GENERAL SYMBOLS

- NEW CONCEALED PENDANT SPRINKLER (SEE SCHEDULE)
- NEW UPRIGHT SPRINKLER (SEE SCHEDULE)
- NEW SIDEWALL SPRINKLER (SEE SCHEDULE)
- NEW UPRIGHT SPRINKLER UNDER DUCTWORK/CONVEYORS/PLATFORMS (SEE SCHEDULE)
- EXISTING TO REMAIN SPRINKLER (ETR)
- EXISTING TO BE REMOVED SPRINKLER (ETBR)
- NEW FIRE PROTECTION PIPING (OR VALVES)
- RISE OR DROP
- EXISTING FIRE PROTECTION PIPING TO REMAIN (ETR)
- EXISTING FIRE PROTECTION PIPING TO BE REMOVED (ETBR)
- CONNECT TO EXISTING (CTE)
- PIPE RISER
- PIPE HANGER
- CHECK VALVE
- PIPE CAP OR PLUG
- CONTROL VALVE (WITH TAMPER SWITCH)
- ZONE CONTROL VALVE STATION (GATE VALVE, CHECK VALVE,FLOW SWITCH, DRAIN, SEE FP12.01)
- HYDRAULIC REFERENCE POINT
- MAIN ALARM CHECK VALVE ASSEMBLY RISER (SEE FP12.01)
- DOUBLE CHECK VALVE ASSEMBLY (W/ 2 TAMPER SWITCHES)
- STORTZ TYPE FIRE DEPARTMENT CONNECTION
- PIPE CONTINUATION
- POINT OF CONNECTION
- PRESSURE GAUGE W/PETCOCK
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- DRAIN VALVE AND CAP
- 12" — PIPE SIZE (DIAMETER)

PIPING SYMBOLS

SYMBOLS	ABBREVIATION	DESCRIPTION
DR	DR	DRAIN PIPING
SPR	SPR	WET SPRINKLER PIPING
SPR-ZONE X	SPR	WET SPRINKLER PIPING (FA ZONE INDICATED)
F	F	FIRE SERVICE
F	F	FIRE SERVICE (UNDERGROUND)
FP	FP	COMBINED FIRE PROTECTION PIPING (SPR/SP)
SP	SP	STANPIPE PIPING
FDC	FDC	PIPING FROM FD PUMPER CONNECTION

