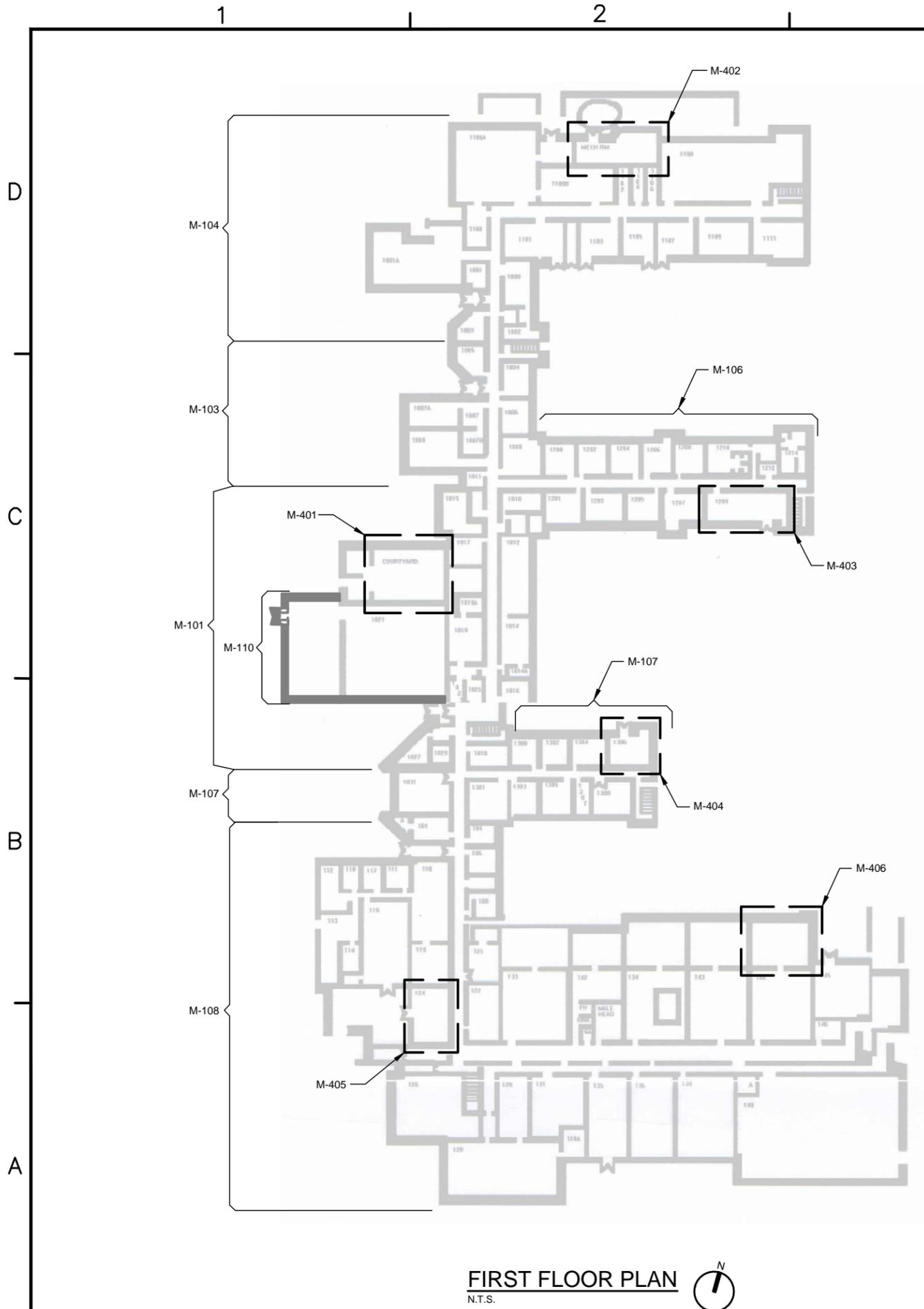
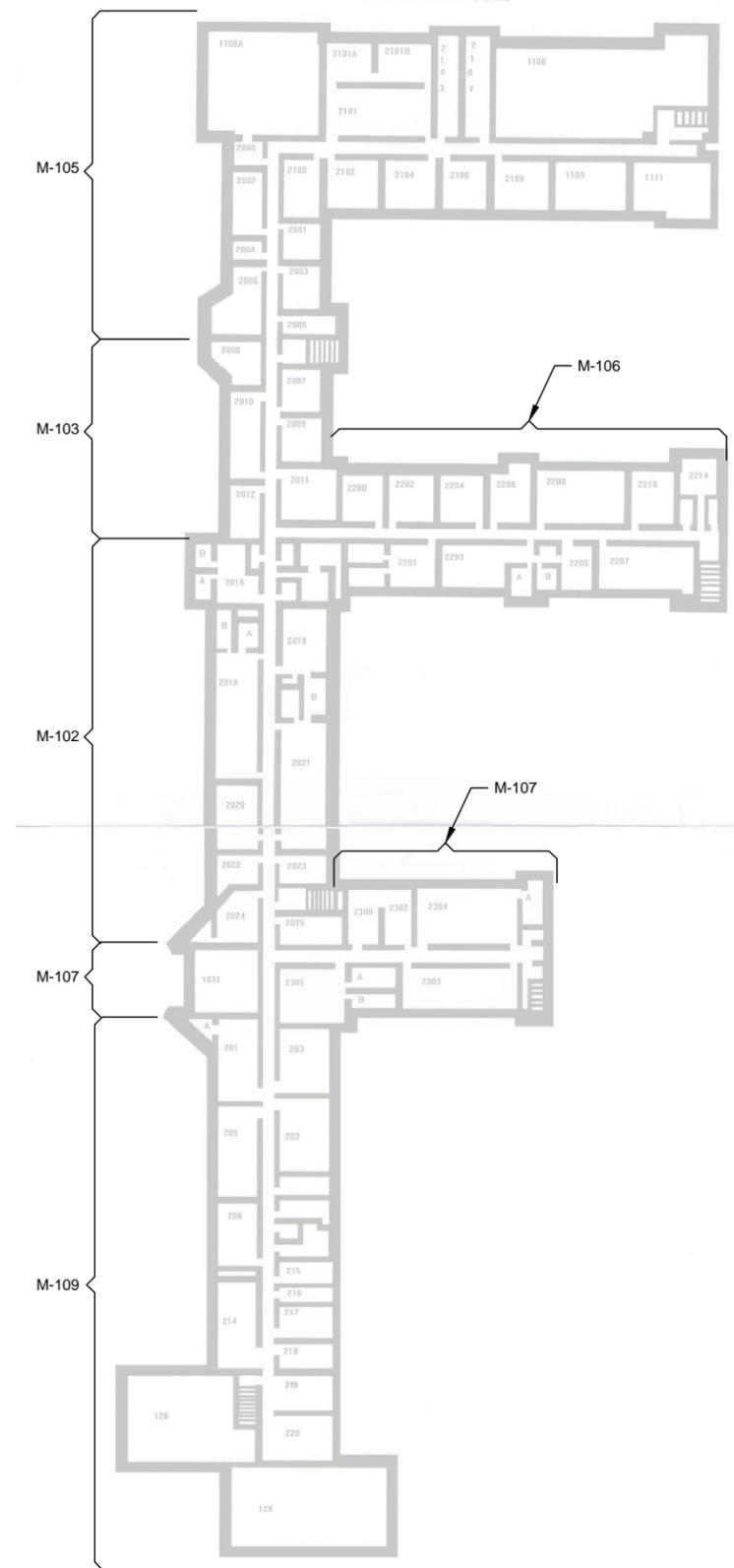


BUILDING SP-381



FIRST FLOOR PLAN
N.T.S.

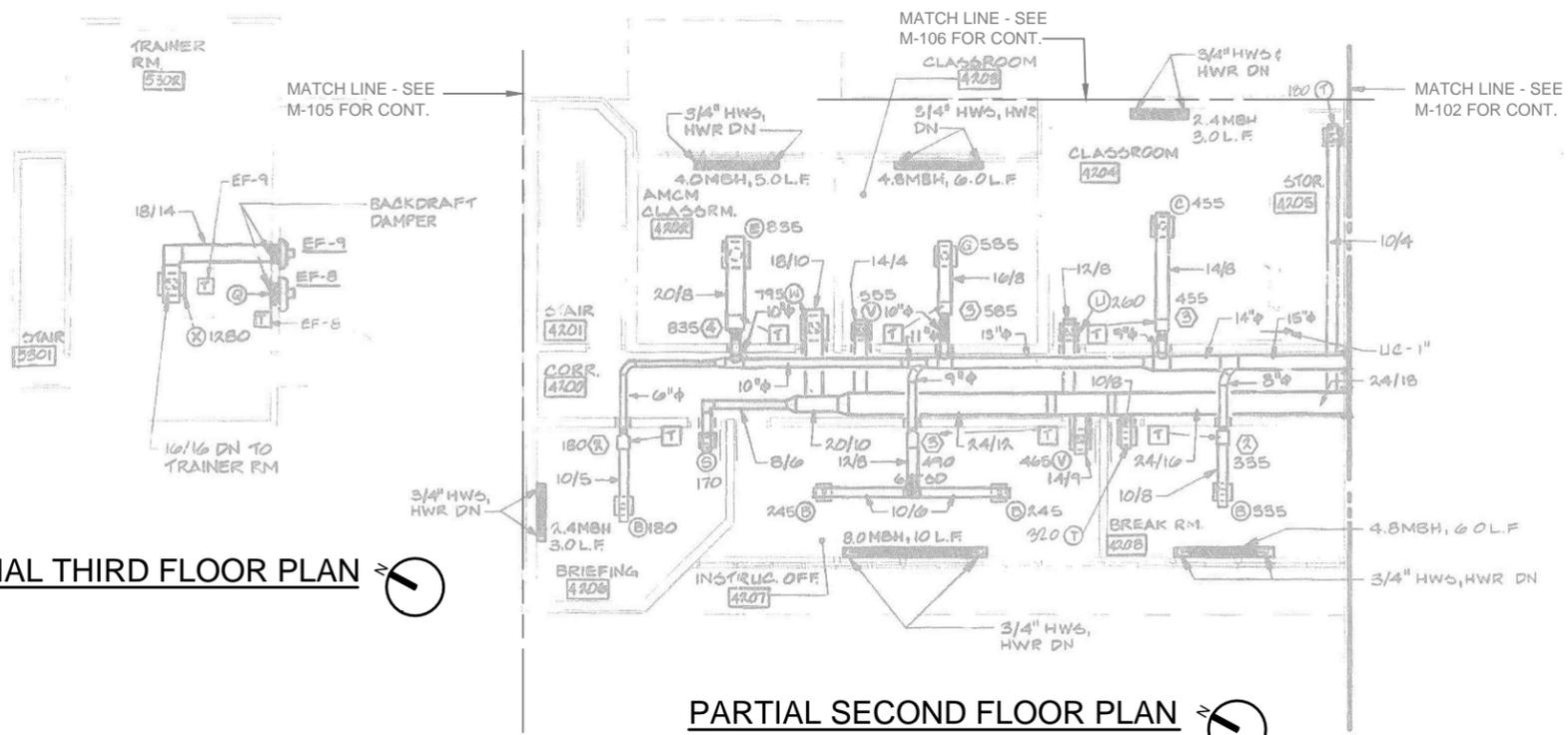


SECOND FLOOR PLAN
N.T.S.

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO DATE	06/02/2016	
DES	PTJ	DRW
CHK	IHK	CHK
BDC		
<<PM/DM>>		MHP
BRANCH MANAGER		
CHIEF	ENG/ARCH	
<<XXX>>		
NAVFAC		
ch2m.		
2411 Dulles Corner Park		
Suite 500		
Herndon, VA 20177		
AVE INFO		
SEAL		
NAVAL FACILITIES ENGINEERING COMMAND		
NORFOLK, VA		
DFSP		
HVAC AND DDC		
FACILITY OPTIMIZATION		
BUILDING SP-381		
KEY PLAN		
SCALE:	AS NOTED	
EPROJCT NO.:	1333285	
CONSTR. CONTR. NO.	N62583-11-D-0533	
NAVFAC DRAWING NO.	12724441	
SHEET	73	OF 119
M-100		
DRAWING REVISION: 10 MAY 2014		

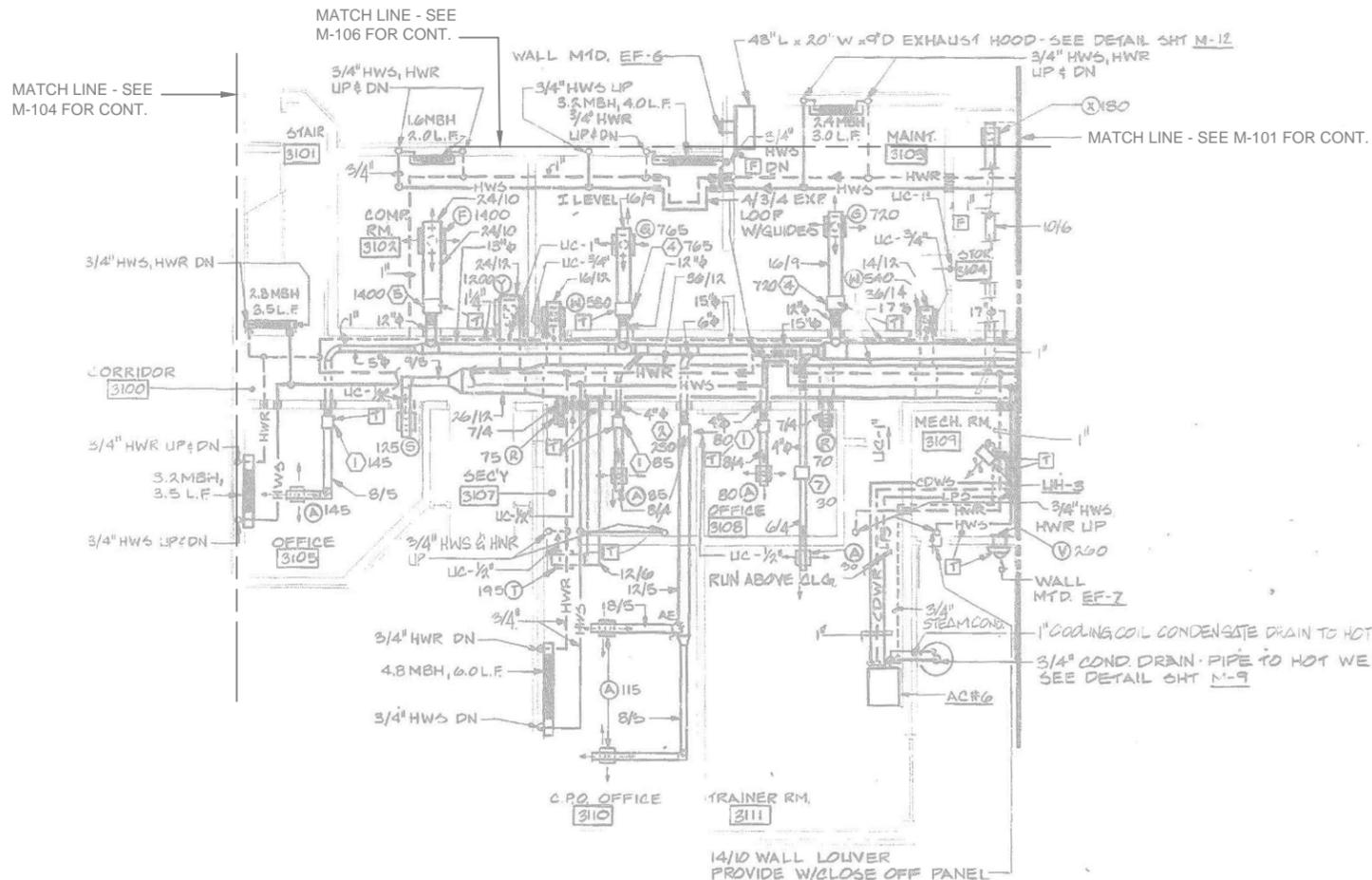
PARTIAL THIRD FLOOR PLAN

1/8" = 1'-0"



PARTIAL SECOND FLOOR PLAN

1/8" = 1'-0"

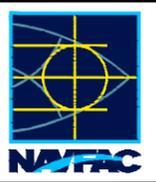


PARTIAL FIRST FLOOR PLAN

1/8" = 1'-0"

GENERAL NOTES

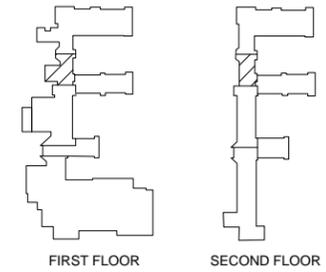
1. THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP.
2. RECORD DRAWINGS OF THE CURRENT POINTS LIST AND SEQUENCES, AND DDC CONNECTED COMPONENTS ARE NOT AVAILABLE FOR BUILDING SP-381. FIELD VERIFY NUMBERS AND CONFIGURATION OF EXISTING CONTROLLED EQUIPMENT FOR USE IN DESIGN DEVELOPMENT.
3. THESE CONCEPT DRAWINGS ARE INCLUDED TO DELINEATE THE EXTENT OF THE WORK AREA AND ARE NOT INTENDED TO CONVEY DESIGN DETAILS FOR THE DDC SYSTEM. DESIGN DETAILS ARE LOCATED THROUGHOUT THIS RFP.
4. EXACT LOCATIONS FOR CONTROLLED EQUIPMENT AND CURRENT DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND CONTROL RELATED COMPONENTS FOR USE IN DESIGN OF THE REPLACEMENT DDC



ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

FOR COMMANDER NAFAC	ACTIVITY
SATISFACTORY TO DATE	06/02/2016
DES. PTJ DRAW. IHK CHK. BDC	<<PM/DM>> MHP
BRANCH MANAGER	
CHIEF ENG/ARCH	<XXX>

NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA
DFSP
HVAC AND DDC FACILITY OPTIMIZATION
BUILDING SP-381
PARTIAL FLOOR PLANS - MECHANICAL



KEY PLAN

SCALE:	AS NOTED
EPROJCT NO.:	1333285
CONSTR. CONTR. NO.	N62583-11-D-0533
NAFAC DRAWING NO.	12724444
SHEET	76 OF 119

M-103

DRAWING REVISION: 10 MAY 2014

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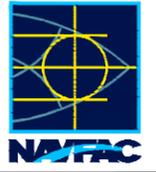
4

5

- GENERAL NOTES**
- THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP.
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- SHEET KEYNOTES**
- MECHANICAL ROOM CONTAINING CENTRAL EQUIPMENT INCLUDING BUT NOT LIMITED TO AIR HANDLING UNIT(S), BOILER(S), PUMP(S), DOMESTIC WATER HEATER(S), AND CONTROL EQUIPMENT.

REV	DESCRIPTION	DATE



ch2m
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 06/02/2016

DES PTJ | DRW IJK | CHK BDC

<<PM/DM>> MHP

BRANCH MANAGER

CHIEF ENG/ARCH

<<XXX>>

NAVY ATLANTIC

DFSP

NORFOLK, VA

NAVAL FACILITIES ENGINEERING COMMAND

HVAC AND DDC

FACILITY OPTIMIZATION

BUILDING SP-381

PARTIAL FIRST FLOOR PLAN - MECHANICAL

AS NOTED

EPROJECT NO.: 1333285

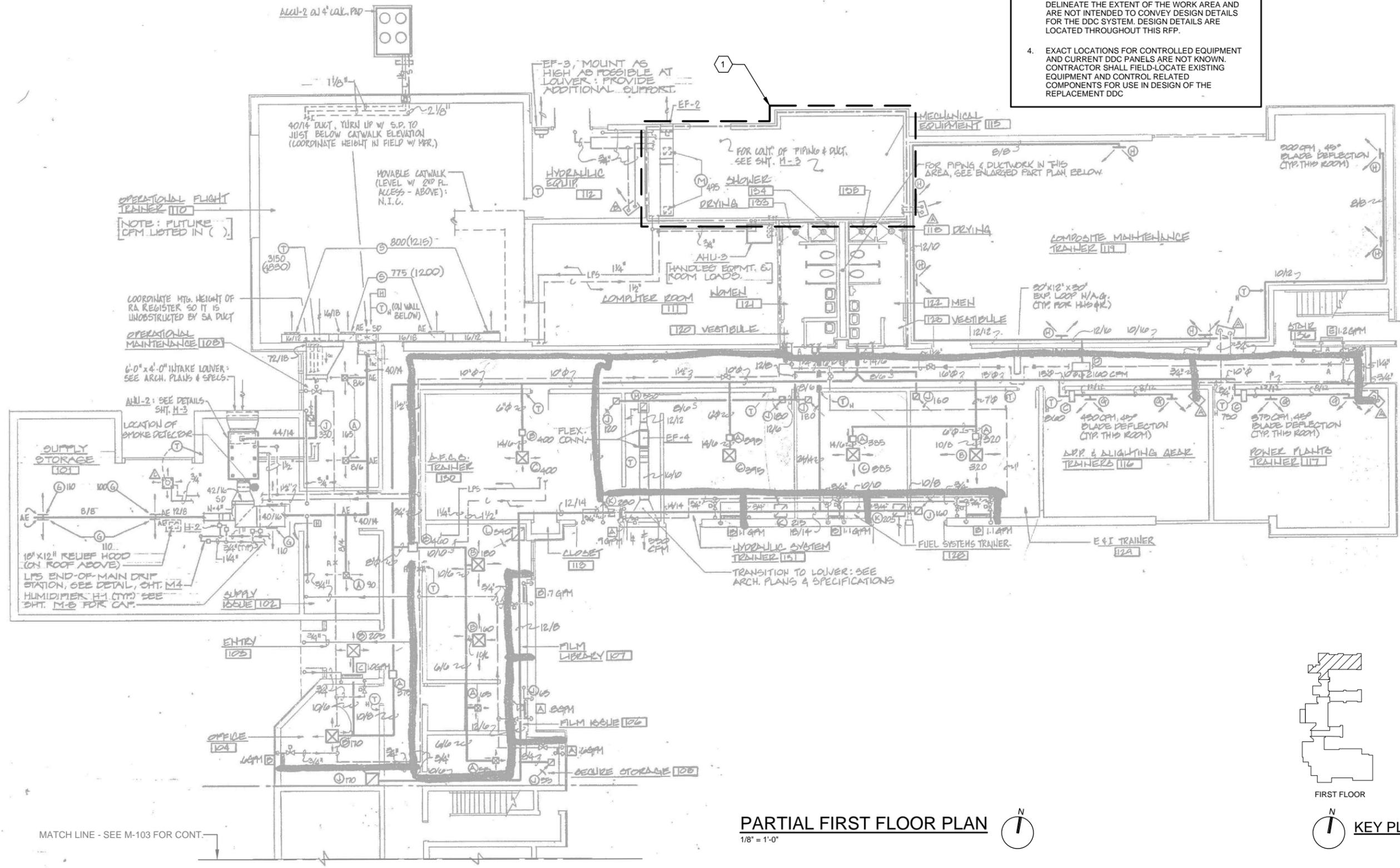
CONSTR. CONTR. NO. N62583-11-D-0533

NAVFAC DRAWING NO. 12724445

SHEET 77 OF 119

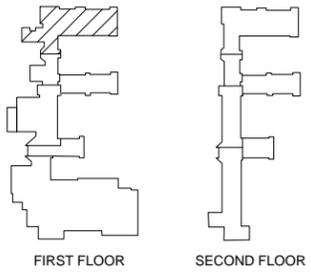
M-104

DATEFORM REVISION: 10 MAY 2014



MATCH LINE - SEE M-103 FOR CONT.

