## Western Washington

<table>
<thead>
<tr>
<th>Exposed Wall Ht</th>
<th>Shaft Depth</th>
<th>Rod &quot;A&quot; Dia.</th>
<th>Bar &quot;B&quot;</th>
<th>Lap Splice</th>
<th>Anchor Bolt Dia.</th>
<th>Base Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
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<td>6'-0&quot;</td>
<td>5'-6&quot;</td>
<td>1/2&quot;</td>
<td>4'-6&quot;</td>
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<td>1 1/8&quot;</td>
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<tr>
<td>8'-0&quot;</td>
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<td>7'-3&quot;</td>
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<td>9'-0&quot;</td>
<td>1&quot;</td>
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<td>6'-0&quot;</td>
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Only Anchor Bolt Option for Rod "A" allowed. Wedge Head Option Not Allowed.

## Eastern Washington

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Special Design Required.

## Notes

1. All rods "A" and anchor bolts shall be per ASTM F1554 grade 105.
2. Anchor Bolts, Nuts, Washers and Rod "A" shall have a protective coating of either Hot Dipped Galvanizing per AASHTO M232 for hardware or AASHTO M111 for Washers and Plates.
3. For intermediate wall heights, use the next higher H.
4. Panels shall have at least 3 feet of level ground on each side.
5. The Contract specifies actual foundation requirements for D1 or D2 and location of Western WA and Eastern WA.
6. Maximum panel length shall be 12 feet.
7. Materials shall meet the requirements of Standard Specification Section 6-12 and Special Provisions Section 5-12.

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**SECTION A**

- Bar "D" #3 @ 1'-0" Max.
- Bar "F" #3 Alternate Vertical Bars as Shown
- Surface Treatment As Required
- Panel Length = 12'-0" Max.

**SECTION B**

- Anchor Spiral with Two Turns Top and Bottom

**SECTION C**

- 3'-0" Min.
- Final Ground Line

**Shaft & Plaster**

- Shaft to Panel Connection - See Detail, Sheet 2
- Anchor Bolts - Set Bolts with Template, Use Nuts Top & Bottom of Template to Secure Location

**Pre-Cast Concrete Panel with Plaster**

- Precast Concrete Plate - See Detail, Sheet 2
- Shaft to Panel Connection - See Detail, Sheet 2

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**Typical Section**

- 3/4" Chamfer (Typ.)
- 2" Clr (Typ.)
- 5 1/2" (Typ.)
- 5 1/2" (Typ.)

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**Standard Plan D-2.36-03**

- SHEET 1 OF 3 SHEETS
- APPROVED FOR PUBLICATION

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**NOISE BARRIER WALL**

- TYPE 11

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**Bijan Khaleghi, Bijn**

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**NOISE BARRIER WALL**

- TYPE 11

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**Bijan Khaleghi**

- NOISE BARRIER WALL
- STANDARD PLAN D-2.36-03
- SHEET 1 OF 3 SHEETS
- APPROVED FOR PUBLICATION
**EPOXY BONDING AGENT BETWEEN PILASTER AND BASE PLATE FOR ROD "A" THREADED BAR OPTION**

**EDGE OF PANEL = SURFACE TREATMENT NOT SHOWN**

**VERTICAL GROUT OPTION**

**BASE PLATE**

**GROUT TYPE 2**

**SHAFT**

**ANCHOR BOLT = ASTM F 1554 (TYP.) = SEE TABLE FOR DIAMETER**

**CONSTRUCTION JOINT WITH ROUGHENED SURFACE**

**SHAFT TO PANEL CONNECTION DETAIL**

**EITHER OPTION ACCEPTABLE TO GROUT BLOCKOUTS, ANCHOR BOLTS AND BASE PLATE TO THE LIMITS SHOWN**

**ROD "A"**

**ANCHOR BOLT OPTION**

**ASTM A583 NUT WITH ASTM F438 WASHER**

**ASTM A583 GR 105 FOR ALL HEIGHTS "H"**

**ASTM F1554 4R105 FOR ALL HEIGHTS "H"**

**ASTM A706 GR 80 AS ALLOWED PER TABLE, FOR HEIGHTS "H" ≤ 16' IN WESTERN WASHINGTON AND "H" ≤ 20' IN EASTERN WASHINGTON**

**BENDING DIAGRAM**

Δ VARIATES WITH ANGLE

VARIATES TO MATCH ANGLE

VARIATES WITH ANGLE

**ANCHOR PLATE DETAIL**

**BASE PLATE**

**BASE PLATE DETAIL**

(TOP OF GROUT TYP.)

