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PLOT DATE/TIME: 7/19/2019 5:14 PM LAYOUT: Cover Sheet USER: Campbell, Hannah

SSD System Design

FOR

Gateway Theater Complex

Wayne State University
5454 Cass Avenue
Detroit, MI 448202

PLANS PREPARED FOR:

Hamilton Anderson Associates
1435 Randolph Street, Suite 200,
Detroit, MI 48226

PREPARED BY:



7681 Tim Ave NW
N. Canton, Ohio 44720
330-915-2650
www.vaporremoval.com

System Designed By:
Tony McDonald - NRPP Cert# 107330

PROJECT NUMBER: 19-0572
GOVERNING STANDARDS: ANSI/AARST RMS-LB
PROJECT BENCHMARK: -0.020" WC

INDEX OF SHEETS

	COVER SHEET
V0-	SPEC SHEETS
V1-	CONSTRUCTION SHEETS
V2-	DETAIL SHEETS
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THE SCOPE OF WORK IN THIS SECTION INCLUDES PROVIDING ALL WORK, MATERIALS, LABOR, EQUIPMENT AND SUPERVISION NECESSARY TO COMPLETE AND ACTIVE SUB-SLAB DEPRESSURIZATION (SSD) SYSTEM FOR THE ENTIRE FOOTPRINT OF THE BUILDING.

1. THE SSD SYSTEM SHALL BE INSTALLED IN GENERAL ACCORDANCE WITH ALL PARTS OF PROJECT SPECIFICATIONS.
2. MATERIALS AND EQUIPMENT SHALL BE PROVIDED AS PER THE DRAWINGS AND SPECIFICATIONS.
3. MATERIALS AND EQUIPMENT SHALL NOT BE STORED OR USED IN SUCH A MANNER AS TO CREATE UNSAFE CONDITIONS AND SHALL MEET REQUIREMENTS OF ANY APPLICABLE CODES.
4. WORK WILL BE CONDUCTED IN CLOSE PROXIMITY TO OTHER TRADES, SAFETY CONCERNS ARE A PRIORITY.
5. ATTEMPTS SHOULD BE MADE TO MINIMIZE DUST, NOISE, AND OTHER INCONVENIENCES.
6. ALL SLAB PENETRATIONS SHALL BE SEALED TO REDUCE DRAWING AIR FROM THE INTERIOR OF THE BUILDING. COORDINATE SEALING WITH OTHER TRADES.
7. AS MINIMUM REQUIREMENTS, THE CONTRACTOR SHALL OBSERVE AND FOLLOW ALL APPROPRIATE AND RELEVANT OR APPLICABLE PROCEDURES IDENTIFIED IN APPLICABLE FEDERAL, STATE, AND LOCAL RULES AND REGULATIONS IN CONDUCTING THE WORK.
8. OTHER APPLICABLE REGULATIONS NOT EXPLICITLY INCLUDED IN THESE SPECIFICATIONS SHALL BE ADHERED TO IN CONDUCTING THE WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND APPROVALS FOR HIS PROJECT RELATED WORK AND FACILITIES.

THE FINISHED SYSTEM SHALL DEMONSTRATE A MINIMUM DIFFERENTIAL PRESSURE BETWEEN THE SUB SLAB AND INDOOR AIR OF -0.020"WC AT THE LEAST RESPONSIVE MONITORING POINT.

SEE SHEET V0-02 FOR A LIST OF SPECIFIED MATERIALS AND AN
ESTIMATED NECESSARY QUANTITY TO COMPLETE THE PROJECT.

NO SUBSTITUTIONS ARE ALLOWED WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF THE SYSTEM DESIGN PROFESSIONAL.

THE PERSON RESPONSIBLE FOR DIAGNOSTIC TESTING, DESIGN, CONSTRUCTION AND ON-SITE SUPERVISION, AS REQUIRED BY THE SPECIFICATIONS, SHALL HAVE SUCCESSFULLY COMPLETED THE REQUIREMENTS OF AND SHALL BE MAINTAINING A CURRENT CERTIFICATION IN THE NATIONAL RADON PROFICIENCY PROGRAM (NRPP) AS A MITIGATION SPECIALIST.

CONTRACTOR WILL BE REQUIRED TO SUBMIT EVIDENCE
DEMONSTRATING THAT THE CONTRACTOR HAS SUCCESSFULLY
DESIGNED AND INSTALLED AT LEAST 5 SSD SYSTEMS OF THE SAME OR
SIMILAR TYPE REQUIRED HERIN.

NO WORK AT THE SITE WILL BE PERMITTED WITHOUT THE PRESENCE OF A PERSON POSSESSING A CURRENT VALID MITIGATION SPECIALIST CERTIFICATION BY THE NRPP.

