

SP00810 (Special Provisions for the 2024 Book)

(Bidding on or after: 087-01-26

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Requires SP00641, SP00744, SP02110 & SP02820.

*This Section requires SP00594 when weatherized guardrail and painting of transitions and terminals are required.)*

## SECTION 00810 - METAL GUARDRAIL

*(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)*

*[NOTE: Except for extra length guardrail posts, do not separately pay for new guardrail posts under this Section. New posts are included in the appropriate guardrail Pay Item. Replacing existing guardrail posts is covered in Section 00812.]*

~~*(Use the following lead-in paragraph when none of the following subsections are included in the Project.)*~~

~~Comply with Section 00810 of the Standard Specifications.~~

~~*(Use the following lead-in paragraph when any of the following subsections are included in the Project.)*~~

Comply with Section 00810 of the Standard Specifications modified as follows:

~~*(Use the following subsection .00 when there is no earthwork on the Project and grading at guardrail terminals are required to be constructed.)*~~

**00810.00 Scope** - Replace the paragraph that begins "Metal guardrail and metal ..." with the following paragraph:

Metal guardrail and metal Median barrier is referred to in this Section as "guardrail". The types of guardrail are shown.

~~*(Use the following subsection .00two paragraphs when there is no earthwork on the Project and grading at guardrail terminals are required to be constructed.)*~~

Add the following paragraph to the end of this subsection:

This Work includes constructing grading at guardrail terminals at locations shown.

*(Use the following subsection .10 when weatherized guardrail is required or when only recycled plastic guardrail blocks will be allowed. Delete "(s)" or parentheses as applicable.)*

**00810.10 Materials** - Add the following paragraph(s) to the end of this subsection:

*(Use the following paragraph when weatherized guardrail is required.)*

Furnish "weatherized" Class IV metal rail meeting the requirements of AASHTO M 180.

*(Use the following paragraph when only recycled plastic guardrail blocks may be used.)*

Furnish recycled plastic guardrail blocks. Wood guardrail blocks are not allowed.

*(Use the following subsection .11 when weatherized guardrail is required.)*

**00810.11 Posts** - Replace this subsection with the following subsection:

**00810.11 Wood Posts** - Furnish wood guardrail posts meeting the requirements of 00810.10.

**00810.12 Median Barrier on Bridges** - Replace this subsection, except for the subsection number and title, with the following:

Furnish metal Median barrier on bridge decks comprised of metal beam rail, metal posts, and hardware meeting the requirements of 00810.10.

At expansion joints on bridge decks, construct special dimension slots in the rail member for post bolt and rail joint bolts as shown.

**00810.14 Condition of Materials** - Replace this subsection, except for the subsection number and title, with the following:

All Materials are subject to inspection of condition at the latest practical time available before or during incorporation of Materials in the Work.

*(Use the following subsection .15 when it has been determined that wood posts and blocks may be salvaged without meeting the preservative treatment requirement. Obtain information from the Designer and concurrence from the Technical Resource.)*

**00810.15 Salvaged Material** - Replace the paragraph that begins "Material salvaged as part..." with the following paragraph:

Materials salvaged as part of removal work on the Project may be reused in new construction if the Engineer determines that the Materials meet the requirements of 0810.10, except for preservative treatment requirements, and conform to the following:

*(Use the following subsection .15(a) when only a certain portion of the existing guardrail posts can be salvaged and reused on the Project. Check with the roadway designer and fill in the blank with the estimated percentage of existing posts that may be reused.)*

**00810.15(a) Wood Posts** - Replace this subsection, except for the subsection number and title, with the following:

Use only structurally sound and treated wood posts, free from damage that would affect their strength and durability. Do not incorporate into the Work any post damaged to the extent that untreated wood is exposed.

It is estimated that \_\_\_\_ % of the existing wood guardrail posts may be reused and incorporated into new guardrail work.

