



**APALTERNATIVES.COM**

WHERE INNOVATION MEETS AUTOMATION



## **AUTOMATED INSTALLATION**

With our fully automated, military grade GPS guided dual anchor driver we are able to drastically reduce project installation times. Our specialized equipment drives two helical anchors (front & rear) in the ground simultaneously, every 45 seconds. The GPS system allows for precision placement and accurate driving depth, taking project quality to the next level.

## **VERSATILITY AND ADAPTABILITY**

As projects progress, module shortages and layout changes can mean substantial and costly re-engineering. The Ready Rack system allows for quick and effortless changes, thanks to it's ability to work with all modules, layouts, terrain, and soil types. Our racking allows you to roll with the punches and sleep easy, knowing you have one of the most versatile racks on the market, without breaking the bank.



## ***READY RACK***

The **Ready Rack** racking system has been deployed across the US and used on large utility scale projects and small commercial projects. But, with age comes experience, so we've redesigned and added some features we know you'll love. The hardware design is a simple configuration that allows contractors to install at lightning fast speed with integrated adjustable features for challenging sites. Helical anchors and quick-install bracing make this simple system extremely robust. Carefully engineered, strong, and lightweight cee channels are highly configurable while allowing nearly infinite configurations and reduced part counts. Horizontal strut channel is customized to meet our high standards of strength and longevity and allows you to fill every inch of valuable space.



## ROCKY SOIL CONDITIONS

APA's ground screws are designed for sites with rock. The forged tip helps lead the screw straight and plumb. The threads of the screw bite and hold firmly into the soil without getting caught on rocks and cobbles. The heavy wall tube and welded connections allow massive amounts of torque and downward pressure to be applied helping the screw to advance into even the toughest soils.

## SIMPLE INSTALL

Several types of equipment can be used to install APA's ground screws. Skid loaders or mini excavators with an auger attachment are among the most common installation equipment. Many drilling contractors can use a simple adaptor to drive ground screws without buying new equipment. Most pile driving rigs can be converted to rotary heads with little effort.

## GROUND SCREW

Our **Ground Screws** are manufactured for even the most challenging solar sites. Our ground screws use heavy wall tubing for the main shaft of the screw. The tips of the screw are forged, making them extremely hard, this is essential to help it penetrate into or pass by underground obstructions. The threads are welded with a patented automated welding process to provide a consistent and strong weld along the entire length of the thread. Ground screws come with a durable hot dipped galvanized coating that will protect them from corrosion.



# WHAT MAKES THE GROUND SCREW FOUNDATION SO CAPABLE?

## HARD SOILS

Hard soils are why ground screws were designed. The forged tip and heavy duty steel tube allow for thousands of pounds of downforce and turning torque to be applied to the screw. This amount of torque and downforce allows rocks and cobbles to be pushed out of the way during installation

## SOLID ROCK

Ground screws can be installed into solid rock. By utilizing the method of drilling a pilot hole and adding some gravel backfill. The ground screws are securely installed into the pilot hole using the threads of the screw and the gravel backfill then locks them into the solid rock

## SANDY SOILS

The granular structure of sand has poor friction value making it hard for driven piles to perform well. However, the shape and threads of a ground screw displace and compact the sand around it when installed. This helps interlock the sand together and provides excellent holding power of the screw threads

## HEIGHT ADJUSTMENT

Posts can be adjusted to the perfect height by simply raising or lowering the top post in or out of the screw. To secure the top post, simply tighten the three set screws

## SHALLOW INSTALL

The ground screws can be installed as shallow as 30" depending on the soil. This allows for less chances of hitting underground obstructions

Diameter	Overall Length			
2.35"	40"	61"	73"	85"
3.00"	40"	61"	73"	85"
3.50"	40"	61"	73"	85"
4.00"	61"	73"	85"	
4.50"	61"	73"	85"	

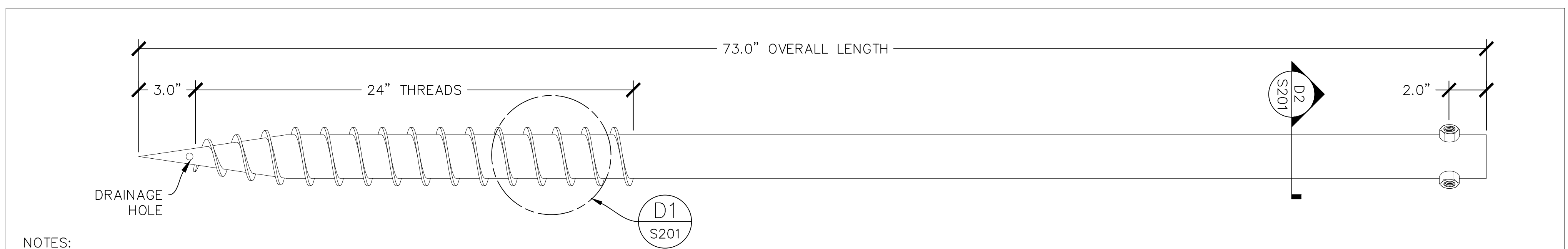
Custom sizes are available contact us for more information

