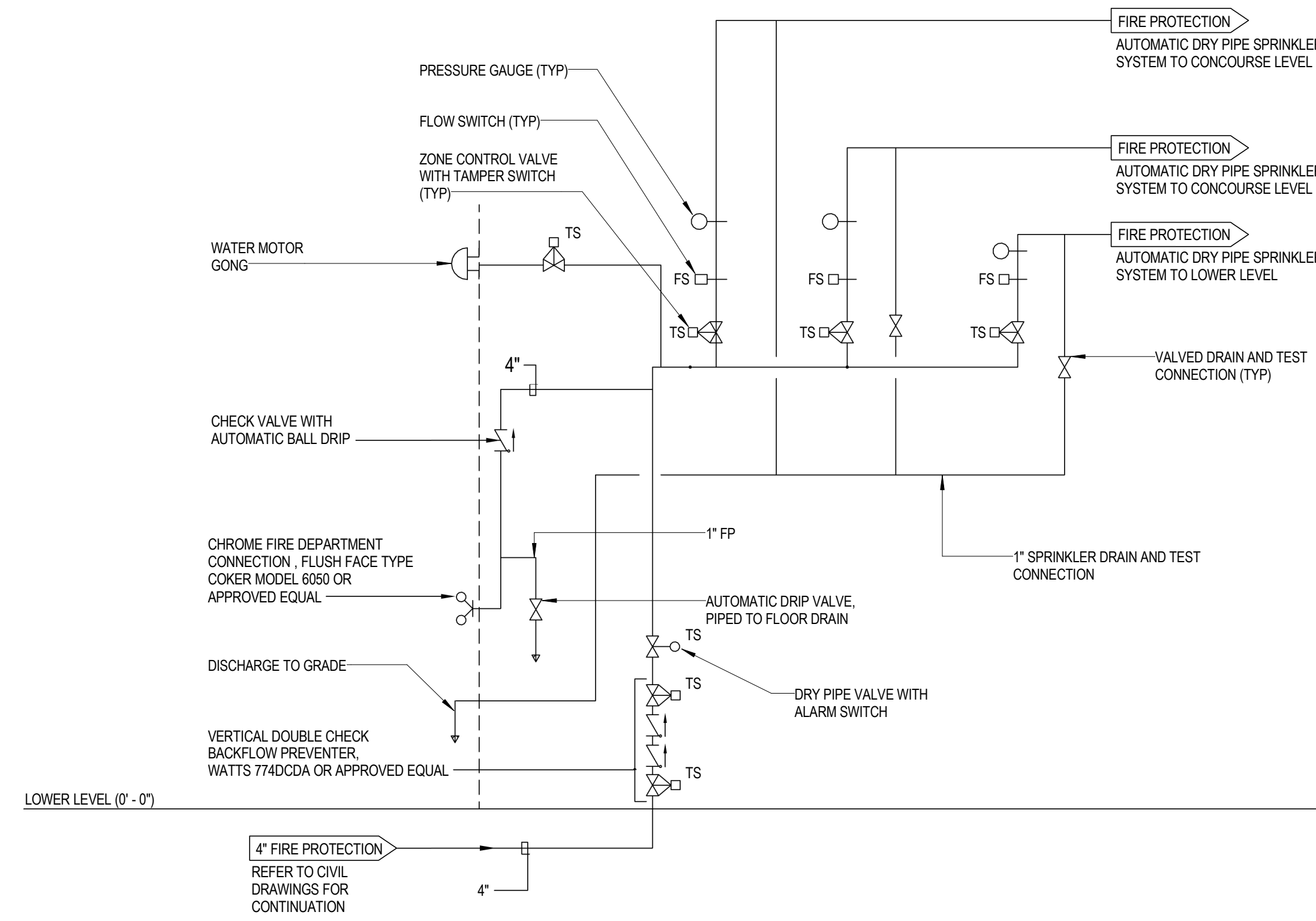


SYMBOL	DESCRIPTION
	BACKFLOW PREVENTER (DOUBLE CHECK TYPE)
	FLOW SWITCH
	OUTSIDE STEM AND YOKE VALVE
	OUTSIDE STEM AND YOKE VALVE WITH TAMPER SWITCH
	SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
	FIRE DEPARTMENT SIAMESE CONNECTION (WALL MOUNTED)
	FIRE DEPARTMENT SIAMESE CONNECTION (FREE-STANDING)
	DRY PIPE VALVE
	WATER MOTOR GONG
	TWO-HOSE CONNECTION WALL HYDRANT
	PRESSURE GAUGE

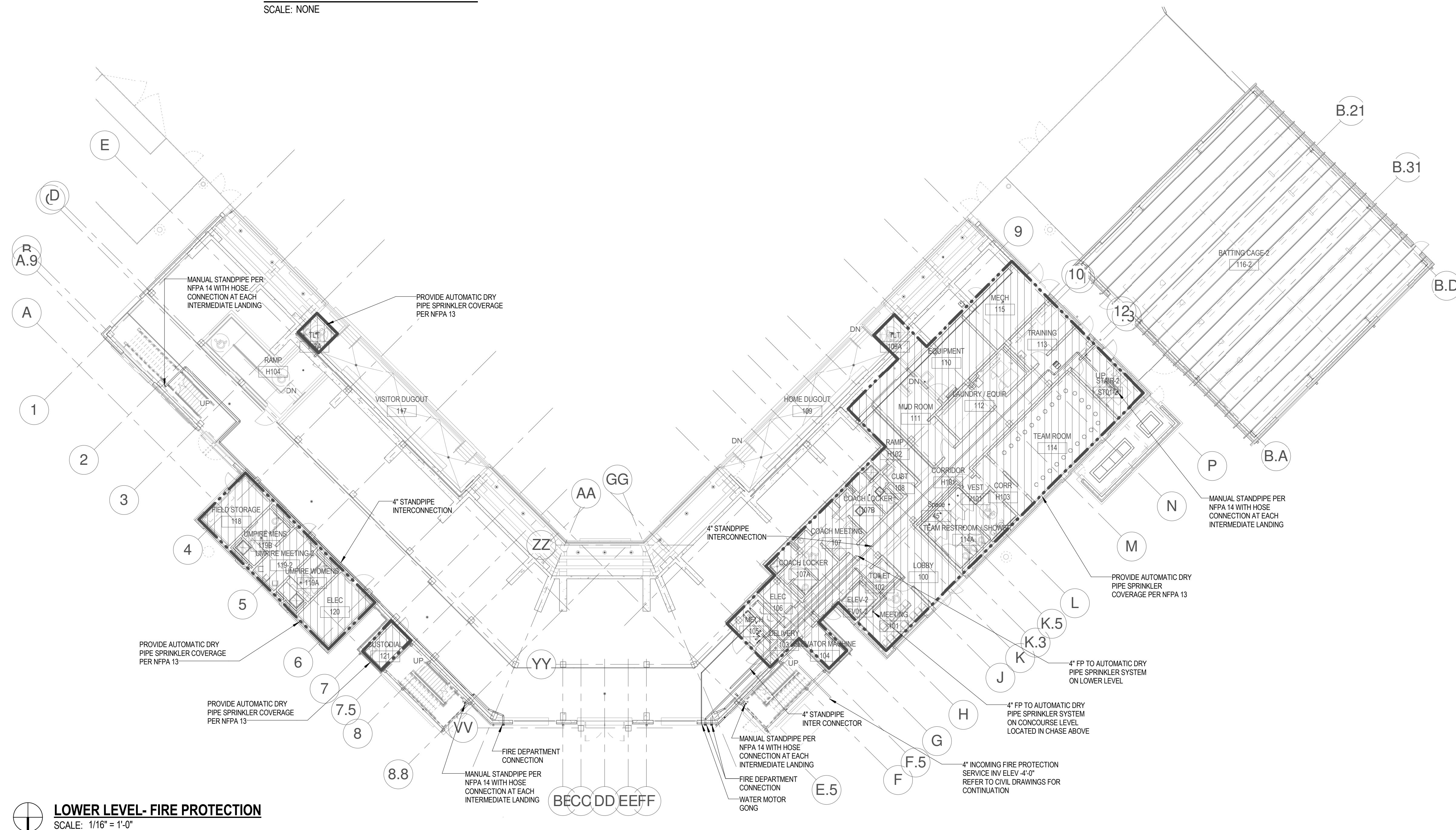


FIRE PROTECTION RISER DIAGRAM
SCALE: NONE

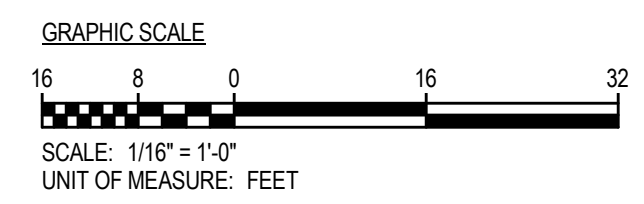
GENERAL NOTES

- CONTRACTOR SHALL COORDINATE LOCATION OF HVAC REGISTERS, PLUMBING, DUCTWORK, EQUIPMENT AND SPRINKLER HEADS. SPRINKLER HEAD LOCATION SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE INSTALLATION.

FIRE PROTECTION SYMBOLS
SCALE: NONE



LOWER LEVEL - FIRE PROTECTION
SCALE: 1/16" = 1'-0"



UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

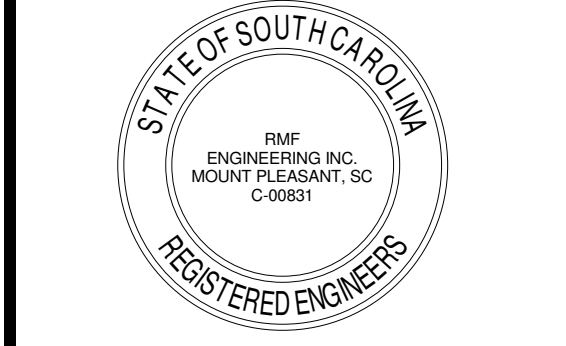
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

LOWER LEVEL FIRE PROTECTION

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE LOCATION OF HVAC REGISTERS, PLUMBING, DUCTWORK, EQUIPMENT AND SPRINKLER HEADS. SPRINKLER HEAD LOCATION SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE INSTALLATION.

CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

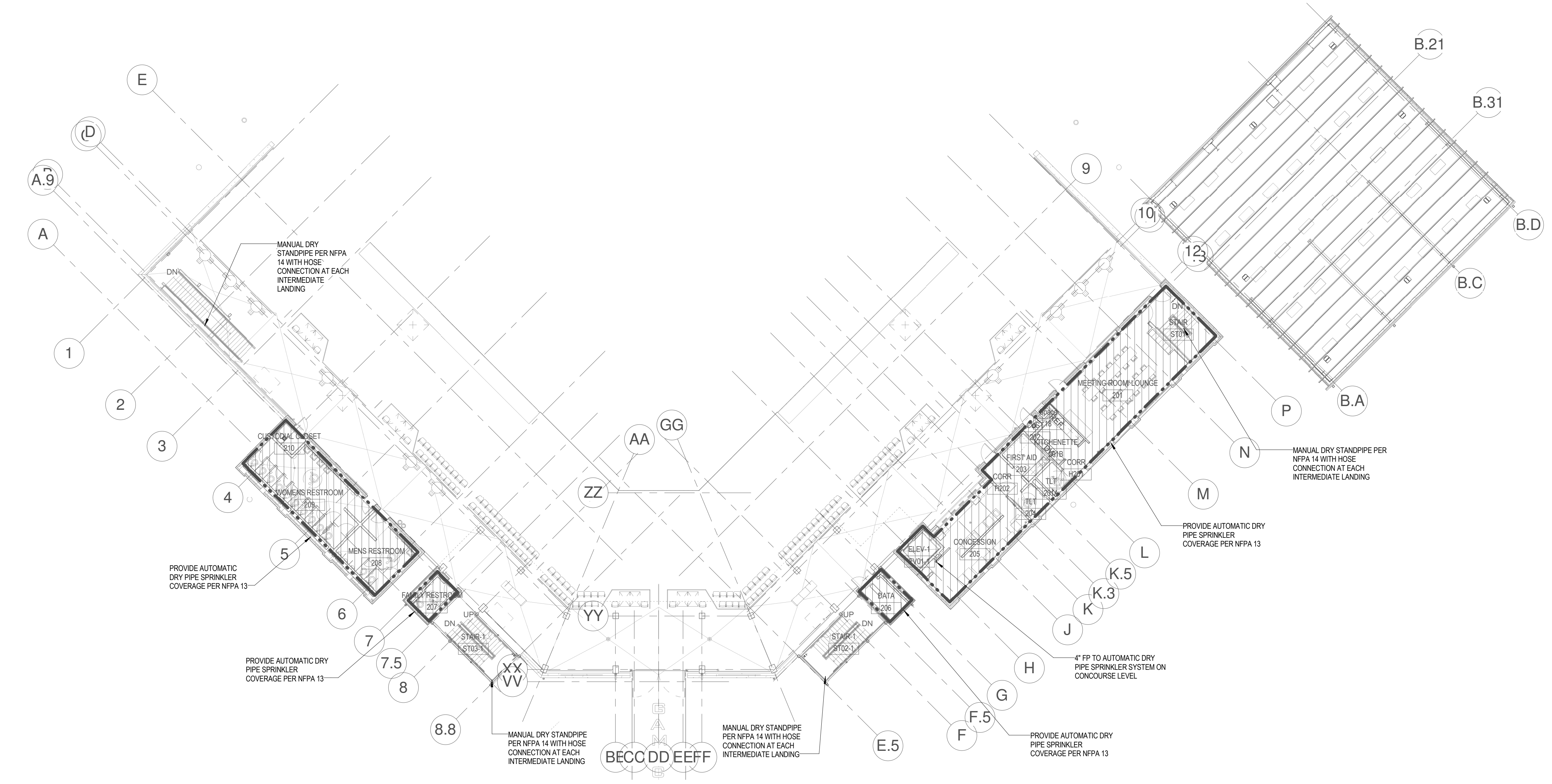
Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

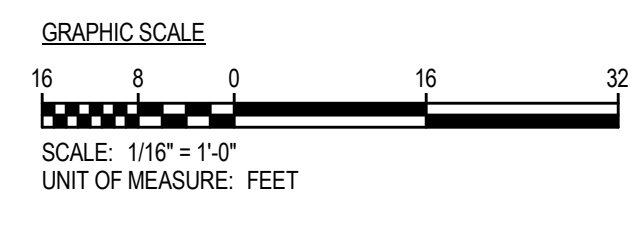
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

CONCOURSE LEVEL FIRE PROTECTION

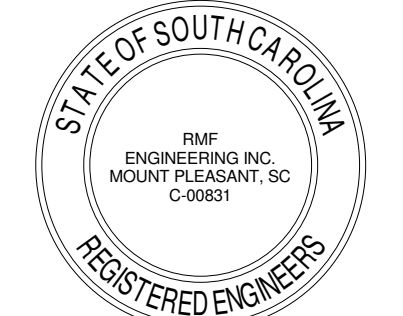
TITLE
FP102
SHEET NO.



CONCOURSE LEVEL - FIRE PROTECTION
SCALE: 1/16" = 1'-0"



CORPORATE SEAL



A/P SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

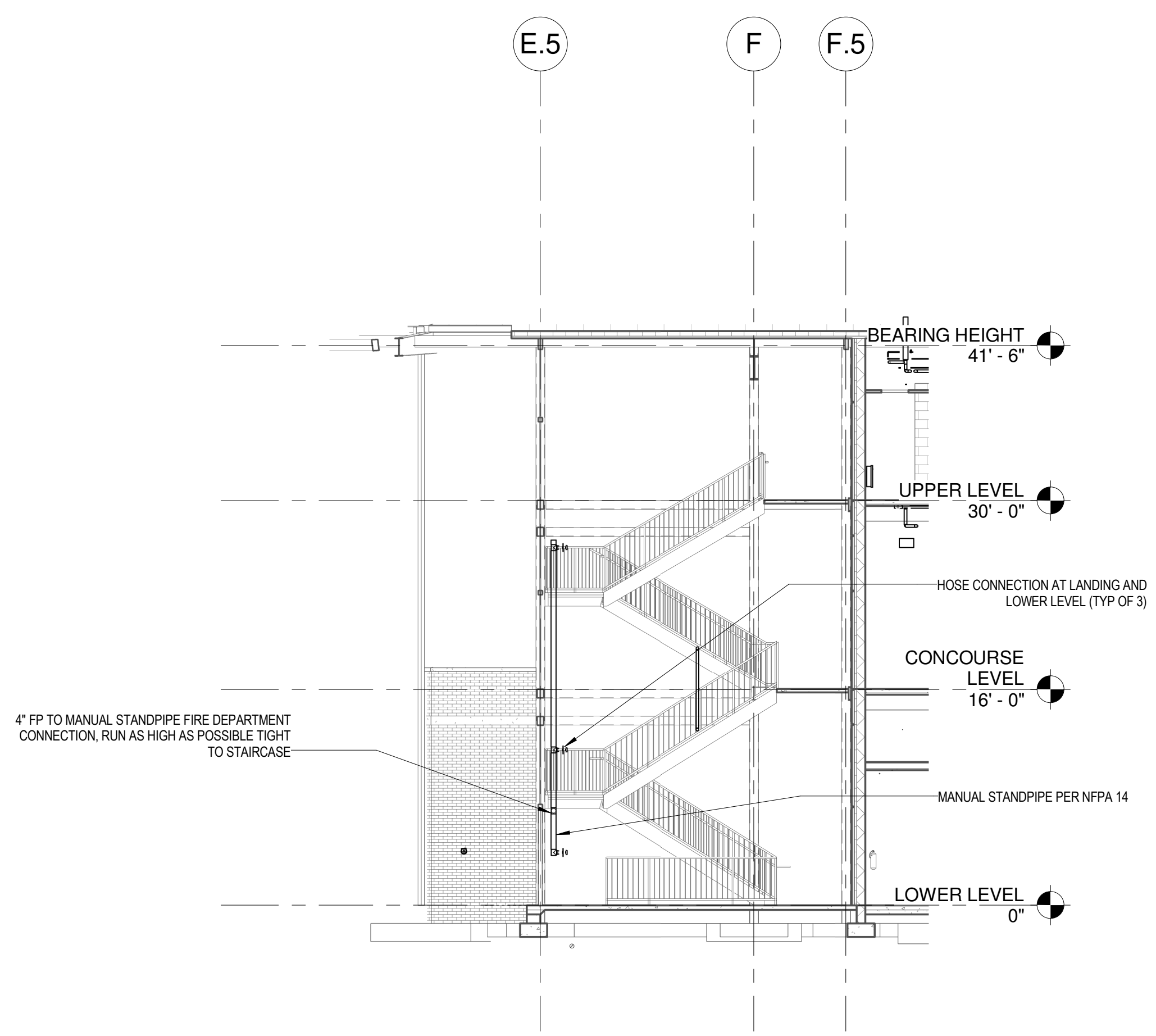
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

UPPER LEVEL FIRE PROTECTION

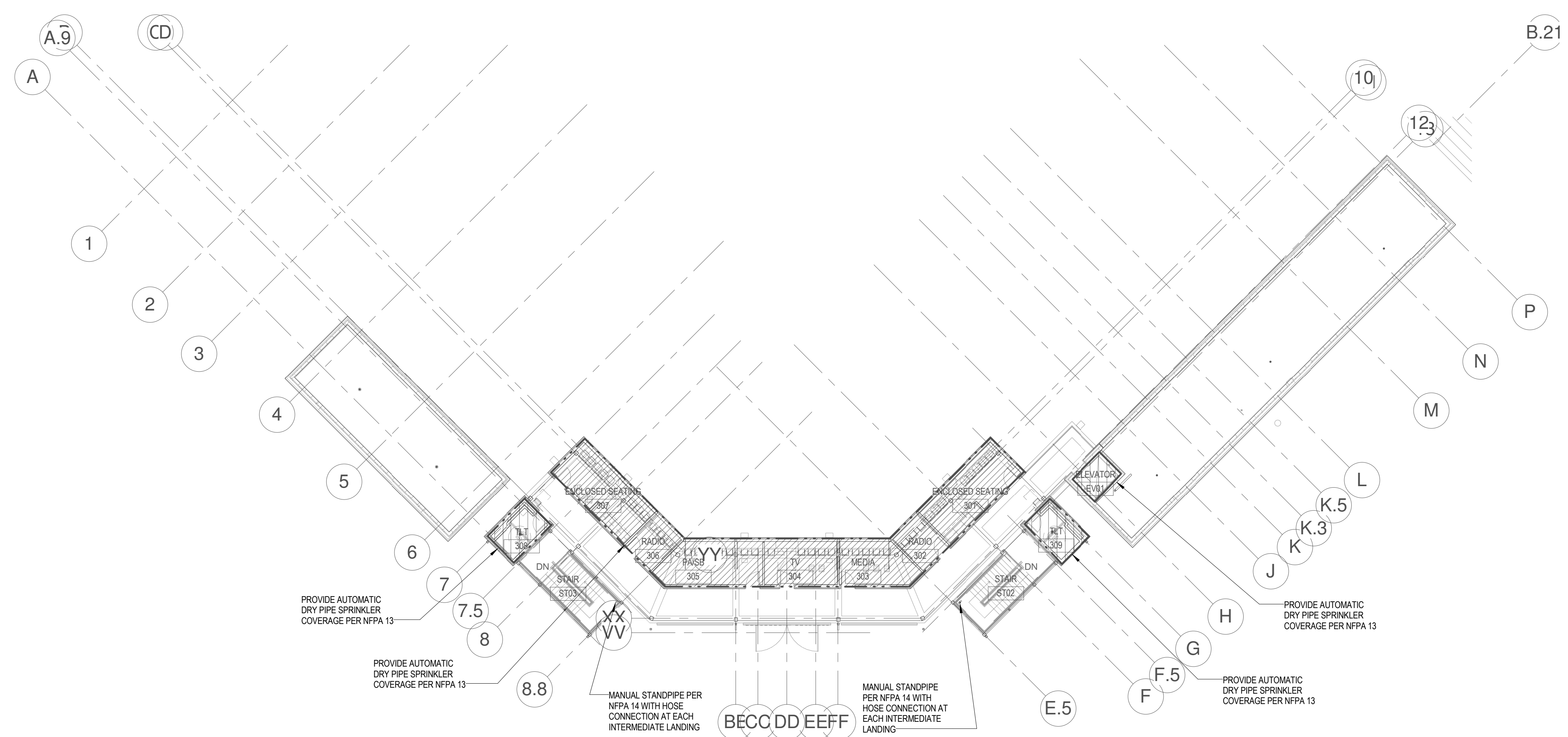
SHEET NO.
FP103

GENERAL NOTES

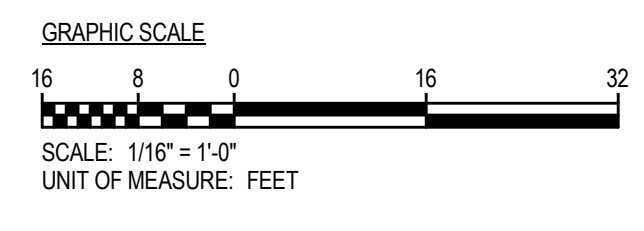
- CONTRACTOR SHALL COORDINATE LOCATION OF HVAC REGISTERS, PLUMBING, DUCTWORK, EQUIPMENT AND SPRINKLER HEADS. SPRINKLER HEAD LOCATION SHALL BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE INSTALLATION.



MANUAL STANDPIPE
SCALE: 1/8" = 1'-0"



UPPER LEVEL - FIRE PROTECTION
SCALE: 1/16" = 1'-0"



GENERAL NOTES

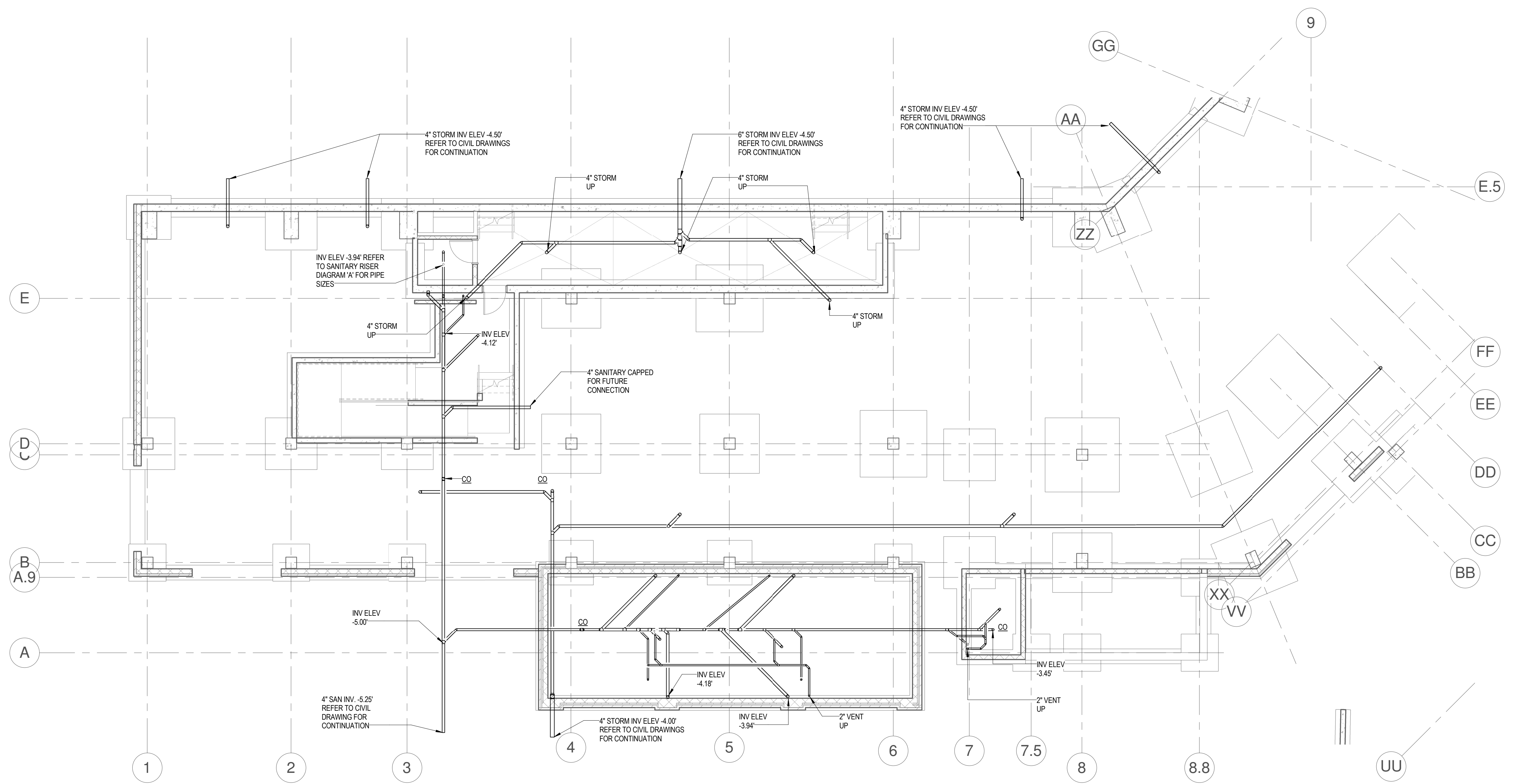
1. ALL PIPE SHALL BE ROUTED IN UNDERSLAB AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.
5. LOWER LEVEL FINISHED FLOOR IS AT 0'-0".

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

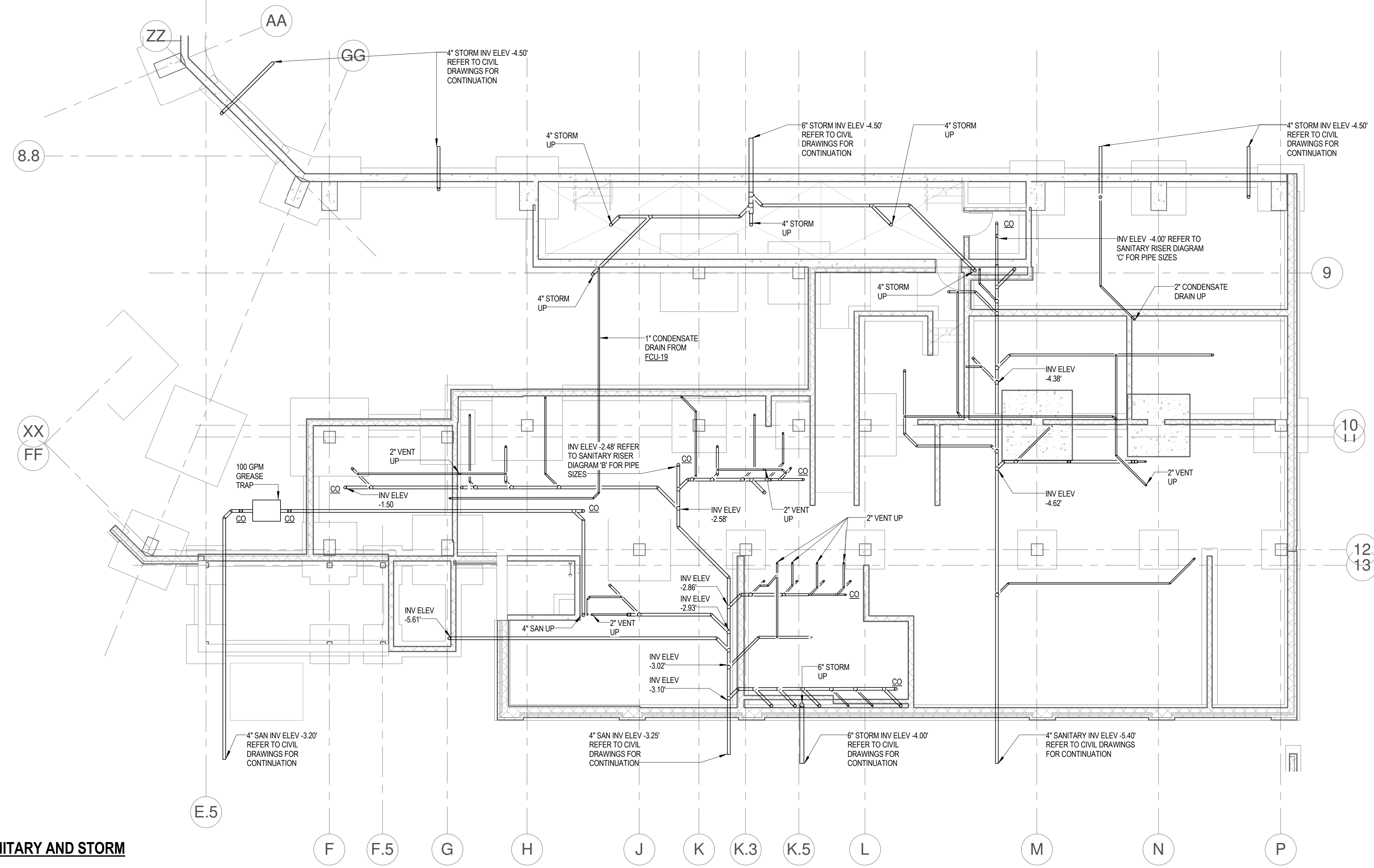
REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

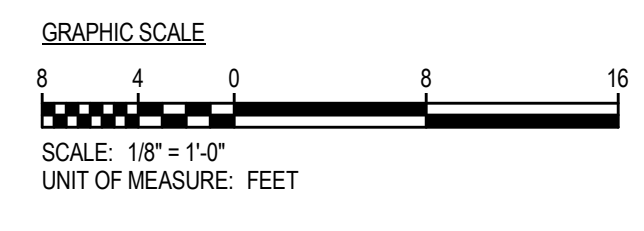
**FOUNDATION PLAN
SANITARY
AND STORM**



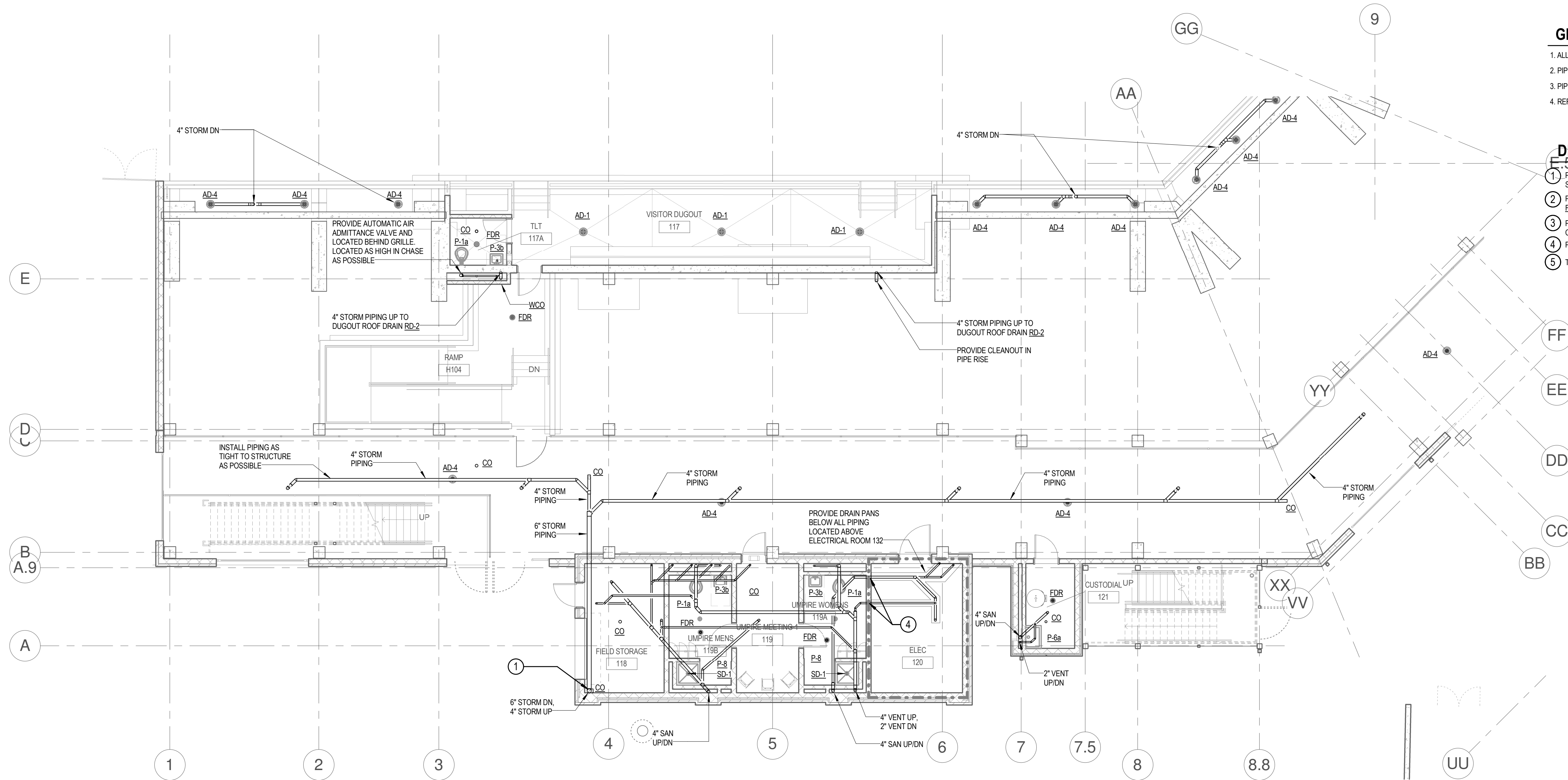
FOUNDATION - VISITOR SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



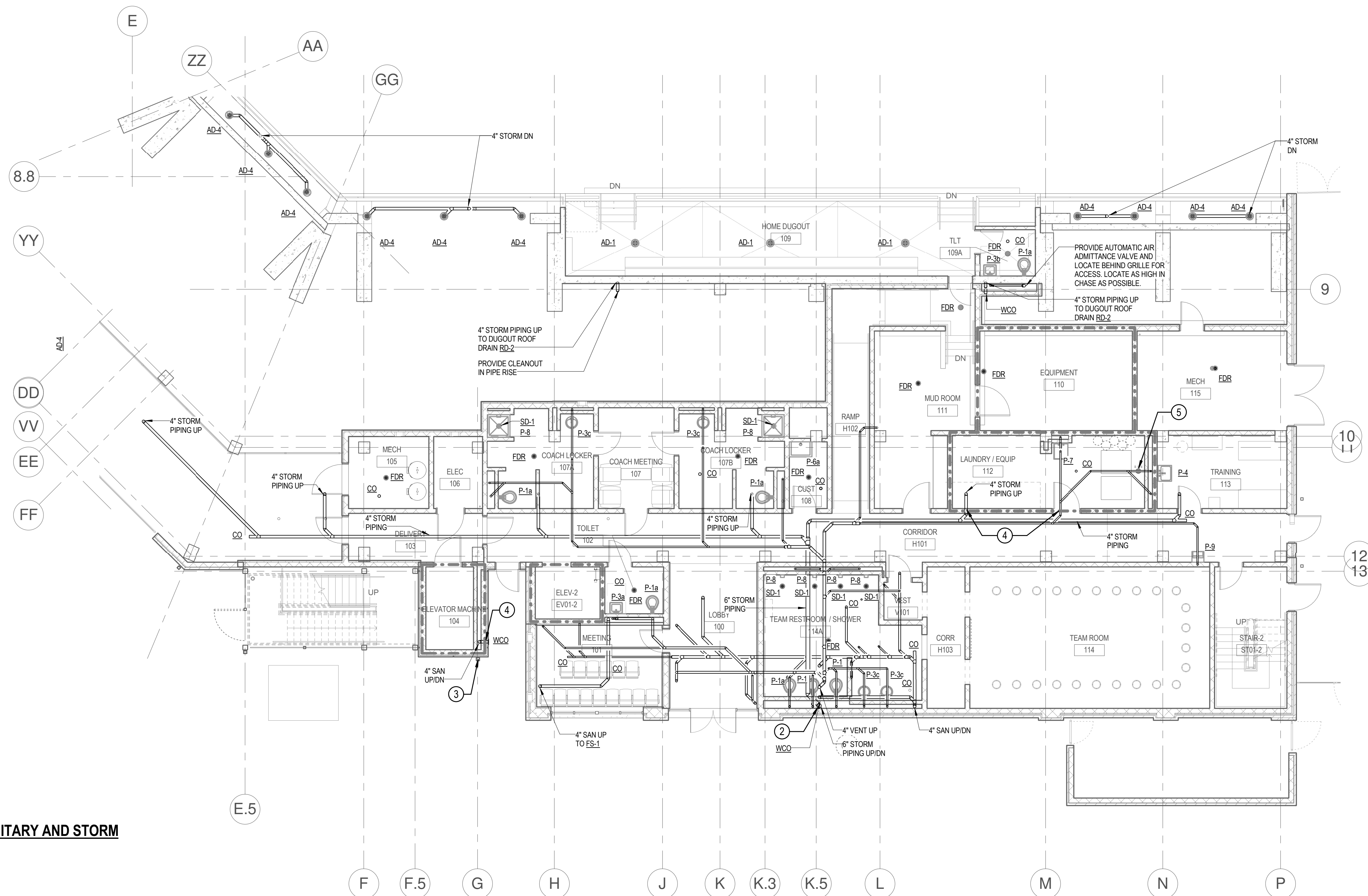
FOUNDATION - HOME SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



3/29/2012 12:15:38 PM



LOWER LEVEL - VISITOR SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



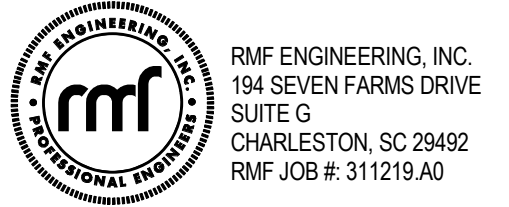
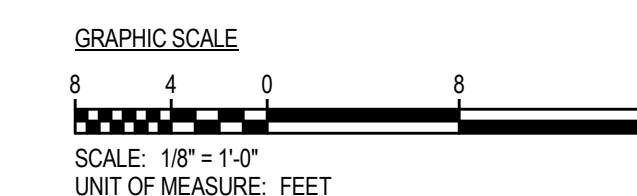
LOWER LEVEL - HOME SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"

GENERAL NOTES

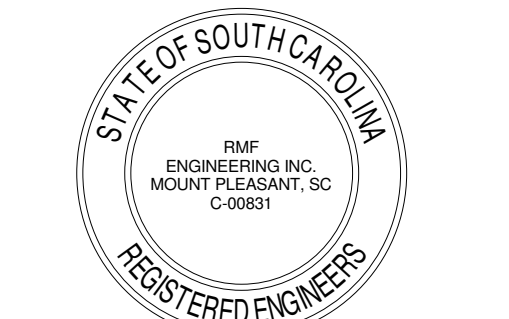
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

1. POINT OF CONNECTION FOR 2" CONDENSATE DRAIN PIPING FROM FAN COIL UNITS ECU-07, AND ECU-08. REFER TO SHEET M201 FOR CONTINUATION OF CONDENSATE PIPING.
2. POINT OF CONNECTION FOR 2 1/2" CONDENSATE DRAIN PIPING FROM FAN COIL UNITS ECU-01, ECU-02, ECU-03, ECU-04, AND ECU-05. REFER TO SHEET M201 FOR CONTINUATION OF CONDENSATE PIPING.
3. POINT OF CONNECTION FOR 1" CONDENSATE DRAIN PIPING FROM FAN COIL UNIT ECU-06. REFER TO SHEET M201 FOR CONTINUATION OF CONDENSATE PIPING.
4. PROVIDE FIRE RATED PIPE PENETRATION.
5. TRENCH DRAIN, REFER TO DETAIL ON DRAWING P500.



CORPORATE SEAL



A/P SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

LOWER LEVEL SANITARY AND STORM

SHEET NO.

P101

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

**CONCOURSE LEVEL
SANITARY
AND STORM**

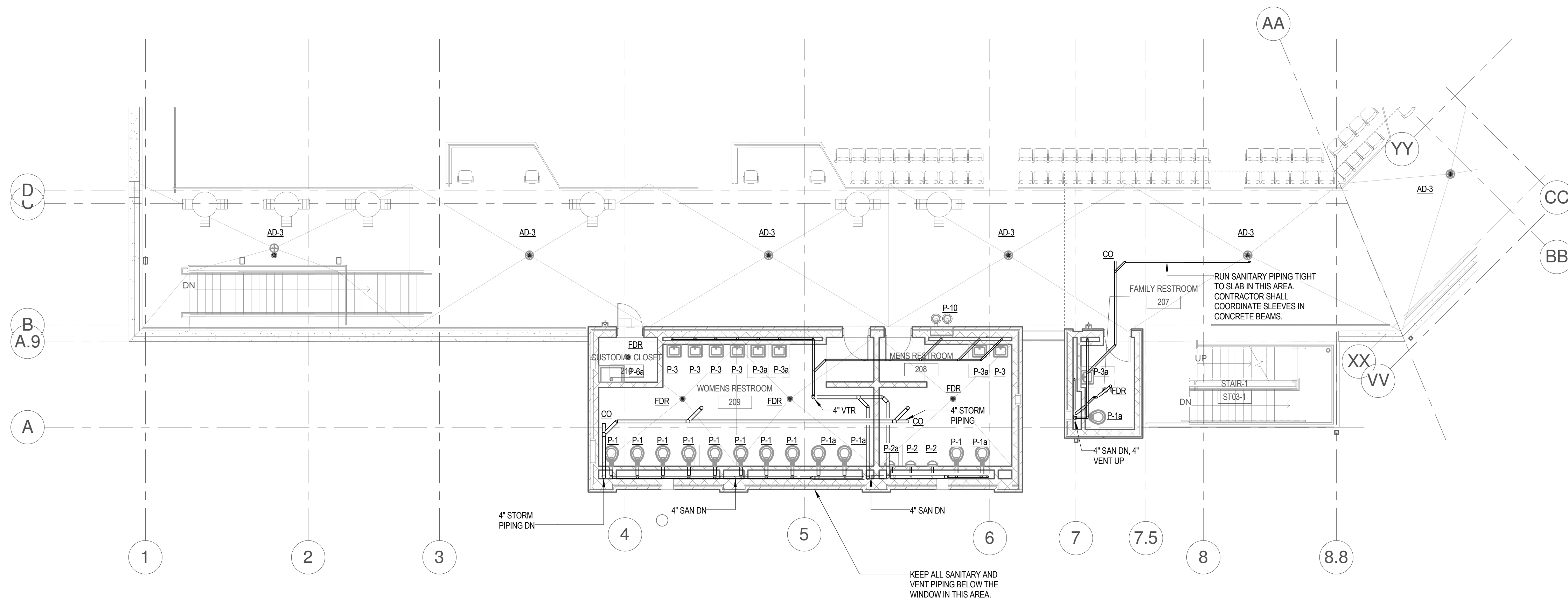
SHEET NO.

