ENGINEERED FOUNDATION PLAN
C.P. SEISMIC PIER™ (MAX. HEIGHT 32.5")
SPA 30-25F

FOR: CENTRAL PIERS, INC.
284 N. THORNE AVE.
FRESNO, CA 93706
559-268-0828

BY: ROCK SOLID ENGINEERING, INC.
1100 MAIN STREET, SUITE A
WATSONVILLE, CA 95076
831-724-5868

REGISTERED PROFESSIONAL ENGINEER
YVETTE M. WILSON
No. 60245
CIVIL
STATE OF CALIFORNIA

Signed: 9-14-2020

STATE APPROVAL

MANUFACTURED HOME/MOBILE HOME
FOUNDATION SYSTEM
HEALTH AND SAFETY CODE, SECTION 18613
APPROVED

APPROVAL DOES NOT AUTHORIZE OR APPROVE ANY
OMISSIONS OR DEVIATION FROM REQUIREMENTS OF
APPLICABLE STATE LAWS AND REGULATIONS
State of California
Department of Housing and Community Development
DIVISION OF CODES AND STANDARDS

BY _____ (signature) DATE 9/16/20

SPA NO. 30-25F

This Plan Approval Expires 9/19/23

REV.	DATE	BY	COMMENTS
3	09/14/20	YW	UPDATE TO 2019 CBC/CRC
2	09/12/18	YW	UPDATE TO 2016 CBC/CRC
1	08/12/16	YW	MINOR TEXT EDITS
0	03/25/14	YW	UPDATE TO 2013 CBC/CRC

GENERAL NOTES:

REFERENCE: CALIFORNIA CODE OF REGULATIONS, TITLE 25 AND 2019 C.R.C./C.B.C. CHAPTER 16. THESE PLANS MEET THE INTENT OF 2019 C.R.C. 301.1.3. 3

1. DESIGN LOADS SHALL BE CONSISTENT WITH LOCAL REQUIREMENTS WHERE INSTALLED. THE FOLLOWING DESIGN LOADS ARE INCORPORATED HEREIN:
   FLOOR LIVE LOAD: 40 PSF
   ROOF LIVE LOAD: 30 PSF – 100 PSF AS LISTED IN TABLE
   BASIC WIND SPEED & EXPOSURE: 95–130 MPH. SEE TABLE F5 3
   SEISMIC DESIGN CATEGORY: E
   SITE CLASS D Ss=1.5* Sds=1.4 Fa=1.4 V=0.215W 3
   *PER ASCE 7–16, SECTION 12.14.8.1, Ss NEED NOT EXCEED 1.5. (SITE VALUE MAY BE HIGHER).
   THIS DESIGN NOT INTENDED FOR USE IN FLOOD HAZARD AREAS UNLESS A SEPARATE DESIGN ADDRESSING THE FLOOD HAZARD IS SUBMITTED FOR APPROVAL BY THE LOCAL JURISDICTION.

2. FOOTINGS ARE TO BE SUPPORTED BY EITHER FIRM, UNSATURATED, UNDISTURBED SOIL OR COMPACTED FILL, ASPHALT OR CONCRETE. FOOTINGS ARE DESIGNED FOR 1500 PSF BEARING CAPACITY AND SHALL BE COMPATIBLE WITH LOCAL SOIL CONDITIONS. ALL FOOTINGS SHALL BE FOUNDED IN ACCORDANCE WITH H.C.D. GUIDELINES AND TITLE 25 OR PREPARE SUBGRADE PER SOIL REPORT WHEN AVAILABLE.

3. STRUCTURAL STEEL:
   a. SHALL CONFORM TO ASTM A36 Fy = 36 KSI MINIMUM.
   b. SHALL BE FABRICATED ACCORDING TO AISC SPECIFICATIONS.
   c. SHALL BE WELDED ACCORDING TO AWS SPECIFICATIONS:
      i. ELECTRODES: E70
      ii. PLATES: ASTM A36
      iii. BOLTS: STANDARD ASTM A307
      iv. THREADED ROD: COLD DRAWN LOW CARBON WELDABLE
      v. ALL METAL COMPONENTS INCLUDING NAILS & SCREWS ETC. ARE TO BE PROTECTIVE COATED.

