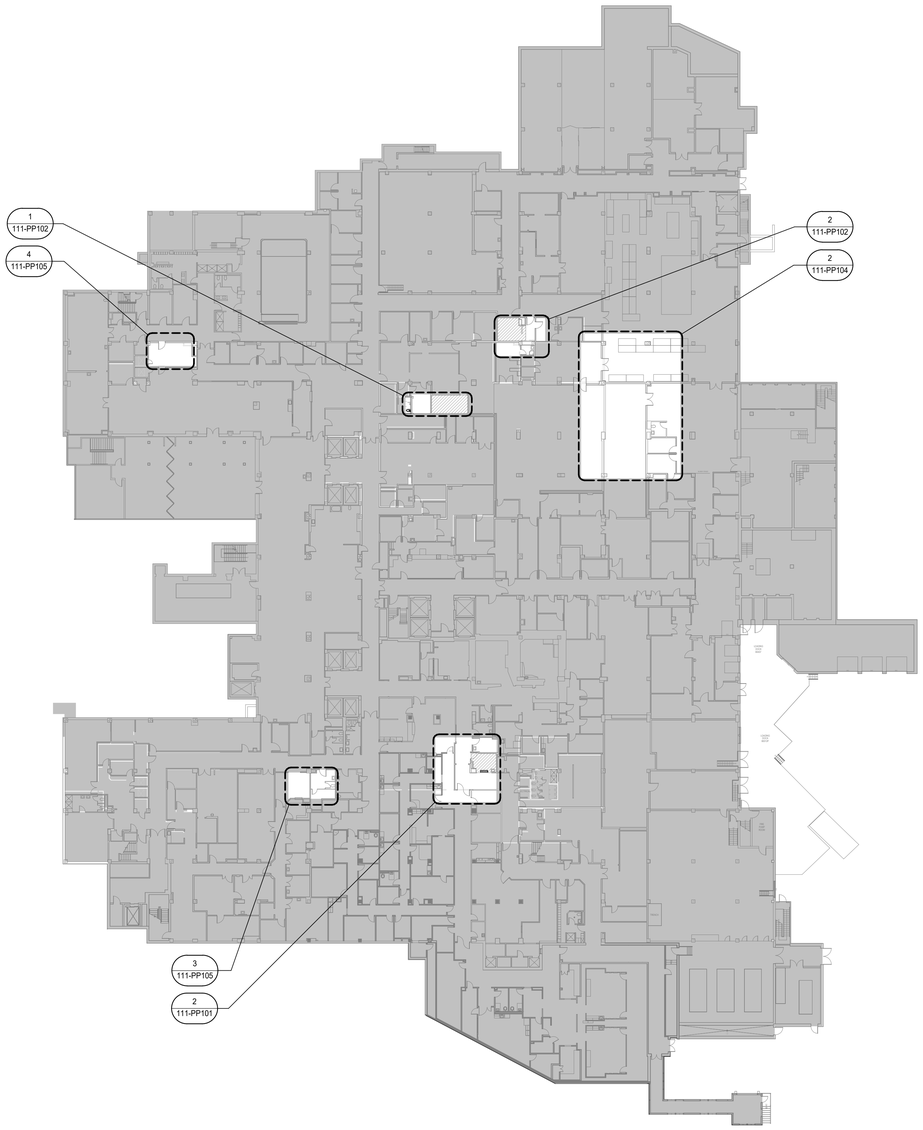
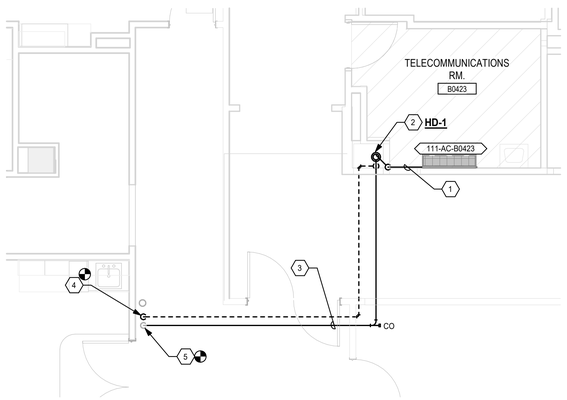
KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO HUB DRAIN.
2. HUB DRAIN (HD-1) TO BE INSTALLED ABOVE CEILING. SEE 5/P-002 FOR MORE INFORMATION.
3. PIPE ROUTED ABOVE CEILING (TYP.).
4. CONNECT TO EXISTING VENT SYSTEM SERVING RESTROOM.
5. CONNECT TO EXISTING SANITARY SYSTEM SERVING RESTROOM.



1 BUILDING 111 BASEMENT FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. B0423 ENLARGED PLAN - PLUMBING (SOUTH)
1/4" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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9/5/25
ARCO G. WIECZOREK
#42666-6
SWISHER
IOWA
PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 BASEMENT - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP101
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

VA FORM 08 - 6231

Autodesk Docs://OCFM East - Milwaukee EHRM (R24)/Consolidated Model (R24).rvt

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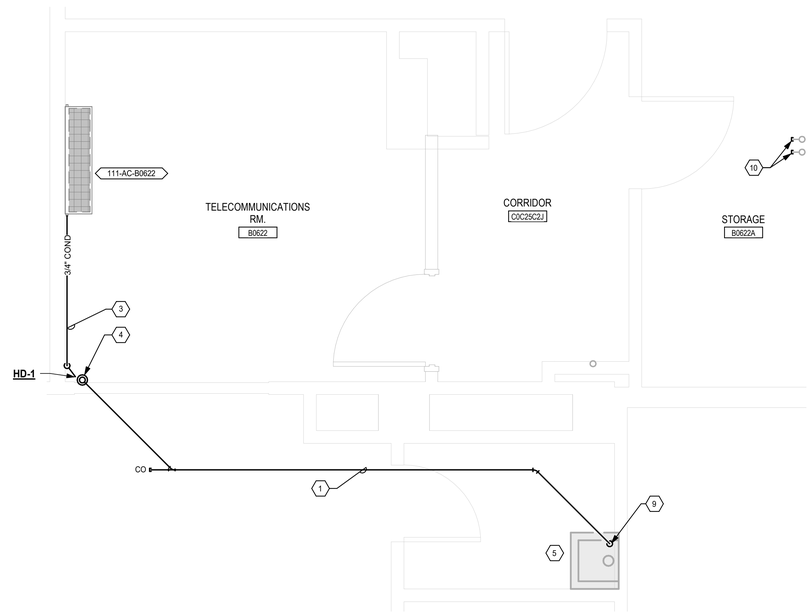
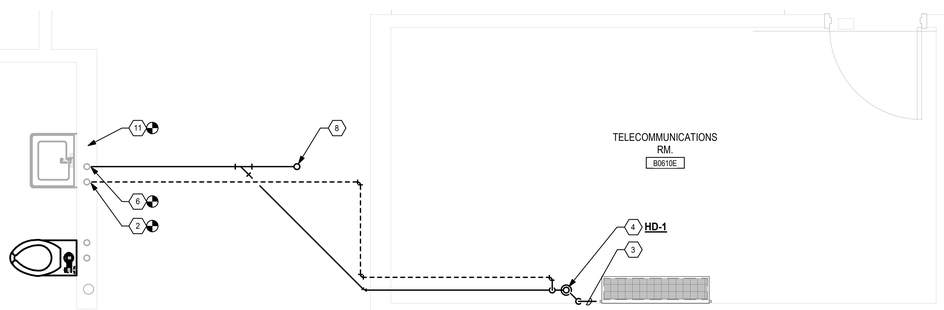
KEY NOTES

1. ROUTE CONDENSATE DRAIN TO EXISTING SERVICE SINK.
2. CONNECT TO EXISTING VENT SYSTEM SERVING RESTROOM.
3. 3/4" CONDENSATE DRAIN. ROUTE TO HUB DRAIN.
4. HUB DRAIN (HD-1) TO BE INSTALLED ABOVE CEILING. 3/P-003 FOR TRAP ARM LENGTH DETAIL.
5. EXISTING SERVICE SINK.
6. CONNECT TO EXISTING SANITARY SYSTEM SERVING RESTROOM.
7. PIPE ROUTED ABOVE CEILNG (TYP FOR ALL PIPE SYSTEMS).
8. 2" SAN UP TO FCO.
9. ROUTE DRAIN AND TERMINATE 4 IN. ABOVE FLOOD RIM OF FIXTURE.
10. CAP DEMOLISHED DOMESTIC WATER LINE TAPS AT MAIN.
11. CONNECT TO EXISTING COLD WATER SYSTEM SERVING FIXTURE.



2 RM. B0622 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"



1 RM. B0610E ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
BUILDING 111 BASEMENT - PLUMBING ENLARGED PLANS

Approved:

Phase
FINAL BID DOCUMENTS

Sprinklered
FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI

Location
5000 W. NATIONAL AVENUE MILWAUKEE, WI

Issue Date SEPTEMBER 5, 2025
Checked AW
Drawn DAW

Project Number 695-21-700
Building Number 111
Drawing Number 111-PP102

VA FORM 08 - 6231

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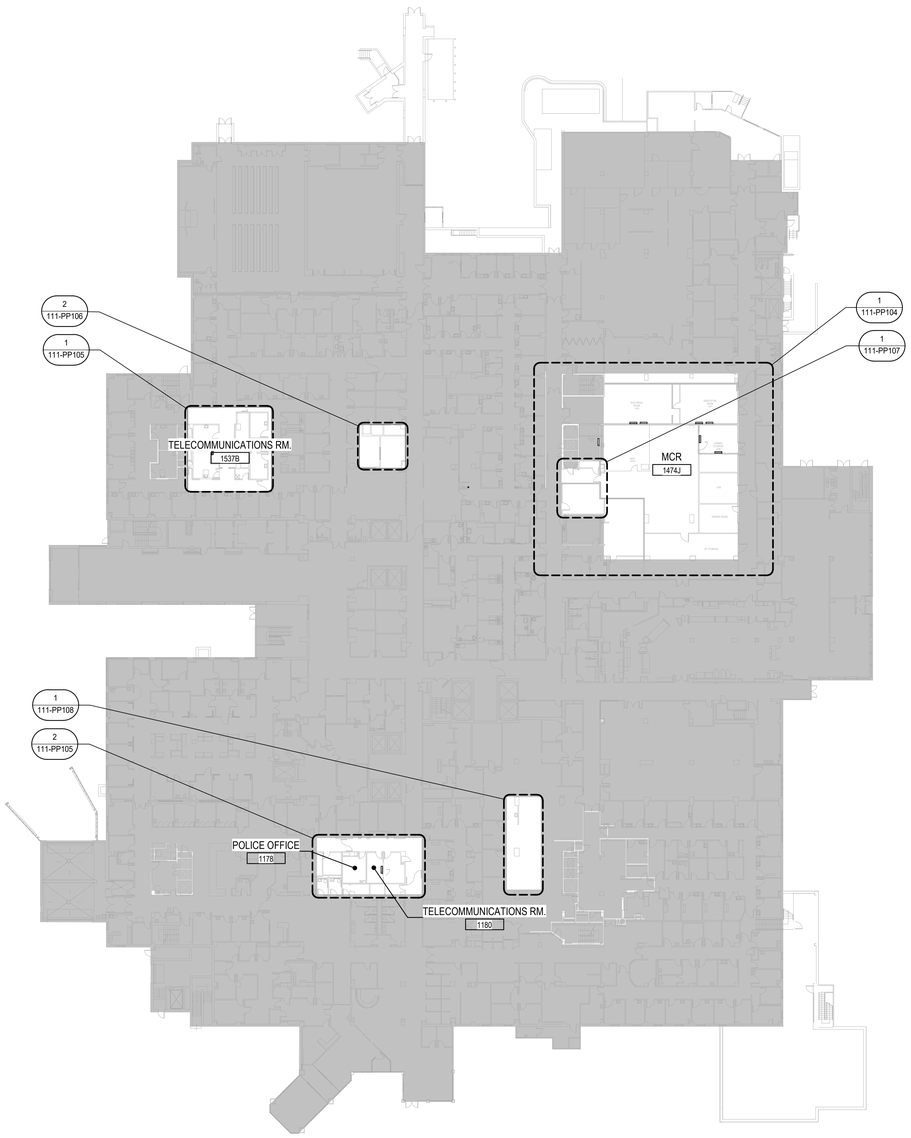

WOMEN'S CLINIC

1 BUILDING 111 LEVEL 01 FLOOR PLAN - PLUMBING
1" = 30'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
BUILDING 111 LEVEL 01 - PLUMBING FLOOR PLAN

Approved:

Phase
FINAL BID DOCUMENTS

Sprinklered
FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI

Location
5000 W. NATIONAL AVENUE MILWAUKEE, WI

Issue Date: SEPTEMBER 5, 2025
Checked: AGW
Drawn: DAW

Project Number: 695-21-700
Building Number: 111
Drawing Number: 111-PP103

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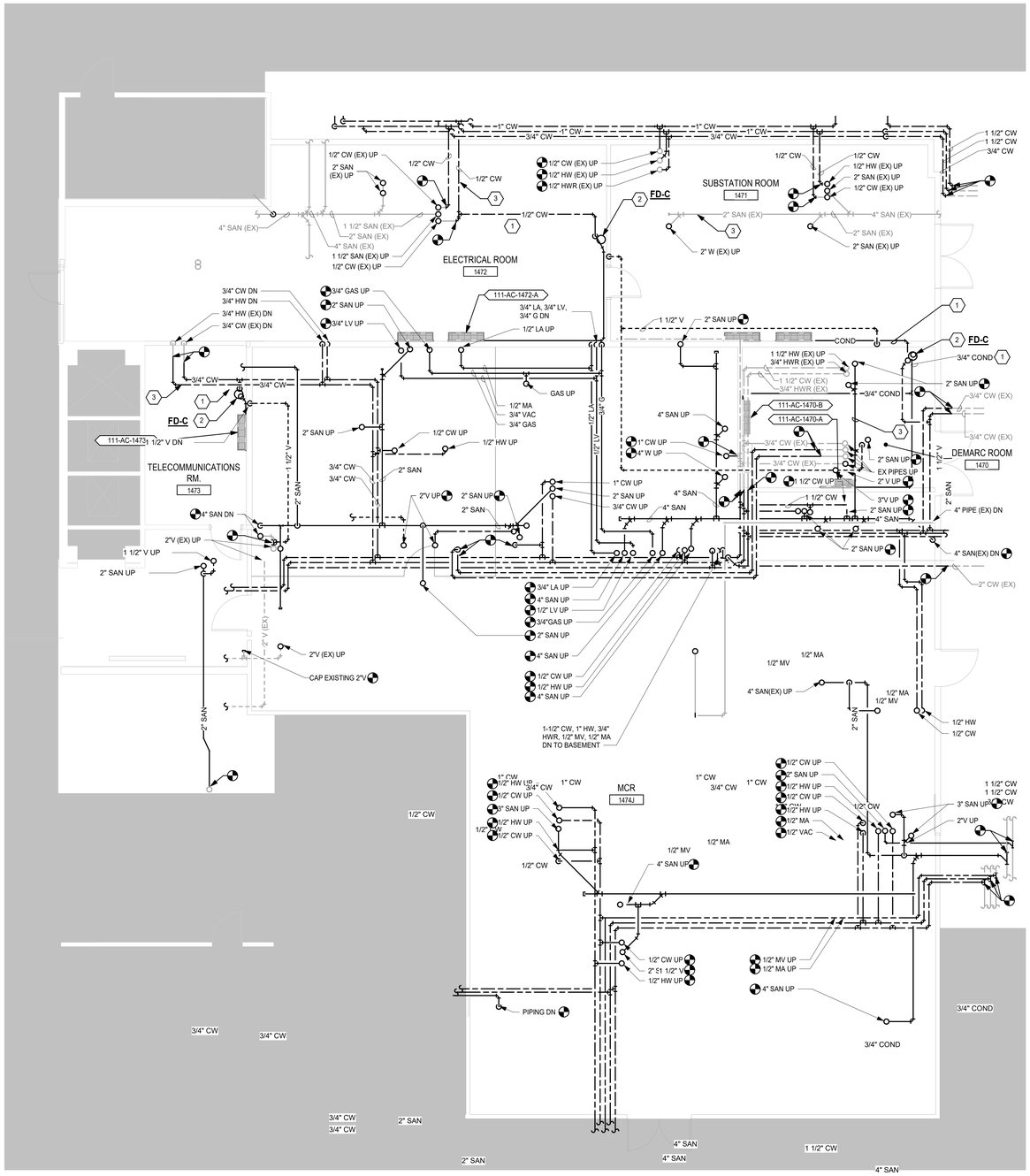
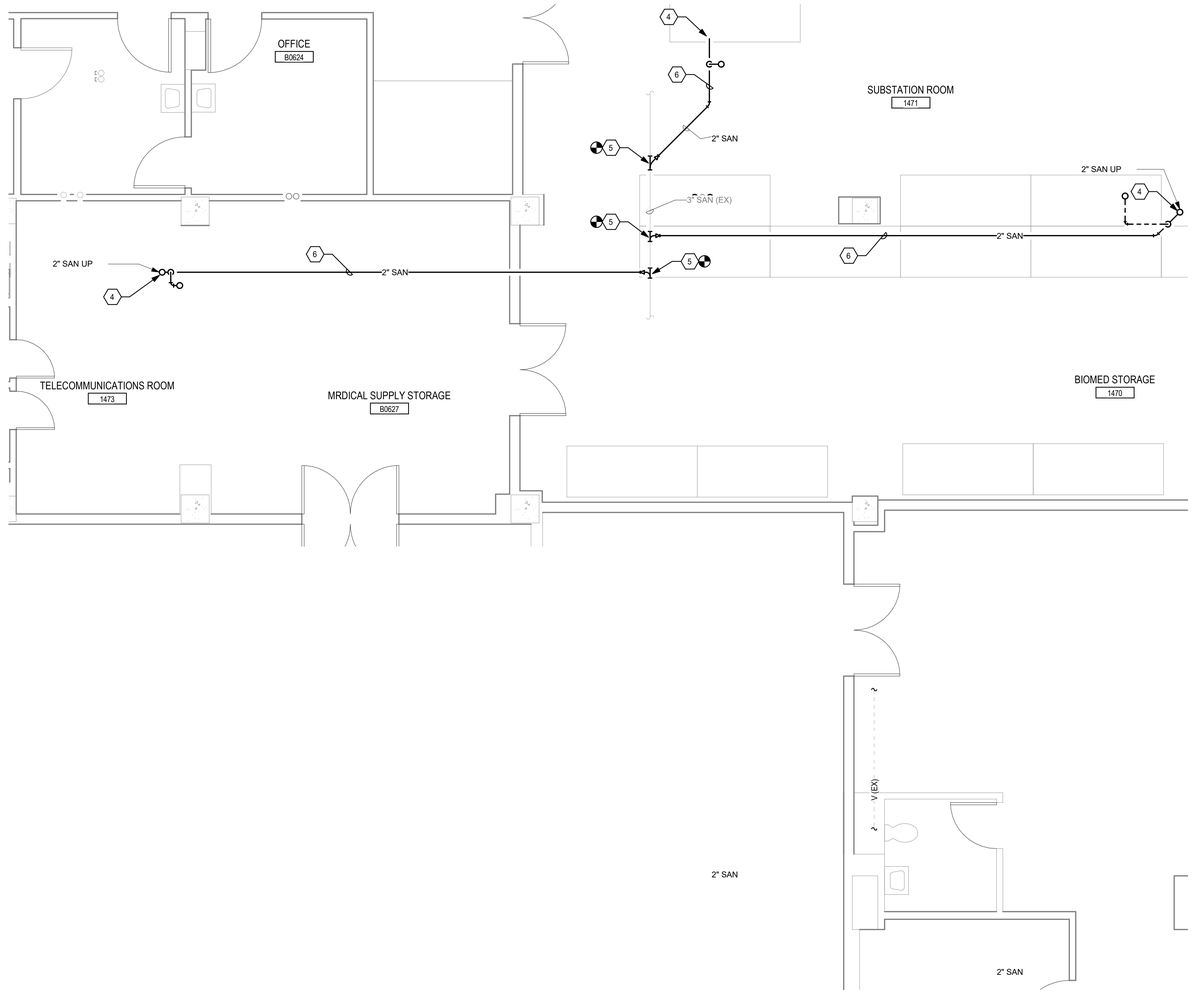
KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO FLOOR DRAIN. REFER TO BASEMENT PLAN FOR CONTINUATION OF SANITARY PIPE.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SANITARY SYSTEM. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. PROVIDE DRIP PAN BELOW ALL PIPING IN TELECOMMUNICATIONS / ELECTRICAL ROOMS (TYP.)
4. SANITARY PIPE ROUTED UP TO LEVEL 01 FLOOR DRAIN.
5. CONNECT INTO EXISTING SANITARY SYSTEM. LOCATION IS APPROXIMATE. CONTRACTOR TO VERIFY EXACT TIE-IN LOCATION IN FIELD.
6. SANITARY AND VENT PIPES ROUTED IN BASEMENT CEILING.



