

ADDENDUM No. 1

RFP No. 25-05

Wheeler Service Center Rooftop Air Handling Unit Replacement

Due: January 30, 2025 by 2:00 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes twenty-seven (27) pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1 by signing and submitting Attachment B, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment B - General Declarations**
- **Attachment D - Prevailing Wage Declaration of Compliance**
- **Attachment E - Living Wage Declaration of Compliance**
- **Attachment G - Vendor Conflict of Interest Disclosure Form**
- **Attachment H - Non-Discrimination Declaration of Compliance**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Is the City open to contracting HVAC controls separately?

Answer 1: No, The City of Ann Arbor is seeking a single solution and does not have a desire to contract the controls separately.

Question 2: Is the intent to integrate to an OEM RTU BACnet controller, or install Automated Logic controls?

Answer 2: The intent is to have the new unit operate in a similar fashion as the previous unit, with the ability to control from the platform displayed during the pre-bid meeting.

Question 3: Does the City of Ann Arbor have a current controls contract?

Answer 3: No, The City does not have a controls contract for this unit.

Question 4: Does the new air handling unit have to be a Carrier unit?

Answer 4: No, any unit can be used long as it's equivalent to the replaced unit and passes inspection.

- Question 5: Will the controls panel be re-used?
Answer 5: It could be, as it's not very old, but it is not necessary.
- Question 6: Are there limits for where the crane is set up?
Answer 6: Yes, it cannot be set up in the allys between the front and back parts of Wheeler Center building
- Question 7: Are there specific work hours?
Answer 7: The City of Ann Arbor has standard working hours during weekdays that we would prefer, however weekend and after hours work can be done with prior authorization
- Question 8: Will the disconnect be reused or replaced?
Answer 8: Either option is fine as long as it passes inspection
- Question 9: Are engineered controls submittals and controls as-builts required? If yes, who is responsible for approving submittals?
Answer 9: No. The intent will be to simply connect the new unit to the existing system.
- Question 10: Are there any controls training requirements?
Answer 10: No. If integrated as the prior unit was, not additional training will be required.
- Question 11: Is it possible for the controls contractor to access the BMS remotely or in-person prior to the proposal due date? If yes, who do we coordinate with?
Answer 11: No remote access will be provided to the BMS. Please reach out to Megan Seay if additional information is desired regarding the BMS controls.
- Question 12: Will the sign-in sheet from the pre-bid meeting, pictures discussed at the pre-bid meeting and the mechanical plans be provided?
Answer 12: Yes, see attached.

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.



**City of Ann Arbor Purchasing
Request for Proposal (RFP) Pre-Proposal Meeting**

RFP# 25-05 - Wheeler Service Center Rooftop Air Handling Unit Replacement

	First /Last Name	Department/Entity	Phone #	E-Mail Address
1.	MAX K Paparelli	Conti Corp.	586-453-3292	mpaparelli@conticorporation.com
2.	Bob Bushman	Hiller-Baldy	248-240-7538	robertb@Miller-Baldy.com
3.	KEITH HUNT	ALLIED BUILDING	810 217 4030	KEITH@TEAMALLIED.COM
4.	JIM KANTZ	Capital City Group	734/344/2222	JKantz@BayCrane.com
5.	KEVIN BOYD	LHM	(248) 653-8335	Kboyd@LHM.US
6.	JASON CHASE	AF SMITH ELECTRIC	(517) 795-0141	JCHASE@AFSMITH.COM
7.	Jon Maurer	Automated Logic	248-226-0685	jonatman.maurer@carrier.com
8.	Tabitha Traycik	Allied Building Service	248-706-8347	TTraycik@TeamAllied.com
9.	Terrence Howe	FM - Sylvan	313-304-9640	Thowe@Sylvan-inc.com
10.	Jeff Hoan	Connelly Crane	734 637-3252	Jeff@connellycrane.com
11.	Jon Meyer	Rob Mer	734-249-2561	Jon@rob-mor.com
12.	MONICA RENTZ	metro controls	586-212-6801	mrentze@metrocontrols.com
13.				
14.				
15.				
16.				

Opened By: _____





**Carrier**

A United Technologies Company

MODEL 48AKD040 - E - 611FF**Work Order 0590002754****SERIAL 3006U17422**

Compressors						(Factory Charged)				Refrigerant/System			Test Pressure Gage		
Qty	Volts	PH	Hz	RLA	LRA	lbs.	kg	R-22	R-22	Hi	Low	PSI (kPa)			
2	460	3	60	13.5	95	Ckt1 36	16.3	R-22		410	150	(2827 kPa) (1034 kPa)			
2	460	3	60	16	120	Ckt2 47	21.3	R-22							

Fan Motors		Qty	Volts	PH	Hz	FLA	HP	KW
Indoor Fan		1	460	3	60	27	20	14.92
Outdoor Fan		4	460	3	60	3.3	1	0.75
Combustion Fan		2	115	1	60	1.1	0.1	0.07

Power Supply	Volts AC	PH	Hz	Max Volts	Min Volts	MCA *	MOCP *
Ckt 1	460	3	60	506	414	106	125
Ckt 2							

*MCA = Min Circuit Amps (Fuse or HACR BKR)
*MOCP = Max Over Current Protective Device Amps

BTU / Hr.	kW	81% Thermal Efficiency	Equipped for use with
500,000	87.9	Input Min	NATURAL
400,000	117.2	Input Max	
324,000	95.9	Output Cap.	For Outdoor Use ONLY

Designed in U.S.A.
UL 1995 Air Conditioners and ANSI 15 Safety Code for Mechanical Refrigeration
Charge System per Installation Instructions

99NA506793 2.0
590g

Accessory Heater / Power Exhaust	chk here / Qty	Volts	Ph	Hz	FLA	HP	Kw	Min Ckt Amps	Max OverCurrent Protective Device Amps
Q1PWREXH034A00	4	460	1	60	3.15	1	0.75	119	125

Installer Note:

- 1: Install accessory per installation instructions enclosed with heater and/or power exhaust and mark space "Check Here" for accessory models used. Use MIN CKT AMPS and MAX OVERCURRENT DEVICE AMPS listed for accessory(s).
- 2: Mark "NONE" if no accessories are used.
- 3: Heaters are manufactured by Tutco.
- 4: Heater references do not apply to gas models.



Model 48AKD040 - E - 611FF

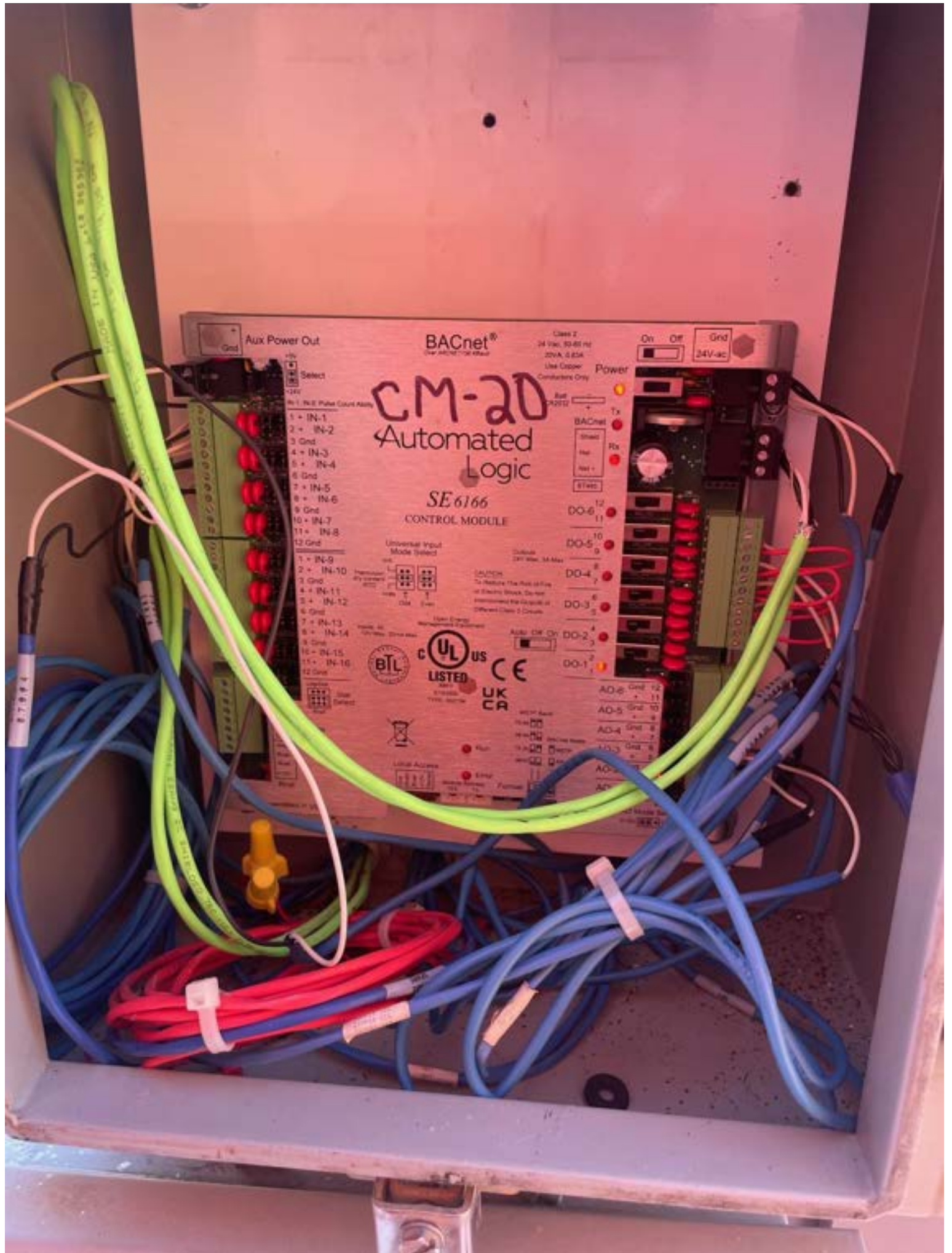


Serial 3006U17422

Made in Mexico, Designed in the U.S.A. Heater Packages for use in U.S.A. ONLY

99NA506803 2.0
590





Aux Power Out

BACnet®
Over ARCNET 156 Kbaud

Class 2
24 Vac, 50-60 Hz
20VA, 0.83A
Use Copper
Conductors Only

On Off Gnd
24V-ac

CM-20
Automated
Logic

SE 6166

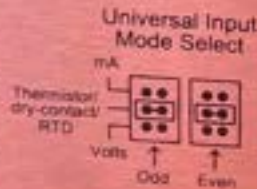
CONTROL MODULE

+5V
Select
+24V

IN-1, IN-2: Pulse Count Ability

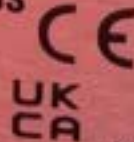
- 1 + IN-1
- 2 + IN-2
- 3 Gnd
- 4 + IN-3
- 5 + IN-4
- 6 Gnd
- 7 + IN-5
- 8 + IN-6
- 9 Gnd
- 10 + IN-7
- 11 + IN-8
- 12 Gnd

- 1 + IN-9
- 2 + IN-10
- 3 Gnd
- 4 + IN-11
- 5 + IN-12
- 6 Gnd
- 7 + IN-13
- 8 + IN-14
- 9 Gnd
- 10 + IN-15
- 11 + IN-16
- 12 Gnd



Inputs: All 10V Max, 20mA Max

Open Energy Management Equipment



LogiStat
Stat Select

LogiStat Port

Gnd
Temp
Sw
LSB
Gnd
Riser +
Riser
+24V
Riser

Batt CR2032

+ Tx

BACnet

Shield

Net - Rx

Net +

BT485

- DO-6 12
- DO-5 11
- DO-4 10
- DO-3 9
- DO-2 8
- DO-1 7
- DO-6 6
- DO-5 5
- DO-4 4
- DO-3 3
- DO-2 2
- DO-1 1

Outputs 24V Max, 3A Max

CAUTION
To Reduce The Risk of Fire or Electric Shock, Do Not interconnect the Outputs of Different Class 2 Circuits

Auto Off On

- AO-6 Gnd 12
- AO-5 Gnd 11
- AO-4 Gnd 10
- AO-3 Gnd 9
- AO-2 Gnd 8
- AO-1 Gnd 7
- AO-6 Gnd 6
- AO-5 Gnd 5
- AO-4 Gnd 4
- AO-3 Gnd 3
- AO-2 Gnd 2
- AO-1 Gnd 1

MSTP Baud

75.0k

38.4k

19.2k

9600

BACnet Mode

MSTP

ARC156

Run

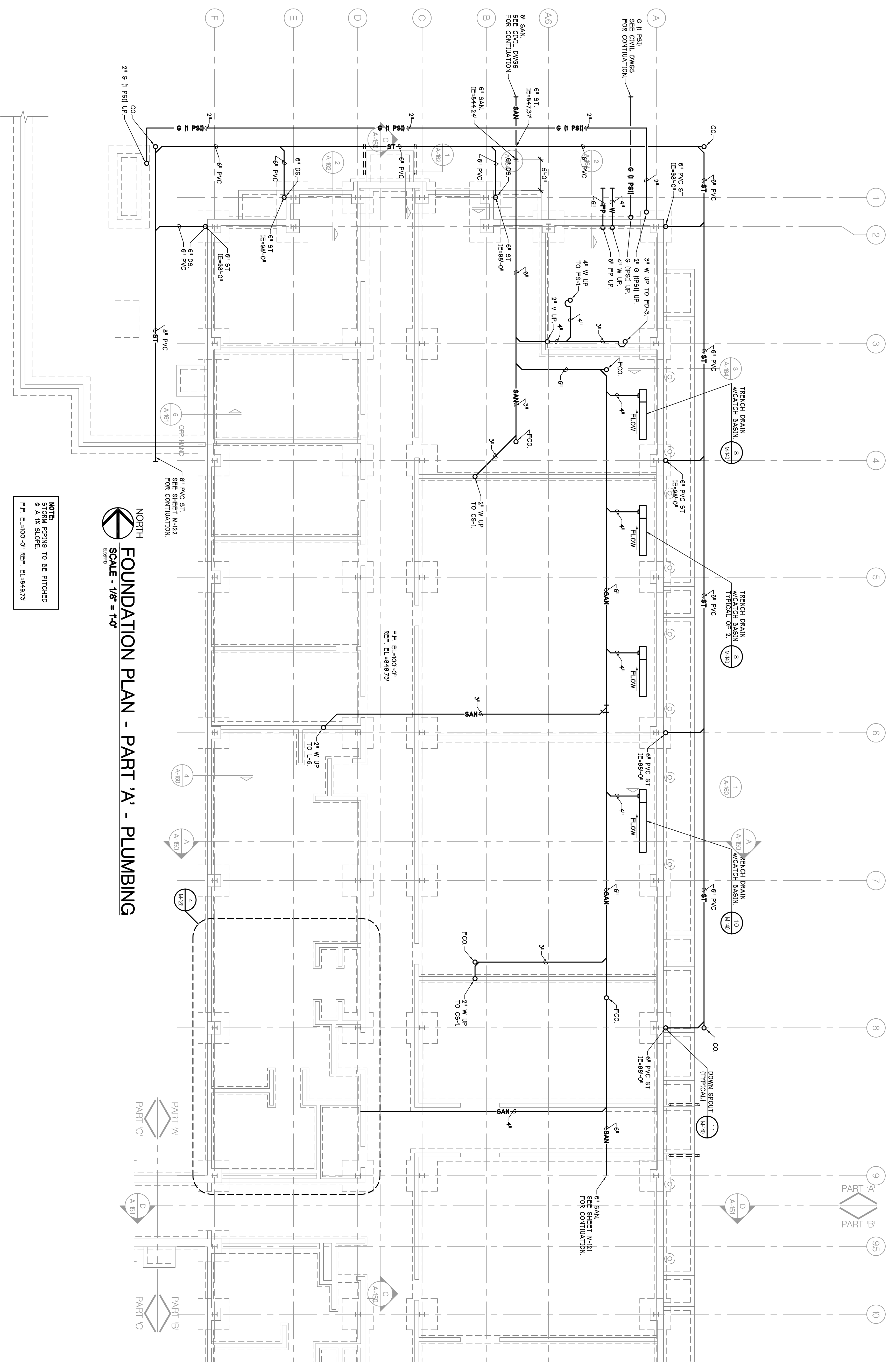
Error

Local Address

Module Address 10x

Format

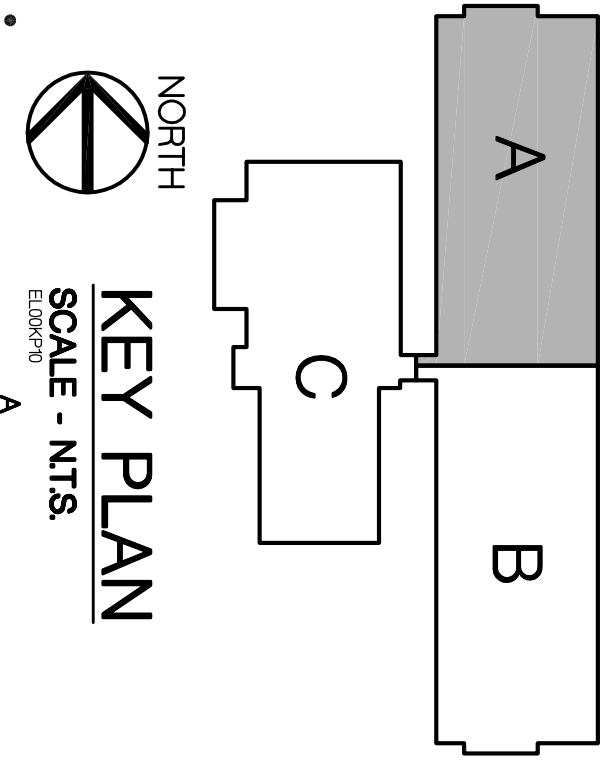
Assembled in USA



NOTE:
 STORM PIPING TO BE PITCHED
 @ A 1% SLOPE.
 F.F. EL.100'-0" REF. EL.484.873'

FOUNDATION PLAN - PART 'A' - PLUMBING

NORTH
 SCALE - 1/8" = 1'-0"



AS BUILTS	8-10-2006
PROPOSAL REQUEST 1	10-3-2006
PROPOSAL REQUEST 3	6-3-2006
CONTRACT SET	2-8-2006
CONSTRUCTION	11-2-2006
60% OWNER REVIEW	8-29-2006
50% OWNER REVIEW	7-18-2006
DD OWNER REVIEW	5-27-2006
DATE ISSUED	
DRAWN BY	AMS
CHECKED BY	AMS, MK

