

**THE NEW JERSEY TURNPIKE AUTHORITY
PROCUREMENT AND MATERIALS MANAGEMENT DEPARTMENT**

New Jersey Turnpike Administrative Offices

1 Turnpike Plaza

P.O. Box 5042

Woodbridge, New Jersey 07095-5042

Tel. - 732-750-5300 Ext. 8640

REQUEST FOR BID

TITLE: **VERTICAL PROPELLER PUMPS, RIGHT-ANGLE GEAR DRIVES,
INTERNAL COMBUSTION ENGINES AND APPURTENANCES**

BID NO: **R-173039**

DUE DATE: **01/24/2023**

TIME: **11:00 AM**

SUBMIT BIDS BEFORE THE DUE DATE AND TIME STATED ABOVE TO THE ABOVE ADDRESS

BIDDER INFORMATION (PLEASE PRINT)

NAME OF BIDDING ENTITY

ADDRESS

CITY, STATE AND ZIP CODE

E-MAIL ADDRESS

REPRESENTATIVE TO CONTACT-NAME & TITLE

TELEPHONE NO.

FEDERAL TAX I.D. NO. or TAXPAYER I.D. NO.

FAX NO.

SECTION I

A. INTRODUCTION

The New Jersey Turnpike Authority (the “Authority”) was created by an act of the New Jersey Legislature in 1948, known as the New Jersey Turnpike Authority Act (as amended and supplemented, “Act”). The Act authorizes the Authority to construct, maintain, repair, and operate the New Jersey Turnpike, to collect tolls, and to issue Turnpike Revenue Bonds or Notes, subject to the approval of the Governor, payable from tolls and other revenues of the Authority. On May 27, 2003, the Act was amended to empower the Turnpike to assume all powers, rights, obligations and duties of the New Jersey Highway Authority (the “Highway Authority”), which owned and operated the Garden State Parkway and PNC Bank Arts Center. On July 9, 2003, the Authority assumed all powers, rights, obligations and duties of the Highway Authority. The Authority currently operates both the Garden State Parkway (“GSP”) and the New Jersey Turnpike (“Turnpike”) (both roads are collectively referred to herein as the (“Roadways”).

The Authority is governed by an eight-member Board of Commissioners (“Board”). The Governor of New Jersey appoints each of its members and has the statutory authority to overturn an action of the Board by vetoing any Board action within 10 days of receiving the minutes of the meeting. The Board authorizes awards of all public contracts over \$100,000, except in cases where it has delegated authority to the Executive Director.

This bid solicitation is being conducted pursuant to the Authority’s enabling statute as found in *N.J.S.A.* 27:23-6.1 and Executive Order number 37 (Corzine 2006) and the regulations and policies of the Authority regarding public bid procurement.

BIDDER GUIDELINES/CHECKLIST

BIDS THAT FAIL TO CONFORM TO THE FOLLOWING REQUIREMENTS MAY BE REJECTED:

1. The Request for Bid (“RFB”), including specifications and related bid documents (“Bids”) must be received at or before the due date and time stated on the cover page at the following place: New Jersey Turnpike Authority, Administration Building, 1 Turnpike Plaza, Woodbridge, New Jersey 07095. **LATE BIDS WILL BE RETURNED UNOPENED. ELECTRONIC, EMAILED OR FACSIMILE BIDS WILL NOT BE ACCEPTED.** Bid opening will take place via teleconference call only. See page 5.
2. **The entity submitting a Bid (“Bidder”) must provide one original and one copy of the Bid.** The Bid must include all price information. Bid prices shall include delivery of all items F.O.B. destination or as otherwise provided. Price quotes must be firm through issuance of contract.
3. All Bid prices must be typed or written in ink. Quote the specified unit of measure. If bidding an alternate, provide detailed specifications on the exception form attached.
4. All corrections, white-outs, erasures, re-striking of type, or other forms of alteration or the appearance of alteration, to unit and/or total prices must be initialed in ink by the Bidder.
5. The Bidder should attend the optional site inspection as described in Section III; A (page 8).
6. **IF CHECKED, THIS RFB REQUIRES THE FOLLOWING MANDATORY DOCUMENT(S) BE SUBMITTED WITH THE BID. FAILURE TO COMPLY WILL RESULT IN REJECTION OF THE BID.**
 - (a) Bid Bond, Letter of Surety or a Cashier’s Check for 10% of the amount Bid
 - (b) Ownership Disclosure Statement (Exhibit C, Instruction to Bidders page 23)
 - (c) Disclosure of Investment Activities in Iran (Exhibit G, Instruction to Bidder page 32)
 - (d) Vendor Disclosure Form (Exhibit G-1, Instruction to Bidder page 33)
7. **TO FACILITATE THE CONTRACT AWARD PROCESS, THE FOLLOWING DOCUMENTS SHOULD BE SUBMITTED WITH THE BID. IN THE EVENT THE DOCUMENTS ARE NOT SUBMITTED WITH THE BID, THEY SHALL BE SUBMITTED WITHIN THREE (3) BUSINESS DAYS FOLLOWING A VERBAL OR WRITTEN REQUEST FROM THE AUTHORITY.**
 - (a) Certification of Registration with the Secretary of State (only if non-NJ corporation)
 - (b) Acknowledgement of requirement for Disclosure of Political Contributions (ELEC)
 - (c) SBE/WBE/MBE/VOB/DVOB Certificates and Form
 - (d) Bidder must sign the Bid
8. **SEE THE AUTHORITY’S INSTRUCTION TO BIDDERS (ATTACHED) FOR A COMPLETE LIST OF THE AUTHORITY’S STANDARD CONTRACT TERMS AND CONDITIONS, AS WELL AS OTHER FORMS THAT ARE REQUIRED PRIOR TO THE AWARD OF THE CONTRACT(S). THE RECOMMENDED LOW BIDDER(S) MUST SUBMIT THE FOLLOWING CHECKED DOCUMENTS PRIOR TO CONTRACT AWARD.**
 - (a) Mandatory Equal Employment Opportunity Language
 - (b) Affirmative Action Information Sheet with Certificate or Form AA302
 - (c) State Contractor Political Contributions Compliance Public Law 2005, Chapter 51 & EO 117
 - (d) Notice to All Bidders of Set-Off for State Tax
 - (e) Insurance Certificate
 - (f) State of New Jersey Division of Business Registration Certificate
 - (g) Russia Interim Certification (P.L. 2022, C.3)
 - (h) Instruction and agreement for Direct Payment (ACH)

SECTION II

A. INTENTION

1. **Sealed Bids (Paper Submission Only) for R-173039** must be received at the New Jersey Turnpike Authority Administrative Offices, 1 Turnpike Plaza, Woodbridge, New Jersey 07095-5042, by the due date and time stated on the cover page of this “RFB”.
2. Bidders mailing Bids should allow for their normal mail delivery time to ensure timely receipt of the Public Bids. **Please be advised that using an overnight/next-day delivery service does not guarantee overnight/next-day deliveries to our location. The Authority will not be responsible for any Bid not being received by the required date and time.**
3. **It is the intention of the Authority to issue a Purchase Order for the procurement of VERTICAL PROPELLER PUMPS, RIGHT-ANGLE GEAR DRIVES, INTERNAL COMBUSTION ENGINES AND APPURTENANCES.**
4. Items purchased under this contract will be delivered as directed by the Authority.
5. Please contact CHRISTINE NOBLE with any questions regarding this procurement at noble@njta.com.

B. BID SHEET INSTRUCTIONS

1. Bidders must follow all instructions in this RFB and in the Instructions to Bidders issued by the Authority, and any other documents issued by the Authority regarding this RFB (collectively, “Bid Documents”).
2. Bidders must examine the bid documents carefully before bidding and must ask the Director of Procurement and Materials Management Department (“PMM”) in writing for any interpretation or correction of any apparent ambiguity, inconsistency or apparent error therein. If necessary, an interpretation or correction to the specifications in the form of an addendum shall be issued at least three (3) days prior to the bid opening by the Director of PMM to Bidders who have obtained the Bid Documents in accordance with *N.J.A.C. 19:9-2.2(a)(3)*. **Requests for interpretation or correction shall be considered only if received at least 5 business days prior to the Bid opening date.**
3. The submission of the Bid is conclusive evidence that the Bidder is fully aware of the conditions, requirements, and details as stated in the Bid Documents. If the Bidder, prior to submitting its Bid, fails to notify the Director of PMM of the existence of an ambiguity or inconsistency in the Bid Documents, a Bid will conclusively be presumed to have been based upon the Authority’s interpretation of such ambiguity or inconsistency.
4. All erasures, interpolations or other physical changes on the Bid form shall be signed or initialed by the Bidder. Bids containing any conditions, omissions, erasure’s, alterations, or items not called for in this “RFB” or irregularities of any kind, may be rejected by the Authority, in its sole discretion.
5. The Bidder shall not attach conditions, limitations or provisos to its Bid.

6. **The Authority will accept Approved Equivalent items on this Bid.** If a Bidder is basing the RFB on items other than what is specified, and wishes the items proposed to be considered as an “Approved Equivalent”, the Bidder shall enter a price on the Bid sheet then submit on the Exception Form in the exact format of the line item on the RFB contained herein, the item number, an item description including manufacturers name, model number, informational brochure(s), and packaging quantities of those items that the Bidder proposes to substitute.

C. **BASIS OF AWARD**

1. Bidders must supply a price for every item listed. **Bids not having a price for all listed items may be rejected.**
2. Bidders must quote only one price per line item. **If a Bidder quotes multiple prices per line item, the Bid may be rejected.**
3. The Authority will purchase amounts of any given item as needed, at the sole discretion of the Authority and shall not be bound by any quantities listed. The Authority reserves the right to make reasonable increases to line item quantities.
4. All items are to be Bid FOB Destination. All shipping, handling, and other costs should be considered in the Bid price(s).
5. The Authority is tax exempt from New Jersey Sales and Excise Tax.
6. Award will be made to the lowest responsible and responsive bidder for the total line items Bid.

D. **MISCELLANEOUS**

1. **ELECTRONIC PAYMENT: The Vendor will be required to accept payment(s) for goods or services via automatic deposit from the Authority. NO OTHER FORM OF PAYMENT WILL BE PROVIDED. See Exhibit M in the Instructions to Bidders on the Authority’s website for the required electronic payment forms: <http://www.njta.com/doing-business/goods-and-services>**

2. **BID OPENING INFORMATION:**

Please be advised that the public bid opening for Solicitation **R-173039** which is scheduled for 01/24/2023 at 11:00 AM will be by **CONFERENCE CALL ONLY.**

Conference call details are as follows:

Dial-in Number: 646-992-2010

Access code: 2336 279 5943

For any bidder who wishes to participate, conference call access will be open 5 minutes prior to opening and remain until all bids have been read.

E. BID QUOTATION SHEET

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL BID AMOUNT
1	3	EA	Vertical Propeller Pumps, Right-Angle Gear Drives, Internal Combustion Engines and Appurtenances per Specifications	\$	\$

Number of days, after receipt of a Purchase Order, that all equipment will be delivered to the Authority, fully completed and compliant with the Specifications:

_____ DAYS

Award will be made to the lowest responsive and responsible bidder for the Total Bid Amount.

ANY INQUIRIES CONCERNING THIS BID MUST BE SENT VIA EMAIL TO: noble@njta.com

PURSUANT TO N.J.A.C. 19:9-2.2 (a)(3), ADDENDA WILL BE DISTRIBUTED AND POSTED ON THE AUTHORITY'S WEBSITE AT LEAST THREE DAYS PRIOR TO THE BID OPENING.

NEW JERSEY TURNPIKE AUTHORITY

Very truly yours,
Janet Rzepka, Deputy Director
Procurement and Materials Management

_____/_____
Name of Company / Authorized Signature of Bidder

F. SIGNATURE PAGE

1. **ADDENDA / INQUIRIES:** COMPLETE (if applicable) BEFORE SUBMITTING BID:
Receipt of Addendum / Inquiries # _____ dated _____ is hereby acknowledged.
Receipt of Addendum / Inquiries # _____ dated _____ is hereby acknowledged.

CHECK BOX IF NO ADDENDA/INQUIRY ISSUED

(All Addenda / Inquiries must be acknowledged as indicated above.)

2. **BID IRREVOCABLE:** This offer shall be irrevocable for ninety (90) working days after the date on which the Authority publicly opens this Bid except in those instances where an unsuccessful Bidder has filed a bid protest pursuant to *N.J.A.C. 19:9-2.12*. Upon notification of a protest, Bidders are required to hold their prices for an additional 90 days. All Bidders will be notified in writing of the action taken by the Authority.
3. **OFFER/CERTIFICATION:** The undersigned offers and agrees to furnish to the New Jersey Turnpike Authority the services and/or materials in compliance with all terms, conditions, specifications and addenda of the RFB, Bid Documents, and resulting contract. The undersigned further certifies understanding and compliance with the requirements of the standard terms and conditions as stated in the Instructions to Bidders included with the Bid Documents. The undersigned certifies that he or she executes this Bid with full authority so to do; and that all statements contained in this Bid and in this certification, are true and correct, and made with full knowledge that the Authority relies upon the truth of the statements contained herein and in any statements requested by the Authority showing evidence of qualifications in awarding the contract.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

4. **AUTHORIZED SIGNATURE:** _____

Print Name and Title: _____

Bidder: _____

Address: _____

City, State, Zip: _____

E-mail address: _____

Telephone #: _____ Fax: # _____

Date: _____

SECTION III

A. PRE-BID SITE VISIT:

Bidders are invited to attend a non-mandatory pre-bid site visit to be conducted by the Authority **for the purpose of providing general information regarding the work involved under this Contract.**

Prospective Bidders must register via e-mail to Christine Noble by JANUARY 3, 2023 at noble@njta.com. The e-mail subject line should read, “BID NO: R-173039 Pre-Bid Site Visit”. Instructions related to the time of the site visit and other details regarding the site visit will be made available via e-mail by JANUARY 5, 2023. The site visit will be conducted on JANUARY 10, 2023 AT 10:00 AM.

The pre-bid site visit will be the only opportunity for the prospective Bidders to visit the site. During the pre-bid site visit a tour of the site will be conducted. No other site visits will be scheduled. Arrangements for the prospective Bidders to gain access to the site for the pre-bid site visit will be provided via e-mail to the prospective Bidders that register, as indicated above.

Nothing discussed or presented at the pre-bid site visit shall be considered part of the Contract. All requests for interpretation or correction must be submitted in accordance with Section II, subsection B of this document.

B. SPECIFICATIONS:

The following technical specifications are included:

01 10 00	Summary of Work
01 33 00	Submittals
01 33 17	Structural Design Support and Anchorage
05 50 00	Miscellaneous Metalwork
26 32 14	Internal Combustion Engine
43 20 00	Pumps, General
43 24 18	Vertical Propeller Pumps
46 01 00	Equipment General Provisions

a. SUMMARY OF WORK (SECTION 01 10 00)

PART 1 -- GENERAL

1.1 THE SUMMARY

- A. The Work to be performed under this Contract shall consist of furnishing manufactured articles and performing all work or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The Work shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper furnishing and commissioning of the Work in good faith shall be provided by the Supplier as though originally so indicated, at no increase in cost to the Owner.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of this Contract shall include furnishing the vertical propeller pumps with associated drives and engines complete to the system, pump system testing and commissioning, and on site services of the manufacturer's representative.
- B. The Work is located at the Owner's pump station at Mile Post 92 of the New Jersey Turnpike in Woodbridge Township, New Jersey.

1.3 CONTRACT METHOD

- A. The Work hereunder will be constructed under a single lump sum contract.
- B. The Work may be assigned, transferred, and set over to the Installation Contractor. Upon assignment of the Contract, Installation Contractor shall have all rights of Owner under the Performance Bond.

1.4 SUPPLIER AND CONTRACTOR RESPONSIBILITIES

- A. The table below provides an itemization of the major elements of Work associated with the pumping system and an indication of the intended work split between the Supplier and Installation Contractor. The Supplier should reference this in preparing their bid. However, regardless of intended work split, upon transfer of Supplier's responsibilities, representation, and liabilities to Installation Contractor, the Installation Contractor shall be responsible for providing a fully functional and performance compliant pumping system.

Responsibility	Supplier	Installation Contractor
Furnish vertical propeller pumps, right angle gear drives, and engines	X	
Factory test vertical propeller pumps, right angle gear drives, and engines as a complete unit.	X	
Furnish and install conduit and wiring		X
Furnish and install instrumentation and controls (except for instruments, devices, and panels provided directly by the Supplier)		X
Furnish and install air intake ductwork and louvers		X
Furnish shop drawings for vertical propeller pumps, right angle gear drives, and engines	X	
Furnish factory test procedures for Supplier's products	X	
Furnish certified factory tests for Supplier's products	X	
Furnish factory test reports for Supplier's products	X	
Coordinate and pay for travel by Owner and Engineer to witness factory tests, as applicable per equipment specification sections	X	
Provide storage area and store equipment at Site		X
Deliver Supplier's products to Site	X	
Inspect Supplier's products upon delivery to Site		X
Off load Supplier's products at Site and place in storage if necessary		X
Inspect Supplier's products after off-loading and placement in storage		X
Provide security, maintenance, and insurance for Supplier's products during storage		X
Install Supplier's products in their proper location		X
Furnish and install all items not provided by Supplier		X
Perform field touch-up of all shop coating (and field finish painting where shop finish final coating is not required in individual specification sections)		X

Supervise installation and certify the installation of Supplier's products	X	
Furnish one year supply of lubricants	X	
Prepare and submit performance testing plan for Supplier's products	X	
Perform pre-performance testing adjustment of Supplier's products	X	
Approve Supplier's products ready for performance testing	X	
Perform performance testing of Supplier's products		X
Provide onsite support for performance testing of Supplier's products	X	
Provide utilities (e.g. electricity, water, etc.) for performance testing		X
Correct installation deficiencies on all Supplier's products		X
Remove Supplier's products that are defective or fail acceptance testing and reinstall once corrected by the Supplier		X
Correct deficiencies on all Supplier's products that are due to Supplier's defects	X	
Retest until deficiencies corrected		X
Submit field performance testing report	X	
Prepare and submit O&M manuals for Supplier's products	X	
Prepare and submit overall O&M manual for entire facility and incorporate Supplier's O&M manuals into the overall O&M manual		X
Conduct training for Owner's staff on Supplier's products	X	
Correct deficiencies on all Supplier's products during the product warranty period	X	
Conduct deficiencies on all non-Supplier products during the guarantee and warranty period		X

1.5 WORK SEQUENCE

- A. During construction, the Installation Contractor shall be required to maintain pump station operations. Pump and drives systems shall be replaced one at a time, with no more than one vertical propeller pump system (new or existing) out of service at one time.

b. SUBMITTALS (SECTION 01 33 00)

PART 1 -- GENERAL

1.1 THE SUMMARY

A. Wherever submittals are required by the Contract Documents, submit them to the Engineer.

1.2 SHOP DRAWINGS

A. Wherever called for in the Contract Documents or where required by the Engineer, furnish one digital copy plus one reproducible copy of each Shop Drawing submittal.

B. Shop Drawings shall include detail design calculations, shop-prepared drawings, fabrication and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items.

C. Whenever the Supplier is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the State of New Jersey unless otherwise indicated.

D. Transmittal Form

1. Shop Drawing submittals shall be accompanied by the Engineer's standard submittal transmittal form, a reproducible copy of which is available from the Engineer.

2. A submittal without the form, or where applicable items on the form have not been completed, will be returned for resubmittal.

E. Organization

1. Use a single submittal transmittal form for each technical specification Section or item or class of material or equipment for which a submittal is required.

2. A single submittal covering multiple Sections will not be accepted, unless the primary specification references other Sections for components: For example, if a pump Section references other Sections for the motor, shop-applied protective coating, anchor bolts, local control panel, and variable frequency drive, a single submittal would be accepted.

3. On the transmittal form, index the components of the submittal and insert tabs in the submittal to match the components.

4. Relate the submittal components to specification paragraph and subparagraph, rawing number, detail number, schedule title, room number, or building name, as applicable.

5. Unless otherwise indicated, match terminology and equipment names and numbers used in the submittals with those used in the Contract Documents.

F. Format

1. Minimum sheet size shall be 8-1/2 inches by 11 inches, and maximum sheet size shall be 24 inches by 36 inches.
2. Number every page in a submittal in sequence.
3. Collate and staple or bind, as appropriate, each copy of a submittal; the Engineer will not collate sheets or copies.
4. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with complete pertinent data capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports.
5. Present a sufficient level of detail for assessment of compliance with the Contract Documents.
6. Numbering
 - a. Assign to each submittal a unique number.
 - b. Number the submittals sequentially, with the submittal numbers clearly noted on the transmittal.
 - c. Assign original submittals a numeric submittal number followed by a letter of the alphabet in order to distinguish between the original submittal and each resubmittal: For example, if submittal "25-A" requires a resubmittal, the first resubmittal will bear the designation "25-B" and the second resubmittal will bear the designation "25-C," and so on.

G. Disorganized submittals that do not meet the requirements of the Contract Documents will be returned without review.

H. Engineer's Review

1. Except as otherwise indicated, the Engineer will return prints of each submittal to the Supplier with comments noted thereon, within 20 Working Days following receipt by the Engineer.
2. It is considered reasonable that the Supplier shall make a complete and acceptable submittal to the Engineer by the first resubmittal on an item.
3. The Owner reserves the right to withhold monies due to the Supplier to cover additional costs of the Engineer's review beyond the first resubmittal.
4. The Engineer's maximum review period for each submittal or resubmittal will be 20 Working Days; thus, for a submittal that requires 2 resubmittals before it is complete, the maximum review period could be 40 Working Days.

I. If a submittal is returned to the Supplier marked "NO EXCEPTIONS TAKEN," formal revision and resubmission will not be required.

- J. If a submittal is returned marked "MAKE CORRECTIONS NOTED," the Supplier shall make the corrections on the submittal, but formal revision and resubmission will not be required.
- K. Resubmittals
1. If a submittal is returned marked "AMEND-RESUBMIT," the Supplier shall revise the submittal and resubmit the required number of copies.
 2. Resubmittal of portions of multi-page or multi-drawing submittals will not be accepted: For example, if a Shop Drawing submittal consisting of 10 drawings contains one drawing noted as "AMEND-RESUBMIT," the submittal as a whole is deemed "AMEND-RESUBMIT," and 10 drawings are required to be resubmitted.
 3. Every change from a submittal to a resubmittal or from a resubmittal to a subsequent resubmittal shall be identified and flagged on the resubmittal.
- L. Rejected Submittals
1. If a submittal is returned marked "REJECTED-RESUBMIT," it shall mean either that the proposed material or product does not satisfy the specification or the submittal is so incomplete that it cannot be reviewed.
 2. The Supplier shall prepare a new submittal and shall submit the required number of copies.
 3. The resubmittal of rejected portions of a previous submittal will not be accepted.
- M. The fabrication of an item may commence only after the Engineer has reviewed the pertinent submittals and returned copies to the Supplier marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED."
- N. Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as changes to the contract requirements.
- O. Review by Supplier
1. Submittals shall be carefully reviewed by an authorized representative of the Supplier prior to submission to the Engineer.
 2. Each submittal shall be dated and signed by the Supplier as being correct and in strict conformance with the Contract Documents.
 3. In the case of Shop Drawings, each sheet shall be so dated and signed.
 4. Any deviations from the Contract Documents shall be noted on the transmittal sheet.
 5. The Engineer will only review submittals that have been so verified by the Supplier.
 6. Non-verified submittals will be returned to the Supplier without action taken by the Engineer, and any delays caused thereby shall be the total responsibility of the Supplier.

P. Conformance

1. Corrections or comments made on the Supplier's Shop Drawings during review shall not relieve the Supplier from compliance with Contract Drawings and Specifications.
2. A lack of comments made on the Supplier's Shop Drawings during review shall not relieve the Supplier from compliance with Contract Drawings and Specifications.
3. Review is for conformance to the design concept and general compliance with the Contract Documents only.
4. The Supplier shall be responsible for confirming and correlating quantities and dimensions, fabrication processes and techniques and satisfactory and safe performance of the Work.

1.3 TECHNICAL MANUAL

A. The Supplier shall submit technical operation and maintenance information for each item of mechanical, electrical, and instrumentation equipment in an organized manner in the Technical Manual.