1 LEVEL 01 - RM. 1456 - ENLARGED PLAN - PLUMBING
3/16" = 1'-0"



2 BASEMENT PLAN (SERVING RM 1456) - SANITARY & VENT
1/4" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 BASEMENT & LEVEL 01 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number: 111
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	Drawing Number: 111-PP104

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8/30/2025 10:19:17 AM

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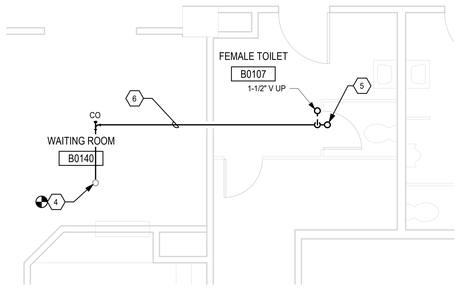
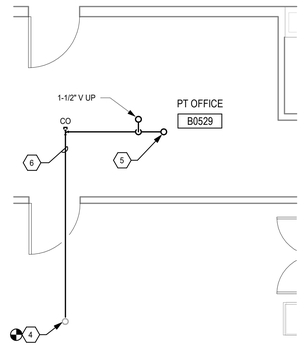
KEY NOTES

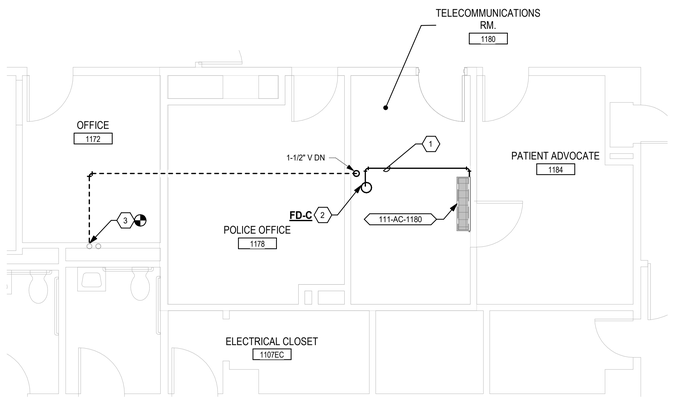
1. ROUTE 3/4" CONDENSATE DRAIN TO FLOOR DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SAN SYSTEM. REFER TO BELOW FLOOR PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. CONNECT INTO EXISTING VENT SYSTEM.
4. CONNECT INTO EXISTING SANITARY SYSTEM.
5. 2" SAN ROUTED UP TO FLOOR DRAIN ON LEVEL 01.
6. SAN PIPE ROUTED IN BASEMENT CEILING.



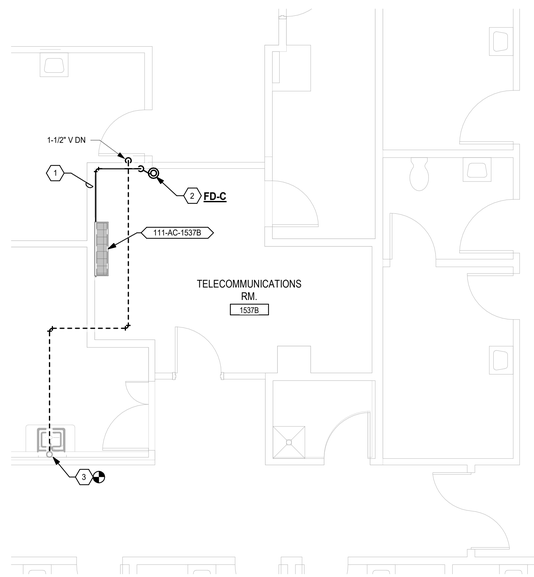
3 BASEMENT PLAN (SERVING RM. 1180) - SANITARY & VENT
1/4" = 1'-0"



4 BASEMENT PLAN (SERVING RM. 1537B) - SANITARY & VENT
1/4" = 1'-0"



2 RM. 1180 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"



1 RM. 1537B ENLARGED PLAN - PLUMBING
1/4" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
BUILDING 111 LEVEL 01 - PLUMBING FLOOR PLAN

Approved:

Phase
FINAL BID DOCUMENTS

Sprinklered
FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI

Location
5000 W. NATIONAL AVENUE MILWAUKEE, WI

Issue Date	Checked	Drawn
SEPTEMBER 5, 2025	AW	DAW

Project Number
695-21-700

Building Number
111

Drawing Number
111-PP105

VA FORM 08 - 6231

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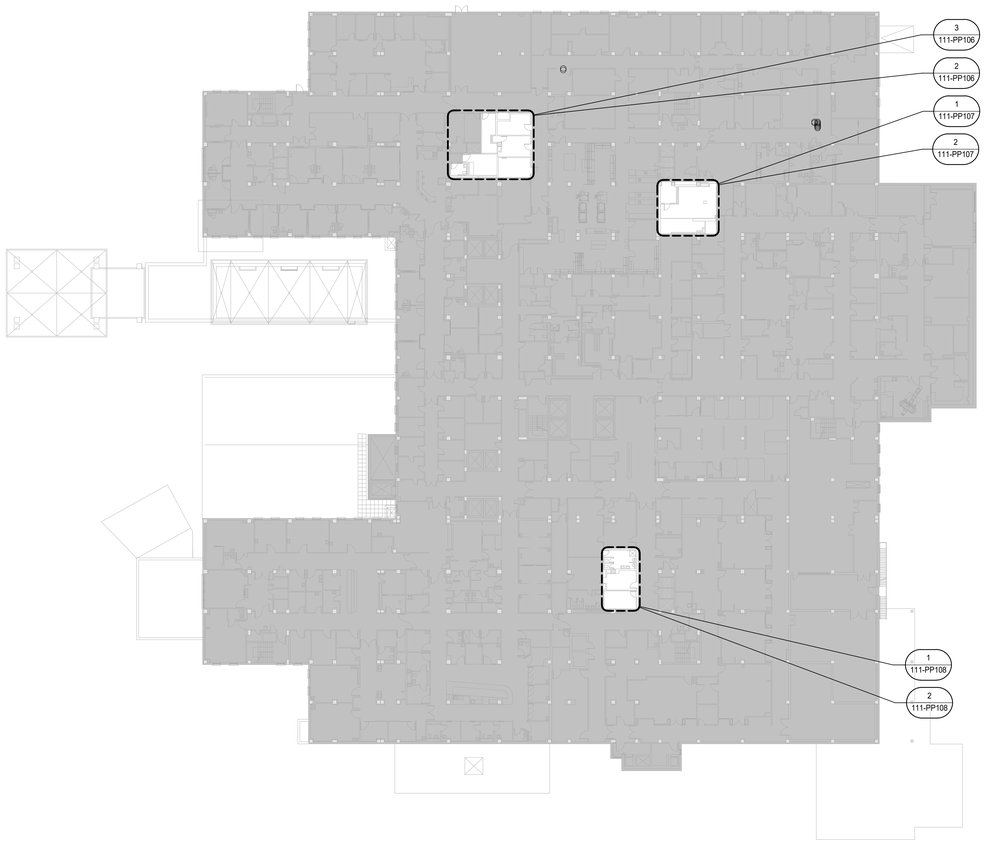
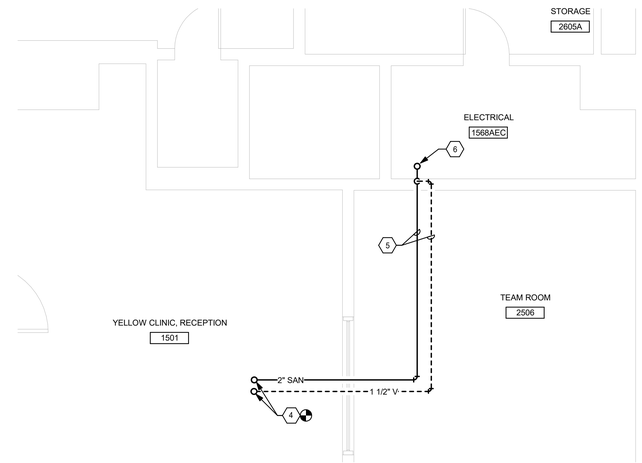
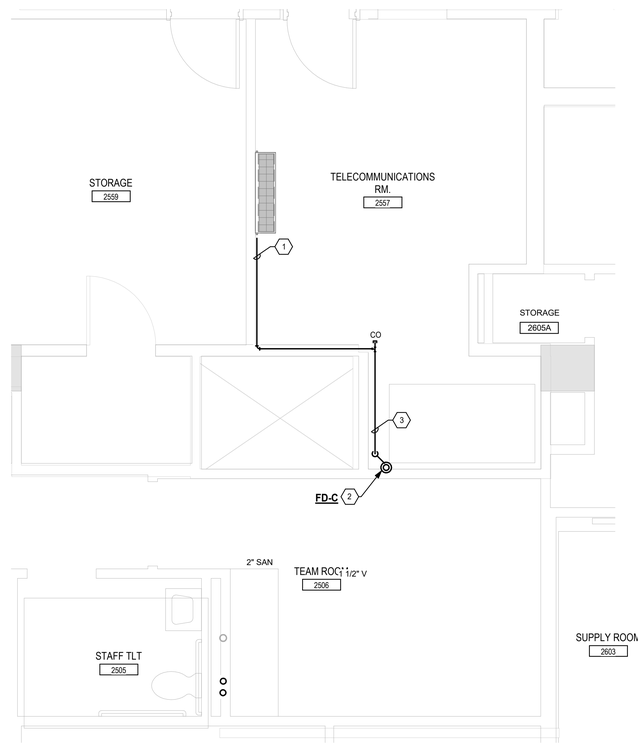


1 BUILDING 111 LEVEL 02 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 LEVEL 01 PLAN (SERVING RM. 2557) - SANITARY & VENT
3/8" = 1'-0"



3 RM. 2557 ENLARGED PLAN - PLUMBING
3/8" = 1'-0"

KEY NOTES

1. ROUTE FULL SIZE CONDENSATE DRAIN TO FLOOR DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SAN SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. PROVIDE DRIP PAN BELOW ALL PIPING IN TELECOMMUNICATIONS ROOMS (TYP).
4. CONNECT INTO EXISTING SANITARY & VENT SYSTEMS SERVING RESTROOM.
5. SAN & VENT PIPES ROUTED IN LEVEL 01 CEILING.
6. 2" SAN ROUTED UP TO FLOOR DRAIN ON LEVEL 02.

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

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VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 02 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI		Project Number: 695-21-700
				Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI		Drawing Number: 111-PP106
		Issue Date: SEPTEMBER 5, 2025	Checked: AW	Drawn: DAW

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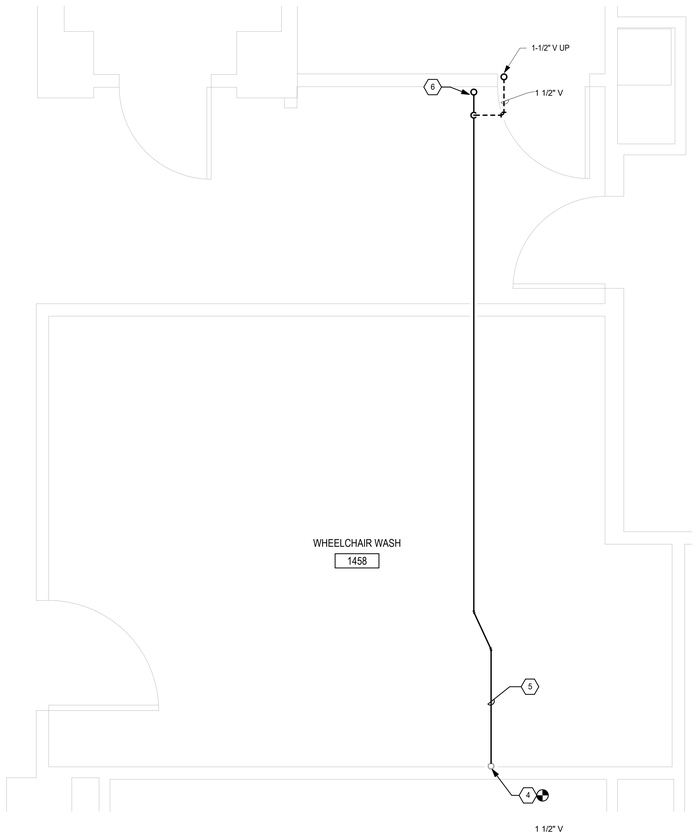
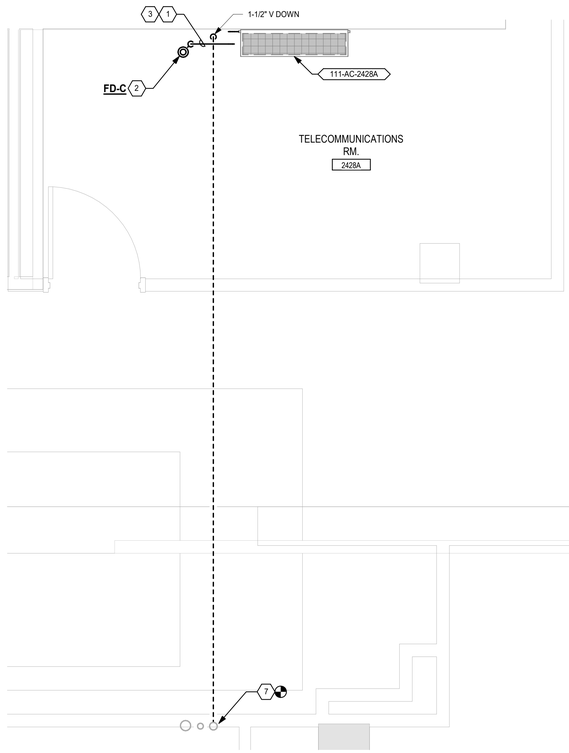
Graphic Scale : 1/16" = 1'-0"
Graphic Scale : 1/8" = 1'-0"
Graphic Scale : 3/32" = 1'-0"
Graphic Scale : 1/4" = 1'-0"
Graphic Scale : 3/16" = 1'-0"
Graphic Scale : 1/2" = 1'-0"
Graphic Scale : 3/4" = 1'-0"
Graphic Scale : 1" = 1'-0"
Graphic Scale : 1 1/2" = 1'-0"

KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO HUB DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SAN SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. PROVIDE DRIP PAN BELOW ALL PIPING IN TELECOMMUNICATIONS ROOMS (TYP)
4. CONNECT SANITARY PIPE INTO EXISTING SYSTEM.
5. SAN PIPE ROUTED IN CEILING OF LEVEL 01.
6. 2" SAN ROUTED UP TO FLOOR DRAIN ON LEVEL 02.
7. CONNECT VENT PIPE INTO EXISTING SYSTEM.



1 LEVEL 01 PLAN (SERVING RM. 2428) - SANITARY & VENT
1/2" = 1'-0"



2 RM. 2428 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 02 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI		Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI		Building Number: 111
		Issue Date: SEPTEMBER 5, 2025	Checked: AW / Drawn: DAW	Drawing Number: 111-PP107

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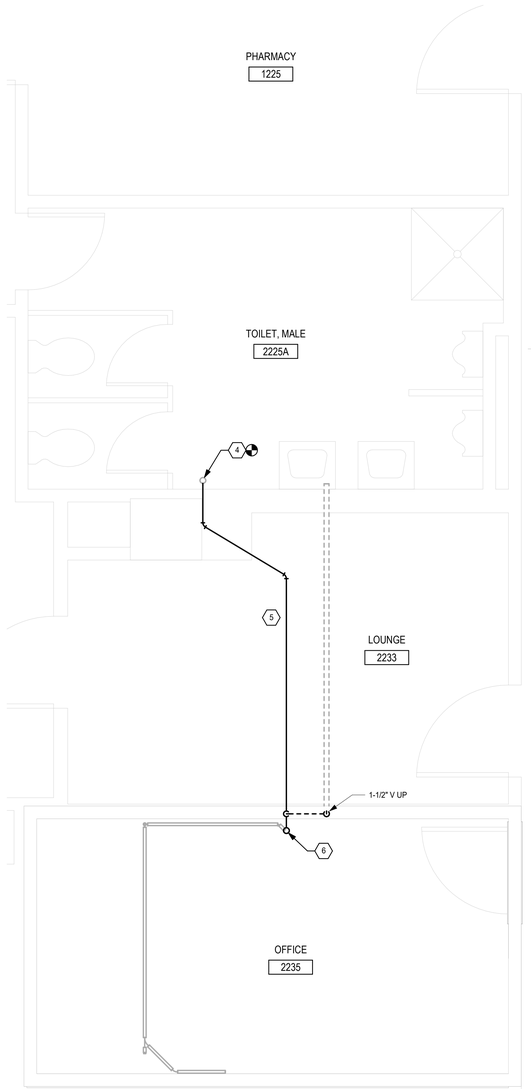
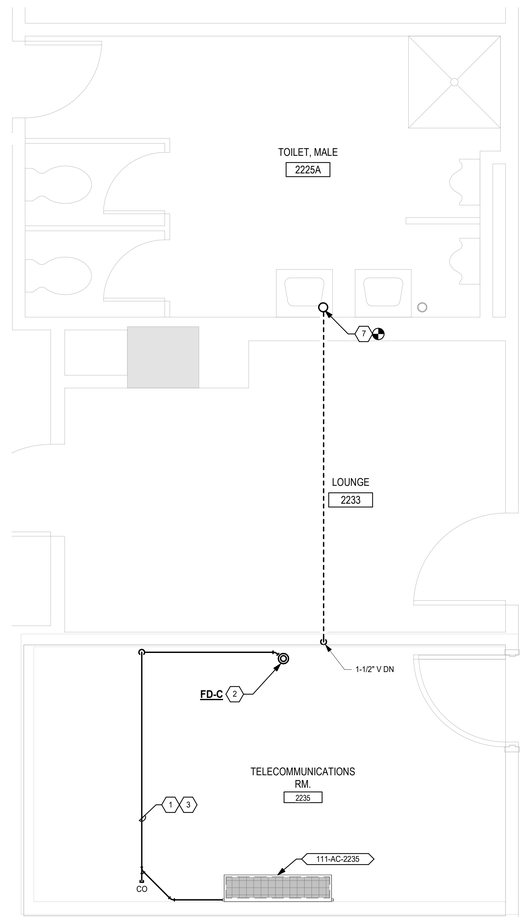


1 LEVEL 01 PLAN (SERVING RM. 2235) - SANITARY & VENT
1/2" = 1'-0"



2 RM. 2235 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO HUB DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SAN SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. PROVIDE DRIP PAN BELOW ALL PIPING IN TELECOMMUNICATIONS ROOMS (TYP)
4. CONNECT SANITARY PIPE INTO EXISTING SYSTEM.
5. SAN PIPE ROUTED IN CEILING OF LEVEL 01.
6. 2" SAN ROUTED UP TO FLOOR DRAIN ON LEVEL 02.
7. CONNECT VENT PIPE INTO EXISTING SYSTEM.

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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WISCONSIN 9/5/25 ARCO G. WIECZOREK #42666-6 SWISHER IOWA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 02 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number: 111
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	Drawing Number: 111-PP108

VA FORM 08 - 6231

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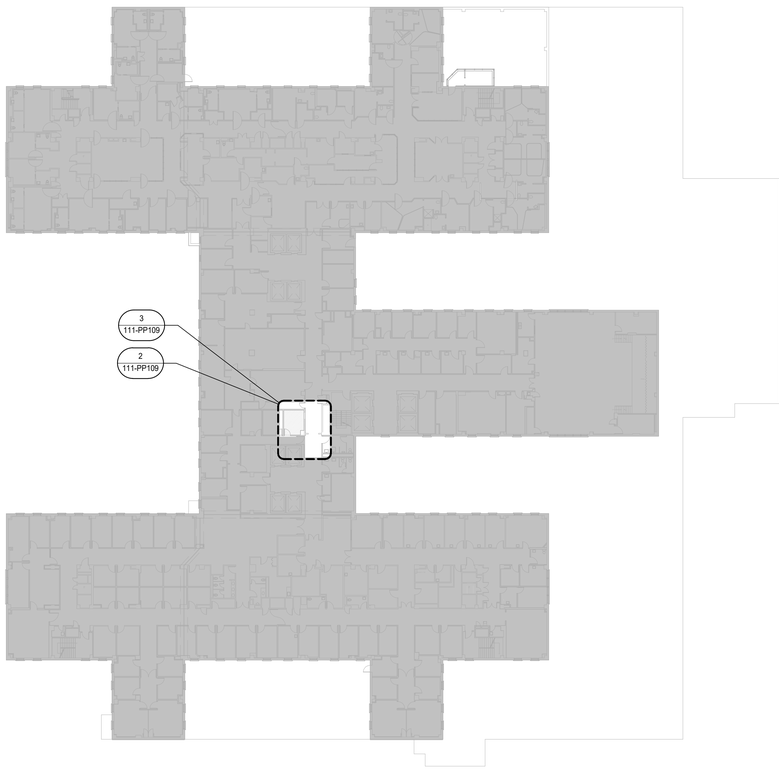
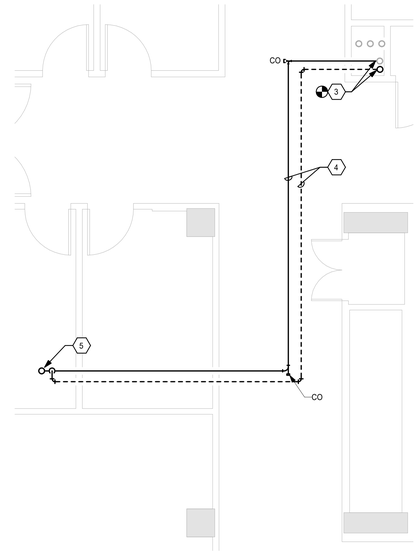
KEY NOTES

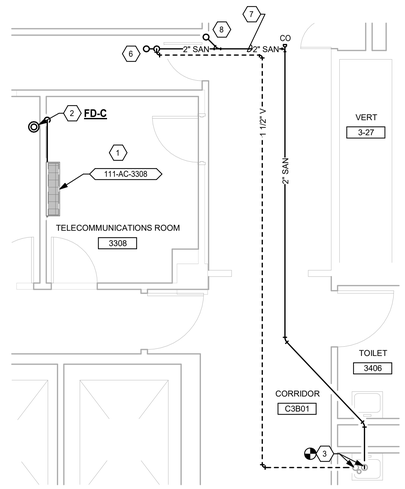
1. 3/4" CONDENSATE DRAIN. ROUTE TO FLOOR DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SANITARY SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL.
3. CONNECT INTO EXISTING SANITARY & VENT RISERS.
4. SANITARY & VENT PIPES ROUTED IN CEILING OF LEVEL 02.
5. 2" SANITARY ROUTED UP TO FLOOR DRAIN ON LEVEL 03.
6. 2" SAN ROUTED UP TO FLOOR DRAIN SERVING RM. 4315 LEVEL 04.
7. SAN & VENT PIPES ROUTED IN CEILING OF LEVEL 03.
8. 2" SAN UP.



