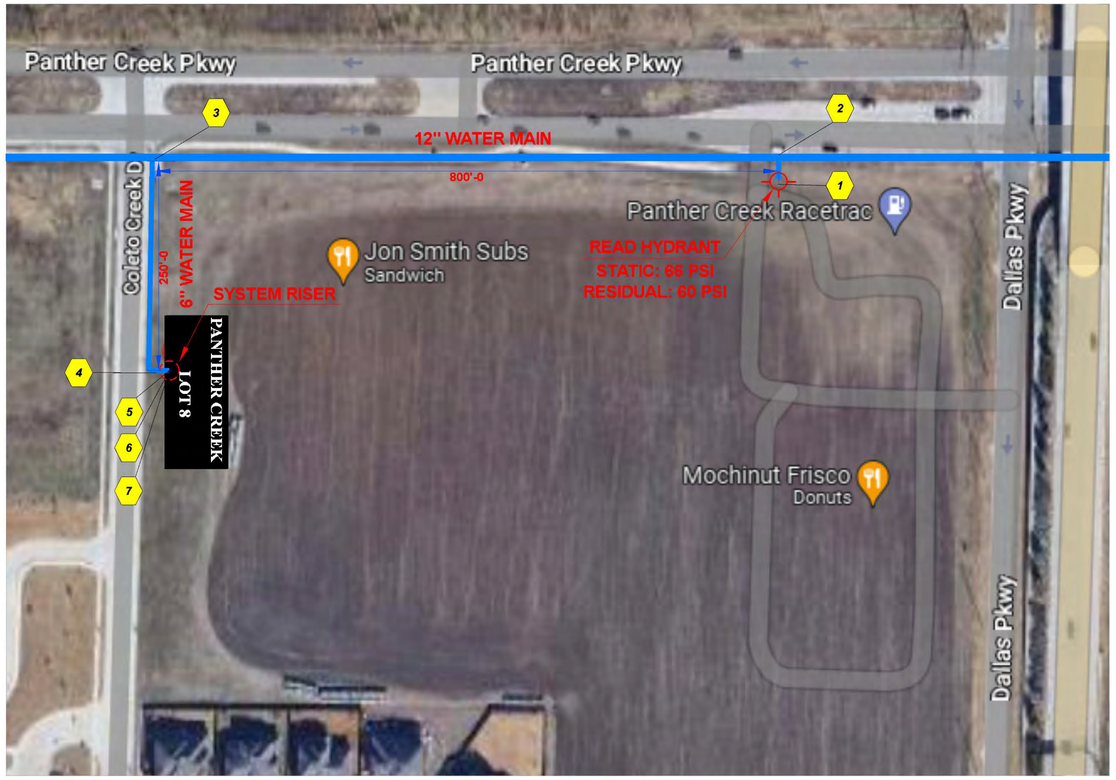
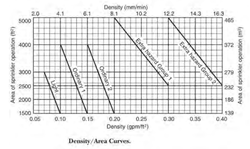


SITE PLAN FOR HYDRAULIC CALCULATION PURPOSES ONLY — **NORTH**

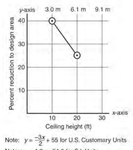
N.T.S.

PROTECTION CRITERIA - NFPA 13 -2016 (STANDARD COVERAGE)

OCCUPANCY CLASSIFICATION	DENSITY	HOSE ALLOW. (GPM)	MAXIMUM SPRINKLER SPACING (sq.ft.)	DESIGN BASIS	AREA IDENTIFICATION
SHELL SPACE	.15 OVER 1500sq.ft USE REDUCTION	250	130	ORDINARY HAZARD GROUP 1	OH1



Density/Area Curves.



Note: $y = -\frac{3}{2}x + 55$ for U.S. Customary Units

Note: $y = -4.8x + 54.6$ for S.I. Units

For ceiling height ≥10 ft and ≤20 ft, $y = -\frac{3}{2}x + 55$

For ceiling height <10 ft, $y = 40$

For ceiling height >20, $y = 0$

For SI units, 1 ft = 0.31 m.