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4. THE C.P. SEISMIC PIER SHALL BE LISTED & LABELED BY BSK ASSOCIATES FOR THESE ULTIMATE LOADS:
   A. 7" THRU 18 INCH PIERS: 3203 LBS. (STRONG DIR), 2273 (WEAK DIR)
   B. 19 INCH X–LARGE PIER: 1553 LBS. (STRONG DIR.), 1462 (WEAK DIR)
   C. 16,000 VERTICAL

5. THIS FOUNDATION SYSTEM IS FOR PLACING MANUFACTURED HOMES CONSTRUCTED WITH LONGITUDINAL OR CROSS JOISTS.

6. THIS FOUNDATION SYSTEM IS DESIGNED TO BE CONSTRUCTED ON A FAIRLY LEVEL SITE WITH NO EXISTING SOIL PROBLEMS. SEE NOTE 2 AND TITLE 25, SECTION 1334(b).

7. THE SIZE, TYPE & LOCATION OF STANDARD VERTICAL SUPPORT PIERS & FOOTINGS MUST BE INSTALLED PER THE HOME MANUFACTURER'S INSTALLATION MANUAL. WITHOUT MANUAL, SPACING OF STANDARD PIERS TO BE DETERMINED BY TITLE 25, SECTION 1335.5.

FOUNDATION PAD NOTES:

1. TWO FOUNDATION PADS ARE AVAILABLE FOR USE WITH THIS SYSTEM. THE CUSTOMER MAY CHOOSE ONE OF THE PADS FOR THEIR HOME. SEE DETAIL 2, SHEET F6.

2. FOUNDATION PADS SHALL BE PLACED ON FIRM, LEVEL UNDISTURBED SOIL (SEE GEN. NOTE 2).

3. THE FOUNDATION PADS SHALL BE ORIENTED AS SHOWN ON THE PLAN VIEW DRAWINGS, SHEETS F3 AND F4, WITH THE BOLT HOLES PERPENDICULAR TO THE CHASSIS BEAM.

4. CONCRETE FOUNDATION PADS
   A. 2500 PSI AT 28 DAYS AS TESTED & MANUF. BY STARLITE WEIGHT CONCRETE.

5. PRESSURE TREATED FOUNDATION PAD
   A. 3/4 INCH A.P.A. 48/24 EXTERIOR P.S.I.–83 CC. PLUGGED, ER–QA397, PRP–108.

6. ATTACHMENT TO EXISTING CONCRETE SLAB
   THE C.P. SEISMIC PIER MAY BE ATTACHED TO AN EXISTING COMPETENT CONCRETE SLAB OR CONCRETE FOOTING ACCORDING TO THE FOLLOWING CRITERIA:
   1. ATTACH WITH TWO 5/8" DIAM. REDHEAD WEDGE ANCHORS, OR EQUIVALENT
   2. MINIMUM EMBEDMENT = 2.5"
   3. MINIMUM CONCRETE THICKNESS = 3¼"
   4. MINIMUM EDGE DISTANCE = 2"

COACH SIZE NOTES:

UNLESS APPROVED BY ROCK SOLID ENGINEERING, INC., THE ROOF PITCH SHOULD NOT EXCEED:
   A. SINGLE WIDES: 4:12
   B. DOUBLE AND TRIPLE WIDES: 3:12 or 4:12 AS LISTED IN TABLE SHEET F5

2. FOR ANY HOME SIZE OTHER THAN AS SHOWN ON THIS PLAN OR REFERENCED IN THE TABLE SHEET F5, THE LAYOUT SHALL BE REVIEWED & APPROVED BY ROCK SOLID ENGINEERING, INC.

INSPECTION REQUIREMENTS:

HCD Exp 9/1/22

1. THE DESIGN OF THIS SYSTEM IS BASED ON STANDARD MANUFACTURED HOMES AS BUILT BY THE MANUFACTURER. SITE BUILT ADDITIONS SUCH AS GARAGES AND SECONDARY ROOFS HAVE NOT BEEN INCLUDED IN THIS DESIGN.

