

POWER VENTILATOR SCHEDULE											
SYMBOL	CFM	ESP	RPM	TIP SPEED	ELECTRICAL		TYPE	DRIVE	CONTROL	ROOF OPENING	REMARKS
					HP	VOLTAGE					
F-1	150	0.50"	1050	2180	130 (1)	115V-1ø	CEILING EXHAUST	DIRECT	②	-	PARK BLDG - WOMEN TOILET 104
F-2	150	0.50"	1050	2180	130 (1)	115V-1ø	CEILING EXHAUST	DIRECT	②	-	PARK BLDG - MEN TOILET 102

(1) WATTS  
(2) VIA LIGHTING CONTROL SYSTEMS OCCUPANCY SENSOR.

DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE													
AIR HANDLING UNIT SECTION							OUTDOOR HEAT PUMP SECTION						
SYMBOL	AIR QUANTITY		EXT. S.P. "H2O (1)	ELECTRICAL		SYMBOL	ELECTRICAL		COOLING CAPACITY BTUH (2)	HEATING CAPACITY BTUH (3)	MIN. SEER	REMARKS	
	TOTAL CFM	OUTSIDE CFM		FAN FLA	VOLTAGE & PHASE		MCA	MOCP					
DAHU-1	450	50	-	1.0	208V-1Ø	DHP-1	11	15	208V-1Ø	8,000-18,000	11,000	20.0	PARKS BLDG - LN - CATERING 100 (4)
DAHU-2	425	30	-	1.0	208V-1Ø	DHP-2	11	15	208V-1Ø	5,800-12,000	10,100	20.0	PARKS BLDG - LN - PARK OFFICE 101 (4)
DAHU-3	425	30	-	1.0	208V-1Ø	DHP-3	11	15	208V-1Ø	5,800-12,000	10,100	20.0	PARKS BLDG - COW - BOX OFFICE AREA (4)

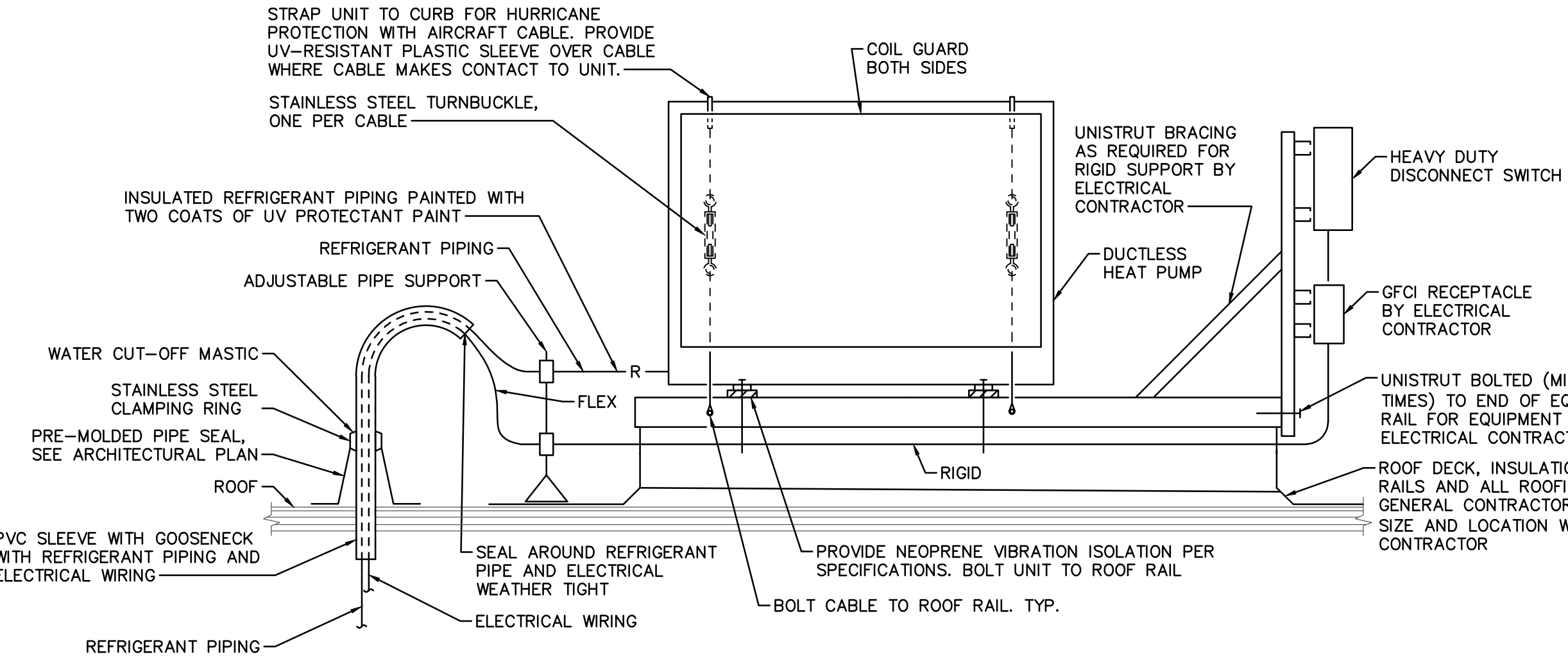
(1) EXP. S.P. INCLUDES SUPPLY AND RETURN AIR DUCTWORK. FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.  
(2) CAPACITY WHEN MATCHED WITH INDOOR HEAT PUMP SECTION AT AHRI CONDITIONS.  
(3) CAPACITY AT 17°F OUTSIDE AIR TEMPERATURE.  
(4) PROVIDE VIBRATION ISOLATORS ON ALL SUPPORTS

