MECHANICAL GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE PURCHASED AND INSTALLED IN ACCORDANCE WITH ALL NATIONAL & NEW YORK STATE CODES AND REGULATIONS (AS WELL AS ALL APPLICABLE LOCAL CODES & REGULATIONS). THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL HVAC WORK IS PROVIDED AND INSTALLED IN STRICT ACCORDANCE WITH SEISMIC REQUIREMENTS.
2. DO NOT SCALE FROM THESE DRAWINGS.
3. THE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL HVAC EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL OTHER MECHANICAL, ELECTRICAL, PLUMBING, FIRE SPRINKLER, ARCHITECTURAL AND STRUCTURAL SYSTEMS. DURING SHOP DRAWINGS SUBMISSIONS, SHOW ALL MOUNTING HEIGHTS OF DUCTWORK, UNITS, ETC.
4. VERIFY ALL EQUIPMENT VOLTAGES WITH THE ELECTRICAL DESIGN PRIOR TO ORDERING EQUIPMENT.
5. PROVIDE PHASE LOSS PROTECTION FOR ALL POLY-PHASE MOTOR DEVICES.
6. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE ASHRAE, NFPA, AND SMACNA GUIDE RECOMMENDATIONS. ALL DUCTS TO HAVE PITTSBURGH TYPE LOCK FOR LONGITUDINAL SEAMS AND DRIVE SLIP / "S" SLIP FOR TRANSVERSE JOINTS. "DUCT-MATE" JOINT SYSTEM IS ACCEPTABLE IN LIEU OF PRIOR SEAM SYSTEMS. SIZES AS SHOWN INDICATE INSIDE CLEAR DIMENSIONS OF THE AIR PASSAGE. DUCTWORK SHALL BE FULLY INSULATED AS PER APPLICABLE CODES AND WRITTEN SPECIFICATIONS.
7. DUCT SIZES MUST BE VERIFIED FOR CLEARANCES AT THE JOB SITE PRIOR TO FABRICATION. DIMENSIONS MAY BE CHANGED TO ACCOMMODATE CONSTRUCTION AS LONG AS EFFECTIVE CROSS-SECTIONAL AREA IS MAINTAINED. DUCT TRANSITIONS SHALL BE CONSTRUCTED WITH A SLOPE OF 1" TO 4". ALL DEVIATIONS FROM ORIGINAL CONTRACT DRAWINGS SHALL BE REVIEWED BY ENGINEER DURING THE SHOP DRAWING PROCESS.
8. PROVIDE MANUAL BALANCING DAMPERS AS REQUIRED TO PROPERLY BALANCE EACH INDIVIDUAL AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF THE BALANCING DAMPER IS NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUMS STANDARDS SHALL GOVERN. ALL SUPPLY, RETURN, AND EXHAUST MAIN BRANCHES FROM TRUNKS, EACH SPLIT AND ALL SUB- BRANCHES FROM MAIN SHALL INCORPORATE BALANCING DAMPERS.
9. PROVIDE FLEXIBLE CONNECTORS AT ALL DUCT CONNECTIONS TO VIBRATING EQUIPMENT. THESE CONNECTORS SHALL BE INSTALLED IN CLOSE PROXIMITY TO SUCH EQUIPMENT.
10. PROVIDE FIRE DAMPERS WITH RATED ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS, SMOKE AND FIRE STOPPING, SHAFT, FLOORS, RATED CEILINGS AND PARTITIONS AS REQUIRED TO MAINTAIN ARCHITECTURAL FIRE RATINGS. REFER TO THE ARCHITECTURAL PLANS AND SPECIFICATIONS FOR LOCATIONS AND FIRE RATING REQUIREMENTS. MC MUST FULLY REVIEW ALL ARCHITECTURAL AND ENGINEERING DRAWINGS AND VISIT THE SITE PRIOR TO SUBMITTING THE BID. NO EXTRAS WILL BE ALLOWED.
11. ALL ACCESS DOORS REQUIRED IN GENERAL CONSTRUCTION ARE TO BE PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR. IT IS THE RESPONSIBILITY OF THE HVAC CONTRACTOR TO IDENTIFY SIZE, TYPE AND LOCATION OF SUCH DOORS FOR PROPER ACCESS TO ALL CONCEALED HVAC EQUIPMENT, VALVES AND OTHER RELATED EQUIPMENT. THE HVAC CONTRACTOR SHALL IDENTIFY THESE REQUIREMENTS ON A COORDINATED SHOP DRAWING PRIOR TO SYSTEM FABRICATION AND INSTALLATION.
12. ALL CEILING MOUNTED EQUIPMENT MUST BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH COMBINATION SPRING AND NEOPRENE-IN-SHEAR HANGERS AND ROD. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE LOAD.
13. THE CONTRACTOR MUST CONTRACT AN INDEPENDENT NEBB CERTIFIED AIR BALANCING & TESTING COMPANY TO PERFORM THE AIR BALANCING WORK AND ASSOCIATED SYSTEM AIR BALANCING REPORT. ALL WORK SHALL BE PERFORMED IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES, REGULATIONS, PLANS AND WRITTEN SPECIFICATIONS. SUBMIT THE FINAL AIR BALANCE REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, AS DETERMINED BY THE G.C. AND OWNER/CLIENT. THE AIR BALANCE REPORT MUST INCLUDE ALL SUPPLY, RETURN, & EXHAUST AIR TERMINALS, FRESH AIR (OUTSIDE AIR) INTAKE AND VENTILATION EXHAUST CFM RATES FOR ALL UNITS. ALSO INCLUDE ACTUAL SUPPLY & RETURN AIR VELOCITY & STATIC PRESSURE READINGS ALONG WITH ALL MOTOR AMPERAGES FOR ALL UNITS.
14. THE CONTRACTOR IS TO INCLUDE IN THEIR BID ALL LOW VOLTAGE CONTROL WIRING, THERMOSTATS, RELAYS, TRANSFORMERS, STARTERS ETC FOR A COMPLETE OPERATING CONTROL SYSTEM AS DESCRIBED IN THE SEQUENCE OF OPERATIONS. (MC) IS ALSO RESPONSIBLE FOR LINE VOLTAGE CONTROL FOR EXHAUST FANS CONTROLLED FROM LIGHT SWITCH AND THERMOSTATS. ALL CONTROL WIRING IN THE AREAS THAT DO NOT HAVE DROPPED CEILINGS THE (MC) MUST PROVIDE ALL CONTROL WIRING CONDUIT. IN AREAS OF DROPPED CEILING PLENUM RATED CONTROL WIRING CAN BE RUN EXPOSED ABOVE CEILING.
15. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS/SPECIFICATIONS.