B. The manual shall be written such that it can be used and understood by the Owner's operation and maintenance staff.

C. Categories

1. The Technical Manual shall be subdivided first by Specification Section number; second, by equipment item; and last, by "Category." The following "Categories" shall be addressed (as applicable):

a. Category 1 - Equipment Summary

1) Summary: A table shall indicate the equipment name, equipment number, and process area in which the equipment is installed.

b. Category 2 - Operational Procedures

1) Procedures: Manufacturer-recommended procedures on the following shall be included in Part 2:

Installation

Adjustment

Startup

Location of controls, special tools, equipment required, or related instrumentation needed for operation

Operation procedures

Load changes

Calibration

Shutdown

Troubleshooting

Disassembly

Reassembly

Realignment

Testing to determine performance efficiency

Tabulation of proper settings for pressure relief valves, low and high pressure switches, and other protection devices
List of all electrical relay settings including alarm and contact settings

c. Category 3 - Preventive Maintenance Procedures

- 1) Procedures: Preventive maintenance procedures shall include manufacturer-recommended procedures to be performed on a periodic basis, both by removing and replacing the equipment or component, and by maintaining the equipment in place.
- 2) Schedules: Recommended frequency of preventive maintenance procedures shall be included. Lubrication schedules, including lubricant SAE grade, type, and temperature ranges, shall be covered.

d. Category 4 - Parts List

- 1) Parts List: A complete parts list shall be furnished, including a generic description and manufacturer's identification number for each part. Addresses and telephone numbers of the nearest supplier and parts warehouse shall be included.
- 2) Drawings: Cross-sectional or exploded view drawings shall accompany the parts list. Part numbers shall appear on the drawings with arrows to the corresponding part.
- 3) Spare Parts List: The spare parts list shall include those spare parts that each manufacturer recommends be maintained by the Owner in inventory. The spare parts list shall include a current list price of each spare part and each manufacturer shall indicate the name, address, and telephone number of its nearest outlet of spare parts, to assist the Owner in ordering.

e. Category 5 - Wiring Diagrams

- 1) Diagrams: Category 5 shall include complete internal and connection wiring diagrams for electrical equipment items.

f. Category 6 - Shop Drawings

- 1) Drawings: This category includes approved shop or fabrication drawings with Engineer comments and corrections incorporated, complete with dimensions.

g. Category 7 - Safety

- 1) Procedures: This category describes the safety precautions to be taken when operating and maintaining the equipment or working near it.

h. Category 8 - Documentation:

- 1) Equipment warranties, affidavits, certifications, calibrations, laboratory test results, etc. required by the Technical Specifications shall be placed in this category.

D. Format

- a. Bind each Technical Manual in standard size 3-ring hardcover binders, labeled on the spine and cover with Project name, Owner's project number, Specification Section number, equipment name, and equipment identification number
2. Each Binder shall contain its own detailed table of contents at the front, plus a summary level table of contents information for the other binders in a multi-binder set.
3. Documents in binders shall be 3-hole punched, with no text punched out, and pages larger than 8-1/2 by 11 shall be folded to 8-1/2 by 11 size.
4. Provide a USB flash drive with electronic files with each final set of Technical Manuals, as follows:
 - a) MicroStation V8i; and
 - b) Adobe Acrobat portable document format (PDF) or other software required by the Specifications.

E. Review Process

1. Furnish one electronic draft Technical Manuals for each Specification Section that requires a manual.
2. Following review and approval of the draft Technical Manuals, submit 5 identical copies of the final manual.

F. Submittal and Corrections

1. The Work under this Contract involves start-up and commissioning of equipment in the facility at independent times within the Project Schedule.
2. The manuals shall be completed for each piece of equipment prior to final acceptance of the equipment by the Owner.
3. Except as otherwise indicated, submit the manuals for review in final form a minimum of 30 Days prior to the start of performance testing for each piece of equipment.
4. Discrepancies found by the Engineer shall be corrected within 30 Days from the Date of written notification by the Engineer.

1.4 QUALITY CONTROL (QC) SUBMITTALS

- A. Quality control submittals are defined as those required by the Specifications to present documentary evidence to the Engineer that the Supplier and Installation Contractor have satisfied certain requirements of the Contract Documents.
- B. Unless otherwise indicated, QC submittals shall be submitted:
1. Before delivery and unloading, for the following types of submittals:
 - a. Manufacturers' installation instructions
 - b. Manufacturers' and Installers' experience qualifications

- c. Design calculations
 - d. Affidavits and manufacturers' certification of compliance with indicated product requirements
 - e. Laboratory analysis results
 - f. Factory test reports
2. Within 20 Working Days of the event documented for the following types of submittals:
- a. Manufacturers' field representative certification of proper installation
 - b. Field measurement
 - c. Field test reports
 - d. Receipt of permit
 - e. Receipt of regulatory approval
- C. The Engineer will record the date that a QC submittal was received and review it for compliance with submittal requirements, but the review procedures above for Shop Drawings and samples will not apply.

c. STRUCTURAL DESIGN, SUPPORT AND ANCHORAGE (SECTION 01 33 17)

Requirements in this specification section related to installation are pertinent only to the Installation Contractor, but the full specification is provided to the pump procurement bidders for reference.

PART 1 -- GENERAL

1.1 SUMMARY

- A. The Contractor shall provide calculations and details for structural and non-structural components, supports, and anchorages as required by the Contract Documents and the 2018 NJ IBC. The contractor shall furnish and install all such structural and non-structural components, supports, and anchorages in accordance with the calculations and details.
- B. The Contractor shall provide calculations and details for structures and non-building structures, supports, and anchorages as required by the Contract Documents and the 2018 NJ IBC. The contractor shall furnish and install all such structures and non-building structures, supports, and anchorages in accordance with the calculations and details.
- C. Where a conflict exists between the requirements of the Contract Documents and the 2018 NJ IBC, the more stringent requirement shall apply.
- D. Design parameters used to determine Seismic and Wind design forces shall be as listed herein.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Reference Specifications

01 33 00	Contractor Submittals
05 50 00	Miscellaneous Metalwork
05 05 19	Post Installed Anchors in Concrete

- B. The edition of the standards applicable to the Work shall be those editions referenced by the 2018 NJ International Building Code (IBC). If the standard is not referenced by the NJ IBC 2018,-referenced standard listed below, the edition of the standard applicable to the Work shall be the edition in effect on the date of signing and sealing of the contract specifications.

N.J.A.C.	New Jersey Administrative Code
IBC	2018 International Building Code NJ Edition
ASCE 7	American Society of Civil Engineers Standard 7-16 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
ACI 318	Building Code Requirements for Structural Concrete (2014 edition)
TMS 402	Building Code for Masonry Structures (2016 edition)
TMS 602	Specification for Masonry Structures (2016 edition)

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00.
 - 1. Calculations and Details
 - 2. Calculations and details are considered a Deferred Submittal as defined in the 2018 NJ IBC.

3. Calculations and details shall be complete, accurate, and in accordance with the requirements of the 2018 NJ IBC and ASCE 7 and shall be signed and sealed by a Professional Engineer registered in the State of New Jersey.
4. Calculations shall be clear and concise and show equipment and other non-structural component anchorage forces and the capacities of the anchorage elements proposed by the Contractor. The calculations shall substantiate a complete load path from the component or equipment being anchored into the supporting structure or foundation.
5. The calculations and details shall demonstrate a complete lateral and vertical load path and shall clearly indicate all forces imposed on the supporting structure.
6. Calculations and details are required for all Non-Structural components, supports, anchorages, and attachments.
 - a. Non-Structural components shall include all architectural, mechanical, and electrical components, equipment, piping, ductwork, and all other similar or related appurtenances necessary to produce the complete architectural, mechanical, and electrical systems.
7. When the Contract Documents require the Contractor to design structures or structural components, calculations and details for those structures and structural components, and their supports, anchorages, and attachments, are required.
8. When computer generated calculations and analyses are included as part (or as the whole) of the calculations, the calculations shall include, but not be limited to, the following: derivations of all input parameters; clear indication of the applicable load combinations and building code equations; diagrams of all members, geometry, loads, forces, reactions and deflections, for all components and connections; and output results demonstrating all stress, force, deflection and other Contract Document and building code requirements have been satisfied.
9. All calculations associated with anchorage into concrete or masonry shall be done using Strength Level forces and shall be in accordance with the applicable provisions of ACI 318 and TMS 402, respectively.
10. Refer to Part 2 below for additional requirements.

1.4 SEISMIC DESIGN CRITERIA

A. Design Requirements

1. Design Parameters:
 - a. Risk Category: IV.
 - b. Seismic Design Category: C.
 - c. Mapped MCE_R , 5% damped spectral response acceleration parameter at short periods: $S_S = 0.272$.
 - d. Mapped MCE_R , 5% damped spectral response acceleration parameter at a period of 1-second: $S_1 = 0.058$.

- e. Site Class: D.
- f. Design, 5% damped spectral response acceleration parameter at short periods: $S_{DS} = 0.287$.
- g. Design, 5% damped spectral response acceleration parameter at a period of 1-second: $S_{D1} = 0.093$.
- h. Seismic response coefficient: C_s shall be calculated in accordance with ASCE 7 Section 11.4.8, Exception 2.
- i. Long period transition period: $T_L = 6$ seconds
- j. Response modification coefficient, R : In accordance with ASCE 7, Tables 12.2-1, 12.14-1, 15.4-1 and 15.4-2.
- k. Seismic Importance Factor, I : 1.50.
- l. Component amplification factor, a_p : In accordance with ASCE 7, Tables 13.5-1 and 13.6-1.
- m. Component response modification factor, R_p : In accordance with ASCE 7, Tables 13.5-1 and 13.6-1.

For Risk Category IV Structures, include the following I_p paragraph.

- n. Component importance factor, I_p : 1.50
2. The following components are exempted from the seismic design requirements:
- a. Exemptions shall be as indicated in ASCE 7 Chapter 13.

1.5 WIND DESIGN CRITERIA

A. Design Requirements

1. Design Parameters:

- a. Risk Category: IV.
- b. Basic 3-second Wind Gust Speed: 126 miles per hour.
- c. Exposure Category: C.
- d. Topographic Factor, K_{zt} : 0.85.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Non-Structural Component Supports and Anchors

1. Unless otherwise indicated, non-structural component supports, anchors, and restrainers shall be adequately designed for all applicable static, dynamic, operational, seismic and wind loads.
 - a. Wall-mounted equipment weighing more than 250 pounds or which is within 18-inches of the floor shall be provided with fabricated steel supports. Pedestals shall be of welded steel or engineered framing support systems. If the supported equipment is a panel or cabinet or is enclosed with removable sides, the pedestal shall match the supported equipment in appearance and dimensions.
 - b. All equipment and all other non-structural components shall be supported and anchored in place by methods that satisfy the building code and the Contract Documents.
 - c. All equipment and all other non-structural components shall be supported and anchored in place by methods that satisfy the manufacturer's applicable seismic certification requirements.
2. Component attachments shall be bolted, welded, or otherwise positively fastened without consideration of frictional resistance produced by the effects of gravity.

B. Non-Building Structures

1. Non-Building Structures shall be designed in accordance with ASCE 7 Chapter 15.
2. Non-Building Structures, foundations, supports, anchors, and restrainers shall be adequately designed for all applicable static, dynamic, operational, seismic and wind loads.

C. Anchors – General

1. Anchor bolts shall be cast-in-place unless otherwise noted or approved by the Engineer.
2. Anchor bolts shall be in accordance with Section 05 50 00.
3. Adhesives and epoxies for post-installed anchors in concrete or masonry shall be in accordance with Section 05 05 19 or 04 05 19.29, respectively.
4. Grouts for anchor bolts shall be in accordance with Section 03 60 00.
5. The Contractor shall determine the size, type, capacity, location, and other placement requirements of anchorage elements. Anchoring methods and leveling criteria in the manufacturer's literature shall be followed. Submit methods and criteria with the calculations and details.
6. Anchor bolt calculations shall clearly show that the capacity of the anchor and the capacity of the concrete that the anchor is embedded in are adequate to resist all applicable load combinations, including seismic and wind loads.
 - a. The design of anchors resisting seismic forces shall satisfy the ductility requirements stated in the 2018 NJ IBC, ASCE 7, ACI 318, and TMS 402.
7. Reduction factors associated with edge distance, embed length, grout and base plate thickness, and bolt spacing shall all be considered and based on the actual dimensions of the concrete or masonry that resists the anchorage forces.

8. Where anchorage is required into or through equipment pads, the following requirements shall apply unless otherwise approved by the Engineer:
 - a. For tensile forces, the embed length and associated concrete failure zone shall be provided entirely within the structural slab. No portion of the equipment pad may be considered as effective in resisting tensile forces.
 - b. For shear forces, the edge distance and associated concrete failure zone shall be provided entirely within the equipment pad. No portion of the structural slab may be considered as effective in resisting shear forces.
9. Anchor bolt details shall include required bolt diameter, embed, spacing, and edge distances.
10. Where additional reinforcement is required to satisfy anchorage requirements, such reinforcement shall be included in the anchorage details, and shall be furnished and installed by the Contractor.

D. Mechanical and Electrical Equipment Foundations

1. Equipment foundations are indicated on Drawings. The Contractor, through the equipment manufacturer, shall verify the size and weight of the equipment foundation to ensure compatibility with equipment.
2. Equipment foundation dimensions shall be coordinated with the equipment base geometry and the edge distance and embed requirements of the equipment anchorage calculations.

E. Mechanical and Electrical Equipment (Housekeeping) Pads

1. General

- a. Equipment, tanks, control cabinets, enclosures, and related equipment shall be mounted on concrete equipment pads, unless otherwise indicated. The top surface of the equipment pads shall be level, unless otherwise indicated, or otherwise required by the equipment manufacturer.
- b. Equipment pads shall be sized to accommodate the bearing and anchorage requirements of the equipment, subject to the constraints listed below.
- c. Final geometry of the equipment pads shall not result in a condition that violates applicable building code provisions, including but not limited to the provisions of the National Electric Code.

2. Mechanical Equipment Pads

- a. Mechanical equipment pad heights shall be coordinated with process equipment and piping elevation requirements. Where no such elevation constraints exist, the equipment pad height shall be as shown on the drawings, or as indicated below when no specific height is provided.

- 1) Equipment pads for mechanical equipment shall be 3.5 inches tall (maximum) at the front of the equipment.

b. Mechanical equipment pads shall extend not more than 2 inches beyond the front, back, and sides of the equipment, except as indicated below, unless otherwise shown on the drawings.

1) Where necessary to meet seismic or wind anchorage requirements, the pads may be extended beyond the 2 inch limit indicated above. The pads shall extend not more than 6 inches beyond the front, back, and sides of the equipment.

3. Electrical Equipment Pads

a. Electrical equipment pads shall be 3.5 inches tall (maximum) at the front of the equipment.

b. Electrical equipment pads shall extend not more than 2 inches beyond the front, back, and sides of the equipment, except as indicated below, unless otherwise shown on the drawings.

1) Where necessary to meet seismic anchorage requirements, the pads may be extended beyond the 2 inch limit indicated above. The pads shall extend not more than 6 inches beyond the front, back, and sides of the equipment.

d. MISCELLANEOUS METALWORK (SECTION 05 50 00)

This specification section is a draft of what will be included in the construction contract and is provided to pump procurement bidders for reference.

PART 1 -- GENERAL

1.1 THE SUMMARY

- A. Provide miscellaneous metalwork and appurtenances, complete and in place, as indicated in accordance with the Contract Documents.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Federal Specifications

MIL-PRF-907F Antiseize Thread Compound, High Temperature

B. Codes

OSHA 1927.10 Fixed Ladders

C. Commercial Standards

AA-M32C22A41	Aluminum Assn.
AISC	Manual of Steel Construction
AISI	Design of Light Gauge, Cold-Formed Steel Structural Members
ASTM A 36	Carbon Structural Steel
ASTM A 48	Gray Iron Castings
ASTM A 53	Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A 123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A 153	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 193	Alloy Steel and Stainless Steel Bolting Materials for High Temperature Service
ASTM A 194	Carbon and Alloy Steel Nuts for Bolts for High Pressure and High Temperature Service
ASTM A 307	Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
ASTM A 325	Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 500	Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A 992	Steel for Structural Shapes for Use in Building Framing
ASTM F 1554	Standard Specification for Anchor Bolts, Steel, 36, 55 and 105-ksi Yield Strength
ANSI/AWS D1.1	Structural Welding Code - Steel
ANSI/AWS D1.2	Structural Welding Code - Aluminum
ANSI/AWS QC1	Qualification and Certification of Welding Inspectors

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with the requirements of Section 01 33 00 - Contractor Submittals.

1. Furnish submittals in accordance with Section 01 33 00 - Contractor Submittals:

B. Shop Drawings

1. Shop Drawings shall conform to AISC recommendations and specifications, and shall show holes, and the like, as may be required for other parts of the Work.
2. Shop Drawings shall include complete details of members and connections, anchor bolt layouts, schedules for fabrication procedures, and diagrams for the sequence of erection.

C. Anchor Submittals

1. For post installed anchors in concrete other than powder-drive pins or impact anchors, refer to Section 05 05 19 – Post Installed Anchors in Concrete.
2. For powder-drive pins or impact anchors, complete structural calculations and anchorage details shall be prepared and submitted by the Contractor for all anchors and anchor groups that are shown but not completely detailed (type, size, location, spacing and embedment) on the Contract Documents. Calculations and anchorage details shall be signed and stamped by a Professional Engineer registered in the state in which the project is located.

1.4 QUALITY ASSURANCE

- A. Weld procedures and welder qualifications shall be available in the Contractor's field office for review.

PART 2 -- PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Steel

Wide Flange Shapes	ASTM A 992
Shapes, Plates, Bars	ASTM A 36
Pipe, Pipe Columns, Bollards	ASTM A 53, Type E or S, Grade B standard weight unless indicated otherwise
HSS	ASTM A 500 Grade B

B. Corrosion Protection

1. Unless otherwise indicated, fabricated steel metalwork which will be used in a corrosive environment and/or will be submerged in water or wastewater shall be coated and shall not be galvanized prior to coating.
2. Other miscellaneous steel metalwork shall be hot-dip galvanized after fabrication.

C. Stainless Steel

1. Unless otherwise indicated, stainless steel metalwork and bolts shall be fabricated from Type 316 stainless steel.

D. Aluminum

1. Unless otherwise indicated, aluminum metalwork shall be fabricated from Alloy 6061-T6.
2. Aluminum in contact with concrete, masonry, wood, porous materials, or dissimilar metals shall have contact surfaces coated in accordance with the requirements of Section 09 96 00 - Protective Coating.

E. Cast Iron

1. Unless otherwise indicated, iron castings shall conform to the requirements of ASTM A 48, Class 50B, or better.

2.2 BOLTS AND ANCHORS

A. Standard Service (Non-Corrosive Application)

1. Bolts, anchor rods, anchor bolts, washers, and nuts shall be fabricated from steel as indicated.
2. Threads on galvanized bolts, rods and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing.
3. Except as otherwise indicated, steel for bolt material, anchor rods, anchor bolts, and cap screws shall be in accordance with the following requirements:
 - a. Structural Connections: ASTM A 307, Grade A or B, hot-dip galvanized
 - b. Headed Anchor Rods and Anchor Bolts: ASTM F1554, Grade 36, hot-dip or mechanically galvanized with Grade A matching nuts
 - c. High-Strength Bolts, where indicated: ASTM A 325
 - d. Pipe and Equipment Flange Bolts: ASTM A 193, Grade B-7

B. Corrosive Service

1. Bolts, anchor rods, anchor bolts, nuts, and washers in the locations listed below shall be fabricated from stainless steel as indicated.
 - a. buried locations
 - b. submerged locations
 - c. locations subject to seasonal or occasional flooding
 - d. inside hydraulic structures below the top of the structure
 - e. inside buried vaults, manholes, and structures that do not drain through a gravity sewer or to a sump with a pump
 - f. inside trenches, containment walls, and curbed areas
 - g. locations indicated or designated by the ENGINEER to be provided with stainless steel bolts

- C. Unless otherwise indicated, stainless steel bolts, nuts, anchor rods, and washers shall be fabricated from Type 316 stainless steel, Class 2, conforming to ASTM A 193 for bolts and to ASTM A 194 for nuts.
- D. Coating
 - 1. Threads on stainless steel bolts and rods shall be protected with an antiseize lubricant suitable for submerged stainless steel bolts, meeting government specification MIL-A-907E.
 - 2. Buried bolts in poorly drained soil shall be coated the same as the buried pipe.
 - 3. Antiseize lubricant shall be classified as acceptable for potable water use by the NSF.
 - 4. Antiseize lubricant shall be "PURE WHITE" by **Anti-Seize Technology**, Franklin Park, IL, 60131, **AS-470** by **Dixon Ticonderoga Company**, Lakehurst, NJ, 08733, or equal.
- E. Bolt Requirements
 - 1. The bolt and nut material shall be free-cutting steel.
 - 2. The nuts shall be capable of developing the full strength of the bolts.
 - 3. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads.
 - 4. Bolts and cap screws shall have hexagon heads and nuts shall be Heavy Hexagon Series.
 - 5. Bolts and nuts shall be installed with washers fabricated from material matching the base material of bolts, except that hardened washers for high-strength bolts shall conform to the requirements of the AISC Specification.
 - 6. Lock washers fabricated from material matching the bolts shall be installed where indicated.
 - 7. The length of each bolt shall be such that the bolt extends at least 1/8 inch beyond the outside face of the nut before tightening, except for anchor bolts which shall be flush with the face of the nut before tightening.

2.3 POWDER-DRIVEN PINS

- A. Powder-driven pins for installation in concrete or steel shall be fabricated from heat-treated steel alloy.
- B. If the pins are not inherently sufficiently corrosion-resistant for the conditions to which they will be exposed, they shall be protected in an acceptable manner.
- C. Pins shall have capped or threaded heads capable of transmitting the loads the shanks are required to support.
- D. Pins that are connected to steel shall be provided with longitudinal serrations around the circumference of the shank.

2.4 IMPACT ANCHOR

- A. Impact anchors shall be an expansion-type anchor in which a nail-type pin is driven to produce the expansive force.

- B. The pin shall be provided with a zinc sleeve with a mushroom-style head and stainless steel nail pin.
- C. Anchors shall be **Zinc Nailon Anchors**, manufactured by **Simpson Strong-Tie, Inc.**, **Metal Hit Anchors**, manufactured by **Hilti, Inc.**, **Rawl Zamac Nailin**, manufactured by the **Rawlplug Company**, or equal.

PART 3 -- EXECUTION

3.1 FABRICATION AND INSTALLATION REQUIREMENTS

- A. Fabrication and Erection: Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction."

3.2 WELDING

A. Method

1. Welding shall be performed by the metal-arc method or gas-shielded arc method as described in the American Welding Society "Welding Handbook" as supplemented by other pertinent standards of the AWS.
2. The qualification of the welders shall be in accordance with the AWS Standards.

B. Quality

1. In assembly and during welding, the component parts shall be adequately clamped, supported, and restrained in order to minimize distortion and for control of dimensions.
2. Weld reinforcement shall be as indicated by the AWS Code.
3. Upon completion of welding, remove weld splatter, flux, slag, and burrs left by attachments.
4. Welds shall be repaired in order to produce a workmanlike appearance, with uniform weld contours and dimensions.
5. Sharp corners of material that is to be painted or coated shall be ground to a minimum of 1/32 inch on the flat.

3.3 GALVANIZING

- A. Structural steel plates shapes, bars, and fabricated assemblies required to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the requirements of ASTM A 123.
- B. Any galvanized part that becomes warped during the galvanizing operation shall be straightened.
- C. Bolts, anchor rods, anchor bolts, nuts, and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the requirements of ASTM A 153.
- D. Field Repairs
 1. Field repairs to damaged galvanizing shall be performed by preparing the surface and applying a coating.

2. Surface preparation shall consist of removing oil, grease, soil, and soluble material by cleaning with water and detergent (SSPC SP1) followed by brush-off blast cleaning (SSPC SP7) over an area extending at least 4 inches into the undamaged area.
3. The coating shall be applied to at least 3 mils dry film thickness, and shall be **Zinc-Clad XI** by **Sherwin-Williams**, **Galvax** by **Alvin Products**, **Galvite** by **ZRC Worldwide**, or equal.

e. **INTERNAL COMBUSTION ENGINE (SECTION 26 32 14)**

PART 1 -- GENERAL

1.1 THE SUMMARY

- A. The Supplier shall provide natural gas engines, complete and operable, and coordination with the rest of the pumping system in accordance with the Contract Documents.
- B. The Supplier shall coordinate with the Installation Contractor for the design and installation requirements.
- C. The Installation Contractor shall be responsible for coordination of interface with other equipment and for any special construction necessary to complete the Work of this Section in an acceptable manner.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Materials shall conform with applicable requirements of the National Electrical Code (NEC), and any other State or Municipal codes which apply. Engine shall meet applicable standards and codes, including IEEE, NEMA, ANSI, OSHA, and UL.

