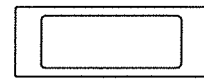
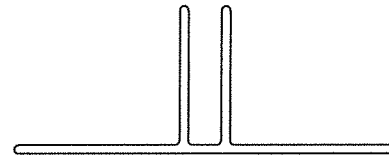


3100 STRUCTURAL TRANSOM MULLION



MULLION



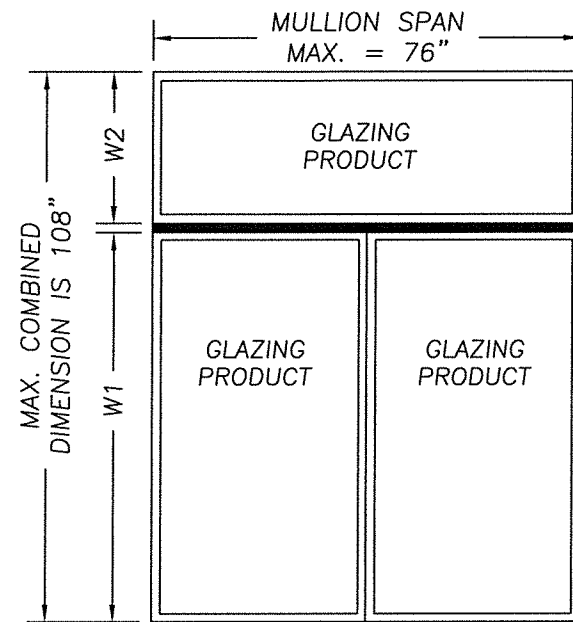
GOAL POST STYLE BRACKET

GENERAL NOTES:

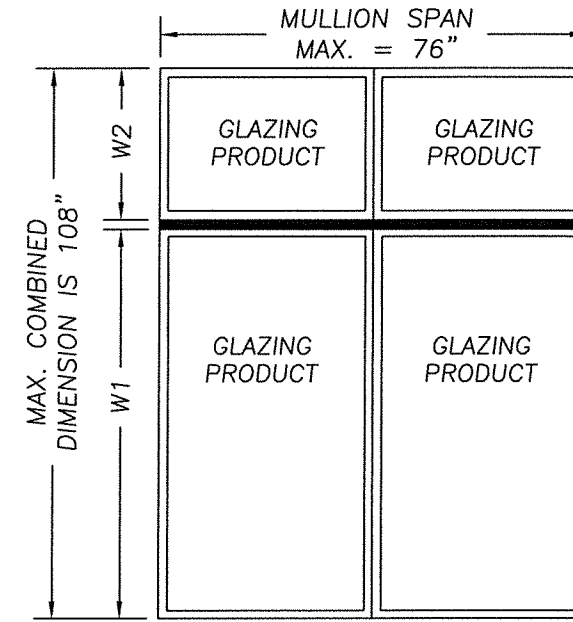
THE ALUMINUM STRUCTURAL MULLIONS DESCRIBED HEREIN COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) AND THE 2018 INTERNATIONAL BUILDING CODE (IBC) SUBJECT TO THE FOLLOWING CONDITIONS:

- MULLION ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- SEPARATE PRODUCT APPROVALS FOR EACH ALSIDE GLAZING PRODUCT USED WITH THESE MULLIONS MUST BE SUBMITTED ALONG WITH THIS MULLION PRODUCT APPROVAL.
- ANY CONDITIONS NOT COVERED IN THIS EVALUATION ARE SUBJECT TO SEPARATE ENGINEERING EVALUATION.
- APPROVED ASSOCIATED MATERIALS TWIN UNITS OR APPROVED SINGLES CAN BE USED IN MULLION CONFIGURATIONS. THE VERTICAL AND HORIZONTAL MULLION CONFIGURATIONS CAN BE COMBINED TO MULL MULTIPLE SINGLE UNITS TOGETHER.
- THE DESIGN PRESSURE RATING OF THE ASSEMBLY SHALL BE THE LESSER OF THE LOAD CAPACITY OF THE MULLION AS DETERMINED USING THIS APPROVAL OR THE DESIGN PRESSURE RATING OF THE INDIVIDUAL GLAZING PRODUCTS USED.
- BOUNDING BOX DIMENSIONS FOR GEOMETRIC TRANSOM SHAPES MUST BE EQUAL TO OR LESS THAN THE RECTANGULAR TRANSOM DIMENSIONS SHOWN HEREIN.
- THIS PRODUCT HAS BEEN ENGINEERED FOLLOWING ACCEPTED ENGINEERING PRACTICE CONFORMING TO THE REQUIREMENTS IN IRC SECTION R609.8.

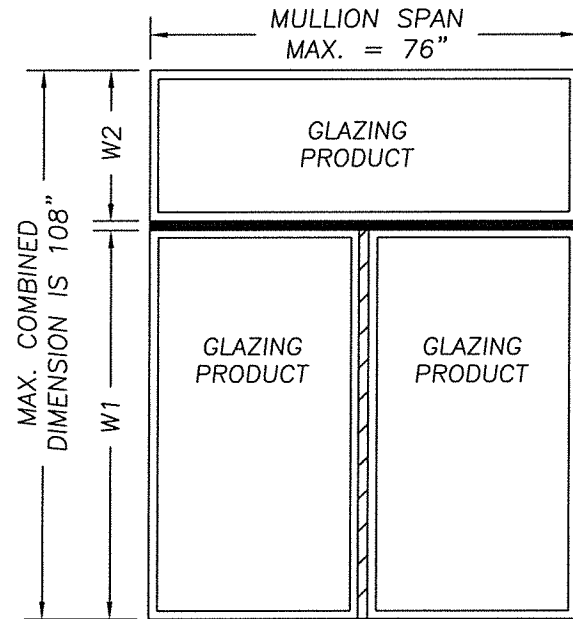
| TABLE OF CONTENTS | |
|-------------------|-----------------------------------------------|
| SHEET # | DESCRIPTION |
| 1 | TYPICAL ELEVATIONS & GENERAL NOTES |
| 2 | MULLION LOAD TABLE FOR WOOD SCREW ANCHORS |
| 3 | MULLION LOAD TABLE FOR CONCRETE SCREW ANCHORS |
| 4 | MULLION SECTION & ANCHOR DETAILS |



