## MECHANICAL NOTES:

- CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR
- INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION. 2. THE DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED TO ESTABLISH LOCATION OF WORK. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND MAKE ADJUSTMENTS AS NECESSARY TO
- COMPLETE THE WORK. 3. PROVIDE ACOUSTICAL DUCT LINER WITH THICKNESS INDICATED ON THE DRAWINGS AND AS SPECIFIED. COMBUSTION RATING SHALL NOT EXCEED FLAMESPREAD 25,
- SMOKE DEVELOPMENT 50, FUEL CONTRIBUTION 50. 4. ALL OPEN END DUCTWORK SHALL HAVE WIRE MESH SCREEN.
- 5. THERMOSTATS SHALL BE INSTALLED 4'-6" ABOVE FINISHED FLOOR WHERE SHOWN ON PLANS UNLESS NOTED OTHERWISE.
- 6. PROVIDE ALL NECESSARY ACCESSORIES FOR DUCTWORK TO ALLOW PROPER AIR BALANCING. AIR SYSTEMS SHALL BE BALANCED AND ADJUSTED AS
- A. AFTER DUCT SYSTEMS HAVE BEEN INSTALLED COMPLETE WITH ALL GRILLES, DAMPERS, DUCTS AND OTHER ITEMS SPECIFIED OR SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL MAKE ADJUSTMENTS, AS REQUIRED, TO DELIVER THE VOLUME OF AIR AT EACH AIR OUTLET WITHIN 10% OF DESIGN FLOW AS SHOWN ON THE DRAWINGS. AFTER THE FINISHED AREA IS OCCUPIED, THE AIR VOLUMES SHALL BE READJUSTED, IF REQUIRED, TO PROPERLY BALANCE THE COOLING AND HEATING LOADS THROUGHOUT THE
- B. AIR OUTLETS SHALL BE BALANCED WITH AIR SUPPLIED AS SHOWN ON THE
- C. CONTRACTOR OR BY BUILDING OWNER SHALL PROVIDE AIR BALANCING BY AN INDEPENDENT CONTRACTOR QUALIFIED / CERTIFIED BY NEBB OR AABC, SUBMIT AIR BALANCING REPORTS.
- D. CONSTANT VOLUME SYSTEM: IF THE SUPPLY AIR DIFFUSERS ARE 10% LESS THAN THE DESIGNED CFM, THEN STATIC PRESSURE READINGS ARE REQUIRED AT THE BRANCH DUCT WHERE IT CONNECTS TO THE MAIN DUCT.
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND/OR DISPOSING OF ALL ITEMS THAT ARE NOT NECESSARY IN THE COMPLETION OF THE PROJECT AND SHALL CLEAN THE AREA OF CONSTRUCTION AFTER THE COMPLETION OF THE PROJECT.
- 8. PROVIDE A SPIN-IN FITTING WITH VOLUME DAMPER AT EACH CONNECTION BETWEEN HARD DUCT AND FLEXIBLE DUCT. APPLY DUCT SEALANT AROUND THE SPIN-IN FITTING.
- 9. PROVIDE SUBMITTALS FOR ALL NEW EQUIPMENT AND MATERIALS. SUBMIT (4) FOUR COPIES TO THE ARCHITECT.
- 10. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THE CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR WORK OF OTHER CONTRACTORS, WHETHER OR NOT INDICATED ON THE PLANS. TRANSFORMED DIVIDED, OFFSET RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED.
- 11. PROVIDE ONE YEAR WARRANTY FOR ALL WORKMANSHIP AND MATERIALS AFTER THE DATE OF FINAL ACCEPTANCE.