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Submittals.
- B. Shop Drawings
 - 1. Detailed, dimensioned Shop Drawings and data demonstrating adherence to the requirements of these specifications shall be submitted and approved before fabrication, shipment, or other Work under this Section begins. Include the manufacturer's certification that engine atmospheric emissions will comply with the limitations.
 - 2. Certified custom drawings and custom wiring diagrams of each component in the system and a master wiring diagram showing the entire system on one sheet. This diagram shall include all AC and DC power control connections between the engine and circuit breakers and shall be a custom drawing for this specific installation. A master drawing of the engine set shall also be provided, showing general dimensions, bill of materials, location and size of all connections for fuel, cooling, exhaust, direct current connections, conduit locations, and connections for control and power wiring. Include wire and terminal numbers for all diagrams. Furnish horsepower output curves, fuel consumption curves, and certified air emission data sheets.
 - 3. Outline drawings and connection diagrams shall be complete enough to enable the installation to be designed completely, and connection diagrams shall give both internal and external connections. Include foundation loading and clearances.
 - 4. Copies of complete and detailed instructions for the operation, lubrication, and maintenance of equipment in the system. The manuals shall be furnished after final approval of Shop and working drawings but prior to shipment of equipment. Manuals shall be complete with wiring diagrams, lubrication schedules and recommended lubricants, drawings, cuts, parts lists, and other necessary data. All parts shall be numbered or otherwise clearly identified to facilitate ordering of replacements. Descriptions of all operational control devices and their functions shall also be included.

1.4 QUALITY ASSURANCE

- A. The engine shall be the product of a manufacturer who has been regularly engaged in the design and production of similar engines for a minimum of 10 years.
- B. The manufacturer shall maintain a local parts and service facility within the State of New Jersey. The supplier shall have factory trained and authorized service representatives to furnish necessary installation, test, and start-up supervision as well as operation and maintenance training necessary for final approval and acceptance.

PART 2 -- PRODUCTS

2.1 SYSTEM COMPONENTS

- A. Provide new natural gas engines as part of the stormwater pumping systems. The engines shall have a nominal rating adequate for powering the vertical propeller pumps as part of a coordinated pumping system. The equipment package shall include in general, and as applicable, an engine on a vibration isolating base, with auxiliaries, accessories, and controls, including intake filters, discharge silencer, turbocharger, heat exchangers, foundation bolts, isolators, piping, flexible couplings, supports, complete exhaust piping, ring, and silencer, insulation, control panels, lubrication system, water jacket heaters, cooling system, batteries and battery rack, battery charger, spare parts, and all materials necessary to permit installation, testing and placing the system in successful operation.
- B. The engine and accessories shall be assembled and shipped to the Site as a complete package coordinated with the requirements of the pumping system, ready for installation. The coated components shall be factory painted before installation.

2.2 SYSTEM OPERATION

- A. The system shall operate as follows:
 - 1. Automatic Control
 - a. The engines shall be controlled by the pump control panel, to be furnished and installed by the Installation Contractor.
 - 2. Emergency Stop Control: An emergency stop pushbutton shall be provided at the engine that shall cause the unit to stop without any delay.

2.3 ENGINE

- A. The engine shall be natural gas, radiator and fan cooled, cast iron block. The engine shall conform to current EPA standards. The horsepower rating of the engine, at its minimum tolerance level, shall be sufficient to drive the vertical propeller pumps. Engine accessories and features shall include:
 - 1. Skid mounted radiator and cooling system rated for full load operation in 122°F (50°C) ambient as measured at the engine air inlet. Radiator shall be provided with a duct adaptor flange. The cooling system shall be filled with 50/50 ethylene glycol/water mixture by the equipment supplier. Rotating parts shall be guarded against accidental contact per OSHA requirements.
 - 2. An electric starter(s) capable of three complete cranking cycles without overheating.
 - 3. Positive displacement, mechanical, full pressure, lubrication oil pump.

4. Full flow lubrication oil filters with replaceable spin-on canister elements and dipstick oil level indicator.
 5. Replaceable dry element air cleaner with restriction indicator.
 6. Flexible supply and return fuel lines.
- B. The engine shall be mounted on a heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails.
 - C. The engine shall be manufactured by **Caterpillar, Cummins**, or approved equal.

2.4 AUXILIARY EQUIPMENT AND ACCESSORIES

- A. Water Jacket Heater: Engine mounted, thermostatically controlled, water jacket heater for each engine. The heater shall be sized as recommended by the engine manufacturer. Heater voltage shall be 120/208V. Provide proper power supply circuits for the heater as required for the voltage and load of the heater, connected to a normally served distribution circuit.
- B. Vibration Isolation: Vibration isolators, spring type, as recommended by the engine manufacturer.
- C. Exhaust Silencer: Exhaust muffler shall be provided for each engine, size and type as recommended by the engine manufacturer. The mufflers shall be critical grade. Exhaust system shall be installed according to the engine manufacturers recommendations and applicable codes and standards.

2.5 LUBRICATION AND COOLING FLUIDS

- A. The supplier shall furnish the engine fully charged with lubricating oil and grease as specified by the manufacturer for continuous service. The cooling system shall be furnished with a full charge of 50 percent ethylene glycol.

2.6 ENGINE MONITORING

- A. The engine shall have as a minimum the following status monitoring outputs:
 1. Engine oil pressure gauge
 2. Engine coolant temperature gauge
 3. Engine operation hour gauge
 - a. The engine operation hour gauge shall be “non-resettable”.

2.7 SPARE PARTS

- A. Three sets of the following spare parts shall be furnished:
 1. Air filters
 2. Oil filters

PART 3 -- EXECUTION

3.1 FACTORY TESTING

- A. The engine system shall be tested at the factory before shipment to the Site. The manufacturer's standard testing procedure shall be followed, and in the event the system does not satisfy the test criteria or the requirements of this Section, it shall be repaired, modified, or replaced until it conforms.
- B. Furnish the Engineer two weeks prior notice of the testing date and a copy of the manufacturer's test procedure. The Owner and the Engineer may witness the factory testing, in which case the Owner will pay the costs to observe the tests. The Engineer will not review nor approve the test procedure.
- C. Test results shall be submitted to the Engineer for the project file.

3.2 CERTIFICATION

- A. The engines shall be EPA certified by the manufacturer to meet 40 CFR Part 60 New Source Performance Standards for Stationary Reciprocating Internal Combustion Engines (RICE).
- B. The engines shall be provided with the Certificates of Conformity with EPA RICE regulations.

3.3 INSTALLATION

- A. Installation will be performed by the Installation Contractor in accordance with their contract documents and the recommendations of the manufacturer.

3.4 START-UP ASSISTANCE AND TRAINING

- A. The manufacturer's representative shall furnish on-Site start-up assistance and shall inspect the installation prior to start-up to verify that equipment is installed in accordance with the manufacturer's requirements.
- B. In addition, the manufacturer's representative shall provide on-Site training for operation and maintenance of all equipment included in this Section.
- C. The following times shall be included, as a minimum, for the above tasks. A Day is defined as 8 hours on-Site, exclusive of meals and travel. Each task shall be considered a separate trip to the site. Dates and times for the trips shall be coordinated with the Installation Contractor and the Owner.
 - 1. Inspection of the installation and start-up assistance: Four Days per engine
 - 2. Operation and Maintenance Training: One Day

f. PUMPS, GENERAL (SECTION 43 20 00)

PART 1 -- GENERAL

1.1 THE SUMMARY

- A. The Supplier shall furnish pumps and pumping appurtenances, complete and operable, as indicated in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to pumps and pumping equipment throughout the Contract Documents, except where otherwise indicated.
- C. The requirements of Section 46 01 00 – Equipment General Provisions, apply to this Section.
- D. Unit Responsibility
 - 1. The pump manufacturer shall be made responsible for furnishing the pumps, right-angle drives, engine drives and auxiliaries, as one complete package and for the coordination of design, assembly, testing, and installation of the Work of each specific pump Section.
 - 2. The Supplier shall be responsible to the Owner for compliance with the product requirements of each specific pump Section.
- E. Single Manufacturer
 - 1. Where 2 or more pump systems of the same type or size are required, provide pumps produced by the same manufacturer.

1.2 SUBMITTALS

- A. Furnish submittals in accordance with the requirements of Section 01 33 00 – Submittals.
 - 1. A copy of this section, Section 43 24 18-Vertical Propeller Pumps and Section 26 32 14-Internal Combustion Engine with each paragraph check marked to indicate compliance with the specification or provide explanation for any proposed deviation.
- B. Shop Drawings
 - 1. Submit pump name, identification number, and specification Section number.
 - 2. Performance Information
 - a. Submit performance data curves showing head, capacity, horsepower demand, NPSHr3 required, and pump efficiency over the entire operating range of the pumps. Submit efficiency curves of drives.
 - b. Require the equipment manufacturer to indicate the head, capacity, required horsepower, pump efficiency, and NPSHr corresponding to each flow condition indicated in the respective performance requirement paragraph of each individual pump specification section. Indicate on the pump curve the Allowable Operating Region (AOR), Preferred Operation Region (POR), and minimum submergence required at maximum flow for the pumps.

- c. Pump Inlet minimum submergence requirement shall be designed in accordance with HI-9.8. If the pump inlet suction bell is fitted with a suction umbrella, design calculation of the umbrella including dimension and sheet reinforcement shall be submitted for review. See Drawing PM-1 for wetwell minimum water level.

3. Operating Range

- a. Require the manufacturer to indicate the limits on the performance curves recommended for stable operation without surge, cavitation, or excessive vibration.
4. Submit assembly and installation drawings, including shaft size, seal, coupling, bearings, anchor bolt plan, part nomenclature, material list, outline dimensions, and shipping weights.
5. Submit an elevation drawing of the proposed local control panel, showing panel-mounted devices, details of enclosure type, a single-line diagram of power distribution, current draw of the panel, and a list of terminals required to receive inputs or to transmit outputs from the local control panel.
6. Submit a wiring diagram of field connections, with identification of terminations between local control panels, junction terminal boxes, and equipment items.
7. Submit a complete electrical schematic diagram.
8. Submit a complete IO list detailing all Owner control and monitoring connections.

C. Rotodynamics and Structural Analyses

1. The Supplier shall perform and submit torsional, lateral, and structural analyses in reference to the latest edition of API 610 and as amended by these Specification for the following pumps:
 - a. Pumps with right-angle gear drives and engine drives.
2. Rotodynamics and Structural Analyses: An experienced specialist from the manufacturer or a highly qualified third party engineer, such as Engineering Dynamics, Mechanical Solutions, or equal, approved in writing by the Engineer, shall perform a complete torsional, lateral and structural vibration analysis for each distinct driven equipment system:
 - a. These analyses shall demonstrate that in no case shall the maximum stress on any component exceed the endurance limits of the pump-drive-coupling-driven equipment train materials of construction. Calculation of shaft deflection in the vicinity of the seal journal shall be submitted.
 - b. Submit calculations of torsional and lateral rotodynamics analysis for the couplings, drive shaft and pump as complete assembled system. The analysis report shall include the specific items as follows:
 - 1) Critical Speed Analyses. The undamped torsional natural frequencies of the complete drive train shall be at least 25 percent above or 25 percent below any possible steady state excitation frequency within the specified operating range from minimum to maximum continuous speed. If torsional frequencies fall within the margin specified, the pump manufacturer shall provide remedial measures to correct the deficiency to meet the requirement. If the margin cannot be avoided by any possible remedial measures, a finite element analysis of the rotating assembly shall be prepared to determine the endurance stress factor of safety of the shaft material.

- 2) Endurance Fatigue Stress Factor of Safety. Shafts shall be designed to carry the steady state and transient loads suitable for unlimited number of load applications. In the event that the critical vibration frequency falls within the operating range of the equipment and the frequencies cannot be absolutely avoided by any means or methods, submit a stress analysis. Where shafts are subjected to fatigue stresses, such as frequent start and stop cycles, the mean stress shall be determined by using the modified Goodman Diagram. The maximum torsional stress shall not exceed the endurance stress limit of the shaft material with a minimum factor of safety of 2. If a keyway is cut into the shaft, the endurance limit of the shaft material shall be reduced by using the appropriate stress concentration factor for fillets cut into the shaft, shoulder, and/or the keyseat.
- 3) The Supplier shall submit a detailed report of the analysis:
 - a) A description of the method used to calculate the natural frequencies.
 - b) A diagram of the mass elastic system.
 - c) A table of the mass moment and torsional stiffness of each element of the mass elastic system.
 - d) Campbell Diagram.
 - e) A mode shape diagram with peak stresses shown for each resonant frequency.
 - f) This analysis shall identify the dry and wet lateral critical(s), plus the torsional critical(s) speeds.

c. Structural analysis of shaft, baseplate, bearing support frame, natural frequency analysis of pump structure, engine and supporting structure shall be prepared. Certifications shall be submitted to the effect that the equipment and equipment supports including anchor bolts comply with seismic and wind design criteria in Section 01 33 17 – Structural Design, Support and Anchorage.

3. This Work shall be performed prior to fabrication of the machinery, and it is subject to review by the Engineer. No fabrication shall be started until the Engineer has approved the analyses.

D. Technical Manual

1. Submit a Technical Manual containing the required information indicated in Section 01 33 00 – Submittals and each specific pump Section.

E. Spare Parts List

1. Submit a spare parts list containing the required information indicated in Section 01 33 00 – Submittals and each specific pump Section.

F. Factory Test Data

1. Submit factory test plan showing piping diameter sizes and lengths, locations of valves and instruments that will be used during testing as part of shop drawing submittal.
2. Submit current calibration certificates of test instruments prior to testing.

3. Submit signed, dated, and certified factory test data for each pump system which requires factory testing.
4. Submit these data before shipment of equipment.

G. Certifications

1. Submit the manufacturer's certification of proper installation.
2. Submit the Installation Contractor's certification of satisfactory field testing.

PART 2 -- PRODUCTS

2.1 GENERAL

A. Compliance with the requirements of the specific pump Sections may necessitate modifications to the manufacturer's standard equipment.

B. Performance Curves

1. Provide centrifugal pumps with a continuously rising pump curve, or with a pump curve that does not cross the system curve within the pump curve's "dip region."
2. Unless otherwise indicated, the required shaft horsepower for the entire pump assembly at any point on the performance curve shall not exceed the rated horsepower of the driver or engine or encroach on the service factor.

C. Compatibility

1. Provide entirely compatible components of each pump system provided under the specific pump Sections.
2. In each unit of pumping equipment, incorporate basic mechanisms, couplings, right-angle drives or engine drives, variable speed controls, necessary mountings, and appurtenances.

D. Balancing

1. Unless otherwise specified the rotating assembly shall be dynamically balanced to ISO 1940 G6.3.

2.2 MATERIALS

A. Provide materials suitable for the intended application.

B. For materials not indicated, provide high-grade, standard commercial quality, free from defects and imperfections that might affect the serviceability of the product for the purpose for which it is intended, and conforming to the following requirements:

1. Bowls and Casings

- a. Provide cast iron pump casings constructed of close-grained gray cast iron, conforming to ASTM A 48 - Gray Iron Castings, Class 30, or equal. Unless otherwise indicated on the specific pump sections, cast iron-fitted pumps shall be epoxy lined and coated for better efficiency.

2. Impellers

- a. Where individual pump sections indicate cast iron impellers, such impellers shall be epoxy coated and constructed of close-grained gray cast iron, conforming to ASTM A 48 - Gray Iron Castings, Class 30, or equal.
 - b. Where individual pump sections indicate stainless steel impellers, such impellers shall be constructed of Type 316 stainless steel.
 - c. Where individual pump sections indicate bronze impellers, or where the impeller material is not otherwise specified, such impellers shall be constructed of zero-lead aluminum bronze conforming to ASTM B 148 – Standard Specification for Aluminum-Bronze Sand Castings, or zero-lead, zincless nickel aluminum bronze ASTM –B 148-C95800.
3. Provide pump shafts constructed of Type 416 or 316 stainless steel.
 4. Provide anti-friction bearings or zero-lead bronze bearings. Bronze bearings shall be Bismuth Tin Bronze ASTM B 584 C89835, or equal.
 5. All elastomeric materials such as gaskets, seals, O-rings in contact with water with shall be compatible with the fluid service.
 6. Miscellaneous stainless steel parts shall be of Type 316.
 7. Provide anchor bolts, washers, and nuts in standard service (non-corrosive application) of galvanized steel in accordance with the requirements of Section 05 50 00 – Miscellaneous Metalwork.
 8. Provide anchor bolts, washers, and nuts in corrosive service of stainless steel in accordance with Section 05 50 00 – Miscellaneous Metalwork.
 9. Corrosive service shall mean and include in locations listed below:
 - a) Submerged locations submerged shall include any component located two feet above high water surface in basins or channel.
 - b) Locations indicated or designated in the contract documents.

2.3 PUMP COMPONENTS - GENERAL

A. Flanges and Bolts

1. Provide suction and discharge flanges conforming to ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, or ASME B16.5 - Pipe Flanges and Flanged Fittings dimensions. Pressure class shall be suitable for the application or as otherwise recommended by the pump manufacturer.
2. Provide flange bolts in accordance with the following.
 - a. Bolts shall have heavy hexagon heads and heavy hexagon nuts. Length of studs shall provide a projection of not less than 0.25 inch and no more than 0.5 inch through the nut when it is drawn tight.
 - b. Threads shall be in accordance with ANSI/ASME B1.1, Class 2, UNC for bolt diameters 1" and smaller and UN8 for bolt diameters greater than 1".

- c. Thread studs on flange connections are not permitted except where space restrictions preclude the use of standard bolts and where approved by the Engineer.
 - d. Through bolt holes shall be drilled in accordance with the applicable flange standard.
 - e. All bolts fastening metallic flanges shall be provided with plain washers installed under the nut. Washer materials shall be of the same material as the bolt. If the through bolt holes are drilled larger than the applicable standard by 1/8 inch in diameter or more, bolts shall be also installed with a plain washer under the bolt head as well.
 - f. Flange bolts shall be ASTM A193, Grade B8M bolts, ASTM A194 Grade 8M nuts with Type 316 SS plain washers.
 - g. Anti-galling compound used for stainless steel fasteners shall be certified for potable water use and shall be Husk-ITT, Lube O'seal; Hercules, Real-Tuff; La Co, Slic-Tite; or equal.
3. Flange gaskets shall be in accordance with the following.
- a. Gaskets for flanged joints used in general water and wastewater service shall be full faced type in accordance with AWWA C207, suitable for temperatures to 700 degrees F, a pH of one to 11, and pressures to 1000 psig.
 - b. Ring gaskets will not be accepted unless otherwise indicated.
 - c. Unless otherwise indicated, flange gaskets up to 150 psi shall be EPDM sheet material, Garlock, or similar products from John Crane, or equal.

B. Lubrication

- 1. Provide storm water pumps with oil-lubricated bearings and seals, and enclosed line shafts.

C. Hand holes

- 1. Provide hand holes on pump casings shaped to follow the contours of the casing in order to avoid any obstructions in the water passage.

D. Drains

- 1. Provide and connect pipe gland seals, air valves, and cooling water drains to the nearest floor sink or drain, using galvanized steel pipe or copper tube that is properly supported with brackets.

E. Grease Lubrication

- 1. The pumps are flood control application and may not operating continuously. Provide a stainless steel tube attached to the column for grease lubrication of the bottom bearing.

F. Stuffing Boxes

- 1. Where stuffing boxes are indicated for the pump seal, provide stuffing boxes of the best quality, using the manufacturer's suggested materials best suited for the specific application.
- 2. For sewage, sludge, drainage, and liquids containing sediments, provide fresh-water-flushed seals, using lantern rings.

3. If fresh water is not available, the seal shall be flushed with product water cleaned by a solids separator as manufactured by **John Crane Co., Lakos (Claude Laval Corp.)**, or equal.
4. Conventional Packing Gland Type Seal
 - a. Unless otherwise indicated, provide packing material of Teflon braiding, containing 50 percent ultrafine graphite impregnation in order to satisfy the requirements listed in the table below.
 - b. Acceptable ring materials are asbestos-free die-molded packing rings of braided graphite material free of PTFE, **Chesterton 1400R** or equal, for non-potable water service, and braided PTFE material, **Chesterton 1725** or equal, that is listed under NSF Standard 61 for potable water service.

Shaft speeds	up to 2500 fpm
Temperature	up to 500 deg F
pH range	0 - 14

2.4 PUMP APPURTENANCES

A. Nameplates

1. Equip each pump with a stainless steel nameplate indicating serial number(s), rated head and flow, impeller size, pump speed, and manufacturer's name and model number.

B. Solenoid Valves

1. Require the pump manufacturer to provide solenoid valves on the water or oil lubrication lines and on cooling water lines.
2. Provide solenoid valve electrical ratings compatible with the motor control voltage.

C. Gauges

1. Provide two 1" half coupling connections with cap, on each side of pump discharge line (spring line) for future pressure gauge connections.

2.5 FACTORY TESTING

A. Conduct the following tests on each indicated pump system:

1. Factory Tests

- a. Perform factory test on centrifugal pumps with drives in accordance with the ANSI/HI 14.6, Rotodynamic Pumps for Hydraulic Performance Acceptance Test.
- b. Performance tests shall meet hydraulic acceptance criteria Grade "1U" unless otherwise indicated. Such tests shall, at a minimum, consist of the following:
 - 1) Hydrostatic test;
 - 2) Performance Test:

- a) Conduct performance testing at maximum speed, obtain a minimum of 7 hydraulic test readings between shutoff head and maximum runoff capacity, and record on data sheets as defined by the Hydraulic Institute Standards;
 - b) Submit pump curves showing head, flow, bhp, NPSHr and efficiency results. The manufacturer's certification shall be visible on each submitted curve;
 - 3) Mechanical testing shall be limited to observation during the hydraulic performance test for any abnormal bearing temperature and pump vibration. Any deficiencies shall be corrected by the manufacturer.
 - 4) NPSHr3
 - a) Perform a net positive suction head required test (NPSHr3), if required by the specific pump Section.
 - b) Acceptance criteria shall be in accordance with ANSI/HI 14.6
 - c) If not required by the specific pump Section, submit the published manufacturer-calculated NPSHr3 curve.
 - 5) Additional tests as indicated in the specific pump specification sections.
 - c. Perform tests using the completely assembled project pump, right-angle gear and Lab Electric Motor with brake power and speed compatible to the supplied gas engine.
 - d. Testing of prototype models will not be accepted.
 - e. Submit certification signed by a senior official of the pump manufacturer that the required pump shaft horsepower did not exceed the rated driver horsepower of 1.0 service rating at any point on the curve.
 - f. No equipment shall be shipped until the test data have been approved by the Engineer.
2. Certified Factory Witnessed Tests
- a. Perform factory witnessed tests on centrifugal pumps with drives in accordance with the factory test procedure indicated above with the exception that the tests shall be witnessed by the Owner and Engineer.
 - b. Mechanical tests shall be conducted in accordance with ANSI/HI 14.6, Appendix E, Mechanical Test. Such tests shall, at a minimum, consist of the following;
 - 1) Measure and record pump bearing temperatures.
 - 2) Measure and record pump vibration.
 - 3) Acceptance criteria and mechanical test records shall be in accordance with ANSI/HI 14.6, Appendix E, Mechanical Test.
 - c. The Contractor shall provide the Owner and Engineer a minimum of 2 weeks notification prior to the test.

- d. Excluding salaries, costs for the attendances of one representative for the Owner and one representative for the Engineer shall be borne by the Supplier and shall be included in the Contract Price, including travel and subsistence costs. The cost shall include repetitive visits, if required. If additional witnessed testing is required due to failure of the pumps to meet specified conditions, expenses of the Engineer and Owner shall be covered by the Contractor.
 - e. No equipment shall be shipped until the test data have been approved by the Engineer.
3. Acceptance
- a. In the event of failure of any pump to meet any of the requirements, make necessary modifications, repairs, or replacements in order to conform to the requirements of the Contract Documents, and re-test the pump until found satisfactory.

