

PLUMBING CALCULATIONS

PLUMBING FIXTURE UNIT SCHDULE					
TAG	FIXTURE	DRAINAGE FIXTURE UNITS	WATER SUPPLY FIXTURE UNITS		
			COLD	HOT	TOTAL
P-1	WATER CLOSET – PRIVATE	3	6	–	6
P-2	LAVATORY – PRIVATE	1	0.5	0.5	0.7
P-3	LAVATORY – PRIVATE	1	0.5	0.5	0.7
P-4	URINAL – ¾" INLET	1	5	–	5
P-5	KITCHEN SINK	2	1.0	1.0	1.4
P-6	SHOWER	2	1.0	1.0	1.4
P-7	UTILITY SINK	2	2.25	2.25	3.0
P-8	BOTTLE FILL	0.5	0.25	–	0.25
P-9	MOP SINK	2	2.25	2.25	3.0
P-11	SERVICE SINK	2	2.25	2.25	3.0
WM	LAUNDRY WASHER	2	1.0	1.0	1.4
FD	FLOOR DRAIN	2	–	–	–
HB	HOSE BIB	–	20	–	20
NFHB	NON-FREEZE HOSE BIB	–	20	–	20
NOTES: DRAINAGE FIXTURE UNIT VALUES AND WATER FIXTURE LOADS VALUES ARE IN ACCORDANCE WITH SECTION 709 & E103 OF THE 2020 PLUMBING CODE OF NEW YORK STATE.					

WATER SYSTEM SIZING CALCULATIONS:

PIPE MATERIAL: TYPE L COPPER.

FIXTURE UNIT COUNT AT SOURCE: APPROXIMATELY 275 FIXTURES UNITS WITH SUPPLY SYSTEM PREDOMINATELY FOR FLUSH TANK TOILETS AND 8 HYDRANTS. THIS EQUATES TO APPROXIMATELY 104 GPM.

PIPE SIZING AT SOURCE = 3"DIA.
PER PUBLISHED HYDRAULIC DATA, 3"DIA TYPE L COPPER AT 104 GPM = 2.61'/100' HEAD LOSS.

ALL PIPE SIZING ON THIS SYSTEM HAS BEEN BASED ON A MORE CONSERVATIVE 4'/100' HEAD LOSS ESTIMATE.

WATER PRESSURE AT SOURCE: ASSUMING 60 PSI STATIC PRESSURE.

HEAD LOSS CALCULATIONS
VALVES & FITTINGS:

- 3" WATER METER WITH STRAINER = 2.0 PSI
- 3" RPZ = 7.0 PSI
- (6) ISOLATION VALVES = ~ 7' EQUIVALENT X 4'/100 = 0.3' = 0.13 PSI
- (14) ELBOWS = ~ 90' EQUIVALENT X 4'/100' = 3.6' = 1.6 PSI
- (8) BRANCH TEE = ~ 6.3' EQUIVALENT X 4'/100' = 0.24' = 0.11 PSI

TOTAL PRESSURE LOSS = 10.84 PSI
FACTOR OF SAFETY (+ 5%) = 11.38 PSI

PIPE LOSS CALCULATIONS

- PIPE RUN TO FARTEST FIXTURE: ~ 180' X 4'/100 = 7.2' = 3.13 PSI
- ELEVATION CHANGE TO FARTEST FIXTURE: 18' = 7.8 PSI

TOTAL PIPE LOSS = 10.93 PSI

TOTAL LOSS ESTIMATES = 22.31 PSI
PRESSURE AT SOURCE = 60 PSI

AVAILABLE PRESSURE AT FARTEST FIXTURES = 37.69 PSI.

TOTAL BUILDING FIXTURE COUNT: P-1 = 9 P-2 = 8 P-3 = 3 P-4 = 6 P-5 = 1 P-6 = 1	P-7 = 2 P-8 = 3 P-9 = 0 P-11 = 2 WM = 2 HB-1 = 2 NFHB = 6
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DRAINAGE SYSTEM SIZING CALCULATIONS:

PIPE SIZING AT SEWER CONNECTION = 4"
SANITARY
ALL PIPE SIZING ON THIS SYSTEM HAS BEEN BASED ON A 1/8" PER FOOT SLOPE.
TOTAL DRAINAGE FIXTURE UNITS = 77.5.

AS PER TABLE 710.1(1):
MAXIMUM NUMBER OF DRAINAGE FIXTURES UNITS
4" SANITARY MAIN AT 1/8" PER FOOT SLOPE = 180 > 77.5.

NOTE: WATER FIXTURE LOADS AND PIPE SIZES CALCULATED IN ACCORDANCE WITH SECTION E103 OF THE 2020 PLUMBING CODE OF NEW YORK STATE.