2. ALL DIMENSIONS INCLUDED ON THIS PLAN, INCLUDING COACH SIZE, ROOF HEIGHT AND PIER HEIGHT, SHOULD BE FIELD VERIFIED BY THE LOCAL BUILDING OFFICIAL. ANY DISCREPENCIES SHOULD BE IMMEDIATELY BROUGHT TO THE ENGINEER'S ATTENTION.

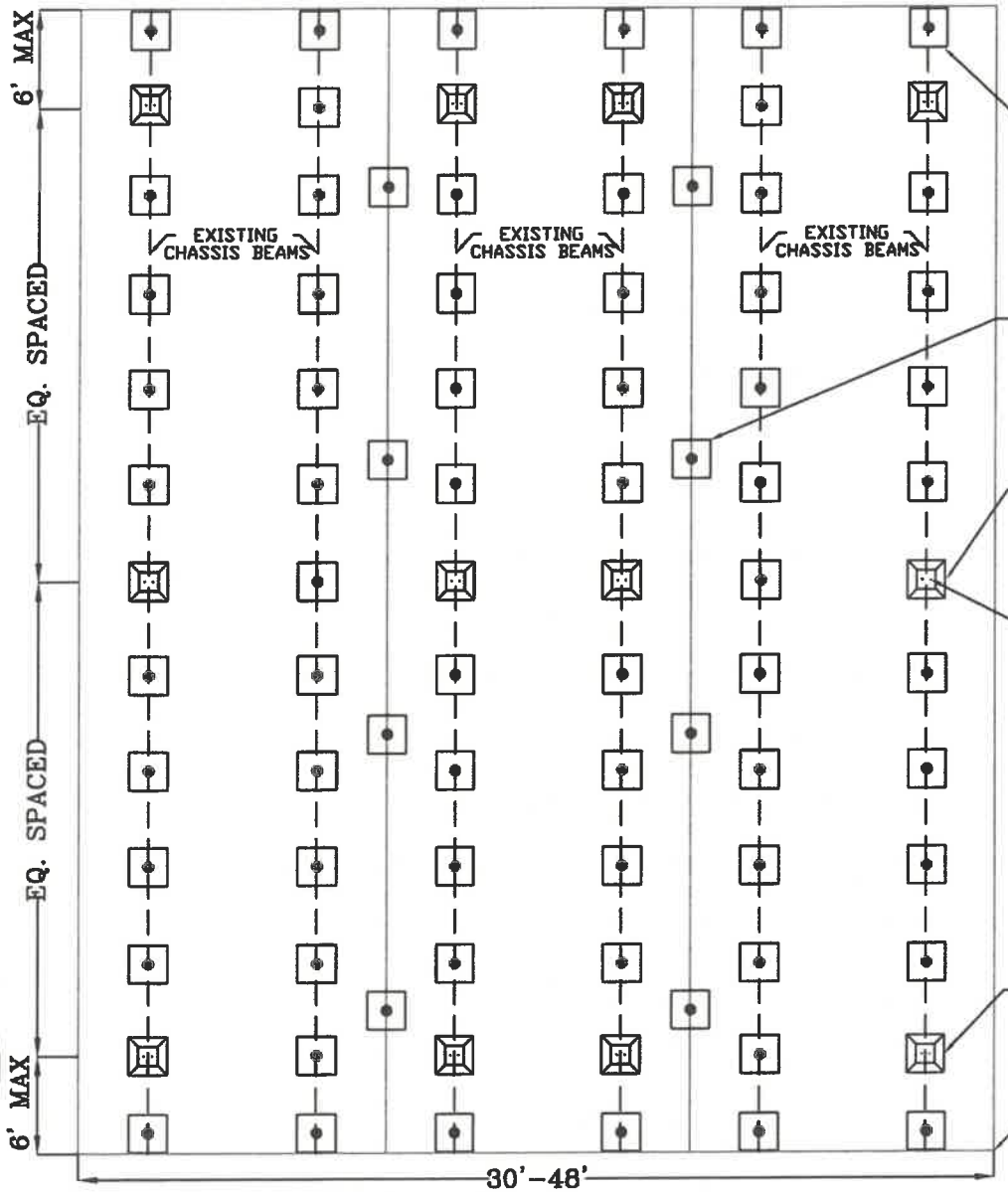
3. THE BUILDING PAD SHOULD BE INSPECTED TO ENSURE THAT PROPER SOIL CONDITIONS AND DRAINAGE PATTERNS HAVE BEEN ESTABLISHED IN ACCORDANCE WITH TITLE 25 & THE HOME INSTALLATION MANUAL.