- 12. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODE, NFPA, ASRHAE AND SMACNA NEC AND AABC UNLESS OTHERWISE NOTED.
- 13. THE CONTRACTOR SHALL PROVIDE THE A/E TEAM A COMPLETE SET OF "AS BUILT" DRAWINGS FOR ALL WORK PERFORMED ON THE PREMISES (REPRODUCIBLE AND A MINIMUM OF 4 COPIES REQUIRED.)
- 14. THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND NOTIFICATION OF ALL OTHER CONTRACTORS EFFECTED BY ANY EQUIPMENT MODIFICATIONS OR
- 15. CONTRACTOR SHALL EXAMINE AND BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS IN THEIR ENTIRETY, SURVEY THE PROJECT AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND SCOPE OF WORK. ALL COSTS SUBMITTED SHALL BE BASED ON A THOROUGH KNOWLEDGE OF ALL WORK AND MATERIALS REQUIRED. ANY ADDITIONAL COSTS DUE TO FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 16. CONDENSATE DRAIN SHALL BE PVC PIPE AND FITTINGS.
- 17. MECHANICAL CONTRACTOR TO PROVIDE DUST PROOFING TO ALL MAIN RETURN AIR DUCT OPENING DURING CONSTRUCTION ONLY. REPLACE FILTER AFTER CONSTRUCTION.
- 18. MECHANICAL CONTRACTOR SHALL REVIEW ALL ELECTRICAL DRAWINGS BEFORE PURCHASING EQUIPMENT TO INSURE THAT THE PROPER ELECTRICAL SERVICE IS TO BE PROVIDED FOR ALL NEW EQUIPMENT.
- 19. ALL NEW DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION STANDARDS. RIGIDITY CLASS OPTIONS, DIMENSIONS OF TRANSVERSE JOINTS AND DIMENSIONS OF INTERMEDIATE REINFORCEMENT SHALL BE IN ACCORDANCE WITH THE PHYSICAL SPACE LIMITATIONS OF PROJECT AND WITHIN THE LIMITATIONS INDICATED ON THE DRAWINGS. AIR DISTRIBUTION SYSTEM SHALL BE SEALED AS REQUIRED TO PREVENT AIR LEAKAGE IN EXCESS OF 5%. THE TOTAL LEAKAGE FOR A PARTICULAR SYSTEM SHALL INCLUDE AIR LEAKAGE AT DUCTWORK, SPIN-COLLAR CONNECTIONS, BRANCH TAPS, DUCTWORK/DIFFUSER INTERFACE CONNECTIONS. PLENUM/DIFFUSER INTERFACE CONNECTIONS, EQUIPMENT CONNECTIONS AND OTHER AREAS IN THE AIR DISTRIBUTION SYSTEM WHERE LEAKAGE MAY OCCUR. DUCT SEALANT SHALL BE MANUFACTURED BY HARDCAST, INC. OR APPROVED EQUAL AND HAVE A FIRE HAZARD RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. ALL SQUARE THROAT 90° ELBOWS SHALL HAVE TURNING VANES. RADIUS ELBOWS WITHOUT TURNING VANES SHALL BE USED AS INDICATED ON THE DRAWINGS.
- 20. ALL DUCTWORK DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS. DUCTWORK SIZES SHOWN DO NOT ACCOUNT FOR DUCTWORK LINER OR INSULATION WRAP
- 21. ALL NEW FLEXIBLE DUCT SHALL BE INSULATED WITH FIBERGLASS VAPOR JACKET HAVING A MAXIMUM THERMAL CONDUCTIVITY (K) OF 0.23 (BTU-IN)/(HR-FT2-F). NEW FLEXIBLE DUCT SHALL BE WOUND SPIRAL ALUMINUM HELIX OR REINFORCED ALUMINUM FOIL FABRIC LOCKED INTO A SPIRAL ALUMINUM HELIX SUITABLE FOR A POSITIVE WORKING PRESSURE OF AT LEAST 3" W.C. NEW FLEXIBLE DUCT SHALL BE FLEXMASTER TYPE 3, TYPE 5, TYPE 8 OR APPROVED EQUAL.