PART 3 -- EXECUTION

3.1 MANUFACTURER'S SERVICES

- A. See Section 01 10 00 – Summary of Works for the Supplier and Installation Contractor responsibilities and detailed work split between the Supplier and Installation Contractor.
- B. Inspection, Startup, and Field Adjustment
 - 1. Where required by the specific pump Section, furnish an authorized service representative of the manufacturer at the Site continuously to supervise the following items and to certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation:
 - a. installation of the equipment;
 - b. inspection, checking, and adjusting the equipment;
 - c. startup and field testing for proper operation; and
 - d. Performance of field adjustments to ensure that the equipment installation and operation comply with the indicated requirements.
- C. Instruction of Owner's Personnel
 - 1. Where required by the individual pump Section, furnish an authorized training representative of the manufacturer at the Site for the number of Days indicated in the specific pump Section, to instruct the Owner's personnel in the operation and maintenance of the equipment, including step-by-step troubleshooting with necessary test equipment.
 - 2. Furnish instruction specific to the model of equipment provided.
 - 3. Qualifications
 - a. Furnish a representative with at least 2 years' experience in training.
 - b. Submit a resume for the representative.
 - 4. Schedule the training a minimum of 3 weeks in advance of the first session.

5. Lesson Plan Review
 - a. Submit the proposed training material and a detailed outline of each lesson for review.
 - b. Incorporate review comments into the material.
6. The trainees will keep the training materials.
7. The Owner may videotape the training for later use with the Owner's personnel.

3.2 INSTALLATION

A. General

1. Install pumping equipment in accordance with the manufacturer's written recommendations.

B. Alignment

1. Field-test the equipment in order to verify proper alignment and freedom from binding, scraping, shaft run out, or other defects.
2. Measure the pump drive shafts just prior to assembly in order to ensure correct alignment without forcing.
3. Ensure that the equipment is secure in position and neat in appearance.

C. Lubricants

1. Provide the necessary oil and grease for initial operation.

3.3 FIELD TESTS

A. Field-test each pump system after installation simulating all of the operational scenarios as specified in order to demonstrate:

1. satisfactory operation without excessive noise and vibration;
2. no material loss caused by cavitation;
3. no overheating of bearings; and,
4. Meet indicated head, flow, and efficiency at the design point.

B. Conduct the following field testing:

1. Startup, check, and operate the pump system over its entire speed range.
2. If the pump is driven by constant speed, test the pump and motor at the maximum RPM.
3. Unless otherwise indicated, vibration shall be within the amplitude limits recommended by the Hydraulic Institute standards at a minimum of 4 pumping conditions defined by the Engineer.

4. Obtain concurrent readings of motor voltage, amperage, pump suction head, and pump discharge head for at least 4 pumping conditions at each pump rotational speed, at maximum RPM if equipped with a constant speed drive.
 5. Check each power lead to the motor for proper current balance.
 6. Bearing Temperatures
 - a. Determine bearing temperatures by a contact-type thermometer.
 - b. Precede this test with a run time sufficient to stabilize bearing temperatures, unless an insufficient liquid volume is available to furnish such a run time.
 7. Ensure that electrical and instrumentation tests conform to the requirements of the Section under which that equipment is specified.
- C. Witnessing
1. Field testing will be witnessed by the Engineer.
 2. Furnish 3 Days advance notice of field testing.
- D. If the pumping system fails to meet the indicated requirements, modify or replace the pump and re-test as indicated above until it satisfies the indicated requirements.
- E. Certification
1. After each pumping system has satisfied the requirements, certify in writing that it has been satisfactorily tested and that final adjustments have been performed.
 2. Certification shall include the date of the field tests, a listing of persons present during the tests, and the test data.
- F. The Installation Contractor shall be responsible for costs of field tests, excluding related services of the manufacturer's representative, which the supplier shall bear.
- G. If available, the Owner's operating personnel will provide assistance in field testing.

g. **VERTICAL PROPELLER PUMPS (SECTION 43 24 18)**

PART 1 -- VERTICAL PROPELLER PUMPS

1.1 THE SUMMARY

- A. The Supplier shall provide vertical propeller pumps, right-angle gear drives, gas engine drives and appurtenances, complete and operable, in accordance with the Contract Documents.
- B. The requirements of Section 43 20 00 - Pumps, General and Section 26 32 14 - Internal Combustion engine apply to this Section.
- C. The THREE vertical propeller pumps shall be designed for use with the right angle gear and natural gas engine, to be installed in the existing pump room for the Storm Water Pump Replacement Project. The gas engines shall be supplied as a package by the pump manufacturer to ensure engine compatibility with pumping equipment. The gas engine system and appurtenances shall be furnished according to Section 26 32 14 - Internal Combustion engine.
- D. The Supplier shall examine the Site conditions, intended application, and operation of the pump system and recommend the pump that will best satisfy the indicated requirements.

1.2 WARRANTY

- A. All equipment supplied under this section shall be warranted for a period of 3 years after pump start up and final acceptance by owner. The equipment shall be warranted to be free from defects in workmanship and materials. The Supplier and Installation Contractor shall replace or repair any defective parts during the warranty period.

PART 2 -- PRODUCTS

2.1 GENERAL DESCRIPTION

- A. Identification: Main stormwater pumps SWP-010, SWP-020, and SWP-030.
- B. Pumping system shall be vertical propeller axial flow enclosed line shaft pump with right angle gear drive and natural gas engine. The unit shall be complete with oiler assembly, bowls, column pipe, below ground discharge head, coupling, packing box assembly, baseplate, fasteners, guards and all other appurtenances.
- C. The pump column and discharge elbow shall be designed for suspension from an integral baseplate, suitable to support both the pump and drive.
- D. Pump Inlet minimum submergence requirement shall be designed in accordance with HI-9.8.
- E. Pumps to be installed through an existing 5 ft 3 inched square floor opening. Supplier shall verify floor opening size before fabrication.
- F. Operating Conditions: The Work of this Section shall be suitable for long term operation under the following conditions.
 - 1. Fluid service - Stormwater, solids able to pass 3.5-inch opening screen
 - 2. Duty - Intermittent

3. Ambient environment - see drawing for elevation subject to submergence
4. Site pump layout sheet as shown on drawing PM-1.
5. Pumps are driven by natural gas engines, all electrical components inside pump room shall be of Class I, Division 1, Group D.

G. Performance and Design Requirements: The Work of this Section shall meet the requirements below.

Design Criteria	Value
Flow at rated speed	40,000 gpm
Bowl Head at rated speed	9.7 feet
Minimum bowl efficiency	84%
Bowl Head AOR	Pump continuous flow with Bowl Head range from minimum of 5 feet (low) to 13 feet (high) or higher.
Maximum rated pump speed	435 rpm
Lubrication	Oil
Column diameter	42 inches
Discharge diameter	42 inches

2.2 PUMP REQUIREMENTS

A. Construction: Construction of vertical propeller pumps shall conform to the following requirements:

Bowl	Cast-iron
Propeller	Bronze, statically and dynamically balanced
Propeller and shaft method of connection	Type 316 stainless steel key seat
Bowl shaft	Stainless steel, Type 416
Suction bell	Cast iron, with bottom bearing and streamlined ribs, lined and coated as specified for bowl exterior.
Column	Carbon steel pipe, not less than Schedule 30, in maximum 10-ft lengths, flanged with registered fit and through bolting. Flange faces shall be machined after welding onto the column.

Suction umbrella	Carbon steel plates, bolted to the suction bell. Diameter shall be as recommended by the manufacturer to minimize pump submergence.
Line shaft and couplings	Stainless steel Type 416, in maximum 10-ft lengths, sized for a critical speed of min 20 percent above max operating speed. Shaft couplings shall be Type 316 stainless steel, threaded or keyed to shaft. Line shaft shall be enclosed.
Shaft enclosing tube	Pumps shall have shafts equipped with an enclosing tube constructed of black steel ASTM A53 Gr. B, schedule 80. For tube sizes 3-1/2 inches and larger, the enclosing tube shall be supported by tube stabilizers integrally welded to the outer column.
Shaft sealing assembly	The shaft sealing assembly shall consist of a bronze tension nut suitable for tension loading of the enclosing tube and an oiler and oil reservoir to ensure proper lubrication for the bearings when the pump is in operation. The oil lubrication system shall include a 120-volt solenoid valve.
Discharge head	Above surface Fabricated carbon steel, reinforced to withstand pump thrust, with flange connections, base plate, and minimum 1-1/4 inch 3000 lb. forged steel half-couplings for air valve, pressure switch, and drain connections.
Bowl bearings	Close tolerance sleeve type, with min length 2-1/2 times shaft diameter, permanently grease-lubricated for suction bell with non-soluble grease, or with Type 316 stainless steel grease tube and fitting, extended to base plate
Lineshaft bearings	Bronze spiral grooved bushings at maximum 5-feet centers, for oil lubricated enclosed lineshaft.
Base plate	Base plate shall be constructed of extra-heavy, carbon steel.

B. Coating

1. Surface preparation shall be in accordance with SSPC SP10 and coating system manufacturer's recommendations.
2. Ferrous pump components shall be coated with the following system.
 - a. Coating shall be a high solids, high build amine cured epoxy. VOC content shall not exceed 220 g/L. Acceptable products include the following:
 - 1) Carboline Carboguard 891
 - 2) Tnemec Epoxoline Series L69
 - b. Apply 3 coats, to a minimum dry film thickness of 12 mils.

3. Application and curing shall be in accordance with SSP PA1 and coating system manufacturer's recommendations.

2.3 Right-Angle Gear Drive

- A. Each pump shall be supplied with a right-angle gear drive. Gear drive shall be a 90 - degree bevel gear, hollow shaft, heavy duty reducer type designed to transmit the required horsepower and to handle all thrust loads.
 1. The gear - reducer shall have a ratio selected by the pump manufacturer as required to match the engine drive rotational speed and direction to the pump rotational speed and direction.
 2. The gear reducer shall be a single reduction spiral/bevel gear, right-angle drive, with horizontal input shaft, and vertical downward output shaft. The gear reducer output shaft shall be coupled to the vertical shafting, and shall support the full weight of the vertical shafting. Gear reducer efficiency shall be not less than 95%. The gear reducer shall be designed and manufactured in accordance with AGMA Standards. The gear reducer output shall be vertical hollow shaft.
 3. The casing shall be high tensile strength (minimum 30,000 psi) cast iron or fabricated steel of adequate strength and rigidity to withstand all loads imposed on it from operation of the equipment, to maintain all gears, bearings, and seals in precise alignment. Lifting lugs shall be provided on the housing suitably located to enable safe removal of the gear reducer. The housing shall be equipped with tapping for oil fill, drain, level indication, breather, etc. and inspection covers as required, which shall be arranged and located for easy observation and access.
 4. Spiral bevel gears shall be precision cut from alloy steel. All gears shall be manufactured to AGMA Q-9 or better as outlined in AGMA Standards. Gear teeth shall be carburized and hardened to 58 to 60 Rockwell C and shall be hard cut after completion of heat treatment. Final surface finish of the gear teeth shall be 32 micro-inch or better. Calculations for strength and durability of gearing shall be based upon AGMA Standards. Ratings shall allow for a minimum of 200 percent momentary starting torque, and shall have a minimum of 1.5-service factor above the nameplate horsepower. The pinion assembly shall be straddle mount with bearings supporting the pinion on both sides.
 5. All bearings incorporated within the gear reducer shall be of the anti-friction type with an Anti-Friction Bearing Manufacturer's Association minimum rated life expectancy (B-10) of 50,000 hours when operating continuously at the full rated gear reducer output brake horsepower. All bearings shall be of standard design, readily available. Bearings shall be oversized to assure the exact position of gears and shafts are maintained. The output shaft bearings shall be oversized steep angled tapered roller bearings, designed to support the weight, and all operating loads of the vertical shafting to be connected to the pump.
 6. All shafts shall be of SAE 4130 steel, designed to AGMA limits for shaft stress and to minimize deflection, with close finished tolerances by grinding.
 7. The gear reducer should have a sprag type non-reverse mounted on the vertical output shaft to stop the pump from reverse rotation. Non-reverse torque shall be transferred directly to the gear case.
- B. Lubrication shall be by oil pressure lubrication of gears and bearings. All shafts shall have double lip oil seals, and the housing construction at the output shaft shall be dry well type to prevent oil from leaking down the output shaft. A positive displacement oil pump shall be provided integral to the gear reducer housing to provide oil circulation, and shall be driven from the gear reducer output shaft. The oil shall be circulated by the internal gear pump through a vertically mounted heat exchanger designed to dissipate heat from the reducer. The heat exchanger shall be designed to dissipate heat during full load pump operation in a 40 deg. C ambient temperature. The heat exchanger shall be equipped with a fan that

turns constantly with the vertical shaft. The fan shall be enclosed to protect from heat and moving parts, and shall be in accordance with OSHA.

2.4 Coupling

- A. Mechanical couplings shall be provided between the driver and the driven equipment. Flexible couplings shall be provided between the driver and the driven equipment to accommodate slight angular misalignment, parallel misalignment, end float, and to cushion shock loads.
- B. Unless otherwise indicated or recommended by the equipment manufacture, the engine shall be connected to the right-angle gear by means of an extension shaft with 2 sets of flanged universal couplings, with an L-10 bearing life of 16,000 hours, set at an angle of 3 degrees. The length of the shaft, measured from face to face of the flanges, shall be sized to suit as shown on drawing and shall be coordinated with the engine manufacturer.

2.5 PUMP CONTROLS

- A. Pump controls shall be provided by the Installation Contractor.
- B. Pumps shall be controlled according to water level in the wet well.

2.6 SPARE PARTS

- A. Furnish the following spare parts.
 - 1. One set of bowl bearings
 - 2. One set of lineshaft bearings
 - 3. One set of packing
 - 4. Any additional spare parts recommended by the manufacturer

2.7 MANUFACTURERS

- A. Pumps
 - 1. Cascade
 - 2. Johnston Pump (Sulzer)
 - 3. Or approved equal
- B. Right-Angle Gear Drives
 - 1. Amarillo Gear Company
 - 2. De'Ran Gear, Inc.
 - 3. Or approved equal

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

- A. Inspection, Startup, and Field Adjustment: The service representative of the manufacturer shall be present at the Site for 3 Days per pump to furnish the services required by Section 43 20 00 – Pumps, General.
- B. Instruction of Owner's Personnel: The training representative of the manufacturer shall be present at the Site for 2 Days to furnish the services required by Section 43 20 00 – Pumps, General.
- C. For the purposes of this paragraph, a Day is defined as an 8 hour period at the Site, excluding travel time.
- D. The Engineer may require that the inspection, startup, and field adjustment services above be furnished in 3 separate trips.

h. EQUIPMENT GENERAL PROVISIONS (SECTION 46 01 00)

Requirements in this specification section related to installation are pertinent only to the Installation Contractor, but the Part 2-Products- General requirements are applicable to the Supplier Contract. The full specification is provided to the pump procurement bidders for reference.

PART 1 -- EQUIPMENT GENERAL PROVISIONS

1.1 THE SUMMARY

- A. The Contractor shall provide equipment and appurtenant Work, complete and operable, in accordance with the Contract Documents.
- B. The provisions of this Section shall apply to equipment throughout the Contract except where otherwise indicated.
- C. All component and support systems of the equipment shall be designed and manufactured to withstand all forces such as internal or external, static, wind, dynamic and seismic loads (wind and seismic in accordance with Section 01 33 17 – Structural Design, Support and Anchorage) in order for the equipment to last throughout its expected life without premature failure. If the project is located in a seismically active zone as specified in Section 01 33 17 – Structural Design, Support and Anchorage, the manufacturer shall submit a certification signed and stamped by a registered engineer stating that the equipment was designed and manufactured to withstand all the loads specified in this paragraph. Submit a copy of that analysis for review by the Engineer.
- D. Equipment Arrangement: Unless specifically indicated otherwise, the arrangement of equipment indicated is based upon information available from manufacturers at the time of design and is not intended to show exact dimensions particular to a specific manufacturer. Some aspects of the Drawings are diagrammatic and some features of the illustrated equipment arrangement may require revision by the Contractor to meet the actual equipment requirements proposed by the Contractor. Structural supports, foundations, piping and valve connections, and electrical and instrumentation connections indicated may have to be altered by the Contractor to accommodate the equipment provided. No additional payment will be made to the Contractor for such revisions and alterations. Substantiating calculations and drawings shall be submitted prior to beginning the fabrication of equipment.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Equipment shall be in accordance with the following standards, as applicable and as indicated in each equipment specification:
 - 1. American Society for Testing and Materials (ASTM).
 - 2. American National Standards Institute (ANSI).
 - 3. American Society of Mechanical Engineers (ASME).
 - 4. American Water Works Association (AWWA).
 - 5. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE).
 - 6. American Welding Society (AWS).
 - 7. National Fire Protection Association (NFPA).

8. Federal Specifications (FS).
9. National Electrical Manufacturers Association (NEMA).
10. Manufacturer's published recommendations and specifications.
11. Occupational Safety and Health Administration (OSHA).
12. Hydraulic Institute (HI)

B. The following standards are referenced in this Section:

- ASME B16.1 Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800
- ASME B16.5 Pipe Flanges and Flanged Fittings, Steel, Nickel Alloy and other Special Alloys
- ASME B46.1 Surface Texture
- ANSI S12.6 Method for the Measurement of the Real-Ear Attenuation of Hearing Protectors
- ASME B1.20.1 General Purpose Pipe Threads (Inch)
- ASME B31.1 Power Piping
- ASME B31.3 Process Piping
- AWWA C206 Field Welding of Steel Water Pipe
- AWWA C207 Steel Pipe Flanges for Waterworks Service - Sizes 4 In. Through 144 In. (100 mm through 3,600 mm)
- AWWA D100 Welded Steel Tanks for Water Storage
- ASTM A 48 Gray Iron Castings
- ASTM A 108 Steel Bars, Carbon, Cold-Finished, Standard Quality

1.3 CONTRACTOR SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Contractor Submittals.
- B. Shop Drawings: Furnish complete drawings and technical information for equipment, piping, valves, and controls. Where indicated or required by the Engineer, Shop Drawings shall include clear, concise calculations showing equipment anchorage forces and the capacities of the anchorage elements proposed by the Contractor.
- C. Spare Parts List: The Contractor shall obtain from the manufacturer and submit as part of Shop Drawings a list of suggested spare parts for each piece of equipment. Contractor shall also furnish the name, address, and telephone number of the nearest distributor for each piece of equipment.

1.4 QUALITY ASSURANCE

- A. **Costs:** Responsibility shall be the Contractor's for performing and paying the costs of inspection, startup, testing, adjustment, and instruction services performed by factory representatives. The Owner will pay for costs of power and water. If available, the Owner's operating personnel will provide assistance in the field testing.
- B. **Inspection:** The Contractor shall inform the local authorities, such as building and plumbing inspectors, fire marshal, OSHA inspectors, and others, to witness required tests for piping, plumbing, fire protection systems, pressure vessels, safety systems, cranes, and related items to obtain required permits and certificates, and shall pay inspection fees.
- C. **Quality and Tolerances:** Tolerances and clearances shall be as shown on the Shop Drawings and shall be closely adhered to.
1. **Machine Work** shall be of high-grade workmanship and finish, with due consideration to the special nature or function of the parts. Members without machined or milled ends and which are to be framed to other steel parts of the structure may have a variation in the detailed length of not greater than 1/16-inch for members 30-feet or less in length, and not greater than 1/8-inch for members over 30-feet in length.
 2. **Castings** shall be homogeneous and free from non-metallic inclusions and defects. Surfaces of castings which are not machined shall be cleaned to remove foundry irregularities. Casting defects not exceeding 12.5 percent of the total thickness and where defects will not affect the strength and serviceability of the casting may be repaired by approved welding procedures. The Engineer shall be notified of larger defects. No repair welding of such defects shall be carried out without the Engineer's written approval. If the removal of metal for repair reduces the stress resisting cross-section of the casting by more than 25 percent or to such an extent that the computed stress in the remaining metal exceeds the allowable stress by more than 25 percent, then the casting may be rejected. Costs of casting new material shall be the Contractor's responsibility as part of the Work.
 3. **Materials** shall meet the physical and mechanical properties in accordance with the reference standards.
- D. **Machine Finish:** The type of finish shall be the most suitable for the application as recommended by the equipment manufacturer in micro-inches in accordance with ANSI B46.1. In the absence of manufacturer's recommendations, the following surface finishes shall be used:
1. Surface roughness not greater than 63 micro-inches shall be required for surfaces in sliding contact.
 2. Surface roughness not greater than 250 micro-inches shall be required for surfaces in contact where a tight joint is not required.
 3. Rough finish not greater than 500 micro-inches shall be required for other machined surfaces.
 4. Contact surfaces of shafts and stems which pass through stuffing boxes and contact surfaces of bearings shall be finished to not greater than 32 micro-inches.
- E. **Manufacturer's Experience:** Equipment manufacturer shall have a record of proven experience of at least 5 years of successful, troublefree operation in similar applications and size equal or larger than the equipment in this Contract. Where indicated in each individual equipment specifications, the Contractor shall submit this experience record to the Engineer for approval.

PART 2 -- PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. **Noise Level:** When the equipment is in operation, no single piece of equipment shall exceed the OSHA noise level requirement of 105 dBA for one hour exposure per day.
- B. **High Noise Level Location:** The Contractor shall provide one personal hearing protection station at each location defined as follows:
1. **Outdoor Location:** Any single equipment item or any group of equipment items that produce noise exceeding OSHA noise level requirements for a 2 hour exposure. Where such equipment is separated by a distance of more than 20-feet, measured between edges of footings, the area for each group of equipment shall be provided with a separate hearing protection station.
 2. **Indoor Location**
 - a. Any single equipment item or any group of equipment items located within a single room not normally occupied, that produces noise exceeding OSHA noise level requirements for a 2 hour exposure.
 - b. Any single equipment item or any group of equipment items located within a single room normally occupied by workers that produces noise exceeding OSHA noise level requirements for an 8 hour exposure.
- C. **Drive Trains and Service Factors:** Service factors shall be applied in the selection or design of mechanical power transmission components. Components of drive train assemblies between the prime mover and the driven equipment shall be designed and rated to deliver the maximum peak or starting torque (whichever is the greatest), speed, and horsepower. Applicable service factors shall be considered, such as mechanical (type of prime mover), load class, start frequency, ventilation, ambient temperature, and fan factors. Drive train components include couplings, shafts, gears and gear drives, drive chains, sprockets, and V-belt drives. Unless otherwise indicated, the following load classifications shall apply in determining service factors:

Type of Equipment	Service Factor	Load Classification
Centrifugal Fans	1.0	Uniform
Reciprocating Air Compressors		
multi-cylinder	2.0	Heavy Shock
single-cylinder	2.0	Heavy Shock
Pumps		
centrifugal or rotary	1.0	Uniform
reciprocating	1.8	Moderate Shock
progressing cavity	1.0	Uniform
Vacuum Filters	1.25	Moderate Shock
Mechanical Bar Screens	1.0	Uniform
Cranes or Hoists	1.25	Moderate Shock

D. Mechanical Service Factors

	Mechanical Service Factors	
	Electric Motor	Internal Combustion Engine
Uniform	1.25	1.50
Moderate Shock	1.50	1.75
Heavy Shock	2.00	2.25

- E. For thermal rating adjustments such as start frequency, ambient temperature, and hourly duty cycle factor, ventilation factor, and fan factor, refer to gear manufacturer sizing information.
- F. For service factors of electric motors, see Section 26 05 10 - Electric Motors.
- G. Where load classifications are not indicated, the equipment manufacturer's recommendations for service factors shall be utilized.
- H. Welding: Unless otherwise indicated, welding shall conform to the following:
1. Latest revision of AWWA D100.
 2. Latest revision of AWWA C206.
 3. Composite fabricated steel assemblies that are to be erected or installed inside a hydraulic structure, including any fixed or movable structural components of mechanical equipment, shall have continuous seal welds to prevent corrosion of hard-to-coat metallic surfaces.
 4. Welding shall be by the metal-arc method or gas-shielded arc method as described in the American Welding Society's "Welding Handbook" as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards.
 5. In assembly and during welding, the component parts shall be adequately clamped, supported, and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as specified by the AWS code. Upon completion of welding, weld splatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance with uniform weld contours and dimensions. Sharp corners of material that are to be painted or coated shall be ground to a minimum of 1/32-inch on the flat.
- I. Protective Coating: Equipment shall be painted or coated in accordance with Section 09 96 00 - Protective Coating, unless otherwise indicated. Non-ferrous metal and corrosion-resisting steel surfaces shall be coated with grease or lubricating oil. Coated surfaces shall be protected from abrasion or other damage during handling, testing, storing, assembly, and shipping.
- J. Potable Water Contact: Materials immersed in or exposed to potable water shall be made of materials or coated compliant with NSF Standard 61. Bronze alloy materials in contact with potable water shall be constructed of zero-lead materials or materials whose lead content do not exceed the weighted average criteria as required by the Lead Reduction Act. Equipment manufacturer shall submit to the Engineer a certification of compliance with the requirement of NSF Standard 61 and the Lead Reduction Act.
- K. Protection of Equipment: Machined and coated surfaces shall be protected by rust inhibitor material prior to shipment. Equipment shall be boxed, crated, or otherwise protected from damage and moisture during

shipment, handling, and storage. Equipment shall be protected from exposure to corrosive fumes and shall be kept thoroughly dry. Equipment with anti-friction bearings or sleeve bearings shall be protected from being damaged due to jarring motion during shipment. Pumps, motors, drives, electrical equipment, and other equipment having anti-friction or sleeve bearings shall be stored in weathertight storage facilities prior to installation. For extended storage periods, plastic equipment wrappers should be avoided to prevent accumulation of condensate in gears and bearings. In addition, motor space heaters shall be energized and shafts shall be rotated per manufacturer's recommendation. Equipment delivered to the Site with rust or corroded parts shall be rejected. If equipment develops defects during storage, it shall be disassembled, cleaned, recoated, or otherwise corrected to restore it to original condition.

