



PRU-D 2X8

DISTRIBUTION GROUND MOUNT

BayWa r.e.

BayWa r.e. Solar Systems Inc.

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The Polar Racking Distribution Ground Mount System 2x8 is ideal for small and medium sized projects. The PRU-D is very robust, easy-to-assemble, and cost-effective.

KEY PRODUCT BENEFITS

- Industry leading field assembly times
- Integrated East West & North South wire management
- Robust structure built with galvanized construction steel (G90)
- 10-year warranty
- Full foundation and technical support
- In-house structural engineering for quick turnaround
- In stock at distributors all over North America. Contact your distributor now



KEY TECHNICAL FEATURES

- Robust high-quality components for easy site handling
- Wind tunnel tested (CPP) and engineered for the toughest wind and snow conditions
- Lowest component count in the industry, resulting in the fastest installation time
- Integrated bonding for panels with ETL certified components
- East-West purlins with pre-punches holes for flexible wire management and routing
- No drilling of rack on site
- Minimal number of posts per rack
- Rated to 10% ground slope East-West



SYSTEM ATTRIBUTES

SYSTEM TYPE	Ground Mount	FOUNDATION	Dual Post
WARRANTY	10-year warranty	TILT	30°

DESIGN CONSIDERATIONS

CODES	ASCE/SEI 7-10, IBC 2012, NBC, OBC 2012 UL467, UL 2703 Bounding and Grounding
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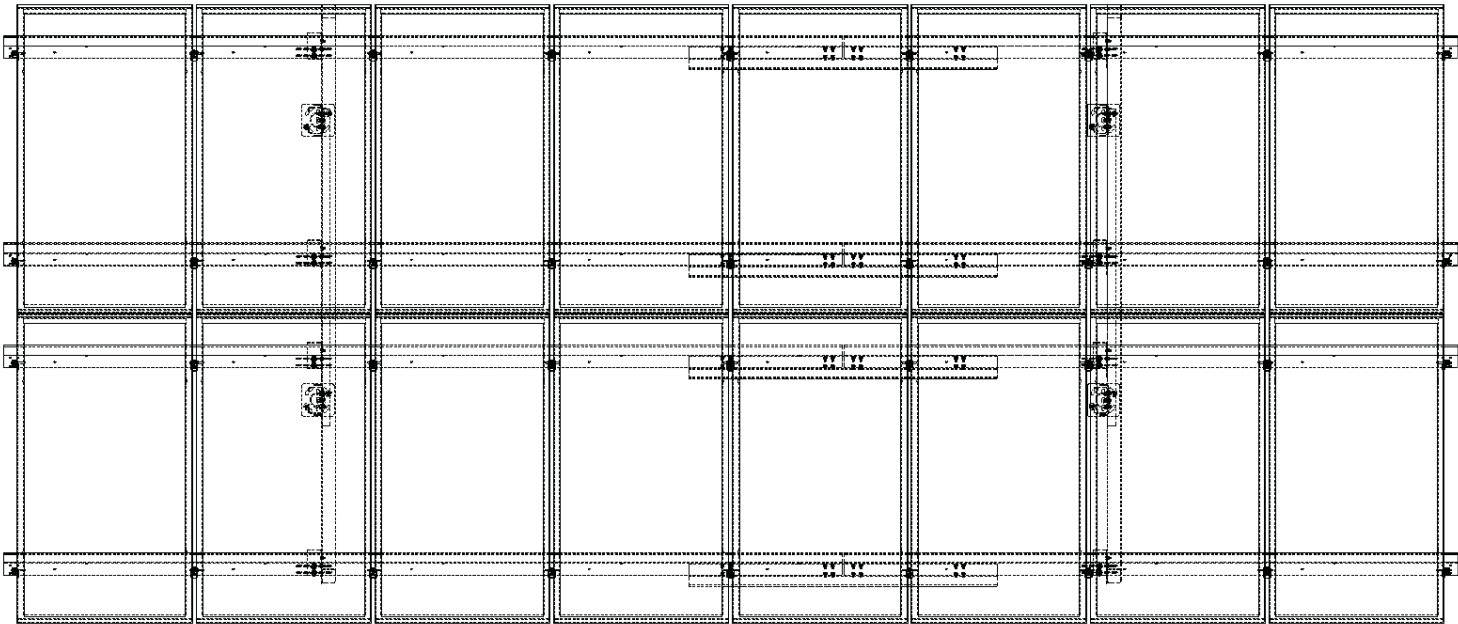
TECHNICAL SPECIFICATIONS

