Memorandum

To: Mayor Elinor Carbone and Water Pollution Control Authority

CC: Ray Drew, DPW
Pennie Zucco, Purchasing Agent
Carol Anderson

From: Edward Tousey, Administrator WPCA

Date: 7/14/2022

Re: WPCA to vote to accept bid from GA Fleet Associates Inc, on Bid #SPR-030-071122

1. Vote by City Council herein acting as the Water Pollution Control Authority to accept the recommendation of the WPCA Administrator to accept the Bid from GA Fleet Associates Inc. To purchase a replacement submersible pump as specified in Bid # SPR-030-071122 for New Harwinton Ave pump station for the amount of $56,820.00.

City of Torrington

Bid Name Submersible Pump New Hartford Rd Pumping Station Bid Number SPR-030-071122

Date of Opening 7/11/22 Time of Opening 11am

VENDOR	BID BOND	NON-COLLUSION	BID AMOUNT	ADDENDUM
GA Fleet Assoc Inc. 6 International Drive, 2nd flr Rye Brook, NY 10573	✓ #1524151 $284.00	✓	56,820.00	

THIS DOCUMENT HAS A WATERMARK AND MICROPRINT SIGNATURE LINES. ABSENCE OF THESE FEATURES WILL INDICATE A COPY.

Valley
VALLEY.COM
Valley National Bank

CASHIER'S CHECK

55-138
212

1524151

DATE 07/08/2022

PAY TO THE ORDER OF CITY OF TORRINGTON

$ 2,841.00

***$2,841DOLLARS and 00CENTS**

COUNTER SIGNATURE REQUIRED IF DRAWN FOR MORE THAN $5,000

Memo: GA FLEET ASSOCIATES INC

Authorized Signature

Authorized Signature

⑈1524151⑈ ⑆021201383⑆ 000041297490⑈

CITY OF TORRINGTON
INVITATION TO BID

BID # SPR-030-071122 SUBMERSIBLE PUMP NEW HARWINTON ROAD PUMPING STATION

Bid opening: July 11, 2022 **Time:** 11:00 AM **Location:** City Hall, 140 Main St., Room 206, Torrington, CT

Bid Bond or Certified Check required with bid: **5%**

Performance Bond required if awarded bid: "see instruction to bidders"

MUST SUBMIT AN ORIGINAL AND TWO (2) COPIES.

The City of Torrington reserves the right to accept or reject any or all bids or any portion thereof, to waive technicalities, and to award the contract as will best serve the public interest.

Omit State and Federal Taxes.

All prices must be F.O.B.: Destination (Torrington) unless otherwise requested.

Dated in Torrington: June 16, 2022 Purchasing Agent _____
Pennie Zucco

Item	Price
Submersible Pump Replacement at New Harwinton Road Pump Station per specifications	****SEE PROPOSAL FORM****
ETA of delivery of submersible pump	****SEE PROPOSAL FORM****

The Purchasing Agent is authorized to offer City based bidders that exceed the lowest bid by up to 6%, the opportunity to match the lowest bid. A City based bidder within the 6% differential who agrees to accept the amount of the lowest bid will be awarded the bid. When multiple City based bidders agree to accept the amount of the low bid then the City based bidders will be invited to submit a new bid, not to exceed the low bid. The bid will then be awarded to the lowest responsive, responsible bidder.

Bidder: GA FLEET ASSOCIATES INC.

Address: 6 International Drive, 2nd Floor, Rye Brook, NY 10573

(Signed By) _____ Title: Sales Engineer

Name (please print) Serdar Umur Date: July 8th, 2022

Phone: 914-835-4000 Fax: 914-835-1331 E-Mail: sumur@gafleet.com

Federal Tax Identification Number: (FEIN) 13-2500658

Comments: Bidding the exact Flygt NT 3171 pump as specified.

Bid # SPR-030-071122

NON-COLLUSION AFFIDAVIT

STATE OF NEW YORK COUNTY OF WESTCHESTER

I, Serdar Umur, being first duly sworn, deposes and says that:

1. I am Serdar Umur of GA Fleet Associates Inc., the bidder that has submitted the attached request for proposal for BID # SPR-030-071122 SUBMERSIBLE PUMP NEW HARWINTON ROAD PUMPING STATION

2. I am fully informed respecting the preparation and contents of the attached RFP and of all pertinent circumstances respecting such bid;

3. Such Bid is genuine and is not a collusive or sham Bid;

4. Neither the Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties of interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the work for which the attached Bid has been submitted nor has it in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the price of any Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Torrington or any person interested in the proposed Bid; and

5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of it agents, representatives, owners, employees, or parties in interest, including this affiant.

(Printed) Serdar Umur

(Signed) S. Umur

(Title) Sales Engineer

Subscribed and sworn to before this 8TH day of JULY, 2022

THERESA M. ALTIERI
Notary Public Printed

My commission expires 3.23.2026

Theresa A. Altieri
Notary Public Signature

THERESA A. ALTIERI
Notary Public, State of New York
No. 01AL4993889
Qualified in Westchester County
Term Expires 3.23.2026

NOTE: Documents must be signed before and sealed by a Notary Public. Only documents bearing a notary seal will be accepted.

