Builder of Choice
ANDERSEN CONSTRUCTION COMPANY

Andersen Construction Company
6712 N. Cutter Circle PO Box 6712
Portland OR 97217
US

TRANSMITTAL

No. 11-0866-0047

PROJECT: Wallowa Memorial Hospital MOB
TO: Clark/Kjos Architects*

DATE: 11/03/2011
RE: 101-211300-Fire Sprinkler System Shop Drawing Resubmittal

ATTN: Matt Kadyk
JOB: 11-0866

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☑ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☑ Attached ☐ Separate Cover	☐ Returned for Corrections
☐ Other:		☐ Due Date:
		☐ Other:

Line	Item	Package	Code	Rev.	Qty	Date	Description	Status
1	Submittal	101-211300	101-211300-001			11/03/2011	Fire Sprinkler System Shop Drawing Resubmittal	

☐ No Exception Taken ☒ Make Corrections Noted
☐ Revise & Resubmit ☐ Rejected
Reviewed for general conformity with the contract documents. Subcontractor is responsible for all quantities, dimensions, joinery, and complete compliance with contract documents.
ANDERSEN CONSTRUCTION CO., INC.
By KA Date 11/14/11
Job # 11-0866
Submittal # 101-211300-001
* Please see attached memo regarding original review comments by Interface Eng.

REMARKS: Matt,

Please find the attached shop drawing resubmittal for the Fire Sprinkler Systems, sent for review and approval.

Respectfully,

Kris Anderson
Andersen Const. Co.

CC: **Clark/Kjos Architects*, Matt Kadyk**
Andersen Structures, LLC, Randy Garrett
Andersen Structures, LLC, Robert Haynes

Signed: Kris Anderson

INTUITIVE FIRE

11/2/11

Kris Anderson
Anderson Const. Co

Re: Wallowa Memorial Hospital MOB.
Enterprise Or.

Mr. Anderson

I have addressed and reviewed the Drawings/Documents. Comments/revisions have been recorded on the resubmitted documents and below.

Comments from ~~Anderson Construction:~~ ▶ CK Architects

1) *Walkway not in Project.*
Sprinkler drawings have been modified. ✓
2) Conceal Sprinkler lines in lobby WITHIN the roof ceiling and ABOVE lines at canopy.
Sprinkler piping has been installed as shown on the architect drawings for the area.

Comments from Interface Engineering
Drawings:

1) *Drawings Submitted are not signed and sealed by Professional Engineer.*
Drawing/Calcs have been reviewed and signed. ✓

2) Provide method for forward flow testing backflow.
Testing of backflow is provided through a 2.5" drain line. See riser diagram. ✓

3) Sheet FP-2 & FP-3: No sprinkler protection has been provided at combustible construction Exits at gridline 1 between gridlines C&D and between gridlines D&E. Please provide.
Dry Pendants Sprinklers have been added in three locations. ✓

4) Sheet FP-4: Dry system routing at Lobby 002 and Vestibule 001 does not coincide with dry system routing shown on sheet P2.11. Verify acceptability of routing with architect.
Routing of fire main has been modified for coordination and installation over corridor. Spec section 21.1.04.c only calls out coordination with the architect for area containing exposed piping. ✓

5) No method of lateral and vertical branch line restraints (including, but not limited to end of branch line restraints) has been provided per NFPA 13-2007 section 9.3.6 and 9.3.6.3 and Table 9.3.6.4. Please provide.
Branchline restraint notes have been added to drawings. ✓

6) Longitudinal & lateral sway bracing locations for the wet sprinkler system as required by are not shown on drawings. Please provide per sway brace calculations.
Sway bracing calcs, details and notes have been added to drawings. ✓

7) Grid system is not provided with pressure relief valve per NFPA13. Please provide.
Notes have been added to riser. ✓

8) Sprinklers have not been provided under combustible stairs. Please provide.
Sprinklers have been added to drawings. ✓

9) No bell is shown. Please provide.
Notes for bell have been added to riser. ✓

10) Sheet FP-1 does not show dry pipe valve trim, including gauges. Please provide full trim.
Detail has been added to riser. ✓

11) No air compressor is shown
Detail and material cut sheets have been added to package. ✓

12) No spare sprinkler box is shown. Please provide.
Detail has been added to riser. ✓

13) Fire department connection is not shown to have a ball drip valve for drainage. Please provide, with drain to sewer or daylight.
Ball drip is show on check valve. ✓

14) Length of ½" thru bolt fastening longitudinal and lateral sway bracing is not provided. Please provide. Identify structural members on drawings showing that the member to which the fastener will be attached is thick enough to hold the entire required length of the thru bolt identified in sway brace calculations.
See Sway Brace Calculations. ✓

15) Hanger detail #1 shows a 2" and a 2.5" Sammy Sidewinder in a 2x6 truss member. A 2x6 truss is actually 1.625" wide. The 2" and 2.5" Sidewinder will just have the excess length extending out the back which will not provide the intended support. Please utilize a hanger that will fit within the structural member it is attached to.
SWG 10 will be utilized. See Hanger #8. ✓

16) Sheet FP-4, the last standard coverage sprinkler at the right-hand end of the canopy is more than 7'6" from the end of the canopy. This area does not meet the criteria of being a "small room" as described in NFPA 13-2007 3.3.15 and so no standard coverage sprinkler may exceed half the allowable distance between sprinklers. Please revise.
The walkway is deleted from the fire sprinkler project scope. ✓

See comments under Hydraulic Calculations, below. If revised calculations require changes in pipe sizes, please provide the

Hydraulic Calculations:

1) Hydraulic calcs are not signed and sealed by registered Professional Engineer per specification 210000.1.04.L.2.b and Oregon state law. Please provide.
   Reviewed and signed. ✓

2) Roof pitch exceeds 2 in 12. Design areas are not increased for dry systems and sloped roofs per NFPA 13. Please revise.
   Hydraulic calcs utilize 7 sprinklers included with 2 sprinklers on eve. (See Attic Sprinkler cut sheets for direction on remote area. ✓

