ABBREVIATIONS

ABOVE FINISH FLOOR	A.F.F.	EQUIPMENT	EQUIP.	PAINTED	PTD
ACOUSTIC, ACOUSTICAL	AC	ETHYLENE PROPYLENE	E.P.D.M.	PAIR	PR
ACOUSTICAL TILE	AC. T.	DIENE TERPOLYMER	FVICT	PAPER TOWEL DISPENSER	PTD
ADDITION AIR CONDITIONING	ADDN A/C	EXISTING EXISTING ROOF DRAIN	EXIST. E.R.D.	PASSAGE PERPENDICULAR	PASS. PERP.
AIR HANDLING UNIT	A.H.U.	EXISTING TO REMAIN	E.T.R.	PLASTER	PLAS.
ALTERNATE	ALT	EXPANSION	EXP.	PLASTIC LAMINATE	PL. LAM.
ALUMINUM	ALUM.	EXPANSION JOINT	E.J.	PLATE	PL.
ANCHOR, ANCHORAGE	ANCH	EXTERIOR	EXT.	PLUMBING	PLBG
ANCHOR BOLTS	AB	EXTERIOR INSULATION	E.I.F.S.	PLYWOOD	PLYWD
AND	&	FINISH SYSTEM		POLYVINYL CHLORIDE	PVC
ANGLE	L	5557 5007	-	PRECAST	P/C
ANODIZED APPROVED	ANOD. APPR.	FEET, FOOT FIBER REINFORCED	FT F.R.G.P.	PRECAST EXPANSION JOINT PREFABRICATED	P.E.J. PREFAB.
ARCHITECT, ARCHITECTURAL	ARCH.	GYPSUM PANEL	r.N.G.P.	PRESSURE TREATED	P.T.
ASBESTOS	ASB.	FINISH, FINISHED	FIN.	THESSORE TREATED	1 .1.
ASPHALT	ASPH.	FIRE BLANKET	FB	QUANTITY	QTY
ASSEMBLY	ASSY	FIRE EXTINGUISHER	F.E.	QUARRY TILE	Q.T.
ASSISTANT	ASST	FIRE RETARDANT TREATED	F.R.		
AT	0	FIREPROOFING	FPRFG.	RADIANT PANEL	R.P.
AUTOMATIC	AUTO.	FIXTURE	FIXT.	RADIUS	RAD.
DEAL	D.1	FLASHING FLOOR	FLASH. FLR	RAIN WATER CONDUCTOR	R.W.C.
BEAM	BM	FLOOR DRAIN	F.D.	RAIN WATER LEADER	R.W.L.
BEARING BETWEEN	BRG BET.	FLOOR FINISH	FLR. FIN.	RECEIVING REFRIGERATOR	RECV. REFR.
BEVEL, BEVELED	BEV.	FOOTING	FTG	REINFORCE	REINF.
BITUMINOUS	BIT.	FOUNDATION	FDN	RELIEVING ANGLE	R.A.
BLOCK	BLK	FURNISH, FURNISHED	FURN.	REQUIRED	REQ'D
BLOCKING	BLKG	FURRED, FURRING	FURR.	REVISED, REVISION	REV.
BOARD	BD			RISER	R.
BOTTOM	BOTT.	GAUGE	GA.	ROOF ACCESS HATCH/SCUTTLE	RAH
BOTTOM OF	B.O.	GALVANIZED	GALV.	ROOF DRAIN	R.D.
BRACE FRAME	B.F.	GRAB BAR GYPSUM WALLBOARD	G.B. GYP. BD.	ROOF FAN	R.F.
BRICK EXPANSION JOINT	B.E.J.	GIFSOM WALLBOAND	GIF. DD.	ROOF TOP UNIT	R.T.U.
BUILDING BUILT-UP-ROOFING	BLDG. B.U.R.	HANDRAIL	H.R.	ROOM	RM
BOILT-OF-ROOFING	D.U.N.	HANDICAPPED	H.C.	SANITARY NAPKIN DISPENSER	SND
CABINET	CAB.	HEIGHT	HGT	SANITARY NAPKIN BISTEINSER SANITARY NAPKIN RECEPTICAL	SNR
CABINET UNIT HEATER	C.U.H.	HIGH POINT	H.P.	SCHEDULE	SCHED.
CAPACITY	CAP.	HOLLOW METAL	H.M.	SCUPPER	SC SC
CEILING	CLG	HORIZONTAL	HORIZ.	SECTION	SECT.
CEILING HEIGHT	CLG. HT.	HOSE BIBB	H.B.	SEISMIC JOINT	S.J.
CEMENT	CEM.	INCLL OF INCLES	IN OD "	SHEET	SHT
CENTER	CTR	INCH OR INCHES INCLUDE, INCLUDING	IN. OR " INCL.	SIMILAR	SIM.
CENTERLINE	CENTERLINE	INFORMATION	INFO.	SMOKE HATCH	S.H.
CERAMIC TILE CHALKBOARD	CER. T. C.BD.	INSIDE DIAMETER	I.D.	SOAP DISPENSER	SD
CHANNEL	С.в.р.	INSULATION	INSUL.	SOUND TRANSMISSION CLASS	S.T.C.
CLOSET	CL.	INTERIOR	INT.	SPECIFICATIONS SPLASH BLOCK	SPEC. S.B.
COLD FORMED METAL FRAME	C.F.M.F.			SQUARE SQUARE	SQ.
COLUMN	COL.	KICK PLATE	K.P.	SQUARE FEET (FOOT)	S.F.
CONCRETE	CONC.			STAINLESS STEEL	ST. STL.
CONFERENCE	CONF.	LABORATORY	LAB.	STANDARD	STD
CONTROL/CONSTRUCTION JOINT	C.J.	LAVATORY	LAV.	STEEL	STL
CONTINUOUS	CONT.	LEAD COATED COPPER LIGHTING	L.C.C. LTG.	STORAGE	STOR.
CONTRACTOR CORRIDOR	CONTR. CORR.	LOW POINT	L.P.	STRUCTURAL	STRUCT.
COURSE, COURSES	CRS.	2011 1 01111	 .	STRUCTURAL GLAZED	COLL
COUNSE, COUNSES	ONO.	MACHINE	MACH.	FACING TILE STRUCTURAL STEEL	SGFT S.STL.
DAMPPROOFING	DMPFG	MAINTENANCE	MAINT.	SUSPEND, SUSPENSION	SUSP.
DEGREE	DEG.	MANUFACTURER	MFR	SWING UP GRAB BAR	SGB
DEMOLITION	DEMO.	MARKER BOARD	MBD		
DEPARTMENT	DEPT.	MASONRY	MAS.	TACKBOARD	TBD
DETAIL	DET.	MASONRY OPENING	M.O.	THROUGH	THRU
DIAMETER	DIA.	MATERIAL MAXIMUM	MATL MAX.	TOILET PAPER DISPENSER	TPD
DIMENSION	DIM.	MECHANICAL	MECH.	TONGUE AND GROOVE	T. & G.
DISTANCE DOOR	DIST. DR	METAL	MET.	TOP OF	T.O.
DOUBLE	DBL.	MEZZANINE	MEZZ.	TREAD TYPICAL	T. TYP.
DOUBLE HUNG	D.H.	MINIMUM	MIN.	TITIOAL	111.
DOWN	DN	MIRROR WITH FRAME	M.W.F.	UNDERWRITERS'	
DOWNSPOUT	D.S.	MISCELLANEOUS	MISC.	LABORATORIES, INC.	UL
DRAWING	DWG			UNDER COUNTER REFRIGERATOR	UCR
DRINKING FOUNTAIN	D.F.	NORTH	N	UNIT HEATER	U.H.
51011		NOT IN CONTRACT	N.I.C.	UNIT VENTILATOR	U.V.
EACH ELECTRICAL	EA.	NOT TO SCALE	N.T.S.	UNLESS OTHERWISE NOTED	U.O.N.
ELECTRIC, ELECTRICAL	ELEC.	NUMBER	NO. OR #		. ==
ELECTRIC WATER COOLER	EWC ELEV.	OFFICE	OFF.	VENT THROUGH ROOF	VTR
ELEVATION ELEVATOR	ELEV. EL.	ON CENTER	0.C.	VENT STACK	VTR VERT.
EXHAUST FAN	E.F.	OPPOSITE HAND	0.H.	VERTICAL VESTIBULE	VERT. VEST.
EXISTING FIRE BLANKET	EFB	OUTSIDE DIAMETER	0.D.	VESTIBULE VINYL COMPOSITION TILE	VEST. VS
EXISTING FIRE EXSTINGUISHER	EFE	OVERFLOW ROOF DRAIN	0.R.D.	THE COMM COMMON TILL	•5
EXISTING VENT STACK	EVS			WALL HYDRANT	W.H.
EMERGENCY	EMERG.			WATERPROOFING	WP
EQUAL	EQ.			WELDED WIRE FABRIC	W.W.F.
				WHITE BOARD	W.BD.
				WITH	W/
				WOOD	WD
				TINO COATED CORDER	700
				ZINC COATED COPPER	Z.C.C.

CLUBHOUSE HUNTER MEMORIAL GOLF COURSE

688 WESTFIELD ROAD MERIDEN, CONNECTICUT 06268

FOR CONSTRUCTION DECEMBER 16, 2014



ARCHITECTURE ENGINEERING ENVIRONMENTAL LAND SURVEYING

355 Research Parkway Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax

BL PROJECT No. 14D2584

LIST OF DRAWINGS

COVER SHEET - DRAWING LIST AND ABBREVIATIONS STRUCTURAL S1.01 MAIN ROOF FRAMING PLAN

RCHITECTURAL

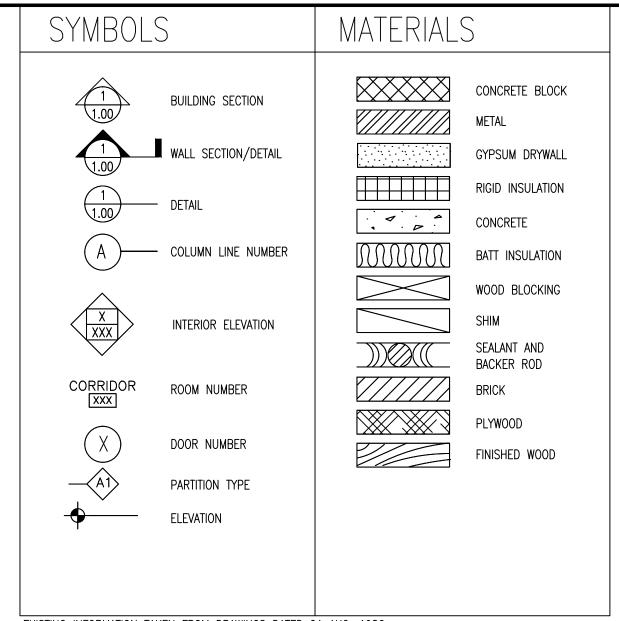
1.01 DEMOLITION PLAN AND FLOOR PLAN, UPPER LEVEL

1.02 REFLECTED CEILING PLAN AND ROOF PLAN, UPPER LEVEL

6.01 WALL SECTIONS

MECHANICAL MOTES, SYMBOLS, LEGENDS AND ABBREVIATION MD1.01 MECHANICAL DEMOLITION FLOOR PLANS

ELECTRICAL
E0.01 ELECTRICAL GENERAL NOTES, SPECIFICATIONS & SYMBOL LEGEND
ED1.01 FIRST FLOOR ELECTRICAL DEMOLITION PLAN
E1.01 FIRST FLOOR ELECTRICAL PLANS



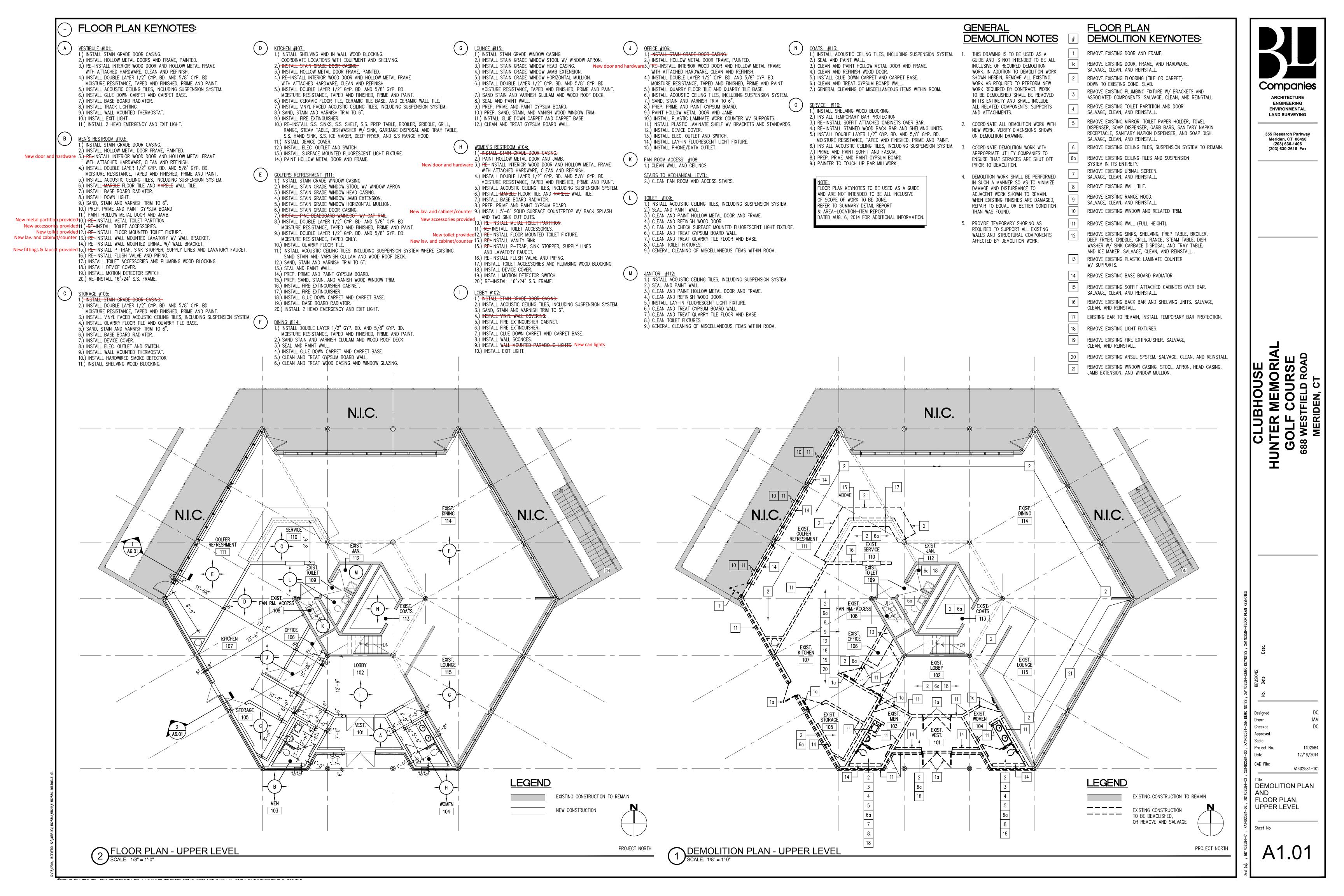
EXISTING INFORMATION TAKEN FROM DRAWINGS DATED 21 AUG. 1986
PREPARED BY CARLIN — POZZI— CHIN ARCHITECTS, P.C. NEW HAVEN, CT.
EXISTING DRAWINGS AVAILABLE.

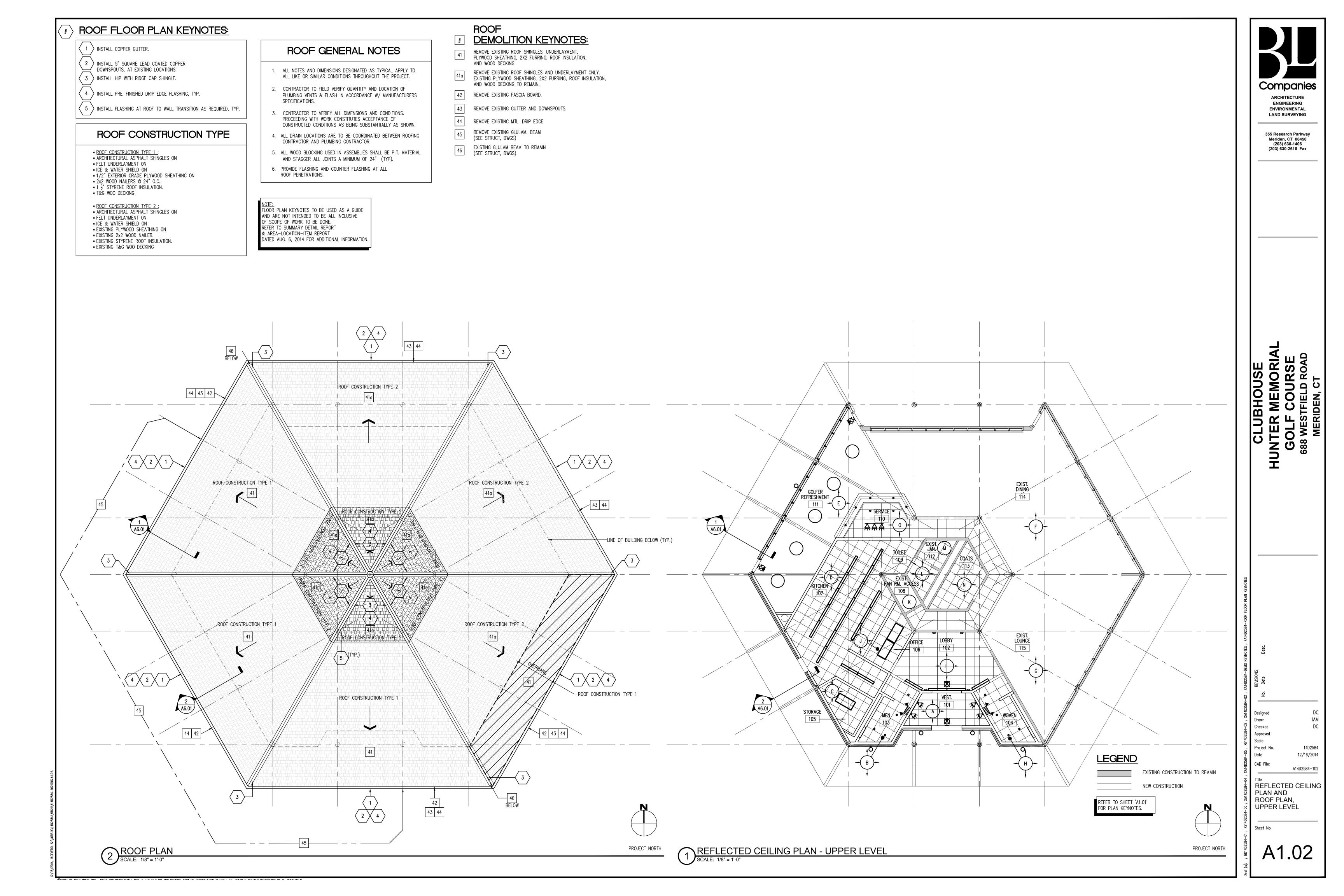
BUILDING INFORMATION

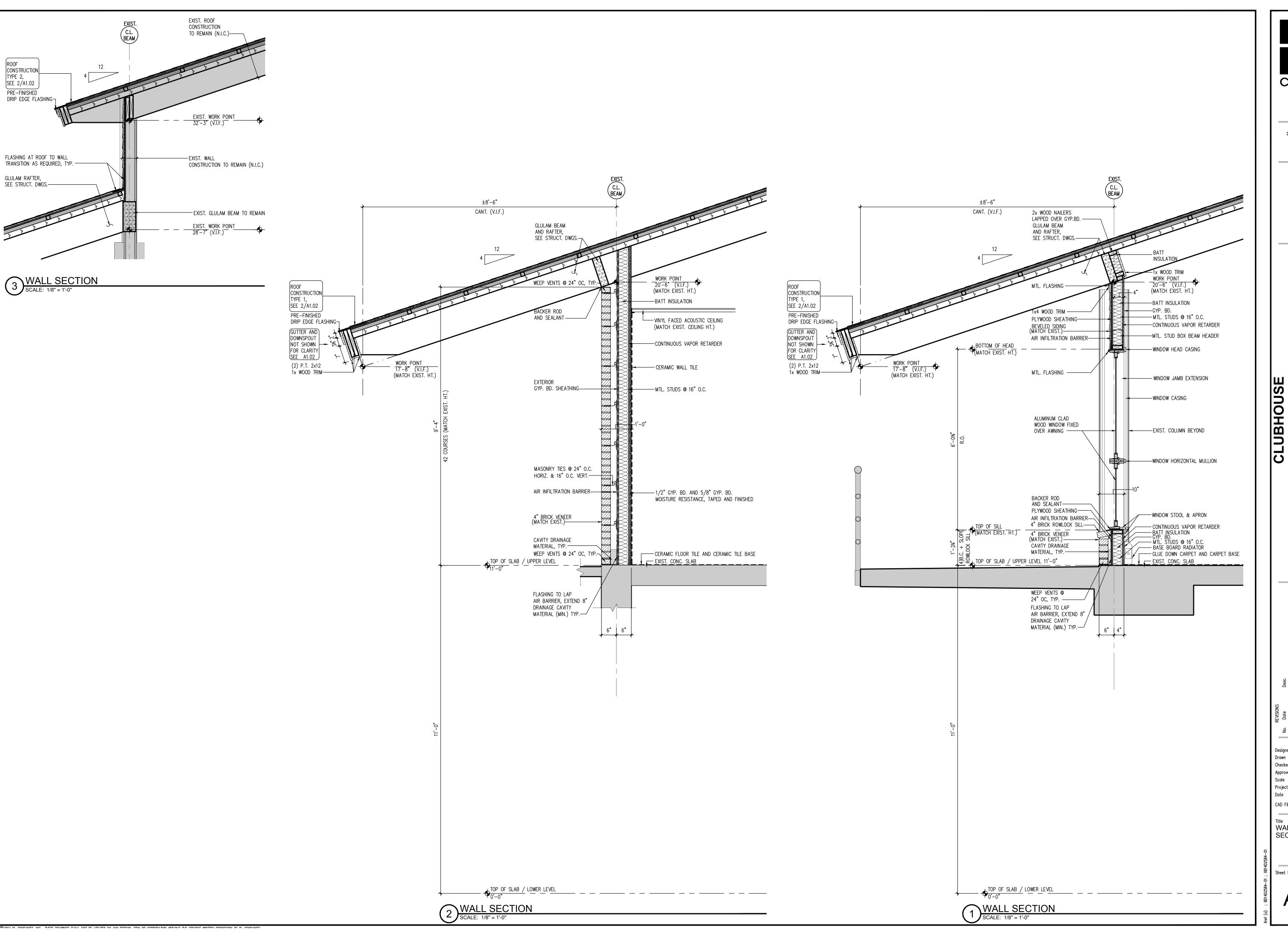
1981	1987	1989	1994	1999	2005
09/01/81 –	04/15/87 –	10/16/89 –	06/15/94 –	05/01/99 –	12/31/05 –
04/14/87	10/15/89	06/14/94	04/30/99	12/30/05	present
A-3	A-3	A-3	A-3	A-3	A-2
(203.4)	(302.4)	(302.4)	(302.4)	(303.4)	(303.1)
4A	5B	5B	5B	5B	VB
(218.0)	(406.0)	(406.0)	(406.0)	(606.1)	(602.5)
1 story/20' 4,200 sq. ft.	1 story /20' 4,200 sq. ft.	1 story /20' 4,200 sq. ft.	1 story /20' 4,200 sq. ft.	1 story /20' 4,200 sq. ft.	1 story /40' 6,000 sq. ft. (T503)
	09/01/81 - 04/14/87 A-3 (203.4) 4A (218.0) 1 story/20'	09/01/81 - 04/15/87 - 10/15/89 A-3 A-3 (302.4) 4A 5B (406.0) 1 story/20' 1 story /20' 4,200 sq. ft.	09/01/81 – 04/15/87 – 10/16/89 – 04/14/87 10/15/89 06/14/94 A-3 A-3 A-3 (203.4) (302.4) (302.4) 4A 5B 5B (218.0) (406.0) (406.0) 1 story/20° 1 story /20° 1 story /20° 4,200 sq. ft. 4,200 sq. ft. 4,200 sq. ft.	09/01/81 – 04/15/87 – 10/15/89 10/16/89 – 06/15/94 – 04/30/99 A-3 (203.4) A-3 (302.4) A-3 (302.4) A-3 (302.4) 4A (218.0) 5B (406.0) 5B (406.0) 5B (406.0) 1 story/20° 4,200 sq. ft. 1 story /20° 1 story /20° 4,200 sq. ft. 1 story /20° 4,200 sq. ft. 1 story /20° 4,200 sq. ft.	09/01/81 – 04/15/87 – 10/16/89 – 04/14/87 10/16/89 – 06/15/94 – 05/01/99 – 12/30/05 A-3 (203.4) A-3 (302.4) A-3 (302.4) A-3 (302.4) A-3 (302.4) A-3 (303.4) 4A (218.0) 5B (406.0) 5B (406.0) 5B (406.0) 606.1) 1 story/20° (4,200 sq. ft.) 1 story /20° (4,200 sq. ft.) 1 story /20° (4,200 sq. ft.) 1 story /20° (4,200 sq. ft.) 4,200 sq. ft.

NOTE:

1981 CONNECTICUT BUILDING CODE IN EFFECT AT THE TIME OF CONSTRUCTION.
ADDITIONAL CODE INFORMATION SHOWN FOR REFERENCE AND COMPARISON ONLY.







Companies ARCHITECTURE **ENGINEERING ENVIRONMENTAL** LAND SURVEYING 355 Research Parkway Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax

Drawn Checked

Approved 14D2584 Project No.

12/16/2014 A14D2584-601

WALL SECTIONS

Sheet No.

A6.01

SYMBOL DESCRIPTION SYMBOL SYMBOL					
₽	DUPLEX RECEPTACLE. (18" A.F.F. UNLESS NOTED OTHERWISE).	1	THERMOSTAT FURNISHED BY DIV. 15, INSTALLED AND WIRED BY DIV. 16		CONTROL WIRING.
=	DOUBLE DUPLEX RECEPTACLE. (18" A.F.F. UNLESS NOTED OTHERWISE).	ScFA	CALL FOR ASSISTANCE PULL CORD.		LINE VOLTAGE WIRING.
\$	QUAD RECEPTACLE. (18" A.F.F. UNLESS NOTED OTHERWISE).	□[C] ^{CFA}	CALL FOR ASSISTANCE LIGHT/ BUZZER.	-	HOME RUN.
=	DEDICATED DUPLEX RECEPTACLE. (18" A.F.F. UNLESS NOTED OTHERWISE).		TRANSFORMER.	▼	TELEPHONE OUTLET.
GFI	DUPLEX RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT INTERRUPTER. (18" A.F.F. UNLESS NOTED OTHERWISE)	7///2	SURFACE MOUNTED PANEL BOARD	▽	DATA OUTLET.
€	WEATHER PROOF DUPLEX RECEPTACLE. (18" A.F.F. UNLESS NOTED OTHERWISE)	7///	RECESSED MOUNTED PANEL BOARD	•	COMBINATION TELEPHONE/DATA OUTLET.
⊖	DUPLEX RECEPTACLE. (10" ABOVE COUNTER UNLESS NOTED OTHERWISE).	۵	WALL MOUNTED SCONCE	◎ ~	COMBINATION TELEPHONE/DATA BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT.
⊳	208 VOLT, 2 POLE, RECEPTACLE AMP RATING AS SHOWN ON PLAN. (18" A.F.F. UNLESS NOTED OTHERWISE)		WALL MOUNTED FLUORESCENT FIXTURE	TV	CABLE CONNECTION.
(a)	208 VOLT, 3 POLE, RECEPTACLE AMP RATING AS SHOWN ON PLAN. (18" A.F.F. UNLESS NOTED OTHERWISE)		RECESSED MOUNTED FLUORESCENT TROFFER	E	MANUAL PULL STATION
-	DUPLEX RECEPTACLE. (FLOOR MOUNTED).	0	RECESSED DOWNLIGHT	ЕИФ	COMBINATION AUDIBLE AND VISUAL ALARM DEVICE
 	QUAD RECEPTACLE. (FLOOR MOUNTED).	A A	WALL MOUNTED TRACK LIGHT	E4	AUDIBLE ALARM DEVICE
-	DEDICATED DUPLEX RECEPTACLE. (FLOOR MOUNTED).	፟ ፟	WALL MOUNTED EXIT SIGN		VISUAL ALARM DEVICE
Ø	208 VOLT, 2 POLE, RECEPTACLE AMP RATING AS SHOWN ON PLAN. (FLOOR MOUNTED)	S	SINGLE POLE TOGGLE SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE)	\$	SMOKE DETECTOR
	208 VOLT, 3 POLE, RECEPTACLE AMP RATING AS SHOWN ON PLAN. (FLOOR MOUNTED)	S ₃	THREE WAY TOGGLE SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE).	\$	ELEVATOR RECALL SMOKE DETECTOR
	SURFACE RACEWAY.	S ₄	THREE WAY TOGGLE SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE).	Θ	FIXED TEMPERATURE HEAT DETECTOR
J	JUNCTION BOX	S∞	OCCUPANCY SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE).	\$ <u></u>	DUCT SMOKE DETECTOR - SUPPLY
○ ~	JUNCTION BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT	S _D	DIMMING SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE).	© _R	DUCT SMOKE DETECTOR - RETURN
ㅁ	HEAVY DUTY DISCONNECT SWITCH (NON-FUSED)	S _{3D}	3 WAY DIMMING SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE).	6	FLOW SWITCH
\Box_1	WEATHER PROOF HEAVY DUTY FUSED DISCONNECT SWITCH	6	CEILING MOUNT OCCUPANCY SWITCH.	®	PRESSURE SWITCH
\boxtimes	MAGNETIC MOTOR STARTER	©	DAYLIGHT HARVESTING PHOTOCELL.	(9	TAMPER SWITCH
/M/	MOTOR	PP	UNIVERSAL VOLTAGE POWER PACK.	FACP	FIRE ALARM CONTROL PANEL
MD	MOTORIZED DAMPER, PROVIDED BY DIV. 15, WIRED BY DIV. 16	TC	TIME CLOCK.	[ANN]	FIRE ALARM ANNUNCIATOR.

			RICAL ABBREVIATION		
A OR AMP	AMPERES	HOA	HANDS-OFF AUTOMATIC SWITCH	Р	POLE
AAC	ABOVE ACCESSIBLE CEILING	HP	HORSEPOWER	PB	PULL BOX
AC	ALTERNATING CURRENT	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	PC	PULL CHAIN
ACT	ABOVE COUNTER TOP			PE	PNEUMATIC ELECTRIC SWITCH
AFF	ABOVE FINISHED FLOOR	IG	ISOLATED GROUND	PH	PHASE
AFG	ABOVE FINISHED GRADE	IMC	INTERMEDIATE METALLIC CONDUIT	P/T	POTENTIAL TRANSFORMER
AHJ	AUTHORITY HAVING JURISDICTION			PVC	POLYVINYL CHLORIDE
AHU	AIR HANDLING UNIT.	JB	JUNCTION BOX		
AIC	INTERRUPTING CAPACITY(RMS SYMMETRICAL AMPERES)			RGS	RIGID GALVANIZED STEEL
ATS	AUTOMATIC TRANSFER SWITCH	KCMIL	1000 CIRCULAR MILS	RMC	RIGID METALLIC CONDUIT
		KV	KILOVOLTS (1000 VOLTS)	RTU	ROOFTOP UNIT
BFG	BELOW FINISHED GRADE	KVA	KILOVOLT AMPERES (1000 VOLT-AMPERES)		• 1 • 1 • 1
BKBD	BACKBOARD	KW	KILOWATTS (1000 WATTS)	SW	SWITCH
		1		SWBD	SWITCHBOARD
C OR COND	CONDUIT	LRA	LOCKED ROTOR AMPS	5	
C/T	CURRENT TRANSFORMER			TEL	TELEPHONE
CB, C/B	CIRCUIT BREAKER	MCA	MINIMUM CIRCUIT AMPS	TYP	TYPICAL
CFA	CALL FOR ASSISTANCE	MCB	MAIN CIRCUIT BREAKER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
CLG	CEILING	MCC	MOTOR CONTROL CENTER		
CPT	CURRENT POTENTIAL TRANS.	MCM	THOUSAND CIRCULAR MILS	UF	UNDERFLOOR
CU	CONDENSING UNIT	MD	MOTORIZED DAMPER	UG	UNDERGROUND
		MDP	MAIN DISTRIBUTION PANEL	UL	UNDERWRITERS LABORATORIES
DC	DIRECT CURRENT	MFR, MFTR	MANUFACTURER	UP	UP
DISC. SW	DISCONNECT SWITCH	MH	MECHANICALLY HELD	UTP	UNSHIELDED TWISTED PAIR
DN	DOWN	MIC	MICROPHONE		
<u></u>		1		V	VOLTS
EO	ELECTRICALLY OPERATED	MLO	MAIN LUGS ONLY	VP	VAPORPROOF
EDH	ELECTRIC DUCT HEATER	MO	MOTOR OPERATED	VSD	VARIABLE SPEED DRIVE
EF	EXHAUST FAN	MTD	MOUNTED	VFD	VARIABLE FREQUENCY DRIVE
EM	EMERGENCY	MUA, MAU	MAKE-UP AIR UNIT	""	
EP	ELECTRIC PNEUMATIC SWITCH			W/	WITH
ETR, E	EXISTING TO REMAIN	NC	NORMALLY CLOSED	WP	WEATHERPROOF
EUH	ELECTRIC UNIT HEATER	NEC	NATIONAL ELECTRIC CODE		
EWC	ELECTRIC WATER COOLER	NF NF	NOT FUSED	XFMR, TXFMR	TRANSFORMER
EWH	ELECTRIC WALL HEATER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	751 10113) 1751 10113	
	The	NIC	NOT IN CONTRACT		
FA	FIRE ALARM	NL	NIGHT LIGHT	EXISTI	NG ELECTRICAL EQUIPMENT ABBREVIATIONS
FACP	FIRE ALARM CONTROL PANEL			EX	EXISTING TO REMAIN.
FCU	FAN COIL UNIT.	NO	NORMALLY OPEN	RE	REMOVE EXISTING.
FLA	FULL LOAD AMPS	NTS	NOT TO SCALE	RL	RELOCATE EXISTING.
	1 OLE LOTIO THAT O	1113	NOT TO SOME	NL NL	NEW LOCATION OF EXISTING RELOCATED.
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER	oc	OCCUPANCY SENSOR	NR	NEW TO REPLACE EXISTING.
G, GND	GROUND FACET CIRCOTT INTERROPTER	1	OCCUPATION SERVICE	RR	REMOVE AND REPLACE ON NEW SURFACE.

ELECTRICAL GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AND SHALL CONFORM IN ALL ASPECTS TO THE 19. CONTRACTOR SHALL SEAL ALL ELECTRICAL PENETRATIONS THRU FIRE RATED PARTITIONS WITH FIRE RATED MATERIAL NATIONAL ELECTRICAL CODE (NFPA CODES & LOCAL BUILDING CODES).
- ALL PERMITS, LICENSES AND CERTIFICATES COVERING THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR
- THE GENERAL CONTRACTOR (G.C.).
- ALL CUTTING PATCHING AND REFINISHING OF WALLS, FLOORS & CEILINGS REQUIRED FOR THE ELECTRICAL WORK SHALL BE PROVIDED FOR BY THE GENERAL CONTRACTOR.
- AND RUN TO AVOID OBSTRUCTIONS AND MECHANICAL EQUIPMENT.
- UNLESS OTHERWISE NOTED, MINIMUM WIRE SIZE SHALL BE #12 AWG, THWN OR THHN COPPER; MINIMUM CONDUIT SIZE SHALL BE 3/4"C. UNLESS OTHERWISE SPECIFIED 20A, 120V BRANCH CIRCUIT WIRING SHALL BE 2#12, #12G.
- ALL WIRING SHALL BE CONCEALED AND RUN IN WALLS OR ABOVE CEILINGS. WIRE MOLDING AND EXPOSED CONDUIT IS NOT PERMITTED.
- WORK NOT INCLUDED IN CONTRACT ('N.I.C.'); ANY WIRING OR EQUIPMENT NOT TO BE FURNISHED BY CONTRACTOR SHALL BE INDICATED ON PLANS AS N.I.C.
- SITE VISITATION PRIOR TO SUBMITTING A BID FOR HIS WORK, THE CONTRACTOR SHALL VISIT THE SITE TO INSPECT THE NATURE AND EXTENT OF THE EXISTING CONDITIONS AND EQUIPMENT, AND DETERMINE HOW THEY WILL AFFECT THE INSTALLATION OF ELECTRICAL WORK. NO ADDITIONAL PAYMENT IN EXCESS OF THE CONTRACT PRICE WILL BE AUTHORIZED FOR "EXTRA" WORK PERFORMED DUE TO EXISTING CONDITIONS WHICH ARE OBVIOUS UPON
- ALLOWANCES ARE TO BE INCLUDED FOR UNFORESEEN CONDITIONS THAT MAY AFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN
- METAL CLAD CABLE, "MC CABLE" IS ACCEPTABLE ON THIS PROJECT AND MAY BE USED AS APPROVED BY NEC, WHERE RUN CONCEALED IN WALLS ABOVE CEILINGS OR IN BASEMENTS.
- 12. ALL UNUSED CONDUIT AND WIRING SHALL BE DROPPED TO THE FLOOR BY THE ELECTRICIAN FOR REMOVAL FROM THE BUILDING BY THE CONTRACTOR.
- 13. ALL EQUIPMENT AND DEVICES SHALL BE NEW & BEAR U.L. LABEL. ALL DEVICES SHALL BE "SPECIFICATION"
- WORKMANSHIP: ONLY THE BEST IN WORKMANSHIP IN ACCORDANCE WITH PRESENT STANDARDS WILL BE ACCEPTABLE. ANY WORK INSTALLED AND ADJUDGED BY THE ENGINEER TO BE BELOW STANDARDS SHALL BE TAKEN OUT AND REPLACED WITH PROPERLY DONE WORK AT CONTRACTOR'S EXPENSE.
- GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND WIRING TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION OF PROJECT. ALL DEFECTS SHALL BE REPAIRED, DURING THIS PERIOD, AT NO CHARGE TO OWNER (MISUSE OR ABUSE CAUSED PROBLEMS EXCEPTED).
- SUBSTITUTIONS OF EQUIPMENT: SPECIFIED PRODUCTS SHALL BE USED AS THE BASIS OF BID AND SHALL BE PROVIDED; WHERE 2 OR MORE MANUFACTURERS ARE LISTED, THE CHOICE IS AT THE CONTRACTOR'S OPTION. AN APPROVED EQUAL SHALL BE DETERMINED BY ENGINEER.
- 17. ALL HOME RUNS GREATER THAN 75' SHALL BE #10 WIRE MINIMUM.
- CONTRACTOR SHALL FIELD VERIFY NAMEPLATE LOADS OF ALL EQUIPMENT (MECHANICAL AND OWNER SUPPLIED) TO INSURE PROPER WIRE SIZING AND OVERCURRENT PROTECTION AND SHALL NOTIFY ENGINEER OF DISCREPANCIES.

