

Harnett County Environmental Health

File/Permit Number: SFD2404-0016

IMPROVEMENT PERMIT

County: Harnett

PIN/Lot Identifier: 0642-95-5498.000

Owner: KB Home Raleigh

Applicant: same

Property Location: 145 Putnam St

Subdivision (if applicable) Birchwood Grove Lot #: 170 Block: _____ Section: _____

New Expansion System Relocation Change of Use

Facility Type: SFD(40'x50')

Number of bedrooms: 5 Number of Occupants: 10 Other: _____

Design Wastewater Strength: Domestic High Strength Industrial Process Wastewater

Proposed Design Daily Flow: 600 GPD Proposed LTAR (Initial): .3 Proposed LTAR (Repair): .3

Proposed Wastewater System Type*: Accepted (Initial) Pump Required: Yes No May be required

Proposed Wastewater System Type*: Accepted (Repair) Pump Required: Yes No May be required

**Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII*

Effluent Standard: DSE HSE NSF/ANSI 40 TS-I TS-II RCW

Saprolite System (Initial): Yes No Saprolite System (Repair): Yes No

Fill System (Initial): Yes No If yes, specify: New Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Fill System (Repair): Yes No If yes, specify: New Existing (when adding more than 6 inches of fill to system area provide a fill plan)

Usable Depth to LC (Initial)*: 24 Usable Depth to LC (Repair)*: 26 * Limiting Condition

Max. Trench Depth (Initial)*: 12 Max. Trench Depth (Repair)*: 14 * Measured on the downhill side of the trench

Artificial Drainage Required: Yes No If yes, please specify details: _____


Type of Water Supply: Private well Public well Shared well Municipal Supply Spring Other: _____

Drainfield location meets requirements of Rule .0508: Yes No Drainfield location meets requirements of Rule .0601: Yes No

Permit valid for: Five years [site plan submitted pursuant to GS 130A-334(13a)] No expiration [plat submitted pursuant to GS 130A-334(7a)]

Permit conditions:

Authorized Agent's Printed Name: Oliver Tolsdorf REHS Expiration Date: 4/23/29

Authorized Agent's Signature:  Date: 4/23/24

See attached site sketch

The issuance of this permit in no way guarantees the issuance of other permits. The permit holder is responsible for checking with appropriate governing bodies in meeting their requirements. This permit is subject to revocation if the site plan, plat, or the intended use changes. The Improvement Permit shall not be affected by a change in ownership of the site. This permit is subject to compliance with the provisions of 15A NCAC 18E and to the conditions of this permit.

Harnett County Environmental Health

File/Permit Number: SFD2404-0016

CONSTRUCTION AUTHORIZATION

County: Harnett PIN/Lot Identifier: 0642-95-5498.000
Owner: KB Home Raleigh Applicant: same
Property Location: 145 Putnam
Facility Type: SFD (40'x50')

Number of bedrooms: 5 Number of Occupants: 10 Other: _____
 New Expansion Repair System Relocation Change of Use
Basement? Yes No Basement Fixtures? Yes No
Crawl Space? Yes No Slab Foundation? Yes No
Type of Wastewater System* Accepted (Initial) Accepted (Repair)

*Please include system classification for proposed wastewater system types in accordance with Rule .1301 Table XXXII
Design Daily Flow: 600 GPD Wastewater Strength: Domestic High Strength Industrial Process Wastewater
Rule .0403(e) Engineering Design Utilizing Low-flow Fixtures and Low-flow Technologies (S.L. 2013-413 and 2014-120)? Yes No
(if yes, please provide engineering documentation)
Effluent Standard: DSE HSE NSF/ANSI 40 TS-I TS-II RCW
Type of Water Supply: Private well Public well Shared well Municipal Supply Spring Other: _____

Installation Requirements/Conditions
Septic Tank Size: 1250 gallons Total Trench/Bed Length: 420 feet Trench/Bed Spacing: 9 feet on center
Trench/Bed Width: 3 inches LTAR: .3 gpd/ft² Usable Depth to LC (Initial)*: 30 ^{Limiting condition}
Soil Cover: 6 inches Slope Corrected Maximum Trench/Bed Depth*: 18 inches ^{Measured on the downhill side of the trench}
Pump Tank Size (if applicable): 1250 gallons Requires more than one pump? Yes No
Pump Requirements: _____ ft. TDH vs. _____ GPM Grease Trap Size (if applicable): _____ gallons
Distribution Method: Serial D-Box or Parallel Pressure Manifold(s) LPP Other: _____
Artificial Drainage Required: Yes No If yes, please specify details: _____