GENERAL NOTES

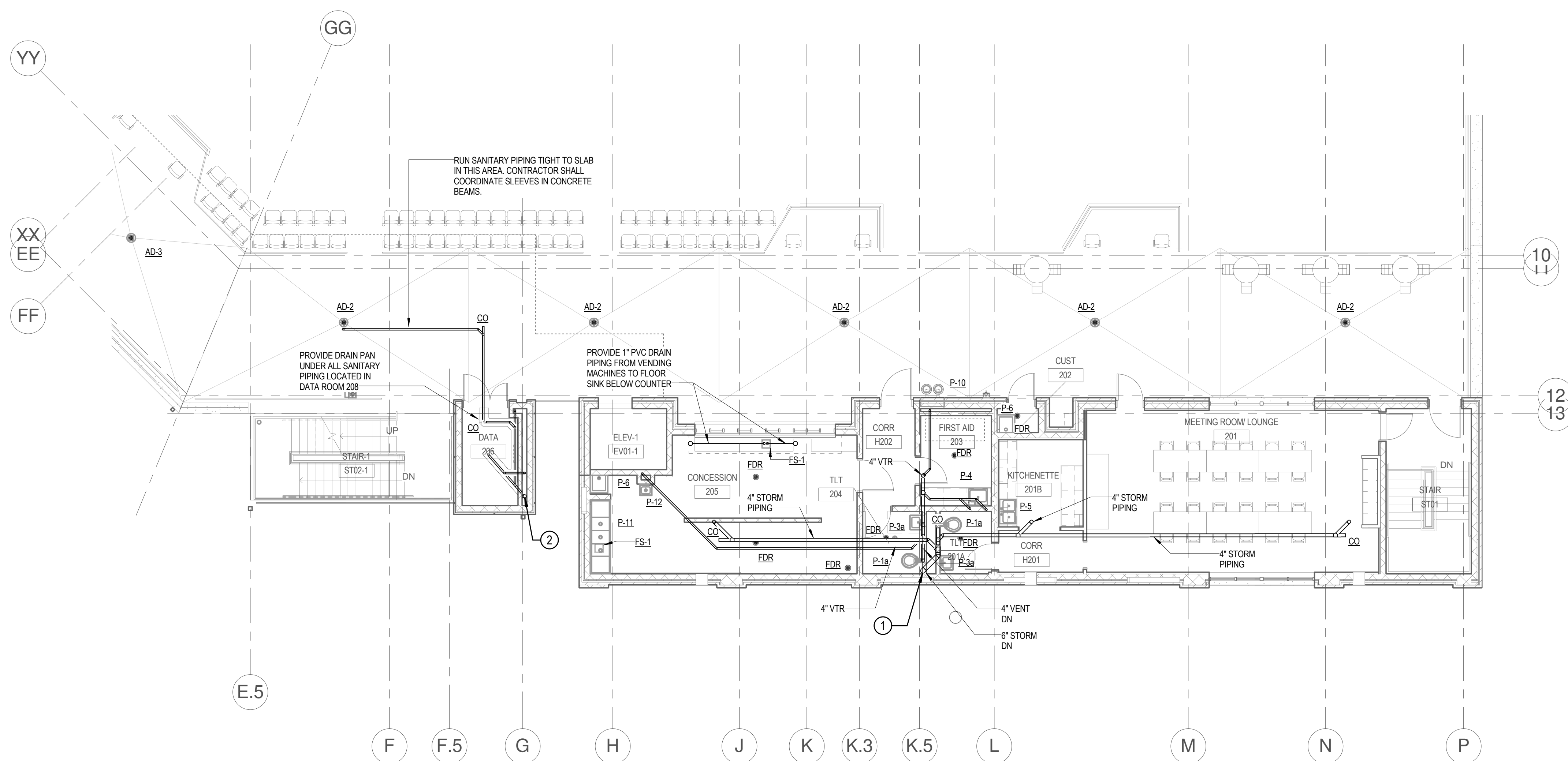
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

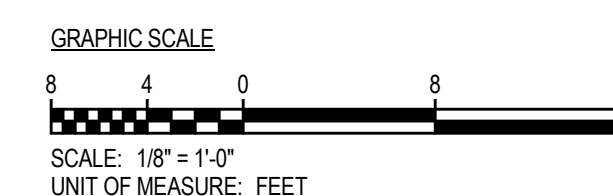
1. POINT OF CONNECTION FOR 1 1/2" CONDENSATE DRAIN PIPING FROM FAN COIL UNIT EQL-09. REFER TO SHEET M202 FOR CONTINUATION OF CONDENSATE PIPING.
2. POINT OF CONNECTION FOR 1" CONDENSATE DRAIN PIPING FROM FAN COIL UNIT EQL-10. REFER TO SHEET M202 FOR CONTINUATION OF CONDENSATE PIPING.

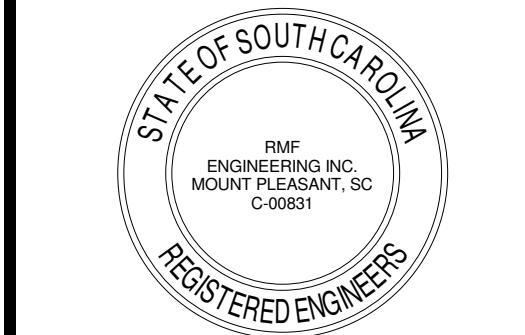


CONCOURSE LEVEL - VISITOR SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



CONCOURSE LEVEL - HOME SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"





UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION

Date 03.16.12
Project No. 11.122.00
Scale As indicated
Drawn By BMW
Checked By DWZ
State Project No. H27-6088-MJ

UPPER LEVEL SANITARY AND STORM

TITLE

P103

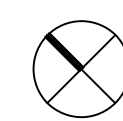
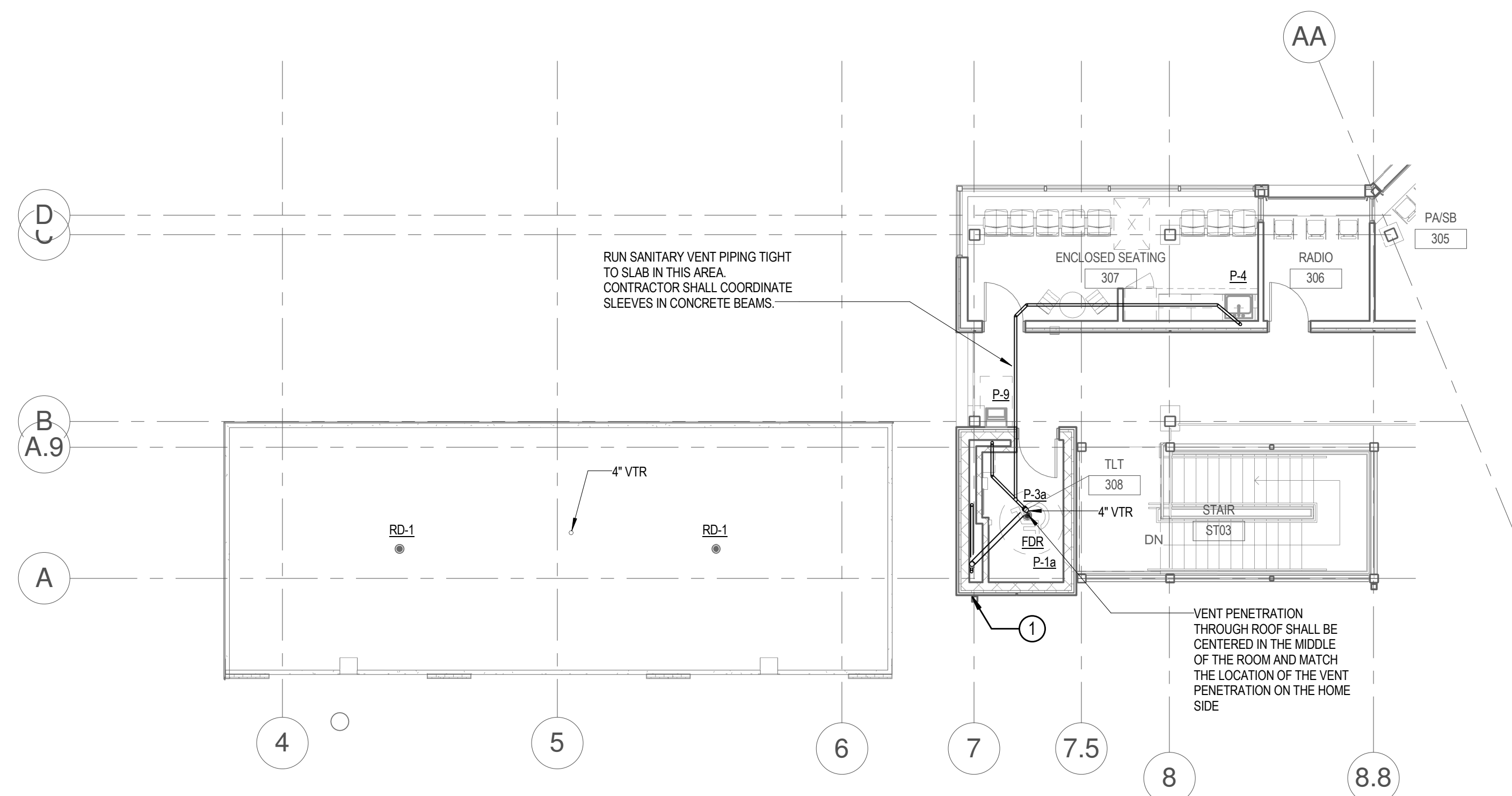
SHEET NO.

GENERAL NOTES

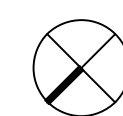
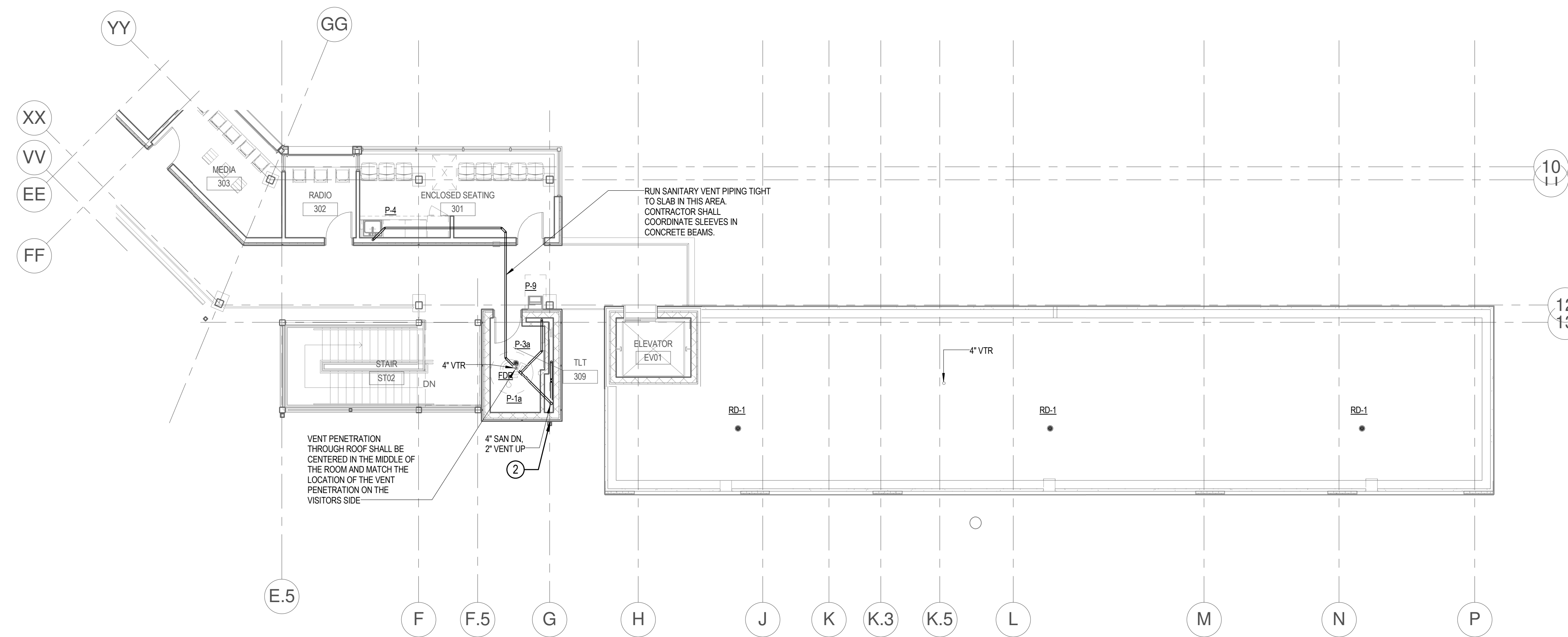
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

1. POINT OF CONNECTION FOR 2 1/2" CONDENSATE DRAIN PIPING FROM FAN COIL UNITS ECU-15, ECU-16, ECU-17, AND ECU-18. REFER TO SHEET M203 FOR CONTINUATION OF CONDENSATE PIPING.
2. POINT OF CONNECTION FOR 2 1/2" CONDENSATE DRAIN PIPING FROM FAN COIL UNITS ECU-12, ECU-13, AND ECU-14. REFER TO SHEET M203 FOR CONTINUATION OF CONDENSATE PIPING.



UPPER LEVEL - VISITOR SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



UPPER LEVEL - HOME SIDE - SANITARY AND STORM
SCALE: 1/8" = 1'-0"



UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

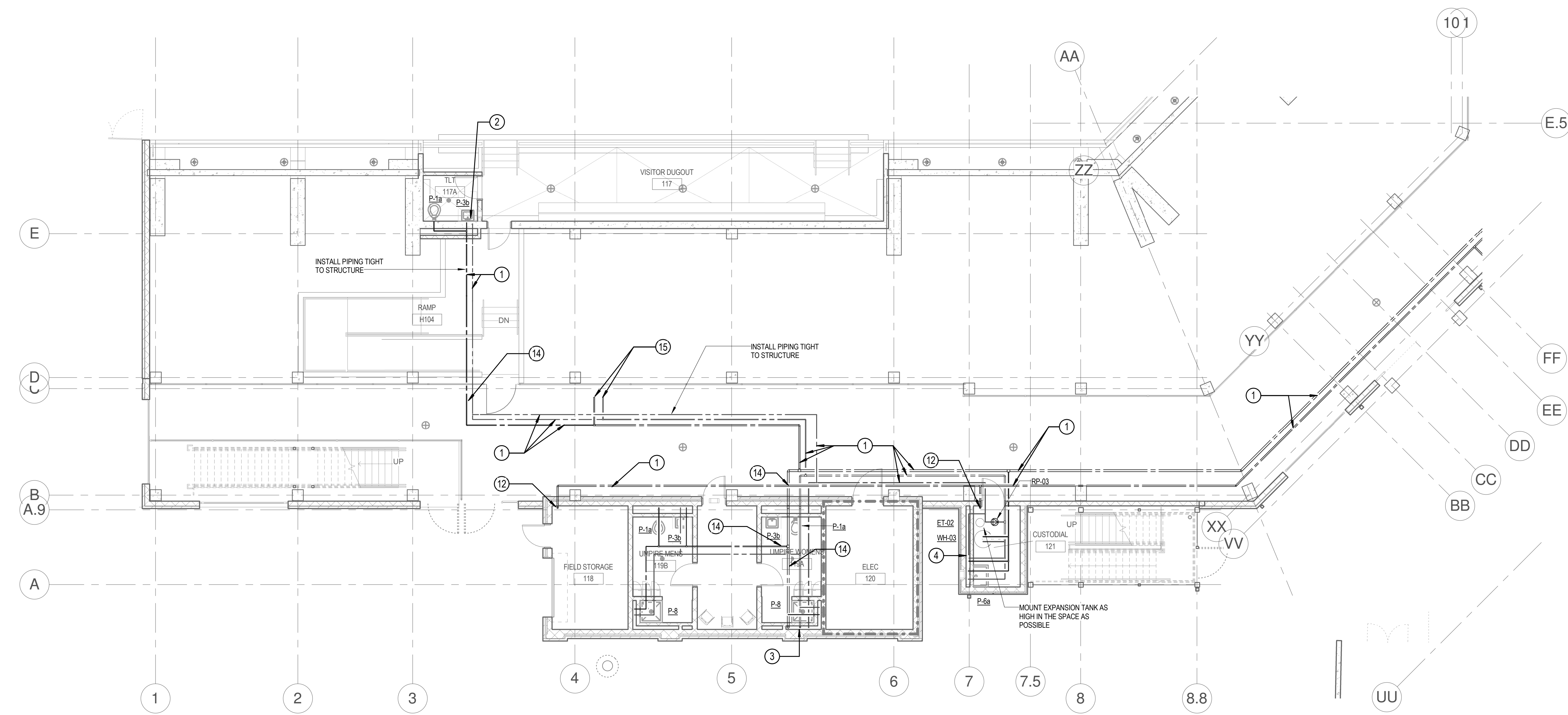
LOWER LEVEL DOMESTIC WATER

GENERAL NOTES

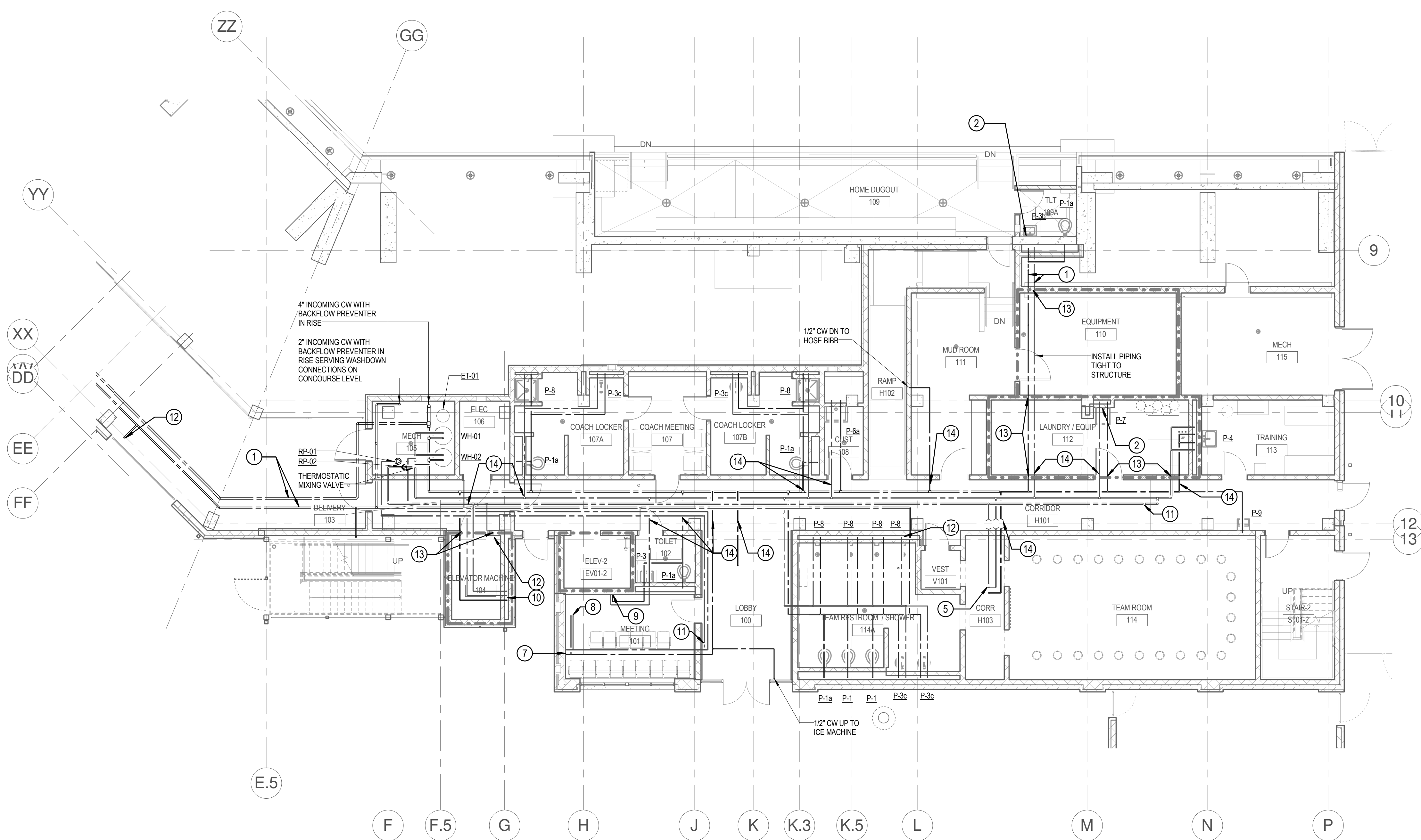
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

1. INSULATE AND HEAT TRACE ALL DOMESTIC WATER PIPING LOCATED IN UNHEATED AREAS.
2. PROVIDE TAMPER PROOF HOSE BIBB (HB-1) UNDER THE SINK.
3. 3" CW, 1 1/2" HW, AND 1 1/2" HWR UP
4. 1 1/2" CW, 1" HW, AND 1" HWR UP
5. 2" CW, 1 1/4" HW, AND 1 1/4" HWR UP
6. 1/2" CW UP
7. 1" CW, AND 1" HW UP
8. 1/2" CW AND HW UP
9. 3/8" CW AND HW UP
10. 1 1/2" CW, 1/2" HW, AND 1/2" HWR UP
11. BALANCING VALVE
12. 2" CW UP TO WASHDOWN CONNECTION.
13. PROVIDE FIRE RATED PIPE PENETRATION.
14. PROVIDE SHUT-OFF VALVES AT PIPE BRANCH.
15. PROVIDE 1 1/2" CW AND 1" HW BRANCH WITH VALVE. CAP PIPE FOR FUTURE CONNECTION.



LOWER LEVEL - VISITOR SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"



LOWER LEVEL - HOME SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"



REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

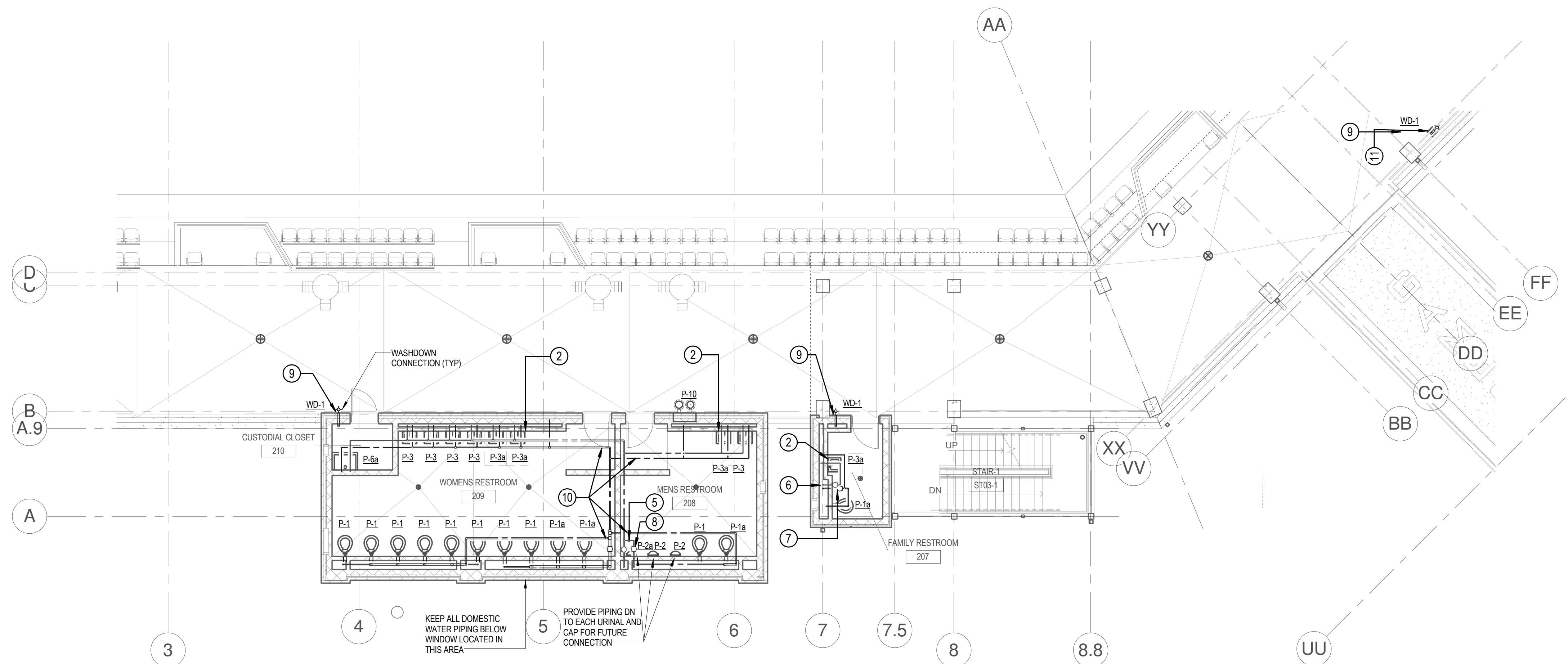
TITLE
CONCOURSE LEVEL DOMESTIC WATER

GENERAL NOTES

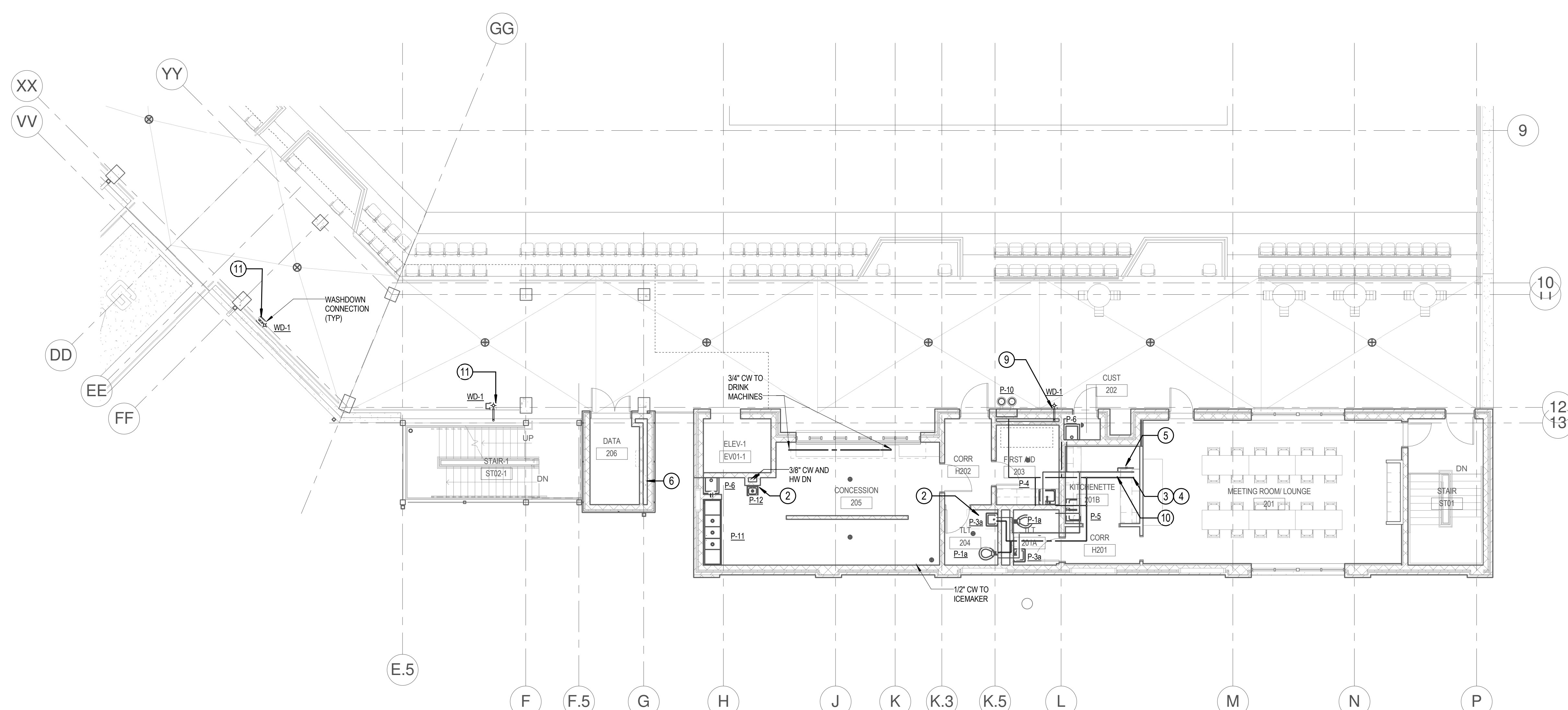
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

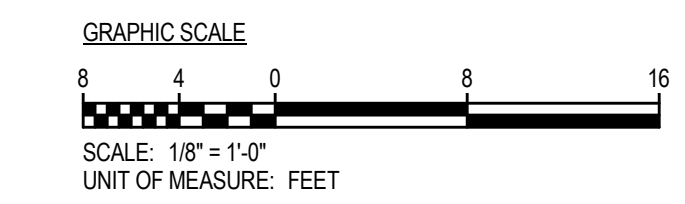
1. INSULATE AND HEAT TRACE ALL DOMESTIC WATER PIPING LOCATED IN UNHEATED AREAS.
2. PROVIDE TAMPER PROOF HOSE BIBB (HB-1) UNDER THE SINK.
3. 1" CW, 1" HW, AND 1/2" HWR DN
4. PROVIDE A SHUT-OFF VALVE ON CW, HW, AND HWR IN THE RISE.
5. BALANCING VALVE
6. 1" CW, 1/2" HW, AND 1/2" HWR UP AND DN
7. PROVIDE A SHUT-OFF VALVE ON THE CW, AND HW.
8. PROVIDE A SHUT-OFF VALVE ON THE CW, HW, AND HWR.
9. PROVIDE LOCKABLE STAINLESS STEEL ACCESS DOOR FOR SHUT-OFF VALVE LOCATED IN THE RISE.
10. PROVIDE SHUT-OFF VALVES AT PIPE BRANCH.
11. PROVIDE 10"x10" TUBE STEEL ENCLOSURE WITH LOCKABLE ACCESS DOOR FOR SHUT-OFF VALVE LOCATED IN THE RISE.

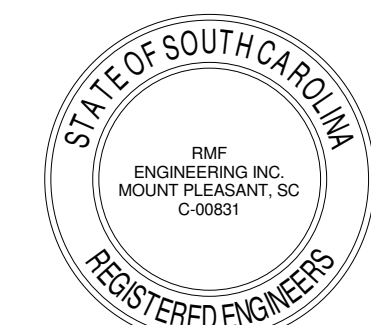


CONCOURSE LEVEL - VISITOR SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"



CONCOURSE LEVEL - HOME SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"





**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

**UPPER LEVEL
DOMESTIC
WATER**

SHEET NO.

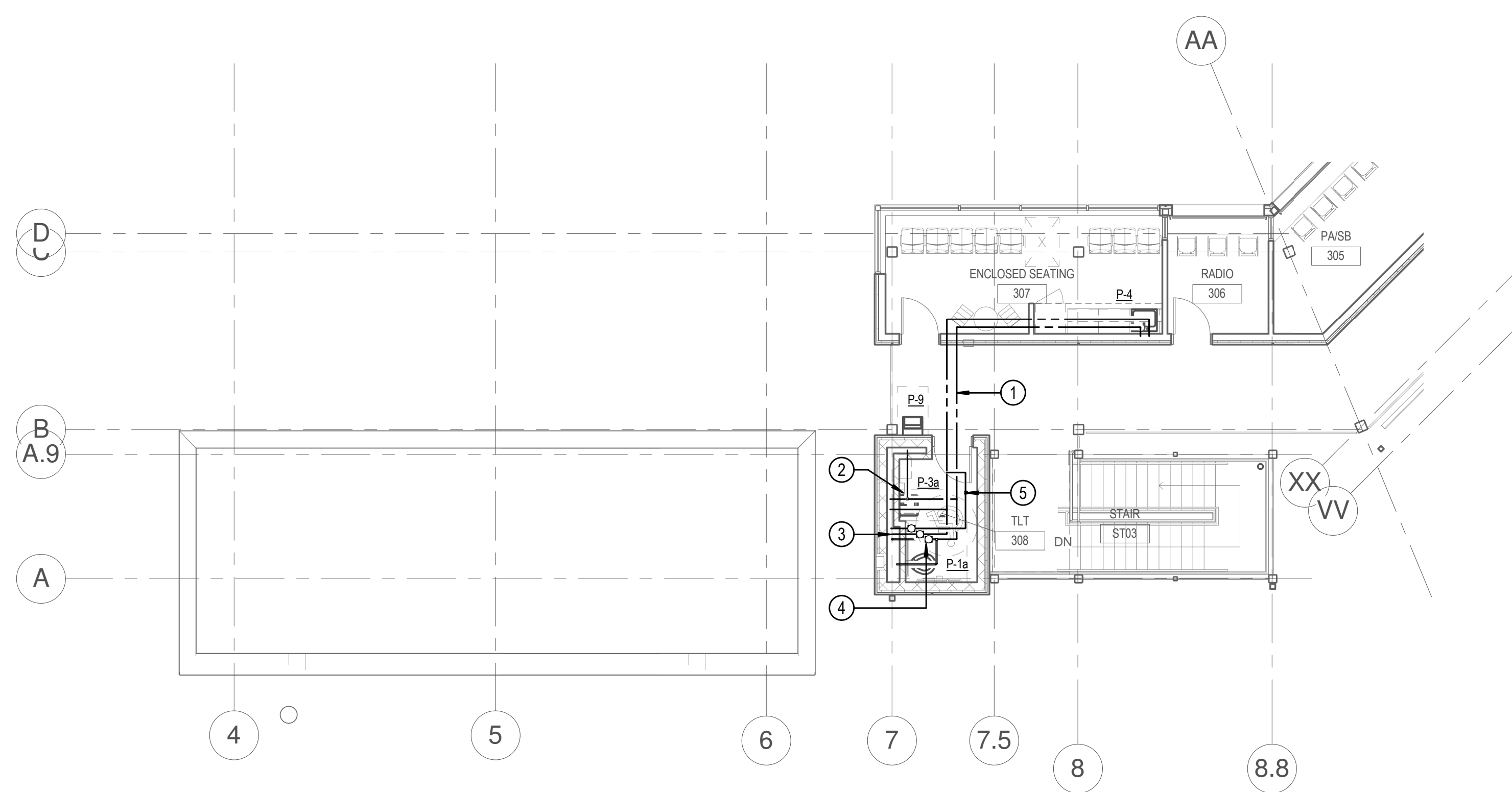
P203

GENERAL NOTES

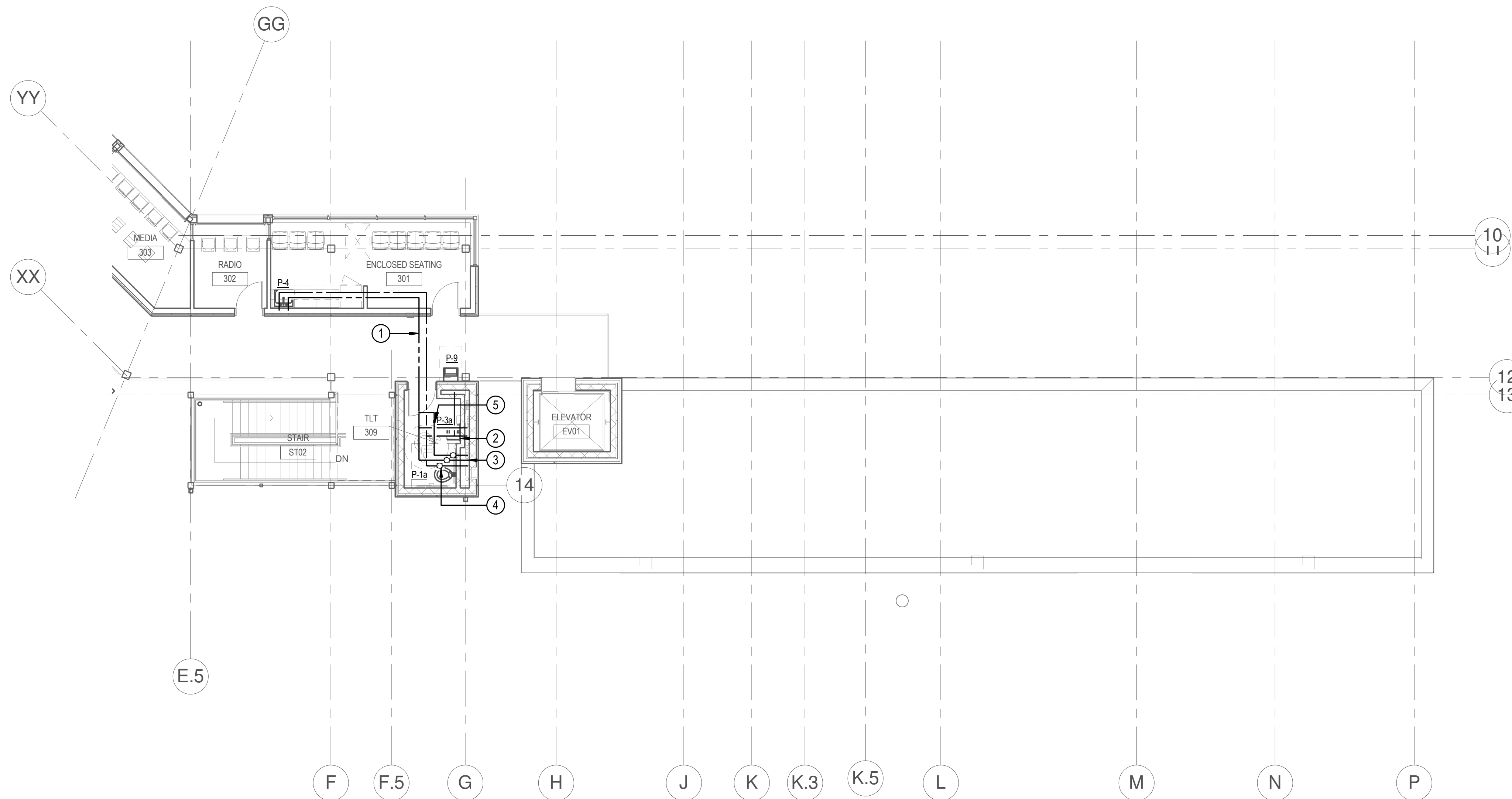
1. ALL PIPE SHALL BE ROUTED IN CEILING SPACE, UNDERSLAB, AND IN WALLS UNLESS OTHERWISE NOTED.
2. PIPE ROUTING SHOWN IS DIAGMATICAL. FINAL ROUTING SHALL BE BY THE CONTRACTOR.
3. PIPING UP TO THE PLUMBING FIXTURES SHALL BE SIZED PER THE FIXTURE SCHEDULE ON P600 UNLESS OTHERWISE NOTED.
4. REFER TO RISER DIAGRAMS FOR PIPE SIZES.

DRAWING NOTES

1. INSULATE AND HEAT TRACE ALL DOMESTIC WATER PIPING LOCATED IN UNHEATED AREAS.
2. PROVIDE TAMPER PROOF HOSE BIBB (HB-1) UNDER THE SINK.
3. 1" CW, 1" HW, AND 1/2" HWR DN
4. PROVIDE A SHUT-OFF VALVE ON CW, HW, AND HWR.
5. BALANCING VALVE
6. 1" CW, 1/2" HW, AND 1/2" HWR UP AND DN.



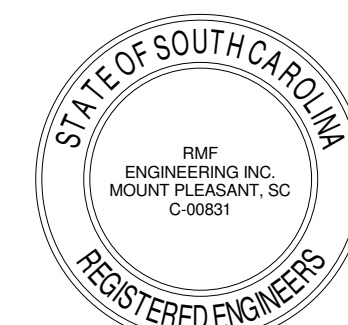
UPPER LEVEL - VISITOR SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"



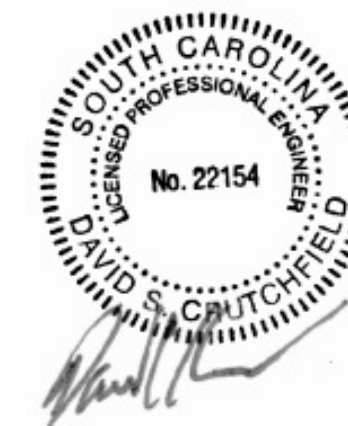
UPPER LEVEL - HOME SIDE - DOMESTIC WATER
SCALE: 1/8" = 1'-0"



CORPORATE SEAL



A/P SEAL



PROJECT TITLE

**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION

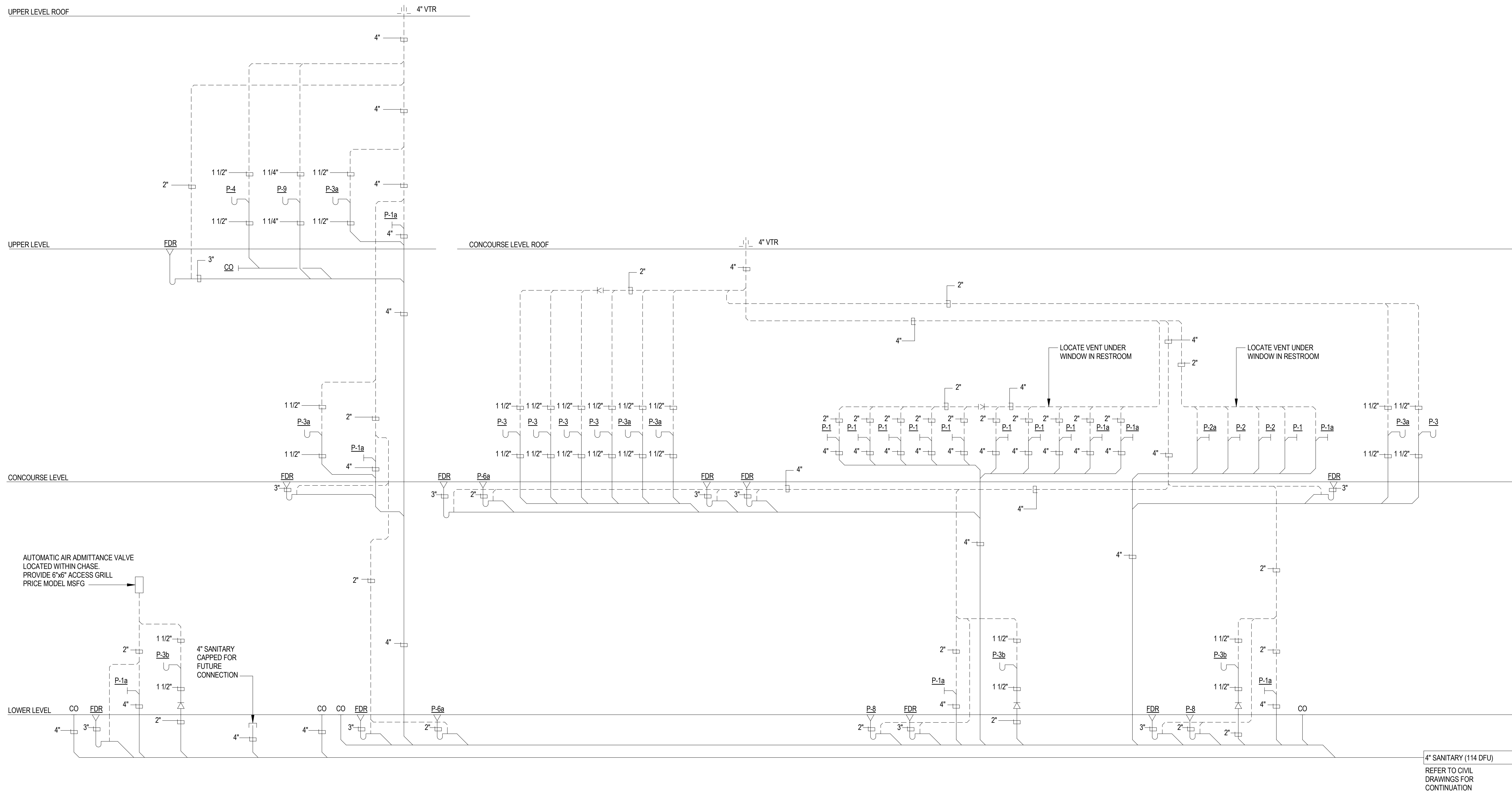
Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

**PLUMBING
RISER
DIAGRAMS**

TITLE

SHEET NO.