## SET SCREW OR FLANGE CONNECTION

Ground screws can be manufactured with a set of three screw nuts or a flange welded to the top of the post. The set screws and flange options allow the screws to be used with fixed tilt, tracking and other solar mounting applications

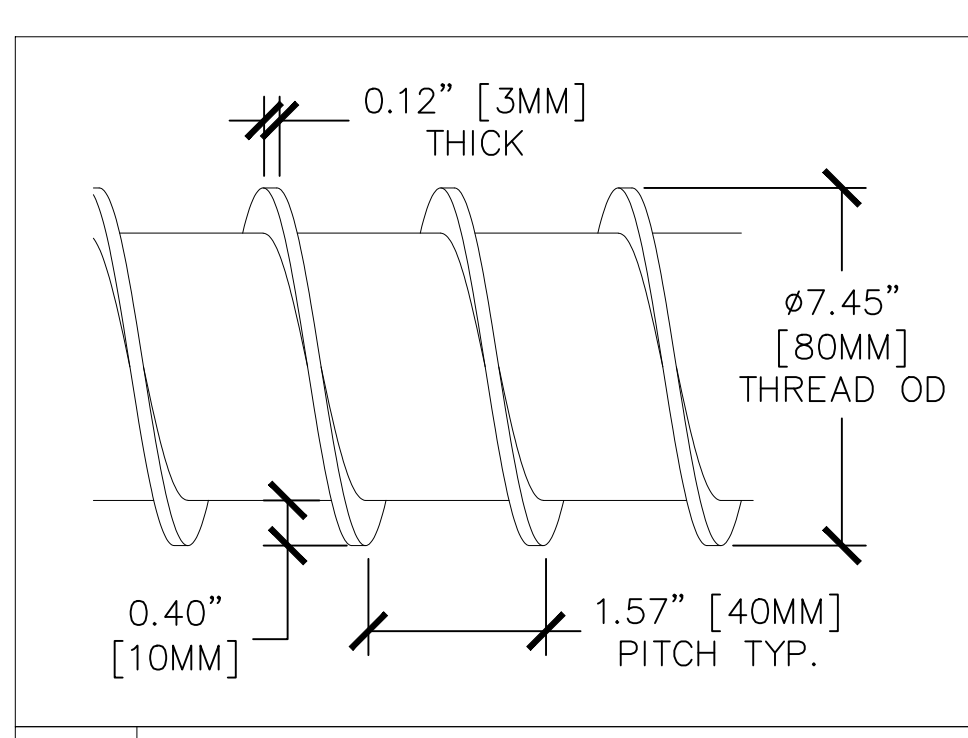


SCALE IS REDUCED WHEN SHEET SIZE IS 18" x 11"