Legal Agreements (If the answer is "Yes" to any type of legal agreements, please attach a copy of the agreement.)
Multi-party Agreement Required [Rule .0204(g)]: Yes No
Easement, Right-of-Way, or Encroachment Agreement Required [Rule .0204(d)]: Yes No
Declaration of Restrictive Covenants: Yes No Pre-Construction Conference Required: Yes No
Management Entity Required: Yes No Minimum O&M Requirements: _____
Conditions: _____

The requirements of 15A NCAC 18E are incorporated by reference into this permit and shall be met. Systems shall be installed in accordance with the attached site sketch. This Construction Authorization is subject to revocation if the site plan, plat, or the intended use changes. The Construction Authorization shall not be affected by a change in ownership of the site. This Construction Authorization is subject to compliance with the provisions of 15A NCAC 18E, or 15A NCAC 18A .1900, as applicable, and to the conditions of this permit.

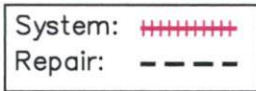
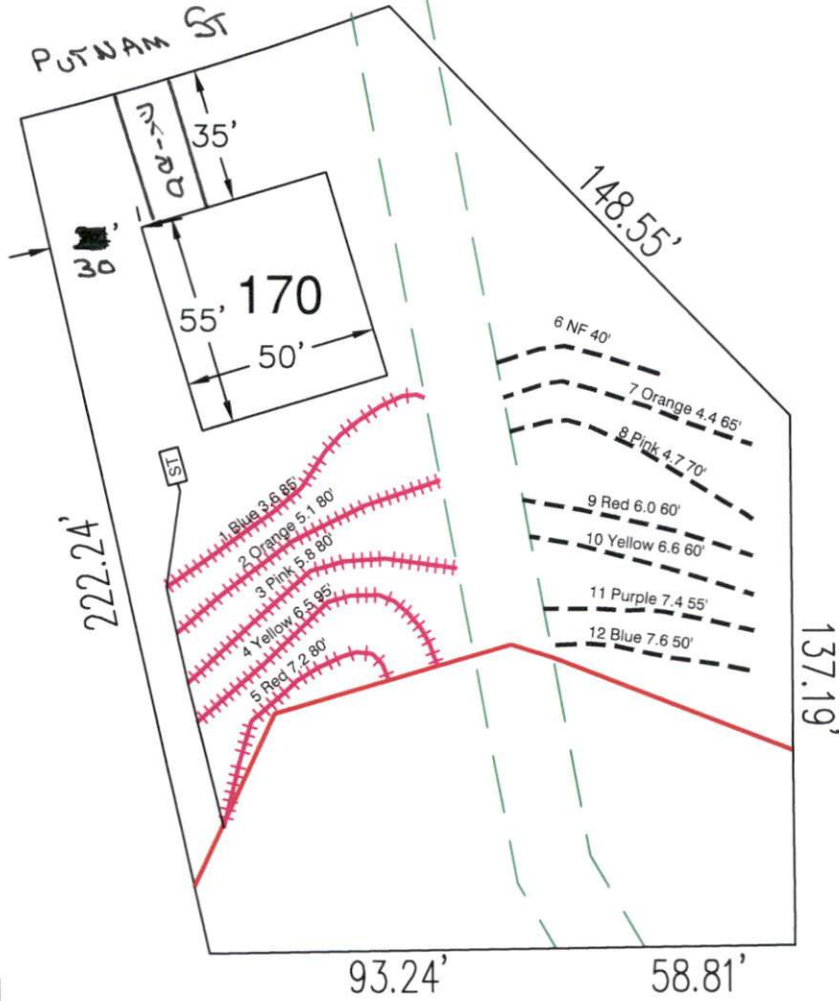
Authorized Agent's Printed Name: Oliver Tolksdorf REHS Expiration Date: 4/23/29
Authorized Agent's Signature: _____ Date: 4/23/24

See attached site sketch

SITE SKETCH

SFD2404-0016

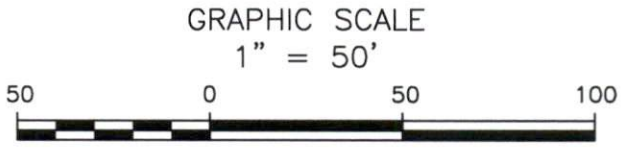
REHS



System: Gravity to Serial Dist.
 Lines: 1-5, (420')
 Accepted Status System
 0.3 Soil LTAR
 12" Trench Bottom At-Grade

