

SYMBOL & ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
-	AC-	AIR CONDITIONING UNIT
-	AD	ACCESS DOOR
-	AFF	ABOVE FINISHED FLOOR
-	AHC	ABOVE HUNG CEILING
-	AP	ACCESS PANEL
-	BHP	BRAKE HORSEPOWER
-	BTU	BRITISH THERMAL UNIT
-	CFM	CUBIC FEET PER MINUTE
-	COD	CABLE OPERATED DAMPER
-	DB	DRY BULB TEMPERATURE
-	DIA. OR Ø	DIAMETER
-	DX	DIRECT EXPANSION
-	EA	EXHAUST AIR
-	EAT	ENTERING AIR TEMPERATURE
-	ER	EXHAUST REGISTER
-	ESP	EXTERNAL STATIC PRESSURE
-	EWT	ENTERING WATER TEMPERATURE
-	FCU	FAN COIL UNIT
-	FPM	FEET PER MINUTE
-	FPS	FEET PER SECOND
-	GPM	GALLONS PER MINUTE
-	HP	HORSE POWER
-	LAT	LEAVING AIR TEMPERATURE
-	LF	LINEAR FEET
-	LWT	LEAVING WATER TEMPERATURE
-	MBH	1000 BRITISH THERMAL UNITS PER HOUR
-	MER	MECHANICAL EQUIPMENT ROOM
-	NIC	NOT IN CONTRACT
-	OAI	OUTSIDE AIR INTAKE
-	PSI	POUNDS PER SQUARE INCH
-	RA	RETURN AIR
-	RF-	RETURN FAN
-	RPM	REVOLUTIONS PER MINUTE
-	SA	SUPPLY AIR
-	SP	STATIC PRESSURE
-	TD	TRANSFER DUCT
-	TF-	TRANSFER FAN
-	TSP	TOTAL STATIC PRESSURE
-	TYP.	TYPICAL
-	U.O.N.	UNLESS OTHERWISE NOTED
-	WB	WET BULB TEMPERATURE
-	WG	INCHES OF WATER GAUGE
-	EX.	EXISTING TO REMAIN
- - - - -	REL.	REMOVE AND RELOCATE
- - - - -	NEW	NEW WORK
- - - - -	DEM.	EXISTING TO BE REMOVED
⊕	-	THERMOSTAT
→	-	AIR INTO REGISTER
⊗	-	POINT OF CONNECTION DISCONNECTION
→	SR	SUPPLY REGISTER
⊠	CD	1-WAY
⊠	CD	2-WAY
⊠	CD	2-WAY

GENERAL NOTES

- DUCT DIMENSIONS SHOWN ON MECHANICAL DRAWINGS REFER TO INSIDE CLEAR DUCT DIMENSIONS. WHERE DUCTWORK IS LINED THE CONTRACTOR SHALL INCREASE THE SIZE OF DUCT TO COMPENSATE FOR LINING.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK AND COORDINATE NEW WORK.
- THE CONTRACTOR SHALL INSTALL FIRE DAMPERS WITH ACCESS DOORS IN ALL DUCTS PENETRATING FIRE RATED WALLS WHETHER SPECIFICALLY SHOWN ON THE DRAWING OR NOT.
- PROVIDE ALL PIPE OPENINGS THROUGH PARTITIONS WITH PIPE SLEEVES. FOR PIPES PENETRATING FIRE RATED PARTITIONS, THE SPACE BETWEEN THE PIPE AND THE SLEEVE SHALL BE SEALED WITH FIRE STOPPING MATERIAL.
- COORDINATE DUCTWORK, GRILLE, DIFFUSER AND REGISTER LOCATIONS WITH LIGHTS, ARCHITECTURAL ELEMENTS AND SHELING.
- THIS CONTRACTOR SHALL SUBMIT FOR REVIEW A COMPOSITE SHOP DRAWING, FULLY COORDINATED WITH ALL OTHER TRADES, INDICATING DUCTWORK, PLUMBING PIPING, SMOKE DETECTORS, LIGHTS, CONDUITS, DIFFUSERS, GRILLES, ETC.
- CONTRACT DRAWINGS AS FAR AS THEY RELATE TO THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, PIPING AND SHEETMETAL, SHALL BE UNDERSTOOD AS DIAGRAMMATIC. ANY CHANGES TO SHEETMETAL AND EQUIPMENT LOCATIONS NECESSARY TO AVOID INTERFERENCE WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST.
- PROVIDE CABLE OPERATED DAMPERS ON DUCTWORK ABOVE DRYWALL CEILINGS.
- ALL RETURN DUCTWORK ENDING ABOVE HUNG CEILING TO HAVE 1/2" WMS.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT PHASING AND TIME SCHEDULE FOR CONSTRUCTION.

IN CHARGE OF JW
 CHECKED BY RG
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SEQUENCE OF OPERATION

HP_UNITS (HP-1)

PROVIDE A NEW TEMPERATURE CONTROL PANEL WITH 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO CHANGE-OVER, SET-BACK, HEAT-OFF-COOL AND ON-AUTO FAN SWITCH. HEATING AND COOLING SHALL BE ENABLED AND DISABLED THROUGH THIS THERMOSTAT.

UNIT OFF: THE OUTSIDE AIR INTAKE AND EXHAUST AIR DAMPERS SHALL BE CLOSED, AND THE RETURN AIR DAMPER SHALL BE FULL OPEN.

