



Fire Marshal Division
P.O. Box 370
Lillington, NC 27546
910-893-7580

Reviewed for Fire Code Compliance
 Leslie Jackson
12/17/2024 8:18:50 AM

Application for Plan Review

Permit Type: _____

Date Received: _____ Received By: _____

Name of Project: _____

Physical Address of Project: _____

Plans Submitted By: _____

Project Phone: (_____) - ____ - ____

Contact Person/Address: _____

Contact Phone: (_____) - ____ - ____ (_____) - ____ - ____

Contractor's Name/Info: _____

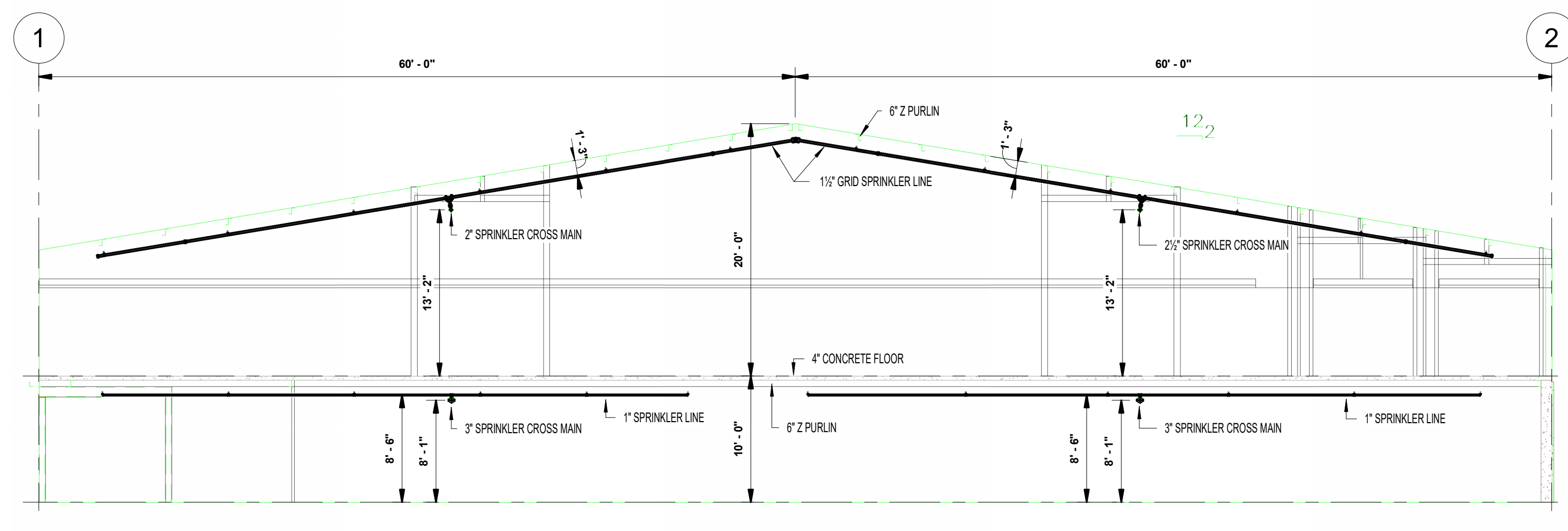
Contractor's Phone: (_____) - ____ - ____

Contact Email: _____

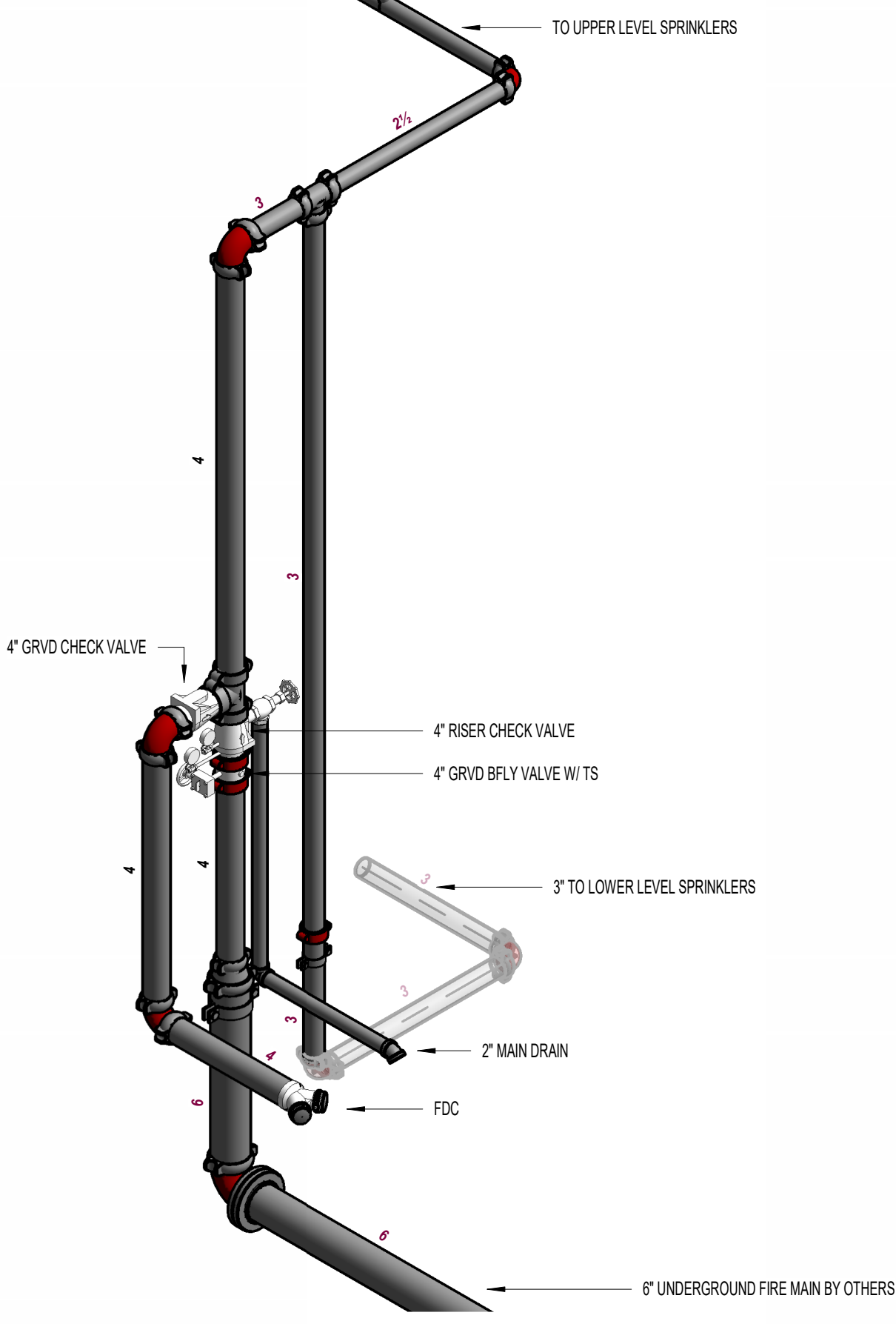
- **Plans that are submitted will be reviewed as quickly as possible with an average time of review between 7-10 working days.**
- **Status checks may be conducted on plan reviews by visiting the website <http://hteweb.harnett.org/Click2GovBP/Index.jsp> or by calling the Harnett County Central Permitting Office (910-893-7525 : Opt. 2), or the Harnett County Fire Marshal's Office (910-893-7580).**
- **Approved plans must be picked up from the Central Permitting Office and all fees paid before any required inspections can be conducted.**

ENCLOSURE MODEL: 400T-AL
 JOB: FUQUAY VARINA STORAGE
 DRAWN BY: PP SCALE: NONE DATE: JUNE 2015
 REMOVABLE ACCESS PANEL: 28 1/4" x 51 1/2" ONE EACH SIDE
 HINGED DRAIN OPENING
 3/4" AIR WATER TIGHT GASKET PER ASSE 1000 (MIN)

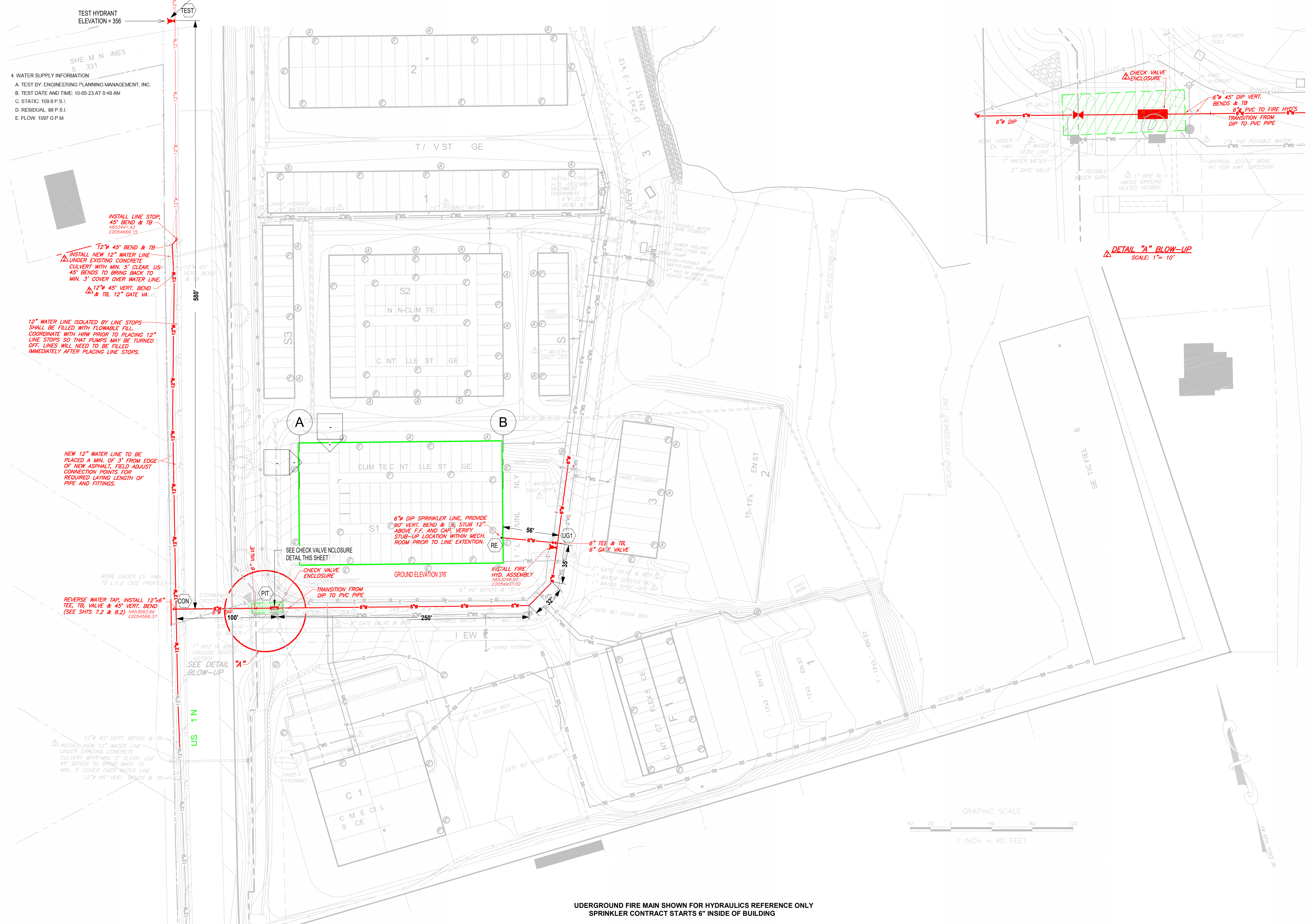
SAFETY COVER
 FRAMING: 2x4 @ 16" O.C. (MIN) 2x6 @ 16" O.C. (MAX)
 6. MODEL PARTS TO ENCLOSE
 7. MODEL PARTS TO ENCLOSE
 8. MODEL PARTS TO ENCLOSE
 9. MODEL PARTS TO ENCLOSE
 10. MODEL PARTS TO ENCLOSE
 11. MODEL PARTS TO ENCLOSE
 12. MODEL PARTS TO ENCLOSE
 13. MODEL PARTS TO ENCLOSE
 14. MODEL PARTS TO ENCLOSE
 15. MODEL PARTS TO ENCLOSE
 16. MODEL PARTS TO ENCLOSE
 17. MODEL PARTS TO ENCLOSE
 18. MODEL PARTS TO ENCLOSE
 19. MODEL PARTS TO ENCLOSE
 20. MODEL PARTS TO ENCLOSE
 21. MODEL PARTS TO ENCLOSE
 22. MODEL PARTS TO ENCLOSE
 23. MODEL PARTS TO ENCLOSE
 24. MODEL PARTS TO ENCLOSE
 25. MODEL PARTS TO ENCLOSE
 26. MODEL PARTS TO ENCLOSE
 27. MODEL PARTS TO ENCLOSE
 28. MODEL PARTS TO ENCLOSE
 29. MODEL PARTS TO ENCLOSE
 30. MODEL PARTS TO ENCLOSE
 31. MODEL PARTS TO ENCLOSE
 32. MODEL PARTS TO ENCLOSE
 33. MODEL PARTS TO ENCLOSE
 34. MODEL PARTS TO ENCLOSE
 35. MODEL PARTS TO ENCLOSE
 36. MODEL PARTS TO ENCLOSE
 37. MODEL PARTS TO ENCLOSE
 38. MODEL PARTS TO ENCLOSE
 39. MODEL PARTS TO ENCLOSE
 40. MODEL PARTS TO ENCLOSE
 41. MODEL PARTS TO ENCLOSE
 42. MODEL PARTS TO ENCLOSE
 43. MODEL PARTS TO ENCLOSE
 44. MODEL PARTS TO ENCLOSE
 45. MODEL PARTS TO ENCLOSE
 46. MODEL PARTS TO ENCLOSE
 47. MODEL PARTS TO ENCLOSE
 48. MODEL PARTS TO ENCLOSE
 49. MODEL PARTS TO ENCLOSE
 50. MODEL PARTS TO ENCLOSE
 51. MODEL PARTS TO ENCLOSE
 52. MODEL PARTS TO ENCLOSE
 53. MODEL PARTS TO ENCLOSE
 54. MODEL PARTS TO ENCLOSE
 55. MODEL PARTS TO ENCLOSE
 56. MODEL PARTS TO ENCLOSE
 57. MODEL PARTS TO ENCLOSE
 58. MODEL PARTS TO ENCLOSE
 59. MODEL PARTS TO ENCLOSE
 60. MODEL PARTS TO ENCLOSE
 61. MODEL PARTS TO ENCLOSE
 62. MODEL PARTS TO ENCLOSE
 63. MODEL PARTS TO ENCLOSE
 64. MODEL PARTS TO ENCLOSE
 65. MODEL PARTS TO ENCLOSE
 66. MODEL PARTS TO ENCLOSE
 67. MODEL PARTS TO ENCLOSE
 68. MODEL PARTS TO ENCLOSE
 69. MODEL PARTS TO ENCLOSE
 70. MODEL PARTS TO ENCLOSE
 71. MODEL PARTS TO ENCLOSE
 72. MODEL PARTS TO ENCLOSE
 73. MODEL PARTS TO ENCLOSE
 74. MODEL PARTS TO ENCLOSE
 75. MODEL PARTS TO ENCLOSE
 76. MODEL PARTS TO ENCLOSE
 77. MODEL PARTS TO ENCLOSE
 78. MODEL PARTS TO ENCLOSE
 79. MODEL PARTS TO ENCLOSE
 80. MODEL PARTS TO ENCLOSE
 81. MODEL PARTS TO ENCLOSE
 82. MODEL PARTS TO ENCLOSE
 83. MODEL PARTS TO ENCLOSE
 84. MODEL PARTS TO ENCLOSE
 85. MODEL PARTS TO ENCLOSE
 86. MODEL PARTS TO ENCLOSE
 87. MODEL PARTS TO ENCLOSE
 88. MODEL PARTS TO ENCLOSE
 89. MODEL PARTS TO ENCLOSE
 90. MODEL PARTS TO ENCLOSE
 91. MODEL PARTS TO ENCLOSE
 92. MODEL PARTS TO ENCLOSE
 93. MODEL PARTS TO ENCLOSE
 94. MODEL PARTS TO ENCLOSE
 95. MODEL PARTS TO ENCLOSE
 96. MODEL PARTS TO ENCLOSE
 97. MODEL PARTS TO ENCLOSE
 98. MODEL PARTS TO ENCLOSE
 99. MODEL PARTS TO ENCLOSE
 100. MODEL PARTS TO ENCLOSE



