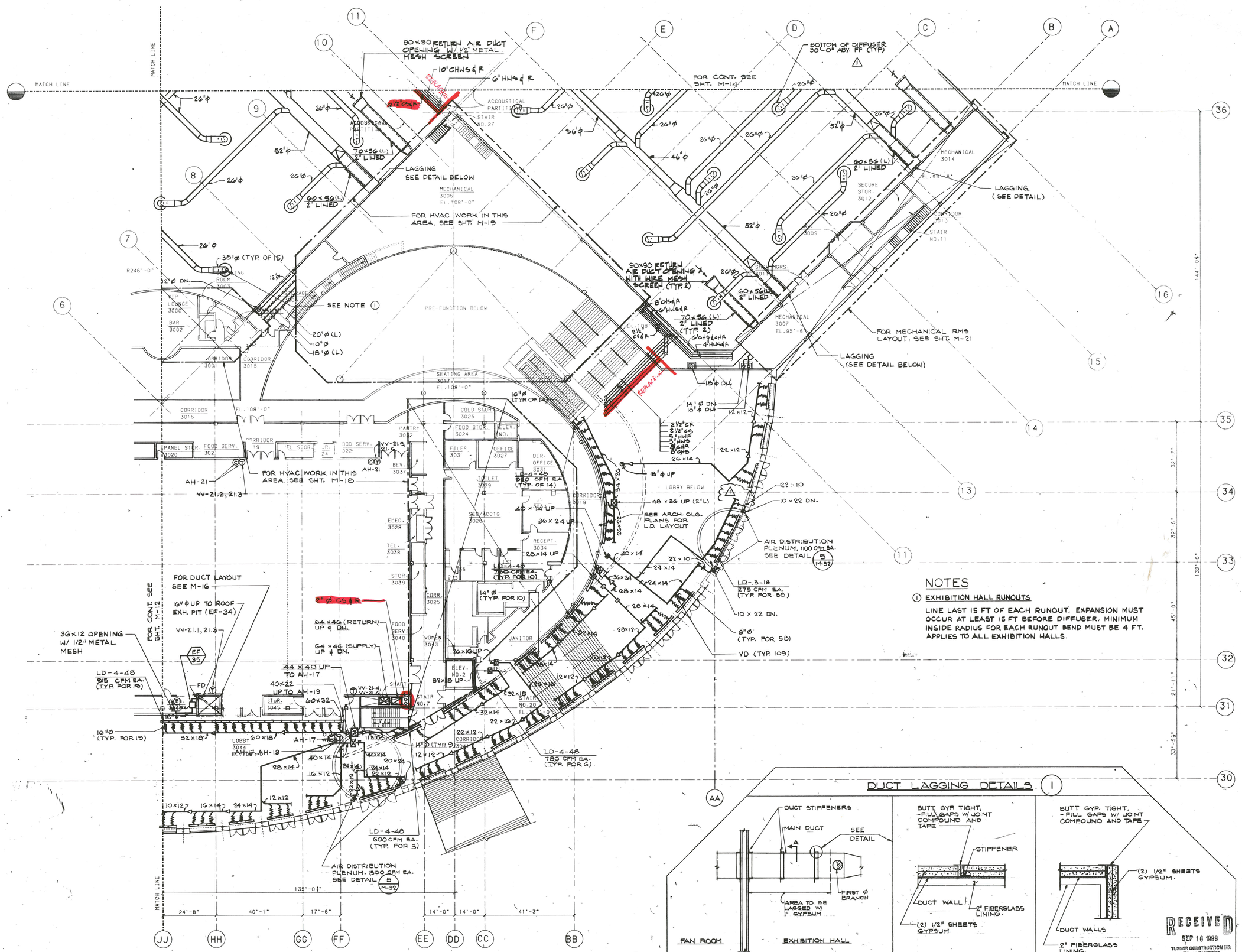
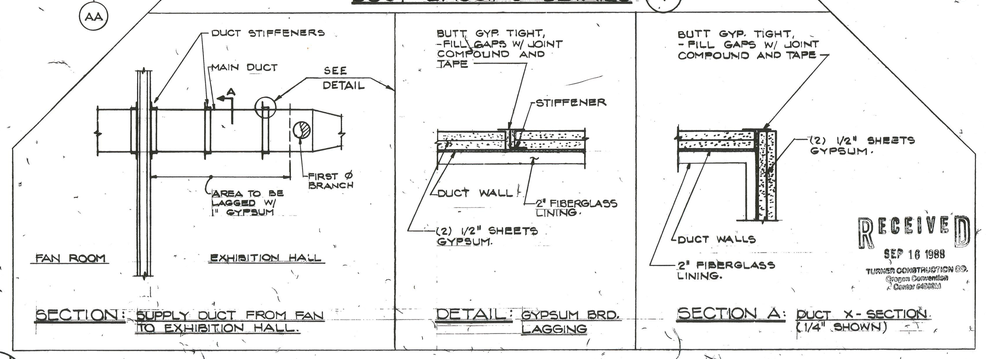


NOTES

1. EXHIBITION HALL RUNOUTS

LINE LAST 15 FT OF EACH RUNOUT. EXPANSION MUST OCCUR AT LEAST 15 FT BEFORE DIFFUSER. MINIMUM INSIDE RADIUS FOR EACH RUNOUT BEND MUST BE 4 FT. APPLIES TO ALL EXHIBITION HALLS.

DUCT LAGGING DETAILS 1



SECTION: SUPPLY DUCT FROM FAN TO EXHIBITION HALL.

DETAIL: GYPSUM BRD. LAGGING

SECTION A: DUCT X-SECTION (1/4" SHOWN)

RECEIVED
SEP 16 1988
TURNER CONSTRUCTION CO.
Oregon Convention Center 5402013

1 M-31 PLAN, SECOND LEVEL - NORTH

1/16"=1'-0"

DMJM

Date JULY 11, 1988

CC# 0100

Revision No. 1 ADDENDUM #3 9/9/88

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Portland, Oregon 97204
Architects, A.I.A.

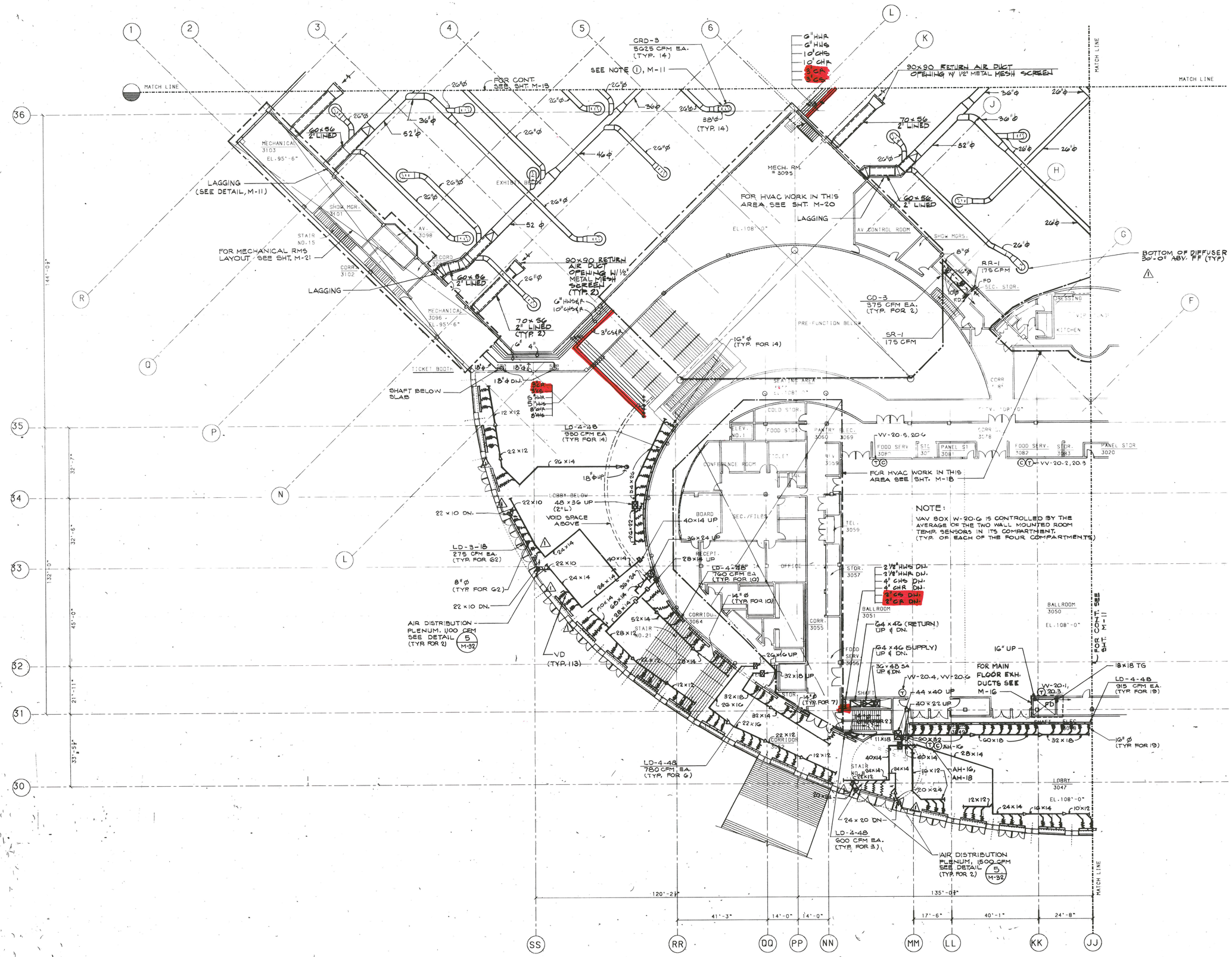
PLAN, SECOND LEVEL - NORTH

OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 13,814 OREGON SEP 16 1988 TOM J. REFFR

Job No. 8804

M-18



1 PLAN, SECOND LEVEL - EAST
M-12
1/16"=1'-0"

RECEIVED
SEP 16 1988
TURNER CONSTRUCTION CO.
Oregon Convention Center 84603M

DMJM
Date: JULY 15, 1988
Zimmer, Gunsul, Frasca & Associates
Lam & Partners, Engineers
Lloyd & Associates, Landscape Architects
Planning
Architecture
Engineering
Interiors
Graphics

CC# 01 00

Revision No.	
1	ADDENDUM #5 9/19/88

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Portland, Oregon 97204
Architects, A.I.A.