L. Identification of Equipment Items

1. At the time of shipping, each item of equipment shall have a legible identifying mark corresponding to the equipment number in the Contract Documents for the particular item.
2. After installation, each item of equipment shall be given permanent identification.
 - a. Pumps, compressors, and blowers of 150 horsepower or less shall receive acrylic plastic nametags.
 - b. Pumps, compressors, and blowers larger than 150 horsepower shall receive stainless steel plate nametags.

M. Vibration Isolators: Air compressors, blowers, engines, inline fans shall be provided with restrained spring-type vibration isolators or pads per manufacturer's written recommendations. Vibration isolations shall be provided with seismic restraint.

N. Equipment Maximum Allowable Vibration Level: Unless otherwise indicated, maximum allowable vibration level shall be in accordance with the acceptance criteria recommended by the reference Standard for that particular type of equipment

O. Shop Fabrication: Shop fabrication shall be performed in accordance with the Contract Documents and the Shop Drawings.

P. Controls: Equipment and system controls shall be in accordance with Division 40 - Instrumentation.

2.2 EQUIPMENT SUPPORTS AND FOUNDATIONS

A. Equipment Supports: Equipment components and supports, anchors, and seismic restrainers shall be adequately designed for static, dynamic, wind, and seismic loads. The design horizontal seismic force shall be the greatest of the following design criteria:

1. Design Criteria noted in Section 01 33 17 – Structural Design, Support and Anchorage.

B. Submit design calculations for equipment supports, anchors, and seismic restrainers signed and sealed by an engineer registered in the State wherein the project is to be built. Calculations shall account for forces and distribution of forces on supporting structures resulting from normal operation, normal operation plus seismic loadings, and normal operation plus wind loadings in accordance with Section 01 33 17 – Structural Design, Support and Anchorage.

1. Wall-mounted equipment weighing more than 250 pounds or which is within 18-inches above the floor shall be provided with fabricated steel supports. Pedestals shall be of welded steel. If the supported equipment is a panel or cabinet or is enclosed with removable sides, the pedestal shall match the supported equipment in appearance and dimensions.

2. Seismic requirements: Freestanding and wall-hung equipment shall be anchored in place by methods that satisfy Section 01 33 17 – Structural Design, Support and Anchorage. Calculations shall be performed and signed and stamped for equipment weighing more than 400 pounds. Calculations shall analyze lateral and overturning forces and shall include a factor of safety against overturning equal to 1.5. Calculations shall include the distribution of forces imposed on the supporting structure and anchors, verifying that each anchor can develop the required resistance forces.
3. Wind requirements: Exterior freestanding equipment shall be anchored in place by methods that satisfy Section 01 33 17 – Structural Design, Support and Anchorage. Calculations shall be performed and signed and stamped, analyzing lateral and overturning forces and shall include a factor of safety against overturning equal to 1.5. Calculations shall include the distribution of forces imposed on the supporting structure and anchors, verifying that each anchor can develop the required resistance forces.
4. Anchors: Anchor bolts shall be in accordance with Section 05 50 00 - Miscellaneous Metalwork. Contractor shall determine the size, type, capacity, location, and other placement requirements of anchorage elements. Anchoring methods and leveling criteria in the manufacturer's literature shall be followed. Submit methods and criteria with the Shop Drawings.
5. Equipment Foundations: Unless otherwise indicated, mechanical equipment, tanks, control cabinets, enclosures, and related equipment shall be mounted on minimum 3.5-inch high concrete bases. Unless otherwise indicated on the Drawings, pumps, blowers, compressors and engine driven equipment shall be provided with a concrete foundation with a total weight equal to at least five times the weight of the equipment. Concrete foundations shall be isolated from the building floor in order to prevent transfer of vibration from the equipment to the building structure. The CONTRACTOR through the equipment manufacturer shall verify the size and weight of equipment foundation to insure compatibility with equipment.
6. Equipment Grout: Mechanical equipment installed on top of concrete foundations or bases shall be provided with non-shrink concrete or epoxy grout as indicated and as specified in Section 03 60 00 - Grouting. Grout shall be applied between the base plate and the concrete foundation or base in accordance with the grout manufacturer's recommendation. Grout shall be free of void space.

2.3 COUPLINGS

- A. Mechanical couplings shall be provided between the driver and the driven equipment. Flexible couplings shall be provided between the driver and the driven equipment to accommodate slight angular misalignment, parallel misalignment, end float, and to cushion shock loads. Unless otherwise indicated or recommended by the equipment manufacturer, coupling type shall be furnished with the respective equipment as follows:

Equipment Type	Coupling Type
Vertical turbine pumps	3 piece spacer for solid shaft
Engine driven pumps	Universal joint type or elastomeric flexible type
Air compressors	Gear or flexible disc pack

- B. Each coupling size shall be determined based on the rated horsepower of the motor, speed of the shaft, and the load classification service factor. The Contractor shall have the equipment manufacturer select or recommend the size and type of coupling required to suit each specific application.

- C. Differential Settlement: Where differential settlement between the driver and the driven equipment may occur, 2 sets of universal type couplings shall be provided.
- D. Taper-Lock or equal bushings may be used to provide for easy installation and removal of shafts of various diameters.

2.4 SHAFTING

- A. General: Equipment manufacturer shall be responsible for designing and manufacturing shafting to carry all loads applied to the shaft. Shafting shall be continuous between bearings and shall be sized to transmit the power required. Keyways shall be accurately cut in line. Shafting shall not be turned down at the ends to accommodate bearings or sprockets whose bore is less than the diameter of the shaft. Shafts shall rotate in the end bearings and shall be turned and polished, straight, and true.
- B. Design Criteria: Shafts shall be designed to carry the steady state and transient loads suitable for unlimited number of load applications.
- C. Materials: Shafting materials shall be compatible with the type of service and load transmitted. Environmental elements such as corrosive gases, moisture, and fluids shall be taken into consideration. Materials shall be as indicated unless furnished as part of an equipment assembly.
 - 1. Low carbon cold-rolled steel shafting shall conform to ASTM A 108, Grade 1018.
 - 2. Medium carbon cold-rolled shafting shall conform to ASTM A 108, Grade 1045.
 - 3. Other grades of carbon steel alloys shall be suitable for service and load.
 - 4. Corrosion-resistant shafting shall be stainless steel or Monel, whichever is most suitable for the intended service.
- D. Differential Settlement: Where differential settlement between the driver and the driven equipment may occur, a shaft of sufficient length with 2 sets of universal type couplings shall be provided.

2.5 GEARS AND GEAR DRIVES

- A. Unless otherwise indicated, gears shall be of the spur, helical, or spiral-bevel type, designed and manufactured in accordance with AGMA Standards, with a service factor suitable for load class, mechanical service and thermal rating adjustment, a minimum L-10 bearing life of 60,000 hours, and a minimum efficiency of 94 percent. Peak torque, starting torque, and shaft overhung load shall be checked when selecting the gear reducer. Worm gears shall not be used unless specifically approved by the Engineer.
- B. Gear speed reducers or increasers shall be of the enclosed type, oil- or grease-lubricated and fully sealed, with a breather to allow air to escape but keep dust and dirt out. The casing shall be of cast iron, ductile iron, or heavy-duty steel construction with lifting lugs and an inspection cover for each gear train. An oil level sight glass and an oil flow indicator shall be provided, located for easy reading.
- C. Gears and gear drives that are part of an equipment assembly shall be shipped fully assembled for field installation.
- D. Material selections shall be selected by the manufacturer, provided the above AGMA values are met. Input and output shafts shall be adequately designed for the service and load requirements. Gears shall be computer-matched for minimum tolerance variation. The output shaft shall have 2 positive seals to prevent oil leakage.

- E. Oil level and drain locations shall be easily accessible. Oil coolers or heat exchangers with required appurtenances shall be provided when necessary.
- F. Where gear drive input or output shafts from one manufacturer connect to couplings or sprockets from a different manufacturer, the Contractor shall have the gear drive manufacturer furnish a matching key taped to the shaft for shipment.

2.6 DRIVE CHAINS

- A. Power drive chains shall be commercial type roller chains meeting ASME Standards.
- B. A chain take-up or tightener shall be provided in every chain drive arrangement to provide easy adjustment.
- C. A minimum of one connecting or coupler link shall be provided in each length of roller chain.
- D. Chain and attachments shall be of the manufacturer's best standard material and be suitable for the process fluid.

2.7 SPROCKETS

- A. General: Sprockets shall be used in conjunction with chain drives and chain-type material handling equipment.
- B. Materials: Unless otherwise indicated, materials shall be as follows:
 - 1. Sprockets with 25 teeth or less, normally used as a driver, shall be made of medium carbon steel in the 0.40 to 0.45 percent carbon range.
 - 2. Type A and B sprockets with 26 teeth or more, normally used as driven sprockets, shall be made of minimum 0.20 percent carbon steel.
 - 3. Large diameter sprockets with Type C hub shall be made of cast iron conforming to ASTM A 48, Class 30.
- C. Sprockets shall be accurately machined to ASME Standards. Sprockets shall have deep hardness penetration in tooth sections.
- D. Finish bored sprockets shall be furnished complete with keyseat and set screws.
- E. To facilitate installation and disassembly, sprockets shall be of the split type or shall be furnished with Taper-Lock bushings as required.
- F. Idler sprockets shall be provided with brass or Babbitt bushings, complete with oil hole and axial or circumferential grooving with stainless steel tubing and grease fitting extended to an accessible location. Steel collars with set screws may be provided in both sides of the hub.

2.8 V-BELT DRIVES

- A. V-belts and sheaves shall be of the best commercial grade and shall conform to ASME, MPTA, and RMA Standards.
- B. Unless otherwise indicated, sheaves shall be machined from the finest quality gray cast iron.

- C. Sheaves shall be statically balanced. In some applications where vibration is a problem, sheaves shall be dynamically balanced. Sheaves operating at belt speeds exceeding 6,500 fpm may be required to be of special materials and construction.
- D. To facilitate installation and disassembly, sheaves shall be provided complete with Taper-Lock or QD bushings as required.
- E. Finish bored sheaves shall be complete with keyseat and set screws.
- F. Sliding motor bases shall be provided to adjust the tension of V-belts.

2.9 DRIVE GUARDS

- A. Power transmission trains, prime movers, machines, shaft extensions, and moving machine parts shall be guarded to conform to the OSHA Safety and Health Standards (29CFR1910). The guards shall be constructed of minimum 10-gauge expanded, flattened steel with smooth edges and corners, galvanized after fabrication, and securely fastened. Where required for lubrication or maintenance, guards shall have hinged and latched access doors.

2.10 BEARINGS

- A. General: Bearings shall conform to the standards of the American Bearing Manufacturers Association, Inc. (ABMA).
- B. To assure satisfactory bearing application, fitting practice, mounting, lubrication, sealing, static rating, housing strength, and lubrication shall be considered in bearing selection.
- C. Re-lubricatable type bearings shall be equipped with hydraulic grease fitting in an accessible location and shall have sufficient grease capacity in the bearing chamber.
- D. Lubricated-for-life bearings shall be factory-lubricated with the manufacturer's recommended grease to insure maximum bearing life and best performance.
- E. Anti-Friction Type Bearing Life: Except where otherwise indicated, bearings shall have a minimum L-10 life expectancy of 5 years or 20,000 hours, whichever occurs first. Where so indicated, bearings shall have a minimum rated L-10 life expectancy corresponding to the type of service, as follows:

Type of Service	Design Life, years	L-10 Design Life, hours
	(whichever comes first)	
8-hour shift	10	20,000
16-hour shift	10	40,000
Continuous	10	60,000

- F. Bearing housings shall be of cast iron or steel and bearing mounting arrangement shall be as indicated or as recommended in the published standards of the manufacturer. Split-type housings may be used to facilitate installation, inspection, and disassembly.

- G. Sleeve Type Bearings: Sleeve-type bearings shall have a cast iron or ductile iron housing and Babbitt or bronze liner. Bearing housing shall be bolted and doweled to the lower casing half. These housings shall be provided with cast iron caps bolted in place and the bearing end caps shall be bored to receive the bearing shells. Sleeve bearings shall be designed on the basis of the maximum allowable load permitted by the bearing manufacturer. If the sleeve bearing is connected to an equipment shaft with a coupling, the coupling transmitted thrust will be assumed to be the maximum motor or equipment thrust. Lubricant, lubrication system, and cooling system shall be as recommended by the bearing manufacturer. In accordance with the Lead Reduction Act, sleeve bearings containing lead material exposed to drinking water shall not be acceptable.
- H. Plate Thrust Bearings: Thrust bearings shall be the Kingsbury Type, designed and manufactured to maintain the shaft in the fixed axial position without undue heating or the necessity of adjustment or attention. Bearings shall be oil lubricated to suit the manufacturer's standard method of lubrication for the specific bearing. If bearing cooling is required, manufacturer shall provide heat exchangers, including necessary instrumentation and controls, piping, filters, and valves.

2.11 PIPING CONNECTIONS

- A. Pipe Hangers, Supports, and Guides: Pipe connections to equipment shall be supported, anchored, and guided to avoid stresses and loads on equipment flanges and equipment. Supports and hangers shall be in accordance with Section 43 10 52 - Pipe Supports.
- B. Flanges and Pipe Threads: Flanges on equipment and appurtenances shall conform to ASME B16.1, Class 125, or B16.5, Class 150, unless otherwise indicated. Pipe threads shall be in accordance with ASME B1.20.1 and Section 43 10 50 - Piping, General.
- C. Flexible Connectors: Flexible connectors shall be installed in piping connections to engines, blowers, compressors, and other vibrating equipment and in piping systems in accordance with the requirements of Section 43 10 50 – Piping, General. Flexible connectors shall be harnessed or otherwise anchored to prevent separation of the pipe where required by the installation.
- D. Insulating Connections: Insulating bushings, unions, couplings, or flanges, as appropriate, shall be used in accordance with the requirements of the specifications.

2.12 GASKETS AND PACKINGS

- A. Gaskets and packings shall be in accordance with the requirements of the specifications. Gaskets and packings in contact with drinking water shall be NSF 61 approved. Elastomeric materials in contact with water with chloramines, or water with ozone residual shall be made of Teflon or Viton-A, or equal.
- B. Packing around valve stems and reciprocating shafts shall be of compressible material, compatible with the fluid being used. Chevron-type "V" packing shall be Garlock No. 432, John Crane Everseal, or equal.
- C. Packing around rotating shafts (other than valve stems) shall be "O" rings, stuffing boxes, or mechanical seals, as recommended by the manufacturer and approved by the Engineer, in accordance with Section 43 20 00 - Pumps, General.

2.13 NAMEPLATES

- A. Equipment nameplates of stainless steel shall be engraved or stamped and fastened to the equipment in an accessible location with No. 4 or larger oval head stainless steel screws or drive pins. Nameplates shall contain the manufacturer's name, model, serial number, size, characteristics, and appropriate data describing the machine performance ratings.

2.14 TOOLS AND SPARE PARTS

- A. Tools: The Contractor shall furnish one complete set of special wrenches and other special tools necessary for the assembly, adjustment, and dismantling of the equipment. Tools shall be of best quality hardened steel forgings with bright finish. Wrench heads shall have work faces dressed to fit nuts. Tools shall be suitable for professional work and manufactured by Snap On, Crescent, Stanley, or equal. The set of tools shall be neatly mounted in a labeled toolbox of suitable design provided with a hinged cover.
- B. Spare parts shall be furnished as indicated in the individual equipment sections. Spare parts shall be suitably packaged for storage and labeled with equipment numbers by means of stainless steel or solid plastic nametags attached to the box.

2.15 EQUIPMENT LUBRICANTS

- A. The CONTRACTOR shall provide lubricants for equipment during shipping, storage, and prior to testing, in accordance with the manufacturer's recommendations. Lubricants that could come in contact with potable water shall be food grade lubricants. After successful initial testing, final testing, and satisfactory completion startup testing per Section 01 75 00 - Equipment Testing and Plant Startup, the Contractor shall conduct one complete lubricant change on equipment. In addition, the Contractor shall be responsible for the proper disposal of used lubricants. The Owner will then be responsible for subsequent lubricant changes

PART 3 -- EXECUTION

3.1 SERVICES OF MANUFACTURER

- A. Installation Supervision, Inspection, Startup, and Field Adjustment: An authorized, experienced, and competent service representative of the manufacturer shall visit the Site to perform the following:
 - 1. Supervision of the installation of the equipment
 - 2. Inspection, checking, and adjusting the equipment and approving its installation
 - 3. Startup and field testing for proper operation, efficiency, and capacity
 - 4. Performing field adjustments during the test period to ensure that the equipment installation and operation comply with requirements
 - 5. Certify in writing that the equipment and controls have been properly installed, aligned, lubricated, adjusted, and readied for operation.
 - 6. Unless otherwise indicated, factory representative shall be present at the job site for the following number of days:
 - a. Half a day per equipment for smaller than 500 horsepower.
 - b. One day per equipment for 500 horsepower and larger.
- B. Owner Staff Training
 - 1. Owner staff training shall be in accordance with Section 01 79 00 – Owner Staff Training.
 - 2. Unless otherwise indicated, a minimum of one day of training shall be provided for each type of equipment.

3.2 INSTALLATION

- A. General: Equipment shall be installed in accordance with the manufacturer's written recommendations.
- B. Alignment: Equipment shall be field tested to verify proper alignment.

3.3 PACKAGED EQUIPMENT

- A. When any system is furnished as pre-packaged equipment, the Contractor shall coordinate space and structural requirements, clearances, utility connections, signals, and outputs with Subcontractors to avoid later change orders.
- B. If the packaged system has any additional features (as safety interlocks, etc.) other than required by the Contract Documents, the Contractor shall coordinate such features with the ENGINEER and provide material and labor necessary for a complete installation as required by the manufacturer.

3.4 FIELD ASSEMBLY

- A. Studs, cap screws, bolt and nuts used in field assembly shall be coated with Never Seize compound or equal.

3.5 WELDING

- A. Welds shall be cleaned of weld-slag, splatter, etc. to provide a smooth surface.

3.6 FIELD TESTS

- A. Where indicated by the individual equipment sections, equipment shall be field tested after installation to demonstrate satisfactory operation without excessive noise, vibration, or overheating of bearings or motor.
- B. The following field testing shall be conducted:
 - 1. Start equipment, check, and operate the equipment over its entire operating range. Vibration level shall be within the amplitude limits as indicated or as recommended by the reference applicable standards.
 - 2. Obtain concurrent readings of motor voltage, amperage, capacity, vibration, and bearing temperatures.
- C. The Engineer shall witness field-testing. The Contractor shall notify the Engineer of the test schedule 3 Days in advance.
- D. In the event that any equipment fails to meet the test requirements, the equipment shall be modified and retested until it satisfies the requirement.

C. DELIVERY

DELIVERY DATE: All bidders must list on their "Bid Quotation Sheet" in the space specified the number of days (e.g. 120, 150, 180, etc. after receipt of purchase order) that all equipment will be delivered to the Authority fully completed and fully compliant with the specifications. A specific number of days must be listed. Under no circumstances shall bidders give approximate dates or ranges of dates to deliver such as: 210 days to 240 days. **FAILURE TO FOLLOW THESE GUIDELINES MAY RESULT IN REJECTION OF BID.**

CONFIRMATION OF ORDER: Once the Vendor receives the purchase order via email from the Authority's representative, the Vendor shall have a maximum of thirty (30) days to verify in writing to the Authority that the equipment has been placed on order with the manufacturer of said equipment. **FAILURE TO FOLLOW THESE GUIDELINES MAY RESULT IN REJECTION OF PURCHASE ORDER AND AWARD TO THE NEXT LOWEST RESPONSIBLE BIDDER.**

DELIVERY INSTRUCTIONS: Vendor must contact Joseph C. Livingston, PE (Supervising Engineer, Planning) at 732-750-5300, ext. 8276 / livingston@njta.com for authorization to schedule date and time prior to delivery. Delivery will be made to:

**New Jersey Turnpike Authority
Stormwater Pump Station MP 92
New Jersey Turnpike Northbound Outer Roadway
Milepost 92.15
Woodbridge, NJ 07095**

Coordinate Location: 40.55015100472031, -74.27426774892928

D. TRAINING

Training requirements will be in accordance the specifications. Note that training will take place at time of equipment commissioning.

UNIT INFORMATION FORM (must be submitted with bid)
FAILURE TO COMPLETE ALL AREAS MAY RESULT IN REJECTION OF BID

VERTICAL PROPELLER PUMPS:

MANUFACTURER: _____ MODEL: _____

FLOW AT RATED SPEED: _____ GPM.

BOWL HEAD AT RATED SPEED: _____ FEET

BOWL EFFICIENCY AT DUTY POINT: _____ %

RATED PUMP SPEED _____ RPM

SERVICING AGENCY: _____

LOCATED AT: _____

TELEPHONE #: _____

CONTACT: _____
(Name & Title)

RIGHT-ANGLE GEAR DRIVES:

MANUFACTURER: _____ MODEL: _____

GEAR RATIO: _____

GEAR REDUCER EFFICIENCY: _____

SERVICING AGENCY: _____

LOCATED AT: _____

TELEPHONE #: _____

CONTACT: _____
(Name & Title)

INTERNAL COMBUSTION ENGINES:

MAKE: _____ MODEL: _____

RATED SPEED: _____

BRAKE HP: _____

EFFICIENCY AT RATED SPEED: _____ %

SERVICING AGENCY: _____

LOCATED AT: _____

TELEPHONE #: _____

CONTACT: _____
(Name & Title)

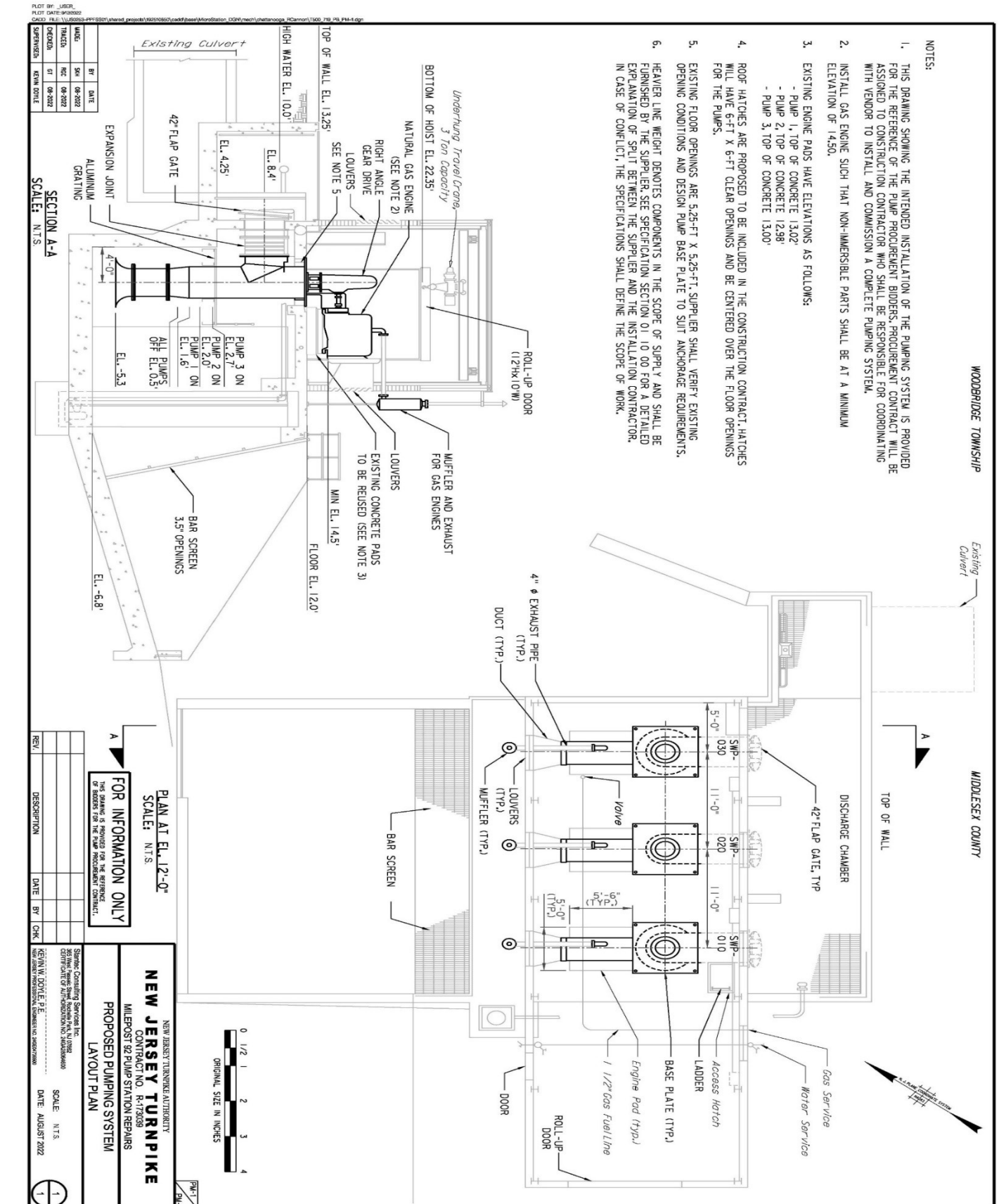
FACILITIES:

Bidders shall represent a manufacturer, which has in operation a factory adequate for the manufacture of the equipment, which it proposes to furnish. The manufacture(s) whose associated equipment or products are bid shall have a full-service warranty and parts supply facility that can guarantee availability of parts. The bidder shall submit the locations, names and telephone numbers of people who are authorized to service the equipment or who can be reached for emergency service.

