LEXINGTON SHRINERS HOSPITAL

OPERATING ROOMS #1 & 2
DATE: 14 OCT 14

DIRECTORY

SALES REP: JOHN MICHAELIDES (614) 309-8529
JOHN.MICHEALIDES@STRYKER.COM

PROJECT MANAGER: JEREMY HASINGER 214-864-8356
JEREMY.HASLINGER@STRYKER.COM

FIELD ENGINEER: BEN BAILEY 419-322-9029
BEN.BAILEY@STRYKER.COM

TABLE OF CONTENTS

I AM IN AGREEMENT WITH THE PLACEMENT OF ALL EQUIPMENT AND UNDERSTAND ALL PRE-INSTALLATION REQUIREMENTS PROVIDED BY STRYKER COMMUNICATIONS.
I HEREBY APPROVE THIS COMPLETE SET OF DRAWINGS.

AUTHORIZED SIGNATURE:

TITLE: DATE:

APPROVED REVISION: 6B

FIELD ENGINEERING APPROVAL

FIELD ENGINEER SIGNATURE:

1410 LAKE SIDE PARKWAY, SUITE 100
FLOWER MOUND, TX 75028
PHONE: (877) 789-8106
E-FAX: (408) 754-2995
www.stryker.com

stryker®

REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 01 / 09

NOTES: (UNLESS OTHERWISE SPECIFIED)

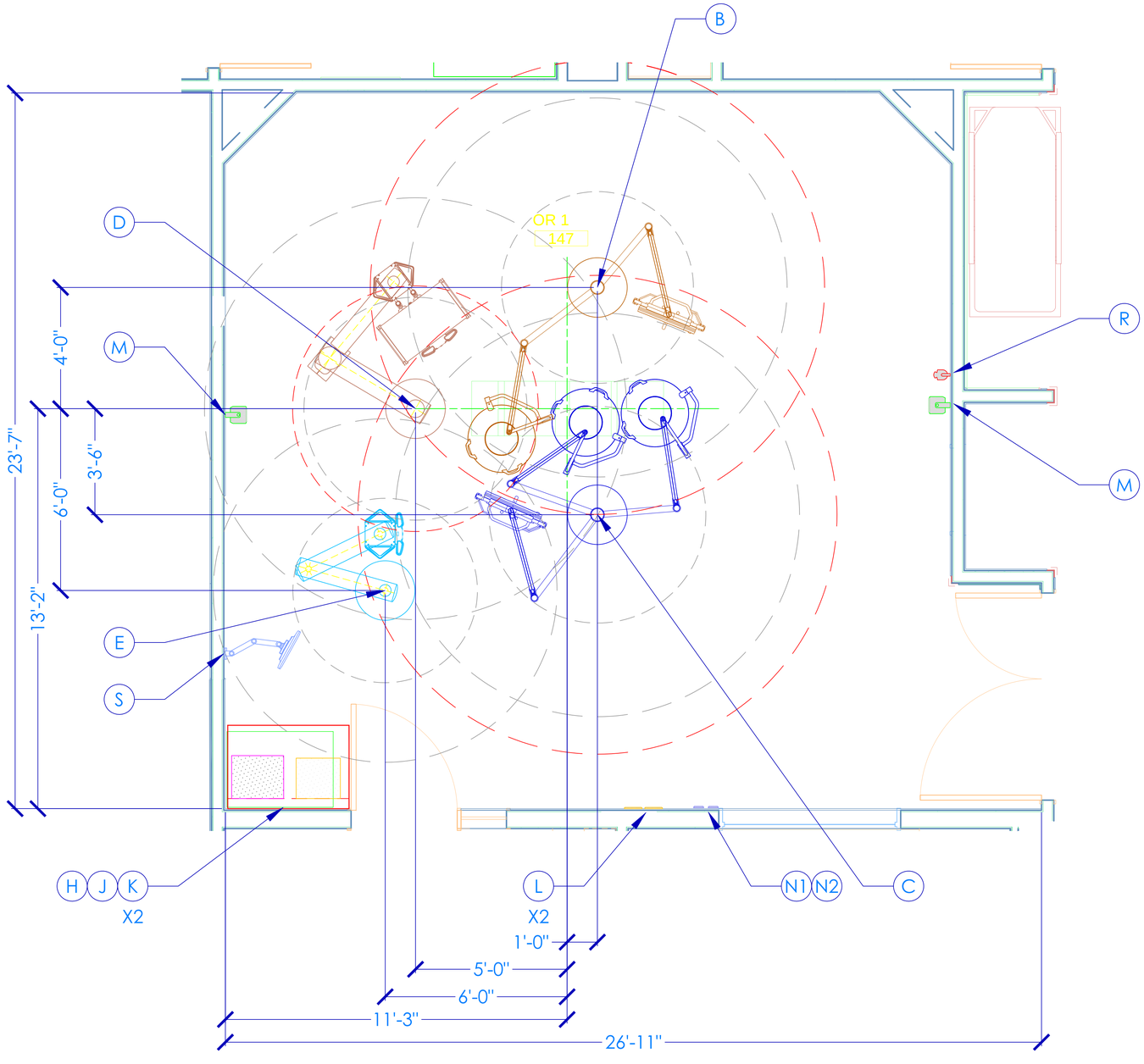
1. EQUIPMENT LIST:

- (B) VISUM LED SURGICAL LIGHT & FLAT PANEL ARM
- (C) VISUM LED DUAL SURGICAL LIGHT & FLAT PANEL ARM
- (D) EQUIPMENT BOOM (1000/1000)
- (E) ANESTHESIA BOOM (800/800)
- (H) NURSE STATION
- (J) SWITCHPOINT INFINITY 3
- (K) VISUM LIGHT POWER SUPPLY BOX - (X2)
- (L) VISUM LIGHT & CAMERA WALL CONTROL PANEL - (X2)
- (M) BRACKET MOUNTED WALL SPEAKER - (X2)
- (N1) WALL PLATE | SINGLE GANG | COPPER DVI
- (N2) WALL PLATE | SINGLE GANG | VGA/S-VIDEO/BNC
- (R) WALL MOUNTED PTZ CAMERA
- (S) WALL MOUNTED TOUCH PANEL (GCX MOUNT)

CONDUIT SCHEDULE

	ITEM - ITEM	QUANTITY	SIZE
	B - J	1	1¼"
	B - K	1	2"
	C - J	1	1¼"
	C - K	1	2"
	D - J	2	2"
	E - J	1	2"
►	L - K	1	¾"
►	M - J	1	¾"
	N1 - J	1	1½"
	N2 - J	1	1"
	R - J	1	1"
	S - J	1	1"

► PLEASE NOTE THERE ARE MULTIPLE INSTANCES OF ITEMS. REFER TO EQUIPMENT LIST FOR SPECIFIC QUANTITIES.



SCALE: 1/2" = 1'

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REV:	DATE:	PROPOSAL #:	DRAFTER
6B	14 OCT 14	REFERENCE CSR#: 23605	E. MONTGOMERY
		PENDING	IR
			-

EQUIPMENT LAYOUT
OPERATING ROOM #1
LEXINGTON SHRINERS HOSPITAL

REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 02 / 09

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. EQUIPMENT LIST:

- (B) VISUM LED SURGICAL LIGHT & FLAT PANEL ARM
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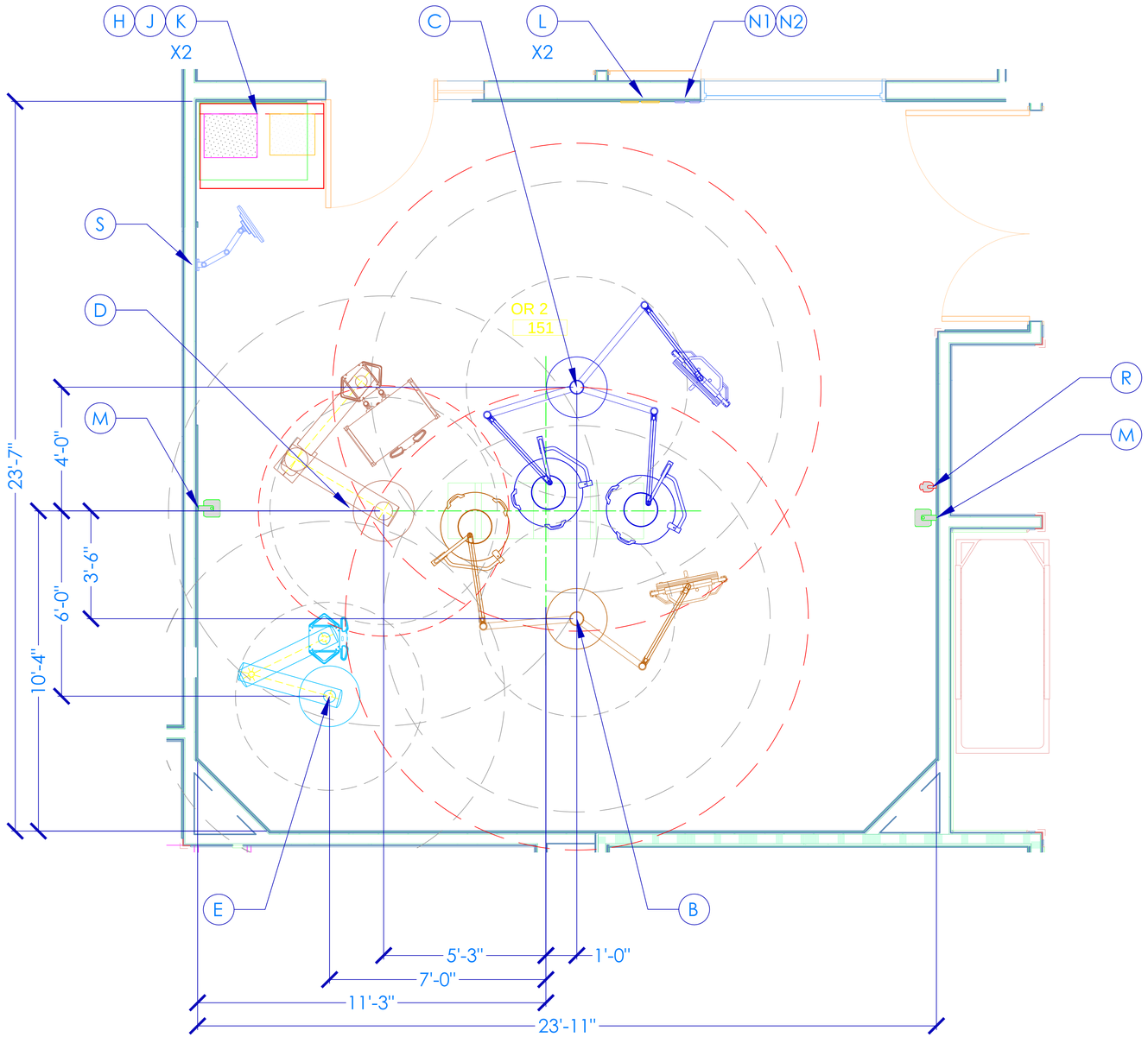
	B - K	1	2"
	C - J	1	1¼"
	C - K	1	2"
	D - J	2	2"
	E - J	1	2"
►	L - K	1	¾"
►	M - J	1	¾"
	N1 - J	1	1½"
	N2 - J	1	1"
	R - J	1	1"
	S - J	1	1"

► PLEASE NOTE THERE ARE MULTIPLE INSTANCES OF ITEMS. REFER TO EQUIPMENT LIST FOR SPECIFIC QUANTITIES.



SCALE: 1/2" = 1'

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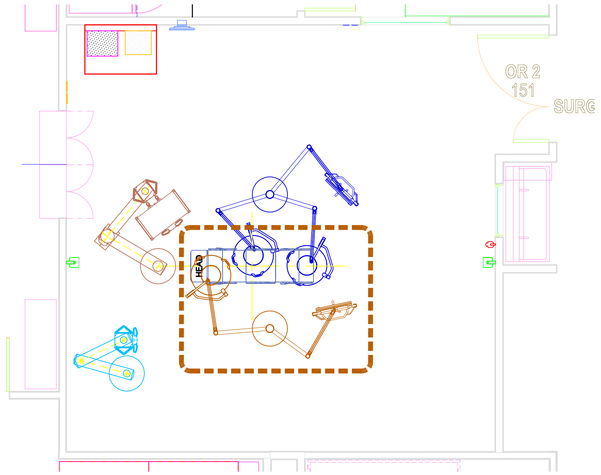
EQUIPMENT LAYOUT

OPERATING ROOM #2

LEXINGTON SHRINERS HOSPITAL

REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

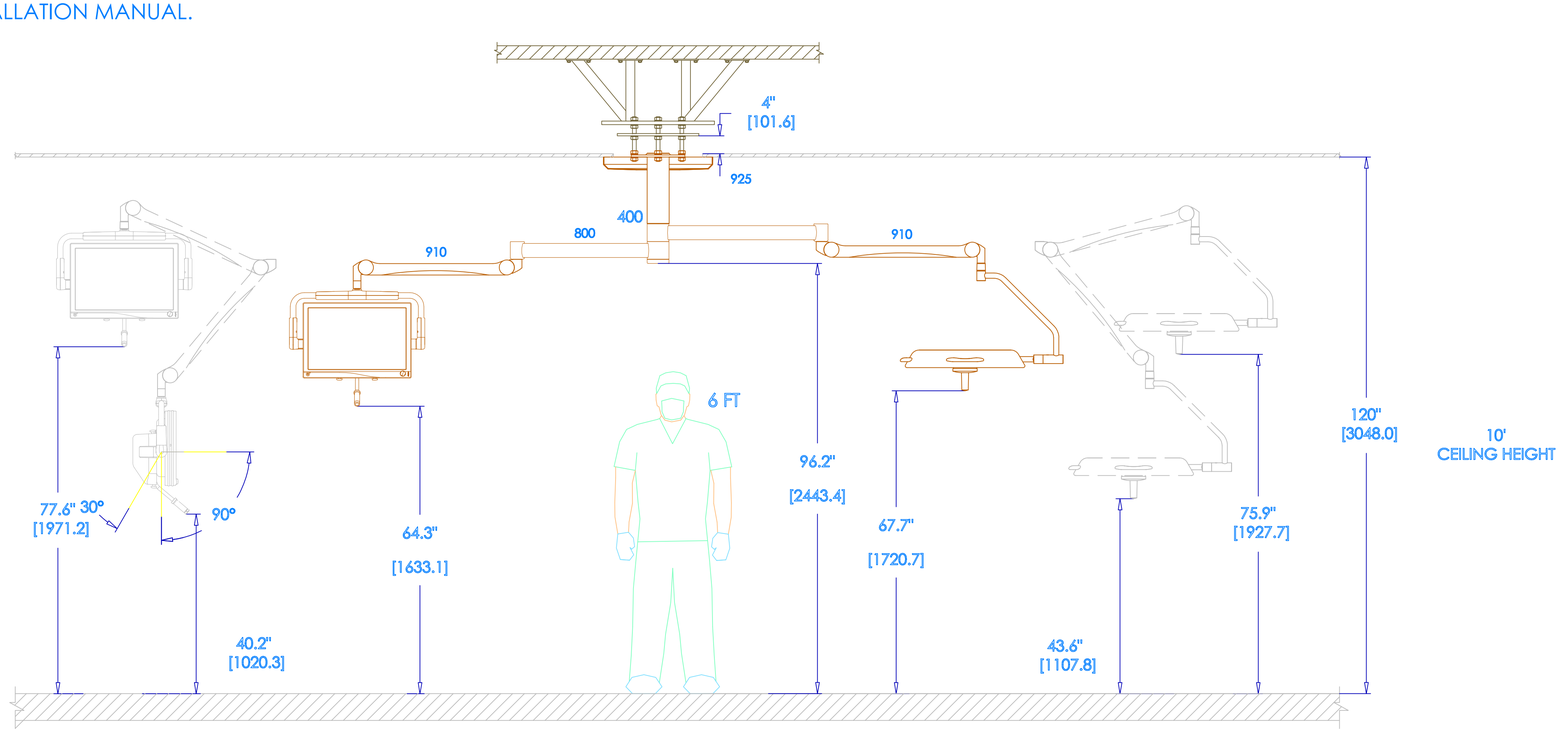
SHEET: 03 / 09



SCALE: 1/4"= 1'

POWER REQUIREMENTS: SEE STRYKER PRE-INSTALLATION MANUAL.

CEILING HEIGHT: 10'-0"



SCALE: 3/4" = 1'

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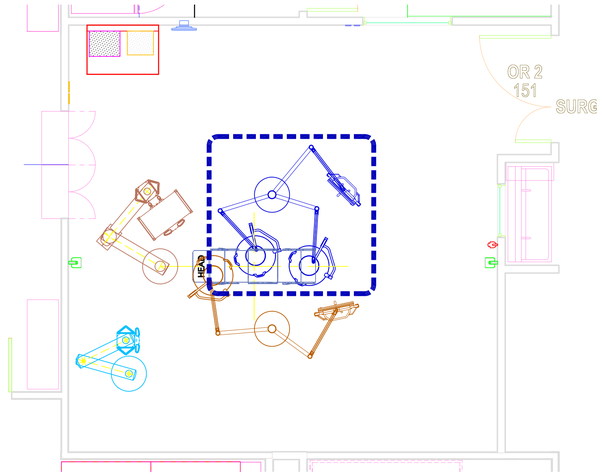
EQUIPMENT ELEVATION
VISUM LED SURGICAL LIGHT & FLAT PANEL ARM - (B)
OPERATING ROOMS #1 & 2
LEXINGTON SHRINERS HOSPITAL

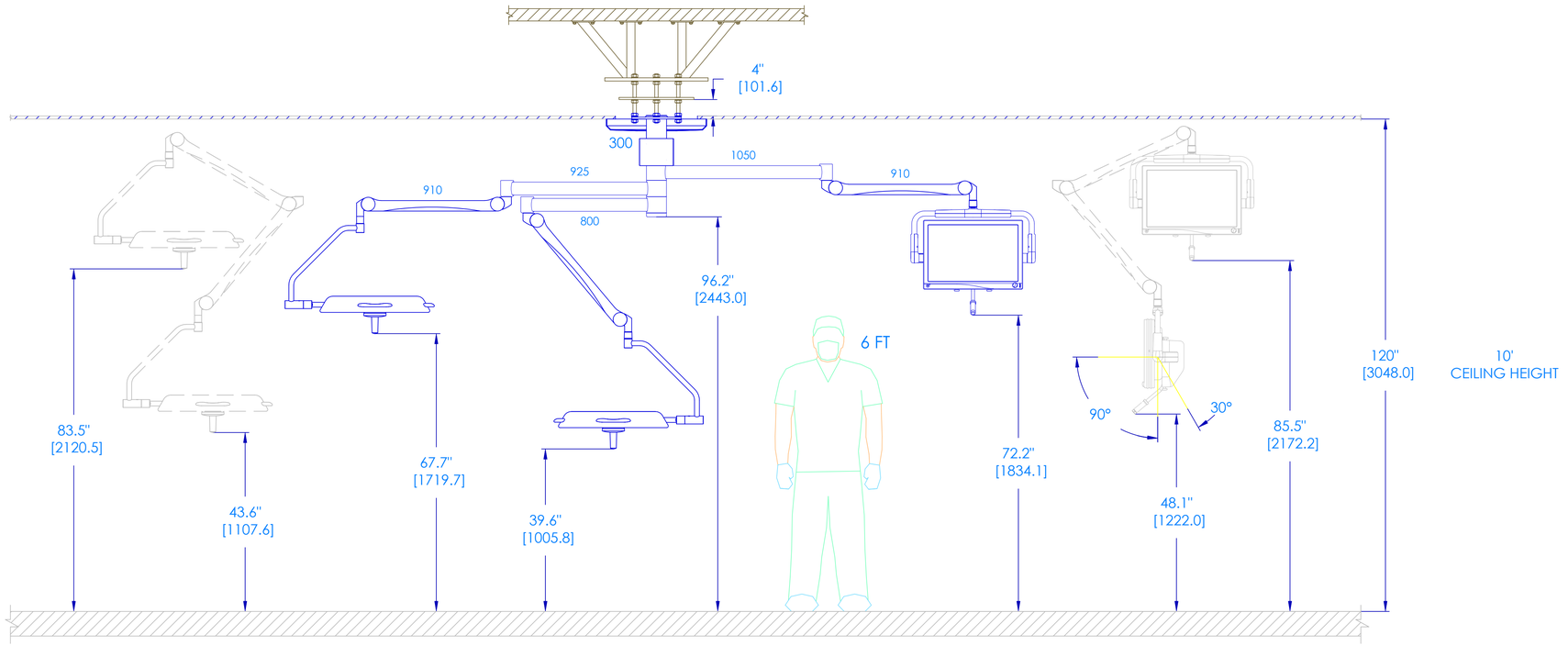
REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 04 / 09



SCALE: 1/4"= 1'

POWER REQUIREMENTS: SEE STRYKER PRE-INSTALLATION MANUAL.