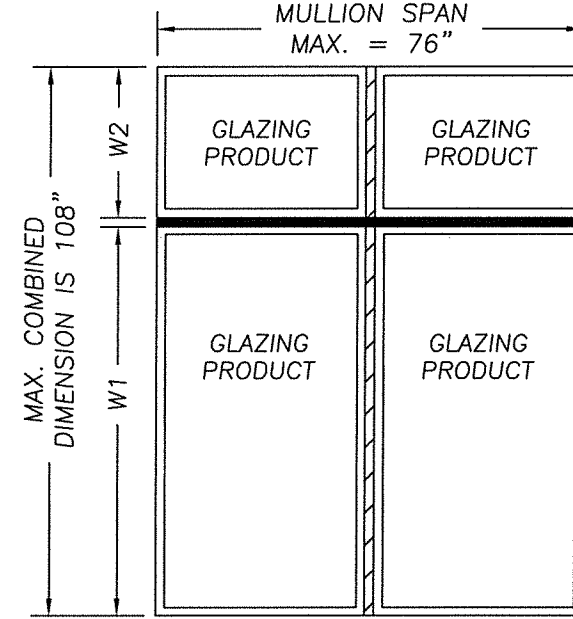
TRANSOM MULLIED OVER TWINS



TWIN TRANSOMS MULLIED OVER TWINS



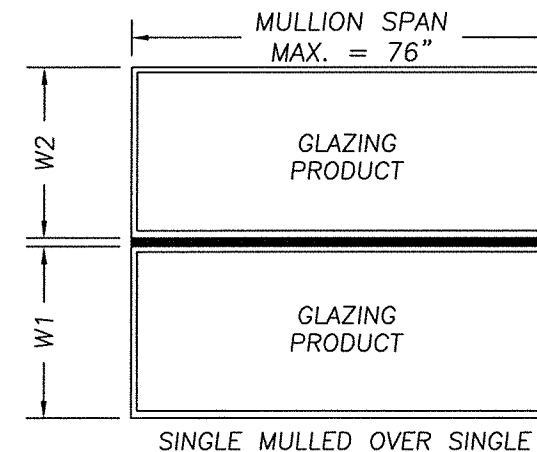
TRANSOM MULLIED OVER
MULLIED SINGLES



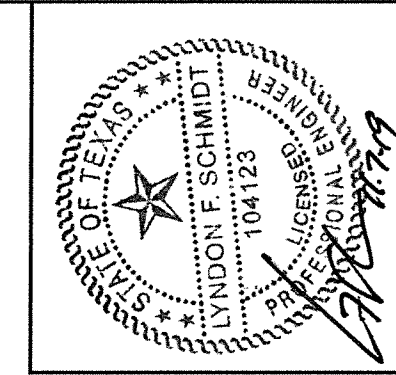
MULLIED TRANSOM SINGLES MULLIED
OVER MULLIED SINGLES

TYPICAL MULLION CONFIGURATIONS

NOTICE:
VERTICAL MULLIONS DEPICTED HERE ARE
COVERED UNDER SEPARATE APPROVAL



SINGLE MULLIED OVER SINGLE

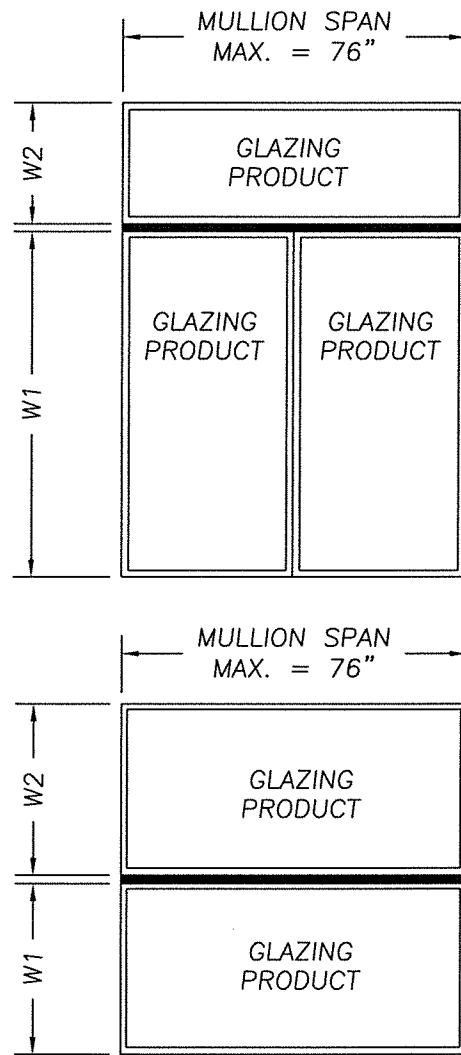


Documents Prepared By: Lyndon F. Schmidt, P.E.
TEXAS P.E. #104123

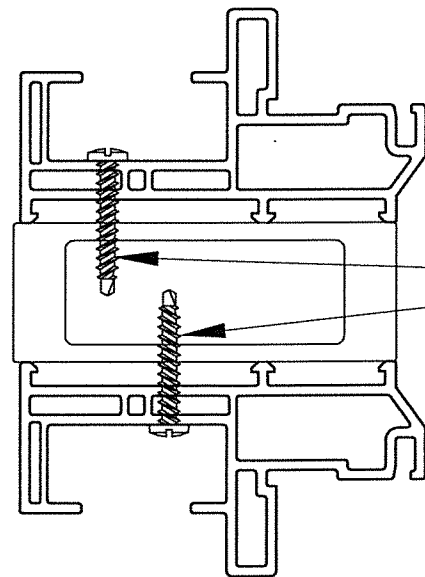
RW BUILDING CONSULTANTS, INC.
P.O. Box 230 Vairico FL, 33595
Phone No.: 813.659.9197
TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

| PRODUCT: | | STRUCTURAL TRANSOM | |
|----------------------|----------|-------------------------------------|------------------------|
| PART OR ASSEMBLY: | | TYPICAL ELEVATION AND GENERAL NOTES | |
| NO. | DATE | BY | REVISIONS |
| 1 | 11/07/19 | LFS | UPDATE TO 2018 IBC/IRC |
| DATE: 8/08/13 | | | |
| SCALE: NTS | | | |
| DWG. BY: JK | | | |
| CHK. BY: LFS | | | |
| DRAWING NO.: TX-4357 | | | |
| SHEET 1 OF 4 | | | |