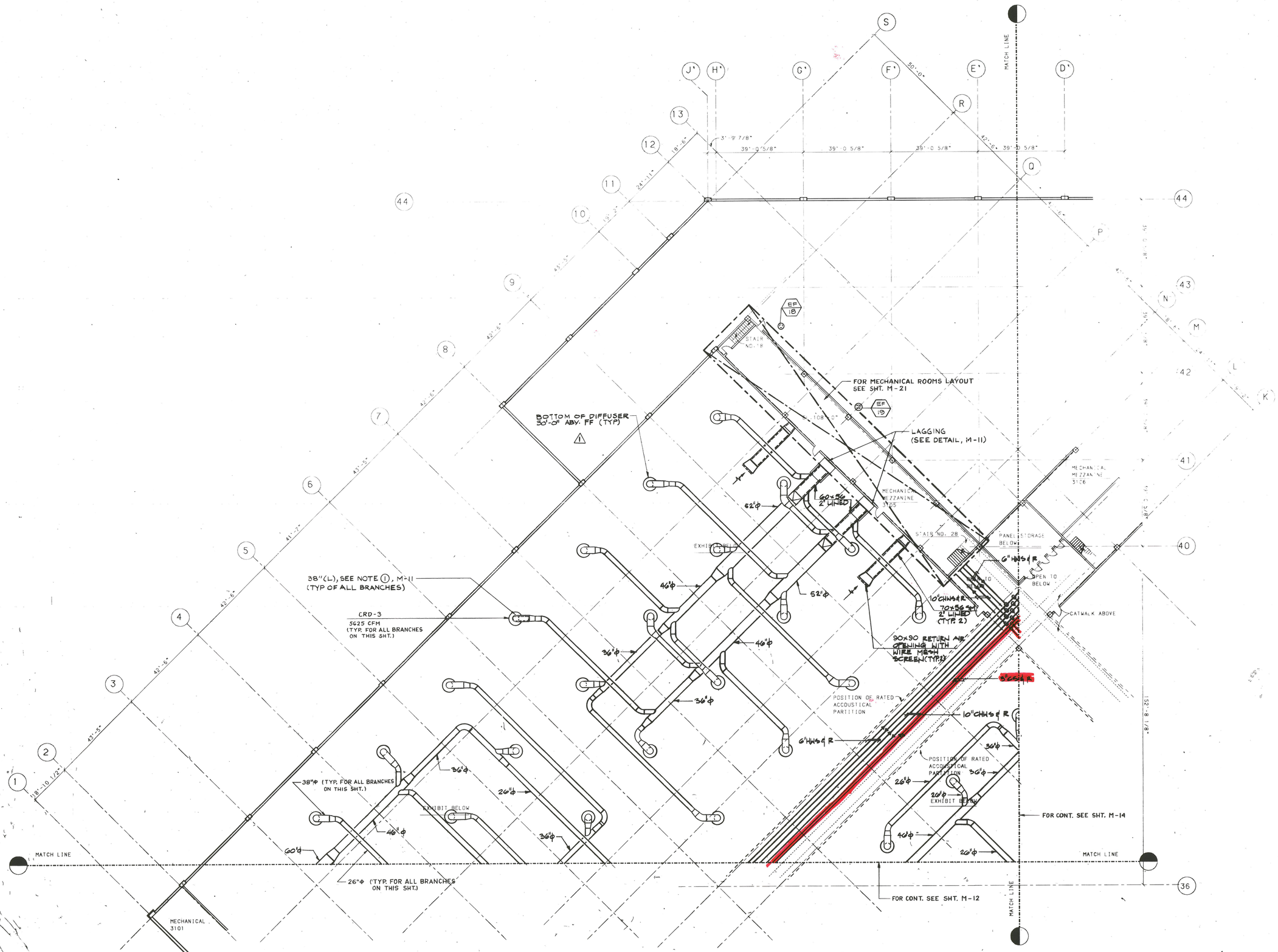
PLAN, SECOND LEVEL - EAST

OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 13,614 OREGON DEC 16 1987 TOM J. REITH

Job No. 2081-02

M-12



1 / M-13 PLAN, SECOND LEVEL - SOUTH
1/16"=1'-0"

RECEIVED
SEP 16 1998
TURNER CONSTRUCTION CO.
Oregon Convention Center #4603M

ATTACHMENT A

Date JULY 13, 1998

DMJM
Dave Mills Johnson & Associates
1500 SW First Avenue, Suite 1000
Portland, Oregon 97201-5818
Telephone 503-241-1383
Architecture
Planning
Engineering
Interiors
Economics

CC# 0 | 0 0

Revision No.
1 ADENDUM #3 9/19/98

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Portland, Oregon 97204
Architects, A.I.A.

PLAN, SECOND LEVEL - SOUTH

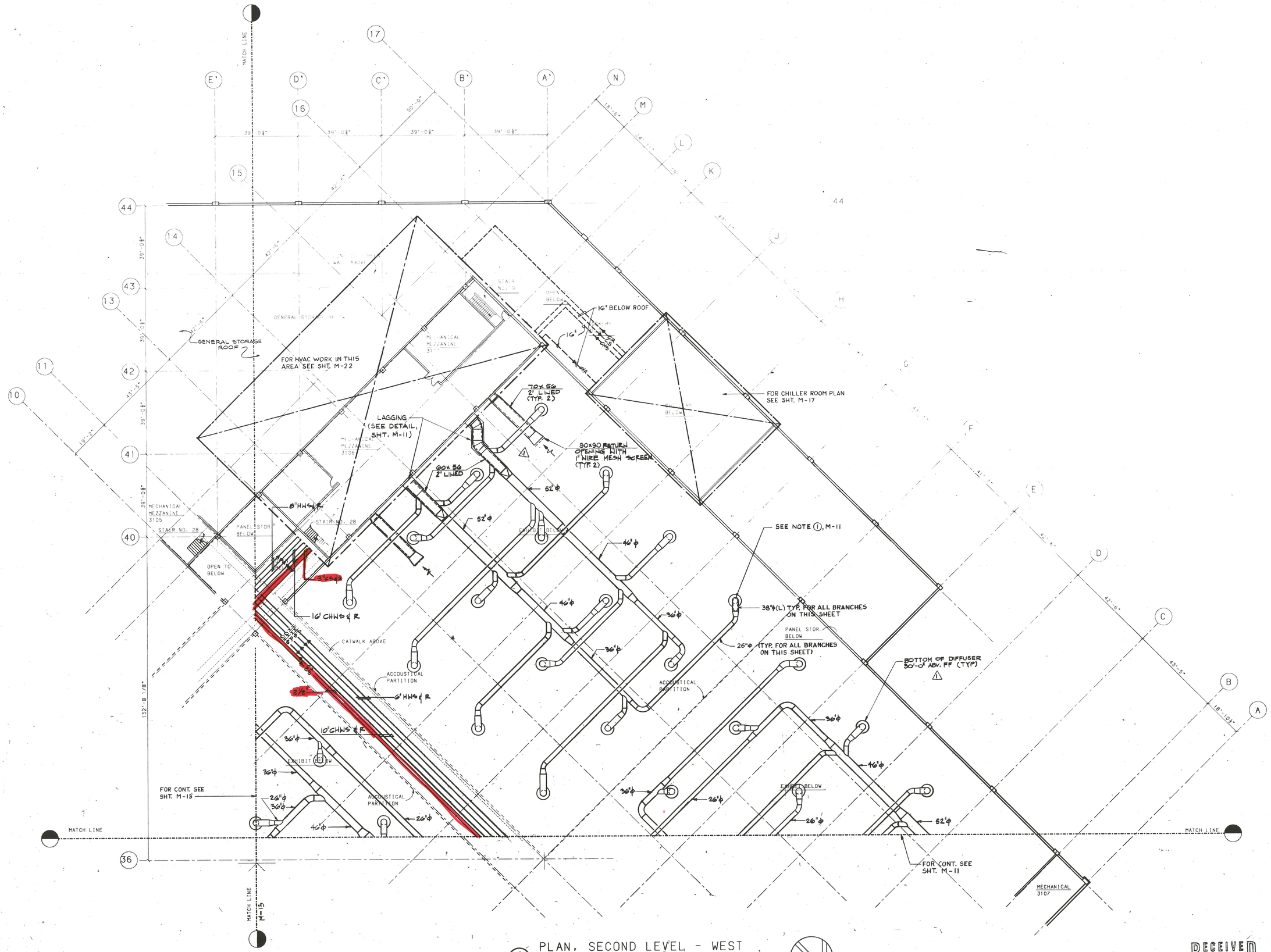
OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 13,518 OREGON SEP 16, 1997 TOM J. REFRE

Job No. 9808

M-13

RFB 14-2504



1 M-14 PLAN, SECOND LEVEL - WEST

1/16"=1'-0"

RECEIVED
SEP 16 1988
TURNER CONSTRUCTION CO.
Oregon Convention Center/MERIDIAN

DMJM

Date JULY 15, 1988

Revision No. CC# 0100

1 ADDENDUM #3 9/19/88

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Architects, A.I.A.
Portland, Oregon 97204

PLAN, SECOND LEVEL - WEST

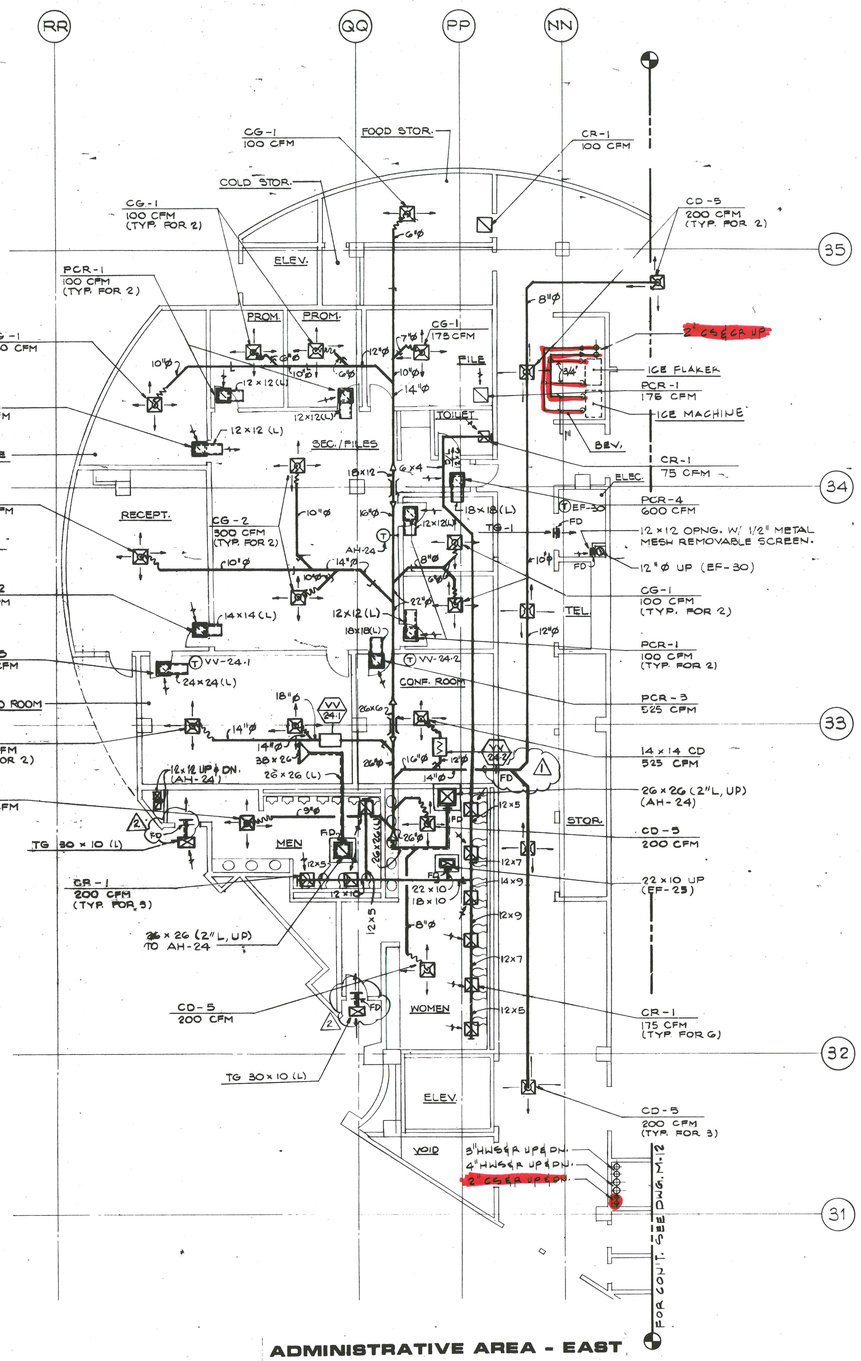
OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 20516 OREGON 10-14-88 TOM J. REJEKI

Job No.