Design Area Reduction for Quick-Response Sprinklers.

(1) Wet pipe system
(2) Light hazard or ordinary hazard occupancy
(3) 20 ft (6.1 m) maximum ceiling height
(4) No unprotected ceiling pockets exceeding 32 ft² (3.0 m²)
(5) No unprotected areas above cloud ceilings

Hose Stream Allowance and Water Supply Duration Requirements for Hydraulically Calculated Systems

Occupancy	Inside Hose gpm	Inside Hose L/min	Total Combined Inside and Outside Hose gpm	Total Combined Inside and Outside Hose L/min	Duration (minutes)
Light hazard	0, 50, or 100	0, 190, or 380	100	380	30
Ordinary hazard	0, 50, or 100	0, 190, or 380	250	950	60–90
Extra hazard	0, 50, or 100	0, 190, or 380	500	1900	90–120

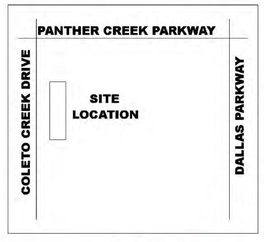
System Protection Area Limitations.

The maximum floor area on any one floor to be protected by sprinklers supplied by any one sprinkler system riser or combined system riser shall be as follows:

(1) Light hazard — 52,000 ft² (4830 m²)
(2) Ordinary hazard — 52,000 ft² (4830 m²)
(3) *Extra hazard — Hydraulically calculated — 40,000 ft² (3720 m²)
(4) Storage — High-piled storage (as defined in 3.9.1.16) and storage covered by other NFPA standards — 40,000 ft² (3720 m²)

Hazen–Williams C Values

Pipe or Tube	C Value*
Unlined cast or ductile iron	100
Black steel (dry systems including preaction)	100
Black steel (wet systems including deluge)	120
Galvanized steel (dry systems including preaction)	100
Galvanized steel (wet systems including deluge)	120
Plastic (listed) all	150
Cement-lined cast- or ductile iron	140
Copper tube, brass or stainless steel	150
Asbestos cement	140
Concrete	140



MAP LOCATOR

SPRINKLER PLAN SYMBOLS:

- GROOVE TEE
- GROOVE ELL
- GROOVE COUP.
- PIPE HANGER (TYP)
- NEW PIPE
- EXISTING PIPE
- HYDRAULIC REFERENCE POINT

* 4.00FF 6" — PIPE ELEVATION TAG (CENTER OF PIPE TO FINISHED FLOOR)

Engineered Corrosion Solutions

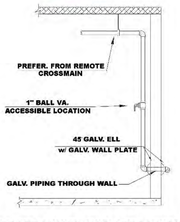
PAV-W

ECS Ejector Automatic Air Vent

AIR VENT RELIEF VALVE ASSEMBLY 1

TYCO RM-1 RISER MANIFOLD

1 WITH PRESSURE RELIEF VALVE



WET PIPE SYSTEM AUXILARY CONNECTION

DRAIN DETAILS

FRISCO
PROGRESS IN MOTION

Fire Hydrant Flow Test Data Report

Address of Test: 5055 PANTHER CREEK P
Work Order ID: 392336
Location Details: 5055 PANTHER CREEK P
Date/Time of Test: 2/9/2023 12:02:39PM
Test Performed By: DICKENS, RONNIE R at the City of Frisco

Static and Residual Hydrant

Main Size	Static (PSI)	Residual (PSI)
12	68	66

Flow Hydrant (Pitot)

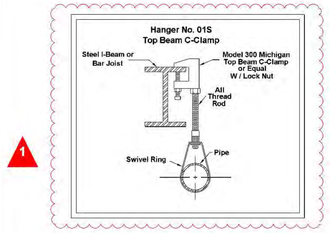
Main Size	Outlet Size Flowed	Pitot 1 (PSI)	Pitot 2 (PSI)	Coefficient
12	2.5	60	0	0.9

Operating Levels of Nearest Elevated Water Tank

Approximate Site Elevation (feet)	Level at Time of Flow Test (feet)	Water Normal Operating Range (feet)
654	803	801-821

Flow (GPM)
1,300

FLOW TEST RESULTS



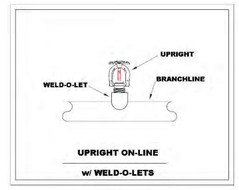
1

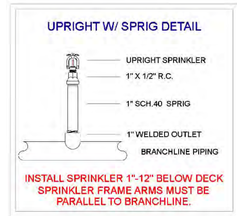
Unsupported Lengths.

