



Plazacomm

Mr. Aaron Gold
10 Wanless Avenue, Suite 201
Toronto, Ontario M4N 1V6
E-Mail: agold@plazacorp.com

22 January 2021

Project Ref.: 20-07-105

Subject: TOWNHOME DEVELOPMENT, 49-59 ONTARIO STREET AND 60 MILL STREET NORTH, PORT HOPE, ONTARIO

Mr. Gold,

Please find enclosed our proposal to design and install a ground improvement solution to support the proposed townhouse development located at 49-59 Ontario Street and 60 Mill Street North in Port Hope Ontario.

In order to provide the necessary bearing capacity and settlement control for the proposed structures and roadway, MENARD Canada Inc. (MENARD) has carried out an initial pre-design using our Controlled Modulus Column System (CMC) below the proposed structures and roadway. Menard has extensive local experience utilizing CMCs to support residential developments throughout our 50-year history in Canada.

Advantages of the Menard's proposed Dynamic Replacement and Controlled Modulus Column system:

1. High degree of quality control – fully instrumented installation process for CMCs.
2. Cost control through design build lump sum project delivery.
3. Displacement installation method - eliminate the need to manage or dispose of undocumented or potentially contaminated fills.
4. Standard construction of strip and spread footings as well as slab on grade. No need for costly pile caps, grade beams or structural slabs.
5. Accelerated schedule compared with traditional engineered fill methods.
6. Reduced geotechnical risk – Menard certifies the bearing capacity provided by our ground improvement methods.

We thank you for the opportunity to submit this alternative proposal to provide a competitive price for the ground improvement scope of work for this project.

Yours truly,

Trevor Bruce, P.Eng.
Cell: 416-801-9471
Email: trevor.bruce@menardcanada.ca

Menard Canada Inc.
2 Campbell Drive Unit 205, Uxbridge (ON) – L9P 1A6
Tel: 905-862-9032

www.menardcanada.ca



Figure 1: CMC Installation in St. Catharines, ON

Townhome Development, 49-59 Ontario Street & 60 Mill Street North, Port Hope, ON

Ground Improvement using Controlled Modulus Columns (CMC®)



Ground Improvement Proposal

Id **20-7-105, Thompson Townhomes, Port Hope, ON** Pages **15**

Rev	Date	Author	Verified by	Modifications
0	22/01/2020	TBr		N/A

Project # :20-7-105
Revision: 0

GROUND IMPROVEMENT PROPOSAL
Date: 22/01/2021





1. Introduction

1.1. Project description

This project involves the construction of four town-home blocks, Blocks A-D, at the site located at 49-50 Ontario Street and 60 Mill Street North in Peterborough Ontario.

CMCs will be utilized for support of standard strip/spread footings as well as slab on grade for the proposed town-homes.

1.2. References

This offer is based on the following documents:

- Draft Geotechnical Investigation – Proposed Residential Development, 45-59 Ontario Street and 60 Mill Street North, Port Hope, Ontario. Prepared by Pinchin Limited Dated August 29, 2019 File No. 238315.002
- Structural Drawings S001 to S260A “Preliminary Structural” Prepared by Keiffer Structural Engineering, Issued for Costing November 3, 2020., Project No. 20148
- Architectural Drawings A100 to A401 Prepared by Edward Weinberg Architect, Issued for Coordination October 13, 2020 Project No. 1705
- Site Grading Plan C03, Prepared by Crozier and Associates, Issued for Submission September 2, 2020 Project No. 892-4783
- Email titled “RE: Menard – Soil Compaction for Thompson Site in Port Hope” from Aaron Gold Received January 13, 2021

2. Ground description

2.1. Soil Profile

The soils on the site can generally be described as a soft sandy to clayey silt that extends approximately 2-4.5m below grade and is underlain by a relatively thin layer of very stiff native silt that overlies bedrock.

2.2. Groundwater

It is understood that the groundwater table generally lies just above the bedrock at approximately 2-3m below existing grade.

3. GROUND IMPROVEMENT TECHNIQUE

3.1. Controlled Modulus Columns (CMC)

CMC are vertical semi-rigid inclusions, i.e. injected columns, with concrete or mortar, installed with a hollow full displacement mandrel, the mandrel is advanced either through vibration or with a specialized rotary auger that is vibration free. During the auger extraction process, the column is developed by grouting under controlled limited pressure through the stem of the auger. Columns diameter varies between 240 and 450 mm.