Location _____

Phone # _____

Contact _____
Name & Title



- NOTES:
1. THIS DRAWING SHOWING THE INTENDED INSTALLATION OF THE PUMPING SYSTEM IS PROVIDED FOR THE REFERENCE OF THE PUMP PROCUREMENT BIDDERS. PROCUREMENT CONTRACT WILL BE ASSIGNED TO CONSTRUCTION CONTRACTOR WHO SHALL BE RESPONSIBLE FOR COORDINATING WITH VENDOR TO INSTALL AND COMMISSION A COMPLETE PUMPING SYSTEM.
 2. INSTALL GAS ENGINE SUCH THAT NON-IMMERSIBLE PARTS SHALL BE AT A MINIMUM ELEVATION OF 14.50.
 3. EXISTING ENGINE PADS HAVE ELEVATIONS AS FOLLOWS:
 - PUMP 1, TOP OF CONCRETE 13.02
 - PUMP 2, TOP OF CONCRETE 12.98
 - PUMP 3, TOP OF CONCRETE 13.00
 4. ROOF HATCHES ARE PROPOSED TO BE INCLUDED IN THE CONSTRUCTION CONTRACT. HATCHES WILL HAVE 6-FT X 6-FT CLEAR OPENINGS AND BE CENTERED OVER THE FLOOR OPENINGS FOR THE PUMPS.
 5. EXISTING FLOOR OPENINGS ARE 5.25-FT X 5.25-FT. SUPPLIER SHALL VERIFY EXISTING OPENING CONDITIONS AND DESIGN PUMP BASE PLATE TO SUIT ANCHORAGE REQUIREMENTS.
 6. HEAVIER LINE WEIGHT DENOTES COMPONENTS IN THE SCOPE OF SUPPLY AND SHALL BE FURNISHED BY THE SUPPLIER. SEE SPECIFICATION SECTION 01 10 00 FOR A DETAILED EXPLANATION OF SPLIT BETWEEN THE SUPPLIER AND THE INSTALLATION CONTRACTOR. IN CASE OF CONFLICT, THE SPECIFICATIONS SHALL DEFINE THE SCOPE OF WORK.

SECTION A-A
SCALE: N.T.S.

NO.	DATE	BY	CHK	DESCRIPTION
1	08-2022			
2	08-2022			
3	08-2022			

FOR INFORMATION ONLY
THIS DRAWING IS PROVIDED FOR THE REFERENCE OF BIDDERS FOR THE PUMP PROCUREMENT CONTRACT.

REV.	DESCRIPTION	DATE	BY	CHK

NEW JERSEY TURNPIKE
CONTRACT NO. R-173039
MILEPOST 82 PUMP STATION REPAIRS
PROPOSED PUMPING SYSTEM
LAYOUT PLAN

Scale: 1/4" = 1'-0"

Scale: N.T.S.

DATE: AUGUST 2022

SECTION IV

A. NO RESPONSE BID SURVEY

BID REQUISITION NUMBER: R-173039

**BID TITLE: VERTICAL PROPELLER PUMPS, RIGHT-ANGLE GEAR DRIVES,
INTERNAL COMBUSTION ENGINES AND APPURTENANCES**

If you do not choose to respond to this Bid, please complete this form and email to Christine Noble at: noble@njta.com

Name of Company _____

Reason you did not respond (Check all that apply)

- Cannot supply product or service
- Cannot meet technical specifications
- Cannot meet delivery specifications
- Cannot meet legal requirements
(i.e. Bid/performance/security/insurance, etc.)
- Cannot provide a competitive price now
- Interested in receiving specifications for informational purposes only
- Insufficient lead time to respond
- Other:(please be specific)

Do you wish to remain on our mailing list?

Yes No

Additional comments: _____

Signed :(optional)_____

Company:_____



NEW JERSEY TURNPIKE AUTHORITY

P.O. Box 5042
Woodbridge, New Jersey 07095
or
1 Turnpike Plaza
Woodbridge, New Jersey 07095
Tel. – 732-750-5300
Fax – 732-750-5399

INSTRUCTIONS TO BIDDERS

PLEASE READ THE INSTRUCTIONS CAREFULLY
BEFORE SUBMITTING YOUR BID

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INSTRUCTIONS TO BIDDERS FOR SUBMISSION OF BIDS STANDARD TERMS AND CONDITIONS

The following Standard Terms and Conditions apply to all contracts, purchase agreements or purchase orders with the New Jersey Turnpike Authority unless specifically stated otherwise in the Invitation to Bid/Request for Bids (“RFB”). Bidders are hereby notified that all Terms and Conditions contained herein will become a part of any contract(s) awarded or order(s) placed as a result of any RFB fully and to the same extent as if copied at length therein. In the case of a conflict between these general Terms and Conditions and the specific provisions of the RFB, the RFB shall control. Failure to comply with each and every one of the below Terms and Conditions, as well as the specific requirements set forth in the RFB, may be grounds for rejection of the bid.

I. DEFINITIONS

The following definitions will be a part of any RFB issued by the New Jersey Turnpike Authority, and any contract(s) awarded or order(s) placed as a result of such documents.

- a. “Authority” shall mean the New Jersey Turnpike Authority.
- b. “Bidder” shall mean any potential vendor submitting a response to an RFB issued by the Authority.
- c. “Contract” shall mean the RFB (including these Standard Terms and Conditions), the response thereto submitted by the bidder, and the Authority’s Notice of Award.
- d. “Director” shall mean the Director of Procurement & Materials Management Department of the Authority.
- e. “Vendor” shall mean the successful bidder who is awarded the contract at issue.

II. STATE LAWS REQUIRING MANDATORY COMPLIANCE BY ALL BIDDERS

A. DIVISION OF REVENUE REGISTRATION-Pursuant to the terms of *N.J.S.A. 52:32-44*, bidders are required to submit to the Authority proof of valid business registration with the New Jersey Division of Revenue in the Department of Treasury, prior to entering into a contract with the Authority. No contract shall be entered into by the Authority unless the bidder first provides proof of valid business registration. In addition, bidders are required to provide to the Authority proof of valid business registration with the Division of Revenue for any and all subcontractors that will be used to provide goods or services under the contract. A copy of the bidder’s and any subcontractor’s valid Certificate of Registration should be included with the bid submission and must be in effect prior to the contract award.

All questions regarding this requirement should be referred to the Division of Revenue hotline at (609)-292-9292 or/online: <http://www.nj.gov/treasury/revenue/forms/njreg.pdf>

B. EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE - Bidders must agree not to discriminate in employment and are required to comply with all applicable anti-discrimination laws, including those contained within *N.J.S.A. 10:2-1 through 10:2-4, N.J.S.A. 10:5-1, et seq., and N.J.S.A. 10:5-31, et seq., P.L. 1975, c. 127*. The mandatory language required by *P.L. 1975, c. 127*, as set forth in Exhibit A, shall be deemed a material term of any and all contracts, purchase agreements, and purchase orders entered into by the Authority. Bidders must acknowledge their agreement with the terms set forth in Exhibit A by signing where indicated and returning the exhibit with the bid. In addition, Bidders must affirmatively demonstrate compliance with *P.L. 1975, c. 127* by submitting with the bid the completed Affirmative Action Information Sheet, set forth in Exhibit B, and any required attachments.

- 1) Anti-discrimination provision required by *N.J.S.A. 10:2-1* In the hiring of persons for the performance of work under this contract or any subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this contract, no contractor, nor any person acting on behalf of such contractor or subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the work to which the employment relates.
- 2) No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of work under this contract or any subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex.
- 3) There may be deducted from the amount payable to the contractor by the contracting public agency, under this contract, a penalty of \$ 50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the contract; and
- 4) This contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the contract occurring after notice to the contractor from the contracting public agency of any prior violation of this section of the contract.

B-1 Equal Pay Reporting Requirement Pursuant to N.J.S.A. 34:11-56.1 et seq.

Pursuant to the Diane B. Allen Equal Pay Act (*N.J.S.A. 34:11-56.1 et seq.*), any employer, regardless of the location of the employer, that enters into a contract with the Authority to provide any service that is not a public work as defined by *N.J.S.A. 34:11-56.25 (5)* must file annual Equal Pay Reports with the New Jersey Commissioner of Labor and Workforce Development, including information regarding the compensation and hours worked by employees categorized by gender, race, ethnicity and job category. Forms and instructions for Equal Pay Reports have been adopted for services contractors, which forms must be filed annually by March 31 for the preceding year, using employment figures from any period in October through December. See <https://nj.gov/labor/equalpay.html>.

C. OWNERSHIP DISCLOSURE FORM-Bidders who are corporations, partnerships or limited liability companies must comply with P.L. 1977, c. 33, N.J.S.A. 52:25-24.2, by completing the Ownership Disclosure Form, set forth in Exhibit C, and submitting it with the bid. Failure to do so shall result in rejection of the bid.

D. POLITICAL CONTRIBUTIONS COMPLIANCE-To be eligible for an award, bidders must comply with the requirements of P.L. 2005, c. 51, N.J.S.A. 19:44 A-20.13 et seq., and with the requirements of Executive Order 117 (Corzine). No award may be made to a bidder who has not complied with these laws regarding political contributions. A more detailed explanation of these requirements is set forth in Exhibit D.

1. **ADDITIONAL DISCLOSURE REQUIREMENTS OF P.L. 2005, C. 271**

Bidders are advised of their responsibility to file annual disclosure statements on political contributions with the New Jersey Election Law Enforcement Commission (ELEC), pursuant to P.L. 2005, c. 271, section 3, if they receive contracts in excess of \$50,000 from any public entity in a calendar year. It is the bidder's responsibility to determine if filing is necessary. Failure to do so can result in the imposition of financial penalties by ELEC. Bidders must include with their bid a statement acknowledging this requirement, on the form set forth in Exhibit E. Additional information about this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us.

E. PREVAILING WAGE ACT-The New Jersey Prevailing Wage Act, *N.J.S.A. 34:11-56.26* et seq., is hereby made a part of every contract entered into on behalf of the Authority, except those contracts which are not within the contemplation of the Act. The bidder's signature on its bid is its guarantee that neither it nor any subcontractors it might employ to perform the work covered by the contract has been suspended or debarred by the New Jersey Department of Labor and Workforce Development for violation of the provisions of the Prevailing Wage Act and/or the Public Works Contractor Registration Act. The bidder's signature on its bid is its guarantee that both it and any subcontractors it might employ to perform the work covered by the contract will comply with the provisions of the Prevailing Wage and Public Works Contractor Registration Acts, where required.

F. PUBLIC WORKS CONTRACTOR REGISTRATION ACT-The New Jersey Public Works Contractor Registration Act requires all contractors, subcontractors and lower tier subcontractors who bid on or engage in any contract for "public work," as defined in *N.J.S.A. 34:11-56.51*, to be first registered with the Department of Labor and Workforce Development. No vendor or subcontractor, including lower tier subcontractors, shall engage in the performance of any public work subject to the contract unless they are registered pursuant to this Act. Bidders can submit a valid copy of their Public Works Contractor Registration Certificate and valid copies of the Registration Certificates for all subcontractors along with the bid, but the certificate(s) must be submitted prior to contract award. The Registration Certificate(s) shall be maintained at the worksite and shall be made readily available for inspection at any time. Pursuant to *N.J.S.A. 34:11-56.55* applications for registration shall not be accepted as a substitute for a Registration Certificate for subcontractors.

Any questions regarding this requirement should be directed to the Division of Wage and Hour Compliance, Department of Labor and Workforce Development at (609) 292-9464.

G. FOREIGN CORPORATION-If applicable, the bidder shall register as a “Foreign Corporation” with the Secretary of the State of New Jersey, designating a resident agent for the service of process. Foreign corporations must obtain a certificate of authority to do business in NJ pursuant to *N.J.S.A. 14A:13-3*. Written proof of such registration must be included with the bid submission.

H. SMALL BUSINESS ENTERPRISE SET-ASIDE CONTRACT FOR GOODS AND SERVICES

It is the policy of the Authority that small business enterprises (“SBE”) as determined and defined by the State of New Jersey, Division of Revenue and Enterprise Services (“Division”) in the Department of the Treasury (*N.J.A.C. 17:13-1.2*) have the opportunity to compete for and participate in the performance of contracts and subcontract for construction and for the purchase of goods and services. The Authority further requires that its contractors/vendors agree to take all necessary and responsible steps, in accordance with *N.J.S.A. 52:32-17 et seq.* and *N.J.A.C. 17:13-1 et seq.* to ensure that SBE’s have these opportunities, as an aid in meeting the commitment of its SBE Programs. When applicable the Authority will designate the contract as a SBE Set-Aside Contract. In such cases requests for bid proposals shall be confined to businesses registered with the Division as an SBE in either Category 1, 2, or 3. Bid proposals from businesses not designated as an SBE, when applicable, will be rejected.

I. CODE OF ETHICS: Bidders are advised that the Authority has adopted the New Jersey Uniform Code of Ethics, a copy of which can be viewed by going to the following web site: <http://nj.gov/ethics/docs/ethics/uniformcode.pdf> By submitting a bid, bidders agree to be subject to the intent and purpose of said Code and to the requirements of the New Jersey State Ethics Commission.

- 1) No vendor shall pay, offer to pay, or agree to pay, either directly or indirectly, any fee, commission, compensation, gift, gratuity, or other thing of value of any kind to any State officer or employee or special State officer or employee, as defined by *N.J.S.A. 52:13D-13b.* and e., in the Department of the Treasury or any other agency with which such vendor transacts or offers or proposes to transact business, or to any member of the immediate family, as defined by *N.J.S.A. 52:13D-13i.*, of any such officer or employee, or any partnership, firm, or corporation with which they are employed or associated, or in which such officer or employee has an interest within the meaning of *N.J.S.A. 52:13D-13g.*
- 2) The solicitation of any fee, commission, compensation, gift, gratuity or other thing of value by any State officer or employee or special State officer or employee from any State vendor shall be reported in writing forthwith by the vendor to the Attorney General and the Executive Commission on Ethical Standards.
- 3) No vendor may, directly or indirectly, undertake any private business, commercial or entrepreneurial relationship with, whether or not pursuant to employment, contract or other agreement, express or implied, or sell any interest in such vendor to, any State officer or employee or special State officer or employee having any duties or responsibilities in connection with the purchase, acquisition or sale of any property or services by or to any State agency or any instrumentality thereof, or with any person, firm or entity with which he is employed or associated or in

which he has an interest within the meaning of *N.J.S.A. 52:13D-13g*. Any relationships subject to this provision shall be reported in writing forthwith to the Executive Commission on Ethical Standards, which may grant a waiver of this restriction upon application of the State officer or employee or special State officer or employee upon a finding that the present or proposed relationship does not present the potential, actuality or appearance of a conflict of interest.

- 4) No vendor shall influence, or attempt to influence or cause to be influenced, any State officer or employee or special State officer or employee in his official capacity in any manner which might tend to impair the objectivity or independence of judgment of said officer or employee.
- 5) No vendor shall cause or influence, or attempt to cause or influence, any State officer or employee or special State officer or employee to use, or attempt to use, his official position to secure unwarranted privileges or advantages for the vendor or any other person.
- 6) The provisions cited shall not be construed to prohibit a State officer or employee or special State officer or employee from receiving gifts from or contracting with vendors under the same terms and conditions as are offered or made available to members of the general public subject to any guidelines the Executive Commission on Ethical Standards may promulgate as stated above.

J. VENDOR LOCATION DISCLOSURE-Pursuant to *N.J.S.A. 52:34-13.2*, every contract entered into by the Authority primarily for the performance of services shall specify that all services performed under the contract or performed under any subcontract awarded under the contract shall be performed within the United States. The statute requires all bidders to disclose the origin and location of the performance of their services, including any subcontracted services that are the subject matter of the contract. Bidders must include with their bid a completed Vendor Disclosure Form, attached hereto as Exhibit G.

J-1 DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN- Pursuant to *N.J.S.A. 52:32-58*, the bidder must certify that neither the bidder, nor one of its parents, subsidiaries, and/or affiliates (as defined in *N.J.S.A. 52:32-56(e)(3)*), is listed on the Department of the Treasury's List of Persons or Entities Engaging in Prohibited Investment Activities in Iran and that neither is involved in any of the investment activities set forth in *N.J.S.A. 52:32-56(f)*. If the bidder is unable to so certify, the bidder shall provide a detailed and precise description of such activities. Bidders must include with their bid a completed Disclosure of Investment Activities in Iran, attached hereto as Exhibit G-1.

J-2 RUSSIA INTERIM CERTIFICATION - Prior to the time a contract is awarded, pursuant to P.L.2022, c.3, the successful Bidder must certify that neither the successful Bidder, nor one of its parents, subsidiaries, or affiliates may have engaged in prohibited activities in Russia or Belarus. If the successful Bidder is unable to so certify, the Bidder shall provide a detailed and precise description of such activities to the Authority. Failure to provide such description will result in the Proposal being rendered as non-responsive, and the Authority will not be permitted to contract with such person or entity, and if a Proposal is accepted or contract is entered into

without delivery of the certification, appropriate penalties, fines and/or sanctions will be assessed as provided by law.

If the Bidder certifies that the Bidder is engaged in activities prohibited by P.L. 2022, c. 3, the Bidder shall have 90 days to cease engaging in any prohibited activities and on or before the 90th day after this certification, shall provide an updated certification. If the Bidder does not provide the updated certification or at that time cannot certify on behalf of the entity that it is not engaged in prohibited activities, the State shall not award the business entity any contracts, renew any contracts, and shall be required to terminate any contract(s) the business entity holds with the State that were issued on or after the effective date of P.L. 2022, c. 3.

The Authority requests that all Bidders submit a copy of the form entitled "Certification of Non-involvement in Prohibited Activities in Russia or Belarus Pursuant to P.L.2022, c.3" with their Proposal. **Bidders must include with their bid a completed Certification of Non-Involvement in Activities in Russia, attached hereto as Exhibit J-2.**

- K. SET-OFF FOR OUTSTANDING TAX LIABILITY**-Bidders are advised that pursuant to P.L. 1995, c. 159, effective January 1, 1996, and notwithstanding any provision of the law to the contrary, the State of New Jersey has the right to set-off any tax indebtedness from payments made under contracts with the Authority. The State's rights are explained in more detail in Exhibit H, attached. Bidders must provide a copy of Exhibit H acknowledging that they have received notice of the State's right of set-off prior to contract award.
- L. MSDS REQUIREMENTS**-Any vendor, Vendor, or subcontractor who provides the Authority materials in the form of a single chemical substance or a mixture containing two or more chemical substances, or who delivers to or stores such materials at an Authority facility, must provide the Authority with a clear, legible copy of the manufacturer's most recent Material Safety Data Sheet (MSDS) for each and every one of those materials, pursuant to *N.J.A.C. 8:59-2.2(i)*.
- M. LABELING REQUIREMENTS**-Any vendor, Vendor or subcontractor who provides the Authority materials which fall under the purview of the New Jersey Worker and Community Right-to-Know-Act, *N.J.S.A. 34:5A-1 et seq.*, or who stores any such materials at an Authority facility, shall ensure that each and every container of those materials is labeled in accordance with the Act and its regulations.
- N. VOC REQUIREMENTS**-Any architectural coating, as defined by *N.J.A.C. 7:27-23.2*, provided to the Authority for its use or used and applied by any vendor or subcontractor in conjunction with an Authority project must comply with each and every requirement of the New Jersey Department of Environmental Protection's Volatile Organic Compounds in Consumer Products (VCC) regulation, *N.J.A.C. 7:27-23.1 et seq.*
- O. COMPLIANCE WITH STATE AND FEDERAL LAWS**-The vendor must comply with all local, state and federal laws, rules and regulations applicable to the contract at issue and to the work to be done thereunder.

P. SAFETY & HEALTH REQUIREMENTS-The goods, services and/or equipment provided through the contract at issue shall be so designed and installed to meet all applicable federal and state safety and health regulations and national consensus standards including, but not limited to US DOL-OSHA, NJ LWD-PEOSHA, NFPA and ANSI standards

Q. CHOICE OF LAW-It is agreed and understood that any contract entered into and/or purchase orders placed as a result of any RFB issued by the Authority shall be governed and construed and the rights and obligations of the parties thereto shall be determined in accordance with the laws of the STATE OF NEW JERSEY.

III. BID PREPARATION

- A. **BID SUBMISSION**-Unless the Authority has made provision for bids to be submitted online, bids must be submitted in paper format, in ink or typewritten. If space is provided on the RFB for bid details, bids must be submitted using that document. Paper bids must be signed and returned in a sealed envelope addressed to the New Jersey Turnpike Authority with the bid opening date, time and bid identification on the outside of the envelope. Bidders shall state on such form a unit price for each item and extend such unit price by multiplying same by the indicated quantities on the bids solicited by the Authority.

All bids must be received in the Authority's Purchasing Department on or before the date and time specified on the RFB. Bids received after the time indicated shall be rejected and returned to the bidder(s) unopened after being processed in accordance with established Authority procedures. The Authority will not be responsible for late postal or delivery service.

- B. **CORRECTIONS**-Any correction of an entry made on the bid should be initialed by a duly authorized representative of the bidder. If the total price is found to be incorrectly computed, discrepancies will be corrected by the Authority on the basis of the written unit prices, and determination of the low bidder will be made on the basis of the correct total price so determined.
- C. **BID PRICES**-All prices quoted shall be firm and not subject to increase during the term of the contract, unless otherwise specified in the RFB. Prices shall include transportation and delivery to the site designated by the Authority in the RFB. All delivery charges shall be borne by the vendor.
- D. **PAYMENT TERMS**-The bidder shall state the terms, if any, requested for the Authority to make payment within a certain period of time after receipt of the bidder's invoice.
- E. **ALTERNATES**-All items are to be quoted as specified in the RFB or as an approved equivalent. In those cases when an alternate product is offered, it is the bidder's responsibility to provide detailed specifications, brand, make and model of the alternate offered, in the bidder's response/bid submission. In the event a bidder fails to take exception to the published bid specifications, the Authority shall evaluate the bid as offering the specified product/service. The Authority shall determine, at its sole discretion, if any alternate product offered is acceptable as an approved equivalent.

In the event the Authority specifies a model number or item that has been replaced/superseded by another model number or item, the bidder may quote the replacement item as an alternate. In this case, the bidder must specify the manufacturer and model number of the replacement item on the response/bid submission and must supply detailed descriptive literature and/or prints with that submission. The Authority will evaluate the proposed item to determine, in its sole discretion, whether it is an approved equivalent.