THIS SYSTEM WAS DESIGNED TO MEET OR EXCEED THE 2018 EDITION OF ANSI/AARST CC-1000: SOIL GAS CONTROL SYSTEMS IN NEW CONSTRUCTION BUILDINGS STANDARD. THE FOLLOWING SECTIONS SHALL APPLY TO THIS PROJECT:

- 1.0 Scope
 - 1.1 General
 - 1.2 Significance of Use
 - 1.3 Applicability
- 2.0 TERMS AND DEFINITIONS
- 3.0 REQUIREMENT SUMMARY
- 3.1 GENERAL
- 3.2 SOIL GAS VENT SYSTEMS REQUIRED
- 3.4 MATERIALS AND SPECIFICATIONS
- 4.0 SOIL GAS COLLECTION PLENUMS
 - 4.1 GENERAL
 - 4.2 PLENUM SIZE CALCULATIONS
 - 4.3 SOIL GAS VENT SYSTEMS PER PLENUM SIZE
 - 4.4 COLLECTIVE EXPANSES AND PLENUM SIZE
 - 4.5 JOINED PLENUMS
 - 4.6 JOINED SOIL GAS VENT SYSTEMS
 - 4.7 LIMITING PLENUM AND VENT SYSTEM SIZE
- 5.0 PLENUM CONSTRUCTION
 - 5.1 CLOSE THE BOTTOM OF THE PLENUMS
 - 5.2 CLOSE THE SIDES OF THE PLENUMS
 - 5.3 FOUNDATION DRAIN SYSTEMS
 - 5.4 FOOTINGS AND JOINED PLENUMS
 - 5.5 GAS PERMEABLE LAYERS
 - 5.6 DUCT SIZES
 - 5.7 SOIL GAS INLETS AND AIRFLOW CAPACITY
 - 5.9 TEST PORTS
 - 5.10 PRIOR TO CONCRETE OR SOIL GAS RETARDERS
- 6.0 CLOSE THE TOP OF THE PLENUM
 - 6.1 GENERAL
 - 6.2 CLOSURE OF CONCRETE FLOORS
 - 6.4 SOIL GS RETARDER MATERIALS/INSTALLATION
 - 6.5 INSPECTION PRIOR TO INDOOR FINISHINGS
- 7.0 PRESSURE FIELD EVALUATION
 - 7.1 GENERAL
 - 7.2 TEST PORT LOCATIONS
 - 7.3 TEST PORT DESIGN
 - 7.4 PFE EVALUATION
- 8.0 SOIL GAS EXHAUST VENT PIPE
 - 8.1 GENERAL
 - 8.2 SLOPE
 - 8.3 AIR AND WATER LEAKAGE
 - 8.4 PIPE ROUTING AND THERMAL INSULATION
 - 8.5 PIPE SUPPORTS
 - 8.6 EXHAUST VENT PIPE EQUIVALENT LENGTH
 - 8.7 PIPING MATERIALS
 - 8.8 JOINTS
 - 8.9 PROVISIONS FOR ASD FANS
 - 8.10 LABELS REQUIRED FOR EXHAUST PIPING
- 9.0 EXHAUST LOCATIONS
 - 9.1 GENERAL
 - 9.2 OUTDOORS
 - 9.3 DIRECTIONAL SPREAD
 - 9.4 STRAIGHT LINE TRAJECTORY
 - 9.5 ELEVATION ABOVE GRADE
 - 9.6 ROOF
 - 9.7 SEPERATION FROM OPENINGS AND PEOPLE

CC-1000 STANDARD SPECIFIC REQUIREMENTS
THE FOLLOWING ITEMS LIMIT THE POTENTIAL INSTALLATION CHOICES
IN THE STANDARD TO THE REQUIREMENTS OF THE DESIGN
PROFESSIONAL.

ALL SOIL GAS COLLECTION PLENUMS IN THIS BUILDING SHALL MEET THE REQUIREMENTS OF TABLE 4.3.3: CREDIT ALLOWANCE FOR AIRTIGHT APPLICATIONS. THE MAXIMUM PLENUM SIZE ALLOWED FOR A 4" RISER PIPE SHALL BE 7,100 FT2.

EXISTING OR CONSTRUCTED MATERIALS THAT SURROUND THE BOTTOM AND SIDES OF GAS PERMEABLE LAYERS AND PERMEABLE COMPONENTS OF FOUNDATION DRAIN SYSTEMS SHALL BE EARTHEN MATERIALS THAT CONTAIN MORE THAN 35% SAND, ROCK FRAGMENT FINES, CLAY AND SILT TO RESTRICT PERMEABILITY.

A MINIMUM 4" LAYER OF MDOT 6AA WHICH CONTAINS NO WASTE PRODUCTS SHALL BE INSTALLED DIRECTLY ABOVE THE SUBGRADE AND BENEATH THE VAPOR BARRIER TO SATISFY THE REQUIREMENTS OF THIS SECTION.

ALL CONVEYANCE PIPING FOR THE SSD SYSTEM ABOVE AND BELOW GRADE SHALL BE 4" SCH40 PVC.

A 20MIL EVOH SHEET APPLIED VAPOR BARRIER WITH AIRTIGHT SEAMS SHALL BE USED ON THIS BUILDING.

IMMEDIATELY AFTER INSTALLATION, ARTIFICIAL SMOKE SHALL BE PUMPED BENEATH THE BARRIER TO VERIFY THE INTERGRY OF THE SEAL. ANY LEAKS IN BARRIER SHALL BE REAPIRED AND THE AREA RETESTED UNTIL NO LEAKS ARE FOUND. THE CLIENT AND ENGINEER OF RECORD SHALL BE PRESENT DURING THIS CATIVITY TO DOCUMENT THE SUCCESSFUL INSTALLATION OF THE BARRIER.

ALL DISCHARGE LOCATIONS SHALL MEET THE REQUIREMENTS FOR VERTICAL DISCHARGE IN THIS SECTION.