- EQUAL TO DOW CORNING SILICONE RTV FOAM AS A MINIMUM. MATERIAL SELECTION SHALL BE BASED ON RATING OF PARTITION PENETRATED.
- 20. ALL SUPPLEMENTARY STEEL REQUIRED FOR ELECTRICAL WORK SHALL BE PROVIDED BY THE CONTRACTOR.
- ALL CORE-BORING, BACKFILLING AND RESURFACING REQUIRED FOR THE ELECTRICAL WORK SHALL BE PROVIDED BY 21. WHERE NOTED ON DRAWINGS OR WHERE CONTRACTOR ELECTS TO GROUP CIRCUITS PER ONE NEUTRAL THEY SHALL SIZE NEUTRAL AS FOLLOWS:
 - a. #10 NEUTRAL PER TWO CIRCUITS

b. #8 NEUTRAL PER THREE CIRCUITS

- THESE DRAWINGS ARE DIAGRAMMATIC ONLY; EXACT LOCATIONS OF ALL CONDUIT, ETC. MUST BE FIELD DETERMINED 22. PROVIDE INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS AND CABLE ASSEMBLIES AS NECESSARY TO COMPLY
 - 23. BRANCH CIRCUITS SHOWN WITH TWO GROUND CONDUCTORS SHALL HAVE ONE EQUIPMENT GROUND CONDUCTOR (GREEN) AND ONE ISOLATED GROUND CONDUCTOR (GREEN W/YELLOW STRIPE) INSTALLED IN RACEWAY.
 - 24. ALL EMPTY CONDUITS FOR FUTURE WORK SHALL BE PROVIDED WITH A PULL WIRE.
 - 25. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN AND DETAILS FOR THE EXACT LOCATION OF ALL LIGHTING FIXTURES AND ANY OTHER EQUIPMENT INSTALLED TO THE CEILING SYSTEM. VERIFY EXACT MOUNTING HEIGHTS AND FINISHES WITH ARCHITECT PRIOR TO ROUGH-IN.
 - 26. CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL WORK ABOVE THE CEILING TO PROVIDE THE GREATEST POSSIBLE CLEARANCE FOR INSTALLATION OF PLUMBING AND MECHANICAL INSTALLATION. CONDUIT RUNS TO BE THROUGH OR ABOVE TRUSSES WHERE POSSIBLE.
 - 27. ELECTRICAL CONTRACTOR TO COORDINATE EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS PRIOR TO FINAL
 - 28. ALL WIRE IN CEILING MUST BE PLENUM RATED.
 - 29. NO TELEPHONE WIRE SHALL BE RUN EXPOSED ON BASEBOARDS OR WALLS.
 - 30. WIRING FOR LOW VOLTAGE SYSTEMS SHALL BE RUN CONCEALED WITHIN WALLS AND ABOVE CEILINGS.
 - 31. PANEL DIRECTORIES SHALL BE COMPLETELY FILLED IN AT COMPLETION OF JOB.
 - 32. CONTRACTOR MUST PRODUCE A LETTER ATTESTING THAT WORK HAS BEEN COMPLETED TO THE SATISFACTION OF THE BUILDING MANAGER WHO WILL CONFIRM HIS ACCEPTANCE BY AFFIXING HIS SIGNATURE TO THE LETTER IN A SPACE PROVIDED FOR THIS PURPOSE. WORK WILL NOT BE CONSIDERED AS BEING COMPLETE WITHOUT THIS
 - 33. HANGING OF LIGHT FIXTURES IS TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL BUILDING CODES AND SEISMIC REQUIREMENTS.
 - 34. AT THE COMPLETION OF THE JOB, IT WILL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO TURN OVER TO THE BUILDING MANAGER AN AS-BUILT-DRAWING IN REPRODUCIBLE FORM. THIS DRAWING DOES NOT HAVE TO BE MADE FROM SCRATCH; THE CONTRACT REFLECTED CEILING AND POWER PLANS MAY BE USED AS BACKGROUNDS WITH THE ACTUAL CIRCUITING CHANGES ADDED.
 - 35. PRIOR TO THE CONTRACTOR BEING RELEASED FROM ALL OBLIGATIONS, HE WILL OBTAIN AND TURN OVER TO THE BUILDING MANAGER THE ORIGINAL COPY OF THE "CERTIFICATE OF ELECTRICAL INSPECTION".
 - 36. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES WITH ARCHITECT.

ELECTRICAL GENERAL DEMOLITION NOTES

- VISIT AND INSPECT THE JOB SITE PRIOR TO BIDDING AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. INCLUDE THE COST OF THE WORK REQUIRED TO ACCOMMODATE THE EXISTING CONDITIONS IN THE BID PROPOSAL.
- THE INTENT OF THE WORK IS TO REMOVE, REPLACE OR RELOCATE ALL ELECTRICAL DEVICES, WIRING AND EQUIPMENT INCLUDING FIRE ALARM, LIGHTING AND SOUND SYSTEMS AND TELECOM AS REQUIRED BY THE NEW ARCHITECTURAL WORK AND AS SHOWN ON THE DRAWINGS. NOT ALL DEVICES ARE SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE ARCHITECTURAL DRAWINGS AND PROVIDING MISCELLANEOUS REMOVALS AND RELOCATION AS REQUIRED BY THAT WORK.
- PLAN FOR EXTENT OF CEILING REMOVALS AND REPLACEMENTS. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS FOR EXTENT OF WALL RENOVATIONS, PATCHING AND FINISHE.
- 4. DEMOLITION WORK SHOWN ON THESE DRAWINGS IS BASED ON LIMITED FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT/ENGINEER BEFORE DISTURBING EXISTING INSTALLATION. THESE DRAWINGS SHOW EQUIPMENT LOCATIONS ONLY. WIRING SHOWN IS SCHEMATIC IN NATURE.
- UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT AND DEVICES SHOWN HATCHED OR WITH DASHED LINE, INCLUDING RELATED CONDUIT AND WIRE, BACK TO SOURCE OF SUPPLY OR NEXT DEVICE OUT OF DEMOLITION AREA. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING DEVICES AND FIXTURES NOT REMOVED DURING DEMOLITION.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF BUILDING DEMOLITION WORK. REFER TO REFLECTED CEILING | 6. ALL CONDUITS/WIRING RUNNING THRU DEMOLITION AREA SERVING EXISTING TENANTS THAT ARE TO REMAIN SHALL REMAIN AS IS UNLESS OTHERWISE NOTED.

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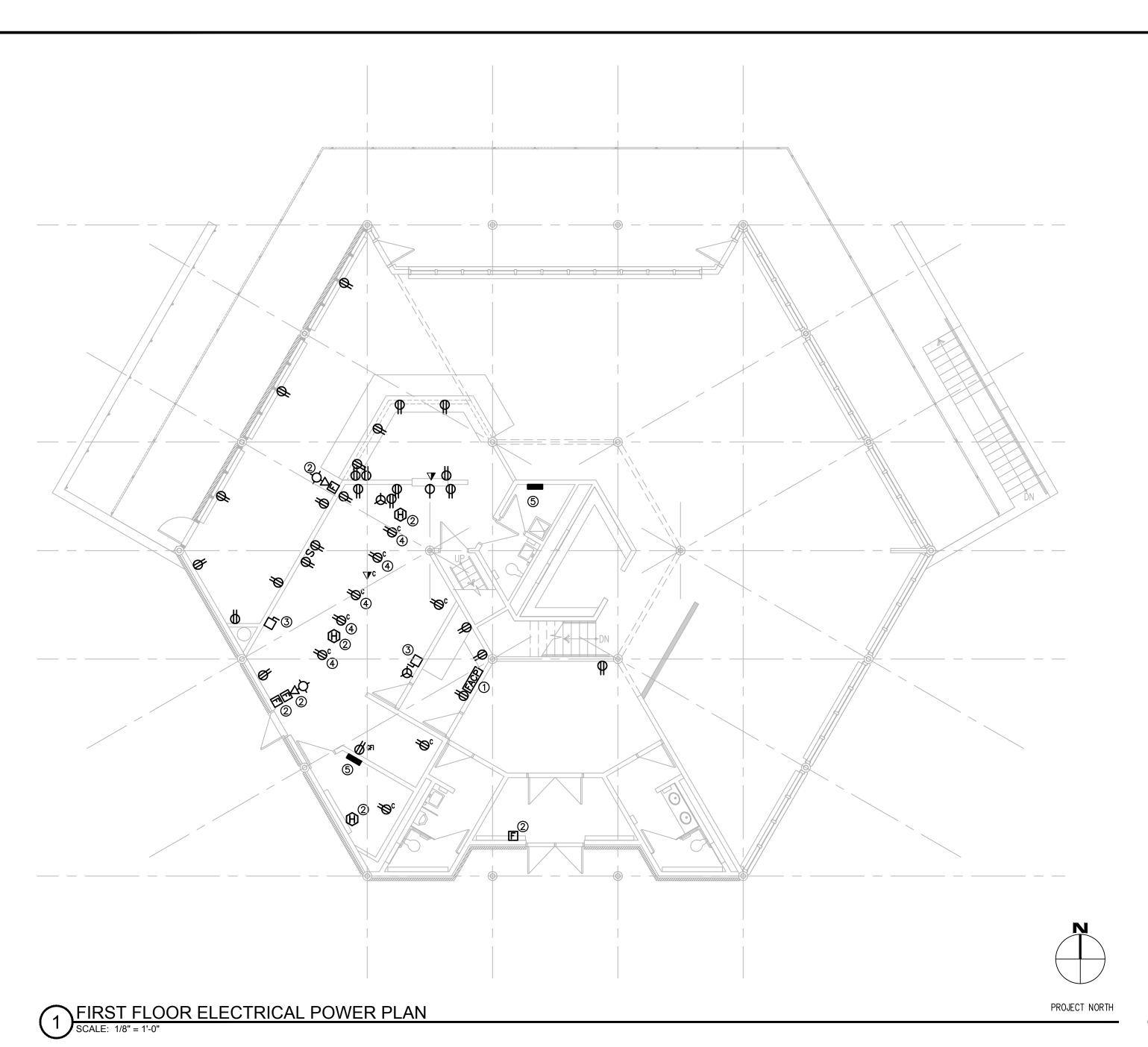
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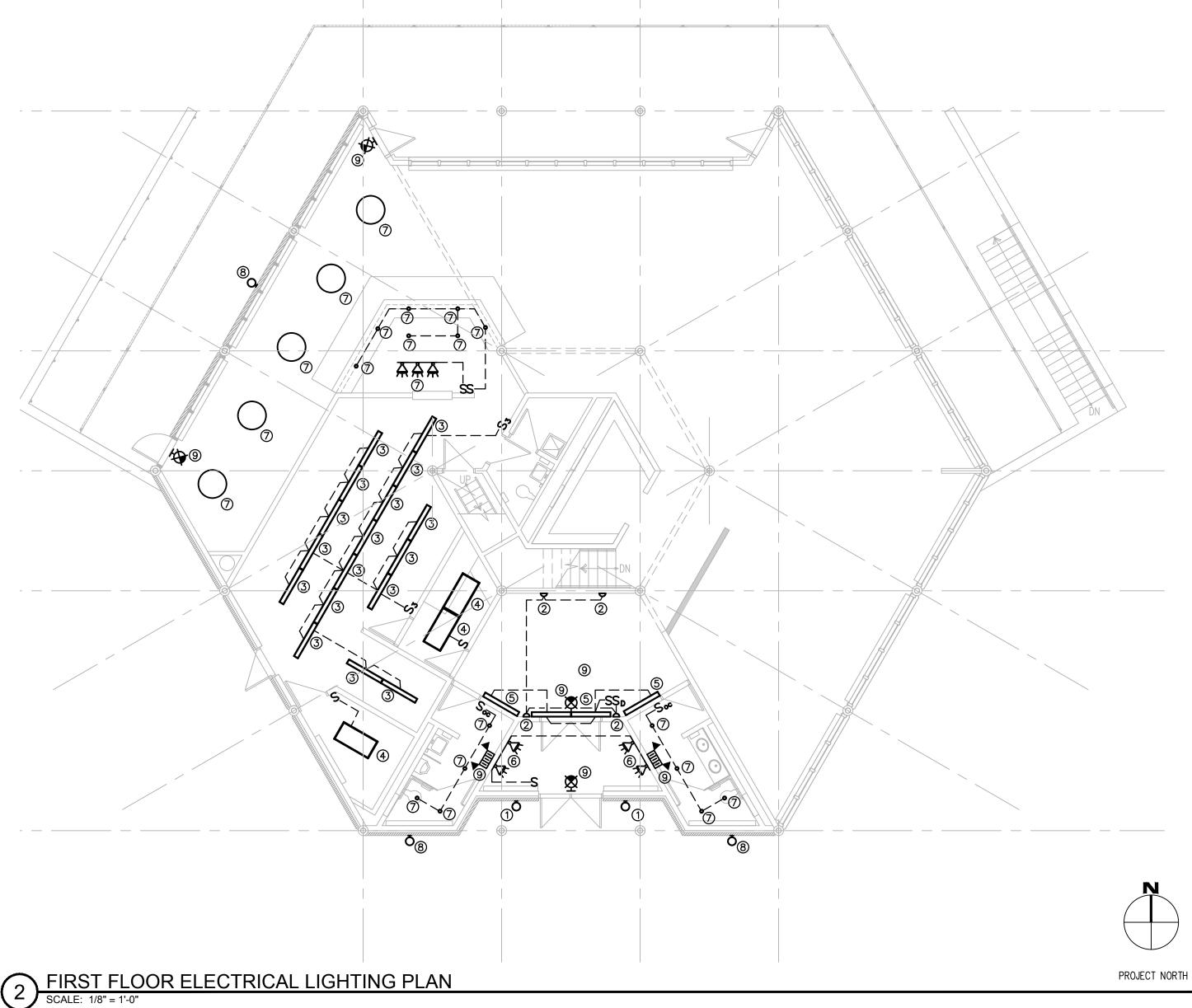
14D2584 Project No. 12/16/2014 E14D2584-001

ELECTRICAL GENERAL NOTES, SYMBOL LEGENDS, ABBREVIATIONS AND SCHEDULES

Sheet No.

MA DE CONDANICE INC. THESE DAMBNOS CHALL NOT DE HTHEFT DV ANV DEDCON FIRM OF CONDODATION WITHOUT THE SPECIFIC MULTIPAL NEEDLISCOM OF DE COMPANIE





POWER KEY NOTES:

- PROVIDE NEW FIRE ALARM CONTROL PANEL IN EXISTING LOCATION. ALL CONDUIT AND WIRING TO DEVICES SHALL REMAIN AND BE REUSED.
- 2 EXISTING FIRE ALARM DEVICE TO BE REMOVED AND REPLACED IN LIKE KIND IN SAME LOCATION. DEVICES SHALL BE BY THE SAME MANUFACTURER.
- (3) EXISTING DISCONNECT SWITCH TO BE REUSED.
- EXISTING CEILING MOUNTED RECEPTACLES SHALL BE REMOVED COMPLETE BACK TO SOURCE PANEL.
- (5) EXISTING ELECTRICAL PANEL SHALL REMAIN.

NOMA DI COLIDANIEC INC. TIECE DOLUMICE CHALL MOT DE HTHITED DV ANV DEDECNE FIDIA OD CODDODATION WITHOUT THE OPENED WRITTEN DEDIFICION OF DI COLIDANIE

GENERAL POWER NOTES:

- 1. ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT SHALL CONFORM TO N.E.C. ARTICLES 110 AND 384. CONSULT ENGINEER WHERE SPACE APPEARS INADEQUATE DUE TO ARCHITECTURAL CHANGES, EQUIPMENT LAYOUT CHANGES, OR FIELD CONDITIONS. DO NOT COVER, OBSCURE OR BLOCK ACCESS TO EQUIPMENT, DATA PLATES, ACCESS PANELS OR MAINTENANCE AREAS WITH THE ELECTRICAL WORK.
- 2. THIS DRAWING SHOWS EQUIPMENT LOCATIONS ONLY. WIRING SHOWN IS SCHEMATIC IN NATURE. COORDINATE CONDUIT ROUTE IN FIELD WITH OTHER TRADES, EQUIPMENT AND OWNER. VERIFY ALL MOUNTING HEIGHTS WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION.
- 3. UNLESS NOTED OTHERWISE, ALL NEW HOMERUNS REQUIRED ARE 3/4"C., 2#12, 1#12G. TO SPARE OR NEW 20A-1P C/B IN PANEL LISTED.
- 4. UNLESS NOTED OTHERWISE, ALL POWER WIRING OF CIRCUIT SHALL MATCH HOMERUN WIRING OF CIRCUIT. MINIMUM POWER WIRING SHALL BE 3/4"C., 2#12 & 1#12G.. MINIMUM CONTROL WIRING SHALL BE 3/4"C., 2#14.
- 5. COORDINATE WITH MECHANICAL PLANS FOR FINAL LOCATION OF ALL DEVICES MOUNTED ON OR IN THE VICINITY OF THE MECHANICAL WORK.
- 6. ALL OUTLETS LOCATED WITHIN SIX (6) FEET OF A SINK OR A WATER SOURCE SHALL BE GROUND FAULT PROTECTED.
- 7. HATCHED AREA ON PLANS IN FRONT OF ELECTRICAL PANELS INDICATE REQUIRED WORKING SPACE.
- 8. EXISTING RECEPTACLES, SWITCHES AND ASSOCIATED COVER PLATES SHOWN ON THIS PLAN SHALL BE REMOVED. REPLACE RECEPTACLES, SWITCHES AND COVER PLATES WITH NEW OF LIKE KIND IN SAME LOCATIONS. EXISTING WIRING AND CIRCUITING SHALL BE REUSED.

LIGHTING KEY NOTES:

- EXISTING EXTERIOR CARRIAGE WALL SCONCES (2) ARE TO BE REMOVED, STORED, INSPECTED, CLEANED AND RE-INSTALLED IN SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- WALL SCONCES (4) IN LOBBY ARE TO BE REPLACED IN LIKE KIND TO EXISTING SCONCES AND ARE TO BE INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- SURFACE MOUNTED LIGHT FIXTURES (17) IN THE KITCHEN AREA ARE TO BE REPLACED IN LIKE KIND TO EXISTING FIXTURES AND INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- RECESSED 2'X4' FLUORESCENT LIGHT FIXTURES (3) ARE TO BE REPLACED IN LIKE KIND TO EXISTING FIXTURES AND INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- WALL MOUNTED FLUORESCENT BAFFLE FIXTURES (3) ARE TO BE REPLACED IN LIKE KIND TO EXISTING FIXTURES AND INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- 6 LIGHT TRACK AND TRACK HEADS (2) ARE TO BE REPLACED IN LIKE KIND TO EXISTING FIXTURES AND INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- 7 EXISTING LIGHT FIXTURES ARE TO BE REMOVED, CLEANED AND RE-INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- WALL MOUNTED AREA LIGHTS (3) ARE TO BE REPLACED IN LIKE KIND TO EXISTING FIXTURES AND INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- 9 EXIT SIGNS AND EMERGENCY LIGHTS ARE TO BE REMOVED, CLEANED AND RE-INSTALLED IN THE SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.

GENERAL LIGHTING NOTES:

- 1. ACCESS TO AND CLEARANCES AROUND ELECTRICAL EQUIPMENT SHALL CONFORM TO N.E.C. ARTICLES 110 AND 384. CONSULT ENGINEER WHERE SPACE APPEARS INADEQUATE DUE TO ARCHITECTURAL CHANGES, EQUIPMENT LAYOUT CHANGES, OR FIELD CONDITIONS. DO NOT COVER, OBSCURE OR BLOCK ACCESS TO EQUIPMENT, DATA PLATES, ACCESS PANELS OR MAINTENANCE AREAS WITH THE ELECTRICAL WORK.
- 2. THIS DRAWING SHOWS EQUIPMENT LOCATIONS ONLY. WIRING SHOWN IS SCHEMATIC IN NATURE. EXISTING CONDUIT AND WIRING SHALL REMAIN AND EXISTING CIRCUITS SHALL BE REUSED. VERIFY ALL MOUNTING HEIGHTS WITH OWNER AND ARCHITECT PRIOR TO
- 3. UNLESS NOTED OTHERWISE, ALL NEW HOMERUNS REQUIRED ARE 3/4"C., 2#12, 1#12G. TO SPARE OR NEW 20A-1P C/B IN PANEL LISTED.
- 4. UNLESS NOTED OTHERWISE, ALL WIRING OF CIRCUIT SHALL MATCH HOMERUN WIRING OF CIRCUIT. MINIMUM WIRING SHALL BE 3/4"C., 2#12, 1#12G.
- 5. CONNECT EXIT SIGNS AND EMERGENCY LIGHTS SHOWN TO LOCAL NIGHT LIGHT CIRCUIT.
- 6. EXISTING LIGHT SWITCHES AND ASSOCIATED COVER PLATES SHOWN ON THIS PLAN SHALL BE REMOVED. REPLACE SWITCHES AND COVER PLATES WITH NEW OF LIKE KIND IN SAME LOCATIONS. EXISTING WIRING AND CIRCUITING SHALL BE REUSED.

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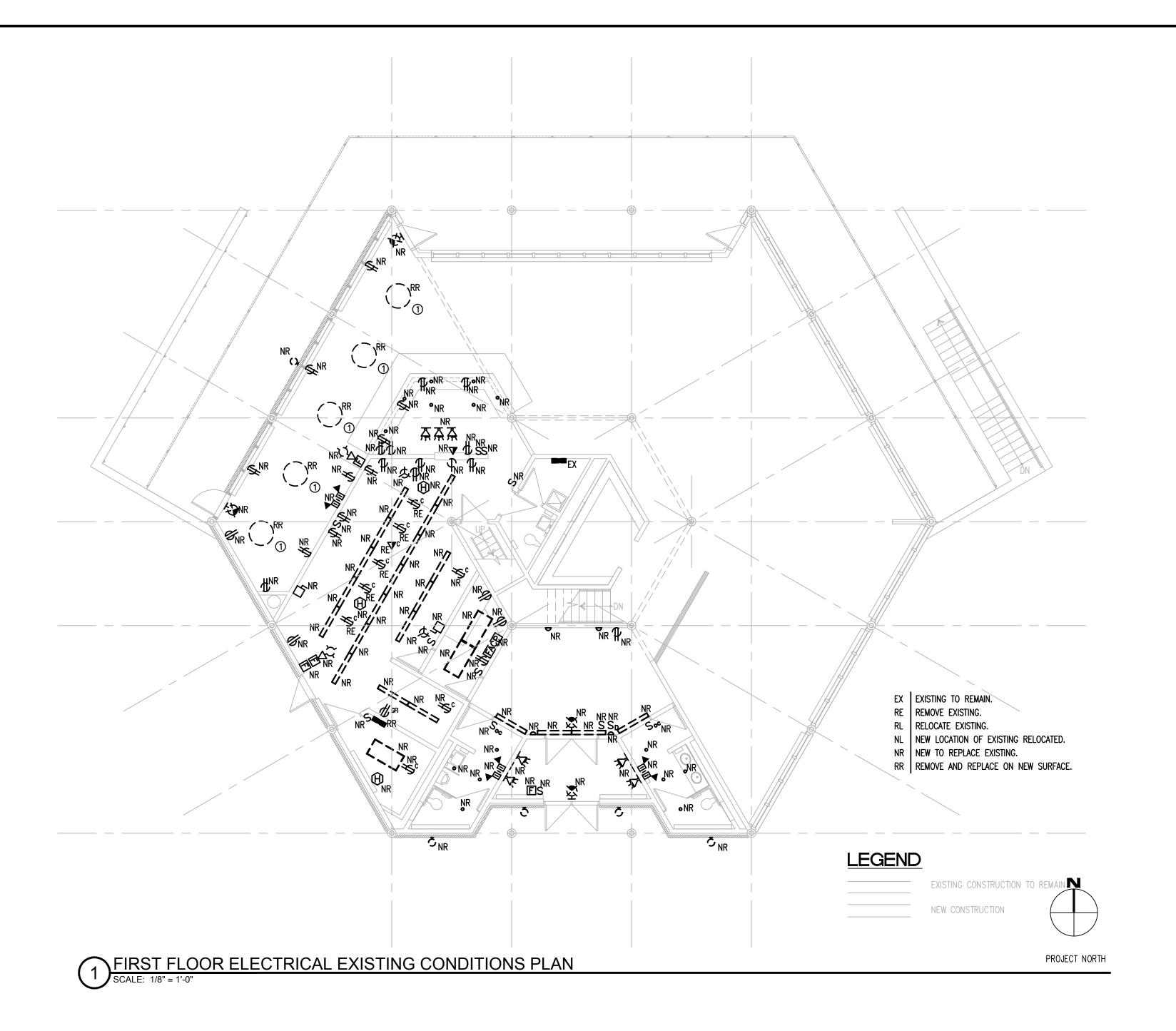
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Title
FIRST FLOOR
ELECTRICAL PLANS

Sheet No.

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ELECTRICAL DEMOLITION KEY NOTES:

- EXISTING HANGING CHANDELIER FIXTURES ARE TO BE REMOVED, STORED, INSPECTED, CLEANED AND RE-INSTALLED IN SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.
- 2 EXISTING SURFACE MOIUNTED KITCHEN FIXTURES ARE TO BE REMOVED, STORED, INSPECTED, CLEANED AND RE-INSTALLED IN SAME LOCATION. EXISTING CIRCUITING TO BE REUSED.

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Project No. Date

EDC14D2584-101

Title
FIRST FLOOR
ELECTRICAL
EXISTING
CONDITIONS
PLAN

12/16/2014

ED1.01

MECHANICAL NOTES

- 1. REFER TO BOTH ARCHITECTURAL ELECTRICAL AND PLUMBING DEMOLITION DRAWINGS FOR COMPLETE SCOPE OF WORK. TAKE CAUTION IN DEMOLITION OF MECHANICAL EQUIPMENT. ALL MECHANICAL INSTALLATIONS SHALL COMPLY WITH LOCAL AND STATE CODES.
- 2. CONTRACTOR SHALL REMOVE ALL PIPING/DUCTWORK AND EQUIPMENT INDICATED ON DRAWINGS INCLUDING ALL HANGERS, PLENUM WALLS, DAMPERS, WIREMOLD, WIRING CONTROLS, T'STATS, ETC. ASSOCIATED W/ EACH PIECE OF EQUIPMENT. MECHANICAL EQUIPMENT SHALL NOT BE ABANDONED IN PLACE.
- WHERE EXISTING ITEMS PENETRATE A WALL, ROOF & FLOOR CONTRACTOR SHALL PROVIDE INFILL PENETRATIONS THROUGH WALL/ROOF W/ LIKE MATERIALS. REFER TO ARCHITECTURAL PLANS FOR WALL, FLOOR TYPES. PATCH & RÉPAIR TO MATCH SURROUNDING SURFACES
- 4. WHERE INDICATED, DUCTWORK AND PIPING OR PORTIONS OF DUCTWORK AND PIPING SHALL BE REUSED. REFER TO DRAWINGS PLANS FOR POINTS OF CONNECTIONS. FIELD VERIFY EXISTING CONDITIONS.
- 5. ALL PIPE, DUCT AND/OR EQUIPMENT TO BE DEMOLISHED IS MARKED WITH AN "//" OR AS
- 6. PROTECT EXISTING FINISHES, FLOORS, SURFACES, CEILING TILES, CEILING GRID, ETC. DURING THE DEMOLITION PROCESS. REINSTALL CEILING GRID AND TILES OR REPLACE AND REINSTALL CEILING GRID AND TILES IF DAMAGED AND REPAIR OTHER DAMAGED SURFACES PRIOR TO COMPLETION OF WORK.
- 7. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED TO TRACE ALL EXISTING AND RELATED DUCT, PIPING AND CONTROL SYSTEMS IN WORK AREAS AND OUTSIDE AREAS PRIOR TO WORK.
- 8. COORDINATE EXACT LOCATION OF ALL NEW EQUIPMENT WITH ARCHITECT'S FINISHED CEILING PLAN, SPRINKLER PIPING AND ELECTRICAL CONDUITS. ALSO, CONTRACTOR SHALL COORDINATE WITH OWNER SUPPLIED AND INSTALLED EQUIPMENT. NO EXTRAS SHALL BE AWARDED FOR REVISIONS CAUSED BY LACK OF COORDINATION.
- 9. EXACT CONDITIONS TO BE VERIFIED IN THE FIELD DUE TO AREAS/DUCTS BEING INACCESSIBLE. DESIGN WAS BASED ON EXISTING DESIGN DRAWINGS AND LIMITED SURVEY. CONTRACTOR SHALL VISIT THE SITE TO VERIFY THE CONSTRUCTION CONDITIONS BEFORE SUBMITTING BID AND FABRICATION.
- 10. DRAWINGS ARE DIAGRAMMATIC, THEREFORE DETERMINE EXACT LOCATIONS OF SYSTEMS/COMPONENTS IN FIELD USING FIELD CONDITIONS.
- 11. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND FOLLOWING OWNERS RULES AND STANDARDS PRIOR TO BID, WORK AND COMPLETION OF PROJECT.
- 12. ALL EXISTING EQUIPMENT AND NEW EQUIPMENT, DUCTS AND PIPING PENETRATING THE NEW FIRE RATED WALLS TO BE FIRE SEALED.
- 13. EXISTING EQUIPMENT NOTED TO BE REFURBISHED TO WORKING ORDER.

ROMA DI CAUDANIFE INC. THEE DANIMAC CHALL NOT DE HTHEFT DV ANV DEDCON FIDIA OD CADDADATION METHOLIT THE COFCIER MOLTETH DEDHICCION OF DI COMPANIEC

- 14. CONTRACTOR SHALL ROUTE DUCTWORK WITHIN THE CEILING SPACE AS HIGH AS POSSIBLE TO MAINTAIN MAXIMUM CLEARANCE ALLOWABLE.
- 15. PIPING LAYOUTS ARE SCHEMATIC. FIELD COORDINATE ALL PIPE RUNS. (PRIOR TO PIPE INSTALLATION) NO EXTRAS SHALL BE AWARDED FOR PIPE REVISIONS CAUSED BY LACK OF COORDINATION.
- 16. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF CHILLED WATER SHUT DOWN, VERIFYING FLOW DIRECTION OF EXISTING PIPING AND THE LABOR AND MATERIALS FOR THE DRAINING, FILLING, VENTING AND START-UP OF SYSTEM.