3) Canopy calculation provides a minimum of 7 psi at 14.8 gpm. These sprinklers cover 191 sq. ft. each (assuming 13'10" apart x 13'10" wide). Using the area density method each sprinkler needs to provide 0.10 gpm per sq. ft. 191 sq. ft. x 0.10 = 19.1 gpm per sprinkler per NPFA 13-2007 section 22.4.4.5.3. The commentary in the Automatic Sprinkler Systems Handbook is helpful in understanding this concept. Please revise calculations to provide a full 0.10 gpm per sq. ft. of sprinkler coverage.
   Sprinklers have been added/relocated and recalculated. ✓

4) Lower Wet calculation provides a minimum of 7 psi at 14.82 gpm at node 101 and 7.426 psi at15.26 gpm at node 103. Node 103 is 12' to the next sprinkler and 6'10" from the wall and thus protects 163.92 sq. ft. Using the area density method each sprinkler needs to provide 0.10 gpm per sq. ft. 163.92 sq. ft. x 0.10 = 16.39 gpm per sprinkler per NPFA 13-2007 section 22.4.4.5.3. Please revise calculations to provide a full 0.10 gpm per sq. ft. of sprinkler coverage.
   Sprinklers have been added/respaced and recalculated. ✓

Sway Brace Calculations:

1) No sway brace calculations have been provided. When provided they will be evaluated per the following items, which will contain dispositions at that time. Please provide.
   Provided. ✓
2) Sway brace calcs are/are not signed and sealed by registered Professional Engineer per specification 210000.1.04.L.2.b
   Created, reviewed and signed. ✓

3) Building Code chapter 16 calcs determining force factor used in NFPA 13 calcs are/are not provided per specification 210000.
   Calcs Provided. ✓

4) Sway brace calcs do/do not appear to conform to NFPA 13.
   Calcs Provided. ✓

5) Lateral sway brace calcs do/do not include branch lines.
   Calcs Provided. ✓
6) Pipe type included in calculations matches/ does not match pipes shown on plans.
   Calcs Provided. ✓
7) Bracing details shown on plans do/do not match components and configuration used in calculations.
   Calcs Provided. ✓

Materials:

8) ARGCO – Fire Department Connections (Groove Outlet): No Exception Taken for 2-way straight pattern single clapper model. Two-way 90 degree pattern single clapper REJECTED because it is not UL Listed or FM Approved.
   FPPI- FDC. UL/FM Approved

Reference:

1) a. Tyco Attic, K5.6 and K8.0, model BB1, brass, 200 degree, TY4180 and TY3180. No cut sheet provided. Please provide.
   See submittal
   b. Tyco Attic, K5.6, model SD1, brass, 200 degree, TY3183. No cut sheet provided. Please provide.
   See submittal

   c. Tyco Concealed, K5.6, TY3531, model RFII, unknown response, white finish, 155 degree. No cut sheet provided. Please provide.
   See submittal

   d. Tyco Extended Coverage Pendent, white, model DS-ECC, 155 degree, K5.6, TY3539. No cut sheet provided. Please provide.
   See submittal

2) Pipe:
   a. Underground: No cut sheet provided. Please provide.
   Underground installed under separate contract. (No Materials Included in this submittal)
3) Fittings:
   a. Grooved: No cut sheet provided. Please provide.
   See submittal
   b. Threaded: No cut sheet provided. Please provide.
   CI Fittings added , See submittal
   c. Flanged: No cut sheet provided. Please provide.
   See submittal
4) Couplings:
   a. Rigid: No cut sheet provided. Please provide.
   See submittal

   b. Flexible: No cut sheet provided. Please provide.
   See submittal

5) Valves:
   a. Automatic Ball Drip: No cut sheet provided. Please provide.
   See submittal

   b. Pressure Relief: No cut sheet provided. Please provide.
   See Submittal-Riser Manifold mod. CR option #6

6) Hangers: No cut sheet provided. Please provide.
   Hangers in Submittal
7) Fasteners for Hangers: No cut sheet provided. Please provide.
   Sammy Hangers Provided
8) Sway Brace Fittings: No cut sheet provided. Please provide.
   See submittal
9) Sway Brace Fasteners: No cut sheet provided. Please provide.
   See submittal and details.
10) Bells: No cut sheet provided. Please provide.
    See submittal and details.
11) Connections:
    a. Inspector's Test Connection: No cut sheet provided. Please provide.
       See submittal- Riser Manifold mod. CR
12) Dry Systems:
    a. Air Compressor: No cut sheet provided. Please provide.
       See submittal-General Air
    b. Accelerator: No cut sheet provided. Please provide.
       Accelerator not required.
    c. Air Pressure Maintenance Device: No cut sheet provided. Please provide.
       See submittal-General Air (231.45 Gallon Air Capacity)

Please feel free to contact me with any questions regarding this letter.

Professional Regards,

Franklin Callfas, P.E.
Fire Protection Engineer
Intuitive Engineering Services
541-848-1798

Wallowa
Project Table of Contents
November 2, 2011
Rev-0a

Drawings

Materials

Calculations

WALLOWA MEMORIAL HOSPITAL MOB
FIRE SPRINKLER SUBMITTAL

GENERAL FIRE SPRINKLER NOTES :

