

**SUPPLEMENTAL SPECIFICATIONS
FOR 2012 IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION**

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SUPPLEMENTAL SPECIFICATIONS

ON PAGE 13, SUBSECTION 102.03- EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK *

Add after the first paragraph:

Upon request, the Department will provide electronic design data to the bidder. The electronic design data is provided for bidder convenience and information and will not become part of contract. No guarantee or warranty is made by the Department that the electronic design data provided to the bidder is compatible with any of the systems that are used by the bidder, is complete, is representative of actual conditions at the site of work, or accurately reflects the quantities and character of the actual work required. The furnishing of electronic design data does not relieve the bidder from risks or of duty to make examinations and investigations of the site of work or of other responsibilities.

ON PAGE 29, SUBSECTION 105.04- COORDINATION OF CONTRACT DOCUMENTS *

Delete numbered paragraphs 1 through 6 and add the following:

1. Calculated dimensions govern over scaled dimensions.
2. Plan sheets govern over Standard Specifications, supplemental specifications, standard special provisions, and standard drawings.
3. Plan details govern over general notes.
4. Supplemental specifications govern over Standard Specifications.
5. Standard special provisions govern over Standard Specifications, and supplemental specifications.
6. Special provisions govern over standard special provisions, Standard Specifications, supplemental specifications, and the plans.
7. Details on the bid schedule govern over other contract documents.

ON PAGE 30, SUBSECTION 105.07- UTILITY FACILITIES *

Add the following after the first sentence of the second paragraph:

The Engineer will immediately notify the utility that an unidentified utility facility has been discovered.

Delete from the second sentence of the second paragraph:

“The Engineer will”

ON PAGE 62, SUBSECTION 106.01- SOURCE OF SUPPLY AND QUALITY REQUIREMENTS*

Add the following:

For projects that involve federal-aid funding, ensure all steel or iron materials permanently incorporated into the work has been produced in the United States. All manufacturing processes for these materials including the application of coatings for such materials must occur in the United States. Coating includes all processes which protect or enhance the value of the material to which the coating is applied.

Obtain from the manufacturer, certifications which document that steel and iron have been manufactured and that coatings for iron or steel have been applied in the United States. Provide the required certifications to the Engineer prior to incorporating these materials into the work. The Department will also require certifications for manufactured and fabricated products purchased by the Contractor.

Provide certifications conforming to 106.04.

The Engineer will permit small quantities of foreign manufactured material so long as their total cost does not exceed 0.1% of the total contract amount or \$2,500 whichever is greater.

Should foreign steel, iron, or applied coatings for iron or steel in excess of the quantities allowed herein become incorporated into the work, remove such materials in excess of the allowable maximum and replace them with materials complying with these specifications at no additional cost to the Department.

ON PAGE 63, SUBSECTION 106.03- SAMPLES, TESTS, AND CITED SPECIFICATIONS

Delete from the sixth paragraph “technicians” and substitute “individuals”.

ON PAGE 67, SUBSECTION 106.07- TEST RESULT DISPUTE RESOLUTION

Delete the first paragraph and substitute the following:

The Department or Contractor may use dispute resolution when differences between the quality control test results and the acceptance test results exceed the values specified in the Quality Assurance Special Provision (QASP) for the quality characteristics specified in Table 106.03-1 of the QASP.

ON PAGE 91, SUBSECTION 108.03- PROJECT SCHEDULE

*

Delete from the first 108.03.A.1 “Primavera Suretrack or”

ON PAGE 94, SUBSECTION 108.04- PRECONSTRUCTION OR PREOPERATIONAL CONFERENCES

*

Add the following after paragraph 2 and renumber 3 to 4.

