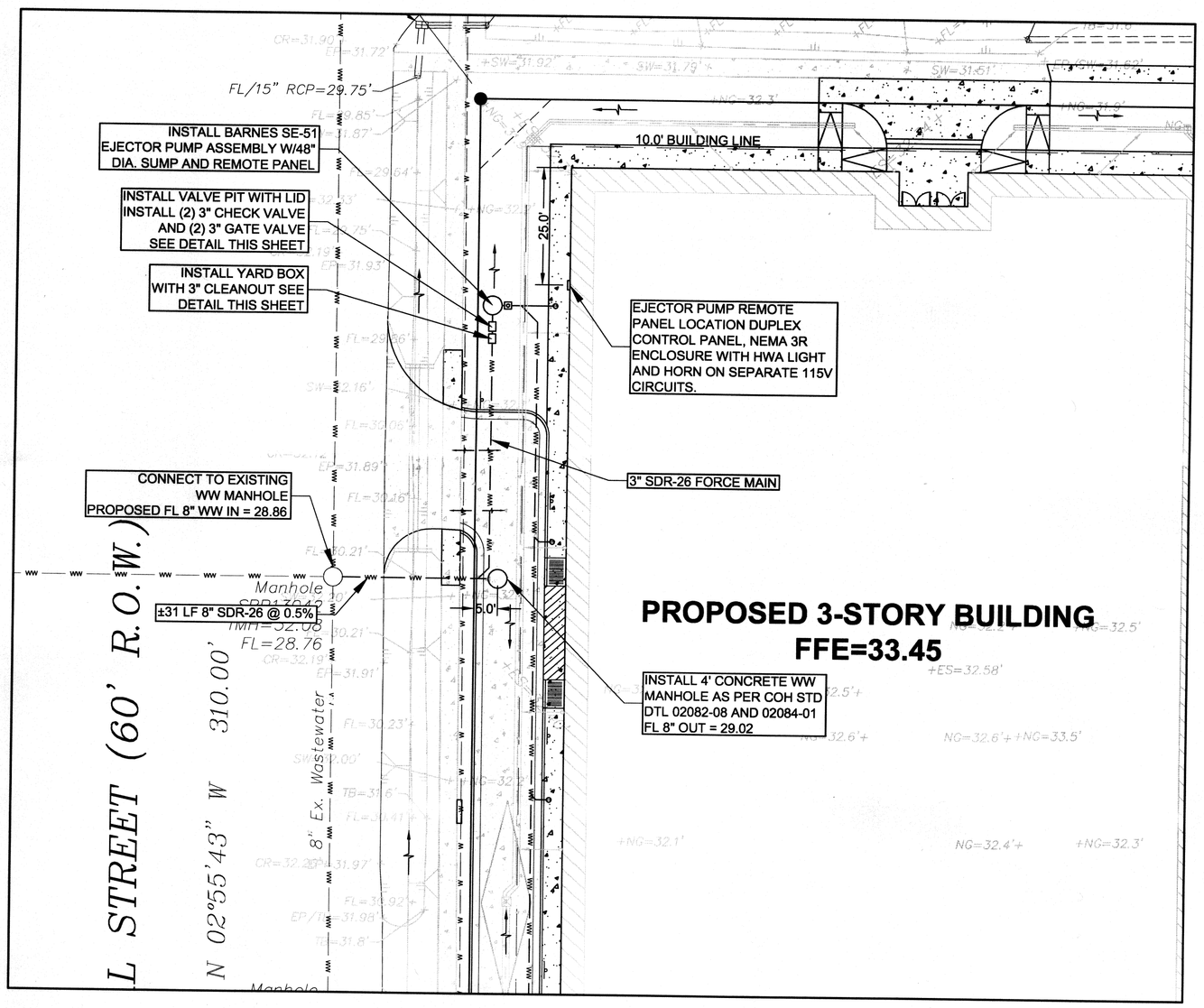


TOTAL DYNAMIC HEAD CALCULATIONS

Pipe Size (Diameter)		3	inch	0.25	ft
Pipe Length		65	ft		
Pipe Area		0.049	s.f.		
Assumed Flow		125	g.p.m.	0.275	c.f.s.
Velocity		5.6	ft/sec		