CODE REFERENCE

2020 NEW YORK STATE BUILDING CODE
2020 NEW YORK STATE MECHANICAL CODE
2020 NEW YORK STATE ENERGY CONSERVATION CODE

MECHANICAL DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION OF MECHANICAL EQUIPMENT AND MATERIAL RELATING TO THEIR RESPECTIVE TRADE.
2. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED WHEN SUCH WORK IS UNCOVERED AND FOUND TO INTERFERE WITH COMPLETION OF WORK IN THIS CONTRACT OR OTHER CONTRACT WORK.
3. EXECUTE THE DEMOLITION IN CAREFUL AND ORDERLY MANNER WITH THE LEAST POSSIBLE DISTURBANCE TO THE PUBLIC, EGRESS OR THE FUNCTIONING OF THE EXISTING BUILDING.
4. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM RISING BY WETTING DEMOLISHED DEBRIS. EXCESSIVE USE OF WATER WILL NOT BE PERMITTED.
5. PRIOR TO DEMOLITION, CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED, SHOULD THE OWNER WANT TO KEEP ANY MATERIALS THE CONTRACTOR SHALL REMOVE AND DELIVER THE PARTS TO THE OWNER ON THE SITE WHERE SO DIRECTED. OTHERWISE ALL DEMOLISHED OR REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF IN A LEGAL MANNER.
6. DEMOLITION SHALL INCLUDE REMOVAL OF ALL PARTS AND PIECES IN THEIR ENTIRETY BACK TO POINTS INDICATED OR IF NOT INDICATED BACK TO THEIR POINT OF SOURCE.
7. WHERE CONDITIONS PROHIBIT TOTAL REMOVAL OF THE WORK, THE REMAINING PORTION SHALL BE CUT FLUSH WITH THE SURROUNDING SURFACE AND BE CAPPED, PLUGGED OR SEALED AND THE SURROUNDING SURFACE SHALL BE REFINISHED IN AN APPROVED MANNER.
9. DO NOT REMOVE EXISTING STRUCTURAL WORK. DO NOT REMOVE OPERATIONAL ELEMENTS AND SAFETY-RELATED COMPONENTS IN A MANNER RESULTING IN A REDUCTION OF CAPACITIES TO PERFORM IN THE MANNER INTENDED OR RESULTING IN DECREASED OPERATIONAL LIFE, INCREASED MAINTENANCE, OR DECREASED SAFETY.
10. REMOVALS, DISCONNECTIONS, AND RELOCATIONS SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL BE EMPLOYED BY A CONTRACTOR LICENSED IN THE TRADE INVOLVED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTED TRADE PRACTICES.
11. PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK TO REMAIN, TO PREVENT FAILURE. DO NOT ENDANGER OTHER WORK.
12. PROTECTION: PROVIDE ADEQUATE PROTECTION WHERE REQUIRED FOR THE PRESENT BUILDING AND ITS CONTENTS. TEMPORARY DUSTPROOF BARRIERS AND BARRICADES SHALL BE ERECTED WHERE REQUIRED FOR PROTECTION OF PERSONNEL, PROTECTION FROM DUST AND DIRT, FOR SECURITY, FIRE AND WEATHER PROTECTIVE REASONS.
13. CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FIRE BY EMPLOYING FIRE DEPARTMENT TYPE HOSES AND PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND/OR THE OWNER'S INSURANCE UNDERWRITER.
14. BEFORE STARTING DEMOLITION OPERATIONS, PROVIDE THE NECESSARY PROTECTIVE DEVICES, WHERE REQUIRED, AND IN STRICT ACCORDANCE WITH OSHA RULES AND REGULATIONS.
14. USE TEMPORARY ENCLOSURES, OR OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING TO LOWEST PRACTICAL LEVEL. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
15. FIELD VERIFY DEMOLITION REQUIREMENTS AND EXISTING CONDITIONS. DEMOLITION NOTES ARE INDICATED IN NOTE FORM.
16. CONTRACTOR SHALL ESTABLISH A PATH OF TRAVEL AND TIME SCHEDULE FOR THE REMOVAL OF ALL DEBRIS AND WASTE, AND HAVE THIS APPROVED BY OWNER. CONTRACTOR IS TO ENSURE THAT ALL CORRIDORS AND PUBLIC AREAS BE KEPT FREE OF OBSTRUCTIONS, DEBRIS, AND ARE TO BE BROOM SWEPT CLEAN AT ALL TIMES.
17. CONTRACTOR SHALL VISIT THE SITE AND BECOME INFORMED AS TO THE CONDITION OF THE PREMISES AND THE EXTENT AND CHARACTER OF WORK REQUIRED. NO ADDITIONAL COMPENSATION WILL BE APPROVED DUE TO FIELD CONDITIONS.