Repair: Pressure Manifold
 Lines: 6-12 (400')
 Accepted Status System
 0.3 Soil LTAR
 14" Trench Bottom At-Grade

- *Keep tanks and drain lines 10' from property lines.
- *Not a survey.
- *Not a guarantee of a septic permit.
- *Keep supply lines >5' from property lines.
- *Some lines are flagged longer in the field than lengths indicate.
- *No grading septic area.



Central Carolina Soil Consulting, PLLC
 1900 South Main Street, Suite 110
 Wake Forest, North Carolina 27587
 Phone (919)569-6704 Fax (919)569-6703

4-Bedroom Septic Layout
 Lot 170, Birchwood Subdivision
 Harnett County, North Carolina

Job# : 3753
Drawn By : LW
Date : 04/15/2023
Revision:



Bateman Civil Survey Company, PC

2524 Reliance Avenue

Apex, NC 27539

(919) 577-1080/fax (919) 577-1080

March 22, 2024

Harnett County Environmental Health Department
Harnett County Environmental Health,
900 S 9th St.
Lillington NC 27546

RE: Wastewater Daily Flow Calculations

Birchwood Grove Lot 170

145 Putnam St, Fuquay Varina, Harnett County, North Carolina

Project #3753

Dear Harnett County Staff:

Bateman Civil Survey Company in conjunction with Central Carolina Soil Consulting (CCSC) are proposing wastewater daily flow calculations for a single-family home located at Birchwood Grove Lot 170 pursuant to session law 2014-120 and 2013-413. The proposed home will have **5** bedrooms and under the current flow calculations provided in the state rules would have a daily flow of **600** gallons per day. That would be based on 120 gallons per bedroom.

Household flow rates from the 15 NCAC 18A section of the state rules relied on fixture flow rates from 1982 and calculated the flows for common fixtures to established average flows for the purpose of calculating household daily flows and septic system based on those flows. The data for the historic fixture flows was taken from the EPA 2002 Onsite Wastewater Treatment Systems Manual.

The attached spreadsheet contains the flow reducing fixtures that are proposed for Birchwood Grove Lot 170. The table includes flow rates for the flow reducing fixtures as well as flow rates from the state rules and the percentage of water savings. On average the proposed fixtures provide a 40% savings.

We are requesting a reduction of 20% for the use of low flow fixtures. This will provide an adjusted daily flow of 96 gallons per bedroom per day and a total flow of **480** gallons per day for the proposed 5-bedroom house.

Calculations for effluent strength are shown below based on a 20% reduction in flow with a base flow concentration of 220 mg/l for both BODs and TSS. High strength effluent levels are considered to be higher than 350 mg/l for both BODs and TSS. Based on a reduction in flow of 20% we anticipate the concentration levels of both BODs and TSS to be around 275 mg/l well below the 350 mg/l threshold.

If you need further information or have any questions, please contact Matt Burdette at (919) 422-2827 or Tom Speight at 919-577-1080 2524 Reliance Ave, Apex NC 27539.

Sincerely,

BATEMAN CIVIL SURVEY COMPANY
NCBELS# C-2378.

DocuSigned by:
Thomas Speight, Jr, PE, PLS
09838E23DC404AD...



Thomas Speight, P.E
(seal)

3/26/2024

Birchwood Grove Lot 170						
	Item		Gal/min. or flush	Number of Fixures	Base Flow From 1982	Percent Water Savings
Master	Shower Head	Moen T5152EP	1.8 gal/minute	1	5.5 gal/minute	67%
	Lavatory Faucet	Moen 5010	1.2 gal/minute	2	3.0 gal/minute	60%
	Tub Trim	Moen T908	Fill & Release	1	Fill & Release	0%
Kitchen	Kitchen Sink Faucet	Moen 5925	1.5 gal/minute	1	3.0 gal/minute	50%
Bath 2	Lavatory Faucet	Moen 5010	1.2 gal/minute	1	3.0 gal/minute	60%
	Shower Head	Moen T5153EP	1.8 gal/minute	1	5.5 gal/minute	67%
Bath 3	Lavatory Faucet	Moen 5010	1.2 gal/minute	1	3.0 gal/minute	60%
	Shower Head	Moen T5152EP	1.8 gal/minute	1	5.5 gal/minute	67%
Laundry	Laundry Faucet	Moen 5925	1.5 gal/minute	1	3.0 gal/minute	50%
Toilets	Master, 2, 3	Gerber 28-990	1.3 gal /flush	3	3.5 gal/minute	63%