A load transfer platform (LTP) is designed between the top of the columns and the structure (spread and strip foundation) to efficiently transfer the load to the CMC. LTP will



be placed by Others after the excavation of soil to the foundation level. For this project the LTP shall consist of a 3" concrete mud-mat discussed in detail below.

The works must be performed from a stable, free of water working platform capable of supporting a 30 ton excavator as well as traffic from concrete trucks.

The rigid inclusion generates very limited spoil during the densification process which makes it ideal in residential locations and tight spaced areas. Any nominal spoil generated will be stacked and disposed by others.

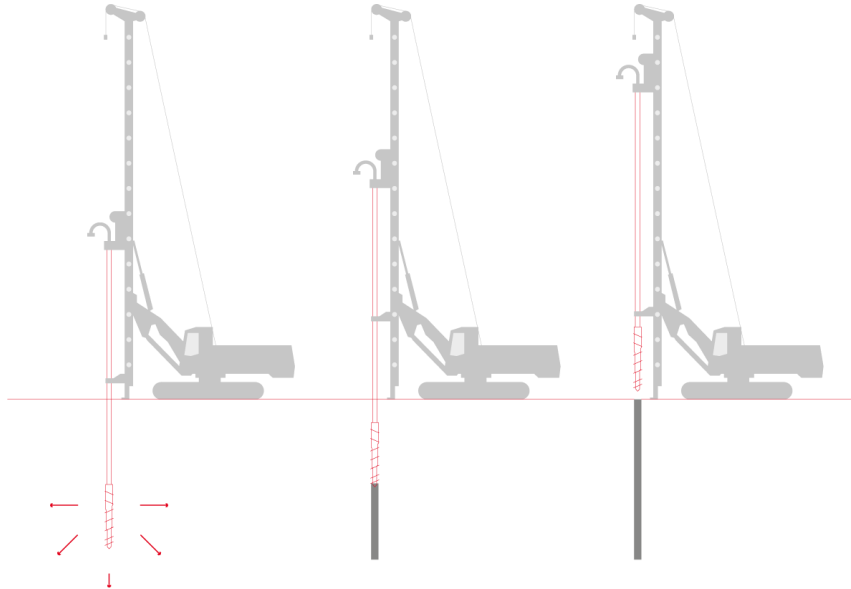


Figure 2 : CMC Installation Process

3.1.1. Application of Controlled Modulus Columns (CMCs) to the Project

- CMC support will be provided for Blocks A, B, C and D
 - Menard accepts no responsibility for structures not directly supported by CMC elements.
- CMC LTP shall consist of a mud mat consisting of at least 75mm (3") of 10 MPa concrete. Foundations will then be placed directly on the LTP by others.
- CMC elements will be cut-off at the appropriate elevation by Menard with a tolerance of +/- 50mm (2").

3.1.2. Testing and Verification

In order to verify the achievement of the design criteria, the final acceptance of the works will be based on Menard QA/QC program. Upon completion of the works, Menard will issue a Final Technical Report stamped by a Professional Engineer registered in Ontario which will certify the works done at the site and present the test results performed to verify the achievement of the works.

3.1.3. Work Near Overhead Power Lines

- We understand that an overhead power line is in proximity to the Eastern walls of Blocks A and D. We also understand that a guy wire crosses the site, but that the guy



wire will be removed prior to mobilization and will not affect or hinder Menard's scope of work.

- Based on the available information the hydro pole lies 3.3m from the nearest building edge and that the line sites on an extension approximately 1.4m from the pole. The power lines lie 8.5m above existing grade which is estimated to be 86.3m based on the site grading plan.
- With the understanding that 3m must be maintained from overhead powerlines at all times it is understood that any proposed CMC within 1.5m of the Eastern walls of Blocks A and D will need to be installed with a shortened rig that can maintain a minimum of 3m radial distance from the overhead powerlines. Based on the boreholes, CMCs are anticipated to be 3 m deep in that area.
- The working grade for Blocks A and D shall be no higher than elevation 86.0m.
- A pre-construction meeting will be required prior to mobilization to review constraints and ensure a safe procedure for working near overhead powerlines.



