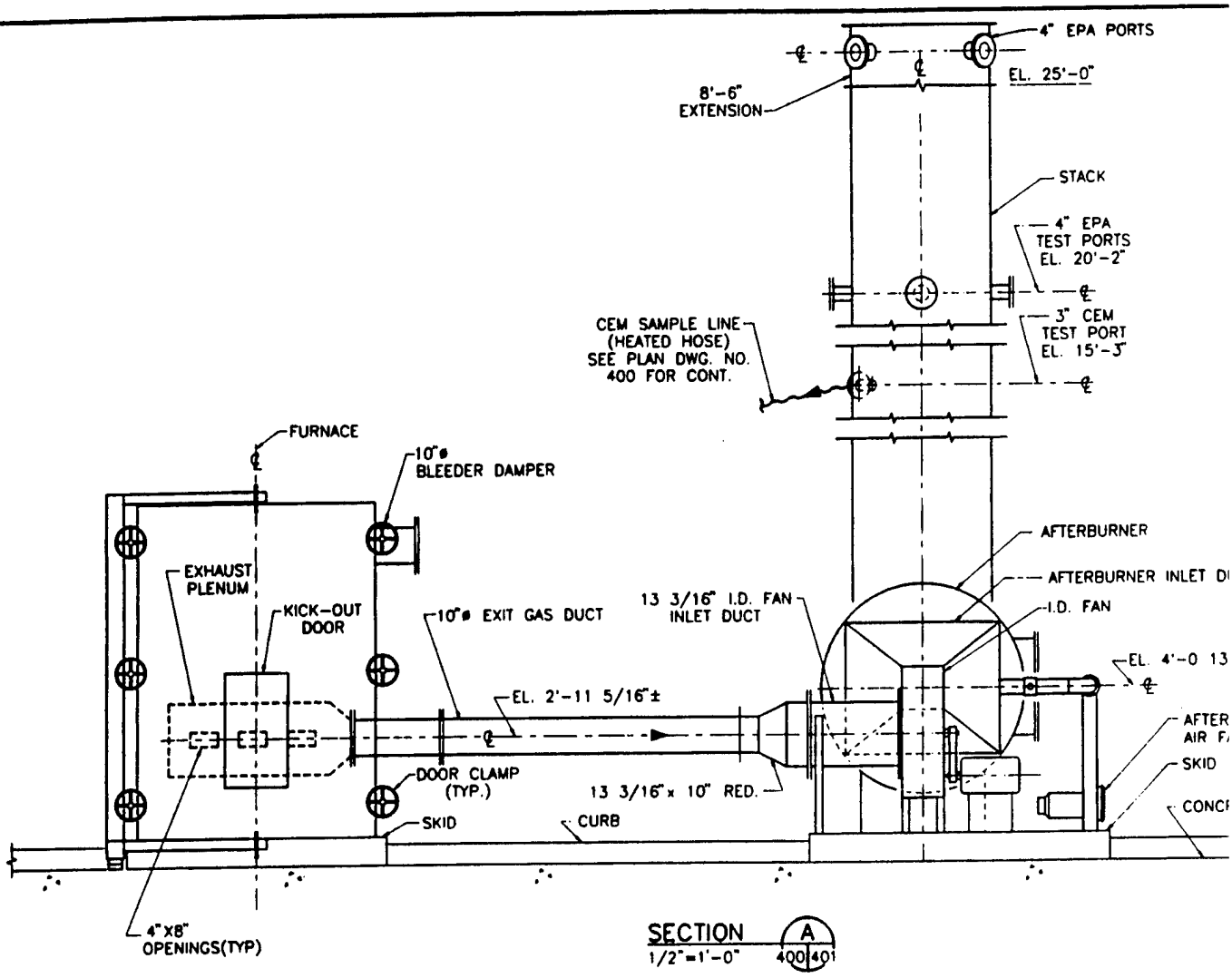


CHECKED	DATE	CLIENT APPROVALS	DATE
CHeide	8/3/96		
ES ENG			
ROJ ENG			
ROJ MGR			
APPROVED			
APPROVED			

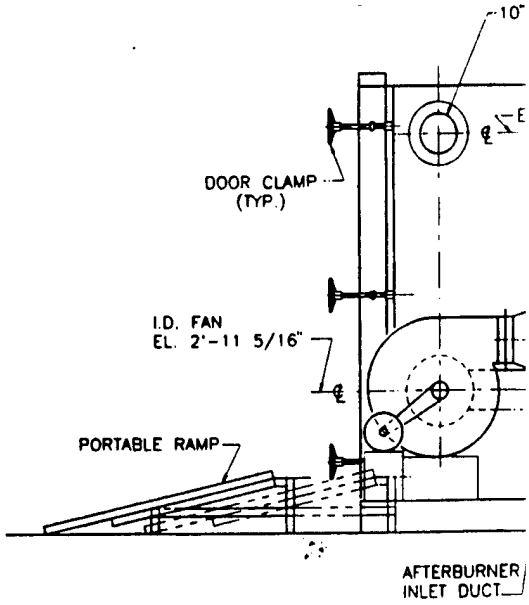
HOT GAS DECON SYSTEM
GENERAL ARRANGEMENT PLAN

DRAWN	DATE	DWG NO	REV NO
J M	11/09/94	400	1
SCALE 3/16" = 1'	W.O. NO 2281-012-010	SHT ____ OF ____	

(3)



SECTION A
1/2"=1'-0" 400|401



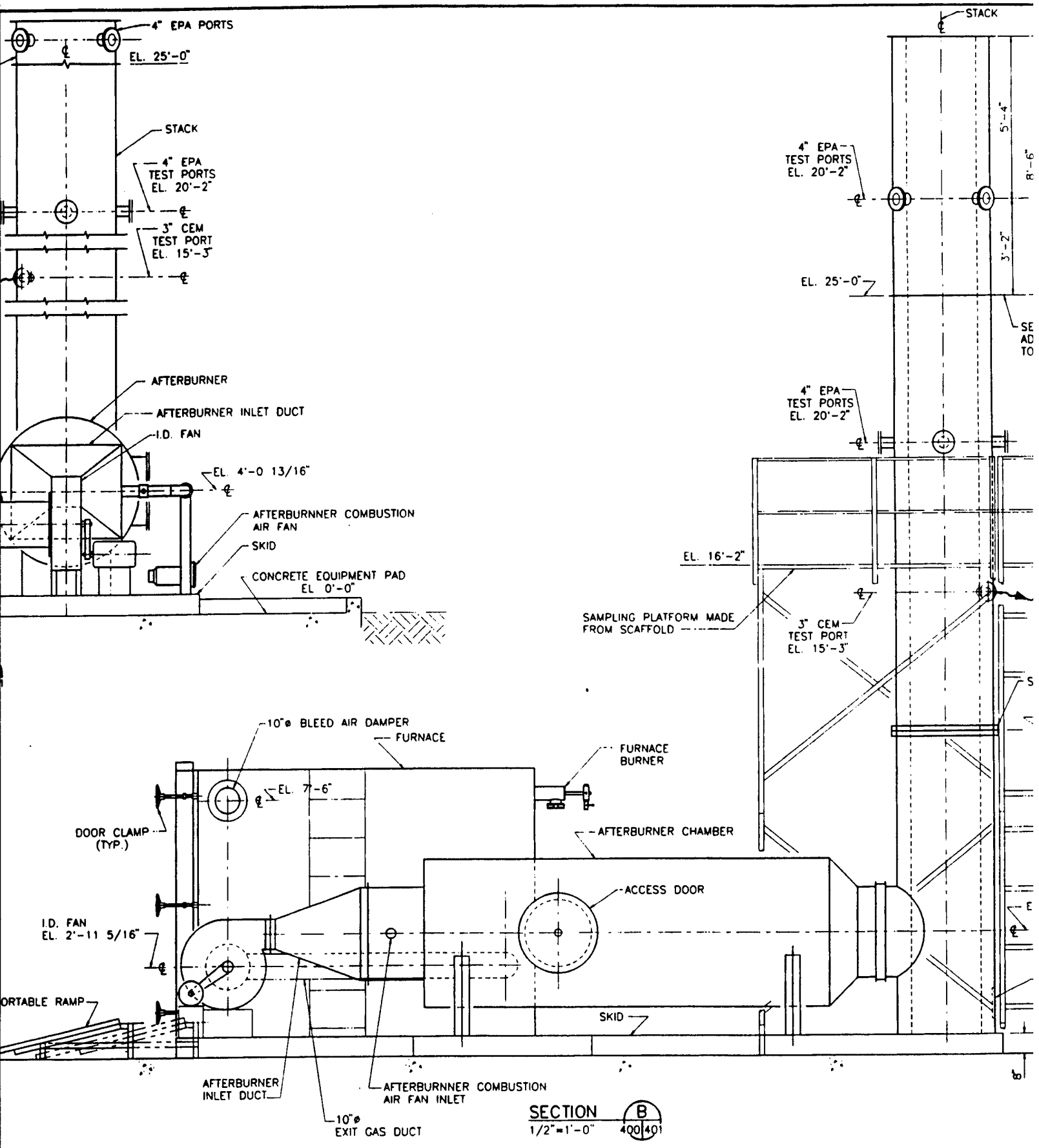
NOTE:
TOP OF CONCRETE EQUIPMENT PAD IS ASSUMED TO BE EL. 0'-0".

NO	DATE	APPR.	REVISION
-	06/96	CAP	ISSUED FOR CONSTRUCTION
1	7/31/96	CAP	REVISED INTERCONNECTING DUCT ARRANGEMENT; ADDED 8'-6" STACK EXT.

