

ADDENDUM No. 1

RFP No. 25-25

Screw Pump #4 and #5 Side Profile Replacement

Due: May 28, 2025 by 2:00 P.M. (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes thirty (30) pages.**

The Proposer is to acknowledge receipt of this Addendum No. 1, including all attachments in its Proposal by so indicating in the proposal that the addendum has been received. Proposals submitted without acknowledgement of receipt of this addendum may be considered non-conforming.

The following forms provided within the RFP Document should be included in submitted proposal:

- **Attachment A – City of Ann Arbor Prevailing Wage Declaration of Compliance**
- **Attachment C – City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment D - City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment E - Vendor Conflict of Interest Disclosure Form of the RFP Document**

Proposals that fail to provide these completed forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Who will be responsible for the removal of corrugated steel that covers both screw pumps?

Answer 1: Plant staff will remove steel covers.

Question 2: Is the contractor to include concrete work in order to repair any damaged areas upon removal of existing side profiles?

Answer 2: Yes any damage that occur during demolition will need to be repaired by the contractor.

Question 3: How long can one screw pump be down for?

Answer 3: Up to a couple weeks depending on the weather forecast.

Question 4: Are installation instructions available from the manufacturer?

Answer 4: Yes, Installation guidance is available and attached hereto.

- Question 5: Is lifting equipment for the project available at the WRRF?
Answer 5: No. Any equipment required to complete the project will need to be provided by the contractor.
- Question 6: Can both pumps be worked on simultaneously?
Answer 6: No. These pumps are critical to incoming flows and having both down for repair would be too high risk for the WRRF.
- Question 7: What is the anticipated timeframe of completion?
Answer 7: The WRRF's expectation is that once work starts it continues through the completion of the project. Anticipated time for completion from start of demolition 2-4weeks.
- Question 8: Is all the hardware being replace?
Answer 8: Yes. New hardware has been supplied with replacement baffles from the manufacturer.
- Question 9: Do new supports line up with old hardware?
Answer 9: Yes. It is suspected that the new supports will likely line up with the old anchor points.
- Question 10: Do you have a sign-in sheet or list of contractors that attended the prebid meeting
Answer 10: Yes, attached hereto.

Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.

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Screw Pump

General Installation Guide



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SECTION 0: INTRODUCTION

The following Method Statement is designed to help Mechanical and Civil Engineers understand the procedures for the installation of a typical Spaans Babcock Screw pump. This document should be read in conjunction with the final approved Spaans Babcock drawings as they will detail some of the specific requirements:

Reference installation drawings:

| | |
|---------------------|---|
| General Arrangement | - |
| Upper Bearing | - |
| Lower Bearing | - |

Correct execution of the installation work as described will increase the operating life of the plant. Installation as described herewith is very simple however not every situation involved in the installation of Spaans Babcock screw Pumps can be foreseen or described herein. Installation Contractor should review the jobsite in conjunction with approved drawings and become familiar with standard installation guidelines and these may affect their scope of work.



SECTION 1: SAFETY

IMPORTANT!

A screw pump can be a dangerous piece of equipment if not treated in the correct manner. In all circumstances as with all pieces of rotating equipment the equipment should be made safe before any work, inspections, modifications etc are carried out. Before removing any guards the electrical supply should be isolated and padlocked off. If it is necessary to enter the screw pump sump or screw spirals then as an extra precaution the drive belts should be disconnected and the flights wedged to prevent accidental rotation.

All personnel who work on or near the screw pump should be aware of the dangers of entering a screw pump sump due to the possibility of atmosphere deterioration. Therefore all persons must be suitably equipped with the relevant safety equipment to enter such an area

This manual describes the screw pump installation in detail with regards to design, production, maintenance and safety procedures.

For safe and correct use:

- Study this manual carefully;
- Activities at the screw pump must be performed by skilled and experienced personnel.
- Review, understand and adhere to local codes and site specific safety procedures

The screw pump and this manual are both designed with the highest possible care of safety and quality. Spaans Babcock accepts, however, no responsibility for damages or losses as a result of careless or incorrect use of the manual. Spaans Babcock does not specify any particular safety procedure and will reject all responsibility for any damage or accident during erection. It is the responsibility of the Installation Contractor to prepare their own safety procedures in concert with their specific work instructions, local and site specific regulations and company policies. .

ALL SAFETY PROCEDURES WHICH WOULD BE DEFINED BY THE CONTRACTOR WILL HAVE TO BE FOLLOWED DURING ALL THE ACTIVITIES.

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SECTION 1.1: RISK ASSESSMENT

RISK ASSESSMENT AND PREVENTATIVE ACTION FOR WORK TO BE CARRIED OUT ON SPAANS BABCOCK SCREW PUMPS.

ACTIVITY Any work associated with components of a screw pump.

RISK Accidental rotation of equipment.
ACTION Isolate and lock off power supply to all associated equipment & electrically disconnect motors. Remove v- belt drives or other driving equipment before commencing work on other parts of pump equipment.

RISK Noxious or explosive gases present in confined spaces.
ACTION Follow procedures in line with "Safe Working in Sewers and at Sewage Works" published by the National Health and Safety Committee for the water service. All personnel entering a confined space must be trained accordingly with regard to gas detection, escape sets etc. and work to the safe system of work for entering confined spaces.

