



HARNETT COUNTY ENVIRONMENTAL HEALTH

File/Permit #: SFD2509-0004

CDP #: _____

IMPROVEMENT PERMIT (IP)

☒ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

Owner: LGI Homes Applicant: LGI Homes

Property Location: 225 Empress St (SR 1284) PIN/Lot Identifier: 0600-66-3589

Subdivision: Brayden Preserve Lot #: 40 Block: _____ Section: _____

Facility Type: 48'x40' SFD Number of bedrooms: 4 Number of Occupants: 8 Other: _____

Design Daily Flow: 480 GPD LTAR (Initial): .4 gpd/ft² LTAR (Repair): .4 gpd/ft²

Wastewater System Type: 50% reduction (Initial)

Pump Required: ☒ Yes ☐ No ☐ May be required Usable Depth to Limiting Condition (Initial): 40

Wastewater System Type: 50% reduction (Repair)

Pump Required: ☒ Yes ☐ No ☐ May be required Usable Depth to Limiting Condition (Repair): 40

Effluent Standard: ☒ DSE ☐ HSE ☐ Other: _____ Type of Water Supply: ☐ Private well ☒ Municipal Supply ☐ Other: _____

Permit conditions:

36" deep curtain drain above the septic system and repair area is required

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, plot, 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.

Authorized Agent's Printed Name: Mark Osborne REHSDate: 10/16/2025

Authorized Agent's Signature: _____

Expiration Date: 10/16/2030

CONSTRUCTION AUTHORIZATION (CA)

☒ New ☐ Expansion ☐ Repair ☐ System Relocation ☐ Change of Use

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Facility Type: 48'x40' SFD Number of bedrooms: 4 Number of Occupants: 8 Other: _____

Design Daily Flow: 480 GPD LTAR: .4 gpd/ft²

Effluent Standard: ☒ DSE ☐ HSE ☐ Other: _____ Type of Water Supply: ☐ Private well ☒ Municipal Supply ☐ Other: _____

Installation Requirements/Conditions

Wastewater System Type: 50% reduction Pump Required: ☐ Yes ☒ No ☐ May be required

Septic Tank Size: 1000 gallons Total Trench Length: 200 feet Trench Spacing: 9 feet on center

Pump Tank Size: 1000 gallons Maximum Trench Depth: 26 inches Soil Cover: 6 inches

Trench Width: 28 inches Distribution Method: ☒ Serial ☐ D-Box or Parallel ☒ Pressure Manifold ☐ Other: _____

Artificial Drainage Required: Yes ☒ No ☐ If yes, please specify details: 36" deep curtain drain above the septic system and repair area is required

Management Entity Required: ☐ Yes ☒ No Minimum O&M Requirements: _____

Permit conditions:

36" deep curtain drain above the septic system and repair area is required

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, plot, 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: Mark Osborne REHSDate: 10/16/25