PARTIAL FIRST FLOOR PLAN
1/8" = 1'-0"



KEY PLAN

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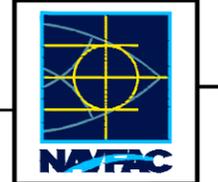
C

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- ### GENERAL NOTES
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REV	DESCRIPTION	DATE	APPR



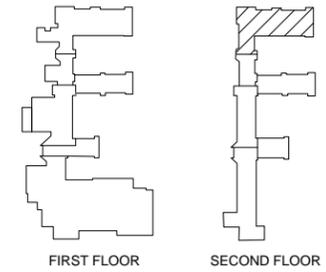
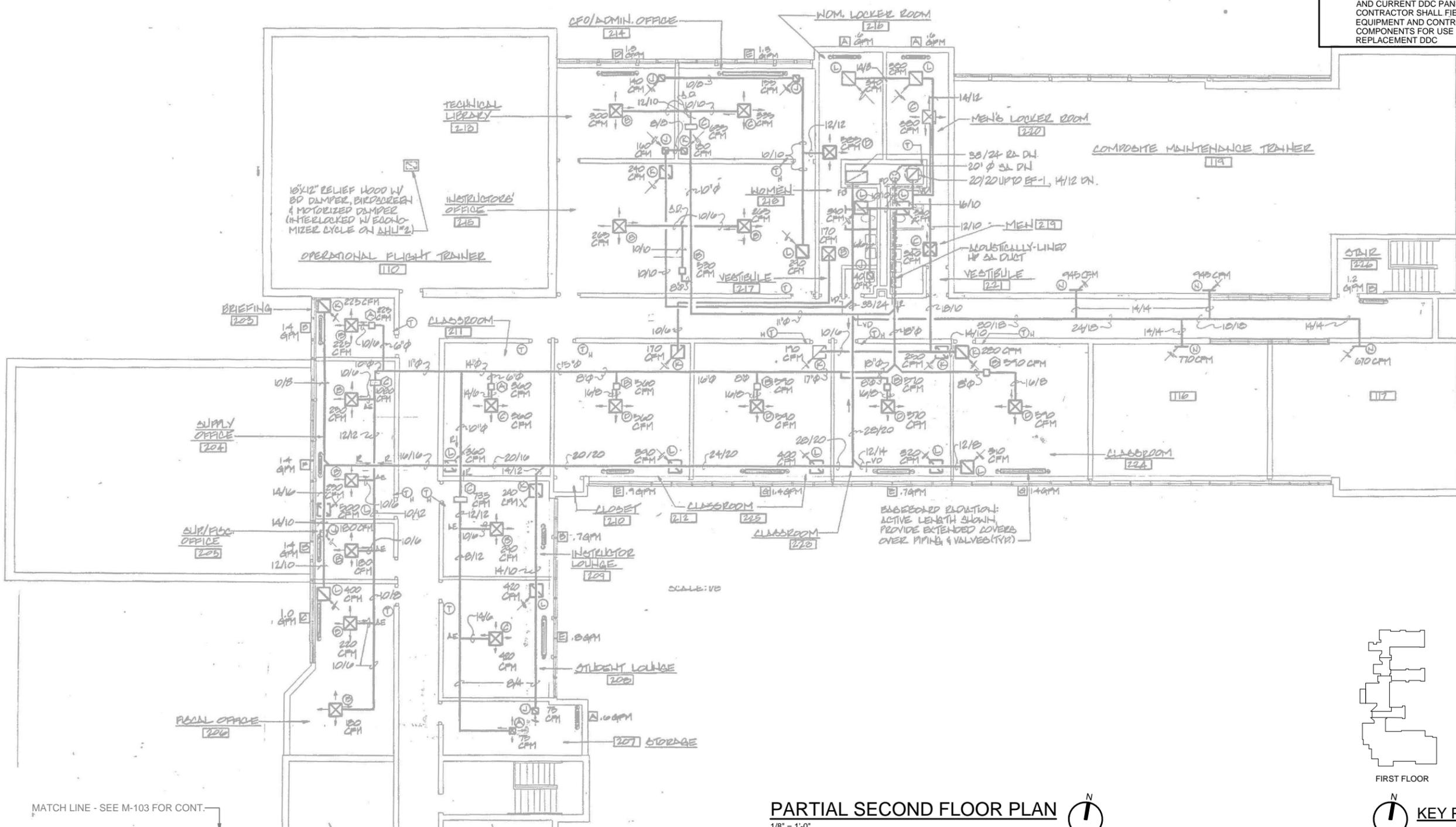
ch2m
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ DRW IHK CHK BDC
<< PM/DMS >> MHP
BRANCH MANAGER
CHIEF ENG/ARCH
<<XXX>>

NAVAL FACILITIES ENGINEERING COMMAND
 NORFOLK, VA
 DFSP

HVAC AND DDC FACILITY OPTIMIZATION
 BUILDING SP-381
 PARTIAL SECOND FLOOR PLAN - MECHANICAL

SCALE: AS NOTED
 EPROJCT NO.: 1333285
 CONSTR. CONTR. NO. N62583-11-D-0533
 NAVFAC DRAWING NO. 12724446
 SHEET 78 OF 119
M-105
 DRAWING REVISION: 10 MAY 2014



KEY PLAN

PARTIAL SECOND FLOOR PLAN
 1/8" = 1'-0"

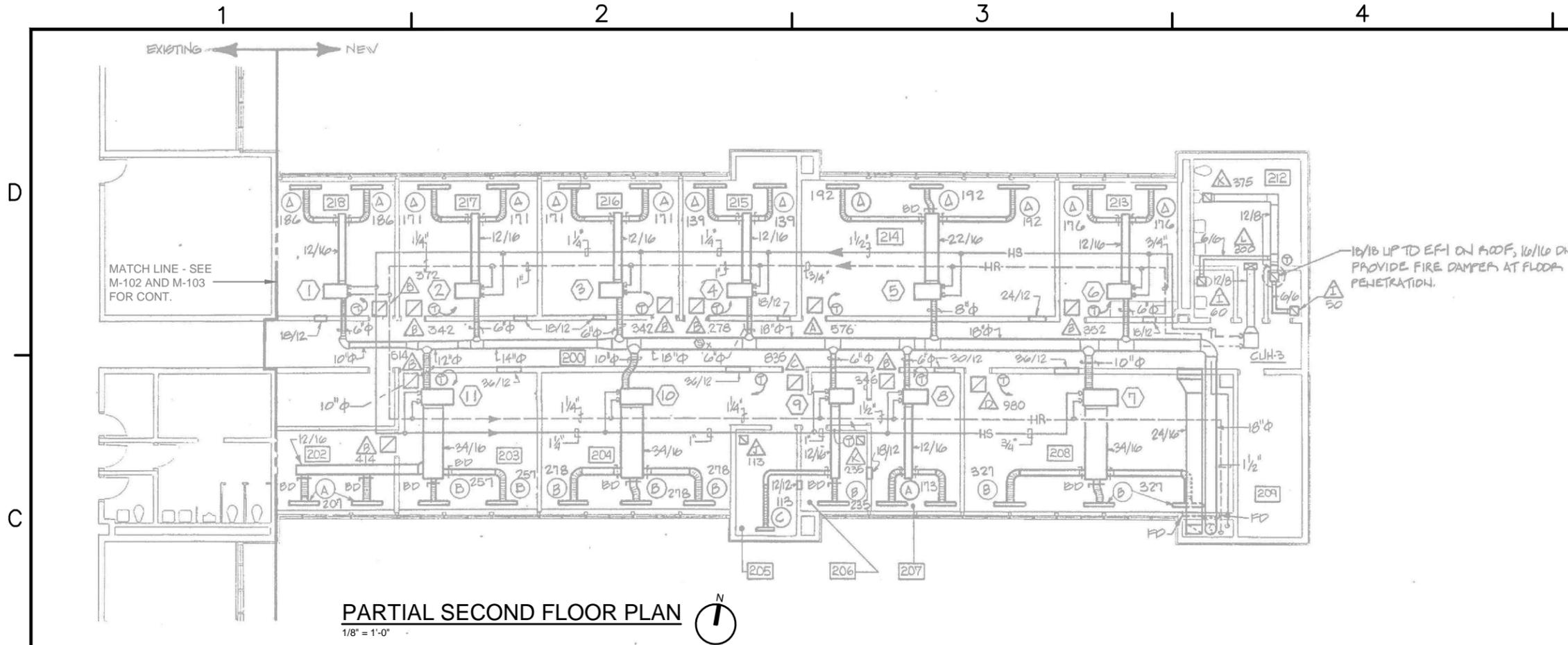
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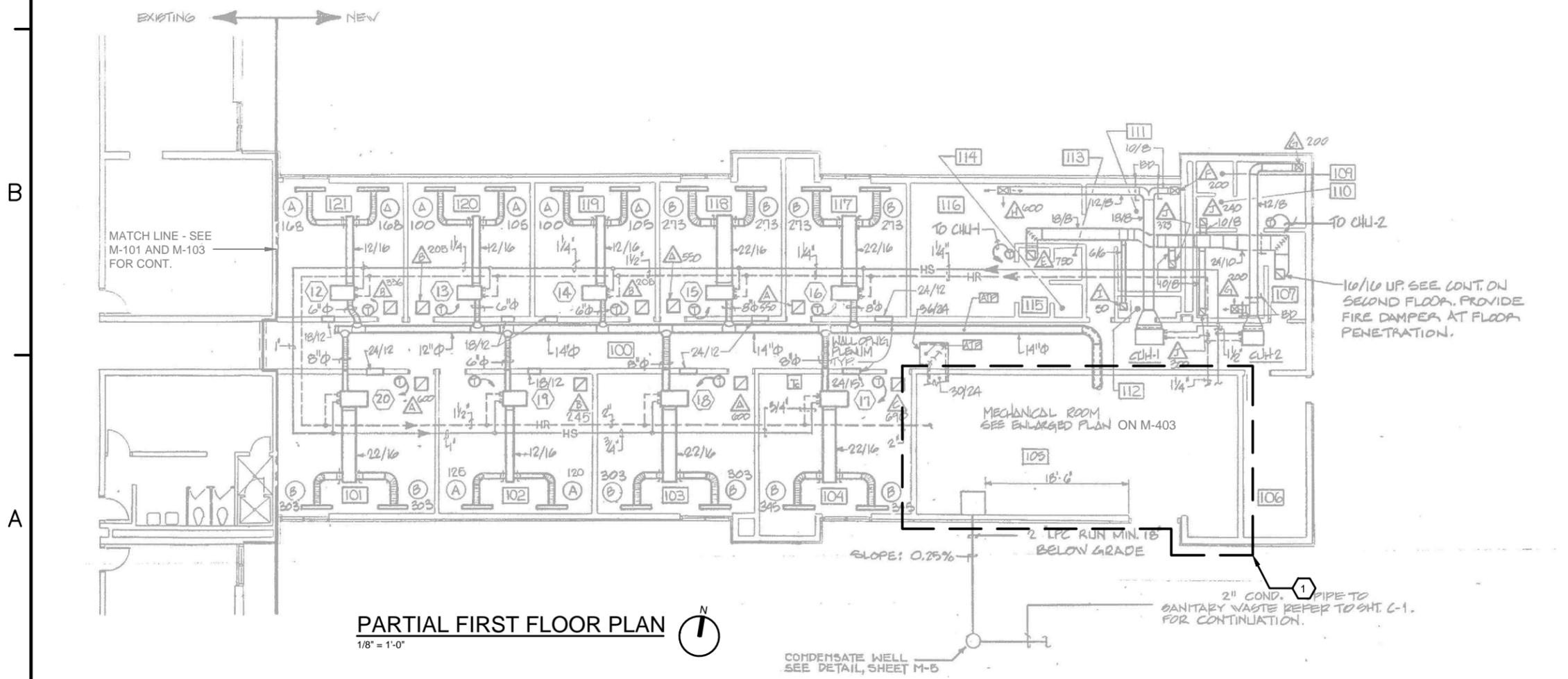
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PARTIAL SECOND FLOOR PLAN
1/8" = 1'-0"



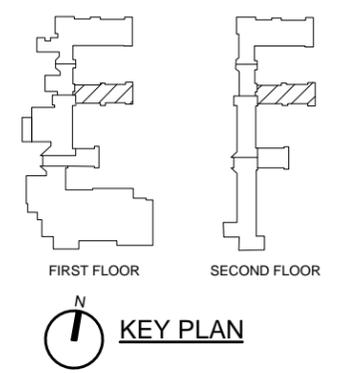
PARTIAL FIRST FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES

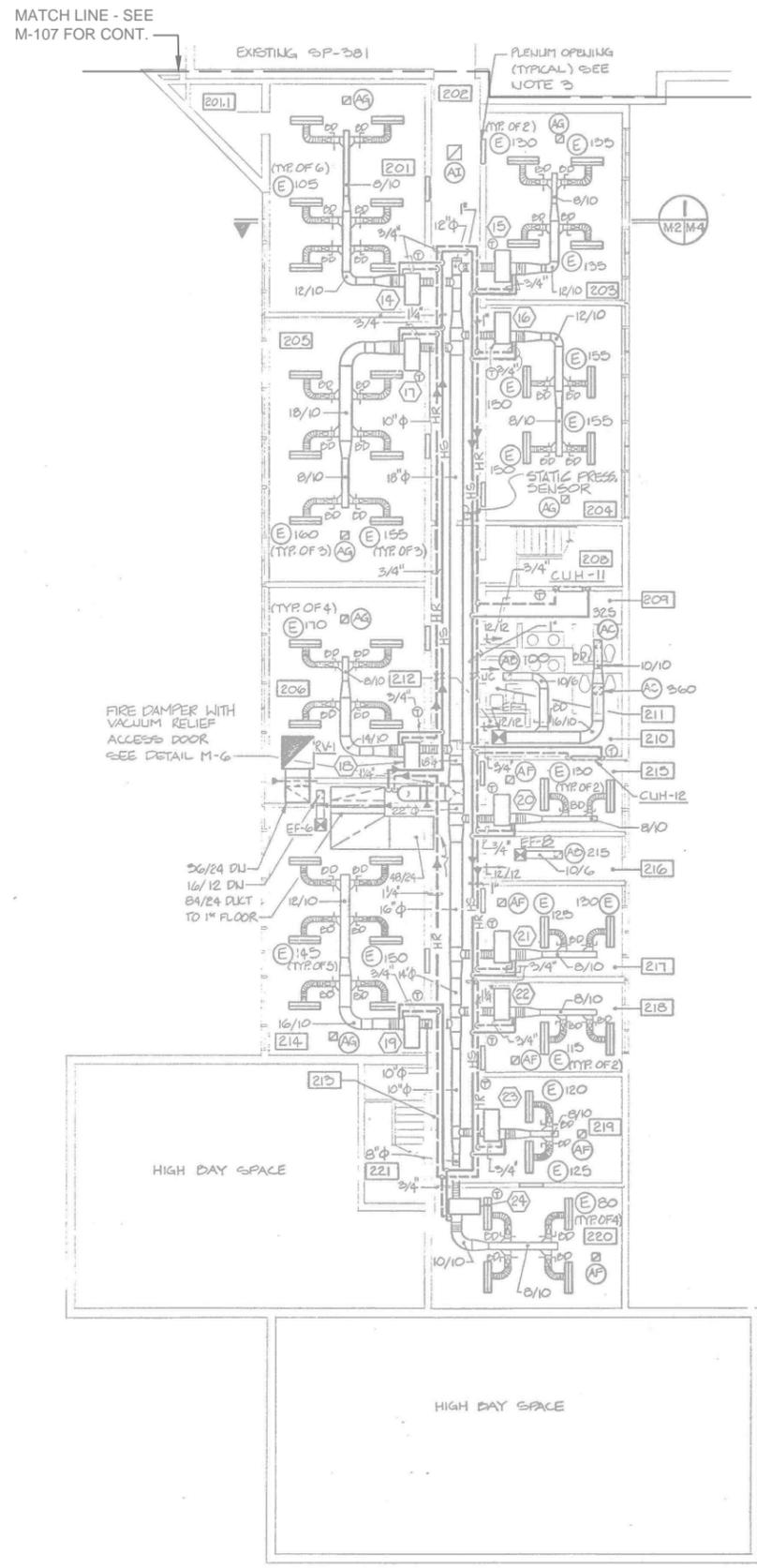
1. THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP.
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SHEET KEYNOTES

- 1 MECHANICAL ROOM CONTAINING CENTRAL EQUIPMENT INCLUDING BUT NOT LIMITED TO AIR HANDLING UNIT(S), BOILER(S), PUMP(S), DOMESTIC WATER HEATER(S), AND CONTROL EQUIPMENT.



APPROVED	DATE
FOR COMMANDER NAVFAC	DESCRIPTION
ACTIVITY	SYN
SATISFACTORY TO DATE 06/02/2016	
DES PTJ DRAW IHK CHK BDC	
<<PM/DM>>	MHP
BRANCH MANAGER	
CHIEF ENG/ARCH	
<<XXX>>	
NAVAL FACILITIES ENGINEERING COMMAND	NORFOLK, VA
DFSP	
HVAC AND DDC FACILITY OPTIMIZATION	
BUILDING SP-381	
PARTIAL FIRST & SECOND FLOOR PLANS - MECHANICAL	
SCALE: AS NOTED	
EPROJCT NO.: 1333285	
CONSTR. CONTR. NO. N62583-11-D-0533	
NAVFAC DRAWING NO. 12724447	
SHEET 79 OF 119	
M-106	
672402	DRAMFORM REVISION: 10 MAY 2014



PARTIAL SECOND FLOOR PLAN
3/32" = 1'-0"

- ### GENERAL NOTES
1. THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP.
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REV	DESCRIPTION	DATE	APPR

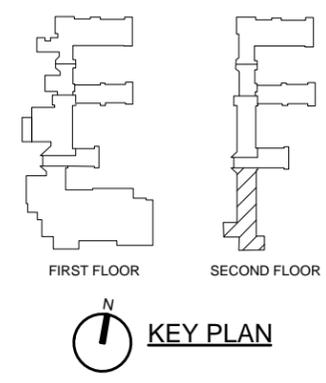


ch2m
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ DRW IHK CHK BDC
<<PM/DM>>
BRANCH MANAGER MHP
CHIEF ENG/ARCH
<XXX>

NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA
DFSP

HVAC AND DDC FACILITY OPTIMIZATION
BUILDING SP-381
PARTIAL SECOND FLOOR PLAN - MECHANICAL



SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724450
SHEET 82 OF 119	

M-109

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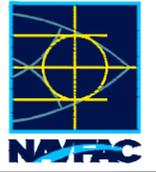
B

A

GENERAL NOTES

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NO.	DATE	DESCRIPTION



ch2m.
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 06/02/2016

DES. PTJ | DRAW. IHK | CHK. BDC

<<PM/DM>> MHP

BRANCH MANAGER

CHIEF ENG/ARCH

<XXX>

NORFOLK, VA

NAVAL FACILITIES ENGINEERING COMMAND

DFSP

HVAC AND DDC

FACILITY OPTIMIZATION

BUILDING SP-381

PARTIAL FIRST FLOOR PLAN - MECHANICAL

SCALE: AS NOTED

PROJECT NO.: 1333285

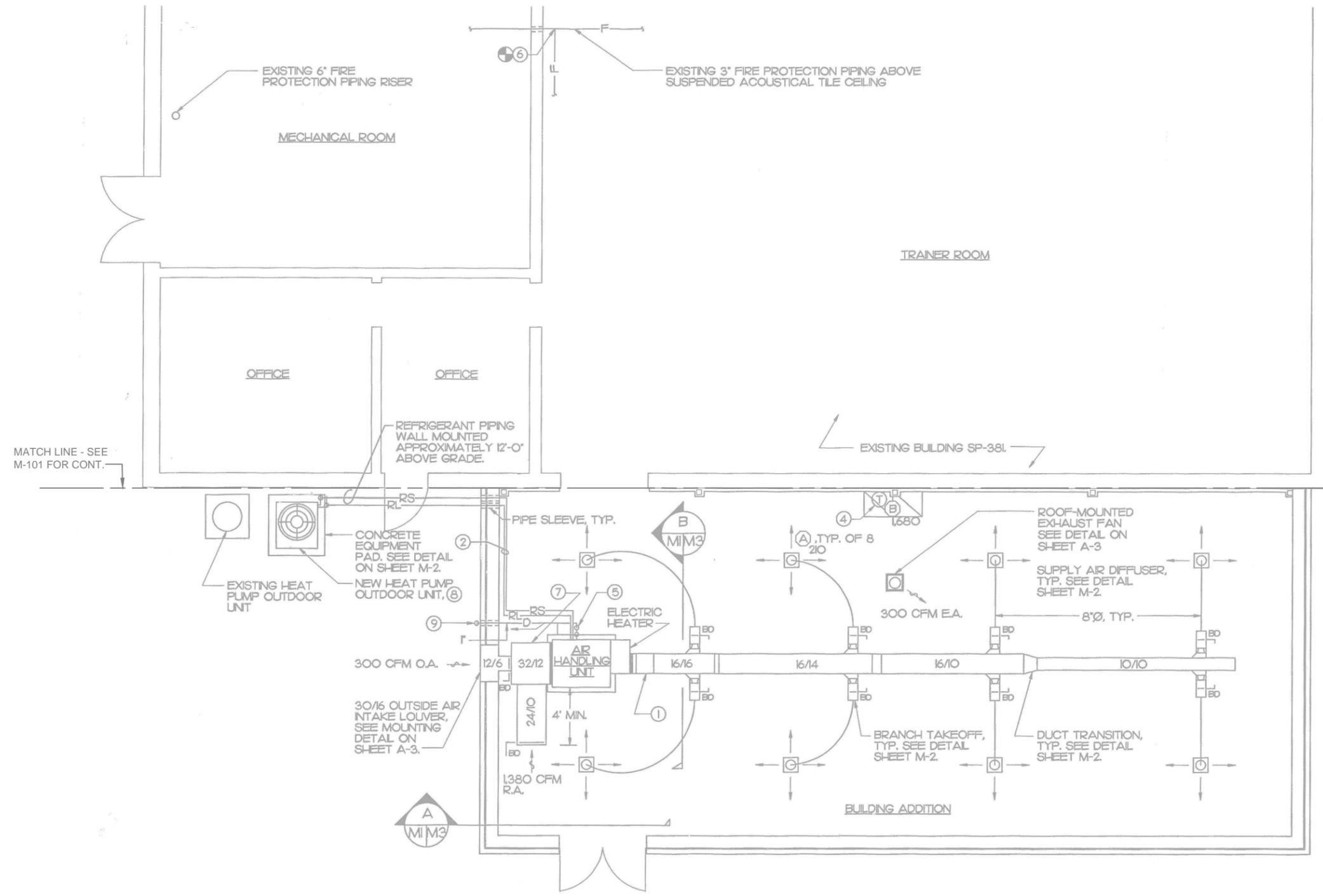
CONSTR. CONTR. NO. N62583-11-D-0533

NAVFAC DRAWING NO. 12724451

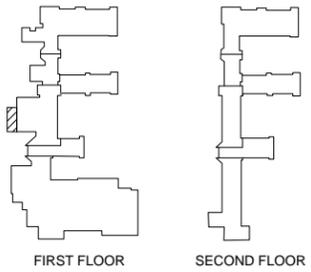
SHEET 83 OF 119

M-110

DATE: 10 MAY 2014



PARTIAL FIRST FLOOR PLAN
 1/8" = 1'-0"



KEY PLAN

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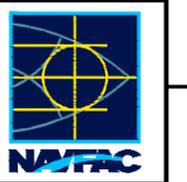
4