RISK Accidental fall of persons or materials.
ACTION Persons working on equipment shall wear normal protective clothing proper footwear and hard hats.
Persons working in sumps shall wear a suitable harness and lifeline connected to a winch if required.
If winch is not practical then persons shall wear a suitable harness connected to a manned lifeline.
Two men shall be in attendance for any work in sumps. One to carry out such functions and the other to ensure safe working procedures.

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RISK Any hidden dangers in or around the sump such as deeper channels, further pump wells, pockets, etc.

ACTION These shall be known to the person entering the sump and shall be suitably fenced or blocked off to prevent access.

RISK Risk of drowning.

ACTION Whilst any person is working in areas considered at “risk to flooding” the top man will observe the adjacent water levels. Should this water level raise to a level considered to be the maximum, then the top man will instruct the person considered “at risk” to come out of the sump.

RISK Risk of infection from sewage in sump.

ACTION Chamber to be cleaned down. No work to be carried out by personnel until sump has been adequately cleaned out.

Persons entering areas infected by sewage should be aware of risks and have had Tetanus injections; they are also advised to have Polio injections.

They will carry out normal health and safety procedures with regard to cleanliness and treatment of minor abrasions to the skin. Suitable protective clothing should be used. On site messing facilities to be provided.

RISK Risk of ear damage due to noise from generators, compressors, concrete breakers, grinders etc.

ACTION Ear protectors to be worn when necessary.

RISK Lifting equipment / fall of equipment.

ACTION All lifting equipment to be certified, crane diagrams and weights to be provided. Lifting of any screw pump equipment should be done by experienced screw pump installation engineers. Lifting should not commence until all persons are clear of the area and persons lifting are satisfied that all is in order. Lifting should not be carried out in case of high wind velocity.

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SECTION 2: DEMOLITION AND SCREEDING PREPARATION

2.1 REMOVAL OF EXISTING SCREW PUMPS

Contractor shall be responsible for removal of existing Screw Pumps in preparation for arrival and installation of the new Spaans Babcock screw pumps. Removal of existing screw pumps shall include the screw pump bodies, bearings, bearing stands and bases, electric motors, grease lubrication systems and piping, couplings, profile plates, and other equipment as directed by the Engineer or Owner. Removed equipment shall be disposed of as directed by the Engineer or Owner except for those parts which the Owner wishes to retain.

2.2 REUSABLE PARTS

Contractor shall remove the screw pump covers and any grating which may interfere with the Installation activities. It is expected that the screw pump covers and grating will be re-used and reinstalled with the new pumps.



Existing Screw Pump Covers (if applicable) must be removed during the demolition and installation activities and then re-installed with the new pumps.

2.3 CONCRETE DEMOLITION

- A. Modify the existing civil constructions as shown on Spaans Babcock GA drawing.
- B. Existing upper and lower bearing concrete plinths (including embedded baseplates) shall be demolished and removed. Baseplate and drive plinth areas should be roughened and fitted with starter bars where shown on Spaans Babcock GA Drawing. The starter bars will be used for grouting in purposes later.

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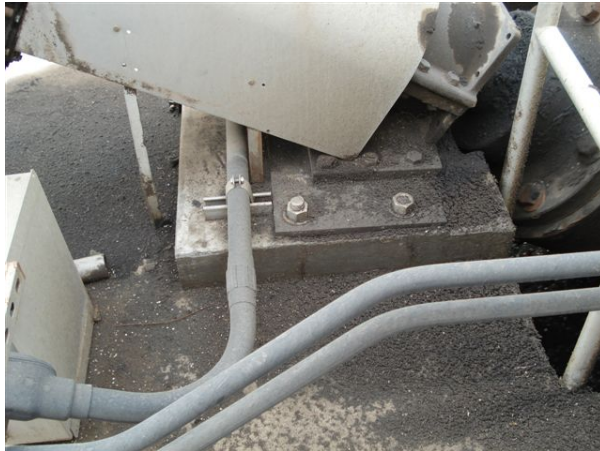
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Upper bearing and concrete plinth to be demolished



Upper bearing and concrete plinth to be demolished



Lower bearing and concrete plinth to be demolished

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- C. Remove loose grout on screw pump trough ledge where side profiles will be installed. (refer to Spaans Babcock GA drawing) NOTE: Side profiles for the new screw will be on the opposite side of the pumps compared to the existing screws. Ledge for profiles should be prepared for installation of new profiles.
- D. Grout in the concrete trough should be removed and must be roughened within approximately 1.25 inches clearance to the final screw diameter. The diameter of the trough should be approximately 2.5 inches larger than the diameter of the screw. Should the trough to screw clearance be greater than 1.25 to 1.375 inches then this area should be made up by the civil contractor prior to the screw being lifted into position. It is normal but not essential to work from the bottom upwards as breaking is found to be easier in this manner. When all the old screed and loose concrete is broken up, the rubble can then be removed using a small tested muck skip attached to a crane or similar to be disposed of by the Contractor.
- E. Drive area and existing trough shall be free from debris and liquids.
- F. Drain and clean the lower sump area (where lower bearing will be installed). Ensure that a small submersible pump is available to remove any liquid which may accumulate in the lower sump area.
- G. Contractor shall also make all electrical disconnections required for the demolition work. Electrical wiring and conduit may be re-used or replaced as directed by the Engineer and Owner.