SCALE: 3/4" = 1'

AUTOCAD DRAWING TEMPLATE | TEM10071 | REV. A

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EQUIPMENT ELEVATION
VISUM LED DUAL SURGICAL LIGHT & FLAT PANEL ARM - (C)
OPERATING ROOMS #1 & 2
LEXINGTON SHRINERS HOSPITAL

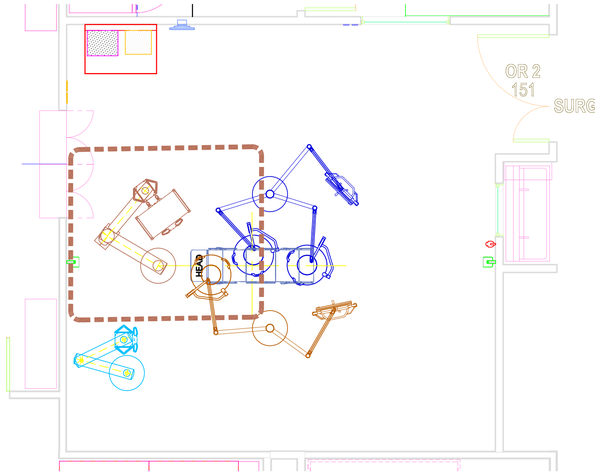
REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 05 / 09

AUTOCAD TITLEBLOCK TEMPLATE |TEM10072| REV. A

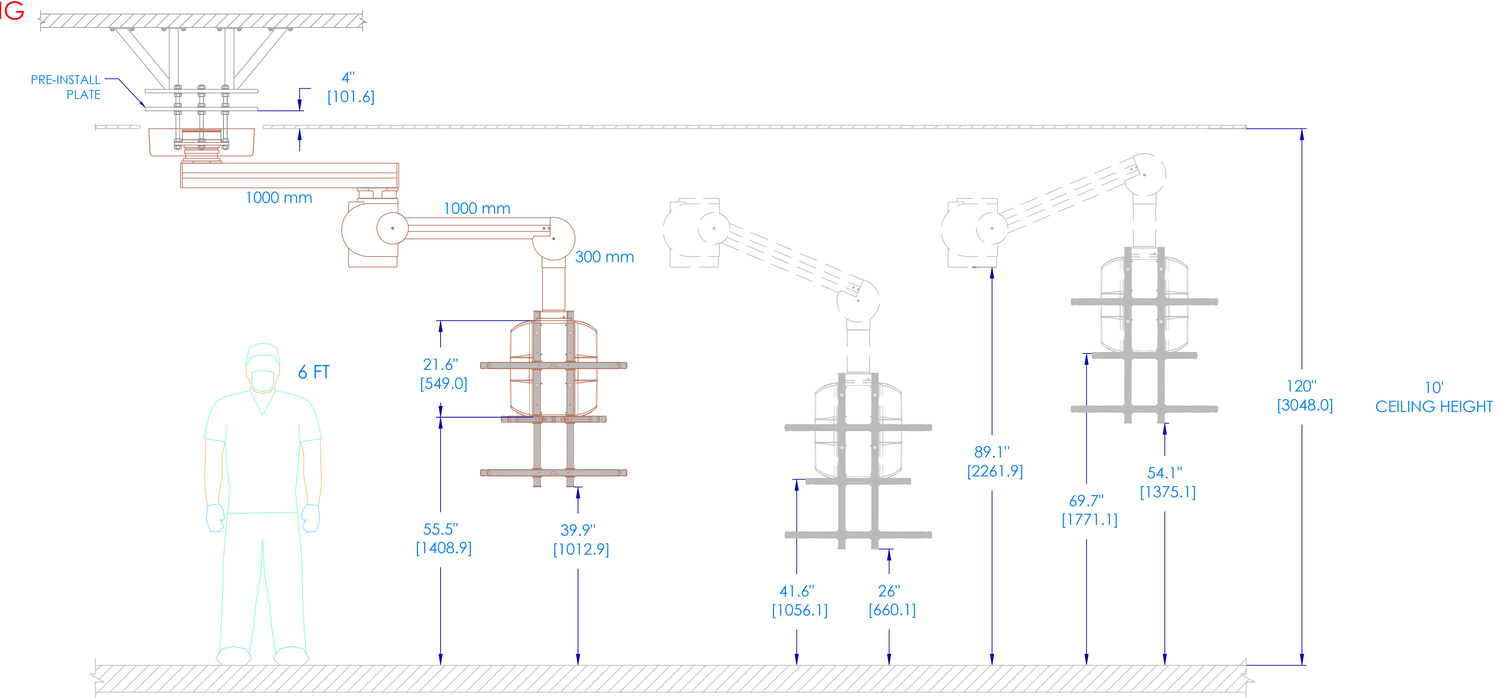
ARM TYPE

EDS 200 ARTICULATING



SCALE: ¼ = 1'

NOTE: PLEASE REFER TO FLEXIS ELEVATION DRAWING FOR SERVICE HEAD CONFIGURATION



SCALE: ¾ = 1'

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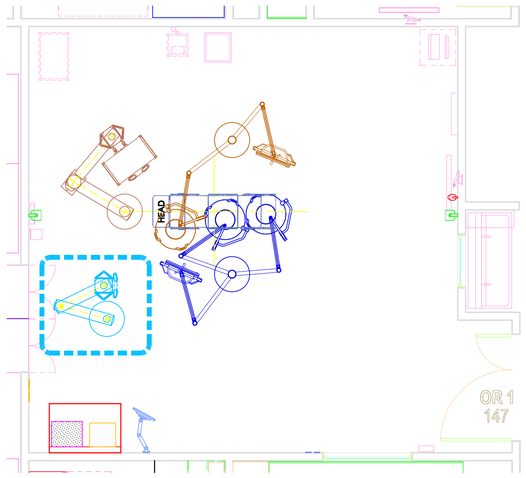
EQUIPMENT ELEVATION

EDS 200 ART. BOOM (1000/1000) - (D)

OPERATING ROOMS #1 & 2
LEXINGTON SHRINERS HOSPITAL

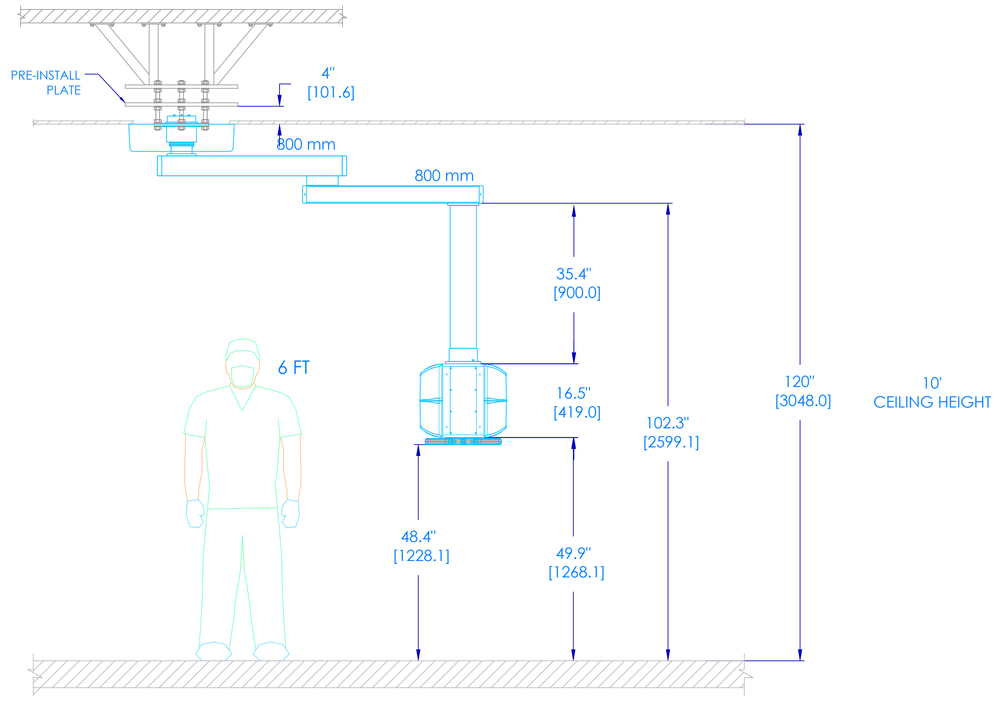
REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 06 / 09



SCALE: 1/4"= 1'

NOTE: PLEASE REFER TO FLEXIS ELEVATION DRAWING FOR SERVICE HEAD CONFIGURATION



SCALE: 3/4" = 1'

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EQUIPMENT ELEVATION
ANESTHESIA BOOM (800/800) - (E)
OPERATING ROOMS #1 & 2
LEXINGTON SHRINERS HOSPITAL

REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 07 / 09

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. **ALL CONDUIT RUNS INCLUDE INSULATED BUSHINGS AND PULL STRINGS.**
2. **CONDUIT RUNS CANNOT EXCEED 50' FROM END-TO-END. DO NOT EXCEED FOUR (4) 90 DEGREE BENDS.**
3. **THE PRE-INSTALL MANUAL REQUIREMENTS SUPERSEDE ALL PRE-INSTALL NOTES IN THIS DRAWING PACKAGE.**
4. **EQUIPMENT LIST:**

B VISUM LED SURGICAL LIGHT & FLAT PANEL ARM

CONDUIT: REFER TO ROOM LAYOUT FOR CONDUIT SIZE. TERMINATE ALL CONDUITS WITHIN 18" OF THE CENTER OF THE CEILING MOUNT.
POWER: ONE (1) - 20 AMP CIRCUIT LOCATED AT JUNCTION BOX WITHIN 18" OF CENTER OF STRYKER PRE-INSTALL PLATE.
- THE CONTRACTOR / ELECTRICIAN TO HARDWIRE STRYKER ELECTRICAL WHIPS DURING STRYKER INSTALLATION. INSTALL ONE (1) - 5 AMP FUSE FOR 100V- 120V APPLICATIONS, OR A 2.5 AMP FUSE FOR 200V-240V APPLICATIONS, IF REQUIRED BY LOCAL ELECTRICAL CODE. THESE FUSES MUST BE PROVIDED BY THE CONTRACTOR.

ACCESS PANEL: ONE (1) 24" X 24" ACCESS PANEL ADJACENT TO SUSPENSION.
STRUCTURAL: STRYKER PRE-INSTALL PLATE SHALL BE INSTALLED BY CUSTOMER/CONTRACTOR AT 4" ABOVE FINISHED CEILING PER CUSTOMER PROVIDED STRUCTURAL ENGINEER SPECS.
- A 21" CIRCULAR HOLE CENTERED ON STRYKER PER-INSTALL PLATE IN THE FINISHED CEILING IS REQUIRED FOR INSTALLATION. A 24" DIAMETER CEILING COVER CONCEALS HOLE AFTER SUSPENSION IS INSTALLED.

C VISUM LED DUAL SURGICAL LIGHT & FLAT PANEL ARM

CONDUIT: REFER TO ROOM LAYOUT FOR CONDUIT SIZE. TERMINATE ALL CONDUITS WITHIN 18" OF THE CENTER OF THE CEILING MOUNT.
POWER: ONE (1) - 20 AMP CIRCUIT LOCATED AT JUNCTION BOX WITHIN 18" OF CENTER OF STRYKER PRE-INSTALL PLATE.
- THE CONTRACTOR / ELECTRICIAN TO HARDWIRE STRYKER ELECTRICAL WHIPS DURING STRYKER INSTALLATION. INSTALL ONE (1) - 5 AMP FUSE FOR 100V- 120V APPLICATIONS, OR A 2.5 AMP FUSE FOR 200V-240V APPLICATIONS, IF REQUIRED BY LOCAL ELECTRICAL CODE. THESE FUSES MUST BE PROVIDED BY THE CONTRACTOR.

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- A 21" CIRCULAR HOLE CENTERED ON STRYKER PER-INSTALL PLATE IN THE FINISHED CEILING IS REQUIRED FOR INSTALLATION. A 24" DIAMETER CEILING COVER CONCEALS HOLE AFTER SUSPENSION IS INSTALLED.

D EDS 200 - EQUIPMENT BOOM (1000/1000)
E EDS 400 - ANESTHESIA BOOM (1000/1000)

CONDUIT: REFER TO ROOM LAYOUT FOR CONDUIT SIZE. TERMINATE ALL CONDUITS WITHIN 18" OF THE CENTER OF THE CEILING MOUNT.
POWER: REFER TO FLEXIS MANUFACTURING ELEVATIONS FOR ELECTRICAL CIRCUIT COUNT. ALL ELECTRICAL CIRCUITS SHALL BE LOCATED AT JUNCTION BOX WITHIN 18" OF CENTER OF STRYKER PRE-INSTALL PLATE.
- THE CONTRACTOR / ELECTRICIAN TO HARDWIRE STRYKER ELECTRICAL WHIP DURING STRYKER INSTALLATION.

PLUMBING: ALL GAS LINES MUST BE TERMINATED WITH STRYKER SUPPLIED GAS RISERS BY CUSTOMER/MEDGAS INSTALLER.
- CHECK VALVES MUST BE ATTACHED TO A GAS MOUNTING BRACKET WITHIN 18" OF CENTER OF STRYKER PRE-INSTALL PLATE.
- STRYKER SUPPLIED BRAKE REGULATOR INSTALLED BY CUSTOMER/MEDGAS INSTALLER IN AN ORIENTATION THAT THE GAUGE CAN BE READ FROM THE ACCESS PANEL.
- ALL FINAL DISS CONNECTIONS TO BE MADE BY CUSTOMER/MEDGAS INSTALLER AFTER STRYKER INSTALLATION.

ACCESS PANEL: ONE (1) 24" X 24" ACCESS PANEL ADJACENT TO SUSPENSION.
STRUCTURAL: STRYKER PRE-INSTALL PLATE SHALL BE INSTALLED BY CUSTOMER/CONTRACTOR AT 4" ABOVE FINISHED CEILING PER CUSTOMER PROVIDED STRUCTURAL ENGINEER SPECS.
- A 21" CIRCULAR HOLE CENTERED ON STRYKER PER-INSTALL PLATE IN THE FINISHED CEILING IS REQUIRED FOR INSTALLATION. A 24" DIAMETER CEILING COVER CONCEALS HOLE AFTER SUSPENSION IS INSTALLED.

H NURSE STATION

POWER: RECOMMEND SEVEN (7) - 20 AMP CIRCUITS
- ONE (1) CIRCUIT FOR QUAD OUTLET BEHIND VIDEO ROUTER.
- ONE (1) CIRCUIT FOR QUAD OUTLET BEHIND LIGHT PSB (IF REQUIRED).
- ONE (1) CIRCUIT FOR DUPLEX OUTLET UNDER TOUCH PANEL.
- ONE (1) CIRCUIT FOR QUAD OUTLET BEHIND DIGITAL CAPTURE DEVICE.
- THREE (3) CIRCUITS FOR THREE (3) QUAD OUTLETS BEHIND THE ADDITIONAL STRYKER PROVIDED EQUIPMENT (IF REQUIRED)
- ALL DOCUMENTATION STATION CIRCUITS REQUIRE CRITICAL POWER.

SPACE REQUIREMENTS: DOC STATION MUST ALLOW FOR A MINIMUM 2" CABLE PASSAGE BETWEEN ALL COMPONENTS HOUSED INSIDE.
- SECTION HOUSING VIDEO ROUTER MUST HAVE AN INTERIOR DIMENSION OF AT LEAST 27.5"W X 31"H X 29"D.
- SECTION HOUSING VIDEO ROUTER MUST BE VENTED.
- DOC STATION MUST ALLOW FOR DIRECT ACCESS TO BACK BOXES PER REQUIREMENTS LISTED BELOW.

DATA: PER LISTED EQUIPMENT.
BACKBOX: PER LISTED EQUIPMENT.
NOTE: CUSTOMER / CONTRACTOR RESPONSIBLE FOR RECEIVING AND INSTALLATION OF DOCUMENTATION STATION PRIOR TO STRYKER INSTALLATION.

DOC STATION EQUIPMENT:

SPI-3 TOUCH PANEL, 22"

DIMENSIONS: 20.3"W X 15.8"H X 13.5"D WITH STAND
DATA: NONE
BACKBOX: NONE

J SWITCHPOINT INFINITY 3

DIMENSIONS:
- MEDIA ROUTER: 20.6"W X 24"H X 17"D
- CONTROL SECTION: 12.5"W X 2.6"H X 17"D
- TOTAL SPACE REQUIRED: 27.5"W X 31"H X 29"D

DATA: ONE (1) ETHERNET CONNECTION
BACKBOX: ONE (1) 18"W X 18"H X 4"D (OR LARGER) JUNCTION BOX FLUSH MOUNTED.
- SET BOTTOM OF BOX 9" ABOVE FINISHED FLOOR.

NOTE: TERMINATE ALL INTEGRATION CONDUITS TO THIS JUNCTION BOX.

K VISUM LIGHT POWER SUPPLY BOX

DIMENSIONS: 12.5"W X 7"H X 15.5"D
- TOTAL SPACE REQUIRED: 20"W X 9"H X 21"D

DATA: ONE (1) ETHERNET CONNECTION WHEN THERE IS NOT A SPI-3 IS PRESENT
BACKBOX: ONE (1) 6"W X 6"H X 4"D (OR LARGER) JUNCTION BOX FLUSH MOUNTED.
- SET BOTTOM OF BOX 14" ABOVE FINISHED FLOOR.

NOTE: TERMINATE ALL SURGICAL LIGHT CONDUITS TO THIS JUNCTION BOX

L VISUM LIGHT & CAMERA WALL CONTROL PANEL

CONDUIT: ONE (1) ¾" CONDUIT TO LIGHT POWER SUPPLY BOX.
BACK BOX: ONE (1) RACO 942, 3-GANG JUNCTION BOX.
- MOUNT IN VERTICAL ORIENTATION AT CONVENTIONAL LIGHT SWITCH HEIGHT.
- IF MULTIPLE WALL CONTROL PANELS ARE INSTALLED, A MINIMUM OF 1.5" IS REQUIRED BETWEEN EACH RACO 942 JUNCTION BOX.

POWER: NONE

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PROPOSAL #: PENDING
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IR
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PRE-INSTALL NOTES

OPERATING ROOMS #1 & 2

LEXINGTON SHRINERS HOSPITAL

REP: JOHN MICHAELIDES
PM: JEREMY HASLINGER

SHEET: 08 / 09

NOTES: (UNLESS OTHERWISE SPECIFIED)

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3. **THE PRE-INSTALL MANUAL REQUIREMENTS SUPERSEDE ALL PRE-INSTALL NOTES IN THIS DRAWING PACKAGE.**
4. **EQUIPMENT LIST:**

M BRACKET MOUNTED WALL SPEAKER
CONDUIT: ONE (1) ¾" CONDUIT
BACK BOX: ONE (1) 4"W X 4"H JUNCTION BOX WITH SINGLE-GANG MUD RING
- MOUNT THE J-BOX IN WALL AT 12" BELOW FINISHED CEILING OR AS REQUESTED

N1 WALL PLATE | SINGLE GANG | COPPER DVI
CONDUIT: ONE (1) 1½" CONDUIT
BACK BOX: ONE (1) 4"W X 4"H JUNCTION BOX WITH SINGLE-GANG MUD RING
- MOUNT THE J-BOX 18" ABOVE FINISHED FLOOR.
POWER: NONE REQUIRED, BUT SHOULD BE LOCATED NEXT TO OUTLET.

N2 WALL PLATE | SINGLE GANG | VGA/S-VIDEO/BNC
CONDUIT: ONE (1) 1" CONDUIT
BACK BOX: ONE (1) 4"W X 4"H JUNCTION BOX WITH SINGLE-GANG MUD RING
- MOUNT THE J-BOX 18" ABOVE FINISHED FLOOR.
POWER: NONE REQUIRED, BUT SHOULD BE LOCATED NEXT TO OUTLET

R WALL MOUNTED PAN/TILT/ZOOM CAMERA
CONDUIT: ONE (1) 1" CONDUIT
BACK BOX: ONE (1) 4"W X 4"H JUNCTION BOX WITH DUAL-GANG MUD RING
- FLUSH MOUNTED IN WALL 12" BELOW FINISHED CEILING
POWER: NONE

S WALL MOUNTED TOUCH PANEL (GCX MOUNT)
CONDUIT: ONE (1) 1" CONDUIT.
BACK BOX: ONE (1) 4"W X 4"H JUNCTION BOX WITH SINGLE-GANG MUD RING
- MOUNT J-BOX WITHIN 18" OF TOUCH PANEL LOCATION
POWER: ONE (1) STANDARD OUTLET WITHIN 18" OF TOUCH PANEL LOCATION.

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PRE-INSTALL NOTES

OPERATING ROOMS #1 & 2

LEXINGTON SHRINERS HOSPITAL

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PM: JEREMY HASLINGER

SHEET: 09 / 09

FLEXiS™

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Pre-Installation Manual

January 2012 1001400007 REV J www.Stryker.com

FLEX*i*S™

Pre-Installation Manual

Stryker FLEXiS™ Pre-Installation Manual

1001400007 REV J

Contents

1. Warnings and Cautions

Please read this manual and follow its instructions carefully. The words WARNING, CAUTION, and Note carry special meanings and should be carefully reviewed:

WARNING	**The personal safety of the patient or user may be involved. Disregarding this information could result in injury to the patient.**
Caution	**Special service procedures or precautions must be followed to avoid damaging the instrument.**
Warning	**A lightening bolt is intended to warn of the presence of hazardous voltages. Refer all service to authorized personnel.**
Note	Special information to make maintenance easier or important information more clear.

To avoid potential serious injury to the user and the patient and/or damage to this device, the user must adhere to the following:

1.1 Warnings

1. Caution must be exercised when lifting heavy objects to avoid serious injury or damage to equipment. Use of proper lifting equipment and technique is required.
2. Energized electrical circuits can cause severe injury or death. Ensure that all personnel working around energized circuits have been trained in and are following proper lock out/tag out and other applicable safety procedures.

1.2 Cautions

1. All Stryker-supplied equipment is to be stored in a clean, dry environment prior to installation. Failing to comply with this requirement may lead to damage of equipment and possible failure of life support components.

1.3 Notes

1. The CE0197 marking does not apply to the FLEXiS System.

2. Product Symbol Definition

The following symbols may be found on the Stryker Equipment Delivery System:

	The book symbol is intended to refer the user to important operating and maintenance (service) instructions in the literature accompanying the product.
	The book symbol is intended to refer the user to important safety operating and maintenance (service) instructions in the literature accompanying the product.
	An exclamation mark within a triangle is intended to alert the user of warnings and cautions.
	A lightning bolt indicates the presence of hazardous voltage. Refer all service to authorized personnel.
	Denotes temperature limits.
	Denotes alternating current.
	Denotes protective earth ground.
	Denotes humidity limits.
	Denotes equipotentiality.
	Denotes usage tips and useful information.
	Denotes a load limitation.
	Denotes fire hazard.
CE 0197	Denotes compliance to European Community Directive 93-42-EEC.
c UL us LISTED FLEXiS (29AZ)	Indicates the product is compliant with “Medical Electrical Equipment with Respect to Electrical Shock, Fire, and Mechanical Hazard only in accordance with CAN/ CSA C22.2 No601.1.
	Denotes the date the equipment was manufactured.
	Denotes the manufacturer of the device.
REF	Denotes product/part number.
SN	Denotes product/serial number.

LOT	Denotes lot or batch number.
EC REP	Denotes European Representative.
!USA Rx ONLY	For U.S. audience only - Caution: Federal Law (USA) restricts this device to sale by or on the order of a physician.
	Denotes quantity.
	Item available in the US only.
	Denotes Class 1 and Type B Equipment. Class 1 Equipment: equipment in which the protection against electric shock does not rely on Basic Insulation only, but includes an additional safety precaution in such a way that means are provided for the connection of Accessible Conductive Parts to Protective (ground) Conductor in the fixed wiring of the installation in such a way that Accessible Conductive Parts cannot become Live in the event of a failure of the Basic Insulation. According to EN ISO 11197 and EN60601-1, 1990 including amendments 1 and 2. Type B Equipment: equipment providing a particular degree of protection against electric shock, particularly regarding allowable leakage current, and reliability of the protective earth connection (if present).
	In accordance with European Community Directive 2002/96/EC on Waste Electrical and Electronic Equipment, this symbol indicates that the product must not be disposed of as unsorted municipal waste but should be collected separately. **Note:** The device does not contain any hazardous materials. Legal regulations may include specifications regarding the disposal of this product. We request that you contact Stryker when you plan to withdraw this device from service for discard.
	This symbol represents the motor duty cycle, or the amount of time an articulating service head can be operated (3 minutes) and then must rest (30 minutes) before being operated again.
	Denotes tipping hazard.
	Indicates double-stacking is prohibited.
	Indicates a forklift should not be used with packaging or equipment.
	Indicates contents are fragile.
INPUT	Device input.