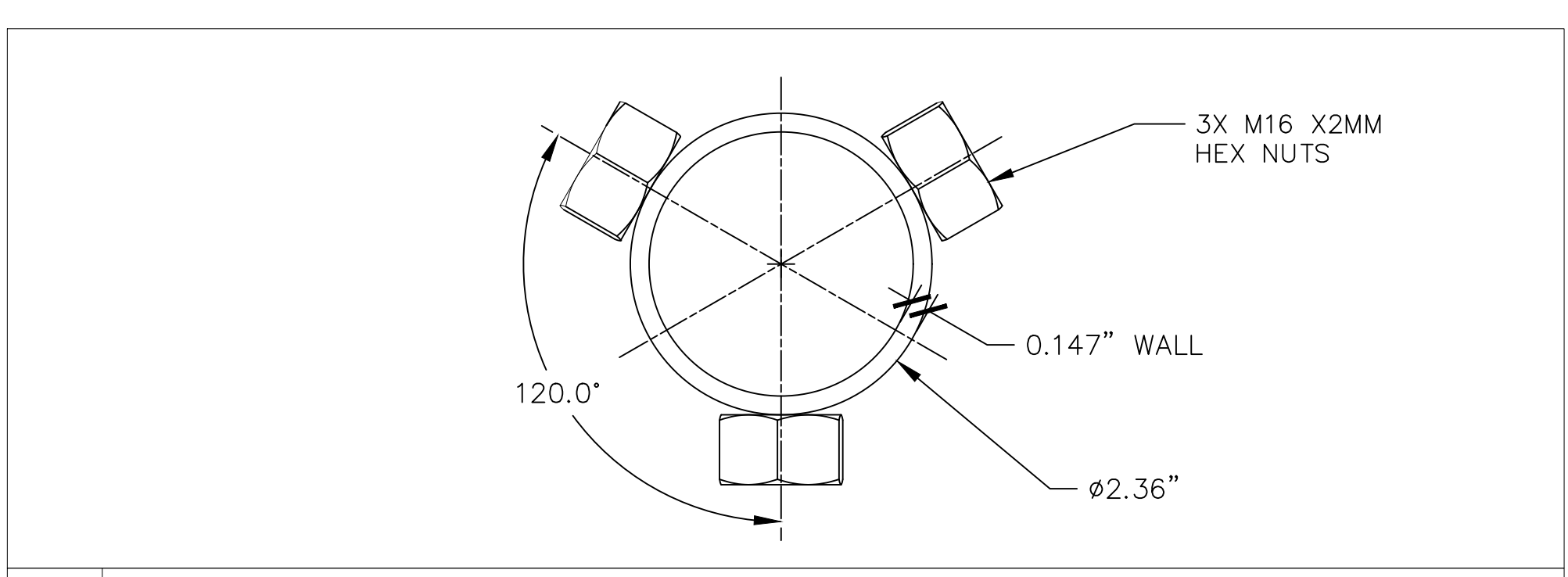


NOTES:  
1. VIEW NOT REPRESENTATIVE OF REQUIRED OVERALL OR THREAD LENGTH.

