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

OFFICE USE ONLY

APPLICATION #: OPM-0549

OSHPD Preapproval of Manufacturer's Certification (OPM)

Type: ☐ New ☒ Renewal/Update

Manufacturer Information

Manufacturer: Abbott Laboratories

Manufacturer's Technical Representative: Claudia Moreno

Mailing Address: 1921 Hurd Drive, MS 2-33, Irving, TX 75038

Telephone: (972) 518-7691 Email: Claudia.Moreno@abbott.com

Product Information

Product Name: Accelerator® a3600 Automation Track 3rd – Party Interfaces

Product Type: Interfaces for 3rd -party unified automated diagnostic processing laboratory instruments

Product Model Number: a3600

General Description: modular system designed to automate pre/post-analytical processing of clinical samples. These interfaces allow for 3rd -party clinical analyzers (XN-9000 and Stago STA-R analyzers) to connect with the Accelerator® a3600 modular system.

Applicant Information

Applicant Company Name:

Contact Person: Dieter Siebald

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

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

Title: Structural Engineer/Project Manager

Registered Design Professonal Preparing Engineering Recommendations

Company Name: CYS STRUCTURAL ENGINEERS, INC.

Name: Dieter Siebald California License Number: S4346

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

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

OSHPD Special Seismic Certification Preapproval (OSP)

☐ Special Seismic Certification is preapproved under OSP OSP Number:

Certification Method

Testing in accordance with: ☐ ICC-ES AC156 ☐ FM 1950-16

☐ Other(s) (Please Specify):

*Use of criteria other than those adopted by the California Building Standards Code, 2019 (CBSC 2019) 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 2019 may be used when approved by OSHPD prior to testing.

☒ Analysis

☐ Experience Data

☐ Combination of Testing, Analysis, and/or Experience Data (Please Specify):

OSHPD Approval

Date: 11/20/2020

Name: Jeffrey Kikumoto Title: Senior Structural Engineer

Condition of Approval (if applicable):

ABBOTT LABORATORIES
ACCELERATOR® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES
OPM–0549

PAGE

NOTES:

THESE DRAWINGS ARE PREPARED FOR ABBOTT LABORATORIES, AN ILLINOIS CORPORATION, ABBOTT PARK, ILLINOIS.

1. THE CONTRACTOR AND THE INSPECTOR SHALL OBTAIN A COPY OF THIS PRE–APPROVAL FROM THE OSHPD WEBSITE.

2. THIS PRE–APPROVAL COVERS THE SUPPORTS AND ATTACHMENTS OF THE LABORATORY EQUIPMENT TO THE STRUCTURE.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

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GENERAL NOTES:

1. THIS OSHPD PRE–APPROVAL OF MANUFACTURER'S CERTIFICATION (OPM) IS BASED ON THE CBC 2019. THE DEMAND (DESIGN FORCES) FOR USE WITH THIS OPM SHALL BE BASED ON THE CBC 2019.
2. IT IS THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD FOR A SITE SPECIFIC PROJECT TO VERIFY:
   - A. THE ADEQUACY OF THE NEW OR EXISTING STRUCTURE TO RESIST THE FORCES AND WEIGHT SPECIFIED FOR EACH COMPONENT IN ADDITION TO ALL OTHER LOADS. PROVIDE AND DESIGN SUPPLEMENTARY MEMBERS AS REQUIRED.
   - B. THAT THE ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY SLAB EDGES OR OPENINGS.
   - C. THAT THE ANCHORS ARE LOCATED AT AN ADEQUATE DISTANCE FROM ANY NEW OR EXISTING ANCHORS. THE SPACING SHOWN IN THE TEST VALUES TABLE ON THIS PAGE IS THE REQUIRED SPACING FROM ANCHORS OF OTHER DIAMETERS AND EMBEDMENTS WILL VARY.
   - D. THAT THE INSTALLATION IS IN CONFORMANCE WITH THE 2019 CBC AND WITH THE DETAILS SHOWN IN THIS PRE–APPROVAL.
   - E. THAT THE ACTUAL EQUIPMENT'S WEIGHT, CENTER OF GRAVITY (CG) LOCATION, ANCHOR LOCATIONS, ANCHOR DETAILS, AND THE MATERIAL AND GAGE OF THE EQUIPMENT WHERE ATTACHMENTS ARE MADE, AGREE WITH THE INFORMATION SHOWN ON THE PRE–APPROVAL DOCUMENTS.

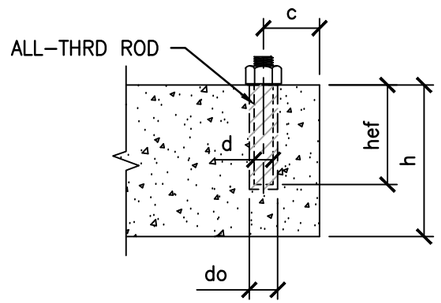
3A. EXPANSION ANCHORS INSTALLED IN NORMAL WEIGHT OR SAND–LIGHTWEIGHT CONCRETE SHALL BE STAINLESS STEEL HILTI KB–TZ EXPANSION ANCHORS COMPLYING WITH ICC–ES ESR–1917 REISSUED MAY 2019. ADHESIVE ANCHORS INSTALLED IN NORMAL WEIGHT CONCRETE SHALL BE ASTM F593 CW1 (316) INSTALLED USING HILTI HIT–RE 500 V3 ADHESIVE COMPLYING WITH ICC–ES ESR–3814 REVISED APRIL 2019.

B. INSTALLATION: INSTALL THE POST–INSTALLED DRILLED–IN CONCRETE ANCHORS IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN THE ICC EVALUATION REPORT FOR THE SPECIFIC ANCHOR AND THE PARAMETERS GIVEN IN THE TABLES ON THIS PAGE.

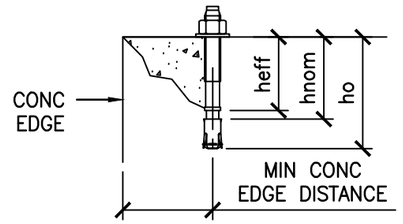
C. TESTING:

- JOB TESTING: FOR VERIFYING SATISFACTORY INSTALLATION WORKMANSHIP, PERFORM JOB SITE TESTING IN ACCORDANCE WITH THE TEST LOAD TABLE PROVIDED IN THIS DOCUMENT. TEST 50% OF THE INSTALLED ANCHORS. FOR TENSION TESTING, THE TEST LOAD MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY MEASURE THE TENSION IN THE ANCHOR SUCH AS DIRECT PULL WITH A HYDRAULIC JACK OR CALIBRATED SPRING LOADING DEVICES. FOR TORQUE TESTING, THE TEST LOAD SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. ALL TESTS SHALL BE CONDUCTED IN THE PRESENCE OF THE INSPECTOR OF RECORD. IF ANY ANCHOR FAILS THE TEST, TEST ALL ANCHORS. THE TEST SHALL BE PERFORMED 24 HOURS OR MORE AFTER INSTALLATION. TESTING MAY BE DONE PRIOR TO EQUIPMENT INSTALLATION. ALSO REFER TO CBC 1910A.5.5 "TESTS FOR POST–INSTALLED ANCHORS IN CONCRETE".
- FAILURE/ACCEPTANCE CRITERIA: THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
  - •• HYDRAULIC RAM METHOD: APPLY AND HOLD TEST LOAD FOR A MINIMUM OF 15 SECONDS. THE ANCHOR SHOULD HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD WHERE WASHERS ARE USED. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE OR BY A CONTINUOUS LOSS OF JACKING PRESSURE.
  - •• TORQUE WRENCH METHOD (EXPANSION ANCHORS ONLY): THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS: WEDGE TYPE: ONE–HALF (½) TURN OF THE NUT.

D. TEST VALUES: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT.



ADHESIVE ANCHOR
(THRD ROD / REINFORCING BAR)



MECHANICAL ANCHOR

POST–INSTALLED ADHESIVE ANCHOR SCHED

CONDITION OF ANCHORAGE	ANCHOR TYPE & DIA (INCH) d	HOLE DIA (INCH) do	EFFECTIVE EMBED (INCH) hef	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH) c	MIN AB SPCG UNO (INCH)	TENSION TEST LOAD (LBS)
CASE 2	½"ø HILTI HAS–R (ASTM F593 CW1 316 SS) ALL–THRD ROD	0.5625	2.75	4	12	6.75	2590

POST–INSTALLED MECHANICAL ANCHOR SCHED

CONDITION OF ANCHORAGE	ANCHOR TYPE & DIA (INCH)	INSTALLATION EMBED (INCH) hnom	EFFECTIVE EMBED (INCH) heff	HOLE DEPTH (INCH) ho	MIN CONC THICKNESS (INCH) h	MIN CONC EDGE DISTANCE (INCH)	MIN AB SPCG UNO (INCH)	TEST LOAD	
								TENSION LOAD (LBS)	TORQUE (FT–LBS)
CASE 1	KB–TZ 304 SS 0.375"ø	2.3125	2.00	2.625	SEE DTLS	12	6.75 PARALLEL TO MTL DECK FLUTES	1350	25

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SHEET TITLE: GENERAL NOTES

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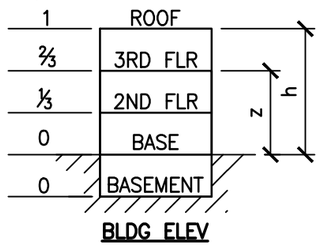
GENERAL NOTES CONTINUED:

4. TWO (2) CONDITIONS OF SUPPORTS & ATTACHMENTS ARE SPECIFIED AND PRESENTED IN THIS PRE-APPROVAL:



BLDG ELEV

CASE 1: SUPPORTS & ATTACHMENTS DTLS LOCATED AT UPPER FLRS ABV THE BASE OF A BLDG (z/h <= 1.0), IT IS ASSUMED THAT THE FLRS ARE BUILT OF A MIN 3¼" NWC OR SLWC TOPPING OVER MTL DECK (f'c = 3000 PSI, MIN).

CASE 2: SUPPORTS & ATTACHMENTS DTLS LOCATED AT OR BLW THE BASE OF A BLDG (z/h = 0). THE FLRS ARE ASSUMED TO BE BUILT OF A MIN 4" NWC SLAB (f'c = 3000 PSI, MIN).

5. THIS PRE-APPROVAL MAY BE USED AT ANY GEOGRAPHICAL LOCATION IN THE STATE OF CALIFORNIA WHERE S_{DS} IS LESS THAN OR EQ TO 2.49.
6. COORDINATE THE ANCHOR BOLT LAYOUT WITH THE COMPONENT IN THE FIELD PRIOR TO SETTING ANCHOR BOLTS.
7. ANCHOR BRACKETS SHALL BE PAINTED WITH A RUST INHIBITIVE PRIMER FOLLOWED BY A COLOR COAT SELECTED BY THE HOSPITAL FACILITY OR MATCH THE COLOR OF THE BASE OF THE EQUIP IF A COLOR IS NOT SPECIFIED BY THE HOSPITAL.
8. FASTENERS AND ASSOCIATED HARDWARE SHALL BE FIELD PAINTED TO MATCH BRACKETS AFTER INSTALLATION IS COMPLETE.
9. STRUCTURAL STEEL SHAPES AND CONNECTORS SHALL CONFORM TO THE FOLLOWING, UNO:
   A. PLATES, ANGLES, BARS & MISCELLANEOUS SHAPES ..... ASTM A36
   B. PLATES AS NOTED ..... ASTM A572 GR 50
   C. MACHINE BOLTS ..... ASTM A307
10. UNIT COMPONENTS, TRACK SUPPORTS AND INTER-CONNECTION OF THE COMPONENTS TO BE PROVIDED BY ABBOTT. CONTRACTOR SHALL FURNISH AND INSTALL THE SEISMIC SUPPORTS AND ATTACHMENTS (INCLUDING SEISMIC BRACKETS, EXPANSION ANCHORS, THRU-BOLTS, STRUT PLATES BELOW SLABS, HIGH STRENGTH BOLTS, ETC.) IN CONJUNCTION WITH COMPONENT SETTING INSTRUCTIONS FROM ABBOTT FIELD INSTALLATION PERSONNEL.
11. DRAWING SCALES ARE NOT PROVIDED. DO NOT SCALE OFF OF THESE DRAWINGS. THE INTENT OF THESE DRAWINGS IS TO SHOW HOW TO FABRICATE THE SEISMIC BRACKET TO ANCHOR THE EQUIPMENT SPECIFIED. THE REPRESENTATIONS OF THE EQUIPMENT ARE ONLY INTENDED TO SHOW THE COORDINATION WITH THE SEISMIC BRACKETS.
12. BOLTS THROUGH CONCRETE ON METAL DECK:
   A. BOLTS SHALL BE TORQUED BY ¾ TURN OF THE NUTS AFTER SNUG TIGHT (THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS REQUIRED TO BRING THE CONNECTED PLIES INTO FIRM CONTACT) CONDITION IS ACHIEVED, UNO.
   B. THRU BOLT HOLES SHALL BE 1/16" LARGER THAN BOLT SIZE (HOLE SIZE = BOLT SIZE + 1/16").
   C. THRU BOLTS IN CONCRETE SHALL RECEIVE SPECIAL INSPECTION & TESTING (THRU BOLTS WITH STEEL-TO-STEEL CONNECTION IN TENSION DO NOT REQUIRE TESTING) IN ACCORDANCE WITH REQUIREMENTS FOR POST-INSTALLED ANCHORS.
13. TAKE CARE TO AVOID DAMAGING REBAR OR POST-TENSIONING TENDONS WHEN INSTALLING ANCHORS TO CONCRETE.

GENERAL NOTES CONTINUED:

14. DRY BOLT AND NUT INSTALLATION TORQUES SHALL BE AS FOLLOWS:

BOLT OR NUT DIA	TORQUE (FT-LBS)
M5	5
M8	8
M10	15
M16	67
M20	136
0.25"	10
0.50"	40

THESE VALUES DO NOT APPLY TO POST-INSTALLED CONCRETE ANCHORS.

15. FUTURE ALTERATIONS TO TRACK SYSTEMS, INCLUSIVE OF BUT NOT LIMITED TO TRACK AND TRACK COMPONENTS, TRACK MODULES AND OTHER INSTRUMENTS ATTACHED TO THE TRACK SYSTEM MUST BE REVIEWED BY OSHPD.

WELDING NOTES:

1. WELDING OF SEISMIC BRACKETS SHALL BE PERFORMED BY CERTIFIED WELDERS USING E70XX ELECTRODES (UNO). THE USE OF E70-T4 WELDING WIRE IS NOT ALLOWED FOR ANY APPLICATION. WELDS SHALL BE IN CONFORMITY WITH THE STRUCTURAL WELDING CODE-STEEL OF THE AMERICAN WELDING SOCIETY (AWS D1.1-15). SUBMIT WELDING PROCEDURES AND SPECIFICATIONS TO OWNER'S TESTING LABORATORY FOR REVIEW AND APPROVAL PRIOR TO BEGINNING SEISMIC BRACKET FABRICATION.
2. WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN AISC 360-16, SECTION J2.2b.

DESIGN CRITERIA

DESIGN OF SUPPORTS & ATTACHMENTS FOR ALL EQUIP COMPONENTS IS PER 2019 CBC

ASCE 7-16 TABLE 13.6-1
OTHER MECHANICAL OR ELECTRICAL COMPONENTS (EXCEPT XN-9000 DOUBLE ROBOT CASE 2)

S_{DS} = 2.5

I_p = 1.5

a_p = 1.0

R_p = 1.5

Ω_o = 1.5

W_P AS NOTED ON COMPONENT BASE PLAN & ELEV. SEE PG 7.

