DOOR SYSTEMS INC

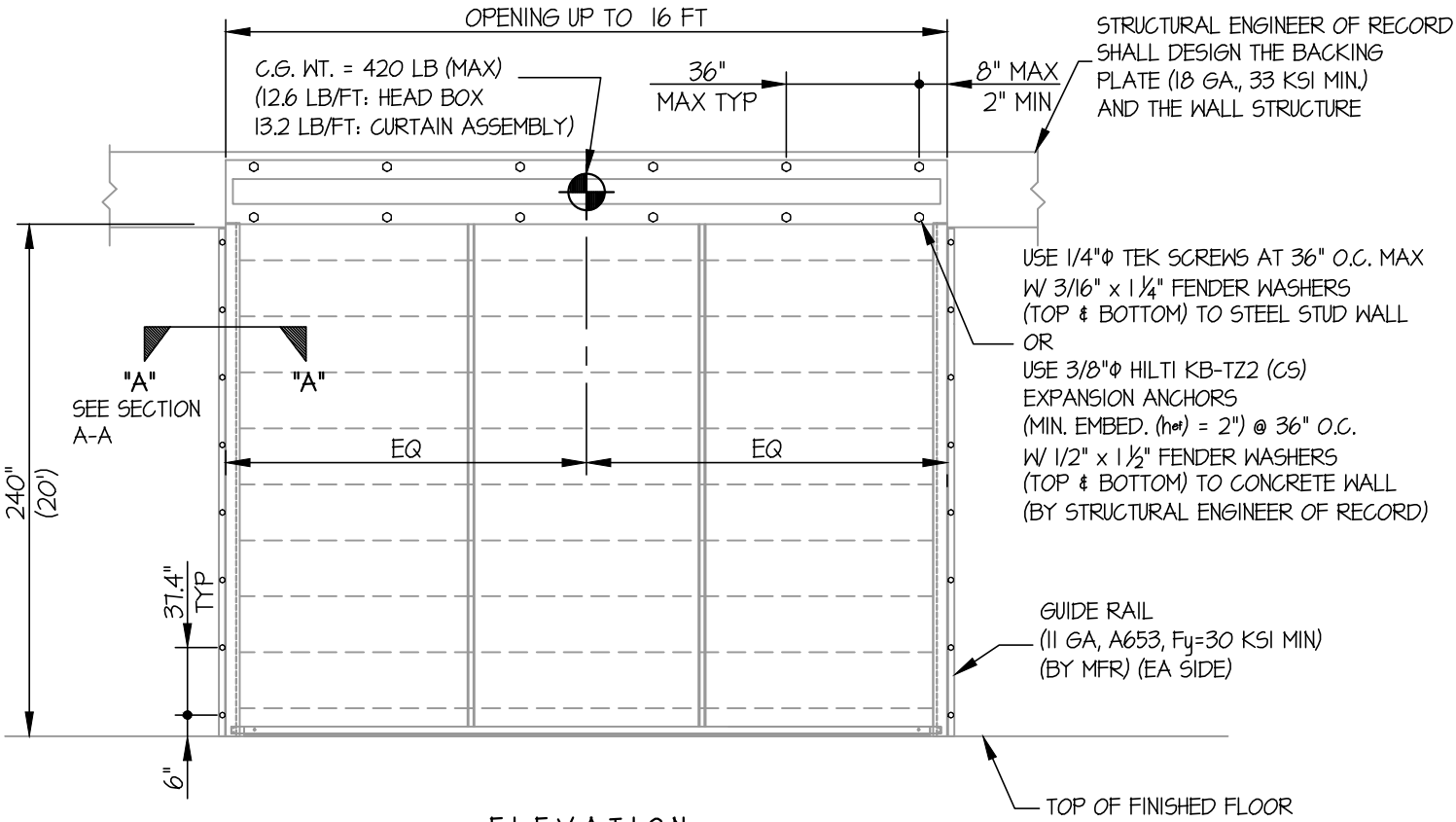
DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

SHEET 1 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



ELEVATION
(SINGLE CURTAIN WALL MOUNT)

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.00, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 2.0, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.40 W_p
   HORIZONTAL FORCE (E_{mh}) = 4.80 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.40 W_p

2. THIS PREAPPROVA ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

3. THIS PREAPPROVA WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.

4. STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2026
STRUCTURAL
STATE OF CALIFORNIA
8/28/24

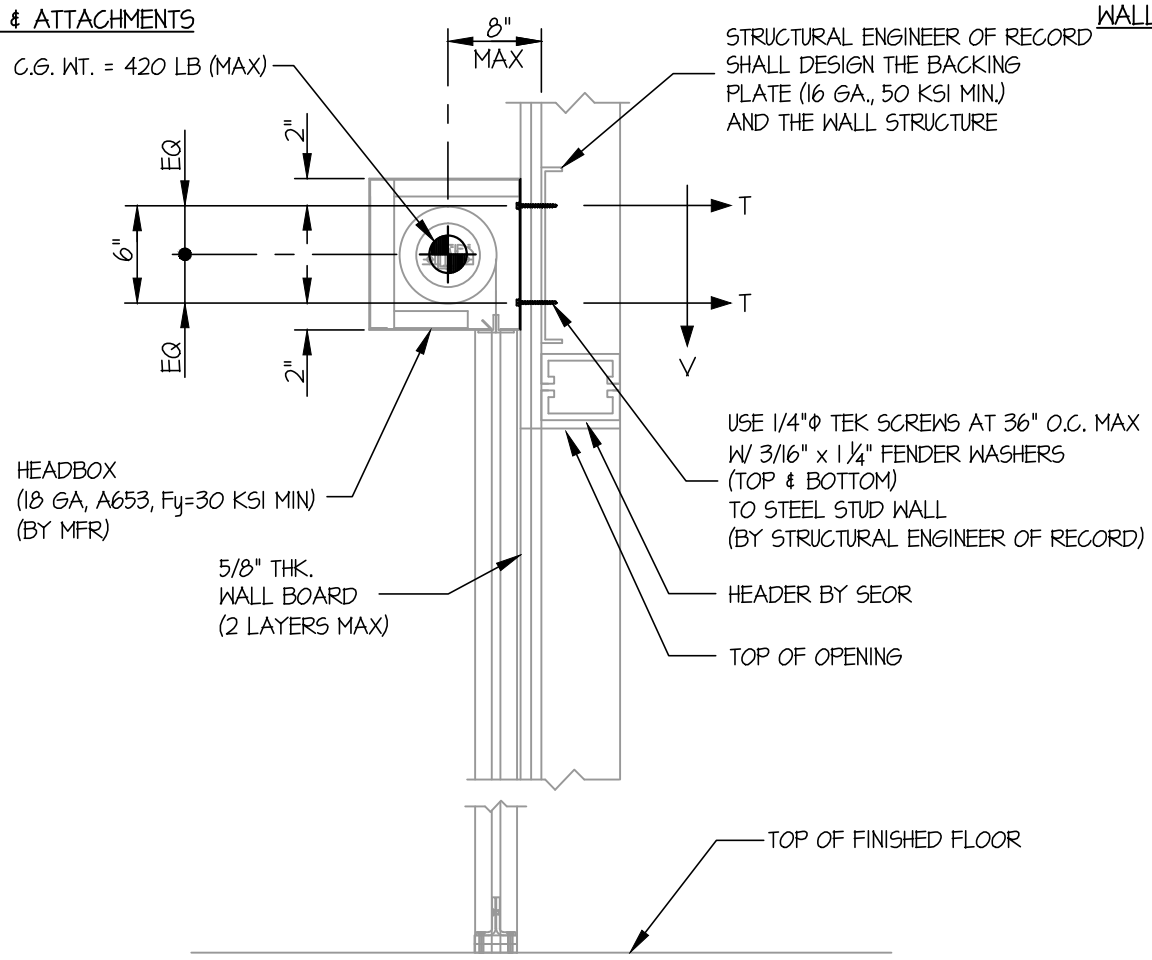
DOOR SYSTEMS INC

DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24
SHEET 2 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



SECTION AT STEEL STUD WALL

(SINGLE CURTAIN WALL MOUNT)

LOADS:

WEIGHT (W_p) = 420 LB MAX
HORIZONTAL FORCE (E_h) = 2.40 W_p = 1008 LB
VERTICAL FORCE (E_v) = 0.40 W_p = 168 LB

SCREW FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(420\#) + 168\#)(8'')}{6\ SCREWS(6'')} = 150\ LB/SCREW$$

$$T_{U\ PARALLEL} = \frac{1008\#(8'')}{2\ SCREWS(180'')} = 23\ LB/SCREW$$

$$T_{U\ PERP} = \frac{1008\#}{12\ SCREWS} = 84\ LB/SCREW$$

$T_{U\ MAX}$ = 150# + 23#(0.3) + 84# = 241 LB/SCREW (MAX)

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(1.2(420\#) + 168\#)}{12\ SCREWS}\right)^2 + \left(\frac{1008\#}{12\ SCREWS}\right)^2} = 101\ LB/SCREW\ (MAX)$$