1.) CONSTRUCTION TYPE IS: ATTIC SPACE = OBSTRUCTED COMBUSTIBLE, OFFICE SPACE = UNOBSTRUCTED NON-COMBUSTIBLE
2.) BUILDING OCCUPANCY IS: LIGHT HAZARD
3.) IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE SPRINKLER SYSTEM.
4.) THE SPRINKLER CONTRACTOR SHALL PROVIDE THE OWNER WITH INSTRUCTION MANUALS FOR THE UPKEEP OF THE SYSTEM (NFPA 25).
5.) POINT OF CONNECTION FOR THIS CONTRACT SHALL BE: 6" ABOVE FINISH FLOOR
6.) WATER SUPPLY INFORMATION: 80PSI STATIC, 60PSI RESIDUAL @1200GPM
7.) ALL MATERIAL USED IN THE INSTALLATION OF THIS SYSTEM(S) SHALL BE NEW AND OF CURRENT ISSUE, ALL MATERIAL SHALL BE APPROVED BY U.L. (UNDERWRITERS LABORATORY) AND/OR F.M. (FACTORY MUTUAL), AND BE IN COMFORMANCE WITH THE APPLICABLE AUTHORITY HAVING JURISDICTION.
8.) ELECTRICAL WIRING IS NOT PART OF THIS CONTRACT AND SHALL BE PERFORMED BY OTHERS UNDER A SEPARATE CONTRACT.
9.) PIPING SUPPORT SHALL BE IN CONFORMANCE WITH THE ADOPTED EDITION OF NFPA-13 AND LOCAL CODE. THIS CONTRACT DOES NOT INCLUDE ANY MATERIAL OR DEVICE TO IMPROVE THE STRUCTURAL INTEGRITY OF THE BUILDING AND ITS ABILITY TO CARRY THE LOAD OF THE FIRE SPRINKLER SYSTEM.
10.) DEFLECTOR DISTANCE TO BE IN ACCORDANCE WITH THE ADOPTED EDITION OF NFPA-13 AND ALL LOCAL CODES.
11.) ALL FIRE RATED PENETRATIONS SHALL BE FIRE STOPPED USING AN APPROVED AND EQUALLY RATED MATERIAL.
12.) SEISMIC SWAY BRACING SHALL BE IN CONFORMANCE WITH THE APPLICABLE EDITION OF NFPA-13.
13.) ALL HYDROSTATIC TESTING AND/OR FLUSHING SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF NFPA-13 AND SHALL BE WITNESSED BY A REPRESENTATIVE OF THE LOCAL AUTHORITY HAVING JURISDICTION.
14.) FIRE DEPARTMENT CONNECTIONS SHALL BE VISIBLE AND ACCESSIBLE, HAVING NATIONAL STANDARD THREAD FEMALE OUTLETS, PROTECTIVE CAPS AND AN APPROVED CHECK VALVE.
15.) EACH VALVE SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION.
16.) STOCK OF SPARE SPRINKLERS OF EACH STYLE, TYPE, AND TEMPERATURE RATING ALONG WITH A SPRINKLER WRENCH, SHALL BE LOCATED AT THE MAIN RISER.

WET PIPING SYSTEM NOTES :

1. LOWER PIPING TO BE SCH. 10, SCH. 40 THREADED AND/OR GROOVED
2. PIPING TO BE INSTALLED TO DRAIN FULLY. LINES THAT TRAP MORE THAN 5 GALLONS WILL REQUIRE A DRAIN VALVE.

DRY PIPING SYSTEM NOTES :

1. ATTIC SPRINKLER PIPING TO BE GALVANIZED SCH. 10, SCH. 40 THREADED AND/OR GROOVED.
2. PIPING TO BE INSTALLED TO DRAIN FULLY. MAINS PITCHED .25" PER 10' - 0". BRANCH LINES PITCHED .5" PER 10' - 0".
3. DRY SYSTEM CAPACITY: 231.45GAL. 0A

FITTER NOTES :

1. ALL DRY SPRINKLERS TO BE 12" UNLESS NOTED OTHERWISE (UNO).
2. ATTIC HEAD NOTES: 1-Obstuctions(ducts etc) must be at least 36" below head)
   2-Deflector must be located within 12" horizontally of Peak and 1" to 12" below bottom of top cord of truss.
   3-Head can be installed no closer than 6" to Face of Truss.
3. DRY PENDENTS TO BE INSTALLED ON ALL DRY SYSTEM DROPS

HYDRAULIC CALCULATION NOTES :

WATER SUPPLY INFORMATION WALLOWA (HYDRANT 15E, EAST OF HOSPITAL)
1. 80PSI STATIC, 60PSI RESIDUAL @ 1200 GPM

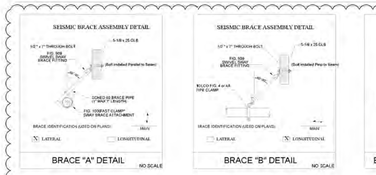
CALCULATIONS
1. CALC#1 LOWER WET CALCULATION
2. CALC#2 ATTIC DRY CALCULATION
3. CALC#3 ATTIC DRY CALCULATION

INDEX:

FIRE SPRINKLER SYSTEM SYMBOLS LEGEND:

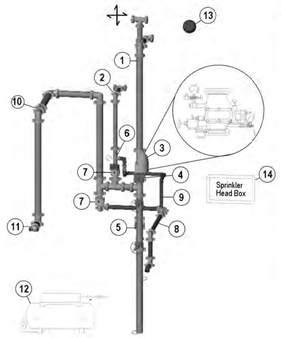
SYMBOL	DESCRIPTION
——	Approximate Hanger Location (See details)
——	Approximate Location of Grooved Coupling
★-0.0 FFE	Elevation from Floor to Centerline of Pipe
- -	Longitudinal Sway Brace (Sym Parallel to Pipe Being Braced)
\	Lateral Sway Brace (Sym. Perpendicular to Pipe Being Braced)
⬡	Hydraulic Reference Point

DETAILS:



STEEL PIPE HANGER SPACING

NOMINAL SIZE		MAX SPACING	
inches	(mm)	feet	(m)
3/4"	(20.0)	N/A	
1"	(25.0)	12'-0"	(3.66)
1-1/4"	(32.0)	12'-0"	(3.66)
1-1/2"	(40.0)	15'-0"	(4.57)
2"	(50.8)	15'-0"	(4.57)
2-1/2"	(63.5)	15'-0"	(4.57)
3"	(76.2)	15'-0"	(4.57)
4"	(101.6)	15'-0"	(4.57)
6"	(152.4)	15'-0"	(4.57)



