



MEP Engineer



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**SPRINKLER SPECIFICATIONS**

**PART 1 - GENERAL**

**1.01 GENERAL PROVISIONS**

A. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF THE WORK IN CONTRACT. THE CONTRACTOR SHALL PROVIDE ALL COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.

**1.02 SCOPE OF WORK**

A. THE WORK UNDER THIS SECTION INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

1. PROVIDE COMPLETE FIRE SPRINKLER SYSTEM AS DESCRIBED IN THESE SPECIFICATIONS BUT NOT LIMITED TO, PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, ACCESSORIES, CONNECTION ETC AS REQUIRED UNDER NFPA13.
2. PREPARATION OF FIRE PROTECTION SHOP DRAWINGS INDICATING PIPE SIZES, ELEVATIONS AND INTERFERENCES.
3. SUBMITTAL OF SHOP DRAWINGS TO THE OWNER'S FIRE PREVENTION UNDERWRITER, THE LOCAL FIRE DEPARTMENT AND THE ENGINEER OF APPROVAL.
4. ALL STAGING, PLANKING AND SCAFFOLDING.
5. OBTAIN ALL PERMITS AND APPROVALS REQUIRED FOR WORK UNDER THIS SECTION.

**1.03 WORK BY OTHERS**

A. THE FOLLOWING ITEMS AND ASSOCIATED WORK INVOLVED WILL BE PERFORMED UNDER OTHER DIVISIONS AND/OR SECTIONS:

1. FINISHED PAINTING.
2. ELECTRICAL POWER OR FIRE ALARM WIRING.
3. HEATING, VENTILATING, AND AIR CONDITIONING.
4. PLUMBING
5. TEMPORARY LIGHT POWER, WATER HEAT, GAS AND SANITARY FACILITIES FOR USE DURING CONSTRUCTION AND TEST.

**1.04 GENERAL REQUIREMENTS**

A. SUBMIT FOR APPROVAL WITHIN 15 DAYS OF THE DATE OF THE CONTRACT, A LIST OF MANUFACTURERS OF MATERIAL AND EQUIPMENT THAT ARE TO BE USED UNDER THIS SECTION OF THE SPECIFICATIONS AFTER APPROVAL OF THE LIST, SHOP DRAWINGS, INCLUDING COMPLETE SPECIFICATIONS OF CAPACITY AND REQUIREMENTS OF EQUIPMENT, SHALL BE SUBMITTED FOR APPROVAL. EQUIPMENT SHALL BE OF PROPER SIZE FOR ITS ALLOTTED SPACE IF MAKE OF EQUIPMENT OTHER THAN THAT SPECIFIED IS USED.

B. GUARANTEES AND WARRANTIES: FURNISH ALL GUARANTEES AND WARRANTIES NORMALLY FURNISHED WITH ANY PURCHASED EQUIPMENT. ALL LABOR SHALL BE GUARANTEED FOR ONE (1) FULL YEAR. ALL GUARANTEES AND WARRANTIES SHALL COMMENCE FROM SUBSTANTIAL COMPLETION OF THE SYSTEM OR SYSTEMS.

C. REFER TO THE FIRE PROTECTION DRAWINGS AND ALL OTHER DRAWINGS FOR A FULL COMPREHENSION OF THE EXTENT AND DETAIL OF THE WORK TO BE PERFORMED. THESE DRAWINGS ARE CONCEPTUAL IN DESIGN ONLY AND ARE INTENDED TO CONVEY SCOPE, ONLY. THE SPRINKLER CONTRACTOR SHALL VERIFY ALL INFORMATION INDICATED ON THESE DRAWINGS.

D. FINISHES: HANGERS, RODS AND OTHER ITEMS EXCEPT STANDARD PIPE AND FITTINGS SHALL BE GALVANIZED OR A FACTORY-APPLIED SHOP COAT. ITEMS NOT FACTORY OR SHOP PRIMED PRIOR TO INSTALLATION SHALL BE PRIMED IMMEDIATELY AFTER INSTALLATION.

