DRAWN BY: BILL BERENS

MONOTUBE SIGN BRIDGE

5' - 0"

2' - 6"

5' - 0"

*

WALK-IN CABINET TYPE VMS

3' - 0" MAX. ATTACHMENT BRACKET SPACING

4" (IN) MAX. GAP BETWEEN RAILING POST AND VMS (TYP.)

3/8" (IN) DIAM. WIRE ROPE (SEE NOTE 4)

ENTRANCE TO WALKWAY (SWING GATE INSIDE ONLY)

RAILING

4' - 0" MAX. W4×13 SPACING

PLAN

TOP OF VARIABLE MESSAGE SIGN

SAFETY CABLE AND INTERMEDIATE SUPPORT ARE OPTIONAL IN THIS ZONE

INTERMEDIATE SUPPORT FOR WIRE ROPE (TYP.) (SEE NOTE 3)

2' - 0" MIN.

8' - 0" MAX. SPACING (TYP.)

6' - 0" MIN. FROM TOP OF GRATE

FALL RESTRAINT BRACKET (TYP.) (SEE DETAIL)

SEE CONTRACT FOR VMS DIMENSIONS

SEE CONTRACT FOR MAINTENANCE WALKWAY LAYOUT

ELEVATION

WALKWAY IN THIS ZONE IS REQUIRED FOR VARIABLE MESSAGE SIGN WITH DOORS ON EACH END

MAINTENANCE WALKWAY INSTALLED ON MONOTUBE SIGN BRIDGE

(WALKWAYS MAY BE USED WITH OTHER LAYOUTS THAN THAT SHOWN ABOVE)

* = SEE NOTE 5

STRUCTURAL LUGS (SIZE TO FIT ROPE SPELTER SOCKET) (TYP.) SEE DETAIL "A"

STRUCTURAL LUG (INTERMEDIATE SUPPORT) SEE DETAIL "B" (SEE NOTE 3)

JAW & EYE END OPEN BODY TURNBUCKLE WITH 14 KIPS MIN. BREAKING STRENGTH (GALVANIZED)

FALL RESTRAINT BRACKET (TYP.)

CLOSED SPELTER SOCKET (TYP.)

SEE NOTE 4

6' - 0" MIN. FROM TOP OF GRATING

SEE SHEET 2 FOR BRACKET DETAILS

FALL RESTRAINT

MATERIAL SPECIFICATIONS	
PIPE	ASTM A 36 OR ASTM A 53 GRADE B, TYPE E OR S, OR ASTM A 500 GRADE B
PLATES AND SHAPES	ASTM A 36
STRUCTURAL TUBING	ASTM A 500 GRADE B
GALVANIZING FOR PIPE PLATES, SHAPES AND STEEL GRATING	AASHTO M 111
HIGH STRENGTH BOLTS, NUTS, & WASHERS; INCL. MOUNTING BEAM BOLTS	STD SPEC. 9-06.5(3)
ALL OTHER BOLTS	STD SPEC. 9-06.5(1)
FASTENER GALVANIZING	ASTM F2329
STEEL GRATING	ASTM A 36
WIRE ROPE	ASTM A 603 W/ CLASS A WEIGHT ZINC COATED WIRES THROUGHOUT ①

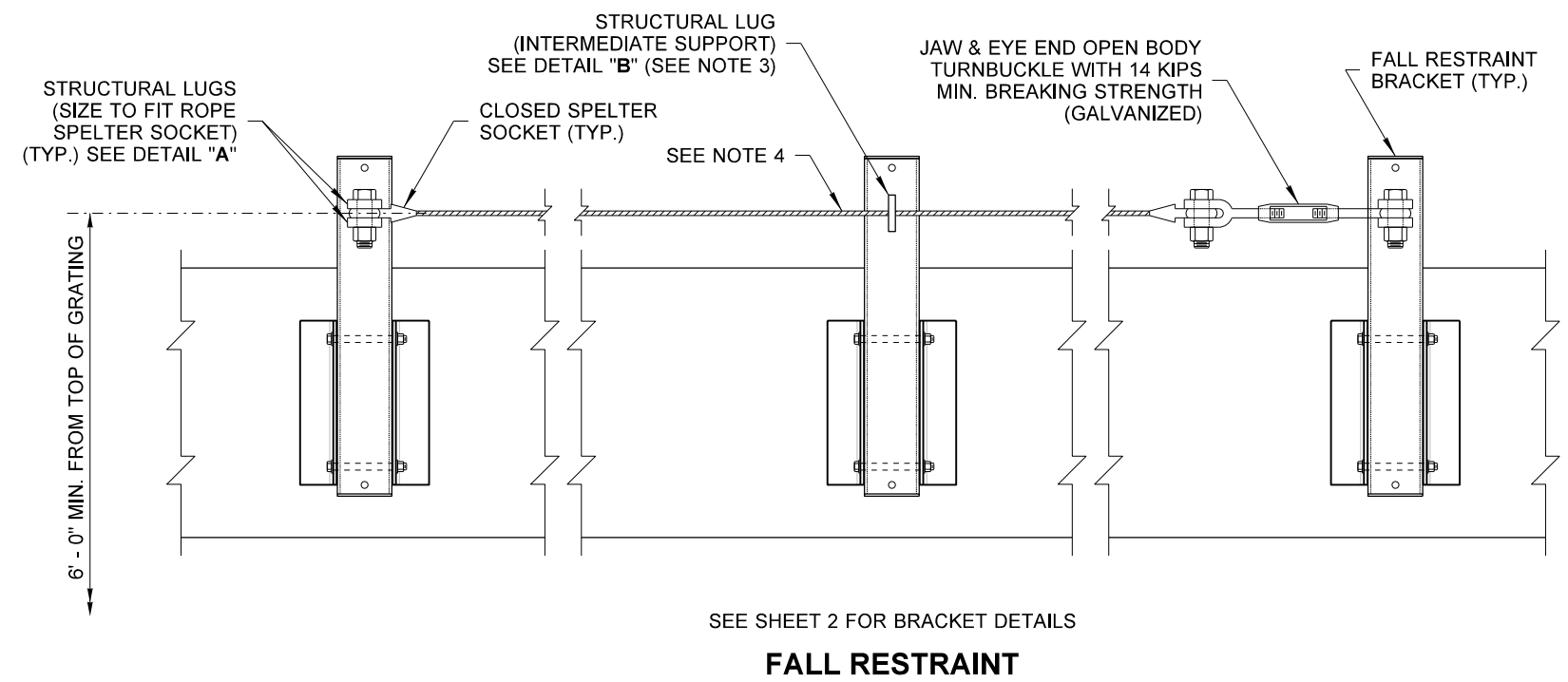① ALLOWABLE ALTERNATE MATERIAL: FEDERAL STANDARD RR-W-410F TYPE 6 CLASS 3 GALVANIZED.