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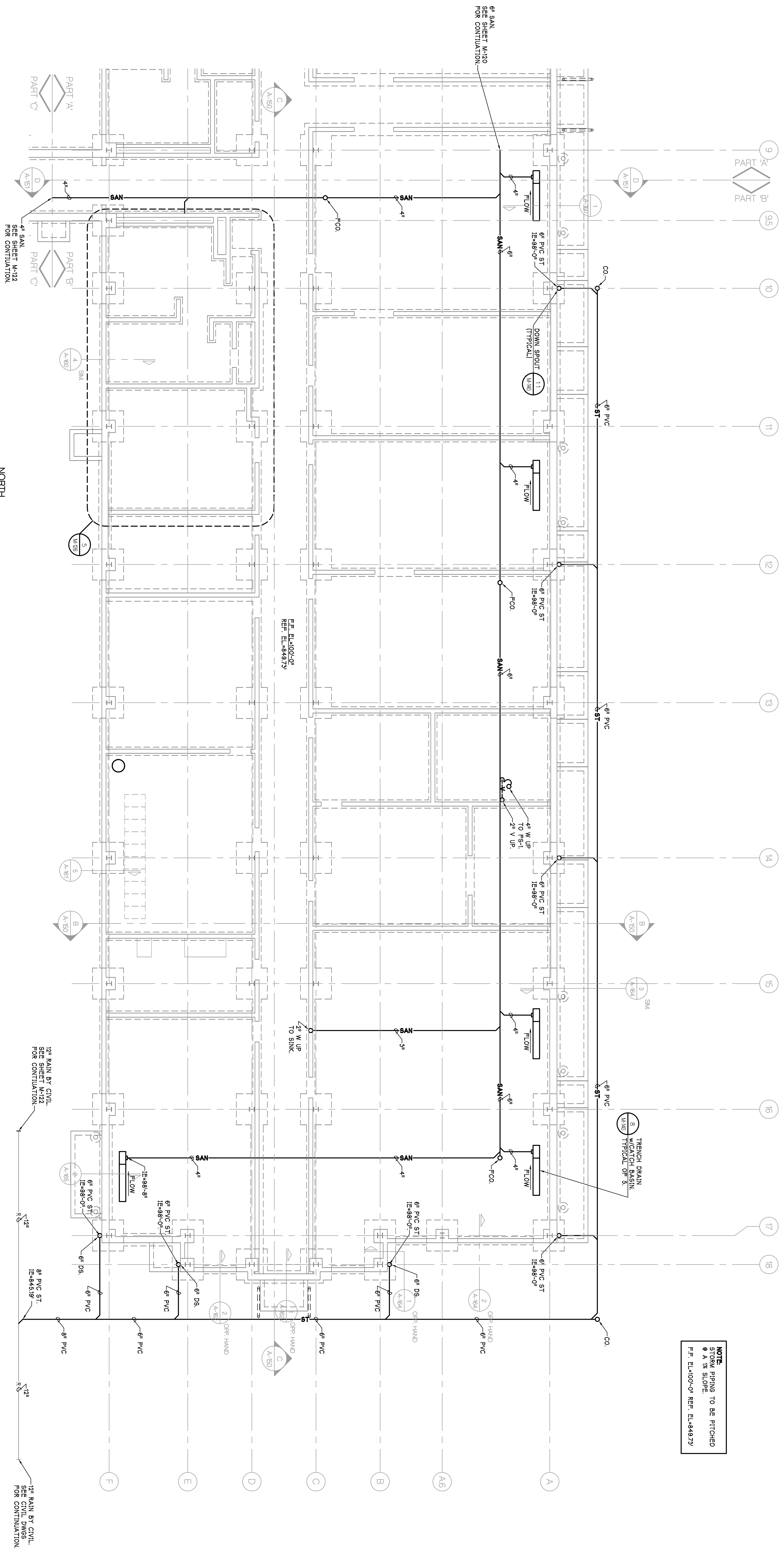
<p>CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108</p>	<p>PROJECT</p>
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<p>CONSULTANT</p>	<p>OPERATIONS BUILDING FOUNDATION PART 'A' PLAN PLUMBING</p>
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<p>PROJECT NUMBER</p>	<p>05-309</p>
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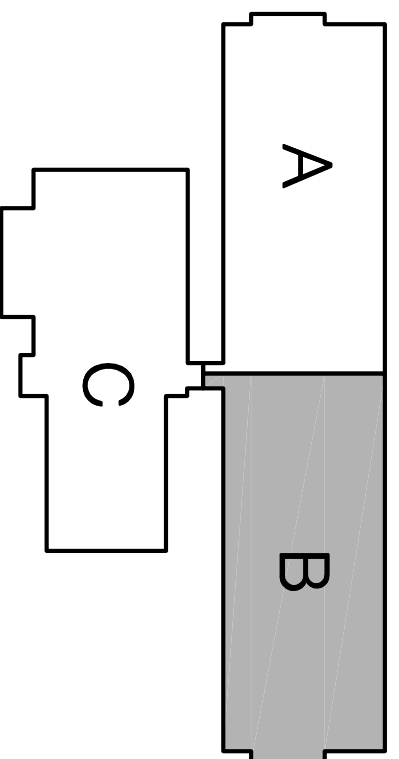
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<p>SHEET NUMBER</p>	<p>M-120</p>
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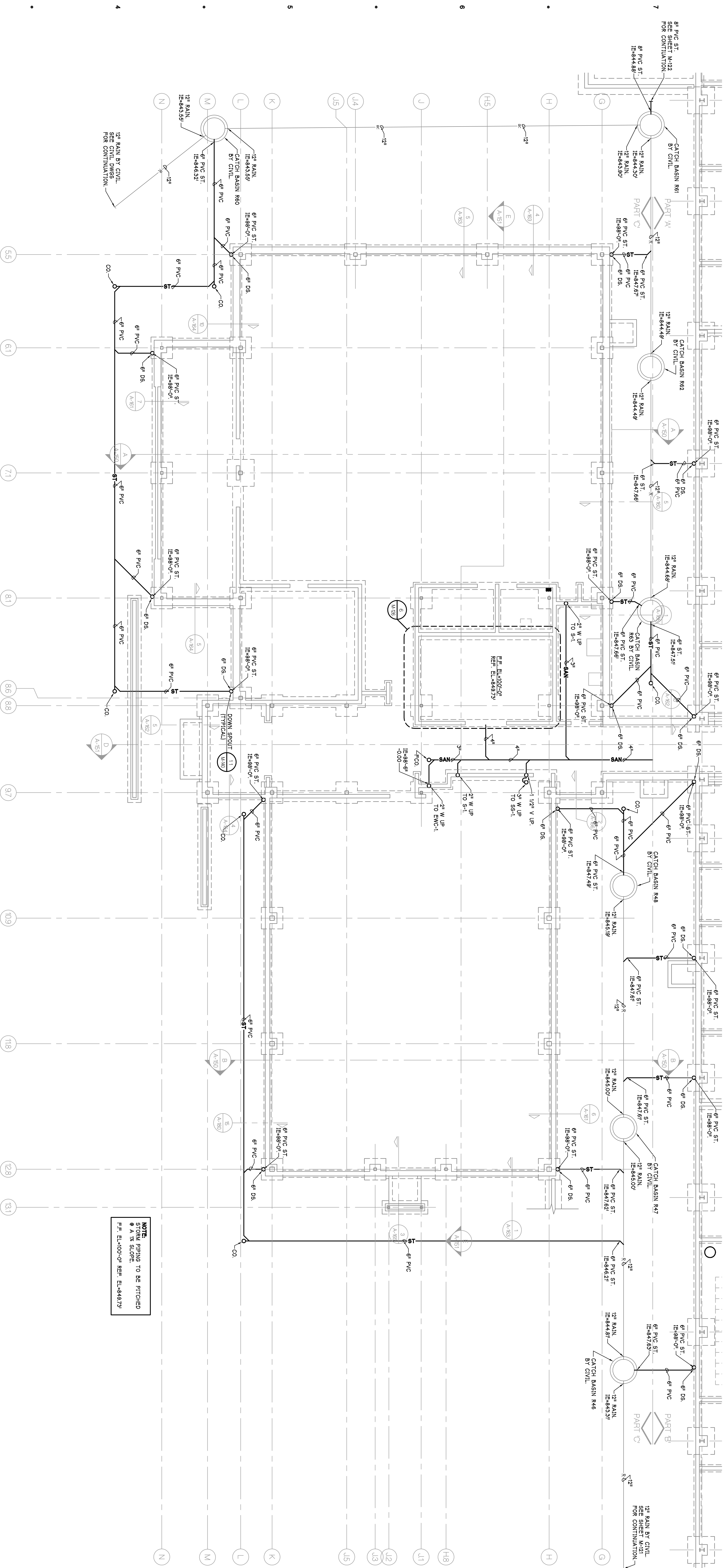


NOTE:
 STORM PIPING TO BE PITCHED
 @ 1/8" SLOPE
 F.F. EL+00'-00" REF. EL+84.873'

NORTH
FOUNDATION PLAN - PART B' - PLUMBING
 SCALE - 1/8" = 1'-0"



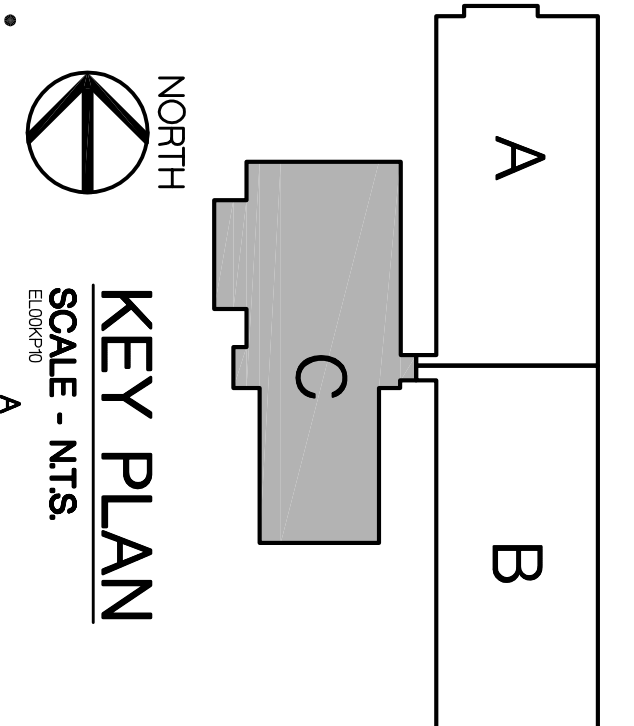
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HOBBS+BLACK ARCHITECTS 1030 N. State Street Ann Arbor, Michigan 48104 P. 734.463.1170 www.hobbsblack.com		 PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. Fleet & Facilities Division 11757 Katy Freeway #600, Houston, (281) 558-7273 1831 Chestnut Street #700, St. Louis, (314) 421-1476
PROJECT OPERATIONS BUILDING FOUNDATION PART B' PLUMBING	CONSULTANT	AS BUILTS 9-10-2006 CONTRACT SET 2-8-2006 CONSTRUCTION 11-12-2006 60% OWNER REVIEW 8-29-2006 90% OWNER REVIEW 7-18-2006 DD OWNER REVIEW 5-27-2006 DATE ISSUED
PROJECT NUMBER 05-309	DRAWN BY P.M. BK CHECKED BY	SHEET NUMBER M-121



NOTE:
 6\"/>

FOUNDATION PLAN - PART 'C' - PLUMBING

NORTH
 SCALE - 1/8" = 1'-0"



AS BUILTS	9-10-2006
CONTRACT SET	2-8-2006
CONSTRUCTION	11-2-2006
60% OWNER REVIEW	8-29-2006
DD OWNER REVIEW	7-18-2006
DATE ISSUED	5-27-2006

DRAWN BY: P.M. BK
 CHECKED BY: P.M. BK

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 QUADE & DOUGLAS, INC.**
 Fleet & Facilities Division
 11757 Katy Freeway #600,
 Houston, (281) 558-7273

100 YEARS
 1831 Chestnut Street #700,
 St. Louis, (314) 421-1476

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 STONE SCHOOL ROAD
 ANN ARBOR, MICHIGAN 48108

PROJECT

CONSULTANT

OPERATIONS BUILDING
 FOUNDATION PLAN
 PART 'C'
 PLUMBING

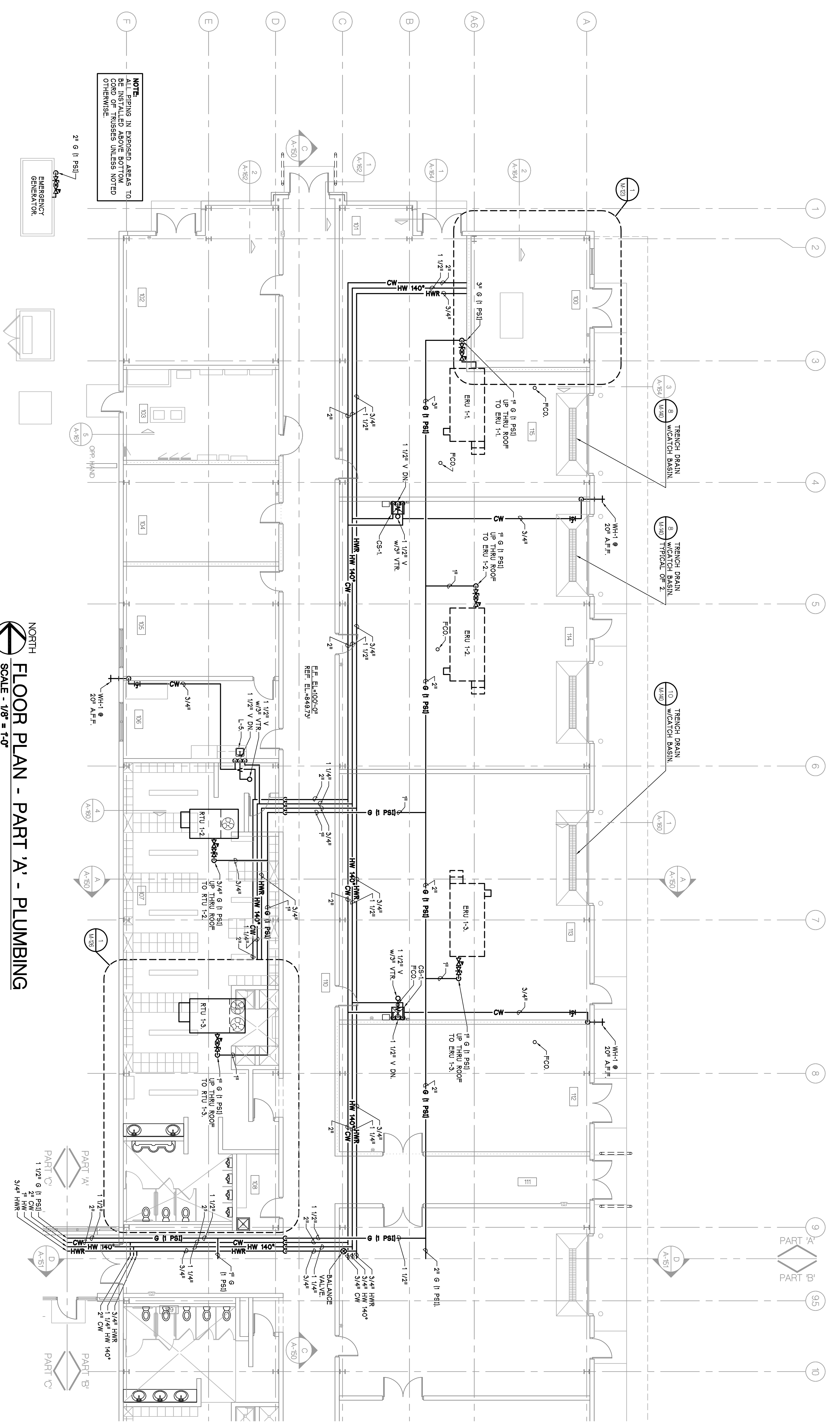
SHEET TITLE

05-309

PROJECT NUMBER

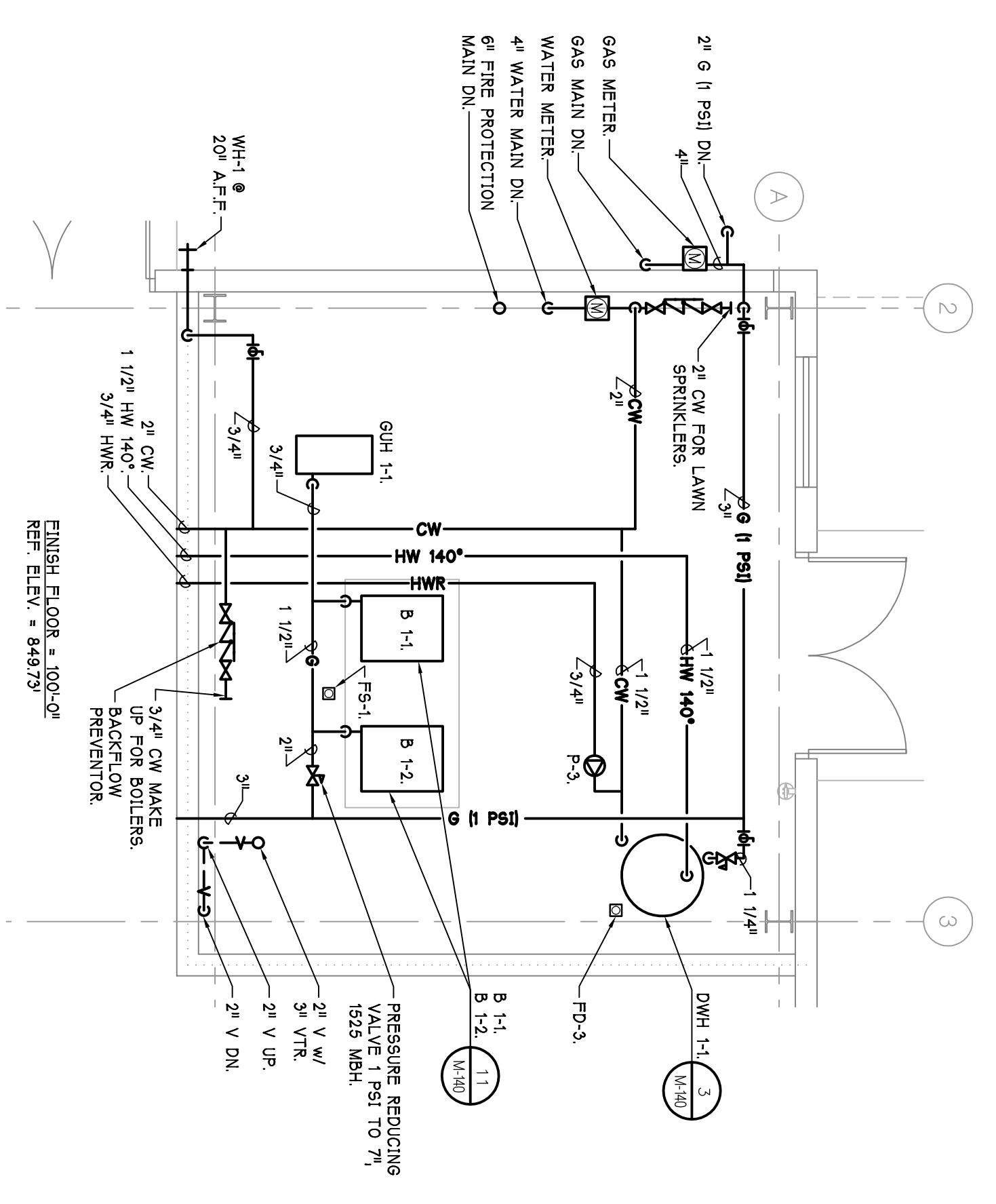
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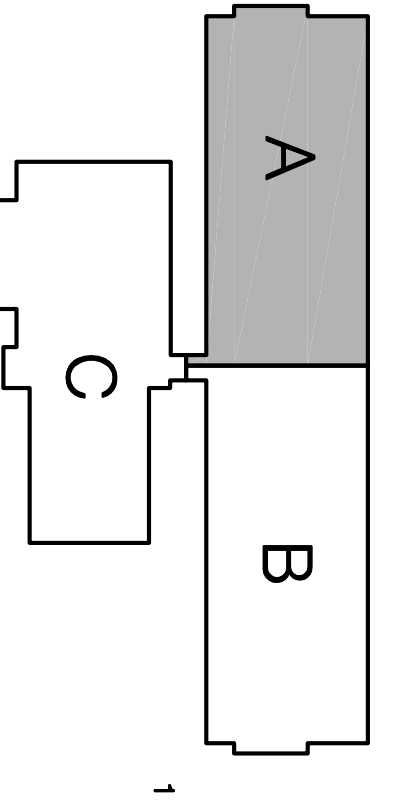


NOTE:
 ALL PIPING IN EXPOSED AREAS TO BE FINISHED TO MATCH THE FINISH OF THE SURFACE UNLESS NOTED OTHERWISE.

NORTH
FLOOR PLAN - PART 'A' - PLUMBING
 SCALE - 1/8" = 1'-0"



1
ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"



NORTH
KEY PLAN
 SCALE - N.T.S.

AS BUILTS	8-10-2008
SUPP. INSTR. 13	2-8-2007
SUPP. INSTR. 11	1-04-2007
PROPOSAL REQUEST 3	6-3-2006
CONTRACT SET	2-8-2006
CONSTRUCTION	11-2-2005
60% OWNER REVIEW	8-29-2005
50% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	M.A.E.
CHECKED BY	P.A.H. SK

PAR
 100 YEARS

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 Fleet & Facilities Division

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1831 Chestnut Street #700,
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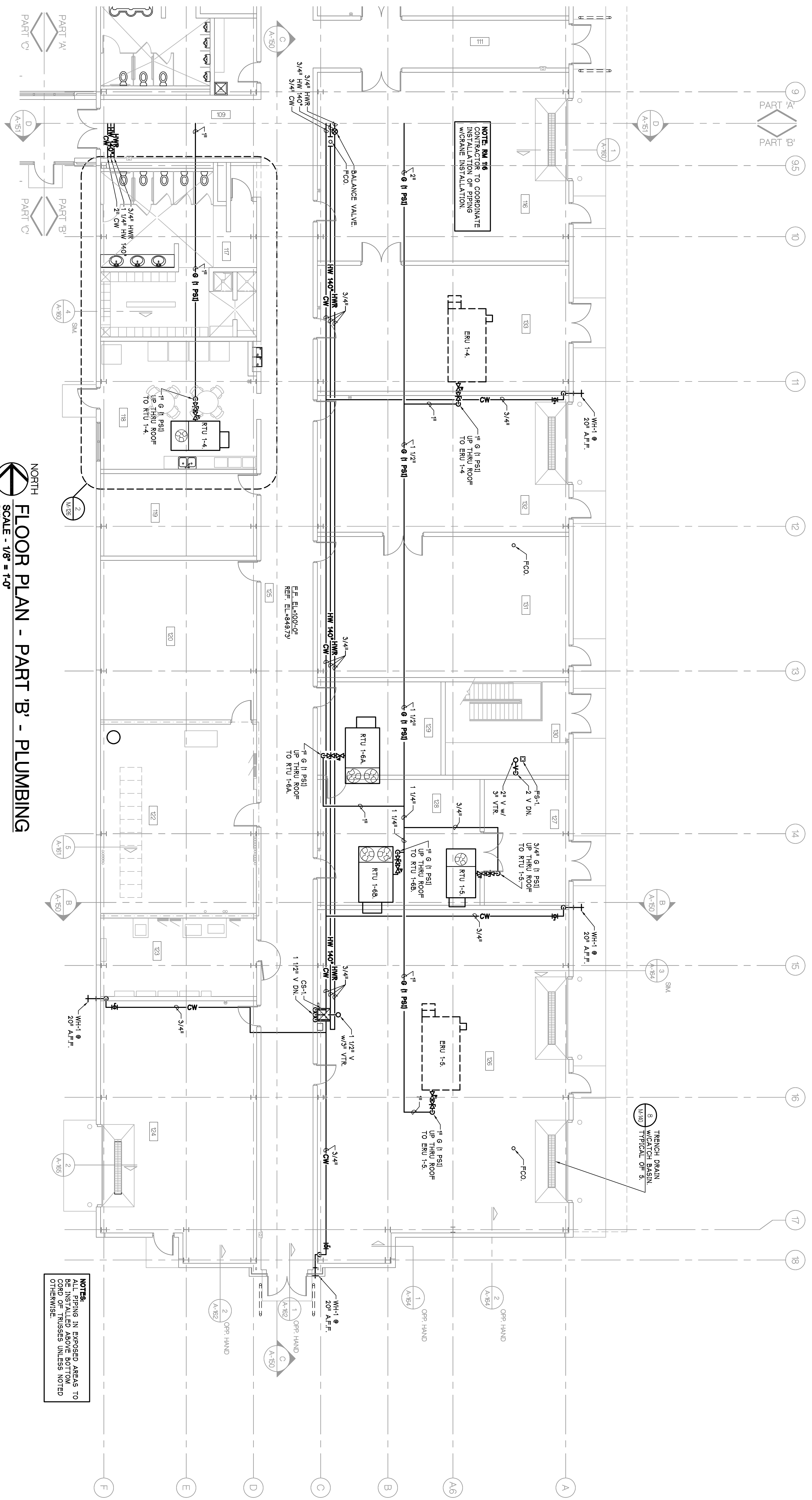
CITY OF ANN ARBOR
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 MAINTENANCE FACILITY
 STONE SCHOOL ROAD
 ANN ARBOR, MICHIGAN 48108

PROJECT
 OPERATIONS BUILDING
 FLOOR PLAN
 PART 'A'
 PLUMBING

CONSULTANT

PROJECT NUMBER
 05-309

SHEET NUMBER
 M-123

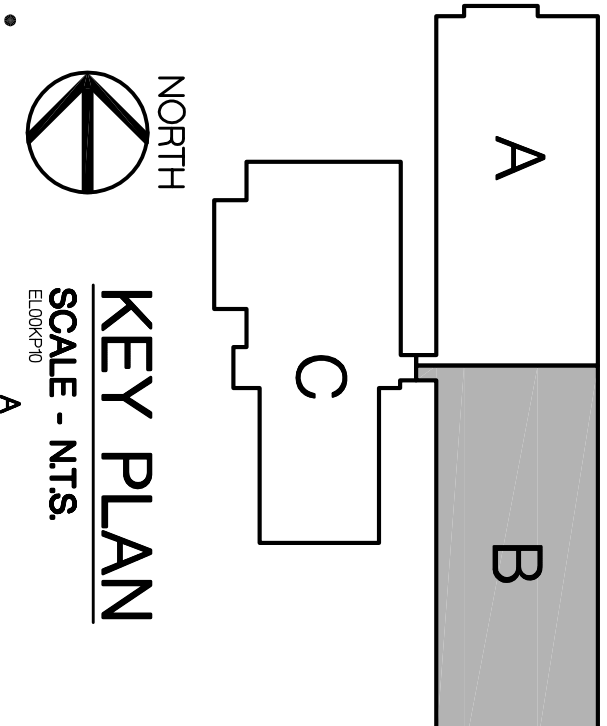


NORTH
FLOOR PLAN - PART 'B' - PLUMBING
 SCALE - 1/8" = 1'-0"

NOTES:
 ALL PIPING IN EXPOSED AREAS TO BE INSTALLED ABOVE BOTTOM OF CEILING UNLESS NOTED OTHERWISE.