3. WH-5 Public Works Contract Report

ON PAGE 114, SUBSECTION 109.03-PAYMENT FOR QUANTITY VARIATIONS, CONTRACT REVISIONS, AND DELAYS

Delete the operated rate formula from 109.03.C.5.f.2) and substitute the following:

$$HR = \frac{(MR + AT) \times RA \times RF}{MH} + OC$$

ON PAGE 115, SUBSECTION 109.03-PAYMENT FOR QUANTITY VARIATIONS, CONTRACT REVISIONS, AND DELAYS

Delete the standby time formula from 109.03.C.5.f.3) and substitute the following:

$$HR = \frac{(MR + AT) \times RA \times RF}{MH} \times 0.5$$

ON PAGE 132, SUBSECTION 205.03 – CONSTRUCTION REQUIREMENTS

*

Delete from listed test AASHTO T 99 Method A or C the words “A or”.

ON PAGE 133, SUBSECTION 205.03 – CONSTRUCTION REQUIREMENTS

*

Delete the Material Property in row b of Table 205.03-1 and substitute "less than 10% retained on the 3 in. sieve; and less than or equal to 30 percent retained on the 3/4" sieve

ON PAGE 156, SUBSECTION 212.03 – CONSTRUCTION REQUIREMENTS *

Delete from the first full paragraph "Inlet Protection." and substitute Heading " **12. Inlet Protection.**"

ON PAGE 158, SUBSECTION 212.04- METHOD OF MEASUREMENT

Delete "swale," from the first sentence of 212.04.4.

ON PAGE 184, SUBSECTION 405.02- MATERIALS *

Add after the first paragraph:

SP 3 mixes may be substituted for SP 2 mixes. The SP 3 mix will be tested and accepted as an SP 2 mix when a substitution is made.

ON PAGE 188, SUBSECTION 405.02- MATERIALS

Delete "AASHTO T 165" and substitute "ASTM D1075 (Replace D1074 and D2726 with AASHTO T 167 and AASHTO T 166)"

Delete "TP 68" and substitute "T 343"

ON PAGE 191, SUBSECTION 405.03- CONSTRUCTION REQUIREMENTS

Delete "AASHTO T 165" and substitute "ASTM D1075"

ON PAGE 194, SUBSECTION 405. 03- CONSTRUCTION REQUIREMENTS

Delete "AASHTO T 165" and substitute "ASTM D1075"

ON PAGE 203, SUBSECTION 405. 03- CONSTRUCTION REQUIREMENTS

Delete "TP 68" and substitute "T 343"

ON PAGE 207, SUBSECTION 405. 03- CONSTRUCTION REQUIREMENTS *

Add after the third paragraph of 405.03.H

Upon Contractor request, the Engineer will evaluate the acceptance test results when the Department's average test results fall outside the tolerances provided for the listed sieves, asphalt content, or both. The Engineer will not conduct an evaluation unless the other acceptance characteristic values are within the specified tolerances. After evaluation, the Engineer will determine whether the acceptance test strip may be accepted.

ON PAGE 214, SUBSECTION 405. 03- CONSTRUCTION REQUIREMENTS *

Delete from the third paragraph "TP 68" and substitute "T 343"

Delete from the middle of the fourth paragraph "Note 4" and substitute "Note 3". *

ON PAGE 219, SUBSECTION 405.03- CONSTRUCTION REQUIREMENTS

*

Add after-405.03.P.3.c-

d. Interstate ramps unless otherwise specified.

ON PAGE 268, SUBSECTION 502.01 – DESCRIPTION

*

Add the following to the beginning of note c of Table 502.01-2.c

Concrete classes designated as "AF" shall have an air content of 6.5+/- 1.5 percent.

Delete the last paragraph and substitute the following:

*

Provide Class 30 concrete and use Nos. 2a, 2b, or 3 size coarse aggregate or combined gradation Nos. 2c or 3c aggregate gradations except for Class 40 and above concrete and prestressed girders, unless otherwise specified. Use Nos. 2a or 2b size coarse aggregate or No. 2c combined aggregate gradation for Class 40 concrete and above and prestressed girders. Minimum cementitious material content may be reduced 20 percent by the Contractor when using a combined gradation.