E. CUTTING AND PATCHING: ALL CUTTING AND PATCHING FOR WORK UNDER THIS SECTION SHALL BE DONE BY THE GENERAL CONTRACTOR.

**1.05 PERMITS, CERTIFICATES, CODES, AND ORDINANCES**

A. IT SHALL BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR TO GIVE ALL REQUISITE NOTICES, FILE ALL REQUISITE PLANS AND CALCULATIONS RELATING TO HIS WORK WITH THE PROPER AUTHORITIES AND OBTAIN ALL REQUIRED APPROVALS AND PERMITS TO PERFORM THE WORK INVOLVED. HE SHALL ALSO BE RESPONSIBLE FOR COORDINATION WITH APPLICABLE AGENCIES AND FURNISHING ALL MATERIALS AND INSTALLATION IN ACCORDANCE WITH THEIR REQUIREMENTS. APPLICABLE AGENCIES SHALL INCLUDE BUT NOT BE LIMITED TO THE LOCAL AND STATE FIRE MARSHAL'S OFFICE, ETC.

B. ALL WORK SHALL BE IN ACCORDANCE WITH THE LOCAL AND STATE BUILDING CODE, ALL APPLICABLE NFPA STANDARDS AND REQUIREMENTS.

**1.06 COORDINATION**

A. KEEP FULLY INFORMED AS TO THE SIZE, SHAPE AND LOCATION OF ALL OPENINGS REQUIRED FOR PIPING AND APPARATUS UNDER THIS SECTION AND GIVE FULL INFORMATION TO OTHER CONTRACTORS SO THAT THE OPENINGS MAY BE PROVIDED IN ADVANCE.

B. THE BUILDING WILL NOT BE OCCUPIED DURING THE ENTIRE SPAN OF THE WORK PERIOD. COORDINATE ALL WORK WITH THAT OF OTHER TRADES. ALL DEBRIS SHALL BE REMOVED AT THE END OF THE WORK DAY AND ALL AREAS LEFT IN A NEAT APPEARANCE.

C. OBTAIN ALL NECESSARY INFORMATION FROM OTHER CONTRACTORS WHICH MAY BE NECESSARY TO FACILITATE THE WORK OF THE FIRE SUPPRESSION SYSTEM AND THE COMPLETION OF THE PROJECT.

D. THIS CONTRACTOR, BEFORE INSTALLING ANY OF HIS WORK, SHALL SEE THAT IT DOES NOT INTERFERE WITH THE CLEARANCE REQUIRED FOR FINISHED WALLS, CEILINGS, DOORS, LIGHTING, REGISTERS, GRILLS, ETC. AS SHOWN ON THE CONTRACT DRAWINGS.

E. WORK INSTALLED BY THIS CONTRACTOR WHICH INTERFERES WITH OR MODIFIES THE INTENT OF THE DESIGN SHALL BE CHANGED AS DIRECTED AND ALL COSTS INCIDENT TO SUCH CHANGES SHALL BE PAID BY THE SPRINKLER CONTRACTOR.

**1.07 PROTECTION**

A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK AND EQUIPMENT UNTIL FINALLY INSPECTED, TESTED AND ACCEPTED. CAREFULLY STORE MATERIALS AND EQUIPMENT, WHICH ARE NOT IMMEDIATELY INSTALLED AFTER DELIVERY TO SITE. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUG DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL.

B. THIS CONTRACTOR SHALL PROTECT WORK AND MATERIAL OF OTHER TRADES AND PROPERTY OF TENANTS AND OWNER FROM DAMAGE THAT MIGHT BE CAUSED BY HIS WORK OR WORKMEN AND MAKE GOOD DAMAGE THUS CAUSED.

**1.08 CERTIFICATES OF APPROVAL**

A. CERTIFICATES OF TESTING AND APPROVAL OF THE COMPLETED INSTALLATION BY THE INSURING AGENCY AND THE LOCAL FIRE DEPARTMENT SHALL BE FURNISHED TO THE ENGINEER.