R:\Clients\Associated PERMANENT\B - Texas Dept of Ins\Mullions\TDI-3100 Structural Mullion\TDI-3100 Structural Mullion\TDI-3100 Structural Mullion\TX-4357.dwg, 2



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$



SECTION THRU MULLION & FRAME

| WOOD SCREW ANCHORS | 3100 SERIES STRUCTURAL TRANSOM MULLION LOAD TABLE (PSF) | | | | | | | | | | | | | |
|--------------------|---------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| | TRIBUTARY WIDTH | | | | | | | | | | | | | |
| | 28" | 30" | 32" | 34" | 36" | 38" | 40" | 42" | 44" | 46" | 48" | 50" | 54" | |
| 76" | 58.29 | 54.40 | 51.00 | 48.00 | 45.33 | 42.95 | 40.80 | 38.86 | 37.09 | 35.48 | 34.00 | 32.64 | 30.22 | |
| 72" | 68.55 | 63.98 | 59.98 | 56.45 | 53.32 | 50.51 | 47.99 | 45.70 | 43.62 | 41.73 | 39.99 | 38.39 | 35.55 | |
| 70" | 74.60 | 69.62 | 65.27 | 61.43 | 58.02 | 54.97 | 52.22 | 49.73 | 47.47 | 45.41 | 43.52 | 41.77 | 38.68 | |
| 68" | 81.37 | 75.95 | 71.20 | 67.01 | 63.29 | 59.96 | 56.96 | 54.25 | 51.78 | 49.53 | 47.47 | 45.57 | 42.19 | |
| 66" | 89.00 | 83.07 | 77.87 | 73.29 | 69.22 | 65.58 | 62.30 | 59.33 | 56.64 | 54.17 | 51.92 | 49.84 | 46.15 | |
| 64" | 97.61 | 91.10 | 85.41 | 80.38 | 75.92 | 71.92 | 68.32 | 65.07 | 62.11 | 59.41 | 56.94 | 54.66 | 50.61 | |
| 62" | 107.36 | 100.20 | 93.94 | 88.41 | 83.50 | 79.11 | 75.15 | 71.57 | 68.32 | 65.35 | 62.63 | 60.12 | 55.67 | |
| 60" | 118.46 | 110.56 | 103.65 | 97.55 | 92.13 | 87.28 | 82.92 | 78.97 | 75.38 | 72.10 | 69.10 | 66.34 | 61.42 | |
| 58" | 120.00 | 120.00 | 114.75 | 108.00 | 102.00 | 96.63 | 91.80 | 87.43 | 83.45 | 79.82 | 76.50 | 73.44 | 68.00 | |
| 56" | 120.00 | 120.00 | 119.57 | 112.54 | 106.29 | 100.69 | 95.66 | 91.10 | 86.96 | 83.18 | 79.71 | 76.53 | 70.86 | |
| 54" | 120.00 | 120.00 | 120.00 | 116.71 | 110.22 | 104.42 | 99.20 | 94.48 | 90.18 | 86.26 | 82.67 | 79.36 | 73.48 | |
| 52" | 120.00 | 120.00 | 120.00 | 120.00 | 114.46 | 108.44 | 103.02 | 98.11 | 93.65 | 89.58 | 85.85 | 82.41 | 76.31 | |
| 50" | 120.00 | 120.00 | 120.00 | 120.00 | 119.04 | 112.77 | 107.14 | 102.03 | 97.40 | 93.16 | 89.28 | 85.71 | 79.36 | |
| 48" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 117.47 | 111.60 | 106.29 | 101.45 | 97.04 | 93.00 | 89.28 | 82.67 | |
| 46" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 116.45 | 110.91 | 105.87 | 101.26 | 97.04 | 93.16 | 86.26 | |
| 44" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 115.95 | 110.68 | 105.87 | 101.45 | 97.40 | 90.18 | |
| 42" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 115.95 | 110.91 | 106.29 | 102.03 | 94.48 | |
| 40" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 116.45 | 111.60 | 107.14 | 99.20 | |
| 38" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 117.47 | 112.77 | 104.42 | |
| 36" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 119.04 | 110.22 | |
| 34" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 116.71 | |
| 32" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | |
| 30" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | |
| 28" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | |
| 26" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | |
| 24" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | |

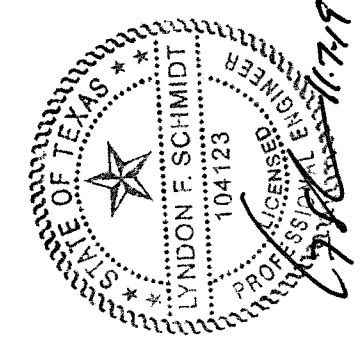
INSTRUCTIONS FOR USE OF THE MULLION LOAD TABLE:

1. DETERMINE THE DESIGN LOAD REQUIREMENT FOR THE PARTICULAR OPENING AS SPECIFIED BY THE BUILDING DESIGNER (ARCHITECT OR ENGINEER OR RECORD).
2. FOR THE PARTICULAR OPENING, DETERMINE THE TRIBUTARY WIDTH AND MULLION SPAN. REFERENCE THE SKETCHES ON THIS SHEET FOR MULLION SPAN AND TRIBUTARY WIDTH DETERMINATION.
3. IN THE FIRST COLUMN OF THE TABLE, LOCATE THE MULLION SPAN. IN THE FIRST ROW OF THE TABLE, LOCATE THE TRIBUTARY WIDTH. AT THE INTERSECTION OF THE ROW CONTAINING THE MULLION SPAN AND THE COLUMN CONTAINING THE TRIBUTARY WIDTH, READ THE MULLION LOAD RATING GIVEN IN PSF. THE MULLION LOAD RATING MUST BE EQUAL TO OR GREATER THAN THE DESIGN LOAD REQUIREMENT DETERMINED IN STEP 1 ABOVE.