ABBREVIATIONS (NOTE: ALL ABBREVIATIONS MAY NOT APPEAR ON DRAWINGS) Kilowatt — Hour ABS ABC ABV A/C AC Above Counter Leaving Air Temperature LAT Latent (BTU) Above Air Conditioner Pounds (Weight) LIN FT Linear Foot Alternating Current ADJ AF LTG L**w**t Adiacent Amp Frame Leaving Water Temperature AFF AFG AHU AIC AMB Above Finish Floor mΑ Mili Amps Above Finish Grade MAX Maximum MBTUH Thousand British Thermal Unit Per Hour Air Handling Unit Amperes Interrupting Capacity MCB Main Circuit Breaker MCC Motor Control Center MCF MCM Thousand Cubic Feet AUX AV BLDG BTU BTUH Thousand Circular Mils MECH MIC Audio Visual Mechanical Microphone British Thermal Unit MIN Minimum MISC MTD Miscellaneous British Thermal Unit Per Hour C CAT Conduit Mounted MTG MTL MTR Catalogue Mounting CB Circuit Breaker Metal Motor CD Condensate Drain CFH CFM CHR CHS MTRZD Cubic Feet Per Hour Motorized MVD Cubic Feet Per Minute Manual Volume Damper Chilled Water Return Neutral Chilled Water Supply Not Applicable CI CKT CLG CO COL COMM CONC Normally Closed Cast Iron Circuit National Electrical Code Ceiling National Electrical Manufacturers Association Clean Out NFPA National Fire Protection Association Not In Contract Column Communication Normally Open Concrete Number Connect Outside Air CONST Opposed Blade Damper Construction CONT Continuous On Center CONTR Contractor Outside Diameter COP Coefficient Of Performance Overflow Downspout Card Reader Ounce Poles Current Transformer Photo-Electric CVO Condensing Unit Pressure Drop PERF Cold Water Valved Opening Perforated CW Cold Water Power Factor CWR Condenser Water Return Phase CWS PLBG Condenser Water Supply Plumbing PNL PSI Pounds Per Square Inch PSIA PSIG PVC PWR QTY R/A Direct Current Pounds Per Square Inch-Absolute DFU DIA DIFF Drainage Fixture Units Pounds Per Square Inch-Gauge Diameter Polyvinyl Chloride Diffuser DN Quantity Down DS DTL DWG EA EAT Return Air Downspout RĆP Detail [†] Reflected Ceiling Plan Drawing RCP Reforced Concrete Pipe REC REF Fach Receptacle Entering Air Temperature Reference REFR REQ'D Electrical Contractor Refrigerator EDH EER EL ELEC ELEV EMER EQ EQUIP ESP EWT Electric Duct Heater Required Energy Efficiency Ratio Running Load Amps Room Elevation RMS RPM RQMT Root Mean Squared Electrical RPM Elevator Emergency Requirement RTU Roof Ťop Unit Equipment Supply Äir External Static Pressure SA Storm Drain Entering Water Temperature EXH EXIST EXP SEER SENS Seasonal Energy Efficiency Ratio Exhaust Existing Sensible (BTU) SFU SHT Supply Fixture Units Expansion SHT Sheet SHT MTL Sheet Metal Fire Alarm Static Pressure Specifications FA FCU FD Free Area SP SPECS SPKR SQ SQFT SS, SAN SSC STD SURF SW SWBD SWGR SYM T-STAT Fan Coil Unit Speaker Square Fire Damper FD FDR FF FIXT Floor Drain Square Feet Feeder Finish Floor Sanitary Sewer Short Ćircuit Current Fixture Standard Surface Switch Switchboard Switchgear Symmetrical Thermostat Timeclock Telephone Total (BTU) Telephone fl fluor Flow Line Fluorescent FN FPM FPB Full Neutral Feet Per Minute Fan Powered VAV Terminal Unit Fused Switch F/A F/B G TC TELE TOT TTB TYP From Above From Below Ground Telephone Terminal Board Typical Underfloor Gauge GAL GALV GCr GEN GFI GFCI GPH Gallons Galvanized General Contractor Unless Otherwise Noted Generator Vacuum Volt Ground Fault Interrupter Ground Fault Circuit Interrupter Volt-Amps Valve Gallons Per Hour Gallons Per Minute VAV Variable Air Volume H HD HORIZ HP HTG HVAC HWC HWR HWS VENTIL Ventilation VERT Vertical VP0 Vent Plugged Opening Horizontal Vent Vent Thru The Roof Horsepower VTR Heating Heating, Ventilation, & Air Conditioning Variable Volume Terminal Unit Hot Water Recirculation (Domestic) Watts Width Wet Bulb Hot Water Return Hot Water Supply Isolated Ground Water Heater Inches Weatherproof IN WC Inches Water Column Waste Plugged Opening INCAND KA KVA KW Weight Transformer Incandescent XFMR Kiloamperes

WYE

Kilovolt Amperes

Kilowatt

(NOTE: AL	L SYMBOLS MAY NOT APPEAR ON DRAW	INGS)
SINGLE LINE	DESCRIPTION	DOUBLE LINE
\subset	90° ELBOW DOWN	8 10
\longrightarrow	90° ELBOW UP	8
	ROUND RADIUS ELBOW	
~	45° ELBOW	
	90° ELBOW DOWN	
	90° ELBOW UP	
	RECTANGULAR RADIUS ELBOW	4
	RECTANGULAR ELBOW WITH TURNING VANES	7 1
	BRANCH TAKE-OFF WITH RADIUS HEEL & EXTRACTOR	
·	REDUCER, ECCENTRIC	
├	REDUCER, CONCENTRIC	
্ ল	NEW SUPPLY AIR DIFFUSER	
	EXISTING SUPPLY AIR GRILLE	
	NEW RETURN GRILLE	
<u>}======</u>	LINED DUCTWORK	5
(= (
	SUPPLY DUCT	
	RETURN DUCT	
	EXHAUST DUCT	
Ø	ROUND DUCT SIZE	├
·——	FLEXIBLE DUCT CONNECTION	
\	EXISTING DUCT	4
\leftarrow	NEW DUCT	4
2//////	REMOVE EXISTING DUCTWORK	<i>\$</i> /////,
$ \frac{1}{2}$ $ \frac{1}{2}$ $ -$	MANUAL VOLUME DAMPER	± * ±
— <u>—</u> M	MOTORIZED DAMPER	- <u></u>
$\overline{\mathbb{B}}$	BAROMETRIC DAMPER	- TA-B
	DIRECTION OF RETURN AIR	
	SUPPLY AIR DIRECTION	
T TS	THERMOSTAT, REMOTE SENSOR	
lacktriangle	POINT OF CONNECTION	
	POINT OF DISCONNECTION	
(M)	MOTOR	
ETR	EXISTING TO REMAIN	

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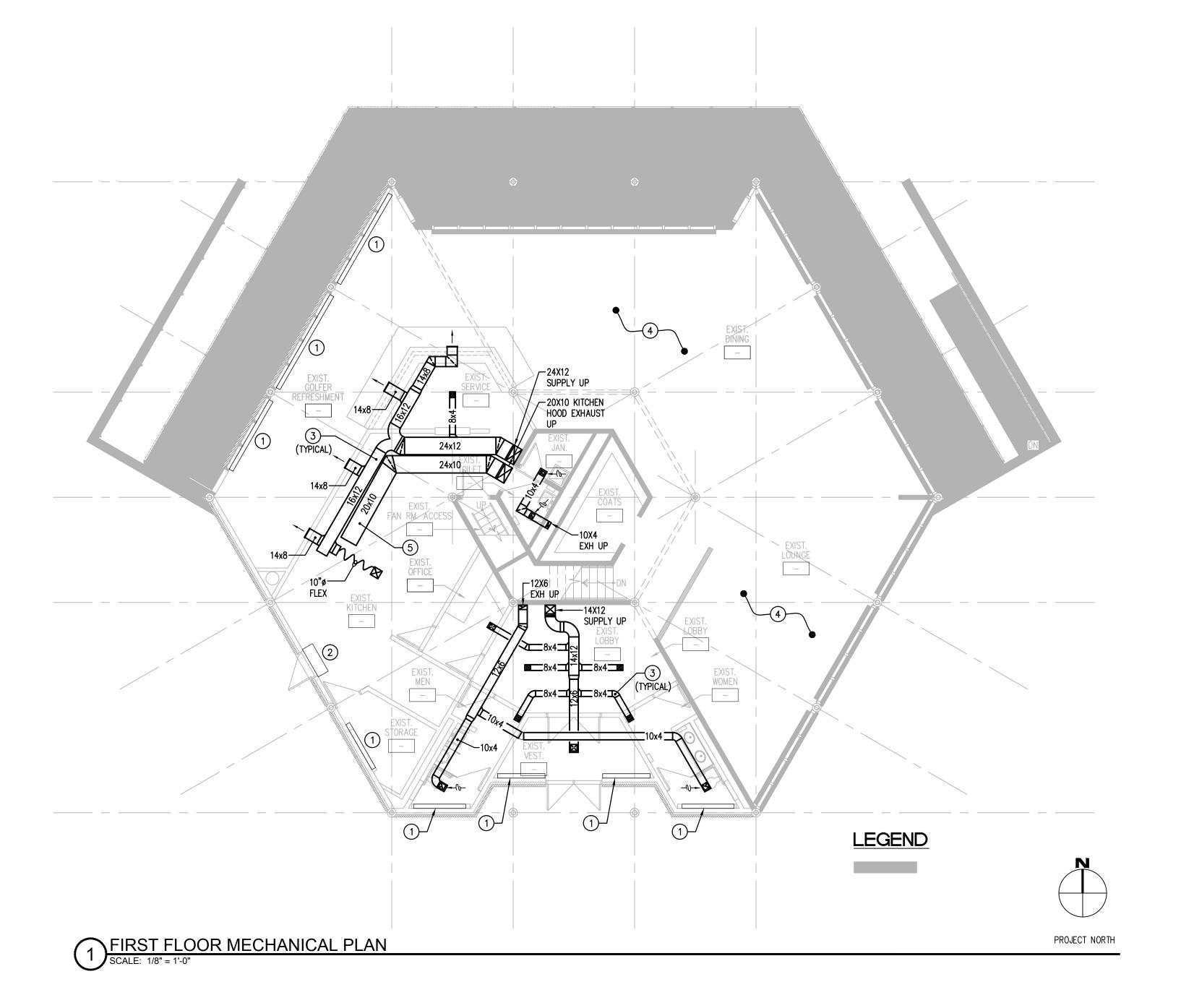
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IDEN, CT

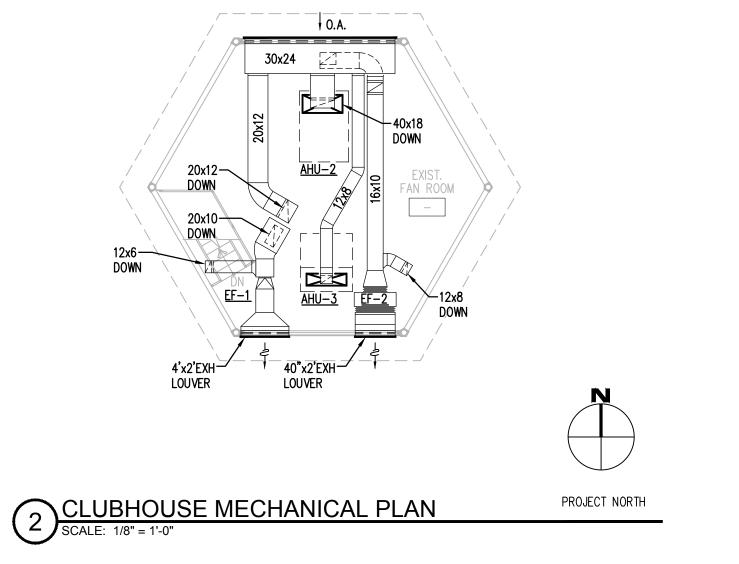
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MECHANICAL NOTES, SYMBOLS, LEGENDS AND **ABBREVIATIONS**

Sheet No.

M0.01





MECHANICAL KEY NOTES:

1) RADIATOR TO BE REINSTALLED

2 DAYTON AIR CURTAIN CABINET MODEL 6E825A TO BE REMOVED AND CLEANED, AND STORED.

3 INSTALL NEW DUCTWORK AND NEW INSULATION TO MATCH EXISTING LAYOUT AND SIZES.

4 NO WORK TO BE DONE IN THIS AREA.

5) KITCHEN EXHAUST DUCK TO BE REINSTALLED.

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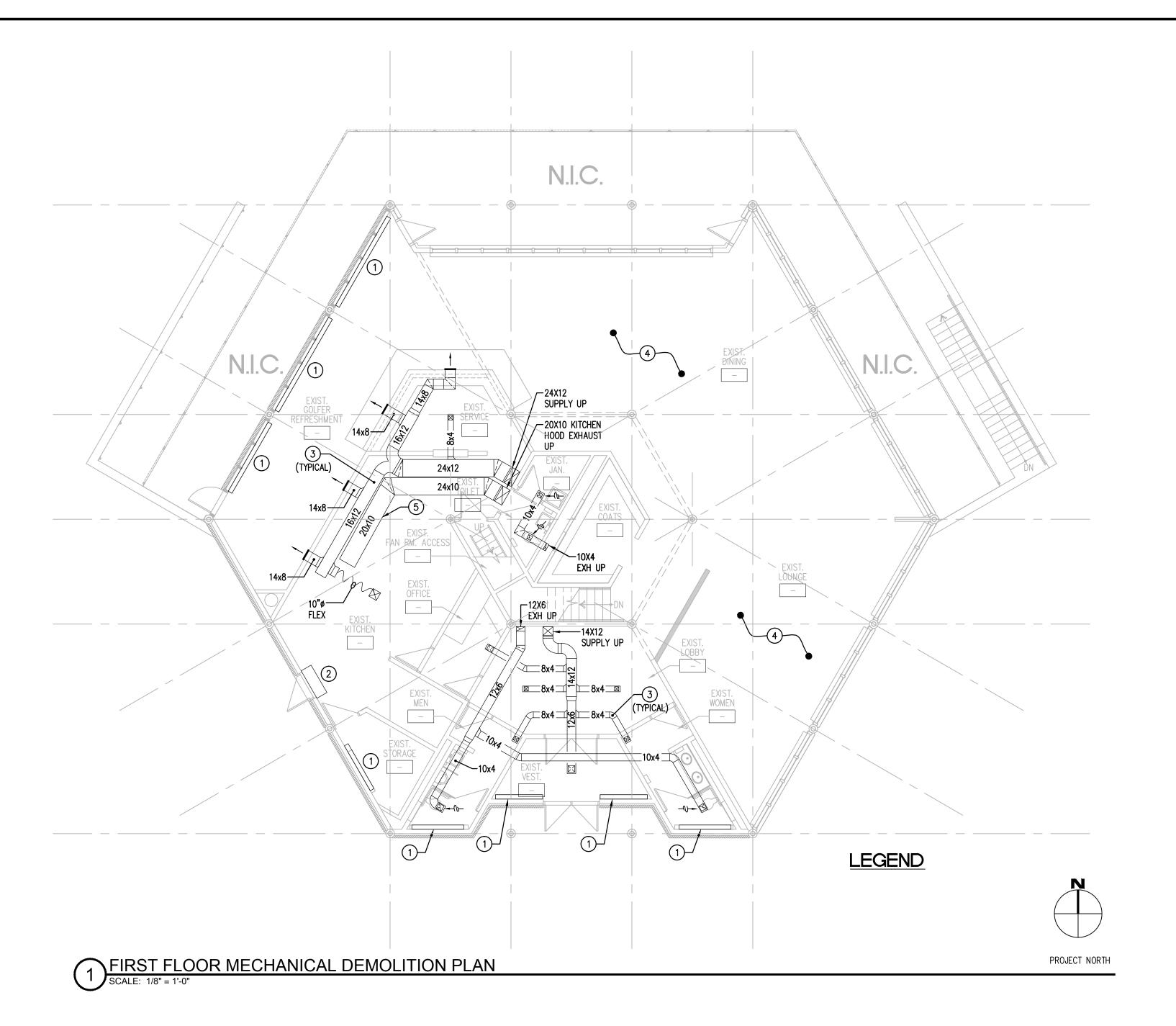
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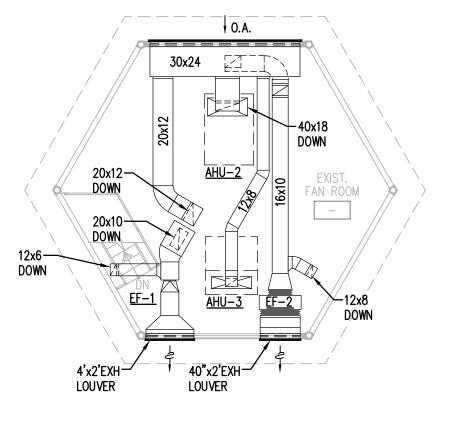
12/16/2014

M14D2584-101

Title MECHANICAL FLOOR PLANS

M1.01





CLUBHOUSE MECHANICAL DEMOLITION PLAN

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

- 1) RADIATOR TO BE REMOVED, CLEANED & STORED.
- 2 DAYTON AIR CURTAIN CABINET MODEL 6E825A TO BE REMOVED AND CLEANED, AND STORED.
- 3 REMOVE SUPPLY AND EXHAUST DUCTWORK.
- 4 NO WORK TO BE DONE IN THIS AREA.
- 5 KITCHEN HOOD EXHAUST DUCTWORK TO BE REMOVED, CLEANED AND STORED.

MECHANICAL DEMOLITION KEY NOTES:

Companies

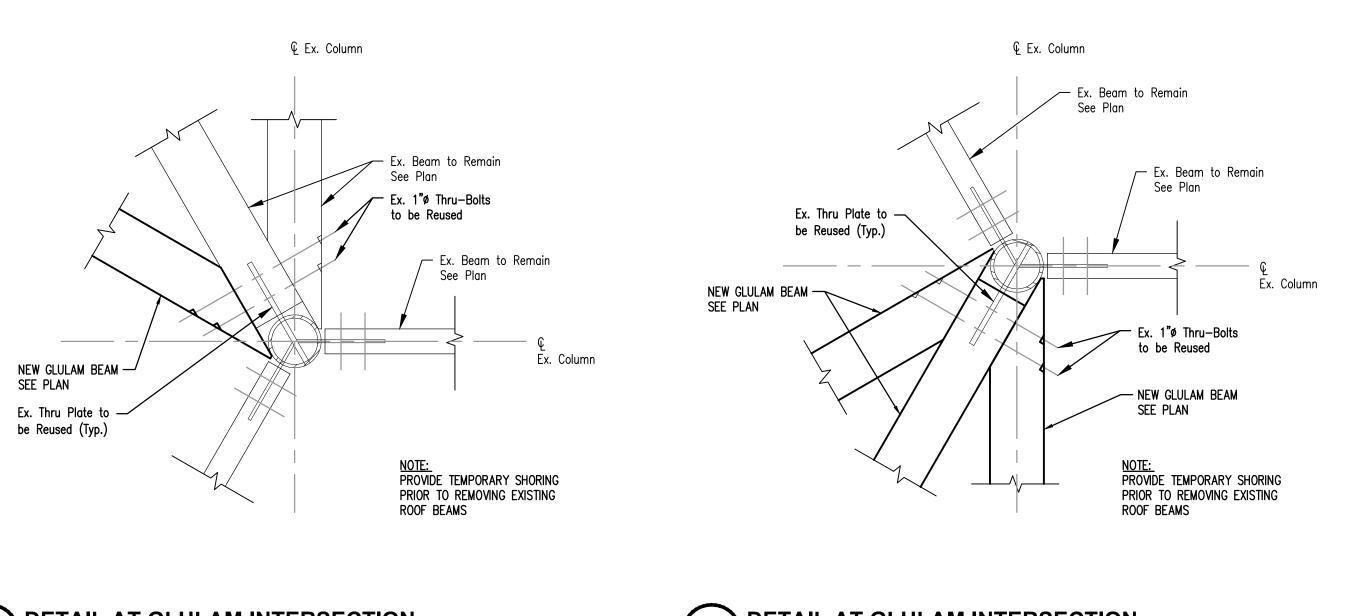
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12/16/2014 MD14D2584-101

MECHANICAL DEMOLITION FLOOR PLANS

MD1.01



— NEW 2x2 NAILERS @ 16" O.C. - NEW 3x6 TONGUE AND GROOVE DECKING. SEE PLAN \sim Ex. (4)-3/4"ø Bolts to be Reused - NEW GLULAM BEAM, SEE PLAN. REPLACE EXISTING CONCEALED PLATE HANGERS IN KIND. - NEW 4x6 TONGUE AND GROOVE DECKING. SEE PLAN - NEW ½" PLYWOOD SHEATHING Ex. Steel Bearing — Plate to be Reused. - NEW GLULAM BEAM SEE PLAN Ex. Concrete Encased Steel Column to Remain See Plan PROVIDE TEMPORARY LATERAL SUPPORT COLUMN PRIOR TO REMOVING EXISTING ROOF BEAMS

DETAIL AT GLULAM INTERSECTION

DETAIL AT GLULAM INTERSECTION

\DETAIL AT GLULAM INTERSECTION

14'-0"(V.I.F.) 14'-0"(V.I.F.) 14'-0"(V.I.F.) Ex. (2)-2x12 Ex. (2)-2x12Ex. (2)-2x12Ex. 31/8"x12" Glulam Ex. 3½"x12" Glulam Ex. 3½"x12" Glulam (2 S1.01) Ex. 51/8"x12" Glulam 14'-0" (**.F.)// NEW. CONT. 63/4"x12", GLULAM Ex. Cont. 6¾"x12" Glulam Ex. 5¼"x12" Glulam ·Ex. 6" Sch. 80 Pipe 🗲 w/ 12" Conc. Enc. to Remain (Typ.) NEW 3" T&G ROOF PLANKS $(2\frac{3}{6}^{\circ} ACTUAL)$ NEW 31/8"x12" GLULAM — Ex. 6" Sch. 40 Pipe NEW 31/8"x12" GLULAM NEW 31/8"x12" GLULAM w/ 12" Conc. Enc. to Remain (Typ.) NEW 4" T&G ROOF PLANKS (2½ ACTUAL) NEW (2)−2x12 TYP. ✓ NEW (2)-2x12NEW (2)-2x1214'-0" (V.I.F.) 14'-0" (V.I.F.) 14'-0" (V.I.F.)

GENERAL NOTES

DESIGNED IN ACCORDANCE WITH THE 2005 STATE OF CONNECTICUT BUILDING CODE, WITH 2009 AMENDMENTS.

IF ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THESE DRAWINGS AND/OR CONDITIONS

TYPICAL DETAILS AND NOTES SHOWN HEREIN SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS

ALL UNDERGROUND UTILITY LOCATIONS SHALL BE VERIFIED PRIOR TO STARTING EXCAVATION WORK. CALL BEFORE YOU DIG PRIOR TO STARTING ANY EXCAVATION.

IT SHALL BE THE CONTRACTORS SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, CONSTRUCTION. THIS INCLUDES PROVIDING TEMPORARY BRACING, SHORING, GUYS OR TIE-DOWNS. THESE TEMPORARY SUPPORTS SHALL REMAIN IN PLACE UNTIL ALL STRUCTURAL COMPONENTS ARE

ROOF LOADS: $DEAD\ LOAD\ =\ 25\ PSF$ LIVE LOAD = 20 PSF (MIN.)EXPOSURE FACTOR, Ce = 1.0THERMAL FACTOR, Ct = 1.0IMPORTANCE FACTOR, Is = 1.0FLAT ROOF SNOW LOAD, Pf = 21 PSF (USE 30 PSF MIN)

WIND LOADS: BASIC WIND SPEED (3-SEC. GUST) = 100 MPH (CT SUPPLEMENT - APPENDIX K) IMPORTANCE FACTOR, lw = 1.0EXPOSURE = "B"

ALL SPECIAL INSPECTION REPORTS PERFORMED IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW IN A TIMELY MANNER. THE FINAL REPORT OF SPECIAL INSPECTIONS SHALL NOT BE ISSUED UNTIL ALL SPECIAL INSPECTION REPORTS HAVE BEEN RECEIVED AND APPROVED BY THE ENGINEER.

SPECIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH THE AFFECTED WORK.

SHOWN FOR SIMILAR CONDITIONS.

WORK AREAS SHALL BE MARKED, FENCED, AND OTHERWISE SECURED SO AS TO PROVIDE PROPER PROTECTION FOR THE PUBLIC, AND AS REQUIRED BY THE BUILDING INSPECTOR.

BRACING AND FORMWORK, ETC., AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING STABLE AND COMPLETED.

GROUND SNOW LOAD, Pg = 30 PSF (CT SUPPLEMENT - APPENDIX K) SNOW LOADS INCREASED FOR DRIFT, SLIDING, ETC. WHERE APPLICABLE.

MAIN ROOF FRAMING PLAN NOTES (WOOD): 1. ALL NEW ROOF DECKING SHALL BE TYPE "LOCK-DECK" (OR APPROVED EQUAL) TONGUE AND GROOVE. ATTACH DECKING TO SUPPORTS AS SPECIFIED BY SUPPLIER.

- NOMINAL 3x6 ($2\frac{3}{16}$ " x $5\frac{1}{4}$ " ACTUAL) - NOMINAL 4x6 ($2\frac{7}{8}$ " x $5\frac{1}{4}$ " ACTUAL) - Fb = 2640 PSI

- Fv = 165 PSI- E = 1.800.000 PSI

2. FINISH AND PATTERN OF NEW DECKING TO MATCH EXISTING.

3. ALL NEW GLULAM MEMBERS TO BE ANTHONY POWER PRODUCTS FAMILY TYPE "24F"

(OR APPROVED EQUAL). a) 31/8"x12" (ACTUAL) GLULAM - Fb = 2,400 PSI

- Fv = 175 PSI- E = 1,700,000 PSIb) 6¾"x12" (ACTUAL) GLULAM

- Fb = 2,400 PSI- Fv = 140 PSI- E = 1.700.000 PSI

4. SIZE AND SPECIES OF NEW GLULAM TO MATCH EXISTING GLULAM TO REMAIN. 5. COORDINATE WITH DEMOLITION DRAWINGS FOR EXISTING FRAMING TO BE REMOVED.

6. SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES.

WOOD NOTES

CARPENTRY NOTES-

WALLS SHOWN ARE BELOW FRAMING LEVEL AT FLOOR AND ROOF FRAMING PLANS.

VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

SEE ARCHITECTURAL DRAWINGS FOR WALLS AND DIMENSIONS NOT SHOWN OR NOTED.

SEE ARCHITECTURAL OR CIVIL DRAWINGS FOR WALKS, RAMPS, PATIOS, ETC., NOT SHOWN OR NOTED.

VERIFY PLATE AND FRAMING ELEVATIONS WITH ARCHITECTURAL DRAWINGS.

SEE ARCHITECTURAL DRAWINGS FOR ROOF SLOPES, ELEVATION, AND DRAINAGE.

NOTCHED AND/OR CUT JOISTS ARE NOT ALLOWED. VERIFY ALL JOIST OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO STARTING WORK.

WOOD CONSTRUCTION SHALL BE PER AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) STANDARDS AND SPECIFICATIONS, AND NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) AS PUBLISHED BY THE AMERICAN FOREST AND PAPER ASSOCIATION (AFPA).

ALL LUMBER FRAMING MEMBERS ARE TO HAVE THE FOLLOWING MINIMUM BASE DESIGN VALUES IN ACCORDANCE WITH THE LATEST ISSUE OF THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS) AS PUBLISHED BY THE AMERICAN FOREST AND PAPER ASSOCIATION (AFPA):

DOUGLAS FIR LARCH, No. 2 OR BETTER: Fb = 1,350 PSIFv = 180 PSIE = 1,600,000 PSI

1½" LSL 1.5E: Fb = 2250 PSIFv = 400 PSIE = 1,500,000 PSI

ALL LUMBER FRAMING MEMBERS NOTED AS P.T. OR LABELED AS PRESSURE TREATED SHALL BE SOUTHERN YELLOW PINE, #2 GRADE OR BETTER.

ALL FRAMING LUMBER SHALL BE AS GRADED PER AMERICAN LUMBER STANDARDS (U.N.O.) WITH MINIMUM GRADES AS FOLLOWS: PLATES, BLOCKS, AND MISC.: DOUGLAS FIR LARCH No. 2 OR BETTER, OR 1.5E LSL.

JOIST HANGERS, STRAPS, CLIPS AND TIE-DOWNS SHALL BE MANUFACTURED BY THE "SIMPSON STRONG-TIE COMPANY, INC." OR APPROVED EQUAL.

NAILING OF MULTIPLE MEMBERS SHALL BE AS REQUIRED BY THE MANUFACTURER. BEARING OF ALL BEAMS SHALL BE 11/2" INCHES MINIMUM.

LAMINATED BEAMS SHALL NOT BE USED IN LOCATIONS EXPOSED TO WEATHER, UNLESS THEY HAVE BEEN PRESSURE TREATED AND WATER REPELLENT APPLIED.

ALL WOOD OR ENGINEERED LUMBER MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

NAILING SCHEDULE-IF NAILING IS NOT NOTED OR SHOWN IN THE DETAILS OR PLANS, USE THE FOLLOWING MINIMUM CRITERIA: JOIST TO SILL OR GIRDER, TOE NAIL.. ...(3)–8d CONTINUOUS RIM JOIST TO DBL TOP PLATES... .16d **@** 8" o.c. .(2)–8d BRIDGING TO JOIST, TOENAIL EACH END ... SOLE PLATE TO JOIST OR BLOCKING, FACE NAIL. ..16d @ 8" o.c. TOP PLATE TO STUD, END NAIL. ..(4)-8d, TOENAIL OR (2)-16D, END NAIL STUD TO SOLE PLATE... DOUBLE STUDS, FACE NAIL. ...16d **@** 24" o.c. DOUBLE TOP PLATES, FACE NAIL16d @ 16" o.c. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL.....(2)-16d CONTINUOUS HEADER, TWO PIECES16d @ 16" o.c. STAGGERED ALONG EDGE CEILING JOISTS TO PLATE, TOE NAIL.. CONTINUOUS HEADER TO STUD, TOE NAIL. CEILING JOISTS, LAPS OVER PARTITION, FACE NAIL... CEILING JOISTS TO PARALLEL RAFTERS, FACE NAIL..... RAFTER TO PLATE, TOE NAIL.. 1" BRACE TO EACH STUD AND PLATE, FACE NAIL.... 1"x8" SHEATHING OR LESS TO EACH BRG, FACE NAIL.......(3)-8d WIDER THAN 1"x8" SHEATHING TO EACH BRG, FACE NAIL...(3)-8d BUILT-UP CORNER STUDS...... PLYWOOD OR OSB: FLOOR, WALL, AND ROOF SHEATHING (TO FRAMING): 1/2", 5/8", 3/4".....

ROOF SHEATHING FASTENERS SHALL BE SPACED AT 6" OC AT EDGES, AND AT 12" OC AT INTERMEDIATE SUPPORTS, U.N.O.

...10d @ 16" O.C.

BOX NAILS MAY BE USED FOR ABOVE NAILING WITH APPROVAL FROM THE ENGINEER.

NAILER TO ROOF DECKING.....

COMMON NAILS ARE REQUIRED FOR SHEAR WALLS, INCLUDING PLATE NAILING, TIE-DOWNS, HANGERS, AND LEDGERS.

BOX NAILS REQUIRE 1/3 MORE NAILS THAN LISTED ABOVE. CEMENT COATED SINKERS ARE CONSIDERED BOX NAILS.

ROOF SHEATHING SHALL BE CONTINUOUS OVER TWO (2) OR MORE SPANS AND FACE GRAIN PERPENDICULAR TO SUPPORT.

ROOF SHEATHING SHALL BE 1/2" APA-RATED TONGUE AND GROOVE SHEATHING, U.N.O.

Companies ARCHITECTURE ENGINEERING

ENVIRONMENTAL LAND SURVEYING

355 Research Parkway Meriden, CT 06450 (203) 630-1406 (203) 630-2615 Fax

Designed Drawn Checked Approved Scale 14D2584 Project No. Date 12/16/2014 CAD File:

S14D2584-101 MAIN ROOF

FRAMING PLAN

Sheet No.

ANA DI COMPANICE INC. THECE DIAMBNOC CHALL MOT DE HITHETE DY ANV DEDECKH FIDH OD CONDODATION MITHORIT THE COFORD MONTEN DEDIRECTOR OF DI COMPANIC



MECHANICAL IMPROVEMENTS

RZ Job No.: 17-063



SHEET NO.

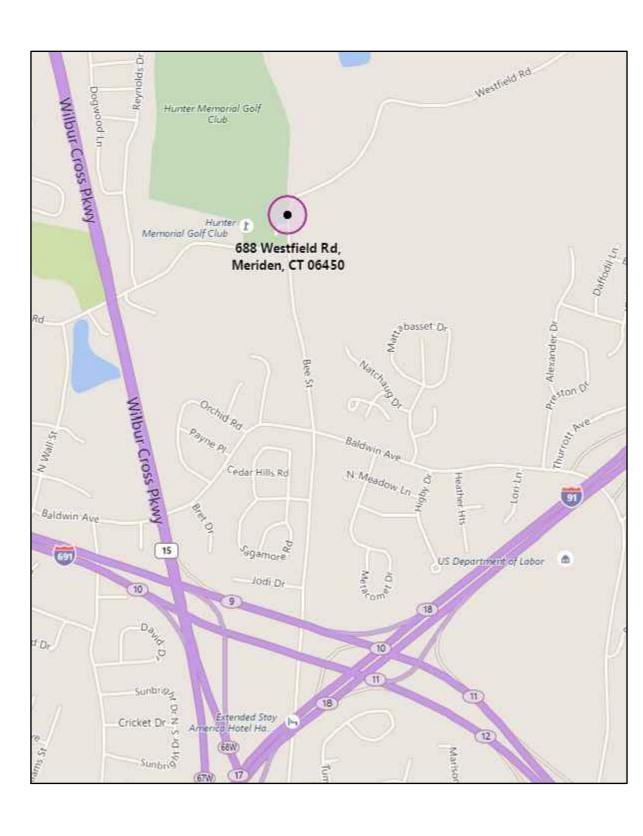
750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

DRAWING TITLE

MECHANICAL GENERAL NOTES & ABBREVIATIONS M-0.2 MECHANICAL SPECIFICATIONS PLUMBING SPECIFICATIONS M-0.3MD-1.1 LOWER LEVEL MECHANICAL DEMOLITION PLAN MD-1.2 UPPER LEVEL/FAN ROOM MECHANICAL DEMOLITION PLAN LOWER LEVEL MECHANICAL NEW WORK PLAN UPPER LEVEL/FAN ROOM MECHANICAL NEW WORK PLAN M-1.2 MECHANICAL DETAILS AND SCHEDULES M-2.1 M-2.2 PLUMBING DETAILS AND SCHEDULES M-3.1 MECHANICAL CONTROLS E-0.1 **ELECTRICAL SPECIFICATIONS** ED-1.1 LOWER LEVEL ELECTRICAL NEW WORK PLAN

ED-1.2 UPPER LEVEL/FAN ROOM ELECTRICAL DEMOLITION PLAN LOWER LEVEL ELECTRICAL NEW WORK PLAN

UPPER LEVEL/FAN ROOM ELECTRICAL NEW WORK PLAN



GENERAL NOTES

<u>GENERAL</u>

- 1. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL AND SPECIAL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, CALIBRATED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- 2. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- 3. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST.
- 4. PERFORM ALL WORK IN COMPLIANCE WITH THE SPECIFICATIONS APPLICABLE CODES, ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION; THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE; IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
- 5. INSTALL ALL EQUIPMENT IN ACCESSIBLE LOCATIONS. WHERE EQUIPMENT MUST BE INSTALLED ABOVE AN INACCESSIBLE CEILING OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED AND THE LOCATION SHALL BE COORDINATED WITH THE ARCHITECT.
- 6. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER; CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- 7. BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT INCLUDING REQUIRED SERVICE CONNECTIONS, FACTORY START UPS, AND INSTALLATION OF FIELD DEVICES.
- 8. PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR AND EXTERIOR WALLS OR FLOOR SLABS.
- 9. PROVIDE PIPING, CONDUIT, AND ALL OTHER ACCESSORIES AS REQUIRED FOR PROPER AND PROFESSIONAL SYSTEMS
- 10. TEST AND BALANCE ALL MECHANICAL AND ELECTRICAL SYSTEMS. PROVIDE ADDITIONAL TESTS AS REQUIRED BY THE SPECIFICATIONS.
- 11. DO NOT INSTALL PIPING OR DUCTWORK OVER ELECTRICAL PANELS, TRANSFORMERS, OR SPECIAL EQUIPMENT
- 12. DO NOT INSTALL, IN STAIRWELLS OR STAIRWELL WALLS, PIPING, DUCTWORK, CONDUIT OR OTHER DEVICES OR EQUIPMENT NOT ASSOCIATED WITH OR SERVING THE RESPECTIVE STAIR.
- 13. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT ON THE FINDINGS.
- 14. PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS IN ALL PIPING, DUCTWORK OR CONDUIT FOR COORDINATION WITH BUILDING STRUCTURE AND CONSTRUCTION.

RENOVATION

- 1. THIS PROJECT INVOLVES THE RENOVATION OF AN EXISTING FACILITY; BEFORE SUBMITTING THE BID, CONTRACTORS SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THE PROJECT IS TO BE COMPLETED.
- 2. CONTRACTORS SHALL BE HELD RESPONSIBLE FOR ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS.
- 3. IT IS NOT THE INTENT OF THESE DOCUMENTS TO SHOW EVERY DEVICE, APPURTENANCE, PIPE, WIRE OR CONDUIT TO BE REMOVED. MEP EQUIPMENT, UNITS, AND SYSTEMS NOT BEING REUSED, SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ASSOCIATED HANGERS, SUPPORTS, BASES, PADS, PIPES, DUCTS, CONDUITS, WIRES, INSULATION, AND CONTROLS BACK TO THE POINT OF ORIGIN.
- 4. EQUIPMENT, PIPING, OR CONDUIT SHALL NOT BE ABANDONED IN-PLACE UNLESS SPECIFICALLY SO NOTED.
- 5. PROPERLY DISPOSE OF DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES, REGULATIONS, AND DEP STANDARDS; TURN OVER TO THE OWNER, EQUIPMENT SO INDICATED.
- 6. RELOCATE EXISTING EQUIPMENT, DEVICES, PIPING, WIRING, AND RELATED SYSTEMS AS REQUIRED FOR CONSTRUCTION PURPOSES. ALL EXISTING SYSTEMS SHALL BE FULLY OPERATIONAL, INCLUDING RECONNECTION TO SERVICES AND UPGRADED SYSTEMS. ALL RELOCATED EQUIPMENT SHALL BE PROTECTED DURING CONSTRUCTION.
- 7. PROVIDE TEMPORARY CONNECTIONS AND SYSTEM MODIFICATIONS AS REQUIRED FOR CONSTRUCTION AND PHASING
- 8. INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHEN NECESSARY. COORDINATE WITH GENERAL CONTRACTOR/CONSTRUCTION MANAGER FOR PHASING REQUIREMENTS.
- 9. SYSTEMS REQUIRING TO REMAIN IN OPERATION DURING DEMOLITION AND RENOVATION SHALL BE CAREFULLY PROTECTED FROM DAMAGE AND CONTAMINATION BY THE CONSTRUCTION PROCESS.

<u>HVAC</u>

- 1. PROVIDE AN AUTOMATIC TEMPERATURE CONTROL SYSTEM COMPLETE IN ALL REGARDS. ALL ZONES, AND SYSTEMS SHALL BE THERMOSTATICALLY CONTROLLED. REVIEW THE PLANS AND SPECIFICATIONS OF ALL MEP TRADES FOR A COMPLETE SCOPE OF THE WORK.
- 2. PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL PIPING TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM; INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL TO BEAM; PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS.
- 3. COORDINATE AND VERIFY LOCATIONS OF ALL ITEMS REQUIRING ACCESS WITH ARCHITECT IN FIELD, INCLUDING VALVES, VOLUME DAMPERS,
- 4. ALL CONDENSATE PIPING SHALL BE PVC OR CPVC SCHEDULE 40.
- 5. ALL DUCTWORK CLEANING AND SANITIZING SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NACDA-ACR, ASSESSMENT, CLEANING AND RESTORATION OF HVAC SYSTEMS.
- 6. TESTING, ADJUSTING AND BALANCING: AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND HYDRONIC SYSTEMS IN ACCORDANCE WITH EITHER AABC OR NEBB STANDARDS.

<u>PLUMBING</u>

- 1. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE, ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER, WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.
- 2. INCLUDE NECESSARY PIPING OFFSETS AND TRANSITIONS AS REQUIRED TO INSTALL THE EQUIPMENT. PIPING, DRAINS AND VENTS SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD THAT THIS WORK HAS BEEN COMPLETED.
- 3. DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS, SHALL BE INSTALLED ON THE WARM SIDE OF INSULATION, AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
- 4. PROVIDE COOLING COIL CONDENSATE TRAPS AND DRAIN PIPING FOR ALL MECHANICAL EQUIPMENT REQUIRING SAME; PIPE CONDENSATE DRAINS BY GRAVITY TO INDIRECT WASTE FLOOR DRAIN OR OTHER APPROVED LOCATION.