- 22. THE MAXIMUM LENGTH OF FLEXIBLE DUCTWORK SHALL NOT EXCEED 8'-0". WHERE A LENGTH GREATER THAN 8'-0" OCCURS, CONTRACTOR SHALL EXTEND THE DUCTWORK WITH EXTERNALLY INSULATED ROUND SHEET METAL OF THE SAME SIZE AS THE FLEXIBLE DUCT.
- PROVIDE SPIN COLLAR BRANCH FITTINGS, CONSTRUCTED OF GALVANIZED STEEL, WITH VOLUME DAMPER AT ALL NEW ROUND BRANCH TAPS SERVING ALL SUPPLY AIR CEILING DIFFUSERS. WHERE THE DEPTH OF THE DUCTWORK WILL NOT PERMIT A SPIN COLLAR FITTING, PROVIDE AN EQUIVALENT FLAT OVAL CONNECTION WITH MANUAL VOLUME DAMPER AND AN OVAL TO ROUND TRANSITION FOR EACH DIFFUSER TAP. FLANGED AND GASKETED STYLE OF SPIN COLLAR FITTINGS ARE NOT ACCEPTABLE
- 24. ALL LINER AND INSULATION SHALL HAVE A COMPOSITE (INSULATION, JACKET OR FACING AND ADHESIVE) FIRE HAZARD RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED AS DETERMINED BY THE APPLICABLE UL OR ASTM STANDARD. ACCESSORIES SUCH AS COATINGS, TAPES, AND ADHESIVES SHALL HAVE THE SAME COMPONENT RATINGS. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN RECOMMENDATIONS.
- 25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND/OR DISPOSING OF ALL ITEMS THAT ARE NOT NECESSARY IN THE COMPLETION OF THE PROJECT AND SHALL CLEAN THE AREA OF CONSTRUCTION AFTER THE COMPLETION OF THE PROJECT.
- 26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF BUILDING INCLUDING ROOF AND ALL WORK AND REPLACEMENT SHALL MATCH EXISTING CONSTRUCTION. ROOF WORK SHALL BE DONE BY BUILDING OWNERS ROOF CONTRACTOR.
- 27. PROVIDE FLEXIBLE CONNECTION AT INLETS AND/OR OUTLETS OF ALL AIR HANDLING UNITS FANS. TERMINAL DEVICE, ETC. MATERIAL SHALL BE VENT-FABRICS INC., "METALEDGE VENTGLAS" OR APPROVED EQUAL. ENDS OF FABRIC MUST BE OVERLAPPED 2" AND GLUED WITH R-H PRODUCTS COMPANY, INC., NUMBER XL8 CONTACT GLUE. SEWING OR STAPLING MAY BE USED IN CONJUNCTION WITH GLUING. AT LEAST ONE INCH SLACK SHALL BE ALLOWED IN ALL FLEXIBLE
- CONNECTION INSTALLATIONS TO INSURE THAT NO VIBRATION IS TRANSMITTED. PROVIDE ACOUSTICAL DUCT LINER W/ THICKNESS INDICATED ON THE DRAWINGS & AS SPECIFIED. COMBUSTION RATING SHALL NOT EXCEED FLAMESPREAD 25, SMOKE DEVELOPMENT 50, FUEL CONTRIBUTION 50. PROVIED DUCT LINER AS NOTED ON SUPPLY, RETURN AND EXHAUST DUCT OFF
- CEF-6 AS NOTED ON PLANS. 29. ALL SUPPLY AND RETURN AIR DUCTWORK NOT LINED SHALL BE INSULATED WITH 2" THICK FOIL FACED INSULATION.
- 30. PRIOR TO INSTALLATION, CONTRACTOR SHALL PREPARE INSTALLATION DRAWING OF EXPOSED SUPPLY, RETURN AIR DUCTWORK OFF GRTU-1 & -2 FOR REVIEW AND COMMENT BY ARCHITECT & ENGINEER.