4. Sequence of works

The following table describes the sequence of works for the installation of CMCs:

#	Step description	By
1	Provide all the necessary elements for our design and execution of our works. Includes foundation plans for each individual block. Required minimum of 4 weeks in advance of proposed mobilization.	Engineer
2	Submit CMC design note, drawings, and method statement for review by the Engineer.	MENARD
3	Locate and remove/deviate existing public and private underground services/utilities and obtain permit to dig.	Contractor
4	Prepare a levelled, free drained and properly compacted working platform made of clean granular material at agreed elevations.	Contractor
5	Provide all the necessary set-up points and benchmarks to identify the location of the footings including elevations.	Contractor
6	Pre-construction meeting on site to review power line constraints and inspect working pad	Contractor & MENARD
7	Mobilisation of resources and equipment set up	MENARD
8	Installation of the Controlled Modulus Columns (CMC)	MENARD
9	Conduct Static Load Tests to verify the performance of installed CMCs	MENARD
10	Demobilisation	MENARD

4.1. Quality Control plan

The following control plan will be implemented:

- ⊕ **Real-time monitoring:** recording of drilling and injection parameters of the CMCs (depth, concrete volume, torque, pull-down...). Recording of crater volumes and platform subsidence for the DR operations.
- ⊕ **Compressive strength tests** at 7 and 28 days on the CMC material, at least 1 set of samples (6 samples) will be taken every 100m³ of supplied material.
- ⊕ **As-built file:** MENARD will issue an as-built file of the foundation works upon issue of the substantial completion of the subcontract works. This includes drawings, construction records and test results.

4.2. Design Criteria

Per the provided structural drawings, ground improvement has been designed to achieve the following:

- 150 kPa SLS and 225 kPa ULS bearing resistance.
- Maximum settlement of 25 mm.
- Maximum differential settlement of 19 mm



5. OFFER

5.1. Bill of quantities

Based on the information available to us to prepare this proposal, we are pleased to present our price, subject to the conditions of this offer, for the design, preparation, mobilization of all necessary equipment and resources required for the installation and static load testing of the Controlled Modulus Columns.

	Description	Qty	Unit	Amount
1	Initial Mobilization and final demobilization CMC equipment; supply, installation for Blocks A,B,C and D, and verification of CMC system; design, shop drawings, and final report stamped by Professional Engineer licensed to practice in Ontario	1	Lump Sum	\$108,932

NOTE:

- The prices above are in Canadian dollars and do not include any sales taxes.
- Prices are based on continuous operation with a single mobilization.
- Winter work is not included in this proposal. For concrete, seasonal road access charges (\$250/load) and winter handling (\$18/m³) will be charged as extras where required.
- The prices above are valid for 30 days from the date of this proposal.
- This proposal assumes that mobilization would not occur during road restriction periods. If mobilization is required during the spring road restriction period, please advise and we will check availability for rigs that are not affected by the restrictions.

5.2. Schedule of works

The total work duration shall be estimated based on 5 working days per week:

- ⊕ Initial Mobilization, CMC installation, Testing, and Final Demobilization: ±1 week



5.3. Facilities and services under Contractor's scope

The Owner / Contractor (or others, as directed by the Client) should provide the following services when required on site:

- ⊕ **Earthworks:** All necessary excavation, grading, backfilling, and earthworks.
- ⊕ **Drawings:** Provide final foundation and site plan drawings in AutoCAD (.dwg) format at least four weeks prior to scheduled mobilization.
- **Work Platform: The General Contractor (GC) is to provide a flat, free draining and stable working pad for the CMC equipment at the approximately elevation 86.0m. Equipment includes a 30-ton excavator as well as concrete truck traffic.**
 - Working platform should be proof rolled..
 - All surficial organic, soft soils, or otherwise unsuitable soils should be stripped and replaced by granular material.
 - The work platform shall be kept free of any standing water, obstacles, structures, overhead or underground services or anything else which could impede Menard's work or be damaged by its operations.
 - Final working grades shall be discussed and coordinated with Menard as designs are finalized.
 - All ramps and access roads for the CMC rig and concrete trucks should be made the same way as the work platform.
- ⊕ **Access to work:** Provision and maintenance of suitable all-weather continuous access roads to the site during mobilization and demobilization and at all times during the progress of the works for concrete trucks and specialized heavy equipment.
- ⊕ **Site restoration and clean up:** Provide for disposal of any spoils (concrete truck wash spoils, mixed soil and or grout from the CMC operation).
- ⊕ **Mobilization and demobilization** are expected to take place outside of thaw period. Any extra cost would be provided subject to finalization of the project schedule. Extra cost includes mobilization and demobilization during road restrictions (half load per axle).
- ⊕ **Obstructions: removal of any above and below grade obstructions.**
- ⊕ **Pre-drilling: not included in this proposal**
- ⊕ **Utilities:** Locating, protecting and relocating any existing overhead or underground utilities and structures which may impede the ground improvement / piling operation and transport of equipment/rig between foundation elements.
- ⊕ **Dust Control,** by watering the surface, if called for by local authorities.
- ⊕ **Survey:** Locate, the intersection of at least three (3) gridlines and provide a minimum of one benchmarks of known elevation, adjacent to work area – layout of CMC locations will be by Menard.