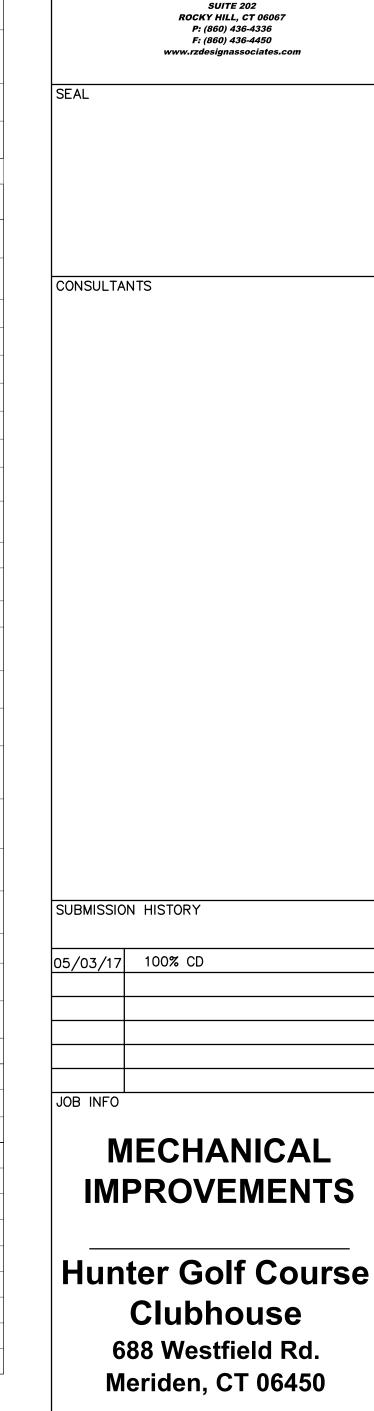
ABBREVIATIONS

	<u> </u>		
A/AMP	AMPERE	IN WG	INCHES OF WATER, GAUGE (PRESS.)
	AIR CONDITIONING UNIT(S)	IW	INDIRECT WASTE
AD	ACCESS DOOR	L	LENGTH
			LEAVING AIR TEMPERATURE
	ABOVE FINISHED GRADE AIR HANDLING UNIT	LBS/HR LF	POUNDS PER HOUR LINEAR FEET
	AMBIENT	LIQ	LIQUID
APD	AIR PRESSURE DROP	MBH	
APPROX		MD	MOTORIZED DAMPER
AVC	AUTOMATIC TEMPERATURE CONTR.	MECH	MECHANICAL
BAS	AVERAGE BUILDING AUTOMATION SYSTEM BRAKE HORSEPOWER	MFR MIN	MANUFACTURER MINIMUM
BHP	BRAKE HORSEPOWER	N/A	
BSMT	DASEMENT	N.C.	NORMALLY CLOSED
BTUH	BRITISH THERMAL UNITS/HOUR	NEC	
CC	CONDENSATE COOLING COIL	NIC NORMALLY	NOT IN CONTRACT
CLG	CEILING	NTS	NOT TO SCALE
CO	CLEANOUT	OA	
CO2	CARBON DIOXIDE	OD	OUTSIDE DIAMETER
COMP COND	COMPRESSOR CONDENSER	ORD	OVERFLOW ROOF DRAIN
CP	CONDENSATE PUMP	PD PH / ø	
CDII	CENTRAL DROCESSING LINIT	PNL	PANELBOARD
CU	CONDENSING UNIT	PRESS	PRESSURE
dB	CUBIC FEET DECIBEL	PRV	PRESSURE REDUCING VALVE
	DEPTH	PSI BA	POUNDS PER SQUARE INCH
	DRY BULB TEMPERATURE	RA RD	RETURN AIR ROOF DRAIN
DEG or *		RH	RELATIVE HUMIDITY
	DIAMETER	RHC	REHEAT COIL
DN DP	DIFFERENTIAL PRESSURE	RHG	REFRIGERANT HOT GAS
DWG	DRAWING	RM RPM	ROOM REVOLUTIONS PER MINUTE
DX	DIRECT EXPANSION	S&R	SUPPLY AND RETURN
EA	EXHAUST AIR	SA	SUPPLY AIR
EAT EFF	ENTERING AIR TEMPERATURE EFFICIENCY	SP	STATIC PRESSURE
ELEC	ELECTRICAL	SPEC SPK	SPECIFICATION SPRINKLER
ELEV	ELEVATOR	SQ	SQUARE
EM	EMERGENCY	SS	STAINLESS STEEL
ESP EVAP	EXTERNAL STATIC PRESSURE EVAPORATOR	ST	STORM
EWB	ENTERING WET BULB TEMPERATURE	STD SUCT	STANDARD SUCTION
EWT	ENTERING WATER TEMPERATURE	TAG	IDENTIFICATION OF EQUIPMENT
EXH	EXHAUST	TD	TEMPERATURE DIFFERENCE
EXP	EXPANSION	TTEMP	TEMPERATURE
F FCU	FAHRENHEIT FAN COIL UNIT	TP TSP	TRAP PRIMER
FD	FIRE DAMPER	T'STAT	TOTAL STATIC PRESSURE THERMOSTAT
FD	FLOOR DRAIN	TX	TRANSFORMER
FPM	FEET PER MINUTE	TYP	TYPICAL
FPS FS	FEET PER SECOND FLOOR SINK	V	VENT
FT	FOOT OR FEET	V VAV	VOLTAGE VARIABLE AIR VOLUME
GA	GAUGE	VA V VD	VOLUME DAMPER
GAL	GALLONS	VEL	VELOCITY
GND GPH	GROUND GALLONS PER HOUR	VFC	VARIABLE FREQUENCY CONTROLLER
GPM	GALLONS PER HOUR GALLONS PER MINUTE	VIF	VERIFY IN FIELD
H	HEIGHT	VOL VTR	VOLUME VENT THRU ROOF
HC	HEATING COIL	W	WASTE
H/C	HEATING/COOLING	W	WATT
HD HP	HEAD HORSEPOWER	WB	WET BULB TEMPERATURE
HR	HOUR(S)	WI WP	WIDTH WEATHERPROOF
HT	HEAT	WPD	WATER PRESSURE DROP
HZ	FREQUENCY (CYC, PER SEC.)	WTR	WATER TRESSORE BROT
IN	INCHES	WWM	WELDED WIRE MESH

	THICK, DARK SOLID LINES INDICATE NEW		
	OR RELOCATED ITEMS OR NEW RACEWAY AND WIRING		
	THIN, LIGHT LINES INDICATE EXISTING ITEMS OR RACEWAY TO REMAIN IN PLACE AND		
	BE REUSED THICK, DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED		
-	POINT OF NEW TO EXISTING CONNECTION, INCLUDING TRANSITIONS		
_	HVAC SYMBOLS		
	RECTANGULAR, FLAT OVAL OR ROUND AIR DUCT		
	AIR DUCT WITH ACOUSTICAL LINING		
	SUPPLY AIR DUCT UP		
	SUPPLY AIR DUCT DOWN		
	RETURN AIR DUCT UP		
	RETURN AIR DUCT DOWN		
	EXHAUST AIR DUCT UP		
	EXHAUST AIR DUCT DOWN		
 AD	TURNING VANES		
□AD	ACCESS DOOR		
www	FLEXIBLE DUCT CONNECTION		
	CEILING SUPPLY DIFFUSERS		
	CEILING RETURN / EXHAUST GRILLE		
	HARD DUCTED DIFFUSER OR GRILLE WITH FULL SIZE BOTTOM TAKE—OFF		
	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW		
- √ →	DIRECTION OF RETURN OR EXHAUST AIRFLOW		
BDD	BACK DRAFT DAMPER		
VD	VOLUME DAMPER		
xxx	SUPPLY PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)		
xxx	RETURN PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)		
M	MOTORIZED DAMPER		
DS	DUCT SMOKE DETECTOR WITH REMOTE INDICATING LIGHT AND TEST SWITCH		
T	ROOM THERMOSTAT OR TEMPERATURE SENSOR		
DUCT S			
20x12 RECTANGULAR DUCT			
20/12 FLAT OVAL DUCT			
20"ø ROUND DUCT			
CLEANOUT PIPE TEE DOWN			
——————————————————————————————————————	IN-LINE EXPANSION COMPENSATOR		
	PIPE ELBOW UP OR PIPE TEE UP		
	PIPE ELBOW DOWN		
	PIPE CAP OR CAPPED END OF PIPE		
	UNION		
.I.	J J		
	PIPE GUIDES		

GENERAL PROCEDURE NOTES

- 1. PROJECT INCLUDES ACCESS TO AND COORDINATION WITH POSSIBLE OCCUPIED SPACES BELOW THE WORK AREA AND WITHIN OTHER PARTS
- 2. NOTICE OF WORK TO BE PERFORMED OUTSIDE THE WORK AREA, OR AFFECTING OTHER TENANTS IS TO BE GIVEN AT LEAST 48 HOURS PRIOR TO SCHEDULED WORK TO ALL PARTIES.
- THE FOLLOWING SPECIAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
- AS CORE DRILLING, HAMMER DRILLING, ETC.
- CONTACT BBS ENGINEERING OFFICE AT LEAST 24 HOURS IN ADVANCE OF SCHEDULED WORK. C. DISTURBANCE AND CLEARING OF WORK SPACE IN ADJACENT
- TENANT SPACES. COORDINATE WITH TENANTS, D. PROTECTION OF THE ADJACENT OCCUPIED AREAS AND ITEMS IN THESE AREAS FROM DAMAGE.
- CONDITION ACCEPTABLE TO THE TENANT AND BUILDING OWNER PRIOR TO THE START OF NEXT DAY'S NORMAL BUSINESS HOURS. CONTRACTOR TO SUBMIT A PROPOSED SCHEDULE TO OWNER AND LANDLORD INDICATING ANTICIPATED AFTER HOURS WORK AND



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- OF THE BUILDING.
- 3. THE CONTRACTOR IS TO INCLUDE IN HIS BID, OR MAKE PROVISIONS FOR,
- A. PERFORMANCE OF WORK AFTER HOURS, OR PREMIUM TIME, SUCH B. "HOT WORKS PERMIT" FOR SOLDERING, BRAZING OR TORCHING.
- RESTORATION OF ANY DISTURBED OCCUPIED SPACES TO
- ACCESS TO ADJACENT TENANT SPACES FOR REVIEW PRIOR TO COMMENCING WORK.

DWG TITLE **MECHANICAL GENERAL NOTES** & ABBREVIATIONS

17-063

5/03/17

D.S.

D.S.

NONE

DWG DATA

DRAWN:

REVIEWED:

SCALE:

PROJECT NUMBER:

SUBMISSION DATE:

MECHANICAL SPECIFICATIONS

- 1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
- 2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
- 3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
- 4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES
- NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
- 5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.
- 6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACTS GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES
- 4. VISIT SITE, CHECK FACILITIES AND CONDITIONS AND MAKE ALL NECESSARY OBSERVATIONS AND MEASUREMENTS. NOTE CONDITIONS
- UNDER WHICH WORK IS TO BE PERFORMED AND TAKE ALL ITEMS INTO CONSIDERATION IN BID. 5.SYSTEMS ARE TO BE COMPLETE AND WORKABLE IN ALL RESPECTS, PLACED IN OPERATION AND PROPERLY ADJUSTED.
- 6.EACH CONTRACTOR SHALL PROVIDE HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH DAILY. 7.CONTRACTOR SHALL PROTECT NEW WORK, EXISTING WORK AND ADJACENT PROPERTY AGAINST WEATHER.
- 8.CONTRACTOR SHALL PROTECT HIS WORK, MATERIALS, APPARATUS AND FIXTURES FROM DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW MATERIAL AT THE CONTRACTOR'S EXPENSE.
- 9.CONTRACTOR MUST CONFIRM ALL UTILITY COMPANY REQUIREMENTS AND CONNECTION POINTS IN FIELD PRIOR TO STARTING WORK. 10.ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS. 11. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND
- THE SAFETY OF WORKERS. 12.NO PIPING, DUCTWORK, WIRING, ETC. SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT. 13.THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR AND OBTAIN A WRITTEN APPROVAL IDENTIFYING THE ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.
- 14.DURING CONSTRUCTION THE CONTRACTOR MAY UNCOVER AN EXISTING CONDITION THAT WILL HAVE TO BE MODIFIED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT EXTRA COST TO THE OWNER, AS THOUGH FULLY DETAILED ON PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS. 15. CODES, PERMITS, STANDARDS AND REGULATIONS
- -CONFORM TO ALL APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.). GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.
- -OBTAIN PERMITS AND PAY ALL FEES ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.

CODES AND STANDARDS:

<u>GENERAL</u>

- 2012 INTERNATIONAL BUILDING CODE
- 2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 2012 INTERNATIONAL EXISTING BUILDING CODE 2012 INTERNATIONAL PLUMBING CODE
- 2012 INTERNATIONAL MECHANICAL CODE
- 2012 INTERNATIONAL ENERGY CONSERVATION CODE
- 2014 NFPA 70, NATIONAL ELECTRICAL CODE, OF THE NATIONAL FIRE PROTECTION ASSOCIATION INC.
- 2012 INTERNATIONAL RESIDENTIAL CODE OF THE INTERNATIONAL CODE COUNCIL, INC.
- 16. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
- 17. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.
- 18. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER AND CONTROL WIRING REQUIRED FOR ALL EQUIPMENT OPERATION NOT SPECIFICALLY PROVIDED BY OTHERS BUT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THIS CONTRACTOR SHALL PROVIDE MOTOR STARTERS FOR INSTALLATION BY OTHERS. COORDINATE REQUIREMENTS.

ALTERATION WORK AND DEMOLITION

- 1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC... TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC ... SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL.
- 2. UPON COMPLETION OF REMOVALS AND MODIFICATIONS, ALL DUCTWORK PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED AND/OR BYPASSED SUCH THAT UPON COMPLETION OF WORK ALL SYSTEMS TO REMAIN, REMAIN OPERATIONAL,
- 3. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK PIPING SYSTEMS UPON COMPLETION OF WORK
- 4. EXISTING EXPOSED PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY
- 5. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK
- 6. ALL EXISTING EXPOSED. UNNECESSARY DUCTWORK AND PIPING NOT RELATE TO NEW WORK SHALL BE COMPLETELY REMOVED.
- 7. RE-ROUTE OR REMOVE ALL EXISTING DUCTWORK, PIPING AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.

BASE EQUIPMENT, MATERIALS AND SUBSTATIONS.

- ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND UL LABELED. BASE BID MANUFACTURERS ARE INCLUDED IN THE SPECIFICATIONS OR LISTED IN SCHEDULES ON THE DRAWINGS. ALL OTHER
- MANUFACTURERS ARE CONSIDERED A SUBSTITUTION. THE NAME OR MAKE OF ANY ARTICLE, DEVICE, MATERIAL, FORM OF CONSTRUCTION, FIXTURE, ETC. STATED IN THIS SPECIFICATIONS,
- WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED, SHALL BE KNOWN AS A "STANDARD". ALL PROPOSALS SHALL BE BASED ON "STANDARDS" SPECIFIED.
- THE EQUIPMENT SCHEDULES ON THE DRAWINGS INDICATE MANUFACTURERS EQUIPMENT MODEL NUMBERS THAT THIS DESIGN HAS BEEN BASED ON. THE USE OF OTHER MANUFACTURERS' EQUIPMENT THAT IS LISTED AS ACCEPTABLE ALTERNATES THAT ENTAILS GENERAL TRADES, STRUCTURAL, MECHANICAL, ELECTRICAL, ETC. REVISIONS IS THIS CONTRACTOR'S RESPONSIBILITY. ANY ADDITIONAL COST OF SUCH CHANGES SHALL BE PAID BY THE CONTRACTOR SUBMITTING THE ACCEPTABLE ALTERNATES WHICH NECESSITATES CHANGES IN INSTALLING SUCH SUBMITTED ALTERNATE EQUIPMENT, EVEN THOUGH SUCH COSTS MAY BE PART OF ANOTHER DIVISION
- SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IF A SUBSTITUTION IS SUBMITTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE IT AND CERTIFY THAT THE SUBSTITUTION IS EQUIVALENT IN ALL RESPECTS TO THE BASE SPECIFICATIONS.
- IF SUBSTITUTIONS ARE APPROVED, NOTIFY ALL OTHER CONTRACTORS, SUBCONTRACTORS, ETC. AFFECTED BY THE SUBSTITUTION AND FULLY COORDINATE WITH THEM. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY THIS CONTRACTOR OR OTHERS, SHALL BE THE RESPONSIBILITY OF AND PAID FOR BY THE SUBSTITUTING CONTRACTOR. APPROVED SHOP DRAWINGS DO NOT ABSOLVE THIS CONTRACTOR FROM THIS RESPONSIBILITY.
- ALL EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFIRM THESE REQUIREMENTS PRIOR TO STARTING WORK.

WARRANTY

- FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR (1) YEAR FROM DATE OF ACCEPTANCE.
- EXTEND ALL MANUFACTURERS' WARRANTIES TO OWNER, INCLUDING FIVE YEAR (5) COMPRESSOR AND TEN (10) YEAR HEAT EXCHANGER EXTENDED WARRANTY ON NEW HVAC EQUIPMENT.
- REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH REPLACEMENT OR REPAIR.

- SUBMIT SHOP DRAWINGS FOR MECHANICAL SYSTEMS, INCLUDING BUT NOT LIMITED TO SHEET METAL, WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON THE CONSTRUCTION DOCUMENTS.
- SHEET METAL DRAWINGS SHALL BE FULLY DIMENSIONED AND COORDINATED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT ALL CRITICAL LOCATIONS.
- CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE ENGINEER UNLESS THE CONTRACTOR'S APPROVAL IS NOTED. DO NOT START WORK OR
- FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR. SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER INSTALLATION.

- WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR
- ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR THE VARIATIONS. EACH MANUFACTURER OR HIS REPRESENTATIVE MUST CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT THE EQUIPMENT SPECIFIED HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON THE DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT THE TIME OF SUBMITTAL.

- EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT DRAWINGS ON THE JOB SITE ON WHICH HE SHALL REGULARLY RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION.
- THESE DRAWINGS SHALL RECORD THE INSTALLED LOCATION OF ALL CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT, ETC. BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM COLUMN CENTERLINES OR READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SEWERS
- AND TOP ELEVATION OF ALL OTHER BELOW-GRADE LINES. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN
- RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK. AFTER THE PROJECT IS COMPLETED, THESE DRAWINGS SHALL BE DELIVERED TO THE ENGINEER IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS ACTUALLY CONSTRUCTED.

AS BUILT DRAWINGS

- 1. PROVIDE A COMPLETE SET OF AS -BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY
- 2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
- 3. INCLUDE ALL CHANGES AND AN ACCURATE RECORD. ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.
- 4.EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
- 5. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- 6.CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
- 7.SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
- 8. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

EQUIPMENT

- 1. MECHANICAL CONTRACTOR TO FURNISH ALL HVAC EQUIPMENT INDICATED AND/OR SCHEDULED ON THE DRAWINGS COMPLETE WITH BASES, ISOLATORS, SUPPORTS AND OTHER REQUIRED ACCESSORIES,
- INSTALL COMPLETE SYSTEMS AND PLACE IN PROPER OPERATION PER MANUFACTURER'S RECOMMENDATIONS, LUBRICATE AND ADJUST AS REQUIRED. FURNISH AND INSTALL CLEAN SET OF FILTERS PRIOR TO BALANCING.

AIR DISTRIBUTION SYSTEMS

- 1. FURNISH ALL MATERIALS, LABOR, EQUIPMENT AND ACCESSORIES REQUIRED TO INSTALL COMPLETE AIR DISTRIBUTION SYSTEMS.
- 2. CONTRACTORS BIDDING THIS PROJECT SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THEIR WORK. SUBMISSION OF A BID ON THIS PROJECT SHALL BE
- CONSTRUED AS HAVING SUCH KNOWLEDGE VERIFY EXACT CONDITIONS IN FIELD AND COORDINATE WITH THE DRAWINGS AND OTHER TRADES
- BEFORE BEGINNING NEW WORK. DETERMINE EXACT LOCATIONS FOR ALL NEW DUCTWORK AND ACCESSORIES IN THE FIELD.
- COORDINATE WORK OF THIS CONTRACT WITH OTHER TRADES 6. ANY DISCREPANCIES BETWEEN WHAT IS SHOWN ON DRAWINGS OR SPECIFIED AND THE ACTUAL CONDITIONS IN THE FIELD SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING.
- 7. BUILDING AND SURFACES DAMAGED DURING INSTALLATION SHALL BE REPAIRED, REPLACED, AND/OR RESTORED TO ORIGINAL CONDITION AFTER COMPLETION OF WORK AND BEFORE ACCEPTANCE BY OWNER.

DUCT ACCESSORIES

- FLEXIBLE DUCTWORK (AS MANUFACTURED BY CLEVAFLEX, FLEXMASTER OR WIREMOLD). FLEXIBLE DUCTS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE AND
- CONNECTED WITH PLASTIC DRAW BANDS AND TIGHTENED. FLEXIBLE DUCTS SHALL BE LIMITED TO 48" MAXIMUM STRAIGHT LENGTHS. FLEXIBLE DUCTS SHALL BE CONSTRUCTED OF 1 1/2" INSULATION WITH VINYL VAPOR BARRIER JACKET AND RATED AT 10" WC FOR SIZES THROUGH 12", UL LISTED, AND MEET 25/50 FLAME AND SMOKE TEST. FLEXIBLE DUCTS ARE NOT PERMITTED IN ROOMS WITHOUT CEILINGS.
- DAMPERS (AS MANUFACTURED BY RUSKIN, NAILOR OR SAFE-AIR)
- a. FABRICATE IN ACCORDANCE WITH SMACNA STANDARDS. PROVIDE END BEARINGS AND LOCKING. INDICATING QUADRANT REGULATORS, BLADE TO BE SINGLE THICKNESS WITH CONTINUOUS HINGE OR
- 3. BACKDRAFT DAMPERS (AS MANUFACTURED BY RUSKIN, NAILOR OR SAFE-AIR)
- a. MULTIPLE BLADE, PARALLEL TYPE DAMPER CONSTRUCTED OF GALVANIZED STEEL WITH FELT OR FLEXIBLE VINYL SEALED EDGES, BALL BEARINGS, PIVOT PIN AND ADJUSTMENT DEVICE FOR VARYING PRESSURES.
- FIRE DAMPERS (AS MANUFACTURED BY RUSKIN, NAILOR OR SAFE—AIR)
- a. FABRICATE IN ACCORDANCE WITH NFPA 90A AND UL555. DAMPERS SHALL BE SUITABLE FOR USE IN THE VERTICAL OR HORIZONTAL POSITION AS INDICATED ON THE DRAWINGS, BE TYPE 'B' WITH BLADES OUT OF AIRSTREAM, AND BE RATED FOR 1-1/2 HOURS MINIMUM (UNLESS NOTED
- 5. PROVIDE DUCT MOUNTED ACCESS DOORS AT ALL FIRE DAMPER LOCATIONS.
- ACCESS DOORS (AS MANUFACTURED BY RUSKIN, NAILOR OR SAFE-AIR) FABRICATE IN ACCORDANCE WITH SMACNA STANDARDS. DOORS TO BE FABRICATED OF GALVANIZED STEEL WITH SEALING GASKET AND QUICK LOCKING DEVICE.
- 6. c. FOR INSULATED DUCTWORK, DOORS SHALL HAVE MINIMUM ONE (1) INCH INSULATION WITH SHEET METAL COVER.I

INSULATION <u>GENERAL</u>

<u>GENERAL</u>

- FURNISH ALL MATERIAL, LABOR AND EQUIPMENT AS REQUIRED TO INSTALL COMPLETE PLUMBING AND HVAC INSULATION AS INDICATED ON MECHANICAL DRAWINGS AND IN THESE SPECIFICATIONS. 2. INSTALL IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- B. HVAC INSULATION (AS MANUFACTURED BY OWENS CORNING, KNAUF, SCHULLER, OR CERTAINTEED INSULATE ALL NON-LINED SUPPLY, RETURN , AND EXHAUST DUCTS WITH FOIL FACED REINFORCED KRAFT JACKET, FIBERGLASS DUCT WRAP FULLY SECURED TO DUCT. LAP AND TAPE SEAMS AND SECURE TIGHTLY TO THE DUCTS WITH WIRE OR STICK PINS. MINIMUM INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE 2012 IECC OR AS OTHERWISE INDICATED. ALL INSULATION TO BE APPLIED

IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND COMPLY WITH 25/50

HVAC SYSTEMS AND EQUIPMENT

FURNISH ALL EQUIPMENT, MATERIALS, LABOR, TOOLS, ETC., FOR THE COMPLETE HVAC SYSTEM.

FLAME AND SMOKE HAZARD RATINGS PER ASTM E-84, NFPA 255 AND UL 723.

2. INSTALL IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND PLACE IN SATISFACTORY OPERATION.

- 3. CONTRACTORS BIDDING THIS PROJECT SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THEIR WORK. SUBMISSION OF A BID ON THIS PROJECT SHALL BE
- CONSTRUED AS HAVING SUCH KNOWLEDGE. 4. VERIFY EXACT CONDITIONS IN FIELD AND COORDINATE WITH THESE DRAWINGS AND OTHER TRADES BEFORE BEGINNING NEW WORK.
- DETERMINE EXACT LOCATIONS FOR ALL EQUIPMENT, PIPING, CONDUITS AND DUCTWORK IN FIELD. COORDINATE WORK OF THIS CONTRACT WITH OTHER TRADES. CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. ARCHITECT'S RESOLUTION TO CONFLICTS SHALL
- ANY DISCREPANCIES BETWEEN WHAT IS SHOWN ON DRAWINGS OR SPECIFIED AND THE ACTUAL CONDITIONS IN THE FIELD SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING.
- BUILDING AND SURFACES DAMAGED DURING INSTALLATION SHALL BE REPAIRED, REPLACED, AND/OR RESTORED TO ORIGINAL CONDITION AFTER COMPLETION OF WORK AND BEFORE ACCEPTANCE BY

HANGERS AND SUPPORT

- 1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND FEDERAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.
- 2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC... ARE SUPPORTED FROM CONCRETE CONSTRUCTION. DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER CONTACT WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.
- 3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.
- 4. BEAM CLAMPS HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, I BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.
- 5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

HVAC INSTRUMENTATION AND DDC CONTROLS

- A. AHU-1, AHU-2, AHU- $\overline{3}$, BOILERS B-1 & B-2, HOT WATER PUMPS P-1 & P-2 SHALL BE TIED INTO NEW BUILDING AUTOMATION SYSTEM.
- FURNISH AND INSTALL COMPLETE TEMPERATURE CONTROL FOR ALL HVAC SYSTEMS. PROVIDE NEW CONTROL DEVICES INCLUDING THERMOSTATS, STAGING RELAYS AND OTHER RELATED DEVICES
- FOR A COMPLETE OPERATIONAL SYSTEM PER THE OPERATING SEQUENCE AND INDUSTRY STANDARDS. MOUNT ALL CONTROLS FURNISHED AS ACCESSORIES TO EQUIPMENT AND PROVIDE ALL CONTROL WIRING REQUIRED FOR PROPER OPERATION. ALL WIRING SHALL BE IN CONDUIT PER NEC AND LOCAL CODE
- REQUIREMENTS. REFER TO THE CONTROL POINTS LIST AND SEQUENCE OF OPERATIONS FOR DDC CONTROL SYSTEM REQUIREMENTS.

HYDRONIC SYSTEMS PIPING:

- 1. HOT WATER PIPING SHALL BE TYPE L COPPER UP TO AND INCLUDING 2". PIPING 2-1/2" AND ABOVE SHALL BE WELDED SCHEDULE 40 STEEL PIPING. PIPING SHALL BE ASTM A53/A FOR STEEL PIPE, ASTM B88 FOR COPPER AND COMPLY WITH ASME B31.9. STEEL FITTINGS SHALL BE WELDED JOINTS; ASTM A 234/A 234M; WROUGHT STEEL. COPPER JOINTS SHALL BE SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER: SOLDER SHALL BE ASTM B32 LEAD-FREE, HB ALLOY (95-5 TIN-ANTIMONY) OR TIN AND SILVER. BRAZE JOINTS SHALL BE AWS A5.8/A5.8M BCup COPPER/SILVER ALLOY.
- 2.ISOLATION VALVES SHALL BE FULL-PORT, BRONZE BODY UP TO 2"; IRON BODY OVER 2", 600 PSI RATED BY NIBCO, MILWAUKEE OR CONBRACO.
- 3.PIPE INSULATION SHALL BE RIGID FIBERGLASS WITH PVC FITTING COVERS, EQUAL TO JOHNS-MANVILLE, KNAUFF OR CERTAINTEED. MINIMUM INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE 2012 IECC OR AS OTHERWISE INDICATED.

COOLING COIL CONDENSATE PIPING

1. ALL CONDENSATE DRAIN PIPING SHALL BE PVC, CPVC OR TYPE DWV COPPER WITH WROUGHT COPPER FITTINGS SOLDERED WITH 95-5 WIRE SOLDER. PITCH PIPING A MINIMUM 1" PER 10 FT. OF RUN. PROVIDE CLEANOUTS AT CHANGES IN DIRECTION AND PROVIDE 4" DEEP TRAP AT AIR HANDLING UNIT(S). CONDENSATE PIPING AND ALL FITTINGS SHALL BE INSULATED WITH 1" FIBERGLASS INSULATION COVERED WITH A KRAFT PAPER AND ALUMINUM FOIL ALL PURPOSE JACKET.

REFRIGERANT PIPING

- 1. REFRIGERANT PIPING:
- A. REFRIGERANT PIPING SHALL BE ACR TYPE WITH WROUGHT COPPER, SILVER BRAZED FITTINGS.
- 2. CONDENSATE DRAIN PIPING:
- A. ALL CONDENSATE DRAIN PIPING SHALL BE TYPE DWV COPPER WITH WROUGHT COPPER FITTINGS SOLDERED WITH 95-5 WIRE SOLDER. PITCH PIPING MINIMUM 1" PER 10 FT. OF RUN. PROVIDE CLEANOUTS AT CHANGES IN DIRECTION AND PROVIDE 4" DEEP TRAP AT AIR HANDLING EQUIPMENT.

3. PIPING INSULATION:

- A. ALL CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH JOHNS MANVILLE MICRO-LOK FIBER GLASS INSULATION FINISHED WITH AN ALL SERVICE JACKET. FITTINGS SHALL BE COVERED WITH JOHNS MANVILLE ZESTON 2000 PVC FITTING COVERS.
- B. REFRIGERANT LIQUID AND VAPOR PIPING SHALL BE INSULATED WITH ARMAFLEX II, INSUL—TUBR, OR RUBATEX R-180-FS TUBING INSULATION. OUTDOOR SECTION OF INSULATION SHALL BE COATED WITH ULTRAVIOLET AND WEATHER RESISTANT PAINT.
- C. INSULATION THICKNESS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE REFERENCED HEREIN AND THE MANUFACTURERS RECOMMENDATIONS.
- 4. PIPING INSTALLATION:
- A. INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE REFERENCED HERE IN, ASHRAE STANDARD 15; SAFETY CODE FOR MECHANICAL REFRIGERATION, CURRENT EDITION AND THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE CONDENSATE DRAIN PIPING AS INDICATED HEREIN.

ADA ACCESSIBILITY

- 1. INSTALL THERMOSTATS & DDC TEMPERATURE SENSORS AT MOUNTING HEIGHT AS REQUIRED BY ICCC/ANSI A117.1-2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES.
- 2. COORDINATE LOCATION AND ELEVATION WITH LIGHT SWITCHES, ETC.



	F: (860) 436-4450 www.rzdesignassociates.com
EAL	

ONSULTANTS	

SUBMISSION HISTORY

JOB INFO

05/03/17	100% CD

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd Meriden, CT 06450

DWG	DATA

PROJECT NUMBER: 17-063 SUBMISSION DATE: 5/03/17 DRAWN: D.S. REVIEWED: SCALE: NONE

DWG TITLE **MECHANICAL SPECIFICATIONS**

PLUMBING SPECIFICATIONS

GENERAL CONDITIONS OF THE CONTRACT

IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS.
PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH,
DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB
CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND
THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. DRAWINGS INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB—CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES.

CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED IN THE 2016 CONNECTICUT STATE BUILDING CODE:

CONNECTICUT CODES AND STANDARDS:

2012 INTERNATIONAL BUILDING CODE
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDING FACILITIES

2012 INTÉRNATIONAL EXISTING BUILDING CODE

2012 INTERNATIONAL PLUMBING CODE 2012 INTERNATIONAL MECHANICAL CODE

2014 NFPA 70, NATIONAL ELECTRICAL CODE, OF THE NATIONAL FIRE PROTECTION ASSOCIATION INC, 2012 INTERNATIONAL RESIDENTIAL CODE OF THE INTERNATIONAL CODE COUNCIL

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

COORDINATION

CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR COORDINATION WITH ALL OTHER TRADES.

SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL, REVISED IF REQUIRED AND RESUBMITTED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEERS DISCRETION. ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

OWNER'S MANUAL AND AS BUILT DRAWINGS

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS, MANUALS PACKED WITH EQUIPMENT AND COMPLETE PARTS BREAKDOWN WITH PART NUMBERS AND DIAGRAMS. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

CONTRACTOR SHALL MAINTAIN, ON—SITE, A FIELD MARK—UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK—UPS ARE TO BE PROVIDED AS AS—BUILT DRAWINGS FOR COMPARISONS.

BASES, HANGERS AND SUPPORTS

THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR, ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS. WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE HANGERS TO BE USED.

PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

ALL PIPING PASSING THROUGH WALLS AND FLOORS SHALL BE SLEEVED. THE SLEEVES SHALL HAVE AN INSIDE DIAMETER 1" LARGER THAN THE PIPE AND INSULATION, IF INSULATED. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.

PIPE SEALS AND FIRE-STOPS

SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

FOR INTERIOR PARTITIONS, WALLS AND FLOORS, SLEEVES SIZED TO ALLOW INSULATION TO PASS THROUGH CONTINUOUS WITH A MAXIMUM 1" ANNULAR SPACE BETWEEN THE INSULATION AND SLEEVE. SLEEVES TO BE CUT SMOOTH AND INSTALLED FLUSH WITH FINISHED WALLS AND 2" ABOVE FINISHED FLOORS. FILL THE ANNULAR SPACE WITH UL SEALING MATERIAL.

EQUIPMENT ACCESSIBILITY

LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITION WITH ADEQUATE CLEARANCES TO PROVIDE SERVICE OR REPAIR.

ACCESS DOORS OR PANELS IN WALLS, CEILINGS OR FLOORS SHALL BE FIELD COORDINATED AND INSTALLED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT OR DEVICES.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER

THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

OPERATING INSTRUCTIONS

UPON THE COMPLETION OF ALL WORK, TESTING AND ADJUSTING THE CONTRACTOR SHALL FURNISH PERSONNEL TO INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE EQUIPMENT AND SYSTEMS FURNISHED.

GUARANTEES

IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

PLUMBING PIPING INSULATION

PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS—CORNING OR CERTAIN—TEED.

INSULATION TO HAVE A "K" VALUE OF 0.24 AT 75°F, FLAME SPREAD/SMOKE OF 25/50, MAX. 850°F RATING, VAPOR BARRIER WHITE KRAFT PAPER WITH GLASS FIBER YARN BONDED TO ALUMINIZED FILM.

AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON.

BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND

INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND OTHER PIPE PENETRATIONS.

PLUMBING PIPING

APPROVED.

PIPING MATERIAL SHALL BE AS FOLLOWS:

WATER PIPING — COPPER, TYPE L, ASTM B88, SOLDER OR PRESS CONNECTIONS.

BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150—400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO OR APOLLO.

NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT.

CONCEALED PIPING AND ACCESSORIES SHALL BE ARRANGED TO USE THE MINIMUM

AMOUNT OF ACCESS DOORS AND PANELS.

PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT.

PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR

RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT. HANGERS AND SUPPORTS SHALL BE AS FOLLOWS:

COPPER PIPING

1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING 1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

WATER PIPING IS TO BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING AND DISINFECTING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

PLUMBING PIPING SPECIALTIES

CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION, BELLOWS TYPE, PRECHARGED. AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

PLUMBING EQUIPMENT AND FIXTURES

ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS SPECIFIED. APPROVAL CERTIFICATION BY CONNECTICUT IS REQUIRED.

FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION, MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM. VERIFY THAT ELECTRICAL POWER HAS PROPER CHARACTERISTICS.

ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF CERTIFICATION.

UPON COMPLETION OF INSTALLATION OF PLUMBING EQUIPMENT, TEST TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND CODES. FOR ALL EQUIPMENT, REPAIR OR REPLACE ANY MALFUNCTIONING EQUIPMENT OR FIXTURES AND RETEST.

ADJUST WATER PRESSURES THROUGH VALVES OR STOPS TO OBTAIN PROPER FLOW RATES AND PRESSURES REQUIRED.

UPON COMPLETION OF INSTALLATION OF EQUIPMENT, THOROUGHLY CLEAN ALL EXPOSED SURFACES, TRIM AND PIPING, FLUSH STRAINERS AND VERIFY FINAL OPERATION

PROVIDE ALL WARRANTIES AND GUARANTEES TO THE OWNER WITH ALL NAMES, ESTABLISHED DATES, AND ANY ADDITIONAL INFORMATION REQUIRED FOR ENFORCEMENT.

NATURAL GAS PIPING SYSTEM

ASTM A53.

UNLESS OTHERWISE NOTED ON THE PLANS, GAS PIPING SHALL BE AS FOLLOWS:

GAS PIPING TO BE SCHEDULE 40 BLACK STEEL WITH MALLEABLE IRON FITTINGS,

PIPE THREADS TO BE TAPERED AND PIPING SHALL SLOPE TOWARDS EQUIPMENT WITH DRIPS AT LOW POINTS AND EQUIPMENT. ASME B1.20.1

ALL PIPING SHALL BE TESTED IN COMPLIANCE WITH THE NEW YORK STATE GAS CODE AND NFPA 54 WITH ALL DOCUMENTATION OF TESTS SIGNED BY CONTRACTOR. TEST WITH COMPRESSED AIR OR OTHER INERT GAS.

SLOPE PIPING UPWARDS AT A MINIMUM OF 1/4" IN 15'-0" HORIZONTAL PIPE RUN.

HANGERS AND SUPPORT SPACING SHALL BE AS FOLLOWS:

GAS CONNECTORS TO EQUIPMENT SHALL BE MADE WITH CCST OR OTHER CSA CERTIFIED/UL LISTED FLEXIBLE CONNECTORS.

ALL PIPING UP TO 2" SHALL BE THREADED, 2-1/2" AND LARGER SHALL BE

ALL PIPE SIZES AT MAXIMUM 6'-0" SPACING

VALVING SHALL BE BALL VALVES (BRONZE BODY, BRASS STEM PTFE SEAT) FOR PIPING UP TO 2" AND IRON BODY GAS COCKS (BRASS PLUG AND WASHER) FOR PIPING 2-1/2" AND LARGER. CSA CERTIFIED/UL LISTED.

ALL NEW GAS PIPING SHALL BE PAINTED WITH PRIMER AND TWO COATS YELLOW ENAMEL WITH PIPE LABELS SPACED AT MAXIMUM 6'-0" INTERVALS. LABELS TO INDICATE NATURAL GAS AND GAS PRESSURE.