NOTE: THE CONTRACTOR TO COORDINATE INSTALLATION OF PIPING WITH THE MECHANICAL CONTRACTOR'S INSTALLATION.

TRENCH DRAIN TYPICAL SEE S1

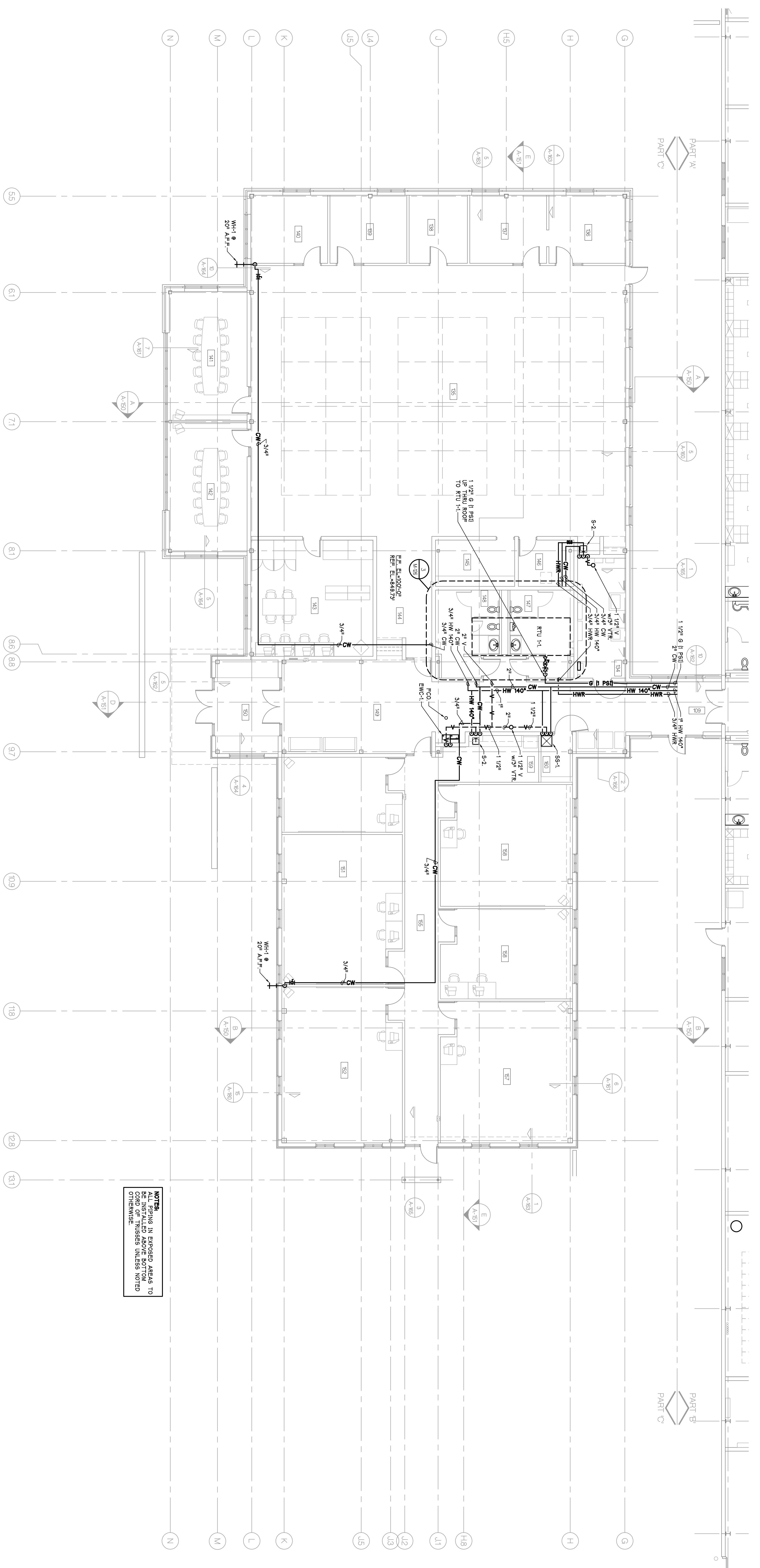


AS NOTED	8-10-2006
SUPP. INSTR. 13	2-23-2007
SUPP. INSTR. 11	1-04-2007
CONTRACT SET	2-23-2006
CONSTRUCTION	11-12-2005
60% OWNER REVIEW	8-29-2005
50% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	MAE
CHECKED BY	PJM, BEK

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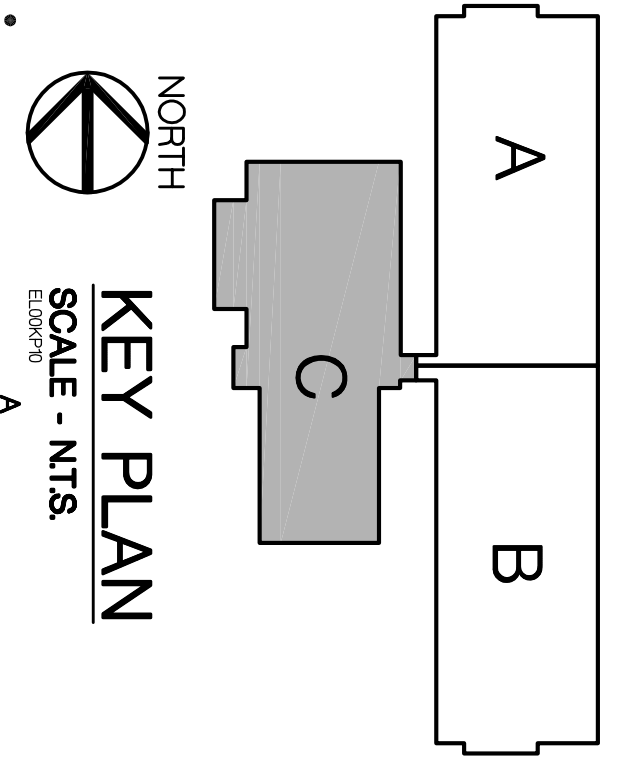
<p>CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108</p>	<p>PROJECT</p>
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CONSULTANT
OPERATIONS BUILDING FLOOR PLAN PART 'B' PLUMBING
SHEET TITLE
05-309
PROJECT NUMBER
M-124
SHEET NUMBER



NORTH
FLOOR PLAN - PART 'C' - PLUMBING
 SCALE - 1/8" = 1'-0"

NOTE:
 PLUMBING IN EXPOSED AREAS TO
 BE INSTALLED ABOVE BOTTOM
 OF CEILING UNLESS NOTED
 OTHERWISE.

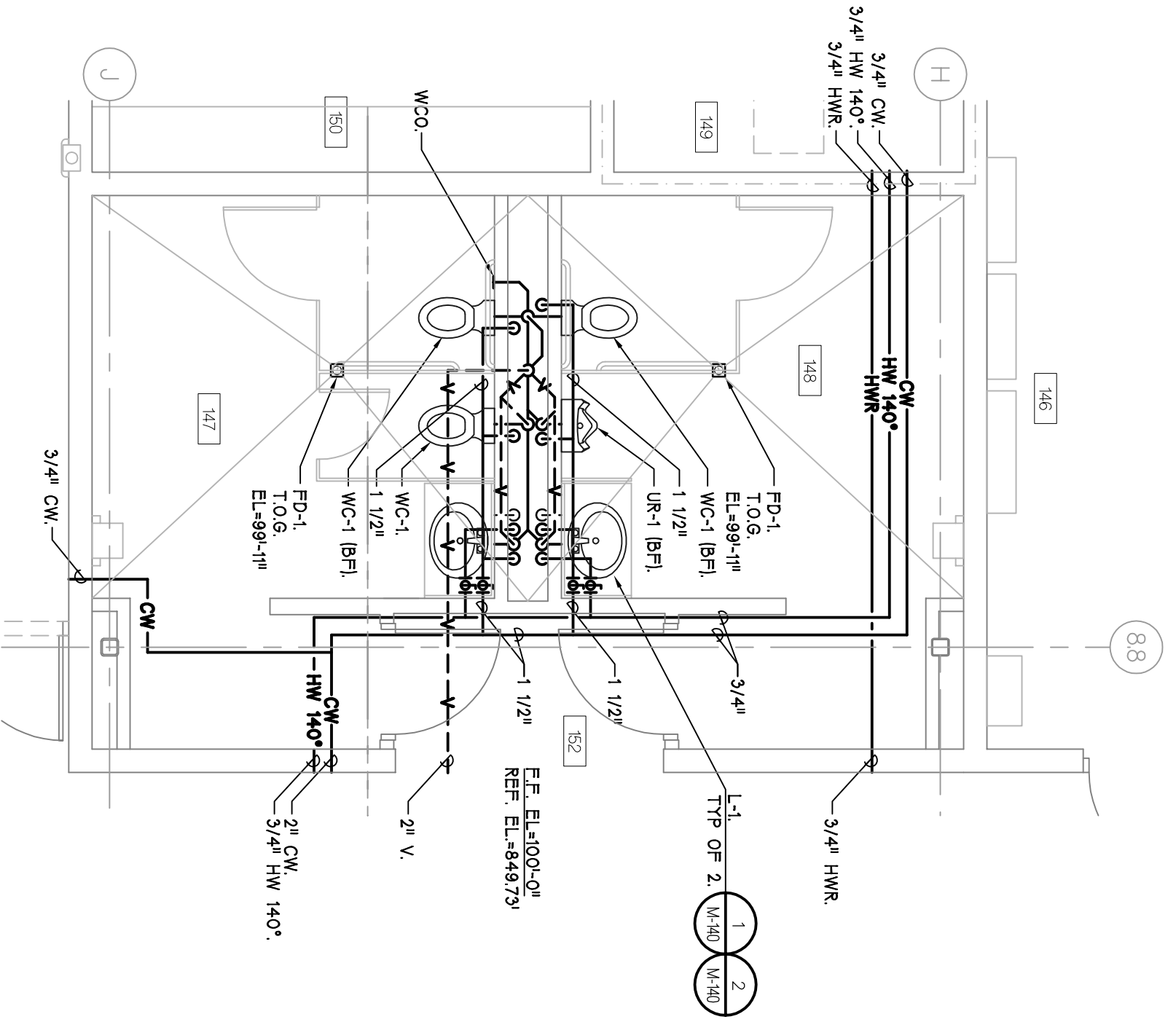


AS BUILTS	8-30-2006
SUPP. NOTES 13	2-4-2007
CONTRACT SET	2-6-2006
CONSTRUCTION	11-2-2005
60% OWNER REVIEW	8-29-2005
90% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	MAE
CHECKED BY	PAH, BEC

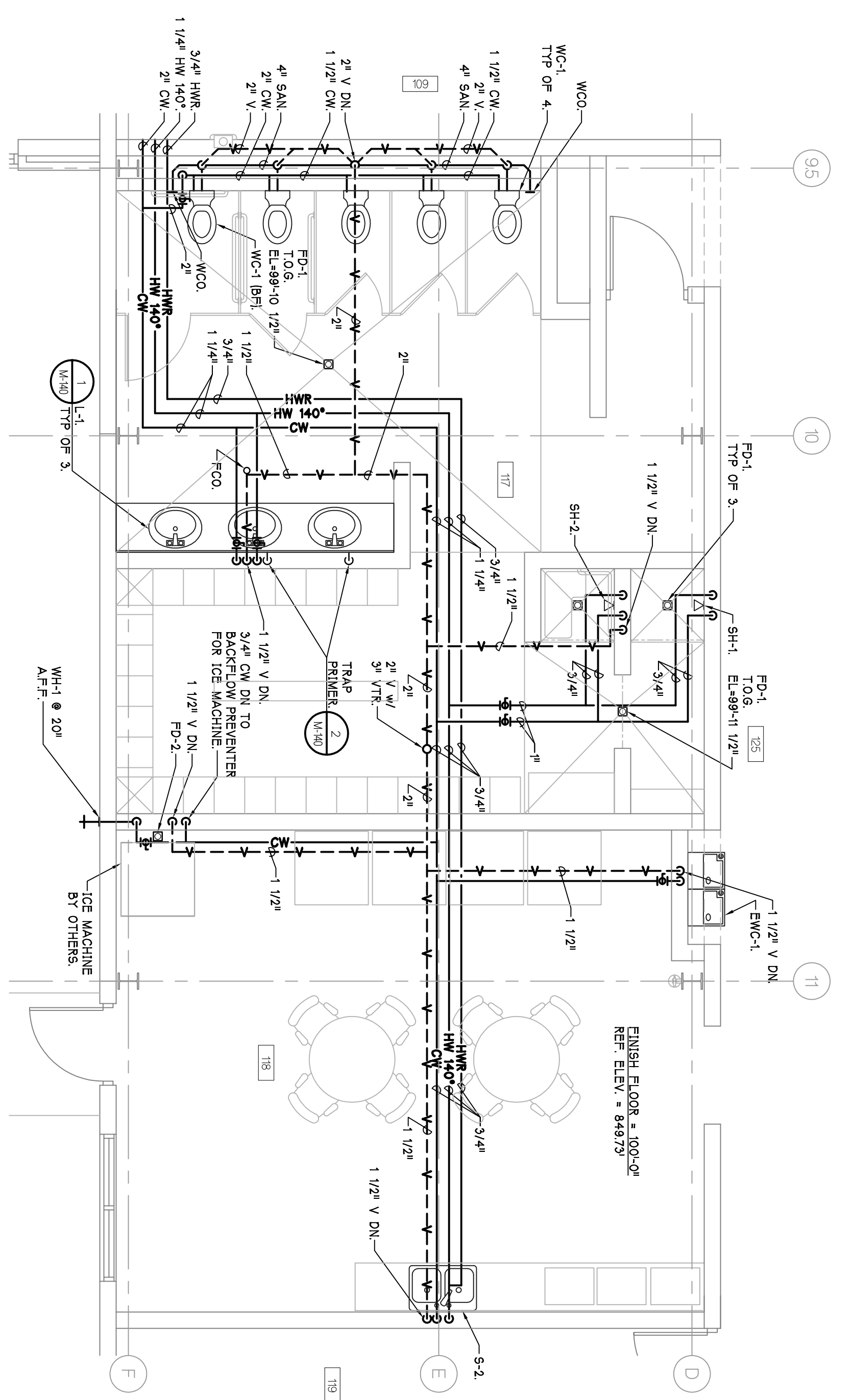
<p>PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. Fleet & Facilities Division 11757 Katy Freeway #600, Houston, (281) 558-7273 1831 Chestnut Street #700, St. Louis, (314) 421-1476</p>	<p>HOBBS+BLACK ARCHITECTS</p> <p>1030 N. State Street Ann Arbor, Michigan 48104 P. 734.463.4189 F. 734.463.1770 www.hobbsblack.com</p>	<p>© Copyright 2006, HOBBS + BLACK, INC. ALL RIGHTS RESERVED.</p>
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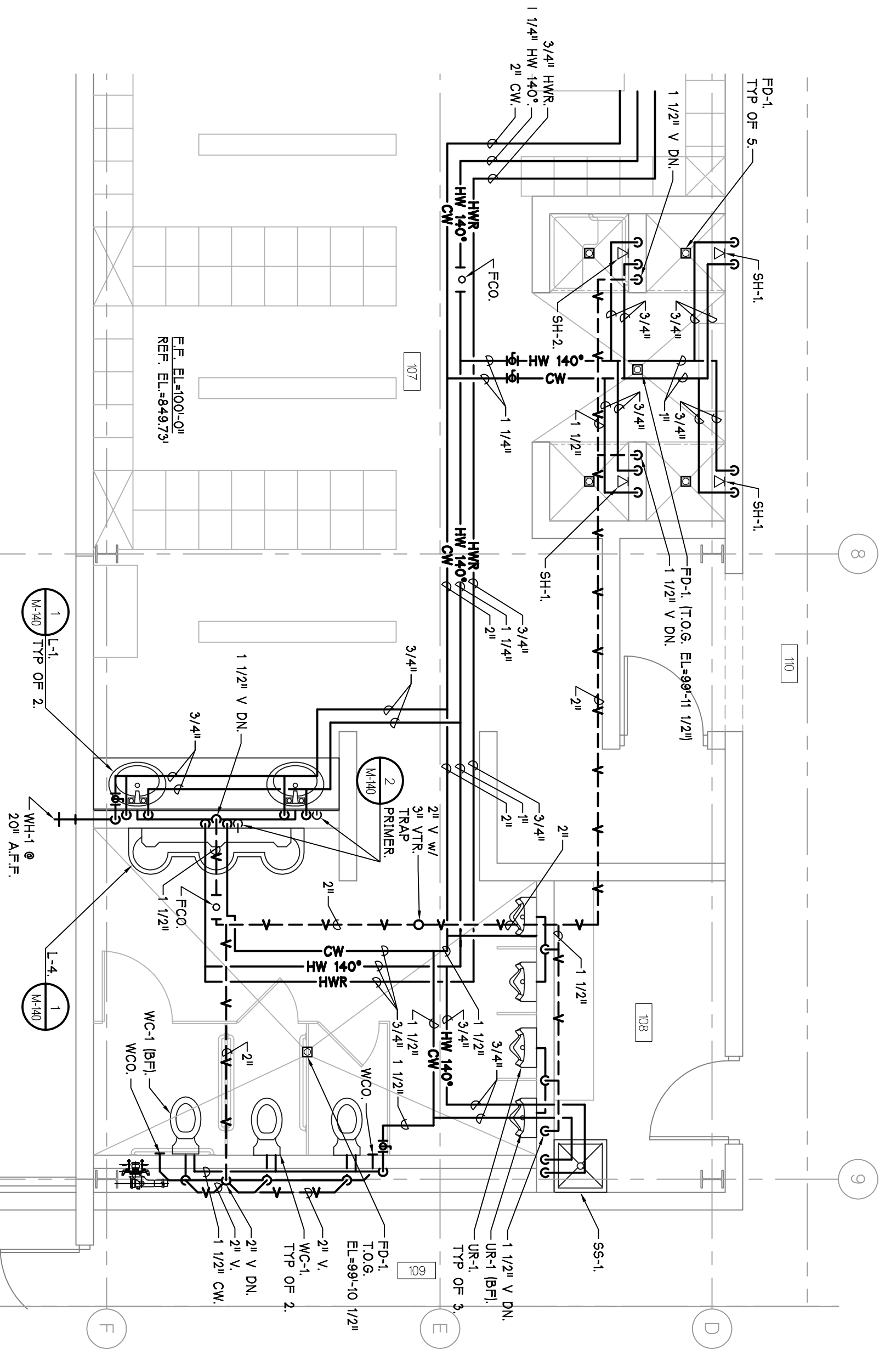
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<p>PROJECT NUMBER</p>	<p>SHEET TITLE</p>
<p>05-309</p>	<p>M-125</p>
<p>SHEET NUMBER</p>	<p></p>