Head Calculations		Hazen-Williams C =	130
Elevation Head (ft)			4.4
Friction loss in pipe (ft)			2.96
Friction loss in fittings	Loss Coefficient	QTY	
90 degree bends	0.9	1	0.44
45 degree bends	0.42	2	0.41
check valves	2.3	1	1.12
gate valves	0.19	1	0.09
tee	1.8	2	1.75
Total Head (ft)			11.2

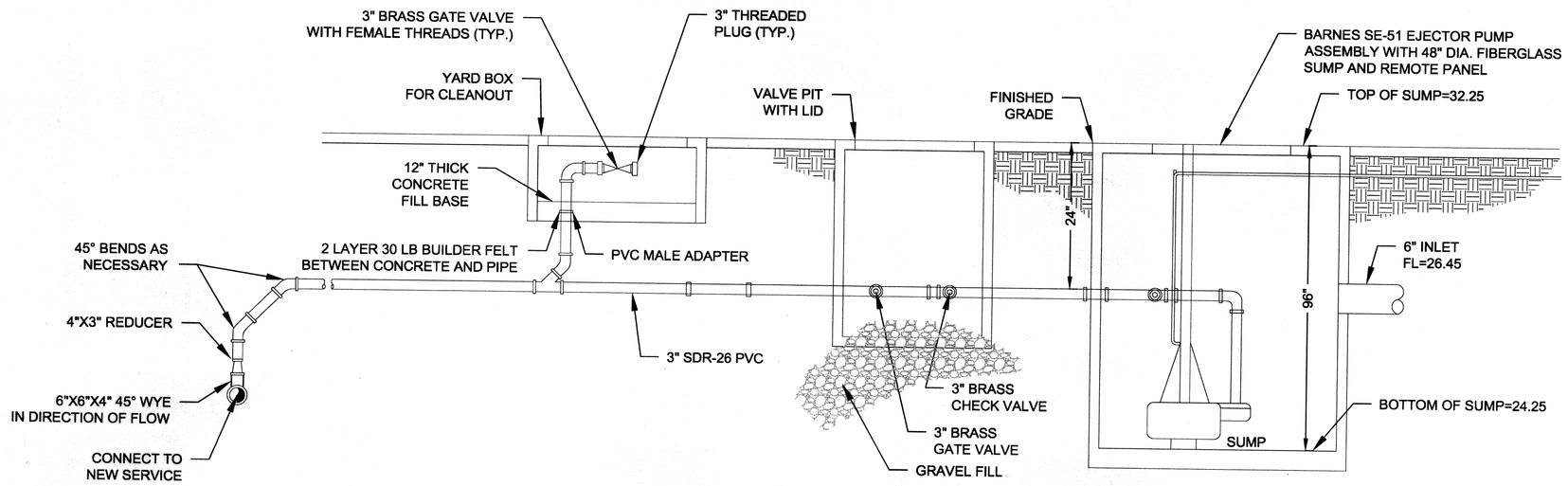
UTILITY NOTES

1. ALL MATERIALS, METHODS, TESTING, AND STANDARDS SHALL COMPLY WITH THE LATEST VERSION OF THE CITY OF HOUSTON STANDARD SPECIFICATIONS.
2. EXISTING UTILITIES SHOWN ARE BASED ON AVAILABLE RECORD DRAWINGS AND SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, MATERIALS, AND SIZES OF ALL EXISTING UTILITIES SHOWN.
3. CONTRACTOR SHALL NOTIFY ONE-CALL OR OTHER UTILITY LOCATION SERVICES AT LEAST 48-HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
4. CONTRACTOR SHALL COORDINATE UTILITY CONNECTIONS WITH UTILITY SERVICE PROVIDERS PRIOR TO TAPPING EXISTING LINES. COORDINATE REMOVAL OF MAINS TEMPORARILY FROM SERVICE AS NECESSARY.