## SYMBOLS AND ABBREVIATIONS

THERMOSTAT 24"X24" RETURN AIR PERFORATED CEILING GRILLE 24"X24" SUPPLY AIR CEILING DIFFUSER ROUND NECK WITH FLEXIBLE CONNECTION SHOWN DUCTWORK WITH VOLUME DAMPER

NEW DUCTWORK OR EQUIPMENT FLEXIBLE DUCTWORK DUCTWORK WITH INTERNAL ACOUSTICAL

\* 1" = 1" THICK LINER \*2" = 2" THICK LINER CEILING DIFFUSER CUBIC FEET PER MINUTE

CEILING GRILLE

SOUNDLINING

CEILING EXHAUST FAN MINIMUM

OPPOSED BLADE VOLUME DAMPER OUTSIDE AIR GRTU GAS ROOF TOP UNIT

ROOF	OP G/	AS-FIR	ED UNI	SCH	EDULE	***************************************	**************************************															bennanian orași e e e e e e e e e e e e e e e e e e e							
1 12 107		SUF	PLY FAN			E	XHAUST FAI	N		COOLING	DATA				HEATII	NG DATA						ELECTRICA	AL	Windowski Walion		muss year flavor			
UNIT DESIGN	NOMINAL TONS	TOTAL CFM	ESP (IN H20)	MOTOR BHP	MIN. OA (CFM)	TOTAL CFM	ESP (IN H20)	MOTOR BHP	EAT DB/WB (EACH)	OA. TEMP	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EER	% EFF	GAS I (MB STAGE 1	NPUT BH) STAGE 2	OUTPUT (MBH)	NO COMP.	RLA EACH	LRA EACH	OFM HP	OFM (FLA) EACH	INDOOR FANS (FLA)	COMBUSTION FAN MOTOR (FLA)	V/PH/Hz	MCA/MOCP	BASIS OF DESIGN	WEIGHT	REMARKS
GRTU-1,2	15	6000	1.25	4.5	1100	4100	0.20	0.75	80/67	95*	183.4	138.5	12	81	176	220	178	2	14.7/16.7	95/114	3 <b>©</b> .5	.09	7.4	.3	460/3/60	45/50	CARRIER 48HCD-017	2550 LBS	1,4
GRTU-3	7.5	3000	0.60	1.65	625		***	-	80/67	95*	93.3	72.2	12	82	90	125	103	2	6.1	41	2	0.8	4.4	.3	460/3/60	19.7/25	CARRIER 48HCD-008	1150 LBS	2,4
GRTU-4,5	3	1200	0.55	0.45	290/120			_	80/67	95*	37.8	27.0	13	80	120	and the state of t	70	1	5.1	39	2	0.4	2.6	.3	460/3/60	9/15	CARRIER 48HJE-004	700 LBS	2,3

VERIFY AND COORDINATE ELECTRICAL REQUIREMENTS AND COORDINATE WITH ELECTRICAL PRIOR TO EQUIPMENT PURCHASE

1 WITH ELEVATED ROOF CURB, ECONOMIZER CYCLE, POWERED EXHAUST WITH CO2 SENSOR CONTROL, HORIZONTAL DUCT ARRANGEMENT, DIGITAL CLOCK THERMOSTAT. FILL VOID SPACE OF ROOF CURB WITH 3 LB DENSITY DUCT LINER. VERIFY AND COORDINATE TOTAL EQUIPMENT WEIGHTS WITH STRUCTURAL PRIOR TO START OF WORK. 2 SAME AS 1 EXCEPT NO POWERED EXHAUST AND WITH VERTICAL DUCT ARRANGEMENT AND 14" HIGH ROOF CURB

3 MIN. OA CFM: 290 - GRTU-4 120 - GRTU-5

4 PROVIDE SMOKE DETECTION IN RA DUCT SECTION OF UNIT AS REQUIRED BY NFPA AND IMC CODE

FAN S	CHE	DUL	E						-
FAN NO.	CFM	SP	AL DA	TA PH	GREENHECK	REMARKS			
CEF-1	375	.25	1350	DIRECT DRIVE	WATTS (HP) 144	120	1	CSP-A390	1,2
CEF-2	400	.375	1070	DIRECT DRIVE	217	120	1	CSP-A510	1,3
CEF-3	100	.25	950	DIRECT DRIVE	511	120	1	SP-A110	4
CEF-4	300	.25	1000	DIRECT DRIVE	139	120	1	CSP-A410	[4]
CEF-5	200	.375	1000	DIRECT DRIVE	83	120	1	CSP-A250	1,3
CEF-6	600	.50	1600	DIRECT DRIVE	405	120	1	CSP-A780	5

FILL VOID SPACE OF ROOF CURB WITH 3 LB DENSITY DUCT LINER.