FAN OPERATION: THE UNIT SHALL START AND STOP AT PRE-SET TIMES AS PROGRAMMED THROUGH THE PROGRAMMABLE THERMOSTAT. UPON STARTUP, THE SUPPLY FAN START AND RAMP UP TO THE PROGRAMMED SPEED. THE OUTDOOR AIR DAMPER AND THE EXHAUST AIR DAMPERS SHALL OPEN AND THE RETURN AIR DAMPER SHALL CLOSE TO THE MINIMUM OUTDOOR AIR POSITION. UPON FAN SHUT DOWN THE OUTDOOR AIR DAMPER AND EXHAUST DAMPERS SHALL FULLY CLOSE AND THE RETURN AIR DAMPER SHALL FULLY OPEN.

COOLING OPERATION: UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE CONTROL CIRCUITS ENERGIZED DURING THE PROGRAMMED OCCUPIED PERIODS. THE OUTSIDE AIR INTAKE DAMPER SHALL BE OPEN AND SUPPLY AIR FAN ON. DX COOLING SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE SET-POINT AT 75°F (ADJUSTABLE).

HEATING OPERATION: UNIT SUPPLY FAN SHALL RUN CONTINUOUSLY DURING THE PROGRAMMED OCCUPIED PERIODS. THE OUTSIDE AIR INTAKE DAMPER SHALL BE OPEN AND SUPPLY AIR FAN ON. DX HEATING SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE SET-POINT AT 68°F (ADJUSTABLE).

MORNING WARM-UP OPERATION: UNIT SHALL START AND OPERATE FOR A PREDETERMINED PERIOD AS PROGRAMMED INTO THE UNITARY CONTROLS. DURING THIS CYCLE; OUTSIDE, INTAKE, AND EXHAUST AIR DAMPERS SHALL REMAIN CLOSED, AND RETURN AIR DAMPER SHALL REMAIN OPEN. THE COMPRESSOR SHALL ENERGIZE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT. WHEN THE ZONE TEMPERATURE COMES TO WITHIN 2°F (ADJUSTABLE) OF SET POINT, THE UNIT SHALL OPERATE IN OCCUPIED MODE.

MORNING COOL-DOWN OPERATION: UNIT SHALL START AND OPERATE FOR A PREDETERMINED PERIOD AS PROGRAMMED INTO THE UNITARY CONTROLS. DURING THIS CYCLE; OUTSIDE, INTAKE, AND EXHAUST AIR DAMPERS SHALL REMAIN CLOSED, AND RETURN AIR DAMPER SHALL REMAIN OPEN. THE COMPRESSOR SHALL ENERGIZE TO MAINTAIN DISCHARGE AIR TEMPERATURE SET POINT. WHEN THE ZONE TEMPERATURE COMES WITHIN 2°F OF SET POINT, THE UNIT SHALL OPERATE IN OCCUPIED MODE.

LIMIT CONTROLS: PROVIDE A HIGH/LOW LIMIT CONTROL(S) IN THE SUPPLY FAN DISCHARGE ARRANGED TO OVERRIDE TEMPERATURE CONTROLS AND PREVENT DISCHARGE TEMPERATURE FROM DROPPING BELOW 50°F AND RISING ABOVE 110°F (ADJUSTABLE). ALL DAMPERS SHALL GO TO THE UNIT OFF POSITION.

MISCELLANEOUS: WHENEVER UNITS ARE SHUTDOWN, THE OUTSIDE AIR INTAKE AND EXHAUST AIR DAMPERS SHALL BE CLOSED AND THE RETURN AIR DAMPER SHALL BE OPEN. PROVIDE ALL WIRING AS REQUIRED.

TOILET_EXHAUST-FAN: TOILET EXHAUST FAN SHALL BE INTERLOCKED WITH A TIME-CLOCK TO OPERATE DURING OCCUPIED PERIODS.

EXHAUST-FAN: EXHAUST FAN SHALL BE INTERLOCKED WITH A TIME-CLOCK TO OPERATE DURING OCCUPIED PERIODS AND/OR 24-7 BASED ON AREA SERVED.

ELECTRIC_UNIT_HEATER: PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH ON-AUTO-OFF SWITCH, LOCATED AS SHOWN ON PLAN AND COORDINATED WITH ARCHITECTURAL DRAWINGS. UNIT HEATER SHALL ENERGIZE TO MAINTAIN TEMPERATURE SET-POINT OF 55°F (ADJUSTABLE).

 OLA Consulting Engineers 60 Broadway, Hawthorne, New York 10632 914.747.2600 8 West 38th Street, Suite 501 New York, NY 10018 646.849.4110 ola.com	