ON PAGE 287, SUBSECTION 502.03 – CONSTRUCTION REQUIREMENTS

*

Add to 502.03.E.4.h

Do not stamp concrete with company logo, dates, patterns, etc. unless otherwise shown on the plans.

ON PAGE 289, SUBSECTION 502.03 – CONSTRUCTION REQUIREMENTS

Delete from Table 502.03-5 the Percent of Design Strength of “8” for Bridge decks, top slabs of concrete box culverts or stifflegs and substitute “80”.

ON PAGE 298, SUBSECTION 502.03 – CONSTRUCTION REQUIREMENTS

*

Delete “X-System 2” from column B of Table 502.03-7 – Cure Methods.

ON PAGE 301, SUBSECTION 502.05 - BASIS OF PAYMENT

Delete the last sentence of the last full paragraph and substitute the following:

Pay for concrete placed in the superstructure as Concrete Class __ Schedule No. 2 by “plan quantity” as specified in 109.01.

ON PAGE 322, SUBSECTION 504.03- CONSTRUCTION REQUIREMENTS

In Table 503.03-2 delete the tension value “5450” for Bolt size 1.375 inch under ASTM A325 and substitute with “85450”.

ON PAGE 324, SUBSECTION 504.03- CONSTRUCTION REQUIREMENTS

*

In Table 504.03-3 Turn-Of-Nut Tightening Method, first column:

- In column heading, change "Bolt Length¹" to read "Bolt Length^{2,3}"
- In first column, second row, change " $1 \leq 4D$ " to read " $\leq 4D$ "
- In first column, third row, change " $4D \leq 8D$ " to read " $4D$ to $\leq 8D$ "
- In first column, fourth row, change " $8D \leq 12D$ " to read " $8D$ to $12D$ "

Below the Table, in Note 3, move the “,” sign from behind the word “determine” to behind “12D”.

ON PAGE 336, SUBSECTION 505.03- CONSTRUCTION REQUIREMENTS

Delete the formula from 505.03.R and substitute the following:

$$D = C \times E^{0.5}$$

ON PAGE 342, SUBSECTION 506.03- CONSTRUCTION REQUIREMENTS

Delete the T0 formula and substitute the following:

$$T_0 = T_x \times e^{UA+Kl}$$

Delete the definition of e and substitute the following:

e = 2.7183 (base of Naperian logarithms)

ON PAGE 351, SUBSECTION 509.01- DESCRIPTION

*

Delete B in the first paragraph.

ON PAGE 357 & 358, SUBSECTION 510.03- CONSTRUCTION REQUIREMENTS

*

Delete part B and substitute the following:

B. Equipment. Use an Engineer approved power-driven finishing machine complying with the following requirements for finishing all areas of work with a width equal to or greater than 14’.

Have at least two hand-operated, spud type internal vibrators available at all times for use as Engineer directed. Submit to the Engineer a request for approval of the specific equipment to be used at least 15 calendar days before the start of work. Do not begin placing deck concrete until the screed and placing procedure is Engineer approved.

Provide a self-propelled finishing machine capable of forward and reverse movement under positive control for placing, striking off and finishing the bridge deck surface, with provisions for raising screeds to clear the surface. Equip the machine with vibrating screeds designed to consolidate the modified composition. The Department requires the vibration frequency be variable with positive control between 3,000 and 11,000 vpm and the bottom face of the screeds be at least 4 in wide and be metal covered. Provide screeds with positive control of the vertical position. Equip the finishing machine with one or more rollers, augers, and 1,500 or 2,500 vpm vibratory pans. Provide a Bid-Well 2450, or equivalent finishing machine. Modification to the Bid-Well 2450 or equivalent is subject to Engineer approval.

"Texas", "Allen", or "Bunyon" type screeds will not be permitted, unless Engineer approved for small and/or irregular areas.

