

BEST ROLLING DOORS, INC.

STEEL ROLL-UP DOORS MODELS S10-6065, S10-6565 & S10-100 LARGE MISSILE IMPACT / HVHZ

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. A DESIGN PROFESSIONAL SHALL BE RESPONSIBLE FOR CERTIFYING THE APPLICATION OF THIS INFORMATION TO ANY SITE-SPECIFIC LOCATION.

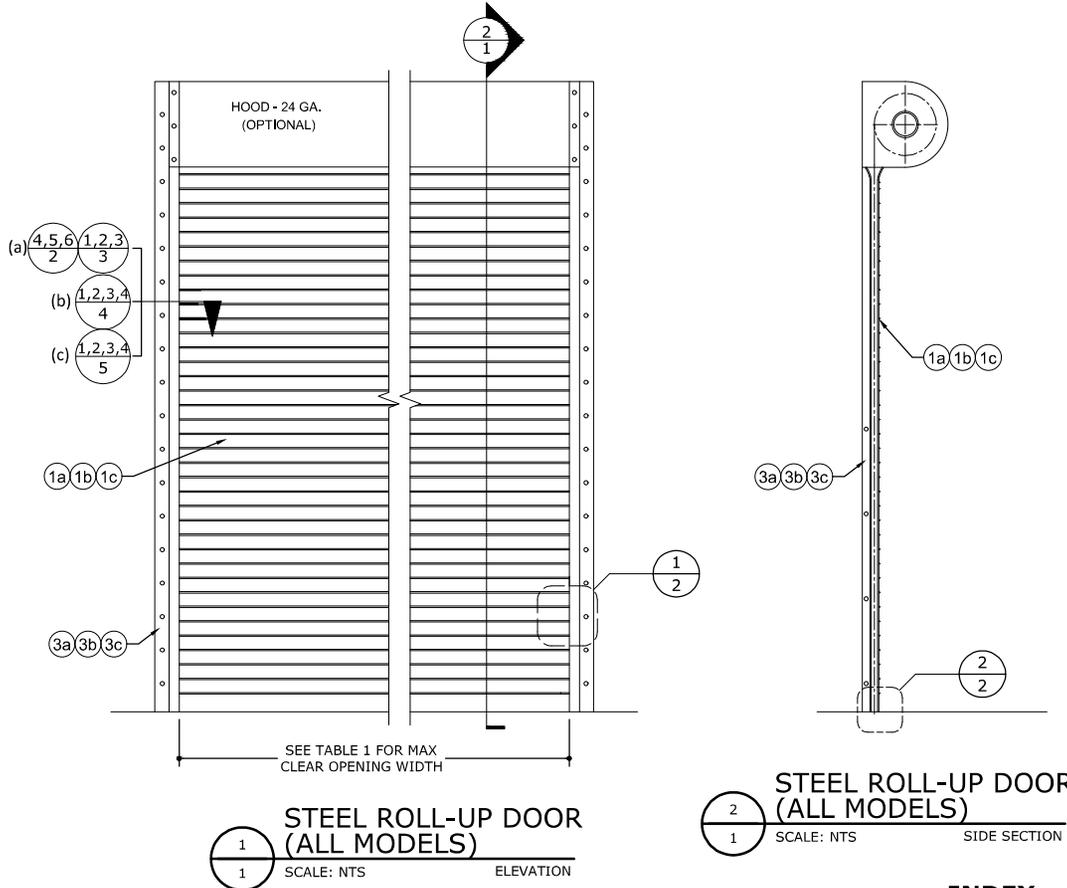


TABLE 1: MAXIMUM ALLOWABLE PRESSURE AND CLEAR OPENING WIDTH

MODEL #	MAXIMUM CLEAR OPENING WIDTH	MAXIMUM ALLOWABLE PRESSURE
(a) S10-6065	24'-1 1/2"	+60psf / -65psf
(b) S10-6565	30'-4 1/2"	+65psf / -65psf
(c) S10-100	30'-4 1/2"	+100psf / -100psf

INDEX

SHEET # | DESCRIPTION

- COVER SHEET
 - 2-5. CONNECTION DETAILS
 6. SYSTEM COMPONENTS
- 6 TOTAL SHEETS

NOTE REGARDING USE OF THIS DOCUMENT & USE OUTSIDE FLORIDA:

NON-SITE-SPECIFIC STRUCTURAL PERFORMANCE EVALUATION. THIS PRODUCT EVALUATION IS VALID FOR USE IN FLORIDA ONLY. USE OF THIS EVALUATION REQUIRES A REVIEW & CERTIFICATION BY A LOCAL DESIGN PROFESSIONAL WHO SHALL BE RESPONSIBLE FOR THE PROPER ADAPTATION OF THIS GENERAL PERFORMANCE EVALUATION TO ANY SITE-SPECIFIC PROJECT. CONTACT THIS OFFICE AT ENGINEERINGEXPRESS.COM/QUOTE FOR ASSISTANCE WITH YOUR PROJECT-SPECIFIC NEEDS & FOR ADAPTATION & CERTIFICATION OF THIS DOCUMENT OUTSIDE OF FLORIDA.