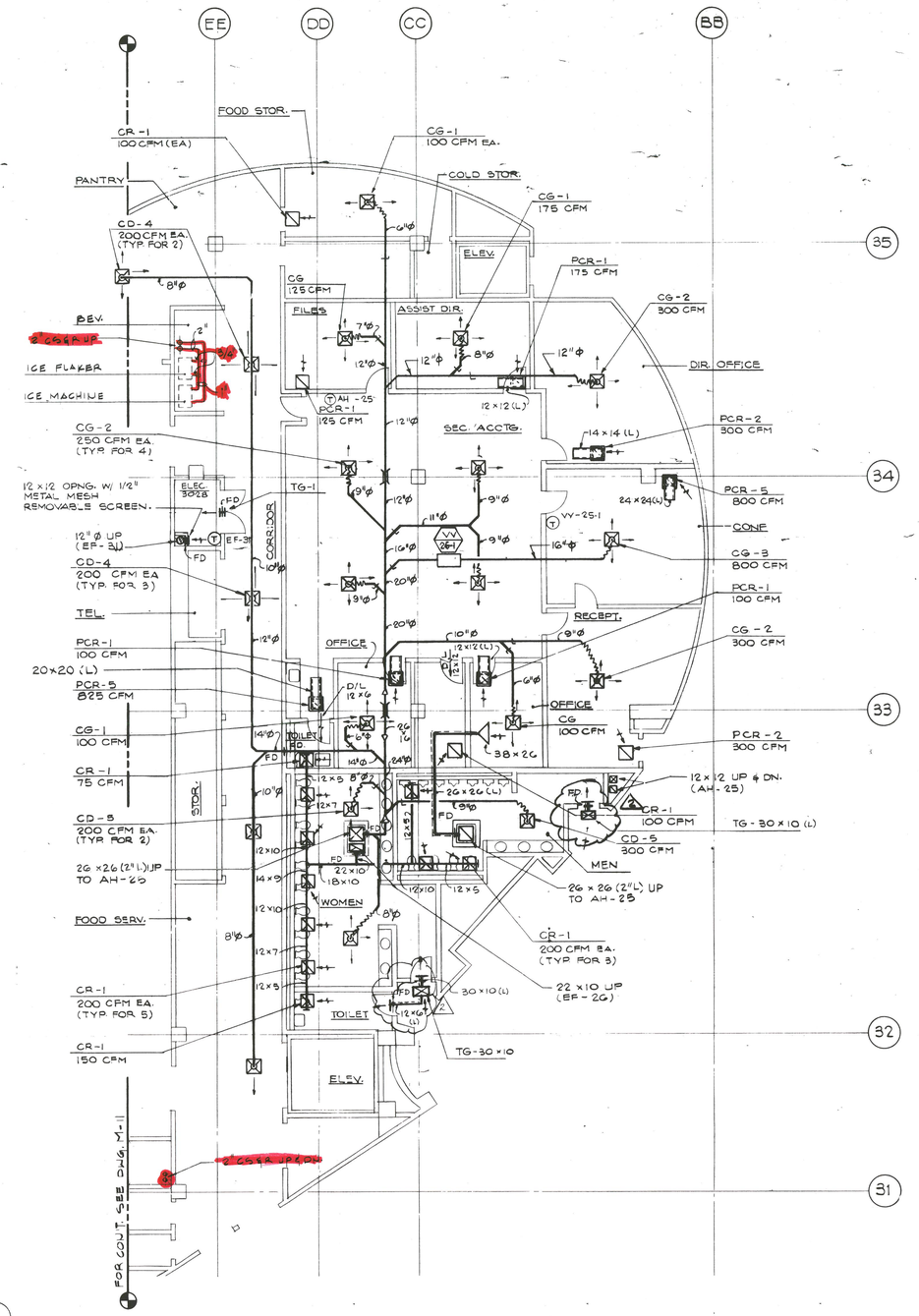
M-14

RFB 14-2504



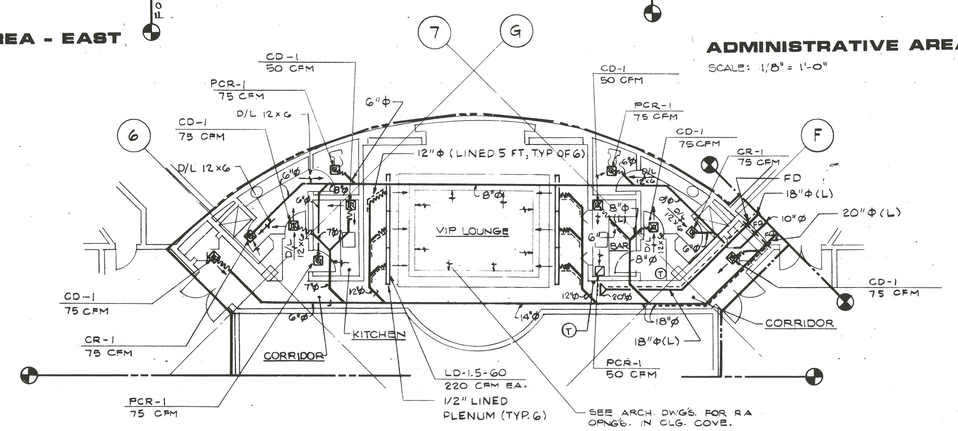
ADMINISTRATIVE AREA - EAST

SCALE: 1/8" = 1'-0"



ADMINISTRATIVE AREA - NORTH

SCALE: 1/8" = 1'-0"



VIP LOUNGE

SCALE: 1/8" = 1'-0"

RECEIVED 6-16-89

TURNER CONSTRUCTION CO.
Oregon Convention Center #4503M

Date JULY 11, 1988

Owner, Name, Address, & Architect
Oregon Convention Center
1201 Jackson, Portland, Oregon
Zimmer Gunsul Frasca Partnership
Planning
Architecture
Engineering
Interiors
Economics

DMJM

CC# 306

Revision No.	
1	ADDENDUM #2 9/19/88
2	REVISION - FD'S ADDED 6/1989

ZIMMER GUNSUL FRASCA PARTNERSHIP
Portland, Oregon 97204
Architects, A.I.A.

ADM. AREAS & VIP LOUNGE - PARTIAL PLAN

OREGON CONVENTION CENTER
"Bid Package 3" - General Contract
PORTLAND, OREGON

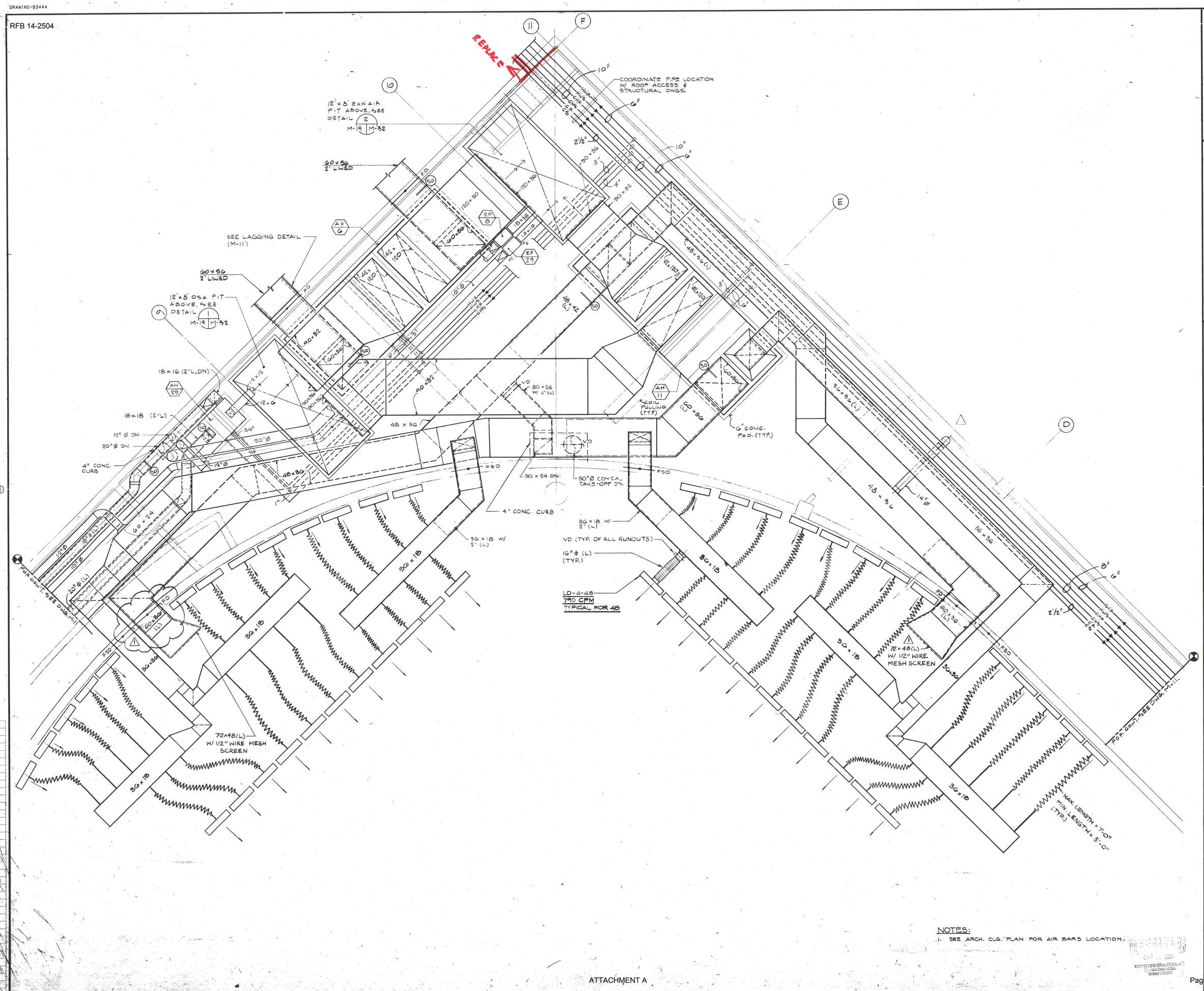
REGISTERED PROFESSIONAL ENGINEER
OREGON
JOHN I. REITZ

Job No. 8840-05

M-18

Sheets

ATTACHMENT A



NOTES:
1. SEE ARCH. CLG. PLAN FOR AIR BARS LOCATION.

DMJM

Date JULY 11, 1988

Division No. CC# 0100

△ ADDENDUM #3 9/9/88

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Portland, Oregon 97204
Architecture
Interior Design
Planning
Engineering
Graphics
Systems

MECHANICAL RM. (PREF. N) - PARTIAL PLAN

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

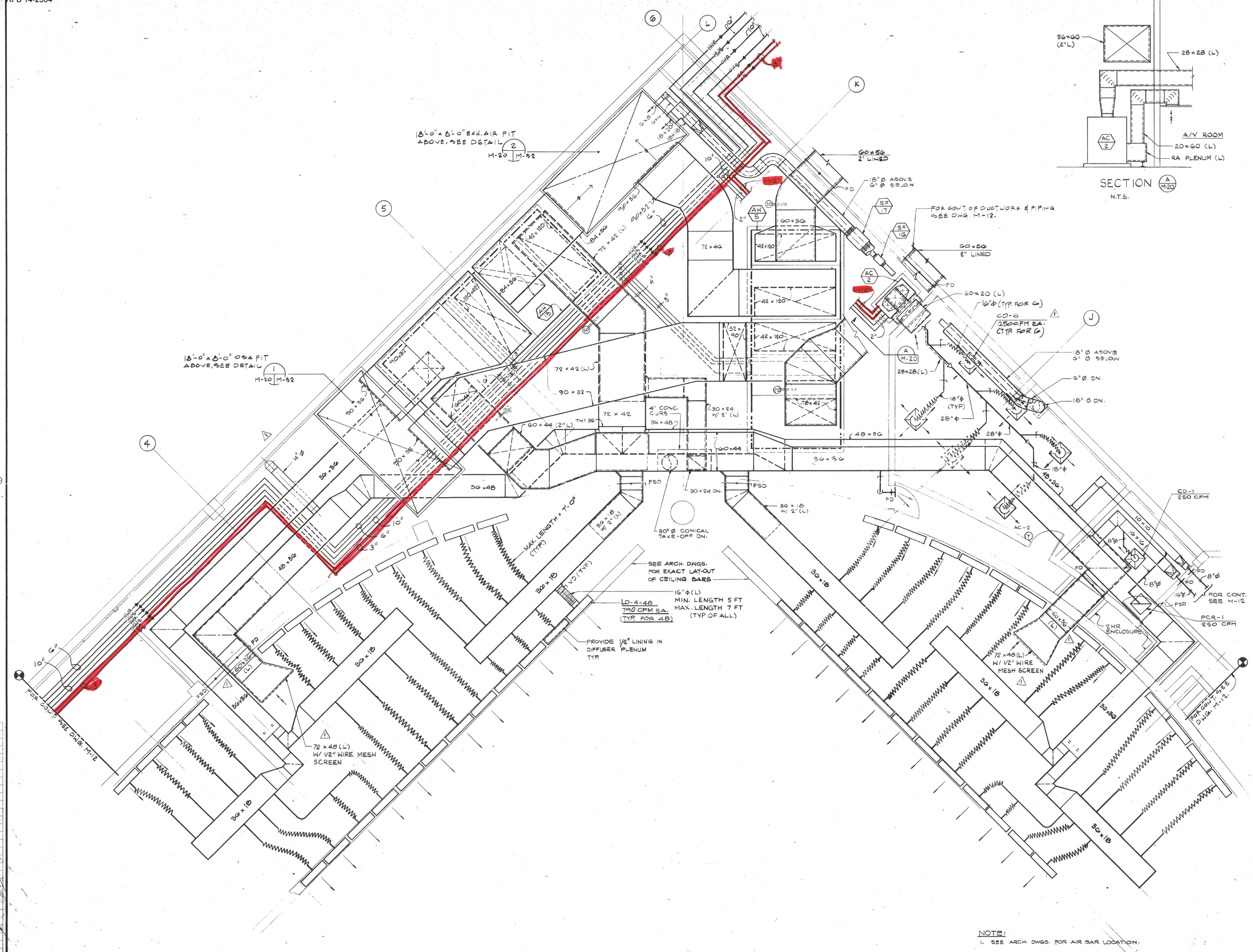
OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 13,616 OREGON JULY 15, 1988 TOM I. REITH