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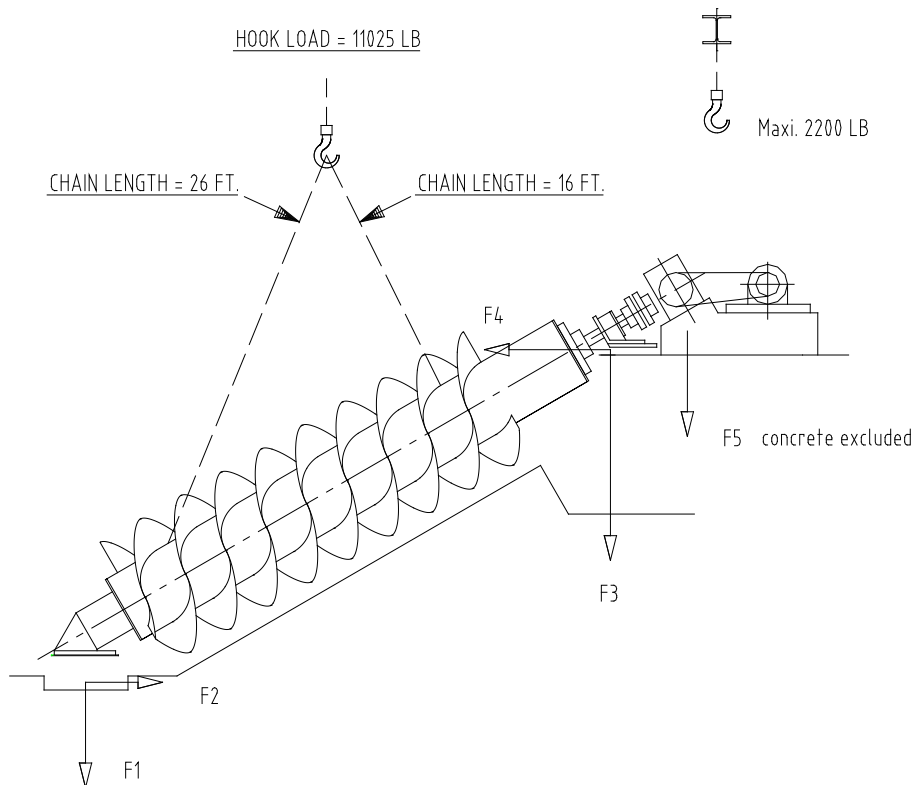
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SECTION 3: DELIVERY AND STORAGE

3.1 EQUIPMENT DELIVERY

Installation Contractor is responsible for unloading of delivered equipment at the jobsite. Screw pump bodies are delivered with lifting lugs. Lifting weights are shown on Spaans Babcock GA Drawing and identified in the Spaans Babcock Technical submittal for this project. The lifting weight drawing shown below is for reference only, please refer to the project specific GA Drawing for loading details.



| SCREW | | LOADS ON CONCRETE STRUCTURE IN KN. / lbs. | | | | TOTAL TRANSPORT WEIGHT | |
|---------|--|---|------|-------|-----|------------------------|-----------|
| | | F1 | F2 | F3 | F4 | F5 | |
| 1372 mm | | 9 | 4 | 34 | 10 | 100 | kg. |
| 54" | | 4271 | 2023 | 11015 | 443 | 2208 | 13446 lbs |

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3.2 STORAGE DETAILS

1. Screw pumps can be stored outside under most conditions. However precautions should be taken to prevent the ingress of dust/sand etc into the bearings. In areas subjected to sand storms or extreme weather; protection should be made to prevent damage to paint surfaces.

Screw pumps can also be stored in their respective troughs provided they are mounted on their bearings and grouted in. In this case they should be lubricated and turned on a monthly basis.

2. Drive units (including gearboxes and motors) should be stored in a dry heated building to prevent any condensation build up within the drive motors.
3. For periods in excess of 3 months then the gear unit should be filled completely with the relevant lubricant and rotated for several revolutions of the output shaft on a monthly basis. In the case of Electric motors fitted with anti-condensation heaters these should be connected to a temporary supply and switched on.
3. Items in packing cases such as Fittings, Gauges, Switches, etc. should also be stored in a dry heated building. Should items be stored in excess of 3 months then it is recommended that 3 monthly inspections are carried out to ensure the equipment is sufficiently protected and to rotate bearings etc.
4. Check all materials and equipment upon delivery. Inspect for damages or missing components. **Unless Spaans Babcock is notified within seven days of receipt of the equipment in writing**, Spaans Babcock will not be held responsible for any damaged or missing components.

Disregard of the above procedure will void the equipment warranty.

SECTION 4: INSTALLATION

4.1 GENERAL

The erection of Spaans Babcock screw pumps and the screeding of the concrete trough is an operation which can be simplified if carried out correctly.

We will provide a final drawing and Technical Details Submission which require the client's approval before manufacture commences. Consequently the civil work must be carried out entirely in accordance with the final approved drawing and documents. Any deviations or inaccuracies can lead to considerable problems during erection and/or operation of the screw pumps.

4.2 CIVIL WORKS

The Contractor should ensure that all civil works are in line with our approved drawings. Prior to installation the pump sumps should be free from debris and liquids with the bearing and baseplate areas concrete roughened and fitted with starter bars.

