ABBREVIATIONS

ACT	ACOUSTICAL TILE
AFF	ABOVE FINISH FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AP	ACCESS PANEL
BLDG	BUILDING
CLG	CEILING
CLDI	CEMENT LINED DUCTILE IRON
CTE	CONNECT TO EXISTING
CONT	CONTINUATION
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EC	EXTENDED COVERAGE
EL/ELEV	ELEVATION
ETR	EXISTING TO REMAIN
ETBR	EXISTING TO BE REMOVED
EX	EXISTING
FDC	FIRE DEPARTMENT (INLET) CONNECTION
F	FIRE SUPPLY MAIN
FFE	FINISH FLOOR ELEVATION
FHV	FIRE HOSE VALVE
FHVC	FIRE HOSE VALVE CABINET
FLR	FLOOR
FP	FIRE PROTECTION
FS	FLOW SWITCH
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
INV	INVERT
MECH	MECHANICAL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
PIV	POST INDICATOR VALVE
PRV	PRESSURE REDUCING/REGULATING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
SPD	SPRINKLER DRAIN
SPR	SPRINKLER
SS	STANDARD SPRAY PATTERN
STD	STANDPIPE
TS	TAMPER SWITCH
TYP	TYPICAL
VIV	VALVE IN VERTICAL
ZCA	(SPRINKLER) ZONE CONTROL ASSEMBLY

SYMBOL LEGEND

SPRINKLERS*

	UPRIGHT STYLE–SS
	PENDENT STYLE–SS
	SIDEWALL STYLE–SS
	SPECIAL APPLICATION, NOT USED
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED

* SYMBOL INDICATES FRAME & DEFLECTOR STYLE, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS INCLUDING TECHNICAL DATA, FINISHES, ESCUTCHEONS AND CONCEALMENT CUP/COVER–PLATE ASSEMBLIES.

PIPING LINETYPES

	UNDERGROUND SPRINKLER/STANDPIPE PIPING
	ABOVEGROUND SPRINKLER/STANDPIPE PIPING
	EXISTING SPRINKLER/STANDPIPE PIPING
	EXISTING SPRINKLER/STANDPIPE PIPING TO BE REMOVED

EQUIPMENT & VALVES

ZCA	SPRINKLER ZONE CONTROL ASSEMBLY
	SUPERVISED CONTROL VALVE
	CHECK VALVE
	BACKFLOW PREVENTER
	PRESSURE REDUCING/REGULATING VALVE
	FIRE DEPARTMENT INLET CONNECTION
	FIRE HOSE VALVE
	FIRE HOSE VALVE CABINET
	CROSS–MAIN FLUSHING CONNECTION
	WET SYSTEM MAIN RISER
	DRY SYSTEM MAIN RISER
	PREACTION SYSTEM MAIN RISER
	POST INDICATOR VALVE
	VALVE AND ROADWAY BOX
	FLOW SWITCH
PS	PRESSURE SWITCH
	PRESSURE GAUGE
	WATER MOTOR GONG
	ELECTRIC ALARM BELL

ANNOTATION

	CONNECT TO EXISTING
	FLOW IN DIRECTION OF ARROW
	DIRECTION OF SLOPE
#	HYDRAULIC CALCULATION NODE POINT
1 / FP0.00	DETAIL DESIGNATION NUMBER DETAIL DESIGNATION DRAWING
F 1 / FP0.00	STANDPIPE/RISER DESIGNATION SERVICE & NUMBER STANDPIPE/RISER DESIGNATION DRAWING
1 / FP0.00	SECTION/ELEVATION DESIGNATION NUMBER SECTION/ELEVATION DESIGNATION DRAWING