Job No. 8000-15

M-19

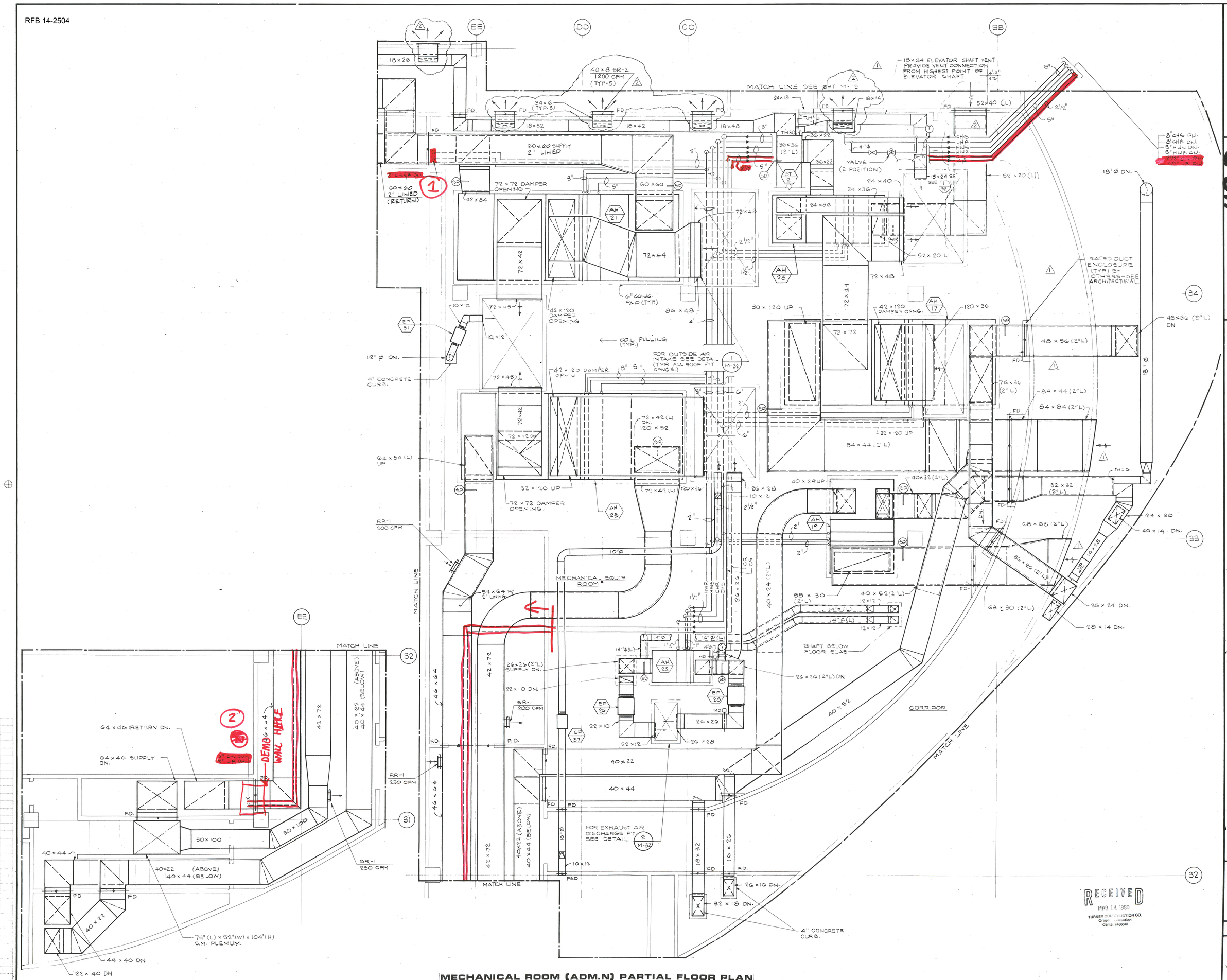
Sheets



NOTE:
1. SEE ARCH. DWGS. FOR AIR BAR LOCATION.

DMJM
Date JULY 11, 1988
Revision No. 1 ADDENDUM #2 9/19/88
CC# 0 0 0
SCALE: 1/4" = 1'-0"
ZIMMER · GUNSUL · FRASCA PARTNERSHIP
Portland, Oregon 97204
Architects, A.I.A.
MECHANICAL RM. (PREF. E) - PARTIAL PLAN
OREGON CONVENTION CENTER
Bid Package 3 - General Contract
PORTLAND, OREGON
Job No. 3000-05
M-20
Sheets

RFB 14-2504



MECHANICAL ROOM (ADM.N) PARTIAL FLOOR PLAN

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

ATTACHMENT A

DMJM

Date JULY 11, 1988

Dave Mark Johnson & Associates
Mechanical Engineers
Los Angeles, California 90015
Plumbing
Fire Protection
Mechanical Engineering
Electrical
Electrical Engineering

CC# 118R

Revision No.
1 ADDENDUM #3 8/19/88
2 REVISION CHANGED 12/9/88

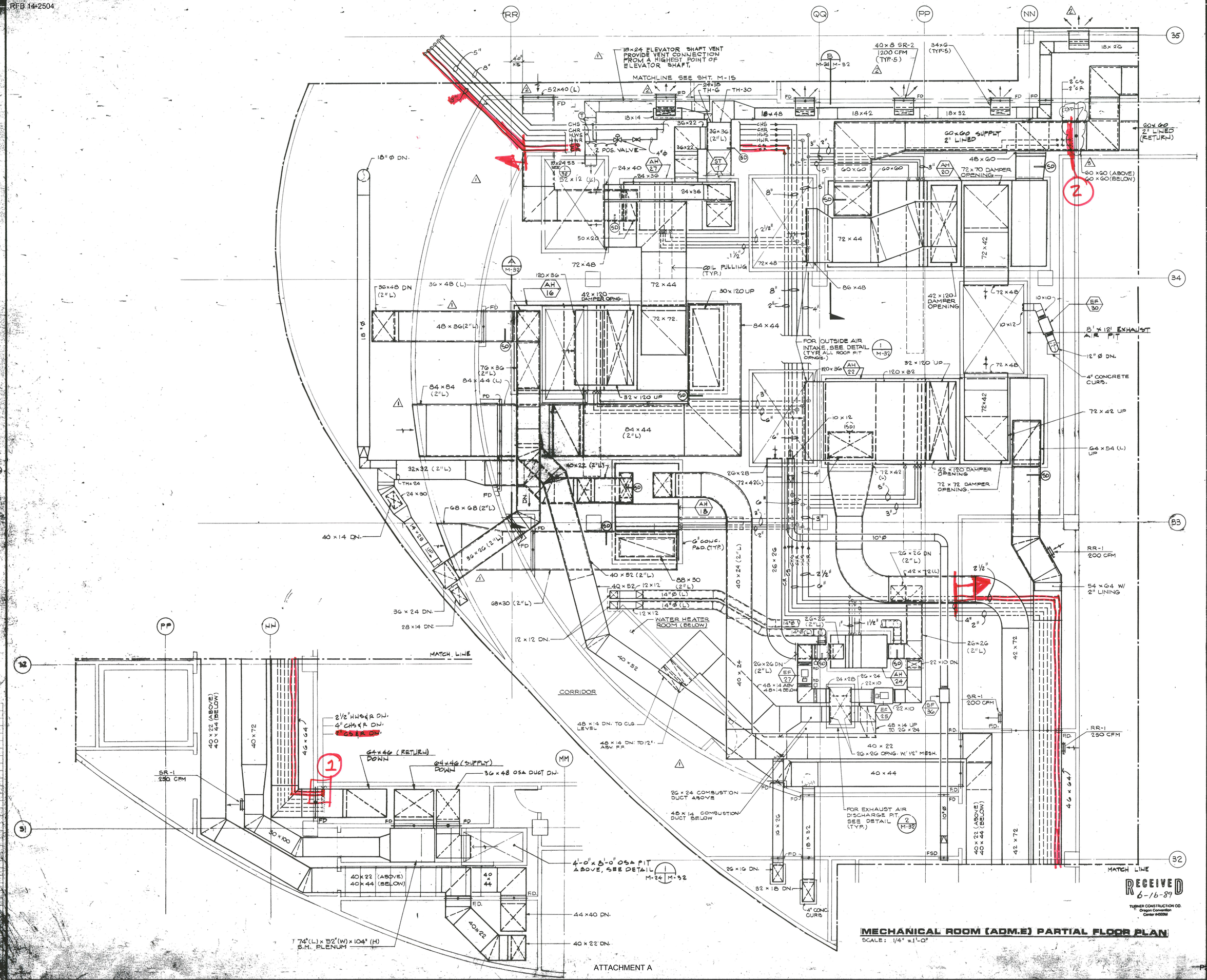
MECHANICAL RM. (ADM. N) - PARTIAL PLAN

ZIMMER-GUNSUL-FRASCA PARTNERSHIP
Architects, A.I.A.

OREGON CONVENTION CENTER
Bid Package 3"-General Contract
PORTLAND, OREGON

Job No. 6060-05

M-23



DMJM

Date: JULY 11, 1988

CC# 306

Revision No.
1 ADDENDUM #3 8/18/88
2 REVISION CHANGED 10/31/88
3 REVISION-FDS ADDED 6/19/89

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Architects, A.I.A.
Portland, Oregon 97204

