



OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
FACILITIES DEVELOPMENT DIVISION

APPLICATION FOR OSHPD PREAPPROVAL
OF MANUFACTURER'S CERTIFICATION (OPM)

OFFICE USE ONLY
APPLICATION #: OPM-0398-13

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: [X] New [ ] Renewal [X] Update to Pre-CBC 2013 OPA Number: OPA-2896-10

Manufacturer Information

Manufacturer: Trumpf Medical Systems, Inc.
Manufacturer's Technical Representative: Andrew Knight
Mailing Address: 1046 LeGrand Blvd., Charleston, SC 29492
Telephone: 843-416-1377 Email: Andrew.Knight@trumpfmedical.com

Product Information

Product Name: Fixed Base Operating Table
Product Type: Motorized Operating Table
Product Model Number: TruSystem 7500, Kikumoto
General Description: Motorized Operating Table
DATE: 10/02/2017

Applicant Information

Applicant Company Name: Trumpf Medical Systems, Inc.
Contact Person: Andrew Knight
Mailing Address: 1046 LeGrand Blvd., Charleston, SC 29492
Telephone: 843-416-1377 Email: Andrew.Knight@trumpfmedical.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: [Handwritten Signature] Date: 12/13/2016
Title: Product Manager Company Name: Trumpf Medical Systems

"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"





**OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT  
FACILITIES DEVELOPMENT DIVISION**

**Registered Design Professional Preparing Engineering Recommendations**

Company Name: CYS Structural Engineers, Inc.

Name: Dieter T. Siebald California License Number: S4346

Mailing Address: 2495 Natomas Park Drive, Suite 650, Sacramento, CA 95833

Telephone: 916-920-2020 Email: dieters@cyseng.com

**OSHPD Special Seismic Certification Preapproval (OSP)**

- Special Seismic Certification is preapproved under OSP-  
(Separate application for OSP is required)
- Special Seismic Certification is not preapproved

**Certification Method(s)**

- Testing in accordance with:  ICC-ES AC156  FM 1950-16
- Other\* (Please Specify): \_\_\_\_\_

OPM-0398-13

\*Use of criteria other than those adopted by the California Building Standards Code, 2016 (CBSC 2016) for component supports and attachments are not permitted. For distribution system, interior partition wall, and suspended ceiling seismic bracings, test criteria other than those adopted in the CBSC 2016 may be used when approved by OSHPD prior to testing.

DATE: 10/02/2017

- Analysis
- Experience Data
- Combination of Testing, Analysis, and/or Experience Data (Please Specify): \_\_\_\_\_

**List of Attachments Supporting the Manufacturer's Certification**

- Test Report  Drawings  Calculations  Manufacturer's Catalog
- Other(s) (Please Specify): \_\_\_\_\_

**OFFICE USE ONLY – OSHPD APPROVAL VALID FOR CBC 2016 & ALL PRE-2016 CODE BASED PROJECTS**

Signature:  Date: 10-02-2017

Print Name: Jeffrey Kikumoto

Title: SSE

Condition of Approval (if applicable): \_\_\_\_\_

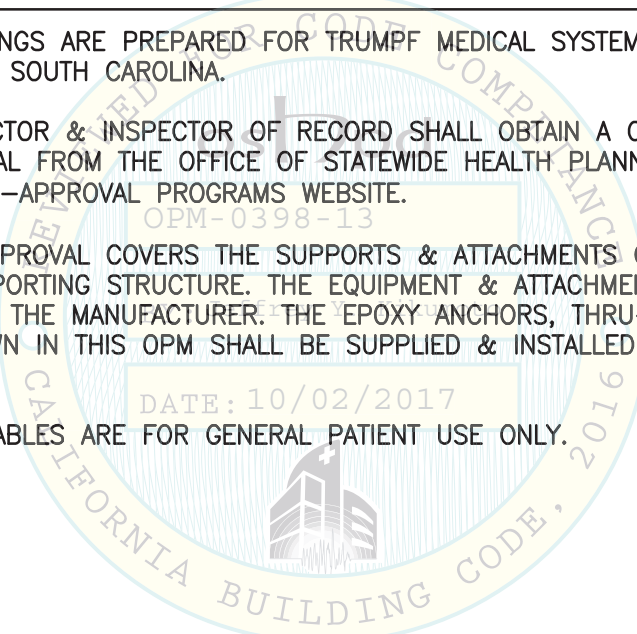
"Access to Safe, Quality Healthcare Environments that Meet California's Diverse and Dynamic Needs"



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OPM-0398-13

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- NOTES:**
1. THESE DRAWINGS ARE PREPARED FOR TRUMPF MEDICAL SYSTEMS INC, CHARLESTON, SOUTH CAROLINA.
  2. THE CONTRACTOR & INSPECTOR OF RECORD SHALL OBTAIN A COPY OF THIS PRE-APPROVAL FROM THE OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT (OSHPD) PRE-APPROVAL PROGRAMS WEBSITE.
  3. THIS PRE-APPROVAL COVERS THE SUPPORTS & ATTACHMENTS OF THE EQUIPMENT TO THE SUPPORTING STRUCTURE. THE EQUIPMENT & ATTACHMENT HARDWARE ARE SUPPLIED BY THE MANUFACTURER. THE EPOXY ANCHORS, THRU-BOLTS & STRUT PLATES SHOWN IN THIS OPM SHALL BE SUPPLIED & INSTALLED BY THE CONTRACTOR.
  4. OPERATING TABLES ARE FOR GENERAL PATIENT USE ONLY.