APPENDIX A
BID # SPR-030-071122
SUBMERSIBLE PUMP NEW HARWINTON ROAD PUMPING STATION

THE UNDERSIGNED AFFIRMS AND DECLARES that this Bid is executed with full knowledge and acceptance of the specifications, requirements, terms and conditions contained herein and with complete understanding and full compliance of system requirements and hereby submits this Bid for the request contained herein and certifies that this Bid meets all the specifications and conditions requested herein. Any substitutions to the specifications requested are clearly and completely noted.

Having received the specifications prepared by the City the undersigned hereby submits the following Unit Price to supply the pump outlined in the specifications, and attests that this bid meets all the specifications and conditions stated in this Invitation to Bid.:

PROPOSED PRICE FOR ONE (1) DRY-PIT SUBERMSIBLE PUMP, DELIVERED TO WPCA PLANT:

$ 56,820.00

FIFTY-SIX THOUSAND AND EIGHT HUNDRED TWENTY DOLLARS EVEN

(PROVIDE PRICE IN WRITING)

ETA DELIVERY TO TORRINGTON WPCA PLANT, 252 BOGUE ROAD, HARWINTON, CT 06791:
12 TO 16 WEEKS AFTER RELEASE TO MANUFACTURING

ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted therein have been considered and all costs thereto are included in the Base Bid.

Addenda # _____, _____, _____, _____, _____

Bidder: GA Fleet Associates Inc.
Address: 6 International Drive, 2nd Floor, Rye Brook, NY 10573
(Signed By) _____ Title: Sales Engineer
Name (please print) Serdar Umur Date: July 8th, 2022
Phone: 914-835-4000 Fax: 914-835-1331 E-Mail: sumur@gafleet.com
Federal Tax Identification Number: (FEIN) 13-2500658
Comments: Bidding the exact Flygt NT 3171 pump as specified.

APPENDIX B
SUBMERSIBLE PUMP NEW HARWINTON ROAD PUMPING STATION
BID # SPR-030-071122
REFERENCES

List references for similar services provided for at least three (3) clients in the past five (5) years. **Please note is it the City's intent to communicate with the references listed herein.**

Bidder: GA Fleet Associates Inc.

Address: 6 International Drive, 2nd Floor, Rye Brook, NY 10573

****

Organization Name: Greenwich WPCA, CT Phone: 203-223-1273

Contact Name: Chris Mandras Email: Chris.Mandras@greenwichct.org

Product Provided: At least ten (10) Flygt submersible pumps of similar kind that is specified for Harwinton Pumping Station

Project(s): Meadow PS Upgrade, Byram Pool PS Upgrade

****

Organization Name: Trumbull, CT Phone: 203-451-7954

Contact Name: Fred Micha Email: fmicha@trumbull-ct.gov

Product Provided: At least ten (10) Flygt submersible pumps of similar kind that is specified for Harwinton Pumping Station

Project(s): Park Ave PS Upgrade, Old Town Rd PS Upgrade, Reservoir Ave PS Upgrade

****

Organization Name: Fairfield WPCA, CT Phone: 203-650-9069

Contact Name: John Bodie Email: jbodie@town.fairfield.ct.us

Product Provided: At least ten (10) Flygt submersible pumps of similar kind that is specified for Harwinton Pumping Station

Project(s): Fairfield WWTP Resiliency Upgrades, Easton Turnpike PS Upgrade

****

Organization Name: Southington, CT Phone: 860-939-0561

Contact Name: Kiari Williams Email: williamsk@southington.org

Product Provided At least ten (10) Flygt submersible pumps of similar kind that is specified for Harwinton Pumping Station

Project(s): Southington WPCF Upgrades

****

Organization Name: _____ Phone: _____

Contact Name: _____ Email: _____

Product Provided: _____

Project(s): _____

FLEET

July 8, 2022

To: **Purchasing Department – City Hall**
140 Main Street, Room 206
Torrington CT 06790

Subject: ***Harwinton Road Pump Station Pump Upgrade Proposal, Torrington, CT***
Bid Number: SPR-030-071122 – Bid Date: 7-11-22 – 11am

We are pleased to submit our proposal for equipment required for the project specified above. Our scope of supply is as follows:

DRY-PIT SUBMERSIBLE PUMP

QTY – 1

- Xylem Model 4" discharge NT-3171 submersible style wastewater pump with HT-453 Hard-Iron N-impeller
- 34HP, 460 volt, 3 phase, 60 HZ, 1760rpm submersible motor with 50ft of electrical cable.
- 6" ANSI x DN150 inlet elbow
- Flygt adjustable vertical installation pump stand
- One (1) suction side custom fabricated adapter piece
- One (1) discharge side custom fabricated adapter piece
- Pump is to be provided with Flygt seal monitor (FLS), three thermal switches.
- Xylem Flygt pump is to be provided with factory standard finish paint.
- Xylem Certified Factory Test to Hydraulic Institute Standard
- **Duty Point: 625GPM @ 116' TDH. Efficiency: Minimum 60%**

PRICE: $56,820.00

Clarifications:

- Freight included.
- Installation is by others. One (1) day of start-up service is included.
- One (1) year warranty from acceptance is included.
- MiniCAs relay to be provided. Minicas unit to be installed in the control panel by others.

