

State of Vermont

Agency of Transportation

Paul R. Philbrook, Secretary

PHASE II

Renovations to The

MATERIALS & RESEARCH LABORATORY

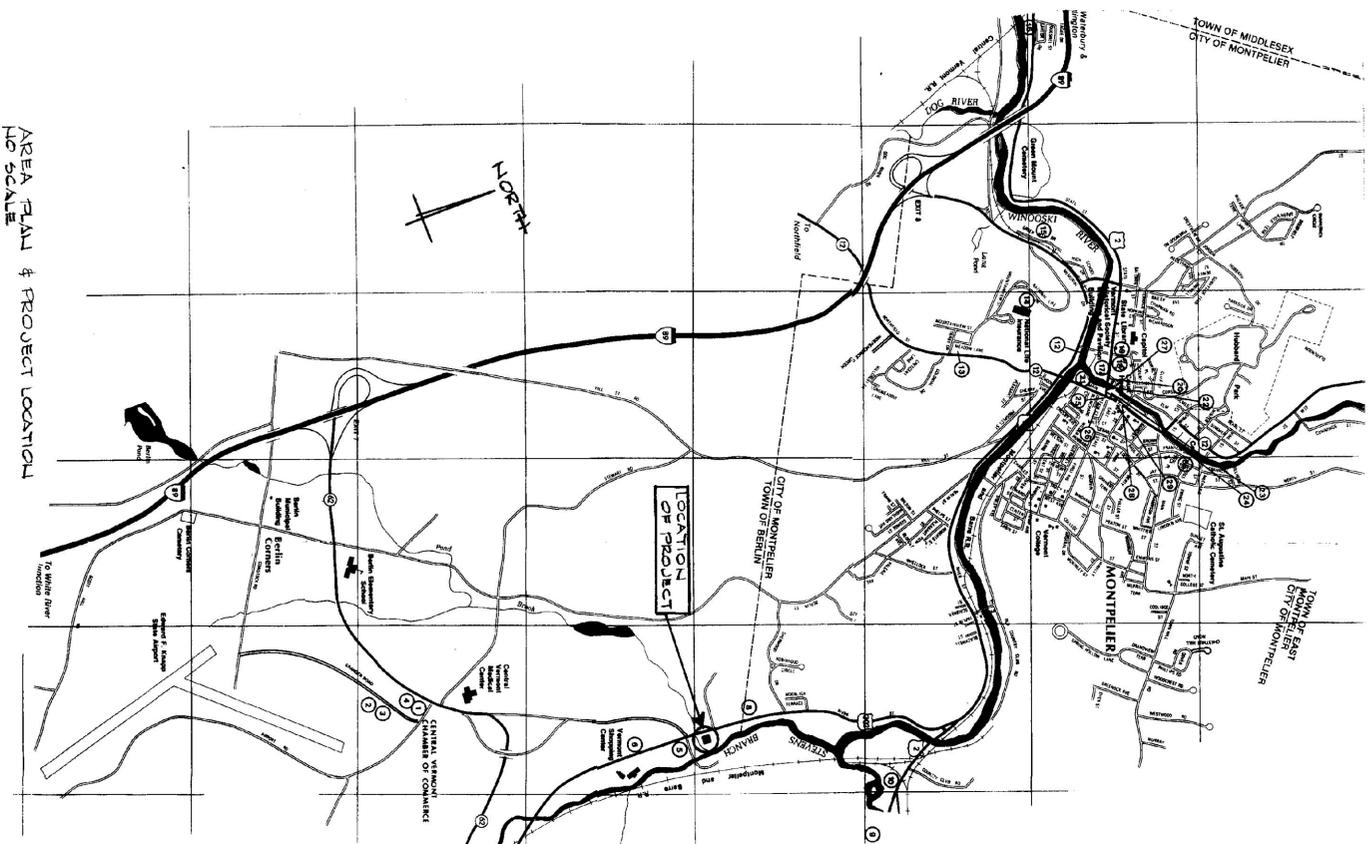
At The

State Highway Laboratory

Berlin, Vermont

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- M6 MECHANICAL SYSTEMS-HEATING-SECOND FLOOR
- M7 MECH SYST. AC-VENTILATION & PLUMBING-FIRST FLOOR
- M8 MECH SYST., AC-VENTILATION & PLUMBING-BSMT & SEC FLOOR



AREA PLAN & PROJECT LOCATION
1/8" = 1' SCALE

State of Vermont
Department of State Buildings

John Zampieri, Commissioner

MATERIALS & RESEARCH
LABORATORY
BERLIN, VT

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Janson Design, Inc.
FRED KEEL, ARCHITECT
P.O. BOX 56 - FRED KEEL ARCHITECT
1969 FRED KEEL
MONTPELIER, VT 05678

TITLE SHEET

DATE:
APRIL 20
1990

DWG. NO.

REV #1 6.14.90
 REVIEWED ELECTRIC CONDUIT
 TO TRAFFIC SHOP
 FROM UTILITY
 APPROX. HENNER & GILV. BACK
 F.V.

REVISIONS: Δ - AS-BUILTS REV. DEC. 1991

State of Vermont
 Department of State Buildings
 John Zampieri, Commissioner

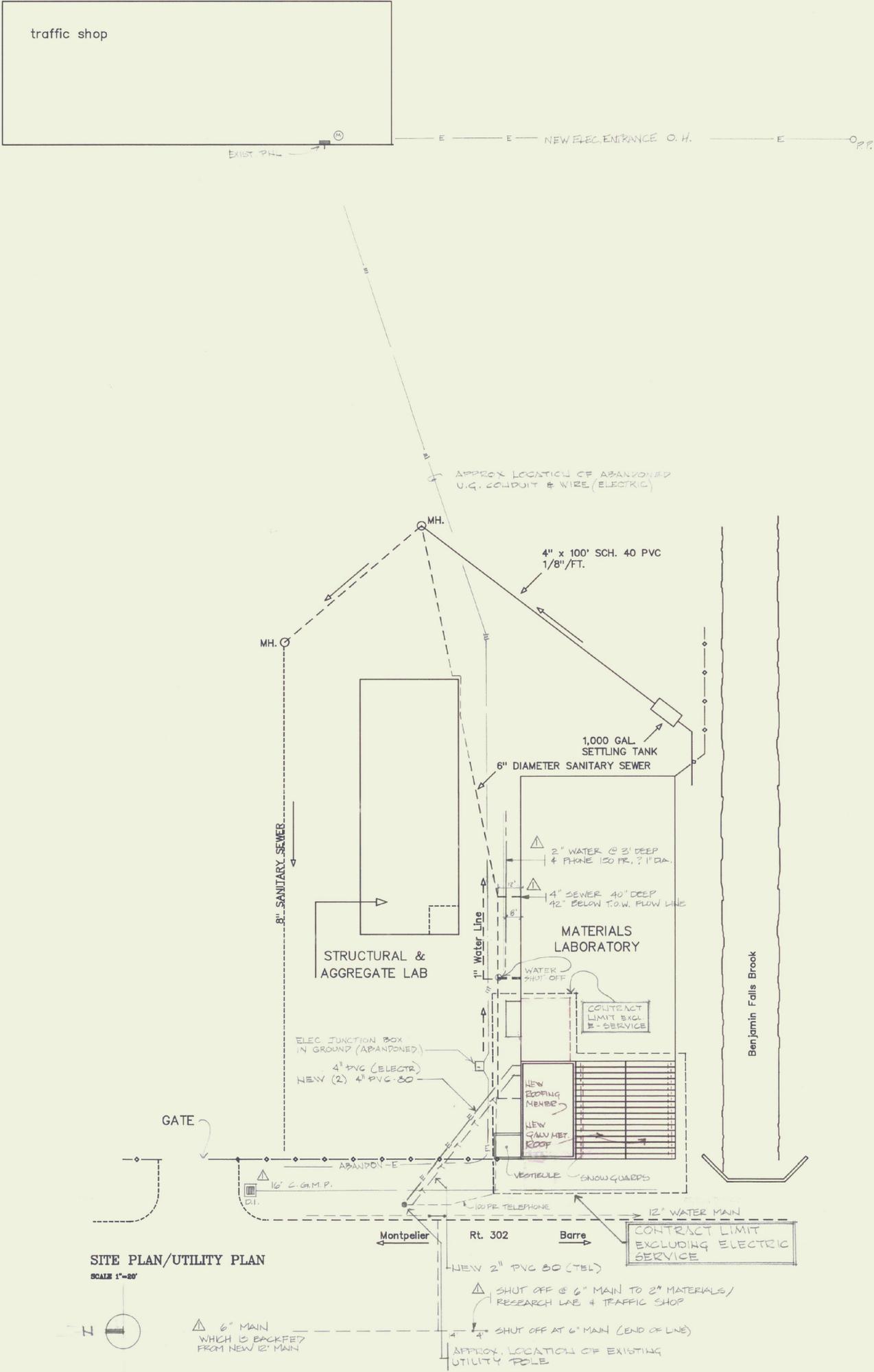
Materials & Research
 Laboratory
 Berlin, Vt.
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Johnson Design, Inc.
 FRED RED, ARCHITECT
 P.O. BOX 55 - Berlin, VT 05602
 (802) 244-9800

SITE PLAN #
 UTILITIES
 AS-BUILTS MERLE MILLER
 12/9/91

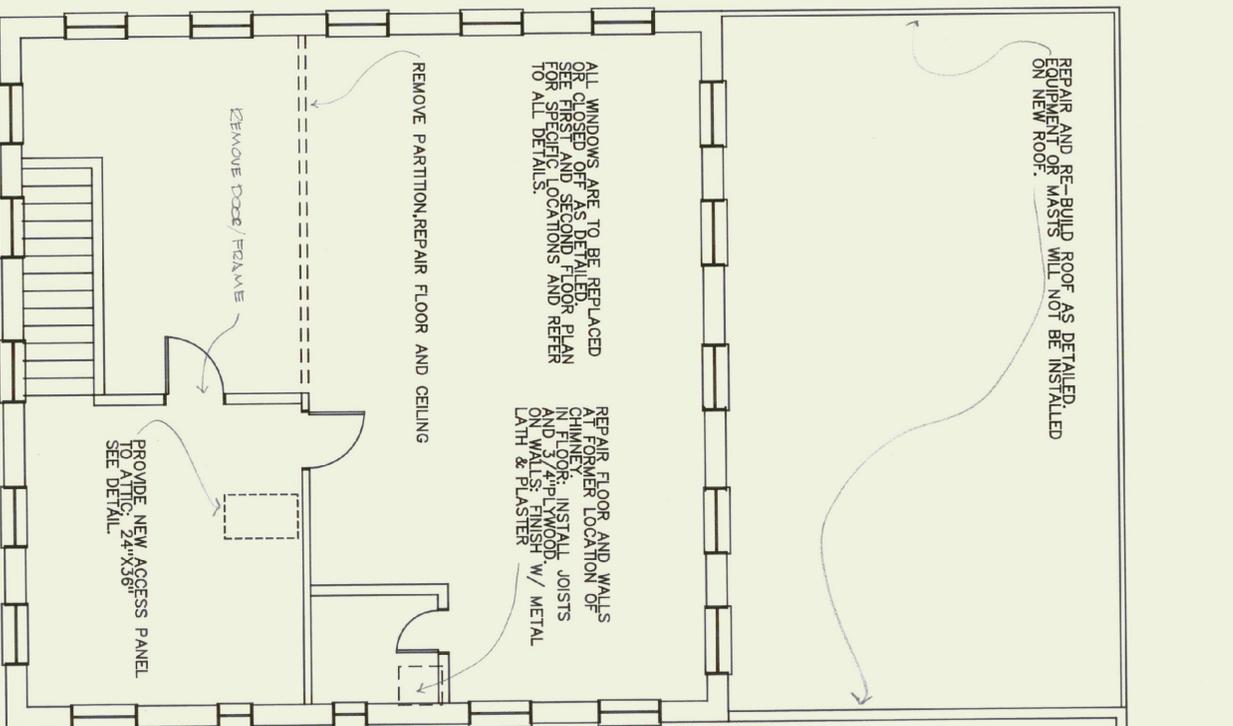
DATE: APRIL 20 1990
 DWG. NO. S1



SITE PLAN/UTILITY PLAN
 SCALE 1"=20'



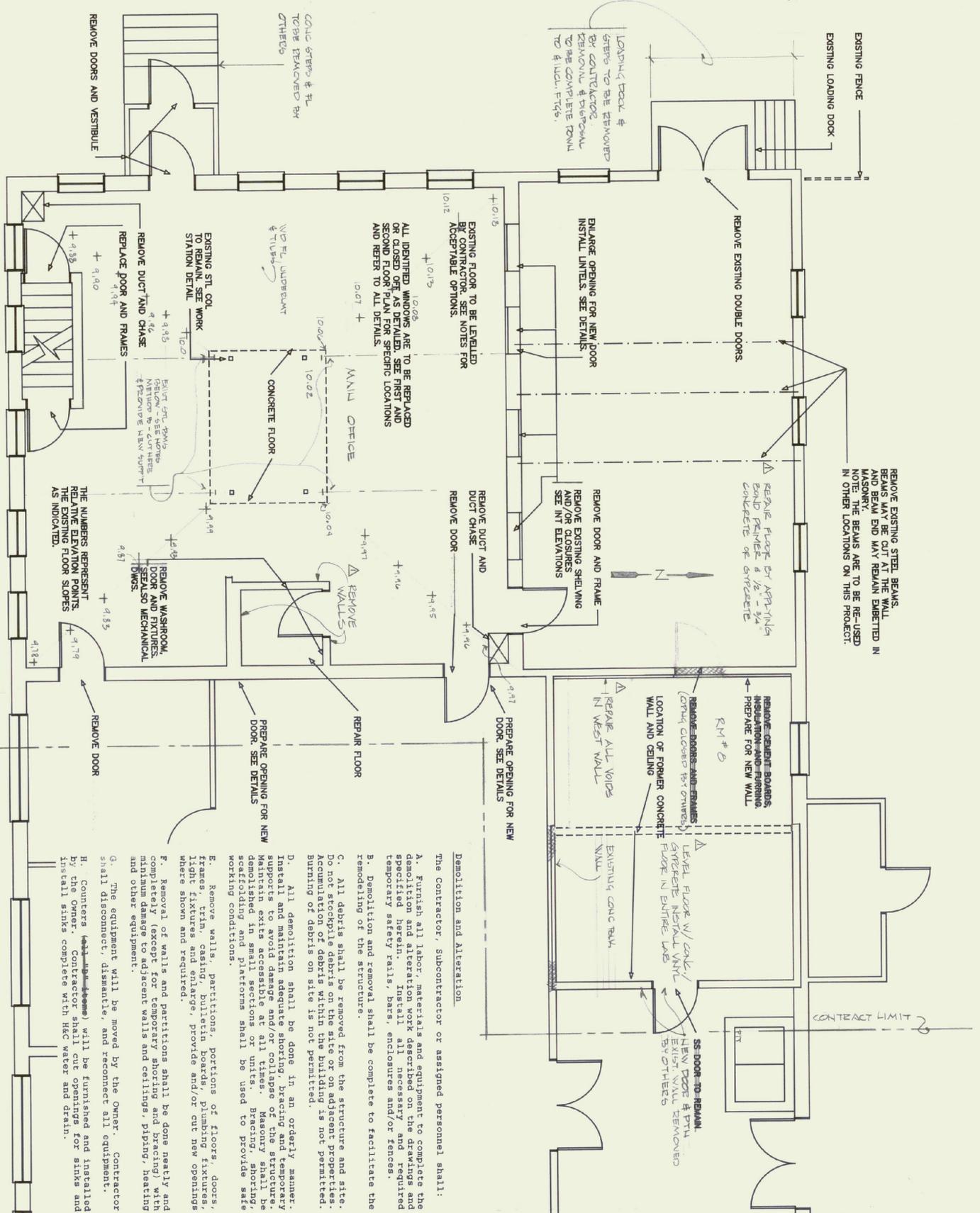
NOTE: 12/5/91
 - TELEPHONE (150 PAIR)
 THE EXISTING TELEPHONE LINE AT THE TIME LEADS FROM THE POLE FOLLOWS THE EDGE OF THE BLOCKTOP AND GOES JUST OUTSIDE THE RESEARCH LAB VESTIBULE FOOTING ABOUT 24" DEEP THEN RUNS PARALLEL TO THE AGGREGATE LAB/MATERIALS BLDG. WALLS DOWN THE DRIVE.
 POWER TELEPHONE SHOP
 (ABANDONED 3/91)
 (3) 4" Ø JACKETED W/ GROUND PARALLELS THE FENCE OUTSIDE THE COMPLEX NEXT TO RT 302 THEN LOOPS OUT AND RUNS BETWEEN THE FRONTIER TIRE SHOP FOUNDATION WALL AND THE NEW RESEARCH LAB VESTIBULE FOOTING. IT IS BURIED ABOUT 30" DEEP RIGHT UNDERNEATH THE TELEPHONE CABLE. THE POWER FEED TIES INTO A "TIE RIM" JUNCTION BOX UNDER AND THE SHOP LOCATION THEN FEEDS DOWN TO THE TRAFFIC SHOP.