P400

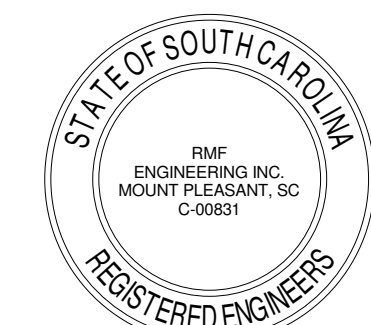


AUTOMATIC AIR ADMITTANCE VALVE
LOCATED WITHIN CHASE
PROVIDE 6\"/>

4\"/>

4\"/>

CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

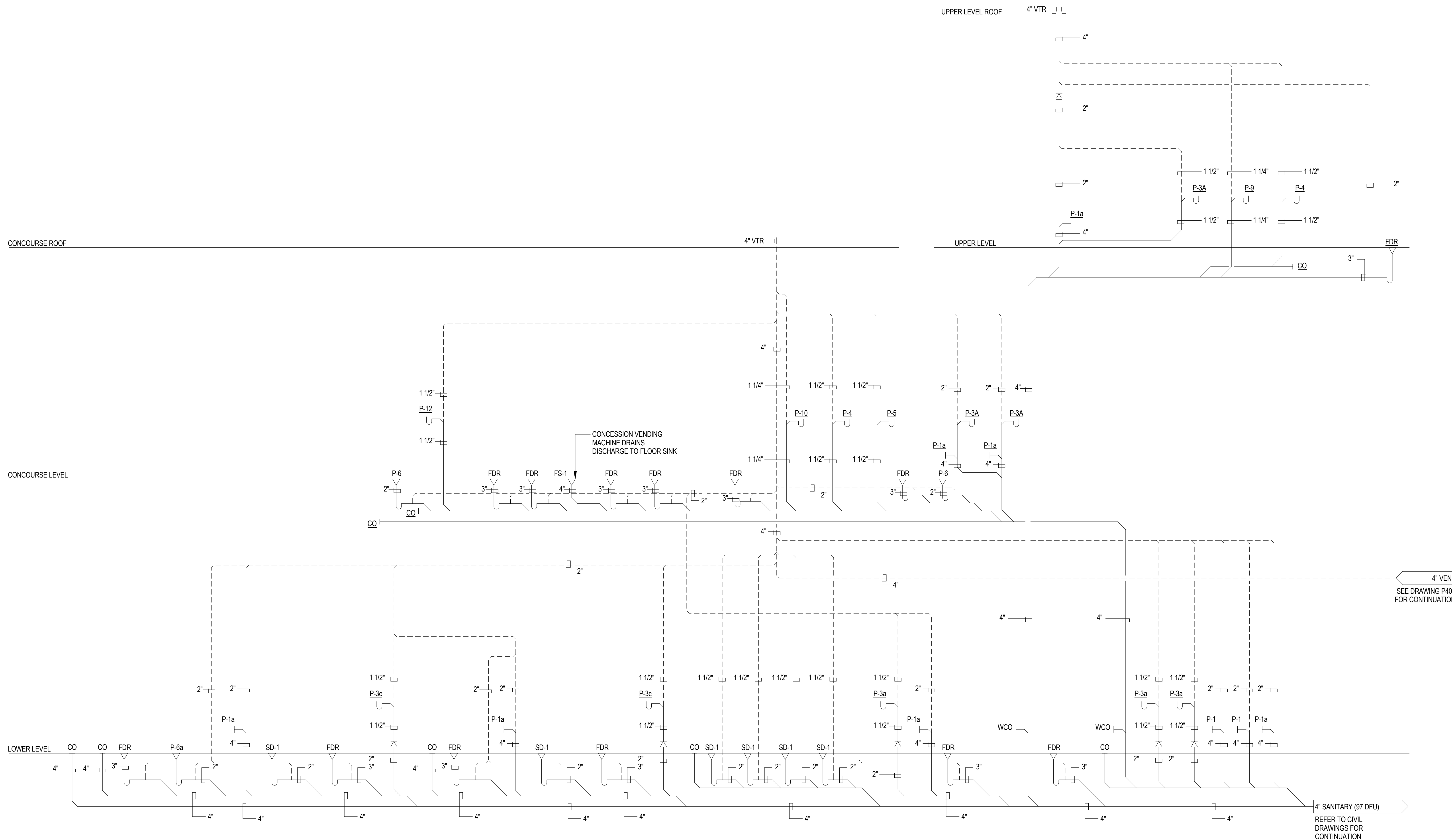
SHEET INFORMATION

Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

**PLUMBING
RISER
DIAGRAMS**

SHEET NO.

P401

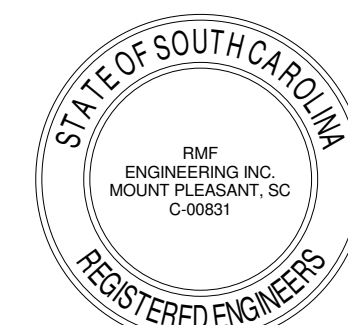


SANITARY - RISER DIAGRAM - 'B'

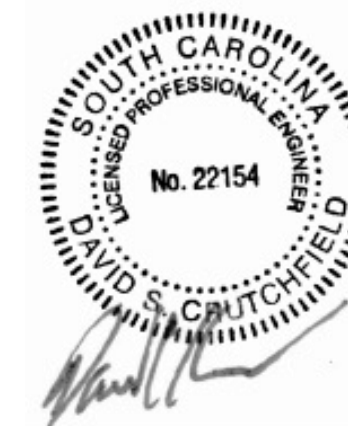
SCALE: NONE

1

CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

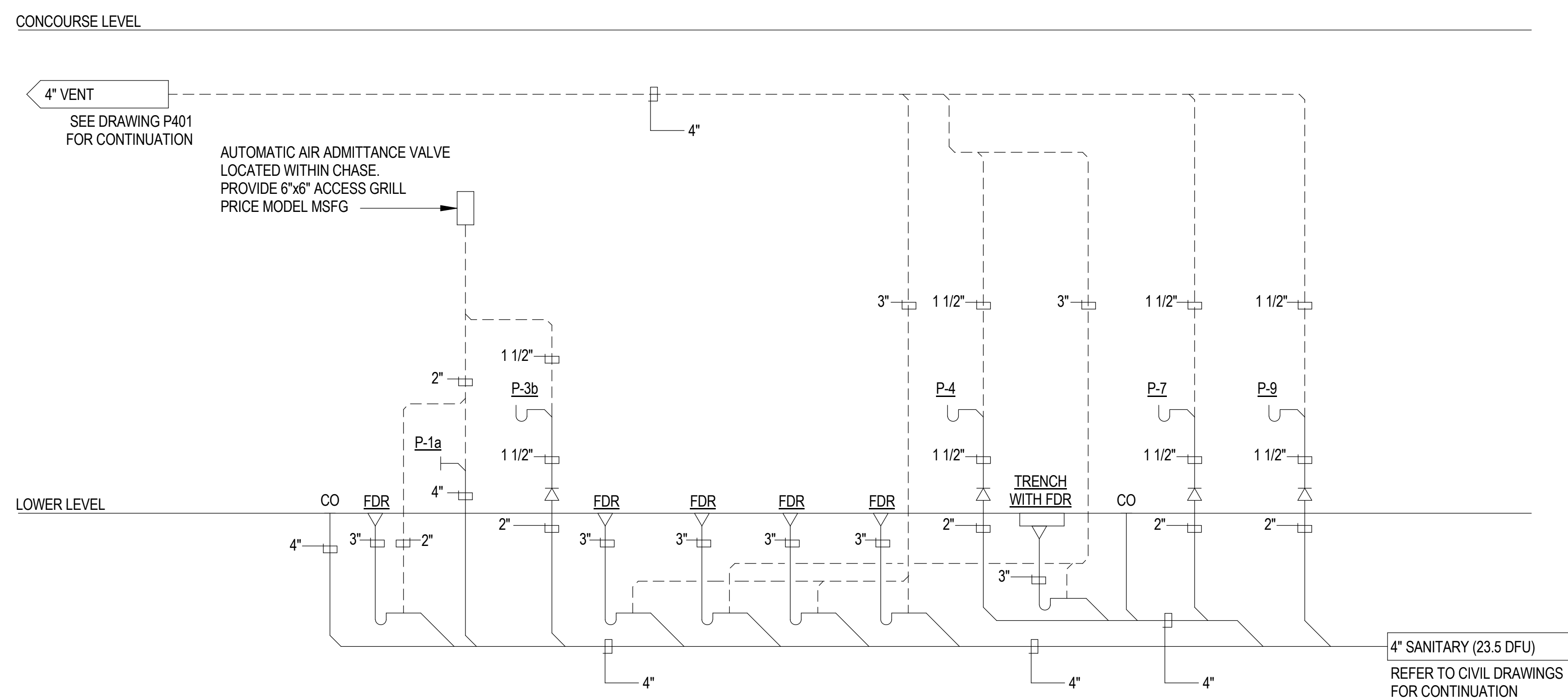
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

**PLUMBING
RISER
DIAGRAMS**

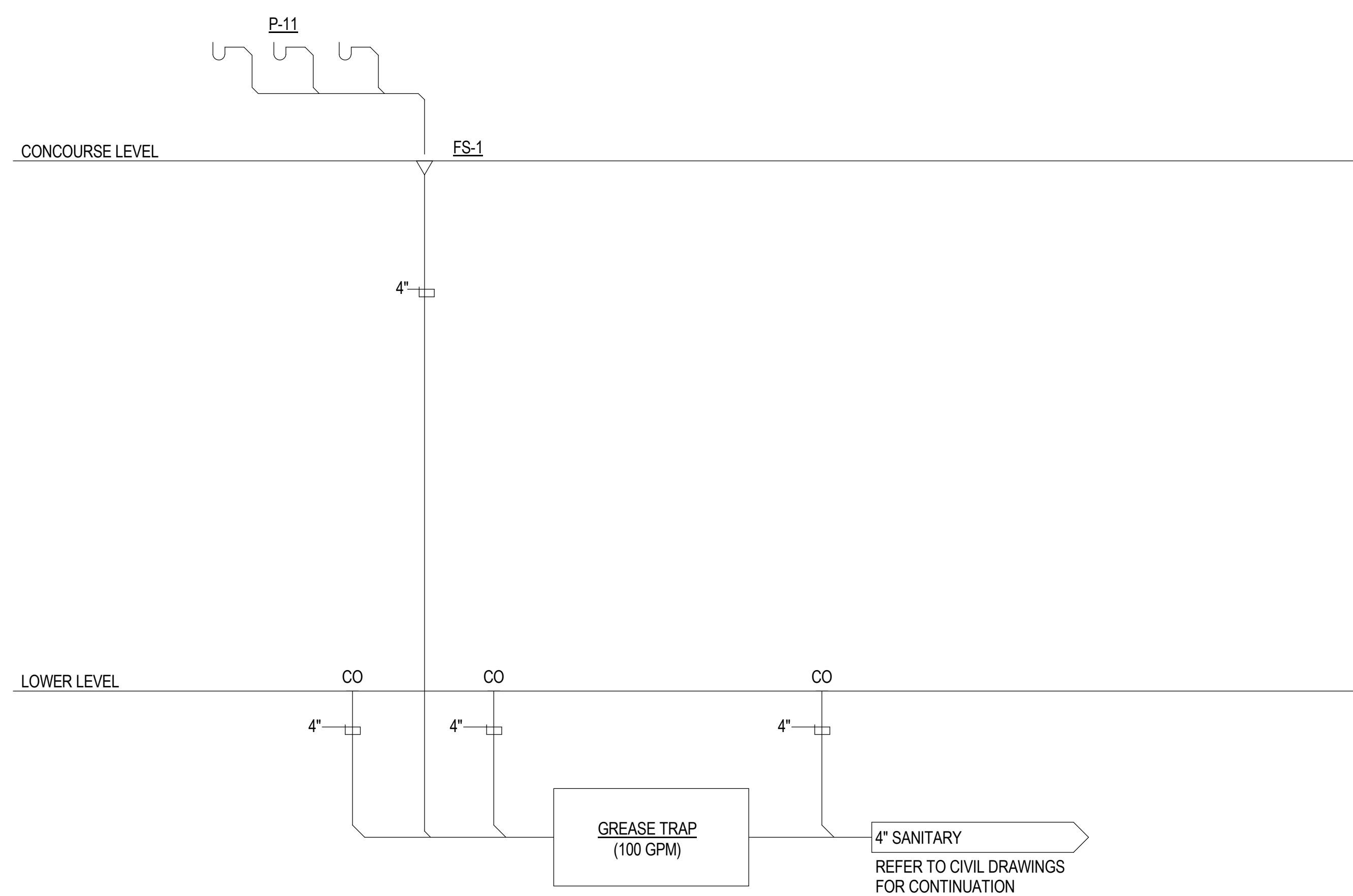
SHEET NO.

P402



SANITARY - RISER DIAGRAM - 'C'

SCALE: NONE 1

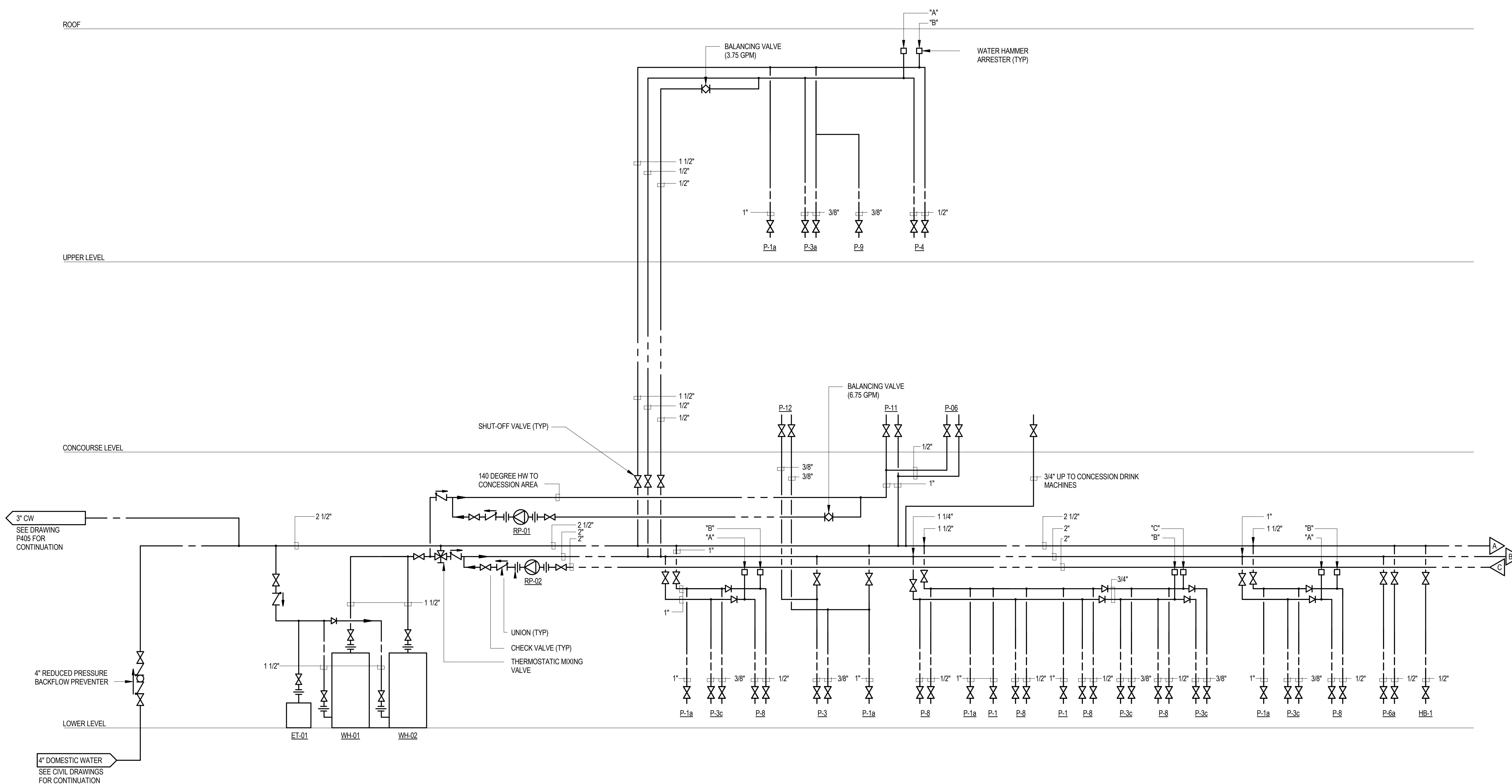


SANITARY - RISER DIAGRAM - 'D'

SCALE: NONE 2

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ



WATER HAMMER ARRESTER SCHEDULE			
SIZE	THREAD SIZE INCH	FIXTURE UNIT CAPACITY	BASIS OF DESIGN
A	1/2	1-11	WILKINS MODEL: 1250-A
B	3/4	12-32	WILKINS MODEL: 1250-B
C	1	33-60	WILKINS MODEL: 1250-C
D	1	61-113	WILKINS MODEL: 1250-D

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION

Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

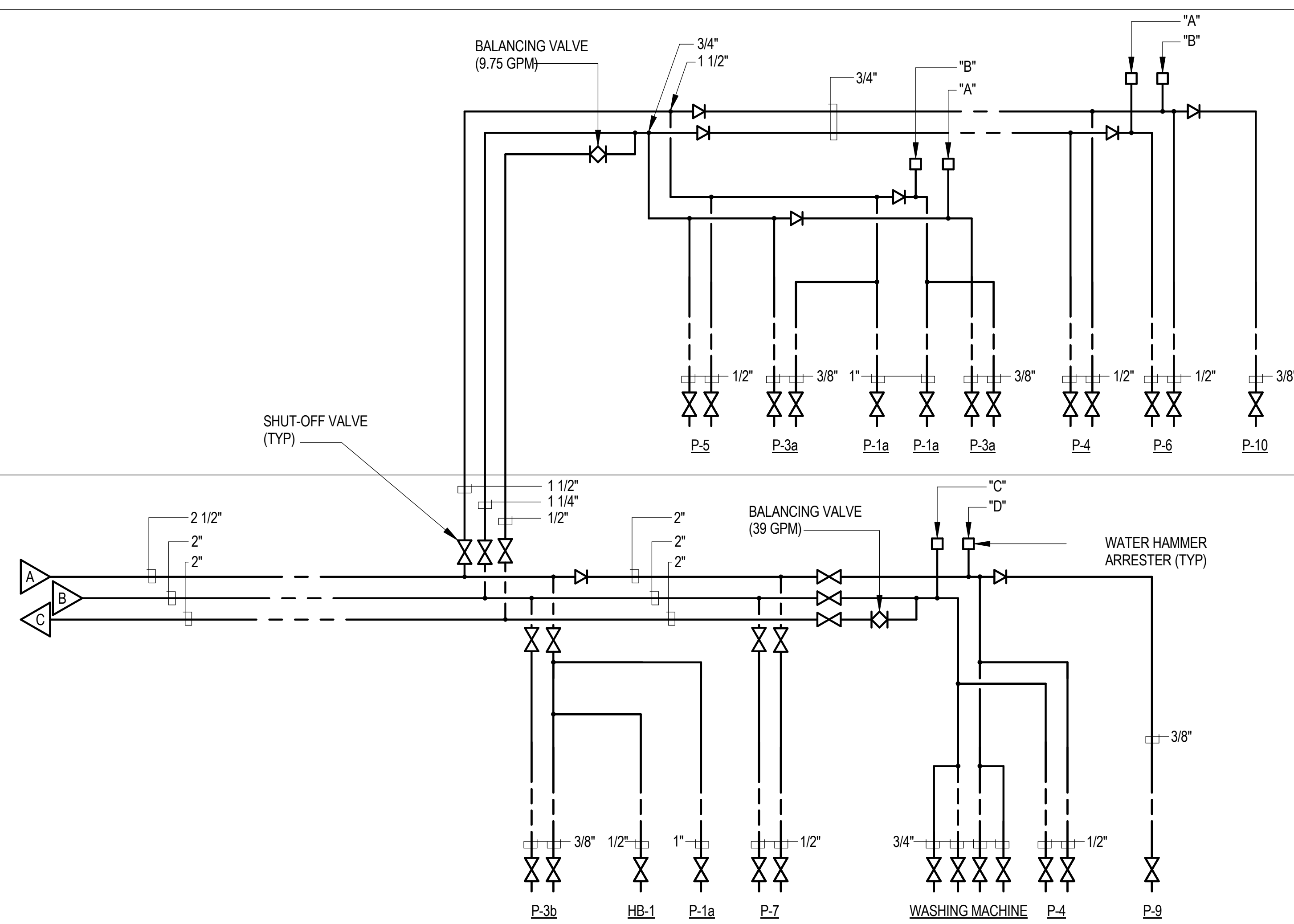
**PLUMBING
RISER
DIAGRAMS**

ROOF

UPPER LEVEL

CONCOURSE LEVEL

LOWER LEVEL



WATER HAMMER ARRESTER SCHEDULE			
SIZE	THREAD SIZE INCH	FIXTURE UNIT CAPACITY	BASIS OF DESIGN
A	1/2	1-11	WILKINS MODEL: 1250-A
B	3/4	12-32	WILKINS MODEL: 1250-B
C	1	33-60	WILKINS MODEL: 1250-C
D	1	61-113	WILKINS MODEL: 1250-D

REVISIONS		
NO	REVISION	DATE

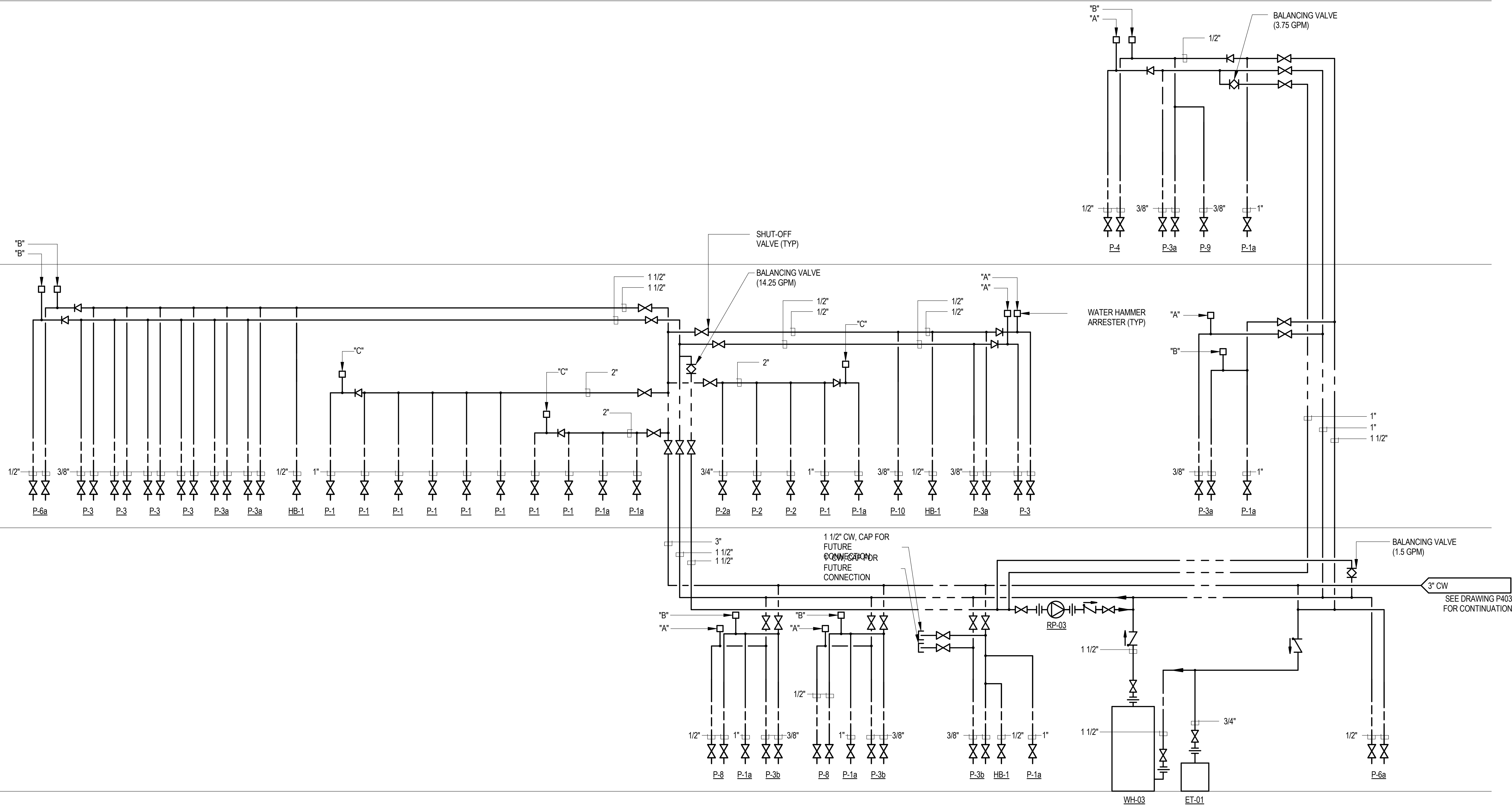
Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

ROOF

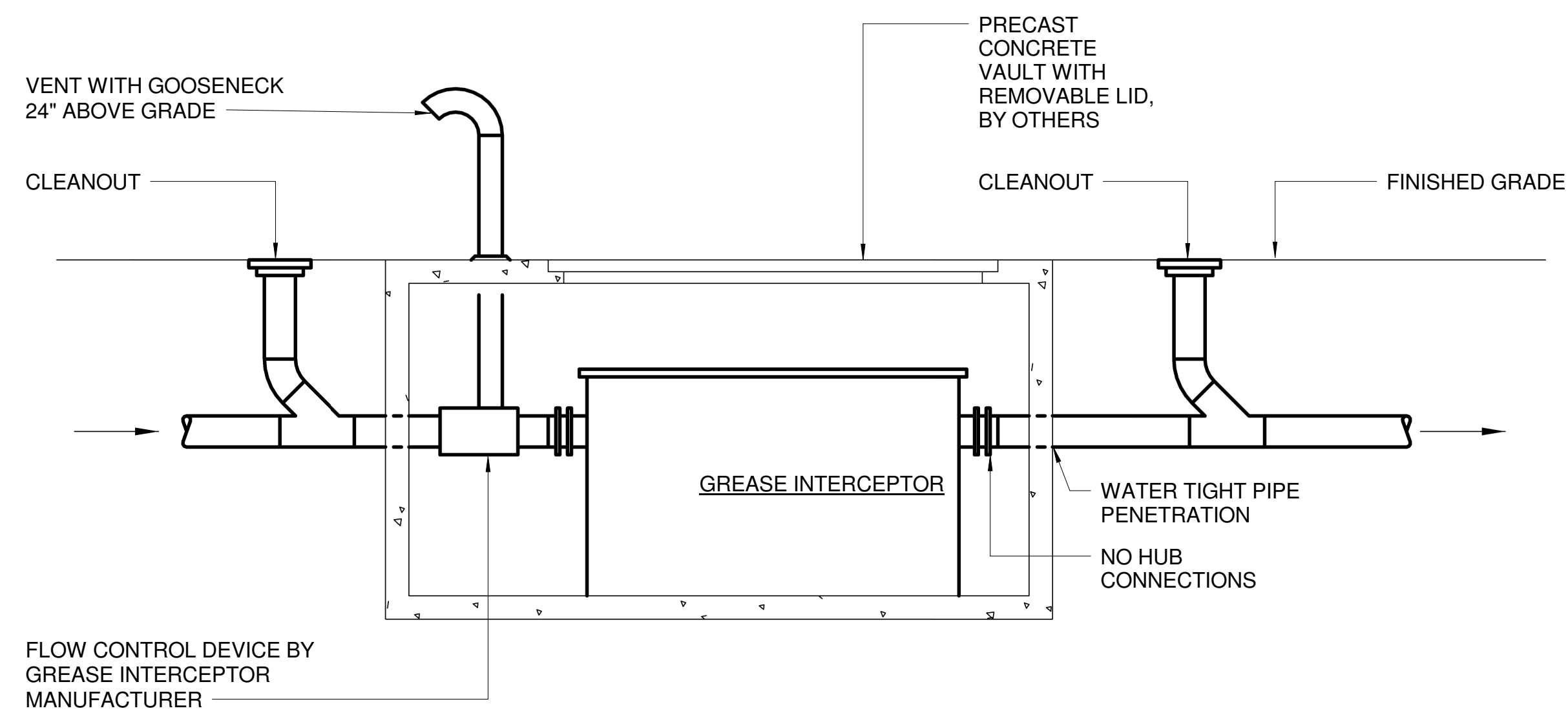
UPPER LEVEL

CONCOURSE LEVEL

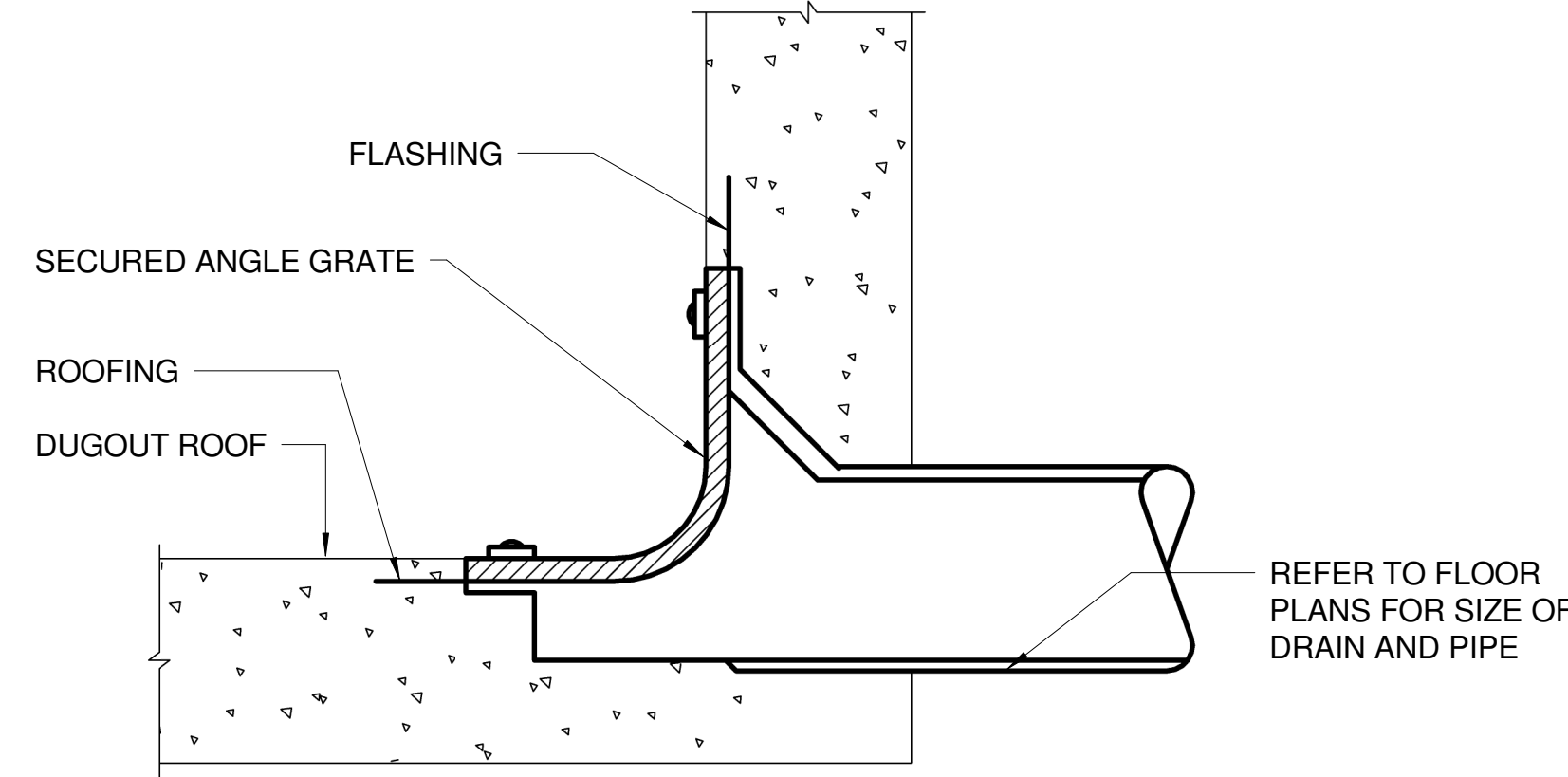
LOWER LEVEL



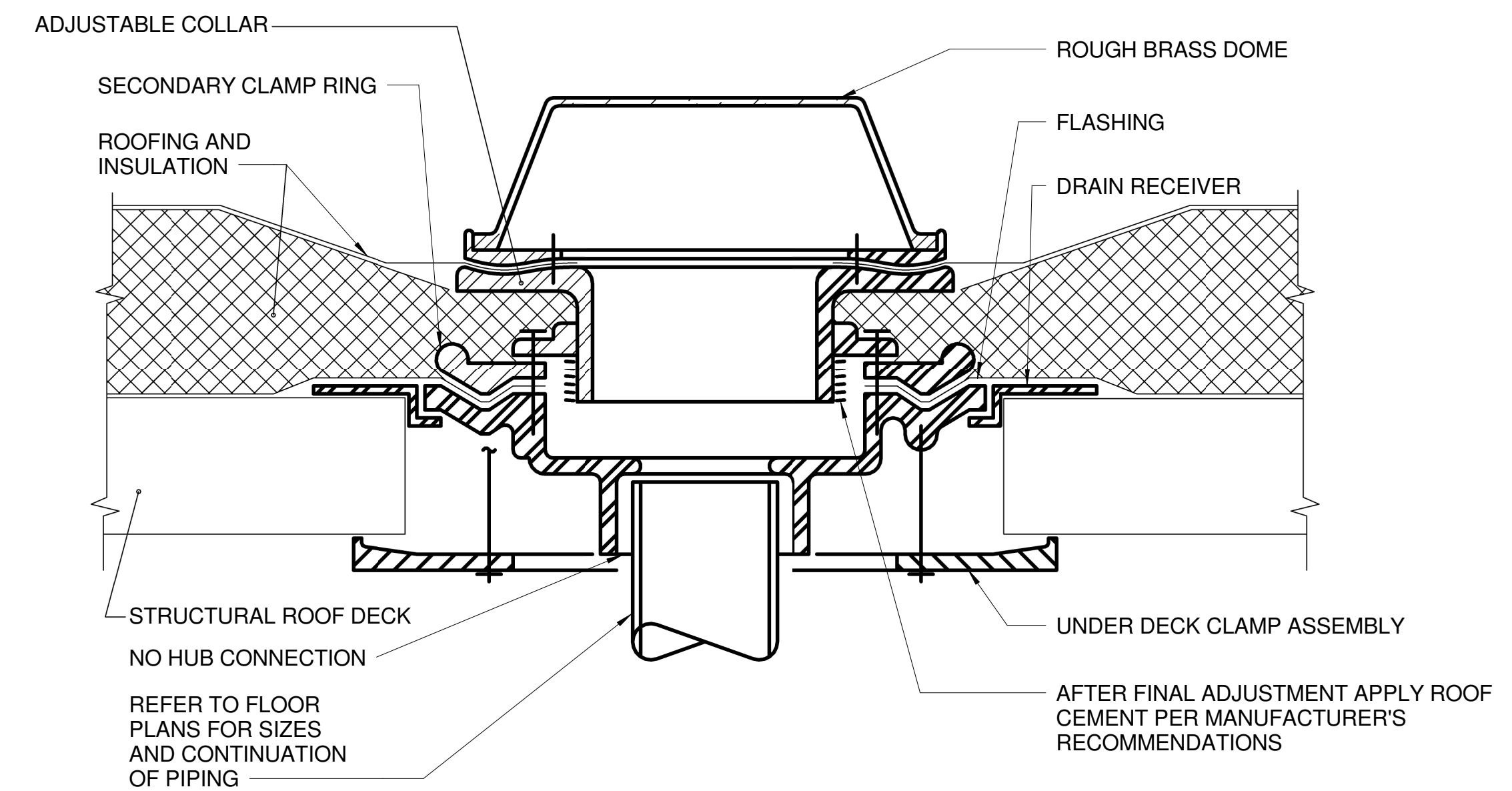
WATER HAMMER ARRESTER SCHEDULE			
SIZE	THREAD SIZE INCH	FIXTURE UNIT CAPACITY	BASIS OF DESIGN
A	1/2	1-11	WILKINS MODEL: 1250-A
B	3/4	12-32	WILKINS MODEL: 1250-B
C	1	33-60	WILKINS MODEL: 1250-C
D	1	61-113	WILKINS MODEL: 1250-D



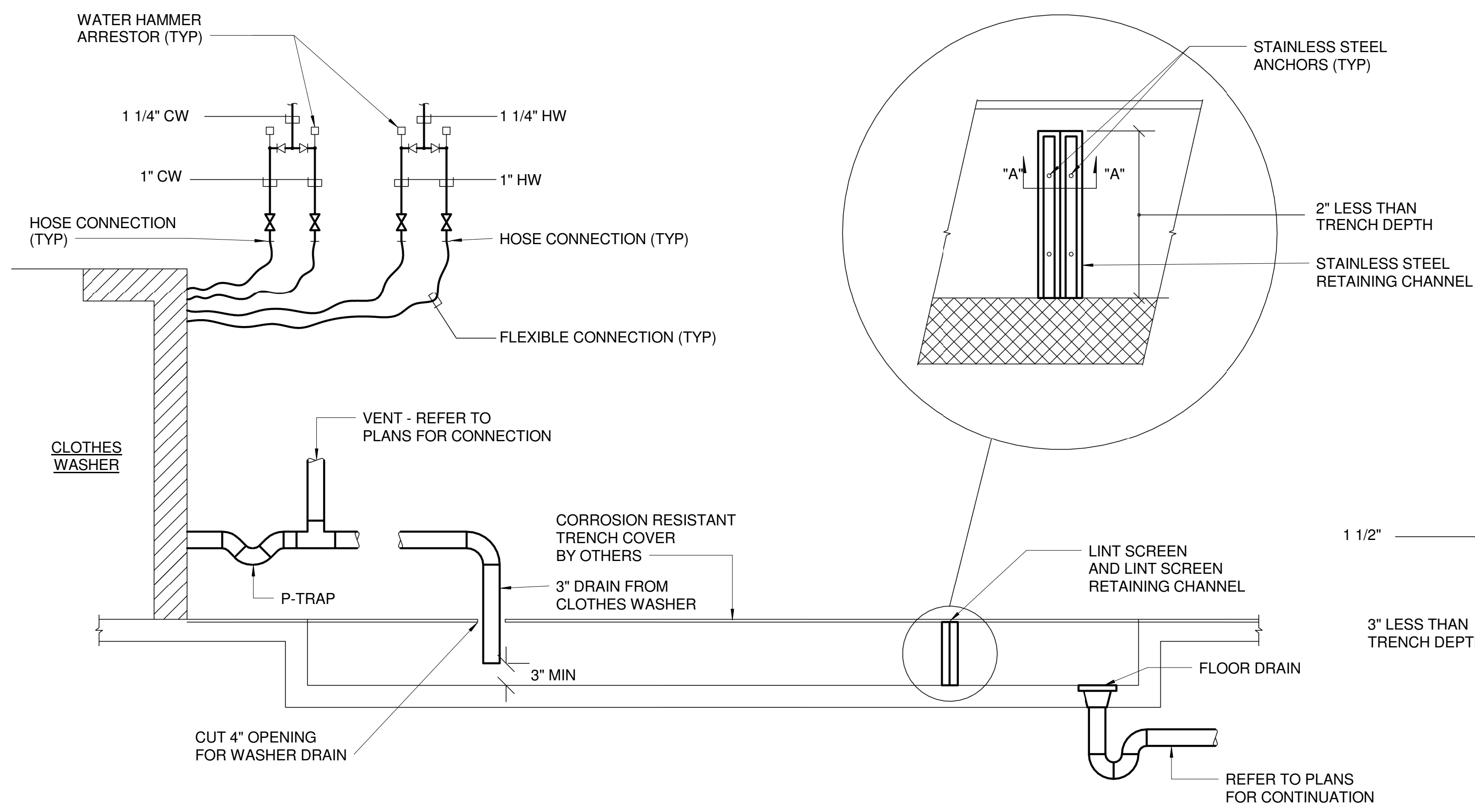
DETAIL - GREASE INTERCEPTOR INSTALLATION
SCALE: N.T.S.



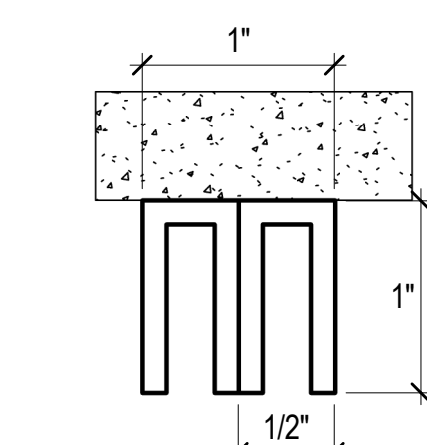
DETAIL - DUGOUT ROOF DRAIN (RD-2)
SCALE: N.T.S.



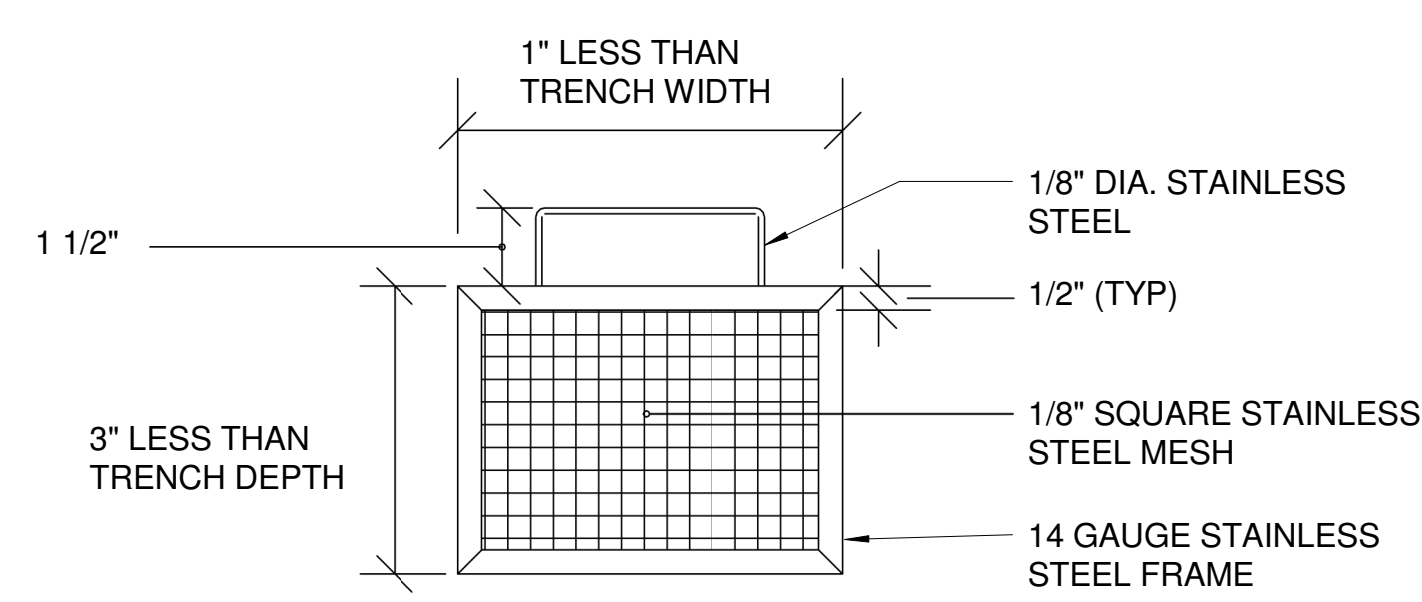
DETAIL - ROOF DRAIN
SCALE: N.T.S.