5

GENERAL NOTES

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REV	DESCRIPTION	DATE	APPR



ch2m
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

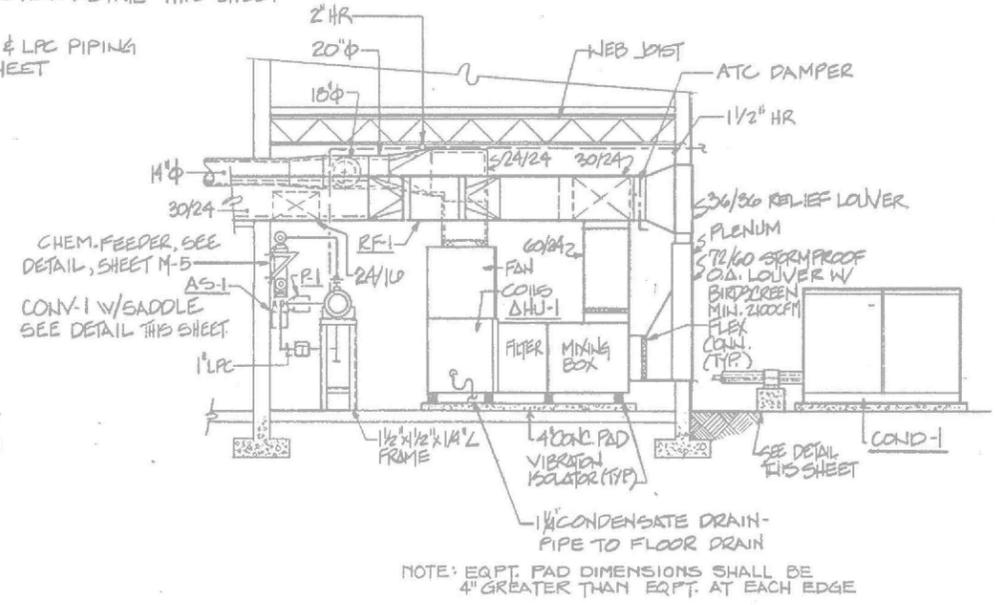
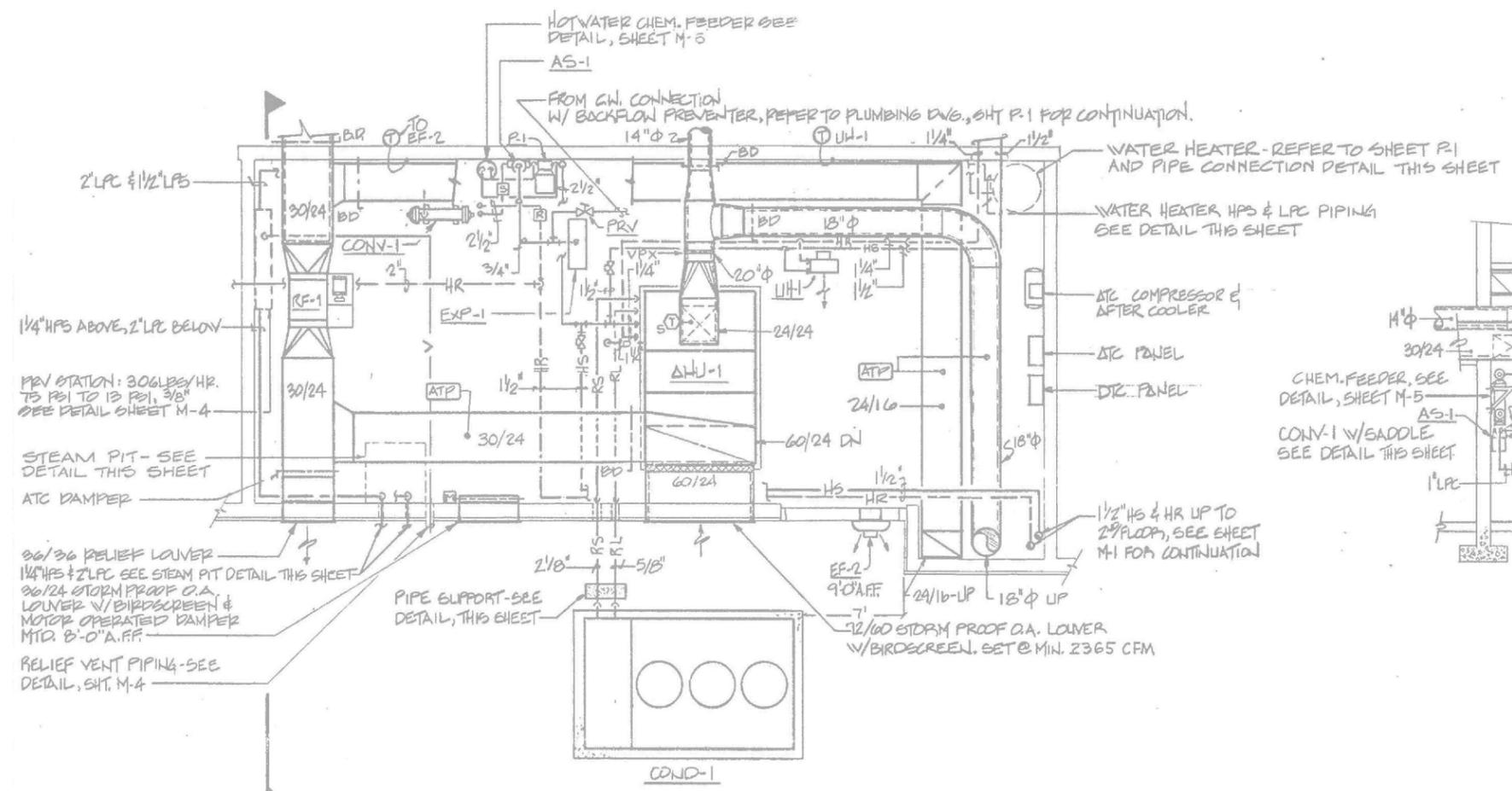
APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ/DW IHK/CHK BDC
<<PM/DMS>> MHP
BRANCH MANAGER
CHIEF ENG/ARCH
<<XXX>>

NAVFAC
NORFOLK, VA
DFSP

NAVAL FACILITIES ENGINEERING COMMAND
HVAC AND DDC
FACILITY OPTIMIZATION
BUILDING SP-381
ENLARGED FLOOR PLAN AND SECTION

SCALE: AS NOTED
PROJECT NO.: 1333285
CONSTR. CONTR. NO. N62583-11-D-0533
NAVFAC DRAWING NO. 12724454
SHEET 86 OF 119
M-403

DATEFORM REVISION: 10 MAY 2014



1 SECTION
1/4" = 1'-0"
M-403

ENLARGED MECHANICAL ROOM PLAN
1/4" = 1'-0"

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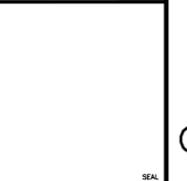
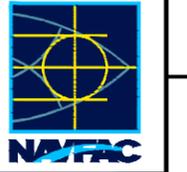
B

A

GENERAL NOTES

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REV	DESCRIPTION	DATE	APPR



2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

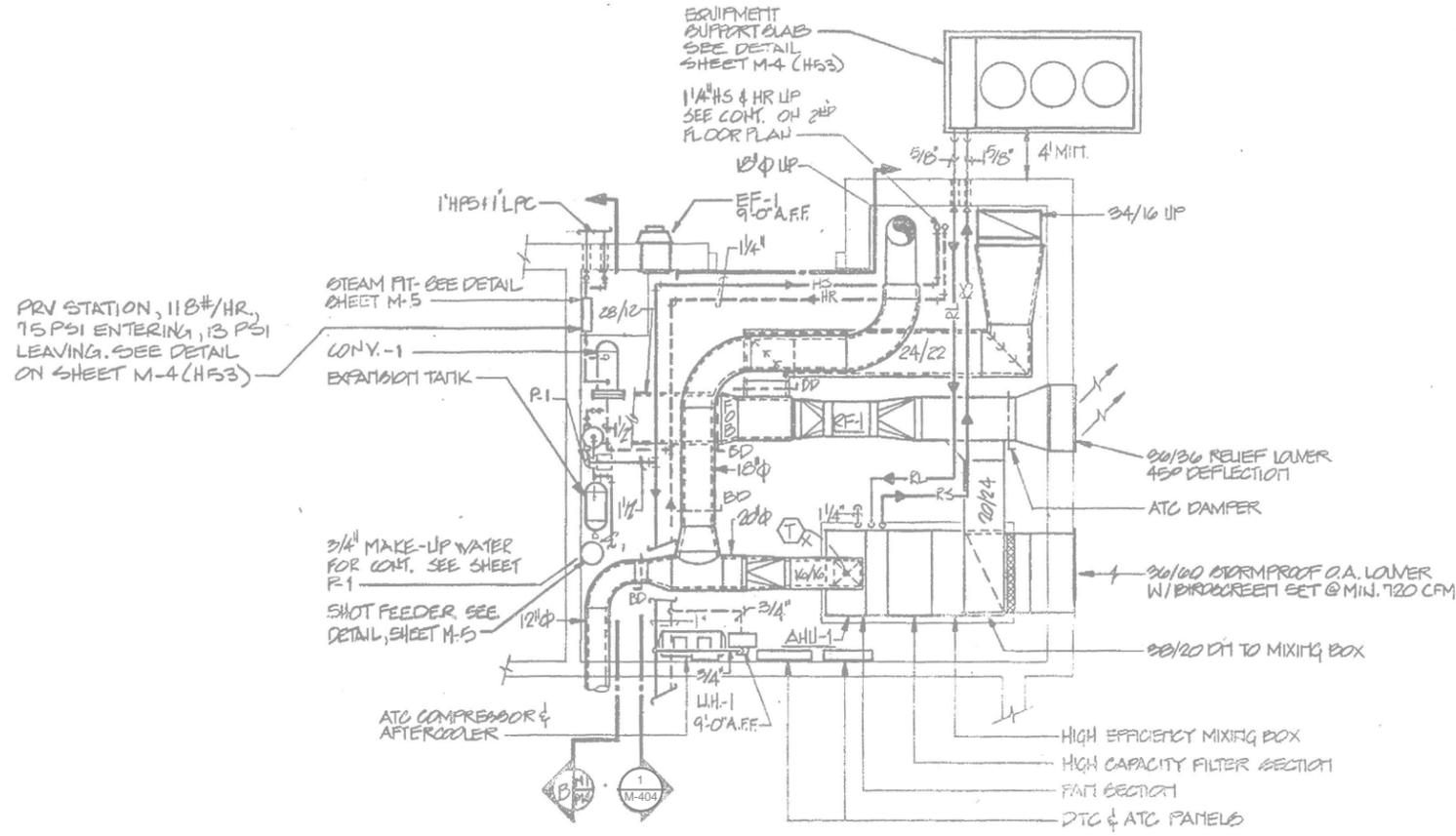
APPROVED FOR COMMANDER NAVFAC

DES	PTJ	DRAW	IHK	CHK	BDC
SCHEDULE TO DATE 06/02/2016					
BRANCH MANAGER MHP					
CHIEF ENG/ARCH <XXX>					

NAVFAC ENGINEERING COMMAND
NORFOLK, VA
HVIC AND DDC FACILITY OPTIMIZATION
BUILDING SP-381
ENLARGED FLOOR PLAN AND SECTION

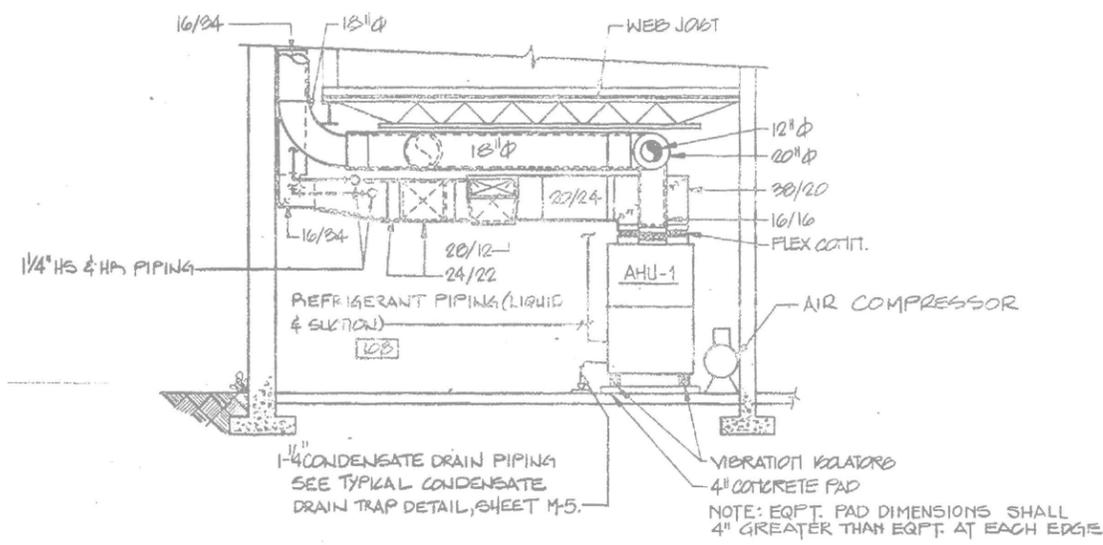
SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724455
SHEET	87 OF 119

M-404
DRAWING REVISION: 10 MAY 2014



ENLARGED MECHANICAL ROOM PLAN

1/4" = 1'-0"



1 SECTION
1/4" = 1'-0"
M-404

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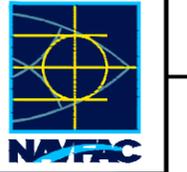
4

5

GENERAL NOTES

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REV	DESCRIPTION	DATE	APPR



SEAL

ch2m
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

AVE INFO

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 06/02/2016

DES PTJ | DRW IHK | CHK BDC

<<PM/DM>> MHP

BRANCH MANAGER

CHIEF ENG/ARCH

<<XXX>>

NORFOLK, VA

NAVAL FACILITIES ENGINEERING COMMAND

DFSP

HVAC AND DDC

FACILITY OPTIMIZATION

BUILDING SP-381

ENLARGED FLOOR PLAN AND SECTION

A

B

C

D

M-405

SCALE: AS NOTED

EPROJECT NO.: 1333285

CONSTR. CONTR. NO. N62583-11-D-0533

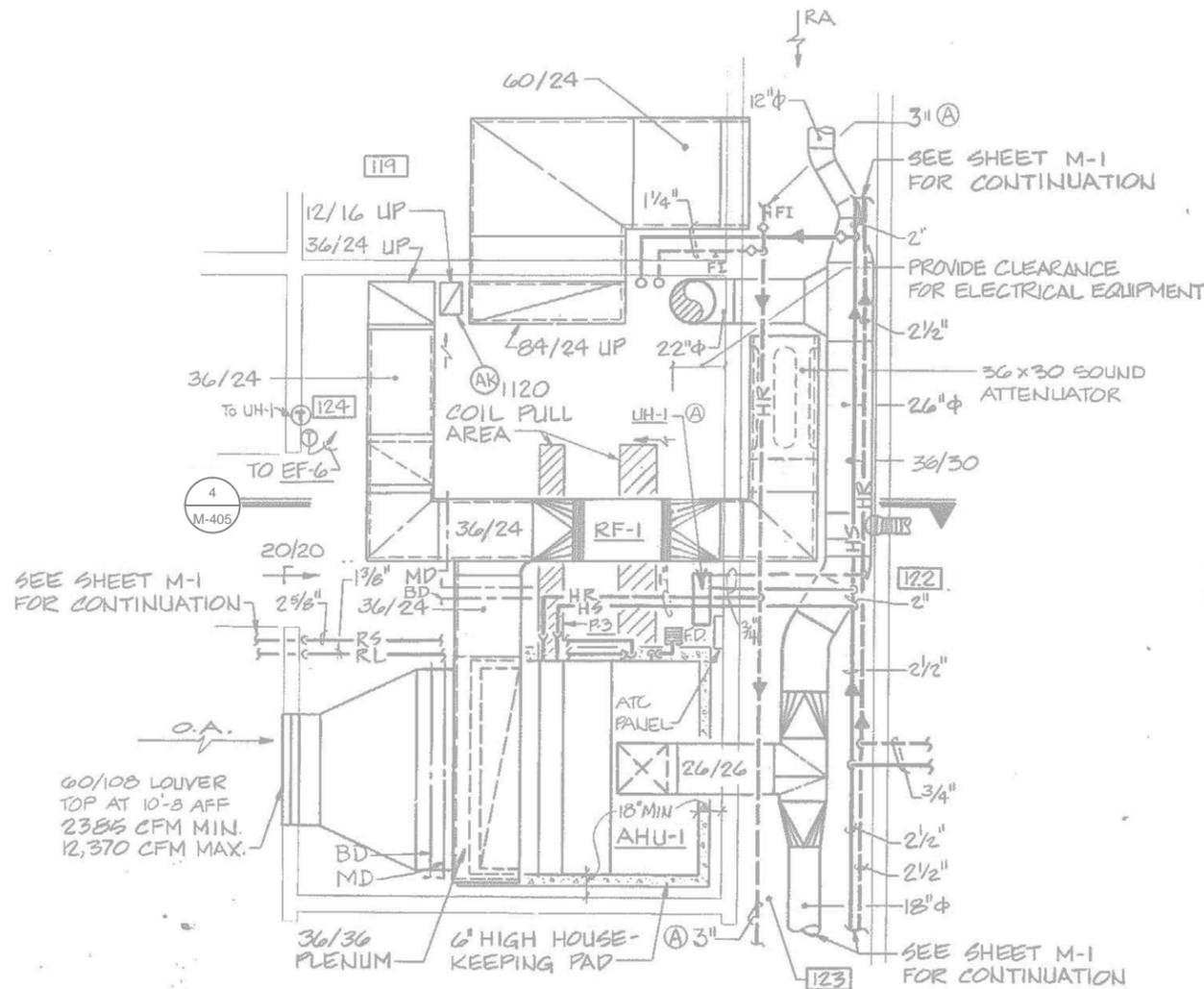
NAVFAC DRAWING NO. 12724456

SHEET 88 OF 119

M-405

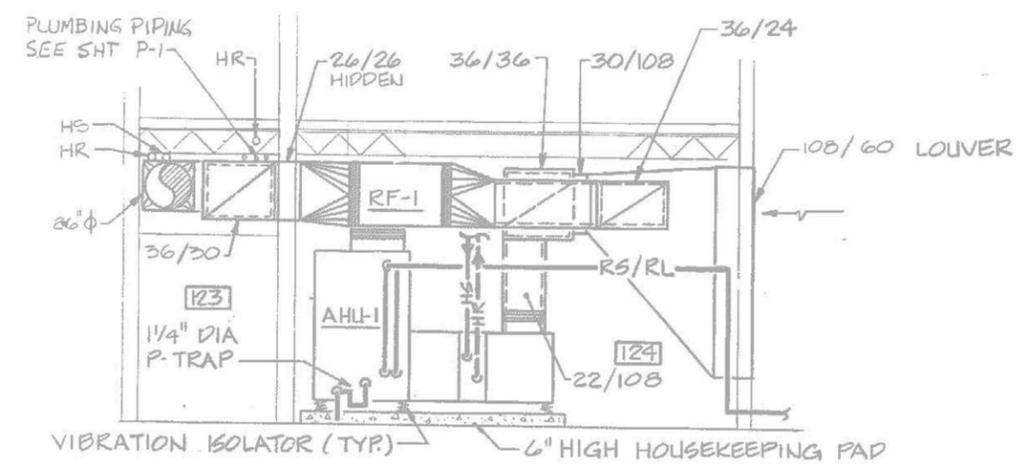
DATE: 10 MAY 2014

672402



MECHANICAL ROOM 124 FLOOR PLAN

1/4" = 1'-0"



SECTION 4

M-405

D

C

B

A

D

C

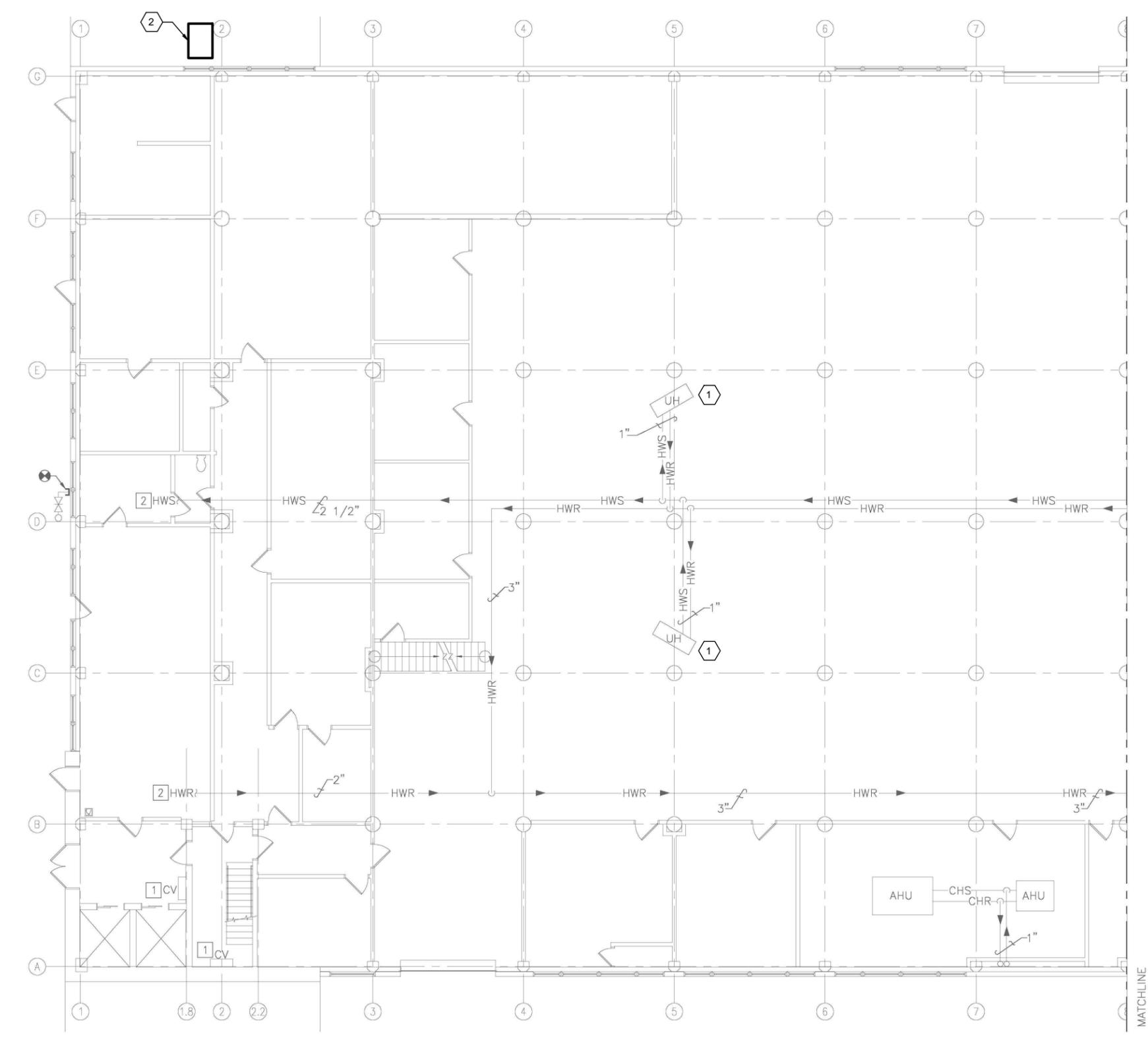
B

A

BUILDING V-53

1 2 3 4 5

D
C
B
A



PARTIAL FIRST FLOOR PIPING PLAN - AREA A
1/8"=1'-0"



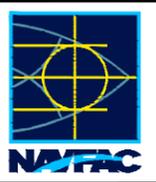
GENERAL NOTES

1. THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
2. PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
3. RECORD DRAWINGS OF THE MECHANICAL SYSTEMS, CURRENT POINTS LIST AND SEQUENCES, AND DDC CONNECTED COMPONENTS ARE INCLUDED FOR REFERENCE ONLY TO REPRESENT CURRENTLY INSTALLED CONTROL EQUIPMENT.
4. THESE CONCEPT DRAWINGS ARE INCLUDED TO DELINEATE THE EXTENT OF THE WORK AREA AND ARE NOT INTENDED TO CONVEY DESIGN DETAILS FOR THE DDC SYSTEM. DESIGN DETAILS ARE LOCATED THROUGHOUT THIS RFP.
5. APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
6. EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR UPGRADE OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
7. PHYSICAL LAYOUT OF MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
8. TYPICAL MECHANICAL EQUIPMENT IS CALLED OUT ON THESE CONCEPT DRAWINGS TO REPRESENT GENERAL CONFIGURATION AND LOCATIONS OF ITEMS. ALL EQUIPMENT TO BE CONTROLLED IS NOT HIGHLIGHTED. FIELD VERIFY LOCATIONS OF MINOR ITEMS FOR CONTROL.

SHEET KEYNOTES

- 1 PROVIDE PROGRAMMABLE THERMOSTATS FOR EXISTING HOT WATER UNIT HEATERS. GROUP HEATERS FOR A TOTAL OF 5 INSTALLED THERMOSTATS ON FIRST FLOOR AS PART OF ECM WORK.
- 2 PROVIDE NEW CONDENSER COIL FOR EXISTING CONDENSING UNIT AS PART OF ECM WORK.