IMPORTANT:

The initial concrete trough **must** be roughly formed to within approx. 1¼" (30 mm) clearance to the final screw diameter (as per our G.A. Drawing), i.e. the diameter of the trough should be approx. 2½" (60 mm) larger than the diameter of the screw. Should the trough to screw clearance be greater than 1¼" to 1⅜" (30-35 mm) then this area should be made up by the Civil Contractor before the screw is installed.

The areas where the drive unit is fixed have to incorporate starters bars, which are used for grouting in purposes later. When pouring concrete plinths, the civil contractor should vibrate the mix in ensuring that the plinth is complete up to the underside of the baseplate and is free from any voids.

The bottom and top bearing foundation areas (recess with rebars for bottom bearing, sleeves through the floor for the top bearing) should be prepared in line with the details on our G.A. drawings. Core out required holes in the floor for upper bear as shown on Spaans Babcock GA Drawings.

The civil contractor must, throughout his work with Spaans Babcock screw pump, prevent splashing of cement, concrete, etc wherever possible. Damage to paint surfaces of Spaans Babcock equipment by others, will require rectification by others.

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4.3 MECHANICAL ERECTION

1. Every screw pump is provided with at least two lifting lugs, welded on the tube, which are the only fixings permitted for the crane slings. These lugs must not be removed after the erection. The positions of these lifting lugs is such that being in the required inclination the slings do not touch the blades.
2. For easy handling it is recommended to use a block and tackle in each chain from the crane hook to the lifting lug or alternatively 2 cranes if there is sufficient access. In this manner it is possible to maneuver the screw from its horizontal delivery position into the required position in the trough without damaging either civil works or the screw blades. Contractor is to ensure that any walkways and grating that may obstruct the installation are removed.
3. The screw pump is delivered without the top bearing and the lower bearing fitted to the screw pump body. Before lifting the screw pump in the trough, the top and lower bearing have to be mounted on the end flanges of the tube. They are both pre-adjusted for alignment in our workshop, lower bearing by a fixing bracket and top bearing with adjusting bolts. The upper bearing assembly is fed through the hole in the pump house wall / floor. Refer to the following pictures and procedures:

TO FIX UPPER AND LOWER BEARINGS TO THE SCREW PUMP BODY:

A *Screw pump upper and lower end plates have a register fit for the upper and lower bearings. Take care not to damage the register when installing the bearings*



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| | | |
|---|---|--|
| B | <p><i>Upper bearing ready for fixing to the screw. The bearing is aligned prior to shipment and held in place with shipping bolts. Do not remove the shipping bolts until directed to so in these procedures.</i></p> <div data-bbox="571 579 812 627" data-label="Text"><p>shipping bolts</p></div> |  |
| C | <p><i>Upper bearing utilizes studs complete with washer and two hex nuts for fixing to the screw body.</i></p> |  |
| D | <p><i>Upper bearing fixed to the screw pump body. Be sure to apply appropriate torque as per the torque guidelines in this manual.</i></p> |  |
| E | <p><i>Lower bearing ready for fixing to the screw pump. Bearing is shown with shipping frame. Do not remove shipping frame until directed to do so in these procedures.</i></p> <div data-bbox="524 1738 764 1787" data-label="Text"><p>shipping frame</p></div> |  |

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| | | |
|---|--|--|
| F | <i>Apply Hylomar paste (or similar fluid packing material) on the spigot/register of the screw pump end plate surface and/or on the lower Bearing end plate to seal the cavity and to prevent the entry of water after installation.</i> |  |
| G | <i>Lower bearing fixed to the screw pump. Be sure to apply appropriate torque as per the torque guidelines in this manual.</i> |  |
| H | <i>Touch up screw ends as required with touch up paint provided by Spaans.</i> |  |

4. The Contractor must establish datum points on the inside of each screw pump trough representing the touch point, chute point, and the filling point as indicated on the Spaans Babcock General Arrangement Drawing. Then the Contractor shall lift the screw into the trough and the screw is supported on packer plates in the concrete trough and adjusted to the correct position from these datums. Lift the screw in the trough.



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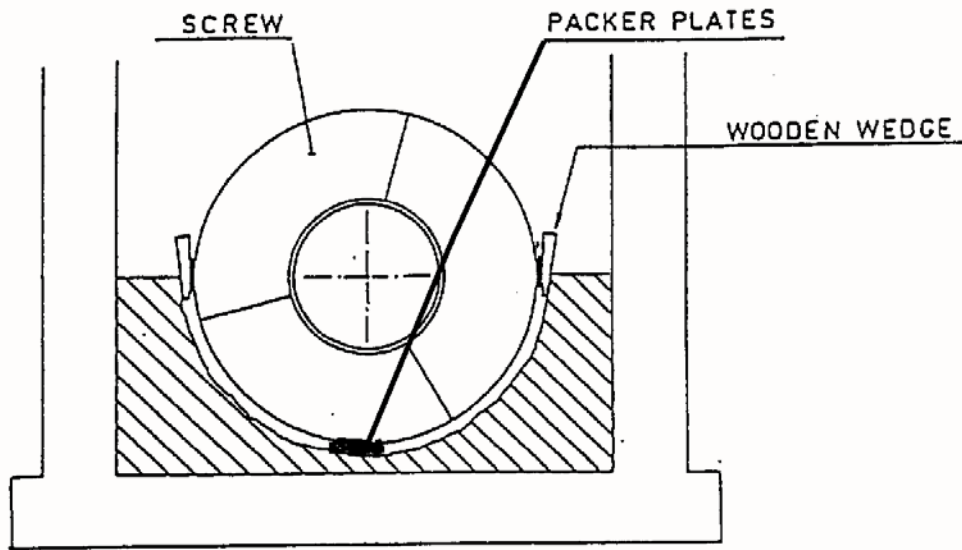
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5. The Contractor lifts the screw into the trough and the screw is supported on packer plates in the concrete trough and adjusted to the correct position based upon the established datum points. Thereafter the screw pump has to be support by a beam or beams.



