

WATER CALCULATIONS

PLUMBING FIXTURES:

28 - HWC/WC	5	FU = 140
1 - UR	5	FU = 5
4 - LAV	2	FU = 8
24 - SK	2	FU = 48
1 - SK1	3	FU = 3
1 - HS	3	FU = 3
1 - 3-SK	4	FU = 4
2 - DW	1.4	FU = 2.8
2 - WB	3	FU = 6
3 - DF	0.25	FU = 0.75
1 - REF	0.25	FU = .25
8 - HB	2.5	FU = 20
1 - MS	3	FU = 3
1 - PS	3	FU = 3

TOTAL: 247.8 FU = 74.56 GPM

NEW 2" METER @ 74.56 GPM = 2.0 PSI DROP
 DISTANCE FROM MAIN TO FURTHEST FIXTURE = 463'
 EQUIVALENT LENGTH = 463' X 1.25 = 578'

MAIN PRESSURE = 65 PSI

FIXTURE MIN.	= 15.0	PSI	
ELEV.	19.5' X .434	= 8.5	PSI
METER DROP	= 2.0	PSI	
RPBP	= 10.0	PSI	
SYSTEM DROP	= 35.5	PSI	

(MAIN PRESSURE OF 65 PSI) - (SYSTEM DROP 35.5 PSI) = 29.5 PSI
 29.5 PSI / 578' FT X 100 = 5.10 PSI/100' FOR FRICTION LOSS

WATER PIPING CONSERVATIVELY SIZED AT 5.0 PSI/100'

PIPE SIZING CHART	TANK	VALVE
1/2"	= 3	GPM = 2 FU
3/4"	= 6	GPM = 7 FU
1"	= 14	GPM = 19 FU
1-1/4"	= 24	GPM = 37 FU
1-1/2"	= 37	GPM = 72 FU
2"	= 74	GPM = 245 FU
2-1/2"	= 117	GPM = 460 FU
3"	= 200	GPM = 945 FU

NOTE: PIPE SIZING CHART SIZED WITH 2012 IPC FIGURE E103.3(3) @ 5.0 PSI/100' FOR FRICTION LOSS AND TABLE E103.3(3).

NOTE: PLUMBING CONTRACTOR TO COORDINATE EXACT MAIN WATER PRESSURE AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

GREASE INTERCEPTOR CALC.

PER 2012 IPC
 FIXTURES ON INTERCEPTOR

(1) HAND SINK	2	DFU = 2
(1) MOP SINK	2	DFU = 2
(3) FLOOR SINK	2	DFU = 6
(2) DW TO FS	(12 GPM X 2)	DFU = 24

TOTAL: 34 DFU = 1000 GALLON MINIMUM CAPACITY

PROVIDE A GREASE INTERCEPTOR WITH A CAPACITY OF AT LEAST 1000 GALLONS.

MATERIAL SCHEDULE

SYSTEM SERVED	MATERIAL
DOMESTIC WATER BELOW FLOOR OR GRADE	TYPE 'K' SOFT COPPER
DOMESTIC WATER ABOVE FLOOR OR GRADE	TYPE L COPPER
WASTE & VENT	SCHEDULE 40 PVC
DRAIN	SCHEDULE 40 PVC

PLUMBING FIXTURE SCHEDULE

* THE PIPE SIZES SHOWN IN THIS TABLE REPRESENT SERVICE PIPE SIZES AND NOT THE ACTUAL FIXTURE CONNECTION SIZE.