SHEET TITLE: TABLE OF CONTENTS



**CYS STRUCTURAL ENGINEERS, INC.**

2495 NATOMAS PARK DRIVE, SUITE 650  
SACRAMENTO, CA 95833

TEL (916) 920-2020  
www.cyseng.com

Job No:	16070.01
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**GENERAL NOTES:**

1. THIS OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2016. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2016.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD (SEOR) FOR A SITE SPECIFIC PROJECT TO VERIFY:
  - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES & WEIGHT SPECIFIED FOR EACH COMPONENT IN ADDITION TO ALL OTHER LOADS. PROVIDE & DESIGN SUPPLEMENTARY MEMBERS AS REQUIRED.
  - B. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
  - C. THAT THE FLOOR ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPACING SHOWN IN THE TEST LOADS TABLE ON PAGE 3 IS THE REQUIRED MINIMUM SPACING OF THE GIVEN DIAMETER ANCHORS. THE REQUIRED SPACING FROM ANCHORS OF OTHER DIAMETERS & EMBEDMENTS MAY VARY & SHALL BE EVALUATED BY THE SEOR.
  - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CBC 2016 & WITH THE DETAILS SHOWN IN THIS PRE-APPROVAL.
  - E. THAT THE ACTUAL COMPONENT'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, & THE MATERIAL & GAGE OF THE COMPONENT WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE-APPROVAL DOCUMENTS.
3. EPOXY ANCHORS INSTALLED IN NORMAL WEIGHT CONCRETE SHALL BE HILTI HIT-RE 500 V3 WITH HIS-RN INSERTS ADHESIVE ANCHORING SYSTEM COMPLYING WITH ESR-3814 REISSUED JANUARY 2017.
  - A. INSTALLATION: INSTALL THE ADHESIVE ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR & THE PARAMETERS GIVEN IN THE TABLE ON PAGE 3.
  - B. JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. THE TEST LOAD MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY MEASURE THE TENSION IN THE ANCHOR SUCH AS DIRECT PULL WITH A HYDRAULIC JACK OR CALIBRATED SPRING LOADING DEVICES. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD (IOR). IF ANY ANCHOR FAILS THE TEST, TEST ALL ANCHORS. THE TEST SHALL BE PERFORMED 24 HOURS OR MORE AFTER INSTALLATION. TESTING MAY BE DONE PRIOR TO COMPONENT INSTALLATION. ALSO REFER TO CBC 1916A.8 "FIELD TESTS FOR POST-INSTALLED ANCHORS IN CONCRETE".
  - C. FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
    - HYDRAULIC RAM METHOD: APPLY AND HOLD TEST LOAD FOR A MINIMUM OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD, E.G., AS EVIDENCED BY LOOSENING OF THE WASHER UNDER THE NUT,



SHEET TITLE: GENERAL NOTES



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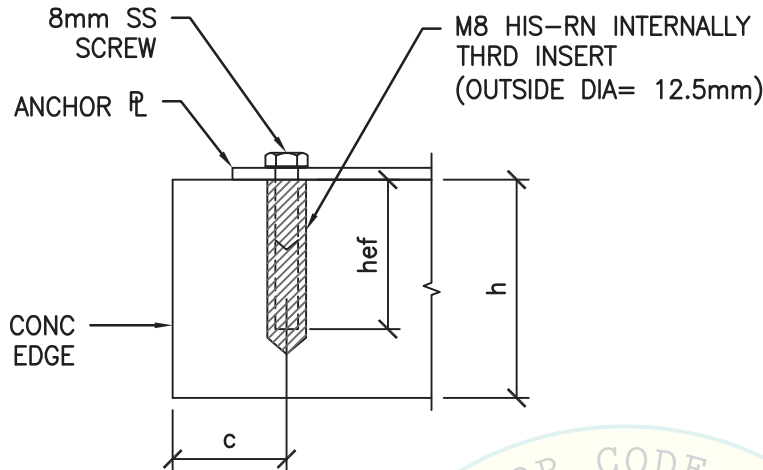
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**GENERAL NOTES CONTINUED:**

3D. ANCHOR INSTALLATION PARAMETERS:



HIS-RN DIA (mm)	EFFECTIVE MIN EMBED (in) hef	MIN CONC THICKNESS (in) h	MIN CONC EDGE DISTANCE (in) c	MIN AB SPACING (in)	TEST LOADS	CONDITION OF ANCHORAGE
					TENSION LOAD (LBS)	
8	3.54	4.75	16	5.28	2770	CASE 2

4. BOLTS THROUGH CONC ON MTL DECK:

- A. BOLTS SHALL BE TORQUED BY 3/4 TURN OF THE NUT AFTER SNUG TIGHT CONDITION IS ACHIEVED, UNO. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQ TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
- B. THRU-BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16").
- C. THRU-BOLTS IN CONC SHALL RECEIVE SPECIAL INSPECTION & TESTING IN ACCORDANCE W/ REQUIREMENTS FOR POST-INSTALLED ANCHORS. THRU-BOLTS W/ STL TO STL CONNECTION IN TENSION DO NOT REQUIRE TESTING.



SHEET TITLE: GENERAL NOTES (CONTINUED)



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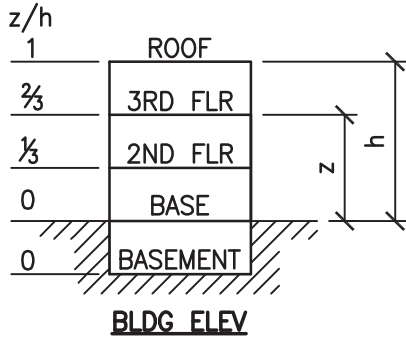
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**GENERAL NOTES CONTINUED:**

5. TWO (2) CASES OF ATTACHMENT ARE SPECIFIED & PRESENTED IN THIS PRE-APPROVAL:



**CASE 1:** ATTACHMENT DETAILS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG ( $z/h \leq 0.67$ ). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 3/4" SLWC TOPPING OVER MIN 20 GA MTL DECK ( $f'c = 3000$  PSI, MIN).

**CASE 2:** ATTACHMENT DETAILS LOCATED AT OR BLW THE BASE OF A BLDG ( $z/h=0$ ). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4.75" NWC SLAB ( $f'c = 3000$  PSI, MIN)

6. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE  $S_{DS}$  (OR  $F_p$ ) IS LESS THAN OR EQ TO THE VALUE SPECIFIED IN THE DESIGN CRITERIA ON PG 5.