**SECTION E**

**SECTION F**

**SHAFT AND PILASTER**

**BASE PLATE**

**BASE PLATE DETAIL**

**BASE PLATE NOT SHOWN FOR CLARITY**

**BASE PLATE X 1'-5" X 1'-5"**

**ASTM A36, GALVANIZED, (EMBEDDED WITH GROUT TYPE 2)**

**SLOT FOR ANCHOR BOLT = (ANCHOR BOLT DIAMETER + 1/4") x 2 1/2"**

**3/4" CHAMFER - ALL CORNERS**

**SHAFT AND PILASTER**

**ROD "A"" (TYP.) - SEE TABLE FOR DIAMETER**

**ROD "A"" (TYP.) - DEFORMED REINF. BAR**

**SHAFT AND PILASTER**

**BOLOUT IN PANEL (TYP.)**

**3/4" CHAMFER - ALL CORNERS**

**BASE PLATE T x 1'-5" x 1'-5" ASTMA58, GALVANIZED, (EMBEDDED WITH GROUT TYPE 2)**

**SEE TABLE FOR WEDGE HEAD OPTION**

**ROD "A"" (TYP.) = NO TAPER FOR ANCHOR BOLT OPTION HOLE DIAM = ROD "A" DIAM + 1/16" (TYP.)**

**TAPERED HOLE DIMENSIONS. - NO TAPER FOR ANCHOR BOLT OPTION HOLE DIAM = ROD "A" DIAM + 1/16" (TYP.)**

**EDGE OF PANEL = SURFACE TREATMENT NOT SHOWN**

**1" MIN. = 3" MAX.**

**FINISHED GROUND**

**SLOPED GROUT OPTION**

**TOP OF GROUT (TYP.)**

**BASE PLATE**

**BASE PLATE DETAIL**

**BASE PLATE NOT SHOWN FOR CLARITY**

**BASE PLATE X 1'-5" X 1'-5"**

**ASTM A36, GALVANIZED, (EMBEDDED WITH GROUT TYPE 2)**

**SLOT FOR ANCHOR BOLT = (ANCHOR BOLT DIAMETER + 1/4") x 2 1/2"**

**3/4" CHAMFER - ALL CORNERS**

**SHAFT AND PILASTER**

**ROD "A"" (TYP.) = NO TAPER FOR ANCHOR BOLT OPTION HOLE DIAM = ROD "A" DIAM + 1/16" (TYP.)**

**TAPERED HOLE FOR WEDGE HEAD OPTION SHOWN = NO TAPER FOR ANCHOR BOLT OPTION WITH HOLE DIAMETER = ROD "A" DIAMETER + 1/16" (TYP.)**

**LOCATIONS**

**WESTERN WASHINGTON**

**EASTERN WASHINGTON**

**PEAK SEISMIC GROUND ACCELERATION COEFFICIENT ON ROCK, SITE CLASS B (g)**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>WIND VELOCITY (MPH)</th>
<th>PEAK SEISMIC GROUND ACCELERATION COEFFICIENT</th>
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</thead>
<tbody>
<tr>
<td>WESTERN WASHINGTON</td>
<td>100</td>
<td>0.45</td>
</tr>
<tr>
<td>EASTERN WASHINGTON</td>
<td>80</td>
<td>0.19</td>
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**FOUNDATION DESIGN**

**SOIL TYPE**

**ANGLE OF INTERNAL FRICTION, # (DEGREES)**

<table>
<thead>
<tr>
<th>SOIL TYPE</th>
<th>ANGLE OF INTERNAL FRICTION, # (DEGREES)</th>
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<tbody>
<tr>
<td>D1</td>
<td>32</td>
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<tr>
<td>D2</td>
<td>38</td>
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**NOISE BARRIER WALL TYPE 11**

**STANDARD PLAN D-2.36-03**

**STATE DESIGN ENGINEER**

Bijan Khaleghi, Bijan

Khalighi, Bijan

Nov 11 2014 3:51 PM

WASHINGTON State Department of Transportation