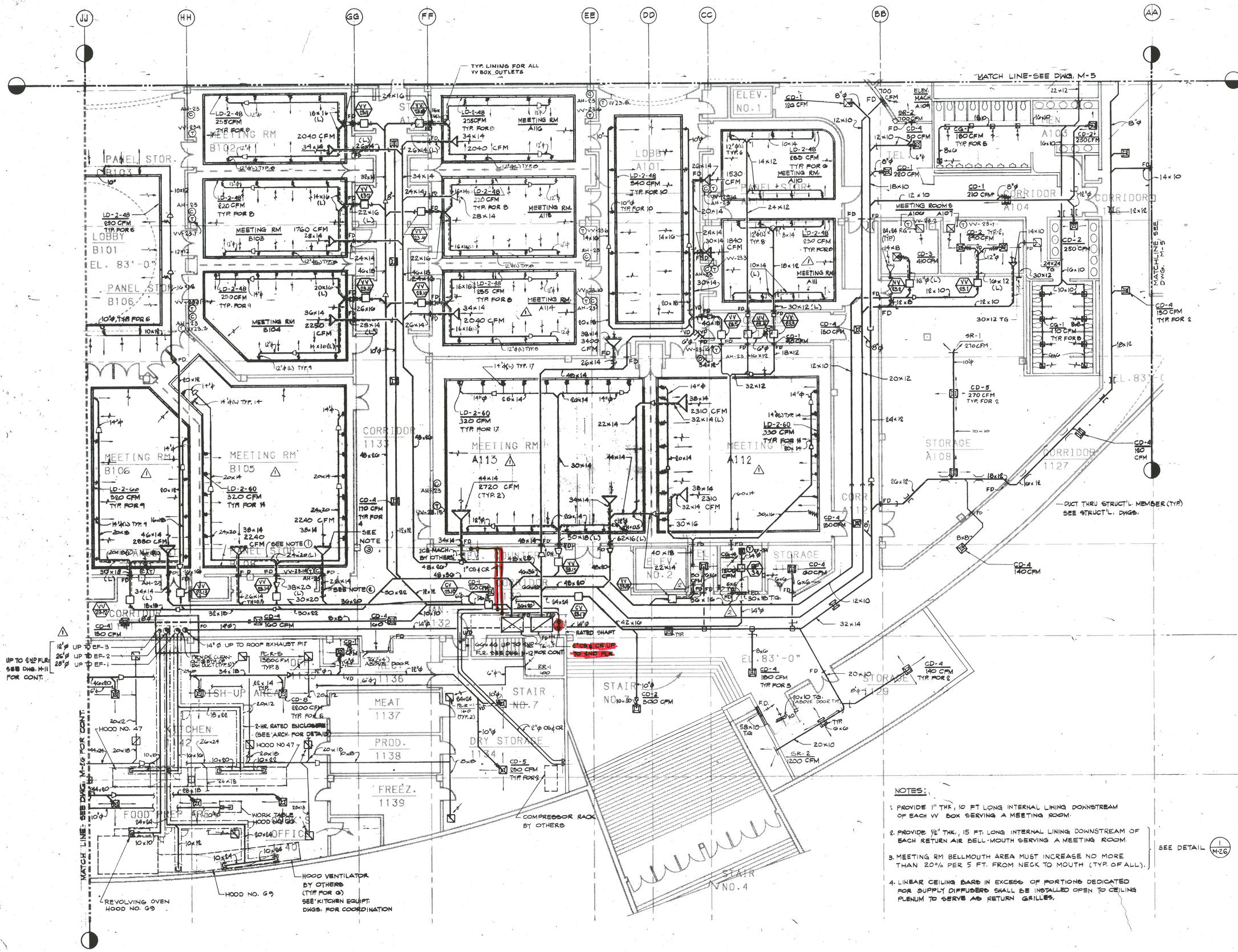
MECHANICAL RM. (ADM. E) - PARTIAL PLAN

OREGON CONVENTION CENTER
"Bid Package 3" - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER 13,614 OREGON JULY 16, 1987 TOM T. REPPE

Job No.

M-24



NOTES:

1. PROVIDE 1" THK., 10 FT LONG INTERNAL LINING DOWNSTREAM OF EACH VV BOX SERVING A MEETING ROOM.
2. PROVIDE ½" THK., 15 FT. LONG INTERNAL LINING DOWNSTREAM OF EACH RETURN AIR BELL-MOUTH SERVING A MEETING ROOM.
3. MEETING RM BELLMOUTH AREA MUST INCREASE NO MORE THAN 20% PER 5 FT. FROM NECK TO MOUTH (TYP. OF ALL).

SEE DETAIL 1/M-26

4. LINEAR CEILING BARS IN EXCESS OF PORTIONS DEDICATED FOR SUPPLY DIFFUSERS SHALL BE INSTALLED OPEN TO CEILING PLENUM TO SERVE AS RETURN GRILLES.

Date JULY 11, 1988

Gunn, Rietz, Wishner & Neuhauser
Consulting Engineers
1211 Portland, Oregon 97205
Plumbing
Fire Protection
Heating
Ventilating
Air Conditioning

DMJM

CC# 306

Revision No.
ADDENDUM #3 9/19/88
REVISION-FD'S ADDED 6/15/89

ZIMMER·GUNSUL·FRASCA PARTNERSHIP
Architects, A.I.A.
Portland, Oregon 97204

PARTIAL PLAN, MAIN LEVEL - NORTH
SCALE: 1/8" = 1'-0"

OREGON CONVENTION CENTER
"Bid Package 3" - General Contract
PORTLAND, OREGON

REGISTERED PROFESSIONAL ENGINEER
OREGON
JOHN J. REFFIN

Job No. 6060-03

M-25

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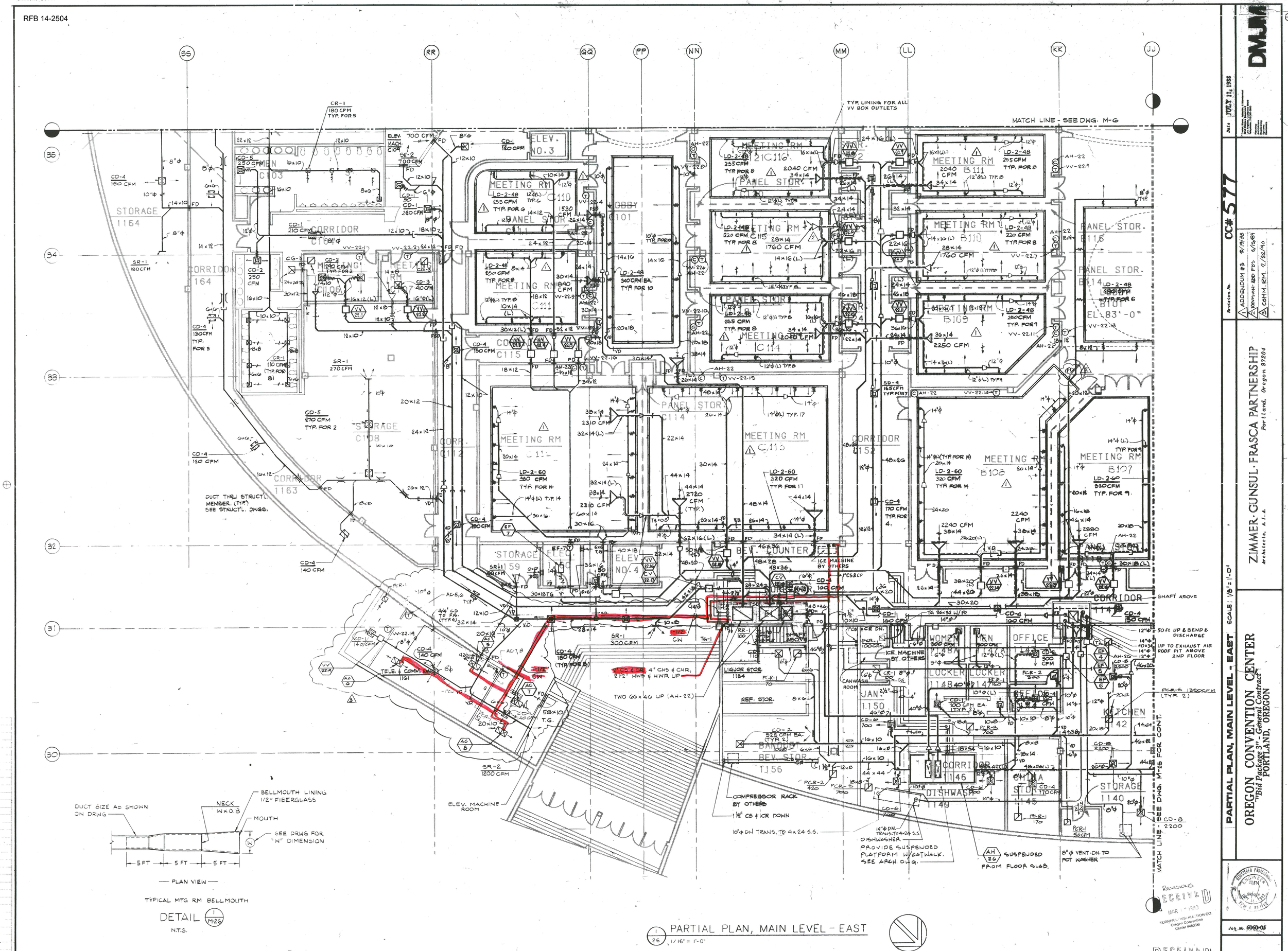
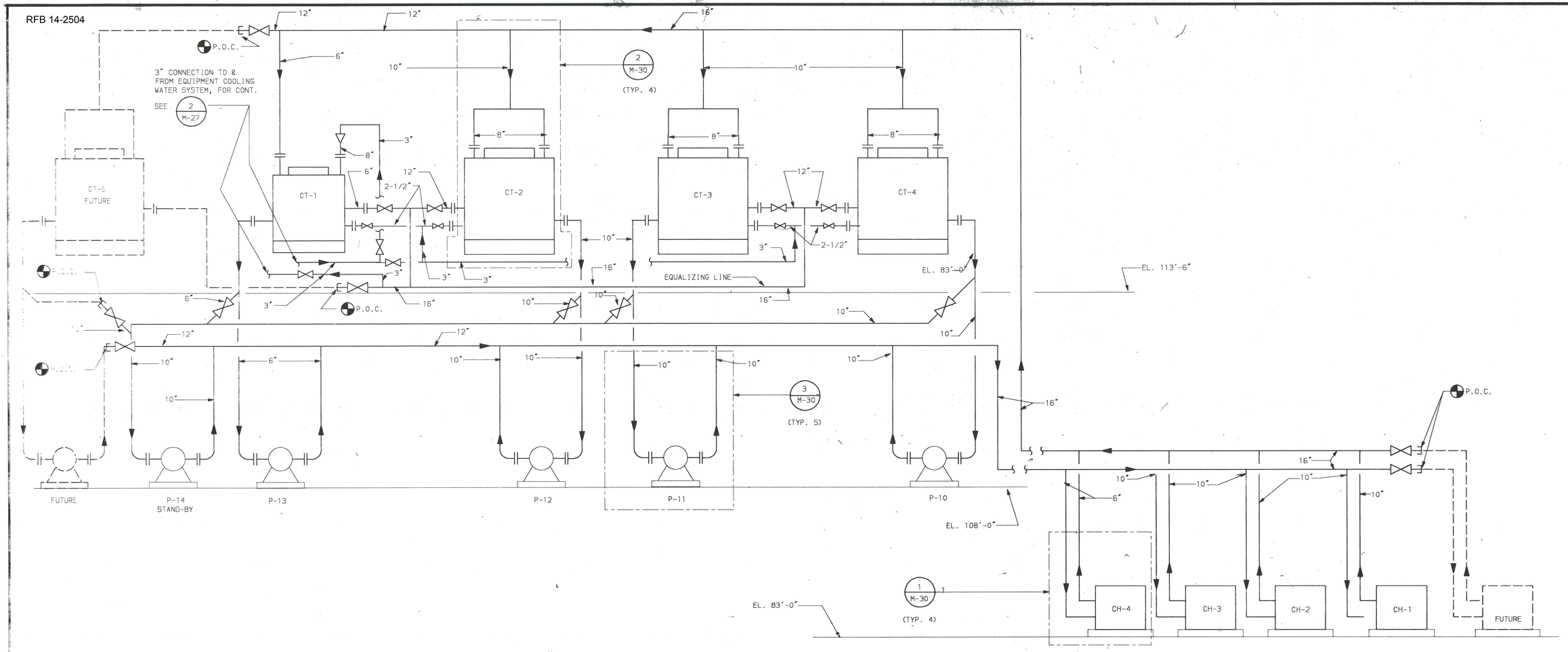
TURNER CONSTRUCTION CO.
Oregon Convention Center 04/05/89