**ABBREVIATIONS:**

Ⓞ	AT	$F_p$	HORIZONTAL SEISMIC FORCE PER ASCE 7-10 SEISMIC FORCE REQUIREMENTS	REQ	REQUIRED
AB	ANCHOR BOLTS	$F_y$	SPECIFIED MINIMUM YIELD STRESS OF STEEL	SEOR	STRUCTURAL ENGINEER OF RECORD
ABV	ABOVE	GA	GAUGE	SIM	SIMILAR
ADJ	ADJACENT	ICC	INTERNATIONAL CODE COUNCIL	SLWC	SAND-LIGHTWEIGHT CONCRETE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	IN (")	INCH	SS	STAINLESS STEEL
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	LBS	POUNDS	STL	STEEL
BLDG	BUILDING	LRFD	LOAD AND RESISTANCE FACTOR DESIGN	THK	THICK/THICKNESS
BLW	BELOW	MAX	MAXIMUM	THRD	THREAD/THREADED
BOTT	BOTTOM	MFR	MANUFACTURER	Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
BRG	BEARING	MIN	MINIMUM	TYP	TYPICAL
CBC	CALIFORNIA BUILDING CODE	MTL	METAL	T&B	TOP & BOTTOM
CG	CENTER OF GRAVITY	NO. (#)	NUMBER OR POUNDS	UNO	UNLESS NOTED OTHERWISE
Ⓞ	CENTERLINE	NWC	NORMAL WEIGHT CONCRETE	Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
COL	COLUMN	OP	OPERATING	W/	WITH
CONC	CONCRETE	OPG	OPENING	Wp	OPERATING WEIGHT
COORD	COORDINATE	OPM	OSHPD PRE-APPROVAL OF MANUFACTURER'S CERTIFICATION	WT	WEIGHT
DIA (⌀)	DIAMETER	OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT		
(E)	EXISTING CONDITION	PERP	PERPENDICULAR		
EA	EACH	PG	PAGE		
EE	EACH END	PL	PLATE		
ELEV	ELEVATION	PSI	POUNDS PER SQUARE INCH		
EQ	EQUAL				
$f'c$	MIN ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE				
FLR	FLOOR				
FT (')	FOOT/FEET				



SHEET TITLE: GENERAL NOTES (CONTINUED)  
ABBREVIATIONS



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TRUMPF MEDICAL SYSTEMS  
FIXED BASE OPERATING TABLE TRUSYSTEM 7500



**DESIGN CRITERIA:**

SUPPORT & ATTACHMENT DESIGN IS PER 2016 CBC AT LRFD LEVEL FORCES.

OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER TABLE 13.6-1 OF ASCE/SEI 7-10 SUPPLEMENT #1:

$a_p = 1.0$        $R_p = 1.5$        $I_p = 1.5$        $\Omega_0 = 1.5$  (FOR CONC ANCHORS ONLY)

$W_p =$  SEE BELOW

UPPER FLRS ABV THE BASE OF BLDG,  $z/h = 0.67$   
CASE 1:       $S_{DS} = 2.50$        $F_p = 2.34 W_p$

FLRS AT OR BLW THE BASE OF BLDG,  $z/h = 0$   
CASE 2:       $S_{DS} = 2.25$        $F_p = 1.013 W_p$

**LOAD COMBINATIONS**

$(0.9 - 0.2 S_{DS}) D - \Omega_0 F_p$  (FOR MAX TENSION)

$(1.2 + 0.2 S_{DS}) D + \Omega_0 F_p$  (FOR MAX COMPRESSION)

**CENTER OF GRAVITY:**

TABLE:	$W_p^{(5)}$	CG LOCATION		
		$X_t^{(1)}$ , IN	$X_{LONG}^{(4)}$ , IN	$H_{cg}^{(3)}$ , IN
U14H	524	0.98	18.1	50.1
U24H	537	3.35	15.7	50.1
U26H	553	3.35	15.7	50.1
ST26H	615	2.64	13.8	50.1
CARBON FLOATLINE <sup>(2)</sup>	720	9.45	31.5	50.1
CARBON X-TRA	615	1.57	14.0	50.1
CARBON SPINE	559	5.04	31.5	50.1
MR-NEURO	787	11.42	4	50.1
<b>COLUMN:</b>				
SF/HYBRID SC	331	0	0	20.45
SB/HYBRID FC	309	0	0	21.05
SM/HYBRID MC	375	0	0	20.85

**TABLE & COLUMN COMPATIBILITY:**

TABLE	COLUMN	
	SM, SF, SB	HYBRID (FC,SC,FC PLUS, SC PLUS)
U14H	Y	N
U24H	Y	N
U26H	Y	N
ST26H	Y	N
CARBON FLOATLINE	Y	Y
CARBON X-TRA	Y	Y
CARBON SPINE	Y	Y
MR - NEURO	N	FC, SC ONLY

**NOTE:**

UNADJUSTED COG LOCATION BASED ON DISTANCE FROM  $\phi$  OF COL

**NOTES:**

- UNADJUSTED CG LOCATION BASED ON DISTANCE FROM  $\phi$  OF COL.
- MAX TRAN SHIFT = 4.9". SEE PG 6.
- FOR COLS  $H_{cg} = (HT \text{ OF COL})/2$ ; FOR TABLES  $H_{cg} = HT \text{ OF COL} + 8"$ .
- $X_{LONG}$  IS THE ALLOWABLE LONGITUDINAL SHIFT OF THE TABLE. SEE PG 6 FOR DIAGRAM.
- $W_p$  OF TABLE INCLUDES PATIENT WT OF 350 LBS.