Delivery: All equipment will be released to manufacturing after approved submittals and receipt of a written confirmation of release to production.

- **Flygt Pumps:** Approximately 12-16 weeks.

Terms & Conditions: Please see attached. Taxes not included. Quotation valid for 90 days.

Regards,

Serdar Umur
Engineering & Sales, Municipal Group
914-548-6062
sumur@gafleet.com

FLEET

PROPOSAL ADDENDUM — GENERAL TERMS AND CONDITIONS

1. **Terms and Conditions Become Addendum to Agreement.** These General Terms and Conditions accompany the Proposal of G.A. Fleet Associates, Inc. (the "Supplier") to the Purchaser identified above (the "Purchaser"). These General Terms and Conditions, unless otherwise addressed by Purchaser and Supplier in writing in the Purchase Order or other agreement based upon this Proposal, will become attached to and made a part of the Purchase Order issued by the Purchaser to Supplier as an Addendum to the Purchase Order (the "Addendum"). The terms in this Addendum supersede anything to the contrary contained in the Purchase Order and any prior understandings, agreements, or representations by, between or among the parties, written or oral, to the extent they relate in any way to the subject matter of the Purchase Order and this Addendum. All references to the Purchase Order (both in the form of the Agreement and this Addendum) include this Addendum.
2. **Addendum Terms Control.** Any conflict between the terms included in this Addendum and the Purchase Order are to be resolved in favor of this Addendum.
3. **Payment Terms.** The following payment terms are applicable to all Purchase Orders:
   - 2%10, N30 Days from date of shipment of the equipment identified in the Purchase Order.
   - 2%10 discount and overdue balances are not eligible for payment by credit card.
   - Any "pay when paid" or similar conditions of payment included in the Purchase Order are not applicable to Supplier, and any such provision included in the Purchase Order is hereby deleted and is of no force or effect with respect to the Supplier
4. **Progressive Payments Required.** All Purchase Orders in excess of $1,000,000.00 require progress payments from the Purchaser. The progress payments are to be as follows: 1/3rd of the Purchase Price upon release to manufacture, 1/3rd of the Purchase Price prior to shipment, and the balance of the Purchase Price in N30 Days.
5. **No Credit Provided by Supplier.** Nothing in the Proposal, the Purchase Order or this Addendum is to be construed as Supplier providing or extending Credit to Purchaser. Any Credit terms provided to Purchaser are at the sole discretion of Supplier.
6. **No Retainage.** Payments due to Supplier under the Purchase order and this Addendum are not subject to any form of retainage; and such payments will be made promptly when due.
7. **Overdue Balances.** In the event Purchaser has any overdue payment balances due, Supplier reserves the right to withhold from Purchaser ordered equipment, services and documentation.
8. **Supplier Does Not Provide Warranties.** Supplier does not provide warranties for the equipment delivered to Purchaser. The standard equipment manufacturer's warranties are the sole warranties available to the Purchaser. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT, FLEET MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION OR OTHER REASON, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Except for the warranty expressly set forth in this Paragraph, the Purchaser acknowledges and agrees that it has relied on no other representations or warranties and that no other representations or warranties have formed the basis of its bargain hereunder.
9. **"Time of Essence" Provisions Not Applicable.** Any "time of the essence" provision included in the Purchase Order is hereby deleted and is of no force or effect with respect to the Supplier.
10. **Liquidated Damages Provisions Not Applicable.** Any "Liquidated Damages" provision included in the Purchase Order is hereby deleted and is of no force or effect with respect to the Supplier.
11. **Limitation of Liability.** Other than the Purchaser's obligation to make payments that are due and owing under the Agreement, a party's entire and collective liability arising out of or relating to this Agreement, regardless of the form of the cause of action, whether in contract, tort, statute or otherwise, shall in no event exceed the amounts paid to Supplier under this Agreement. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT, NEITHER PARTY SHALL, UNDER ANY CIRCUMSTANCES, BE LIABLE TO THE OTHER PARTY FOR ANY CLAIM BASED UPON ANY THIRD PARTY CLAIM OR FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE, EXEMPLARY OR SPECIAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY DAMAGES ARISING OUT OF OR IN CONNECTION WITH ANY MALFUNCTIONS, DELAYS, LOSS OF PROFIT, INTERRUPTION OF SERVICE OR LOSS OF BUSINESS OR ANTICIPATORY PROFITS, EVEN IF A PARTY HAS BEEN APPRISED OF THE LIKELIHOOD OF SUCH DAMAGES OCCURRING.
12. **Indemnification Limited to Direct Cause.** Supplier agrees to defend, indemnify and hold Purchaser harmless against all costs, expenses and losses incurred through claims based upon the direct actions of Supplier. Any "indemnification" provision included in the Purchase Order that requires any expansion of the indemnification offered in the previous sentence is hereby deleted and is of no force or effect with respect to the Supplier.
13. **Third Party Contracts Not Applicable.** Supplier is not bound by any third party contract or other form of agreement of any type referred to or included in the Purchase Order. Any third party contract included in the Purchase Order is hereby deleted and is of no force or effect with respect to the Supplier
14. **Entire Agreement.** Unless the parties enter into a separate agreement in writing, these General Terms and Conditions and the Proposal (collectively, the "Agreement") constitute the entire agreement between the Purchaser and the Supplier regarding the project described in the Proposal. If Supplier has commenced work in connection with the matters described in the Proposal to which these General Terms and Conditions are attached; all provisions in this Agreement for the benefit or protection of either party shall apply to such activities. There are no prior or contemporaneous, oral or written, representations, understandings or agreements that are not fully expressed in this Agreement. No amendment, change order, waiver or discharge shall be valid unless it is in writing and signed by an authorized representative of the party against whom such amendment, change order, waiver or discharge is sought to be enforced. In the event of a conflict between these General Terms and Conditions and the Proposal to which they may be attached, these General Terms and Conditions shall control.
15. **Choice of Law.** This Agreement will be governed by and construed in accordance with the laws of the State of New York, without giving effect to the conflicts of laws provisions thereof.
16. **Insurance.** Supplier possesses appropriate insurance for the equipment and services provided. Costs for excessive coverage, endorsements, or limits will be passed on to Purchaser as necessary.