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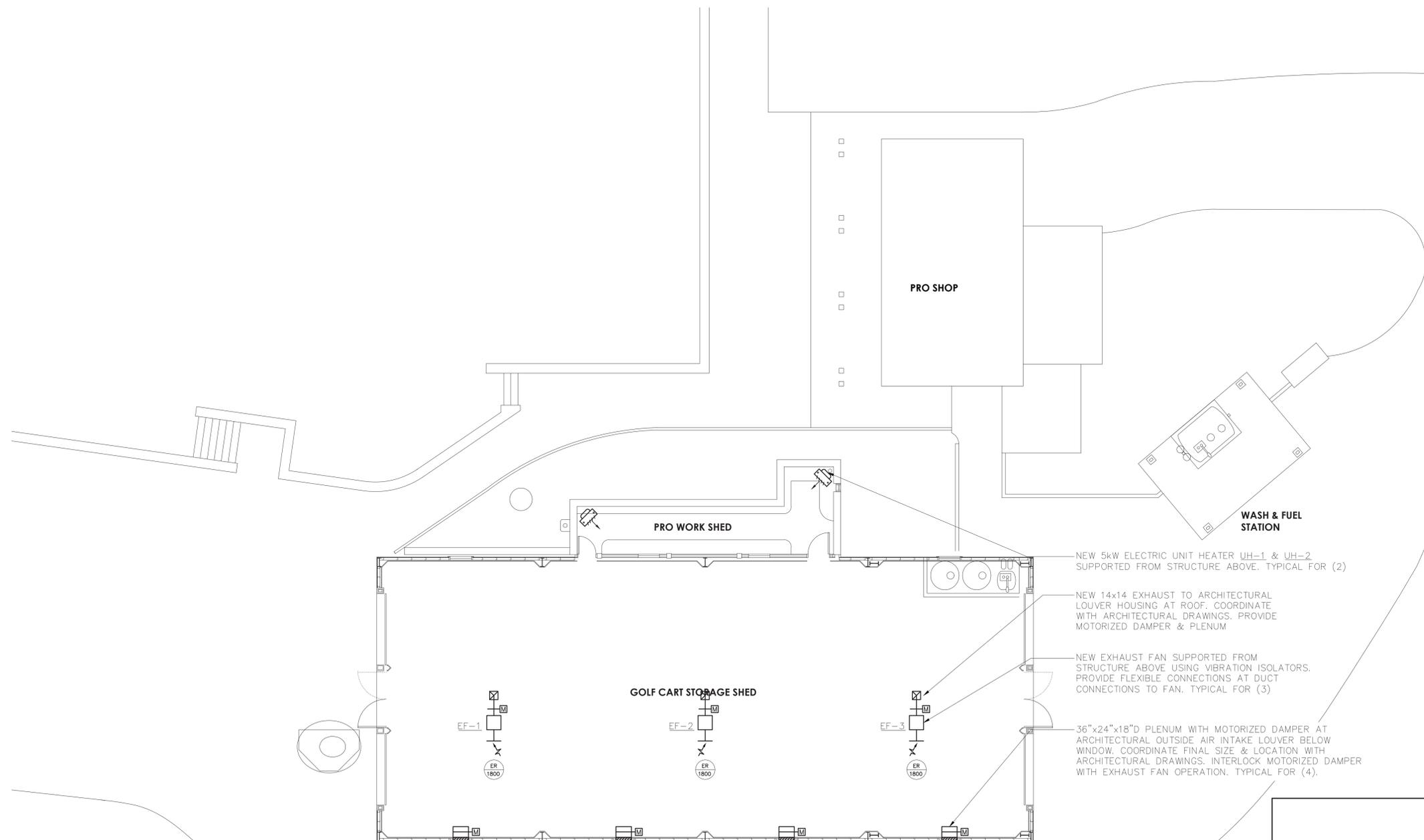
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TITLE _____	TITLE _____	TITLE _____	TITLE _____

WESTCHESTER COUNTY, NEW YORK		CONTRACT NUMBER	SHEET NUMBER
DEPARTMENT OF PUBLIC WORKS		17 - 539	M-001
DIVISION OF ENGINEERING		SHEET NO. 37 OF 59	

NEW GOLF CART STORAGE FACILITY AND CLUBHOUSE UPGRADES		SCALE: NONE	DATE: 6/4/21
MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK		DPW FILE NO.	REV. NO.
MECH. SYMBOLS, ABBREVIATIONS, & NOTES		10-02-M-70-0	0



NEW 5kW ELECTRIC UNIT HEATER UH-1 & UH-2 SUPPORTED FROM STRUCTURE ABOVE. TYPICAL FOR (2)

NEW 14x14 EXHAUST TO ARCHITECTURAL LOUVER HOUSING AT ROOF. COORDINATE WITH ARCHITECTURAL DRAWINGS. PROVIDE MOTORIZED DAMPER & PLENUM

NEW EXHAUST FAN SUPPORTED FROM STRUCTURE ABOVE USING VIBRATION ISOLATORS. PROVIDE FLEXIBLE CONNECTIONS AT DUCT CONNECTIONS TO FAN. TYPICAL FOR (3)

36"x24"x18"D PLENUM WITH MOTORIZED DAMPER AT ARCHITECTURAL OUTSIDE AIR INTAKE LOUVER BELOW WINDOW. COORDINATE FINAL SIZE & LOCATION WITH ARCHITECTURAL DRAWINGS. INTERLOCK MOTORIZED DAMPER WITH EXHAUST FAN OPERATION. TYPICAL FOR (4).

**CART STORAGE SHED
MECHANICAL NEW WORK PLAN**



SCALE: 1/8" = 1'-0"
NOTES:
1. OUTDOOR INTAKE AIR SHALL BE PROVIDED THROUGH ARCHITECTURAL LOUVERS LOCATED BELOW WINDOWS ALONG THE EAST PERIMETER WALL. REFER TO ARCHITECTURAL DRAWINGS.