ON PAGE 363 SUBSECTION 511.02 - MATERIALS

*

Delete " Fabric Type B System.....718.02" and substitute " Fabric..... Type B System.....718.08"

ON PAGE 365 SUBSECTION 511.03 - CONSTRUCTION REQUIREMENTS

*

In the second sentence of 511.03-B, last paragraph, delete "0.06 gal yd²" and substitute " 0.06 gal/yd²"

ON PAGE 374 SUBSECTION 604.02 – MATERIALS *

Delete the word “baskets” in part 4 and substitute “gaskets”.

ON PAGE 377 SUBSECTION 606.02 – MATERIALS *

Delete the following:

Fittings for polyethylene Drainage TubingASTM F405
Rodent Protection Devices for Trench drainASTM F4499

And substitute:

Fittings for polyethylene Drainage Tubing706.20
Rodent Protection Devices for Trench drain.....706.21

ON PAGE 386 SUBSECTION 611.03 - CONSTRUCTION REQUIREMENTS *

Add at beginning of last sentence “Cattle Guard Type C, ”

ON PAGE 386 SUBSECTION 611.04 - METHOD OF MEASUREMENT *

Delete the text of this subsection and substitute the following:

The Engineer will measure acceptably completed work by the each including the wing braces and posts.
The distance between the posts will be excluded from measurement for fence.

ON PAGE 386 SUBSECTION 611.05 – BASIS OF PAYMENT *

Delete the pay item “ ___ Cattle Guards, Type ___ ” and substitute “Cattle Guard, Type ___ ”

ON PAGE 386 THRU 388, SECTION 612 – GUARDRAIL *

Delete this Section and substitute the following:

SECTION 612 - GUARDRAIL AND CONCRETE BARRIER

612.01 Description. Provide and install guardrail and concrete barrier.

612.02 Materials. Provide materials as specified in:

Concrete	502 (for Concrete Barrier)
Non-Structural Concrete	509
Metal Reinforcement	503
Guardrail and Hardware	708.14
Wood Guardrail Posts and Wood Blockouts	710.03
Steel Guardrail Posts	708.07

612.03 Construction Requirements.

A. **Guardrail.** Provide galvanized steel W-beam or thrie-beam guardrail.

Space posts as shown on the plans, set plumb and to established lines and grades. Place backfill material in layers and thoroughly tamp. Boring of wood posts should be done before treating. The Department will permit field boring provided the hole is treated with a wood preservative as specified in 710.09 before driving the bolts.

The Contractor may drive the posts if it can be done without damage to posts, pavement, shoulders, or adjacent slopes. If pilot holes are necessary to prevent such damage, fill remaining voids between post and soil with dry sand or pea gravel. Remove, replace or reinstall misaligned, loose, or damaged posts and repair damage to the existing pavement, shoulders or adjacent slopes at no additional cost to the Department.

B. Concrete Barrier.

Cure concrete barrier as specified in 502.03.

Pre-cast concrete barrier units upside down to include connector and transition section. Finish the concrete on precast and cast-in-place concrete barrier with an ordinary surface finish as specified in 502.03. Set concrete barrier to the line and grade shown on the plans.

612.04 Method of Measurement. The Engineer will measure acceptably completed work as follows:

1. Concrete barrier, guardrail, and guardrail median barrier will be by the foot not including terminals.
2. Guardrail terminals, concrete terminal Type A, concrete parapet connector, and concrete barrier connector will be per each.

612.05 Basis of Payment. The Department will pay for acceptable quantities at the contract unit prices as follows:

Pay Item	Pay Unit
Guardrail	ft
Guardrail Median Barrier	ft
Guardrail Terminal Type ____	Each
Concrete Barrier	ft
Concrete Terminal Type A	Each
Concrete Parapet Connector	Each
Concrete Barrier Connector	Each
Cast-in-place Concrete Barrier	ft

Terminal plates, spacers, additional posts, blockouts and hardware as shown on the plans are incidental and the cost included in the contract unit prices for terminals.

ON PAGE 390 SUBSECTION 615.02 – MATERIALS *

Delete the Aggregate reference to “703.09” and substitute “703.02 and 703.05”.