6. Use suitable erection supports to hold the screw in position. Examples of erection supports:



7. The upper bearing can now be leveled horizontally and the anchor bolts are placed through the floor. The bearing alignment is preset in the factory. Do not remove shipping supports.

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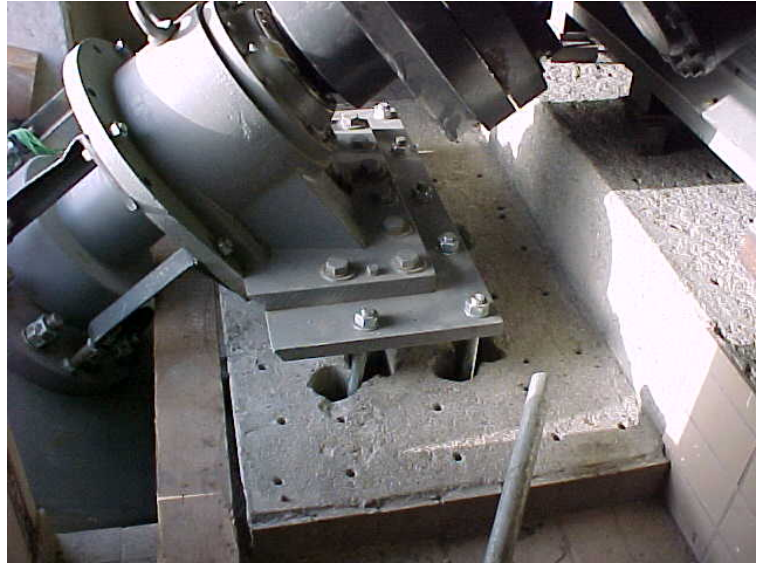
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Setting of the upper bearing assembly:



8. The lower bearing can now be positioned and leveled. The foundation bolts are fitted protruding downwards to the prepared bottom bearing foundation area as per the drawing. It is normal to tack weld the bearing anchor bolts to the starter bars to prevent disturbance when grouting.

*Starter bars up to lower bearing.
Ready for shuttering and grouting:*



*Lower bearing grouted in place
with shuttering shown.*

9. After s

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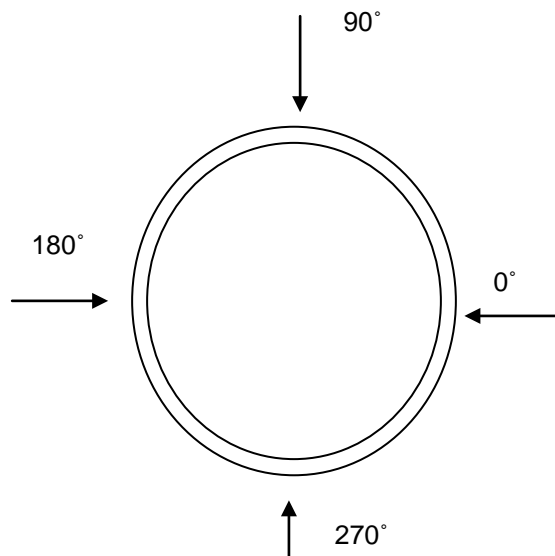
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- Use of special chemicals to speed up hardening is not recommended unless special non shrinking concrete is used due to the risk of shrinking.
10. After the bearing plinths have cured, remove shipping frames and temporary shipping fasteners from the upper and lower bearings.
 11. Tighten all fasteners to appropriate torques per the torque table in the procedure. (refer to page 20 for torque table)
 12. After the bearing plinths have cured and the shuttering has been removed the screw is turned by hand to ensure it is running freely. If not the bottom bearing needs to be re-adjusted by adding shims to beneath the base plate. When turning freely all bolts on both foundations are then pulled down and again it is checked for free rotation. Check that bearing alignment is reasonable and adjust by shimming if necessary. Bearing alignment must be checked again later by Spaans prior to screeding however poor alignment at this stage can result in additional work later for the Contractor.

Checking Bearing Alignment:

Using feeler gauges, check the spacing between the shaft and housing at the four cardinal ordinates (0°, 90°, 180°, 270°). The differences between the points of measurement must be within 0.010" for proper bearing alignment.



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13. The method of construction used to locate the drive units consists of a steel base plate to which the drive assembly is usually fixed in our facility prior to shipment. The areas where the drive unit is to be fixed must incorporate starter bars (as per our drawing), which are used for grouting in purposes later.

Typical drive unit and drive baseplate as supplied from the factory:

(Note that electrical motors will require assembly onto drive baseplate by Contractor.)