OLA Consulting Engineers
60 Broadway, Hawthorne,
New York 10632
914.747.2600
8 West 38th Street,
Suite 501
New York, NY 10018
646.849.4110
olaee.com



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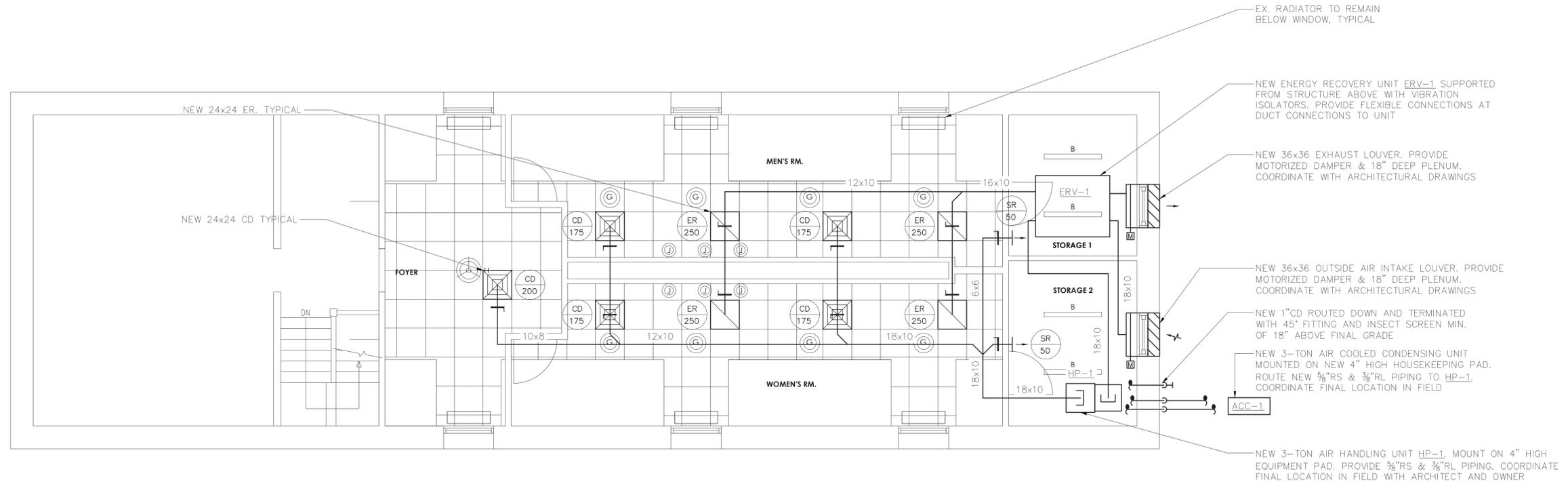
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 TITLE: _____ DATE: _____ TITLE: _____ DATE: _____

WESTCHESTER COUNTY, NEW YORK
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING
 CONTRACT NUMBER: 17-539 SHEET NUMBER: M-201
 SHEET NO. 38 OF 59

NEW GOLF CART STORAGE FACILITY
 AND CLUBHOUSE UPGRADES
 MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK
 CART STORAGE SHED MECHANICAL NEW WORK PLAN
 SCALE: 1/8" = 1'-0"
 DATE: 6/4/21
 DPW FILE NO.: 10-02-M-71-0 REV. NO.: 0

IN CHARGE OF: JW
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**BATHROOMS & LOCKERS
MECHANICAL NEW WORK PLAN**



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

NOTES:
1. SUPPLY AND RETURN DUCTWORK ABOVE TOILET ROOM SHALL BE RUN ABOVE CEILING. COORDINATE WITH ARCHITECTURAL DRAWINGS.

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NAME	NAME	SIGNATURE	SIGNATURE	DATE
TITLE	TITLE	TITLE	TITLE	DATE
WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING				CONTRACT NUMBER 17 - 539 SHEET NUMBER M-202
NEW GOLF CART STORAGE FACILITY AND CLUBHOUSE UPGRADES MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK BATHROOMS & LOCKERS MECHANICAL NEW WORK PLAN				SCALE: 1/4" = 1'-0" DATE: 6/4/21 DPW FILE NO. 10-02-M-72-0 REV. NO. 0

EXHAUST FAN SCHEDULE

DESIGNATION	EF-1	EF-2	EF-3
LOCATION	GOLF CART STORAGE	GOLF CART STORAGE	GOLF CART STORAGE
AREA SERVED	GOLF CART STORAGE	GOLF CART STORAGE	GOLF CART STORAGE
MODEL	SQ-140 (VARI-GREEN)	SQ-140 (VARI-GREEN)	SQ-140 (VARI-GREEN)
CFM	1,800	1,800	1,800
BHP	0.3	0.3	0.3
HP	3/4	3/4	3/4
FAN RPM	1140	1140	1140
SP (IN H ₂ O)	0.375	0.375	0.375
VOLTS/ø/Hz	230/1/60	230/1/60	230/1/60
INTERLOCK	-	-	-

- NOTES:
- FANS BASED ON GREENHECK.
 - ALL MOTORS SHALL BE PREMIUM EFFICIENCY.
 - FURNISH MOTOR STARTERS AND DISCONNECT SWITCHES FOR EACH FAN.
 - FURNISH MOTOR AND BELT GUARD FOR ALL EXTERNAL MOTOR DRIVES.
 - FURNISH RUBBER IN SHEAR OR SPRING VIBRATION ISOLATORS AS PER THE SPECIFICATION.
 - FURNISH WALL MOUNTED SPEED CONTROLLER OR THERMOSTAT AS INDICATED ON PLAN.