NOTES

1. Not intended for use in front of static signs.

2. For maintenance walkway, railing, grating, and toe plate details, **See Standard Plan G-95.10**.

3. Use two lanyards through intermediate wire rope support.

4. 3/8" (in) diameter wire rope with 14 kips min. breaking strength. The wire rope shall be installed with 450 lbs. of tension, and with 6" (in) of take up adjustment available in the turnbuckle.

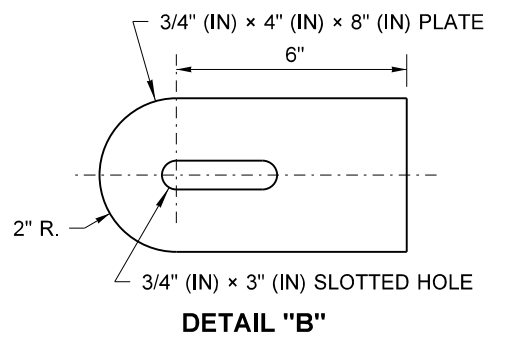5. Handrail fit-up with VMS door opening is the responsibility of the contractor.

4"

2"

3"

1 1/2" R.

5/8" (IN) PLATE

HOLE DIAM. = BOLT DIAM. + 1/16"

① 5" (IN) WHEN AN INTERMEDIATE SUPPORT IS USED

DETAIL "A"

3/4" (IN) × 4" (IN) × 8" (IN) PLATE

6"

2" R.

3/4" (IN) × 3" (IN) SLOTTED HOLE

DETAIL "B"

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STATE OF WASHINGTON
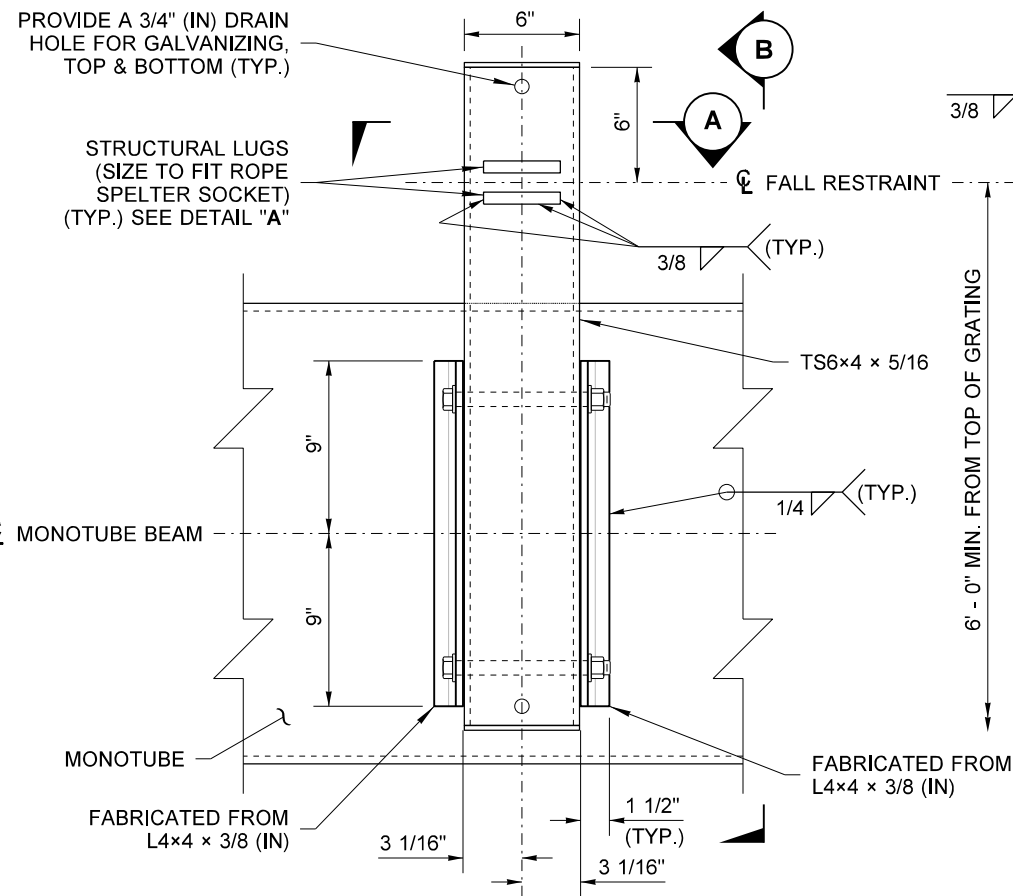25470
STRUCTURAL
PROFESSIONAL ENGINEER