This drive unit baseplate is positioned on site in the correct position relative to the top bearing and coupling assembly after bearings have been installed and checked for alignment. This steel baseplate is packed from the existing concrete with spacers to attain the correct levels. Again we suggest to field weld this framework to the starter bars to ensure that the baseplate does not move.

Packing up the supports of the drive unit frame is done so that there is no load, either axial or radial, on the flexible coupling. See also the mounting instruction for couplings regarding clearances and alignments in the O&M manual for this project.

Once aligned the drive baseplate may then be shuttered and filled with grout by the Civil Contractor.

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14. Tightening moment hexagon head bolts



All hexagon head bolts subjected to operating forces must, depending on size and type of material, be tightened applying the force indicated in the table. This does not apply to hexagonal head bolts under which nylon washers or rubber rings are placed.

| THREAD SIZE | ST./ZINC PLATED | | S.S A4 & A2 | |
|----------------|--------------------|----------|-------------|----------|
| | 8.8 | 10.9 | 70 | 80 |
| M8 | 18 ft.lb | 27 ft.lb | 13 ft.lb | 18 ft.lb |
| M10 | 38 | 55 | 27 | 35 |
| M12 | 64 | 95 | 46 | 60 |
| M16 | 160 | 228 | 111 | 146 |
| M20 | 315 | 455 | 220 | 298 |
| M24 | 545 | 780 | 285 | 513 |
| M27 | 810 | 1140 | 300 | - |
| M30 | 1105 | 1550 | 410 | - |
| M36 | 1920 | 2730 | 600 | - |

SECTION 5: SCREEDING

5.1 Safety Guidelines for Screeding

1. Main drive motor to be disconnected, panel isolated and locked off by qualified electrician. Under no circumstances should any electrical work be carried out on the screw pumps panel during the Screeding Operation.
2. Any work needing to be done on or near the screw itself must be finalised before the motor is connected to the power supply. **Ensure that the Anti-Rotation Device is disengaged or removed from the drive unit.**
3. As most covers or floor plating will have been removed to facilitate screeding, access to screws should be cordoned off and only persons with specific duties relevant to screeding procedure should be present in the immediate area.
4. The Civil contractor must take all adequate precautions to cover and/or handrail off all open areas to the screw not required to "feed in" the screed mix. The Civil Contractor should also provide and install youngman boards or similar to give adequate safe access for the screeding operation in line with the advise of the Installation Engineer. These will be used to assist in feeding material into the screw flights.
5. When the screeding motor is connected electrically this area should be cordoned off and designated "out of bounds" to all personnel as it is not practical or possible to guard off the Vee belt drive of the screeding equipment.
6. The stop/start box and isolator unit must be carefully controlled only by authorized personnel. Make sure not to start the operation until satisfied that all safe working criteria have been met, and discontinue the operation if any safety factors are breached in any way. **During screeding process if any access to the screw or its immediate vicinity is needed the screw must be stopped, box isolated and locked off.** Wedges must then be inserted to prevent accidental rotation of the screw.
7. After screeding is completed the motor must be disconnected electrically before any work is done on the screw itself.

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8. If the possibility of hazardous conditions exists, atmosphere monitoring equipment must be used at all times in accordance with appropriate relevant safety regulations.
9. After all work on the screw is finished, Main Drive Motor must be connected by qualified electrician and all relevant guards replaced.
10. The Civil contractor shall take all precautions as necessary in accordance with appropriate relevant safety regulations to ensure the maximum safety of all personnel during the pouring of the mix and the screeding operation.
11. **It is important that the number of personnel involved in the operation be kept to the minimum number practical to complete the job for safety reasons.**

5.2 SCREEDING

1. Spaans Babcock has performed many thousands of screeding operations throughout the world and based on our experience we give the following information as a guide. Please note however that we take no responsibility for the civil content of the screeding operation.

Suggested Screed Mix:

| | | |
|--|---|---------|
| Ordinary Portland cement | : | 1 part |
| Washed sand (having particle size of 1/8" max.): | | 2 parts |
| Sika Latex (1 part per 40 parts water – sprayed on rough trough not mixed with concrete for screeding) | | |

| | |
|--------|--------------|
| Slump: | 1 to 1½ inch |
|--------|--------------|

2. Rough pre-cast surfaces to be thoroughly cleaned to remove all dirt, oil, grease and dust.
3. Set up wood forms and shuttering prior to the screeding operation to contain screed in the desired areas.

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*Shuttering shown
prior to
screeding:*

*(note screeding
bar welded to the
flights)*



4. Connect temporary screeding motor (provided by Spaans) to gearbox and temporary on/off switch for motor.

*Screeding motor
connected to
gearbox:*



5. Before commencement of screeding apply a bonding agent coat of Sealocrete or equivalent as specified by manufacturer and whilst coat is still tacky apply screed mix.
6. To the above dry mix, add a little Sealocrete whilst adding the required quantity of clean cold water to produce a slightly damp stiff mix care to be taken to ensure that water / cement ratio is kept to a workable minimum and that during and after application the mix is kept damp and allowed to cure as on mass in accordance with established building practice.
7. It is our recommendation to perform the following operations at night to avoid high temperatures and fast drying times.