1 BUILDING CROSS SECTION
 1/8" = 1'-0"



2 SPRINKLER RISER DETAIL (ISOMETRIC)



3 SITE
 1" = 50'-0"

GENERAL NOTES

- PROJECT INFORMATION:
 - PROJECT NAME: BAUCOM BUSINESS PLAZA (STORAGE)
 - LOCATION: 11132 U.S. 401 N FUQUAY VARINA, NC 27526
- BUILDING CONSTRUCTION: NEW CONSTRUCTION
 - EXTERIOR: STEEL WAINSCOT / MASONRY
 - INTERIOR: 2 PURLINS ON STEEL BEAMS
 - FLOOR: CONCRETE
 - NUMBER OF FLOORS: 2 FLOOR
 - TOTAL SQUARE FEET: 48,000 SQFT
 - BUILDING HEIGHT: 30'-0"
- DESIGN MODIFIED PER NFPA 13 (2013)
 - TYPE OF SYSTEM: WET
 - MISCELLANEOUS STORAGE
 - STORAGE HEIGHT: 12'-0" MAX
 - DESIGNED TO ORDINARY HAZARD II, (20 GPM OVER THE MOST REMOTE 1500 SQFT) WITH 250 GPM HOSE ALLOWANCE
- WATER SUPPLY INFORMATION:
 - TEST BY: ENGINEERING PLANNING MANAGEMENT, INC.
 - TEST DATE AND TIME: 10-05-23 AT 9:48 AM
 - STATIC: 109.8 PSI
 - RESIDUAL: 86 PSI
 - FLOW: 1597 G.P.M.
 - SOURCE: FIRE HYDRANT ON 12' CITY MAIN @ 11132 US 01 N, FUQUAY VARINA, NC
- UNDERGROUND FIRE MAIN:
 - NEW BY FIRE MAIN BY OTHERS, SHOWN FOR HYDRAULIC REFERENCE ONLY.
 - SPRINKLER CONTRACT STARTS AT A 6" CONNECTION INSIDE BUILDING
- PIPE AND FITTINGS:
 - RISER, FEED MAIN, CROSS-MAIN
 - PIPE: SCHEDULE 10
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - CONNECTIONS: WELDED GROOVED OUTLETS U.S.O.
 - GRID BRANCHLINES TO BE WELDED:
 - PIPE: 1 1/2" SCHEDULE 10 GROOVED U.S.O.
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - ARMOVERS: 1" SCHEDULE 40
 - FITTINGS: STANDARD WEIGHT THREADED FITTINGS
- FIRE SPRINKLER SYSTEM:
 - ALL MATERIALS AND INSTALLATION SHALL CONFORM TO NFPA
 - CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVE-GROUND PIPING SHALL BE COMPLETED AND COPIES BE PROVIDED TO THE OWNER AND AUTHORITY HAVING JURISDICTION AS DIRECTED.
- GENERAL MATERIALS:
 - ALL COMPONENTS AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED AND/OR FACTORY MUTUAL APPROVED.
 - ALL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH NFPA AND/OR MANUFACTURERS LITERATURE.
- SPRINKLER HEADS:
 - ALL SPRINKLER HEADS SHALL BE LISTED AND APPROVED FOR USE AS SPECIFIED PER NFPA 13 AND FM.
- HANGERS AND SUPPORTS:
 - HANGER ROD FOR PIPE 1 1/4" SHALL BE 3/8" MACHINE THREAD ROD
 - HANGER ROD FOR PIPE 6"-8" SHALL BE 1/2" MACHINE THREAD ROD
 - MISCELLANEOUS STORAGE
 - STORAGE HEIGHT: 12'-0" MAX
 - DESIGNED TO ORDINARY HAZARD II, (20 GPM OVER THE MOST REMOTE 1500 SQFT) WITH 250 GPM HOSE ALLOWANCE
- VALVES AND SPECIAL EQUIPMENT:
 - ALL VALVES AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED/CLASSIFIED AND/OR FACTORY MUTUAL APPROVED IN CONFORMANCE WITH NFPA 13 AND SPECIFICATIONS
 - FIRE DEPARTMENT CONNECTION:
 - LOCATION: AT HOT BOX NEAR 2ND STREET (BY OTHERS)
 - FABRICATION:
 - FABRICATION SHALL BE PERFORMED BY EXPERIENCED WORKMEN
 - WELDING SHALL BE BY A CERTIFIED WELDER AND COMPLY WITH A.W.S. 10.9 AR-3
 - NO WELDING SHALL BE PERFORMED ON JOB SITE
 - DUE AND PROPER CARE SHALL BE TAKEN TO REMOVE CUT/DRILLED COUPONS FROM PIPING DURING THE WELDING PROCESS
 - THREADS AND GROOVES FOR EACH TYPE OF FITTING SHALL BE CUT OR ROLLED TO CONFORM WITH THE FITTINGS MANUFACTURER'S LISTED REQUIREMENT.
- INSTALLATION:
 - INSTALLATION SHALL BE PERFORMED BY EXPERIENCED FIRE SPRINKLER WORKMEN
 - INSTALLATION SHALL CONFORM TO NFPA 13 STANDARD.
- SPECIAL NOTES:
 - WATER SHIELDS, WHEN REQUIRED TO LIMIT SPRINKLER DISCHARGE ON ELECTRICAL EQUIPMENT, PANELS, AND SWITCH GEAR, SHALL BE PROVIDED AND INSTALLED BY OTHERS
 - CENTRAL STATION ALARM AND/OR EVACUATION ALARM SYSTEM SHALL BE PROVIDED AND INSTALLED BY OTHERS
 - SWITCHES AND BELLS FURNISHED AND MOUNTED BY SPRINKLER CONTRACTOR SHALL BE WIRED AND CONNECTED BY OTHERS AND IF REQUIRED TO CONNECT TO BUILDING'S ALARM SYSTEM IT SHALL ALSO BE EXTENDED WITH WIRING TO THE MONITORING ALARM SYSTEM BY OTHERS.

IMPORTANT
 In locations that are subject to freezing conditions, it is the owner's responsibility to provide heat throughout areas protected by wet pipe sprinkler systems and in enclosures for dry pipe, deluge or other types of valves controlling water supplies to sprinkler systems.

This drawing including all information and design concept herein contained is the property of Carolina Fire Protection Company, Inc. and is loaned upon express conditions that the same be returned to CFP, Inc. upon request; all information contained herein shall be treated as secret, and confidential; no reproduction of this drawing or any part thereof shall be made without written consent of CFP, Inc.

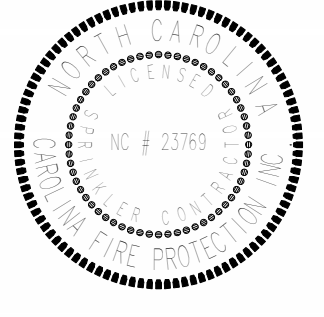
CONTRACT RESPONSIBILITIES	
ITEM	C.F.P. / OTHERS
STREET WATER CONNECTION	N/A
UNDERGROUND WATER MAINS	N/A
EXCAVATIONS	N/A
BACKFILL	N/A
WIRING	N/A
PAINTING	N/A

SYMBOLS	
	GATE VALVE (SEE NOTES)
	FIRE HOSE ASSEMBLY
	FLOW SWITCH (FS)
	MONITOR SWITCH
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	BUTTERFLY VALVE
	FIRE DEPT CONN (SIDE WALK)
	POST INDICATOR VALVE (PIV)
	KEY GATE SECTIONAL VALVE
	ALARM VALVE (ALV)
	DRY PIPE VALVE
	WAFAER CHECK VALVE
	SWING CHECK VALVE
	SYSTEM RISER
	INSPECTOR'S TEST
	GLOBE VALVE
	FLANGED CONNECTION
	ELECTRIC BELL
	WATER MOTOR GONGS (WVG)
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	FIRE DEPT CONN (SIDE WALK)
	POST INDICATOR VALVE (PIV)
	KEY GATE SECTIONAL VALVE
	ALARM VALVE (ALV)
	DRY PIPE VALVE
	WAFAER CHECK VALVE
	SWING CHECK VALVE
	SYSTEM RISER
	INSPECTOR'S TEST
	GLOBE VALVE
	FLANGED CONNECTION
	ELECTRIC BELL
	WATER MOTOR GONGS (WVG)
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	FIRE DEPT CONN (SIDE WALK)
	POST INDICATOR VALVE (PIV)
	KEY GATE SECTIONAL VALVE
	ALARM VALVE (ALV)
	DRY PIPE VALVE
	WAFAER CHECK VALVE
	SWING CHECK VALVE
	SYSTEM RISER
	INSPECTOR'S TEST
	GLOBE VALVE
	FLANGED CONNECTION

ABBREVIATIONS	
BOS	Bottom of Beam
BOB	Bottom of Deck
BOP	Bottom of Pipe
BTB	Bottom Top of Steel
DO	Drill
HY	Hose Valve
M.C.	Manhole and Cap
NC	Not in Contract
NTS	Not to Scale
OSU	Open Bar Joint
PRV	Pressure Reducing Valve
RM	Roof Membrn
SP	Staircase
TOS	Top of Beam
TOP	Top of Floor
TOS	Top of Steel
UND	Under Floor/Chimney

SYSTEM TYPE	
WET	<input type="checkbox"/> DELUGE <input type="checkbox"/>
DRY	<input type="checkbox"/> PREACTION <input type="checkbox"/>

APPROVALS	
<input type="checkbox"/> ISO	OUT IN
<input type="checkbox"/> IRI	OUT IN
<input type="checkbox"/> FM	OUT IN
<input type="checkbox"/>	OUT IN



CAROLINA FIRE PROTECTION
 4055 HODGES CHAPEL ROAD
 DUNN, N.C. 28334
 Phone (910) 892-1700
 Fax (910) 892-7322

CONTRACT NAME:
BAUCOM BUSINESS PLAZA (STORAGE)
 11132 U.S. 401 N FUQUAY VARINA, NC 27526

CONTRACT WITH: Owner

DESCRIPTION: **SITE PLAN, MISC NOTES & DETAILS**

CHECKED BY: Checker
 DATE: Issue Date

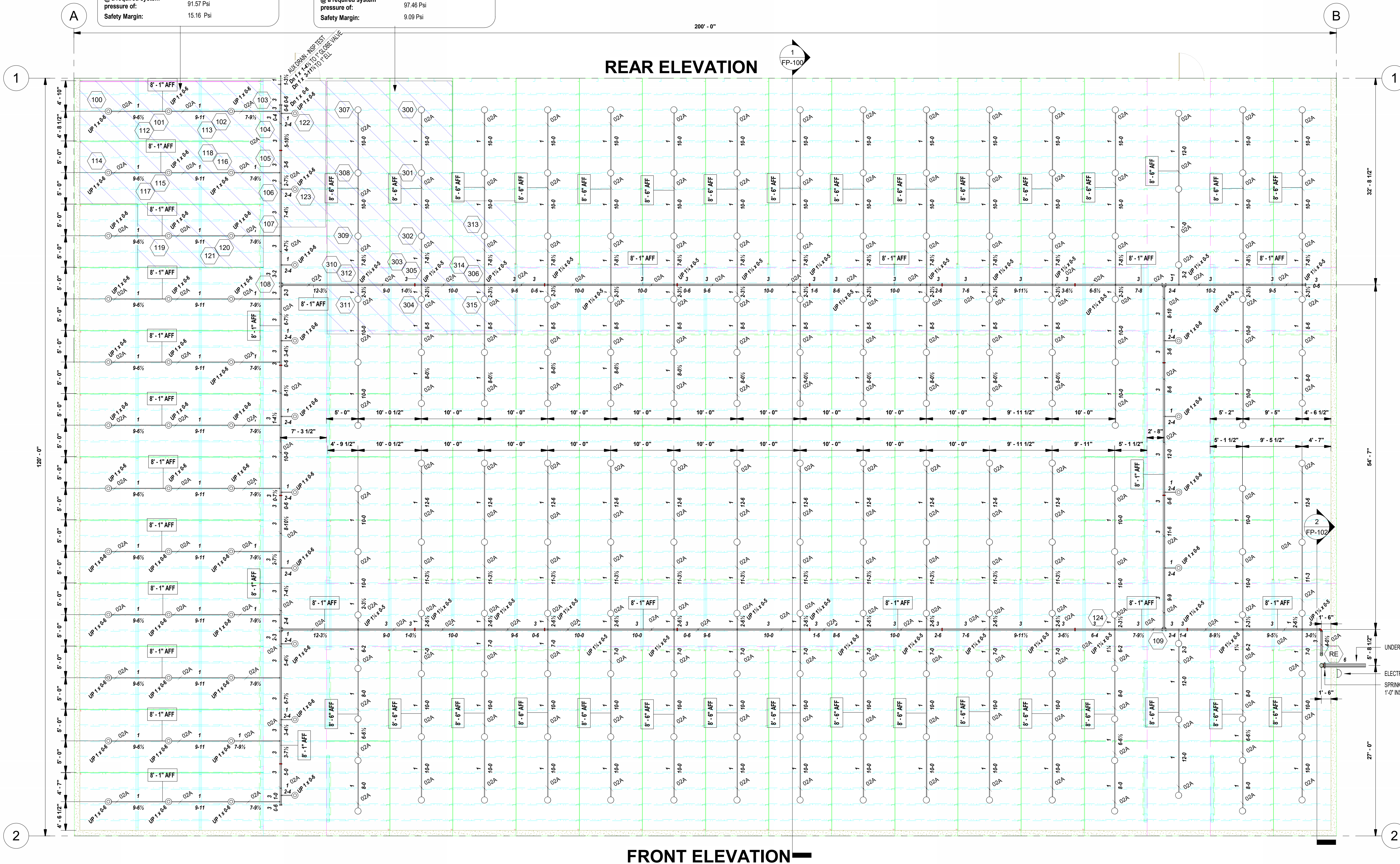
SCALE: As indicated

PROJECT NUMBER: IFPDC-GB

DRAWING NO: FP-100

Fire Protection System Demand:	
Remote area number:	1
Occupancy classification:	DH-2 (STORAGE)
Density:	20 Gpm/SqFt
Area of application:	900 SqFt
No. of sprinklers calculated:	10
Total Hose Streams:	250 GPM
Total Additional Flow:	0 GPM
Total water required (including hose streams):	553.08 GPM
ⓐ a required system pressure of:	91.57 Psi
Safety Margin:	15.16 Psi