SEISMIC LOADS FOR CASE 1 – UPPER FLRS ABV THE BASE, z/h <= 1.0 (LRFD)

$F_p = 3.00\ W_p$

$F_v = 0.50\ W_p$

SEISMIC LOADS FOR CASE 2 – SLAB AT OR BLW BASE, z/h = 0 (LRFD)

$F_p = 1.12\ W_p$

$F_v = 0.50\ W_p$

XN-9000 DOUBLE ROBOT: S_{DS} = 2.3

$F_p = 1.04\ W_p$ $F_v = 0.46\ W_p$

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SHEET TITLE: GENERAL NOTES & DESIGN CRITERIA

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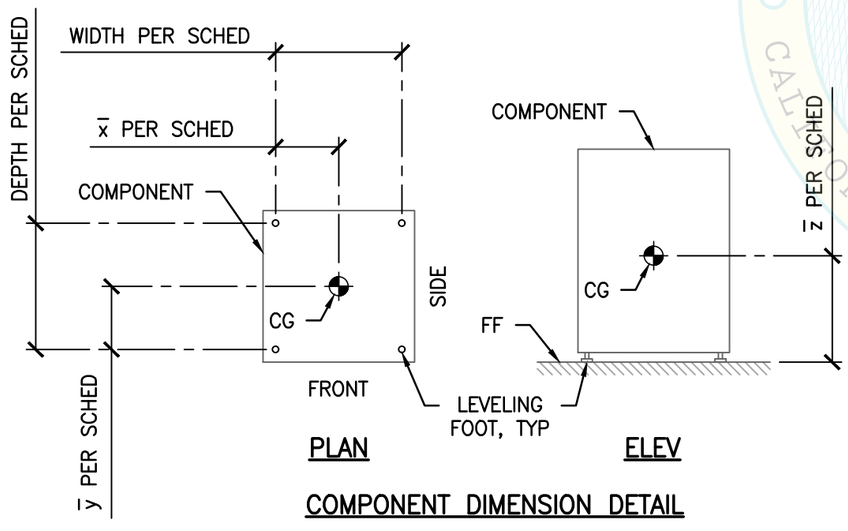
COMPONENT DIMENSIONS SCHED:

	NO.	COMPONENT	LEVELING FOOT DIMS		CG LOCATION			OP WT (W_p)	PG
			WIDTH	DEPTH	$\bar{x}$	$\bar{y}$	$\bar{z}$		
STAGO STA-R INTERFACE		TYPICAL TRACK MODULE(2)	90" MAX	11.50"	MIDSPAN	5.75"	26.9"	165#	7,8
	1.	ROBOT MODULE	N/A	N/A	7.32"	3.27"	2.56"	33#	11
	2.	ELECTRICAL CONTROL PANEL	5.3"	14.7"	7.35"	2.65"	10.5"	11#	12
SYSMEX XN-9000 INTERFACE	3.	OUTPUT LOADER MODULE	24.80"	18.11"	13.34"	5.89"	24.06"	62#	13
	4.	RETURN LANE(4)	46.5" MAX	5.7"	MIDSPAN	2.56"	27.36"	9 PLF	14
	5.	INPUT LOADER MODULE	22.83"	18.11"	7.72"	11.33"	30.03"	84#	15
	6.	DOUBLE ROBOT MODULE	20.87"	41.77"	7.13"	20.79"	29.33"	374#	17

NOTES:

1. SEE COMPONENT DIMENSION DTL FOR MORE INFO.
2. COMPONENT OP WT (Wp) INCLUDES WT OF TWO TOP TRACKS, BOTT TRACK, & TWO SUPPORT FRAMES AS SHOWN ON PG 7.
3. THE DIMS FURNISHED ABV ARE NOT INTENDED TO BE USED TO LAYOUT THE COMPONENTS. THIS INFORMATION IS BEING FURNISHED FOR USE BY THE SEOR.
4. FRAMES FOR RETURN LANE WEIGH APPROXIMATELY 7 LBS EA. WT IN TABLE IS FOR RETURN LANE ONLY.



COMPONENT DIMENSION DETAIL

ABBREVIATIONS:

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ADJ	ADJACENT
AISC	AMERICAN INSTITUTE FOR STEEL CONSTRUCTION
ALUM	ALUMINUM
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASD	ALLOWABLE STRENGTH DESIGN
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLDG	BUILDING
BLW	BELOW
BOTT	BOTTOM
CBC	CALIFORNIA BUILDING CODE
CG	CENTER OF GRAVITY
CJP	COMPLETE JOINT PENETRATION
CLR	CLEAR OR CLEARANCE
CLSE	CALIFORNIA LICENSED STRUCTURAL ENGINEER
℄	CENTERLINE
CONC	CONCRETE
CONN	CONNECTION
COORD	COORDINATE
CTR	CENTER
DBL	DOUBLE
DIA (ø)	DIAMETER
DIM	DIMENSION
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING CONDITION
EA	EACH
EE	EACH END
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
f'_c	MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE
FF	FINISHED FLOOR
FLG	FLANGE
FLR	FLOOR
FRMG	FRAMING
FT (')	FOOT/FEET
F_y	SPECIFIED YIELD STRENGTH OF REINFORCING, PSI OR SPECIFIED MINIMUM YIELD STRESS OF STEEL, KSI
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
ICC	INTERNATIONAL CODE COUNCIL
IN (")	INCH
INFO	INFORMATION
KSI	KIPS PER SQUARE INCH
L	LENGTH
LBS	POUNDS
LRFD	LOAD & RESISTANCE FACTOR DESIGN
LFRS	LATERAL FORCE RESISTING SYSTEM
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
NO. (#)	NUMBER OR POUNDS
NTS	NOT TO SCALE
NS&FS	NEAR SIDE & FAR SIDE
NWC	NORMAL WEIGHT CONCRETE
OPG	OPENING
OP WT	OPERATING WEIGHT
OSHPD	OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
PG(S)	PAGE(S)
ℙ	PLATE
PLF	POUNDS PER LINEAL FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REQ	REQUIRED
SC	SLIP-CRITICAL
SCHED	SCHEDULE
SEOR	STRUCTURAL ENGINEER OF RECORD
SIM	SIMILAR
SLWC	SAND LIGHT WEIGHT CONCRETE
SOG	SLAB ON GRADE
SPCG	SPACING
SQ	SQUARE
SS	STAINLESS STEEL
STIFF	STIFFENER
STL	STEEL
T&B	TOP & BOTTOM
TEMP	TEMPORARY
THRD	THREAD OR THREADED
T_{max}	MAXIMUM TENSION DUE TO SEISMIC FORCE
TOC	TOP OF CONCRETE
Tu	ANCHORAGE TENSION REACTION DUE TO SEISMIC FORCE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	ANCHORAGE SHEAR REAC
VERT	VERTICAL
V_{max}	MAXIMUM SHEAR DUE TO SEISMIC FORCE
Vu	ANCHORAGE SHEAR REACTION DUE TO SEISMIC FORCE
W/	WITH
W_p	COMPONENT SELF-WEIGHT
WF	WEIGHT

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SHEET TITLE: COMPONENT DIMENSIONS SCHEDULE & ABBREVIATIONS

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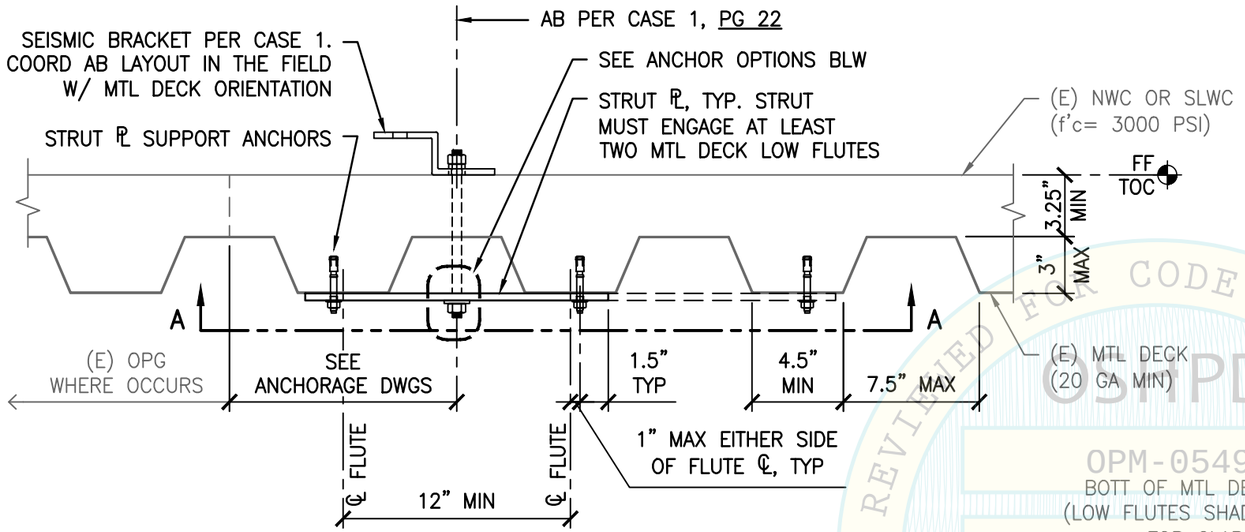
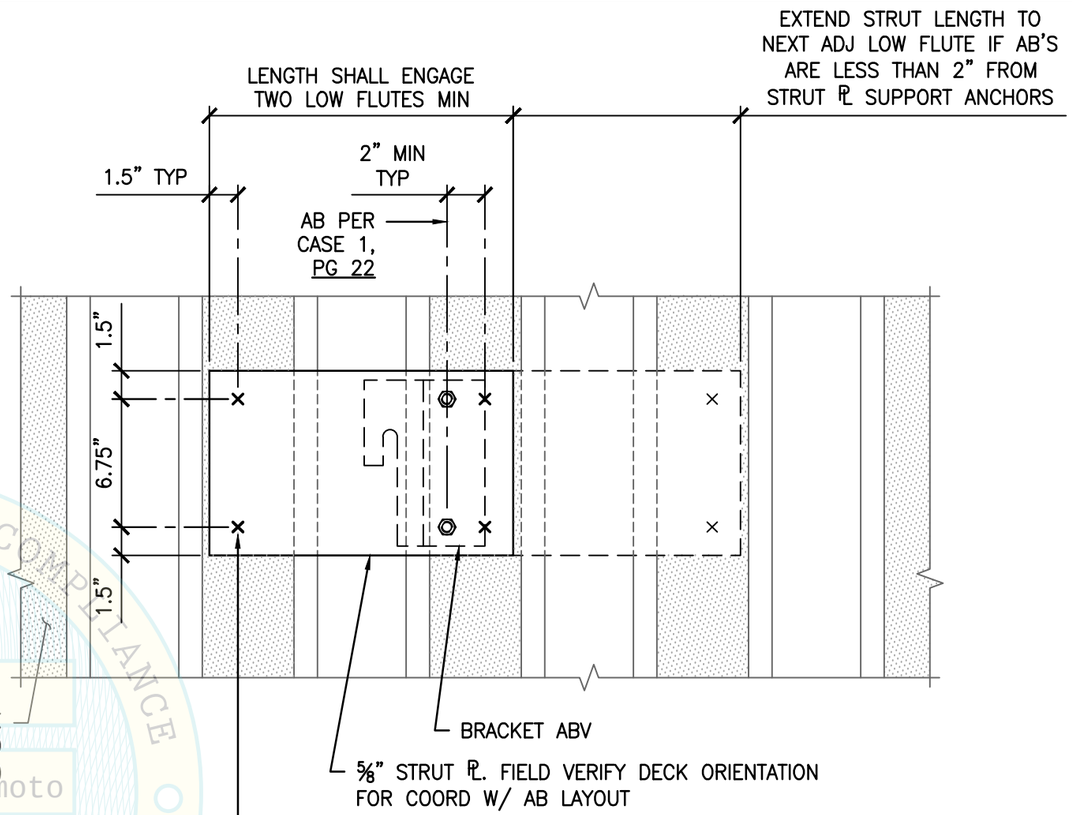
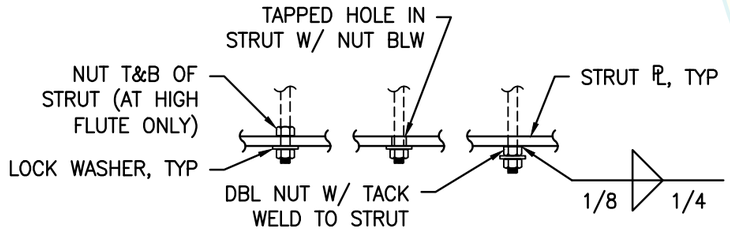




SECTION A–A



ANCHOR OPTIONS

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SHEET TITLE: TYPICAL STRUT DETAILS

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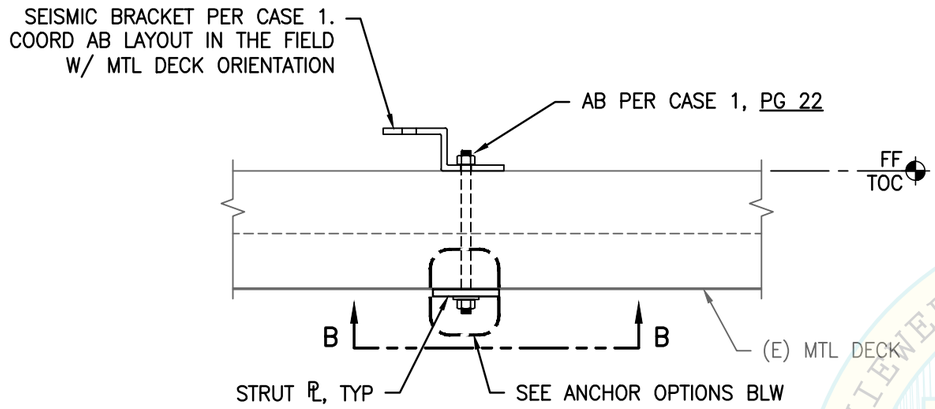
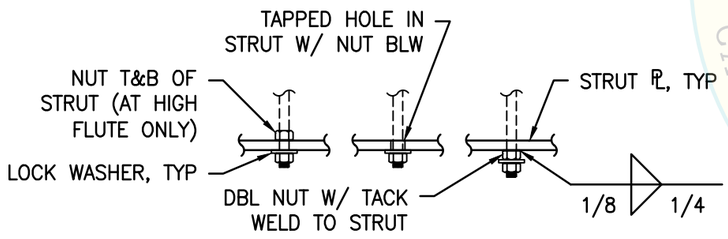
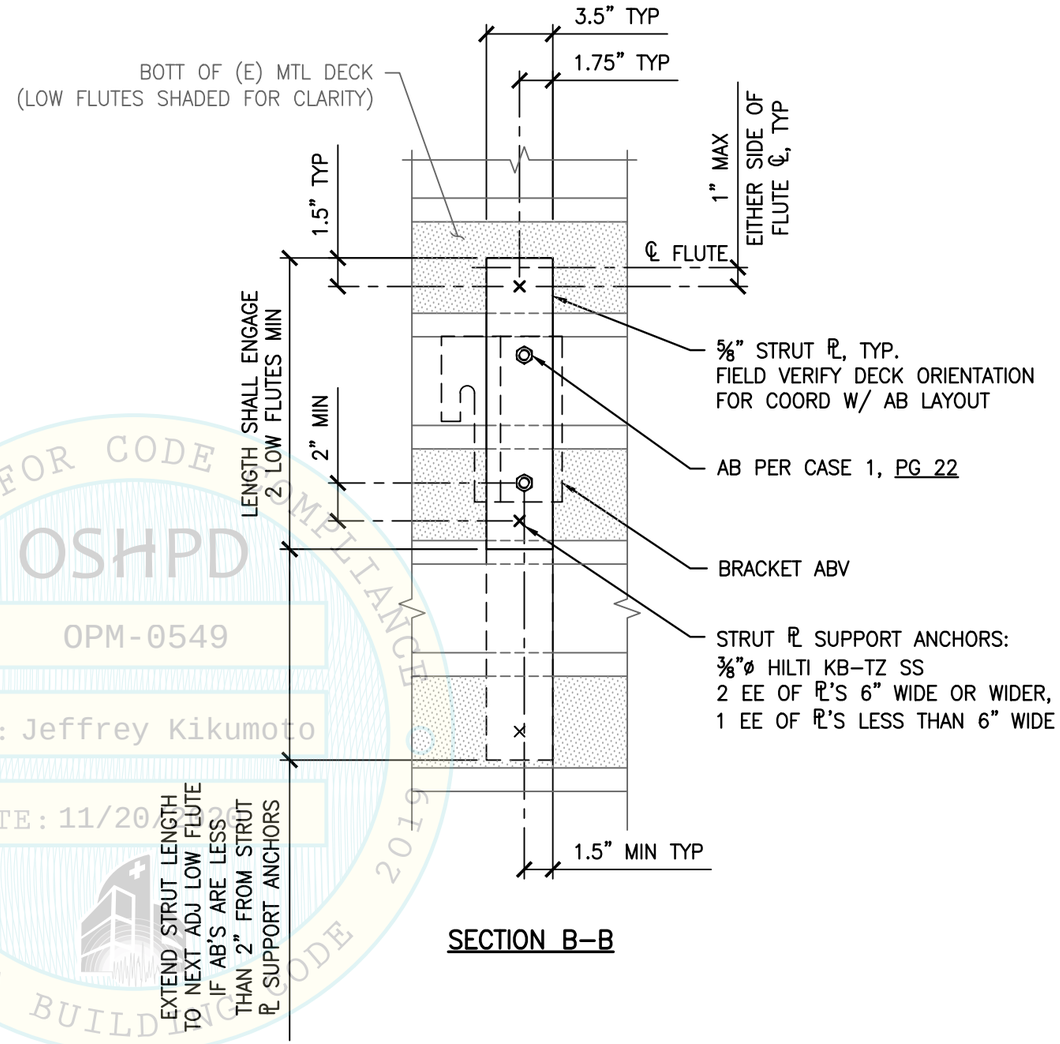


NOTE:
STIFF ℄ NOT SHOWN
FOR CLARITY.