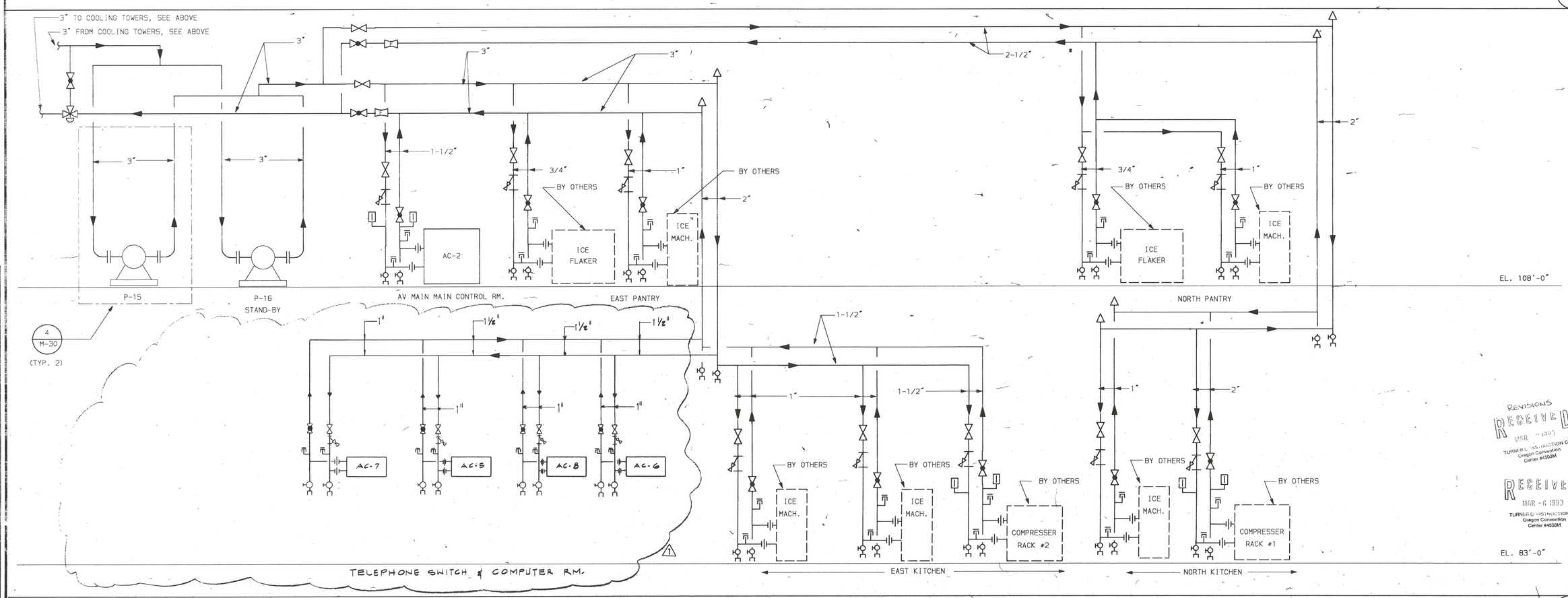

MATCH LINE - SEE DWG. M-6
TYP. LINING FOR ALL VV BOX OUTLETS
MEETING RM
PANEL STOR.
CORRIDOR
STORAGE
ELEV. NO. 3
ELEV. NO. 4
LOBBY C101
BEV. COUNTER
KITCHEN
WOMEN
MEN
OFFICE
LOCKER
JAN.
DISHWASHER
ELEV. MACHINE ROOM
LIQUOR STOR.
REF. STOR.
BAKERY
SHAFT ABOVE
ICE MACHINE BY OTHERS
CANWASH ROOM
COMPRESSOR RACK BY OTHERS
PROVIDE SUSPENDED PLATFORM W/CATWALK. SEE ARCH. DWG.
SUSPENDED FROM FLOOR SLAB.
8" ϕ VENT-DN. TO POT WASHER
50 ft UP & BEND & DISCHARGE
UP TO EXHAUST AIR ROOF PIT ABOVE 2ND FLOOR
TWO 66x46 UP (AH-22)
DUCT THRU STRUCT'L. MEMBER. (TYP) SEE STRUCT'L. DWGS.
BELLMOUTH LINING 1/2" FIBERGLASS
DUCT SIZE AS SHOWN ON DRWG
NECK W x 0.8
MOUTH
SEE DRWG FOR "W" DIMENSION
5 FT
PLAN VIEW
TYPICAL MTG RM BELLMOUTH
DETAIL 1/M-26
N.T.S.
1/26 PARTIAL PLAN, MAIN LEVEL - EAST
1/16" = 1'-0"
RECEIVED MAR - 6 1990 TURNER CONSTRUCTION CO. Oregon Convention Center #4503M
RECEIVED MAR - 1 1990 TURNER CONSTRUCTION CO. Oregon Convention Center #4503M
DMJM
ZIMMER GUNSUL FRASCA PARTNERSHIP Portland, Oregon 97204
Architects, A.I.A.
OREGON CONVENTION CENTER
"Bid Package 3" - General Contract
PORTLAND, OREGON
PARTIAL PLAN, MAIN LEVEL - EAST
SCALE: 1/8" = 1'-0"
CC# 577
Revision No.
ADDENDUM #3 9/19/88
ADDENDUM #5 FDS 6/15/89
CONM. RM. 2/22/90
Job No. 6060-08
M-26
Sheets

RFB 14-2504



CONDENSER WATER PIPING DIAGRAM

1



COOLING WATER PIPING DIAGRAM

2

REVISIONS RECEIVED MAR 1 1993 TURNER CONSTRUCTION CO. Oregon Convention Center #4503M

RECEIVED MAR - 6 1993 TURNER CONSTRUCTION CO. Oregon Convention Center #4503M

Date JULY 11, 1990

DMJM Dowl, Mott, Jackson & Moreland Civil Mechanical Electrical Structural Plumbing Fire Protection Systems Telephone 503-241-1383

Revision No. CC# 5577

△1 COMMUNICATION RM. 2/22/90

ZIMMER GUNSUL FRASCA PARTNERSHIP
Architects, A.I.A. Portland, Oregon 97204

CONDENSER WATER DIAGRAM

"Bid Package 3" - General Contract

OREGON CONVENTION CENTER

Portland, Oregon

Job No. 6065-05

M-27

2 of Sheets

ATTACHMENT A

RFB 14-2504

HVAC LEGEND

- NEW DUCTWORK
- EXISTING DUCTWORK
- DEMOLITION DUCTWORK
- OSA — OUTSIDE AIR DUCT / RISER
- RA/EA — RETURN AIR, RELIEF AIR OR EXHAUST AIR DUCT / RISER
- SA — SUPPLY AIR DUCT / RISER
- DUCT DROPS
- NEW EQUIPMENT
- EXISTING EQUIPMENT
- DEMOLITION EQUIPMENT
- HEATING COIL (WATER OR STEAM)
- ELECTRIC DUCT HEATER
- TERMINAL UNIT
- SOUND TRAP
- FLEXIBLE DUCT
- FLEXIBLE CONNECTION
- FD — MOTORIZED DAMPER
- BD — BACKDRAFT DAMPER
- VOLUME DAMPER
- FD — FIRE DAMPER
- SD — SMOKE DAMPER WITH ACTUATOR
- FSD — COMBINATION FIRE AND SMOKE DAMPERWITH ACTUATOR
- HUMIDIFIER
- MODULAR ACOUSTIC PLENUM
- CONCENTRIC TRANSITION (A = 15° MAXIMUM)
- ECCENTRIC TRANSITION (A = 15° MAXIMUM)
- RECTANGULAR-TO-ROUND TRANSITION (A = 15° MAXIMUM)
- DN — DUCT OFFSET, DOWN
- UP — DUCT OFFSET, UP
- MITERED ELBOW (WITH TURNING VANES)
- R=1.5 x D — RADIUS ELBOW
- MITERED OFFSET (A = 15° MAXIMUM)
- R=1.50 — RADIUS OFFSET
- DUCT WITH LINING
- 90° HEEL TAP TAKEOFF (RECTANGULAR DUCT)
- TEE (ROUND OR FLAT OVAL DUCTS)
- ROUND SPIN IN CONNECTION TO RECTANGULAR DUCT
- MITERED TEE WITH TURNING VANES AND REDUCER (RECTANGULAR DUCTS)
- CONICAL TEE (ROUND OR FLAT OVAL DUCTS)
- 45° CONICAL LATERAL BRANCH (ROUND OR FLAT OVAL DUCTS)
- 45° LATERAL BRANCH (ROUND OR FLAT OVAL DUCTS)
- NESTED FITTING WITH REDUCER, MITERED ELBOW WITH TURNING VANES (RECTANGULAR DUCTS)
- NESTED FITTING WITH REDUCER, RADIUS ELBOW (RECTANGULAR DUCTS)
- 8x8-B / 125 — NECK SIZE-GRILLE TYPE / CFM — CEILING MOUNTED RETURN OR EXHAUST GRILLE / REGISTER
- 8x8-B / 125 (THROW) — NECK SIZE-DIFFUSER TYPE / CFM — CEILING MOUNTED SUPPLY DIFFUSER
- 8x8-B / 125 — SIDEWALL GRILLE / REGISTER, FACE SIZE-GRILLE TYPE / CFM
- 2-½-48-A / 125 — LINEAR SLOT DIFFUSER 4 BOOT, NO.SLOTS-SLOT WIDTH-LENGTH-TYPE / CFM
- B / 125 — LIGHT TROFFER DIFFUSER, TYPE / CFM
- AP — ACCESS PANEL
- AD — ACCESS DOOR
- T — WALL MOUNTED THERMOSTAT
- T — CEILING MOUNTED THERMOSTAT
- T NLL — NIGHT LOW LIMIT THERMOSTAT
- T S — TEMPERATURE SENSOR (SPACE TYPE)
- H — HUMIDISTAT
- H S — HUMIDITY SENSOR
- XXX — SUBSCRIPT NEXT TO THERMOSTAT OR HUMIDISTAT INDICATES ZONE NUMBER, TERMINAL UNIT NUMBER, HUMIDIFIER NUMBER, ETC.
- SP — STATIC PRESSURE SENSOR
- SD — SMOKE DETECTOR
- WALL SWITCH
- EQUIPMENT SYMBOL
- NOTE REFERENCE
- POINT OF CONNECTION (NEW WORK TO EXISTING)
- A — ABANDON
- D — DELIVER TO OWNER
- E — EXISTING TO REMAIN
- C — CUT AND CAP OR PLUG
- K — CUT AND CAP TO BE RECONNECTED
- N — NEW
- R — RELOCATE
- X — EXISTING TO BE REMOVED
- NEW PIPING
- EXISTING PIPING
- DEMOLITION PIPING
- PIPE RISER - UP
- PIPE RISER - DOWN
- BRANCH TOP CONNECTION
- BRANCH BOTTOM CONNECTION
- BRANCH SIDE CONNECTION
- BRANCH CONNECTION
- ELBOW
- BALL VALVE
- GATE VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- PRV — PRESSURE REDUCING VALVE
- TCV — CONTROL VALVE - TWO WAY
- TCV — CONTROL VALVE - THREE WAY
- SOLENOID VALVE
- AUTOMATIC FLOW CONTROL VALVE
- CHECK VALVE
- BALANCING VALVE
- FLOW MEASURING STATION
- CIRCUIT SETTER
- MAV — MANUAL AIR VENT
- VB — VACUUM BREAKER
- SA — SHOCK ARRESTER
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- PRESSURE GAUGE & GAUGE COCK
- GAUGE COCK
- PETE'S PLUG
- THERMOMETER
- RV, SV — RELIEF OR SAFETY VALVE
- SLOPE
- REDUCER
- UNION
- STRAINER
- FLEXIBLE CONNECTION
- PIPE EXPANSION JOINT
- PIPE GUIDE OR SLEEVE
- PIPE ANCHOR
- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- HWRR — HEATING WATER REVERSE RETURN
- CHS — CHILLED WATER SUPPLY
- CHR — CHILLED WATER RETURN
- CHRR — CHILLED WATER REVERSE RETURN
- HRS — HEAT RECOVERY SUPPLY
- HRR — HEAT RECOVERY RETURN
- CWS — CONDENSING WATER SUPPLY
- CWR — CONDENSING WATER RETURN
- BFW — BOILER FEEDWATER
- NP — NON-POTABLE
- D — DRAIN
- RF — REFRIGERANT
- CO — CARBON MONOXIDE SENSOR