HO
DECONTAMI
ALAAP

WEST CHESTER

PLOTTED 07/31/96 11:36 am
PLT. SC. 1=24 FILE NO. 12104001



SECTION B
1/2"=1'-0"
400|401

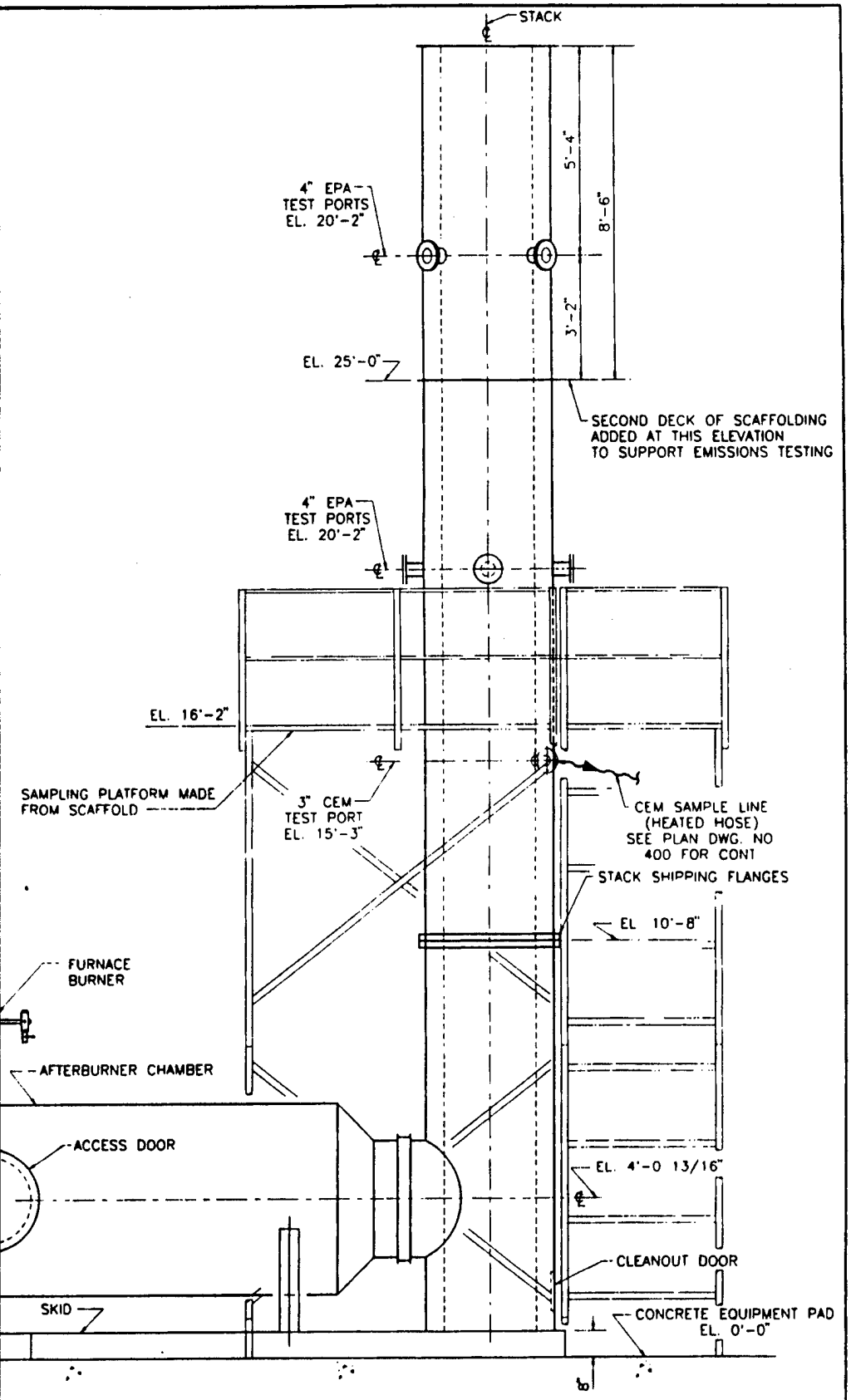
HOT-GAS DECONTAMINATION SYSTEM
ALAAP
ALPINE, ALABAMA

WESTON

CHECKED	DATE	CLIENT APPROVALS	DATE
DES ENG			
PROJ ENG			
PROJ MGR			
APPROVED			
APPROVED			

HOT GAS D
SECTIONS

DRAWN	DATE
J.M.	11/10
SCALE	W.O. NO
1/2"=1'	02281-01



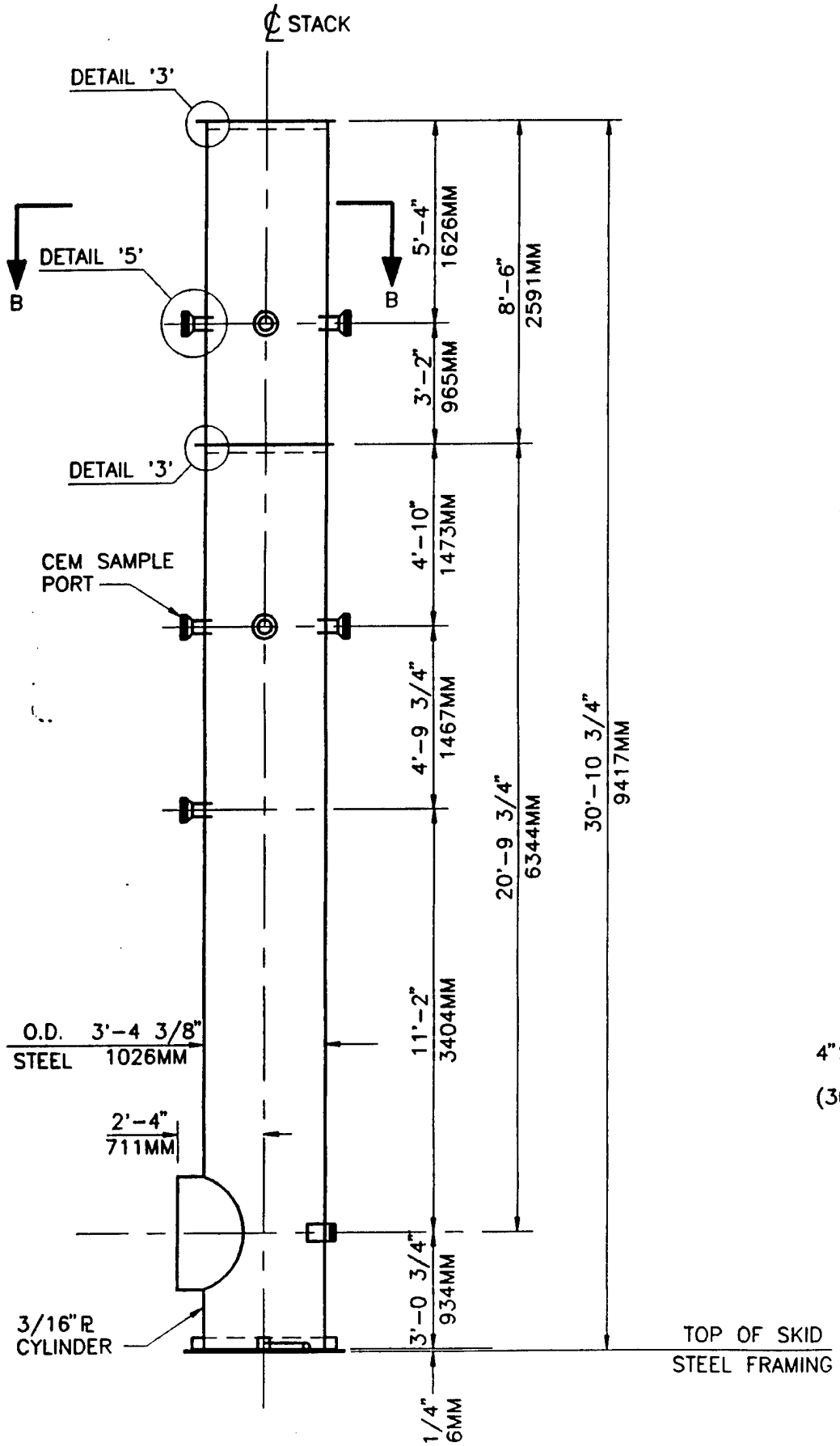
TION B
'-0" 400 401

DATE	CLIENT APPROVALS	DATE

HOT GAS DECON SYSTEM SECTIONS AND DETAILS

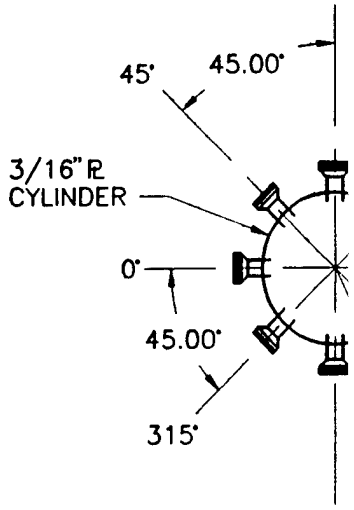
DRAWN	DATE	DWG. NO	REV. NO.
J.M.	11/10/94	401	1
SCALE	W.O. NO.	SHT ____ OF ____	
1/2" = 1'	02281-012-010		

(3)



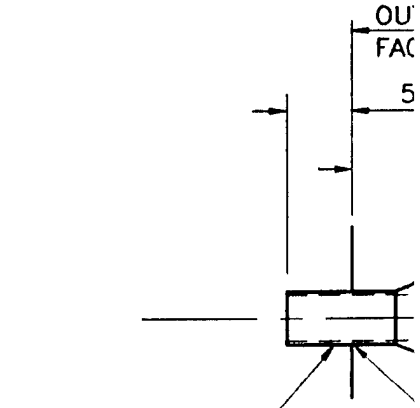
ELEVATION VIEW

SCALE: 1/4"=1'-0"