SECTION 10 00 00

VERTICAL DRY INSTALLED WASTEWATER PUMP FOR SEWAGE LIFT STATION

PART 1. GENERAL

1.1. SCOPE OF WORK

A. The work in this section shall include furnishing and placing into operation **1** vertical mounted sewage pump(s) complete with submersible motor, stand and cable as specified herein and as indicated on the drawings. The complete pump station shall be submersible up to 65 feet above the inlet pipe level.

1.2. RELATED SECTIONS

A. Section 20 00 00 MONITORING AND CONTROL EQUIPMENT

1.3. REFERENCES

A. American Society for testing and material (ASTM) International
   1. A 48: Standard Specification for Gray Iron Castings.
   2. A743: Standard Specification Iron-Chromium Nickel, Corrosion Resistant,

B: American National Standards Institute (ANSI):
   1. B16.1: Standard for Cast Iron Pipe Flanges and Flanged Fittings, 125 lb.

C. Hydraulic Institute: Current Standards.
   1. HI 14.6: Hydrodynamic Pumps for Hydraulic Performance Acceptance Tests.
   2. HI 11.6: Submersible Pump Tests

1.4. SUBMITTALS

A. Submittal data shall be provided to show compliance with these specifications, plans or other specifications that will influence the proper operation of the pump(s).

B. Standard submittal data for approval must consist of:

   1. Pump Performance Curves.
   2. Pump Outline Drawing.
   3. Station Drawing for Accessories.
   4. Electrical Motor Data.
   5. Typical Installation Guides.
   6. Technical Manuals and Parts List.
   8. Printed Warranty.
   9. Management system certificate ISO 9001.
   10. Manufacturer's Equipment Storage Recommendations.
   11. Manufacturer's Standard Recommended Start-Up Report Form.

C. Lack of the above requested submittal data is cause for rejection.

1.5. QUALIFICATION REQUIREMENTS

A. The manufacturer shall provide data on alternate equipment manufacturer's experience. Only Manufacturers with 20 or more years of experience who have furnished at least 5 similar lift stations shall be considered.

B. After installation, a pump station start-up shall be performed by the installing contractor under the supervision of the manufacture's authorized representative. 8 hours of field service shall be provided by an authorized, factory trained representative of the pump manufacturer. Services shall include, but not be limited to, inspection of the completed pump station installation to ensure that it has been performed in accordance with the manufacturer's instructions and recommendations, supervision of all field-testing and activation of the Pump Manufacturer's Warranty. The test shall demonstrate to the satisfaction of the Owner that the equipment meets all specified performance criteria, is properly installed and anchored, and operates smoothly without exceeding the full load amperage rating of the motor. The Contractor shall be responsible for coordinating the required field services with the Pump Manufacturer.

1.6. DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle products to site under provisions of Section XXXX

1.7. OPERATIONAL REQUIREMENTS AND WARRANTY

A. The station shall be equipped with **1** vertical dry mounted close-coupled submersible wastewater pumps with integral motor cooling system.