ELECTRIC FAN HEATER SCHEDULE						
SYMBOL	CFM	BTU/HR	ELECTRICAL		MOUNTING HEIGHT	REMARKS
			KW	VOLTAGE		
EFH-1	425	17,065	5.0	208V-3Ø	CEILING MOUNTED VERTICAL	PARKS BLDG - WOMEN'S RESTROOM 104
EFH-2	425	17,065	5.0	208V-3Ø	CEILING MOUNTED VERTICAL	PARKS BLDG - MEN'S RESTROOM 102

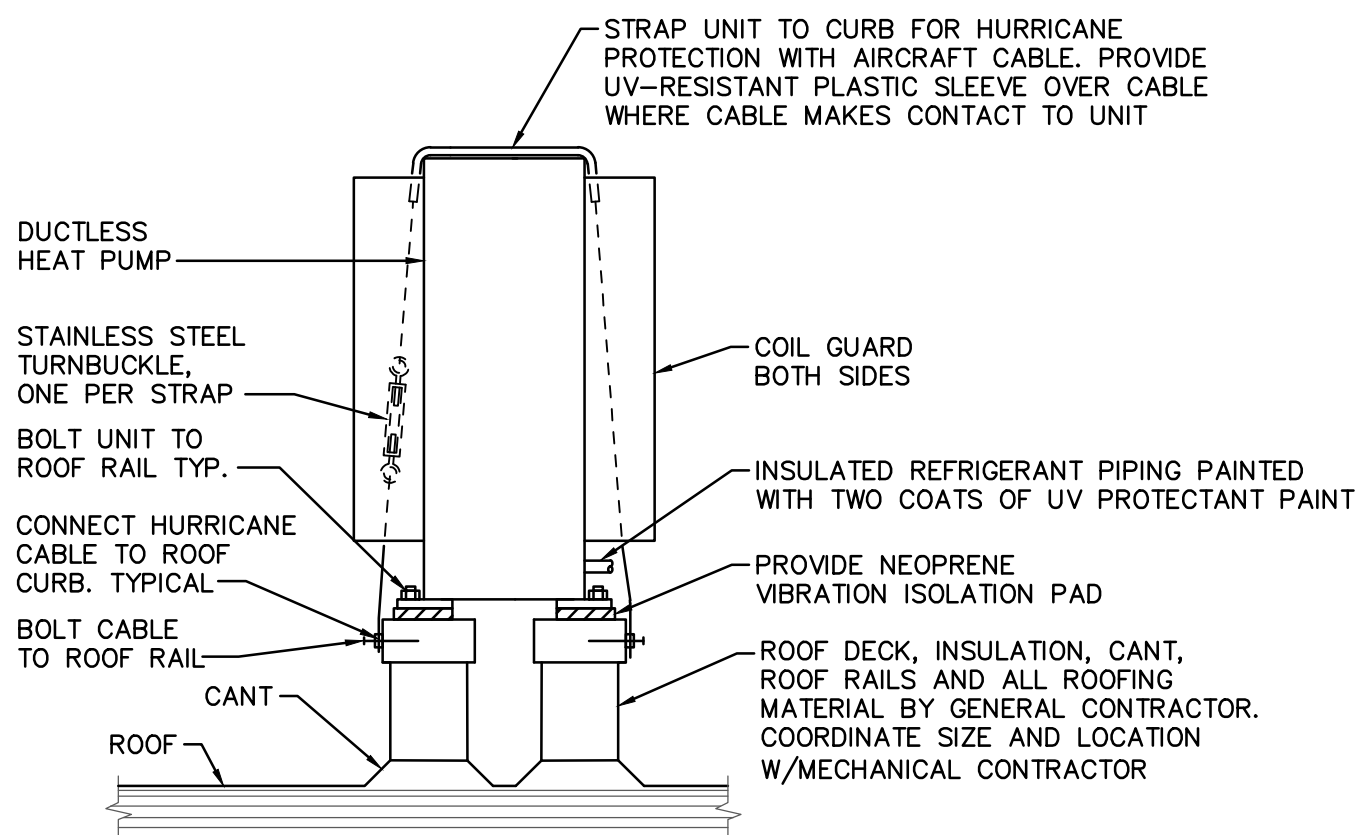
LOUVERED PENTHOUSE SCHEDULE					
SYMBOL	CFM	THROAT SIZE	MAXIMUM AIR PRESS. DROP "H2O	TYPE	SERVING UNITS
LP-1	50	12"x12"	0.10"	OUTSIDE AIR INTAKE	DAHU-1