COMMISSIONING/ACCEPTANCE PROCEDURES:

THE FOLLOWING ARE INCLUDED IN THE PROJECT SCOPE OF WORK:

PRIOR THE ACCEPTING OF ANY PROJECT THE FOLLOWING DOCUMENTATION MUST BE SUBMITTED BY THE G.C. AND/OR THE M.C. FOR DISTRIBUTION FOR ENGINEER REVIEW.

A. LETTER STATING THAT ALL OWNER MEP PUNCH LIST ITEMS HAVE BEEN CORRECTED. LETTER TO INCLUDE ALL PUNCH LIST SIGNED BY ARCHITECT SUB-CONTRACTORS INDICATING COMPLETION.
B. TEST REPORTS.
C. AS BUILT DRAWINGS FOR ALL TRADES.
D. O & M MANUALS FOR ALL TRADES INCLUDING:
   1. DESCRIPTIVE LITERATURE FOR EQUIPMENT AND COMPONENTS.
   2. MODEL NUMBER AND PERFORMANCE DATA.
   3. INSTALLATION AND OPERATING INSTRUCTIONS.
   4. MAINTENANCE AND REPAIR INSTRUCTIONS.
   5. SPARE PART LIST.
   6. PHONE NUMBER AND PERSON'S NAME (IF POSSIBLE) OF MANUFACTURER.
   7. NUMBER OF MANUALS PER PROJECT MANAGER'S REQUEST.
E. BALANCING REPORTS.
F. VALVE CHARTS.
G. EQUIPMENT WARRANTIES.
H. EQUIPMENT TRAINING CERTIFICATIONS (IF APPLICABLE).
I. EQUIPMENT/DEVICES LABEL LIST.
J. TRAINING OPERATIONAL DEMONSTRATION.

THE DEMONSTRATIONS INCLUDE:
1. ALL CONTROLS ALARMS, CONNECTED TO ALL HVAC UNITS AND EQUIPMENT.

K. SIGN-OFF FORMS (FINAL).

SCOPE OF WORK

DEMOLITION

1. REMOVE EXISTING EXHAUST FANS AND ASSOCIATED DUCTWORK, CONTROLS AND ACCESSORIES.

CONSTRUCTION

2. PROVIDE TWO (2) NEW TOILET EXHAUST FANS AND ASSOCIATED DUCTWORK TO TOILETS AND SIMILAR ROOMS.
3. PROVIDE TWO (2) NEW EXHAUST LOUVERS ASSOCIATED WITH FANS.
4. PROVIDE NEW ELECTRIC UNIT HEATERS AS INDICATED.