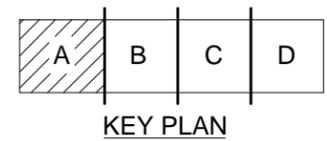
REV	DESCRIPTION	DATE	APPR



ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED	DATE
FOR COMMANDER NAVFAC	06/02/2016
DES	PTJ
DRAW	IHK
CHK	BDC
BRANCH MANAGER	MHP
CHIEF ENG/ARCH	<XXX>

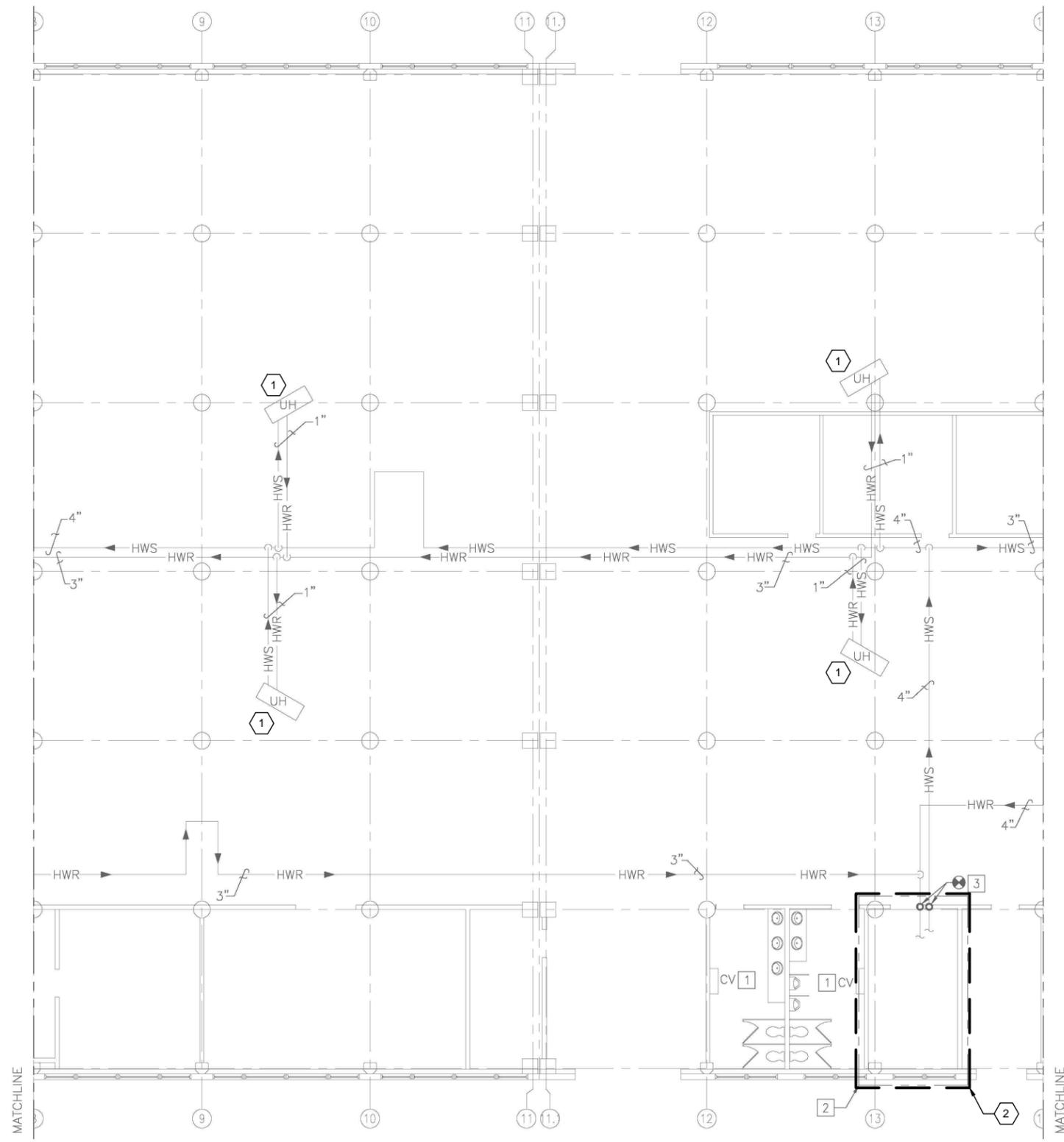
NAVFAC ENGINEERING COMMAND
NORFOLK, VA
DFSP
HVAC AND DDC
FACILITY OPTIMIZATION
BUILDING V-53
PARTIAL FIRST FLOOR PIPING PLAN - AREA A



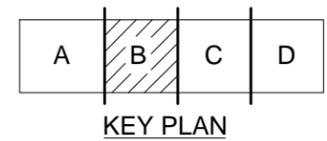
SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724458
SHEET	90 OF 119

M-101

1 2 3 4 5



PARTIAL FIRST FLOOR PIPING PLAN - AREA B
1/8"=1'-0"



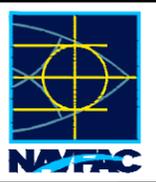
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SHEET KEYNOTES

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2. REFER TO ENLARGED MECHANICAL ROOM PLAN M-401 FOR EQUIPMENT THIS AREA.

APPR	DATE	DESCRIPTION	REV



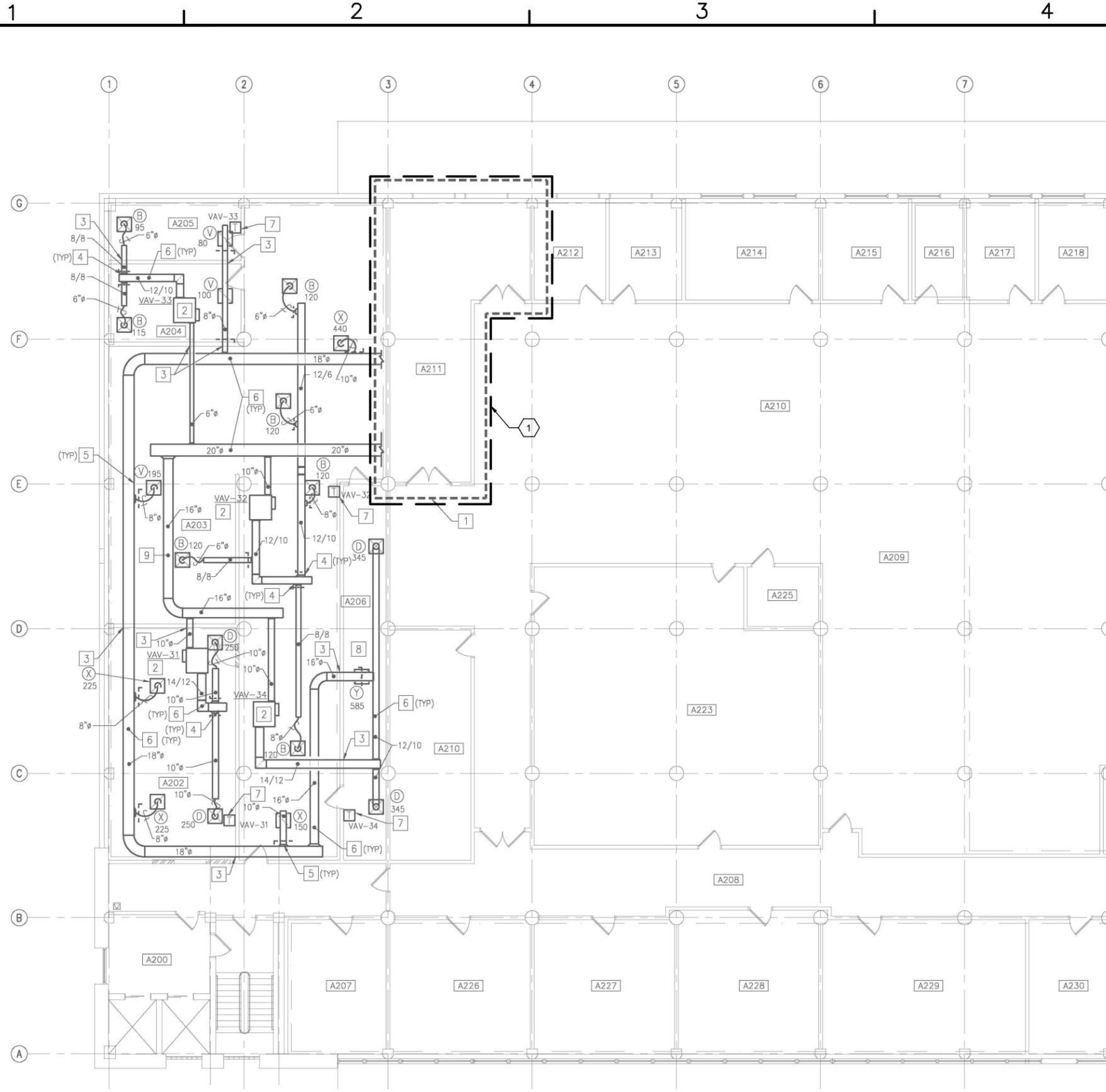
ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED	DATE
FOR COMMANDER NAVFAC	06/02/2016
ACTIVITY	DES PTJ DRW IHK CHK BDC
SATISFACTORY TO DATE	<<PM/DM>> MHP
BRANCH MANAGER	CHIEF ENG/ARCH
<XXX>	<XXX>

NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA
DFSP

HVAC AND DDC FACILITY OPTIMIZATION
BUILDING V-53
PARTIAL FIRST FLOOR PIPING PLAN - AREA B

SCALE: AS NOTED
EPROJCT NO.: 1333285
CONSTR. CONTR. NO. N62583-11-D-0533
NAVFAC DRAWING NO. 12724459
SHEET 91 OF 119
M-102



PARTIAL SECOND FLOOR DUCTWORK PLAN - AREA A
 1/8"=1'-0"



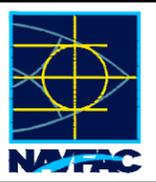
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SHEET KEYNOTES

- 1 REFER TO ENLARGED MECHANICAL ROOM PLAN M-402 FOR EQUIPMENT THIS AREA.

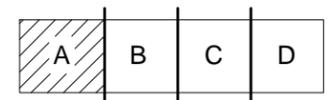
APPR.	DATE	DESCRIPTION	REV.



ch2m.
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

APPROVED	DATE
FOR COMMANDER NAVFAC	06/02/2016
DESIGN	PTJ DRAW
CHK	IHK CHK
BDC	<<PM/DM>>
BRANCH MANAGER	MHP
CHIEF ENG/ARCH	<<XXX>>

NAVFAC
 MID-ATLANTIC
 DFSF
 NAVAL FACILITIES ENGINEERING COMMAND
 NORFOLK, VA
**HVAC AND DDC
 FACILITY OPTIMIZATION**
 BUILDING V-53
 PARTIAL SECOND FLOOR DUCTWORK PLAN - AREA A



SCALE:	AS NOTED
EPROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724462
SHEET	94 OF 119

M-105

1

2

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4

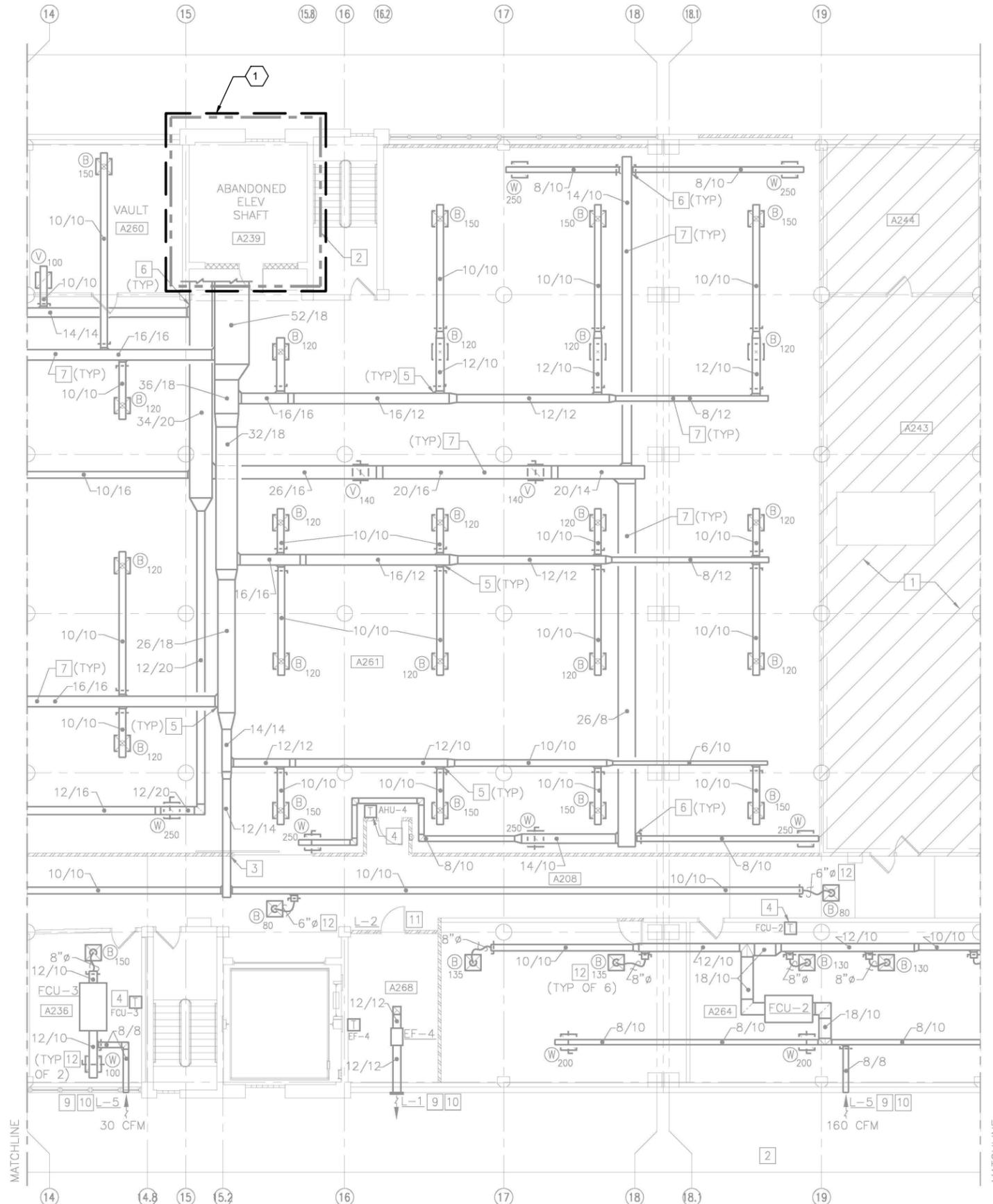
5

D

C

B

A



PARTIAL SECOND FLOOR DUCTWORK PLAN - AREA C
 1/8"=1'-0"



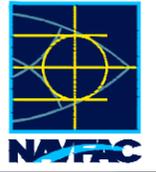
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SHEET KEYNOTES

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REV	DESCRIPTION	DATE	APPR



ch2m
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

APPROVED	DATE
FOR COMMANDER NAVFAC	06/02/2016
DESIGNER	PTJ
DRAWN	IHK
CHECKED	CHK
BDC	<<PM/DM>>
BRANCH MANAGER	MHP
CHIEF ENGINEER/ARCHITECT	<XXX>

NAVFAC ENGINEERING COMMAND
 NAVFAC
 NORFOLK, VA
 DFSP
HVAC AND DDC FACILITY OPTIMIZATION
 BUILDING V-53
 PARTIAL SECOND FLOOR DUCTWORK PLAN - AREA C



SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724463
SHEET	95 OF 119

M-106
 DRAWING REVISION: 10 MAY 2014

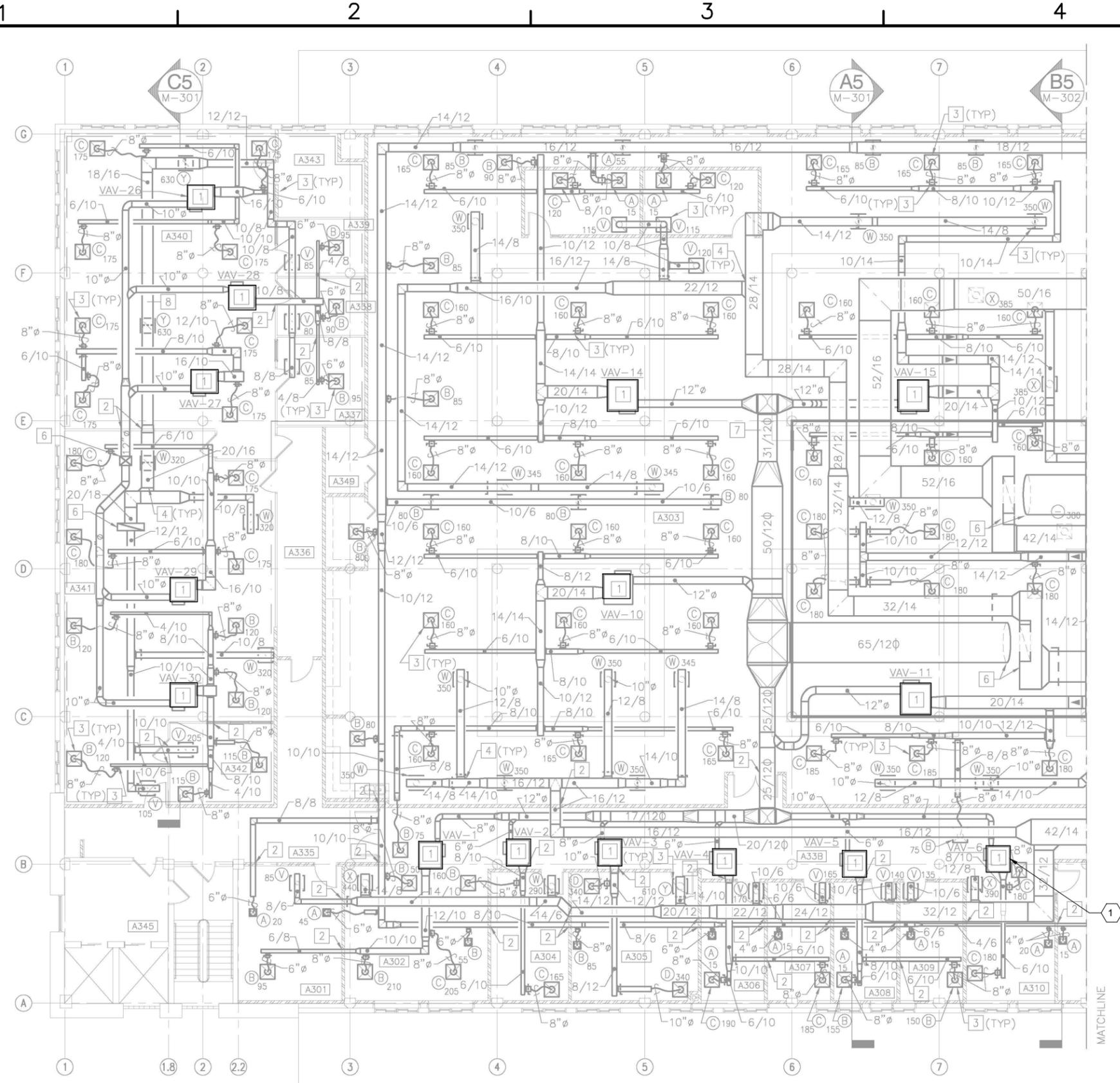
1

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PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA A
1/8"=1'-0"

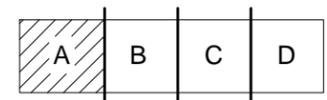


GENERAL NOTES

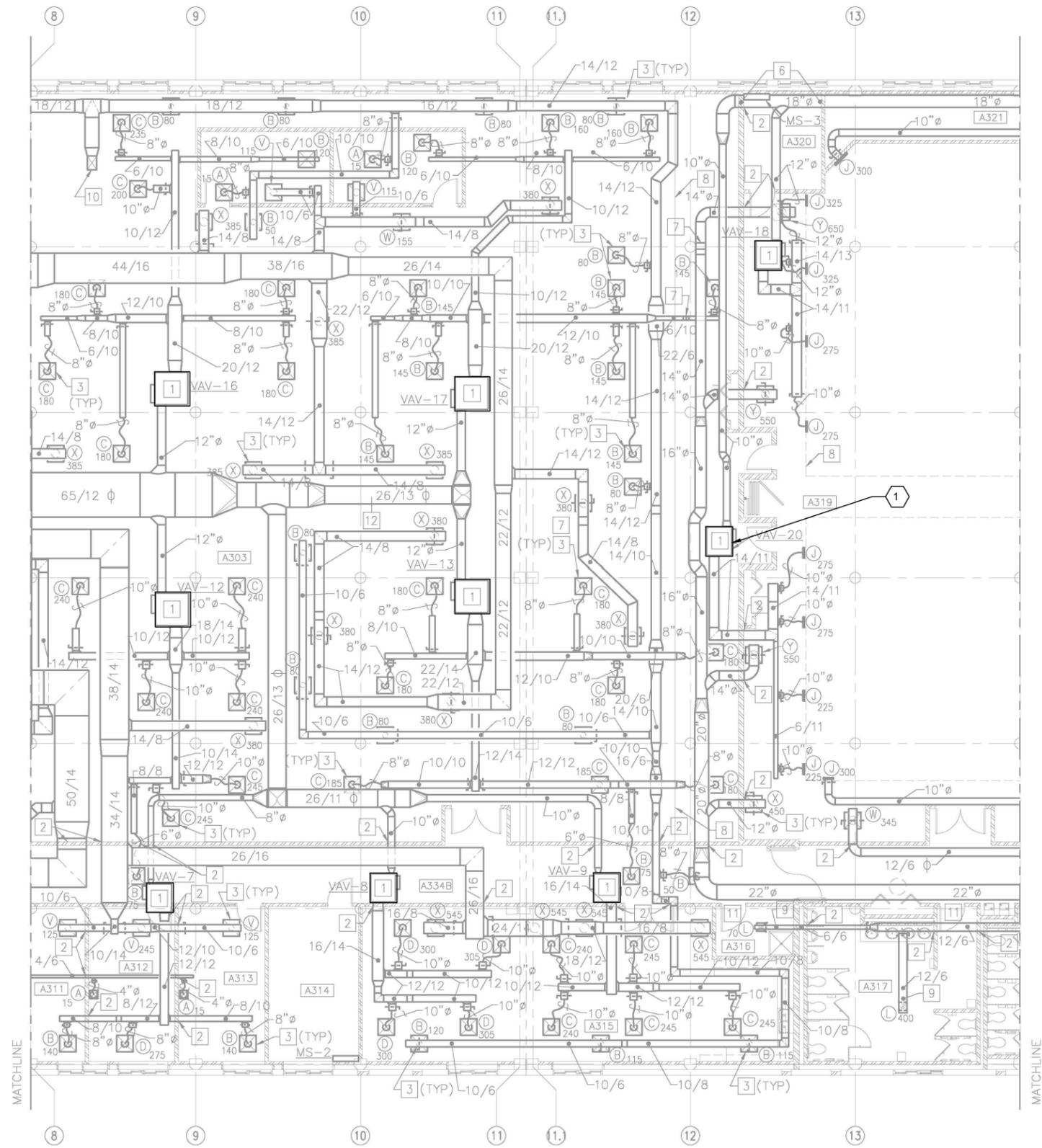
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SHEET KEYNOTES

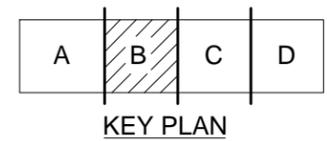
- TYPICAL VAV BOX. FIELD VERIFY ACTUAL SITE LOCATIONS AND QUANTITIES FOR DDC EXPANSION WORK.