SECTION
SAMPLE PORTS

SCALE: 1/4



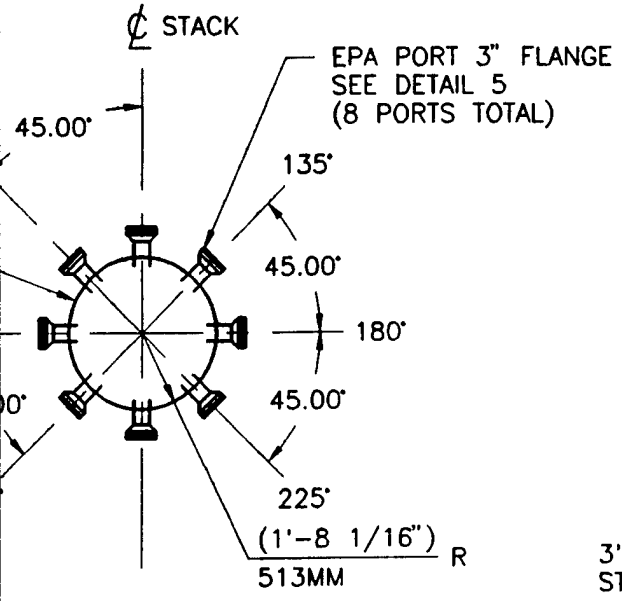
(EPA

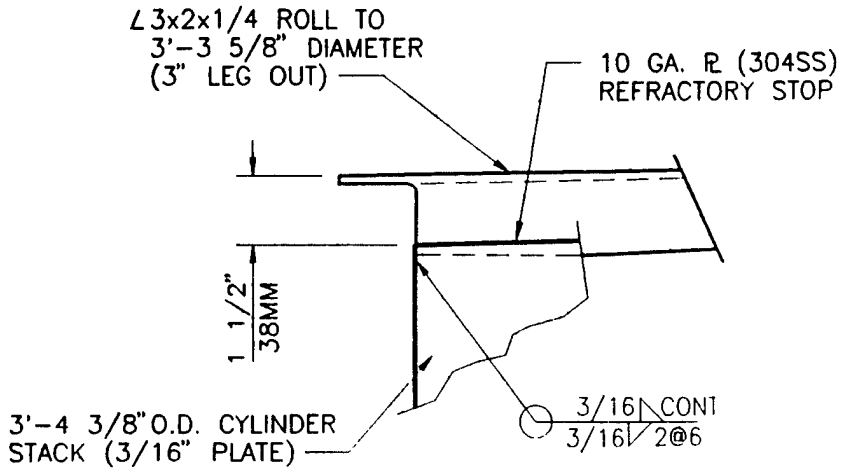
ST
TO SUPP
PROPO
DEL

REFERENCE
W.O. NO.: 0228

PLOTTED
PLT. SC.

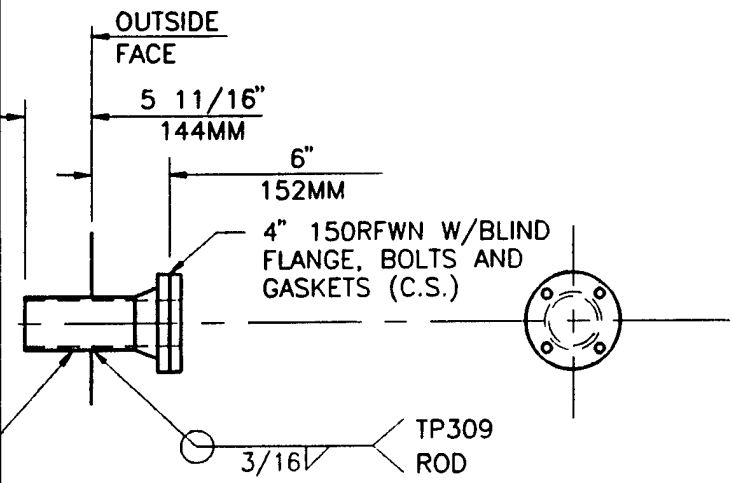
(1)





SECTION B-B
PORTS PLAN VIEW
SCALE: 1/4"=1'-0"

DETAIL '3'
(STACK CAP RING)
N.T.S.



DETAIL '5'
(EPA SAMPLE PORTS)
(TYPICAL)
N.T.S.

NOTES:

1. SANDBLAST EXTERIOR SURFACES PER SSPC-SP6.
2. PAINT EXTERIOR SURFACES W/(1) COAT (3-4)MILS DFT CARBOZINC 11, FINISH COAT ~~W/(2) COATS (4 MILS EACH)~~ DFT "SHERMAN ~~WILLIAMS-ALL WEATHER EXPOXY~~".
3. ALL C.S. MATERIAL SHALL BE A36.
4. ALL LIFTING LUGS LIFT STRAIGHT UP UNLESS NOTED OTHERWISE.

FILE NO. 19951000
1=48
08/10/95 3:08 pm

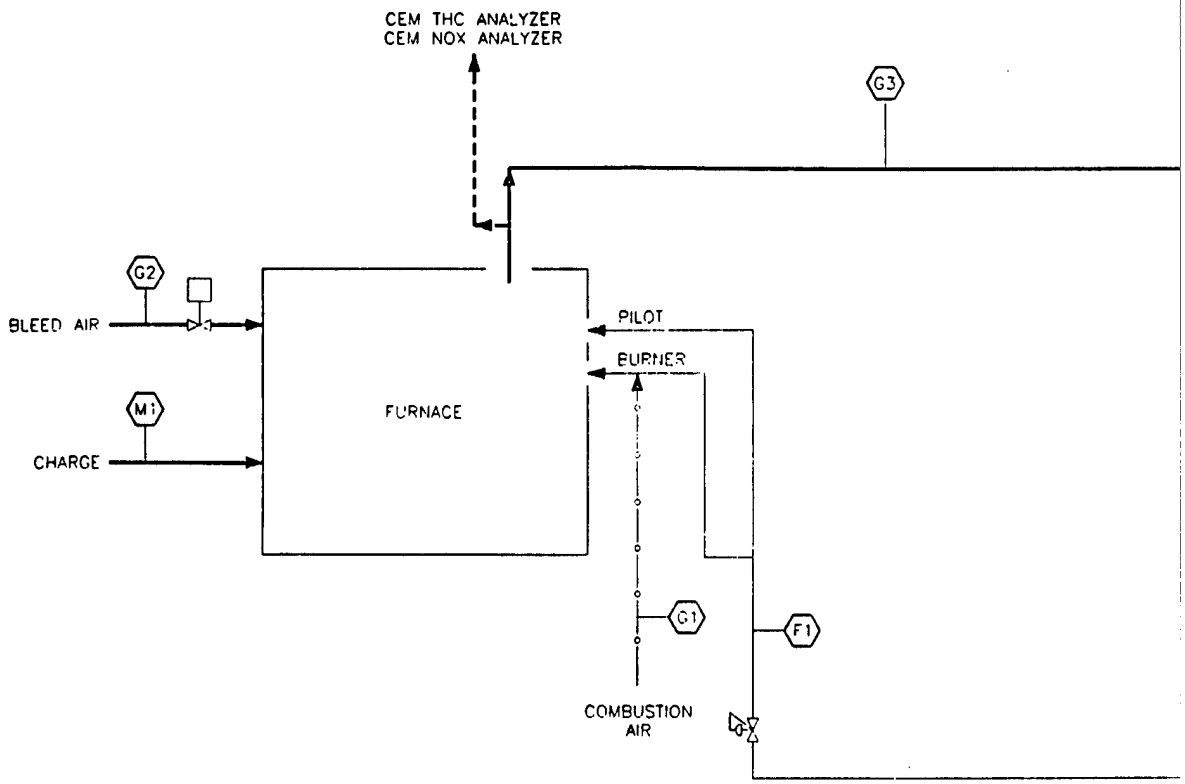
STACK MODIFICATION
O SUPPORT EMISSIONS TESTING
PROPOSED MODIFICATION #2
DELIVERY ORDER #12

ERENCE
NO.: 02281-012-012

(2)

ROY F. WESTON, INC.
WESTON
MANAGERS DESIGNERS/CONSULTANTS

DRAWN	DATE	DES. ENG.	DATE	W. O. NO.
SCB	8/8/95			00936019095
CHECKED	DATE	APPROVED	DATE	DWG. NO.
				1000



WARM-UP CONDITIONS GAS FLOWS		G1	G2	G3	G4	G5
	Units	Furnace Combustion Air	Bleed Air Damper	Furnace Exit Gas	Afterburner Combustion Air	Stack Exit Gas
Flow Rate	scfm	333	585	940	246	2,653
Temperature	°F	70	70	700	70	1,800
Pressure	in w.c.	27.00	-0.50	-0.50	13.90	
Mass Flow : Warm Up	lb/hr	1,536	2,705	4,294	1,137	5,513
Composition:						
CO2	wt %	–	–	3.5	–	7.2
H2O	wt %	–	–	1.9	–	4.0
N2	wt %	79.0	79.0	77.7	79.0	78.8
O2	wt %	21.0	21.0	16.9	21.0	12.0
SOx	wt %	–	–	–	–	
THC	wt %	–	–	–	–	
NOx	wt %	–	–	–	–	

FUEL		F1	F2
	Units	Furnace Fuel	Afterburner Fuel
Flow Rate (maximum)	scfh	423	1037
Pressure	psi	5	5
Mass Flow (maximum)	lb/hr	50.54	123.98
Burner Heat Release	btu/hr	1,128,868	1,630,659
Composition:			
C	wt %	81.6	81.6
H	wt %	18.4	18.4

MATERIAL		M1
	Units	Furnace Charge
Charge Size (maximum)	lbs	3,000
Moisture Content	%	
Temperature	°F	70