**1.09 DAMAGE TO OTHER WORK**

A. THIS CONTRACTOR SHALL BE HELD RESPONSIBLE AND SHALL PAY FOR ALL DAMAGE TO OTHER WORK CAUSED BY HIS WORK OR WORKMEN. REPAIRING OF SUCH DAMAGE SHALL BE DONE BY THIS CONTRACTOR WHO INSTALLED THE WORK AND AS DIRECTED BY THE ENGINEER.

**1.10 GUARANTEE**

A. ALL EQUIPMENT, LABOR AND MATERIALS FURNISHED UNDER THIS SECTION OF THE SPECIFICATIONS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP. MATERIALS AND/OR EQUIPMENT FOUND DEFECTIVE SHALL BE REPLACED WITH NEW MATERIALS AND/OR EQUIPMENT AT THIS CONTRACTOR'S EXPENSE. THIS CONTRACTOR SHALL GUARANTEE THAT ALL ELEMENTS OF THE SYSTEM ARE OF SUFFICIENT CAPACITY TO MEET THE REQUIREMENTS SET FORTH HEREIN. UPON RECEIPT OF NOTICE FROM THE OWNER OR ARCHITECT OF ANY FAILURE DURING THE GUARANTEE PERIOD, THE DEFECT SHALL BE REMEDIATED PROMPTLY BY AND AT THE EXPENSE OF THIS CONTRACTOR.

B. THIS CONTRACTOR SHALL SEE THAT THERE IS NO CONFLICT IN THE WORK AND NO CONFLICT WITH THE WORK OF OTHER TRADES. ANY CONFLICT SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT.

**PART 2 - PRODUCTS**

**2.01 PIPE AND FITTING**

A. STANDARD WEIGHT BLACK STEEL PIPE, SCHEDULE 40, ASTM-A-120, GRADE B, WITH CAST IRON SPRINKLER PATTERN, 175 POUND, SCREWED FITTINGS FOR PIPING 2 INCH AND SMALLER.

B. SCHEDULE 10, THIN WALL STEEL PIPE FOR PIPING LARGER THAN 2 INCH IN SIZE.

C. PIPING LARGER THAN 2 INCH SHALL BE ASSEMBLED WITH MECHANICAL JOINTS USING ROLLED GROOVED METHOD.

**2.02 SPRINKLER HEADS**

A. SPRINKLER HEADS SHALL BE VIKING, GRINNELL, AUTOMATIC SPRINKLER OR EQUAL, BRONZE CONSTRUCTION, 1/2 INCH IPS THREAD AND 1/2 INCH ORIFICE, FULLY RECESSED HEADS WITH WHITE COVER PLATES, FM APPROVED UL-LISTED, TEMPERATURE RATING SHALL BE 155°-165°.

**2.03 HANGERS, MISCELLANEOUS SUPPORTS AND INSERTS**

A. PIPE - 2 INCHES AND SMALLER - FM APPROVED 1A BAND TYPE COMPLETE WITH THREADED ROD HANGER NUT, LOCK NUT AND PROPERLY SIZED FOR PIPE SUPPORTED, AND SHALL BE SIMILAR TO CARPENTER-PATERSON FIGURE 1A.

B. PIPING - 2 1/2 INCHES AND LARGER - FM APPROVED CLEVIS HANGER TYPE COMPLETE WITH THREADED ROD, LOCKING AND ADJUSTING NUTS AND SIZED FOR SIZE OF PIPE SUPPORTED, AND SHALL BE SIMILAR TO CARPENTER-PATERSON FIGURE 100 OR EQUAL.

C. PIPE HANGERS AND SUPPORTS SHALL BE INSTALLED ON ALL PIPING SYSTEMS AS FOLLOWS:

PIPE SIZE	MINIMUM ROD DIAMETER
1/2 TO 1 INCH	3/8 INCH
1 1/2 TO 2 INCH	3/8 INCH
2 1/2 AND LARGER	1/2 INCH

D. HANGERS AND SUPPORTS SHALL BE FURNISHED COMPLETE WITH ALL APPURTENANCES AND SHALL BE CENTRAL IRON, GRINNELL, CARPENTER-PATERSON OR EQUAL. HANGERS AND SUPPORTS SHALL BE HOT-DIPPED GALVANIZED WHERE EXPOSED AND DIP PAINTED WHERE CONCEALED. ALL HANGERS AND SUPPORTS SHALL BEAR THE APPROVAL OF A RECOGNIZED TESTING AGENCY.