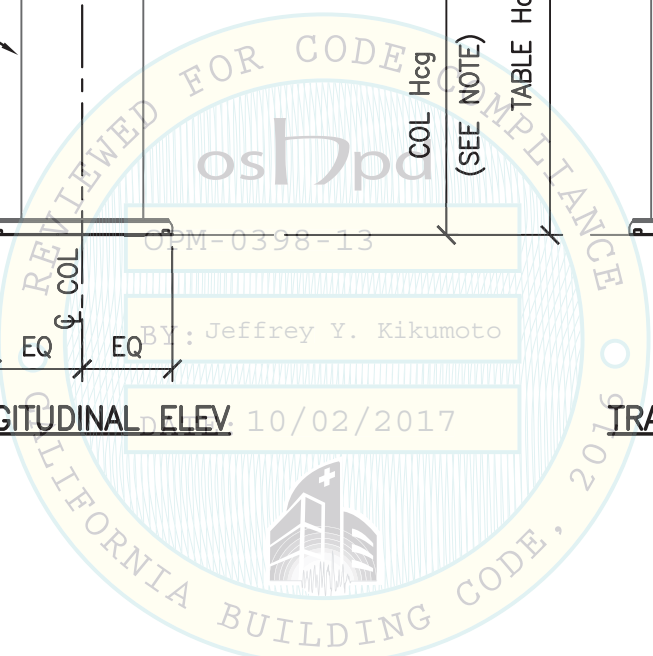
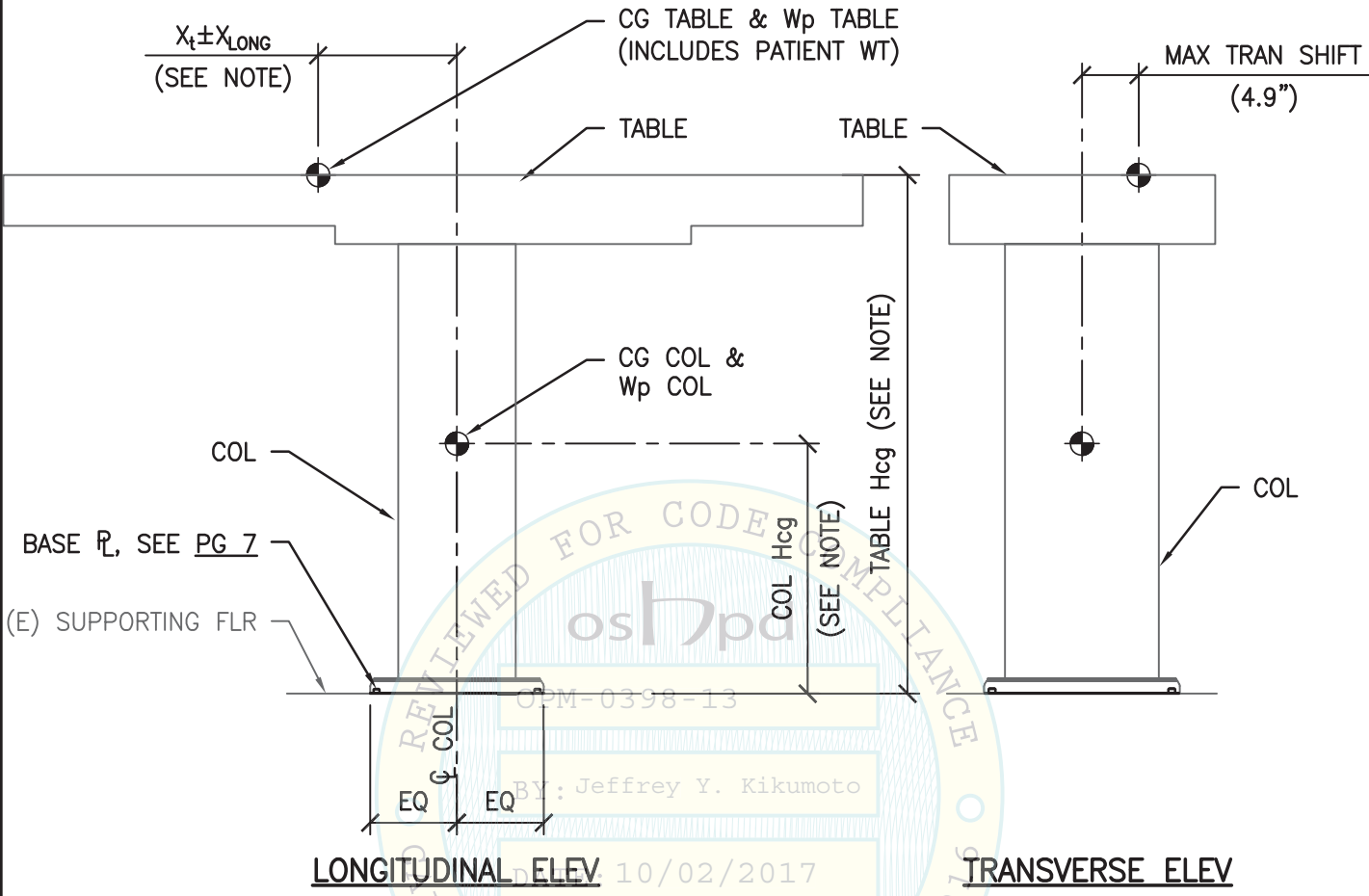


SHEET TITLE: SYSTEM OVERVIEW & DESIGN CRITERIA

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TRUMPF MEDICAL SYSTEMS  
FIXED BASE OPERATING TABLE TRUSYSTEM 7500



**NOTE:**  
REF TABLES ON PG 5 FOR Wp, Hcg, Xt & XLONG.



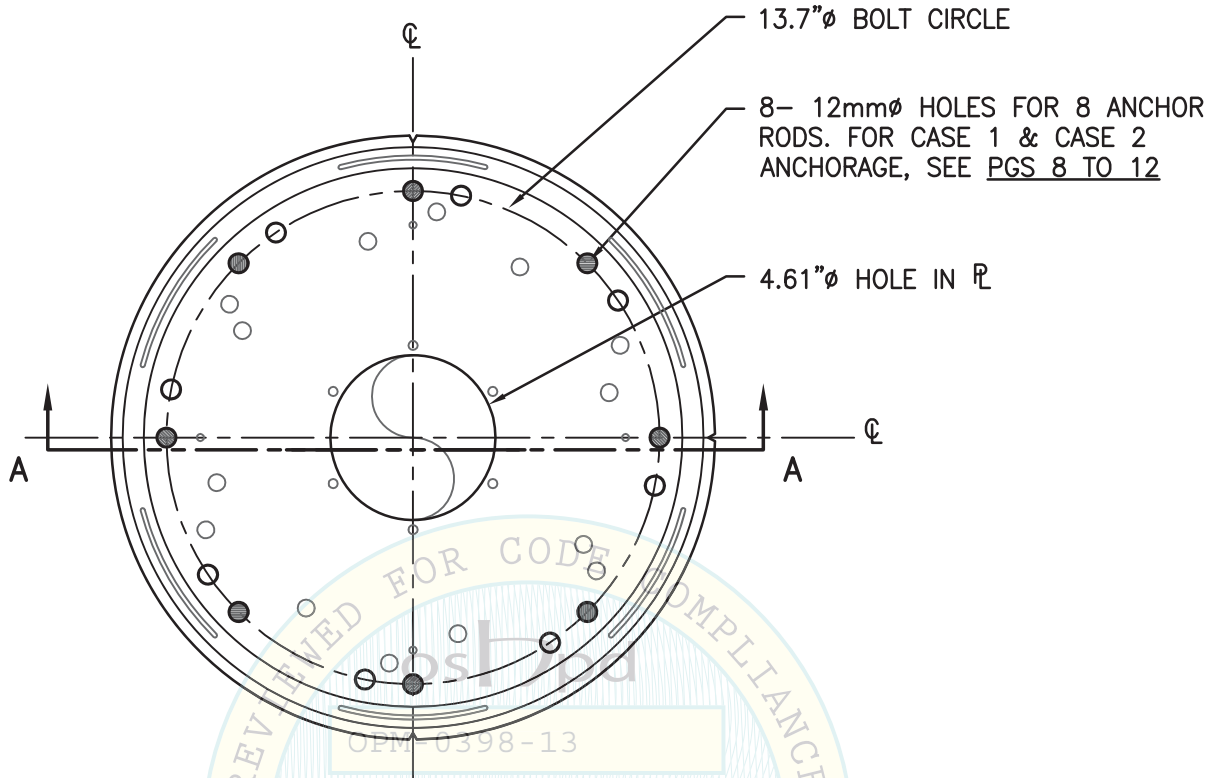
SHEET TITLE: OPERATING TABLE  
ELEVATION