ROCK SOLID ENGINEERING, INC.

ENGINEERED FOUNDATION PLAN
CENTRAL PIERS – SPA 30–25F

3 09/14/20

SHEET F2 OF 6



STANDARD CHASSIS PIER SUPPORT. TYPE, SIZE & LOCATION MUST BE INSTALLED AS SPECIFIED IN HOME'S INSTALLATION MANUAL

SIZE TYPE & LOCATION OF MARRIAGE LINE SUPPORTS MUST BE INSTALLED AS SPECIFIED IN THE HOME'S INSTALLATION MANUAL.

PLACE C.P. SEISMIC PIERS™
IN ROWS OF 4
PER TABLE, SHEET F5
OF ROWS PER TABLE, SHEET F5
EACH SEISMIC PIER MAY REPLACE 1 STANDARD PIER

PAD ORIENTATION
PAD MUST BE PLACED AS SHOWN WITH BOLT HOLES PERPENDICULAR TO CHASSIS BEAM

WHEN TIDOWNS ARE REQUIRED: PLACE C.P. ANCHOR PIER ON OUTER CHASSIS BEAM IN PLACE OF SEISMIC PIER.
TIEDOWNS PER TABLE, SHEET F5,
(Ult. Capacity=2840 Lat & 3170 Uplift)

OUTLINE OF HOME

REGISTERED PROFESSIONAL ENGINEER
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Signed: 9-14-2020

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Exp 9/9/22

PLAN

Not to Scale

TRIPLE WIDE HOME

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ENGINEERED FOUNDATION PLAN

CENTRAL PIERS – SPA 30–25F

3 09/14/20

SHEET F3 OF 6

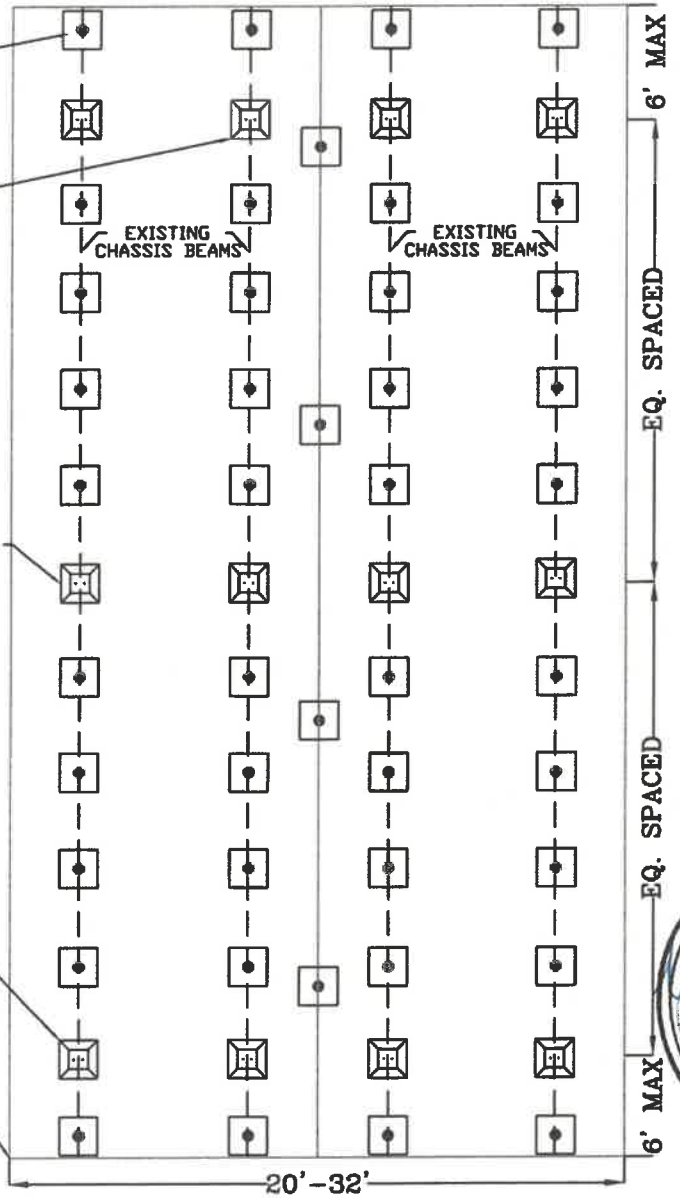
STANDARD CHASSIS PIER SUPPORT. TYPE, SIZE & LOCATION MUST BE INSTALLED AS SPECIFIED IN HOME'S INSTALLATION MANUAL

