

FIRE PROTECTION SPECIFICATION:

GENERAL:

- A.) THE WORK COVERED BY THIS SECTION OF THE SPECIFICATION CONSISTS OF FURNISHING ALL MATERIALS, LABOR, SUPERVISION, EQUIPMENT AND APPURTENANCES, TOOLS, PERMITS, AND SERVICE TO PERFORM ALL FIRE PROTECTION WORK, COMPLETE AND PLACE INTO APPROVED OPERATING CONDITION, INCLUDING ALL TESTS AND ADJUSTMENTS IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS AND APPLICABLE DRAWINGS.
- B.) THE PRINCIPLE WORK UNDER THIS SECTION SHALL INCLUDE, BUT WILL NOT BE LIMITED TO THE FOLLOWING MAJOR ITEMS:
1. SPRINKLER PIPING
 2. SPRINKLER HEADS
 3. HANGERS, SUPPORTS AND SLEEVES
 4. CORE DRILLING
- C.) RELATED WORK: THE FOLLOWING WORK IS NOT INCLUDED IN THIS SECTION AND IS TO BE PERFORMED UNDER THE DESIGNATED SECTIONS:
1. ELECTRICAL WORK
 2. CUTTING AND PATCHING
- D.) SUBMIT COMPLETE SHOP DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS. SHOP DRAWINGS SHALL INCLUDE EQUIPMENT, PIPING, VALVES, HANGERS, SUPPORTS AND SPRINKLER HEADS.
- E.) THE FIRE PROTECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK UNTIL ITS COMPLETION AND FINAL ACCEPTANCE AND REPLACE ANY WORK OR MATERIALS THAT HAVE BEEN DAMAGED, LOST, STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.
- F.) MATERIALS AND FIXTURES SHALL BE PROPERLY PROTECTED AGAINST OBSTRUCTION AND DAMAGE.
- G.) THE FIRE PROTECTION SUBCONTRACTOR SHALL CAREFULLY FIELD SURVEY THE SITE FOR EXISTING CONDITIONS SINCE THIS RENOVATION WORK.
- H.) THE FIRE PROTECTION SUBCONTRACTOR SHALL VISIT THE SITE OF THE PROPOSED WORK AND SHALL FULLY ACQUAINT THEMSELVES WITH THE CONDITIONS CHARACTER AND EXTENT OF WORK REQUIRED.
- I.) THE FIRE PROTECTION SUBCONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER FOR DIRECTION IF ANY ACTUAL FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS AS EXISTING.
- J.) SUBMIT ALL GUARANTEES IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS.
- K.) PREPARE AND SUBMIT RECORD DRAWINGS IN ACCORDANCE WITH THE PROVISIONS OF THE GENERAL CONDITIONS.
- L.) THE FIRE PROTECTION SUBCONTRACTOR SHALL PERFORM ALL CORE DRILLING OF FLOORS AND WALLS AS REQUIRED TO INSTALL THE FIRE PROTECTION SYSTEMS.
- M.) ALL WORK AND MATERIALS ARE TO COMPLY IN EVERY RESPECT WITH THE STATE BUILDING CODE AND SUCH APPLICABLE BUILDING LAWS AND REGULATIONS ARE TO BE CONSIDERED AS PART OF THESE SPECIFICATIONS.
- N.) THE FIRE PROTECTION SUBCONTRACTOR IS TO GIVE ALL REQUISITE NOTICES AND FILE ALL REQUISITE PLANS RELATING TO THEIR WORK WITH THE PROPER AUTHORITIES AND IS TO SECURE ALL PERMITS AND PAY ALL FEES FOR SAME. IF ANY WORK IS CHANGED AND CHANGES ARE NECESSARY TO CONFORM TO ORDINANCES THESE CHANGES SHALL BE MADE AT THE FIRE PROTECTION SUBCONTRACTORS EXPENSE.
- O.) THE DRAWINGS AND SPECIFICATIONS SHALL BE FOLLOWED WHEN IN EXCESS OF THE MINIMUM REQUIREMENTS OF THE CODE.
- P.) THE DRAWINGS AND THESE SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER AND ANY LABOR OR MATERIALS CALLED FOR THE EITHER WHETHER OR NOT BY BOTH SHALL BE FURNISHED AND INSTALLED BY THIS SUBCONTRACTOR.
- Q.) INSTRUCT TO THE OWNER'S SATISFACTION SUCH PERSONS AS THE OWNER DESIGNATES IN THE PROPER OPERATION AND MAINTENANCE OF THE SYSTEMS AND THEIR PARTS.
- R.) THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL THREE SETS OF OPERATION AND INSTRUCTIONAL MANUALS, SPARE PARTS LISTS, DRAWINGS, MANUFACTURER'S BULLETINS AND OTHER PERTINENT DATA OF ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT. EACH SET SHALL BE ENCLOSED IN A SUITABLE HARD COVER BINDER.
- S.) AFTER COMPLETION OF THE WORK ALL TOOLS AND OTHER EQUIPMENT SHALL BE REMOVED FROM THE BUILDING. ALL EXCESS MATERIALS SHALL BE REMOVED AND THE BUILDING LEFT BROOM CLEAN.
- T.) TEST ALL FIRE PROTECTION PIPING AND MAKE WATERTIGHT BEFORE PAINTING AND BEFORE CONCEALMENT. MAKE PARTIAL TESTS AS REQUIRED DURING THE PROGRESS OF THE WORK. ALL TESTS SHALL BE WITNESSED BY THE OWNER'S REPRESENTATIVE AND LOCAL AUTHORITIES.
- U.) PIPING SYSTEM SHALL BE TESTED BY A HYDROSTATIC TEST OF 200 PSI IN ACCORDANCE WITH NFPA REQUIREMENTS.
- V.) DEFECTIVE WORK- IF INSPECTION OF TEST SHOWS DEFECTS, SUCH DEFECTIVE WORK OR MATERIAL SHALL BE REPLACED, INSPECTED AND TESTS SHALL BE REPEATED. ALL REPAIRS TO PIPING SHALL BE MADE WITH NEW MATERIAL.