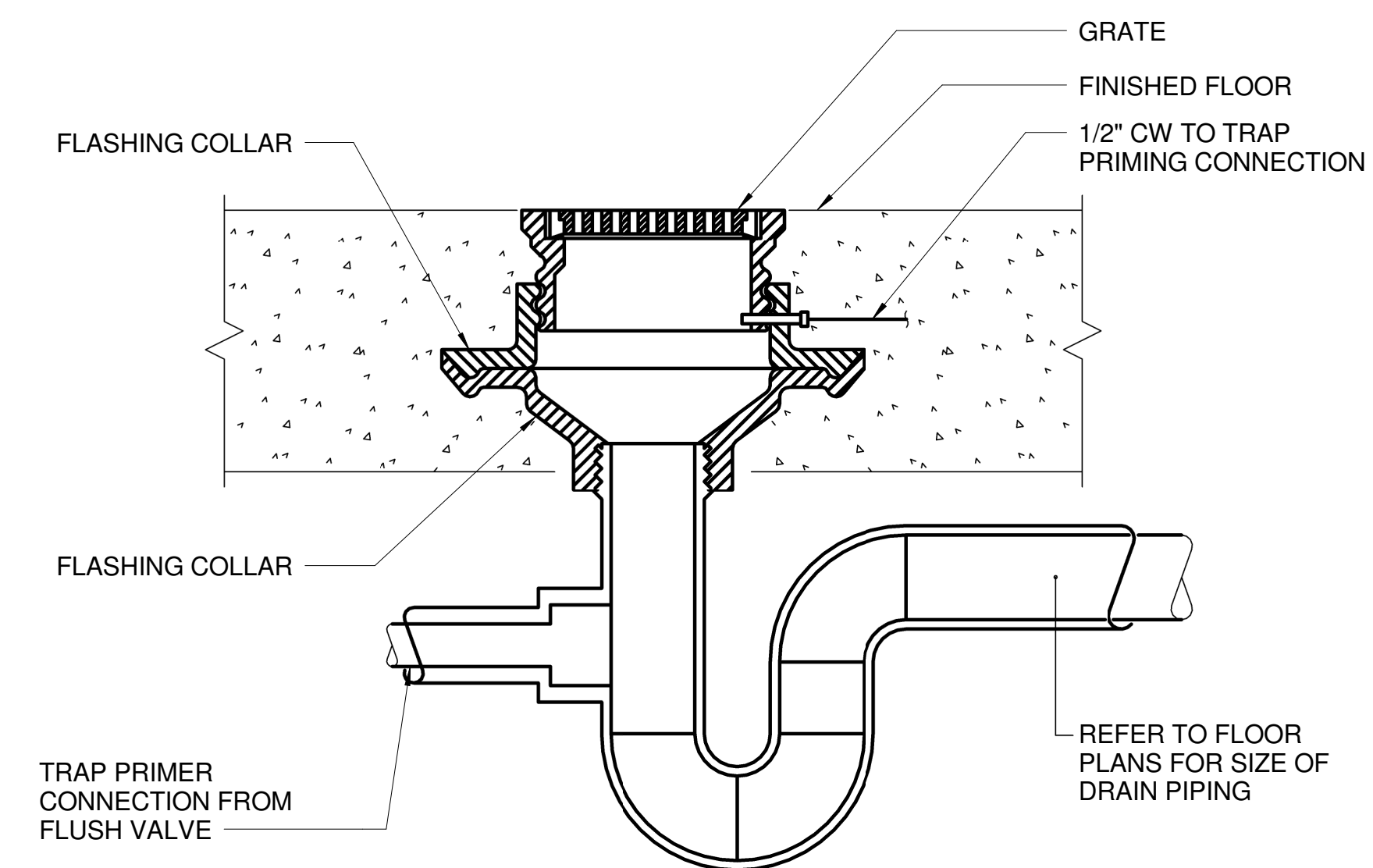
DETAIL - WASHER CONNECTION AND DRAIN TRENCH
SCALE: N.T.S.



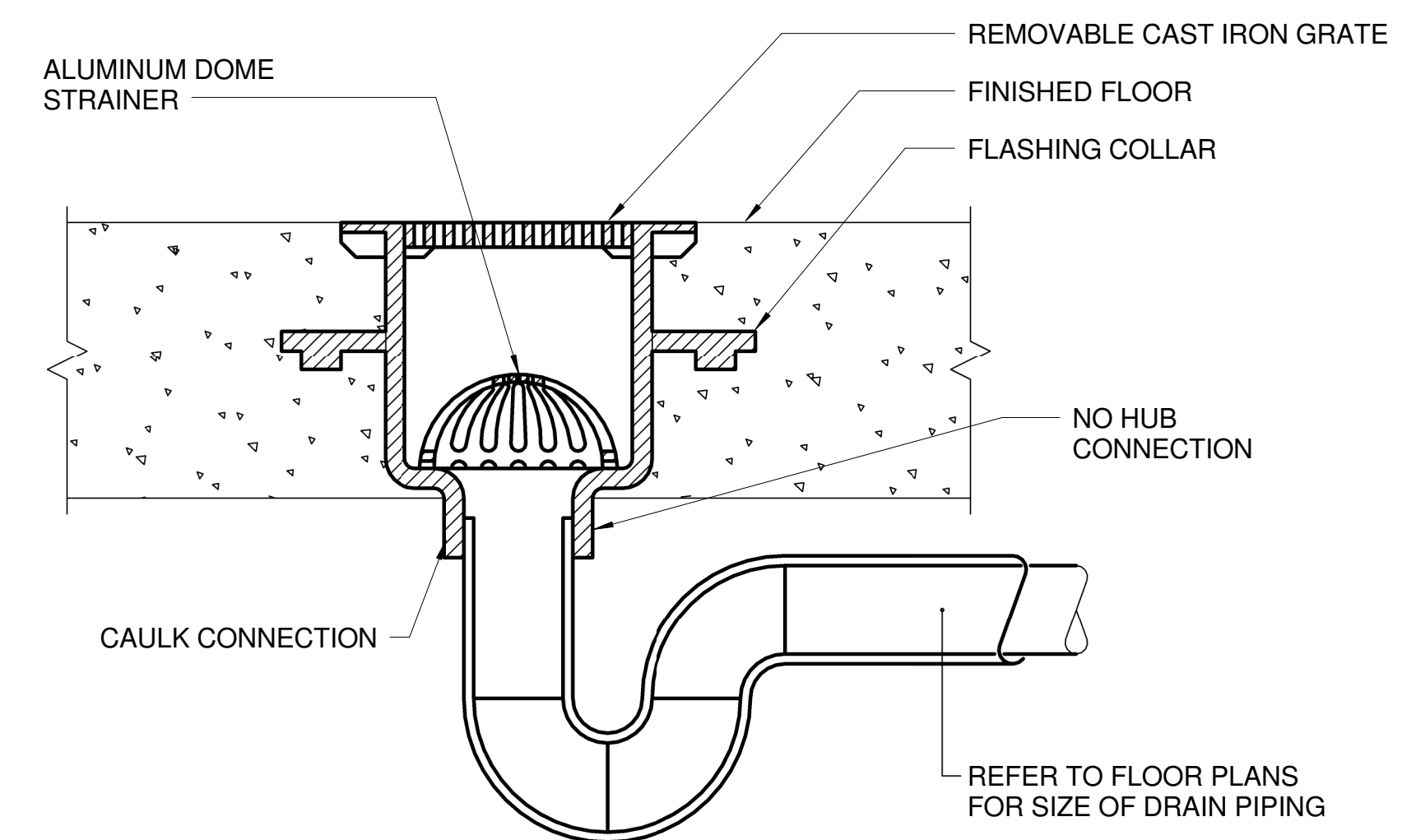
SECTION \"A-A\"
SCALE: NONE



LINT SCREEN (2 REQUIRED)
SCALE: NONE



DETAIL - FLOOR DRAIN/AREA DRAIN
SCALE: N.T.S.



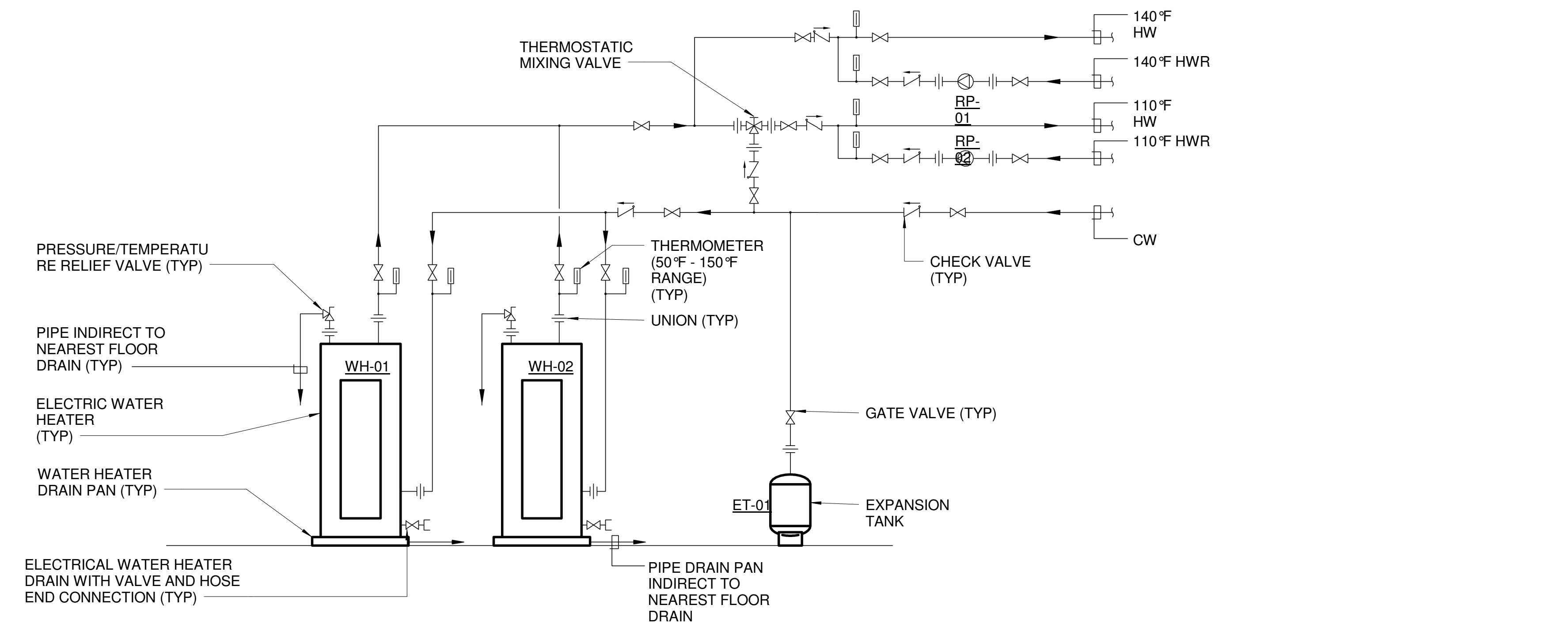
DETAIL - FLOOR SINK
SCALE: N.T.S.

REVISIONS	
NO.	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	NONE
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

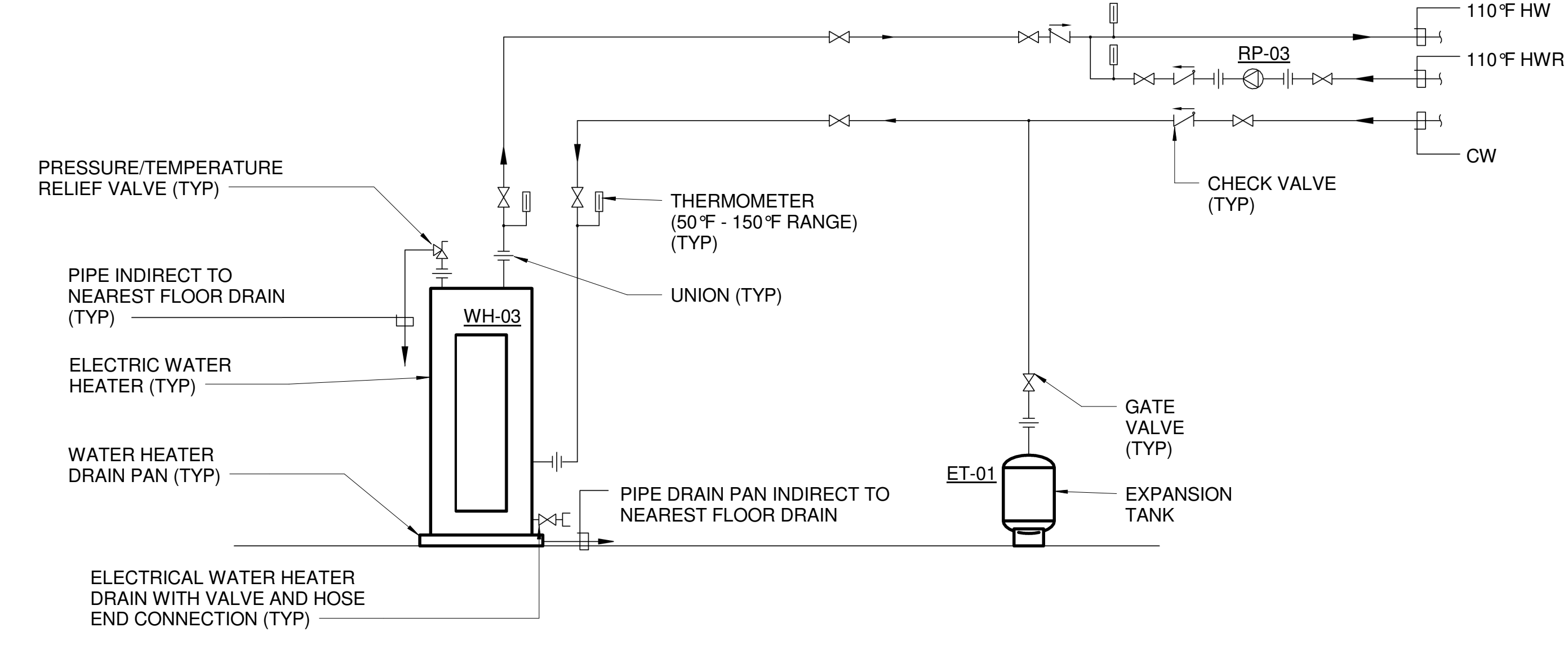
REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	NONE
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ



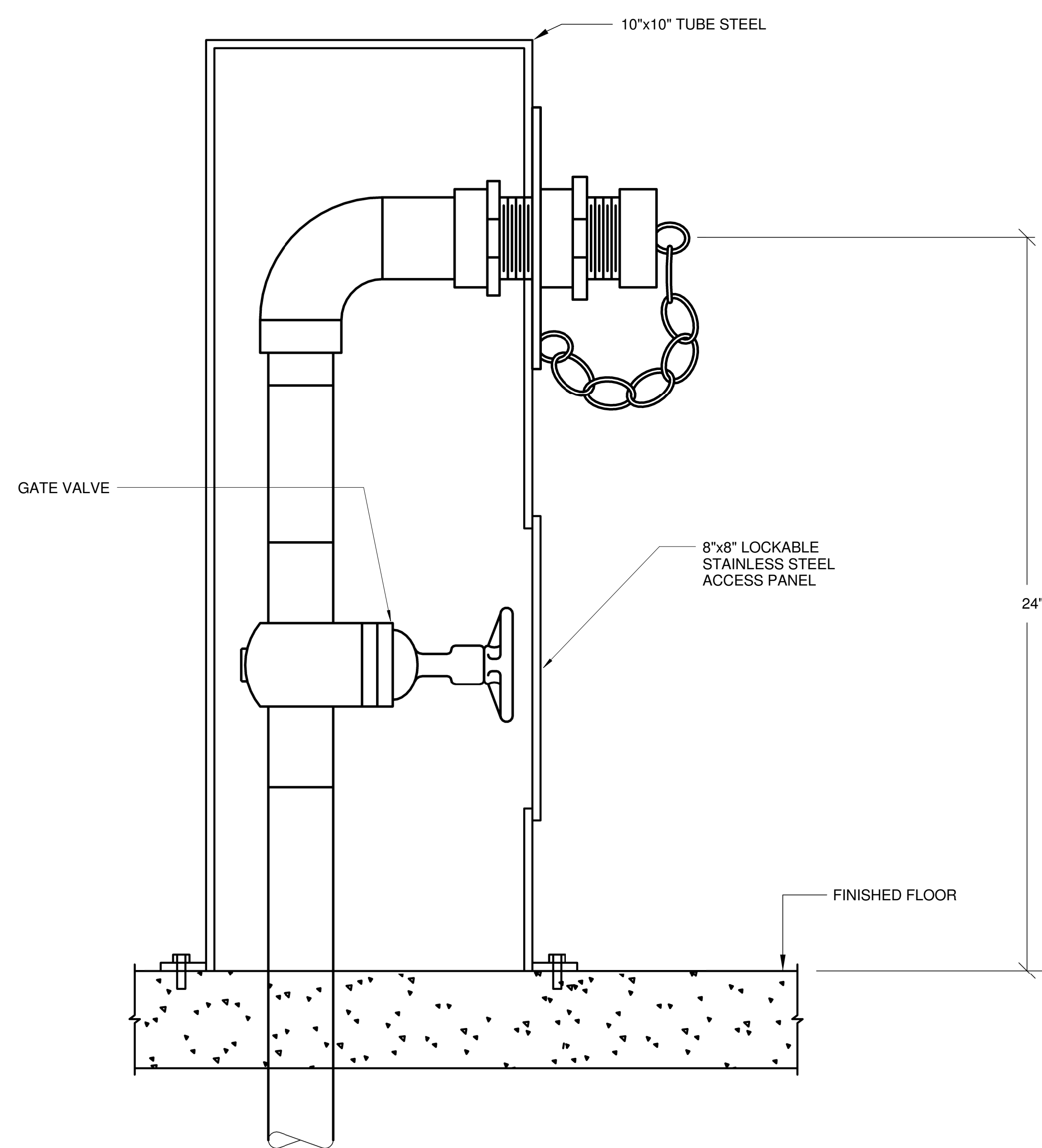
NOTE:
1. REFER TO RISER DIAGRAMS FOR PIPE SIZES.
2. PROVIDE SEISMIC SWAY BRACING FOR WATER HEATERS PER THE 2009 INTERNATIONAL BUILDING CODE AND THE 2009 INTERNATIONAL MECHANICAL CODE.

DETAIL - ELECTRIC WATER HEATER INSTALLATION - HOME SIDE
SCALE: N.T.S.

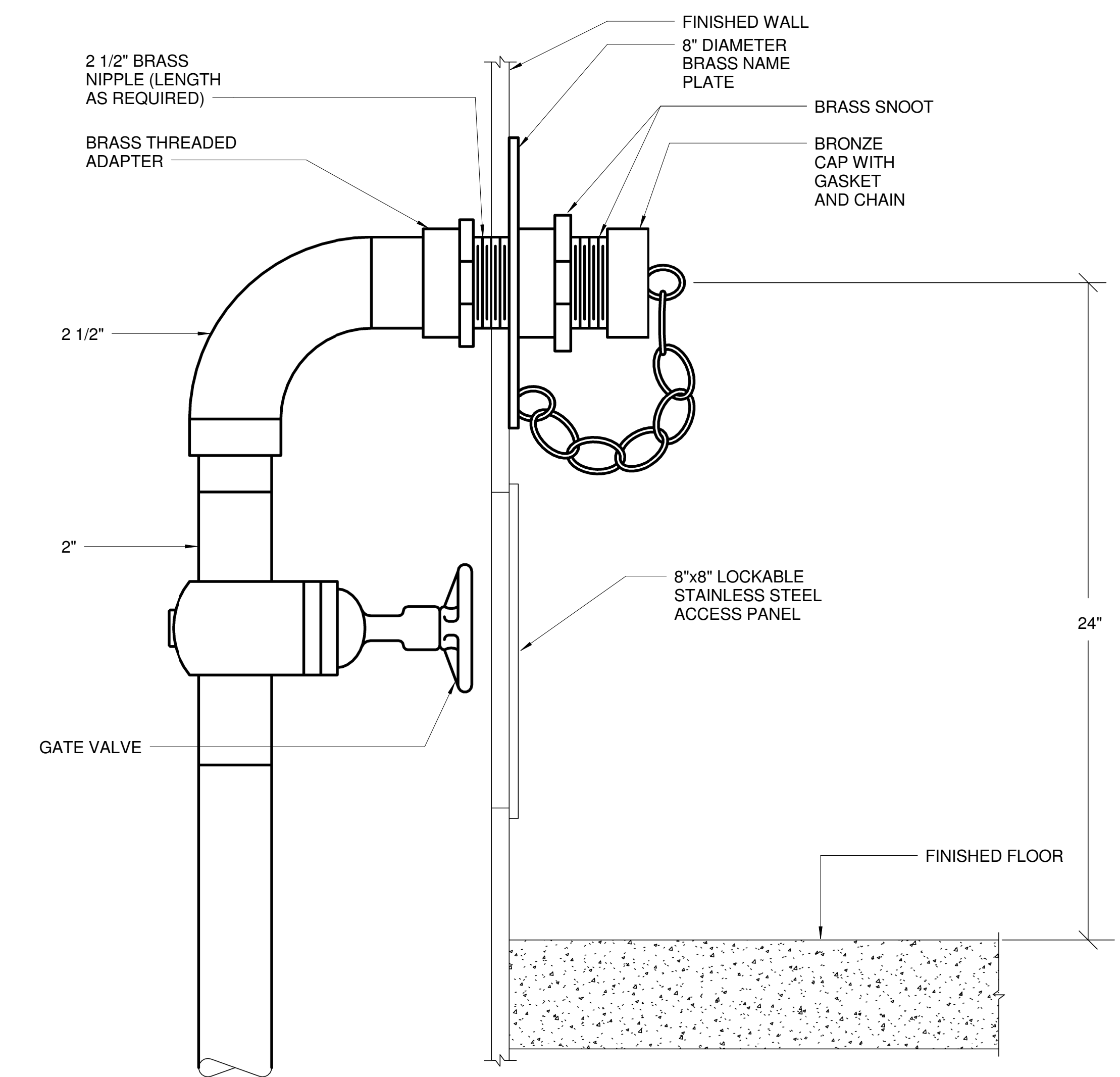


NOTE:
1. REFER TO RISER DIAGRAMS FOR PIPE SIZES.
2. PROVIDE SEISMIC SWAY BRACING FOR WATER HEATERS PER THE 2009 INTERNATIONAL BUILDING CODE AND THE 2009 INTERNATIONAL MECHANICAL CODE.

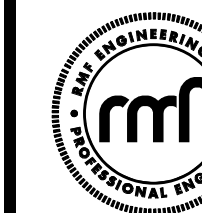
DETAIL - ELECTRIC WATER HEATER INSTALLATION - VISITOR SIDE
SCALE: N.T.S.



DETAIL - FREE STANDING WASHDOWN CONNECTION
SCALE: N.T.S.

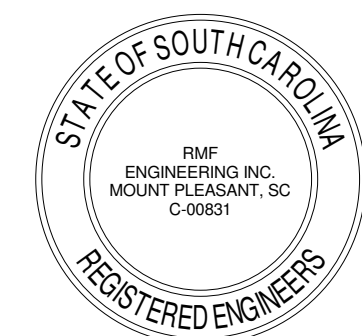


DETAIL - WASHDOWN CONNECTION (WD-1)
SCALE: N.T.S.

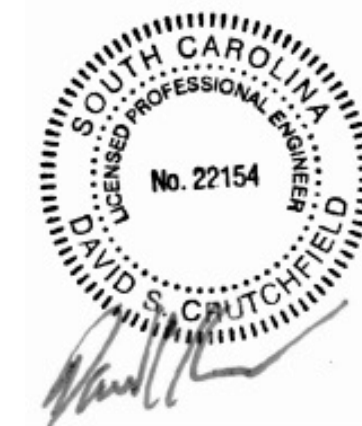


RMF ENGINEERING, INC.
194 SEVEN FARMS DRIVE
SUITE G
CHARLESTON, SC 29402
RMF JOB # 311219.00

CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

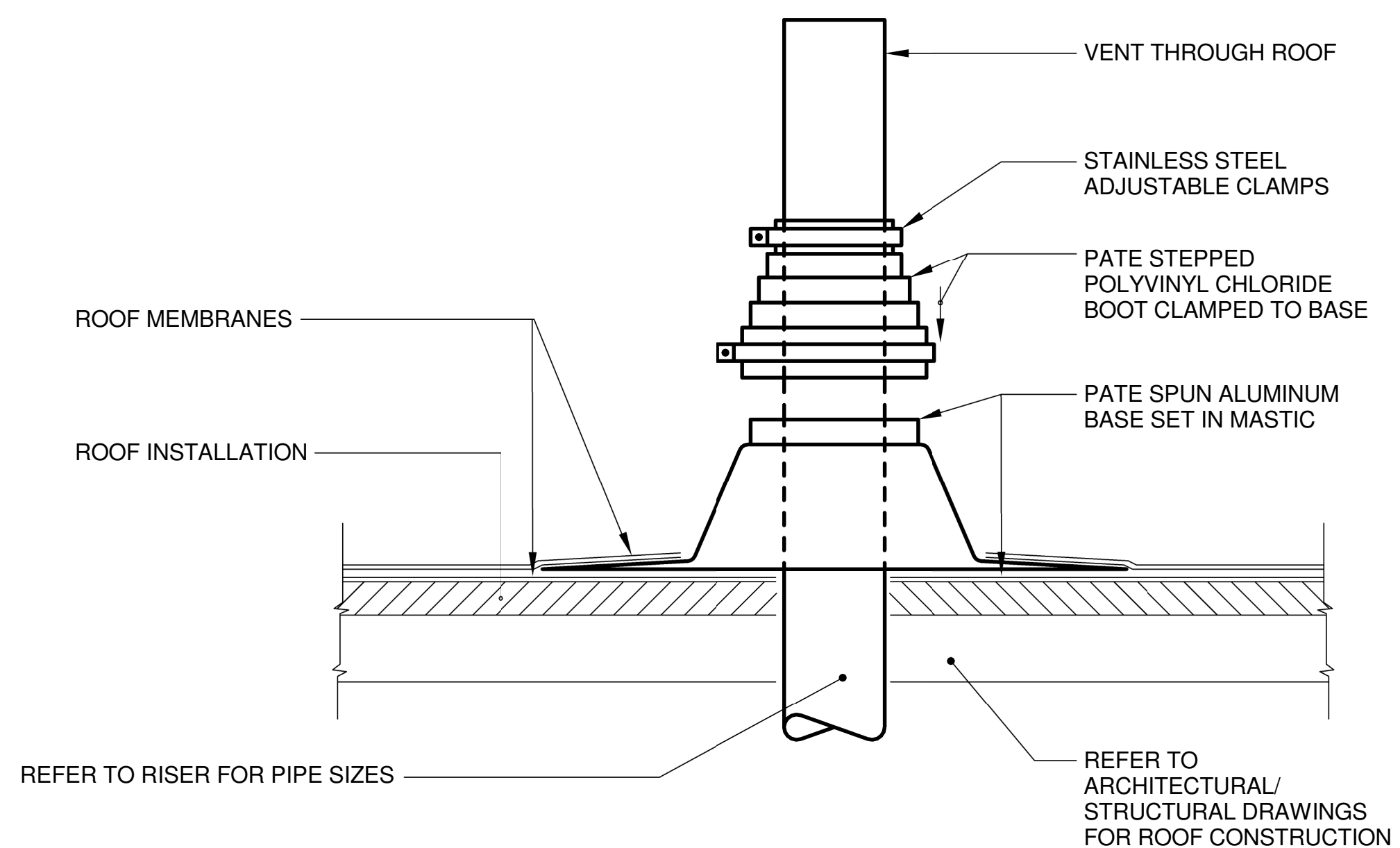
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	NONE
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

**PLUMBING
DETAILS**

TITLE

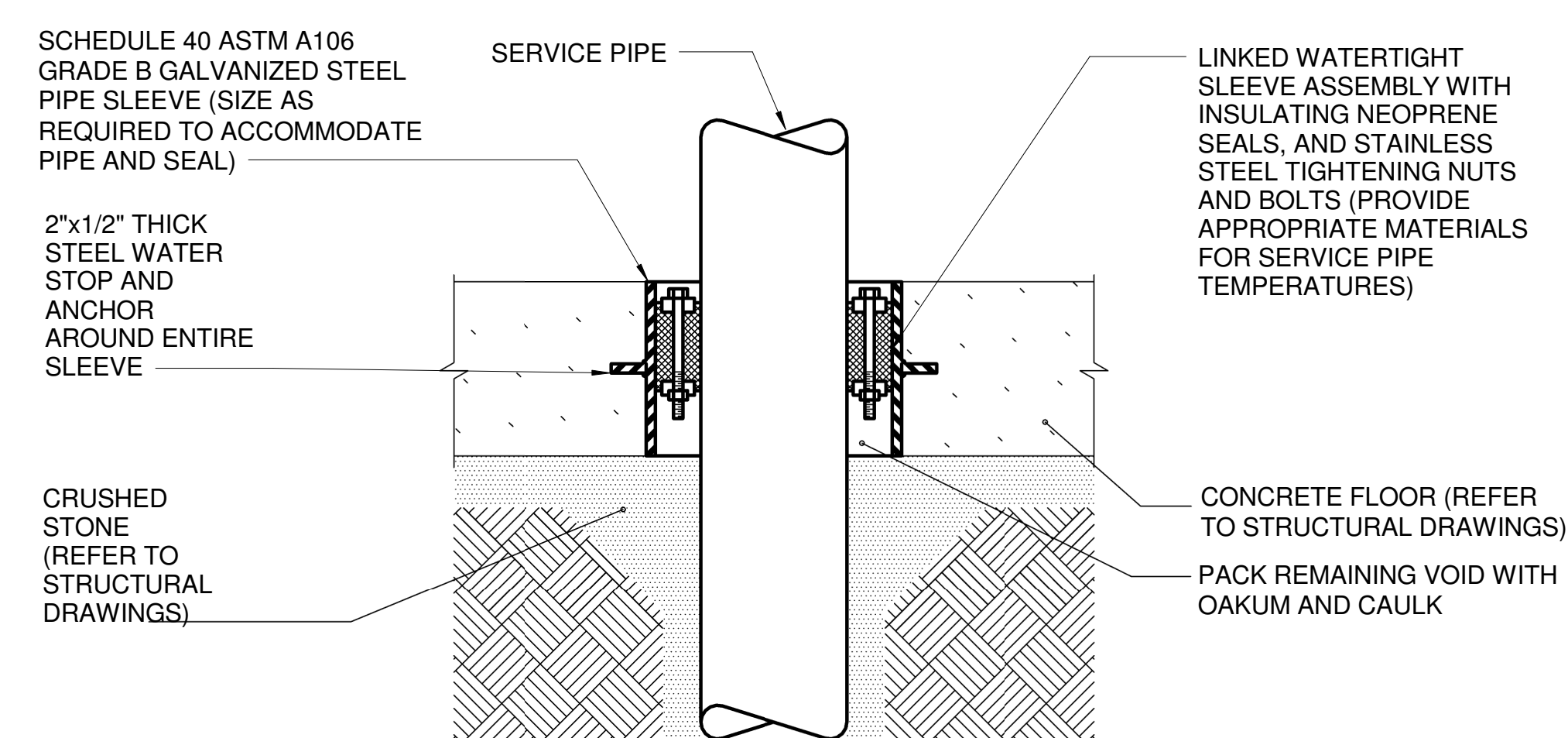
SHEET NO.

P502



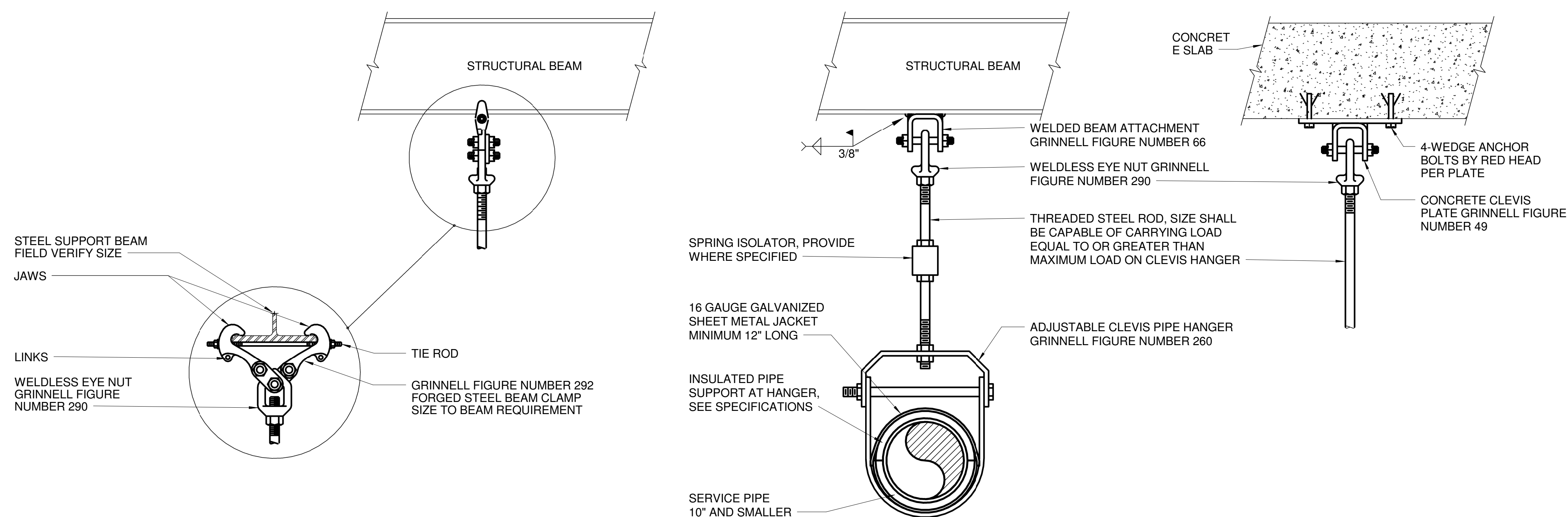
DETAIL - SANITARY VENT THROUGH ROOF

SCALE: N.T.S.



DETAIL - PIPE PENETRATION AT GRADE

SCALE: N.T.S.



NOTES:

- HANGER SPACING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- CLEVIS TYPE PIPE HANGERS SHALL BE USED FOR PIPE SIZES 10" AND SMALLER AND WHEN PIPING SYSTEMS ARE STATIONARY.
- DETAIL IS GENERAL TO THE PROJECT.

DETAIL - PIPE HANGERS

SCALE: N.T.S.

PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE	ROUGH-IN CONNECTION					FIXTURE UNITS			BASIS OF DESIGN	MOUNTING HEIGHTS	REMARKS
		CW	HW	SAN	VENT	STORM	CW	HW	SAN			
P-1	WATER CLOSET	1	-	4	4	-	10	-	4.0	AMERICAN STANDARD 3351.001, AMERICAN STANDARD 6065.121.002	STANDARD	
P-1a	WATER CLOSET (ADA)	1	-	4	4	-	10	-	4.0	AMERICAN STANDARD 3351.001, AMERICAN STANDARD 6065.121.002	17"-19" TOP OF SEAT	MOUNTED FOR HANDICAP USE
P-2	WATERLESS URINAL	-	-	2	2	-	-	-	2.0	AMERICAN STANDARD 6150.100	24"	
P-2a	WATERLESS URINAL (ADA)	-	-	2	2	-	-	-	2.0	AMERICAN STANDARD 6150.100	17"	MOUNTED FOR HANDICAP USE
P-3	LAVATORY (WALL MOUNT)	3/8	3/8	1 1/4	1 1/4	-	1.5	1.5	1.0	AMERICAN STANDARD 0195.073, AMERICAN STANDARD 6055.205, AMERICAN STANDARD 605XTMV	31" TOP OF RIM	
P-3a	LAVATORY (WALL MOUNT - ADA)	3/8	3/8	1 1/4	1 1/4	-	1.5	1.5	1.0	AMERICAN STANDARD 0195.073, AMERICAN STANDARD 6055.205, AMERICAN STANDARD 605XTMV	34" TOP OF RIM, 29" APRON/KNEE CLEARANCE	MOUNTED FOR HANDICAP USE
P-3b	LAVATORY (WALL MOUNT - ADA)	3/8	3/8	1 1/4	1 1/4	-	1.5	1.5	1.0	AMERICAN STANDARD 0195.073, AMERICAN STANDARD 7402.172V15	34" TOP OF RIM, 29" APRON/KNEE CLEARANCE	MOUNTED FOR HANDICAP USE
P-3c	LAVATORY (COUNTER MOUNT)	3/8	3/8	1 1/4	1 1/4	-	1.5	1.5	1.0	AMERICAN STANDARD 0476.028, AMERICAN STANDARD 7402.172V15	34" TOP OF RIM, 29" APRON/KNEE CLEARANCE	MOUNTED FOR HANDICAP USE
P-4	KITCHEN SINK, SINGLE BOWL	1/2	1/2	1 1/2	1 1/2	-	1.0	1.0	2.0	AMERICAN STANDARD 155B.252283.073, AMERICAN STANDARD 4275.550		
P-5	KITCHEN SINK, DOUBLE BOWL	1/2	1/2	1 1/2	1 1/2	-	1.0	1.0	2.0	AMERICAN STANDARD 17DB.332284.073, AMERICAN STANDARD 4275.551		
P-6	MOP SINK	1/2	1/2	3	3	-	2.25	2.25	2.0	FIAT SB-2424, FIAT 830-AA		
P-6a	MOP SINK	1/2	1/2	3	3	-	2.25	2.25	2.0	FIAT SB-3624, FIAT 830-AA		
P-7	LAUNDRY SINK	1/2	1/2	3	3	-	2.25	2.25	2.0	ZURN MS2622, FIAT 830-AA		
P-8	SHOWER	1/2	1/2	-	-	-	3.0	3.0	-	AMERICAN STANDARD T675.507		
P-9	DRINKING FOUNTAIN, SINGLE	3/8	-	(2) 1 1/4	1 1/4	-	0.25	-	0.5	ELKAY VRCGRN8		
P-10	DRINKING FOUNTAIN, DOUBLE	3/8	-	1 1/4	1 1/4	-	0.25	-	0.5	ELKAY VRCHDTL8SC		
P-11	3 COMPARTMENT CONCESSION SINK	1/2	1/2	3	3	-	2.25	2.25	2.0	ELKAY SS8354LR, ELKAY LK940 ARC TUBE		
P-12	HANDWASH SINK CONCESSION	3/8	3/8	1 1/4	1 1/4	-	1.5	1.5	1.0	ELKAY CHS81716C		
HB-1	HOSE BIBB	1/2	-	-	-	-	1.5	-	-	JOSAM 71050		
FDR	FLOOR DRAIN	-	-	3	2	-	-	-	2.0	JOSAM 31003		TRAP PRIME ALL FLOOR DRAINS
AD-1	DUGOUT AREA DRAIN	-	-	-	-	4	-	-	-	JOSAM 32330-SD-19		
AD-2	CONCOURSE AREA DRAIN	-	-	-	-	4	-	-	-	JOSAM 24200		WATERPROOF FLOOR CONSTRUCTION
AD-3	CONCOURSE AREA DRAIN	-	-	-	-	4	-	-	-	JOSAM 32330-SD-19		
AD-4	LOWER LEVEL AREA DRAIN	-	-	-	-	4	-	-	-	JOSAM 32330-SD-19		
RD-1	ROOF DRAIN	-	-	-	-	4	-	-	-	JOSAM 21500-6		
RD-2	ROOF DRAIN (PARAPET TYPE)	-	-	-	-	4	-	-	-	JOSAM 24724		
SD-1	SHOWER DRAIN	-	-	2	1 1/2	1 1/2	-	-	2.0	JOSAM 31002		
FS-1	FLOOR SINK	-	-	4	-	-	-	-	-	JOSAM 49340A-LF-3		

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.

DOMESTIC WATER HEATER SCHEDULE

DESIG	CAPACITY GALLON	RECOVERY 100° RISE GALLONS	NUMBER OF ELEMENTS	TOTAL KW	ELECTRICAL	APPROX SHIPPING WEIGHT LBS.	BASIS OF DESIGN
WH-01	200	221	3	54	480/3/60	900	BRADFORD WHITE VR200-54
WH-02	200	221	3	54	480/3/60	900	BRADFORD WHITE VR200-54
WH-03	200	221	3	54	480/3/60	900	BRADFORD WHITE VR200-54

NOTES:
1. WATER HEATERS SHALL BE PROVIDED WITH HEATING ELEMENTS FOR SIMULTANEOUS OPERATION.