MAINTENANCE WALKWAY MOUNTING FOR MONOTUBE SIGN BRIDGE STANDARD PLAN G-95.20-03

SHEET 1 OF 3 SHEETS
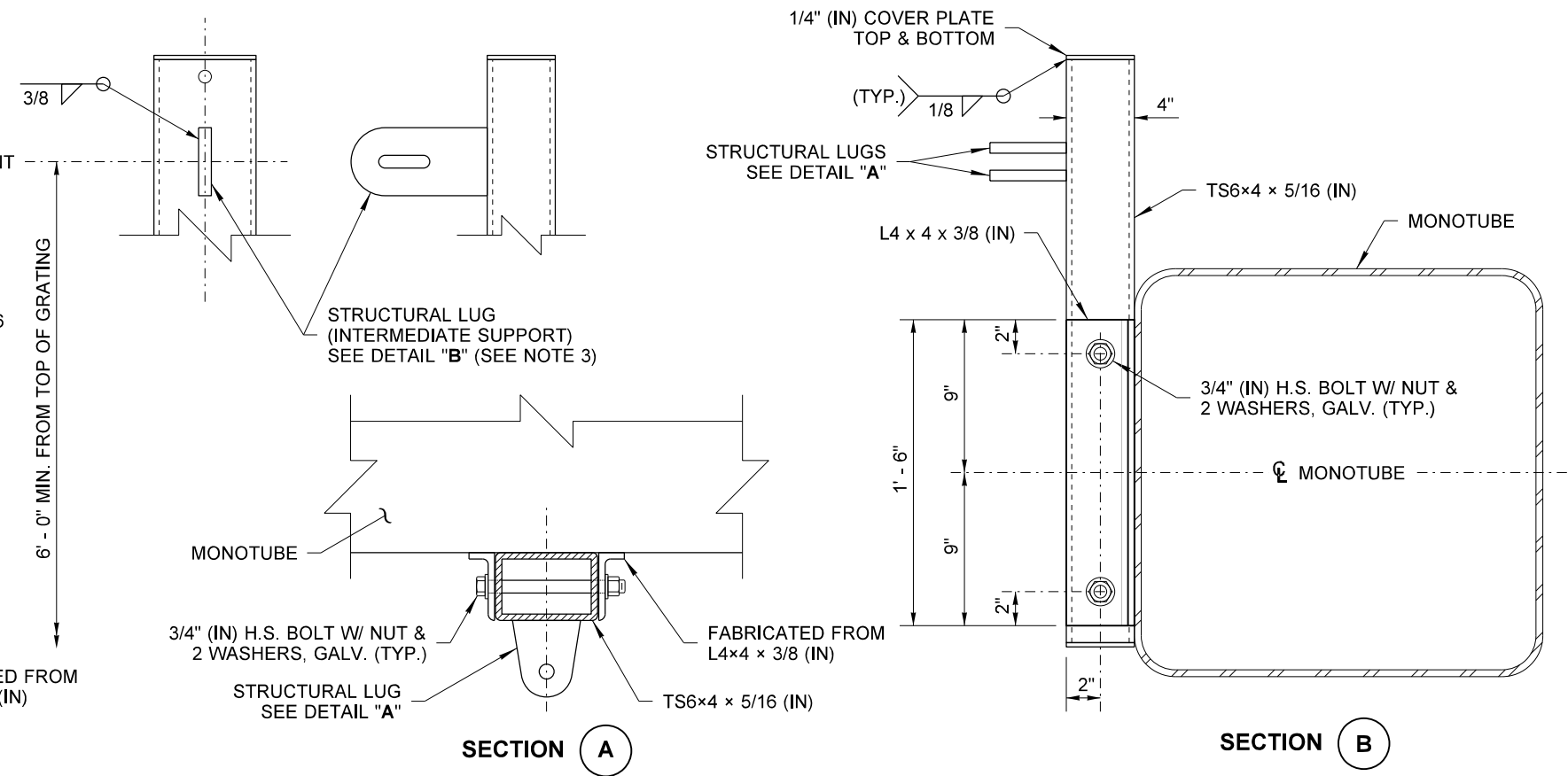
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STATE DESIGN ENGINEER

Washington State Department of Transportation

DRAWN BY: BILL BERENS

PROVIDE A 3/4" (IN) DRAIN
HOLE FOR GALVANIZING,
TOP & BOTTOM (TYP.)