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Project: Gateway Theater Complex Wayne State University 5454 Cass Avenue Detroit, MI 48202	Date: 7/18/19	
	Drawn By: H. Campbell Job Number: 19-0572 NRPP Cert# 107330	
Sheet Number:		
V0-01		

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PLOT DATE/TIME: 7/19/2019 5:14 PM LAYOUT: MATERIALS USER: Campbell, Hannah

PRODUCT	MANUFACTURER	MODEL	ESTIMATED QUANTITY	UNITS
ENKA-DRAIN	Low & Bonar, Inc	9323	1250	LF
20 MIL EVOH VAPOR BARRIER	RAVEN INDUSTRIES	VBP20	15000	SF
BUTYL SEAM TAPE	RAVEN INDUSTRIES	TP2BR	63	ROLL
RTV SILICONE	VARIOUS	RTV SILICONE	1500	LF
VAPOR BOND TAPE	RAVEN INDUSTRIES	TVB4	15	ROLL
VAPOR BOOT TAPE	RAVEN INDUSTRIES	TBOOT	25	ROLL
TERMINATION BAR	STEGO INDUSTRIES	TERM BAR	575	LF
HEX HEAD CONCRETE SCREW	TAPCON	1/4" X 1-1/4"	280	EACH
VAPOR PIN INSERT	CONX COLVIN, INC	PVC_INSERT.01	1	EACH
U-STOP BUSHING	RADONAWAY	79219	6	EACH
4" SCH40 PVC PIPE AND FITTINGS	VARIOUS	VARIOUS	420	LF
FIRESTOP SEALANT	SPECIFIED TECHNOLOGIES	LCI300	3	TUBES
FIRESTOP COLLAR	SPECIFIED TECHNOLOGIES	LCC400	12	EACH
METAL BOCA PLATE	OATEY	33897	24	EACH
ROOF FLASHING	GENOVA	14564	6	EACH
EXHAUST SCREEN	RADONAWAY	76041-2	6	EACH
490CFM @ 0.5" FAN ASSEMBLY	FANTECH	RN4-EC	6	EACH
RUBBER COUPLING WITH WORM DRIVE CLAMPS	FERNCO	1006-44	12	EACH
RUBBER COUPLING WITH WORM DRIVE CLAMPS	FERNCO	1056-42	12	EACH
0-5" MINIHASIC GAGE	DWYER INSTRUMENTS	2-5005	12	EACH
5/16" OD MINIHASIC TUBING	EASTMAN	98562	6	LF
APPLIANCE CORD	WHIRLPOOL	W10278923RP	6	EACH
1/4" PRESSURE SWITCH	RADONAWAY	73023	6	EACH
NETWORX MONITORING STATION	GE	NX-8E	1	EACH
LOW VOLTAGE CABLE	VARIOUS	18AWG / 4C		LF

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EVENT:

DATE:

Project:

Gateway Theater Complex

Wayne State University

5454 Cass Avenue

Detroit, MI 48202

Drawn By: H. Campbell







Job Number: 19-0572

Date: 7/18/19

NRPP Cert# 107330

Sheet Number:
V0-02

[illegible]

LEGEND	
	VENT MATTING
	SCH40 PVC VERTICAL CONVEYANCE PIPING
	4" SCH40 PVC HORIZONTAL CONVEYANCE PIPING
	EXTRACTION POINT
	FAN
	MONITORING POINT

[illegible]

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Project:	Drawn By: H. Campbell Job Number: 19-0572	

Sheet Number:

