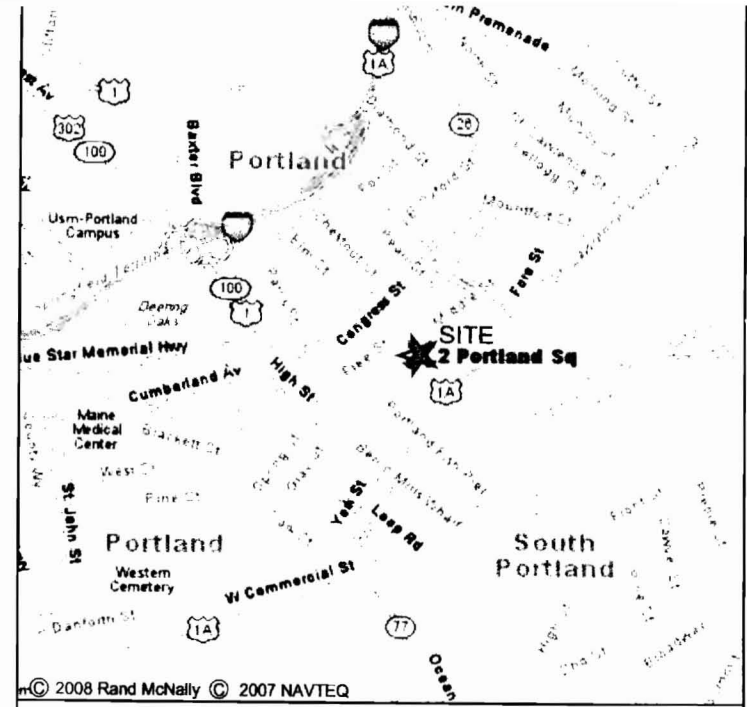
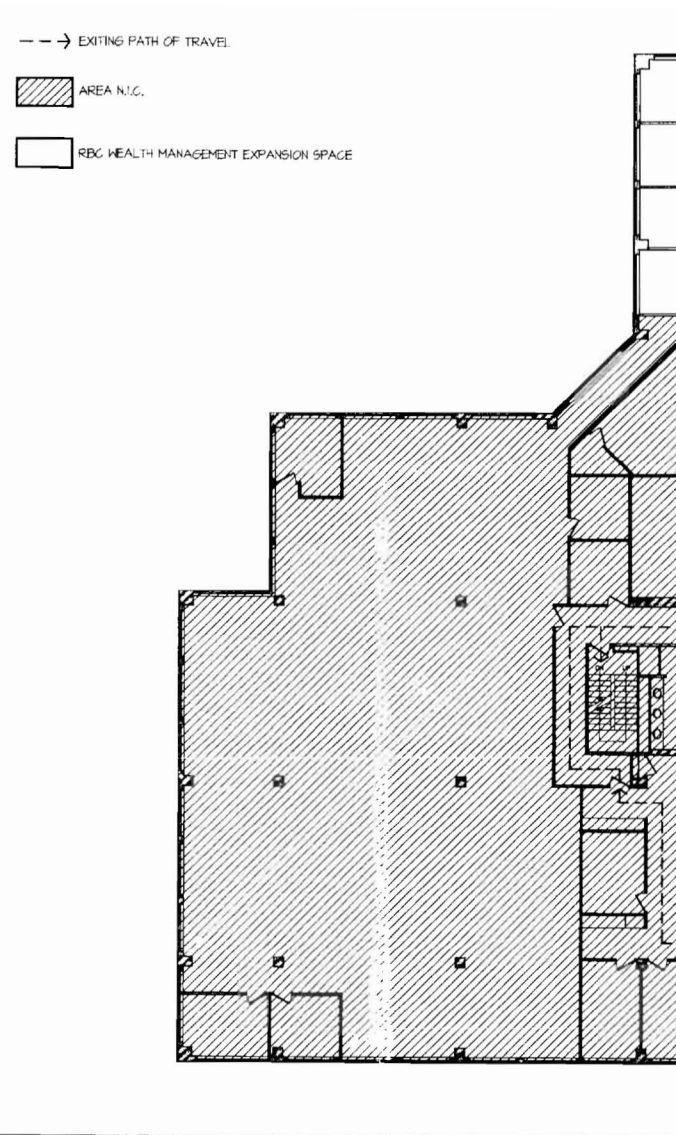


AGT. Acoustical Ceiling Tile	ADJ. Adjustable	A.F.F. Above Finished Floor	ALT. Alternate	ALUM. Aluminum	ANOD. Anodized	At. At	And. And	Angle. Angle
B. Board	BLDS. Building	BLKS. Blocking	BOT. Bottom	B.O. By Owner/Bottom Of				
CAB. Cabinet	C.B. Chalk Board	C.B. Corner Board	C.C./C. Conference	C.J. Control Joint	C.L. Center Line	C.L. Ceiling	C.L. Closet	C.M. Clear
C.O. Concrete Masonry Unit	C.O. Case Opening/Clean Out	C.O. Column	C.O.M. Customer's Own Material	C.O.N.C. Concrete	C.O.N.F. Conference	C.O.N.S.T. Construction	C.O.N.T. Continuous	C.O.N.T.R. Contractor
C.P.T. Ceramic Tile	C.P.T. Counter	C.H. Cold Water						
D. Degree	DEMO. Demolition	DEPT. Department	DET. Detail	D.F. Drinking Fountain	DIA. Diameter	DIM. Dimension	DN. Down	DR. Door
DW. Dishwasher	DWS. Drawing	DWR. Drawer						
E. East	E.A. East	EL. Elevator	ELEC. Electrical	ELEV. Elevation	ENGR. Engineer	ENTR. Entrance	E.O. Electrical Outlet	E.P.N.L. Electrical Panelboard
E.Q. Equipment	E.H.C. Electric Water Cooler	EXIST. Existing	EXT. Exterior/Extension					
F. Fire Alarm	F.A. Furnished By Others	F.D. Floor Drain	F.E. Fire Extinguisher	F.E.C. Fire Extinguisher Cabinet	F.F. Finish/Fabric	FIN. Finish/Finished	FLR. Floor	FLUO-F. Fluorescent
F.O.S. Face of Stud	FR. Frame	FR. Fire Retardant/Fire Retardant/Fire Rated	FT. Feet	FURN. Furniture	FURR. Furring/Furred	FUT. Future	FEP. Finished End Panel	
G. Gauge/Gage	GALL. Gallon	GALV. Galvanized	GAB. Grab Bar	G.C. General Contractor	G.P. Gypsum Sheathing	GYP. SHTB. Gypsum Board		
H. High	H.D. Hand Dryer	H.D.C.P. Handicapped	H.D.W. Hardware	H.M. Hollow Metal	H.M.Z. Horizontal	H.R. Height	H.T. Heating	H.V.A.C. Heating Ventilation Air Conditioning
H.W. Hot Water								
I. In. or (")	INFO. Information	INSUL. Insulation	INT. Interior					
J. Janitor	JAN. CLO. Janitor Closet	JT. Joint						
K. Knock Down	K.D. Knock Out							
L. Laboratory	LAV. Lavatory	L.F. Linear Feet	LT. Light/ Lighting					
M. Maintenance	MATL. Material	MAX. Maximum	M.D.F. Med. Density Fiberboard	M.E.C.H. Mechanical	MET. Metal	MFR. Manufacturer/Manufacture	MIR. Mirror	MISC. Miscellaneous
M.D.G. Moulding/Molding	M.R. Moisture Resistant	MTD. Mounted	MILL. Million	MICRO. Microwave				
N. North	N.C. Not in Contract	N.O. or # Number	N.T.S. Not To Scale					
O.C. Office	OFF. Overhead	OPNS. Opening	OPP. Opposite					
P. Point	PED. Pedestal	PLAM. Plastic Laminate	PLYWD. Plywood	P.N.L. Panel	PNT. Point	POL. Polish	PR. Preparation	PROJ. Projection Project
P.T.C. Paper Towel Cabinet	PTD. Painted	PTM. Partition						
Q. Quarry Tile	Q.T. Quarry	QTY. Quantity						
R. Thermal Resistance (R" Value)	R. Riser/Radius	R.A. Return Air	RE. Regarding or Reference	REC. Recessed	REF. Reflected	REFR. Refrigerator	REIN.F. Reinforce/reinforcing	RES.D. Reverse
R.H. Room	R.O. Rough Opening							
S. South	S.A. Solid Core	S.C. Soap Dispenser	SECT. Section	S.F. Square Feet	SHEATH. Sheathing	SIM. Similar	S.N.V. Sanitary Napkin Vending	S.N.D. Sanitary Napkin Disposal
SPEC. Specification	SPK. Speaker	SQ. Square	S.S. Service Sink	S.S.T.L. Stainless Steel	S.T.C. Sound Transmission Coefficient	STD. Standard	STL. Steel	STN. Stone
STR. Storage	STR. Structural	SURF. MTD. Surface Mounted	SUSP. Suspended	SW. Switch	SYM. Symmetrical			
T. Thermostat	T.B. Towel Bar	T.B. Tackboard	T.D. Tissue Dispenser	TEL. Telephone	TEMP. Tempered	TERR. Terrazzo	T.G. Tongue & Groove	THK. Thick/Thickness
T.O. Top Of	T.O.S. Top Of Steel	T.P.H. Toilet Paper Holder	TREAD. Tread	T.V. Television	TYP. Typical			
U. Unless Otherwise Noted	U.O.N. Unless Otherwise Noted	UR. Urinal						
V. Vail/Vinyl	V.B. Vinyl Base/Vapor Barrier	V.C.T. Vinyl Composition Tile	VER. Verify	VERT. Vertical	VEST. Vestibule	V.T. Vinyl Tile	V.V.C. Vinyl Wallcovering	
W. Wide/Width/West/Watt	W. Wall	W.C. Water Closet	W.D. Wood	W.D.K. Window	W.F. Wood Floor	W.H. Water Heater	W.H.D. Window	W.P. Mark Point
W.H. Window	W.H.D. Window	W.P. Mark Point	W.R. Waste Receptacle	W.S.C. Wainscot	W.W.F. Welded Wire Fabric			
Y. Yard	YR. Year							



PROJECT DATA	
PROJECT DESCRIPTION:	- EXPANSION OF EXISTING INTERIOR OFFICE SPACE - MECHANICAL AND ELECTRICAL INCLUDED UNDER THIS CONTRACT
APPLICABLE BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE WITH CITY AMENDMENTS
CONSTRUCTION TYPE:	TYPE 1B FULLY SPRINKLERED
OCCUPANCY GROUP:	B - OFFICE
OFFICE AREA:	EXISTING - 8,734 S.F. NEW - 3,400 S.F. TOTAL - 12,134 S.F.
OCCUPANT LOAD:	126 OCCUPANTS
EXITS REQUIRED:	2 EXITS, (EXIT WIDTH - 126 x .15 = 18.9')
EXITS PROVIDED:	3 EXITS - 2 @ 36' x 12'
ALLOWABLE TRAVEL DISTANCE:	300'
ALLOWABLE COMMON PATH OF TRAVEL DISTANCE:	100'

GENERAL NOTES	
1.	ALL BIDDERS OF RECORD MUST VISIT THE PROJECT SITE TO ACQUAINT THEMSELVES WITH EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS.
2.	ALL DIMENSIONS AND ALIGNMENTS WITH EXISTING CONSTRUCTION MUST BE FIELD VERIFIED. BASE BUILDING WALLS AND DOORS ARE SHOWN FOR REFERENCE ONLY, AND ARE SUBJECT TO FIELD VERIFICATION. NOTIFY ARCHITECT REGARDING DISCREPANCIES BEFORE PROCEEDING WITH THE WORK AFFECTED.
3.	CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS WITH BUILDING OWNER FOR ACCESS TO BUILDING DURING OFF HOURS, INCLUDING, BUT NOT LIMITED TO DELIVERIES. CONTRACTOR AND ALL SUB-CONTRACTORS SHALL ACKNOWLEDGE AND ABIDE BY ALL BUILDING REGULATIONS.
4.	CONTRACTOR SHALL, AT ALL TIMES, KEEP THE PREMISES FREE FROM WASTE MATERIAL OR RUBBISH CAUSED BY THE WORK. UPON COMPLETION OF THE PROJECT, CLEAN ALL SURFACES AND LEAVE THE WORK IN A CLEAN CONDITION.
5.	CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS REQUIRED BY THE DRAWINGS AND IN FULL ACCORDANCE WITH ALL CODES AND ORDINANCES.
6.	CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES AND CERTIFICATES AND PAY ALL FEES CONNECTED THEREWITH.
7.	IT IS NOT THE INTENT OF THIS DOCUMENT TO IDENTIFY ALL ITEMS NECESSARY FOR A COMPLETE INSTALLATION, BUT TO PROVIDE A GENERAL DESCRIPTION OF THE MATERIALS AND WORK REQUIRED. SHOULD LABOR AND MATERIALS NOT SPECIFICALLY MENTIONED BE REQUIRED FOR COMPLETION OF THE WORK, FURNISH AND INSTALL SUCH ITEMS OF TYPE, QUALITY, AND QUANTITY SUITABLE FOR SERVICE REQUIRED.
8.	THE WORD 'PROVIDE' AS USED IN THE DRAWINGS SHALL BE UNDERSTOOD TO MEAN 'PROVIDE COMPLETE IN PLACE' THAT IS FURNISHED AND INSTALLED.
9.	ALL PRODUCTS SHALL BE AS SPECIFIED. NO SUBSTITUTION WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY ARCHITECT.
10.	CONTRACTOR SHALL PATCH AND REPAIR EXISTING CONSTRUCTION TO 'LIKE NEW' CONDITION AS A RESULT OF REMOVAL OR REPLACEMENT OF EXISTING CONSTRUCTION. ALL HOLES OR PENETRATIONS THROUGH FIRE RATED ASSEMBLIES MUST BE PATCHED AND REPAIRED TO MAINTAIN THE INTEGRITY OF THE ASSEMBLY. THE CONTRACTOR SHALL ALSO REPAIR OR REPLACE ANY DAMAGE CAUSED TO THE EXISTING BUILDING AND PROPERTY DURING CONSTRUCTION OUTSIDE OF THE LIMITS OF CONSTRUCTION.
11.	ALL SUB-CONTRACTORS SHALL SUBMIT MATERIAL SAFETY DATA SHEETS (MSDS) IF APPLICABLE TO THEIR TRADE, TO THE GENERAL CONTRACTOR FOR RECORD KEEPING AND SUBMITTAL TO TENANT.
12.	ALL CONCEALED WOOD CONSTRUCTION MATERIALS ARE TO BE FIRE TREATED.
13.	PROVIDE CONTROL JOINTS IN GYP. BD. WALL SURFACES AT LOCATIONS CONSISTENT WITH THE LINES OF THE BUILDING SPACES, 30'-0" MAX. WALL RUNS, WHERE REQUIRED. SEE FINISH PLAN FOR SPECIFIC LOCATIONS OF GYP. BD. PARTITION CONTROL JOINTS THAT COORDINATE WITH FINISH TRANSITIONS.
14.	CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE PROPER DUST SHIELDS, TEMPORARY WALLS ETC. THAT ARE REQUIRED TO MAINTAIN OPERATIONS DURING NORMAL WORKING HOURS.
15.	CONTRACTOR SHALL COORDINATE WITH THE BUILDING OWNER ANY DISRUPTION OF ELECTRICAL SERVICE ANY REQUIRED DISRUPTION SHALL BE CONDUCTED DURING TIMES SPECIFIED BY OWNER.



PROJECT DIRECTORY	
TENANT:	RBC HEALTH MANAGEMENT 2 PORTLAND SQUARE SUITE 501 PORTLAND, ME 04101
PROJECT MANAGER:	RBC HEALTH MANAGEMENT DAN RAUSCHER PLAZA - P12 60TH SOUTH SIXTH STREET MINNEAPOLIS, MN 55402 CONTACT: KURT OSTRANDER OFFICE: 612.293.1134 FAX: 612.293.2740 E-MAIL: kurt.ostlander@rbc.com SECONDARY CONTACT: RH SMITH OFFICE: 201.632.1451 E-MAIL: rsmith@rbc.com
ARCHITECT:	WALSH BISHOP ASSOCIATES, INC. 400 2ND AVENUE SOUTH SUITE 300 MINNEAPOLIS, MN 55402 CONTACT: ADAM KEZZIAH OFFICE: 612.371.2827 FAX: 612.222.2383 E-MAIL: adam.kezziah@wba.com
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PROPERTY MANAGER:	REEF AMERICA ONE PORTLAND SQUARE PORTLAND, ME 04101 CONTACT: MICHAEL McDONALD OFFICE: 207.874.6000 EMAIL: michael.mcdonald@reef.com

SHEET INDEX	
ARCHITECTURAL	
PROJECT MANUAL	
G100	SHEET INDEX, CONTACT INFORMATION, SITE MAP
A200	DEMOLITION PLAN / ARCHITECTURAL FLOOR PLAN
A300	REFLECTED CEILING PLAN / POWER AND COMMUNICATIONS PLAN
A401	VOIP POWER / COMMUNICATION NOTES & DETAILS - REF. ONLY
A600	DETAILS / ELEVATIONS
A800	DOOR SCHEDULE / FRAME TYPES / DETAILS
A900	FURNITURE PLAN / WALL AND FLOOR FINISH PLAN
ENGINEERING	
M001	MECHANICAL LEGEND
M101	MECHANICAL LEGEND
M201	MECHANICAL SPECIFICATIONS
M301	MECHANICAL 5TH FLOOR DEMOLITION AND NEW CONSTRUCTION PLAN
M401	MECHANICAL DETAILS
E001	ELECTRICAL SYMBOLS, NOTES, SCHEDULES, AND ABBREVIATIONS
E201	ELECTRICAL SPECIFICATIONS
E301	ELECTRICAL 5TH FLOOR DEMOLITION PLAN
E302	ELECTRICAL 5TH FLOOR POWER AND LIGHTING CONSTRUCTION PLANS
FP001	FIRE PROTECTION LEGEND
FP201	FIRE PROTECTION SPECIFICATIONS
FP301	FIRE PROTECTION 5TH FLOOR CONSTRUCTION PLAN
FA301	FIRE ALARM 5TH FLOOR CONSTRUCTION PLAN

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

Dean A. Olsen  
Date: 02.13.09 License No. ARC3379

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TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
2 Portland Square  
Suite 501  
Portland, ME 04101



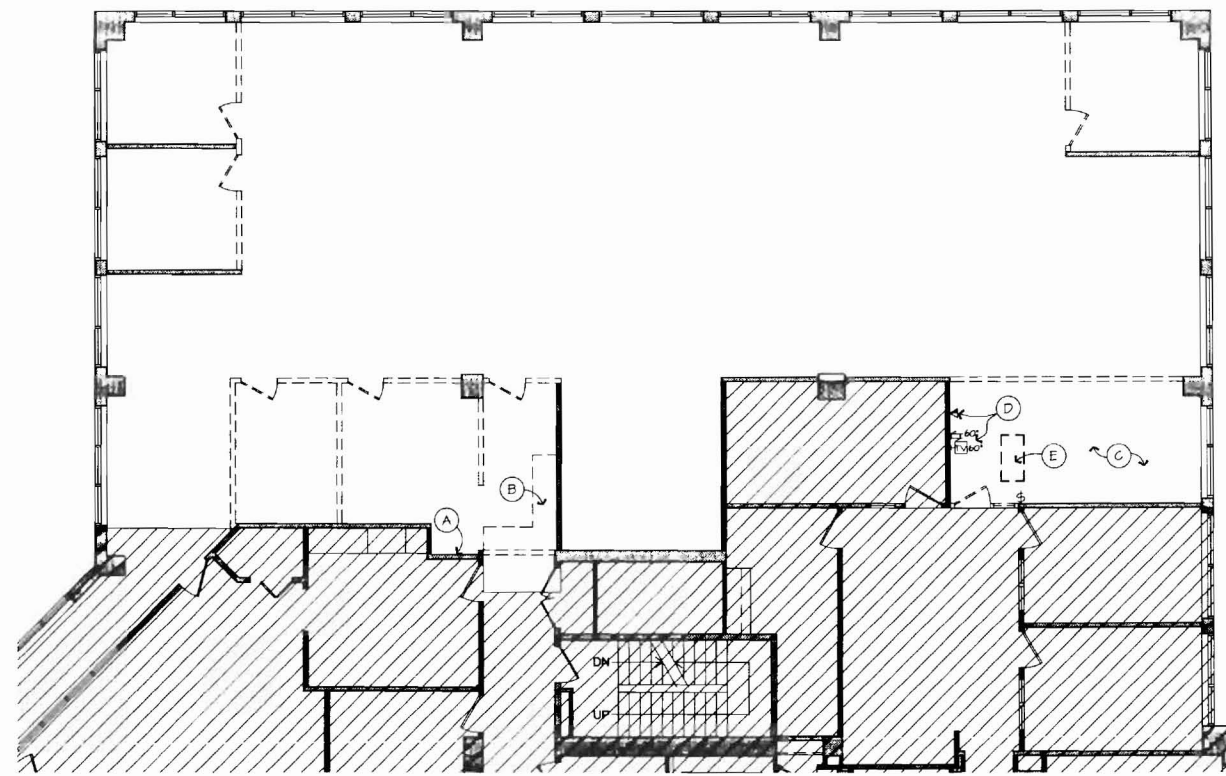
No.	Date	Revision
	02.13.09	ISSUE FOR PERMIT & CONSTRUCTION
	02.06.09	ISSUE FOR BID

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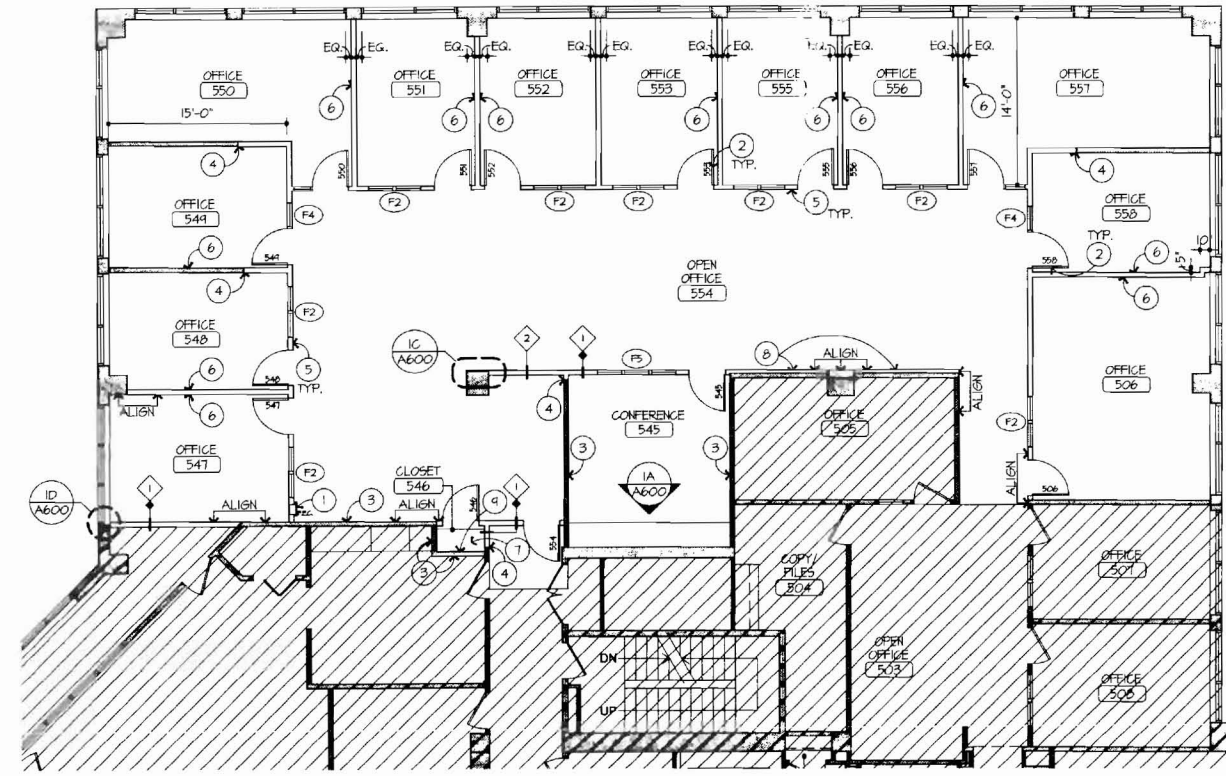
SHEET TITLE:  
**SHEET INDEX, CONTACT INFORMATION, SITE MAP**

Date: 02.13.09  
Comm. No: 8528293.03  
In Charge: AK  
Drawn By: JD  
Checked By: DO

**G100**

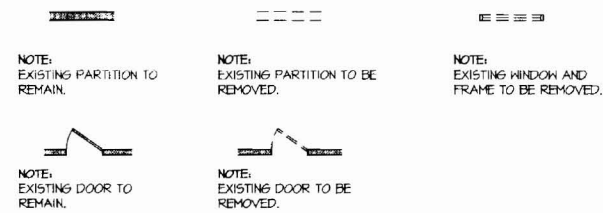


4B DEMOLITION PLAN - 5TH FLOOR  
SCALE: 1/8" = 1'-0"



2B ARCHITECTURAL FLOOR PLAN - 5TH FLOOR  
SCALE: 1/8" = 1'-0"

DEMOLITION DOOR AND WALL SYMBOL KEY:



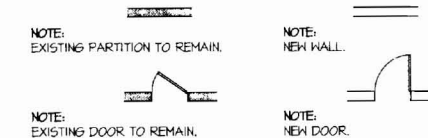
DEMOLITION NOTES:

- REMOVE EXISTING CONSTRUCTION AS INDICATED. PATCH AND REPAIR AT AREAS OF DEMOLITION AS REQUIRED.
- REMOVE EXISTING DOORS, FRAMES, AND HARDWARE AS INDICATED. RETURN TO LANDLORD'S STOCK AS ADVISED BY PROPERTY MANAGER.
- REMOVE ALL EXISTING ELECTRICAL (RECEPTACLES, SWITCHES, FLOOR OUTLETS, ETC.) AND DATA RECEPTACLES ALONG WITH PHONE/ CABLING LINES AT WALLS SCHEDULED FOR DEMOLITION.
- REMOVE ALL FLOOR AND WALL COVERINGS WITHIN AREA OF WORK AND PREPARE SURFACES TO RECEIVE NEW MATERIALS.

DEMOLITION PLAN KEY NOTES: INDICATED BY ○ ON PLAN

- (A) REMOVE GYP. BD. FACE TO ALLOW INSTALLATION OF PLYWOOD BLOCKING.
- (B) REMOVE EXISTING MILLWORK.
- (C) REMOVE EXISTING FLOOR COVERING WITHIN ROOM INDICATED AND SALVAGE FOR REUSE IN NEW CONSTRUCTION.
- (D) REMOVE EXISTING DEVICE AND TERMINATE WIRING BACK TO SOURCE.
- (E) REMOVE EXISTING LIGHT FIXTURE AS INDICATED, SALVAGE FOR REUSE IN NEW CONSTRUCTION.

DOOR AND WALL SYMBOL KEY:



ARCHITECTURAL NOTES

- PROVIDE FIRE RATED BLOCKING IN HALL CAVITY AT ALL DOOR WALL STOPS, PRESENTATION BOARDS, FURNITURE INSTALLATION ETC. AS REQUIRED FOR COMPLETE AND PROPER INSTALLATION. REINFORCE AND BRACE WALLS AS NECESSARY.
- UNLESS OTHERWISE NOTED, DIMENSIONS SHOWN ON ALL PLANS ARE TO FACE OF WALL.
- IN UNRATED PARTITIONS TO STRUCTURE PROVIDE RETURN AIR OPENINGS AS REQUIRED. BY MECHANICAL.
- LANDLORD TO PROVIDE BUILDING STANDARD BLINDS AT ALL EXTERIOR WINDOWS AS REQUIRED. REPLACE DAMAGED AND BROKEN BLINDS AS NEEDED. CLEAN ALL EXISTING BLINDS.

FLOOR PLAN KEY NOTES: INDICATED BY ○ ON PLAN

- PROVIDE FIRE EXTINGUISHER AND SEMI-RECESSED CABINET. SEE DETAIL 2B/A600.
- PROVIDE HAT/COAT HOOK AT 5'-6" A.F.F. BEHIND EACH OFFICE DOOR. REFER TO DIVISION 8 - HARDWARE IN PROJECT MANUAL FOR HAT/COAT HOOK SPEC.
- VERIFY EXISTING WALL EXTENDS TO UNDERSIDE OF STRUCTURAL DECK ABOVE. MODIFY AS REQUIRED.
- ALIGN FACE OF NEW WALL TO FACE OF EXISTING WALL. THICKNESS TO MATCH EXISTING ADJACENT. TYPICAL.
- REFER TO 2C/A600 FOR TYPICAL SPACING BETWEEN DOOR AND SIDELIGHT.
- PROVIDE IN WALL BLOCKING FOR TENANT PROVIDED FLAT PANEL TV. REFER TO ELEVATION 2A/A600.
- ADJUSTABLE SHELVING. SEE DETAIL 3C/A600.
- FURR OUT WALL AS REQUIRED.
- PROVIDE 3/4" PLYWOOD IN-WALL BLOCKING AND 1 LAYER OF 5/8" GYP. BD. REFER TO 3C/A600.

PARTITION SCHEDULE:		
PLAN SECTION	WIDTH	DESCRIPTION
	4 7/8"	3 5/8" STEEL STUDS AT 16" O.C., ONE LAYER 5/8" GYP. BD. EA. SIDE W/ SOUND ATTENUATION BATTING
	4 7/8"	3 5/8" STEEL STUDS AT 16" O.C., ONE LAYER 5/8" GYP. BD. EA. SIDE

NOTE: ALL PARTITIONS TO BE UNLESS OTHERWISE NOTED.