- ⊕ **Any permits** and fees related to water supply, execution of the sub-grade improvement work, disposal of spoil, etc.
- ⊕ **Traffic management:** Any necessary road closures, signage, traffic control, barricades and street sweeping that may be required on either private or public roads.
- ⊕ **Contractor responsibilities:** Assume the usual responsibilities and services of a General Contractor on a construction site, including wrap-up insurance, road cleaning, off work-hours security and fencing (if necessary).
- ⊕ **Drainage:** Temporary or definitive drainage systems, as required.
- ⊕ **Security:** Any additional resources and/or costs related to required site-specific security measures including, but not limited to, escorts for trucks/personnel.



APPENDIX 1: TERMS & CONDITIONS – 4 pages

These Terms and Conditions (« Conditions » or “Agreement”) contain the entire agreement between the Parties and shall form an integral part of the Offer sent by Menard Canada Inc. (“MENARD”).

These Conditions may be supplemented subsequently by the signing between the parties of a standard document of the Canadian Construction Association (CCA) as the ACC-1 (2001) and CCDC-2 (2008) (hereinafter as a "normalized Document"). The Offer and its appendices, including these Terms, will absolutely be listed and attached to the aforesaid Document and shall form integral part of the Contractual Documents.

If there is any conflict between the Document and these Conditions, the Parties agree that the terms of these Conditions shall prevail.

⊕ **Confidentiality**

All rights in connection with this document, including translation thereof, are reserved to Menard Canada Inc. No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the prior permission of Menard Canada Inc.

⊕ **MENARD Obligations**

MENARD will execute the Works in accordance with the Offer accepted by the Client and according to the standards and industry practices. MENARD will communicate and cooperate in order to support the Client in its planning and coordination of the works.

⊕ **Client Obligations**

All permits and associated fees related to the execution of subgrade improvement foundation work and / or disposal of related spoil materials shall be provided by the Client.

The Client must also coordinate the activities of all third parties involved in the Project during the execution of the works by MENARD.

⊕ **Payment**

MENARD reserves the right to ask the Client before completion of the work, his permission to perform the necessary checks to ensure that the Client has the financial capacity to fulfill its obligations under these Conditions.

Client shall, during the execution of the works, inform MENARD of any substantial change or event that may change its financial capacity.

Our payment terms are net (i.e. 90%) 30 days for work complete and invoiced to the end of each monthly period. Holdback will be due and payable following substantial completion of MENARD's work according to current Ontario lien legislation, not General Contract substantial completion.

In case of a delay in such payment, MENARD shall apply an interest rate of 1.25% per month or 15% per year. Such amount shall be calculated on any outstanding amount and no payment shall be considered as final until such interests have been paid.

Any recovery costs such as lawyers or court fees incurred to recover the unpaid amount will be considered as final and shall be reimbursed by the Client in its totality. No payment shall be considered as final until such fees have been paid. In the case that some amounts are disputed amounts, the Client shall make the aforesaid payments, less the disputed amounts. No payment shall be considered as final until the dispute related to these amounts have been settled in writing and that all the sums due to MENARD have been paid in full.



If some part of the Works cannot be completed due to weather conditions or any other conditions beyond the control of MENARD, the Client cannot for this reason retain or suspend the payment of the work completed.