SCALE: 1" = 20'

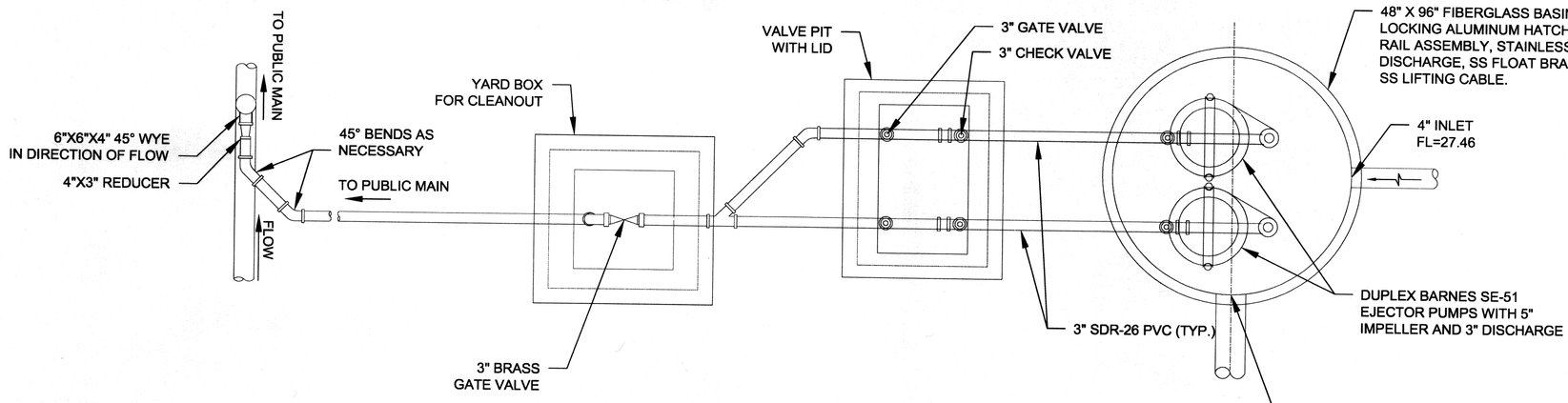
LEGEND

- BOUNDARY
- ADJACENT BOUNDARY
- BUILDING LINE
- EASEMENT
- EXISTING CONTOUR
- PROPOSED CONTOUR (XXX)
- WATER LINE (W)
- WASTEWATER LINE (WW)
- OVERHEAD ELECTRIC (OE)
- STORMSEWER
- TREE TO REMAIN



EJECTOR PUMP INSTALLATION - PROFILE VIEW

N.T.S.



EJECTOR PUMP INSTALLATION - PLAN VIEW

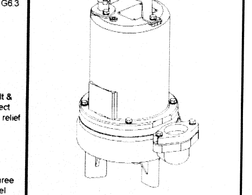
N.T.S.

