



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

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

OFFICE USE ONLY	
APPLICATION #:	OPM-0256-13

**OSHPD Preapproval of Manufacturer's Certification (OPM)**

Type:  New  Renewal  Update to Pre-CBC 2013 OPA Number: \_\_\_\_\_

**Manufacturer Information**

Manufacturer: Skytron LLC.

Manufacturer's Technical Representative: Bob Vreeland

Mailing Address: Skytron US, 5085 Corporate Exchange Blvd SE, Grand Rapids, MI 49512

Telephone: (616) 656-1189 Email: bvreeland@skytron.us

**Product Information**

Product Name: Skytron Ergon 3

Product Type: Hospital Ceiling Mounted Booms

Product Model Number: 100 Series, 110 Series, 120 Series, 200 Series, 300 Series, 310 Series, 320 Series, 330 Series, Stellar XL Surgical Lights

General Description: Skytron's Ergon 3 ceiling mounted booms are mounted from a single point of attachment.

Multiple booms at different elevations are used for equipment, monitors and lights.

**Applicant Information**

Applicant Company Name: ISAT Seismic Bracing

Contact Person: William V Joerger

Mailing Address: 1020 Crews Road, Suite Q, Matthews NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2013.

Signature of Applicant:  Date: 01/22/2016

Title: Principal Structural Engineer Company Name: ISAT Seismic Bracing

"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: ISAT Seismic Bracing

Name: William V Joerger California License Number: S4545

Mailing Address: 1020 Crews Rd, Matthews NC 28105

Telephone: 510-714-0216 Email: wvjoerger@isatsb.com

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

- Special Seismic Certification is preapproved under OSP- (Separate application for OSP is required)
- Special Seismic Certification is no preapproved

**Certification Method(s)**

- Testing in accordance with:  ICC-ES AC156  FM 1950-10
- Other\* (Please Specify): \_\_\_\_\_

Equipment is considered to be rugged. OPM is for anchorage to concrete slabs.

\*Use of criteria other than those adopted by the California Building Standards Code, 2013 (CBSC 2013) 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 2013 may be used when approved by OSHPD prior to testing.

- 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 2013 ONLY**

Signature: *J Enzler* Date: 12-19-2016

Print Name: Jeffrey Enzler

Title: DSE

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

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





# INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY

A Division of Tomarco Contractor Specialties

Submitted Documents

OSHPD OPM-0256-13

BY: Jeffrey Enzler

## SUPPORT AND ATTACHMENT OPM CONSTRUCTION DRAWINGS SKYTRON ERGON 3 BOOMS WITH STELLAR XL SURGICAL LIGHTS

**SKYTRON, LLC**

ISAT  
1020 Crews Road Suite Q  
Matthews, NC 28105  
704-841-4080



*WVJ 15 Nov 16*

FILE NO.: CLT-0515-070

*"Empowered by Experience"*

REV 6

OSHPD OPM-0256-13 DWG - i

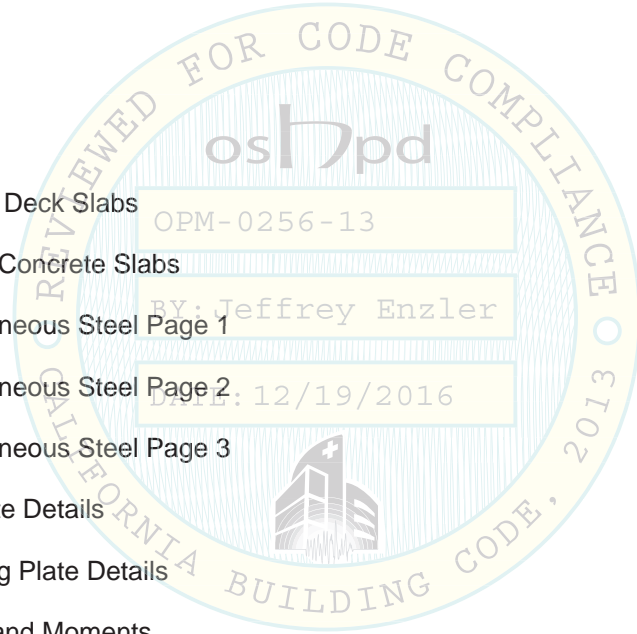


# OSHPD OPM-0256-13

## DRAWING INDEX

### INDEX

Cover Page	p i
Index Page	p ii
General Notes	p 1
Attachment Notes	p 2
Skytron Ergon 3 at Metal Deck Slabs	p 3
Skytron Ergon 3 at Solid Concrete Slabs	p 4
Skytron Ergon 3 Miscellaneous Steel Page 1	p 5
Skytron Ergon 3 Miscellaneous Steel Page 2	p 6
Skytron Ergon 3 Miscellaneous Steel Page 3	p 7
Skytron Ergon 3 Top Plate Details	p 8
Skytron Ergon 3 Mounting Plate Details	p 9
Skytron Ergon 3 Forces and Moments	p 10
Skytron Ergon 3 Stellar XL Forces and Moments	p 11
Skytron Equipment Mounting and Anchorage Forces	p 12



## OSHPD OPM-0256-13

MANUFACTURE: SKYTRON  
EQUIPMENT TYPE: CEILING MOUNTED BOOM  
AND SURGICAL LIGHTS (NON-MOTORIZED)

### GENERAL NOTES:

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. SEISMIC CRITERIA USED:  $S_{DS} = 2.5$   $I_p = 1.5$   $a_p = 1.0$   $R_p = 1.5$   $z/h \leq 1.0$   $F_pH = 3.00$  AND  $F_pV = 0.50$ .
3. SUPPORT AND ATTACHMENT FORCES ARE DETERMINED USING ASCE 7-10 CHAPTER 13 "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". AN OVERSTRENGTH FACTOR  $\Omega_0 = 1.5$  IS USED FOR CONCRETE MATERIALS PER ASCE 7-10 SUPPLEMENT 1 TABLE 13.6-1. LOADS SHOWN ARE STRENGTH DESIGN LOADS PER CBC 2013 SECTION 1909A.
4. THIS PREAPPROVAL COVERS ONLY THE SUPPORTS AND ATTACHMENTS OF THE EQUIPMENT TO THE STRUCTURE.
5. STEEL MATERIALS: ANGLES AND PLATE ASTM A36, ROUND HSS ASTM A500 GRADE B (FY = 42 KSI), RECTANGULAR HSS ASTM A500 GRADE B (FY = 46 KSI), WELDING ELECTRODES E70XX. ALL THREAD ROD ASTM A36, NUTS ASTM A563, WASHERS ASTM F436. BOLTS SUPPLIED BY SKYTRON ARE ASTM A193 B7.
6. CONCRETE SLABS:
  - a. FOR ELEVATED SOLID CONCRETE SLABS: 6" THICKNESS OF NORMAL WEIGHT CONCRETE WITH 4000 PSI MINIMUM STRENGTH.
  - b. METAL DECK: 3" DEEP COMPOSITE STEEL DECK, 20 GAGE MINIMUM, 4 1/2 INCH MINIMUM BOTTOM FLUTE WIDTH AND FLUTE SPACING IS 12", WITH 3 1/4 INCH SAND LIGHT WEIGHT CONCRETE CONCRETE COVER AT 4000 PSI MINIMUM STRENGTH.
7. POST-INSTALLED CONCRETE ANCHORS: HILTI KWIK BOLT TZ (ESR-1917) 5/8" DIAMETER x 4 3/4" MIN. HOLE DEPTH (4" EFFECTIVE EMBEDMENT) AND 60 FT-LBS INSTALLATION TORQUE; 12" EDGE DISTANCE. ANCHOR SPACING IS SHOWN ON THE DRAWINGS INCLUDED IN THIS OPM.
8. STELLAR XL SURGICAL LIGHTS THAT ARE PART OF THIS OPM ARE ATTACHED TO THE ERGON 3 BOOMS AND HUB.

