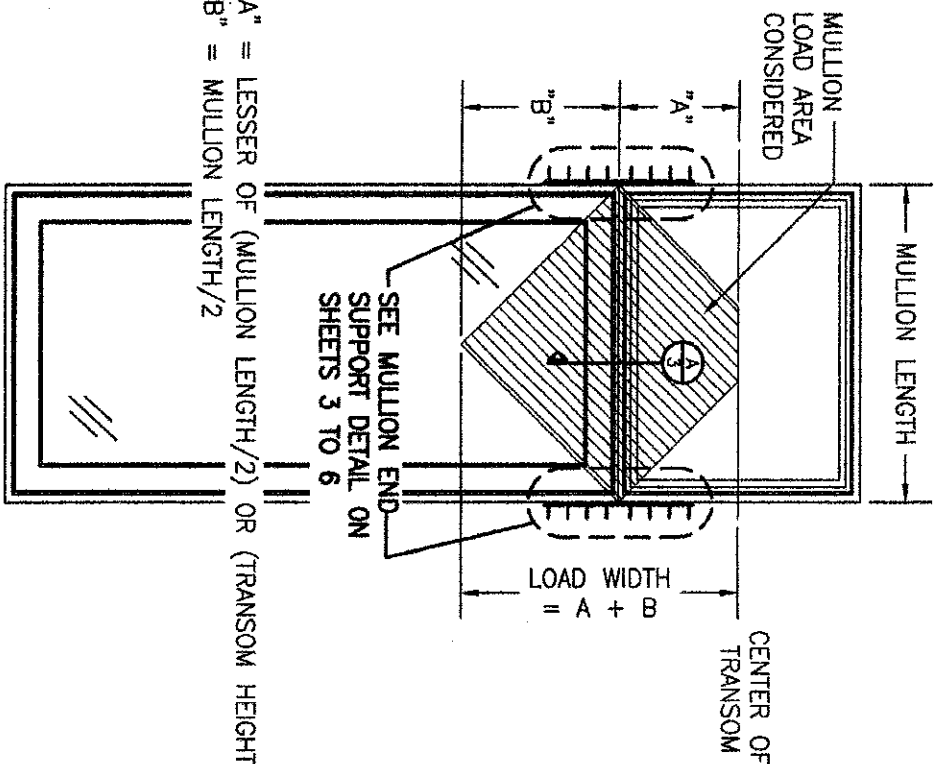


"A" = LESSER OF (MULLION LENGTH/2) OR (TRANSOM HEIGHT/2)
"B" = MULLION LENGTH/2



SINGLE WINDOW OR DOOR WITH FIXED TRANSOM (SEE LOAD TABLE 1.0)

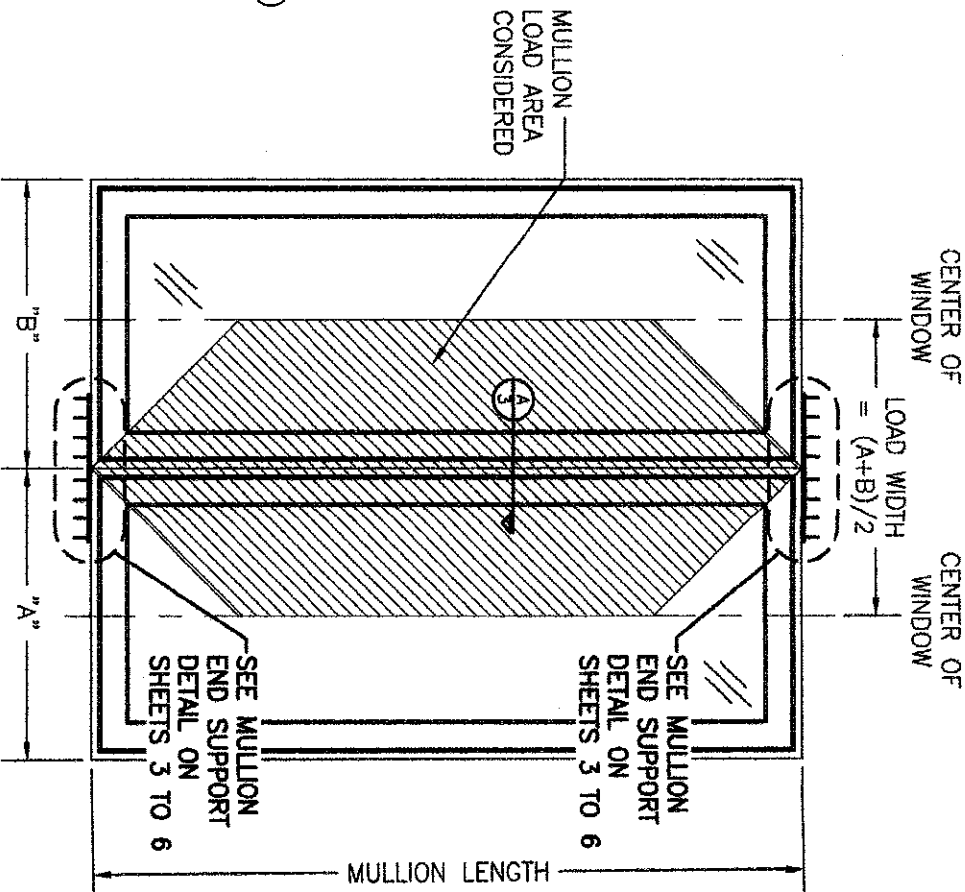
- NOTES:
1. WINDOW/DOOR MAY BE ANY FIXED OR OPERABLE UNIT.
 2. MULLION MAY BE HORIZONTAL OR VERTICAL.

GENERAL NOTES:

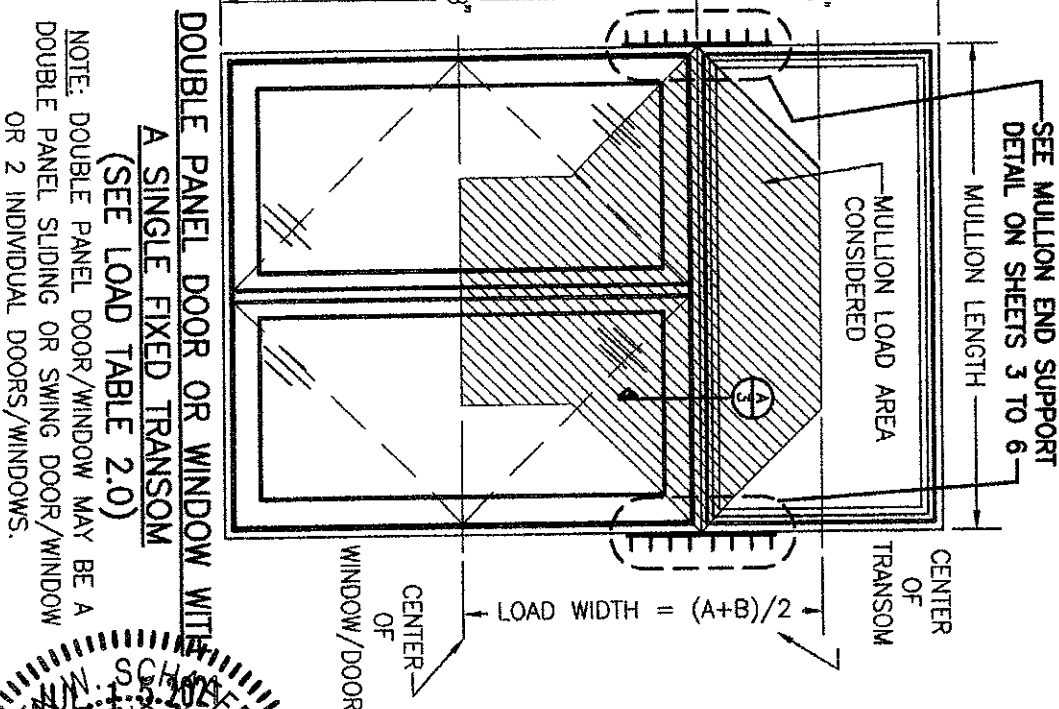
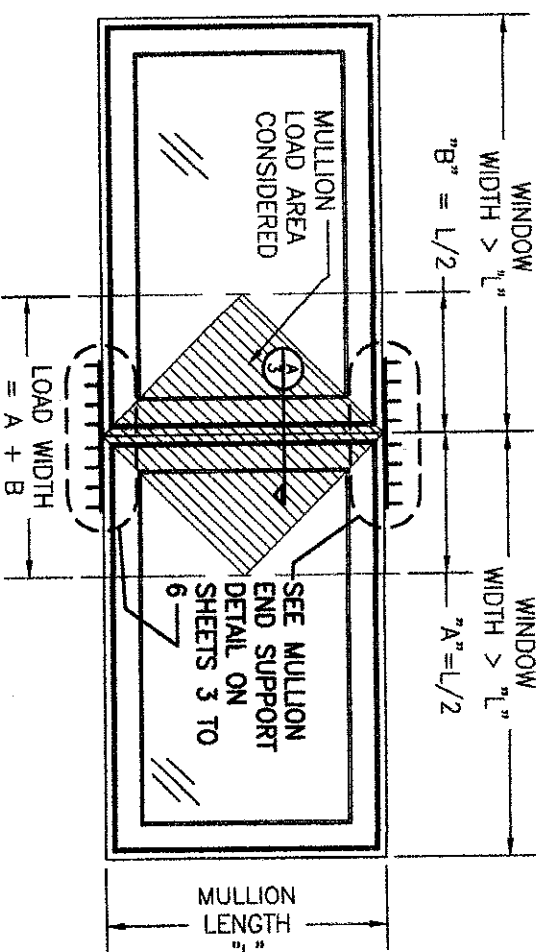
1. THESE MULLION SYSTEMS HAVE BEEN ANALYZED AND CERTIFIED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE LOAD TABLES.
2. OPENINGS, INCLUDING BUCKS (IF USED AS SUPPORT), MUST BE DESIGNED & CONSTRUCTED TO WITHSTAND WIND LOADS TRANSFERRED BY THE MULLIONS END REACTIONS & SUPPORTED WINDOWS/DOORS.
3. ALL MATERIALS & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & MAY NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS.
4. THESE MULLION SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH & MEET THE REQUIREMENTS OF THE FLORIDA BUILDING CODE (FBC) INCLUDING HIGH VELOCITY HURRICANE ZONES (HVHZ).
5. ALLOWABLE PRESSURE ON THE MULLION OR THE INDIVIDUAL DOOR/WINDOW UNITS.
6. WINDOW/DOOR SIZES SHALL BE AS RESTRICTED BY THEIR OWN INDIVIDUAL APPROVALS/CERTIFICATIONS.
7. FOR WINDOW OR DOOR FRAME TO OPENING ATTACHMENT, SEE THE RESPECTIVE PRODUCT CERTIFIED DRAWINGS/SPECIFICATIONS FOR THE WINDOW/DOOR.
8. MULLION LENGTHS ARE RESTRICTED BY THOSE SHOWN IN THE TABLES.
9. THE LOADS IN THESE TABLES CONSIDER WORSE CASE OF MULLION STRESS, DEFLECTION AND END REACTION.
10. ANY CONDITIONS NOT COVERED IN THIS CERTIFICATION SHALL BE SUBJECT TO SEPERATE ENGINEERING REVIEW.
11. ALL EMBEDMENTS SPECIFIED ARE TO BE BEYOND WALL FINISH.
12. MULLION BAR MUST BE CONTINUOUS END TO END.
13. WHEN VERTICALLY STACKED, THE MANUFACTURER/INSTALLER SHALL INSURE THAT THE DEAD WEIGHT OF THE ABOVE WINDOWS WILL NOT CAUSE UNDO STRESS ON THE BELOW WINDOWS. THESE MULLIONS ARE DESIGNED TO SUPPORT WIND LOAD ONLY & ARE NOT CONSIDERED TO SUPPORT DEAD LOAD OF THE WINDOWS/DOORS.
14. ALL ANCHORS SPECIFIED HERE-IN THAT ARE TO PENETRATE PRESSURE TREATED (P.T.) LUMBER SHALL BE OF A MATERIAL CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
15. DOORS & WINDOWS SHALL BE UNDER SEPERATE CERTIFICATION. SEE THE PRODUCTS SPECIFIC CERTIFICATION FOR THEIR USE.

FIXED WINDOW TO FIXED WINDOW WHEN WINDOW WIDTHS ARE LESS THAN OR EQUAL TO THE MULLION LENGTH (SEE LOAD TABLE 1.0)

NOTE: MULLION MAY BE HORIZONTAL OR VERTICAL



FIXED WINDOW TO FIXED WINDOW WHEN WINDOW WIDTHS ARE GREATER THAN THE MULLION LENGTH (SEE LOAD TABLE 1.0)



DOUBLE PANEL DOOR OR WINDOW WITH A SINGLE FIXED TRANSOM (SEE LOAD TABLE 2.0)

NOTE: DOUBLE PANEL DOOR/WINDOW MAY BE A
DOUBLE PANEL SLIDING OR SWING DOOR/WINDOW
OR 2 INDIVIDUAL DOORS/WINDOWS.