BARNES — www.cranepumps.com

Series SE-L
2" Spherical Solids Handling
Manual & Automatic

1½", 2" & 3" Discharge

DISCHARGE	2" NPT, Female, Vertical, Bolt-on Flange
LIQUID TEMPERATURE	104 F (40 C) Continuous
VOLUTE	Cast Iron ASTM A-48, Class 30
MOTOR HOUSING	Cast Iron ASTM A-48, Class 30
SEAL PLATE	Cast Iron ASTM A-48, Class 30
IMPELLER: *Design*	2 Vane, open, with pump-out vanes on back side. Dynamically balanced, ISO G6.3
Material	Cast Iron ASTM A-48, Class 30
SHAFT	416 Stainless Steel
SQUARE RINGS	Buna-N
HARDWARE	300 Series Stainless Steel
PAINT	Air Dry Enamel
SEAL: *Design*	Single Mechanical
Material	Carbon/Ceramic/Buna-N
	Hardware: 300 Series Stainless
CORD ENTRY	15 ft. (5m) Cord with plug on 120 volt & 5HP, 240 volt 1 phase. Quick connect custom molded for sealing and strain relief
SPEED	1750 RPM (Nominal)
UPPER BEARING	Single Row, Ball, Oil lubricated
Load	Radial
LOWER BEARING	Single Row, Ball, Oil lubricated
Load	Radial & Thrust
MOTOR: *Design*	NEMA L, Single Phase, NEMA B -Three phase Torque Curve, Oil Filled, Squirrel Cage Induction
Insulation	Class B
SINGLE PHASE	Permanent Split Capacitor (PSC) Includes Overload Protection in Motor
THREE PHASE	200-240/460 v Tri-Voltage motor 600V Requires overload Protection to be included in control panel.
LEVEL CONTROL	"A" - Wide Angle, PVC, Mechanical, 15 ft (5m) cord with Piggy-Back Plug, N/O "AU" - Wide Angle, Polypropylene Mechanical, N/O Integral to pump ON and OFF Points are adjustable
OPTIONAL EQUIPMENT	Seal Material, Impeller Trims, Additional cord. Normally Closed Temperature Sensors with cord for 3 phase pumps. (Requires relay in control panel).



Series: SE (SE51 & SE52)
.5, .75, 1.0HP, 1750RPM, 60Hz

Hydraulic Institute Supa MEMBER

CSA 108
UL 778
LR16567

Sample Specifications: Section 1 Page 5.

DESCRIPTION:

SUBMERSIBLE NON-CLOG SEWAGE PUMP DESIGNED FOR TYPICAL RAW SEWAGE APPLICATIONS

CRANE PUMPS & SYSTEMS
A Crane Co. Company
USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

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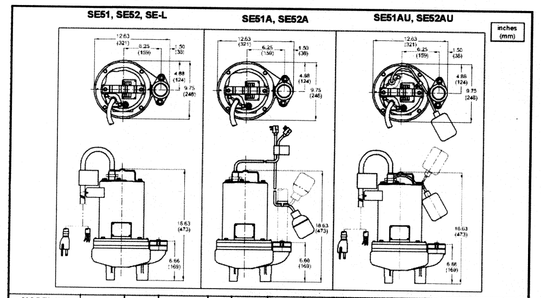
Series SE-L
2" Spherical Solids Handling
Manual & Automatic