HVAC ABBREVIATIONS

AF	AIR FOIL	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MBH	BTUH IN THOUSANDS
AL	ALUMINUM	MECH	MECHANICAL
APPROX	APPROXIMATE	MFGR	MANUFACTURER
ARCH	ARCHITECT	MIN	MINIMUM
BI	BACKWARD INCLINED	MVD	MANUAL VOLUME DAMPER
BLDG	BUILDING	NC	NORMALLY CLOSED
BTUH	BRITISH THERMAL UNIT/HOUR	NIM	NOT IN MECHANICAL
C/C	CENTER TO CENTER	NO	NORMALLY OPEN
CFM	CUBIC FEET/MINUTE	O/C	ON CENTER
CIRC	CIRCULATOR	OSA	OUTSIDE AIR
CLG	CEILING	OV	OUTLET VELOCITY
CONC	CONCRETE	PD	PRESSURE DIFFERENCE
CONN	CONNECTION	PF	PLUG FAN
CONST	CONSTRUCTION	PG	PRESSURE GAUGE
CONTR	CONTRACTOR	PSIG	POUNDS/SQUARE INCH, GAUGE
db	DRY BULB	PRESS	PRESSURE
DIA	DIAMETER	RA	RETURN AIR
DIM	DIMENSION	RECIRC	RECIRCULATION
DN	DOWN	REG	REGISTER
DWG	DRAWING	REQD	REQUIRED
EA	EXHAUST AIR	RH	RELATIVE HUMIDITY
ELECT	ELECTRICAL	RPM	REVOLUTIONS/MINUTE
ENGR	ENGINEER	RM	ROOM
EQUIP	EQUIPMENT	SH	STATIC HEAD
ESP	EXTERNAL STATIC PRESSURE	SP	STATIC PRESSURE
EXH	EXHAUST	SPEC	SPECIFICATIONS
FA	FROM ABOVE	SQ	SQUARE
FB	FROM BELOW	SS	STAINLESS STEEL
FC	FORWARD CURVED	STD	STANDARD
FD	FLOOR DRAIN	STRUCT	STRUCTURE, STRUCTURAL
FLR	FLOOR	SW	SWITCH
FPI	FINS PER INCH	TD	TEMPERATURE DIFFERENCE
FPM	FEET PER MINUTE	TDH	TOTAL DYNAMIC HEAD
FV	FACE VELOCITY	TEMP	TEMPERATURE
GA	GAUGE	THRU	THROUGH
GAL	GALLON	TMTR	THERMOMETER
GPM	GALLONS/MINUTE	TS	TIP SPEED
GRAV	GRAVITY	TSP	TOTAL STATIC PRESSURE
HTG	HEATING	TSTAT	THERMOSTAT
HP	HORSEPOWER	TYP	TYPICAL
KW	KILOWATT	VEL	VELOCITY
LB	POUND	wb	WET BULB

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DIFFUSERS

SYMBOL	TYPE	NECK SIZE INCHES	FACE SIZE INCHES	DESIGN BASIS/ REMARKS
A	RETURN / EXHAUST GRILLE	SEE DRAWINGS	-	TITUS MODEL 33RL
B	SUPPLY GRILLE	SEE DRAWINGS	-	TITUS MODEL 272FS
C	LOUVERED DIFFUSER	SEE DRAWINGS	12x12	TITUS MODEL TDC
D	FILTERED TRANSFER GRILLE	SEE DRAWINGS	-	TITUS MODEL 33RFL
E	RETURN / EXHAUST GRILLE	SEE DRAWINGS	-	TITUS MODEL 350FL
F	FLOW BAR	SEE DRAWINGS	-	PRICE JET SLOT JS SERIES
G	ROUND SUPPLY DIFFUSER	SEE DRAWINGS	-	PRICE MODEL RCD
H	LINEAR SLOT DIFFUSER	SEE DRAWINGS	-	TITUS MODEL ML-38
I	LOUVERED DIFFUSER	SEE DRAWINGS	24x24	TITUS MODEL TDC
J	FLOW BAR	SEE DRAWINGS	-	PRICE AJUSTA BLOT
K	LINEAR BAR RETURN GRILLE	SEE DRAWINGS	-	PRICE LBMH CORE 25B 3

NOTES:

DIFF 07/30/01

AIR SEPARATORS

SYMBOL	SYSTEM SERVED	GPM	CONNECTION SIZE INCHES	MAX. PD. FEET	DESIGN BASIS/ REMARKS
AS-3	HEATING WATER	420	6	5	B&G ROLLAIRTROL
AS-4	PROCESS WATER	300	4	7	B&G ROLLAIRTROL

NOTES:

AIRSEP 06/08/01

DUCT FREE SPLIT SYSTEM HEAT PUMP

SYMBOL	DESCRIPTION
HP-1 / CU-1	CARRIER MANUFACTURE: (HP-1) UNDER CEILING FAN COIL MODEL 40GAE060 (1600 CFM) WITH WALL MOUNTED THERMOSTAT. (CU-1) OUTDOOR SECTION MODEL 38QR-C060, COOLING CAPACITY BASED ON 80 DB, 67 WB ROOM TEMP (F) AND 90 DB OUTDOOR TEMP (F), 42.6 MBH SENSIBLE, 61.2 MBH TOTAL COOLING. HEATING CAPACITY BASED ON 65 DEG. (F) ENTERING INDOOR UNIT AND 10 DEG. (F) INTERING OUTDOOR UNIT. HEATING CAPACITY = 25.7 MBH UNIT TO BE PROVIDED WITH LOW AMBIENT KIT AND CRANKCASE HEATER. PROVIDE ALL PIPING, VALVES, CONTROLWIRING AND PIPING AS RECOMMENDED BY EQUIPMENT MANUFACTURE. SEE ELECTRICALDRAWINGS FOR ELECTRICAL REQUIREMENTS. HP-1 WEIGHT = 181 LBS., CU-1 WEIGHT = 272 LBS.
HP-2 / CU-2	CARRIER MANUFACTURE: (HP-1) UNDER CEILING FAN COIL MODEL 40GAE060 (1600 CFM) WITH WALL MOUNTED THERMOSTAT. (CU-1) OUTDOOR SECTION MODEL 38QR-C060, COOLING CAPACITY BASED ON 80 DB, 67 WB ROOM TEMP (F) AND 90 DB OUTDOOR TEMP (F), 42.6 MBH SENSIBLE, 61.2 MBH TOTAL COOLING. HEATING CAPACITY BASED ON 65 DEG. (F) ENTERING INDOOR UNIT AND 10 DEG. (F) INTERING OUTDOOR UNIT. HEATING CAPACITY = 25.7 MBH UNIT TO BE PROVIDED WITH LOW AMBIENT KIT AND CRANKCASE HEATER. PROVIDE ALL PIPING, VALVES, CONTROLWIRING AND PIPING AS RECOMMENDED BY EQUIPMENT MANUFACTURE. SEE ELECTRICALDRAWINGS FOR ELECTRICAL REQUIREMENTS. HP-1 WEIGHT = 181 LBS., CU-1 WEIGHT = 272 LBS.
HP-3 / CU-3	CARRIER MANUFACTURE: (HP-1) UNDER CEILING FAN COIL MODEL 40GAE060 (1600 CFM) WITH WALL MOUNTED THERMOSTAT. (CU-1) OUTDOOR SECTION MODEL 38QR-C060, COOLING CAPACITY BASED ON 80 DB, 67 WB ROOM TEMP (F) AND 90 DB OUTDOOR TEMP (F), 42.6 MBH SENSIBLE, 61.2 MBH TOTAL COOLING. HEATING CAPACITY BASED ON 65 DEG. (F) ENTERING INDOOR UNIT AND 10 DEG. (F) INTERING OUTDOOR UNIT. HEATING CAPACITY = 25.7 MBH UNIT TO BE PROVIDED WITH LOW AMBIENT KIT AND CRANKCASE HEATER. PROVIDE ALL PIPING, VALVES, CONTROLWIRING AND PIPING AS RECOMMENDED BY EQUIPMENT MANUFACTURE. SEE ELECTRICALDRAWINGS FOR ELECTRICAL REQUIREMENTS. HP-1 WEIGHT = 181 LBS., CU-1 WEIGHT = 272 LBS.

1

MISC 06/08/01

PUMPS

SYMBOL	SYSTEM SERVED	TYPE	GPM	TOTAL HEAD FEET	DESIGN TEMP F. DEG.	DESIGN PRESS PSIG	MOTOR BHP	MOTOR HP	MOTOR RPM	VIBRATION ISOLATION BASE TYPE	VIBRATION ISOLATION ISOLATOR TYPE	VIBRATION ISOLATION MIN STATIC DEFLECTION INCHES	OPER WEIGHT LBS	DESIGN BASIS/ REMARKS
P-20	NOT USED													
P-21	NOT USED													1
P-22	PROCESS CLG. SECOND.	END SUCTION	300	140	100	50	15.22	25	1750	N/A	SPRING	N/A	700	B & G 1510 3G
P-23	PROCESS CLG. SECOND.	END SUCTION	300	140	100	50	15.22	25	1750	N/A	SPRING	N/A	700	B & G 1510 3G
P-24	PROCESS CLG. PRIM.	END SUCTION	300	45	100	50	4.75	7.5	1750	N/A	SPRING	N/A	610	B & G 1510 3G
P-25 1	PROCESS CLG. PRIM.	END SUCTION	300	45	100	50	4.75	7.5	1750	N/A	SPRING	N/A	610	B & G 1510 3G
P-26	HEATING WATER	END SUCTION	420	100	180	100	14.12	20	1750	N/A	SPRING	N/A	550	B & G 1510 4E
P-27	WSHP-17		1.12	12				1/30					7	BECKETT MODEL CU18-UL
P-28	WSHP-15		1.12	12				1/30					7	BECKETT MODEL CU18-UL 3

NOTES:

PUMPS 07/19/02

WATER SOURCE HEAT PUMPS

SYMBOL	SYSTEM SERVED	CFM SA	CFM RA	CFM EA	ESP INCHES	COOLING CAPACITY MBH SENS	COOLING CAPACITY MBH TOTAL	COOLING EAT DEG F DB	COOLING EAT DEG F WB	COOLING LAT DEG F DB	COOLING LAT DEG F WB	GPM	MAX PD FEET	HEATING THO MBH	HEATING EAT DEG F	POWER MCA NOTE #( )	DESIGN BASIS/ REMARKS
WSHP-1	ELECT. RM 1740	1600	1550	50	0.35	33.8	35.2	80	63.8	60.4	56.4	7.9	10	-	-	10.7 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-2	SECURITY AREA	900	700	200	0.7	23.5	24.2	78.4	63.6	54.2	54	5.5	10	32.8	68	6 (1)	TRANE MODEL GEHA
WSHP-3	TELE/DATA 1741	1400	1350	50	0.25	30.2	31.4	80	63.8	60	56	6.9	10	-	-	7.7 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-4	ELECT. RM 1722	955	955	-	0.15	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-5	ELECT. RM 1182	955	955	-	0.15	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-6	ELECT. RM 1331	955	955	-	0.15	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-7	ELEV. MR 1330	955	955	-	0.3	24.4	26.3	80	63.8	56.6	54.4	4.7	10	-	-	5.9 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-8	ELEV. MR 1841	955	955	-	0.15	24.4	26.3	80	63.8	56.6	54.4	4.7	10	-	-	4.9 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-9	ELECT. RM 1860	955	955	-	0.15	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-10	ELEV. MR 1861	955	955	-	0.15	24.4	26.3	80	63.8	56.6	54.4	4.7	10	-	-	5.9 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-11	ELEV. RM 3200	955	955	-	0.2	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-12	A.V. 3240	955	955	-	0.15	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-13	ELECT RM 3270	955	955	-	0.2	23.08	23.7	80	63.8	57.9	55.4	4	10	-	-	5.8 (1)	TRANE MODEL GEHA (COOLING ONLY)
WSHP-14	TICKETS 2010	450	400	50	-	12.4	15.2	75	62	49.5	48.8	4.4	12	1.5	68	9.9 (2)	TRANE MODEL WPCE
WSHP-15	VOLUNTEERS	610	405	205	0.4	14.9	18	80.1	63.8	57.4	53.8	5.6	9	20.0	49.6	9.6 (1)	TRANE MODEL GEHV (NOTE 4)
WSHP-16	VOLUNTEERS	610	490	120	0.45	13.2	14.9	78	63	58	54.5	4	6	14.5	58	9.6 (1)	TRANE MODEL GEHV (NOTE 4) 3
WSHP-17	VOLUNTEERS	720	580	140	0.7	17.4	21.7	78	63	55.6	52.4	4	6	17.1	58	9.6 (1)	TRANE MODEL GEHV (NOTE 4)

GENERAL NOTES: 1. 460 VOLTS, THREE PHASE.
2. 208 VOLT, SINGLE PHASE
3. CAPACITIES ARE BASED ON EWT OF 81 DEG. F, AND LWT OF 97
4. PROVIDE UNIT WITH FACTORY MOUNTED ELECTRIC RESISTANCE BACKUP HEATING COIL (5.3 KW). 5

HTPUMP 07/19/02

FLAT PLATE HEAT EXCHANGERS

SYMBOL	CAPACITY MBH	TOWER SIDE GPM	TOWER SIDE EWT F DEG	TOWER SIDE LWT F DEG	TOWER SIDE MAX PD PSI	TOWER SIDE FOULING FACTOR	PROCESS SIDE GPM	PROCESS SIDE EWT F DEG.	PROCESS SIDE LWT F DEG.	PROCESS SIDE MAX PD PSI	PROCESS SIDE FOULING FACTOR	DESIGN BASIS/ REMARKS
HX-1	1192	300	80	88	5	N/A	3000	92	84	5	N/A	ALFA LAVAL M10-BFG
HX-2	1192	300	80	88	5	N/A	3000	92	84	5	N/A	ALFA LAVAL M10-BFG

NOTES: SIZE THE HEAT EXCHANGER FRAME TO ALLOW THE ADDITION OF 15% EXTRA PLATES FOR FUTURE GROWTH.