OPM-0256-13 SKYTRON ERGON 3 GENERAL NOTES

 <b>International Seismic Application Technology</b> <b>A Division of Tomarco Contractor Specialties</b> 1020 Crews Road, Suite Q, Matthews, NC 28105 704-841-4080 www.isatsb.com	
 <i>WVJ</i>	<b>DRAWN BY:</b> WVJ <b>DATE:</b> 08/10/15
	<b>REVISED BY:</b> WVJ <b>DATE:</b> 11/15/16 <b>REV NO:</b> 4
<b>SCALE</b> N.T.S.	<b>PAGE</b> GEN NOTES

OSHPD OPM-0256-13 DWG - 1

**OSHPD OPM-0256-13**

MANUFACTURE: SKYTRON

EQUIPMENT TYPE: CEILING MOUNTED BOOM AND SURGICAL LIGHTS (NON-MOTORIZED)


**ATTACHMENT NOTES:**

1. THIS OSHPD PREAPPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2013. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2013.
2. BRACE ARM INCLINATION MAY VARY FROM 30° TO 45° FROM HORIZONTAL.
3. PERIODIC SPECIAL INSPECTION PER CBC 2013 SECTION 1705A AND TABLE 1705A.3 INCLUDING VERIFICATION OF ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, ANCHOR SPACING, EDGE DISTANCES, CONCRETE MEMBER THICKNESS, TIGHTENING TORQUE, HOLE DIMENSIONS, ANCHOR EMBEDMENT AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. IN ADDITION, FOLLOW THE PROVISIONS OF THE 2013 CALIFORNIA BUILDING CODE SECTION 1913A.7.2 BY CONFIRMING THE INSTALLATION TORQUE SPECIFIED BY THE MANUFACTURER. TESTING IS NOT TO OCCUR UNTIL A MINIMUM OF 24 HOURS HAS ELAPSED AFTER THE INSTALLATION OF THE SUBJECT ANCHORS. TESTING SHALL BE DONE IN THE PRESENCE OF THE SPECIAL INSPECTOR. TEST 50% OF THE ANCHORS FOR EACH PIECE OF EQUIPMENT. USING A CALIBRATED TORQUE WRENCH VERIFY THE INSTALLATION TORQUE IS OBTAINED WITHIN 1/2 TURN OF THE NUT. REPORT OF TEST RESULTS ARE TO BE SUBMITTED TO THE ENFORCEMENT AGENCY. THE SEOR SHALL PROVIDE REMEDIAL ANCHORAGE DETAILS IN THE EVENT THAT AN ANCHOR FAILS TO MEET THE TEST REQUIREMENTS.
4. WELDS ARE TO BE VISUALLY INSPECTED BY A QUALIFIED WELDING INSPECTOR.
5. STRENGTH DESIGN WAS USED FOR ANCHOR FORCE CALCULATIONS INCLUDING  $\phi$  PER ACI 318-11 WHERE REQUIRED FOR ATTACHMENT TO CONCRETE.
6. EXERCISE DUE CARE WHEN DRILLING POST-INSTALLED ANCHORS TO AVOID DAMAGING CONCRETE REINFORCEMENT OR TENDONS.
7. PROVIDE FULL THREAD ENGAGEMENT OF NUT AND WASHER.


**RESPONSIBILITIES OF THE STRUCTURAL ENGINEER OF RECORD**

1. CONFIRM THE MATERIAL PROPERTIES AND THICKNESS OF THE CONCRETE SLAB TO WHICH THE EQUIPMENT IS ATTACHED MEETS THE REQUIREMENTS OF THIS OPM.
2. PROVIDE A PLAN FOR INSPECTION OF SUPPORTS AND ATTACHMENTS AND VERIFY ITS IMPLEMENTATION.
3. CONFIRM THE SPECIFIED MINIMUM CONCRETE EDGE DISTANCES ARE MAINTAINED BASED ON THE ACTUAL EQUIPMENT LOCATION. VERIFY THAT EXISTING OR NEW ANCHORS ARE AN ADEQUATE DISTANCE FROM THIS UNIT'S ATTACHMENT.
4. VERIFY THAT THE EXISTING STRUCTURE IS ADEQUATE FOR THE IMPOSED DEAD, LATERAL AND TENSION FORCES SHOWN IN ADDITION TO ALL OTHER LOADS.
5. VERIFY THAT THE INSTALLATION IS IN CONFORMANCE WITH CBC 2013 AND WITH THE OPM-0256-13 DETAILS INCLUDING MATERIALS AND DIMENSIONS OF THE SUPPORT WHERE THE ATTACHMENTS ARE MADE AGREE WITH THE INFORMATION SHOWN.
6. VERIFY THAT THE PROJECT SPECIFIC  $S_{Ds}$  AND  $z/h$  VALUES RESULT IN SEISMIC FORCES ( $E_h$  AND  $E_v$ ) DO NOT EXCEED THE VALUES SHOWN IN THESE DETAILS.

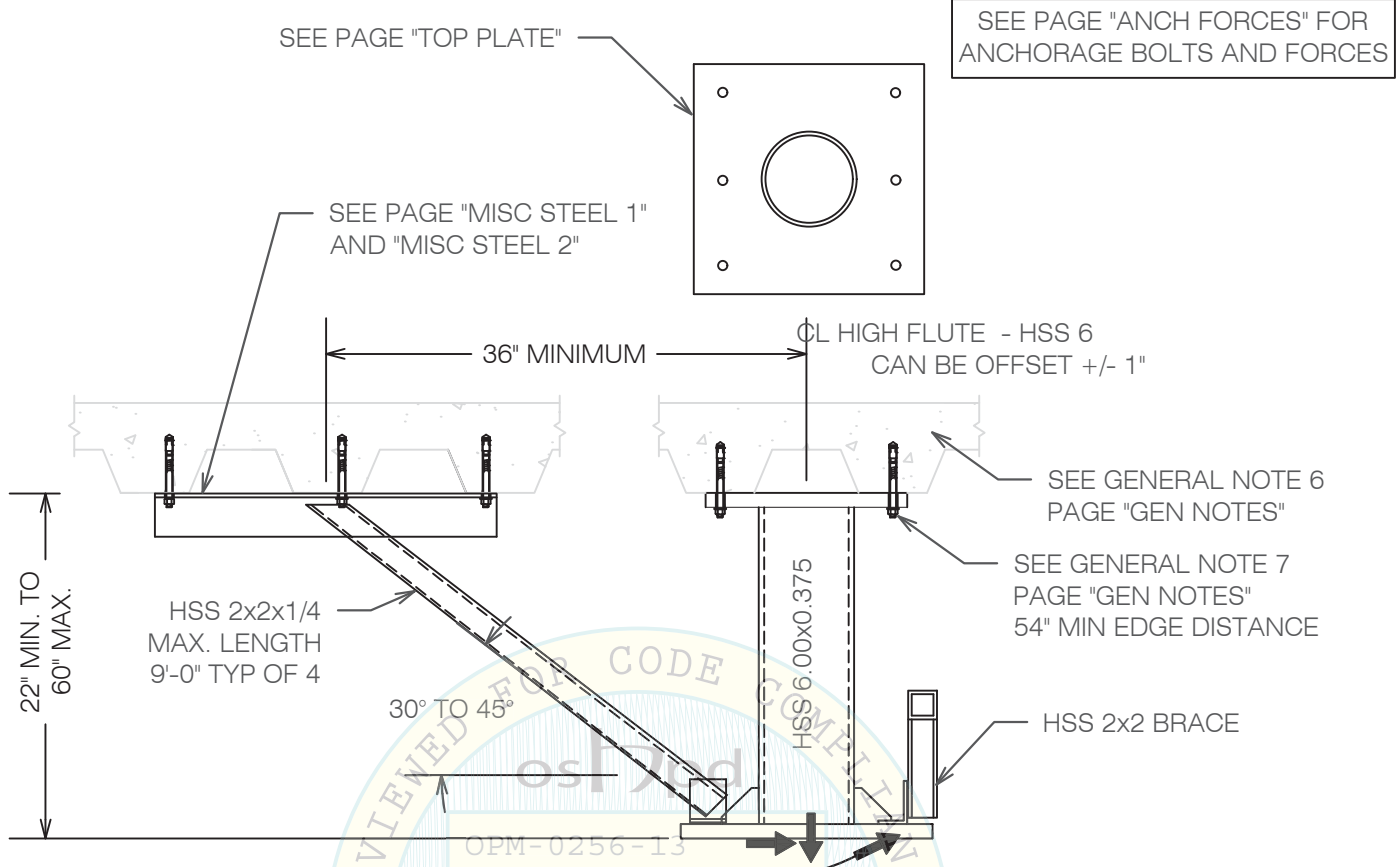
OPM-0256-13 SKYTRON ERGON 3 ATTACHMENT NOTES



