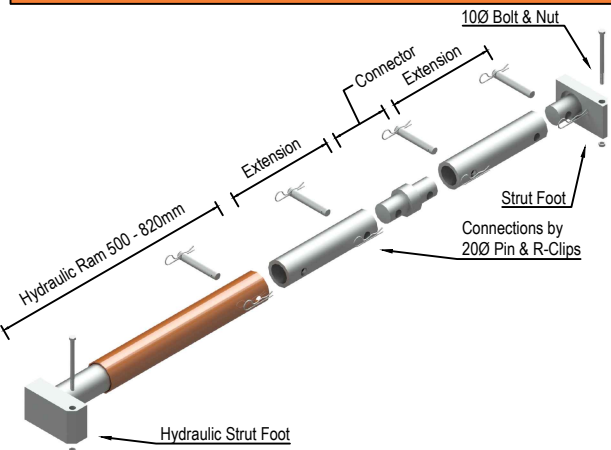
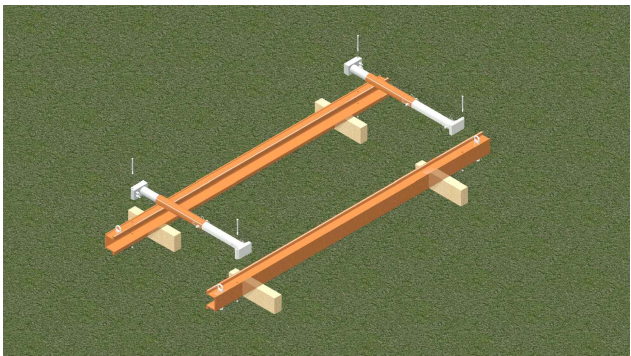


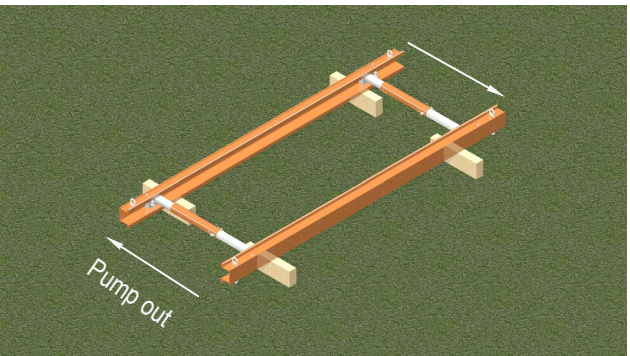
Installation Sequence - Dig & Push



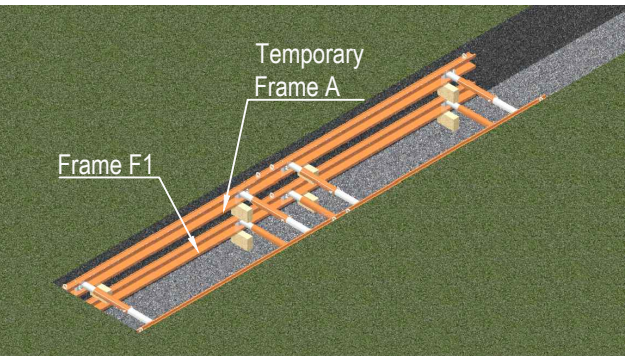
1. Assemble Waler struts to the required length by adding extension units on to the Hydraulic Ram as required.



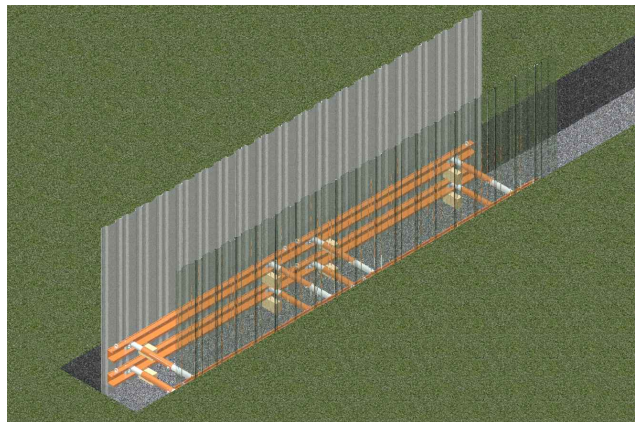
2. Lay two Aluminium Waler rails down on level ground on suitable timber bearers. Install the two Waler Struts and connect to the rails using M10 Bolts (Detail A) and noting the correct orientation (see below). If preferred, the legs can be assembled within the excavation at the level specified in the Temporary Works Design. Follow steps 1-3 within the excavation.