1 IN-LINE FAN W/ BDD, WALL CAP AND SPEED SWITCH NEAR FAN.

2 CONTROL BY LITE SWITCH IN TOILET ROOM AND INTERLOCK WITH GRTU-1.

3 CONTROL BY LITE SWITCH IN TOILET ROOM.

4 CEILING MOUNTED FAN W/ BDD, WALL CAP AND SPEED SWITCH.

5 SAME AS 1 EXCEPT SPEED SWITCH MOUNTED IN SPACE.

## MISCELLANEOUS HVAC EQUIPMENT CAPACITY SCHEDULE

- 1. ELECTRIC DUCT HEATER (EDH 1 & 2) EQUAL TO INDEECO SLIP-IN TYPE HEATER WITH 5KW CAPACITY AT 460 VOLT-10-SINGLE STEP. WITH ALL COMPONENTS NECESSARY FOR U.L. LABEL INCLUDING 24 VOLT CONTROL TRANSFORMER, AIR FLOW SWITCH AND WALL MOUNTED
- 2. ELECTRIC WALL HEATER (EWH) IN BAPTISTRY 1500 WATT CAPACITY AT 120V-10 EQUAL TO MARKEL # G3323 WITH SURFACE MOUNTED ADAPTOR, TAMPER PROOF THERMOSTAT AND MANUAL DISCONNECT SWITCH.
- 3. ELECTRIC BASEBOARD (EBB) HEATERS EQUAL TO MARKEL # 2900S WITH 250 WATTS/LINEAR FOOT CAPACITY RATED AT 120V-10 WITH BUILT-IN THERMOSTAT. CAPACITORS - 750 WATT(W) AND 1500 WATT(S) AS NOTED ON PLANS, VERIFY FINISH COLOR WITH ARCHITECT.

AIR D	EVICE S	SCHEDU	LE						
DESIGN	CFM RANGE	LOCATION	MAX. S.P. IN. WG.	N.C. NECK SIZE		TYPE	ACCESSORIES	MANUFACTURER	REMARKS
CD-1	850	SANCTUARY	.2	<b>≤</b> 25	14"ø*	SQUARE PLAQUE	OBD	TITUS OMNI	SUPPLY
CD-2	0-200	SEE PLANS	.08	<b>≤</b> 30	8"ø*	24X24 PERF. FACE	NONE	TITUS PSS	SUPPLY
CD-3	201-350	SEE PLANS	.08	<b>≤</b> 30	10"ø*	24X24 PERF. FACE	NONE	TITUS PSS	SUPPLY
CD-4	200	MEZZANINE	.08	<b>≤</b> 30	8"ø*	HTG/CLG VAV TYPE	NONE	THERMA FUSER	SUPPLY
SR-1	350	ENTRY	,1	<b>≤</b> 30	12X6	REGISTER	OBD	TITUS 350	SUPPLY
CG-1	600	SANCTUARY	.1	<b>≤</b> 25	12"ø**	24X24 PERF. FACE	w.	TITUS PDR	RETURN
CG-2	800	SANCTUARY	.1	<b>≤</b> 25	14"ø**	24X24 PERF. FACE	-	TITUS PDR	RETURN
CG-3	TO 650	SEE PLANS	,1	<b>≤</b> 30	14"ø	24X24 PERF. FACE	-	TITUS PDR	RETURN
CG-4	TO 300	MEZZANINE	.1	<b>≤</b> 30	10"ø	24X24 PERF. FACE		TITUS PDR	EXHAUST .
TG-1		MEZZANINE	.1	<b>≤</b> 30	16X16	WALL GRILLE	-	TITUS 350	TRANS. AIR
ER-1	TO 150	SEE PLANS	.1	<b>≤</b> 30	8X6	CEILING GRILLE	-	TITUS 350	EXHAUST
ER-2	151-300	SEE PLANS	.1	<b>≤</b> 30	10X8	CEILING GRILLE	***	TITUS 350	EXHAUST