For steel pipe, the unsupported horizontal length between the end sprinkler and the last hanger on the line shall not be greater than 36 in. (900 mm) for 1 in. (25 mm) pipe, 48 in. (1.2 m) for 1¼ in. (32 mm) pipe, and 60 in. (1.5 m) for 1½ in. (40 mm) or larger pipe.

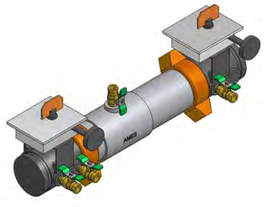
Hangers shall be designed to support five times the weight of the water-filled pipe plus 250 lb (115 kg) at each point of piping support.
These points of support shall be adequate to support the system.

HANGER DETAILS



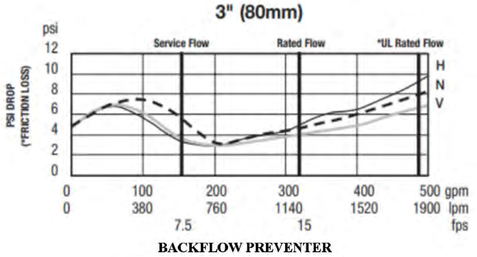


SPRINKLER HEAD DETAILS



AMES FIRE & WATERWORKS
A WATTS Brand

Colt™ Series C200 (Colt 200),



BACKFLOW PREVENTER

BUILDING INFORMATION

APPLICABLE CODES

2018 - INTERNATIONAL BUILDING CODE
2015 - INTERNATIONAL FIRE CODE
2016 - NFPA - 13

BUILDING AREA

BUILDING SQFT: 6,403

OCCUPANCY CLASSIFICATION

BUSINESS-B

GENERAL BUILDING HEIGHTS

31'-0 TOP OF PARAPET

TYPES OF CONSTRUCTION

STEEL CONSTRUCTION
TYPE II-B

SCOPE OF WORK

AUTOMATIC FIRE SPRINKLER SYSTEM TO BE INSTALLED THROUGHOUT BUILDING. UNDERGROUND SUPPLY TO BE DONE BY OTHERS.

- **ALL WELDED BRANCHLINES ARE SHOWN AS CUT LENGTHS FROM CENTER TO CENTER**
- **ALL THREADED BRANCHLINES ARE SHOWN AS TOTAL LENGTHS**
- **ALL CROSSMAINS WITH WELD-O-LETS ARE CUT LENGTHS AND CENTER TO CENTER and/or OUTLET TO OUTLET**

GENERAL NOTES:

WET-SYSTEM

1. SYSTEM LAYOUT SHOULD BE COORDINATED WITH OTHER TRADES FOR ACCURATE INSTALLATION. HYDRAULIC CALCULATIONS HAVE BEEN PERFORMED TO CONFIRM GENERAL LAYOUT.
2. SYSTEM DESIGN SHALL BE PER NFPA - 13 AND DESIGN SPECIFICATIONS AND MEET ALL BUILDING CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ).
3. FINAL COORDINATION AND LOCATIONS OF FIRE PROTECTION COMPONENTS INCLUDING SPRINKLERS, PIPE, ALARMS, DRAINS, TEST POINTS, ETC, WITH ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL COMPONENTS AND CALCULATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR MUST MAKE NOTE OF ALL FIELD OR COORDINATION CHANGES ON THE INSTALLATION DRAWINGS. ONCE COMPLETE THE CONTRACTOR SHALL SUPPLY RECORD DOCUMENT DRAWINGS TO THE OWNER FOR THEIR USE.
5. FORWARD COMPLETED CONTRACTOR MATERIAL TEST CERTIFICATES TO THE OWNER.
6. SUBMIT A REQUEST FOR INFORMATION (RFI), FOR QUESTIONS RELATED TO THE FIRE PROTECTION DOCUMENTS.
7. ALL INSPECTORS' TEST CONNECTIONS, LOW POINT AND MAIN DRAINS DISCHARGE OUTSIDE ON A SPLASH BLOCK OR APPROVED DRAIN LOCATIONS CAPABLE OF HANDLING FULL FLOW FROM DRAIN DISCHARGE AND DIVERTED AWAY FROM FINISHED SURFACES THAT MAY CAUSE DAMAGE. ALL VALVES (DRAINS, INSPECTORS TEST, CONTROL) SHALL BE IDENTIFIED AS REQUIRED BY NFPA 13. ALL INSPECTORS TEST VALVES SHALL BE LOCATED NO MORE THAN 6'-0 AFF
8. PENETRATIONS OF RATED WALLS OR ASSEMBLIES TO BE FIRE CAULKED WITH APPROVED MATERIAL AND METHODS PER APPLICABLE CODES AND ACCEPTANCE BY AUTHORITY HAVING JURISIDICTION (AHJ). IF APPLICABLE TO THE SPECIFICATIONS TO THIS PROJECT.
9. STEEL BEAM & BAR JOIST HANGER LOCATIONS ARE APPROXIMATE AND WILL MIGRATE TO THE NEAREST BEAM OR JOIST DURING INSTALLATION. ALL HANGERS TO BE SPACED PER NFPA 13
10. THREADED PIPE SHALL BE SCH40 BLACK WITH THREADED CAST IRON FITTINGS
11. GROOVED PIPE SHALL BE SCH10 BLACK w/ WELDED OUTLETS, ROLL GROOVED ENDS, AND GROOVED FITTINGS.
12. ALL SYSTEM COMPONENTS SHALL BE U.L. LISTED OR F.M. APPROVED. (VERIFY SPECIFICATIONS)
13. ALL SYSTEM COMPONENTS SHALL BE NEW.
14. CROSS MAIN PIPE TO HAVE A GROOVED CAP AT EACH END OF MAIN FOR FLUSHING
15. ALL VALVES TO BE LABELED WITH PROPER SIGNAGE.
16. DETAILED PIPE ROUTING NEAR ELECTRICAL EQUIPMENT SHALL BE PER NFPA 70 REQUIREMENTS.
17. PROVIDE DRAINAGE TO PREVENT THE FIRE DEPARTMENT CONNECTION PIPING FROM FREEZING
18. ALL CONTINUOUS OBSTRUCTIONS 4'-0 AND OVER TO HAVE SPRINKLER PROTECTION UNDER OBSTRUCTION
19. ALL SPRINKLERS SHALL BEQUICK RESPONSE
20. COORDINATE SPRINKLER TEMPERATURES NEAR HEAT-PRODUCING SOURCES INCLUDING AIR DIFFUSERS PER NFPA 13 REQUIREMENTS.
21. FIRE PROTECTION CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE ABILITY OF THE STRUCTURE TO ADEQUATELY SUPPORT THE FIRE SPRINKLER SYSTEM OR ANY APPURTENANCES THEREOF
22. THE OWNER IS RESPONSIBLE FOR ALL AREAS WITH WATER FILLED PIPE TO BE ADEQUATELY HEATED AND MAINTAINED ABOVE 40 DEGREES TO PREVENT SYSTEMS FROM FREEZING.
23. ALL HYDROSTATIC TESTING OF NEW SYSTEMS AND FLUSHING OF NEW UNDERGROUND SYSTEMS IS REQUIRED TO BE WITNESSED BY A REPRESENTATIVE OF THE AUTHORITY HAVING JURISDICTION. BEFORE ANY TEST OR INSPECTION. ALL PORTIONS OF THE AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED, TESTED, AND FLUSHED.
24. FIRE DEPARTMENT CONNECTION(S) (FDC) SHALL BE LOCATED WITHIN 100 FEET OF A FIRE HYDRANT AND SHALL BE LOCATED ON THE STREET SIDE OF BUILDINGS, FULLY VISIBLE AND RECOGNIZABLE FROM THE STREET OF NEAREST POINT OF FIRE DEPARTMENT VEHICLE ACCESS. FDC SHALL NOT BE CLOSER THAN 3 FEET TO ANY DOOR OR WINDOW OPENING AND SHALL NOT BE OBSTRUCTED BY TREES, SHRUBS, PARKING SPACES, WALLS OR ANY OTHER FIXED OR MOVABLE OBJECT. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE FDC INLETS. FDC INLETS SHALL BE LOCATED NOT LESS THAN 18" ABOVE FINISHED GRADE AND NOT MORE THAN 48" ABOVE FINISHED GRADE.
25. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS, PUMPS, TANKS, WATER LEVELS AND TEMPERATURES, CRITICAL AIR PRESSURES AND WATER-FLOW SWITCHES ON ALL SPRINKLER SYSTEMS SHALL BE ELECTRICALLY SUPERVISED BY A LISTED FIRE ALARM CONTROL UNIT
26. CONCEALED WORK: FIRE SPRINKLER PIPING SHALL NOT BE COVERED UP BY WALLS, SHEETROCK, CEILING TILES, ETC. UNTIL AFTER FIRE SPRINKLER ROUGH-IN & HYDRO INSPECTIONS ARE SIGNED OFF BY FIRE INSPECTOR. PIPING THAT IS COVERED OR CONCEALED PRIOR TO INSPECTION SIGNOFF SHALL BE EXPOSED FOR INSPECTION.