ON PAGE 395, SUBSECTION 616.03 – CONSTRUCTION REQUIREMENTS *

Add the following after the list of preferences 616.03.A.3:

Use sign substrate materials for fabrication as follows:

1. Extruded Aluminum for permanent multiple post signs within Interstate right of way.
2. Sheet aluminum 0.063” minimum thickness for:
 - a. Signs directly affixed to buildings, structures or to extruded aluminum panels, such as Specific Motorist Services panels (Facility Logo Signs) affixed to an Interstate Specific Motorist Service Panel.

- b. Historical, Geological, or Scenic Byway map board signs, if backed by HDO Plywood ½” thickness and installed in a sign frame.
- 3. Sheet aluminum 0.080” minimum thickness for free standing sheet aluminum signs.
- 4. HDO Plywood ½” minimum thickness for plywood signs smaller than 96”x48”.
- 5. HDO Plywood 5/8” minimum thickness for plywood signs 96”x48” or larger.

The Engineer will not allow overlaying of Extruded Aluminum, Sheet Aluminum, or Plywood signs with additional layers of substrates as a method of initial fabrication, maintenance, or refurbishment.

ON PAGE 416, SUBSECTION 621.05- BASIS OF PAYMENT

Delete the second pay item. (Seed ... Ac)

ON PAGE 440, SUBSECTION 630.03 – CONSTRUCTION REQUIREMENTS *

Delete from the third paragraph “6 ft” and substitute “5 ft”.

ON PAGE 443, SUBSECTION 634.01 – DESCRIPTION *

Delete the text of this subsection and substitute the following:

Remove the existing mailbox assembly and provide and install mailbox assembly.

ON PAGE 443, SUBSECTION 634.02 – MATERIALS *

Delete the second paragraph.

Delete the first and second sentences of the fourth paragraph.

Delete “adapter plates” from the third and fourth sentences of the fourth paragraph and substitute “shelf”.

ON PAGE 444, SUBSECTION 634.03 – CONSTRUCTION REQUIREMENTS *

Delete from the third sentence “support/foundation” and substitute “assembly”.

ON PAGE 444, SUBSECTION 634.04 – METHOD OF MEASUREMENT *

Add in part 1 after “each” the word “assembly”.

ON PAGE 444, SUBSECTION 634.05 – BASIS OF PAYMENT *

Delete “adapter plates” from the last paragraph and substitute “shelf”.

ON PAGE 462, SUBSECTION 703.02- CONCRETE AGGREGATE

Delete from Table 703.02-3 the Percent Passing the No.100 sieve “3-10” and substitute “2-10”.

ON PAGE 466, SUBSECTION 703.04- AGGREGATE FOR UNTREATED BASE *

Add the following footnote to table:

Percent Passing applies to all columns.

ON PAGE 468, SUBSECTION 703.05- AGGREGATE FOR SUPERPAVE HMA PAVEMENT

In Table 703.05-1 the values where columns are blank shall be the same requirement for all mixture types as shown under type SP2.

ON PAGE 471, SUBSECTION 703.08-AGGREGATE FOR OPEN GRADED ROCK (ROCK CAP)

Delete Subsection heading and substitute: **703.08-AGGREGATE FOR OPEN-GRADED BASE**

ON PAGE 473, SUBSECTION 703.09-AGGREGATE FOR EXTRUSIONS *

Delete this Subsection.

ON PAGE 478, SUBSECTION 704.03-HOT POURED ELASTOMERIC TYPE CONCRETE JOINT SEALANT *

Delete the first sentence and substitute the following;

Meet ASTM D 6690, Type III.