1 BUILDING 111 LEVEL 03 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 LEVEL 02 PLAN (SERVING RM. 3308) - SANITARY & VENT
1/4" = 1'-0"



3 RM. 3308 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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9/5/25
ARED G. WIECZOREK
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PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
BUILDING 111 LEVEL 03 - PLUMBING FLOOR PLAN	FINAL BID DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number: 111
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	Drawing Number: 111-PP109

VA FORM 08 - 6231

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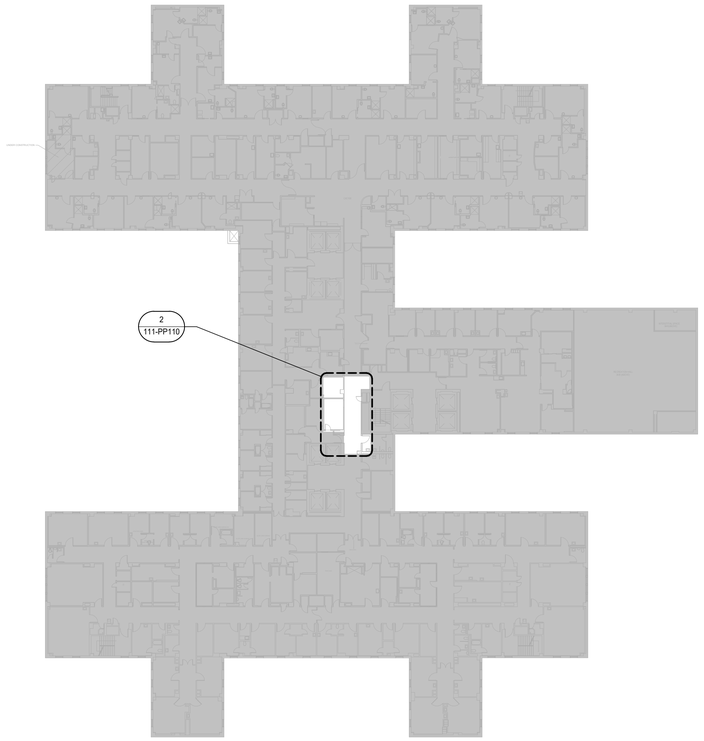
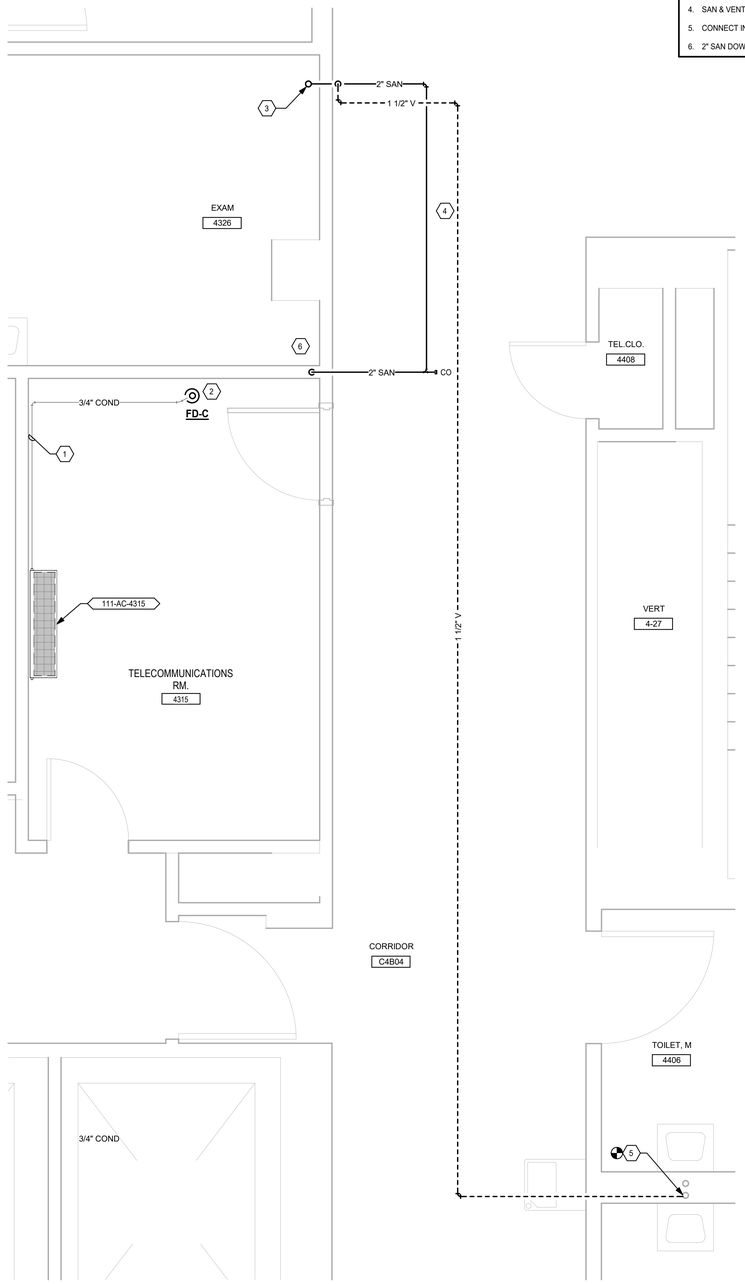


1 BUILDING 111 LEVEL 04 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 4315 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO FLOOR DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SANITARY SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL. REFER TO LEVEL 03 PLUMBING PLANS FOR SAN & VENT PIPE CONTINUATION.
3. 2" SAN ROUTED UP TO FLOOR DRAIN SERVING RM. 5311 LEVEL 05.
4. SAN & VENT PIPES ABOVE CEILING.
5. CONNECT INTO EXISTING SANITARY & VENT SYSTEMS.
6. 2" SAN DOWN.

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 04 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP110
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

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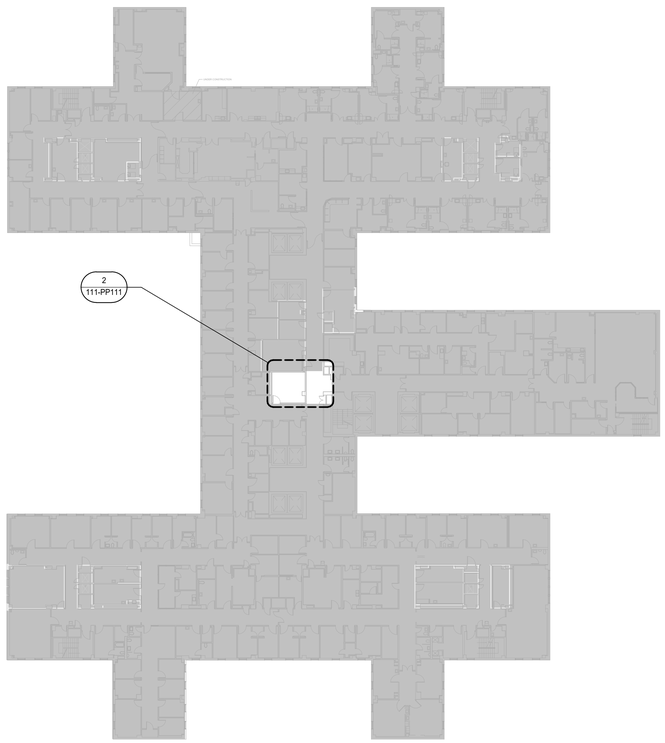
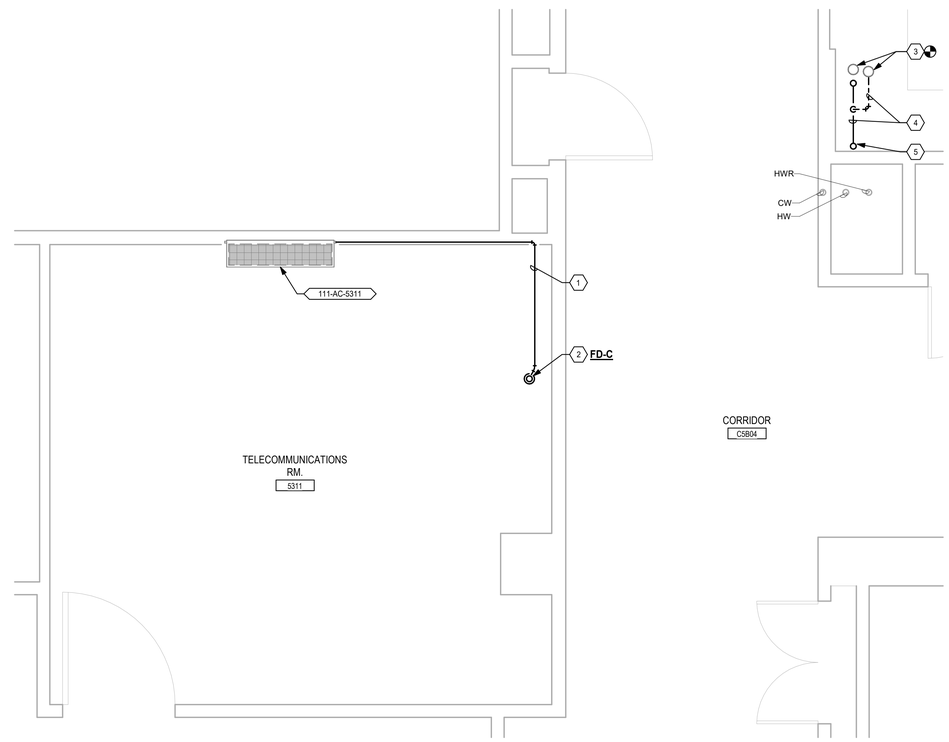
KEY NOTES

1. ROUTE 3/4" CONDENSATE DRAIN TO FLOOR DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SANITARY SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL. REFER TO LEVEL 04 PLUMBING PLANS FOR SAN & VENT PIPE CONTINUATION.
3. CONNECT INTO EXISTING SANITARY & VENT SYSTEMS SERVING SINK ON FLOOR ABOVE.
4. SANITARY & VENT PIPES ROUTED IN CEILING OF LEVEL 05.
5. 2" SANITARY ROUTED UP TO FLOOR DRAIN SERVING RM. 6410A LEVEL 06.



1 BUILDING 111 LEVEL 05 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 5311 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

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VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 05 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number: 111
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	Drawing Number: 111-PP111

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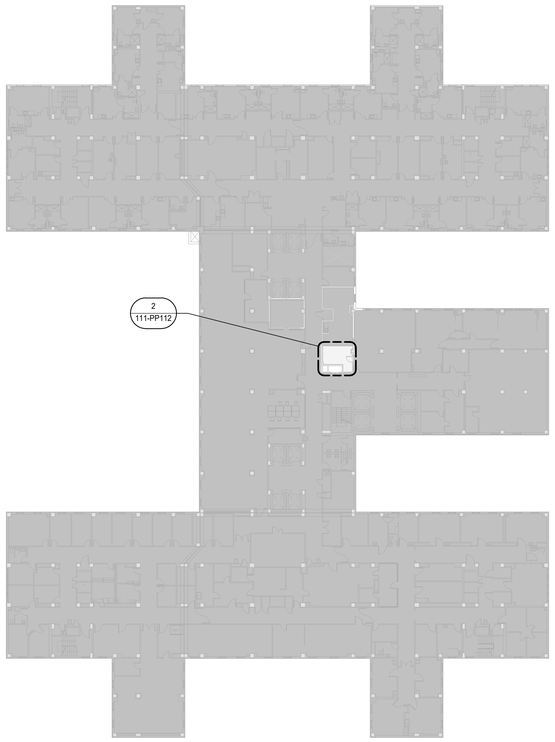
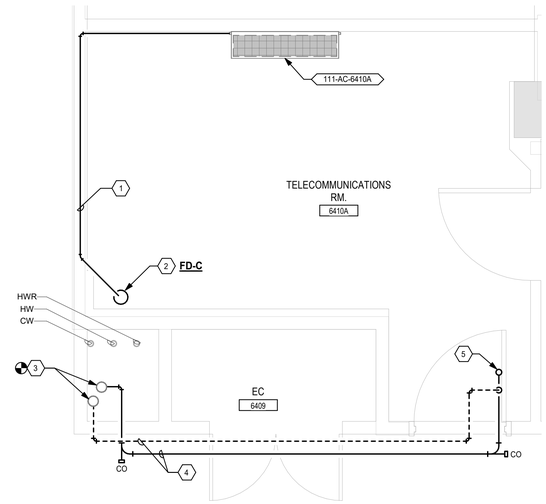
KEY NOTES

1. 3/4" CONDENSATE DRAIN. ROUTE TO HUB DRAIN.
2. FLOOR DRAIN (FD-C) TO BE INSTALLED IN FLOOR. TIE INTO EXISTING SANITARY SYSTEM. REFER TO BELOW SLAB PLAN FOR CONTINUATION. SEE 2/P-002 FOR TYPICAL TYPE "C" FLOOR DRAIN DETAIL, 4/P-002 FOR TRAP SEAL DETAIL, AND 6/P-002 FOR TRAP ARM LENGTH DETAIL. REFER TO LEVEL 04 PLUMBING PLANS FOR SAN & VENT PIPE CONTINUATION.
3. CONNECT INTO EXISTING SAN & VENT RISERS IN SHAFT.
4. SAN & VENT PIPES ROUTED IN CEILING OF LEVEL 06.
5. 2" SAN ROUTED UP TO SERVICE SINK ON LEVEL 07.
6. CONNECT NEW 1/2" CW LINE INTO EXISTING COLD WATER LINE SERVING RESTROOM.



1 BUILDING 111 LEVEL 06 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 6410A ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Graphic Scale : 1/16" = 1'-0" (0' 8' 16' 32')
Graphic Scale : 1/8" = 1'-0" (0' 4' 8' 16')
Graphic Scale : 3/32" = 1'-0" (0' 4" 8" 1' 2')
Graphic Scale : 1/4" = 1'-0" (0' 1' 2' 4')
Graphic Scale : 3/16" = 1'-0" (0' 3' 6' 12')
Graphic Scale : 1/2" = 1'-0" (0' 1' 2' 4')
Graphic Scale : 3/4" = 1'-0" (0' 6" 1' 2')
Graphic Scale : 1" = 1'-0" (0' 6" 1' 2')
Graphic Scale : 1 1/2" = 1'-0" (0' 3" 6" 1' 1' 6")

Revisions:	Date:

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PROFESSIONAL ENGINEER

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Drawing Title: BUILDING 111 LEVEL 06 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number: 111
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	Drawing Number: 111-PP112

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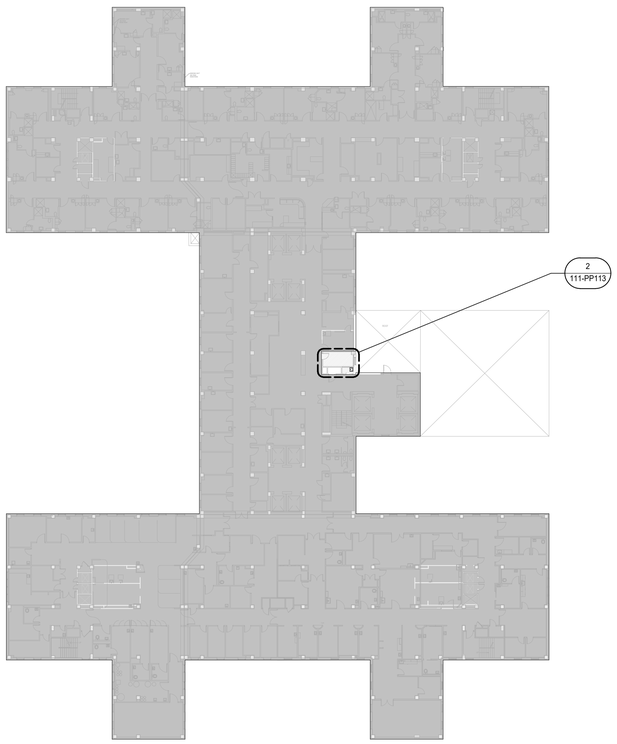
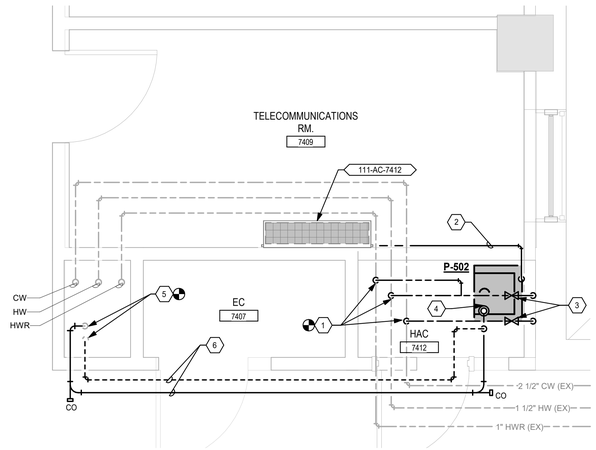
KEY NOTES

1. CONNECT HW, HWR, & CW FROM SERVICE SINK INTO EXISTING SYSTEMS.
2. 3/4" CONDENSATE DRAIN. ROUTE TO SERVICE SINK.
3. ISOLATION VALVE.
4. 2" SAN ROUTED UP TO SERVICE SINK ON LEVEL 08.
5. CONNECT INTO EXISTING SAN & VENT RISERS IN SHAFT.
6. SAN & VENT PIPES ROUTED IN CEILING OF LEVEL 07.



1 BUILDING 111 LEVEL 07 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 7412 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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Drawing Title: BUILDING 111 LEVEL 07 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP113
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

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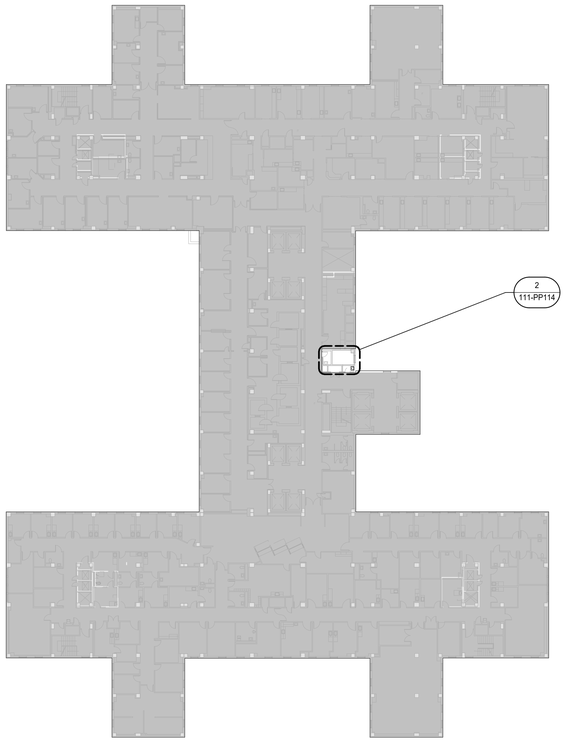
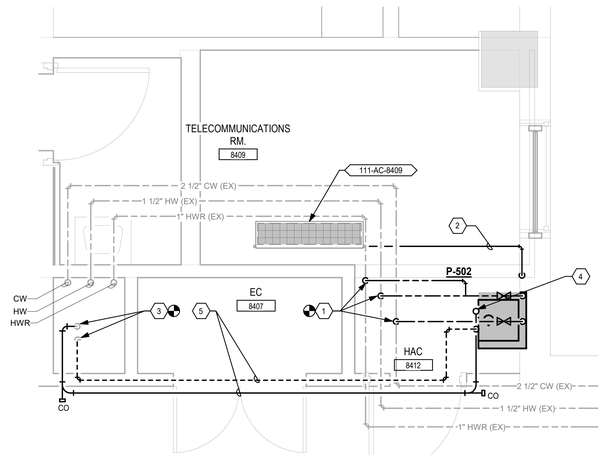
KEY NOTES

1. CONNECT HW, HWR, & CW FROM SERVICE SINK IINTO EXISTING SYSTEMS.
2. 3/4" CONDENSATE DRAIN. ROUTE TO SERVICE SINK.
3. CONNECT INTO EXISTING SAN & VENT RISER SYSTEM.
4. 2" SAN ROUTED UP TO SERVICE SINK ON LEVEL 09.
5. SAN & VENT PIPES ROUTED IN CEILING OF LEVEL 08.