	The arrow denotes the air flow direction. The P/N and Lot values will be populated depending on the part ordered. Assembled by Mackay for Stryker For use with N2 or compressed air Max allowable inlet pressure = 300 psi Supplies boom brake system

3. Scope

This Pre-Installation Guide describes the requirements for assembling and installing components used in the support of Stryker ceiling-mounted boom assemblies, prior to installation of the components. These requirements include all services to be routed to and/or through the boom, such as medical gases, electrical, video, data, etc. This goes for both the single and tandem mounts and also applies to the EDS boom system. This guide does not describe the installation of the boom

4. Hospital/Contractor Responsibilities

WARNING **Responsibility for proper design of support structure lies entirely with the hospital/contractor and is not covered through warranty by Stryker. Improperly designed support structure may result in poor performance or damage to equipment and possible injury to user. Warranty service charges related to inadequate support structure design shall be at the customer's expense.**

Stryker will not review or approve customer support structures. This is the responsibility of the customer's architect and designated structural engineer. Any visit by Stryker personnel to view the steelwork is purely to review its positioning against reflected ceiling plans.

4.1 Delivery and Storage

1. Accept delivery of Stryker crates and equipment to the proper room before installation date.
2. All Stryker-supplied equipment is to be stored in a secure, clean, temperature controlled, dry environment prior to installation. Failing to comply with this requirement may lead to damage of equipment, possible failure of life support components, theft and damage.
3. Remove and dispose of pallets, boxes, and trash upon completion of installation.

4.2 Drawings and Information

1. The hospital must supply Stryker with up to date drawings in .dwg format (CAD) including but not limited to:
   - Room layout plans (current and proposed)
   - Electrical services drawings
   - Mechanical services drawings
   - Elevation drawings
   - Structural steel (support structure) drawings
   - Ceiling drawings
2. The hospital must ensure that Stryker is notified of all revisions and changes to drawings prior to and during the scope of the project.

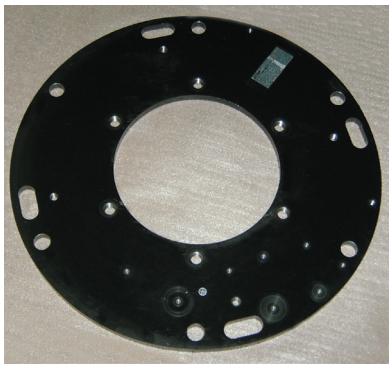
4.3 Ceiling Access

- A 24" x 24" (610mm x 610mm) minimum access panel must be installed in the ceiling within 18" (450mm) of the Stryker-supplied Mounting (Interface) Plate to allow connection of electrical and data cables during final installation. In this instance, an access panel is defined as an opening in the ceiling near the fixture that allows for servicing the equipment. The access panel must be separate from the hole where the equipment is hung and it must have a door for future serviceability.
- A hole matching the Stryker-supplied mounting plate is required to provide easy access to risers and electrical junction boxes during installation of boom assembly. The hole size should match the outline of the plate, round for single mounts (Figure 6.1) and square for tandem mounts (Figure 6.2), and should be aligned with the center of the Mounting (Interface) Plate. This hole will be concealed by a Stryker-supplied cover; therefore, it is important not to exceed the specified hole size. Make certain no objects interfere with this space.

5. Stryker Responsibility

1. Provide the hospital or designated contractor with Stryker rough in drawings including elevation and room configuration drawings for Stryker-supplied equipment.
2. Advise the hospital of a proposed time-frame for installation of Stryker-supplied infrastructure.
3. Check in with hospital personnel and/or contractor to announce arrival.
4. Run and terminate all Stryker-supplied audio visual cables required for Stryker equipment.
5. Install booms.
6. Inspect all installed booms for quality assurance.

Stryker Provides the Following:

<table>
<tr>
<td> 
Mounting (Interface) Plate</td>
<td> 
Gas Risers with Check Valves (Positive Flow)</td>
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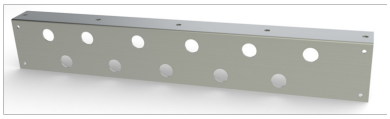
<td> 
Copper Cap for Vacuum Riser (Negative Flow)</td>
<td> 
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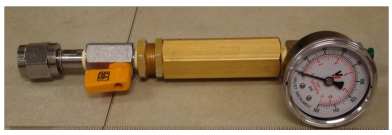
<td> 
Air Pressure Regulator</td>
<td></td>
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</table>

6. Structural Responsibility

6.1 Super Structure/Mounting Support

WARNING **Responsibility for proper design of support structure lies entirely with the hospital/contractor and is not covered through warranty by Stryker. Improperly designed support structure may result in poor performance or damage to equipment and possible injury to user. Warranty service charges related to inadequate support structure design shall be at the customer's expense.**

Stryker will not review or approve customer support structures. This is the responsibility of the customer's architect and designated structural engineer. Any visit by Stryker personnel to view the steelwork is purely to review its positioning against reflected ceiling plans.

1. Design and install the support structure to:
   - Support (Stryker-supplied) weight and moment loads of each equipment piece.
   - Satisfy all applicable regulations including, but not limited to, building and electrical codes.
2. Install Stryker-supplied Mounting (Interface) Plate at the bottom of each support structure and 4" above the finished ceiling in accordance with the recommended method. THIS MUST BE INSTALLED PRIOR TO STRYKER'S ON-SITE ARRIVAL FOR INSTALLATION.
3. Ensure Stryker equipment and infrastructure is not impeded by the design of the support structure.
4. Attach a Stryker-supplied support bracket for gas check valves (risers) and attach to support structure within 18" (458mm) of the center of each boom's Stryker-supplied Mounting (Interface) Plate. The support bracket must be accessible from the access panel.
5. Install a 24" x 24" (610mm X 610mm) access panel directly adjacent to each mounting point for installation, maintenance and future service.

Note The support structure must be designed and installed in such a way that does not allow obstruction of or interference with the six 5/8-11 UNC (M16) tapped holes located adjacent to the inner diameter of the Mounting (Interface) Plate as well as the 6.09" (155mm) diameter center hole and the 4 each (M4) ceiling cover holes (see Figure 6.1).

6.2 Support Structure Design Considerations

The support structure must be designed and fabricated to adequately support the loads specified for each application and to conform to all applicable regulations. Figure 6.1 is only an example of how all of the required components tie in with the hospital-supplied structure. The structure can vary significantly based on load, interstitial space, obstructions, local building codes, etc.

1. Position the support structure according to the room layout provided by Stryker.

WARNING **The maximum allowed deflection of the ceiling plate under maximum load is 1˚.**

2. The Stryker-supplied Mounting (Interface) Plate must be level within 0.25in (6.4mm). The bottom of the Mounting (Interface) Plate must be 4" (100mm) above the finished ceiling. Allow enough space to route cables and hoses to be run out of the boom.

WARNING **Responsibility for proper design of support structure lies entirely with the hospital/contractor and is not covered through warranty by Stryker. Improperly designed support structure may result in poor performance and/or damage to equipment as well as possible injury to user. Service charges related to inadequate support structure design shall be at the customer's expense.**

WARNING **Caution must be exercised when lifting heavy object to avoid serious bodily injury or damage to equipment.**

Note The ceiling cover holes and boom flange mounting holes, located in the plate's Clear Zone, cannot be impeded (See Figures 6.3 and 6.4).

Note Use of bolt-together, pre-fabricated structural members is highly discouraged and is considered an unacceptable solution for the support structure design. This approach will generally allow considerable flexing of the structure resulting in poor performance of boom assembly and possible equipment damage.

Data shown in the table below applies to the highest capacity model with the highest rotational moment. It is recommended that all support structures be designed around the heaviest model for both increased safety margin and to allow flexibility for future product upgrades.

Single Mount	1000 lbs (454 kg)
Tandem Mount	2800 lbs (1270 kg)

See Appendix B for seismic anchorage calculations and drawings for more detailed structural requirements and information.

Note Please make certain your structural and/or mechanical engineer includes side bracing in the design of the above ceiling structures to ensure the structure will remain level.

6.3 Site Preparation

Prior to the installation of the boom assembly, the interstitial space must be prepared to accept the pre-installation components. The medical gas delivery system, electrical circuits, and the Stryker-supplied Mounting (Interface) Plate must be installed prior to the Stryker equipment installation. Stryker assumes all work has been performed in accordance with all applicable regulations including, but not limited to, local electrical and building codes as well as NEC, NFPA, and CGA.

The support structure shown is for reference only . The design and manufacture of the support structure is the hospital's responsibility, and is not covered by the Stryker warranty.

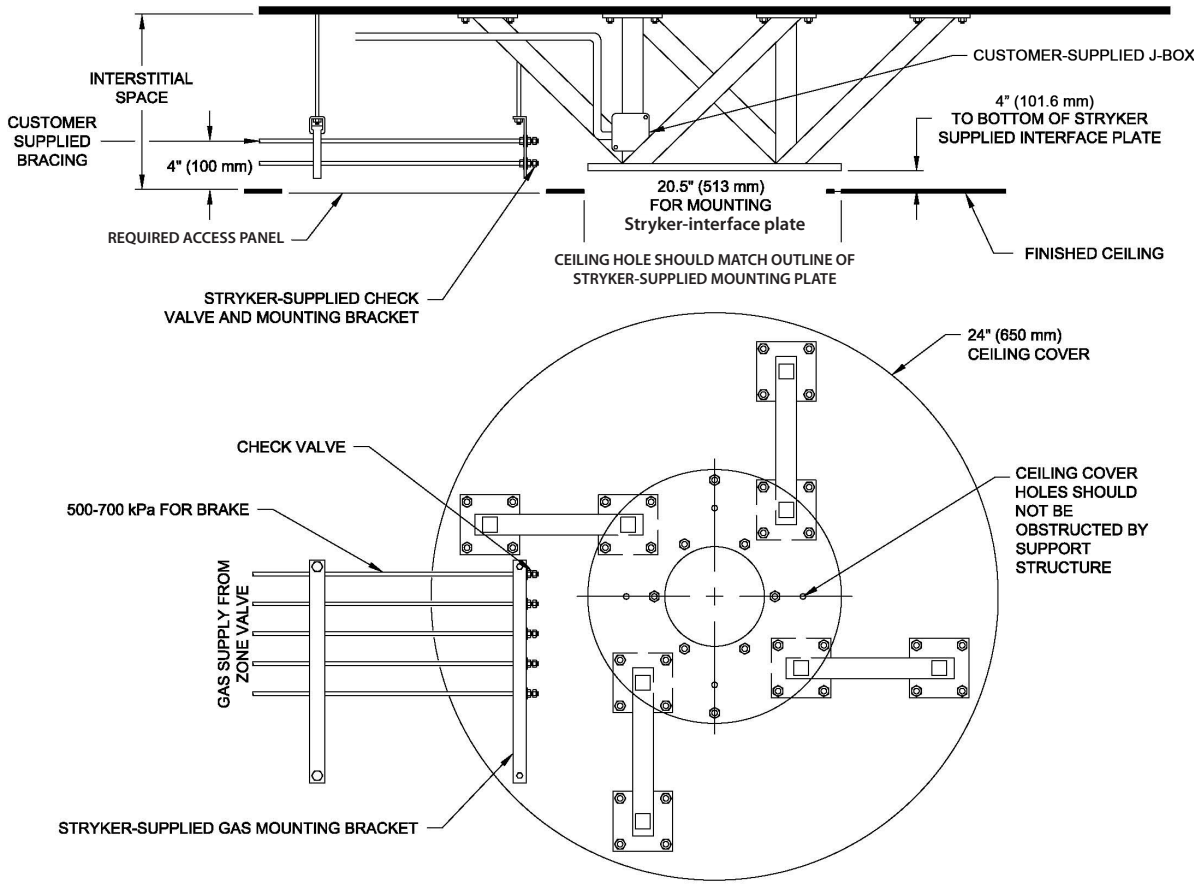


Figure 6.1 - Side view (top) and bottom view (bottom)

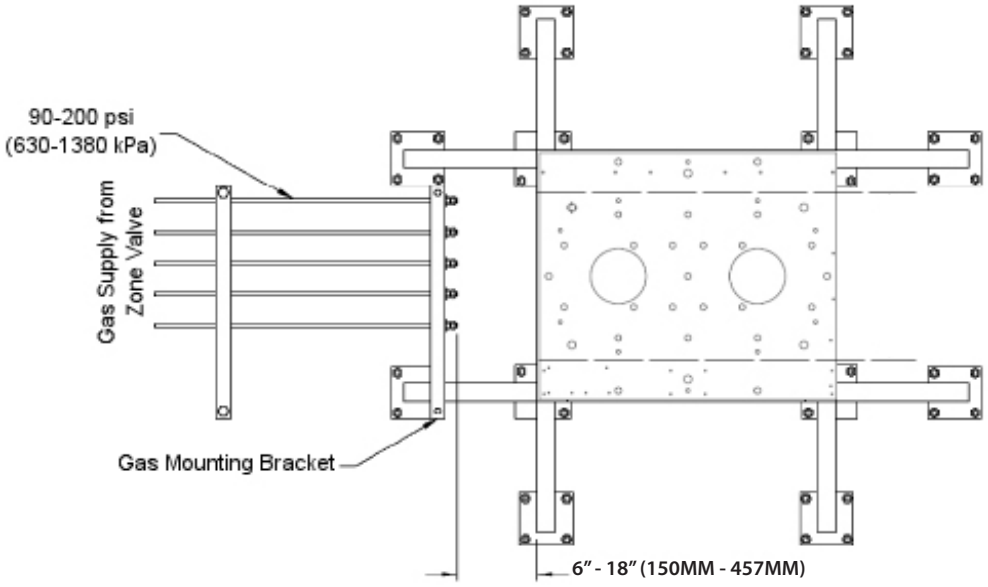


Figure 6.2 - Bottom view of a tandem boom site.

6.3.1 Stryker Mounting (Interface) Plate (Stryker-Supplied)

The Stryker-supplied Mounting Plate is the primary surface for boom assembly. It is the responsibility of the customer/contractor to install the plate, as it is considered part of the structure. The mounting plate MUST be installed by the hospital/contractor prior to the installation start date.

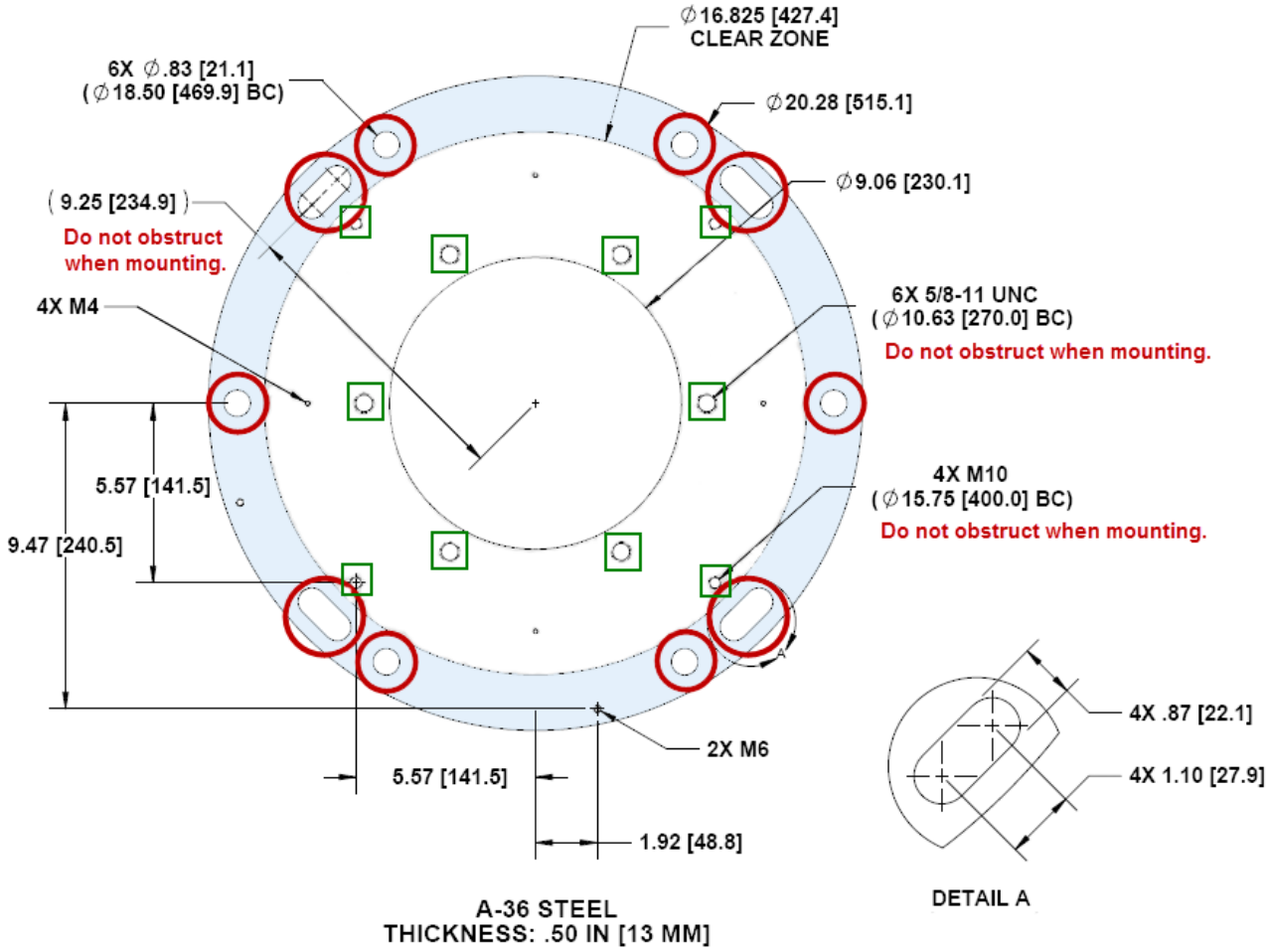


Figure 6.3 - Stryker-Supplied Single Mounting (Interface) Plate (Material: Steel, 0.5" (12.7mm) thick, approximately 40 lb [18 kg])

Note All squares denote Stryker-only threaded holes. Circles are acceptable mounting holes for the contractor. Areas shaded in blue are acceptable welding points.

Note The single-mount ceiling cover is round with a diameter of 24" (597mm) and a depth of 8" (203mm).

Note For ICU installations of a single mounted boom and an OSC600 single-mount, the Stryker-supplied Mounting (Interface) Plate is 0.75" (19.1mm) thick and weighs approximately 52lbs.

6.3.2 Stryker Tandem Mounting (Interface) Plate (Stryker-Supplied)

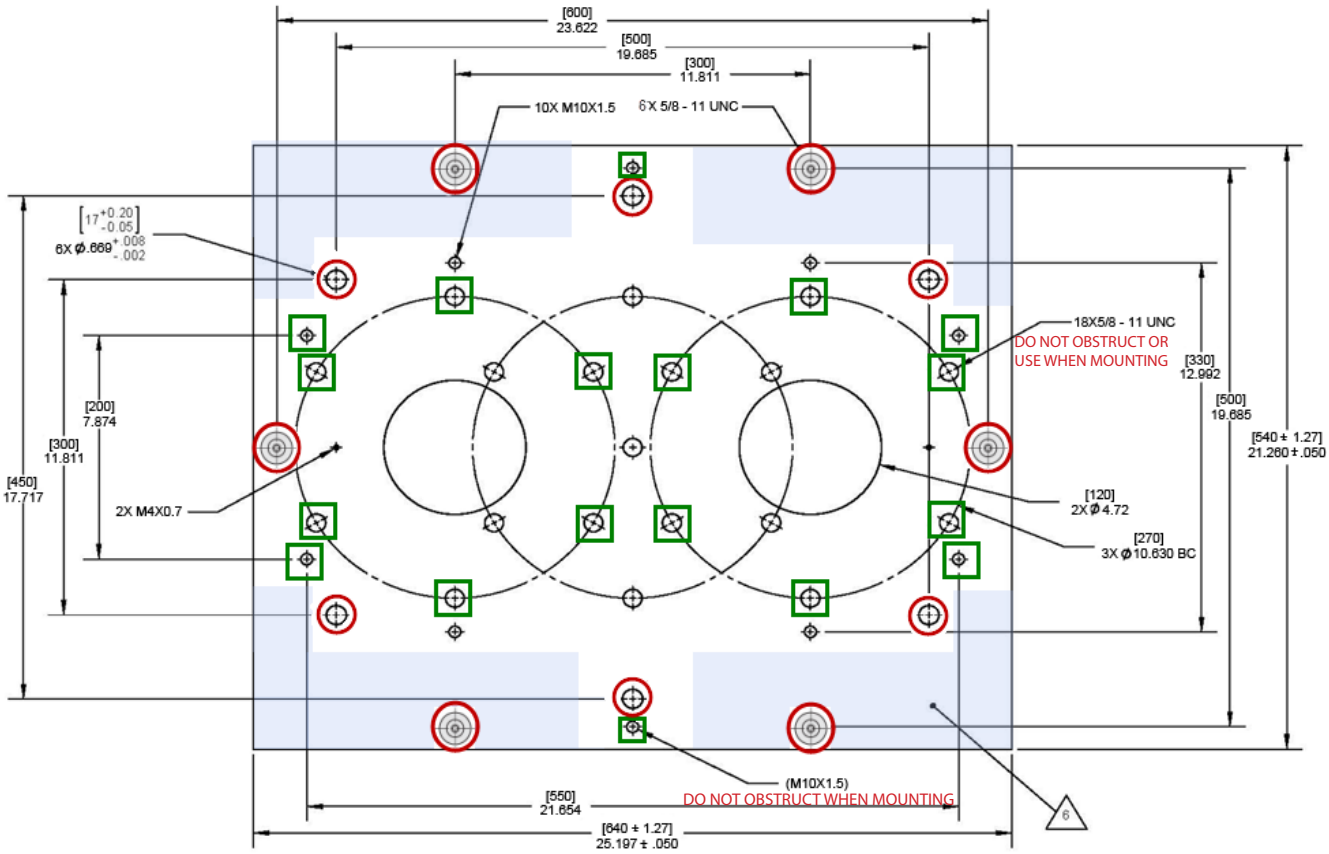


Figure 6.4 - Stryker-Supplied Tandem Mounting (Interface) Plate (Material: Steel, 0.75" (19.1mm) thick, approximately 90 lb [40.8 kg])

Note All squares denote Stryker-only holes. All circles denote optional contractor holes. Areas shaded in blue are acceptable for welding.

Note The Stryker-supplied ceiling cover for the tandem plate is 27.5" (700mm) x 27.5" (700mm) x 6" (150mm). The ceiling cover hole should match the outline of the plate.

7. Electrical Responsibility

7.1 Electrical and Audio Visual Infrastructure (Prior to Stryker Installation)

1. Install appropriate conduit, as shown in the Conduit Schedule on the CAD drawings.
2. Install contractor-supplied UL-rated junction box within 18" of center of each Stryker-supplied Mounting (Interface) Plate. Please select a location adjacent to the access panel for serviceability and ease of installation.
3. Ensure capacity of electrical infrastructure is capable of meeting the requirements as specified by Stryker for the project.
4. Connect all high-voltage electrical connections. Ensure all power is live at time of installation.

7.2 Electrical

All electrical hard wiring must be completed by a hospital contracted certified electrician.

1. Hospital contracted electrician must be available for final electrical wiring of Stryker equipment during the Stryker installation.
2. All electrical services must be routed in accordance with all applicable regulations including but not limited to, local building and electrical codes, to electrical junction boxes (J-boxes). Junction boxes must have knockouts sufficient to accommodate 0.86" (22mm) conduit.
3. Circuit breakers are not provided in this unit. FLEXiS System circuits must be connected to correctly rated and protected branch circuits that are protected by double-pole breakers.