PROVIDE SUBMITTALS - ARCHITECT SHALL HAVE FINAL APPROVAL

## MINIMUM OUTSIDE/VENTILATION AIR REQUIREMENTS PER ANSI/ASHRAE STANDARD C2.1-2004.

= 290 CFM

1. SANCTUARY/ENTRY

A. 5CFM/PERSON PLUS .06 CFM/SQ. FT. 360 PEOPLE X 5CFM/P

= 1800 CFM4450 SQ.FT X .06 CFM/SQ.FT. = 270 CFM REQUIRED 2070 CFM

B. ACTUAL GRTU-1 & 2 @ 1100 CFM (EA)

3. (2) CLASSROOMS (SOUTH) A. 10CFM/PERSON PLUS .12 CFM/SQ.FT. (2) CR'S @ 11 PEOPLE/CR X 10CFM/P = 220 CFM

GRTU-4 OA CFM

560 SQ.FT X .06 CFM/SQ.FT. = 70 CFM REQUIRED 290 CFM B. ACTUAL

4. PASTOR'S OFFICES

GRTU-3 OA CFM

B. ACTUAL

A. 5CFM/PERSON + .06 CFM/SQ.FT. 5CFM/P X 4 PEOPLE 560 SQ.FT. X .06 CFM/SQ.FT.

REQUIRED 55 CFM B. ACTUAL GRTU-5 OA CFM = 120 CFM

1535 SQ. FT. X .12 CFM/SQ.FT.

SPIN-IN COLLAR WITH MANUAL BALANCING DAMPER -SUPPLY OR RETURN DUCT 2. (4) CLASSROOMS (NORTH) A. 10CFM/PERSON PLUS .12 CFM/SQ.FT. (4) CR'S © 11 PEOPLE/CR X 10CFM/P. = 400 CFM