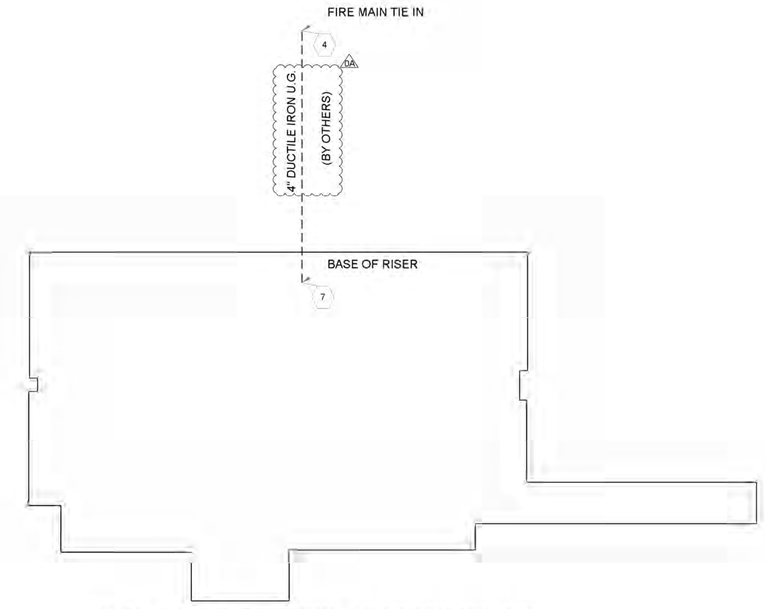
Riser Detail
Scale: N.T.S.

Note: Underground to be flushed and hydrostatically tested per NFPA 13 and local codes prior to connecting sprinkler system

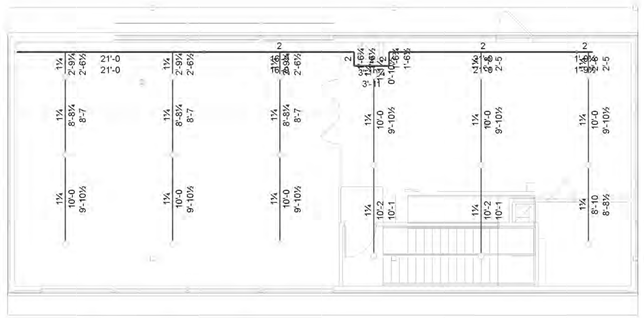
Riser Notes

1. 4" Dry Riser
2. 2.5" Wet Riser 0A
3. 4" Tyco DPV-1 Dry Valve
4. 4" Butterfly Valve
5. 4" Ames C200 Backflow 0A
6. 2.5" Reliable CR Riser Manifold with pressure relief, flow switch, and test-drain.
7. 2.5" Butterfly Valve
8. 2.5" for Testing of backflow device
9. 2" Drain to exterior
10. 4" FDC Check Valve
11. 4" FDC with 2 - 2.5" Threaded ports and signage 0A
12. Air Compressor (General OL series, System Capacity: 335gal, 1/2 HP)
13. Alarm Bell
14. Sprinkler Box with spare sprinklers and wrench

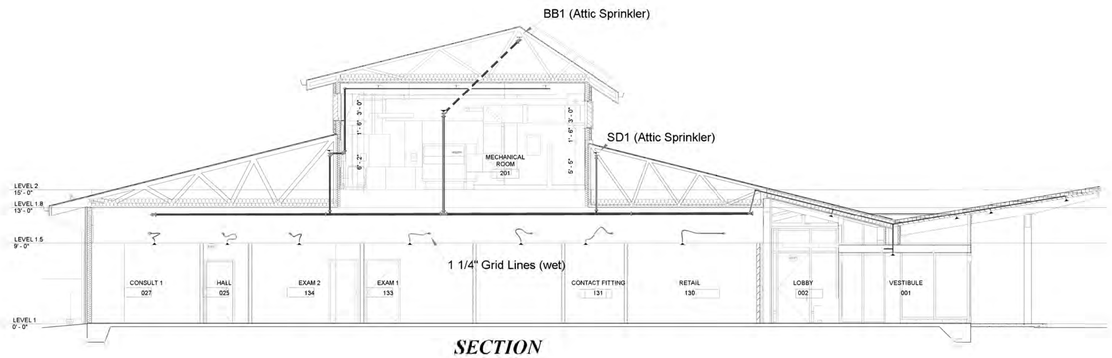
Provisions for forward flow testing of backflow through 2 1/2" main drain connection capable of flowing 423.43 GPM @ Fitot of 6 PSI.



ALL WORK ON THE SITE PLAN (BY OTHERS), SHOWN FOR REFERENCE ONLY.



2ND FLOOR MECHANICAL



SECTION

0 4' 8' 16'

GENERAL NOTES
1. ALL MATERIAL TO BE NEW AND U.L. APPROVED.
2. ALL HANGERS AND SEISMIC RESTRAINTS TO BE IN ACCORDANCE WITH NFPA #13.
3. OWNER TO MAINTAIN TEMPERATURE IN ALL WARM AREAS, ABOVE 40 DEG. MIN.