WARNING **Energized electrical circuits can cause severe injury or death. Ensure that all personnel working around energized circuits have been trained in and are following proper lock out/tag out and other applicable safety procedures.**

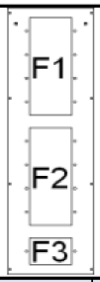
Note For Hong Kong installations where electrical outlets are connected to branch circuits rated at a higher amperage than the outlets themselves, BS1363 requires all electrical plugs to be equipped with a fuse equal to or less than the amperage rating of the outlet. In this case, ensure all equipment being connected to electrical outlets contains properly fused plugs.

4. Wiring must be #12 AWG minimum for branch circuits up to 20A and #10 AWG for 30A branch circuits.
5. Prior to wiring each FLEXiS System, locate the site-specific Stryker elevation drawings for the unit.

Note Refer to the drawings for specific amperage.

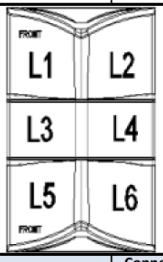
6. Refer to the section labeled "Outlet Connections Schedule" on the elevation drawing. Review each of the four subsections of the supply unit, front plate, right module, back plate, and left module. If the connection type indicated is "electric" then the corresponding circuit numbers and required branch circuit ratings should be observed and followed. The indicated voltage rating is the maximum rather than the nominal (e.g., 125 VAC corresponds to a nominal of 110VAC—See Figure 7.1).

Front Plate	P13009



Circuit	Outlets	Type	Connection Type	Color	Power
E1, E2	F1	20A/125V-Duplex (8-Outlets)	Electric	Red	Standard
E3,E4	F2	20A/125V-Duplex (8-Outlets)	Electric	Red	Standard
NA	F3	Data Pass Through	Data	NA	NA

Left Module	P12932	P12940	P12932	



Circuit	Outlets	Type	Connection Type	Color	Power
NA	L1	DVI	Data	NA	NA
NA	L2	VGA	Data	NA	NA
NA	L3	S-Video	Data	NA	NA
NA	L4	LAN/LAN	Data	NA	NA
E5	L5	20A/125V-Duplex (2-Outlets)	Electric	Red	Standard
E5	L6	20A/125V-Duplex (2-Outlets)	Electric	Red	Standard

Figure 7.1 - E1 and E2 Circuits on Front Module and E5 Circuit on Side Module

7. The circuit number indicated is specific to one circuit wire set.

Caution **Take care to correctly connect the specific circuit to the properly rated branch circuit to prevent potential damage to the FLEXiS System.**

8. Each conduit contains wires that are sequentially labeled (e.g., E1, E2, E3, etc.) and correspond to the specific circuit (see Figure7.2 for illustration).
9. The hospital contractor shall ensure hospital electrical infrastructure is capable of meeting recommended requirements. If not, do not proceed.
10. A separate 20A circuit is required for electric lift motor (articulating arm systems only).
11. Before Stryker arrives on-site pull wire as necessary for each assembly, leaving adequate length for termination with customer-supplied wiring from service head assembly.
12. When no motor is involved(OSC400 or OSC600), the electropneumatic brake circuit draws approximately 0.5A. The electropneumatic brake for an MMP200 can operate on the 20A circuit for the electric lift motor.

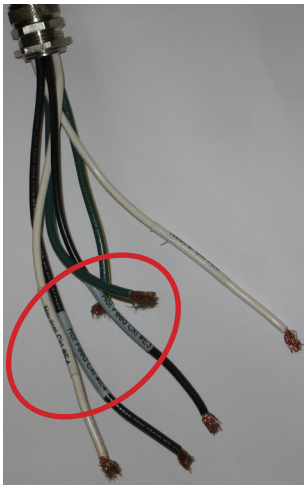


Figure 7.2 - Wire Labeling Locations

13. Connect boom electrical power to junction box during Stryker installation.
14. During Stryker installation, perform final electrical hard wiring testing and validation for all electrical cables and power outlets, including those on the Stryker-supplied booms.

WARNING **Ensure all wiring is properly connected to prevent a fire.**

7.3 Isolated Power

1. This product does not include an isolation transformer. If the FLEXiS Service Head is purchased with isolated circuits, it is the responsibility of the customer to supply and install an appropriate isolating transformer or equivalent as well as any other equipment required for the

isolated power system, such as a line isolation monitor. Installation of this equipment must be done according to all applicable laws and regulations.

2. Isolated power applies to electrical outlets only, not electric Lift Motor.
3. Isolated power will be indicated in the Electrical Outlet Schedule.

7.4 Video and Data Conduit Requirements

1. All conduits will have insulated bushings.
2. Conduit size and routing will be specified in Stryker rough-in drawings and on the conduit schedule on the CAD drawings.
3. Stryker cable installation only covers cable pulls less than 50'.
4. Any cable runs outside of the Operating Room or over 50', unless other wise specified, are the responsibility of the Hospital/Contractor to source, supply, pull and install.
5. All conduits must have pull strings in place.

8. Medical Gas Responsibility

Caution **Hospital supply pressure on any medical gas, including the brake system, should not exceed 200 psi.**

8.1 Gas Part Descriptions

Gas Riser with Check Valve (Stryker-supplied)

Note Gas Risers are only available in the U.S. and Canada.

Interface between hospital-supplied medical gases and service head gas delivery hoses. Gas risers with check valves are Stryker-supplied and have connectors as per local medical gas standards. Each riser is keyed to specific gas type by means of a DISS style connection. The vacuum and WAGD riser will have a copper cap in lieu of a check valve (Figure 8.1).

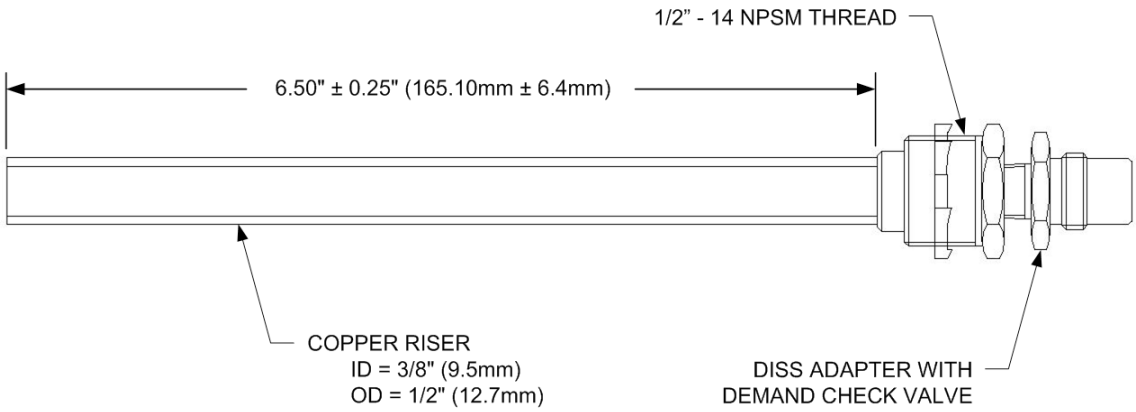


Figure 8.1 - Stryker-supplied Gas Riser with Check Valve

Gas Riser with Check Valve Mounting Bracket (Stryker-supplied)
Bracket that supports check valve and brake regulator assembly (Figure 8.2).

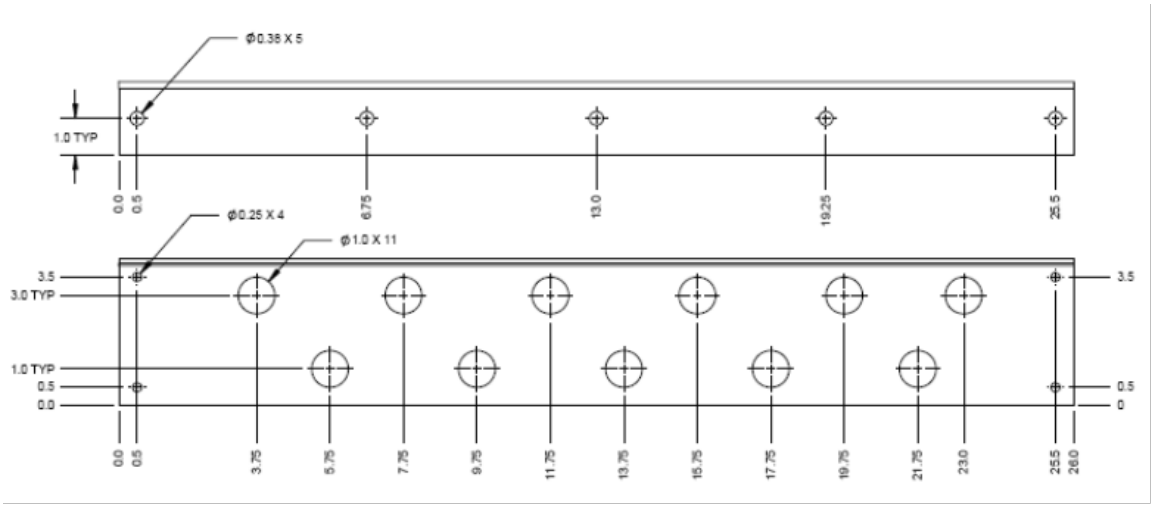


Figure 8.2 - Stryker-supplied Gas Riser with Check Valve Mounting Bracket

Brake Kit

Air pressure regulator, tubing and fittings necessary for controlling braking and boom rotational movement. Stryker-supplied brake system regulator must be mounted with 18" (458mm) of center of the Stryker Mounting (Interface) Plate.

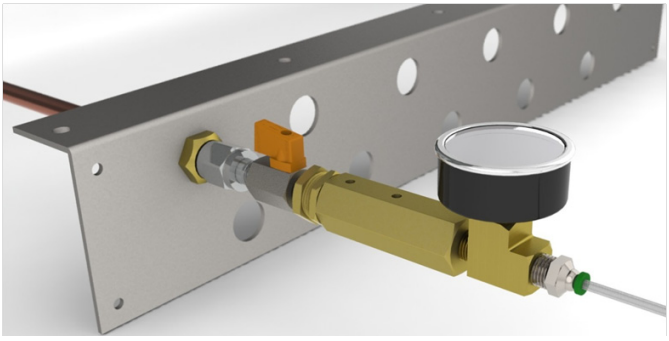


Figure 8.3 - Nitrogen Application

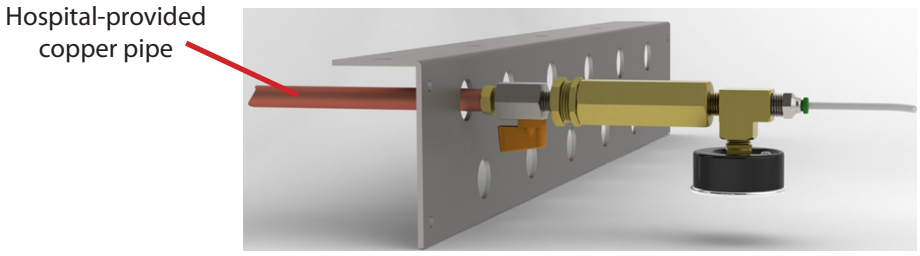


Figure 8.4 - Compressed Air Application

8.2 Med Gas Site Preparations

1. Install gas lines conforming to local gas standards and NFPA99.

2. Purge gas lines prior to installation of brake regulator.
3. Install a minimum of one zone valve per room on the Nitrogen line (or compressed air) dedicated to the boom brakes.

Caution **Brake regulator is not intended to be used as a shutoff for the zone valve.**

Caution **It is not recommended to connect WAGD lines to the medical-surgical vacuum system.**

Per NFPA99, flammable and nonflammable gasses are known to be incompatible with some seals and piping using in medical-surgical vacuum systems. If WAGD is to be included as part of the medical-surgical vacuum system, it should be recognized that this activity might cause deterioration of the vacuum system.

Note Although not recommended, if WAGD is included as part of the medical-surgical vacuum system, the source must comply with NFPA99 section 5.1.3.8.1.2 and a large WAGD hose must be specified in the Stryker booms.

Note For Passive AGSS systems in Canada, the exhaust flow for a passive AGSS system connected to a Stryker outlet must meet a minimum flow rate of 25 liters per minute at all scavenging points.

Note Special care should be taken when installing gas risers to the hospital gas lines to ensure the proper riser is connected to the proper gas line. Ensure labeling matches at each connection.

Note Per NFPA99, this requirement applies to ICU and Exam rooms, as well as Operating Rooms.

4. Install gas risers with check valves and brake regulator prior to Stryker installation. Please select locations adjacent to the access panel for serviceability and ease of installation. The gauge on the break regulator must be visible and within arm's reach.
5. Attach gas hoses from boom to gas risers with check valves during Stryker installation.
6. Attach gas hoses from boom to brake regulator.

Note Every gas listed on the gas schedule, from the site specific Stryker drawings, requires a med gas riser. For example, if two vacuums are required then two vacuum risers are required.

8.3 Gas and Air Lines

1. **U.S. and Canada only** - All gas lines must be terminated with (Stryker-supplied) gas risers with check valves and appropriate connectors for interfacing with hoses on boom. The check valves must be attached to a gas mounting bracket, which must be within 18" (150-458mm) from the center of each boom Mounting (Interface) Plate to allow for termination with gas hoses in the Stryker boom.

2. Install manifold bracket from ceiling, within 18” of the center of the mounting plate and accessible from the access panel, using contractor-supplied hardware.
   a. Feed rear most gas riser with check valve through manifold bracket. Thread included jam nut onto riser body from backside of bracket and tighten.
   b. Solder riser “pigtail” (3/8” [9.5mm] copper tubing) to existing gas line giving careful attention to matching riser type with correct gas type.
   c. Attach boom line to gas risers with check valves.
   d. Repeat steps a-c for all remaining gas lines, working from rear to front.
   e. All gas lines must be cleaned/blown down free of debris prior to connecting gas hoses from the Stryker mounted boom.
   f. Ensure that all gas lines are properly labeled by gas type per NFPA 99 (for U.S. only) or appropriate local codes or standards, such as ISO 7396-1.
   g. For nitrogen applications, mount the nitrogen DISS to the mounting bracket. For compressed air applications, mount a ¼” male NPT fitting to the mounting bracket and thread the regulator assembly onto the fitting. If space does not allow the regulator to be installed as packaged, a 90° elbow fitting can be purchased/installed to allow for the assembly to accommodate tight space.
      If necessary for a Classic Service Head, mount regulator assembly to Manifold Bracket, and attach Y-fitting with hose, as shown in Figure 8.2.
   h. Make certain regulator gauge face is visible and unobstructed.

8.3.1 For Classic Service Heads

1. Connect compressed air supply to regulator assembly inlet.
   a. Ensure the pipe is purged and a blow down test is conducted prior to installing brake regulator.
   b. Brake regulator is not to be used as a shutoff valve.

Caution **Teflon or other types of plumbing tape SHALL NOT be used around the threads of the pipe leading up to the regulator. Only use an oxygen safe pipe joint compound which conforms to NFPA99 (U.S. only), section 5.1.10.4 on the male pipe that threads into the female port.**

Caution **Special care should be paid to ensure cross-threading does not occur when installing the brake regulators. If cross-threading occurs, IMMEDIATELY replace this regulator as leaks are likely.**

   c. Prior to pressurizing the boom brake system ensure the regulator is set to 0 psi by adjusting the regulator knob in a counter-clockwise direction until it cannot be adjusted any further.
   d. Continue with Section 8.3.4.

8.3.2 Nitrogen Supplied Brake Systems

1. Mount the nitrogen riser to the manifold bracket as detailed above in Steps a-c.

Caution **Regulator material is aluminum and should not be connected until all hot work is complete.**

Note The brake regulator is pre-adjusted to provide 80 -5/+10 psi, therefore no adjustments to the regulator should be needed.

2. Install the brake regulator in the same manner in which the gas hoses are installed. Thread the DISS connector from the regulator onto the nitrogen riser installed from Step 1 above.
3. Install the Teflon hose into the outlet of the brake regulator by pressing fully into the quick-connect fitting.

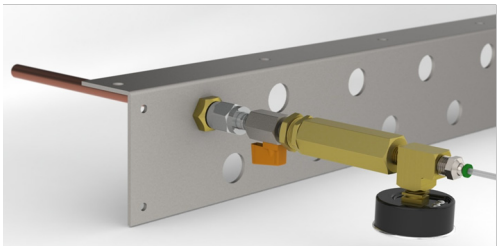


Figure 8.5 - Nitrogen Brake Regulator Assembled to Bracket and Riser

4. If the regulator and riser assembly cannot be mounted in the allotted space, Stryker can provide a 90º elbow fitting which increases the regulator mounting options. To install the elbow fitting, thread the female DISS locking nut from the elbow fitting onto the riser. Then attach the regulator to the elbow fitting by threading the female DISS locking nut onto the male DISS on the elbow.
5. Continue with Section 8.3.4.

Figure 8.6 - 90º Elbow Fitting

8.3.3 Compressed Air Supplied Brake Systems

Note Stryker does not supply the 1/4 NPT fitting to connect the brake regulator to the supply line.

1. Connect compressed air supply to regulator assembly inlet.
   a. Ensure the pipe is purged and a blow down test is conducted prior to installing brake regulator.
   b. Thread copper pipe fitting onto compressed air regulator at the ball valve inlet.
   c. Continue with Section 8.2.4.

Caution **Take care when applying Teflon or other types of plumbing tape around the threads of the pipe leading up to the regulator. Only use an oxygen safe pipe joint compound which conforms to NFPA99 (U.S. only), section 5.1.10.4 on the male pipe that threads into the female port.**

Caution **Special care should be paid to ensure cross-threading does not occur when installing the brake regulators. If cross-threading occurs, IMMEDIATELY replace this regulator as leaks are likely.**

8.3.4 For Both Nitrogen and Compressed Air

1. Lines must be pressurized at time of installing for brake testing.
2. Provide Stryker with standing leak test and blow down verification.

Note **U.S. only** - NFPA 5.1.10.4 Threaded Joints. Threaded joints in medical gas and vacuum distribution piping shall meet the following requirements: 1) Be limited to connections to pressure/vacuum indicators, alarm devices, check valves, and source equipment, 2) Be tapered pipe threads complying with ASME B1.20.1, Pipe Threads, General Purpose, Inch, 3) Be made up of polytetrafluoroethylene (such as Teflon) tape or other thread sealant recommended for oxygen service, with the sealant applied to the male threads only

3. Connect the brake tube to regulator, and Y-fitting to the opposite end of the brake tube (See Figures 8.3 and 8.4).
4. Ensure that all gas lines are properly labeled according to all applicable regulatory requirements. All gas lines must be labeled to indicate gas type.
5. Test all gas lines to ensure sufficient airflow and pressure/vacuum per NFPA 99 (U.S. only) or other appropriate local code or standard, such as ISO 5359. Ensure that pressurized air for boom brakes is 125-200 psi (862-1380 kPa).

WARNING **A final check must be performed to confirm that all gas lines have been connected to the correct, corresponding supply lines.**

Appendix A - Common Configurations

A.1 Single Configurations

Mount	Arm	Weight (lbs)	X (in)	Y (in)
SINGLE				
OSC400	1000	841	31	71
	600/600	716	36	67
	600/800	636	41	64
	800/600	629	41	64
	800/800	555	45	60
	800/1000	496	49	56
	1000/800	496	49	56
	1000/1000	460	52	53
OSC600	1000	1000	32	62
	600/600	1000	37	60
	600/800	950	43	61
	800/600	950	43	61
	800/800	909	44	64
OSC600	800/1000	813	52	64
	1000/800	813	52	64
	1000/1000	736	56	60
MMP200	1000	411	52	58
	1000/1000	653	64	55
LED/Visum	Single	131	34.4	53
	Dual	204	40.2	61.6
	Triple	282	45.6	65.4
Flat Panel	Single	214	33	49
	Dual	184	31	45

A2 - Tandem Configurations

Mount 1	Mount 2	Arm	Weight (lbs)	X (in)	Y (in)
TANDEM					
OSC400	OSC400		1682	31	71
OSC400	OSC600		2241	31	56
OSC600	OSC600		2800	32	60
OSC400	SINGLE ARM		766	55	47
OSC400	DUAL ARM		832	55	47
OSC400	TRIPLE ARM		899	55	47
OSC400	SINGLE FP		803	56	48
OSC400	DUAL FP		867	56	58
MMP200	SINGLE ARM		766	55	47
MMP200	DUAL ARM		832	55	47
MMP200	TRIPLE ARM		899	55	47
MMP200	SINGLE FP		803	56	48
MMP200	DUAL FP		867	56	48
TRIPLE ARM	SINGLE FP		396	35	37
TRIPLE ARM	DUAL FP		460	34	36
DUAL ARM	SINGLE FP		329	35	37
DUAL ARM	DUAL FP		393	34	36
SINGLE ARM	SINGLE FP		263	35	37
SINGLE ARM	DUAL FP		327	34	36

Appendix B - Seismic Calculations Single

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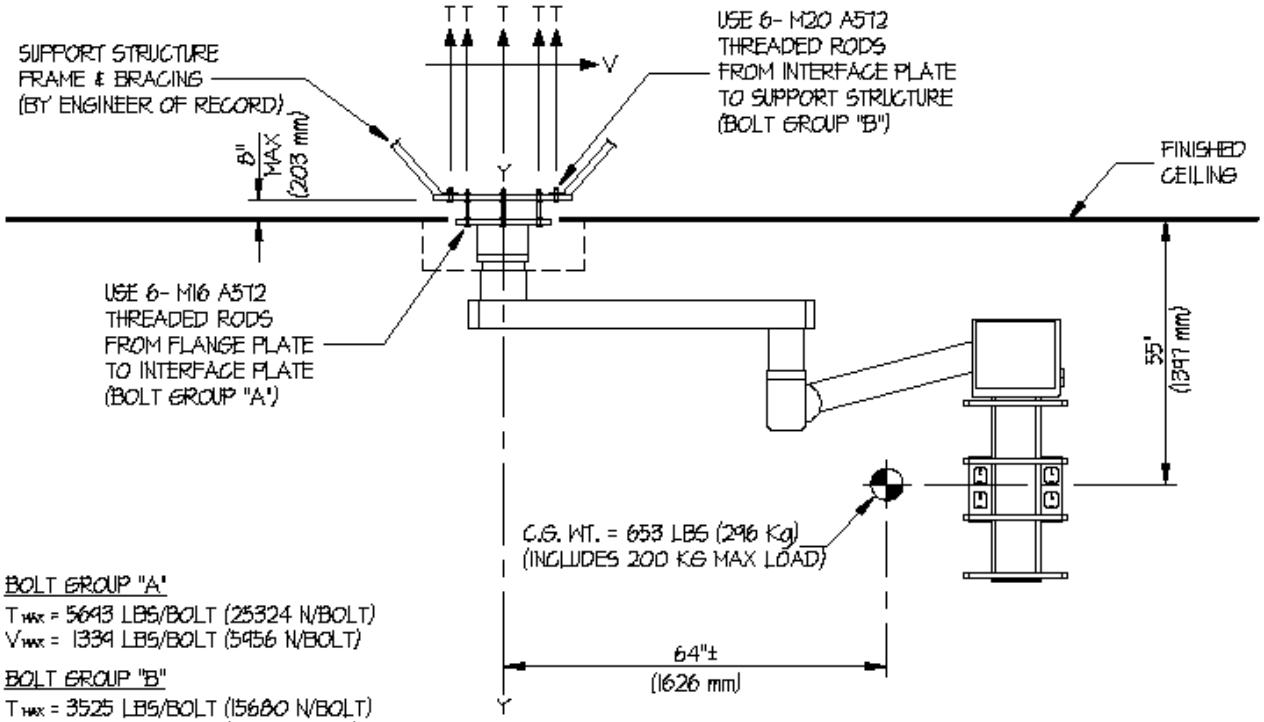
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 1
DUAL ARM ARTICULATING BOOM (MAX LOAD: 200 KG)	JOB NO. 11-0518	
	DATE 4/6/05	OF 3 SHEETS

SEISMIC ANCHORAGE — CEILING MOUNTED



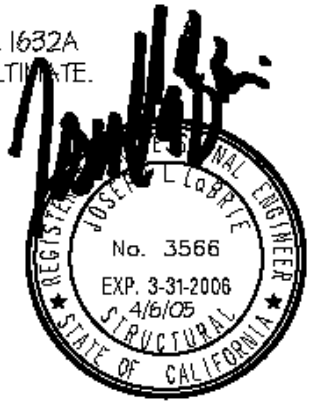
BOLT GROUP "A"
T_{MAX} = 5643 LBS/BOLT (25324 N/BOLT)
V_{MAX} = 1334 LBS/BOLT (5956 N/BOLT)

BOLT GROUP "B"
T_{MAX} = 3525 LBS/BOLT (15680 N/BOLT)
V_{MAX} = 812 LBS/BOLT (3612 N/BOLT)

ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.94W - (C_a = .66, I_p = 1.5, a_p = 1.0, R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.