CLAMPING	Top clamping	PURLINS MATERIAL / COATING	G90 Pre-galvanized Steel
BONDING AND GROUNDING	Integrated bonding and grounding	CONNECTION PLATES MATERIAL / COATING	Hot Dip Galvanized
FOUNDATION	Helical piles, Ground Screws	HARDWARE MATERIAL / COATING	Magni 565 Coated

MODULE COMPATIBILITY

MODULE ORIENTATION	Portrait	MODULE WIDTH	990-1024mm
MODULE TYPE	72 Cell	MODULE FRAME THICKNESS	31-50mm

KIT, RACK, 2X8

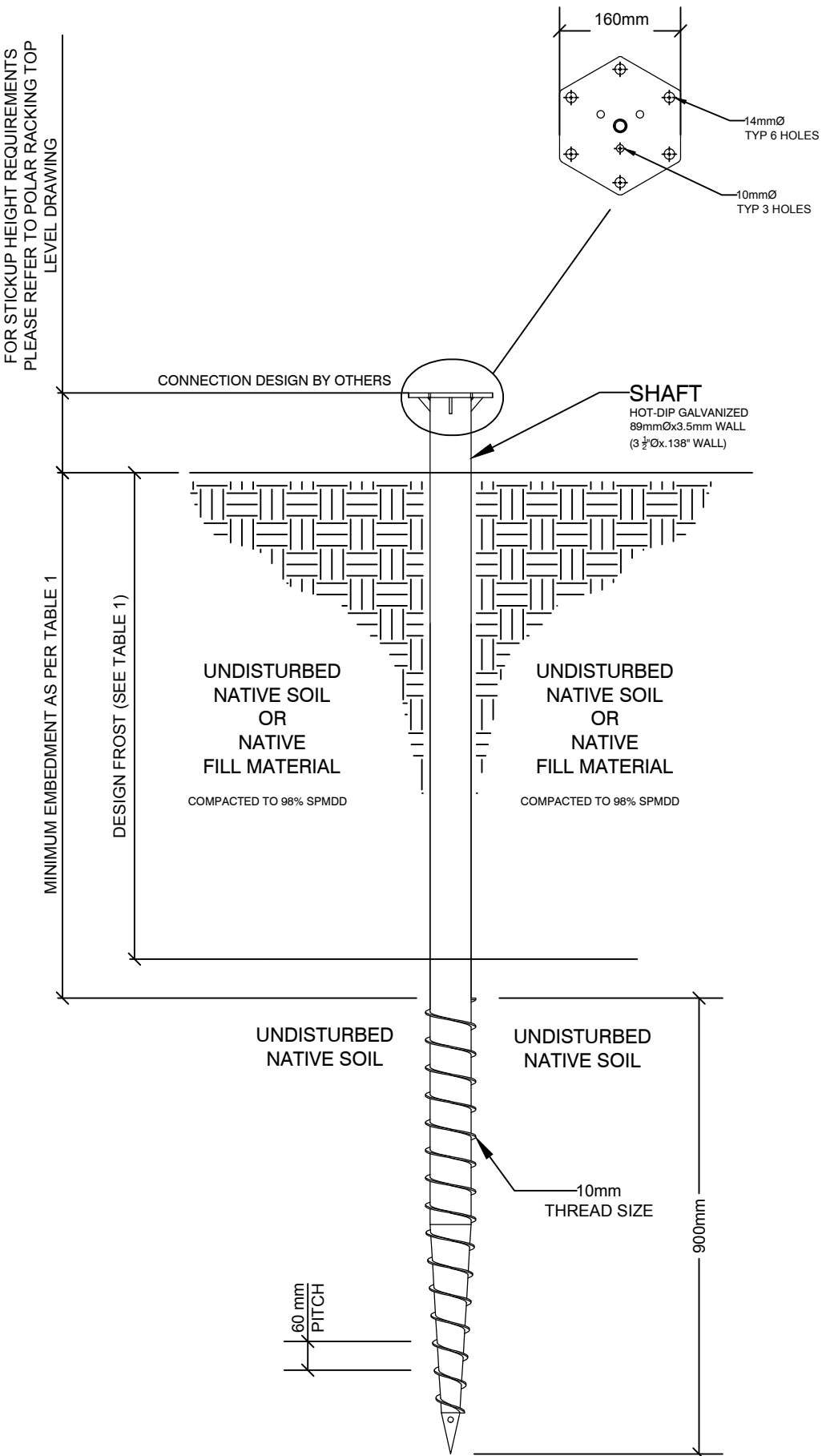


This document does not create any express warranty by Polar Racking or about its products or services. Polar Racking's sole warranty is contained in the written product manual for each product. The end-user documentation shipped with Polar Racking's products constitutes the sole specifications referred to in the product warranty. The customer is solely responsible for verifying the suitability of Polar Racking's product for each use. Subject to change without notice. Last update in June 2020.