REGISTER, GRILLE & DIFFUSER SCHEDULE					
SYMBOL	C.F.M.	NECK SIZE	TYPE	RUNOUT SIZE	REMARKS
Ⓐ	50-125	6"x6"	24"x24" LAY-IN CEILING S.A. DIFFUSER	6"Ø	

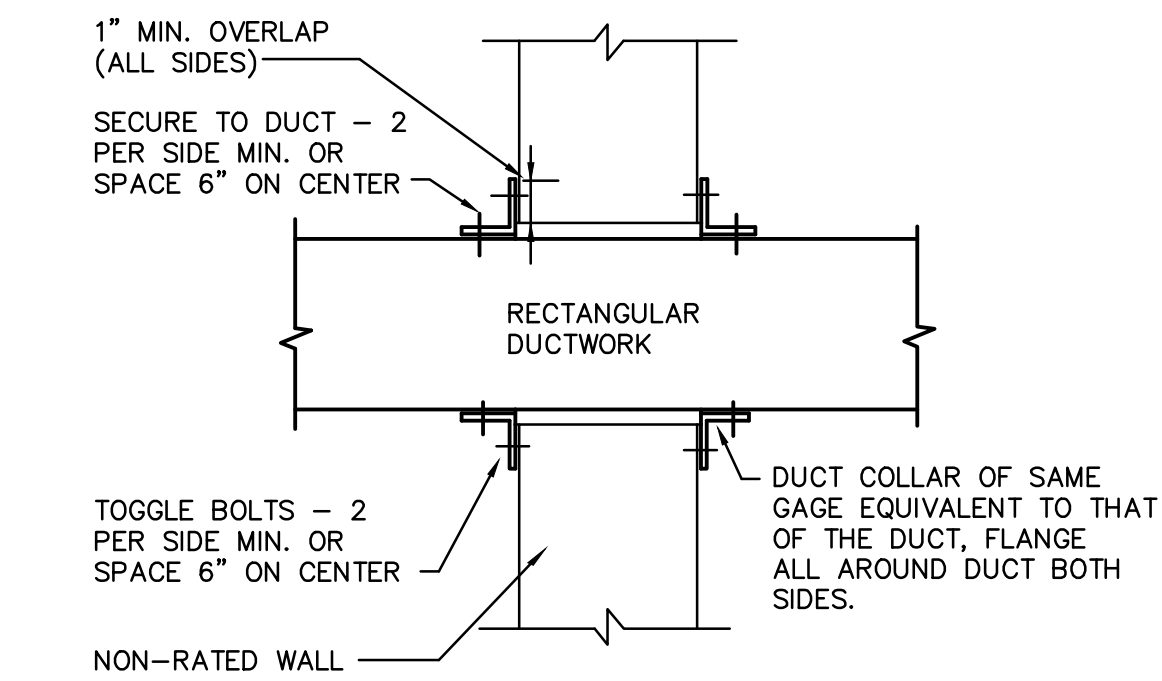
BASEBOARD SCHEDULE						
SYMBOL	BTU/HR	ELECTRICAL		MAXIMUM LENGTH	MAXIMUM HEIGHT	REMARKS
		WATTS	VOLTAGE & PHASE			
EBB-1	4260	1250	208V-1ø	5'-0"	ABOVE DOOR	