1/4"ϕ TEK SCREWS (16 GA, 50 KSI STEEL STUDS)
W/ 2 LAYERS GYP BOARD MAX
ϕT = 418 LB/SCREW
ϕV= 266 LB/SCREW

INTERACTION

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.0$$

$$\left(\frac{241}{418}\right) + \left(\frac{101}{266}\right) = 0.96 \leq 1.0 \therefore \text{O.K.}$$

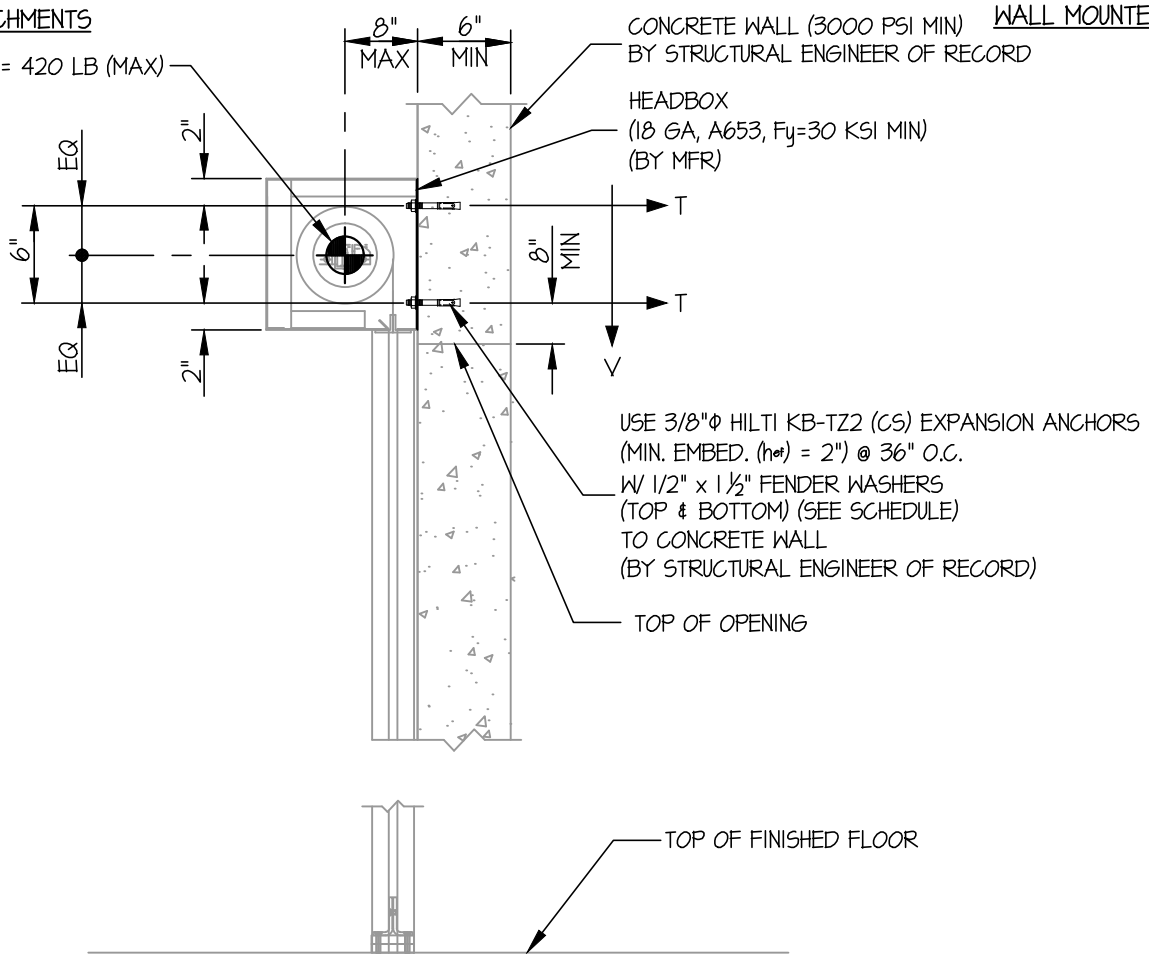
DOOR SYSTEMS INC

DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24
SHEET 3 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



SECTION AT CONCRETE WALL
(SINGLE ROLLER WALL MOUNT)

LOADS:

WEIGHT (W_p) = 420 LB MAX
HORIZONTAL FORCE (E_h) = 4.80 W_p = 2016 LB
VERTICAL FORCE (E_v) = 0.40 W_p = 168 LB

ANCHOR FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(420\#) + 168\#)(8'')}{6\ BOLTS\ (6'')} = 150\ LB/BOLT$$

$$T_{U\ PARALLEL} = \frac{2016\#(8'')}{2\ BOLTS\ (180'')} = 45\ LB/BOLT$$

$$T_{U\ PERP} = \frac{2016\#}{12\ BOLTS} = 168\ LB/BOLT$$

$T_{U\ MAX}$ = 150# + 45#(0.3) + 168# = 332 LB/BOLT (MAX)

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(1.2(420\#) + 168\#)}{12\ BOLTS}\right)^2 + \left(\frac{2016\#}{12\ BOLTS}\right)^2} = 177\ LB/BOLT\ (MAX)$$

ANCHOR SPEC: 1/2"Φ HILTI KB-TZ2 (CS): (h_{ef} = 2")
SPACING = 6" MIN
EDGE DISTANCE = 8" MIN:
$\phi T = 0.75\phi N_n$ = 1586 LB/ANCHOR (TENSION)
$\phi V = \phi V_n$ = 1463 LB/ANCHOR (SHEAR)

INTERACTION:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.0$$

$$\left(\frac{332}{1586}\right) + \left(\frac{177}{1463}\right) = 0.33 \leq 1.0 \quad \therefore \text{O.K.}$$

DOOR SYSTEMS INC

DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES.	J. ROBERSON
JOB NO.	11-2404
DATE	8/28/24

SHEET 4 OF 14 SHEETS

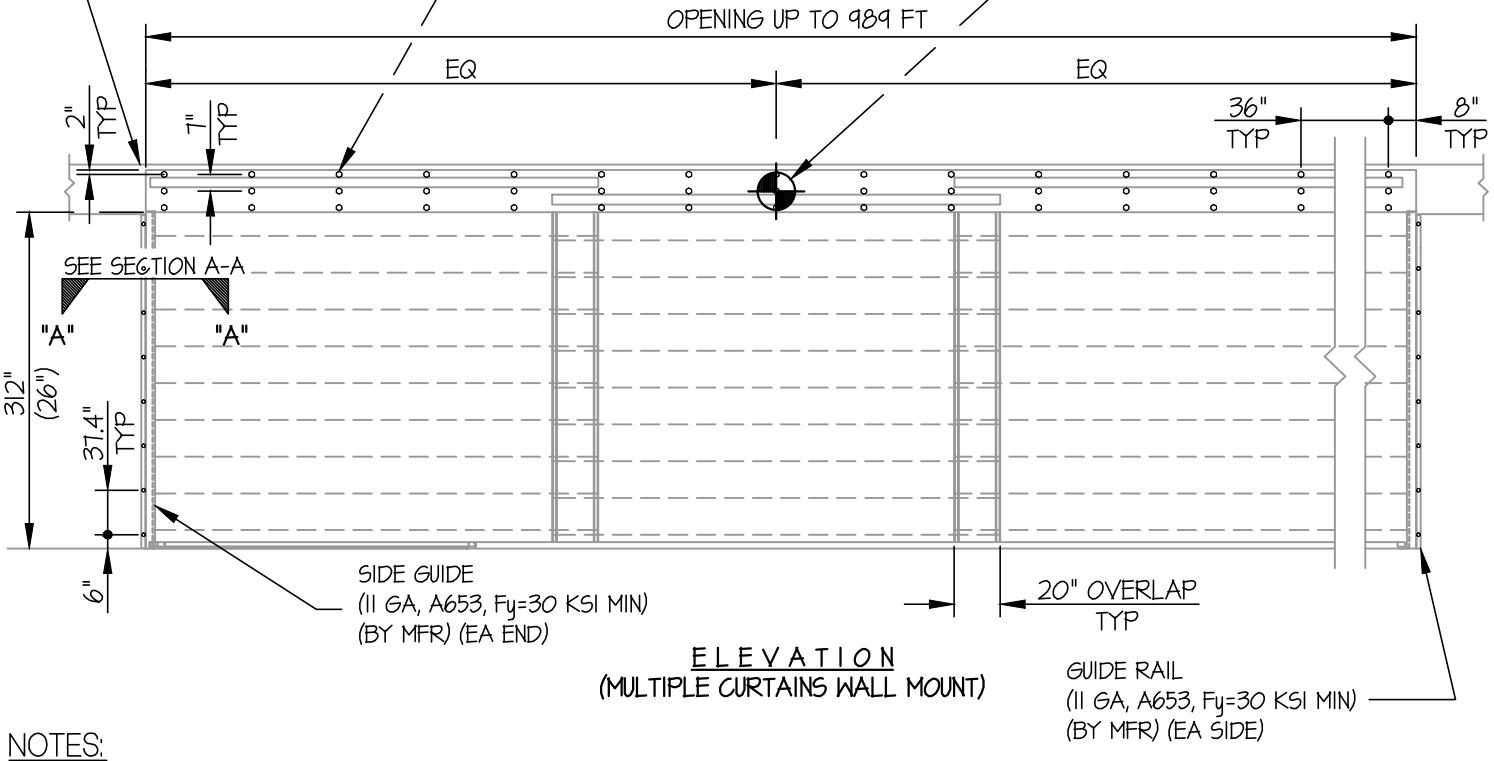
SEISMIC SUPPORTS & ATTACHMENTS

USE 1/4"Φ TEK SCREWS AT 36" O.C. MAX
W/ 3/16" x 1 ¼" FENDER WASHERS
(TOP & BOTTOM) TO STEEL STUD WALL OR
USE 3/8"Φ HILTI KB-TZ2 (CS) EXPANSION ANCHORS
(MIN. EMBED. (h_{ef}) = 2") @ 36" O.C.
W/ 1/2" x 1 ½" FENDER WASHERS
(TOP & BOTTOM) TO CONCRETE WALL
(BY STRUCTURAL ENGINEER OF RECORD)