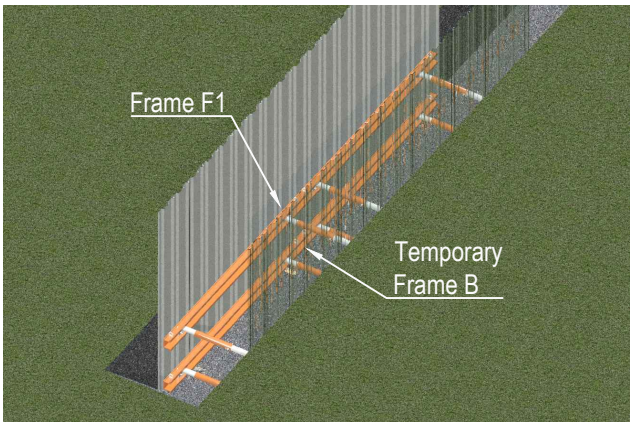
3. Pump out the Hydraulic Rams to the required size. Ensure that the pump is 3/4s full of shoring fluid. Attach the single hose to the female connector of the pump, then attach the other end to the male connector on the Hydraulic Ram. Open the lock off valves and pump out the frames to the required size. Close the lock off valves to maintain pressure. Connect lifting hooks through the lifting points (Detail A).



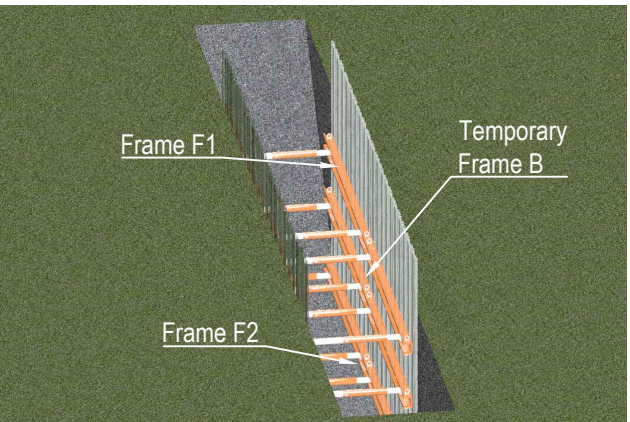
4. The following steps describe the 'Dig & Push' Installation method for an excavation with 2no. Frame levels (F1 & F2, upper and lower frames). Alternative installation methods are shown below. Check for services and then excavate to the underside of Frame F1 (upper), using a stepped or battered edge if required. Using correctly rated lifting chains, lift two frame levels into the shallow pit and lay on timber bearers.



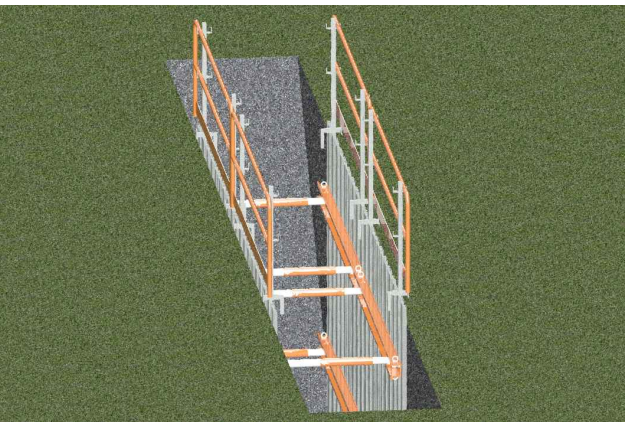
5. Using the correct Driving Cap for the sheet type, push sheets around the perimeter of the excavation until refusal, or about half the required dig depth. The Waler Rails can act as a guide. Ensure that the restraint chains are hooked onto the sheet piles. Temporary use of shorter sheets can be used to provide a digging window if required.



6. Excavate to the midpoint between the upper and lower (F1 & F2) frames' final levels. Install the 'dummy' Temporary Frame B to restrain the bottom of the sheets. The frame can be installed partially retracted and then pumped out to the required size in the excavation. If this is not possible, the frame can be assembled within the trench. Remove the Temporary Frame (A) (Stage 3).



7. Progress the excavation to the underside of Frame F2's final level by digging and pushing the sheets incrementally. Install the lower Frame F2 and attach restraint chains. Temporary Frame B can now be removed. Continue 'digging & pushing' the sheets until the final formation level is reached, installing additional frame levels where required.



8. Ensure that all the sheets are pushed to their final levels. This is usually the formation level unless a toe-in is specified in the Temporary Works design. Install suitable access and edge protection system. The removal of the equipment is the reverse of this procedure, reinstalling the temporary frame levels where required as backfilling progresses.