END CLIPPED STEEL BAR MULLION

CONSULTANTS
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7480 150TH COURT NORTH
PALM BEACH GARDENS, FL 33418
PHONE: 561-744-3424

JOB INFORMATION:

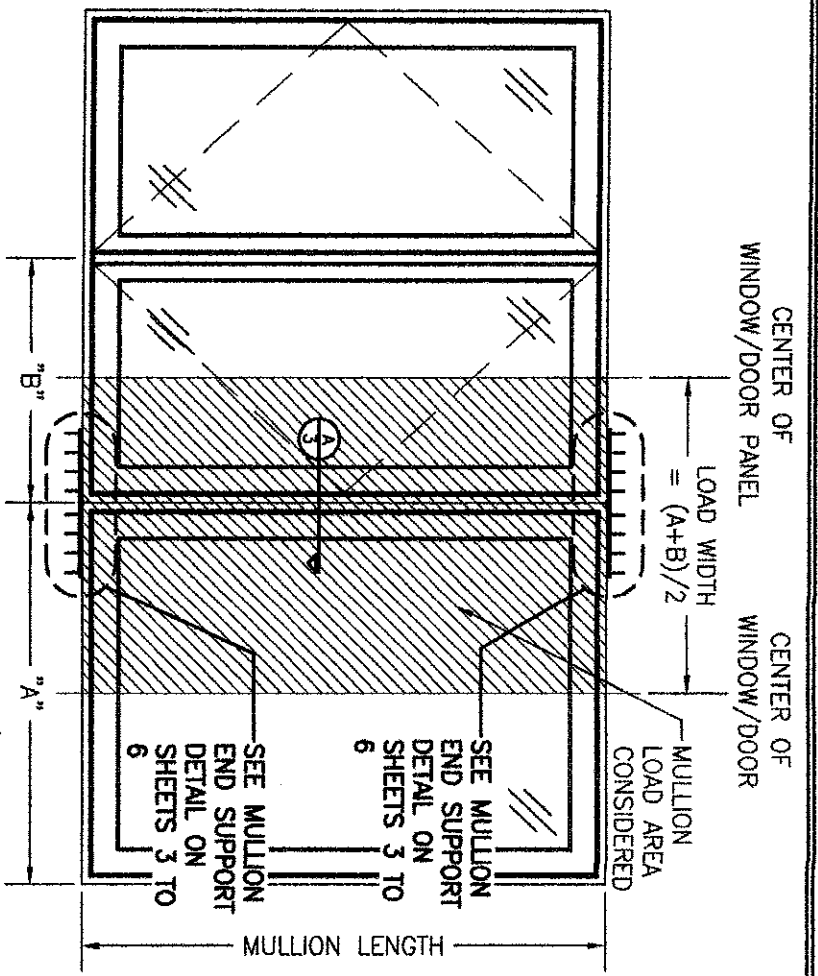
TISCHLER UND SOHN (USA) LTD.
SIX SUBURBAN AVENUE
STAMFORD, CONNECTICUT
203-674-0600

NO.	REVISION DESCRIPTION	BY	DATE
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CHECKED BY: W.S.
DATE: 06/09/21

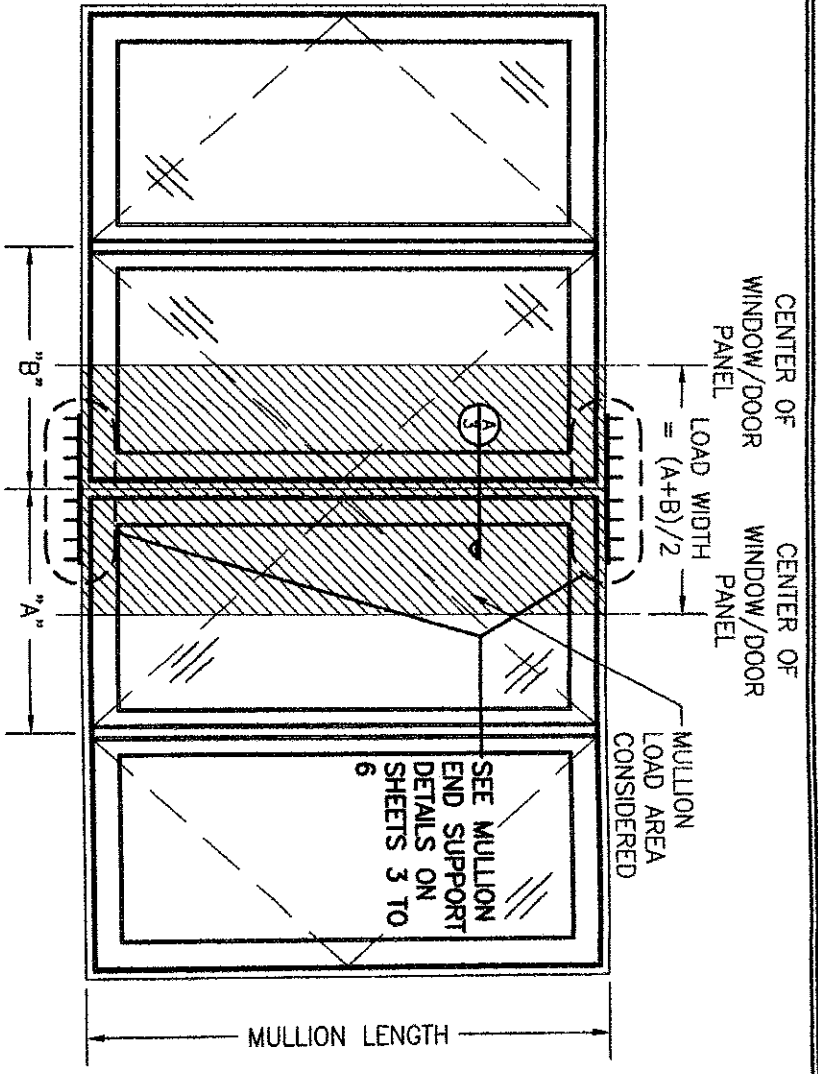
THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR RATIONAL, AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

DRAWING NO. 1995
SHEET NO. 1 OF 7



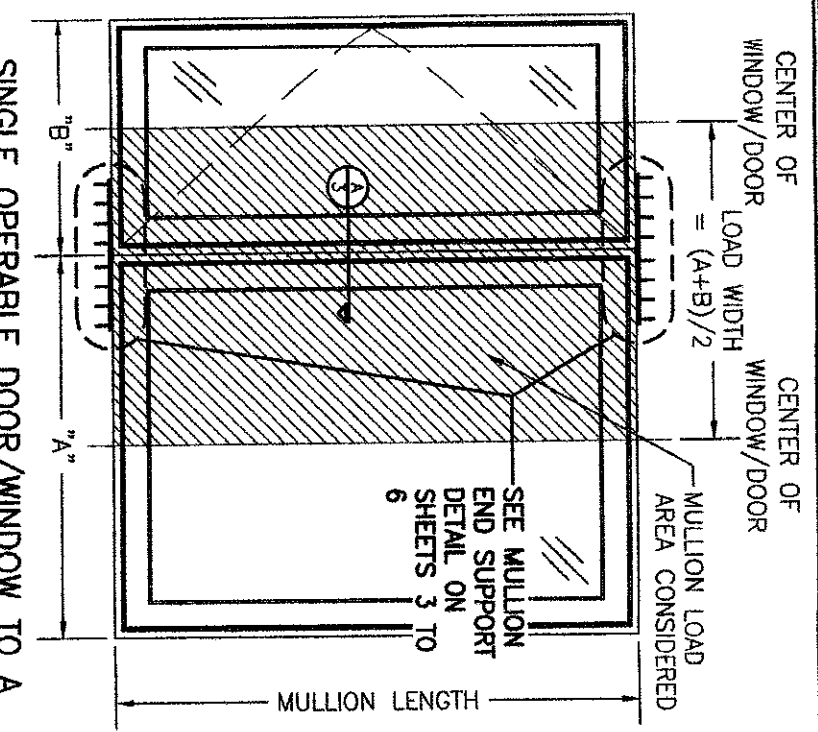
MULTIPLE PANEL OPERABLE DOOR/WINDOW
TO A SINGLE DOOR/WINDOW
(SEE LOAD TABLE 3.0)

NOTE: MULTIPLE PANEL DOORS/WINDOWS MAY BE SLIDING OR SWING.