SEAL MUST BE SIGNED AND DATED TO BE VALID

STEEL PIPE HANGER SPACING

SIZE	BETWEEN HANGERS	TO END OF LINE	ARM-OVER LENGTH MAX.
1"	12'-0"	(SSP) 1'-0" (SSU) 3'-0"	(SSP) 1'-0"
1¼"	12'-0"	(SSP) 1'-0" (SSU) 4'-0"	(SSP) 1'-0" (SSU) 2'-0"
1½"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
2"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
2½"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
3"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
4"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
6"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"

*WHERE A BRANCH LINE ABOVE A CEILING SUPPLIES SPRINKLERS IN THE 'PENDENT' POSITION BELOW THE CEILING THE HANGER ASSEMBLY SUPPORTING THE PIPE SUPPLYING SPRINKLER IN THE PENDENT POSITION SHALL BE OF A TYPE THAT PREVENTS UPWARD MOVEMENT. THESE PENDENT SPRINKLERS REQUIRE A HANGER WITHIN 12 INCHES OF THE PENDENT SPRINKLER.
**WHERE A HANGER CAN NOT BE INSTALLED WITHIN 12 INCHES OF THE LAST PENDENT, THE PIPE SHALL BE EXTENDED BEYOND THE END SPRINKLER AND SUPPORTED BY AN ADDITIONAL HANGER.

CONTRACTOR:

ADDRESS:

REVISION

DATE	DESCRIPTION	BY
3/16/2023 1	REVISE PER REVIEW COMMENTS.	DLH

ALL ROOMS ARE LIGHT HAZARD UNLESS OTHERWISE NOTED
OH1 - ORDINARY HAZARD GROUP 1
OH2 - ORDINARY HAZARD GROUP 2

INDEX OF DRAWINGS

KFP

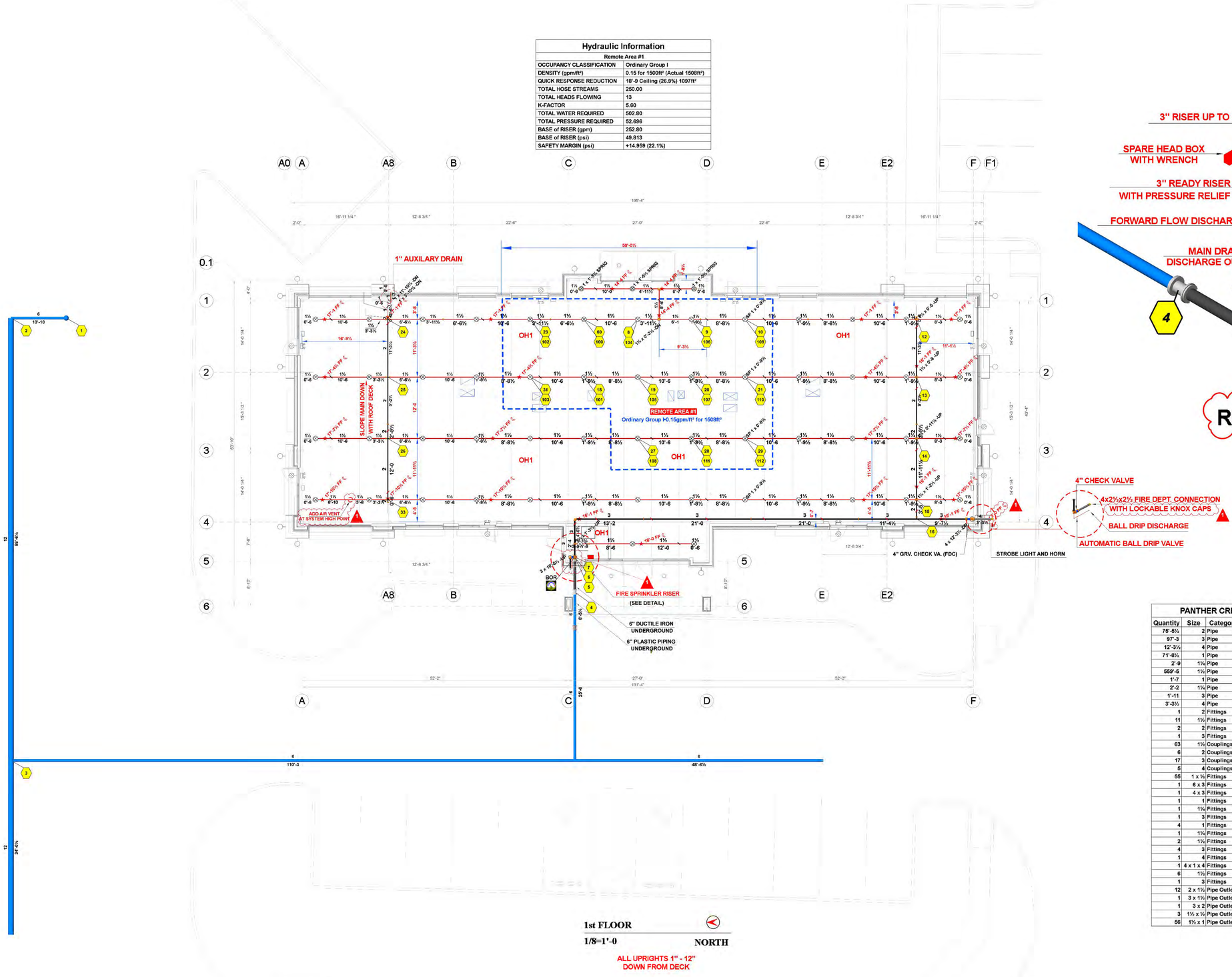
KODIAK FIRE PROTECTION, INC.
507 PRESTIGE CIRCLE, ALLEN, TX 75002
TXACR#3354 • TXSCR#1751231 • TXECR#1660290
PH: (469) 342-6819 FAX: (800) 335-6449
www.kodiakfiretexas.com

