

WHITE PAPER

PET VALU

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OVERVIEW OF CHALLENGE IN THE PROJECT

Pet Valu was planning to open a new store in an existing commercial building in Cumberland, Rhode Island. The place was a big white box space with existing electrical, domestic water, and sewer services provided by the base building.

Following were the challenges while designing the Pet Valu store-

- 1.Design the MEP system using existing base building services.
- 2.Keep the cost low and maintain Pet Valu design standards.
- 3.Running the services from the existing service location to the new space by keeping the other existing commercial stores operational

YOUR ONE STOP
SHOP FOR ALL
MEP DESIGN
NEEDS

DESIGNED &
CONCEPTUALIZED BY
NY-ENGINEERS

OUR CUSTOM SOLUTION

NY Engineers were focused to come up with the best possible solution which is not time-consuming and affordable to the client.

We found the best possible routing for the sewer and water piping without affecting the operations of other stores. Water, sewer, and electrical power load were calculated and satisfied within the available existing load in compliance with all local codes, energy conservation codes, and Pet Valu design standard requirements.

The plumbing drain piping layout was designed with the aim to lower the material cost.

The whole MEP system for Pet Valu was designed within 2 weeks resulting in faster DOB approval and functioning before the planned timeline.

Area - 4150 Sq. Ft.

Services Used - Mechanical, Electrical, Plumbing

EXISTING ROOFTOP UNIT SCHEDULE																				
UNIT:			COOLING PERFORMANCE			HEATING PERFORMANCE				COMPRESSORS		CONDENSER FAN		EVAP. FAN		ELECTRICAL DATA (3Ø/208V/60HZ)		DIMENSIONS (L X W X D) (IN.)	WT. (LBS)	MANUFACTURER MODEL NO.
TAG	LOCATION	TONS	CAP. (MBH)	EER	CFM	HEAT INPUT (MBH)	HEAT OUTUT (MBH)	EFF. (%)	GAS PIPE SIZE Ø (IN.)	TYPE	NO.	HP	UNITS	HP	UNITS	MCA	RLA			
RTU-1 10	ROOF	5	120	9.0	4000	240	192	80	3/4	RECIP.	2	3/4	2	2	1	51.9	48.3	90 X 60 X 50	1116	YORK DM120N20A2AAA3C
REMARKS: RTU-1 EER = 9.0, REFRIGERANT = R22			BASIS OF DESIGN: ROOFTOP UNIT WITH DIFFERENTIAL ENTHALPY CONTROLLED ECONOMIZER WITH POWER EXHAUST, LOW AMBIENT HEAD PRESSURE CONTROLS, SMOKE DETECTOR, PROGRAMMABLE THERMOSTAT, ROOF CURB, THRU-THE-BOTTOM SERVICE CONNECTIONS AND 120 VAC GFCI CONVENIENCE OUTLET.																	

NOTES:
1) CONTRACTOR TO UTILIZE LANDLORD'S ROOFING CONTRACTOR FOR ALL ROOF PENETRATIONS. REUSE EXISTING ROOF OPENINGS IF POSSIBLE.
2) CONTRACTOR TO HIRE STRUCTURAL ENGINEER TO VERIFY STRUCTURAL INTEGRITY OF ROOF DECK. ADDITIONAL STRUCTURAL REQUIREMENTS ARE THE RESPONSIBILITY OF THIS CONTRACTOR.
3) RUN 1" CONDENSATE DRAIN LINE TO NEAREST ROOF DRAIN OR SPLASH BLOCK.
4) UNIT SHALL BE MOUNTED ON PREFABRICATED ROOF CURB WITH VIBRATION ELIMINATORS (WHERE REQUIRED). LOCATE PER LANDLORD'S SPECIFICATIONS.

LEGEND									
	SQUARE CEILING SUPPLY AIR DIFFUSER 24/24		EQUIPMENT LABEL		TEMPERATURE SENSOR		SD	SMOKE DAMPER	
	SQUARE CEILING SUPPLY AIR DIFFUSER 12/12		DIFFUSER NECK SIZE		CARBON DIOXIDE SENSOR		FSD	FIRE/SMOKE DAMPER	
	ROUND SUPPLY AIR DIFFUSER		SAD		NEW DUCTWORK		BD	BACK DRAFT DAMPER	
	CEILING RETURN AIR GRILLE		RET		PHOTOELECTRIC SMOKE DETECTOR		(E)	EXISTING	
	THERMOSTAT		TR		RELOCATED		(N)	NEW	
			VD		EXISTING DUCTWORK		FC	FLEXIBLE CONNECTION	
			FD		CABLE OPERATED VOLUME DAMPER			FIELD CONNECTION	