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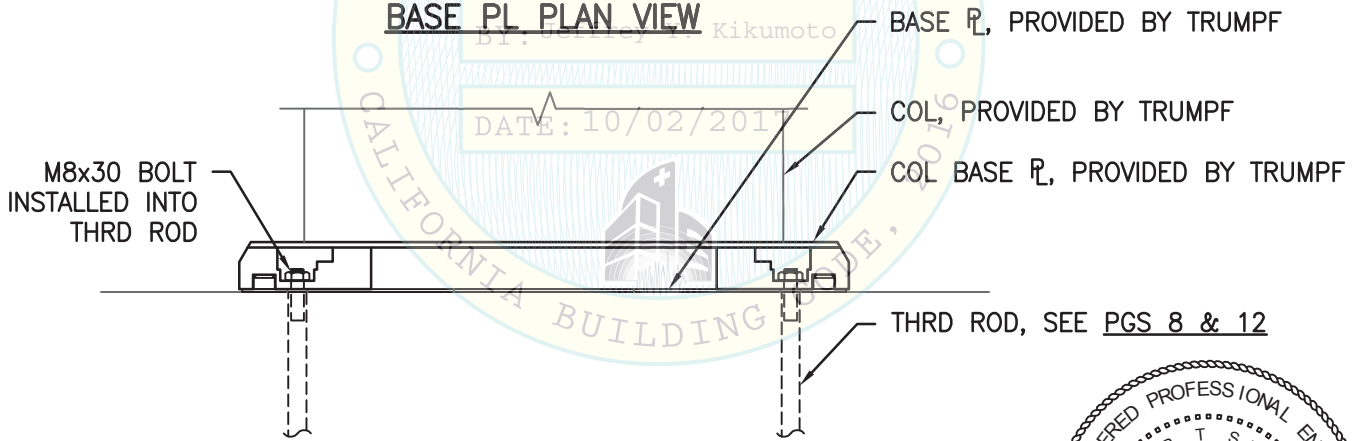
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**BASE PL PLAN VIEW**



**SECTION A-A**

**NOTE:**  
 $\phi$  MATERIAL IS EN 10088-2:2014 (#1.4301)  
 (ASTM A240 TYPE 304 SS, Fy= 30 KSI)



SHEET TITLE: OPERATING TABLE  
BASE PLATE DETAIL



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TRUMPF MEDICAL SYSTEMS  
FIXED BASE OPERATING TABLE TRUSYSTEM 7500



FOR DESIGN CRITERIA SEE PG 5

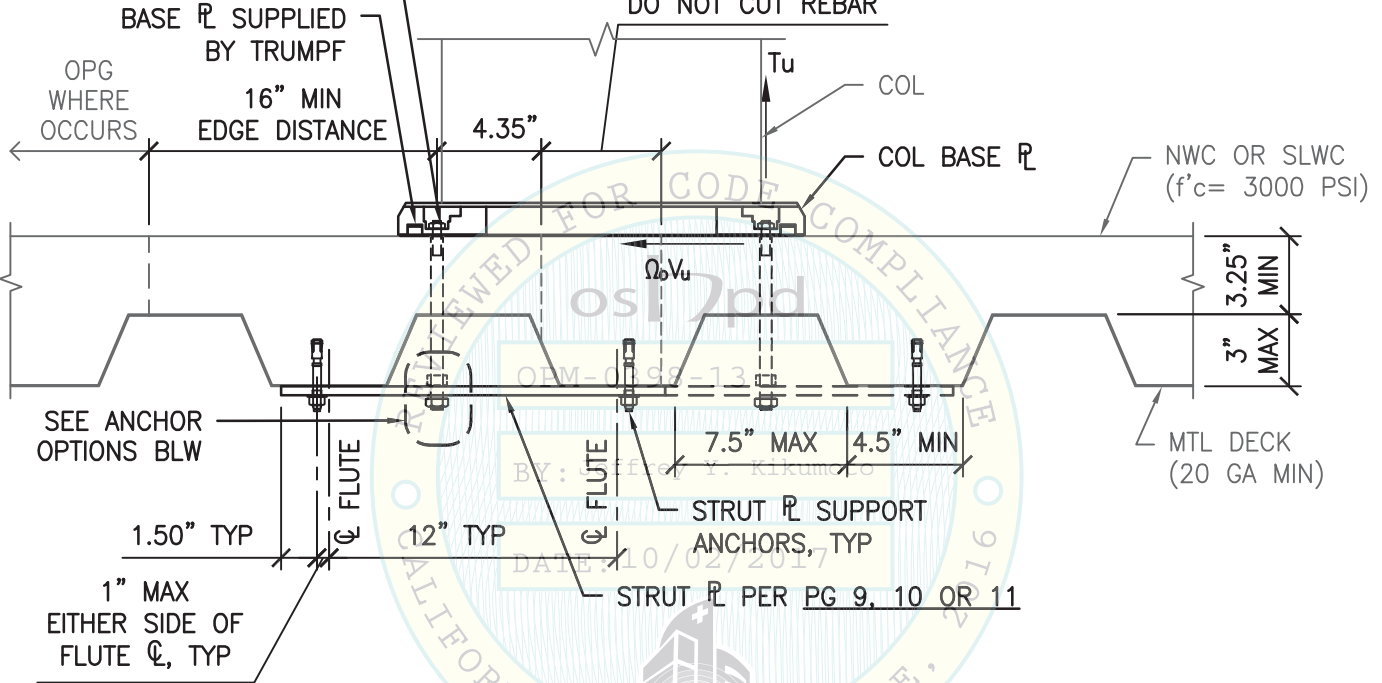
MAX LRFD FORCES AT EA ANCHOR (LBS)