FOR ANCHORING GLAZING PRODUCTS TO THE MULLION, ANCHOR SIZE AND SPACING SHALL BE AS SPECIFIED IN ONE OF THE FOLLOWING:

1. SUBSTITUTE (1 FOR 1) 1/4"-14 SELF-DRILLING SCREWS FOR THE FASTENERS SHOWN IN THE INDIVIDUAL GLAZING PRODUCT APPROVAL.
2. SUBSTITUTE #8-18 PANHEAD SELF-DRILLING SCREWS FOR THE FASTENERS SHOWN IN THE INDIVIDUAL GLAZING PRODUCT APPROVAL. MAXIMUM FASTENER SPACING ALLOWED IS 6" FROM EACH END AND AT 15" O.C. MAX. SPACING.

NOTE: A MINIMUM OF 3 THREADS OF THE SELF-DRILLING SCREWS MUST PROTRUDE THROUGH THE WALL OF THE MULLION. THIS SECTION VIEW IS SHOWN FOR ILLUSTRATIVE PURPOSES; OTHER FRAME SECTIONS OF TDI APPROVED WINDOWS BY ALSIDE WINDOWS CAN BE USED IN THIS FASHION.



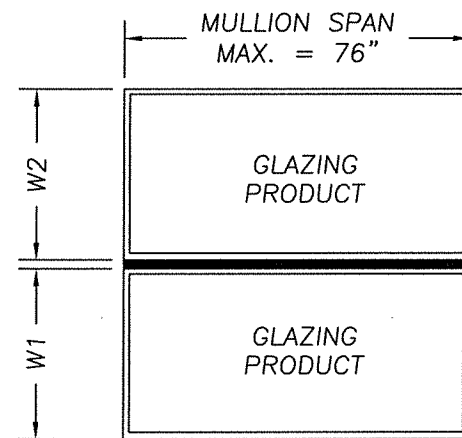
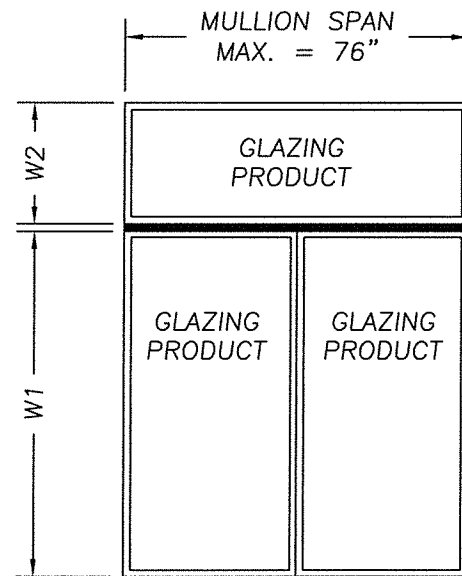
Documents Prepared By: Lyndon F. Schmidt, P.E.
TEXAS P.E. #104123

RW BUILDING CONSULTANTS, INC.
P.O. Box 230 Valrico FL 33595
Phone No.: 813.659.9197

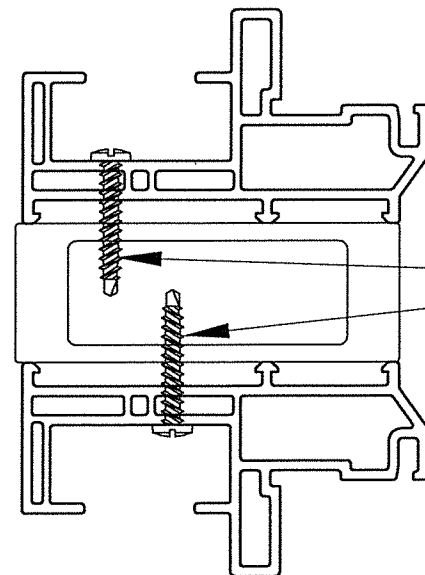
TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

| | |
|-------------------|-----------------------------------------------|
| PRODUCT: | STRUCTURAL TRANSOM |
| PART OR ASSEMBLY: | MULLION LOAD TABLE FOR CONCRETE SCREW ANCHORS |
| DATE: | 8/08/13 |
| SCALE: | NTS |
| DWG. BY: | JK |
| CHK. BY: | LFS |
| DRAWING NO.: | TX-4357 |
| SHEET | 2 OF 4 |

R:\Clients\Associated PERMANENT B - Texas Dept of Ins\Mullions\TDI-3100 Structural Mullion\TDI-3100 Structural Mullion\TDI-3100 Structural Mullion\TDI-3100 Structural Mullion\TX-4357.dwg, 3