PAD ORIENTATION
PAD MUST BE PLACED AS SHOWN WITH BOLT HOLES PERPENDICULAR TO CHASSIS BEAM

PLACE C.P. SEISMIC PIERS™ IN ROWS OF 4, # OF ROWS PER TABLE SHEET F5 # PER TABLE SHEET F5, EACH SEISMIC PIER MAY REPLACE 1 STANDARD PIER

WHEN TIDOWNS ARE REQUIRED: PLACE C.P. ANCHOR PIER ON OUTER CHASSIS BEAM IN PLACE OF SEISMIC PIER. # TIEDOWNS PER TABLE SHEET F5
(Ult. Capacity=2840 Lat & 3170 Uplift)

OUTLINE OF HOME



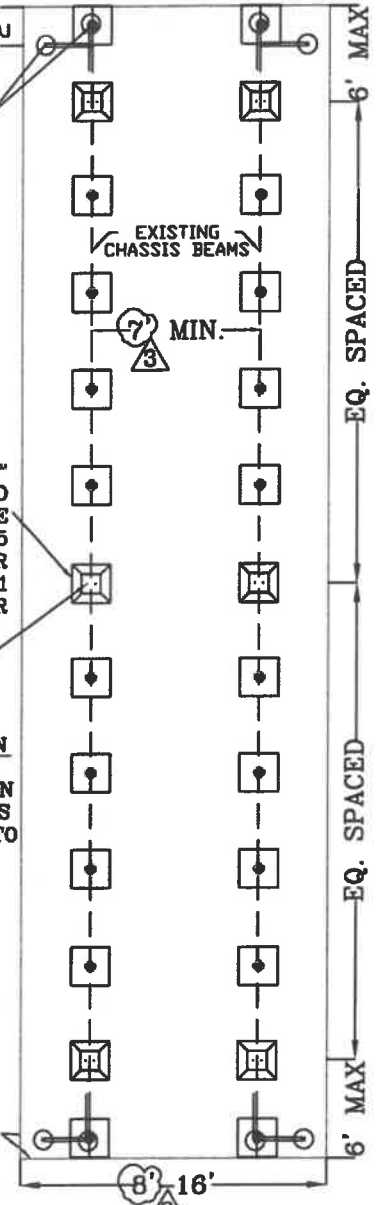
PLAN Not to Scale
DOUBLE WIDE HOME

INSTALL HOME PRIDE OR OLIVER TECHNOLOGIES EARTH ANCHORS 2900 lbs CAPACITY. NUMBER PER TABLE SHEET F5 SPACE 1ST ROW 2 FT FROM END THEN SPACE EVENLY. INSTALL END WALL TIEDOWNS, WHERE REQUIRED SEE TABLE SHEET F5.