	$T_u$	$\Omega_o V_u$
CASE 1	2704#	510#

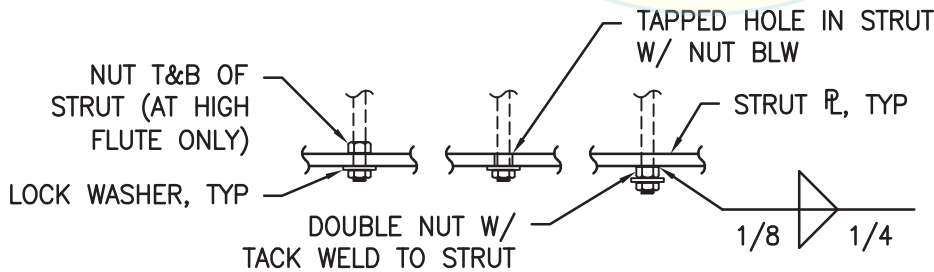
OVERSTRENGTH FACTOR ( $\Omega_o$ ) INCLUDED ONLY IN SHEAR VALUE.

M8x30 SCREW & WASHER FOR 8mm $\phi$  INTERNALLY THRD 12.5mm  $\phi$  SS ANCHOR ROD SUPPLIED BY TRUMPF, TYP OF 8 (SAME MATERIAL AS HILTI HIS-RN; EN 10088-3,  $F_y = 50.75$  KSI MIN PER TABLE 4 OF ESR-3814)

5"  $\phi$  HOLE DO NOT CUT REBAR



**SUSPENDED FLR W/ THRU-BOLTS**



**ANCHOR OPTIONS**



SHEET TITLE: SANDWICH MOUNTED FLOOR ATTACHMENT  
CASE 1 - UPPER FLOORS



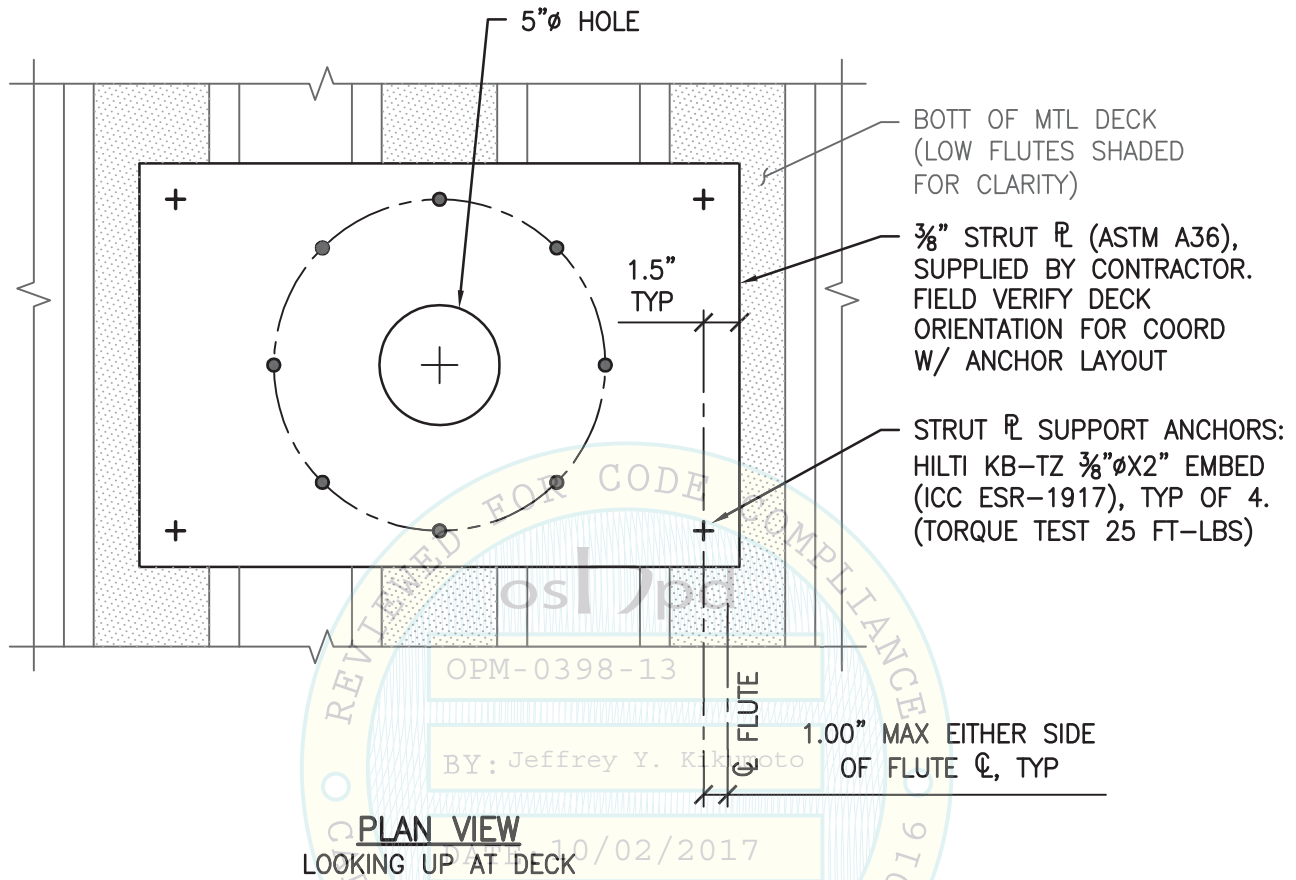
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**NOTE:**  
CONTRACTOR HAS OPTION TO USE  
TRUMPF SUPPLIED STRUT  $\bar{R}$ , SEE PG 11



SHEET TITLE: STRUT PLATE DETAIL (SUPPLIED BY CONTRACTOR)