NOTE: DRAINAGE FIXTURE UNITS CALCULATED IN ACCORDANCE WITH SECTION 709 AND 710 OF THE 2020 PLUMBING CODE OF NEW YORK STATE.

SYMBOL & ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
	NEW	NEW WORK ABOVE SLAB
	NEW	NEW WORK BELOW SLAB
	CW	COLD WATER
	HW	HOT WATER
	HWC	HOT WATER RECIRCULATION
	V	VENT
	W	WASTE LINE
	S	SOIL LINE
	G	GAS LINES
	LDR	LEADER
	SS	SANITARY SEWER (SITE WORK ONLY)
	SD	STORM DRAINAGE
	PD	PUMP DISCHARGE
	–	3-WAY VALVE
	–	BUTTERFLY VALVE
	–	2-WAY VALVE
	–	PLUG VALVE
	–	SOLENOID VALVE
	–	GATE VALVE
	–	GLOBE VALVE
	–	CHECK VALVE
	–	OS&Y GATE VALVE
	–	BALL VALVE
	–	CIRCUIT SETTER
	–	MANUAL AIR VENT
	–	T&P RELIEF VALVE
	–	PRESSURE REDUCING VALVE
	–	TEE DOWN
	–	ELBOW DOWN
	–	TEE UP
	–	ELBOW UP
	–	PIPE CAP
	CODP	CLEAN OUT DECK PLATE
	WCO	WALL CLEAN OUT
	FCO	FLOOR CLEAN OUT
	FLFD	FUNNEL FLOOR DRAIN
	–	CONCENTRIC REDUCER
	–	ECCENTRIC REDUCER
	–	STRAINER
	–	FLEXIBLE CONNECTION
	–	FLOW ARROW
	–	PRESSURE GAGE
	–	PUMP
	–	THERMOMETER
	–	BASKET STRAINER
	HB	HOSE BIB
	NFHB	NON-FREEZE HOSE BIB
	RD	ROOF DRAIN
	FD	FLOOR DRAIN
	–	UNION
	–	RISER TAG
	–	EYE WASH
	–	WALL HYDRANT
	AFF	ABOVE FINISHED FLOOR
	AHC	ABOVE HUNG CEILING
	BFP	BACK FLOW PREVENTOR

GENERAL NOTES

- THE CONTRACT DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENTS OF THE PLUMBING SYSTEMS. IF ANY DEPARTURES FROM THE DRAWINGS ARE DEEMED NECESSARY BY THE PLUMBING CONTRACTOR, DETAILS OF SUCH DEPARTURES AND THE REASONS THEREFORE SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR APPROVAL. NO SUCH DEPARTURES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER AND ENGINEER. EQUIPMENT AND PIPING ARRANGEMENTS SHALL PROVIDE ADEQUATE AND ACCEPTABLE CLEARANCES FOR ENTRY, SERVICING, AND MAINTENANCE. ANY CHANGES TO PIPING AND EQUIPMENT LOCATIONS NECESSARY TO AVOID INTERFERENCE WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST.
- THE PLUMBING WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE PREVAILING NEW YORK STATE PLUMBING AND BUILDING CODES. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.
- THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.
- CONNECTIONS TO EXISTING UTILITIES AND SERVICES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, INVERT ELEVATIONS, AND SIZES OF EXISTING PLUMBING SERVICES IN FIELD, AND SHALL CONNECT NEW PLUMBING SERVICES AS INDICATED ON DRAWINGS.
- PRIOR TO FABRICATION, THIS CONTRACTOR

Sullivan Architecture, P.C.

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Owner: Bedford Village
Fire District
34 Village Green
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MEP Engineer: **OLA Consulting Engineers**
50 Broadway, Hawthorne, NY 10532
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Date	Issue
03.10.20	MEETING
03.27.20	DESIGN DEVELOPMENT
05.07.20	PROGRESS
05.08.20	CD PROGRESS SET
05.28.20	CD PROGRESS SET
06.30.20	CD REVIEW SET
09.01.20	CONSTRUCTION PROGRESS
09.15.20	ICC SUBMISSION
01.15.21	ISSUED FOR BID

Project Title	
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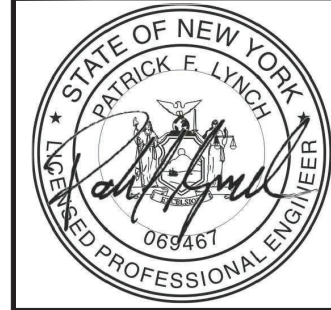
Bedford
Fire
Headquarters

550 Old Post Road
Bedford, NY 10506

Drawing Title

PLUMBING SYMBOLS, ABBREVIATIONS, & GENERAL NOTES

Project No.	NSPG0070.00
Date	03-27-20
Scale	AS NOTED
Drawing by	JRT
Checked by	JF/RS



Drawing No.

P0.1