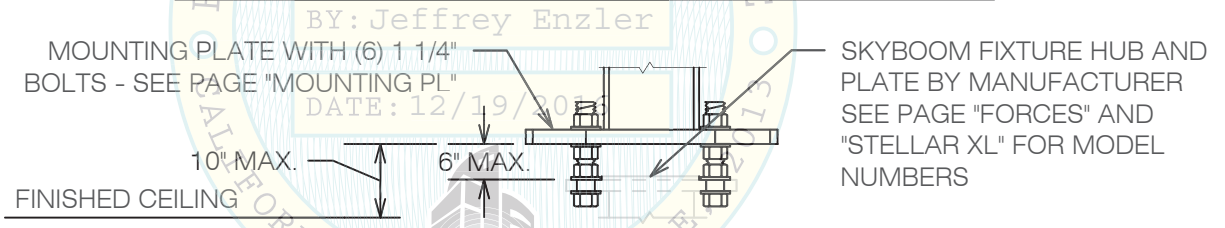
**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com

	<b>DRAWN BY:</b> WVJ
	<b>DATE:</b> 08/10/15
	<b>REVISED BY:</b> WVJ
	<b>DATE:</b> 03/01/16
	<b>REV NO:</b> 2
<b>SCALE</b>	<b>PAGE</b>
N.T.S.	ATTACH NOTES

OSHPD OPM-0256-13 DWG - 2



SECTION VIEW AT BRACE AND VERTICAL SUPPORT CONNECTION



SECTION VIEW AT FIXTURE TO MOUNTING PLATE CONNECTION  
 INSTALLER IS TO PROVIDE ALL MATERIALS ABOVE THE SKYTRON MOUNTING PLATE

OPM-0256-13 SKYTRON ERGON 3 AND STELLAR XL AT METAL DECK SLAB

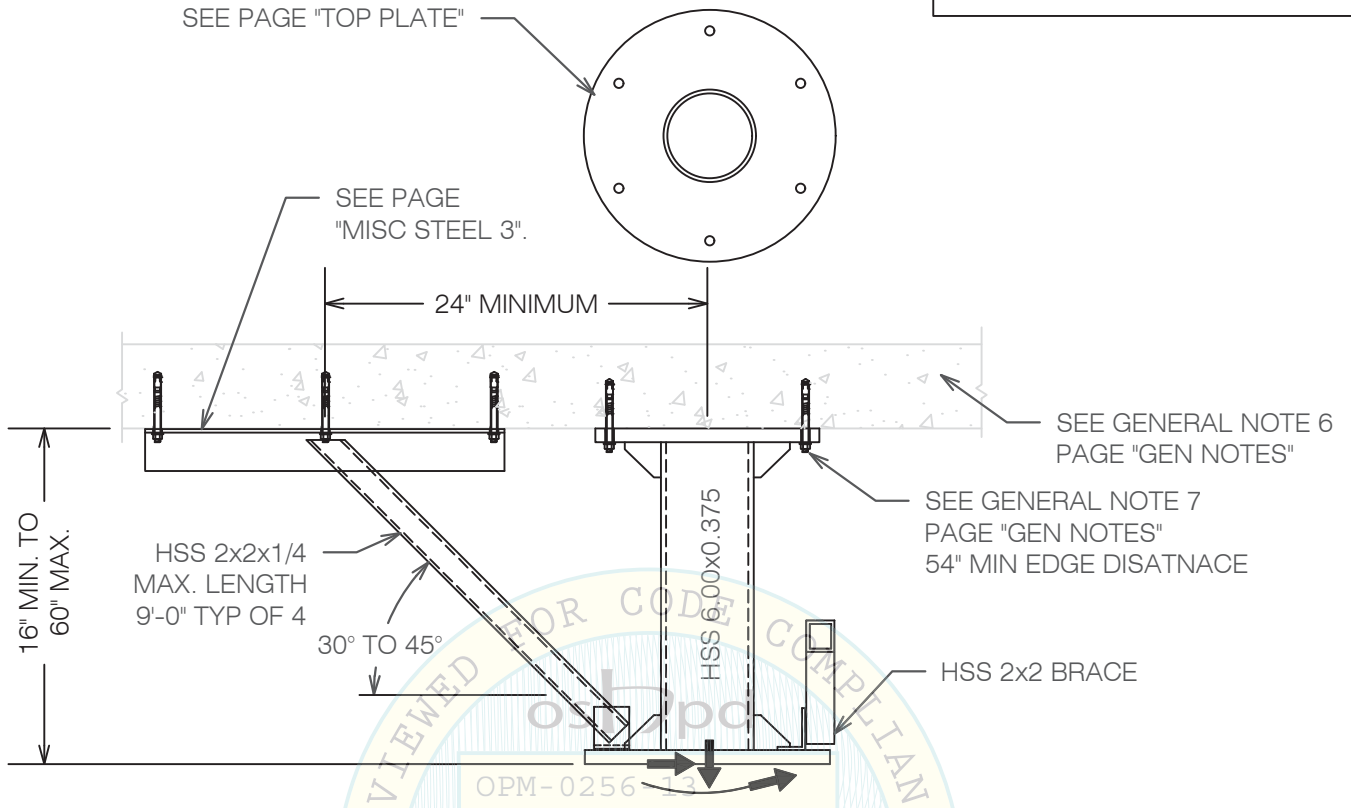


**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com

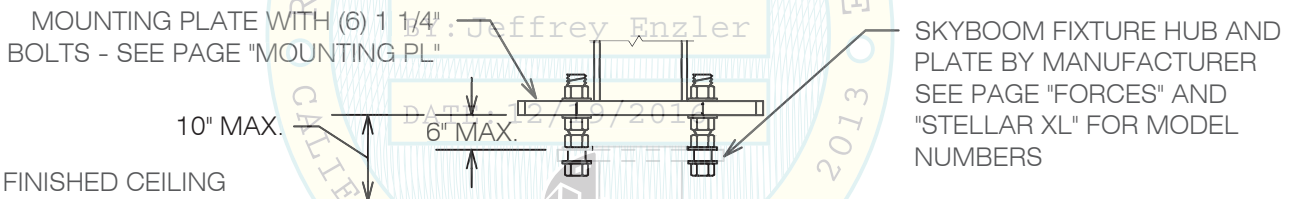
	DRAWN BY: WVJ	
	DATE: 08/10/15	
	REVISED BY: WVJ	
		DATE: 11/15/16
		REV NO: 4
SCALE N.T.S.	PAGE METAL DECK	