HATCHING DESCRIPTION

HATCHING	DESCRIPTION
	EXISTING AREA - NO WORK EXPECTED
	BASE BID - DEMOLITION
	ADD. ALTERNATIVE NO. 3

GENERAL NOTES

1. ALL FIRE PROTECTION GENERAL NOTES, SYMBOLS LISTS & DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL SPRINKLER DRAWINGS FOR THIS PROJECT.
2. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND EXACT LOCATIONS AND ARRANGEMENTS OF EXIST./NEW EQUIPMENT, DUCTWORK, PIPING AND OTHER COMPONENTS SHALL BE DETERMINED IN THE FIELD WITH DUE CONSIDERATION OF STRUCTURAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS. EXISTING STRUCTURAL SYSTEMS SHALL NOT BE MODIFIED WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
3. THE PROJECT SHALL BE PHASED IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED PHASING PLAN. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER/ARCHITECT FOR THE SEQUENCING AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK. SEE SPECIFICATIONS.
4. AESTHETICS ARE A PRIORITY FOR THIS PROJECT. ALL PIPING TO BE CONCEALED UNLESS OTHERWISE NOTED. ALL AREAS WITH CEILINGS TO HAVE CONCEALED PLATE TYPE SPRINKLERS LOCATED AT THE CENTER OF SUSPENDED CEILING TILES IN A SYMMETRICAL PATTERN APPROVED BY THE ARCHITECT. WHERE SPRINKLER LOCATIONS CONFLICT WITH OTHER SYSTEMS (I.E. SECURITY), CENTER OF TILE REQUIREMENT MAY BE WAIVED. SPRINKLER & SPRINKLER PLATE FINISH SHALL MATCH CEILING FINISH. ANY EXPOSED PIPING SHALL BE PAINTED TO MATCH CEILING FINISH. BID SHALL INCLUDE SPECIAL ORDERED SPRINKLER FINISHES FROM THE MANUFACTURER.
5. WHERE INDICATED ON THE DRAWINGS, REMOVE OR RELOCATE EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE THE NEW WORK. REMOVALS SHALL INCLUDE ALL ASSOCIATED OFF-SITE DISPOSAL COSTS.
6. EXISTING EQUIPMENT AND PIPING TO REMAIN IN SERVICE SHALL BE INSPECTED. ANY EQUIPMENT FOUND TO BE INOPERABLE SHALL BE REPORTED TO OWNER AND ENGINEER.
7. FIRE PROTECTION CONTRACTOR SHALL ENSURE PROPOSED FIRE PROTECTION SYSTEM DESIGN MEETS ALL REQUIREMENTS OF NFPA-13, NFPA 415 AND AUTHORITY HAVING JURISDICTION REQUIREMENTS.
8. SPRINKLER SYSTEM(S) SHALL BE HYDRAULICALLY DESIGNED TO PROVIDE MINIMUM FLOW RATES AT HYDRAULICALLY MOST REMOTE AREA AS REQUIRED BY OWNER'S INSURANCE UNDERWRITER AND NFPA 13. STANDPIPE SYSTEM SHALL BE HYDRAULICALLY DESIGNED IN ACCORDANCE WITH NFPA 14 AND PORTLAND FIRE DEPARTMENT REQUIREMENTS. PORTLAND FIRE DEPARTMENT SHALL PROVIDE REQUIRED PRESSURE (65 PSI).
9. INSPECTION/TEST DRAIN ASSEMBLES SHALL BE PIPED TO GRADE. COORDINATE LOCATIONS WITH OWNERS REPRESENTATIVE. PIPING LOCATED OUTSIDE OF THE BUILDING SHALL BE GALVANIZED STEEL.
10. ALL PIPE PENETRATIONS THRU FIRE RATED FLOOR/CEILING ASSEMBLIES SHALL BE FIREPROOFED BY THE SPRINKLER CONTRACTOR AS REQUIRED TO MEET REQUIRED RATING.
11. MANUFACTURERS NAME & MODEL NUMBER ARE USED FOR DESCRIPTIVE PURPOSES ONLY & ARE INTENDED TO INDICATE THE STANDARD OF MATERIAL OR ARTICLES REQUIRED. IF ALLOWED BY SPECIFICATION, A SUBSTITUTE MAY BE SUBMITTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE "SUBSTITUTION" SPECIFICATION SECTION.
12. INSTALLATION SHALL PERMIT, ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT OF EQUIPMENT PROVIDED. PROVIDE ACCESS PANELS TO GAIN ACCESS TO SPRINKLER SYSTEMS COMPONENTS THAT REQUIRE MAINTENANCE ACCORDING TO MANUFACTURERS LITERATURE.
13. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS & GUIDES AS NECESSARY TO PREVENT UNDUE STRAIN ON PIPING.
14. FIRE PROTECTION CONTRACTOR TO COORDINATE ALL WORK WITH OTHER BUILDING TRADES. SOME RELOCATION OF EXISTING SPRINKLERS MAY BE NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT OR DUCTWORK. FIRE PROTECTION CONTRACTOR SHALL SUBMIT A COORDINATION DRAWING WITH PIPING ELEVATIONS SHOWN TO PREVENT CONSTRUCTION AND OPERATING INTERFERENCE.
15. FILL AND PATCH ALL OPENINGS IN WALLS WHERE PIPES ARE OR HAVE BEEN REMOVED WITH UL LISTED FIRE ASSEMBLY APPROVED BY THE ARCHITECT. MAINTAIN FIRE RATING IF APPLICABLE.