WALL MOUNTED

STRUCTURAL ENGINEER OF RECORD
SHALL DESIGN THE BACKING
PLATE (18 GA., 33 KSI MIN.)
AND THE WALL STRUCTURE

(12.6 LB/FT : HEAD BOX
16.1 LB/FT: CURTAIN ASSEMBLY)



ELEVATION
(MULTIPLE CURTAINS WALL MOUNT)

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 2.0, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.76 W_p
   HORIZONTAL FORCE (E_{mh}) = 5.52 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.46 W_p

2. THIS PREAPPROVA ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

3. THIS PREAPPROVA WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.

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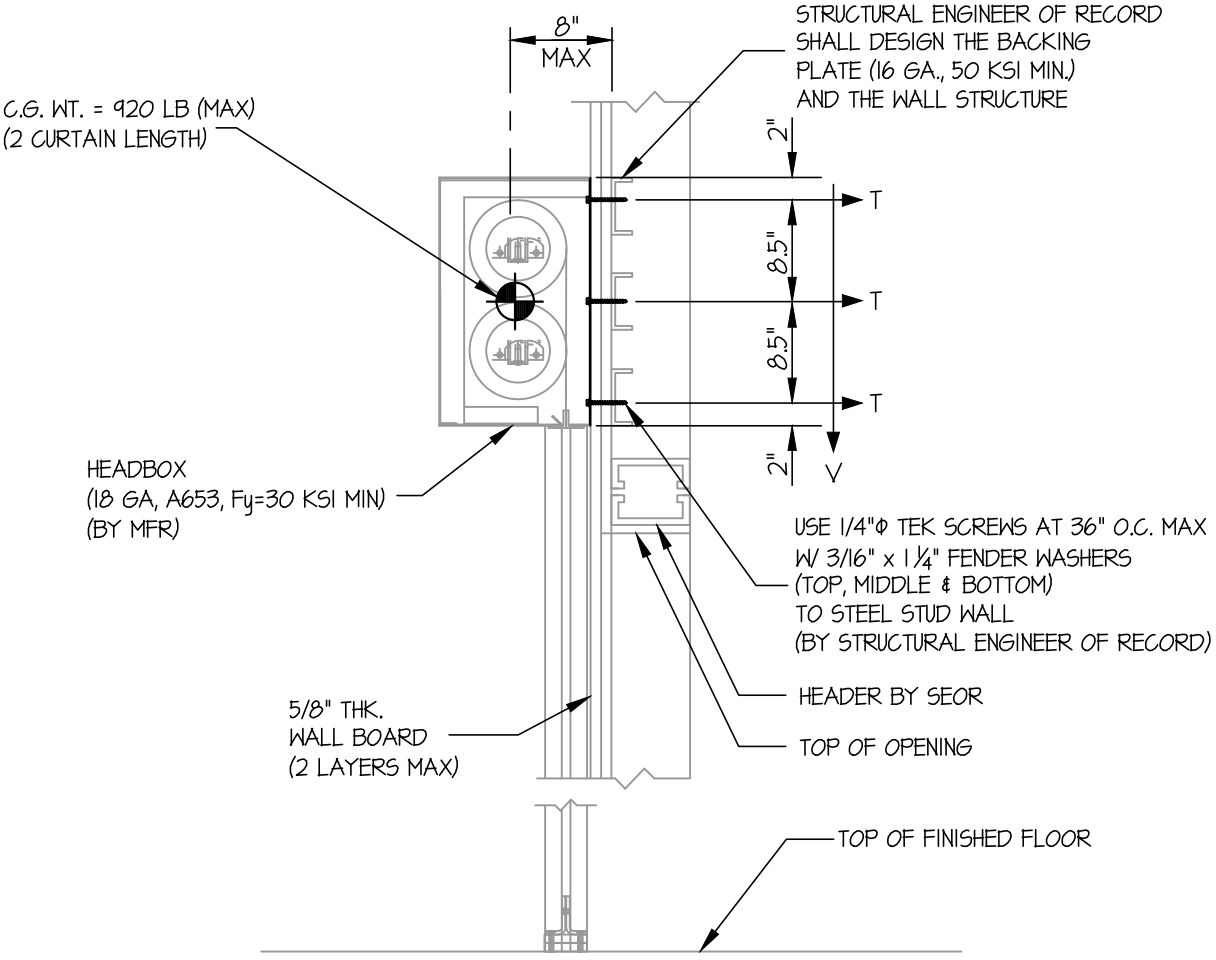
DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

SHEET 5 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



SECTION AT STEEL STUD WALL
(MULTIPLE CURTAINS WALL MOUNT)

LOADS:

WEIGHT (W_p) = 920 LB MAX (2 CURTAIN LENGTHS)
HORIZONTAL FORCE (E_h) = 2.76 W_p = 2539 LB
VERTICAL FORCE (E_v) = 0.46 W_p = 423 LB

SCREW FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(920\#) + 423\#)(8'')}{12\ SCREWS(17'')} = 60\ LB/SCREW$$

$$T_{U\ PARALLEL} = \frac{2539\#(8'')}{3\ SCREWS(180'')} = 38\ LB/SCREW$$

$$T_{U\ PERP} = \frac{2539\#}{33\ SCREWS} = 77\ LB/SCREW$$

$T_{U\ MAX}$ = 60# + 38#(0.3) + 77# = 149 LB/SCREW (MAX)

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(1.2(920\#) + 423\#)}{33\ SCREWS}\right)^2 + \left(\frac{2539\#}{33\ SCREWS}\right)^2} = 90\ LB/SCREW\ (MAX)$$

1/4"ϕ TEK SCREWS (16 GA, 50 KSI STEEL STUDS)
W/ 2 LAYERS GYP BOARD MAX
ϕT = 418 LB/SCREW
ϕV= 266 LB/SCREW

INTERACTION:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \le 1.0$$

$$\left(\frac{149}{418}\right) + \left(\frac{90}{266}\right) = 0.70 \le 1.0 \quad \therefore \text{ O.K.}$$

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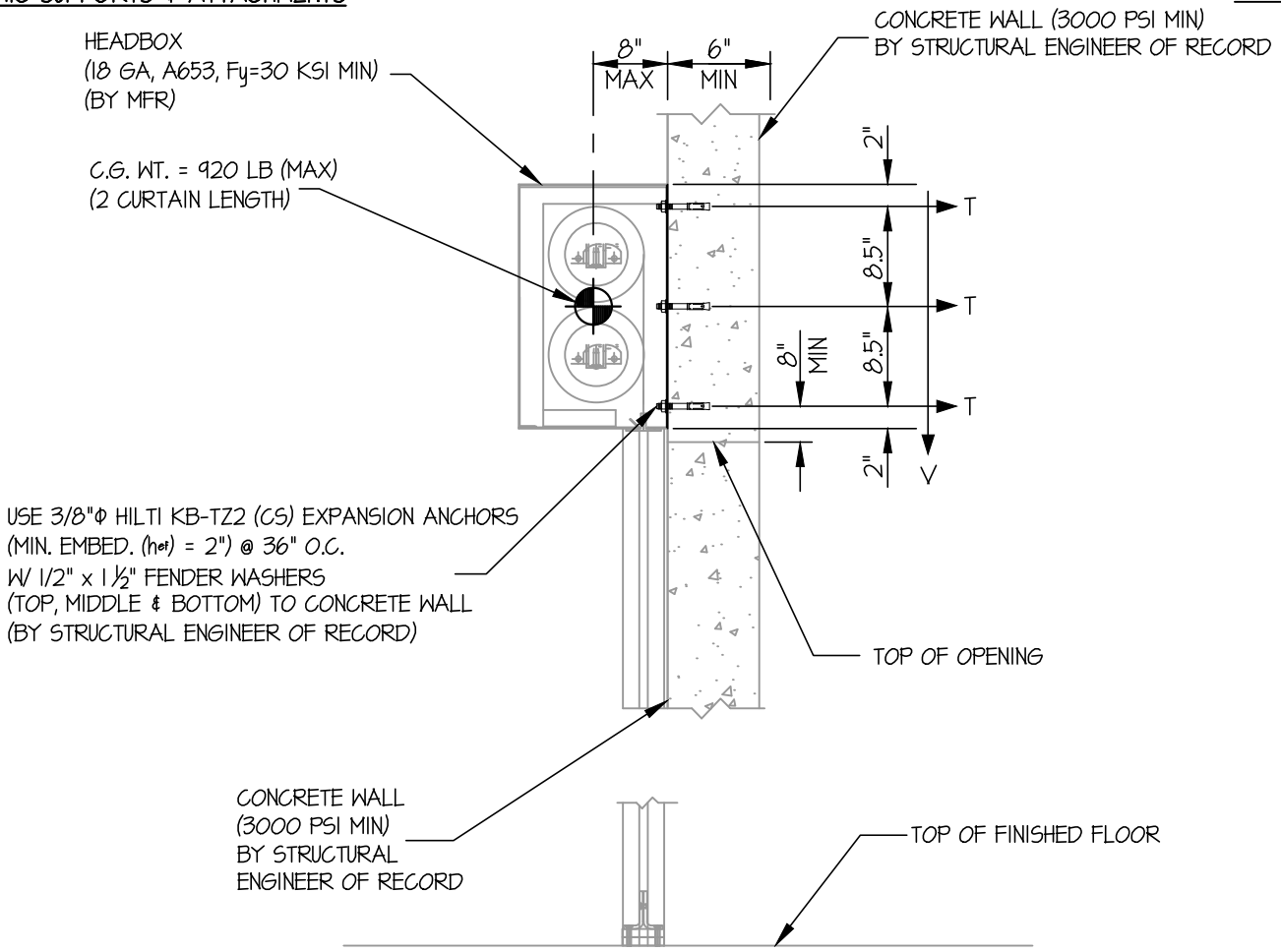
DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24
SHEET 6 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