DATE	APPR
DESCRIPTION	REV
2411 Dulles Corner Park Suite 500 Herndon, VA 20177	
APPROVED	DATE
FOR COMMANDER NAVFAC	06/02/2016
ACTIVITY	
SATISFACTORY TO DATE	DESIGN
DESIGN	PTJ
DRAWING	IHK
CHECK	CHK
BDD	
BRANCH MANAGER	MHB
CHIEF ENGINEER/ARCHITECT	<XXX>
NAVFAC ENGINEERING COMMAND NORFOLK, VA DFSP	
HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-53 PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA A	
SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724464
SHEET	96 OF 119
M-107	
<small>DRAWING REVISION: 10 MAY 2014</small>	



PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA B
 1/8"=1'-0"

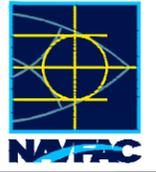


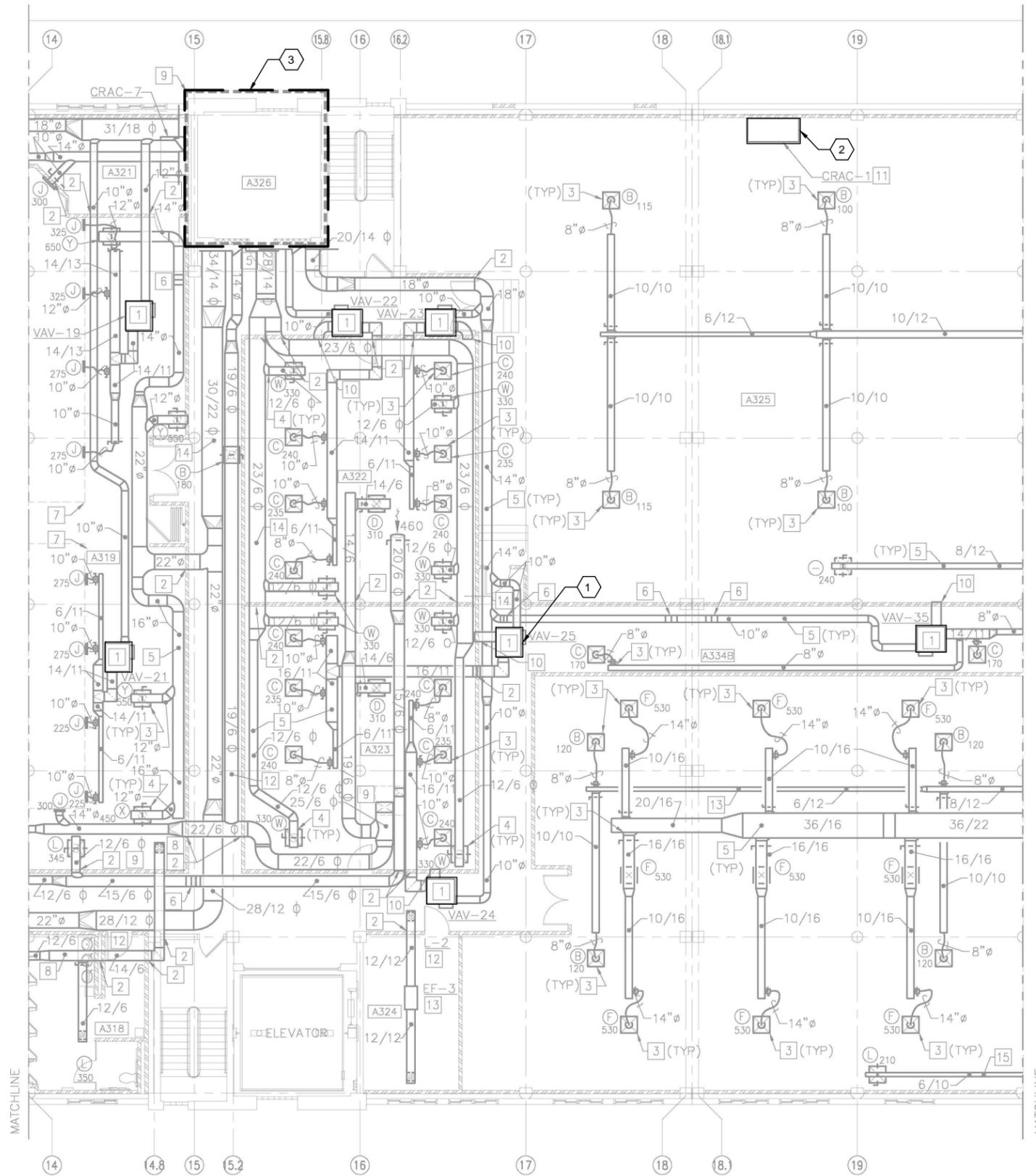
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SHEET KEYNOTES

1. TYPICAL VAV BOX. FIELD VERIFY ACTUAL SITE LOCATIONS AND QUANTITIES FOR DDC EXPANSION WORK.

	APPR. _____ DATE _____
	DESCRIPTION _____ REV. _____
	
	 2411 Dulles Corner Park Suite 500 Herndon, VA 20177
	APPROVED _____ FOR COMMANDER NAVFAC ACTIVITY _____ SATISFACTORY TO DATE 06/02/2016 DES. PTJ DRW. IHK CHK. BDC <<PM/DM>> MHP BRANCH MANAGER _____ CHIEF ENG/ARCH _____ <<XXX>> _____
NAVFAC ENGINEERING COMMAND NORFOLK, VA DFSP	HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-53 PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA B
	SCALE: AS NOTED EPROJECT NO.: 1333285 CONSTR. CONTR. NO. N62583-11-D-0533 NAVFAC DRAWING NO. 12724465 SHEET 97 OF 119 M-108 <small>DRAWING REVISION: 10 MAY 2014</small>



PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA C
1/8"=1'-0"

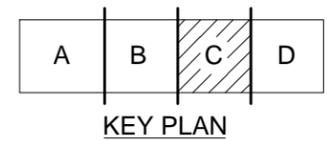


GENERAL NOTES

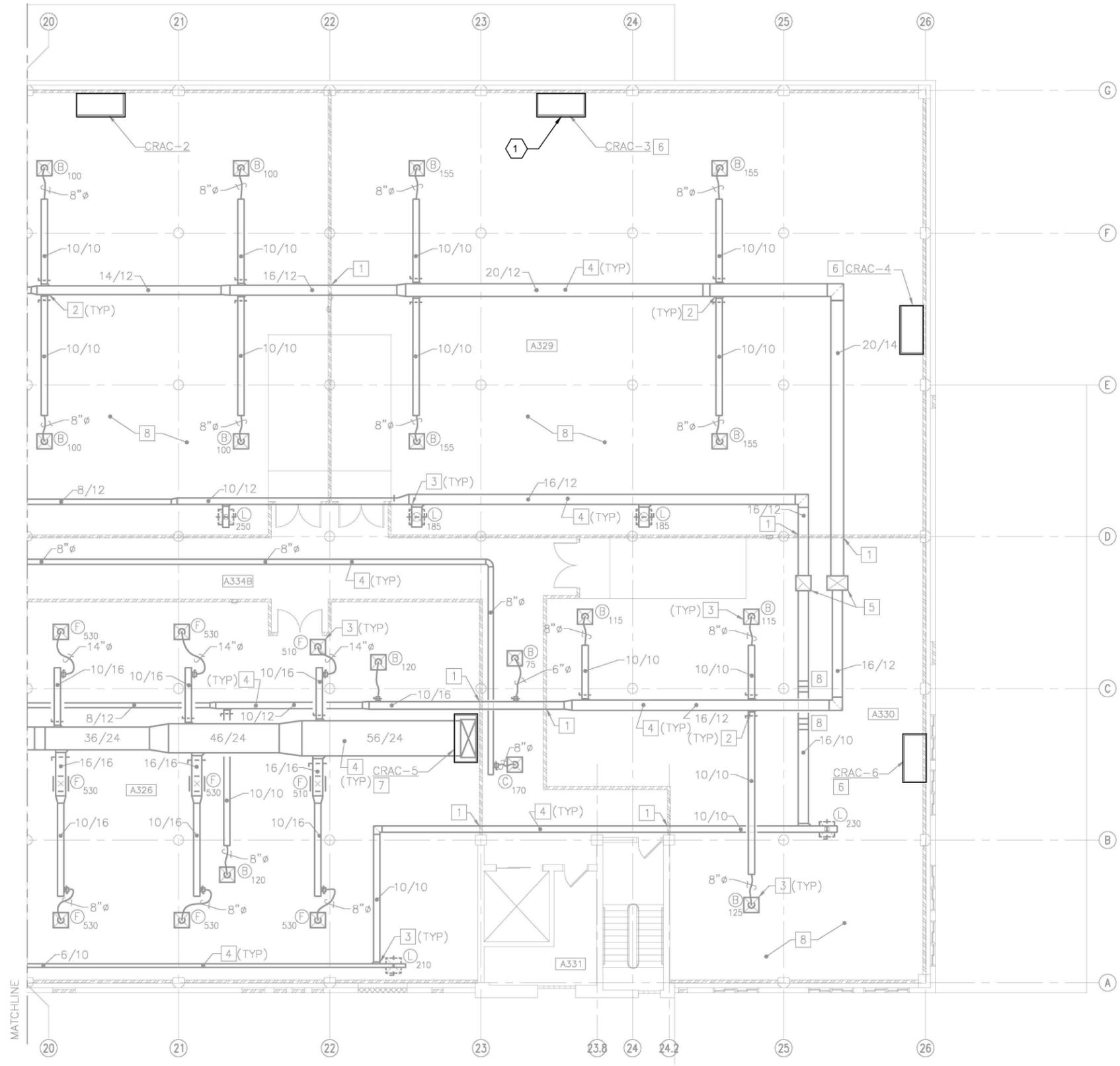
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SHEET KEYNOTES

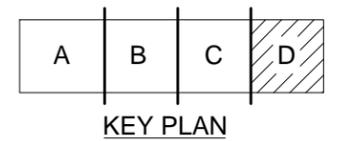
- 1 TYPICAL VAV BOX. FIELD VERIFY ACTUAL SITE LOCATIONS AND QUANTITIES.
- 2 COMPUTER ROOM UNIT INDOOR SECTION. FIELD VERIFY ACTUAL SITE LOCATIONS.
- 3 REFER TO ENLARGED MECHANICAL ROOM PLAN M-403 FOR EQUIPMENT THIS AREA.



	DATE	APPR.																		
	DESCRIPTION	REV.																		
2411 Dulles Corner Park Suite 500 Herndon, VA 20177																				
<small>AVE INFO</small>																				
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FOR COMMANDER NAVFAC																				
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NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VA DFSP																				
HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-53 PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA C																				
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SCALE:	AS NOTED																			
EPROJCT NO.:	1333285																			
CONSTR. CONTR. NO.:	N62583-11-D-0533																			
NAVFAC DRAWING NO.:	12724466																			
SHEET	98 OF 119																			
M-109																				
<small>DRAWING REVISION: 10 MAY 2014</small>																				



PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA D
 1/8"=1'-0"



GENERAL NOTES

- THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
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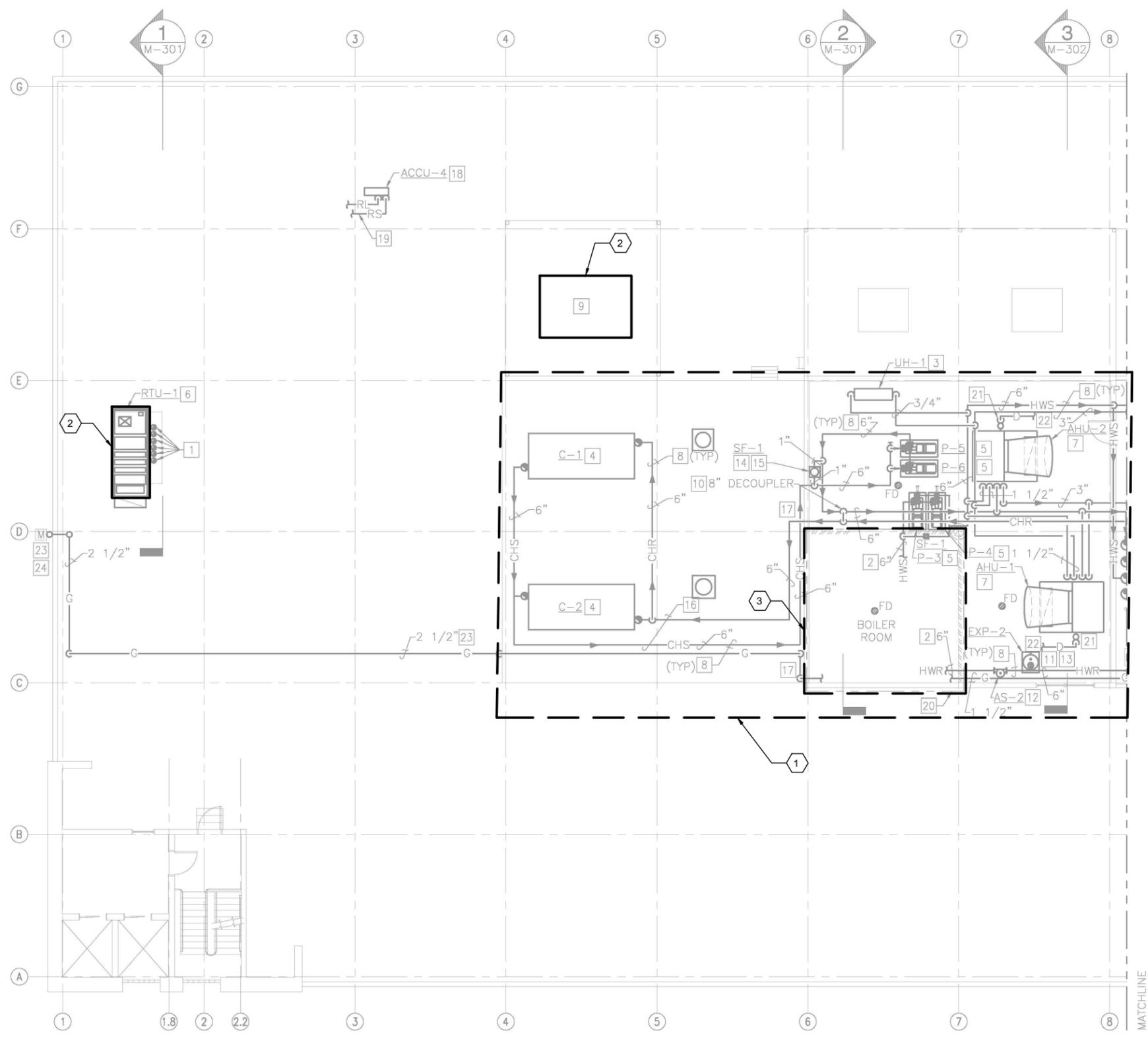
SHEET KEYNOTES

- COMPUTER ROOM UNIT INDOOR SECTION. FIELD VERIFY ACTUAL SITE LOCATIONS.

APPROVED	DATE
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	06/02/2016
DES. PTJ DRW. IHK CHK. BDC	
<<PM/DM>>	MHP
BRANCH MANAGER	
CHIEF. ENG/ARCH	
<<XXX>>	
NAVAL FACILITIES ENGINEERING COMMAND	
NORFOLK, VA	
HVFAC AND DDC FACILITY OPTIMIZATION	
BUILDING V-53	
PARTIAL THIRD FLOOR DUCTWORK PLAN - AREA D	
SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724467
SHEET	99 OF 119
M-110	
DRAWING REVISION: 10 MAY 2014	

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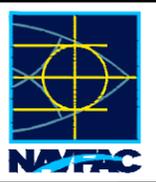
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SHEET KEYNOTES

- 1 CENTRAL EQUIPMENT AT ROOF MECHANICAL ROOM AND MEZZANINE.
- 2 INDIVIDUAL MECHANICAL EQUIPMENT.
- 3 REFER TO ENLARGE MECHANICAL ROOM PLAN M-401 FOR BOILER ROOM EQUIPMENT.

APPR.	DATE
SYN.	DESCRIPTION

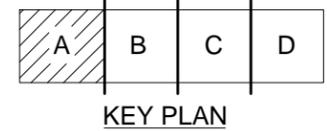


ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

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FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ DRW IHK CHK BDC
<<PM/DM>>
BRANCH MANAGER MHP
CHIEF ENG/ARCH
<<XXX>>

NAVFAC ENGINEERING COMMAND
NORFOLK, VA
HVIC AND DDC
FACILITY OPTIMIZATION
BUILDING V-53
PARTIAL ROOF PLAN - AREA A

PARTIAL ROOF PLAN - AREA A
1/8"=1'-0"

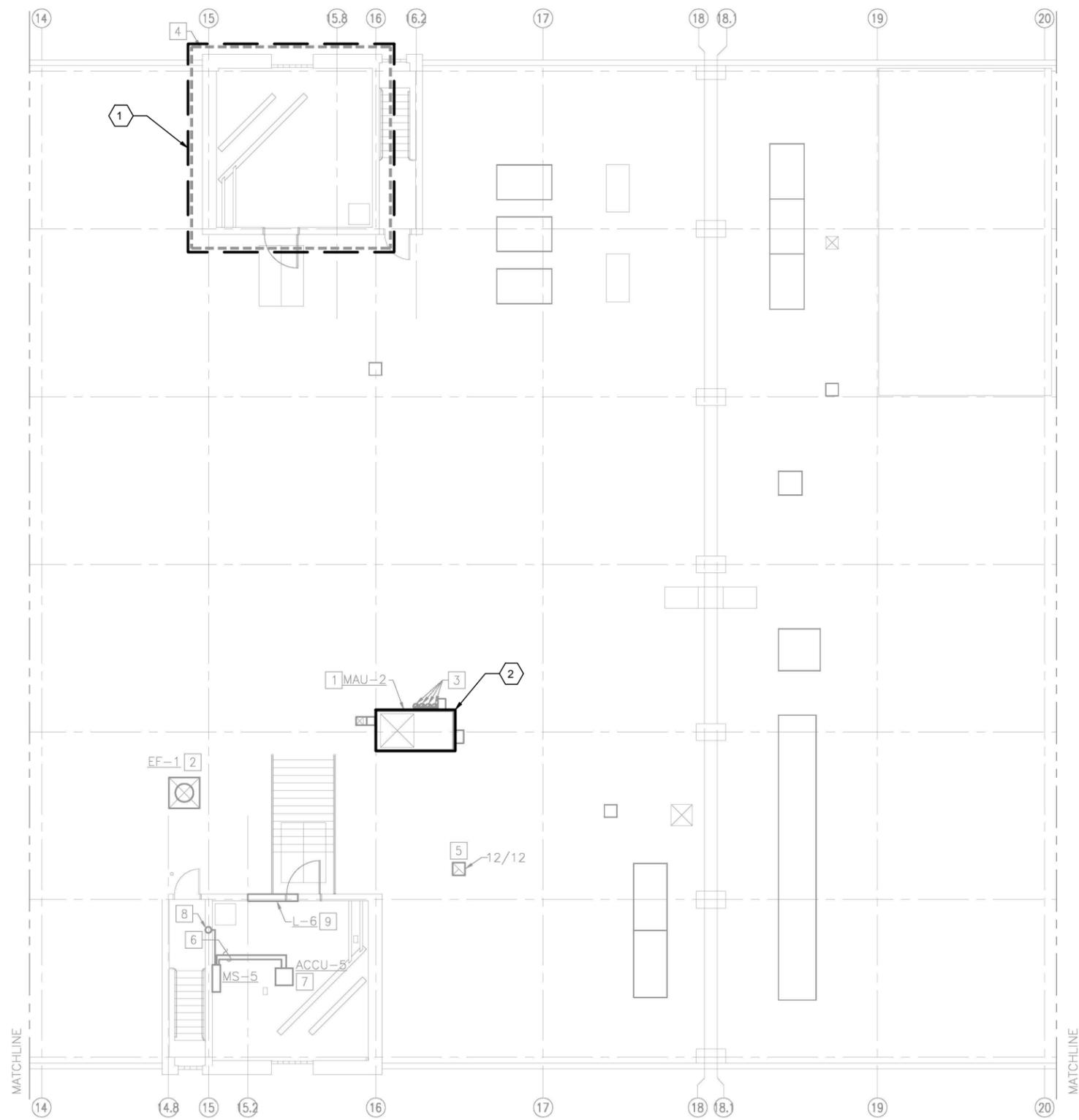


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CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724468
SHEET 100 OF 119	

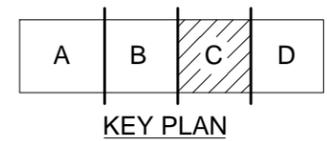
M-111

DATEFORM REVISION: 10 MAY 2014

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PARTIAL ROOF PLAN - AREA C
1/8"=1'-0"



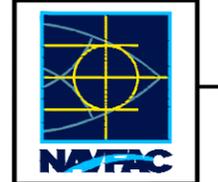
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SHEET KEYNOTES

- REFER TO ENLARGED MECHANICAL ROOM PLAN M-403 FOR EQUIPMENT THIS AREA.
- INDIVIDUAL MECHANICAL EQUIPMENT.

REV	DESCRIPTION	DATE	APPR



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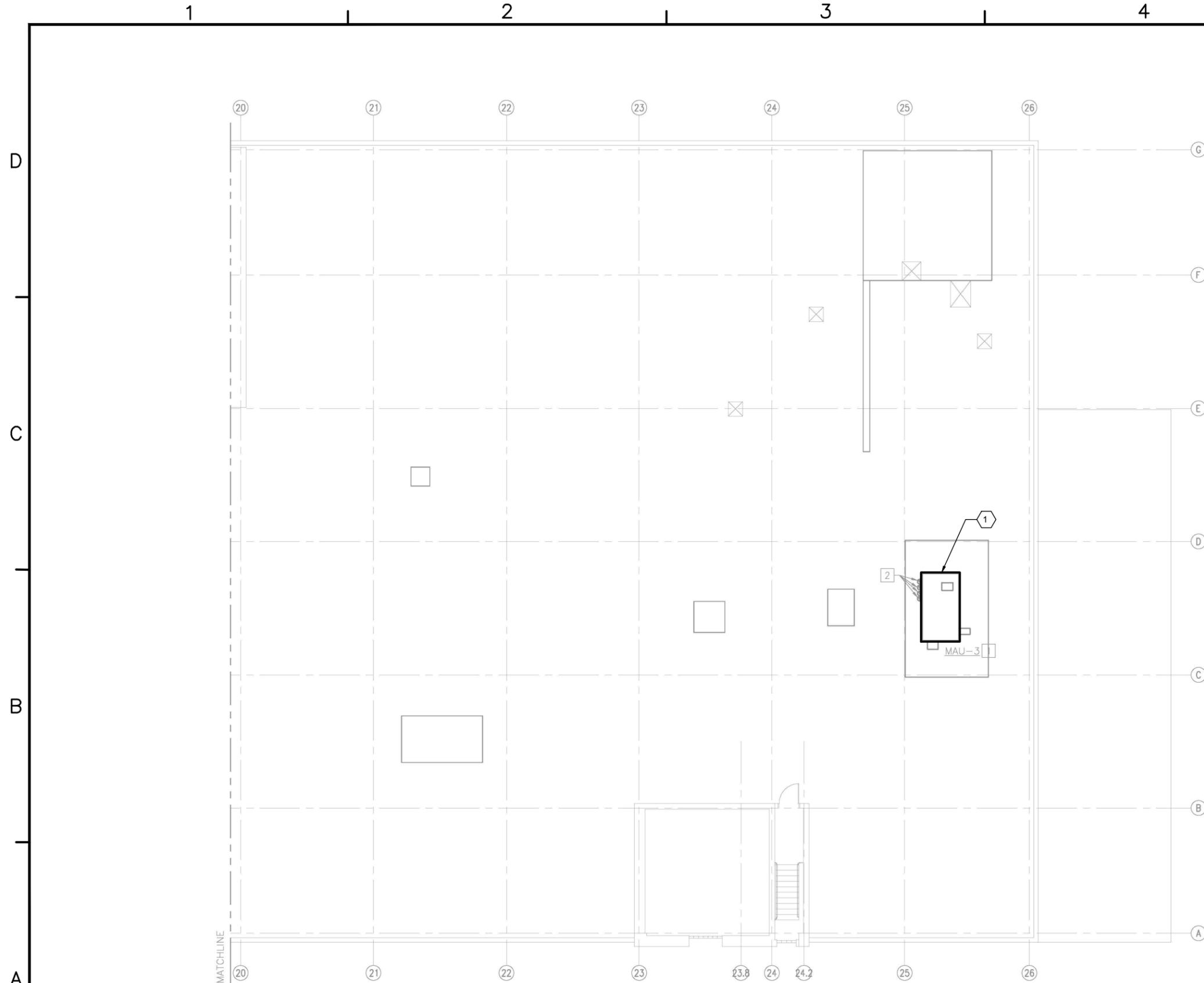
ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

AVE INFO

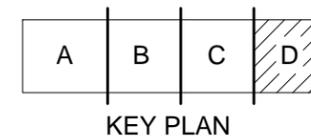
APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ DRW IHK CHK BDC
<<PM/DM>> MHP
BRANCH MANAGER
CHIEF ENG/ARCH
<<XXX>>

NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA
DFSP
HVIC AND DDC
FACILITY OPTIMIZATION
BUILDING V-53
PARTIAL ROOF PLAN - AREA C

SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724470
SHEET 102 OF 119	
M-113	



PARTIAL ROOF PLAN - AREA D
1/8"=1'-0"



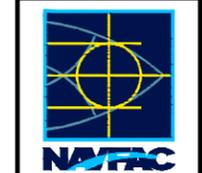
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SHEET KEYNOTES

- 1 INDIVIDUAL MECHANICAL EQUIPMENT.