NEW SPRINKLER SCHEDULE

SYMBOL	MFG. / MODEL NO.	STYLE	LOCATION	ORIFICE SIZE	K FACTOR	TEMPERATURE RATING °F	SPRINKLER FINISH	ESCUTCHEON OR PLATE FINISH	COATING	REMARKS
●	TYCO RF-II	CONCEALED PENDANT	NEW TERMINAL	1/2"	5.6	155	-	CUSTOM MATCH CEILING	-	QUICK RESPONSE ORDER CUSTOM PLATE FINISH IF NEEDED TO MATCH CEILING
$●_X$	TYCO TY-FRB	UPRIGHT	AREAS W/O CEILINGS	1/2"	5.6	155 UNLESS NOTED	BRASS	N/A	-	X= TEMPERATURE RATING IF NOT 155 OTHERWISE, NO TEMP PROVIDED
▽	TYCO TY-FRB	VERTICAL SIDEWALL	HIGH WOOD CEILING	1/2"	5.6	200 UNLESS NOTED	WHITE OR BRASS	N/A OR WHITE	-	SEE MANF. SPECS FOR INSTALATION
▼	TYCO SW-20	EX. COVERAGE SIDEWALL	HIGH WOOD CEILING	3/4"	11.2	200 UNLESS NOTED	WHITE OR BRASS	N/A OR WHITE	-	EXTENDED COVERAGE ORDINARY HAZARD SPRINKLER-SEE MANF. SPECS FOR INSTALLATION
$●_O$	TYCO DS-C	DRY TYPE PENDANT	UNDER METAL EXT. CANOPY	1"	5.6	155 UNLESS NOTED	-	CUSTOM MATCH CEILING	COATED FOR EXTERIOR USE	SEE MANF. SPECS FOR INSTALLATION ORDER CUSTOM PLATE FINISH IF NEEDED TO MATCH CEILING
●	TYCO TFP PH2	INSTITUTIONAL PENDANT	ROOM 3523	1/2"	5.6	165	-	CHROME	-	SEE MANF. SPECS FOR INSTALATION
$▽_O$	TYCO DS-C	DRY TYPE SIDEWALL	LOADING DOCK	1"	5.6	155 UNLESS NOTED	BRASS	CHROME	COATED FOR EXTERIOR USE	SEE MANF. SPECS FOR INSTALATION

NOTE - MFG / MODEL NO. ARE FOR REFERENCE ONLY. PRODUCTS OF EQUAL QUALITY / PERFORMANCE ARE ACCEPTABLE.

SPRINKLER / STANDPIPE DESIGN CRITERIA (ALSO SEE SPECIFICATIONS)

AREA / SYSTEM	DESIGN CRITERIA
BAGGAGE HANDLING AREAS	ORDINARY HAZARD GROUP II (NFPA 13)
PUBLIC PASSENGER AREAS (WAITING AREAS, CONCOURSE, SECURITY AREAS, ETC)	ORDINARY HAZARD GROUP I (NFPA 13)
MERCANTILE AREAS	ORDINARY HAZARD GROUP II (NFPA 13)
PRIVATE OFFICES, CONFERENCE ROOMS, TOILETS	LIGHT HAZARD (NFPA 13)
STANDPIPE SYSTEMS	SYSTEM HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA 14. PORTLAND FD TO PROVIDE REQUIRED PRESSURE (65 PSI).