STEADY-STATE CONDITIONS GAS FLOWS		G1	G2	G3	G4	G5
	Units	Furnace Combustion Air	Bleed Air Damper	Furnace Exit Gas	Afterburner Combustion Air	Stack Exit Gas
Flow Rate	scfm	80	0	342	246.10	1,311
Temperature	°F	70	–	700	700	1,800
Pressure	in w.c.	27.00	–	-0.50	13.90	–
Mass Flow	lb/hr	371	–	1,582	1,137	2,729
Composition:						
CO2	wt %	–	–	4.5	–	9.8
H2O	wt %	–	–	2.5	–	3.2
N2	wt %	79.0	–	77.3	79.0	77.2
O2	wt %	21.0	–	15.7	21.0	13.8
SOx	wt %	–	–	–	–	–
THC	wt %	–	–	–	–	–
NOx	wt %	–	–	–	–	–

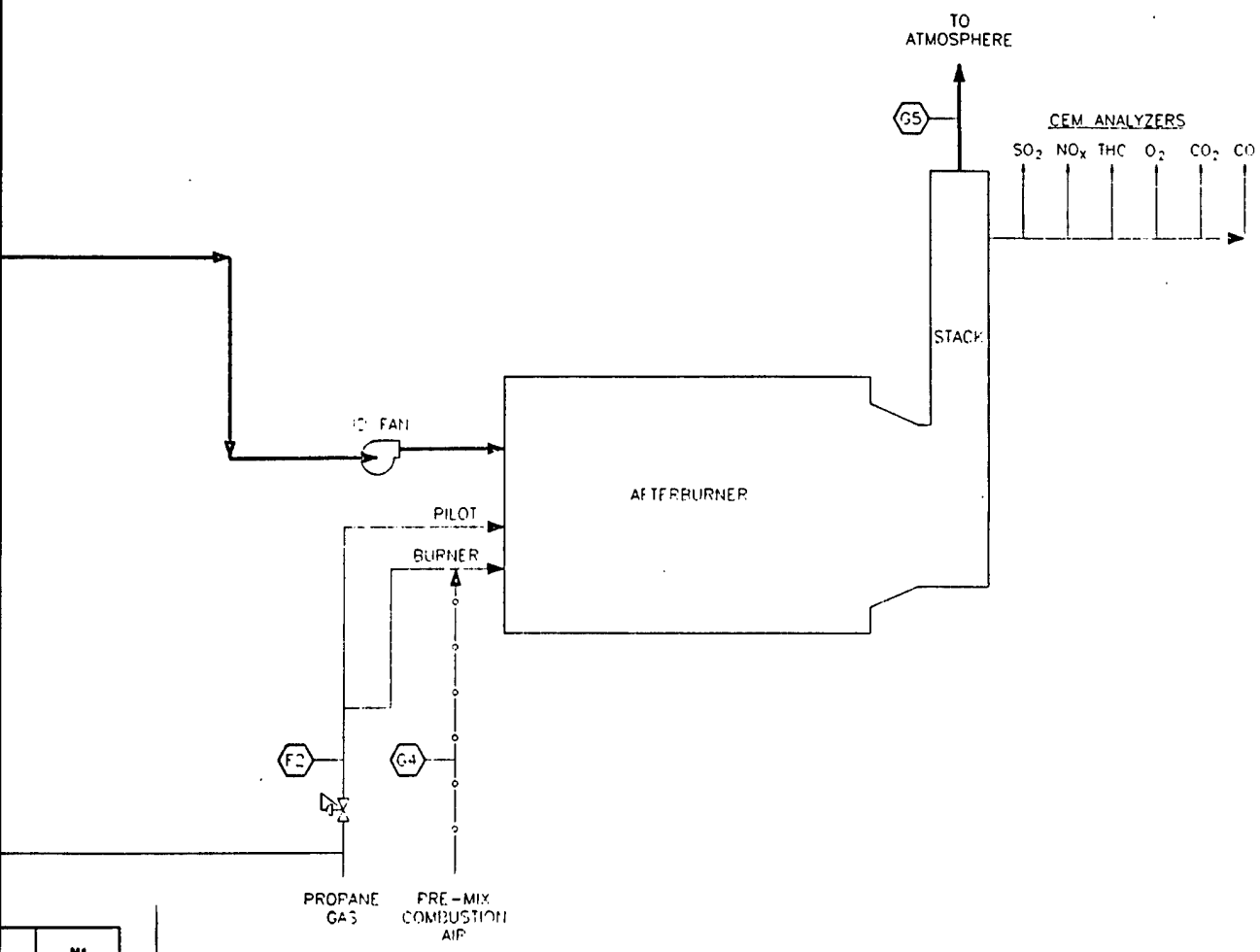
FUEL		F1	F2
	Units	Furnace Fuel	Afterburner Fuel
Flow Rate (maximum)	scfh	197	248
Pressure	psi	5	5
Mass Flow (maximum)	lb/hr	24	29.69
Burner Heat Release	btu/hr	487,164	587,496
Composition:			
C	wt %	81.6	81.6
H	wt %	18.4	18.4

MATERIAL		M1
	Units	Furnace Charge
Charge Size (maximum)	lbs	3,000
Moisture Content	%	–
Temperature	°F	700

PLOTTED 05/19/96 5:05 am
FILE NO 1210001

1		
2	05/19/96	ADDITION OF BLEED AIR
1	04/01/96	INCORPORATED VENDOR DATA AND AS-BUILT INFORMATION
–	03/96	DRAFT

U.S
DELIVERY OR



	M1
	Furnace Charge
	3,000
	70

COOL-DOWN CONDITIONS GAS FLOWS	Units	G1 Furnace Combustion Air	G2 Bleed Air Damper	G3 Furnace Exit Gas	G4 Afterburner Combustion Air	G5 Stack Exit Gas
Flow Rate	scfm	333	585	918	246	1,106
Temperature	°F	70	70	–	70	1,800
Pressure	in w.c.	27.00	-0.50	-0.50	13.90	
Mass Flow	lb/hr	1,538	2,705	4,243	1,137	2,324
Composition:						
CO2	wt %	–	–	–	–	14.7
H2O	wt %	–	–	–	–	8.1
N2	wt %	79.0	79.0	79.0	79.0	58.4
O2	wt %	21.0	21.0	21.0	21.0	17.8
SOx	wt %	–	–	–	–	
THC	wt %	–	–	–	–	
NOx	wt %	–	–	–	–	

FUEL	Units	F1 Furnace Fuel	F2 Afterburner Fuel
Flow Rate (maximum)	scfh	–	955
Pressure	psi	–	5
Mass Flow (maximum)	lb/hr	–	114
Burner Heat Release	btu/hr	–	2,258,900
Composition:			
C	wt %	–	81.6
H	wt %	–	18.4

MATERIAL	Units	M1 Furnace Charge
Charge Size (maximum)	lbs	3,000
Moisture Content	%	-
Temperature	°F	700