Authorized Agent's Signature: _____

Expiration Date: 10/16/2030

Owner/Legal Representative Signature: _____

Date: _____

***See attached site sketch**

Harnett County Environmental Health

SITE SKETCH

PIN 0600-66-3589

Permit Number SFD2509-0004

LGI Homes

Brayden Preserve 40

Applicant's Name

Subdivision/Section/Lot Number

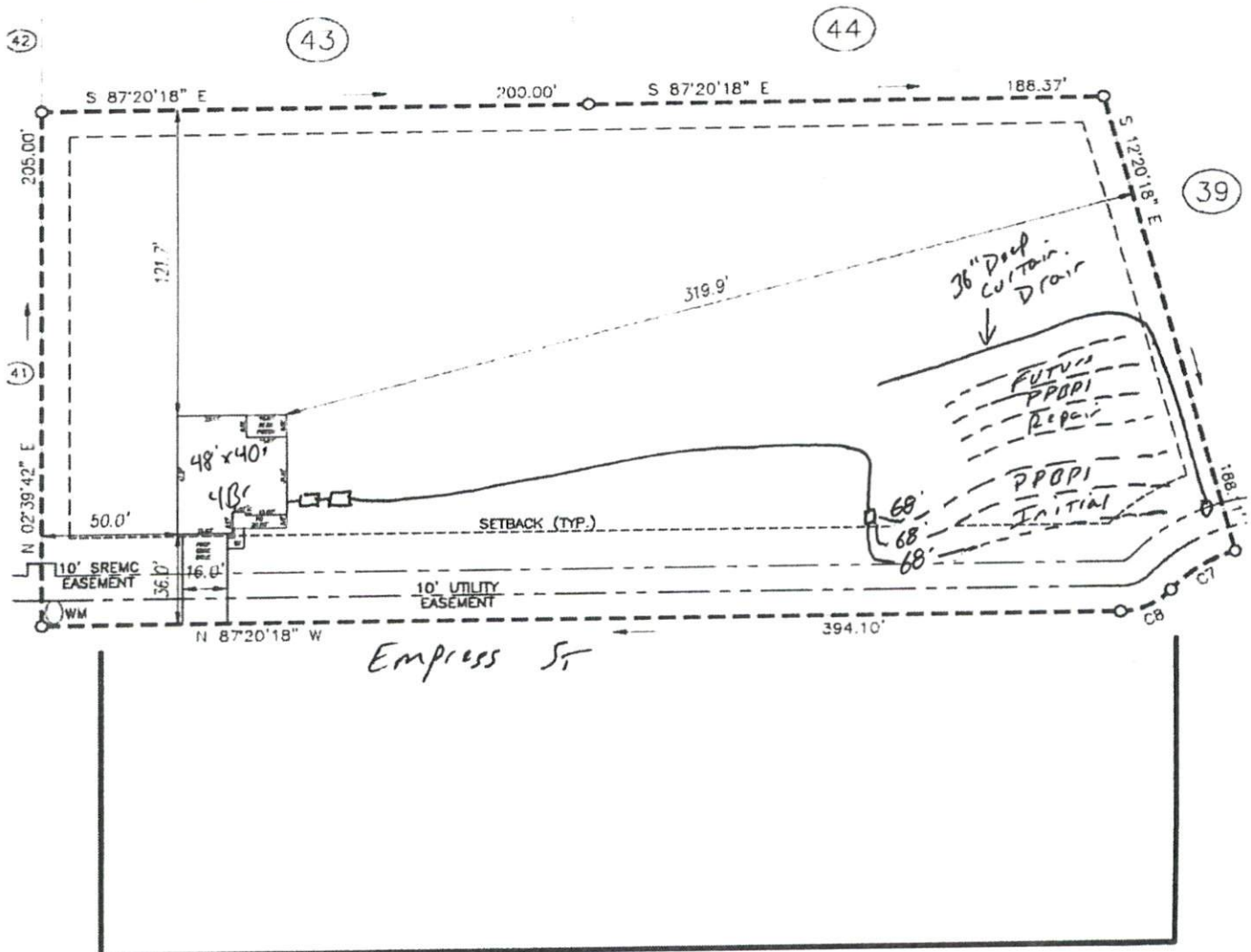
Mark Osborne REHS

Authorized State Agent

Date

System components represent approximate contours only. The contractor must flag the system prior to beginning the installation to ensure that the proper grade is maintained.

Scale = NTS



Initial System

PRESSURE MANIFOLD DESIGN

Name: LGI Homes P.I.N. #: 0600-66-3589 D #: N/A

Address: 225 Empress Street Subdiv: Brayden Preseve Lot#: 40

of BDR: 4 Daily Flow: 480 gal/day L.T.A.R.: 0.350 gal/day/sq.ft

Septic Tank: 1000 gals (min.) Pump Tank: 1000 gals (min.) Sq. Foot: 693 Stone Depth: N/A
(Panel Block)

Number of Taps: 3 Length of Trenches: 77 ft(See Tap Chart for Details)

Depth of Trenches: see Harnett County permit Manifold Length: 36 in

Manifold Diameter: 4 in sch 80pvc (minimum) Tap Configuration: 6 in spacing 1 side(s) of manifold

Supply Line: length: 200 ft Diameter: 1.5 in sch 40pvc

Friction Loss + Fitting Loss: 7.52 ft(supply line length + 70' for fittings in pump tank)

Design Head: 2.0 ft Elevation Head: 8.24 ft

Vent Hole Size: 3/16 in Orifice Coefficient of Discharge: 0.60

Orifice Coefficient of Contraction: 0.62 Orifice Coefficient of Velocity: 0.97

Maximum Head Supplied by Selected Pump(s) at Total Design Flowrate: 23 ft

Orifice / Vent Hole Flowrate: 1.99 gpm Head Loss at Orifice / Vent Hole: 1.46 ft

Total Head: 19.22 ft Pump to Deliver: 18.43 gals/min at 19.22 ft head

Dosing Volume: 217.72 gals.