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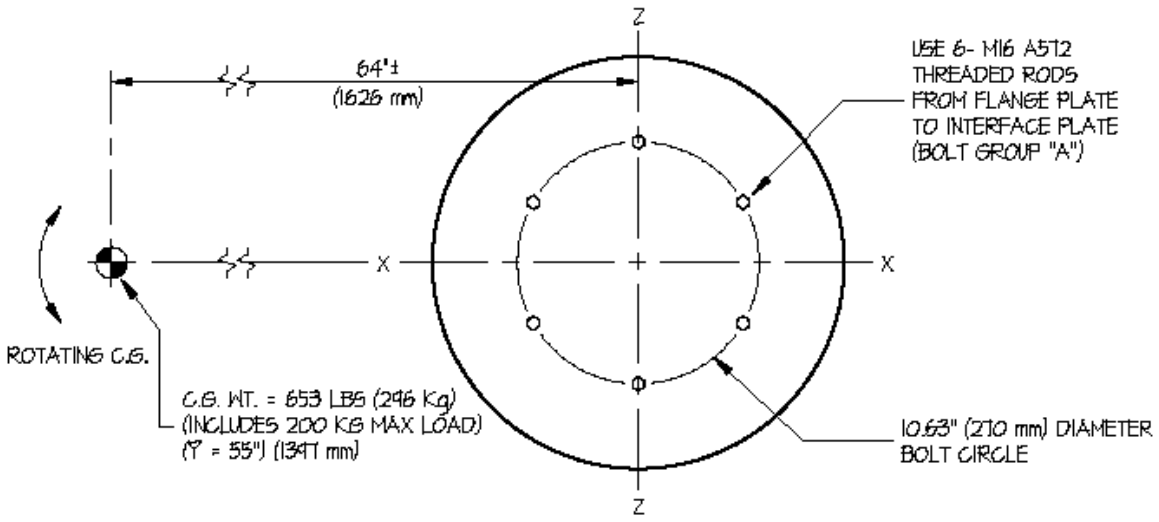
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0518	
DUAL ARM ARTICULATING BOOM (MAX LOAD: 200 KG)	DATE 4/6/05	OF 3 SHEETS

SEISMIC ANCHORAGE

FLANGE PLATE



PLAN AT FLANGE PLATE

LOADS:

WEIGHT = 653 LBS (2905 N)
HORIZONTAL FORCE (V_H) = 614 LBS (2731 N)
VERTICAL FORCE (V_V) = 205 LBS (912 N)

BOLT GROUP PROPERTIES:

I_{X-X} = 85 in.^{2}/BOLT (54839 mm^2/BOLT)
I_{Z-Z} = 85 in.^{2}/BOLT (54839 mm^2/BOLT)
I_{Y-Y} = 169 in.^{2}/BOLT (109032 mm^2/BOLT)

MOMENTS:

M_{XX} = 614#(55") + (653# + 205#)64" = 88,682"# (10020 N-m)
M_{ZZ} = 614#(55") + (653# + 205#)64" = 88,682"# (10020 N-m)
M_{YY} = 614#(64") = 39,296"# (4440 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{88682"\#(5.32")}{85} + \frac{653\# + 205\#}{6} = 5693 \text{ LBS/BOLT (MAX) (25324 N/BOLT)}$$

SHEAR (V)

$$V = \frac{614\#}{6} + \frac{39296"\#(5.32")}{169} = 1339 \text{ LBS/BOLT (MAX) (5956 N/BOLT)}$$

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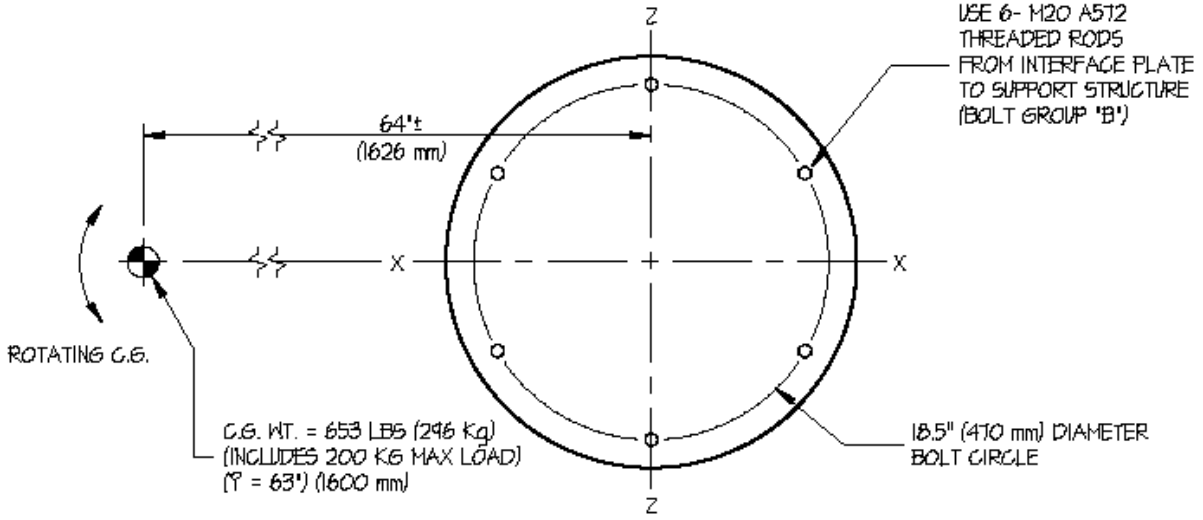
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 3
	JOB NO. 11-0518	
DUAL ARM ARTICULATING BOOM (MAX LOAD: 200 KG)	DATE 4/6/05	OF 3 SHEETS

SEISMIC ANCHORAGE

INTERFACE PLATE



PLAN AT INTERFACE PLATE

LOADS:
WEIGHT = 653 LBS (2905 N)
HORIZONTAL FORCE (V_H) = 614 LBS (2731 N)
VERTICAL FORCE (V_V) = 205 LBS (912 N)

BOLT GROUP PROPERTIES:
I_{X-X} = 256 $in.^4$/BOLT (54839 mm /BOLT)
I_{Z-Z} = 256 $in.^4$/BOLT (54839 mm /BOLT)
I_{Y-Y} = 512 $in.^4$/BOLT (54839 mm /BOLT)

MOMENTS:
M_{XX} = 614#(63") + (653# + 205#)64" = 93,594"# (10575 N-m)
M_{ZZ} = 614#(63") + (653# + 205#)64" = 93,594"# (10575 N-m)
M_{YY} = 614#(64") = 39,296"# (4440 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{93594"\#(9.25")}{256} + \frac{653\# + 205\#}{6} = 3525 \text{ LBS/BOLT (MAX) (15680 N/BOLT)}$$

SHEAR (V)

$$V = \frac{614\#}{6} + \frac{39296"\#(9.25")}{512} = 812 \text{ LBS/BOLT (MAX) (3612 N/BOLT)}$$

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EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
2801 Connery Way Suite B
Missoula, MT 59808
Phn: (406) 541-3273 Fax: (406) 541-3274

Office of Statewide Health Planning and Development

ANCHORAGE PRE-APPROVAL

OPA-1235

Equipment Manufacturer: Stryker Communications

Equipment Type: 400 Series Service Arm

GENERAL NOTES

1. FORCES ARE DETERMINED PER 2001 CBC 1632A.2, EQUATIONS 32-A1, A2 & A3, WHERE $C_a = .66, a_p = 2.5, I_p = 1.5$ AND $R_p = 3.0$
   PLEASE NOTE THAT THE RESULT FROM EQUATIONS 32-A1, A2 & A3
   HAVE BEEN REDUCED BY A FACTOR OF 1.4 FOR ALLOWABLE STRESS DESIGN.
2. THIS PRE-APPROVAL CONFORMS TO THE 2001 CALIFORNIA BUILDING CODE.
3. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION AND AT ANY HEIGHT IN THE STATE OF CALIFORNIA.
4. THE ENGINEER OF RECORD SHALL DESIGN BACKING BARS, STUDS, ETC.
   WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS. THE ENGINEER OF RECORD
   SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS)
   WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
5. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE WORKING LOADS (AS OPPOSED TO ULTIMATE LOADS)
   AND MAY BE USED FOR ALLOWABLE STRENGTH DESIGN.
6. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH C. LABRIE
No. 3566
EXP. 3-31-2008
STRUCTURAL
STATE OF CALIFORNIA
11/28/06

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Office of Statewide Health Planning and Development
OPA-1235
on
Tuesday, November 28, 2006
Anthony R. Pike (916) 654-3362

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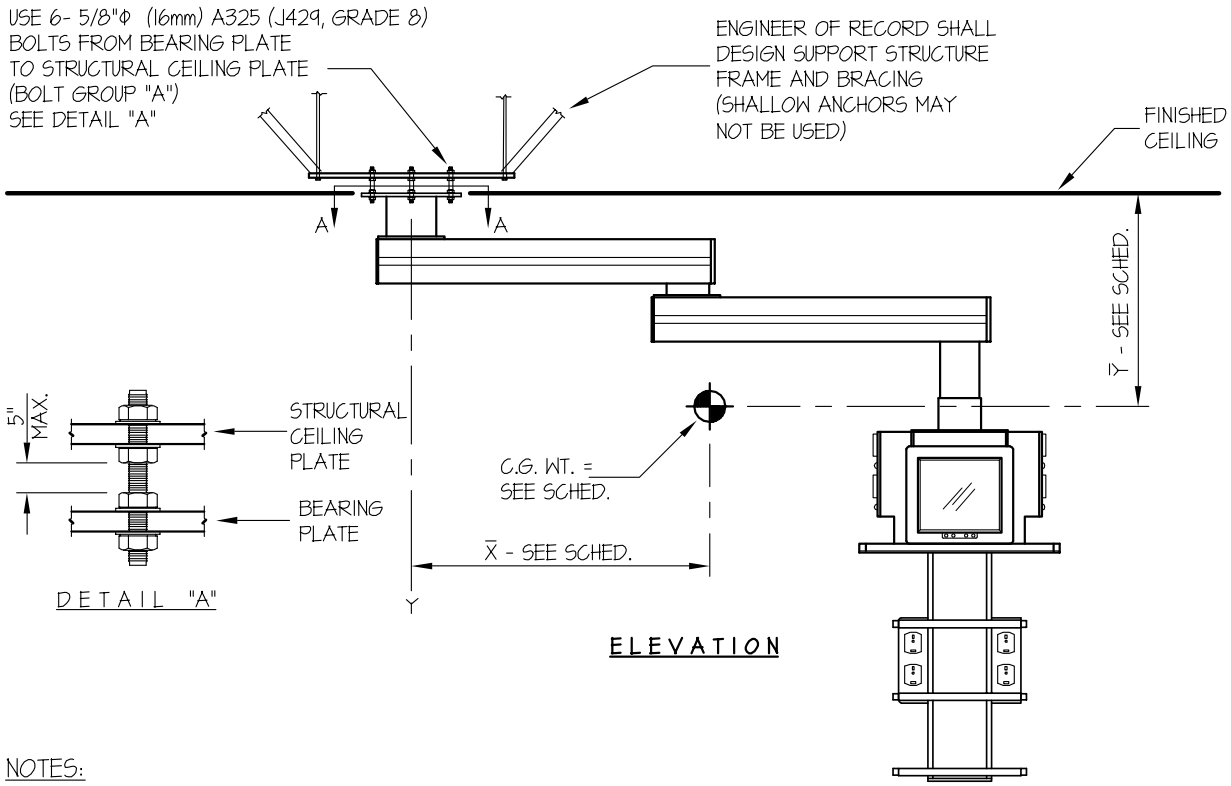
STRYKER COMMUNICATIONS

400 SERIES SERVICE ARM

DES. R. LA BRIE | JOB NO. 11-0605 | DATE 11/28/06 | SHEET 2 OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

CEILING MOUNTED



NOTES:

1. ANCHORAGE DESIGN PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 2.36W (C_a = .66, I_p = 1.5, a_p = 2.5, R_p = 3.0)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.
4. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.
5. SEE GENERAL NOTES: SHEET 1 OF 4

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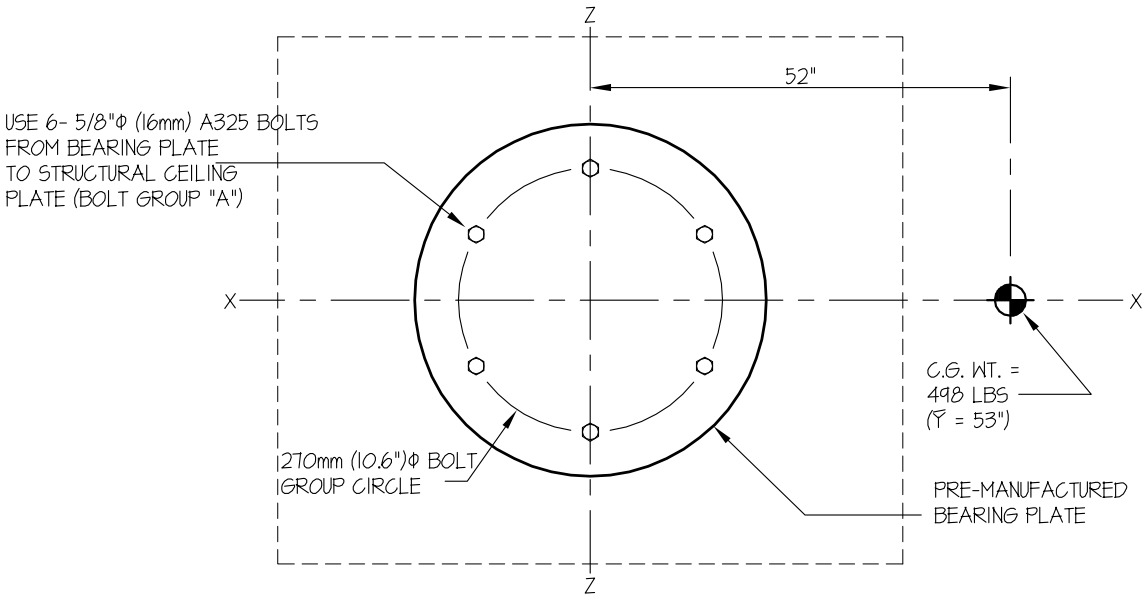
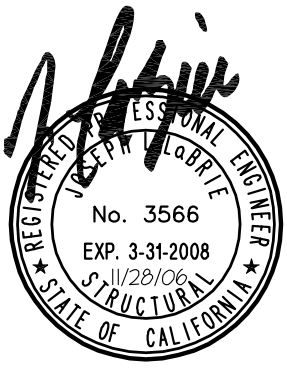
400 SERIES SERVICE ARM	DATE 11/28/06	OF 4 SHEETS

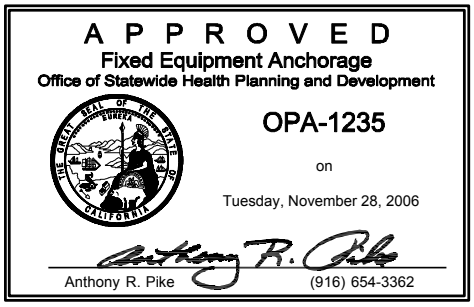
SEISMIC ANCHORAGE CALCULATION

BEARING PLATE TO STRUCTURAL CEILING PLATE



PLAN AT BEARING PLATE





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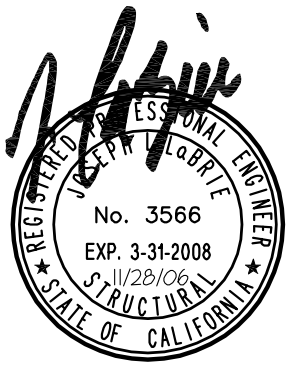
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 4
	JOB NO. 11-0605	
400 SERIES SERVICE ARM	DATE 11/28/06	OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

400 SERIES SERVICE ARM - BEARING PLATE TO STRUCTURAL CEILING PLATE

MODEL (ARM LENGTH)	MAX WEIGHT (lbs)	$\bar{X}$ (in)	$\bar{Y}$ (in)	M_{xx} & M_{zz}	T_{MAX} (lbs/bolt)	V_{MAX} (lbs/bolt)
SINGLE ARM (1000 mm)	841	31	71	187498	11965	413
DOUBLE ARM (600 mm / 600 mm)	716	36	67	159267	10163	377
DOUBLE ARM (600 mm / 800 mm)	636	41	64	142651	9100	358
DOUBLE ARM (800 mm / 600 mm)	629	41	64	141081	8999	356
DOUBLE ARM (800 mm / 800 mm)	555	45	60	123210	7864	337
DOUBLE ARM (800 mm / 1000 mm)	496	49	56	108975	6956	324
DOUBLE ARM (1000 mm / 800 mm)	496	49	56	108975	6956	324
DOUBLE ARM (1000 mm / 1000 mm)	460	52	53	100302	6403	318



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Anthony R. Pike (916) 654-3362

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EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
2801 Connery Way Suite B
Missoula, MT 59808
Phn: (406) 541-3273 Fax: (406) 541-3274

Office of Statewide Health Planning and Development

ANCHORAGE PRE-APPROVAL

OPA-1236

Equipment Manufacturer: Stryker Communications

Equipment Type: 600 Series Service Arm

GENERAL NOTES

1. FORCES ARE DETERMINED PER 2001 CBC 1632A.2, EQUATIONS 32-A1, A2 & A3, WHERE $C_a = .66, a_p = 2.5, I_p = 1.5$ AND $R_p = 3.0$
   PLEASE NOTE THAT THE RESULT FROM EQUATIONS 32-A1, A2 & A3
   HAVE BEEN REDUCED BY A FACTOR OF 1.4 FOR ALLOWABLE STRESS DESIGN.
2. THIS PRE-APPROVAL CONFORMS TO THE 2001 CALIFORNIA BUILDING CODE.
3. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION AND AT ANY HEIGHT IN THE STATE OF CALIFORNIA.
4. THE ENGINEER OF RECORD SHALL DESIGN BACKING BARS, STUDS, ETC.
   WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS. THE ENGINEER OF RECORD
   SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS)
   WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
5. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE WORKING LOADS (AS OPPOSED TO ULTIMATE LOADS)
   AND MAY BE USED FOR ALLOWABLE STRENGTH DESIGN.
6. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.