C.P. SEISMIC PIER™ & FOUNDATION PAD # PER TABLE SHEET F5 EACH SEISMIC PIER MAY REPLACE 1 STANDARD PIER

PAD ORIENTATION
PAD MUST BE PLACED AS SHOWN WITH BOLT HOLES PERPENDICULAR TO CHASSIS BEAM

OUTLINE OF HOME



PLAN Not to Scale
SINGLE WIDE HOME

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ENGINEERED FOUNDATION PLAN
CENTRAL PIERS – SPA 30-25F

ROCK SOLID ENGINEERING, INC.

3 09/14/20

SHEET F4 OF 6

			MAX. ROOF LIVE LOAD (PSF)	30 PSF			30 PSF			40 PSF			100 PSF		
			MAX. WIND LOAD(MPH,EXP)	95C			100C			120B			130C		
HOME SIZE				# OF SEISMIC PIERS	# OF ROWS	# OF TIE DOWNS	# OF SEISMIC PIERS	# OF ROWS	# OF TIE DOWNS	# OF SEISMIC PIERS	# OF ROWS	# OF TIE DOWNS	# OF SEISMIC PIERS	# OF ROWS	# OF TIE DOWNS
	ROOF PITCH	WIDTH	LENGTH												
SINGLES	4:12	8'–16'	22' TO 48'	4	2 ROWS	4	4	2 ROWS	4	4	2 ROWS	4 / 4*	4	2 ROWS	4 / 4*
			48.5'–60'	6	3 ROWS	4	6	3 ROWS	4	6	3 ROWS	4	6	3 ROWS	4 / 4*
			60.5'–78'	8	4 ROWS	4	8	4 ROWS	4	8	4 ROWS	4	8	4 ROWS	6 / 4*
DOUBLE WIDES	3:12	20'–32'	28' TO 56'	8	2 ROWS	0	8	2 ROWS	0	4	2 ROWS	4	8	3 ROWS	4
			56.5'–66'	8	2 ROWS	0	12	3 ROWS	0	8	3 ROWS	4	8	3 ROWS	4
			66.5'–78'	12	3 ROWS	0	12	3 ROWS	0	8	3 ROWS	4	12	4 ROWS	4
	4:12	20'–32'	30' TO 56'	8	2 ROWS	0	8	2 ROWS	0	4	2 ROWS	4	8	3 ROWS	4
			56.5'–66'	8	2 ROWS	0	12	3 ROWS	0	8	3 ROWS	4	8	3 ROWS	4
			66.5'–78'	12	3 ROWS	0	12	3 ROWS	0	12	4 ROWS	4	12	4 ROWS	4
TRIPLES WIDES	4:12	30'–40'	34' TO 48'	8	2 ROWS	0	8	2 ROWS	0	8	3 ROWS	4	8	3 ROWS	4
			48.5'–56'	12	3 ROWS	0	12	3 ROWS	0	8	3 ROWS	4	12	4 ROWS	4
			56.5'–66'	12	3 ROWS	0	12	3 ROWS	0	12	4 ROWS	4	12	4 ROWS	4
			66.5'–78'	16	4 ROWS	0	16	4 ROWS	0	12	4 ROWS	4	16	5 ROWS	4
		40.5'–48'	40' TO 48'	12	3 ROWS	0	12	3 ROWS	0	8	3 ROWS	4	12	4 ROWS	4
			48.5'–56'	12	3 ROWS	0	12	3 ROWS	0	12	4 ROWS	4	16	5 ROWS	4
			56.5'–66'	12	3 ROWS	0	12	3 ROWS	0	12	4 ROWS	4	16	5 ROWS	4
			66.5'–78'	16	4 ROWS	0	16	4 ROWS	0	16	5 ROWS	4	14	5 ROWS	6

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TABLE NOTES:
TO USE TABLE, FIND HOME SIZE (SINGLE, DOUBLE OR TRIPLE), THEN FIND ROOF PITCH, WIDTH AND LENGTH. FOLLOW ROW ACROSS TO DESIGN ROOF LOAD THEN DESIGN WIND LOAD. READ TOTAL NUMBER OF C.P. SEISMIC PIERS, # OF ROWS & TIEDOWNS REQUIRED. SEE PLAN SHEETS F3 AND F4 FOR PLACEMENT OF C.P. SEISMIC PIERS AND TIEDOWN SPECIFICATIONS.