$$\text{TRIBUTARY WIDTH} = \frac{W1 + W2}{2}$$



SECTION THRU MULLION & FRAME

| CONCRETE SCREW ANCHORS | 3100 SERIES STRUCTURAL TRANSOM MULLION LOAD TABLE (PSF) | | | | | | | | | | | | | |
|------------------------------|---------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--|
| | TRIBUTARY WIDTH | | | | | | | | | | | | | |
| | 28" | 30" | 32" | 34" | 36" | 38" | 40" | 42" | 44" | 46" | 48" | 50" | 54" | |
| 76" | 54.14 | 50.53 | 47.37 | 44.58 | 42.11 | 39.89 | 37.89 | 36.09 | 34.45 | 32.95 | 31.58 | 30.32 | 28.07 | |
| 72" | 57.14 | 53.33 | 50.00 | 47.06 | 44.44 | 42.11 | 40.00 | 38.10 | 36.36 | 34.78 | 33.33 | 32.00 | 29.63 | |
| 70" | 58.78 | 54.86 | 51.43 | 48.40 | 45.71 | 43.31 | 41.14 | 39.18 | 37.40 | 35.78 | 34.29 | 32.91 | 30.48 | |
| 68" | 60.50 | 56.47 | 52.94 | 49.83 | 47.06 | 44.58 | 42.35 | 40.34 | 38.50 | 36.83 | 35.29 | 33.88 | 31.37 | |
| 66" | 62.34 | 58.18 | 54.55 | 51.34 | 48.48 | 45.93 | 43.64 | 41.56 | 39.67 | 37.94 | 36.36 | 34.91 | 32.32 | |
| 64" | 64.29 | 60.00 | 56.25 | 52.94 | 50.00 | 47.37 | 45.00 | 42.86 | 40.91 | 39.13 | 37.50 | 36.00 | 33.33 | |
| 62" | 66.36 | 61.94 | 58.06 | 54.65 | 51.61 | 48.90 | 46.45 | 44.24 | 42.23 | 40.39 | 38.71 | 37.16 | 34.41 | |
| 60" | 68.57 | 64.00 | 60.00 | 56.47 | 53.33 | 50.53 | 48.00 | 45.71 | 43.64 | 41.74 | 40.00 | 38.40 | 35.56 | |
| 58" | 70.94 | 66.21 | 62.07 | 58.42 | 55.17 | 52.27 | 49.66 | 47.29 | 45.14 | 43.18 | 41.38 | 39.72 | 36.78 | |
| 56" | 73.47 | 68.57 | 64.29 | 60.50 | 57.14 | 54.14 | 51.43 | 48.98 | 46.75 | 44.72 | 42.86 | 41.14 | 38.10 | |
| 54" | 76.19 | 71.11 | 66.67 | 62.75 | 59.26 | 56.14 | 53.33 | 50.79 | 48.48 | 46.38 | 44.44 | 42.67 | 39.51 | |
| 52" | 79.12 | 73.85 | 69.23 | 65.16 | 61.54 | 58.30 | 55.38 | 52.75 | 50.35 | 48.16 | 46.15 | 44.31 | 41.03 | |
| 50" | 82.29 | 76.80 | 72.00 | 67.76 | 64.00 | 60.63 | 57.60 | 54.86 | 52.36 | 50.09 | 48.00 | 46.08 | 42.67 | |
| 48" | 85.71 | 80.00 | 75.00 | 70.59 | 66.67 | 63.16 | 60.00 | 57.14 | 54.55 | 52.17 | 50.00 | 48.00 | 44.44 | |
| 46" | 89.44 | 83.48 | 78.26 | 73.66 | 69.57 | 65.90 | 62.61 | 59.63 | 56.92 | 54.44 | 52.17 | 50.09 | 46.38 | |
| 44" | 93.51 | 87.27 | 81.82 | 77.01 | 72.73 | 68.90 | 65.45 | 62.34 | 59.50 | 56.92 | 54.55 | 52.36 | 48.48 | |
| 42" | 97.96 | 91.43 | 85.71 | 80.67 | 76.19 | 72.18 | 68.57 | 65.31 | 62.34 | 59.63 | 57.14 | 54.86 | 50.79 | |
| 40" | 102.86 | 96.00 | 90.00 | 84.71 | 80.00 | 75.79 | 72.00 | 68.57 | 65.45 | 62.61 | 60.00 | 57.60 | 53.33 | |
| 38" | 108.27 | 101.05 | 94.74 | 89.16 | 84.21 | 79.78 | 75.79 | 72.18 | 68.90 | 65.90 | 63.16 | 60.63 | 56.14 | |
| 36" | 114.29 | 106.67 | 100.00 | 94.12 | 88.89 | 84.21 | 80.00 | 76.19 | 72.73 | 69.57 | 66.67 | 64.00 | 59.26 | |
| 34" | 120.00 | 112.94 | 105.88 | 99.65 | 94.12 | 89.16 | 84.71 | 80.67 | 77.01 | 73.66 | 70.59 | 67.76 | 62.75 | |
| 32" | 120.00 | 120.00 | 112.50 | 105.88 | 100.00 | 94.74 | 90.00 | 85.71 | 81.82 | 78.26 | 75.00 | 72.00 | 66.67 | |
| 30" | 120.00 | 120.00 | 120.00 | 112.94 | 106.67 | 101.05 | 96.00 | 91.43 | 87.27 | 83.48 | 80.00 | 76.80 | 71.11 | |
| 28" | 120.00 | 120.00 | 120.00 | 120.00 | 114.29 | 108.27 | 102.86 | 97.96 | 93.51 | 89.44 | 85.71 | 82.29 | 76.19 | |
| 26" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 116.60 | 110.77 | 105.49 | 100.70 | 96.32 | 92.31 | 88.62 | 82.05 | |
| 24" | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 120.00 | 114.29 | 109.09 | 104.35 | 100.00 | 96.00 | 88.89 | |

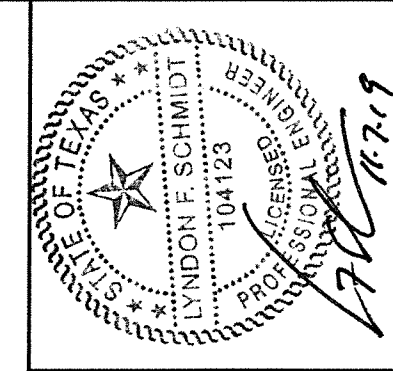
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FOR ANCHORING GLAZING PRODUCTS TO THE MULLION, ANCHOR SIZE AND SPACING SHALL BE AS SPECIFIED IN ONE OF THE FOLLOWING:

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2. SUBSTITUTE #8-18 PANHEAD SELF-DRILLING SCREWS FOR THE FASTENERS SHOWN IN THE INDIVIDUAL GLAZING PRODUCT APPROVAL. MAXIMUM FASTENER SPACING ALLOWED IS 6" FROM EACH END AND AT 15" O.C. MAX. SPACING.