WALL TYPE SYMBOL KEY

- TERMINATE PARTITION AT BOTTOM OF CEILING GRID
- EXTEND PARTITION TO UNDERSIDE OF STRUCTURAL DECK ABOVE

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

*Dean A. Olsen*  
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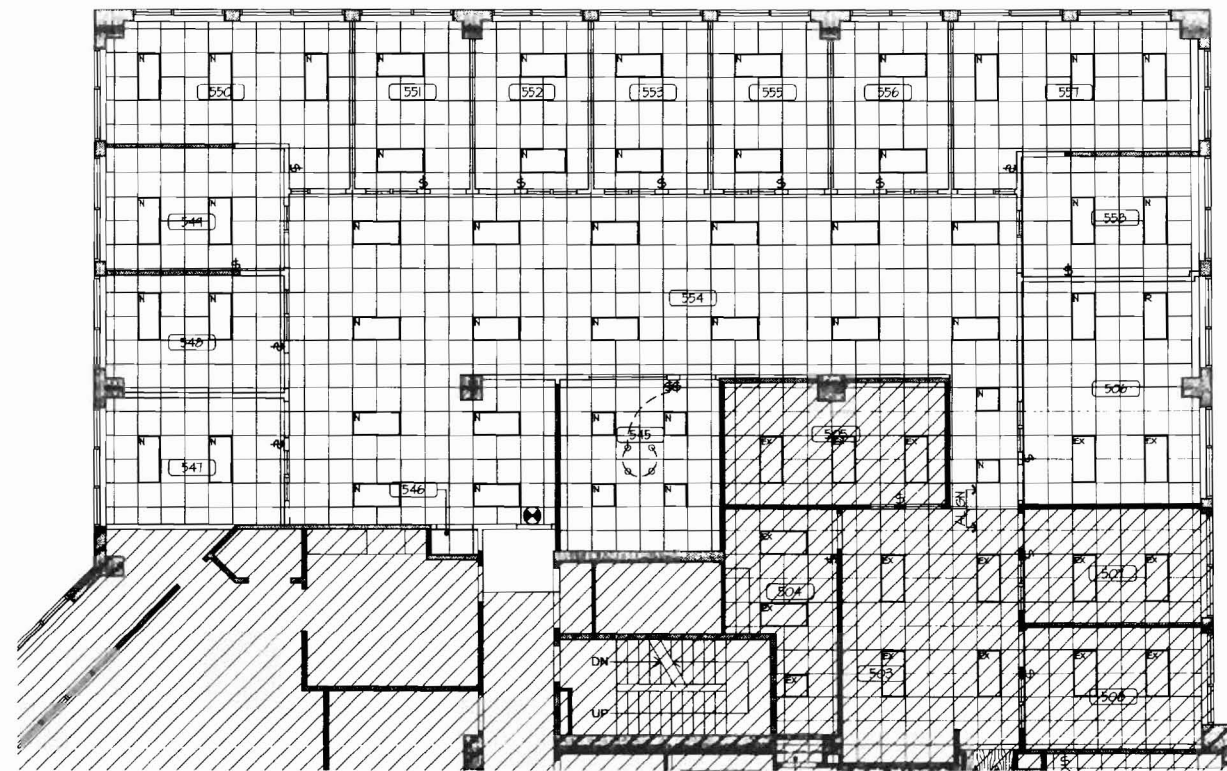
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SHEET TITLE:  
**DEMOLITION PLAN /  
ARCHITECTURAL FLOOR  
PLAN**

Date: 02.13.09  
Comm. No: 8528293.03  
In Charge: AK  
Drawn By: JD  
Checked By: DO

**A200**





4B REFLECTED CEILING PLAN - 5TH FLOOR  
A300 SCALE: 1/8" = 1'-0"

REFLECTED CEILING PLAN NOTES

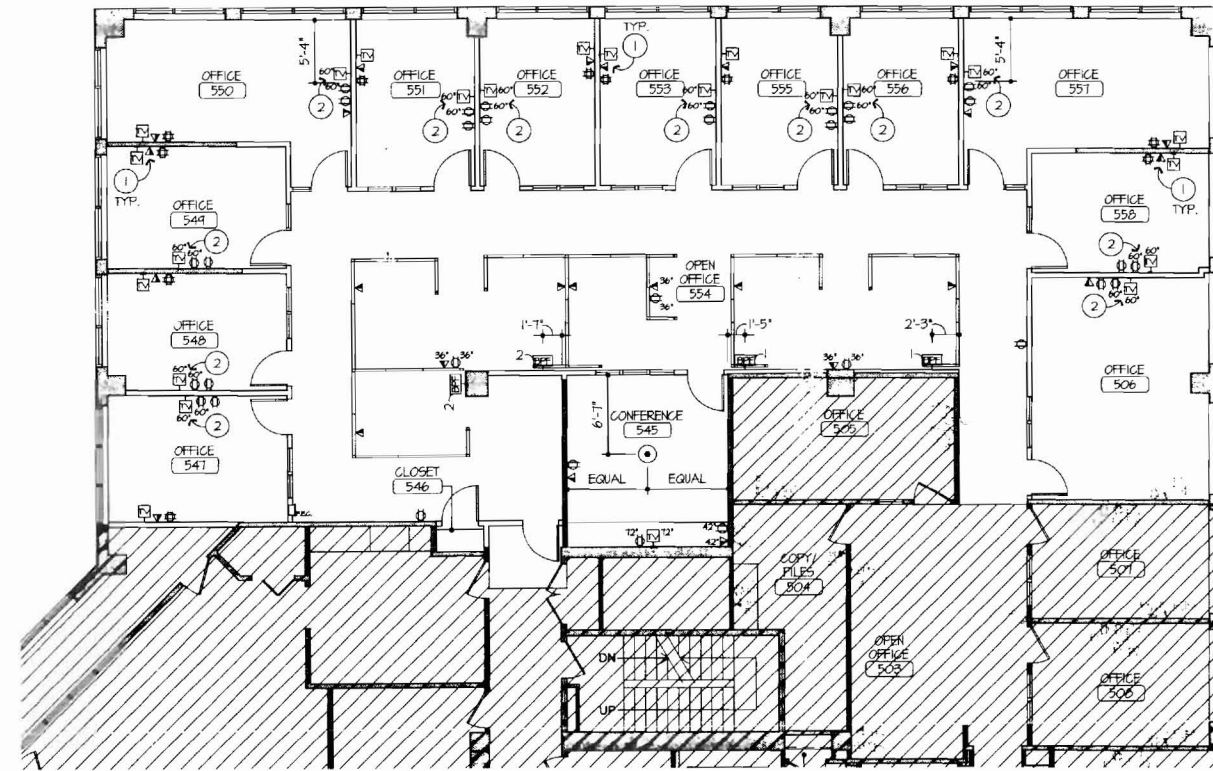
1. LIGHTING SHOWN FOR REFERENCE ONLY. REFER TO ENGINEERING DRAWINGS FOR NEW LIGHTING AND MECHANICAL PLANS.
2. DOWNLIGHT FIXTURES TO BE PLENUM APPROVED.
3. ALL SWITCHES AND FACE PLATE COLORS TO BE WHITE. REFER TO 2A/A401.
4. NEW CEILING GRID AND TILE TO BE LOCATED AT 8'-6" A.F.F. TO MATCH EXISTING.
5. PROVIDE REGULAR EDGE IN CEILING TILES AT HALL ANGLES AND INTERIOR PARTITIONS.
6. PROVIDE EXIT AND EGRESS LIGHTING AS REQUIRED BY GOVERNING CODES. VERIFY QUANTITY AND LOCATION WITH FIRE MARSHALL.
7. ALL FIXTURES SHALL BE SWITCHED TO CONFORM WITH ALL GOVERNING CODES.
8. PROVIDE SMOKE DETECTORS AS REQUIRED BY GOVERNING CODES.
9. REUSE AND RELOCATE EXISTING LIGHT FIXTURES WHERE POSSIBLE. SUPPLEMENT NEW FIXTURE AS REQUIRED.

REFLECTED CEILING PLAN SYMBOLS KEY

- 24"x48" FLUORESCENT LIGHT FIXTURE WITH DEEP CELL PARABOLIC LENS (18 CELL)
- DIMMABLE INCANDESCENT DOWNLIGHT (CONFERENCE ONLY)
- ⊕ SINGLE POLE SWITCH
- ⊙ ILLUMINATED EXIT SIGN, WHITE
- WALL TO STRUCTURE (SEE PARTITION SCHEDULE ON SHEET A200).

FIXTURE LABEL KEY

- EX EXISTING FIXTURE TO REMAIN
- R RELOCATED FIXTURE
- N NEW FIXTURE



2B POWER AND COMMUNICATIONS PLAN - 5TH FLOOR  
A300 SCALE: 1/8" = 1'-0"

ELECTRICAL/COMMUNICATIONS/CABLING NOTES:

1. ALL DEVICE AND FACE PLATE COLORS TO BE WHITE. REFER TO 2A/A401.
2. ALL NEW OUTLETS TO BE MOUNTED 18" A.F.F. AT CENTER, UNLESS OTHERWISE NOTED.
3. THIS DRAWING IS DIAGRAMMATIC AND INTENDED TO SHOW APPROXIMATE LOCATIONS, EXCEPT WHERE DIMENSIONED.
4. ALL COMPUTER OUTLETS TO BE CONNECTED IN HOME RUN TO THE PATCH PANEL IN THE TELE/ DATA ROOM 558 WITHIN EXISTING PORTION OF SUITE.
5. ELECTRICAL PLAN SHOWN FOR REFERENCE ONLY. REFER TO ENGINEERING DRAWINGS FOR NEW POWER AND COMMUNICATIONS PLANS.
6. PROVIDE IN WALL CONDUIT FROM 6" ABOVE CEILING TO VOICE/DATA J-BOX, WITH FULL STRING PRIOR TO INSTALLATION OF BATT INSULATION. SIZE CONDUIT TO ACCOMMODATE NUMBER AND SIZE OF CABLES TO SERVE THAT LOCATION AS LISTED ON A401.
7. FIRE ALARM SYSTEM ON THE FLOOR AS REQUIRED TO MEET ALL GOVERNING CODES AND ADA REQUIREMENTS.
8. DO NOT TERMINATE DATA/COMM LINES IN WALL WHEN INSTALLING FOR SYSTEM FURNITURE CUBICLES. LEAVE ENOUGH UN-TERMINATED CABLE TO REACH THE FURTHEST CUBE.
9. PROVIDE COVER PLATE AND A 90 DEGREE 1/2" SEAL-TIGHT CONNECTOR FOR EACH BASE FEED LOCATION.
10. ALL DIMENSIONS ARE TO THE CENTER OF THE RECEPTACLE UNLESS OTHERWISE NOTED.
11. ALL EXISTING WALL OUTLETS WHICH DO NOT INTERFERE WITH NEW CONSTRUCTION SHALL REMAIN.

ELECTRICAL/COMMUNICATIONS REFERENCE NOTES: INDICATED BY ○ ON PLAN

- ① FOURPLEX RECEPTACLE, VOICE/DATA AND CABLE T.V. JACK MIN. 20"- MAX. 48" MOUNTING DISTANCE FROM REAR OFFICE WALL. COORDINATE WITH FURNITURE.
- ② REFER TO 2A/A600 FOR ADDITIONAL INFORMATION RELATED TO DEVICE MOUNTING HEIGHTS.

ELECTRICAL/COMMUNICATIONS SCHEDULE:

- ▲ JUNCTION BOX TO PROVIDE ADEQUATE SPACE FOR THE FOLLOWING: (SINGLE GANG MOUNTING ON 4X4 BOX):
  - TWO CATEGORY 5 FOUR PAIR CABLES FOR DATA COMMUNICATIONS
  - A) SINGLE 4 PAIR TO RJ45 JACK FOR DATA 1, 568A
  - B) SINGLE 4 PAIR TO RJ45 JACK FOR DATA 2, 568B
 (NUMBER DENOTES QUANTITY REQUIRED AT LOCATION).
- DUPLEX RECEPTACLE
- ⊕ FOUR-PLEX RECEPTACLE
- <sub>4</sub> DUPLEX RECEPTACLE. NUMBER REPRESENTS HEIGHT A.F.F.
- ⊕<sub>4</sub> CABLE T.V. ROUGH-IN: PROVIDE MID RING COVER PLATE AND H.D. PULL STRING AS REQUIRED TO PULL CABLE THROUGH INSULATED WALL CAVITY.
- ⊕<sub>4</sub> WALL FED BASE PANEL FEED FOR SYSTEMS FURNITURE- STANDARD 8-WIRE ELECTRICAL, 3 AND 1 CONFIGURATION. PROVIDE ISOLATED GROUND PER SYSTEM REQUIREMENTS. VERIFY EXACT LOCATION AND POWER REQUIREMENTS WITH SYSTEM FURNITURE VENDOR AND COORDINATE CONNECTION DEVICE REQUIREMENTS FOR COMPLETE CONNECTION TO ELECTRIFIED SYSTEM FURNITURE. PROVIDE SEPARATE JUNCTION BOXES FOR POWER AND LOW VOLTAGE FEEDS. NUMBER INDICATES QUANTITY OF CUBES SERVED BY "BFP" FOR POWER AND LOW VOLTAGE TERMINATIONS. REFER TO 2D/A401 FOR ADDITIONAL INFORMATION.
- CORE DRILL / FLOOR MONUMENT SIZED ADEQUATELY FOR POWER AND CABLING REQUIREMENTS AS INDICATED ON PLAN. SUBMIT CUT SHEET TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. PROVIDE FLOOR CONDUIT RUNS TO FEED. SEE SHEET A401 FOR ADDITIONAL INFORMATION. VERIFY SLAB STRUCTURE PRIOR TO CORE DRILLING. SPECIFICATION: NIREMOLD, WALKER, IN-FLOOR, SYSTEM, R44 POKE-THRU SERIES.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

Dean A. Oisen  
Date: 02.13.09 License No. ARC3379

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No.	Date	Revision
02.13.09	02.13.09	ISSUE FOR PERMIT & CONSTRUCTION
02.06.09	02.06.09	ISSUE FOR BID

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SHEET TITLE:  
REFLECTED CEILING PLAN / POWER AND COMMUNICATIONS PLAN

Date: 02.13.09  
Comm. No: 8528293.03  
In Charge: AK  
Drawn By: JD  
Checked By: DO **A300**





I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

Dean A. Olsen  
 Date: 02.13.09 License No. ARC3379

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TENANT IMPROVEMENTS FOR:  
**RBC Wealth Management**  
 2 Portland Square  
 Suite 501  
 Portland, ME 04101

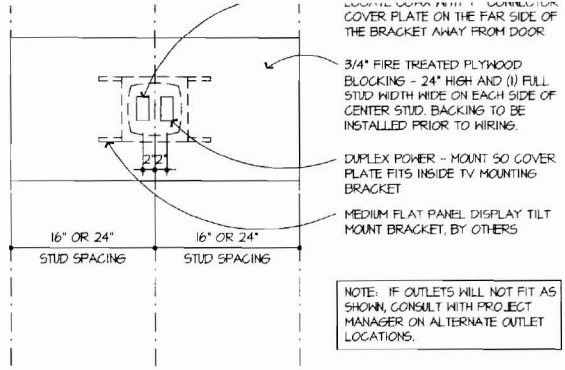
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No.	Date	Revision
	02.13.09	ISSUE FOR PERMIT & CONSTRUCTION
	02.06.04	ISSUE FOR BID

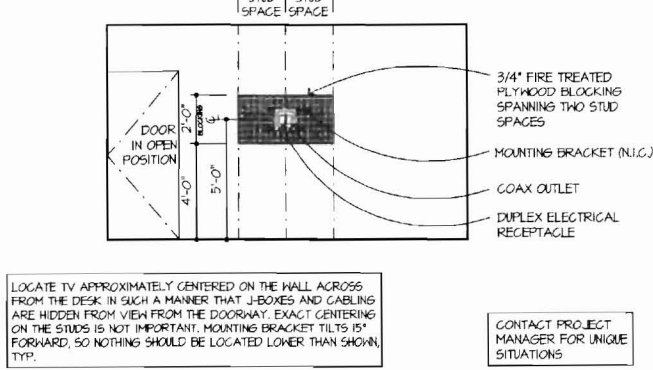
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SHEET TITLE:  
**DETAILS / ELEVATIONS**

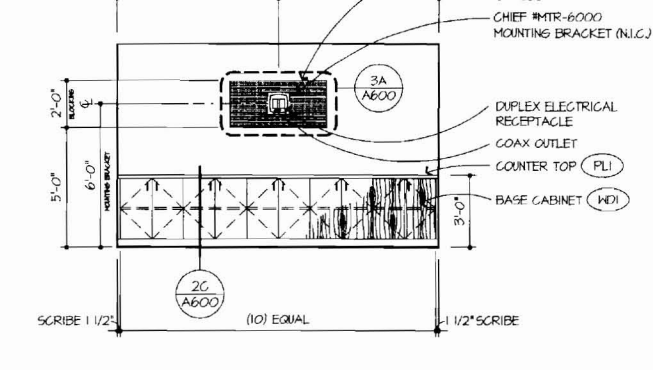
Date: 02.13.09  
 Comm. No: 8528293.03  
 In Charge: AK  
 Drawn By: JD  
 Checked By: DO **A600**



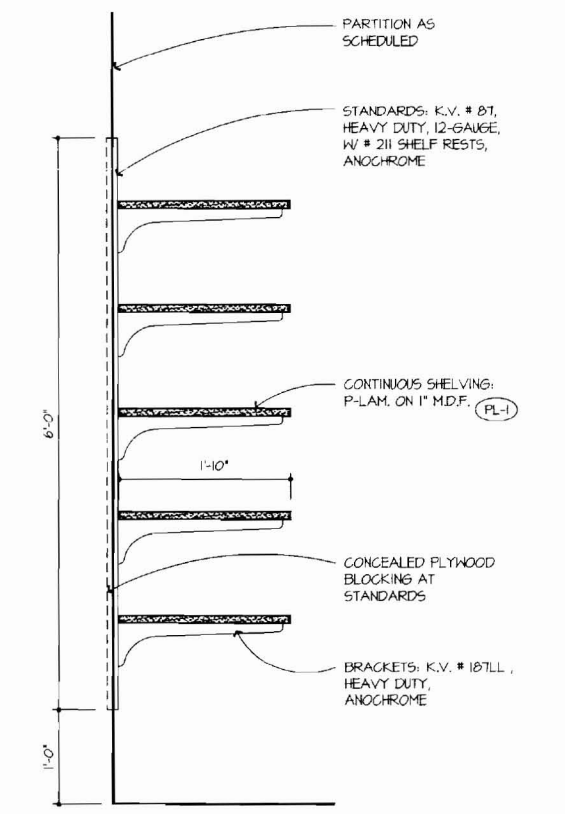
**3A** DETAIL @ MOUNTING BRACKET  
 SCALE: 3/4\"/>



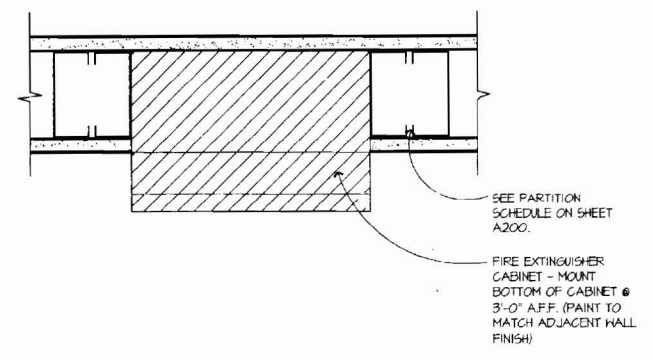
**2A** ELEVATION OF FLAT PANEL TV @ OFFICE WALL  
 SCALE: 1/4\"/>



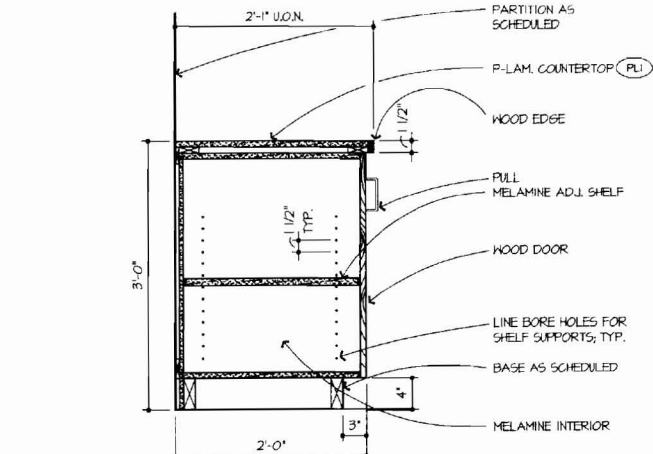
**1A** ELEVATION @ CONFERENCE ROOM  
 SCALE: 1/4\"/>



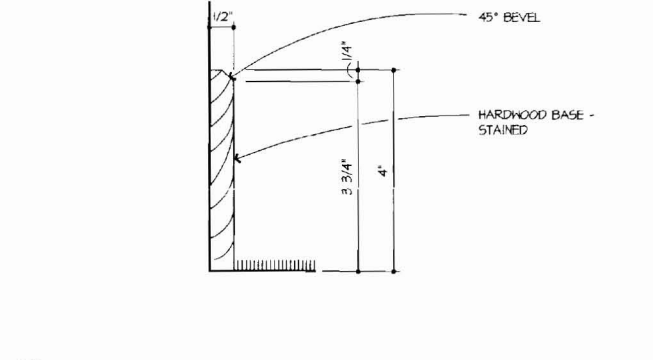
**3C** SECTION @ ADJ. SHELVES - (5) HIGH  
 SCALE: 1\"/>



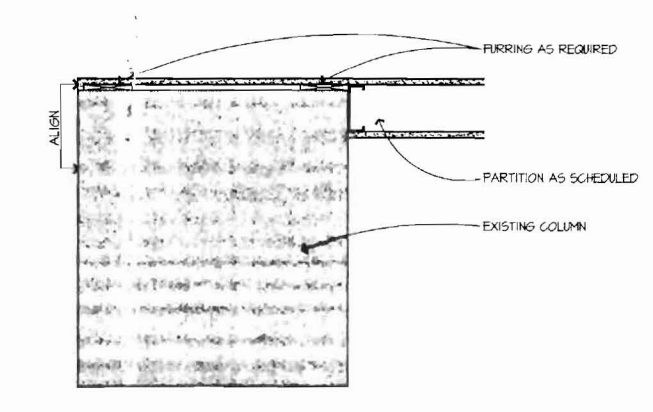
**2B** DETAIL @ SEMI RECESSED FIRE EXTINGUISHER  
 SCALE: 3\"/>



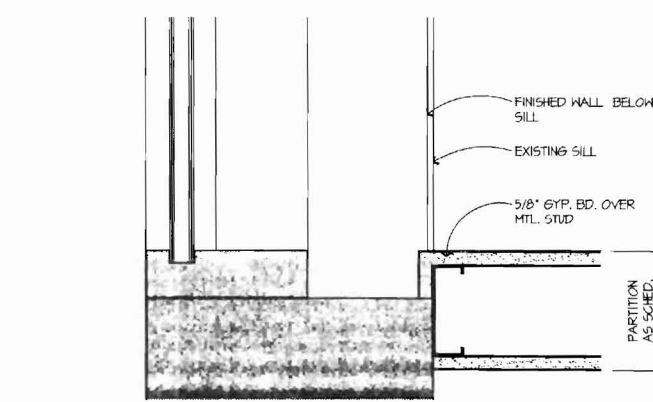
**2C** SECTION @ BASE CABINET  
 SCALE: 1\"/>



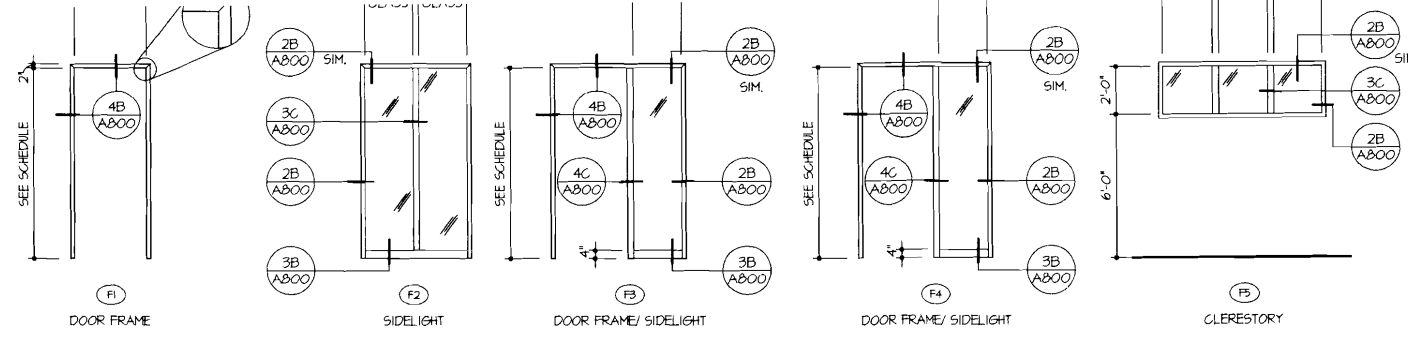
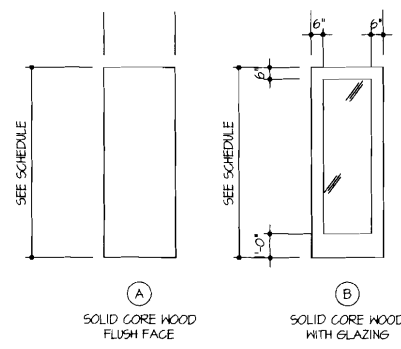
**1B** DETAIL @ WOOD BASE MOULDING  
 SCALE: 3\"/>



**1C** DETAIL @ COLUMN  
 SCALE: 1 1/2\"/>



**1D** DETAIL @ WALL TO EXTERIOR MULLION  
 SCALE: 3\"/>



DOOR CODE	ROOM NAME	DOOR SIZE (H x W x T)	DOOR		FRAME		HWR. GROUP	LABEL (MINUTES)	REMARKS
			TYPE	MATL	TYPE	MATL			
506	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
545	CONFERENCE	3'-0"x8'-0"x1 3/4"	B	HD	F1	HD	IA	-	-
546	CLOSET	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	110" O.H. STOP
547	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
548	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
549	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F4	HD	IA	-	-
550	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F3	HD	IA	-	-
551	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
552	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
553	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
554	OPEN OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	4	-	-
555	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
556	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F1	HD	IA	-	-
557	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F3	HD	IA	-	-
558	OFFICE	3'-0"x8'-0"x1 3/4"	A	HD	F4	HD	IA	-	-

**DOOR / HARDWARE / SIDELIGHT NOTES:**

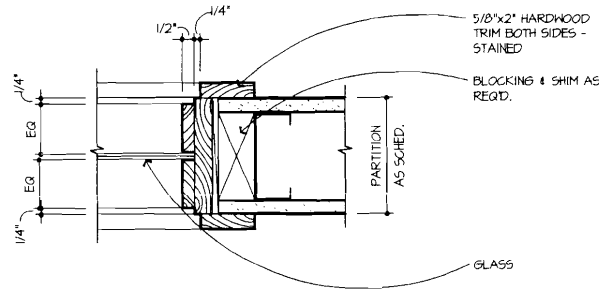
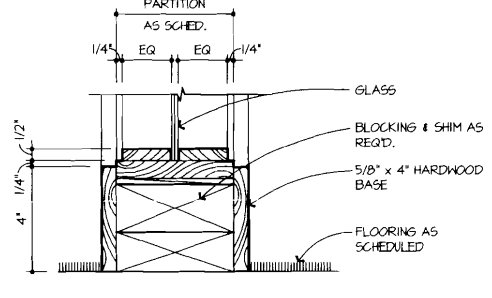
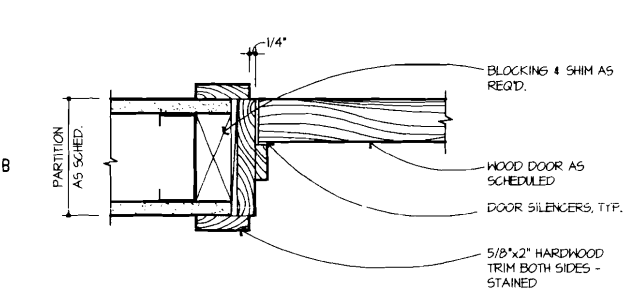
- VERIFY EXACT HARDWARE KEYING REQUIREMENTS WITH TENANT.
- PROVIDE 1/4" CLEAR TEMPERED GLASS AT ALL SIDELIGHTS & INTERIOR WINDOWS, UNLESS OTHERWISE NOTED.

**HARDWARE KEY:**

- GROUP 1A:**  
 -PASSAGE SET  
 -BUTTS (2 PAIR)  
 -WALL STOP
- GROUP 4:**  
 -GLASS ROOM FUNCTION LOCKSET  
 -BUTTS (2 PAIR)  
 -PARALLEL ARM CLOSER  
 -WALL STOP

**4A DOOR TYPES**  
 A800 1/4" = 1'-0"

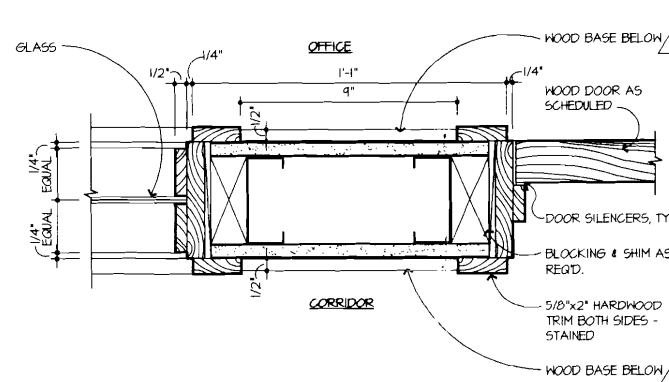
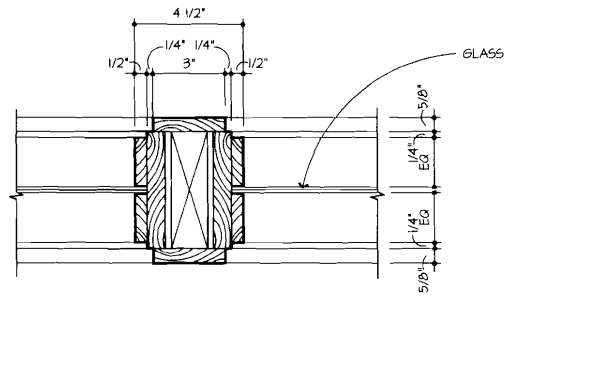
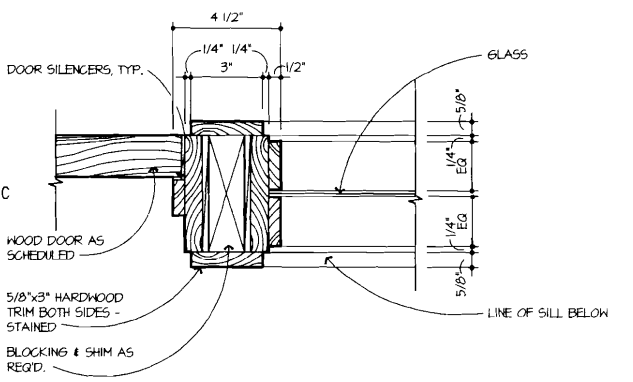
**3A FRAME TYPES**  
 A800 1/4" = 1'-0"