ENERGY RECOVERY SCHEDULE

DESIGNATION	ERV-1
LOCATION	STORAGE
AREA SERVED	TOILET/LOCKER ROOM
MANUFACTURER	GREENHECK
MODEL	ERV-20-15L
WEIGHT	779
SUPPLY FAN:	
CFM	1,000
MIN OA CFM	1,000
HP	3/4
ESP/TSP	0.75/0.845
EXHAUST FAN:	
CFM	1,000
HP	3/4
ESP/TSP	0.75/0.849

ENERGY CONSERVATION WHEEL: (SUMMER OAT 95/75, WINTER OAT 0/0)

SUMMER SAT DB/WB	78.3/66.2
SUMMER RAT DB/WB	75.0/63.9
SUMMER EAT DB/WB	91.5/73.2
WINTER SAT DB/WB	60.7/48.8
WINTER RAT DB/WB	55.8/35.0
WINTER EAT DB/WB	20.4/19.0

FILTERS DATA:

QUANTITY/SIZE	8-20x20 (EXHAUST AIR) 8-20x20 (OUTDOOR AIR)
EFFICIENCY	MERV 8

ELECTRICAL DATA:

VOLTS/ø/Hz	208 / 1 / 60
MCA	18.5
MAX FUSE SIZE	25.0

- NOTES:
- FURNISH THE FOLLOWING OPTIONS AND ACCESSORIES:
 - ROOM TEMPERATURE SENSOR.
 - PREMIUM EFFICIENCY MOTORS
 - ANGLE FILTER SECTIONS WITH MERV-8 FILTERS.
 - DIRTY FILTER SENSOR - OUTDOOR AND EXHAUST AIR.
 - OUTDOOR AIRFLOW MONITORING.
 - ROTATION SENSOR.
 - DUCT FLANGE.
 - MICROPROCESSOR CONTROLS.
 - SPRING VIBRATION ISOLATORS.
 - MOTORIZED SUPPLY AND RETURN LOW LEAKAGE DAMPERS.
 - FROST CONTROL - MODULATING WHEEL.
 - FURNISH EXTRA DRIVE BELT AND EXTRA FILTER SET.
 - PROVIDE UNIT MOUNTED DISCONNECT SWITCH.
 - UNIT SHALL BE UL LISTED.

EQUIPMENT NOTES:

- LOUVERS:** SHALL BE RUSKIN MODEL ELF375DX DRAINABLE BLADE, 37.5' BRUSHED ALUMINUM 6063-T5, ANODIZED CUSTOM COLOR TO BE SUBMITTED FOR APPROVAL. FURNISH 1/2" GALVANIZED STEEL BIRD SCREEN. COORDINATE WITH ARCHITECTURAL PLANS.
- MOTORIZED DAMPER:** SHALL BE RUSKIN MODEL CD40. 4" DEEP EXTRUDED ALUMINUM AIRFOIL DAMPER. DAMPER SHALL HAVE OPPOSED BLADES, MOTOR, AND LINKAGE. DAMPER SHALL BE 120V, 3 AMP MAX. DAMPER SHALL BE LOW-LEAKAGE RATED TYPE.
 - OUTSIDE AIR INTAKE & EXHAUST DAMPERS SHALL BE CLASS 1 MOTORIZED DAMPERS WITH MAXIMUM LEAKAGE RATE OF 4 CFM/FT² @ 1.0" W.G.; TESTED IN ACCORDANCE WITH AMCA 500D. DAMPERS SHALL BE CONFIGURED TO CLOSE AUTOMATICALLY WHEN THE SYSTEMS OF SPACE SERVED ARE NOT IN USE.
- CEILING DIFFUSERS:** SHALL BE TITUS MODEL TDC WITH OPPOSED BLADE VOLUME DAMPER. ALL STEEL CONSTRUCTION. FINISH SHALL BE BAKED ON ENAMEL, COLOR SHALL BE WHITE. FRAME SHALL BE SUITABLE FOR LAY IN OR SURFACE MOUNTING. NECK SHALL BE ROUND. REFER TO PLANS FOR MODULE SIZE, NECK SIZE, AND CFM. COORDINATE WITH ARCH PLANS.
- SUPPLY AIR REGISTERS:** SHALL BE TITUS MODEL 300FL, 1/2" SPACING, DOUBLE DEFLECTION, ALL ALUMINUM CONSTRUCTION, AIRFOIL BLADES WITH OPPOSED BLADE VOLUME DAMPER, SIZE AND CFM AS NOTED ON PLANS. FINISH SHALL BE BAKED ON ENAMEL, COLOR SHALL BE WHITE. FRAME SHALL BE SUITABLE FOR SURFACE MOUNT OR LAY IN. COORDINATE WITH ARCH PLANS.
- RETURN & EXHAUST AIR REGISTERS:** SHALL BE TITUS MODEL 355FL, 1/2" SPACING, 35' FIXED DEFLECTION, ALL ALUMINUM CONSTRUCTION, AIRFOIL BLADES WITH OPPOSED BLADE VOLUME DAMPERS, SIZE AND CFM AS NOTED ON PLANS. FINISH SHALL BE BAKED ON ENAMEL, COLOR SHALL BE WHITE. FRAME SHALL BE SUITABLE FOR SURFACE MOUNT OR LAY IN. COORDINATE WITH ARCH PLANS.
- HEAVY DUTY SIDEWALL RETURN AIR REGISTERS - FOR USE IN CART STORAGE SHED:** SHALL BE TITUS MODEL J3RL, STEEL CONSTRUCTION, WITH 1/2" SPACING, 38' FIXED DEFLECTION, 16-GAUGE BORDER, 14-GAUGE BLADES, SUPPORT BARS 6" ON CENTER, OPPOSED BLADE VOLUME DAMPER IN NECK, SIZE AND CFM AS NOTED ON PLANS. FINISH SHALL BE BAKED ON ENAMEL. SUBMIT COLOR CHART FOR APPROVAL. FRAME SHALL BE SUITABLE FOR SURFACE MOUNTING. COORDINATE WITH ARCH PLANS.
- THERMOSTAT GUARDS:** PROVIDE LOCKING TAMPER PROOF COVER FOR ALL THERMOSTATS AND CO2 SENSORS. COVER SHALL BE CLEAR ACRYLIC PLASTIC WITH TUMBLER TYPE KEY LOCK. SIMILAR TO HONEYWELL CG-512A.
- REFRIGERANT PIPE INSULATION:** SHALL BE AP ARMAFLEX PIPE INSULATION. 1" THICK UNSLIT, TO BE INSTALLED BEFORE FINAL CONNECTION. FIELD FABRICATE FITTING INSULATION WITH MITER-CUTS. ALL BUTT JOINTS AND SEAMS ARE TO BE SEALED WITH ARMSTRONG 520 ADHESIVE. ALL INSULATION INSTALLED OUTDOORS SHALL BE COATED WITH ARMSTRONG ARMAFLEX FINISH, AS PER THE MANUFACTURERS RECOMMENDATIONS.
- VERTICAL INDOOR HEAT PUMP (HP-1):** SHALL BE 3-TON VERTICAL DUCTED DAIKIN MODEL FTQ36PBVJU RATED AT 36,000 BTUH COOLING / 40,000 BTUH HEATING; 1,200 CFM @ 0.8" ESP; 3/8"RL & 3/8"HG, R-410A REFRIGERANT. MICROPROCESSOR THERMOSTAT FOR COOLING AND HEATING. ELECTRICAL: 208-230/1/60, 2.8 MCA, 15 MOCP.