IV. BIDDER GUARANTEES AND MISCELLANEOUS CONTRACT REQUIREMENTS

- A. WARRANTY-**The bidder hereby represents and warrants that the equipment offered is standard new equipment, latest model of regular stock product, with parts regularly used for the type of equipment offered, that such parts are all in production and none likely to be discontinued; also, that no attachment or part has been substituted or applied contrary to manufacturer's recommendations and standard practice.

The bidder shall unconditionally guarantee all new equipment for a term of one year from time of acceptance by the Authority unless specified otherwise in the RFB and shall render prompt service of such equipment without charge, regardless of geographic location. The bidder shall maintain sufficient quantities of parts necessary for proper service to equipment at distribution points and service headquarters.

- B. BID SECURITY-**Bidder shall submit with its bid proposal, fully executed by its bonding company and itself, either: (1) the standard form Authority Letter of Surety (attached hereto as Exhibit I), or (2) the standard form Authority Proposal Bond (attached hereto as Exhibit J), in the amount of 10% of its bid price. In lieu of the Letter of Surety or Proposal Bond, the bidder may elect to furnish with its bid proposal a Cashier's check in the amount of 10% of the bid price as a performance warranty deposit. This bid surety will be held by the Authority until award of the contract to ensure compliance by the successful bidder with the terms and obligations of the bid including, but not limited to, delivery date.
- C. CONTRACT BOND-**The vendor shall, within ten (10) calendar days of receipt of the Notice of Award, furnish and deliver the Contract Bond on the standard form of the Authority, attached hereto as Exhibit K. The Contract Bond shall be in a sum of up to 100% of the total amount bid for the contract, as specified in the RFB, and shall be maintained by the vendor until final payment is made. In the event of insolvency of the Surety, the vendor shall forthwith furnish and maintain other Surety satisfactory to the Authority.
- D. ELECTRONIC PAYMENT -** With the award of this contract, the successful vendor(s) will be required to receive their payment(s) electronically and invoices should be emailed to; invoicefb@njta.com In order to receive your payments via automatic deposit from the Authority, complete and return the "Authorization Agreement for Direct Payments (ACH Credits)" Form with an **original voided check or bank letter**. The form must include ABA number (routing or transit number), bank account number and if the bank account is a checking or savings account. The form and instructions are located in the Instruction to Bidders on the Authority's website <http://www.state.nj.us/turnpike/purchasing.html>. The completed form along with the required voided check or bank letter should be emailed to achvendor@njta.com

E. NON-COLLUSION-. The bidder's signature on its bid is its guarantee that said bidder has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the referenced contract; and that all statements contained in the bid and any additional statements requested by the Authority are true and correct, and made with full knowledge that the Authority relies upon the truth of the statements contained therein in awarding the contract.

The bidder's signature on its bid is its guarantee, in accordance with *N.J.S.A. 52:34-15*, that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by the bidder for the purpose of securing business.

V. INSURANCE AND INDEMNIFICATION

A. INSURANCE-The bidder shall procure and maintain at its own expense for the entire term of the contract insurance for liability for damages imposed by law and assumed under this contract, of the kinds and in the amounts hereinafter provided. All insurance companies used must be authorized to do business in the State of New Jersey and must carry an A.M. Best Rating of A-/VII or better. Before commencing any services hereunder, the bidder shall furnish to the Authority a certificate(s) of insurance. The Authority reserves the right to request and obtain complete copies of all insurance policies showing that it has complied with this Section. All certificate(s) and notices of cancellation or change shall be mailed to: Director, Purchasing Department, New Jersey Turnpike Authority, P.O. Box 5042, Woodbridge, New Jersey 07095. Upon request, the bidder shall furnish the Authority with a certified copy of each policy itself, including the provision establishing premiums.

The type and minimum limits of insurance shall be:

1. **Commercial General Liability Insurance.** The minimum limits of liability for this insurance per accident shall be as follows:

- Bodily injury and property damage each occurrence \$2,000,000.00
- Personal injury each occurrence \$2,000,000.00
- General Aggregate \$2,000,000.00
- Products and Completed Operations Aggregate \$2,000,000.00
- Fire Damage Legal Liability \$100,000.00
- Medical Payments \$5,000.00

The above required Commercial General Liability Insurance shall name the Authority, its Commissioners, officers, employees, and agents as additional insureds. The coverage to be provided under this policy shall be provided on the ISO CG 00 01 Form or its equivalent. The insurance policy shall be endorsed to include Personal Injury, Broad Form Property Damage, Contractual Liability (including the deletion of the coverage restriction related to work conducted within fifty (50) feet of a railroad), Products/Completed Operations, Independent Consultants and XCU if applicable. Products/Completed Operations coverage shall remain in force for a period of two (2) years following the completion and/or termination of the contract.

2. **Business Automobile Liability Insurance.** The Comprehensive Automobile Liability policy shall cover owned, non-owned, and hired vehicles with minimum limits as follows:

Combined Single Limit of Liability for Bodily Injury or Property Damage for any one accident: \$2,000,000. This policy shall include an endorsement amending the Contractual Liability coverage to delete the exclusion for work done within fifty feet of the railroad, an MCS 90 as required by law and the ISO CA 99 48.

This policy shall name the Authority, its Commissioners, officers, employees, and agents as additional insured.

3. **Workers Compensation and Employers' Liability Insurance.** Workers Compensation Insurance shall be provided in accordance with the requirements of the laws of the State of New Jersey and shall include an All-States endorsement or similar statement in the policy declarations, extending coverage to any state which may be interpreted to have legal jurisdiction. Employers' Liability Insurance shall be provided with a limit of liability of not less than \$1,000,000 for each accident.

4. **Umbrella Liability Insurance.**

Umbrella liability insurance is required with limits **in excess** of those underlying policies stated under parts (a) Commercial General Liability, (b) Commercial Automobile Liability and (c) Employers' Liability with minimum limits as follows:

Minimum limit each occurrence and annual aggregate.....\$3,000,000
Limits can be achieved in any combination of primary and excess limits.

This policy shall name the Authority, its officers, employees, and agents as additional insured.

5. **Certificate and Endorsement Requirements**

Each of the above required policies shall contain the endorsements as stated below:

- (a) Sixty (60) days' notice of cancellation or any restriction in coverage by registered mail to the Authority.
- (b) All policies, except Workers Compensation and Employers' Liability Insurance, shall contain a waiver of subrogation clause in favor of the Authority.
- (c) With respect to the Workers' Compensation and Employers' Liability, this policy shall contain a waiver of subrogation in favor of the Authority, where allowed by law.
- (d) With respect to Commercial General Liability and Automobile Liability policies, the other insurance clause under each policy shall be amended to read as follows: "This policy will act as primary insurance and not contribute with policies issued to the Authority."

The vendor shall also require that all of its contracting parties comply with the insurance requirements stated above including providing evidence of such insurance coverages in the same manner as stated above.

Due to future changes in economic financial and/or insurance market conditions the Authority at its discretion may modify the above stated insurance requirements.

NOTWITHSTANDING THAT MINIMUM AMOUNTS OF INSURANCE COVERAGE CARRIED OR REQUIRED TO BE CARRIED BY THE BIDDER ARE SPECIFIED HEREIN, THE LIABILITY OF THE BIDDER SHALL NOT BE LIMITED TO THE AMOUNTS SO SPECIFIED AND SHALL EXTEND TO ANY AND ALL LIABILITY IN EXCESS OF THE INSURANCE COVERAGES SO PROVIDED NOR SHALL THESE MINIMUM LIMITS PRECLUDE THE AUTHORITY FROM TAKING ANY ACTION AVAILABLE TO IT UNDER THE PROVISIONS OF THE CONTRACT OR OTHERWISE IN LAW.

B. INDEMNIFICATION-Vendor agrees to defend, indemnify and save harmless the Authority, its Commissioners, officers, employees, and agents and each and every one of them against and from all liabilities, judgments, threatened, pending or completed actions, suits, demands for damages or costs of every kind and description actually and reasonably incurred (including attorney's fees and costs and court costs) (collectively "Liabilities") including, without implied limitations, Liabilities for damage to property or Liabilities for injury or death of the officers, agents and employees of either the vendor or the Authority, resulting from any act or omission or willful misconduct of the vendor or any of its officers, agents, sub-consultants, or employees in any manner related to the subject matter of the contract. In the event that the vendor fails to defend, indemnify and save harmless the Authority, its Commissioners, officers, employees, and agents, and each and every one of them, in accordance with this Section, any money due to the vendor under and by virtue of the contract as shall be considered necessary by the Authority may be retained by the Authority and held until any and all liabilities shall have been settled and suitable evidence to that effect furnished to the Authority. The obligations in this Section shall survive the termination, expiration or rescission of the contract.

C. PATENT INDEMNIFICATION-The vendor hereby agrees that it will indemnify, defend, and save harmless the Authority, its Commissioners, officers, agents and servants from all suits, actions, claims and judgments of any kind or character whatsoever for infringement of patent, trademark or copyright regarding the items bid herein that may be brought by any person, corporation, or firm.

VI. DELIVERY REQUIREMENTS

A. DELIVERY DATE-A FIRM delivery date must be stated on the bid. Statements such as "stock" or "immediate" are not acceptable. Where the RFB calls for delivery within a specified time, it shall be indicated in the bid whether delivery will be made within the time specified.

B. F.O.B.-Price shall include delivery to the Authority F.O.B. destination, freight paid to any destination on the New Jersey Turnpike or Garden State Parkway. No additional charge will be allowed for any transportation cost resulting from partial shipments made at vendor's convenience when a single shipment is ordered. Prices quoted are firm throughout the term of the contract for complete delivery of quantities specified.

Bids submitted on an F.O.B. destination basis are mandatory; however, in instances where customs of the trade or unusual circumstances dictate F.O.B. shipping point, an estimate of the shipping charges must be noted on the bid and may be accepted in the Director's sole discretion. In such cases, actual shipping charges are to be prepaid and added to the invoice.

C. DELIVERY-Upon award of the contract:

1. Deliveries shall be made at such time and in such quantities as ordered in strict accordance with conditions stated in the RFB.
2. Deliveries may be set on a scheduled basis as arranged between the Authority and the vendor. It shall be the responsibility of the vendor to maintain an adequate supply stock.
3. The vendor will be responsible, at the point of delivery, for the delivery of material in such quality and condition as required by Paragraph IV.A. hereof and in accordance with good commercial practice.
4. Items delivered must be strictly in accordance with those bid upon.
5. As applicable, bidders must state in the space provided on the RFB/bid solicitation documents the number of days required to make delivery after notification to ship.
6. In the event delivery is not made within the number of days stipulated, the Authority may purchase the required material from any available source. The difference in price, if any, will be paid by the vendor failing to meet its commitments.

VII. OTHER TERMS AND CONDITIONS

A. CONTRACT PERIOD- Except as otherwise stated in the RFB, the term of the contract shall be for one (1) year, with the option to extend for two (2) one-year options, at the Authority's discretion, and with vendor's concurrence.

B. EXTENSION OPTION-If, in the opinion of the Director, it is in the best interest of the Authority to extend any contract beyond the original term, for a period of all or any part of a year, the vendor will be so notified of the Director's intent, prior to the expiration date of the existing contract. The Authority reserves the right to make up to two extensions of this contract for not more than one year each. If the extension is acceptable to the Authority at the original prices and on the original terms, notice will be given to the vendor by the Director in writing. If the original contract required a Contract Bond, a new Contract Bond must be submitted to cover the period of the extension. The same insurance requirements will be required for each extension period.

C. TERMINATION OF CONTRACT-The contract awarded may be terminated by the Authority at any time for inadequate or improper performance, or for breach of any terms, conditions, or obligations of the contract by the vendor, as determined by the Authority, or if the vendor shall make an assignment for the benefit of creditors, or file a voluntary petition in bankruptcy, or if an involuntary petition in bankruptcy is filed against the vendor and the act of bankruptcy therein alleged is not denied by the vendor, or if denied, is found by a court or jury. Further, the Authority reserves the right to terminate any contract for any reason provided written notice has been given by the Director to the vendor at least thirty (30) days prior to such proposed termination date.

The notice of termination shall be in writing and shall be effective upon receipt by the vendor. Upon termination, the Authority shall be liable only for payment for goods or services properly delivered or performed in accordance with the contract. The Authority shall have the right to purchase non-delivered goods, to replace defective goods or services on the open market and hold the vendor liable for the difference between the price set forth in the contract for such goods or services and the prices paid on the open market or pursue any other right available by law. In addition, the Authority shall have the right, without the necessity of court proceedings, to recover all equipment, material or supplies that are the property of the Authority and have been entrusted with the vendor to be used in the performance of said contract. Nothing in this paragraph is intended to limit the Authority's right to legally pursue all costs which exceed the amount due and owing the vendor under said contract. The list of remedies in this paragraph is not exclusive.

- D. SCOPE-**The total quantities of any contract are estimated. There is no guarantee of any minimum quantity. It is understood and agreed that contract prices shall cover the quantities actually required and ordered by the Authority during the term of the contract, whether more or less than the approximate quantity stated.
- E. BIDDERS FACILITIES-**The Authority reserves the right to inspect the bidder's establishment before making an award.
- F. TESTING-**The Authority reserves the right to have the material tested prior to the award and during the contract by an independent testing laboratory, to determine if the material meets the specifications of the RFB. If required for testing purposes, the low bidder shall submit a reasonable quantity of the product as samples. If these samples prove satisfactory, the contract shall be awarded. If they do not prove satisfactory, a test shall be made of the next low bidder's sample, until satisfactory products are found to meet requirements. Should the laboratory find that any shipment does not meet specifications, the Authority shall have the right to reject same.
- G. INSPECTION-** All work done and supplies furnished shall be subject to inspection, testing and rejection by the Authority, or its representatives, at all times and places, both during manufacture and at destination. After award of the contract, should the result of any test or inspections show that the material supplied fails to meet the requirements of the Authority, the material shall be rejected and immediately replaced by the vendor. Rejected supplies or materials will be returned at the vendor's risk, and all inspection, handling, and transportation charges to and from the Authority's delivery site will be assumed by the vendor. The vendor shall bear any and all expenses resulting from delay caused by failure to meet test or inspection standards. Should the Authority for any reason decide to accept any shipment which fails to meet specifications, the Authority may make an appropriate price adjustment with regard to same.

- H. AWARDS**-Comparison of bids will be based on the total price stated in the bid and an award will be based on the total price, terms and delivery date given by the bidder. If the total price is found to have been incorrectly computed, discrepancies will be corrected by the Authority on the basis of the unit prices and a determination of the low bidder will be made on the basis of the corrected total price. The Authority shall not be liable for any failure on its part to detect or correct errors, and the Authority's action in connection therewith shall not give rise to any rights to the bidder.
- I. NOTICE TO VENDORS AND AUTHORITY DEPARTMENTS**-The Authority is authorized to order, and vendors are authorized to ship only those items covered by the contract. If a review of orders placed by the Authority reveals that material other than that covered by the contract has been ordered and delivered, the Director will take such steps as are necessary to have the material returned regardless of the time elapsed between the date of delivery and discovery of the violation. A full refund to the Authority by the vendor will be required.
- J RIGHT TO AUDIT**-Vendor shall keep and maintain proper and adequate books, records and accounts accurately reflecting all costs and amounts billed to Authority under the contract at issue. Authority, its employees, officers, or representatives shall have the right upon written request and reasonable notice, to inspect and examine all of the vendor's books and records related to the contract. Such records shall be retained by vendor for at least five (5) years from the termination of the contract. In no event shall books and records be disposed of or destroyed of prior to five (5) years from the termination of the contract or during any dispute or claim between the Authority and vendor with regard to the contract at issue.
1. In accordance with the New Jersey Office of the State Comptroller ("OSC") document retention policy *N.J.A.C. 17:44-2.2* - The vendor shall maintain all documentation related to products, transactions, or services under this contract for a period of five years from the date of final payment. Such records shall be made available to the OSC upon request.
- K. TAXES**-The Authority is exempt from Federal Excise Tax, New Jersey State Sales and Use Tax and other tax as applicable.
- L. TRANSFER OF BUSINESS**-It is understood by all parties that, if, during the term of the contract, the vendor disposes of its business by sale, transfer or by any means to another party, all obligations are transferred to such purchaser.

M. INTERAGENCY COOPERATIVE PURCHASING-Pursuant to *N.J.S.A. 27:23-6.1(a)*, vendors may receive inquiries by the entities listed below, with respect to extending this contract to them based upon the same prices, terms, and conditions:

South Jersey Transportation Authority
New Jersey Sports & Exposition Authority
New Jersey Meadowlands Commission
New Jersey Water Supply Authority
Port Authority of New York & New Jersey
Delaware River Port Authority
Higher Education Student Assistance Authority

N. CONTRACT CHANGES-During the term of contract, no change will be permitted in any of its conditions and specifications unless the vendor receives written approval from the Director.

Should the vendor find at any time that existing conditions make modification in requirements necessary, the vendor shall promptly report such matter to the Director for consideration and decision.

O. SUBCONTRACTING OR ASSIGNMENT-The contract may not be subcontracted or assigned by the vendor, in whole or in part, without the prior written consent of the Director. In the event that bidder proposes to subcontract some or all of the services to be provided under the contract, it shall state so in its bid and attach for approval a list of said subcontractors and an itemization of the goods and/or services to be supplied by them.

P. REJECTION OF BIDS-Failure to comply with mandatory requirements of the bid shall be considered grounds for rejection. The Authority retains the right to reject any or all bids, to waive informalities and minor irregularities and to rebid the entire contract.

Q. LIABILITIES OR DEBTS OWED TO THE AUTHORITY- The failure by any Contractor or subcontractor during the term of the Contract to satisfy in a timely manner any outstanding debts or fees owed to the Authority, whenever incurred, including but not limited to those related to nonpayment of tolls or administrative fees, as required by *N.J.A.C. 19:9-1.19* and *N.J.A.C. 19:9-9.2*, shall be grounds for suspension or termination of the Contract, in the sole discretion of the Authority.

EXHIBIT A
MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq., N.J.A.C. 17:27

GOODS, PROFESSIONAL SERVICES AND GENERAL SERVICE CONTRACTS

During the performance of this contract, the contractor agrees as follows:

- A. The Contractor or Subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality, or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment and that employees are treated during employment without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.
- B. The Contractor or Subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity, or expression, disability, nationality or sex.
- C. The Contractor or Subcontractor will send to each labor union with which it has a collective bargaining agreement a notice, to be provided by the agency contracting officer, advising the labor union of the Contractor's commitments under this chapter and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The Contractor or Subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to *N.J.S.A. 10:5-31 et seq.*, as amended and supplemented from time to time, and the Americans with Disabilities Act.
- E. The Contractor or Subcontractor agrees to make good faith efforts to meet targeted county employment goals established in accordance with *N.J.A.C. 17:27-5.2*.
- F. The Contractor or Subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities and labor unions, that it does not discriminate on the basis of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

- G. The Contractor or Subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personal testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

- H. In conforming with the targeted employment goals, the Contractor or Subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

- I. The Contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:
 - i. LETTER OF FEDERAL AFFIRMATIVE ACTION PLAN APPROVAL
 - ii. CERTIFICATE OF EMPLOYEE INFORMATION REPORT
 - iii. EMPLOYEE INFORMATION REPORT FORM AA302

The Contractor and its Subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N.J.A.C. 17:27**

Submitted by:

Firm Name: _____

Signature: _____

Print Name: _____

Title: _____

Date: _____

EXHIBIT B
AFFIRMATIVE ACTION INFORMATION SHEET

BIDDERS ARE REQUIRED TO SUBMIT ONE OF THE FOLLOWING FORMS RELATING TO COMPLIANCE WITH AFFIRMATIVE ACTION REGULATIONS. **PLEASE COMPLETE AND RETURN THIS FORM AND ANY REQUIRED DOCUMENTS WITH THE BID.**

1. The bidder has a Federal Affirmative Action Plan Approval which consists of a valid letter from the United States Department of Labor Office of Federal Contract Compliance Programs (Good for one year of the date of letter).

YES _____ NO _____

If Yes, a photocopy of the Letter of Approval is to be submitted with the bid.

(OR)

2. The bidder has submitted an Affirmative Action Employee Information Report (Form AA302) to the State Treasurer, and the State Treasurer has approved said report pursuant to *N.J.A.C. 17:27-4.6*.

YES _____ NO _____

If Yes, a photocopy of the Certificate of Employee Information Report is to be submitted with the bid. (Expiration Date on Certificate)

Certificate Number _____

(OR)

3. The bidder has submitted an Employee Information Report (Form AA302) to the State Treasurer, and the State Treasurer has not yet approved said report.

YES _____ NO _____

If Yes, a photocopy of the Form AA302 is to be submitted with the bid.

If you are the successful Proposer and have none of the above, please contact the Procurement and Materials Management Department at **(732) 750-5300 ext. 8628** within five (5) days of notification of award for AA-302 Form. This AA-302 Form must be forwarded to the States' Affirmative Action Office with a copy returned to the Authority's Procurement and Materials Management Department.

The signature below certifies that one of the above forms of Affirmative Action evidence has been submitted, and all information contained above is correct to the best of my knowledge.

Signed _____ Date Signed _____

Print Name and Title _____

Bidder's Company Name _____

Address _____

Telephone Number _____ Fax Number _____

EXHIBIT C
OWNERSHIP DISCLOSURE FORM

BID SOLICITATION: _____ BIDDER/PROPOSER: _____

PART 1

PLEASE COMPLETE THE QUESTIONS BELOW BY CHECKING EITHER THE “YES” OR “NO” BOX. ALL PARTIES ENTERING INTO A CONTRACT WITH THE NEW JERSEY TURNPIKE AUTHORITY ARE REQUIRED TO COMPLETE THIS FORM PURSUANT TO N.J.S.A. 52:25-24.2

PLEASE NOTE THAT IF THE BIDDER/PROPOSER IS A NON-PROFIT ENTITY, THIS FORM IS NOT REQUIRED.

1. Are there any individuals, corporations, partnerships, or limited liability companies owning a **10% or greater** interest in the Bidder/Proposer?

YES NO

IF THE ANSWER TO QUESTION 1 IS “NO”, PLEASE SIGN AND DATE THE FORM.

IF THE ANSWER TO QUESTION 1 IS “YES”, PLEASE ANSWER QUESTIONS 2-4 BELOW.

2. Of those parties owning a 10% or greater interest in the Bidder/Proposer, are any of those parties individuals?

YES NO

3. Of those parties owning a 10% or greater interest in the Bidder/Proposer, are any of those parties **corporations, partnerships, or limited liability companies**?

YES NO

4. If your answer to Question 3 is “YES”, are there any parties owning a **10% or greater** interest in the corporation, partnership, or limited liability company referenced in Question 3?

YES NO

IF ANY OF THE ANSWERS TO QUESTIONS 2-4 ARE “YES”, PLEASE PROVIDE THE REQUESTED INFORMATION IN PART 2.

PART 2

PLEASE PROVIDE FURTHER INFORMATION RELATED TO QUESTIONS 2-4 ANSWERED AS “YES”.

If you answered “YES” for questions 2, 3, or 4 you must disclose identifying information related to the individuals, corporations, partnerships, and/or limited liability companies owning a 10% or greater interest in the Bidder/Proposer. Further, if one or more of these entities is itself a corporation, partnership, or limited liability company, you must also disclose all parties that own a 10% or greater interest in that corporation, partnership, or limited liability company. This information is required by statute.

INDIVIDUALS

NAME _____	DATE OF BIRTH _____
ADDRESS 1 _____	
ADDRESS 2 _____	
CITY _____	STATE _____ ZIP _____

NAME _____	DATE OF BIRTH _____
ADDRESS 1 _____	
ADDRESS 2 _____	
CITY _____	STATE _____ ZIP _____

NAME _____	DATE OF BIRTH _____
ADDRESS 1 _____	
ADDRESS 2 _____	
CITY _____	STATE _____ ZIP _____

Attach Additional Sheets if Necessary.

PART 2 continued

PARTNERSHIPS/CORPORATIONS/LIMITED LIABILITY COMPANIES

ENTITY NAME _____
PARTNER NAME _____
ADDRESS 1 _____
ADDRESS 2 _____
CITY _____ STATE _____ ZIP _____

ENTITY NAME _____
PARTNER NAME _____
ADDRESS 1 _____
ADDRESS 2 _____
CITY _____ STATE _____ ZIP _____

ENTITY NAME _____
PARTNER NAME _____
ADDRESS 1 _____
ADDRESS 2 _____
CITY _____ STATE _____ ZIP _____

Attach Additional Sheets if Necessary.