ANCHOR OPTIONS



SECTION B-B

SHEET TITLE: TYPICAL STRUT DETAILS

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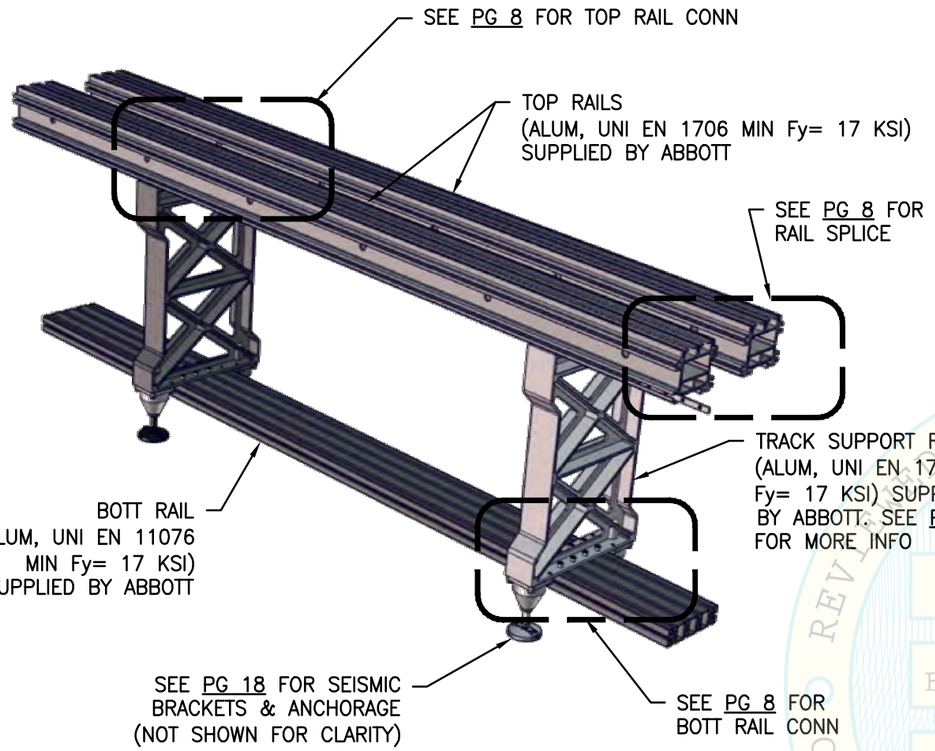
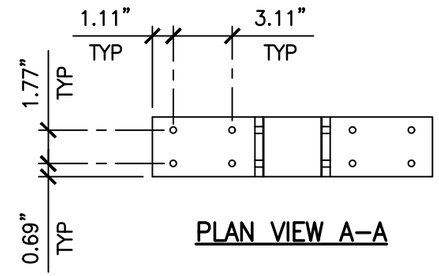
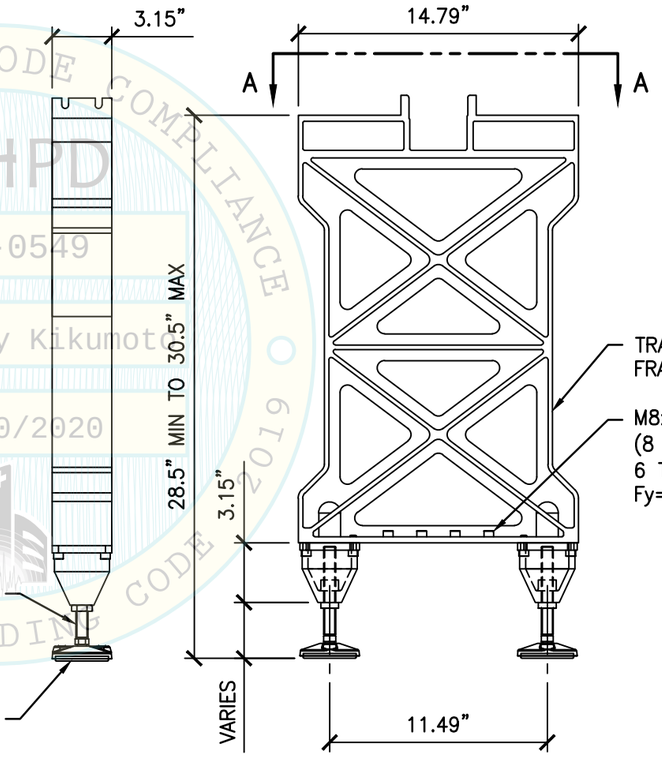


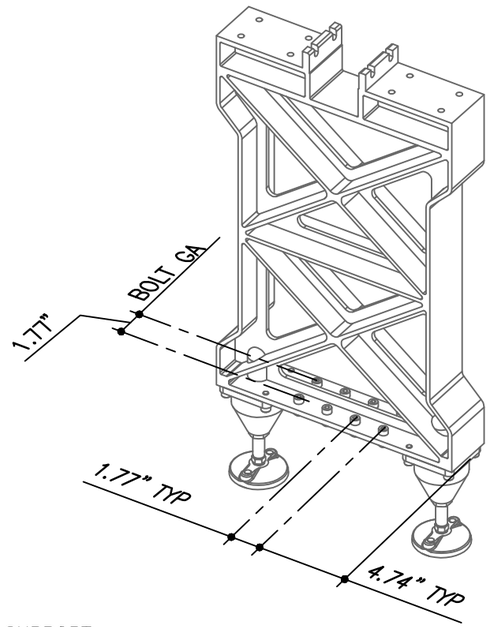


PLAN VIEW A–A



SIDE VIEW

ELEV VIEW



ISOMETRIC VIEW

NOTES:
1. MAX OPERATING WT Wp= 165 LBS INCLUDING SUPPORT FRAMES, T&B RAIL, TRACK, COVERS, ETC.
2. COMPONENT SUB–ASSEMBLY CONNECTIONS SHALL BE PERFORMED BY ABBOTT, NOT BY THE GC.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

TRACK SUPPORT FRAME

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
TYPICAL TRACK MODULE

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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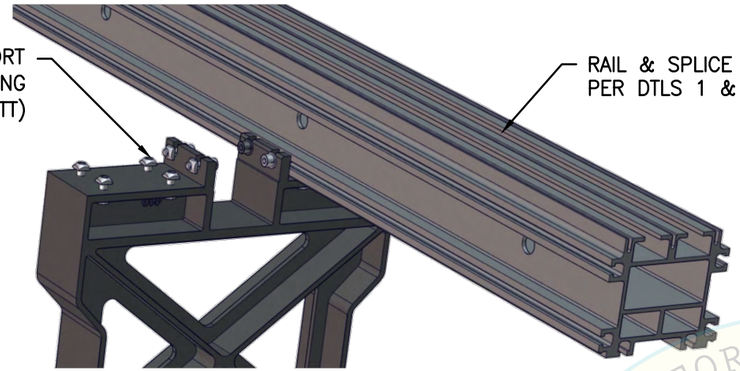
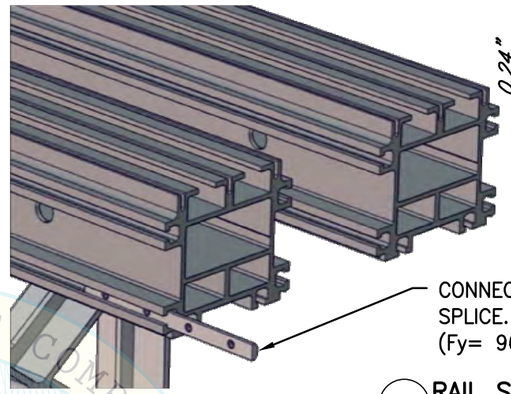
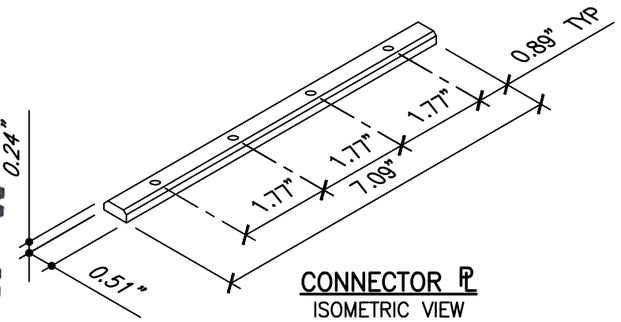


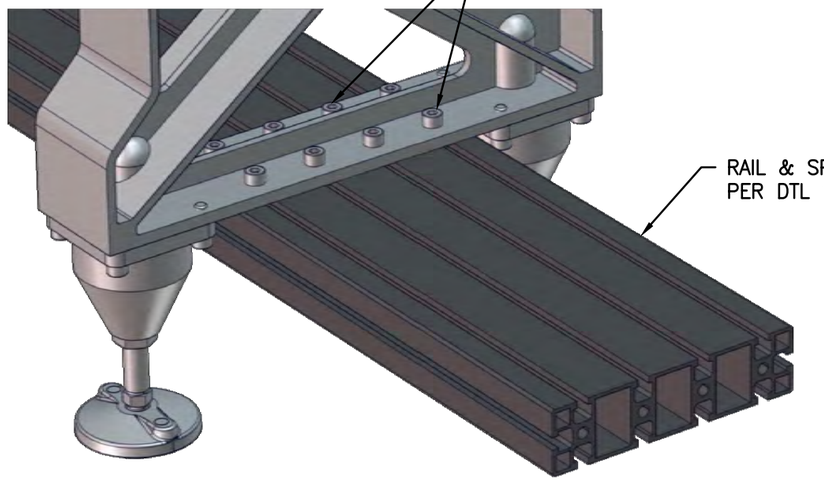
TOP RAIL CONN



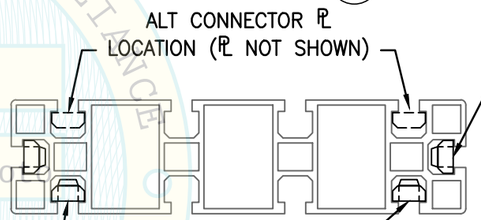


CONNECTOR ℄
ISOMETRIC VIEW

1 RAIL SPLICE DETAIL

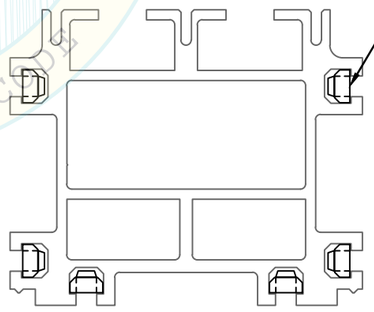


BOTT RAIL CONN



CONNECTOR ℄ (STL, Fe 37 GALV MIN Fy= 36 KSI), TYP OF 4 AT BOTT RAIL
SECTION PROPERTIES:
A= 0.1070 IN^2; S= 0.00353 IN^3; I= 0.000454 IN^4
TWO CONNECTOR ℄'S ARE REQ AT ES OF THE RAIL IN ANY OF THE 3 LOCATIONS.

2 BOTT RAIL DETAIL



CONNECTOR ℄ (STL, Fe 37 GALV MIN Fy= 36 KSI), TYP OF 6 AT TOP RAIL
SECTION PROPERTIES:
A= 0.1070 IN^2; S= 0.00353 IN^3;
I= 0.000454 IN^4

3 TOP RAIL DETAIL

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
TYPICAL TRACK MODULE

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TEL (916) 920-2020
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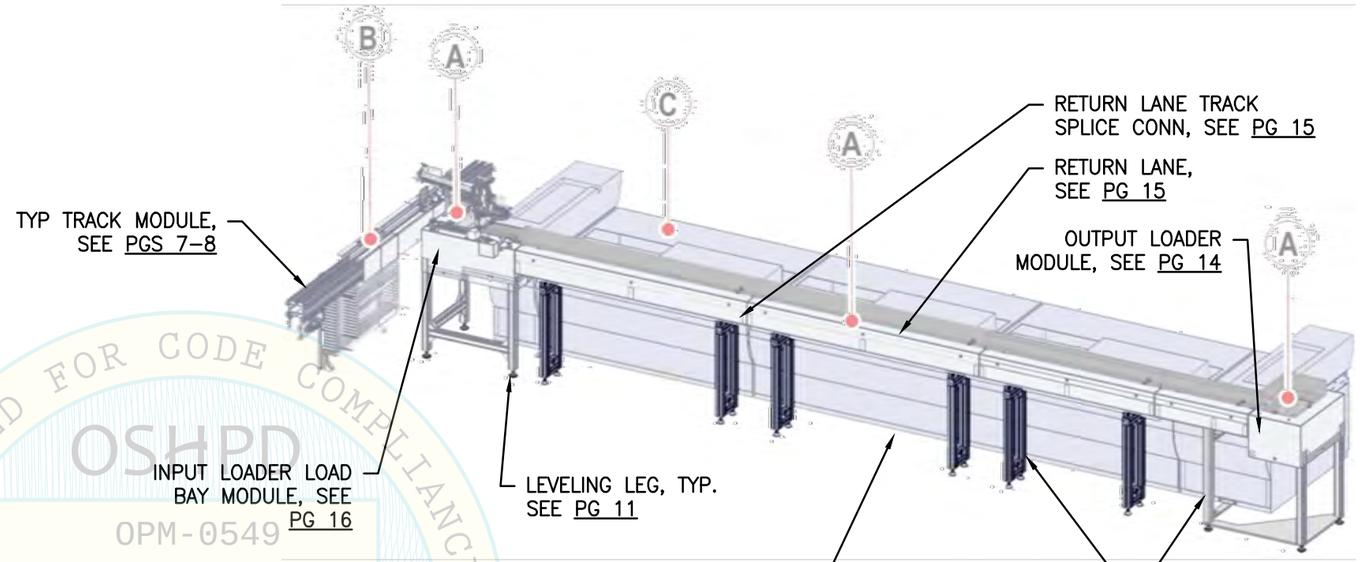

NOTES:

1. COMPONENTS ARE SHOWN ONLY TO DESCRIBE THE INTERFACE SYSTEMS. NUMBER & LOCATION OF COMPONENTS MAY VARY BASED ON SITE SPECIFIC NEEDS.
2. COMPONENT SUB–ASSEMBLY CONNS SHALL BE SUPPLIED & PERFORMED BY ABBOTT, NOT BY THE GENERAL CONTRACTOR.
3. SEE PG 4 FOR COMPONENT UNIT WTS & DIMS.
4. CLADDING PANELS NOT SHOWN FOR CLARITY.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
XN-9000 INTERFACE W/ INPUT LOADER LOAD BAY MODULE