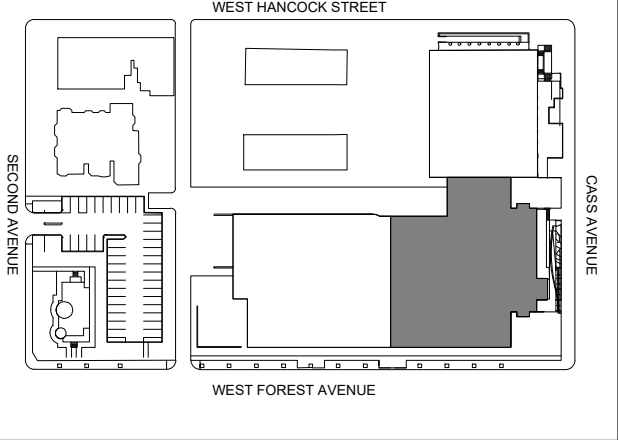
V1-01

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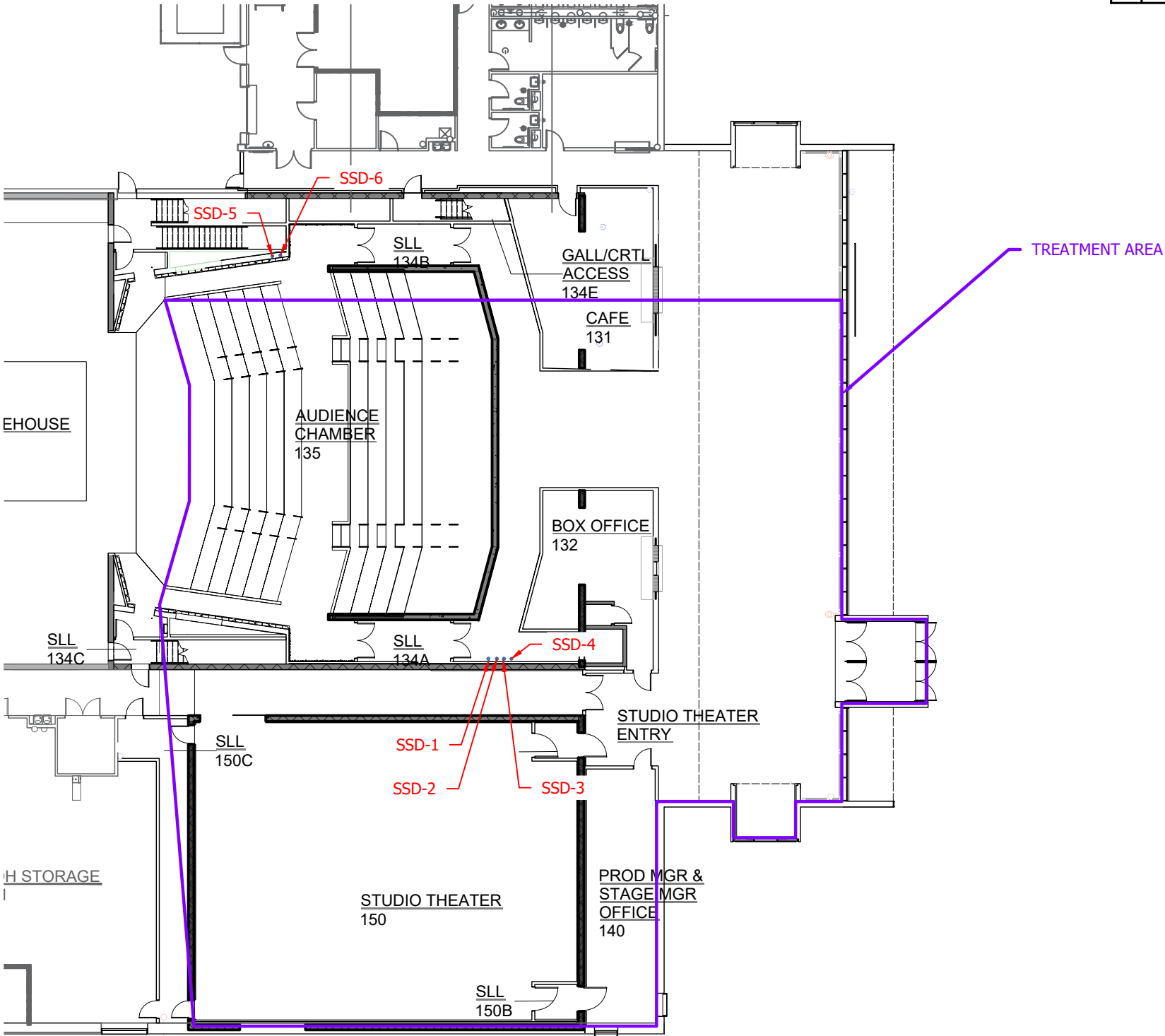
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FOUNDATION LAYOUT
SSD SYSTEM DESIGN
SCALE: NTS

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KEY MAP



LEGEND	
	FAN
	SCH40 PVC VERTICAL CONVEYANCE PIPING
	4" SCH40 PVC HORIZONTAL CONVEYANCE PIPING



EVENT:	DATE:

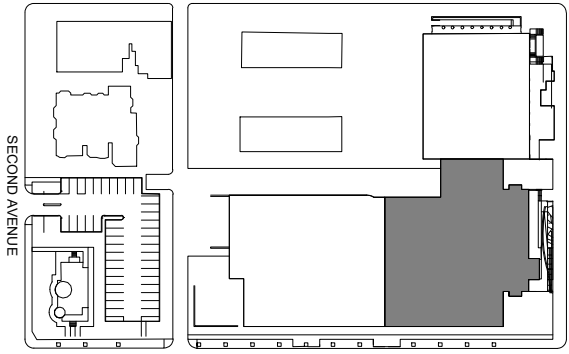
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		Sheet Number:	Job Number: 19-0572