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8. We also recommend that wherever possible the same personnel are used for each of the screw pumps. This will lead to a smoother operation with the personnel being familiar with their respective duties.
9. Ensure that the trough is rough and wet enough for proper attachment of the final screed.
10. Normally the trough would be kept watered for 12 hours prior to screeding.
11. It is best to mix the screed on site and lower it in using a crane and concrete skip.
12. The Installation Engineer will supervise the mixing of the screed with regards to the consistency. This ensures that the mix is of the correct consistency as this is very important for screeding. Once this has been established and screeding is underway it is essential to provide a continuous supply of screed at the same consistency. This will allow the completion of the screeding operation with the minimum amount of effort and time.
13. The first load should be dropped into the base of the screw as instructed by the Installation Engineer.
14. The screw is now driven by a screeding motor to form the trough. The trough screeding is done section by section with the civil contractor adding the grout mix when requested by the Installation Engineer. This process is done slowly (approx. 5-7 rpm), constantly stopping and starting. During these operations it may be necessary for the civil contractor to hand pack some of the grout in various areas, when screeding note the backstop so rotate in one direction. The screeding operation can take several hours to complete depending upon the screw pump size.

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Hand Packing of grout:



15. After the screeding has been completed, the screeding motor disconnected and the screw wedged to prevent accidental rotation it will be necessary to hand finish areas of the trough and finish the benching to the side of the screw pump. The civil contractor should now wash off and remove any build-up of concrete screed from the screw to prevent any paint surface damage. If the concrete is allowed to dry on the screw pump flight surface, it may create static imbalance and damage the bearings during operation. Also, once the concrete dries up on the screw flights, it is very difficult to chip it off; this will also damage the screw pump paint and the damaged areas should be coated using touch-up paint. See photo:



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16. Upon completion the trough should be covered with tarpaulin (plastic) to prevent the screed from drying too quickly under extremely fast drying conditions. If seen necessary by the civil engineers water can be sprayed on the screed provided the screed is sufficiently cured to prevent it from sagging. The screw pump may be turned on and kept running all night using the temporary screeding motor to get the correct clearance until the concrete trough sets.
17. After completion of screeding, the screeding bar has to be removed from the screw pump body, and painting damage on the flight has thereafter be rectified as described in the paint repair procedure. Refer to the paint details section in the screw pump submittal.
18. Remove temporary screeding motor and all forms/shuttering. Remove any blocks preventing rotation of the screw. Rotate screw by hand to check for points of interference.
19. Install profile plates (See section 6) and again check that screw can be rotated freely without interference.
20. Install Electric Motor on the drive baseplate and slide rails and make permanent connections. Install Anti Rotation Device on the motor shaft. Make sure all electrical connections are correct.

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| <p>NOTE: Ensure that motor wiring and direction of rotation is correct. If the electric motor is rotated the wrong way, the Anti-Rotation Device and electric motor may be damaged. Spaans Babcock will not cover this damage under equipment warranty.</p> |
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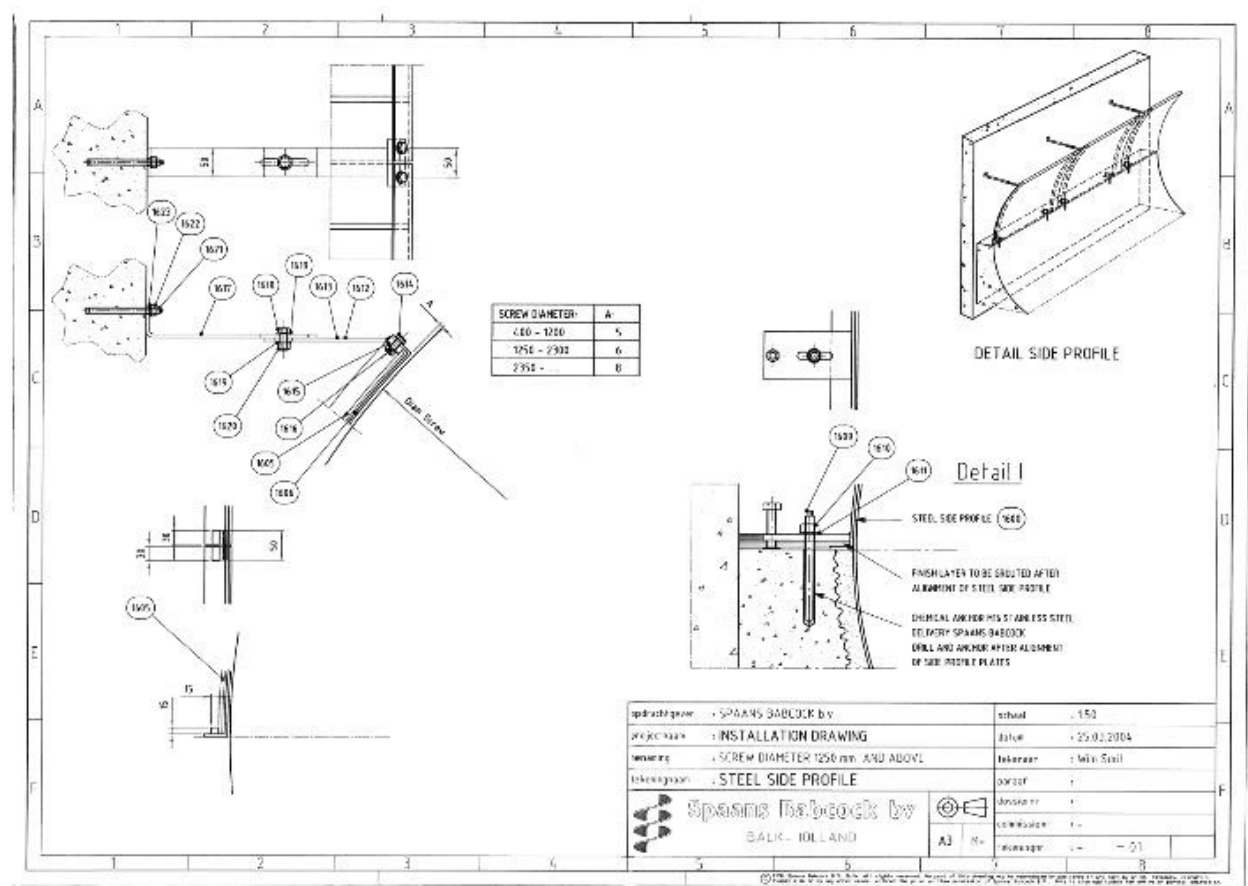