SECTION AT CONCRETE WALL
(MULTIPLE CURTAINS WALL MOUNT)

LOADS:

WEIGHT (W_p) = 920 LB (2 CURTAIN LENGTHS)
HORIZONTAL FORCE (E_h) = 5.52 W_p = 5079 LB
VERTICAL FORCE (E_v) = 0.46 W_p = 423 LB

ANCHOR FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(920\#) + 423\#)(8")}{12\ BOLTS\ (17")} = 60\ LB/BOLT$$

$$T_{U\ PARALLEL} = \frac{5079\#(8")}{3\ BOLTS\ (180")} = 75\ LB/BOLT$$

$$T_{U\ PERP} = \frac{5079\#}{33\ BOLTS} = 154\ LB/BOLT$$

$$T_{U\ MAX} = 60\# + 75\#(0.3) + 154\# = 237\ LB/BOLT\ (MAX)$$

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(1.2(920\#) + 423\#)}{33\ BOLTS}\right)^2 + \left(\frac{5079\#}{33\ BOLTS}\right)^2} = 161\ LB/BOLT\ (MAX)$$

ANCHOR SPEC: 3/8"Φ HILTI KB-TZ2 (CS); (h_{ef} = 2")
SPACING = 6" MIN
EDGE DISTANCE = 8" MIN:
$\phi T = 0.75\phi N_n$ = 1586 LB/ANCHOR (TENSION)
$\phi V = \phi V_n$ = 1463 LB/ANCHOR (SHEAR)

INTERACTION:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.2$$

$$\left(\frac{237}{1586}\right) + \left(\frac{161}{1463}\right) = 0.26 \leq 1.2 \quad \therefore \text{ O.K.}$$

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DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

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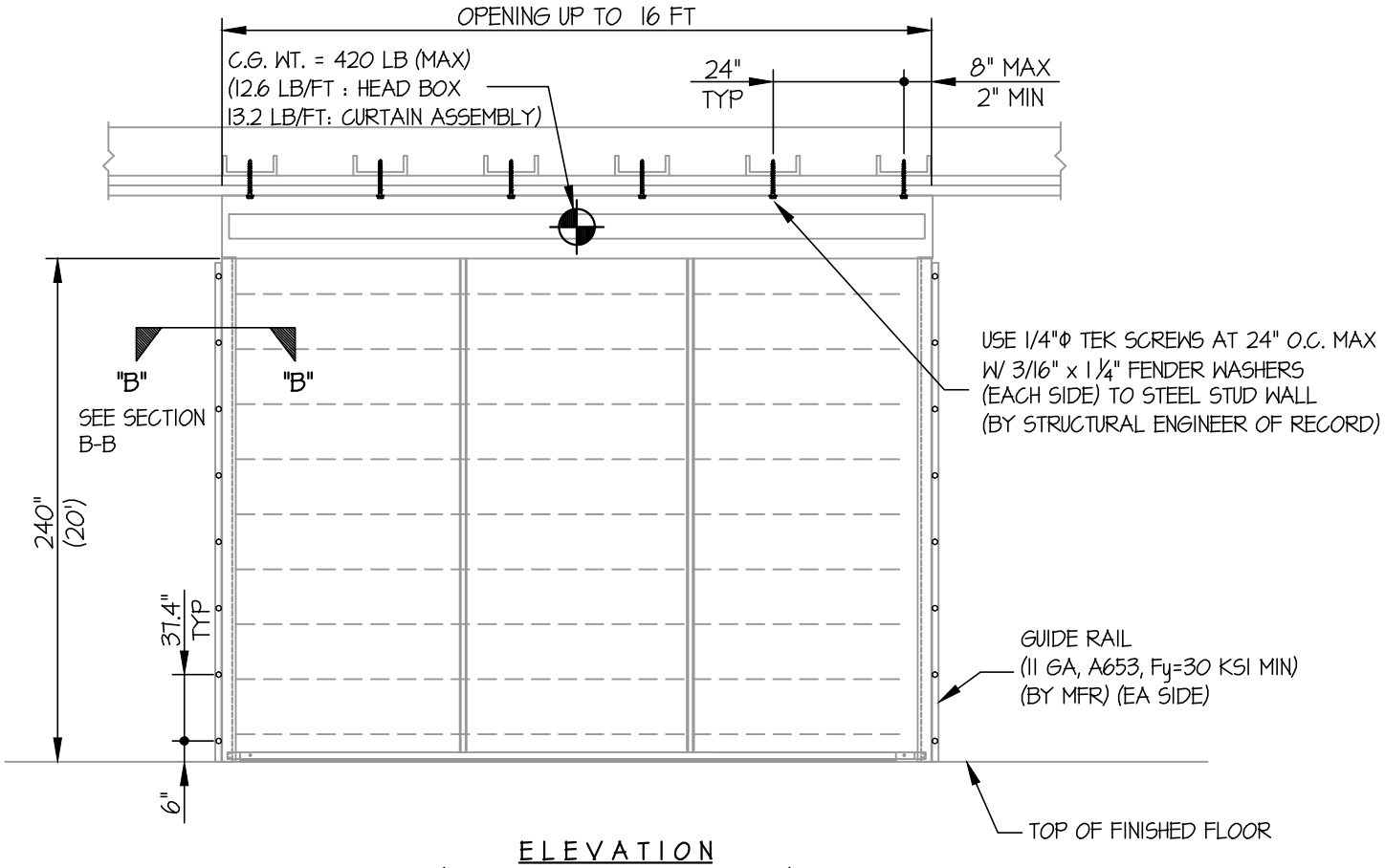
SHEET 7 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

WALL MOUNTED



ELEVATION
(SINGLE ROLLER CEILING MOUNT)

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.00, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 2.0, $z/h \leq 1$)

   HORIZONTAL FORCE (E_h) = 2.40 W_p
   HORIZONTAL FORCE (E_{mh}) = 4.80 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.40 W_p