1
V1-02

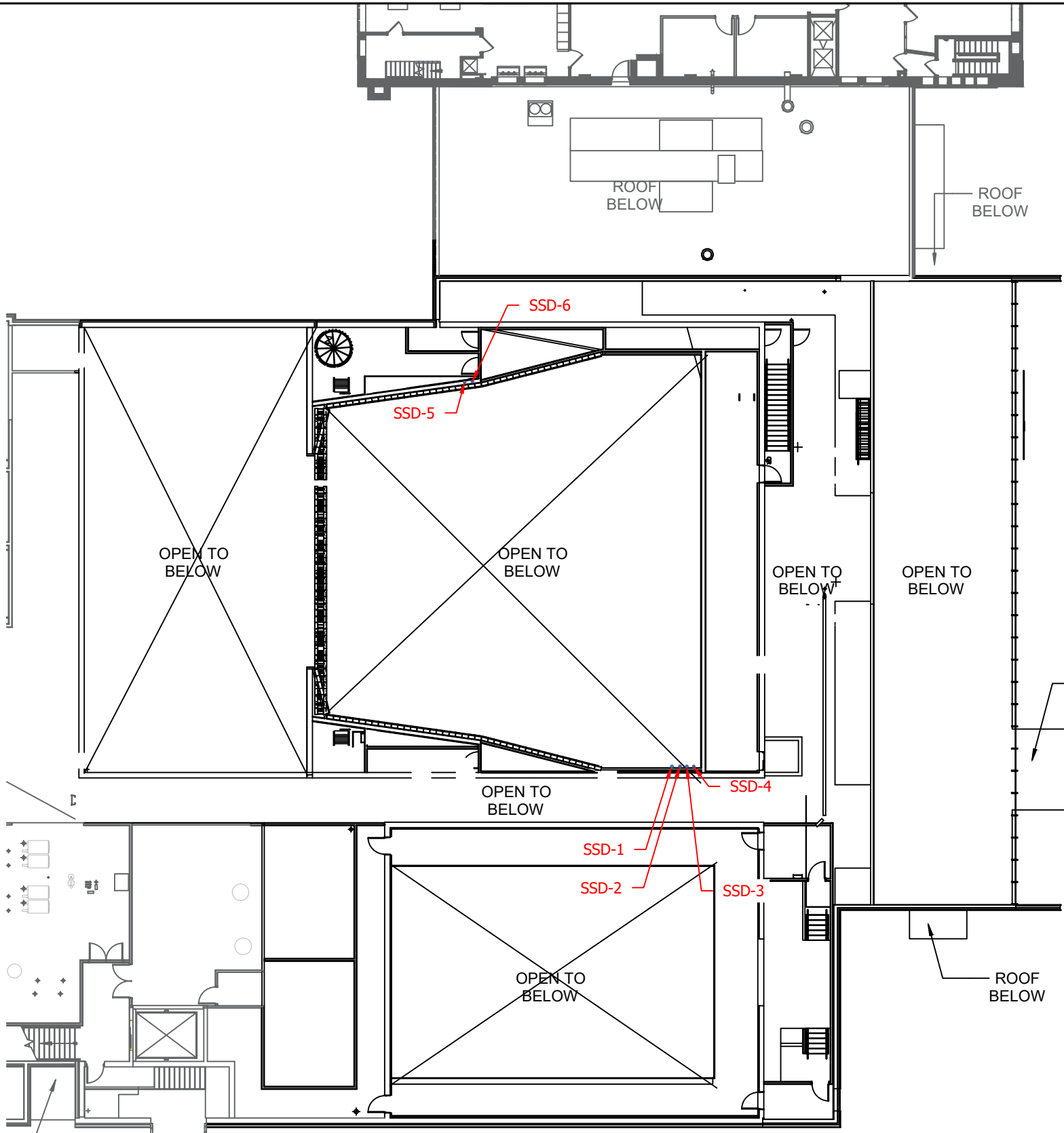
FIRST FLOOR LAYOUT
SSD SYSTEM DESIGN
SCALE: 3/4" = 1'




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V1-02



KEY MAP



	FAN
	SCH40 PVC VERTICAL CONVEYANCE PIPING
	4" SCH40 PVC HORIZONTAL CONVEYANCE PIPING

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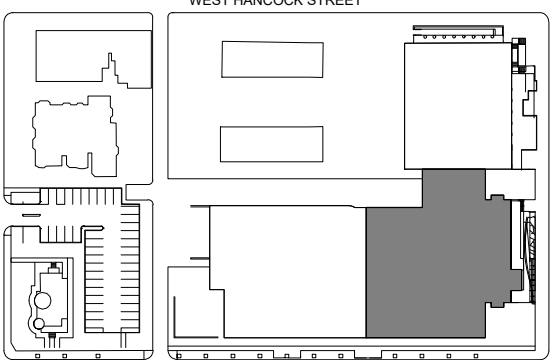
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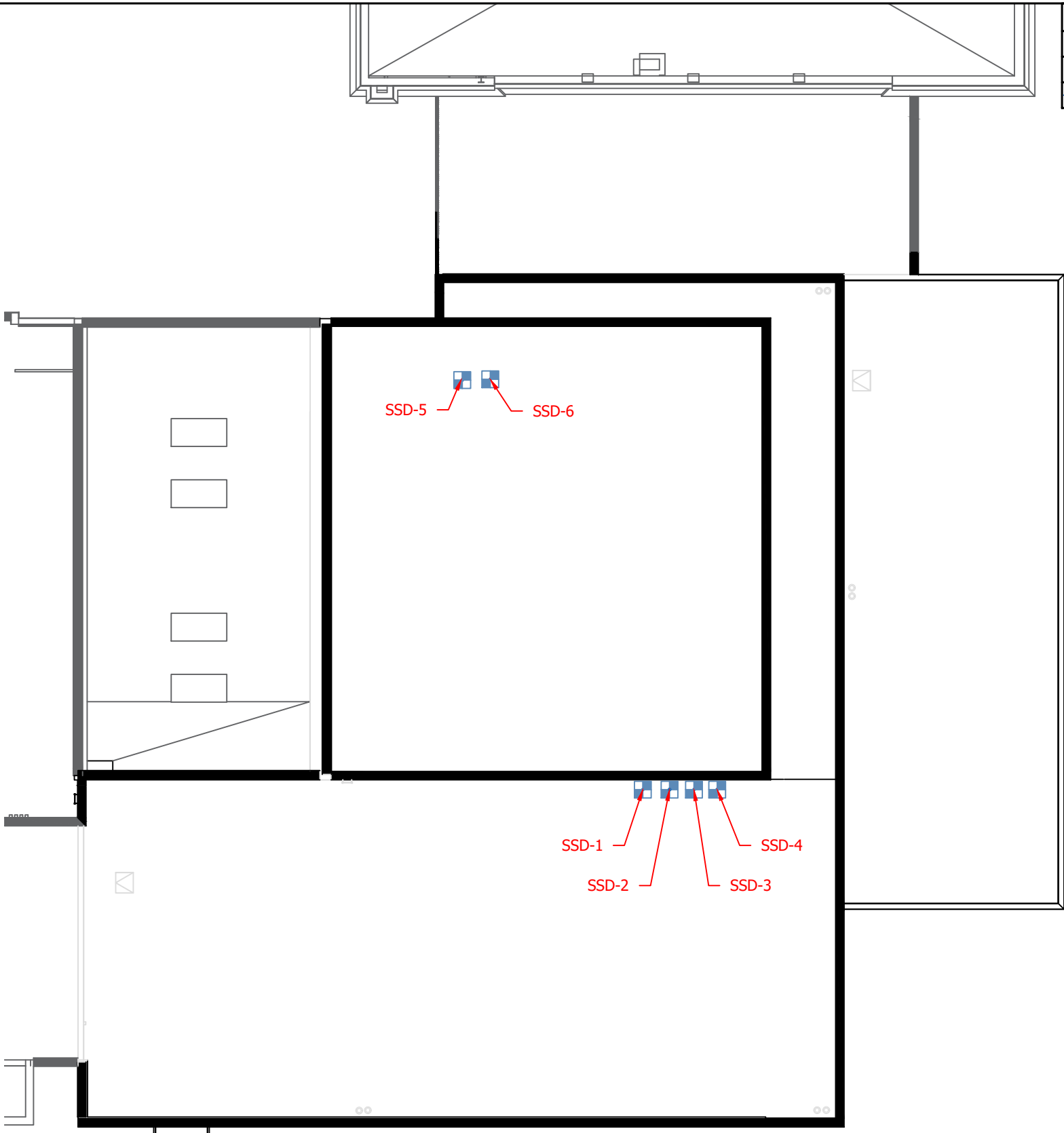
V1-03