**4B DETAIL @ DOOR JAMB**  
 A800 SCALE: 3" = 1'-0"

**3B DETAIL @ SIDELIGHT SILL**  
 A800 SCALE: 3" = 1'-0"

**2B DETAIL @ SIDELIGHT JAMB**  
 A800 SCALE: 3" = 1'-0"



**4C DETAIL @ DOOR AND SIDELIGHT JAMB**  
 A800 SCALE: 3" = 1'-0"

**3C DETAIL @ SIDELIGHT MULLION**  
 A800 SCALE: 3" = 1'-0"

**2C DETAIL @ TYPICAL SIDELIGHT/ DOOR MULLION**  
 A800 SCALE: 3" = 1'-0"

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

*Dean A. Olsen*  
 Dean A. Olsen  
 Date: 02.13.09 License No. ARC3379

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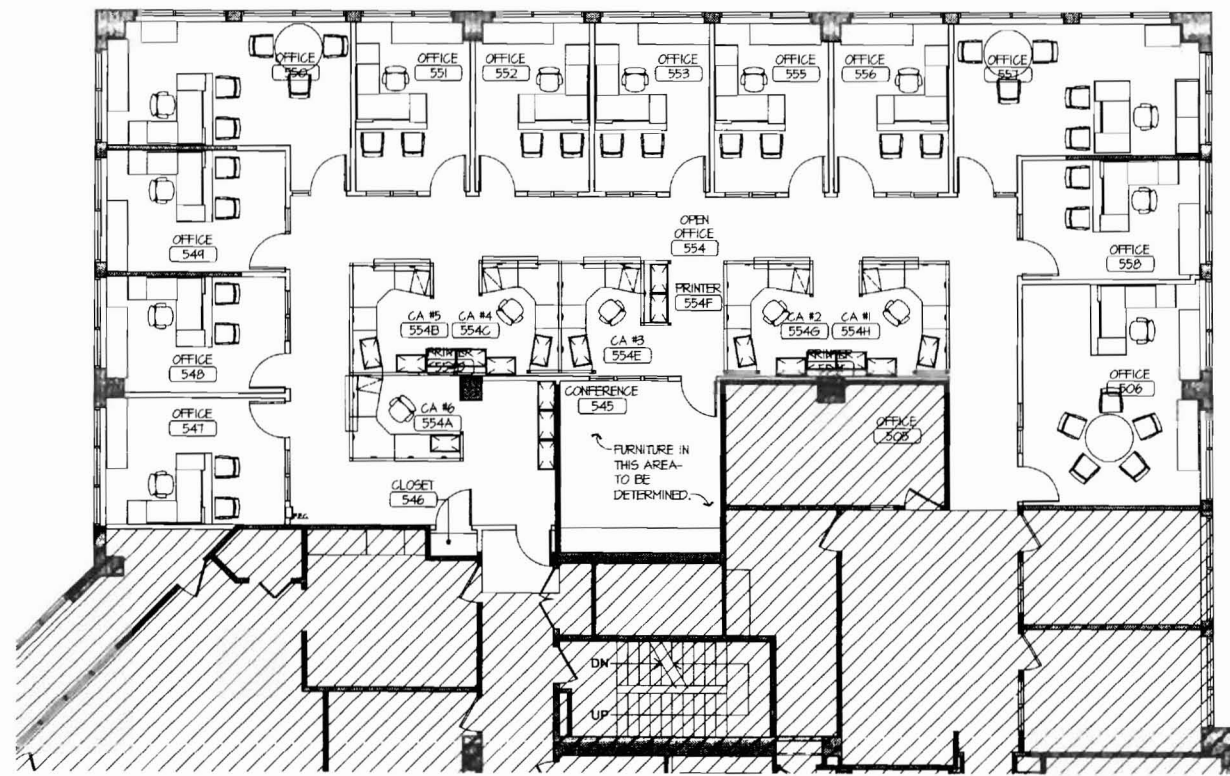
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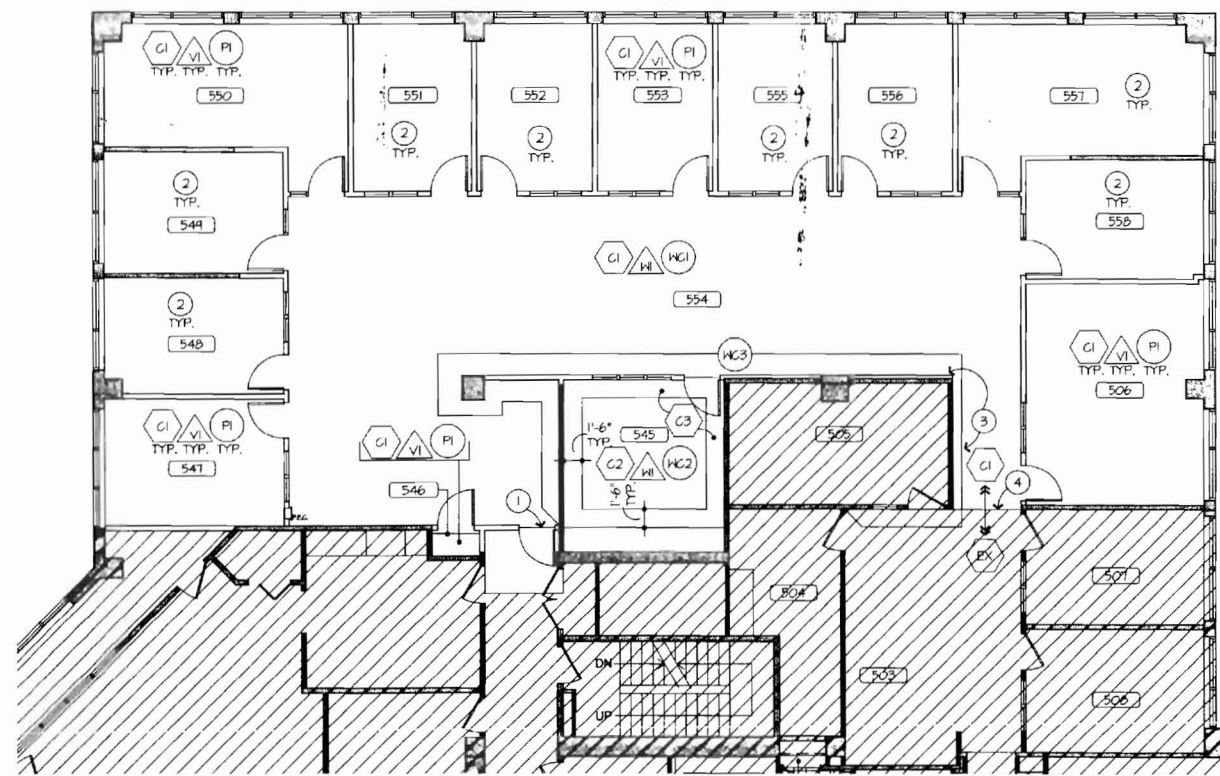
**SHEET TITLE:**  
 DOOR SCHEDULE/  
 FRAME TYPES/  
 DETAILS

Date: 02.13.09  
 Comm. No: 8528293.03  
 In Charge: AK  
 Drawn By: JD  
 Checked By: DO **A800**



4B FURNITURE PLAN - 5TH FLOOR  
A900 SCALE: 1/8" = 1'-0"

REFERENCE ONLY



2B WALL AND FLOOR FINISH PLAN - 5TH FLOOR  
A900 SCALE: 1/8" = 1'-0"



FINISH KEY:

- HEXAGON: INDICATES FLOOR FINISH MATERIAL
- CIRCLE: INDICATES WALL/CEILING FINISH MATERIAL
- TRIANGLE: INDICATES WALL BASE MATERIAL
- SQUARE: INDICATES HOOD VENEER, SOLID SURFACE, OR PLASTIC LAMINATE FINISH

FLOOR FINISH GENERAL NOTES:

1. REFER TO MANUFACTURER OF THE CARPET FOR SUGGESTED ADHESIVE. CARPET ADHESIVES TO CARRY GRI IAG ADHESIVE TESTING LABEL FOR LOW VOC EMISSIONS.
2. CARPET TO BE SUPPLIED BY G.C.. CONTRACTOR SHALL BE RESPONSIBLE FOR CARPET QUANTITY TAKEOFF AND LABOR TO INSTALL NEW CARPET AND/OR REMOVAL OF EXISTING CARPET IN PLACE. CONTRACTOR ALSO RESPONSIBLE FOR SUPPLY AND INSTALLATION OF ANY OTHER FLOORING MATERIALS AND VINYL BASE REQUIRED BY THE PROJECT.
3. ALL PRODUCTS SHALL BE AS SPECIFIED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY ARCHITECT.
4. ANY QUESTIONS REGARDING THIS PROJECT SHOULD BE DIRECTED TO THE PROJECT MANAGER INDICATED ON SHEET 6100.
5. ALL OPEN OFFICE AREAS/CORRIDORS TO RECEIVE (CI, VI) EXCEPT OFFICES OR UNLESS OTHERWISE NOTED.
6. ALL PRIVATE OFFICES TO RECEIVE (CI, VI) UNLESS OTHERWISE NOTED.
7. REFER TO PROJECT MANUAL FOR CONTRACTED PRICING FOR FINISHES INDICATED
8. ALL 'EX' INDICATED ON THE PLANS ARE EXISTING TO REMAIN.

FLOOR FINISHES:

CARPET

- (C1) MILLIKEN CARPET TILE, "COLORHEAVE CUSTOM", # SH15548-03, SIZE: 3'-0" x 3'-0" WITH COMFORT PLUS INSTALLATION, MONOLITHIC
- (C2) ATLAS COMMERCIAL CARPET, "BRAMPTON", COLOR: # B524 PRAIRIE COVE, CONTENT: XTI NYLON, WIDTH: 12'-6"
- (C3) LARKAN COMMERCIAL CARPET, "DEANUUP DE BOUCLE", DCA0, COLOR: # 543 INKHELL, CONTENT: DUPONT 6.6 NYLON, WIDTH: 12'

BASE

- (WI) NEW 4" HIGH HARDWOOD, BASE, STAIN TO MATCH (HDI), SEE DETAIL 1B/A600.
- (VI) 4.5" HIGH VINYL BASE BY JOHNSONITE, COLOR: # 74 BONE WHITE, PROVIDE TIGHT LOCK STRAIGHT BASE AT ALL CARPET TILE LOCATIONS. PROVIDE COVERED BASE AT ALL VINYL TILE LOCATIONS.

WALL FINISH GENERAL NOTES:

1. ALL PAINTED SURFACES SHALL HAVE AN EGGSHELL FINISH UNLESS OTHERWISE NOTED. METAL SURFACES SHALL RECEIVE ALKYL ENAMEL SEMI-GLOSS FINISH.
2. CONTRACTOR SHALL SUBMIT 8" X 10" PAINT-OUTS TO ARCHITECT FOR APPROVAL, PRIOR TO JOB-SITE APPLICATION.
3. ALL PRODUCTS SHALL BE AS SPECIFIED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY ARCHITECT.
4. CONTRACTOR SHALL SUPPLY ALL NECESSARY FINISHES AS REQUIRED BY PROJECT. CONTRACTOR IS RESPONSIBLE FOR QUANTITY TAKEOFF AND LABOR TO APPLY FINISHES. CONTRACTOR IS ALSO RESPONSIBLE FOR THE SUPPLY AND APPLICATION OF ALL PAINT AND STAIN REQUIRED BY THE PROJECT.
5. WRAP WALLCOVERING AS SCHEDULED TO UNDERSIDE OF SOFFIT AND GYP. BD. OPENINGS IF NECESSARY.
6. SKIM COAT ALL NEW AND EXISTING WALL SURFACES AND COLUMN ENCLOSURES AS REQUIRED FOR ACCEPTANCE OF NEW FINISHES.
7. ANY QUESTIONS REGARDING THIS PROJECT SHOULD BE DIRECTED TO THE PROJECT MANAGER INDICATED ON SHEET 6100.
8. ALL OPEN OFFICE AREAS/CORRIDORS TO RECEIVE (WC1), UNLESS OTHERWISE NOTED.
9. ALL PRIVATE OFFICES TO RECEIVE (PI), UNLESS OTHERWISE NOTED.
10. REFER TO PROJECT MANUAL FOR CONTRACTED PRICING FOR FINISHES INDICATED

WALL FINISHES:

PAINT

- (PI) BENJAMIN MOORE, # HC-81, "MANCHESTER TAN", TINTED BASE 1B, (CREAM)

HALLCOVERING

- (WC1) MAHARAM, "SPICE", # 341200-003, CRYSTAL 54"WIDE, TYPE II (CREAM), \*PER ASTM E 84, FLAME SPREAD INDEX: 25 OR LESS, SMOKE DEVELOPED INDEX: 450 OR LESS
- (WC2) MAHARAM, "LUMINOUS", # 341000-011, PENTER 54"WIDE, TYPE II (SILVER), \*PER ASTM E 84, FLAME SPREAD INDEX: 25 OR LESS, SMOKE DEVELOPED INDEX: 450 OR LESS
- (WC3) MAHARAM, "LUMINOUS", # 341000-005, PARCHMENT 54"WIDE, TYPE II (TAN), \*PER ASTM E 84, FLAME SPREAD INDEX: 25 OR LESS, SMOKE DEVELOPED INDEX: 450 OR LESS

MILLWORK FINISHES:

HOOD

- (HDI) WOOD STAIN TO MATCH, LUMBALL OFFICE FURNITURES "JUDICIAL WALNUT", STAIN SAMPLE TO BE APPROVED BY ARCHITECT.

PLASTIC LAMINATE

- (PLI) NEVAMAR, # 9L6002T, "ARMORED PROTECTION" HYBRID SLATE, TEXTURED

FINISH PLAN KEY NOTES, Indicated by (1) on plan.

- (1) TRANSITION BUILDING CORRIDOR FINISHES WITH NEW TENANT FINISHES. COORDINATE ALL WORK WITH BUILDING MANAGEMENT AS NECESSARY.
- (2) SEE FLOOR FINISH GENERAL NOTE # 6, AND WALL FINISH GENERAL NOTE # 9 FOR PRIVATE OFFICE FINISH SPECIFICATIONS.
- (3) PROVIDE NEW WALLCOVERING BEGINNING AT THE CORNER OUTSIDE OFFICE 505 IN EXISTING SPACE TO AREA INDICATED ON PLANS.
- (4) PROVIDE SMOOTH TRANSITION FOR FLOORING SEAMS BETWEEN EXISTING CARPET AND NEW CARPET AT AREA OF NEW CONSTRUCTION.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

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SHEET TITLE:

FURNITURE PLAN /  
WALL AND FLOOR  
FINISH PLAN

Date: 02.13.09  
Comm. No: 8528293.03  
In Charge: AK  
Drawn By: JD  
Checked By: DO

A900



WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

2. ALL DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICES FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS SUBJECT TO APPROVAL OF ENGINEER.

3. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL STEEL FRAMING.

4. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

5. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP WORK PROPOSAL.

6. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME. ALL SHUT DOWNS SHALL BE ON OFF HOURS & INCLUDED IN BID.

7. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ENGINEER.

8. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT, AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

9. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS

10. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL. SEE SPECIFICATIONS

11. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, CONDUIT, AND EQUIPMENT.

12. ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE OWNER.

13. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.

14. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

15. INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

16. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED.

17. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC. WHICH AFFECT THIS WORK AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION.

18. PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE AND SAFE INSTALLATION OF HVAC IN FULL CONFORMITY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION; ALL AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED FOR THE SYSTEMS INCLUDED. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER. INCLUDE ALL COSTS FOR PERMITS, LICENSES, CERTIFICATES, FILING AND INSPECTIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION.

19. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

		FLEXIBLE CONNECTION
		VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
		VANED ELBOW (SHORT RAD.)
		STANDARD RADIUS ELBOW
		NEW DUCT (WIDTH X DEPTH)
		EXISTING DUCT TO REMAIN
		EXISTING DUCT TO BE REMOVED
		FLEXIBLE DUCTWORK (INSULATED)
		DUCT WITH SOUND LINING
		DUCTWORK WITH EXTERNAL INSULATION WRAP
		MANUAL VOLUME DAMPER
		FIRE DAMPER
		BACK DRAFT DAMPER
		COMBINATION FIRE/SMOKE DAMPER
		MOTORIZED DAMPER
		SMOKE DETECTOR
		AUTOMATIC DAMPER (ELECTRIC)
		LEAK DETECTOR
		FLOW SWITCH
		DIFFERENTIAL PRESSURE GAUGE
		SUPPLY DUCT (UP & DOWN)
		EXHAUST DUCT (UP & DOWN)
		CONNECT NEW DUCT TO EXISTING DUCT
		INCLINED RISE IN DIRECTION OF AIR FLOW
		INCLINED DROP IN DIRECTION OF AIR FLOW
		LIMIT OF DEMOLITION
		VERTICAL DUCT DROP
		VERTICAL DUCT RISE

	NEW PIPE
	EXISTING PIPE
	EXISTING PIPE TO BE REMOVED
	DIRECTION OF PIPE PITCH (DOWN)
	DIRECTION OF FLOW
	REDUCER OR INCREASER
	ECCENTRIC REDUCER
	PIPE DOWN
	PIPE UP
	TOP CONNECTION
	BOTTOM CONNECTION
	PIPE DROP
	PIPE RISE
	UNION
	FLANGED END
	DEAD END - SCREWED CAP
	DEAD END - WELDED CAP
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	STRAINER
	THERMOMETER WELL
	PRESSURE GAGE WITH NEEDLE VALVE
	THERMOMETER
	GATE VALVE
	THERMAL EXPANSION VALVE
	SOLENOID VALVE
	FLOW CONTROL VALVE
	DRAIN VALVE
	GLOBE VALVE
	CHECK VALVE
	SILENT CHECK VALVE
	BALL VALVE
	CIRCUIT SETTER
	2-WAY CONTROL VALVE
	PLUG VALVE
	2-WAY CONTROL VALVE
	MOTORIZED VALVE
	THREE-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	SAFETY OR PRESSURE RELIEF VALVE
	BUTTERFLY VALVE
	PITCH UP IN DIRECTION OF FLOW
	PITCH DOWN IN DIRECTION OF FLOW
	CALIBRATED BALANCING VALVES (CIRCUIT SETTERS)

	REVISION NUMBER
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	LIMIT OF DEMOLITION
	PUMP
	METER
	REFRIGERANT SIGHT GLASS
	THERMOSTAT
	HUMIDITY SENSOR
	REMOTE INDICATOR LIGHT
	INDICATOR UNIT
	LEAK SENSOR
	CONDENSATE PUMP
	CURRENT TRANSDUCER
	SMOKE DETECTOR/SENSOR
	SWITCH
	VIBRATION ISOLATOR IN HANGER
	DUCT UNDER PRESSURE (SUPPLY AIR OR FAN DISCHARGE)
	DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR)
	CONDENSATE PUMP
	BREAK GLASS STATION
	SECTION DESIGNATION
	DRAWING REFERENCE NUMBER

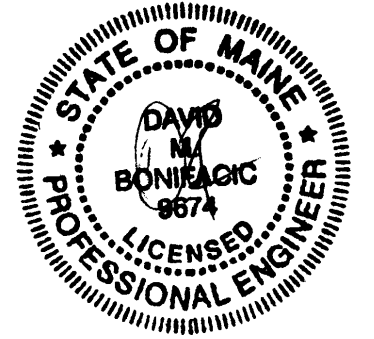
DIFFUSER SYMBOLS	
SYMBOL	DESCRIPTION
	SUPPLY DIFFUSER
	RETURN/EXHAUST GRILLE
	3-WAY DIFFUSER
	2-WAY DIFFUSER
	2-WAY CORNER DIFFUSER
	1-WAY DIFFUSER
	LINEAR DIFFUSER
	SIDEWALL DIFFUSER
	TYPE A SUPPLY REGISTER, 150 CFM

A	AMPERES	LDB	LEAVING DRY BULB TEMP.
AC	AIR CONDITIONING	LWB	LEAVING WET BULB TEMP.
AD	ACCESS DOOR	LRA	LOCKED ROTOR AMPS
AD	ACCESS DOOR	LWT	LEAVING WATER TEMP.
AF	ABOVE FINISHED FLOOR	M	AUTOMATIC DAMPER MOTOR ACTUATOR
AL	ACOUSTICAL LINING	MAX	MAXIMUM
AP	ACCESS PANEL	MBH	THOUSAND BTU PER HR
BHP	BRAKE HORSEPOWER	MCA	MINIMUM CKT AMPACITY
BTU	BRITISH THERMAL UNIT	MCC	MOTOR CONTROL CENTER
BTU/HR	BTU PER HOUR	MFS	MAXIMUM FUSE SIZE
CAP	CAPACITY	MHP	MOTOR HORSEPOWER
CD	CEILING DIFFUSER	MIN	MINIMUM
CFM	CUBIC FEET PER MINUTE	NK	NECK SIZE
CG	CEILING GRILLE	OAI	OUTSIDE AIR INTAKE
CLG	CEILING	OD	OUTSIDE DIAMETER
CP	CONDENSATE PUMP	OED	OPEN END DUCT
CWS&R	CONDENSER WATER SUPPLY & RETURN DROP	PD	PRESSURE DROP
D	DRY BULB	PH	PHASE
DB	DOWN	PSI	POUNDS PER SQUARE INCH
DN	DOWN	R	RISE
DWG	DRAWING	RM	ROOM
EAT	ENTERING AIR TEMP.	RPW	REVOLUTIONS PER MINUTE
EDB	ENTERING DRY BULB TEMPERATURE	SD	SMOKE DETECTOR
EF	EXHAUST FAN	SENS	SENSIBLE
EWB	ENTERING WET BULB TEMPERATURE	SP	STATIC PRESSURE
ER	EXISTING TO BE RELOCATED	SQ FT	SQUARE FEET
ESP	EXTERNAL STATIC PRESSURE	TEMP	TEMPERATURE
°F	DEGREES FAHRENHEIT	TD	TRANSFER DUCT
FC	FLEXIBLE CONNECTION, FAN COIL	TYP	TYPICAL
FLA	FULL LOAD AMPS	V	VOLTS
FPS	FEET PER SECOND	VD	VOLUME DAMPER
FT	FEET	W	WIDTH
H	HEIGHT	WI	WITH
HR	HOUR	WB	WET BULB
HZ	HERTZ	WG	WATER GAUGE
KW	KILOWATT	WMS	WIRE MESH SCREEN
L	LENGTH	WTS	WEIGHTS
LAT	LEAVING AIR TEMP.		
LBS	POUNDS		
IN	INCHES		

**WALSH BISHOP ASSOCIATES, INC.**  
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

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TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
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ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:  
**MECHANICAL LEGEND**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - M001

TAG NO.	AIR FLOW RANGE (CFM)	PRIMARY AIR INLET SIZE (INCHES)	BOX DIMENSIONS (LxWxH)	FAN MOTOR DATA					HEATING COIL ELECTRIC			MFG	MODEL NUMBER	UNIT SIZE	REMARKS
				ESP (IN W.G.)	FAN MOTOR DRIVE	MINIMUM FAN HP OR WATTS	MAXIMUM NC	V/PH/Hz	KW	STEPS	V/PH/Hz				
FPT-1	0-400	8"Ø	41X36X17	.25	DIRECT	1/4	27	277/1/60	3	2	480/3/60	TITUS	PTQ5	3	
FPT-2	401-750	10"Ø	41X36X17	.25	DIRECT	1/4	27	277/1/60	6.0	2	480/3/60	TITUS	PTQ5	3	
FPT-3	751-1100	12"Ø	47X48X20	.25	DIRECT	1/3	32	277/1/60	10	3	480/3/60	TITUS	PTQ5	5	
FPT-4	1101-1700	14"Ø	47X48X20	.25	DIRECT	3/4	36	277/1/60	16	3	480/3/60	TITUS	PTQ5	6	

\* SET MINIMUM PRIMARY AIR TO 1/3 OF DESIGN AIRFLOW UNLESS OTHERWISE SPECIFIED ON DRAWING  
 \* PROVIDE W/ THE FOLLOWING MANUFACTURER'S OPTIONS: 1" STERILINER LINING, DISCONNECT SWITCHES, SINGLE POINT ELECTRICAL CONNECTIONS, FILTER, ECM MOTORS & FIELD MOUNTED CONTROLS BY CONTROLS CONTRACTOR.  
 \* CONTROLS SHALL BE JOHNSON CONTROLS AND INSTALLED BY AN APPROVED JOHNSON CONTROLS CONTRACTOR IN THE FIELD.  
 \* REFER TO PLANS FOR EXACT INDIVIDUAL FLOW RATES FOR EACH FAN POWERED TERMINAL AND BALANCE TO THE CFMS DEPICTED.

**AIR DEVICE SCHEDULE** 15855-1

UNIT DESIGNATION	CFM RANGE	MODULE SIZE	FACE SIZE	NECK SIZE	NC LEVEL	VELOCITY PRESSURE	MANUFACTURER	MODEL NO.	REMARKS
CD-1	0-100	24X24	24X24	6"Ø	<25	0.01	TITUS	TMS-AA	1,2,3,4
CD-2	101-250	24X24	24X24	8"Ø	<25	0.01	TITUS	TMS-AA	1,2,3,4
CD-3	251-500	24X24	24X24	10"Ø	<25	0.01	TITUS	TMS-AA	1,2,3,4
LD-1	0-125	4"	-	8"Ø	<25	0.01	TITUS	TBD-30	1,2,3,4,5
LD-2	126-230	4"	-	10"Ø	<25	0.01	TITUS	TBD-30	1,2,3,4,5
RG-1	0-950	24X24	22X22	-	<25	0.01	TITUS	50F	1,2,3,4

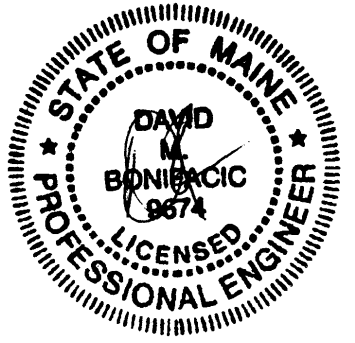
- NOTES:  
 1. SELECTIONS BASED ON TITUS OR APPROVED EQUAL.  
 2. DIFFUSER TYPES SHALL BE COMPATIBLE WITH ARCHITECTURAL CEILING TYPE FOR THE ROOM IN WHICH THE AIR DEVICE IS LOCATED.  
 3. REFER TO PLANS FOR LOCATION AND AIR QUANTITIES OF EACH AIR DEVICE AND REQUIRED FLOW PATTERN.  
 4. DIFFUSERS MUST BE SUPPORTED INDEPENDENTLY OF CEILING GRID.  
 5. 2 SLOT DIFFUSER, 1" SLOT WIDTH.

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SHEET TITLE:

**MECHANICAL LEGEND**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - **M101**

REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COLLARS, CAPS, ELECTRIC POWER, ETC. NECESSARY TO PERFORM THE TESTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR SCHEDULING THE TEST NO LESS THAN THREE (3) BUSINESS DAYS PRIOR TO ITS INTENDED OCCURRENCE. LOW PRESSURE DUCTWORK (2" CLASS) SHALL BE TESTED ON AN AS-NEEDED BASIS AT THE ENGINEER'S DISCRETION. LEAKAGE TEST PROCEDURES SHALL FOLLOW THE OUTLINES AND CLASSIFICATIONS IN THE SMACNA HVAC DUCT LEAKAGE TEST MANUAL. IF SPECIMEN FAILS TO MEET ALLOTTED LEAKAGE LEVEL, THE CONTRACTOR SHALL MODIFY TO BRING IT INTO COMPLIANCE AND SHALL RETEST IT UNTIL ACCEPTABLE LEAKAGE IS DEMONSTRATED. TESTS AND NECESSARY REPAIR SHALL BE COMPLETED PRIOR TO CONCEALMENT OF DUCTS.

**F. MATERIALS:**

1. SHEET METAL: UNLESS OTHERWISE SPECIFIED OR INDICATED, DUCTS SHALL BE CONSTRUCTED OF HOT-DIPPED GALVANIZED SHEETMETAL WITH G60 COMMERCIAL COATING ACCORDING TO ASTM A653 & A924.
2. STAINLESS STEEL: PROVIDE DUCTWORK OF STAINLESS STEEL CONSTRUCTION, WHERE INDICATED. DUCTWORK SHALL BE 316INO. 4 FINISH FOR EXPOSED DUCT. 304INO. 1 FINISH FOR CONCEALED DUCTS. PROVIDE FOR ALL CORROSIVE EXHAUST SYSTEMS INCLUDING FUME HOODS.
3. ALUMINUM: PROVIDE DUCTWORK OF ALUMINUM CONSTRUCTION, WHERE INDICATED. DUCTWORK SHALL BE ALLOY 3003, H14, OF THICKNESS REQUIRED BY THE SMACNA DUCT CONSTRUCTION STANDARDS. PROVIDE FOR ALL DUCTWORK EXPOSED TO WEATHER AND MOISTURE INCLUDING OUTSIDE AIR DUCTS WITHIN 10 FEET OF LOUVERS AND DISHWASHER EXHAUST.
4. IN WELDED CASES FOR ALL METAL DUCTWORK, THE FILLER ROD MATERIAL SHALL EQUAL OR EXCEED THE BASE METAL PROPERTIES.
5. WELDED DUCTWORK SHALL BE SEALED AIR, WATER AND GAS TIGHT.
6. FLEXIBLE CONNECTIONS AT FANS SHALL BE NEOPRENE COATED, FLAME RETARDANT GLASS FABRIC (COMPLYING WITH NFPA 90), 30 OZ./SQ. YD. WITH SEWED AND CEMENTED SEAMS.

**G. FABRICATION:**

1. CONFORM TO SMACNA REQUIREMENTS FOR METAL THICKNESS, REINFORCING, JOINTS, AND SEALING FOR MAXIMUM STATIC PRESSURES INVOLVED. ALL SEAMS AND JOINTS SHALL BE SEALED AND TAPED.
2. ELBOWS SHALL CONFORM TO SMACNA REQUIREMENTS AND THE FOLLOWING:
  - a) PROVIDE LONG RADIUS TYPE WITH CENTERLINE RADIUS MINIMUM 1.5 TIMES DUCT WIDTH. PROVIDE SHORT RADIUS OR SQUARE ELBOWS WHERE INDICATED OR WHERE REQUIRED TO FIT RESTRICTED SPACES. PROVIDE TURNING VANES ON ALL SHORT RADIUS AND MITERED ELBOWS. CONFORM TO SMACNA FOR THE NUMBER OF VANES FOR FITTINGS.
3. BRANCH CONNECTIONS: PROVIDE 45 DEGREE ENTRY OR CONICAL TAPS. PROVIDE RADIUS TYPE FITTINGS FOR DIVIDED FLOW BRANCHES.

**H. ACOUSTICALLY LINED DUCTWORK:**

1. PROVIDE MAT FACED GLASS DUCT LINER, 1-INCH THICK, 2 LB/CF DENSITY. DUCT DIMENSIONS INDICATED ARE CLEAR (NET) INSIDE DIMENSIONS. FOR DUCT VELOCITIES GREATER THAN 2,000 FPM, FACE DUCT LINER WITH 24 GAUGE PERFORATED ALUMINUM OR GALVANIZED STEEL, FULLY COVERING DUCT LINER, AND SUPPORTED 12" ON CENTER. DO NOT EXTERNALLY INSULATE ACOUSTICALLY LINED DUCTWORK. CONFORM TO SMACNA REQUIREMENTS FOR INSTALLATION. PROVIDE ACOUSTICALLY LINED DUCT WHERE LISTED BELOW AND/OR SHOWN ON THE DRAWINGS:
 

ALL TRANSFER DUCTS  
WITHIN MINIMUM 20 FEET OF ALL AC UNIT DISCHARGES  
WITHIN MINIMUM 20 FEET OF FAN INLET AND DISCHARGES  
WITHIN MINIMUM 10 FEET DOWNSTREAM OF TERMINAL BOXES (VAV, DUAL DUCT, CAV OR FAN POWERED).

**I. VOLUME DAMPERS:**

1. DAMPERS SHALL BE GALVANIZED STEEL OR SAME MATERIAL AS DUCT CONSTRUCTION. CONFORM TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION, OPPOSED BLADE TYPE. PROVIDE BEARING AT BOTH ENDS OF DAMPER AND QUADRANT, WITH LEVER AND LOCKSCREW, AT ONE END. INSTALL WITH LEVERS ACCESSIBLE THROUGH INSULATION. SPLITTER DAMPER OR AIR EXTRACTORS SHALL NOT BE USED ON THIS PROJECT.
2. PROVIDE MANUAL BALANCING VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE AIR DISTRIBUTION SYSTEM. IF THE LOCATIONS OF BALANCING DAMPERS ARE NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN:
  - a) LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH SPLIT, AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
  - b) LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
  - c) MEDIUM PRESSURE: ALL BRANCHES AND TAKEOFFS DOWNSTREAM OF TERMINAL BOXES (VAV OR FAN POWERED) SHALL BE PROVIDED WITH BALANCING DAMPERS.
  - d) AS NOTED ON PLANS.

**J. DUCT ACCESS DOORS:**

1. CONFORM TO SMACNA WITH PIANO TYPE HINGES, TWO SASH LOCKS AND DOOR GASKETS. SCREWED ACCESS PANELS ARE NOT PERMITTED. PROVIDE REMOVABLE ACCESS DOORS WHERE DOOR SWING CAN NOT BE ACCOMMODATED.
2. SIZE: MINIMUM 20" X 14" EXCEPT DUCTS LESS THAN 16", ONE DIMENSION 20" AND THE OTHER DIMENSION, 2" LESS THAN THE DUCT WIDTH.
3. PROVIDE ACCESS DOORS: AT ENTERING AND LEAVING SIDES OF COILS IN DUCTS, AUTOMATIC DAMPERS ON LINKAGE SIDE, MANUAL VOLUME DAMPERS 2 SQ. FT. AND LARGER, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, SMOKE DETECTION HEADS, FAN BEARINGS ENCLOSED IN DUCTS, SUCTION AND DISCHARGE SIDES OF CEILING MOUNTED FANS, FILTERS, REHEAT COILS, AT ALL EQUIPMENT REQUIRING ACCESS AND AS INDICATED ON DRAWINGS.

**K. FIRE DAMPERS:**

1. FUSIBLE LINK FIRE DAMPERS SHALL BE INSTALLED AS INDICATED ON DRAWINGS AND AS REQUIRED BY LOCAL BUILDING CODE. DAMPER SHALL BE UL LISTED AND LABELED AND IN CONFORMANCE WITH NFPA.
2. FIRE DAMPERS SHALL BE FACTORY FABRICATED WITH FUSIBLE LINK SHUTTER TYPE MECHANISM OUT OF AIRSTREAM. THE HVAC CONTRACTOR SHALL PROVIDE AN ACCESS DOOR AT EACH DAMPER.
3. DAMPER SHALL BE MANUFACTURED BY RUSKIN, MODEL 1B02 (1 1/2 HR RATED, VERTICAL STATIC) OR MODEL 1B02 (1 1/2 HR RATED, HORIZONTAL DYNAMIC) AS REQUIRED, TYPE "B", OR APPROVED EQUAL.