EXPANSION TANK SCHEDULE

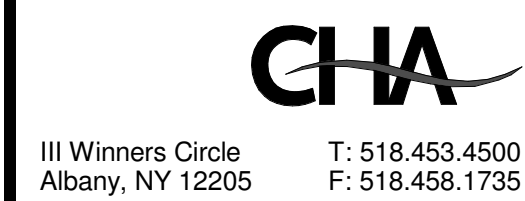
DESIGNATION	SERVICE	TYPE	TANK VOLUME GALLON	DIMENSIONS		DRY WEIGHT LBS	BASIS OF DESIGN
				DIAMETER INCHES	HEIGHT INCHES		
ET-01	DOMESTIC WATER	DIAPHRAGM	22.0	16	32	88	WATTS DETA-42
ET-02	DOMESTIC WATER	DIAPHRAGM	5.0	12	14	28	WATTS DETA-12

RECIRCULATING PUMP DUTY

DESIGNATION:	RP-01	RP-02	RP-03
SERVICE:	DOMESTIC HOT WATER (140°F)	DOMESTIC HOT WATER	DOMESTIC HOT WATER
CAPACITY (GPM):	6.75	52.5	19.5
HEAD (FT):	15	20	15
MOTOR WATTS:	130	300	300
MOTOR RPM:	3300	3250	2650
ELECTRICAL:	1 PH/115 V	1 PH/115 V	1 PH/115 V
BASIS OF DESIGN:	BELL & GOSSETT PL-36	BELL & GOSSETT PL-130	BELL & GOSSETT PL-55



1217 Hampton Street T: 803.771.2999
Columbia, SC 29201 F: 803.771.2958

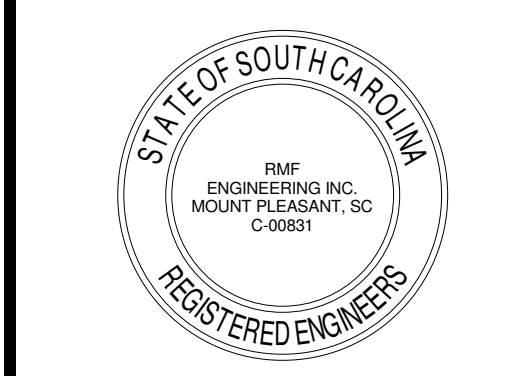


111 Winners Circle T: 518.453.4500
Albany, NY 12205 F: 518.458.1735

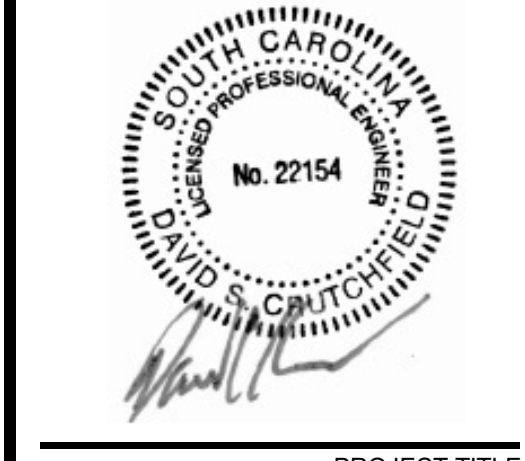


RMF ENGINEERING, INC.
194 SEVEN FARMS DRIVE
SUITE G
CHARLESTON, SC 29402
RMF-JOB #: 311219-00

CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	1/2" = 1'-0"
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE
PLUMBING SCHEDULES

SHEET NO.
P600

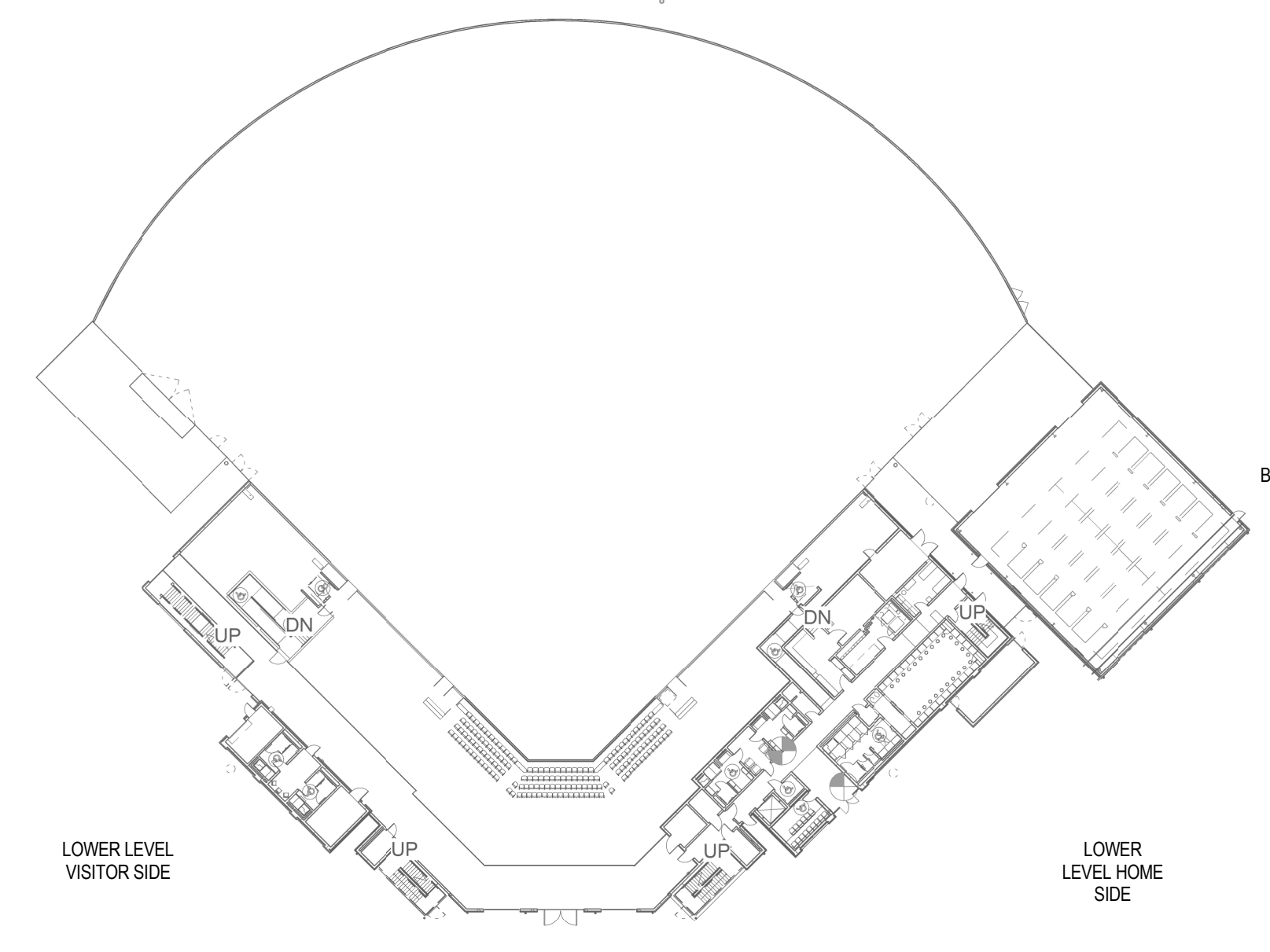
MECHANICAL ABBREVIATIONS

NOTE: THIS IS A STANDARD ABBREVIATION LIST. SOME ABBREVIATIONS MAY NOT APPEAR ON THE ACCOMPANYING DRAWINGS

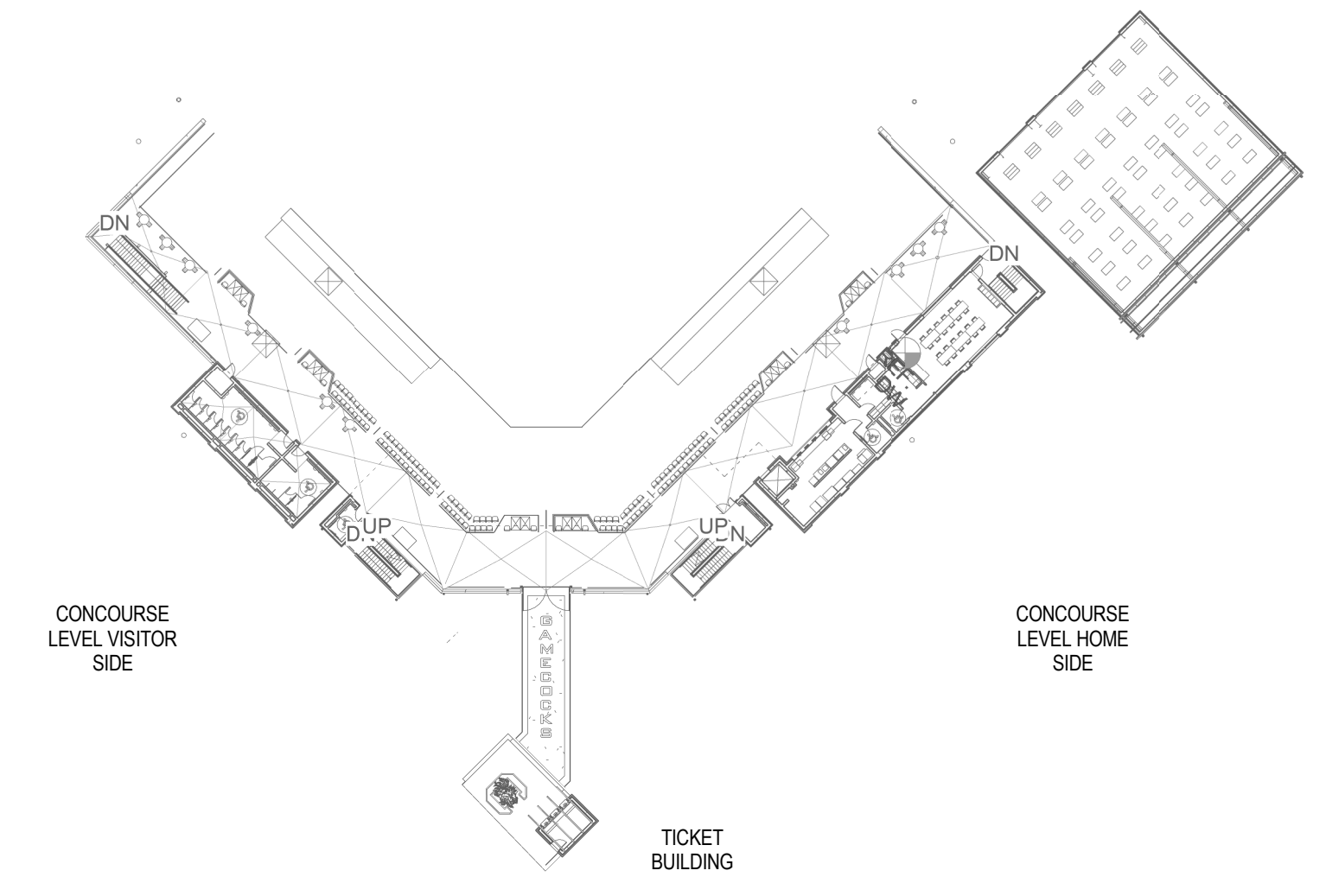
Table of mechanical abbreviations with columns for symbol, description, and units. Includes symbols like #, \$, %, &, +, -, /, <, >, =, \times, \div, @, A, ACV, AD, AF, AFF, AFD, ATC, BAS, BBD, BCWR, BCWS, BDD, BDF, BHP, BMS, BO, BTU, BTUH, CA, CBD, CC, CCM, CD, CF, CFM, CHEL, CHR, CHS, CHX, CO, CO2, CS, CT, CW, CWR, CHS, °C, D, DB, DCC, DESG, DHR, DHS, DHHR, DHWS, DIA, DR, DRS, DTR, DTS, DW, EA, EAT, ED, EJ, ELEV, EMS, EQ, ES, ESP, EVAC, EWT, EX, #2FOR, #2FOS, #6FOR, #6FOS, F&T, FC, FD, FER, FDV, FF, FFE, FNF, FNFINCH, FM, FMF, FO, FOF, FOD, FOR, FOS, FOSUCT, FOT, FOTP, FOV, FPM, FPS, FS, FT, FW, FWR, FWS, °F, G, GAL, GEN, GHR, GHS, GPH, GPM, GR, H, HB, HD, HP, HPR, HPS, HR, HRR, HRS, HRSG, HS, HTHR, HTS, HW, HWR.

Table with columns for SYMBOL and EQUIPMENT DESIGNATIONS DESCRIPTION. Includes symbols like ACCLX, BCX, EX, ELX, EHLX, EHLX, FCLX, HRCLX, HRSEX, HRVX, RCPX, REX, VEX.

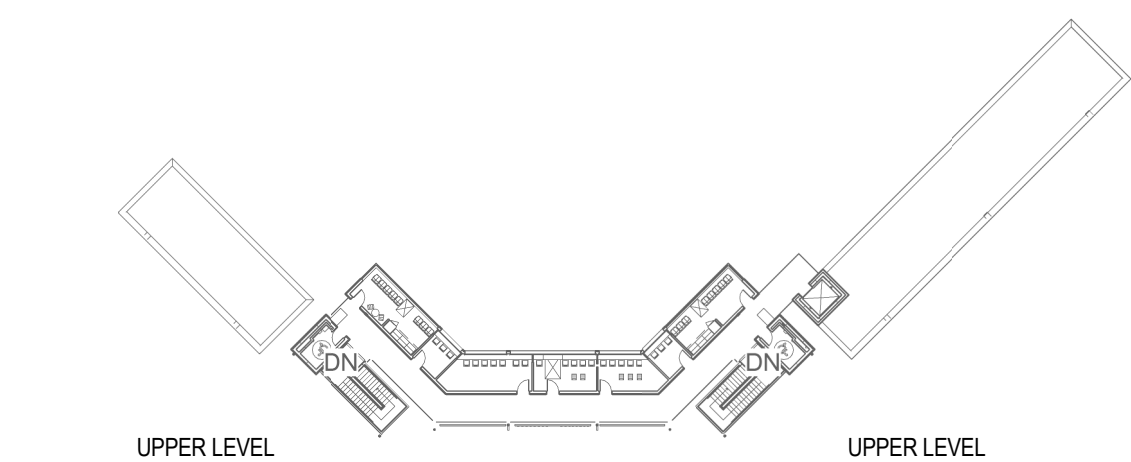
Table with columns for SYMBOL and DUCTWORK SYMBOLS DESCRIPTION. Includes symbols like (H), (T), (TS), arrows, boxes, and various duct symbols for diffusers, dampers, and connections.



LOWER LEVEL KEY PLAN MECH SCALE: 1" = 50'-0"



CONCOURSE LEVEL KEY PLAN MECH SCALE: 1" = 50'-0"

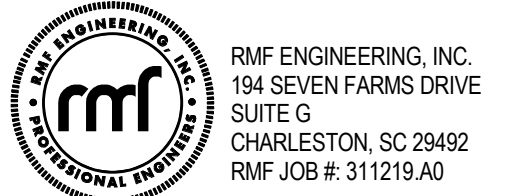


UPPER LEVEL KEY PLAN MECH SCALE: 1" = 50'-0"

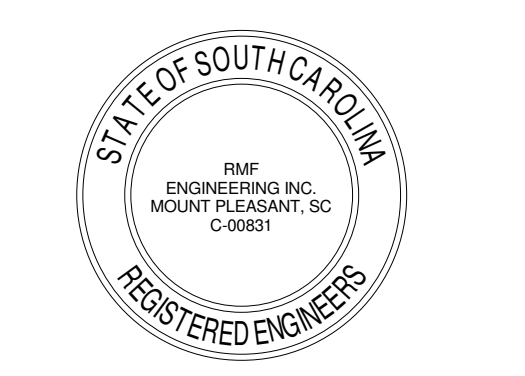


1217 Hampton Street T: 803.771.2999 Columbia, SC 29201 F: 803.771.2958

CHA 111 Winners Circle T: 518.453.4500 Albany, NY 12205 F: 518.458.1735



CORPORATE SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA SOFTBALL STADIUM CONSTRUCTION

BID SET

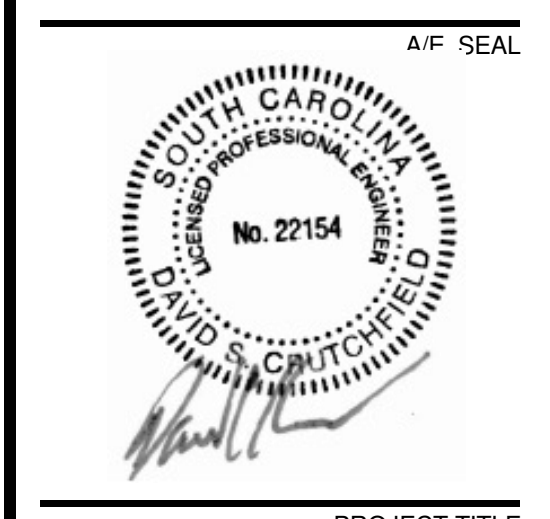
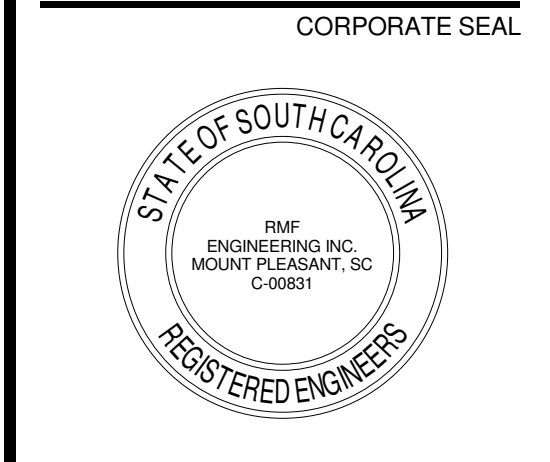
Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners...

Table with columns for NO, REVISION, DATE. Includes a REVISIONS table.

Table with columns for SHEET INFORMATION, Date, Project No., Scale, Drawn By, Checked By, State Project No.

MECHANICAL LEGEND AND ABBREVIATIONS

M000 SHEET NO.



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

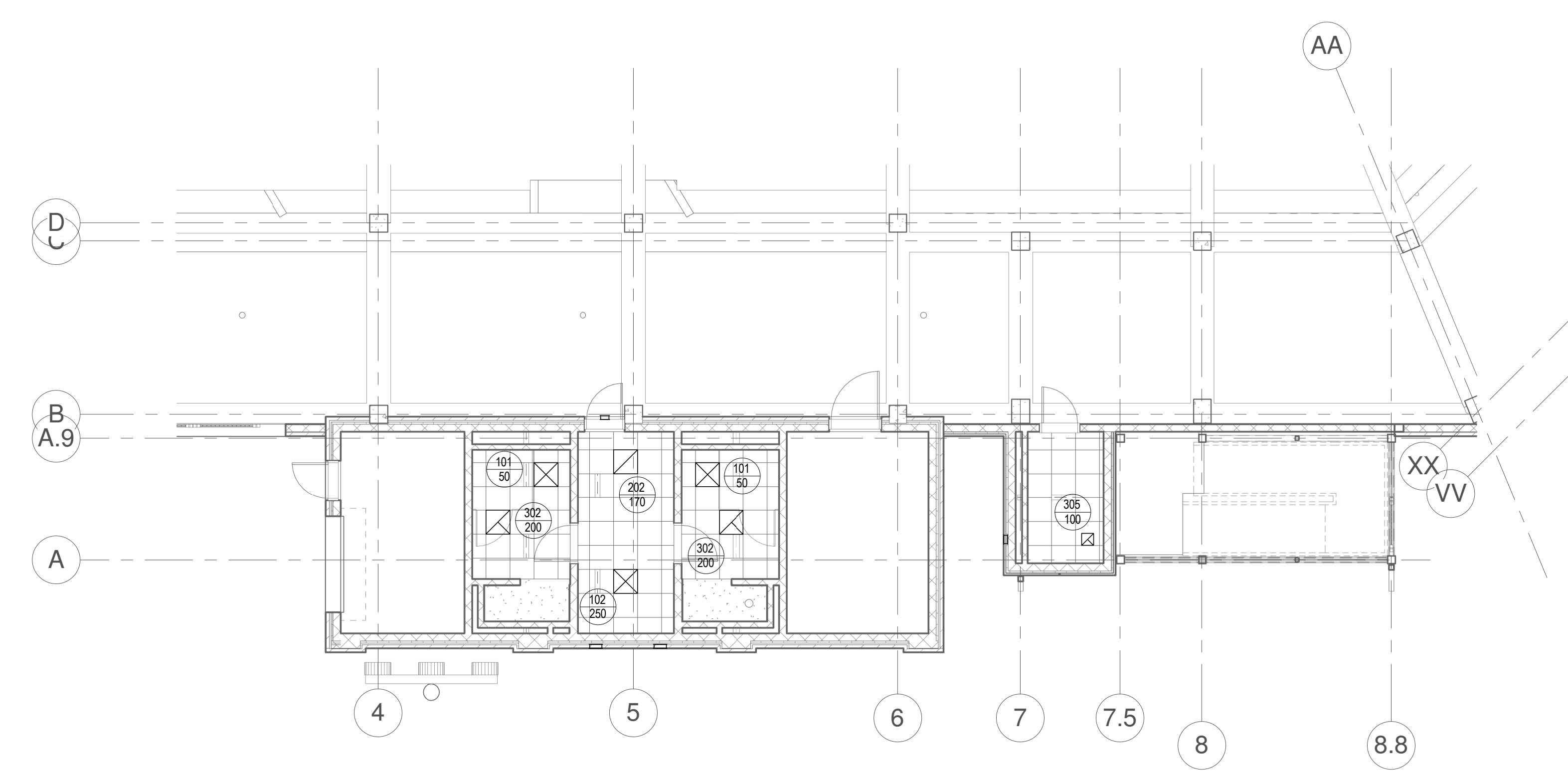
REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	1/8" = 1'-0"
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

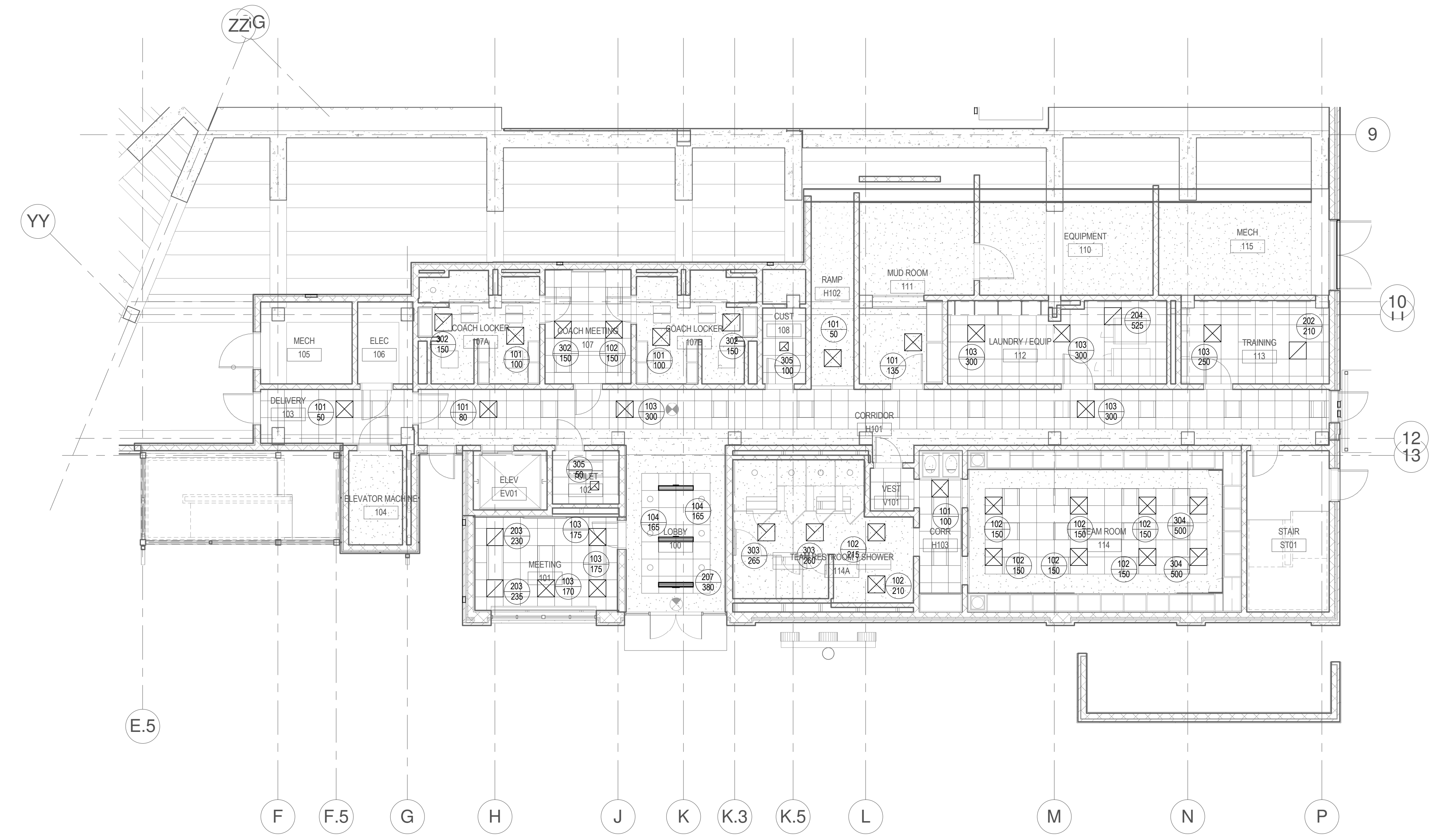
TITLE

LOWER LEVEL - DIFFUSER PLAN

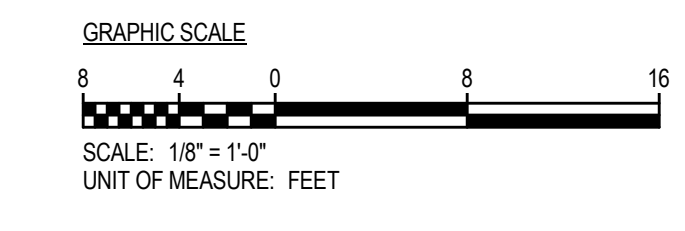
SHEET NO.
M100



LOWER LEVEL - VISITOR SIDE - DIFFUSER PLAN
SCALE: 1/8" = 1'-0"

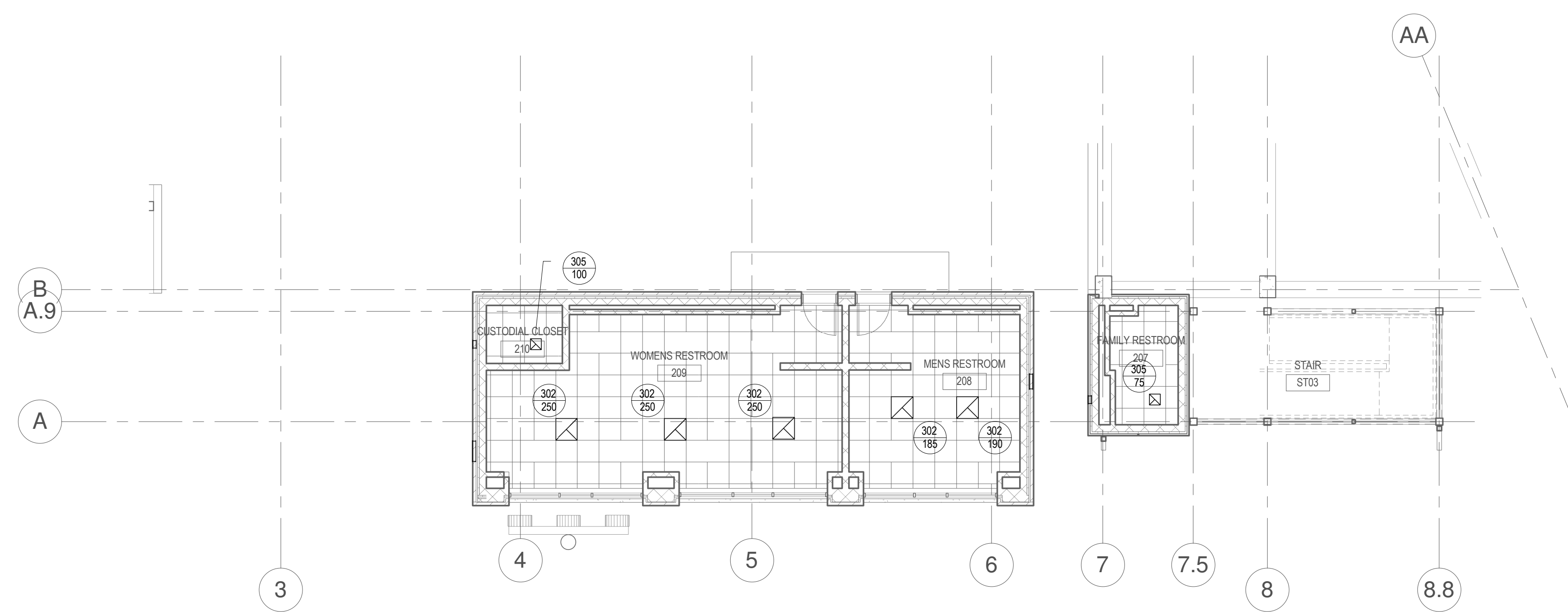


LOWER LEVEL - HOME SIDE - DIFFUSER PLAN
SCALE: 1/8" = 1'-0"

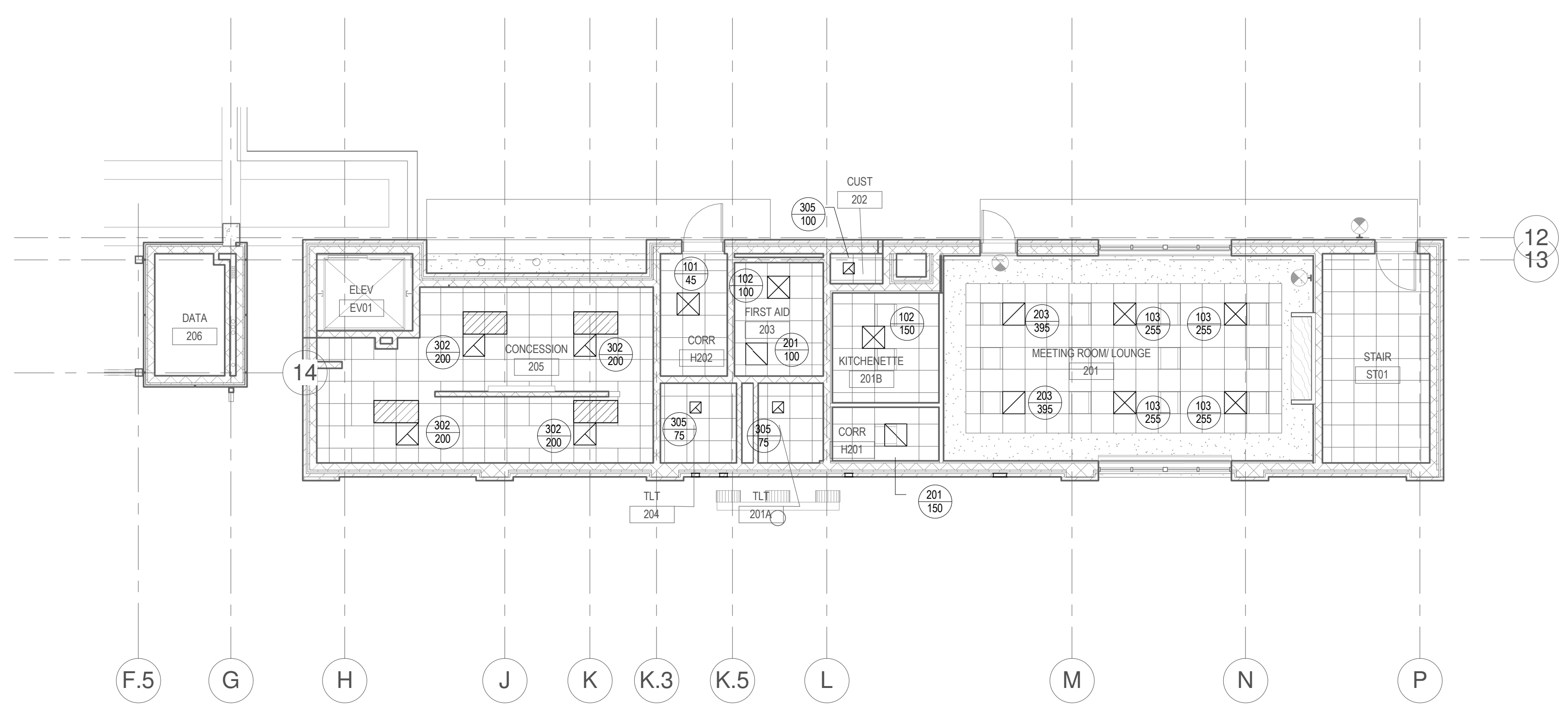


REVISIONS		
NO	REVISION	DATE

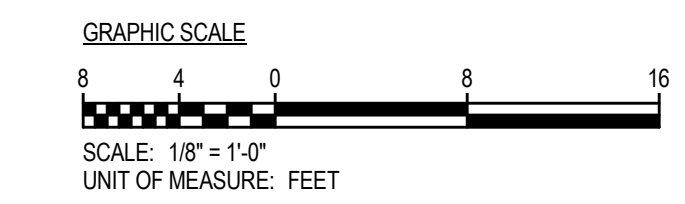
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	1/8" = 1'-0"
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ



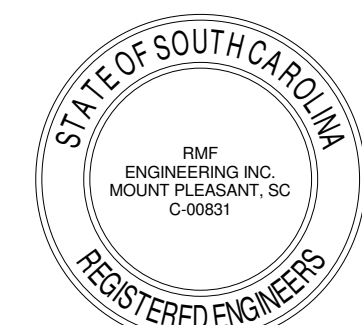
CONCOURSE LEVEL - VISITOR SIDE - DIFFUSER PLAN
SCALE: 1/8" = 1'-0"



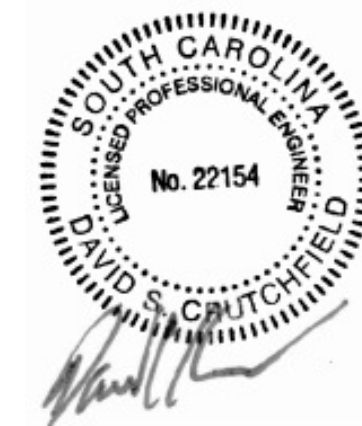
CONCOURSE LEVEL - HOME SIDE - DIFFUSER PLAN
SCALE: 1/8" = 1'-0"



CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

**UNIVERSITY OF
SOUTH
CAROLINA**

**SOFTBALL
STADIUM
CONSTRUCTION**

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

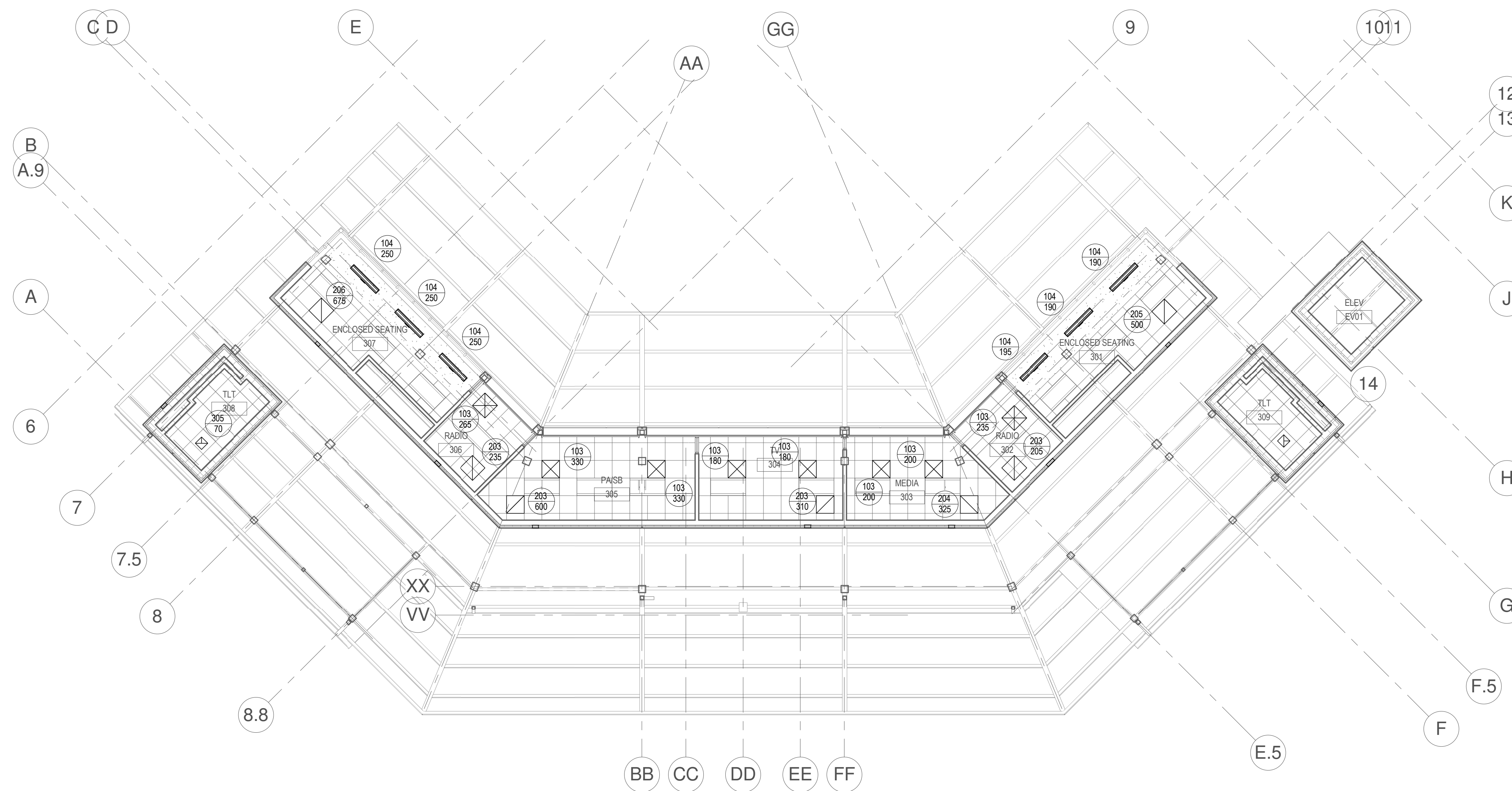
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	1/8" = 1'-0"
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

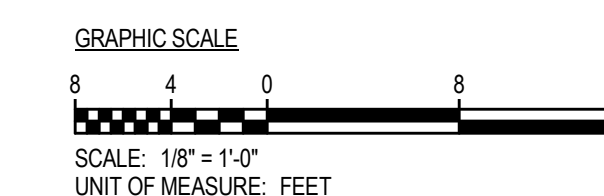
**UPPER
LEVEL -
DIFFUSER
PLAN**

SHEET NO.

M102



UPPER LEVEL - DIFFUSER PLAN
SCALE: 1/8" = 1'-0"



REVISIONS	
NO	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

**LOWER
LEVEL HVAC**

TITLE

SHEET NO.

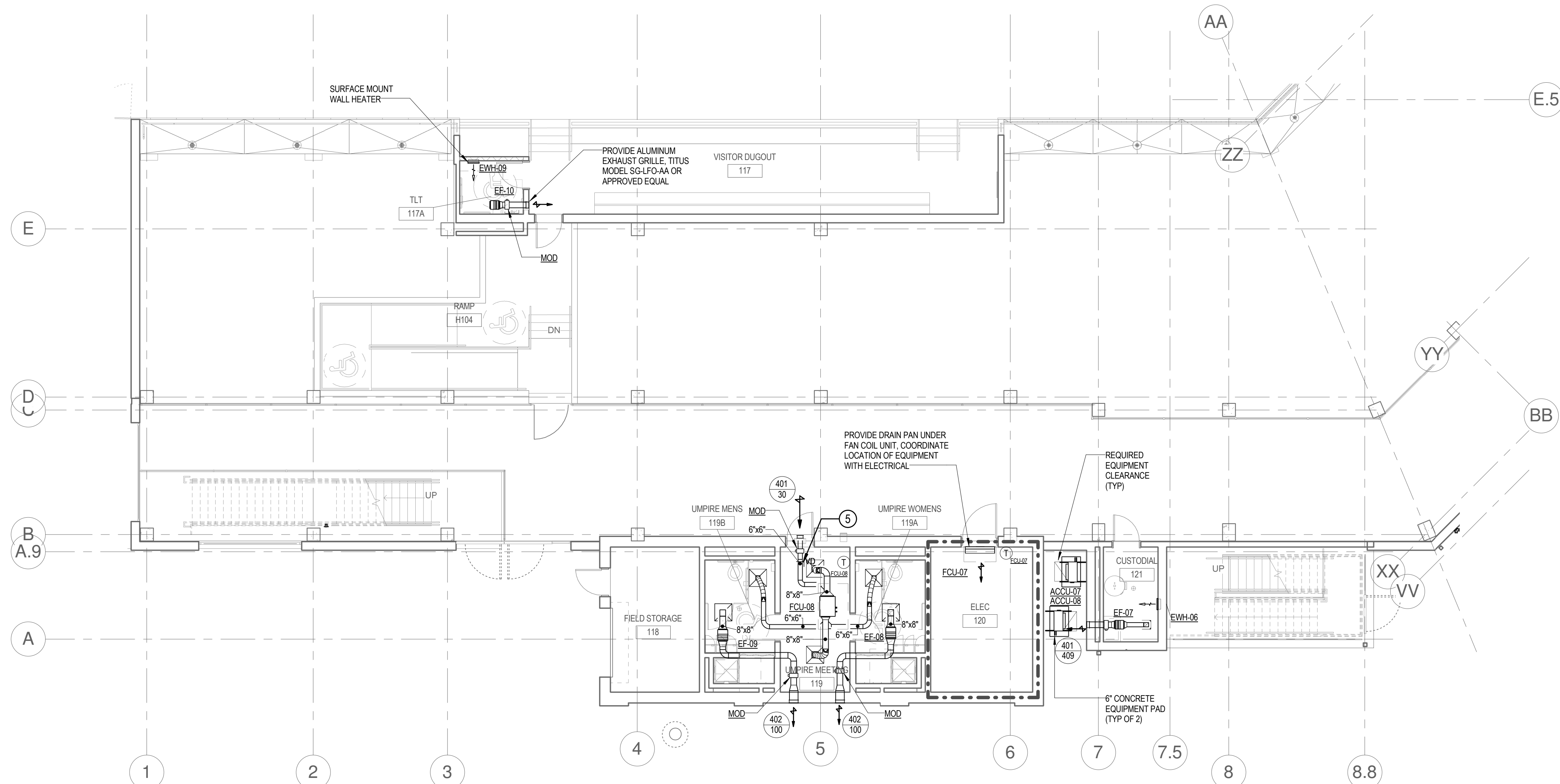
M103

GENERAL NOTES

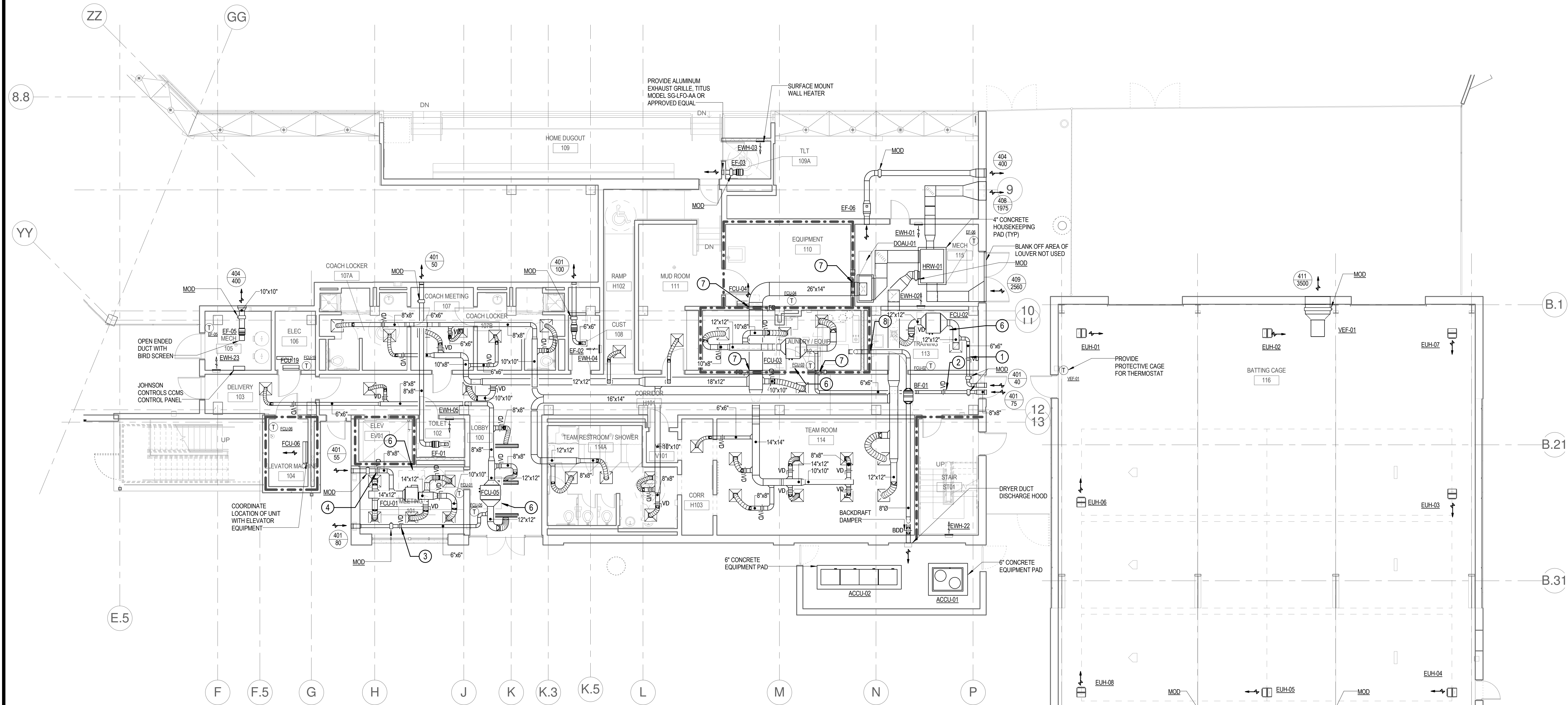
- SLOPE ALL EXHAUST AND OUTDOOR AIR DUCTWORK DOWN TOWARDS LOUVERS.
- FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.

DRAWING NOTES

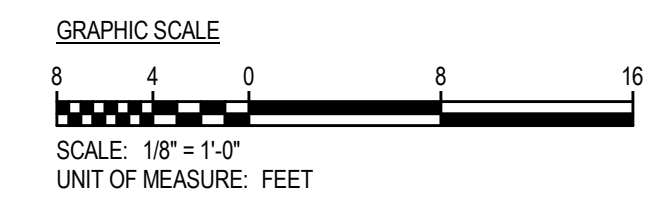
- BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 40 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
- BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 75 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
- BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 80 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
- BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 55 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
- BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 30 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
- MECHANICAL EQUIPMENT SERVICE CLEARANCE.
- PROVIDE FIRE DAMPER AT WALL PENETRATION.
- SEAL DRYER DUCT PENETRATION ANNULAR SPACE WITH FIRE CAULK. DRYER DUCT SHALL BE GALVANIZED STEEL. INSTALLATION SHALL MEET THE REQUIREMENTS OF SECTION 504.2 OF THE 2009 INTERNATIONAL MECHANICAL CODE.