NOTE: A MINIMUM OF 3 THREADS OF THE SELF-DRILLING SCREWS MUST PROTRUDE THROUGH THE WALL OF THE MULLION. THIS SECTION VIEW IS SHOWN FOR ILLUSTRATIVE PURPOSES; OTHER FRAME SECTIONS OF TDI APPROVED WINDOWS BY ALSIDE WINDOWS CAN BE USED IN THIS FASHION.



Documents Prepared By: Lyndon F. Schmidt, P.E.
TEXAS P.E. #104123

RW BUILDING CONSULTANTS, INC.
P.O. Box 230 Valrico FL 33595
Phone No.: 813.659.9197

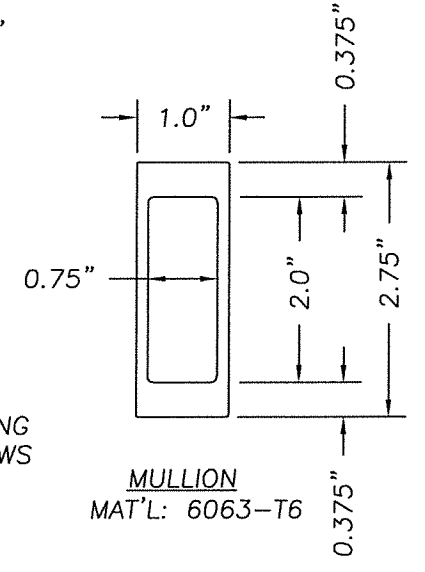
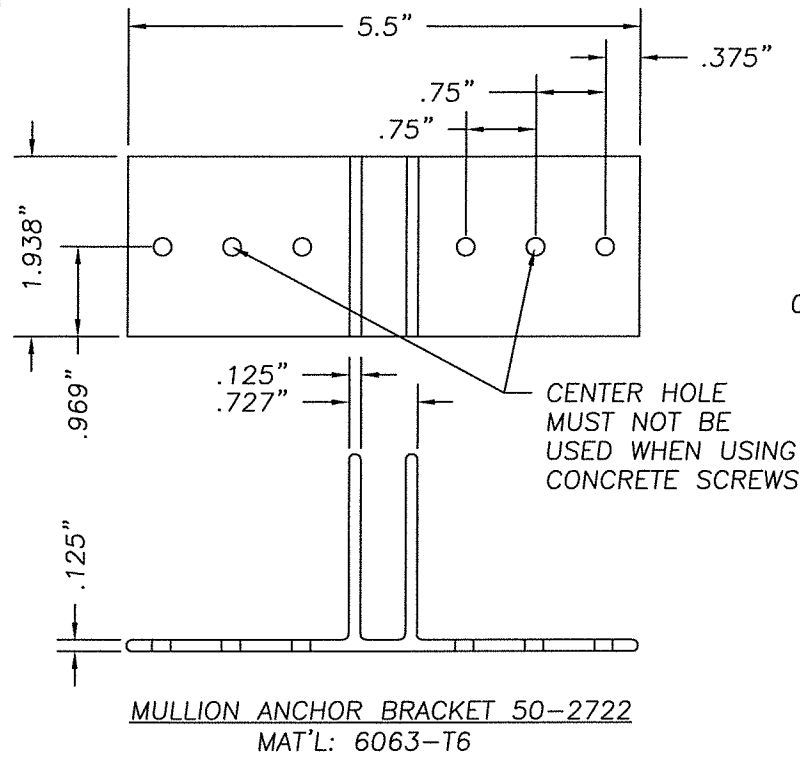
TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

PRODUCT: STRUCTURAL TRANSOM
PART OR ASSEMBLY: MULLION LOAD TABLE FOR USING CONCRETE SCREW ANCHORS

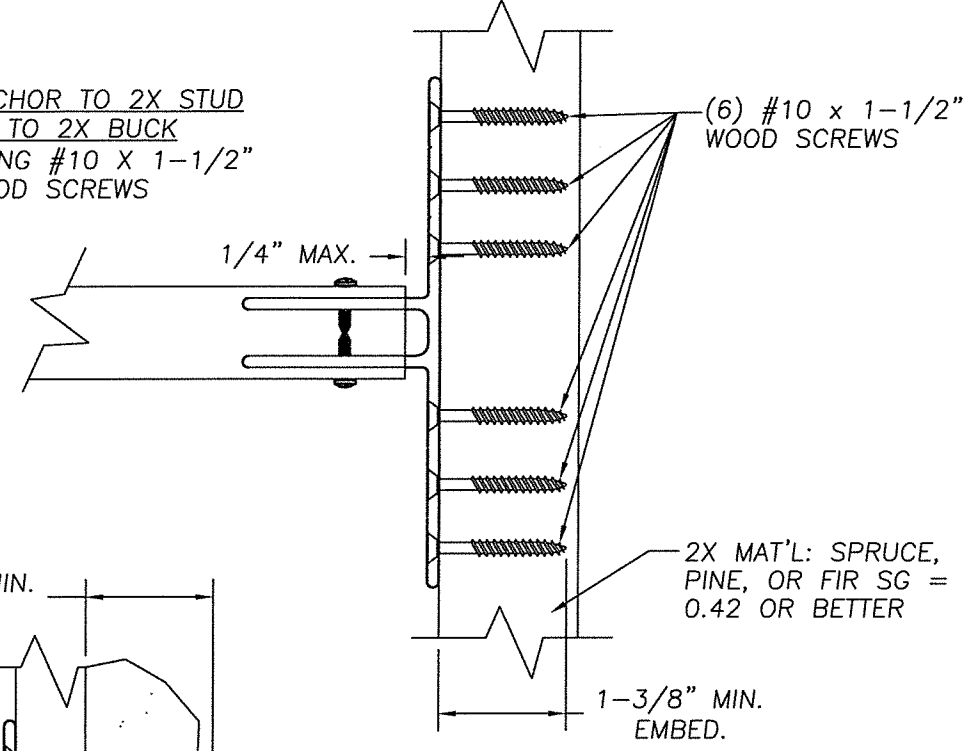
| NO. | DATE | REVISIONS |
|-----|----------|------------------------|
| 1 | 11/07/19 | UPDATE TO 2018 IBC/IRC |