FOR EXAMPLE, FOR A 24'x60' HOME WITH A 3:12 ROOF PITCH, DESIGN SNOW LOAD OF 30 PSF & 100 MPH, EXPOSURE C WIND LOAD, READ 12 C.P. SEISMIC PIERS, PLACED IN 3 ROWS, WITH 0 C.P. ANCHOR PIER TIEDOWNS. LAYOUT SHOWN IN DOUBLE WIDE PLAN VIEW SHEET F4.

*FOR SINGLE WIDES, WHERE TIEDOWN COLUMN IS SPLIT AS SHOWN, INSTALL 2 EARTH ANCHOR TIEDOWNS AT EACH ENDWALL , TOTAL # OF ENDWALL TIEDOWS PER HOME IS INDICATED IN TABLE BY *.

4 / 4* — 4 = TOTAL # OF SIDEWALL TIEDOWNS; 4* = TOTAL # OF ENDWALL TIEDOWNS

HOME SIZES REFER TO NOMINAL SIZES THAT ARE COMMONLY MANUFACTURED. IF THE EXACT SIZE OF THE HOME IS NOT LISTED, CHECK THE NEXT HIGHER OR LOWER SIZE AND USE THE ONE THAT REQUIRED MORE PIERS.

THE TIEDOWNS SHALL BE LISTED & INSTALLATION INSTRUCTIONS SHALL BE ON SITE AT TIME OF INSPECTION.

NO MORE THAN 1/3 OF THE TOTAL NUMBER OF C.P. SEISMIC MAY BE EXTENDED ABOVE 22.75 INCHES MEASURED FROM THE BASE OF THE PIER TO THE TOP PLATE OF THE PIER. NO MORE THAN ½ OF THE C.P. ANCHOR PIER MAY BE EXTENDED ABOVE 28 INCHES MEASURED AS STATED ABOVE.

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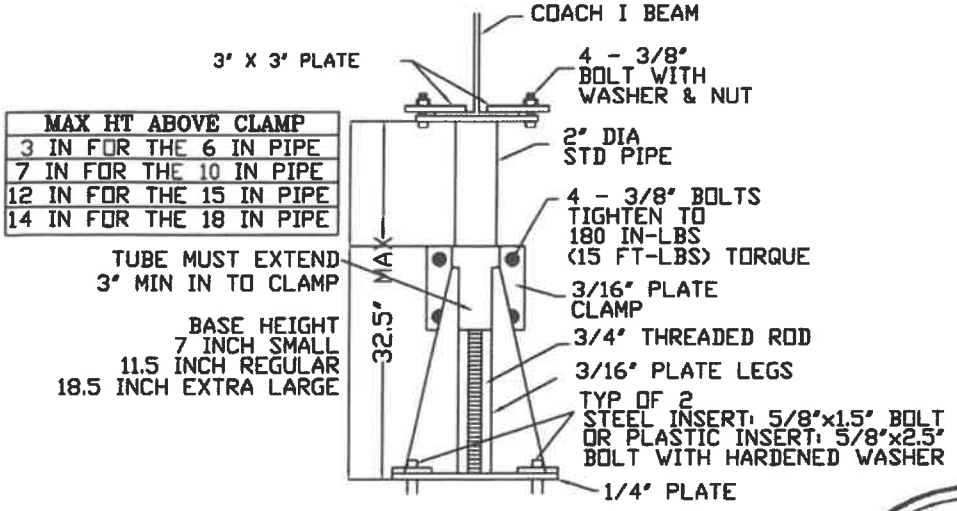
ENGINEERED FOUNDATION PLAN
CENTRAL PIERS – SPA 30–25F