1 BUILDING 111 LEVEL 08 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 8409 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

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Drawing Title: BUILDING 111 LEVEL 08 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP114
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

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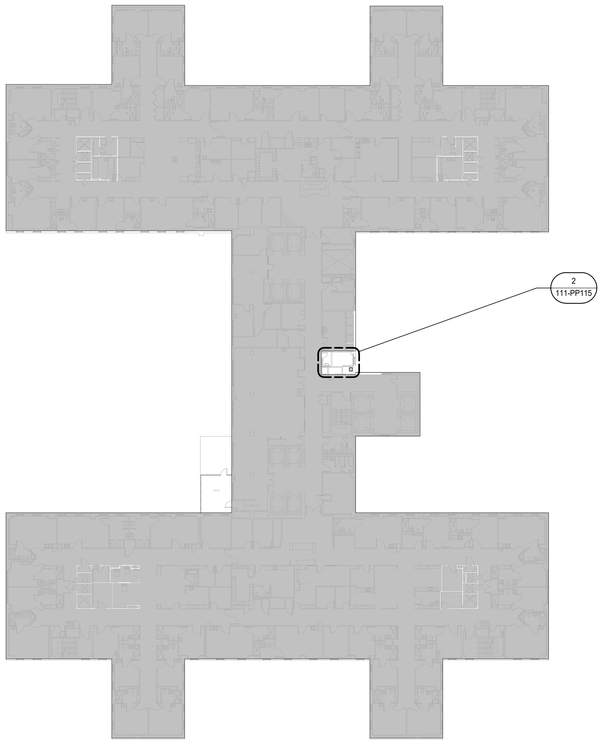
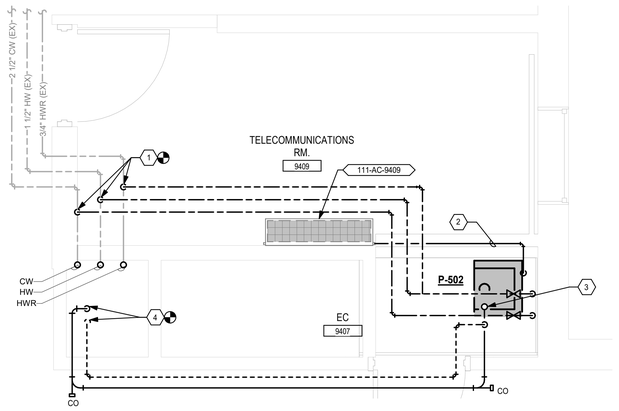
KEY NOTES

1. CONNECT HW, HWR, & CW FROM SERVICE SINK IINTO EXISTING SYSTEMS.
2. 3/4" CONDENSATE DRAIN. ROUTE TO SERVICE SINK.
3. 2" SAN ROUTED UP TO SERVICE SINK ON LEVEL 10.
4. CONNECT INTO EXISTING SAN & VENT RISERS IN SHAFT.



1 BUILDING 111 LEVEL 09 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 9409 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title: BUILDING 111 LEVEL 09 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP115
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

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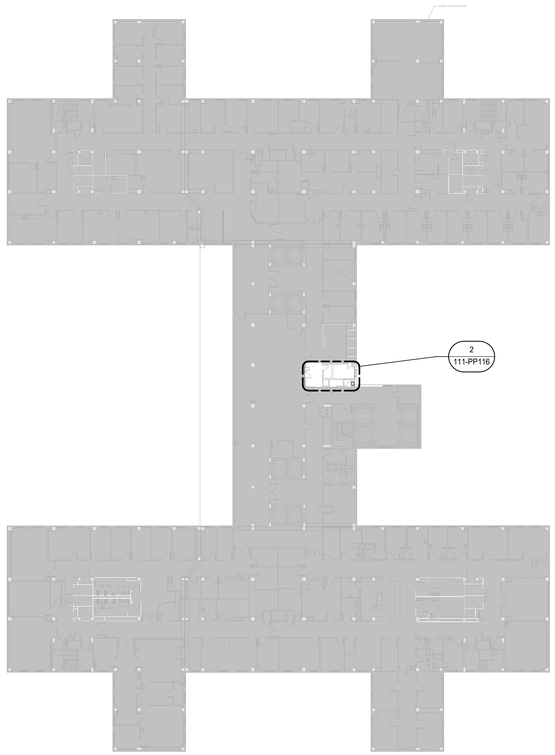
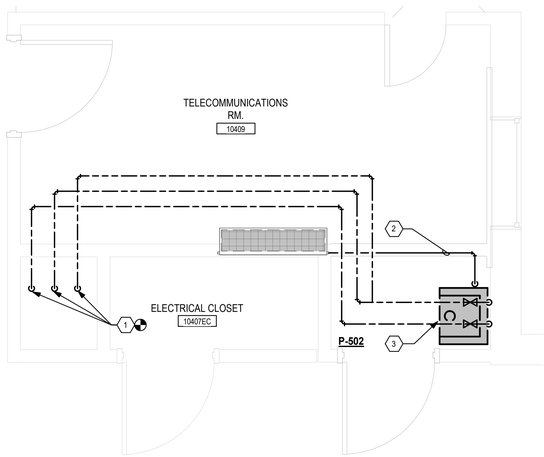
Graphic Scale : 1/16" = 1'-0"
Graphic Scale : 1/8" = 1'-0"
Graphic Scale : 3/32" = 1'-0"
Graphic Scale : 1/4" = 1'-0"
Graphic Scale : 3/16" = 1'-0"
Graphic Scale : 1/2" = 1'-0"
Graphic Scale : 3/4" = 1'-0"
Graphic Scale : 1" = 1'-0"
Graphic Scale : 1 1/2" = 1'-0"

KEY NOTES

1. DROP HW, HWR & CW FROM SERVICE SINK TO FLOOR BELOW AND TAP INTO OR EXTEND EXISTING RISERS.
2. 3/4" CONDENSATE DRAIN. ROUTE TO SERVICE SINK.
3. 2" SAN FROM FLOOR BELOW.



1 BUILDING 111 LEVEL 10 FLOOR PLAN - PLUMBING
1" = 30'-0"



2 RM. 10409 ENLARGED PLAN - PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

Revisions:	Date:

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Drawing Title: BUILDING 111 LEVEL 10 - PLUMBING FLOOR PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 111
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 111-PP116
		Issue Date: SEPTEMBER 5, 2025 / Checked: AW / Drawn: DAW	

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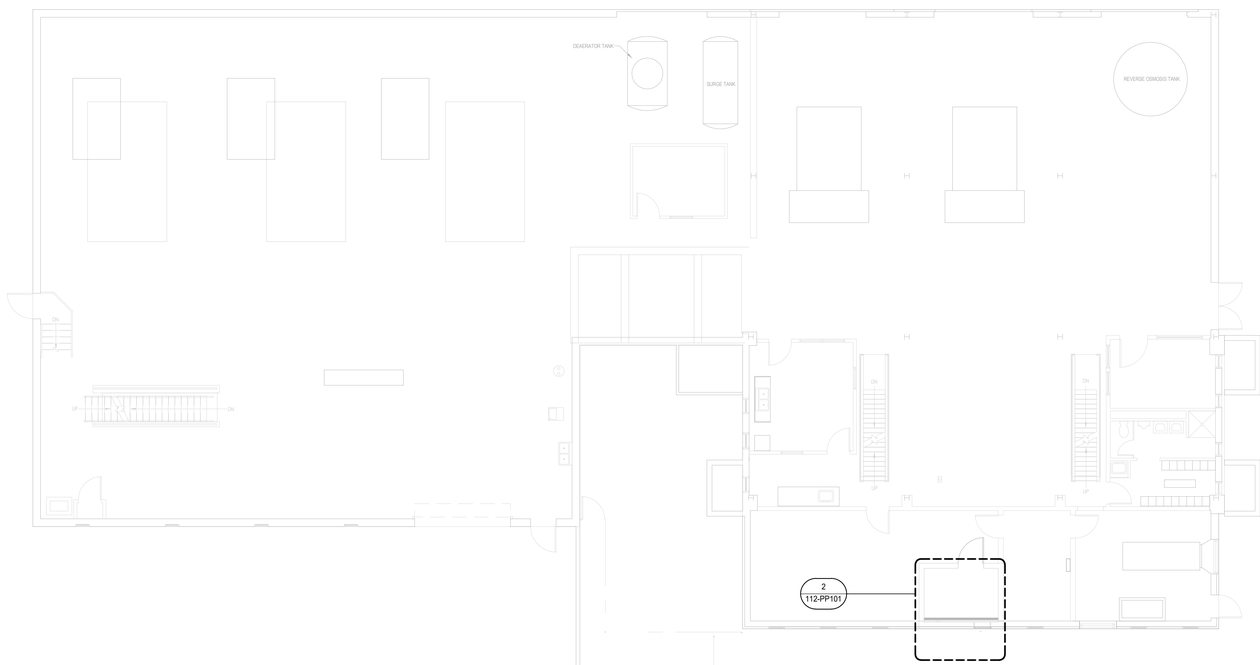
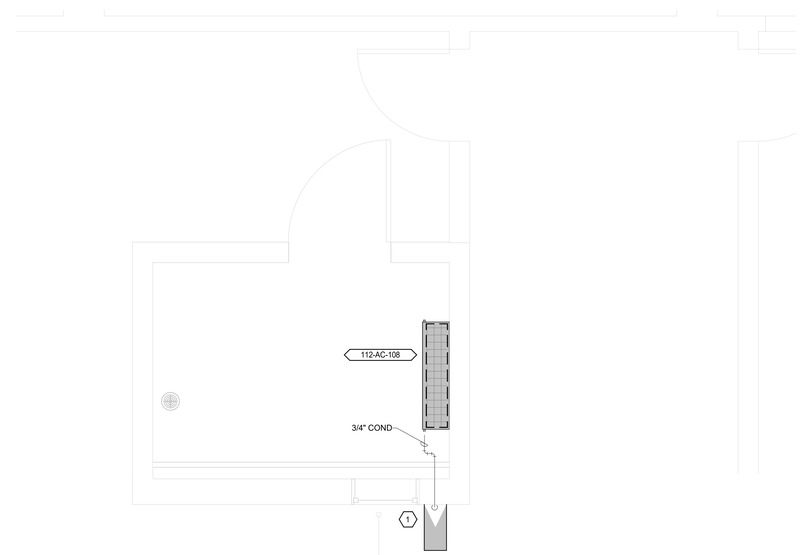
Graphic Scale : 3/16" = 1'-0"
Graphic Scale : 1/8" = 1'-0"
Graphic Scale : 3/32" = 1'-0"
Graphic Scale : 1/4" = 1'-0"
Graphic Scale : 1/2" = 1'-0"
Graphic Scale : 3/4" = 1'-0"
Graphic Scale : 1" = 1'-0"
Graphic Scale : 1 1/2" = 1'-0"

KEY NOTES

1. ROUTE 3/4" CONDENSATE DRAIN TO EXTERIOR AND DRAIN TO GRADE. PROVIDE SPLASH BLOCK AT DISCHARGE.



1 BLDG 112 - FIRST FLOOR - OVERALL PLUMBING
1/8" = 1'-0"



2 BLDG 112 - FIRST FLOOR - ENLARGED PLAN PLUMBING
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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WISCONSIN 9/5/25 ARON G. WIECZOREK #42666-6 SWISHER IOWA PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title BUILDING 112 LEVEL 01 - PLUMBING FLOOR PLAN	**Phase** FINAL BID DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI		**Project Number** 695-21-700
				Building Number 112
Approved:	**Sprinklered**	**Location** 5000 W. NATIONAL AVENUE MILWAUKEE, WI		**Drawing Number** 112-PP101
		Issue Date SEPTEMBER 5, 2025	**Checked** AGW	**Drawn** HWG

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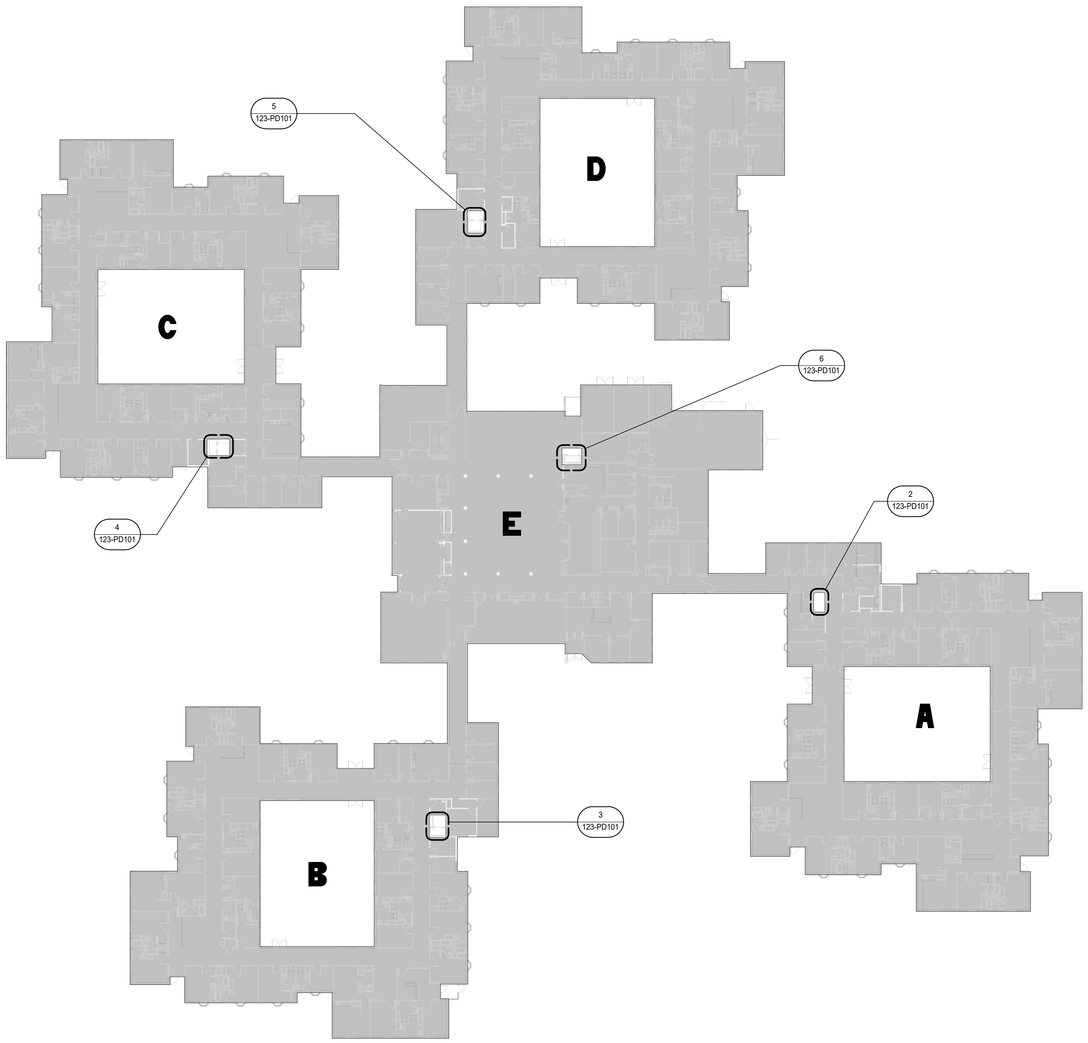
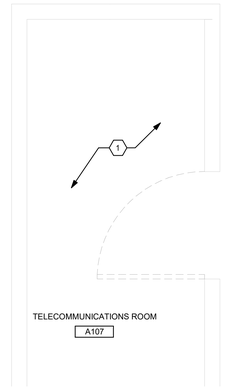
KEY NOTES

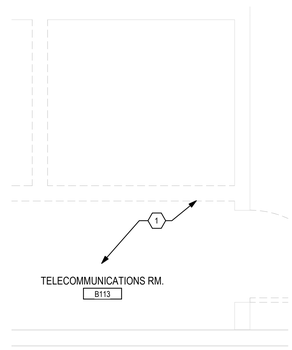
1. THERE ARE NO PLUMBING SYSTEMS IN THIS AREA TO BE DEMOLISHED.



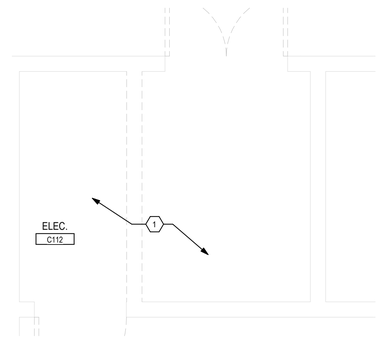
1 BUILDING 123 LEVEL 01 FLOOR PLAN - PLUMBING DEMOLITION
1" = 30'-0"



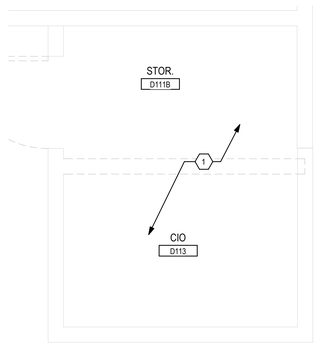
2 RM. A107 ENLARGED PLAN - PLUMBING DEMOLITION
1/2" = 1'-0"



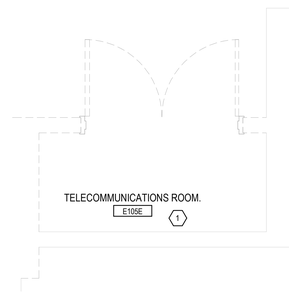
3 RM. B113 ENLARGED PLAN - PLUMBING DEMOLITION
1/2" = 1'-0"



4 RM. C113 ENLARGED PLAN - PLUMBING DEMOLITION
1/2" = 1'-0"



5 RM. D113 ENLARGED PLAN - PLUMBING DEMOLITION
1/2" = 1'-0"



6 RM. E105E ENLARGED PLAN - PLUMBING DEMOLITION
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

0' 15' 30' 60'
Graphic Scale : 1" = 30'-0"

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Drawing Title: BUILDING 123 LEVEL 01 - PLUMBING DEMOLITION PLAN	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI		Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI		Building Number: 123
		Issue Date: SEPTEMBER 5, 2025	Checked: AW / Drawn: DAW	Drawing Number: 123-PD101