	M1
	Furnace Charge
	3,000
	–
	700

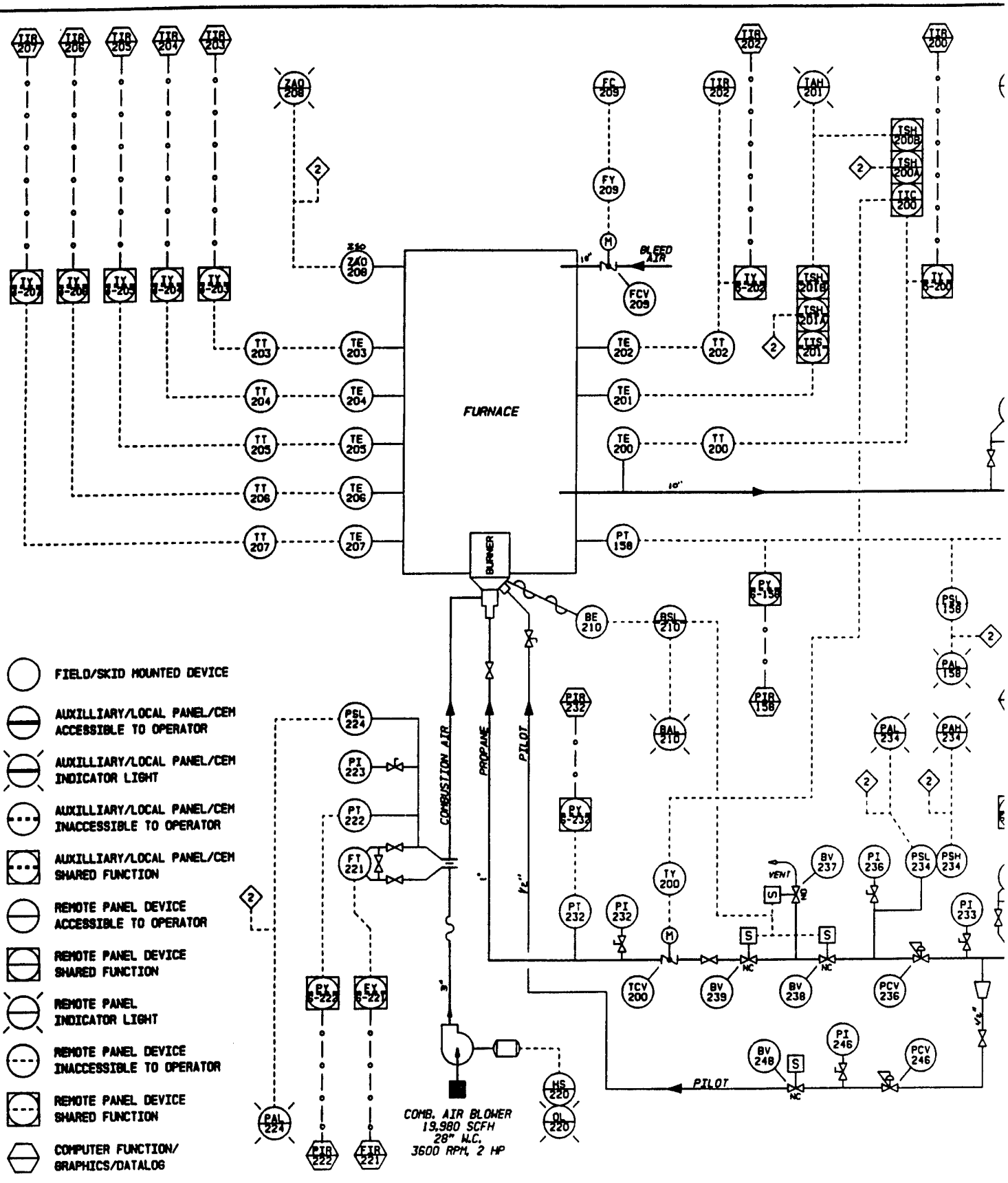
U.S.A.E.C.
LIVERY ORDER #10 & 12

WESTON

PROCESS FLOW DIAGRAM
HOT-GAS DECONTAMINATION SYSTEM

1001

2

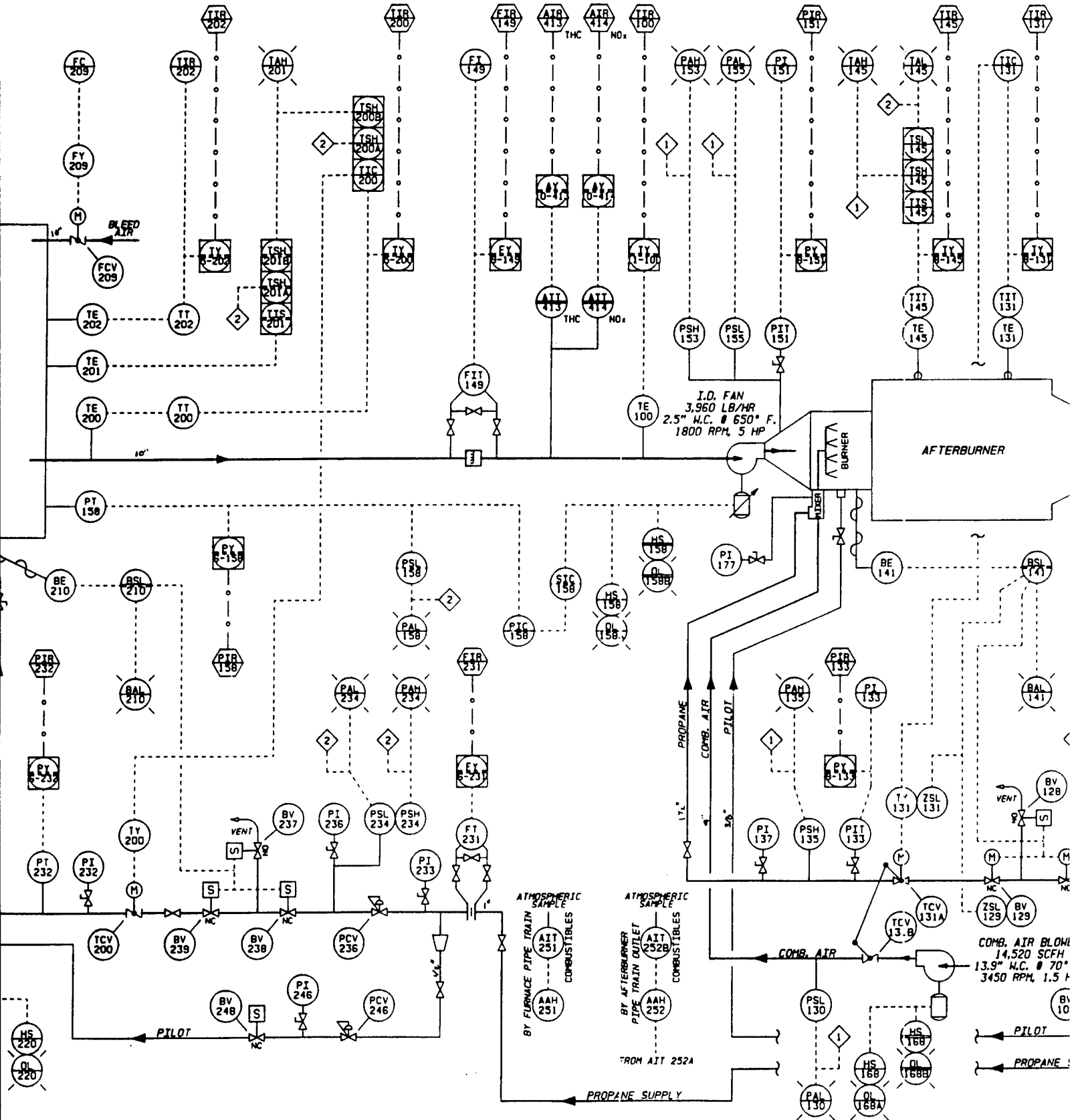


NO	DATE	APPR	REVISION
2	8/10/98	CAP	"AS-BUILT" FINAL EQUIPMENT CONFIGURATION
1	2/11/98	CAP	UPDATED PER L&L AND ARRTECH REVISED SUBMITTALS
–	1	CAP	DRAFT

DELIVERY ORDER
HOT-GAS DECO

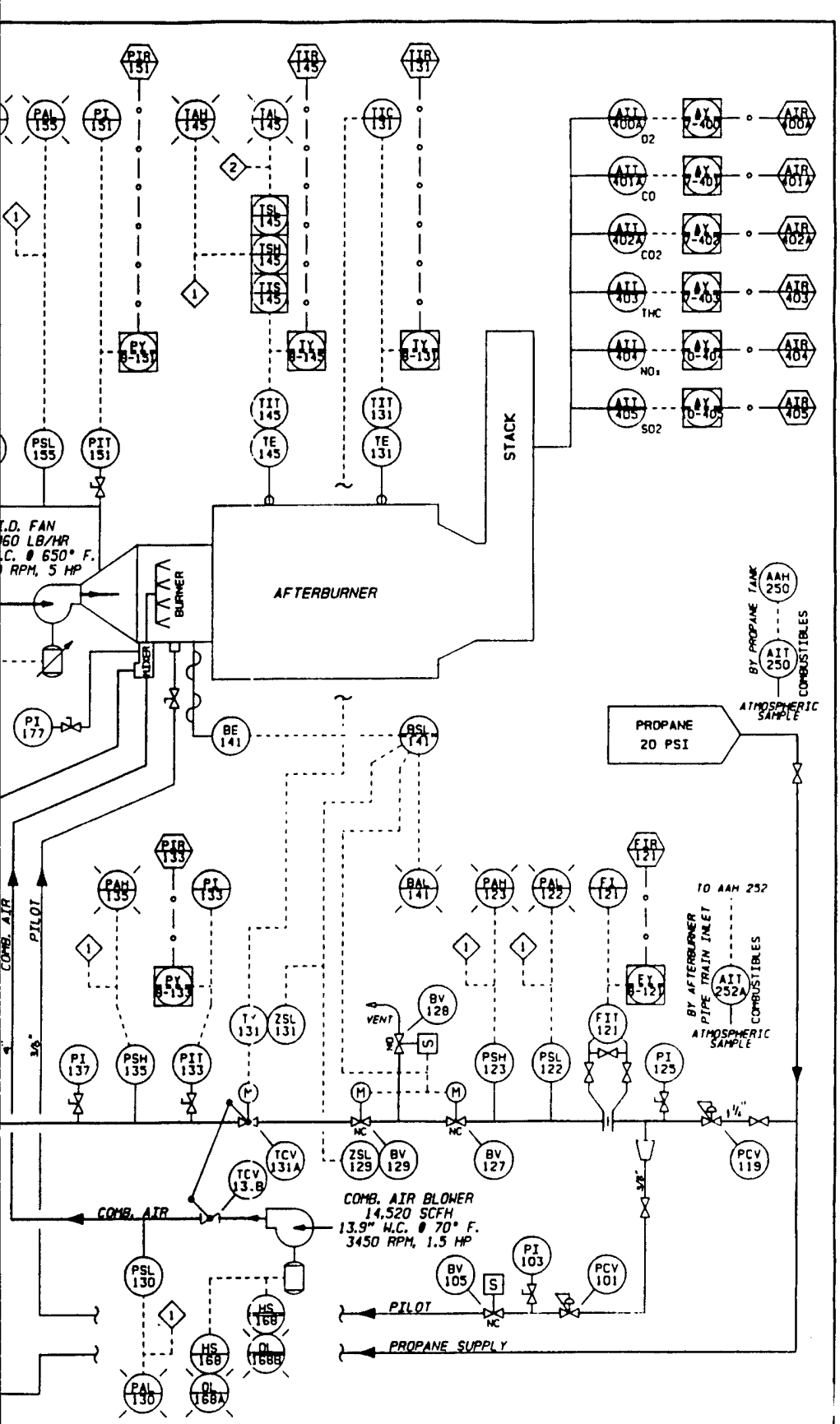
WEST CHESTER

0



	DELIVERY ORDERS #10 & #12 HOT-GAS DECON SYSTEM	CHECKED	DATE	CLIENT APPROVALS		DATE	PIPIN
L EQUIPMENT CONFIGURATION		DES ENG					
L AND ARRTECH REVISED SUBMITTALS	WESTON MANAGERS	PROJ ENG					
		PROJ MGR					
REVISION	WEST CHESTER	APPROVED					DRAWN R DA
		APPROVED					SCALE NO