⊕ Additional Works

MENARD may execute, after a formal request made by the Client, some works which were not included in the Offer. Such additional work shall be subject to a specific quotation which shall be accepted by the Client before the execution of the additional works. If the Clients refuses to pay a lump-sum for the Additional Works, then the Client may choose to pay them according to the "time and material" rates detailed below:

- | | | |
|----|--|------------------|
| a) | Additional Hour: | 550,00 \$/Hour |
| b) | Stand-by or delay (Staff & Equipment), in the completion of the works: | 2,200,00 \$/Hour |
| c) | Testing, materials and equipment rental: | Cost + 15% |

Without limiting the generality of the foregoing, MENARD hereby reserves its right to refuse the performance of any Additional Work.

⊕ Variation of Quantities

Quantities that are specified in the Offer are approximate estimates and are subject to variation, If, at the request of the Client, MENARD shall proceed to any variation in the quantities described in the Offer for more or less than 15% of the volume of material and/or working hours specified in the Offer, then MENARD will proceed to a revision of its price.

If such variation of quantities has a positive impact i.e increases the price for the completion of the Works, MENARD shall submit a revised proposal to the Client in order to obtain its approval and shall not proceed to the execution of the works before obtaining such approval.

If such variation of quantities has a negative impact i.e decreases the price for the completion of the Works, MENARD shall submit to the Client, at his request, a credit notice. The Parties hereby understood and agrees that such credit shall not be proportionate to the portion of the Works that has been withdrawn but will be calculated by MENARD.

⊕ Concealed or Unknown Conditions

If the Client or MENARD discover, at work site:

- Concealed underground or physical condition who were existing before the commencement of the Works and that materially differs from the conditions described in the Offer; or
- Physical conditions that are not attributable to weather conditions but, because of their nature, differs substantially from usual conditions that are generally considered acceptable for the type of Works described in the Offer;

The Party that has discovered the condition must inform in written the Other Party, before any modification is made to the condition and at the latest 5 days after the discovery of such condition for the first time. If the concealed or unknown condition would cause an increase or a decrease of the cost of the Works for MENARD, the Client shall issue the appropriate instructions and revise the price of the contract accordingly before MENARD continue to proceed to the execution of the works.

⊕ Delays

If MENARD cannot perform all or part of the Work on time because of an act or omission contrary to the provisions contained in the Offer, for reasons attributable to the Client or to any other person employed by the Client, the time of the contract shall be extended for an additional period of time according to an agreement between the Parties and MENARD shall be reimbursed for all the costs incurred due to such delay.

If MENARD cannot perform the Work on time due to a suspension of work issued by a Court or any other Governmental body, and provided that this suspension has not been made as a



result of an action or a fault of MENARD, then the time of the contract shall be extended for an additional period of time as agreed between the Parties and MENARD shall be reimbursed for all the costs incurred due to such delay.

If MENARD cannot perform the Work on time because of labour disputes, strikes, lockouts, fire, unusual delays of public carriers or unavoidable accident or of unusually bad weather or any cause beyond the control of MENARD; except for a cause resulting from a defect of MENARD; then the time of the contract shall be extended for an additional period of time by an agreement between the Parties but such period shall in no case be less than the time lost because of the event that caused the delay.

If the delay is caused by an action of the Client or any other person employed by the client, then MENARD will be reimbursed for all the costs incurred due to such delay

⊕ **Warranty**

MENARD ensures that the work is free from any material and workmanship defects for a period of one (1) year ("Warranty Period") after substantial completion of the Work performed by MENARD as described in the Offer.

During the warranty period, MENARD shall correct the defects or pay the damages resulting from these defects. The parties hereby understand and agree that this express limited warranty represents the exclusive remedy of the Client and the only obligation of MENARD related to the Work performed under these Conditions.

⊕ **Bonds and Insurances**

No bonds have been included but can be provided at cost.

MENARD carries Comprehensive Contractors General Liability Insurance with a \$5,000,000 limit. Our offer is based on an Owner / General Contractor supplied "Wrap-Up" policy being in place at the time our work proceeds and MENARD being named as an additional insured under that coverage.

⊕ **Limitation of Liability**

a) **General Limitation of Liability**

Except in the event of bodily injury or fraud, gross negligence or wilful misconduct by MENARD hereunder, the liability of MENARD, its representatives, directors, officers and employees as well as the Client's exclusive recourse with respect to any claim relating to the performance or the non-performance of obligations provided for herein or based on any default, or with respect to any other claim related hereto, is limited to the recovery of direct damages suffered by the Client and shall in no event exceed, as a whole, 10% of the price of the Works mentioned in the Offer (the amount of Additional Works shall be excluded therefrom). In no event shall MENARD be liable for any indirect damage suffered by the Client, even if the Customer has been informed of the possibility of such damages, including, but not limited to, loss of profits or income.

b) **Limitation of Liability for Penalties for Delays and for Fees Related to Acceleration of Works**

Notwithstanding article a) above, MENARD's total liability for penalties incurred due to delays caused by MENARD, including, but not limited to, any fees related to the acceleration of works that result therefrom that may be claimed by the Client from MENARD, shall be limited to and may in no event exceed, as a whole, 10% of the price of the Works mentioned in the Offer (the amount of Additional Works shall be excluded therefrom).