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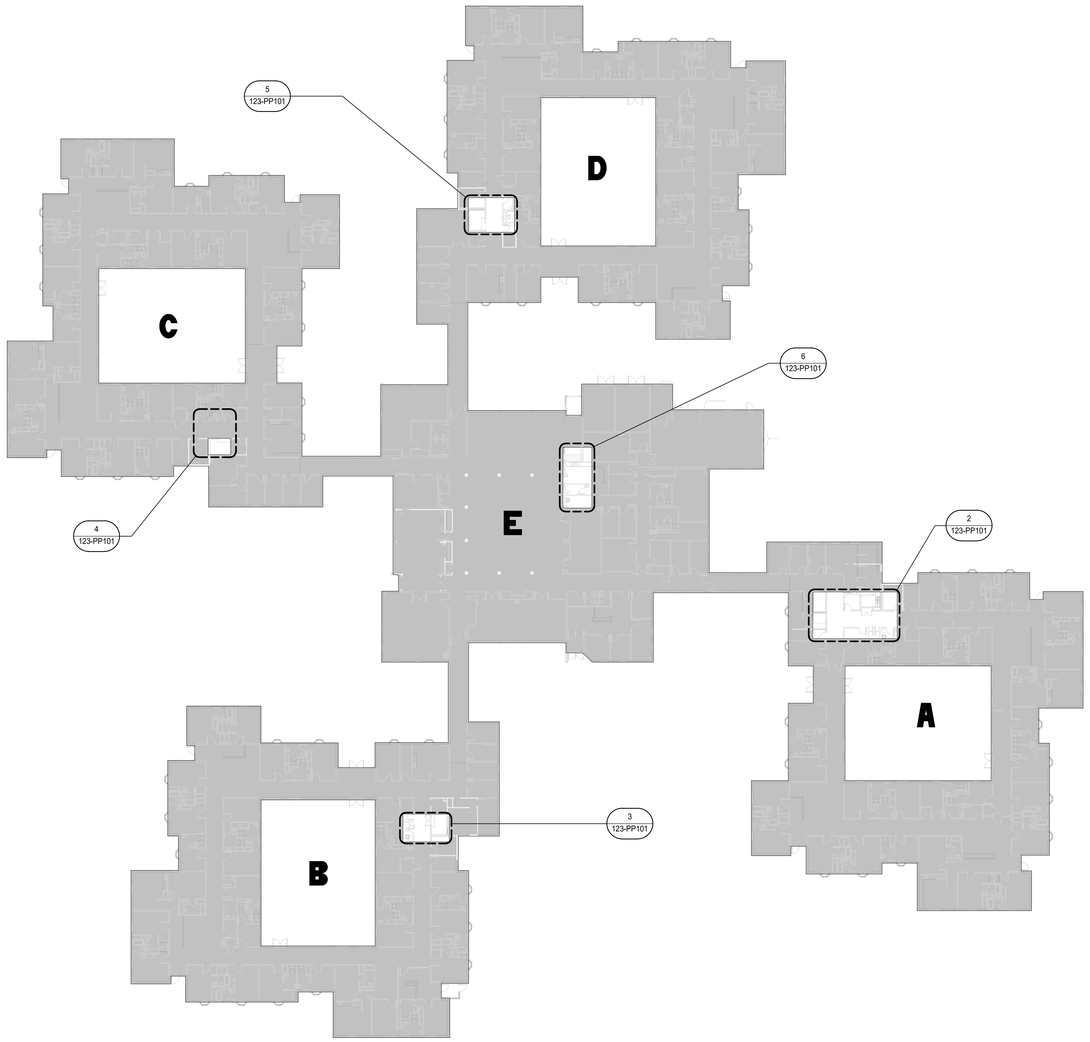
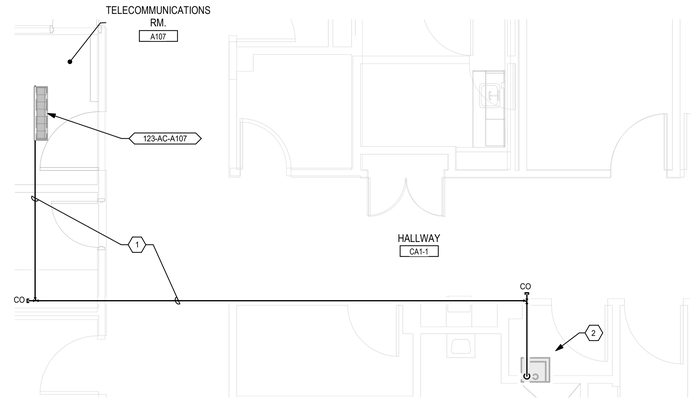
KEY NOTES

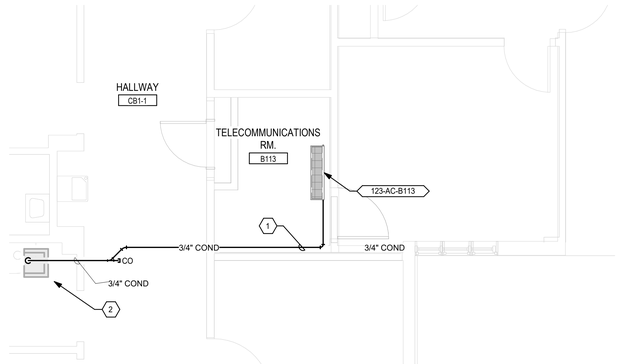
1. 3/4" CONDENSATE DRAIN. ROUTE TO EXISTING SERVICE SINK.
2. EXISTING SERVICE SINK.



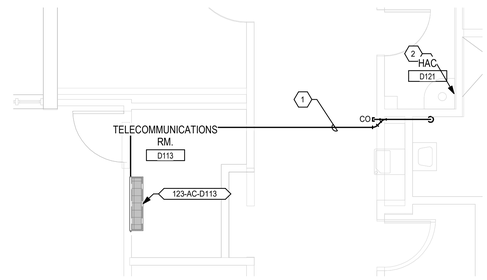
1 BUILDING 123 LEVEL 01PLAN - PLUMBING
1" = 30'-0"



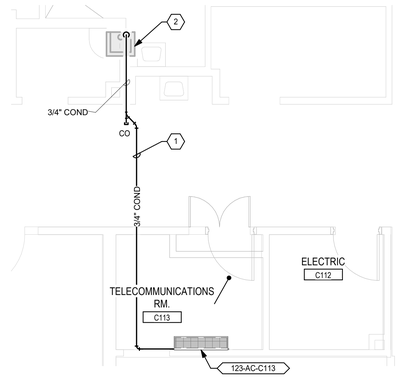
2 RM. A107 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"



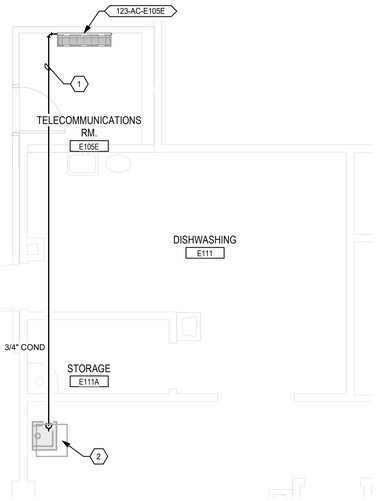
3 RM. B113 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"



5 RM. D113 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"



4 RM. C113 ENLARGED PLAN - PLUMBING
1/4" = 1'-0"



6 RM. E105E ENLARGED PLAN - PLUMBING
1/4" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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Office of Construction and Facilities Management
3/4" COND

VA U.S. Department of Veterans Affairs

Drawing Title BUILDING 123 LEVEL 01 - PLUMBING FLOOR PLAN	**Phase** FINAL BID DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	**Project Number** 695-21-700
			Building Number 123
Approved: 3/4" COND	**Sprinklered** FULLY SPRINKLERED	**Location** 5000 W. NATIONAL AVENUE MILWAUKEE, WI	**Drawing Number** 123-PP101
		Issue Date SEPTEMBER 5, 2025 / **Checked** AW / **Drawn** DAW	

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GENERAL ABBREVIATIONS

A/E	ARCHITECTS AND ENGINEERS
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AMB	AMBIENT
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASHP	AIR SOURCE HEAT PUMP
ASHRAE	AMERICAN SOCIETY OF HEATING REFRIGERATION AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
BLDG	BUILDING
BMT	BONE MARROW TRANSPLANT
CENT	CENTRIFUGAL
CO2	CARBON DIOXIDE
DEMO	DEMOLITION
DWG	DRAWING
EA	EXHAUST AIR
ETO	ETHYLENE OXIDE
ESMT	EASEMENT
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
EPA	ENVIROMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
EX	EXISTING (OR EXIST)
GA	GAUGE
GS	GALVANIZED STEEL
HAC	HOUSEKEEPING AIDE'S CLOSET
IBC	INTERNATIONAL BUILDING CODE
IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH...
I/O	INPUT/OUTPUT
ICU	INTENSIVE CARE UNIT
ID	INSIDE DIAMETER
IPC	INTERNATIONAL PLUMBING CODE
ITAC	INFORMATION TECHNOLOGY AIR CONDITIONING
LPG	LIQUID PROPANE GAS
MAX	MAXIMUM
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MIN	MINIMUM
MRI	MAGNETIC RESONANCE IMAGING
NA	NOT APPLICABLE (ALSO N/A)
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFC	NATIONAL FIRE CODES
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOAA	NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
NOM	NOMINAL
NSPC	NATIONAL STANDARD PLUMBING CODE
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OR	OPERATING ROOM
PGW	PROPYLENE GLYCOL-WATER SOLUTION
PSS	PRIMARY SECONDARY SYSTEM
R/E	RETURN OR EXHAUST
RA	RETURN AIR
REQD	REQUIRED
RDS	ROOM DATA SHEETS
RO	REVERSE OSMOSIS
RM	ROOM
SA	SUPPLY AIR
SCI	SPINAL CODE INJURY
SEN	SENSIBLE HEAT
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS...
SPEC	SPECIFICATION
SS	STAINLESS STEEL
TYP	TYPICAL
TEMP	TEMPERATURE
UL	UNDERWRITER'S LABORATORY
UPC	UNIVERSAL PLUMBING CODE
UTIL	UTILITY
VA	DEPARTMENT OF VETERANS AFFAIRS
VHA	VETERANS HEALTH ADMINISTRATION
VBA	VETERANS BENEFITS ADMINISTRATION
VAHBS	VA HOSPITAL BUILDING SYSTEM
VAMCS	VA MASTER CONSTRUCTION SPECIFICATIONS
WCPU	WATER-COOLED PACKAGED UNIT
XFER	TRANSFER

UNITS OF MEASURE

APD	AIR SIDE PRESSURE DROP
BHP	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CENTIGRADE (CELSIUS)
CFM	CUBIC FEET PER MINUTE
CFH	CUBIC FEET PER HOUR
CFT	CUBIC FEET
CM	CUBIC METER
CM/S	CENTIMETER PER SECOND
COP	COEFFICIENT OF PERFORMANCE
DB	DRY-BULB TEMPERATURE
dB	DECIBEL
DEG	DEGREE
DIA	DIAMETER
DP	DEWPOINT
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EGT	ENTERING GLYCOL TEMPERATURE
ENT	ENTERING
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
FT-LB	FOOT-POUND
FT-WC	FEET OF WATER COLUMN
GA	GAUGE
GAL	GALLONS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HT	HEIGHT
HZ	HERTZ
IN	INCHES
IN HG	INCHES OF MERCURY
IN WG	INCH WATER GAUGE
IN-LB	INCH-POUND
IPLV	INTEGRATED PART LOAD VALUE
KG	KILOGRAM
KG/HR	KILOGRAM PER HOUR
kPA	KILO PASCAL
kW	KILOWATT
kWH	KILOWATT HOUR
L	LITER
LF	LINEAR FEET (FOOT)
L/H	LITERS PER HOUR
L/M	LITERS PER MINUTE
L/S	LITERS PER SECOND
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LGT	LEAVING GLYCOL TEMPERATURE
LH	LATENT HEAT
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
M	METER
MAX	MAXIMUM
MBH	1000 BTUH
MCA	MAXIMUM CURRENT AMPACITY
MCA	MULTICHANNEL ANALYZER
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MM	MILLIMETER
M/S	METERS PER SECOND
MTD	MEAN TEMPERATURE DIFFERENCE
NC	NOISE CRITERIA
Nm	NEWTON-METER
NPLV	NON-STANDARD PART LOAD VALUE
PA	PASCAL
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ATMOSPHERE
PSIG	POUNDS PER SQUARE INCH-GAGE
RAT	RETURN AIR TEMPERATURE
RPM	REVOLUTIONS PER MINUTE
SI	SQUARE INCHES
SAT	SUPPLY AIR TEMPERATURE
SCFM	STANDARD CUBIC FEET PER MINUTE
SP GR	SPECIFIC GRAVITY
SQ FT	SQUARE FOOT (FEET)
SQ M	SQUARE METER
TD	TEMPERATURE DIFFERENCE
TSP	TOTAL STATIC PRESSURE
W	WATTS
WB	WET-BULB (TEMPERATURE)

MECHANICAL ABBREVIATIONS

AHU	AIR-HANDLING UNIT
AMP	AMPERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
AQST	AQUASTAT
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
BG	BOTTOM GRILLE
BHP	BRAKE HORSEPOWER
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CCD	COOLING COIL CONDENSATE DRAIN
CD	CEILING DIFFUSER
CENT	CENTRIFICAL
CG	CEILING GRILLE
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CO	CLEAN OUT
CO²	CARBON DIOXODE
COMP	COMPRESSOR UNIT
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CU	CONDENSING UNIT
CV	CONSTANT VOLUME
CW	COLD WATER (POTABLE)
D	DAMPER - AUTOMATIC
DB	DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DF	DIFFUSER
DIW	DEIONIZED WATER
DP	DIFFUSER PLATE
DP	DEW POINT TEMPERATURE
DPA	DIFFERENTIAL PRESSURE ASSEMBLY
DPS	DIFFERENTIAL PRESSURE SENSOR
DX	DIRECT EXPANSION
DXCC	DIRECT EXPANSION COOLING COIL
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EVAPORATIVE COOLER
ECC	ENGINEERING CONTROL CENTER
ECU	EVAPORATIVE CONDENSER UNIT
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EH	EXHAUST HOOD
ENT	ENTERING
ER	EXHAUST REGISTER
EWT	ENTERING WATER TEMPERATURE
FD	FLOOR DRAIN
FD	FIRE DAMPER
FF	FINAL FILTER
FM	FLOW METER
FV	FACE VELOCITY
HB	HOSE BIBB
HC	HEATING COIL
HD	HOOD
HSTAT	HUMIDISTAT
HW	HOT WATER (POTABLE)
HWC	HOT WATER COIL
HX	HEAT EXCHANGER
IAQ	INDOOR AIR QUALITY
LAT	LEAVING AIR TEMPERATURE
LVG	LEAVING
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MB	MIXING BOX
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MHP	MOTOR HORSEPOWER
MZ	MULTI-ZONE
NC	NORMALLY CLOSED
NC	NOISE CRITERIA
NO	NORMALLY OPEN
O²	OXYGEN
OA	OUTSIDE AIR
OAD	OUTDOOR AIR DAMPER
OAI	OUTSIDE AIR INTAKE
P	PUMP
PG	PRESSURE GAGE
R/E	RETURN OR EXHAUST
RA	RETURN AIR
RAD	RETURN AIR DAMPER
RDS	ROOM DATA SHEETS
REA	RELIEF AIR
REF	REFRIGERANT
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RR	RETURN REGISTER
RTU	ROOF TOP UNIT
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SDPR	SMOKE DAMPER
SDR	SMOKE DAMPER (RETURN)
SDS	SMOKE DAMPER (SUPPLY)
SEN	SENSIBLE HEAT
SF	SUPPLY FAN
SG	SUPPLY AIR GRILLE
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SR	SUPPLY AIR REGISTER
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
V	VALVE
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE

GENERAL MECHANICAL NOTES

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF VETERANS AFFAIRS (VA) STANDARDS.
2. ALL WORK SHALL BE IN CONFORMANCE WITH THE INTERNATIONAL MECHANICAL CODE - LATEST EDITION ADOPTED BY THE VA. THE VA SERVES AS AUTHORITY HAVING JURISDICTION.
3. THESE DOCUMENTS ARE INTENDED TO COMPLY WITH APPLICABLE CODES. WHERE DISCREPANCIES OCCUR, NOTIFY THE ENGINEER/ARCHITECT IN WRITING FOR INTERPRETATION. CORRECT ANY INSTALLATION THAT FAILS TO COMPLY WITH THE CODES AND STANDARDS AT NO ADDITIONAL COST TO THE OWNER.
   CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY INCLUDING ALL LABOR, MATERIALS, PERMITS, TAXES, FEES, INSPECTIONS, HARDWARE, AND COST FOR INSTALLATION FOR A COMPLETE AND OPERATIONAL SYSTEM.
4. ALL MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, COMPLETE WITH MANUFACTURER'S GUARANTEE OR WARRANTY AND SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
5. PENETRATIONS THROUGH FIRE RATED WALLS BY DIVISION 23 CONTRACTOR SHALL BE SEALED WITH APPROPRIATE FIRE PROOFING MATERIAL TO RESTORE FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.
6. CONTRACTOR SHALL KEEP THE WORK AREA CLEAN OF ALL DEBRIS ON A DAILY BASIS. ALL NEW MATERIALS AWAITING INSTALLATION SHALL BE KEPT IN AREAS DESIGNATED BY THE OWNER.
7. DRAWINGS SHALL NOT BE SCALED TO OBTAIN DIMENSIONS. REFER TO DIMENSIONED ARCHITECTURAL FLOOR PLANS. IF THE DIMENSIONS CANNOT BE DETERMINED BY THE INFORMATION GIVEN, CONTRACTOR SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION.
8. PERIODIC SITE OBSERVATION BY THE ENGINEER IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHOULD NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK, BUT RATHER PERIODIC IN AN EFFORT TO GUARD THE OWNER AGAINST DEFECTS OR DEFICIENCIES IN THE WORK OF THE CONTRACTOR.
9. INFORMATION CONTAINED ON THE MECHANICAL DRAWINGS IS IN ITSELF INCOMPLETE AND VOID UNLESS USED IN CONJUNCTION WITH ALL OTHER DISCIPLINE DRAWINGS, THE SPECIFICATIONS, TRADE PRACTICES, OR APPLICABLE STANDARDS, CODES, ETC., AND SHALL BE CONSIDERED THE CONTRACT DOCUMENTS AND WITH ALL THEREIN BY REFERENCE, WHICH THE CONTRACTOR CERTIFIES KNOWLEDGE OF BY SIGNING THE CONTRACT.
10. CONTRACTOR IS TO ASSUME FULL RESPONSIBILITY, UNRELIEVED BY REVIEW OF SHOP DRAWINGS OR PERIODIC OBSERVATION OF CONSTRUCTION, FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED ON THE JOB SITE AND BETWEEN INDIVIDUAL DRAWINGS OR SETS OF DRAWINGS FOR FABRICATION PROCESSES AND CONSTRUCTION TECHNIQUES (INCLUDING EXCAVATION, SHORING, SCAFFOLDING, BRACING, ERECTION, FORM WORK, ETC.), FOR COORDINATION OF THE VARIOUS TRADES, AND FOR SAFE CONDITIONS ON THE JOB SITE. VARIATIONS IN FIELD CONDITIONS RELATIVE TO THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER AS SOON AS THEY ARE FOUND. WORK SHALL NOT PROGRESS UNTIL WRITTEN PERMISSION FROM THE ENGINEER IS OBTAINED.
11. PROVIDE VOLUME BALANCING DAMPERS FOR ALL SUPPLY DIFFUSERS, RETURN AND EXHAUST GRILLES AND AT EACH INDIVIDUAL BRANCH VENTILATION SUPPLY, RETURN AND RELIEF DUCT.
12. PLACE DIFFUSERS AS CLOSE TO PLAN LOCATION AS POSSIBLE WITHOUT INTERFERING WITH OTHER CEILING DEVICES.
13. ALL NEW EQUIPMENT AND ACCESSORIES SHALL BE INSTALLED SO AS TO BE EASILY ACCESSIBLE. ALL CLEARANCES FOR EQUIPMENT PER MANUFACTURERS GUIDELINES AND CODE COMPLIANCE SHALL BE REQUIRED.
14. PROVIDE ACCESS PANELS FOR VALVES, ETC. THAT ARE LOCATED IN CONCEALED AREAS. COORDINATE WITH GENERAL CONTRACTOR FOR EXACT LOCATION AND WITH ARCHITECTURAL PLANS FOR FINISHES.
15. ALL COMPONENTS OF SYSTEMS SHALL BE PROVIDED FOR A COMPLETELY OPERATIONAL, UNDERSTANDABLE, SAFE, AND CLEAN SYSTEM; INCLUDING BUT NOT LIMITED TO EXTRANEOUS FIXTURE TRIM AS SPECIFIED, SERVICE AND COMMISSIONING INTO OPERATION, LABELS, TESTING AND CLEANING, FIRE AND LIFE SAFETY REQUIREMENTS, AND CONSIDERING THE REQUESTS OF OWNERS PERSONNEL.
16. ELECTRICAL PANELS SHOWN FOR REFERENCE. DO NOT ROUTE ANY COMPONENTS ABOVE OR IN FRONT OF ELECTRICAL EQUIPMENT. MAINTAIN CODE REQUIRED CLEARANCES.
17. ALL DUCTWORK SIZES SHOWN ON DRAWINGS ARE CLEAR INTERIOR DIMENSIONS.
18. THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR AND COORDINATED WITH ARCHITECTURAL PLANS. IF THERMOSTATS ARE INSTALLED ADJACENT TO A LIGHT SWITCH ALIGN MOUNTING HEIGHT WITH LIGHT SWITCH.
19. PROVIDE CONCEALING FLANGES AT ALL VISIBLE DUCT PENETRATIONS THROUGH WALLS.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERCONNECTING CONTROL WIRING.
21. PLANS ARE DIAGRAMMATIC AND INTENDED TO CONVEY SCOPE OF WORK AND GENERAL LOCATIONS OF EQUIPMENT, MATERIALS, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT OWN WORK ACCORDINGLY AND IS RESPONSIBLE FOR DETERMINING EXACT LOCATIONS FOR EQUIPMENT, MATERIALS, ETC.
22. THE EXISTING MECHANICAL SYSTEMS SHALL BE MODIFIED PER SPECIFIED PLANS AND SPECIFICATIONS. FIELD VERIFY EXISTING MECHANICAL SYSTEMS REQUIREMENTS PRIOR TO BIDDING.
23. COORDINATE SCOPE OF WORK WITH THE WORK OF OTHER TRADES PRIOR TO INSTALLATION. ISSUES DUE TO LACK OF COORDINATION EFFORT WILL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
    COORDINATE LOCATION OF SYSTEM COMPONENTS WITHIN LIMITS OF STRUCTURE AND OTHER ENGINEERED SYSTEMS. ROUTE ALL MECHANICAL SYSTEMS IN CONCEALED SPACES AND INSTALL COMPONENTS AS HIGH AS POSSIBLE. OFFSET SYSTEMS ROUTING AS REQUIRED, PROVIDING REQUIRED MATERIALS. PIPE SHALL NOT BE ROUTED IN EXTERIOR WALLS UNLESS NOTED.
    COORDINATE ROUTING OF MECHANICAL SYSTEMS TO MAINTAIN REQUIRED SERVICE CLEARANCES AROUND ANY EQUIPMENT AND ELECTRICAL ITEMS.
24. INFILL AND REPAIR TO MATCH EXISTING CONDITIONS ALL WALL, FLOOR, AND CEILING PENETRATIONS RESULTING FROM DEMOLISHED ITEMS, AND INSTALLATION OF NEW SYSTEMS. COORDINATE WITH GENERAL CONTRACTOR FOR COVERAGE OF THIS SCOPE.
25. ALL ELEMENTS OF CONSTRUCTION SHALL BE INSTALLED BY SKILLED TRADESMEN OF THERE PARTICULAR TRADE, AND INSTALLED IN A NEAT WORKMANLIKE MANNER KEEPING WITH THE HIGHEST STANDARDS OF THE TRADE.
26. COORDINATE SCOPE OF WORK WITH PROJECT SCHEDULES AGREED UPON BY OWNER AND ALL CONTRACTORS.
27. REFER TO SPECIFICATION MANUAL FOR FURTHER DETAILS ABOUT DESIGN STANDARDS, PRODUCTS, DRAWINGS, SUBMITTALS, DOCUMENTATION, COORDINATION, AND INSTALLATION.
28. PROVIDE DIRECT-DIGITAL CONTROL SYSTEM(S) AS INDICATED ON THE PROJECT DOCUMENTS, POINT LIST, INTEROPERABILITY TABLES, DRAWINGS AND AS DESCRIBED IN THESE SPECIFICATIONS. INCLUDE A COMPLETE AND WORKING DIRECT-DIGITAL CONTROL SYSTEM. PROVIDE ALL ENGINEERING, PROGRAMMING, CONFIGURATION/SETUP HARDWARE AND SOFTWARE, OPEN LICENSES, CONTROLS AND INSTALLATION MATERIALS, INSTALLATION LABOR, COMMISSIONING AND START-UP, TRAINING, FINAL PROJECT DOCUMENTATION AND WARRANTY. COORDINATE WITH VA TECHNOLOGY STAFF FOR INTEGRATION OF REQUIRED SITE NETWORK SECURITY INTEGRATION.
29. CONTROLS SHALL BE AN EXTENSION OF THE EXISTING OWNER PROVIDED TEMPERATURE CONTROL SYSTEM. PROVIDE A COMPLETE AND FUNCTIONAL EXPANDED CONTROL SYSTEM TO ADD ON TO THE EXISTING SYSTEM TO CONTROL ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT. PROVIDE COMPONENTS AND PROGRAMMING THAT MATCH EXISTING SYSTEM AND ARE COMPATIBLE WITH THE EXISTING SYSTEM, INCLUDING BUT NOT LIMITED TO CONTROL BOARDS, THERMOSTATS, WIRING, AND ACCESSORIES. FIELD VERIFY EXISTING PROGRAMMING FOR REUSE AND/OR UPDATING. ALL NEW BUILDING CONTROLLERS SHALL BE NATIVE BACNET. ALL NEW BACNET CONTROLLERS, DEVICES AND COMPONENTS SHALL BE LISTED BY BACNET TESTING LABORATORIES.
30. SEQUENCES INCLUDED IN THE SUBMITTAL MUST REFLECT WHAT IS ACTUALLY GOING TO BE PROGRAMMED, INCLUDING SUGGESTED CHANGES TO THE PLANS. COPIED SEQUENCES FROM THE PLANS WILL NOT BE ACCEPTED. INCLUDE SYSTEM GRAPHICS INDICATING MONITORED SYSTEMS, DATA (CONNECTED AND CALCULATED) POINT ADDRESSES, OPERATOR NOTATIONS, NETWORK CONFIGURATION, ETC.
31. ALL SOFTWARE WORK INVOLVING THIS INTEGRATION PROCESS IS THE RESPONSIBILITY OF THE TEMPERATURE CONTROL CONTRACTOR AND MUST BE COMPLETED BY A TECHNICIAN CERTIFIED WITH THE EXISTING SYSTEM. THE TCC MUST SUBMIT A COPY OF THE CERTIFICATION DOCUMENTATION FOR THE SYSTEM PROGRAMMER PRIOR TO COMPLETING ANY WORK IN ORDER TO ENSURE THE INTEGRITY OF THE SYSTEM.
32. THE TCC IS ALSO RESPONSIBLE FOR PROVIDING AND INSTALLING ALL ROUTERS, SWITCHES, JACE'S, SOFTWARE LICENSES, DRIVERS, ETC, AS NEEDED FOR A COMPLETE INSTALLATION INCLUDING FULL INTEGRATION. THE TCC IS RESPONSIBLE FOR ALL GRAPHICS GENERATION AND POINT MAPPING OF POINTS TO BE ADDED IN THE PROJECT. THE TCC SHALL UTILIZE THE EXISTING DATABASE AS AN EXAMPLE FOR ALL PROGRAMMING, GRAPHICS, ANIMATIONS, AND POINT MAPPING FOR WORK DONE ON THE PROJECT IN ORDER TO MAINTAIN CONSISTENCY WITHIN THE BAS.
33. LOCATIONS OF CONDENSING UNITS ARE SCHEMATIC IN NATURE. CONTRACTOR SHALL COORDINATE FINAL PLACEMENT OF CONDENSING UNITS WITH VA.