6"

STRUCTURAL LUGS
(SIZE TO FIT ROPE
SPELTER SOCKET)
(TYP.) SEE DETAIL "A"

6"

B

A

℄ FALL RESTRAINT

3/8 (TYP.)

TS6×4 × 5/16 (IN)

9"

℄ MONOTUBE BEAM

1/4 (TYP.)

9"

MONOTUBE

FABRICATED FROM
L4×4 × 3/8 (IN)

FABRICATED FROM
L4×4 × 3/8 (IN)

3 1/16"

1 1/2"
(TYP.)

6' - 0" MIN. FROM TOP OF GRATING

3 1/16"

ELEVATION VIEW

3/8

1/4" (IN) COVER PLATE
TOP & BOTTOM

(TYP.) 1/8

4"

STRUCTURAL LUGS
SEE DETAIL "A"

STRUCTURAL LUG
(INTERMEDIATE SUPPORT)
SEE DETAIL "B" (SEE NOTE 3)

TS6×4 × 5/16 (IN)

MONOTUBE

L4 x 4 x 3/8 (IN)

MONOTUBE

2"

9"

3/4" (IN) H.S. BOLT W/ NUT &
2 WASHERS, GALV. (TYP.)

1' - 6"

℄ MONOTUBE

3/4" (IN) H.S. BOLT W/ NUT &
2 WASHERS, GALV. (TYP.)

STRUCTURAL LUG
SEE DETAIL "A"

FABRICATED FROM
L4×4 × 3/8 (IN)

TS6×4 × 5/16 (IN)

9"

2"

2"

SECTION A

SECTION B

**FALL RESTRAINT BRACKET INSTALLATION
ON NEW MONOTUBE SIGN BRIDGE**

PROVIDE A 3/4" (IN) DRAIN
HOLE FOR GALVANIZING,
TOP & BOTTOM (TYP.)

6"

C

STRUCTURAL LUGS
(SIZE TO FIT ROPE
SPELTER SOCKET)
(TYP.) SEE DETAIL "A"

6"

℄ FALL RESTRAINT

3/8 (TYP.)

FIELD LOCATE 1 1/8" (IN) DIAM.
HOLES @ FRONT AND
BACK OF MONOTUBE (TYP.)

4"

6"

3/4" (IN) × 13" (IN) × 1' - 8" PLATE

EXISTING MONOTUBE BEAM
AND BRACKET PLATE

6"

TS6×4 × 5/16 (IN)

4"

1/4

2"

1 1/8" (IN) DIAM. HOLE (TYP.)

EXISTING
MONOTUBE

2" 4 1/2" 4 1/2" 2"

6' - 0" MIN. FROM TOP OF GRATING

ELEVATION VIEW

3/8

STRUCTURAL LUGS
SEE DETAIL "A"

1/8 (TYP.)

1/4" (IN) COVER PLATE
TOP & BOTTOM

4"

3" THREAD
EACH END (TYP.)

STRUCTURAL LUG
(INTERMEDIATE SUPPORT)
SEE DETAIL "B" (SEE NOTE 3)

EXISTING MONOTUBE

3/4" (IN) × 13" (IN) × 1' - 8" PLATE

1" (IN) DIAM. ROD W/ 2 LOCK-
NUTS & WASHERS, GALV.
(ASTM A 449) (TYP.) ~ 4 SETS
REQUIRED PER BRACKET

TS6×4 × 5/16 (IN)

2" (TYP.)