PRODUCTS:

- A.) FURNISH AND INSTALL A COMPLETE FIRE PROTECTION SPRINKLER SYSTEM USING MATERIALS HEREINAFTER SPECIFIED AND IN ACCORDANCE WITH NFPA STANDARDS NO. 13 (2007 EDITION), NO. 14 (2007 EDITION), NO. 20 (2007 EDITION) AND THE MASSACHUSETTS STATE BUILDING CODE, 780 CMR, LATEST EDITION.
- B.) SPRINKLER PIPING SHALL BE BLACK STEEL USED FOR ALL INTERIOR PIPING, SCHEDULE 40, ASTM A-120.
- C.) FITTINGS SHALL BE BLACK STEEL WITH SCREWED FITTINGS FOR 2" PIPE AND SMALLER, GROOVED FITTING WITH MECHANICAL COUPLINGS FOR PIPING 2 1/2" AND LARGER.
- D.) HANGERS SHALL BE ADJUSTABLE SWIVEL RING PATTERN SUPPORTED FROM STRUCTURE.
- E.) ALL CORES AND HOLES IN WALLS, PARTITIONS, FLOORS AND CEILINGS, ETC. MADE BY THE FIRE PROTECTION CONTRACTOR SHALL BE PROVIDED WITH UL LISTED FIRESTOP MATERIAL TO MATCH FIRE RESISTANCE RATING OF THE PENETRATED ASSEMBLY.

EXECUTION:

- A.) THIS FIRE PROTECTION SUBCONTRACTOR SHALL INSTALL ALL PIPING, FITTINGS, VALVES AND ALL RELATED APPURTENANCES ESSENTIALLY AS INDICATED ON THE DRAWINGS AND IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNTIL COMPLETED AND APPROVED.
- B.) ALL PIPING MUST BE TRUE, PLUMB AND WITH PROPER PITCH FOR REQUIREMENTS OF THE LOCAL AUTHORITIES AND THE OWNER'S INSURANCE COMPANY.

LEGEND :

- NEW SPRINKLER PIPING TO BE INSTALLED
- EXISTING SPRINKLER PIPING TO REMAIN
- NEW PIPING CONNECTION TO EXISTING
- NEW PENDENT CONNECTED TO EXISTING OUTLET
- UN-UTILIZED PLUGGED EXISTING OUTLET
- ELEVATION OF SPRINKLER PIPE ABOVE BASEMENT FLOOR
- HYDRAULIC REFERENCE POINT

**** ALL OUTLETS NOT UTILIZED TO BE PLUGGED BACK TO BRANCHLINE**

SPRINKLER HEAD LEGEND:

SYM	CNT	NAME	METAL	TEMP	K	NPT	SIN #	MFG.	MODEL#	ESOUT
●	135	NEW PENDENT	WHITE	165	5.60	1/2"	RS415	RELIABLE	G4A	CONCEALED
○	1	EXISTING UPRIGHT SPRINKLER TO REMAIN								