**L. SEAL OPENINGS AROUND DUCTS THROUGH WALLS WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL. SEAL ALL DUCT PENETRATIONS THROUGH WALLS AIRTIGHT.**

**M. ALL DUCTS EXPOSED TO MOISTURE SHALL BE ALUMINUM, SLOPED, DRAINED, AND SHALL NOT BE INTERNALLY LINED.**

**N. EXISTING DUCTWORK TO BE REUSED:**

1. THIS CONTRACTOR SHALL INSPECT, SEAL PER SMACNA REQUIREMENTS, LEAK TEST, AND INSULATE ALL EXISTING DUCTWORK TO BE REUSED. EXISTING DUCTWORK TO BE REUSED SHALL CONFORM TO SPECIFICATIONS FOR NEW DUCTWORK LISTED HEREIN. ALL REQUIRED WORK SHALL BE PART OF BID.

**A. GENERAL:**

1. GRILLES, REGISTERS AND DIFFUSERS SHALL BE TESTED IN ACCORDANCE WITH ASHRAE STANDARD 70-1991 OR LATEST EDITION. THE MANUFACTURER SHALL PROVIDE PUBLISHED PERFORMANCE DATA FOR ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT AS PART OF SUBMITTAL.
2. MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF DIFFUSERS, GRILLES AND REGISTERS WITH OTHER TRADES AND WITH CEILING AND WALL CONSTRUCTION. THE MECHANICAL CONTRACTOR SHALL VERIFY THAT ALL DIFFUSERS, GRILLES AND REGISTERS ARE COMPATIBLE WITH CEILING CONSTRUCTION TO WHICH THEY ARE TO BE INSTALLED.
3. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION, LENGTHS AND FOR FRAMING AND MITERING ARRANGEMENTS THAT MAY DIFFER FROM THOSE SHOWN ON HVAC DRAWINGS. PROVIDE ALL REQUIRED GENERAL CONSTRUCTION, FRAMING, BLOCKING, PLASTERING AND SUPPORTS TO MATCH CEILING, SOFFIT OR WALL CONSTRUCTION AS PART OF PROJECT.
4. INLETS AND OUTLETS SHALL HANDLE AIR QUANTITIES INDICATED AT OPERATING VELOCITIES WITH SOUND PRESSURE LEVEL NOT TO EXCEED NC-30, UNLESS NOTED OTHERWISE.
5. DIFFUSERS, GRILLES AND REGISTERS SHALL BE INSTALLED WITH FACES SET LEVEL AND PLUMB AND MOUNTED TIGHTLY AGAINST MOUNTING SERVICE.
6. ALL AIR INLETS AND OUTLETS TO BE STEEL OR ALUMINUM IF EXPOSED TO MOISTURE UNLESS OTHERWISE INDICATED. FINISHES SHALL BE SELECTED BY ARCHITECT.
7. DIFFUSERS, GRILLES AND REGISTERS SHALL BE MANUFACTURED BY TITUS OR ANEMOSTAT.
8. SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT INCLUDING MANUFACTURERS MODELS, SIZES, PERFORMANCE, ACCESSORIES, ACOUSTIC INFORMATION, FINISHES, ETC., BEFORE RELEASE FOR FABRICATION. NOTE ANY DEVIATIONS FROM SPECIFICATIONS AND SCHEDULES SHALL BE INDICATED ON SUBMITTAL.

**B. AIR INLET AND OUTLET DEVICES:**

1. PROVIDE DIFFUSERS, GRILLES AND REGISTERS FOR SUPPLY, RETURN AND EXHAUST INLETS AND OUTLETS, OF THE SIZE, TYPE, AND DESIGN INDICATED ON DRAWINGS.
2. ALL SUPPLY RETURN AND EXHAUST AIR INLETS AND OUTLETS SHALL BE PROVIDED WITH AN OPPOSED BLADE DAMPER AND GRID (ADJUSTABLE THROUGH THE FACE) FOR TRIM BALANCING.
3. SUPPLY REGISTERS SHALL HAVE TWO SETS OF DIRECTIONAL CONTROL BLADES.
4. ONLY 4 WAY DIFFUSERS SHALL BE USED. PROVIDE BLANK OFF SHEETMETAL BAFFLE FOR ALL 1-WAY, 2-WAY AND 3-WAY DIFFUSERS.

**15900 AUTOMATIC TEMPERATURE CONTROLS**

**A. GENERAL:**

1. FURNISH AND INSTALL AS HEREIN SPECIFIED, A COMPLETE AUTOMATIC TEMPERATURE CONTROL SYSTEM OF THE (PNEUMATIC) AS REQUIRED MANUFACTURED BY JOHNSON CONTROLS, OR APPROVED EQUAL BY THE ENGINEER. MANUFACTURER SHALL BE SUBMITTED WITH BID AND APPROVED BY ENGINEER BEFORE BID AWARD. THE ATC CONTRACTOR SHALL BE AN INDEPENDENT CONTRACTOR NOT AFFILIATED WITH THE MECHANICAL CONTRACTOR.
2. ALL TEMPERATURE CONTROL SYSTEMS AND COMPONENTS UNDER THIS SUBCONTRACT ARE TO BE FULLY MODULATING TYPE, EXCEPT WHERE NOTED OTHERWISE. THE SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL ASSOCIATED CONTROL EQUIPMENT, THERMOSTATS, DAMPER OPERATORS, RELAYS, PILOT POSITIONERS, CONTROL WIRING, CONTROL AIR PIPING, SWITCHES, INTERLOCK WIRING, PNEUMATIC CONTROL COMPONENTS AND ASSOCIATED PIPING OR WIRING, APPURTENANCES, ETC., TO PROVIDE THE FUNCTIONS DESCRIBED IN THESE SPECIFICATIONS AND PLANS, REGARDLESS OF WHETHER OR NOT SAID DEVICE RELAY, ETC., IS SPECIFICALLY MENTIONED HEREAFTER.
3. THE SYSTEM SHALL BE SUPERVISED AND CHECKED OUT COMPLETELY IN ALL RESPECTS BY COMPETENT MECHANICS, REGULARLY EMPLOYED BY THE MANUFACTURER.
4. ALL CONTROLS MUST BE THE PRODUCT OF ONE MANUFACTURER. ALL AUTOMATIC CONTROL VALVES, SENSORS AND DAMPER OPERATORS SHALL BE MANUFACTURED BY THE TEMPERATURE CONTROL MANUFACTURER.
5. ALL (BIMCS) SYSTEMS SUPPLIED UNDER THIS CONTRACT SHALL BE YEAR 2000 COMPLIANT "Y2K". THE BIMS MANUFACTURER SHALL PROVIDE WRITTEN CERTIFICATION STATING THAT THE PROPOSED SYSTEM COMPLIES WITH BID PROPOSAL.
6. CONNECTION TO EXISTING SYSTEM
  - a) IF NEW WORK IS TO CONNECT TO AN EXISTING SYSTEM, THE PROPOSED NEW SYSTEM TO BE INSTALLED SHALL BE FULLY COMPATIBLE WITH THE EXISTING SYSTEM. THE MANUFACTURER OF THE PROPOSED NEW SYSTEM SHALL PROVIDE ALL REQUIRED INTERFACES OR "GATEWAYS" TO ENSURE THAT THEIR SYSTEM IS FULLY COMPATIBLE.
7. THE CONTROL SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING DESCRIPTION OF SYSTEM OPERATIONS AND/OR DETAIL INFORMATION SHOWN ON THE PLANS AND AS DESCRIBED HEREIN.
8. THE MANUFACTURER OF THE AUTOMATIC CONTROL EQUIPMENT SHALL SUBMIT THE FOLLOWING FOR APPROVAL: A SCHEMATIC DIAGRAM OF EACH CONTROL SYSTEM WHICH SHALL INDICATE THE PROPER SEQUENCE OF OPERATION AND RANGE OF THE CONTROLS FOR ALL CYCLES. A COMPLETE DESCRIPTION OF THE AUTOMATIC OPERATION OF EACH SYSTEM. THE DESCRIPTION SHOULD INCLUDE THE DUTY OF EACH THERMOSTAT, VALVE, SWITCH, ETC., INCORPORATED IN THE CONTROL SYSTEM WITH A SCHEDULE AND ILLUSTRATION OF ALL CONTROL INSTRUMENTS AND EQUIPMENT INCLUDING CONTROL PANELS AND DEVICES FOR EACH SYSTEM.

**B. ELECTRIC WIRING:**

1. ALL ELECTRICAL WORK (EXCEPT FOR MOTOR FEEDERS, WIRING BETWEEN MOTORS, MOTOR CONTROLLERS, FEEDER PANELS, FUSES, CIRCUIT BREAKERS AND BUS BARS) REQUIRED FOR THE AUTOMATIC TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR. WORK SHALL INCLUDE BUT NOT BE LIMITED TO TIME SWITCHES, DAMPER MOTORS, DAMPER SWITCHES, ELECTRIC THERMOSTATS, ELECTRIC RELAYS, EP SWITCHES, INTERLOCKING WIRING, WIRE, CONDUIT, ETC.
2. ALL 115 VOLT POWER REQUIRED FOR CONTROL PURPOSES SHALL BE PROVIDED BY THE CONTROL CONTRACTOR FROM A SOURCE ESTABLISHED BY THE ELECTRICAL CONTRACTOR.
3. THE CONTROL MANUFACTURER SHALL INCLUDE WIRING DIAGRAMS IN HIS SHOP DRAWINGS SUBMITTALS FULLY COORDINATED WITH THE ELECTRICAL CONTRACTORS WORK. IT SHALL BE THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL WIRING AND CONDUIT AS REQUIRED TO ACHIEVE THE FUNCTION CALLED FOR IN THESE SPECIFICATIONS, CONFORMING WITH LOCAL CODES FOR MATERIAL AND INSTALLATION. THE ELECTRICAL SPECIFICATION FOR THE PROJECT ELECTRICAL WORK IS TO BE FOLLOWED.
4. FURNISH A CERTIFICATE INDICATING METHOD OF WIRING COMPLIANCE WITH LOCAL CODES AS PART OF FIRST SHOP DRAWING SUBMITTAL.

**C. ROOM THERMOSTAT AND SWITCH LOCATIONS:**

1. ALL ROOM THERMOSTATS AND SWITCH LOCATIONS (WHETHER SHOWN ON PLANS OR NOT) SHALL BE SELECTED AND SUBMITTED BY THE TEMPERATURE CONTROL MANUFACTURER FOR APPROVAL BY THE ARCHITECT AND ENGINEER PRIOR TO ACTUAL INSTALLATION.

**D. PNEUMATIC PIPING AND TUBING:**

1. PROVIDE PNEUMATIC CONTROL AIR PIPING AND TUBING FOR CONNECTION TO ALL PNEUMATIC AIR EQUIPMENT.
2. THE PNEUMATIC PIPING SYSTEM SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER BY TRAINED MECHANICS IN THE DIRECT EMPLOY OF THE CONTROL MANUFACTURER.

BE RUN EXPOSED IN MECHANICAL ROOMS OR AREAS WHERE OTHER PIPING IS EXPOSED. PROVIDE DIELECTRIC SUPPORTS WHERE REQUIRED.

4. SINGLE TERMINAL LINES IN EQUIPMENT ROOMS SHALL BE HARD DRAWN COPPER, RUN TO WITHIN ONE FOOT OF THE CONNECTION, WHICH SHALL BE MADE WITH FLEXIBLE POLYETHYLENE. IF A TERMINAL IS LESS THAN ONE FOOT, FLEXIBLE POLYETHYLENE MAY BE USED. WHERE POLYETHYLENE TUBING LEAVES A METAL CONTAINER, IT SHALL BE PROTECTED BY A SUITABLE METAL GRADUET.
5. HARD COPPER TUBING, OR POLYETHYLENE TUBING IN CONDUIT SHALL BE USED WHERE BURIED IN CONSTRUCTION.
6. COLOR OR NUMBER CODED POLYETHYLENE SHALL BE USED INSIDE CONTROL CABINETS AND SHALL BE NEATLY TIED AND SUPPORTED. FLEXIBLE CONNECTIONS BRIDGING THE CABINET AND ITS DOOR SHALL BE NEATLY FASTENED ALONG THE HINGE SIDE AND SHALL BE PROTECTED AGAINST ABRASION.

**15990 TESTING AND BALANCING**

**A. GENERAL:**

1. TESTING AND BALANCING WORK SHALL BE PERFORMED BY AN INDEPENDENT COMPANY (NOT ASSOCIATED WITH THE HVAC CONTRACTOR), AABC CERTIFIED OR AS APPROVED BY THE ENGINEER BEFORE COMMENCEMENT OF WORK.
  2. AFTER ALL PROJECT HVAC WORK IS COMPLETE, TESTED AND IN FULL WORKING ORDER, THE AGENCY SHALL PERFORM THE BALANCING AND TESTING OF THE PROJECT HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS.
  3. UPON THE COMPLETION OF THE AIR CONDITIONING SYSTEM, THE BALANCING AGENCY SHALL PERFORM TESTING AND BALANCING AND COMPLETE ALL TEST DATA IN A CERTIFIED REPORT AND SUBMIT FOUR (4) COPIES FOR REVIEW AND APPROVAL TO THE ENGINEER.
  4. THE REPORT SHALL INCLUDE DESIGN AND ACTUAL READINGS FOR ALL EQUIPMENT AND LOCATION PLAN INDICATING WHERE ALL WORK HAS BEEN PERFORMED, AND METHODS OF BALANCING AND DETAILS OF INSTRUMENTS USED.
  5. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF THE REPORT.
  6. AFTER SUBMISSION OF THE FIELD VERIFIED BALANCING REPORT, THE AIR BALANCING COMPANY SHALL RETURN TO THE JOB SITE TO PERFORM TWO (2) OCCUPANT COMFORT BALANCES AS DIRECTED BY THE OWNER OR ENGINEER.
  7. THE FINAL REPORT AFTER THE COMFORT BALANCE IS TO BE INCLUDED IN PROJECT OPERATING AND MAINTENANCE MANUAL.
  8. THE TESTING AND BALANCING AGENCY SHALL INCLUDE AS PART OF THEIR WORK AN EXTENDED WARRANTY OF 90 DAYS AFTER COMPLETION OF TEST AND BALANCE WORK. THE ENGINEER AT HIS DISCRETION DURING THE WARRANTY PERIOD MAY REQUEST A RECHECK, OR RESETTING OF ANY EQUIPMENT. THE MECHANICAL CONTRACTOR AND THE BALANCING CONTRACTOR SHALL PROVIDE THE NECESSARY TECHNICIANS TO FACILITATE THIS WORK.
  9. BALANCING AGENCY SHALL PERMANENTLY MARK ALL ADJUSTMENT DEVICES (VALVES, DAMPERS, ETC.) TO ENABLE THE SETTING TO BE RESTORED.
- B. AIR BALANCING**
1. HVAC CONTRACTOR SHALL ENSURE THAT A FIRST SET OF AIR FILTERS ARE IN PLACE, WHENEVER FANS ARE RUNNING AND REPLACED WITH A NEW CLEAN SET OF FILTERS BEFORE TESTING IS COMMENCED.
  2. TEST, ADJUST, REPLACE SHEAVES, AND BALANCE ALL EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE AIR QUANTITIES INDICATED ON PLANS WITHIN PLUS OR MINUS 5 PERCENT.
  3. TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
    - a) FLOW, LEAKAGE CLASS, TEMPERATURE, STATIC PRESSURE OF AIR AT ALL TRUNK DUCTS SERVING AREAS OF WORK.
    - b) TEMPERATURE OF AIR LEAVING OUTLETS AT TWO (2) TYPICAL AIR OUTLETS.
    - c) QUANTITY OF AIR AT EACH AIR INLET AND OUTLET AFTER BALANCING.
    - d) PROVIDE FOR ALL FANS, FAN MOTOR HP, AMPS, VOLTS, FAN RPM, CFM, INLET AND DISCHARGE STATIC PRESSURE, SHEAVE POSITION.
    - e) PROVIDE FOR ALL AIR CONDITIONING UNITS, SUPPLY CFM, OUTSIDE AIR CFM, RETURN AIR CFM, MIXED AIR CFM, PROVIDE OUTSIDE AIR, MIXED AIR AND SUPPLY AIR TEMPERATURES DRY BULB (COOLING AND HEATING, WET-BULB-COOLING) INDICATE UNIT OPERATING MODE DURING TEST.
    - f) CALIBRATE ALL NEW AND EXISTING TO BE REUSED TERMINAL BOXES (VAV, FAN POWERED OR DUAL DUCT) AS REQUIRED TO MEET SPECIFIED MINIMUM/MAXIMUM CFM.
    - g) LISTING OF DESIGN AND ACTUAL READINGS AS WELL AS ALL MANUFACTURER'S DATA FOR EQUIPMENT.

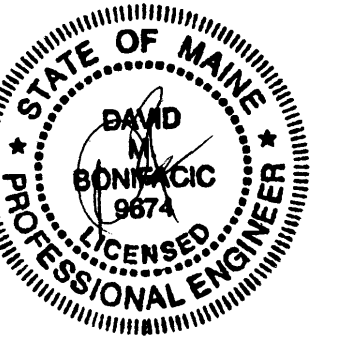
**15995 - SYSTEM COMMISSIONING**

- A. PRIOR TO FULL OPERATION, A COMPLETE DEMONSTRATION AND TESTING OF THE SYSTEM OPERATING FUNCTIONS AND ALARMS SHALL BE PERFORMED BY THIS CONTRACTOR IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND ENGINEER. THIS TESTING SHALL TAKE PLACE AFTER HAVING SATISFACTORILY MET THE REQUIREMENTS OF SHOP DRAWING ACCEPTANCE. COMMISSIONING OF THE SYSTEMS SHALL BE SCHEDULED BEFORE SPACE IS OCCUPIED LEAVING ENOUGH TIME TO CORRECT SYSTEM DEFICIENCIES AND AFTER SHOP DRAWING ACCEPTANCE. UPON SUCCESSFUL COMPLETION OF SYSTEM OPERATION, THE CONTRACTOR SHALL SUBMIT A STATEMENT STATING THAT THE FULL OPERATION OF ALL SYSTEMS, FUNCTIONS AND ALARMS HAS BEEN DEMONSTRATED AND ARE OPERATIONAL AS WELL AS A LISTING OF ALL SYSTEMS, ALARMS AND FUNCTIONS THAT HAVE BEEN COMMISSIONED. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE TO THE OWNER, OWNER'S REPRESENTATIVE AND ENGINEER BEFORE FINAL ACCEPTANCE CAN TAKE PLACE.**

WALSH BISHOP  
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

**WB**  
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**TENANT IMPROVEMENTS FOR:**

RBC Wealth Management  
2 Portland Square  
Suite 501  
Portland, ME 04101



ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:  
**MECHANICAL SPECIFICATIONS**

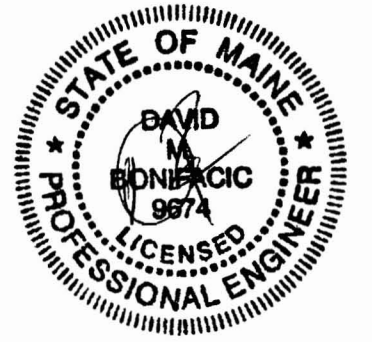
Date: 02.13.09  
Comm. No: 092WBA001.01  
In Charge: MM  
Drawn By: -  
Checked By: - M202



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.



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**TENANT IMPROVEMENTS FOR:**

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 2 Portland Square  
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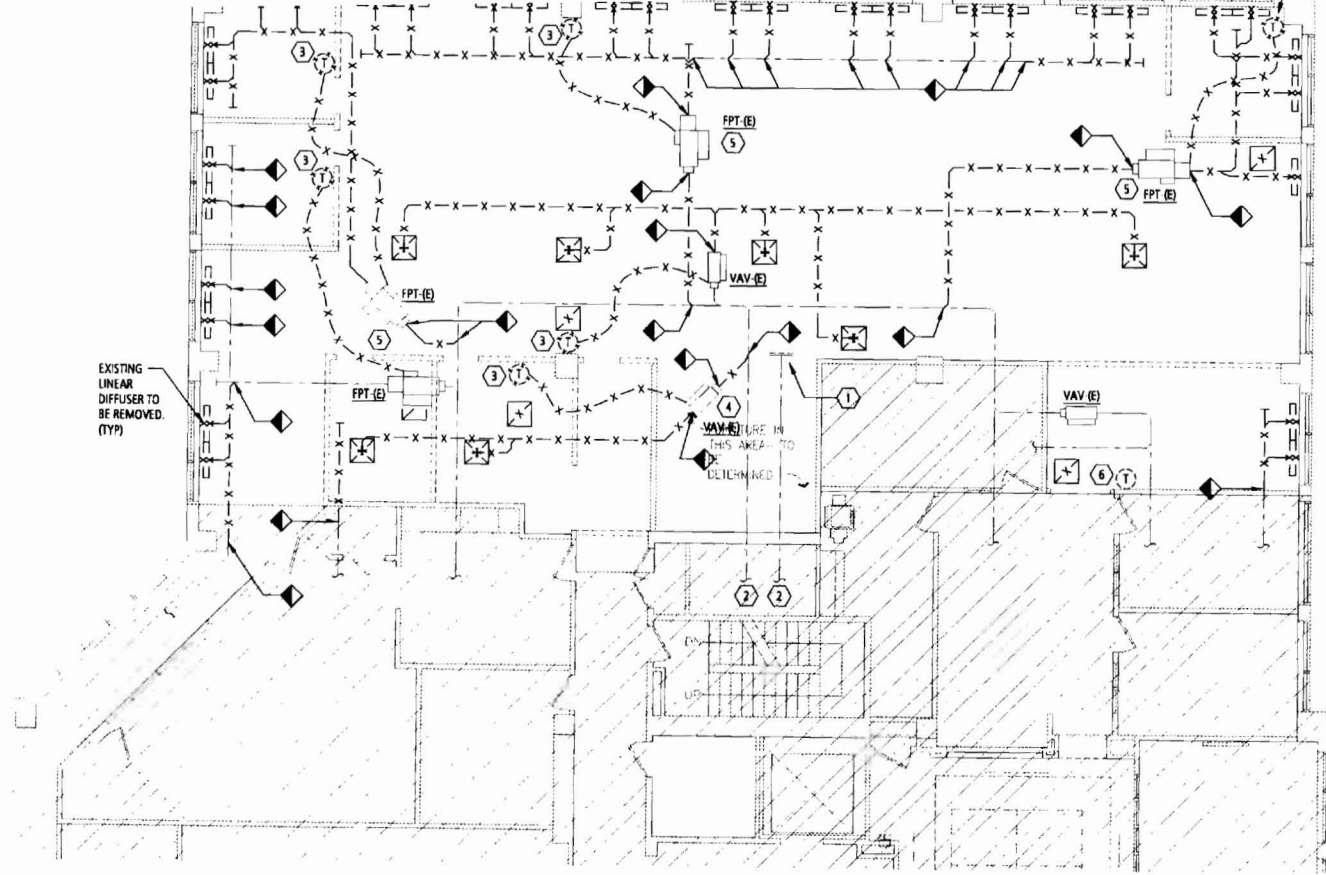


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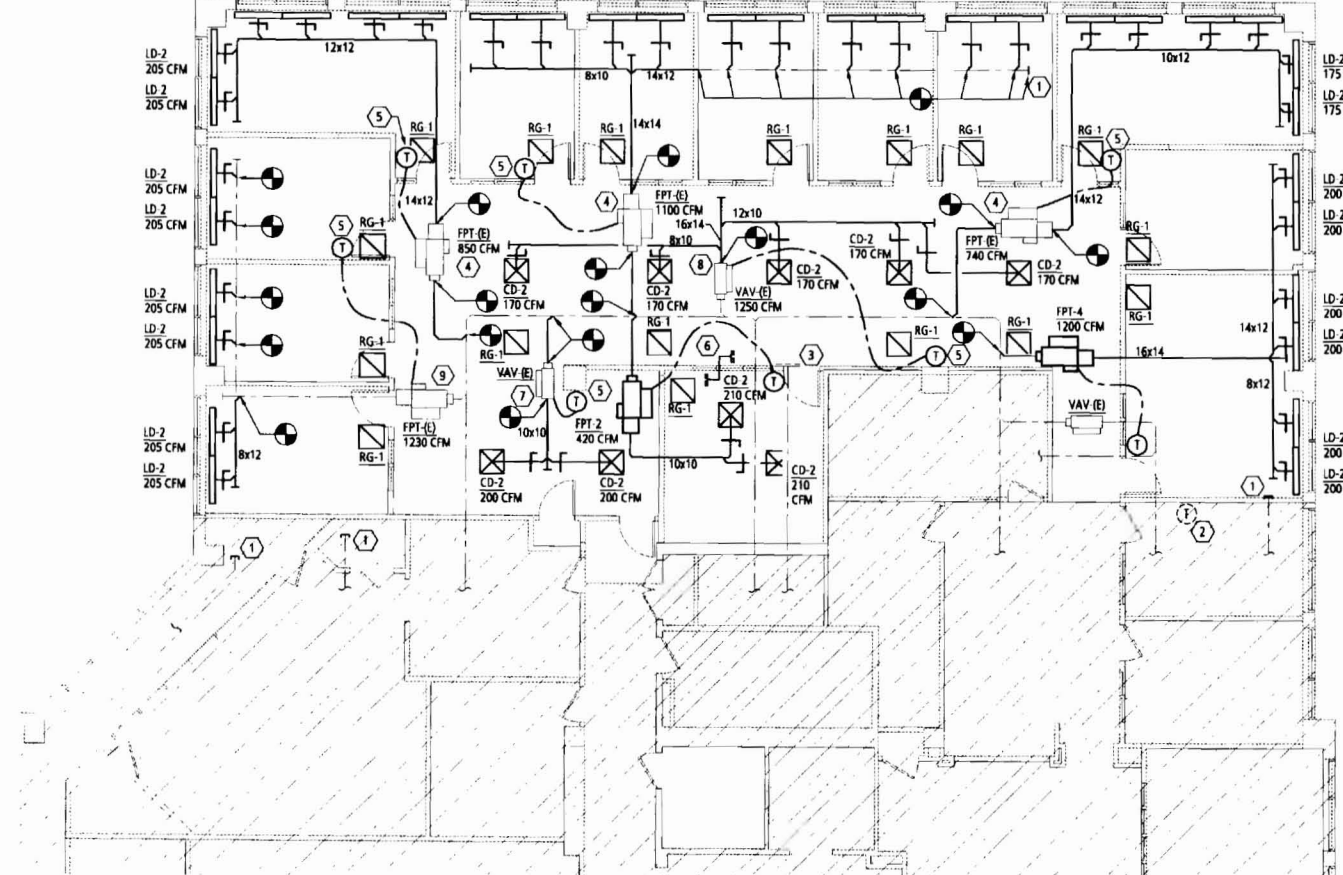
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SHEET TITLE:  
**MECHANICAL 5TH FLR  
 DEMOLITION AND NEW  
 CONSTRUCTION PLAN**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - **M301**



**1 5TH FLOOR DEMOLITION PLAN**  
 SCALE: 1/8" = 1'-0"



**2 5TH FLOOR CONSTRUCTION PLAN**  
 SCALE: 1/8" = 1'-0"

**MECHANICAL DEMOLITION NOTES:**

1. CONTRACTOR SHALL PATCH ALL DUCTWORK AS NECESSARY WHERE DISCONNECTION IS CALLED FOR.
2. THIS CONTRACTOR SHALL VISIT THE SITE AND ADJOINING AREAS AND EXAMINE THE EXISTING CONDITIONS TO BECOME FAMILIAR WITH THEM AND TO DETERMINE THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT. THIS CONTRACTOR SHALL PERFORM THIS PRIOR TO THE SUBMISSION OF HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
3. THE DEMOLITION WORK SHALL INCLUDE, PROVIDING ALL MATERIALS, ALL NECESSARY EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER MECHANICAL WORK REQUIRED, TOGETHER WITH ANY REQUIRED TEMPORARY CONNECTIONS TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. NOTES AND GRAPHIC REPRESENTATION SHALL NOT LIMIT THE EXTENT OF DEMOLITION REQUIRED. EXTENT OF DEMOLITION WORK SHALL BE COORDINATED WITH THE ARCHITECT AND BUILDING MANAGEMENT.
4. REFER TO ARCHITECTS PLANS FOR SCOPE OF WORK.
5. PROVIDE A METHOD OF FILTRATION FOR THE BASE BUILDING RETURN AIR AND TOILET EXHAUSTS TO PREVENT ENTRAINMENT OF DUST INTO BASE BUILDING SYSTEMS.
6. ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW MECHANICAL (AS WELL AS ELECTRICAL AND GENERAL CONSTRUCTION WORK) SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF THIS CONTRACT.
7. CONTRACTOR TO CONTACT BUILDING MANAGEMENT AND TENANT REGARDING DUCTWORK REMOVAL SCOPE OF WORK TO ENSURE THAT OTHER TENANTS THAT ARE TO STAY OPERATIONAL ARE NOT AFFECTED BY REMOVALS OF THE BASE BUILDING DUCTWORK.
8. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING DUCTS AND PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILING AND PARTITIONS.
9. PATCH AND SEAL ALL EXISTING TO REMAIN DUCTWORK AS NECESSARY.
10. CONTRACTOR SHALL COORDINATE ANY NECESSARY BUILDING SHUTDOWNS WITH BUILDING AND CONFORM TO ALL BUILDING STANDARDS AND PROCEDURES.

**MECHANICAL DEMOLITION KEY NOTES:**

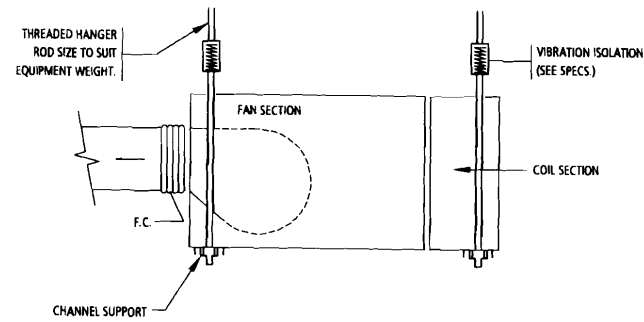
- 1 EXISTING BASE BUILDING RETURN AIR DUCT OPENING.
- 2 EXISTING BASE BUILDING SUPPLY AND RETURN AIR DUCT CONNECTIONS TO SHAFTS
- 3 EXISTING THERMOSTAT TO BE REMOVED IN ITS ENTIRETY.
- 4 EXISTING VAV UNIT TO REMAIN. UNIT SHALL BE DISCONNECTED AND RELOCATED TO NEW RELOCATION SHOWN ON CONSTRUCTION PLAN.
- 5 EXISTING FPT UNIT TO REMAIN. UNIT SHALL BE DISCONNECTED AND RELOCATED TO NEW LOCATION SHOWN ON CONSTRUCTION PLAN.
- 6 EXISTING THERMOSTAT TO REMAIN. THERMOSTAT SHALL BE RELOCATED TO NEW LOCATION SHOWN ON CONSTRUCTION PLAN.