REVISIONS

DATE	REVISION	DESCRIPTION	BY
9-20-11	0	ISSUED FOR REVIEW	FJC
10-26-11	0A	INTERFACE ENGINEERING REVIEW COMMENTS	FJC

SPRINKLER SYMBOL DESCRIPTION

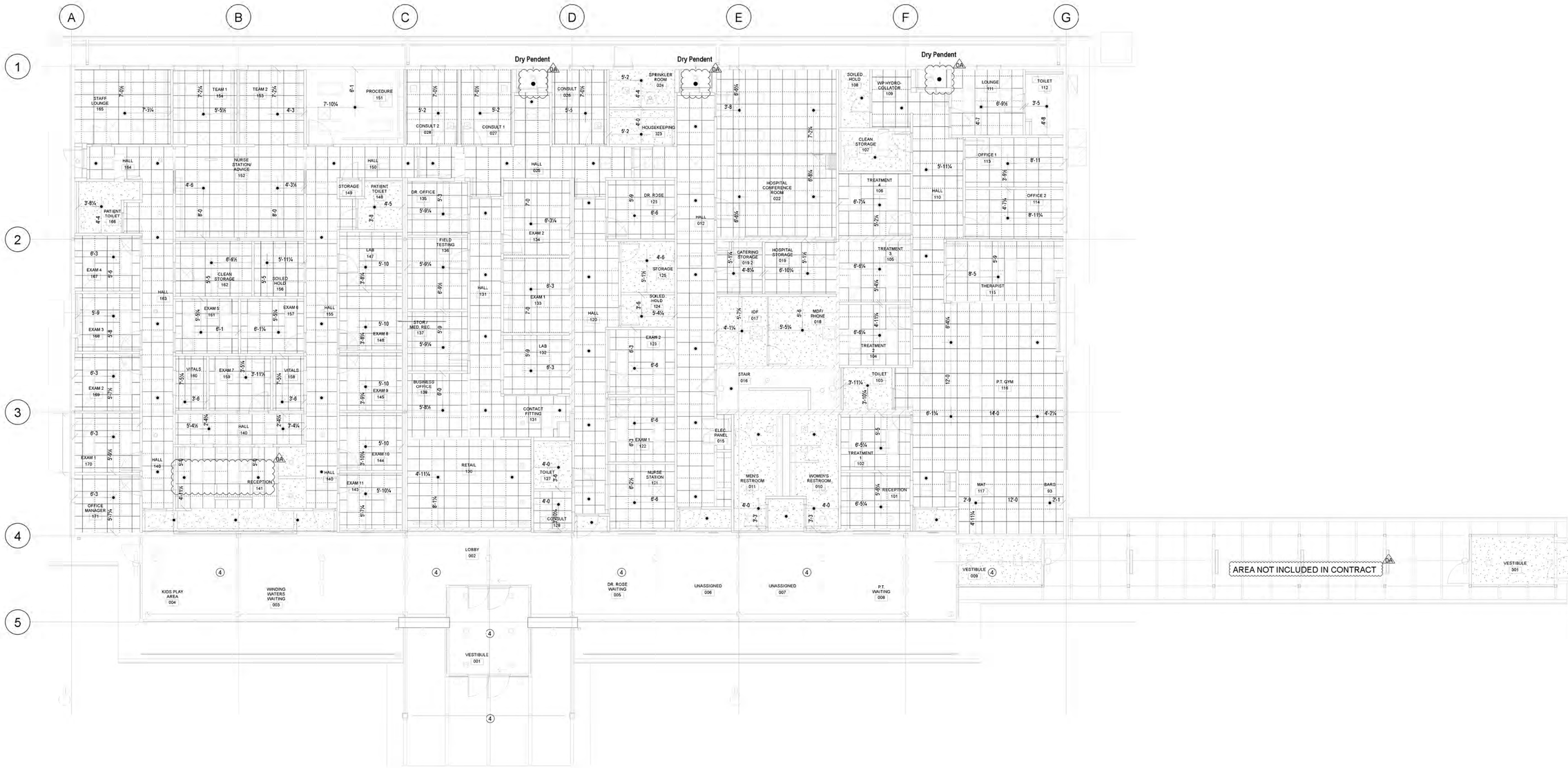
SYMBOL	SIZE	STYLE	MAKE	FINISH	MODEL	TEMP.	K-FACTOR	SIN#	TOTAL
	1/2"	SSU	TYCO	PB	TY-FRB	200	5.6	TY3131	18
TOTAL SPRINKLERS SHOWN ON THIS SHEET									18
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT									244

SEVERSON FIRE PROTECTION
220 SE. DAVIS AVENUE
BEND, OREGON 97702
541-382-3720(OFFICE)

PROJECT

WALLOWA MEMORIAL HOSPITAL
WALLOWA COUNTY HEALTH CARE DISTRICT
ENTERPRISE, OREGON, 97828

Date	9/20/11
Scale	1/8"=1-0
Job No.	11-137FS
Drawn By	F.CALLFAS
Sheet No.	FP-1



RCP HEAD LAYOUT

0 4' 8' 16'

GENERAL NOTES

1. ALL MATERIAL TO BE NEW AND U.L. APPROVED.
2. ALL HANGERS AND SEISMIC RESTRAINTS TO BE IN ACCORDANCE WITH NFPA #13.
3. OWNER TO MAINTAIN TEMPERATURE IN ALL WARM AREAS, ABOVE 40 DEG. MIN.
4. COVERED BY ATTIC DRY SYSTEM