Equipment Details

Length	Permissible Load	Min. Width	Max. Width	Frame weight
m	kN/m	m	m	kg
1.50	8.0	0.50	2.00	77
2.00	56.0	0.50	2.00	88
2.50	48.0	0.50	2.00	99
3.00	30.0	0.50	1.80	110
3.50	36.0	0.50	1.80	143
4.00	30.5	0.50	1.80	154
5.00	23.0	0.50	1.80	168

Residual Risks

The following residual risks must be addressed in the Contractors RAMS:

1. Locate all potential services prior to excavation in accordance with NRSWA Regulations.
2. The excavation may be classified as a confined space. The Contractor must assess this risk and provide suitable gas detection and rescue equipment where appropriate.
3. The Contractor should always adequately consider the surrounding environment and account for adjacent structures, slopes, roads etc.
4. Additional or independent edge protection may be required during the installation.

Useful Links



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0	First Issue	SRB	23/01/24
Rev.	Revision Details.	DR	Date.

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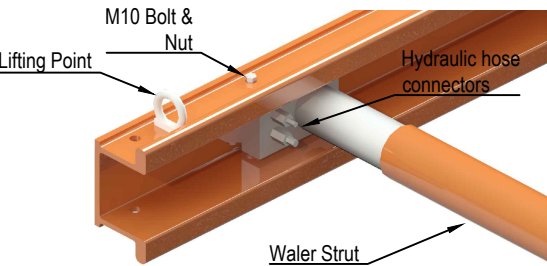
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Aluminium Waler User Guide
Version V1.1

Drawing Scale: Varies	Paper Size: A3
Drawn By: SRB	Date: 23/01/24
Checked By: PJ	Date: 23/01/24
Drawing Number: SEL-UG-AW_001	Revision: V 1.1

Detail A - Strut Connection

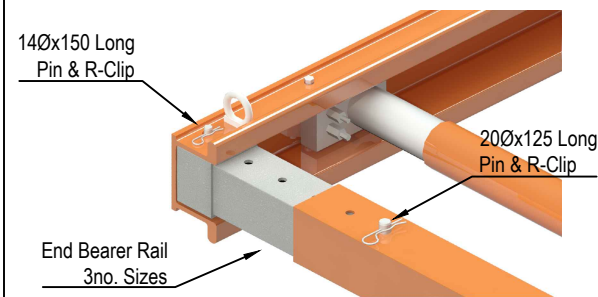


Edge Protection & Access



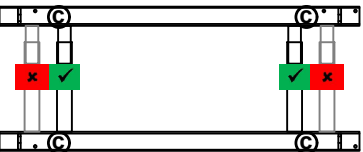
Please contact Site Equipment for info on our full range of Access & Edge Protection accessories.

Detail B - End Bearers



Waler Strut Arrangement

Ensure that the waler struts are arranged facing inwards. For two strut arrangements (up to 3m waler), the strut centres should be:
Strut centres = Rail length - 0.72m.
For three strut arrangements, place the third strut centrally.



Do's and Don'ts

- ✓ Ensure an adequate Lift Plan is incorporated into the method statement (By Contractor) and pay close attention to the weights of the Waler Frames (shown in table above).
- ✓ Carefully inspect all components and hydraulics prior to use. Contact SEL for advice where damaged components are found.
- ✓ Ensure all operatives are Trained & Competent and have been briefed on the requirements of the Temporary Works Design where necessary.
- ✓ Install suitable edge protection, access system and Davit system where required.
- ✓ Ensure appropriate vertical support is provided to the legs during installation and removal.
- ✓ Allow a minimum of 100mm extension on the rams to enable retraction when removing the equipment.
- ✗ Don't enter an excavation before adequate shoring is in place.
- ✗ Don't use hanging chains for lifting.
- ✗ Don't use faulty or damaged equipment.

Alternative Installation Methods

Alternative Installation: Pre-driving

1. Pre-drive all sheets to the final toe level as identified in the Temporary Works Design using suitable plant.
2. Excavate to the underside of the upper Frame F1
3. Install Frame F1 to the level specified in the TWD
4. Excavate to the underside of the lower Frame F2
5. Install Frame F2 to the level specified in the TWD
6. Excavate to formation level.
7. Install permanent works, then the excavation must be backfilled to the underside of each frame prior to its' removal.

Dig & Push Installation with three or more frame levels
In situations where three or more frames are required, Stage 6 (Installing Frame F2) is repeated with further temporary frame levels installed to ensure the bottom of the sheets are always secured.

Excessive sheet cantilever below the lowest frame must be avoided.
Please ensure all struts are fully retracted prior to collection.