Fire Protection System Demand:	
Remote area number:	3
Occupancy classification:	DH-2 (STORAGE)
Density:	20 Gpm/SqFt
Area of application:	900 SqFt
No. of sprinklers calculated:	10
Total Hose Streams:	250 GPM
Total Additional Flow:	0
Total water required (including hose streams):	570.33 GPM
ⓐ a required system pressure of:	97.46 Psi
Safety Margin:	9.09 Psi

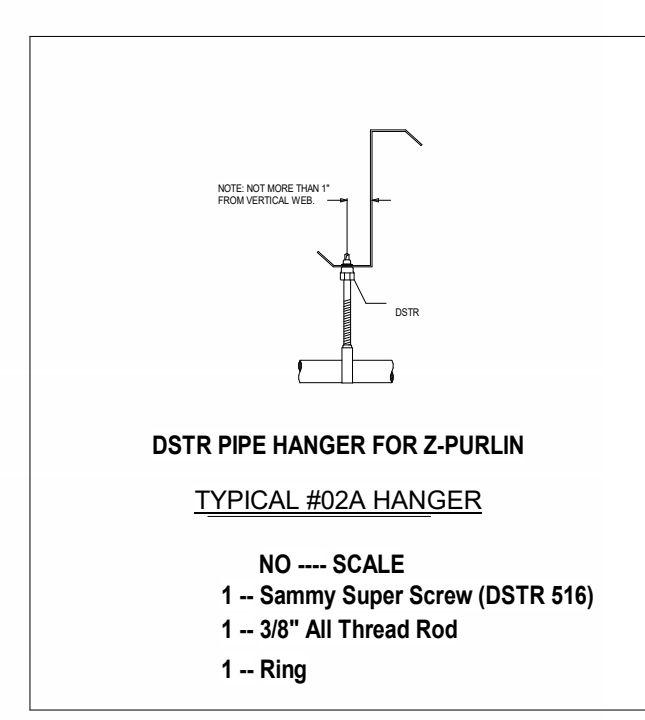


GENERAL NOTES

- PROJECT INFORMATION:
 - PROJECT NAME: BAUCOM BUSINESS PLAZA (STORAGE)
 - LOCATION: 11132 U.S. 401 N FUQUAY VARINA, NC 27526
- BUILDING CONSTRUCTION: NEW CONSTRUCTION
 - EXTERIOR: STEEL WAINSCOT / MASONRY
 - INTERIOR: Z PURLINS ON STEEL BEAMS
 - FLOOR: CONCRETE
 - NUMBER OF FLOORS: 2 FLOOR
 - TOTAL SQUARE FEET: 48,000 SQFT
 - BUILDING HEIGHT: 30'-0"
- DESIGN MODIFIED PER NFPA 13 (2013)
 - TYPE OF SYSTEM: WET
 - MISCELLANEOUS STORAGE
 - STORAGE HEIGHT: 12'-0" MAX
 - DESIGNED TO ORDINARY HAZARD II, (20 GPM OVER THE MOST REMOTE 1500 SQFT) WITH 250 GPM HOSE ALLOWANCE
- WATER SUPPLY INFORMATION:
 - TEST BY: ENGINEERING PLANNING MANAGEMENT, INC.
 - TEST DATE AND TIME: 10-05-23 AT 9:48 AM
 - STATIC: 109.8 P.S.I.
 - RESIDUAL: 88 P.S.I.
 - FLOW: 1597 G.P.M.
 - SOURCE: FIRE HYDRANT ON 12" CITY MAIN @ 11132 US 01 N, FUQUAY VARINA, NC
- UNDERGROUND FIRE MAIN:
 - NEW 6" FIRE MAIN BY OTHERS, SHOWN FOR HYDRAULIC REFERENCE ONLY.
 - SPRINKLER CONTRACT STARTS AT A 6" CONNECTION INSIDE BUILDING
- PIPE AND FITTINGS:
 - RISER, FEED-MAIN, CROSS-MAIN
 - PIPE: SCHEDULE 10
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - CONNECTIONS: WELDED GROOVED OUTLETS, U.S.O.
 - GRID BRANCHLINES TO BE WELDED:
 - PIPE: 1 1/2" SCHEDULE 10 GROOVED U.S.O.
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - ARMOVERS: 1" SCHEDULE 40
 - FITTINGS: STANDARD WEIGHT THREADED FITTINGS
 - SCHEDULE BRANCHLINES TO BE THREADED:
 - PIPE: SCHEDULE 40
 - FITTINGS: STANDARD WEIGHT THREADED FITTINGS
 - FIRE SPRINKLER SYSTEM:
 - ALL MATERIALS AND INSTALLATION SHALL CONFORM TO NFPA 13
 - CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND 1 1/2" INSD FACE OF WALL PIPING SHALL BE COMPLETED AND COPIES PROVIDED TO THE OWNER AND AUTHORITY HAVING JURISDICTION AS DIRECTED.
- GENERAL MATERIALS:
 - ALL COMPONENTS AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED AND/OR FACTORY MUTUAL APPROVED.
 - ALL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH NFPA AND/OR MANUFACTURERS LITERATURE.
- SPRINKLER HEADS:
 - ALL SPRINKLER HEADS SHALL BE LISTED AND APPROVED FOR USE AS SPECIFIED PER NFPA 13 AND FM.
- HANGERS AND SUPPORTS:
 - HANGER ROD FOR PIPE 1 1/2" SHALL BE 3/8" MACHINE THREAD ROD
 - HANGER ROD FOR PIPE 6" SHALL BE 1/2" MACHINE THREAD ROD
 - C. SPACING: Per NFPA-13
 - SCHEDULE 40 PIPE: 1 1/2" THRU 1-1/4" SHALL BE 12'-0" O.C. MAX.
 - SCHEDULE 40 PIPE: 1-1/2" THRU 1" SHALL BE 15'-0" O.C. MAX.
 - TRAPEZOID AND OTHER SPECIAL HANGERS SHALL CONFORM TO NFPA 13 FOR STYLE AND TYPE USED AND/OR THE SPECIAL LISTING APPROVED FOR THE FIRE SPRINKLER SYSTEM.
- VALVES AND SPECIAL EQUIPMENT:
 - ALL VALVES AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED/CLASSIFIED AND/OR FACTORY MUTUAL APPROVED IN CONFORMANCE WITH NFPA 13 AND SPECIFICATIONS
- FIRE DEPARTMENT CONNECTION:
 - LOCATION: AT HOT BOX NEAR 2ND STREET (BY OTHERS)
- FABRICATION:
 - FABRICATION SHALL BE PERFORMED BY EXPERIENCED WORKMEN.
 - WELDING SHALL BE BY A CERTIFIED WELDER AND COMPLY WITH A.W.S. 10.9 AR-3
 - NO WELDING SHALL BE PERFORMED ON JOB SITE.
 - DUE AND PROPER CARE SHALL BE TAKEN TO REMOVE OUTDRILLED COUPLERS FROM PIPING DURING THE WELDING PROCESS.
 - THREADS AND GROOVES FOR EACH TYPE OF FITTING SHALL BE CUT OR ROLLED TO CONFORM WITH THE FITTINGS MANUFACTURERS LISTED REQUIREMENT.
- INSTALLATION:
 - INSTALLATION SHALL BE PERFORMED BY EXPERIENCED FIRE SPRINKLER WORKMEN.
 - INSTALLATION SHALL CONFORM TO NFPA 13 STANDARD.
- SPECIAL NOTES:
 - WATER SHIELDS, WHEN REQUIRED TO LIMIT SPRINKLER DISCHARGE ON ELECTRICAL EQUIPMENT, PANELS, AND SWITCH GEAR, SHALL BE PROVIDED AND INSTALLED BY OTHERS.
 - CENTRAL STATION AND/OR EVACUATION ALARM SYSTEM SHALL BE PROVIDED AND INSTALLED BY OTHERS.
 - SWITCHES AND BELLS FURNISHED AND MOUNTED BY SPRINKLER CONTRACTOR SHALL BE WIRED AND CONNECTED BY OTHERS AND IF REQUIRED TO CONNECT TO BUILDING'S ALARM SYSTEM IT SHALL ALSO BE EXTENDED WITH WIRING TO THE MONITORING ALARM SYSTEM BY OTHERS.

GENERAL NOTES
1/8" = 1'-0"

1 LOWER LEVEL SPRINKLER PLAN
1/8" = 1'-0"



IMPORTANT
In locations that are subject to freezing conditions, it is the owner's responsibility to provide heat throughout areas protected by wet pipe sprinkler systems and in enclosures for dry pipe, deluge or other types of valves controlling water supplies to sprinkler systems.

This drawing including all information and design concept herein contained is the property of Carolina Fire Protection Company, Inc. and is loaned upon express conditions that the same be returned to CFP, Inc. upon request; all information contained herein shall be treated as secret, and confidential; no reproduction of this drawing or any part thereof shall be made without written consent of CFP, Inc.

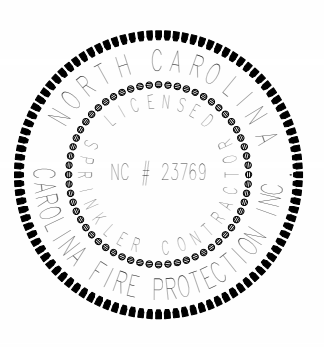
CONTRACT RESPONSIBILITIES	
ITEM	C.F.P. / OTHERS
STREET WATER CONNECTION	N/A
UNDERGROUND WATER MAINS	N/A
EXCAVATIONS	N/A
BACKFILL	N/A
WIRING	N/A
PAINTING	N/A

SYMBOLS	
	CEILING HT. ABOVE REF.
	CL OF PIPE BELOW BDD
	CL OF PIPE ABOVE REF.
	FIRE HOSE ASSEMBLY
	FLOW SWITCH (FS)
	MONITOR SWITCH
	HYDRAULIC REF. POINT
	LINE DESIGNATION
	MAIN DESIGNATION
	ALARM VALVE (ALV)
	DRY PIPE VALVE
	WAFAER CHECK VALVE
	SWING CHECK VALVE
	SYSTEM RISER
	INSPECTOR'S TEST
	GLOBE VALVE
	FLANGED CONNECTION
	GATE VALVE (SEE NOTES)
	ELECTRIC BELL
	WATER MOTOR GONGS (W/MG)
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	BUTTERFLY VALVE
	ROOT INDICATOR VALVE (RIV)
	KEY GATE SECTIONAL VALVE
	THRUST BLOCK
	24 WAY SEISMIC BRACING
	GROOVED CAP
	GROOVED PLUG
	FLANGED CONNECTION

ABBREVIATIONS	
BDD	Bottom of Beam
BOP	Bottom of Deck
BT	Bottom of Pipe
DT	Below Top of Steel Deck
HT	Head Valve
N.C.	Not in Contact
N.S.	Not in Scale
OB	Open Box Joint
PN	Pressure Ret. Valve
RM	Root Indicator
SP	Staircase
TB	Top of Beam
TD	Top of Deck
TS	Top of Steel Deck
UNO	Unless Noted Otherwise

SYSTEM TYPE	
WET	<input type="checkbox"/> DELUGE <input type="checkbox"/>
DRY	<input type="checkbox"/> PREACTION <input type="checkbox"/>

APPROVALS	
<input type="checkbox"/> ISO	OUT
<input type="checkbox"/> IRI	OUT
<input type="checkbox"/> FM	OUT
<input type="checkbox"/>	OUT
<input type="checkbox"/>	IN



Sprinkler Schedule - Lower Level		
Image	Count	Description
	50	Victaulic 1/2 Ordinary Upright Temperature - 155 Finish - B Quick Response Model - FL-QR SIN - V2704 K Factor - 5.6
	189	Victaulic 1/2 Ordinary Upright Temperature - 155 Finish - B Quick Response Model - FL-QR SIN - V2704 K Factor - 5.6
Total Number of Sprinklers - 239		

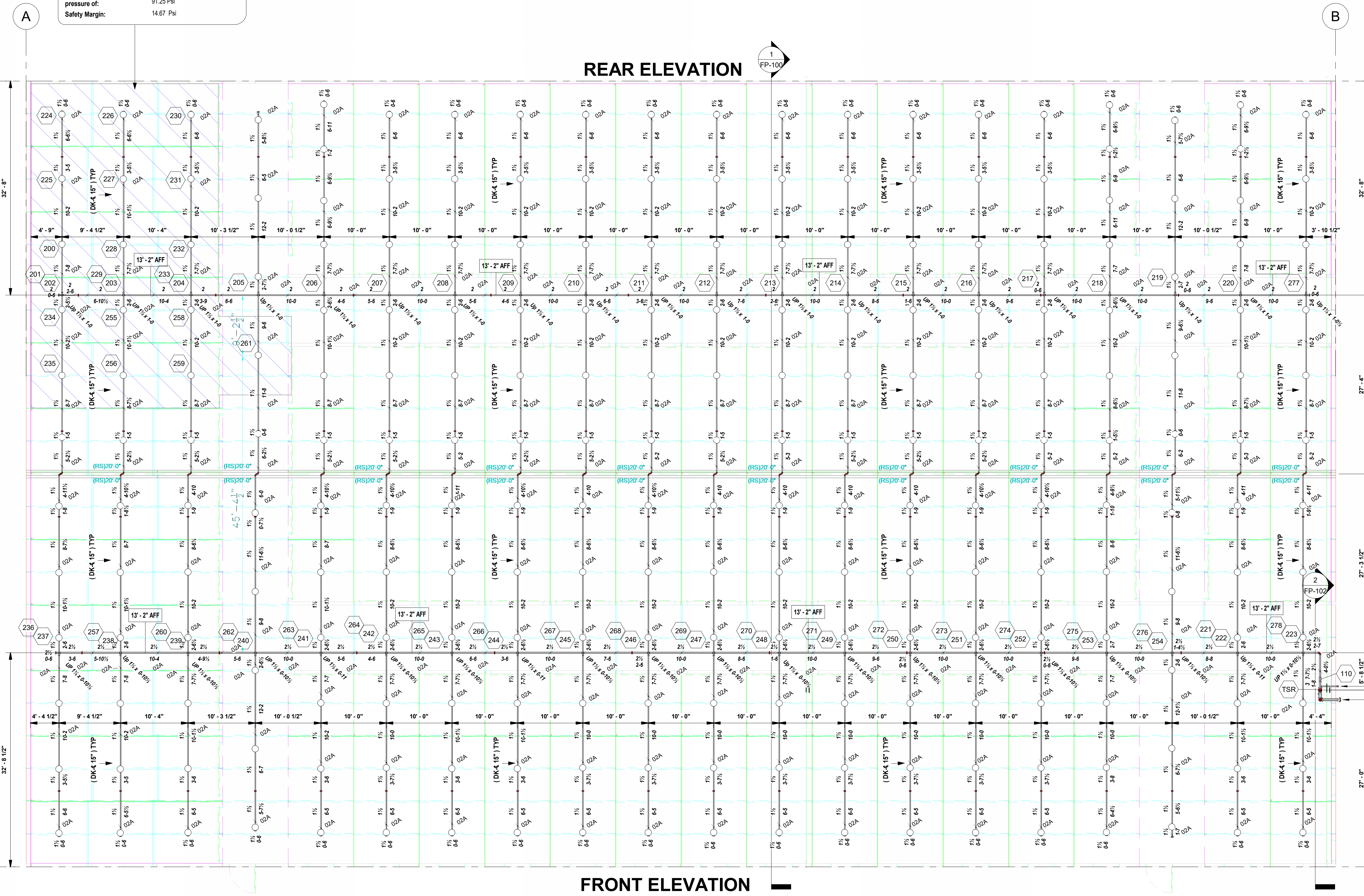
4055 HODGES CHAPEL ROAD
Dunn, N.C. 28334
Phone (910) 892-1700
Fax (910) 892-7322