- NOTES:
1. PILE DESIGN LOADS (FACTORED):
- FRONT POST:
- UPLIFT =12 kN
 - DOWNWARD =22 kN
 - LATERAL =10 kN
 - MOMENT =5 kN-m
- FRONT POST:
- UPLIFT =51 kN
 - DOWNWARD =22 kN
 - LATERAL =21 kN
 - MOMENT =5 kN-m

- DESIGN LOADS ARE DETERMINED FROM LOAD COMBINATIONS BASED ON ULS DESIGN AS PER THE REQUIREMENTS SET BY THE NBCC 2015, TABLE 4.1.3.2-A.
2. GEOTECHNICAL DESIGN PARAMETERS:
- a. ADFREEZE BOND OF 150kPa IS CONSIDERED FOR STEEL TO FROZEN SOIL.
 - b. FROST DEPTH TO BE CONFIRMED BASED ON MEAN FREEZING DEGREE DAYS AND INFERRED FROST ASSUMPTION TABLE 1. CONTRACTOR MUST CONFIRM THE FOLLOWING FROST DEPTH IS ADEQUATE WITH LOCAL BUILDING DEPARTMENT.
 - c. GEOTECHNICAL RESISTANCE FACTOR IS 0.5 (FACTOR OF SAFETY OF 2.0). THEREFORE A FROST UPLIFT LOAD AS PER TABLE 1 GOVERNS AXIAL DESIGN.
3. PILE INSTALLER TO CREATE PILE INSTALLATION REPORT (INCLUDING TORQUE AND DEPTH READINGS) AND SUBMIT FOR APPROVAL TO ENGINEER UPON COMPLETION. IF THE FOLLOWING MINIMUM EMBEDMENT AND INSTALLATION TORQUE REQUIREMENTS BASED ON SUBSURFACE CONDITIONS (WHICH SHOULD BE VERIFIED BY THE CONTRACTOR), ARE MET OR EXCEEDED THAN INSTALLATION OF THE PILE IS ACCEPTABLE.
4. NO PLASTIC DEFORMATION THAT WOULD INTERFERE WITH THE ATTACHMENT OF THE TOP BRACKET OF THE PRU-D RACKING SYSTEM IS ACCEPTABLE, THIS IS TO ACCOMMODATE FULL CONTACT OF TOP BRACKET WHICH RELIES ON THE FRICTION BETWEEN THE PIPE AND THE CONNECTION TO RESIST THE DESIGN LOAD.
5. IF PILE REFUSAL IS ENCOUNTERED PRIOR TO ACHIEVING THE MINIMUM EMBEDMENT, THEN PREDRILLING MAY BE REQUIRED TO ACCOMMODATE INSTALLATION. PREDRILLING SHOULD BE COMPLETED WITH EQUIPMENT NO GREATER THAN 76mm O.D..
6. STRUCTURAL STEEL MEMBERS SHALL CONFORM TO:
- CSA S16.0-01 (LIMIT STATES DESIGN)
 - PIPE SHAFT -ASTM A500 GRADE C
 - COATING - ASTM A123 GRADE 75 (HOT DIPPED GALVANIZED)
7. WELDING TO CONFORM TO:
- CSA W59 AND W47.1
 - WELD YIELD STRENGTH=300MPa
 - ALL WELDS TO BE 6.4mm FILLET WELDS UNLESS NOTED OTHERWISE.
8. THE SITE IS ASSUMED TO BE OF LOW CORROSION POTENTIAL AND SACRIFICIAL LOSS HAS BEEN ASSUMED AS NOTED IN *PRU-D FOUNDATION DESIGN BRIEF*, BY *PRI ENGINEERING CORP.*, DATED *03 MAY, 2021*. CONTRACTOR TO VERIFY CORROSION DESIGN REQUIREMENTS WITH LOCAL BUILDING AUTHORITY.
9. PILES SHALL BE INSTALLED AT THE RATE OF ONE REVOLUTION PER PITCH.
10. PILE TO BE VERTICAL $\pm 1.0^\circ$
11. THE RESISTANCE LOADS BELOW ARE BASED ON ANTICIPATED RESISTANCE, WHILE TORQUE IS AN APPROPRIATE WAY TO ESTIMATE THE ULTIMATE CAPACITY OF THE PILE, THE ACTUAL CAPACITY CAN ONLY BE CONFIRMED IF PILE LOAD TESTING IS COMPLETE.
12. THE PILES MUST BE INSTALLED TO MEET ALL TOLERANCES NOTED IN THE PRU-D INSTALLATION MANUAL.