OSHPD OPM-0256-13 DWG - 3

SEE PAGE "ANCH FORCES" FOR ANCHORAGE BOLTS AND FORCES




SECTION VIEW AT BRACE AND VERTICAL SUPPORT CONNECTION



SECTION VIEW AT FIXTURE TO MOUNTING PLATE CONNECTION  
INSTALLER IS TO PROVIDE ALL MATERIALS ABOVE THE SKYTRON HUB PLATE

OPM-0256-13 SKYTRON ERGON 3 AND STELLAR XL AT SOLID CONCRETE SLAB

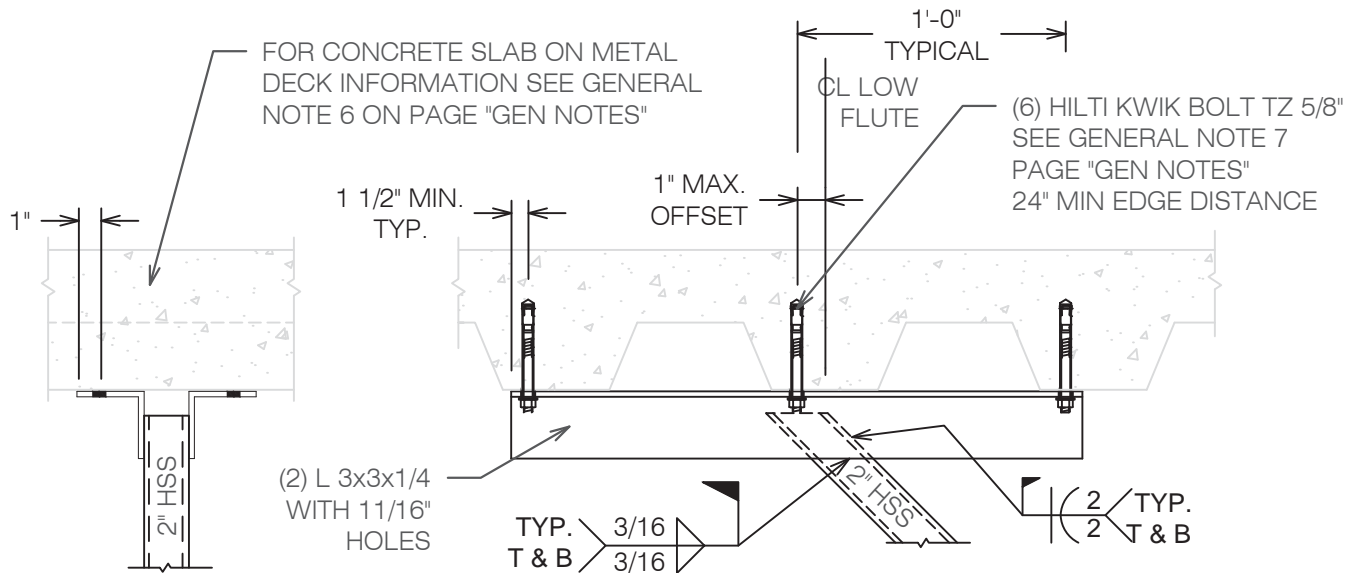


**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com

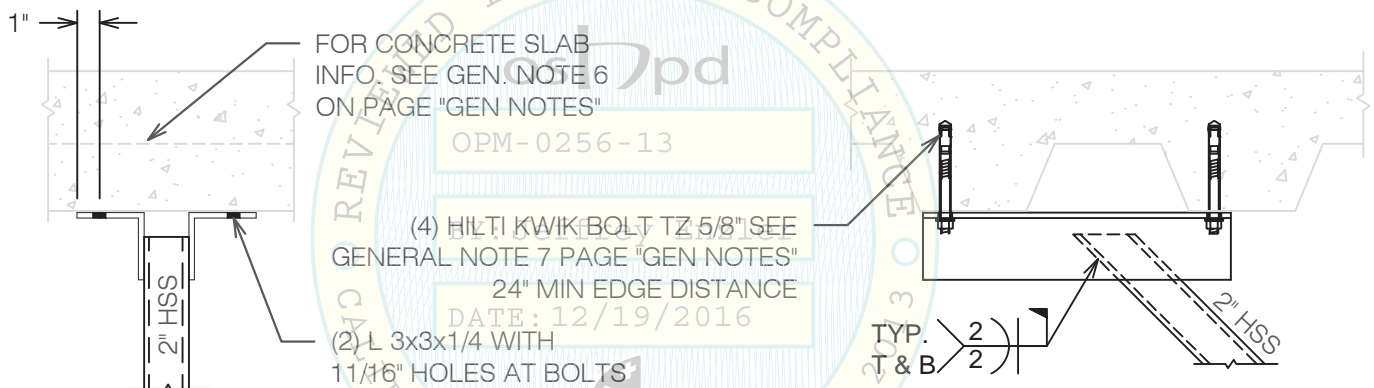
	DRAWN BY: WVJ	
	DATE: 08/10/15	
	REVISED BY: WVJ	
		DATE: 11/15/16
		REV NO: 3
SCALE N.T.S.	PAGE SOLID SLAB	

OSHPD OPM-0256-13 DWG - 4





DETAIL A FOR MODELS 330 SERIES, 320 SERIES, 310 SERIES AND 300 SERIES BRACE CONNECTION

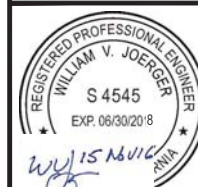


DETAIL B FOR MODELS 200 SERIES, 120 SERIES, 110 SERIES AND 100 SERIES BRACE CONNECTION AND ALL STELLAR XL MODELS

OPM-0256-13 SKYTRON ERGON 3 WITH STELLAR XL MISC. STEEL FOR METAL DECK SLABS BRACE CONNECTION PERPENDICULAR TO METAL DECK FLUTES



**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com



**DRAWN BY:** WVJ  
**DATE:** 08/10/15  
**REVISED BY:** WVJ  
**DATE:** 11/15/16  
**REV NO:** 4

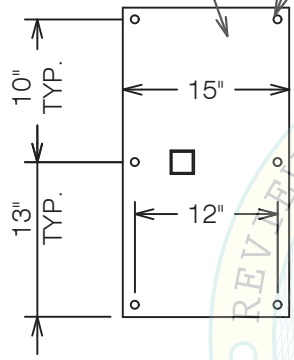
**SCALE:** N.T.S.  
**PAGE:** MISC. STEEL 1

FOR CONCRETE SLAB ON METAL DECK INFORMATION SEE GENERAL NOTE 6 ON PAGE "GEN NOTES"