EXISTING CONDITIONS
SECOND FLOOR
SCALE 1/4"=1'-0"

REVISIONS: Δ - AS BUILT REV. FEB. 1991

REV. 6.14.90
1. REPAIR ROOF FRAME
2. CHANGES IN CHIM LAB
FL



EXISTING CONDITIONS
FIRST FLOOR
SCALE: 1/4" = 1'-0"

NOTES:
1. THIS PLAN DESCRIBES THE EXISTING CONDITIONS IN A GENERAL WAY & NOT INTENDED TO ADDRESS EVERY DETAIL. CONTRACTOR IS TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS BEFORE SUBMITTING THE BID.
2. IT IS THE OWNER'S INTENT TO OBTAIN A LEVEL FLOOR AT THE SPACE LABELED MAIN OFFICE. METHOD TO ACHIEVE A LEVEL FLOOR ARE ACCEPTABLE.
METHOD A:
3. OVER EXISTE FL AREA & LICOE

INSTALL TAPERED WOOD STEPS CUT FROM 2" LUMBER, SIZED TO FIT.
b) INSTALL SHIMS, SHIMMERS, WEDGES ETC TO ACCOMPLISH SLOPE BREAKING FOR plywood FL.
c) INSTALL GROUT/SHIMS OVER CONC FL AREA (IN CENTER OF RM) TO ACCOMPLISH SLOPE BREAKING FOR plywood FL.
d) INSTALL 3/4" x 4" T&G plywood FL OVER EXISTE AREA w/ SCREWS & CONCRETE ASPHERIVE.
3. EXISTING FL TILES MAY REMAIN.

Demolition and Alteration
The contractor, subcontractor or assigned personnel shall:
A. Furnish all labor, materials and equipment to complete the demolition and alteration work described on the drawings and specified herein. Install all necessary temporary safety rails, bars, enclosures and/or fences.
B. Demolition and removal shall be complete to facilitate the remodeling of the structure.
C. All debris shall be removed from the structure and site. Do not stockpile debris on the site or on adjacent properties. Accumulation of debris within the building is not permitted. Burning of debris on site is not permitted.
D. All demolition shall be done in an orderly manner. Install and maintain adequate shoring, bracing and temporary supports to avoid damage and/or collapse of the structure. Maintain exits accessible at all times. Masonry shall be demolished in small sections or units. Bracing, shoring, scaffolding and platforms shall be used to provide safe working conditions.
E. Remove walls, partitions, portions of floors, doors, frames, trim, casing, bulletin boards, plumbing fixtures, light fixtures and enlarge, provide and/or cut new openings where shown and required.
F. Removal of walls and partitions shall be done neatly and completely (except for temporary shoring and bracing) with minimum damage to adjacent walls and ceilings, piping, heating and other equipment.
G. The equipment will be moved by the Owner. Contractor shall disconnect, dismantle, and reconnect all equipment.
H. Counters (cabinets/drawers) will be furnished and installed by the Owner. Contractor shall cut openings for sinks and install sinks complete with hot water and drain.

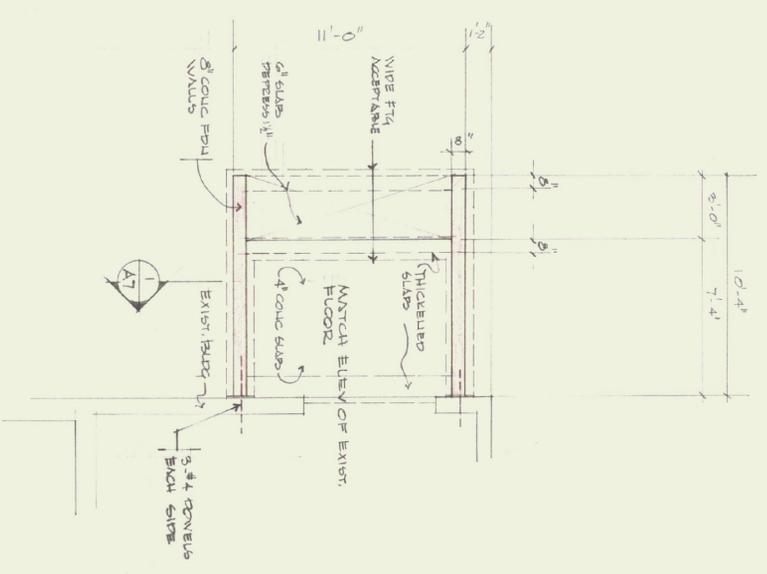
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Berlin, Vt.

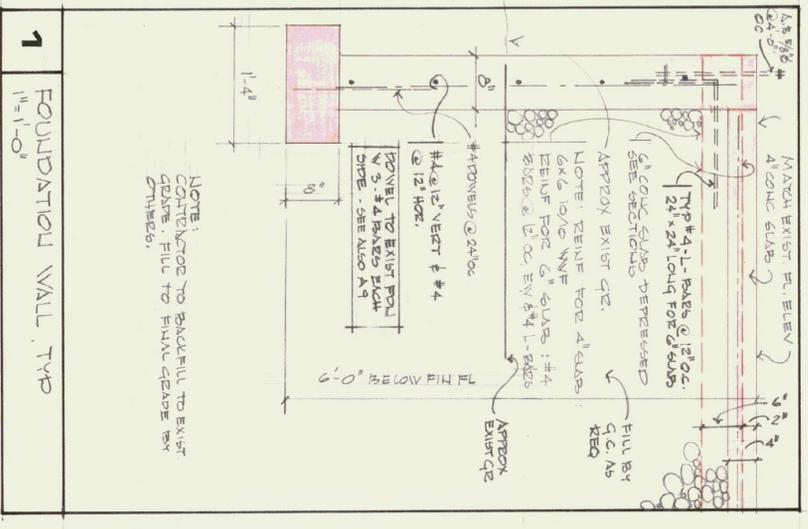
Janson Design, Inc.
P.O. BOX 55 - BOLTON ROAD, WATERBURY, VT 05678
(802) 244-9600

EXISTING CONDITIONS
(RIP OUT HEAD)

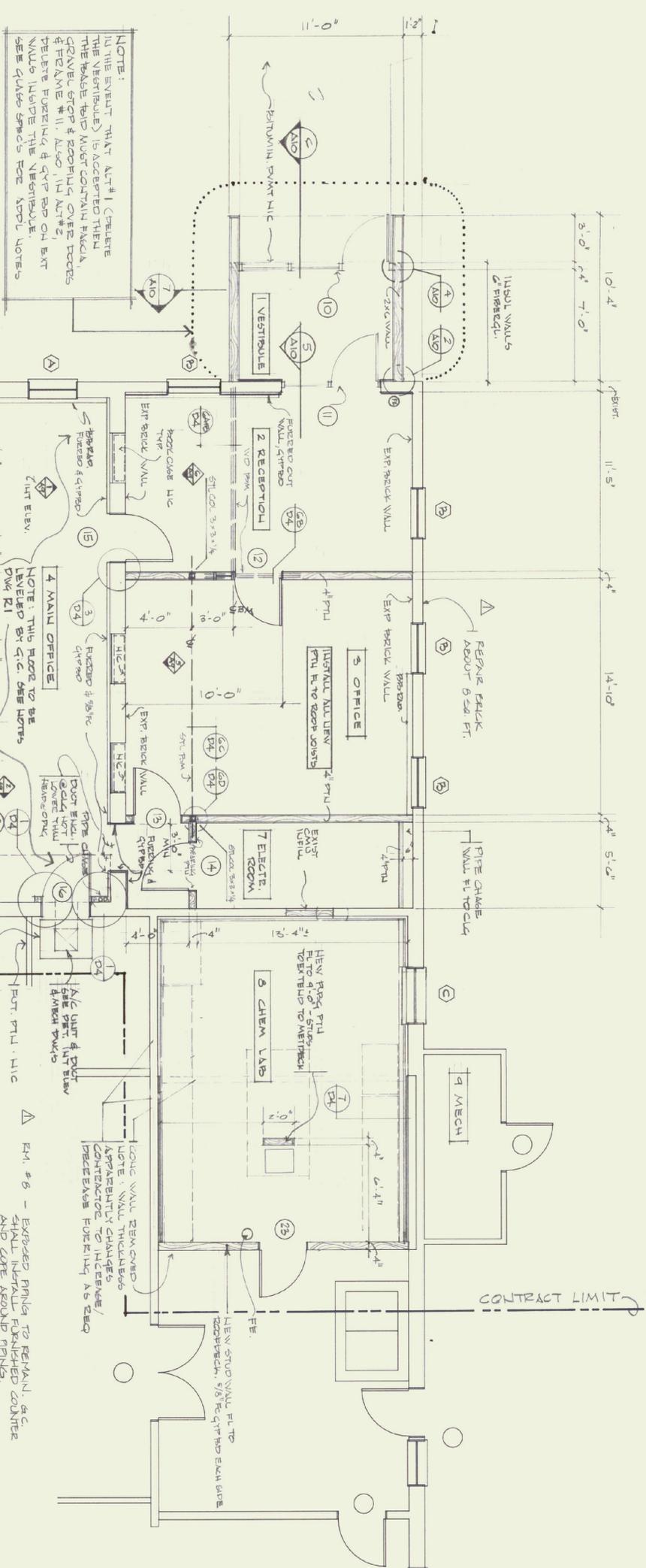
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DWG. NO. R1



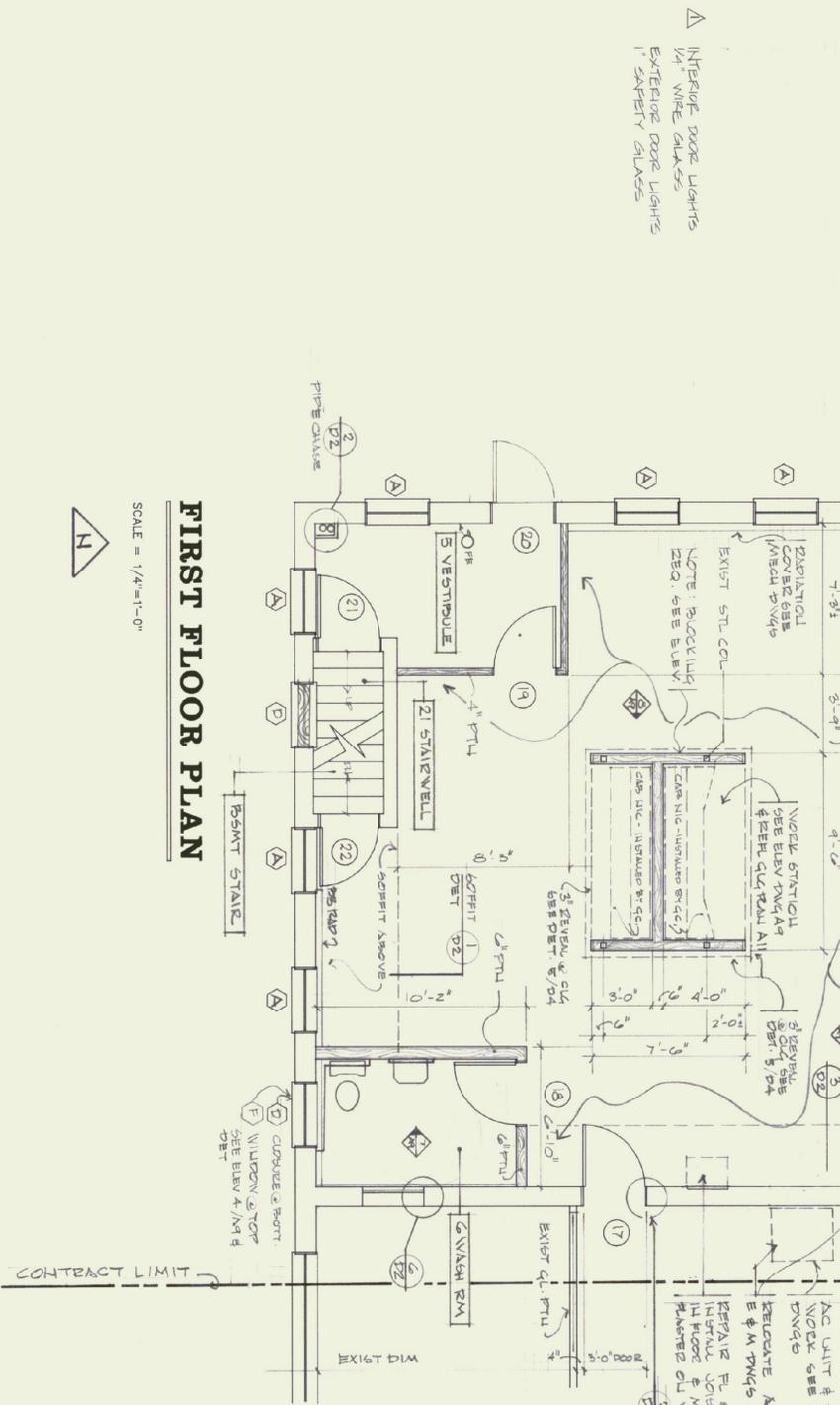
VESTIBULE END BAY
SCALE 1/4"=1'-0"



FOUNDATION WALL, TYP
SCALE 1/4"=1'-0"



FIRST FLOOR PLAN
SCALE = 1/4"=1'-0"



FIRST FLOOR PLAN
SCALE = 1/4"=1'-0"

- NOTES:
1. INSTALL ALL PARTITIONS FL TO EXISTING CEILING OR STRUCTURE WITH TIGHT FIT.
 2. PARTITION AT DOOR #14 IS INTENDED AS A BEARING PTN. HEADERS OVER DOOR #14 SHALL BE 2" X 12" MILL.
 3. NOTE LOCATION OF WORKSTATION IN 4A MAIL OFFICE. COORDINATE THE CEILING W/PT AS DETAILLED.
 4. FURNISH & INSTALL FIRE EXTINGUISHERS WHERE SHOWN (5 TOTAL).
 5. (A) = WINDOW REPAIRMENT SEE DET. TWG 12
 6. (B) = WINDOW CLOSURE
 7. (C) = ROOM ELEV & LOCATION OF ELEV.
 8. (D) = DOOR LIT SEE SCHEDULE
 9. EXIST. REPAIRS TO BE LIMITED TO ALL REMAINING EXIST. SUBFACES IN EX. 4-MAIL OFFICE, VESTIBULE, WINDS IN THE REAR OF DOORS #20, 21 & 22, ALL WINDOW REPAIRS-REPAIRS (NOT THE REAR) & WINDOW CLOSURES-REPAIRS (NOT THE REAR) AT ALL WINDOWS.
 10. INSTALL BLOCKFILL FOR WALL MTP DOOR STOPS IN ALL NEW PTNS.