TABLE 1 - DESIGN PARAMETERS FOR PREDOMINANTLY FINE-GRAINED SOILS								
Mean Freezing Degree Days (°C-days)	Mean Frost Depth (m)	Maximum Frost Depth (m)	Maximum Frost Load (kN)	Maximum Racking Uplift Load (kN)	Governing Uplift Load (kN)	Minimum Embedment Depth to Top of Threads (m)	Minimum Average Torque in the Final Three Readings (ft-lbs)	Minimum Torque Value in the Final Three Readings (ft-lbs)
> 500 and ≤ 815	1.2	1.6	84	51	84	1.9	2,450	2,080
> 815 and ≤ 1,110	1.4	1.8	98	51	98	2.1	2,800	2,380



00	ISSUED FOR REVIEW	04MAY21
REV NO.	ISSUANCE	DATE

PROJECT NAME:

PRU-D DUAL LEG

DRAWING NAME:

GROUND SCREW
FOUNDATION DESIGN

PROJ. NO.: 21-030	DWG. BY: VT	CHKD. BY: JG	APPR. BY: AY
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DRAWING NUMBER:

FIGURE-12

NOTES:

1. RACKING REACTION LOADS (FACTORED):

FRONT POST:

UPLIFT	=12 kN
DOWNWARD	=22 kN
LATERAL	=10 kN
MOMENT	=5 kN-m

FRONT POST:

UPLIFT	=51 kN
DOWNWARD	=22 kN
LATERAL	=21 kN
MOMENT	=5 kN-m

DESIGN LOADS ARE DETERMINED FROM LOAD COMBINATIONS BASED ON ULS DESIGN AS PER THE REQUIREMENTS SET BY THE NBCC 2015, TABLE 4.1.3.2-A.

2. GEOTECHNICAL DESIGN PARAMETERS:

- ADFREEZE BOND OF 150kPa IS CONSIDERED FOR STEEL TO FROZEN SOIL.
- FROST DEPTH TO BE CONFIRMED BASED ON MEAN FREEZING DEGREE DAYS AND INFERRED FROST ASSUMPTION AS PER TABLE 1 and TABLE 2. CONTRACTOR MUST CONFIRM THE FOLLOWING FROST DEPTH IS ADEQUATE WITH LOCAL BUILDING DEPARTMENT.
- GEOTECHNICAL RESISTANCE FACTOR IS 0.5 (FACTOR OF SAFETY OF 2.0).
THEREFORE FROST UPLIFT LOAD IS AS PER TABLE FOR PREDOMINANTLY FINE-GRAINED SOILS (>50% OF MATERIAL PASSING SIEVE NO. 200) AND TABLE 2 FOR PREDOMINANTLY COARSE-GRAINED SOILS (<50% OF MATERIAL PASSING SIEVE NO. 200).
- PILE INSTALLER TO CREATE PILE INSTALLATION REPORT (INCLUDING TORQUE AND DEPTH READINGS) AND SUBMIT FOR APPROVAL TO ENGINEER UPON COMPLETION. IF THE FOLLOWING MINIMUM EMBEDMENT AND INSTALLATION TORQUE REQUIREMENTS BASED ON SUBSURFACE CONDITIONS (WHICH SHOULD BE VERIFIED BY THE CONTRACTOR), ARE MET OR EXCEEDED THEN INSTALLATION OF THE PILE IS ACCEPTABLE.
- NO PLASTIC DEFORMATION THAT WOULD INTERFERE WITH THE ATTACHMENT OF THE TOP BRACKET OF THE PRU-D RACKING SYSTEM IS ACCEPTABLE, THIS IS TO ACCOMMODATE FULL CONTACT OF TOP BRACKET WHICH RELIES ON THE FRICTION BETWEEN THE PIPE AND THE CONNECTION TO RESIST THE DESIGN LOAD.
- STRUCTURAL STEEL MEMBERS SHALL CONFORM TO:
CSA S16.0-01 (LIMIT STATES DESIGN)
PIPE SHAFT -ASTM A252-10, 350W (50 ksi) HOT ROLLED
HELIX PLATE - ASTM A572-50, 350W (50 ksi) HOT ROLLED
- WELDING TO CONFORM TO:
CSA W59 AND W47.1
WELD YIELD STRENGTH=300MPa
ALL WELDS TO BE 6.4mm FILLET WELDS UNLESS NOTED OTHERWISE.
- THE SITE IS ASSUMED TO BE OF LOW CORROSION POTENTIAL AND SACRIFICIAL LOSS HAS BEEN ASSUMED AS NOTED IN *PRU-D FOUNDATION DESIGN BRIEF*, BY *PRI ENGINEERING CORP.*, DATED MAY 3, 2021. CONTRACTOR TO VERIFY CORROSION DESIGN REQUIREMENTS WITH LOCAL BUILDING AUTHORITY.
- PILES SHALL BE INSTALLED AT THE RATE OF ONE REVOLUTION PER PITCH.
- PILE TO BE VERTICAL $\pm 1.0^\circ$
- IF VALIDATION OF DESIGN IS REQUIRED, AXIAL LOAD TESTING MUST BE COMPLETED TO VERIFY ACTUAL PILE CAPACITY.
- THE PILES MUST BE INSTALLED TO MEET ALL TOLERANCES NOTED IN THE PRU-D INSTALLATION MANUAL.