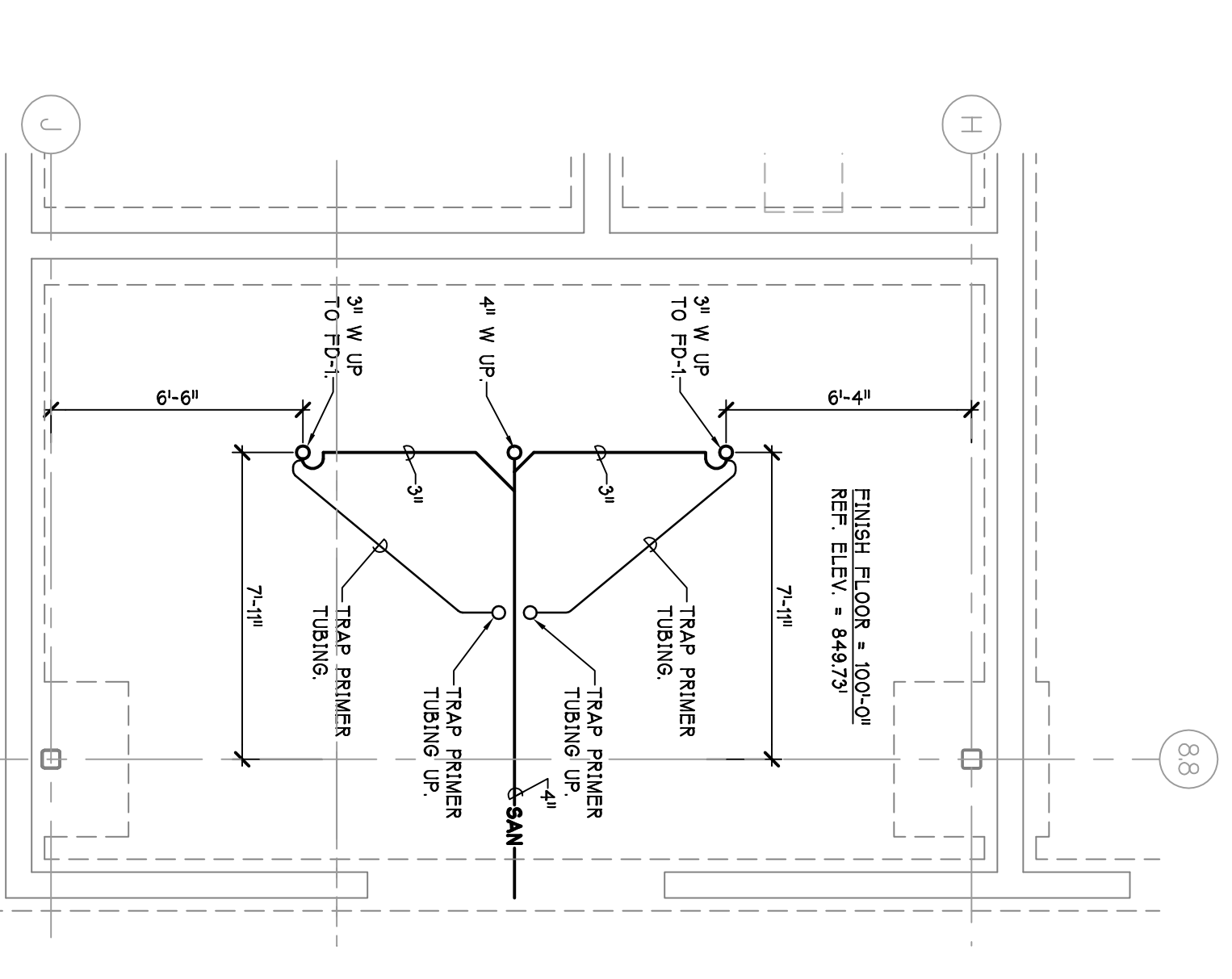
3 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



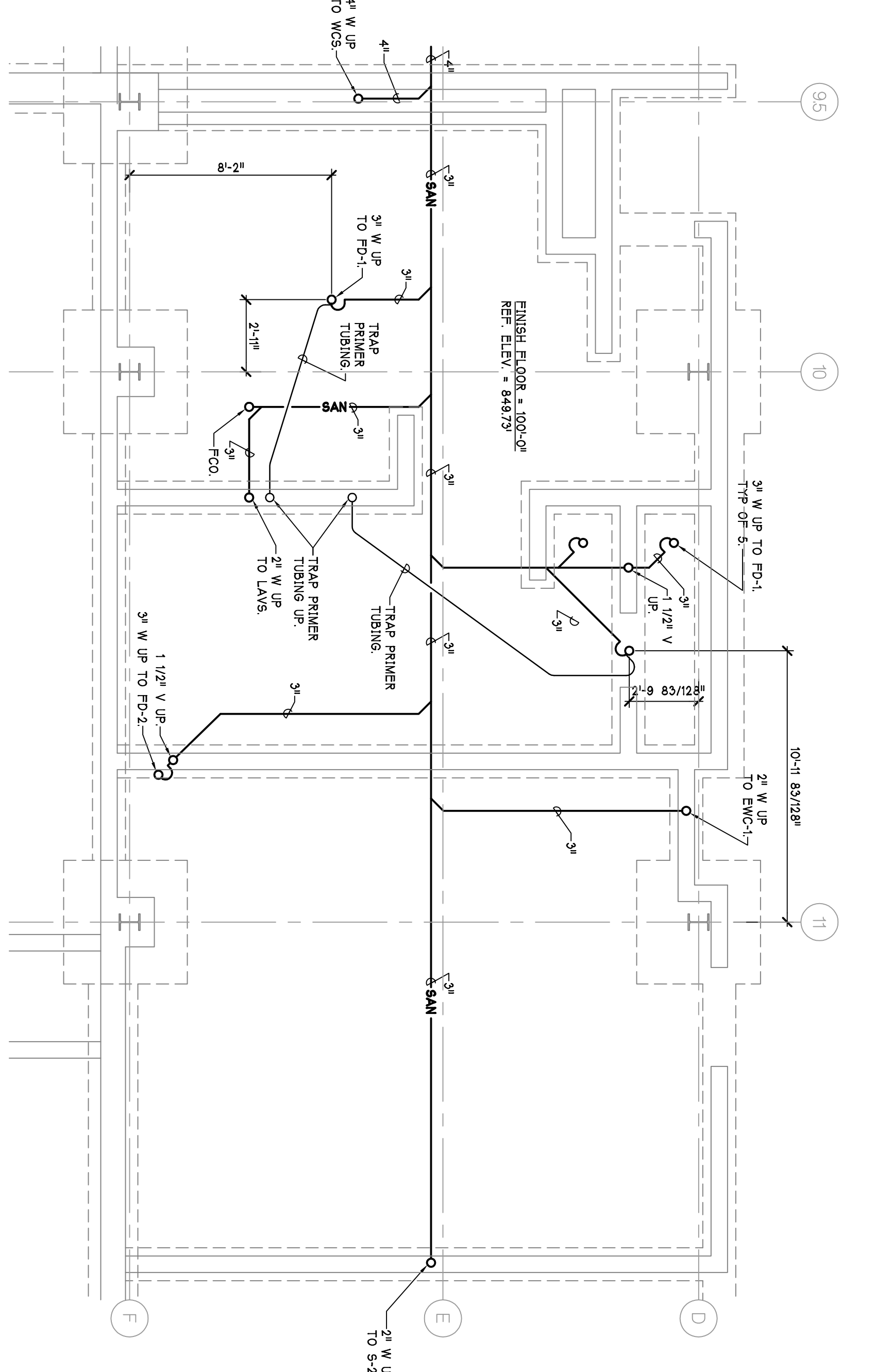
2 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



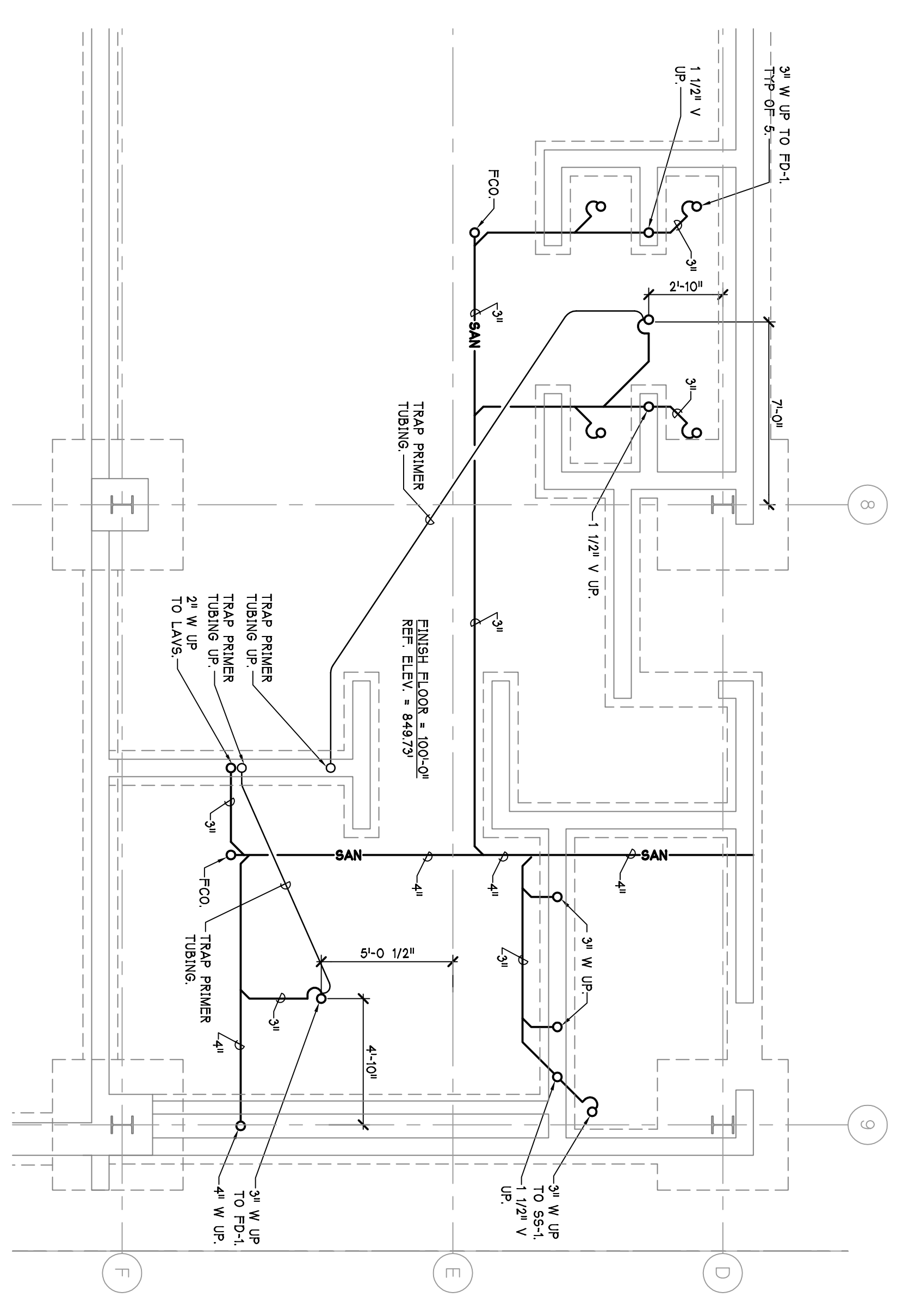
1 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



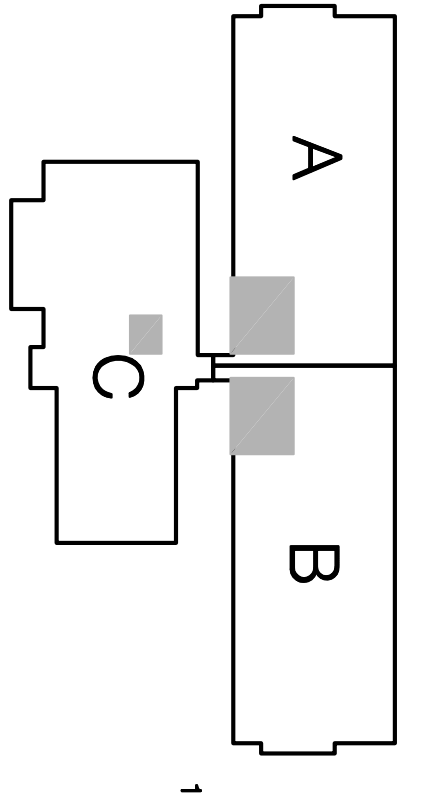
6 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



5 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



4 ENLARGED PLAN - PLUMBING
 SCALE - 1/4" = 1'-0"
 M-126
 (Sheet)



NORTH
 KEY PLAN
 SCALE - N.T.S.
 (Sheet)

PROJECT NUMBER
05-309

SHEET NUMBER
M-126

OPERATIONS BUILDING
 ENLARGED PLUMBING
 PART M-1, E-C
 PLUMBING
 SHEET TITLE

CONSULTANT

PROJECT

CITY OF ANN ARBOR
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 QUADE & DOUGLAS, INC.
 Fleet & Facilities Division

11575 Katy Freeway #600,
 Houston, (281) 558-7273

1831 Chestnut Street #700,
 St. Louis, (314) 421-1478

100 YEARS

DATE ISSUED
 5-27-2006

DD OWNER REVIEW
 7-18-2006

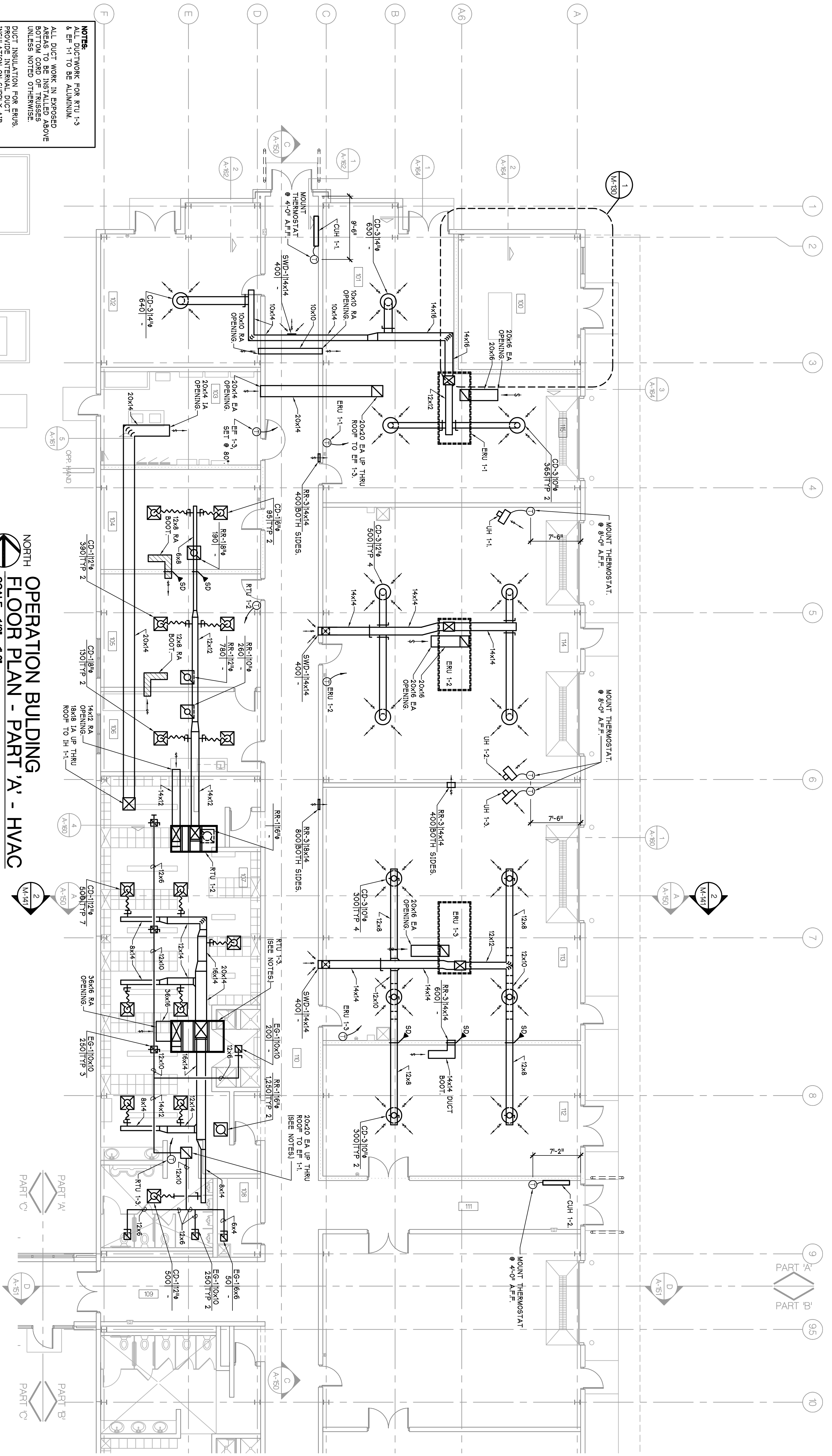
60X OWNER REVIEW
 8-29-2006

CONTRACT SET
 2-28-2006

AS BUILTS
 9-30-2006

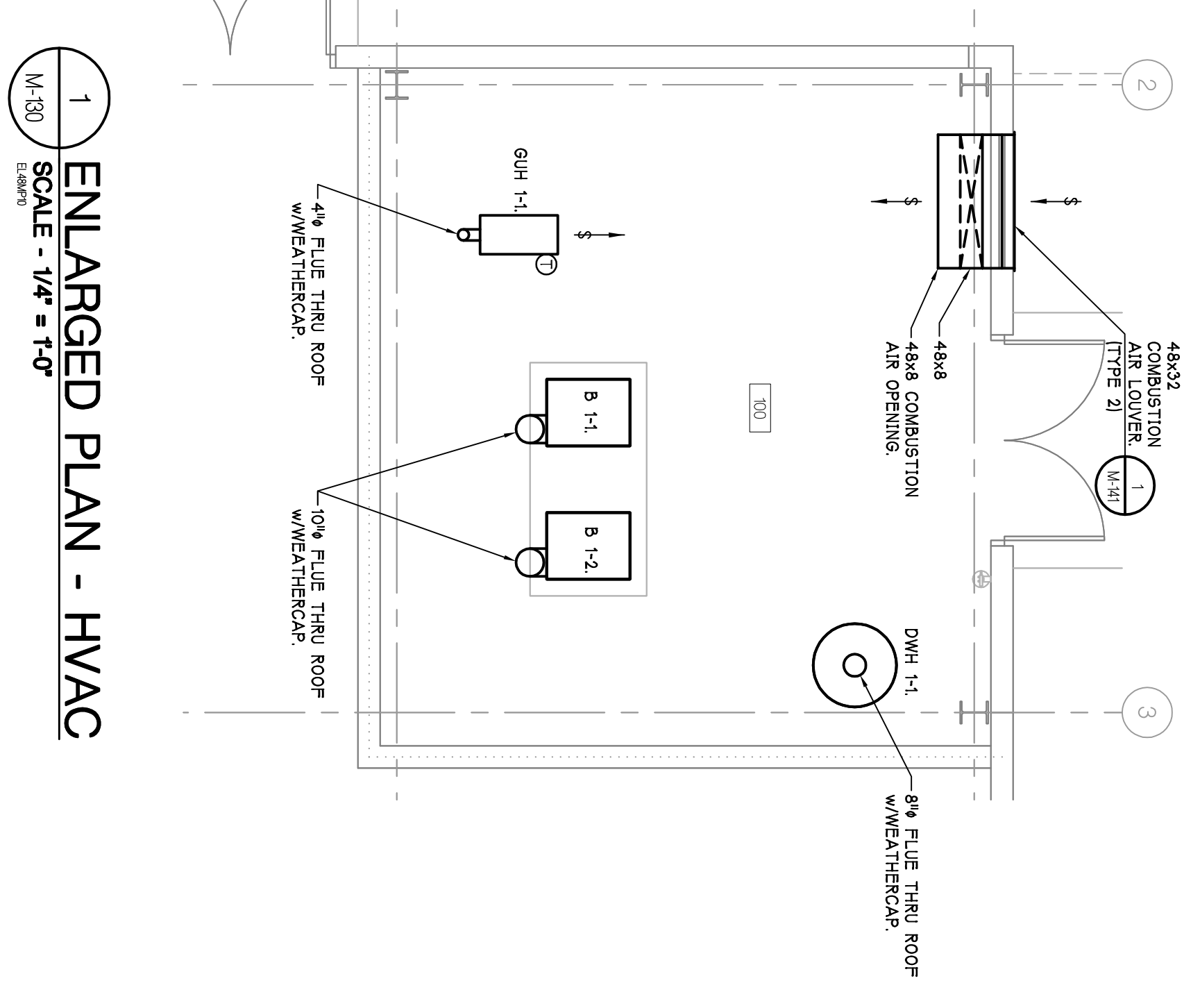
DRAWN BY
 P.M. BE

CHECKED BY

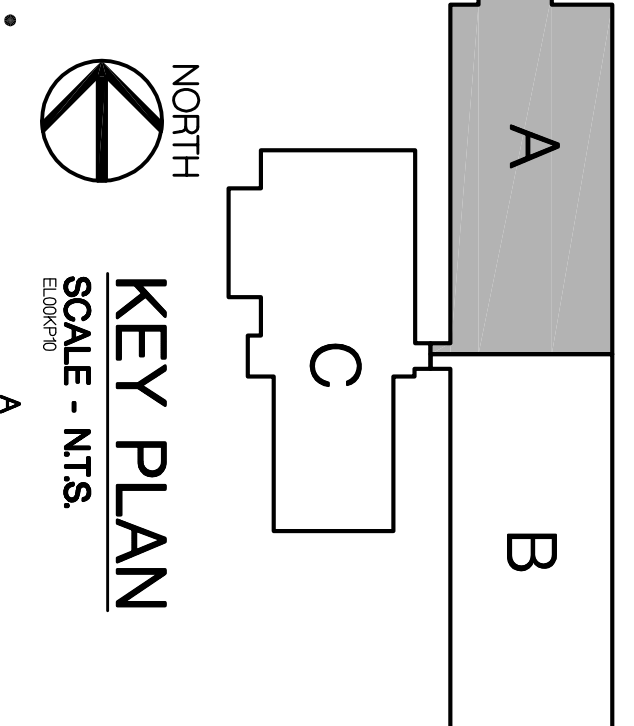


NOTES:
 ALL DUCTWORK FOR RTU-1-3 & EF-1-1 TO BE ALUMINUM.
 ALL DUCT WORK IN EXPOSED BOTTOM CAB OF TRUSSES UNLESS NOTED OTHERWISE.
 DUCT INSULATION FOR ENUS PROVIDE INTERNAL DUCT FLEXIBLE AND THE 1ST 4'-0" ON THE EXTERIOR DUCT WORK HAVE FITTERMAN INSULATION.