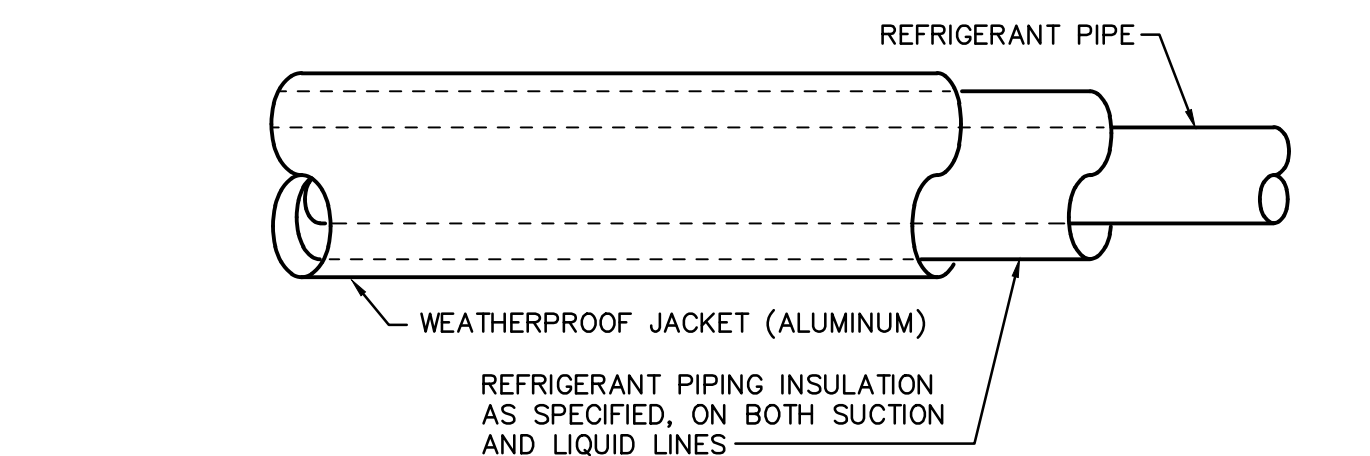
**DUCTLESS HEAT PUMP ON ROOF DETAIL**  
SCALE: NONE



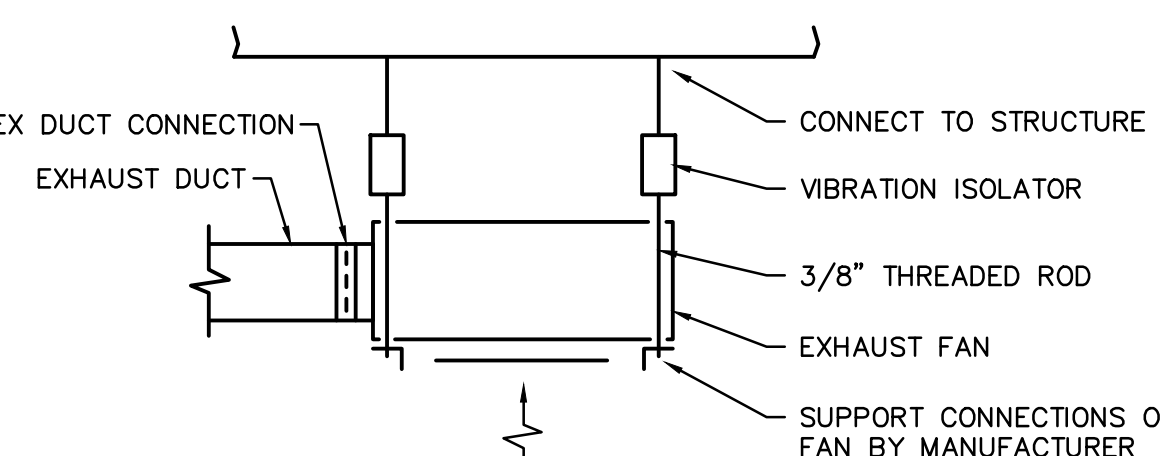
**LOUVERED PENTHOUSE DETAIL**  
NO SCALE



**WALL PENETRATION DETAIL**  
SCALE: NONE



**REFRIGERANT PIPE WITH ALUMINUM JACKET**  
NO SCALE



**EXHAUST FAN DETAIL**  
SCALE: NONE

LEGEND	
	REFRIGERANT PIPING
	AIR CONDITIONING CONDENSATE PIPING
	RECTANGULAR DUCTWORK
	SUPPLY AIR DUCTWORK TURNED DOWN
	SUPPLY AIR DUCTWORK TURNED UP
	RETURN AIR/EXHAUST AIR TURNED DOWN
	RETURN AIR/EXHAUST AIR TURNED UP
	INTERNALLY INSULATED DUCTWORK
	1 HOUR FIELD DESIGNATION
	REGISTER, GRILLE OR DIFFUSER SYMBOL
	HEATING AND COOLING THERMOSTAT WITH # INDICATING UNIT
	DISCONNECT SWITCH BY MECHANICAL CONTRACTOR
	KEYED NOTE SYMBOL
S.A.	SUPPLY AIR
R.A.	RETURN AIR
O.A.	OUTSIDE AIR
EX.A.	EXHAUST AIR
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
M.D.	MANUAL DAMPER
M.O.D.	MOTOR OPERATED DAMPER
A.F.F.	ABOVE FINISHED FLOOR
FIN. FL.	FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
CONC.	CONCRETE
CONT.	CONTINUATION
CONTR.	CONTRACTOR