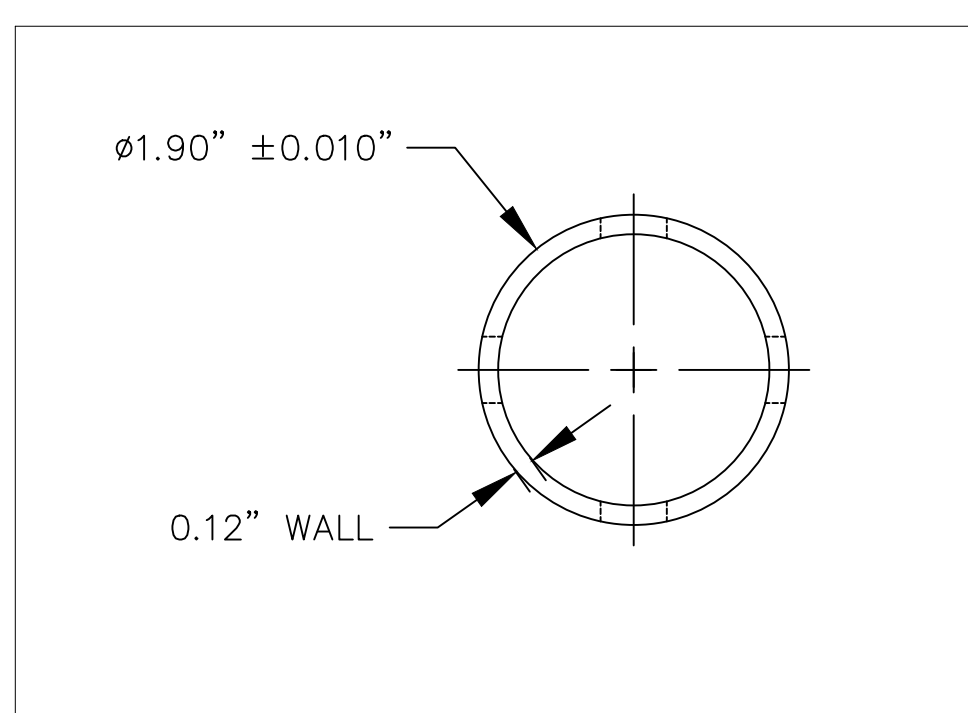
E1 PART: SCREW PILE



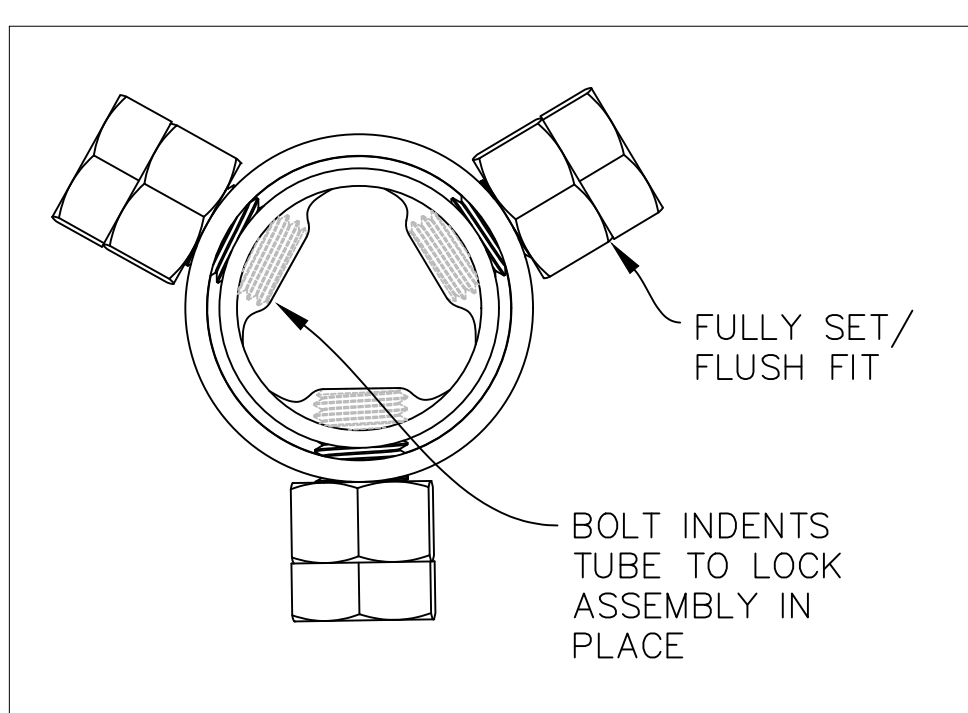
D1 DETAIL: SCREW PILE



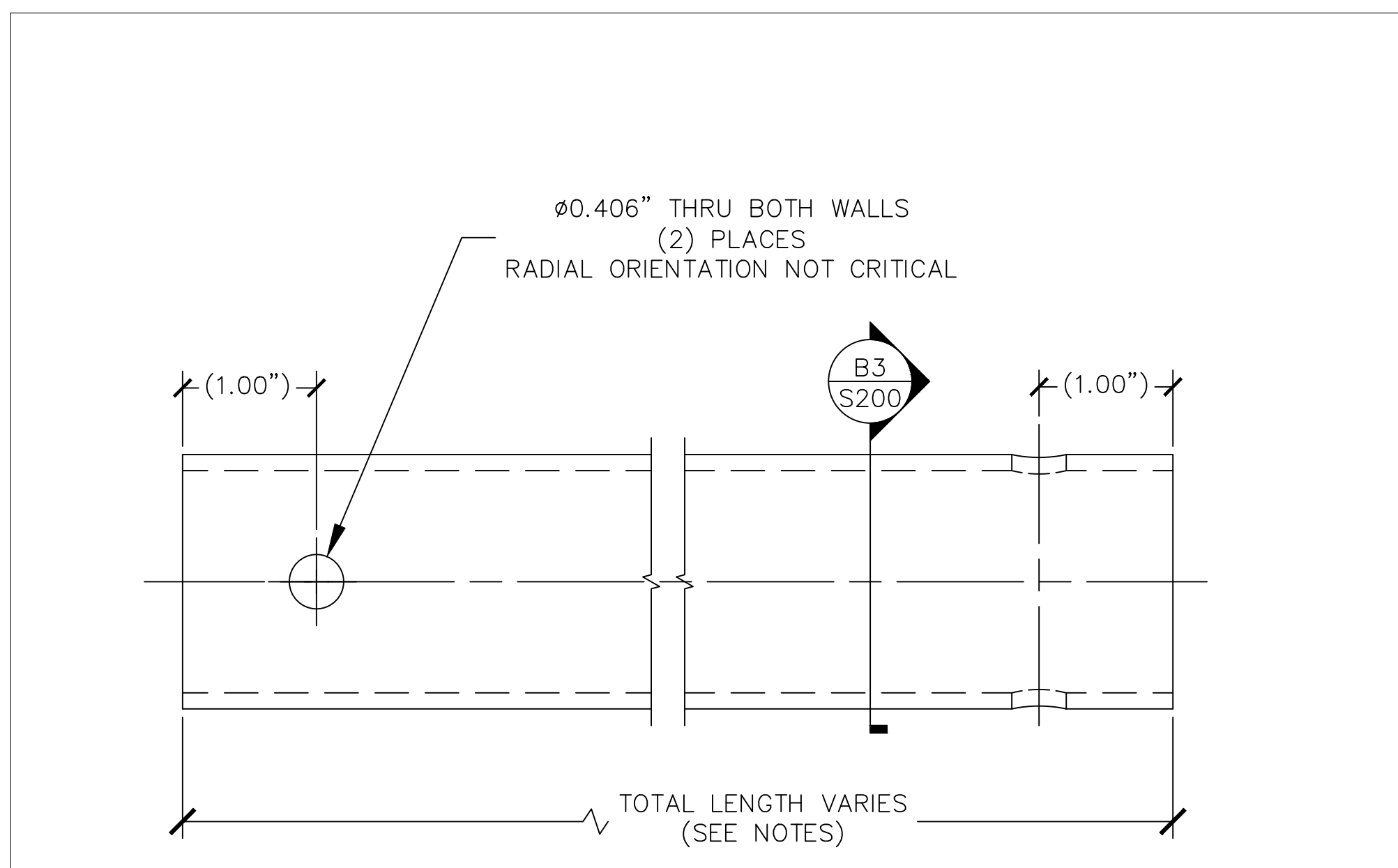
D2 SECTION: SCREW PILE



C1 SECTION: ANCHOR POST

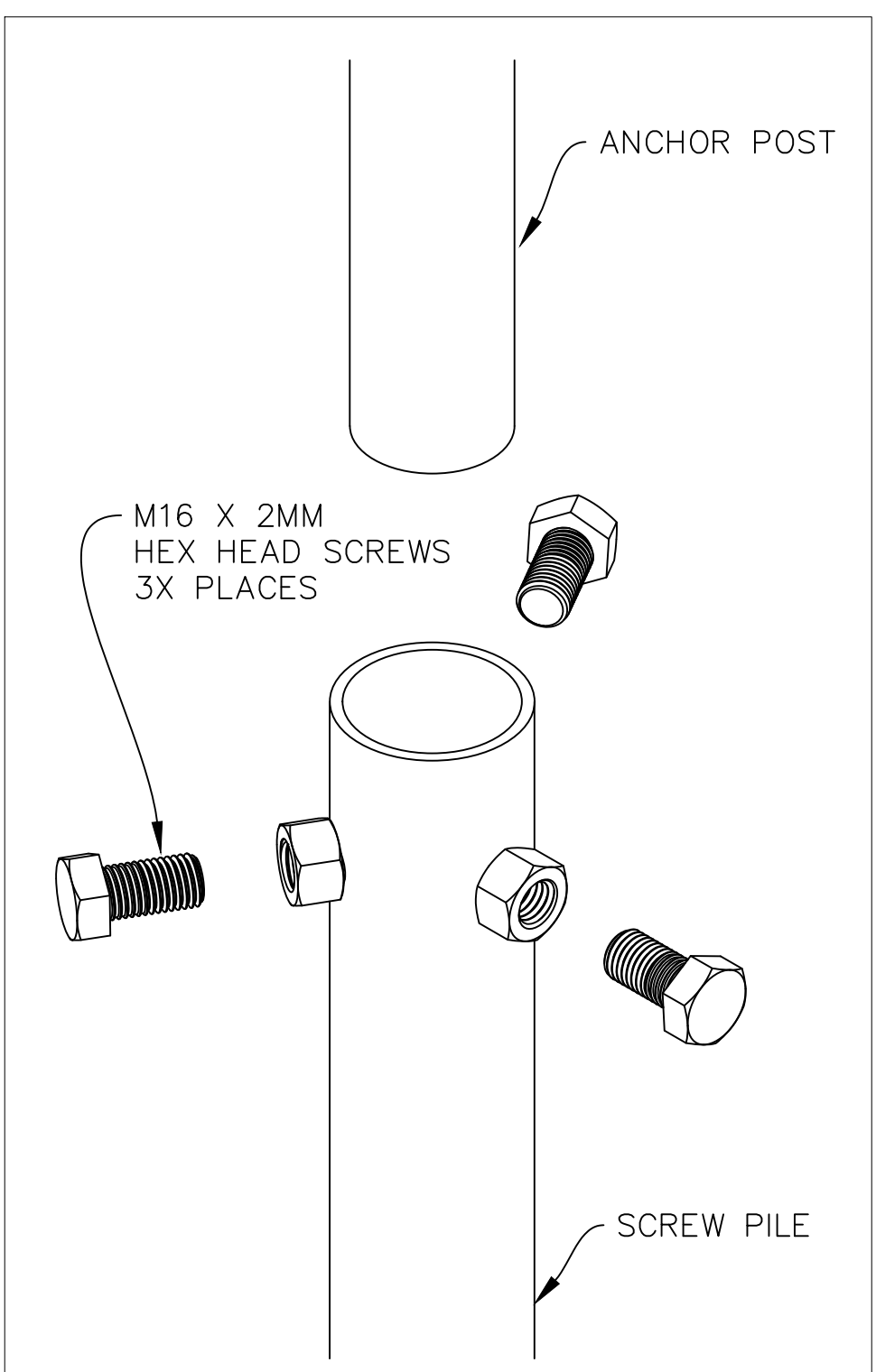


C2 DETAIL: PILE ASSEMBLY

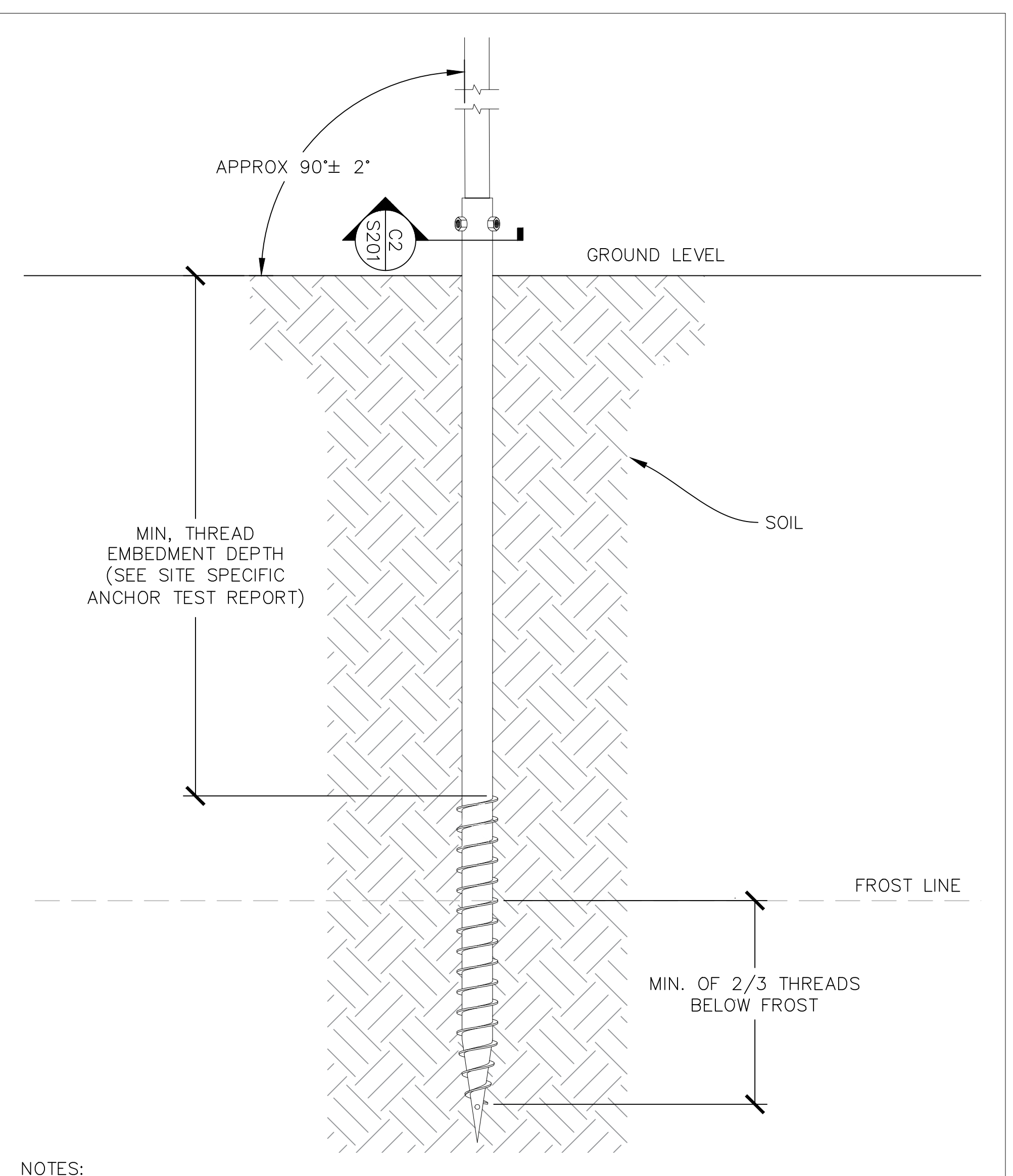


NOTES:  
1. LENGTHS VARY, SEE SHEET NOTES

A1 PART: ANCHOR POST



A3 CONNECTION: POST-TO-PILE



NOTES:  
1. LENGTH & THREADS MAY VARY, SEE SHEET NOTES

A5 VIEW: POST EMBEDMENT

- NOTES:
- ANCHOR TUBE MATERIAL: 50 KSI MIN YIELD STRENGTH, 1010 STEEL