HVAC SYMBOL LIST

IDENTIFIER	DESCRIPTION
	NEW DUCTWORK OR PIPING
	EXISTING DUCTWORK OR PIPING TO BE REMOVED
	EXISTING DUCTWORK OR PIPING TO REMAIN
	HEAT TRACE PIPE
24X12 / 24X12	DOUBLE-LINE AND SINGLE-LINE RECTANGULAR DUCT, FIRST NUMBER INDICATES SIDE IN VIEW IN INCHES, SECOND NUMBER INDICATES SIDE IN DEPTH IN INCHES
	FLEXIBLE DUCTWORK
	REGULAR SUPPLY AIR DUCT (UP AND DOWN)
	REGULAR RETURN AIR DUCT (UP AND DOWN)
	REGULAR EXHAUST AIR DUCT (UP AND DOWN)
	REGULAR OUTSIDE AIR DUCT (UP AND DOWN)
VD	VOLUME DAMPER
BD	BACKDRAFT DAMPER
M	MOTOR OPERATED DAMPER
XXX / XX	EQUIPMENT TAG / EQUIPMENT NUMBER
XXX / X-XXX	DETAIL TAG/CALL OUT TAG / MECHANICAL SHEET NUMBER
T	THERMOSTAT
	EXHAUST GRILLE
F#	REFER TO SUPPLEMENTAL FIGURE INDICATED BY NUMBER (I.E. F2 REFERS TO FIGURE 2)

HVAC ABBREVIATIONS

IDENTIFIER	DESCRIPTION
AC	DIRECT EXPANSION AIR CONDITION UNIT
CFM	CUBIC FEET PER MINUTE
COND	CONDENSATE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DB	DRY BULB
DN	DOWN
EA	EXHAUST AIR
EF	EXHAUST FAN
EG	EXHAUST GRILLE
UH	ELECTRIC UNIT HEATER
EER	ENERGY EFFICIENCY RATIO
EG	EXHAUST GRILLE
FAI	FRESH AIR INTAKE
GC	GENERAL CONTRACTOR
MBH	THOUSAND BTU PER HOUR
PC	PLUMBING CONTRACTOR
RG	RETURN GRILLE
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SD	SUPPLY DIFFUSER
TYP.	TYPICAL
VIF	VERIFY IN FIELD

OUTDOOR AIR VENTILATION SCHEDULE

SPACE DETAILS		MECH CODE REQUIREMENTS (2)							DESIGN			
ROOM	AREA (FT^2)	# PEOPLE	OA / SQ FT	OA PER PERSON	NET OA	# OF FIXT (TOILET/URINALS/ SLOP SINK)	CFM/FIXTURE	NET EA	DESIGN OA FLOW (CFM)	ACTUAL SA FLOW (CFM)	ACTUAL RA FLOW (CFM)	ACTUAL EA FLOW (CFM)
ELECTRICAL CLOSET	13	0	0	0	0	0	0	0	-	-	--	-
SPRINKLER ROOM	36	0	0	0	0	0	0	0	-	-	--	-
FAMILY RESTROOM	57	0	0	0	0	1	50	75	75	75	--	75
MENS RESTROOM	317	0	0	0	0	7	50	350	550	550	--	550
JANITORS CLOSET	57	0	0	0	0	1	50	50	50	50	--	50
ACCESS ROOM	34	0	0	0	0	0	0	0	-	-	--	-
WOMENS RESTROOM	575	0	0	0	0	13	50	650	1000	1000	--	1000
JANITORS CLOSET	29	0	0	0	0	1	50	50	75	75	--	75

NOTES:
1. NEW YORK STATE MECHANICAL CODE
2. ALL MAKE UP AIR PROVIDED BY WINDOW OPENINGS. RESTROOM IS SEASONAL.

CONSULTANT INFORMATION
The LiRo Group
3 Aerial Way, Syosset, New York 11791
(516) 938-5476 www.liro.com

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STATE OF NEW YORK · FRANK F. ULISSE · 090111 · LICENSED PROFESSIONAL ENGINEER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION
☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

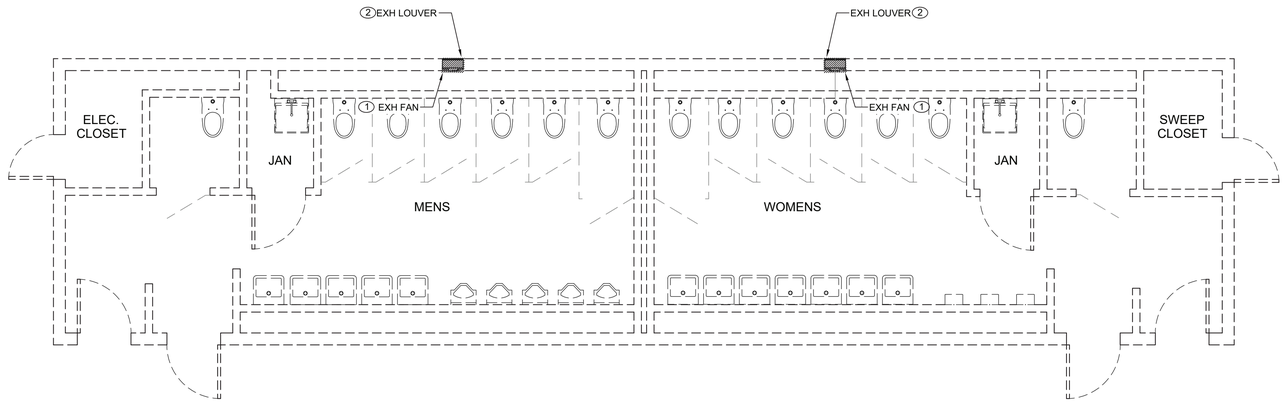
WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 2
PLAYLAND PARK, RYE, NEW YORK
BUMPER CAR RESTROOMS
MECHANICAL NOTES, SYMBOLS, ABBREVIATIONS AND DRAWING LIST