### GENERAL NOTES:

- HVAC CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS, CLEARANCES, LOCATIONS AND ELEVATIONS PRIOR TO ORDERING, FABRICATION, AND INSTALLATION OF HIS WORK. DISCREPANCIES OR INTERFERENCE'S SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE. THE DRAWINGS DIAGRAMMATICALLY INDICATE THE GENERAL LOCATION OF DUCTS, PIPING AND EQUIPMENT AND DO NOT SHOW ALL SUPPORTS, OFFSETS, FITTINGS, BOLTS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE SYSTEM. WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS FOUND NECESSARY TO CHANGE THE LOCATION OF ANY WORK TO ACCOMMODATE THE CONDITIONS AT THE BUILDING, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, AND AS DIRECTED BY THE ENGINEER.
- ALL SUPPLY AND RETURN CONNECTIONS TO AHU SHALL BE MADE WITH A FLEXIBLE DUCT CONNECTION.
- PIPING, DUCTWORK, ETC., SHALL NOT BE SUPPORTED FROM BAR JOIST BRIDGING OR ROOFDECK. EQUIPMENT SUPPORTED BY BAR JOISTS SHALL HAVE SUPPORTS ATTACHED AS CLOSE AS POSSIBLE TO BAR JOIST PANEL POINTS. HVAC CONTRACTOR SHALL SUPPLY ANY AND ALL STRUCTURAL MEMBERS NECESSARY TO SUPPORT WORK BETWEEN BAR JOISTS, BEAMS, ETC.
- ALL DUCT JOINTS SHALL BE SEALED AS SPECIFIED.
- IN AREAS WITH GYPBOARD CEILINGS, HVAC CONTRACTOR SHALL INSTALL EQUIPMENT, DUCTWORK AND PIPE HANGERS PRIOR TO GYPBOARD INSTALLATION.
- HVAC CONTRACTOR/ CONTROLS CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR FOR PROVISIONS OF POWER TO DDC CONTROL SYSTEM CONTROL PANELS, CONTROLLERS, ETC., NOT SHOWN ON M OR E DRAWINGS. ELECTRICAL CONTRACTOR WILL PROVIDE POWER TO GENERAL POINTS, JUNCTION BOXES, ETC., AND POWER WIRING FROM THOSE POINTS TO EQUIPMENT SHALL BE BY THE HVAC CONTRACTOR/CONTROL CONTRACTOR.
- ALL THERMOSTATS AND SWITCHES FOR MECHANICAL SYSTEMS SHALL BE MOUNTED 44" AFF.

### MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

- COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE), C403.4 HYBRIDIC AND MULTIPLE ZONE (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 AND C407 TOTAL BUILDING PERFORMANCE. THE BUILDING ENERGY COST SHALL BE EQUAL TO OR LESS THAN 65 PERCENT OF THE STANDARD REFERENCE DESIGN BUILDING.
- COMPLIANCE PER ANSI/ASHRAE/IESNA 90.1-2013.
- COMPLIANCE PER NORTH CAROLINA SPECIFIC COMCHECK OR ASHRAE 90.1-2013 COMCHECK.

CLIMATE ZONE 3A

EXTERIOR DESIGN CONDITIONS  
winter dry bulb: 26°F  
summer dry bulb: 92°F DB/76°F WB

INTERIOR DESIGN CONDITIONS  
winter dry bulb: 70°F  
summer dry bulb: 75°F  
relative humidity: 50%

BUILDING HEATING LOAD: BLOCK LOAD = 11.3 MBH

BUILDING COOLING LOAD: BLOCK LOAD = 2.2 TONS

MECHANICAL SPACING CONDITIONING SYSTEM

Unitary:  
description of unit:  
heating efficiency:  
cooling efficiency:  
heat output of unit:  
cooling output of unit:

Boiler: N/A  
total boiler output: if oversized, state reason.  
Chiller: N/A  
total chiller capacity: if oversized, state reason.

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON THIS SHEET  
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

motor horsepower:  
number of phases:  
minimum efficiency:  
motor type:  
# of poles:

### DESIGNER STATEMENT

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Conservation Code.