**MECHANICAL CONSTRUCTION NOTES:**

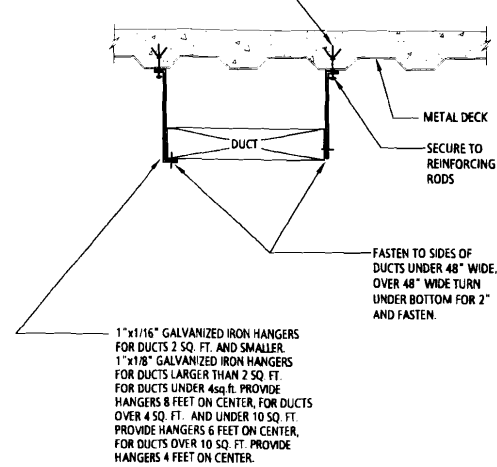
1. REFER TO ARCHITECTS PLANS FOR AREA OF WORK.
2. PROVIDE A METHOD OF FILTRATION FOR THE BASE BUILDING RETURN AIR AND TOILET EXHAUSTS TO PREVENT ENTRAINMENT OF DUCT INTO BASE BUILDING SYSTEMS.
3. EXACT LOCATIONS OF ALL VISIBLE HVAC DEVICES SHALL BE COORDINATED WITH THE ARCHITECT AND ENGINEER.
4. ALL THERMOSTATS SHALL BE MOUNTED IN COMPLIANCE WITH ALL APPLICABLE CODES. LOCATE AWAY FROM COPIERS AND EQUIPMENT IF APPLICABLE.
5. CONTRACTOR SHALL MAKE REPAIRS TO EXISTING DAMAGED DUCTWORK, DIFFUSERS, INSULATION, FLEX CONNECTIONS, ETC. TO BE REUSED.
6. ALL NEW AND EXISTING DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS WITH ASI.
7. PAINT UNDERSIDE OF ALL DUCTWORK VISIBLE THROUGH RETURN AIR GRILLES
8. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH.
9. ALL FPTs AND VAVs THAT ARE BEING INSTALLED OR RELOCATED SHALL BE INSTALLED TO MAINTAIN MANUFACTURER'S RECOMMENDED AND CODE REQUIRED CLEARANCES. CONTRACTOR SHALL ALSO BE RESPONSIBLE TO RELOCATE ANY EXISTING FPTs AND VAVs WHERE NEW CONSTRUCTION WILL INTERFERE WITH THESE CLEARANCES. WHERE HVAC EQUIPMENT IS LOCATED ABOVE A HARD CEILING ACCESS PANELS SHALL BE PROVIDED TO ACCESS THE UNIT.
10. PROVIDE BALANCING DAMPERS AT EACH TAKEOFF TO DIFFUSER AND AS INDICATED.
11. CONTRACTOR SHALL COMPLY WITH ALL BUILDING RULES AND REGULATIONS.
12. CONTRACTOR SHALL REBALANCE ALL EXISTING EQUIPMENT WITHIN THE SCOPE OF WORK TO VALUES SHOWN.
13. CONTRACTOR SHALL COORDINATE ANY NECESSARY BUILDING SHUTDOWNS WITH BUILDING AND CONFORM TO ALL BUILDING STANDARDS AND PROCEDURES.

**MECHANICAL CONSTRUCTION KEY NOTES:**

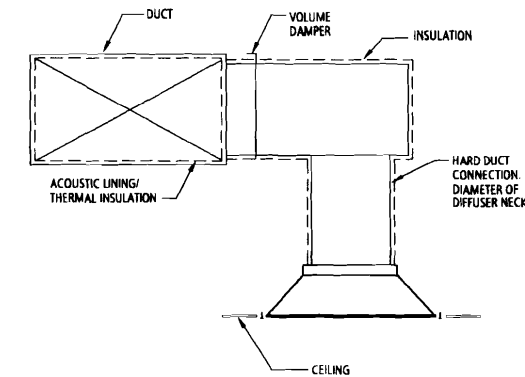
- 1 CAP AND SEAL EXISTING DUCT.
- 2 EXISTING THERMOSTAT, NEW LOCATION.
- 3 EXISTING BASE BUILDING RETURN AIR DUCT OPENING TO REMAIN. CONTRACTOR SHALL EXTEND AS NECESSARY TO MAKE SURE IT IS OUTSIDE OF CONFERENCE ROOM.
- 4 EXISTING FPT UNIT, RELOCATED TO THIS LOCATION. PROVIDE NEW DUCTWORK AS SHOWN. FPT SHALL BE PROPERLY HUNG AND MOUNTED IN A CONFIGURATION TO MAINTAIN THE MANUFACTURER'S RECOMMENDED AND CODE REQUIRED CLEARANCES. CLEAN UNIT, PROVIDE NEW FILTERS AND REBALANCE TO VALUES SHOWN.
- 5 PROVIDE NEW THERMOSTAT AND PNEUMATIC TUBING BACK TO TERMINAL UNIT.
- 6 12x12 ACOUSTICALLY LINED TRANSFER DUCT. DUCT SHALL BE OPEN ENDED WITH WIRE MESH SCREEN.
- 7 EXISTING VAV UNIT, RELOCATED TO THIS LOCATION. PROVIDE NEW DUCTWORK AS SHOWN. VAV SHALL BE PROPERLY HUNG AND MOUNTED IN A CONFIGURATION TO MAINTAIN THE MANUFACTURER'S RECOMMENDED AND CODE REQUIRED CLEARANCES. CLEAN UNIT, PROVIDE NEW FILTERS AND REBALANCE TO VALUES SHOWN.
- 8 EXISTING VAV UNIT. PROVIDE NEW DUCTWORK AS SHOWN. CLEAN UNIT, PROVIDE NEW FILTERS AND REBALANCE TO VALUES SHOWN.
- 9 EXISTING FPT UNIT. PROVIDE NEW DUCTWORK AS SHOWN. FPT SHALL BE RELOCATED IF NEW CONSTRUCTION INTERFERES WITH MANUFACTURER'S RECOMMENDED AND CODE REQUIRED CLEARANCES. CLEAN UNIT, PROVIDE NEW FILTERS AND REBALANCE TO VALUES SHOWN.



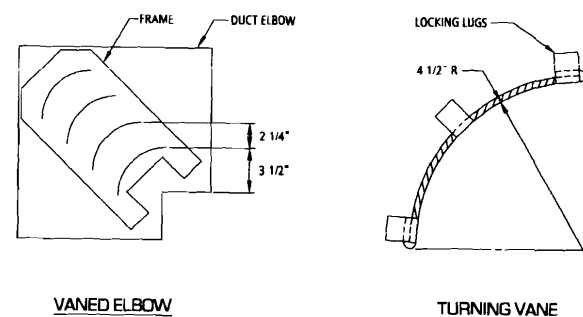
15060-15 HANGING DETAIL HVAC EQUIPMENT



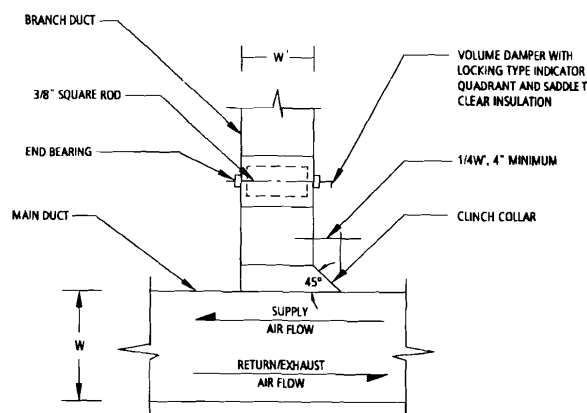
15060-9 TYPICAL DUCT HANGING DETAIL FOR METAL DECK



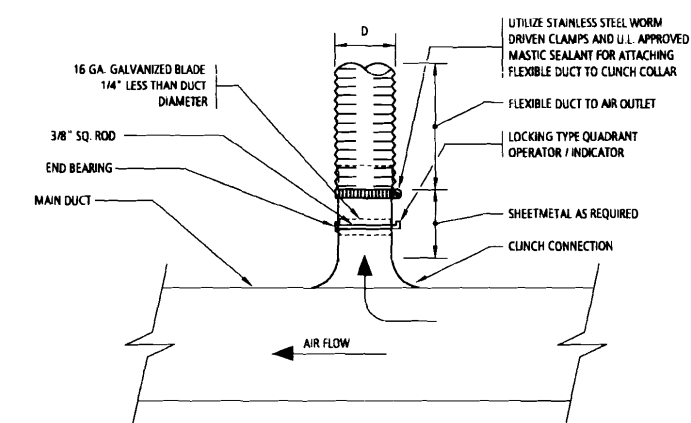
15855-3 TYPICAL DIFFUSER CONNECTION-C



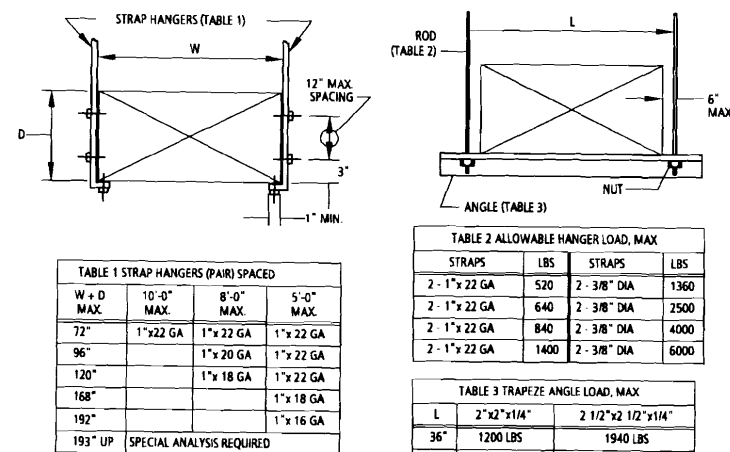
15815-7 SINGLE THICKNESS TURNING VANES DETAIL



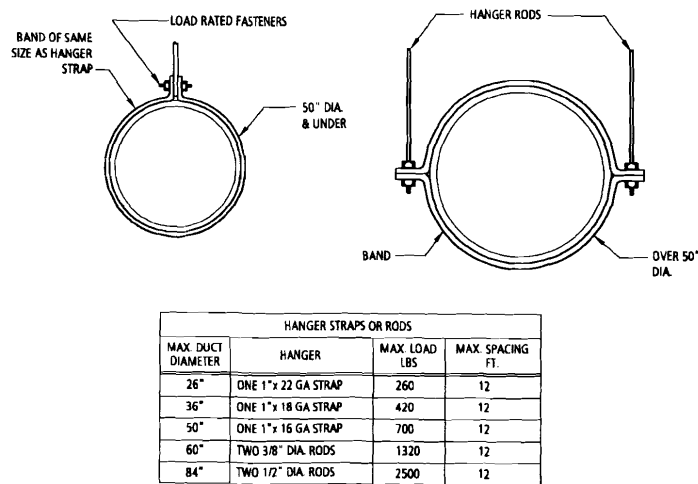
15815-1 RECTANGULAR DUCT BRANCH WITH ANGULAR TAP & VOLUME DAMPER



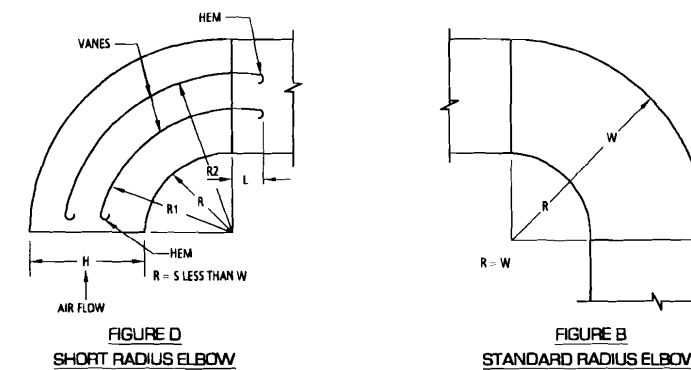
15815-19 CIRCULAR BRANCH CONNECTION TO SINGLE AIR OUTLET



15815-5 RECTANGULAR DUCT HANGERS



15815-6 ROUND DUCT HANGERS

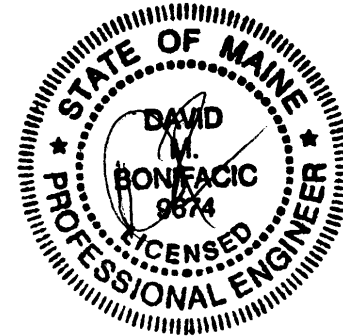


15815-8 RADIUS ELBOW

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TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
2 Portland Square  
Suite 501  
Portland, ME 04101



ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:

MECHANICAL  
DETAILS

Date: 02.13.09

Comm. No: 092WBA001.01

In Charge: MM

Drawn By: -

Checked By: -

M401

VOLTAGE		PHASE		WIRE		MAN N		OPTI ONS	
208Y/120V	3ø	4#	BUS	400	AMPS	<input type="checkbox"/> 200K NEUTRAL	<input type="checkbox"/> ISOLATED GROUND BUS	<input type="checkbox"/> EQUIPMENT GROUND BUS	<input type="checkbox"/> STAINLESS STEEL CONSTR.
<input type="checkbox"/> FLUSH	<input type="checkbox"/> NEW	<input type="checkbox"/> EXISTING	DEV CE	150/3	AMPS	<input type="checkbox"/> BREAKER	<input type="checkbox"/> LUGS ONLY	<input type="checkbox"/> MOLDED CASE SW TCH	<input type="checkbox"/> NEMA 3R
REMARKS:									
<input type="checkbox"/> SUB-FEED MAN N CB	<input type="checkbox"/> SW TCH & FUSE	<input type="checkbox"/> TOP FEED	<input type="checkbox"/> BOTTOM FEED	<input type="checkbox"/> FEED THRU	<input type="checkbox"/> DOUBLE LUGS	<input type="checkbox"/> CONTRACTOR CONTROLLED AMPS	<input type="checkbox"/> OX T'S CONTROLLED	<input type="checkbox"/> OTHER:	

QTY	DESCR PTI ON	CR	RATNG	#	OR RATNG	DESCR PTI ON	QTY
1	ACTI VE EXI STI NG TO REMAN	70A	B	20A		SPARE	4
3	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	8
5	SPARE	20A	B	20A		SPARE	10
7	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	12
9	SPARE	20A	B	20A		SPARE	14
11	ACTI VE EXI STI NG TO REMAN	30A	C	50A		ACTI VE EXI STI NG TO REMAN	16
13	ACTI VE EXI STI NG TO REMAN	30A	A	40A		ACTI VE EXI STI NG TO REMAN	18
15	ACTI VE EXI STI NG TO REMAN	50A	B	40A		ACTI VE EXI STI NG TO REMAN	20
17	ACTI VE EXI STI NG TO REMAN	50A	C	30A		ACTI VE EXI STI NG TO REMAN	22
19	ACTI VE EXI STI NG TO REMAN	60A	A	50A		ACTI VE EXI STI NG TO REMAN	24
21	ACTI VE EXI STI NG TO REMAN	60A	B	30A		ACTI VE EXI STI NG TO REMAN	26
23	ACTI VE EXI STI NG TO REMAN	50A	C	90A		SPARE	28
25	ACTI VE EXI STI NG TO REMAN	15A	A	20A		LIGHTING	30
27	ACTI VE EXI STI NG TO REMAN	15A	B	20A		LIGHTING	32
29	ACTI VE EXI STI NG TO REMAN		C				34
31	ACTI VE EXI STI NG TO REMAN		A	40A		FPT 2	36
33	ACTI VE EXI STI NG TO REMAN		B				38
35	ACTI VE EXI STI NG TO REMAN		C				40
37	ACTI VE EXI STI NG TO REMAN		A				42
39	ACTI VE EXI STI NG TO REMAN		B				
41	ACTI VE EXI STI NG TO REMAN		C				

NOTES:  
 - NEW BREAKERS SHALL BE COMPATIBLE WITH EXISTING PANEL.  
 - UPGRADE PANEL DIRECTORY TO REFLECT ALL CHANGES.  
 - OUT OF FUNCTION DESCRIPTIONS AND CKT. BKR. RATINGS DENOTE EXISTING. LEAVE AS REMAINING OR PROVIDE NEW LOADS AS DESCRIBED.

AFF	ABOVE FINISH FLOOR	HIVAC	HEATING, VENTILATING AND AIR CONDITIONING DIVISION OF WORK
AT	AMPERE TRIP	HZ	HERTZ
ATS	AUTOMATIC TRANSFER SWITCH	JB	JUNCTION BOX
AWG	AMERICAN WIRE GAUGE	KVA	KILOVOLT AMPERES
BLDG	BUILDING	KW	KILOWATTS
C	CONDUIT	LEMCS	LOCAL EMERGENCY CONTROL SYSTEM
CAT	CATALOG	LP	PANEL DESIGNATION
CB	CIRCUIT BREAKER	LTG	LIGHTING
CD	CANDELA	MAX	MAXIMUM
CFSO	COMBINATION FIRE/SMOKE DAMPER	MCB	MAIN CIRCUIT BREAKER
CKT	CIRCUIT	MECH	MECHANICAL
CLG	CEILING	MER	MECHANICAL EQUIPMENT ROOM
CO	CONDUIT ONLY	MFS	MAIN FUSED SWITCH
CU	CLOSET	MIN	MINIMUM
CL	COPPER	MLO	MAIN LUGS ONLY
DACS	DIGITAL ALARM COMMUNICATION SYSTEM	MTD	MOUNTED
DACT	DIGITAL ALARM COMMUNICATION TERMINAL	N	NEUTRAL
DGP	DATA GATHERING PANEL	NC	NORMALLY CLOSED
DISC	DISCONNECT	NIC	NOT IN CONTRACT
DN	DOWN	NO	NUMBER
DWG	DRAWING	NL	NIGHT LIGHT
E	EXISTING DEVICE TO REMAIN	NTS	NOT TO SCALE
ELEC	ELECTRICAL	P	POLE
EQUIP	EQUIPMENT	PNL	PANEL
FACP	FIRE ALARM CONTROL PANEL	Ø	PHASE
FBO	FURNISH BY OTHER DIVISION OF WORK	SW	SWITCH
FCD	FUSED CUTOFF BOX	SWBD	SWITCHBOARD
FCS	FIRE COMMAND STATION	TEL	TELEPHONE
FIXT	FIXTURE	7YP	TYPICAL
FL	FLOOR	UON	UNLESS OTHERWISE NOTED
FLEX	FLEXIBLE	UL	UNDERWRITERS LABORATORIES
FT	FET OR FOOT	VESDA	VERY EARLY SMOKE DETECTION APPARATUS
GA	GAUGE	V	VOLTAGE
G, GRD	GROUND	WP	WEATHERPROOF
GC	GENERAL CONTRACTOR		

VOLTAGE		PHASE		WIRE		MAN N		OPTI ONS	
208Y/120V	3ø	4#	BUS	400	AMPS	<input type="checkbox"/> 200K NEUTRAL	<input type="checkbox"/> ISOLATED GROUND BUS	<input type="checkbox"/> EQUIPMENT GROUND BUS	<input type="checkbox"/> STAINLESS STEEL CONSTR.
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QTY	DESCR PTI ON	CR	RATNG	#	OR RATNG	DESCR PTI ON	QTY
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19	CLOCK OUTLET	20A	A	20A		ACTI VE EXI STI NG TO REMAN	20
21	ACTI VE EXI STI NG TO REMAN	20A	B	20A		ACTI VE EXI STI NG TO REMAN	22
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29	ACTI VE EXI STI NG TO REMAN	20A	C	20A		ACTI VE EXI STI NG TO REMAN	30
31	CLOCK OUTLET		A				32
33	ACTI VE EXI STI NG TO REMAN	20A	B	20A		ACTI VE EXI STI NG TO REMAN	34
35	CONFERENCE RM. RECEPT.	20A	C	20A		ACTI VE EXI STI NG TO REMAN	36
37	CONFERENCE RM. LIGHTING	20A	A	20A		CLOCK OUTLET	38
39	SPARE	20A	B	20A		CLOCK OUTLET	40
41	ACTI VE EXI STI NG TO REMAN	20A	C	20A		OFFICE 547 & 548 RECEPT.	42

NOTES:  
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<input type="checkbox"/> FLUSH	<input type="checkbox"/> NEW	<input type="checkbox"/> EXISTING	DEV CE	150/3	AMPS	<input type="checkbox"/> BREAKER	<input type="checkbox"/> LUGS ONLY	<input type="checkbox"/> MOLDED CASE SW TCH	<input type="checkbox"/> NEMA 3R
REMARKS:									
<input type="checkbox"/> SUB-FEED MAN N CB	<input type="checkbox"/> SW TCH & FUSE	<input type="checkbox"/> TOP FEED	<input type="checkbox"/> BOTTOM FEED	<input type="checkbox"/> FEED THRU	<input type="checkbox"/> DOUBLE LUGS	<input type="checkbox"/> CONTRACTOR CONTROLLED AMPS	<input type="checkbox"/> OX T'S CONTROLLED	<input type="checkbox"/> OTHER:	

QTY	DESCR PTI ON	CR	RATNG	#	OR RATNG	DESCR PTI ON	QTY
1	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	2
3	ACTI VE EXI STI NG TO REMAN	20A	B	20A		ACTI VE EXI STI NG TO REMAN	4
5	ACTI VE EXI STI NG TO REMAN	20A	C	20A		ACTI VE EXI STI NG TO REMAN	6
7	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	8
9	ACTI VE EXI STI NG TO REMAN	20A	B	20A		OFFICE 558 & 506 RECEPT.	10
11	ACTI VE EXI STI NG TO REMAN	20A	C	20A		FURNITURE	12
13	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	14
15	ACTI VE EXI STI NG TO REMAN	20A	B	20A		ACTI VE EXI STI NG TO REMAN	16
17	OFFICE 549 & 550 RECEPT.	20A	C	20A		ACTI VE EXI STI NG TO REMAN	18
19	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	20
21	ACTI VE EXI STI NG TO REMAN	20A	B	20A		ACTI VE EXI STI NG TO REMAN	22
23	ACTI VE EXI STI NG TO REMAN	20A	C	20A		ACTI VE EXI STI NG TO REMAN	24
25	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	26
27	ACTI VE EXI STI NG TO REMAN	30A	B	20A		ACTI VE EXI STI NG TO REMAN	28
29	ACTI VE EXI STI NG TO REMAN	20A	C	20A		ACTI VE EXI STI NG TO REMAN	30
31	ACTI VE EXI STI NG TO REMAN	20A	A	20A		ACTI VE EXI STI NG TO REMAN	32
33	ACTI VE EXI STI NG TO REMAN	20A	B	20A		FURNITURE	34
35	ACTI VE EXI STI NG TO REMAN	20A	C	20A		FURNITURE	36
37	OFFICE 551 & 552 RECEPT.	20A	A	20A		ACTI VE EXI STI NG TO REMAN	38
39	OFFICE 553 & 555 RECEPT.	20A	B	20A		ACTI VE EXI STI NG TO REMAN	40
41	OFFICE 556 & 557 RECEPT.	20A	C	20A		RECEPT.	42

NOTES:  
 - NEW BREAKERS SHALL BE COMPATIBLE WITH EXISTING PANEL.  
 - UPGRADE PANEL DIRECTORY TO REFLECT ALL CHANGES.  
 - OUT OF FUNCTION DESCRIPTIONS AND CKT. BKR. RATINGS DENOTE EXISTING. LEAVE AS REMAINING OR PROVIDE NEW LOADS AS DESCRIBED.

- ALL WORK IS NEW UNLESS OTHERWISE NOTED. THE DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK. SCALE DIMENSIONS SHALL NOT BE USED. THE EXACT LOCATION AND ELEVATION OF ALL RECEPTS AND TELEPHONE DATA OUTLETS, ETC., SHALL BE DETERMINED FROM THE ARCHITECT'S DRAWINGS, U.O.N.
- ALL ELECTRIC POWER MUST BE DISCONNECTED BEFORE STARTING DEMOLITION.
- FILE PLANS WITH THE BUILDING DEPARTMENT AND OBTAIN ALL PERMITS AND SIGNOFFS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AND CONFER WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION.
- ELECTRICAL METALLIC TUBING (E.M.T.) SHALL BE USED WITH COMPRESSION TYPE FITTINGS ONLY.
- GREENFIELD MAY BE USED FOR FINAL CONNECTION TO MOTORS AND RECESSED FIXTURES ONLY. LENGTH SHALL NOT EXCEED 6 FEET.
- PANEL DIRECTORIES SHALL BE UPDATED TO CONFORM TO WORK COMPLETED.
- ELECTRIC PANEL COVERS ARE NOT TO BE LEFT OFF AT ANY TIME UNLESS MEN ARE WORKING ON SAME. COVERS SHALL BE REPLACED EACH NIGHT BEFORE LEAVING JOB SITE.
- BUILDING FIRE ALARM SYSTEM INTEGRITY SHALL BE MAINTAINED AT ALL TIMES BEFORE DURING AND AFTER DEMOLITION AND/OR CONSTRUCTION.
- WHEN USING TEMPORARY LIGHTING, THE CONTRACTOR SHALL CLEARLY LABEL PANELS AND BREAKERS USED FOR LIGHTING. LOCATION OF PANELS TO BE SHOWN ON FLOOR PLAN POSTED AT ENTRANCE TO WORK AREA. PROPER TEMPORARY LIGHTING AND POWER MUST BE INSTALLED AND MAINTAINED IN ALL WORK AREAS. TEMPORARY LIGHT AND POWER STRINGERS SHALL UTILIZE C-TAP TERMINATIONS. LAMP HOODS SHALL HAVE LEFT HANDED SCREW SHIELD LAMP HOLDERS AND NON-METALLIC LAMP GUARDS. CONNECTIONS TO EXISTING STAIRWELL AND EXIT LIGHT SYSTEMS ARE NOT PERMITTED.
- ALL NEW MATERIALS REQUIRED SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS LABORATORIES, INC. IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION, UNLESS OTHERWISE NOTED.
- ELECTRICAL CONTRACTOR SHALL VISIT AND EXAMINE CAREFULLY THE EXISTING AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THE WORK. CONTRACTOR SHALL PERFORM THIS, PRIOR TO SUBMITTING HIS PROPOSAL SUBMISSION OF A PROPOSAL WILL BE CONSIDERED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- THIS CONTRACTOR, BEFORE INSTALLING ANY OF THE WORK, SHALL SEE THAT IT DOES NOT INTERFERE WITH CLEARANCES REQUIRED FOR FINISHED COLUMNS, HUNG CEILING PLASTER, PARTITIONS, WALLS, ETC., AS SHOWN IN THE ARCHITECTURAL DRAWINGS AND DETAILS. IF ANY WORK IS SO INSTALLED AND IT LATER DEVELOPS THAT SUCH DETAILS OR DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR AT HIS OWN EXPENSE SHALL MAKE SUCH CHANGES IN THE WORK AS DIRECTED BY THE ARCHITECT, AS WELL AS TO PERMIT THE INSTALLATION OF THE ARCHITECTURAL WORK AS SHOWN ON THE PLANS AND DETAILS.
- THE CONTRACTOR SHALL MAINTAIN CONTINUITY OF SERVICE ON ALL CIRCUITS WHICH ALSO SERVE AREAS NOT AFFECTED BY THESE CHANGES. WHENEVER IT IS REQUIRED THAT AN EXISTING CIRCUIT BE REVISED, DISCONNECTED OR REMOVED, IT SHALL BE UNDERSTOOD THAT THE CIRCUIT SHALL BE RECONNECTED AND SERVICE RE-ESTABLISHED IN THE REMAINING PORTION OF THE CIRCUIT WHICH IS OUTSIDE OF THE AREA AFFECTED BY THIS ALTERATION.
- THE CONTRACTOR SHALL CUT BACK TO THE FLOOR, WALL OR CEILING, REMOVE WIRING AND PLUG BOTH ENDS OF CONCEALED CONDUITS MADE OBSOLETE BY THIS ALTERATION. EXPOSED CONDUITS, WIREWAYS, OUTLET BOXES, PULL BOXES, HANGERS, ETC. MADE OBSOLETE BY THE ALTERATION WORK SHALL BE REMOVED, UNLESS OTHERWISE NOTED.
- IN CONNECTION WITH THE ALTERATIONS TO THE EXISTING BUILDING, THERE WILL BE CERTAIN REMOVALS AND RELOCATIONS OF THE EXISTING ELECTRICAL WORK NECESSARY FOR THE SATISFACTORY PERFORMANCE OF THE WORK. THESE CHANGES CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS, BUT SHOULD BE TAKEN INTO CONSIDERATION BY THE CONTRACTOR IN PREPARING HIS PROPOSAL FOR THIS WORK.
- UPON COMPLETION OF THE WORK, A SET OF "AS-BUILT" DRAWINGS SHALL BE SUBMITTED. PROVIDE "AS-BUILT" DRAWINGS ON DISK, AUTOCAD 14 AND FULL SIZE PRINT DRAWINGS SHOWING ALL FEEDERS AND BRANCH CIRCUITS WIRE SIZE, CONDUIT, ACTUAL EQUIPMENT DEVICES CIRCUIT NUMBERING OF ALL ELECTRICAL WORK AS ACTUALLY INSTALLED. CADD BACKGROUNDS TO BE SUPPLIED BY WB ENGINEERING & CONSULTING.
- PERFORM THE WORK AT SUCH TIME AND IN SUCH MANNER AS TO MINIMIZE INTERFERENCE WITH BUILDING'S NORMAL OPERATION. NOTIFY OWNER'S REPRESENTATIVES IN ADVANCE EACH TIME A SERVICE OUTAGE OR INTERRUPTION WILL BE REQUIRED FOR THE PERFORMANCE OF SOME PHASE OF THE WORK. SCHEDULE SUCH SERVICE OUTAGES OR INTERRUPTIONS ONLY AFTER HAVING RECEIVED APPROVAL OF DATE, HOUR, AND TIME INTERVAL REQUIRED THEREOF. SCHEDULE OF WORK AS DIRECTED SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. ALL CORING, CHIPPING, CHASING OF CONCRETE, AND WORK WHICH RESULTS IN NOISE SHALL BE ACCOMPLISHED BEFORE 8:00 A.M. OR AFTER 5:00 P.M., DURING NORMAL WORKING DAYS OR ON WEEKENDS. COORDINATE AND OBTAIN APPROVAL FROM BUILDING MANAGEMENT FOR ALL WORK SCHEDULE.
- DURING THE PROJECT DURATION, THE BUILDING MANAGEMENT OFFICE AND ITS DESIGNATED REPRESENTATIVE WILL INSPECT THE WORK IN PROGRESS. ANY WORK WHICH IS JUDGED UNSATISFACTORY FOR ANY REASON OR NOT IN COMPLIANCE WITH BUILDING STANDARDS SHALL BE REMOVED AND REPLACED AT THE EXPENSE OF THE CONTRACTOR.
- START OF WORK AND ALL ACCESS TO BUILDING ELECTRICAL CLOSETS MUST BE COORDINATED WITH BUILDING OFFICE. ANY ELECTRICAL CONTRACTOR WORKING IN AN ELECTRICAL CLOSET WITHOUT CONSENT OF THE BUILDING OFFICE WILL BE BARRED FROM WORKING IN THE BUILDING.
- THE OPERATION OF THE ELECTRICAL INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF THE WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND UNDERWRITERS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE AN ELECTRICAL INSPECTION APPROVAL CERTIFICATE TO BUILDING MANAGEMENT UPON COMPLETION OF WORK.
- PROVIDE GROUND WIRES IN ALL BRANCH CIRCUITS AND FEEDERS.

SYMBOL	DESCRIPTION
	DUPLEX CONVENIENCE RECEPTACLE OUTLET - 120V, 20A, NEMAS-20R HUBBELL 5362 SERIES OR APPROVED EQUAL.
	DOUBLE DUPLEX RECEPTACLE OUTLET - 120V, 20A, NEMAS-20R(QUAD) HUBBELL 5362 SERIES OR APPROVED EQUAL.
	CLOCK SYSTEM OUTLET - EXACT MOUNTING HEIGHT DETERMINED IN FIELD.
	CABLE TV OUTLET - DOUBLE GANG BOX WITH 3/2" E.C. TO 6" ABOVE NEAREST ACCESSIBLE CEILING.
	WALL MTD. COMBINATION J BOX TO SERVE FURNITURE POWER AND AND TEL/DATA. THE G.C. SHALL COORDINATE WITH FURNITURE VENDOR FOR ALL REQUIREMENTS.
	FLUSH FLOOR FIRE RATED POKE THRU POWER AND COMMUNICATION LOCATION FLOOR BOX. COORDINATE EXACT LOCATION WITH ARCHITECT. PROVIDE 1 1/4" E.C. TO NEAREST HUNG CEILING SPACE FOR TEL/DATA. WIREMOLD R/C4 POKE-THRU SERIES OR APPROVED EQUAL.
	SWITCH (SINGLE POLE) HUBBELL CSB SERIES OR APPROVED EQUAL 3 - DENOTES THREE WAY SWITCH 4 - DENOTES FOUR WAY SWITCH P - PILOT LIGHT # - CONTROLLING LIGHTING FIXTURES CONNECTED ON CIRCUIT 'X'
	CEILING MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR FOR SMALL AREAS (UP TO 500 SQ. FT.) PIR & US SENSING WITH PHOTOCELL OPTION. SELF-ADJUSTING SENSITIVITY. POWER PACK REQUIRED. LITTON #LOS CDT 500 WH OR APPROVED EQUAL. HUBBELL ATD500C SERIES W/ CU SERIES CONTROL UNIT OR APP. EQUAL.
	CEILING MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR FOR LARGE AREAS (UP TO 2000 SQ. FT.) PIR & US SENSING WITH PHOTOCELL OPTION. SELF-ADJUSTING SENSITIVITY. POWER PACK REQUIRED. LITTON #LOS CDT 1000 WH OR APPROVED EQUAL. HUBBELL ATD1000C SERIES W/ CU SERIES CONTROL UNIT OR APP. EQUAL.
	Ceiling MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR FOR SINGLE SWITCH. WALL MOUNT OCCUPANCY SENSOR HUBBELL # AD1277M OR APPROVED EQUAL.
	DUAL SWITCH, WALL MOUNT OCCUPANCY SENSOR HUBBELL # AD1277W OR APPROVED EQUAL.