CONTRACT NUMBER	20-530
SHEET NUMBER	BCR-M-01
DWG NO.:	Page 272 of 288
SCALE:	AS NOTED
DATE:	MAY 26, 2021
DPW FILE NUMBER	1-118-M-660
REV. NO.	0

MECHANICAL DEMOLITION NOTES:

1. (1) DEMOLISH EXISTING WALL MOUNTED PROPELLER FAN.
2. (2) DEMOLISH EXISTING EXHAUST LOUVER AND ASSOCIATED SLEEVE.



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MECHANICAL ARENA RESTROOM DEMOLITION PLAN

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

CONSULTANT INFORMATION

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3 Aerial Way, Syosset, New York 11791
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REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

CONTRACTOR

NAME
SIGNATURE
TITLE DATE

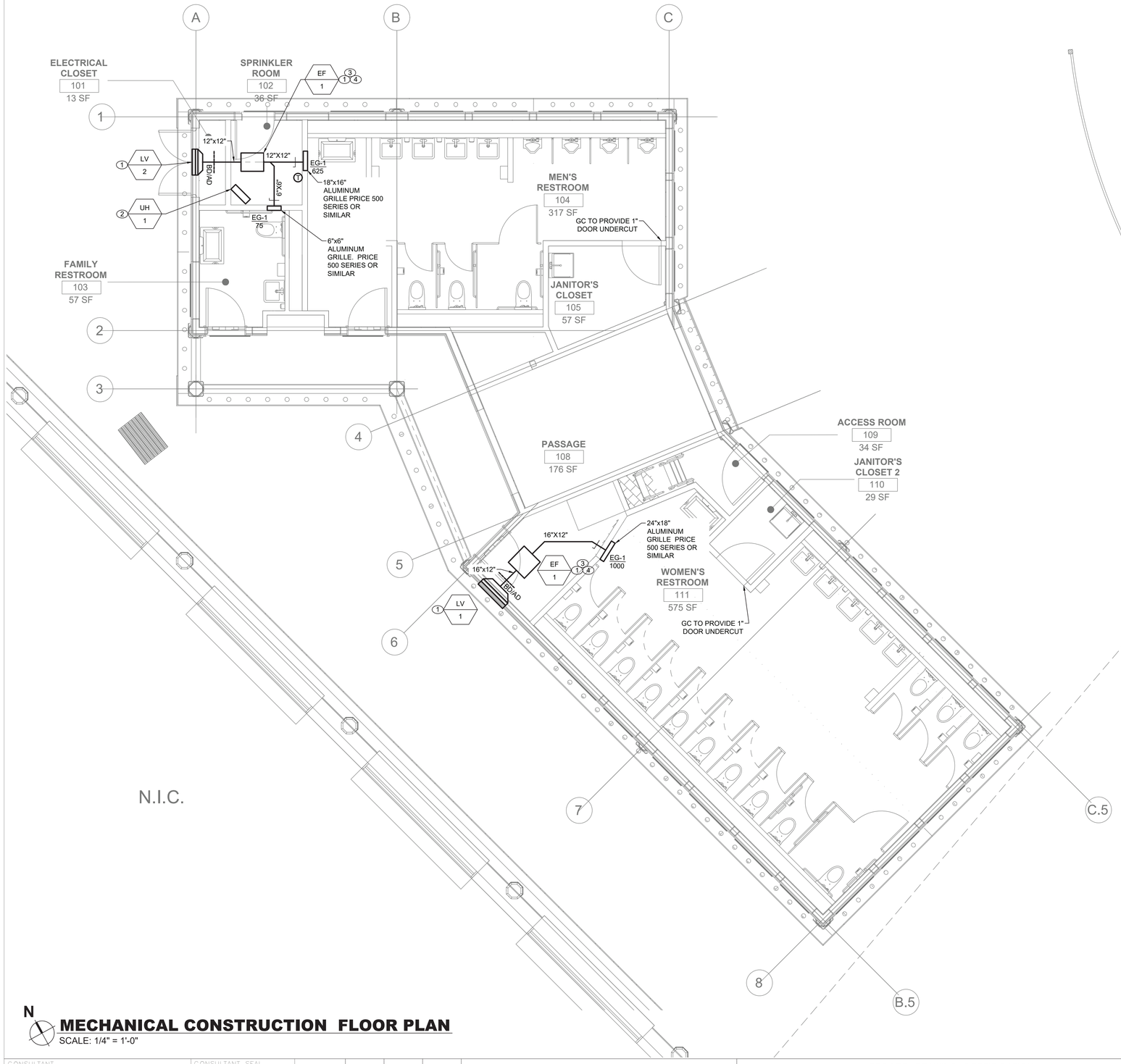
PROJECT COORDINATOR

NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 2
PLAYLAND PARK, RYE, NEW YORK
BUMPER CAR RESTROOMS
MECHANICAL ARENA RESTROOM DEMOLITION PLAN