SIGNED: \_\_\_\_\_  
NAME: Kenneth Lynch, P.E.  
TITLE: Professional Engineer

### PROJECT INFORMATION

# NORTH WATERFRONT PARK

10 COWAN STREET  
WILMINGTON, NORTH CAROLINA

CITY OF WILMINGTON  
Community Services Department  
PO Box 1810, Wilmington, North Carolina 28402  
City of Wilmington Project Code 3CPRK1860

Landscape Architecture = L  
HARGREAVES JONES  
180 Varick Street, Suite 204, New York, NY 10014  
www.hargreavesjonesla.com  
NC License #C-513

Architecture = A  
SAGE & COMBE ARCHITECTS  
12-15 Vestry Street, 9th Floor, New York, NY 10013  
www.sageandcombe.com

Acoustic/Theater/AV = AT  
OAP.P.C.  
77 Water Street, New York NY 10015  
www.arup.com

Civil Engineering = C  
Structural Engineering = S  
Geotechnical Engineering = G  
STEWART  
223 S. West Street, Suite 1100, Raleigh, NC 27603  
www.stewartinc.com  
NC License #C-1051

Environmental Engineering = EE  
SOIL & ENVIRONMENTAL CONSULTANTS, PA  
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615  
www.sandec.com  
EAGLE RESOURCES  
215 West Moore Street, Southport, NC 28461  
www.eagleresources.com

Irrigation = I  
CLARK IRRIGATION DESIGN & CONSULTING, INC  
P.O. Box 693, Lenoir, VA 24553  
www.clarkirrigationdesign.com

Landscape Soil = LS  
LANDIS, PLLC  
3808 Bentley Brook Dr. Raleigh, NC 27612  
www.landispllc.com

Mechanical Engineering = M  
Electrical Engineering = E  
Plumbing Engineering = P  
Fire Protection = FP  
CHEATHAM & ASSOCIATES, PA  
3412 Enterprise Drive, Wilmington NC 28405  
www.cheathamga.com  
NC License #C-1073

Marine Structural Engineering = SM  
ANDREW CONSULTING ENGINEERS  
3811 Peachtree Avenue, Suite 300, Wilmington, NC 28403  
www.andrewengineers.com

Water Fountain Design = W/F  
DELTA FOUNTAINS  
11494 Columbia Park Dr. W., Suite 4, Jacksonville, FL 32258  
www.deltafountains.com

Lighting Design = EL  
LITTONSON DESIGN ASSOCIATES  
40 Worth Street, Room 703, New York NY 10013  
www.littonsondesign.com

### SEAL/SIGNATURE

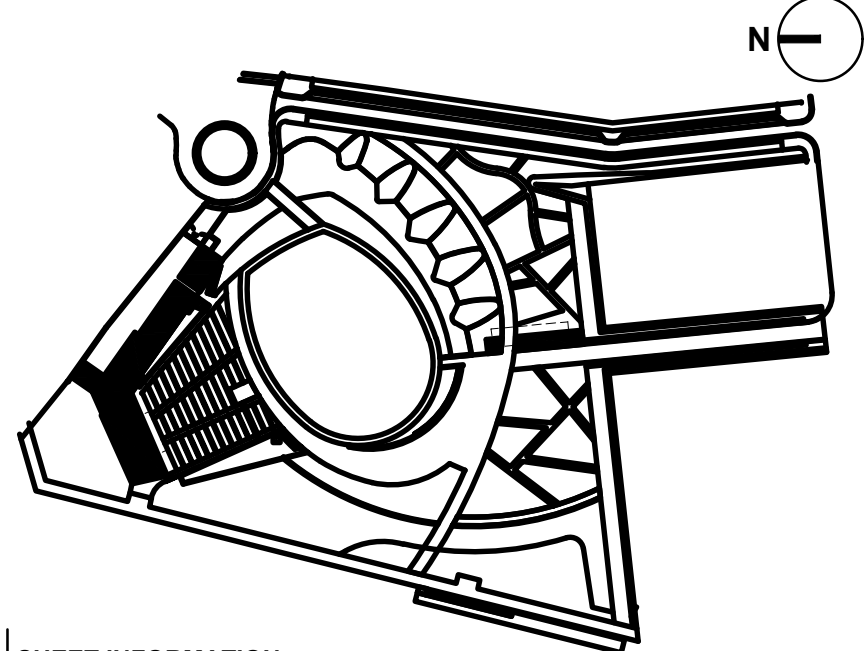
CAPA 17109

PROGRESS DRAWINGS  
DO NOT USE FOR CONSTRUCTION

### ISSUE/REVISIONS

NO.	DESCRIPTION	DATE
1	30% CONSTRUCTION DOCUMENTS P3 & P4	08/07/2019
2	60% CONSTRUCTION DOCUMENTS P4	07/12/2019
3	95% CONSTRUCTION DOCUMENTS P4	12/04/2019