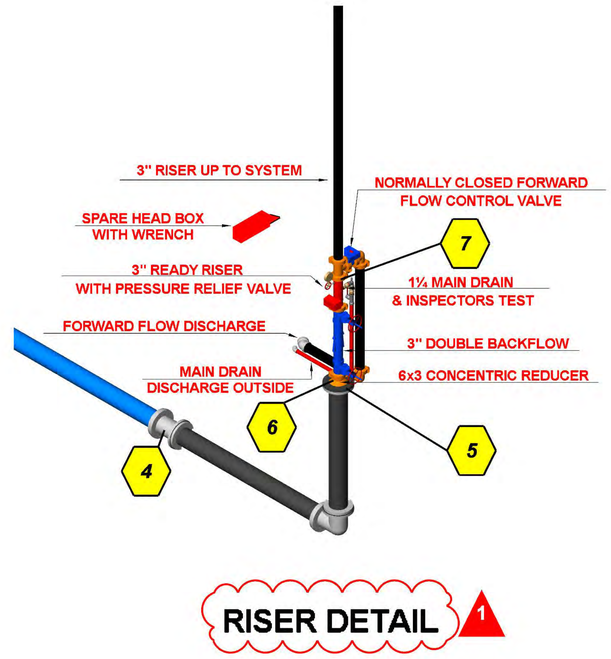
PROJECT NAME:

DRAWING TYPE: FIRE SPRINKLER PLANS

DATE:	3/16/2023
SCALE:	NOT TO SCALE
DESIGN BY:	RJF
DRAWN BY:	
CHECKED BY:	
SHEET:	FP-1 1 OF 2

Hydraulic Information	
Remote Area #1	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft²)	0.15 for 1500ft² (Actual 1508ft²)
QUICK RESPONSE REDUCTION	18'-9 Ceiling (26.9%) 1097ft²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	13
K-FACTOR	5.60
TOTAL WATER REQUIRED	502.80
TOTAL PRESSURE REQUIRED	52.696
BASE of RISER (gpm)	252.80
BASE of RISER (psi)	49.813
SAFETY MARGIN (psi)	+14.959 (22.1%)





RISER DETAIL 1

1st FLOOR
1/8=1'-0

NORTH

PANTHER CREEK LOT 8 - BOM			
Quantity	Size	Category	Description
75'-5½	2	Pipe	Pipe, Schedule 10
97'-3	3	Pipe	Pipe, Schedule 10
12'-3½	4	Pipe	Pipe, Schedule 10
71'-8½	1	Pipe	Pipe, Schedule 40
2'-9	1¼	Pipe	Pipe, Schedule 40
559'-5	1½	Pipe	Pipe, Schedule 40
1'-7	1	Pipe	Pipe, Schedule 40 (Galv)
2'-2	1½	Pipe	Pipe, Schedule 40 (Galv)
1'-11	3	Pipe	Pipe, Schedule 40 (Galv)
3'-3½	4	Pipe	Pipe, Schedule 40 (Galv)
1	2	Fittings	Grooved Drain Cap (1" Outlet)
11	1½	Fittings	FireLock® Cap
2	2	Fittings	FireLock® Cap
1	3	Fittings	FireLock® Cap
63	1½	Couplings	FireLock® Rigid Coupling
6	2	Couplings	FireLock® Rigid Coupling
17	3	Couplings	FireLock® Rigid Coupling
5	4	Couplings	FireLock® Rigid Coupling
55	1 x ½	Fittings	Threaded Reducer, CI
1	6 x 3	Fittings	Grooved Concentric Reducer
1	4 x 3	Fittings	Grooved Concentric Reducer
1	1	Fittings	Threaded, 45° Elbow, CI, Galv
1	1½	Fittings	Threaded, 45° Elbow, CI, Galv
1	3	Fittings	Threaded, 45° Elbow, CI, Galv
4	1	Fittings	Threaded, 90° Elbow, CI
1	1¼	Fittings	Threaded, 90° Elbow, CI
2	1½	Fittings	Grooved, 90° Elbow, DI, Org
4	3	Fittings	FireLock® 90° Elbow
1	4	Fittings	FireLock® 90° Elbow
1	4 x 1 x 4	Fittings	Drain Elbow
6	1½	Fittings	Grooved Tee, DI, Org
1	3	Fittings	Victaulic FireLock Tee
12	2 x 1½	Pipe Outlets	Grv x Mech Tee
1	3 x 1½	Pipe Outlets	Grv x Mech Tee
1	3 x 2	Pipe Outlets	Grv x Mech Tee
3	1½ x ½	Pipe Outlets	Thread Mech Tee
56	1½ x 1	Pipe Outlets	Thread Mech Tee