SMOKE DETECTOR TEST STATION

	REMOTE TEST STATION WITH AUDIBLE AND VISUAL ALARM FOR DUCT SMOKE DETECTOR MANUFACTURED BY SIMPLEX MODEL 4098-9842.
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AIR BALANCE SCHEDULE

MARK	PET VALU (CFM)		
	S/A	O/A	E/A
RTU-1	2,000	500	-
RTU-2	2,000	500	-
EF-1	-	-	70
EF-2	-	-	70
EF-3	-	-	70
EF-4	-	-	170
TOTAL	4,000	1000	380
SALES PRESSURIZATION (O/A) - (E/A) = +1000 CFM - 380 CFM = +620 CFM			
NET BUILDING PRESSURIZATION = +620 CFM			

THERMOSTAT SCHEDULE

THERMOSTAT BY MECHANICAL CONTRACTOR
THERMOSTAT SHALL BE MANUFACTURED BY HONEYWELL, MODEL VisionPRO WIFI (TH8321WF1001). THERMOSTAT SHALL BE TOUCHSCREEN PROGRAMMABLE 7-DAY TYPE. PROVIDE LOCKING GUARD COVER. MOUNT AT 4'-0" AFF.

KEY NOTES

- ROUTE SUPPLY AND RETURN DUCTWORK FULL SIZE FROM THE NEW RTU CONNECTIONS THROUGH THE ROOF AS SHOWN. PROVIDE FLEXIBLE CONNECTIONS AND TRANSITION THROUGH THE JOISTS AS REQUIRED.
- FACTORY INSTALLED SMOKE DETECTOR CAPABLE OF SHUTTING DOWN THE RESPECTIVE MECHANICAL UNIT UPON ACTIVATION.
- VERIFY FINAL PLACEMENT OF 24/7 EXISTING PROGRAMMABLE THERMOSTAT AND NEW TEMPERATURE SENSORS WITH ARCHITECTURAL FLOOR PLAN AND INTERIOR ELEVATIONS.
- PROVIDE NEW CEILING MOUNTED CABINET FAN FOR EXHAUST. ROUTE THE BRANCH EXHAUST DUCT TO MAIN EXHAUST DUCT TO EXTERIOR OF BUILDING. FAN SHALL BE INTERLOCKED WITH RESTROOM LIGHT SWITCH FOR SIMULTANEOUS OPERATION.
- ROUTE NEW EXHAUST DUCT UP THROUGH ROOF WITH ROOF CAP AND INSECT SCREEN. MAINTAIN MINIMUM 10'-0" CLEARANCE FROM ALL AIR INTAKES AND BUILDING OPENINGS. COORDINATE ALL ROOF MODIFICATIONS WITH LANDLORD REPRESENTATIVE AND LANDLORD ROOFING CONTRACTOR.
- PROVIDE NEW CEILING MOUNTED CABINET FAN AT 11'-0" AFF FOR EXHAUST. FAN SHALL BE CONTROLLED BY AN INDEPENDENT SWITCH LOCATED INSIDE THE DOG WASH STATION.
- ROUTE 3"PVC FLUE VENT AND 3" PVC COMBUSTION AIR INTAKE OUT THRU EXTERIOR WALL AND TERMINATE PER MANUFACTURER'S INSTRUCTION.
- CONN 4" GALVANIZED SHEET METAL (26 GA.) CLOTHES DRYER DUCT FROM CLOTHES DRYER AND ROUTE AS SHOWN THROUGH EXTERIOR WALL @ 10'-0" FINISHED ELEVATION AND TERMINATE WITH DRYER VENT CAP WITH BACKDRAFT DAMPER (NO SCREWS). MAINTAIN A MIN. DISTANCE OF 10'-0" AWAY FROM ALL FRESH AIR INTAKES AND BUILDING OPENINGS.
- RETURN AIR INTAKE OPENING SHALL HAVE A MINIMUM FREE AREA OF 7 SQUARE FEET. PROVIDE 1/4"x1/4" CORROSION RESISTANT WIRE MESH SCREEN OVER INTAKE.
- EXPOSED DUCTWORK SHALL BE INSTALLED AS INTERNALLY LINED SPIRAL RIGID ROUND WITH GALVANIZED SHEET METAL FINISH. BOTTOM OF DUCTWORK SHALL BE FLUSH WITH THE ADJACENT LIGHTS (11'-0" A.F.F.).
- UNDERCUT DOOR 1" FOR TRANSFER AIR.
- RETURN AIR PLENUM SHALL BE INTERNALLY LINED AS DESCRIBED IN THE GENERAL NOTES ON SHEET M2.0. BOTTOM OF RETURN PLENUM SHALL BE EVEN WITH THE BOTTOM OF THE ADJACENT SUPPLY MAIN(S).