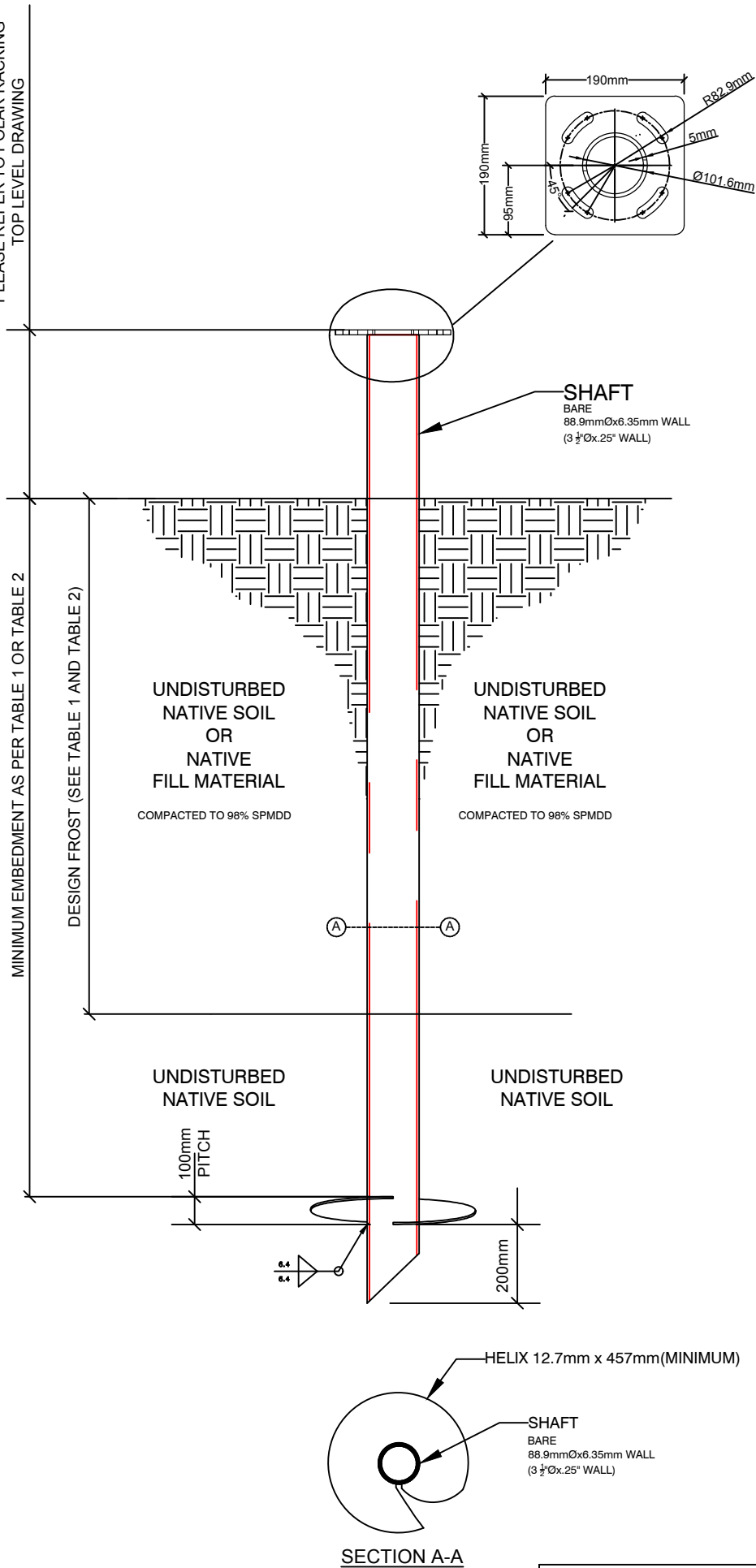
TABLE 1 - DESIGN PARAMETERS FOR PREDOMINANTLY FINE-GRAINED SOILS

Mean Freezing Degree Days ($^{\circ}$ C-days)	Mean Frost Depth (m)	Maximum Frost Depth (m)	Maximum Frost Load (kN)	Maximum Racking Uplift Load (kN)	Governing Uplift Load (kN)	Minimum Embedment Depth to Top of Helix (m)	Minimum Average Torque in the Final Three Readings (ft-lbs)	Minimum Torque Value in the Final Three Readings (ft-lbs)
> 500 and \leq 815	1.2	1.6	84	51	84	1.9	3,800	3,300
> 815 and \leq 1,110	1.4	1.8	98	51	98	2.1	4,500	3,900
> 1,110 and \leq 1,450	1.6	2.0	112	51	112	2.3	5,100	4,400
> 1,450 and \leq 1,835	1.8	2.2	126	51	126	2.5	5,700	4,900
> 1,835 and \leq 2,265	2.0	2.4	140	51	140	2.7	6,300	5,400
> 2,265 and \leq 2,740	2.2	2.6	154	51	154	2.9	7,000	6,000
> 2,740 and \leq 3,000	2.4	2.8	168	51	168	3.1	7,600	6,500

TABLE 2 - DESIGN PARAMETERS FOR PREDOMINANTLY COARSE-GRAINED SOILS

Mean Freezing Degree Days ($^{\circ}$ C-days)	Mean Frost Depth (m)	Maximum Frost Depth (m)	Maximum Frost Load (kN)	Maximum Racking Uplift Load (kN)	Governing Uplift Load (kN)	Minimum Embedment Depth to Top of Helix (m)	Minimum Average Torque in the Final Three Readings (ft-lbs)	Minimum Torque Value in the Final Three Readings (ft-lbs)