ON PAGE 485, SUBSECTION 706.19-POLYPROPYLENE PIPE *

Add the following:

706.20 Fittings for Polyethylene Drainage Tubing. Meet ASTM F405

706.21 Rodent Protection Devices for Trench Drain Meet ASTM F449

ON PAGE 498, SUBSECTION 708.13 - CHAIN LINK FENCE

Delete from the first sentence “(3.05mm)” and substitute “(0.12 in)”

ON PAGE 499, SUBSECTION 708.14 - GUARDRAILS AND FITTINGS *

Delete this subsection and substitute the following:

708.14 Guardrails and Hardware. Provide galvanized beams for guardrail and terminals that meet AASHTO M-180, Class A, Type 2, except that galvanizing the rail occurs after fabrication, with fabrication to include forming, cutting, shearing, punching, drilling, bending, welding, and riveting. In addition, ensure the minimum average mass of zinc coating is 2 ounces per square foot of surface (not sheet). Galvanize splice plates in accordance with ASTM A 123. Galvanize anchor cables in accordance with AASHTO M30.

Provide bolts, nuts and washers used with guardrail in accordance with ASTM A 307 or A 325, except that rail splice bolts must be button headed. Provide galvanized bolts, nuts, washers and other hardware used with guardrail in accordance with ASTM A 153.

ON PAGE 505, SUBSECTION 708.25 –ALUMINUM RAIL AND FITTINGS *

Delete this subsection.

ON PAGE 505, SUBSECTION 708.27 – SHEET ALUMINUM *

Delete this subsection and substitute the following:

708.27 Sheet Aluminum. Meet ASTM B 209, Alloy 6061-T6 or 5052-H38 with an alodine 1200 finish.
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ON PAGE 508, SUBSECTION 710.03 - WOOD GUARDRAIL POSTS AND WOOD SPACER BLOCKS *

Delete the title and substitute "Wood Guardrail Posts and Wood Blockouts"

Delete "spacer blocks" at the end of the first sentence and substitute "blockouts".

In the first sentence of the second paragraph, Delete the word "blocks" and substitute "blockouts".

ON PAGE 511, SUBSECTION 710.09 -PRESERVATIVE TREATMENT *

Delete from the first sentence "block spacers" and substitute "blockouts"

Delete the title of Table 710.09-2 and substitute "Guardrail Posts and Blockouts"

ON PAGE 519 SUBSECTION 712.01 - PLYWOOD FOR TYPE E SIGNS *

Delete the text of this subsection and substitute the following:

Meet U.S. Product Standard for Construction and Industrial Plywood.

ON PAGE 519, SUBSECTION 712.02 – REFLECTIVE SHEETING *

Delete this subsection and substitute the following:

712.02 Reflective Sheeting.

- A. Materials.** Use materials for initial fabrication, repair or maintenance of highway signs, including sheeting, electronic cuttable (EC) graphic films and transparent inks meeting ASTM D 4956 standards for classification, color and performance. Also meet the requirements of the sheeting manufacturer's Matched Component System (MCS). Use retroreflective sheeting material meeting ASTM D 4956 supplemental requirement S1 if specified. Use reboundable retroreflective sheeting meeting ASTM D 4956 including supplemental requirement S2. Only use EC graphic films meeting ASTM D-4956 07, Type 1 and ASTM E84 on rigid or flexible substrate standard highway signs as direct applied opaque black letters, numbers, borders, symbols or arrows and are only allowed in transparent colors as direct applied letters, numbers, borders, symbols or shapes on specific motorist service facility logo signs provided at the expense of the motorist service facility owner.

Use retroreflective prismatic sheeting with opaque pressure sensitive adhesive. Use EC graphic films with pressure sensitive adhesive. The Engineer will not allow Translucence/Transparency of retroreflective prismatic sheeting and opaque EC graphic films or Sheeting with heat-activated adhesives.

B. Retroreflectivity.

1. Class B. Sheet Aluminum Signs, Plywood Signs, and Other Traffic Control Devices. Meet the requirements of ASTM D 4956, Type IV for reflective sheeting used on cones, barricades, drums, tubular markers, vertical panels and for background, direct applied letters, numbers, borders, symbols and arrows on information signs, warning signs, guide signs and regulatory signs, except for sheeted aluminum delineator reflector units and flexible post delineators that require ASTM D 4956, Type IX direct applied reflective sheeting.
2. Class C. Extruded Aluminum -- Meet ASTM D 4956, Type IV sheeting for background and ASTM D 4956, Type IX sheeting for direct applied letters, numbers, borders, symbols and arrows.