MARK	FIXTURE	DESCRIPTION	PIPE SIZES			
			COLD	HOT	WASTE	VENT
CO	FLOOR CLEANOUT	WATTS #C0-200-R CAST IRON FLOOR CLEANOUT W/ NICKEL BRONZE TOP VERIFY FLOOR TYPE W/ ARCHITECT, SIZE PER PLANS.	-	-	-	-
FS	FLOOR SINK	WATTS #FS-730-F-1 ENAMELED 12"x12"x6" FLOOR SINK W/ BOTTOM DOOR STRAINER, PROVIDE TRAP GUARD AND A 1/2" OR 3/4" GRATE AS NEEDED.	-	-	2"	2"
WC	WATER CLOSET	AMERICAN STANDARD CADET PRO, 1.6 GPF, TANK TYPE-GRAVITY, CHURCH ELONGATED WHITE, OPEN-FRONT, SOLID SEAT, MTD AT 15" AFF.	3/4"	-	4"	2"
HWC	ADA WATER CLOSET	AMERICAN STANDARD CADET PRO, 1.6 GPF, TANK TYPE-GRAVITY, CHURCH ELONGATED WHITE, OPEN-FRONT, SOLID SEAT, MTD AT 17" AFF.	3/4"	-	4"	2"
HB	HOSE BIBB	WATTS DRAINAGE PRODUCTS #HY-725, NON-FREEZE, WALL HYDRANT, SELF DRAINING W/ INTEGRAL VACUUM BREAKER, NICKEL BRONZE BOX & DOOR & LOOSE 'T' HANDLE KEY.	3/4"	-	-	-
LAV	COUNTER-TOP LAVATORY	AMERICAN STANDARD AQUALYN, SELF-RIMMING, VIT. CHINA, SYMONS SLC-8000 SELF-METERED, 0.5 GPM ASRATOR, 1 QT. CYCLE, W/ T-STATIC MIXING VALVE (TV).	3/4"	3/4"	2"	2"
SK1	1 COMP. SINK	JUST SLX-2225-A-GR, 18 GA. S.S. 1-COMP. SINK, 22"x25"x8" W/ T&S BRASS #B-2855, 2.2 GPM BTM. MTD. FAUCET W/ LEVER HANDLES & 9" SWING SPOUT.	1/2"	1/2"	2"	2"
TV	THERMOSTATIC TEMPERING VALVE	WATTS MODEL LFMV-M1 UNDER COUNTER MTD, SOLID BRASS, ADJ. TEMP W/ LOCKNUT SET TO 110°F. MAX. W/ SS INTERVALS & INTEGRAL CHECKS, ASSE 1070.	1/2"	1/2"	-	-
BWC	BABY DEVORO WATER CLOSET	AMERICAN STANDARD BABY DEVORO FLOWISE, 1.28 GPF, TANK TYPE-GRAVITY, WHITE, OPEN-FRONT, SOLID SEAT.	3/4"	-	4"	2"
WCO	WALL CLEANOUT	WATTS CO-590-RD WALL CLEANOUT W/ BRONZE THREAD PLUG & SS WALL ACCESS COVER SIZE PER PLANS.	-	-	-	-
DF	DRINKING FOUNTAIN (SPLIT LEVEL, ADA)	HALSEY TAYLOR CXL-II, NON-FILTERED, NON-REFRIGERATED MODEL 7434004861, WITH DOUBLE BUBBLER FRONT BUTTON, WALL MOUNTING TYPE, TWO STATION FIXTURE, INSTALLATION SHALL COMPLY WITH ALL CURRENT ADA REQUIREMENTS. HIGH SPOUT SHALL BE MOUNTED AT 42" AFF AND LOW SPOUT AT 36" AFF. DIMENSIONS: 38.5" X 19" X 22.75", WEIGHT IS 55 LBS.	1/2"	-	2"	2"
UR	URINAL WATTS CA-321 CARRIER	AMERICAN STANDARD WASHROOM, 1.0 GPF, SLOAN ROYAL FLUSH VALVE, WASHOUT FLUSHING ACTION, INTEGRAL TRAP. INSTALL AT HEIGHT PER ARCHITECT.	1-1/2"	-	2"	2"
WHA	WATER HAMMER ARRESTER	WATTS DRAINAGE LF15M2-DR SERIES, PRE-CHARGED, LEAD-FREE, COPPER SHOCK ARRESTER W/ POLY. PISTON, EPDM O-RING, SIZE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE 10"x10" S.S. ACCESS PANEL W/ LOCK.	-	-	-	-
WB	WASHER BOX W/ DRAIN	WATER-TITE #W4700, TOP MOUNTED WASHING MACHINE OUTLET BOX WITH 2" DRAIN OUTLET, CHROME 1/4" TURN BALL VALVES W/ 1/2" SWEAT CONNECTION.	3/4"	3/4"	2"	2"
3-SK	3-COMPARTMENT SINK	JUST NSF8-354-24RL, 3-COMP. 18"Wx24"Lx12"D, 14 GA. S.S. SINK W/ DRAINBOARDS & DRAIN STRAINERS. NSF LISTED. WALL-MTD. JPR-309 PRE-RINSE SPRAY FAUCET/HOSE W/ HANDLES & WALL BRACKET.	3/4"	3/4"	INDIRECT. WASTE THRU FS	-
SK	SINK	ELKAY LUSTERTONE CLASSIC STAINLESS STEEL DRKAD222055R, SINGLE BOWL DROP-IN CLASSROOM ADA SINK W/SLOTTED HOLE, T&S 8-1892-CR-LF08 0.5 GPM FAUCET AND TOMLINSON 1016128 WATER FOUNTAIN BUBBLER.	3/4"	3/4"	2"	2"
DW	DISHWASHER	BY OWNER	-	1/2"	INDIRECT. WASTE THRU FS	2"
R/O	REVERSE OSMOSIS	BY OWNER. RECOMMENDED MODEL: PELICAN PRO RD	-	-	-	-
WF	WATER FILTER	WHIRLPOOL: WHADU55	1/2"	-	-	-
WS	WATER SOFTENER	BY OWNER. RECOMMENDED MODEL: LIFESOURCE MODEL #4140LE WITH SCALEOVER MODEL #SS-6633.	2-1/2"	-	-	-
PS	PREP SINK	JUST NSF8-124, 1-COMP. 24"Wx24"Lx12"D, 14 GA. S.S. SINK & DRAIN STRAINERS. NSF LISTED. PROVIDE W/ JS-48-TA1 WALL-MTD. FAUCET W/ 4" HANDLES.	3/4"	3/4"	INDIRECT. WASTE THRU FS	-
TG	TRAP GUARD	PROVENT 'TRAP GUARD' OR EQUAL, TRAP SEAL DEVICE FOR FLOOR DRAINS. MATCH FLOOR DRAIN SIZE. CONFORM TO ASSE 1072.	-	-	-	-
FD	FLOOR DRAIN	WATTS FD-100-AS FLOOR DRAIN, CLAMPING COLLAR W/ 5" ROUND NICKLE BRONZE STRAINER, AND TRAP PRIMER CONNECTION. PROVIDE PROVENT TRAPGUARD DRAIN FITTING.	-	-	2"	2"