**NORTH OPERATION BUILDING
 FLOOR PLAN - PART 'A' - HVAC**
 SCALE - 1/8" = 1'-0"



1 ENLARGED PLAN - HVAC
 SCALE - 1/4" = 1'-0"



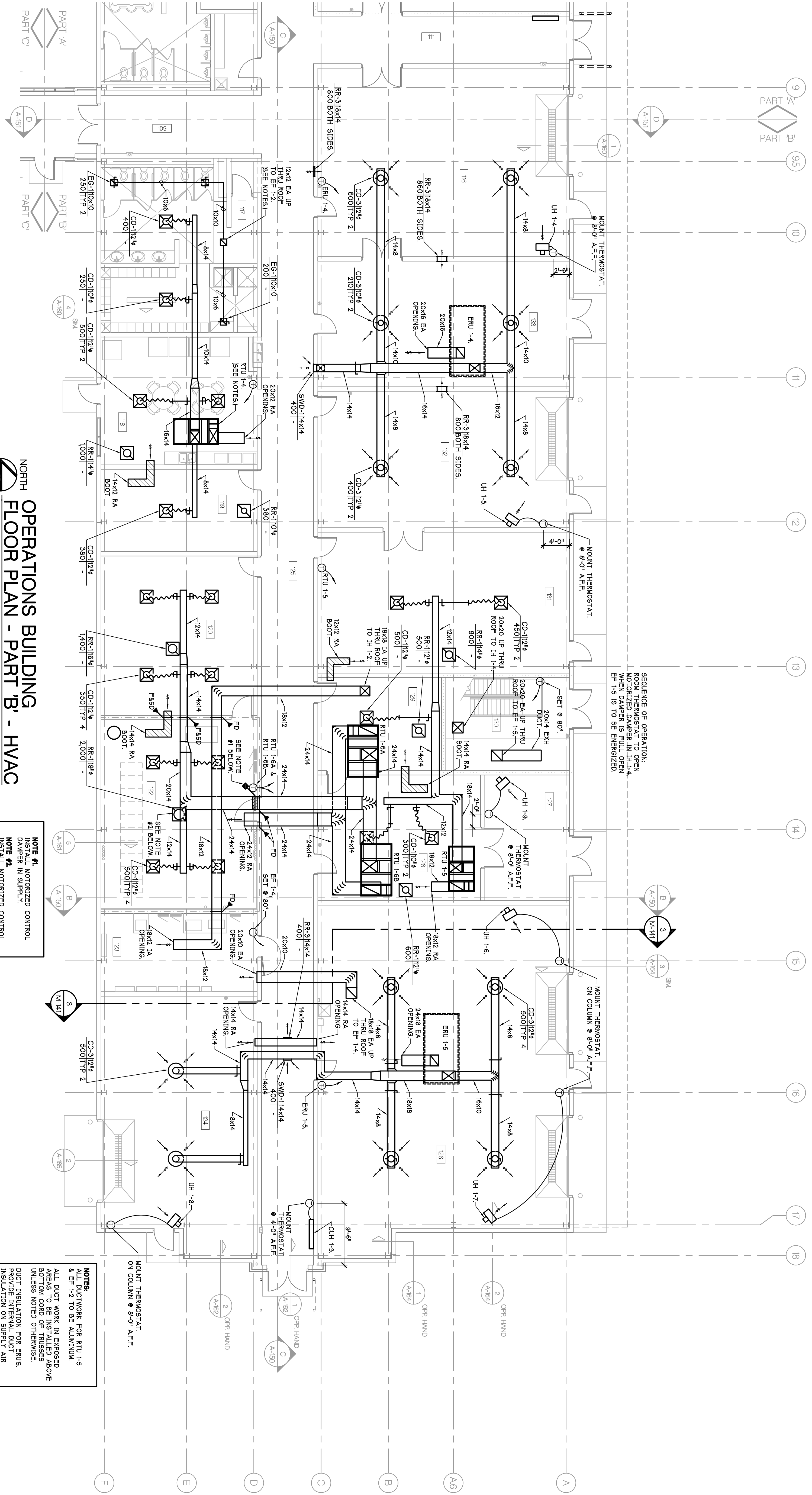
KEY PLAN
 SCALE - NTS

AS BUILTS	8-10-2008
SUPP. INSTR. 12	1-8-2007
REVISIONAL REQUEST 3	6-3-2006
CONTRACT SET	1-4-2006
POS. BID. 202.1	12-12-2005
CONSTRUCTION	11-12-2005
50% OWNER REVIEW	8-29-2005
50% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	MAE
CHECKED BY	PAH, BK

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PROJECT	OPERATIONS BUILDING FLOOR PLAN PART 'A' HVAC
CONSULTANT	
SHEET TITLE	05-309
PROJECT NUMBER	M-130
SHEET NUMBER	



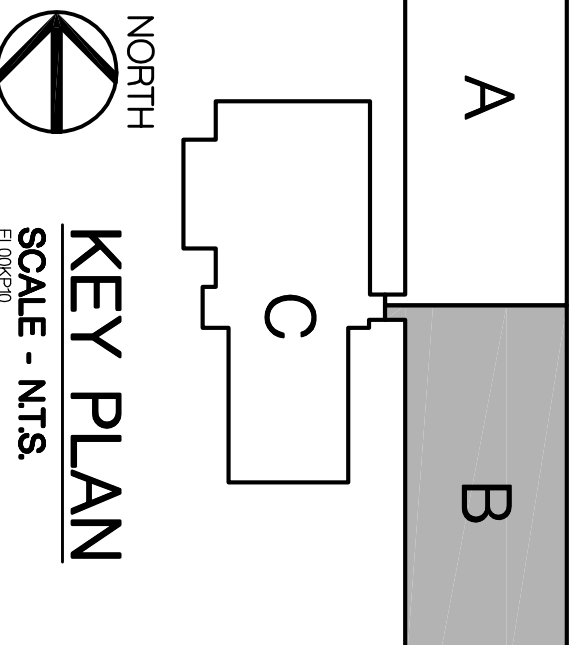
NORTH
OPERATIONS BUILDING
FLOOR PLAN - PART 'B' - HVAC

SCALE - 1/8" = 1'-0"

NOTE #1: WOTERDIP CONTROL DAMPERS SHALL BE RISKIN MODEL CP-515. PROVIDE W/VOY ELECTRIC ACTUATOR DAMPERS TO BE LAMPED CLOSELINE.

NOTES:
 ALL DUCTWORK FOR RTU 1-5 & EP 1-3 TO BE ALUMINUM.
 ALL DUCT WORK IN EXPOSED ABOVE BOTTOM BOARD OF TRUSSES, UNLESS NOTED OTHERWISE.
 PROVIDE INTERNAL DUCT AIR FLOW AND THE 1ST 4'-0" OF THE EXPOSED DUCT WORK, HAVE INTERNAL INSULATION.

SEQUENCE OF OPERATION:
 ROOM THERMOSTAT TO OPEN WHEN DAMPER IS FULL OPEN EP 1-5 IS TO BE ENERGIZED.



NORTH
KEY PLAN
 SCALE - N.T.S.

AS BUILTS	8-10-2008
FROM REQ 15	4-9-2007
FROM REQ 12	1-8-2007
FROM REQ 9	1-3-2006
CONTRACT SET	2-4-2006
ISSUE NO. 1	12-13-2005
ISSUE NO. 2	11-12-2005
ISSUE NO. 3	11-12-2005
ISSUE NO. 4	8-29-2005
ISSUE NO. 5	7-18-2005
ISSUE NO. 6	5-27-2005
DATE ISSUED	

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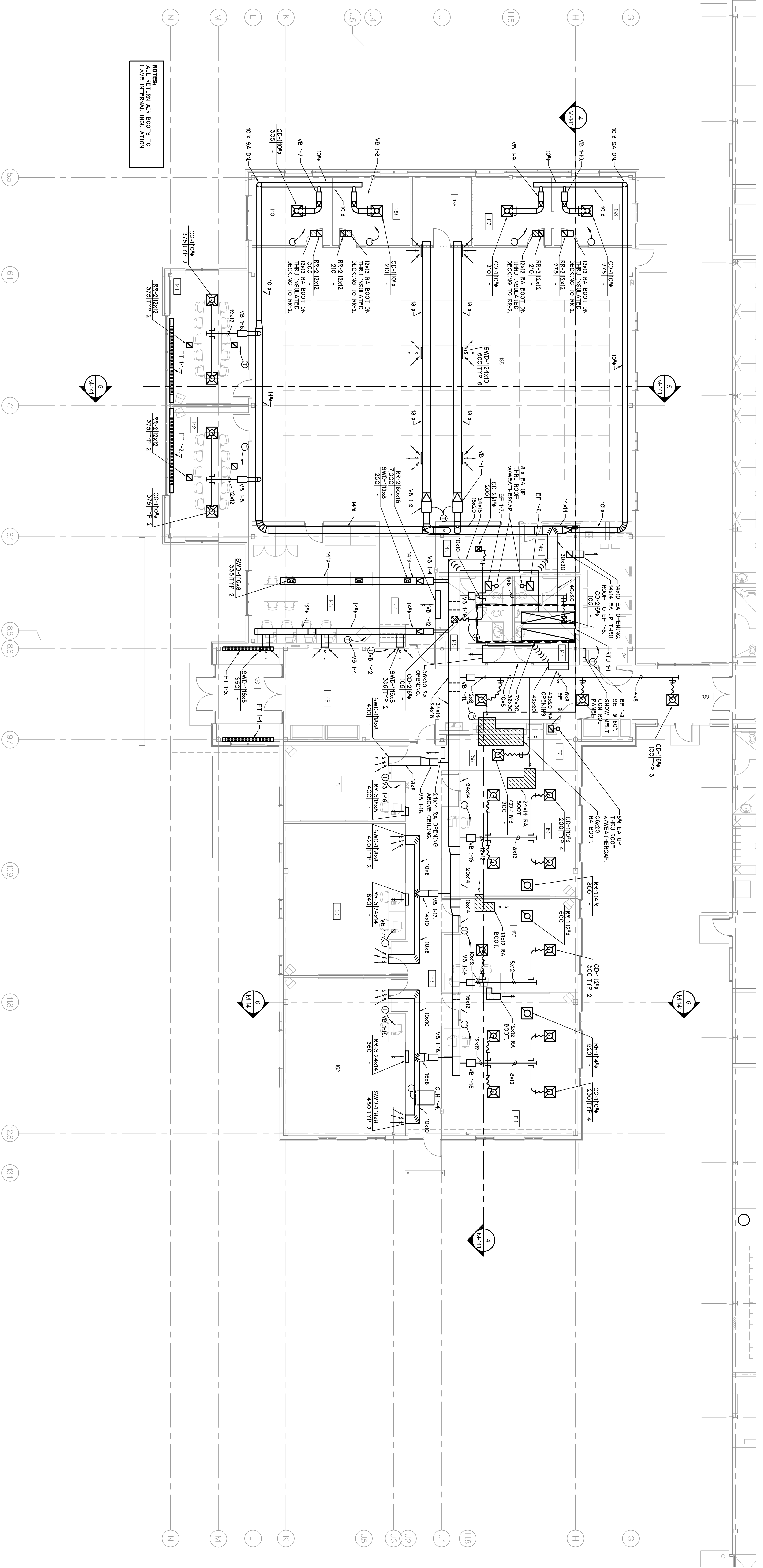
CITY OF ANN ARBOR
 OPERATIONS AND
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 STONE SCHOOL ROAD
 ANN ARBOR, MICHIGAN 48108

PROJECT
 CONSULTANT

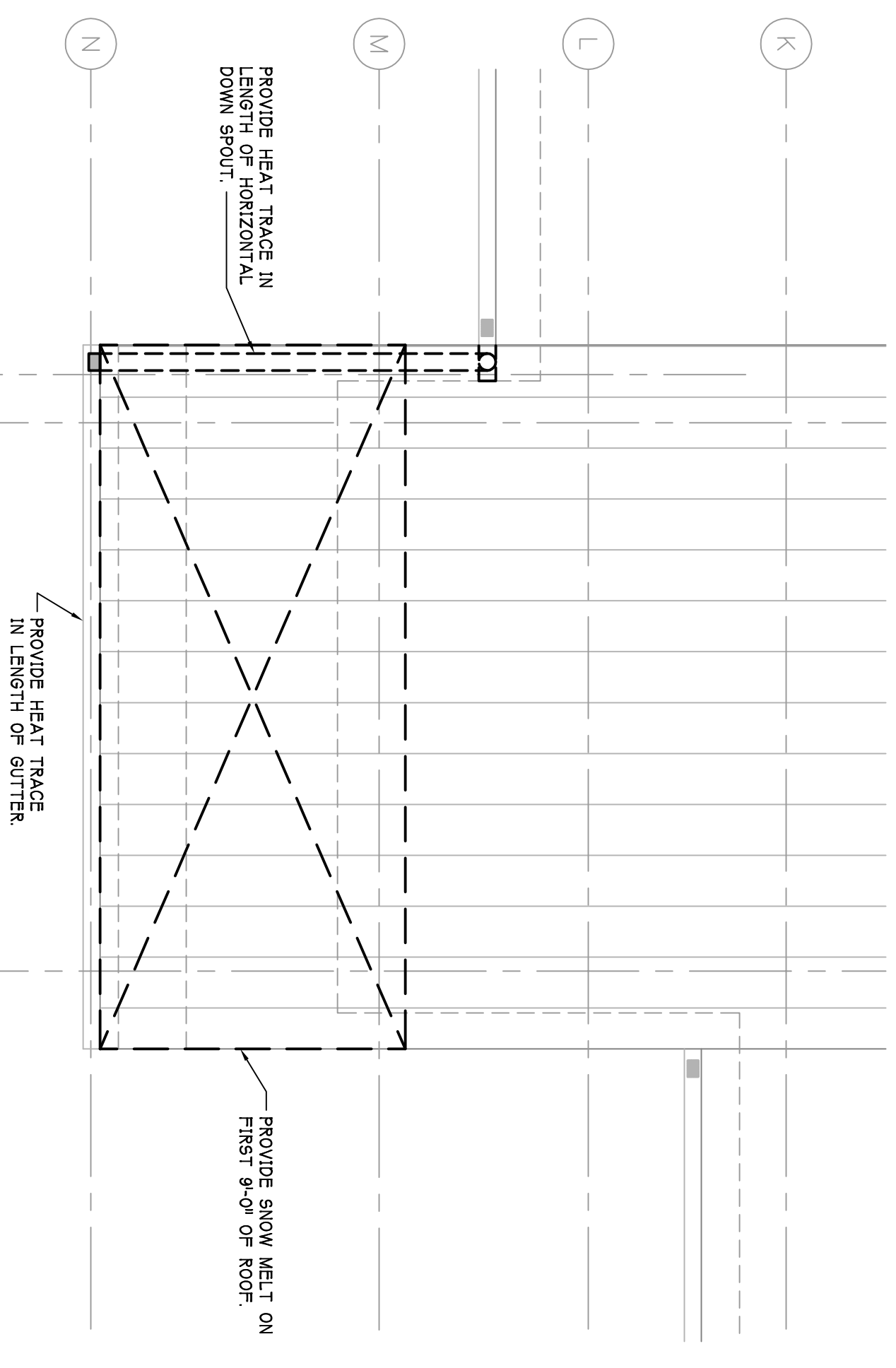
OPERATIONS BUILDING
 FLOOR PLAN
 PART 'B'
 HVAC
 SHEET TITLE

05-309
 PROJECT NUMBER

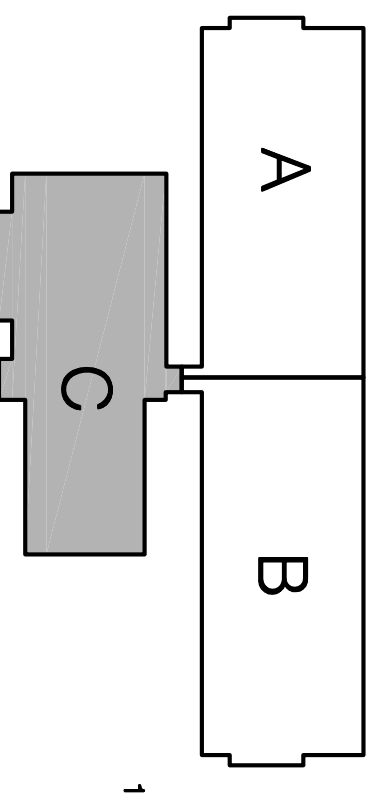
M-131
 SHEET NUMBER



NORTH
FLOOR PLAN - PART 'C' - HVAC
 SCALE - 7/8" = 1'-0"



1 SNOW MELT SYSTEM
 SCALE - 1/4" = 1'-0"



KEY PLAN
 SCALE - NTS

AS BUILTS	8-9-2006
CONTRACT SET	2-4-2006
NOBISUAL 1	11-1-2005
CONSTRUCTION	11-2-2005
50% OWNER REVIEW	8-29-2005
50% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	

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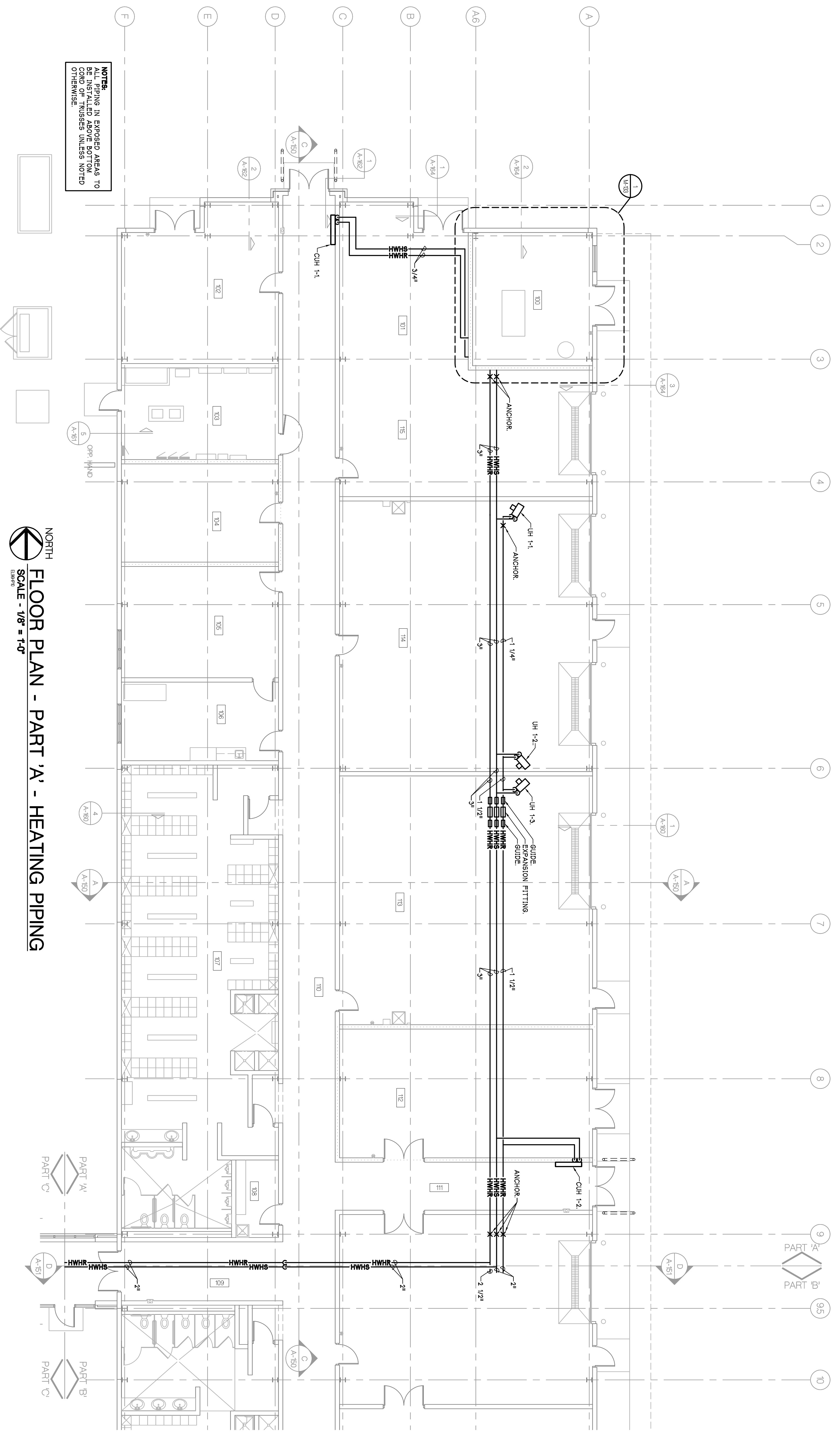
PROJECT
 OPERATIONS BUILDING
 FLOOR PLAN
 PART 'C'
 HVAC