2

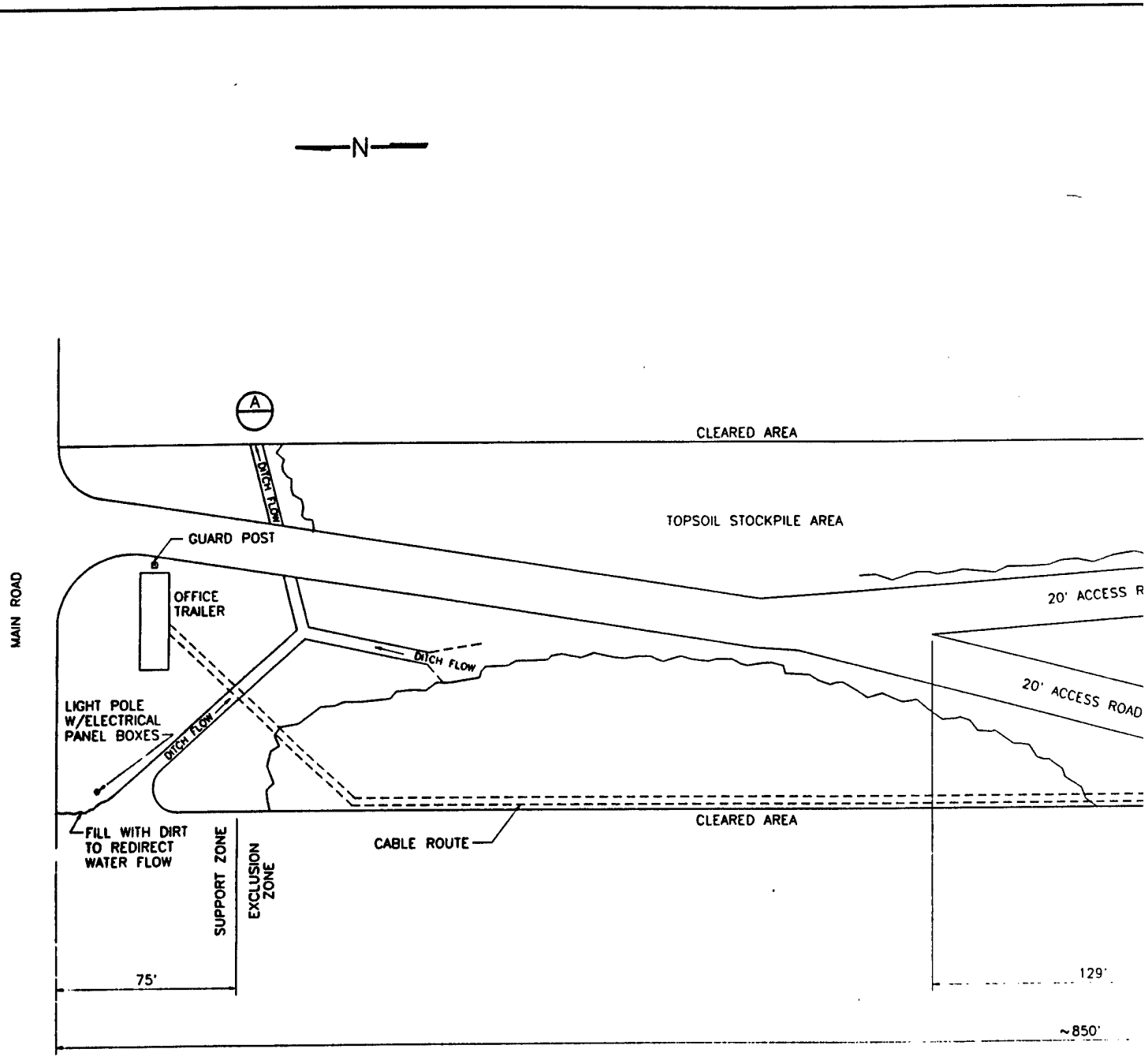


DATE	CLIENT APPROVALS		DATE
2/1/95			

PIPING & INSTRUMENTATION DIAGRAM

DRAWN	DATE	DWG NO	REV NO
R DAILY	2/2/95	1002	2
SCALE	P.O. NO	SHT ___ OF ___	
NONE	02281-012-010		

3

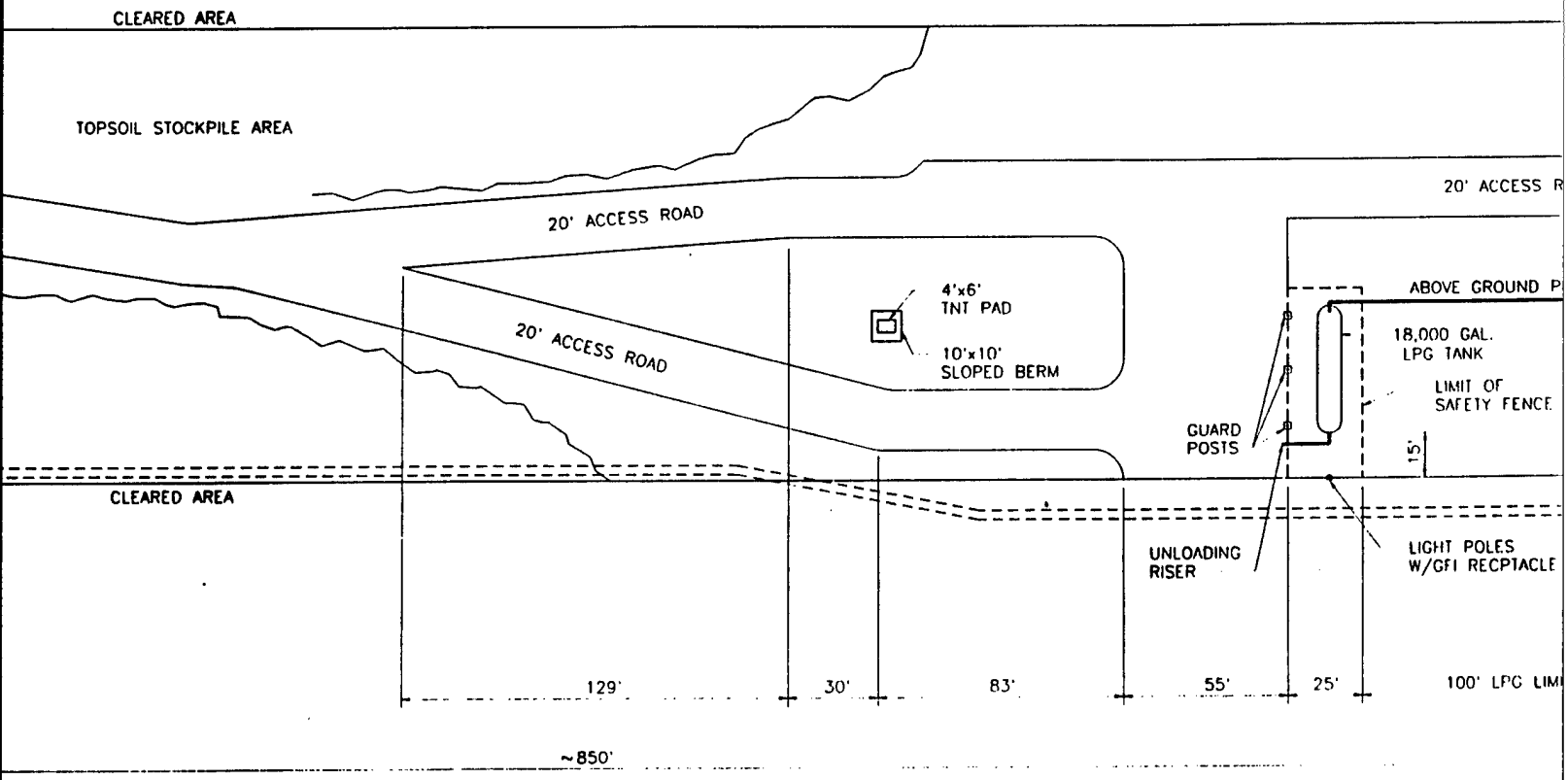


NO	DATE	APPR	REVISION
3	1/18/96	CMD	SHOWN WITH MODIFICATIONS FOR TESTING
2	10/9/95		SHOWN WITH TRAILERS AND AS CONSTRUCTED
1			INITIAL SITE LAYOUT