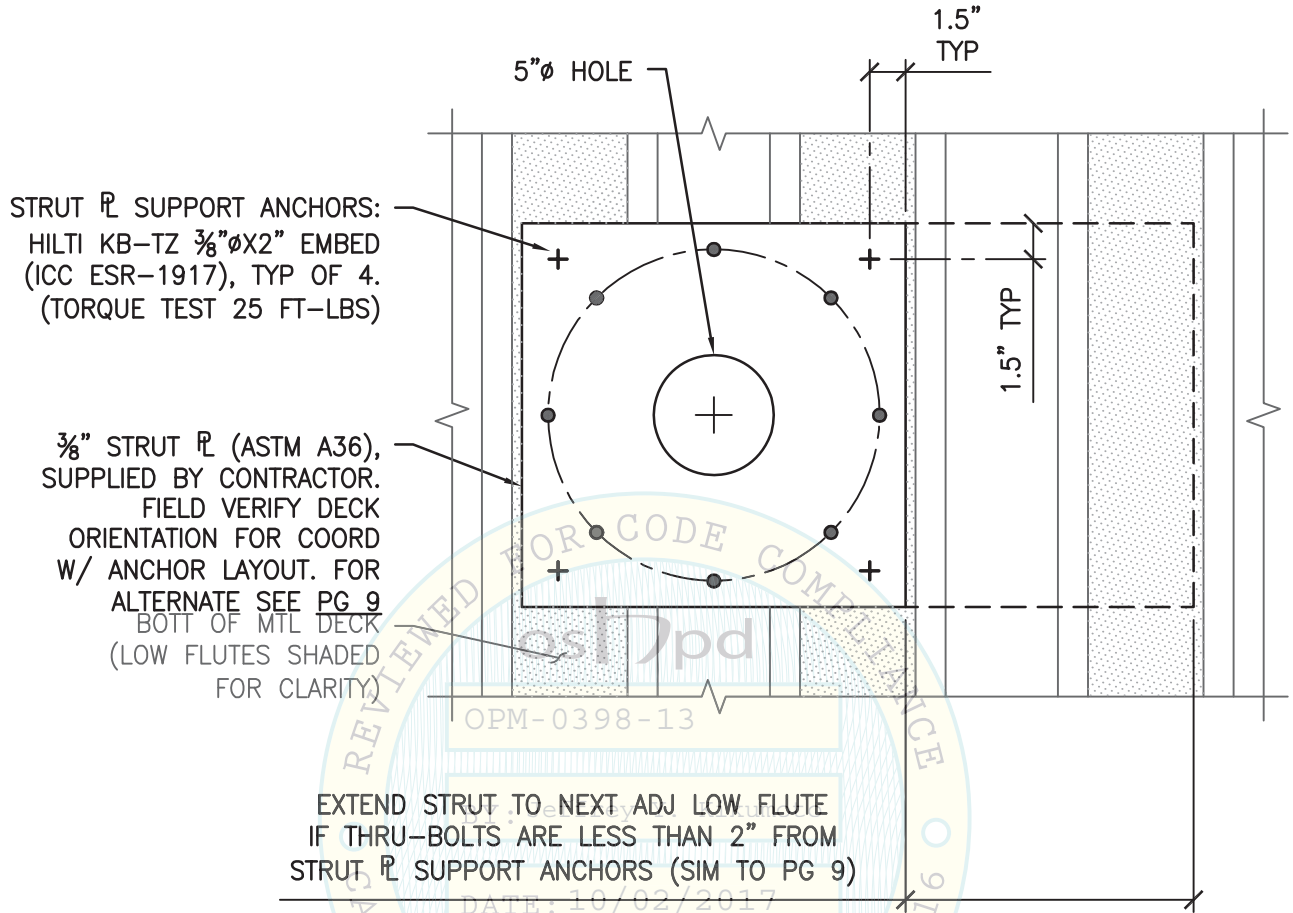
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**PLAN VIEW**  
LOOKING UP AT DECK

