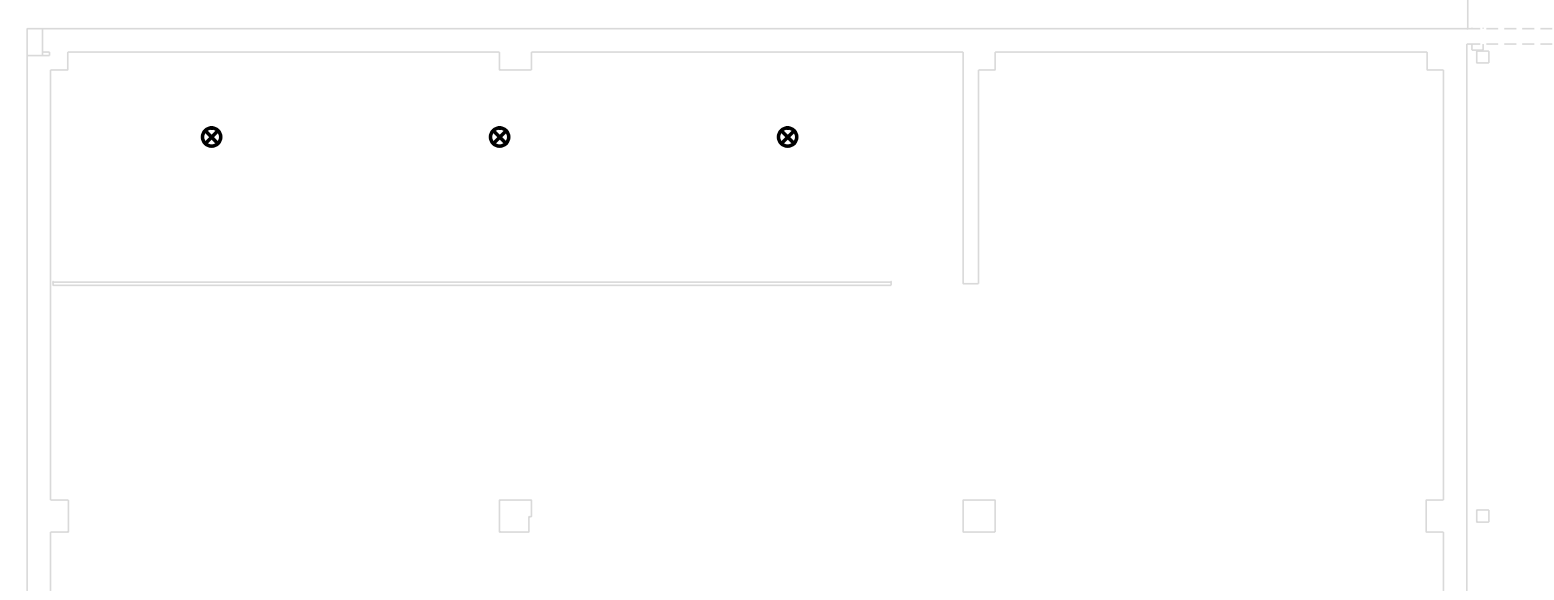


1 FIRST FLOOR PLAN – FIRE PROTECTION
 FP1.101 SCALE: 1/8" = 1'-0"



2 MEZZANINE PLAN – FIRE PROTECTION
 FP1.101 SCALE: 1/8" = 1'-0"

FIRE PROTECTION CRITERIA

- THE PURPOSE OF THE FIRE PROTECTION DRAWINGS AND SPECIFICATIONS IS TO ESTABLISH THE CRITERIA FOR DESIGN, MATERIALS, AND LOCATIONS OF THE COMPLETE SPRINKLER SYSTEM. THE FIRE PROTECTION SUB-CONTRACTOR IS RESPONSIBLE FOR THE FINAL DESIGN OF THE SPRINKLER SYSTEM AND SAID DESIGN AND INSTALLATION SHALL INCLUDE ALL COMPONENTS TO PROVIDE FOR THE COMPLETE SYSTEM WITHOUT ANY ADDITIONAL EXPENSE TO THE OWNER. THE SUB-CONTRACTOR SHALL VERIFY THAT THE NUMBER OF HEADS SHOWN ON HIS WORKING PLANS AND HYDRAULIC CALCULATIONS ARE ADEQUATE TO PROTECT ALL AREAS OF THE BUILDING AND SHALL INCLUDE ANY COST FOR ADDITIONAL SPRINKLER HEADS AND PIPING NOT SHOWN ON THESE DRAWINGS IN HIS CONTRACT PRICE.
- THE BUILDING IS TO BE 100% SPRINKLERED INCLUDING ALL CLOSETS, TELEPHONE ROOMS, ELECTRIC ROOMS AND EMERGENCY ELECTRIC ROOMS.
- THE BUILDING IS GENERALLY MASONRY AND STEEL CONSTRUCTION. THE SPACE SHALL BE PROTECTED THROUGHOUT WITH A WET TYPE SPRINKLER SYSTEM AND THE HEADS LOCATED WHERE SHOWN.
- CODE REQUIREMENTS:
 BUILDING USE = B – BUSINESS
 FLOOR AREA = 11,585 S.F.
 OCCUPANCY = 114
 CONSTRUCTION = 2B
 MGL-C148-S26G – REQUIRES SPRINKLERS IN COMMERCIAL USE BUILDING GREATER THAN 7,500 S.F.
 SYSTEM DESIGN PROVIDES FOR AN AUTOMATIC SPRINKLER SYSTEM. REFER TO ARCHITECT'S DRAWINGS FOR ADDITIONAL CODE SUMMARY INFORMATION AND DELINEATION OF FIRE SEPARATIONS. REFER TO ELECTRICAL DRAWINGS FOR DETAILS OF THE FIRE ALARM SYSTEM.
- PROVIDE COMPLETE HYDRAULIC CALCULATIONS AND DISTRIBUTION SYSTEM DESIGN UTILIZING THE DESIGN CRITERIA ESTABLISHED ON THE CONTRACT DOCUMENTS. SYSTEM DESIGN SHALL BE BASED ON FLOW TEST TO BE CONDUCTED BY THE FIRE PROTECTION SUB-CONTRACTOR. CONSULT WITH AND COORDINATE THE TIME SCHEDULE WITH THE ARCHITECT AND THE WATER DEPARTMENT. FOR THE PURPOSES OF PREPARATION OF THESE DOCUMENTS THE FOLLOWING FLOW TEST DATA HAS BEEN USED. THE TEST WAS PREPARED FOR THE WILBRAHAM WATER DEPARTMENT. FLOW HYDRANT IS LOCATED ON THE FIRE STATION PROPERTY ADJACENT TO THE BUILDING. GAGE HYDRANT IS LOCATED ON BOSTON ROAD. GAGE HYDRANT ELEVATION IS APPROXIMATELY 268'.