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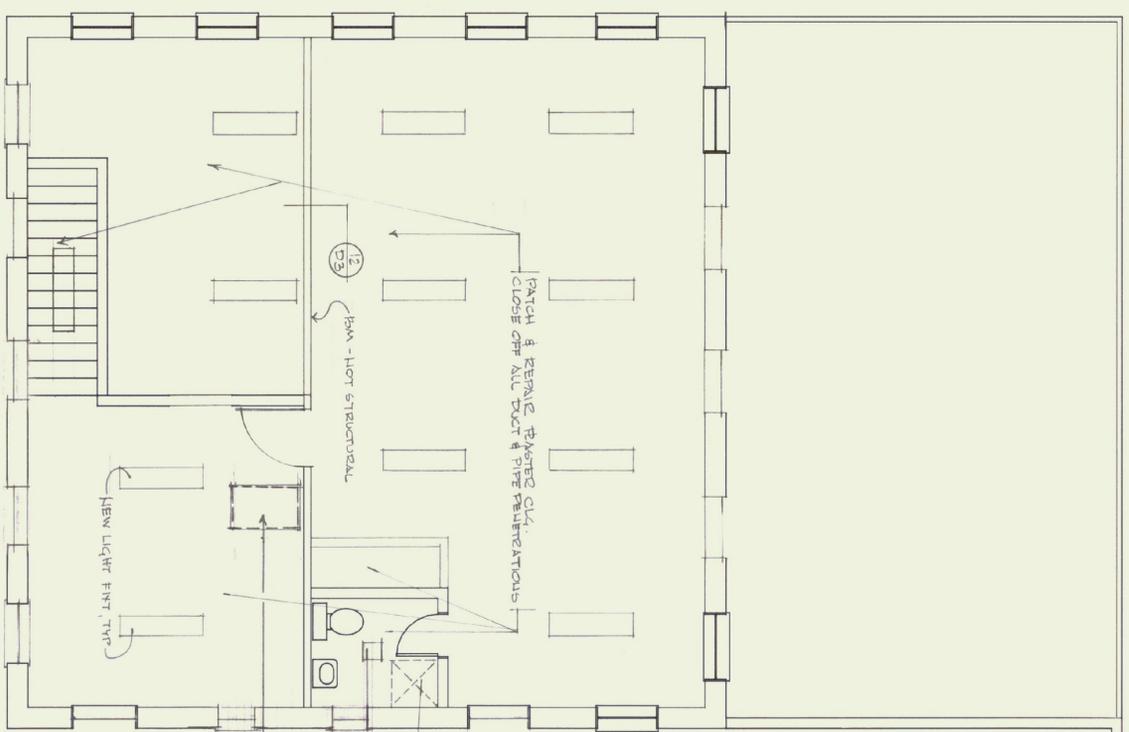


Janson Design, Inc.
7800 RFD, ARCHITECT
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BURLINGTON, VT 05401
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FIRST FLOOR PLAN
DATE: APR 22 1990
DWG. NO. A 7

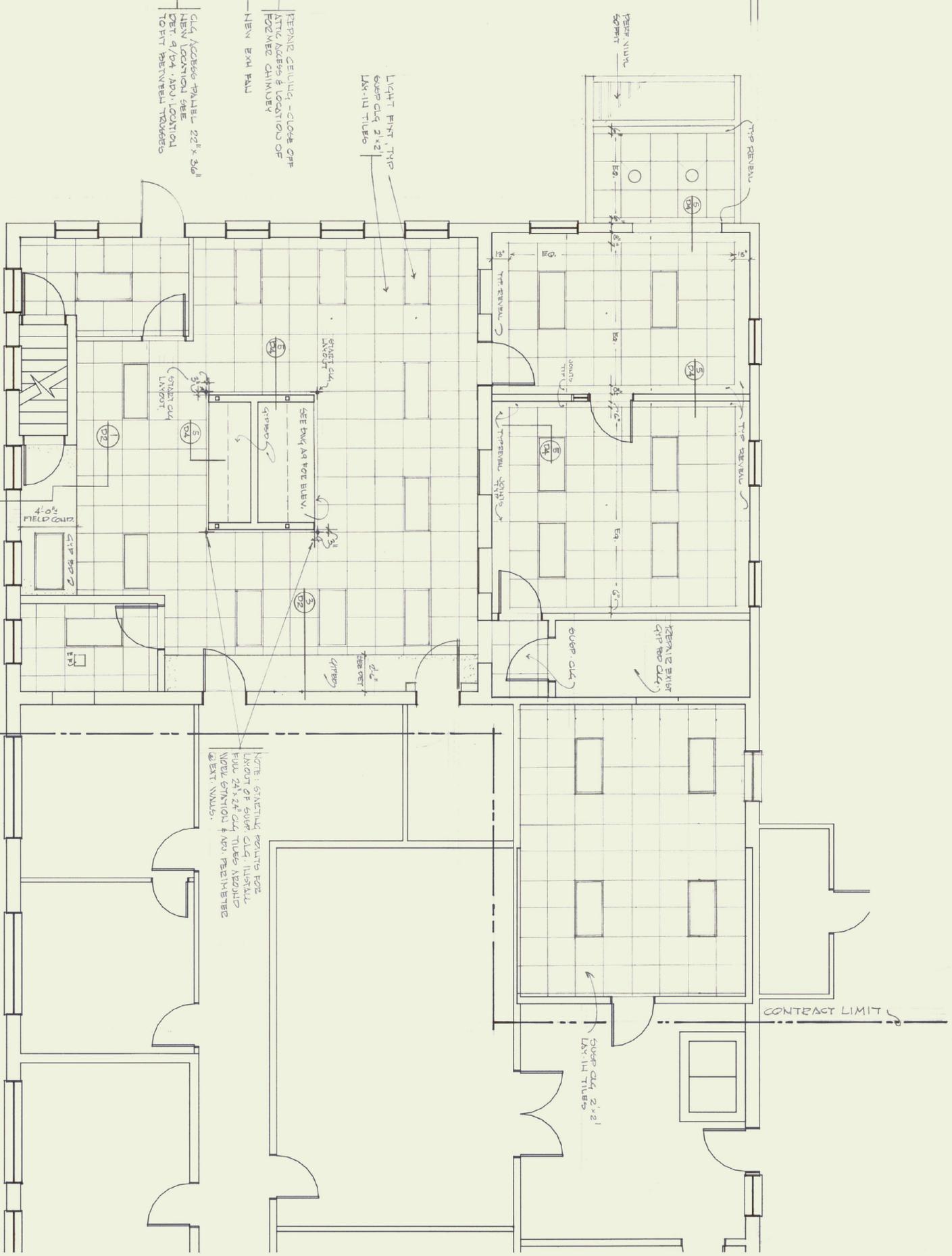
REV. 1: CH. AIR 2 TO AIR 1
2: PREPARED REF TOPPT. GIBBONS
EJH

REVISIONS: AS BUILT REV. DEC. 1991



REFLECTED CEILING PLAN
SECOND FLOOR PLAN

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



REFLECTED CEILING PLAN
FIRST FLOOR PLAN

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

CONTRACT LIMIT

CONTRACT LIMIT

NOTE: SINKING RESULTS FOR LAYOUT OF EXH. CLG. INSTALL FULL 24" x 24" CLG. TILES REQUIRED W/OUT EXTENSION & AIR PENETRATIONS @ EXH. VENTS.

REV. 6/14/90
 REVISION 14 2 W/100% & ELEV 1

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 (802) 244-5800

REFLECTED
 CEILING
 PLAN

DATE: APRIL 20 1990
 DWG. NO. A11

DOOR SCHEDULE:

NO.	TYPE	DOOR			FRAME			REMARKS			
		WIDTH	HGT.	THK.	MAT'L	FIN.	MAT'L		FIN.	HDW.	DTL.
10	F	3'-0"	7'-0"	1 3/4	ALU	ANOD	ALU	ANOD	A	ALU	ALU ENTRANCE DOORS & GLASS FRAME
11	G	3'-0"	6'-8"	1 3/4	ALU	ANOD	ALU	ANOD	A	ALU ENTR. DOORS & GLASS FRAME- VERIFY OPNG	
12	E	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	B	ALU	SIDELIGHT W/ WIRE GLASS
13	A	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	B		
14	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	D		
15	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	C		
16	D	3'-6"	6'-8"	1 3/4	WD	S & V	HM	PTD	D		ACCESS DOOR W/LOUVER & FIRE DAMPER
17	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	C		
18	A	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	E		
19	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	C		
20	C	3'-0"	6'-8"	1 3/4	HM	PTD	HM	PTD	F	ALU	INSUL EXT DOOR, REPLACE DOOR & FRAME- VERIFY
21	B	3'-0"	6'-8"	1 3/4	HM	PTD	HM	PTD	C		REPLACE EXIST DOOR & FRAME; PLASTER REPAIR REQ
22	A	2'-8"	6'-6"	1 3/4	WD	S & V	HM	PTD	B		REPL. EXIST DOOR & FRAME; PLASTER REPAIR REQ
23	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	B		
24	A	2'-2"-6"	6'-8"	1 3/4	WD	S & V	HM	PTD	G		
25	B	3'-0"	6'-8"	1 3/4	WD	S & V	HM	PTD	C		
26	A	2'-8"	6'-8"	1 3/4	WD	S & V	HM	PTD	E		ENLARGE OPNG AS REQU.- PL REPAIR REQU.

WINDOW SCHEDULE

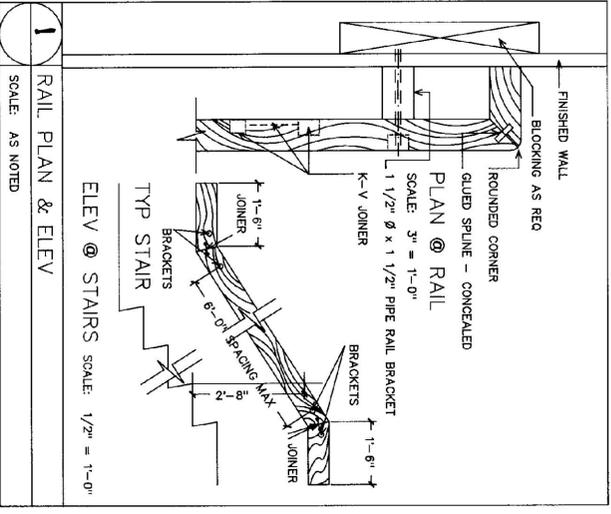
WINDOW TYPE	MODEL NO.	REMARKS
A	AP335 (TOP) AN31 (BOTTOM) VENT SASH	ALL WINDOWS ARE BASED ON ANDERSEN'S DATA. FURNISH AND INSTALL ALL WINDOWS WITH FULL SCREENS AND ALL HARDWARE. PVC COLOR TO BE TERRATONE.
B	SAME AS A EXCEPT DIFFERENT INSTALLATION DETAILS	
C	AP352V VENT SASH	
D	INSUL PANEL (WINDOW CLOSURE) NO GLASS. SEE DETAILS	
E	EGRESS WINDOW CW15 OR APPROVED EQUAL	
F	A31 (TOP) INSUL PANEL BELOW	

FINISH SCHEDULE:

ROOM NO.	ROOM NAME	FLOOR		BASE		WALLS		CEILING	TRIM	REMARKS
		MAT'L	FIN.	MAT'L	FIN.	MAT'L	FIN.			
1	VESTIBULE	CONC	CARP	VINYL		GYPBD	POT	9'-6"	SUSP	NO BASE ON BRICK WALL
2	RECEPTION ROOM	CONC	CARP	VINYL		GYPBD	PTD	8'-6"	SUSP	
3	OFFICE	CONC	CARP	VINYL		GYPBD	PTD	8'-6"	SUSP	NO BASE ON BRICK WALL
4	MAIN OFFICE	LEVEL EXIST FLOOR	WOOD	CARP	VINYL	GYPBD	PTD	8'-6"	SUSP	REPAIR & LEVEL FLOOR. REPAIR PLASTER WALLS SEE NOTE 3 AND NOTES ON DWG R1.A, V, AB & A11
5	VESTIBULE	LEVEL EXIST FLOOR	WOOD	CARP	VINYL	GYPBD	PTD	8'-6"	SUSP	REPAIR & LEVEL FLOOR. REPAIR PLASTER WALLS SEE NOTE 3 AND NOTES ON DWG R1.A, V, AB & A11
6	WASHROOM		WOOD	VINYL	VINYL	PL	PTD	7'-6"	SUSP	
7	ELECTRICAL ROOM		CONC		VINYL	EXIST	PTD	NOTE 2		
8	CHEM LAB		CONC		VINYL	GYPBD	PTD	8'-6"	SUSP	
20	PHONE CLOSET	WOOD	NIC	VINYL		GYPBD	PTD	NOTE 3		REPLACE EXISTING TREADS
21	STARWELL	EXIST	REPER TREADS			PL	PTD	NOTE 3		
22	HALL	WOOD	NIC				PTD	EXIST		
23	MICROFILM	WOOD	NIC				PTD	EXIST		
24	WASHROOM	WOOD	VINYL	VINYL			PTD	EXIST		