2. THIS PREAPPROVA ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

3. THIS PREAPPROVA WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.

4. STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

REGISTERED PROFESSIONAL ENGINEER
JONATHAN ROBERSON
No. 4197
EXP. 6-30-2026
STRUCTURAL
STATE OF CALIFORNIA
8/28/24

DOOR SYSTEMS INC

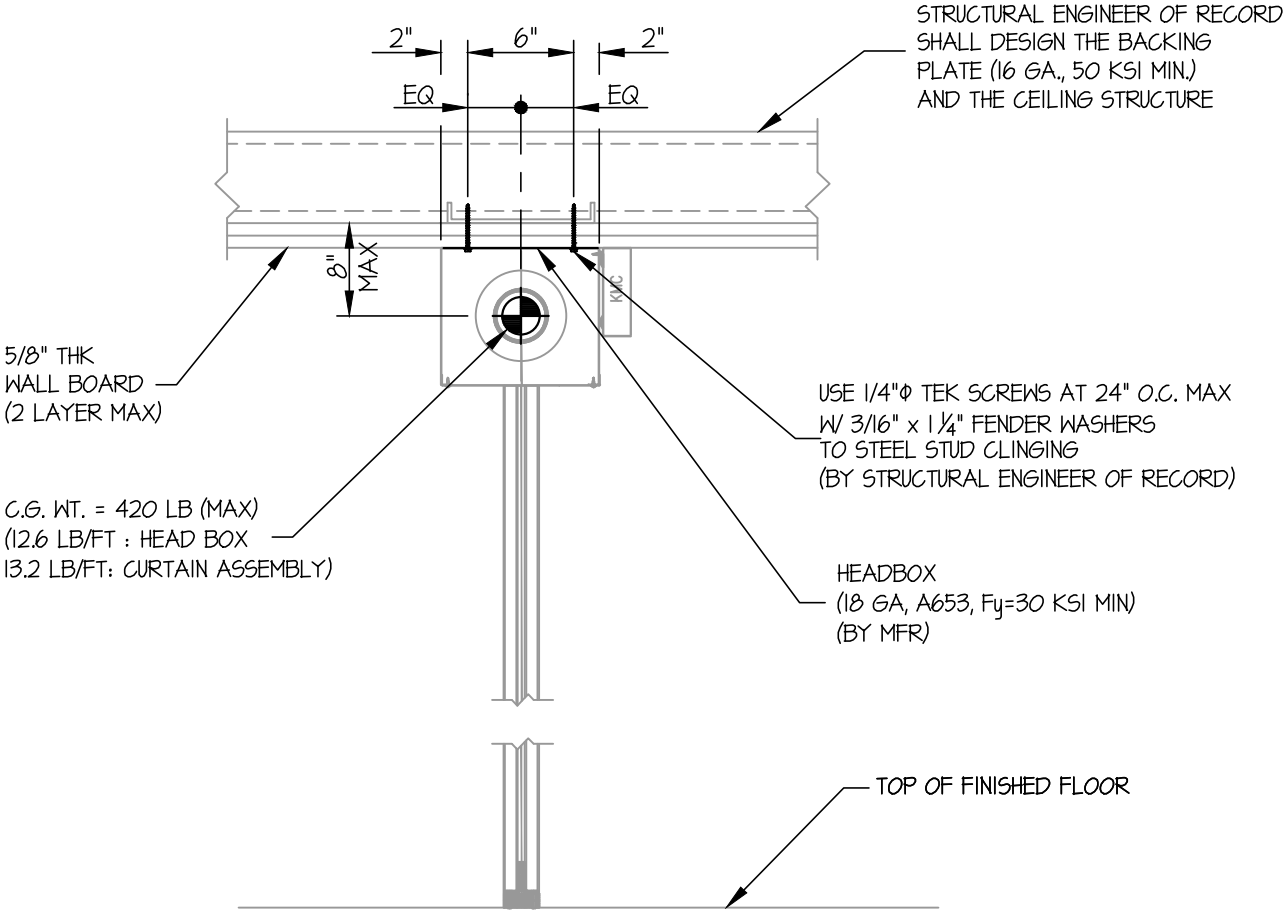
DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

SHEET 8 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



SECTION AT STEEL STUD CEILING
(SINGLE ROLLER CEILING MOUNT)

LOADS:

WEIGHT (W_p) = 420 LB MAX
HORIZONTAL FORCE (E_h) = 2.40 W_p = 1008 LB
VERTICAL FORCE (E_v) = 0.40 W_p = 168 LB

SCREW FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(420\#) + 168\#)}{16\ SCREWS} = 42\ LB/SCREW$$

$$T_{U\ PARALLEL} = \frac{1008\#(8'')}{2\ SCREWS(180'')} = 23\ LB/SCREW$$

$$T_{U\ PERP} = \frac{1008\#(8'')}{8\ SCREWS(6'')} = 192\ LB/SCREW$$

$$T_{U\ MAX} = 42\# + 23\#(0.3) + 192\# = 241\ LB/SCREW\ (MAX)$$

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(1008\#)}{16\ SCREWS}\right)^2 + \left(\frac{(1008\#)}{16\ SCREWS}\right)^2} = 89\ LB/BOLT\ (MAX)$$

1/4"ϕ TEK SCREWS (16 GA, 50 KSI STEEL STUDS)
W/ 2 LAYERS GYP BOARD MAX
ϕT = 418 LB/SCREW
ϕV= 266 LB/SCREW

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.0$$

$$\left(\frac{241}{418}\right) + \left(\frac{89}{266}\right) = 0.91 \leq 1.0 \quad \therefore \text{ O.K.}$$

DOOR SYSTEMS INC

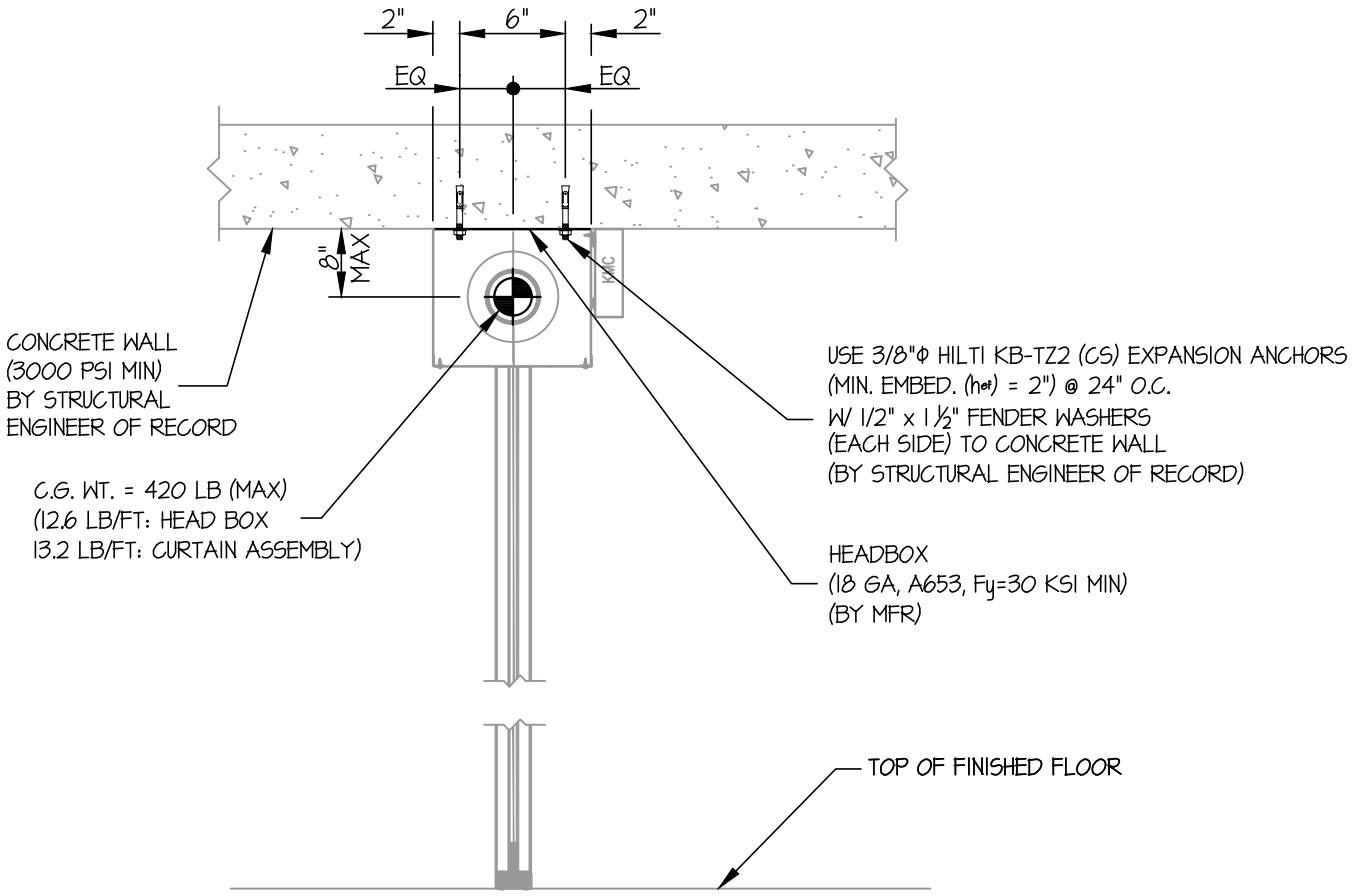
DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

SHEET 9 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



SECTION AT CONCRETE WALL
(SINGLE ROLLER CEILING MOUNT)

LOADS:

WEIGHT (W_p) = 420 LB MAX
HORIZONTAL FORCE (E_h) = 4.80 W_p = 2016 LB
VERTICAL FORCE (E_v) = 0.40 W_p = 168 LB

ANCHOR FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(420\#) + 168\#)}{16\ SCREWS} = 42\ LB/SCREW$$

$$T_{U\ PARALLEL} = \frac{2016\#(8'')}{2\ SCREWS(180'')} = 45\ LB/SCREW$$

$$T_{U\ PERP} = \frac{2016\#(8'')}{8\ SCREWS(6'')} = 384\ LB/SCREW$$

$$T_{U\ MAX} = 42\# + 45\#(0.3) + 384\# = 402\ LB/SCREW\ (MAX)$$

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(2016\#)}{16\ SCREWS}\right)^2 + \left(\frac{(2016\#)}{16\ SCREWS}\right)^2} = 179\ LB/BOLT\ (MAX)$$

ANCHOR SPEC: 3/8"Φ HILTI KB-TZ2 (CS): (h_{ef} = 2")
SPACING = 6" MIN
EDGE DISTANCE = 8" MIN:
$\phi T = 0.75\phi N_n$ = 1586 LB/ANCHOR (TENSION)
$\phi V = \phi V_n$ = 1463 LB/ANCHOR (SHEAR)