SECTION C

**FALL RESTRAINT BRACKET INSTALLATION
ON EXISTING MONOTUBE SIGN BRIDGE**

**MAINTENANCE WALKWAY
MOUNTING FOR
MONOTUBE SIGN BRIDGE
STANDARD PLAN G-95.20-03**

SHEET 2 OF 3 SHEETS

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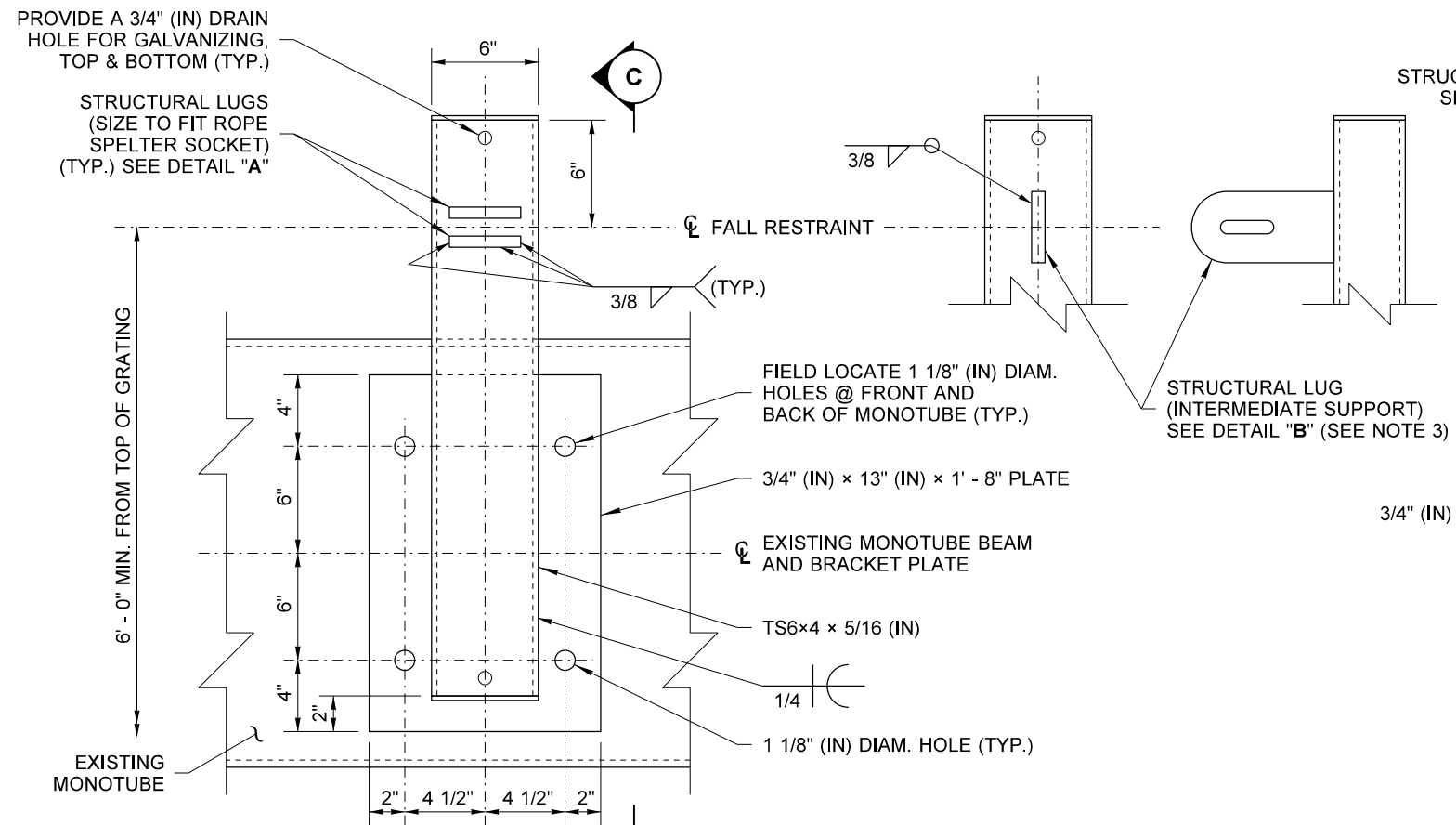
Washington State Department of Transportation
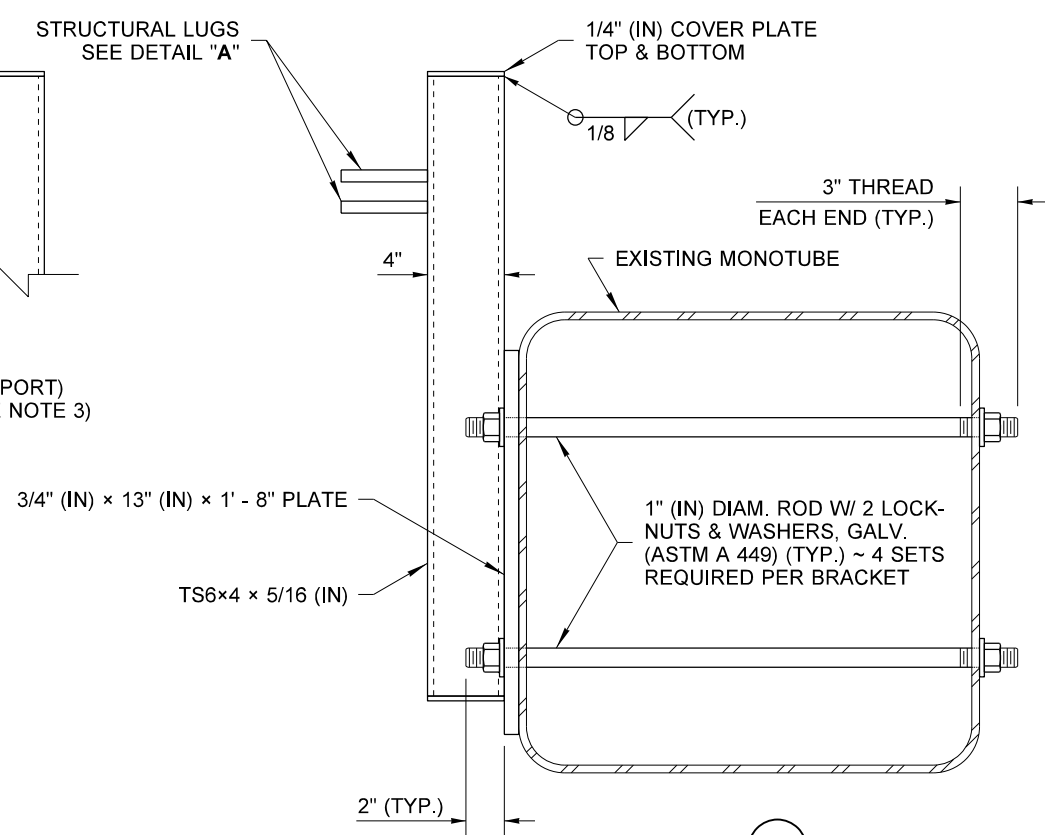