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KEY MAP



LEGEND	
	FAN
	SCH40 PVC VERTICAL CONVEYANCE PIPING
	4" SCH40 PVC HORIZONTAL CONVEYANCE PIPING

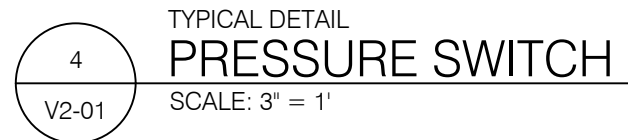
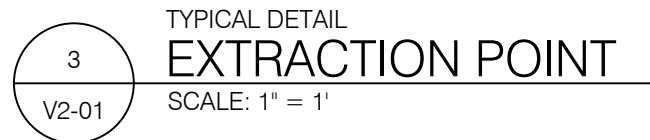
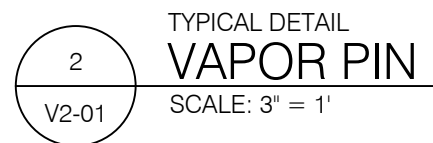
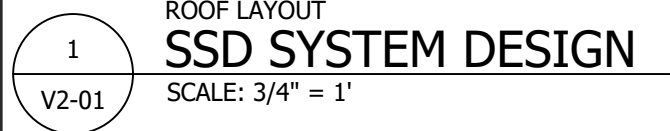
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V1-04

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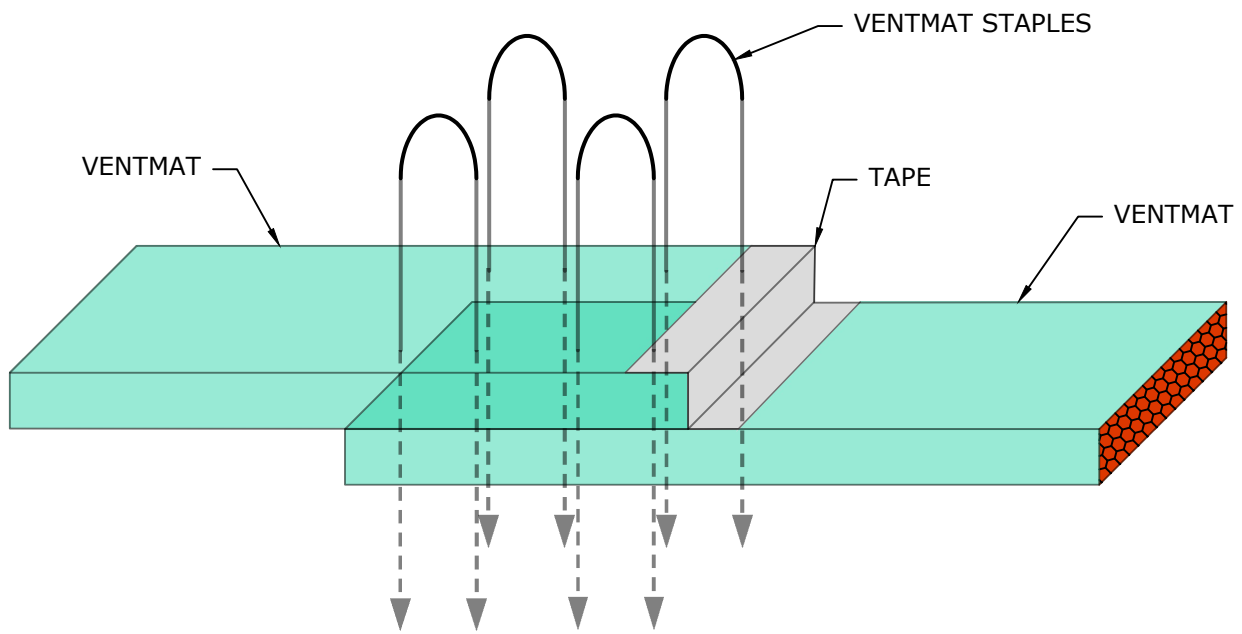
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	NRPP Cert# 107330