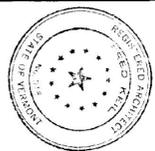
NOTES:

1. FINISH EXISTING BRICK WALLS WHICH WILL REMAIN EXPOSED AS FOLLOWS:
 - * REPAIR BRICK WORK, REPLACE MISSING BRICKS IN OPENINGS AND PENETRATIONS.
 - * WASH-DOWN BRICK WORK WITH DETERGENT NO. 600 SURECLEAN.
 - * APPLY WITH BRUSH TWO COATS P&L HOUSE (ACRYLIC) PAINT, EGGSHELL FINISH. COLOR TO BE SELECTED.
2. REPAIR CEILINGS, PATCH HOLES, FIRETAPE, FINISH TAPE AND PAINT.
3. PLASTER REPAIR SHALL BE REQUIRED OF ALL EXPOSED SURFACES, INCLUDING BUT NOT LIMITED TO, WINDOW SPLAYS, DOOR OPENINGS, DOOR FRAMES REFER TO NOTES ON DWG R 1 AND ALL DETAILS.
4. REPLACE ALL STAIR TREADS. INSTALL MUSSON NO. 787 DIC-O-TREAD STAIR TREADS; COLOR TO BE SELECTED FROM STANDARD SOLID COLORS.
5. VINYL TILES, 12" X 12" SHALL BE INSTALLED IN #7 ELECTRICAL ROOM AND #8 CHEM LAB- ARNSTRONG STANDARD EXELON IMPERIAL TEXTURE, 1/8" GAUGE, TYPE IV, COMPOSITION 1. COLOR TO BE SELECTED FROM STANDARD COLORS.
6. ABBREVIATIONS USED IN SCHEDULES:
 - ALU ALUMINIUM
 - ANOD ANODIZED
 - WD WOOD
 - HN HOLLOW METAL
 - PTD PAINTED
 - S & V STAINED AND VARNISHED
 - PL PLASTER
 - NIC NOT IN CONTRACT
 - AP ACCESS PANEL/DOOR



State of Vermont
Department of State Buildings
John Zampieri, Commissioner

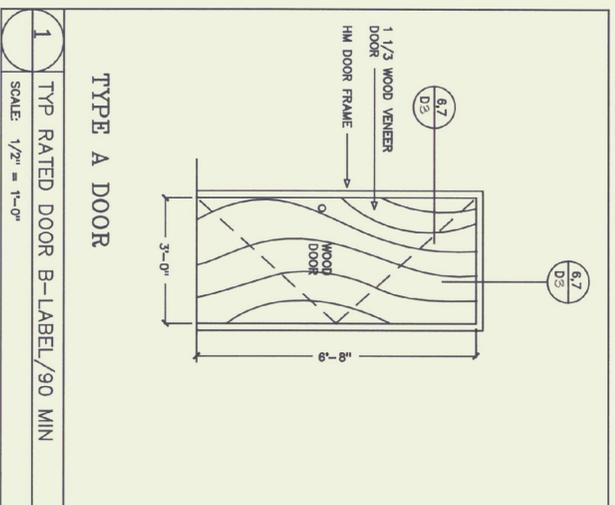
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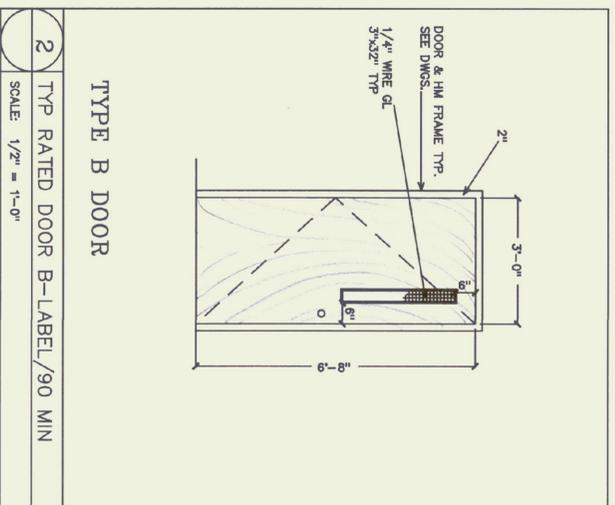
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SCHEDULES

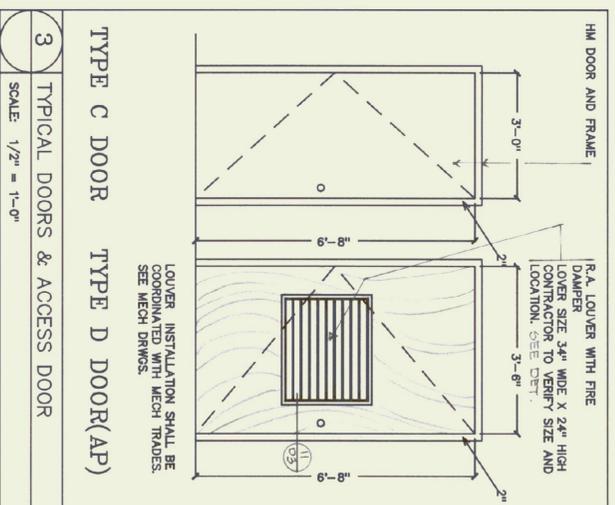
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DWG. NO. A12



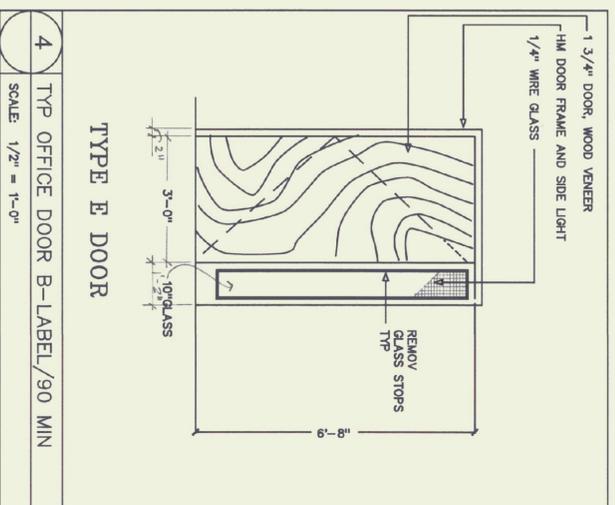
1 TYP RATED DOOR B-LABEL/90 MIN
SCALE: 1/2" = 1'-0"



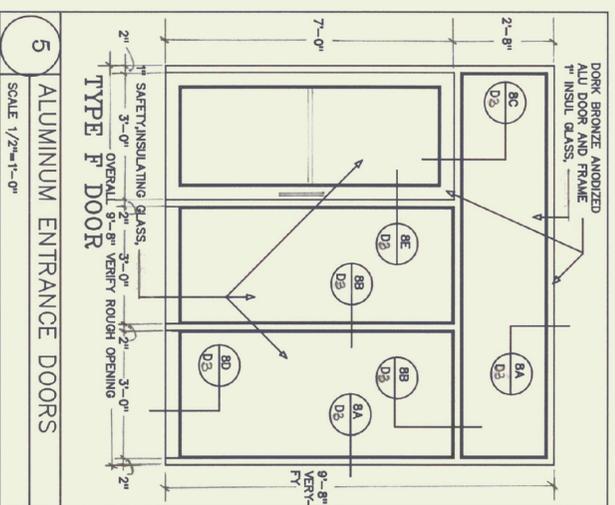
2 TYP RATED DOOR B-LABEL/90 MIN
SCALE: 1/2" = 1'-0"



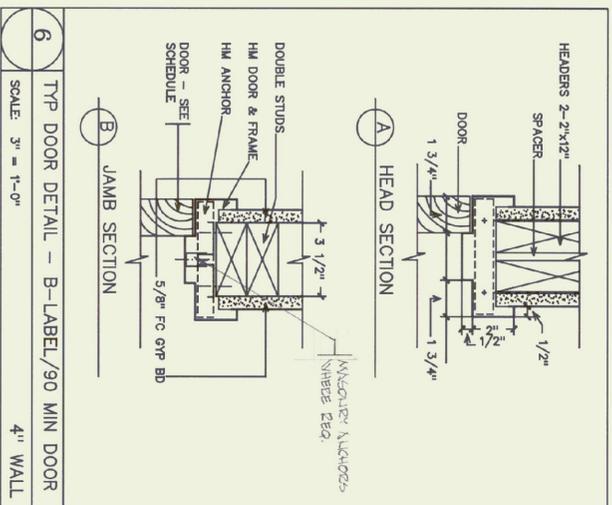
3 TYPICAL DOORS & ACCESS DOOR
SCALE: 1/2" = 1'-0"



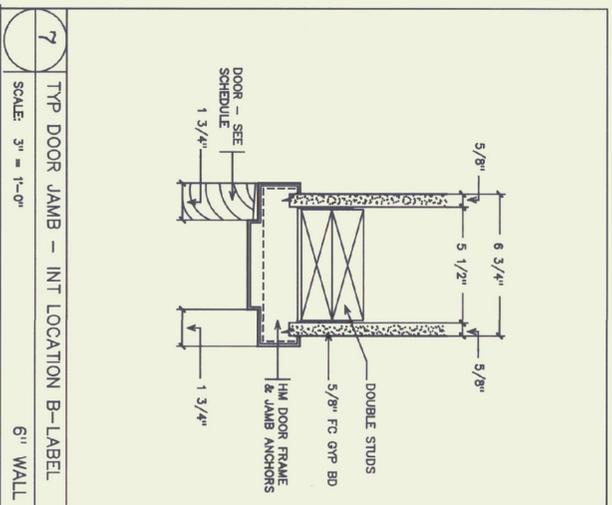
4 TYP OFFICE DOOR B-LABEL/90 MIN
SCALE: 1/2" = 1'-0"



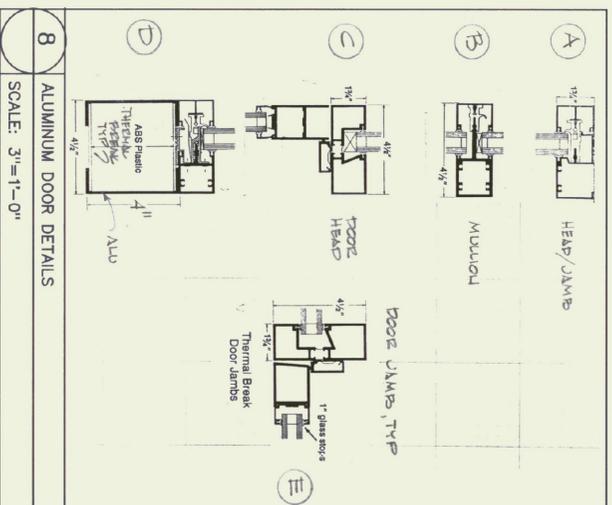
5 ALUMINUM ENTRANCE DOORS
SCALE: 1/2" = 1'-0"



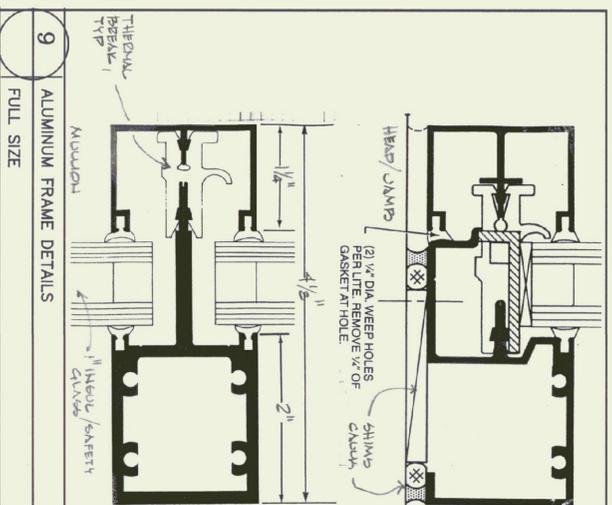
6 TYP DOOR DETAIL - B-LABEL/90 MIN DOOR
SCALE: 3" = 1'-0" 4" WALL



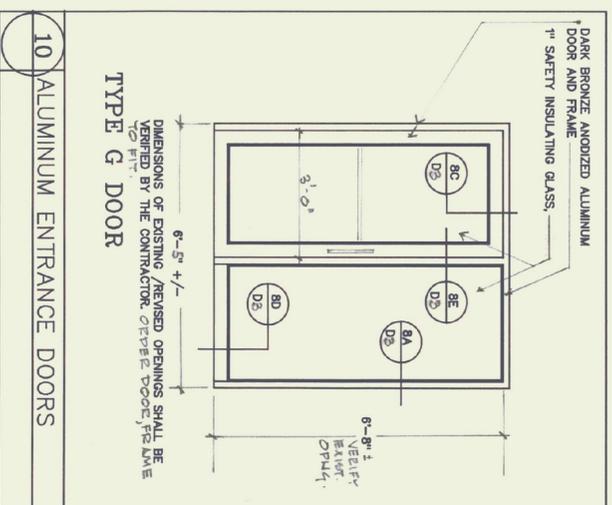
7 TYP DOOR JAMB - INT LOCATION B-LABEL
SCALE: 3" = 1'-0" 6" WALL



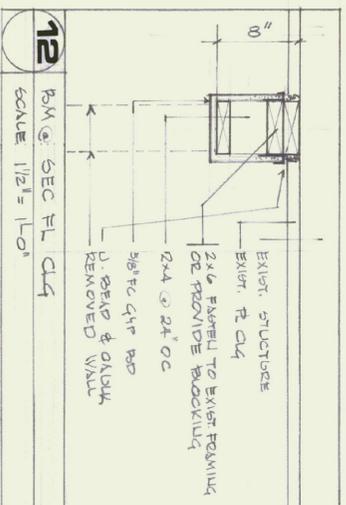
8 ALUMINUM DOOR DETAILS
SCALE: 3" = 1'-0"