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.2$$

$$\left(\frac{402}{1586}\right) + \left(\frac{179}{1463}\right) = 0.38 \leq 1.2 \quad \therefore \text{ O.K.}$$

DOOR SYSTEMS INC

DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

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DATE 8/28/24

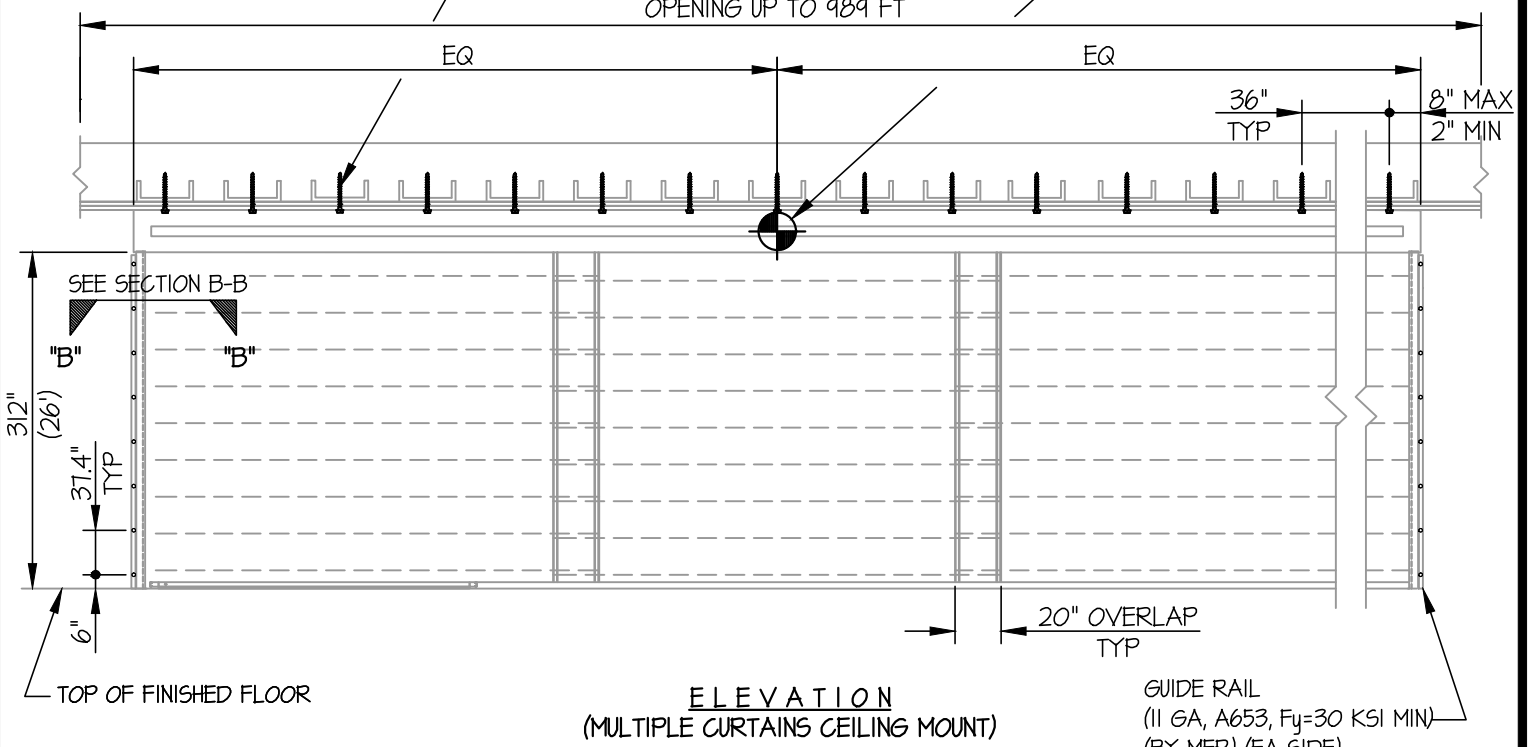
SHEET 10 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

USE 1/4"Φ TEK SCREWS AT 36" O.C. MAX
W/ 3/16" x 1 ¼" FENDER WASHERS
(3 ROWS) TO STEEL STUD CEILING OR
USE 3/8"Φ HILTI KB-TZ2 (CS) EXPANSION ANCHORS
(MIN. EMBED. (h_{ef}) = 2") @ 36" O.C.
W/ 1/2" x 1 ½" FENDER WASHERS
(3 ROWS) TO CONCRETE CEILING
(BY STRUCTURAL ENGINEER OF RECORD)

CEILING MOUNTED

(12.6 LB/FT: HEAD BOX
16.1 LB/FT: CURTAIN ASSEMBLY)



ELEVATION
(MULTIPLE CURTAINS CEILING MOUNT)

NOTES:

1. FORCES ARE DETERMINED PER 2022 CALIFORNIA BUILDING CODE AND ASCE 7-16. STRENGTH DESIGN IS USED. (EXAMPLE: S_{DS} = 2.30, a_p = 1.0, I_p = 1.5, R_p = 1.5, Ω_0 = 2.0, z/h ≤ 1)

   HORIZONTAL FORCE (E_h) = 2.76 W_p
   HORIZONTAL FORCE (E_{mh}) = 5.52 W_p (FOR CONCRETE ANCHORAGE)
   VERTICAL FORCE (E_v) = 0.46 W_p

2. THIS PREAPPROVA ENCOMPASSES WEIGHTS AND VERTICAL C.G. POSITIONS NOT EXCEEDING VALUES SHOWN.

3. THIS PREAPPROVA WAS PREPARED WITHOUT KNOWLEDGE OF ANY SITE CONDITION. COMPATIBILITY FOR USE WITH A SITE SHALL BE EVALUATED BY THE STRUCTURAL ENGINEER OF RECORD OF THE INSTALLATION (SEOR). USE REQUIRES APPROVAL BY THE SEOR.

4. STRUCTURAL ENGINEER OF RECORD FOR THE INSTALLATION SHALL VERIFY ALL CONDITIONS, EVALUATE INTERACTION WITH ADJACENT EQUIPMENT AND ANCHORS, AND PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN IN COMBINATION WITH ALL OTHER LOADS THAT MAY BE PRESENT.

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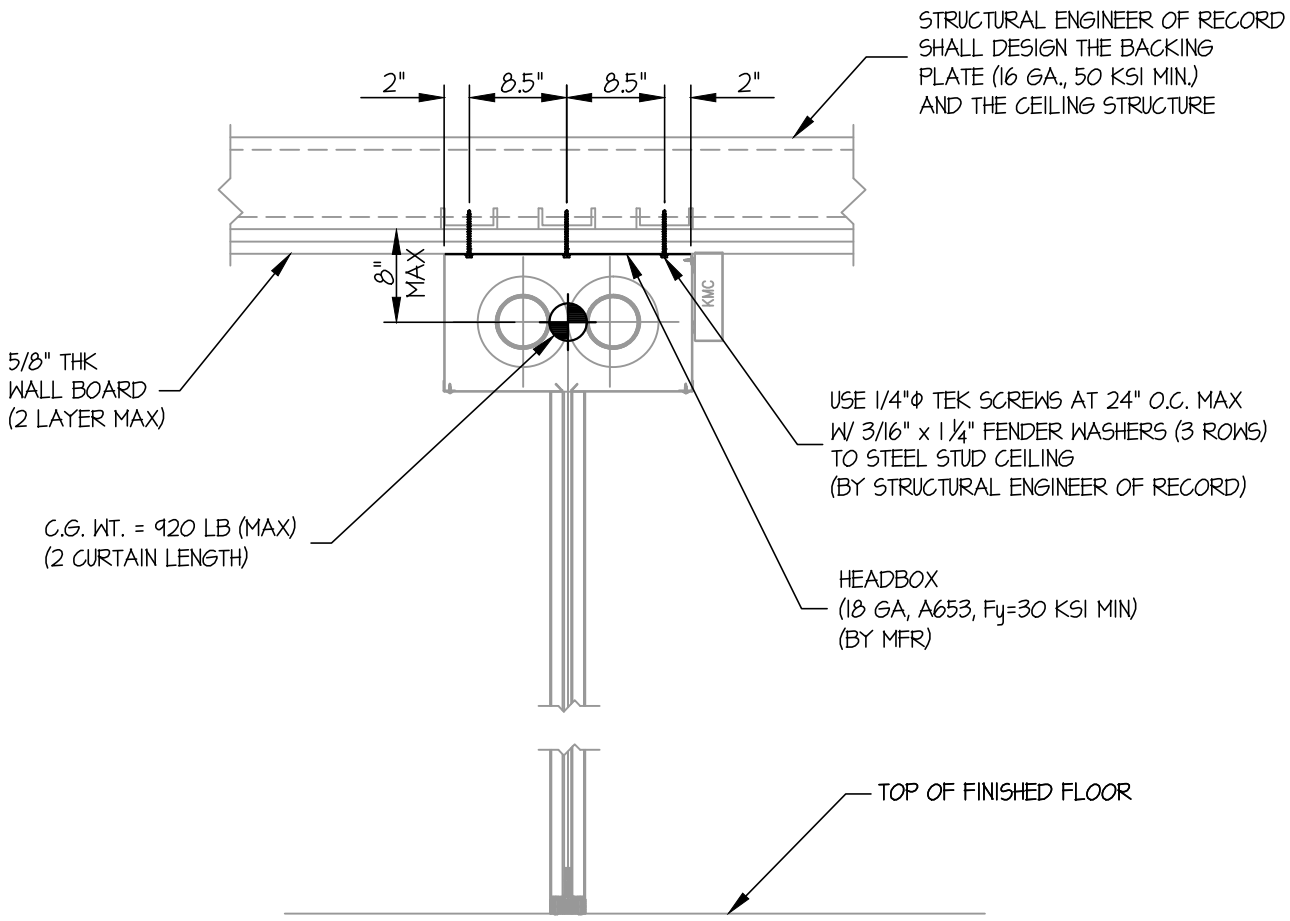
DES. J. ROBERSON