HILTI KWIK BOLT TZ 5/8" SEE GENERAL NOTE 7 PAGE "GEN NOTES"  
24" MIN EDGE DISTANCE

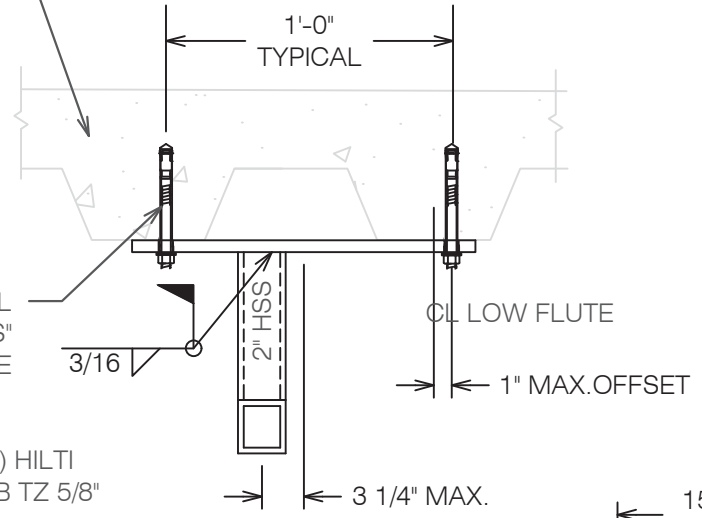
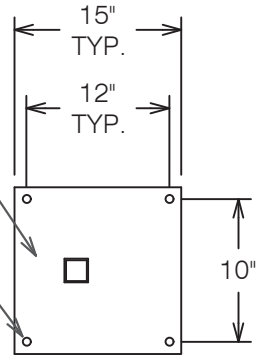
ASTM A36 PLATE  
1/2x15x26

(6) HILTI  
KB TZ 5/8"



ASTM A36 PLATE  
1/2x13x15

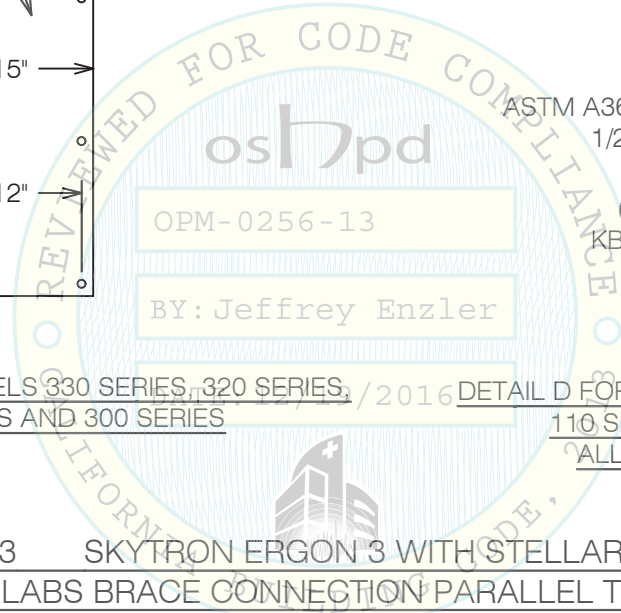
(4) HILTI  
KB TZ 5/8"




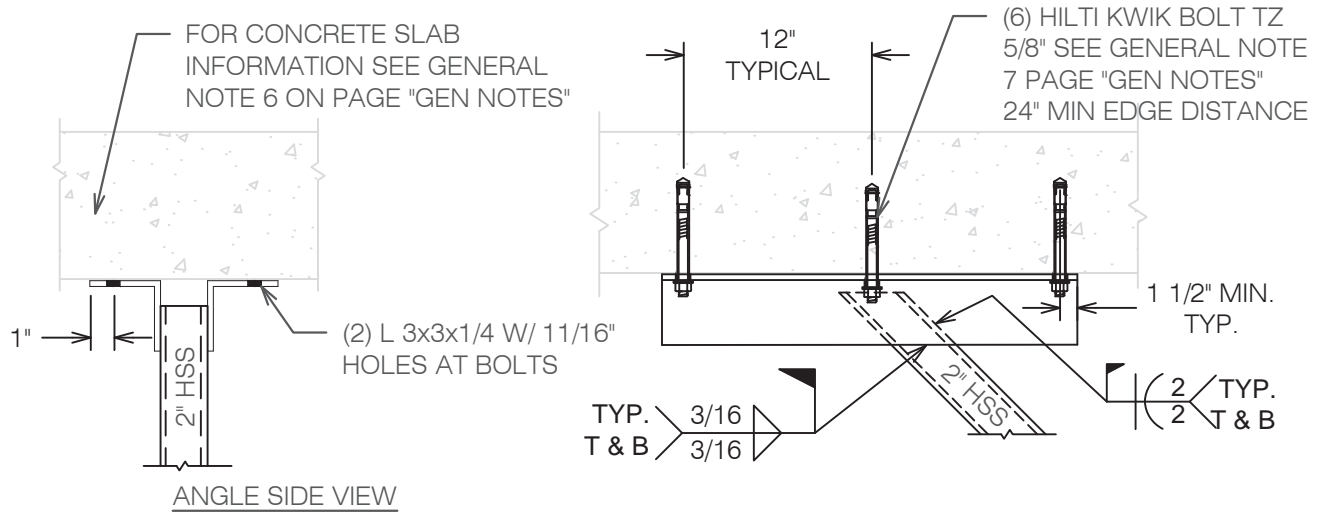
DETAIL C FOR MODELS 330 SERIES, 320 SERIES, 310 SERIES AND 300 SERIES

DETAIL D FOR MODELS 200 SERIES, 120 SERIES, 110 SERIES AND 100 SERIES AND ALL MODELS OF STELLAR XL

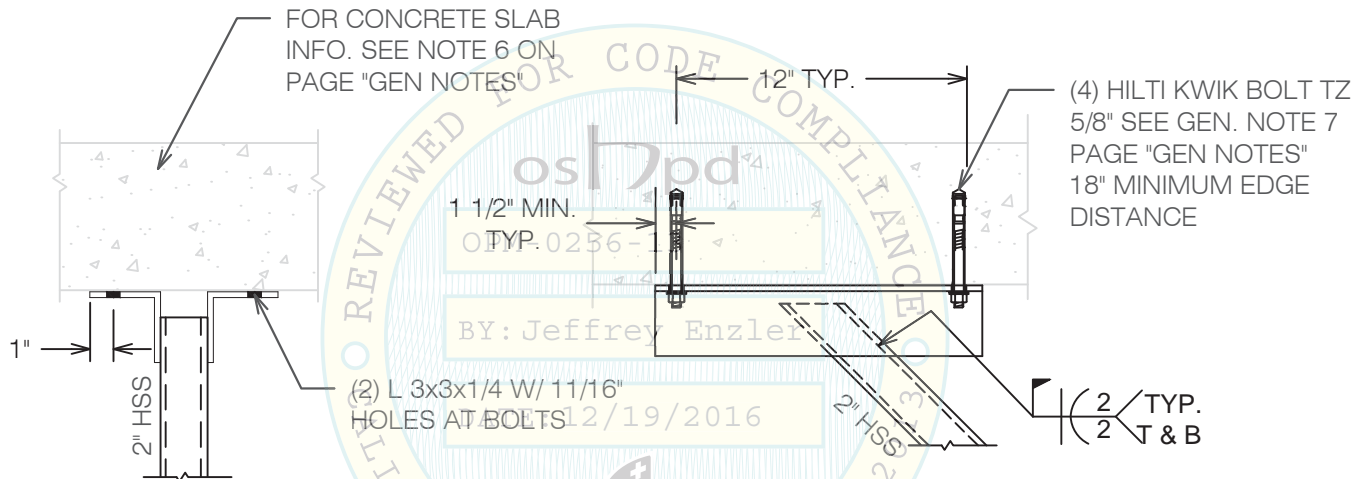
OPM-0256-13 SKYTRON ERGON 3 WITH STELLAR XL MISC. STEEL FOR METAL DECK SLABS BRACE CONNECTION PARALLEL TO METAL DECK FLUTES