CONTRACT NAME: BAUCOM BUSINESS PLAZA (STORAGE)		11132 U.S. 401 N FUQUAY VARINA, NC 27526	
CONTRACT WITH: Owner	LOWER LEVEL SPRINKLER PLAN		
CONTRACT NO.:	DATE:	ISSUE DATE:	SCALE: 1/8" = 1'-0"
PROJECT NO.:	PROJECT NAME:	PROJECT ADDRESS:	PROJECT CITY:
PROJECT STATE:	PROJECT ZIP:	PROJECT PHONE:	PROJECT FAX:
PROJECT EMAIL:	PROJECT WEBSITE:	PROJECT DRAWING NO.:	PROJECT DATE:

Revisions			
#	Date	Description	By

CHECKED BY: Checker
DATE: Issue Date
Project Number: IFPDC-GB
DRAWING NO: FP-101

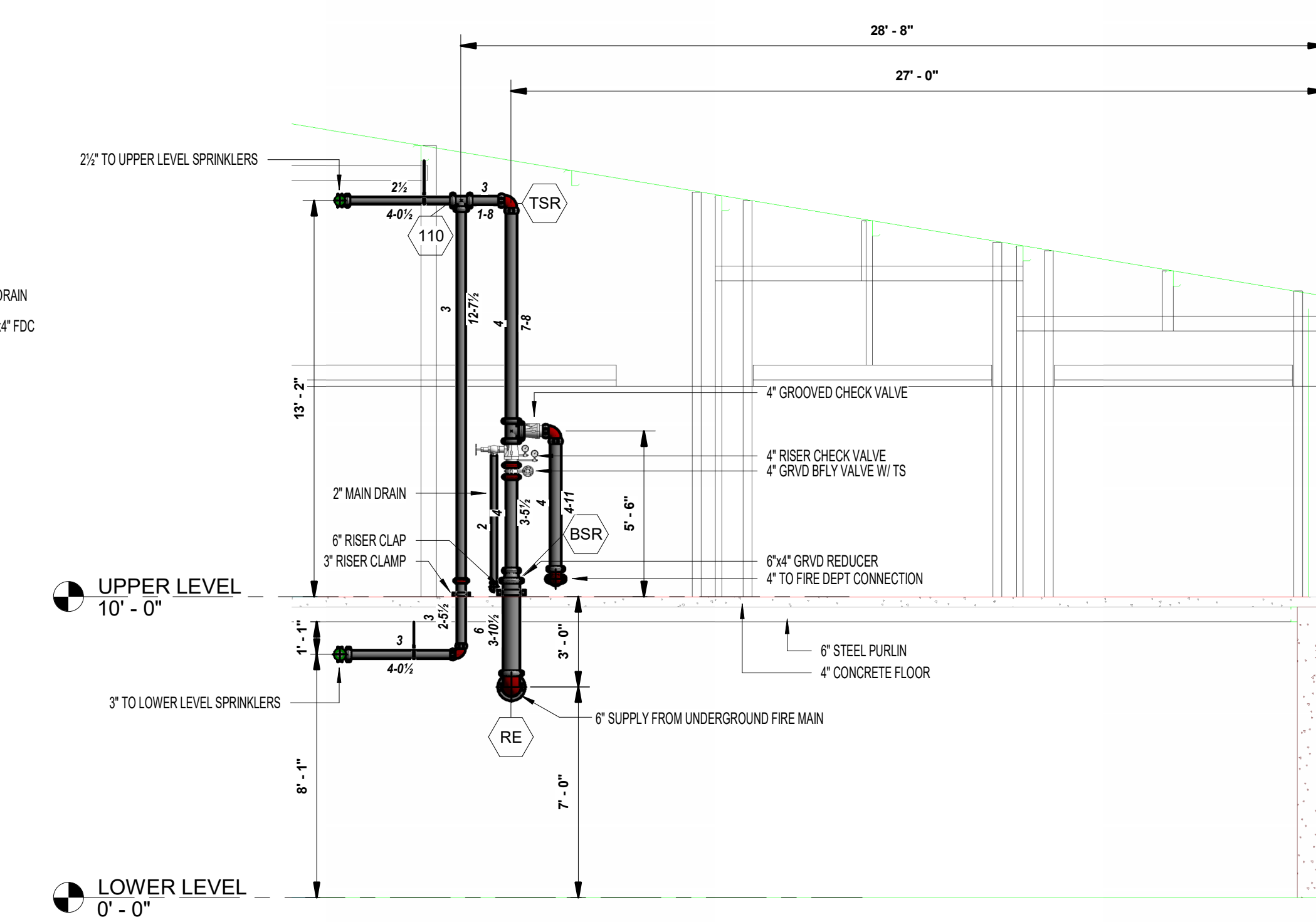
Fire Protection System Demand:	
Remote area number:	2
Occupancy classification:	OH-2 (STORAGE)
Density:	.20 Gpm/SqFt
Area of application:	1500 SqFt
No. of sprinklers calculated:	16
Total Hose Streams:	250 GPM
Total Additional Flow:	0 GPM
Total water required (including hose streams):	628.19 GPM
@ a required system pressure of:	91.25 Psi
Safety Margin:	14.67 Psi



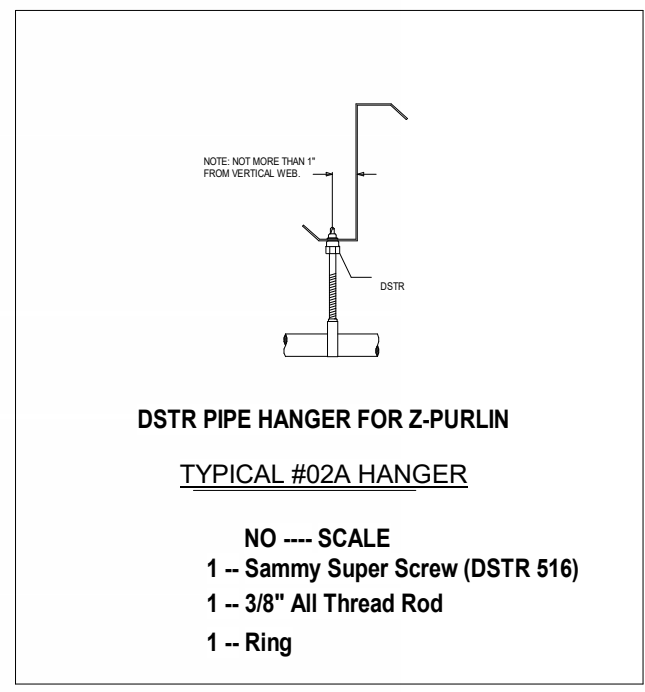
1 UPPER LEVEL SPRINKLER PLAN
1/8" = 1'-0"

GENERAL NOTES

- PROJECT INFORMATION:
 - PROJECT NAME: BAUCOM BUSINESS PLAZA (STORAGE)
 - LOCATION: 11132 U.S. 401 N. FUQUAY VARINA, NC 27526
- BUILDING CONSTRUCTION: NEW CONSTRUCTION
 - EXTERIOR: STEEL WAINSCOT / MASONRY
 - INTERIOR: Z PURLINS ON STEEL BEAMS
- FLOOR: CONCRETE
- NUMBER OF FLOORS: 2 FLOOR
- TOTAL SQUARE FEET: 48,000 SQFT
- BUILDING HEIGHT: 30'-0"
- DESIGN MODIFIED PER NFPA 13 (2013)
 - TYPE OF SYSTEM: WET
 - MISCELLANEOUS STORAGE
 - STORAGE HEIGHT: 12'-0" MAX
 - DESIGNED TO ORDINARY HAZARD II, (20 GPM OVER THE MOST REMOTE 1500 SQFT) WITH 250 GPM HOSE ALLOWANCE
- WATER SUPPLY INFORMATION:
 - TEST BY: ENGINEERING PLANNING MANAGEMENT, INC.
 - TEST DATE AND TIME: 10-05-23 AT 9:48 AM
 - STATIC: 100.8 P.S.I.
 - RESIDUAL: 88 P.S.I.
 - FLOW: 1507 G.P.M.
 - SOURCE: FIRE HYDRANT ON 12" CITY MAIN @ 11132 US 01 N, FUQUAY VARINA, NC
- UNDERGROUND FIRE MAIN:
 - NEW 6" FIRE MAIN BY OTHERS, SHOWN FOR HYDRAULIC REFERENCE ONLY.
 - SPRINKLER CONTRACT STARTS AT A 6" CONNECTION INSIDE BUILDING
- PIPE AND FITTINGS:
 - RISER, FEED-MAIN, CROSS-MAIN
 - PIPE: SCHEDULE 10
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - CONNECTIONS: WELDED GROOVED OUTLETS, U.S.O.
 - GRID BRANCHLINES TO BE WELDED:
 - PIPE: 1 1/2" SCHEDULE 10 GROOVED, U.S.O.
 - FITTINGS: SHORT PATTERN GROOVED FITTINGS W/ RIGID COUPLINGS U.S.O.
 - ARMOVERS: 1" SCHEDULE 40
 - FITTINGS: STANDARD WEIGHT THREADED FITTINGS
 - SCHEDULE BRANCHLINES TO BE THREADED:
 - PIPE: SCHEDULE 40
 - FITTINGS: STANDARD WEIGHT THREADED FITTINGS
- FIRE SPRINKLER SYSTEM:
 - ALL MATERIALS AND INSTALLATION SHALL CONFORM TO NFPA
 - CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING SHALL BE COMPLETED AND COPIES PROVIDED TO THE OWNER AND AUTHORITY HAVING JURISDICTION AS DIRECTED.
- GENERAL MATERIALS:
 - ALL COMPONENTS AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED AND/OR FACTORY MUTUAL APPROVED.
 - ALL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH NFPA AND/OR MANUFACTURERS LITERATURE.
- SPRINKLER HEADS:
 - ALL SPRINKLER HEADS SHALL BE LISTED AND APPROVED FOR USE AS SPECIFIED PER NFPA 13 AND FM.
- HANGERS AND SUPPORTS:
 - HANGER ROD FOR PIPE 1-4" SHALL BE 3/8" MACHINE THREAD ROD
 - HANGER ROD FOR PIPE 6"-8" SHALL BE 1/2" MACHINE THREAD ROD
 - SPACING: Per NFPA-13
 - SCHEDULE 40 PIPE: 1" THRU 1-1/4" SHALL BE 12'-0" O.C. MAX.
 - SCHEDULE 40 PIPE: 1-1/2" THRU 8" SHALL BE 15'-0" O.C. MAX.
 - TRAPRAZE AND OTHER SPECIAL HANGERS SHALL CONFORM TO NFPA 13 FOR STYLE AND TYPE USED AND/OR THE SPECIAL LISTING APPROVED FOR THE FIRE SPRINKLER SYSTEM.
- VALVES AND SPECIAL EQUIPMENT:
 - ALL VALVES AND EQUIPMENT OF THE FIRE SPRINKLER SYSTEM SHALL BE UL LISTED AND/OR FACTORY MUTUAL APPROVED IN CONFORMANCE WITH NFPA 13 AND SPECIFICATIONS
 - FIRE DEPARTMENT CONNECTION
 - LOCATION: AT HOT BOX NEAR 2ND STREET (BY OTHERS)
 - FABRICATION:
 - FABRICATION SHALL BE PERFORMED BY EXPERIENCED WORKMEN.
 - WELDING SHALL BE BY A CERTIFIED WELDER AND COMPLY WITH A.W.S. 10.9 AR-3
 - NO WELDING SHALL BE PERFORMED ON JOE SITE.
 - DUE AND PROPER CARE SHALL BE TAKEN TO REMOVE CUT/DRIILLED COUPONS FROM PIPING DURING THE WELDING PROCESS.
 - THREADS AND GROOVES FOR EACH TYPE OF FITTING SHALL BE CUT OR ROLLED TO CONFORM WITH THE FITTINGS MANUFACTURERS LISTED REQUIREMENT.
 - INSTALLATION:
 - INSTALLATION SHALL BE PERFORMED BY EXPERIENCED FIRE SPRINKLER WORKMEN.
 - INSTALLATION SHALL CONFORM TO NFPA 13 STANDARD.
 - SPECIAL NOTES:
 - WATER SHIELDS, WHEN REQUIRED TO LIMIT SPRINKLER DISCHARGE ON ELECTRICAL EQUIPMENT, PANELS, AND SWITCH GEAR, SHALL BE PROVIDED AND INSTALLED BY OTHERS.
 - CENTRAL STATION ALARM AND/OR EVACUATION ALARM SYSTEM SHALL BE PROVIDED AND INSTALLED BY OTHERS.
 - CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING SHALL BE COMPLETED AND COPIES PROVIDED TO THE OWNER AND AUTHORITY HAVING JURISDICTION AS DIRECTED.
 - REQUIRED TO CONNECT TO BUILDING'S ALARM SYSTEM IT SHALL ALSO BE EXTENDED WITH WIRING TO THE MONITORING ALARM SYSTEM BY OTHERS.



2 SPRINKLER RISER DETAIL
1/4" = 1'-0"



IMPORTANT
In locations that are subject to freezing conditions, it is the owner's responsibility to provide heat throughout areas protected by wet pipe sprinkler systems and in enclosures for dry pipe, deluge or other types of valves controlling water supplies to sprinkler systems.