GENERAL DEMOLITION NOTES

1. ALL PIPING AND DUCTWORK IS SHOWN SCHEMATICALLY BASED ON EXISTING PLANS. CONTRACTORS SHALL BE RESPONSIBLE FOR COORDINATION OF VERIFYING ROUTES OF ALL EXISTING CONDITIONS AND EXISTING UTILITIES PRIOR TO BIDDING AND STARTING OF WORK. IF CONDITIONS DIFFER GREATLY CONTACT ENGINEER.
2. CONDUCT A PRECONSTRUCTION AIR AND WATER FLOW TEST OF EXISTING SYSTEMS AND MAINS SERVING EACH AREA AND FLOOR BEFORE STARTING ANY DEMOLITION WORK. SUBMIT REPORT OF FLOWS AND FINDINGS TO ENGINEER AND OWNER.
3. COORDINATE SCHEDULE OF WORK WITH OWNER AND PROVIDE SUFFICIENT NOTICE BEFORE ANY SHUTDOWNS, TO MINIMIZE DISRUPTIONS TO ANY CONCURRENT OPERATIONS.
4. COMPLY WITH SITE SAFETY PROCEDURES OF OWNER, GENERAL CONTRACTOR, AND OSHA.
5. DEMOLISH MATERIALS, EQUIPMENT, AND ASSOCIATED SYSTEMS AS SHOWN WITHIN SCOPE OF WORK AREA AS DESIGNATED/NOTED. DEMOLISH ALL BRANCH DUCT AND PIPE, SUPPORTS, ACCESSORIES, EQUIPMENT, TERMINAL DEVICES, CONTROLS, WIRING, CONDUITS, AND ASSOCIATED ITEMS BACK TO RESPECTIVE MAINS. THEN CAP, SEAL, REPAIR, REINSULATE MAIN CONNECTIONS AS REQUIRED. NOTHING SHALL BE ABANDONED IN PLACE UNLESS NOTED OTHERWISE. REMOVE ALL DEMOLISHED ITEMS FROM SITE AND DISPOSE PROPERLY PER LOCAL LAWS.
6. HATCHED OR GRAYED OUT AREAS ARE NOT WITHIN CONTRACT BOUNDARY. COORDINATE WITH OWNER IF SUCH AREAS REQUIRE ACCESS TO COMPLETE SCOPE OF WORK, SUCH AS REMOVING A BRANCH MAIN BACK TO LARGER MAIN TO ELIMINATE DEAD LEGS.
7. INFILL AND REPAIR TO MATCH EXISTING CONDITIONS ALL WALL, FLOOR, AND CEILING PENETRATIONS RESULTING FROM DEMOLISHED ITEMS, AND INSTALLATION OF NEW SYSTEMS. COORDINATE WITH GENERAL CONTRACTOR FOR COVERAGE OF THIS SCOPE.
8. SAVE NOTED ITEMS FOR REUSE OR OWNERS SALVAGE. STORE NOTED ITEMS AND OTHER ITEMS IDENTIFIED BY OWNER IN OWNER'S DESIGNATED STORAGE AREA.
9. PROTECT EXISTING TO REMAIN EQUIPMENT, MATERIALS, AND SURROUND SITE FROM DAMAGE DURING DEMOLITION. REPAIRS AND REPLACEMENT OF EXISTING TO REMAIN CONDITIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
10. REFER TO SPECIFICATION MANUAL FOR FURTHER DETAILS.

ROOMS IN SCOPE - MECHANICAL

LEVEL	NUMBER	NAME	MECHANICAL DEMO REQUIRED	MECHANICAL NEW REQUIRED
BUILDING 03				
LEVEL 01	1454	TELECOMMUNICATIONS ROOM	No	Yes
BUILDING 04				
LEVEL 02	2110	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 05				
LEVEL 01	117	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 02	204	EXISTING TELECOMMUNICATION RM.	Yes	Yes
BUILDING 06				
LEVEL 01	6-1-C102	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	A104	EXISTING TELECOMMUNICATION RM.	Yes	Yes
LEVEL 01	B103	EXISTING TELECOMMUNICATION RM.	Yes	Yes
LEVEL 02	D203	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 03	C302	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 07				
BASEMENT	B09	EXISTING TELECOMMUNICATION RM.	Yes	Yes
BUILDING 20				
LEVEL 01	20-1-030	TELECOMMUNICATIONS ROOM	No	Yes
BUILDING 43				
LEVEL 01	A156	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 02	A201	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 70				
LEVEL 01	B-159	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	C-126	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	D-125	EXISTING TELECOMMUNICATION RM.	Yes	Yes
LEVEL 01	E-104	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 97				
LEVEL 01	005	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 102				
BASEMENT	B100FC	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	144	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 107				
LEVEL 02	200	TELECOMMUNICATIONS ROOM	No	Yes
BUILDING 108				
LEVEL 02	200	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 109				
BASEMENT	B001	TELECOMMUNICATIONS ROOM	No	Yes
BUILDING 111				
BASEMENT	B0610E	TELECOMMUNICATIONS ROOM	Yes	Yes
BASEMENT	B0622	TELECOMMUNICATIONS ROOM	Yes	Yes
BASEMENT	B0423	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	1180	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	1470	DEMARC ROOM	Yes	Yes
LEVEL 01	1471	SUBSTATION ROOM	Yes	Yes
LEVEL 01	1472	ELECTRICAL ROOM	Yes	Yes
LEVEL 01	1473	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	1537B	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 02	2235	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 02	2528A	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 02	2557	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 03	3308	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 04	4315	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 05	5311	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 06	6410A	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 07	7412	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 08	8409	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 09	9409	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 10	10409	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 112				
LEVEL 01	108	EXISTING TELECOMMUNICATION RM.	No	Yes
BUILDING 113				
BASEMENT	106	REFRIGERATION ROOM	No	No
BUILDING 123				
LEVEL 01	A107	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	B113	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	C113	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	D113	TELECOMMUNICATIONS ROOM	Yes	Yes
LEVEL 01	E105E	TELECOMMUNICATIONS ROOM	Yes	Yes
BUILDING 146				
BASEMENT	005	EXISTING TELECOMMUNICATION RM.	No	No
BUILDING 147				
BASEMENT	002	TELECOMMUNICATIONS ROOM	No	No
BUILDING 148				
BASEMENT	002	TELECOMMUNICATIONS ROOM	No	No

AREA PLAN LEGEND

AREA NOT IN CONTRACT

HVAC DESIGN DATA

DESIGN CONDITIONS	SUMMER					WINTER					LOWEST AVERAGE ANNUAL DEWPOINT	
	TEMP		WET BULB TEMP		% HUMIDITY	TEMP		DEWPOINT TEMP		% HUMIDITY		
	°F	[°C]	°F	[°C]		°F	[°C]	°F	[°C]		°F	[°C]
OUTDOOR DESIGN CONDITIONS	90	[32]	74.3	[24]	30	-1.4	[-19]	-1.9	[-19]	N/A	0	[-18]
INDOOR AREA DESIGN CONDITIONS												
ALL ROOMS	80.6	[27]	63	[17]	60	64	[18]	35	[2]	8	N/A	N/A

Revisions:	Date:

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SPLIT SYSTEM AIR CONDITIONER / EVAPORATOR SCHEDULE

INDOOR UNIT MARK	OUTDOOR COND. UNIT MARK	BLDG	ROOM	INDOOR UNIT TYPE	HEAT LOAD STANDARD BASIS OF DESIGN	TOTAL SUPPLY AIR FLOW	TOTAL CAPACITY	COOLING CAPACITY				HEATING CAPACITY					MCA / MOP AMPS	PHASE	VOLT	REFRIG.	PIPE LENGTH MAX. FT	INDOOR UNIT MANF / MODEL	OUTDOOR UNIT MANF / MODEL	NOTES
								MIN SEER2	EAT Db	EAT Wb	OSA DESIGN...	MIN. HEAT CAPACITY	COP @ 5 F	EAT Db	LAT Db	OSA DESIGN...								
						CFM	MBH		°F	°F	°F	MBH		°F	°F	°F								
03-AC-1454	03-ACCU-1454	3	1454	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
04-AC-2110	04-ACCU-2110	4	2110	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
05-AC-117	05-ACCU-117	5	117	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
05-AC-204	05-ACCU-204	5	204	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
06-AC-A104	06-ACCU-A104	06	A104	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
06-AC-B103	06-ACCU-B103	06	B103	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
06-AC-C102	06-ACCU-C102	06	C012	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
06-AC-D203	06-ACCU-D203	06	D203	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
06-AC-C302	06-ACCU-C302	06	C302	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
07-AC-B09	07-ACCU-B09	07	B09	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
20-AC-20-1-030	20-ACCU-20-1-030	20	20-1-030	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
43-AC-A156	43-ACCU-A156	43	A156	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
43-AC-A201	43-ACCU-A201	43	A201	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
70-AC-E-104	70-ACCU-E-104	70	E-104	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
70-AC-D-125	70-ACCU-D-125	70	D-125	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
70-AC-B-159	70-ACCU-B-159	70	B-159	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
70-AC-C-126	70-ACCU-C-126	70	C-126	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
97-AC-005	97-ACCU-005	97	005	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
102-AC-B100F	102-ACCU-B100F	102	B100FC	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
102-AC-144	102-ACCU-144	102	144	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
107-AC-200	107-ACCU-200	107	200	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
108-AC-200	108-ACCU-200	108	200	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
109-AC-B001	109-ACCU-B001	109	B001	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
111-AC-B0610E	111-ACCU-B0610E	111	B0610E	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
111-AC-B0622	111-ACCU-B0622	111	B0622	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
111-AC-B0423	111-ACCU-B0423	111	B0423	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
111-AC-1180	111-ACCU-1180	111	1180	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
111-AC-1471-A	111-ACCU-1471-A	111	1471	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-1471-B	111-ACCU-1471-B	111	1471	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-1472-A	111-ACCU-1472-A	111	1472	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-1472-B	111-ACCU-1472-B	111	1472	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-1470-A	111-ACCU-1470-A	111	1470	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-1470-B	111-ACCU-1470-B	111	1470	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-1537B	111-ACCU-1537B	111	1537B	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-1473	111-ACCU-1473	111	1473	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-2235	111-ACCU-2235	111	2235	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-2428A	111-ACCU-2428A	111	2428	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-2557	111-ACCU-2557	111	2557	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
111-AC-3308	111-ACCU-3308	111	3308	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-4315	111-ACCU-4315	111	4315	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-5311	111-ACCU-5311	111	5311	WALL MOUNT	10 kw (34,120 btuh)	794	33.6	21	75	61	95	16.5	1.8	64	84	-13	23 / 35	1	208-230	R-35	131	GREE - LIV36HP230V1R32AH	GREE - LIV36HP230V1R32AO	1, 2, 3, 4
111-AC-6410A	111-ACCU-6410A	111	6410A	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
111-AC-7409	111-ACCU-7409	111	7412	WALL MOUNT	7 kw (23,884 btu/hr)	677	24	19	75	61	95	13.1	1.75	64	84	-13	15 / 20	1	208-230	R-33	131	GREE - LIV24HP230V1R32AH	GREE - LIV24HP230V1R32AO	1, 2, 3, 4
111-AC-8409	111-ACCU-8409	111	8409	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-9409	111-ACCU-9409	111	9409	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
111-AC-10409	111-ACCU-10409	111	10409	WALL MOUNT	8.5 kw (29,002 btuh)	794	30	22	75	61	95	16.5	1.8	64	84	-13	25.6 / 35	1	208-230	R-34	131	GREE - LIV30HP230V1R32AH	GREE - LIV30HP230V1R32AO	1, 2, 3, 4
112-AC-108	112-ACCU-108	112	108	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
123-AC-A107	123-ACCU-A107	123	A107	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
123-AC-B113	123-ACCU-B113	123	B113	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
123-AC-C113	123-ACCU-C113	123	C113	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
123-AC-D113	123-ACCU-D113	123	D113	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4
123-AC-E105E	123-ACCU-E105E	123	E105E	WALL MOUNT	5 kw (17,060 btu/hr)	618	18	20	75	61	95	9.1	1.75	64	84	-13	13 / 15	1	208-230	R-32	82	GREE - LIVI18HP230V1R32AH	GREE - LIVI18HP230V1R32AO	1, 2, 3, 4

NOTES:

1. LOCATIONS OF CONDENSING UNITS ARE SCHEMATIC IN NATURE. CONTRACTOR SHALL COORDINATE FINAL PLACEMENT OF CONDENSING UNITS WITH VA.
2. PROVIDE MICROPROCESSOR CONTROL, PROGRAMMABLE THERMOSTAT, BACNET INTERFACE, UNITY CARD OR EQUIVALENT, DISCONNECT SWITCH, CONDENSATE PUMP, AIR FILTER, SECONDARY DRAIN PAN WITH WATER LEAK SENSOR, 18" CONDENSER STANDS. INSTALL PER MANUFACTURER GUIDELINES.
3. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH. INDOOR UNIT IS POWERED BY OUTDOOR UNIT.
4. COORDINATE REFRIGERANT PIPE ROUTING WITH MANUFACTURER TO ENSURE PIPE RUNS DO NOT EXTEND FURTHER THAN THE MANUFACTURER'S RECOMMENDED DISTANCES. UPSIZE REFRIGERANT PIPE IF REQUIRED. PROVIDE ADDITIONAL REFRIGERANT CHARGE AS NEEDED FOR LINESET LENGTHS.

OIT TR ROOM DESIGN INPUT COORDINATION SCHEDULE

BLDG	ROOM	IT RACKS	ROOM TYPE	HEAT LOAD STANDARD BASIS OF DESIGN	HVAC SYSTEM TYPE	CRITICAL REDUNDANCY LEVEL	ANSI/TIA-942-B RATING	FIRE SUPPRESSION SYSTEM TYPE	NOTES
NUM.	NUM.	QTY	TE / TR	VA Standard Rack Loads	DX Mini-Split	N	1 / 2 / 3 / 4	WS (wet system) CA (clean agent)	
3	1454	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
4	2110	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
5	117	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
5	204	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
6	A104	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
6	B103	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
6	C012	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
6	D203	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
6	C302	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
7	B09	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
20	20-1-030	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
43	A156	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
43	A201	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
70	B-159	3	TR	8.5 kw (29,002 btuh)	DX	N	1	NONE	
70	E-104	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
70	D-125	2	TR	7 kw (23,884 btu/hr)	DX	N	1	NONE	
70	C-126	3	TR	8.5 kw (29,002 btuh)	DX	N	1	NONE	
97	005	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
102	B100FC	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
102	144	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
107	200	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
108	200	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
109	B001	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
111	B0610E	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
111	B0622	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
111	B0423	2	TR	7 kw (23,884 btu/hr)	DX	N	1	WS	
111	1180	2	TR	7 kw (23,884 btu/hr)	DX	N	1	WS	
111	1473	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	1470	3	DEMARC	8.5 kw (29,002 btuh)	DX	N + 1	3	WS & CA	
111	1471	-	SUBSTATION	20 kw (68,240 btuh)	DX	N	1	WS	
111	1472	-	ELEC RM	20 kw (68,240 btuh)	DX	N	1	WS	
111	1537B	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	2235	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	2428	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	2557	2	TR	7 kw (23,884 btu/hr)	DX	N	1	WS	
111	3308	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	4315	4	TR	10 kw (34,120 btuh)	DX	N	1	WS	
111	5311	4	TR	10 kw (34,120 btuh)	DX	N	1	WS	
111	6410A	2	TR	7 kw (23,884 btu/hr)	DX	N	1	WS	
111	7412	2	TR	7 kw (23,884 btu/hr)	DX	N	1	WS	
111	8409	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	9409	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
111	10409	3	TR	8.5 kw (29,002 btuh)	DX	N	1	WS	
112	108	1	TR	5 kw (17,060 btu/hr)	DX	N	1	NONE	
113	105	0	TE	NA/0 kw (NA/0 btu/hr)	NONE	N	1	NONE	
123	A107	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
123	B113	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
123	C113	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
123	D113	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
123	E105E	1	TR	5 kw (17,060 btu/hr)	DX	N	1	WS	
144	G22	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
144	175	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
144	G68	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
144	146	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
146	002	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
147	002	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.
148	002	1	TR	5 kw (17,060 btu/hr)	DX - Existing	N	1	WS	NO CHANGES TO COOLING SYSTEMS OR SPRINKLERS.