SYMBOL	DESCRIPTION
	WALL MOUNTED TEL/DATA COMMUNICATIONS OUTLET WITH 1" E.C. RUN TO 6" WITHIN NEAREST HUNG CEILING SPACE. PROVIDE PROTECTIVE GROMMET ON ENDS OF ALL OPEN CONDUITS. "C" INDICATES ABOVE COUNTER

SYMBOL	DESCRIPTION
	KEYED DRAWING NOTE DESIGNATION
	DETAIL NUMBER DESIGNATION
	DRAWING REFERENCE NUMBER

	2'x4' FLUORESCENT LIGHT FIXTURE
	2'x2' FLUORESCENT LIGHT FIXTURE
	DOWNLIGHT
	TYPICAL FLUORESCENT LIGHT FIXTURE. "EM" INDICATES EMERGENCY/LIFE SAFETY FIXTURE AND "NL" INDICATES 24 HOUR (UNSWITCHED) CIRCUIT. PROVIDE BODINE BALLASTS FOR ALL EMERGENCY FIXTURES.
	WALL MOUNTED EXIT LIGHT FIXTURE WITH 6" HIGH RED LETTERS, NICKEL CADMIUM BATTERIES, CHARGER & BATTERY TEST SWITCH. SHADED AREAS INDICATE LIGHTED FACES. PROVIDE ARROWS AS INDICATED.
	PENDANT OR CEILING MOUNTED EXIT LIGHT FIXTURE. SHADED AREAS INDICATE LIGHTED FACES. PROVIDE ARROWS AS INDICATED. PROVIDE 1/2" MC TO NEAREST UNSWITCHED 277V SOURCE.

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ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.

B. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE EXISTING BUILDING CONSTRUCTION STANDARDS.

C. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK AS INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF HIS BID, AND IF NOT RESOLVED TO SATISFACTION SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE. REQUEST FOR ADDITIONAL COMPENSATION DUE TO CONTRACTOR'S FAILURE TO EXAMINE THE SITE PRIOR TO SUBMISSION OF BID SHALL NOT BE CONSIDERED.

D. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL LOCATIONS OF EQUIPMENT AND DEVICES, ETC. WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

E. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING, AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID THAT IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.

F. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE ELECTRICAL WORK, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL WITHOUT ADDITIONAL COST.

G. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME THAT THE ELECTRICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION AND SERVICING OF THE EQUIPMENT.

H. ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITERS' LABORATORIES, INC. MATERIALS SHALL BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATIONS AND APPROVED RULES AND REGULATIONS OF NEMA AND SHALL BEAR THE UL INSPECTION LABEL. MATERIAL AND APPARATUS FOR LIKE SHALL BE BY THE SAME MANUFACTURER.

I. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE, SAFE INSTALLATION OF ALL ELECTRICAL WORK. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

1. PROVIDING OF LIGHT FIXTURES AND LAMPS INCLUDING EXT AND EMERGENCY LIGHTING AND ALL ASSOCIATED COMPONENTS AND BRANCH CIRCUITING. PROVIDE FLUORESCENT LIGHT FIXTURES WITH ELECTRONIC BALLASTS CLASS P, HIGH POWER FACTOR ETL AND CBM APPROVED.
2. PROVIDING OF NEW RACEWAY AND CONDUCTORS FOR LIGHTING AND POWER.
3. ADDITIONS AND MODIFICATIONS TO EXISTING ELECTRICAL POWER DISTRIBUTION EQUIPMENT AND RELATED FEEDERS.
4. PROVIDING POWER WIRING AND FINAL CONNECTIONS TO HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT.
5. PROVIDING OF CONDUIT, JUNCTION BOXES, PULL BOXES, ETC., REQUIRED FOR THE AFORESAID EQUIPMENT.
6. MAINTENANCE AND PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING MANAGEMENT.
7. GROUNDING OF ALL EQUIPMENT AS REQUIRED BY NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE DRAWINGS.
8. MAINTAIN CONTINUITY OF EXISTING CIRCUITRY TO ADJACENT AREAS NOT AFFECTED BY THE NEW WORK.
9. PROVIDING TELEPHONE/DATA AND SIGNAL EMPTY CONDUIT, PULLBOXES, OUTLETS, SLEEVES AND FISHWIRS.
10. COORDINATE WITH BUILDING FIRE ALARM MAINTENANCE CONTRACTOR AND PROVIDE ALL REQUIRED ADDITIONS AND MODIFICATIONS TO THE EXISTING BUILDING FIRE ALARM SYSTEM.
11. PROVIDING RECEPTACLES, LIGHT SWITCHES, DISCONNECT SWITCHES, FUSES, DIMMERS, OUTLET BOXES, CONTACTORS AND OTHER WIRING DEVICES INCLUDING RELATED BRANCH CIRCUIT WIRING.

J. PERFORM ANY NOISY WORK (E.G., CHOPPING, CORE DRILLING, DEMOLITION, ETC.) AND BASE BUILDING SYSTEM TEMPORARY SHUTDOWNS OUTSIDE OF NORMAL BUSINESS HOURS ON SAFE TIME (PREMIUM TIME) SAFE TIME WORK SHALL BE PERFORMED WHEN AND AS DIRECTED BY THE BUILDING MANAGEMENT.

K. FOLLOW THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A201 LATEST EDITION, OR AS REQUIRED BY THE ARCHITECTS DOCUMENTS AND/OR ENGINEERS DOCUMENTS.

L. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS. PROVIDE A MINIMUM OF SIX (6) COPIES OF 8-1/2"x11" SUBMISSIONS AND ONE (1) REPRODUCIBLE AND ONE (1) PRINT OF ALL DRAWINGS.

1. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1. SERVICE AND METERING EQUIPMENT, INCLUDING LAYOUT.
2. FIRE ALARM SYSTEM MODIFICATIONS, INCLUDING NON-TYPICAL ONE LINE DIAGRAM AND BATTERY CALCULATIONS.
3. LIGHTING FIXTURES AND LAMPS.
4. SWITCHES AND FUSES.
5. CIRCUIT BREAKERS.
6. WIRING DEVICES.
7. ANY OTHER ITEM THAT MAY BE REQUIRED BY ARCHITECT.

M. SUBMIT FOUR (4) LOOSE LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS TO INCLUDE ALL SHOP DRAWINGS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL SYSTEMS.

N. CONTRACTOR SHALL REVISE DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AS BUILT CONDITION (DEVICES, EQUIPMENT, CIRCUITRY, ETC.), DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AND ACAD DISKETTE OF AS-BUILT DRAWINGS ARE TO BE SUBMITTED TO THE OWNER AND WB ENGINEERING REVIEW AND RECORDS.

O. SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL NOT BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER THAT INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION.

P. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

Q. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. PROVIDE TEMPORARY FEEDERS, CIRCUITRY, ETC., AS REQUIRED TO MINIMIZE DOWNTIME.

R. DEFINITIONS:

1. "ELECTRICAL CONTRACTOR", "THIS CONTRACTOR", "THE PARTY OR PARTIES HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE ELECTRICAL WORK AS DESCRIBED HEREIN.
2. "ARCHITECT", "ENGINEER", "OWNER'S REPRESENTATIVE" - THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.
3. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE ELECTRICAL WORK.
4. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE ELECTRICAL WORK.

INCLUDING THE EXTENSION OF EXISTING OR PROVIDING NEW CIRCUIT/CONDUCTORS/WIRING AS REQUIRED.

7. "REMOVE" - DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY EFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARY COMPONENTS TO MAINTAIN SUCH OPERATION.

8. ACCEPTABLE MANUFACTURERS:

DISCONNECT SWITCHES: ITE, CUTLER HAMMER, GE OR SQUARE "D"

FUSES: BUSSMAN, GOULD SHAWMUT

RACEWAY: NATIONAL WIRE PRODUCTS, TRIANGLE OR REPUBLIC

WIRE/CABLE: ROME PHELPS DOGGE, GENERAL CABLE, SIMPLEX

JUNCTION/PULL BOXES: APPLETON ELECTRIC, CROUSE HINDS OR O Z / GEDNEY CO.

FIRE STOP MATERIAL: MILTI, 3M (NOTE: MATERIAL MUST BE ACCEPTABLE TO LOCAL AHJ)

FITTINGS, COUPLINGS, BUSHINGS, CONNECTORS: OZ GEDNEY, BURNOY, NEPCO, THOMAS AND BETTS

FIRE RATED POKE THROUGH: HUBBELL, WIREMOLD, STEEL CITY.

ABBREVIATIONS		KW	KILOWATT
A	AMP/AMPERE	LTG	LIGHTING
AF	ABOVE FINISH FLOOR	MCB	MAIN CIRCUIT BREAKER
ATS	AUTOMATIC TRANSFER SWITCH	KCMIL	THOUSAND CIRCULAR MILLS
AWG	AMERICAN WIRE GAUGE	MLO	MAIN LOGS ONLY
CB	CIRCUIT BREAKER	MTD	MOUNTED
CKT	CIRCUIT	N	NEUTRAL
CO	CONDUIT ONLY	NTS	NOT TO SCALE
CU	COPPER	PB	PULL BOX
DISC	DISCONNECT	PBL	PANELBOARD
E	EXISTING	PWR	POWER
ELEC	ELECTRICAL	SD	SMOKE DETECTOR
EM	EMERGENCY	SWBD	SWITCHBOARD
FA	FIRE ALARM	TYP	TYPICAL
FBO	FURNISHED BY OTHERS	UF	UNFUSED
GF/GF	GROUND FAULT INTERRUPTER	UDN	UNLESS OTHERWISE NOTED
GRD	GROUND	W	WIRE
HZ	HERTZ	WP	WEATHERPROOF
IG	ISOLATED GROUND		
JB	JUNCTION BOX		
KVA	KILOVOLT/AMPERE		

16120 WIRE AND CABLE

A. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN INSULATED. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID WIRE. CONDUCTORS AND #8 AWG AND LARGER SHALL BE STRANDED WIRE.

B. METAL CLAD CABLE (TYPE MC) IS PERMISSIBLE FOR CONCEALED BRANCH CIRCUITRY WHERE PERMITTED BY CODE AND BUILDING MANAGEMENT.

C. BRANCH CIRCUIT WIRE SIZE: THE MINIMUM WIRE SIZE FOR BRANCH CIRCUIT SHALL BE #12 AWG EXCEPT 120 VOLT CIRCUITS OVER 80 FEET IN LENGTH SHALL BE 10# AWG. REFER TO DRAWINGS FOR FURTHER WIRE SIZING INFORMATION.

D. PROVIDE ALL BRANCH CIRCUITS WITH DEDICATED GROUND WIRES.

E. COLOR CODING OF 120/208 VOLT WIRING SYSTEM:

1. BLACK FOR A PHASE
2. RED FOR B PHASE
3. BLUE FOR C PHASE
4. WHITE FOR NEUTRAL
5. GREEN FOR EQUIPMENT GROUND

F. COLOR CODING OF 277/480 VOLT WIRING SYSTEM:

1. BROWN FOR A PHASE
2. YELLOW FOR B PHASE
3. ORANGE FOR C PHASE
4. WHITE FOR NEUTRAL
5. GREEN FOR EQUIPMENT GROUND

G. PROVIDE FLAMEPROOF IDENTIFICATION TAGS IN ALL JUNCTION BOXES, PULL BOXES AND PANELBOARDS FOR ALL FEEDERS, BRANCH CIRCUIT AND CONTROL WIRING. TAGS SHALL IDENTIFY CONDUCTOR SIZES, SOURCE AND TERMINATION POINTS.

H. INSTALL NO MORE THAN 3 LIGHTING OR CONVENIENCE BRANCH CIRCUITS IN ONE CONDUIT OR HOMERUN UNLESS OTHERWISE NOTED.

16130 RACEWAY

A. CONDUIT SHALL BE THIN WALL TUBING (EMT), WITH COMPRESSION FITTINGS SIZED PER DRAWING, 3/4" DIA. MINIMUM. (MAXIMUM 3 CIRCUITS PER HOMERUN EXCEPT AS NOTED).

B. FLEXIBLE STEEL CONDUIT MAY BE USED ONLY FOR:

1. SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICABLE
2. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE. MINIMUM 4 FT. MAXIMUM 6 FT. LENGTHS.
3. VIBRATING EQUIPMENT. MAXIMUM LENGTH 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.
4. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.
5. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.

C. LIQUID TIGHT FLEXIBLE STEEL CONDUIT MAY BE USED ONLY FOR:

1. FOR FINAL CONNECTION(S) TO MOTOR TERMINAL BOXES), WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END.

D. EXPANSION FITTINGS: INSTALL AT RIGHT ANGLES WITH CLIP CENTERED IN EXPANSION JOINT. PROVIDE LENGTH OF RUNS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

E. RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT AS REQUIRED TO MAINTAIN THE EXISTING FIRE RATING.

F. PROVIDE FISH OR PULL WIRE IN ALL EMPTY CONDUITS.

G. MAINTAIN GROUND CONTINUITY OF ALL INTERRUPTED RACEWAYS WITH GROUND CONDUCTOR.

H. ALL WIRING WITHIN ELECTRICAL CLOSET AND IN BUILDINGS CORE CEILINGS SHALL BE INSTALLED IN CONDUIT.

I. INSTALL ACCESSIBLE JUNCTION AND PULLBOXES CLEAR OF OTHER TRADES AND SUPPORTED FROM BUILDING STRUCTURE INDEPENDENT OF CONDUIT.

16130 PULL BOXES, JUNCTION BOXES AND OUTLET BOXES.

A. PULL BOXES, JUNCTION BOXES AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD GAUGE SHEET STEEL.

B. PROVIDE PULL BOXES AND JUNCTION BOXES IN LONG STRAIGHT RUNS OF RACEWAY TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED, TO FULFILL REQUIREMENTS AS TO THE NUMBER OF BENDS PERMITTED IN RACEWAY BETWEEN CABLE ACCESS POINTS, THE ACCESSIBILITY OF CABLE JOINTS AND SPLICES, AND THE APPLICATION OF CABLE SUPPORTS.

C. PULLBOXES AND JUNCTION BOXES SHALL BE SIZED SO THAT THE MINIMUM BENDING RADIUS CRITERIA SPECIFIED FOR THE WIRES AND CABLE ARE MAINTAINED.

D. ALL EQUIPMENT, DEVICE BOXES, JUNCTION BOXES, PULLBOXES AND OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO THE BOX. IF NECESSARY AND APPROVED BY ARCHITECT, PROVIDE ACCESS DOOR OR COVERPLATES IN AREAS WHERE UNOBSTRUCTED ACCESS IS NOT POSSIBLE.

E. USE WEATHERPROOF BOXES, JUNCTION BOXES AND DEVICES FOR ALL REQUIRED WEATHERPROOF INSTALLATION.

16130 FIRE RATED POKE THROUGH

A. THROUGH FLOOR FITTING SHALL BE CAPABLE OF HANDLING POWER AND/OR VOICE/DATA SERVICE IN A SINGLE FITTING. THE UNIT SHALL BE INSTALLED IN A CORE DRILLED HOLE AND SHALL COVER REQUIRED FLOOR THICKNESS. IT SHALL BE UL LISTED MINIMUM FOR 2 HOUR RATED OR AS REQUIRED. THE RATED INSERT SHALL CONTAIN A RETAINER FOR SECURING THE DEVICE IN THE SLAB AS WELL AS THE ORGANIC INTUMESCENT MATERIAL.

C. FLUSH FIRE-RATED POKE THROUGH DEVICES SHALL BE BRASS, U.O.N., COORDINATE WITH ARCHITECT.

D. FOR ABOVE FLOOR SERVICE PROVIDE PEDESTAL TYPE SERVICE HEAD IN ALUMINUM COORDINATE REQUIREMENTS WITH ARCHITECT.

E. ALL UNITS SHALL BE MEET REQUIREMENTS OF UL 514A FOR SCRUB WATER PROTECTION.

16130 TELEPHONE AND DATA EMPTY CONDUIT SYSTEM

A. PROVIDE LABOR, MATERIALS AND SERVICES FOR A COMPLETE AND SAFE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION FOR THE SYSTEM INCLUDING THE FOLLOWING:

1. CONDUIT
2. PULL BOXES
3. OUTLET BOXES
4. SLEEVES

B. PROVIDE MINIMUM 2" DEEP 2 GANG OUTLET BOXES. DEVICES BY OTHERS.

C. ALL RACEWAY SHALL BE EMT WITH BUSHED TERMINATIONS 6" ABOVE HUNG CEILING WITH FISH WIRE (NYLON CORD).

16140 WIRING DEVICES

A. WIRING DEVICES SHALL BE OF THE COMMERCIAL SPECIFICATION GRADE. ALL DEVICES AND PLATES SHALL BE PLUMB AND FLUSH MOUNTED, UNLESS OTHERWISE NOTED.

B. SWITCHES SHALL BE 120/277 VOLTS, RATED AT 20 AMPERES.

C. 20 AMP RECEPTACLES SHALL BE 125 VOLT NEMA 5-20R CONFIGURATION.

D. ALL RECEPTACLES AND COVERPLATES COLOR SHALL BE AS SELECTED BY ARCHITECT.

16142 ELECTRIFIED FURNITURE SYSTEMS

A. THE ELECTRIFIED FURNITURE VENDOR WILL SUPPLY ALL RECEPTACLES, FURNITURE TASK LIGHTING FIXTURES, WIRING HARNESSSES, CONNECTORS AND FITTINGS TO THE ELECTRICAL CONTRACTOR FOR THE COMPLETE WIRING INSTALLATION. ALL WIRING AND COMPONENTS SHALL BE INSTALLED AS DIRECTED BY VENDOR. ELECTRICAL CONTRACTOR SHALL FURNISH 18" MAXIMUM LIQUIDTIGHT FLEXIBLE CONDUIT CONNECTIONS WITH REQUIRED PHASE CONDUCTORS, NEUTRAL AND GROUND CONDUCTORS FROM WALL OR FLOOR OUTLETS AS INDICATED ON PLANS.

16140 SWITCHES, FUSES AND CIRCUIT BREAKERS

A. SWITCHES SHALL BE QUICK BREAK HEAVY DUTY IN NEMA 1 ENCLOSURE FUSED OR UNFUSED, AS INDICATED ON THE DRAWINGS. FUSES FOR SWITCHES SHALL BE CURRENT LIMITING TYPE WITH AN INTERRUPTING CAPACITY OF 200,000 RMS SYMMETRICAL AMPERES FOR 120/280V PANELS AND 14,000 SYMMETRICAL AMPERES FOR 277/480V PANELS.

B. CIRCUIT BREAKERS SHALL BE "THERMAL MAGNETIC" TYPE, QUICK-MAKE, QUICK-BREAK WITH NON-WELDING CONTACTS COMPENSATED FOR AMBIENT TEMPERATURES AND SHALL HAVE A MINIMUM SHORT CIRCUIT RATING OF 10,000 SYMMETRICAL AMPERES FOR 120/280V PANELS AND 14,000 SYMMETRICAL AMPERES FOR 277/480V PANELS.

16511 LIGHTING FIXTURES AND LAMPS

A. BALLASTS AND LAMPS SHALL ENERGY EFFICIENT COMPLYING WITH THE MAINE STATE ENERGY CODE.

1. PROVIDE COMPLETE LIGHT FIXTURES WITH ASSOCIATED LAMPS, MOUNTING ACCESSORIES, ETC., AS PER ARCHITECT'S SPECIFICATIONS.
2. ALL EMERGENCY FIXTURES SHALL MEET MAINE STATE ENERGY CODE REQUIREMENTS.
3. PROVIDE DIMMABLE BALLASTS FOR ALL LIGHTING FIXTURES SHOWN/NOTED TO BE CONTROLLED BY DIMMING DEVICES/SYSTEMS.

B. WIRING

1. LUMINAIRE WIRING: 600 VOLT, 302 DEG F, TYPE SFF-2, BEGINNING AT SEPARATELY MOUNTED OUTLET PERMITTED.
2. SPLICES: MECHANICAL BORING PRESSURE CONNECTOR OR CRIMP CONNECTOR, WIRE NUTS NOT BOX.
3. FIXTURES FED FROM MORE THAN ONE PANEL: SEPARATE NEUTRAL TO EACH PANEL.
4. FLEXIBLE CONDUIT CONNECTIONS FOR RECESSED FIXTURES, MAXIMUM LENGTH: 6 FT. 0 IN.

C. SUPPORTS

1. INDIVIDUAL FIXTURES: CARRY WEIGHT OF FIXTURE TO BUILDING CONSTRUCTION, CLEAR OF DUCTS OR PIPES.
2. PENDANT MOUNTED FIXTURES: WITH CONDUIT STEMS SUPPORTED TO CEILING FRAMEWORK SELF-LEVELING FITTINGS.

D. BASE BID MANUFACTURERS

1. BASE BID FOR LIGHTING FIXTURES SHALL BE BASED ON MANUFACTURERS LISTED IN LIGHTING FIXTURES SCHEDULE.

E. ELECTRONIC BALLASTS

1. PROVIDE UL LISTED CLASS P, "A" SOUND RATED BALLASTS WITH HIGH POWER FACTOR WITH REQUIRED VOLTAGE AND FREQUENCY.
2. BALLAST TO HAVE A FIVE (5) YEAR WARRANTY INCLUDING REASONABLE REPLACEMENT LABOR COSTS.
3. THIRD HARMONICS DISTORTION SHALL BE LESS THAN 10%.
4. BALLAST TO CONTAIN REQUIRED FILTERING SO AS NOT TO INTERFERE WITH POWER LINE CARRIER SYSTEM.
5. BALLAST SHALL BE RAPID START, FULL LIGHT OUTPUT.

F. LOCATIONS

1. LOCATIONS ON THE DRAWINGS ARE DIAGRAMMATIC.
2. VERIFY WITH ARCHITECTURAL REFLECTED CEILING DRAWINGS & COORDINATE SPACE CONDITIONS WITH OTHER TRADES.
3. FIXTURE ROWS SHALL BE IN STRAIGHT LINES EXCEPT AS NOTED. FIXTURE DOORS SHALL OPEN FROM SAME SIDE.

G. MOUNTING

1. FOR CEILING CONSTRUCTION, REFER TO ARCHITECTURAL DRAWINGS FOR FINISH SCHEDULES AND REFER TO MANUFACTURER'S INSTALLATION DETAILS AND APPLICABLE CODES FOR REQUIRED FIXTURE MOUNTING ACCESSORIES.
2. VERIFY ALL CEILING TRIMS WITH ARCHITECTURAL DRAWINGS.

H. REPLACE BLEMISHED, DAMAGED OR UNSATISFACTORY FIXTURES AS DIRECTED.

1. REPLACE LAMPS THAT FAIL DURING CONSTRUCTION PRIOR TO OWNER'S ACCEPTANCE OF SPACE.

16600 FIRE ALARM SYSTEM

A. THIS SECTION INCLUDES MODIFICATION OF THE EXISTING BUILDING FIRE ALARM SYSTEM.

B. SHOP DRAWINGS:

1. WIRING DIAGRAMS: PROVIDE DETAILED WIRING DIAGRAMS THAT DIFFERENTIATE BETWEEN MANUFACTURER INSTALLED AND FIELD-INSTALLED WIRING. INCLUDE DIAGRAMS DEPICTING ALL SYSTEM PANELS, DEVICES, ETC., WITH ALL TERMINALS AND INTERCONNECTIONS IDENTIFIED.

C. MANUFACTURER QUALIFICATIONS: ALL EQUIPMENT SHALL BE COMPATIBLE WITH THE EXISTING BUILDING FIRE ALARM SYSTEM OR APPROVED EQUAL.

D. COMPLIANCE WITH LOCAL REQUIREMENTS: COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) LOCAL ORDINANCES AND REGULATIONS, REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND LOCAL BUILDING CODE.

E. PROVIDE NEW AND/OR UPGRADED POWER SUPPLIES AS NECESSARY TO SUPPORT THE INSTALLED SYSTEM. SUBMIT BATTERY CALCULATIONS AS PART OF THE SHOP DRAWING SUBMITTAL PACKAGE.

F. MANUAL DOUBLE ACTION PULL STATIONS SHALL BE ADA COMPLIANT.

AUDIBILITY SIGNALING APPLIANCES (AS REQUIRED BY THE CONTRACTOR) TO WHICH EXISTING SYSTEM STAND-ALONE DEVICES MAY BE USED TO AUGMENT COMBINATION UNITS WHERE SHOWN OR REQUIRED. THE CONTRACTOR SHALL PROVIDE SURFACE MOUNT BACKBOXES AND OUTDOOR RATED APPLIANCES WHERE AMBIENT CONDITIONS DICTATE. MINIMUM AUDIBLE AND VISUAL CHARACTERISTICS ARE AS FOLLOWS:

1. VISUAL SIGNALS: PROVIDE SYNCHRONIZED FLASHING XENON STROBES IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) APPLICATIONS GUIDELINES. VISUAL SIGNALS SHALL HAVE A MINIMUM EFFECTIVE INTENSITY RATING OF 15 CANDELA, EXCEPT PROVIDE 30, 75 OR 110 CANDELA AS OTHERWISE SHOWN ON DRAWINGS IN ACCORDANCE WITH NFPA 72. STROBES SHALL PRODUCE A MINIMUM OF ONE FLASH (MAXIMUM OF THREE) PER SECOND ACROSS THE LISTED VOLTAGE RANGE.
2. VOICE EVACUATION SPEAKERS: PROVIDE 4-INCH SPEAKERS SUITABLE FOR CONTINUOUSLY SUPERVISED CIRCUITRY WHERE INDICATED AND REQUIRED. SPEAKERS SHALL BE RED WITH A MINIMUM OF FOUR ADJUSTABLE POWER TAPS OF 1/4, 1/2, 1 AND 2 WATTS. EACH SPEAKER SHALL HAVE A FREQUENCY RESPONSE RANGE OF 400 TO 4000 HZ AND A SOUND OUTPUT LEVEL OF 80DB AT THE 1-WATT TAP SETTING. PROVIDE SURFACE MOUNT BACKBOXES WHERE REQUIRED. THE INSTALLATION SHALL UTILIZE FLEXIBLE CONDUIT CONNECTIONS AND ENCLOSED WIRING TERMINALS.

H. FIRE DEPARTMENT REQUIREMENTS:

1. COORDINATE WITH AND PROVIDE ALL ITEMS REQUIRED BY THE LOCAL FIRE DEPARTMENT. PAY ALL COSTS.
1. ALL WIRING FOR THE SYSTEM SHALL BE IN ACCORDANCE WITH ALL CODE AND LOCAL REGULATIONS INCLUDING ARTICLES 760, 725, AND 800 OF THE NATIONAL ELECTRICAL CODE.
1. PROVIDE COMPLETE WIRING BETWEEN ALL EQUIPMENT. ALL DEVICES SHALL BE MOUNTED UPON AND TERMINATIONS MADE IN NRTL LISTED BOXES. WIRING SPLICES AND TRANSPOSING OR CHANGING OF COLORS SHALL NOT BE PERMITTED.
1. USE 14 AWG MINIMUM SIZE SOLID CONDUCTORS FOR FIRE ALARM DETECTION AND SIGNAL CIRCUIT CONDUCTORS UNLESS OTHERWISE REQUIRED BY THE MANUFACTURER. USE SHIELDED WIRING FOR INITIATING AND COMMUNICATION (DATA AND VOICE) CIRCUITS.
1. PROVIDE SHIELDED WIRE FOR ALL SPEAKER CIRCUITS.
1. TERMINATE CONDUCTORS USING RING TYPE COMPRESSION CONNECTORS ON LABELED AND NUMBERED TERMINAL BLOCKS. DO NOT SPLICE CONDUCTORS. LABEL CONDUCTORS AT ALL TERMINATIONS WITH TERMINAL NUMBER AND SYSTEM NUMBER.
1. FIRE ALARM JUNCTION BOXES AND TERMINAL CABINETS SHALL HAVE A CAPACITY FORTY PERCENT GREATER THAN THAT REQUIRED FOR THE WIRING AND TERMINAL BLOCKS. PAINT J-BOXES OR CABINETS FIRE ALARM RED AND IDENTIFY CABINETS WITH WHITE LETTERING ON THE COVER "FIRE ALARM SYSTEM". INDICATE LOCATIONS OF TERMINAL BOXES AND CABINETS ON RECORD DRAWINGS.
1. PROVIDE NAME PLATES ON REMOTE STATUS LIGHTS AND TEST STATIONS AS TO UNIT SERVED.
1. INSTALL MANUAL STATIONS WITH OPERATING HANDLE 4 FEET (1.2 M) ABOVE FLOOR. INSTALL AUDIBLE AND VISUAL SIGNAL DEVICES 6 FEET 8 INCHES (2 M) ABOVE THE FLOOR.
1. AUDIBLE DEVICES SHALL BE SET FOR THE FOLLOWING MINIMUM DB LEVELS:
  1. GENERAL AREAS - 95 DB AT TEN FEET.
  2. SMALL ROOMS (E.G. TOILETS, ETC.) - 85 DB AT TEN FEET.
  3. MECHANICAL ROOMS, EQUIPMENT SPACES: - 100 DB AT TEN FEET.
  4. SET AS REQUIRED BY THE FIRE DEPARTMENT.
1. VISUAL DEVICES SHALL HAVE, MINIMUM EFFECTIVE INTENSITY RATINGS:
  1. 75 CANDELA.
1. LOCATE REMOTE INDICATING DEVICES (PILOT LIGHTS) OUTSIDE OF ROOM IN NORMAL VIEW ABOVE DOOR TO ISOLATED SPACE, ON CEILING, OR ON WALL AT SIX FEET (2M) ABOVE FINISHED FLOOR IN LOCATIONS APPROVED BY THE ARCHITECT.
1. MANUFACTURER'S FIELD SERVICES:
  1. PROVIDE MANUFACTURER CERTIFIED AND TRAINED TECHNICIANS AND REPRESENTATIVES FOR TESTING, SUPERVISION AND ASSISTANCE IN THE INSTALLATION OF THE FIRE ALARM SYSTEM. CONNECTIONS AND TERMINATIONS SHALL BE MADE UNDER THE DIRECT SUPERVISION OF THE FIRE ALARM MANUFACTURER EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR TESTS, PROGRAMMING, ADJUSTMENT AND CALIBRATION OF THE EQUIPMENT.
1. ACCEPTANCE TESTING:
  1. PRE-TEST THE ENTIRE SYSTEM AND ALL FUNCTIONS TO VERIFY COMPLETE OPERATION. AFTER CORRECT OPERATION IS VERIFIED, NOTIFY THE FIRE DEPARTMENT, TESTING COMPANY AND THE ARCHITECT THAT SYSTEM IS COMPLETE AND READY FOR ACCEPTANCE TESTING. PROVIDE TESTING AT A TIME MUTUALLY AGREEABLE TO ALL PARTIES. PROVIDE A MINIMUM ONE WEEK NOTICE.
  1. TESTING SHALL BE AS REQUIRED BY THE FIRE DEPARTMENT, LOCAL AUTHORITIES, THE OWNER AND THE ARCHITECT. AT A MINIMUM, OPERATE EVERY BUILDING FIRE ALARM DEVICE TO ENSURE PROPER OPERATION, CORRECT ANNUNCIATION AT EACH REMOTE ANNUNCIATOR AND CONTROL PANEL. THE INITIATING CIRCUIT AND SIGNALING CIRCUITS SHALL BE OPENED IN AT LEAST TWO LOCATIONS PER ZONE TO CHECK TO THE PRESENCE OF CORRECT SUPERVISORY CIRCUITRY.
  1. THE ENTIRE FIRE ALARM SYSTEM SHALL BE TESTED BY SMOKE OR HEAT ACTIVATION OF EACH DEVICE AND SYSTEM SHORT CIRCUITING AT EACH REMOTE TEST POINT OF INITIATING ZONE AND ALARM CIRCUITS. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE PROJECT FOREMAN, THE OWNER'S REPRESENTATIVE, FIRE AUTHORITY OF THE FIRE JURISDICTION AND THE REPRESENTATIVE OF THE FIRE ALARM SYSTEM MANUFACTURER.
  1. THE ENTIRE SYSTEM SHALL BE MARKED PER DEVICE CIRCUIT TO INDICATE FUNCTION AND OPERATION FROM MANUFACTURER'S POINT-TO-POINT WIRING DIAGRAMS. DRAWINGS SHALL BE SIGNED BY THE INSTALLER, MANUFACTURER AND UL CERTIFIED TESTING COMPANY AND THE FIRE DEPARTMENT'S REPRESENTATIVE.
  1. UPON COMPLETION OF TESTING, CD-SIGNED DRAWINGS AND REPORTS SHALL BE FORWARDED TO THE ARCHITECT FOR RECORD PURPOSES FOR FINAL ACCEPTANCE. TESTING AND REPORTS SHALL COMPLY WITH NFPA 72 STANDARD REQUIREMENTS.
  1. PROVIDE UL CERTIFICATION OF THE SYSTEM.
  1. PAY ALL COSTS FOR CERTIFICATION, TESTING AND FIRE DEPARTMENT APPROVALS.
  1. LEAVE THE FIRE ALARM SYSTEM IN PROPER WORKING CONDITION.
  1. PROVIDE COPIES OF TESTING REPORTS AND UL CERTIFICATION IN THE O & M MANUALS.