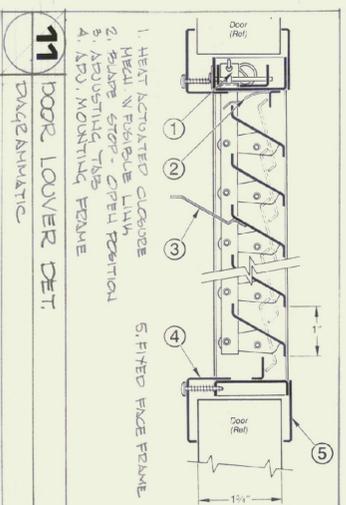
9 ALUMINUM FRAME DETAILS
FULL SIZE



10 ALUMINUM ENTRANCE DOORS
SCALE: 1/2" = 1'-0"



12 RM SEC FL CLG
SCALE: 1/2" = 1'-0"



11 DOOR LOUVER DET.
DARK ANODIZED

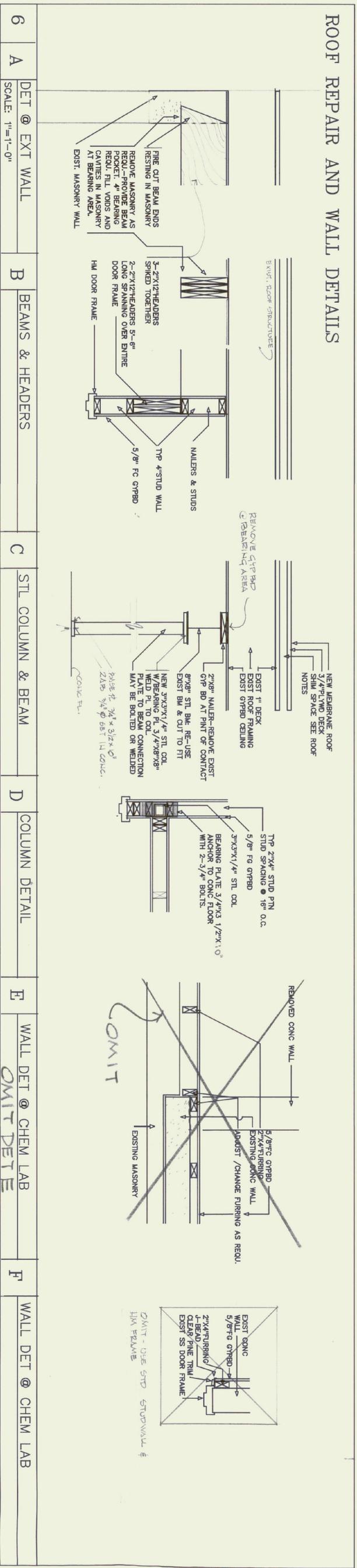
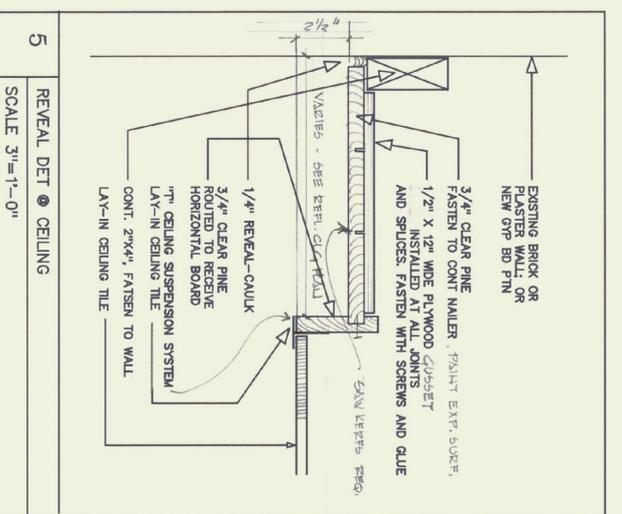
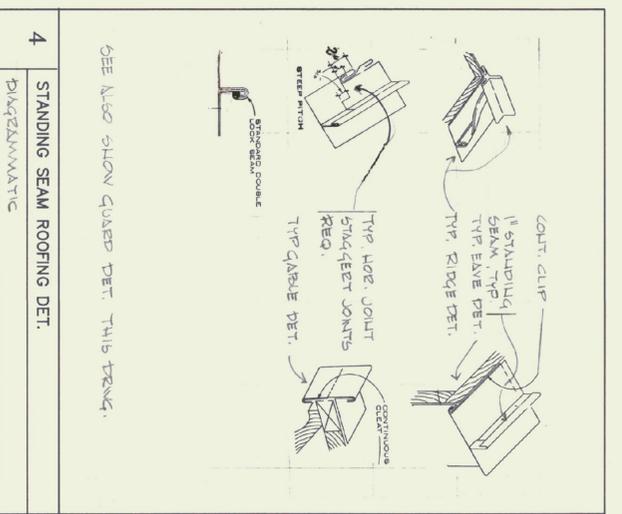
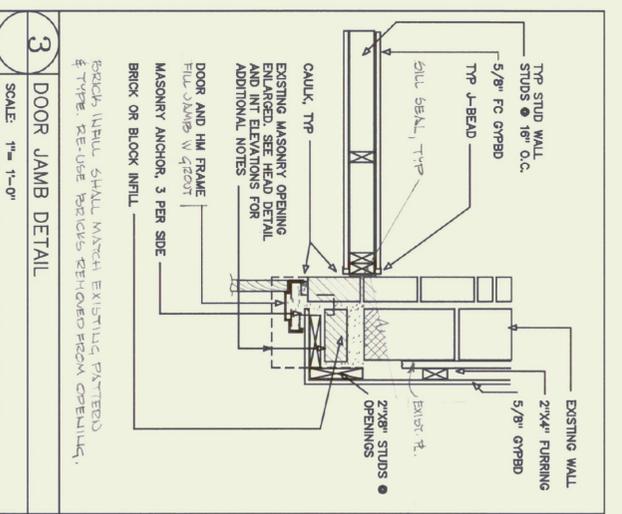
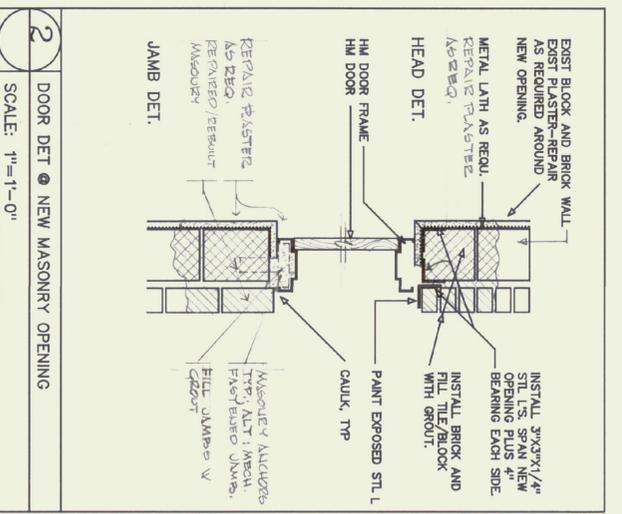
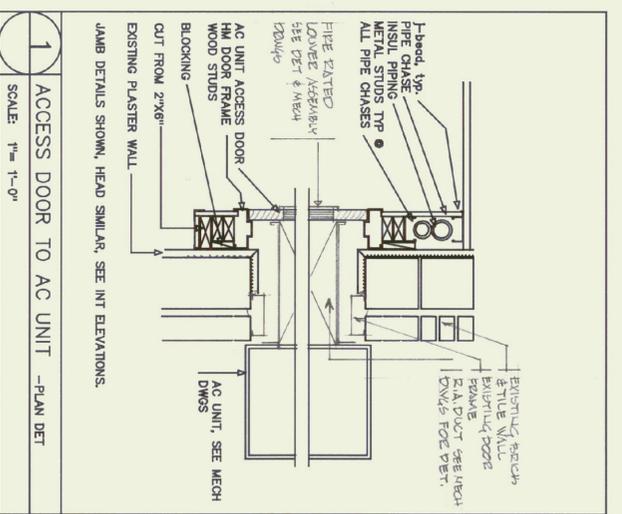
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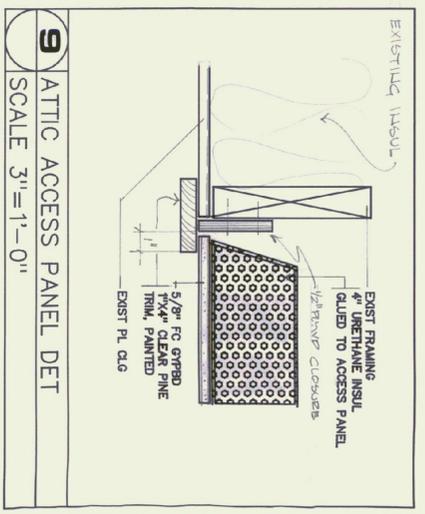
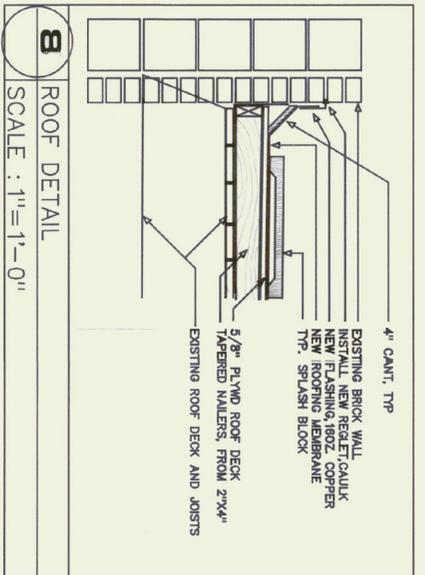
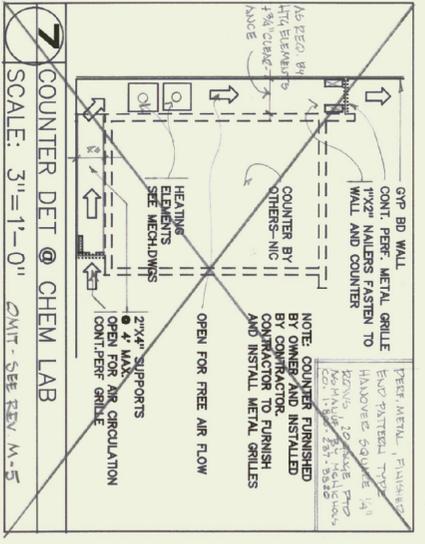
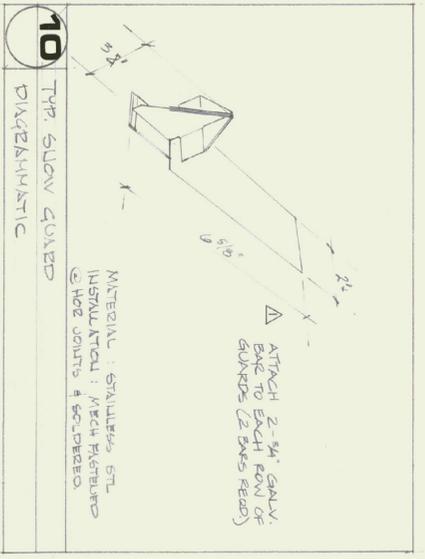


Jonson Design, Inc.
FRED KELL, ARCHITECT
P.O. BOX 55 - BOLTON ROAD, WATERBURY, VT 05676
(802) 244-0800

DATE: APRIL 20 1978
DWG. NO. D3



- STEEL NOTES
1. TUBE COL SHALL BE ASTM A500 GRADE B, Fy = 46 KSI
 2. ALL BOLTS SHALL BE 3/4" Ø A325F HIGH STRENGTH BOLTS.
 3. SHOP WELDS USE E-70 ELECTRODE
 4. WELDING SHALL BE DONE BY CERTIFIED WELDER
 5. PAINT ALL STL W RUST INHIBITIVE PRIMER.



REV: CMIT DET 04
REV: CMIT DET 04
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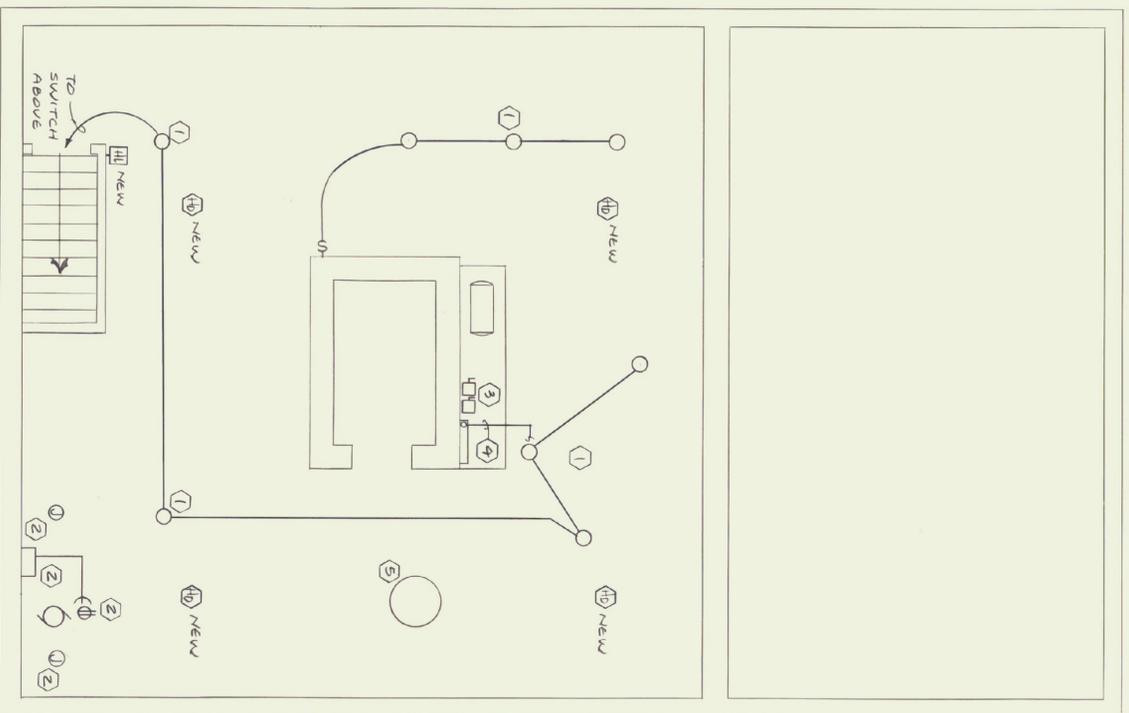
REVISIONS: Δ - AS BUILT REV. DEC. 1991