LOWER LEVEL - VISITOR SIDE - HVAC
SCALE: 1/8" = 1'-0"



LOWER LEVEL - HOME SIDE - HVAC
SCALE: 1/8" = 1'-0"



REVISIONS		
NO	REVISION	DATE

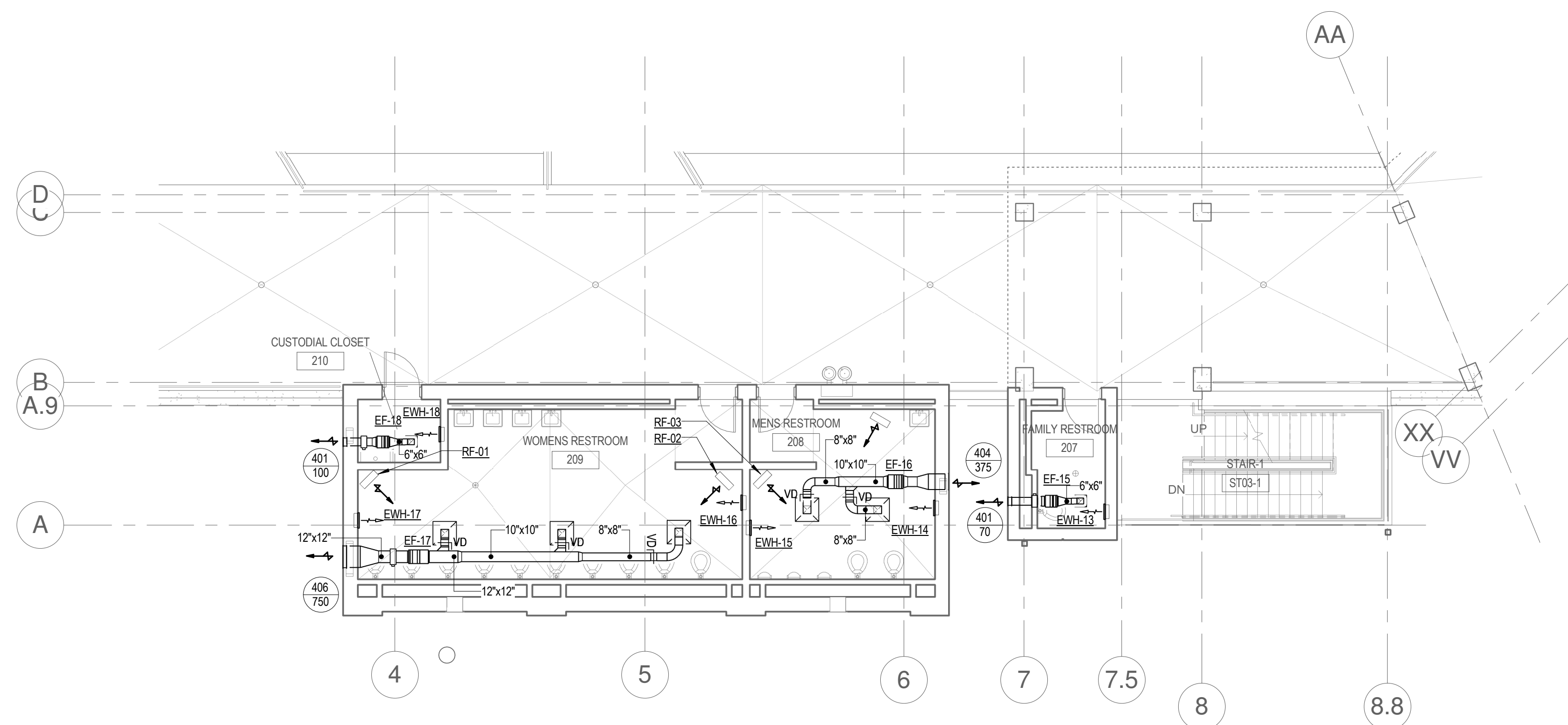
SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

GENERAL NOTES

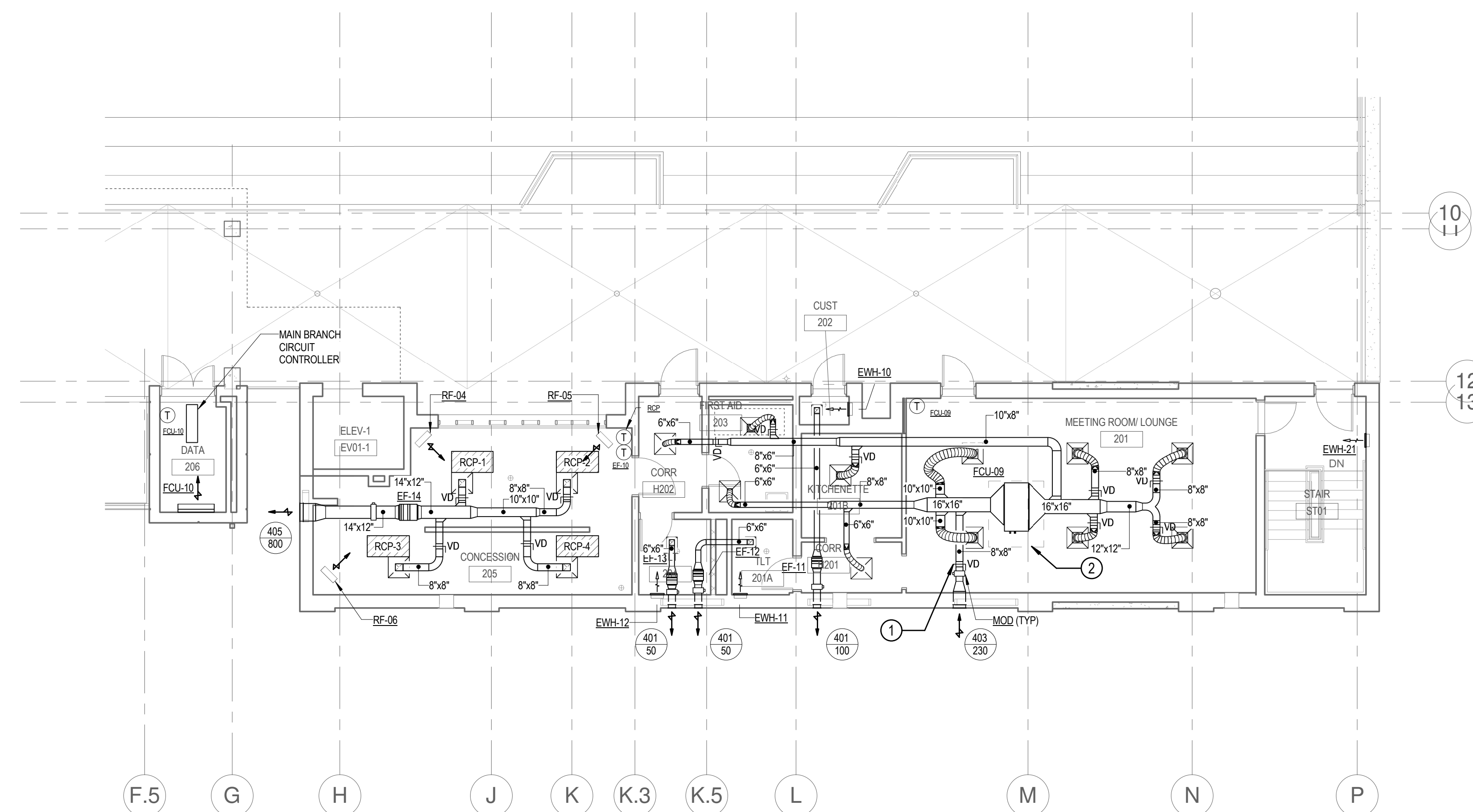
1. SLOPE ALL EXHAUST AND OUTDOOR AIR DUCTWORK DOWN TOWARDS LOUVERS.
2. FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 538 THAT WILL SHUT-OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.

DRAWING NOTES

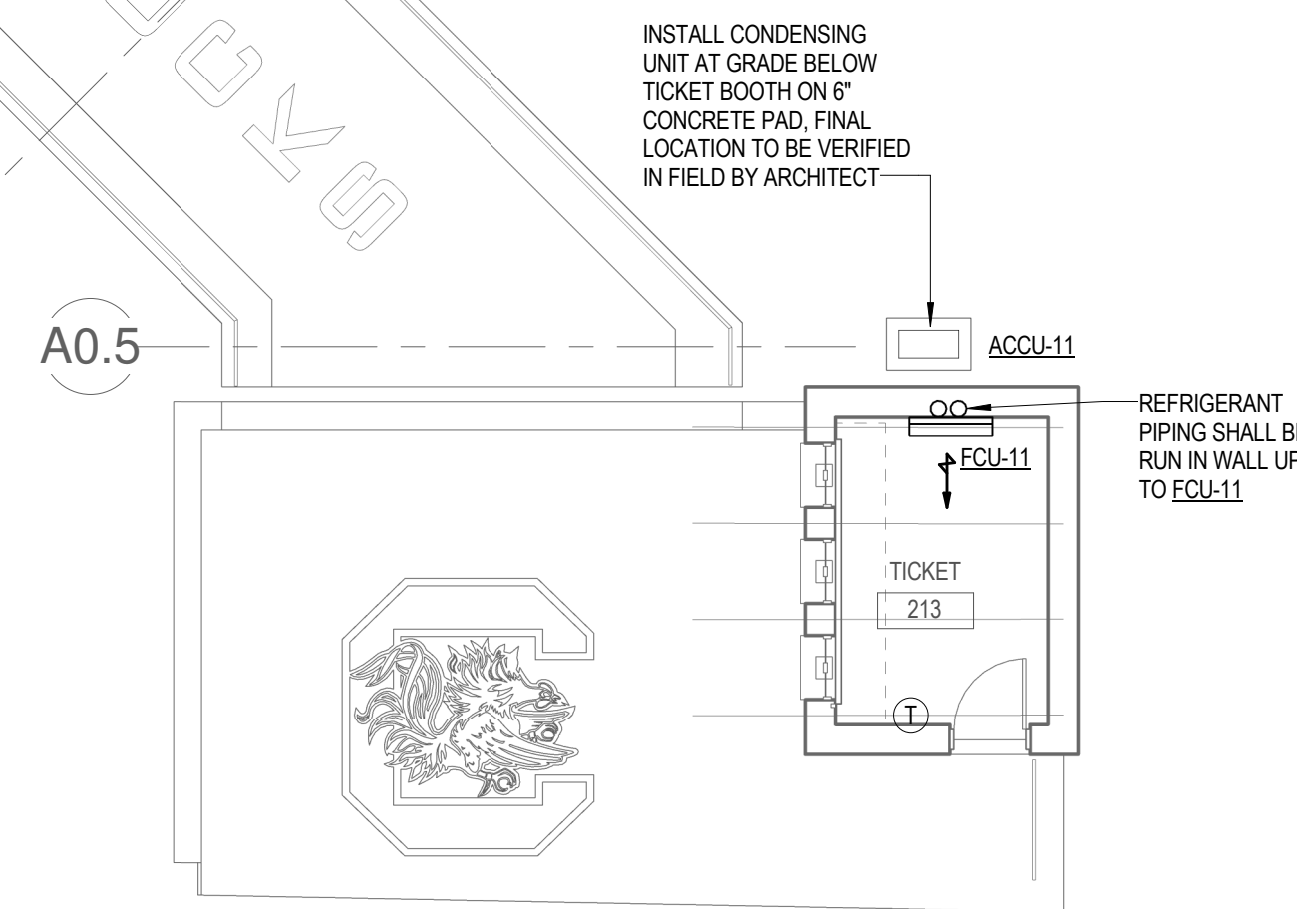
1. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 230 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
2. MECHANICAL EQUIPMENT SERVICE CLEARANCE



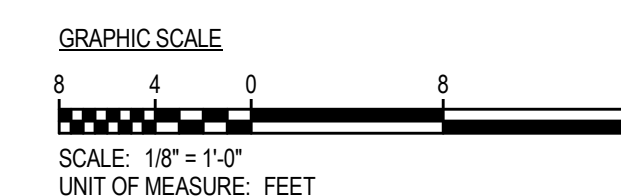
CONCOURSE LEVEL - VISITOR SIDE - HVAC
SCALE: 1/8" = 1'-0"



CONCOURSE LEVEL - HOME SIDE - HVAC
SCALE: 1/8" = 1'-0"



CONCOURSE LEVEL - TICKET - HVAC
SCALE: 1/8" = 1'-0"

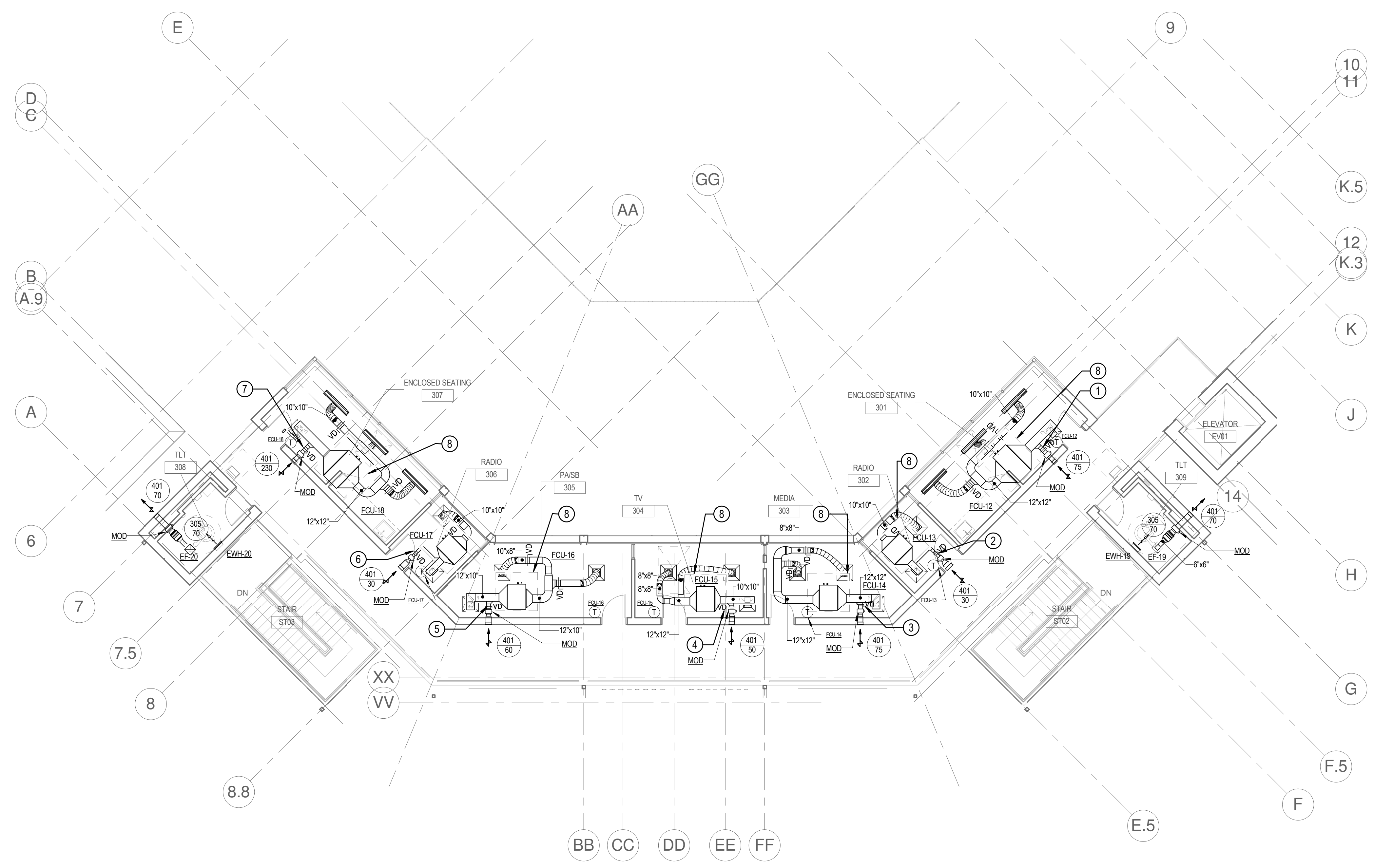


GENERAL NOTES

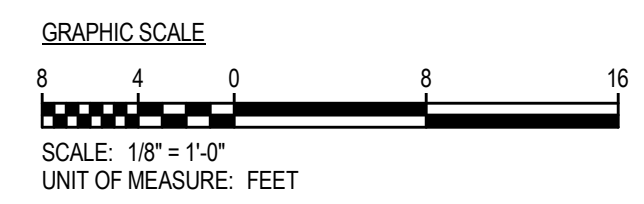
1. SLOPE ALL EXHAUST AND OUTDOOR AIR DUCTWORK DOWN TOWARDS LOUVERS.
2. FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT-OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.

DRAWING NOTES

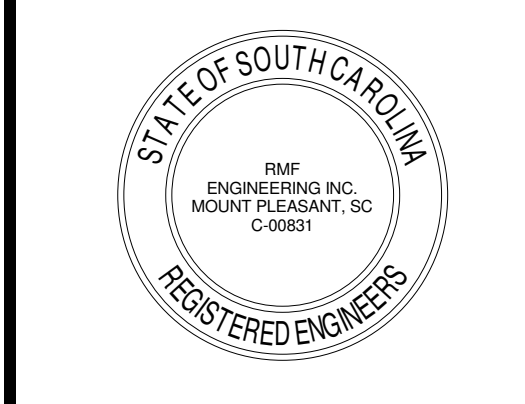
1. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 75 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
2. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 30 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
3. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 75 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
4. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 50 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
5. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 60 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
6. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 30 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
7. BALANCE AND LOCK VOLUME DAMPER TO PROVIDE 75 CFM OF OUTDOOR AIR TO FAN COIL UNIT.
8. MECHANICAL EQUIPMENT SERVICE CLEARANCE



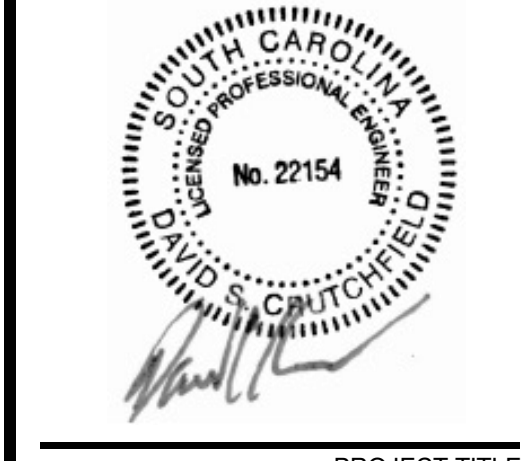
UPPER LEVEL - HVAC
SCALE: 1/8" = 1'-0"



CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

UPPER LEVEL HVAC

SHEET NO.
M105

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION

Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

LOWER LEVEL MECHANICAL PIPING

SHEET NO.

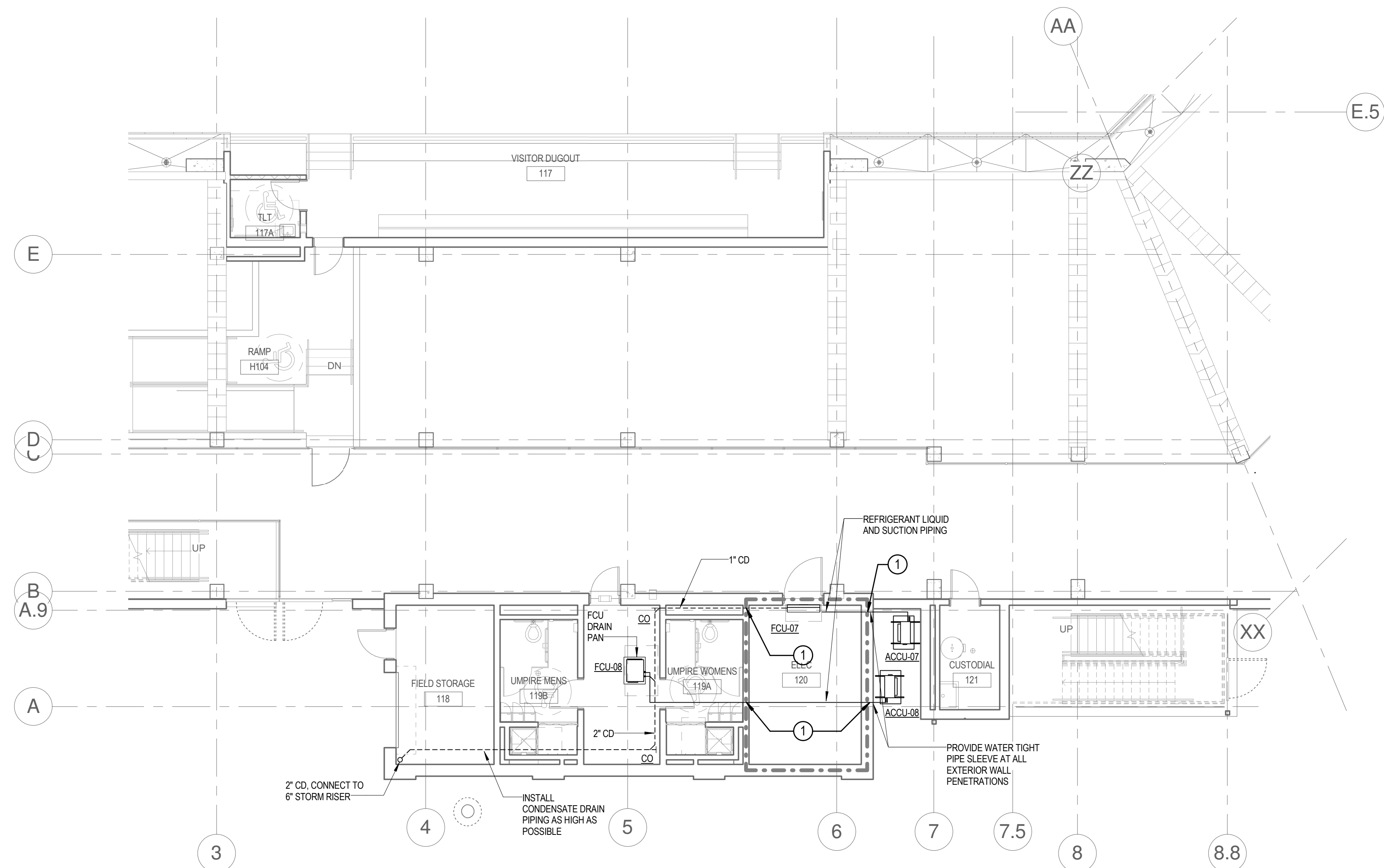
M201

GENERAL NOTES

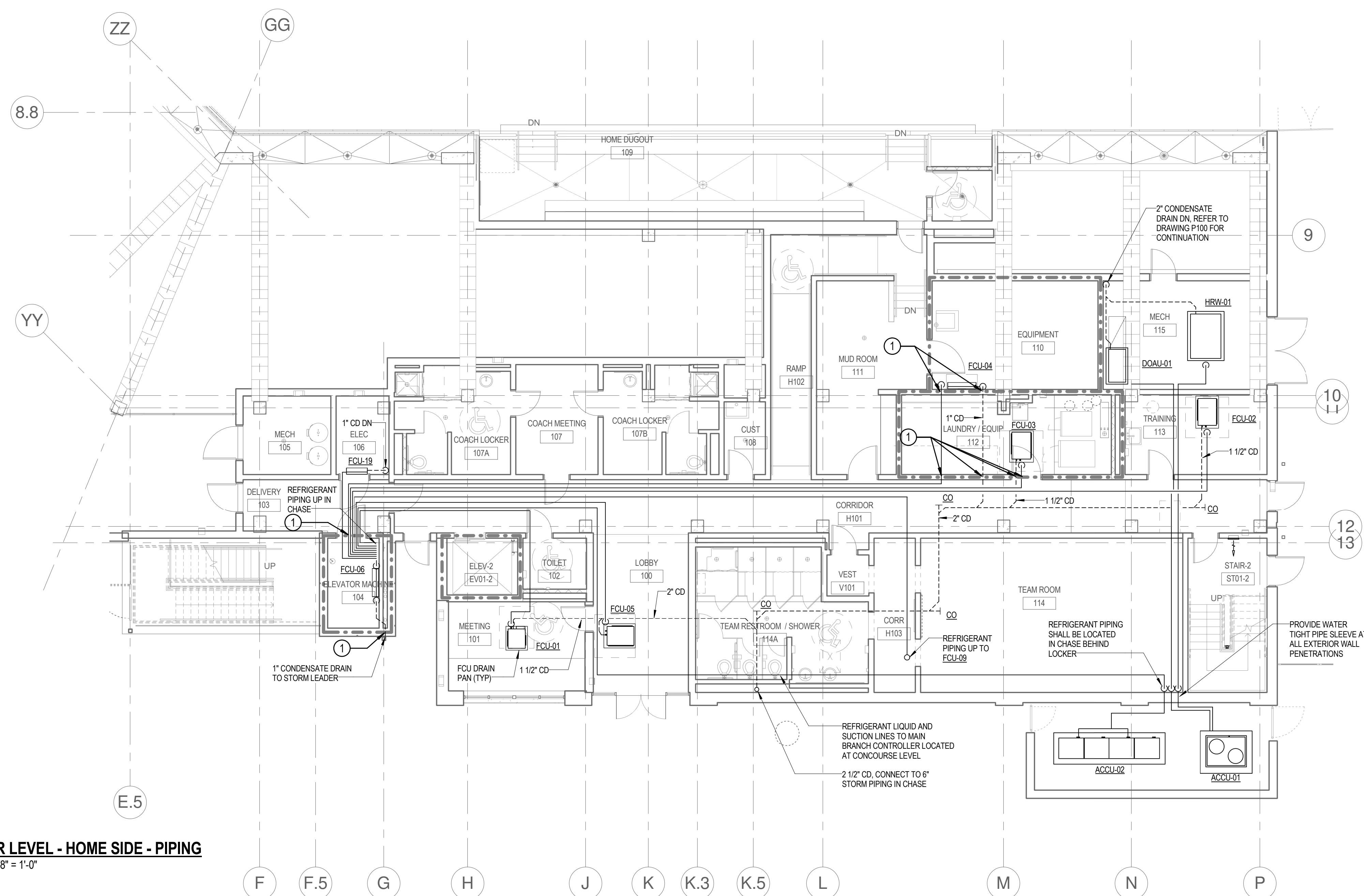
- COORDINATE THE LOCATION OF ALL EQUIPMENT, PIPING, AND DUCTWORK WITH ALL OTHER TRADES (PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.) BEFORE INSTALLATION.
- FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT-OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.
- PIPE ROUTING SHOWN IS DIAGMATICAL. FINAL ROUTING WILL BE DONE BY CONTRACTOR.
- FOR CLARITY ONLY ONE REFRIGERANT LINE IS SHOWN PER SYSTEM. BOTH LIQUID AND SUCTION LINES ARE REQUIRED.

DRAWING NOTES

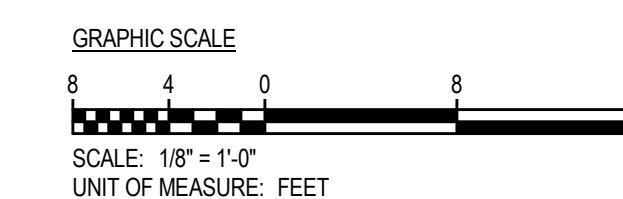
- PROVIDE FIRE RATED PENETRATION.



LOWER LEVEL - VISITOR SIDE - PIPING
SCALE: 1/8" = 1'-0"



LOWER LEVEL - HOME SIDE - PIPING
SCALE: 1/8" = 1'-0"



REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE
CONCOURSE LEVEL MECHANICAL PIPING

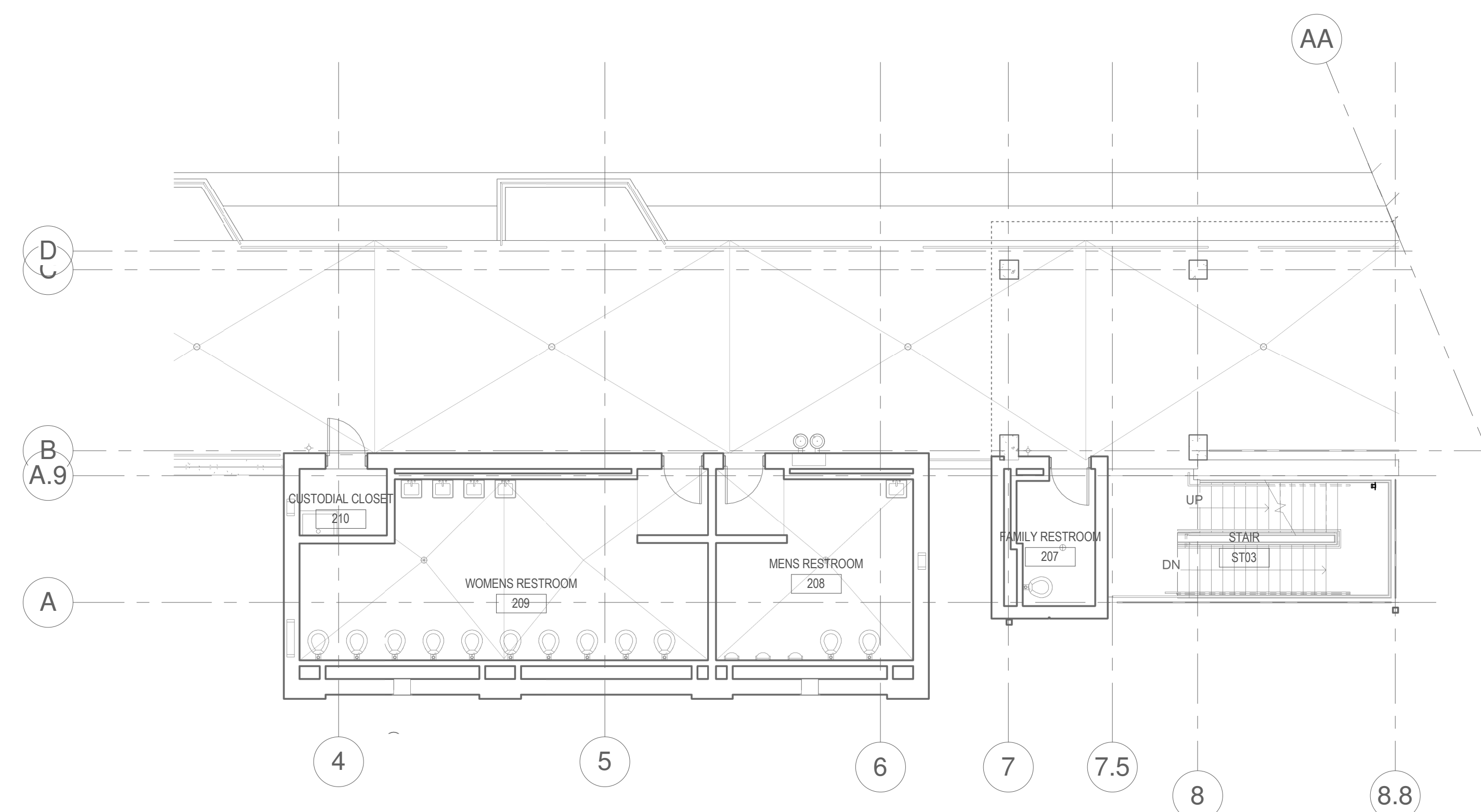
SHEET NO.
M202

GENERAL NOTES

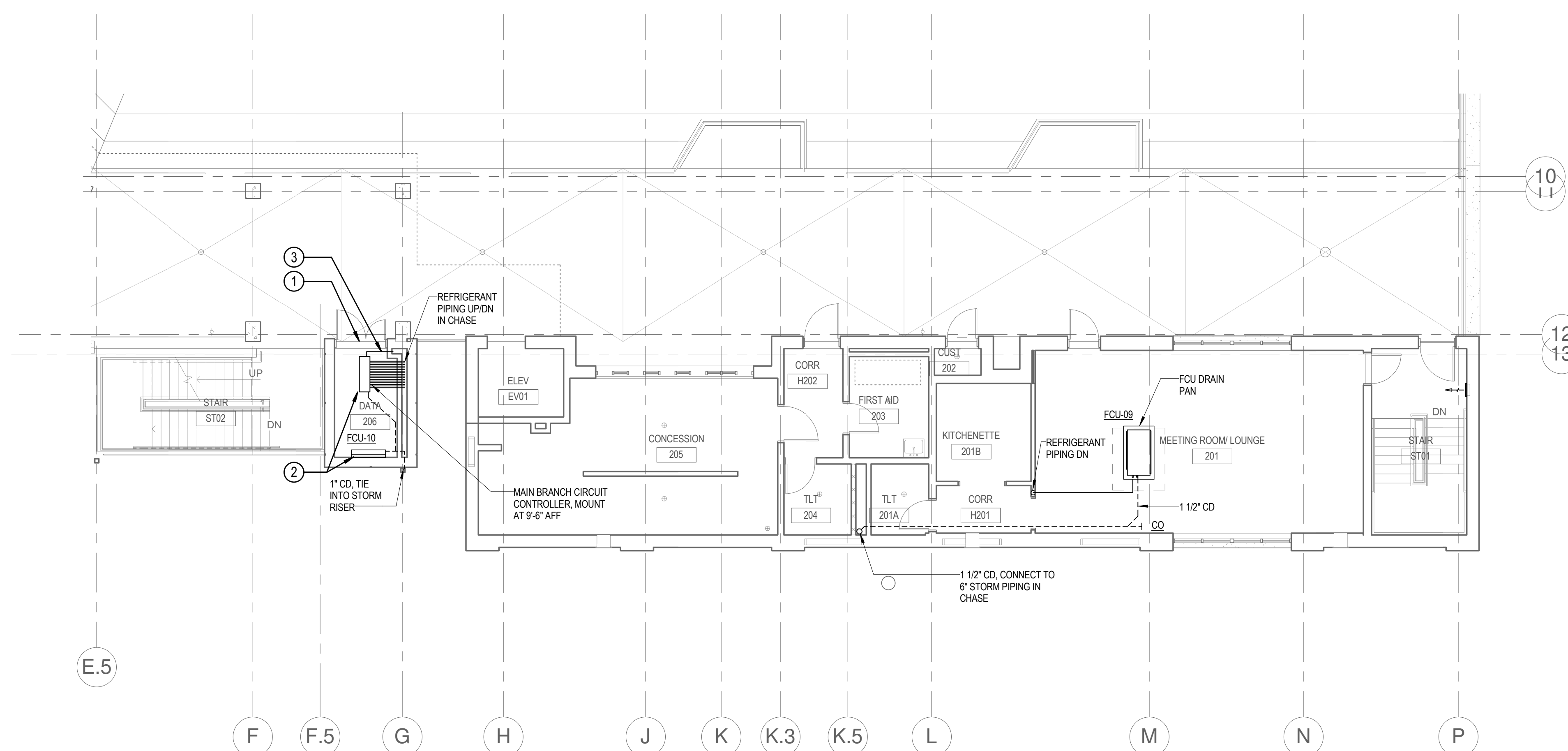
- COORDINATE THE LOCATION OF ALL EQUIPMENT, PIPING, AND DUCTWORK WITH ALL OTHER TRADES (PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.) BEFORE INSTALLATION.
- FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT-OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.
- PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING WILL BE DONE BY CONTRACTOR.
- FOR CLARITY ONLY ONE REFRIGERANT LINE IS SHOWN PER SYSTEM. BOTH LIQUID AND SUCTION LINES ARE REQUIRED.
- NO WORK ON THE VISITORS SIDE THIS LEVEL.

DRAWING NOTES

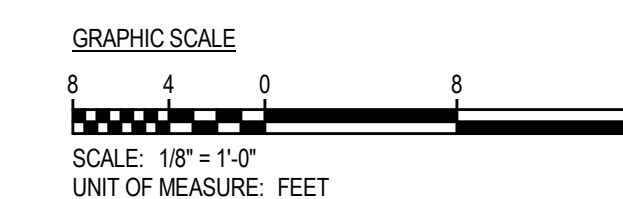
- PROVIDE WATER TIGHT PIPE SLEEVE AT ALL EXTERIOR WALL PENETRATIONS.
- PROVIDE DRAIN PAN UNDER FAN COIL UNIT AND BRANCH CONTROLLER.
- COORDINATE REFRIGERANT AND CONDENSATE PIPING WITH ELECTRICAL CONDUIT AND SANITARY PIPING WITHIN THE SPACE.



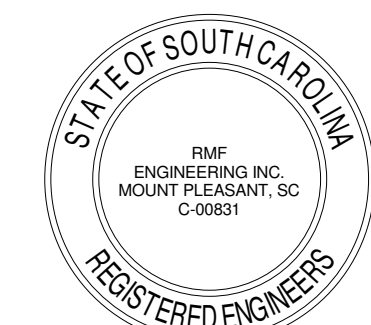
CONCOURSE LEVEL - VISITOR SIDE - PIPING
SCALE: 1/8" = 1'-0"



CONCOURSE LEVEL - HOME SIDE - PIPING
SCALE: 1/8" = 1'-0"



CORPORATE SEAL



A.P. SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	As indicated
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE

UPPER LEVEL MECHANICAL PIPING

SHEET NO.

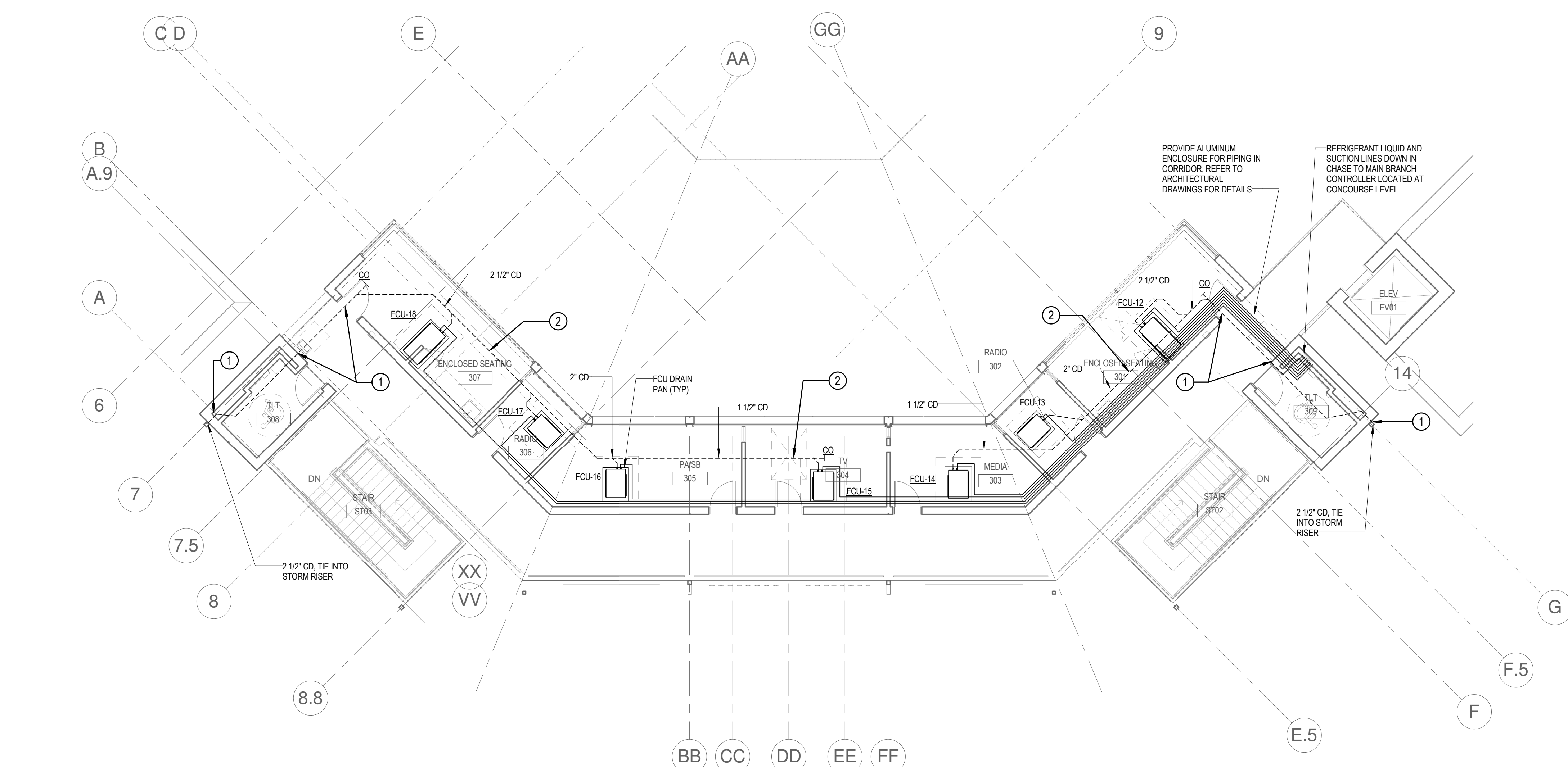
M203

GENERAL NOTES

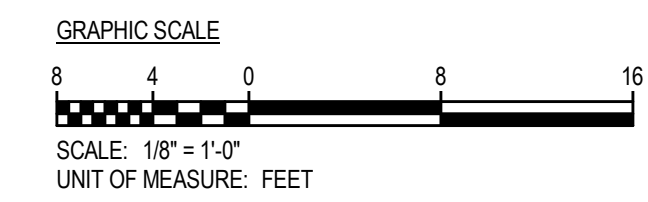
- COORDINATE THE LOCATION OF ALL EQUIPMENT, PIPING, AND DUCTWORK WITH ALL OTHER TRADES (PLUMBING, FIRE PROTECTION, ELECTRICAL, ETC.) BEFORE INSTALLATION.
- FCU SHALL BE PROVIDED WITH A WATER LEVEL PROTECTION DEVICE CONFORMING TO UL 508 THAT WILL SHUT-OFF THE FCU IF THE PRIMARY DRAIN IS BLOCKED. THE DEVICE SHALL BE INSTALLED IN THE PRIMARY DRAIN LINE OR FCU DRAIN PAN AND LOCATED AT A POINT HIGHER THAN THE PRIMARY DRAIN LINE CONNECTION AND BELOW THE OVERFLOW RIM OF SUCH PAN IN ACCORDANCE WITH IMC 2009.
- PIPE ROUTING SHOWN IS DIAGRAMMATICAL. FINAL ROUTING WILL BE DONE BY CONTRACTOR.
- FOR CLARITY ONLY ONE REFRIGERANT LINE IS SHOWN PER SYSTEM. BOTH LIQUID AND SUCTION LINES ARE REQUIRED.

DRAWING NOTES

- PROVIDE WATER TIGHT PIPE SLEEVE AT ALL EXTERIOR WALL PENETRATIONS.
- INSTALL CONDENSATE PIPING AS HIGH AS POSSIBLE IN SPACE. UNITS WILL BE PROVIDED WITH CONDENSATE PUMP. REFER TO SCHEDULE ON DRAWING M600.