In the alternative, to comply with the ownership disclosure requirement, a Bidder/Proposer with any direct or indirect parent entity which is publicly traded may submit the name and address of each publicly traded entity and the name and address of each person that holds a 10% or greater beneficial interest in the publicly traded entity as of the last annual filing with the federal Securities and Exchange Commission or the foreign equivalent, and, if there is any person that holds a 10% or greater beneficial interest, also shall submit links to the websites containing the last annual filings with the federal securities and Exchange Commission or the foreign equivalent and the relevant page number(s) of the filings that contain the information on each person that holds a 10 percent or greater beneficial interest. *N.J.S.A 52:25-24.2.*

CERTIFICATION

I, the undersigned, certify that I am authorized to execute this certification on behalf of the Bidder/Proposer, that the foregoing information and any attachments hereto, to the best of my knowledge are true and complete. I acknowledge that the New Jersey Turnpike Authority is relying on the information contained herein, and that the Bidder/Proposer is under a continuing obligation from the date of this certification through the completion of any contract(s) with the New Jersey Turnpike Authority to notify the New Jersey Turnpike Authority in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification. If I do so, I will be subject to criminal prosecution under the law, and it will constitute a material breach of my agreement(s) with the New Jersey Turnpike Authority, permitting the New Jersey Turnpike Authority to declare any contract(s) resulting from this certification void and unenforceable.

Signature

Date

Print Name and Title

FEIN/SSN

EXHIBIT D
State Contractor Political Contributions Compliance
Public Law 2005, Chapter 51 and Executive Order 117

In order to safeguard the integrity of State government procurement by imposing restrictions to insulate the award of State contracts from political contributions that pose the risk of improper influence, purchase of access, or the appearance thereof, Executive Order 134 (McGreevey) was signed on September 22, 2004 and became effective October 15, 2004. EO134 was applicable to all State agencies, the principal departments of the executive branch, any division, board, bureau, office, commission within or created by a principal executive branch department, and any independent State authority, board, commission, instrumentality, or agency. EO134 was superseded by P.L. 2005, c. 51, signed into law on March 22, 2005 (“Chapter 51”). In September 2008, Executive Order 117 (Corzine) was signed and became effective November 15, 2008. EO117, which applies only prospectively, extends Chapter 51’s political contribution restrictions by expanding the definition of “business entity” to include, for example, more corporate shareholders and sole proprietors. EO117 and Chapter 51 contain restrictions and reporting requirements that will necessitate a thorough review of their provisions by bidders.

Pursuant to the requirements of Chapter 51 and EO117, the terms and conditions set forth in this Exhibit are material terms of any contract entered into by the Authority.

DEFINITIONS

For the purpose of this Exhibit, the following shall be defined as follows:

a) “**Contribution**” – means a contribution reportable by the recipient under the New Jersey Campaign Contributions and Expenditures Reporting Act, P.L. 1973, c. 83, N.J.S.A. 19:44A-1 et seq., and implementing regulations set forth at N.J.A.C. 19:25-7 and N.J.A.C. 19:25-10.1 et seq., made on or after October 15, 2004. As of January 1, 2005, contributions in excess of \$300 are reportable.

b) “**Business Entity**” – means any natural or legal person; business corporation (and any officer, person, or business entity that owns or controls 10% or more of the corporation’s stock); professional services corporation (and any of its officers or shareholders); limited liability company (and any members); general partnership (and any partners); limited partnership (and any partners); in the case of a sole proprietorship: the proprietor; a business trust, association or any other legal commercial entity organized under the laws of New Jersey or any other state or foreign jurisdiction, including its principals, officers, or partners. The definition of a business entity also includes (i) all principals who own or control more than 10 percent of the profits or assets of a business entity; (ii) any subsidiaries directly or indirectly controlled by the business entity; (iii) any political organization organized under section 527 of the Internal Revenue Code that is directly or indirectly controlled by the business entity, other than a candidate committee, election fund, or political party committee; and (iv) if a business entity is a natural person, that person’s spouse, civil union partner or child, residing in the same household, except for contributions by spouses, civil union partners, or resident children to a candidate for whom the contributor is eligible to vote, or to a political party committee within whose jurisdiction the contributor resides.

PROHIBITION ON CONTRACTS/BREACH OF EXISTING CONTRACT

As set forth in Chapter 51 and EO117, the Authority shall not enter into a contract to procure from any Business Entity services or any material, supplies or equipment, or to acquire, sell or lease any land or building, where the value of the transaction exceeds \$17,500, if that Business Entity has solicited or made any contribution of money, or pledge of contribution, including in-kind contributions, to a candidate committee and/or election fund of any candidate for or holder of the public office of Governor or Lieutenant Governor, or to any State, county or municipal political party committee, or legislative leadership committee during specified time periods.

Further, it shall be a breach of the terms of any contract with the Authority for any Business Entity who has been awarded the contract, during the term of the contract or any extension thereof, to:

- (i) make or solicit a contribution in violation of Chapter 51 or EO117;
- (ii) knowingly conceal or misrepresent a contribution given or received;
- (iii) make or solicit contributions through intermediaries for the purpose of concealing or misrepresenting the source of the contribution;
- (iv) make or solicit any contribution on the condition or with the agreement that it will be contributed to a campaign committee or any candidate of holder of the public office of Governor or Lieutenant Governor, or to any State, county or municipal party committee, or legislative leadership committee;
- (v) engage or employ a lobbyist or consultant with the intent or understanding that such lobbyist or consultant would make or solicit any contribution, which if made or solicited by the Business Entity itself, would subject that entity to the restrictions of Chapter 51 or EO117;
- (vi) fund contributions made by third parties, including consultants, attorneys, family members, and employees;
- (vii) engage in any exchange of contributions to circumvent the intent of Chapter 51 or EO117; or
- (viii) directly or indirectly through or by any other person or means, do any act which would subject that entity to the restrictions of Chapter 51 or EO117.

CERTIFICATION AND DISCLOSURE REQUIREMENTS

Prior to the award of any contract or agreement, the Authority shall notify any Business Entity to which it intends to award a contract of the need to submit to the Authority a completed Certification and Disclosure of Political Contributions form, as issued by the State Treasurer. **The intended awardee will receive the applicable form from the Authority's Purchasing Department to be completed and returned to the Authority for submission to the State Treasurer.**

In completing this form, the Business Entity must certify that no contributions prohibited by Chapter 51 or EO117 have been made by the Business Entity and must report all contributions the Business Entity made during the preceding four years to any political organization organized under 26 U.S.C. § 527 of the Internal Revenue Code that also meets the definition of a "continuing political committee" within the meaning of *N.J.S.A.* 19:44A-3(n) and *N.J.A.C.* 19:25-1.7. Failure

to submit the required forms will preclude award of the contract at issue, as well as future contract opportunities.

Upon approval by the State Treasurer, the Authority will issue a contract. However, if the State Treasurer determines that any contribution or action by a Business Entity poses a conflict of interest in the awarding of the contract or agreement at issue, the State Treasurer shall disqualify the Business Entity from award of such contract.

Once approved by the State Treasurer, a Business Entity's Political Contributions Certification is valid for a two (2) year period from the date of approval. If, prior to the award of a contract, the State Treasurer confirms to the Authority that the intended awardee has an approved Certification that will remain valid for the term of the contract, the Authority may waive the requirement that the awardee complete an additional Certification and Disclosure of Political Contributions form.

Any Business Entity entering into a contract with the Authority is required, on a continuing basis, to report to the Authority any contributions it makes during the term of the contract, and any extension(s) thereof, at the time any such contribution is made. Such reports shall be subject to review by the Authority and the State Treasurer. If the State Treasurer determines that any such contribution poses a conflict of interest, such contribution shall be deemed a material breach of the contract or agreement at issue.

EXHIBIT E
NEW JERSEY ELECTION LAW ENFORCEMENT COMMISSION
REQUIREMENT FOR DISCLOSURE OF POLITICAL CONTRIBUTIONS

All business entities are advised of their responsibility to file on annual disclosure statement of political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if they receive contracts in excess of \$50,000.00 from public entities in a calendar year. Business entities are responsible for determining if filing is necessary. Additional information on this requirement is available from ELEC at 888-313-3532 or at www.elec.state.nj.us

DISCLOSURE OF CONTRIBUTIONS TO NEW JERSEY ELECTION LAW
ENFORCEMENT COMMISSION IN ACCORDANCE WITH N.J.S.A. 19:44A-20.27

The undersigned Bidder submitting the bid for the goods/services herein hereby acknowledges its responsibility to file an annual disclosure statement of political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if in receipt of contracts in excess of \$50,000.00 from public entities in a calendar year. Bidder further acknowledges that business entities are solely responsible for determining if filing is necessary and that all statements contained in said bid and in this certification, are true and correct, and made with full knowledge that the New Jersey Turnpike Authority relies upon the truth of the statements contained in said bid and in statements contained in this certification in awarding the contract at issue.

I certify that I am authorized to make the foregoing statements on behalf of the Bidder and that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

AUTHORIZED SIGNATURE: _____

Print Name and Title: _____

Bidder : _____

Date: _____

EXHIBIT F
SMALL/MINORITY/WOMAN OWNED BUSINESS ENTERPRISE

If your firm is registered with the State of New Jersey as a Small Business Enterprise (SBE) and/or certified as a Woman Business Enterprise (WBE), a Minority Business Enterprise (MBE), a Veteran Owned Business (VOB) or as a Disabled Veteran Owned Business (DVOB), you must send a copy of the Registration/Certification Form(s) with your quotation.

Please check off the gross receipt category of your business if registered as an SBE

SBE CATEGORY 1	\$0- \$500,000	_____
SBE CATEGORY 2	\$500,001 thru \$5,000,000	_____
SBE CATEGORY 3	\$5,000,001 thru \$12,000,000	_____
NOT APPLICABLE		_____

SBE Registration # _____

Please check below if applicable

W B E _____ M B E _____ V O B _____ D V O B _____

COMPANY _____

SIGNATURE _____

NAME _____

TITLE _____

DATE _____

EXHIBIT G
VENDOR DISCLOSURE FORM

Please be advised that in accordance with *N.J.S.A.52:34-13.2*, the New Jersey Turnpike Authority has developed this form under the policy and procedures directed under this Order. In entering into contracts, the State contracting agencies must consider the requirements of New Jersey's contracting laws, the best interests of the State of New Jersey and its citizens, as well as applicable federal and international requirements.

The State contracting agencies shall ensure that all vendors seeking to enter into any contract in which services are procured on behalf of the State of New Jersey must disclose:

- A. The location by country where services under the contract will be performed; and
- B. Any subcontracting of services under the contract and the location by country where any subcontracted services will be performed.

THE LOCATION BY COUNTRY WHERE SERVICES UNDER THIS CONTRACT WILL BE PERFORMED:

Contractor Name: _____

Address: _____

Country: _____

Subcontractor #1 Name: _____

Address: _____

Country: _____

Subcontractor #2 Name: _____

Address: _____

Country: _____

(For additional subcontractors, attach additional copies of this form)

I certify that all information is true and correct to the best of my knowledge.

Signature: _____

Print Name: _____ Title: _____

EXHIBIT G-1
NEW JERSEY TURNPIKE AUTHORITY
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

NAME OF CONTRACTOR /BIDDER: _____

PART 1: CERTIFICATION

CONTRACTORS/BIDDERS **MUST COMPLETE** PART 1 BY CHECKING **EITHER BOX**.

FAILURE TO CHECK ONE OF THE BOXES SHALL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list follows this certification and can also be found on the State of New Jersey, Department of Treasury, Division of Purchase and Property website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Contractors/Bidders **must** review this list prior to completing the below certification. **FAILURE TO COMPLETE THE CERTIFICATION WILL RENDER A CONTRACTOR'S/BIDDER'S PROPOSAL NON-RESPONSIVE.** If the Authority finds a person or entity to be in violation of law, it shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

PLEASE CHECK THE APPROPRIATE BOX:

I certify, pursuant to Public Law 2012, c. 25, that neither the contractor/bidder listed above nor any of the contractor's/bidder's parents, subsidiaries, or affiliates is **listed** on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and I am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the CERTIFICATION below.**

OR

I am unable to certify as above because the contractor/bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the CERTIFICATION below. **Failure to provide such will result in the proposal being rendered a non-responsive** and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

Part 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the requested information below. Please provide thorough answers to each question. If you need to make additional entries, provide the requested information on a separate sheet

Name _____ Relationship to Contractor/Bidder _____

Description of Activities

Duration of Engagement _____ Anticipated Cessation Date _____

Contractor/Bidder Contact Name _____ Contact Phone Number _____

CERTIFICATION
MUST BE SIGNED BY BIDDER

I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above referenced person or entity. I acknowledge that the New Jersey Turnpike Authority (“Authority”) is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the Authority to notify the Authority in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the Authority and that the Authority at its option may declare any contract(s) resulting from this certification void and unenforceable.

FULL NAME (print): _____ SIGNATURE _____

TITLE: _____ DATE: _____



EXHIBIT G-2

**CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES
IN RUSSIA OR BELARUS PURSUANT TO P.L.2022, c.3**

CONTRACT / BID SOLICITATION TITLE _____

CONTRACT / BID SOLICITATION No. _____

CHECK THE APPROPRIATE BOX

I, the undersigned, am authorized by the person or entity seeking to enter into or renew the contract identified above, to certify that the Bidder is not engaged in prohibited activities in Russia or Belarus as such term is defined in [P.L.2022, c.3](#),¹ section 1.e, except as permitted by federal law.

I understand that if this statement is willfully false, I may be subject to penalty, as set forth in P.L.2022, c.3, section 1.d.

OR

I, the undersigned am unable to certify above because the person or entity seeking to enter into or renew the contract identified above, or one of its parents, subsidiaries, or affiliates may have engaged in prohibited activities in Russia or Belarus. A detailed, accurate and precise description of the activities is provided below.

Failure to provide such description will result in the Proposal being rendered as non-responsive, and the Authority will not be permitted to contract with such person or entity, and if a Proposal is accepted or contract is entered into without delivery of the certification, appropriate penalties, fines and/or sanctions will be assessed as provided by law.

Description of Prohibited Activity

Attach Additional Sheets If Necessary.

If you certify that the Bidder is engaged in activities prohibited by P.L. 2022, c. 3, the Bidder shall have 90 days to cease engaging in any prohibited activities and on or before the 90th day after this certification, shall provide an updated certification. If the Bidder does not provide the updated certification or at that time cannot certify on behalf of the entity that it is not engaged in prohibited activities, the State shall not award the business entity any contracts, renew any contracts, and shall be required to terminate any contract(s) the business entity holds with the State that were issued on or after the effective date of P.L. 2022, c. 3.

Signature of Authorized Representative

Date

Print Name and Title of Authorized Representative

Bidder Name

¹ Engaged in prohibited activities in Russia or Belarus” means (1) companies in which the Government of Russia or Belarus has any direct equity share; (2) having any business operations commencing after the effective date of this act that involve contracts with or the provision of goods or services to the Government of Russia or Belarus; (3) being headquartered in Russia or having its principal place of business in Russia or Belarus, or (4) supporting, assisting or facilitating the Government of Russia or Belarus in their campaigns to invade the sovereign country of Ukraine, either through in-kind support or for profit.

EXHIBIT H
NOTICE TO ALL BIDDERS
SET-OFF FOR STATE TAX

Please be advised that pursuant to P.L. 1995, c. 159, effective January 1, 1996 and notwithstanding any provision of the law to the contrary, whenever any taxpayer, partnership, or S corporation under contract to provide goods or services or construction projects to the State of New Jersey or its agencies or instrumentalities, including the legislative and judicial branches of State government, is entitled to payment for those goods or services or construction projects and at the same time the taxpayer, or the partner or shareholder of that entity, is indebted for any State tax, the Director of the Division of Taxation shall seek to set-off that taxpayer's, partner's or shareholder's share of the payment due to the taxpayer, partnership, or S corporation. The amount of set-off shall not allow for the deduction of any expenses or other deductions which might be attributable to a partner or shareholder subject to set-off under this act. No payment shall be made to the taxpayer, the provider of goods or services, or the contractor or subcontractor of construction projects pending resolution of the indebtedness.

The Director of Division of Taxation shall give notice of the set-off to the taxpayer, the provider of goods or services, or the contractor or subcontractor of construction projects and provide an opportunity for a hearing with thirty (30) days of such notice under the procedures for protests established under *N.J.S.A.* 54:49-18. No requests for conference, protest or subsequent appeal to the Tax Court from any protest under this section shall stay the collection of the indebtedness. Interest that may be payable by the State pursuant to P.L. 1987, c. 184, *N.J.S.A.* 52:32-32 et seq. to the taxpayer, the provider of goods or services, or the contractor or subcontractor of construction projects shall be stayed.

"I HAVE BEEN ADVISED OF THIS NOTICE."

COMPANY _____

SIGNATURE _____

NAME _____

TITLE _____

DATE _____

EXHIBIT I

LETTER OF SURETY

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

_____ as PRINCIPAL: and

_____ as Surety and duly qualified to transact business in the State of New Jersey, are hereby held and firmly bound unto the New Jersey Turnpike Authority in the sum by which the amount of the Contract, covering the attached proposal, properly and lawfully executed by and between the New Jersey Turnpike Authority and some third party, may exceed the amount bid by the Principal for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed, this _____ day of _____ A.D.

Two Thousand and _____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the Principal has submitted to the New Jersey Turnpike Authority a certain Proposal, attached hereto and hereby made a part hereof, to enter into a Contract in writing for Contract No. _____ of the New Jersey Turnpike Authority;

NOW, THEREFORE,

(a) If said Proposal shall be rejected by the New Jersey Turnpike Authority, or in the alternative,

(b) If said Proposal shall be accepted by the New Jersey Turnpike Authority, and the Principal shall duly execute the Contract Agreement and furnish the required Contract Bond, within the stipulated time,

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Authority may accept such Proposal; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

[Corporate Seal]

WITNESS OR ATTEST:

Principal

[Corporate Seal]

WITNESS OR ATTEST:

Surety

EXHIBIT J
PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

_____ as PRINCIPAL: and

_____ as Surety and duly qualified to transact business in the State of New Jersey, are hereby held and firmly bound unto the New Jersey Turnpike Authority in the sum of

_____ Dollars and

_____ Cents \$ _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed, this _____ day of _____ A.D.

Two Thousand and _____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the Principal has submitted to the New Jersey Turnpike Authority a certain Proposal, attached hereto and hereby made a part hereof, to enter into a Contract in writing for Contract No. _____ of the New Jersey Turnpike Authority;

NOW, THEREFORE,

- (a) If said Proposal shall be rejected by the New Jersey Turnpike Authority, or in the alternative,
- (b) If said Proposal shall be accepted by the New Jersey Turnpike Authority and the Principal shall duly execute the Contract Agreement and furnish the required Contract Bond, within the stipulated time,

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event, exceed the amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligation of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Authority may accept such proposal; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

[Corporate Seal]

WITNESS OR ATTEST

Principal

[Corporate Seal]

WITNESS OR ATTEST:

Surety

EXHIBIT K
CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____

Duly organized under the Laws of the _____
(An individual, a partnership, a corporation)

State of _____ and having a usual place of _____

_____ at _____ as

Principal, and _____ a

corporation duly organized under the Laws of the State of _____ and duly authorized to do business in the State of New Jersey and having a usual place of business at _____ as Surety, are holden and stand firmly bound and obligated unto the New Jersey Turnpike Authority, as Obligee, in the sum of _____ lawful money of the United States of America, to and for the true payment whereof we bind ourselves and each of us, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

The condition of the above obligation is such that whereas, the above named Principal did on the _____ day of _____, 201_____, enter into a contract with the Obligee, New Jersey Turnpike Authority generally described as follows: _____ which said contract is made part of this Bond the same as though set forth herein.

Now, if the said Principal shall well and faithfully do and perform the things agreed by the Principal to be done and performed according to the terms of said contract, and shall pay all lawful claims of laborers and other beneficiaries as defined by *N.J.S.A 2A:44-143* for labor performed or materials, provisions, provender of other supplies, or teams, fuels, oils, implements or machinery furnished, used or consumed in the carrying forward, performing or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit of laborers and any beneficiary as defined in *N.J.S.A 2A:44-143* having a just claim, as well as, for the Obligee herein, then this obligation shall be void; otherwise, the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said Surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of the said contract or in or to the plans or specifications therefore shall in anywise affect the obligation of said Surety on its bond, and the Surety hereby waives notice of same.

IN WITNESS WHEREOF, we have hereunto set our hands and seals

this _____ day of _____ in the year 20_____.

WITNESS OR ATTEST

[CORPORATE SEAL]

PRINCIPAL

WITNESS OR ATTEST:

[CORPORATE SEAL]

SURETY

EXHIBIT L
CERTIFICATION AND REQUEST FOR WAIVER
OF THE COMPREHENSIVE AUTOMOBILE LIABILITY INSURANCE
REQUIREMENT

Purchase Requisition # _____

I hereby request an exemption from the New Jersey Turnpike Authority's Comprehensive Automobile Liability Insurance policy for the above reference Purchase Requisition. I certify that if the company referenced below (hereinafter, "the Company") is the successful low bidder the Company will utilize a recognized, commercial third party shipper (i.e. UPS, Federal Express, DHL, U.S. Postal Service, Air Borne Express, etc..) to deliver all Goods to the New Jersey Turnpike Authority. By signing this certification, a representation is made that no vehicle either owned, rented or leased by the Company will be used for the delivery of any goods to the New Jersey Turnpike Authority, and that, any delivery made will be restricted to the use of third parties providing package delivery service in the ordinary course of business. Accordingly, a waiver of Comprehensive Automobile Liability Insurance is hereby requested.

Company (insert name of Company)

By: _____
(print and sign name)

Title

Date

EXHIBIT M

INSTRUCTIONS FOR DIRECT PAYMENTS (ACH CREDITS)

PLEASE PRINT ALL ENTRIES (except for signature)

COMPANY NAME – Enter your company’s name as registered with the New Jersey Turnpike Authority.

NJTA VENDOR ID NUMBER – Enter the number assigned to your company by the New Jersey Turnpike Authority*.

TELEPHONE NUMBER - Enter your telephone number, including area code.

EMAIL ADDRESS - Enter your email address. You will receive detailed notification of ACH payment.

DEPOSITORY NAME – Enter the name of your depository bank/financial institution.

BRANCH - Enter the name of your bank’s branch office/location.

CITY/STATE/ZIP CODE – Enter your bank’s address.

ROUTING NUMBER (DFI ID) – Enter your bank’s routing number. This is your bank’s nine position American Banking Association number, also known as the bank transit code.

ACCOUNT NUMBER – Enter your checking or savings account number. This is a variable length field.

NAME AND TITLE– Enter the name and title of the person who has the authority to accept ACH payment as an alternative to receiving check payment for your company.

AUTHORIZED SIGNATORY – Enter your signature.

If you require assistance, please call Carol Sabanos at (732) 750-5300, ext. 8149 or email her at achvendor@njta.

Following completion, forward the form (attached with the required **original** voided check or bank letter) to: New Jersey Turnpike Authority, ATTN: Accounts Payable, Finance Department/AP, PO Box 5042, Woodbridge, NJ 07095-5042 **or** you may scan and email the completed form (with the required **original** voided check or bank letter) to achvendor@njta.

New Jersey Turnpike Authority
ATTN: Accounts Payable, Finance Department
PO Box 5042
Woodbridge, NJ 07095-5042

AUTHORIZATION AGREEMENT FOR DIRECT PAYMENTS (ACH CREDITS)

Company Name _____ NJTA Vendor ID _____

Telephone Number _____ Email Address _____

I (we) hereby authorize New Jersey Turnpike Authority (NJTA) to initiate ACH credit entries to my (our) Checking Account / Savings Account (select one) indicated below at the depository financial institution named below, hereafter called DEPOSITORY.

I (we) acknowledge that that origination of ACH transactions to my (our) account must comply with the provisions of U.S. law.

Depository Name _____ Branch _____

City _____ State _____ Zip _____

Routing Number (DFI ID) _____ Account Number _____

This authorization is to remain in full force and effect until New Jersey Turnpike Authority (NJTA) has received written notification from me (or either of us) of its termination in such time and in such manner so as to afford New Jersey Turnpike Authority and DEPOSITORY a reasonable opportunity to act on it.

Name(s) _____ Title _____
(please print)

Date _____ Authorized Signatory _____

PLEASE INCLUDE AN ORIGINAL VOIDED CHECK OR BANK LETTER WITH THIS FORM.

For NJTA use only:

Received by: _____ Date: _____