NOTE:
CONSTRUCTION DOCUMENTS ARE BASED ON A SET OF DRAWINGS AND/OR INFORMATION PROVIDED BY PET VALU. SARGENT ARCHITECTS AND SARGENT'S ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS.

AIR DEVICE SCHEDULE

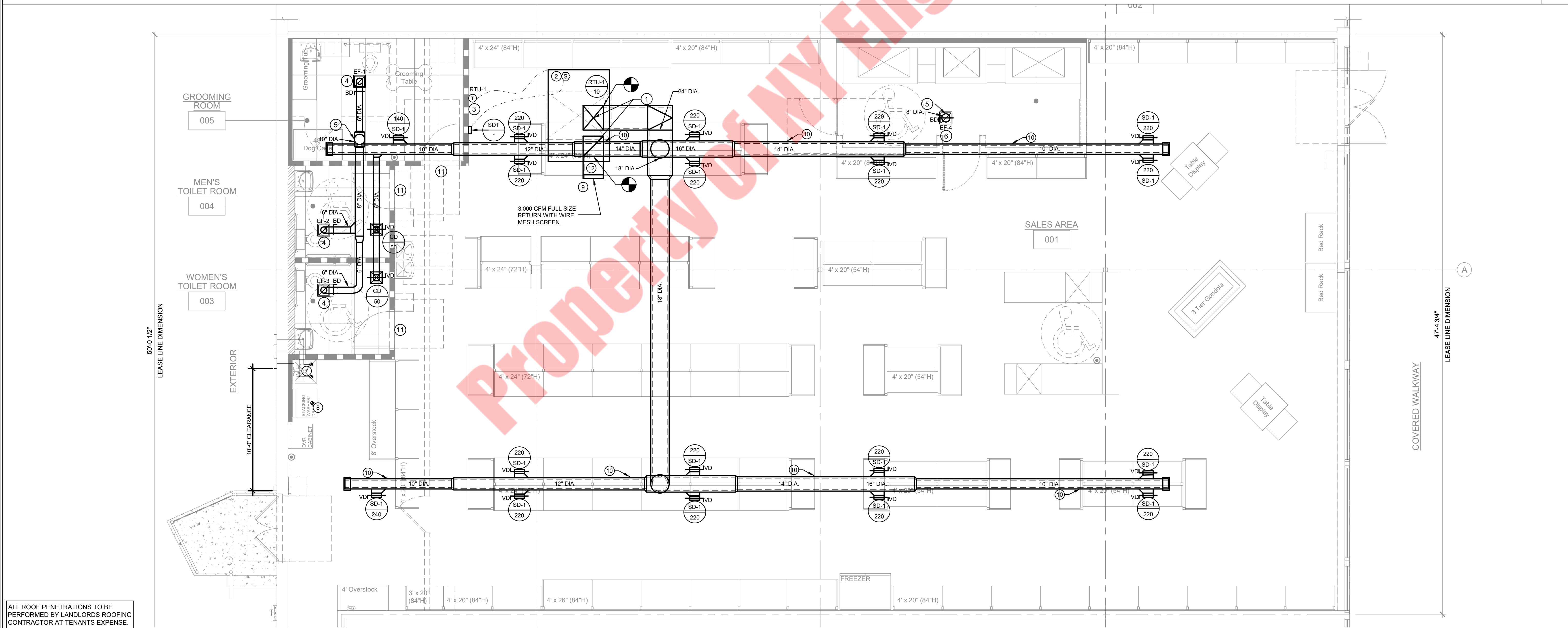
MARK	FACE SIZE	TYPE	MOUNTING TYPE	MAXIMUM N.C.	DIRECTION	MANUFACTURER	MODEL	NOTES
CD	12X12	SUPPLY	CEILING	30	4-WAY	TITUS	TMS	1,2,3
SD-1	12X8	SUPPLY	SURFACE	30	1-WAY	TITUS	300RL	1,2,3

NOTES: (NOT ALL MAY APPLY)
1. PROVIDE NECESSARY MOUNTING HARDWARE AND ACCESSORIES AS REQUIRED FOR INTENDED INSTALLATION.
2. AIR DEVICE(S) SHALL BE FACTORY FINISHED #26 WHITE.
3. AIR DEVICE(S) SHALL BE INSTALLED WITH MANUFACTURER AVAILABLE MOLDED INSULATION BACKING. FIELD FABRICATED INSULATION BACKING IS NOT ALLOWED (UNLESS FIRST APPROVED BY THE OWNER'S CONSTRUCTION MANAGER).

MECHANICAL SCHEDULE

SCALE: NONE

2



MECHANICAL FLOOR PLAN

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

1