CONSULTANT

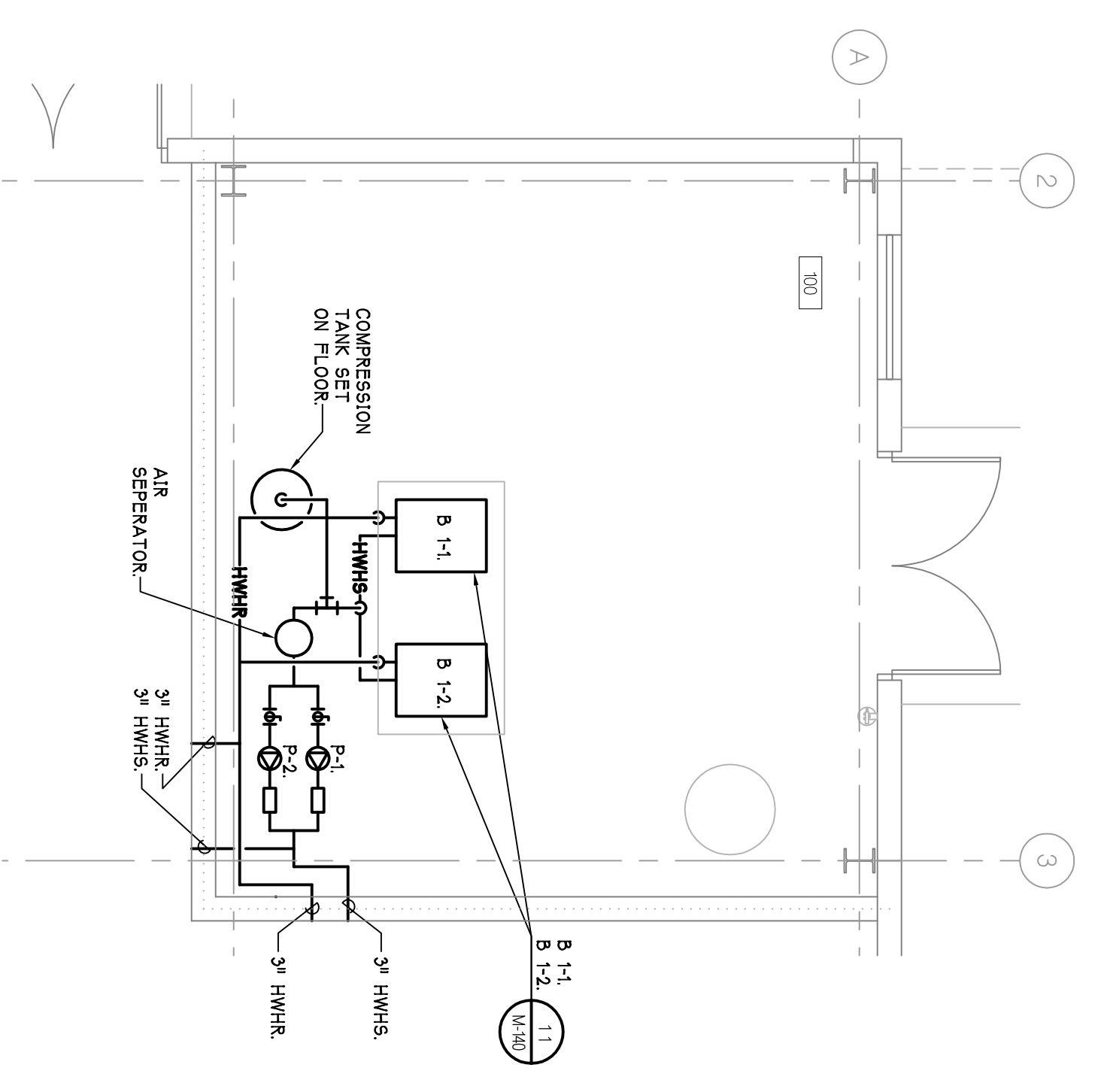
PROJECT NUMBER
05-309

SHEET TITLE
M-132

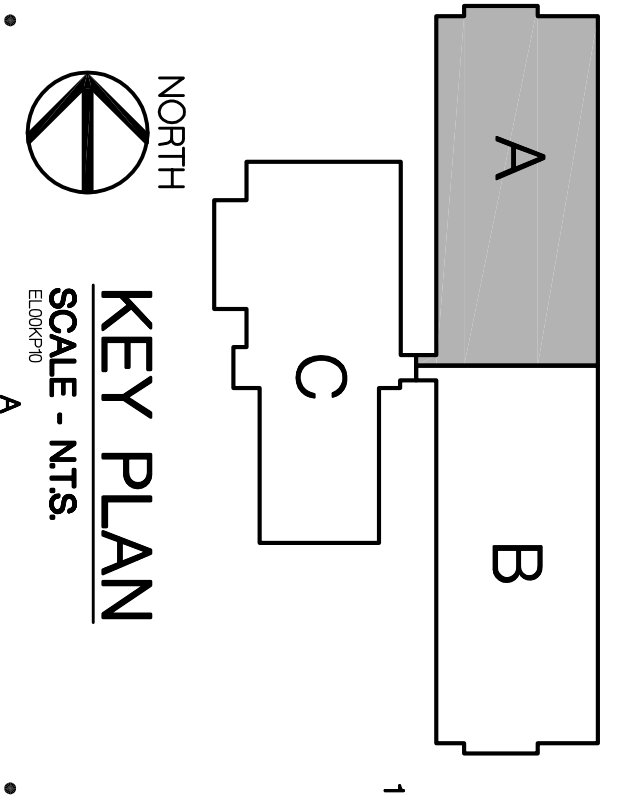
SHEET NUMBER



NORTH
FLOOR PLAN - PART 'A' - HEATING PIPING
 SCALE - 1/8" = 1'-0"



1
 ENLARGED PLAN - HEATING PIPING
 SCALE - 1/4" = 1'-0"



NORTH
KEY PLAN
 SCALE - N.T.S.

AS NOTED	8-10-2006
SUPP. INSTR. 13	2-23-2007
SUPP. INSTR. 10	12-19-2006
CONTRACT SET	2-23-2006
CONSTRUCTION	11-12-2005
60% OWNER REVIEW	8-29-2005
50% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	M.A.E.
CHECKED BY	P.M.B.

PAR
 100 YEARS

PARSONS BRINCKERHOFF
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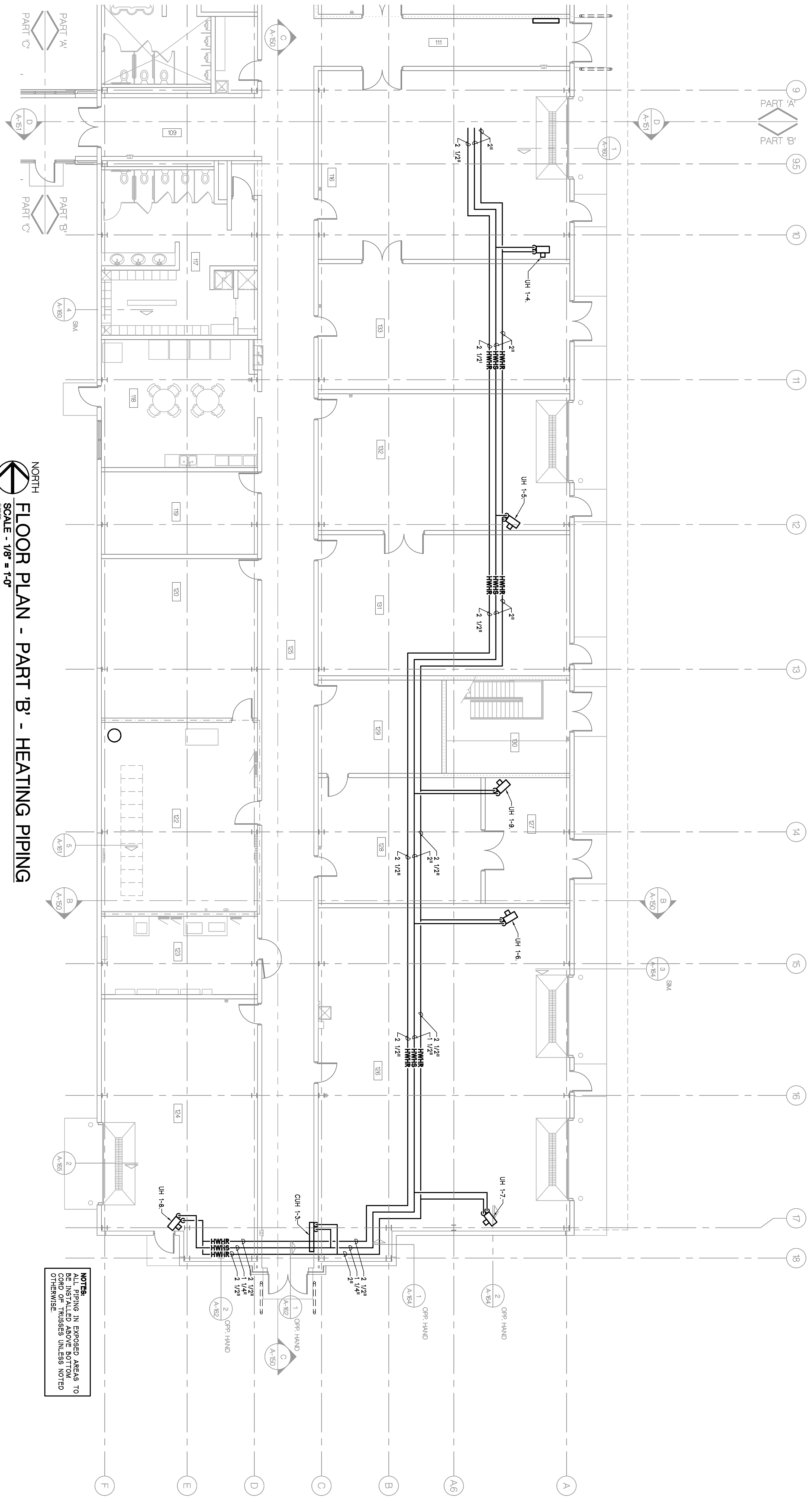
PROJECT

CONSULTANT

OPERATIONS BUILDING
 FLOOR PLAN
 PART 'A'
 HEATING PIPING
 SHEET TITLE

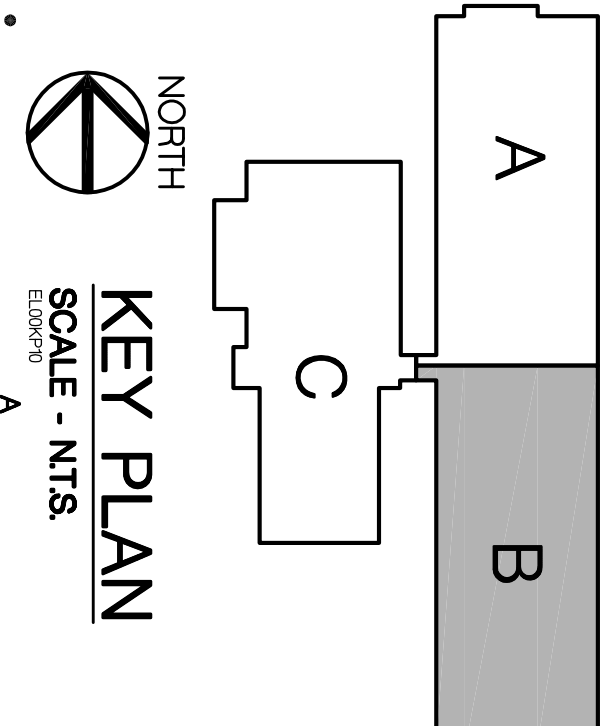
05-309
 PROJECT NUMBER

M-133
 SHEET NUMBER



FLOOR PLAN - PART 'B' - HEATING PIPING
 SCALE - 1/8" = 1'-0"

NOTES:
 1. PIPING IN EXPOSED AREAS TO BE INSTALLED ABOVE BOTTOM CHIMNEYS UNLESS NOTED OTHERWISE.

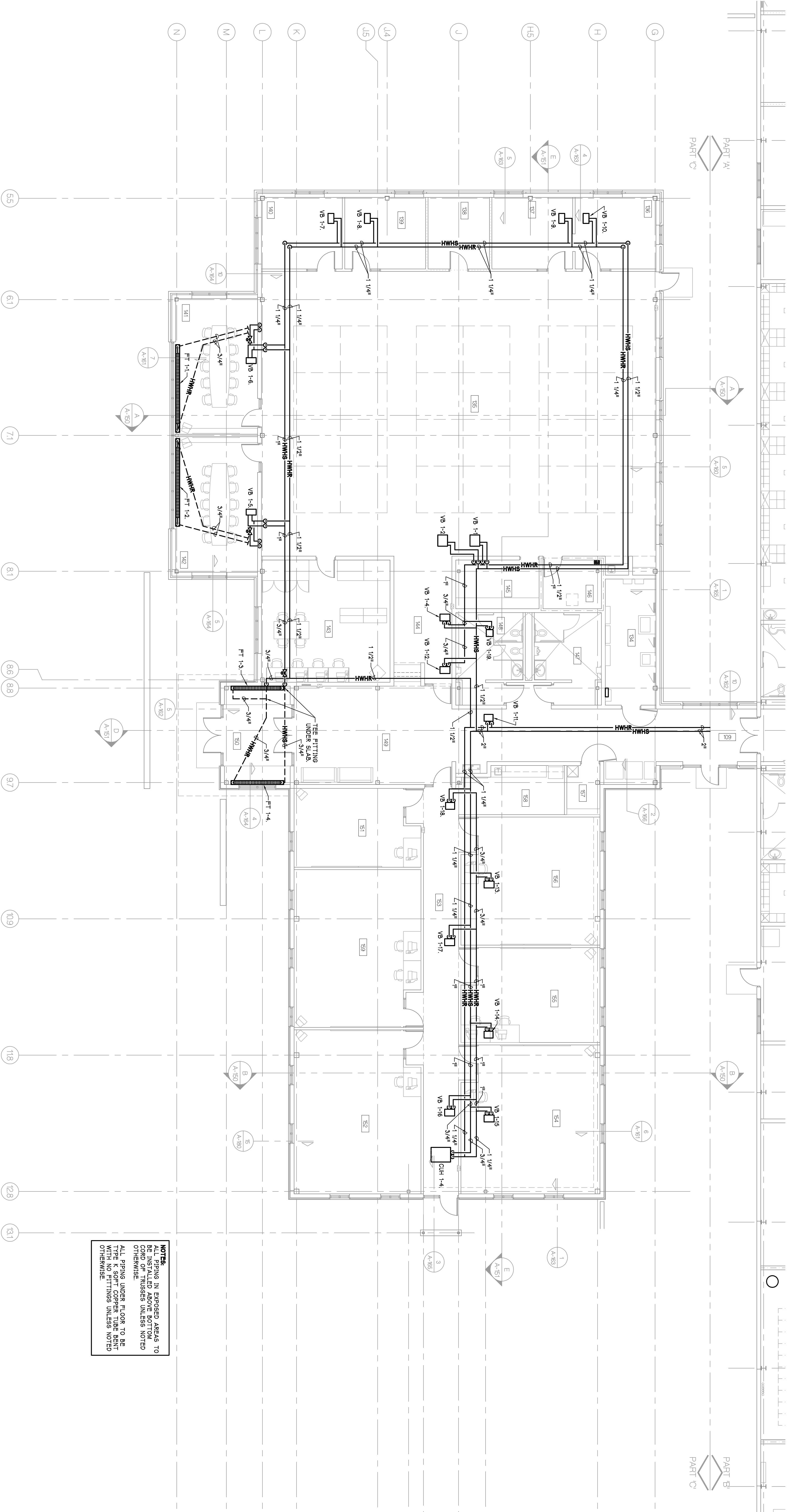


KEY PLAN
 SCALE - N.T.S.

AS BUILTS	8-30-2006
OWNER NOTICE 13	2-4-2007
CONTRACT SET	2-6-2006
CONSTRUCTION SET	11-2-2005
60% OWNER REVIEW	8-29-2005
90% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	MMS
CHECKED BY	PAH, SKS

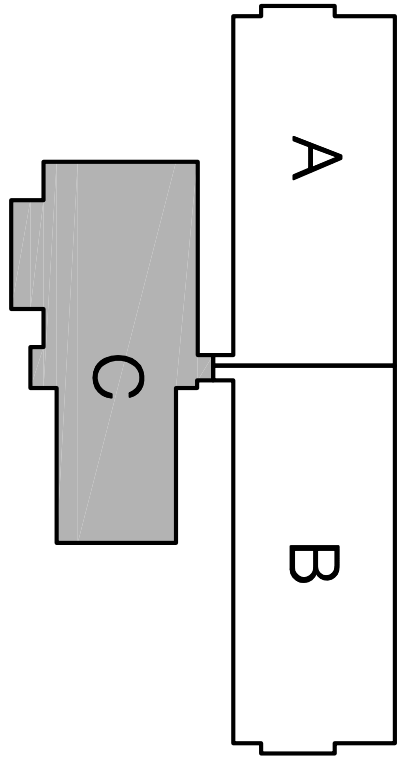
 11757 Katy Freeway #600, Houston, (281) 558-7273 1831 Chestnut Street #700, St. Louis, (314) 421-1476 100 YEARS	 10314 Stone Road Ann Arbor, Michigan 48104 P. 734.463.4189 F. 734.463.1770 www.hobbsblack.com	© Copyright 2005, Hobbs + Black, Inc. ALL RIGHTS RESERVED.
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 CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108	PROJECT CONSULTANT OPERATIONS BUILDING FLOOR PLAN PART 'B' HEATING PIPING SHEET TITLE 05-309 PROJECT NUMBER M-134 SHEET NUMBER
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NOTES:
 1. PIPING IN SUSPECT AREAS TO BE SHOWN IN ABOVE BOTTOM CORNER OF TRISSES UNLESS NOTED OTHERWISE.
 2. ALL PIPING UNDER FLOOR TO BE SHOWN IN ABOVE BOTTOM CORNER OF TRISSES UNLESS NOTED OTHERWISE.

FLOOR PLAN - PART 'C' - HEATING PIPING
 NORTH
 SCALE - 1/8" = 1'-0"

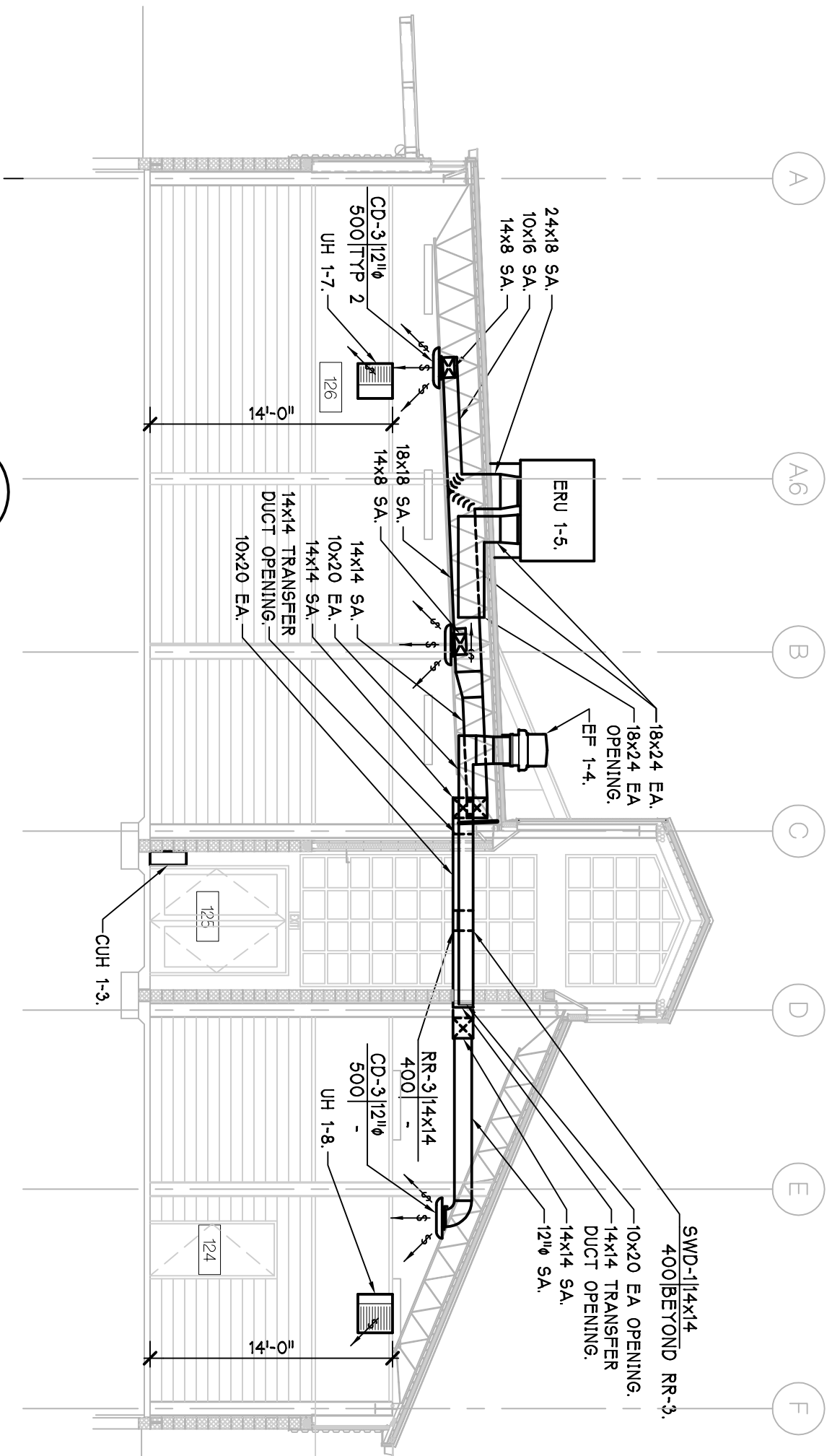


KEY PLAN
 NORTH
 SCALE - N.T.S.