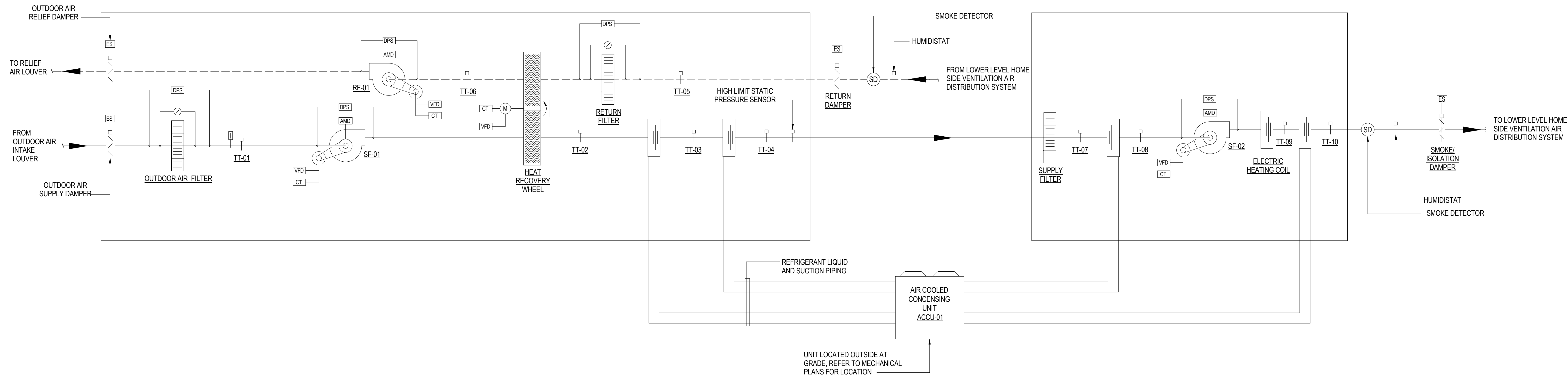
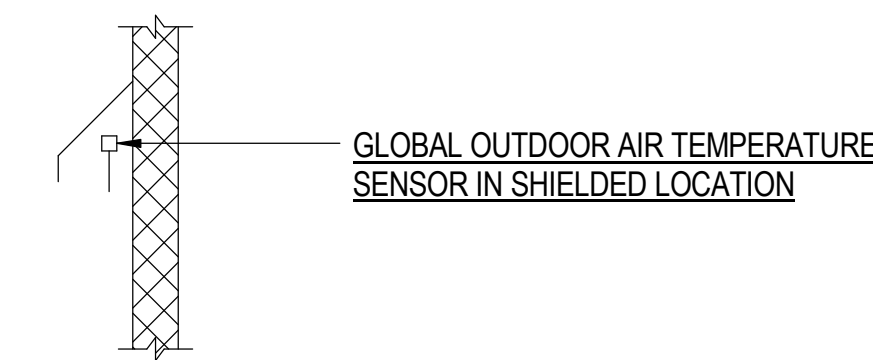


UPPER LEVEL PIPING
SCALE: 1/8" = 1'-0"



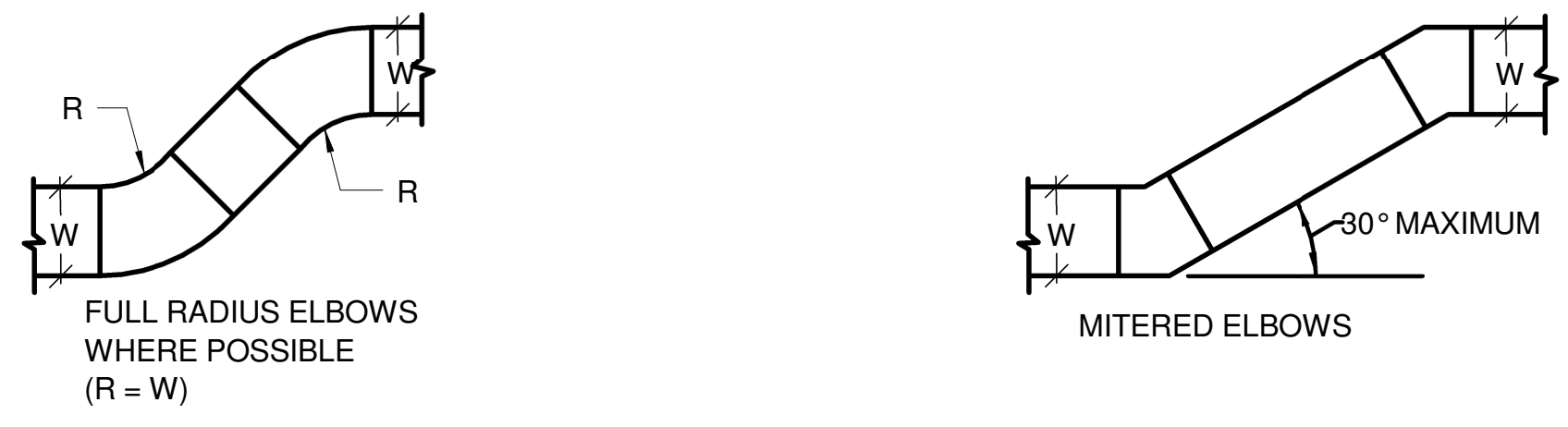
REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

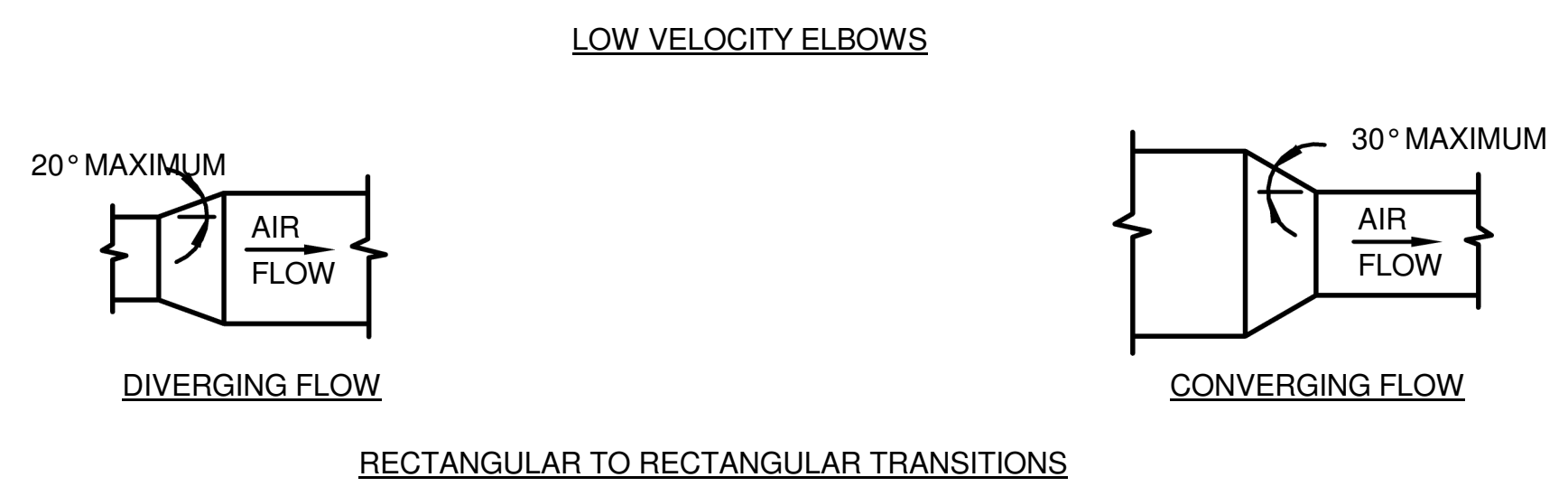
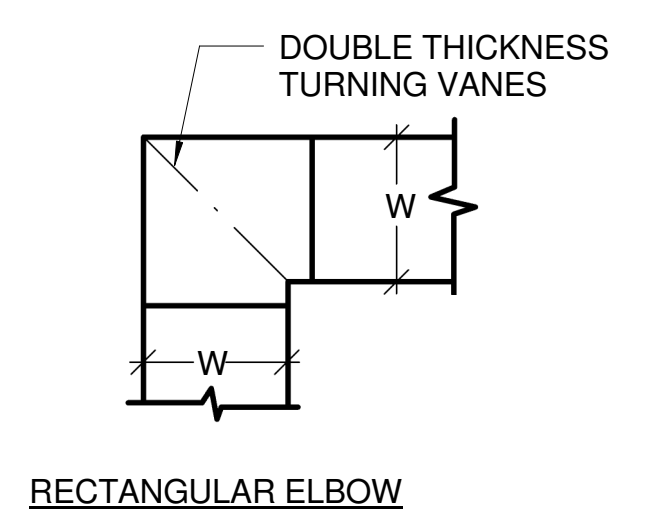
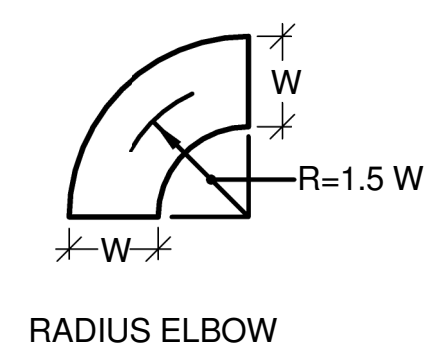
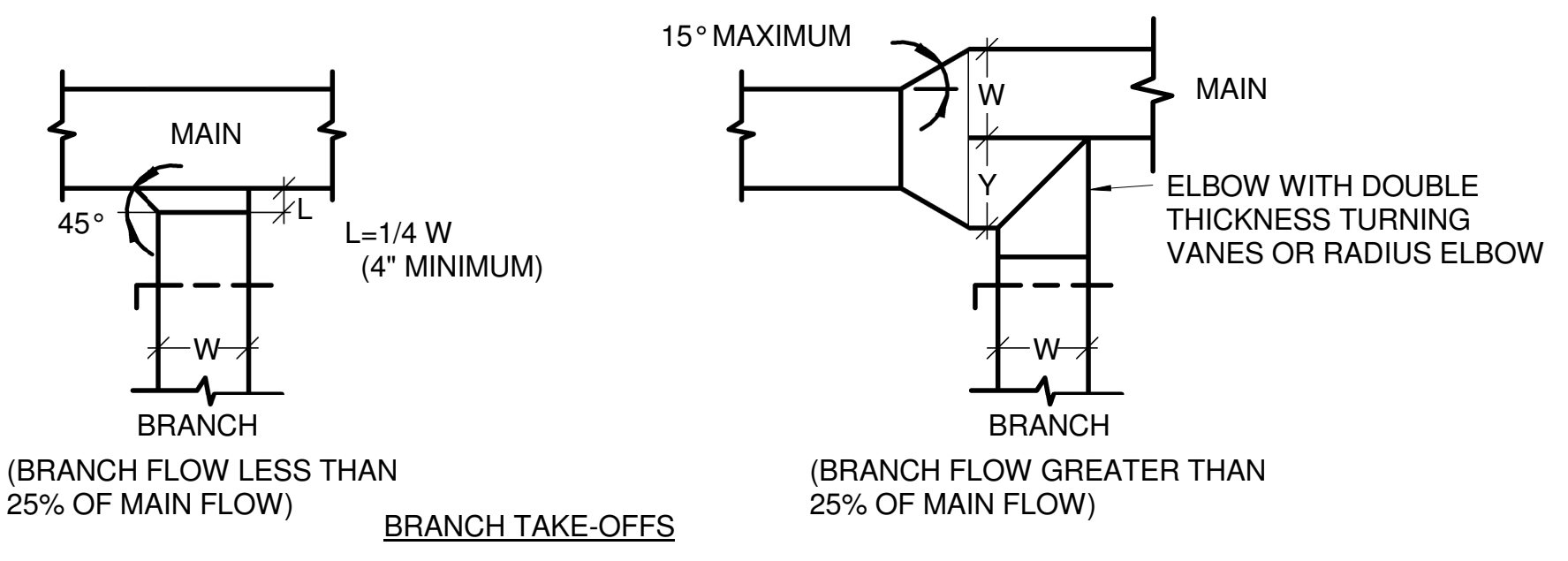


DEDICATED OUTDOOR AIR UNIT (DOAU) SEQUENCE OF OPERATION

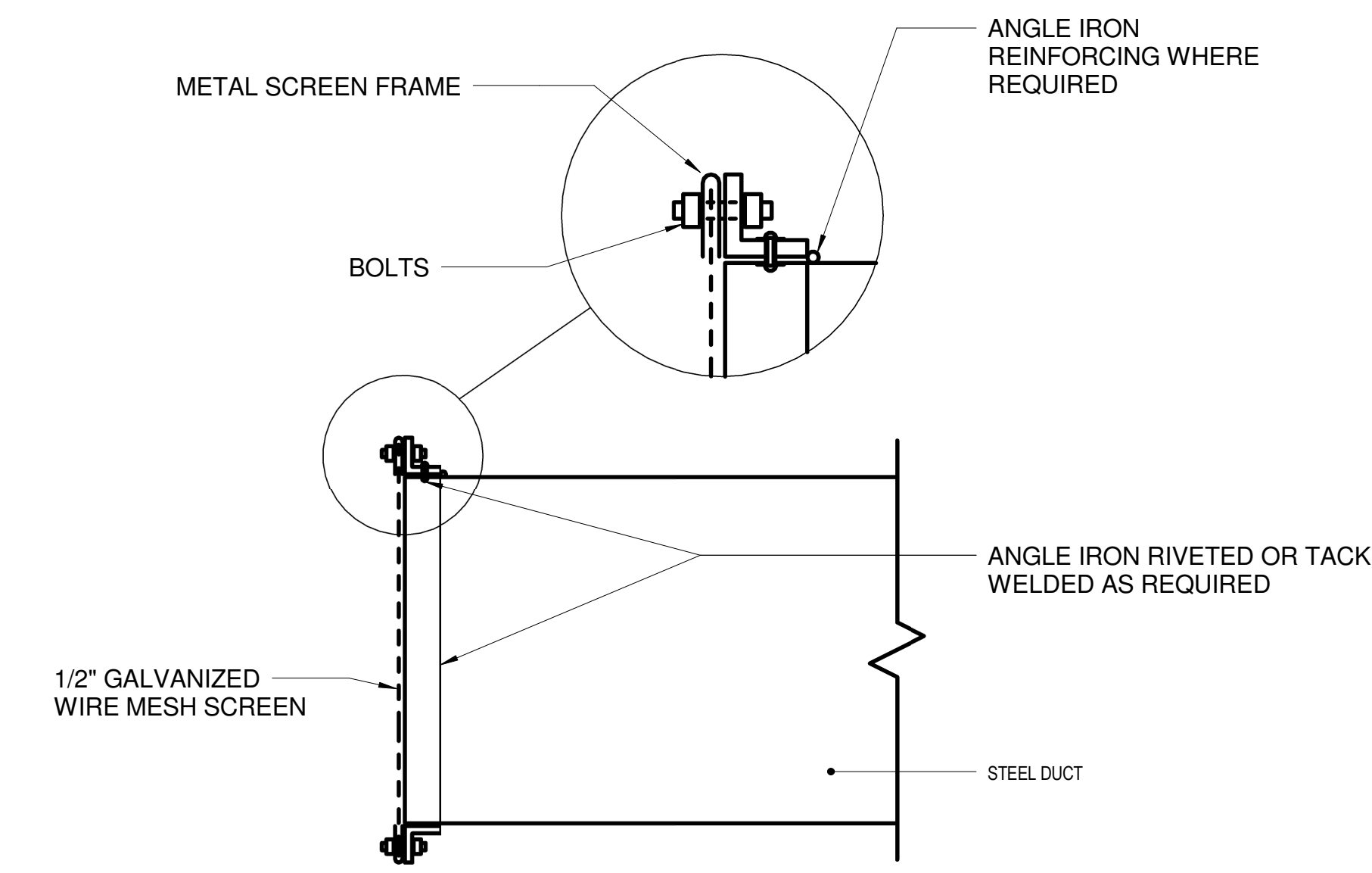
- 1.1 GENERAL NOTES
 - A. REFER TO PLANS FOR LOCATIONS OF ALL ROOM THERMOSTATS, PANELS, DAMPERS AND EQUIPMENT; WHERE SUCH DEVICES ARE NOT INDICATED, HOWEVER REQUIRED BY THE SEQUENCES THEY SHOULD BE PROVIDED AND LOCATED IN THE FIELD BY THE ENGINEER AND ARCHITECT.
 - B. ALL TEMPERATURE, HUMIDITY, PRESSURE AND TIME SET-POINTS SHALL BE FULLY ADJUSTABLE FROM THE CAMPUS METASYS SYSTEM.
 - C. ALL TEMPERATURE SENSORS SHALL HAVE A DEAD-BAND OF 2°F. ALL HUMIDITY SENSORS SHALL HAVE A DEAD-BAND OF 5% RH.
 - D. CONTROLLING POINT FOR 'OCCUPIED' AND 'UNOCCUPIED' CHANGEOVER SHALL BE BY THE CCMS.
- 1.2 CENTRAL CONTROL AND MONITORING SYSTEM (CCMS) INTERFACE
 - A. BUILDING CONTROL UNIT PANEL:
 1. AN OPERATOR SHALL GAIN ACCESS TO THE SYSTEM VIA A PERSONAL COMPUTER (PC) WORKSTATION THAT RUNS THE CCMS SOFTWARE. THE WORKSTATION PROVIDES A GRAPHICAL INTERFACE TO SYSTEM INFORMATION. THE OPERATOR SHALL HAVE THE ABILITY TO CREATE AND EDIT SYSTEM DATABASE, VIEW CURRENT AND TRENDED INFORMATION, ACKNOWLEDGE ALARMS, AND PERFORM OPERATOR OVERRIDES AND OTHER OPERATOR TRANSACTIONS FROM THE PC WORKSTATION.
 2. A PC WORKSTATION SHALL ALSO ACCESS A CCMS SITE REMOTELY THROUGH THE USE OF A STANDARD MODEM OR THROUGH OWNER'S ETHERNET CONNECTION.
- 1.3 DEDICATED OUTDOOR AIR UNIT (DOAU) WITH HEAT RECOVERY WHEEL
 - A. THE VENTILATION AIR UNIT SHALL BE PROVIDED AS A SPACE CONDITIONING AND NEUTRAL AIR SYSTEM WHICH SHALL PROVIDE DEHUMIDIFIED AIR TO THE SPACE, FOR HEATING, COOLING, AND VENTILATION AND BUILDING PRESSURIZATION.
 - B. DURING THE OCCUPIED MODE THE VENTILATION AIR UNIT FANS WILL ENERGIZE. REFRIGERANT CIRCUITS SHALL MODULATE ON AND OFF AS REQUIRED TO MAINTAIN DISCHARGE AIR TEMPERATURE AND HUMIDITY.
 - C. SYSTEM CONTROL:
 1. SUPPLY FAN STARTER SHALL BE MANUALLY INDEXED TO THE AUTOMATIC MODE AT THE VARIABLE FREQUENCY DRIVE.
 2. WHEN THE UNITS ARE DE-ENERGIZED THROUGH THE CCMS, ALL CONTROLS SHALL RETURN TO THEIR NORMAL POSITION READY FOR RESTARTING. ELECTRIC HEATER SHALL DE-ENERGIZE, MOTOR OPERATED DAMPERS SHALL CLOSE AND REFRIGERANT CIRCUITS SHALL DE-ENERGIZE.
 3. A FAILURE OF THE SUPPLY FAN, RELIEF FAN OR HEAT RECOVERY WHEEL SHALL BE ALARMED TO THE CCMS. UPON SENSING FAILURE, THE CCMS SHALL INDICATE ALARM, DISABLE THE FAN AND RETURN ALL CONTROLS TO THEIR NORMAL POSITION.
 4. THE RELIEF FAN SPEED SHALL BE SET TO MAINTAIN CONSTANT SYSTEM DIFFERENTIAL BETWEEN THE SUPPLY AIR QUANTITY AND RETURN AIR QUANTITY TO PROVIDE PROPER BUILDING PRESSURIZATION. REFER TO THE EQUIPMENT SCHEDULE FOR MINIMUM AIRFLOW.
 5. INTERNAL CONTROLS WITHIN THE VENTILATION AIR UNIT SHALL CONTROL HEAT RECOVERY WHEEL TO MAXIMIZE ENERGY RECOVERY.
 6. DOAU SHALL SHUTDOWN AND ALARM TO CCMS IF WATER IS PRESENT IN THE EXTERNAL COOLING COIL DRAIN PAN.
 - D. UNIT OPERATION
 1. SUPPLY AIR AND RELIEF FAN SHALL BE SOFT STARTED AND RUN CONTINUOUSLY.
 2. SUPPLY, RETURN, AND RELIEF AIR DAMPERS SHALL FULLY OPEN.
 3. MANUFACTURER SHALL PROVIDE DEHUMIDIFICATION CONTROL WHICH SHALL SUB-COOL SUPPLY AIR TO REDUCE RELATIVE HUMIDITY BELOW 20%. CONDENSER COIL AND ELECTRIC HEAT (IF NEEDED) SHALL THEN REHEAT AIR TO SET POINT.
 4. THE UNIT SHALL OPERATE AS A NEUTRAL AIR UNIT AND SHALL SUPPLY AIR AT 70°F AND 50% RELATIVE HUMIDITY TO THE SPACES.
 - E. SMOKE CONTROL
 1. SMOKE DETECTOR SHALL, ON THE DETECTION OF PRODUCTS OF COMBUSTION, DE-ENERGIZE THE AIR HANDLING UNIT IN ACCORDANCE WITH NFPA-90A. ALL HVAC SMOKE DETECTORS SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM, AS A SUPERVISORY ALARM ONLY. IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-72 - NATIONAL FIRE ALARM CODE.
- 1.4 ALARM POINTS
 - A. PROVIDE THE FOLLOWING ALARM POINTS PER SPACE.
 1. HIGH TEMPERATURE ALARM - ALARM OVER 75°F.
 2. LOW TEMPERATURE ALARM - ALARM 4°F BELOW THE ACTIVE SET-POINT.
 3. HIGH HUMIDITY ALARM - ALARM OVER 60% RH.
 4. LOW HUMIDITY ALARM - ALARM BELOW 30% RH.
 5. FAN STATUS ALARM - ALARM ANY FAN SHOWING 'ON' WHEN THE COMMAND IS 'OFF'.
- 1.5 SYSTEM TRENDED
 - A. CONTROLS CONTRACTOR SHALL SUBMIT THE FOLLOWING TRENDED DATA PER SPACE. TRENDED POINTS SHALL BE TAKEN EVERY HOUR FOR A TWO WEEK PERIOD.
 1. DISCHARGE AIR TEMPERATURE SET-POINT.
 2. DISCHARGE AIR TEMPERATURE ACTUAL.
 3. DISCHARGE AIR HUMIDITY.
 4. SUPPLY, RETURN AND RELIEF AIR DAMPER POSITION.
 5. SUPPLY, RETURN AND RELIEF AIR FAN STATUS ON/OFF.
 6. DOAU HEATER STATUS ON/OFF.
 7. VFD COMMAND.
 8. VFD FEEDBACK.



DUCT OFFSETS

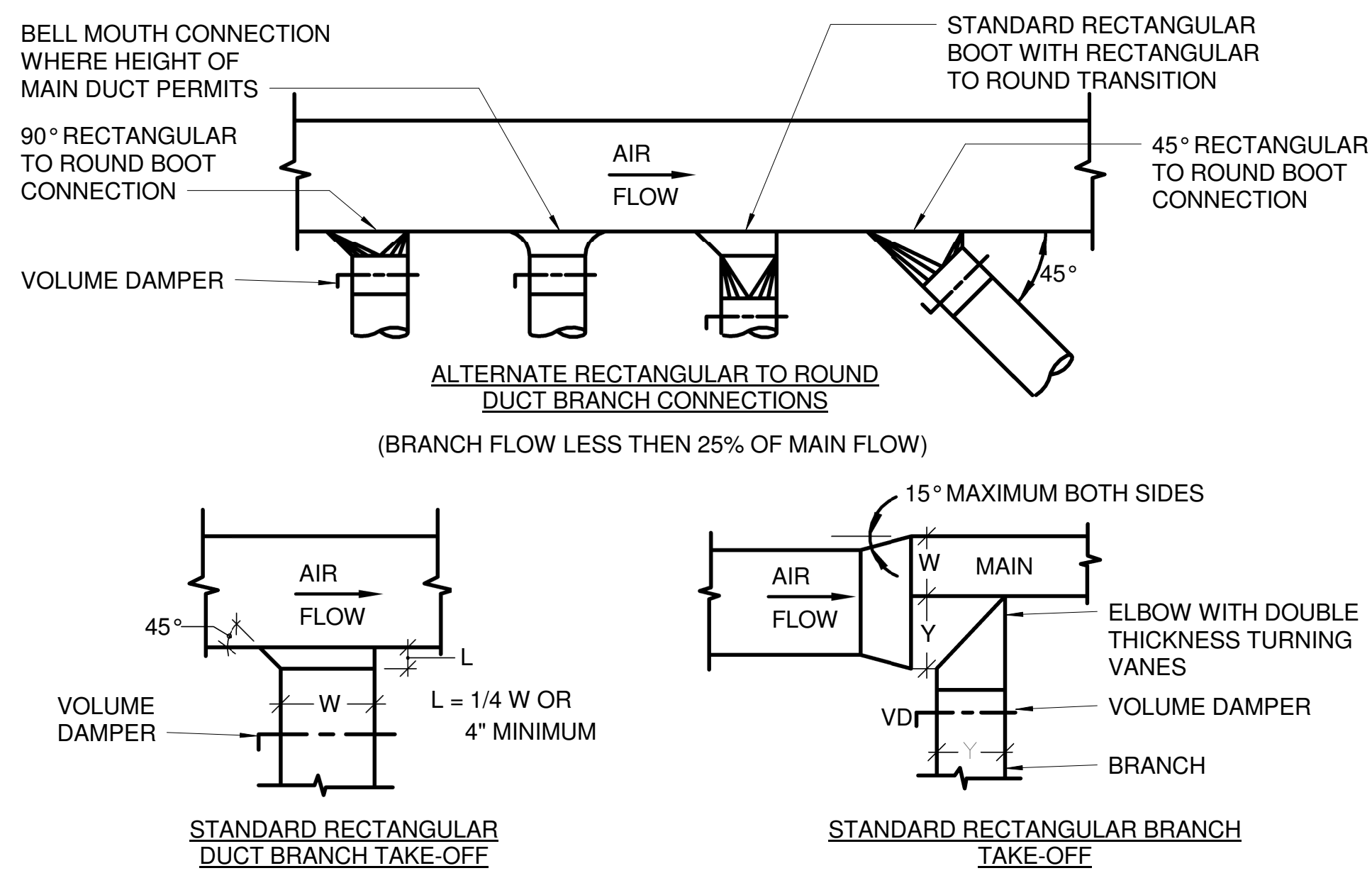


RECTANGULAR TO RECTANGULAR TRANSITIONS



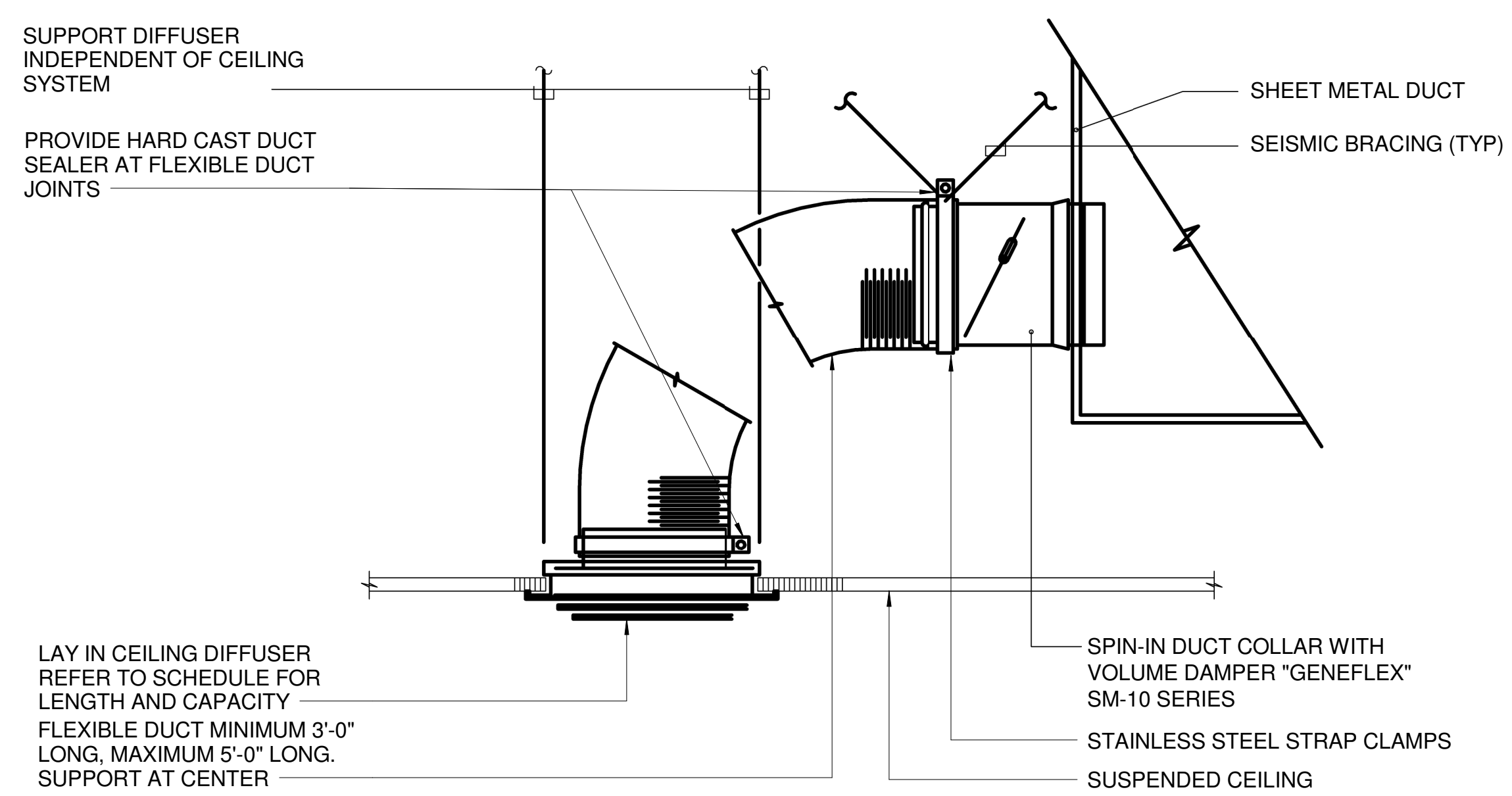
DETAIL - RECTANGULAR DUCT FITTINGS

SCALE: N.T.S.



DETAIL - LOW VELOCITY BRANCH TAKE-OFF

SCALE: N.T.S.



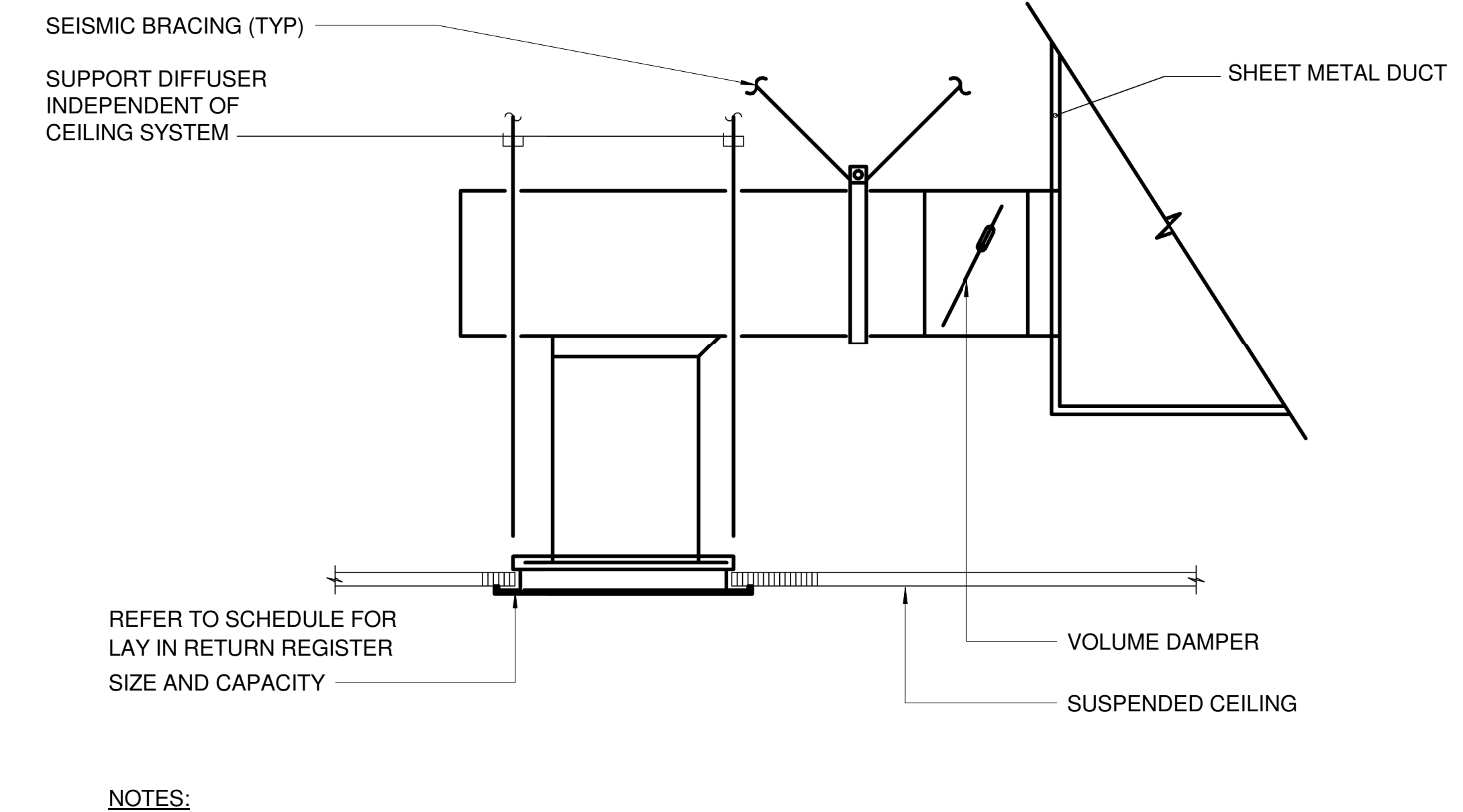
- NOTES:**
- DUCT INSULATION SHALL BE PROVIDED AS SPECIFIED.
 - PROVIDE ADDITIONAL ROUND, RIGID SHEET METAL DUCTWORK AS REQUIRED TO LIMIT FLEXIBLE DUCT LENGTH TO 5'-0" MAXIMUM.
 - MAXIMUM SAG 1/2" PER FOOT.
 - PROVIDE SEISMIC SWAY BRACING FOR ALL DUCTWORK AND HANGERS PER THE 2009 INTERNATIONAL BUILDING CODE AND 2009 INTERNATIONAL MECHANICAL CODE.
 - CONTRACTOR SHALL VERIFY MAXIMUM LOADING ON DUCTWORK SUPPORT ASSEMBLIES.

DETAIL - CEILING DIFFUSER BRANCH DUCTS

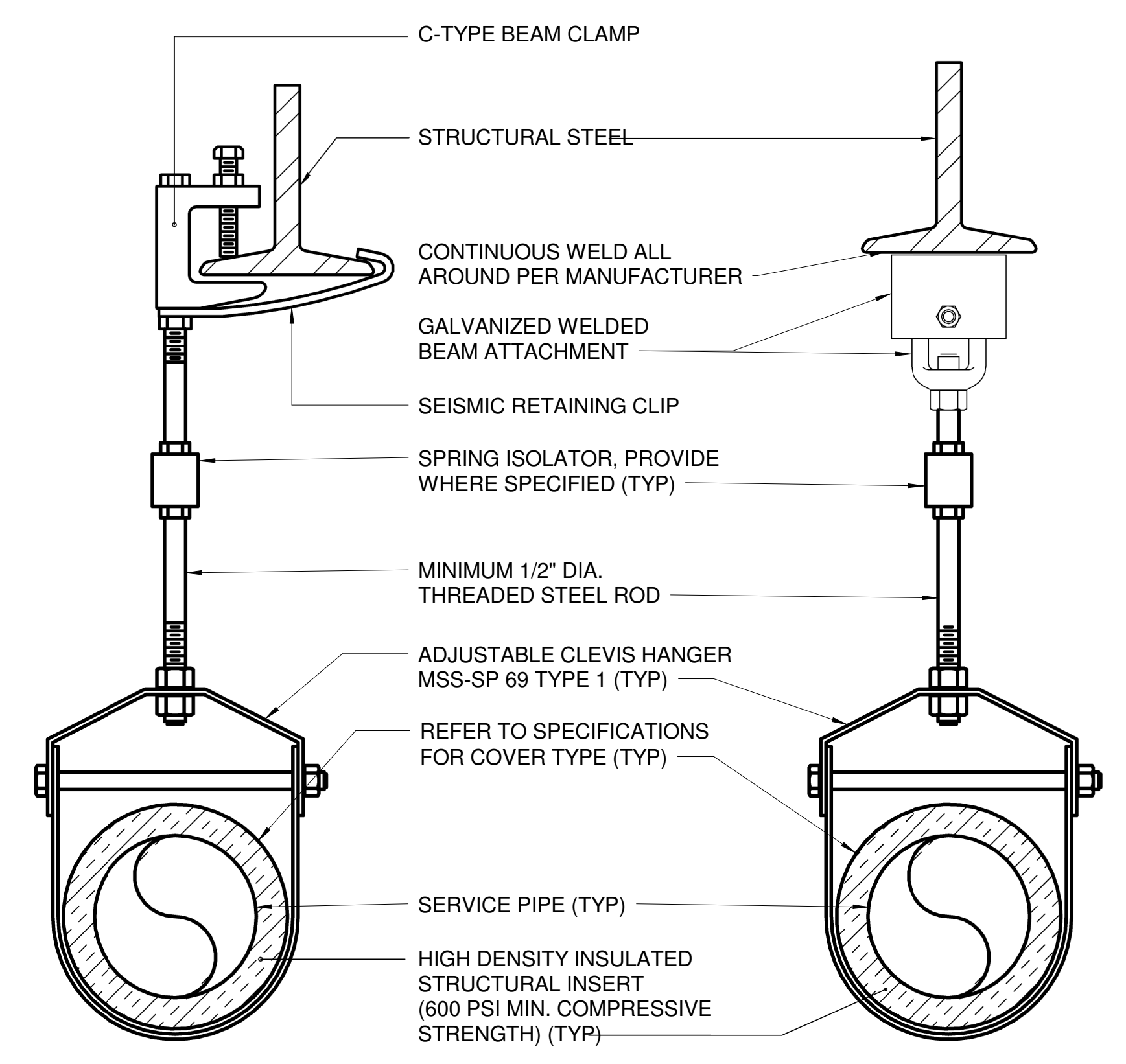
SCALE: N.T.S.

DETAIL - RETURN/EXHAUST AIR BRANCH DUCT

SCALE: N.T.S.

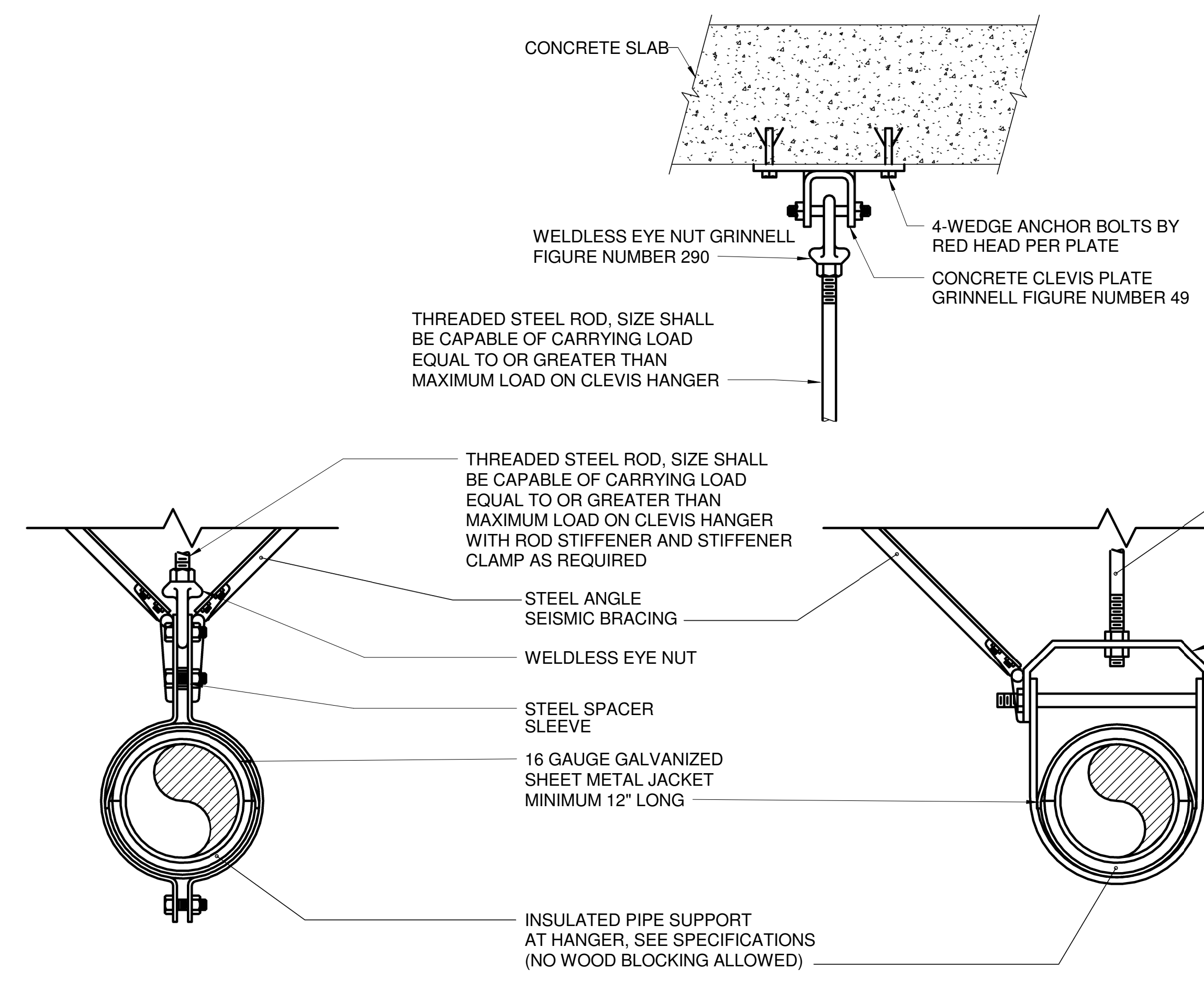


- NOTES:**
- DUCT INSULATION SHALL BE PROVIDED AS SPECIFIED.
 - PROVIDE SEISMIC SWAY BRACING FOR ALL DUCTWORK AND HANGERS PER THE 2009 INTERNATIONAL BUILDING CODE AND 2009 INTERNATIONAL MECHANICAL CODE.
 - CONTRACTOR SHALL VERIFY MAXIMUM LOADING ON DUCTWORK SUPPORT ASSEMBLIES.

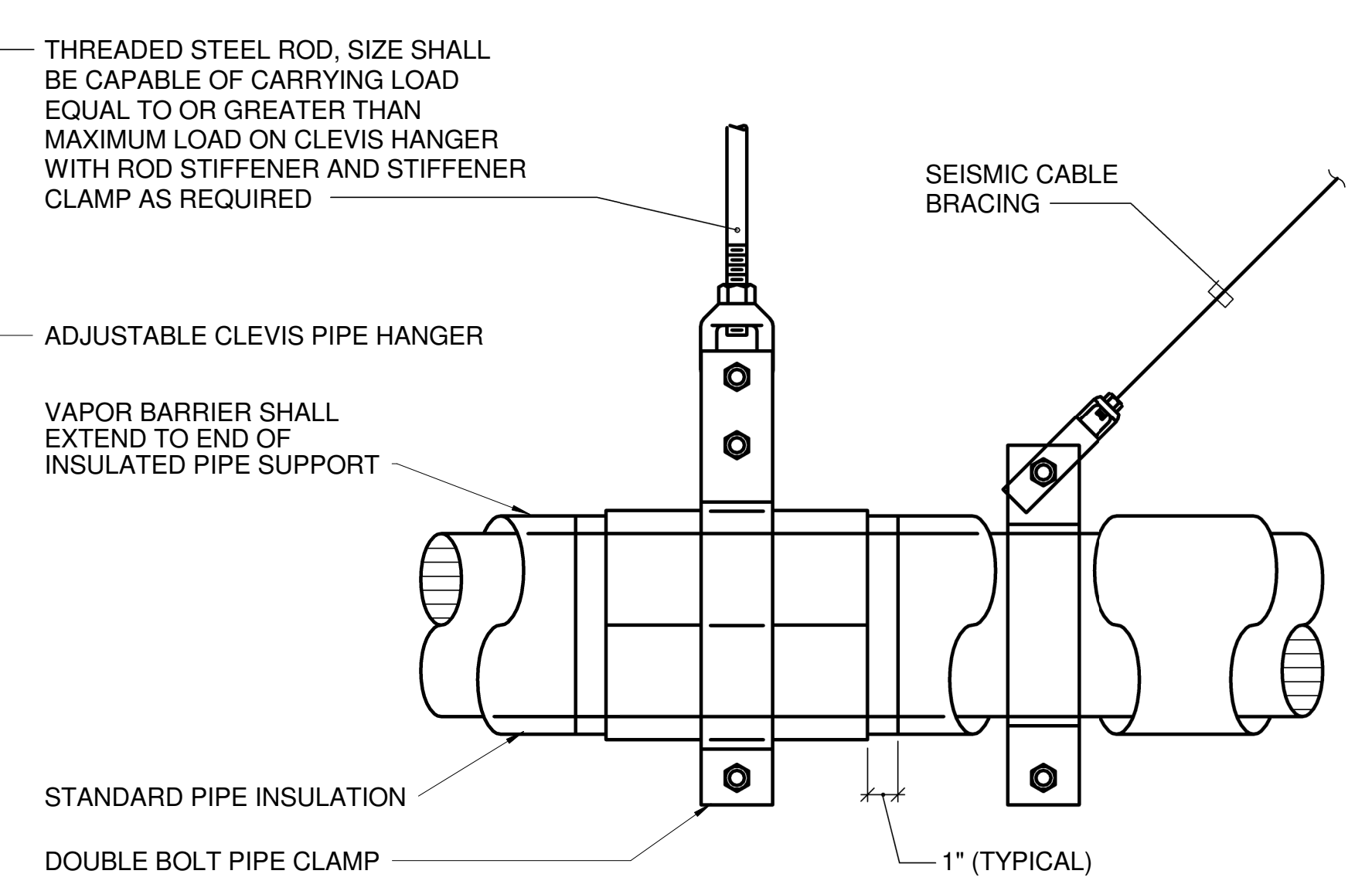


DETAIL - PIPE HANGER

SCALE: N.T.S.