DATE: 8/08/13
SCALE: NTS
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: TX-4357
SHEET 3 OF 4

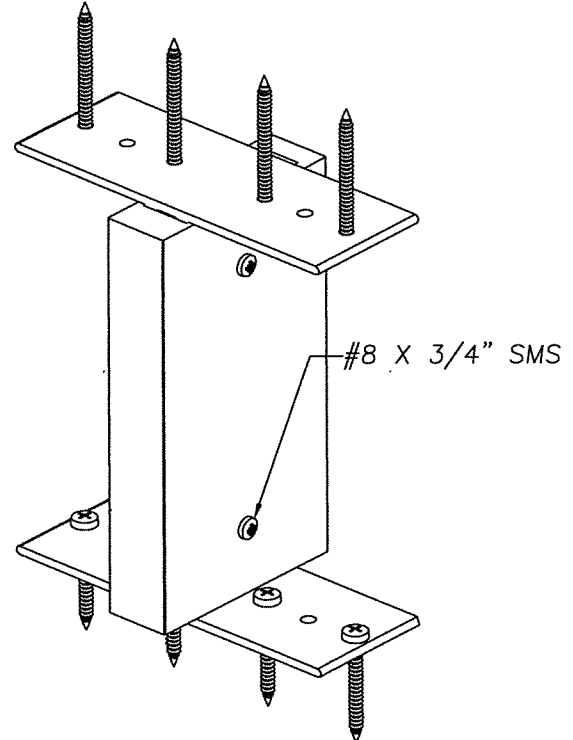
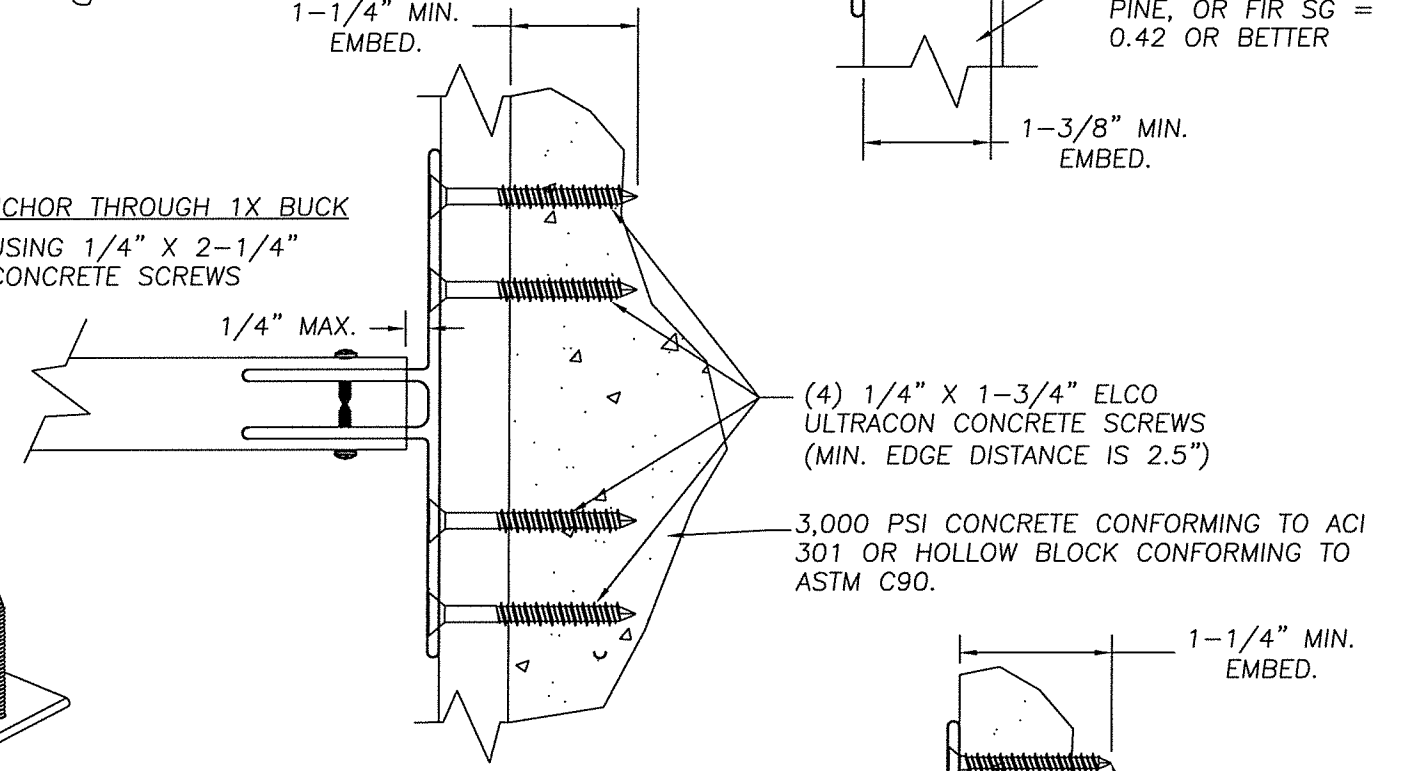
R:\Clients\Associated PERMANENT\B - Texas Dept of Ins\Mullions\TDI-3100 Structural Mullion\TDI-3100 RENEWAL\TX-4357.dwg, 4