FIXTURES	TOILET	FAUCET	SHOWER	LEAK	BATH	OTHER	DISHWASHER	CLOTHES WASHER	TOTALS
PERCENT OF HOUSE HOLD WATER USE	24%	20%	20%	12%	3%	3%	2%	16%	100%
GALLONS PER DAY (600 BASE)	144	120	120	72	18	18	12	96	600
PERCENT OF SAVINGS FROM WATER SAVING FIXURES	63%	57% avg	67%	0%	0%	0%	0%	0%	40%
ADJUSTED FLOW (GALLONS)	53	52	40	72	18	18	12	96	361

MOEN®

Specifications

DESCRIPTION

- Metal construction with various finishes identified by suffix
- Pressure balancing cycle valve design with an adjustable temperature limit stop
- 1/2" IPS connections
- Includes valve, tub spout, showerhead, arm and flange


OPERATION

- Lever style handle
- Handle operates counterclockwise through a 270° arc with off at 6 o'clock and maximum hot at the 9 o'clock position. Shut off in clockwise direction
- Adjustable temperature limit stop to control maximum hot water temperature
- Pressure balancing mechanism maintains selected discharge temperature to $\pm 2^\circ$

FLOW

- EP suffix models are designed to deliver 1.75 gpm (6.6 L/min) at 45 psi

STANDARDS

- Third party certified to: WaterSense®, ASME A112.18.1/CSA B-125.1 and all applicable requirements referenced therein
- Products marked with 1.75 gpm are compliant with California water efficiency regulations
- ADA  for lever handle

WARRANTY

- Lifetime limited warranty against leaks, drips and finish defects to the original homeowner
 - 10 year limited warranty when used in a multifamily installation
 - 5 year limited warranty when used in a commercial installation
- Visit www.moen.com/support for complete details and limitations