### KEY MAP



### SHEET INFORMATION

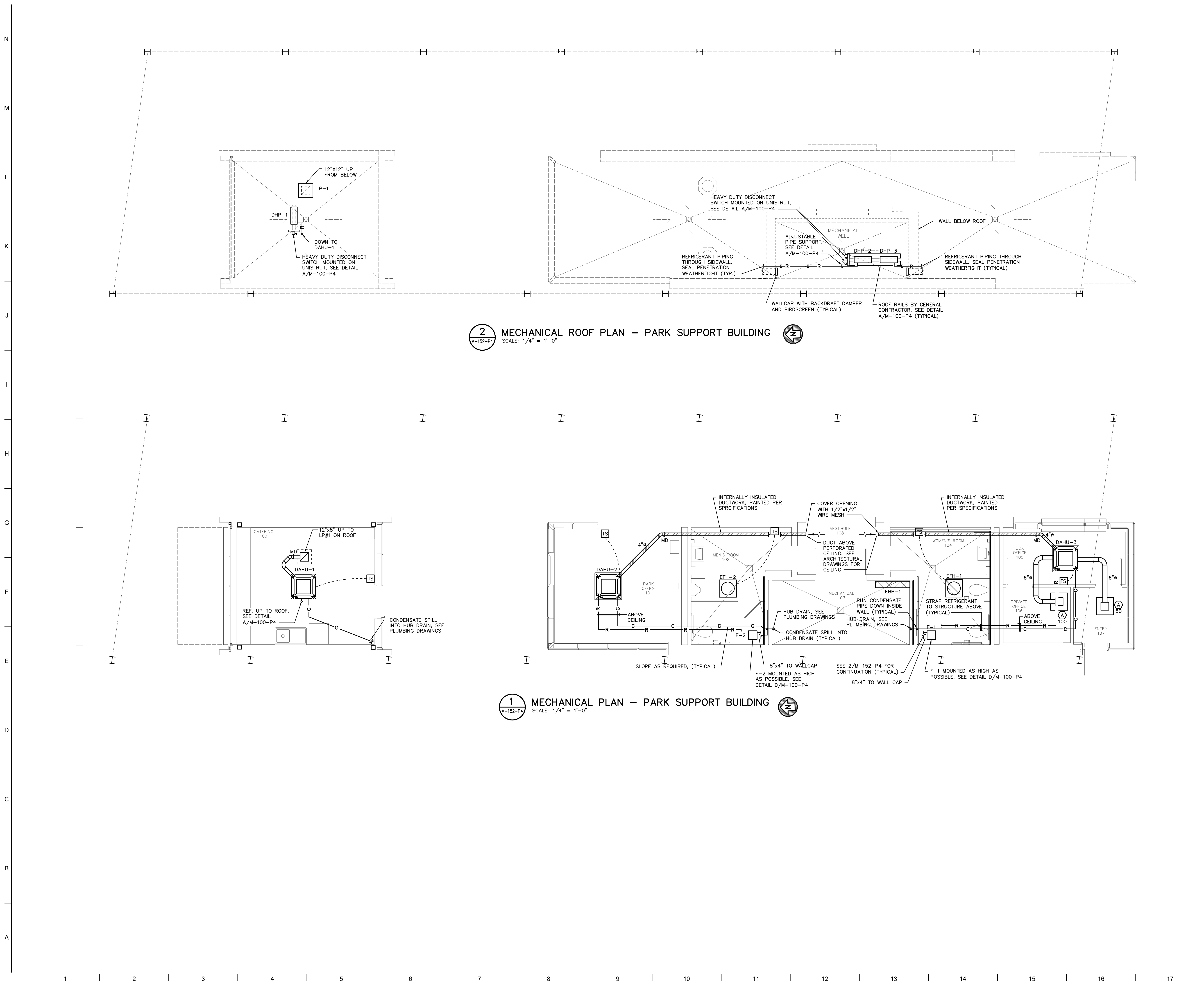
Project No.: NWP 1701  
Drawn By: KCL, NAH  
Checked By: KL  
Date: 08/15/2019  
Scale: AS NOTED

### SHEET TITLE

## MECHANICAL LEGEND, SCHEDULES AND DETAILS

### SHEET NO.

M-100-P4



PROJECT INFORMATION

# NORTH WATERFRONT PARK

10 COWAN STREET  
WILMINGTON, NORTH CAROLINA

CITY OF WILMINGTON  
Community Services Department  
P.O. Box 1810, Wilmington, North Carolina 28402  
City of Wilmington Project Code 3CPRK1860