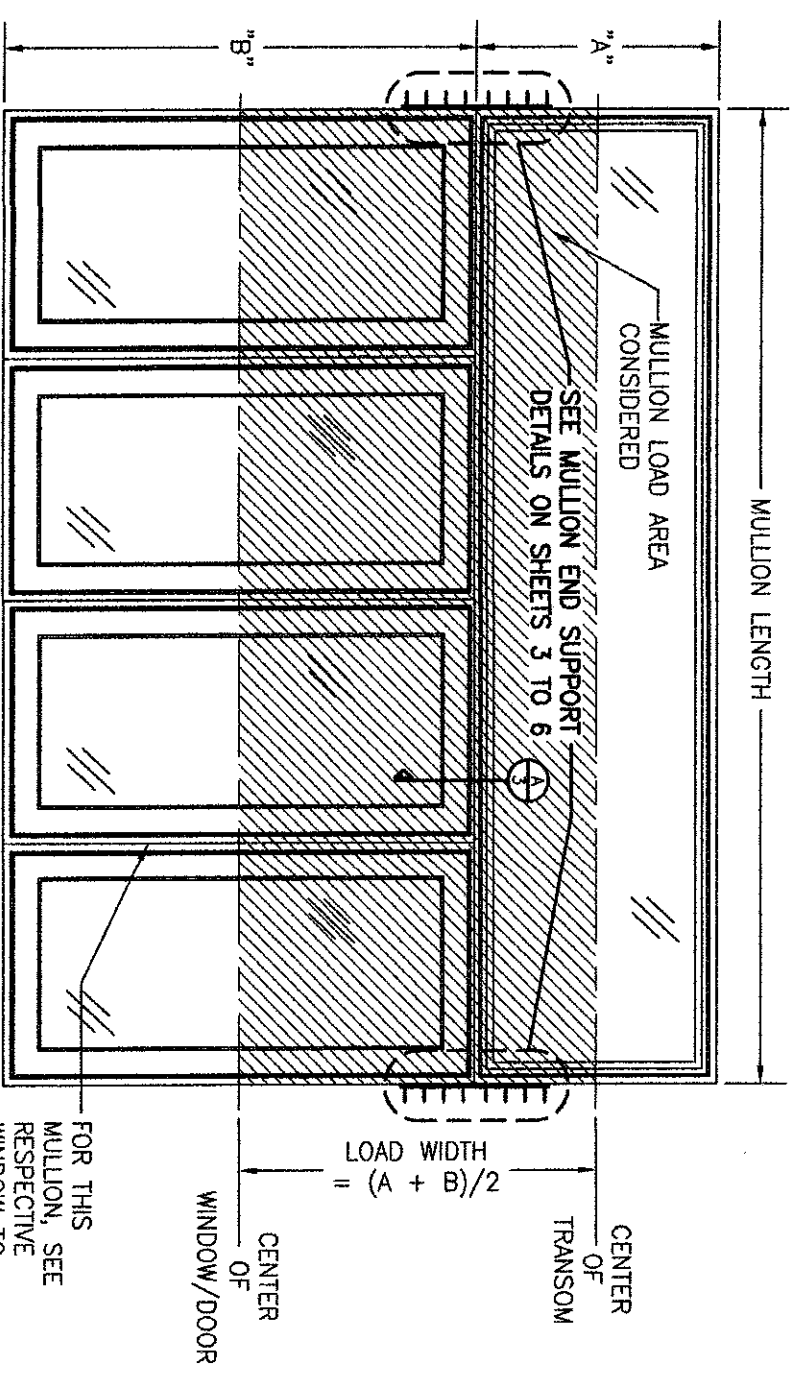


MULTIPLE PANEL OPERABLE DOOR/WINDOW
TO A MULTIPLE PANEL DOOR/WINDOW
(SEE LOAD TABLE 3.0)

NOTE: MULTIPLE PANEL DOORS/WINDOWS MAY BE SLIDING OR SWING.

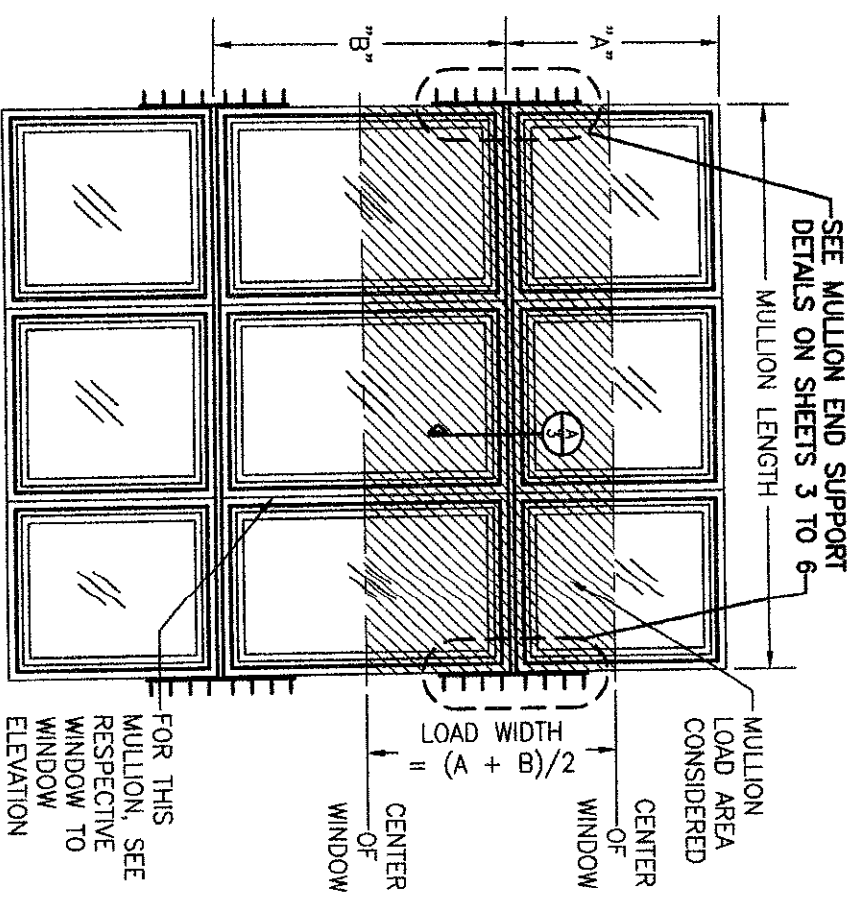


SINGLE OPERABLE DOOR/WINDOW TO A
SINGLE OPERABLE OR FIXED DOOR/WINDOW
(SEE LOAD TABLE 3.0)



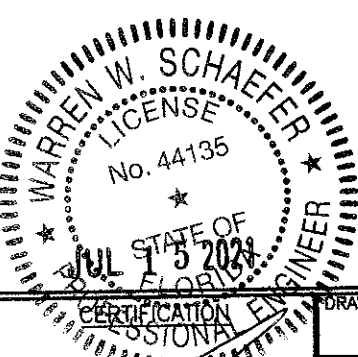
MULTIPLE WINDOWS/DOORS WITH TRANSOM
(SEE LOAD TABLE 3.0)

NOTES: 1. TRANSOM MAY BE SINGLE OR MULTIPLE WINDOWS.
2. BOTTOM UNIT ALSO INCLUDES USE OF SLIDING DOORS/WINDOWS & BI-FOLD DOORS.