 <b>International Seismic Application Technology</b> <b>A Division of Tomarco Contractor Specialties</b> 1020 Crews Road, Suite Q, Matthews, NC 28105 704-841-4080 www.isatsb.com		
 <i>WVJ</i>	<b>DRAWN BY:</b> WVJ <b>DATE:</b> 08/10/15	
	<b>REVISED BY:</b> WVJ <b>DATE:</b> 11/15/16 <b>REV NO:</b> 4	
	<table border="1"> <tr> <td><b>SCALE</b> N.T.S.</td> <td><b>PAGE</b> MISC. STEEL 2</td> </tr> </table>	<b>SCALE</b> N.T.S.
<b>SCALE</b> N.T.S.	<b>PAGE</b> MISC. STEEL 2	



DETAIL E FOR MODELS 330 SERIES, 320 SERIES, 310 SERIES AND 300 SERIES BRACE CONNECTION



DETAIL F FOR MODELS 200 SERIES, 120 SERIES, 110 SERIES AND 100 SERIES AND ALL STELLAR XL MODELS BRACE CONNECTION

OPM-0256-13 SKYTRON ERGON 3 WITH STELLAR XL MISC. STEEL FOR SOLID SLABS



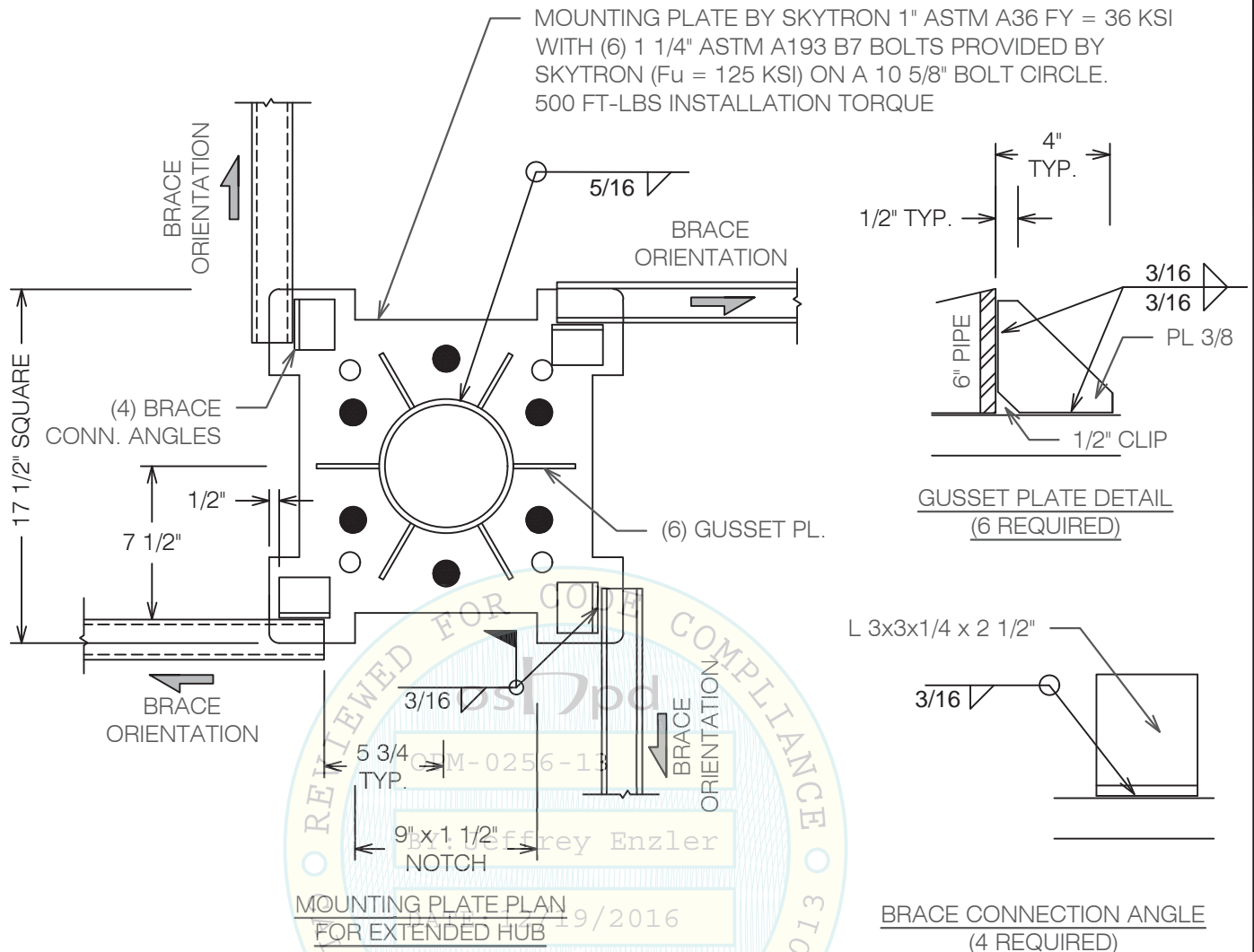
**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com



**DRAWN BY:** WVJ  
**DATE:** 08/10/15  
**REVISED BY:** WVJ  
**DATE:** 11/15/16  
**REV NO:** 4

**SCALE:** N.T.S.  
**PAGE:** MISC. STEEL 3

OSHPD OPM-0256-13 DWG - 7



REVIEWED FOR CODE COMPLIANCE  
 OPM-0256-13  
 Jeffrey Enzler  
 9/2016

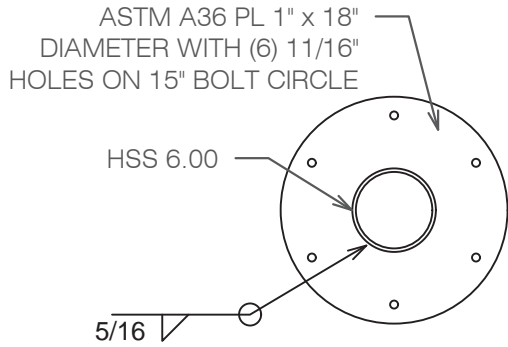
ALL MATERIALS (EXCEPT FOR THE SKYTRON MOUNTING PLATE) ARE BY THE INSTALLATION CONTRACTOR. WELDS MAY BE FIELD WELDS OR SHOP WELDS

OPM-0256-13 MOUNTING PLATE DETAILS FOR ERGON 3 AND STELLAR XL

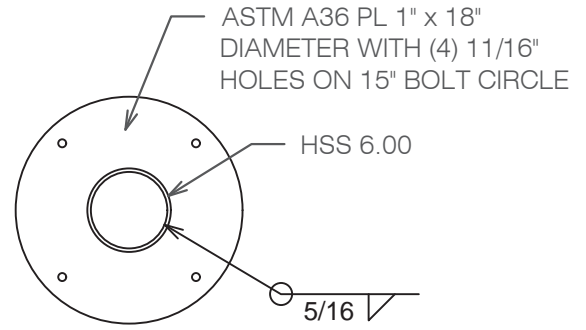


**A Division of Tomarco Contractor Specialties  
 International Seismic Application Technology**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com