- C. Field Measurement.** Take retroreflectivity readings following procedures specified in ASTM E 1709, Standard Test Method for Measurement of Retroreflective Signs Using a Portable Retroreflectometer. Compare retroreflectivity readings to the initial retroreflectivity values shown in ASTM D 4956 for retroreflective sheeting by classification, type, and color and use to determine a traffic control devices' compliance with 626.03.
- D. Fabrication Requirements.** Clean substrates per manufacturer's recommendations prior to applying retroreflective sheeting. Apply retroreflective sheeting directly to sheet aluminum, extruded aluminum, or plywood substrate in accordance with manufacturer's recommendations and in such a manner that there will be no unsheeted substrate visible when the sign is completed. Use retroreflective sheeting for letters, numbers, borders, symbols and arrows direct applied to sheeted substrate using the manufacturer's suggested methods.
1. **Overlays** – Do not attach sheeted substrate as a partial or complete overlay to an existing sign, except that the Engineer may allow Route Shields to be attached to the face of an existing sign if a direct applied replacement is not feasible. The Engineer will not allow retroreflective sheeting direct applied to an existing sign face for repair or maintenance of an existing sign.
 2. **Butt Splices** – Do not splice reflectorized sheeting on panels of 24 in or less in width. Use a maximum of one butt splice per sign with the splice placed vertically or horizontally across the sign face, on larger panels. Use a maximum of one butt splice on any single 12 inch extruded aluminum panel. Do not allow Butt splice gaps to exceed 1/32 in.
 3. **Pop Rivets** – Do not Pop rivet overlay panels, letters, numbers, borders, symbols and arrows for initial fabrication of any highway sign. The Engineer may allow Pop rivets to attach Route Shields on separate substrate to the sign face of an existing highway sign if the use of a direct applied shield is not feasible, and may allow Specific Motorist Service Facility Logo panels to be pop riveted to the face of a Specific Motorist Service Sign.
 4. **Orientation** - Place reflective sheeting in the same orientation, per manufacturer's recommendations, to assure uniform day and night color appearance.
 5. **Color Match** - Color match sign faces composed of more than one piece of retroreflective sheet or extruded panel at the time of sign fabrication. The Engineer will not allow Non-uniform shading and undesirable contrast between adjacent widths of butted sheeting.
 6. **Adherence** - Remove sheeting with Cracks, discoloration, appearance of air pockets, or any other indication of non-adherence.
 7. **Screen Printing** – Apply screen printing of letters, numerals, symbols, and border using transparent inks which conform to the sheeting manufacturer's Matched Component System (MCS). Provided screen printed items with a uniform, smooth regular outline, without ragged, faded or bleeding edges. Provide letters, numbers, borders and symbols having interior or exterior rounded corners with a smooth radius of 3/16 in \pm 1/16 in.
 8. **Cutting/Plotting** - Provide cutout letters, numbers, borders, and symbols with a smooth regular outline, without ragged or torn edges. Provide non-reflective EC graphic film letters, numbers, borders, and symbols with a smooth regular outline, without ragged or torn edges. Provide letters, numbers, borders, and symbols having interior or exterior rounded corners with a smooth radius of 3/16 in \pm 1/16 in.
 9. **Edges** – Provide substrate for signs with edges finished as follows:
 - a. Plywood signs - Ends or edges which do not have a factory finish are required to be filed or sanded smooth with no burrs or chipping. Fill voids in edges of plywood signs with approved wood filler compatible with the High Density Overlay (HDO) plywood. Apply an Engineer approved edge sealer to edges after filling and sanding the edges smooth. Allow sealer to dry to prevent delamination of the plywood and loss of adhesion of the retroreflective sheeting.
 - b. Aluminum - File smooth with no nicks or burrs, ends or edges which have been cut or do not have a factory finish.
- E. Finish.** Trim sheeting flush with the sign panel edges or ends to eliminate snagging, raveling or delamination. Apply retroreflective sheeting to extruded aluminum with heat rolled edges, and with sheeting rolled flush into side channel sheeting grooves prior to bolting the panels together.
- F. Storage and Shipping.** Stack, store and/or transport finished signs, with separation paper between the completed sign faces. Do not stack, store, or transport more than two finished signs together if signs are laid flat and stacked upon one another. Stack, store, or ship more than two