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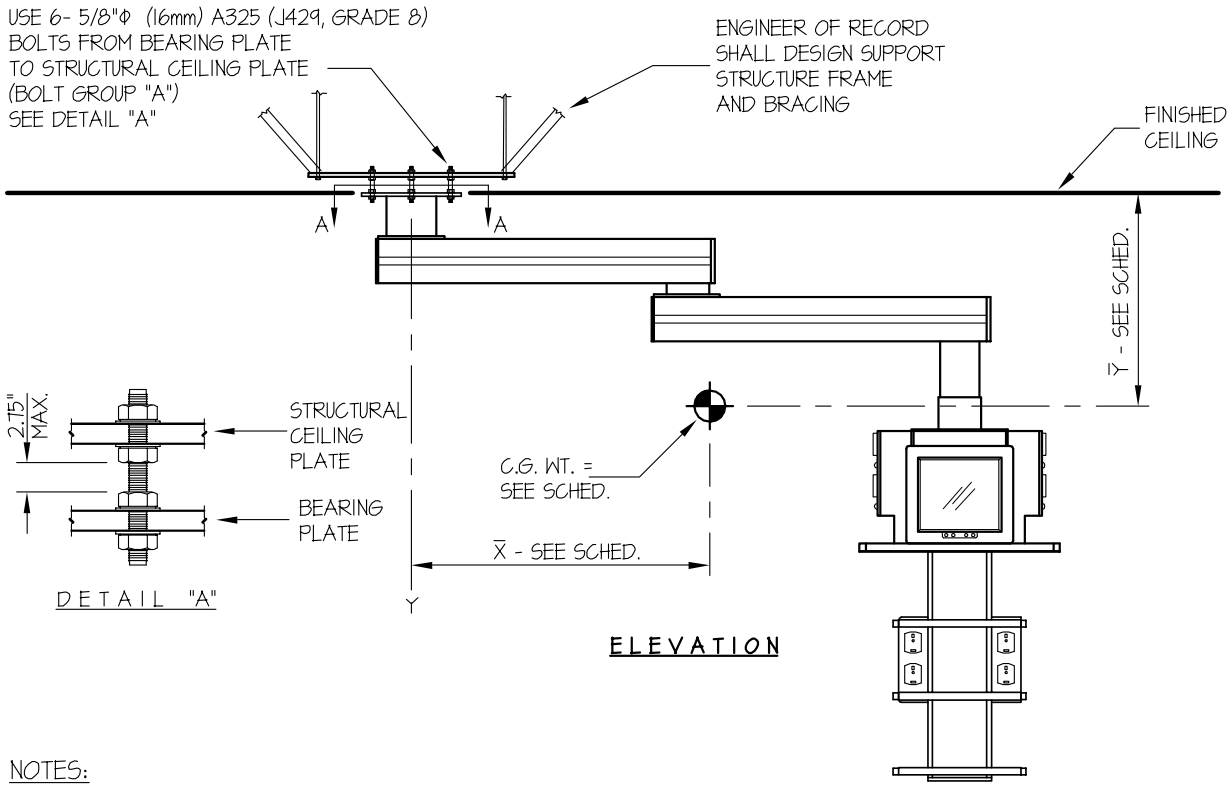
	JOB NO. 11-0605	
600 SERIES SERVICE ARM	DATE 11/28/06	OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

CEILING MOUNTED



NOTES:

1. ANCHORAGE DESIGN PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 2.36W (C_a = .66, I_p = 1.5, a_p = 2.5, R_p = 3.0)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.
4. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.
5. SEE GENERAL NOTES: SHEET 1 OF 4

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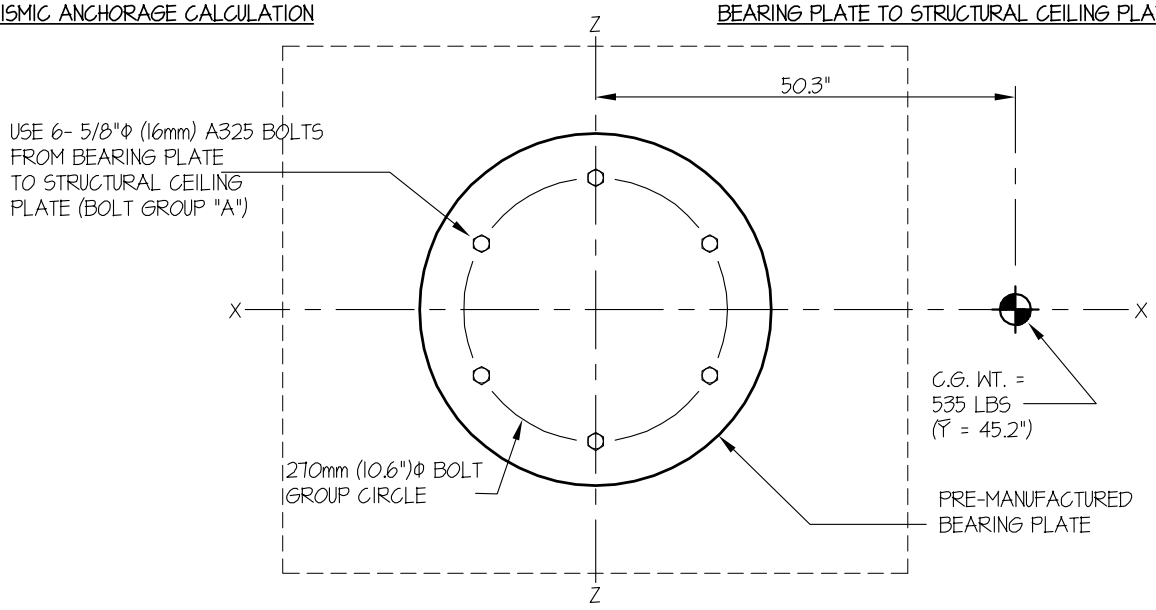
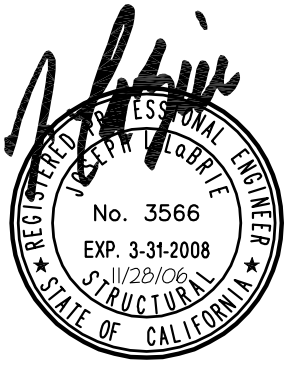
	JOB NO. 11-0605	
600 SERIES SERVICE ARM	DATE 11/28/06	OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

BEARING PLATE TO STRUCTURAL CEILING PLATE



PLAN AT BEARING PLATE



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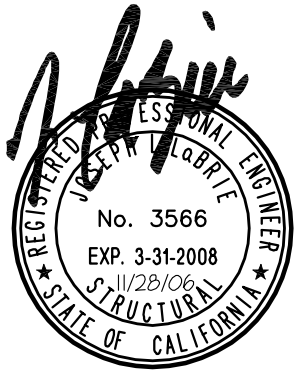
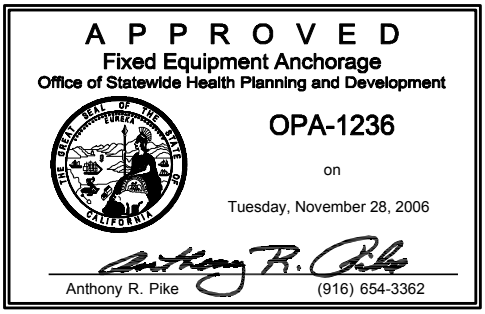
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 4
	JOB NO. 11-0605	
600 SERIES SERVICE ARM	DATE 11/28/06	OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

600 SERIES SERVICE ARM - BEARING PLATE TO STRUCTURAL CEILING PLATE

MODEL (ARM LENGTH)	MAX WEIGHT (lbs)	$\bar{X}$ (in)	$\bar{Y}$ (in)	T MAX (lbs/bolt)	V MAX (lbs/bolt)
SINGLE ARM (1000 mm)	1000	32	62	13066	551
DOUBLE ARM (600 mm / 600 mm)	1000	37	60	13330	551
DOUBLE ARM (600 mm / 800 mm)	950	43	61	13444	532
DOUBLE ARM (800 mm / 600 mm)	950	43	61	13444	532
DOUBLE ARM (800 mm / 800 mm)	909	44	64	13369	513
DOUBLE ARM (800 mm / 1000 mm)	813	52	64	12635	478
DOUBLE ARM (1000 mm / 800 mm)	813	52	64	12635	478
DOUBLE ARM (1000 mm / 1000 mm)	736	56	60	11330	448

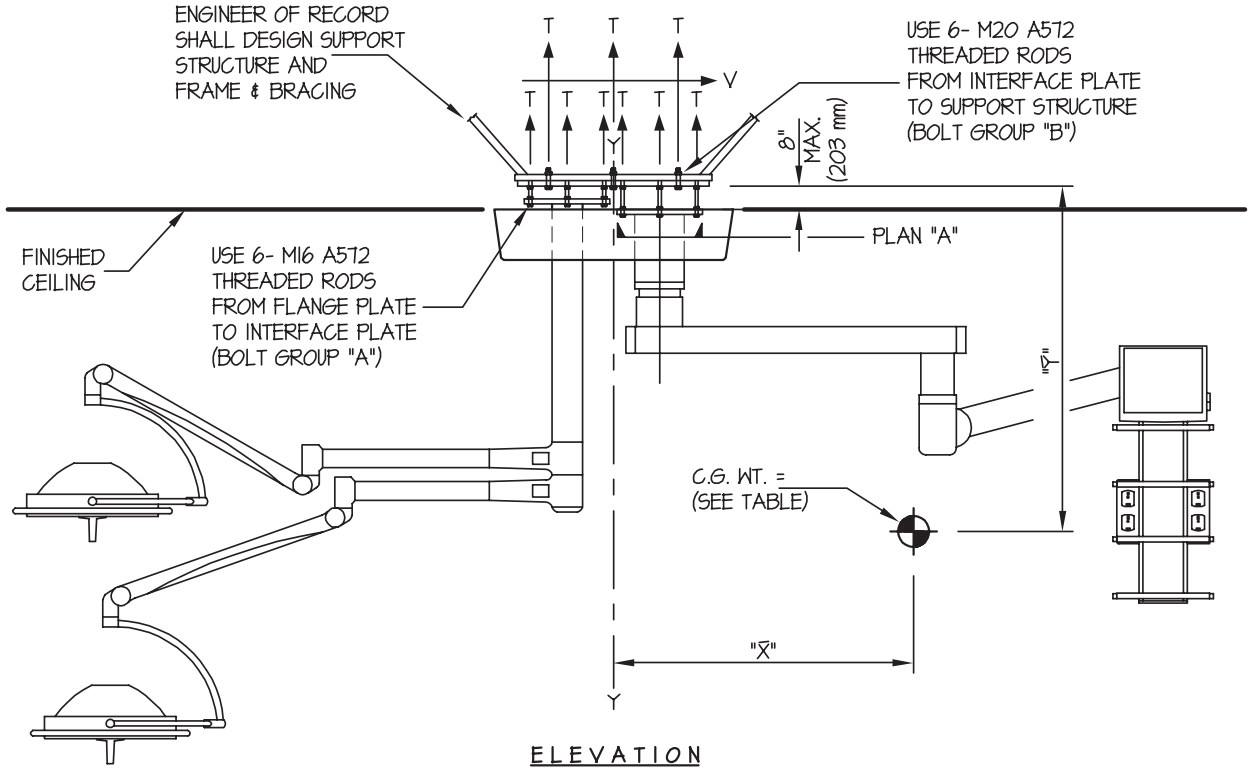




Appendix C - Seismic Calculations Tandem

STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 1
	JOB NO. 11-0518	
STRYKER TANDEM MOUNT	DATE 4/6/05	OF 4 SHEETS

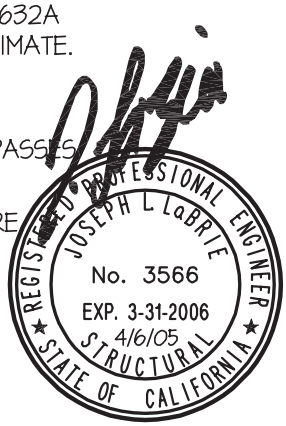
SEISMIC ANCHORAGE CALCULATION — CEILING MOUNTED



ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.94W - (C_a = .66, I_p = 1.5, a_p = 1.0, R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.



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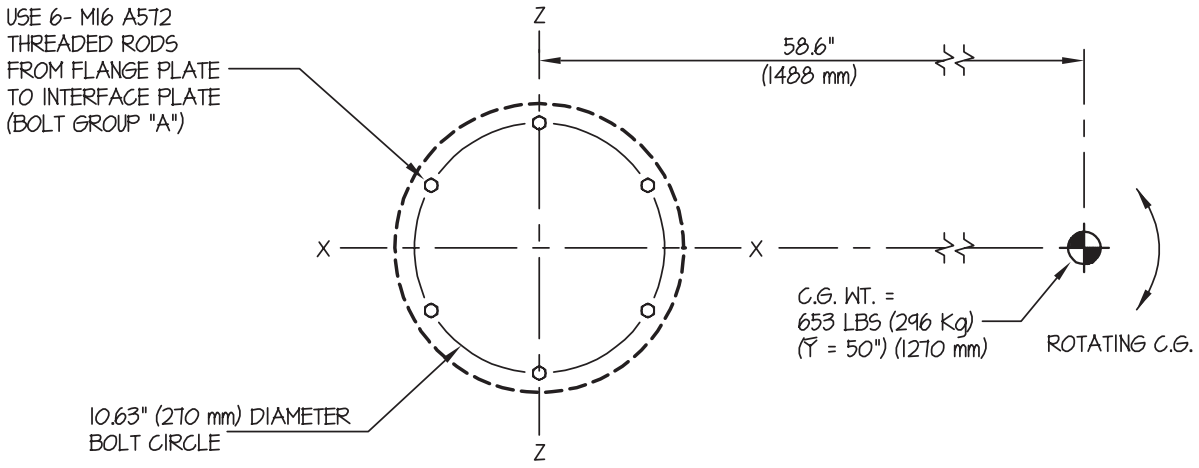
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0518	
STRYKER TANDEM MOUNT	DATE 4/6/05	OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

FLANGE PLATE



PLAN "A" AT MOUNTING PLATE

LOADS:

WEIGHT = 653 LBS (2905 N)
HORIZONTAL FORCE (V_H) = 614 LBS (2731 N)
VERTICAL FORCE (V_V) = 205 LBS (912 N)

BOLT GROUP PROPERTIES:

I_{X-X} = 85 in.^{2}/BOLT (54839 mm^2/BOLT)
I_{Z-Z} = 85 in.^{2}/BOLT (54839 mm^2/BOLT)
I_{Y-Y} = 169 in.^{2}/BOLT (109032 mm^2/BOLT)

MOMENTS:

M_{XX} = 614#(50") + (653# + 205#)58.6" = 80,979"# (9150 N-m)
M_{ZZ} = 614#(50") + (653# + 205#)58.6" = 80,979"# (9150 N-m)
M_{YY} = 614#(58.6") = 35,980"# (4065 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{80979"\#(5.32")}{85} + \frac{653\# + 205\#}{6} = 5211 \text{ LBS/BOLT (MAX) } (23180 \text{ N/BOLT})$$

SHEAR (V)

$$V = \frac{614\#}{6} + \frac{35980"\#(5.32")}{169} = 1235 \text{ LBS/BOLT (MAX) } (5494 \text{ N/BOLT})$$

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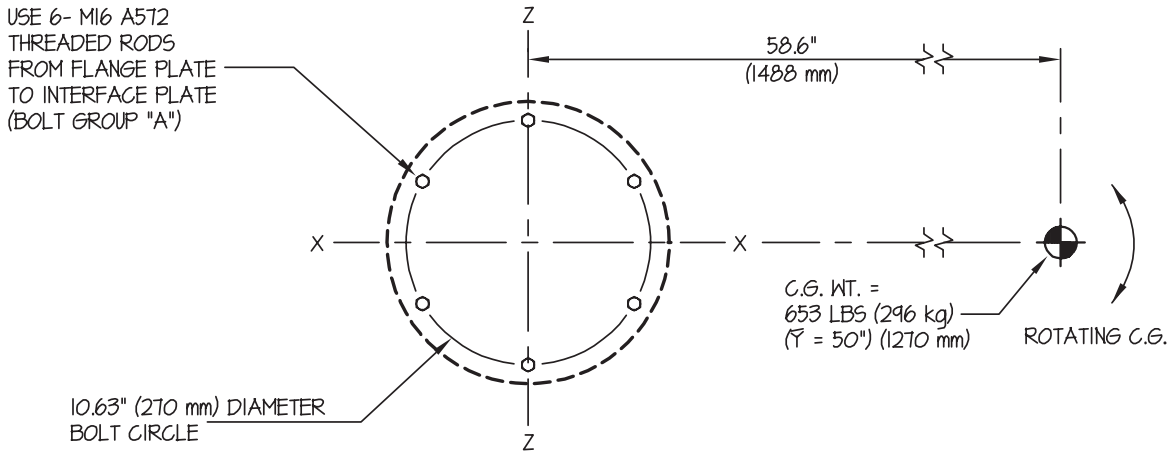
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0524	
STRYKER TANDEM MOUNT	DATE 4/29/05	OF 4 SHEETS

SEISMIC ANCHORAGE SEISMIC ZONE 3 & BELOW FLANGE PLATE



PLAN "A" AT MOUNTING PLATE

LOADS:
WEIGHT = 653 LBS (2905 N)
HORIZONTAL FORCE (V_H) = 333 LBS (1481 N)
VERTICAL FORCE (V_V) = 111 LBS (494 N)

BOLT GROUP PROPERTIES:
I_{X-X} = 85 in.^{2} /BOLT 54839 mm^2/BOLT)
I_{Z-Z} = 85 in.^{2} /BOLT 54839 mm^2/BOLT)
I_{Y-Y} = 170 in.^{2} /BOLT 109677 mm^2/BOLT)

MOMENTS:
M_{XX} = 333#(50") + (653# + 111#)58.6" = 61,420"# (6940 N-m)
M_{ZZ} = 333#(50") + (653# + 111#)58.6" = 61,420"# (6940 N-m)
M_{YY} = 333#(58.6") = 19,514"# (2205 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{61420"\#(5.32")}{85} + \frac{653\# + 111\#}{6} = 3972 \text{ LBS/BOLT (MAX) (17668 N/BOLT)}$$

SHEAR (V)

$$V = \frac{333\#}{6} + \frac{19514"\#(5.32")}{169} = 670 \text{ LBS/BOLT (MAX) (2980 N/BOLT)}$$

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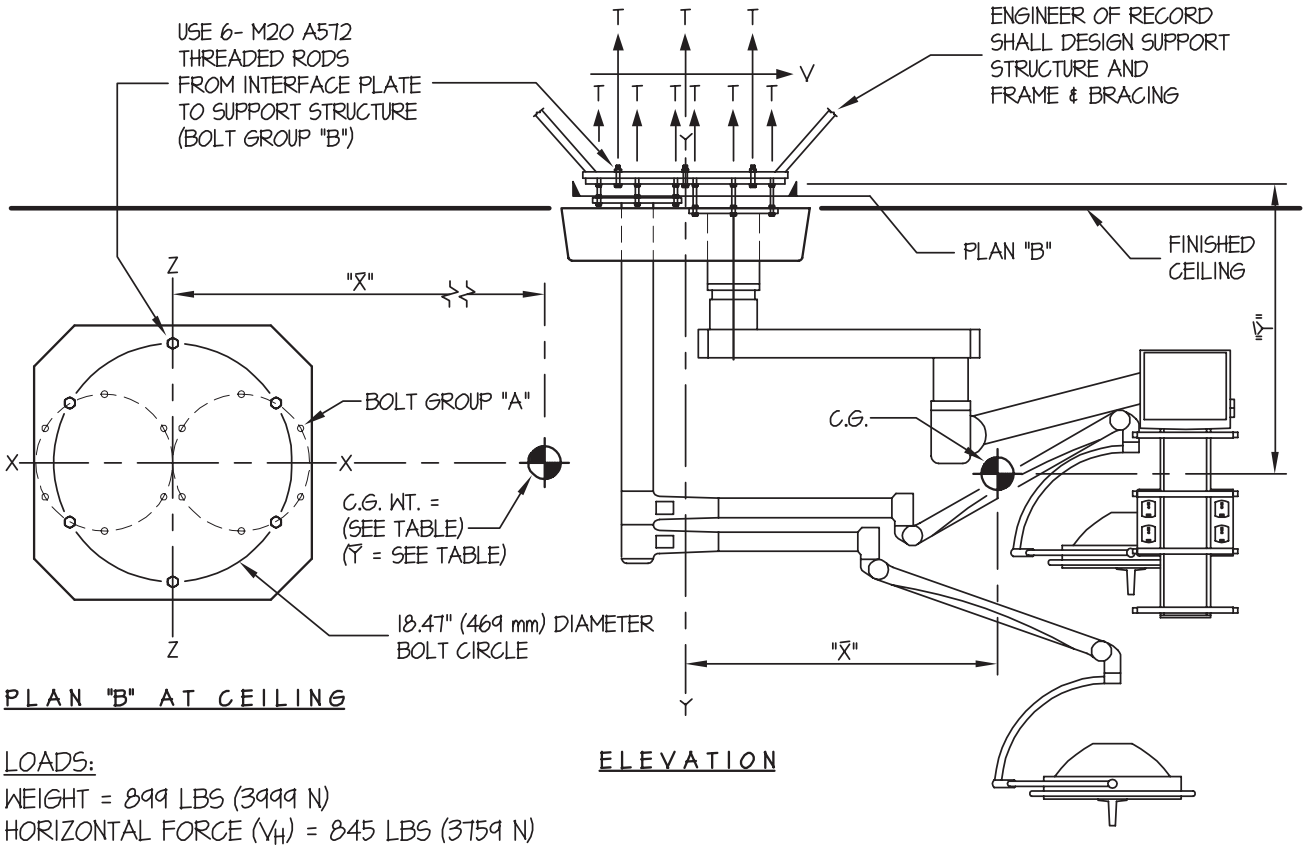
STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0518
DATE 4/6/05
SHEET 3 OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

INTERFACE PLATE



PLAN "B" AT CEILING

ELEVATION

LOADS:

WEIGHT = 899 LBS (3999 N)
HORIZONTAL FORCE (V_H) = 845 LBS (3759 N)
VERTICAL FORCE (V_V) = 282 LBS (1254 N)

BOLT GROUP PROPERTIES:

I_{X-X} = 256 in.^{2}/BOLT (165161 mm^2/BOLT)
I_{Z-Z} = 256 in.^{2}/BOLT (165161 mm^2/BOLT)
I_{Y-Y} = 512 in.^{2}/BOLT (330322 mm^2/BOLT)

MOMENTS:

M_{XX} = 845#(47") + (899# + 282#)55" = 104,656"# (11825 N-m)
M_{ZZ} = 845#(47") + (899# + 282#)55" = 104,656"# (11825 N-m)
M_{YY} = 845#(55") = 46,478"# (5252 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{104656"\#(9.24")}{256} + \frac{899\# + 282\#}{6} = 3974 \text{ LBS/BOLT (MAX) (17677 N/BOLT)}$$

SHEAR (V)

$$V = \frac{845\#}{6} + \frac{46478"\#(9.24")}{512} = 980 \text{ LBS/BOLT (MAX) (4359 N/BOLT)}$$

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STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0518
DATE 4/6/05
SHEET 4 OF 4 SHEETS

SEISMIC ANCHORAGE CALCULATION

TANDEM CONFIGURATION	$\bar{X}$ in (mm)	$\bar{Y}$ in (mm)	WEIGHT lbs (N)	M_{XX} in/lbs (N-m)	M_{YY} in/lbs (N-m)	T_{MAX} lbs/bolt (N)	V_{MAX} lbs/bolt (N)
DUAL ARM NON-ARTICULATING & SINGLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	766 (3407)	89,173 (10076)	36,602 (4136)	3386 (15062)	835 (3714)
DUAL ARM NON-ARTICULATING & DUAL ARM SURGICAL LIGHT	55 (1397)	47 (1194)	832 (3701)	96,856 (10944)	43,014 (4860)	3678 (16360)	907 (4035)
DUAL ARM NON-ARTICULATING & TRIPLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	899 (3999)	104,656 (11825)	46,478 (5252)	3974 (17677)	980 (4359)
DUAL ARM NON-ARTICULATING & FLAT PANEL ARM W/ SINGLE FLAT PANEL	56 (1422)	48 (1219)	803 (3572)	95,289 (10767)	42,270 (4776)	3615 (16080)	889 (3954)
DUAL ARM NON-ARTICULATING & FLAT PANEL ARM W/ DUAL FLAT PANEL	56 (1422)	48 (1219)	867 (3857)	102,884 (11625)	45,639 (5157)	3903 (17361)	959 (4266)
DUAL ARM ARTICULATING & SINGLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	766 (3407)	89,173 (10076)	39,602 (4475)	3386 (15062)	835 (3714)
DUAL ARM ARTICULATING & DUAL ARM SURGICAL LIGHT	55 (1397)	47 (1194)	832 (3701)	96,856 (10944)	43,014 (4860)	3678 (16360)	907 (4035)
* DUAL ARM ARTICULATING & TRIPLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	899 (3999)	104,656 (11825)	46,478 (5252)	3974 (17677)	980 (4359)
DUAL ARM ARTICULATING & FLAT PANEL ARM W/ SINGLE FLAT PANEL	56 (1422)	48 (1219)	803 (3572)	95,289 (10767)	42,270 (4776)	3615 (16080)	889 (3954)
DUAL ARM ARTICULATING & FLAT PANEL ARM W/ DUAL FLAT PANEL	56 (1422)	48 (1219)	867 (3857)	102,884 (11625)	45,639 (5157)	3903 (17361)	959 (4266)
TRIPLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	396 (1761)	31,976 (3613)	13,028 (1472)	1241 (5520)	297 (1321)
TRIPLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	460 (2046)	36,107 (4080)	14,072 (1661)	1404 (6245)	337 (1499)
DUAL ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	329 (1463)	26,566 (3002)	10,824 (1223)	1031 (4586)	247 (1099)
DUAL ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	393 (1748)	30,848 (3486)	12,560 (1419)	1199 (5333)	288 (1281)
SINGLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	263 (1170)	21,236 (2399)	8,653 (978)	824 (3665)	197 (876)
SINGLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	327 (1455)	25,667 (2900)	10,451 (1181)	998 (4439)	240 (1068)