**3.04 GUARANTEE**

A. ALL MATERIALS, ITEMS OF EQUIPMENT AND WORKMANSHIP FURNISHED UNDER THIS SECTION SHALL CARRY THE MINIMUM ONE (1) YEAR, OR GREATER, WARRANTY AGAINST ALL DEFECTS IN MATERIAL AND WORKMANSHIP. ANY FAULT DUE TO DESIGN WHICH MAY DEVELOP SHALL BE MADE GOOD, FORTHWITH, BY, AND AT THE EXPENSE OF, THIS CONTRACTOR, INCLUDING ALL OTHER DAMAGE DONE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM THIS FAILURE, PROVIDE EMERGENCY 24 HOUR ON-SITE SERVICE IN THE EVENT THAT, WITHIN THE GUARANTEE PERIOD, ANY DEFECT DEVELOPS WITHIN THE SYSTEM THAT NEEDS IMMEDIATE ATTENTION.

B. GUARANTEE THAT ALL ELEMENTS OF THE NEW SYSTEM ARE OF SUFFICIENT CAPACITY TO MEET THE SPECIFIED PERFORMANCE OF REQUIREMENTS AS SET FORTH HEREIN OR AS INDICATED.

**3.05 CLEANING OF SYSTEMS**

A. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEANING THE NEW SPRINKLER PIPING AFTER INSTALLATION AND BEFORE SYSTEM OPERATION. ANY DAMAGE TO PARTS OF THE BUILDINGS, ITS FINISH OR FURNISHINGS, DUE TO THIS CONTRACTOR'S FAILURE TO PROPERLY CLEAN THE SYSTEM, SHALL BE REPAIRED OR REPLACED, AT HIS EXPENSE.

B. ALL SPRINKLER HEADS AND EQUIPMENT SHALL BE THOROUGHLY CLEANED OF ALL PLASTER, STICKS, RUST STAINS AND OTHER FOREIGN MATTER OR DISCOLORATION, LEAVING EVERY PART IN AN ACCEPTABLE CONDITION AND READY FOR USE. SURFACES SHALL BE CLEANED, POLISHED AND LEFT BRIGHT.

C. ALL FINISHED METAL WORK SHALL BE CLEANED, POLISHED AND LEFT BRIGHT. ALL EQUIPMENT, PIPE, VALVES, DRAINS AND FITTINGS SHALL BE CLEANED OF GREASE, METAL CUTTING AND SLUDGE, WHICH MAY HAVE ACCUMULATED DURING CONSTRUCTION AND/OR TESTING.

**3.06 INSPECTION AND TESTS**

A. ALL INSPECTIONS, EXAMINATIONS AND TESTS REQUIRED BY THE AUTHORITIES AND/OR AGENCIES SPECIFIED IN THIS SECTION OF THE SPECIFICATIONS SHALL BE ARRANGED AND PAID FOR BY THIS CONTRACTOR, AS NECESSARY TO OBTAIN COMPLETE AND FINAL ACCEPTANCE OF THE FIRE PROTECTION WORK. HE SHALL DELIVER CERTIFICATES OF ALL SUCH INSPECTIONS TO THE

**3.07 DRY SPRINKLER SYSTEMS**

A. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIALTY VALVES PIPES AND EQUIPMENT AS REQUIRED FOR THE SYSTEM. THE SYSTEM SHALL BE COMPLETE WITH DRY PIPE VALVES, AIR COMPRESSOR, ACCELERATOR, MAINTENANCE PRESSURE COMPRESSOR AND ASSOCIATED TRIM AND WIRED FOR INTERCONNECTION TO ALL REQUIRED ACCESSORIES, HEAT/SMOKE DETECTORS PRESSURE SWITCHES, ETC. AS REQUIRED.