ABBOTT LABORATORIES
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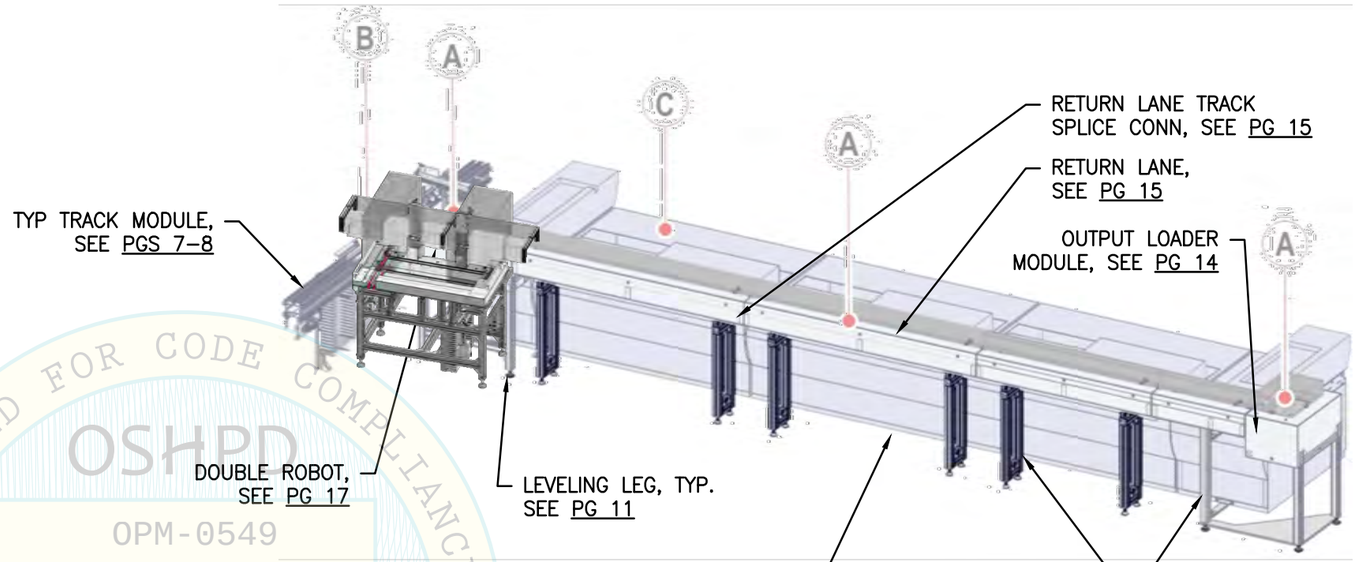

NOTES:

1. COMPONENTS ARE SHOWN ONLY TO DESCRIBE THE INTERFACE SYSTEMS. NUMBER & LOCATION OF COMPONENTS MAY VARY BASED ON SITE SPECIFIC NEEDS.
2. COMPONENT SUB–ASSEMBLY CONNS SHALL BE SUPPLIED & PERFORMED BY ABBOTT, NOT BY THE GENERAL CONTRACTOR.
3. SEE PG 4 FOR COMPONENT UNIT WTS & DIMS.
4. CLADDING PANELS NOT SHOWN FOR CLARITY.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
XN-9000 INTERFACE W/ DOUBLE ROBOT

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

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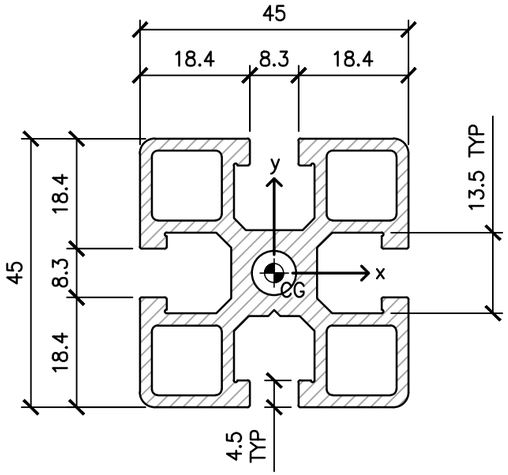
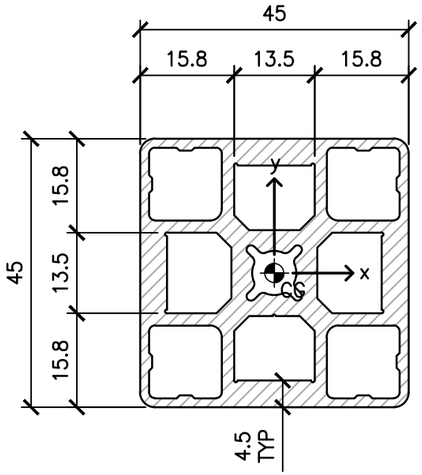
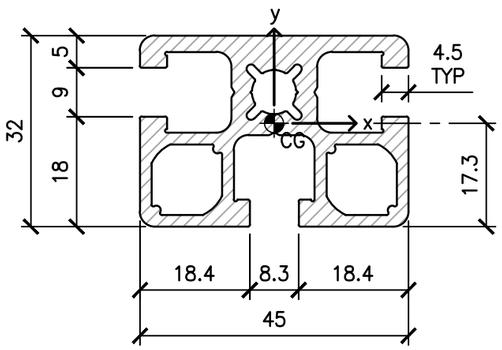


45x45 OPEN PROFILE



45x45 CLOSED PROFILE



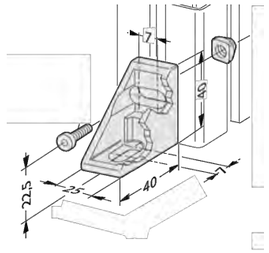
32x45 OPEN PROFILE

EXTRUDED ALUM PROFILE SECTION PROPERTIES:

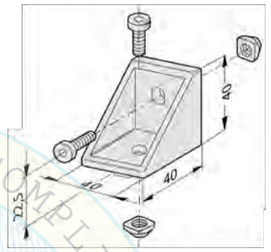
PROFILE	A (MM^2)	Sx (MM^3)	Sy (MM^3)	Ix (MM^4)	Iy (MM^4)
45x45 OPEN FRAME	721	5.88	5.88	13.25	13.25
32x45 OPEN FRAME	533	3.55	4.28	5.80	8.70
45x45 CLOSED FRAME	585	5.20	5.20	11.73	11.73

EXTRUDED ALUM PROFILE CROSS SECTIONS

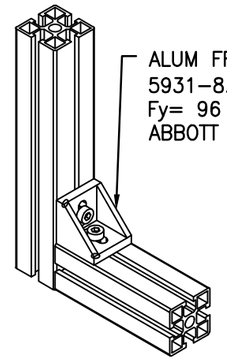
NOTES:
1. ALL DIMS SHOWN W/ OUT UNITS ARE IN MM.
2. ATTACHMENTS TO FRMG USING M8 UNI 5931–8.8 BOLTS W/ SPRING NUTS, TYP. Fy= 96 KSI MIN. INSTALL TORQUE 8 FT–LBS. ATTACHMENT BY ABBOTT.
3. MATERIAL: ALUM EN AW–6060–T5 Fy= 14.5 KSI (100 Nmm^2) MIN



25x40x40 FRMG BRACKET DETAIL



40x40x40 FRMG BRACKET DETAIL



TYP ALUM FRMG BRACKET DETAIL

TYP LEVELING LEG CONN DETAIL

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
XN-9000 SUBCOMPONENTS TYPICAL CONNECTIONS

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

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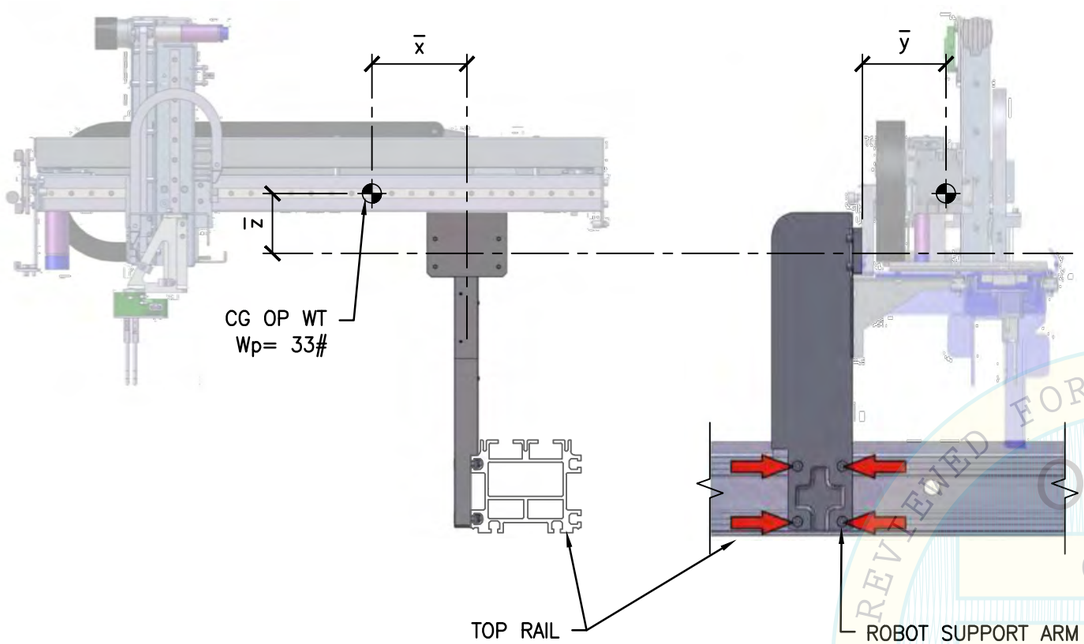
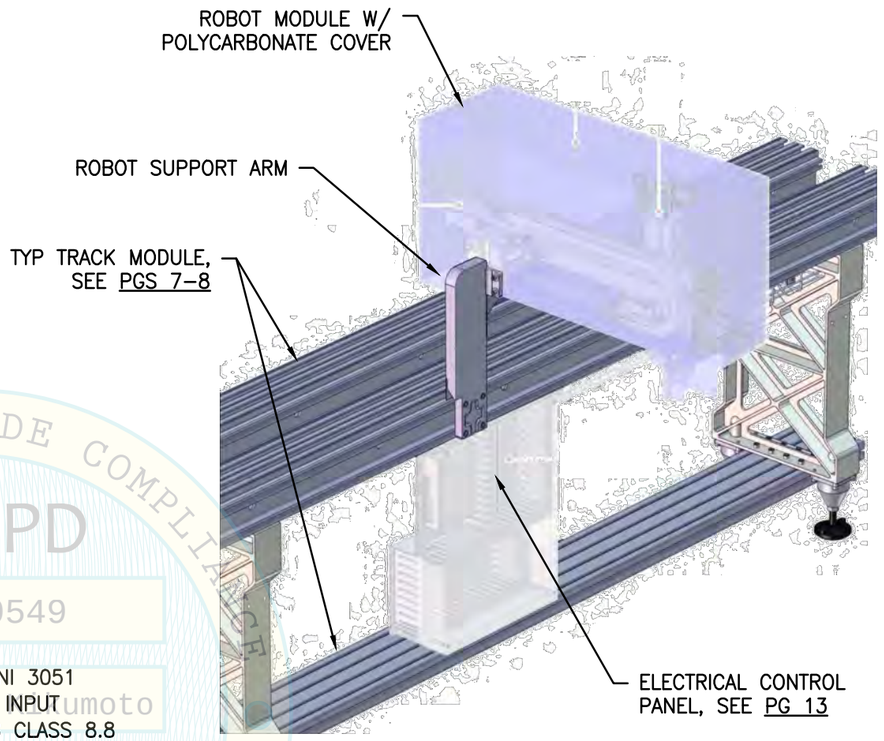


SIDE ELEV

FRONT ELEV

ROBOT ARM ATTACHMENT



NOTE:
STAGO STA-R MODULE NOT SHOWN
FOR CLARITY (NOT PART OF THIS OPM)

NOTES:

1. COMPONENTS ARE SHOWN ONLY TO DESCRIBE THE INTERFACE SYSTEMS. NUMBER & LOCATION OF COMPONENTS MAY VARY BASED ON SITE SPECIFIC NEEDS.
2. COMPONENT SUB-ASSEMBLY CONNS SHALL BE SUPPLIED & PERFORMED BY ABBOTT, NOT BY THE GENERAL CONTRACTOR.
3. SEE PG 4 FOR COMPONENT UNIT WTS & DIMS.
4. CLADDING COVER PANELS NOT SHOWN FOR CLARITY.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
STAGO STA-R INTERFACE & TYPICAL CONNECTIONS

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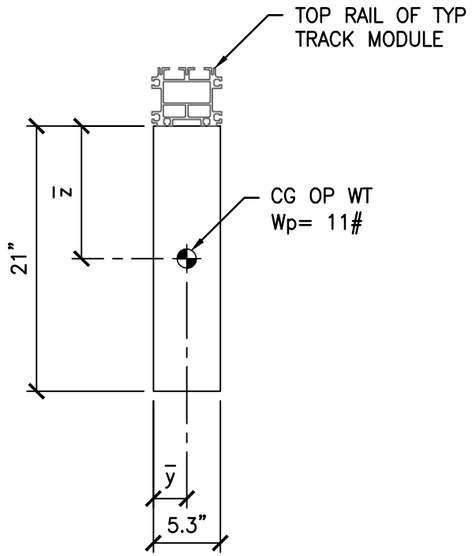
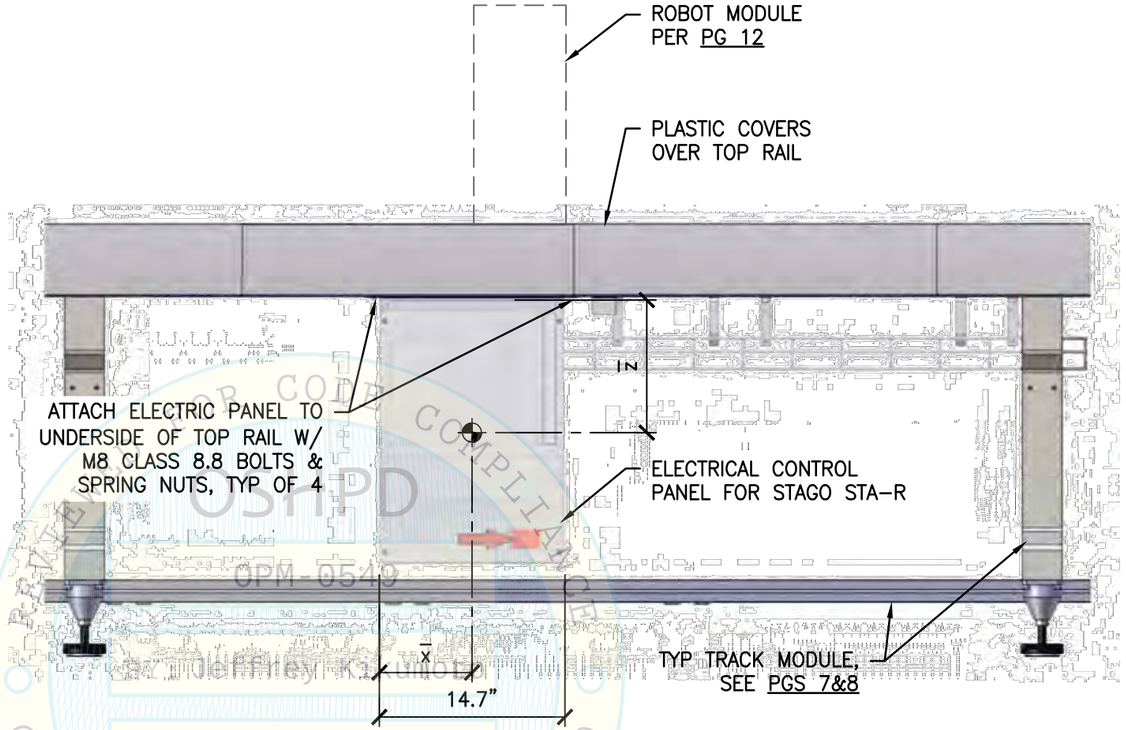


SIDE ELEV



FRONT ELEV

NOTE:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4. IN SCHED, $\bar{z}$ IS HT OF CG ABV FLR.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
COMPONENT 1: ELECTRICAL CONTROL PANEL

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ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