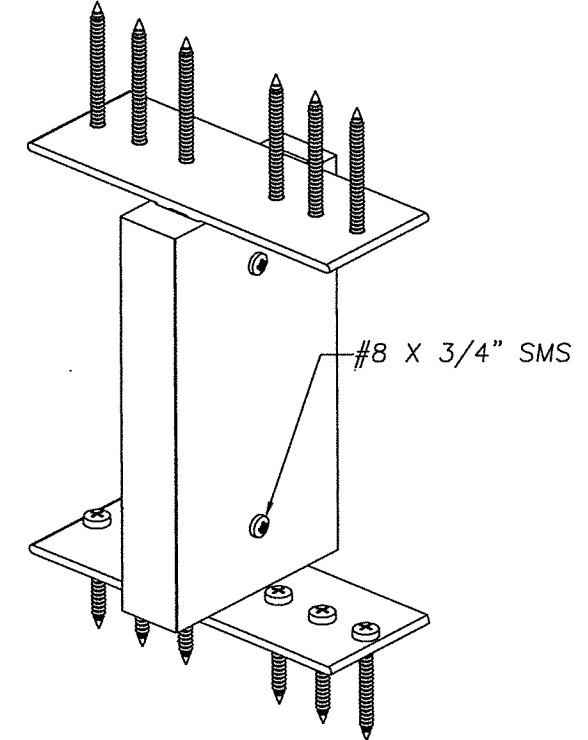
ANCHOR TO 2X STUD
OR TO 2X BUCK
USING #10 X 1-1/2"
WOOD SCREWS



ANCHOR THROUGH 1X BUCK
USING 1/4" X 2-1/4"
CONCRETE SCREWS

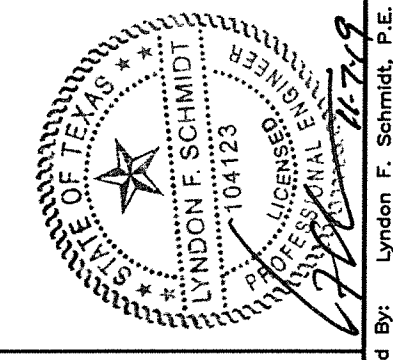
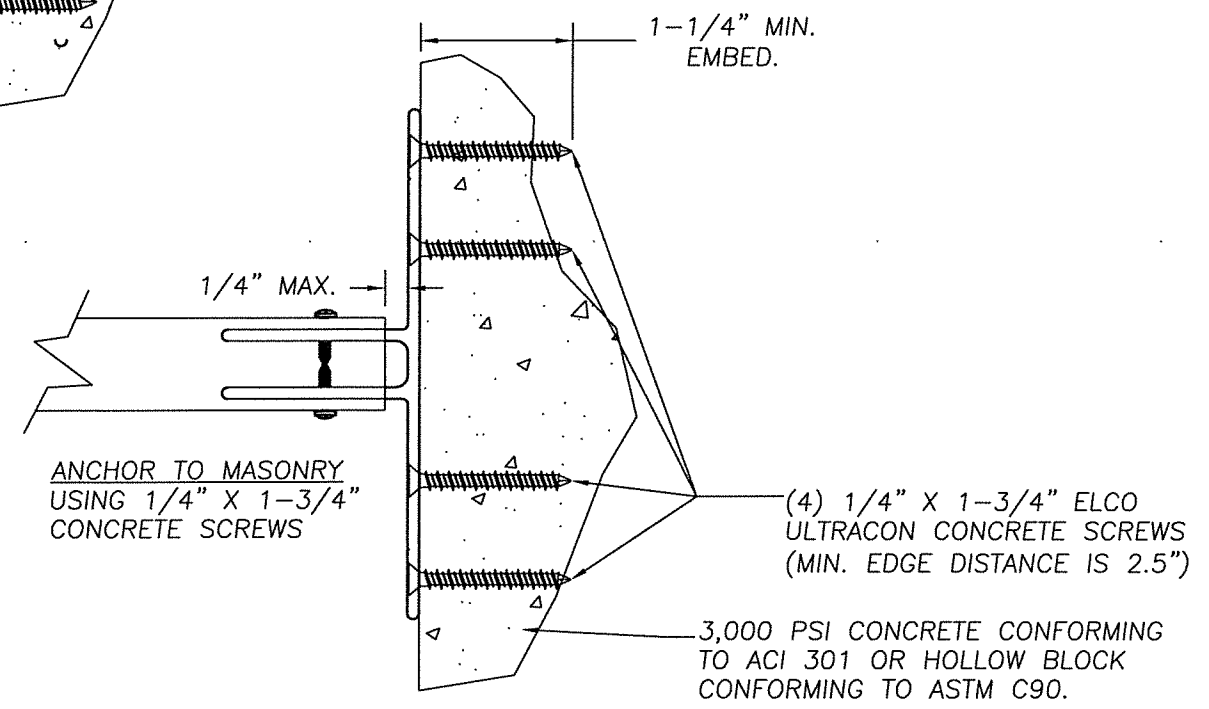


BASIC MULLION BRACKET ANCHORING
FOR CONCRETE SCREW CONNECTIONS



BASIC MULLION BRACKET ANCHORING
FOR WOOD SCREW CONNECTIONS

ANCHOR TO MASONRY
USING 1/4" X 1-3/4"
CONCRETE SCREWS



Documents Prepared By: Lyndon F. Schmidt, P.E.
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TEXAS BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF REGISTRATION # F-11852

| | |
|-------------------|----------------------------------|
| PRODUCT: | STRUCTURAL TRANSOM |
| PART OR ASSEMBLY: | MULLION SECTION & ANCHOR DETAILS |

| NO. | DATE | DESCRIPTION | LFS | BY |
|-----|----------|------------------------|-----|----|
| 1 | 11/07/19 | UPDATE TO 2018 IBC/IRC | | |

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|--------------|---------|
| DATE: | 8/08/13 |
| SCALE: | NTS |
| DWG. BY: | JK |
| CHK. BY: | LFS |
| DRAWING NO.: | TX-4357 |
| SHEET | 4 OF 4 |