REVISIONS

DATE	REVISION	DESCRIPTION	BY
3-20-11	0	ISSUED FOR REVIEW	FJC
10-26-11	0A	INTERFACE ENGINEERING REVIEW COMMENTS	FJC

SPRINKLER SYMBOL DESCRIPTION

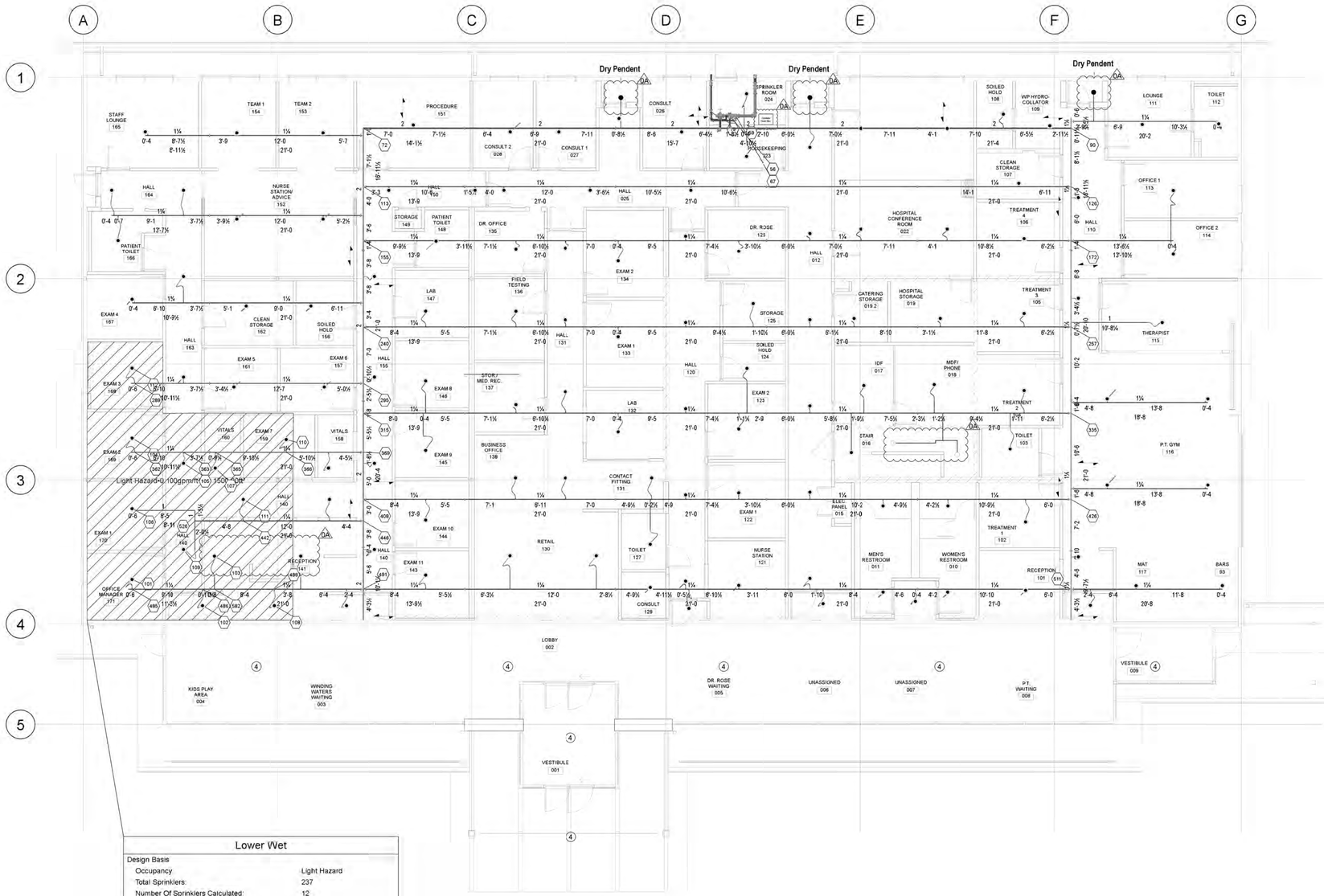
SYMBOL	SIZE	STYLE	MAKE	FINISH	MODEL	TEMP.	K-FACTOR	SIN#	TOTAL
•	1/2"	CONCEALED	TYCO	WHITE	RFII	155	5.6	TY3531	125
●	1/2"	DRY SSP	TYCO	CHROME	DS-1	155	5.6	TY3255	3
	1/2"	SSU	TYCO	PB	TY-FRB	155	5.6	TY3131	2
TOTAL SPRINKLERS SHOWN ON THIS SHEET									130
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT									244

SEVERSON FIRE PROTECTION
220 SE. DAVIS AVENUE
BEND, OREGON 97702
541-382-3720(OFFICE)

PROJECT

WALLOWA MEMORIAL HOSPITAL
WALLOWA COUNTY HEALTH CARE DISTRICT
ENTERPRISE, OREGON, 97828

Date	9/20/11
Scale	1/8"=1-0
Job No.	11-137FS
Drawn By	F.CALLFAS
Sheet No.	FP-2



Lower Wet	
Design Basis	
Occupancy:	Light Hazard
Total Sprinklers:	237
Number Of Sprinklers Calculated:	12
K-Factor:	5.6
Orifice Size:	0.5
Design Density:	0.100gpm/ft²
Average Density:	0.209gpm/ft²
Area of Application:	1500.00ft² (Actual 927.97ft²)
Demand at Base Of Riser or Point Of Connection	
Total Demand Flow(gpm):	194.16
Pressure(psi):	50.797
Water Supply Information At Time Of Design	
Static Pressure(psi):	80.000
Residual Pressure(psi):	60.000
Supply Flow(gpm):	1200.00
Total Demand Flow(gpm):	294.16
Total Demand Pressure(psi):	51.433

WET SYSTEM

0 4' 8' 16'

GENERAL NOTES

1. ALL MATERIAL TO BE NEW AND U.L. APPROVED.
2. ALL HANGERS AND SEISMIC RESTRAINTS TO BE IN ACCORDANCE WITH NFPA #13.
3. OWNER TO MAINTAIN TEMPERATURE IN ALL WARM AREAS, ABOVE 40 DEG. MIN.
4. COVERED BY ATTIC DRY SYSTEM

REVISIONS

DATE	REVISION	DESCRIPTION	BY
3-20-11	0	ISSUED FOR REVIEW	FJC
10-26-11	0A	INTERFACE ENGINEERING REVIEW COMMENTS	FJC

SPRINKLER SYMBOL DESCRIPTION

SYMBOL	SIZE	STYLE	MAKE	FINISH	MODEL	TEMP	K-FACTOR	SIN#	TOTAL
●	1/2"	CONCEALED	TYCO	WHITE	RFII	155	5.6	TY3531	125
●	1/2"	DRY SSP	TYCO	CHROME	DS-1	155	5.6	TY3255	3
	1/2"	SSU	TYCO	PB	TY-FRB	155	5.6	TY3131	2
TOTAL SPRINKLERS SHOWN ON THIS SHEET									130
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT									244

SEVERSON FIRE PROTECTION
220 SE. DAVIS AVENUE
BEND, OREGON 97702
541-382-3720(OFFICE)