State of Vermont
Department of State Buildings
John Zampieri, Commissioner

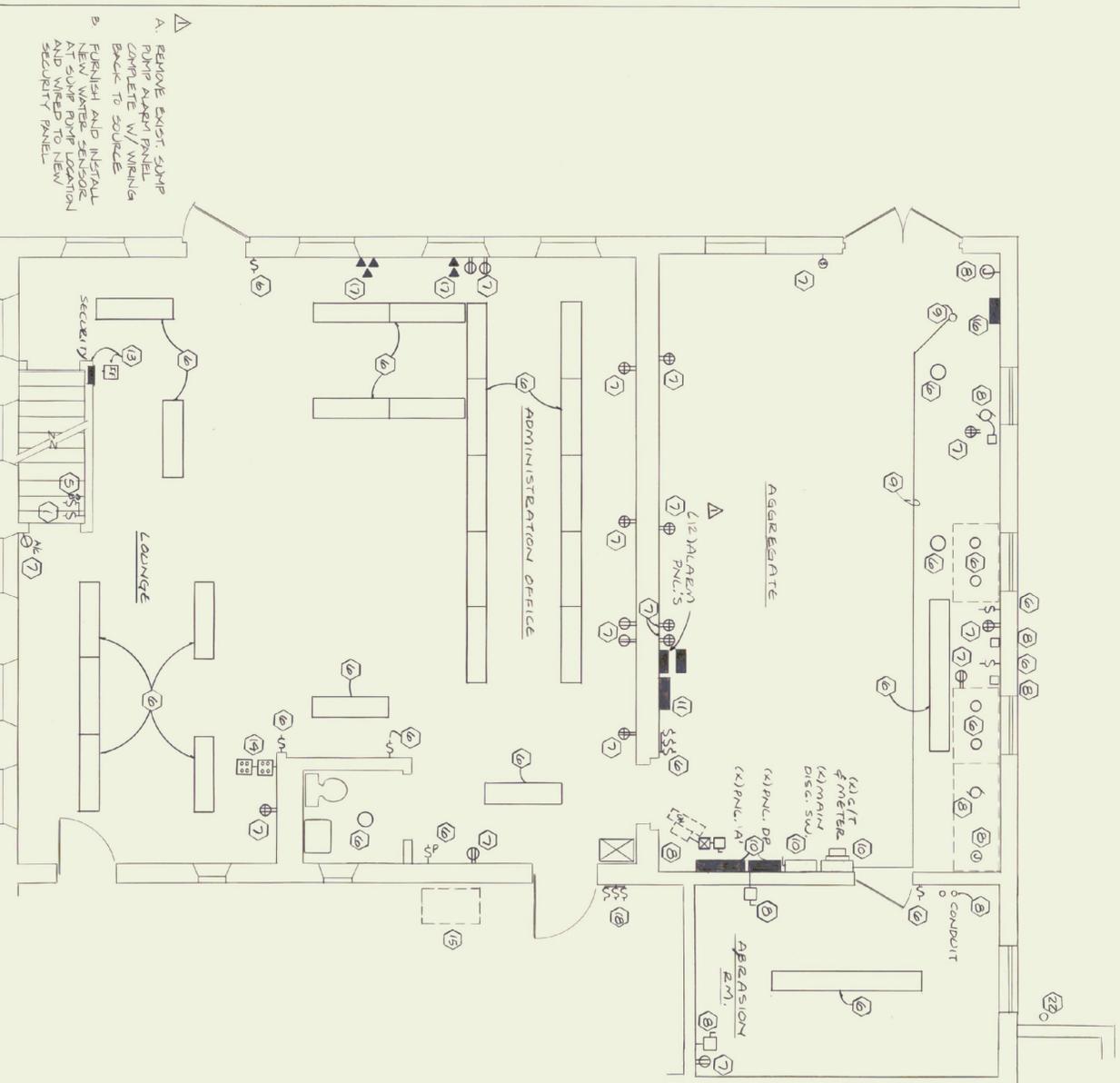
Materials & Research
Laboratory
Berlin, Vt.
PHASE II

REGISTERED ARCHITECT
STATE OF VERMONT
JANSON DESIGN, INC.

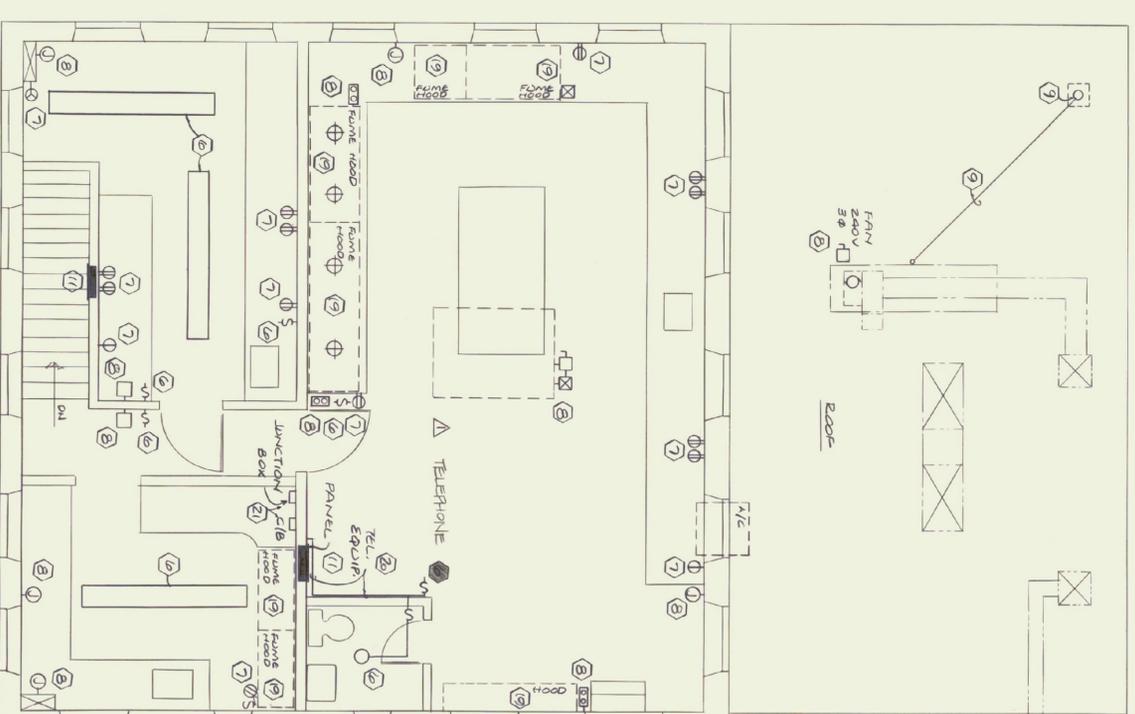
DATE: APRIL 20 1990
DWG. NO. D4



BASEMENT FLOOR PLAN - DEMOLITION
1/4" = 1'-0"



FIRST FLOOR PLAN - DEMOLITION
1/4" = 1'-0"



SECOND FLOOR PLAN - DEMOLITION
1/4" = 1'-0"

- NOTES: DEMOLITION
- EXISTING LIGHT FIXTURES TO BE REMOVED COMPLETE WITH CONDUIT, AND WIRE TO NEW PANEL, INCLUDING TO CONTROL SWITCH.
 - REMOVE EXISTING SUMP PUMP, CONTROL AND FLOAT'S COMPLETE WITH RECEPTACLE TO NEW PANEL. FURNISH AND INSTALL NEW DUPLEX AND WIRE BACK TO SOURCE.
 - REMOVE EXISTING DISCONNECT SWITCHES COMPLETE WITH CONDUIT AND WIRE BACK TO SOURCE.
 - REMOVE EXISTING BOTTLE WIRING AND EMERGENCY OIL BURNER SWITCH COMPLETE BACK TO SOURCE.
 - REMOVE EXISTING LIGHTING FIXTURES AND SWITCHING COMPLETE WITH CONDUIT AND WIRING BACK TO SOURCE.
 - REMOVE DUPLEX AND SINGLE RECEPTACLES COMPLETE WITH BOXES, CONDUIT AND WIRING BACK TO SOURCE.
 - REMOVE EXISTING POWER WIRING TO MECHANICAL EQUIPMENT COMPLETE WITH CONDUIT AND WIRING BACK TO SOURCE.

- REMOVE EXISTING ELECTRICAL SERVICE COMPLETE WITH CONDUIT AND WIRE AFTER NEW SERVICE IS INSTALLED AND UNDER OPERATIONAL.
- REMOVE EXISTING WIRING FROM ROOM AND OFF WIRE CONDUITS.
- REMOVE EXISTING WIRING, WIRING EQUIPMENT, MAIN RECONNECT, AND WIRE BACK TO SOURCE. EXISTING EQUIPMENT TO REMAIN OPERATIONAL UNTIL NEW SERVICE AND DISTRIBUTION EQUIPMENT IS INSTALLED.
- REMOVE EXISTING PANEL, COMPLETE WITH CONDUIT AND WIRING BACK TO SOURCE INCLUDING SHARED CIRCUIT WIRING.
- REMOVE EXISTING SECURITY PANELS COMPLETE. FURNISH AND INSTALL NEW REMANUAL STRIP PANEL FOR EXISTING ALARM SERVICE WIRING TO EXISTING TELEPHONE LINE TO BE RE-ROUTED TO NEW EQUIPMENT.
- REMOVE EXISTING SECURITY KEY PAD AND ALARM SENSOR COMPLETE WITH WIRING BACK TO SOURCE.
- REMOVE EXISTING PUMP WIRE PANELS COMPLETE WITH CONDUIT AND WIRING BACK TO SOURCE INCLUDING ALL SHARED CIRCUIT WIRING.
- DISCONNECT EXISTING POWER WIRING TO EXISTING AIR CONDITIONING EQUIPMENT AND REMOVED COMPLETE WITH ALL NECESSARY CONDUIT, WIRING AND COMPONENTS AT NEW LOCATION.
- REMOVE EXISTING TELEPHONE CABINET AND WIRING.
- REMOVE EXISTING TELEPHONE OUTLETS AND WIRING.
- REMOVE EXISTING LIGHT SWITCHES COMPLETE AND INSTALL NEW SWITCHES, BOXES, RECEPTACLES AND WIRING AT NEW LOCATION AND REWIRE AS REQUIRED TO EXISTING LIGHT FIXTURES.
- REMOVE EXISTING POWER WIRING TO ALL HOODS COMPLETE WITH CONDUIT AND WIRING BACK TO SOURCE.
- PROVIDE NEW POWER AS TELEPHONE EQUIPMENT TO REMAIN AS IS.
- REMOVE EXISTING JUNCTION BOX, CIRCUIT BREAKER, CONDUIT AND WIRING BACK TO SOURCE.
- EXISTING BRICK 4" PVC TO REMAIN AND SHALL BE EXTENDED INTO SERVICE.
- EXISTING 4" PVC TO REMAIN AND SHALL BE EXTENDED INTO SERVICE.
- EXISTING A/C LINE OR ROOF TO REMAIN EXCEPT TO BE RE-ROUTED TO NEW CIRCUIT DUE TO PANEL CHANGES.

REVISIONS: Δ - AS BUILT REV. DEC. 1991



Wolbach Engineering, Inc.
Consulting Engineers
20 Lombard Ave. Ste. 103, S. Burlington, VT 05403
(802) 658-4044

State of Vermont
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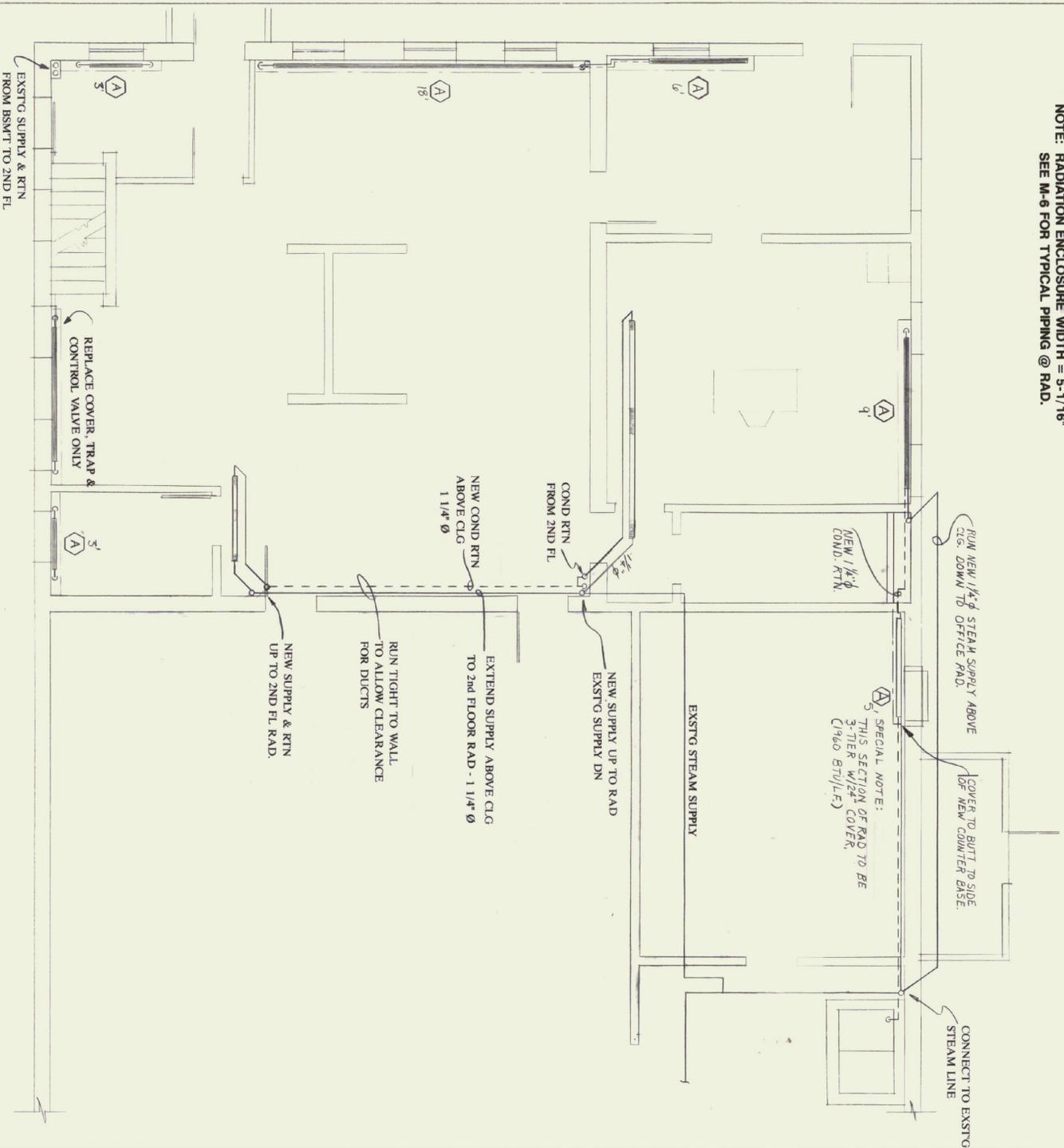
Materials & Research
Laboratory
PHASE II
Berlin, VT

Jonson Design, Inc.
FRED KELL, ARCHITECT
P.O. BOX 55 - BOLTON ROAD, WATERBURY, VT 05678
(802) 244-5800