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885



Digitally signed by
Frank Bennardo
Date: 2023.11.03
17:11:40 -04'00'

GENERAL NOTES:

- THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE EIGHTH EDITION (2023) FOR USE INSIDE AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE, PER TAS 201, 202, AND 203 STANDARDS. SEE PRODUCT EVALUATION REPORT FOR MORE INFORMATION.
- POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED PER SEPARATE ENGINEERING IN ACCORDANCE WITH THE GOVERNING CODE. PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7-22 AND THE FLORIDA BUILDING CODE SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN (TABLE 1) FOR ANY ASSEMBLY AS SHOWN.
- ALLOWABLE DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT. THESE INSTALLATION INSTRUCTIONS ARE PART OF A PRODUCT APPROVAL EVALUATION AND SHALL ONLY BE USED IN CONJUNCTION WITH THE EVALUATION REPORT SUBMITTED FOR THE SAME PRODUCT APPROVAL.
- SLATS TO BE A.S.T.M. A-653 GR 50 STRUCTURAL QUALITY STEEL WITH MIN. Fy = 50 KSI AND G-90 GALVANIZING PER A.S.T.M. A-653, OR A.I.S.I. 304 SERIES STAINLESS STEEL MANUFACTURED WITH A MINIMUM YIELD STRENGTH OF Fy = 50 KSI.
- WINDLOCKS SHALL BE 11 GA PLATED STEEL, A.S.T.M. A-1011
- ALL ASSEMBLY BOLTS TO BE S.A.E. GRADE 2 CADMIUM PLATED OR GALVANIZED STEEL.
- ALL RIVETS TO BE A.I.S.I. 1035 STEEL, CADMIUM PLATED, STAINLESS STEEL OR ZINC PLATED W/ Fy= 37,000 PSI.
- INSULATION MATERIAL SHALL BE EPS-EXPANDED POLYSTYRENE INSULATION MANUFACTURED BY DYPLAST PRODUCTS LLC COMPANY, MIAMI-DADE COUNTY NOTICE OF ACCEPTANCE # 17-1207.05 OR LATEST VERSION.
- DOOR MAY BE INSTALLED ON THE INSIDE OR OUTSIDE OF AN EXTERIOR WALL. DOOR IMPACTED ON BOTH SIDES.
- GUIDE DETAILS CAN BE USED IN ANY COMBINATION.
- ROLL-UP MECHANISM AND HOOD ASSEMBLY ARE NOT PART OF THIS APPROVAL.
- THIS DOCUMENT CONTAINS INFORMATION RELEVANT TO THE NECESSARY STRUCTURAL REQUIREMENTS OF THE SYSTEM INSTALLATION. COMPONENTS AND FASTENERS NOT REFERENCED WHICH ARE PART OF THE INTERNAL FABRICATION OF THE SPECIFIED SYSTEMS OR ASSEMBLIES SHALL BE PER MANUFACTURER PUBLISHED SPECIFICATIONS.
- PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS OUTLINED HEREIN.
- UNITS SHALL BE LABELED IN ACCORDANCE WITH THE FLORIDA BUILDING COMMISSION AND THE FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION SPECIFICATION.
- CONTRACTOR SHALL BE RESPONSIBLE TO INSULATE DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- WATERPROOFING IS NOT PART OF THIS CERTIFICATION AND SHALL BE CERTIFIED BY OTHERS.

FL 10706.1

ENGINEERING EXPRESS

POSTAL ADDRESS:
2234 NORTH FEDERAL HWY # 7664
BOCA RATON, FL 33431
ENGINEERINGEXPRESS.COM

BEST ROLLING DOORS, INC.

9770 N.W. 79TH AVENUE
HIALEAH GARDENS, FL
Phn. (305) 698-3550

STEEL ROLL-UP DOORS
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#10706.1)