This drawing including all information and design concept herein contained is the property of Carolina Fire Protection Company, Inc. and is loaned upon express conditions that the same be returned to CFP, Inc. upon request; all information contained herein shall be treated as secret, and confidential; no reproduction of this drawing or any part thereof shall be made without written consent of CFP, Inc.

CONTRACT RESPONSIBILITIES	
ITEM	C.F.P. / OTHERS
STREET WATER CONNECTION	N/A
UNDERGROUND WATER MAINS	N/A
EXCAVATIONS	N/A
BACKFILL	N/A
WIRING	N/A
PAINTING	N/A

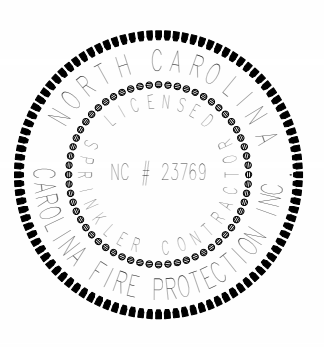
SYMBOLS	
	GATE VALVE (SEE NOTES)
	FIRE HOSE ASSEMBLY
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	BUTTERFLY VALVE
	ALARM VALVE (ALT)
	DRY PIPE VALVE
	WAFAER CHECK VALVE
	SWING CHECK VALVE
	SYSTEM RISER
	INSPECTOR'S TEST GLOBE VALVE
	FLANGED CONNECTION
	ELECTRIC BELL
	WATER MOTOR GONGS (W/MG)
	FIRE DEPT CONN (STANDARD)
	FIRE DEPT CONN (FLUSH)
	KEY GATE SECTIONAL VALVE
	THRUST BLOCK
	24 WAY SEISMIC BRACING
	LOW/HIGH ELEVATION CHANGE IN PIPE
	ANGLE VALVE

ABBREVIATIONS	
BOE	Bottom of Beam
BOB	Bottom of Deck
BOF	Bottom of Pipe
BTB	Below Top of Steel
DO	Drill
HY	Hose Valve
M.C.	Manhole and Cap
NC	Not in Contact
NTS	Not to Scale
OSU	Open Bar Joint
PS	Pressure Ret. Valve
RM	Roof Membrd
SP	Staircase
TBE	Top of Beam
TCP	Top of Pipe
TOS	Top of Steel
UNC	Unless Noted Otherwise

SYSTEM TYPE	
WET	<input type="checkbox"/> DELUGE <input type="checkbox"/>
DRY	<input type="checkbox"/> PREACTION <input type="checkbox"/>

APPROVALS

<input type="checkbox"/> ISO	OUT	IN
<input type="checkbox"/> IRI	OUT	IN
<input type="checkbox"/> FM	OUT	IN
<input type="checkbox"/>	OUT	IN



Sprinkler Schedule - Upper Level		
Image	Count	Description
	239	Victaulic 1/2 Ordinary Upright Temperature - 155 Finish - B Quick Response Model - FL-QR SIN - V2704 K Factor - 5.6
Total Number of Sprinklers - 239		



CONTRACT NAME: BAUCOM BUSINESS PLAZA (STORAGE) 11132 U.S. 401 N. FUQUAY VARINA, NC 27526		CHECKED BY: Checker
CONTRACT WITH: Owner	DATE: _____	Issue Date
DESCRIPTION: UPPER LEVEL SPRINKLER PLAN	SCALE: _____	As indicated
PROJECT NUMBER: IFPDC-GB	DRAWN BY: _____	
DRAWING NO: FP-102		

Revisions			
#	Date	Description	By



Hydraulic Calculations by HydraCALC

CAROLINA FIRE PROTECTION
4055 HODGES CHAPEL ROAD
DUNN, NC 28334
910-892-1700

Job Name : BAUCOM BUSINESS PLAZA STORAGE
Drawing : FP-101
Location : 11132 US 401 N FUQUAY VARINA, NC 27526
Remote Area : 1
Contract :
Data File : BAUCOM BUSINESS PLAZA STORAGE Area 1.WXF

HYDRAULIC CALCULATIONS
for

JOB NAME BAUCOM BUSINESS PLAZA STORAGE
Location 11132 US 401 N FUQUAY VARINA, NC 27526
Drawing # FP-101
Contract #
Date 10-02-24

DESIGN

Remote area # 1
Remote area location LOWER LEVEL
Occupancy classification OH-2 (STORAGE)
Density 0.2 - Gpm/SqFt
Area of application 900 - SqFt
Coverage/sprinkler 125 - SqFt
Type of sprinkler calculated VICTAULIC (V2704) 1/2" 155 QR BR UPR
Sprinklers calculated 10
In-rack demand N/A - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 553.08 - GPM @ 91.57 - Psi
Type of system WET
Volume of system (dry or pre-action) - Gal

WATER SUPPLY INFORMATION

Test date 10-05-23
Location 11132 US 401 N, FUQUAY-VARINA, NC
Source of info ENGINEERING PLANNING AND MANAGEMENT

CONTRACTOR INFO CAROLINA FIRE PROTECTION
Address 4055 HODGES CHAPEL ROAD / DUNN, NC 28334
Phone # 910-892-1700
Name of designer IFPDC-GB
Authority having jurisdiction

NOTES:

SAFETY MARGIN 15.16 PSI

text1(35) - invisible

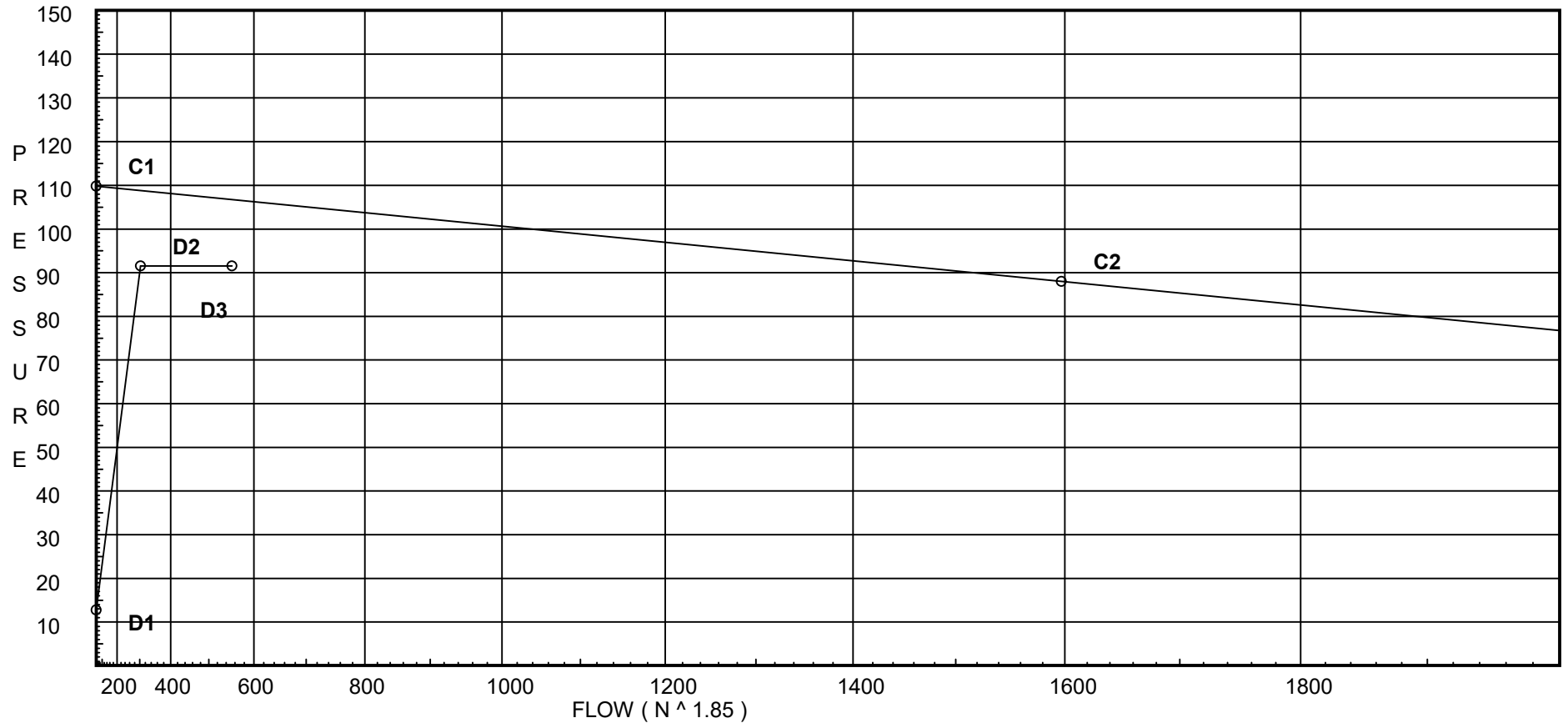
Water Supply Curve

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 2
Date

City Water Supply:
C1 - Static Pressure : 109.8
C2 - Residual Pressure: 88
C2 - Residual Flow : 1597

Demand:
D1 - Elevation : 12.794
D2 - System Flow : 303.083
D2 - System Pressure : 91.570
Hose (Demand) : 250
D3 - System Demand : 553.083
Safety Margin : 15.164



Fittings Used Summary

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 3
Date

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Bvca	B Fly Vic 705						6	6	7		8	12	14	16	18	19					
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
F	NFPA 13 45' Elbow	1	1	1	1	2	2	3	3	3	4	5	7	9	11	13	17	19	21	24	28
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zcj	Colt C500 Horz OSY	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units Inches
 Length Units Feet
 Flow Units US Gallons per Minute
 Pressure Units Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Flow Summary - NFPA

CAROLINA FIRE PROTECTION
 BAUCOM BUSINESS PLAZA STORAGE

Page 4
 Date

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	109.8	88	1597.0	106.734	553.08	91.57

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
100	8.54	5.6	19.93	25.0	0.2 125
101	8.08		22.49		
102	8.08		29.73		
103	8.08		51.57		
104	8.08		51.57		
105	8.08		51.7		
106	8.08		51.8		
107	8.08		52.17		
108	8.08		52.79		
109	8.08		57.94		
110	23.17		58.0		
TSR	23.17		58.88		
BSR	11.0		65.28		
RE	7.0		67.08		
UG1	-1.0		70.87	250.0	
PIT	-1.0		73.62		
CON	-1.0		82.71		
TEST	-21.0		91.57		
112	8.54	5.6	21.15	25.76	0.2 125
113	8.54	5.6	28.05	29.66	0.2 125
114	8.54	5.6	19.98	25.03	0.2 125
115	8.08		22.55		
116	8.08		29.81		
117	8.54	5.6	21.21	25.79	0.2 125
118	8.54	5.6	28.13	29.7	0.2 125
119	8.54	5.6	32.42	31.89	0.2 125
120	8.08		37.37		
121	8.54	5.6	35.34	33.29	0.2 125
122	8.54	5.6	47.11	38.44	0.1 132
123	8.54	5.6	47.32	38.52	0.1 132
124	8.08		57.75		

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 5
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
100 to 101	8.54 8.08	5.60	25.00 25.0	1 1.049	E	2.0	10.000 2.000 12.000	120 0.1967	19.930 0.199 2.360			Vel = 9.28
101 to 102	8.08 8.08		25.76 50.76	1 1.049			9.930 9.930	120 0.7288	22.489 0.0 7.237			Vel = 18.84
102 to 103	8.08 8.08		29.66 80.42	1 1.049	T	5.0	7.790 5.000 12.790	120 1.7076	29.726 0.0 21.840			Vel = 29.85
103 to 104	8.08 8.08		0.0 80.42	3 3.26			0.320 0.320	120 0.0062	51.566 0.0 0.002			Vel = 3.09
104 to 105	8.08 8.08		38.44 118.86	3 3.26			9.390 9.390	120 0.0141	51.568 0.0 0.132			Vel = 4.57
105 to 106	8.08 8.08		80.52 199.38	3 3.26			2.610 2.610	120 0.0368	51.700 0.0 0.096			Vel = 7.66
106 to 107	8.08 8.08		38.52 237.9	3 3.26			7.390 7.390	120 0.0507	51.796 0.0 0.375			Vel = 9.14
107 to 108	8.08 8.08		65.18 303.08	3 3.26			7.760 7.760	120 0.0795	52.171 0.0 0.617			Vel = 11.65
108 to 109	8.08 8.08		-158.58 144.5	3 3.26	3T	60.478	194.540 60.478 255.018	120 0.0202	52.788 0.0 5.148			Vel = 5.55
109 to 110	8.08 23.17		158.58 303.08	3 3.26	2E T	18.815 20.159	44.080 38.974 83.054	120 0.0795	57.936 -6.535 6.599			Vel = 11.65
110 to TSR	23.17 23.17		0.0 303.08	3 3.26	E	9.408	1.670 9.408 11.078	120 0.0794	58.000 0.0 0.880			Vel = 11.65
TSR to BSR	23.17 11		0.0 303.08	4 4.26	Bvca S	10.534 28.968	12.625 39.502 52.127	120 0.0216	58.880 5.271 1.126			Vel = 6.82
BSR to RE	11 7		0.0 303.08	6 6.357	E	17.603	4.000 17.603 21.603	120 0.0031	65.277 1.732 0.066			Vel = 3.06
RE to UG1	7 -1		0.0 303.08	6 6.28	E T G	22.063 47.277 4.728	60.000 74.068 134.068	140 0.0025	67.075 3.465 0.329			Vel = 3.14
UG1 to PIT	-1 -1	H250	250.00 553.08	6 6.09	E 2F	21.583 21.583	317.000 43.166 360.166	150 0.0076	70.869 0.0 2.748			Vel = 6.09
PIT to CON	-1 -1		0.0 553.08	6 6.28	2E T 2G	44.125 47.277 9.455	100.000 100.857 200.857	140 0.0075	73.617 7.596 1.498		** Fixed Loss = 7.596	Vel = 5.73

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 6
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv Len	Zcj	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
						0.0						
CON to TEST	-1 -21		0.0 553.08	12	T 3F	98.292 63.89	580.000 162.182 742.182	140	82.711 8.662			Vel = 1.46
TEST			0.0 553.08						91.570		K Factor = 57.80	
112 to 101	8.54 8.08	5.60	25.76	1	T	5.0	0.460 5.000 5.460	120	21.155 0.199 1.135			Vel = 9.56
101			0.0 25.76						22.489		K Factor = 5.43	
113 to 102	8.54 8.08	5.60	29.66	1	T	5.0	0.460 5.000 5.460	120	28.054 0.199 1.473			Vel = 11.01
102			0.0 29.66						29.726		K Factor = 5.44	
114 to 115	8.54 8.08	5.60	25.03	1	E	2.0	10.000 2.000 12.000	120	19.985 0.199 2.366			Vel = 9.29
115 to 116	8.08 8.08		25.80	1			9.930 9.930	120	22.550 0.0 7.256			Vel = 18.87
116 to 105	8.08 8.08		29.70	1	T	5.0	7.790 5.000 12.790	120	29.806 0.0 21.894			Vel = 29.89
105			0.0 80.53						51.700		K Factor = 11.20	
117 to 115	8.54 8.08	5.60	25.79	1	T	5.0	0.460 5.000 5.460	120	21.213 0.199 1.138			Vel = 9.57
115			0.0 25.79						22.550		K Factor = 5.43	
118 to 116	8.54 8.08	5.60	29.70	1	T	5.0	0.460 5.000 5.460	120	28.130 0.199 1.477			Vel = 11.03
116			0.0 29.70						29.806		K Factor = 5.44	
119 to 120	8.54 8.08	5.60	31.89	1	T	5.0	10.390 5.000 15.390	120	32.420 0.199 4.747			Vel = 11.84
120 to 107	8.08 8.08		33.29	1	T	5.0	7.790 5.000 12.790	120	37.366 0.0 14.805			Vel = 24.20
107			0.0 65.18						52.171		K Factor = 9.02	
121 to 120	8.54 8.08	5.60	33.29	1	T	5.0	0.460 5.000 5.460	120	35.342 0.199 1.825			Vel = 12.36