AIR COMPRESSOR FOR DRY PIPE SYSTEMS SHALL BE SIZED, FURNISHED AND INSTALLED ON THE RISER AS AN INTEGRAL PART OF THE DRY PIPE SPRINKLER SYSTEM, AND SHALL MEET ALL REQUIREMENTS OF NFPA.

**PART 3 - EXECUTION**

**3.01 INSTALLATION AND WORKMANSHIP**

A. REFER TO THE FIRE PROTECTION DRAWINGS FOR THE SCOPE OF WORK INVOLVED. THE SYSTEM SHALL BE INSTALLED COMPLETE WITH ALL REQUIRED ACCESSORIES AND INCIDENTALS REQUIRED BY THE CODES AND AUTHORITIES. NO SPRINKLERS ARE TO BE INSTALLED PRIOR TO THE BUILDING BEING COMPLETELY SEALED IN FROM EXTERNAL MOISTURE AND CONDITIONS.

ALL SPRINKLER PIPING SHALL BE CONCEALED ABOVE CEILING AND PENDENT HEADS PROVIDED.

B. THE ENTIRE WORK PROVIDED IN THIS CONTRACT SHALL BE CONSTRUCTED AND FINISHED IN EVERY RESPECT IN A WORKMANLIKE AND SUBSTANTIAL MANNER. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL SUCH PARTS AS MAY BE NECESSARY TO COMPLETE THE SYSTEMS IN ACCORDANCE WITH THE BEST TRADE PRACTICE AND TO THE SATISFACTION OF THE ARCHITECT.

C. KEEP OTHER CONTRACTORS FULLY INFORMED AS TO THE SHAPE, SIZE AND POSITION OF ALL OPENINGS REQUIRED FOR APPARATUS REQUIRED UNDER THIS SECTION OF WORK. FURNISH AND INSTALL ALL SLEEVES, SUPPORTS, ETC., AS REQUIRED.

D. INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL CODES, OTHER AGENCIES HAVING JURISDICTION.

**3.02 WORKING DRAWINGS**

A. PREPARE AND OBTAIN APPROVAL OF COMPLETE SPRINKLER WORKING DRAWINGS OF THE SPRINKLER SYSTEM WITH NEW PIPING AND OTHER INFORMATION REQUIRED BY THE AUTHORITIES OUTLINED IN THIS SPECIFICATIONS.

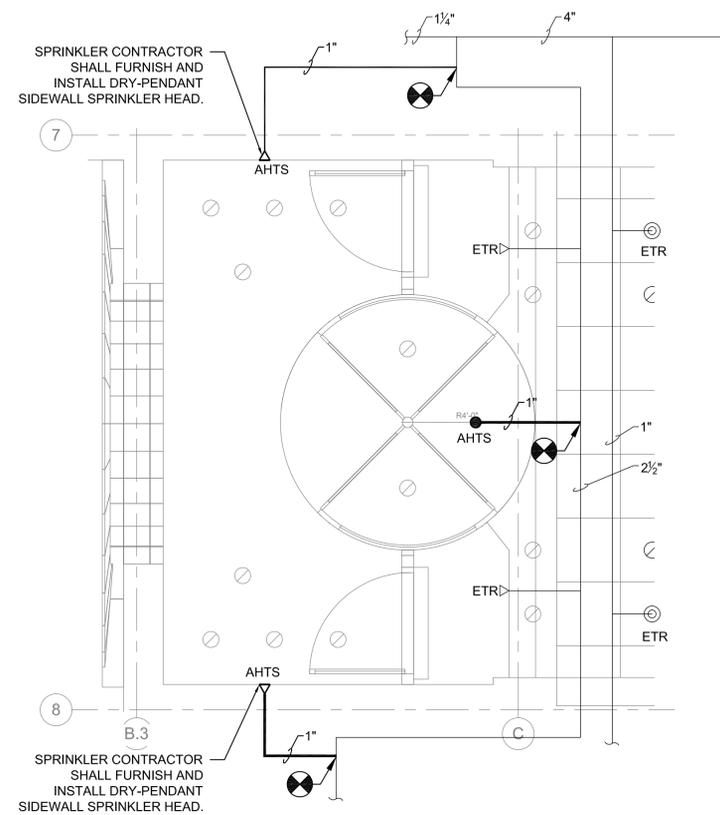
B. ALL DRAWINGS PREPARED BY THE FIRE PROTECTION CONTRACTOR SHALL BE AFFIXED WITH THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF MASSACHUSETTS.