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SACRAMENTO, CA 95833
TEL (916) 920-2020
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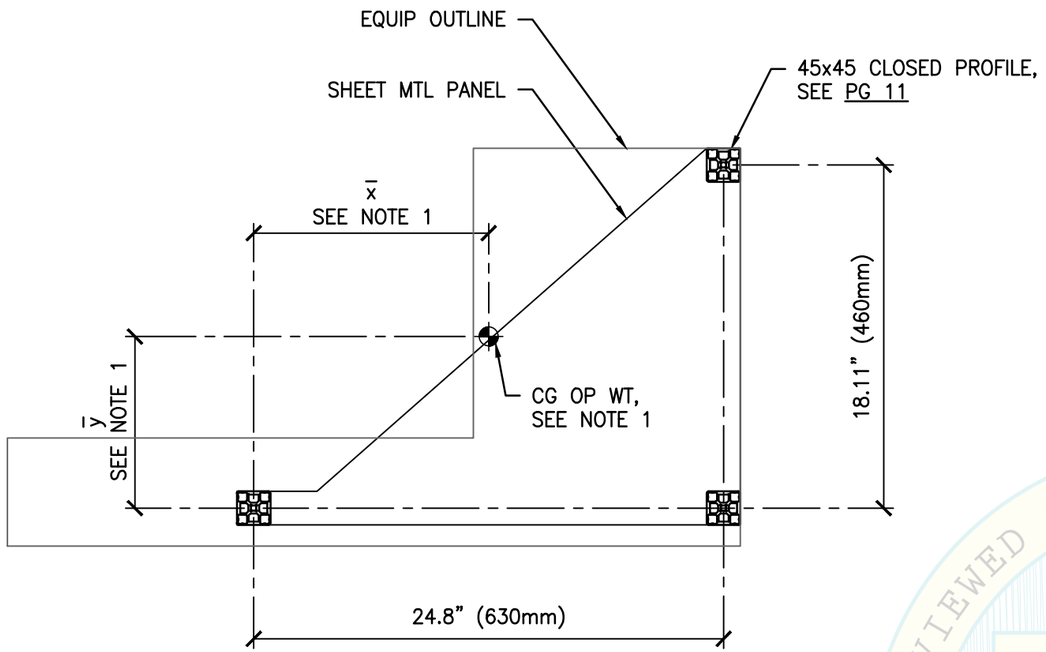
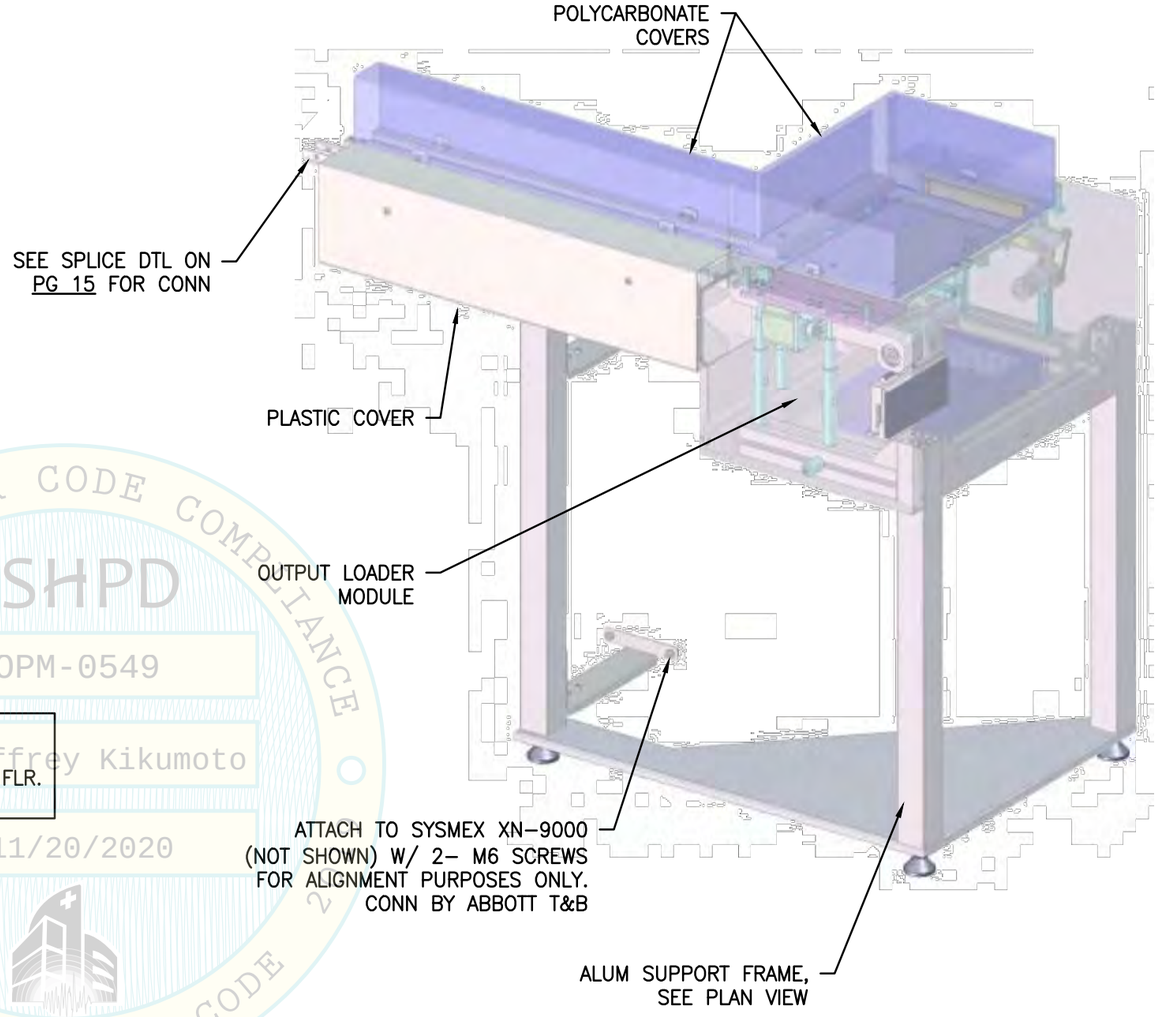


PLAN VIEW
AT BASE

NOTES:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4. IN SCHED, $\bar{z}$ IS HT OF CG ABV FLR.
2. SEE PG 11 FOR EXTRUDED ALUM FRAME DTLS.



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
COMPONENT 2: OUTPUT LOADER MODULE

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
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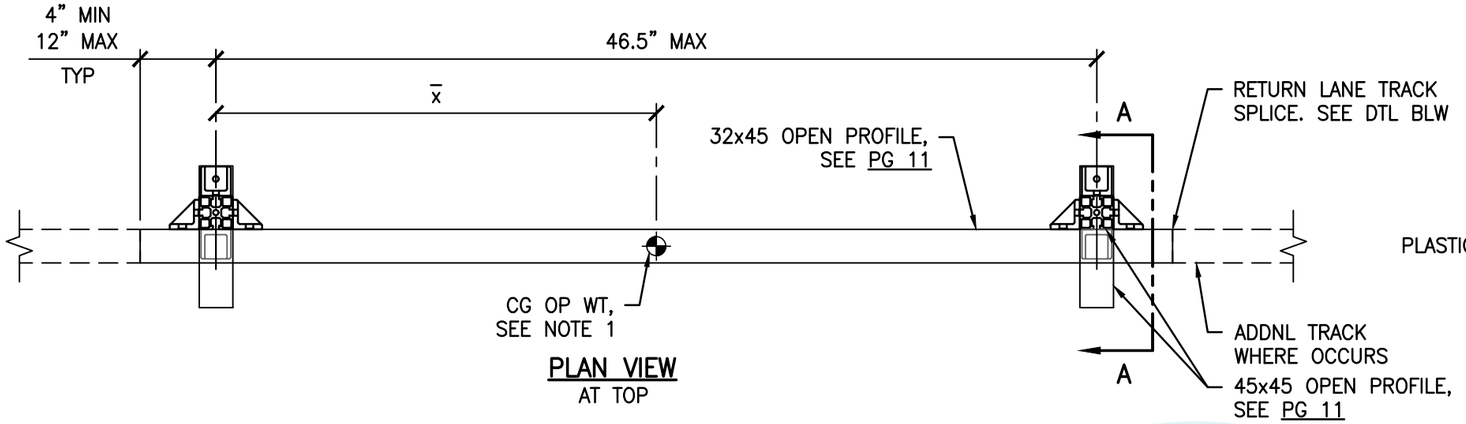
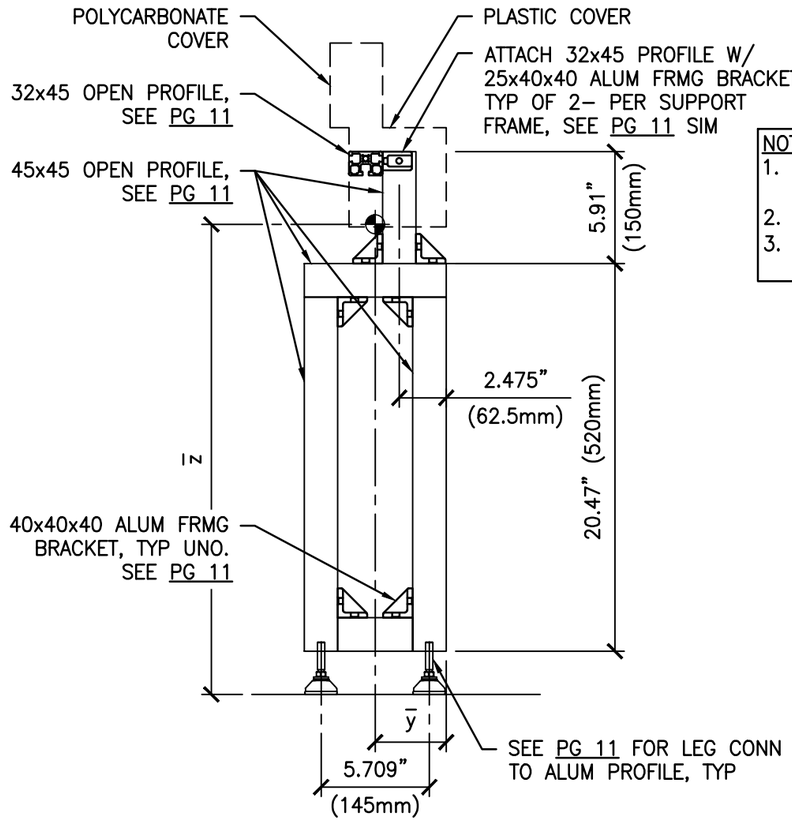
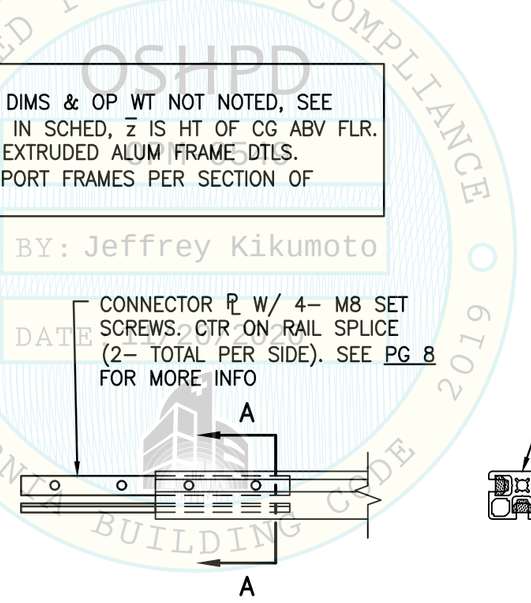


PLAN VIEW
AT TOP



SIDE ELEV A–A

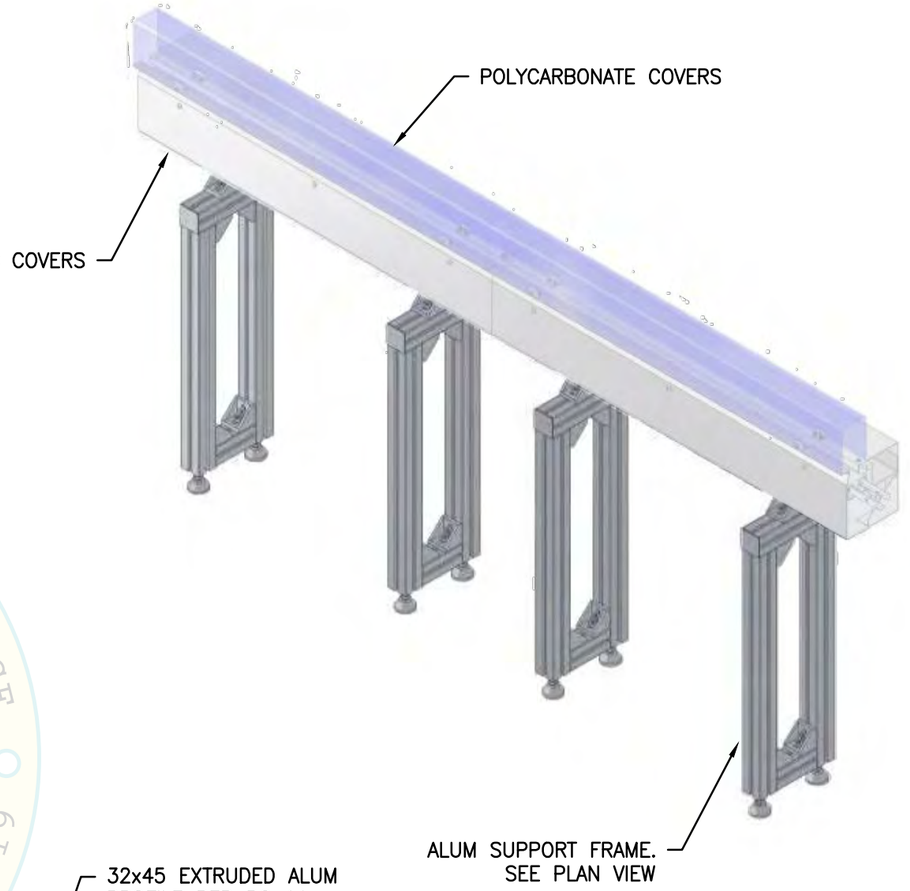
NOTES:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4. IN SCHED, $\bar{z}$ IS HT OF CG ABV FLR.
2. SEE PG 11 FOR EXTRUDED ALUM FRAME DTLS.
3. PROVIDE (2) SUPPORT FRAMES PER SECTION OF TRACK.

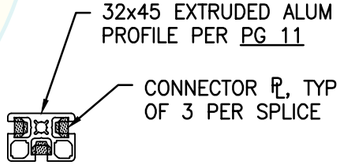


SECTION A–A

NOTES:
1. CONN PERFORMED BY ABBOTT, TYP
2. THIS CONN IS ALSO USED TO ATTACH THE INPUT LOADER & OUTPUT LOADER MODULES ON PGS 14 & 16.

RETURN LANE TRACK SPLICE DETAIL





REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
COMPONENT 3: RETURN LANE

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

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SACRAMENTO, CA 95833
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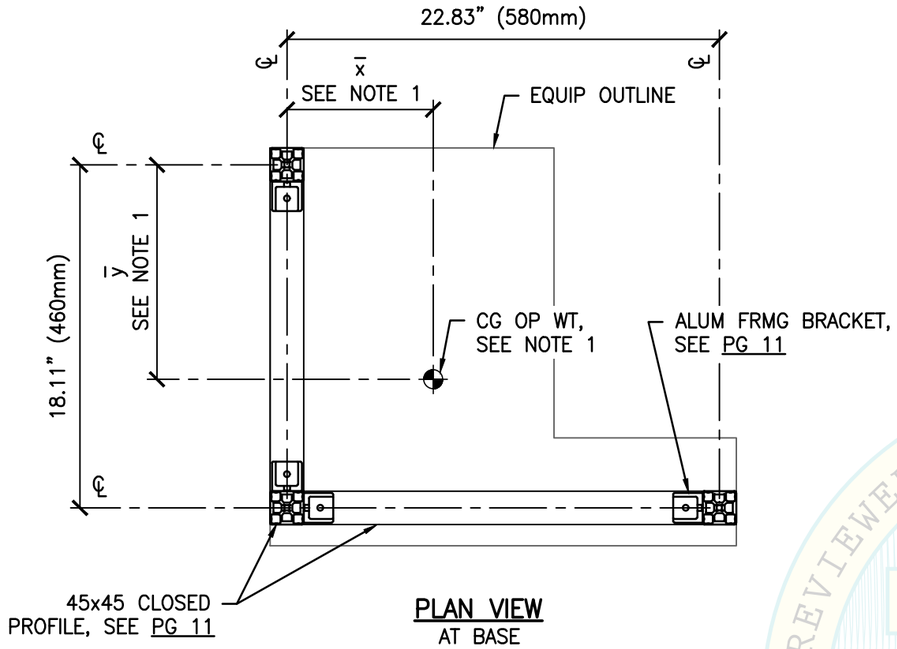
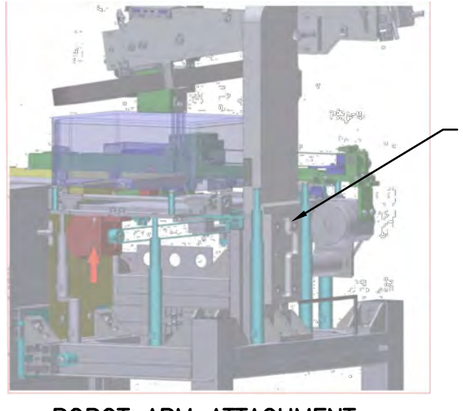