  - ANCHOR TUBE TO BE HOT DIPPED GALVANIZED TO ASTM A123 OR INLINE GALVANIZED TO ASTM A1057.
  - SCREW PILE TUBE MATERIAL: 30 KSI MIN YIELD STRENGTH STEEL.
  - SCREW PILE THREAD MATERIAL: 28 KSI MIN YIELD STRENGTH STEEL.
  - SCREW PILE TO BE HOT DIPPED GALVANIZED TO ASTM A123 OR INLINE GALVANIZED TO ASTM A1057.
  - ALL HARDWARE IS 300 SERIES STAINLESS STEEL, A574 ALLOY STEEL, OR MINIMUM 8.8 CLASS METRIC.
  - BOLTS MUST BE FULLY SET INTO WELDED NUTS.
  - BOLTS SHALL BE 25 TO 30 MM LONG.
  - SCREW PILE SHALL PENETRATE THE SOIL TO A DEPTH PAST THE FROST LINE, SUCH WHICH LESS THAN 1/3 OF THE TOTAL LENGTH OF THREADS ARE ABOVE THE FROST LINE, OR TO THE DEPTH INDICATED AS MINIMUM PER THE STAMPED ANCHOR TEST REPORT, WHICHEVER IS DEEPER.
  - ANCHOR POST SHALL EXTEND ABOVE GROUND LEVEL AT MINIMUM OF INDICATED FRONT LIP CLEARANCE, PLUS THE ADDITIONAL LENGTH REQUIRED TO ACHIEVE THE INDICATED TILT ANGLE.
  - MINIMUM ENGAGEMENT BETWEEN SCREW PILE AND ANCHOR POST SHALL BE 4".
  - INSTALLERS SHALL REFER TO STRUT AND POST SETUP SHEETS FOR LENGTH AND PLACEMENT DETAILS.

- ANCHOR POST INSTALLATION
- ACCURATELY LOCATE AND INSTALL SCREW PILES BY SUCH METHODS AND EQUIPMENT SO AS NOT TO IMPAIR THE PILE STRENGTH OR DAMAGE ANCHORS OR ADJACENT CONSTRUCTION.
  - INSTALLATION CONTRACTOR RESPONSIBLE FOR ALL CONSTRUCTION EQUIPMENT, METHODS, AND SEQUENCES.
  - DISTURBED GALVANIZED SURFACES SHALL BE TOUCHED UP WITH AN APPROVED COLD GALVANIZING COMPOUND.
  - INSTALL SCREW PILES TO MINIMUM DEPTH AS INDICATED THIS SHEET OR AS REQUIRED PER THE STAMPED ANCHOR TEST REPORT.

CUSTOMER

RACKING PROVIDER

**APA SOLAR RACKING**  
20-345 COUNTY ROAD X  
RIDGEVILLE CORNERS, OHIO 43055  
(P) 419.267.5280  
(F) 419.267.5214  
WWW.APALTERNATIVES.COM