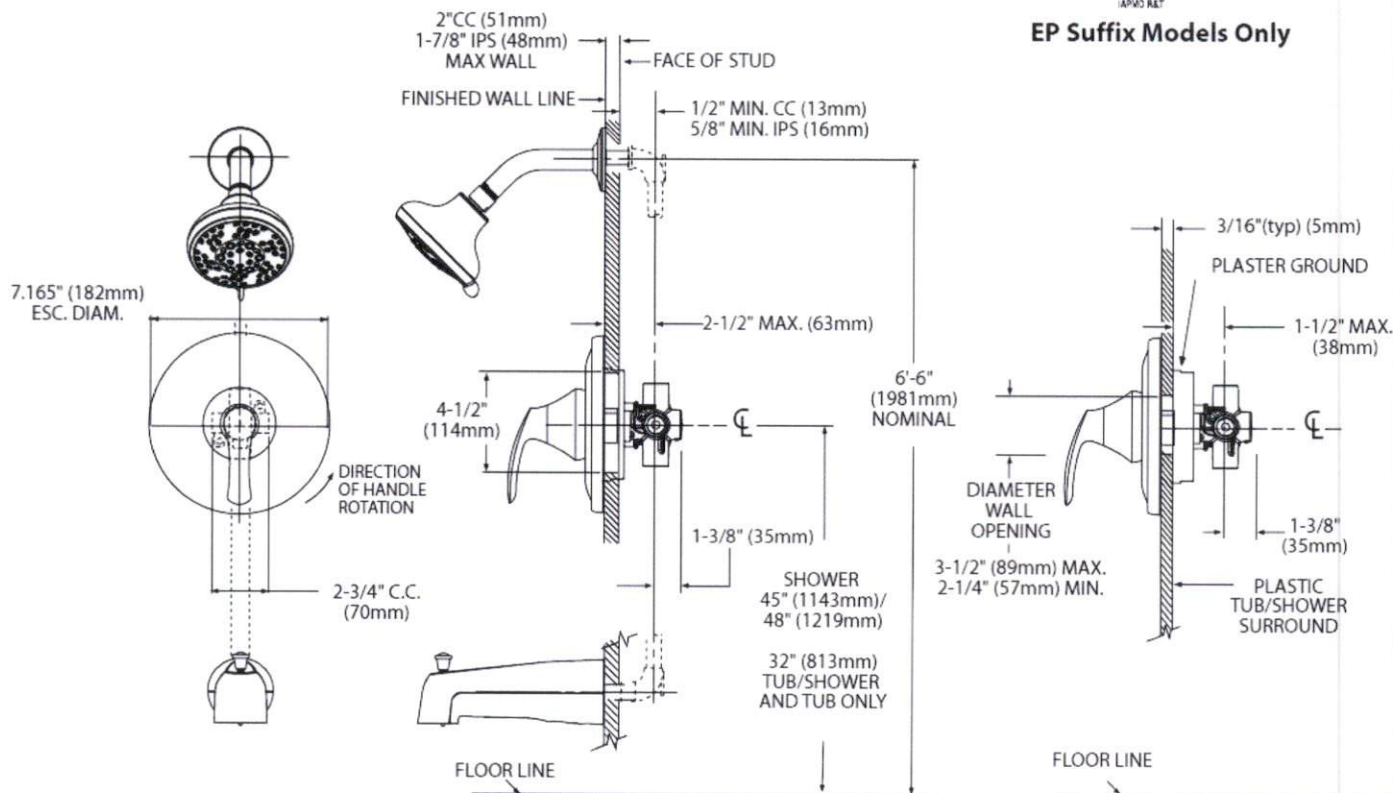


Seena™ Posi-Temp® Single-Handle Tub/Shower

Models: T5152EP series - shower trim only
T5153EP series - tub/shower trim



EP Suffix Models Only



MOEN®

Specifications

DESCRIPTION

- Metal construction with finish identified by suffix
- 1/2" IPS connections for flexible hoses only; not for use with rigid or semi-rigid supply risers (3/8" Copper or Pex) with coupling nuts
- Installation through 3 holes, 1" min. diameter, and 4" on center
- Includes pop-up waste assembly

OPERATION

- Lever handles
- Maximum handle rotation angle is 90° to full on
- Hot side counterclockwise to open (clockwise to close)
- Cold side clockwise to open (counterclockwise to close)

FLOW

- Water usage is limited to the maximum flow rates as indicated by the corresponding product markings
 - 1.2 gpm max (4.5 L/min) at 60 psi

CARTRIDGE

- 1234 cartridge
- Nonmetallic and stainless steel material

STANDARDS

- Third party certified at WaterSense®, ASME A112.18.1/CSA B125.1, and all applicable requirements referenced therein including NSF 61/9 & 372
- Products marked with 1.2 gpm are compliant with California water efficiency regulations
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- ADA ♿ for lever handles

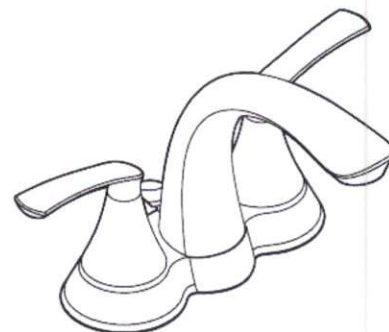
WARRANTY

- Limited lifetime warranty against leaks, drips and finish defects to the original consumer purchaser
- 10 year warranty when used in a multifamily installation
- 5 year warranty when used in a commercial installation

Visit www.moen.com/support for complete details and limitations

OPTIONS (See Illustrated Parts page)