TANKLESS GAS WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	SERVICE	STOR. CAP.	INPUT	ELECTRICAL			TEMP. RISE	OUTPUT CAPACITY	REMARKS
							WATTS	VOLTS/PH	HZ			
1&2	RINNAI	RU98E (KB3237WD)	NAT. GAS	COMMERCIAL	-	199 MBH	54 MAX 2 MIN.	120/1	60	100°F (COMBINED)	0.5 - 8.4 GPM	DIRECT-VENT APPLIANCE W/ FACTORY 5% CONCENTRIC VENT TERM. KIT. SEE NOTES #1, 2, 3, 4, 5, 6 BELOW

NOTES:

- INTERIOR MODEL - PROVIDE WITH THRU-ROOF DIRECT-VENT KIT.
- PROVIDE WITH REU-MSB-M MULTI-UNIT CONTROLLER KIT, REU-MSB-C1 CABLES AND MCC-91 CONTROLLER.
- COORDINATE CONTROLLER LOCATION WITH OWNER.
- PROVIDE FACTORY WALL-MOUNTING BRACKETS.
- PROVIDE ACID NEUTRALIZATION KIT FOR CONDENSATE DRAIN.
- INSTALL STRICTLY PER MANUFACTURER'S REQUIREMENTS.

PUMP SCHEDULE

MARK	MANUFACTURER	MODEL	G.P.M.	FT.HD.	H.P.	RPM	VOLTS/PH	REMARKS
1	ARMSTRONG	ASTRO-30	4	12'	1/25	1750	115V/1 PH	HW RECIRCULATION - BRONZE BODY PUMP, 3/4" SIZE. PROVIDE TIMER CONTROL W/ AQUASTAT FOR PUMP SHUTDOWN

TEXAS ENGINEER FIRM REGISTRATION #F-15201

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DFT: EB
 DSN: DM
 JOB NO: 190000
 CHK: MG

THE MONTESSORIOM AT BELLA TERRA
 23421 FM 1093 RD.
 RICHMOND, TX 77406

NO.	DESCRIPTION	DATE
1	FINAL SCHEME	02.01.19
2	REV/FINAL SCHEME	02.07.19
3	PERMIT	05.24.19

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Project No. 1801.74
 Date 02/11/19
 Drawn by JG
 Checked by NL

Sheet No.

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