RACKING TYPE

**MODULAR**

STRUCTURAL ENGINEER OF RECORD

**the jdi group**  
architects & engineers

360 W. DUSSEL DR.  
MAUMEE, OH 43537  
(P) 419.725.7161 (F) 419.725.7160

PROFESSIONAL SEAL/STAMP

STRUCTURAL PRINT PACKAGE

SHEET NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	06/07/18

**APPROVED**

DRAWN	REVIEWED	APPROVED	SIZE
NF	TM	JDI	D

SHEET NAME  
ANCHOR POSTS & HELICES

PROJECT NUMBER  
AM25NY-003

DRAWING NUMBER  
S.201

REV.  
A

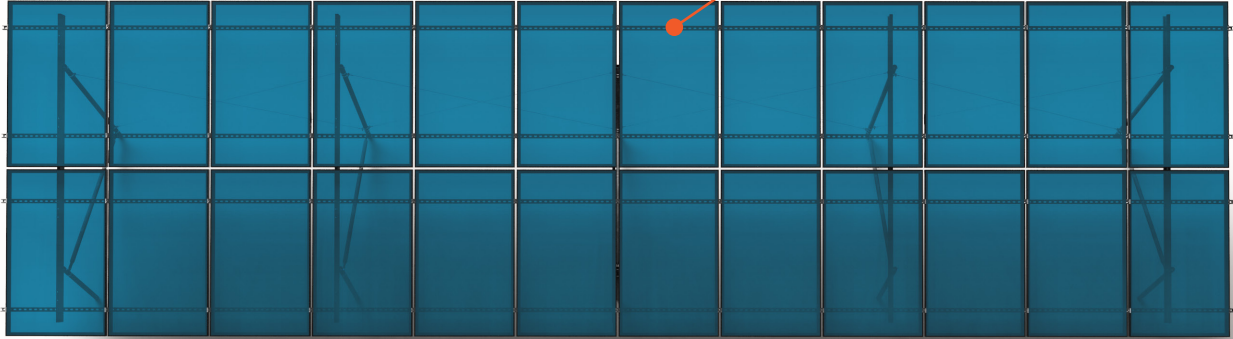
# WHAT MAKES THE **READYRACK** SYSTEM SO SPECIAL?

## FULLY CUSTOMIZABLE ROW LENGTHS

How do you fit more content while increasing production and reducing costs? Fill up every inch of space by creating rows as long or as short as you need.

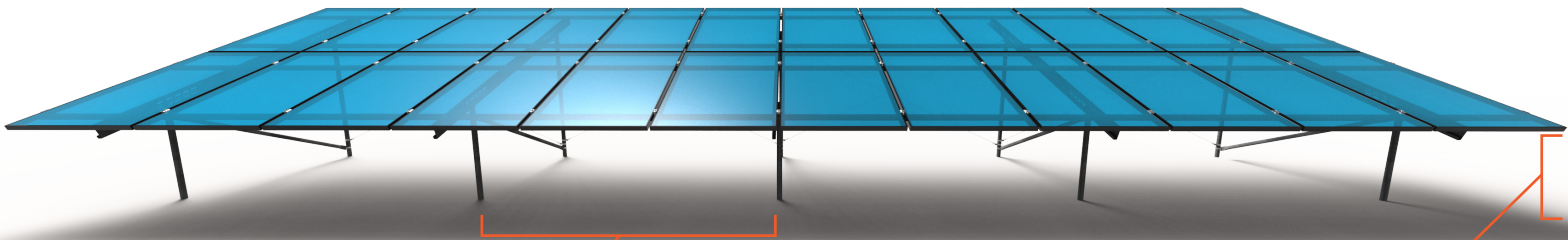
## VERSATILE DESIGN

We can design your rack to fit any panel and in any space and configuration. This can all be done on the fly, thanks to highly adaptable components.



## REDUCED PANEL SPACING

Every inch saved between panels means more panels will fit in the same area. High density means high profits.



## INCREASED ANCHOR SPACING

Longer spans means less parts, faster installation, and more money in your pocket.

## HIGH GROUND CLEARANCE

Whether your project needs clearance for snow or room for maintenance, our highly adjustable anchors have got you covered.



## INSTALLER FRIENDLY

Sleek and strong, our super cee channel accommodates varying posts heights and spans, tilts, and adjustments in the field, making our rack an installer's dream.

## HIGH STRENGTH PARTS

Engineered for the toughest northern winters and the harshest southern hurricanes, our racks will still be standing long after everything else.

**Racking Material:** High Strength Steel  
**Corrosion Resistance:** G90 Galvanized. Higher coating as required.  
**Snow Load:** Opsf to 35psf (higher load options available)  
**Wind Load:** Up to 150mph  
**Tilt Angle:** Customer Specified (5-30 Degrees)  
**Anchor Depth:** Design based on soil type and frost line. Testing performed by APA  
**Building Code Compliant:** IBC 2012  
**PE Stamped Drawings:** APA drawings can be PE stamped for all 50 states and territories.



419.267.5280 // SALES@APALTERNATIVES.COM