SPECIFICATIONS

GENERAL

1. SCOPE
   - A. PROJECT SCOPE INCLUDES THE RENOVATION OF THE FIRST FLOOR TENANT SPACE AT 56 NORTHPORT DRIVE, PORTLAND MAINE.
   - B. THE WORK UNDER THIS SECTION INCLUDES ALL LABOR, MATERIALS, FEES AND ACTIVITIES NECESSARY TO INSTALL, TEST AND COMMISSION A FULLY FUNCTIONAL AND CODE COMPLIANT AUTOMATIC WET–PIPE SPRINKLER SYSTEM.
   - C. WHERE INDICATED, SUBMITTALS SHALL BE PREPARED AND FORWARDED TO THE ARCHITECT/ENGINEER FOR REVIEW. SUCCESSFULLY COMPLETING THE SUBMITTAL AND REVIEW PROCESS OF FIRE SPRINKLER SYSTEM PRODUCT DATA, SHOP DRAWINGS, CALCULATIONS, AS–BUILT DRAWINGS AND TEST CERTIFICATES SHALL BE A PREREQUISITE TO ISSUING FINAL ENGINEER APPROVAL CERTIFICATION FOR OCCUPANCY.
   - D. THE WORK SHALL BE AS DESCRIBED DIRECTLY BY THESE DRAWINGS AND RELATED DOCUMENTS UNDER THIS SECTION AND AS AFFECTED BY RELATED DOCUMENTS NOT EXCLUSIVE TO THE WORK OF THIS SECTION.
2. PURPOSE OF ENGINEERING DRAWINGS
   - A. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE FOR INTENDED FOR PURPOSES OF OBTAINING A BUILDING PERMIT AND AS THE BASIS OF DESIGN FOR PREPARATION OF DETAILED SHOP DRAWINGS (WORKING PLANS). THE DRAWINGS ARE NOT INTENDED TO SHOW EXACT LOCATIONS, BUT TO DEMONSTRATE THE CONFIGURATION OF MAJOR SYSTEM COMPONENTS AND APPROXIMATE SPRINKLER LOCATIONS. FIELD VERIFY LOCATIONS OF ALL SPRINKLERS AND SYSTEM PIPING.
   - B. ALL COMPONENTS SHOWN ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING.
3. RELATED DOCUMENTS
   - A. ARCHITECTURAL, STRUCTURAL & ENGINEERING DRAWINGS & SPECIFICATIONS
   - B. OWNER AND/OR TENANT CONSTRUCTION STANDARDS OF PRACTICE
4. CODES & STANDARDS
   - A. BUILDING CODE: INTERNATIONAL BUILDING CODE 2003 (AS AMENDED FOR PORTLAND MAINE.)
   - B. FIRE CODE: INTERNATIONAL FIRE CODE 2003 (AS AMENDED FOR PORTLAND MAINE.)
   - C. SPRINKLER STANDARD: NFPA 13 (2007)
   - D. FIRE ALARM CODE: NFPA 72 (2007)
5. QUALITY ASSURANCE
   - A. PRODUCTS: DOMESTICALLY MANUFACTURED, UL LISTED & FM APPROVED FOR USE WITH FIRE SPRINKLER SYSTEMS.
   - B. INSTALLERS: LICENSED IN GOOD STANDING AS SPRINKLER PIPE FITTERS IN MAINE.
6. WARRANTEE
   - A. WARRANTEE WORK OF THIS SECTION IN WRITING FOR ONE YEAR FROM DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THE PERIOD, PROMPTLY AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.
7. INSPECTION OF SITE CONDITIONS
   - A. AT THE TIME OF BID, ALL EXCEPTIONS TAKEN TO THESE DRAWINGS AND RELATED DOCUMENTS, VARIANCES FROM SAME AND ALL SUBSTITUTIONS OF EQUIPMENT SPECIFIED SHALL BE LISTED IN WRITING AND INCLUDED IN THE BID FOR REVIEW. ANY SUCH EXCEPTIONS, VARIANCES, OR SUBSTITUTIONS, WHICH WERE NOT LISTED AT THE TIME OF BID SHALL NOT BE APPROVED OR CONSIDERED.
8. UNIT PRICES
   - A. INCLUDE IN BID, FOR EACH TYPE OF SPRINKLER SPECIFIED, UNIT PRICE FOR ADDITION OF ONE SPRINKLER INCLUDING 10–FT OF PIPE AND ASSOCIATED FITTINGS.

PRODUCTS

1. PIPE & FITTINGS
   - A. PIPE: UL 852, ASTM A53 SCHEDULE 40 CARBON STEEL WITH THREADED ENDS OR SCHEDULE 10 WITH ROLL–GROOVE ENDS.
   - B. THREADED FITTINGS: ANSI B16.4 CAST IRON THREADED CLASS 125 OF CLASS 250 PATTERN AS REQUIRED BY APPLICATION.
   - C. GROOVED FITTINGS: UL 213 DUCTILE IRON (ASTM A536) GROOVED–END WITH RIGID OR FLEXIBLE COUPLINGS AS REQUIRED BY APPLICATION.
   - D. HOLE–CUT OUTLETS: UL 213 TWO–PIECE DUCTILE IRON (ASTM A536) BODY, BOLT ASSEMBLED. U–BOLT OR STRAP–ON FITTINGS ARE NOT ACCEPTABLE.
   - E. ACCEPTABLE MANUFACTURERS FOR UL 213 PRODUCTS: TYCO FIRE & BUILDING PRODUCTS, VICTAULIC CO.
   - F. ACCEPTABLE MANUFACTURERS FOR PIPE: ALLIED TUBE & CONDUIT CORP, BULLMOOSE TUBE CO, WHEATLAND TUBE CO.
   - G. ACCEPTABLE MANUFACTURERS FOR THREADED FITTINGS: ANVIL INTERNATIONAL LP, TYCO FIRE & BUILDING PRODUCTS, WARD MANUFACTURING INC.
2. SPRINKLERS:
   - A. GENERAL (UNLESS OTHERWISE NOTED): MATCH EXISTING SPRINKLERS.
   - B. ACCEPTABLE MANUFACTURERS: RELIABLE SPRINKLER CO, TYCO FIRE & BUILDING PRODUCTS, VICTAULIC CO, VIKING CORP.
3. PIPE SUPPORT
   - A. UL 203 BAND HANGER WITH THREADED STEEL ROD AND UL 203 BEAM CLAMP.
   - B. ACCEPTABLE MANUFACTURERS: COOPER B–LINE INC, ERICO INC, PHD MANUFACTURING INC, TOLCO (NIBCO CO)