signs on edge in a vertical position to eliminate bruising and damage to the cells of the prismatic sheeting.

ON PAGE 522, SUBSECTION 712.10- FLEXIBLE POST DELINEATORS

Delete from 712.10.2.a “IX” and substitute “IV”.

ON PAGE 523 & 524, SUBSECTION 713.06– COMPOSITE JUNCTION BOXES

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Delete this subsection and substitute the following:

713.06 Composite Junction Boxes. Provide composite junction boxes meeting the following requirements;

1. Polymer concrete, reinforced by a fiberglass weave.
2. Constructed bottomless.
3. Non-deliberate traffic junction boxes and covers tested and certified to the provisions of the ANSI/SCTE 77 2010, by a nationally recognized third party independent test firm such as UL (Underwriters Laboratories) or ETL (Intertek) testing services.
4. One year minimum manufacturer’s warranty.
5. Non-deliberate traffic junction box covers rated for a Tier 22 application. Emboss Tier 22 rating in the top surface of the cover.
6. Secure cover to junction box using stainless steel hex head with self-cleaning threads. (Example: Coil bolt or $\frac{3}{8}$ -7 lag thread.
7. Type PGD junction box is to have a two piece box cover.
8. Embed a “General Purpose” EMS marker in the junction box cover.
9. Mold logos in the junction box cover.
10. A minimum applied force of 2,000 pound rating for the pull slots.
11. Color junction boxes and covers concrete gray.

Size junction boxes as follows:

Size “PGB” nominal inside dimensions of 11 ½ in x 21¼ in x 16 in deep.

Size “PGC” nominal inside dimensions of 15½ in x 28½ in x 16 in deep.

Size “PGD” nominal inside dimensions of 20¾ in x 29¾ in x 16 in deep.

ON PAGE 525, SUBSECTION 713.08– SIGNAL POLES

Delete from 713.08.A.2 “20 ft.” and substitute “15 ft.”

Delete the entire first 713.08.A.4 and substitute the following:

- 3A. Use current Department approved signal pole designs.

ON PAGE 527, SUBSECTION 713.09– LUMINAIRE POLES

Delete the entire 713.09.A.3 and substitute the following:

3. Use current Department approved luminaire pole designs.

ON PAGE 536, SUBSECTION 718.05- DRAINAGE GEOTEXTILE PROPERTY REQUIREMENTS

Correct the heading of the last two columns of Table 718.05-1 to read:

Minimum Average Roll Values
(in weaker principal direction)

In Table 718.05-1 add the value of Grab Elongation, (%) for Type II of NA.

In Table 718.05-1 add the value of Apparent Opening Size (AOS) (Std. Sieve) for Type II of “#70 or Finer”

**ON PAGE 537, SUBSECTION 718.06- RIPRAP/EROSION CONTROL GEOTEXTILE
PROPERTY REQUIREMENTS**

In Table 718.06-1 the values where columns are blank shall be the same requirement shown under Type I.

**ON PAGE 538, SUBSECTION 718.07- SUBGRADE SEPARATION GEOTEXTILE PROPERTY
REQUIREMENTS**

In Table 718.07-1 delete the value of Apparent Opening Size (AOS) (Std. Sieve) for Type II of “#70 or Finer” and substitute “#30 or Finer” under Type II “ and “#70 or Finer” under Type III.

ON PAGE 541, SUBSECTION 720.07- RECYCLED ASPHALT PAVEMENT

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Delete “720.07C” and substitute “720.07 3”