C. BEFORE BUYING OR INSTALLING ANY EQUIPMENT, COMPLETE WORKING PLANS SHALL BE SUBMITTED BY THE FIRE PROTECTION CONTRACTOR FOR APPROVAL BY THE INSURING AGENCY, HIS RATING ASSOCIATION, AND THE LOCAL FIRE DEPARTMENT. THE WORD "APPROVED" AS USED IN THESE SPECIFICATIONS MEANS ACCEPTABLE TO THE RATING AGENCY AND THE LOCAL FIRE DEPARTMENT.

D. AFTER APPROVAL OF WORKING PLANS IS RECEIVED FROM THE ABOVE AUTHORITIES, SEVEN (7) COPIES SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.

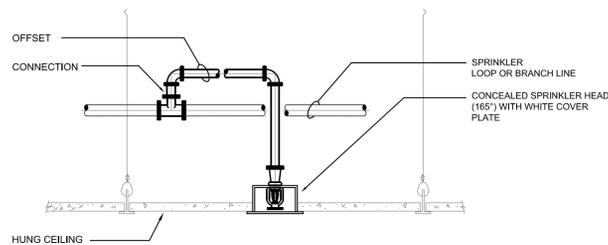
**3.03 TESTS**

A. AFTER COMPLETION, THE SYSTEM SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE OF NOT LESS THAN 200 PSI FOR A PERIOD OF NOT LESS THAN TWO HOURS IN THE PRESENCE OF THE ENGINEER AND REPRESENTATIVES OF THE UNDERWRITER AND FIRE DEPARTMENT. ANY DEFECTS SHOWING DURING THE TEST PERIOD SHALL BE REPAIRED BY THE FIRE PROTECTION CONTRACTOR AT HIS EXPENSE. DEFECTS SHALL BE REPAIRED BY REPLACING THE DEFECTIVE PARTS WITH NEW MATERIAL.



**FIRE PROTECTION FLOOR PLAN 1**  
SCALE: 3/8" = 1'-0"

FIRE PROTECTION LEGEND		
SYMBOL	ABBREVIATION	DESCRIPTION
—		EXISTING PIPING
—		NEW SPRINKLER PIPING
⊕		CONNECT INTO EXISTING FIRE OR CROSS MAIN
RH		REMOVE SPRINKLER HEAD
ETR		EXISTING SPRINKLER HEAD TO REMAIN
AHTS		ADD ADDITIONAL SPRINKLER HEAD TO SYSTEM
ADCO		ADJUST SPRINKLER HEAD TO CENTER OF TILE
⊕		EXTEND PIPING FROM EXIST LOCATION TO NEW HEAD



NOTES: OFFICE AREA'S  
1. RUN SPRINKLER PIPING TO AVOID CONFLICT WITH LIGHT FIXTURES AND DUCTWORK  
2. THIS DETAIL SHOWS THE INTENT OF INSTALLATION & ONLY ONE OF THE VARIOUS CONDITIONS WHICH DICTATE VARIATIONS IN INSTALLATION.

**FULLY RECESSED DROP DETAIL**  
SCALE: N.T.S.

No.	Description	Date

**Town of Acton  
Memorial Library**

486 Main Street  
Acton, MA 01720

**FIRE PROTECTION SPEC, DET & PLANS**

Project Number	213066
Date	1/24/2014
Drawn By	MM
Checked By	WCC

**FP1**

Scale AS NOTED