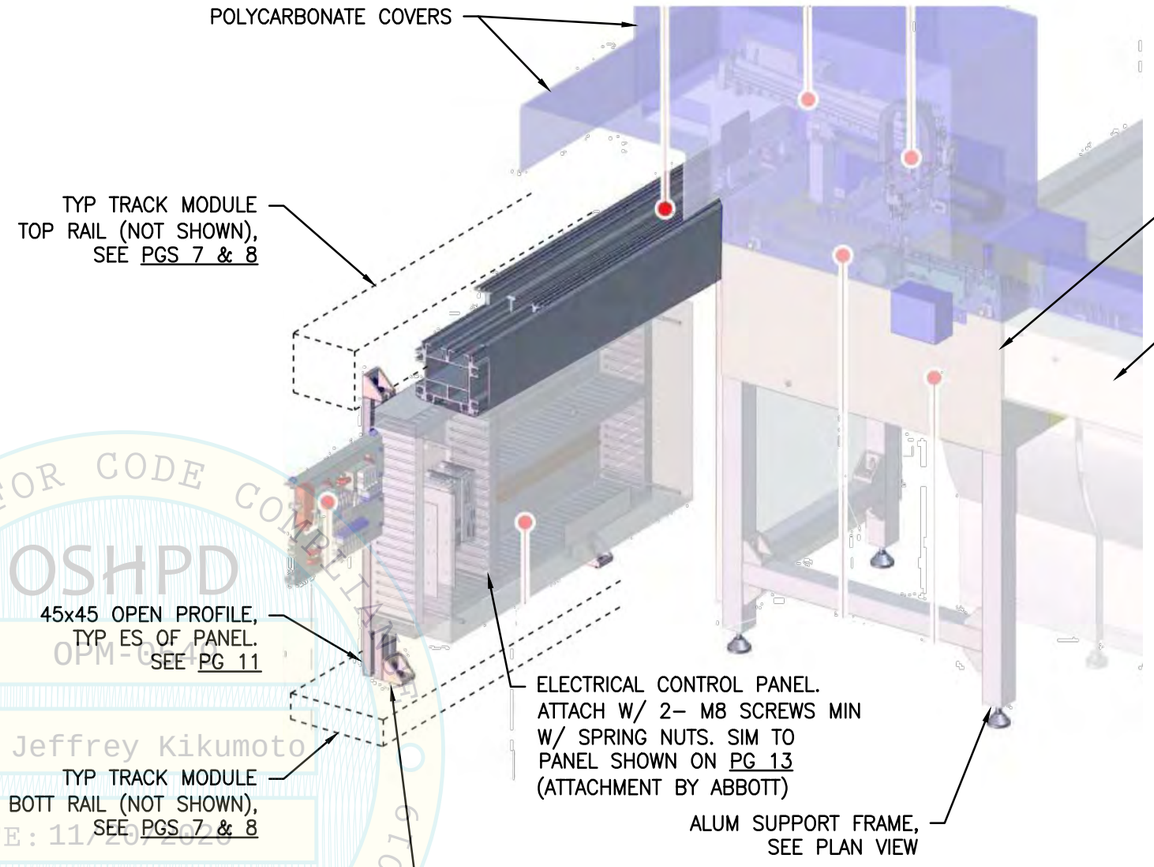
PLAN VIEW
AT BASE

NOTES:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4. IN SCHED, $\bar{z}$ IS HT OF CG ABV FLR.
2. SEE PG 11 FOR EXTRUDED ALUM FRAME DTLS.



ROBOT SUPPORT ARM (ALUM UNI 3051 Fy= 80Mpa MIN) ATTACHED TO INPUT LOADER MODULE FRAME W/ M8 CLASS 8.8 BOLTS & SPRING NUTS, TYP OF 4

ROBOT ARM ATTACHMENT



REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
COMPONENT 4: INPUT LOADER MODULE & ELECTRICAL CONTROL PANEL

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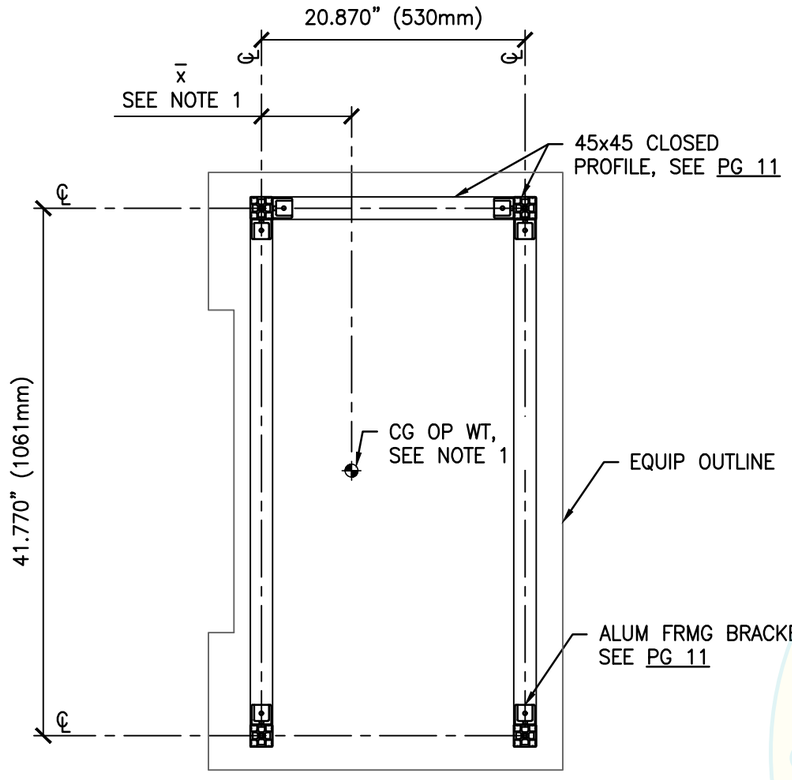
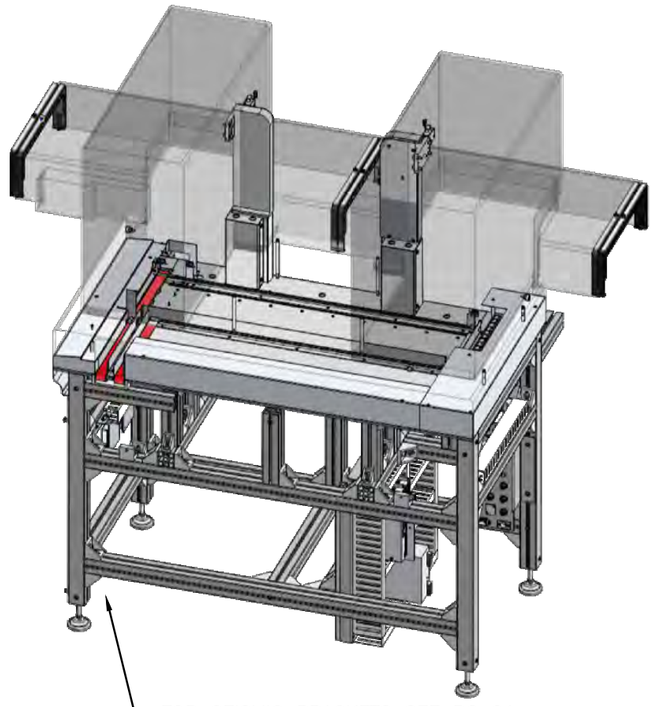


PLAN VIEW
AT BASE

NOTE:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4. IN SCHED, $\bar{z}$ IS HT OF CG ABV FLR.



FOR SEISMIC BRACKETS SEE PG 21.
SESMIC BRACKETS NOT SHOWN

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: MODULE & INTERFACE SUB-ASSEMBLY DETAILS (CONNECTION BY ABBOTT)
COMPONENT 5: DOUBLE ROBOT

ABBOTT LABORATORIES
ACCELERATOR ® a3600 AUTOMATION TRACK 3RD PARTY INTERFACES

CYS STRUCTURAL ENGINEERS, INC.
2495 NATOMAS PARK DRIVE, SUITE 650
SACRAMENTO, CA 95833
TEL (916) 920-2020
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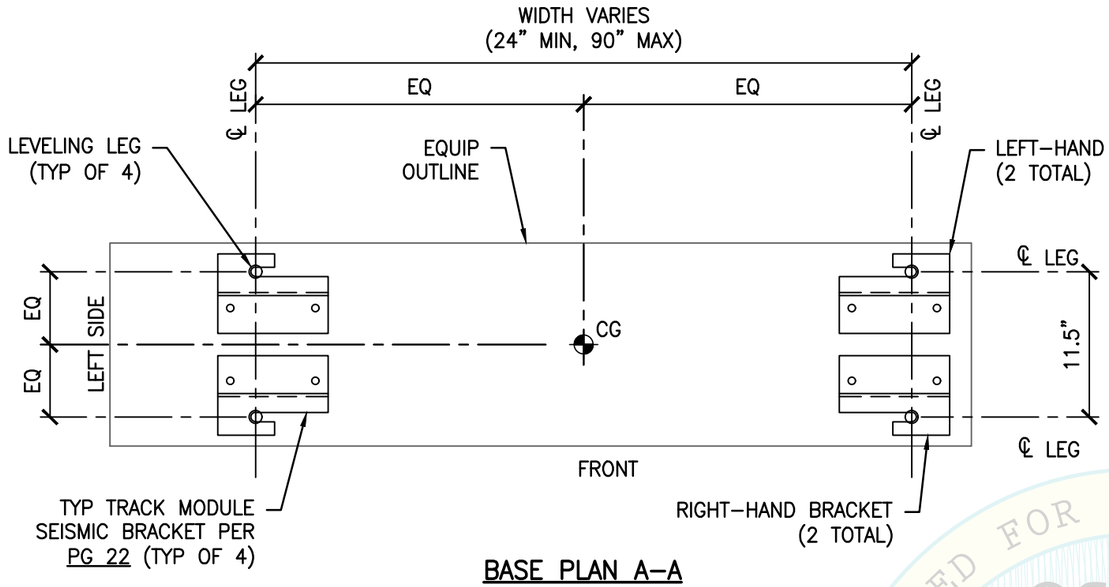


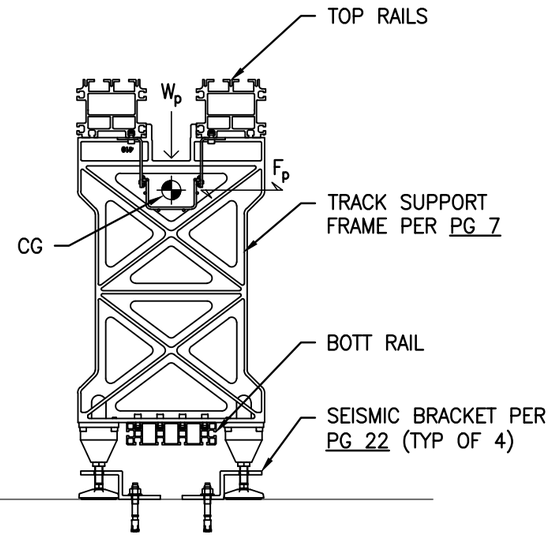
BASE PLAN A-A

	MAX ANCHOR FORCES AT LRFD AT LEVELING LEG[1]		
	T_{max}	C_{max}	V_{max}
CASE 1 [3]	1362	1584#	508#
CASE 2 [2]	748#	969#	286#

1. ECCENTRICITY & PRYING ACTION CONSIDERED BASED ON THE SEISMIC BRACKET CONFIGURATION SHOWN.
2. INCLUDES OVERSTRENGTH FACTOR (Ω_o).
3. OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED FOR ANCHORAGE TO CONC.

NOTES:
1. FOR COMPONENT DIMS & OP WT NOT NOTED, SEE SCHED ON PG 4.
2. A DISTANCE OF 5.5" BTW AB OF ADJ BRACKETS IS ACCEPTABLE.

FRONT ELEV



RIGHT SIDE ELEV

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TYPICAL TRACK MODULE
BASE PLAN & ELEVATIONS

ABBOTT LABORATORIES
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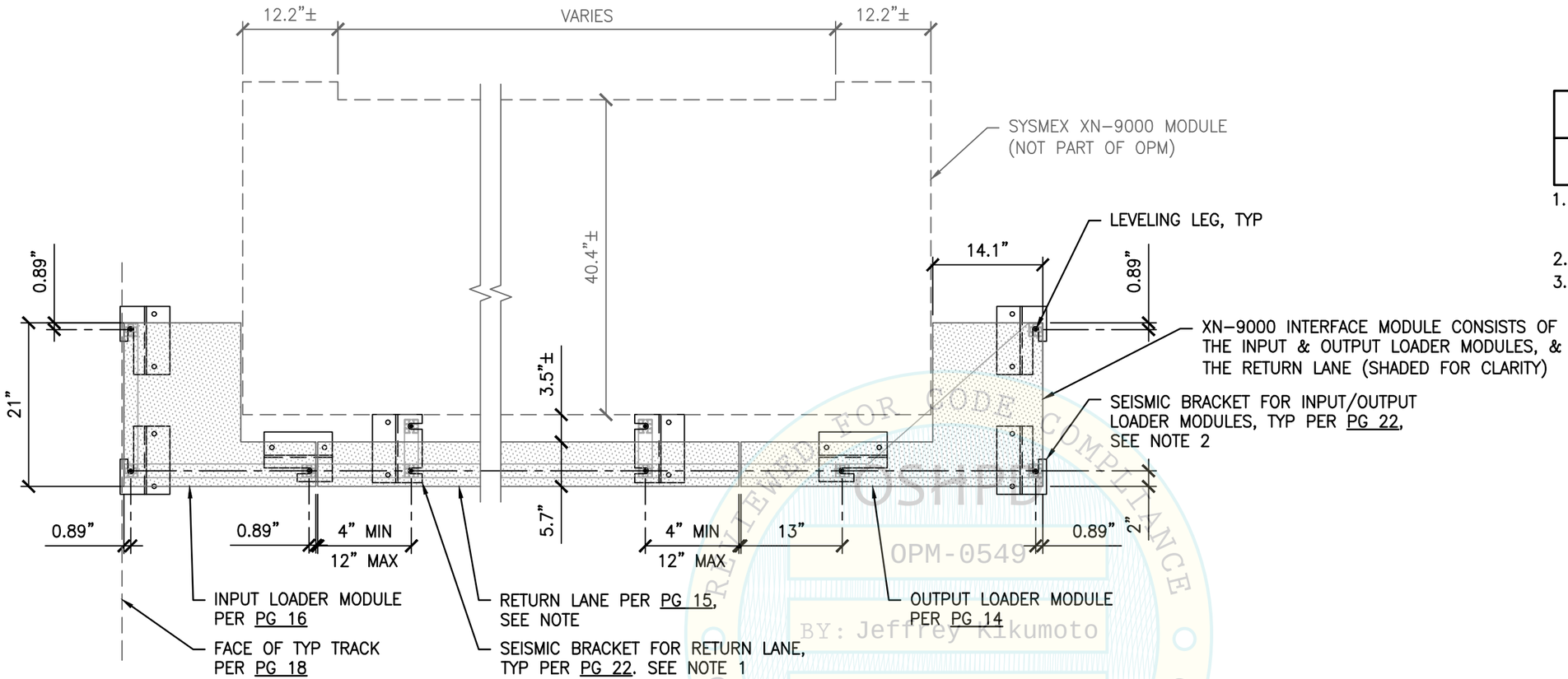

PLAN VIEW

	MAX ANCHOR FORCES AT LRFD AT EA LEVELING LEG[1]		
	T_{max}	C_{max}	V_{max}
CASE 1[3]	494#	533#	172#
CASE 2[2]	275#	324#	97#

1. ECCENTRICITY & PRYING ACTION CONSIDERED BASED ON THE SEISMIC BRACKET CONFIGURATION SHOWN.
2. INCLUDES OVERSTRENGTH FACTOR (Ω_o).
3. OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED FOR ANCHORAGE TO CONC.