FPHTEX 06/08/01

HOT WATER BOILERS

3

SYMBOL	CAPACITY MBH INPUT	OUTPUT MBH	WATER SIDE GPM	WATER SIDE EWT F DEG.	WATER SIDE LWT F DEG.	OPER PRESS PSIG	ASME RATING PSIG	BURNER HP	BURNER RPM	FUEL TYPE	FUEL CAPACITY (MBH)	FLUE DIA INCHES	OPER WEIGHT LBS	DESIGN BASIS/ REMARKS
B-3	10500	8,400	420	140	180	55	160	5	3450	NAT	10500	20	26000	WATER TUBE BRYAN RW1050
											3			

NOTES:

HWBOILER 06/08/01

EXPANSION TANKS

SYMBOL	SYSTEM SERVED	TYPE	CAPACITY VOLUME GALS	CAPACITY ACCEPTANCE GALS	VALVE SETTING PRV PSIG	VALVE SETTING RELIEF PSIG	DESIGN BASIS/ REMARKS
ET-3	HEATING WATER	BLADDER	528	528	18	65	B & G B-2000 / 6217 LBS FULL WEIGHT
ET-4	CHILLED WATER	BLADDER	211	211	28	65	B & G B-800 / 2401 LBS FULL WEIGHT
ET-5	PROCESS COOLING	BLADDER	211	211	28	65	B & G B-800 / 2401 LBS FULL WEIGHT

NOTES:

EXPTANK 06/08/01

UNIT HEATERS - ELECTRIC

SYMBOL	AREA SERVED	CAPACITY KW	CFM	AIRSIDE EAT F DEG.	AIRSIDE LAT F DEG.	DESIGN BASIS/ REMARKS
EUH-1	STORAGE P-2060	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL
EUH-2	STORAGE P-2060	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL
EUH-3	GENERATOR ROOM P-2072	5	400	50	90	TRANE UHEC-05 HORIZONTAL
EUH-4	NOT USED					
EUH-5	STORAGE P-2090	5	400	50	90	TRANE UHEC-05 HORIZONTAL
EUH-6	STORAGE P-2010	5	400	50	90	TRANE UHEC-05 HORIZONTAL
EUH-7	STORAGE P-1070	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL
EUH-8	STORAGE P-1070	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL
EUH-9	STORAGE P-1020	5	400	50	90	TRANE UHEC-05 HORIZONTAL
EUH-10	STORAGE P-1060	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL
EUH-11	NOT USED					
EUH-12	STORAGE P-1130	5	400	50	90	TRANE UHEC-05 HORIZONTAL
EUH-13	STORAGE P-1150	3.3	400	50	76	TRANE UHEC-03 HORIZONTAL

NOTES:

UHELEC 06/08/01

UNIT HEATERS - HOT WATER

SYMBOL	CAPACITY MBH	AIR SIDE CFM	AIR SIDE EAT F DEG.	WATER SIDE GPM	WATER SIDE EWT F DEG.	WATER SIDE MAX PD FEET	MOTOR HP	MOTOR RPM	TCV TYPE 2 WAY	TCV TYPE 3 WAY	OPER WEIGHT LBS	DESIGN BASIS/ REMARKS
UH-1	8.8	545	60	1.0	180	1	1/20	1550	•			TRANE MODEL 3B6
UH-2	8.8	545	60	1.0	180	1	1/20	1550	•			TRANE MODEL 3B6
												3

NOTES:

UHWATER 06/08/01

ROOF HEADS 3

SYMBOL	TYPE	CFM	FUNCTION INTAKE	FUNCTION RELIEF	LENGTH INCHES	WIDTH INCHES	HEIGHT INCHES	THROAT AREA SQ. FT.	STATIC PD	DAMPER BACKDRAFT	DAMPER MOTOR OPERATED	DESIGN BASIS/ REMARKS
RH-1	LOUVERED	39840	•		108	98	31	54.83	01		•	GREENHECK WIH
RH-2	LOUVERED	39840	•		108	98	31	54.83	01		•	GREENHECK WIH

NOTES:

ROOFHEAD 06/22/01

ATTACHMENT A

DOCUMENTS HAVE BEEN REVISED BASED SOLELY ON RECORD WORKING DRAWINGS SUPPLIED BY THE CONTRACTOR AND THE CONTRACT DOCUMENTS. THEY DO NOT NECESSARILY SHOW ALL EXISTING CONDITIONS AND MAY NOT BE ACCURATE IN ALL LOCATIONS. FIELD VERIFY EXISTING AND/OR HIDDEN CONDITIONS PRIOR TO COMMENCEMENT OF NEW WORK.

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BID PACKAGES 5 AND 6

Revisions

1 3/16/01
2 7/11/01
3 ADDENDUM #1 8/10/01
4 ADDENDUM #3 8/23/01
5 CCD 110 7/22/02
6 RECORD DRAWINGS JUNE 9, 03

OREGON CONVENTION CENTER EXPANSION

Portland, Oregon

Drawing Title
HVAC LEGEND AND SCHEDULES

Date: 6/11/01
Job No: P 60097.01
Drawn By: RWH
Checked By: RGB

Drawing No.

M0.1

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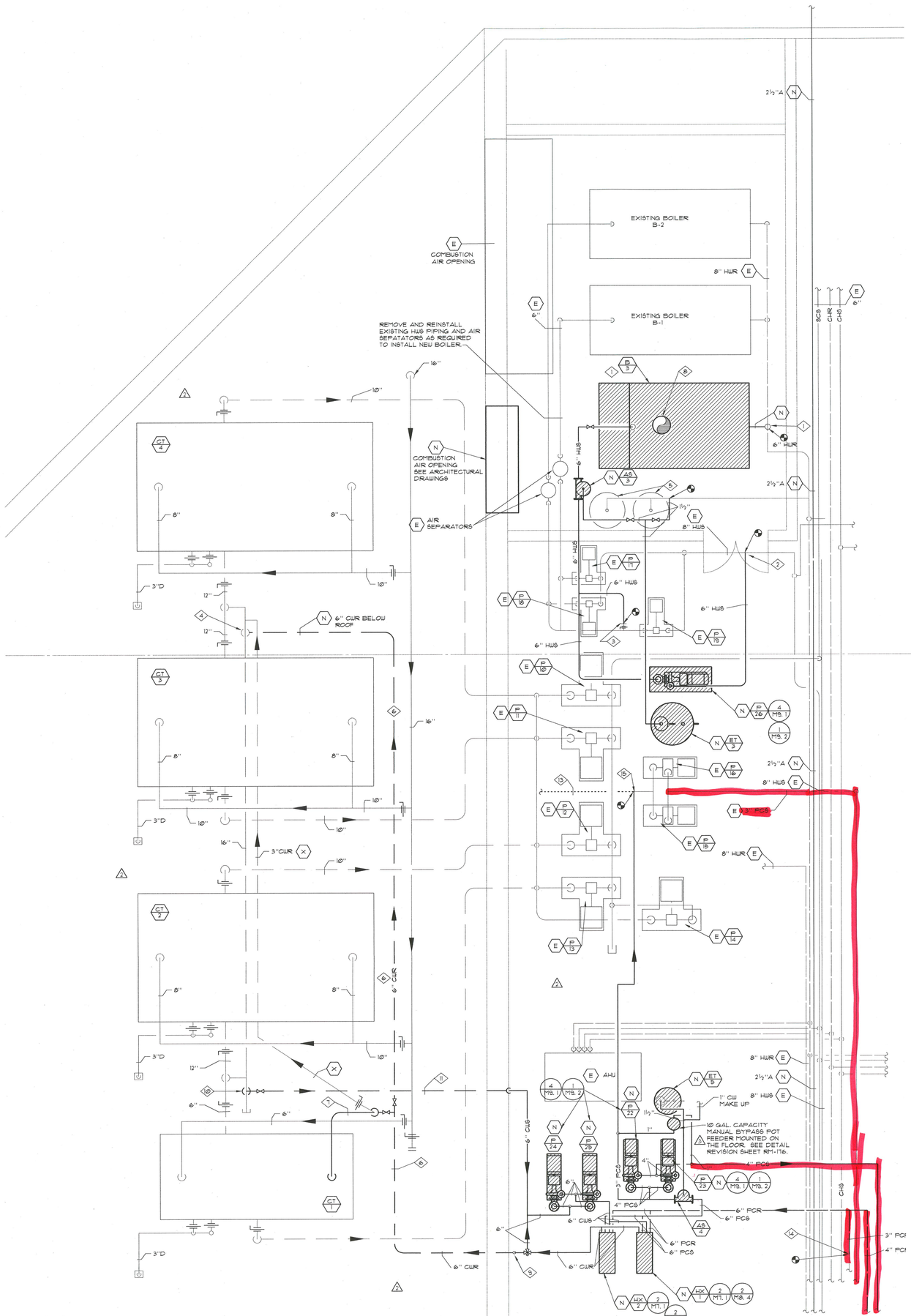


1 / M5.6 ENLARGED PLAN - BOILER ROOM

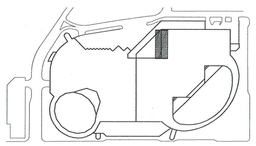
SCALE: 1/4"=1'-0"

KEYED NOTES

1. CONNECT NEW BOILER TO EXISTING HWR VALVED TAP.
2. PROVIDE NEW VALVE AND CONNECT TO EXISTING 8" HWS.
3. CONNECT NEW 6" HWS TO EXISTING VALVED TAP.
4. REPLACE EXISTING 3" CWR CONNECTION TO 16" EQUALIZING LINE WITH NEW 6" CWR ; EXTEND NEW 6" CWR DOWN THROUGH ROOF. REPLACE EXISTING 3" CWR WITH NEW 6" CWR BELOW ROOF.
5. EXISTING EXPANSION TANK.
6. REPLACE EXISTING 3" CWR WITH NEW 6" CWR BELOW ROOF.
7. REPLACE EXISTING 3" CWR TO COOLING TOWER CT-1 WITH NEW 6" CWR.
8. PROVIDE NEW 20" "PS" VENT FOR NEW BOILER UP THROUGH ROOF.
9. REPLACE EXISTING 3" CWR UP THRU FLOOR WITH NEW 6" CWR. RECONNECT EXISTING CHEMICAL FEED FITTINGS IN VERTICAL RISE AT THIS LOCATION.
10. REPLACE EXISTING 3" CWS WITH NEW 6" CWS, CONNECT TO EXISTING 16" CHS.
11. REPLACE EXISTING 3" CWS WITH NEW 6" CWS BELOW ROOF.
12. REPLACE EXISTING 3" CWS UP THROUGH FLOOR WITH NEW 6" CWS.
13. DEMO EXISTING 3" CWS BETWEEN CONNECTION POINTS OF NEW PIPING AS SHOWN.
14. DEMO EXISTING 3" PCR FROM THIS POINT TO BELOW FLOOR NEAR EXTERIOR WALL. CONNECT NEW 3" PCR AND EXTEND AS SHOWN.
15. CONNECT NEW 3" PCS TO EXISTING 3" PCS.

SEE CONTRACTOR'S RECORD DRAWINGS FOR ADDITIONAL INFORMATION REGARDING ROUTING AND SIZING OF MECHANICAL WORK.

KEY PLAN
NTS



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BID PACKAGES 5 AND 6

Revisions

1. ADDENDUM #3 8/23/01 ENTIRE SHEET
2. CCD 73 RM 113-114 RFI 1289 4/11/02
3. CCD 124 RM-115 7/16/02
4. RECORD DRAWINGS JUNE 9, 03

OREGON CONVENTION CENTER EXPANSION

Portland, Oregon

Drawing Title

ENLARGED PLANS MEZZANINE 1 BOILER ROOM

Date:	6/11/01
Job No:	P 60097.01
Drawn By:	RWH
Checked By:	RGB

Drawing No.

M5.6

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