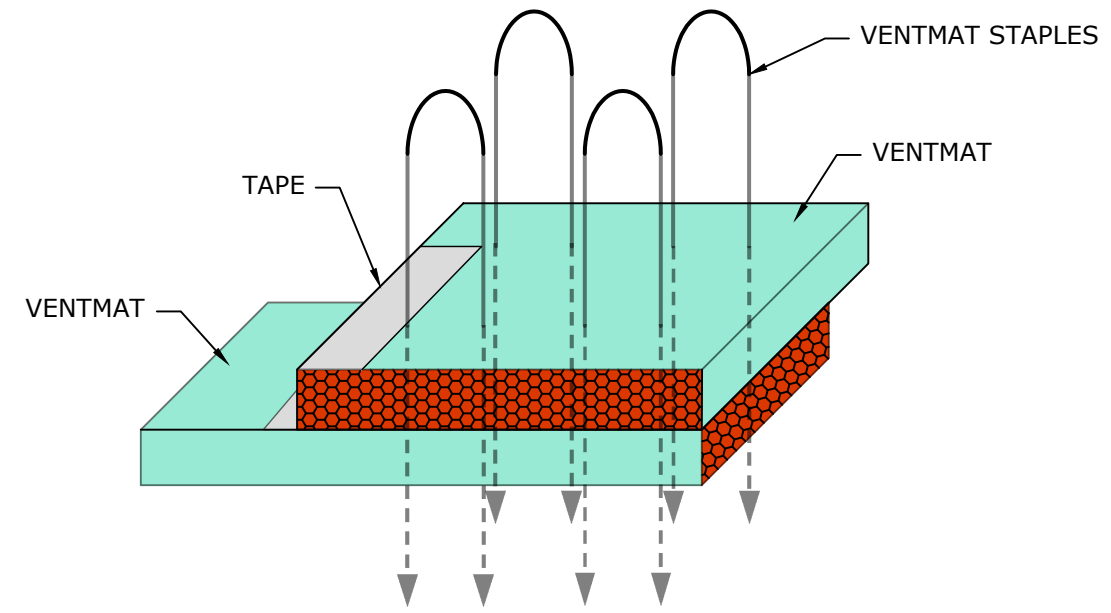
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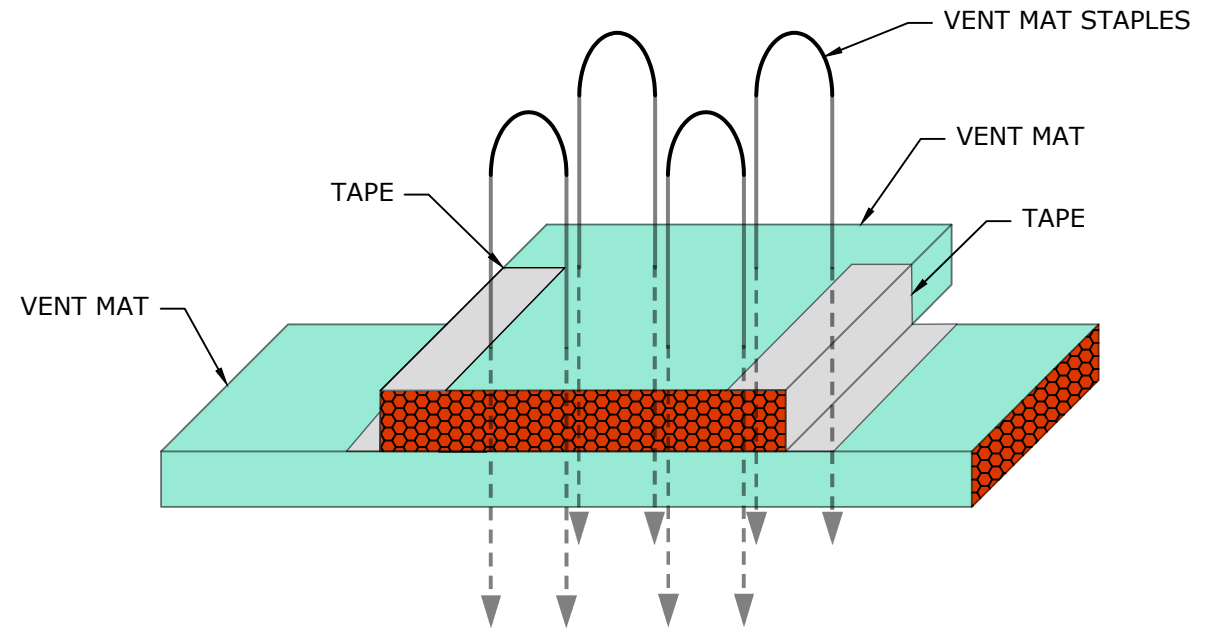
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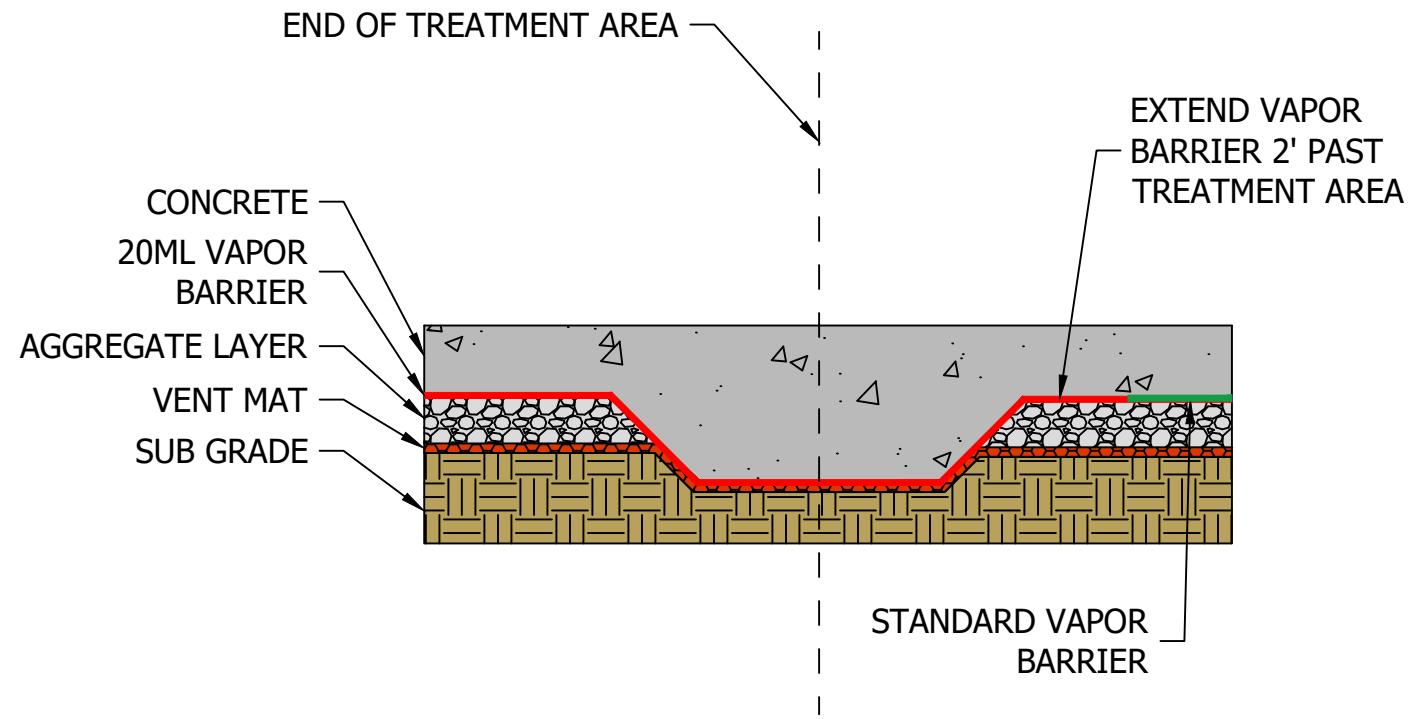
1
V2-02
TYPICAL DETAIL
VENTMAT END LAP SEAM
SCALE: 3/4" = 1'