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 7
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
120			0.0 33.29						37.366		K Factor = 5.45	
122 to 104	8.54 8.08	5.60	38.44	1	E T	2.0 5.0	2.770 7.000 9.770	120	47.112 0.199		Vel = 14.27	
104			0.0 38.44						51.568		K Factor = 5.35	
123 to 106	8.54 8.08	5.60	38.52	1	E T	2.0 5.0	2.770 7.000 9.770	120	47.322 0.199		Vel = 14.30	
106			0.0 38.52						51.796		K Factor = 5.35	
108 to 124	8.08 8.08		158.58	3	T	20.159	186.770 20.159 206.929	120	52.788 0.0		Vel = 6.10	
124 to 109	8.08 8.08		0.0	3			7.790	120	57.749 0.0		Vel = 6.10	
109			0.0 158.58						57.936		K Factor = 20.83	



Hydraulic Calculations by HydraCALC

CAROLINA FIRE PROTECTION
4055 HODGES CHAPEL ROAD
DUNN, NC 28334
910-892-1700

Job Name : BAUCOM BUSINESS PLAZA STORAGE
Drawing : FP-102
Location : 11132 US 401 N FUQUAY VARINA, NC 27526
Remote Area : 2
Contract :
Data File : BAUCOM BUSINESS PLAZA STORAGE Area 2.WXF

HYDRAULIC CALCULATIONS
for

JOB NAME BAUCOM BUSINESS PLAZA STORAGE
Location 11132 US 401 N FUQUAY VARINA, NC 27526
Drawing # FP-102
Contract #
Date 10-02-24

DESIGN

Remote area # 2
Remote area location UPPER LEVEL
Occupancy classification OH-2 (STORAGE)
Density 0.2 - Gpm/SqFt
Area of application 1500 - SqFt
Coverage/sprinkler 125 - SqFt
Type of sprinkler calculated VICTAULIC (V2704) 1/2" 155 QR BR UPR
Sprinklers calculated 16
In-rack demand N/A - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 628.19 - GPM @ 91.25 - Psi
Type of system WET
Volume of system (dry or pre-action) - Gal

WATER SUPPLY INFORMATION

Test date 10-05-23
Location 11132 US 401 N, FUQUAY-VARINA, NC
Source of info ENGINEERING PLANNING AND MANAGEMENT

CONTRACTOR INFO CAROLINA FIRE PROTECTION
Address 4055 HODGES CHAPEL ROAD / DUNN, NC 28334
Phone # 910-892-1700
Name of designer IFPDC-GB
Authority having jurisdiction

NOTES:
SAFETY MARGIN 14.67 PSI

text1(35) - invisible

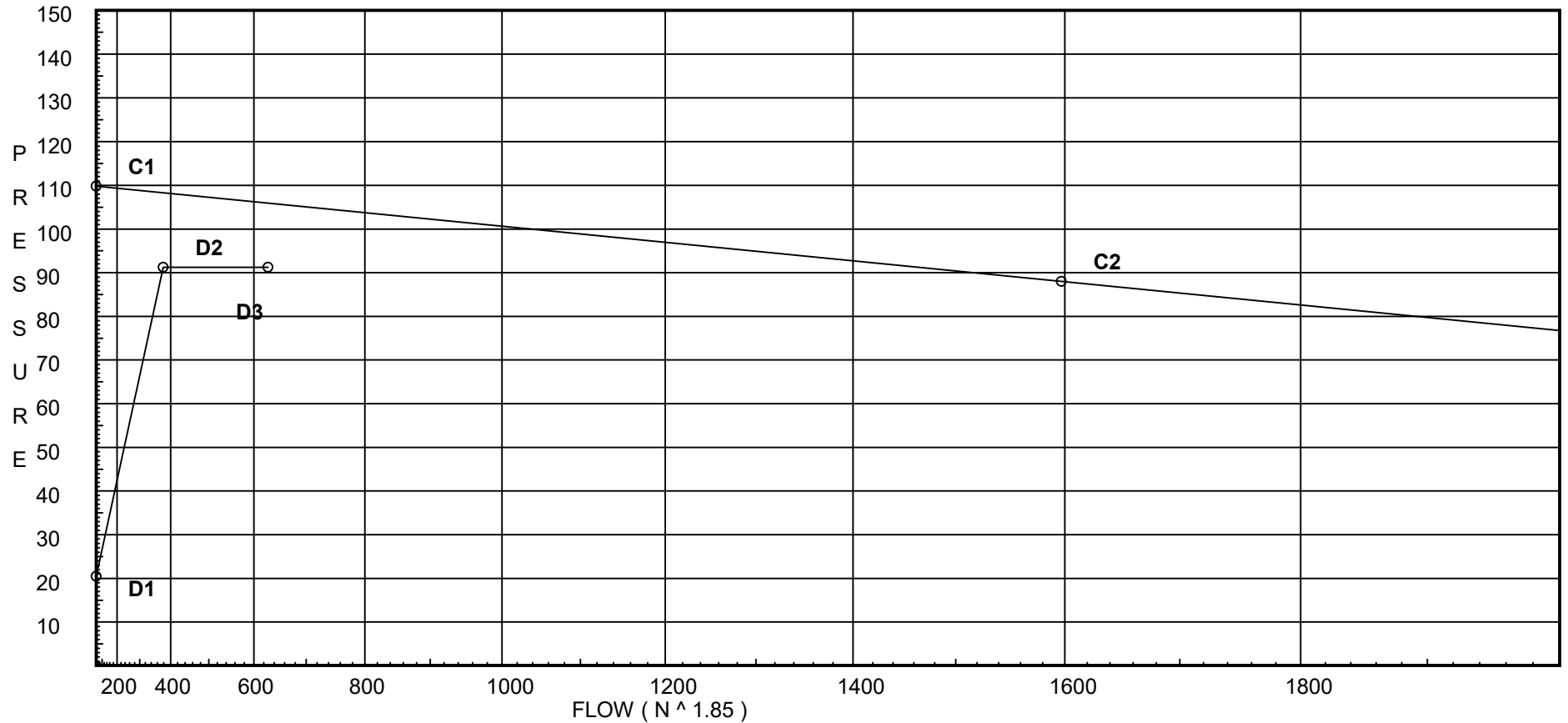
Water Supply Curve

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 2
Date

City Water Supply:
C1 - Static Pressure : 109.8
C2 - Residual Pressure: 88
C2 - Residual Flow : 1597

Demand:
D1 - Elevation : 20.455
D2 - System Flow : 378.186
D2 - System Pressure : 91.252
Hose (Demand) : 250
D3 - System Demand : 628.186
Safety Margin : 14.668



Fittings Used Summary

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 3
Date

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24	
Bvca	B Fly Vic 705						6	6	7		8	12	14	16	18	19						
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
F	NFPA 13 45' Elbow	1	1	1	1	2	2	3	3	3	4	5	7	9	11	13	17	19	21	24	28	
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13	
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65						
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	
Zcj	Colt C500 Horz OSY	Fitting generates a Fixed Loss Based on Flow																				

Units Summary

Diameter Units Inches
 Length Units Feet
 Flow Units US Gallons per Minute
 Pressure Units Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Flow Summary - NFPA

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 4
Date

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	109.8	88	1597.0	105.92	628.19	91.252

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
WS	0.0		28.23		
200	22.9	5.6	16.95	23.05	0.2 115
201	24.16		17.41		
202	23.17		19.87		
203	23.17		20.14		
204	23.17		21.24		
205	23.17		23.68		
206	23.17		25.94		
207	23.17		27.8		
208	23.17		29.44		
209	23.17		30.94		
210	23.17		32.4		
211	23.17		33.83		
212	23.17		35.26		
213	23.17		36.69		
214	23.17		38.12		
215	23.17		39.53		
216	23.17		40.89		
217	23.17		42.15		
218	23.17		43.22		
219	23.17		44.03		
220	23.17		44.53		
221	24.17		47.48		
222	23.17		48.29		
223	23.17		50.96		
110	23.17		55.98		
TSR	23.17		56.18		
BSR	11.0		63.14		
RE	7.0		64.98		
UG1	-1.0		68.94	250.0	
PIT	-1.0		72.41		
CON	-1.0		82.34		
TEST	-21.0		91.25		
224	19.6	5.6	17.57	23.47	0.2 115
225	21.23	5.6	17.04	23.11	0.2 115
226	19.58	5.6	17.77	23.6	0.2 115
227	21.22	5.6	17.23	23.25	0.2 115
228	22.88	5.6	17.15	23.19	0.2 115
229	24.14		17.62		
230	19.59	5.6	18.5	24.09	0.2 115
231	21.24	5.6	17.97	23.74	0.2 115
232	22.9	5.6	17.92	23.7	0.2 115

Flow Summary - NFPA

CAROLINA FIRE PROTECTION
 BAUCOM BUSINESS PLAZA STORAGE

Page 5
 Date

NODE ANALYSIS (cont.)

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node		Notes
233	24.16		18.42			
234	24.56	5.6	17.25	23.26	0.2	115
235	26.23	5.6	16.87	23.0	0.2	115
236	24.16		23.42			
237	23.17		24.83			
238	23.17		24.92			
239	23.17		25.29			
240	23.17		26.06			
241	23.17		27.08			
242	23.17		28.28			
243	23.17		29.6			
244	23.17		30.98			
245	23.17		32.4			
246	23.17		33.83			
247	23.17		35.26			
248	23.17		36.69			
249	23.17		38.12			
250	23.17		39.56			
251	23.17		41.04			
252	23.17		42.57			
253	23.17		44.23			
254	23.17		46.1			
255	24.55	5.6	17.45	23.39	0.2	115
256	26.22	5.6	17.06	23.13	0.2	115
257	24.14		23.54			
258	24.56	5.6	18.25	23.93	0.2	115
259	26.24	5.6	17.82	23.64	0.2	115
260	24.16		23.96			
261	25.72	5.6	22.61	26.63	0.2	115
262	24.15		25.3			
263	24.17		26.53			
264	24.14		27.81			
265	24.14		29.16			
266	24.17		30.55			
267	24.15		31.98			
268	24.15		33.41			
269	24.15		34.84			
270	24.14		36.27			
271	24.15		37.7			
272	24.15		39.14			
273	24.15		40.6			
274	24.14		42.11			
275	24.14		43.71			
276	24.15		45.46			
277	23.17		44.7			
278	24.16		49.9			

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 6
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
200 to 201	22.9 24.16	5.60	69.64	1.5			7.680	120	16.947 -0.546			
			69.64	1.682			7.680	0.1312	1.008	Vel =	10.06	
201 to 202	24.16 23.17		-10.30	1.5	2T	19.799	1.010 19.799	120	17.409 0.429			
			59.34	1.682			20.809	0.0976	2.031	Vel =	8.57	
202 to 203	23.17 23.17		0.0	2			9.370	120	19.869 0.0			
			59.34	2.157			9.370	0.0291	0.273	Vel =	5.21	
203 to 204	23.17 23.17		60.45	2			10.330	120	20.142 0.0			
			119.79	2.157			10.330	0.1066	1.101	Vel =	10.52	
204 to 205	23.17 23.17		64.82	2			10.270	120	21.243 0.0			
			184.61	2.157			10.270	0.2374	2.438	Vel =	16.21	
205 to 206	23.17 23.17		-4.90	2			10.020	120	23.681 0.0			
			179.71	2.157			10.020	0.2258	2.263	Vel =	15.78	
206 to 207	23.17 23.17		-17.84	2			10.000	120	25.944 0.0			
			161.87	2.157			10.000	0.1861	1.861	Vel =	14.21	
207 to 208	23.17 23.17		-11.15	2			10.000	120	27.805 0.0			
			150.72	2.157			10.000	0.1631	1.631	Vel =	13.23	
208 to 209	23.17 23.17		-6.24	2			10.000	120	29.436 0.0			
			144.48	2.157			10.000	0.1508	1.508	Vel =	12.69	
209 to 210	23.17 23.17		-2.92	2			10.000	120	30.944 0.0			
			141.56	2.157			10.000	0.1452	1.452	Vel =	12.43	
210 to 211	23.17 23.17		-0.99	2			10.000	120	32.396 0.0			
			140.57	2.157			10.000	0.1434	1.434	Vel =	12.34	
211 to 212	23.17 23.17		-0.17	2			10.000	120	33.830 0.0			
			140.4	2.157			10.000	0.1430	1.430	Vel =	12.33	
212 to 213	23.17 23.17		-0.01	2			10.000	120	35.260 0.0			
			140.39	2.157			10.000	0.1430	1.430	Vel =	12.33	
213 to 214	23.17 23.17		-0.13	2			10.000	120	36.690 0.0			
			140.26	2.157			10.000	0.1428	1.428	Vel =	12.31	
214 to 215	23.17 23.17		-0.87	2			10.000	120	38.118 0.0			
			139.39	2.157			10.000	0.1411	1.411	Vel =	12.24	
215 to 216	23.17 23.17		-2.70	2			10.000	120	39.529 0.0			
			136.69	2.157			10.000	0.1361	1.361	Vel =	12.00	