JOB NO. 11-2404

DATE 8/28/24

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



SECTION AT STEEL STUD CEILING
(MULTIPLE CURTAINS CEILING MOUNT)

LOADS:

WEIGHT (W_p) = 920 LB (2 CURTAIN LENGTHS)
HORIZONTAL FORCE (E_h) = 2.76 W_p = 2540 LB
VERTICAL FORCE (E_v) = 0.46 W_p = 423 LB

SCREW FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(920\#) + 423\#)}{30\ SCREWS} = 51\ LB/SCREW$$

$$T_{U\ PARALLEL} = \frac{2540\#(8'')}{3\ SCREWS(360'')} = 19\ LB/SCREW$$

$$T_{U\ PERP} = \frac{2540\#(8'')}{10\ SCREWS(17'')} = 120\ LB/SCREW$$

$T_{U\ MAX}$ = 51# + 19#(0.3) + 120# = 177 LB/SCREW (MAX)

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{(2540\#)}{30\ SCREWS}\right)^2 + \left(\frac{(2540\#)}{30\ SCREWS}\right)^2} = 120\ LB/BOLT\ (MAX)$$

1/4"ϕ TEK SCREWS (16 GA, 50 KSI STEEL STUDS)
W/ 2 LAYERS GYP BOARD MAX
ϕT = 418 LB/SCREW
ϕV= 266 LB/SCREW

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.0$$

$$\left(\frac{177}{418}\right) + \left(\frac{120}{266}\right) = 0.88 \leq 1.0 \quad \therefore \text{ O.K.}$$

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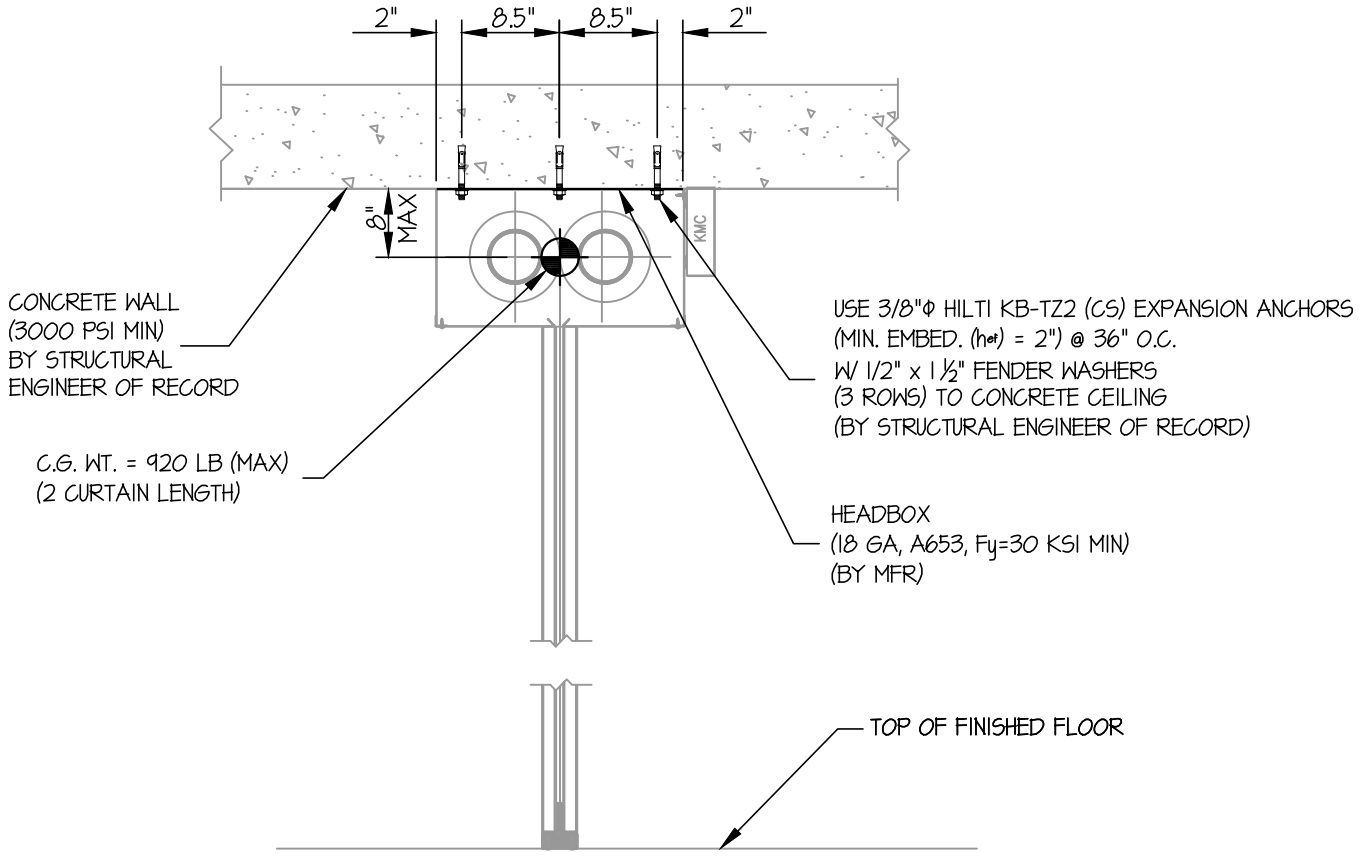
SHEET 12 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



SECTION AT CONCRETE CEILING
(MULTIPLE CURTAINS CEILING MOUNT)

LOADS:

WEIGHT (W_p) = 920 LB (2 CURTAIN LENGTHS)
HORIZONTAL FORCE (E_h) = 5.52 W_p = 5080 LB
VERTICAL FORCE (E_v) = 0.46 W_p = 423 LB

ANCHOR FORCES:

TENSION (T)

$$T_{U\ VERTICAL} = \frac{(1.2(920\#) + 423\#)}{30\ BOLTS} = 51\ LB/BOLT$$

$$T_{U\ PARALLEL} = \frac{5080\#(8'')}{3\ BOLTS(360'')} = 38\ LB/BOLT$$

$$T_{U\ PERP} = \frac{5080\#(8'')}{10\ BOLTS(17'')} = 239\ LB/BOLT$$

$T_{U\ MAX}$ = 51# + 38#(0.3) + 239# = 302 LB/BOLT (MAX)

SHEAR (V)

$$V_{U\ WALL} = \sqrt{\left(\frac{5080\#}{30\ BOLTS}\right)^2 + \left(\frac{5080\#}{30\ BOLTS}\right)^2} = 240\ LB/BOLT\ (MAX)$$

ANCHOR SPEC: 3/8"Φ HILTI KB-TZ2 (CS): (h_{ef} = 2")
SPACING = 6" MIN
EDGE DISTANCE = 8" MIN:
$\phi T = 0.75\phi N_n$ = 1586 LB/ANCHOR (TENSION)
$\phi V = \phi V_n$ = 1463 LB/ANCHOR (SHEAR)

UNITY CHECK:

$$\left(\frac{T_u}{\phi T}\right) + \left(\frac{V_u}{\phi V}\right) \leq 1.2$$

$$\left(\frac{302}{1586}\right) + \left(\frac{240}{1463}\right) = 0.37 \leq 1.2 \quad \therefore \text{ O.K.}$$

DOOR SYSTEMS INC

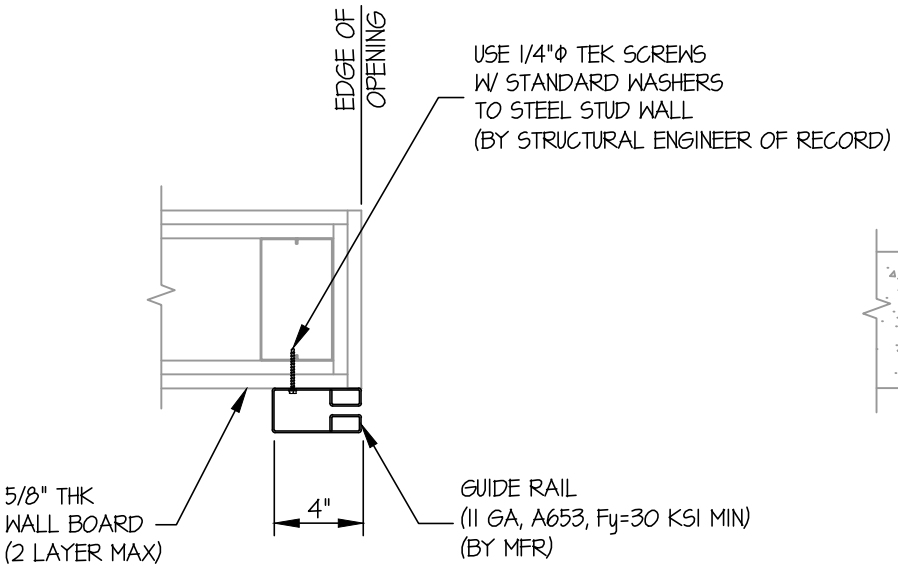
DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