⊕ **Contaminated Soil/Water**

MENARD Offer is based on 'non-contaminated' conditions. Any and all costs associated with handling, storing and / or disposal of contaminated soil and / or water will be to the account of Client;

⊕ **Force Majeure**

Neither party will be liable for any failure of or delay in the performance of any of its obligations under the present Conditions if its failure or delay is due to the occurrence of a Force Majeure Event.

"Force Majeure Event" means any event that (i) is beyond the reasonable control of a party, (ii) materially affects the performance of any of its obligations under these Conditions, and (iii) could not reasonably have been foreseen or provided against. Under this Agreement, force majeure may include strikes or lock-out, change in market conditions, any government act or Court or administrative order.

In addition to that, MENARD shall not be held responsible for the consequences of a temperatures that would prevent to achieve the anticipated results or that would delay the completion of the works under this Agreement.

⊕ **Assignment**

Neither Party shall assign or transfer any or all the obligations described in the present Conditions without the written consent of the other, which cannot be unreasonably withheld.

⊕ **Applicable Law**

This Agreement is governed according to the laws that apply in the province of Ontario and the federal laws if necessary.

⊕ **Validity**

This proposal is valid for 30 days and is subject to availability of material, equipment and crew at the time of order. After the validity period, this proposal shall be considered withdrawn unless revalidated in writing.

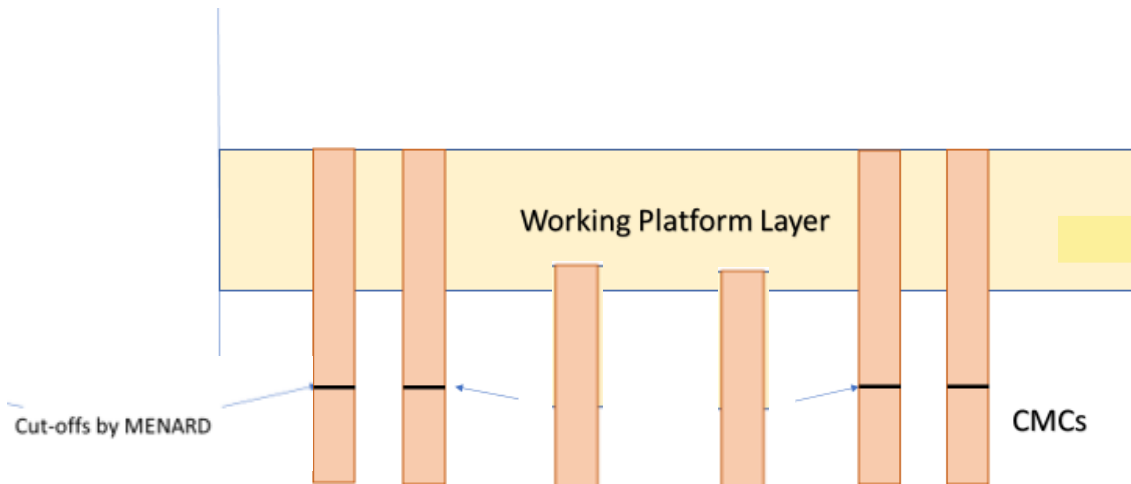
Menard Canada Inc is committed to ensuring the health and safety of all of its people and customers while providing services to you in a timely and professional manner.

The COVID-19 pandemic requires us to modify our business behavior. This means that Menard Canada can only provide you with services in a manner in which it deems safe based on government and internal safety protocol.