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 7
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
216 to 217	23.17 23.17		-5.86 130.83	2 2.157			10.000 10.000	120 0.1255	40.890 0.0 1.255			Vel = 11.49
217 to 218	23.17 23.17		-10.52 120.31	2 2.157			9.990 9.990	120 0.1075	42.145 0.0 1.074			Vel = 10.56
218 to 219	23.17 23.17		-16.77 103.54	2 2.157			9.980 9.980	120 0.0815	43.219 0.0 0.813			Vel = 9.09
219 to 220	23.17 23.17		-24.63 78.91	2 2.157			10.020 10.020	120 0.0492	44.032 0.0 0.493			Vel = 6.93
220 to 221	23.17 24.17		-44.85 34.06	1.5 1.682	3T 2E	29.699 9.9	57.180 39.599 96.779	120 0.0350	44.525 -0.433 3.384			Vel = 4.92
221 to 222	24.17 23.17		0.0 34.06	1.5 1.682	T	9.9	1.010 9.900 10.910	120 0.0349	47.476 0.433 0.381			Vel = 4.92
222 to 223	23.17 23.17		299.28 333.34	2.5 2.635			10.000 10.000	120 0.2672	48.290 0.0 2.672			Vel = 19.61
223 to 110	23.17 23.17		44.85 378.19	2.5 2.635	E	8.237	6.630 8.237 14.867	120 0.3375	50.962 0.0 5.017			Vel = 22.25
110 to TSR	23.17 23.17		0.0 378.19	3 3.26			1.670 1.670	120 0.1198	55.979 0.0 0.200			Vel = 14.54
TSR to BSR	23.17 11		0.0 378.19	4 4.26	Bvca S	10.534 28.968	12.625 39.502 52.127	120 0.0325	56.179 5.271 1.695			Vel = 8.51
BSR to RE	11 7		0.0 378.19	6 6.357	E	17.603	4.000 17.603 21.603	120 0.0046	63.145 1.732 0.100			Vel = 3.82
RE to UG1	7 -1		0.0 378.19	6 6.28	E T G	22.063 47.277 4.728	60.000 74.068 134.068	140 0.0037	64.977 3.465 0.495			Vel = 3.92
UG1 to PIT	-1 -1	H250	250.00 628.19	6 6.09	E 2F	21.583 21.583	317.000 43.166 360.166	150 0.0097	68.937 0.0 3.478			Vel = 6.92
PIT to CON	-1 -1		0.0 628.19	6 6.28	2E T 2G Zcj	44.125 47.277 9.455 0.0	100.000 100.857 200.857	140 0.0094	72.415 8.030 1.896		** Fixed Loss = 8.03	Vel = 6.51
CON to TEST	-1 -21		0.0 628.19	12 12.46	T 3F	98.292 63.89	580.000 162.182 742.182	140 0.0003	82.341 8.662 0.249			Vel = 1.65
TEST			0.0 628.19						91.252			K Factor = 65.76

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 8
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
224 to 225	19.6 21.23	5.60	23.47	1.5			9.960	120	17.568 -0.706			
							9.960	0.0176	0.175	Vel =	3.39	
225 to 200	21.23 22.9	5.60	23.12	1.5			10.150	120	17.037 -0.723			
			46.59	1.682			10.150	0.0624	0.633	Vel =	6.73	
200			0.0 46.59						16.947	K Factor =	11.32	
226 to 227	19.58 21.22	5.60	23.60	1.5			9.980	120	17.767 -0.710			
			23.6	1.682			9.980	0.0177	0.177	Vel =	3.41	
227 to 228	21.22 22.88	5.60	23.25	1.5			10.140	120	17.234 -0.719			
			46.85	1.682			10.140	0.0630	0.639	Vel =	6.76	
228 to 229	22.88 24.14	5.60	23.20	1.5			7.640	120	17.154 -0.546			
			70.05	1.682			7.640	0.1327	1.014	Vel =	10.11	
229 to 203	24.14 23.17		-9.60	1.5	2T	19.799	0.980 19.799 20.779	120	17.622 0.420			
			60.45	1.682			20.779	0.1011	2.100	Vel =	8.73	
203			0.0 60.45						20.142	K Factor =	13.47	
230 to 231	19.59 21.24	5.60	24.09	1.5			9.960	120	18.500 -0.715			
			24.09	1.682			9.960	0.0185	0.184	Vel =	3.48	
231 to 232	21.24 22.9	5.60	23.74	1.5			10.150	120	17.969 -0.719			
			47.83	1.682			10.150	0.0655	0.665	Vel =	6.91	
232 to 233	22.9 24.16	5.60	23.70	1.5			7.640	120	17.915 -0.546			
			71.53	1.682			7.640	0.1380	1.054	Vel =	10.33	
233 to 204	24.16 23.17		-6.71	1.5	2T	19.799	1.000 19.799 20.799	120	18.423 0.429			
			64.82	1.682			20.799	0.1150	2.391	Vel =	9.36	
204			0.0 64.82						21.243	K Factor =	14.06	
201 to 234	24.16 24.56		10.30	1.5			2.440	120	17.409 -0.173			
			10.3	1.682			2.440	0.0037	0.009	Vel =	1.49	
234 to 235	24.56 26.23	5.60	23.26	1.5			10.190	120	17.245 -0.723			
			33.56	1.682			10.190	0.0341	0.347	Vel =	4.85	
235 to 236	26.23 24.16	5.60	23.00	1.5	2E T	9.9 9.9	43.540 19.800 63.340	120	16.869 0.897			
			56.56	1.682			63.340	0.0893	5.657	Vel =	8.17	
236 to 237	24.16 23.17		0.0	1.5	T	9.9	1.010 9.900 10.910	120	23.423 0.429			
			56.56	1.682			10.910	0.0893	0.974	Vel =	8.17	

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 9
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
237 to 238	23.17 23.17		0.0 56.56	2.5 2.635		9.370 9.370	120 0.0101	24.826 0.0 0.095		Vel = 3.33	
238 to 239	23.17 23.17		56.12 112.68	2.5 2.635		10.330 10.330	120 0.0359	24.921 0.0 0.371		Vel = 6.63	
239 to 240	23.17 23.17		54.27 166.95	2.5 2.635		10.270 10.270	120 0.0743	25.292 0.0 0.763		Vel = 9.82	
240 to 241	23.17 23.17		31.53 198.48	2.5 2.635		10.020 10.020	120 0.1024	26.055 0.0 1.026		Vel = 11.68	
241 to 242	23.17 23.17		17.83 216.31	2.5 2.635		10.000 10.000	120 0.1200	27.081 0.0 1.200		Vel = 12.73	
242 to 243	23.17 23.17		11.15 227.46	2.5 2.635		10.000 10.000	120 0.1318	28.281 0.0 1.318		Vel = 13.38	
243 to 244	23.17 23.17		6.25 233.71	2.5 2.635		10.000 10.000	120 0.1385	29.599 0.0 1.385		Vel = 13.75	
244 to 245	23.17 23.17		2.92 236.63	2.5 2.635		10.000 10.000	120 0.1417	30.984 0.0 1.417		Vel = 13.92	
245 to 246	23.17 23.17		0.99 237.62	2.5 2.635		10.000 10.000	120 0.1429	32.401 0.0 1.429		Vel = 13.98	
246 to 247	23.17 23.17		0.16 237.78	2.5 2.635		10.000 10.000	120 0.1430	33.830 0.0 1.430		Vel = 13.99	
247 to 248	23.17 23.17		0.01 237.79	2.5 2.635		10.000 10.000	120 0.1430	35.260 0.0 1.430		Vel = 13.99	
248 to 249	23.17 23.17		0.14 237.93	2.5 2.635		10.000 10.000	120 0.1432	36.690 0.0 1.432		Vel = 14.00	
249 to 250	23.17 23.17		0.87 238.8	2.5 2.635		10.000 10.000	120 0.1441	38.122 0.0 1.441		Vel = 14.05	
250 to 251	23.17 23.17		2.70 241.5	2.5 2.635		10.000 10.000	120 0.1472	39.563 0.0 1.472		Vel = 14.21	
251 to 252	23.17 23.17		5.86 247.36	2.5 2.635		10.000 10.000	120 0.1539	41.035 0.0 1.539		Vel = 14.55	
252 to 253	23.17 23.17		10.52 257.88	2.5 2.635		9.990 9.990	120 0.1662	42.574 0.0 1.660		Vel = 15.17	

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 10
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
253 to 254	23.17 23.17		16.77 274.65	2.5 2.635			9.980 9.980	120 0.1867	44.234 0.0 1.863		Vel = 16.16	
254 to 222	23.17 23.17		24.62 299.27	2.5 2.635			10.020 10.020	120 0.2189	46.097 0.0 2.193		Vel = 17.61	
222			0.0 299.27						48.290		K Factor = 43.07	
229 to 255	24.14 24.55		9.59 9.59	1.5 1.682			2.490 2.490	120 0.0036	17.622 -0.178 0.009		Vel = 1.38	
255 to 256	24.55 26.22	5.60	23.40 32.99	1.5 1.682			10.130 10.130	120 0.0329	17.453 -0.723 0.333		Vel = 4.76	
256 to 257	26.22 24.14	5.60	23.13 56.12	1.5 1.682	2E T	9.9 9.9	43.540 19.800 63.340	120 0.0881	17.063 0.901 5.578		Vel = 8.10	
257 to 238	24.14 23.17		0.0 56.12	1.5 1.682	T	9.9	0.990 9.900 10.890	120 0.0881	23.542 0.420 0.959		Vel = 8.10	
238			0.0 56.12						24.921		K Factor = 11.24	
233 to 258	24.16 24.56		6.70 6.7	1.5 1.682			2.480 2.480	120 0.0016	18.423 -0.173 0.004		Vel = 0.97	
258 to 259	24.56 26.24	5.60	23.93 30.63	1.5 1.682			10.150 10.150	120 0.0288	18.254 -0.728 0.292		Vel = 4.42	
259 to 260	26.24 24.16	5.60	23.64 54.27	1.5 1.682	2E T	9.9 9.9	43.530 19.800 63.330	120 0.0828	17.818 0.901 5.241		Vel = 7.84	
260 to 239	24.16 23.17		0.0 54.27	1.5 1.682	T	9.9	1.010 9.900 10.910	120 0.0828	23.960 0.429 0.903		Vel = 7.84	
239			0.0 54.27						25.292		K Factor = 10.79	
205 to 261	23.17 25.72		4.91 4.91	1.5 1.682	2T	19.799	10.510 19.799 30.309	120 0.0010	23.681 -1.104 0.029		Vel = 0.71	
261 to 262	25.72 24.15	5.60	26.62 31.53	1.5 1.682	2E T	9.9 9.9	46.670 19.800 66.470	120 0.0303	22.606 0.680 2.014		Vel = 4.55	
262 to 240	24.15 23.17		0.0 31.53	1.5 1.682	T	9.9	1.000 9.900 10.900	120 0.0304	25.300 0.424 0.331		Vel = 4.55	
240			0.0 31.53						26.055		K Factor = 6.18	

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 11
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
206 to 263	23.17 24.17		17.83 17.83	1.5 1.682	3T 2E	29.699 9.9	57.190 39.599 96.789	120 0.0106	25.944 -0.433 1.022		Vel = 2.57	
263 to 241	24.17 23.17		0.0 17.83	1.5 1.682	T	9.9	1.010 9.900 10.910	120 0.0105	26.533 0.433 0.115		Vel = 2.57	
241			0.0 17.83						27.081		K Factor = 3.43	
207 to 264	23.17 24.14		11.15 11.15	1.5 1.682	3T 2E	29.699 9.9	57.160 39.599 96.759	120 0.0044	27.805 -0.420 0.428		Vel = 1.61	
264 to 242	24.14 23.17		0.0 11.15	1.5 1.682	T	9.9	0.990 9.900 10.890	120 0.0044	27.813 0.420 0.048		Vel = 1.61	
242			0.0 11.15						28.281		K Factor = 2.10	
208 to 265	23.17 24.14		6.25 6.25	1.5 1.682	3T 2E	29.699 9.9	57.160 39.599 96.759	120 0.0015	29.436 -0.420 0.146		Vel = 0.90	
265 to 243	24.14 23.17		0.0 6.25	1.5 1.682	T	9.9	0.990 9.900 10.890	120 0.0016	29.162 0.420 0.017		Vel = 0.90	
243			0.0 6.25						29.599		K Factor = 1.15	
209 to 266	23.17 24.17		2.93 2.93	1.5 1.682	3T 2E	29.699 9.9	57.180 39.599 96.779	120 0.0004	30.944 -0.433 0.036		Vel = 0.42	
266 to 244	24.17 23.17		0.0 2.93	1.5 1.682	T	9.9	1.010 9.900 10.910	120 0.0004	30.547 0.433 0.004		Vel = 0.42	
244			0.0 2.93						30.984		K Factor = 0.53	
210 to 267	23.17 24.15		0.99 0.99	1.5 1.682	3T 2E	29.699 9.9	57.150 39.599 96.749	120 0	32.396 -0.424 0.004		Vel = 0.14	
267 to 245	24.15 23.17		0.0 0.99	1.5 1.682	T	9.9	0.990 9.900 10.890	120 0.0001	31.976 0.424 0.001		Vel = 0.14	
245			0.0 0.99						32.401		K Factor = 0.17	
211 to 268	23.17 24.15		0.17 0.17	1.5 1.682	3T 2E	29.699 9.9	57.160 39.599 96.759	120 0	33.830 -0.424 -0.001		Vel = 0.02	
268 to 246	24.15 23.17		0.0 0.17	1.5 1.682	T	9.9	0.990 9.900 10.890	120 0.0001	33.405 0.424 0.001		Vel = 0.02	
246			0.0 0.17						33.830		K Factor = 0.03	

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 12
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
212 to 269	23.17 24.15		0.01	1.5	3T 2E	29.699 9.9	57.140 39.599 96.739	120 0	35.260 -0.424 -0.001			Vel = 0
269 to 247	24.15 23.17		0.0	1.5	T	9.9	1.000 9.900 10.900	120 0.0001	34.835 0.424 0.001			Vel = 0
247			0.0 0.01						35.260			K Factor = 0
213 to 270	23.17 24.14		0.13	1.5	3T 2E	29.699 9.9	57.140 39.599 96.739	120 0	36.690 -0.420 0.0			Vel = 0.02
270 to 248	24.14 23.17		0.0	1.5	T	9.9	0.980 9.900 10.880	120 0	36.270 0.420 0.0			Vel = 0.02
248			0.0 0.13						36.690			K Factor = 0.02
214 to 271	23.17 24.15		0.87	1.5	3T 2E	29.699 9.9	57.170 39.599 96.769	120 0	38.118 -0.424 0.003			Vel = 0.13
271 to 249	24.15 23.17		0.0	1.5	T	9.9	1.000 9.900 10.900	120 0.0001	37.697 0.424 0.001			Vel = 0.13
249			0.0 0.87						38.122			K Factor = 0.14
215 to 272	23.17 24.15		2.70	1.5	3T 2E	29.699 9.9	57.150 39.599 96.749	120 0.0003	39.529 -0.424 0.031			Vel = 0.39
272 to 250	24.15 23.17		0.0	1.5	T	9.9	0.990 9.900 10.890	120 0.0003	39.136 0.424 0.003			Vel = 0.39
250			0.0 2.70						39.563			K Factor = 0.43
216 to 273	23.17 24.15		5.86	1.5	3T 2E	29.699 9.9	57.160 39.599 96.759	120 0.0013	40.890 -0.424 0.130			Vel = 0.85
273 to 251	24.15 23.17		0.0	1.5	T	9.9	1.000 9.900 10.900	120 0.0014	40.596 0.424 0.015			Vel = 0.85
251			0.0 5.86						41.035			K Factor = 0.91
217 to 274	23.17 24.14		10.52	1.5	3T 2E	29.699 9.9	57.150 39.599 96.749	120 0.0040	42.145 -0.420 0.385			Vel = 1.52
274 to 252	24.14 23.17		0.0	1.5	T	9.9	0.990 9.900 10.890	120 0.0040	42.110 0.420 0.044			Vel = 1.52
252			0.0									