B. Each pump shall be mounted on concrete base and equipped with a 90° suction pipe with an inspection hatch of at least 5".

C. The impeller shall also be a semi open multi vane self-cleaning impeller designed to transport wastewater with fibrous materials like wet wipes. Due to the presence of sand and chlorides the impeller shall be made of high chromium cast iron with at least 24% chrome. Impellers that have surface hardening (by thermal, coating, etc.) will not be allowed.

D. Each pump shall be capable to lift 625 **USgpm** at a total dynamic head of 116 **feet**.

E. The NPSHre shall be below 18 **feet**

F. The hydraulic efficiency in this duty point shall be not less than 60 **%** and approved according HI 11.6:2012 Grade 2B.

G. The pumps shall be provided with prorated 60 months (5 years) warranty against defects in materials and or workmanship. Unless otherwise specified, all other equipment shall be warrantied for 12 months (1 year). The warranty shall be in printed form and previously published as the manufacturer's standard warranty for all similar units manufactured, latest revision. Upon warranty occurrence, the manufacturer's authorized service center shall remove the pump, repair, reinstall and provide start up on the repaired pump. A detailed failure analysis shall be submitted to the Owner for their records summarizing corrective action taken.

H. The manufacturer shall guarantee clog-free operation for a period of 24 months from the date of start-up of the pumps by the local authorized factory representative. A certificate shall be provided to the Owner on the day of start up with the local contact information and effective date. If the impeller clogs with typical solids or modern trash debris normally found in domestic wastewater during this period, an authorized representative shall travel to the

jobsite, remove the pump, clear the obstruction and reinstall the pump at no cost for the Owner. A written report shall be provided to the Owner detailing the service call with pictures for verification purposes.

PART 2. PRODUCTS / PUMPS

2.1. SUBMERSIBLE SEWAGE PUMP(S) FOR VERTICAL DRY INSTALLATION (FLYGT NT 3171)

A. The pump shall be equipped with a 34 **HP** submersible electric motor, capable to operate on a **460**volt, 3 phases, 60 hertz voltage supply.

B. The hydraulic of the pump shall be capable of handling raw domestic wastewater with fibrous materials like wet wipes.

C. The impeller blades shall be self-cleaning upon each rotation as they pass across a sharp relief groove in the Insert ring and shall keep the impeller blades clear of debris.

D. The pump shall be capable to operate without any limitation between 50% and 125% of the Best efficiency point (B.E.P) of the performance curve.

E. The motor of the pump shall be induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. It shall be submersible according standard IEC 60034 and protection class IP 68. It shall continue to operate satisfactorily even when the station is subjected to a flooding and the motor is permanently submerged by a water column of 65 feet. Motors which only can be submerged for a limited time (IP 67) shall not be considered as equal.

F. The motor shall be capable to operate the pump at continuous duty (S1) in an ambient temperature up to 104°F. Operational restrictions or the demand of auxiliary cooling systems like fans or blowers are not acceptable. It shall be designed to run on an adjustable speed drive (ASD).

G. Stator shall be insulated with class H trickle impregnated insulation rated at 356°F.

H. The junction chamber containing the terminal board shall be hermetically sealed from the motor by an elastomeric compression seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board.

I. The motor shall be protected by 3 thermal switches embedded in the stator set to open at 284°F (140°C) and one leakage sensor floating type located in a leakage chamber below the main bearing. The sensor and the switches shall be connected to the control panel which shall stop the motor and send an alarm when the sensors are activated.

J. The motor shall be capable of no less than 30 evenly spaced starts per hour and be able to operate throughout the entire pump performance curve from shut-off through run-out.

K. The discharge flange of the pump shall be 4" and suction flange shall be 150mm. Both shall be drilled as needed.

L. The impeller shall be mounted on the motor shaft. Couplings shall not be accepted.

M. Due to the likely presence of sand and or grit the impeller and the insert ring shall be made of ASTM A-532 Alloy III A with 25% chrome and the leading edges shall be hardened to 60 HRC.

N. The motor shall be provided with an integral motor cooling system. A stainless steel cooling jacket shall encircle the stator housing, providing for dissipation of motor heat regardless of the type of pump installation. An impeller, integral to the cooling system and driven by the pump shaft, shall provide the necessary circulation of the cooling liquid through the jacket. The cooling liquid shall pass about the stator housing in the closed loop system in turbulent flow providing for superior heat transfer. The cooling system shall have one fill port and one drain port integral to the cooling jacket. The pump shall be capable of operating continuously (S1) in an ambient temperature up to 122°F (50 °C) and transport liquids with a temperature up to 104°F (40°C). Operational restrictions at temperatures below 122°F are not acceptable. Fans, blowers or auxiliary cooling systems that are mounted external to the pump motor are not acceptable.