* THIS MODEL USED IN EXAMPLE ON PAGE 3

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
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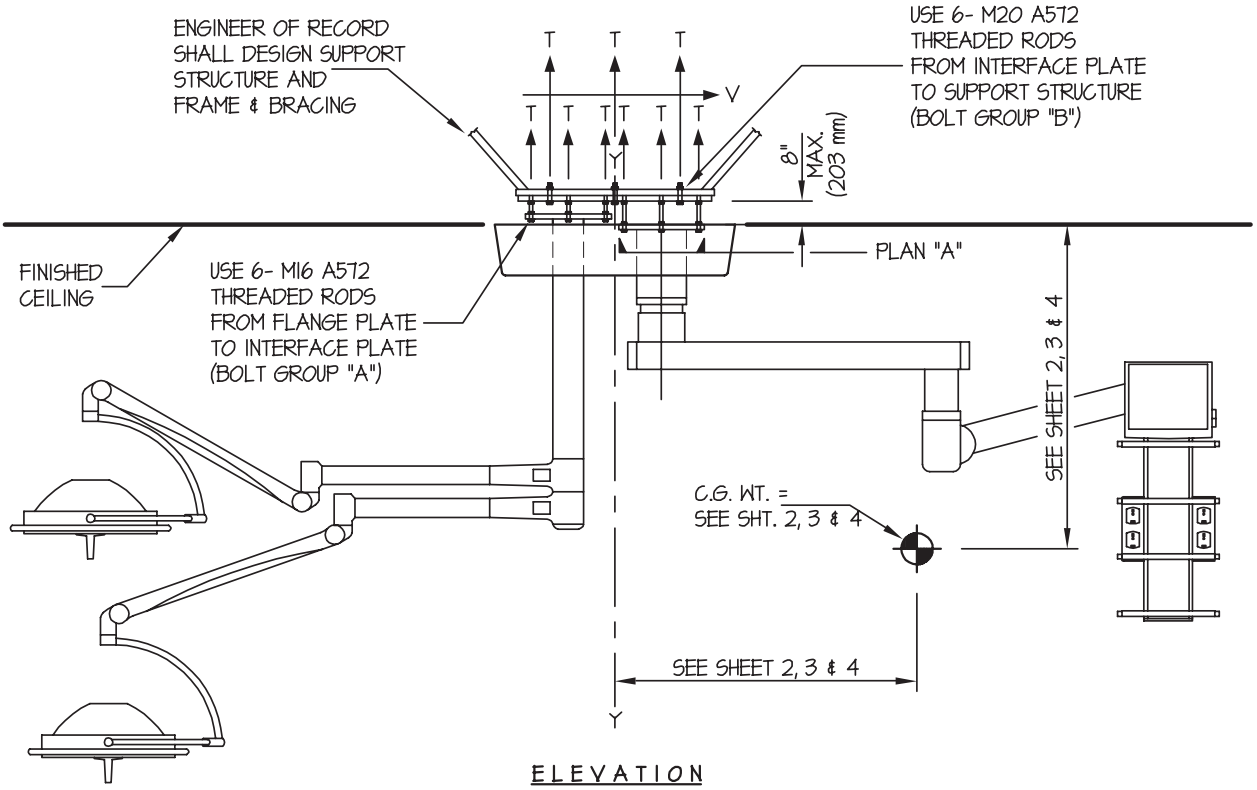
STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0524
DATE 4/29/05
SHEET 1 OF 4 SHEETS

SEISMIC ANCHORAGE | SEISMIC ZONE 3 & BELOW | CEILING MOUNTED



ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 UNIFORM BUILDING CODE - SECTION 1632 AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.51W (C_a = .36, I_p = 1.5, a_p = 1.0, R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H) SEISMIC ZONE 3 & BELOW
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

REGISTERED PROFESSIONAL ENGINEER
JOSEPH L LaBRIE
No. 3566
EXP. 3-31-2006
4/29/05
STRUCTURAL
STATE OF CALIFORNIA

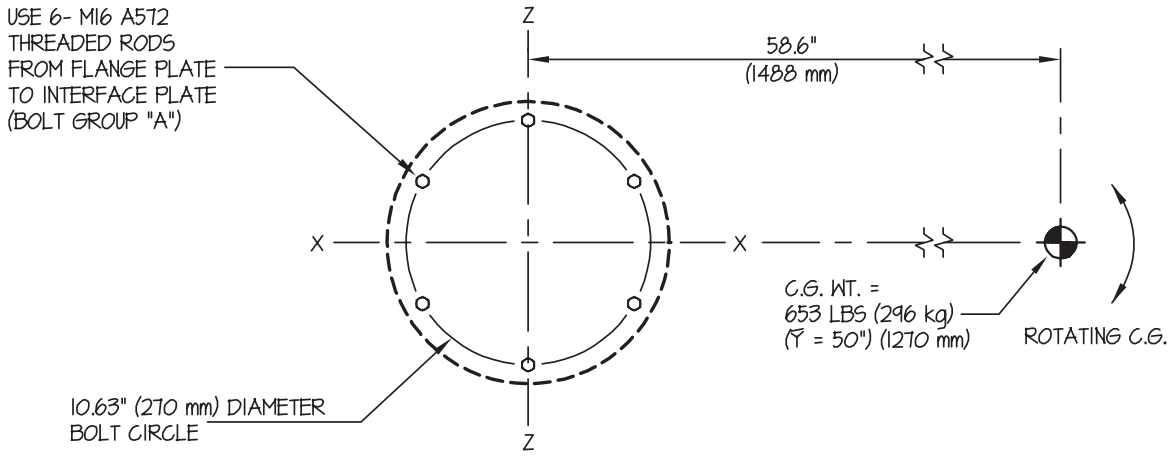
EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
www.equipmentanchorage.com

STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0524
DATE 4/29/05
SHEET 2 OF 4 SHEETS

SEISMIC ANCHORAGE SEISMIC ZONE 3 & BELOW FLANGE PLATE



PLAN "A" AT MOUNTING PLATE

LOADS:
WEIGHT = 653 LBS (2905 N)
HORIZONTAL FORCE (V_H) = 333 LBS (1481 N)
VERTICAL FORCE (V_V) = 111 LBS (494 N)

BOLT GROUP PROPERTIES:
I_{X-X} = 85 in.^{2}/BOLT 54839 mm^2/BOLT)
I_{Z-Z} = 85 in.^{2}/BOLT 54839 mm^2/BOLT)
I_{Y-Y} = 170 in.^{2}/BOLT 109677 mm^2/BOLT)

MOMENTS:
M_{XX} = 333#(50") + (653# + 111#)58.6" = 61,420"# (6940 N-m)
M_{ZZ} = 333#(50") + (653# + 111#)58.6" = 61,420"# (6940 N-m)
M_{YY} = 333#(58.6") = 19,514"# (2205 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{61420"\#(5.32")}{85} + \frac{653\# + 111\#}{6} = 3972 \text{ LBS/BOLT (MAX) (17668 N/BOLT)}$$

SHEAR (V)

$$V = \frac{333\#}{6} + \frac{19514"\#(5.32")}{169} = 670 \text{ LBS/BOLT (MAX) (2980 N/BOLT)}$$

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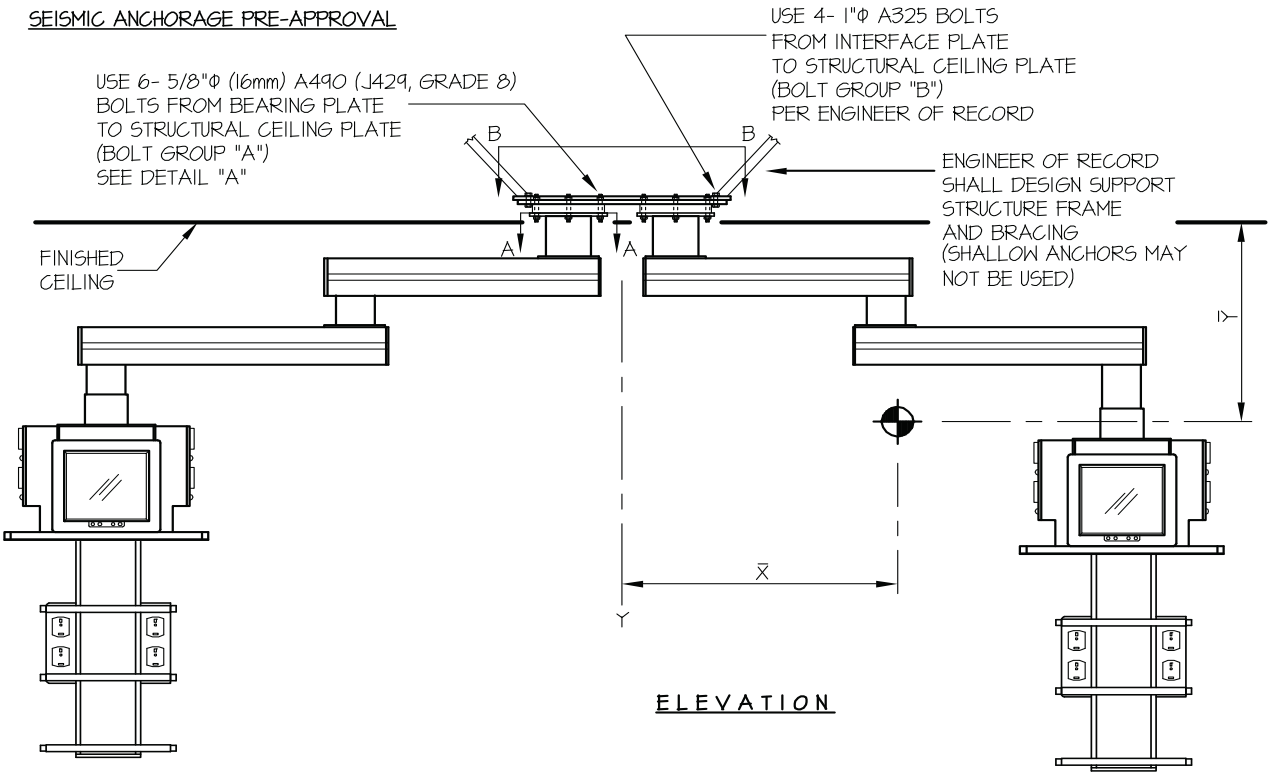
STRYKER COMMUNICATIONS

400/400, 400/600, 600/600 TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0605
DATE 11/28/06
SHEET 2 OF 5 SHEETS

SEISMIC ANCHORAGE PRE-APPROVAL



ELEVATION

NOTES:

1. ANCHORAGE DESIGN PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 2.36W (C_a = .66, I_p = 1.5, a_p = 2.5, R_p = 3.0)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. SEE GENERAL NOTES: SHEET 1 OF 5

REGISTERED PROFESSIONAL ENGINEER
No. 5566
EXP. 3-31-2008
11/28/06
STRUCTURAL
STATE OF CALIFORNIA

APPROVED
Fixed Equipment Anchorage
Office of Statewide Health Planning and Development
OPA-1237
on
Tuesday, November 28, 2006
Anthony R. Pike (916) 654-3362

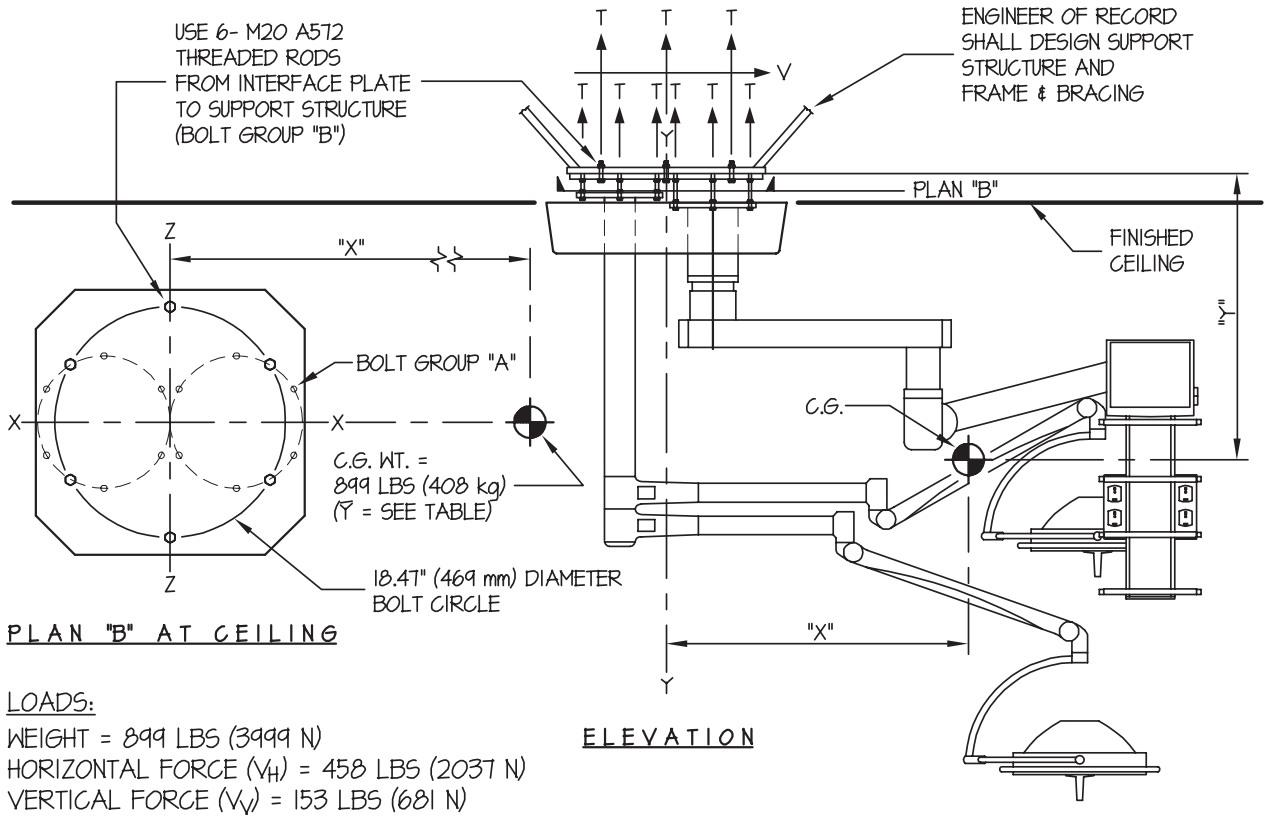
EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
www.equipmentanchorage.com

STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0524
DATE 4/29/05
SHEET 3 OF 4 SHEETS

SEISMIC ANCHORAGE SEISMIC ZONE 3 & BELOW INTERFACE PLATE



PLAN "B" AT CEILING

ELEVATION

LOADS:

WEIGHT = 899 LBS (3999 N)
HORIZONTAL FORCE (V_H) = 458 LBS (2037 N)
VERTICAL FORCE (V_V) = 153 LBS (681 N)

BOLT GROUP PROPERTIES:

I_{X-X} = 256 in.^{2}/BOLT 165161 mm^2/BOLT)
I_{Z-Z} = 256 in.^{2}/BOLT 165161 mm^2/BOLT)
I_{Y-Y} = 512 in.^{2}/BOLT 330322 mm^2/BOLT)

MOMENTS:

M_{XX} = 458#(47") + (899# + 153#)55" = 79,386"# (8970 N-m)
M_{ZZ} = 458#(47") + (899# + 153#)55" = 79,386"# (8970 N-m)
M_{YY} = 458#(55") = 25,190"# (2846 N-m)

BOLT FORCES:

TENSION (T)

$$T = \frac{79386"\#(9.24")}{256} + \frac{899\# + 153\#}{6} = 3041 \text{ LBS/BOLT (MAX) (13527 N/BOLT)}$$

SHEAR (V)

$$V = \frac{458\#}{6} + \frac{25190"\#(9.24")}{512} = 531 \text{ LBS/BOLT (MAX) (2362 N/BOLT)}$$

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STRYKER COMMUNICATIONS

STRYKER TANDEM MOUNT

DES. R. LA BRIE
JOB NO. 11-0524
DATE 4/29/05

SHEET 4 OF 4 SHEETS

SEISMIC ANCHORAGE SEISMIC ZONE 3 & BELOW

TANDEM CONFIGURATION	$\bar{X}$ in (mm)	$\bar{Y}$ in (mm)	WEIGHT lbs (N)	M_{XX} in/lbs (N-m)	M_{YY} in/lbs (N-m)	T_{MAX} lbs/bolt (N)	V_{MAX} lbs/bolt (N)
DUAL ARM NON-ARTICULATING & SINGLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	766 (3407)	67,653 (7644)	21,486 (2428)	2591 (11525)	453 (2015)
DUAL ARM NON-ARTICULATING & DUAL ARM SURGICAL LIGHT	55 (1397)	47 (1194)	832 (3701)	73,482 (8303)	23,338 (2637)	2814 (12517)	492 (2189)
DUAL ARM NON-ARTICULATING & TRIPLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	899 (3999)	79,400 (8971)	25,217 (2849)	3041 (13527)	532 (2366)
DUAL ARM NON-ARTICULATING & FLAT PANEL ARM W/ SINGLE FLAT PANEL	56 (1422)	48 (1219)	803 (3572)	72,270 (8166)	22,934 (2591)	2765 (12299)	482 (2144)
DUAL ARM NON-ARTICULATING & FLAT PANEL ARM W/ DUAL FLAT PANEL	56 (1422)	48 (1219)	867 (3857)	78,030 (8817)	24,762 (2798)	2985 (13278)	521 (2318)
DUAL ARM ARTICULATING & SINGLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	766 (3407)	67,653 (7644)	21,486 (2428)	2591 (11525)	453 (2015)
DUAL ARM ARTICULATING & DUAL ARM SURGICAL LIGHT	55 (1397)	47 (1194)	832 (3701)	73,482 (8303)	23,338 (2637)	2814 (12517)	492 (2189)
* DUAL ARM ARTICULATING & TRIPLE ARM SURGICAL LIGHT	55 (1397)	47 (1194)	899 (3999)	79,400 (8971)	25,217 (2849)	3041 (13527)	532 (2366)
DUAL ARM ARTICULATING & FLAT PANEL ARM W/ SINGLE FLAT PANEL	56 (1422)	48 (1219)	803 (3572)	72,270 (8166)	22,934 (2591)	2765 (12299)	482 (2144)
DUAL ARM ARTICULATING & FLAT PANEL ARM W/ DUAL FLAT PANEL	56 (1422)	48 (1219)	867 (3857)	78,030 (8817)	24,762 (2798)	2985 (13278)	521 (2318)
TRIPLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	396 (1761)	23,689 (2677)	7,069 (799)	932 (4146)	161 (716)
TRIPLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	460 (2046)	26,744 (3022)	7,976 (901)	1055 (4693)	183 (814)
DUAL ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	329 (1463)	19,681 (2224)	5,873 (664)	775 (3447)	134 (596)
DUAL ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	393 (1748)	22,849 (2582)	6,815 (770)	901 (4008)	156 (694)
SINGLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ SINGLE FLAT PANEL	35 (889)	37 (940)	263 (1170)	15,733 (1778)	4,695 (530)	619 (2753)	107 (476)
SINGLE ARM SURGICAL LIGHT & FLAT PANEL ARM W/ DUAL FLAT PANEL	34 (864)	36 (914)	327 (1455)	19,012 (2148)	5,670 (641)	750 (3336)	130 (578)

* THIS MODEL USED IN EXAMPLE ON PAGE 3

EASE
EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING
2801 Connery Way Suite B
Missoula, MT 59808
Phn: (406) 541-3273 Fax: (406) 541-3274

Office of Statewide Health Planning and Development

ANCHORAGE PRE-APPROVAL

OPA-1237

Equipment Manufacturer: Stryker Communications

Equipment Type: Tandem Mount

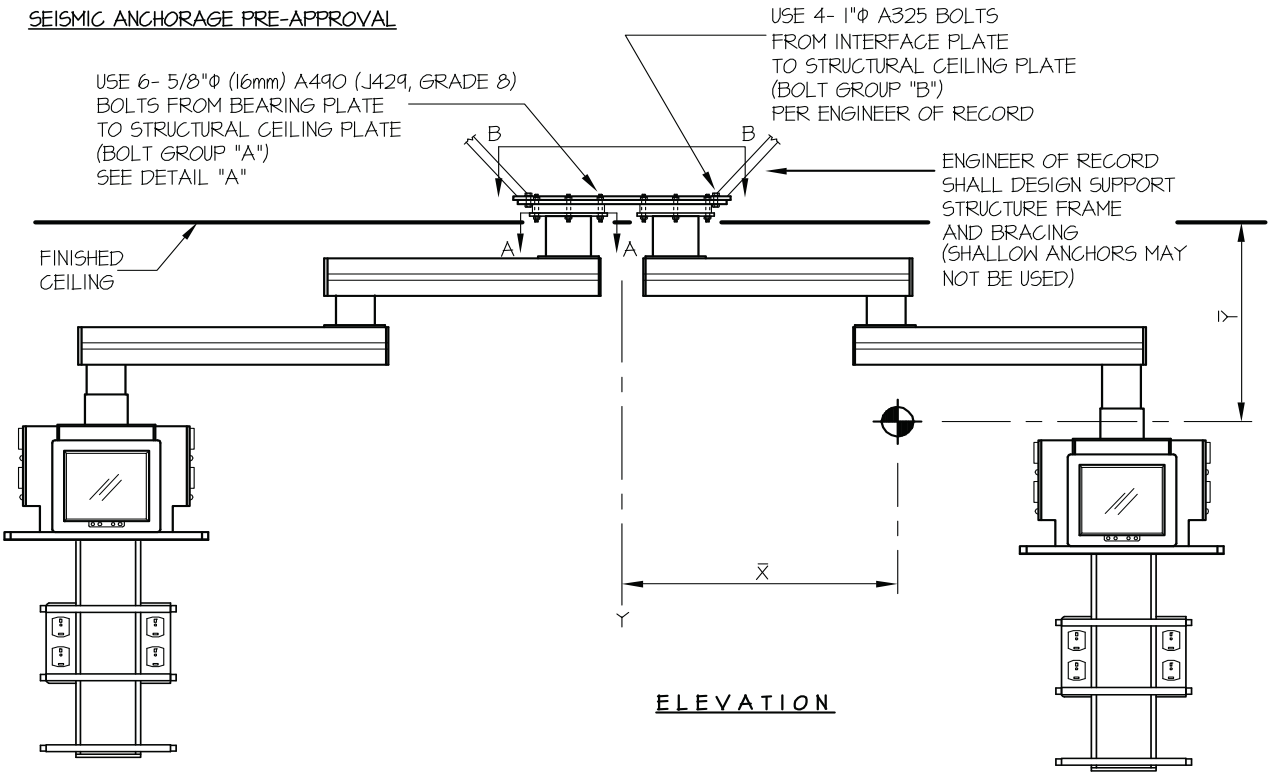
GENERAL NOTES

1. FORCES ARE DETERMINED PER 2001 CBC 1632A.2, EQUATIONS 32-A1, A2 & A3, WHERE C_a = .66, a_p = 2.5, I_p = 1.5 AND R_p = 3.0
   PLEASE NOTE THAT THE RESULT FROM EQUATIONS 32-A1, A2 & A3 HAVE BEEN REDUCED BY A FACTOR OF 1.4 FOR ALLOWABLE STRESS DESIGN.
2. THIS PRE-APPROVAL CONFORMS TO THE 2001 CALIFORNIA BUILDING CODE.
3. THE DETAILS IN THIS PRE-APPROVAL MAY BE USED AT ANY LOCATION AND AT ANY HEIGHT IN THE STATE OF CALIFORNIA.
4. THE ENGINEER OF RECORD SHALL DESIGN BACKING BARS, STUDS, ETC. WHICH THE UNITS ARE ATTACHED TO AS NOTED ON THE DRAWINGS. THE ENGINEER OF RECORD SHALL ALSO VERIFY THE ADEQUACY OF THE STRUCTURES (SUCH AS WALLS AND FLOORS) WHICH SUPPORT THE UNITS FOR THE LOADS IMPOSED ON THEM BY THE UNITS AS WELL AS ALL OTHER LOADS.
5. ALL ANCHOR FORCES SHOWN ON THE DRAWINGS ARE WORKING LOADS (AS OPPOSED TO ULTIMATE LOADS) AND MAY BE USED FOR ALLOWABLE STRENGTH DESIGN.
6. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.