- Thin and thick deck mounting hardware kits available

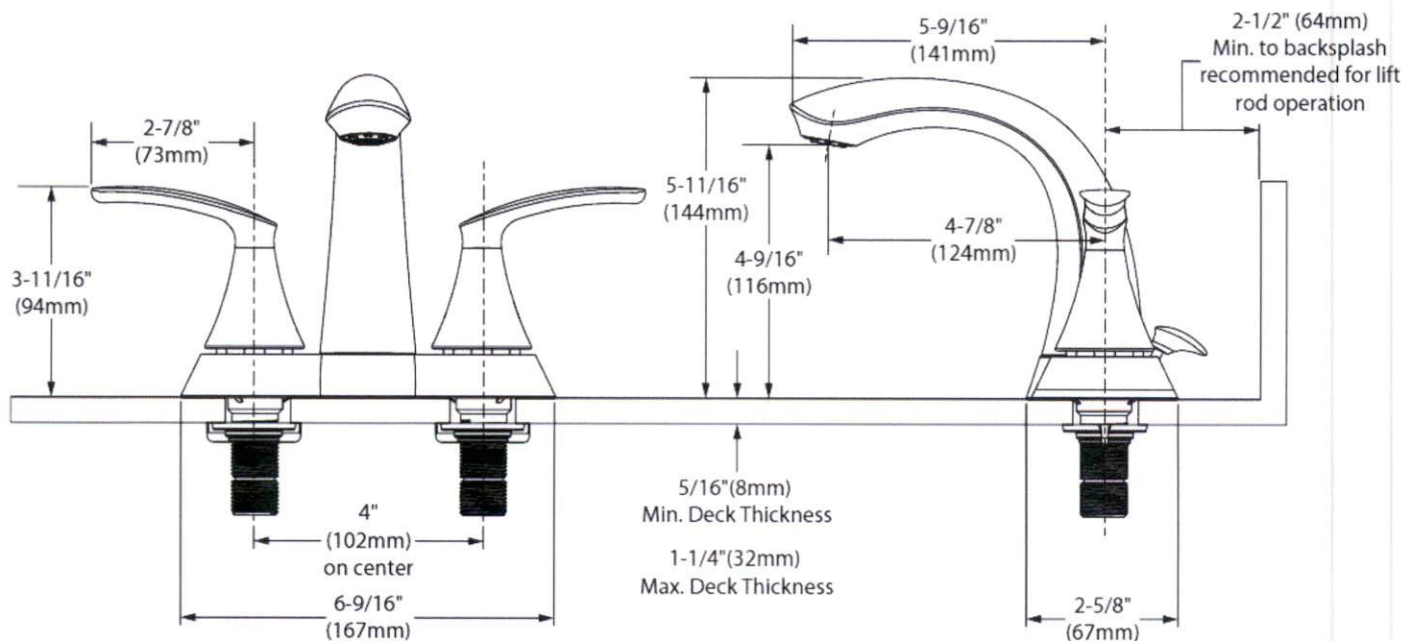


SEENA™

Two-Handle 4" Centerset Lavatory Faucet

Models:

5010 series includes pop-up waste



CRITICAL DIMENSIONS

(DO NOT SCALE)

MOEN®

Specifications

FAUCET DESCRIPTION

- Pulldown system offers smooth operation, easy movement and secure docking
- Metal construction with various finishes identified by suffix
- Quick connect installation - Duralock™
- PowerBoost™ spray technology
- Pulldown spray with 68" braided hose
- Flexible supply lines with 3/8" compression fittings
- High arc spout provides height and reach to fill or clean large pots while pulldown wand provides the maneuverability for cleaning or rinsing
- Faucet designed for handle to be mounted on right side

OPERATION

- Lever style handle
- Temperature controlled by 100° arc of handle travel
- Operates with less than 5 lbs. of force
- Operates in stream or spray mode in the pullout or retracted position

FLOW

- Flow is limited to 1.5 gpm (5.7 L/min) max at 60 psi

CARTRIDGE

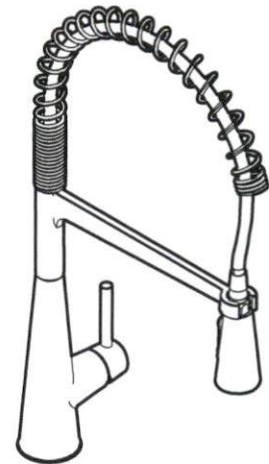
- 1255™ Duralast™ cartridge for single handle faucets

STANDARDS

- Third party certified to IAPMO Green, ASME A112.18.1/CSA B125.1 and all applicable requirements therein including NSF 61/9 & 372
- Meets CalGreen and Georgia SB370 requirements
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- The backflow protection system in the device consists of two independently operating check valves, a primary and a secondary which prevent backflow
- ADA ♿ for lever handle