O. The cable entry shall consist of dual cylindrical elastomer sleeves, flanked by washers, all having a close tolerance fit against the cable and the cable entry. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable. The shaft shall be sealed by two mechanical seals, each having an independent spring system. The seals shall require neither maintenance nor adjustment and shall be capable of operating in either clockwise or counter clockwise direction of rotation without damage or loss of seal function.

P. Motor and Hydraulic shall be designed and supplied by the pump manufacturer.

Q. The shaft shall rotate on two bearings. The motor bearings shall be sealed and permanently grease lubricated with high temperature grease. The upper motor bearing shall be a single row ball bearing to handle radial loads. The lower bearing shall be a double row angular contact ball bearing to handle the thrust and radial forces. Single row lower bearings are not acceptable. The minimum L10 bearing life shall be 50,000 hours at any usable portion of the pump performance field.

R. Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seal sets, each having an independent spring. The lower primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion and abrasion resistant tungsten-carbide ring. The upper secondary seal, located between the seal chamber and the seal inspection chamber shall be a leakage-free seal. The upper seal shall contain one stationary and one positively driven rotating corrosion and abrasion resistant tungsten-carbide seal ring. The rotating seal ring shall have small back-swept grooves laser inscribed upon its face to act as a pump as it rotates, returning any fluid that should enter the dry motor chamber back into the lubricant chamber. All seal rings shall be individual solid sintered rings. Each seal interface shall be held in place by its own spring system. The seals shall not depend upon direction of rotation for sealing. Mounting of the lower seal on the impeller hub is not acceptable. Shaft seals without positively driven rotating members or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces are not acceptable. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance.

S. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. Seal lubricant shall be non-hazardous.

T. Where a seal cavity is present in the seal chamber, the area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove.

This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

U. The Materials of construction shall be as follows:

Pump housing: ASTM A-48, Class 35B
Cooling jacket: Stainless steel AISI 316
Impeller and insert ring: A 532 ALLOY III A (25% chrome)
Stator housing: ASTM A-48, Class 35B
Shaft: ASTM A479 S43100-T.
Shaft seal: Pump side: - Corrosion resistant Tungsten carbide WCCR
Shaft seal Motor side: - Corrosion resistant Tungsten carbide WCCR

V. All castings must be blasted before coating. All wet surfaces are to be coated with two-pack oxyrane ester Duasolid 50. The total layer thickness should be at least 120 microns. Zink dust primer shall not be used.

W. The motor shall be equipped with 50 feet of screened cable suitable for submersible pump applications. The power cable shall be sized according to NEC and ICEA standards. The outer jacket of the cable shall be oil resistant chlorinated polyethylene rubber. The cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet.

X. Each completed and assembled pump/motor unit shall undergo the following factory tests at the manufacturer's plant prior to shipment. The Manufacturer shall provide on demand a copy of his quality control plan for these tests and an ISO 9001 factory certificate.

a) Minimum 3-point hydraulic performance test according HI 11.6:2012 Grade 2B
b) No-Leak seal integrity test
c) Electrical integrity test

2.2. SUPPORT STAND FOR PUMP(S)

A. Each pump has to be supplied with a stand made of painted steel and a 90° suction elbow made of cast iron. The suction flange shall be 6" drilled according ANSI B16.1-89; tab.5.

B. The inlet elbow shall have an inspection hatch of at least 5"

C. It shall be possible to rotate the pump housing in steps of 15° to adjust the discharge position infinitely relative to the inlet pipe.

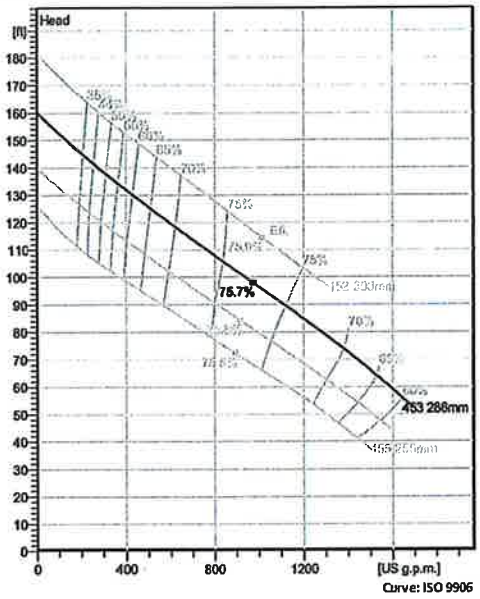
NT 3171 HT 3~ 453

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Possible to be upgraded with Guide-pin® for even better clogging resistance. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification

Curves according to: Water, pure ,39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



Curve: ISO 9906

Configuration

Motor number
N3171.185 25-19-4AA-D
34hp

Installation type
T - Vertical Permanent, Dry

Impeller diameter
286 mm

Discharge diameter
4 inch

Pump information

Impeller diameter
286 mm

Discharge diameter
4 inch

Inlet diameter
150 mm

Maximum operating speed
1760 rpm

Number of blades
2

Max. fluid temperature
40 °C

Materials

Impeller
Hard-Iron™

Project

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NT 3171 HT 3~ 453

Technical specification

Motor - General

Motor number N3171.185 25-19-4AA-D 34hp	**Phases** 3~	**Rated speed** 1760 rpm	**Rated power** 34 hp
ATEX approved No	**Number of poles** 4	**Rated current** 40 A	**Stator variant** 7
Frequency 60 Hz	**Rated voltage** 460 V	**Insulation class** H	**Type of Duty** S1
Version code 185			