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

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TENANT IMPROVEMENTS FOR:

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**RBC Wealth Management**

ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:  
**ELECTRICAL SPECIFICATIONS**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - E201

### ELECTRICAL DEMOLITION NOTES

1. THE ELECTRICAL CONTRACTOR SHALL FIELD EXAMINE THE ENTIRE AREA AFFECTED BY THIS CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND OTHER DEVICES COMPLETE WITH ALL ASSOCIATED WIRING, CONDUITS, ETC. AS REQUIRED TO COMPLETE THE NEW WORK. ALL CONDUITS WITH NON-ACTIVE WIRING SHALL BE REMOVED. AS PER DEMOLITION PLAN PROVIDE ALL DEMOLITION LABOR AS REQUIRED BY ARCHITECTS DEMOLITION NOTE AND AS INSTRUCTED IN FIELD BY G.C. WHERE THE REMOVAL OF THESE ITEMS MAKE DEAD ELECTRICAL WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS AS REQUIRED TO MAKE THE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, OBSOLETE WIRING SHALL BE REMOVED BACK TO THE REMAINING DEVICE OR TO THE PANELBOARD.
2. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS AND SCHEMES IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLAN. ALL WORK THAT IS NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED, DISCONNECTED AND REMOVED.
3. MAINTAIN CONTINUOUS SERVICE ON REMAINING FEEDERS, CIRCUITS OR PARTIAL CIRCUITS AND OUTLETS SERVICING ADJACENT REMAINING ACTIVE AREAS, EXCEPT WHERE GIVEN WRITTEN PERMISSION FOR OUTAGE FOR SPECIFIED TIME. ALL WORK REQUIRING SHUTDOWN OF EXISTING SYSTEMS SHALL BE PERFORMED ON OVERTIME (PREMIUM HOURS) AT HOURS AS APPROVED BY OWNER, ARCHITECT OR GENERAL CONTRACTOR AND AT NO ADDITIONAL COST TO THE OWNER. SUBMIT SCHEDULE OF REQUIRED OUTAGES FOR APPROVAL. PERFORM WORK IN A MANNER TO MINIMIZE SHUTDOWN TIME.
4. CUT BACK TO FLOOR, WALL, OR CEILING AND PLUG ENDS OF CONCEALED CONDUITS MADE OBSOLETE BY ALTERATIONS TO PERMIT REFINISHING SURFACES. REMOVE EXPOSED CONDUITS, WIRE WAYS, OUTLET BOXES, HANGERS, SUPPORTS AND DEVICES MADE OBSOLETE BY THIS WORK UNLESS DESIGNATED SPECIFICALLY TO REMAIN. ELIMINATE VOID SPACES. ALL ELECTRICAL WORK IN ADJOINING AREAS WHICH IS REQUIRED TO FUNCTION BUT IS AFFECTED BY DEMOLITION SHALL BE RECONNECTED AND RESTORED TO ITS PRESENT FUNCTION.
5. PROVIDE RECONNECTIONS AND TEMPORARY INSTALLATION AS REQUIRED; REMOVE AT JOB COMPLETION.
6. CONTRACTOR SHALL TRACE EXISTING CIRCUITS AND IDENTIFY LOCATION AND TYPE OF LOAD SERVED. AS-BUILT RECORDS SHALL BE SUBMITTED TO ENGINEER PRIOR TO START OF DEMOLITION.
7. PROVIDE TEMPORARY CONSTRUCTION LIGHTING AND POWER AS REQUIRED BY THE CONTRACTORS OF ALL DISCIPLINES OF THIS CONTRACT.
8. EXISTING CONDUITS WHEN REUSED, SHALL BE THOROUGHLY CLEANED AND REFURBISHED BEFORE REUSING.
9. PROVIDE BLANK PLATES ON ALL UNUSED OUTLET BOXES.
10. CONTRACTOR SHALL REMOVE ALL EXISTING ACCESSIBLE FIRE ALARM, TELEPHONE AND DATA CABLES THAT ARE ABANDONED AND NOT BEING REUSED AS PART OF THIS PROJECT.
11. ALL FIRE ALARM, TELEPHONE AND DATA CABLES BEING DESIGNATED FOR FUTURE USE SHALL BE TAGGED AND LABELED AS SUCH AT BOTH ENDS.

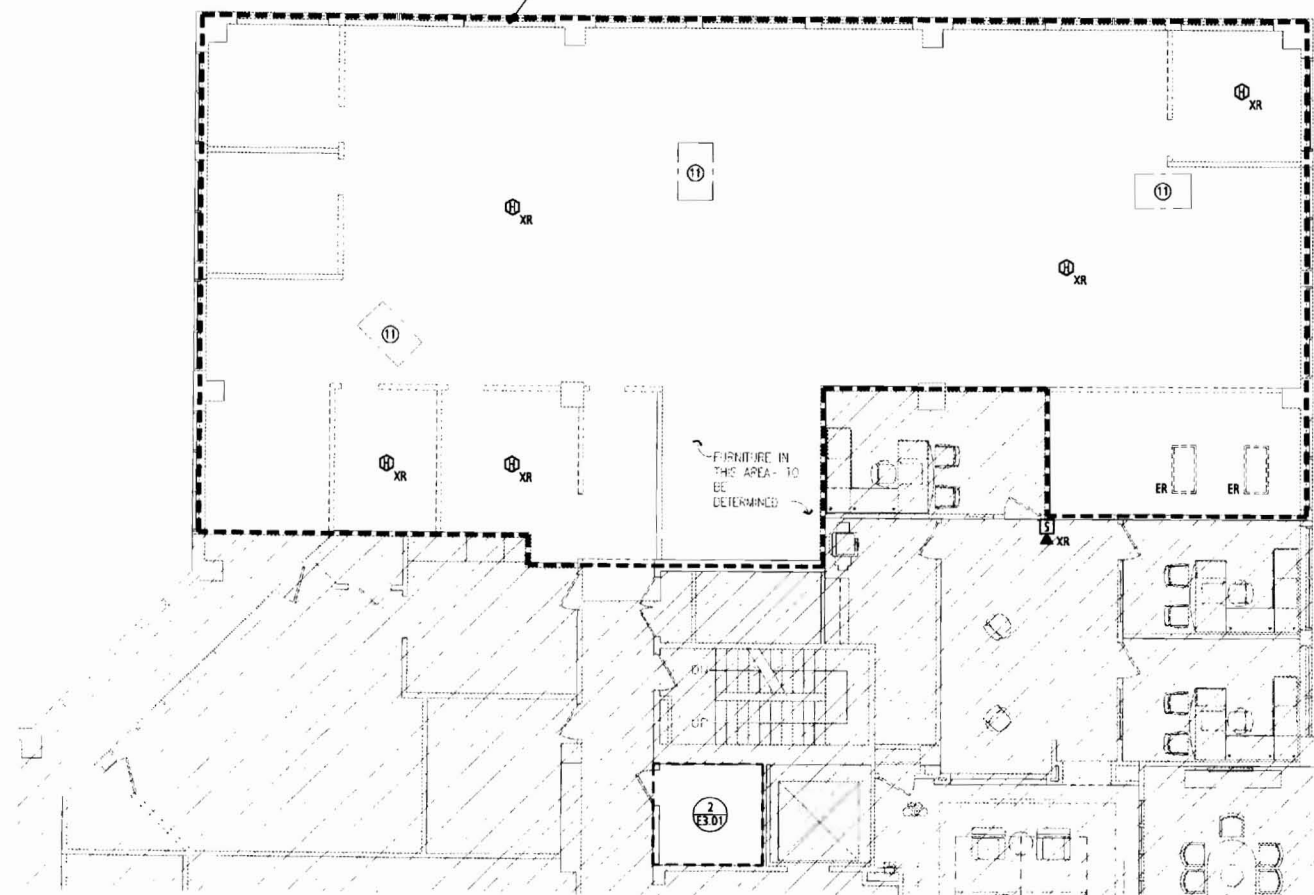
### EXISTING ELECTRICAL EQUIPMENT LEGEND

	SYMBOLS/EQUIPMENT SHOWN OUT OF FUNCTION (SOLID LINE WEIGHT) SHALL REMAIN OR BE MODIFIED AS NOTED.
ERN	EXISTING DEVICE/EQUIPMENT TO REMAIN.
ER	EXISTING DEVICE TO REMAIN. DISCONNECT AND REMOVE EXISTING HOME RUN CIRCUITRY AND RE-CIRCUIT DEVICE AS NOTED.
RX	NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.
XR	EXISTING EQUIPMENT SHALL BE DISCONNECTED, REMOVED AND RELOCATED AS SHOWN. CUT BACK AND/OR EXTEND EXISTING BRANCH CIRCUIT WIRING AND CONDUIT AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION.
X	EXISTING EQUIPMENT SHALL BE DISCONNECTED AND REMOVED. CUT BACK AND MAKE SAFE ALL ASSOCIATED BRANCH CIRCUIT WIRING CONDUIT BACK TO POWER SOURCE AND LABEL BREAKER IN PANELBOARD AS SPARE. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CIRCUITRY TO DEVICES UNAFFECTED BY DEMOLITION.

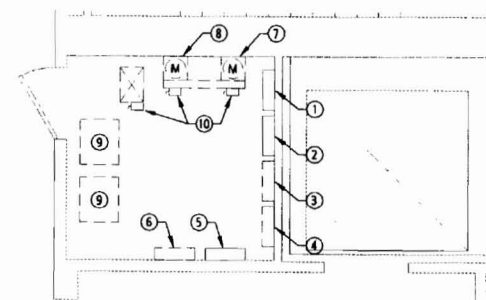
### KEYED NOTES:

- 1 EXISTING PANEL PSA SEC. 1 TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E001
- 2 EXISTING PANEL PSA SEC. 2 TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E001
- 3 EXISTING PANEL PSB SEC. 1 TO REMAIN.
- 4 EXISTING PANEL PSB SEC. 2 TO REMAIN.
- 5 EXISTING PANEL LSA TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E001.
- 6 EXISTING "NEW TENANT LIGHTING" PANEL TO REMAIN.
- 7 EXISTING ROYAL BANK OF CANADA METER TO REMAIN.
- 8 EXISTING 501 METER TO REMAIN.
- 9 EXISTING 45kVA TRANSFORMER TO REMAIN.
- 10 EXISTING DISCONNECT TO REMAIN.
- 11 EXISTING FPT UNIT IS BEING RELOCATED. REFER TO POWER CONSTRUCTION PLAN ON DWG. E302 FOR ADDITIONAL INFORMATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CIRCUITRY TO DEVICES UNAFFECTED BY DEMOLITION.



1 5TH FLOOR DEMOLITION PLAN  
SCALE: 1/8" = 1'-0"

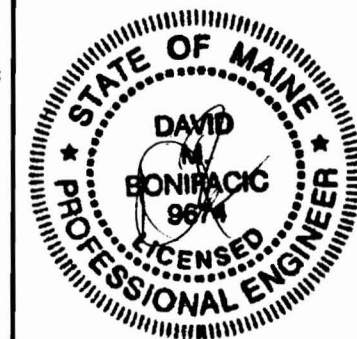


2 5TH FLOOR ELECTRIC ROOM PART PLAN  
SCALE: 1/4" = 1'-0"

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.

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TENANT IMPROVEMENTS FOR:

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ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:  
**ELECTRICAL 5TH FLOOR  
DEMOLITION PLAN**

Date: 02.13.09  
Comm. No: 092WBA001.01  
In Charge: MM  
Drawn By: -  
Checked By: -

E301

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.



TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
 2 Portland Square  
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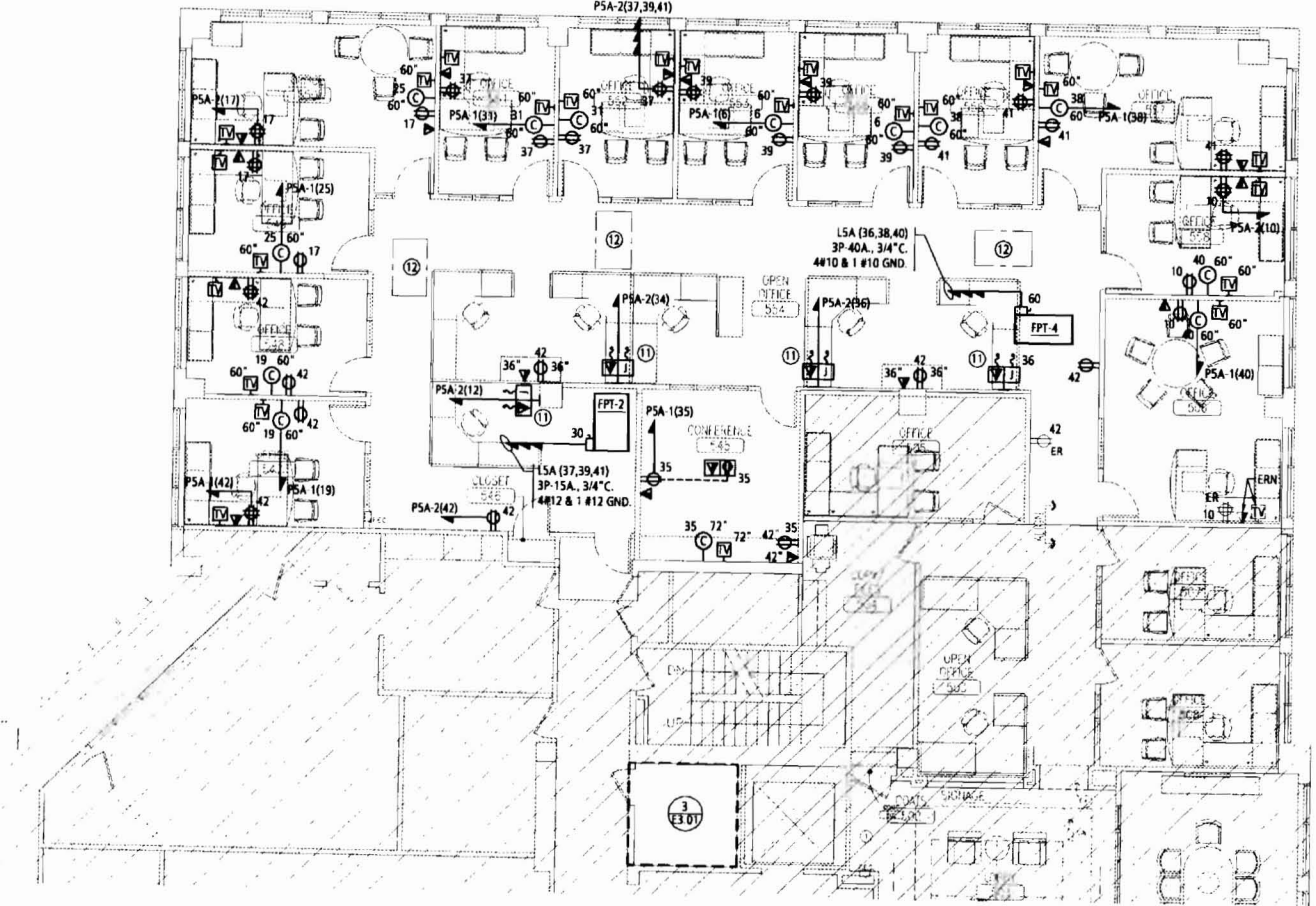


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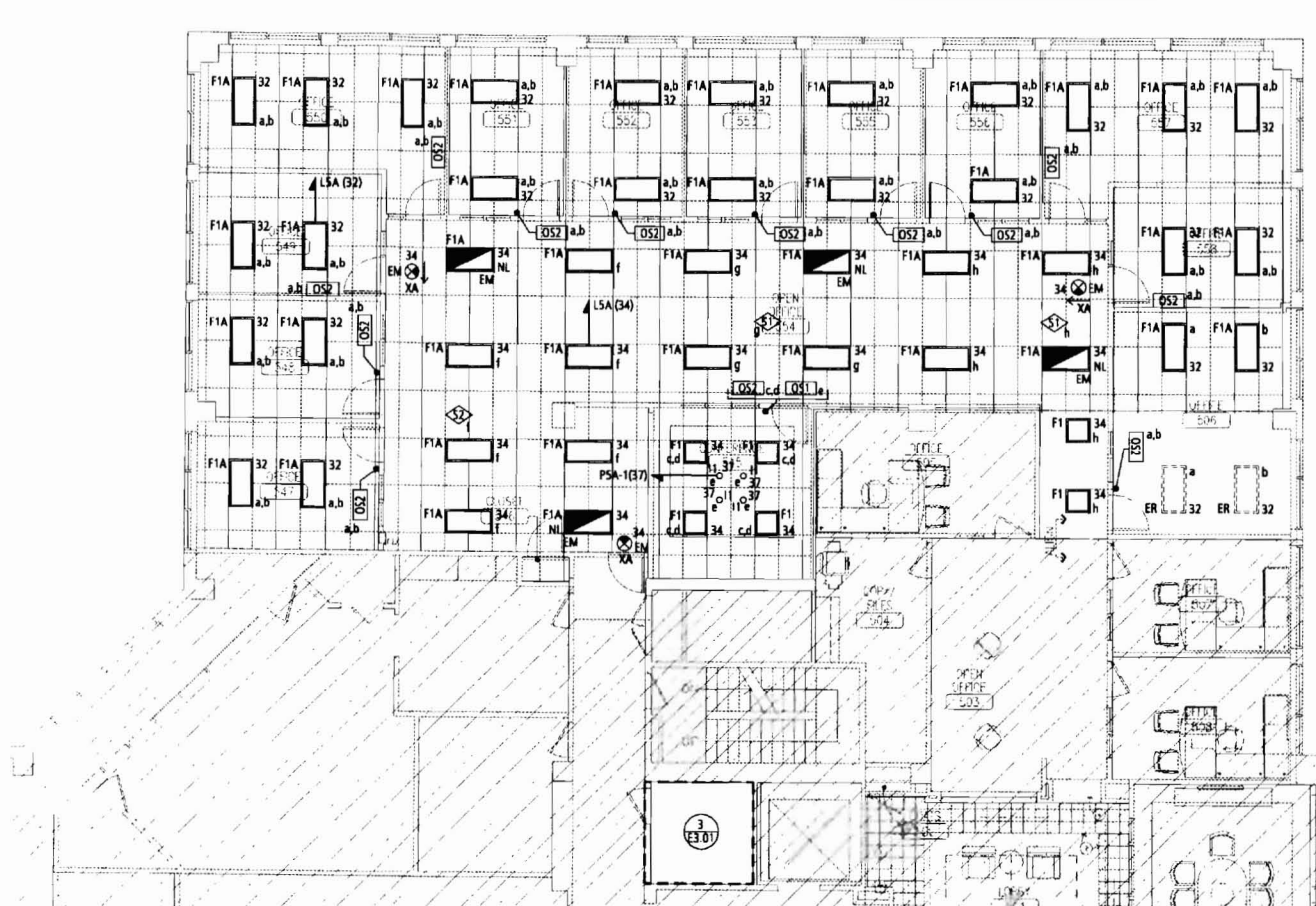
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SHEET TITLE:  
**ELECTRICAL 5TH FLOOR POWER AND LIGHTING CONSTRUCTION PLANS**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - **E302**



**1 5TH FLOOR POWER CONSTRUCTION PLAN**  
 SCALE: 1/8" = 1'-0"

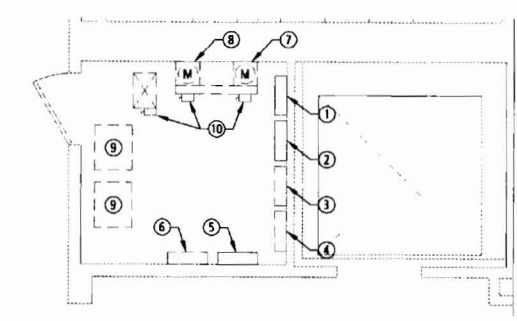


**2 5TH FLOOR LIGHTING CONSTRUCTION PLAN**  
 SCALE: 1/8" = 1'-0"

- LIGHTING NOTES**
- FOR GENERAL NOTES AND SYMBOL LIST SEE DWG. E001.
  - REFER TO LIGHTING FIXTURE SCHEDULE ON THIS DWG. FOR ADDITIONAL INFORMATION SEE ARCHITECTURAL DRAWINGS.
  - FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES AND SWITCHES SEE ARCHITECTURAL DRAWINGS.
  - CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH LIGHTING FIXTURE. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRES, BOXES, CEILING OUTLETS AND WHIPS REQUIRED TO ENERGIZE LIGHTING FIXTURES AS SHOWN. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL REQUIRED WIRING BETWEEN THE LIGHT SWITCHES / OCCUPANCY SENSORS TO THE LIGHTING FIXTURES.
  - CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
  - ALL BRANCH CIRCUIT WIRING SHALL BE ROUTED CONCEALED IN WALLS AND IN HUNG CEILING CAVITY, U.O.N. FINAL CONNECTIONS TO LIGHTING FIXTURES SHALL BE MADE WITH WIRING HAVING 90°C RATED INSULATION.
  - ALL EMERGENCY LIGHTING FIXTURES USED AS 'NIGHT LIGHTS' AND EXIT LIGHTS SHALL BE UNSWITCHED.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR THE WIRING OF THE OCCUPANCY SENSOR. MANUFACTURER'S FIELD TECHNICAL REPRESENTATIVE TO VISIT THE SITE AND SUPERVISE FINAL SENSOR ADJUSTMENTS AS REQUIRED.
  - CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL CEILING MOUNTED OCCUPANCY SENSORS WITH ALL OTHER CEILING APPURTANCES SUCH AS HVAC DIFFUSERS, SPRINKLER HEADS, ETC. LOCATE SENSORS MINIMUM 6 FEET FROM HVAC DIFFUSER.
  - COORDINATE FIXTURE TYPES, MODEL NUMBERS AND COMPATIBILITY WITH DROP CEILING WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
  - FOR QUANTITY AND EXACT LOCATION OF ALL LIGHTING FIXTURES REFER TO ARCHITECTURAL DRAWINGS.
  - NUMERAL SHOWN NEXT TO FIXTURE DENOTES BRANCH CIRCUIT. LOW CASE LETTER DENOTES SWITCHING FUNCTION.
  - COLOR AND RENDERING INDEX OF ALL FLUORESCENT LAMPS ARE BY ARCHITECT.

- POWER NOTES**
- FOR GENERAL NOTES AND SYMBOL LIST SEE DWG. E001.
  - FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL POWER AND TELEPHONE/DATA OUTLETS SEE ARCHITECTURAL DRAWINGS.
  - CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH RECEPTACLE. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE CONDUITS, WIRES, AND BOXES REQUIRED TO ENERGIZE THE EQUIPMENT AS SHOWN.
  - CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND FOR REFERENCE ONLY. FIELD CONDITIONS PREVAIL.
  - ALL BRANCH WIRING SHALL BE ROUTED CONCEALED IN WALLS AND HUNG CEILING CAVITIES, U.O.N.
  - 3/4" DIA. SHALL BE THE MINIMUM SIZE CONDUIT INSTALLED.
  - ALL CIRCUITS TO COMPUTERS, LASER PRINTERS, COPIERS, FAX MACHINES AND ANY OTHER LOADS OF NON-LINEAR NATURE OUTLETS SHALL HAVE SEPARATE NEUTRAL WIRES. STANDARD SHARED NEUTRAL HOMERUNS ARE NOT PERMITTED.
  - MAINTAIN CONTINUITY OF EXISTING BRANCH CIRCUITING FOR EXISTING RECEPTACLES TO REMAIN. RECONNECT TO EXISTING RESPECTIVE PANELS AS REQUIRED.
  - FOR ADDITIONAL POWER NOTES SEE ARCHITECTURAL DRAWINGS.

- KEYED NOTES:**
- EXISTING PANEL PSA SEC. 1 TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E101.
  - EXISTING PANEL PSA SEC. 2 TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E101.
  - EXISTING PANEL PSB SEC. 1 TO REMAIN.
  - EXISTING PANEL PSB SEC. 2 TO REMAIN.
  - EXISTING PANEL LSA TO BE MODIFIED PER PANEL SCHEDULE ON DWG. E101.
  - EXISTING NEW TENANT LIGHTING PANEL TO REMAIN.
  - EXISTING ROYAL BANK OF CANADA METER TO REMAIN.
  - EXISTING 501 METER TO REMAIN.
  - EXISTING 45kVA TRANSFORMER TO REMAIN.
  - EXISTING DISCONNECT TO REMAIN.
  - WALL MOUNTED COMBINATION J BOX TO SERVE REQUIREMENTS FOR POWER AND TELEPHONE/DATA OUTLETS WITHIN PRE-WIRED FURNITURE. COORDINATE EXACT CONNECTION TYPE AND QUANTITY OF POWER CONDUCTORS WITH EQUIPMENT MANUFACTURER. PROVIDE DISCONNECTING MEANS AS REQUIRED BY NEC ART. 605.7. PROVIDE 1-1 1/4" C. TO 6" INTO NEAREST HUNG CEILING SPACE.
  - NEW LOCATION OF EXISTING FPT UNIT. CONTRACTOR SHALL EXTEND CIRCUITRY FROM EXISTING LOCATION TO NEW LOCATION AS REQUIRED TO ENERGIZE EQUIPMENT. CIRCUITRY EXTENSIONS SHALL BE OF SAME SIZE, TYPE, AND QUANTITY TO MATCH EXISTING.



**3 5TH FLOOR ELECTRIC ROOM PART PLAN**  
 SCALE: 1/4" = 1'-0"

**LIGHTING FIXTURE SCHEDULE**

DESIG.	DESIG.	MFG. & CAT. NO.	TYPE	BALLAST TYPE	LAMP TYPE	VOLTAGE	NO LAMP/WAIT	MOUNTING	REMARKS
□	F1	2' x 2' DEEP CELL PARABOLIC BY METALUX OR APPROVED EQUAL. CONTRACTOR SHALL FIELD VERIFY TO MATCH WITH EXISTING FIXTURES.	FLUORESCENT	ELECTRONIC	T8	277	3-17	RECESSED	
□	F1A	2' x 4' DEEP CELL PARABOLIC BY METALUX OR APPROVED EQUAL. CONTRACTOR SHALL FIELD VERIFY TO MATCH WITH EXISTING FIXTURES.	FLUORESCENT	ELECTRONIC	T8	277	2-32	RECESSED	
○	I1	JUNO TC906-6463-WH	INCANDESCENT	ELECTRONIC	INCANDESCENT	120	1-100	RECESSED	6" DIAMETER DIRECT/INDIRECT
⊗	XA	SURE LITES LPX70RWH	AS INDICATED ON DWG.	ELECTRONIC	LED	277		AS INDICATED ON DWG.	

**EXISTING ELECTRICAL EQUIPMENT LEGEND**

□	SYMBOLS/EQUIPMENT SHOWN OUT OF FUNCTION (SOLID LINE WEIGHT) SHALL REMAIN OR BE MODIFIED AS NOTED.
ERN	EXISTING DEVICE/EQUIPMENT TO REMAIN.
ER	EXISTING DEVICE TO REMAIN. DISCONNECT AND REMOVE EXISTING HOME RUN CIRCUITRY AND RE-CIRCUIT DEVICE AS NOTED.