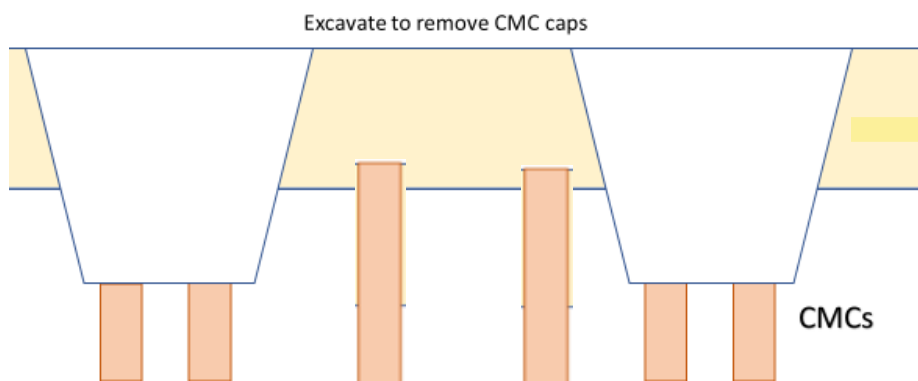
Menard Canada employees may provide some or all of the services remotely and travel to business meetings or site will be affected.

Menard Canada accepts no liability or responsibility for the delayed or non-performance of any services caused by our business modifications attributable to the containment of COVID -19 or the health and safety of its people.

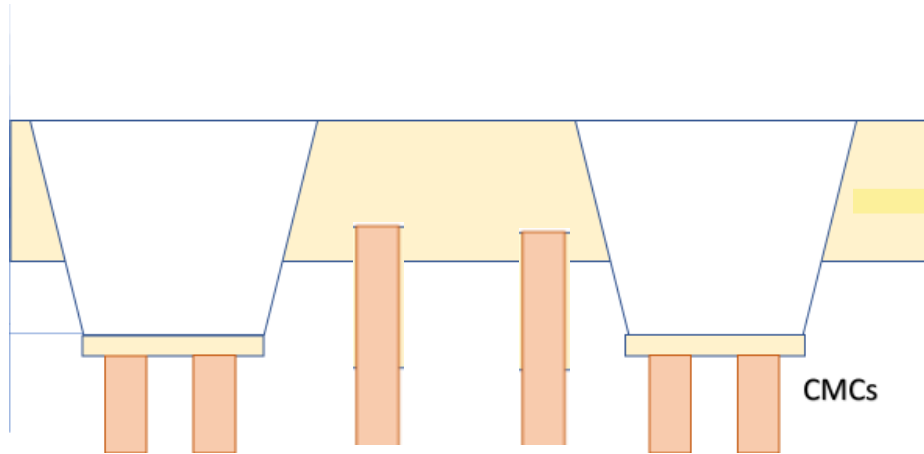
APPENDIX 2: SEQUENCING



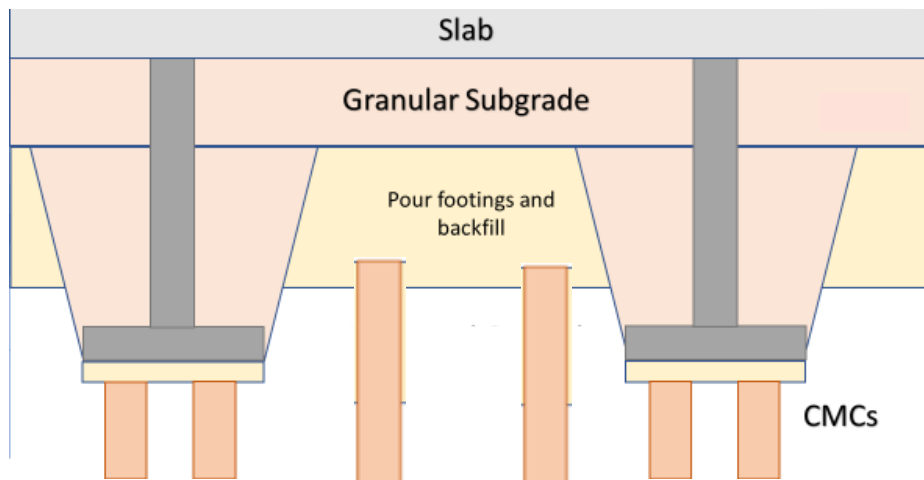
1: MENARD to install and cut-off CMCs (backfilled with onsite material)



2: Excavate for footings. By others



3: Place at least 75mm (3") mud-mat of 10 MPa concrete for LTP above CMCs. By others.



4: Pour footings and backfill as per construction schedule. By others.