EXECUTION OF WORK

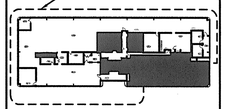
1. PREPARATION, PRIOR TO BEGINNING WORK
   - A. SITE VISIT: VISIT AND EXAMINE SITE FOR CONNECTION POINTS TO EXISTING FIRE SPRINKLER SYSTEM, PARTITIONS TO BE PENETRATED, CLEARANCES TO OBSTRUCTIONS, AND OTHER EXISTING FACILITY FEATURES THAT WILL AFFECT THE WORK.
   - B. PERFORM HYDRANT FLOW TEST OR, WHERE APPLICABLE, SECURE MOST RECENT FIRE PUMP TEST OR PRESSURE REGULATING VALVE TEST RESULTS FROM THE OWNER.
   - C. SUBMITTALS: PRIOR TO BEGINNING WORK, PREPARE AND SUBMIT FOR REVIEW AND IN ONE COMPLETE PACKAGE PRODUCT DATA "CUT–SHEETS" FOR EACH PRODUCT SPECIFIED AND SHOP DRAWINGS INCLUSIVE OF INFORMATION REQUIRED BY NFPA 13 FOR WORKING PLANS.
   - D. OBTAIN NECESSARY PERMITS AND APPROVALS FROM LOCAL AUTHORITIES HAVING JURISDICTION.
2. IMPAIRMENTS & TEMPORARY PROTECTION
   - A. COORDINATE SYSTEM IMPAIRMENTS WITH THE OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION.
   - B. PROVIDE TEMPORARY FIRE SPRINKLER PROTECTION, TEMPORARY HOSE VALVE INSTALLATION AND/OR SIMILAR PROVISIONS IN ACCORDANCE WITH LOCAL AUTHORITIES HAVING JURISDICTION REQUIREMENTS.
3. COORDINATION
   - A. COORDINATE INSTALLATION WITH OTHER SECTIONS OF THE WORK.
   - B. COORDINATE FIRE ALARM MONITORING DEVICE TESTING WITH THE FIRE ALARM PORTION OF THE WORK.
4. GENERAL SYSTEM INSTALLATION
   - A. INSTALL PIPING IN A NEAT AND WORKMANLIKE MANNER WITH PIPING PARALLEL OR PERPENDICULAR TO INTERIOR BUILDING FEATURES.
   - B. INSTALL PIPE WITH PROPER PITCH FOR DRAINAGE. INSTALL AUXILIARY DRAIN VALVES AND PLUGS AS REQUIRED BY NFPA 13 WHERE TRAPPED SECTIONS OF PIPING CANNOT BE AVOIDED.
   - C. SUPPORT PIPE WITH HANGERS SPACED IN ACCORDANCE WITH NFPA 13. ALL ATTACHMENTS SHALL BE TO BUILDING STRUCTURAL ELEMENTS.
5. INSTALLATION OF SPRINKLERS
   - A. DETERMINE FINAL SPRINKLER LOCATIONS VIA FIELD MEASUREMENT.
   - B. LOCATE SPRINKLERS WITH RESPECT TO, AND WITH SUFFICIENT CLEARANCE FROM CEILING OBSTRUCTIONS IN ACCORDANCE WITH NFPA 13 AND ANY SPECIAL LISTING REQUIREMENTS OF THE SPRINKLER.
   - C. LOCATE SPRINKLERS IN THE CENTER OF CEILING TILES AND IN–LINE WITH ADJACENT LIGHTING FIXTURES, AIR DIFFUSERS, AND SIMILAR CEILING FEATURES.
   - D. DO NOT INSTALL SPRINKLERS IN LOCATIONS SUBJECT TO MECHANICAL DAMAGE OR IMPACT. WHERE SUCH INSTALLATION IS UNAVOIDABLE, PROVIDE GUARDS LISTED FOR USE WITH THE SPRINKLER.
6. PENETRATIONS
   - A. USE APPROPRIATE TOOLS AND SAWS FOR MAKING PENETRATIONS,
   - B. SLEEVE PENETRATIONS WITH GALVANIZED SCHEDULE 10 PIPE SLEEVE AND PROTECT WITH FIRE–STOPPING IN ACCORDANCE WITH MANUFACTURER'S LISTING REQUIREMENTS. COORDINATE WALL RATING REQUIREMENTS WITH ARCHITECTURAL PLANS.