APPROVED
Fixed Equipment Anchorage
Office of Statewide Health Planning and Development
OPA-1237
on
Tuesday, November 28, 2006
Anthony R. Pike (916) 654-3362

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING www.equipmentanchorage.com		
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 2
	JOB NO. 11-0605	
400/400, 400/600, 600/600 TANDEM MOUNT	DATE 11/28/06	OF 5 SHEETS

SEISMIC ANCHORAGE PRE-APPROVAL



ELEVATION

NOTES:

1. ANCHORAGE DESIGN PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 2.36W (C_a = .66, I_p = 1.5, a_p = 2.5, R_p = 3.0)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS PRE-APPROVAL ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. THE UNIT HAS BEEN SHAKETABLE TESTED AND AS A RESULT, THE ANCHORAGE ASSEMBLY IS APPROVED.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.
4. SEE GENERAL NOTES: SHEET 1 OF 5

REGISTERED PROFESSIONAL ENGINEER
No. 6566
EXP. 3-31-2008
11/28/06
STRUCTURAL
STATE OF CALIFORNIA

APPROVED
Fixed Equipment Anchorage
Office of Statewide Health Planning and Development
OPA-1237
on
Tuesday, November 28, 2006
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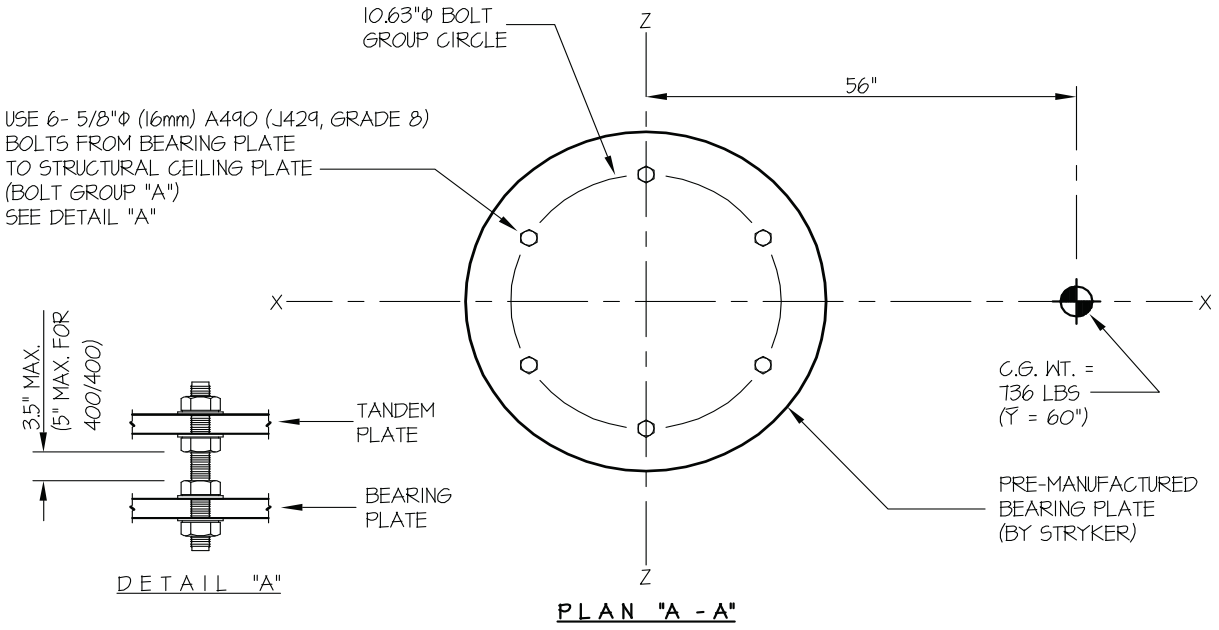
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 3
	JOB NO. 11-0605	
400/400, 400/600, 600/600 TANDEM MOUNT	DATE 11/28/06	OF 5 SHEETS

SEISMIC ANCHORAGE PRE-APPROVAL

BEARING PLATE TO TANDEM PLATE



REGISTERED PROFESSIONAL ENGINEER
JOSEPH R. LaBRIE
No. 3566
EXP. 3-31-2008
11/28/06
STRUCTURAL
STATE OF CALIFORNIA

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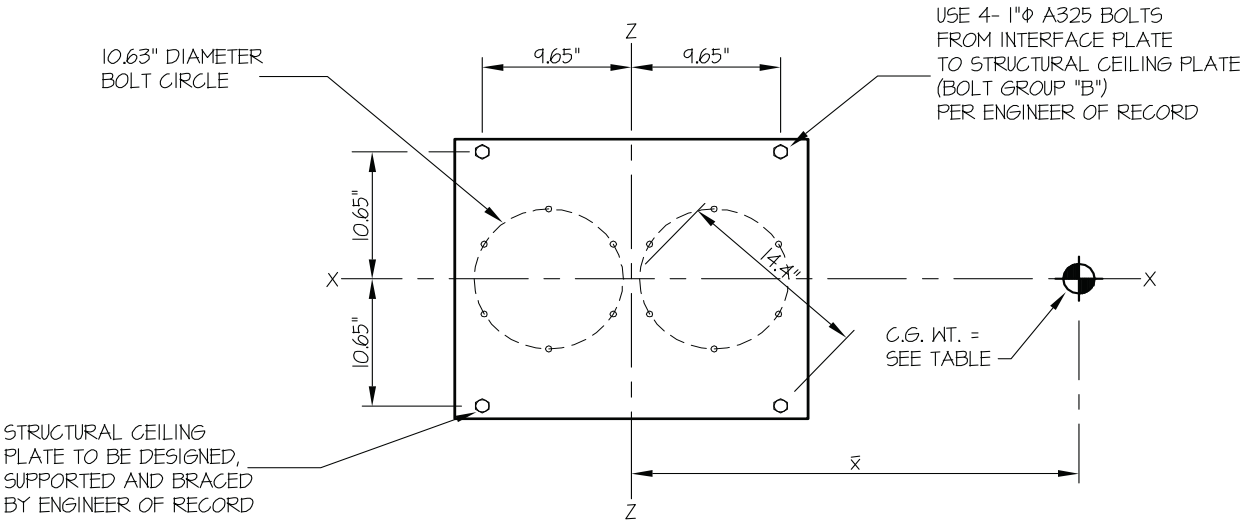
	JOB NO. 11-0605	
400/400, 400/600, 600/600 TANDEM MOUNT	DATE 11/28/06	OF 5 SHEETS

SEISMIC ANCHORAGE PRE-APPROVAL

TANDEM PLATE TO STRUCTURAL CEILING PLATE



PLAN AT "B-B"

REGISTERED PROFESSIONAL ENGINEER
JOSEPH LaBRIE
No. 3566
EXP. 3-31-2008
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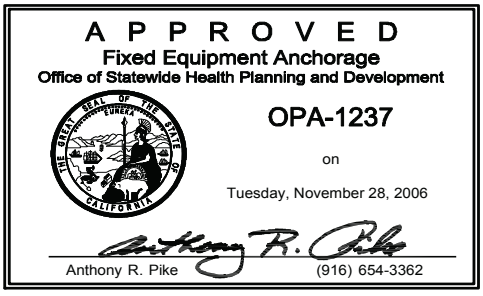
STRYKER COMMUNICATIONS	DES. R. LA BRIE	SHEET 5
	JOB NO. 11-0605	
400/400, 400/600, 600/600 TANDEM MOUNT	DATE 11/28/06	OF 5 SHEETS

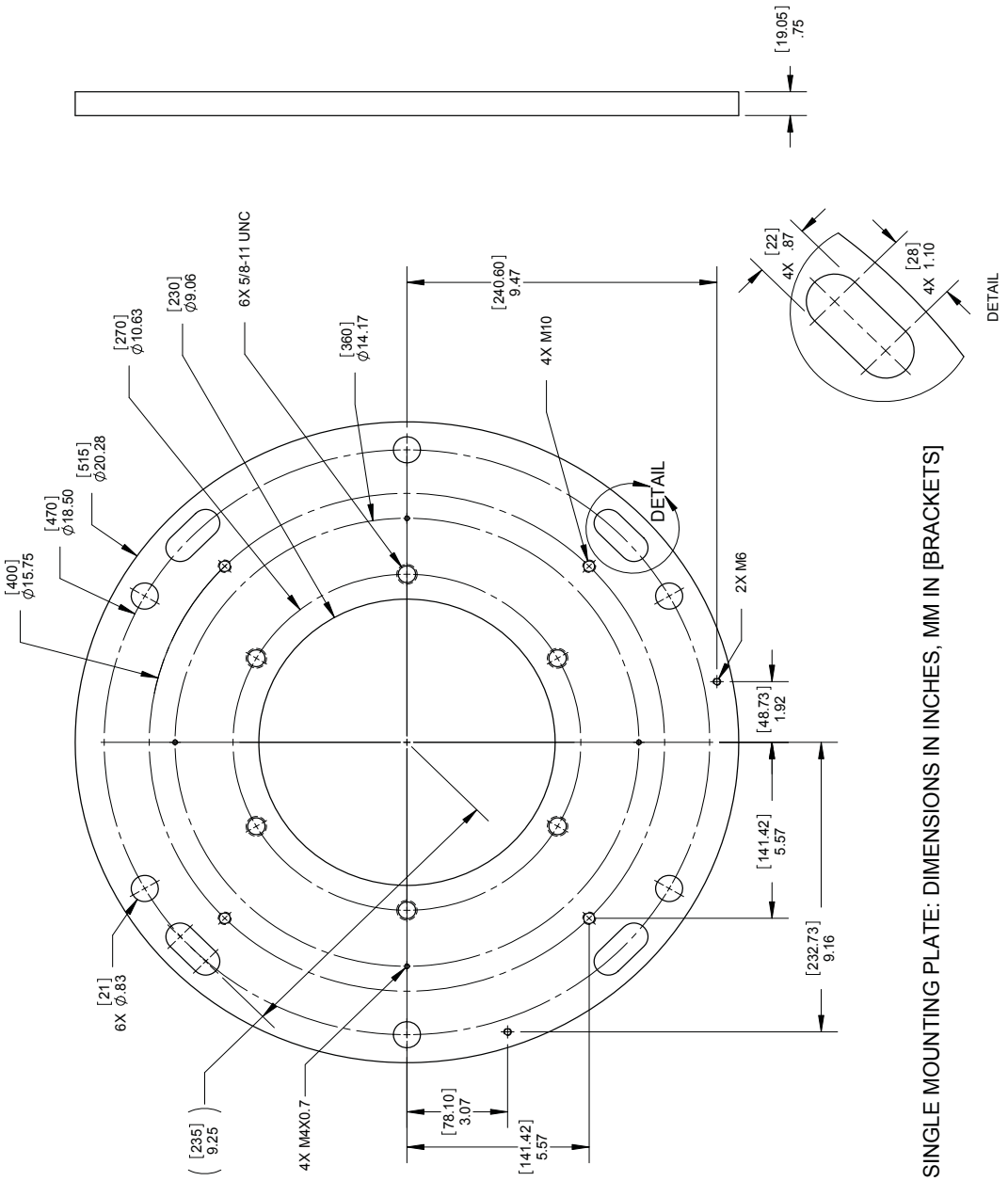
SEISMIC ANCHORAGE PRE-APPROVAL

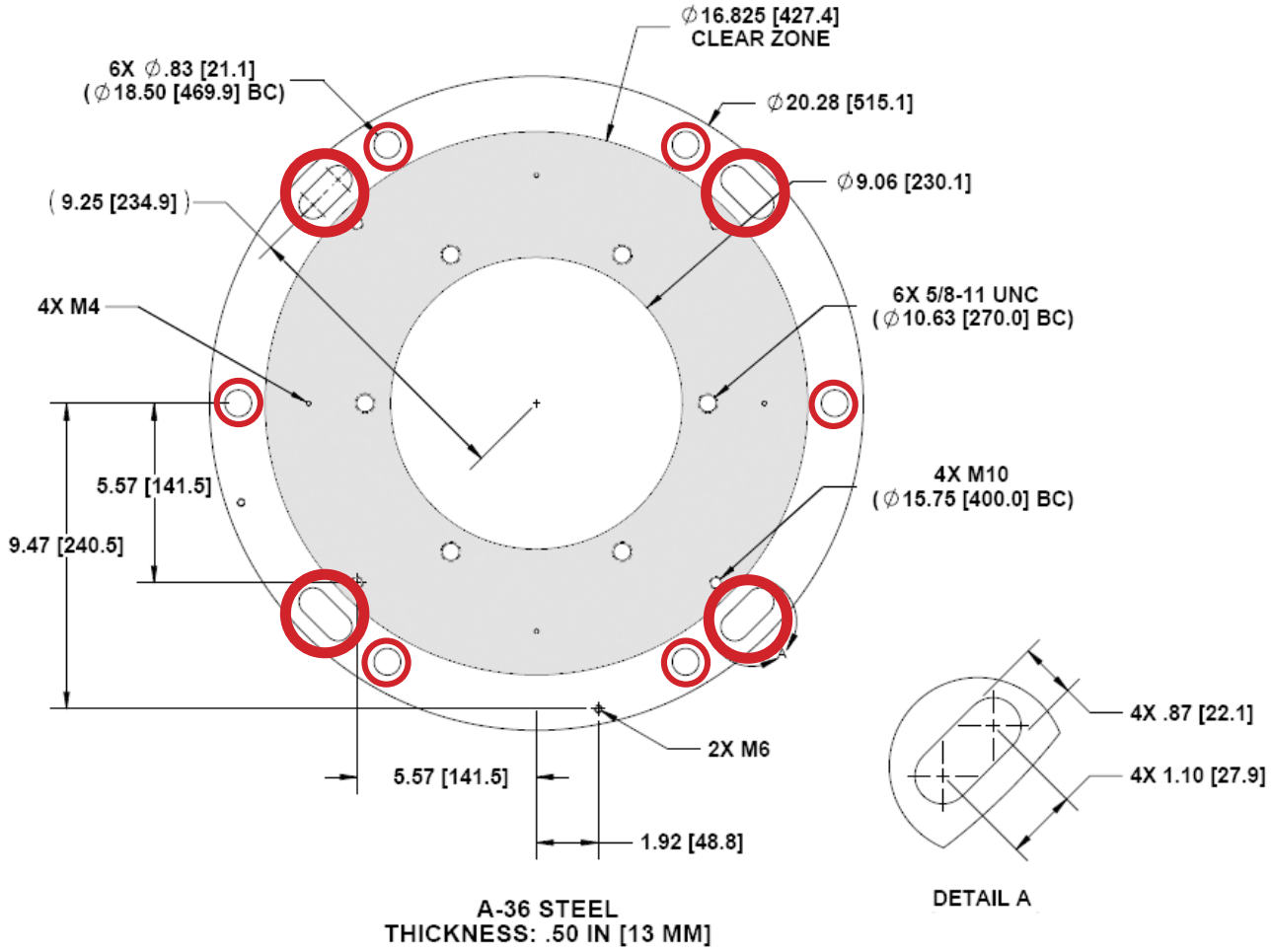
TANDEM PLATE TO STRUCTURAL CEILING PLATE

MODEL (ARM LENGTH)	MAX WEIGHT (lbs)	$\bar{X}$ (in)	$\bar{Y}$ (in)	Mxx & Mzz	T MAX (lbs/bolt)	V MAX (lbs/bolt)
400/400 (MAX WEIGHT)	1682	31	71	374996	13799	1070
400/600 (MAX WEIGHT)	2241	31	56	420292	15625	1400
600/600 (MAX WEIGHT)	2800	32	60	556576	20657	1730



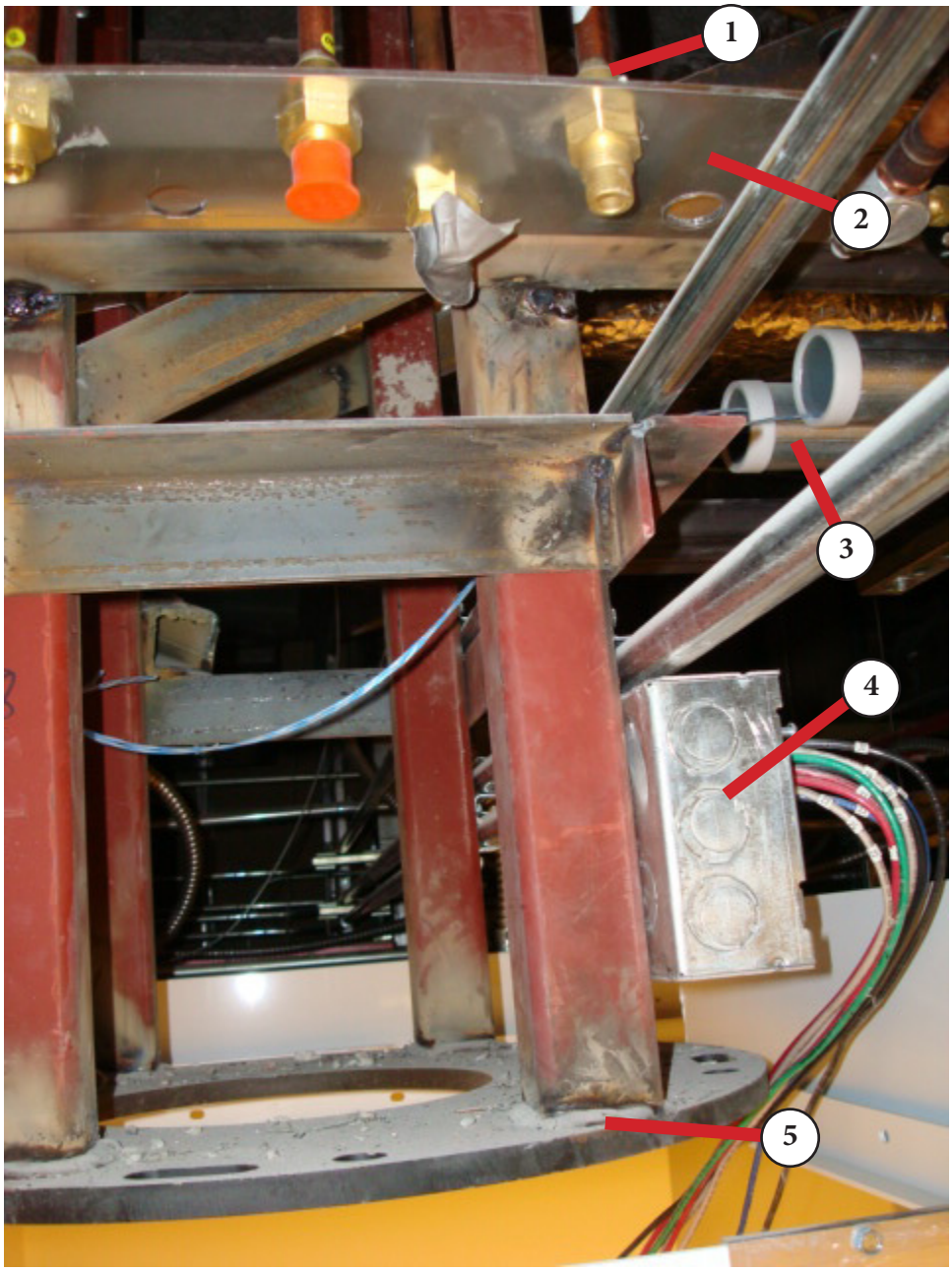
Appendix D - Mounting (interface) plate Detail



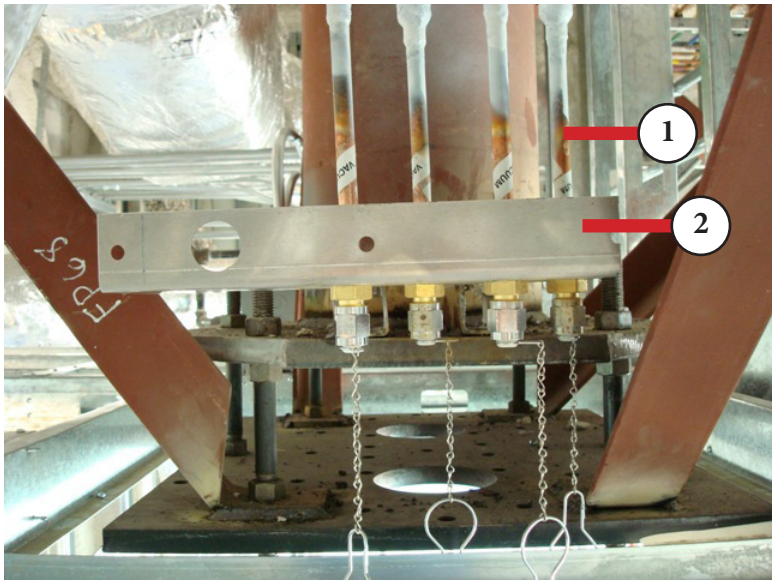


Use any of the holes marked in red.

Appendix E - Installation-Ready Site



1	Gas Riser (Stryker supplied, contractor installed). Locate within 18” of mounting plate center.
2	Riser Mounting Bracket (Stryker supplied, contractor installed).
3	Conduit with pull strings and insulated bushings (supplied and installed by contractor). Max distance = 45’. Locate within 18” of mounting plate center.
4	J-Box - Power for hard-wired circuits (supplied and installed by contractor). Locate within 18” of mounting plate center.
5	Boom Mounting Plate (Stryker supplied, contractor installed). Locate 4” above finished ceiling with minimum of 4” of clear space above mount.



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EC REP
Stryker France S.A.
ZAC Satolas Green
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CE 0197