- NOTES:**
- HANGER SPACING SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
 - CLEVIS TYPE PIPE HANGERS SHALL BE USED FOR PIPE SIZES 10" AND SMALLER AND WHEN PIPING SYSTEMS ARE STATIONARY.
 - PROVIDE SEISMIC SWAY BRACING FOR ALL PIPE HANGERS PER THE 2009 INTERNATIONAL BUILDING CODE AND THE 2009 INTERNATIONAL MECHANICAL CODE AND THE SMACNA SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS SECOND EDITION-FEBRUARY, 1998 AND ADDENDUM NO. 1 SEPTEMBER, 2000.
 - CONTRACTOR SHALL VERIFY MAXIMUM LOADING ON PIPE SUPPORT ASSEMBLIES.
 - ALL MECHANICAL PIPES AT EXPOSED CEILING STRUCTURES TO RUN DIRECTLY BELOW DECK. PIPES THAT RETURN TO A LOWER ROOM MUST TRAVEL VERTICALLY WITHIN THE WALL.



QUACKENBUSH ARCHITECTS+PLANNERS

1217 Hampton Street T: 803.771.2999
Columbia, SC 29201 F: 803.771.2958

CHA

111 Winners Circle T: 518.453.4500
Albany, NY 12205 F: 518.458.1735

RFM ENGINEERING, INC.
194 SEVEN FARMS DRIVE
SUITE G CHARLESTON, SC 29402
RFM JOB # 31219.00

CORPORATE SEAL

STATE OF SOUTH CAROLINA
RFM ENGINEERING, INC.
MOUNT PLEASANT, SC
REGISTERED ENGINEERS

A.P. SEAL

STATE OF SOUTH CAROLINA
No. 22154
UNIVERSITY OF SOUTH CAROLINA
SCHOOL OF ARCHITECTURE

PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION

Date 03.16.12
Project No. 11.122.00
Scale NONE
Drawn By BMW
Checked By DWZ
State Project No. H27-6088-MJ

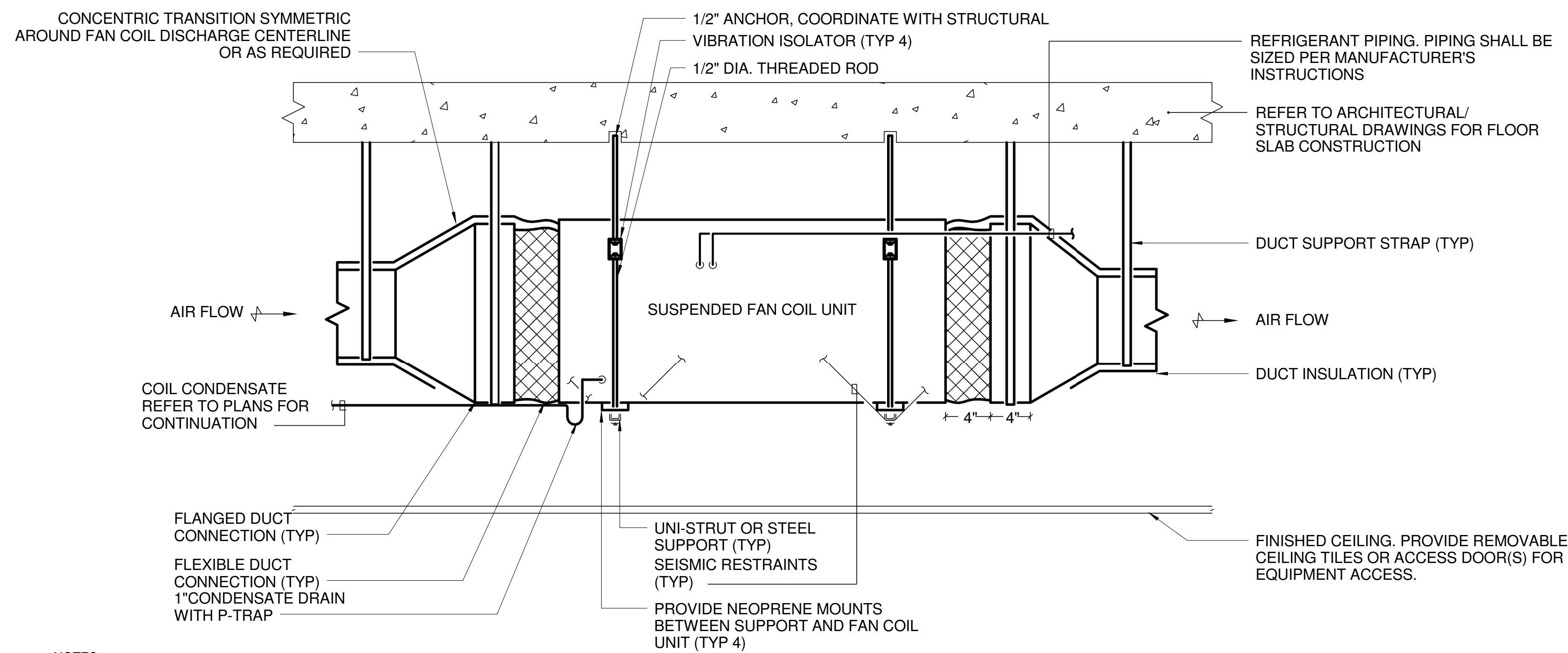
TITLE

MECHANICAL DETAILS

SHEET NO.

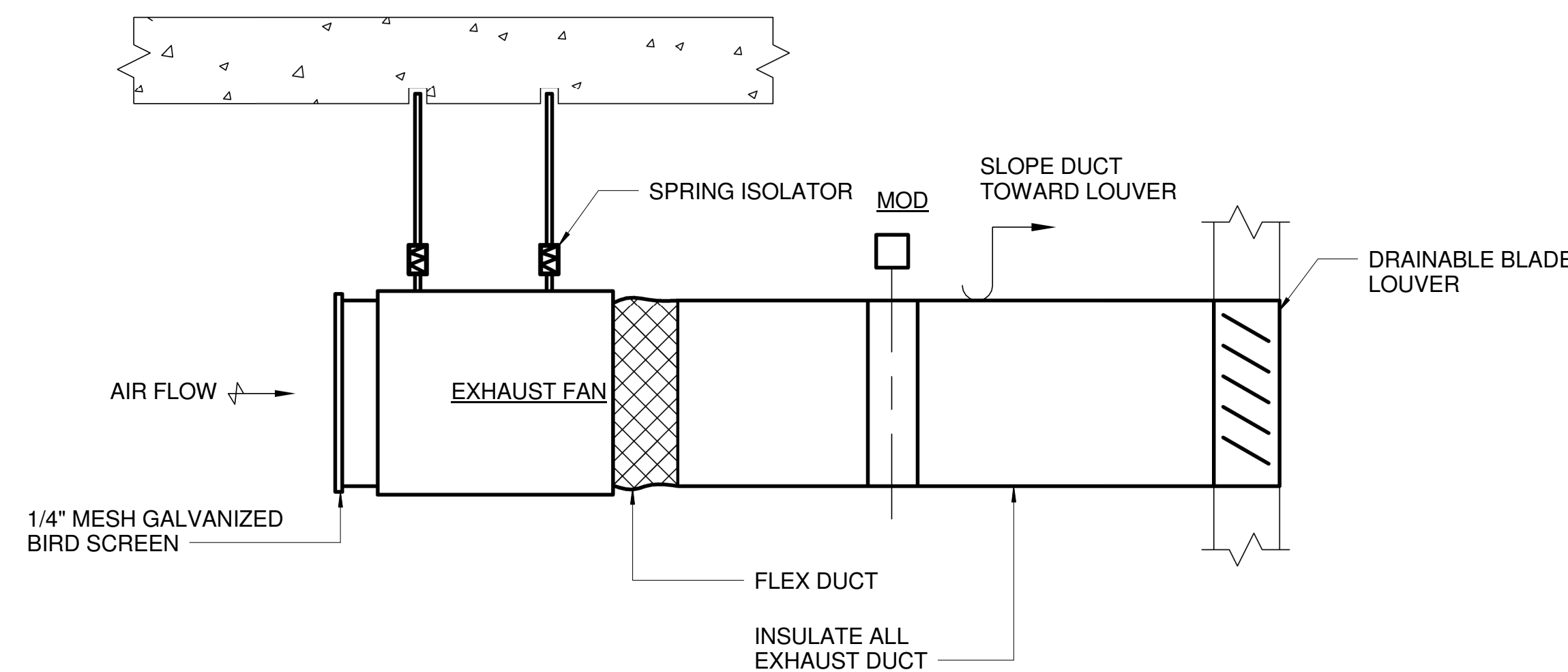
M500

3/23/2012 12:11:03 PM



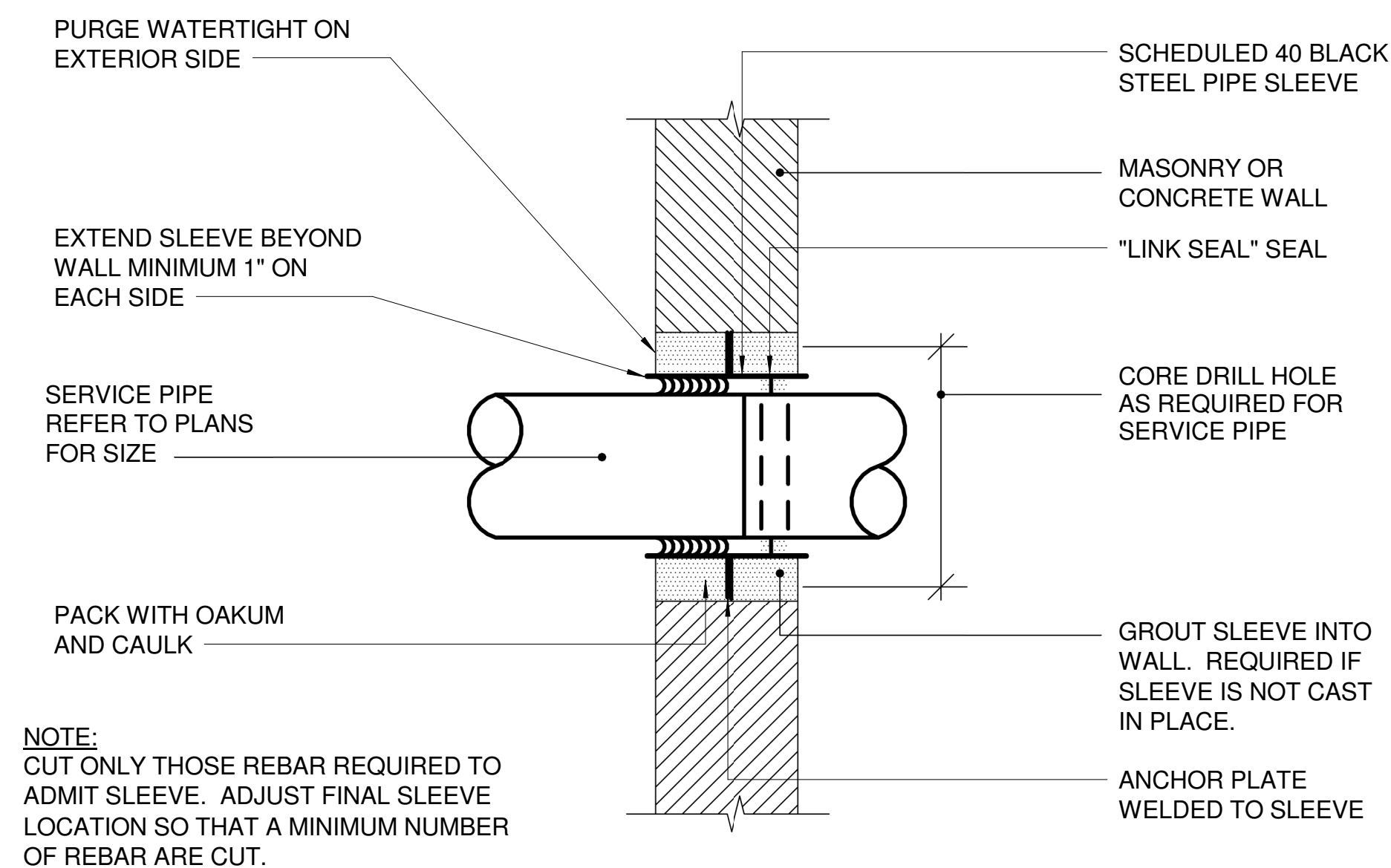
- NOTES:**
1. PROVIDE SEISMIC BRACING FOR ALL FAN COIL UNITS, DUCTWORK AND HANGERS PER THE 2009 INTERNATIONAL BUILDING CODE AND 2009 INTERNATIONAL MECHANICAL CODE.
 2. CONTRACTOR SHALL VERIFY MAXIMUM LOADING ON FAN COIL AND DUCTWORK SUPPORT ASSEMBLIES.

DETAIL - FAN COIL UNIT
SCALE: N.T.S.



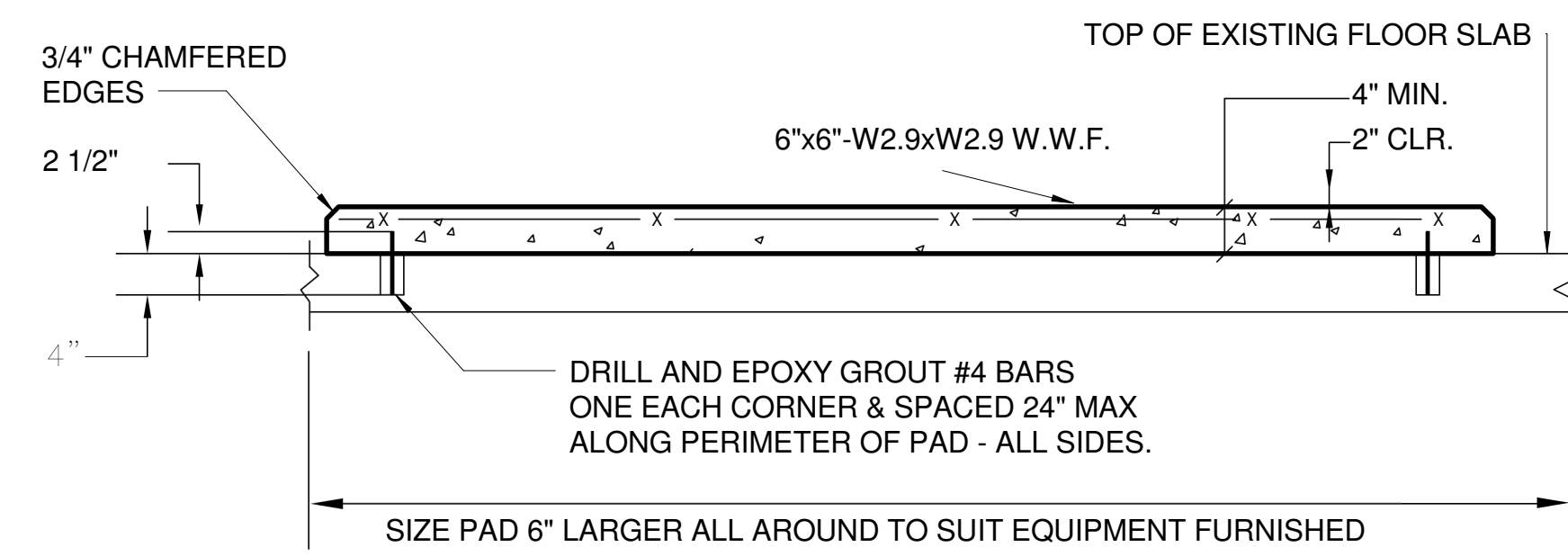
- NOTES:**
1. PROVIDE SEISMIC BRACING FOR ALL EXHAUST FANS, DUCTWORK AND HANGERS PER THE 2009 INTERNATIONAL BUILDING CODE AND 2009 INTERNATIONAL MECHANICAL CODE.
 2. CONTRACTOR SHALL VERIFY MAXIMUM LOADING ON EXHAUST FAN AND DUCTWORK SUPPORT ASSEMBLIES.

DETAIL - INLINE EXHAUST FAN
SCALE: N.T.S.



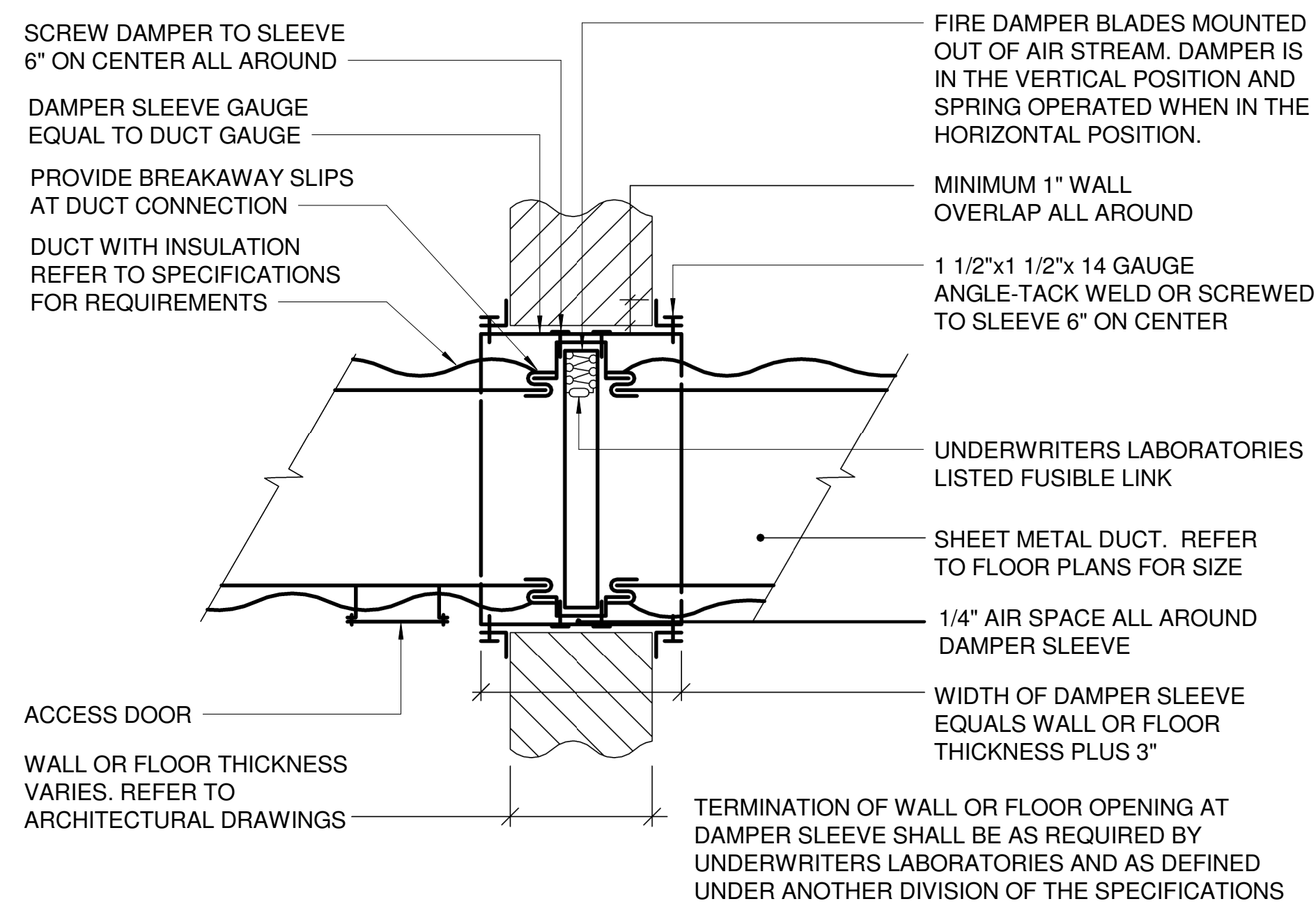
NOTE:
CUT ONLY THOSE REBAR REQUIRED TO ADMIT SLEEVE. ADJUST FINAL SLEEVE LOCATION SO THAT A MINIMUM NUMBER OF REBAR ARE CUT.

DETAIL - PIPE SLEEVE IN EXTERIOR WALL
SCALE: N.T.S.

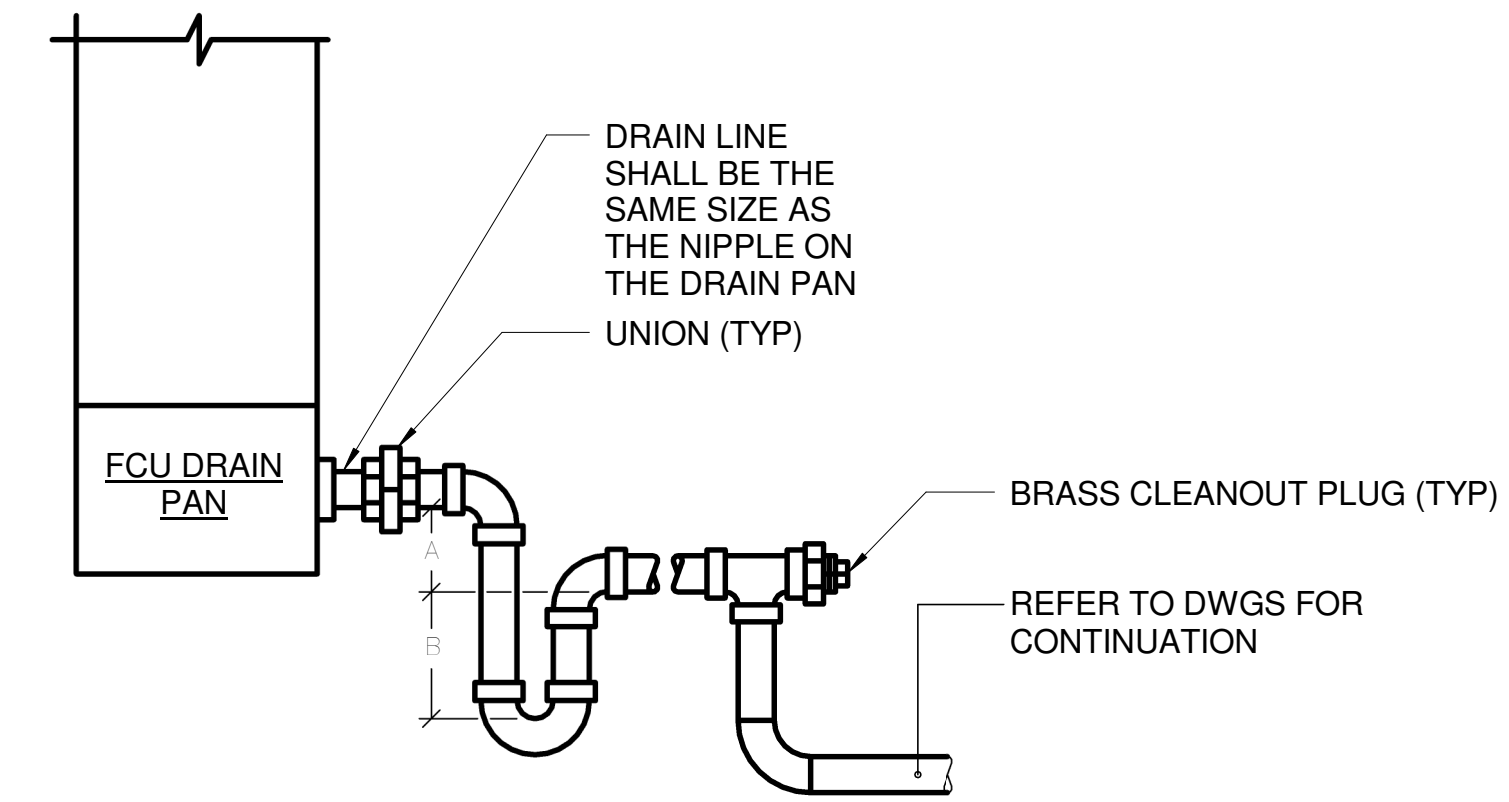


- NOTES:**
1. THIS DETAIL APPLIES TO ALL MECHANICAL EQUIPMENT HOUSEKEEPING PAD INSTALLATIONS, UNLESS NOTED OTHERWISE.
 2. TROWELED FINISH.

DETAIL - HOUSEKEEPING PAD
SCALE: N.T.S.

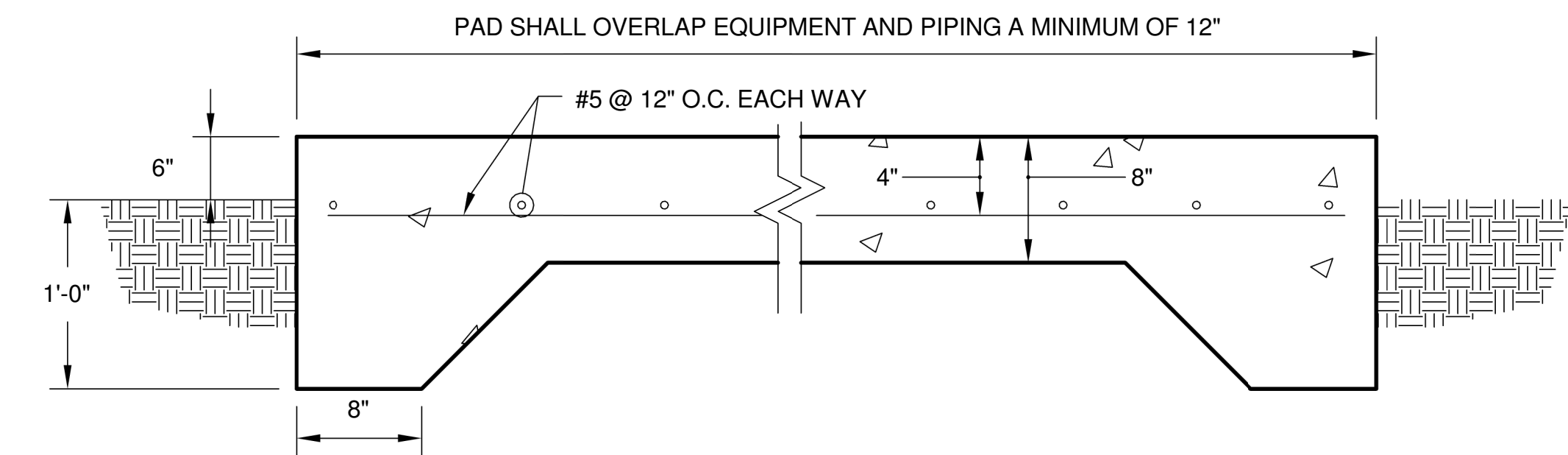


DETAIL - FIRE DAMPER INSTALLATION (TYPICAL)
SCALE: N.T.S.



- NOTE:**
1. FOR THE DRAW THRU FAN COIL UNIT:
A = THE FCU SUPPLY FAN TOTAL STATIC PRESSURE (INCHES) PLUS TWO (2) INCHES.
B = THE FCU SUPPLY FAN TOTAL STATIC PRESSURE (INCHES)

DETAIL - COIL CONDENSATE P-TRAP
SCALE: N.T.S.



DETAIL - EXTERIOR CONCRETE EQUIPMENT CURB AT GRADE
SCALE: N.T.S.

REVISIONS		
NO.	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	NONE
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

DEDICATED OUTDOOR AIR UNIT SCHEDULE

DESIGNATION	FAN SECTION				COOLING MODE								REHEAT COIL DATA				HEATING COIL DATA			ELECTRICAL		REFRIGERANT	WEIGHT LBS.	EER	BASIS OF DESIGN				
	CFM	MINIMUM OA CFM	ESP INCH WG	MOTOR HP	EAT °F		LAT °F		SENS MBH	TOTAL MBH	FACE AREA SF	NUMBER OF COILS	MAXIMUM FIN SPACING FIN/INCH	MINIMUM ROWS	EAT °F		TOTAL MBH	KW	TOTAL MCA	ELECTRICAL V/PH/Hz									
					DB	WB	DB	WB							DB	WB					DB					WB			
DOAU-01	2560	2560	1.0	2.0	82	67	55	54	75.9	102.4	8.1	1	168	4	55.4	53.6	75.4	61.3	56.2	54.7	97.7	119.9	35	56	460/3/60	R-410a	1500	12.4	TRANE OWE090E4

NOTES:

- DOAU-01 SHALL BE PROVIDED WITH A HEAT RECOVERY WHEEL REFER TO THE HEAT RECOVERY WHEEL SCHEDULE ON THIS SHEET.
- ELECTRIC HEATING COIL SHALL BE PROVIDED WITH SCR CONTROL.

HEAT RECOVERY WHEEL SCHEDULE

DESIGNATION	SERVICE	SUPPLY FAN		EXHAUST FAN		ENTHALPY WHEEL		CFM		FACE VELOCITY FPM		ENTERING AIR TEMPERATURE						LEAVING AIR TEMPERATURE						ELECTRICAL V/PH/Hz	TOTAL MCA	BASIS OF DESIGN			
		ESP INCH WG	MOTOR HP	ESP INCH WG	MOTOR HP	MOTOR HP	SUPPLY	EXHAUST	SUPPLY	EXHAUST	SUMMER			WINTER			SUMMER			WINTER									
											°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB							
HRW-01	DOAU-01	1.0	1.5	1.0	2.0	1.5	2560	1975	294	294	97	76	75	62	22	-	72	54	82	67	94	73	54	43	30	24	460/3/60	7.75	SEMCO FV4000

FAN SCHEDULE

DESIG	SERVICE	TYPE	CFM	ESP INCH HO	APPROX RPM	MAX WATT	DRIVE	AMCA CONSTRUCTION CLASS	ELECTRICAL	APPROX WEIGHT (LBS)	BASIS OF DESIGN	REMARKS
EF-01	TOILET EXHAUST	IN-LINE	50	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-02	JANITOR'S CLOSET	IN-LINE	100	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-03	TOILET EXHAUST	IN-LINE	70	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-05	MECHANICAL ROOM 106	IN-LINE	400	0.25	2250	149	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-06	MECHANICAL ROOM 123	IN-LINE	400	0.25	2250	149	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-07	JANITOR'S CLOSET	IN-LINE	100	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-08	TOILET EXHAUST	IN-LINE	100	0.25	1410	119	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-09	TOILET EXHAUST	IN-LINE	100	0.25	1410	119	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-10	TOILET EXHAUST	IN-LINE	70	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-11	JANITOR'S CLOSET	IN-LINE	100	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-12	TOILET EXHAUST	IN-LINE	70	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-13	TOILET EXHAUST	IN-LINE	70	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-14	CONCESSIONS	IN-LINE	800	0.50	1850	181	DIRECT	A	120/1/60	100	COOK SQN	(2)
EF-15	TOILET EXHAUST	IN-LINE	70	0.25	1189	69	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-16	TOILET EXHAUST	IN-LINE	375	0.50	2250	149	DIRECT	A	120/1/60	100	COOK SQN	(2)
EF-17	TOILET EXHAUST	IN-LINE	750	0.50	1828	181	DIRECT	A	120/1/60	100	COOK SQN	(2)
EF-18	TOILET EXHAUST	IN-LINE	100	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-19	TOILET EXHAUST	IN-LINE	70	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
EF-20	TOILET EXHAUST	IN-LINE	70	0.25	1399	114	DIRECT	A	120/1/60	70	COOK SQN	(2)
BF-01	LAUNDRY BOOSTER FAN	IN-LINE	750	0.50	2700	329	DIRECT	A	120/1/60	100	FANTECH FKD10	(1)
VEF-01	BATTING CAGES	SIDEWALL	3500	0.15	1140	373	BELT	A	120/1/60	150	COOK XLWH	
RF-01-03	GROUP RESTROOMS	WALL FAN	2000	-	-	160	DIRECT	A	120/1/60	50	COOK 18CAC11W	
RF-04-06	CONCESSIONS	WALL FAN	2000	-	-	160	DIRECT	A	120/1/60	50	COOK 18CAC11W	

NOTE:

- CLOTHES DRYER EXHAUST FAN SHALL MEET THE STANDARDS OUTLINED IN SECTION 504.7 OF THE 2009 INTERNATIONAL MECHANICAL CODE.
- PROVIDE 277 VOLT TRANSFORMER FOR OPERATION WITH LIGHTING OCCUPANCY SENSORS.

ELECTRIC WALL HEATER SCHEDULE

DESIGNATION	NOMINAL CFM	REQUIRED MBH	NUMBER OF ELEMENTS	CONNECTED KW	ELECTRICAL V/Hz	BASIS OF DESIGN	REMARKS
EW-01	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)(2)
EW-02	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)
EW-03	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)(2)
EW-04	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)(2)
EW-05	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)(2)
EW-06	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-09	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)(2)
EW-10	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-11	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-12	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-13	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-14	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)
EW-15	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)
EW-16	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)
EW-17	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)
EW-18	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-19	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-20	100	13.6	1	4.0	277/1/60	QMARK AWH4407	(1)
EW-21	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)(2)
EW-22	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)(2)
EW-23	100	16.3	1	4.8	277/1/60	QMARK AWH4507	(1)(2)

NOTE:

- INSTALL HEATER SO THE BOTTOM OF THE UNIT IS AT 1'-0" ABOVE FINISHED FLOOR.
- PROVIDE REQUIRED HARDWARE FOR SURFACE MOUNTED INSTALLATION.

ELECTRIC UNIT HEATER SCHEDULE

DESIGNATION	SERVICE	NOMINAL CFM	REQUIRED MBH	NUMBER OF ELEMENTS	CONNECTED KW	ELECTRICAL V/Hz	BASIS OF DESIGN	REMARKS
EUH-01 - EUH-08	BATTING CAGES	700	26	1	7.5	480/3/60	REZNOR EGH8	-

RADIANT CEILING PANEL SCHEDULE

DESIGNATION	SERVICE	CONNECTED KW	ELECTRICAL V/Hz	BASIS OF DESIGN	REMARKS
RCP-01-RCP-04	CONCESSIONS	0.75	208/1/60	MARLEY ATH24488A	-

DX FAN COIL UNIT SCHEDULE

DESIG	FAN			REFRIGERANT	COIL DUTY			MOUNTING	ELECTRICAL (V/Hz)	MCA	BASIS OF DESIGN	REMARKS	
	MAX CFM	MAX OA CFM	ESP		EAT °F	COOLING CAPACITY							HEATING CAPACITY
						TOTAL (MBH)	SENSIBLE (MBH)						
FCU-01	520	55	0.35	R-410A	75.9	63.7	15.8	12.7	6.8	208/1/60	2.24	1	
FCU-02	250	40	0.32	R-410A	75.6	63.5	6.2	5.4	2.3	208/1/60	1.05	1	
FCU-03	600	75	0.41	R-410A	73.3	61.3	12.7	12.0	2.0	208/1/60	1.56	1	
FCU-04	635	N/A	N/A	R-410A	80.0	67.0	24.0	18.0	5.0	208/1/60	0.54	1(2)	
FCU-05	460	80	0.47	R-410A	76.0	63.7	13.3	10.6	7.7	208/1/60	1.56	1(2)	
FCU-06	635	N/A	N/A	R-410A	80.0	67.0	24.0	18.0	5.0	208/1/60	0.54	1(2)	
FCU-07	635	N/A	N/A	R-410A	80.0	67.0	30.0	18.0	5.0	208/1/60	1.0	1(2)	
FCU-08	270	30	0.35	R-410A	74.3	62.2	4.8	4.3	1.1	208/1/60	1.0	1(2)	
FCU-09	1315	230	0.44	R-410A	76.0	63.8	38.0	30.3	14.8	208/1/60	4.23	1(2)	
FCU-10	635	N/A	N/A	R-410A	80.0	67.0	24.0	18.0	5.0	208/1/60	0.54	1(2)	
FCU-11	240	N/A	N/A	R-410A	80.0	67.0	8.5	5.4	4.2	208/1/60	1.0	1(2)	
FCU-12	575	75	0.40	R-410A	75.0	62.8	14.9	12.6	7.4	208/1/60	1.45	1(2)	
FCU-13	235	30	0.35	R-410A	74.9	62.8	6.1	5.1	2.8	208/1/60	1.20	1(2)	
FCU-14	400	75	0.38	R-410A	76.3	64.0	11.9	9.4	5.2	208/1/60	1.20	1(2)	
FCU-15	360	50	0.35	R-410A	75.2	63.0	9.6	8.0	4.2	208/1/60	1.20	1(2)	
FCU-16	660	60	0.35	R-410A	74.1	62.0	15.4	13.8	4.7	208/1/60	1.56	1(2)	
FCU-17	265	30	0.38	R-410A	74.6	62.5	6.6	5.7	3.0	208/1/60	1.05	1(2)	
FCU-18	750	75	0.40	R-410A	74.3	62.3	17.9	15.9	8.1	208/1/60	2.24	1(2)	
FCU-19	240	N/A	N/A	R-410A	80.0	67.0	8.5	5.4	4.2	208/1/60	1.0	1(2)	

NOTE:

- UNIT SHALL UTILIZE A VARIABLE REFRIGERANT FLOW SYSTEM CONNECTED TO ACCU-02.
- UNIT SHALL BE EQUIPPED WITH A CONDENSATE DISCHARGE PUMP, MITSUBISHI MODEL NUMBER SH1730-230.
- UNIT IS PROVIDED WITH INTEGRAL CONDENSATE LIFT MECHANISM.

DX HEAT PUMP SCHEDULE

DESIG.	CAPACITY (MBH)		OUTDOOR FAN			COMPRESSOR			INDOOR		REFRIGERANT	WEIGHT LBS.	BASIS OF DESIGN
	COOLING	HEATING	No MOTOR	FLA EACH	ELECTRIC (V/Hz)	No	RLA	LRA	DESIGN TEMP (°F DB)				
									SUMMER	WINTER			
ACCU-01	111.4		1	2.5	460/3/60	2	7.8	52.0	75	70	R-410A	510	TRANE OTA120E4
ACCU-02	288		4	X	460/3/60	4	37.9	-	72	70	R-410A	1500	MITSUBISHI PURY
ACCU-07	30.0		1	0.75	208/1/60	1	12.0	14.0	72	70	R-410A	74	MITSUBISHI PUY
ACCU-08	4.8		1	0.5	208/1/60	1	6.6	8.2	72	70	R-410A	74	MITSUBISHI SUZ
ACCU-11	8.5		1	0.5	208/1/60	1	6.6	8.2	72	70	R-410A	74	MITSUBISHI MUZ

AIR DEVICE SCHEDULE

No	SERVICE	TYPE	CFM	SIZE	BLOW	BASIS OF DESIGN	NECK SIZE
101	SUPPLY	LAY IN	0-150	24"x24"	4-WAY	TITUS PAS-AA	6" NECK
102	SUPPLY	LAY IN	151-250	24"x24"	4-WAY	TITUS PAS-AA	8" NECK
103	SUPPLY	LAY IN	251-320	24"x24"	4-WAY	TITUS PAS-AA	10" NECK
104	SUPPLY	LINEAR	150-300	4'-0" x 2 SLOT	15" DEFL	TITUS TBD-30	10" NECK
201	RETURN	CEILING FILTER GRILLE	0-100	24"x24"	-	TITUS 8FF	6" NECK
202	RETURN	CEILING FILTER GRILLE	101-175	24"x24"	-	TITUS 8FF	8" NECK
203	RETURN	CEILING FILTER GRILLE	176-275	24"x24"	-	TITUS 8FF	10" NECK
204	RETURN	CEILING FILTER GRILLE	276-400	24"x24"	-	TITUS 8FF	12" NECK
205	RETURN	CEILING FILTER GRILLE	401-525	24"x24"	-	TITUS 8FF	14" NECK
206	RETURN	CEILING FILTER GRILLE	526-700	24"x24"	-	TITUS 8FF	16" NECK
207	RETURN	LINEAR	300-400	4'-0" x 3-SLOT	-	TITUS TBR-30	10" NECK
301	EXHAUST	LAY IN	0-125	24"x24"	-	TITUS PAR-AA	6"x6" NECK
302	EXHAUST	LAY IN	126-225	24"x24"	-	TITUS PAR-AA	8"x8" NECK
303	EXHAUST	LAY IN	226-350	24"x24"	-	TITUS PAR-AA	10"x10" NECK
304	EXHAUST	LAY IN	351-500	24"x24"	-	TITUS PAR-AA	12"x12" NECK
305	EXHAUST	LAY IN	0-1				

BUILDING DESIGN COMMISSIONING DATA

1. OUTSIDE DESIGN CONDITIONS:
 - SUMMER (0.4%) : 97°F DB/76°F WB
 - WINTER (99.6%) : 22°F DB
 - EVAPORATION (0.4%) : 78°F
2. GENERAL BUILDING CRITERIA
 - WALL U-FACTOR : 0.061
 - GLASS U-FACTOR : 0.260
 - GLASS SHADING COEFFICIENT : 0.690
 - ROOF U-FACTOR : 0.040
3. GENERAL BUILDING DESIGN LOAD REQUIREMENTS :
 - LIGHTING : 1.1 - W/SF
 - PEOPLE : 250 BTUH/PERSON
 - MISC EQUIPMENT : 1.5 - W/SF
4. COMFORT HEATING : 70°F ± 5°F
5. COMFORT COOLING & DEHUMIDIFICATION : 75°F ± 5°F/50% RH ± 10% RH
6. MINIMUM BUILDING POSITIVE PRESSURE : 0.05"
7. CODES:
 - 2009 INTERNATIONAL BUILDING CODE
 - 2009 INTERNATIONAL MECHANICAL CODE
 - 2009 INTERNATIONAL PLUMBING CODE
 - 2009 INTERNATIONAL FIRE CODE
 - 2006 INTERNATIONAL ENERGY CONSERVATION CODE
 - NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS (LATEST EDITIONS)
 - ASHRAE STANDARDS AND HANDBOOKS (LATEST EDITIONS)
 - OWNER'S INSURANCE UNDERWRITER STANDARDS

DUCT CONSTRUCTION AND LEAK TEST SCHEDULE

DUCT SYSTEM	MAXIMUM OPERATING PRESSURE INCH WG	DUCT CONSTRUCTION			DUCT PRESSURE TEST			REMARKS
		CONSTRUCTION CLASS INCH WG	POSITIVE OR NEGATIVE	SMACNA DUCT SEAL CLASS	TEST REQUIRED YES/NO	TEST PRESSURE INCH WG	DUCT LEAK CLASS	
SUPPLY AIR	2"	2"	POSITIVE	B	NO	2"	12	(2)
RETURN AIR	-2"	2"	NEGATIVE	B	NO	2"	12	(3)
EXHAUST AIR	-2"	2"	NEGATIVE	B	NO	2"	12	

- (1) TEST PER SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, 1ST EDITION.
- (2) DOWNSTREAM OF UNIT (FROM FAN COIL UNIT TO AIR DEVICE).
- (3) UPSTREAM OF UNIT.



QUACKENBUSH
ARCHITECTS+PLANNERS

1217 Hampton Street T: 803.771.2999
Columbia, SC 29201 F: 803.771.2958

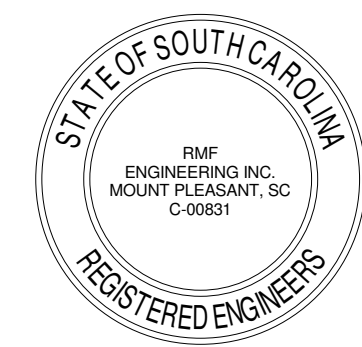


III Winners Circle T: 518.453.4500
Albany, NY 12205 F: 518.458.1735

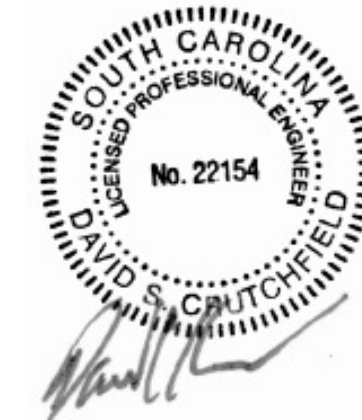


RMF ENGINEERING, INC.
194 SEVEN FARMS DRIVE
SUITE G
CHARLESTON, SC 29402
RMF JOB # 311219.00

CORPORATE SEAL



A/P SEAL



PROJECT TITLE

UNIVERSITY OF SOUTH CAROLINA

SOFTBALL STADIUM CONSTRUCTION

BID SET

Conditions of Use: This drawing and the design thereon are the property of Quackenbush Architects + Planners. The reproduction, copying, or use of this drawing without the written consent of Quackenbush Architects + Planners is prohibited and any infringement will be subject to legal action.

REVISIONS		
NO	REVISION	DATE

SHEET INFORMATION	
Date	03.16.12
Project No.	11.122.00
Scale	12" = 1'-0"
Drawn By	BMW
Checked By	DWZ
State Project No.	H27-6088-MJ

TITLE
MECHANICAL SCHEDULES

SHEET NO.
M601