MULTIPLE WINDOWS (SEE LOAD TABLE 3.0)

NOTE: CONTINUOUS MULLION MAY BE HORIZONTAL OR VERTICAL (HORIZONTAL SHOWN).

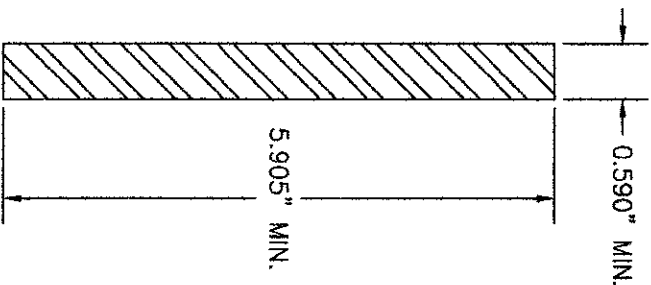
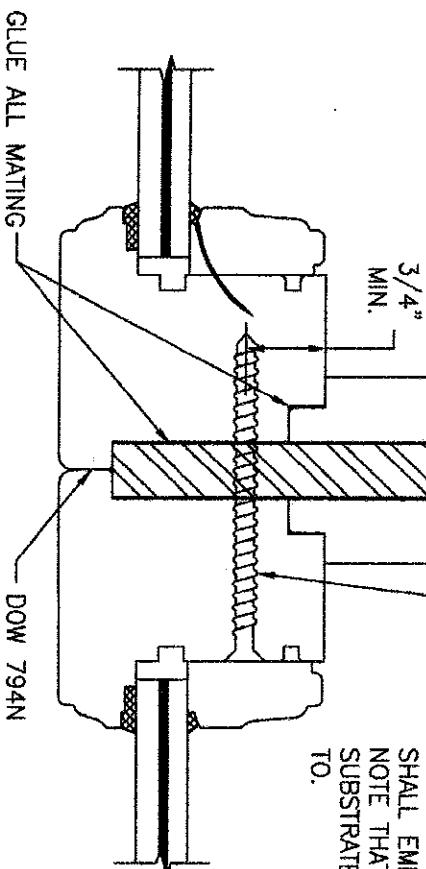


DRAWING TITLE		END CLIPPED STEEL BAR MULLION		CONSULTANTS		W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		JOB INFORMATION:		TISCHLER UND SOHN (USA) LTD.		SIX SUBURBAN AVENUE STAMFORD, CONNECTICUT 203-674-0600		DRAWN BY: W.W.S.		CHECKED BY: W.W.S.	
DATE		1995		7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		DATE		06/09/21		NO.		REVISION DESCRIPTION		BY		DATE	
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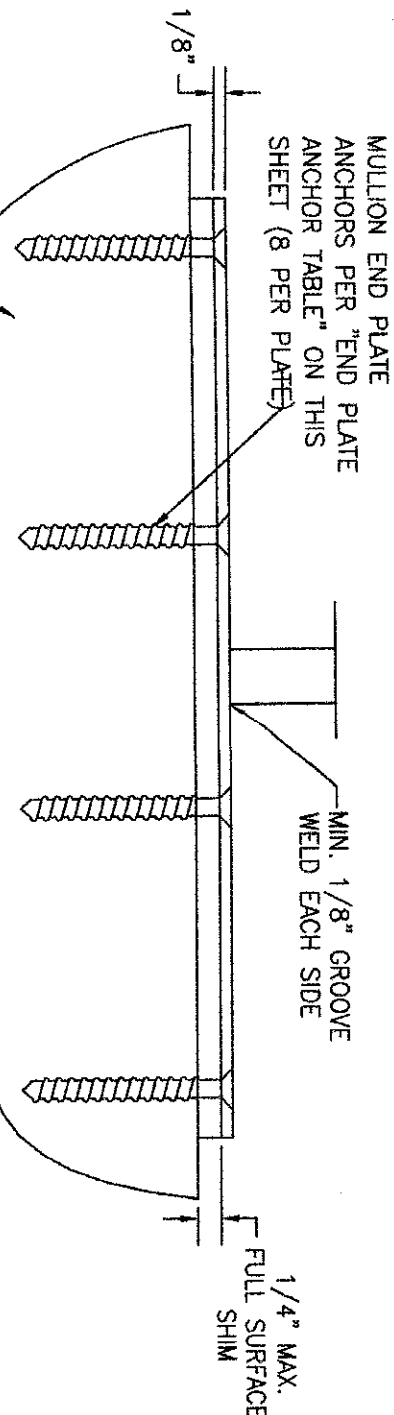
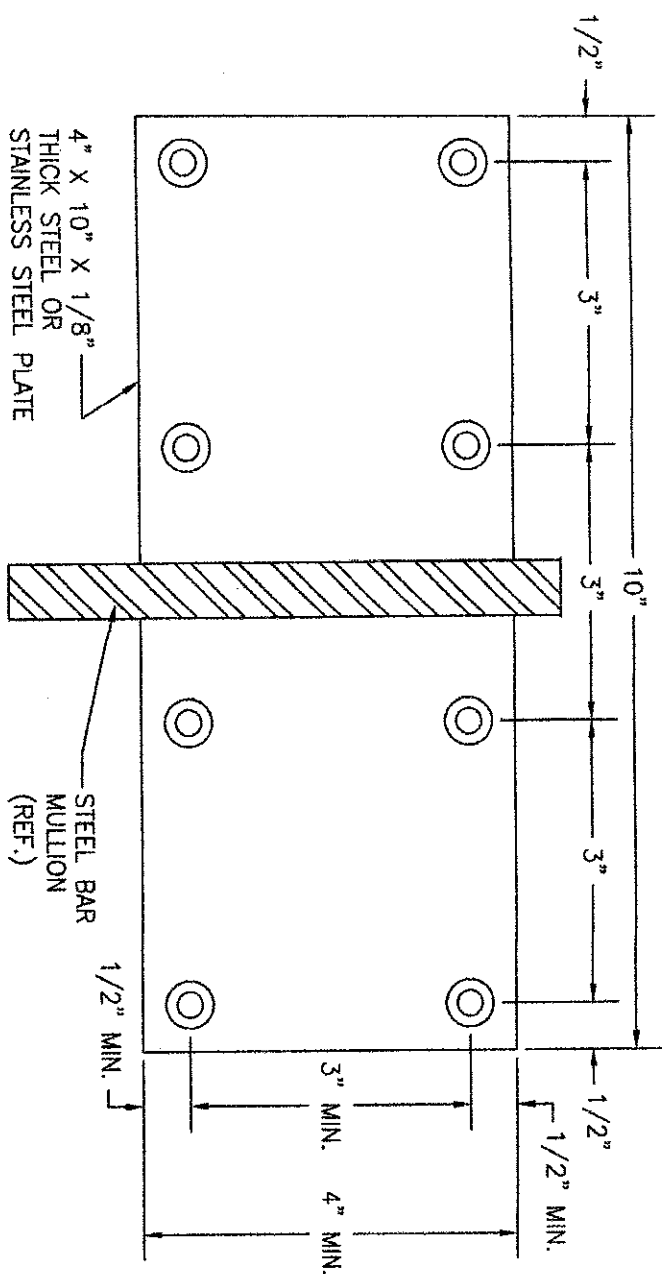
CONTINUOUS WOOD MULL CAP AS REQUIRED
0.59" X 5.9" MIN. 34 KSI STEEL OR STAINLESS STEEL BAR
3/4" MIN.
1 15/16" MIN.
DOW 794N
GLUE ALL MATING SURFACES BOTH SIDES OF MULLION WITH BEKO ALLCON 10 POLYURETHANE GLUE OR EQUIVALENT