65% DESIGN DEVELOPMENT SUBMISSION	6.15.21
Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL SCHEDULES

Approved:

Phase: FINAL BID DOCUMENTS

Sprinklered: FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI

Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI

Issue Date: SEPTEMBER 5, 2025 | Checked: AGW | Drawn: HWG

Project Number: 695-21-700

Building Number:

Drawing Number: M-002

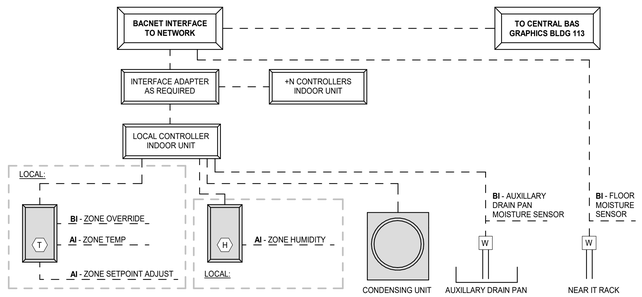
VA FORM 08 - 6231

Autodesk Docs://OCFM East - Milwaukee EHRM (R24)/Consolidated Model (R24).rvt

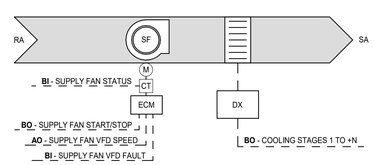
8/30/2025 10:22:36 AM

POINTS LIST

POINT NAME	HARDWARE POINTS				SOFTWARE POINTS					SHOW ON GRAPHIC
	AI	AO	BI	BO	AV	BV	TREND	SCHEDULE	ALARM	
SYSTEM (AIR HANDLER) ON/OFF				X				X		
ZONE TEMPERATURE OVERRIDE			X				X			X
ZONE SETPOINT ADJUST HEATING AND COOLING			X				X			X
ZONE TEMP	X						X			X
ZONE HUMIDITY	X						X			X
SUPPLY AIR TEMPERATURE	X						X			X
SUPPLY FAN STATUS			X				X			X
CONDENSER/COMPRESSOR STATUS			X				X			X
COOLING STAGE 1 +N				X			X			X
SUPPLY FAN START/STOP				X			X			X
COOLING SETPOINT					X		X			X
HEATING SETPOINT					X		X			X
COMPRESSOR RUNTIME EXCEEDED							X		X	
FILTER CHANGE REQUIRED	X							X	X	X
HIGH SUPPLY AIR TEMP									X	
LOW SUPPLY AIR TEMP									X	
HIGH ZONE AIR TEMP									X	
LOW ZONE AIR TEMP									X	
HIGH ZONE HUMIDITY									X	
LOW ZONE HUMIDITY									X	
COMPRESSOR FAILURE									X	
SUPPLY FAN FAILURE									X	
SUPPLY FAN RUNTIME EXCEEDED									X	
SUPPLY FAN ECM STATUS			X				X			X
SUPPLY FAN ECM SPEED		X					X			X
SUPPLY FAN ECM FAULT			X						X	X
SCHEDULE								X		
AUX DRAIN PAN MOISTURE SENSOR	X									X
AUX DRAIN PAN WATER SENSED									X	
FLOOR MOISTURE SENSOR	X									X
FLOOR MOISTURE SENSED									X	



- CONTROL OF UNIT AND ROOM CONDITIONS THROUGH OIT SERVER. CENTRAL BAS TO HAVE PASSWORD LOCKED OVERRIDING CONTROL OF CRAC UNIT, TO HAVE MONITORING AND ALARMING CAPABILITIES ONLY.
- COORDINATE CONTROL COMPONENTS AND WIRING WITH UNIT MANUFACTURER AND BUILDING AUTOMATION SYTEM.
- UNITS MAY REQUIRE UNIT MANUFACTURER PROVIDED COMPONENTS FOR COMPATIBILITY.
- PROVIDE POINTS AS AVAILABLE PER UNIT MANUFACTURER FOR CRITICAL PERFORMANCE SETPOINTS, MONITORING, AND ALARMS.
- INTERFACE ADAPATER SHALL BE UNITY CARD OR EQUIVALENT.



1 CONTROLS SCHEMATIC - TR UNIT DX
NTS

SEQUENCE - DATA CENTER UNIT DX

TELECOMMUNICATIONS ROOM UNIT

ALL EQUIPMENT TO BE CONNECTED TO CENTRAL HVAC AUTOMATION SYSTEM WITH BACNET DEVICES FOR CENTRAL MONITORING, TRENDING, AND ALARMING PURPOSES. ALARMS ARE TO NOTIFY HVAC VIA METASYS TO GRAPHICS.

UNITS CONTROLLERS SHALL OPERATE INDEPENDENTLY FROM THE CENTRAL HVAC AUTOMATION SYSTEM. PROVIDE A WALL-MOUNT PROGRAMMABLE THERMOSTAT FOR EACH UNIT.

PROVIDE AS MANY NOTED POINTS AS POSSIBLE PER THE UNITS AVAILABILITY FROM THE UNIT MANUFACTURERS CONTROL BOARD. IF POINTS ARE NOT AVAILABLE THEN COORDINATE WITH ENGINEER AND NOTE IN SUBMITTALS WHAT IS AVAILABLE AND WHAT IS NOT AVAILABLE.

RUN CONDITIONS - CONTINUOUS:
SUPPLY AIR TEMPERATURE SETPOINTS SHALL RANGE BETWEEN 64°F FOR HEATING MODE, AND 81°F FOR COOLING MODE, WHILE MAINTAINING RACK INLET TEMPERATURES BETWEEN 72°F AND 80.6°F. DIGITALLY CONTROLED COMPRESSOR TO MATCH SETPOINTS, AND VARY AIRFLOWS AS REQUIRED.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:
THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE UNOCCUPIED OVERRIDE:
A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

SUPPLY FAN:
THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME. FAN SPEED SHALL BE VARIABLE ELECTRONICALLY COMMUTATED MOTOR AND AUTOMATICALLY REGULATED BY UNIT CONTROLLER FOR ALL MODES OF OPERATION.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- SUPPLY FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- SUPPLY FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- SUPPLY FAN RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

HEAT PUMP COOLING & HEATING:
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE/MODULATE THE HEAT PUMP TO MAINTAIN ITS ZONE SETPOINT. TO PREVENT SHORT CYCLING, THERE SHALL BE A USER DEFINABLE (ADJ.) DELAY BETWEEN STAGES, AND EACH STAGE SHALL HAVE A USER DEFINABLE (ADJ.) MINIMUM RUNTIME.

THE HEAT PUMP SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS ABOVE COOLING SETPOINT, ENGAGE COOLING STAGE.
- THE ZONE TEMPERATURE IS BELOW HEATING SETPOINT, ENGAGE HEATING STAGE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW SUPPLY AIR TEMP: IF THE SUPPLY AIR TEMPERATURE IS LESS THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

FILTER SCHEDULE:
THE CONTROLLER SHALL MONITOR THE FILTER SCHEDULE FOR CHANGE OUT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- FILTER CHANGE REQUIRED: FILTER RUN TIME EXCEEDS A USER DEFINABLE LIMIT 90 DAYS (ADJ.).

HUMIDITY MONITORING:
ROOM AIR HUMIDITY SHALL RANGE BETWEEN 8% RH AND 60% RH. THE BAS TO MONITOR, TREND, AND ALARM HUMIDITY STATUS.

ALARMS SHALL BE PROVIDED AS FOLLOWS:
- HIGH ZONE HUMIDITY: IF THE ZONE HUMIDITYIS GREATER THAN THE SETPOINT BY A USER DEFINABLE AMOUNT 10% (ADJ.) FOR A USER DEFINABLE AMOUNT OF TIME 30 MINUTES (ADJ.).
- LOW ZONE HUMIDITY: IF THE ZONE HUMIDITY IS LESS THAN THE SETPOINT BY A USER DEFINABLE AMOUNT 10% (ADJ.) FOR A USER DEFINABLE AMOUNT OF TIME 30 MINUTES (ADJ).

CONDENSATE OVERFLOW:
THE AUXILIARY DRAIN PAN MOISTURE SENSOR SHALL MONITOR FOR WATER IN CONDENSATE PAN. UNIT SHALL SHUT DOWN ON CONDENSATE OVERFLOW AFTER USER DEFINED TIME AFTER 12 HOURS (ADJ).

ALARM SHALL BE PROVIDED AS FOLLOWS:
- WATER OVERFLOW SENSED IN PAN.

FLOOR MOISTURE SENSOR:
THE FLOOR MOISTURE SENSOR SHALL MONITOR FOR WATER NEAR IT RACKS.

ALARM SHALL BE PROVIDED AS FOLLOWS:
- WATER SENSED NEAR IT RACK.

REDUNDANT OPERATION
WHEN PAIRED WITH MULTIPLE DX UNITS, OPERATE INDOOR EVAPORATOR UNITS ON A VA APPROVED LEAD/LAG/STANDBY SCHEDULE, AND WITH OFFSET TEMPERATURE SETPOINTS (ADJ) TO PROVIDE ADDITIONAL OR REDUNDANT CAPACITY.

Revisions:	Date:

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Office of Construction and Facilities Management
VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL CONTROLS	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number:
		Issue Date: SEPTEMBER 5, 2025 / Checked: AGW / Drawn: HWG	Drawing Number: M-003

VA FORM 08 - 6231

Autodesk Docs://OCFM East - Milwaukee EHRM (R24)/Consolidated Model (R24).rvt
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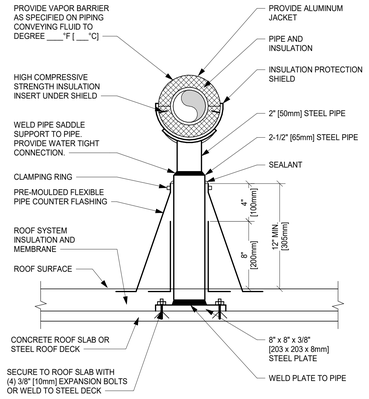
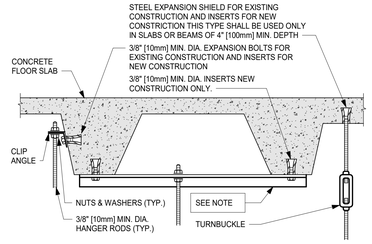


NOTES:

1. PROVIDE RESTRAINING CLAMPS 8'-0" [2.4m] O.C.

4 PIPE SUPPORT ON ROOF
NTS



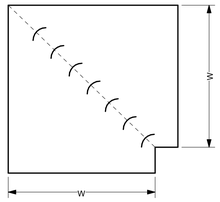
TYPICAL METHOD OF SECURING HANGER RODS IN CONCRETE SLABS AND BEAMS.

NOTE:

PIPES UNDER 2" [50mm] IN SIZE: 1-1/2" x1-1/2" x 1/4" [40 x 40 x 8mm] ANGLE

PIPES 2" [50mm] AND LARGER: 3" x 3" x 1/4" [75 x 75 x 8mm] ANGLE

3 HANGER RODS IN CONCRETE DETAIL
NTS



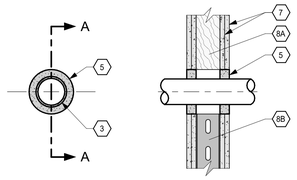
NOTES:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN W1 DOES NOT EQUAL W2, VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF W DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" [50mm] RADIUS, 1 1/2" [40mm] MAXIMUM SPACE BETWEEN VANES AND A 3/4" [20mm] TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" [500mm] VANES SHALL BE DOUBLE VANE TYPE.

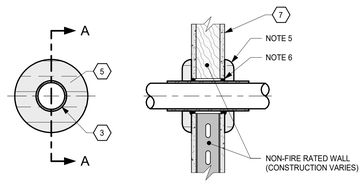
2 DUCT ELBOW VANES DETAIL
NTS

KEYNOTES

1. CONCRETE/CONCRETE BLOCK FLOOR OR WALL ASSEMBLY:
   A. MIMIMUM 5 IN. THICK REINFORCED NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF OPENING IS 6 IN.
   B. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE FLOOR OR MIN 5 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS.
   C. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE FLOOR OR MIN 5 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM AREA OF OPENING IS 45 SQ IN. WITH A MAXIMUM DIMENSION OF 9 IN.
   D. FLOOR OR WALL ASSEMBLY - MINIMUM 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE FLOOR OR MIN 5 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE WALL. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM AREA OF OPENING IS 192 SQ IN. WITH A MAXIMUM DIMENSION OF 24 IN.
2. METALLIC SLEEVE (OPTIONAL) – NOMINAL 6 IN. DIAM (OR SMALLER) ELECTRICAL METALLIC TUBING, STEEL CONDUIT OR CAST IRON PIPE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES.
3. THROUGH PENETRANTS – ONE METALLIC PIPE OR CONDUIT TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOMINAL ANNULAR SPACE OF 3/4 IN. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
4. PACKING MATERIAL – MIMIMUM 3 IN. THICKNESS OF MIMIMUM 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. PACKING MATERIAL TO BE CENTERED IN WALLS MID DEPTH AND RECESSED TO ALLOW FOR INSTALLATION OF FILL MATERIAL.
5. FILL, VOID, OR CAVITY SEALANT - MINIMUM 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITH THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OF CONTINUOUS CONTACT LOCATIONS BETWEEN PENETRANT AND WALL, A MINIMUM OF 1/2 IN. DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PENETRANT WALL INTERFACE ON BOTH SURFACES OF WALL.
6. WALL ASSEMBLY THE ONE (1) OR TWO (2) HOUR OF FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY IN JUL INCLUDE FOLLOWING CONSTRUCTION FEATURES:
7. GYPSUM BOARD - 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE TAPERED EDGES. GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE, AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR ARE U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY.
8. STUD WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. OPENING IN THE WALL SHALL BE 4 TO 6 IN. WIDER, AND 4 TO 6 IN. HIGHER THAN THE DIAMETER OF THE OPENING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 IN. TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.
   A. WOOD CONSTRUCTION - SHALL CONSIST OF NOMINAL 2 IN. X 4 IN. LUMBER, SPACED 16 IN. ON CENTER. MAXIMUM DIAMETER OF OPENING IS 14-1/2 IN.
   B. STEEL CONSTRUCTION - SHALL BE A MINIMUM OF 2-1/2 IN. WIDE AND SPACED AT MAXIMUM OF 24 IN. ON CENTER. MAXIMUM DIAMETER OF OPENING IS 32-1/4 IN. IF THE DIAMETER OF THE OPENING EXCEEDS THE WIDTH OF THE STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD, INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW ATTACHED TO THE STEEL STUDS AND EACH END THE FRAMING.)

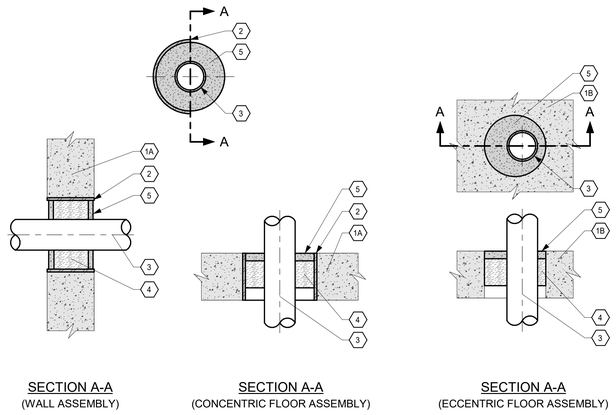


SECTION A-A
PENETRANT IN 1 OR 2 HOUR RATED WALL ASSEMBLY



SECTION A-A
NON-FIRE RATED WALL PENETRANT EXPOSED IN FINISHED ROOM WALL ASSEMBLY

PENETRATION - STUD WALL

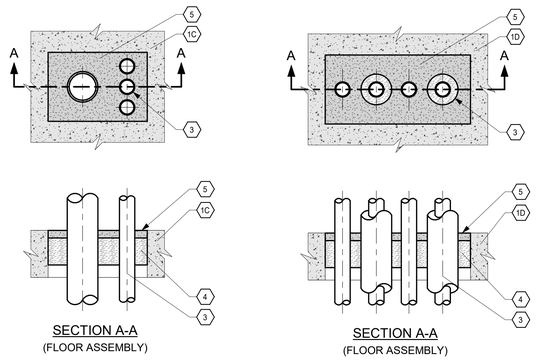


SECTION A-A (WALL ASSEMBLY)

SECTION A-A (CONCENTRIC FLOOR ASSEMBLY)

SECTION A-A (ECCENTRIC FLOOR ASSEMBLY)

PENETRATION - CONCRETE/CONCRETE BLOCK



SECTION A-A (FLOOR ASSEMBLY)

SECTION A-A (FLOOR ASSEMBLY)

MULTIPLE/GANGED PENETRATION - CONCRETE/CONCRETE BLOCK

NOTES:

"PENETRANT" IS DEFINED AS: METALLIC PIPE, CONDUIT, OR TUBING.

WALL PENETRANT - THE FOLLOWING TYPES AND SIZES MAY BE USED:
- STEEL PIPE - NOMINAL 30 IN. DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE BREAK LINE IRON PIPE NOMINAL 30 IN. DIAMETER OR SMALLER CAST OR DUCTILE IRON PIPE.
- COPPER TUBING - NOMINAL 6 IN. DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- COPPER PIPE - NOMINAL 6 IN. DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

FLOOR PENETRANT - THE FOLLOWING TYPES AND SIZES MAY BE USED:
- STEEL PIPE – NOMINAL 4 IN. DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE.
- COPPER TUBING - NOMINAL 3 IN. DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- COPPER PIPE - NOMINAL 3 IN. DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

1. THIS DETAIL APPLIES TO ALL ITEMS PENETRATING FIRE RATED AND NON-FIRE RATED WALLS AND FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND INSULATION AND VAPOR BARRIER THROUGH ALL PENETRATIONS. PERMIT THERMAL EXPANSION WITHOUT DAMAGING INSULATION, AND TO SEAL AIRTIGHT AROUND INSULATED AND UNINSULATED PIPES FOR NOISE TRANSMISSION CONTROL. REFER TO SPECIFICATIONS FOR SELECTION OF THROUGH PENETRATION FIRE STOPPING.
2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL. EACH CONTRACTOR FURNISHES SLEEVE TO GENERAL CONTRACTOR, COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. G.C. BUILDS SLEEVE INTO WALL OR FLOOR ALLOWING NO GAP AROUND SLEEVE. IF SLEEVE IS NOT PROVIDED WHEN WALL OR FLOOR IS BUILT, CONTRACTOR SHALL INSTALL SLEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRE STOP SYSTEM.
3. INSTALL BACKING MATERIAL, SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRE STOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
4. WATER-TIGHT WELDED 1 IN. x 1 IN., MINIMUM 20 GAUGE GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12 IN. MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.
5. WALL ASSEMBLY THE ONE (1) OR TWO (2) HOUR OF FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY IN JUL INCLUDE FOLLOWING CONSTRUCTION FEATURES:
6. THROUGH PENETRANTS - ONE PENETRANT TO BE INSTALLED EITHER CONCENTRICALLY OR A ECCENTRICALLY WITHIN THE FIRE STOP SYSTEM. THE ANNULAR SPACE SHALL BE 0 IN. TO MAXIMUM OF 2-1/4 IN. PENETRANT MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PENETRANT MAY BE INSTALLED AT AN ANGLE, NOT GREATER THAN 45° FROM PERPENDICULAR. PENETRANT SHALL BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
7. INSTALL AN ESCUTCHEON AROUND PIPES EXPOSED IN FINISHED ROOMS. FOR ALL INSULATED PIPING INSTALL A PLASTIC JACKET EXTENDING 6 IN. BEYOND THE WALL TO PROTECT INSULATION FROM DAMAGE.
8. MAKE A SMOOTH ROUND OPENING IN WALL SLIGHTLY LARGER THAN OUTSIDE DIAMETER OF THE PIPE AND INSULATION. ADD A BEAD OF NON-HARDENING CAULK IN THE ANNULAR SPACE.
9. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

1 TYPICAL PIPE PENETRATION DETAIL
NTS

MECHANICAL EQUIPMENT

- MECHANICAL EQUIPMENT - DEMOLITION
- MECHANICAL EQUIPMENT - EXISTING TO REMAIN
- INTAKE AIRFLOW
- MECHANICAL EQUIPMENT
- MANUFACTURER'S RECOMMENDED MAINTENANCE/OPERATIONAL CLEARANCE, SEE PLANS FOR SPECIFIC REQUIREMENTS.