Section 6: Install Side Profile Plates, Guards, Splash Plate

1. After the screeding operation is complete, all guards covers and the splash plate should be installed using fasteners provided.
2. Profile plates should be installed as per the project drawings. Positioning of side profiles is carried out after the screeding of the trough. The side profile plates are an extension of the trough and must be installed as close to a 1/4" gap as possible without the screw striking the side profiles.

The removable side profiles are bolted with through bolts to the wall/structure and the inclined shoulder of the screw trough parallel to the screw axis.

Refer to sketch below and General Arrangement drawing for reference.



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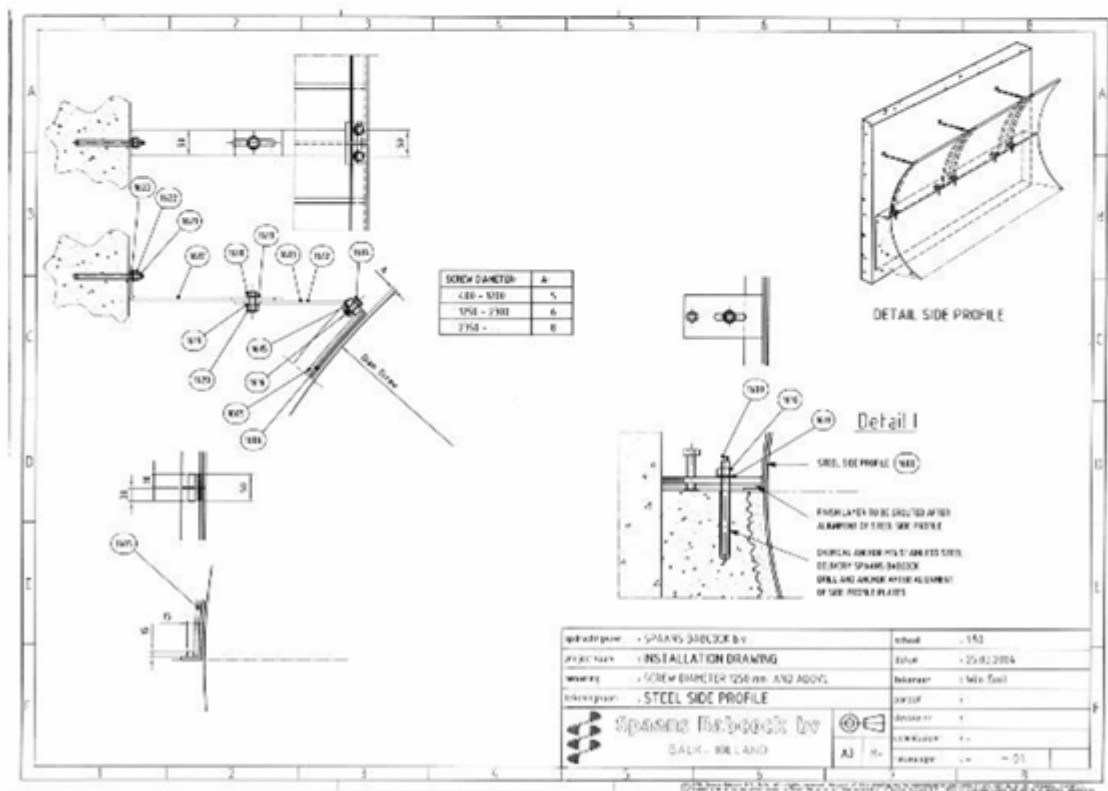


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Refer to sketch below and General Arrangement drawing for reference.



City of Ann Arbor WRRRF Pre Bid Meeting

May 15, 2025 10:00am

RFP#25-25 Screw Pump #4 and #5 Side Profile Replacement

| NAME | COMPANY | PHONE | EMAIL |
|-----------------|---------------------------|--------------|--------------------------|
| Niko Schmiedgen | Monroe Plumbing & Heating | 734-731-4578 | NikoS@monroeplumbing.com |
| Matt Shaeffer | Midwest Power/Lee | 248-770-5124 | midwestpower@hotmail.com |
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