FRAME SCREWS AND THEIR POSITIONS ALONG EACH FRAME MEMBER TO BE AS SPECIFIED IN THE APPLICABLE WINDOW/DOOR APPROVAL(S). SCREW LENGTH SHALL BE AS REQUIRED TO RUN THROUGH THE STEEL BAR'S PREDRILLED HOLES AND PENETRATE THE OPPOSING FRAME MEMBER MIN. 1 1/4". IF MULLION CONSISTS OF 2 DIFFERENT WINDOW/DOOR PRODUCTS, THE WORSE CASE FRAME ANCHOR REQUIREMENTS SHALL BE USED FROM THE TWO PRODUCT APPROVALS. IF SCREWS CAN NOT PENETRATE THE OPPOSING FRAME MEMBER AT LEAST 1 1/4", THEY SHALL BE PLACED FROM BOTH SIDES OF THE MULLION USING THE ANCHOR POSITION REQUIREMENTS OF EACH APPROVAL & SHALL EMBED THE OPPOSING FRAME MEMBER MIN. 3/4". NOTE THAT THE MULLION BAR IS GENERALLY CONSIDERED A SUBSTRATE TO WHICH THE WINDOWS/DOORS ARE ANCHORED TO.

SECTION A
SCALE: 1/2 FULL



STEEL BAR MULLION
(MIN. 34 KSI STEEL OR STAINLESS STEEL)



SUBSTRATE PER "END PLATE ANCHOR TABLE"

MULLION END SUPPORT DETAIL OPTION 1A
(APPLICABLE WITH ALL SUBSTRATES EXCEPT CMU)

NOTE: END PLATE MAY BE POSITIONED ANYWHERE ALONG THE MULLION BAR CROSS SECTIONAL LENGTH PROVIDING THE EDGE OF THE PLATE DOES NOT GO PAST NEITHER THE INTERIOR OR EXTERIOR EDGE OF THE BAR.

MULLION END PLATE ANCHOR REQUIREMENTS TABLE

OPENING TYPE (SUBSTRATE)	FRAME/CLIP/BRAKET TO OPENING FASTENER TYPE	MINIMUM EMBED	MINIMUM EDGE DIST.
FRAME SHEAR SCREWS			
2X WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55)	NO. 14 SMS/WOOD SCREW	1 1/4"	1"
MIN. 18 GA. 33 KSI METAL STUD	1/4" GR. 5 SELF TAP/DRILLING SCREW	FULL	1/2"
MIN. 1/8" THK A36 STEEL	1/4" GR. 5 SELF TAP/DRILLING SCREW	FULL	1/2"
MIN. 1/8" THK 6063-T5 ALUM.	1/4" GR. 5 SELF TAP/DRILLING SCREW	FULL	1/2"
CONCRETE FILLED C-90 CMU	(1) 1/4" CONCRETE SCREW	1 3/4"	2"
MIN. 2500 PSI CONCRETE	(1) 1/4" CONCRETE SCREW	1 3/4"	2"

(1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS (C.S.), ELCO CRETE-FLEX (S.S.) OR HILTI KWIK-CON II (C.S. OR S.S.).

END PLATE ANCHOR NOTE:

THESE MULLIONS MAY INTERSECT AND BE TIED TOGETHER. WHEN ONE MULLION BAR IS END ATTACHED TO ANOTHER STEEL BAR MULLION, ONE OF 2 OPTIONS MAY APPLY. OPTION 1: USE END PLATES AS SHOWN HERE-IN AND ATTACH THE PLATES TO THE SUPPORTING MULLION BAR WITH 1/4-14 OR 1/4-20 SELF TAPPING SCREWS WITH FULL THREAD EMBED OR WITH 1/4-16 OR 20 MACHINE SCREWS THREADED INTO THE BAR MIN. 1/2". OPTION 2: WELD THE MULLION BAR END DIRECTLY TO THE OPPOSING MULLION WITH EITHER 3/16" GROOVE WELDS OR 3/16" FILLET WELDS EACH SIDE OF THE BAR.