OUTDOOR UNIT ACC-1 SHALL BE 3-TON DAIKIN MODEL RZQ36PVJU9 OUTDOOR COMPRESSOR RATED AT 36,000 BTUH COOLING / 40,000 BTUH HEATING; ELECTRICAL: 208-230/1/60, 27 MCA, 30 MOCP.
- ELECTRIC UNIT HEATER (UH-1 & UH-2):** SHALL BE MARKEL MODEL F1FUH05003, RATED AT 400 CFM, 17.1 MBH, 5 kW, 208V/1ø/60Hz, 24 AMPS. PROVIDE THE FOLLOWING OPTIONS: FAN GUARD, AIR DEFLECTION LOUVER, SUMMER FAN SWITCH, HEAT PURGE FAN DELAY SWITCH, DISCONNECT SWITCH, & WALL THERMOSTAT.
- VIBRATION ISOLATORS:** ALL INDOOR AND OUTDOOR HVAC EQUIPMENT SHALL BE MOUNTED ON SPRING VIBRATION ISOLATORS, WITH A RATED STATIC DEFLECTION OF AT LEAST 1". USE MASON TYPE "SLF" OR "SLFH" FOR FLOOR MOUNTED EQUIPMENT, RATED FOR MACHINE LOAD. USE MASON TYPE "30" OR "W30" FOR EQUIPMENT SUSPENDED FROM CEILING. ASSUMING THE EQUIPMENT IS MOUNTED TO PROVIDE FOR EQUAL LOAD DISTRIBUTION, EACH SPRING SHALL BE RATED FOR 1/4 THE UNIT'S TOTAL WEIGHT. SYSTEMS MUST BE ENGINEERED FOR 95% ISOLATION EFFICIENCY AT THE LOWEST ROTATIONAL SPEED OF THE UNIT.

OLA Consulting Engineers
 60 Broadway, Hawthorne,
 New York 10632
 914.747.2600
 8 West 38th Street,
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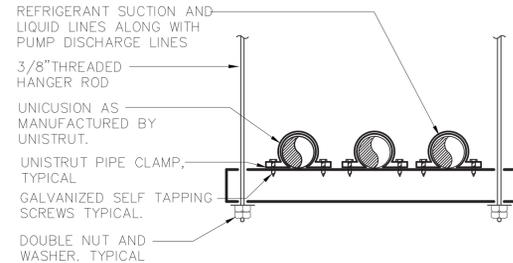
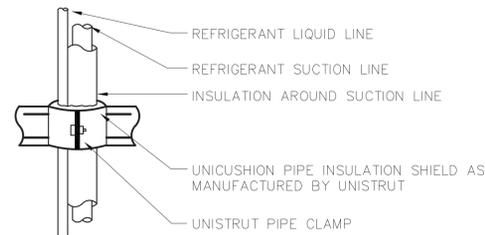
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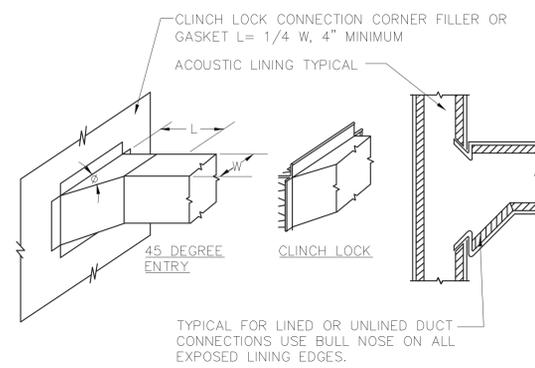
WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING		CONTRACT NUMBER 17-539	SHEET NUMBER M-601
NEW GOLF CART STORAGE FACILITY AND CLUBHOUSE UPGRADES MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK MECHANICAL SCHEDULES		SHEET NO. 40 OF 59	SCALE: NONE DATE: 6/4/21
IN CHARGE OF <u>JW</u> CHECKED BY <u>RG</u> MADE BY <u>AMB</u>		DPW FILE NO. 10-02-M-73-0	REV. NO. 0