REMARKS	DATE	DRWN	CHKD
INT ISSUE	08/16/17	RVN	FLB
REC 2020 (24-30346)	01/25/21	JEM	FLB
REC 2023	09/29/23	AMZ	RS

COPYRIGHT ENGINEERING EXPRESS®

23-62056a

SCALE: NTS UNLESS NOTED

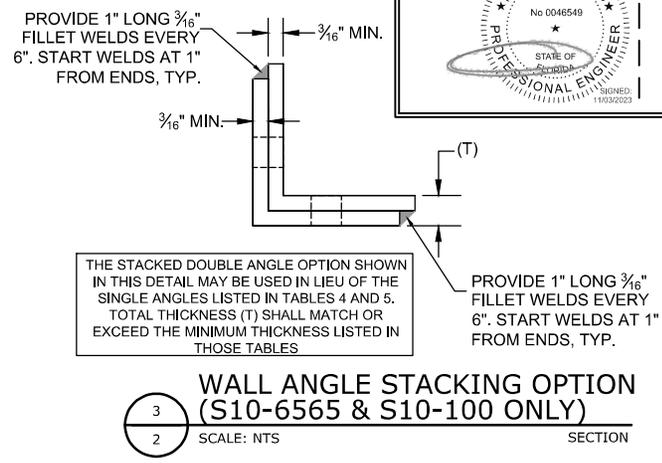
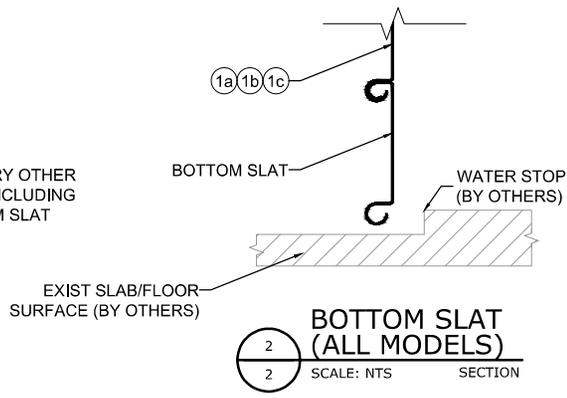
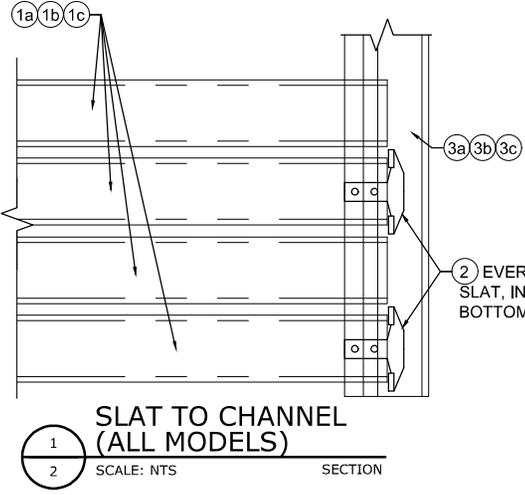
1

VISIT ECALC.IO/62056a

FOR HELPFUL RESOURCES, SITE SPECIFIC JOB ORDERING & MORE INFORMATION ABOUT THIS PRODUCT & RELATED SERVICES



c:\users\sam\engineering\express\production - documents\projects\23-23-62056 multiple products 2023 fbc update fl10706\work\drawings & cad\21-36346a -fl10706.1 - dwg_1.dwg 11/13/2023 3:59 PM SAM

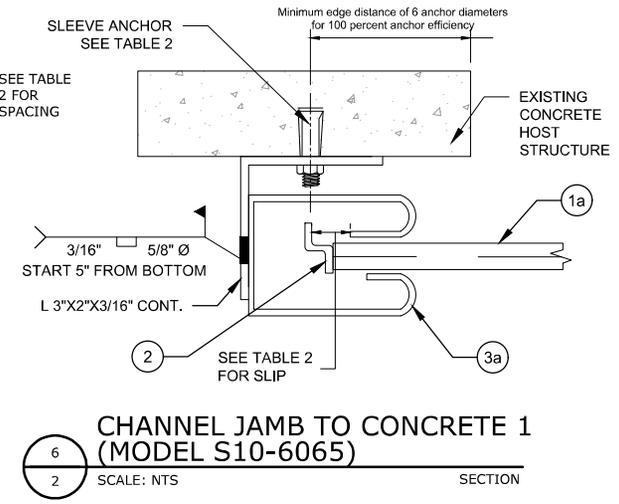
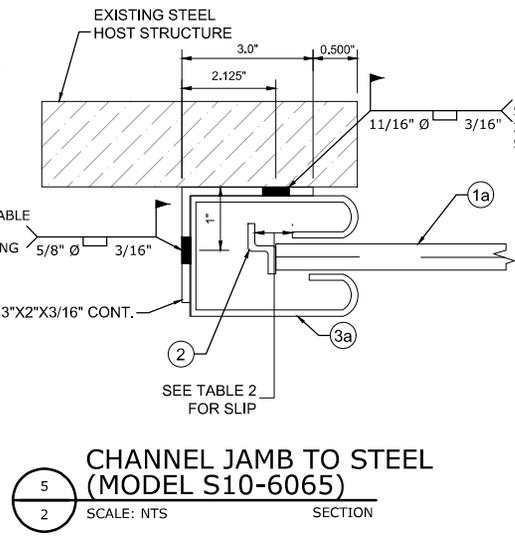
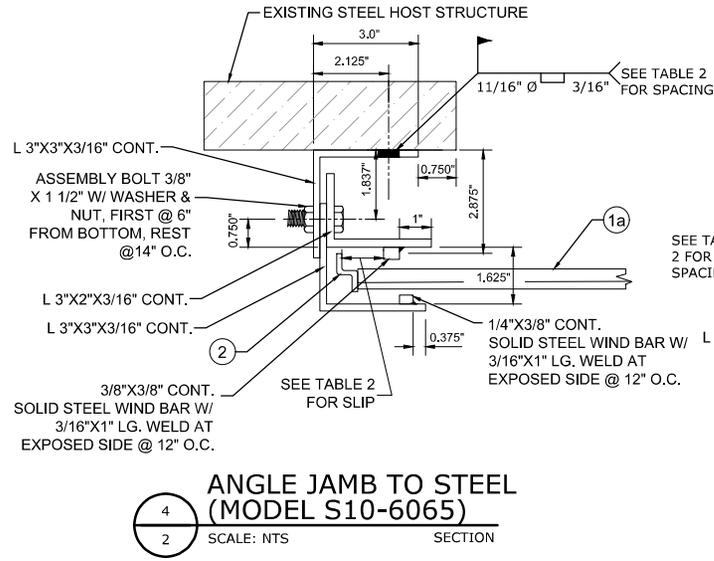


FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885

STATE OF FLORIDA
PROFESSIONAL ENGINEER
No 0046549
LICENSE

SPACE RESERVED FOR CERTIFYING ENGINEER'S DIGITAL OR PHYSICAL SEAL & DATE OF CERTIFICATION
NOVEMBER 3, 2023

**JAMB CONNECTIONS
MODEL #S10-6065**



FL 10706.1

ENGINEERING EXPRESS

POSTAL ADDRESS:
2234 NORTH FEDERAL HWY # 7664
BOCA RATON, FL 33431
ENGINEERINGEXPRESS.COM

BEST ROLLING DOORS, INC.
9770 N.W. 79TH AVENUE
HIALEAH GARDENS, FL
Phn. (305) 698-3550
STEEL ROLL-UP DOORS

FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#10706.1)

DRWN	CHKD	DATE
RVN	FLB	08/16/17
JEM	FLB	01/25/21
AMZ	RS	09/29/23

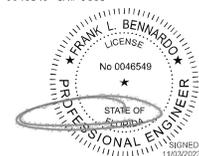
REMARKS
INT ISSUE
FBC 2020 (21-58346)
FBC 2023

23-62056a
SCALE: NTS UNLESS NOTED

2

JAMB CONNECTIONS MODEL #S10-6065 CONT'D

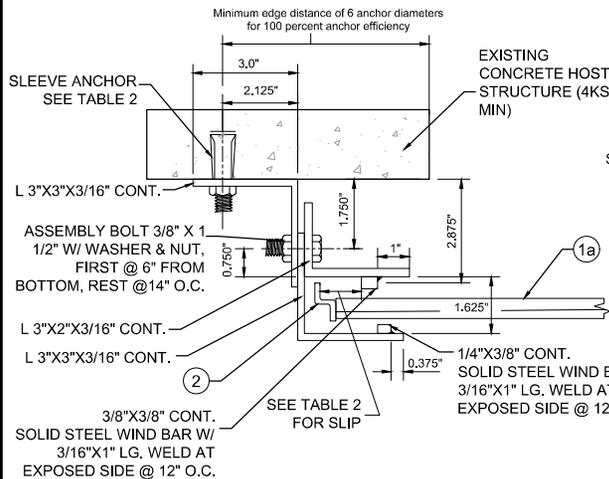
FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885



SPACE RESERVED FOR
CERTIFYING ENGINEER'S
DIGITAL OR PHYSICAL SEAL
& DATE OF CERTIFICATION

NOVEMBER 3, 2023

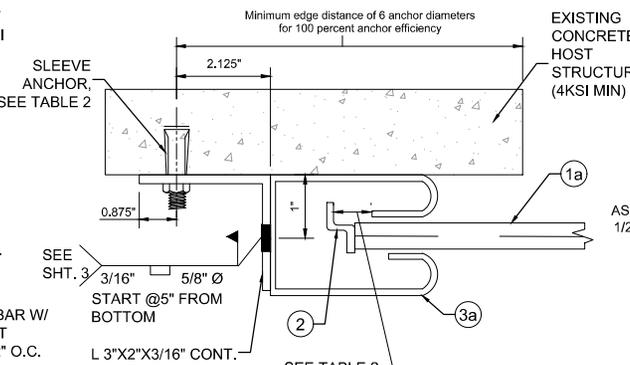
c:\users\sam\engineering\express\production - documents\projects\23-23-62056 multiple products 2023 fbc update fl10706\work\drawings & cad\21-36346a -fl10706.1 - dwg - L.dwg