Motor - Technical

Power factor - 1/1 Load 0.87	**Motor efficiency - 1/1 Load** 90.0 %	**Total moment of inertia** 4.31 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.83	**Motor efficiency - 3/4 Load** 91.0 %	**Starting current, direct starting** 281 A	
Power factor - 1/2 Load 0.74	**Motor efficiency - 1/2 Load** 91.0 %	**Starting current, star-delta** 93.7 A	

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NT 3171 HT 3~ 453

Performance curve

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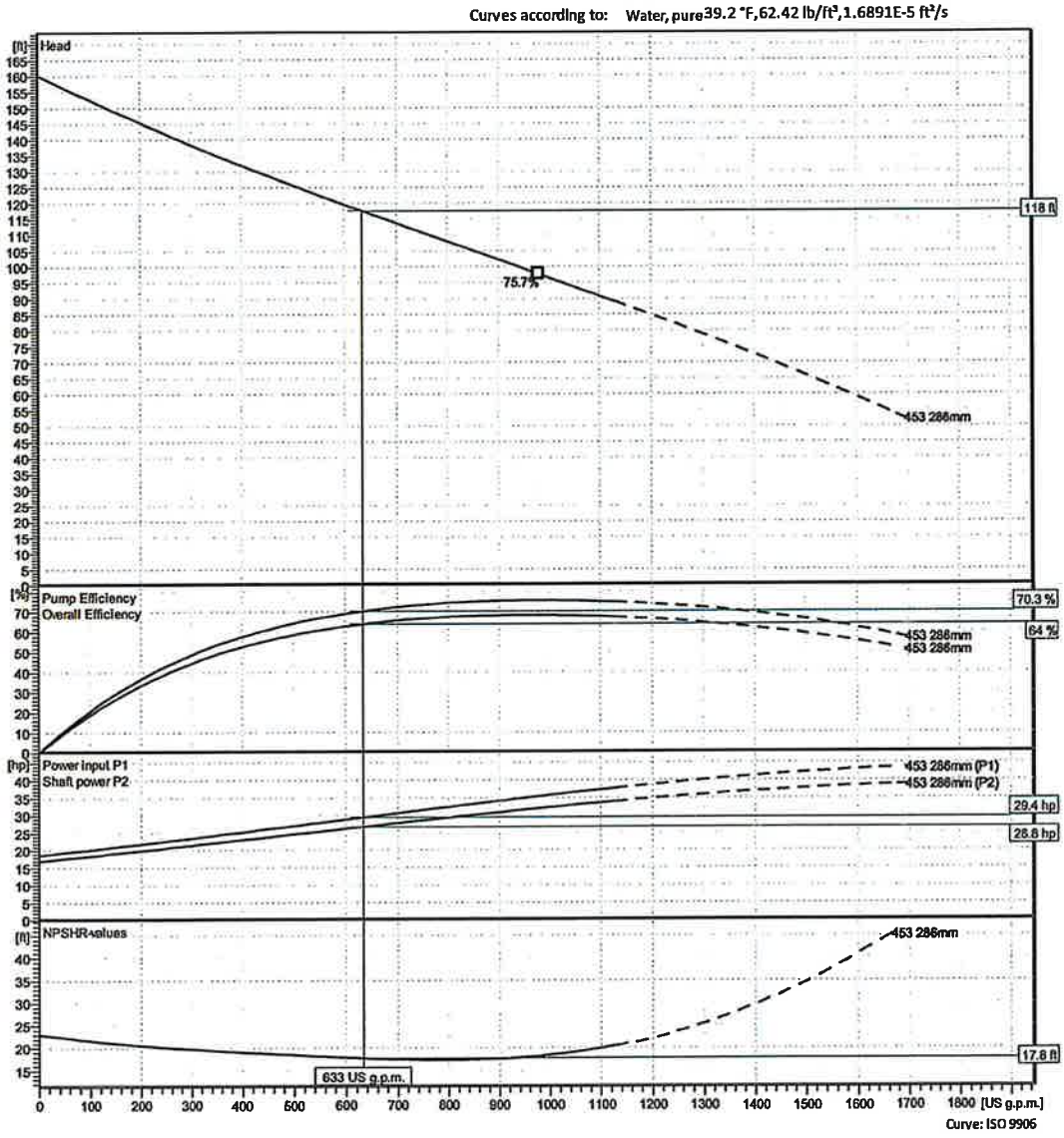
a xylem brand