APP'R	DATE	DESCRIPTION	REV



SEAL

ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

AVE INFO

APPROVED
FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE 06/02/2016

DES PTJ | DRW IHK | CHK BDC

<<PM/DM>> MHP

BRANCH MANAGER

CHIEF ENG/ARCH

<<XXX>>

NAVY-ATLANTIC
DFSP
NORFOLK, VA

NAVAL FACILITIES ENGINEERING COMMAND
HVAC AND DDC
FACILITY OPTIMIZATION
BUILDING V-53
PARTIAL ROOF PLAN - AREA D

SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724471
SHEET 103 OF 119	

M-114

DRAWING REVISION: 10 MAY 2014

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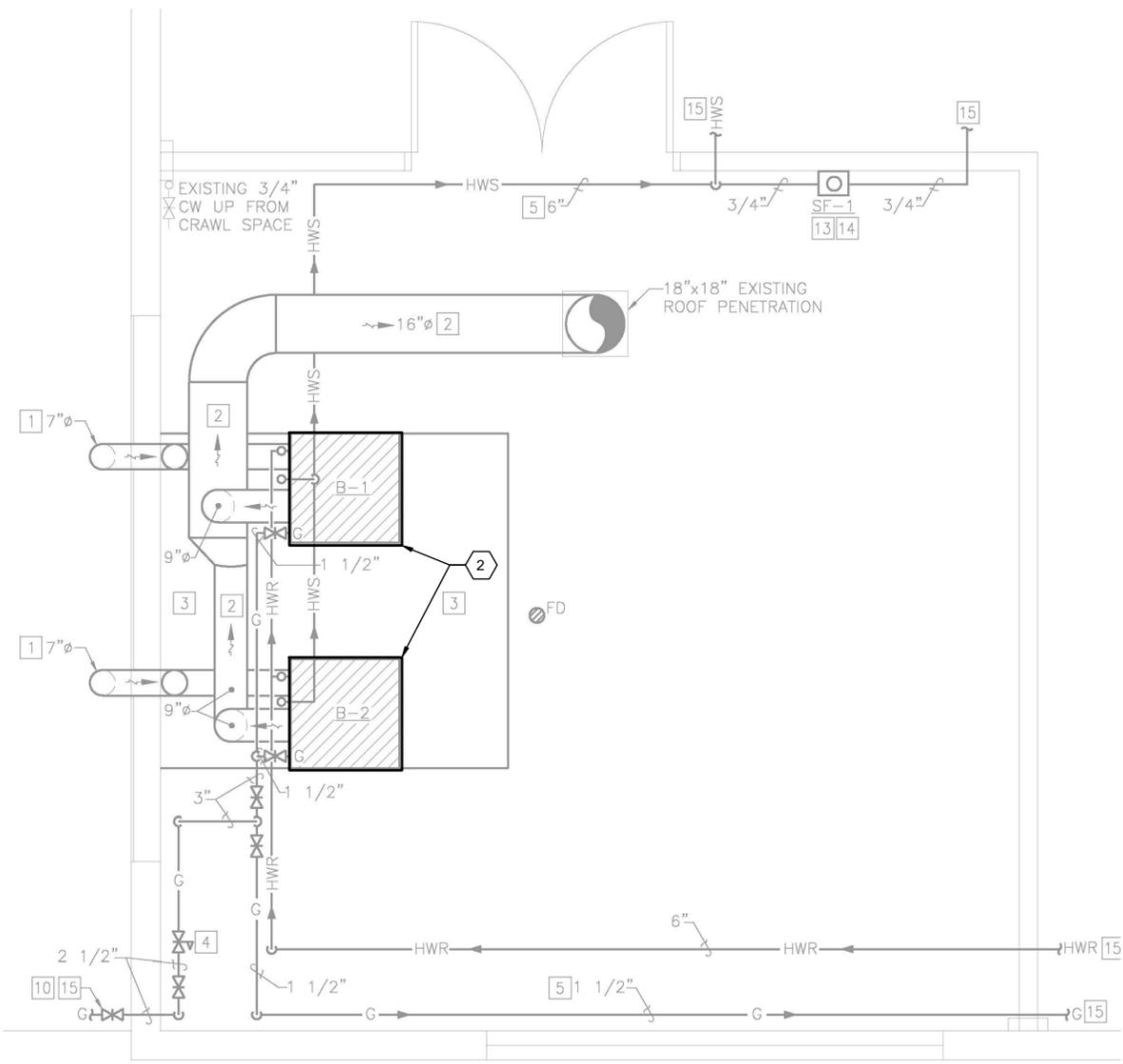
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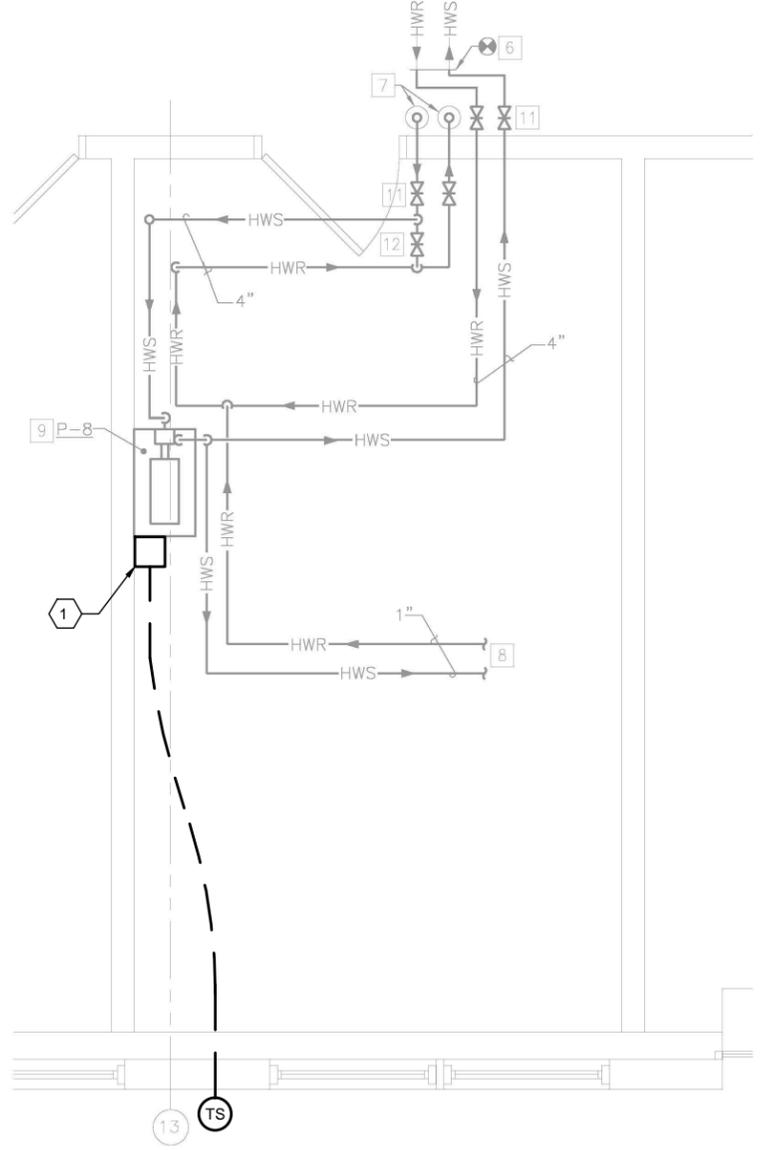
SHEET KEYNOTES

- PROVIDE OUTDOOR AIR TEMPERATURE SENSOR TO ENABLE/DISABLE HEATING WATER CIRCULATION PUMP P-8 AS PART OF ECM WORK.
- BOILERS ASSOCIATED WITH DDC UPGRADE.



ENLARGED BOILER ROOM MECHANICAL PLAN

1/2"=1'-0"



ENLARGED FIRST FLOOR MECHANICAL ROOM PLAN

1/2"=1'-0"



APPR	DATE								
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2411 Dulles Corner Park Suite 500 Herndon, VA 20177									
APPROVED: _____ FOR COMMANDER NAVFAC ACTIVITY: _____									
SATISFACTORY TO DATE: 06/02/2016 DES: PTJ DRAW: IHK CHK: BDC <<PM/DM>> MHP BRANCH MANAGER CHIEF: ENG/ARCH <<XXX>>									
NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VA HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-53 ENLARGED FIRST FLOOR PLANS									
SCALE: AS NOTED EPROJECT NO.: 1333285 CONSTR. CONTR. NO.: N62583-11-D-0533 NAVFAC DRAWING NO.: 12724472 SHEET 104 OF 119									
M-401 <small>DRAWING REVISION: 10 MAY 2014</small>									

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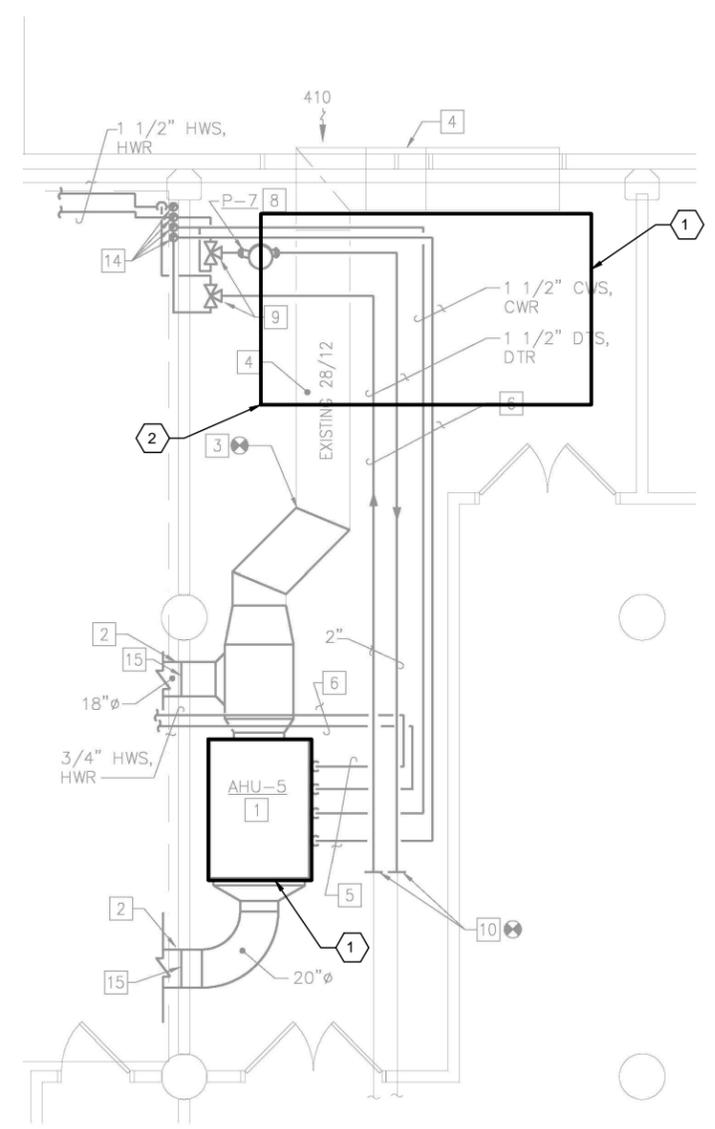
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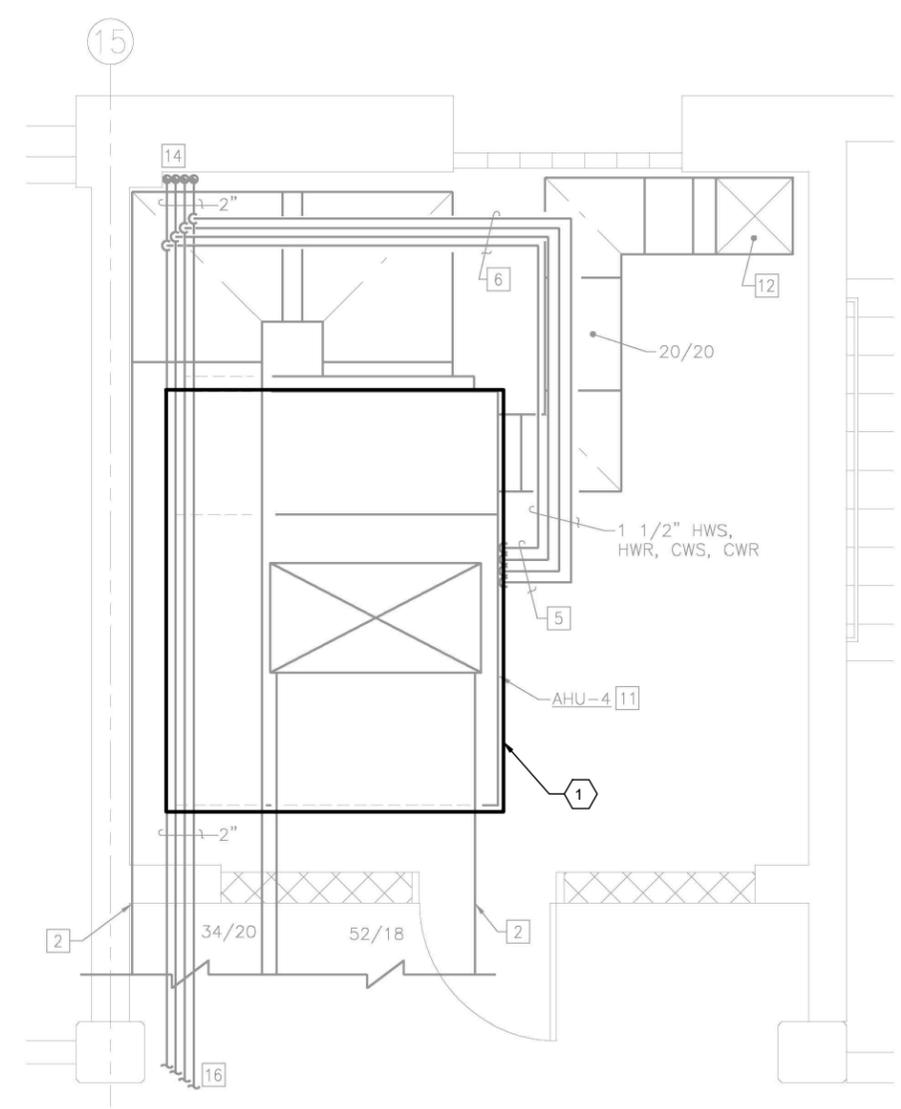
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ENLARGED SECOND FLOOR MECHANICAL ROOM
1/4"=1'-0"



**ENLARGED MECHANICAL ROOM
SECOND FLOOR ABANDONED ELEVATOR SHAFT**
1/2"=1'-0"



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SHEET KEYNOTES

- AIR HANDLING UNIT.
- PROVIDE OUTDOOR AIR DAMPER ACTUATOR AND CONTROLS TO OPEN LINKED DAMPERS TO FULL RETURN DURING UNOCCUPIED PERIODS AS PART OF ECM WORK.

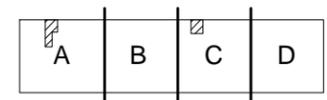
REV	DESCRIPTION	DATE	APP'D



ch2m
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED	ACTIVITY
FOR COMMANDER NAVFAC	
SATISFACTORY TO DATE	06/02/2016
DES	PTJ
DRW	IHK
CHK	BDC
<<PM/DM>>	MHP
BRANCH MANAGER	
CHIEF ENG/ARCH	
<XXX>	

NAVFAC ENGINEERING COMMAND
NORFOLK, VA
HVC AND DDC
FACILITY OPTIMIZATION
BUILDING V-53
ENLARGED PLANS
MID-ATLANTIC
DFSP



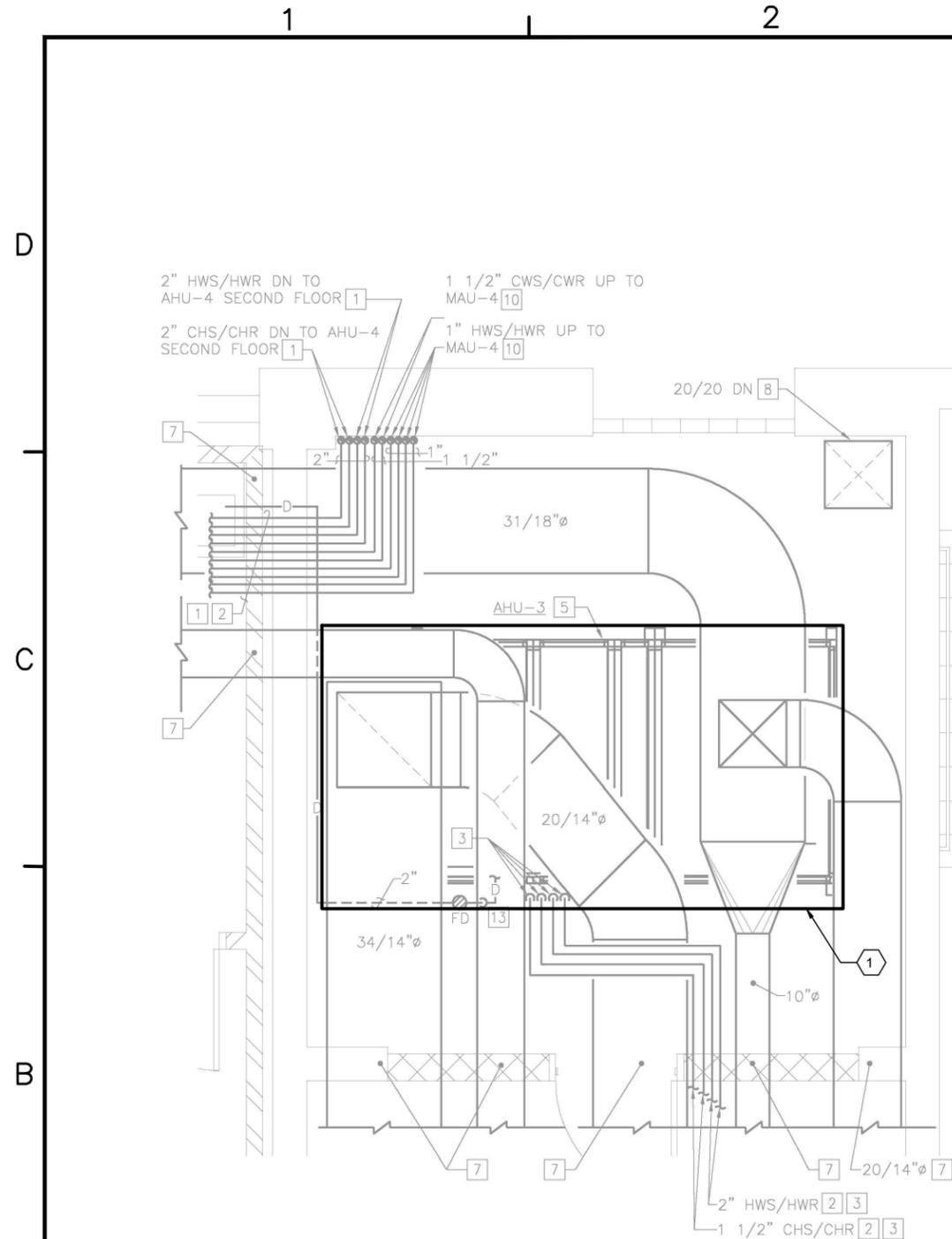
KEY PLAN

SCALE:	AS NOTED
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CONSTR. CONTR. NO.	N62583-11-D-0533
NAVFAC DRAWING NO.	12724473
SHEET	105 OF 119

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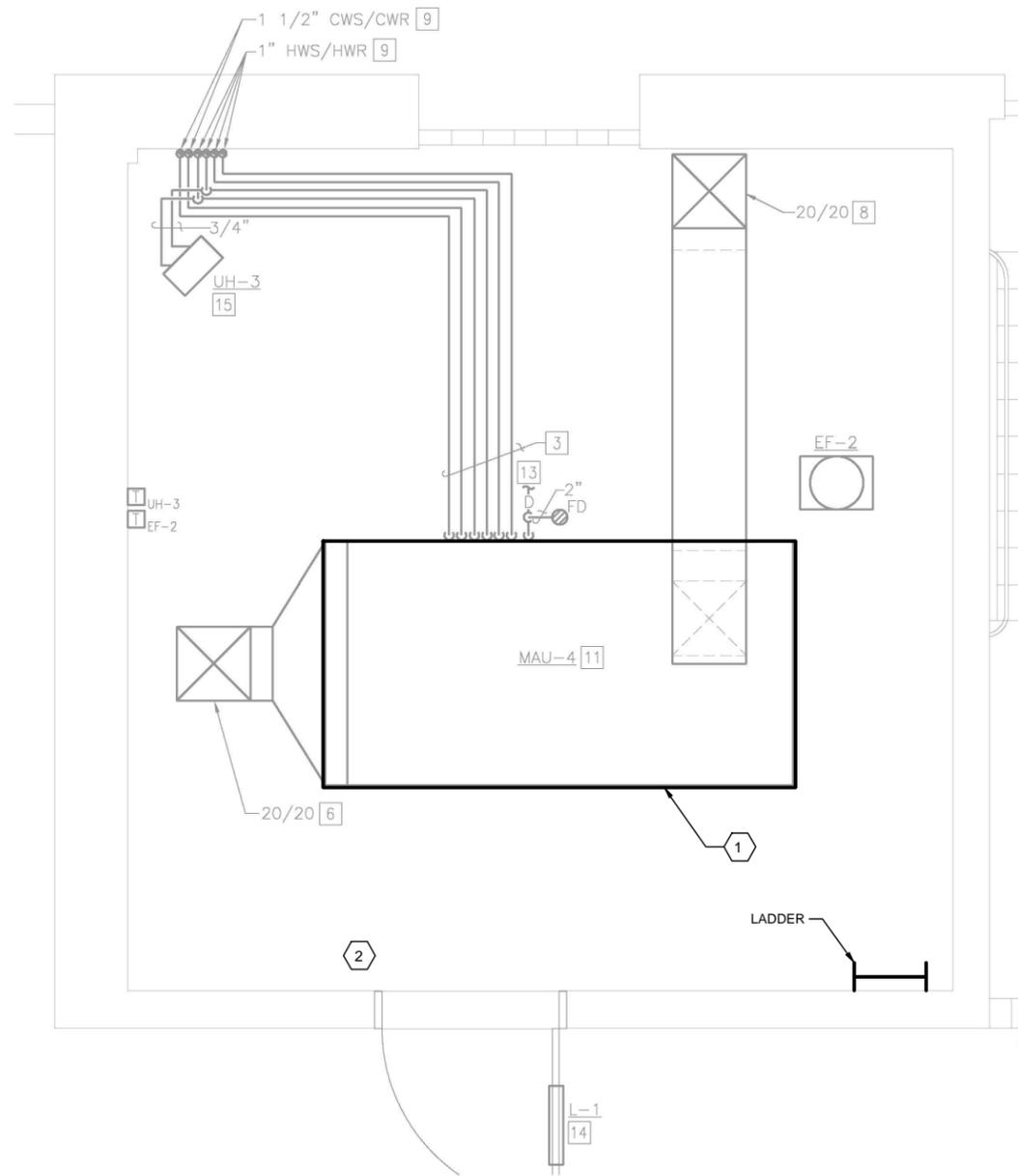
DRAWING REVISION: 10 MAY 2014

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ENLARGED MECHANICAL ROOM THIRD FLOOR
ABANDONED ELEVATOR SHAFT

1/2"=1'-0"



ENLARGED MECHANICAL ROOM ROOF
ABANDONED ELEVATOR SHAFT

1/2"=1'-0"

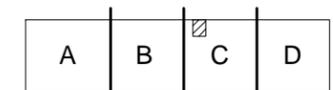


GENERAL NOTES

1. THIS PROJECT INCLUDES REPLACING THE EXISTING DDC SYSTEM THROUGHOUT THE FACILITY. UPGRADE CONSISTS OF REPLACING OR ADDING CONTROLS, VALVES AS NECESSARY, ACTUATORS, AND SENSORS FOR ALL EQUIPMENT PER THE DDC POINTS LIST INCLUDED IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
2. PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
3. RECORD DRAWINGS OF THE MECHANICAL SYSTEMS, CURRENT POINTS LIST AND SEQUENCES, AND DDC CONNECTED COMPONENTS ARE INCLUDED FOR REFERENCE ONLY TO REPRESENT CURRENTLY INSTALLED CONTROL EQUIPMENT.
4. THESE CONCEPT DRAWINGS ARE INCLUDED TO DELINEATE THE EXTENT OF THE WORK AREA AND ARE NOT INTENDED TO CONVEY DESIGN DETAILS FOR THE DDC SYSTEM. DESIGN DETAILS ARE LOCATED THROUGHOUT THIS RFP.
5. APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
6. EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR UPGRADE OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
7. PHYSICAL LAYOUT OF MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
8. TYPICAL MECHANICAL EQUIPMENT IS CALLED OUT ON THESE CONCEPT DRAWINGS TO REPRESENT GENERAL CONFIGURATION AND LOCATIONS OF ITEMS. ALL EQUIPMENT TO BE CONTROLLED IS NOT HIGHLIGHTED. FIELD VERIFY LOCATIONS OF MINOR ITEMS FOR CONTROL.