SEE TYPICAL DIFFUSER AND GRILLE DETAIL —

= 185 CFM

= 20 CFM

= 35 CFM

REQUIRED 625 CFM

23" HIGH CURB WITH SA INSULATED SUPPLY PLENUM

PRESSURE TREATED FIRE RETARDANT WOOD APPROX. 6" HIGH AT HIGH POINT

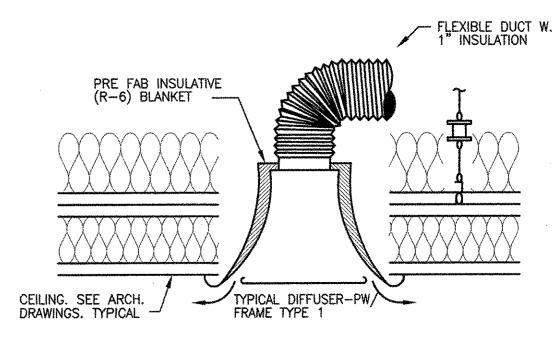
TYPICAL SUPPLY/RETURN RUNOUT DETAIL

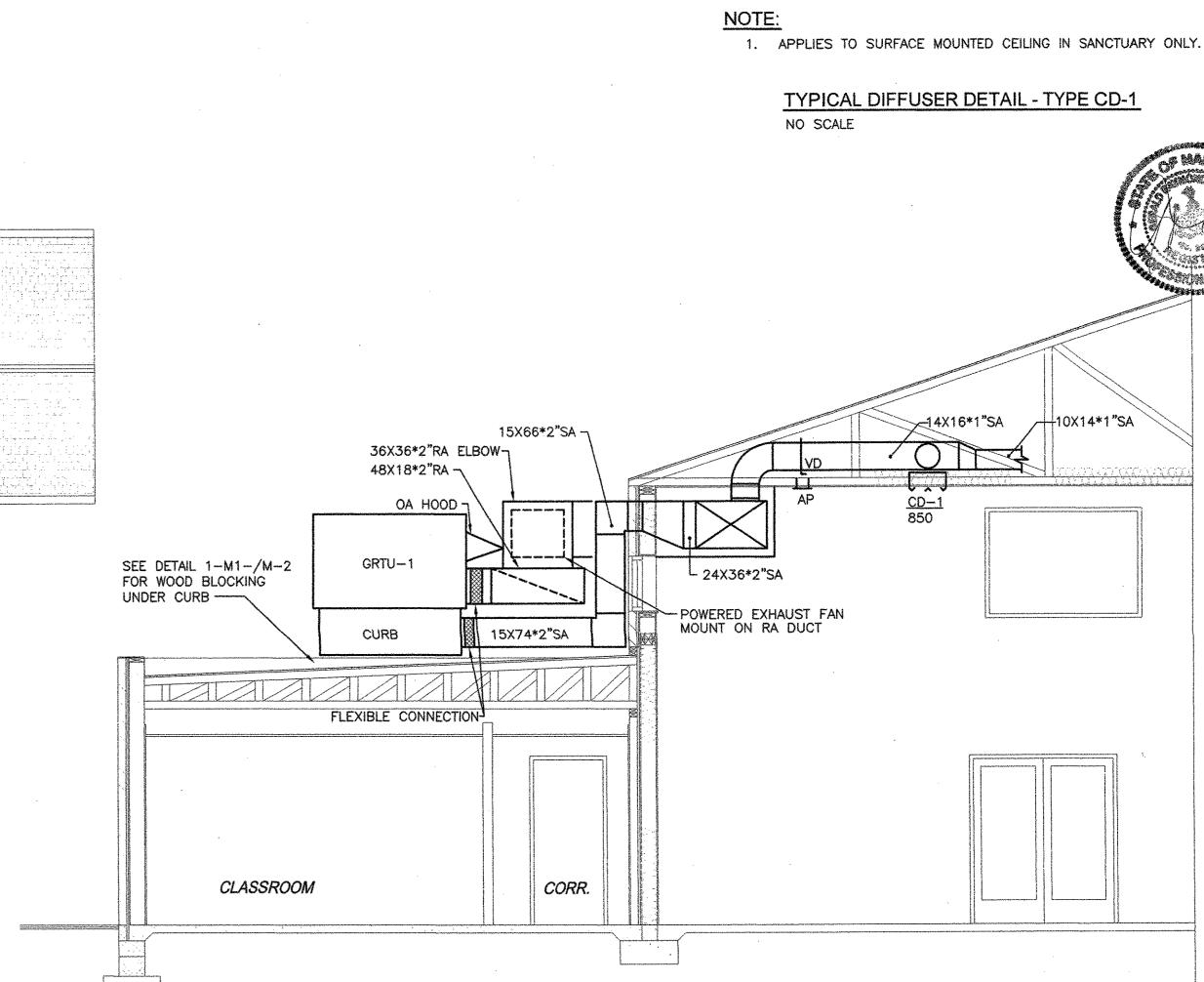
-----

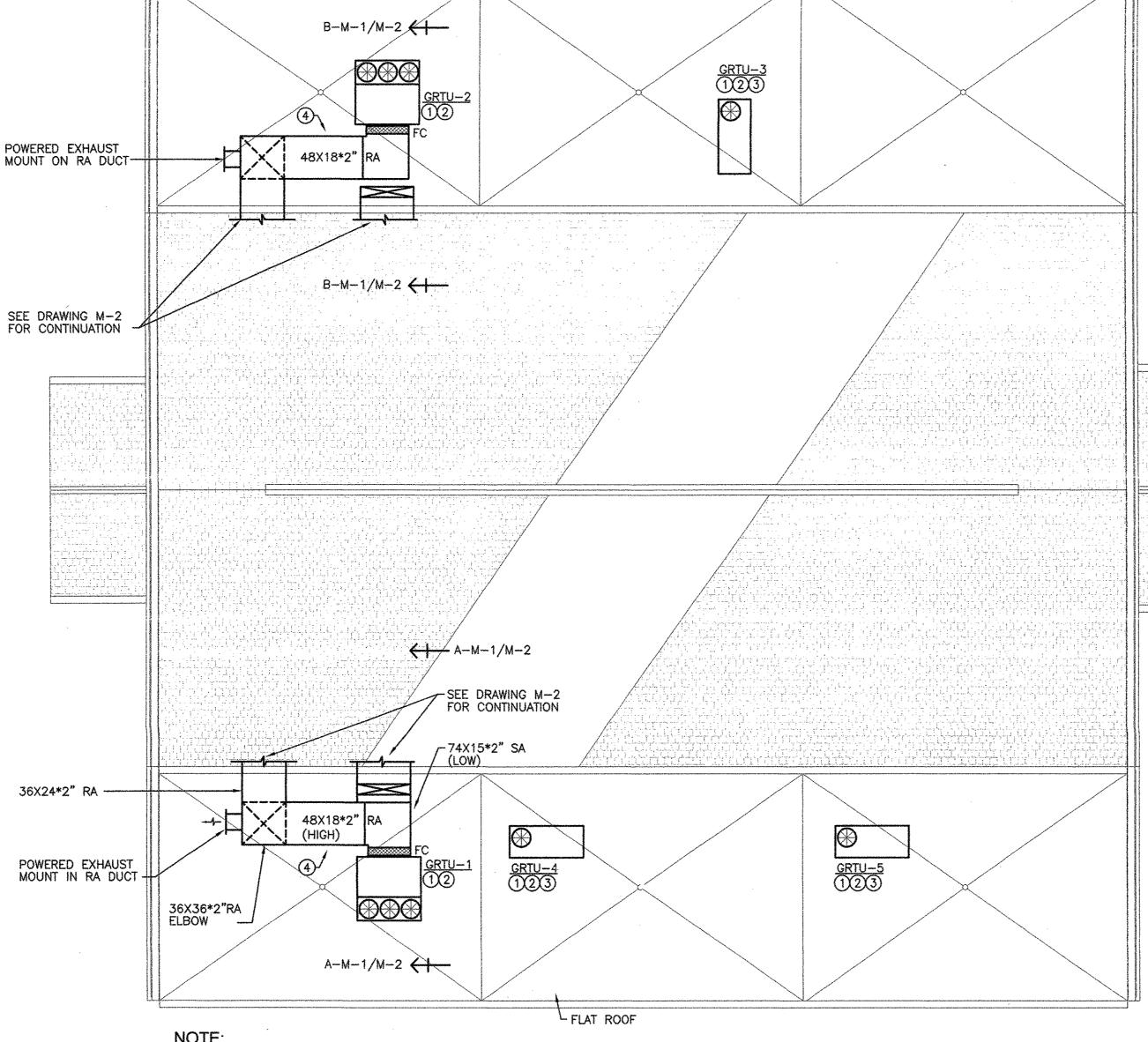
L CUT WOOD AS NECESSARY TO LEVEL CURBS

TYPICAL RA GRILLE DETAIL
NO SCALE

----







ROOF PLAN - HVAC

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