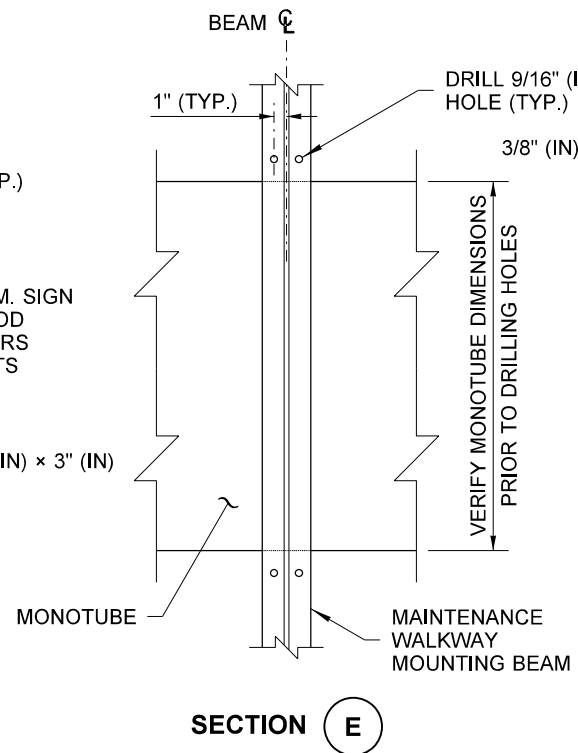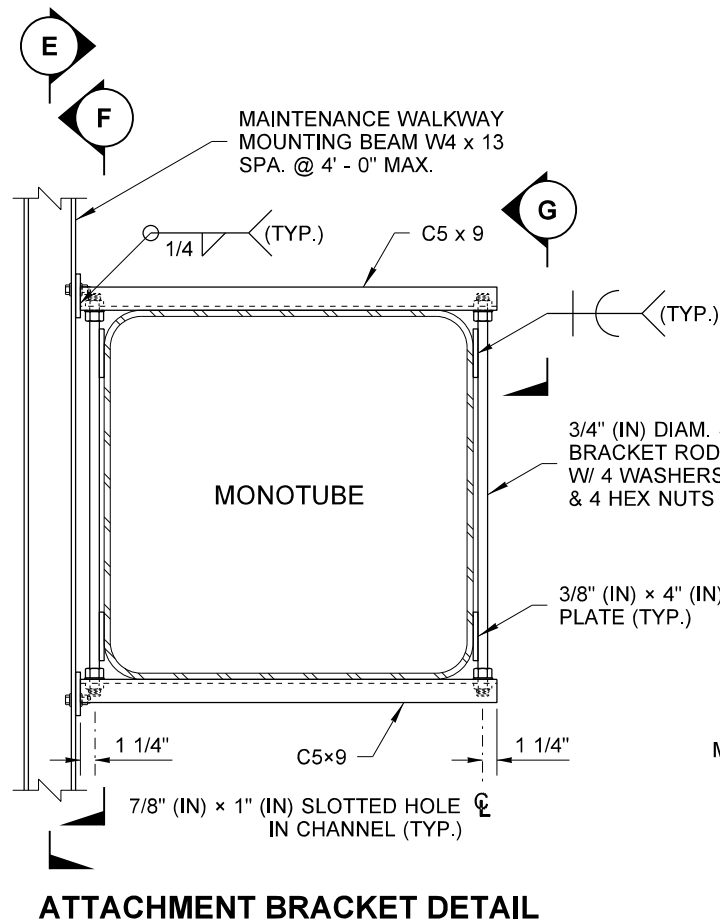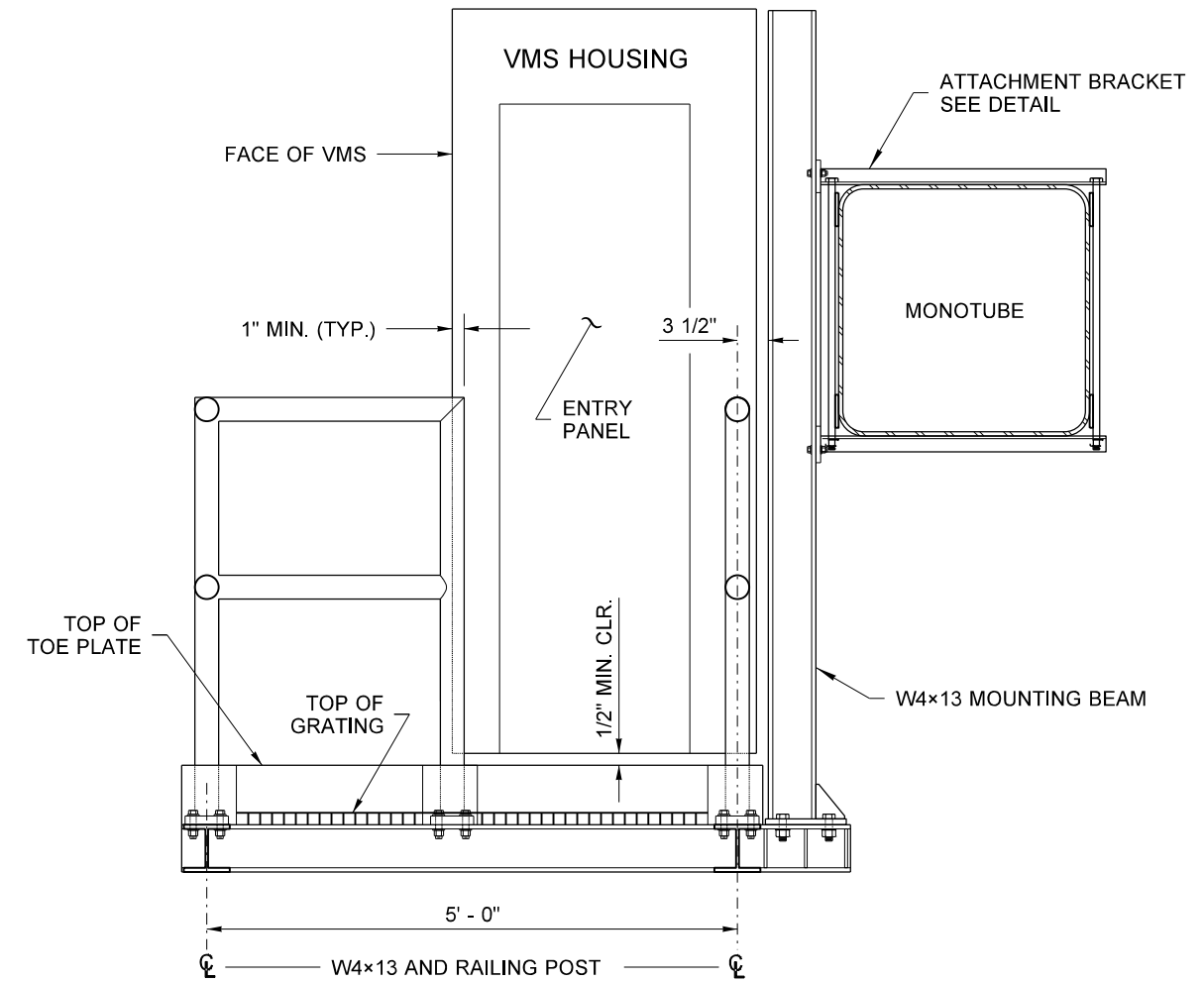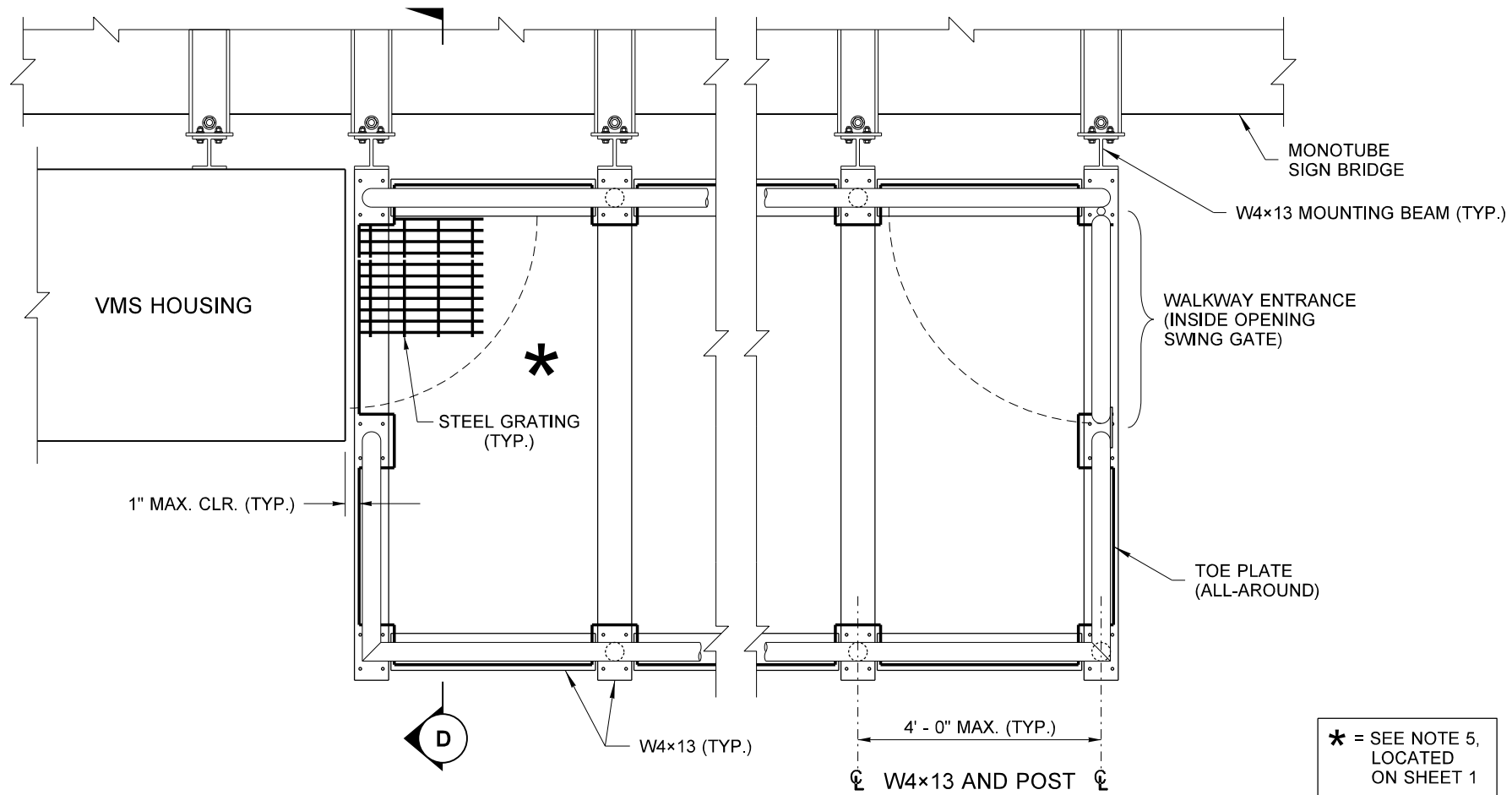DRAWN BY: BILL BERENS