END CLIPPED STEEL BAR MULLION

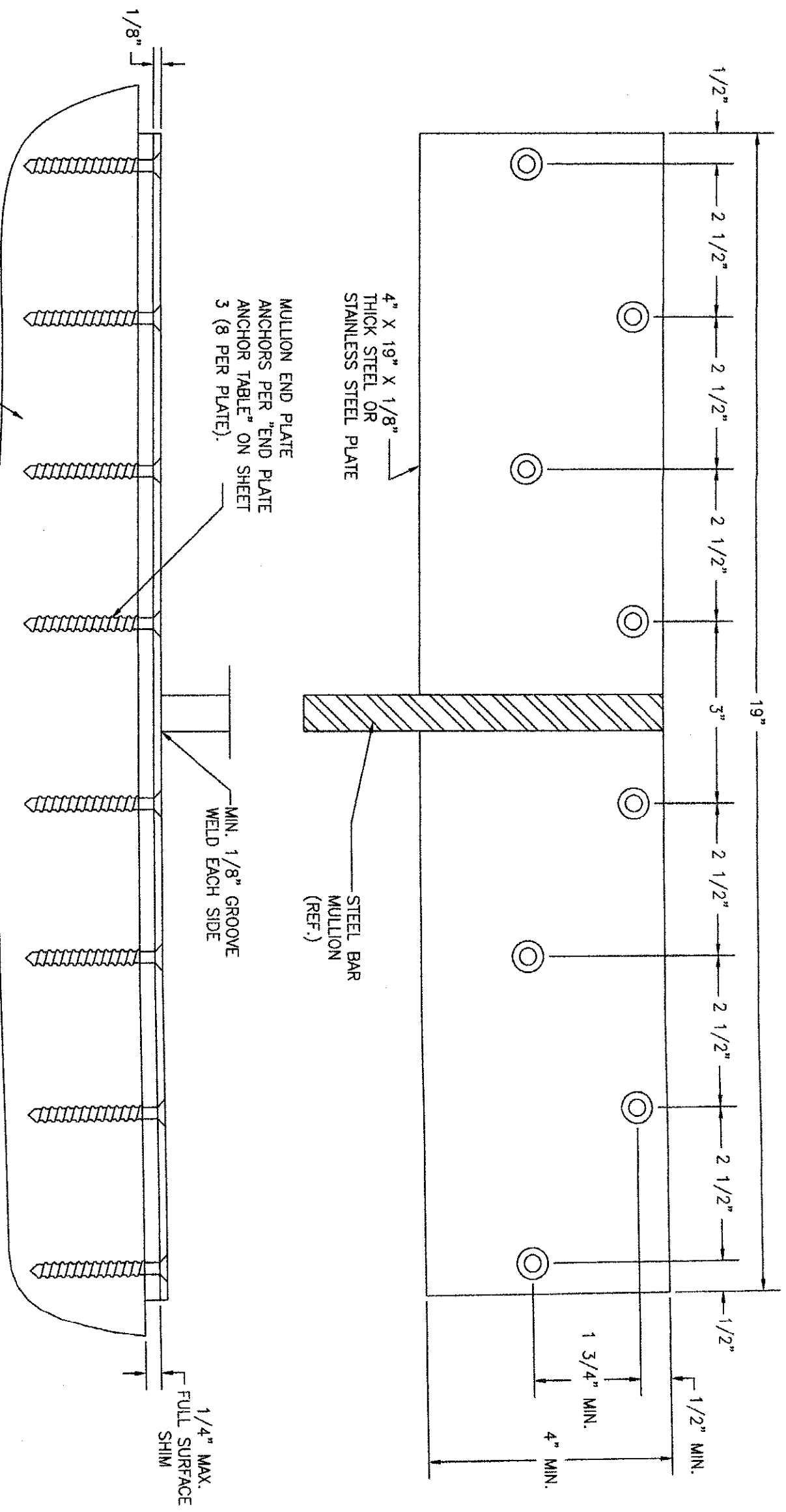
CONSULTANTS
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)
7480 150TH COURT NORTH
PALM BEACH GARDENS, FL 33418
PHONE: 561-744-3424

MANUFACTURER
TISCHLER UND SOHN (USA) LTD.
SIX SUBURBAN AVENUE
STAMFORD, CONNECTICUT
203-674-0600

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DATE: 06/09/21	

WARREN W. SCHAEFER
LICENSE No. 44135
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DRAWING NO. 1995
SHEET NO. 3 OF 7



SUBSTRATE PER "END-
PLATE ANCHOR TABLE"

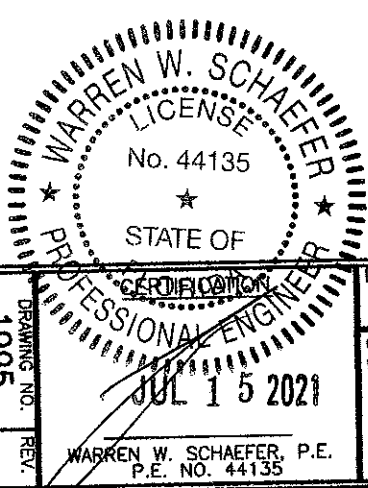
MULLION END PLATE
ANCHORS PER "END PLATE
ANCHOR TABLE" ON SHEET
3 (8 PER PLATE).

MIN. 1/8" GROOVE
WELD EACH SIDE

STEEL BAR
MULLION
(REF.)

**MULLION END SUPPORT DETAIL OPTION 2A
(APPLICABLE WITH ALL SUBSTRATES EXCEPT CMU)**
NOTE: END PLATE MAY BE POSITIONED ANYWHERE ALONG THE MULLION BAR
CROSS SECTIONAL LENGTH PROVIDING THE EDGE OF THE PLATE DOES NOT
GO PAST NEITHER THE INTERIOR OR EXTERIOR EDGE OF THE BAR.