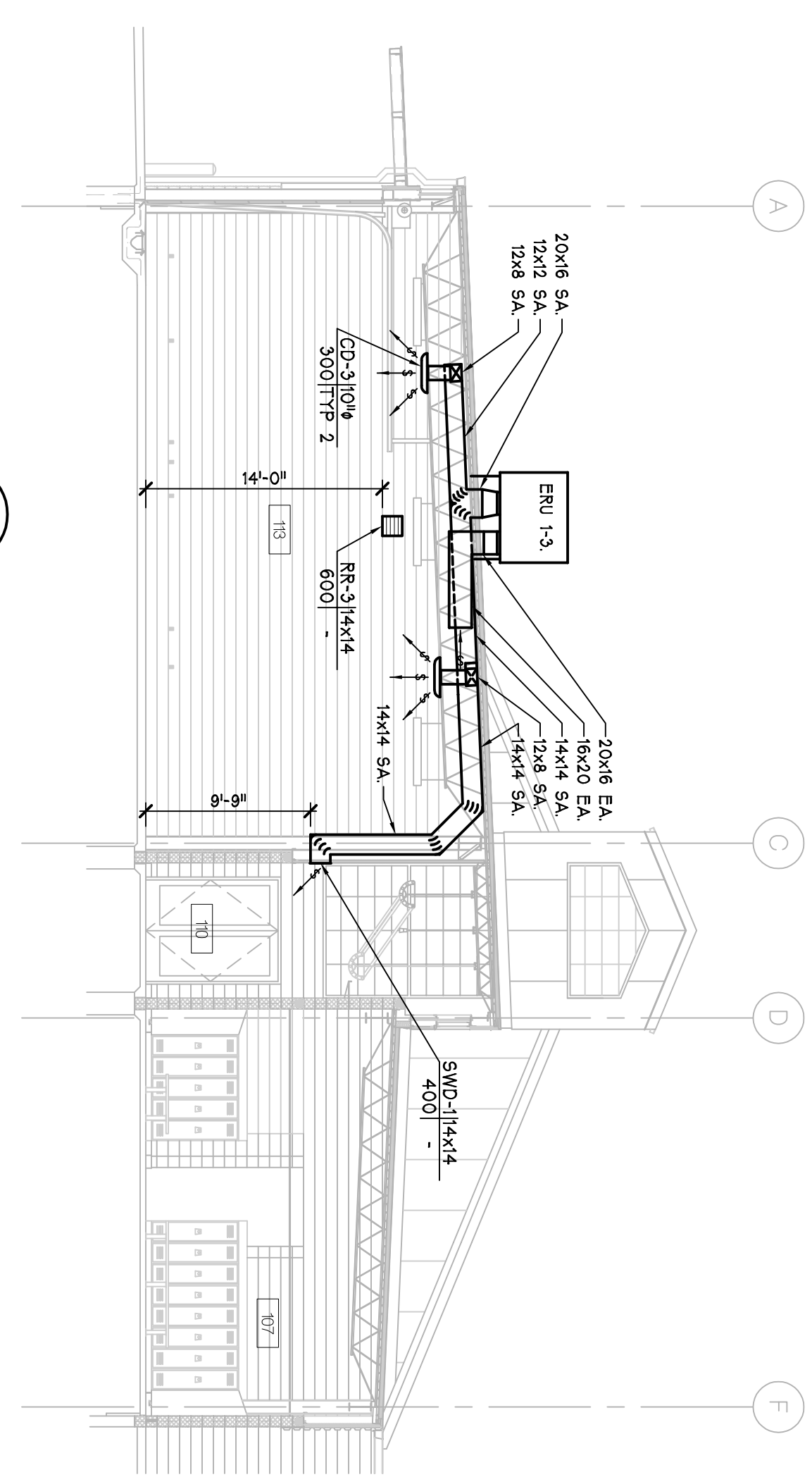
AS BUILTS	8-9-2006
DATE	2-4-2007
CONTRACT SET	2-8-2006
CONSTRUCTION	11-2-2005
60% OWNER REVIEW	8-29-2005
90% OWNER REVIEW	7-18-2005
DD OWNER REVIEW	5-27-2005
DATE ISSUED	
DRAWN BY	MAE
CHECKED BY	P.M. BE

<p>PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. Fleet & Facilities Division 11757 Katy Freeway #600, Houston, (281) 558-7273 1831 Chestnut Street #700, St. Louis, (314) 421-1476</p>	<p>HOBBS+BLACK ARCHITECTS 10701 South Road Ann Arbor, Michigan 48104 P. 734.463.4189 F. 734.463.1770 www.hobbsblack.com</p>	<p>© Copyright 2006, HOBBS + BLACK, INC. ALL RIGHTS RESERVED.</p>	<p>CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108</p>	<p>CONSULTANT</p>	<p>PROJECT</p>
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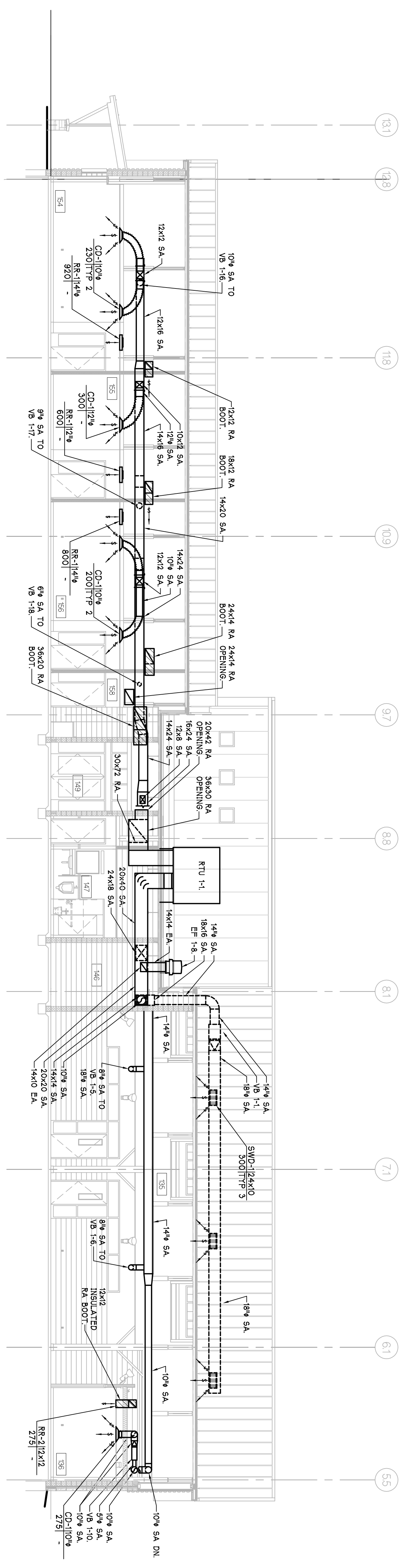
PROJECT NUMBER	05-309
SHEET NUMBER	M-135



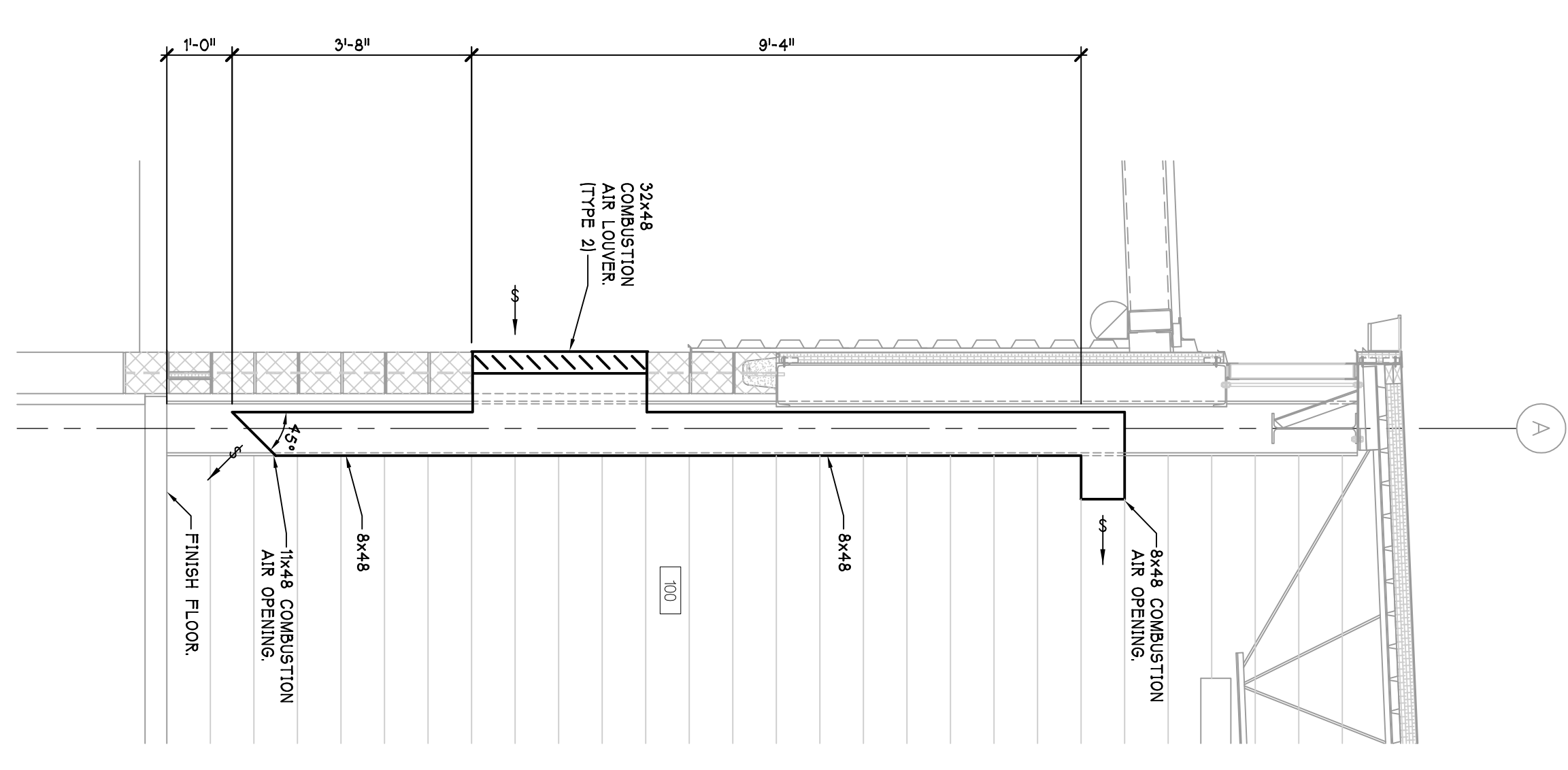
3 MECHANICAL SECTION
 M-141 SCALE - 1/8" = 1'-0"



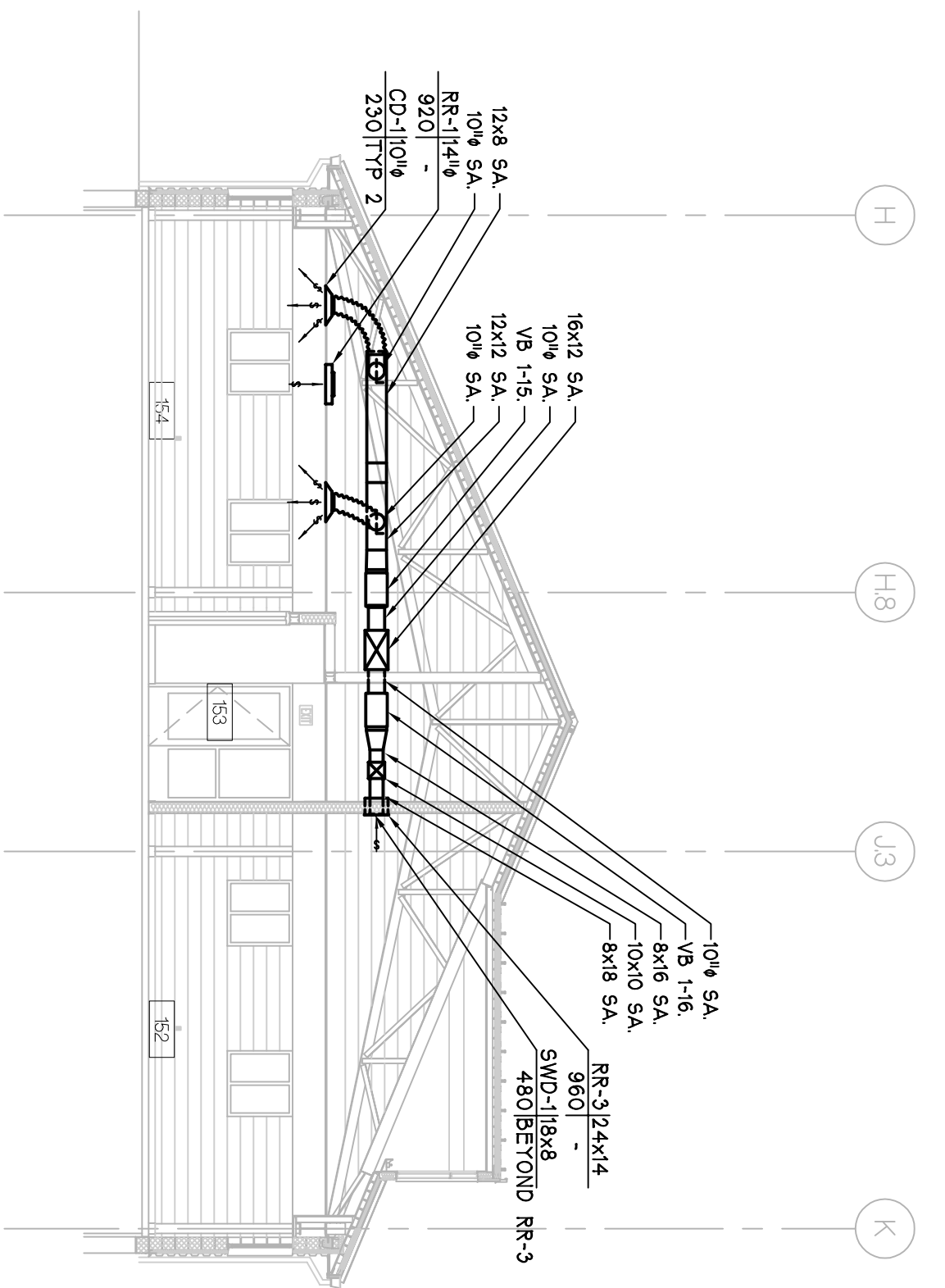
2 MECHANICAL SECTION
 M-141 SCALE - 1/8" = 1'-0"



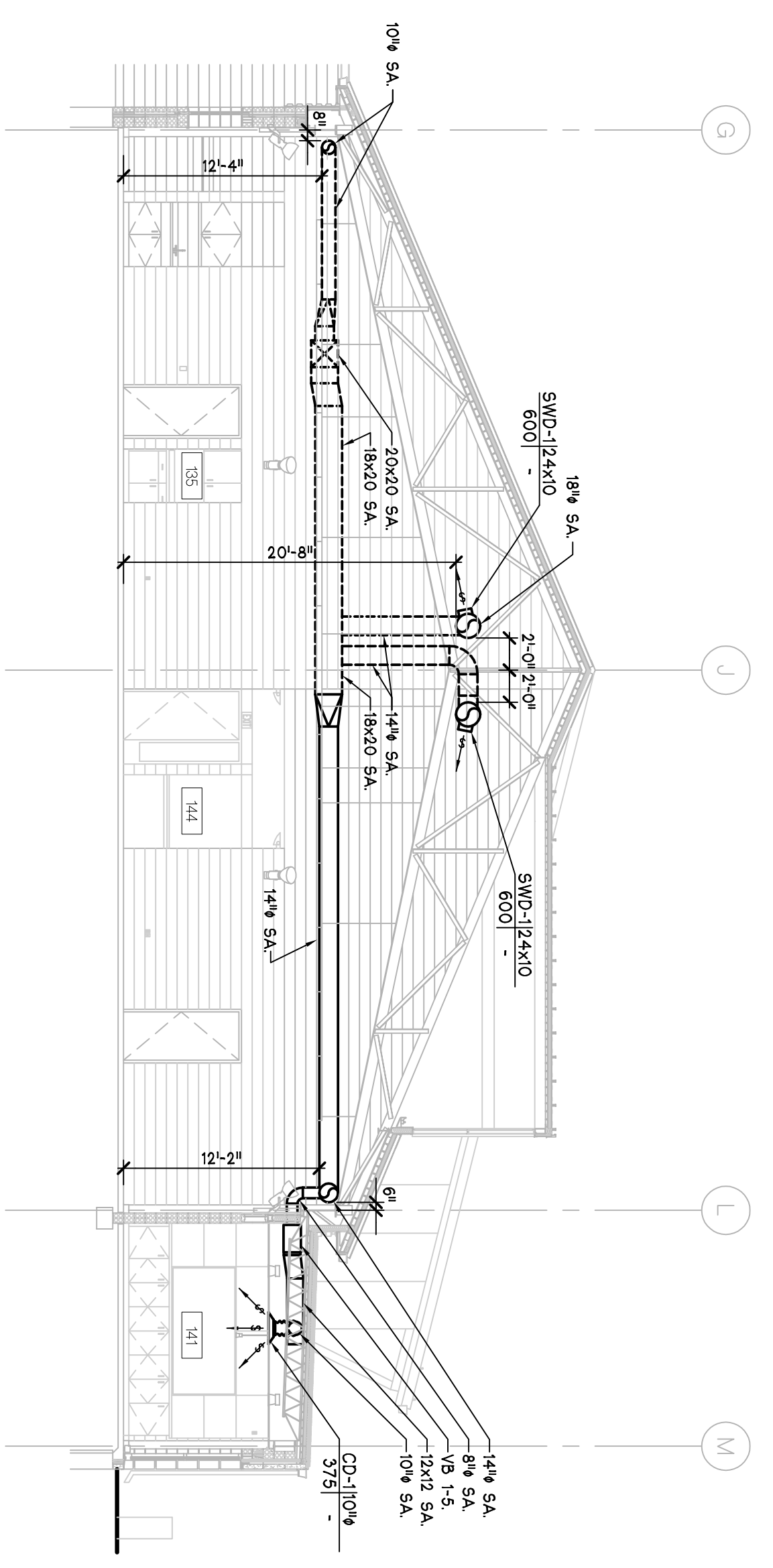
4 MECHANICAL SECTION
 M-141 SCALE - 1/8" = 1'-0"





1 COMBUSTION AIR DETAIL
 M-141 SCALE - 1/2" = 1'-0"

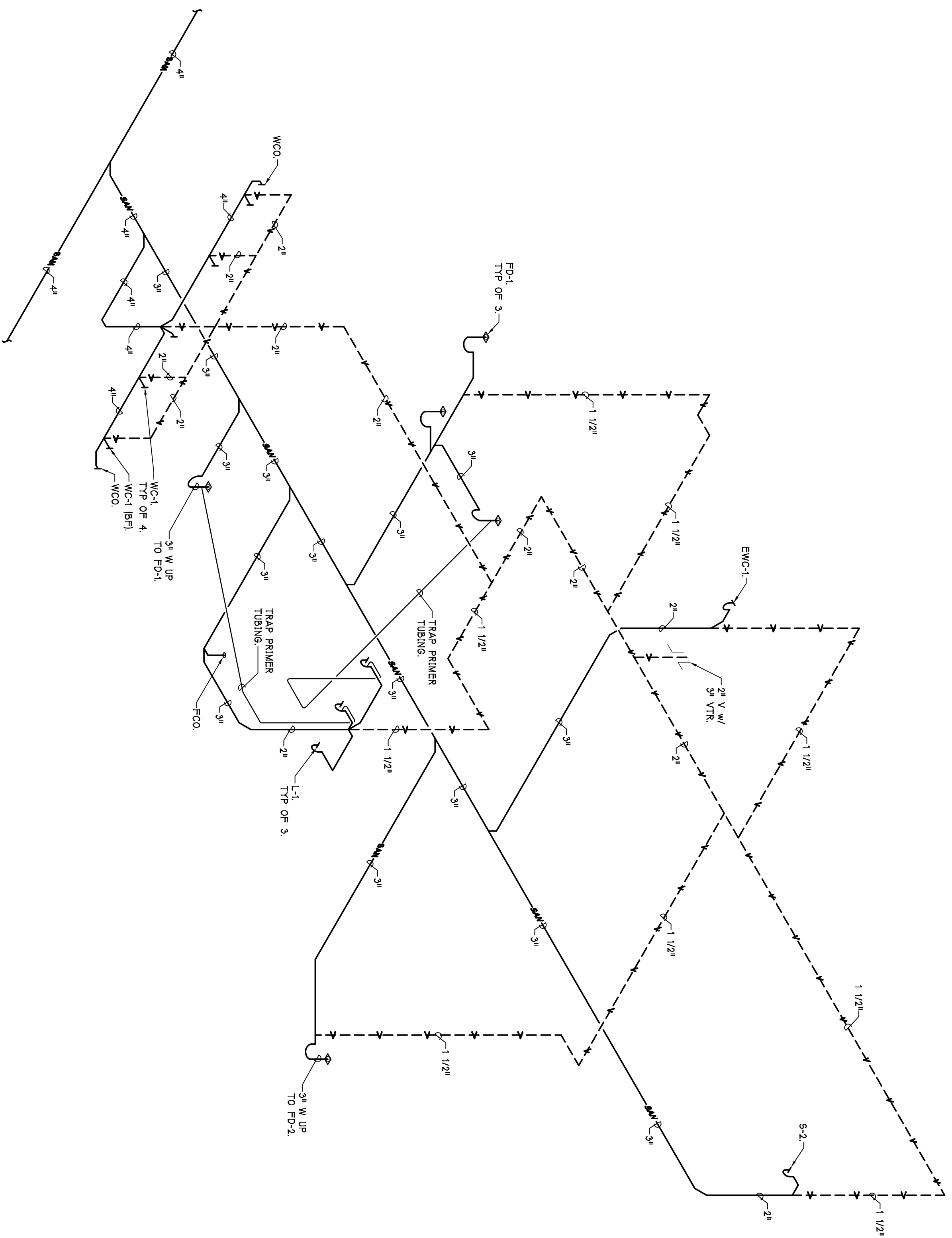


6 MECHANICAL SECTION
 M-141 SCALE - 1/8" = 1'-0"



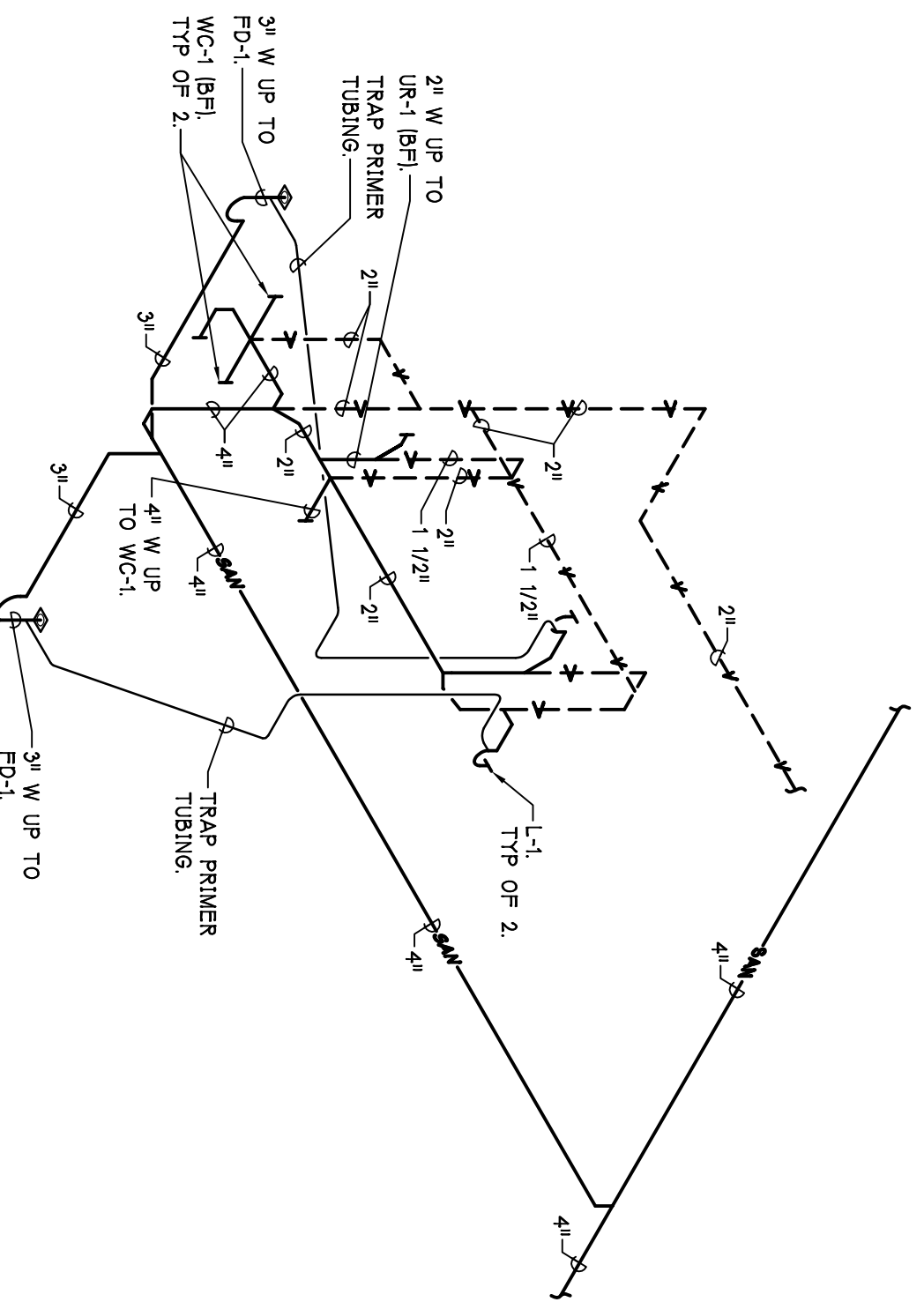
5 MECHANICAL SECTION
 M-141 SCALE - 1/8" = 1'-0"

 CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108	CONSULTANT OPERATIONS BUILDING MECHANICAL SECTIONS SHEET TITLE 05-309 PROJECT NUMBER M-141 SHEET NUMBER	©Copyright 2008, HOBBS + BLACK, INC. ALL RIGHTS RESERVED. HOBBS+BLACK ARCHITECTS 10701 South Blvd. Ann Arbor, Michigan 48104 P. 734.463.4189 F. 734.463.1770 www.hobbsblack.com	 PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. Fleet & Facilities Division 11757 Katy Freeway #600, Houston, (281) 558-7273 1831 Chestnut Street #700, St. Louis, (314) 421-1478	AS BUILTS 9-10-2008 CONTRACT SET 2-8-2008 CONSTRUCTION 11-1-2008 60% OWNER REVIEW 8-29-2008 50% OWNER REVIEW 7-18-2008 DD OWNER REVIEW 5-27-2008 DATE ISSUED DRAWN BY PAB, BPC CHECKED BY
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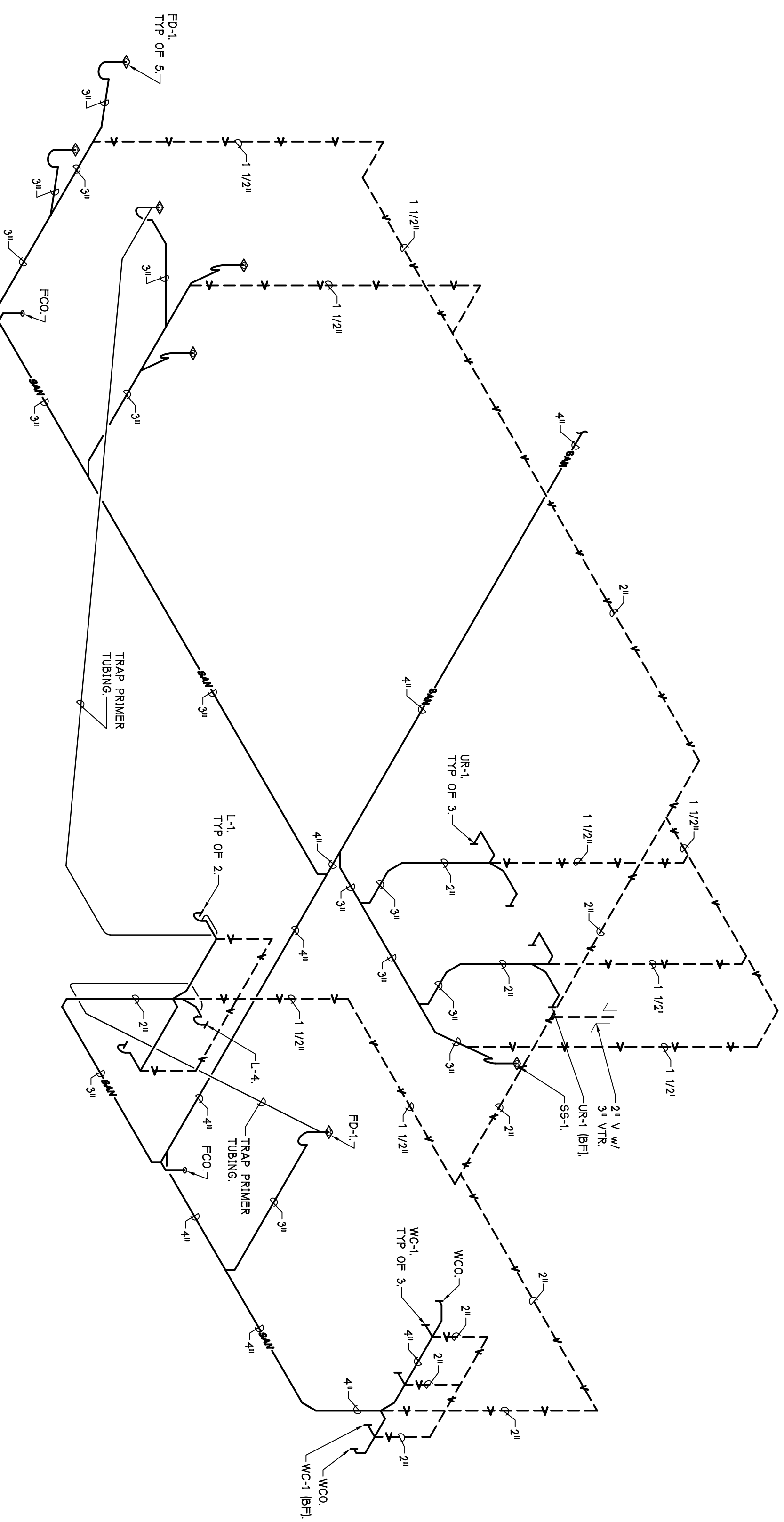
SANITARY ISOMETRIC - RM 117 & 118
 NOT TO SCALE

NOTE: TRAP PRIMER, SEE DETAIL 20M-140



SANITARY ISOMETRIC - RM 147 & 148
 NOT TO SCALE

NOTE: TRAP PRIMER, SEE DETAIL 20M-140



SANITARY ISOMETRIC - RM 107 & 108
 NOT TO SCALE


NOTE: TRAP PRIMER, SEE DETAIL 20M-140

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 **CITY OF ANN ARBOR**
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 STONE SCHOOL ROAD
 ANN ARBOR, MICHIGAN 48108

PROJECT
 CONSULTANT

OPERATIONS BUILDING
 SANITARY ISOMETRICS
 SHEET TITLE

PROJECT NUMBER
05-309

SHEET NUMBER
M-142

SHEET NUMBER

DIFUSER AND GRILLE SCHEDULE

Table with columns: MARK, MANUF., MODEL #, FACE SIZE, FRAME, MAT'L, FINISH, REMARKS. Lists various diffuser and grille specifications.

UNIT HEATER SCHEDULE

Table with columns: MARK, MANUF., MODEL #, C.F.M., M.B.H., LAT., G.P.M., PRESS. DROP, H.P., VOLT., PH., MOTOR, REMARKS. Lists unit heater specifications.

GAS FIRED UNIT HEATER SCHEDULE

Table with columns: MARK, MANUF., MODEL #, C.F.M., M.B.H., LAT., H.P., VOLT., PH., MOTOR, REMARKS. Lists gas fired unit heater specifications.

INTAKE & RELIEF VENT SCHEDULE

Table with columns: MARK, MANUF., MODEL #, SIZE, LENGTH, WIDTH, C.F.M., STATIC PRESS., DAMPER TYPE, REMARKS. Lists intake and relief vent specifications.

PUMP SCHEDULE

Table with columns: MARK, MANUF., MODEL #, G.P.M., HEAD, RPM, INLET / OUTLET INCHES, H.P., VOLT., PHASE, MOTOR, REMARKS. Lists pump specifications.

PLUMBING FIXTURE CONNECTION SCHEDULE

Table with columns: MARK, MANUF., MODEL #, FIXTURE, CONNECTIONS, REMARKS. Lists plumbing fixture connection specifications.

FINNED TUBE RADIATION SCHEDULE

Table with columns: MARK, MANUF., BTUH / FT, TOTAL BTUH, GPM, EWT, LWT, TUBE FIN, FIN/FT, LENGTH, ROWS, TYPE, LENGTH, HEIGHT, END CAP, ACCESS, REMARKS. Lists finned tube radiation specifications.

ROOF TOP UNIT SCHEDULE

Table with columns: MARK, MANUF., MODEL #, SUPPLY CFM, O.A.L. E.S.P., H.P., TOTAL SENSIBLE ENTERING AIR, COOLING CAPACITY, HEATING CAPACITY, ELECTRICAL, REMARKS. Lists roof top unit specifications.

ENERGY RECOVERY AIR HANDLING UNIT SCHEDULE

Table with columns: MARK, MANUF., MODEL #, WINTER RECOVERY, SUMMER RECOVERY, FANS, SUPPLY, EXHAUST, HEAT CAPACITY, ELECTRICAL, REMARKS. Lists energy recovery air handling unit specifications.

VARIABLE AIR VOLUME BOX SCHEDULE

Table with columns: MARK, MANUF., MODEL #, INLET SIZE, OUTLET SIZE, MIN. S.P., MAX. CFM, COOLING CFM, #ROWS, M.B.H., G.P.M., EWT, WTD, ENT, LAT, APD, CONTROL PACKAGE, REMARKS. Lists variable air volume box specifications.

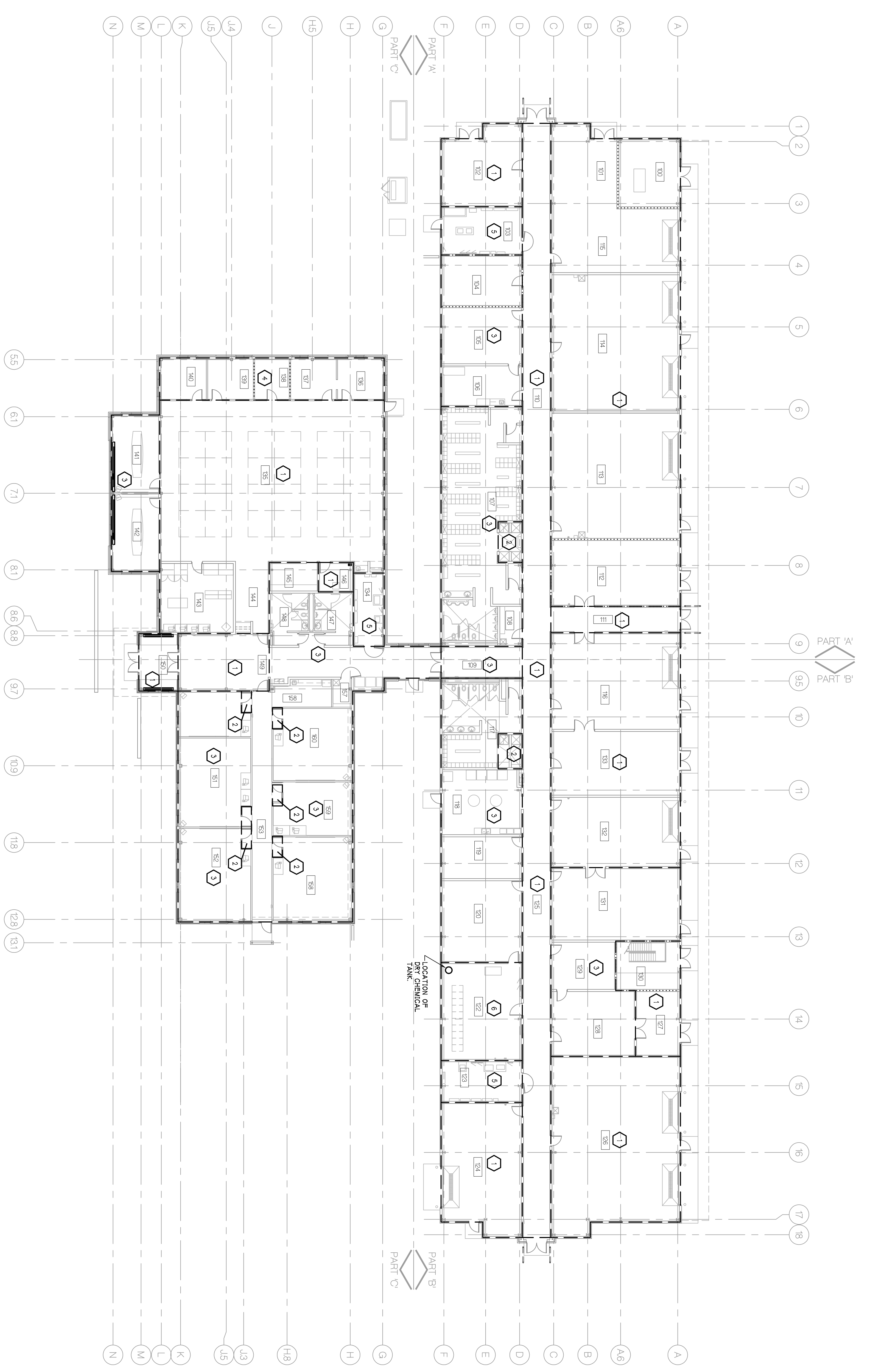
EXHAUST FAN SCHEDULE

Table with columns: MARK, MANUF., MODEL #, DRIVE, CFM, STATIC PRESS., RPM, SONES, H.P., VOLT., PHASE, ELECTRICAL, DISCONNECT BY, STARTER BY, REMARKS. Lists exhaust fan specifications.

CABINET UNIT HEATER SCHEDULE

Table with columns: MARK, MANUF., MODEL #, C.F.M., M.B.H., LAT., G.P.M., PRESS. DROP, DIMENSIONS, MOTOR, REMARKS. Lists cabinet unit heater specifications.

Project information including: AS BUILTS, P-9-2008, RFP# 802.15, 4-3-2007, CONTRACT SET, 2-4-2006, OPERATIONAL, 11-1-2005, 60% OWNER REVIEW, 8-29-2005, 50% OWNER REVIEW, 7-18-2005, DD OWNER REVIEW, 5-27-2005, DATE ISSUED, M&E, DRAWN BY, P&L, CHK, CHECKED BY, HOBBES & BLACK ARCHITECTS, 10704 South Blvd, Houston, TX 77036, PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC. Fleet & Facilities Division, 11757 Katy Freeway 8600, Houston, (281) 558-7243, 1831 Chestnut Street #700, St. Louis, (314) 421-1476, CITY OF ANN ARBOR OPERATIONS AND MAINTENANCE FACILITY STONE SCHOOL ROAD ANN ARBOR, MICHIGAN 48108, OPS. BLDG. MECHANICAL SCHEDULES, SHEET TITLE, 05-309, PROJECT NUMBER, M-150, SHEET NUMBER.



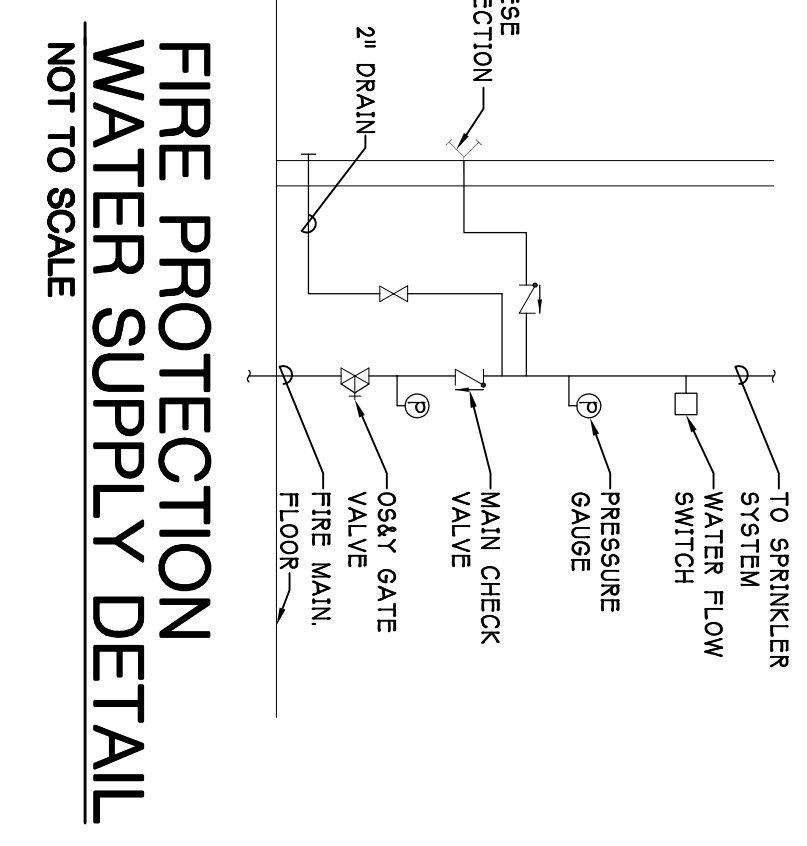
**OPERATIONS BUILDING
 FIRE PROTECTION PLAN**
 NORTH
 SCALE - VMS = 1'-0"

FIRE PROTECTION PLAN NOTES

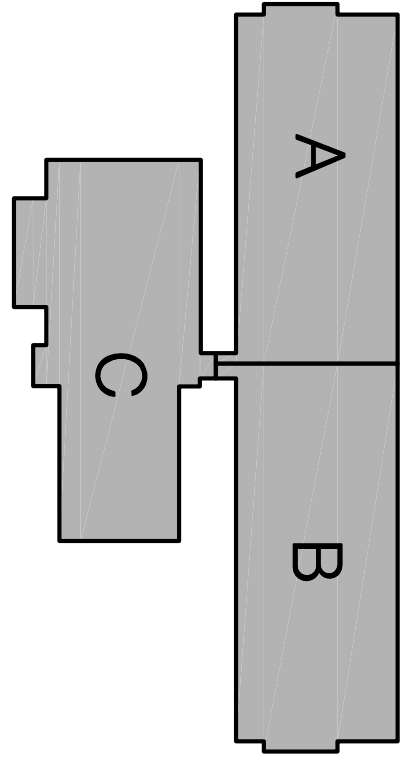
1. EXPOSED CONSTRUCTION PROVIDE SPRINKLER SYSTEM IN THIS AREA WITH BRASS UPRIGHT HEADS. CONTRACTOR TO BAG ABOVE EXPOSED AREA IS PAVING. PIPING IN THESE AREAS IS TO BE INSTALLED IN CONJUNCTION WITH THE EXPOSED CONSTRUCTION.
2. EXPOSED CEILING PROVIDE SPRINKLER SYSTEM IN THIS AREA WITH WHITE PENDENT HEADS AND TWO PIECE ESCUTCHEONS.
3. LAY-IN CEILING PROVIDE SPRINKLER SYSTEM IN THESE AREAS WITH WHITE PENDENT HEADS AND TWO PIECE ESCUTCHEONS.
4. LAY-IN CEILING IN ROOMS BELOW EXPOSED AREA PROVIDE WHITE PENDENT HEADS AND TWO PIECE ESCUTCHEONS IN ROOMS WITH LAY-IN CEILING AND BRASS UPRIGHT HEADS IN EXPOSED AREA ABOVE. CONTRACTOR TO BAG HEADS IN EXPOSED CONSTRUCTION PROVIDE SYSTEM WITH BRASS ELECTRICAL EQUIPMENT ROOM WITH EXPOSED CONSTRUCTION PROVIDE SYSTEM WITH BRASS UPRIGHT HEADS AND PIPING TO MEET INSTALLATION AND CLEANABLE REQUIREMENTS AS PER MECHANICAL NOTES.
5. COMPLETE AREA PROVIDE AREA WITH APPROVED FM 200 DRY CHEMICAL FIRE PROTECTION SYSTEM OR APPROVED EQUIV.

FIRE PROTECTION NOTES

1. PROVIDE A COMPLETE FIRE PROTECTION SYSTEM IN THE BUILDING SYSTEM SHALL BE A LIGHT OR ORDINARY HAZARD AS REQUIRED. IT SHALL BE A WET PIPE TYPE SYSTEM WITH ALL REQUIRED HEADS, SHOCK AWAY PREVENTORS, SHAMER CONNECTIONS, PIPING, RESISTANT AND BRASS.
2. IT IS THE FIRE PROTECTION CONTRACTORS RESPONSIBILITY TO DESIGN THE SYSTEM REQUIRED FOR THIS FACILITY. THE CONTRACTOR SHALL VERIFY THE CAPACITY OF THE PUBLIC WATER AVAILABLE AND DESIGN HIS SYSTEM USING THESE CAPACITIES.
3. ANY INFORMATION ON THIS DESIGN IS STRICTLY FOR REFERENCE ONLY. IT IS THE CONTRACTORS RESPONSIBILITY FOR FINAL DESIGN OF THE SYSTEM TO BE INSTALLED.
4. HEAD TEMPERATURES SHALL BE 480 DEGREES F UNLESS OTHERWISE NOTED ON THE PLANS OR DECIDED TO BE OTHER BY THE DESIGN ENGINEER.
5. DESIGN SHALL BE BASED ON NFPA 413 THE OWNERS INSURANCE UNDERWRITER AND ALL FEDERAL, STATE AND LOCAL CODES. DESIGN SHALL BE DONE BY A PERSON REGISTERED WITH THE PROFESSIONAL ENGINEERING BOARD OF MICHIGAN AND APPROVED AND RETURNED BEFORE THE ACTION IS BEGUN.



**FIRE PROTECTION
 WATER SUPPLY DETAIL**
 NOT TO SCALE



KEY PLAN
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PROJECT: OPERATIONS BUILDING FIRE PROTECTION PLAN
 CONSULTANT: HOBBS+BLACK ARCHITECTS
 SHEET TITLE: OPERATIONS BUILDING FIRE PROTECTION PLAN
 PROJECT NUMBER: 05-309
 SHEET NUMBER: M-160