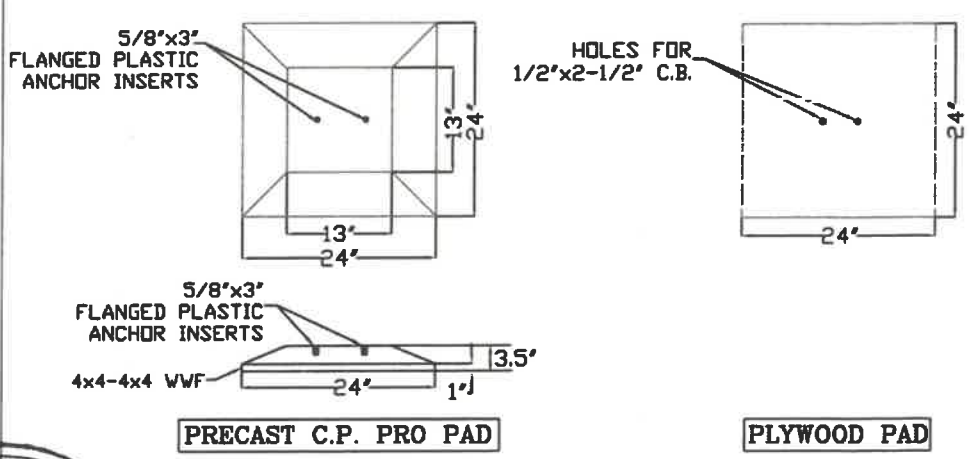
3 09/14/20

SHEET F5 OF 6



1 SEISMIC PIER™ NOT TO SCALE

C.P. SEISMIC PIER #1
LISTING #C03-044-60F BY BSK



2 FOUNDATION PADS NOT TO SCALE

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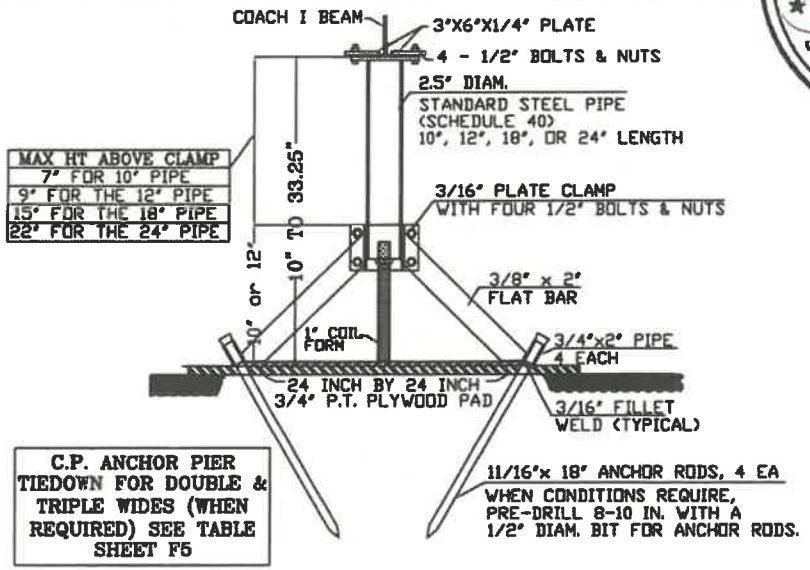
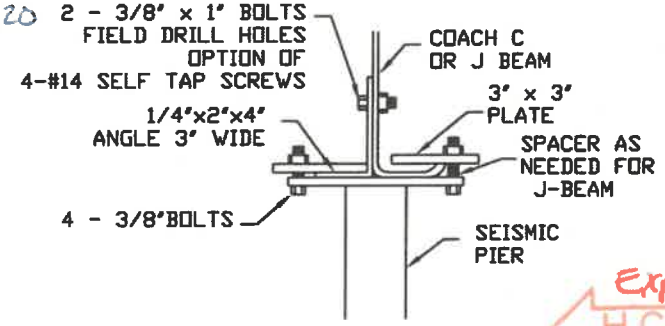


3 C.P. ANCHOR PIER NOT TO SCALE

LISTING #186.6 BY CTC



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4 TYPICAL BEAM CONNECTION NOT TO SCALE

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SHEET F6 OF 6