PANTHER CREEK LOT 8 - BOM (			
Quantity	Size	Category	Descr
1	6	Fittings	F-Grooved, Flange w
1		Flow Devices	Horn & Strobe
1	4 x 2½ x 2½	FDCs	FDC, Exposed, Siam
1	3	Valves	Valve, G-G Backflow
1	1	Valves	Ball, T-T
1	3	Valves	Valve, G-G Butterfly
1	4	Valves	Valve, G-G Check
1	1	Hangers	Top Beam C-Clamp -
1	1¼	Hangers	Top Beam C-Clamp -
48	1½	Hangers	Top Beam C-Clamp -
7	2	Hangers	Top Beam C-Clamp -
8	3	Hangers	Top Beam C-Clamp -
1	3	Riser	Grv Riser Manifold

PANTHER CREEK LOT 8 - BOM HEADS			
Quantity	Size	Category	Description

SEAL MUST BE SIGNED AND DATED TO BE VALID

STEEL PIPE HANGER SPACING

SIZE	BETWEEN HANGERS	TO END OF LINE	ARM-OVER LENGTH MAX.
1"	12'-0"	(SSP) 1'-0" (SSU) 3'-0"	(SSP) 1'-0"
1¼"	12'-0"	(SSP) 1'-0" (SSU) 4'-0"	(SSP) 1'-0" (SSU) 2'-0"
1½"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
2"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
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3"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
4"	15'-0"	(SSP) 1'-0" (SSU) 5'-0"	(SSP) 1'-0" (SSU) 2'-0"
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*WHERE A BRANCH LINE ABOVE A CEILING SUPPLIES SPRINKLERS IN THE PENDENT POSITION BELOW THE CEILING THE HANGER ASSEMBLY SUPPORTING THE PIPE SUPPLYING SPRINKLER IN THE PENDENT POSITION SHALL BE OF A TYPE THAT PREVENTS UPWARD MOVEMENT. THESE PENDENT SPRINKLERS REQUIRE A HANGER WITHIN 12 INCHES OF THE PENDENT SPRINKLER.
**WHERE A HANGER CAN NOT BE INSTALLED WITHIN 12 INCHES OF THE LAST PENDENT, THE PIPE SHALL BE EXTENDED BEYOND THE END SPRINKLER AND SUPPORTED BY AN ADDITIONAL HANGER.

CONTRACTOR:

ADDRESS:

REVISION

DATE	DESCRIPTION	BY

ALL ROOMS ARE LIGHT HAZARD UNLESS OTHERWISE NOTED
OH1 - ORDINARY HAZARD GROUP 1
OH2 - ORDINARY HAZARD GROUP 2

Sprinkler Legend

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
⊗	Victaulic	V2704	FL-QR	55	5.60	Upright	½	Quick	Brass	200 °F	ON-LINE
⊗	Victaulic	V2704	FL-QR	3	5.60	Upright	½	Quick	Brass	200 °F	SPRIG
				Total = 58							

KODIAK FIRE PROTECTION, INC.
507 PRESTIGE CIRCLE, ALLEN, TX 75002
TXACR#3354 • TXSCR#1751231 • TXECR#1660290
PH: (469) 342-6819 FAX: (800) 335-6449
www.kodiakfiretexas.com

KFP

DATE:	3/16/2023
SCALE:	1/8" = 1'-0
DESIGN BY:	RJF
DRAWN BY:	
CHECKED BY:	
PROJECT NAME:	
SHEET:	FP-2 2 OF 2
DRAWING TYPE:	FIRE SPRINKLER PLANS