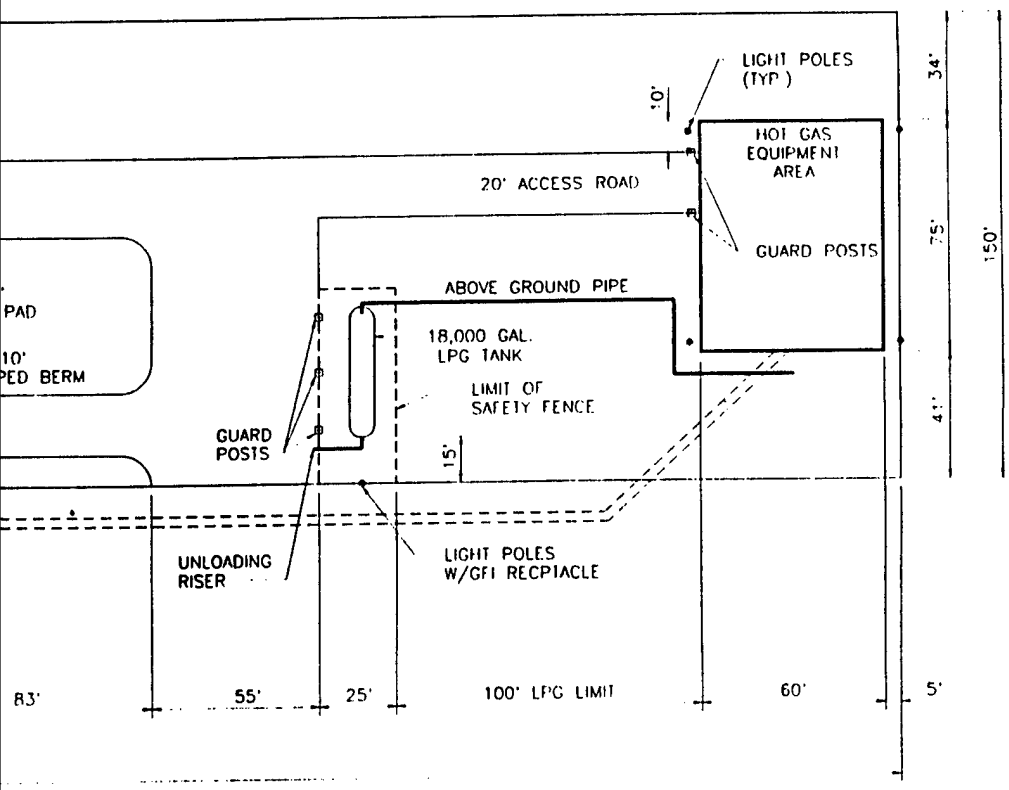
US
DELIVERY ORD

WEST CHESTER

PLOTTED 01/10/96 11:06 am
PLT SC 1=350 FILE NO 12122000



(2)	USACE DELIVERY ORDER #10& #12	CHECKED CA Parker	DATE 11/11/96	CLIENT APPROVALS	DATE		
		DES ENG					
		PROJ ENG					
		PROJ MGR					
		APPROVED					
		APPROVED					
REVISION	WESTON WEST CHESTER PENNSYLVANIA					DRAWN	SCALE

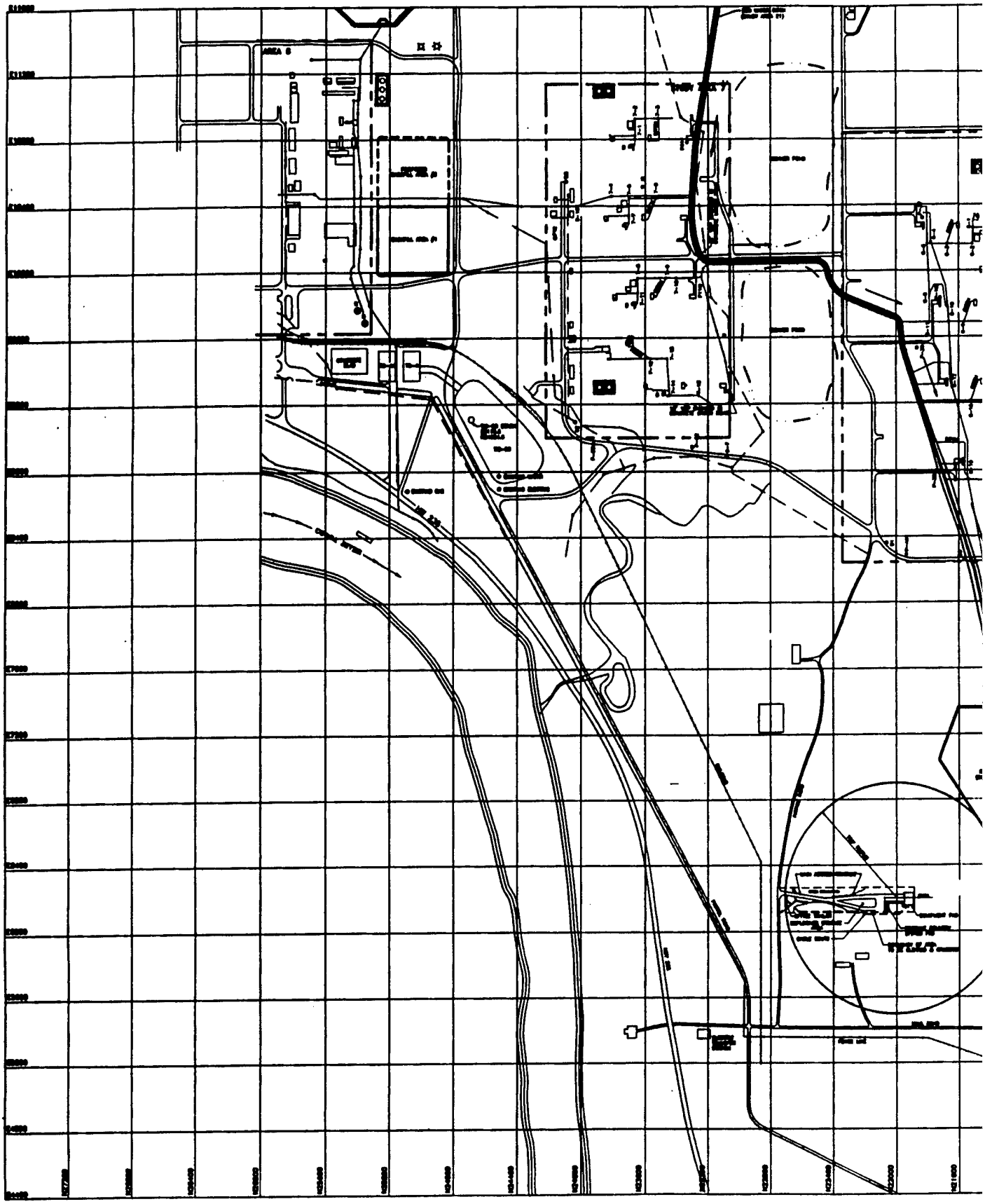


	DATE 11/11/96	CLIENT APPROVALS	DATE	

(3)

SITE LAYOUT

DRAWN	DATE 6/21/95	DWG. NO. C100	REV. NO. 3
SCALE 1" = 30'	W.O. NO. 02281-012-012	SHT. 1 OF 1	

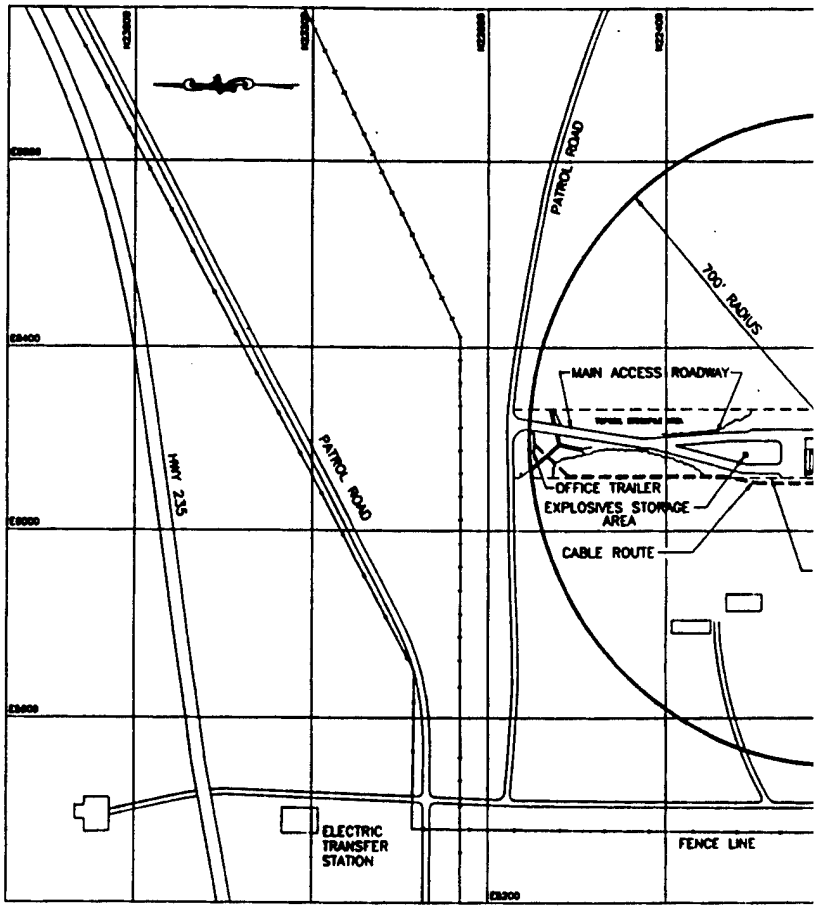


NO.	DATE	APPR.	REVISION
3	8/1/96	CAP	SHOWN WITH MODIFICATIONS FOR TESTING
2	6/6/96	CAP	ADDED EXPLOSIVES- STORAGE AREA & ADDITIONAL SITE ID'S
1	11/9/95	CSP	MOVED SITE TO ACCOMODATE OTHER SITE REMEDIATION ACTIVITIES

DECONTA
ALPINE

PLOTTED 08/07/96 10:20 am
PLT. SC. 1=4800 FILE NO. PARKER

NOTE:
DRAWINGS ARE APPROXIMATELY SCALED BASED UI
PREVIOUS INVESTIGATIVE REPORTS PREPARED BY
AND A SITE PLAN PREPARED FOR ALABAMA ORDN
WORKS (SANITARY & INDUSTRIAL WASTE SEWERAG
NO. 2, 1946). SITE FEATURES AND OTHER INFOR
PROVIDED IN THIS DRAWING WILL BE VERIFIED DU
SITE SURVEY AND SUBSEQUENT REMEDIAL ACTIVIT



DETAIL A

LEGEND

- RAILROAD TRACKS
- P41 MONITORING WELL
- 7-3 MANHOLE
- EXISTING ROAD
- FLOW DIRECTION
- 700' SAFETY ZONE

200' 600'
0 400' 800'