**ANGLE JAMB TO CONCRETE 1
(MODEL S10-6065)**



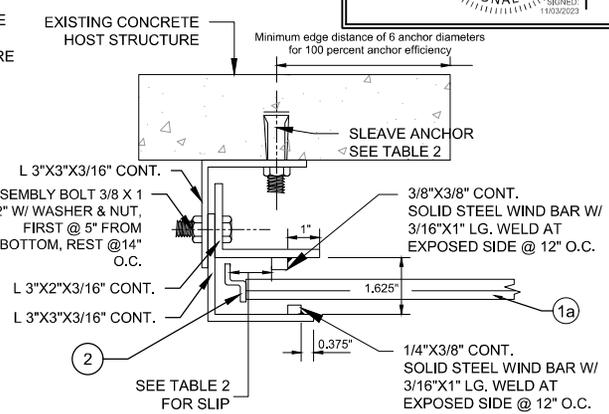
SCALE: NTS SECTION



**CHANNEL JAMB TO CONCRETE 2
(MODEL S10-6065)**



SCALE: NTS SECTION



**ANGLE JAMB TO CONCRETE 2
(MODEL S10-6065)**



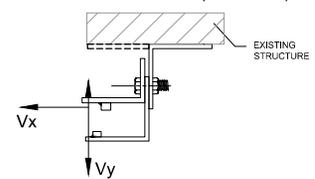
SCALE: NTS SECTION

TABLE 2: MODEL #S10-6065 JAMB CONNECTIONS

DOOR OPENING WIDTH	SLIP EACH END	ASSEMBLY CARRIAGE BOLT	ANCHORS TO CONCRETE JAMB		FIELD WELD TO STEEL JAMB		
			ANGLE GUIDE	CHANNEL GUIDE	ANGLE GUIDE	CHANNEL GUIDE	
			HILTI KWIK BOLT 3 OR DYNABOLT SLEEVE ANCHOR*	HILTI KWIK BOLT 3 OR DYNABOLT SLEEVE ANCHOR*	PLUG WELD WALL ANGLE TO JAMB	PLUG WELD WALL ANGLE TO JAMB	PLUG WELD CHANNEL TO WALL ANGLE
dia. x embedment x spacing	dia. x embedment x spacing						
24' 1-1/2"	1.00"	1/2"-13x1-1/2" @14" o.c.	3/4" x 6-1/2" @4-3/4" o.c.	3/4" x 6-1/2" @10" o.c.	11/16" dia. x 3/16" @5-1/2" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @4" o.c.
20'-0"	1.00"	1/2"-13x1-1/2" @14" o.c.	3/4" x 6-1/2" @8" o.c.	3/4" x 6-1/2" @13" o.c.	11/16" dia. x 3/16" @7-1/2" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @5" o.c.
16'-0"	1.00"	1/2"-13x1-1/2" @14" o.c.	3/4" x 6-1/2" @13" o.c.	3/4" x 4-3/4" @14" o.c. or 5/8" x 4" @13" o.c.	11/16" dia. x 3/16" @11" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @7" o.c.
14'-0"	1.00"	1/2"-13x1-1/2" @14" o.c.	3/4" x 4-3/4" @14" o.c. or 5/8" x 5-1/2" @12" o.c.	3/4" x 3-1/4" @14" o.c. or 5/8" x 4" @14" o.c.	11/16" dia. x 3/16" @14" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @8-1/2" o.c.
12'-0"	0.50"	1/2"-13x1-1/2" @14" o.c.	3/4" x 3-1/4" @8-1/2" o.c. or 5/8" x 5-1/2" @11" o.c.	3/4" x 3-1/4" @14" o.c. or 5/8" x 5-1/2" @14" o.c.	11/16" dia. x 3/16" @13" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @9" o.c.
10'-0"	0.50"	1/2"-13x1-1/2" @14" o.c.	3/4" x 3-1/4" @14" o.c. or 5/8" x 5-1/2" @14" o.c.	3/4" x 3-1/4" @14" o.c. or 5/8" x 5-1/2" @14" o.c.	11/16" dia. x 3/16" @14" o.c.	11/16" dia. x 3/16" @14" o.c.	5/8" x 3/16" @13" o.c.

* FIRST AND LAST ANCHOR SHALL BE 7" MAXIMUM FROM END OF ANGLE

LOAD DIAGRAM (ANGLES)



LOAD DIAGRAM (CHANNEL)

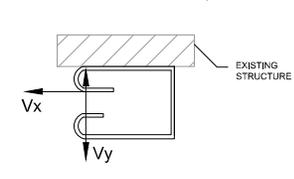


TABLE 3: MODEL #S10-6065 JAMB REACTIONS

DOOR OPENING WIDTH	SLIP EACH END	C CHANNEL OR ANGLE GUIDES			
		POSITIVE WIND Vx plf	POSITIVE WIND Vy plf	NEGATIVE WIND Vx plf	NEGATIVE WIND Vy plf
24' 1-1/2"	1.00"	3486	727	3784	787
20'-0"	1.00"	2574	602	2799	653
16'-0"	1.00"	1738	482	1900	523
14'-0"	1.00"	1329	422	1461	457
12'-0"	0.50"	1434	363	1582	393
10'-0"	0.50"	858	302	971	327

FL 10706.1

EX ENGINEERING EXPRESS
POSTAL ADDRESS:
2234 NORTH FEDERAL HWY # 7664
BOCA RATON, FL 33431
ENGINEERINGEXPRESS.COM

BEST ROLLING DOORS, INC.
9770 N.W. 79TH AVENUE
HIALEAH GARDENS, FL
Phn. (305) 698-3550
STEEL ROLL-UP DOORS
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#10706.1)