SYMBOLS - PIPING

SYSTEM LABEL	SYSTEM DESCRIPTION
—?"SYS (EX)—	GENERAL PIPING - EXISTING TO REMAIN
— — —?"— — —	GENERAL PIPING - TO BE DEMOLISHED
——?"SYS——	GENERAL PIPING - NEW WORK
————	TYPICAL MECHANICAL SYSTEM - SUPPLY PIPING
— — — —	TYPICAL MECHANICAL SYSTEM - RETURN PIPING
——CHWS——	CHILLED WATER SUPPLY
— —CHWR— —	CHILLED WATER RETURN
——REF——	REFRIGERANT PIPING (LIQ/SUC)
	DEMOLISH TO THIS POINT
	NEW CONNECTION TO EXISTING
	BOTTOM CONNECTION
	END DROP / DOWN
	END UP / RISER
	HEADER FLANGE CAP
	PIPE END CAP
	RISE / DROP IN-LINE
	TEE DOWN
	TEE UP
	TOP CONNECTION
	UP & DN / RISER
	VALVE - BALL, NORMALLY CLOSED
	VALVE - BALL, NORMALLY OPEN
	VALVE - SHUT-OFF, NORMALLY CLOSED
	VALVE - SHUT-OFF, NORMALLY OPEN
	CONTINUATION BREAK
	COUPLING
	DIRECTION OF FLOW
	REDUCER
	UNION

DRAWING SYMBOLS

- 2 / MH100 — DETAIL NUMBER (VIEW # ON SHEET SHOWN); DRAWING NUMBER ON SHEET SHOWN
- 2 / MH100 — SECTION NUMBER (VIEW # ON SHEET SHOWN); DRAWING NUMBER ON SHEET SHOWN
- 01-SF-3 — BUILDING NO. WHERE EQUIPMENT IS LOCATED; EQUIPMENT ABBREVIATION (SUPPLY FAN); ITEM NUMBER (SUPPLY FAN NO. 1); TYPICAL UNIT NO.
- 08-TU-1-1 — BUILDING NO. WHERE EQUIPMENT IS LOCATED; ITEM NUMBER (TERMINAL UNIT NO. 1); SERVED BY (AIR HANDLER UNIT NO. 1); EQUIPMENT ABBREVIATION (TERMINAL UNIT)

DUCTWORK SYMBOLS

(ROUND) (RECT.)

- SUPPLY DUCT UP ("X")
- SUPPLY DUCT DOWN ("X")
- EXHAUST DUCT UP ("Y")
- EXHAUST DUCT DOWN ("Y")
- RETURN DUCT UP ("/")
- RETURN DUCT DOWN ("/")
- SD-14 270 CFM — SUPPLY DIFFUSER/GRILLE (CEILING, SQUARE 4-WAY) SEE NOTES 1, 2, 3.
- RG-24 270 CFM — RETURN GRILLE (CEILING) SEE NOTES 1, 2, 3.
- EG-21 80 CFM — EXHAUST GRILLE SEE NOTES 1, 2, 3.
- SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
- EXHAUST OR RETURN CEILING REGISTER OR GRILLE BELOW DUCT
- EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)
- EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)
- R — INCLINED RISE, IN DIRECTION OF AIR FLOW
- D — INCLINED DROP, IN DIRECTION OF AIR FLOW
- LIMIT OF DEMOLITION
- CONNECT NEW DUCT TO EXISTING DUCT
- FC — FLEXIBLE CONNECTION (FC) - EQUIPMENT, VIBRATION, OR SEISMIC
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS. VANE SYMBOL ARE NOT SHOWN ON PLANS)
- VANED ELBOW (SHORT RADIUS)
- STANDARD RADIUS ELBOW (LONG RADIUS)
- 10"x8"SA — NEW DUCT
- 10"x8"SA(EX) — EXISTING DUCT TO REMAIN
- 10"x8" — EXISTING DUCT TO BE REMOVED

DUCT LABELING NOTE:
- INSIDE DIMENSIONS: WIDTH x DEPTH
- SA = SUPPLY AIR
- RA = RETURN AIR
- OA = OUTSIDE AIR SUPPLY
- EA = EXHAUST AIR

- MANUAL VOLUME DAMPER

NOTES:

1. AIR TERMINAL LABEL:
   AIR TERMINAL TYPE
   BALANCED FLOW RATE
2. AIR TERMINAL TYPE:
   Sx = SUPPLY, Rx = RETURN, Ex = EXHAUST
   xD = DIFFUSER
   xG = GRILLE
   xR = REGISTER (WITH INTEGRATED VOLUME DAMPER)
   (EX. SG-14 = SUPPLY GRILLE)
3. REFER TO AIR DEVICE SCHEDULE FOR DETAILS.

Revisions:	Date:

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VA U.S. Department of Veterans Affairs

Drawing Title: MECHANICAL DETAILS AND LEGENDS	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Building Number:
		Issue Date: SEPTEMBER 5, 2025 / Checked: AGW / Drawn: HWG	Drawing Number: M-004

VA FORM 08 - 6231

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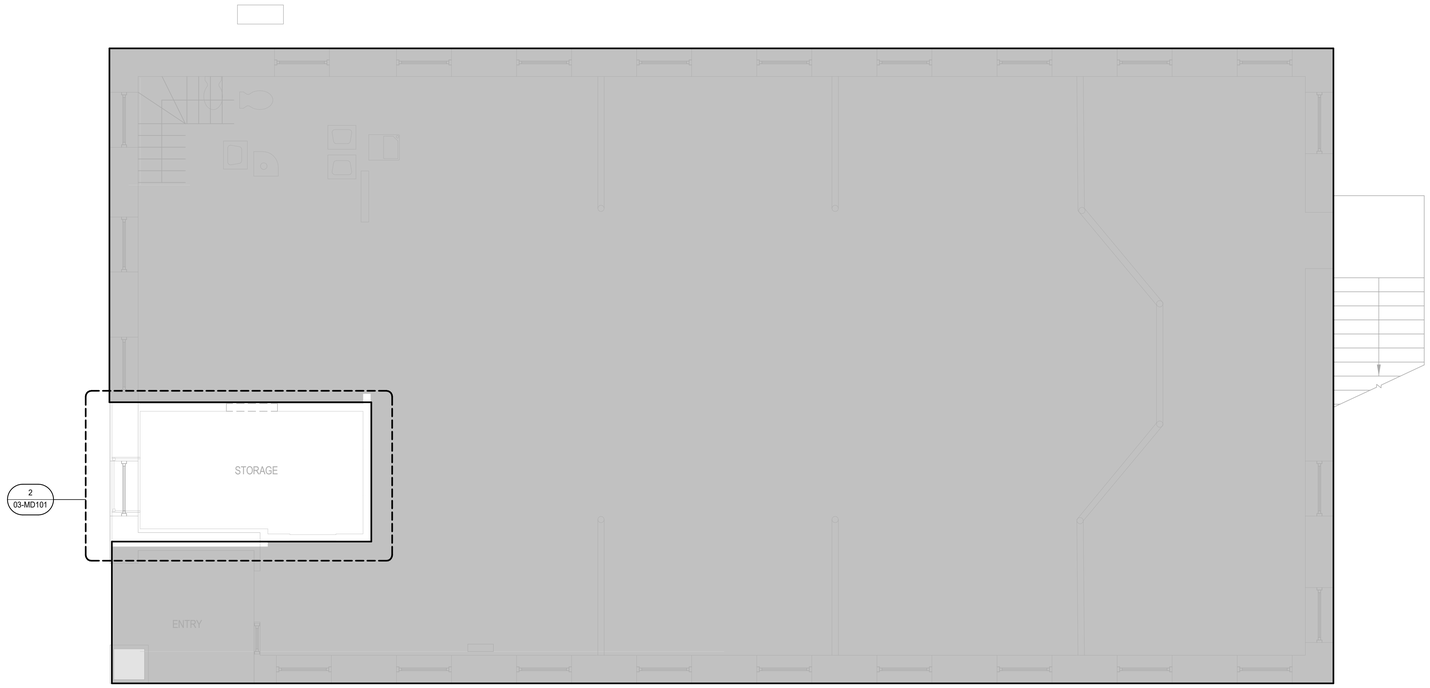
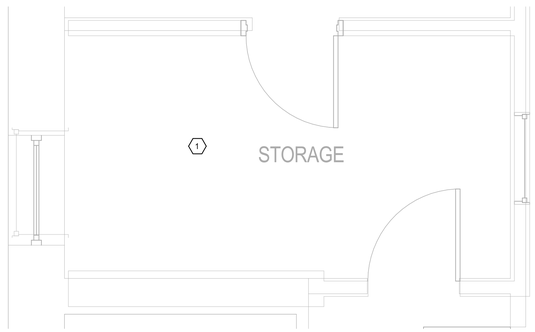
KEY NOTES

1. THERE ARE NO MECHANICAL SYSTEMS IN THIS AREA TO BE DEMOLISHED.
2. EXISTING CONDENSER TO REMAIN.



1 BLDG 3 - FIRST FLOOR - OVERALL MECHANICAL DEMOLITION
1/4" = 1'-0"



2 BLDG 3 - FIRST FLOOR - ENLARGED MECHANICAL DEMOLITION - ROOM 1454
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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SWISHER
IOWA
PROFESSIONAL ENGINEER

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Drawing Title: BLDG 3 - FIRST FLOOR OVERALL & ENLARGED MECHANICAL DEMOLITION PLANS	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 03
Approved:	Sprinklered	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 03-MD101
		Issue Date: SEPTEMBER 5, 2025 / Checked: AWG / Drawn: HWG	

Graphic Scale: 3/32" = 1'-0"
Graphic Scale: 1/8" = 1'-0"
Graphic Scale: 1/4" = 1'-0"
Graphic Scale: 3/16" = 1'-0"
Graphic Scale: 1/2" = 1'-0"
Graphic Scale: 3/4" = 1'-0"
Graphic Scale: 1" = 1'-0"
Graphic Scale: 1 1/2" = 1'-0"

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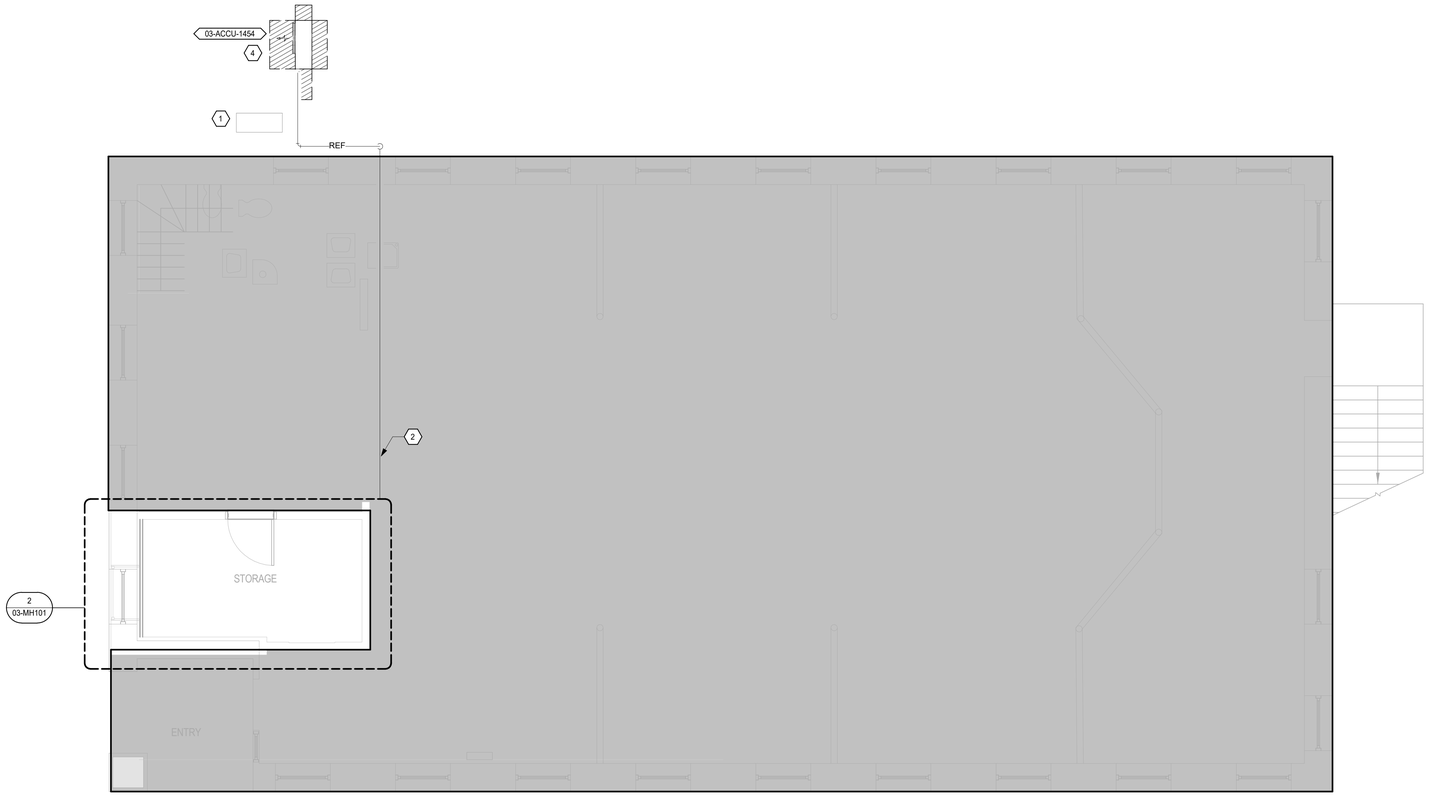
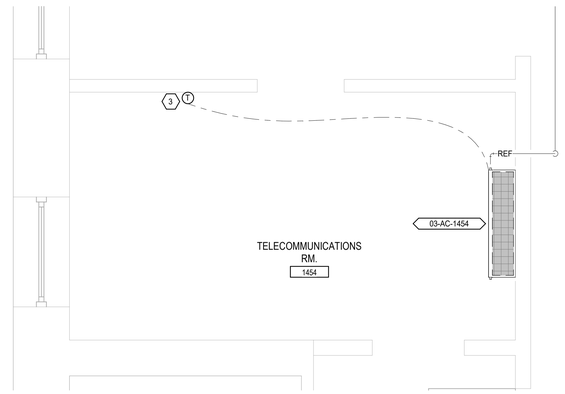
VA FORM 08 - 6231

KEY NOTES

1. EXISTING CONDENSER TO REMAIN.
2. ROUTE REFRIGERANT PIPE THROUGH FLOOR, THEN ROUTE THROUGH BASEMENT.
3. TEMPERATURE CONTROL. REFERENCE MECHANICAL CONTROL PLANS FOR CONTROLS AND MONITORING.
4. SHADED AREA INDICATES RECOMMENDED 36" CLEARENCE FOR DX UNIT.



1 BLDG 3 - FIRST FLOOR - OVERALL MECHANICAL
1/4" = 1'-0"



2 BLDG 3 FIRST FLOOR ENLARGED MECHANICAL PLAN
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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IOWA
PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
BLDG 3 - FIRST FLOOR OVERALL & ENLARGED MECHANICAL PLANS

Phase
FINAL BID DOCUMENTS

Project Title
EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI

Project Number
695-21-700

Building Number
03

Approved:

Sprinklered

Location
5000 W. NATIONAL AVENUE MILWAUKEE, WI

Issue Date SEPTEMBER 5, 2025 | **Checked** AGW | **Drawn** HWG

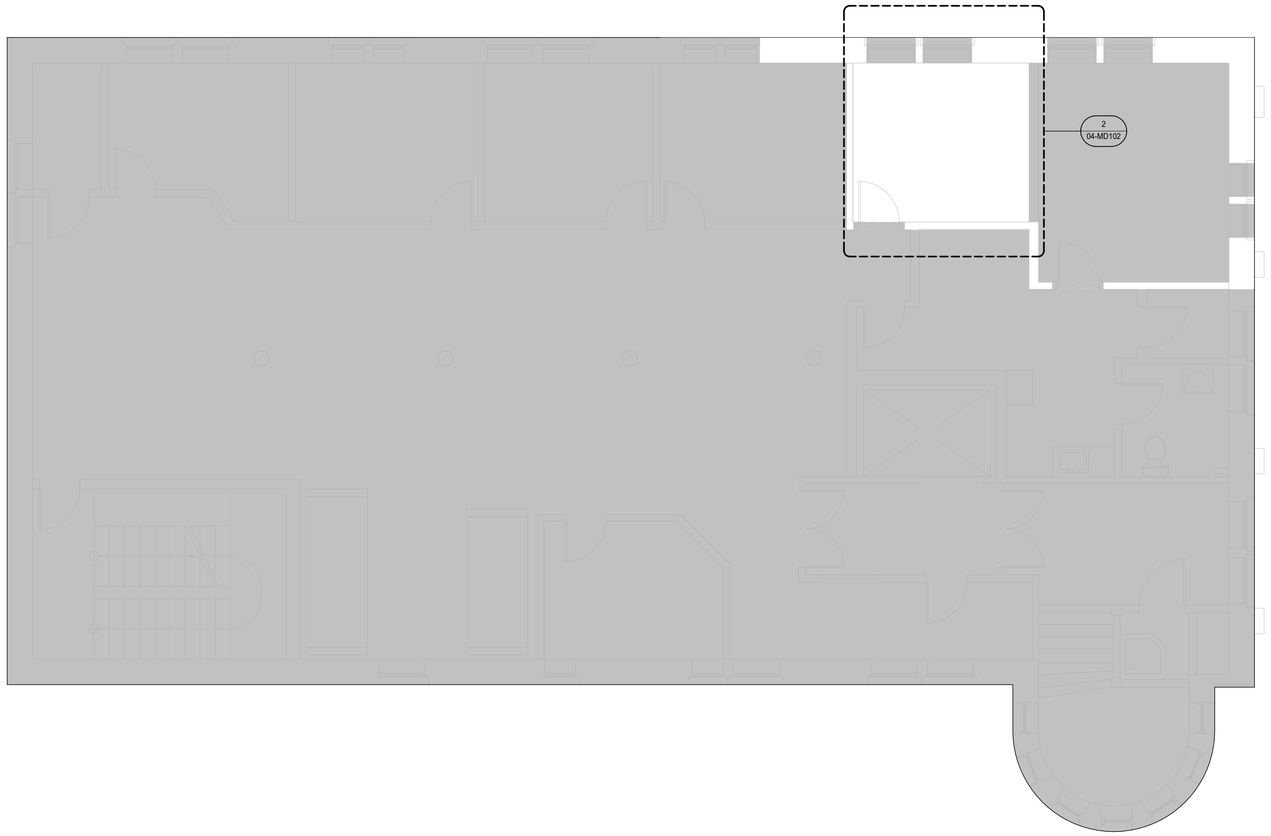
Drawing Number
03-MH101

Autodesk Docs://OCFM East - Milwaukee EHRM (R24)/Consolidated Model (R24).rvt
8/30/2025 10:22:49 AM

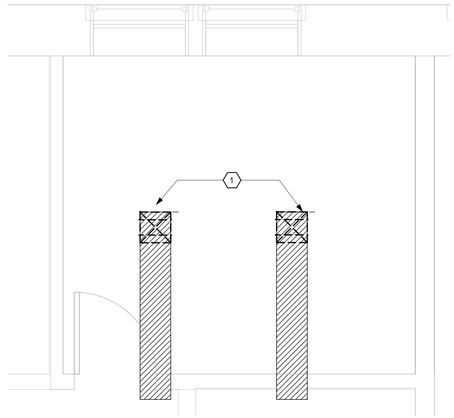
VA FORM 08 - 6231

KEY NOTES

1. DEMOLISH SUPPLY AND RETURN AIR GRILLES. DEMOLISH DUCT BRANCHES AND CAP TAPS AT MAINS.



1 BLDG 4 - SECOND FLOOR - OVERALL MECHANICAL DEMOLITION
1/4" = 1'-0"



2 BLDG 4 - SECOND FLOOR - ENLARGED MECHANICAL DEMOLITION - ROOM 2110-2112
1/2" = 1'-0"

TRUE NORTH
PLAN NORTH

Revisions:	Date:

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: BLDG 4 - SECOND FLOOR OVERALL & ENLARGED - MECHANICAL DEMOLITION	Phase: FINAL BID DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES – MILWAUKEE, WI	Project Number: 695-21-700
			Building Number: 04
Approved:	Sprinklered: FULLY SPRINKLERED	Location: 5000 W. NATIONAL AVENUE MILWAUKEE, WI	Drawing Number: 04-MD102
		Issue Date: SEPTEMBER 5, 2025 / Checked: AGW / Drawn: SM	

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Graphic Scale: 1/16" = 1'-0" (0' 8' 16' 32')
Graphic Scale: 1/8" = 1'-0" (0' 4' 8' 16')
Graphic Scale: 3/32" = 1'-0" (0' 4" 8" 1' 2')
Graphic Scale: 1/4" = 1'-0" (0' 1' 2' 4')
Graphic Scale: 3/16" = 1'-0" (0' 1' 3' 6' 12')
Graphic Scale: 1/2" = 1'-0" (0' 1' 2' 4')
Graphic Scale: 3/4" = 1'-0" (0' 6" 1' 2')
Graphic Scale: 1" = 1'-0" (0' 6" 1' 2')
Graphic Scale: 1 1/2" = 1'-0" (0' 3" 6" 1' 1' 6")