SHEET KEYNOTES

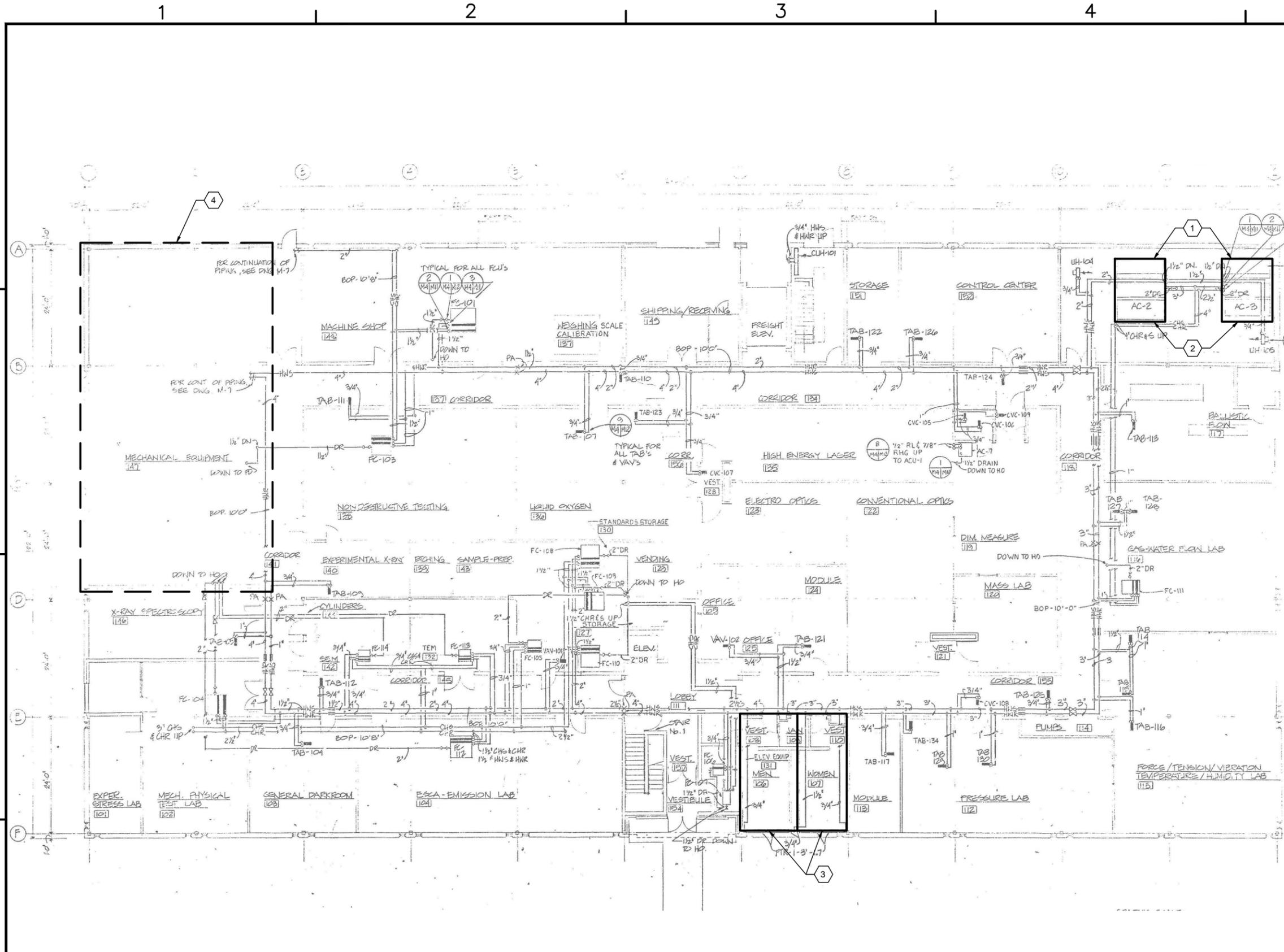
- 1 AIR HANDLING UNIT.
- 2 THIS AREA IS ABOVE ABANDONED ELEVATOR HOISTWAY. ACCESS IS THROUGH LADDER AT THIRD FLOOR STAIR LANDING.



KEY PLAN

APPR	DATE
DESCRIPTION	DATE
SYN	DATE
2411 Dulles Corner Park Suite 500 Herndon, VA 20177	
APPROVED:	
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE 06/02/2016	
DES	PTJ
DRW	IHK
CHK	BDC
<<PM/DM>>	
BRANCH MANAGER	
MIHP	
CHIEF ENG/ARCH	
<<XXX>>	
NAVFAC ENGINEERING COMMAND	
NORFOLK, VA	
HVAC AND DDC	
FACILITY OPTIMIZATION	
BUILDING V-53	
ENLARGED PLANS	
M-ATLANTIC	
DFSP	
SCALE:	AS NOTED
PROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724474
SHEET	106 OF 119
M-403	
<small>DRAWING REVISION: 10 MAY 2014</small>	

BUILDING V-61



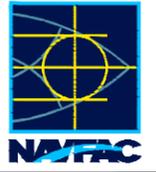
FIRST FLOOR PIPING PLAN
3/32"=1'-0"

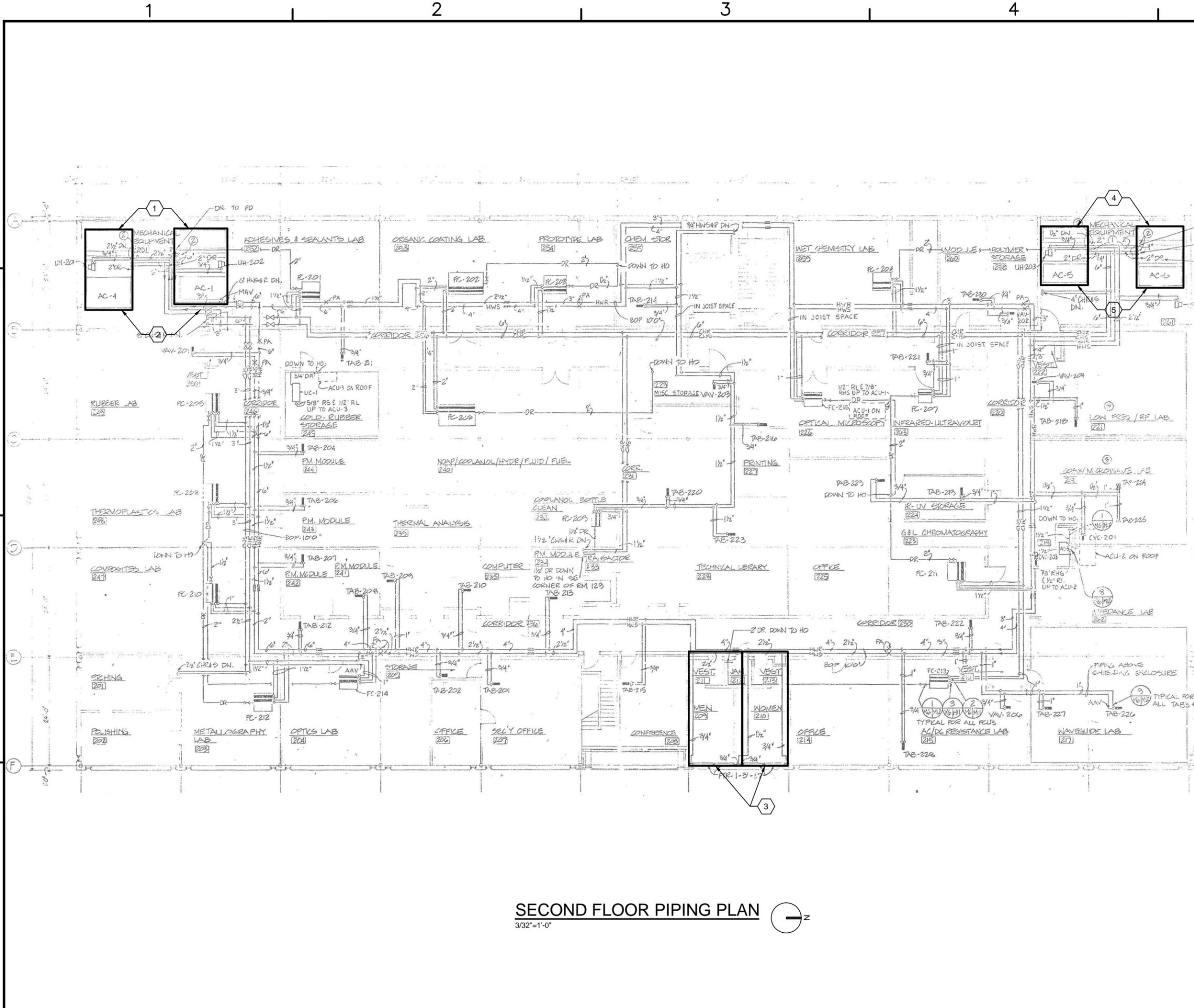
GENERAL NOTES

- THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
- PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
- AVAILABLE RECORD DRAWINGS DATE FROM THE ORIGINAL BUILDING CONSTRUCTION AND ARE INCLUDED FOR REFERENCE IN PART 6. ALL WORK SHALL BE BASED ON THE EXISTING SITE CONDITIONS AS RENOVATIONS AND MISSION CHANGES WILL HAVE MODIFIED THE BUILDING SYSTEMS.
- EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
- PHYSICAL LAYOUT OF MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 6 VAV UNITS, TERMINAL AIR BLENDERS, OR CONSTANT VOLUME BOXES TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 3 FAN-COIL UNITS TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- AVAILABLE RECORD DRAWINGS IDENTIFY 2 DX/ELECTRIC HEAT UNITS AS AC-7 AND AC-8. THESE UNITS ARE INCLUDED IN THE DDC EXPANSION POINTS. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- UPDATE/OCCUPANCY SCHEDULES FOR THE EXISTING AHUS (AC-1 THROUGH AC-6) AT THE EXISTING DDC SYSTEM AFTER IMPLEMENTATION OF THE DDC EXPANSION AS AN ECM.
- REFER TO RECORD DRAWINGS IN PART 6 FOR INFORMATION REGARDING EXISTING EQUIPMENT CONFIGURATION AND CONTROL SEQUENCES.

SHEET KEYNOTES

- AIR HANDLING UNITS AC-2 AND AC-3 FOR DDC EXPANSION.
- CONSIDER ZONING AND EQUIPMENT CONFIGURATION FOR DESIGN AND INSTALLATION OF CO2 SENSORS. MODIFY EXISTING AC-2 AND AC-3 MODULATING ECONOMIZER OUTDOOR AIR CONTROL ALGORITHMS FOR DEMAND CONTROLLED VENTILATION FOR ECM.
- PROVIDE OCCUPANCY SENSORS FOR TOILET ROOM LIGHTING FOR BOTH GENDERS FOR ECM.
- REFER TO ENLARGED MECHANICAL ROOM PLAN ON M-7 FOR EQUIPMENT IN THIS AREA.

APPR	DATE	
SYN	DESCRIPTION	
		
		
2411 Dulles Corner Park Suite 500 Herndon, VA 20177		
APPROVED	DATE	
FOR COMMANDER NAVFAC	ACTIVITY	
SATISFACTORY TO DATE	06/02/2016	
DES	PTJ	DRW
IHK	CHK	BDC
<<PM/DM>>		MHP
BRANCH MANAGER		
CHIEF ENG/ARCH		
<<XXX>>		
NAVFAC ENGINEERING COMMAND NORFOLK, VA DFSP		
HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-61 FIRST FLOOR PLAN		
SCALE:	AS NOTED	
EPROJCT NO.:	1333285	
CONSTR. CONTR. NO.	N62583-11-D-0533	
NAVFAC DRAWING NO.	12724475	
SHEET	107	OF 119
M-101		
<small>DRAWING REVISION: 10 MAY 2014</small>		



SECOND FLOOR PIPING PLAN
3/32"=1'-0"



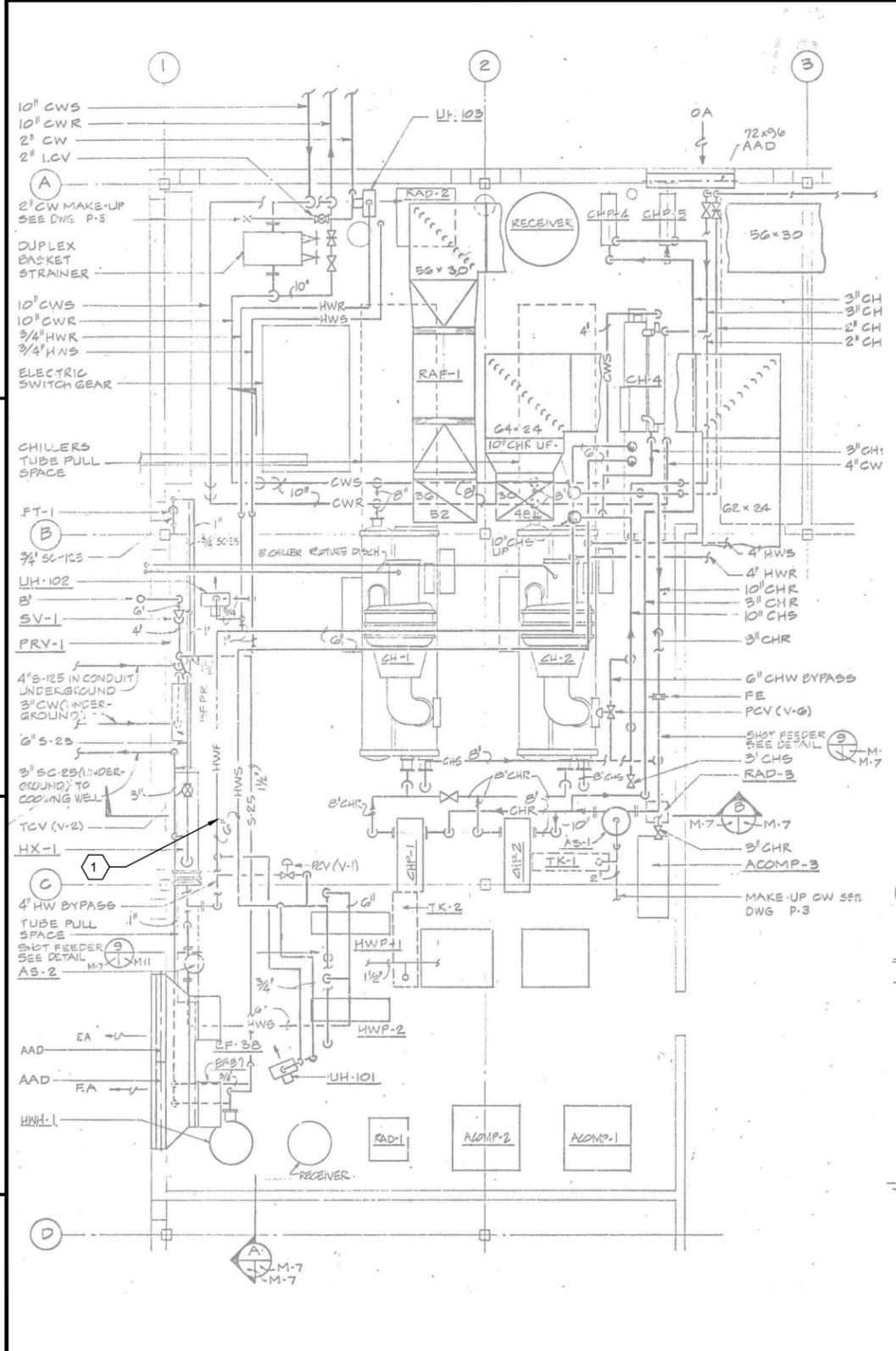
GENERAL NOTES

- THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
- PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
- AVAILABLE RECORD DRAWINGS DATE FROM THE ORIGINAL BUILDING CONSTRUCTION AND ARE INCLUDED FOR REFERENCE IN PART 6. ALL WORK SHALL BE BASED ON THE EXISTING SITE CONDITIONS AS RENOVATIONS AND MISSION CHANGES WILL HAVE MODIFIED THE BUILDING SYSTEMS.
- EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
- PHYSICAL LAYOUT OF MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 6 VAV UNITS, TERMINAL AIR BLENDERS, OR CONSTANT VOLUME BOXES TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 3 FAN-COIL UNITS TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- AVAILABLE RECORD DRAWINGS IDENTIFY 2 DX/ELECTRIC HEAT UNITS AS AC-7 AND AC-8. THESE UNITS ARE INCLUDED IN THE DDC EXPANSION POINTS. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- UPDATE/ADD OCCUPANCY SCHEDULES FOR THE EXISTING AHUS (AC-1 THROUGH AC-6) AT THE EXISTING DDC SYSTEM AFTER IMPLEMENTATION OF THE DDC EXPANSION AS AN ECM.
- REFER TO RECORD DRAWINGS IN PART 6 FOR INFORMATION REGARDING EXISTING EQUIPMENT CONFIGURATION AND CONTROL SEQUENCES.

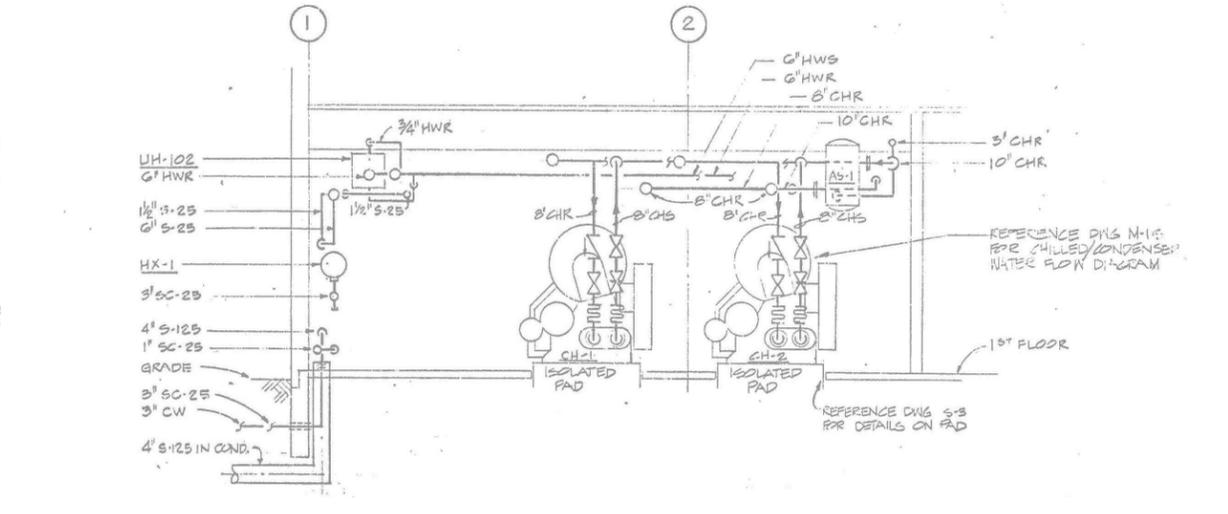
SHEET KEYNOTES

- AIR HANDLING UNITS AC-1 AND AC-4 FOR DDC EXPANSION.
- CONSIDER ZONING AND EQUIPMENT CONFIGURATION FOR DESIGN AND INSTALLATION OF CO2 SENSORS. MODIFY EXISTING AC-1 AND AC-4 MODULATING ECONOMIZER OUTDOOR AIR CONTROL ALGORITHMS FOR DEMAND CONTROLLED VENTILATION FOR ECM.
- PROVIDE OCCUPANCY SENSORS FOR TOILET ROOM LIGHTING FOR BOTH GENDERS FOR ECM.
- AIR HANDLING UNITS AC-5 AND AC-6 FOR DDC EXPANSION.

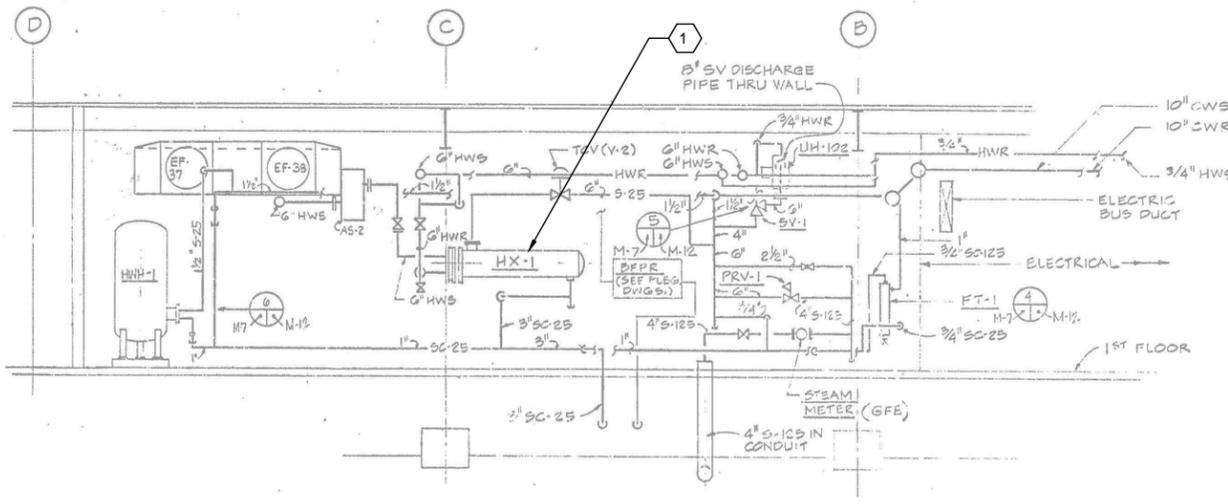
APPR	DATE	
REV	DESCRIPTION	
2411 Dulles Corner Park Suite 500 Herndon, VA 20177		
APPROVED	DATE	
FOR COMMANDER NAVFAC		
ACTIVITY		
SATISFACTORY TO DATE	06/02/2016	
DES	PTJ	DRW
CHK	IHK	CHK
BDC		
BRANCH MANAGER	MHP	
CHIEF ENG/ARCH		
CHIEF		
NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VA DFSP HVAC AND DDC FACILITY OPTIMIZATION BUILDING V-61 SECOND FLOOR PLAN		
SCALE:	AS NOTED	
EPROJCT NO.:	1333285	
CONSTR. CONTR. NO.:	N62583-11-D-0533	
NAVFAC DRAWING NO.:	12724476	
SHEET	108	OF 119
M-102		
<small>DRAWING REVISION: 10 MAY 2014</small>		



PARTIAL FIRST FLOOR PLAN
3/16"=1'-0"



SECTION B
NTS



SECTION A
NTS

GENERAL NOTES

- THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
- PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
- AVAILABLE RECORD DRAWINGS DATE FROM THE ORIGINAL BUILDING CONSTRUCTION AND ARE INCLUDED FOR REFERENCE IN PART 6. ALL WORK SHALL BE BASED ON THE EXISTING SITE CONDITIONS AS RENOVATIONS AND MISSION CHANGES WILL HAVE MODIFIED THE BUILDING SYSTEMS.
- EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
- PHYSICAL LAYOUT OF MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 6 VAV UNITS, TERMINAL AIR BLENDERS, OR CONSTANT VOLUME BOXES TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- DDC EXPANSION WORK INCLUDES THE ADDITION OF 3 FAN-COIL UNITS TO THE EXISTING DDC SYSTEM. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- AVAILABLE RECORD DRAWINGS IDENTIFY 2 DX/ELECTRIC HEAT UNITS AS AC-7 AND AC-8. THESE UNITS ARE INCLUDED IN THE DDC EXPANSION POINTS. FIELD LOCATE EXISTING UNITS NOT VISIBLE TO THE DDC SYSTEM AND PROVIDE CONNECTIVITY.
- UPDATE/ADD OCCUPANCY SCHEDULES FOR THE EXISTING AHUS (AC-1 THROUGH AC-6) AT THE EXISTING DDC SYSTEM AFTER IMPLEMENTATION OF THE DDC EXPANSION AS AN ECM.
- REFER TO RECORD DRAWINGS IN PART 6 FOR INFORMATION REGARDING EXISTING EQUIPMENT CONFIGURATION AND CONTROL SEQUENCES.

SHEET KEYNOTES

- EXISTING HOT WATER GENERATING SYSTEM HAS BEEN MODIFIED BY THE INSTALLATION OF A HOT WATER BOILER.