(1) FILL VOID SPACE OF CURB WITH 3LB DENSITY DUCT LINER. (2) A/C DRAIN OFF GRTU TRAP, RUN TO AND DISCHARGE OVER

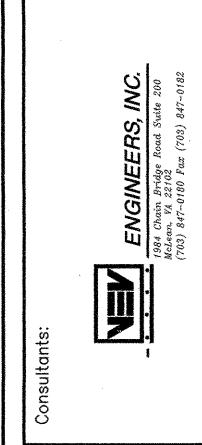
NEAREST ROOF DRAIN.

(3) LEVEL CURB AS NECESSARY WITH FIRE RETARDANT PRESSURE TREATED WOOD BLOCKING. 4 PREPARE INSTALLATION DRAWING OF EXPOSED SUPPLY/RETURN DUCTWORK. SEE MECHANICAL NOTE #30 ON THIS SHEET.

SECTION A -M-1/M-2 SCALE: 1/4 = 1'-0"

SECTION B-M-1/M-2 SIMILAR EXCEPT MIRROR IMAGE.

— 48X18\*2" RA



88 88 on one

Date: OCTOBER 12, 2010 Scale: NONE Drawn: CC Checked: BK File No. F: IPROJ 12010 10003

 $\sim$   $\sim$   $\sim$ 

Drawing No.