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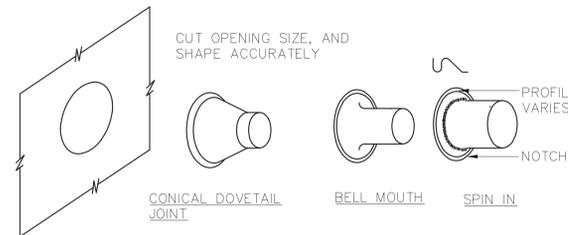
- NOTES:**
- 1.) LIQUID AND SUCTION LINES MAY BE ROUTED TOGETHER FOR CONVENIENCE, BUT MUST BE COMPLETELY INSULATED FROM EACH OTHER. DO NOT SOLDER LIQUID AND SUCTION LINES TOGETHER. DO NOT ALLOW METAL TO METAL CONTACT.
 - 2.) LINES SHOULD BE INSTALLED WITH AS FEW BENDS AS POSSIBLE, ALLOWING SERVICE ACCESS TO THE INDOOR COIL.
 - 3.) USE LONG RADIUS ELBOWS WHEREVER POSSIBLE, EXCEPT IN OIL RETURN TRAPS, WHERE SHORT RADIUS ELBOWS SHOULD BE USED.
 - 4.) SLOPE HORIZONTAL SUCTION LINES 1 INCH EVERY 20 FEET TOWARD THE OUTDOOR UNIT.

5 REFRIGERANT PIPE SUPPORT DETAIL
SCALE: NONE

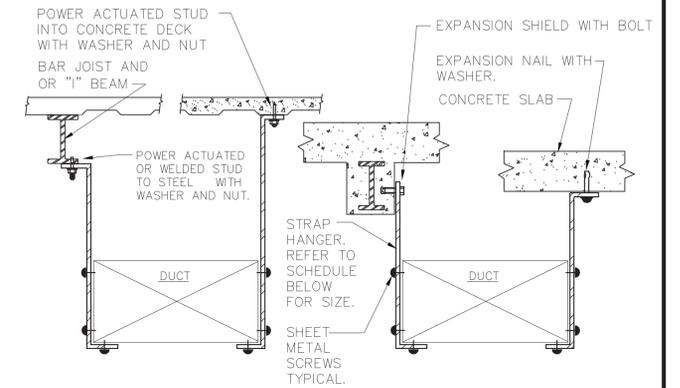


TYPICAL FOR LINED OR UNLINED DUCT CONNECTIONS USE BULL NOSE ON ALL EXPOSED LINING EDGES.

CLOSE ALL OPENINGS AT CORNERS WITH FILLER PIECE OR GASKET.



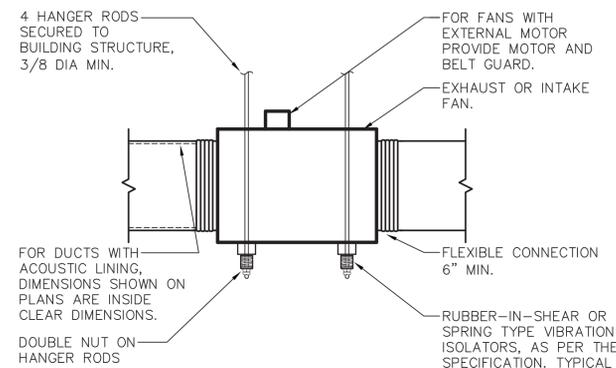
3 DUCT BRANCH CONNECTION DETAIL
SCALE: NONE



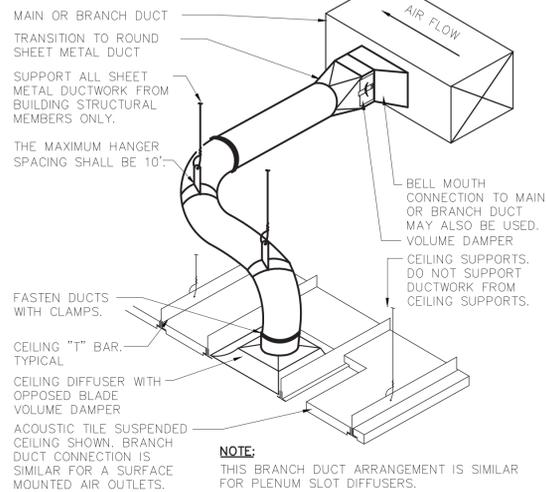
- NOTES:**
1. FOR DUCTS OVER 49" WIDE, THE STRAP HANGER SHALL BE TURNED UNDER THE BOTTOM OF THE DUCT.
 2. ALL ANCHORS AND INSERTS SHALL HAVE NEW YORK CITY BOARD OF STANDARD AND APPEALS, (BSA) APPROVAL.

HANGER STRAP SCHEDULE		
DUCT SIZE	HANGER SIZE	MAXIMUM SPACING
UP TO 2 SQ.FT.	1" X 1/16"	8'-0"
2 SQ.FT. TO 4 SQ.FT.	1" X 1/8"	8'-0"
4 SQ.FT. TO 10 SQ.FT.	1" X 1/8"	6'-0"
OVER 10 SQ.FT.	1" X 1/8"	4'-0"

1 DUCT HANGER DETAIL
SCALE: NONE

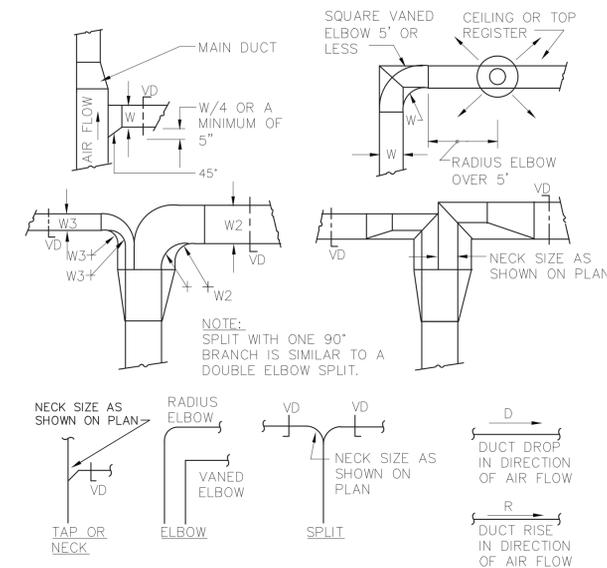


6 INLINE FAN DETAIL
SCALE: NONE



NOTE:
THIS BRANCH DUCT ARRANGEMENT IS SIMILAR FOR PLENUM SLOT DIFFUSERS.