*ALL SPRINKLER SYSTEM HYDRAULIC CALCULATIONS TO INCLUDE A 500 GPM HOSE STREAM ALLOWANCE

NARRATIVE OF FIRE SUPPRESSION SCOPE

NEW TERMINAL EXPANSION WILL BE PROVIDED WITH AN AUTOMATIC SPRINKLER SYSTEM THROUGHOUT THE BUILDING. A STANDPIPE SYSTEM WILL ALSO BE INSTALLED AS PART OF THE CONSTRUCTION. THE EXISTING TERMINAL WILL BE PROVIDED WITH NEW SPRINKLERS ADJACENT TO THE EQUIVALENT FIRE WALL THAT SEPARATES THE NEW TERMINAL EXPANSION. AS PART OF ADD. ALTERNATE NO. 3, SPRINKLER PROTECTION WILL BE EXTENDED TO ALL NON-SPRINKLERED AREAS WITHIN THE EXISTING BUILDING AS DETAILED IN THE DRAWINGS.

HYDRAULIC CALCULATIONS REMOTE AREA # 1

NFPA HAZARD	ORDINARY HAZARD GROUP 1
SYSTEM TYPE	WET PIPE
WATER SUPPLY	MUNICIPAL WATER SUPPLY
@ EXIST. HYDRANTS	- STATIC 90 PSIG
	- RESIDUAL 84 PSIG
	- FLOWING 2510 GPM
FIRE PUMP	NOT REQUIRED
CALCULATED DENSITY	0.15 GPM/FT^2
REMOTE AREA SIZE	>1500 FT^2
COVERAGE PER SPRINKLER	MAX. 16' X 18' PER MANF. LISTING
SYSTEM DEMAND:	
@ CITY WATER CONNECT.	406.53 GPM @ 79.03 PSIG
HOSE DEMAND	500 GPM
TOTAL DEMAND:	
@ CITY WATER CONNECT.	906.53 GPM @ 79.03 PSIG
SAFETY MARGIN:	10.05 PSIG

HYDRAULIC CALCULATIONS REMOTE AREA # 2

NFPA HAZARD	ORDINARY HAZARD GROUP 2
SYSTEM TYPE	WET PIPE
WATER SUPPLY	MUNICIPAL WATER SUPPLY
@ EXIST. HYDRANTS	- STATIC 90 PSIG
	- RESIDUAL 84 PSIG
	- FLOWING 2510 GPM
FIRE PUMP	NOT REQUIRED
CALCULATED DENSITY	0.20 GPM/FT^2
REMOTE AREA SIZE	>1500 FT^2
COVERAGE PER SPRINKLER	MAX. 120 FT^2
SYSTEM DEMAND:	
@ CITY WATER CONNECT.	462.03 GPM @ 77.93 PSIG
HOSE DEMAND	500 GPM
TOTAL DEMAND:	
@ CITY WATER CONNECT.	962.03 GPM @ 77.93 PSIG
SAFETY MARGIN:	11.06 PSIG

EXSITING FIRE PROTECTION WATER SUPPLY INFORMATION

SCALE: AS NOTED

2

FIRE PROTECTION LEGEND, SCHEDULES & GENERAL NOTES

SCALE: NOT TO SCALE

1

SHEET NOTES

GENERAL NOTES

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THESE DRAWINGS ARE ISSUED FOR CONSTRUCTION AND REFLECT ALL FRM ISSUED BULLETINS AND SKETCHES.

△	Issue	Date & Issue Description	By	Check
	01	09/22/08	SKD	WMC
		DESIGN DEVELOPMENT		
	02	12/03/08	SKD	WMC
		75% CONSTRUCTION DOCUMENTS		
	03	01/23/09	MHY	JLD
		95% CONSTRUCTION DOCUMENTS		
	04	10/26/09	JLD	SKD
		ISSUED FOR PERMIT		
02	05	11/12/09	JLD	SKD
		ADDENDUM #2		
145	06	09/01/11	SKD	JLD
		ISSUED FOR CONSTRUCTION		

Seal/Signature

Jeremy D. Wing — SEAL — 09/01/2011

Project Name
PWM Terminal Enhancement

Project Number
09.6395.000

CAD File Name
FP00.01.dwg

Description
FIRE PROTECTION LEGEND, SCHEDULES & GENERAL NOTES

Scale
AS NOTED

FP00.01