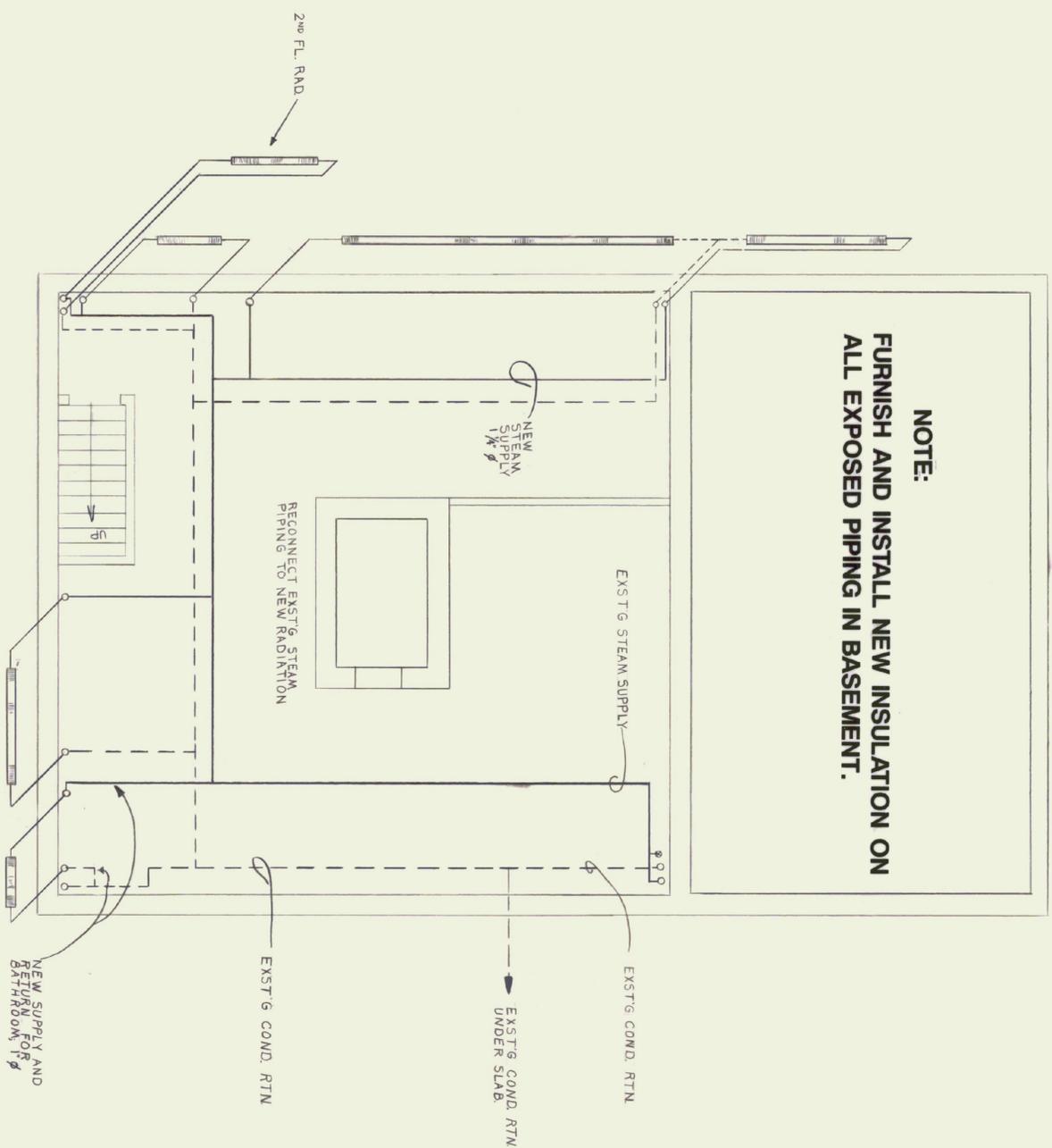
DEMOLITION
ELECTRICAL

DATE: 4-26-90
DWG. NO. E-3

NOTE: RADIATION ENCLOSURE WIDTH = 5'-1 1/16"
SEE M-6 FOR TYPICAL PIPING @ RAD.



First Floor Plan
Scale: 1/4" = 1'-0"



Basement Floor Plan
Scale: 1/4" = 1'-0"



MECHANICAL CONSULTANT:

GWR Engineering, P.C.
PO Box 157 - The Cannery Building
Shelburne, VT 05482
Tel (802) 985-8061 FAX (802) 985-8499

ARCHITECT:

Janson Design, Inc.
RED KILL ARCHITECT
P.O. BOX 55 - 80203
5003 244-5800
05476

State of Vermont
Department of State Buildings
John Zampieri, Commissioner

MATERIALS & RESEARCH LABORATORY

Berlin, VT
Phase 2

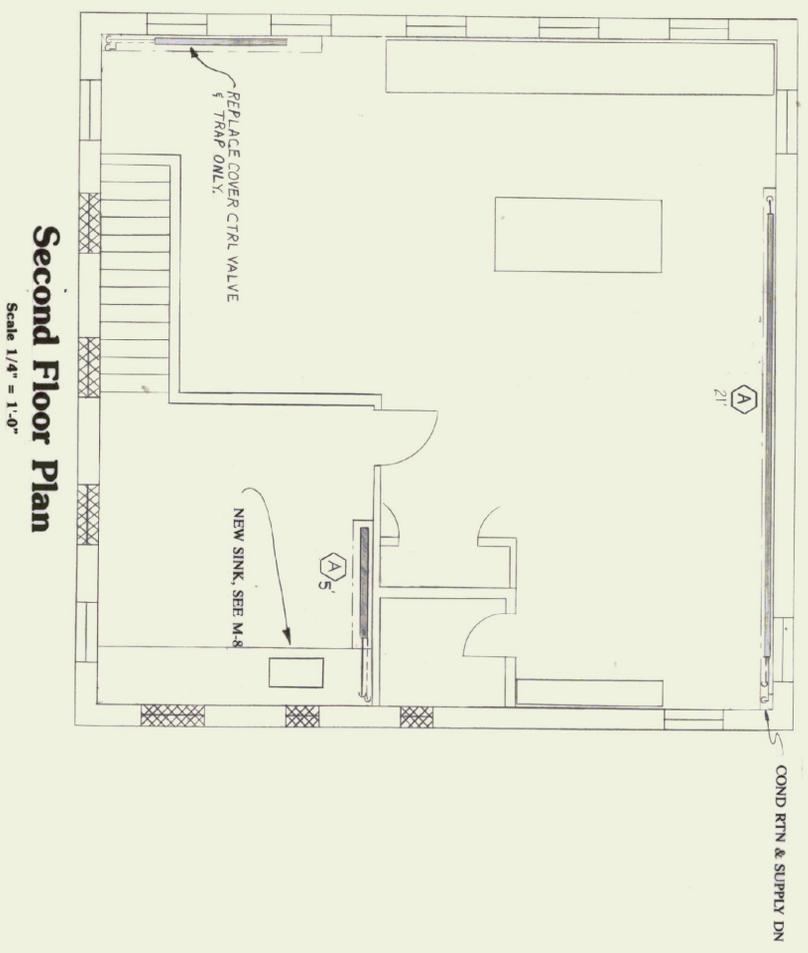
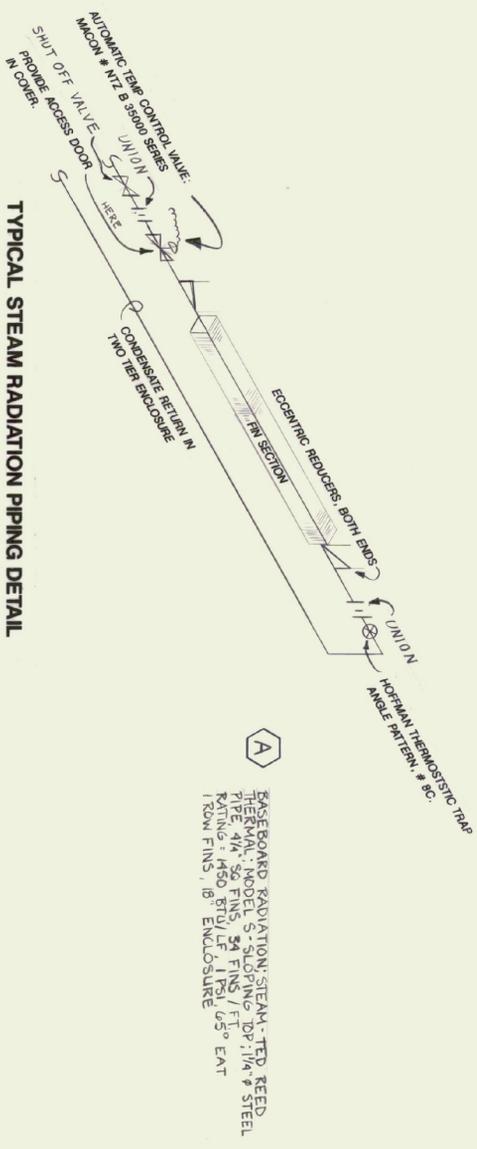
MECHANICAL SYSTEMS - HEATING

DATE:

4-20-'00

DWG. NO.

M-5



MECHANICAL CONSULTANT:
GWR Engineering, P.C.
 PO Box 157 - The Creamery Building
 Shelburne, VT 05482
 Tel (802) 985-8081 FAX (802) 985-8499

ARCHITECT:
 Jonson Design, Inc.
 1000 YERL AVENUE
 BURLINGTON, VT 05401
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State of Vermont
 Department of State Buildings
 John Zampieri, Commissioner

MATERIALS & RESEARCH LABORATORY
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Phase 2

MECHANICAL SYSTEMS - HEATING
 Second Floor Plan

DATE: 4-20-90
 DWG. NO. M-6

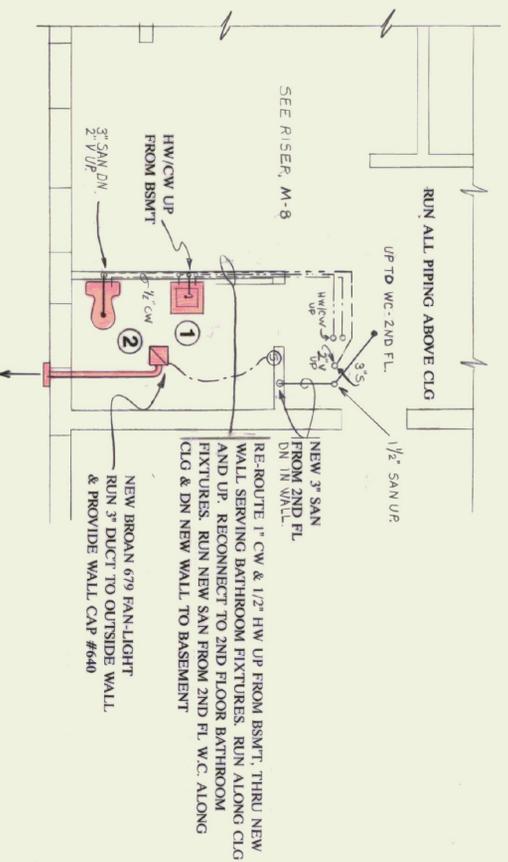
Minimum Insulation Thicknesses
 (per ASHRAE 90A-1980)

Heating System	Fluid Temperature Range	Minimum Pipe Insulation Thicknesses for Pipe Sizes*					
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
High Pressure	150-230	1.5	2.5	3.0	3.5	3.5	3.5
Medium Pressure	120-150	1.5	2.0	2.5	3.0	3.0	3.0
Low Pressure	90-120	1.0	1.5	2.0	2.5	2.5	2.5
Steam	Avg	1.0	1.5	2.0	2.0	2.0	2.0
Chilled Water	4.5-13	0.5	0.5	0.75	1.0	1.0	1.0
Cooling Water	4.5-13	0.5	0.5	0.75	1.0	1.0	1.0
Refrigerant	Avg	1.0	1.0	1.0	1.5	1.5	1.5
Condensate	Avg	1.0	1.0	1.0	1.5	1.5	1.5

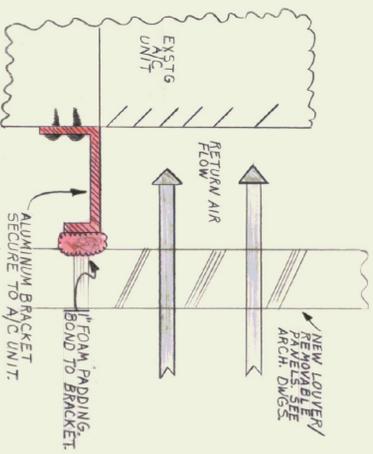
Heating System	Series Water	Minimum Pipe Insulation Thicknesses for Pipe Sizes					
		Up to 1"	1 1/4"	1 1/2"	2"	Over 2"	Over 2"
Heating	Up to 1"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	1 1/4" and larger	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Temperatures	100-180	0.5	0.5	0.75	1.0	1.0	1.0
	180-210	0.5	0.5	0.75	1.0	1.0	1.0
Series Water	100-130	0.5	0.5	0.75	1.0	1.0	1.0
	130-180	0.5	0.5	0.75	1.0	1.0	1.0

PLUMBING FIXTURE NOTES:

- 1 INSTALL NEW HANDICAPPED LAVATORY & FAUCET PER ANSI A117.1-1986:
 AMERICAN STANDARD WALL HUNG LAVATORY, LUCERNE MODEL 0355-012 FOR
 CONGEALD ARMS - WHITE. MOUNT TO OBTAIN RIM HEIGHT = 34" OFF
 FLOOR. FURNISH AND INSTALL SYMONS SINGLE LEVER FAUCET,
 MODEL #S-90-2-G-FR-W.
 CARRIER: ZURN MODEL Z-1231
 STOPS & TRAPS: INSTALL NEW ANGLE STOPS FOR FLEXIBLE RISERS.
 RE-PIPE NEW 1-1/2" SAN.
 INSULATION: INSULATE ALL PIPING UNDER LAV. WITH 1/2" ARMARLEX
 REPLY TAPED ON.
- 2 INSTALL NEW WATER CLOSET PER ANSI A117.1-1986 HANDICAPPED STANDARDS:
 AMERICAN STANDARD FLOOR MOUNT, TANK TYPE, CABOT FLOATED WATER
 SAVER TOILET MODEL #2108.408 - WHITE. PROVIDE BEMIS DURALOT SEAT,
 ENLARGATED, OPEN FRONT, LESS COVER. MODEL #1955-C.



Partial First Floor Plan T.R.
 Scale 1/4" = 1'-0"



Partial First Floor Plan - A/C
 Scale 1/4" = 1'-0"



NOTE: ALL CIG DIFFUSERS TO BE CARRIES OR METAL/ALRE.
 LANTIN TO FIT CIG GRID. 24" X 24" 4-WAY WITH
 1/2" X 1/2" NECK.