Duty point

Flow	Head
633 US g.p.m.	118 ft

Curves according to: Water, pure39.2 °F,62.42 lb/ft³,1.6891E-5 ft²/s



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NT 3171 HT 3~ 453

Dimensional drawing

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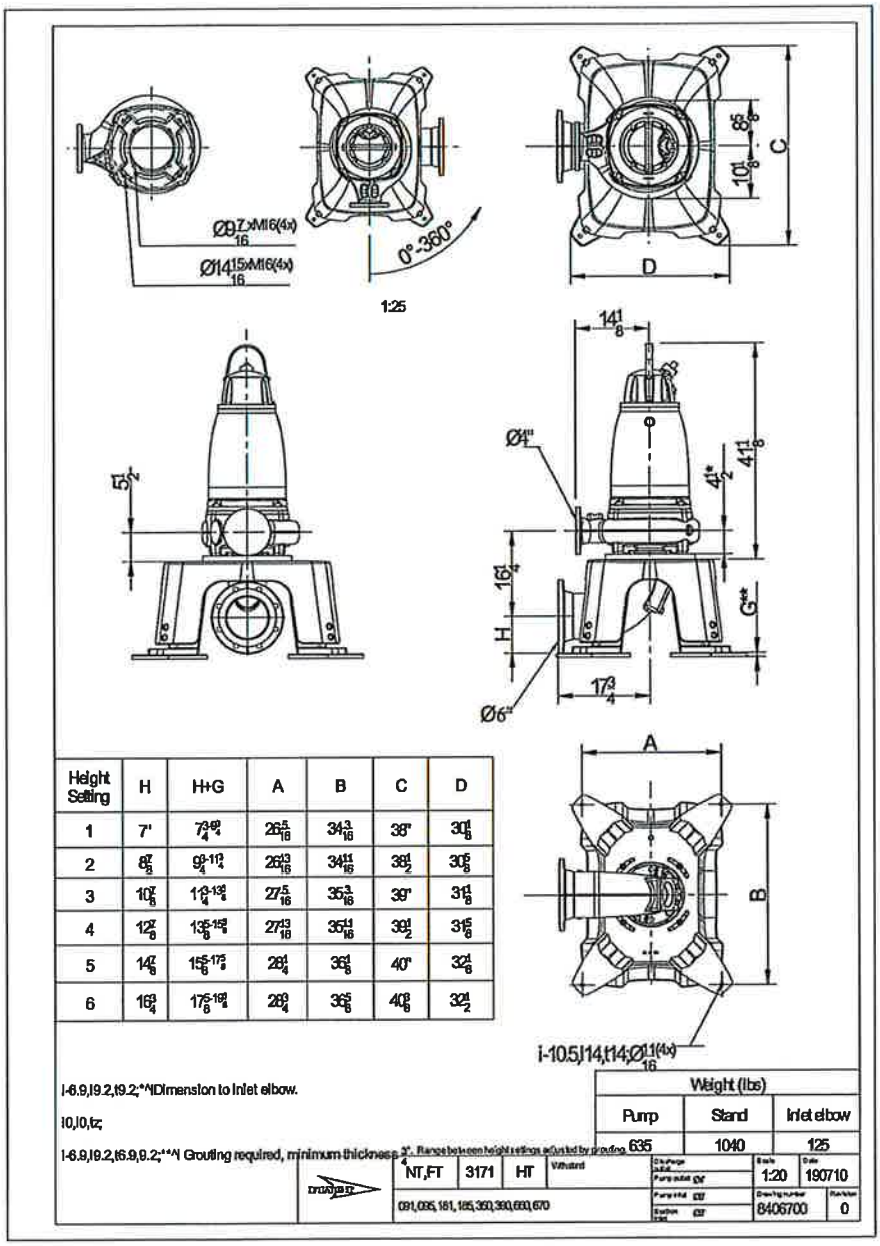

Height Setting	H	H+G	A	B	C	D
1	7"	7 3/4-8"	26 5/16	34 3/16	38"	30 1/8
2	8 7/8	9 1/4-11 1/4	26 13/16	34 11/16	38 1/2	30 5/8
3	10 7/8	11 1/4-13 3/8	27 5/16	35 3/16	39"	31 1/8
4	12 7/8	13 3/8-15 3/8	27 13/16	35 11/16	39 1/2	31 5/8
5	14 7/8	15 5/8-17 5/8	28 1/4	36 1/8	40"	32 1/8
6	16 3/4	17 5/8-19 3/8	28 3/4	36 5/8	40 5/8	32 1/2

I-6.9,I9.2,t9.2;**)Dimension to inlet elbow.

I0,I0,t;

I-6.9,I9.2,t6.9,9.2;***) Grouting required, minimum thickness 3". Range between height settings adjusted by grouting.

Weight (lbs)		
Pump	Stand	Inlet elbow
635	1040	125

NT,FT	3171	HT	Wilo std			1:20	190710
091,095,181,185,360,380,660,670						8406700	0

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