NOTES:
1. FOR EA SECTION OF RETURN LANE TRACK, ORIENT BRACKETS SO THAT THE SLOTS FOR LEVELING LEGS FACE EA OTHER.
2. FOR INPUT LOADER ATTACHMENT, USE 2– LEFT–HAND BRACKETS & & 1– RIGHT–HAND BRACKET. FOR OUTPUT LOADER ATTACHMENT, USE 2– RIGHT–HAND BRACKETS & 1– LEFT–HAND BRACKET.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: XN - 9000 SPUR BASE PLAN W/ INPUT LOADER MODULE

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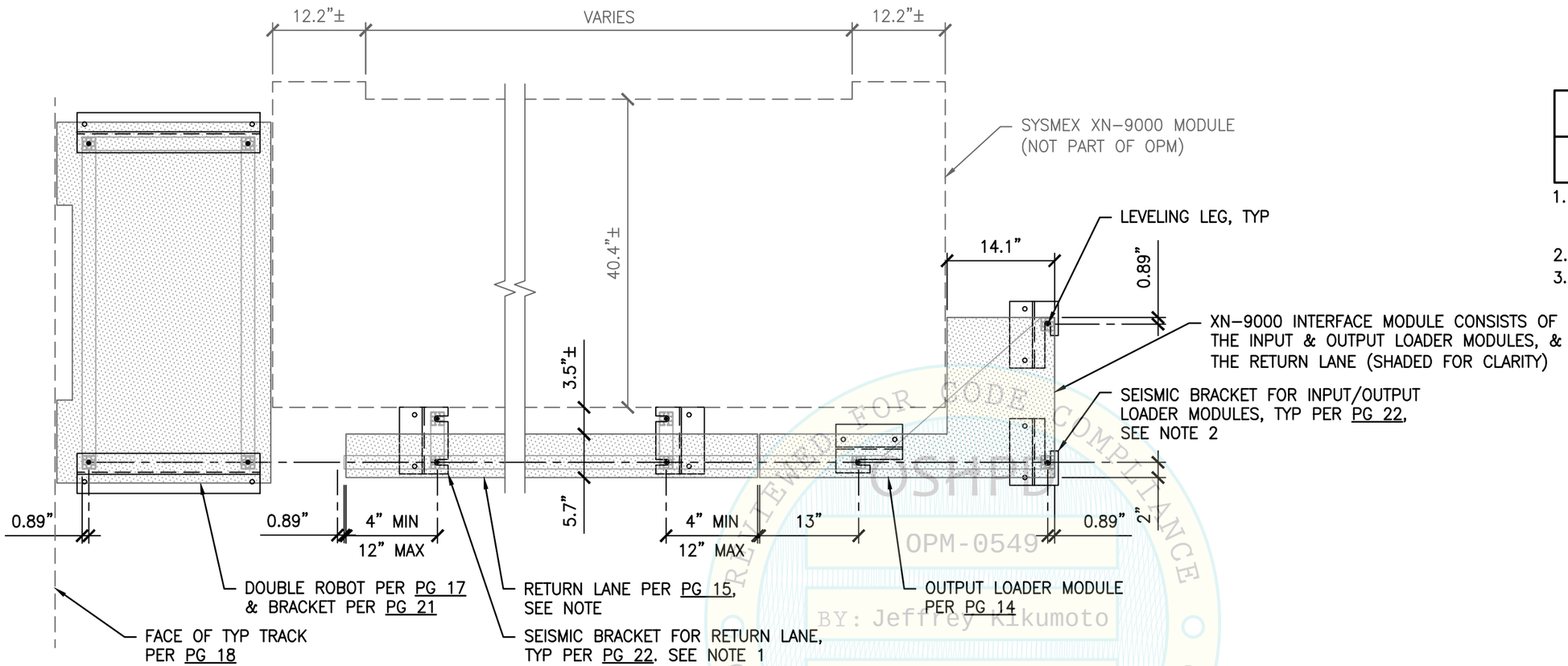

PLAN VIEW

	MAX ANCHOR FORCES AT LRFD AT EA LEVELING LEG[1]		
	T_{max}	C_{max}	V_{max}
CASE 1[3]	725#	960#	310#
CASE 2[2]	360#	593#	161#

1. ECCENTRICITY & PRYING ACTION CONSIDERED BASED ON THE SEISMIC BRACKET CONFIGURATION SHOWN.
2. INCLUDES OVERSTRENGTH FACTOR (Ω_o).
3. OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED FOR ANCHORAGE TO CONC.

NOTES:
1. FOR EA SECTION OF RETURN LANE TRACK, ORIENT BRACKETS SO THAT THE SLOTS FOR LEVELING LEGS FACE EA OTHER.
2. FOR INPUT LOADER ATTACHMENT, USE 2– LEFT–HAND BRACKETS & & 1– RIGHT–HAND BRACKET. FOR OUTPUT LOADER ATTACHMENT, USE 2– RIGHT–HAND BRACKETS & 1– LEFT–HAND BRACKET.

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
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STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: XN - 9000 SPUR BASE PLAN W/ DOUBLE ROBOT

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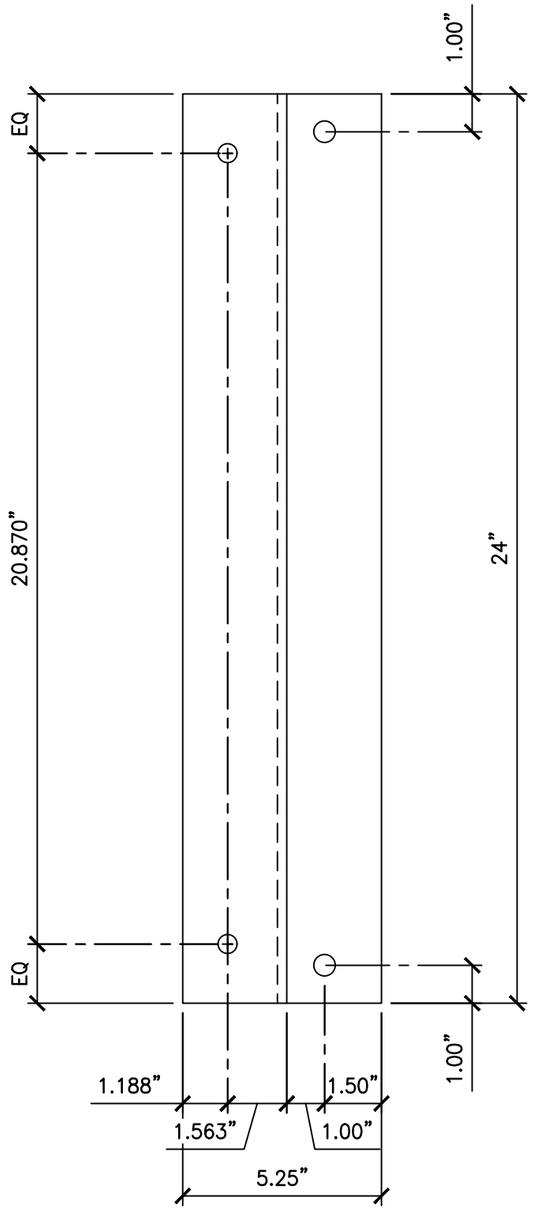
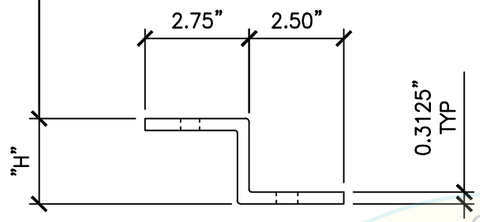
XN-9000 DOUBLE ROBOT SEISMIC BRACKET DETAIL:



PLAN

"H" VARIES TO ACCOMMODATE VERT ADJUSTMENT OF THE COMPONENT FOR LEVELING PURPOSES AS MEASURED FROM THE FLR TO THE BOTT OF THE COMPONENT PER THE CASE 1 & CASE 2 FLR TO COMPONENT CLEARANCES AS FOLLOWS:



ELEV

BRACKET	"H" (IN)	CLEARANCE (IN)	
		MIN	MAX
A	4.15	4.15	4.55
B	3.75	3.75	4.15
C	3.35	3.35	3.75
D	2.95	2.95	3.35
E	2.55	2.55	2.95
F	2.15	2.15	2.55
G	1.75	0	2.15

NOTES:
1. FOR INFO NOT SHOWN OR NOTED, SEE TYP SEISMIC BRACKET DETAIL.
2. FOR CASE 1 & CASE 2 ANCHORAGE TO FLR, SEE PG 25

REGISTERED PROFESSIONAL ENGINEER
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STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TYPICAL TRACK MODULE & XN-9000 DOUBLE ROBOT SEISMIC BRACKET FABRICATION DETAIL

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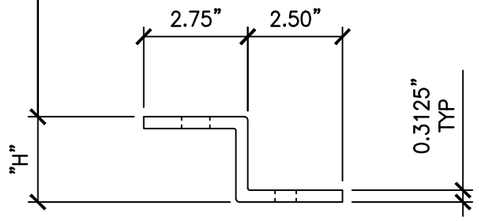
XN-9000 INTERFACE SEISMIC BRACKET DETAILS:

"H" VARIES TO ACCOMMODATE VERT ADJUSTMENT OF THE COMPONENT FOR LEVELING PURPOSES AS MEASURED FROM THE FLR TO THE BOTT OF THE COMPONENT PER THE CASE 1 & CASE 2 FLR TO COMPONENT CLEARANCES AS FOLLOWS:

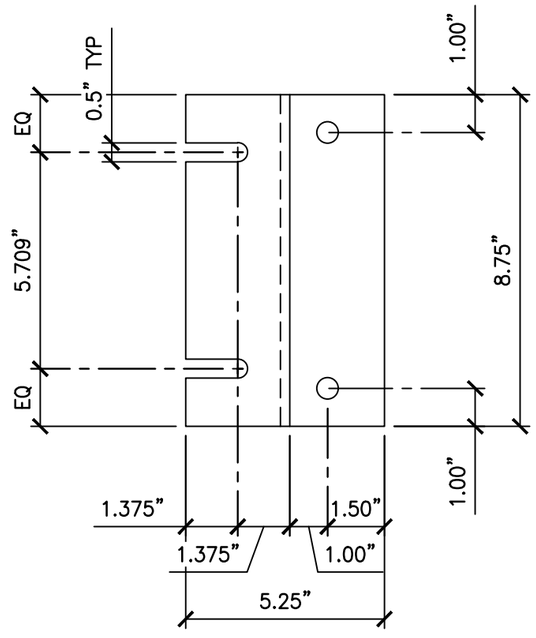
BRACKET A: "H" = 2.25" FOR 2.25" ≤ CLR ≤ 3.50"

BRACKET B: "H" = 3.50" FOR 3.50" ≤ CLR ≤ 4.75"

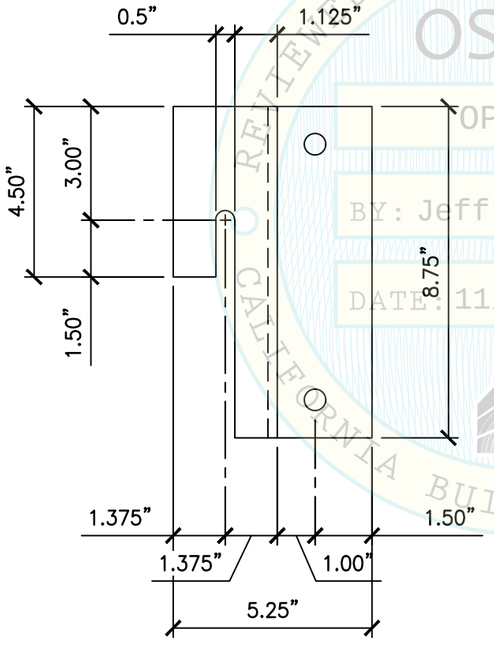
BRACKET C: "H" = 1.50" 1.50" ≤ CLR ≤ 2.25"



ELEV



SEISMIC BRACKET FOR RETURN LANE



SEISMIC BRACKET FOR INPUT/OUTPUT LOADER MODULES

PLAN

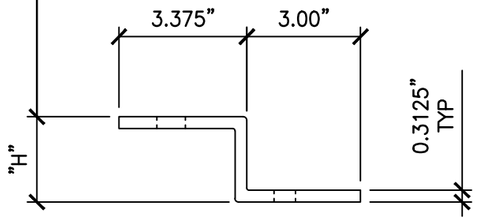
NOTE:
FOR INFO NOT SHOWN OR NOTED, SEE TYP SEISMIC BRACKET DETAIL

TYP TRACK MODULE SEISMIC BRACKET DETAIL:

"H" VARIES TO ACCOMMODATE VERT ADJUSTMENT OF THE COMPONENT FOR LEVELING PURPOSES AS MEASURED FROM THE FLR TO THE BOTT OF THE COMPONENT PER THE CASE 1 & CASE 2 FLR TO COMPONENT CLEARANCES AS FOLLOWS:

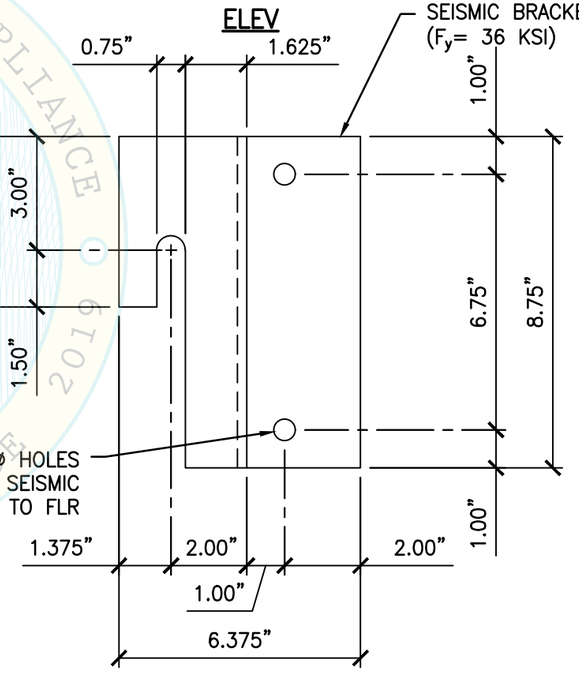
BRACKET A: "H" = 2.25" FOR 2.25" ≤ CLR ≤ 3.50"

BRACKET B: "H" = 3.50" FOR 3.50" ≤ CLR ≤ 4.75"



NOTES:
1. FOR CASE 1 & CASE 2 ANCHORAGE TO FLR, SEE PGS 23 & 24.
2. BRACKET LAYOUT SHALL BE FOLLOWED AS SHOWN ON PLANS ON PG 18 & 19.
3. LEFT-HAND BRACKET SHOWN. SEE BASE PLAN A-A ON PG 18 FOR RIGHT-HAND BRACKET CONFIGURATION.
4. GC SHALL PROVIDE & INSTALL SEISMIC BRACKET.
5. FOR MAX CLR, SEE DTLS ON PGS 23 & 24.