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 13
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
252			10.52						42.574		K Factor = 1.61	
218 to 275	23.17 24.14		16.77	1.5	3T 2E	29.699 9.9	57.150 39.599	120	43.219 -0.420		Vel = 2.42	
275 to 253	24.14 23.17		16.77	1.682			96.749	0.0094	0.912			
275 to 253	24.14 23.17		0.0	1.5	T	9.9	0.990 9.900	120	43.711 0.420		Vel = 2.42	
253			0.0 16.77						44.234		K Factor = 2.52	
219 to 276	23.17 24.15		24.63	1.5	3T 2E	29.699 9.9	57.160 39.599	120	44.032 -0.424		Vel = 3.56	
276 to 254	24.15 23.17		24.63	1.682			96.759	0.0192	1.856			
276 to 254	24.15 23.17		0.0	1.5	T	9.9	1.000 9.900	120	45.464 0.424		Vel = 3.56	
254			0.0 24.63						46.097		K Factor = 3.63	
220 to 277	23.17 23.17		44.85	2			10.000	120	44.525 0.0		Vel = 3.94	
277 to 278	23.17 24.16		44.85	2.157			10.000	0.0173	0.173			
277 to 278	23.17 24.16		0.0	1.5	3T 2E	29.699 9.9	57.190 39.599	120	44.698 -0.429		Vel = 6.48	
278 to 223	24.16 23.17		44.85	1.682			96.789	0.0582	5.630			
278 to 223	24.16 23.17		0.0	1.5	T	9.9	1.000 9.900	120	49.899 0.429		Vel = 6.48	
223			0.0 44.85						50.962		K Factor = 6.28	



Hydraulic Calculations by HydraCALC

CAROLINA FIRE PROTECTION
4055 HODGES CHAPEL ROAD
DUNN, NC 28334
910-892-1700

Job Name : BAUCOM BUSINESS PLAZA STORAGE
Drawing : FP-101
Location : 11132 US 401 N FUQUAY VARINA, NC 27526
Remote Area : 3
Contract :
Data File : BAUCOM BUSINESS PLAZA STORAGE Area 3.WXF

HYDRAULIC CALCULATIONS
for

JOB NAME BAUCOM BUSINESS PLAZA STORAGE
Location 11132 US 401 N FUQUAY VARINA, NC 27526
Drawing # FP-101
Contract #
Date 10-02-24

DESIGN

Remote area # 3
Remote area location LOWER LEVEL
Occupancy classification OH-2 (STORAGE)
Density 0.2 - Gpm/SqFt
Area of application 900 - SqFt
Coverage/sprinkler 125 - SqFt
Type of sprinkler calculated VICTAULIC (V2704) 1/2" 155 QR BR UPR
Sprinklers calculated 16
In-rack demand N/A - GPM
Hose streams 250 - GPM
Total water required (including hose streams) 570.33 - GPM @ 97.46 - Psi
Type of system WET
Volume of system (dry or pre-action) - Gal

WATER SUPPLY INFORMATION

Test date 10-05-23
Location 11132 US 401 N, FUQUAY-VARINA, NC
Source of info ENGINEERING PLANNING AND MANAGEMENT

CONTRACTOR INFO CAROLINA FIRE PROTECTION
Address 4055 HODGES CHAPEL ROAD / DUNN, NC 28334
Phone # 910-892-1700
Name of designer IFPDC-GB
Authority having jurisdiction

NOTES:

SAFETY MARGIN 9.09 PSI

text1(35) - invisible

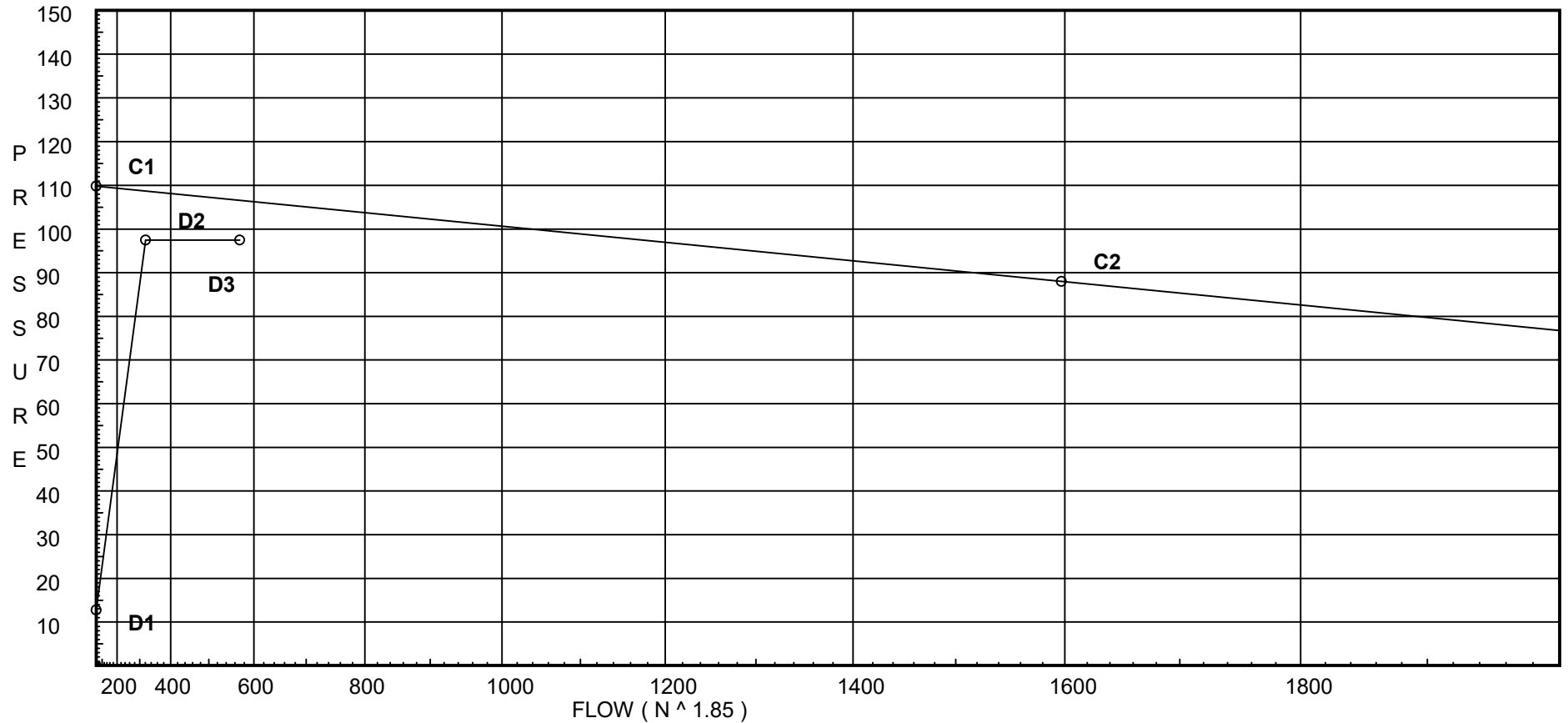
Water Supply Curve

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 2
Date

City Water Supply:
C1 - Static Pressure : 109.8
C2 - Residual Pressure: 88
C2 - Residual Flow : 1597

Demand:
D1 - Elevation : 12.776
D2 - System Flow : 320.33
D2 - System Pressure : 97.463
Hose (Demand) : 250
D3 - System Demand : 570.33
Safety Margin : 9.092



Fittings Used Summary

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 3
Date

Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20	24
Bvca	B Fly Vic 705						6	6	7		8	12	14	16	18	19					
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
F	NFPA 13 45' Elbow	1	1	1	1	2	2	3	3	3	4	5	7	9	11	13	17	19	21	24	28
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zcj	Colt C500 Horz OSY	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units Inches
 Length Units Feet
 Flow Units US Gallons per Minute
 Pressure Units Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Flow Summary - NFPA

CAROLINA FIRE PROTECTION
 BAUCOM BUSINESS PLAZA STORAGE

Page 4
 Date

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	109.8	88	1597.0	106.555	570.33	97.463

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
`	0.0		23.61		
300	8.5	5.6	19.93	25.0	0.2 125
301	8.5	5.6	21.9	26.2	0.2 125
302	8.5	5.6	29.3	30.31	0.2 125
304	8.5	5.6	48.31	38.92	0.2 125
303	8.5		51.56		
305	8.08		57.83		
306	8.08		57.91		
109	8.08		63.33		
110	23.17		64.1		
TSR	23.17		64.25		
BSR	11.0		70.77		
RE	7.0		72.57		
UG1	-1.0		76.4	250.0	
PIT	-1.0		79.31		
CON	-1.0		88.59		
TEST	-21.0		97.46		
307	8.5	5.6	19.93	25.0	0.2 125
308	8.5	5.6	21.9	26.21	0.2 125
309	8.5	5.6	29.31	30.32	0.2 125
311	8.5	5.6	48.32	38.93	0.2 125
310	8.5		51.57		
312	8.08		57.84		
108	8.08		58.56		
124	8.08		63.15		
313	8.5	5.6	49.15	39.26	0.2 125
315	8.5	5.6	51.46	40.17	0.2 125
314	8.5		54.91		

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 5
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
300 to 301	8.5 8.5	5.60	25.00 25.0	1 1.049			10.000 10.000	120 0.1966	19.930 0.0 1.966			Vel = 9.28
301 to 302	8.5 8.5	5.60	26.20 51.2	1 1.049			10.000 10.000	120 0.7408	21.896 0.0 7.408			Vel = 19.01
302 to 303	8.5 8.5	5.60	30.32 81.52	1 1.049	T	5.0	7.710 5.000 12.710	120 1.7511	29.304 0.0 22.256			Vel = 30.26
303			0.0 81.52						51.560			K Factor = 11.35
304 to 303	8.5 8.5	5.60	38.92 38.92	1 1.049	T	5.0	2.290 5.000 7.290	120 0.4460	48.309 0.0 3.251			Vel = 14.45
303 to 305	8.5 8.08		81.52 120.44	1.25 1.38	T	6.0	0.420 6.000 6.420	120 0.9481	51.560 0.182 6.087			Vel = 25.83
305 to 306	8.08 8.08		-31.64 88.8	3 3.26			10.000 10.000	120 0.0082	57.829 0.0 0.082			Vel = 3.41
306 to 109	8.08 8.08		79.43 168.23	3 3.26	2T	40.319	162.200 40.319 202.519	120 0.0267	57.911 0.0 5.416			Vel = 6.47
109 to 110	8.08 23.17		152.10 320.33	3 3.26	2E T	18.815 20.159	44.080 38.974 83.054	120 0.0880	63.327 -6.535 7.311			Vel = 12.31
110 to TSR	23.17 23.17		0.0 320.33	3 3.26			1.670 1.670	120 0.0880	64.103 0.0 0.147			Vel = 12.31
TSR to BSR	23.17 11		0.0 320.33	4 4.26	Bvca S	10.534 28.968	12.625 39.502 52.127	120 0.0239	64.250 5.271 1.247			Vel = 7.21
BSR to RE	11 7		0.0 320.33	6 6.357	E	17.603	4.000 17.603 21.603	120 0.0034	70.768 1.732 0.074			Vel = 3.24
RE to UG1	7 -1		0.0 320.33	6 6.28	E T G	22.063 47.277 4.728	60.000 74.068 134.068	140 0.0027	72.574 3.465 0.364			Vel = 3.32
UG1 to PIT	-1 -1	H250	250.00 570.33	6 6.09	E 2F	21.583 21.583	317.000 43.166 360.166	150 0.0081	76.403 0.0 2.908			Vel = 6.28
PIT to CON	-1 -1		0.0 570.33	6 6.28	2E T 2G Zcj	44.125 47.277 9.455 0.0	100.000 100.857 200.857	140 0.0079	79.311 7.695 1.587			* * Fixed Loss = 7.695 Vel = 5.91
CON to TEST	-1 -21		0.0 570.33	12 12.46	T 3F	98.292 63.89	580.000 162.182 742.182	140 0.0003	88.593 8.662 0.208			Vel = 1.50

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
BAUCOM BUSINESS PLAZA STORAGE

Page 6
Date

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Equiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****			
			0.0												
TEST			570.33										97.463	K Factor = 57.77	
307 to 308	8.5 8.5	5.60	25.00 25.0	1 1.049			10.000 10.000	120 0.1967	19.934 0.0 1.967	Vel = 9.28					
308 to 309	8.5 8.5	5.60	26.21 51.21	1 1.049			10.000 10.000	120 0.7409	21.901 0.0 7.409	Vel = 19.01					
309 to 310	8.5 8.5	5.60	30.32 81.53	1 1.049	T 5.0		7.710 5.000 12.710	120 1.7515	29.310 0.0 22.261	Vel = 30.27					
			0.0												
310			81.53										51.571	K Factor = 11.35	
311 to 310	8.5 8.5	5.60	38.93 38.93	1 1.049	T 5.0		2.290 5.000 7.290	120 0.4461	48.319 0.0 3.252	Vel = 14.45					
310 to 312	8.5 8.08		81.53 120.46	1.25 1.38	T 6.0		0.420 6.000 6.420	120 0.9484	51.571 0.182 6.089	Vel = 25.84					
312 to 108	8.08 8.08		31.64 152.1	3 3.26	T 20.159		12.300 20.159 32.459	120 0.0222	57.842 0.0 0.720	Vel = 5.85					
108 to 124	8.08 8.08		0.0 152.1	3 3.26	T 20.159		186.770 20.159 206.929	120 0.0222	58.562 0.0 4.592	Vel = 5.85					
124 to 109	8.08 8.08		0.0 152.1	3 3.26			7.790 7.790	120 0.0222	63.154 0.0 0.173	Vel = 5.85					
			0.0												
109			152.10										63.327	K Factor = 19.11	
313 to 314	8.5 8.5	5.60	39.26 39.26	1 1.049	T 5.0		7.710 5.000 12.710	120 0.4532	49.151 0.0 5.760	Vel = 14.57					
			0.0												
314			39.26										54.911	K Factor = 5.30	
315 to 314	8.5 8.5	5.60	40.17 40.17	1 1.049	T 5.0		2.290 5.000 7.290	120 0.4728	51.464 0.0 3.447	Vel = 14.91					
314 to 306	8.5 8.08		39.26 79.43	1.25 1.38	T 6.0		0.420 6.000 6.420	120 0.4389	54.911 0.182 2.818	Vel = 17.04					
			0.0												
306			79.43										57.911	K Factor = 10.44	
305 to 312	8.08 8.08		31.65 31.65	3 3.26			10.040 10.040	120 0.0013	57.829 0.0 0.013	Vel = 1.22					
			0.0												

Final Calculations : Hazen-Williams

CAROLINA FIRE PROTECTION
 BAUCOM BUSINESS PLAZA STORAGE

Page 7
 Date

Node1	Elev1	K	Qa	Nom	Fitting		Pipe	CFact	Pt			
to					or		Ftngs		Pe	*****	Notes	*****
Node2	Elev2	Fact	Qt	Act	Equiv	Len	Total	Pf/Ft	Pf			
312			31.65						57.842		K Factor =	4.16