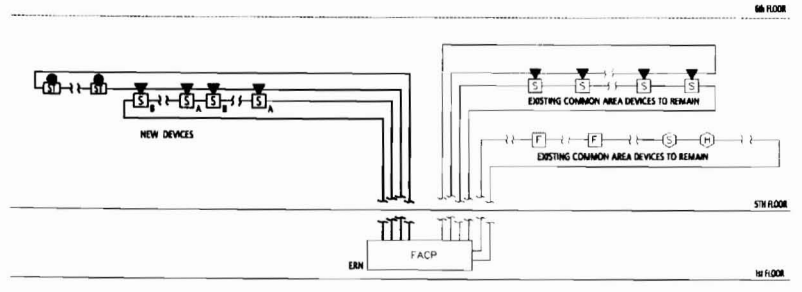
1. ALL NEW DEVICES/WIRING SHALL BE COMPATIBLE WITH THE EXISTING FIRE ALARM CONTROL PANEL. PROVIDE ALL NECESSARY WIRING AND ACCESSORIES AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
2. ALL DEVICES SHALL BE ADDRESSABLE TO MATCH EXISTING SYSTEM. ANY CONFLICTS OF SYSTEM TYPE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. CONTACT EXISTING FIRE ALARM SYSTEM MAINTENANCE CONTRACTOR FOR COORDINATION OF COMPATIBLE SYSTEM EQUIPMENT.
4. ALL QUALIFICATIONS AND/OR EXCEPTIONS SHOULD BE CLEARLY IDENTIFIED IN THE BID SUBMISSION.
5. FIRE ALARM WIRING DIAGRAMS SHOWN ARE FOR GENERAL ARRANGEMENT ONLY. THE ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS AND SUBMIT A POINT-BY-POINT WIRING DIAGRAM PRIOR TO INSTALLATION.
6. THE FIRE ALARM INSTALLATION SHALL COMPLY WITH LOCAL BUILDING CODE, REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND THE AMERICANS WITH DISABILITIES ACT (ADA).
7. UNLESS OTHERWISE DIRECTED AND PRIOR TO THE COMMENCEMENT OF WORK, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FILING PLANS AND NECESSARY DOCUMENTS WITH ALL LOCAL AUTHORITIES HAVING JURISDICTION, SUCH AS THE LOCAL FIRE DEPARTMENT OR THE STATE FIRE MARSHAL'S OFFICE.
8. WHERE REQUIRED, THE ELECTRICAL CONTRACTOR SHALL FILE AN "APPLICATION FOR ELECTRICAL INSPECTION" WITH THE LOCAL AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL THEN ACCOMPANY THE INSPECTOR DURING HIS INSPECTION OF THE SYSTEM, MAKE ALL MODIFICATIONS REQUIRED BY THE INSPECTOR RESULTING FROM ISSUANCE OF ANY NOTICE OF DEFECTS AND FILE A SELF CERTIFICATION AFFIDAVIT. THE ELECTRICAL CONTRACTOR SHALL PAY ALL FEES RELATING TO THE INSPECTION.
9. PERMITS AND APPROVALS NECESSARY FOR INSTALLATION OF THE WORK SHALL BE OBTAINED PRIOR TO THE COMMENCEMENT OF THE WORK. ALL PERMIT COSTS AND INSPECTION FEES SHALL BE INCLUDED AS PART OF THIS CONTRACT.
10. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND PROTECT ALL FIRE ALARM SAFETY DEVICES IN OPERATION AT ALL TIMES. IF ANY PORTION OF THE FIRE ALARM SYSTEM IS DISABLED DURING THE CONSTRUCTION PERIOD, NOTIFY BUILDING MANAGER/OWNER IMMEDIATELY.
11. ALL REQUIRED TEMPORARY SHUTDOWNS OF THE EXISTING POWER AND FIRE ALARM SYSTEMS SHALL BE DONE AFTER REGULAR WORKING HOURS ON A PREMIUM TIME BASIS AND ONLY WHEN AND AS COORDINATED WITH THE BUILDING MANAGEMENT. ADDITIONAL COST OF REQUIRED PREMIUM TIME LABOR SHALL BE INCLUDED IN THE BID PROPOSAL.
12. IN AREAS WHERE DUST AND DIRT WILL BE AIRBORNE DURING DEMOLITION AND CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A PLASTIC COVER OVER SMOKE DETECTORS AND THEN REMOVE ONCE THE SPACE IS CLEAN. IF A FIRE ALARM DEVICE IS LOCATED ON A WALL OR CEILING TO BE REMOVED, THE DEVICE SHALL BE REMOVED UPON INSTALLATION OF NEW DEVICES.
13. UNLESS DIRECTED OTHERWISE BY FIRE ALARM MAINTENANCE VENDOR, FIRE ALARM DEVICE WIRING SHALL BE AS FOLLOWS (FOR BIDDING PURPOSES ONLY):  
 SPEAKER WIRING - #14 AWG TWISTED TEFLON CABLE, INSULATED PLENUM RATED  
 STROBE WIRING - 12/2 MC (FIRE ALARM) CABLE, RATED FOR 600 VOLTS  
 DATA LOOP (SIGNAL) WIRING - #14 AWG TWISTED/SHIELDED TEFLON CABLE, INSULATED PLENUM RATED  
 CONFIRM WIRING SIZE, TYPE AND QUANTITY WITH FIRE ALARM VENDOR PRIOR TO PURCHASE. ALL FIRE ALARM WIRING SHALL NOT BE SPLICED.
14. ALL FIRE ALARM CABLING SUSCEPTIBLE TO DAMAGE DUE TO EXPOSURE TO MECHANICAL EQUIPMENT OR VERTICAL RUNS IN PARTITION WALLS SHALL BE IN RIGID STEEL CONDUIT.
15. ALL FIRE ALARM CABLING SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS:  
 A MINIMUM TEMPERATURE RATING OF 200 DEG. C.  
 A MINIMUM AVERAGE INSULATION THICKNESS OF 15 MILS.  
 A MINIMUM AVERAGE JACKET THICKNESS OF 25 MILS.  
 THE COLOR OF THE CABLE SHALL BE RED.  
 THE CABLE SHALL BE TYPE FPLP (PLENUM TYPE)  
 THE CABLE SHALL BE VISIBLY MARKED EXTERNALLY THAT IT MEETS THE ABOVE REQUIREMENTS AND IS LISTED BY UL 1424 AND UL 910.
16. SPEAKERS SHALL BE TAPPED TO PROVIDE 15dB ABOVE THE AMBIENT NOISE LEVEL. UNLESS OTHERWISE NOTED, SPEAKERS SHALL BE TAPPED AT 1/2 WATT IN OFFICE AREAS AND 1 WATT MINIMUM IN MECHANICAL SPACES. THE ELECTRICAL CONTRACTOR SHALL PERFORM ALL SOUND LEVEL TESTING AFTER THE INSTALLATION IS COMPLETE AND SHALL ADJUST TAP SETTINGS AS REQUIRED TO OBTAIN THE REQUIRED SOUND LEVELS.
17. STROBES SHALL HAVE A LIGHT OUTPUT OF 15/90/75/115 CANDELA (AS NOTED ON DWGS.), AND A FLASH RATE OF 1-3 HZ. ALL STROBES WITHIN THE FIT-OUT SPACE SHALL BE SYNCHRONIZED.
18. WALL MOUNTED SPEAKER/STROBE DEVICES SHALL NOT HAVE ANY OTHER DEVICE OR APPURTENANCE WITHIN 5 FEET OF THE DEVICE. EACH DEVICE SHALL BE MOUNTED AT A MINIMUM OF 80" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING LINE, WHICHEVER IS LOWER.
19. ALL CONCEALED FIRE ALARM CABLING SHALL BE PLENUM RATED AND SHALL NOT BE REQUIRED TO BE INSTALLED IN CONDUIT, UNLESS OTHERWISE NOTED OR SHOWN ON THE DRAWINGS.
20. AFTER SYSTEM INSTALLATION IS COMPLETE, THE ELECTRICAL CONTRACTOR SHALL SCHEDULE, COORDINATE AND TEST ALL SYSTEM COMPONENTS AND FUNCTIONS TO ENSURE THAT NEW EQUIPMENT PROPERLY OPERATES PRIOR TO FIRE DEPARTMENT INSPECTION.
21. UNLESS DIRECTED OTHERWISE BY THE ENGINEER/OWNER AND/OR THE BUILDING FIRE ALARM SYSTEM MAINTENANCE CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN AND PROTECT ALL EXISTING FIRE ALARM SYSTEM DEVICES FOR THE DURATION OF THE CONSTRUCTION PERIOD. HE SHALL NOT REMOVE ANY EXISTING BASE BUILDING FIRE ALARM DEVICES, WIRING OR EQUIPMENT UNTIL THE NEW SYSTEM IS COMPLETELY OPERATIONAL. EXISTING BASE BUILDING FIRE ALARM EQUIPMENT MUST REMAIN IN SERVICE AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION. IF ANY PORTION OF THE EXISTING FIRE ALARM SYSTEM IS DISABLED DURING THE CONSTRUCTION PERIOD, NOTIFY THE BUILDING MANAGER/OWNER AND GENERAL CONTRACTOR IMMEDIATELY.
22. THE ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE WITH THE BUILDING FIRE ALARM SYSTEM MAINTENANCE CONTRACTOR FOR THE TYPE OF FIRE ALARM DEVICES TO BE PROVIDED (ADDRESSABLE OR ANALOG TO MATCH EXISTING SYSTEM DEVICES). ALL NEW DEVICES INSTALLED SHALL BE COMPATIBLE AND CONSISTENT WITH THE EXISTING BUILDING FIRE ALARM SYSTEM INSTALLATION. THE ELECTRICAL CONTRACTOR SHALL NOT ORDER ANY NEW DEVICES WITHOUT SHOP APPROVAL FROM THE ENGINEER.
23. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO RETAIN AND COORDINATE WITH THE BUILDING FIRE ALARM MAINTENANCE CONTRACTOR FOR ANY REQUIRED PROGRAMMING AND FINAL CONNECTIONS TO THE BUILDING FIRE ALARM SYSTEM. THE ELECTRICAL CONTRACTOR SHALL INCLUDE COORDINATION, PROGRAMMING AND FINAL CONNECTION COSTS IN THEIR BID. FIRE ALARM SYSTEM TESTING SHALL CONSIST OF PROCEDURE NOTED ABOVE.
24. PROVIDE UPGRADE OF EXISTING SYSTEM POWER SUPPLIES AND AMPLIFIERS AS NECESSARY TO SUPPORT MODIFICATIONS AS SHOWN/NOTED ON THESE DRAWINGS. SUBMIT BATTERY CALCULATIONS SHOWING REQUIRED UPGRADES, IF ANY, AS PART OF THE SHOP DRAWING SUBMITTAL PACKAGE.



1 5TH FLOOR FIRE ALARM PLAN  
SCALE: 1/8" = 1'-0"

**FIRE ALARM NARRATIVE:**

- A. CODES:
  1. MAINE STATE BUILDING CODE
  2. NFPA 13, 2002 EDITION
  3. NFPA 72, 2002 EDITION
  4. AMERICAN WITH DISABILITIES ACT
  5. AUTHORITY HAVING JURISDICTION - CITY OF PORTLAND.
- B. OCCUPANCY & DESIGN CRITERIA:
  1. USE GROUP B, BUSINESS OFFICES.
  2. ADA SPEAKER/STROBES - NOTIFICATION DEVICES WILL BE INSTALLED THROUGHOUT PER CODE.
- C. SEQUENCE OF OPERATION
  1. OPERATION OF A MANUAL STATION, AUTOMATIC ALARM INITIATING DEVICE, OR SPRINKLER FLOW SWITCH SHALL AUTOMATICALLY:
    - a. NOTIFY THE PORTLAND FIRE DEPARTMENT
    - b. PROVIDE A PRE-ALERT TONE FOLLOWED BY 3 REPETITIONS OF AN APPROVED VOICE INSTRUCTIONAL MESSAGE. FOLLOWING THE INSTRUCTIONAL MESSAGE, SOUND A TEMPORAL CODE 3 EVACUATION TONE TO THE FIRE FLOOR, THE FLOOR BELOW AND THE FLOOR ABOVE TO EVACUATE THE BUILDING. AUTOMATIC SEQUENCING SHALL BE OVERRIDDEN BY THE PAGING MICROPHONE(S) LOCATED AT THE MAIN FACP.
    - c. ACTIVATE ALL VISUAL SIGNAL CIRCUITS THROUGHOUT THE FACILITY, SYNCHRONIZED IN ACCORDANCE WITH LOCAL AND NFPA 72 GUIDELINES.
    - d. UPON ALARM BY AN ELEVATOR LOBBY SMOKE DETECTOR OR OTHER DESIGNATED RECALL DEVICE, RECALL ALL ELEVATORS THAT SERVE THE FLOOR OF INCIDENCE TO A PRE-DETERMINED FLOOR. IF THE PRE-DETERMINED FLOOR HAPPENS TO BE THE FLOOR OF INCIDENCE, THE ELEVATOR SHALL BE RECALLED TO A PRE-DETERMINED ALTERNATE FLOOR.
    - e. INITIATE ALARM REPORTING TO THE PORTLAND FIRE DEPARTMENT VIA THE EXISTING MASTERBOX AND TO AN APPROVED CENTRAL MONITORING STATION (CMS) VIA A DIGITAL ALARM COMMUNICATOR/TRANSMITTER (DACIT).
    - f. SOUND AN AUDIBLE ALARM SIGNAL AND FLASH A GENERAL ALARM LED AT THE FACP. THE AUDIBLE SIGNAL SHALL BE SILENCED AND THE LED SHALL LIGHT STEADILY UPON ACKNOWLEDGMENT OF AN ALARM. SUBSEQUENT ALARMS SHALL RE-INITIATE THIS SEQUENCE.
  2. THE EXISTENCE OF A GROUND FAULT, SHORT, REMOVAL OF A DETECTOR HEAD, COMMUNICATIONS FAILURE, FAILURE OF ANY COMPONENT OR WIRING THAT MIGHT IMPAIR THE FUNCTION OF THE SYSTEM, OR OTHER RELATED SYSTEM FAULT SHALL AUTOMATICALLY:
    - a. SOUND AN AUDIBLE TROUBLE SIGNAL AND FLASH A TROUBLE LED AT THE FACP AND ANY SYSTEM ANNUNCIATORS. THE AUDIBLE SHALL SILENCE AND THE LED SHALL LIGHT STEADILY UPON ACKNOWLEDGMENT OF THE CONDITION UNTIL THE CONDITION IS CLEARED. SUBSEQUENT CONDITIONS SHALL CAUSE THIS SEQUENCE TO REOCCUR.
    - b. DISPLAY THE CONDITION ON THE LCD DISPLAY LOCATED AT THE FACP, NETWORK PANELS AND ANY SYSTEM ANNUNCIATORS.
    - c. LOG THE EVENT IN THE SYSTEM'S HISTORY FILE, AND PRINT OUT THE TROUBLE MESSAGE INCLUDING DATE AND TIME WHERE APPLICABLE.
  3. ACTUATION OF A SPRINKLER SUPERVISORY SWITCH OR EMERGENCY POWER CONTACT SHALL AUTOMATICALLY:
    - a. SOUND AN AUDIBLE SUPERVISORY TROUBLE SIGNAL AND FLASH A SUPERVISORY TROUBLE LED AT THE FACP. THE AUDIBLE SHALL SILENCE AND THE LED SHALL LIGHT STEADILY UPON ACKNOWLEDGMENT OF THE CONDITION UNTIL THE CONDITION IS CLEARED. SUBSEQUENT CONDITIONS SHALL CAUSE THIS SEQUENCE TO REOCCUR.
    - b. DISPLAY THE CONDITION ON THE LCD DISPLAY LOCATED AT THE FACP, NETWORK PANELS AND ANY SYSTEM ANNUNCIATORS.
  4. LOG THE EVENT IN THE SYSTEM'S HISTORY FILE, AND PRINT OUT THE SUPERVISORY MESSAGE INCLUDING DATE AND TIME WHERE APPLICABLE.
  5. LOCAL PANEL INDICATORS AND CONTROLS SHALL INCLUDE THE FOLLOWING:
    - a. UNDER NORMAL CONDITION, A "POWER ON" LED SHALL ILLUMINATE.
    - b. UNDER ALARM CONDITIONS, AN "ALARM" LED SHALL ILLUMINATE.
    - c. AN ALARM SILENCE SWITCH TO SILENCE THE LOCAL TRANSDUCER PANEL ALARM SIGNAL AND LIGHT THE "ALARM SILENCED" LED.
    - d. A TROUBLE SILENCE SWITCH SHALL SILENCE THE LOCAL TRANSDUCER PANEL TROUBLE SIGNAL AND LIGHT THE "TROUBLE SILENCED" LED.
    - e. AN INTEGRAL ALPHANUMERIC LCD TO PRESENT DEVICE ADDRESS AND CONDITION MESSAGE.
    - f. A LOCAL PANEL RESET FUNCTION.
- D. TESTING CRITERIA
  1. FIRE ALARM SYSTEM
    - i. FIRE ALARM TESTING COMPANY SHALL COMPLETE A NFPA CERTIFICATE OF COMPLETION PRIOR TO BOSTON FIRE DEPARTMENT ACCEPTANCE TESTING. EACH DEVICE SHALL BE FUNCTIONALLY TESTED.
    - ii. UPON FUNCTION OF EACH DEVICE, THE CORRESPONDING PROGRAMMED EVENT SEQUENCES SHALL BE VERIFIED. SUBSEQUENT EVENTS SHALL INCLUDE OCCUPANT NOTIFICATION AND SYSTEM ANNUNCIATION. PROPER VISUAL NOTIFICATION SHALL BE VERIFIED.
    - iii. AUDIBLE SOUND PRESSURE LEVELS SHALL BE MEASURED AND RECORDED. A COMPLETE REPORT DEMONSTRATING THE ACTIVATION AND SUBSEQUENT ACKNOWLEDGMENT OF EACH ACTIVATION SHALL BE PROVIDED.
    - iv. AN ANNUAL TEST AND INSPECTION CONTRACT WILL BE IN EVIDENCE AT THE TIME OF THE FINAL TESTING. THE FINAL SYSTEM ACCEPTANCE TEST SHALL BE CONDUCTED BY THE HOLDER OF THE TEST CONTRACT AND WITNESSED BY THE CITY OF BOSTON.



2 PARTIAL FIRE ALARM ONE-LINE DIAGRAM  
SCALE: NONE

FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
HD	ADDRESSABLE HEAT DETECTOR, CEILING MOUNTED
30cd	COMBINATION SPEAKER/STROBE DEVICE, WALL MOUNT, RED - 1/2 WATT TAP U.O.M. CANDELA RATING AS INDICATED ON FLOOR PLAN.
15cd	STROBE ONLY DEVICE, WALL MOUNT, RED CANDELA RATING AS INDICATED ON FLOOR PLAN

EXISTING ELECTRICAL EQUIPMENT LEGEND	
SYM	EXISTING DEVICE/EQUIPMENT TO REMAIN.
ER	EXISTING COMMON AREA DEVICES TO REMAIN.
RX	NEW LOCATION OF RELOCATED EXISTING EQUIPMENT.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.



TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
 2 Portland Square  
 Suite 501  
 Portland, ME 04101



ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

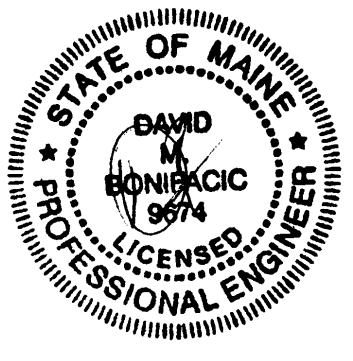
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SHEET TITLE:  
**FIRE ALARM 5TH FLOOR CONSTRUCTION PLAN**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - FA301



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Maine.



TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
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Portland, ME 04101



ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:

# FIRE PROTECTION SPECIFICATIONS

Date:	02.13.09
Comm. No:	092WBA001.01
In Charge:	MM
Drawn By:	
Checked By:	FP201

1. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

2. CODES, PERMITS AND INSPECTIONS:

2.1. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATES ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

2.2. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE. FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION. OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREOF. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

3. SITE VERIFICATIONS:

3.1. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AND TENANT AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

3.2. THE LOCATIONS OF THE EXISTING SERVICES ARE BELIEVED TO BE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF THESE SERVICES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK.

3.3. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACTOR DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTING A BID. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING PIPE SIZES, CLEARANCES, ETC. AND CONDITIONS.

4. CONTRACT DOCUMENTS:

4.1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.

4.2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. PIPE ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF PIPE TO AVOID OBSTRUCTIONS. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

4.3. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

4.4. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE MECHANICAL WORK ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL COSTS.

4.5. THE BASE BUILDING DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

5. GUARANTEE:

5.1. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OF ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

5.2. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS AND LOCAL BUILDING CODE.

5.3. QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC. OR BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

5.4. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. UL 1787, FOR EARLY SUPPRESSION, FAST-RESPONSE APPLICATIONS.

3. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.

4. ACCESS DOORS IN GENERAL CONSTRUCTION:

4.1. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18" X 18") AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLING OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID.

5. SPRINKLER TYPES, FEATURES, AND OPTIONS AS FOLLOWS:

1. CONCEALED CEILING SPRINKLERS, INCLUDING COVER PLATE.
2. QUICK-RESPONSE SPRINKLERS.

6. SPRINKLER GUARDS: WIRE CAGE TYPE, INCLUDING FASTENING DEVICE FOR ATTACHING TO SPRINKLER.

7. B1. LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEM TO 200 PSIG AND TEST FOR 2 HOURS WITHOUT ANY LOSS IN PRESSURE. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

7.2. FLUSH, TEST, AND INSPECT SPRINKLER SYSTEMS ACCORDING TO MAINE BUILDING CODES AND NFPA 13, "SYSTEMS ACCEPTANCE" CHAPTER.

7.3. FLUSH, TEST, AND INSPECT STANDPIPE SYSTEMS ACCORDING TO MAINE BUILDING CODES "SYSTEM ACCEPTANCE" CHAPTER.

7.4. COORDINATE WITH FIRE ALARM TESTS. OPERATE AS REQUIRED.

7.5. VERIFY THAT EQUIPMENT HOSE TESTS ARE SAME AS LOCAL FIRE DEPARTMENT EQUIPMENT.

8. REPORT TEST RESULTS PROMPTLY AND IN WRITING TO ARCHITECT AND AUTHORITIES HAVING JURISDICTION.

9. CLEANING AND PROTECTION:

9.1. CLEAN DIRT AND DEBRIS FROM SPRINKLERS.

9.2. REMOVE AND REPLACE SPRINKLERS WITH PART OTHER THAN FACTORY FINISH. PROTECT SPRINKLERS FROM DAMAGE UNTIL SUBSTANTIAL COMPLETION.

10. DEMONSTRATION:

10.1. ENGAGE A FACTORY AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNERS MAINTENANCE PERSONNEL TO ADJUST, OPERATE AND MAINTAIN SPECIALTY VALVES. REFER TO DIVISION 1 SECTION "CLOSEOUT PROCEDURES"

1.2 SUMMARY

A. THIS SECTION INCLUDES THE FOLLOWING FIRE SUPPRESSION SYSTEMS INSIDE THE BUILDING:

1. WET-PIPE SPRINKLER SYSTEMS
2. RELATED SECTIONS INCLUDE:
  1. DIVISION 13 - "FIRE ALARM" FOR ALARM DEVICES NOT SPECIFIED IN THIS SECTION.
  2. DIVISION 16 - ELECTRICAL
3. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH ALL MAINE BUILDING CODES AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
4. PHASING AS REQUIRED BY OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, OR BUILDING MANAGEMENT
5. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
6. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
7. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
8. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

1.3 SYSTEM DESCRIPTIONS:

A. WET-PIPE SPRINKLER SYSTEM: AUTOMATIC SPRINKLERS ARE ATTACHED TO PIPING CONTAINING WATER AND THAT IS CONNECTED TO WATER SUPPLY. WATER DISCHARGES IMMEDIATELY FROM SPRINKLERS WHEN THEY ARE OPENED. SPRINKLERS OPEN WHEN HEAT MELTS FUSIBLE LINK OR DESTROYS FRANGIBLE DEVICE.

1.4 PIPING REQUIREMENTS:

- A. STANDARD PIPING SYSTEM COMPONENT WORKING PRESSURE: LISTED FOR AT LEAST 175 PSIG
- B. FIRE-SUPPRESSION SPRINKLER SYSTEM DESIGN SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION.
- C. SEISMIC PERFORMANCE: FIRE-SUPPRESSION PIPING SHALL BE CAPABLE OF WITHSTANDING THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO NFPA 13 AND ALL MAINE BUILDING CODES.

1.5 QUALITY ASSURANCE:

- A. INSTALLER QUALIFICATIONS: INSTALLER'S RESPONSIBILITIES INCLUDE PREPARING AND COORDINATING SHOP DRAWINGS, FABRICATING, AND INSTALLING FIRE SUPPRESSION SYSTEMS. BASE CALCULATIONS OR RESULTS OF FIRE-HYDRANT FLOW TEST.
- B. NFPA STANDARDS: FIRE-SUPPRESSION SYSTEM EQUIPMENT, SPECIALTIES, ACCESSORIES, INSTALLATION, AND TESTING SHALL COMPLY WITH THE FOLLOWING:
  1. INTERNATIONAL BUILDING CODE
  2. NFPA 13, "INSTALLATION OF SPRINKLER SYSTEMS"

1.6 EXTRA MATERIALS:

A. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

3. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.

4. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

H. SHOP DRAWINGS:

1. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

2. INDICATE ON EACH SHOP DRAWING SUBMITTED:

- a. PROJECT NAME AND LOCATION
- b. NAME OF ARCHITECT AND ENGINEER
- c. ITEM IDENTIFICATION
- d. APPROVAL STAMP OF PRIME CONTRACTOR

3. SUBMISSIONS:

- a. SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND THREE COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- b. SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

I. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1. PIPE AND FITTINGS
2. SPRINKLERS
3. PIPING LAYOUTS
4. SUPPORTS, HANGERS AND GUIDES
5. HYDRAULIC CALCULATIONS

J. AS BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS:

1. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

2. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

3. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

4. REPRODUCE "AS BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION IN AUTOCAD R14 FORMAT.

K. SUBSTITUTIONS:

1. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS, ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTE. SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTE. ANY SUBSTITUTE MUST BE SUBMITTED WITH AN EXPLANATION WHY A SUBSTITUTE IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.
2. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.

L. CHASING, CHOPPING OR CORE DRILLING:

1. PRIOR TO ANY CHASING, CHOPPING, OR CORE DRILLING BEING PERFORMED, THIS CONTRACTOR SHALL FIELD INVESTIGATE EXISTING CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES AND BUILDING MANAGEMENT TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECT ANY EXISTING BUILDING SYSTEMS. THIS WORK MUST BE APPROVED BY BUILDING MANAGEMENT PRIOR TO PROCEEDING.

M. DEMOLITION, REMOVAL AND RELOCATION:

1. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

2. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT, AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

3. EQUIPMENT REQUIRED TO BE TEMPORARILY DISCONNECTED AND RELOCATED SHALL BE CAREFULLY REMOVED, STORED, CLEANED, REINSTALLED, RECONNECTED AND MADE OPERATIONAL.

4. ALL EXISTING WORK NOT INDICATED FOR DEMOLITION SHALL BE PROTECTED FROM DAMAGE. WHERE EXISTING WORK TO REMAIN IS DAMAGED OR DISTURBED, CONTRACTOR SHALL REPAIR OR REPLACE TO OWNER'S AND BUILDING MANAGER'S SATISFACTION AT NO COST TO THE OWNER OR BUILDING MANAGEMENT.

5. GENERAL CONTRACTOR TO REMOVE ALL CEILING IN AREAS WHERE NEW PIPING IS TO BE INSTALLED OR EXISTING IS ALTERED, AS PER ARCHITECT'S INSTRUCTIONS.

6. NECESSARY CUTTING AND PATCHING TO ACCOMMODATE THE NEW WORK SHALL BE PERFORMED BY THIS CONTRACTOR AND COORDINATED WITH BUILDING MANAGEMENT SO AS TO MINIMIZE DISRUPTION OF EXISTING TENANTS AND SERVICES. UPON COMPLETION OF DEMOLITION, RESTORE ALL ITEMS TO MATCH EXISTING CONDITIONS.

7. ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE LEGALLY DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE ARCHITECT OR OWNER. REFRIGERATION CONTAINED IN EXISTING EQUIPMENT TO BE REMOVED SHALL BE RECLAIMED OR LEGALLY DISPOSED OF IN ACCORDANCE WITH EPA REQUIREMENTS AND ASHRAE.

8. PROVIDE FOR LEGAL REMOVAL AND DISPOSAL OF ALL RUBBISH AND DEBRIS FROM THE BUILDING AND SITE. COORDINATE ALL DEMOLITION AND REMOVALS WITH BUILDING MANAGEMENT.

N. CONNECTIONS TO EXISTING WORK:

1. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCTWORK AND PIPING CONNECTIONS AS REQUIRED TO MINIMIZE SHUTDOWN TIME.

3. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION.

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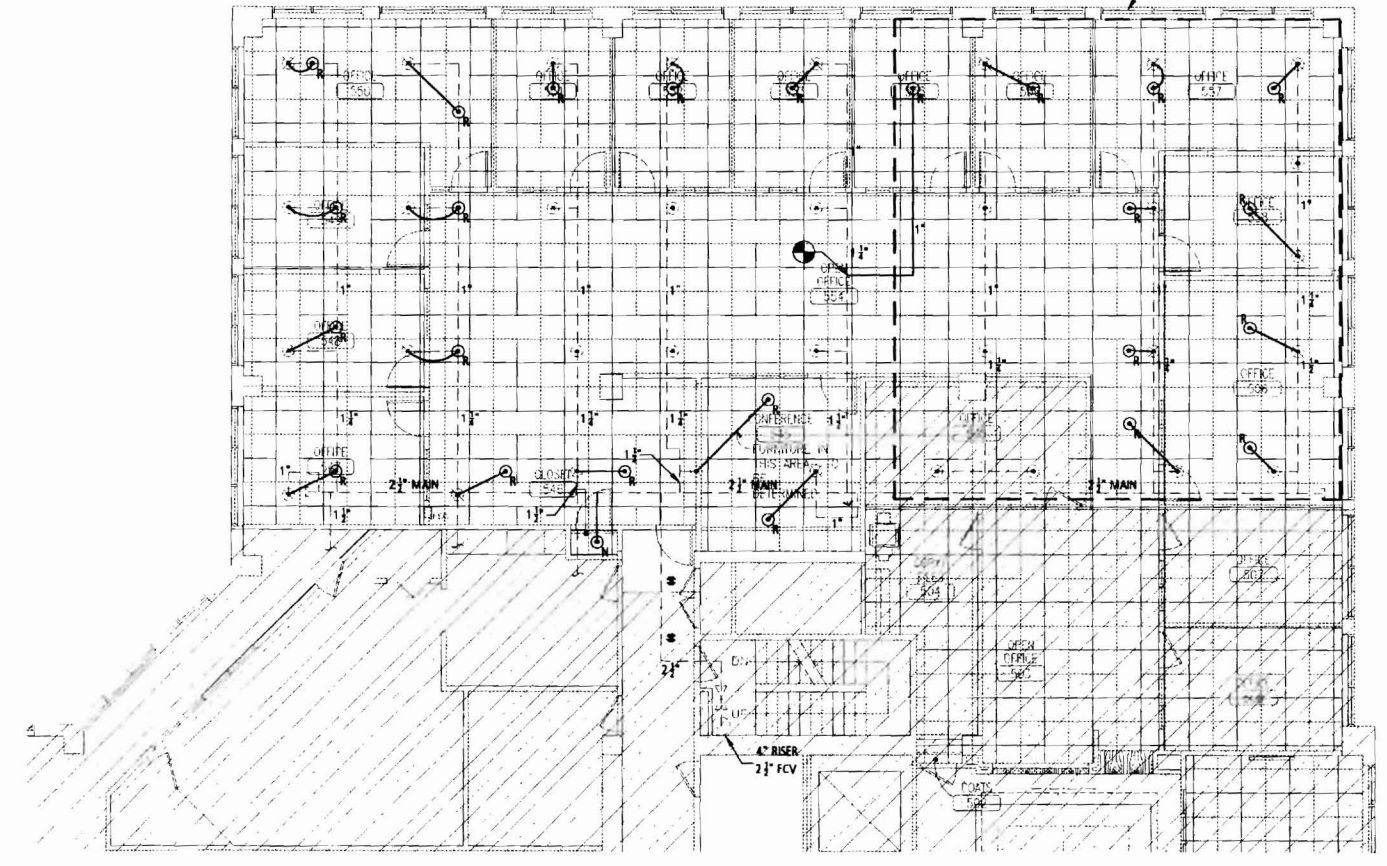
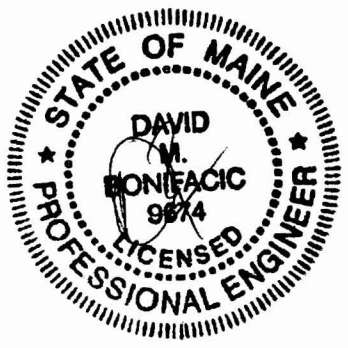
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I hereby certify that this plan, specific report was prepared by me or under my supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Maine.



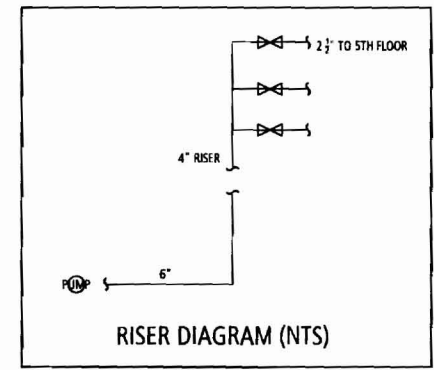
**WB**  
 Engineers | Consultant  
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1 5TH FLOOR FIRE PROTECTION CONSTRUCTION PLAN  
 SCALE: 1/8" = 1'-0"

**FIRE PROTECTION GENERAL NOTES:**

- EXISTING SPRINKLER HEADS TO BE RELOCATED WHERE SHOWN. RELOCATED HEADS SHALL NOT BE REUSED, PROVIDE NEW HEADS TO MATCH EXISTING (CHROME PENDENT).



**FIRE PROTECTION HYDRAULIC INFO:**

- FIRE PUMP REPORT (06/04/2008):  
 PUMP OUTPUT:  
 177 PSI STATIC  
 167 PSI RESIDUAL @ 387 GPM.

TENANT IMPROVEMENTS FOR:

RBC Wealth Management  
 2 Portland Square  
 Suite 501  
 Portland, ME 04101



ISSUE FOR PERMIT/ CONSTRUCTION 02.13.09

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SHEET TITLE:  
**FIRE PROTECTION 5TH FLOOR CONSTRUCTION PLAN**

Date: 02.13.09  
 Comm. No: 092WBA001.01  
 In Charge: MM  
 Drawn By: -  
 Checked By: - FP3C