Landscape Architecture = L  
**HARGREAVES JONES**  
180 Varick Street, Suite 204, New York, NY 10014  
www.hargreavesjonesla.com  
NC License #C-513

Architecture = A  
**SAGE & COOMBE ARCHITECTS**  
12-15 Vestry Street, 5th Floor, New York, NY 10013  
www.sageandcoombe.com

Acoustic/Theater/AV = AT  
**OAP.P.C.**  
77 Water Street, New York NY 10015  
www.arup.com

Civil Engineering = C  
Structural Engineering = S  
Geotechnical Engineering = G  
**STEWART**  
223 S. West Street, Suite 1100, Raleigh, NC 27603  
www.stewartinc.com  
NC License #C-1051

Environmental Engineering = EE  
**SOIL & ENVIRONMENTAL CONSULTANTS, PA**  
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615  
www.sandec.com

**EAGLE RESOURCES**  
215 West Moore Street, Southport, NC 28461  
www.eagleresources.com

Irrigation = I  
**CLARK IRRIGATION DESIGN & CONSULTING, INC**  
P.O. Box 693, Lenoir, NC 28553  
www.clarkirrigationdesign.com

Landscape Soil = LS  
**LANDIS, PLLC**  
3808 Bentley Brook Dr, Raleigh, NC 27612  
www.landispllc.com

Mechanical Engineering = M  
Electrical Engineering = E  
Plumbing Engineering = P  
Fire Protection = FP  
**CHEATHAM & ASSOCIATES, PA**  
3412 Enterprise Drive, Wilmington NC 28405  
www.cheatham-pa.com  
NC License #C-1073

Marine Structural Engineering = SM  
**ANDREW CONSULTING ENGINEERS**  
3811 Peachtree Avenue, Suite 300, Wilmington, NC 28403  
www.andrewengineers.com

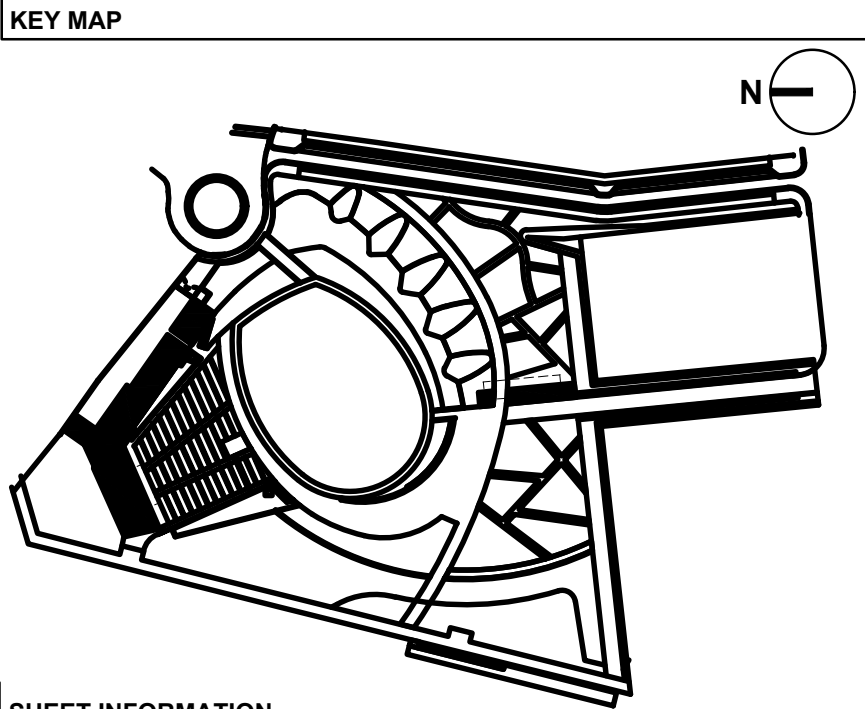
Water Fountain Design = WFD  
**DELTA FOUNTAINS**  
11494 Columbia Park Dr. W., Suite 4, Jacksonville, FL 32258  
www.deltafountains.com

Lighting Design = EL  
**TILLOTSON DESIGN ASSOCIATES**  
40 Worth Street, Room 703, New York NY 10013  
www.tillotsondesign.com

SEAL/SIGNATURE  
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SHEET INFORMATION  
Project No.: NWP 1701  
Drawn By: KCL, NAH  
Checked By: KL  
Date: 08/15/2019  
Scale: AS NOTED

SHEET TITLE

## MECHANICAL PLANS - PARK SUPPORT BUILDING

SHEET NO.

# M-152-P4