FOR TESTING
AGE AREA & ADDITIONAL SITE ID'S
TE OTHER SITE REMEDIATION ACTIVITIES
REVISION

HOT-GAS DECONTAMINATION SYSTEM

ALPINE ALABAMA

WESTON

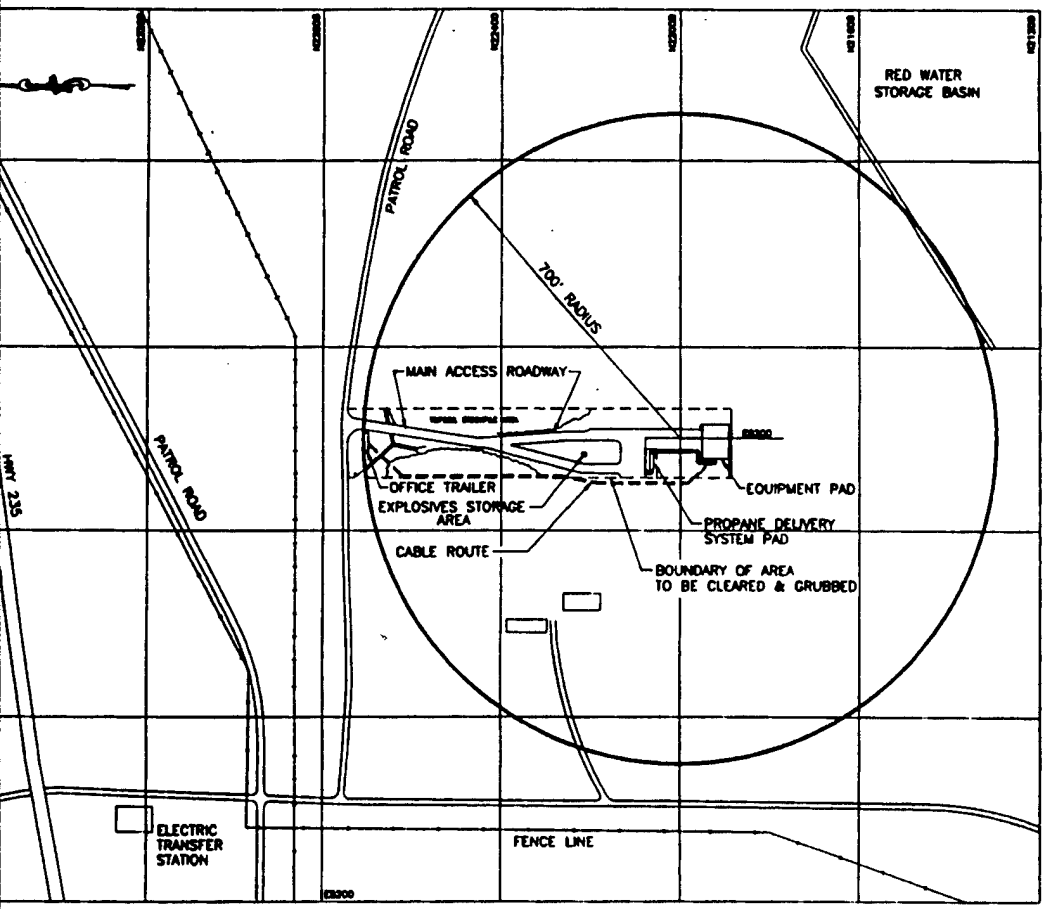
CHECKED	DATE	CLIENT APPROVALS	DATE
EES ENG.			
PROJ. ENG.			
PROJ. MGR.			
APPROVED			
APPROVED			

HO
O

DRAWN R.L.

SCALE 1" = 400'

NOTE:
DRAWINGS ARE APPROXIMATELY SCALED BASED UPON PREVIOUS INVESTIGATIVE REPORTS PREPARED BY ESE INC., AND A SITE PLAN PREPARED FOR ALABAMA ORDNANCE WORKS (SANITARY & INDUSTRIAL WASTE SEWERAGE PLANT NO. 2, 1946). SITE FEATURES AND OTHER INFORMATION PROVIDED IN THIS DRAWING WILL BE VERIFIED DURING THE SITE SURVEY AND SUBSEQUENT REMEDIAL ACTIVITIES.



DETAIL A

100 300
0 200 400

END

- RAILROAD TRACKS
- MONITORING WELL
- MANHOLE
- EXISTING ROAD
- FLOW DIRECTION
- 700' SAFETY ZONE

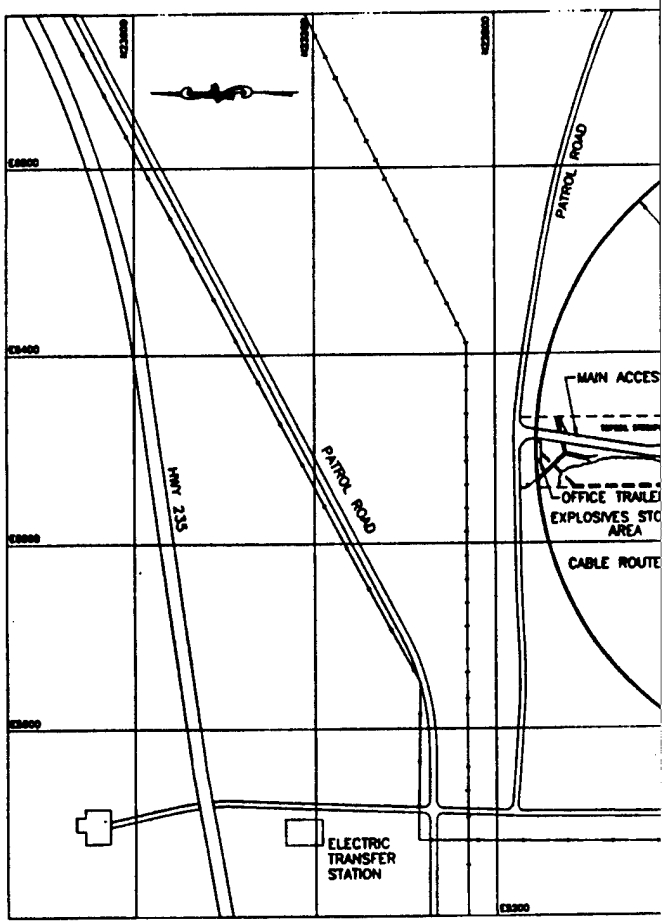
00' 800'
400' 800'

	DATE	CLIENT APPROVALS	DATE

HOT GAS DECON SYSTEM
OVERALL SITE LAYOUT

DRAWN R.L.	DATE 11/9/94	DWG NO 2000	REV NO 3
SCALE 1"=400'	W.O. NO. 02281-012-010	SHT ___ OF ___	

(3)



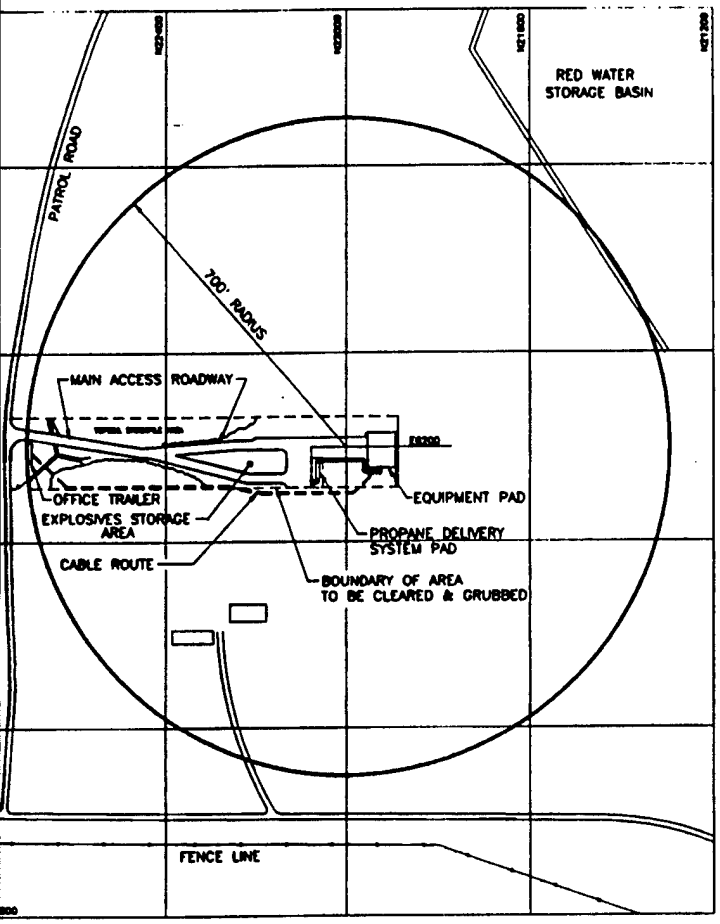
(1)

NO	DATE	APPR.	REVISION
2	8/7/98	CAP	SHOWN WITH MODIFICATIONS FOR TESTING
1	1/31/98	CAP	ADDED EXPLOSIVES- STORAGE AREA & ADDITIONAL SITE ID'S
–	11/19/97	CAP	ISSUED FOR CONSTRUCTION

HOT –
DECONTAMINAT
ALPINE

WEST CHESTER

PLOTTED 08/07/98 10:22 am
PLT. SC. 1=2400 FILE NO. 12102001



(2)

100 300
0 200 400

HOT – GAS
NTAMINATION SYSTEM
ALABAMA

WESTON

CHECKED		DATE	CLIENT APPROVALS	DATE
DES. ENG.				
PROJ. ENG.				
PROJ. MGR.				
APPROVED				
APPROVED				

FIGURE 1
SYSTEM SITE LAYOUT

DRAWN	DATE	DWG. NO	REV. NO
B. DAILY	11/11/94	2001	2
SCALE 1" = 200'	W.O. NO. 02281-012-010	SHT. ___ OF ___	