ELEV



PLAN

FOR ABBOTT USE:
MAX TRACK HT
PER BRACKET
A = 888mm
B = 920mm

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TYPICAL TRACK MODULE & XN-9000 INTERFACE MODULE SEISMIC BRACKET FABRICATION DETAILS

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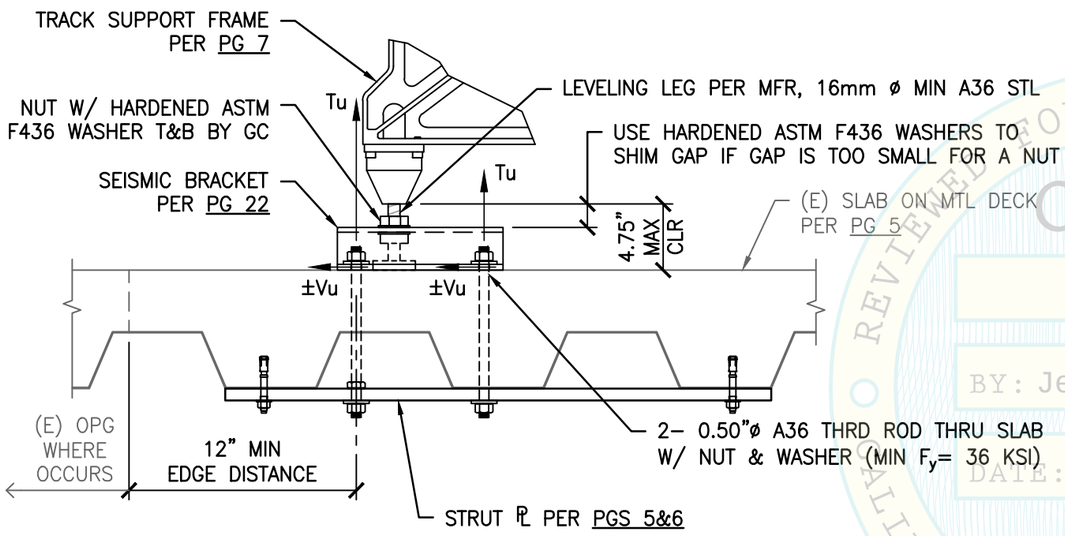
	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 1 $z/h \leq 1.0$	2808#	364#

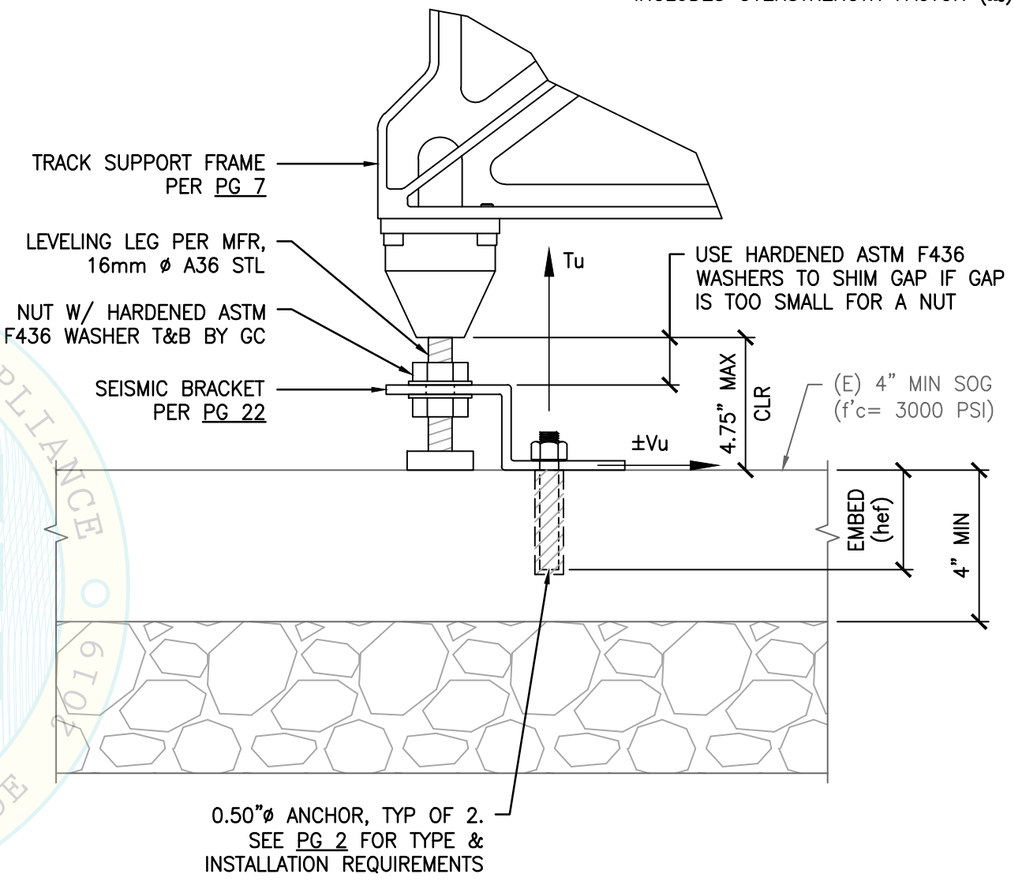
OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED TO Vu FOR ANCHORAGE TO CONC.



CASE 1 – SUSPENDED FLR W/ THRU BOLTS

	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 2 $z/h = 0$	1098#	92#

INCLUDES OVERSTRENGTH FACTOR (Ω_o)



CASE 2 – SLAB ON GRADE

(SLAB AT OR BLW GRADE)

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: TYPICAL TRACK MODULE SUPPORT & ATTACHMENT DETAILS

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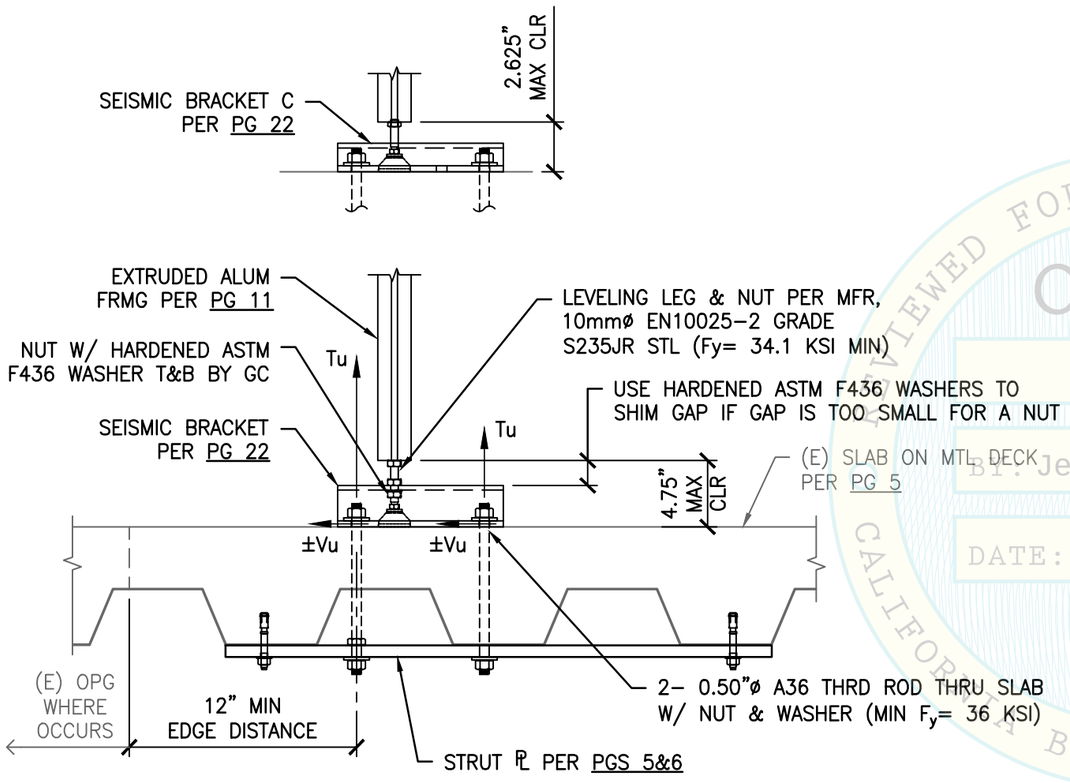
	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 1 $z/h \leq 1.0$	1393#	164#

OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED TO Vu FOR ANCHORAGE TO CONC.

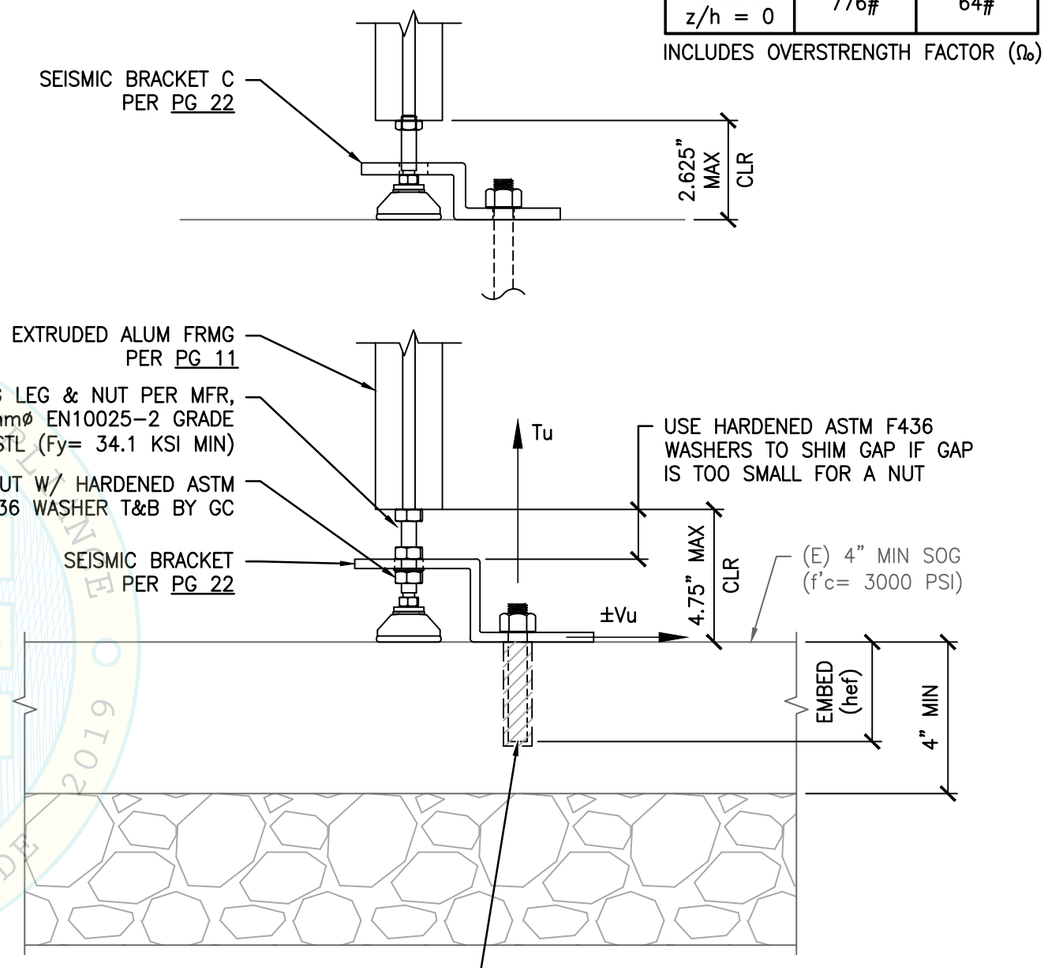


NOTE:
BRACKET FOR INPUT & OUTPUT LOADER SHOWN, RETURN LANE SIM

CASE 1 – SUSPENDED FLR W/ THRU BOLTS

	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 2 $z/h = 0$	776#	64#

INCLUDES OVERSTRENGTH FACTOR (Ω_o)



CASE 2 – SLAB ON GRADE

(SLAB AT OR BLW GRADE)

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: XN-9000 INTERFACE
SUPPORT & ATTACHMENT DETAILS

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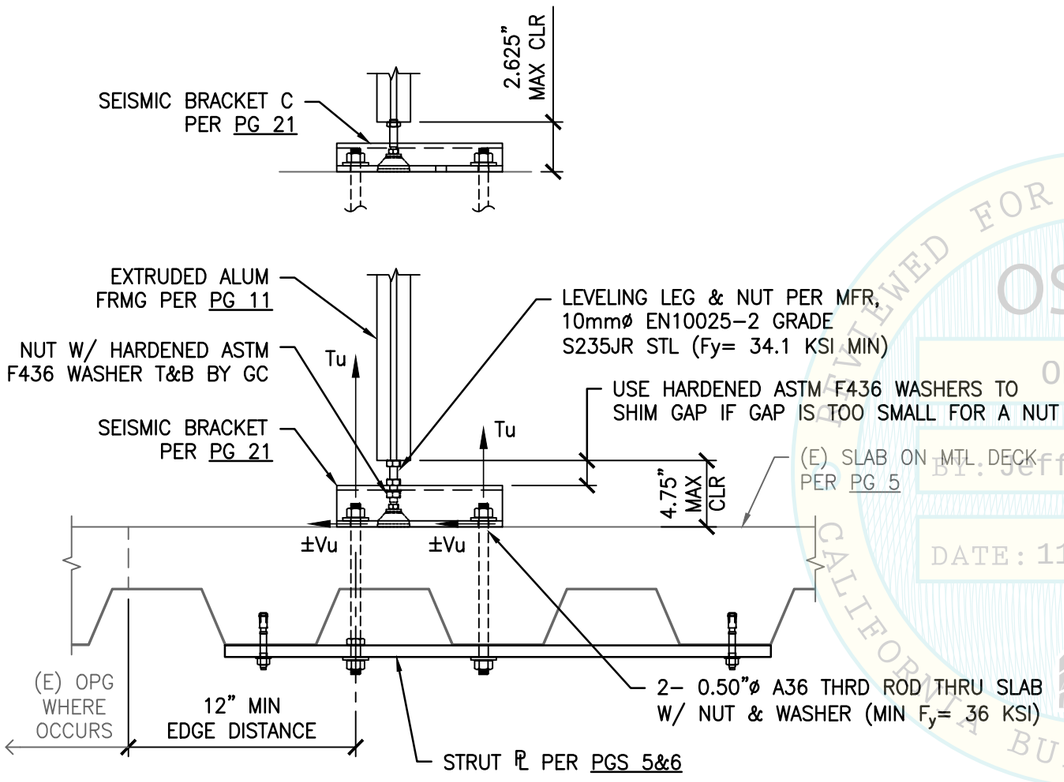
	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 1 z/h ≤ 1.0	4395#	308#

OVERSTRENGTH FACTOR (Ω_o) MUST BE APPLIED TO Vu FOR ANCHORAGE TO CONC.

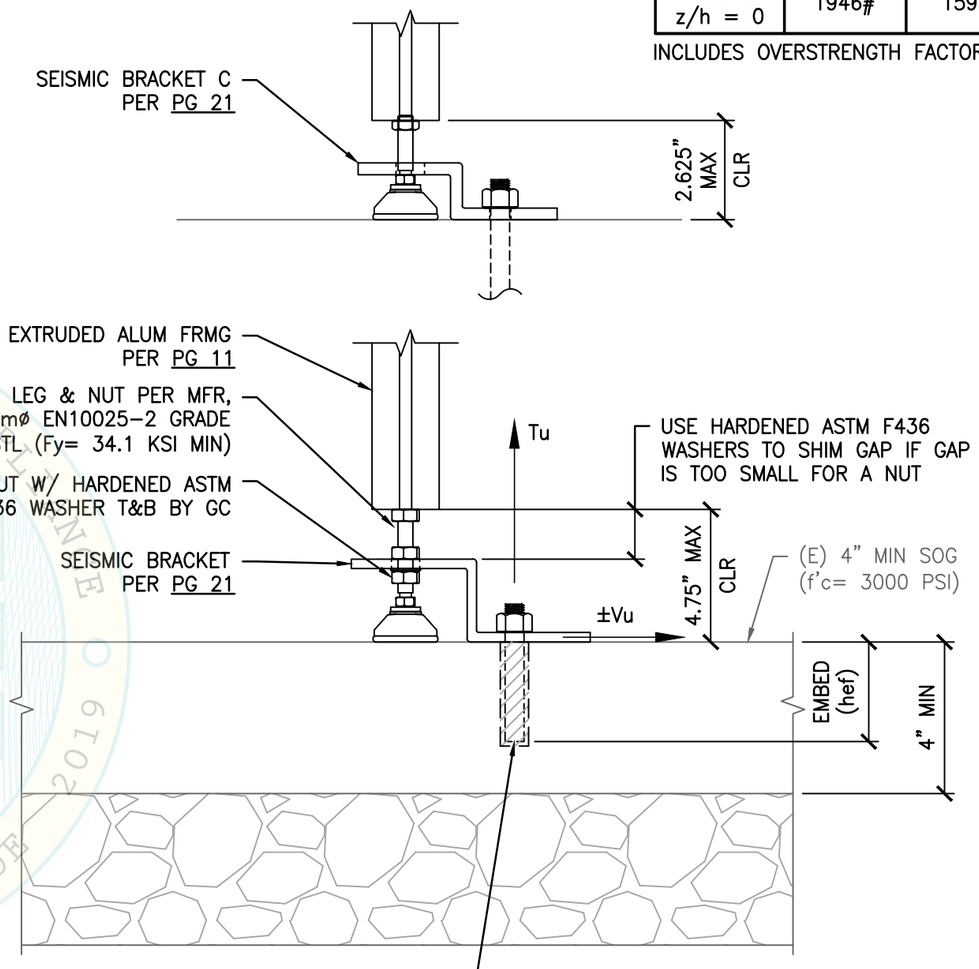


NOTE:
BRACKET FOR INPUT & OUTPUT LOADER SHOWN, RETURN LANE SIM

CASE 1 – SUSPENDED FLR W/ THRU BOLTS

	MAX ANCHOR FORCES AT LRFD AT EA AB	
	Tu	Vu
CASE 2 z/h = 0	1946#	159#

INCLUDES OVERSTRENGTH FACTOR (Ω_o)



CASE 2 – SLAB ON GRADE

(SLAB AT OR BLW GRADE)

REGISTERED PROFESSIONAL ENGINEER
DIETER T SIEBALD
No. S4346
STRUCTURAL
STATE OF CALIFORNIA

SHEET TITLE: XN-9000 DOUBLE ROBOT
SUPPORT & ATTACHMENT DETAILS

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