DATE	DRWN	CHKD	DATE	DATE
08/16/17	RVN	FLB	01/25/21	
07/25/21	JEM	FLB	09/29/23	
09/29/23	AMZ	RS		

REMARKS
COPYRIGHT ENGINEERING EXPRESS®

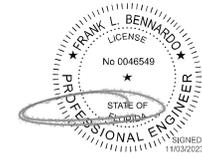
23-62056a

SCALE: NTS UNLESS NOTED



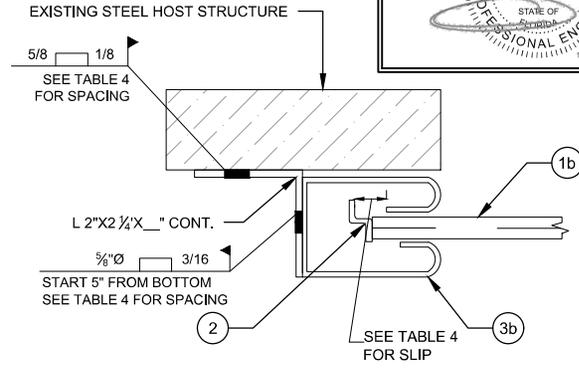
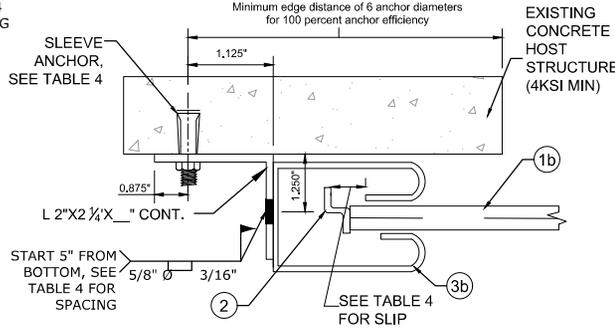
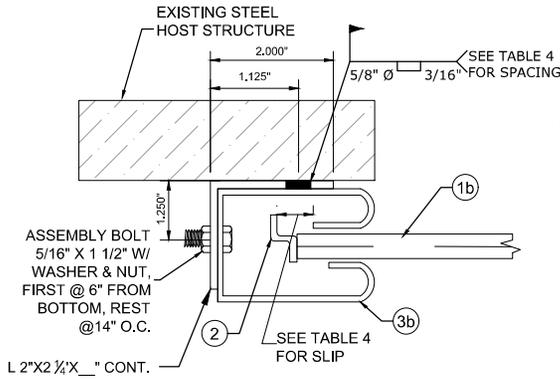
JAMB CONNECTIONS MODEL #S10-6565

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885



SPACE RESERVED FOR
CERTIFYING ENGINEER'S
DIGITAL OR PHYSICAL SEAL
& DATE OF CERTIFICATION

NOVEMBER 3, 2023



**CHANNEL JAMB TO STEEL 1
(MODEL S10-6565)**

SCALE: NTS SECTION

**CHANNEL JAMB TO CONCRETE
(MODEL S10-6565)**

SCALE: NTS SECTION

**CHANNEL JAMB TO STEEL 2
(MODEL S10-6565)**

SCALE: NTS SECTION

FL 10706.1

**ENGINEERING
EXPRESS**

POSTAL ADDRESS:
2234 NORTH FEDERAL HWY # 7664
BOCA RATON, FL 33431
ENGINEERINGEXPRESS.COM

BEST ROLLING DOORS, INC.

9770 N.W. 79TH AVENUE
HIALEAH GARDENS, FL
Phn. (305) 698-3550

STEEL ROLL-UP DOORS
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#10706.1)

TABLE 4: MODEL #S10-6565 JAMB CONNECTIONS

DOOR OPENING WIDTH	SLIP EACH END	ANCHORS TO CONCRETE JAMB fc= 4000 psi		FIELD WELD TO STEEL JAMB Based on a minimum wall angle thickness: 3/16"		WALL ANGLE THICKNESS Gr50 Fy = 50 ksi, see detail 3/2 for angle stacking options	
		WALL ANGLE TO JAMB		CHANNEL GUIDE		CHANNEL GUIDE	
		HILTI Kwik Bolt 3 or Dynabolt Sleeve Anchor *	PLUG WELD WALL ANGLE TO JAMB	PLUG WELD CHANNEL TO WALL ANGLE	E-GUIDE STEEL JAMB	Z-GUIDE CONCRETE JAMB	
		dia. x embedment x spacing					
30'-4-1/2"	1.50	5/8" x 4" @ 6-1/2" o.c.	5/8" dia. x 3/16" @ 6-1/2" o.c.	5/8" dia. x 3/16" @ 10" o.c.	3/8"	3/8"	
25'-0"	1.50	5/8" x 4" @ 9-1/2" o.c.	5/8" dia. x 3/16" @ 8" o.c.	5/8" dia. x 3/16" @ 12" o.c.	5/16"	5/16"	
20'-0"	1.50	5/8" x 4" @ 13-1/2" o.c.	5/8" dia. x 3/16" @ 12" o.c.	5/8" dia. x 3/16" @ 14" o.c.	1/4"	1/4"	
16'-0"	1.00	5/8" x 4" @ 16" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/8" dia. x 3/16" @ 14" o.c.	1/4"	1/4"	
14'-0"	0.75	5/8" x 4" @ 16" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/8" dia. x 3/16" @ 14" o.c.	3/16"	3/16"	
12'-0"	0.50	5/8" x 4" @ 16" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/8" dia. x 3/16" @ 14" o.c.	3/16"	3/16"	
8'-0"	0.25	5/8" x 4" @ 16" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/8" dia. x 3/16" @ 14" o.c.	3/16"	3/16"	
4'-0"	0.50	5/8" x 4" @ 16" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/8" dia. x 3/16" @ 14" o.c.	3/16"	3/16"	