	DRAWN BY: WVJ	
	DATE: 11/24/15	
	REVISED BY: WVJ	
		DATE: 11/15/16
		REV NO: 3
SCALE	PAGE	
N.T.S.	MOUNTING PL	

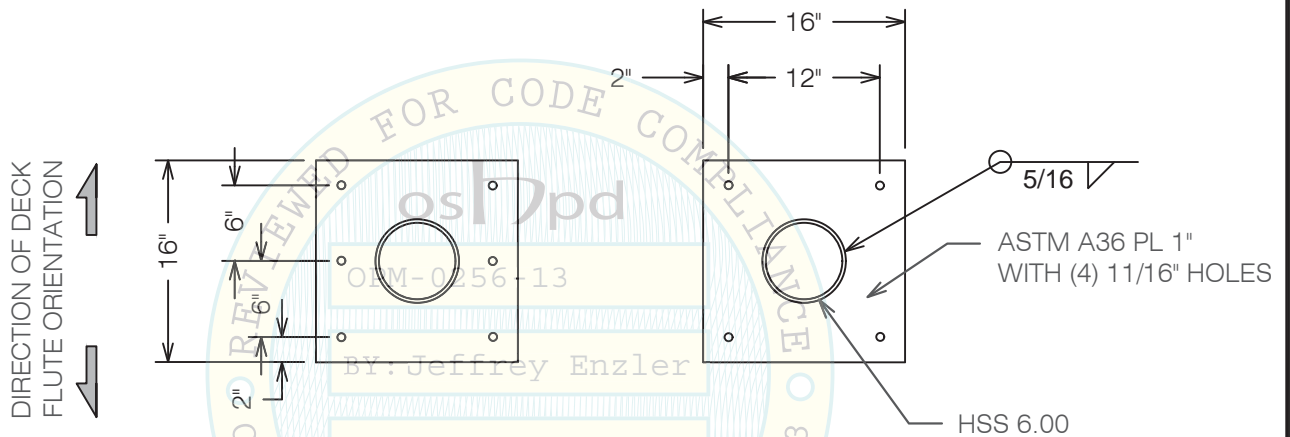


DETAIL A FOR MODELS 330 SERIES, 320 SERIES, 310 SERIES AND 300 SERIES BRACE CONNECTION



DETAIL B FOR MODELS 200 SERIES, 120 SERIES, 110 SERIES AND 100 SERIES BRACE CONNECTION AND ALL STELLAR XL MODELS

TOP PLATE AT SOLID CONCRETE SLABS



DETAIL A FOR MODELS 330 SERIES, 320 SERIES, 310 SERIES AND 300 SERIES BRACE CONNECTION

DETAIL B FOR MODELS 200 SERIES, 120 SERIES, 110 SERIES AND 100 SERIES BRACE CONNECTION AND ALL STELLAR XL MODELS

TOP PLATE AT METAL DECK SLABS

OPM-0256-13 SKYTRON ERGON 3 AND STELLAR XL TOP PLATE DETAILS

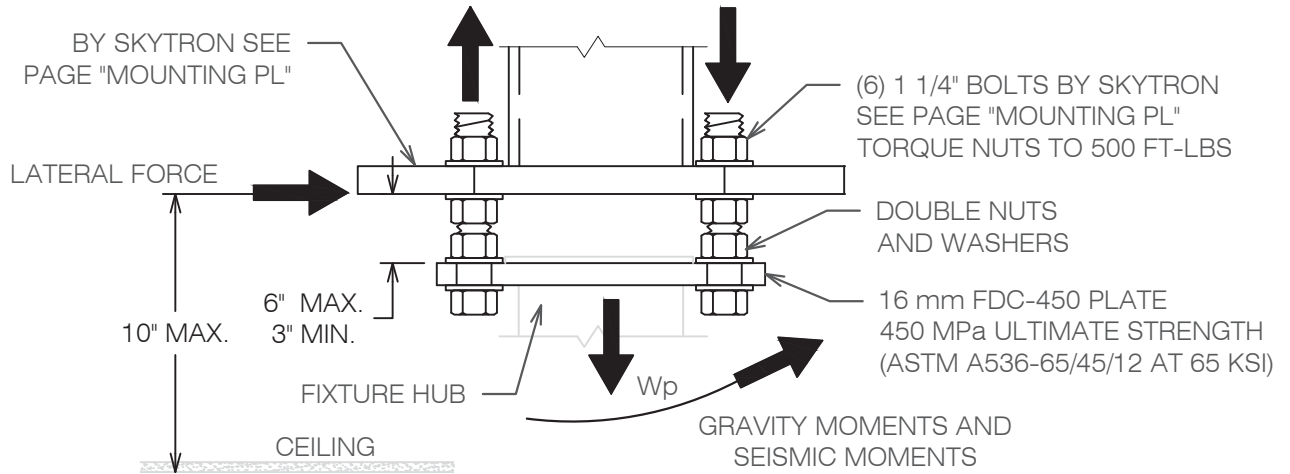


**International Seismic Application Technology**  
**A Division of Tomarco Contractor Specialties**  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com



DRAWN BY: WVJ	
DATE: 08/10/15	
REVISED BY: WVJ	
DATE: 08/03/16	
REV NO: 4	
SCALE	PAGE
N.T.S.	TOP PLATE

OSHPD OPM-0256-13 DWG - 9



Model Number	Weight at 1g (lbs.)	Seismic Design Forces at Ultimate Loads			
		Vertical Force (lbs.)	Lateral force (lbs.)	Mx (ft.-lbs.)	My (ft.-lbs.)
100 SERIES	216	367	648	1,481	2,401
110 SERIES	494	840	1,482	4,477	6,166
120 SERIES	639	1,086	1,917	5,454	7,221
200 SERIES	597	615	1,791	3,118	7,148
300 SERIES	625	1,068	1,884	7,012	10,422
310 SERIES	839	1,426	2,517	6,137	12,460
320 SERIES	1006	1,710	3,018	9,557	14,543
330 SERIES	1168	1,986	3,504	12,059	19,546

1. WEIGHTS AND MOMENTS ARE FACTORED LOADS USING STRENGTH DESIGN AND INCLUDE THE FOLLOWING FACTORS: DL = 1.2, FpV = 0.5 AND FpH = 3.0. MAXIMUM LOADING AFFECT IS USED FOR DESIGN.
2. Mx ARE MOMENTS IN THE HORIZONTAL AXIS DUE TO COMPONENT WEIGHT TIMES THE MAXIMUM HORIZONTAL ECCENTRICITY.
3. My ARE MOMENTS IN THE HORIZONTAL AXIS DUE TO COMPONENT WEIGHT PLUS VERTICAL SEISMIC ACCELERATION TIMES THE MAXIMUM VERTICAL ECCENTRICITY.

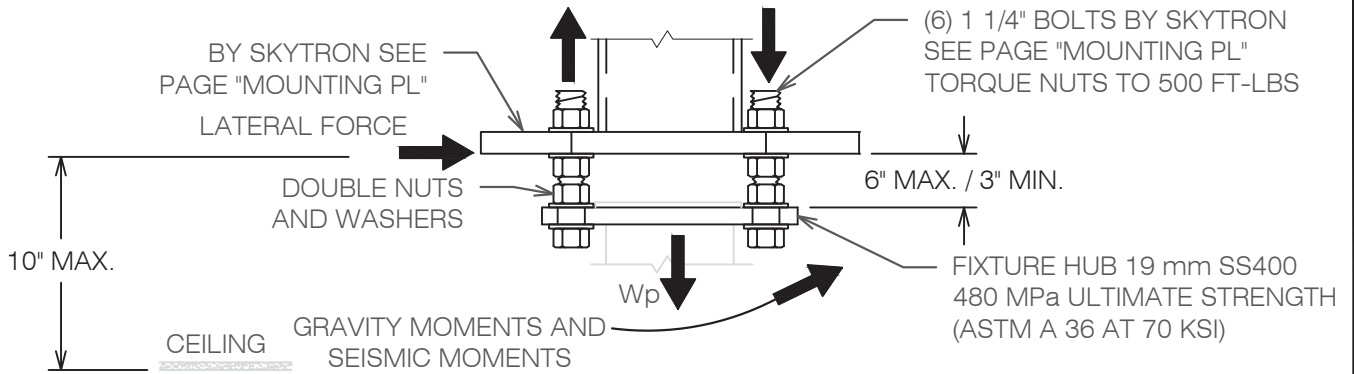
OPM-0256-13 SKYTRON ERGON 3 FORCES AND MOMENTS