ALL UN-USED OUTLETS TO BE PLUGGED BACK TO EXISTING BRANCHLINE

REMOTE AREA 1 - LIGHT HAZARD

HYDRAULIC DESIGN DATA

A.H.J.	FRAMINGHAM FIRE DEPT. / FPE
DESIGN STD.	NFPA 13 - 2007 EDITION
PIPE TYPES	
MAINS	BLACK STEEL SCHED 10
BRANCHES	BLACK STEEL SCHED 40
SPRINKLER ORIFICE	1/2" K= 5.6
AREA LOCATION	OPEN OFFICE PLAN
# OF FLOWING SPRINKLERS	13
DENSITY	.10 G.P.M./SQ.FT. 196
REMOTE AREA	1500 SQ.FT.
DEMAND AT PUMP DISCHARGE	
FLOW	268 G.P.M.
PRESSURE	52.7 P.S.I.

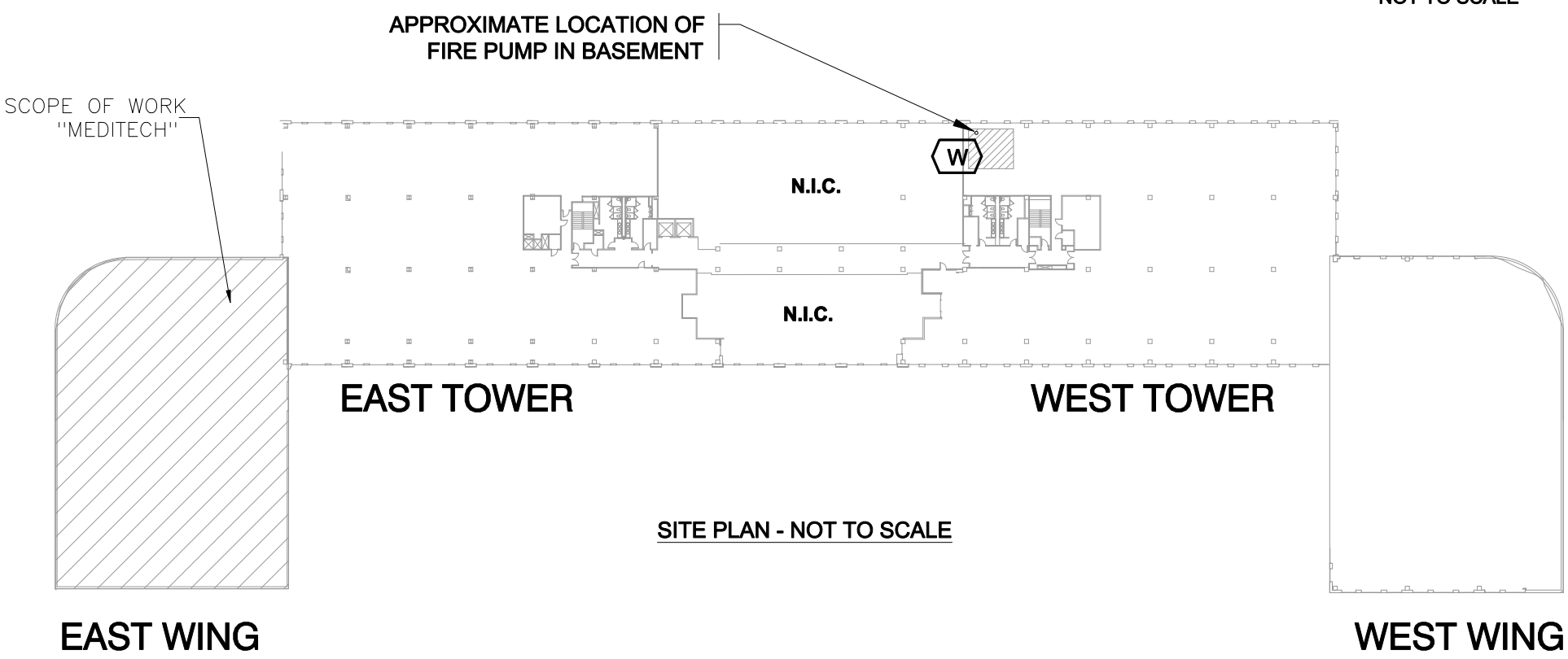
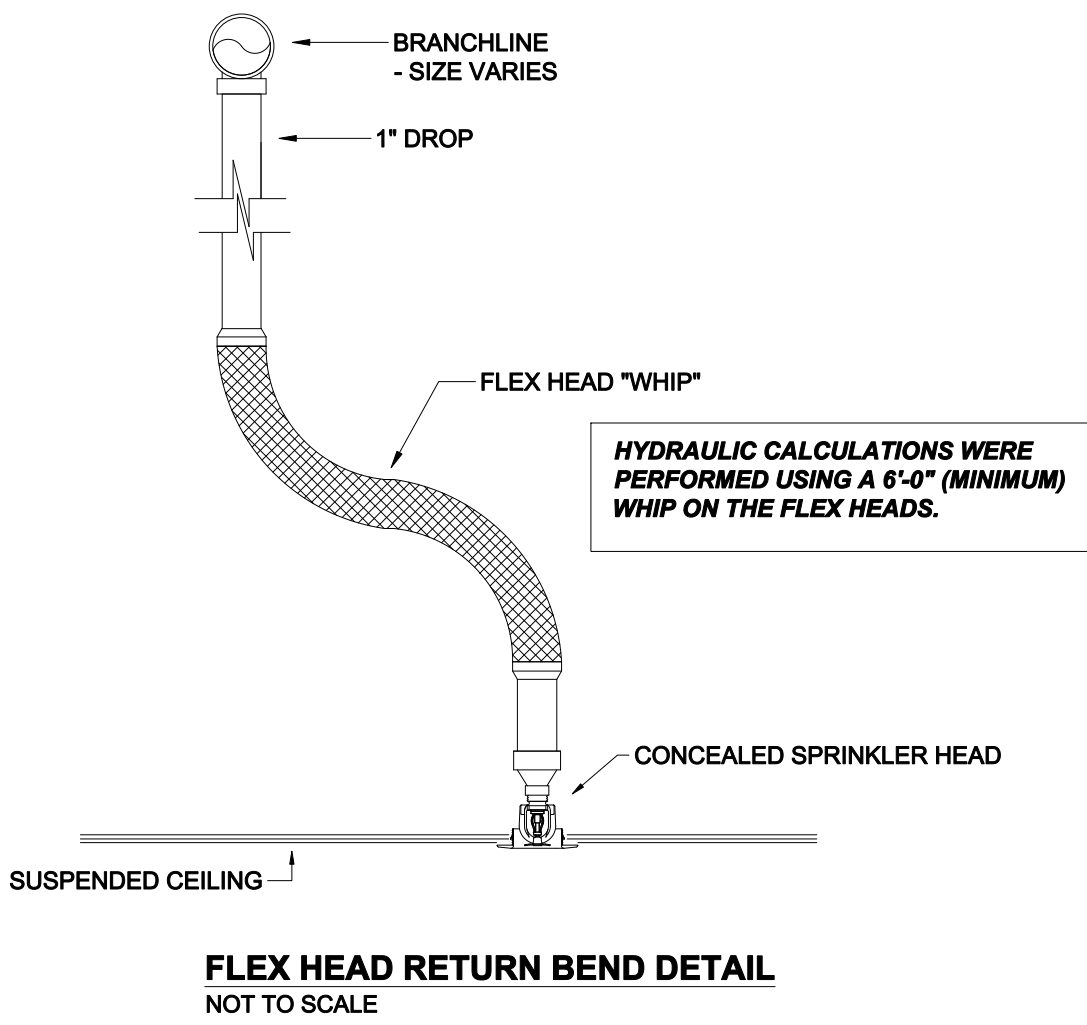
WATER FLOW DATA:

FIRE PUMP TEST RESULTS PROVIDED BY OTHERS.

STATIC PRESSURE: 130 PSI
RESIDUAL PRESSURE: 76 PSI
FLOW: 2300 GPM

FROM NODE 'B6' TO 'W' (PUMP DISCHARGE LOCATION) THE FOLLOWING WAS INCLUDED IN HYDRAULIC CALCULATIONS:
(2) 4" 90° ELBOWS
(2) 3" 90° ELBOWS
(5) 6" 90° ELBOWS
(4) 42" OF 6" PIPE
(2) 18" 90° ELBOWS
(56" OF 8" PIPE

AVAILABLE PRESSURE OF 128.0 PSI EXCEEDS REQUIRED PRESSURE OF 52.7 PSI. THIS IS A SAFETY MARGIN OF 76.2 PSI OR 99% OF SUPPLY



Project: 2007-160
MEDITECH
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No.	Date	Description

Drawn By:
JLC
Reviewed By:

Checked By:

Sheet Title
**EAST WING
SECOND FLOOR PLAN**

Orientation - Scale - Date
SEPTEMBER 14, 2011
SCALE 1/8" = 1'-0"
0 feet 8 16 24

Sheet Number
FP1