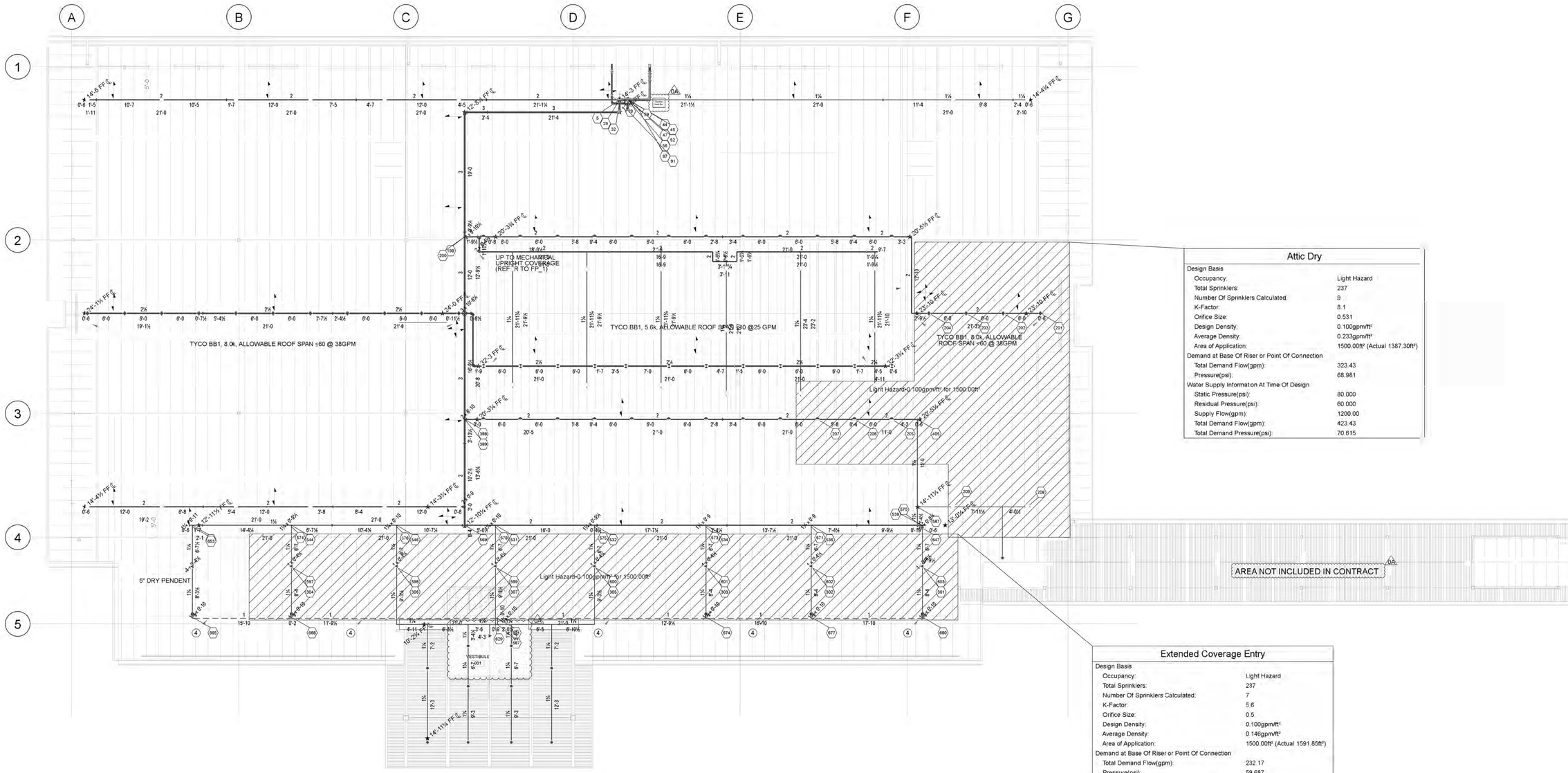
PROJECT

WALLOWA MEMORIAL HOSPITAL

WALLOWA COUNTY HEALTH CARE DISTRICT

ENTERPRISE, OREGON, 97828

Date	9/20/11
Scale	1/8"=1-0
Job No.	11-137FS
Drawn By	F.CALLFAS
Sheet No.	FP-3



Attic Dry	
Design Basis	
Occupancy:	Light Hazard
Total Sprinklers:	237
Number Of Sprinklers Calculated:	9
K-Factor:	8.1
Orifice Size:	0.531
Design Density:	0.100gpm/ft²
Average Density:	0.233gpm/ft²
Area of Application:	1500.00ft² (Actual 1387.30ft²)
Demand at Base Of Riser or Point Of Connection	
Total Demand Flow(gpm):	323.43
Pressure(psi):	68.981
Water Supply Information At Time Of Design	
Static Pressure(psi):	80.000
Residual Pressure(psi):	60.000
Supply Flow(gpm):	1200.00
Total Demand Flow(gpm):	423.43
Total Demand Pressure(psi):	70.615

Extended Coverage Entry	
Design Basis	
Occupancy:	Light Hazard
Total Sprinklers:	237
Number Of Sprinklers Calculated:	7
K-Factor:	5.6
Orifice Size:	0.5
Design Density:	0.100gpm/ft²
Average Density:	0.146gpm/ft²
Area of Application:	1500.00ft² (Actual 1591.85ft²)
Demand at Base Of Riser or Point Of Connection	
Total Demand Flow(gpm):	232.17
Pressure(psi):	59.687
Water Supply Information At Time Of Design	
Static Pressure(psi):	80.000
Residual Pressure(psi):	60.000
Supply Flow(gpm):	1200.00
Total Demand Flow(gpm):	332.17
Total Demand Pressure(psi):	60.572

DRY SYSTEM

0 4' 8' 16'

GENERAL NOTES

1. ALL MATERIAL TO BE NEW AND U.L. APPROVED.
2. ALL HANGERS AND SEISMIC RESTRAINTS TO BE IN ACCORDANCE WITH NFPA #13.
3. OWNER TO MAINTAIN TEMPERATURE IN ALL WARM AREAS, ABOVE 40 DEG. MIN.
4. 1" GANG DRAIN, EXCLUDED FROM CALCULATIONS - – – – –

REVISIONS

DATE	REVISION	DESCRIPTION	BY
3-20-11	0	ISSUED FOR REVIEW	FJC
10-26-11	0A	INTERFACE ENGINEERING REVIEW COMMENTS	FJC

SPRINKLER SYMBOL DESCRIPTION

SYMBOL	SIZE	STYLE	MAKE	FINISH	MODEL	TEMP	K-FACTOR	SIN#	TOTAL
●	1/2"	SSP	TYCO	CHROME	DS-1	155	5.6	TY3255	11
	1/2"	SSU	TYCO	BRASS	TY-FRB	200	5.6	TY3131	16
◆	3/4"	ATTIC	TYCO	BRASS	BB1	200	8.0	TY4180	11
⧗	1/2"	ATTIC	TYCO	BRASS	BB1	200	5.6	TY3180	12
▰	1/2"	ATTIC	TYCO	BRASS	SD-1	200	5.6	TY3183	24
◄	1/2"	EC. PEN	TYCO	WHITE	DS-ECC	155	5.6	TY3539	9
TOTAL SPRINKLERS SHOWN ON THIS SHEET									81
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT									244