**International Seismic Application Technology**  
A Division of Tomarco Contractor Specialties  
1020 Crews Road, Suite Q, Matthews, NC 28105  
704-841-4080 www.isatsb.com

	DRAWN BY: WVJ	
	DATE: 08/10/15	
	REVISED BY: WVJ	
		DATE: 11/15/16
		REV NO: 3
SCALE	PAGE	
N.T.S.	FORCES	

OSHPD OPM-0256-13 DWG - 10



Equipment Data							Seismic Design Forces at Ultimate Loads			
Model Series	Model Number Used for Design	Hub Conf. No.	Bolts at at Hub	Bolts at Mount. Pl.	Torque ft.-lbs.	Weight at 1g lbs.	Vertical Force lbs.	Lateral Force lbs.	Mx ft.-lbs.	My ft.-lbs.
STANDARD	STX555	2	(6) 1/2"	(4) 7/8"	32	353	600	1,059	2,653	3,960
EXTENDED ARM SINGLE	STX5-EA-2000	1	(4) 7/8"	(4) 7/8"	166	159	270	477	1,599	1,432
EXTENDED ARM DUAL	STX55-EA-2000/1500	1	(4) 7/8"	(4) 7/8"	166	315	536	945	1,601	1,389
EXTENDED HUB & ARM	STX55-EH-2000/1500	3	(6) 7/8"	(6) 7/8"	166	421	716	1,263	3,469	6,503
EXTENDED HUB	STX555-EH	3	(6) 7/8"	(6) 7/8"	166	466	792	1,398	3,075	8,352
LFS	LFS STX555	1	(4) 7/8"	(4) 7/8"	166	562	955	1,686	3,656	6,136
LFSLFS	LFSLFS STX55	1	(4) 7/8"	(4) 7/8"	166	579	984	1,737	3,493	5,641

- WEIGHTS AND MOMENTS ARE FACTORED LOADS USING STRENGTH DESIGN AND INCLUDE THE FOLLOWING FACTORS: DL = 1.2, FpV = 0.5 AND FpH = 3.0.
- Mx ARE MOMENTS IN THE HORIZONTAL AXIS DUE TO COMPONENT WEIGHT TIMES THE MAXIMUM HORIZONTAL ECCENTRICITY.
- My ARE MOMENTS IN THE HORIZONTAL AXIS DUE TO COMPONENT LATERAL FORCE TIMES THE MAXIMUM VERTICAL ECCENTRICITY.
- MODEL NUMBER TABULATED YIELDS THE WORST CASE LOADING FOR THE MODEL SERIES.
- EXTENDED HUB MODELS DO NOT HAVE A UNIVERSAL MOUNTING PLATE.
- SEE PAGE "ATTACH NOTES" FOR A LISTING OF THE MODEL NUMBERS INCLUDED WITHIN A GIVEN MODEL SERIES.

BY: Jeffrey Enzler  
 MODELS INCLUDED IN OPM-0256-13  
 DATE: 12/19/2016

SERIES  
 STANDARD STX5-895, STX5-1090, STX5-1285, STX5-895/700, STX55-1090/895, STX55-1285/1090, STX555, STX5-HY-895, STX5-HY-1090  
 LFS LFSSTX5, LFSSTX55, LFSSTX555  
 LFSLFS LFSLFSSTX5, LFSLFSSTX55  
 EXTENDED ARM - SINGLE STX5-EA-1500, STX5-EA-2000  
 EXTENDED ARM - DUAL STX5-HY-1285, STX5-HY-1500, STX55-EA-1500/1300, STX55-EA-2000/1500  
 EXTENDED HUB/EXTENDED ARM STX55-EH-1500/1300, STX55-EH-2000/1500  
 EXTENDED HUB STX5-EH-895, STX5-EH-1090, STX5-EH-1285, STX5-EH-1500, STX5-EH-2000, STX55-895/700, STX55-EH-1090/895, STX55-EH-1285/1090, STX555-EH

OPM-0256-13 SKYTRON ERGON 3 WITH STELLAR XL SURGICAL LIGHTS  
 FORCES AND MOMENTS

**ISAT**  
 International Seismic Application Technology  
 A Division of Tomarco Contractor Specialties  
 1020 Crews Road, Suite Q, Matthews, NC 28105  
 704-841-4080 www.isatsb.com

	DRAWN BY: WVJ	
	DATE: 01/22/16	
	REVISED BY: WVJ	
DATE: 11/15/16		
REV NO: 2		
SCALE N.T.S.	PAGE STELLAR XL	

OSHPD OPM-0256-13 DWG - 11

EQUIPMENT DATA AND ATTACHMENT AND ANCHORAGE FORCES <sup>3</sup>							
Model Series	Bolts at Hub and Mount. Pl.	Torque ft.-lbs.	Diagonal Brace Anchorage <sup>1</sup>	Top Plate Max. <sup>2</sup>		Brace Anchorage <sup>2</sup>	
				Tu Lbs	Vu Lbs	Tu Lbs	Vu Lbs
<b>ERGON 3</b>							
100 SERIES	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	300	2260	1210	1290
110 SERIES	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	300	2260	1210	1290
120 SERIES	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	300	2260	1210	1290
200 SERIES	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	300	2260	1210	1290
300 SERIES	(6) 1 1/4"	500	(6) Hilti KB TZ 5/8"	500	2950	1100	1460
310 SERIES	(6) 1 1/4"	500	(6) Hilti KB TZ 5/8"	500	2950	1100	1460
320 SERIES	(6) 1 1/4"	500	(6) Hilti KB TZ 5/8"	500	2950	1100	1460
330 SERIES	(6) 1 1/4"	500	(6) Hilti KB TZ 5/8"	500	2950	1100	1460
<b>STELLAR XL SURGICAL LIGHTS</b>							
STANDARD	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
EXTENDED ARM SINGLE	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
EXTENDED ARM DUAL	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
EXTENDED HUB & ARM	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
EXTENDED HUB	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
LFS	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310
LFSLFS	(6) 1 1/4"	500	(4) Hilti KB TZ 5/8"	230	2160	870	1310

1. SEE PAGE "GEN NOTE" GENERAL NOTE 7 HILTI KWIK BOLT TZ (ESR-1917) WITH 4" EFFECTIVE EMBEDMENT AND 60 FT-LBS INSTALLATION TORQUE.
2. INCLUDES AN OVERSTRENGTH FACTOR OF  $\Omega_0 = 1.50$ .
3. FORCES SHOWN ARE FOR EACH ANCHOR.

OPM-0256-13 SKYTRON ERGON 3 WITH STELLAR XL SURGICAL LIGHTS  
EQUIPMENT MOUNTING AND ANCHOR FORCES



**International Seismic Application Technology**  
A Division of Tomarco Contractor Specialties  
1020 Crews Road, Suite Q, Matthews, NC 28105  
704-841-4080 www.isatsb.com

	DRAWN BY: WVJ	
	DATE: 02/26/16	
	REVISED BY: WVJ	
		DATE: 11/15/16
		REV NO: 3
SCALE	PAGE	
N.T.S.	ANCH FORCES	

OSHPD OPM-0256-13 DWG - 12