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CONSULTANTS

SEAL

SUBMISSION HISTORY

05/03/17 100% CD

JOB INFO

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd. Meriden, CT 06450

DWG DATA

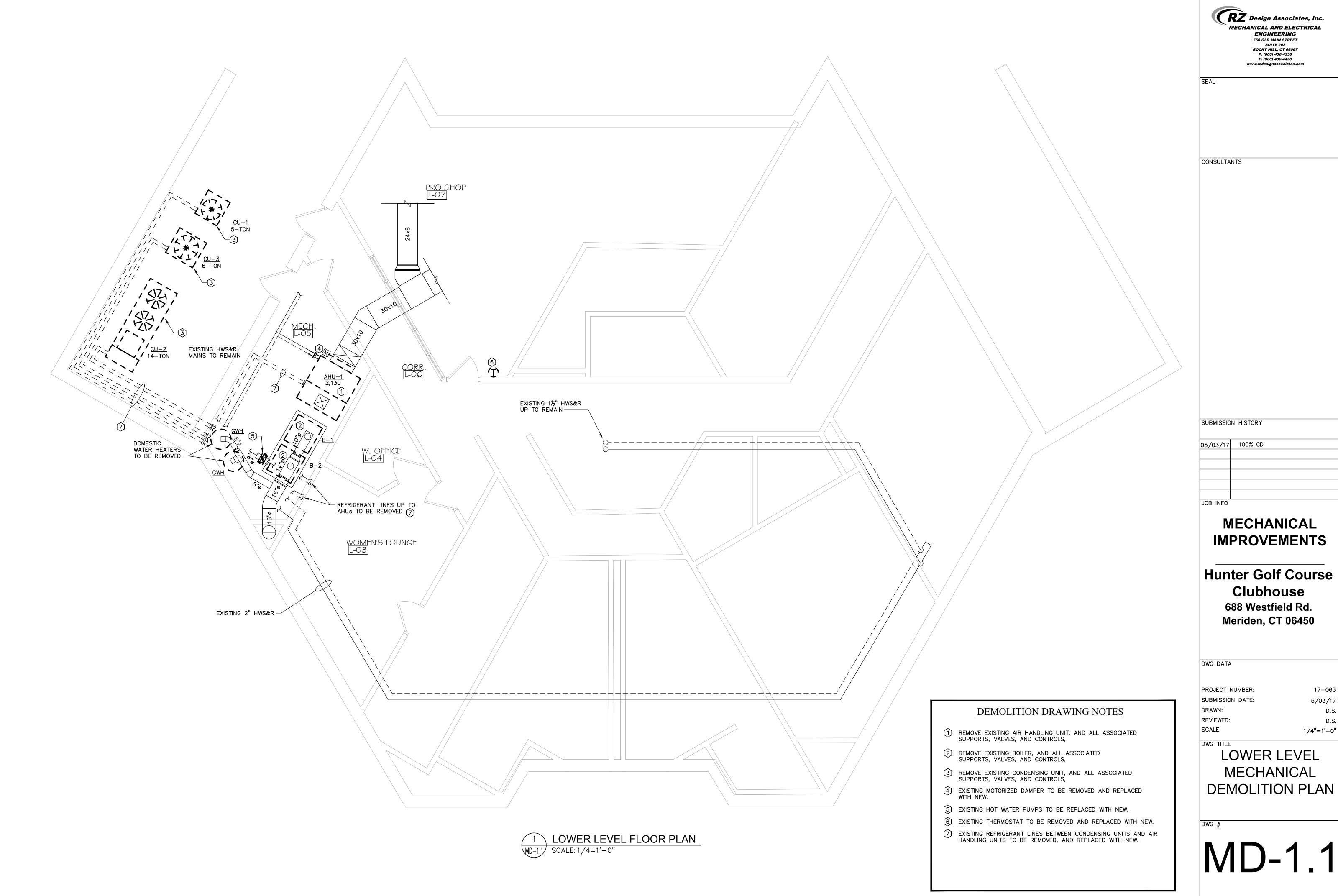
PROJECT NUMBER: 17-063
SUBMISSION DATE: 5/03/17
DRAWN: D.S.
REVIEWED: D.S.
SCALE: NONE

DWG TITLE

PLUMBING SPECIFICATIONS

DWG #

M-0.3



RZ Design Associates, Inc. MECHANICAL AND ELECTRICAL

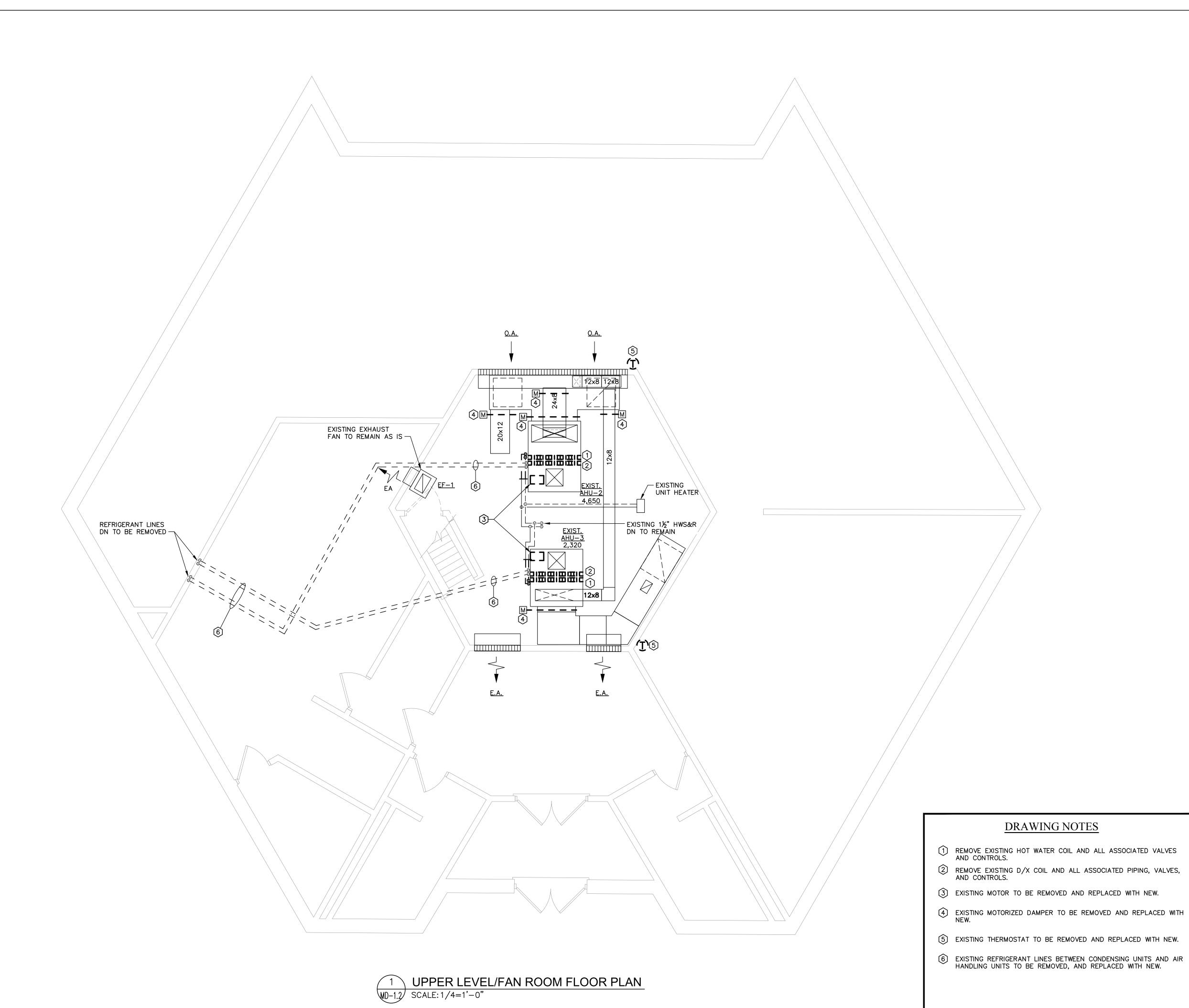
IMPROVEMENTS

Clubhouse 688 Westfield Rd.

17-063 5/03/17 1/4"=1'-0"

LOWER LEVEL MECHANICAL **DEMOLITION PLAN**

MD-1.1



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SEAL

CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd. Meriden, CT 06450

DWG DATA

PROJECT NUMBER: 17-063

SUBMISSION DATE: 5/03/17

DRAWN: XXX

REVIEWED: XXX

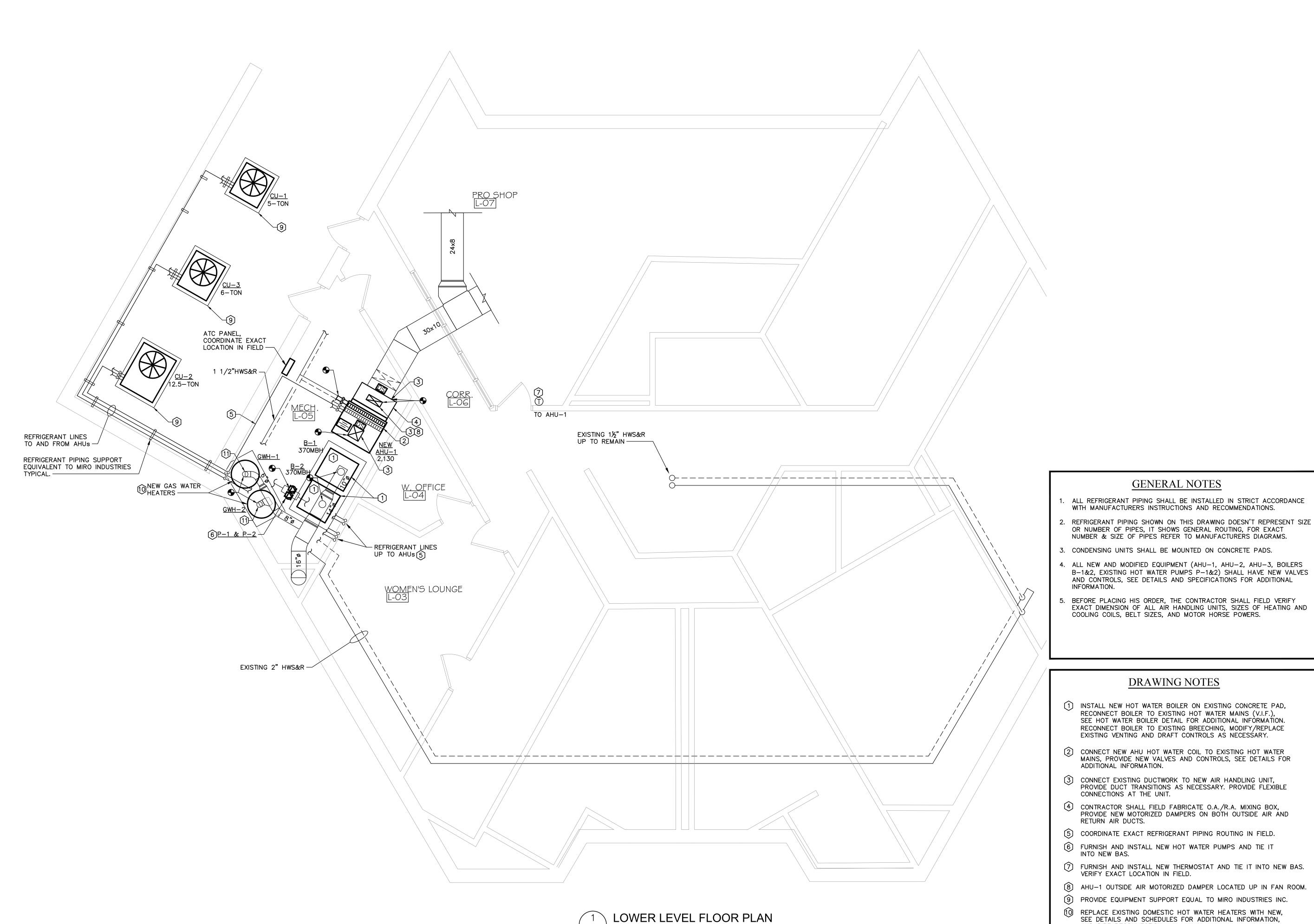
SCALE: 1/4"=1'-0"

G TITLE

UPPER LEVEL/
FAN ROOM
MECHANICAL
DEMOLITION PLAN

DWG #

MD-1.2



M-1.1 SCALE: 1/4=1'-0"



CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

JOB INFO

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse

688 Westfield Rd. Meriden, CT 06450

DWG DATA

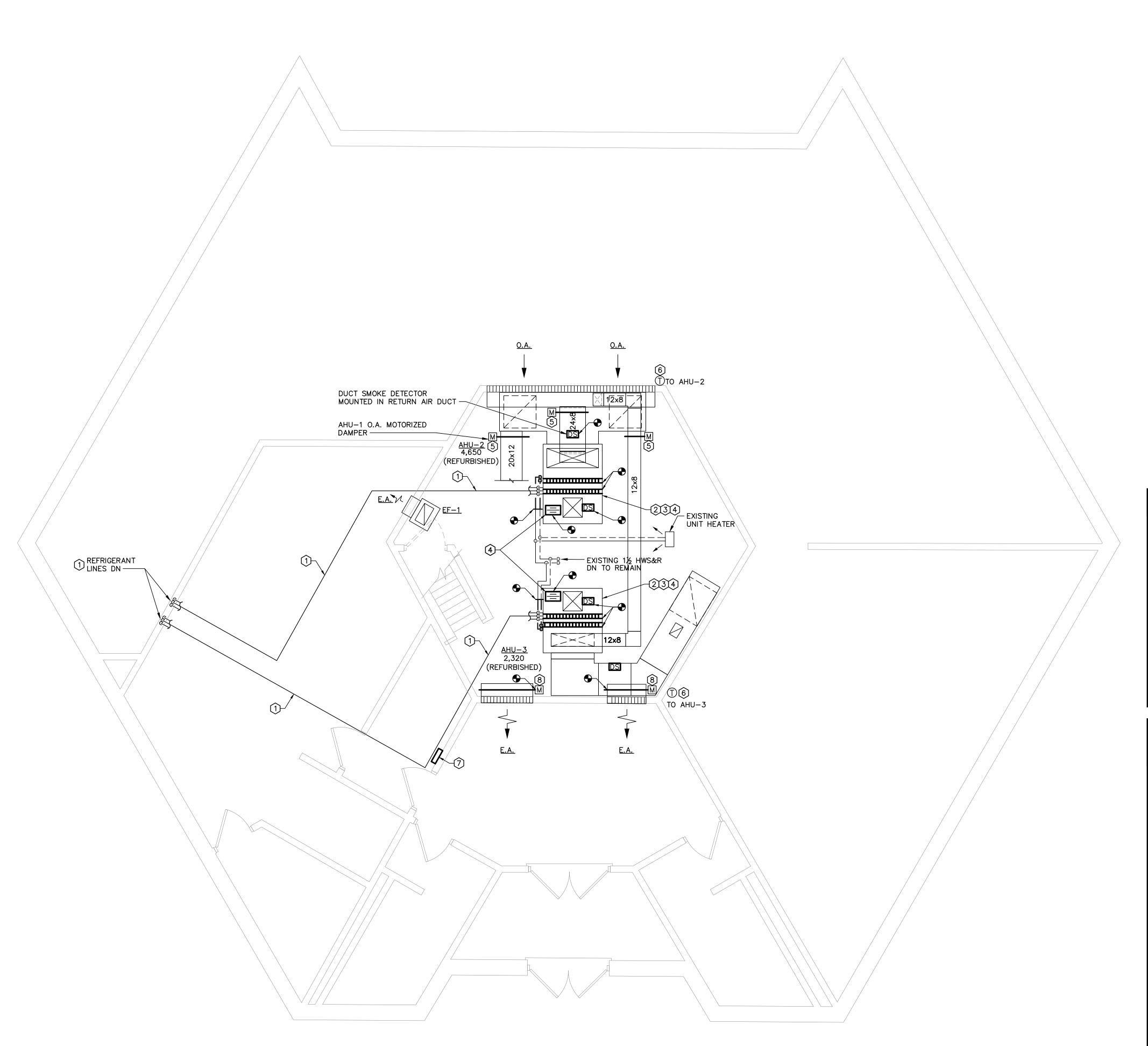
PROJECT NUMBER: 17-063 SUBMISSION DATE: 5/03/17 DRAWN: REVIEWED: SCALE: 1/4"=1'-0"

LOWER LEVEL MECHANICAL **NEW WORK PLAN**

DRAWING NOTES

GENERAL NOTES

- 1 INSTALL NEW HOT WATER BOILER ON EXISTING CONCRETE PAD, RECONNECT BOILER TO EXISTING HOT WATER MAINS (V.I.F.), SEE HOT WATER BOILER DETAIL FOR ADDITIONAL INFORMATION. RECONNECT BOILER TO EXISTING BREECHING, MODIFY/REPLACE EXISTING VENTING AND DRAFT CONTROLS AS NECESSARY.
- (2) CONNECT NEW AHU HOT WATER COIL TO EXISTING HOT WATER MAINS, PROVIDE NEW VALVES AND CONTROLS, SEE DETAILS FOR ADDITIONAL INFORMATION.
- (3) CONNECT EXISTING DUCTWORK TO NEW AIR HANDLING UNIT, PROVIDE DUCT TRANSITIONS AS NECESSARY. PROVIDE FLEXIBLE CONNECTIONS AT THE UNIT.
- 4 CONTRACTOR SHALL FIELD FABRICATE O.A./R.A. MIXING BOX, PROVIDE NEW MOTORIZED DAMPERS ON BOTH OUTSIDE AIR AND RETURN AIR DUCTS.
- (5) COORDINATE EXACT REFRIGERANT PIPING ROUTING IN FIELD.
- 6 FURNISH AND INSTALL NEW HOT WATER PUMPS AND TIE IT INTO NEW BAS.
- 7 FURNISH AND INSTALL NEW THERMOSTAT AND TIE IT INTO NEW BAS. VERIFY EXACT LOCATION IN FIELD.
- (8) AHU-1 OUTSIDE AIR MOTORIZED DAMPER LOCATED UP IN FAN ROOM.
- 9 PROVIDE EQUIPMENT SUPPORT EQUAL TO MIRO INDUSTRIES INC.
- REPLACE EXISTING DOMESTIC HOT WATER HEATERS WITH NEW, SEE DETAILS AND SCHEDULES FOR ADDITIONAL INFORMATION, AND PIPE RECONNECTION..
- (1) CONNECT NEW HOT WATER HEATER VENTING TO EXISTING BREECHING, MODIFY EXISTING BREECHING AS NECESSARY.



UPPER LEVEL/FAN ROOM FLOOR PLAN

M-1.2 SCALE: 1/4=1'-0"



CONSULTANTS

GENERAL NOTES

- 1. ALL REFRIGERANT PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.
- REFRIGERATION PIPING SHOWN ON THIS DRAWING DOESN'T REPRESENT SIZE OR NUMBER OF PIPES, IT SHOWS GENERAL ROUTING, FOR EXACT NUMBER & SIZE OF PIPES REFER TO MANUFACTURERS DIAGRAMS.
- 3. CONDENSING UNITS SHALL BE MOUNTED ON CONCRETE PADS.
- 4. ALL NEW AND MODIFIED EQUIPMENT (AHU-1, AHU-2, AHU-3, BOILERS B-1&2, EXISTING HOT WATER PUMPS P-1&2) SHALL HAVE NEW VALVES AND CONTROLS, SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL
- 5. BEFORE PLACING HIS ORDER, THE CONTRACTOR SHALL FIELD VERIFY EXACT DIMENSION OF ALL AIR HANDLING UNITS, SIZES OF HEATING AND COOLING COILS, BELT SIZES, AND MOTOR HORSE POWERS.

DRAWING NOTES

- (1) COORDINATE EXACT REFRIGERANT PIPING ROUTING IN FIELD.
- 2 REPLACE EXISTING HOT WATER COIL WITH NEW, PROVIDE TIGHT SEAL AROUND THE COIL, MAKE SURE THERE ARE NO LEAKS. PROVIDE NEW VALVES AND CONTROLS, SEE HOT WATER DETAIL FOR ADDITIONAL INFORMATION.
- REPLACE EXISTING D/X COIL WITH NEW, PROVIDE TIGHT SEAL AROUND THE COIL, MAKE SURE THERE ARE NO LEAKS. PROVIDE NEW VALVES AND CONTROLS, INSTALL IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.
- 4 THE CONTRACTOR SHALL REFURBISH EXISTING AIR HANDLING UNIT AND BRING IT UP TO PERFECT WORKING CONDITION, CONTRACTOR
 - 1. EXAMINE EXISTING AHU INTERNAL INSULATION, AND REPAIR OR REPLACE IF NECESSARY (V.I.F.).

 2. EXAMINE EXISTING AHU FOR LEAKS, REPLACE SEALS AS
 - NECESSARY.
 - 3. WASH AND VACUUM INTERIOR OF THE UNIT.4. WASH AND VACUUM CONDENSATE DRAIN PAN, REPLACE IF NECESSARY.
 - 5. REPLACE FAN BELTS WITH NEW. 6. REPLACE AHU FILTERS WITH NEW.
- 7. REPLACE EXISTING MOTOR WITH NEW PREMIUM EFFICIENCY, VERIFY HORSE POWER IN FIELD.
- 8. REPLACE EXISTING MOTORIZED DAMPERS WITH NEW.
- REPLACE ALL FLEXIBLE DUCT CONNECTIONS.
 EXAMINE EXISTING SPRING SUPPORTS REPLACE IF NECESSARY.
- (5) FURNISH AND INSTALL NEW MOTORIZED DAMPER AND TIE IT INTO NEW BAS.
- 6 FURNISH AND INSTALL NEW THERMOSTAT AND TIE INTO NEW BAS. VERIFY EXACT LOCATION IN FIELD.
- NEW ATC HEAD END CONTROLLER. COORDINATE EXACT LOCATION WITH OWNER.
- 8 FURNISH AND INSTALL NEW MOTORIZED DAMPER, AND INTERLOCK IT WITH EXISTING EXHAUST FAN.

SUBMISSION HISTORY

05/03/17	100% CD	

JOB INFO

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd. Meriden, CT 06450

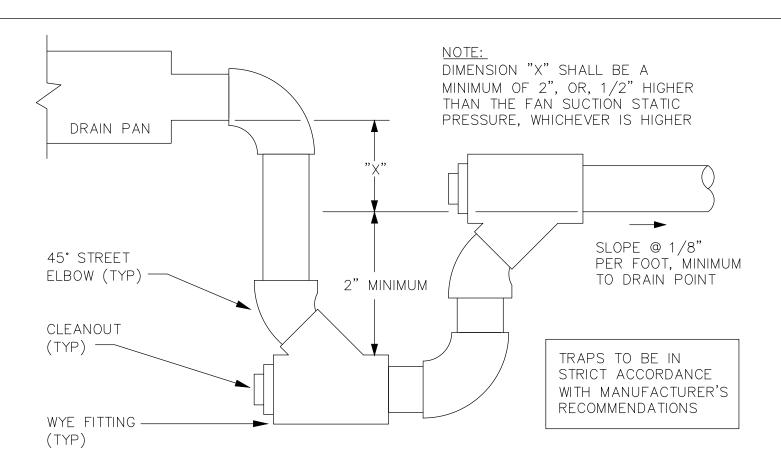
DWG DATA

PROJECT NUMBER: 17-063 SUBMISSION DATE: 5/03/17 DRAWN: REVIEWED: SCALE: 1/4"=1'-0"

UPPER LEVEL/ FAN ROOM MECHANICAL **NEW WORK PLAN**

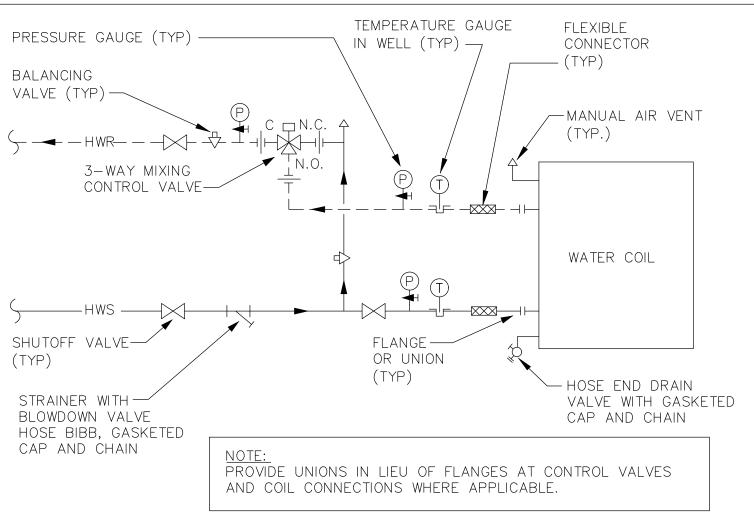
DWG #

M-1.2



COOLING COIL CONDENSATE TRAP **DETAIL FOR DRAW-THRU COILS**

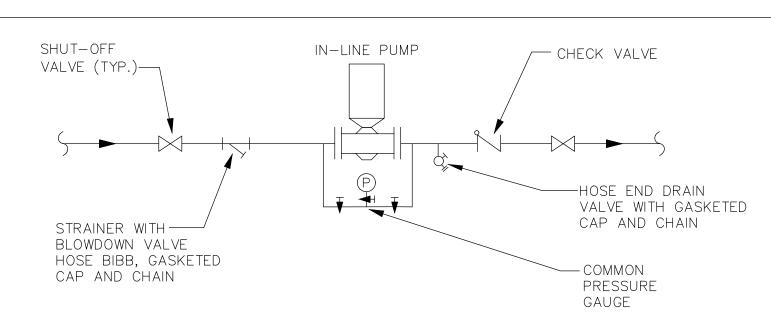
NOT TO SCALE



3-WAY WATER COIL PIPING DETAIL

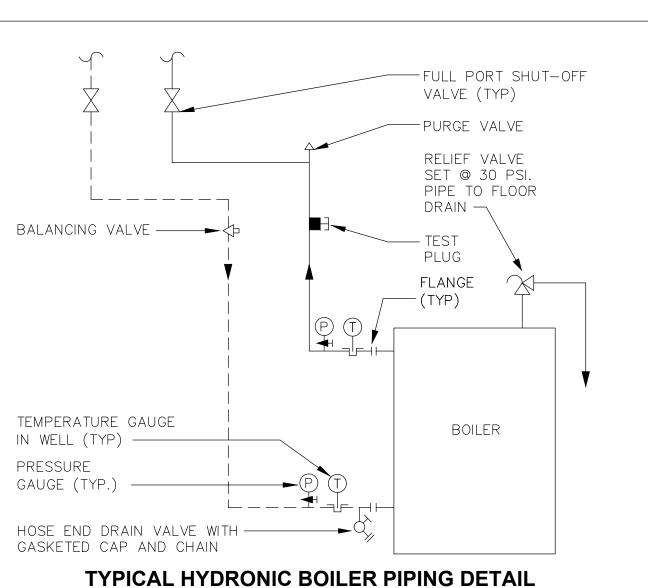
NOT TO SCALE

NOT TO SCALE



IN-LINE PUMP DETAIL

NOT TO SCALE



AIR COOLED CONDENSING UNIT SCHEDULE AMBIENT | CAPACITY | REFRIGERANT NUMBER OF STEPS TAG MFR MODEL REFRIGERANT TEMP (°F) (TONS) TYPE UNLOADING CIRCUITS 4TTA4060A3000A CU-1TRANE 95 410A TRANE TTA150H3 95 12 1/2 CU-2410A TTA073G3 CU-3TRANE 410A

		1 17 (0 7 0 0				•	
TAG	MCA	MCB	VOLTS/ PHASE	SERVES	WEIGHT	F	REMARKS
CU-1	21	35	208/3	AHU-1	211		
CU-2	56	70	208/3	AHU-2	514		
CU-3	30.5	50	208/3	AHU-3	345		

GENERAL NOTES/ACCESSORIES

- 1. ACCEPTABLE MANUFACTURERS BY: JCI & DAIKIN
- 2. SIZE AND QUANTITY OF REFRIGERANT PIPING PER MANUFACTURERS RECOMMENDATIONS.
- 3. INSTALL REFRIGERANT PIPING IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.
- 4. 5-YEAR WARRANY 4.1. 5 YEAR PARTS
- 4.2. 1 YEAR LABOR

- 5. TTA CONTROLS 5.1. 24V CONTROL CIRCUIT
- 5.2. CONTROL TRANSFORMER
- 5.3. ANTI-SHORT CYCLE TIMER 6. HOT GAS BY-PASS
- 7. LOW AMBIENT CONTROLS
- 8. COMPRESSORS-R410A MICROCHANNEL

CAS	T IRON	BOILE	R SCHED	JLE (H	TOF	WATE	R)

	TAG MFR MODEL		I-B-R MBH		NATURAL GAS		DESIGN	RELIEF VALVE	 EWT/LWT	FLUE SIZE
TAG			GROSS	NET	INPUT MBH	MINIMUM PRESSURE	PRESSURE (PSIG)	SETTING (PSIG)	(°F)	(IN)
B-1	BURNHAM	809HE	370	322	460	5	50	30	150/180	10"
B-2	BURNHAM	809HE	370	322	460	5	50	30	150/180	10"

TAG	VOLTS/ PHASE	WEIGHT (LBS)	UNIT SIZE WxDxH	REMARKS
B-1	120/1	970	35"×33.5"×32.5"	
B-2	120/1	970	35"×33.5"×32.5"	

GENERAL NOTES/ACCESSORIES

- ACCEPTABLE MANUFACTURERS BY: WEIL-MCLAIN And VIESSMANN MANUFACTURING CO.
- 2. LOW WATER CUT-OFF 3. FLAME ROLL-OUT SWITCH
- 4. HIGH LIMIT CONTROL
- 5. ELECTRONIC IGNITION

TAG

- 6. 50VA TRANSFORMER AND JUNCTION BOX 7. ALUMINIZED STEEL BURNERS
- 8. PRESSURE TEMPERATURE GAUGE

GPM

- 9. DELUXE JACKET WITH 3" INSULATION

MFR

	PUM	P SCHEDULE	=
TYPE		SERIES/SIZE	

TYPE

P-1	TACO, IN	C.	IN-LINE	00E/VR30	65	38	HOT WATER SYSTEM
P-2	TACO, IN	C.	IN-LINE	00E/VR30	65	38	HOT WATER SYSTEM
TAG	RPM	MOTOR HP	ECM MOTOR	VOLTS/ PHASE	OPE	ERATION	REMARKS
P-1	3450	2.175	YES	208/1	RUN/S	STAND-BY	
P-2	3450	2.175	YES	208/1	RUN/S	STAND-BY	

MODEL NUMBER

GENERAL NOTES/ACCESSORIES: . ACCEPTABLE MANUFACTURERS BY: B&G, ARMSTRONG PUMPS INC., GRUNDFOS.

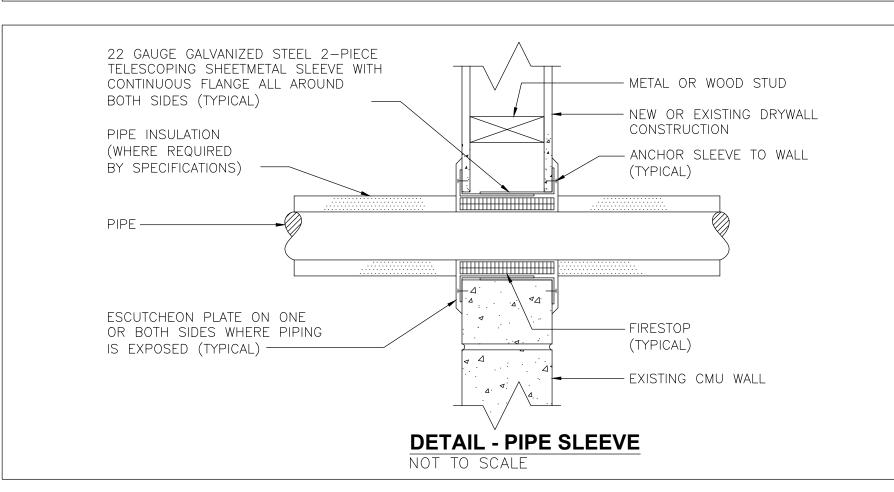
- 2. OPERATION MODES 2.1. CONSTANT PRESSURE CONTROL
- 2.2. VARIABLE DIFFERENTIAL PRESSURE CONTROL 2.3. PROPORTIONAL PRESSURE CONTROL
- 2.4. CONSTANT CURVE DUTY 2.5. RPM REGULATION

- 2.6. POWER LIMITATION (AMPS OR WATTS) 2.7. THE SENSORLESS PUMP CONTROL DOESN'T NEED OR ACCEPT A REMOTE REFERENCE SIGNAL TO OPERATE IN ANY OF THE MODES>
- 3. PROVIDE MAXIMUM IMPELLER DIAMETER FOR NON-OVERLOADING PERFORMANCE FOR SPECIFIED HORSEPOWER. TRIM AND BALANCE IMPELLER AFTER SYSTEM HAS BEEN INSTALLED AND OPERATED.

FT OF HEAD

(TDH)

SERVES



AIR HANDLING UNIT SCHEDULE TAG TYPE AREA SERVED | WEIGHT MFR MODEL CONFIGURATION VERTICAL/TOP FRONT W/HOUSED FAN AHU-1TRANE UCCAD06A0 INDOOR 420 LOWER LEVEL | 710 |

TAG	CFM	ESP (IN WG)	TYPE	SIZE	RPM	HP	ВНР	VFD
AHU-1	2,130	0.75"	FC	_	1137	1 1/2	1.051	NO

SUPPLY FAN

HOT WATER COIL MAXIMUM EWT LWT MAXIMUM VELOCITY TAG GPM RUNOUT MBH ROWS (°F) (°F) (°F) (°F) WPD (FT) SIZE (IN) (FPM) AHU-1 54.5 95 94 180 150 500

					X COIL					
TAG	EAT DB/WB (°F)	LAT DB/WB (°F)	TOTAL MBH	SENSIBLE MBH	REFRIG TYPE	SUCTION TEMP (°F)	NUMBER OF CIRCUITS	MAXIMUM VELOCITY (FPM)	ROWS	DRAIN PIPE SIZE (IN)
AHU-1	78.2/65.4	57.6/56.4	59.21	48.08	R410A		1	500	4	3/4"
	ELECTRICAL									

TAG	MCA	МСВ	VOLTS/ PHASE	REMARKS
AHU-1	9.31	15	208/3	

GENERAL NOTES/ACCESSORIES

- 1. ACCEPTABLE MANUFACTURERS BY: JCI, & DAIKIN 2. HEATING CAPACITIES BASED UPON DESIGN HEATING CFM AND MINIMUM OUTDOOR AIR CFM, O°F OA (WINTER),
- 70°F/30% RH RA 3. COOLING CAPACITIES BASED UPON DESIGN COOLING CFM AND MINIMUM OUTDOOR AIR CFM, 91°F DB / 73°F WB
- O.A., 75°F DB, 50% RH RA 4. AHU SHALL BE PREWIRED FOR SINGLE POINT POWER
- CONNECTION. 5. ALTERNATE MANUFACTURER OF EQUAL PERFORMANCE AND CAPACITY MUST HAVE SAME PHYSICAL DIMENSIONS, OTHERWISE BASE MANUFACTURER MUST BE SUPPLIED. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING DIMENSIONS IN FIELD. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STRUCTURAL AND MECHANICAL MODIFICATIONS AT NO COST TO OWNER.

AHU MODULES:

- 1) FIELD FABRICATED MIXING BOX 2 FLAT FILTER
- (3) HOT WATER HEATING COIL 4 D/X COOLING COIL

(5) SUPPLY FAN SECTION

- 6. PROVIDE DUCT SMOKE DETECTORS IN BOTH SUPPLY AND RETURN DUCTS
- 7. PROVIDE MERV-13 FILTERS.
- 8. AHU-1 UNIT SIZE 57"Wx42"Dx62"H 9. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN FIELD, HE ALSO NEEDS TO MEASURE EXISTING UNIT AND ORDER
- NEW ONE WITH SAME DIMENSIONS. 8. PROVIDE DUCT TRANSITION AT THE UNIT AS NECESSARY
- 9. PROVIDE SPRING NEW ISOLATORS 10. PROVIDED FUSED DISCONNECT SWITCH WITH FUSES PER MANUFACTURER RECOMMENDATION.

EXISTING AIR HANDLING UNIT REPLACEMENT COIL SCHEDULE MINIMUM TAG MFR CFM SERVES ОА 4,650 AHU-2TRANE 850 AHU-22,320 330 TRANE AHU-3AHU-3

				Н	OT WATER C	OIL				
TAG	EAT (°F)	LAT (°F)	МВН	EWT (°F)	LWT (°F)	GPM	PIPE RUNOUT SIZE (IN)	MAXIMUM VELOCITY (FPM)	MAXIMUM WPD (FT)	ROWS
AHU-2	58	94.67	185	180	150	12	1 1/4"	500	2	1
AHU-3	58	95.38	94	180	150	6.2	1"	500	1	1

	DX COIL									
TAG	EAT DB/WB (°F)	LAT DB/WB (°F)	TOTAL MBH	SENSIBLE MBH	REFRIG TYPE	NUMBER OF CIRCUITS	MAXIMUM VELOCITY (FPM)	ROWS	DRAIN PIPE SIZE (IN)	
AHU-2	77.9/65.2	54.0/53.3	166	122	R410A	2	500	4	3/4"	
AHU-3	77.3/64.7	55.2/54.6	708	56	R410A	1	500	4	3/4"	

GENERAL NOTES/ACCESSORIES:

70°F/30% RH RA

ANY AIR LEAKAGE.