MECHANICAL CONSULTANT:
GWR Engineering, P.C.
 P.O. Box 157 - The Community Building
 Shelburne, VT 05482
 Tel (802) 985-8061 FAX (802) 985-8499

ARCHITECT:
Janson Design, Inc.
 FRED JONAS, ARCHITECT
 8020 ROAD, WATERBURY, VT 05678
 P.O. BOX 59 - (802) 244-8800

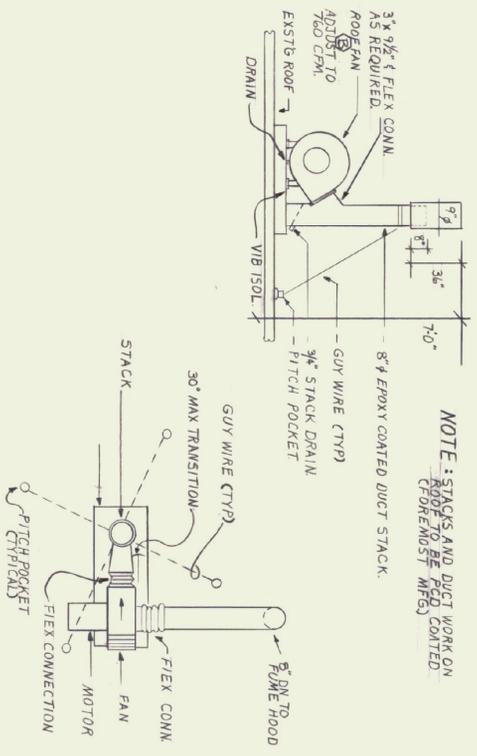
State of Vermont
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 John Zampieri, Commissioner

MATERIALS & RESEARCH LABORATORY
 Berlin, VT
Phase 2

MECHANICAL SYSTEMS -
First Floor Plan
New Work

AIR CONDITIONING
VENTILATION
PLUMBING

DATE: 4-20-'90
 DWG. NO. M-7



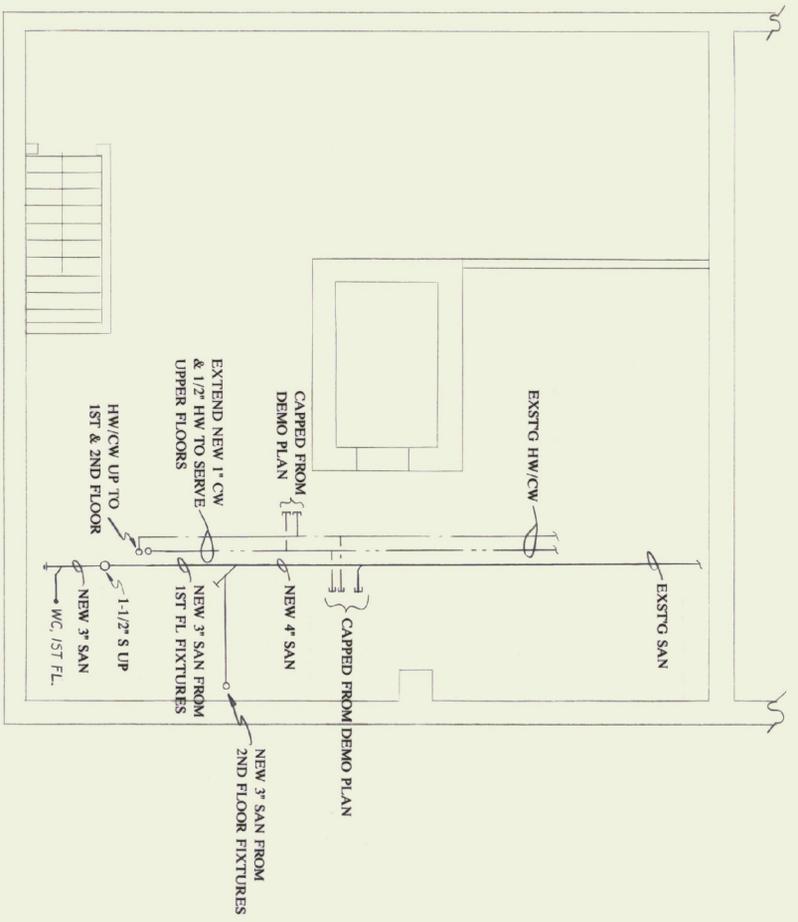
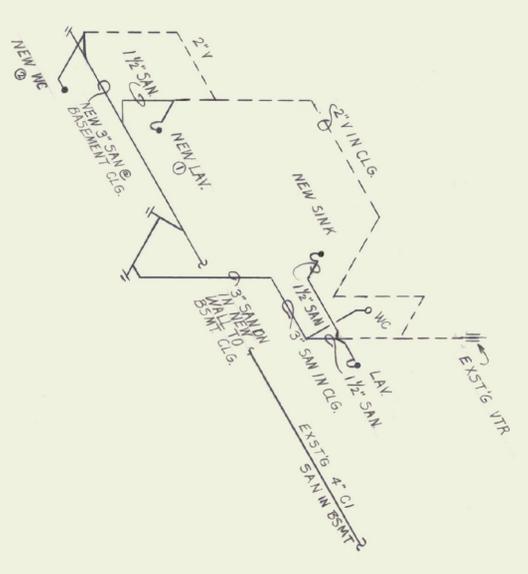
NOTE: STACKS AND DUCT WORK ON ROOF TO BE PROTECTED FROM DEMO BY MFS.

SEE M-4 FOR ROOF LOCATION

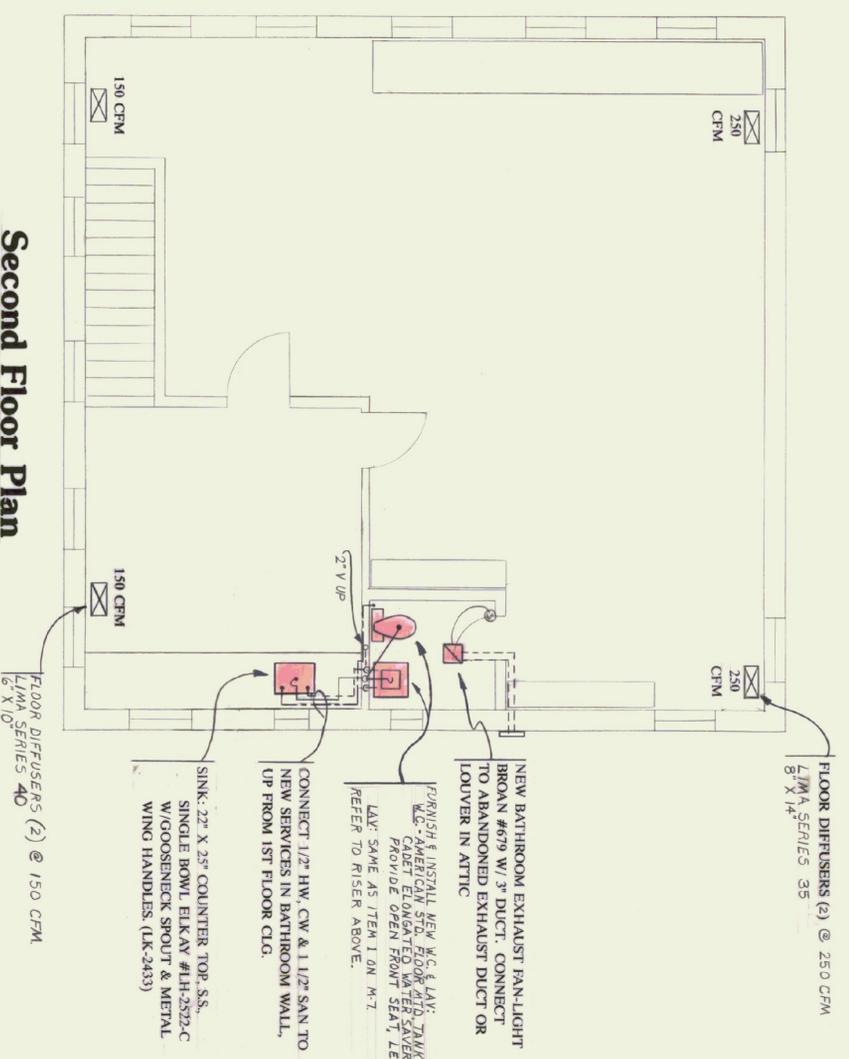
Roof Fan & Stack Details
No Scale



San Piping Riser Diagram - Toilet Rooms
No Scale



Basement Floor Plan
Scale 1/4" = 1'-0"



Second Floor Plan
Scale 1/4" = 1'-0"



MECHANICAL CONSULTANT:
GWR Engineering, P.C.
PO Box 137 - The Community Building
5th Floor
7th (802) 985-8001 FAX (802) 985-8499

ARCHITECT:
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MATERIALS & RESEARCH LABORATORY
Phase 2

MECHANICAL SYSTEMS -
Basement & Second Floor Plans
New Work

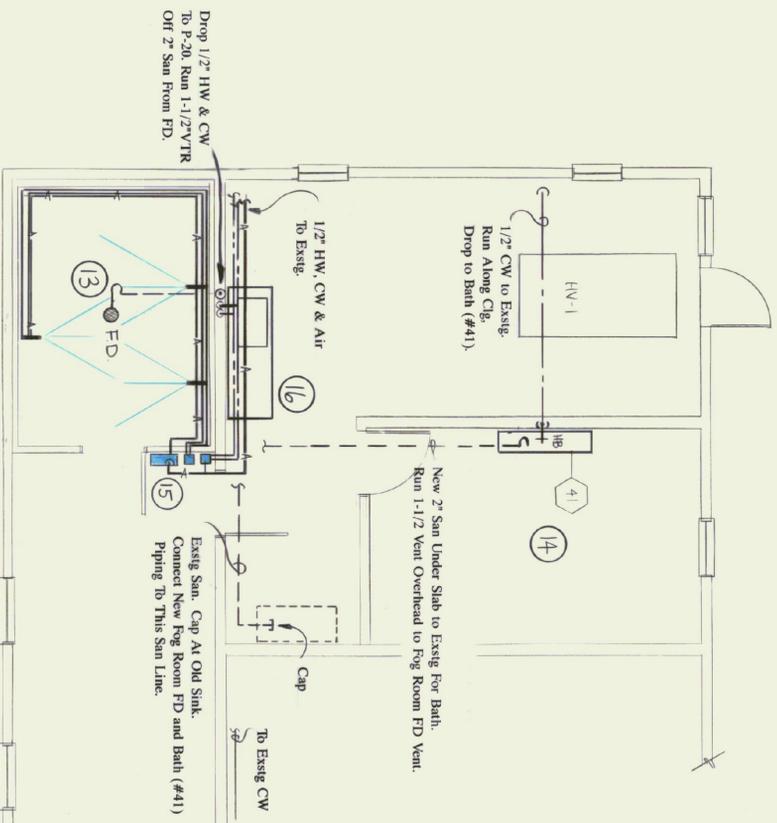
AIR CONDITIONING VENTILATION PLUMBING
DATE: 4-20-90
DWG. NO. **M-8**

HVAC	Fluid System Type	Fluid Temp Range	Minimum Pipe Insulation											
			1" or less		1 1/2" or less		2" or less		2 1/2" or less		3" or less		3 1/2" or less	
High Pressure	High Temp	Low Temp	High Pressure	High Temp	Low Temp	High Pressure	High Temp	Low Temp	High Pressure	High Temp	Low Temp	High Pressure	High Temp	Low Temp
152-238	300-450	122-151	251-305	122-151	251-305	122-151	251-305	122-151	251-305	122-151	251-305	122-151	251-305	122-151
44-93	120-200	94-121	201-250	44-93	120-200	94-121	201-250	44-93	120-200	94-121	201-250	44-93	120-200	94-121
Any	Any	Any	Any	Any	Any	Any	Any	Any	Any	Any	Any	Any	Any	Any
4.5-13	40-55	4.5-13	40-55	4.5-13	40-55	4.5-13	40-55	4.5-13	40-55	4.5-13	40-55	4.5-13	40-55	4.5-13
4.5	40	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40	4.5	40	4.5

*For piping exposed to ambient temperatures, increase thickness by 0.5 in.
 **Rounds on individual terminal units (not exceeding 12 ft in length)

Piping	Minimum Pipe Insulation		Non-encasing Piping		Up to 1/4"		Over 2"	
	Condensing	Non-Condensing	Condensing	Non-Condensing	Condensing	Non-Condensing	Condensing	Non-Condensing
Service Water Heating	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Temperature	120-180	120-180	120-180	120-180	120-180	120-180	120-180	120-180
Temp	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Temp	100-130	100-130	100-130	100-130	100-130	100-130	100-130	100-130

Heating Systems, Steam & Hot Water



NEW WORK NOTES

- 13 INSTALL FLOOR DRAIN IN FOG ROOM. CONNECT TO EXISTING DRAIN BEFORE NEW FLOOR IS POURED.
- 14 INSTALL NEW CM & DRAIN FOR BATH #41. CONNECT NEW CM TO EXISTING CM LINE. CONNECT DRAIN TO EXISTING BEFORE NEW FLOOR IS POURED. PROVIDE FAUCET FOR CM OUTLET.
- 15 RELOCATE AND RECONNECT THE FOG ROOM'S HUMIDITY & TEMPERATURE MONITOR (HONEYWELL).
- 16 REINSTALL RELOCATED SINK, P-20. RECONNECT TO EXISTING CM, HW, WASTE AND VENT.

NEW BUILDING - NEW PLUMBING WORK
 SCALE: 1/4"=1'-0"

Conn To Exisg San Shown On Site Plan.

State of Vermont
 Department of State Buildings
 John Zampieri, Commissioner

Materials & Research
 Laboratory
 Berlin, VT

Jonson Design, Inc.
 P.O. BOX 55 - BOLTON ROAD, WATERBURY, VT 05676
 (802) 244-5800

DATE: 10-10-89
 DWG. NO. M-2

EQUIPMENT SCHEDULE

MARK	TYPE	MANUFACTURER	MODEL	CHARACTERISTICS	ELECTRICAL	NOTES
A	EXHAUST FAN	STANLEY	"S" SIZE 10	501 CFM @ 1/10" S.P. W/ SHUTTER & WALL BOX SIDE GUARDS	1/6 HP, 120 V 1 PH	DISCONN SW & SPEED CONTROL
B	EXHAUST FAN	BUFFALO	SA-10-F	CENTRIFUGAL UPPLAST 2000 CFM @ 1/2" ESP ARKANG. # 10, SINGLE INLET	3/4 HP, 208V, 3Ø 60HZ, 2084 RPM	200 LBS.
C	UNIT HEATER	MCQUAY	UHH 016B	28,800 BTUH, 380 CFM 60° F. EAT, 123° F. BMT 2 PSI STEAM	1/60 HP, 120V, 1Ø, 0.6 A	

1 Exhaust fan to be wired to operate when any one of the dust hoods (209, 211, 219) are in use.

REGISTER-LOUVER SCHEDULE

MARK	TYPE	MANUFACTURER	MODEL	CHARACTERISTICS	ELECTRICAL	NOTES
A	SUPPLY REGISTER	METALAIRE	VHD	14" x 10" - DOUBLE DEFLECTION W/O OBD 525 CFM, 500 FPM, 20NC		ALUM. FIN.
B	SUPPLY LOUVER	ARROW	BL 245	48" X 24" 4" DEEP STATIONARY W/IRRD SCREEN AND FLANGE		ALUM. FIN.

FOG ROOM HUMIDITY AND TEMPERATURE CONTROL & PIPING DETAILS