VMS HOUSING

MONOTUBE SIGN BRIDGE

W4×13 MOUNTING BEAM (TYP.)

WALKWAY ENTRANCE
(INSIDE OPENING
SWING GATE)

STEEL GRATING
(TYP.)

TOE PLATE
(ALL-AROUND)

1" MAX. CLR. (TYP.)

W4×13 (TYP.)

4' - 0" MAX. (TYP.)

℄ W4×13 AND POST ℄

D

✱ = SEE NOTE 5,
LOCATED
ON SHEET 1

MAINTENANCE WALKWAY
PARTIAL PLAN

ATTACHMENT BRACKET
SEE DETAIL

VMS HOUSING

FACE OF VMS

MONOTUBE

1" MIN. (TYP.)

3 1/2"

ENTRY
PANEL

1/2" MIN. CLR.

TOP OF
TOE PLATE

TOP OF
GRATING

W4×13 MOUNTING BEAM

5' - 0"

℄ W4×13 AND RAILING POST ℄

SECTION D

MAINTENANCE WALKWAY
MOUNTING BEAM W4 × 13
SPA. @ 4' - 0" MAX.

(TYP.)
1/4

E
F
G

C5 × 9

MONOTUBE

3/4" (IN) DIAM. SIGN
BRACKET ROD
W/ 4 WASHERS
& 4 HEX NUTS

3/8" (IN) × 4" (IN) × 3" (IN)
PLATE (TYP.)

1 1/4"   C5×9   1 1/4"

7/8" (IN) × 1" (IN) SLOTTED HOLE
IN CHANNEL (TYP.)

ATTACHMENT BRACKET DETAIL

BEAM ℄

1" (TYP.)

DRILL 9/16" (IN)
HOLE (TYP.)

VERIFY MONOTUBE DIMENSIONS
PRIOR TO DRILLING HOLES

MONOTUBE

MAINTENANCE
WALKWAY
MOUNTING BEAM

SECTION E

ALL PARTS ℄

9/16" (IN) × 3/4" (IN) SLOTTED HOLE
(VERT.) FOR 1/2" (IN) DIAM.
H.S. MOUNTING
BEAM BOLT (TYP.)

1" (TYP.)

3/8" (IN) × 3 1/2" (IN) × 6" (IN)
PLATE (TYP.)

1 1/4" (TYP.)

3/8" (IN) × 4" (IN) × 3" (IN)
PLATE (TYP.)

MOUNTING
BEAM

C5×9 (TYP.)

(TYP.)
1/4

(TYP.)

1/2" (TYP.)

SECTION F

1/2" MIN.
(TYP.)

LOCKING HEX NUT W/
NYLON INSERT (TYP.)

WASHER (TYP.)

C5 x 9

1 1/2"
(TYP.)

HEX NUT

3/8" (IN) × 4" (IN) × 3" (IN)
PLATE (TYP.)

3/4" (IN) DIAM. ROD

VIEW G

BRACKET NOTES

PAINT ENTIRE ATTACHMENT BRACKET TO MATCH EXISTING
STRUCTURE EXCEPT FOR MOUNTING BEAM.

SIGN, LIGHT, BEAM LENGTHS, SIZE AND SPACING SHALL BE
DETERMINED FROM THE CONTRACT PLANS OR WSDOT
STANDARD PLANS.

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25470
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STRUCTURAL ENGINEER
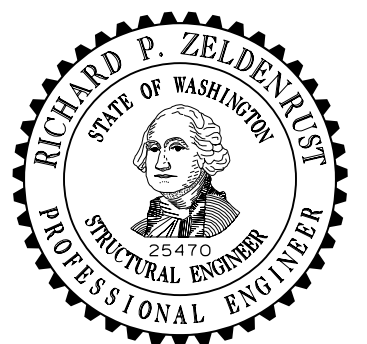
MAINTENANCE WALKWAY
MOUNTING FOR
MONOTUBE SIGN BRIDGE
STANDARD PLAN G-95.20-03

SHEET 3 OF 3 SHEETS

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