CONTRACT NUMBER	20-530
SHEET NUMBER	BCR-M-11
DWG. NO.:	
SCALE:	1/4" = 1'-0"
DATE:	MAY 26, 2021
DPW FILE NUMBER	1-118-M-661
REV. NO.	0



MECHANICAL CONSTRUCTION NOTES:

1. INSTALL NEW EXHAUST FAN AND LOUVERS AS SHOWN. COORDINATE THE LOCATION OF THE EXHAUST FAN IN FIELD. EXHAUST FAN TO BE PROVIDED WITH A BACKDRAFT DAMPER AND ACCESS.
2. PROVIDE NEW WALL HUNG ELECTRIC UNIT HEATER WITH BUILT IN THERMOSTAT. COORDINATE MOUNTING HEIGHT IN FIELD. SET TEMPERATURE TO 55 DEG-F.
3. EXHAUST TERMINATION SHALL BE LOCATED NOT LESS THAN 3 FEET FROM OPERABLE WINDOWS.
4. MECHANICAL INTAKE IS PROVIDED THROUGH OPENED DOORS DURING OPERATIONAL HOURS. FACILITY IS DESIGNED WITH THE INTENT OF ALL DOORS BEING OPEN.

N

MECHANICAL CONSTRUCTION FLOOR PLAN

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

CONSULTANT INFORMATION

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(516) 938-5476 www.liro.com

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REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION

☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

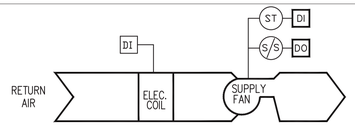
CONTRACTOR: NAME / SIGNATURE / TITLE / DATE

PROJECT COORDINATOR: NAME / SIGNATURE / TITLE / DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 2
PLAYLAND PARK, RYE, NEW YORK
BUMPER CAR RESTROOMS
MECHANICAL CONSTRUCTION FLOOR PLAN

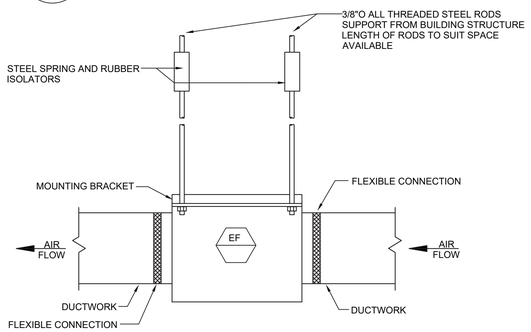
CONTRACT NUMBER	20-530
SHEET NUMBER	BCR-M-21
DWG. NO.:	
SCALE:	1/4" = 1'-0"
DATE:	MAY 26, 2021
DPW FILE NUMBER	1-118-M-662
REV. NO.	0



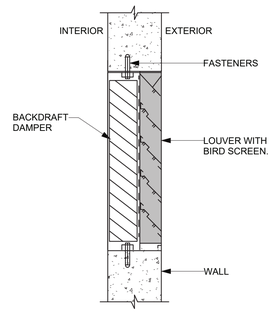
UNIT HEATER - ELECTRIC - SEQUENCE OF OPERATIONS:

1. OCCUPIED MODE:
   a. ON DROP IN SPACE TEMPERATURE BELOW OCCUPIED HEATING SETPOINT, CYCLE THE FAN ON AND MODULATE (2 STAGE) ELECTRIC COIL TO MAINTAIN SPACE OCCUPIED SETPOINT, FAN SHALL HAVE DELAYED SHUT OFF AFTER VALVE CLOSES. USE 5 DEG. F (ADJUSTABLE) DEADBAND TO MINIMIZE SHORT CYCLING.
2. UNOCCUPIED MODE:
   a. ON DROP IN SPACE TEMPERATURE BELOW UNOCCUPIED HEATING SETPOINT, CYCLE THE FAN OFF AND POWER OFF ELECTRIC COIL. USE 5 DEG. F (ADJUSTABLE) DEADBAND TO MINIMIZE SHORT CYCLING.
4. SAFETIES:
   a. PROVIDE CURRENT SENSOR TO SENSE THE STATUS OF THE FANS. WHEN FAN MOTOR AMP DRAW IS OUT OF NORMAL RANGE, GENERATE AN ALARM AT THE OWS.