APPROVED	DATE	APP'R
FOR COMMANDER NAVFAC	ACTIVITY	DESCRIPTION
SATISFACTORY TO DATE	06/02/2016	
DES	PTJ	DRW
CHK	IHK	CHK
BDC		
<<PM/DM>>		MHP
BRANCH MANAGER		
CHIEF ENG/ARCH		
<<XXX>>		
NAVAL FACILITIES ENGINEERING COMMAND	NORFOLK, VA	
DFSP		
HVAC AND DDC		
FACILITY OPTIMIZATION		
BUILDING V-61		
PARTIAL FIRST FLOOR PLAN AND SECTIONS		
SCALE:	AS NOTED	
PROJECT NO.:	1333285	
CONSTR. CONTR. NO.:	N62583-11-D-0533	
NAVFAC DRAWING NO.:	12724477	
SHEET	109	OF 119
M-103		
DRAWING REVISION: 10 MAY 2014		

BUILDING W-130

1

2

3

4

5

D

C

B

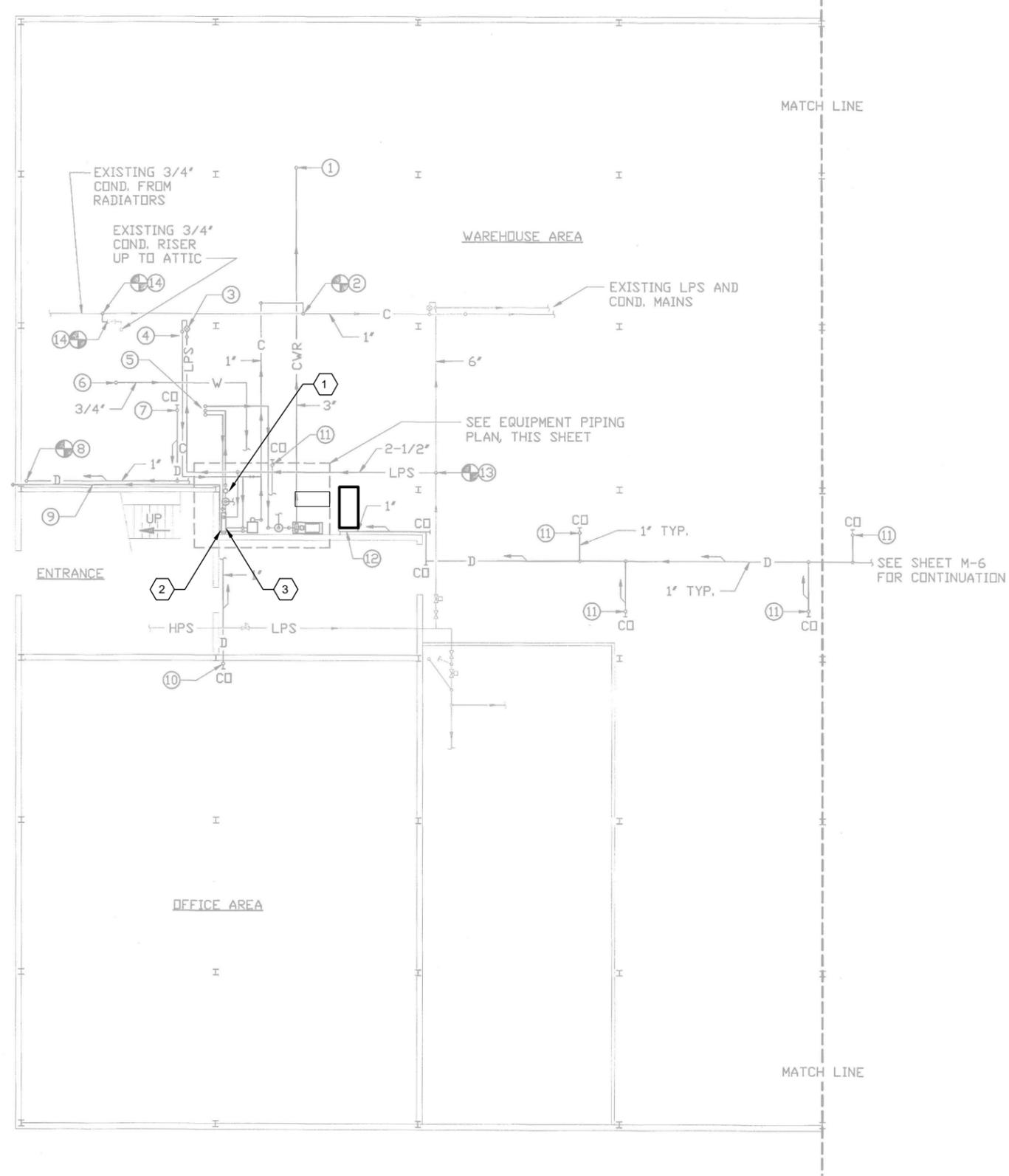
A

D

C

B

A



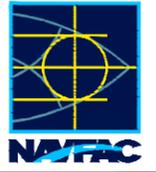
GENERAL NOTES

1. THIS PROJECT INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY. PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
2. APPROXIMATE LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
3. EXACT LOCATIONS FOR EXISTING EQUIPMENT AND SUPPORT INFRASTRUCTURE ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS TO SUPPORT ECM IMPLEMENTATION.
4. PHYSICAL LAYOUT OF FLOOR PLANS/ MECHANICAL ROOMS MAY DIFFER FROM RECORD DRAWING PLANS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.

SHEET KEYNOTES

1. INSTALL STANDALONE CONTROLLER TO CONTROL HOT WATER (HW) TEMPERATURE BASED ON OUTSIDE AIR TEMPERATURE RESET.
2. INSTALL STANALONE CONTROLLER TO MODULATE STEAM FLOW TO HW CONVERTER BASED ON OUTSIDE AIR RESET.
3. INSTALL APPROPRIATE CONTROLS TO SHUT OFF STEAM TO HOT WATER CONVERTER WHEN OUTSIDE AIR TEMPERATURE IS GREATER THAN 50F OR WHEN THE CHILLER IS IN OPERATION.

APPR.	DATE
SYN.	DESCRIPTION

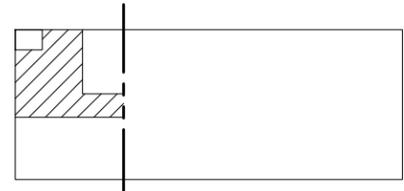


ch2m.
 2411 Dulles Corner Park
 Suite 500
 Herndon, VA 20177

APPROVED
FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES PTJ DRW IHK CHK BDC
<<PM/DM>> MHP
BRANCH MANAGER
CHIEF ENG/ARCH
<XXX>

NAVFAC ENGINEERING COMMAND
 NORFOLK, VA
 DFSP
 HVAC AND DDC
 FACILITY OPTIMIZATION
 BUILDING W-130
 FIRST FLOOR PLAN - SOUTH END

FIRST FLOOR PLAN - SOUTH END
 1/8"=1'-0"



KEY PLAN

SCALE:	AS NOTED
EPROJECT NO.:	1333285
CONSTR. CONTR. NO.	N62583-11-D-0533
NAVFAC DRAWING NO.	12724478
SHEET	110 OF 119
M-101	

1

2

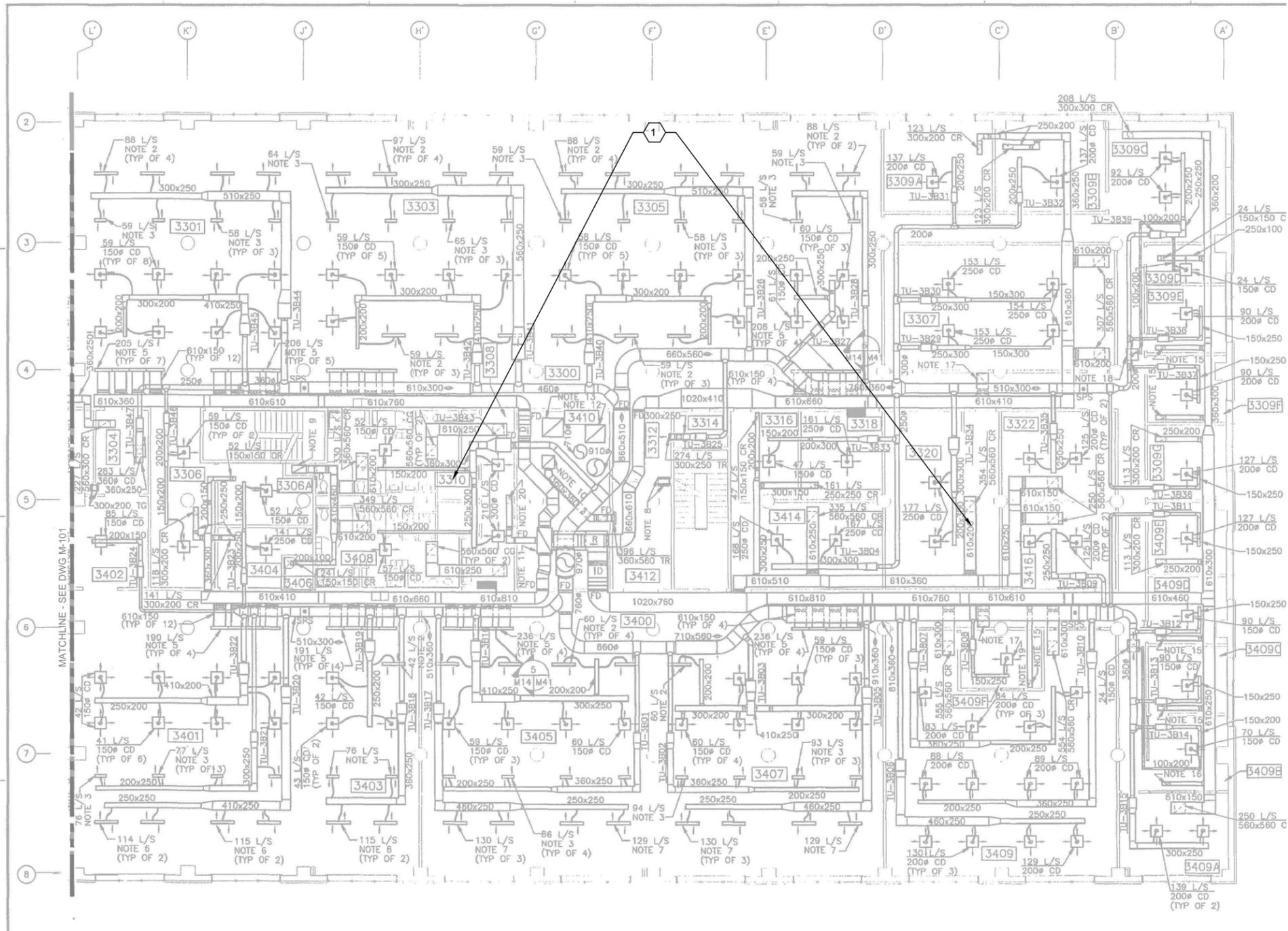
3

4

5

BUILDING X-70

BUILDING Z-133



THIRD FLOOR PARTIAL PLAN

3/32"=1'-0"



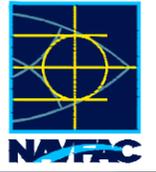
KEY PLAN

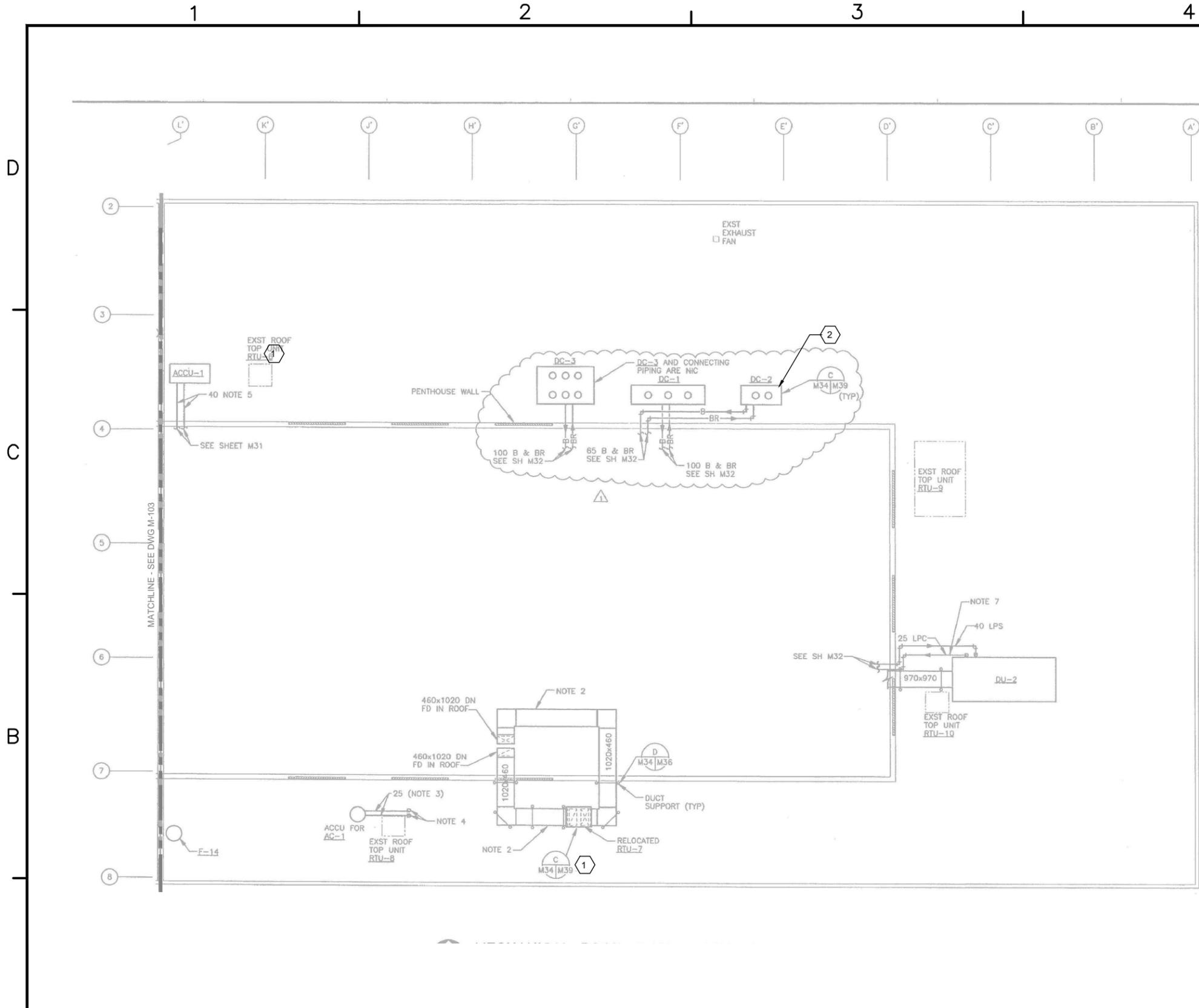
GENERAL NOTES

1. THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
2. RETROCOMMISSIONING THE HVAC SYSTEM IS INCLUDED AS AN ECM. EXTEND RETROCOMMISSIONING EFFORT TO INCLUDE SMOKE DAMPER VERIFICATION.
3. PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
4. GENERAL LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
5. EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
6. CENTRAL MECHANICAL EQUIPMENT IS LOCATED WITHIN THE MECHANICAL PENTHOUSE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
7. DDC EXPANSION FOR VAV BOXES INCLUDES EFFORT ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE ALL VAV BOXES FOR DDC EXPANSION AND RETROCOMMISSIONING.
8. DDC EXPANSION FOR FAN-COILS, DX SPLITS AND CRAC UNITS REQUIRES FIELD LOCATION OF INDOOR EQUIPMENT LOCATED ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE EQUIPMENT FOR DDC EXPANSION AND RETROCOMMISSIONING.
9. DEDICATED OUTDOOR AIR UNITS (DOAS) ARE NOT INCLUDED IN DDC EXPANSION.

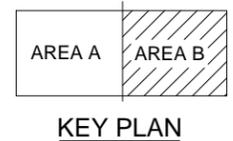
SHEET KEYNOTES

1. PERFORM DDC EXPANSION AND RETRO COMMISSION WORK ON MECHANICAL EQUIPMENT LOCATED ON ALL FIVE FLOORS. THIRD FLOOR SHOWN, OTHER FLOORS SIMILAR.

DATE	APPR.
DESCRIPTION	SYN.
	
	
2411 Dulles Corner Park Suite 500 Herndon, VA 20177	
APPROVED	DATE
FOR COMMANDER NAVFAC	
ACTIVITY	
SATISFACTORY TO DATE	06/02/2016
DES. PTJ DRW. IHK CHK. BDC	
<<PM/DM>>	MHP
BRANCH MANAGER	
CHIEF ENG/ARCH	
<<XXX>>	
NAVAL FACILITIES ENGINEERING COMMAND NORFOLK, VA DFSP	
HVAC AND DDC FACILITY OPTIMIZATION BUILDING Z-133 THIRD FLOOR PARTIAL PLAN	
SCALE:	AS NOTED
EPROJCT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724481
SHEET	113 OF 119
M-102	
<small>DRAWING REVISION: 10 MAY 2014</small>	



ROOF/PENTHOUSE PARTIAL PLAN
3/32"=1'-0"



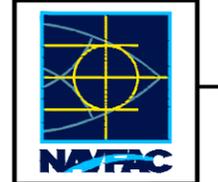
GENERAL NOTES

1. THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
2. RETROCOMMISSIONING THE HVAC SYSTEM IS INCLUDED AS AN ECM. EXTEND RETROCOMMISSIONING EFFORT TO INCLUDE SMOKE DAMPER VERIFICATION.
3. PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
4. GENERAL LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
5. EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
6. CENTRAL MECHANICAL EQUIPMENT IS LOCATED WITHIN THE MECHANICAL PENTHOUSE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
7. DDC EXPANSION FOR VAV BOXES INCLUDES EFFORT ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE ALL VAV BOXES FOR DDC EXPANSION AND RETROCOMMISSIONING.
8. DDC EXPANSION FOR FAN-COILS, DX SPLITS AND CRAC UNITS REQUIRES FIELD LOCATION OF INDOOR EQUIPMENT LOCATED ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE EQUIPMENT FOR DDC EXPANSION AND RETROCOMMISSIONING.
9. DEDICATED OUTDOOR AIR UNITS (DOAS) ARE NOT INCLUDED IN DDC EXPANSION.

SHEET KEYNOTES

- 1 PERFORM DDC EXPANSION AND RETRO COMMISSION WORK ON ROOF MOUNTED EQUIPMENT (TYPICAL).
- 2 REPLACE COIL ON EXISTING DRY COOLER AS PART OF ECM EFFORT.

APPR.	DATE
SYN.	DESCRIPTION



ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
SATISFACTORY TO DATE 06/02/2016
DES. PTJ DRW. IHK CHK. BDC
<<PMJ/DM>>
BRANCH MANAGER MHP
CHIEF ENG/ARCH
<<XXX>>

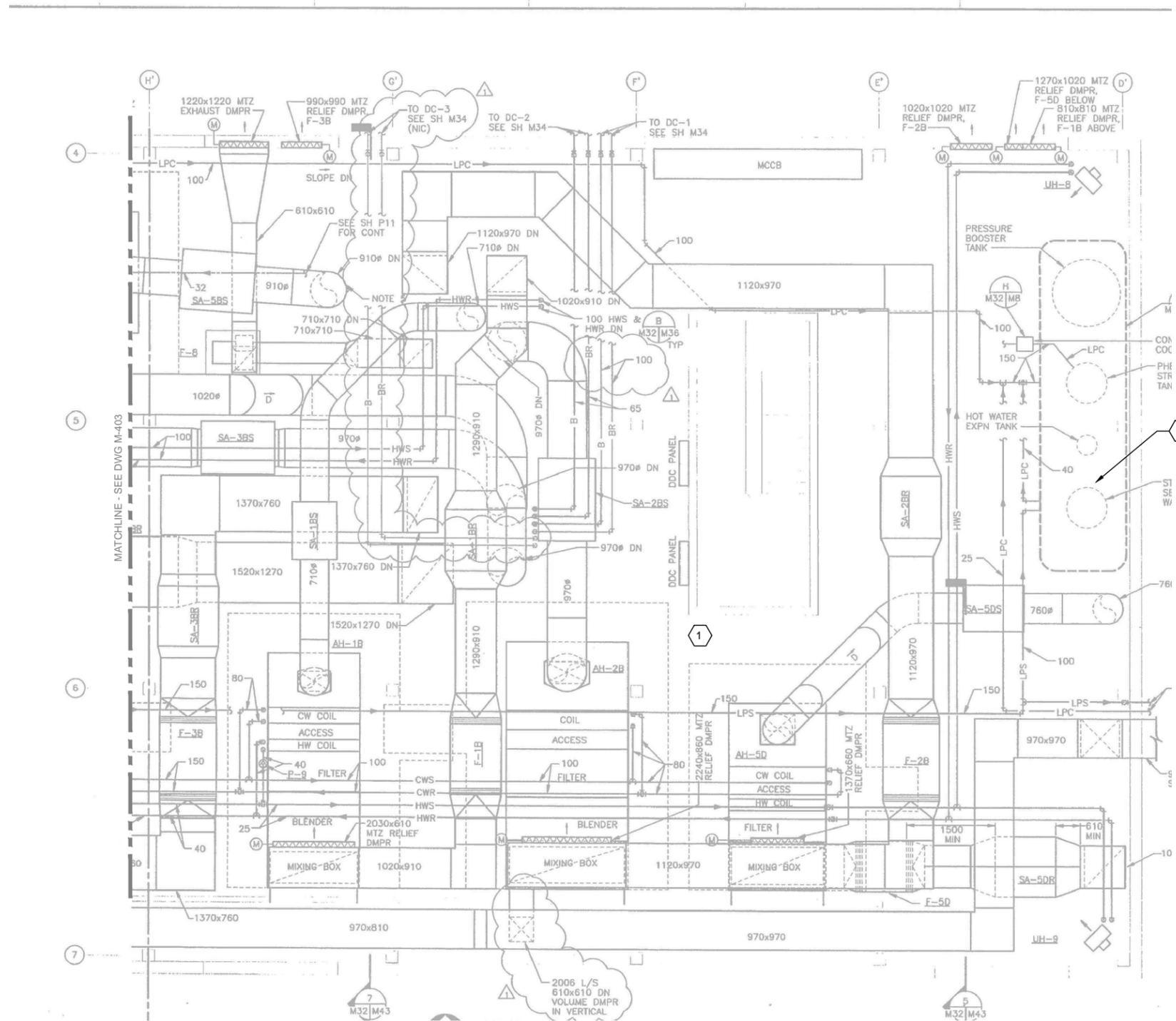
NAVFAC
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VA
DFSP
HVAC AND DDC
FACILITY OPTIMIZATION
BUILDING Z-133
ROOF/PENTHOUSE PARTIAL PLAN

SCALE:	AS NOTED
EPROJECT NO.:	1333285
CONSTR. CONTR. NO.:	N62583-11-D-0533
NAVFAC DRAWING NO.:	12724483
SHEET 115 OF 119	

M-104

1 2 3 4 5

D
C
B
A



PENTHOUSE PARTIAL PLAN
3/16"=1'-0"



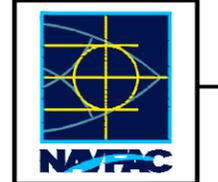
GENERAL NOTES

- THIS PROJECT INCLUDES EXPANSION OF THE EXISTING DDC CONTROL SYSTEM TO INCLUDE POINTS TABULATED IN THE POINTS LIST IN PART 6 OF THIS RFP. WORK ALSO INCLUDES IMPLEMENTATION OF ECM(S) WITHIN THE FACILITY.
- RETROCOMMISSIONING THE HVAC SYSTEM IS INCLUDED AS AN ECM. EXTEND RETROCOMMISSIONING EFFORT TO INCLUDE SMOKE DAMPER VERIFICATION.
- PROVIDE EQUIPMENT AND CONTROL COMPONENTS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- GENERAL LOCATIONS OF EQUIPMENT ARE INDICATED ON CONCEPT DRAWINGS. APPLICABLE NOTES ARE IDENTIFIED BY HEXAGONAL FLAGS.
- EXACT LOCATIONS FOR EXISTING EQUIPMENT, SUPPORT INFRASTRUCTURE, AND AVAILABLE DDC PANELS ARE NOT KNOWN. CONTRACTOR SHALL FIELD-LOCATE EXISTING EQUIPMENT AND MODIFY THE BUILDING SYSTEMS AS NECESSARY FOR EXPANSION OF THE DDC SYSTEM AND ECM IMPLEMENTATION.
- CENTRAL MECHANICAL EQUIPMENT IS LOCATED WITHIN THE MECHANICAL PENTHOUSE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF CENTRAL PLANT EQUIPMENT, DUCTWORK, AND PIPING.
- DDC EXPANSION FOR VAV BOXES INCLUDES EFFORT ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE ALL VAV BOXES FOR DDC EXPANSION AND RETROCOMMISSIONING.
- DDC EXPANSION FOR FAN-COILS, DX SPLITS AND CRAC UNITS REQUIRES FIELD LOCATION OF INDOOR EQUIPMENT LOCATED ON FLOORS 1-5 OF THE FACILITY. CONTRACTOR SHALL INVESTIGATE AND FIELD LOCATE EQUIPMENT FOR DDC EXPANSION AND RETROCOMMISSIONING.
- DEDICATED OUTDOOR AIR UNITS (DOAS) ARE NOT INCLUDED IN DDC EXPANSION.

SHEET KEYNOTES

- PERFORM DDC EXPANSION AND RETRO COMMISSION WORK ON MECHANICAL EQUIPMENT LOCATED IN PENTHOUSE.
- CONTRACTOR SHALL FIELD LOCATE DOMESTIC WATER HEATING EQUIPMENT IF NOT INSTALLED IN MECHANICAL PENTHOUSE FOR DDC EXPANSION, INSTALLATION OF RECIRCULATION PUMP CONTROLS, AND RETROCOMMISSIONING.

REV	DESCRIPTION	DATE	APPR



SEAL

ch2m.
2411 Dulles Corner Park
Suite 500
Herndon, VA 20177

KEY PLAN

APPROVED	DATE
FOR COMMANDER NAVFAC	ACTIVITY
SATISFACTORY TO DATE	06/02/2016
DES	PTJ
DRAW	IHK
CHK	BDC
<<PM/DM>>	MHP
BRANCH MANAGER	
CHIEF ENG/ARCH	<XXX>

NAVFAC ENGINEERING COMMAND
NORFOLK, VA
DFSP
HVAC AND DDC FACILITY OPTIMIZATION
BUILDING Z-133
PENTHOUSE PARTIAL PLAN

SCALE:	AS NOTED
EPROJECT NO.:	1333285
CONSTR. CONTR. NO.	N62583-11-D-0533
NAVFAC DRAWING NO.	12724487
SHEET	119 OF 119
M-404	

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