4 FLEXIBLE DUCT CONNECTION DETAIL
SCALE: NONE



- NOTES:**
- 1.) SINGLE LINE REPRESENTATIONS REFER TO DOUBLE LINE DETAILS.
 - 2.) USE RADIUS OR SQUARE VANED BENDS FOR BOTH ELBOWS AND SPLITS AS DETERMINED BY SPACE LIMITATIONS, AND THE DISTANCE FROM AIR OUTLETS.
 - 3.) ALL SQUARE ELBOWS SHALL HAVE FACTORY TURNING VANES, AND MAINTAIN A CONSTANT WIDTH.
 - 4.) WHERE DUCTS SPLIT, THE SOLID LINE REPRESENTATION IS PREFERRED, UNLESS PRECLUDED BY SPACE, OR OTHERWISE INDICATED.
 - 5.) USE ELBOW SPLIT FOR BRANCH CONNECTIONS ONLY WHERE NECK SIZE IS GIVEN.

2 DUCT BRANCH TAKEOFF DETAIL
SCALE: NONE

OLA Consulting Engineers
60 Broadway, Hawthorne,
New York 10632
914.747.2600
8 West 38th Street,
Suite 501
New York, NY 10018
646.849.4110
ola.com

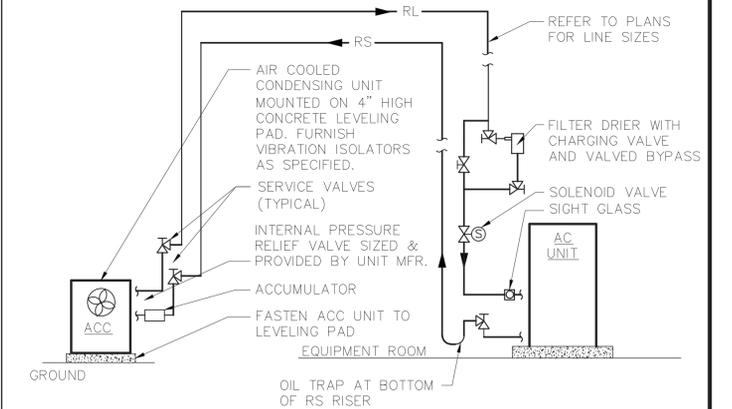


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REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
RECORD DRAWING CERTIFICATION				
<input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES				
CONTRACTOR			PROJECT COORDINATOR	
NAME	SIGNATURE		NAME	SIGNATURE
TITLE	DATE	TITLE	DATE	
WESTCHESTER COUNTY, NEW YORK			CONTRACT NUMBER	SHEET NUMBER
DEPARTMENT OF PUBLIC WORKS			17 - 539	M-701
DIVISION OF ENGINEERING			SHEET NO. 41 OF 59	
NEW GOLF CART STORAGE FACILITY AND CLUBHOUSE UPGRADES			SCALE: NONE	DATE: 6/4/21
MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK			DPW FILE NO.	REV. NO.
MECHANICAL DETAILS 1 OF 2			10-02-M-74-0	0

IN CHARGE OF JW
CHECKED BY RG
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NOTES:

- 1.) PROVIDE TRAPS AS FOLLOWS:
 - A. FOR RISES UP TO 50', USE 1 TRAP AT THE BOTTOM OF THE SUCTION RISER.
 - B. FOR RISES BETWEEN 50' AND 100', INSTALL A SECOND TRAP HALF WAY UP THE RISER.
 - C. FOR RISES OVER 100', INSTALL TRAPS AT 1/3 INTERVALS.
- 2.) REFRIGERANT PIPING SHALL BE INSTALLED SO THAT THEY WILL NOT OBSTRUCT SERVICE ACCESS TO EITHER THE INDOOR COIL OR CONDENSING UNIT, THE AIR HANDLER IN GENERAL OR THE FILTER.
- 3.) SLOPE HORIZONTAL SUCTION LINES APPROX. 1" EVERY 20 FEET TOWARD THE CONDENSING UNIT TO FACILITATE OIL RETURN.
- 4.) ALL FASTENERS AND SUPPORTS LOCATED OUTDOORS SHALL BE GALVANIZED

1 REFRIGERANT PIPING SCHEMATIC
SCALE: NONE

OLA Consulting Engineers
60 Broadway, Hawthorne,
New York 10632
914.747.2600
8 West 38th Street,
Suite 501
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NAME	NAME	SIGNATURE	SIGNATURE	DATE
TITLE	TITLE	DATE	DATE	DATE
WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING				CONTRACT NUMBER 17-539
NEW GOLF CART STORAGE FACILITY AND CLUBHOUSE UPGRADES MOHANSIC GOLF COURSE, YORKYOWN, NEW YORK MECHANICAL DETAILS 2 OF 2				SHEET NUMBER M-702
SCALE: NONE DATE: 6/4/21				SHEET NO. 42 OF 59
DPW FILE NO. 10-02-M-75-0				REV. NO. 0

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