   - C. COVER PENETRATIONS WITH ESCUTCHEON PLATE.
7. CLEANING
   - A. CLEAN INSTALLATION THOROUGHLY UPON COMPLETION TO REMOVE GREASE, METAL CUTTINGS, DIRT AND OTHER FOREIGN MATERIALS.
   - B. REPAIR STOPPAGES, DISCOLORATION AND DAMAGE THAT RESULT FROM FAILURE TO CLEAN PIPING PROPERLY WITHIN CONTRACT PRICE.
8. TESTING
   - A. HYDROSTATICALLY TEST SYSTEM AS REQUIRED BY NFPA 13. EXISTING SYSTEM RETROFITS WHERE NEW WORK CANNOT BE ISOLATED FROM EXISTING PIPING SHALL BE TESTED AT NORMAL SYSTEM PRESSURE. MONITOR FOR LEAKS FOR A PERIOD OF TWO (2) HOURS. REMOVE DEFECTIVE MATERIALS, REPLACE WITH NEW AND REPEAT TESTS AS NECESSARY.
   - B. COORDINATE FIRE ALARM MONITORING DEVICE TESTING WITH FIRE ALARM PORTION OF WORK. OPERATE AND ADJUST SWITCHES TO ACHIEVE SATISFACTORY RESULTS.
9. SYSTEM ACCEPTANCE
   - A. PREPARE AND SUBMIT "CONTRACTOR'S ABOVEGROUND PIPING TESTING & MATERIAL CERTIFICATE" FOR REVIEW. CERTIFICATE MUST INCLUDE ALL INFORMATION REQUIRED BY NFPA 13 AND BE ENDORSED IN WRITING FOR APPROVAL.
   - B. PREPARE AND SUBMIT FOR REVIEW AS–BUILT SHOP DRAWING PLANS INCLUSIVE OF IN–FIELD CHANGES FROM ORIGINAL SHOP DRAWING SUBMITTAL.
   - C. AFTER ENGINEER REVIEW OF TEST CERTIFICATES AND AS–BUILT DRAWINGS, SCHEDULE ENGINEER FINAL WALK–THRU. FOREMAN SHALL BE PRESENT FOR THE WALK–THRU TO ANSWER QUESTIONS AND TO OPERATE SYSTEM FEATURES AS NECESSARY. FOREMAN SHALL DOCUMENT AND ADDRESS ENGINEER FINAL "PUNCH LIST" OBSERVATIONS.
   - D. AFTER "PUNCH–LIST" OBSERVATIONS ARE ADDRESSED, SCHEDULE AUTHORITY HAVING JURISDICTION FINAL APPROVAL INSPECTION. FOREMAN SHALL BE PRESENT FOR THE WALK–THRU TO ANSWER QUESTIONS AND TO OPERATE SYSTEM FEATURES AS NECESSARY.
10. PROJECT CLOSEOUT
    - A. PREPARE AND SUBMIT FINAL CLOSEOUT DOCUMENTATION INCLUDING STATEMENT OF WARRANTEE AND OPERATION AND MAINTENANCE MANUALS AS REQUIRED BY OTHER SECTION OF THE WORK.
    - B. SCHEDULE AND PERFORM OWNER DEMONSTRATION TRAINING.

56 NORTHPORT DRIVE
(1361 WASHINGTON AVENUE)
PORTLAND, ME

Liberty Mutual.

RDK ENGINEERS
Andover, MA - Boston, MA - New Brunswick, NJ
-Amherst, MA - Durham, NC - Charlotte, NC
70 Fargo Street Boston, MA 02210-1964
T.617-345-9885

PROJECT SCOPE



PROJECT NORTH

STATE OF MAINE
GREGORY J. TITTERINGTON
5673
REGISTERED PROFESSIONAL ENGINEER

ARCHITECTS + ENGINEERS
ADD Inc
311 SUMMER STREET BOSTON, MA 02210 617.234.3100

ISSUANCES

No.	Description	Date
1	ISSUED FOR PERMIT	12/23/08

Checked by:

FIRE PROTECTION LEGEND & SPECIFICATIONS

Drawing Scale: N.T.S.

Job No. 20080729

FP-000