2
V2-02
TYPICAL DETAIL
VENTMAT CORNER SEAM
SCALE: 3/4" = 1'



3
V2-02
TYPICAL DETAIL
VENTMAT LAP SEAM
SCALE: 3/4" = 1'



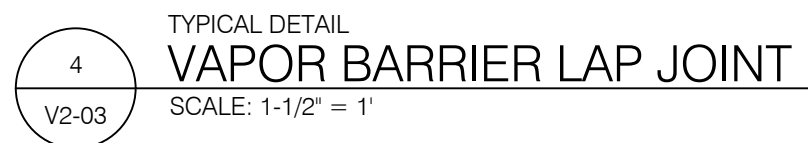
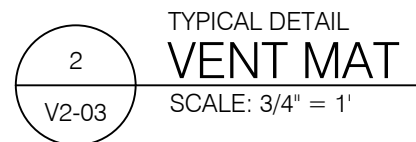
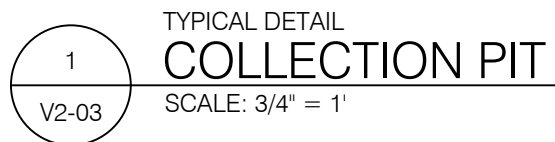
4
V2-02
TYPICAL DETAIL
VENTMAT AT THICKEND POUR
SCALE: 3/4" = 1'

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Project:	Gateway Theater Complex	Date: 7/18/19	NRPP Cert# 107330
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	5454 Cass Avenue		
	Detroit, MI 48202		
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	Job Number: 19-0572		
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AZ SOLUTIONS, INC.
VAPOR REMOVAL SPECIALISTS

[illegible]

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V2-03



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