* FIRST AND LAST ANCHOR SHALL BE 7" MAXIMUM FROM END OF ANGLE

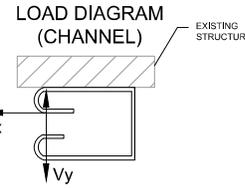
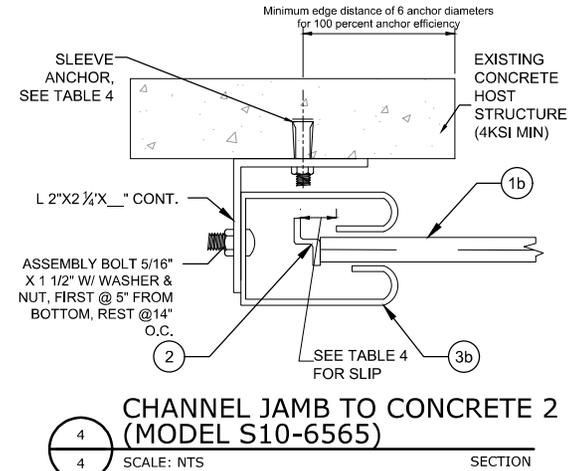


TABLE 5: MODEL #S10-6565 JAMB REACTIONS

Design Wind Load (psf)	Opening Width	Design Slip	Vx (lb/ft)	Vy (lb/ft)
+50 / -50	12'-0"	1/2"	1213	302
	16'-0"	1"	1459	402
	20'-0"	1 1/2"	1739	502
	25'-0"	1 1/2"	2501	627
+55 / -55	30'-4 1/2"	1 1/2"	3389	761
	12'-0"	1/2"	1362	332
	16'-0"	1"	1620	442
	20'-0"	1 1/2"	1923	552
+60 / -60	25'-0"	1 1/2"	2758	690
	30'-4 1/2"	1 1/2"	3732	838
	12'-0"	1/2"	1510	362
	16'-0"	1"	1782	483
+65 / -65	20'-0"	1 1/2"	2106	603
	25'-0"	1 1/2"	3014	752
	30'-4 1/2"	1 1/2"	4075	914
	12'-0"	1/2"	1659	393
	16'-0"	1"	1943	523
	20'-0"	1 1/2"	2290	653
	25'-0"	1 1/2"	3271	815
	30'-4 1/2"	1 1/2"	4418	990