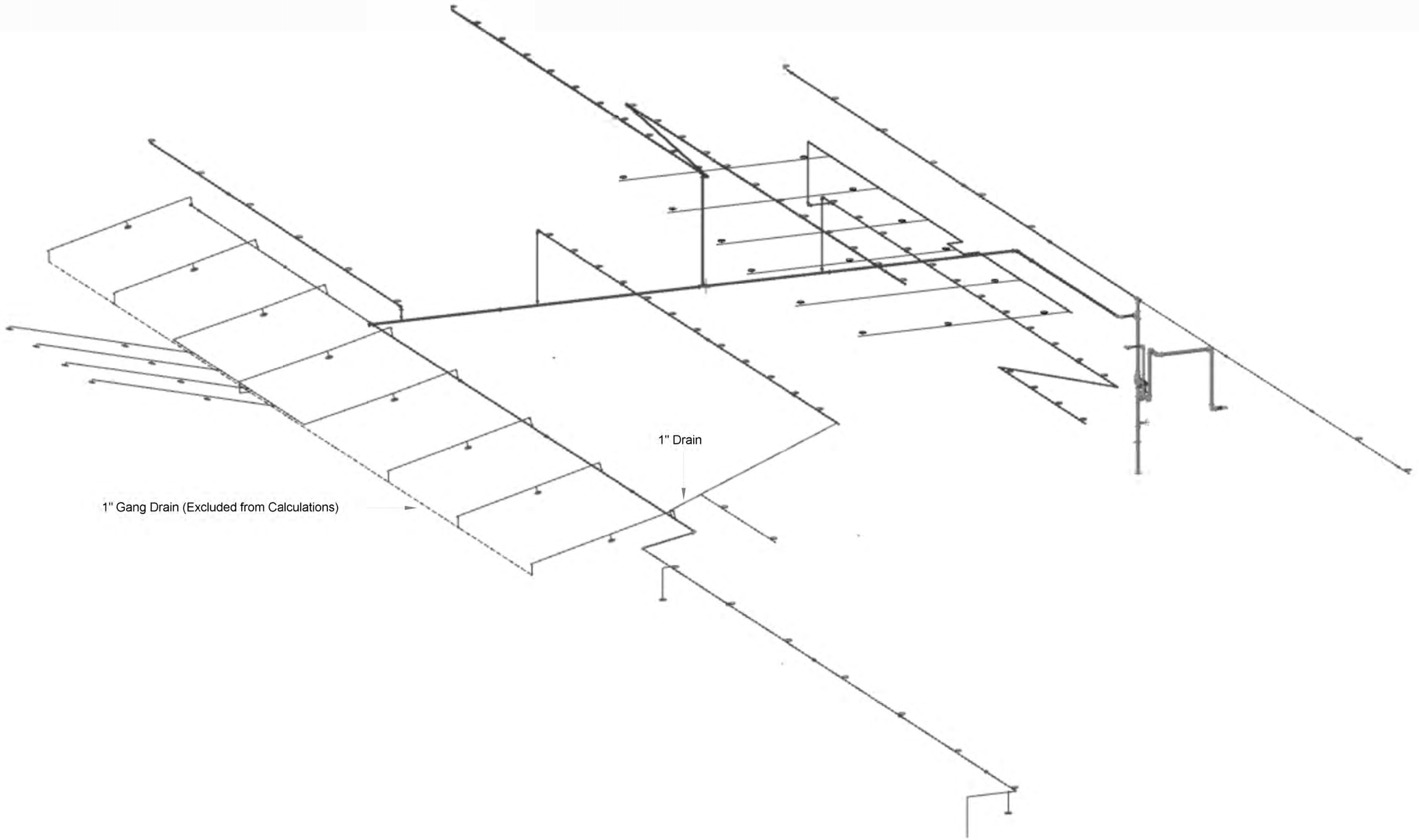
SEVERSON FIRE PROTECTION
220 SE. DAVIS AVENUE
BEND, OREGON 97702
541-382-3720(OFFICE)

PROJECT

WALLOWA MEMORIAL HOSPITAL

WALLOWA COUNTY HEALTH CARE DISTRICT
ENTERPRISE, OREGON, 97828

Date	9/20/11
Scale	1/8"=1-0
Job No.	11-137FS
Drawn By	F.CALLFAS
Sheet No.	FP-4



DRY SYSTEM ISOMETRIC

0 4' 8' 16'

GENERAL NOTES

1. ALL MATERIAL TO BE NEW AND U.L. APPROVED.
2. ALL HANGERS AND SEISMIC RESTRAINTS TO BE IN ACCORDANCE WITH NFPA #13.
3. OWNER TO MAINTAIN TEMPERATURE IN ALL WARM AREAS, ABOVE 40 DEG. MIN.

REVISIONS

DATE	REVISION	DESCRIPTION	BY
9-20-11	0	ISSUED FOR REVIEW	FJC
10-26-11	0A	INTERFACE ENGINEERING REVIEW COMMENTS	FJC

SPRINKLER SYMBOL DESCRIPTION

SYMBOL	SIZE	STYLE	MAKE	FINISH	MODEL	TEMP	K-FACTOR	SIN#	TOTAL
TOTAL SPRINKLERS SHOWN ON THIS SHEET									
TOTAL SPRINKLERS REQUIRED ON THIS CONTRACT									244

SEVERSON
FIRE PROTECTION
220 SE. DAVIS AVENUE
BEND, OREGON 97702
541-382-3720(OFFICE)

PROJECT

WALLOWA MEMORIAL HOSPITAL
WALLOWA COUNTY HEALTH CARE DISTRICT
ENTERPRISE, OREGON, 97828

Date	9/20/11
Scale	1/8"=1-0
Job No.	11-137FS
Drawn By	F.CALLFAS
Sheet No.	FP-5