- 1. ACCEPTABLE MANUFACTURERS BY: JCI, & DAIKIN 2. HEATING CAPACITIES BASED UPON DESIGN HEATING CFM AND MINIMUM OUTDOOR AIR CFM, O°F OA (WINTER),
- 3. COOLING CAPACITIES BASED UPON DESIGN COOLING CFM AND MINIMUM OUTDOOR AIR CFM, 91°F DB / 73°F WB O.A., 75°F DB, 50% RH RA
- 4. CONTRACTOR SHALL MEASURE EXISTING COILS IN FIELD AND MAKE SURE THEY FIT INTO EXISTING UNITS, BLANK OFF EMPTY SPACES AROUND THE UNITS AS NECESSARY. 5. PROVIDE TIGHT SEAL AROUND ALL COILS TO PREVENT
- 6. INSTALL REFRIGERANT PIPING, VALVES, AND CONTROLS IN STRICT ACCORDANCE WITH MANUFACTURERS
- INSTRUCTIONS AND RECOMMENDATIONS.
 7. PROVIDE RETURN DUCT MOUNTED HUMIDISTAT, AND CO2 SENSOR FOR EACH UNIT.
- 8. PROVIDE NEW DUCT SMOKE DETECTORS IN BOTH SUPPLY AND RETURN DUCTS



SEAL

CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd. Meriden, CT 06450

DWG DATA

JOB INFO

PROJECT NUMBER: 17-063 SUBMISSION DATE: 5/03/17 DRAWN: D.S. REVIEWED: D.S. SCALE: NONE

DWG TITLE

MECHANICAL DETAILS AND SCHEDULES

M-2.1

PLUMBING GENERAL NOTES

- 1. THESE GENERAL NOTES ARE APPLICABLE TO ALL PLUMBING DRAWINGS.
- 2. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK, SEE DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE LOCATIONS AND MOUNTING HEIGHTS. DO NOT SCALE DRAWINGS.
- 4. PLUMBING CONTRACTOR MUST REVIEW DRAWINGS OF THE OTHER TRADES AS PART OF THIS CONTRACT FOR ADDITIONAL WORK REQUIRED AND OR COORDINATION OF HIS WORK FOR OPERATIONS OR CONNECTIONS TO OTHER SYSTEMS.
- 5. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES FOR THE ROUTING AND INSTALLATION OF ALL SYSTEMS TO AVOID CONFLICTS BETWEEN PLUMBING AND OTHER TRADES. ANY WORK COMPLETED WITHOUT COORDINATION OF TRADES SHALL BE REMOVED AND REDONE AT NO COST TO THE OWNER.
- 6. ALL OPENINGS IN EXTERIOR WALLS FOR MEP SYSTEMS SHALL BE SEALED WEATHER—TIGHT BY THE WATERPROOFING, DAMPPROOFING, CAULKING AND SEALANT FILED SUB—BIDDER. GENERAL CONTRACTOR TO PROVIDE FIRE RATED SEALANTS AS REQUIRED AT FIRE RATED WALL, FLOOR, CEILING AND ROOF ASSEMBLIES.
- 7. PLUMBING CONTRACTOR SHALL PROVIDE ALL SUPPLEMENTAL FRAMING BETWEEN PRIMARY FRAMING TO SUPPORT PLUMBING SYSTEM. SYSTEM SHALL NOT BE SUPPORTED FROM ROOF DECK.
- 8. THE PLUMBING CONTRACTOR SHALL RUN TIGHT TO STRUCTURE, UNLESS OTHERWISE NOTED, TO AVOID CONFLICTS.

PLUMBING VALVE / FITTING SYMBOL LEGEND								
•	CONNECT TO EXISTING							
	CIRCULATOR PUMP							
	PIPE CAP							
ψ	UNION							
ф	VALVE, BALL							
N	VALVE, CHECK							
▼	VALVE, GAS (BALL OR PLUG)							

PLUMBING PIPING SYMBOL LEGEND				
}— G —→	NATURAL GAS PIPING			
├	VENT PIPING			
	WATER PIPING - COLD			
\	WATER PIPING - HOT			
\	WATER PIPING - HOT RECIRCULATION			
	PIPING - EXISITNG			

	GAS FIRED WATER HEATER SCHEDULE													
TAG	MFR	MODEL	LOCATION	FUEL TYPE	MBH INPUT	STORAGE CAP. (GAL.)	RECOVERY IN GPH @ 100°F	THERMAL EFFICIENCY %	STANDBY LOSSES BTU/HR	VENT SIZE	GASS CONN.	INLET/OUTLET WATER CONN.	VOLTS/φ	REMARKS
GWH-1	A.O. SMITH	BT-80	MECH ROOM	NATURAL GAS	76 @ 5" W.C.	80	73	80	N/A	4"	3/4"	1"	120/1	CONTRACTOR TO PROVIDE START-UP WITH FULL WRITTEN REPORT. WATER HEATER TEMPERATURE SET AT 140°F.
GWH-2	A.O. SMITH	BT-80	MECH ROOM	NATURAL GAS	76 @ 5" W.C.	80	73	80	N/A	4"	3/4"	1"	120/1	CONTRACTOR TO PROVIDE START-UP WITH FULL WRITTEN REPORT. WATER HEATER TEMPERATURE SET AT 140°F.

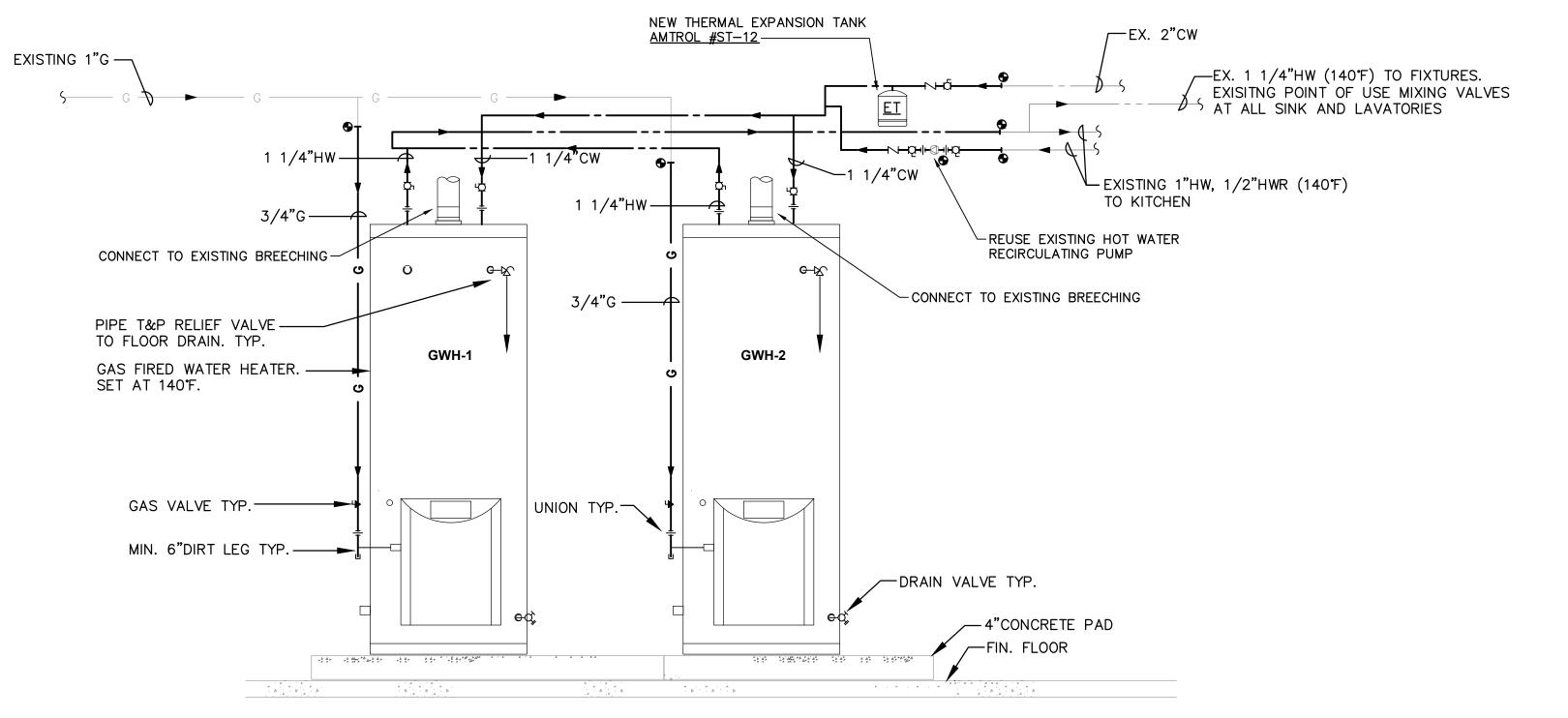
GENERAL NOTES:

1. THE WATER HEATER SHALL BE FACTORY ASSEMBLED, AND SHALL INCLUDE HOOKUPS FOR ELECTRICAL, GAS, VENTING AND PLUMBING. THE BURNER SHALL BE A HIGH EFFICIENCY TYPE. IGNITION SHALL BE BY AN ELECTRONIC PILOT SYSTEM WITH AUTOMATIC SAFETY CONTROLS FOR HIGH LIMIT, GAS PRESSURE REGULATOR. VENTING SHALL BE U.L. RATED FOR USE WITH CPVC. THE WATER HEATER SHALL BE CONSTRUCTED TO ASME CODE, CERTIFIED BY CSA, AND APPROVED BY NSF FOR DOMESTIC HOT WATER USE.

1. PROVIDE ASME RATED TANK, TO BE PROVIDED FOR GWH

- 2. PROVIDE ASME PRESSURE/TEMPERATURE RELIEF VALVE FOR THE WATER HEATER.
- 3. THE WATER HEATER SHALL COMPLY WITH THE ENERGY EFFICIENCY REQUIREMENTS FOR STANDBY LOSS AND THERMAL EFFICIENCY AS SPECIFIED IN THE LATEST EDITION OF ASHRAE 90.1 STANDARD.

	DOMESTIC EXPANSION TANK SCHEDULE							
TAG	MFR	MODEL	SYSTEM SERVED	GAL	ACCEPT FACTOR	AIR PRE- CHARGE (PSIG)	MAX PRESSURE (PSIG)	REMARKS
ET-1	AMTROL	ST-12	DOMESTIC WATER HEATING	4.4	3.2	50	150	
GENERAL NOTE	FS:					1		



DOMESTIC HOT WATER HEATER SCHEMATIC PIPING DETAIL NOT TO SCALE



SEAL

CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL IMPROVEMENTS

Hunter Golf Course
Clubhouse
688 Westfield Rd.
Meriden, CT 06450

DWG DATA

PROJECT NUMBER: 17-063
SUBMISSION DATE: 5/03/17
DRAWN: MK
REVIEWED: DS
SCALE: NOT TO SCALE

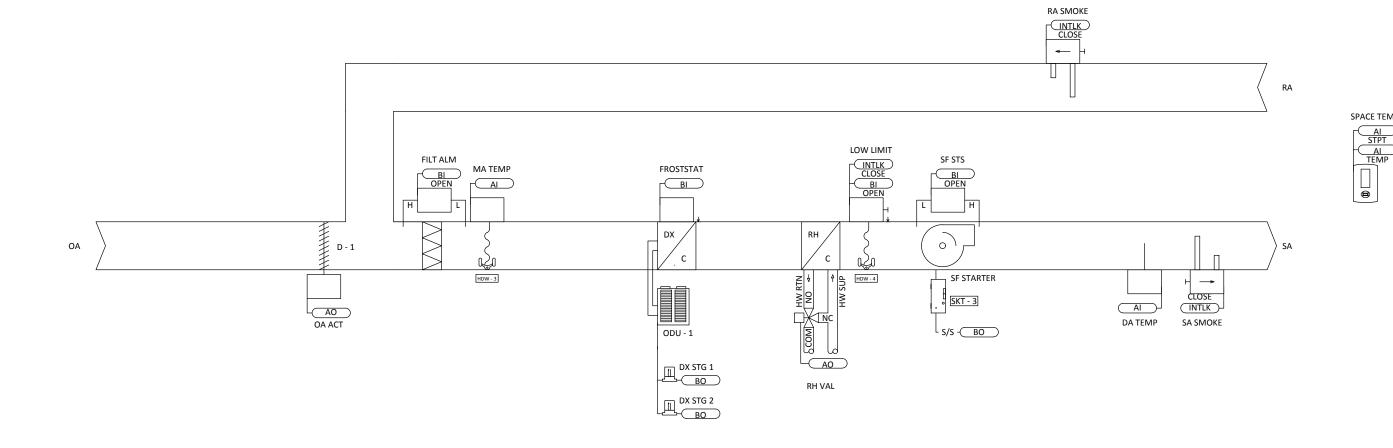
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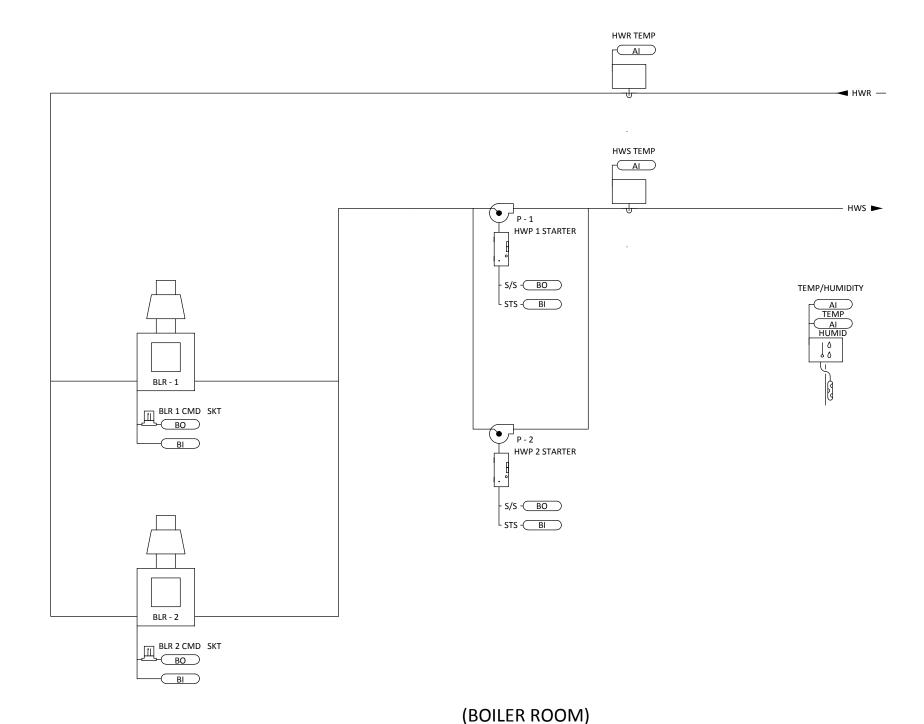
PLUMBING SCHEDULES AND DETAIL

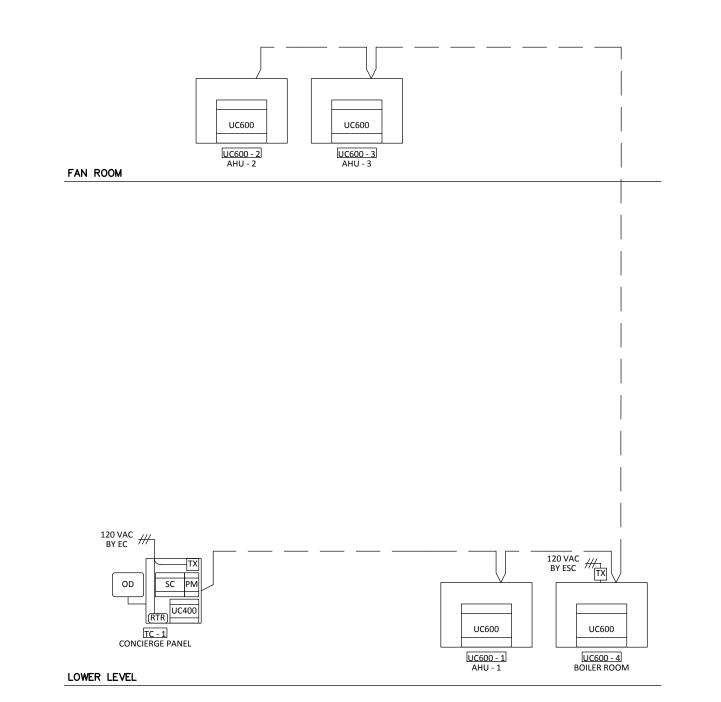
DWG #

M-2.2

AHU-1,2&3







Boiler Room Sequence of Operations

General Description: The hot water system consists of multiple boilers and associated pumps. The Building Automation System (BAS) controller shall provide stand-alone control or BAS workstation control of the supply heating water temperature setpoint (adj.) by controlling the boiler's enable/disable boiler signal and hot water tempering valve.

Heating System Enable/Disable: The heating system shall be enabled when the outside air temperature falls below 60.0 deg. F (adj.). When enabled, the BAS controller shall start the lead hot water distribution pump and enable the lead boiler. The boiler factory control shall operate the boiler to maintain its local supply setpoint. Heating shall be disabled when the outdoor air temperature is above 65.0 deg. F (adj.). When heating is disabled, the hot water pumps and boilers shall be commanded to OFF. The BAS shall be able to individually enable the hot water distribution pumps or the boilers.

Boiler Control: The boiler lead/lag sequence shall be based on a weekly schedule from the BAS, an operator shall be able to manually change the lead/lag sequence.

If the hot water distribution system supply temperature falls more than 25.0 deg. F (adj.) below setpoint for a period longer than 15 minutes (adj.), or if an active boiler signals a failure alarm, the BAS controller shall enable the lag boiler. In addition, the BAS controller shall send an alarm to the BAS workstation. When a boiler failure exists, lead/lag automation shall be disabled and the currently running boiler shall become the lead boiler. Once the problem is corrected, the operator shall be able to clear the alarm failure from the BAS controller or BAS workstation. This shall re-enable the lead/lag sequence.

Once the lead boiler is enabled, the add sequence of additional boilers shall be disabled for a period of 30 minutes

below the hot water setpoint for a period of 10 minutes (adj.) or more.

The last boiler enabled shall be disabled when the hot water temperature rises 5.0 deg. F (adj.) above the hot water setpoint for a period of 10 minutes (adj.) or more. Additional boilers shall be disabled following the same subtraction sequence if the hot water temperature remains 5.0 deg. F (adj.) above the hot water setpoint for a period of 10

(adj.). Additional boilers are added if the hot water distribution system supply temperature falls 5.0 deg. F (adj.)

Hot Water Reset: The hot water supply temperature setpoint shall be linearly reset from 120.0 deg. F (adj.) to 180.0 deg. F (adj.) as the outside air temperature falls from 60.0 deg. F (adj.) to 0.0 deg. F (adj.)

Hot Water Distribution Pump Start/Stop: The BAS controller shall start a hot water pump through a contact closure of the pump's motor starter enable contacts.

Hot Water Distribution Pump Status: The BAS controller shall detect hot water pump run status by a current

Hot Water Distribution Pump Lead/Lag: The hot water pump lead/lag sequence shall be based on a weekly schedule from the BAS, an operator shall be able to manually change the lead/lag sequence.

Hot Water Distribution Pump Failure: If the lead start/stop relay is enabled and the current switch status is off for more than 30 seconds (adj.), the BAS controller shall annunciate a hot water pump failure alarm to the BAS workstation and starts the lag pump. When a pump failure exists, lead/lag automation shall be disabled and the currently running pump becomes the lead pump. Once the problem has been corrected, the operator shall be able to clear the alarm failure from the BAS controller or BAS workstation. This action shall re-enable the lead/lag sequence.

Freeze Protection: When the outdoor air temperature falls below 35.0 deg. F (adj.), the hot water distribution pump shall operate continuously to provide hot water circulation to all associated hot water coils. If the hot water supply temperature falls below 130.0 deg. F (adj.) during unoccupied periods, the boiler sequence shall be enabled to safeguard against low water temperature and boiler condensation.

Air Handling Unit Sequence of Operations

Building Automation System Interface: The Building Automation System (BAS) shall send the controller Occupied Bypass, Morning Warm-up/Pre-Cool, Occupied/Unoccupied and Heat/Cool modes. If a BAS is not present, or communication is lost with the BAS the controller shall operate using default modes and setpoints.

Optimal Start: The BAS shall monitor the scheduled occupied time, occupied space setpoints and space

temperature to calculate when the optimal start occurs.

Morning Warm-Up Mode: During optimal start, if the space temperature is below the occupied heating setpoint a morning warm-up mode shall be activated. When morning warm-up is initiated the unit shall enable the heating and

morning warm-up mode shall be activated. When morning warm-up is initiated the unit shall enable the heating and supply fan. The outside air damper shall remain closed. When the space temperature reaches the occupied heating setpoint (adj.), the unit shall transition to the occupied mode.

Pre-Cool Mode: During optimal start, if the space temperature is above the occupied cooling setpoint, pre-cool mode shall be activated. When pre-cool is initiated the unit shall enable the fan and cooling. The outside air damper

shall remain closed. When the space temperature reaches occupied cooling setpoint (adj.), the unit shall transition to the occupied mode.

Optimal Stop: The BAS shall monitor the scheduled unoccupied time, occupied setpoints and space temperature to calculate when the optimal stop occurs. When the optimal stop mode is active the unit controller shall maintain the space temperature to the space temperature offset setpoint. Outside air damper shall remain enabled to provide

minimum ventilation.

Occupied Bypass: The BAS shall monitor the status of the "on" and "cancel" buttons of the space temperature sensor. When an occupied bypass request is received from a space sensor, the unit shall transition from its current occupancy mode to occupied bypass mode and the unit shall maintain the space temperature to the occupied setpoints (adj.).

Heat/Cool Mode: When the space temperature rises above the occupied cooling setpoint the mode shall transition to cooling. When the space temperature falls below the occupied heating setpoint the mode shall transition to heating. When the space temperature is above the occupied cooling setpoint or below the occupied heating setpoint the mode shall remain in its last state. If the space temperature sensor fails the mode shall remain in its last state and an alarm shall be annunciated at the BAS. If the local and communicated setpoints fail the controller shall disable the supply fan and an alarm shall be annunciated at the BAS.

Mixed Air Low Limit: The initial damper opening rate shall be limited to 2% per minute (adj.) until the damper has reached its minimum ventilation position. The outside air damper shall modulate to a position less than the minimum damper position if the mixed air temperature drops below 50.0 deg. F (adj.). If the mixed air temperature sensor fails an alarm shall be annunciated at the BAS and the outside air damper shall return to the minimum position.

Freeze Protection: A hardwired, low limit temperature switch shall be electrically interlocked with the motor starter. If the low limit temperature switch is tripped 38.0 deg. F (adj.), the outside air damper shall close, all valves shall open to 100% (adjust per climate), all stages of DX cooling shall be disabled and an alarm shall be annunciated at the BAS. A manual reset of the low limit temperature switch shall be required to restart the fan.

Smoke Detector Shutdown: The unit shall shut down in response to a signal from either smoke detector indicating the presence of smoke. The smoke detectors shall be interlocked to the unit through the dry contacts of the smoke detectors. A manual reset of the smoke detectors shall be required to restart the unit.

High Condensate Level: The unit shall shut down in response to a signal from drain pan overflow sensor. Alarm shall be annunciated at the BAS. A manual reset shall be required to restart the unit.

Filter Status: A differential pressure switch shall monitor the differential pressure across the filter when the fan is

running. If the switch closes during normal operation a dirty filter alarm shall be annunciated at the BAS.

Exhaust Fan Sequence of Operations

Building Automation System Interface: The Building Automation System (BAS) shall enable/disable these units based on the same Time of Day schedule as the Air Handling Units.

Occupied: The BMS will begin operation by commanding the isolation controls damper to open. Once the damper is proven open, via the damper end switch, the fan will start.

Un-Occupied: The BMS will command the isolation controls damper to close. The damper end switch will shut down

Fan Failure Alarm: The BMS will monitor the operation of the fan. If after 30 seconds of operation and no indication that the fan has begun operation the BMS will send a fan failure alarm to the BAS

NEW BUILDING AUTOMATION CONTROLS (BAS)

- FURNISH AND INSTALL NEW TEMPERATURE CONTROLS AS MANUFACTURED BY TRANE, OR ACCEPTABLE EQUIVALENT BY JCI. CONTROLS SHALL BE WEB BASED WITH BACnet INTERFACE, ACCESSIBLE FROM ANY WIRELESS
- 2. LIST OF EQUIPMENT TO BE CONTROLLED BY NEW BUILDING AUTOMATION SYSTEM (BAS):
- 2.1. NEW BOILERS B-1 & B-2 (RUN/STAND-BY)
- 2.2. EXITING HOT WATER PUMPS P-1 & P-2 (RUN/STAND-BY)
 2.3. AIR HANDLING UNITS AHU-1, AHU-2 & AHU-3
- 2.4. CONDENSING UNITS CU-1, CU-2 & CU-3
- PROVIDE WALL MOUNTED THERMOSTATS WITH DISPLAY, AND MAXIMUM 2-DEGREE UP AND DOWN ADJUSTMENT. FULL TEMPERATURE CONTROL THRU BAS ONLY.
- 4. AHU-1, AHU-2 & AHU-3
 4.1. FURNISH AND INSTALL NEW CONDENSATE DRAIN OVERFLOW SENSORS,
- AND TIE IT BACK TO NEW BAS.
 4.2. REPLACE ALL MOTORIZED DAMPERS, AND TIE IT BACK TO NEW BAS.
 4.3. FURNISH AND INSTALL NEW DUCT SMOKE DETECTORS, AND TIE IT BACK TO NEW BAS.
- 5. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL WIRING BETWEEN ALL INDOOR AND OUTDOOR UNITS. ALL CONTROLS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.



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	SEAL
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www.rzdesignassociates.con

CONSULTANTS

BMISSIC	N HISTORY	
/03/17	100% CD	

JOB INFO

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse

688 Westfield Rd. Meriden, CT 06450

DWG DATA

PROJECT NUMBER: 17-063
SUBMISSION DATE: 5/03/17
DRAWN: D.S.
REVIEWED: D.S.
SCALE: NONE

WG TITLE

MECHANICAL CONTROLS

DWG #

M-3.1

GENERAL PROVISIONS A. GENERAL

- 1. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
- 2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH
- 3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
- 4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
- 5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR
- AT NO ADDITIONAL COST.

 6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID
- INTERFERENCE.

 7. EXAMINE THE WORK OF OTHER TRADES INSOFAR AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
- 8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.

 CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK.

 ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTERGRAL WITH EQUIPMENT PACKAGE.
- 9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.
- B. VISIT TO THE SITE

 1. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.
- C. CODE AND PERMITS

 1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
- COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
 THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS

ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN

- DUPLICATE.

 4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT.
- D. SHOP DRAWINGS SUBMITTALS

 1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS. THE SHOP DRAWINGS OF THE FOLLOWING EQUIPMENT USING THE INDICATED NUMBERING SYSTEM AND TITLES, SHALL BE SUBMITTED THROUGH THE ARCHITECT TO THE ENGINEER AND THEN RESUBMITTED FOR FINAL APPROVAL, IF NECESSARY. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:

 a. WIRING DEVICES
 - b. PANELBOARDS AND SAFETY SWITCHES INCLUDING FAULT CURRENT STUDY BASED ON EQUIPMENT BEING SUPPLIED.
 - c. CONTACTORS, TIME SWITCHES AND PHOTOCELL
 - d. LIGHTING FIXTURES
 e. SUPERVISORY ALARM SYSTEM

CONTRACT DOCUMENTS.

- 2. ALL SUBMITTED SHOP DRAWINGS (MANUFACTURERS "EQUIPMENT DESCRIPTIVE SHEETS OR VENDORS" PREPARED DRAWINGS) SHALL HAVE THE GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S "STAMP OF APPROVAL" INDICATING THAT THE ITEM SUBMITTED IS AS CALLED FOR ON THE PLANS AND SPECIFICATIONS, IS APPROVED BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR, THE DATE OF APPROVAL AND INITIALED BY THE PERSON APPROVING THE SUBMITTAL AND THE
- NAME OF THE COMPANY SUBMITTING SAID EQUIPMENT FOR APPROVAL.

 3. SUBMIT BOUND BROCHURES COMPLETE WITH A TABLE OF CONTENTS. LOOSE OR STAPLED TOGETHER SHEETS ARE NOT ACCEPTABLE. ANY SUBMITTALS NOT IN BROCHURE FORM OR NOT AS SPECIFIED SHALL BE RETURNED AT THE CONTRACTOR'S EXPENSE FOR RESUBMITTAL.
- 4. ALL DESCRIPTIVE LITERATURE SHALL BE SUBMITTED IN A THREE (3) HOLE BROCHURE WITH A COVER IDENTIFYING THE FOLLOWING:
 a. NAME OF THE JOB.
- b. LOCATION OF THE JOB, ADDRESS, CITY AND STATE.c. NAME AND ADDRESS OF THE COMPANY SUBMITTING THE BROCHURES.
- d. DATE OF THE SUBMITTAL.
 5. EVERY EFFORT SHALL BE MADE, IN CHECKING THE SHOP DRAWINGS, TO DETECT AND CORRECT ALL ERRORS, OMISSIONS AND INACCURACIES. FAILURE TO DO THIS WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER AND COMPLETE INSTALLATION IN ACCORDANCE WITH THE
- E. RECORD DRAWINGS
 1. SUBMIT TO THE ARCHITECT ONE SET OF ELECTRICAL DRAWINGS SHOWING THE RECORD CONDITIONS.
 F. STANDARDS AND SUBSTITUTIONS
- 1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".
- 2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION. SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF

- 3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS
- 4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.
- 5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
- G. INTERFERENCES

 1. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH
- DRAWINGS AND SPECIFICATIONS.

 2. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.
- H. QUALITY ASSURANCE

 1. ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

BASIC ELECTRICAL MATERIALS AND METHODS

C. EXECUTION

- A. NAMEPLATES

 1. GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
- 2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.
- B. MOUNTING ACCESSORIES

 1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON,
 CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD
 REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL
- EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.

 2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS,
 CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE
 A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE
 GALVANIZED. PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY
- BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.

 3. ALL SURFACE—MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD. ALL FLOOR—MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.
- ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
- 2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
- 3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
- ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE—DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE—RATED WALLS, FLOORS OR CEILINGS.
 THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE
- D. MATERIALS AND WORKMANSHIP

 1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE

WITH ARCHITECT PRIOR TO INSTALLATION.

- MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.

 2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL
 BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR
 INDICATED ON THE DRAWINGS TO THE CONTRARY.
- 3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
- 4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS
- LABORATORIES LABEL OR ETL LABEL.

 5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.
- E. SCOPE OF WORK

 1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
 - a. DEMOLITION OF EXISTING CIRCUITS FOR EQUIPMENT TO BE REMOVED.
 b. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.

WIRE AND CABLE

- A. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

 208/120V SYSTEM=PHASE A BLACK; PHASE B RED; PHASE C BLUE;
- NEUTRAL WHITE; GROUND GREEN.

 1. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
- 2. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
- 3. CONDUCTORS SHALL BE SOFT ANNEALED COPPER (EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE) INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE.
- B. INSULATION TYPE SHALL BE TYPE THWN FOR WIRE SIZES #8 AWG AND LARGER AND THHN OR THWN FOR #10AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.
- D. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED.
 1. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.
- E. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
- F. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.

 G. INSTALL WIRING IN CONDUIT. CONCEALED WIRING IN WALLS OR ABOVE CEILINGS, OR EXPOSED IN UNFINISHED AREAS (WHERE NOT SUBJECT TO PHYSICAL DAMAGE) MAY BE RUN IN MC OR AC CABLE.
- H. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.
- I. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.

 J. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE
- INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS.

 K. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT
- LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.

 1. CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.
- L. FORM AND TIE ALL WIRING IN PANELBOARDS.M. THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.
- N. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.
- O. WIRE SIZES SHALL BE BASED ON THE 60 DEGREES C. AMPACITIES FOR WIRE SIZES NO. 14-1 A.W.G., AND 75 DEGREES C. AMPACITIES FOR WIRE SIZES #1/0 A.W.G. AND LARGER.

RACEWAYS AND BOXES A. RACEWAYS

- 1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.
 - a. CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.
 - b. CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE
 - c. CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY
 - WALL, METAL THREADED TYPE.

 d. PROVIDE BRANCH CIRCUIT CONDUCTORS THAT ARE TYPE THHN
 OR THWN AS REQUIRED. MC CABLE CAN BE USED FOR LIGHT
 FIXTURE TO LIGHT FIXTURE.
- CONDUIT SIZE SHALL BE 3/4" MINIMUM.
 CONDUIT SHALL BE SECURELY FASTENED IN PLACE.
- CONDUIT SHALL BE SECURELY FASTERED IN PLACE.
 ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.
- 5. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.
- 6. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED (TWO COATS) WITH HEAVY ASPHALTUM PAINT.
- 7. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE (NEC).
- 8. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY—IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
- 9. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL—THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
- 10. INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.
- 11. PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF.
 12. THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND
- UNDERGROUND THREADED METAL JOINTS.

 13. INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOOR SLABS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.
- 14. HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.

 B. PULL AND JUNCTION BOXES
- INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED.
- 2. PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE.
- 3. PROVIDE CAST IRON BOXES, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE WHERE SHOWN ON THE DRAWINGS. FURNISH REMOVABLE COVERS WITH GASKETS AND STAINLESS STEEL, BRASS OR BRONZE SCREWS.

4. PROVIDE CONCRETE BOXES FOR UNDERGROUND WORK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. FURNISH STEEL FRAMES AND COVERS WITH THE COVER ATTACHED TO THE FRAME WITH HEXAGON HEAD, BRASS OR BRONZE CAP SCREWS, 3/8" DIAMETER. PROVIDE A RUBBER GASKET FOR SEALING BETWEEN THE COVER AND THE FRAME. PAINT THE COVER WITH TWO COATS OF HEAVY ASPHALTUM.

C. OUTLET BOXES 1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR

CONCEALED INTERIOR WORK.

2. USE CAST BOXES, ZINC—CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK, AND FOR EXPOSED OR CONCEALED WORK

IN WET, DAMP OR EXTERIOR LOCATIONS. CAST BOXES SHALL BE

- SERIES FD BY CROUSE HINDS OR APPLETON.

 3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE x 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE WIDTH MAY BE REDUCED TO 2-1/8" OR 1-1/2"
- UNDER SPECIAL CONDITIONS.

 4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL x 1-1/2" DEEP (4-11/16" OCTAGONAL x 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES).
- GANG BOXES SHALL BE ONE PIECE (MINIMUM), 2-1/8" DEEP.
 FLUSH MOUNT BOXES IN ALL FINISHED WALLS. INSTALL THE PLASTER RINGS IN DRYWALLED PLASTERED WALLS AND RAISED COVERS AS REQUIRED IN WALLS WITH OTHER FINISHES SO THAT THE COVER PLATES FIT TIGHTLY AGAINST BOXES OR RINGS, 3/16"
- MAXIMUM GAPS ARE ALLOWED FOR NONCOMBUSTIBLE WALLS.

 7. ADJUST LOCATION OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET A.D.A. REQUIREMENTS.
- SUPPORT ALL BOXES TO MAINTAIN PROPER ALIGNMENT AND RIGIDITY.
 CLEAN BOXES OF ALL FOREIGN MATTER PRIOR TO THE INSTALLATION OR WIRING OF DEVICES.

<u>WIRING DEVICES</u> A. WIRING DEVICE COLOR SHALL BE WHITE, UNLESS OTHERWISE

- INDICATED.

 B. PROVIDE TOTALLY ENCLOSED, 20 AMPERE, 120/277 VOLT, QUIET
- A/C GENERAL USE SNAP SWITCHES.
 C. SWITCHES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY
- D. PROVIDE NEMA CONFIGURATION 5-15R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED FOR 15 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- E. RECEPTACLES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, P&S OR LEVITON.
 F. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR
- CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE
 RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS.
 G. PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND
- WORKMANSHIP EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.

 H. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
- FINISHED AREAS: THERMOPLASTIC COLOR TO MATCH DEVICE.
- UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL, AS APPROPRIATE FOR THE TYPE OF BOX.
 EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKET, WEATHERPROOF,
- CROUSE—HINDS "WLRD" FOR DUPLEX RECEPTACLES AND WLRS FOR SINGLE RECEPTACLES OR EQUAL.

 4. TELEPHONE, COMMUNICATION, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND
- SWITCHES. ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE BY THIS CONTRACTOR.

 5. WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED
- UNDER A COMMON COVERPLATE.

 I. LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS OTHERWISE INDICATED. THE LONG
- DIMENSION OF THE SWITCHES SHALL BE VERTICAL.

 J. LOCATE RECEPTACLES APPROXIMATELY 1"-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE. THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL.

SAFETY SWITCHES A SAFETY SWITCHES SHALL BE THE ENCLOSE

MANUFACTURER.

- A. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY—DUTY TYPE
 (TYPE HD) WITH QUICK—MAKE, QUICK—BREAK MECHANISM AND
 EXTERNAL PAD LOCKABLE OPERATING HANDLE.

 B. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS
- APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS.