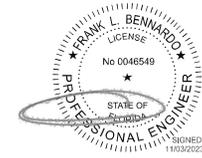


**CHANNEL JAMB TO CONCRETE 2
(MODEL S10-6565)**

SCALE: NTS SECTION

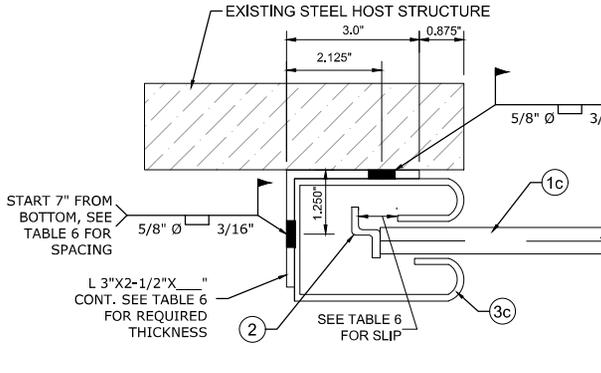
JAMB CONNECTIONS MODEL #S10-100

FRANK BENNARDO, P.E.
PE# 0046549 CA# 9885

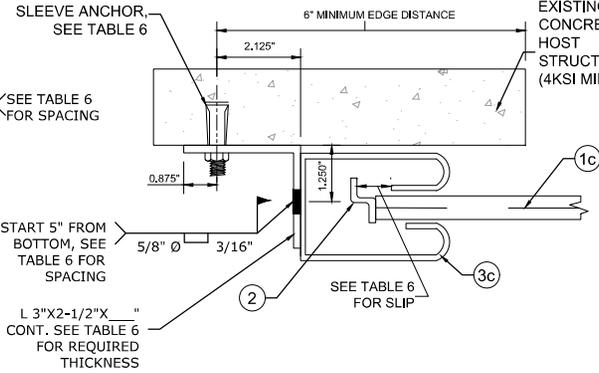


SPACE RESERVED FOR
CERTIFYING ENGINEER'S
DIGITAL OR PHYSICAL SEAL
& DATE OF CERTIFICATION

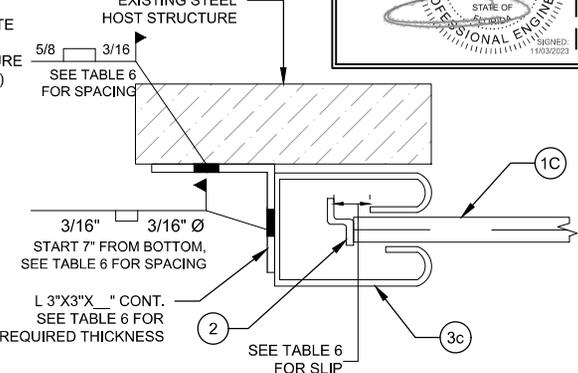
NOVEMBER 3, 2023



1
5 CHANNEL JAMB TO STEEL 1
(MODEL S10-100)
SCALE: NTS SECTION



2
5 CHANNEL JAMB TO CONCRETE 1
(MODEL S10-100)
SCALE: NTS SECTION



3
5 CHANNEL JAMB TO STEEL 2
(MODEL S10-100)
SCALE: NTS SECTION

TABLE 6: MODEL #S10-100 JAMB CONNECTIONS

DOOR OPENING WIDTH	SLIP EACH END	ANCHORS TO CONCRETE JAMB fc = 4000 psi		FIELD WELD TO STEEL JAMB		WALL ANGLE THICKNESS Gr50 Fy = 50 ksi, see detail 3/2 for angle stacking options	
		WALL ANGLE TO JAMB		CHANNEL GUIDE		CHANNEL GUIDE	
		HILTI Kwik Bolt 3 or Dynabolt Sleeve Anchor *	PLUG WELD WALL ANGLE TO JAMB	PLUG WELD CHANNEL TO WALL ANGLE	E-GUIDE STEEL JAM	Z-GUIDE CONCRETE JAM	
		dia. x embedment x spacing					
30' 4-1/2"	1.50"	3/4" x 6-1/2" @ 5-1/4" o.c.	5/8" dia. x 3/16" @ 4-3/4" o.c.	5/8" dia. x 3/16" @ 7" o.c.	1/2"	1/2"	
25'-0"	1.50"	3/4" x 6-1/2" @ 7" o.c.	5/8" dia. x 3/16" @ 6-1/4" o.c.	5/8" dia. x 3/16" @ 9-1/4" o.c.	7/16"	7/16"	
20'-0"	1.50"	3/4" x 6-1/2" @ 10-1/2" o.c.	5/8" dia. x 3/16" @ 9" o.c.	5/8" dia. x 3/16" @ 12" o.c.	3/8"	3/8"	
15'-0"	1.00"	3/4" x 6-1/2" @ 14" o.c.	5/8" dia. x 3/16" @ 12" o.c.	5/8" dia. x 3/16" @ 14" o.c.	5/16"	5/16"	

* FIRST AND LAST ANCHOR SHALL BE 7" MAXIMUM FROM END OF ANGLE

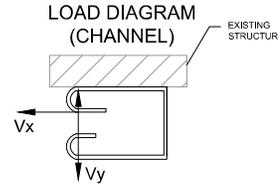
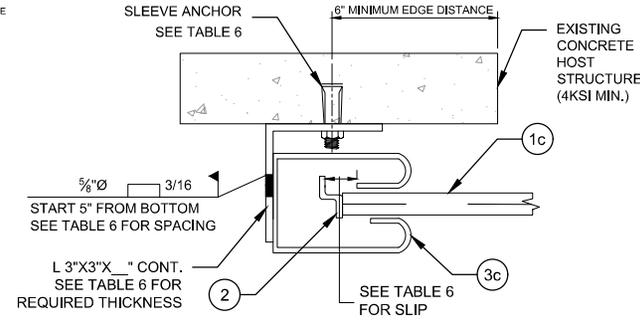


TABLE 7: MODEL #S10-100
JAMB REACTIONS

DOOR OPENING WIDTH	Vx (+ or -)	Vy (+ or -)
	lb / ft	lb / ft
30' 4-1/2"	6799	1523
25'-0"	5035	1254
20'-0"	3528	1004
15'-0"	2670	754



4
5 CHANNEL JAMB TO CONCRETE 2
(MODEL S10-100)
SCALE: NTS SECTION

FL 10706.1

ENGINEERING EXPRESS
POSTAL ADDRESS:
2234 NORTH FEDERAL HWY # 7664
BOCA RATON, FL 33431
ENGINEERINGEXPRESS.COM

BEST ROLLING DOORS, INC.
9770 N.W. 79TH AVENUE
HIALEAH GARDENS, FL
Phn. (305) 698-3550
STEEL ROLL-UP DOORS
FLORIDA BUILDING CODE EIGHTH EDITION (2023)
FLORIDA STATEWIDE APPROVAL (FSA FL#10706.1)

DATE	DRWN	CHKD	REMARKS
08/16/17	RVN	FLB	
01/25/21	JEM	FLB	
09/29/23	AMZ	RS	

23-62056a

SCALE: NTS UNLESS NOTED