Drawdown: 217.72 gals divided by 18 gals/in = 12.10 inches

SJE Rhombus Installer Friendly Series simplex control panel, or equivalent, required
A septic tank filter, or equal is required.

Possible pumps: Hydromatic: Goulds: Myers:
Zoeller: 137 Other:

TAP CHART

Bench Mark	4.30	is = 100.00	set at	Transformer Pad right front corner			Design Head:	2.0	
Pump tank elev.	8	96.30	Pump elev.	91.30	Manifold elev.			99.54	
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
8	Green	5.76	98.54	77	1/2in SCH 80	5.48	160.00	231	0.6926
9	Pink	6.07	98.23	77	1/2in SCH 80	5.48	160.00	231	0.6926
10	Blue	6.70	97.60	77	1/2in SCH 80	5.48	160.00	231	0.6926
		total	feet =	231	gal/min =	16.4	LTAR =		0.3500
% of Pipe Vol.	145		Des. Flow		480.00		(ltar + 5%)		0.3675
Dose Volume	217.72		Pump Run=		29.20		(ltar W/ PB)		0.7000
Dose Pump Time	13.24		Tank Gal/IN		18		(ltar + 5%)		0.7350
Drawdown in Inches	12.10		Elev. Head		8.24				
Supply Line Length	200								
Comments:									

Repair System

PRESSURE MANIFOLD DESIGN

Name: LGI Homes P.I.N. #: 0600-66-3589 D #: N/A
Address: 225 Empress Street Subdiv: Brayden Preseve Lot#: 40
of BDR: 4 Daily Flow: 480 gal/day L.T.A.R.: 0.300 gal/day/sq.ft
Septic Tank: 1000 gals (min.) Pump Tank: 1000 gals (min.) Sq. Foot: 804 Stone Depth: N/A
Number of Taps: 4 Length of Trenches: Varies ft(See Tap Chart for Details) (Panel Block)
Depth of Trenches: see Harnett County permit Manifold Length: 42 in
Manifold Diameter: 4 in sch 80pvc (minimum) Tap Configuration: 6 in spacing 1 side(s) of manifold
Supply Line: length: 215 ft Diameter: 1.5 in sch 40pvc
Friction Loss + Fitting Loss: 17.47 ft(supply line length + 70' for fittings in pump tank)
Design Head: 2.0 ft Elevation Head: 10.44 ft
Vent Hole Size: 3/16 in Orifice Coefficient of Discharge: 0.60
Orifice Coefficient of Contraction: 0.62 Orifice Coefficient of Velocity: 0.97
Maximum Head Supplied by Selected Pump(s) at Total Design Flowrate: 40 ft
Orifice / Vent Hole Flowrate: 2.62 gpm Head Loss at Orifice / Vent Hole: 2.54 ft
Total Head: 32.45 ft Pump to Deliver: 27.80 gals/min at 32.45 ft head
Dosing Volume: 252.59 gals.
Drawdown: 252.59 gals divided by 18 gals/in = 14.03 inches
SJE Rhombus Installer Friendly Series simplex control panel, or equivalent, required
A septic tank filter, or equal is required.
Possible pumps: Hydromatic: Goulds: Myers:
Zoeller: 140 Other:

TAP CHART

Bench Mark	4.30	is = 100.00	set at	Transformer Pad right front corner			Design Head:	2.0	
Pump tank elev.		8	96.30	Pump elev.	91.30		Manifold elev.	101.74	
line	color	rod read	Elevation	length	hole size	flow/tap	gal/day	trench area	LINE LTAR
4	Green	3.56	100.74	58	1/2in SCH 80	5.48	104.46	174	0.6004
5	Blue	4.38	99.92	58	1/2in SCH 80	5.48	104.46	174	0.6004
6	lime	4.78	99.52	76	1/2in SCH 40	7.11	135.54	228	0.5945
7	Red	5.48	98.82	76	1/2in SCH 40	7.11	135.54	228	0.5945
		total	feet =	268	gal/min =	25.2	LTAR =		0.3000
% of Pipe Vol.		145		Des. Flow	480.00			(ltar + 5%)	0.3150
Dose Volume		252.59		Pump Run=	19.06			(ltar W/ PB)	0.6000
Dose Pump Time		10.03		Tank Gal/MN	18			(ltar + 5%)	0.6300
Drawdown in Inches		14.03		Elev. Head	10.44				
Supply Line Length		215							
Comments:									