 C. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS.
- D. SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- E. ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R
 OUTDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS.
 F. MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR
 CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE
- G. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' & 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- H. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

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CONSULTANTS

SUBMISSION HISTORY

05/03/17	100%	CD		

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd. Meriden, CT 06450

DWG DATA

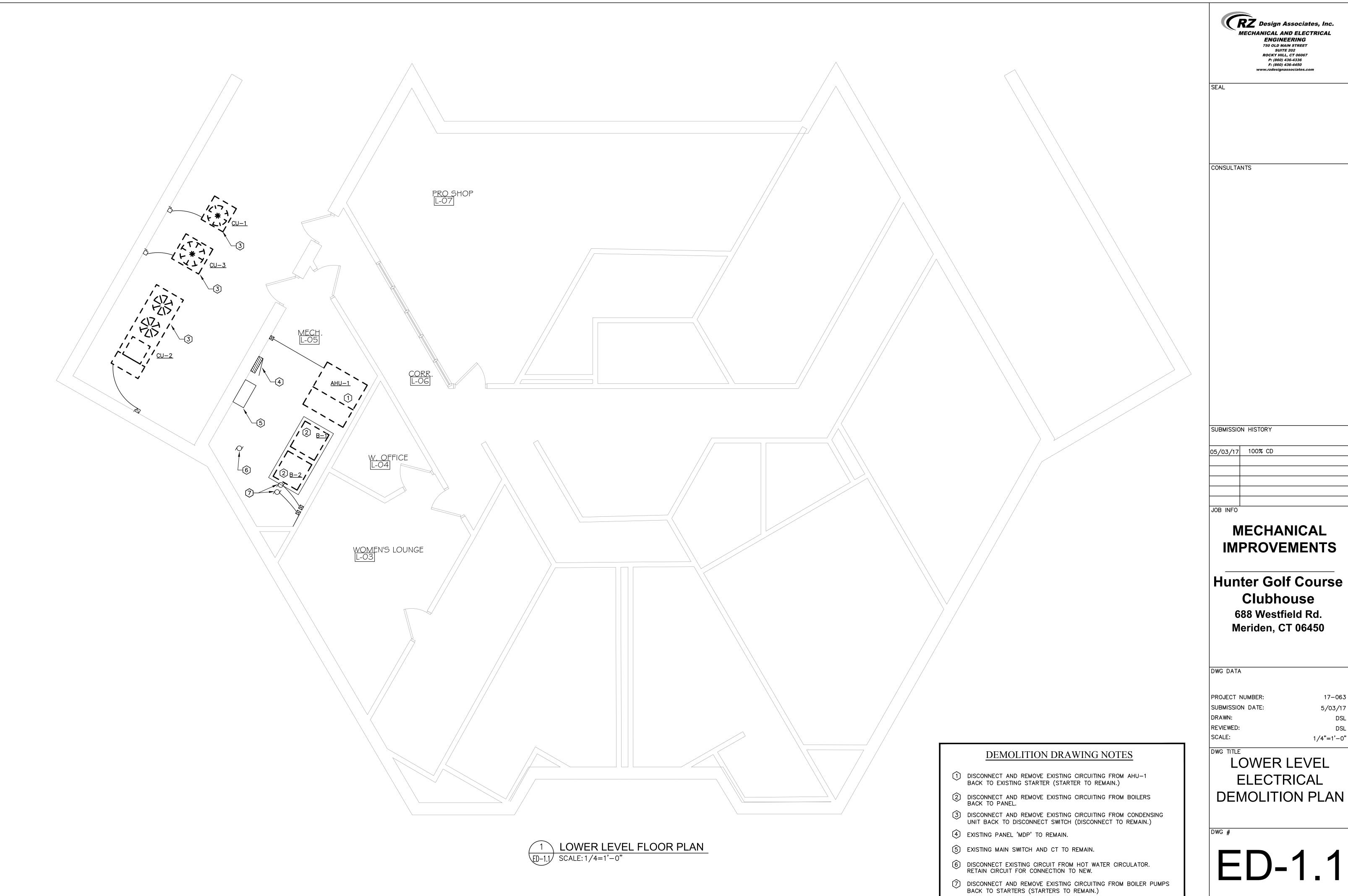
JOB INFO

PROJECT NUMBER: 17-063
SUBMISSION DATE: 5/03/17
DRAWN: DSL
REVIEWED: DSL
SCALE: NONE

ELECTRICAL SPECIFICATIONS

DWC #

E-0.1



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SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL

IMPROVEMENTS

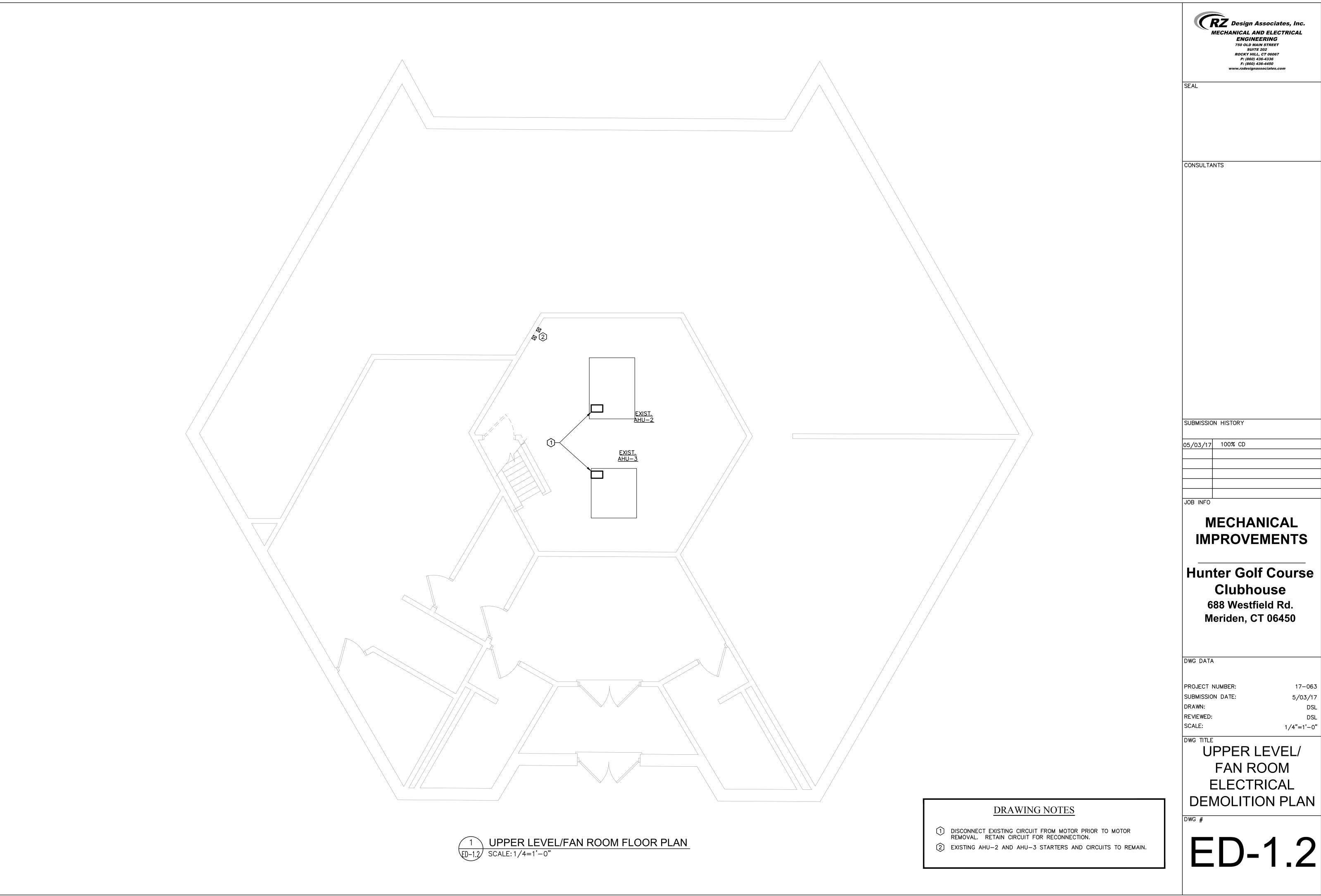
Clubhouse 688 Westfield Rd. Meriden, CT 06450

17-063

PROJECT NUMBER: SUBMISSION DATE: 5/03/17 DRAWN: REVIEWED: 1/4"=1'-0"

LOWER LEVEL ELECTRICAL DEMOLITION PLAN

ED-1.1



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MECHANICAL IMPROVEMENTS

Clubhouse 688 Westfield Rd.

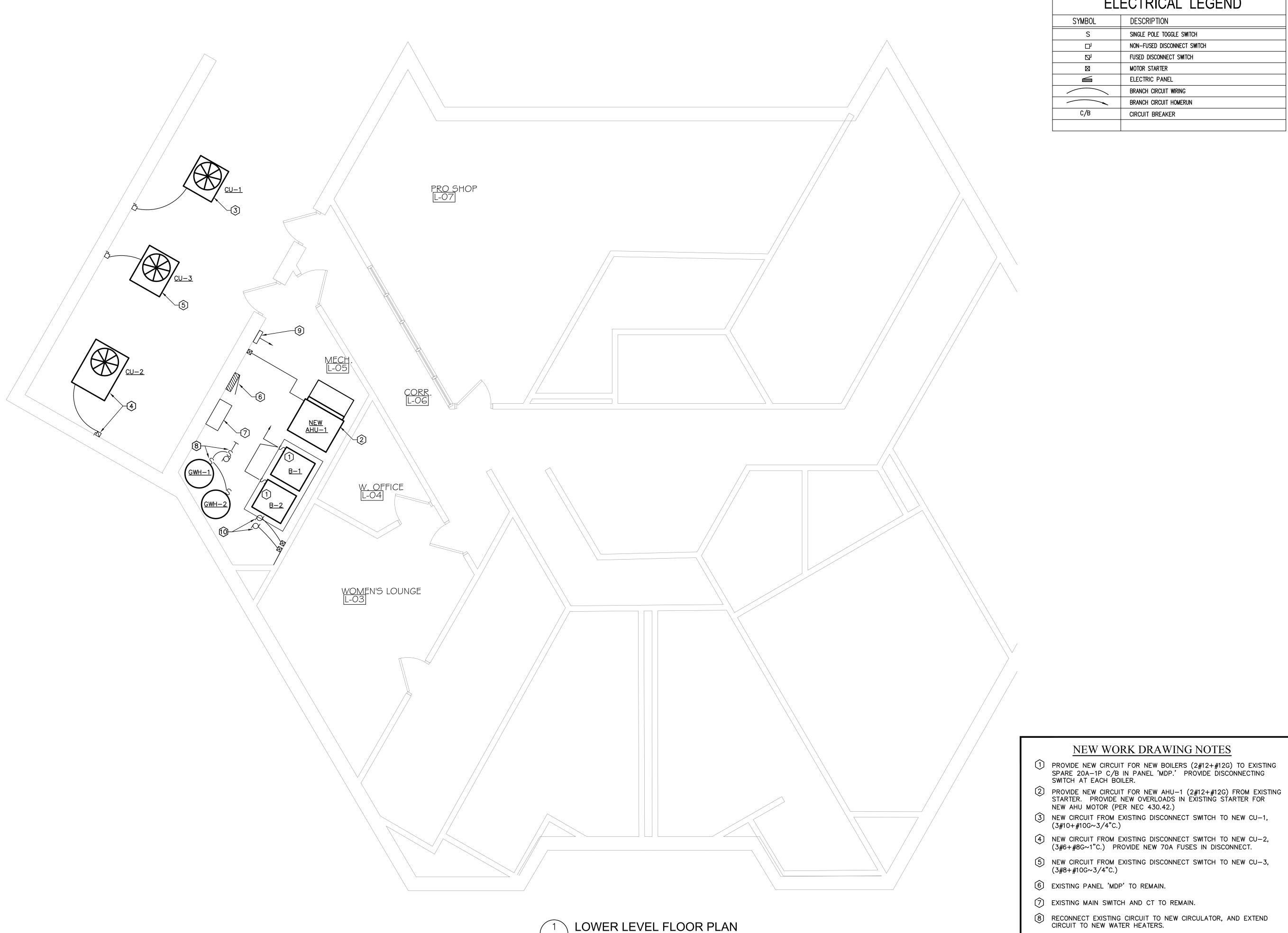
1/4"=1'-0"

17-063

5/03/17

UPPER LEVEL/ FAN ROOM ELECTRICAL

ED-1.2



E-1.1 SCALE: 1/4=1'-0"

EL	ELECTRICAL LEGEND					
SYMBOL	DESCRIPTION					
S	SINGLE POLE TOGGLE SWITCH					
ㅁ	NON-FUSED DISCONNECT SWITCH					
\square_{j}	FUSED DISCONNECT SWITCH					
	MOTOR STARTER					
	ELECTRIC PANEL					
	BRANCH CIRCUIT WIRING					
	BRANCH CIRCUIT HOMERUN					
C/B	CIRCUIT BREAKER					

NEW WORK DRAWING NOTES

9 TEMPERATURE CONTROL PANEL (SEE MECH DWGS.) ROUTE 2#12+#12G~3/4"C TO NEW 20A-1P C/B IN PANEL 'MDP.'

PROVIDE NEW CIRCUITS FOR NEW BOILER PUMPS (2#12+#12G) FROM EXISTING STARTERS. PROVIDE NEW OVERLOADS IN EXISTING STARTERS FOR NEW PUMP MOTORS (PER NEC 430.42.)



CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL IMPROVEMENTS

Hunter Golf Course Clubhouse 688 Westfield Rd.

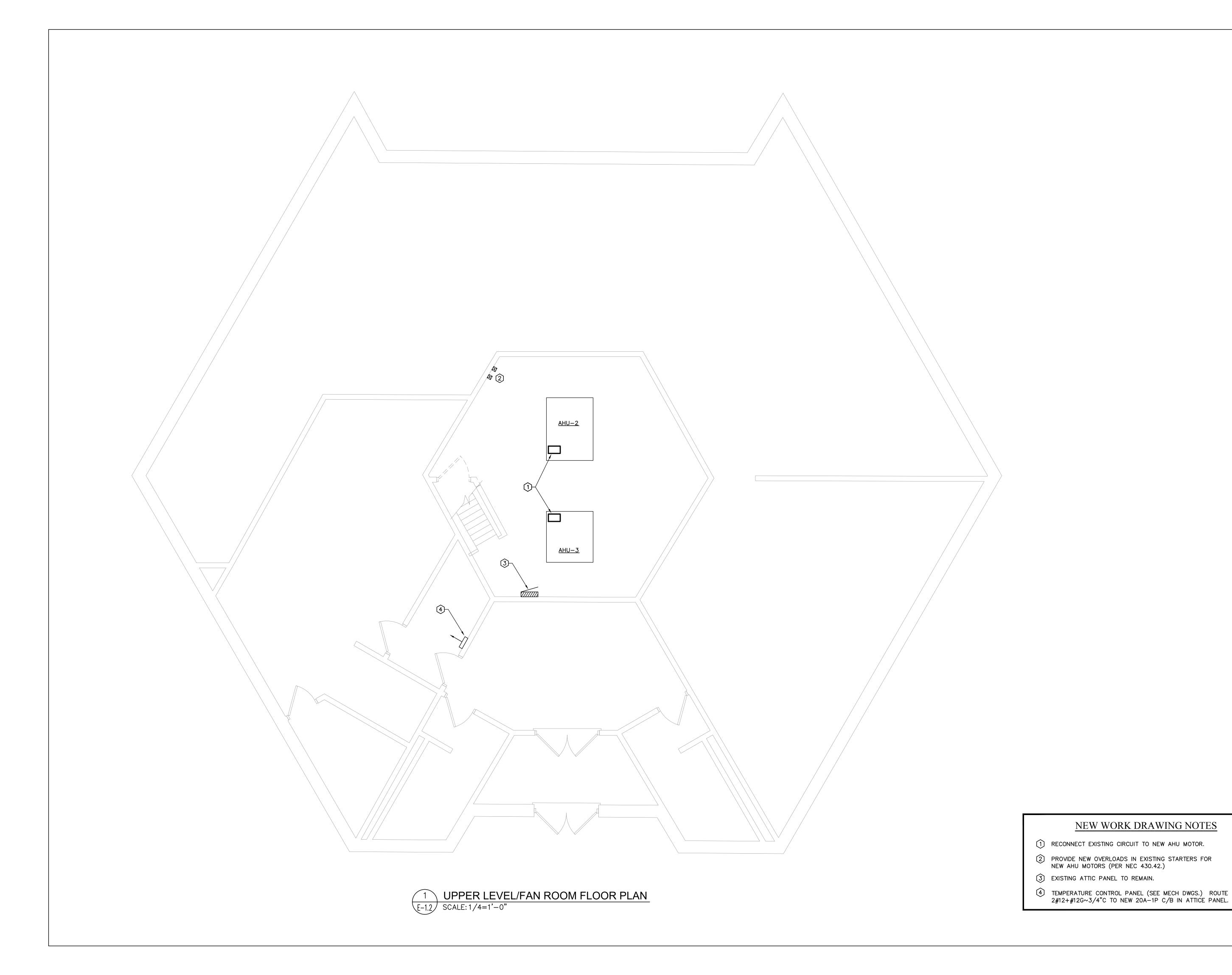
Meriden, CT 06450

DWG DATA

17-063 PROJECT NUMBER: SUBMISSION DATE: 5/03/17 DRAWN: REVIEWED: SCALE: 1/4"=1'-0"

LOWER LEVEL ELECTRICAL **NEW WORK PLAN**

E-1.1





SEAL

CONSULTANTS

SUBMISSION HISTORY

05/03/17 100% CD

MECHANICAL

IMPROVEMENTS

Hunter Golf Course
Clubhouse
688 Westfield Rd.
Meriden, CT 06450

17-063

5/03/17

1/4"=1'-0"

DWG DATA

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DRAWN:
REVIEWED:

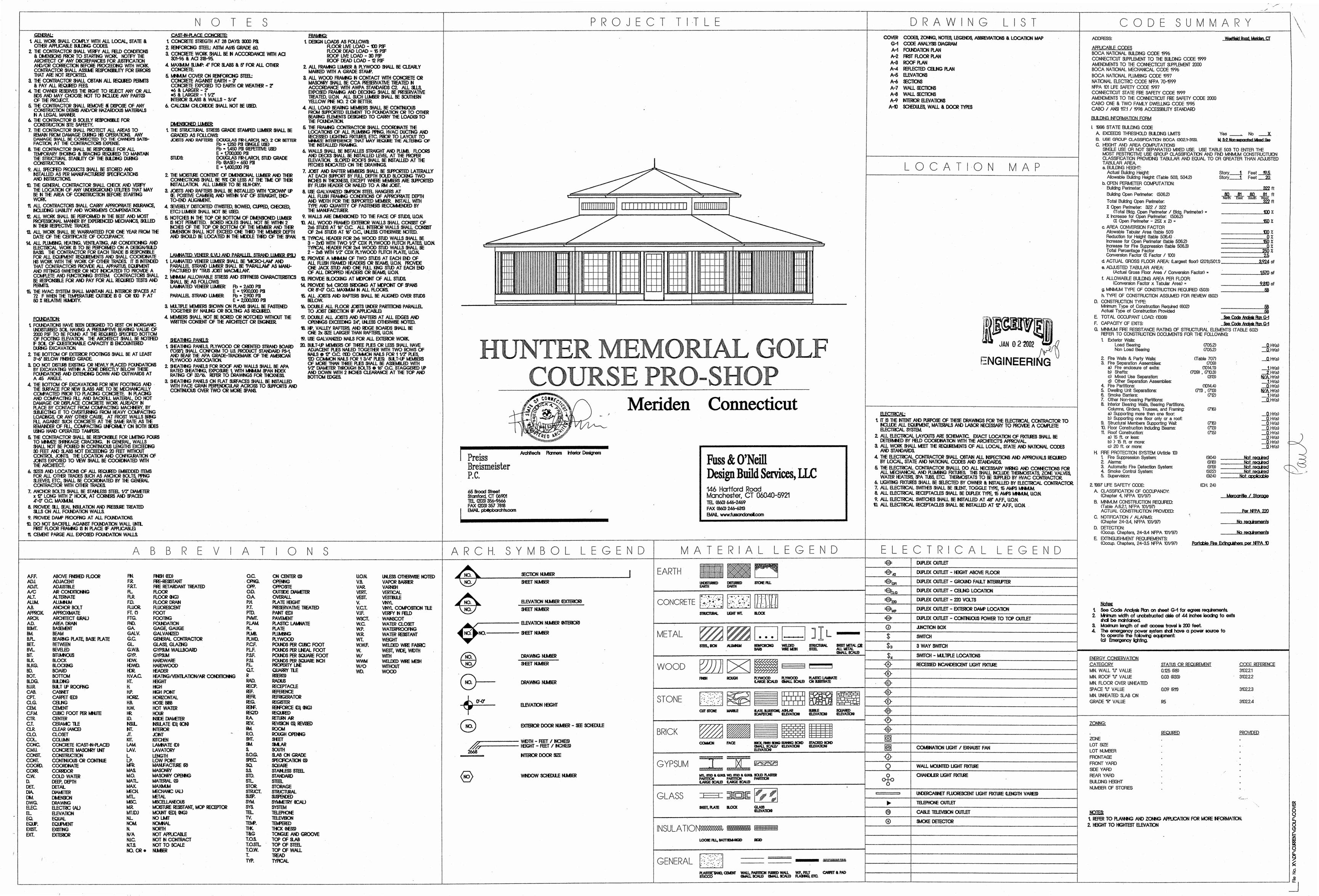
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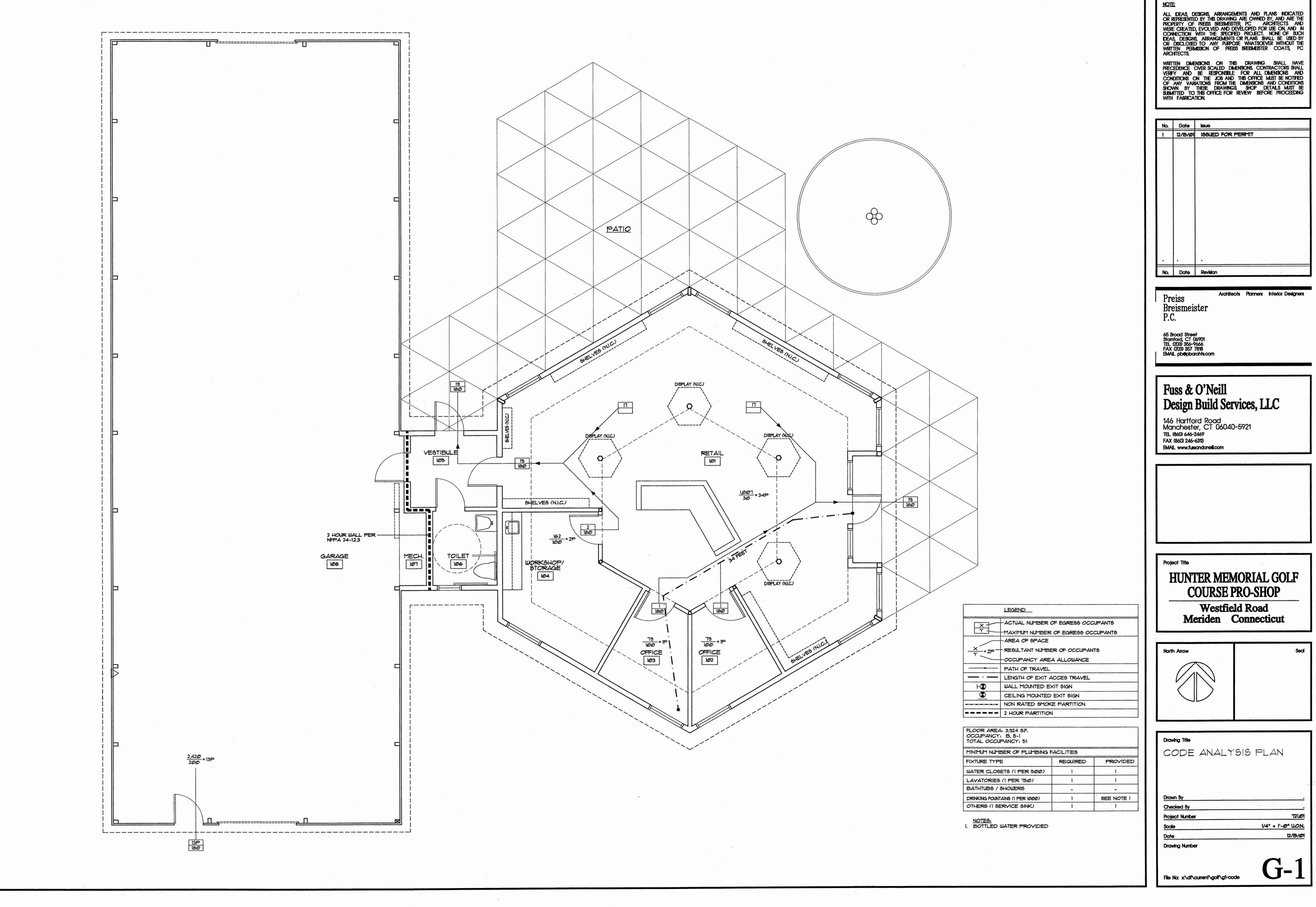
> UPPER LEVEL/ FAN ROOM

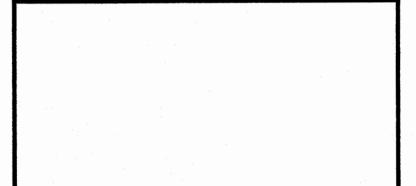
ELECTRICAL NEW WORK PLAN

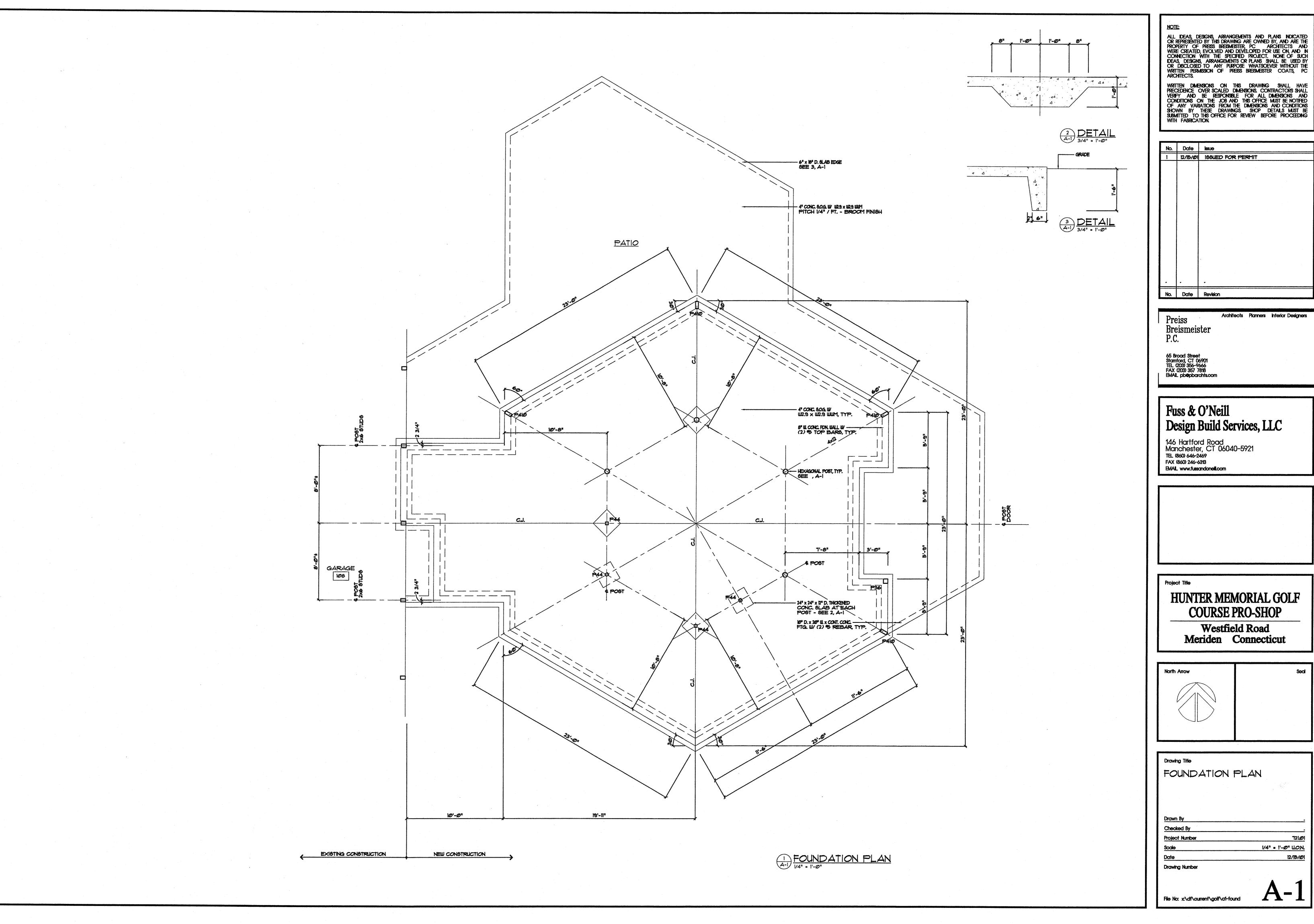
DWG #

E-1.2

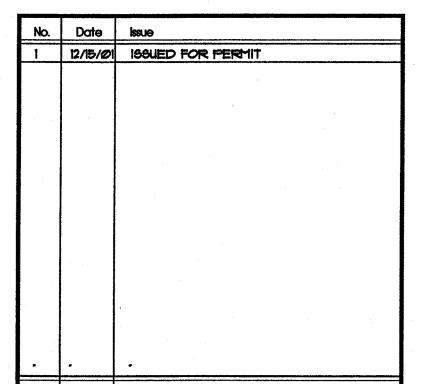








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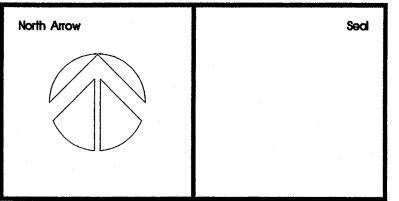
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Fuss & O'Neill Design Build Services, LLC

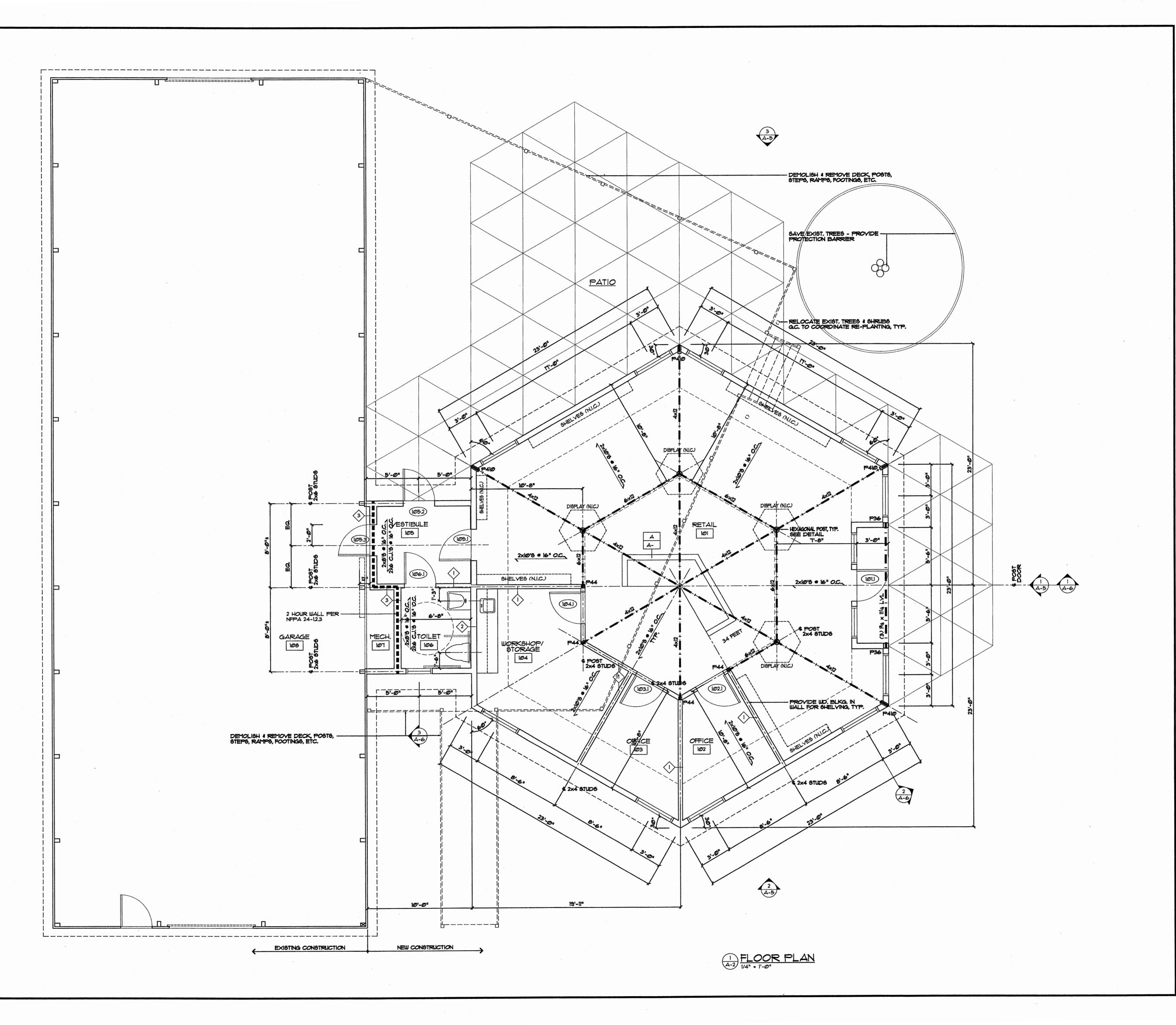


COURSE PRO-SHOP

Westfield Road Meriden Connecticut



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Fuss & O'Neill Design Build Services, LLC

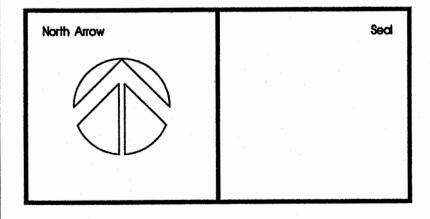
146 Hartford Road Manchester, CT 06040-5921 TEL (860) 646-2469 FAX (860) 246-6313 EMAIL www.fussandoneill.com



Project Title

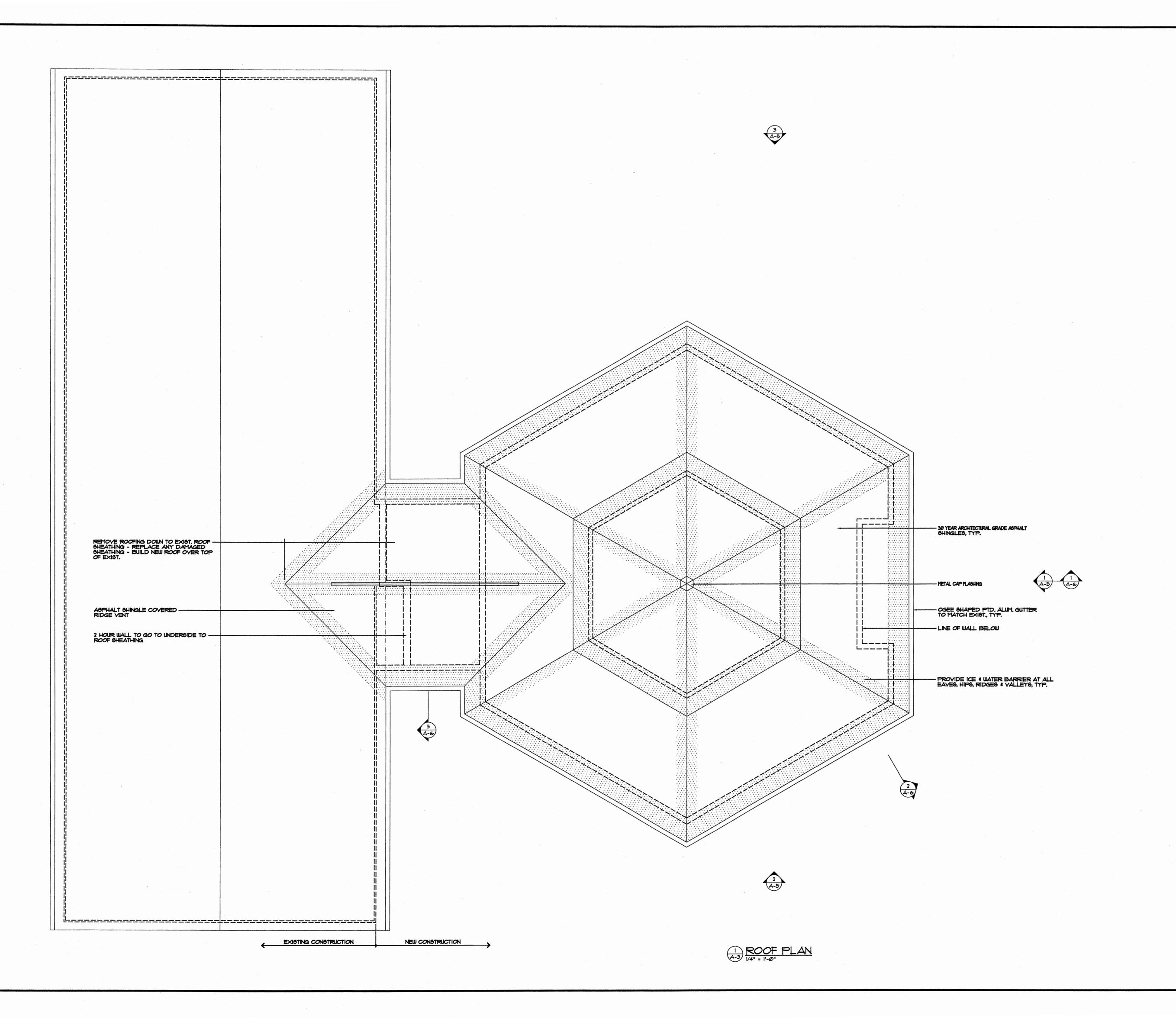
HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut



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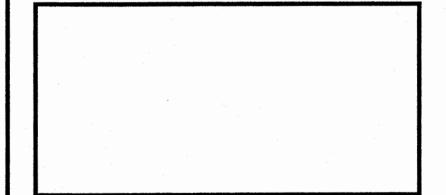
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Fuss & O'Neill Design Build Services, LLC

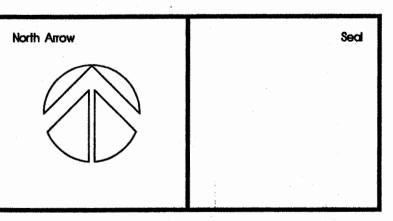
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Project Title

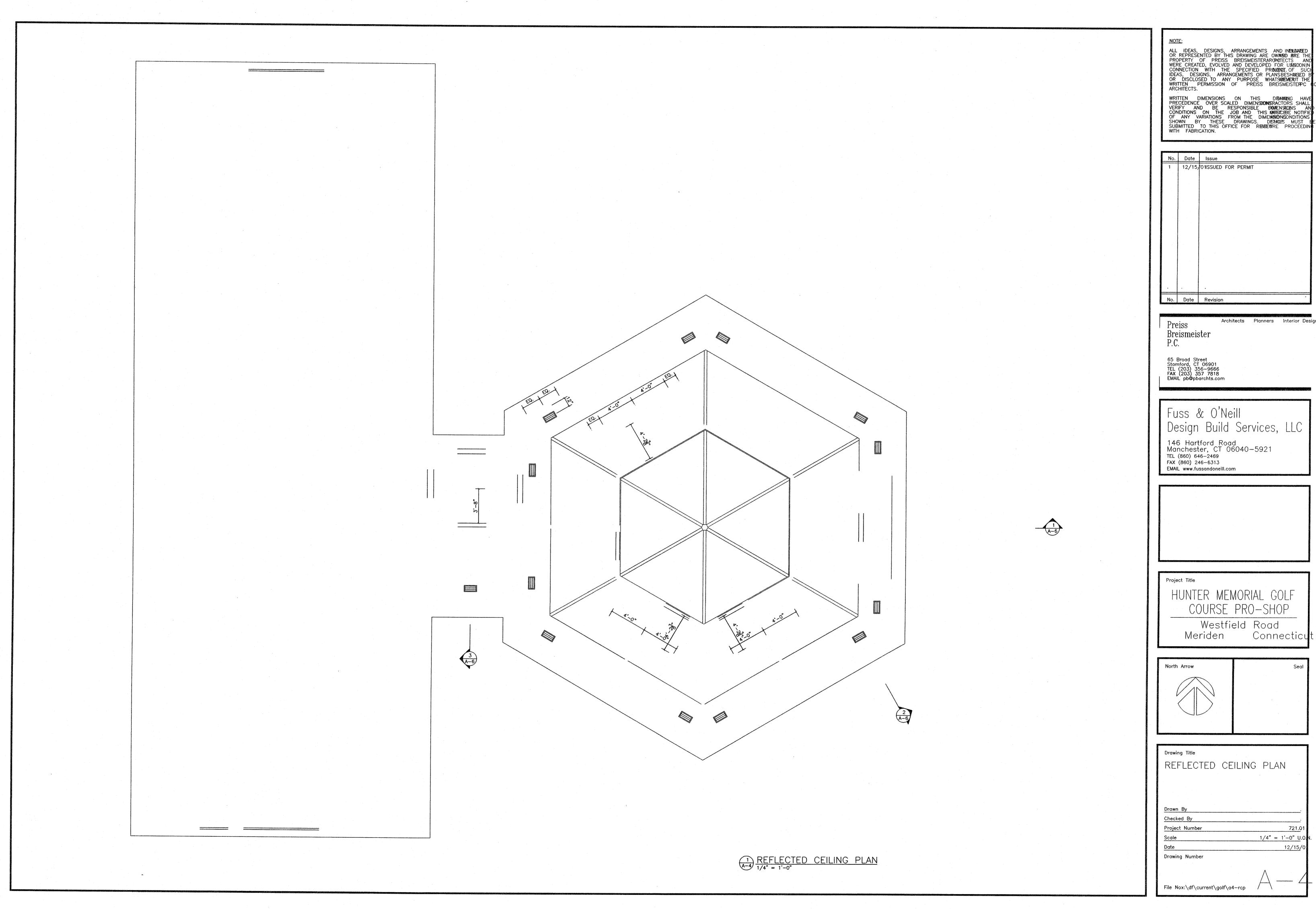
HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut

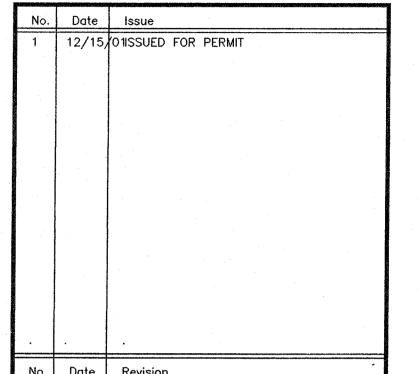


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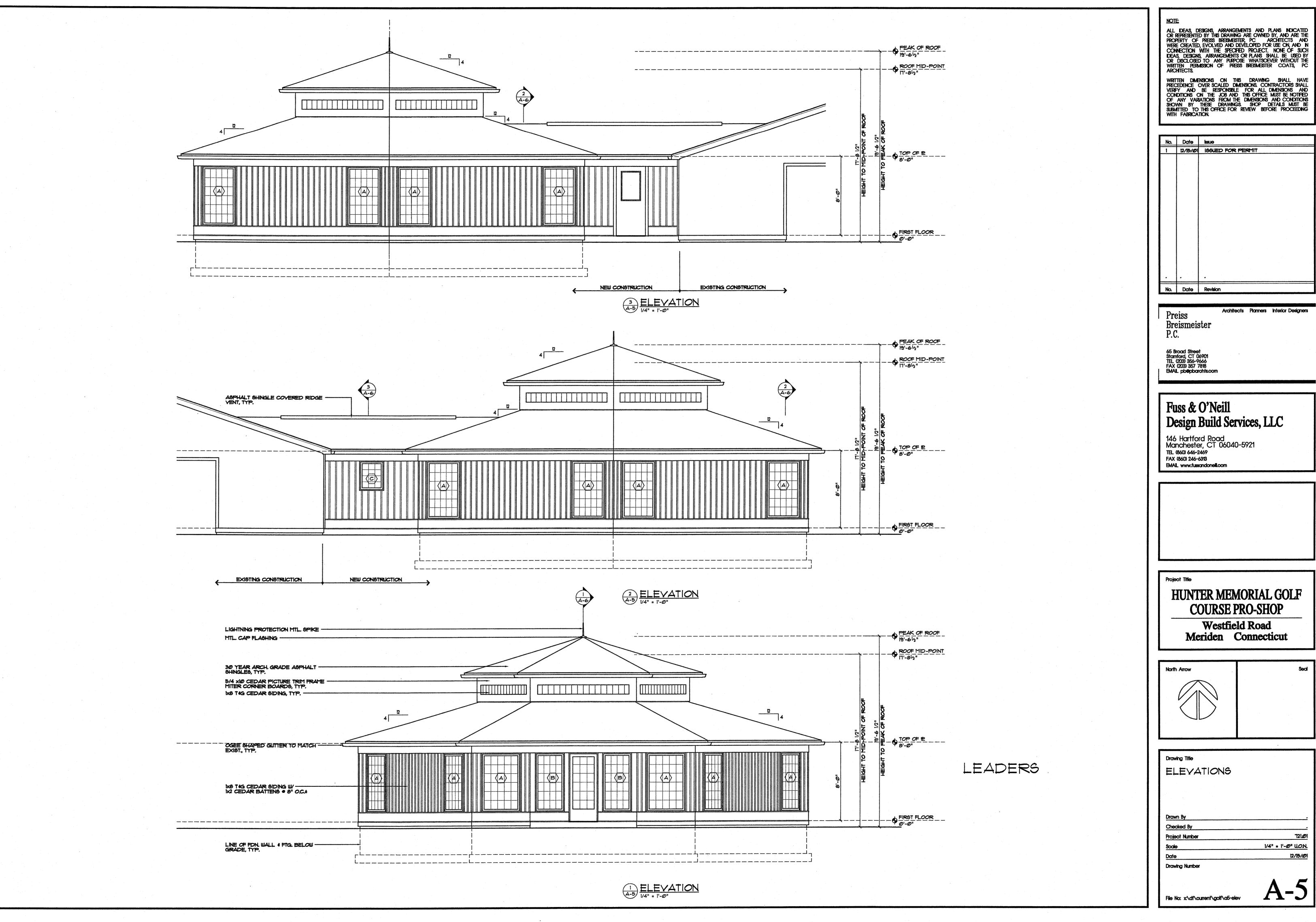
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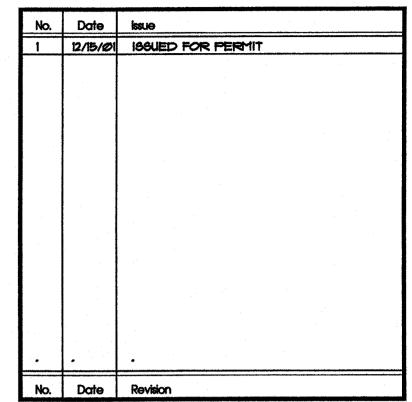
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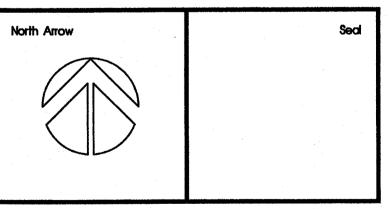
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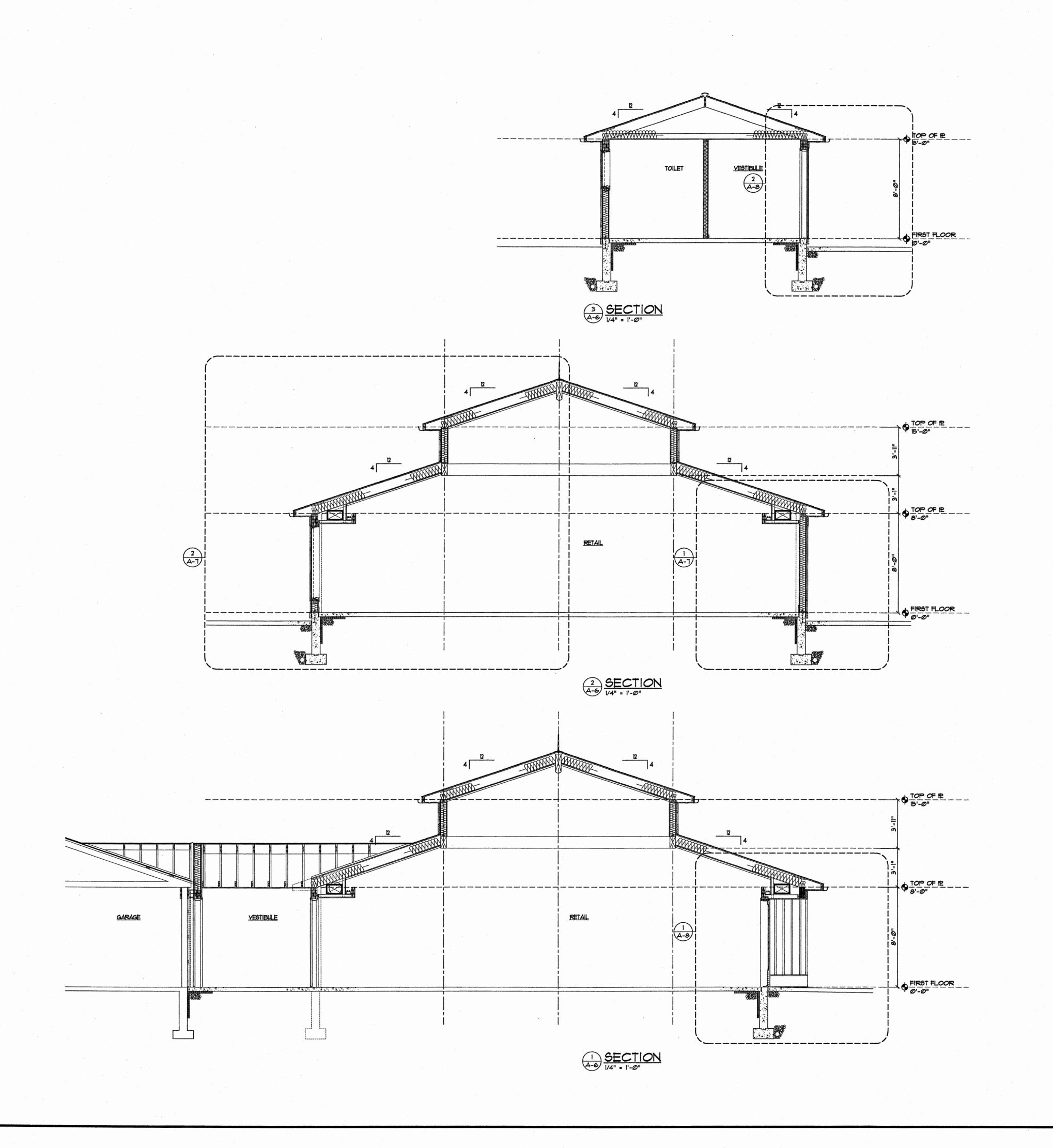


HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut



Drawing Title	
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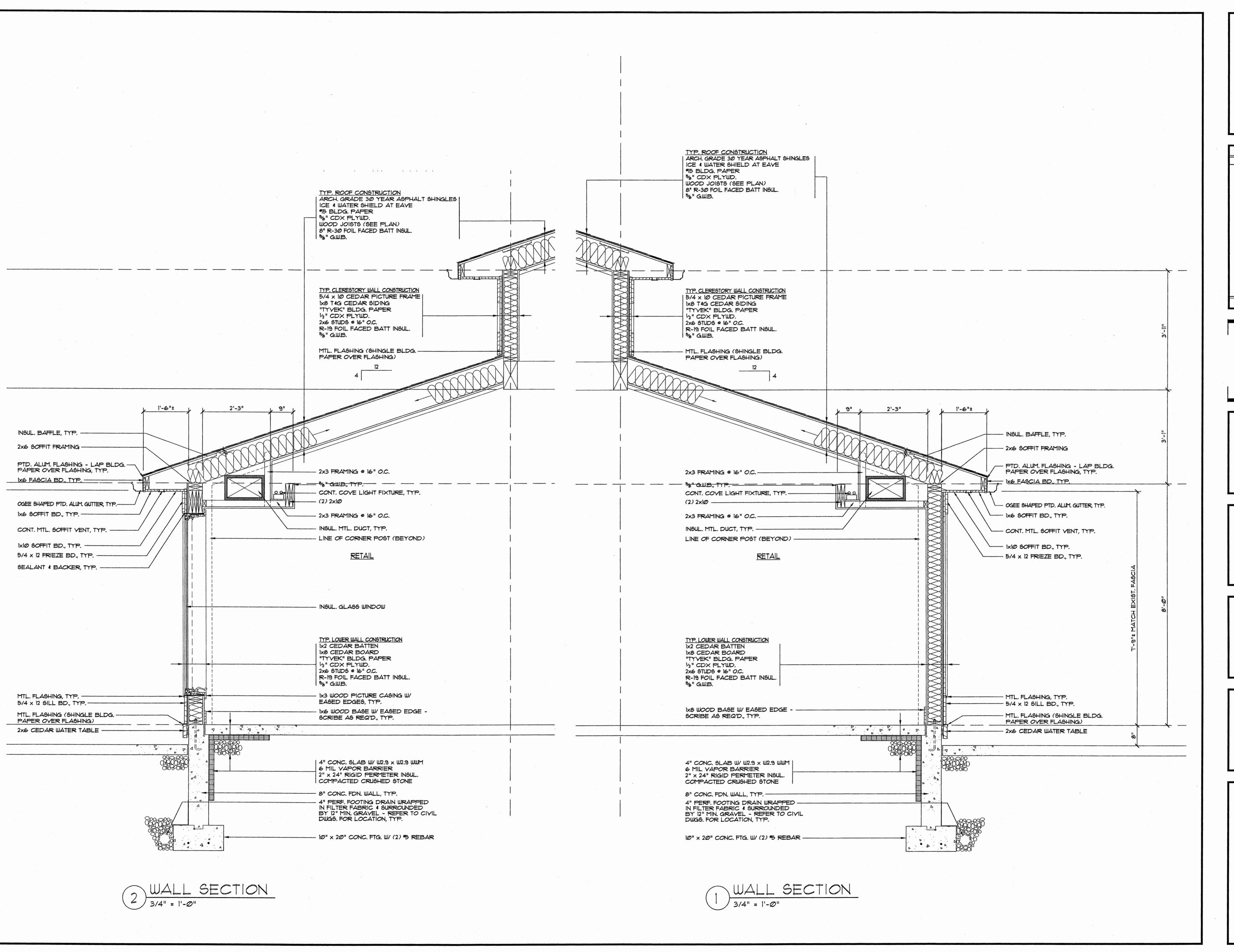
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HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut

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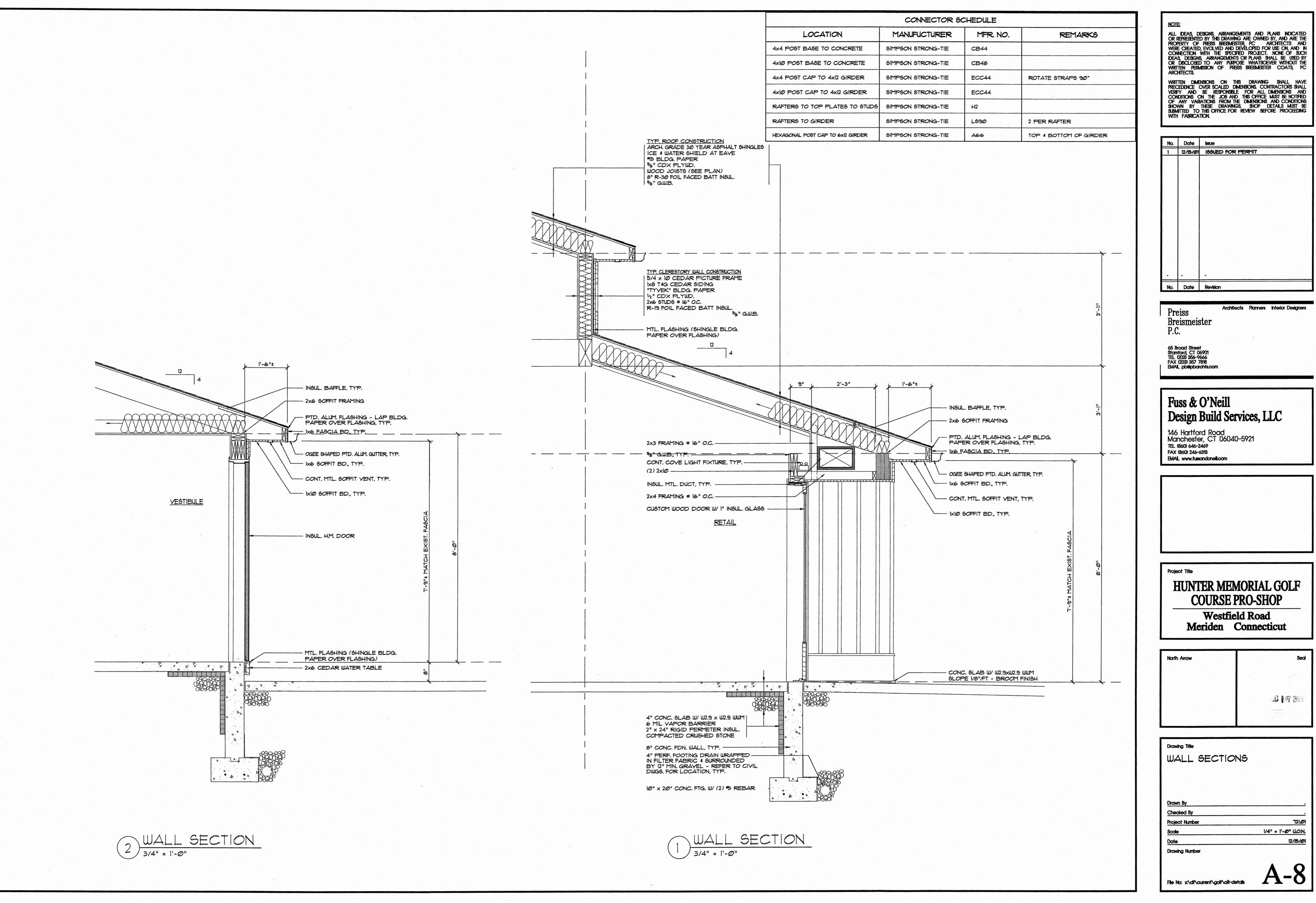
Project Title **HUNTER MEMORIAL GOLF COURSE PRO-SHOP** Westfield Road

Meriden Connecticut

North Arrow	Seal

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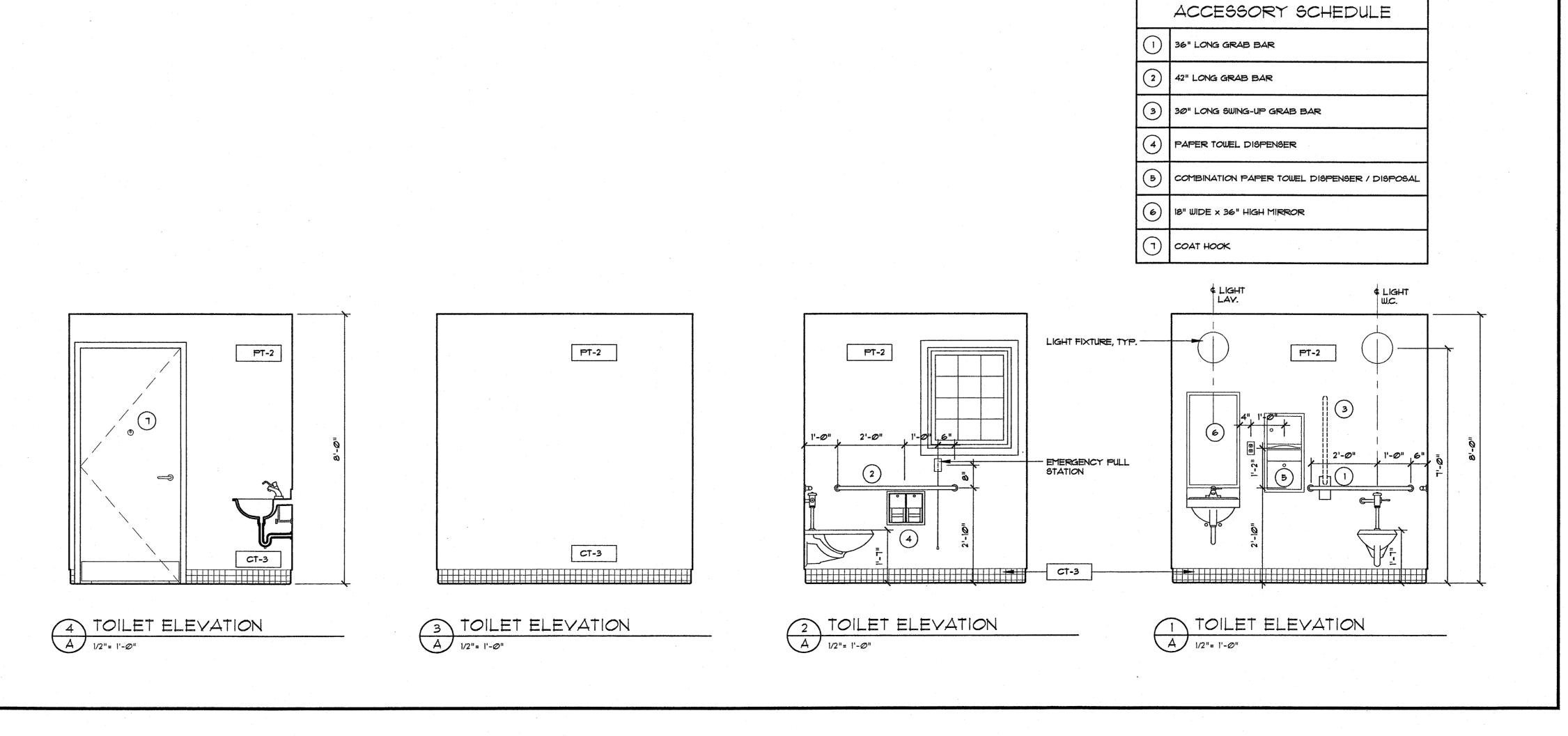


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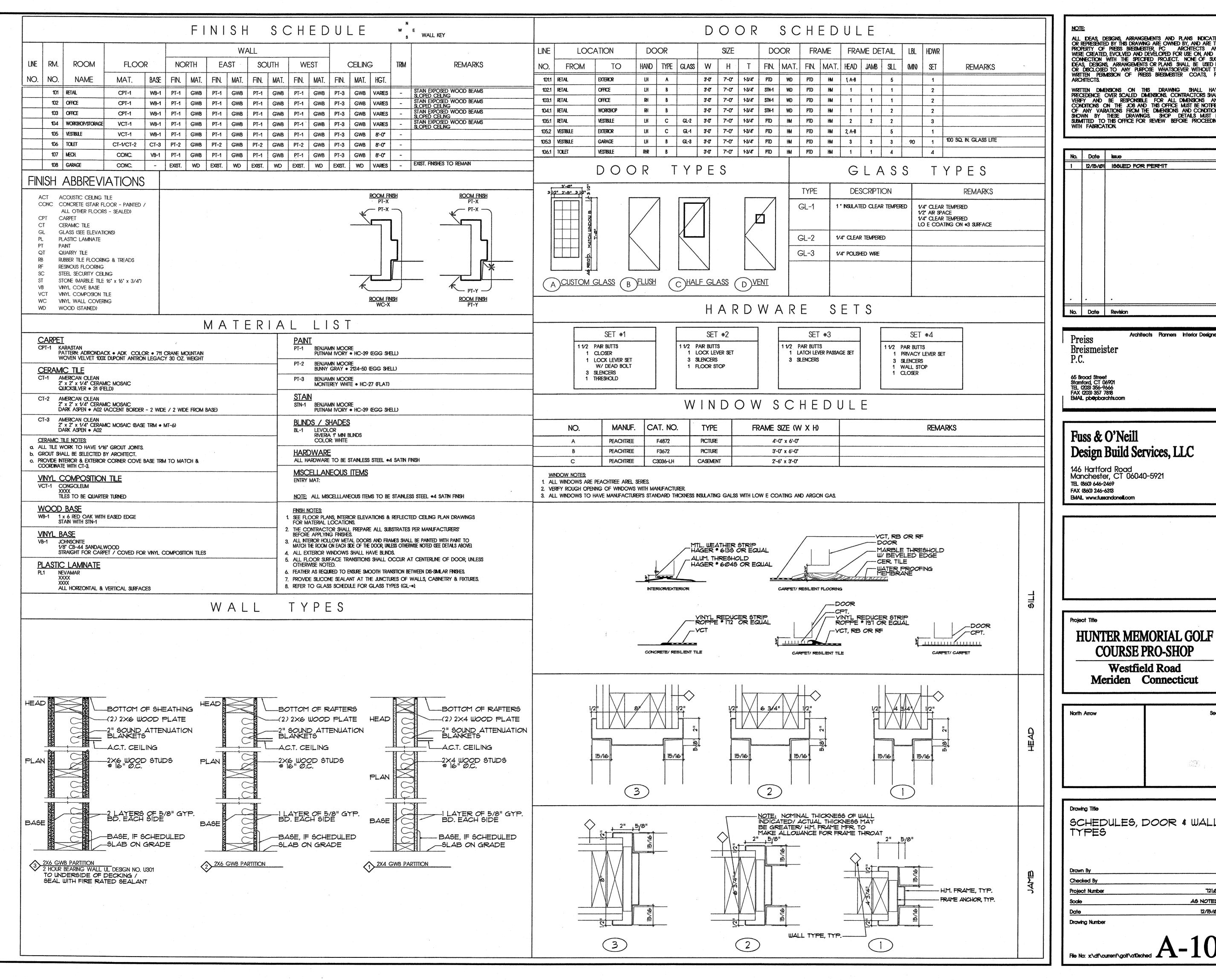
HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut

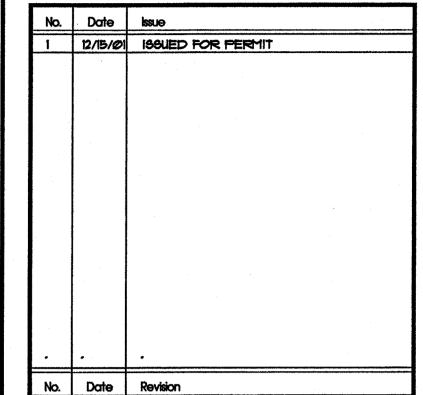
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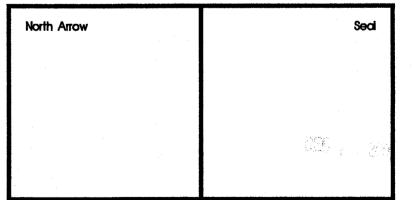
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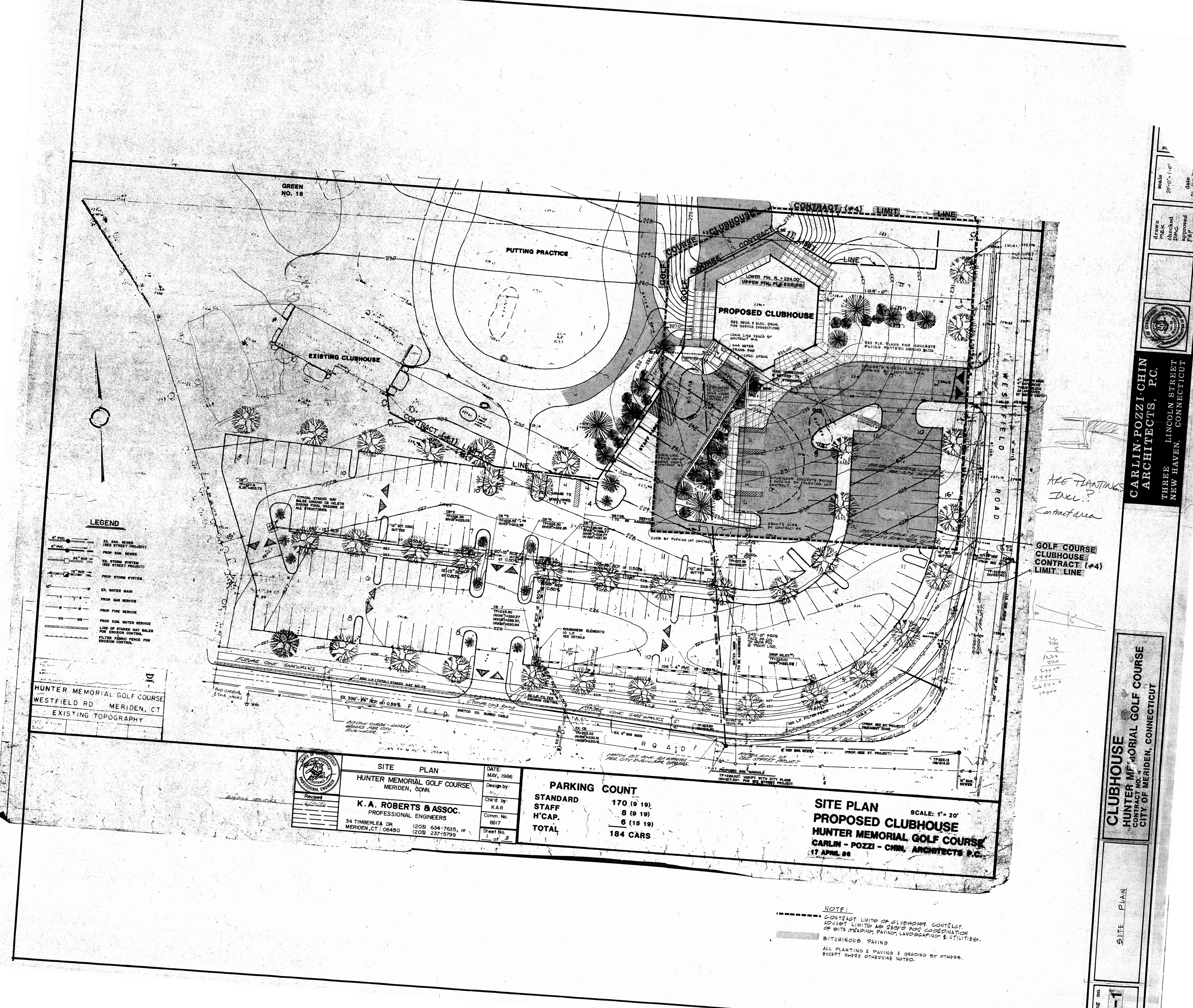
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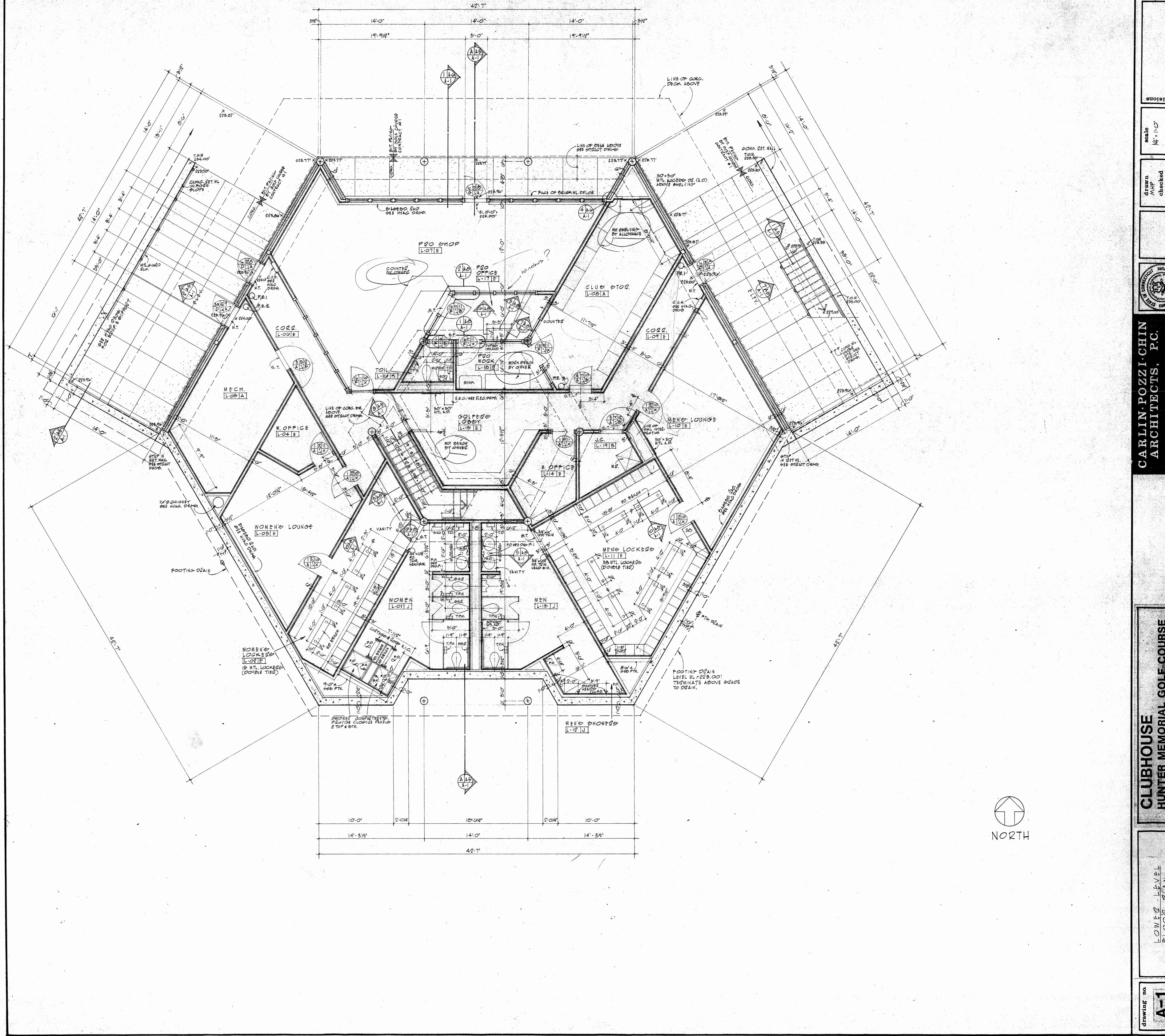
HUNTER MEMORIAL GOLF COURSE PRO-SHOP

Westfield Road Meriden Connecticut



Drawing Title
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