WARRANTY

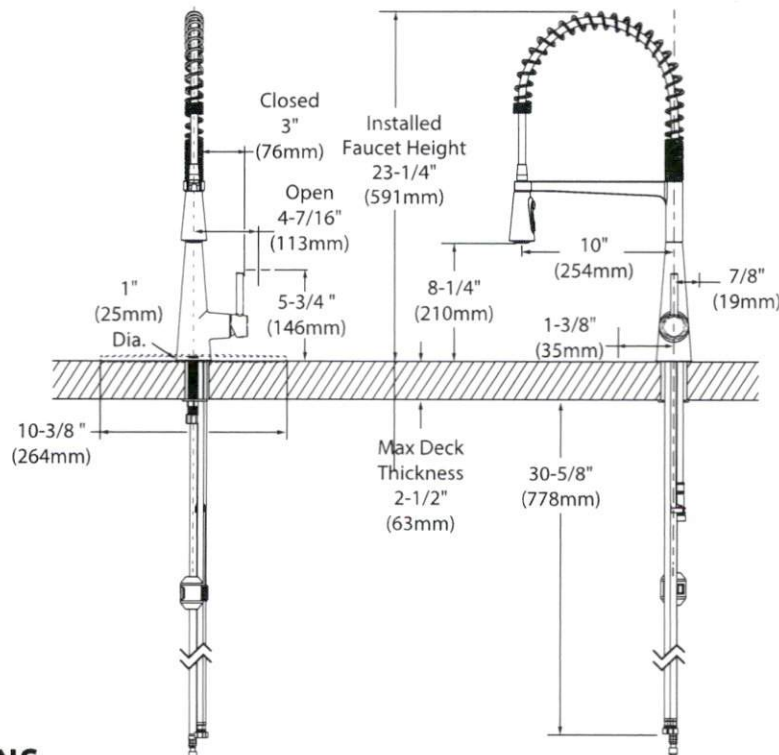
- Lifetime limited warranty against leaks, drips and finish defects to the original homeowner
 - 10 year limited warranty when used in a multifamily installation
 - 5 year limited warranty when used in a commercial installation
- Visit www.moen.com/support for complete details and limitations



Sleek™ Single Handle Pre-Rinse Spring Pulldown Kitchen Faucet

Model: 5925 series

NOTE: this faucet is designed to be installed through 1 or 3 holes, 1-1/2" (38mm) min. dia.



CRITICAL DIMENSIONS

(DO NOT SCALE)



VITREOUS CHINA

TOILET
21-918



**MAXWELL® 1.28
ErgoHeight™
17" High Elongated Toilet**

12" Rough-in

Features:

- 1.28 gpf/4.8 Lpf high efficiency two-piece toilet
- Elongated ErgoHeight™ bowl
- Dual-fed siphon jet
- Pilot fill valve
- 3" flush valve
- 2" glazed trapway
- Color matched front tank lever (white only)
- Optional insulated non-sweating tank
- Optional right-handed trip lever
- Available in White, Bone and Biscuit
- 2 bolt caps
- ADA Compliant

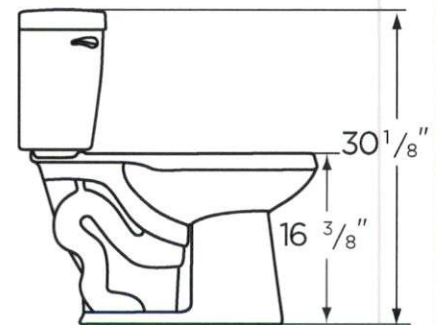
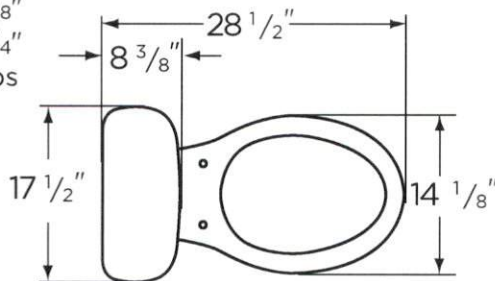


Dimensions:

- Height 30 1/8"
- Width 17 1/2"
- Depth 28 1/2"
- Rough-in 12"
- Water Surface from Rim 6 1/2"
- Trapway 2"
- Water Surface 8 7/8" x 7 3/8"
- Water Seal 2 1/4"
- Shipping Weight 85.5 lbs

Specifications: Bowl—#21-928 Front Bowl
Seat not included

Tank—#28-990



THIS FIXTURE QUALIFIES ACCORDING TO ASME TEST PROCEDURES AS A HIGH EFFICIENCY WATER CLOSET WITH AN AVERAGE CONSUMPTION OF 1.28 gpf (4.8 Lpf) OR LESS.

HIGH EFFICIENCY TOILET
HET

www.gerberonline.com

Job Name	
Date	
Model Specified	
Quantity	
Customer	
Contractor	
Architect/engineer	

LAVATORIES

TOILETS

BIDETS / URINALS

CAST IRON