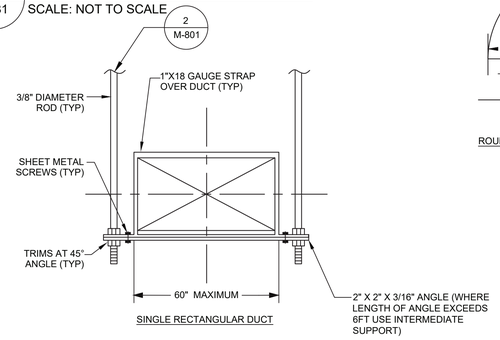
1 Unit Heater - Electric
BCR-M-81 SCALE: NOT TO SCALE



3 MECHANICAL FAN HANGING DETAIL
M-81 SCALE: NOT TO SCALE

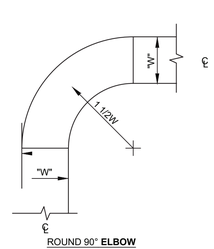


7 MECHANICAL LOUVER
M-81 SCALE: NOT TO SCALE

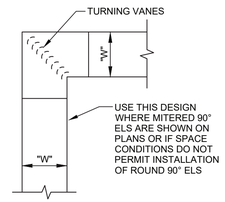


SINGLE RECTANGULAR DUCT

4 MECHANICAL DUCT HANGER DETAIL
M-81 SCALE: NOT TO SCALE

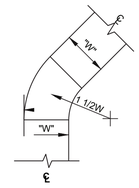


ROUND 90° **ELBOW**

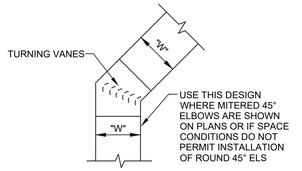


MITERED 90° **ELBOW**

CONSTRUCTION OF 90° **ELBOWS**

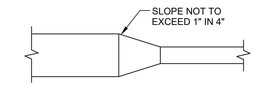


ROUND 45° **ELBOW**

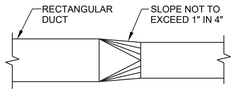


MITERED 45° **ELBOW**

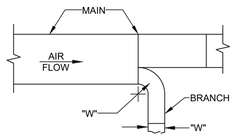
CONSTRUCTION OF 45° **ELBOWS**



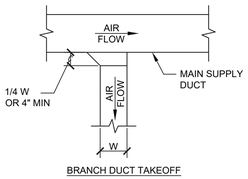
TYPICAL RECTANGULAR TRANSITION



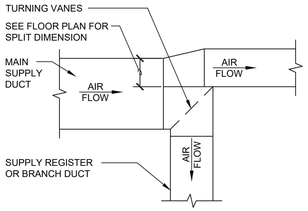
TYPICAL RECTANGULAR TO ROUND TRANSITION



ROUND BRANCH TAKEOFF



BRANCH DUCT TAKEOFF



SQUARE BRANCH TAKEOFF

CONSTRUCTION OF TAKEOFFS

ENSURE SPEC INDICATES THAT:
ALL DUCT TRANSITIONS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.

ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKABLE MANNER.

THE DIMENSION SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT. **ALSO AND/OR ONLY PUT THIS ON 001-SHEET**

VANES SHORTER THAN 36" SHALL BE SINGLE WALL, WITH A 2" RADIUS AND 1 1/2" SPACING. VANES LARGER THAN 36" AND SHORTER THAN 48" SHALL BE DOUBLE WALL, WITH A 2" OUTER RADIUS, 1" INNER RADIUS, AND 2 1/8" SPACING. VANES LONGER THAN 48" SHALL BE DOUBLE WALL, WITH A 4 1/2" OUTER RADIUS, 2 1/4" INNER RADIUS, AND 3 1/4" SPACING. NO TURNING VANES SHALL INCLUDE A TRAILING EDGE.

FOR SQUARE 90 DEG ELBOWS, IF INLET AND OUTLET DIMENSIONS ARE NOT THE SAME, PROVISIONS MUST BE MADE SO THAT VANE EDGES PROJECT TANGENTS PARALLEL TO DUCT SIDES. VANES AS USED WHEN INLET AND OUTLET DIMENSIONS ARE IDENTICAL ARE NOT ACCEPTABLE ON SIZE CHANGE ELBOWS WITHOUT MODIFICATION.

ELECTRIC UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	TYPE	KW	V-PH-HZ
UH-1	UHEC	UHEC-031A0C0	SPRINKLER RM	ELECTRIC	3.0	208-1-60

NOTES:
1. PROVIDE ALL CONTACTS, RELAYS, AND DEVICES NECESSARY FOR BMS CONTROL OF UNIT HEATERS PER SEQUENCE OF OPERATIONS.
2. PROVIDE STAINLESS STEEL WALL AND CEILING SWIVEL TYPE MOUNTING BRACKET FOR CORROSION RESISTANT HEATERS.
3. PROVIDE T-BAR FRAME MOUNTING KIT FOR CEILING MOUNTED HEATER TO ENABLE MOUNTING IN A STANDARD 2 FT X 2 FT CEILING GRID.

LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	SERVICE	LOCATION	MATERIAL	FINISH TYPE	WIDTH (INCH)	HEIGHT (INCH)	PRESSURE DROP (IN. WG)	MINIMUM FREE AREA (SQUARE FEET)
LV-1	GREENHECK	ESD-635	EXHAUST	WOMENS BATHROOM	ALUMINUM	BAKED ENAMEL	30	24	0.06	1.42
LV-2	GREENHECK	ESD-635	EXHAUST	MENS AND FAMILIY BATHROOM	ALUMINUM	BAKED ENAMEL	24	18	0.06	1.1

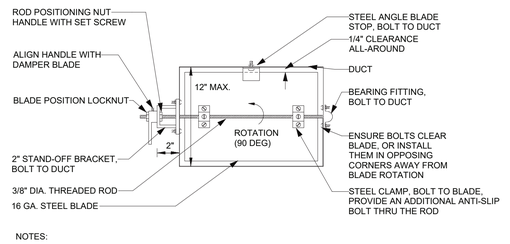
NOTES:
1) PROVIDE WITH ALUMINUM BIRD SCREEN AND BACKDRAFT DAMPERS.

FAN SCHEDULE

TAG	MANUFACTURER	MODEL	LOCATION	SERVICE	TYPE	DRIVE	AIR FLOW (CFM)	TSP (IN. WG)	ELECTRICAL				OPERATING WEIGHT (±LBS)	DIMENSIONS LxWxH (IN)	NOTES
									HP	BHP	RPM	V-PH-HZ			
EF-1	GREENHECK	SQ-130-VG	ROOF	WOMENS BATH RM EXH	INLINE	DIRECT	1000	0.50	0.25	0.18	1140	115-1-60	61	21X21X21	
EF-2	GREENHECK	SQ-100-VG	ROOF	MENS BATH RM EXH	INLINE	DIRECT	700	0.50	0.25	0.10	1276	115-1-60	45	17X21X17	

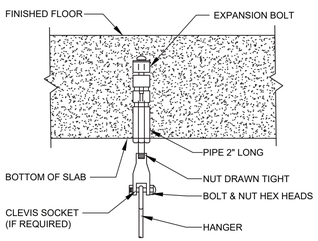
NOTES:
1. PROVIDE ALL CONTACTS, RELAYS, AND DEVICES NECESSARY FOR BMS CONTROL OF FANS PER SEQUENCE OF OPERATIONS.
2. PROVIDE PREMIUM EFFICIENCY MOTORS.
3. PROVIDE THERMAL OVERLOAD FOR ALL SINGLE PHASE MOTORS.
4. PROVIDE SALT WATER RESISTANT HI-PRO POLYESTER COATING FOR ALL FANS.
7. PROVIDE FLEXIBLE DUCT CONNECTORS FOR THE INLET AND OUTLET OF THE FAN.
8. PROVIDE HANGER RODS AND SPRING VIBRATION ISOLATORS FOR IN LINE FANS.

5 MECHANICAL DUCT CONSTRUCTION DETAIL
M-81 SCALE: NOT TO SCALE



NOTES:
1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90 DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12", PROVIDE FACTORY-FABRICATED OPPOSED BLADE DAMPERS.

6 MECHANICAL VOLUME DAMPER
M-81 SCALE: NOT TO SCALE



CONCRETE ANCHOR FOR HANGING PIPING OR EQUIPMENT

7 MECHANICAL ANCHORING DETAIL
M-81 SCALE: NOT TO SCALE

CONSULTANT INFORMATION
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CONSULTANT SEAL
STATE OF NEW YORK · FRANK F. DUSSE · 090174 · LICENSED PROFESSIONAL ENGINEER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION
☐ AS BUILT – CHANGES AS NOTED ☐ AS BUILT – NO CHANGES

CONTRACTOR
NAME
SIGNATURE
TITLE DATE

PROJECT COORDINATOR
NAME
SIGNATURE
TITLE DATE

WESTCHESTER COUNTY, NEW YORK
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION
DIVISION OF ENGINEERING

INFRASTRUCTURE REHABILITATION - PHASE 2
PLAYLAND PARK, RYE, NEW YORK
BUMPER CAR RESTROOMS
MECHANICAL SCHEDULES & DETAILS

CONTRACT NUMBER 20-530
SHEET NUMBER **BCR-M-81**

DWG. NO.:
SCALE: 1/4" = 1'-0"
DATE: MAY 26, 2021
DPW FILE NUMBER **1-118-M-663**
REV. NO. 0