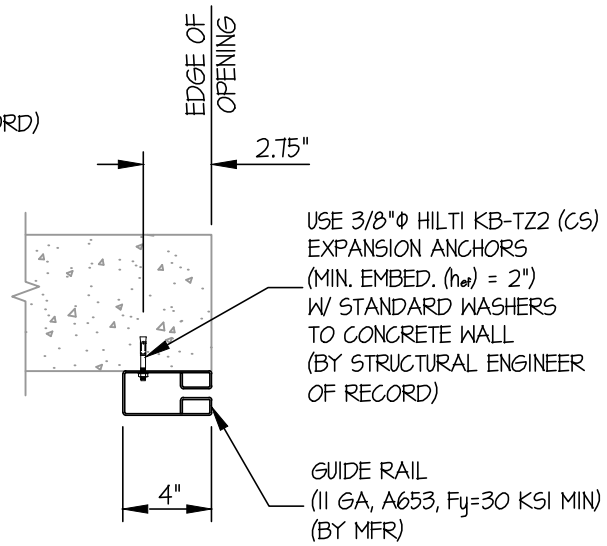
SHEET 13 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

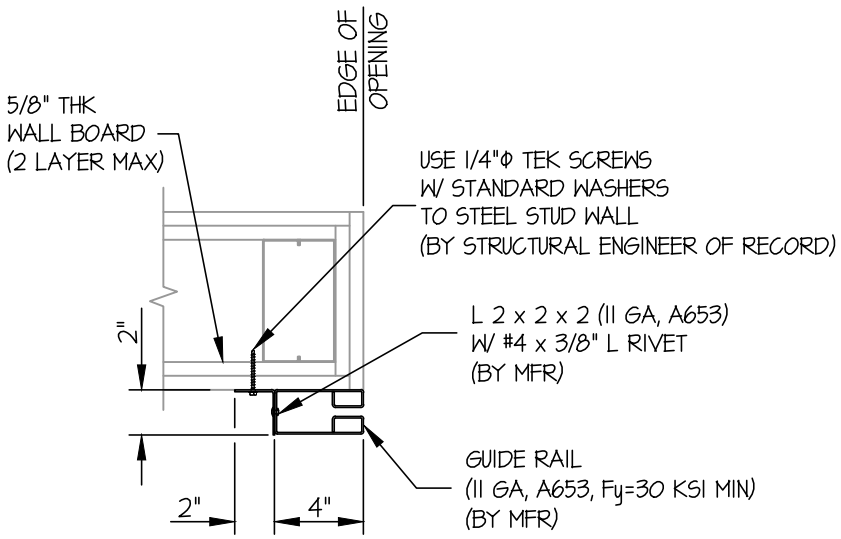
WALL MOUNTED



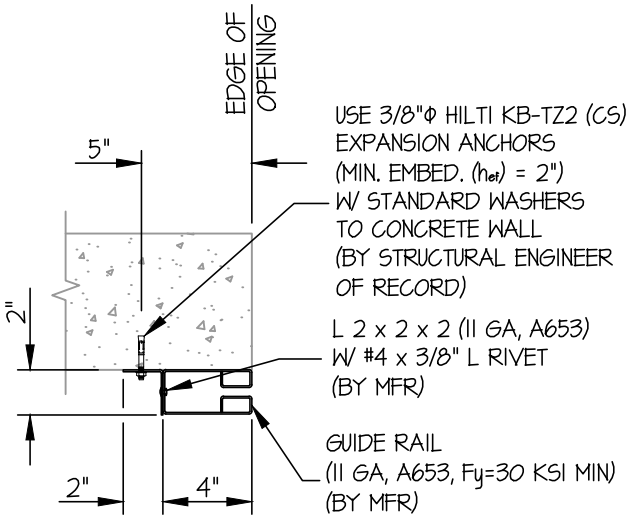
SECTION AT STEEL STUD WALL



SECTION AT CONCRETE WALL



GUIDE RAIL WITH ANGLE FACE FIX ON STUD WALL
(OPTION)



GUIDE RAIL WITH ANGLE FACE FIX ON CONCRETE WALL
(OPTION)

SECTION A-A

DOOR SYSTEMS INC

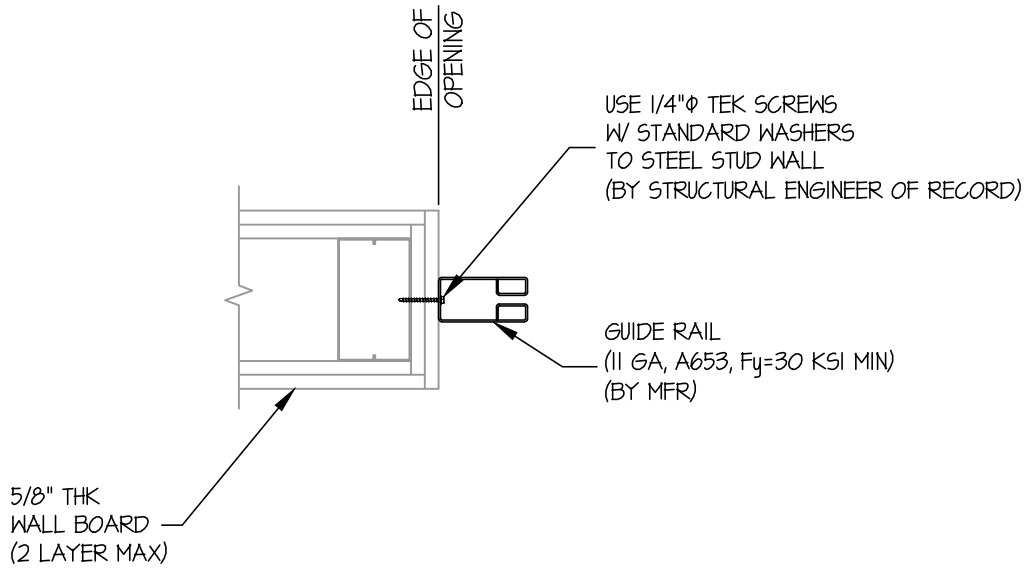
DSI-HS10B HOSE STREAM RATED SMOKE & FIRE CURTAIN

DES. J. ROBERSON
JOB NO. 11-2404
DATE 8/28/24

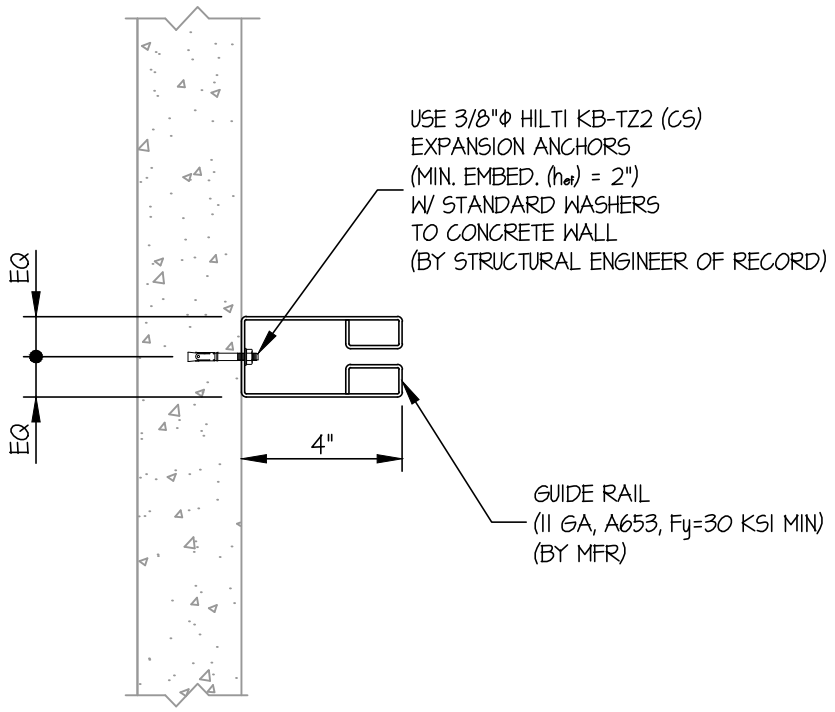
SHEET 14 OF 14 SHEETS

SEISMIC SUPPORTS & ATTACHMENTS

CEILING MOUNTED



SECTION AT STEEL STUD WALL



SECTION AT CONCRETE WALL

SECTION B-B