> 500 and \leq 615	2	2.6	140	51	140	2.9	6,300	5,400
> 615 and \leq 745	2.2	2.8	154	51	154	3.1	7,000	6,000
> 745 and \leq 890	2.4	3.0	168	51	168	3.3	7,600	6,500
> 890 and \leq 1,045	2.6	3.2	182	51	182	3.5	8,200	7,000
> 1,045 and \leq 1,210	2.8	3.4	196	51	196	3.7	8,900	7,600
> 1,210 and \leq 1,390	3.0	3.6	210	51	210	3.9	9,500	8,100
> 1,390 and \leq 1,580	3.2	3.8	224	51	224	4.1	10,100	8,600
> 1,580 and \leq 1,785	3.4	4.0	238	51	238	4.3	10,800	9,200
> 1,785 and \leq 2,000	3.6	4.2	252	51	252	4.5	11,400	9,700
> 2,000 and \leq 2,230	3.8	4.4	266	51	266	4.7	12,000	10,200
> 2,230 and \leq 2,470	4.00	4.8	280	51	280	5.1	12,600	10,800
> 2,470 and \leq 2,725	4.2	5.0	294	51	294	5.3	13,300	11,400
> 2,725 and \leq 2,990	4.4	5.2	308	51	308	5.5	13,900	11,900

FOR STICKUP HEIGHT REQUIREMENTS
PLEASE REFER TO POLAR RACKING
TOP LEVEL DRAWING



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00	ISSUED FOR REVIEW	4MAY21
REV NO.	ISSUANCE	DATE
PROJECT NAME:		
PRU-D DUAL LEG		
DRAWING NAME:		
HELICAL PILE FOUNDATION DESIGN		
PROJ. NO.: 21-030	DWG. BY: VT	CHKD. BY: JG
		APPR. BY: AY
DRAWING NUMBER:		FIGURE-3