**NOTE:**  
CONTRACTOR HAS OPTION TO USE  
TRUMPF SUPPLIED STRUT  $\phi$ , SEE PG 11



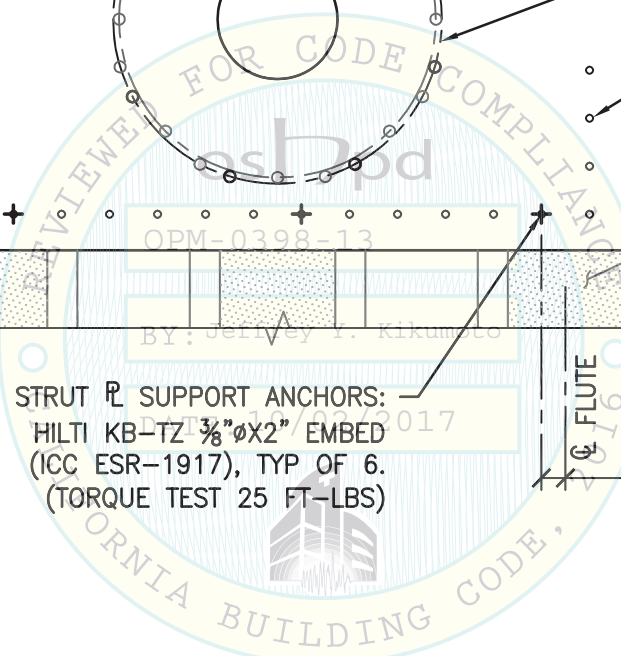
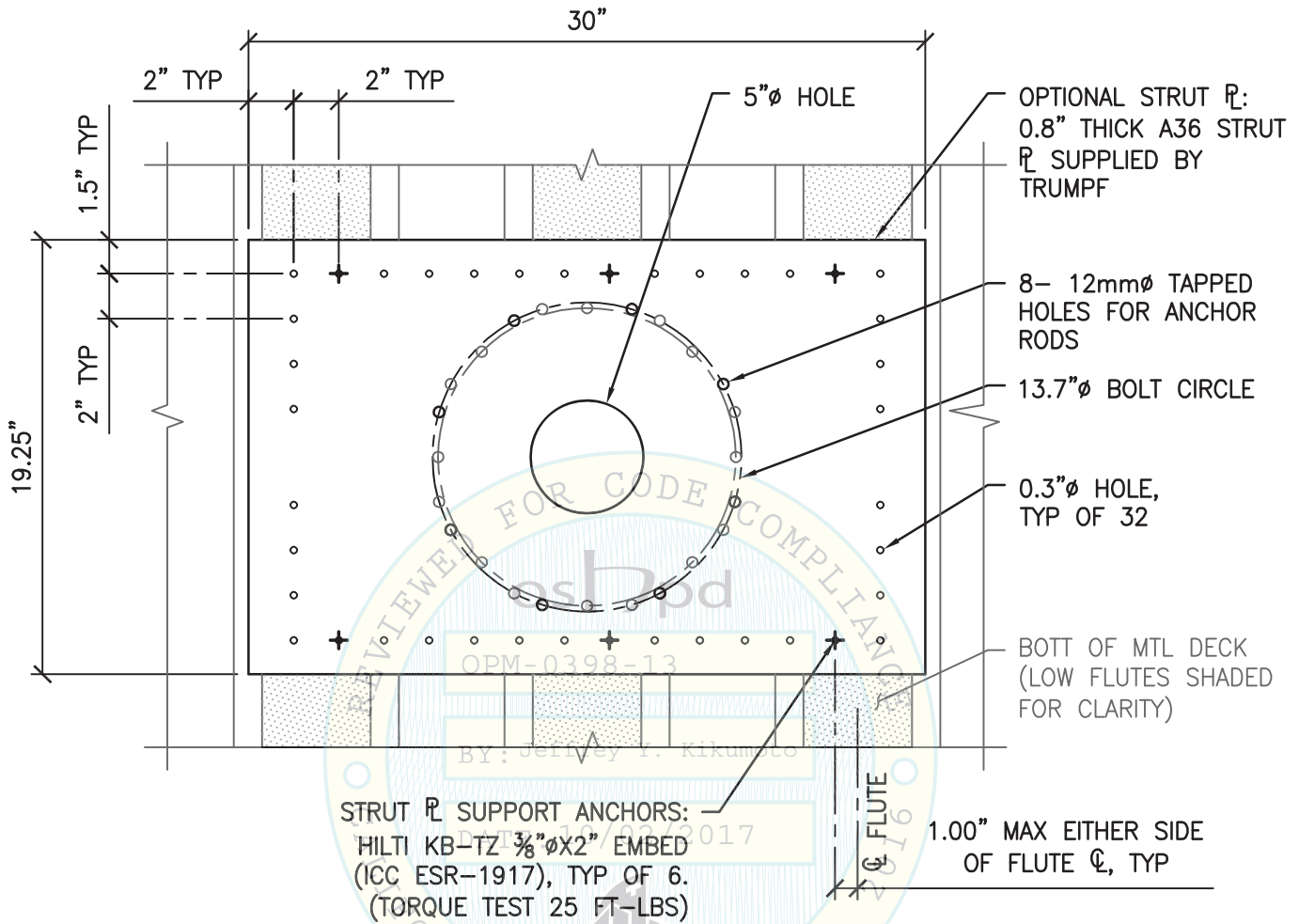
SHEET TITLE: STRUT PLATE DETAIL (SUPPLIED BY CONTRACTOR)

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SHEET TITLE: STRUT PLATE DETAIL (PROVIDED BY TRUMPF)

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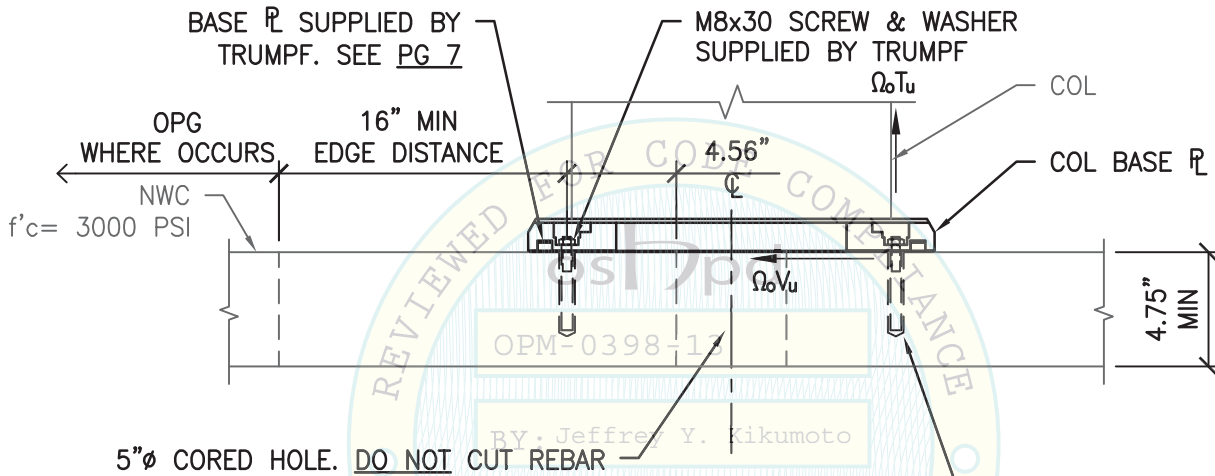
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FOR DESIGN CRITERIA SEE PG 5	MAX LRFD FORCES AT EA ANCHOR (LBS)	
	$T_u$	$V_u$
CASE 2	1834#	208#

OVERSTRENGTH FACTOR ( $\Omega_o$ ) INCLUDED.



8mm  $\phi$  HILTI HIS-RN INTERNALLY THRD 12.5mm  $\phi$  SS INSERTS, SUPPLIED BY TRUMPF INSTALL PER ICC ESR-3814. MIN EMBED hef= 3.54" (SEE PG 3)

**4.75" MIN SLAB ON GRADE**

**NOTE:**  
OP TABLE COL BASE  $\phi$  NOT SHOWN FOR CLARITY.



SHEET TITLE: SURFACE MOUNTED FLOOR ATTACHMENT  
CASE 2 - AT OR BELOW BASE

<p><b>CYS STRUCTURAL ENGINEERS, INC.</b> 2495 NATOMAS PARK DRIVE, SUITE 650 SACRAMENTO, CA 95833</p>	TEL (916) 920-2020	Job No: 16070.01
	www.cyseng.com	Date: 9-25-2017
		Page: 12 of 12

L:\Jobs\16070 Trumpf - OPMs\TASK 01\_Operation Table\_OPM-0398-13\ACAD\S1\_TASK 01.dwg Time: Sep 25, 2017 - 09:48am Login: camachom Dim: scale: 1 LTScale: 6