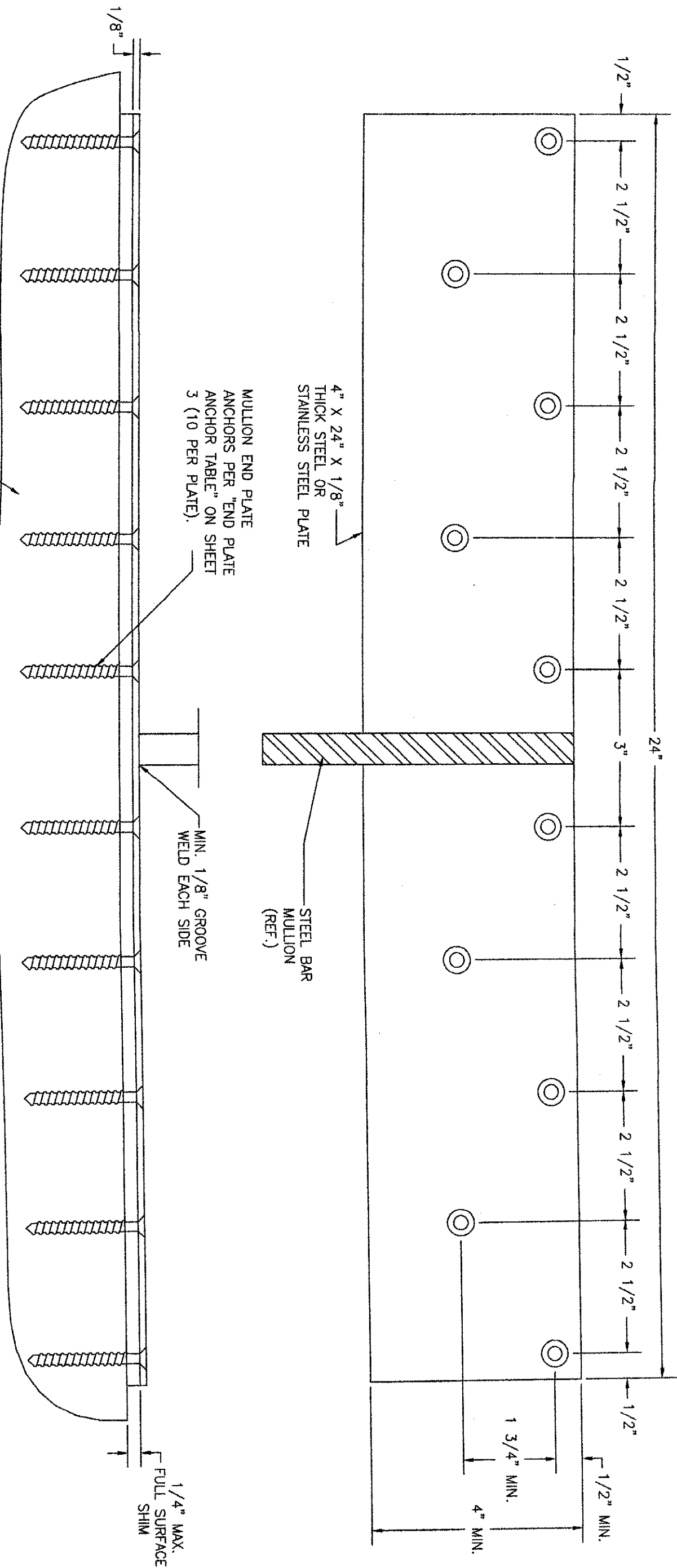
1/4" MAX.
FULL SURFACE
SHIM



DRAWING TITLE			
END CLIPPED STEEL BAR MULLION			
CONSULTANTS		MANUFACTURER	
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809)		TISCHLER UND SOHN (USA) LTD.	
7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		SIX SUBURBAN AVENUE STAMFORD, CONNECTICUT 203-674-0600	

NO.	REVISION	DESCRIPTION	BY	DATE

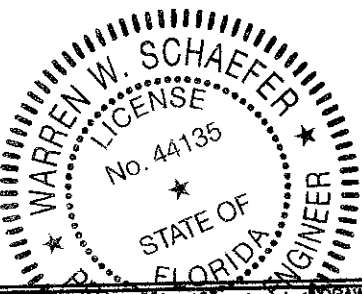
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W.W.S.	W.W.S.
DATE:	DATE:
1-24	06/09/21



SUBSTRATE PER "END-
PLATE ANCHOR TABLE"

**MULLION END SUPPORT DETAIL OPTION 2B
(APPLICABLE WITH CMU SUBSTRATE)**

NOTE: END PLATE MAY BE POSITIONED ANYWHERE ALONG THE MULLION BAR
CROSS SECTIONAL LENGTH PROVIDING THE EDGE OF THE PLATE DOES NOT
GO PAST NEITHER THE INTERIOR OR EXTERIOR EDGE OF THE BAR.



NO.	REVISION DESCRIPTION	BY	DATE

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SIX SUBURBAN AVENUE
STAMFORD, CONNECTICUT
203-674-0600

CONSULTANTS
**W. W. SCHAEFER ENGINEERING
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PHONE: 561-744-3424

DRAWING NO. 1995
SHEET NO. 6 OF 7
WARREN W. SCHAEFER, P.E.
P.E. NO. 44135
JUL 15 2021

LOAD TABLE 1.0				
MAXIMUM MULLION LENGTH (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/-PSF)		
144	96	55.0	65.0	
	90	56.9	67.2	
	84	59.2	69.9	
	79	61.9	73.1	
138	79	63.5	75.0	
	96	58.7	69.3	
	90	60.6	71.6	
	84	62.9	74.3	
132	79	63.7	75.0	
	96	62.9	74.3	
	90	64.7	75.0	

LOAD TABLE 2.0				
MAXIMUM MULLION LENGTH (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/-PSF)		
144	96	47.2	47.2	
	90	50.3	50.3	
	84	53.9	53.9	
	78	58.0	58.0	
132	72	62.9	62.9	
	66	68.6	68.6	
	60	75.0	75.0	
	96	56.1	56.1	
120	90	59.9	59.9	
	84	64.1	64.1	
	78	69.1	69.1	
114	72	74.8	74.8	
	96	62.9	67.9	

LOAD TABLE 3.0							
MAXIMUM MULLION LENGTH (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/-PSF)		MAXIMUM MULLION LENGTH (IN.)	MAXIMUM LOAD WIDTH (IN.)	ALLOWABLE PRESSURE (+/-PSF)	
		POSITIVE	NEGATIVE			POSITIVE	NEGATIVE
144	96	36.7	43.3	114	96	52.9	62.6
	90	39.1	46.2		96	57.0	67.4
	84	41.9	49.5		96	61.8	73.0
	78	45.1	53.3		96	63.5	75.0
	72	48.9	57.8		96	48.9	57.8
	66	53.3	63.0		96	52.1	61.6
	60	58.7	69.0		96	55.9	66.0
	60	65.2	75.0	108	96	60.2	71.1
	96	40.0	47.3		96	63.4	75.0
	90	42.7	50.4		96	51.8	61.2
84	45.7	54.0	96		55.2	65.3	
78	49.2	58.2	102		96	59.2	69.9
72	53.3	63.0		96	63.7	75.0	
78	58.2	68.8		96	55.0	65.0	
72	64.0	75.0		96	58.7	69.3	
96	44.0	52.0		96	96	62.9	74.3
90	46.9	55.5	96		63.6	75.0	
84	50.3	59.4	96		58.7	69.3	
96	54.2	64.0	90		96	62.6	74.0
90	58.7	69.3			96	64.0	75.0
84	64.0	75.0		96	62.9	74.3	
96	46.3	54.7		84	96	63.5	75.0
96	49.4	58.4			83	96	63.6
114	96			83	96		

DUE TO LOAD AREA BEING CONSIDERED AS FULLY RECTANGULAR, THE PRESSURES STATED IN THIS TABLE MAY BE CONSERVATIVE. A JOB SPECIFIC REVIEW & CERTIFICATION MAY BE COMPLETED BY W. W. SCHAEFER FOR ANY JOB TO POTENTIALLY ALLOW FOR SLIGHTLY HIGHER PRESSURES THAN THOSE STATED HERE-IN. ANY JOB SPECIFIC REVIEW IS CONSIDERED OUT-SIDE OF & SEPARATE FROM THIS APPROVAL & IS SUBJECT TO REVIEW BY THE GOVERNING BUILDING OFFICIAL.

NOTE: THE LOADS IN THESE TABLES ARE RESTRICTED TO A MAXIMUM OF 75 PSF. USE OF THESE MULLIONS WITH REQUIRED DESIGN PRESSURES ABOVE 75 PSF OR WITH CONDITIONS OUTSIDE OF THESE TABLES SHALL BE SUBJECT TO SEPARATE REVIEW & CERTIFICATION BY A FLORIDA LICENSED STRUCTURAL ENGINEER & REVIEW BY THE GOVERNING BUILDING OFFICIAL.

NO.	REVISION	DESCRIPTION	BY	DATE

DRAWING TITLE END CLIPPED STEEL BAR MULLION		CONSULTANTS W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (CA 6809) 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424		MANUFACTURER TISCHLER UND SOHN (USA) LTD. SIX SUBURBAN AVENUE STAMFORD, CONNECTICUT 203-674-0600	
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WARREN W. SCHAEFER

ENGINEER

No. 44135

FLORIDA

CERTIFICATION

10/21/2027

DRAWING NO.

1995

REV.

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OF

7

WARREN W. SCHAEFER, P.E.

P.E. NO. 44135