BARNES — www.cranepumps.com

1½", 2" & 3" Discharge

SE51, SE52, SE-L | SE51A, SE52A | SE51AU, SE52AU



MODEL NO	PART NO	HP	VOLT/PH	Hz	RPM (Nom)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	CORD SIZE	CORD TYPE	CORD O.D inch (mm)
SE51	104871	0.5	120/1	60	1750	F	11.6	21.3	14/3	SJTOW	0.375 (9.5)
SE51A	104872	0.5	120/1	60	1750	F	11.6	21.3	14/3	SJTOW	0.375 (9.5)
SE51AU	104873	0.5	120/1	60	1750	F	11.6	21.3	14/3	SJTOW	0.375 (9.5)
SE52	104874	0.5	240/1	60	1750	J	5.9	14.9	14/3	SOW	0.530 (13.5)
SE52AU	104875	0.5	240/1	60	1750	J	5.9	14.9	14/3	SOW	0.530 (13.5)
SE54L	104881	0.5	200-240/3	60	1750	H/L	3.2/2.6	9.6/11.9	14/4	SOW	0.570 (14.5)
SE544L	104882	0.5	480/3	60	1750	K	1.5	5.3	14/4	SOW	0.570 (14.5)
SE554L	104883	0.5	600/3	60	1750	H	1.0	3.4	14/4	SOW	0.570 (14.5)
SE774L	104884	0.75	200-240/1	60	1750	G/K	7.4/7.0	21.5/25.9	14/3	SOW	0.530 (13.5)
SE784L	104885	0.75	200-240/3	60	1750	H/K	4.9/4.5	13.7/15.4	14/4	SOW	0.570 (14.5)
SE744L	104886	0.75	480/3	60	1750	K	2.2	7.7	14/4	SOW	0.570 (14.5)
SE754L	104887	0.75	600/3	60	1750	H	1.5	7.2	14/4	SOW	0.570 (14.5)
SE1074L	104888	1.0	200-240/1	60	1750	D/G	8.6/8.3	21.5/29.9	14/3	SOW	0.530 (13.5)
SE1084L	104889	1.0	200-240/3	60	1750	E/H	5.1/4.9	13.7/15.4	14/4	SOW	0.570 (14.5)
SE1044L	104890	1.0	480/3	60	1750	H	2.4	7.7	14/4	SOW	0.570 (14.5)
SE1054L	104891	1.0	600/3	60	1750	J	1.9	7.2	14/4	SOW	0.570 (14.5)

Mechanical Switch on SE51A, cord 16/2, SJOW, 0.320 (8.1mm) O.D., Piggy-Back Plug
Mechanical Switch on SE-AU cord 14/2, SJOW, 0.345 (8.8mm) O.D.

IMPORTANT !
1.) PUMP MAY BE OPERATED "DRY" FOR EXTENDED PERIODS WITHOUT DAMAGE TO MOTOR AND/OR SEALS.
2.) THIS PUMP IS APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION II HAZARDOUS LOCATIONS.
3.) THIS PUMP IS NOT APPROPRIATE FOR USE IN CLASS I DIVISION I OR CLASS II HAZARDOUS LOCATIONS.
4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR LOCAL ESTHETIC APPEAL MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND/OR AS TO AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

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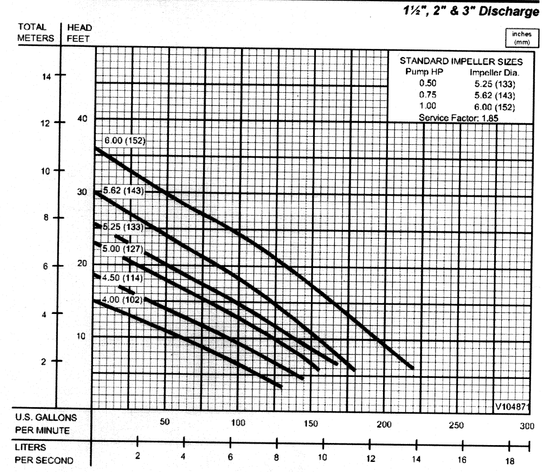
BARNES — www.cranepumps.com

Series SE -L
Performance Curve
0.5, 0.75, 1HP, 1750RPM, 60Hz

1½", 2" & 3" Discharge



Testing is performed with water, specific gravity 1.0 @ 68° F @ (20°C), other fluids may vary performance

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6001 W. WILLIAM CANNON
BUILDING 2, SUITE 203-C
AUSTIN, TX 78749
(512) 301-3389 (o)
(512) 301-3348 (f)

TEXAS DESIGN INTERESTS, LLC
COMMERCIAL/RESIDENTIAL - CIVIL & STRUCTURAL ENGINEERING

BOWIE STREET CAMPUS
7310 BOWIE STREET
HOUSTON, TX 77012

HATCH + ULLAND OWEN ARCHITECTS

STATE OF TEXAS
JEFFREY B. SHINDLER
91160
REGISTERED PROFESSIONAL ENGINEER
10/29/09
FIRM REG. # F-8601

EJECTOR PUMP PLAN

PROJECT # 302-103

DATE 10/29/09

SHEET
C9
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