 STATIC PRESSURE = 65 PSI
 RESIDUAL PRESSURE = 59 PSI
 FLOW = 606 GPM
 AVAILABLE FLOW @ 20 PSI = 1,800 GPM
- REQUIRED DESIGN FLOWS:
 A. DESIGN HAZARDS:
 1. APPARATUS BAY = ORDINARY, GROUP 1
 2. MECHANICAL ROOMS = ORDINARY, GROUP 1
 3. STORAGE ROOMS = ORDINARY, GROUP 1
 4. KITCHEN COOKING AREA = ORDINARY, GROUP 1
 5. ALL OTHER AREAS NOT LISTED = LIGHT
 * REFER TO DRAWINGS INDICATING THE DELINEATIONS.
 B. REQUIRED DESIGN DENSITIES:
 1. LIGHT HAZARD AREAS = 0.10 GPM OVER 1,500 S.F.
 2. ORDINARY HAZARD GROUP 1 = 0.15 GPM OVER 1,500 S.F.
- SPRINKLER SPACING (MAX.):
 LIGHT HAZARD AREAS = 225 S.F.
 ORDINARY HAZARD AREAS = 130 S.F.
 SIDEWALL HEADS = TABLE 8.7.2.2.1 OF NFPA 13
- PRELIMINARY CALCULATIONS ONLY. THESE ARE BASED ON THE INFORMATION ABOVE FOR THE DESIGNER'S PURPOSES ONLY AND TO ESTABLISH THE SYSTEM PERFORMANCE IN ACCORDANCE WITH 903.1. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY DEVIATION.
 ANALYSIS OF ORDINARY HAZARD AREA (APPARATUS BAY):
 SPRINKLER FLOW:
 MIN. FLOW
 0.15 GPM/S.F. x 1,500 = 225 GPM
 HYDRAULIC FACTOR = 1.33
 SPRINKLER FLOW = 300 GPM
 ELEVATION = 284'
 INSIDE HOSE = 150 GPM
 OUTSIDE HOSE = 100 GPM
 TOTAL HOSE = 250 GPM
 TOTAL FLOW = 550 GPM
 MINIMUM PRESSURE @ SPRINKLER HEAD:
 (ASSUME K = 5.6) = 12 PSI
 PRESSURE AVAILABLE @
 550 GPM @ EL 268' = 59 PSI
 GRAVITY LOSS
 (284 - 268) x .433 = 7 PSI
 D.C.V.A. = 5 PSI
 DESIGN CUSHION = 10 PSI
 AVAILABLE FOR
 PIPING LOSS (59 - 34) = 25 PSI
- FOLLOW THE HEAD LAYOUTS SHOWN ON THE DRAWINGS IN FINISHED AREAS. ALL SPRINKLER HEADS SHALL BE LOCATED DEAD CENTER ON THE CEILING TILE AND SWING JOINTS IF REQUIRED MAY BE USED TO MEET THIS REQUIREMENT.
- HYDRAULIC CALCULATIONS FOR THE SYSTEM SHALL INCLUDE A 10 PSI CUSHION AND SHALL LIMIT WATER FLOW VELOCITY TO A MAXIMUM OF 20 FT./SEC.



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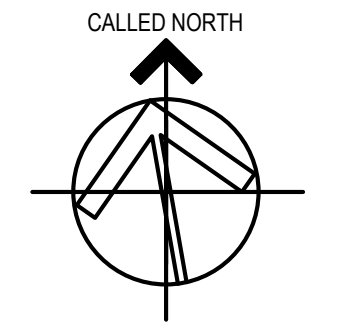
Owner
TOWN OF WILBRAHAM

240 SPRINGFIELD STREET
 WILBRAHAM, MA

Project
Wilbraham Fire Station

2770 Boston Road
 Wilbraham, MA

Key Plan



Seals
BID SET

Issues	
Date	Description

Revisions		
No.	Date	Description

Drawing Title
**FIRST FLOOR PLAN
 FIRE PROTECTION**

Issue Date:	01/19/12
Project No:	TA-01-01
Project Manager:	JM
Project Architect:	JB

Drawing Number
FP1.101