**00810.15(b) Metal Beam Rail Members** - Replace this subsection, except for the subsection number and title, with the following:

Furnish metal beam rail members unpainted, straight and free of breaks, kinks, dents, damage to galvanized coating, or any other damage that would affect the integrity of the member. If paint is removed from metal beam rail members salvaged from the Project, remove the paint at a location outside of the Highway Right-of-Way, and in a manner that will not damage the galvanizing. Repair minor damage to galvanizing according to 00810.43.

*(Use the following lead-in paragraph and subsection .16 when there is no earthwork on the Project and grading at guardrail terminals are required to be constructed.)*

Add the following subsection:

**00810.16 Grading at Guardrail Terminal Materials:**

**(a) Embankment** - Furnish embankment Materials meeting the applicable parts of Section 00330.

**(b) Aggregate** - Furnish either 1" - 0 or 3/4" - 0 size crushed Aggregate that is clean, hard, durable, and reasonably well-graded from the maximum size to dust.

**(c) Asphalt Concrete Mixture** - Furnish asphalt concrete mixture meeting the requirements of 00744.10 through 00744.14.

Acceptance of grading at guardrail terminal Materials will be visual by the Engineer.

*(Use the following lead-in paragraph and subsection .17 when weatherized guardrail and painting of guardrail transitions and terminals are required. Include 00594.10 and 00594.90(a) in SP00594.)*

Add the following subsection:

**00810.17 Painted Guardrail** - Paint all galvanized metal guardrail transition and guardrail terminal Materials according to Section 00594.

**00810.40 Timing and Coordination of Work** - Replace the paragraph that begins "Do not leave posts ..." with the following paragraph:

Do not leave posts installed for guardrail and Median barrier exposed to traffic for more than 24 hours before installing the rail members, rail end pieces and anchors and tightening all bolts. Install replacement rail according to 00310.40(a).

*(Use the following subsection .41 when there is any possibility that hand dug guardrail posts are required. Obtain information from the Utility Coordinator or the Designer. If in doubt add this language and a quantity of 4 in the Schedule of Items.)*

**00810.41 Excavation and Backfill** - Add the following paragraph to the end of this subsection:

Hand dig guardrail post holes or use other non-invasive methods when posts are located within 24 inches surrounding the outside dimension of all sides of underground utilities as shown or directed.

**00810.43 Erection of Rails and Other Components** - Replace the paragraph that begins "Normally, all fabrication ..." with the following paragraph:

Fabricate metal beam rail members and other components in the shop or by the manufacturer. Limit field cutting, drilling and other field fabrication to the minimum and perform in a manner that will not impair the appearance or structural quality of the material. Burning new holes in metal beam rail members is not allowed.

Replace the paragraph that begins "Draw tight all ..." with the following paragraph:

Draw tight all bolts. Furnish bolts of sufficient length to extend slightly beyond the nuts.

*(Use the following lead-in paragraph and subsection .44 when grading at guardrail terminals are required and there is no earthwork on the Project.)*

Add the following subsection:

**00810.44 Grading at Guardrail Terminals:**

**(a) Earthwork** - Perform earthwork according to the applicable parts of Section 00330.

**(b) Aggregate** - Place Aggregate in two or more layers of nearly equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches. Compact each layer of Material by rollers conforming in general to 00641.24.

Shape and maintain the surface of each layer during the compaction operation to produce a uniform texture and firmly keyed Aggregates.

Continue the compactive effort until there is no reaction or yielding observed under the compactor.

**(c) Asphalt Concrete Mixture** - Place asphalt concrete mixture according to 00744.40 through 00744.49.

*(Use the following subsection .80 when grading at guardrail terminals are required and there is no earthwork on the Project.)*

**00810.80 Measurement** - Add the following to the end of this subsection:

The estimated quantities of Materials for all the grading at guardrail terminals are:

*(Provide estimated quantities. Delete what does not apply.)*

Material	Amount
Embankment .....	___ cu. yd.
Excavation .....	___ cu. yd.
Aggregate Base .....	___ cu. yd.
Asphalt Concrete Mixture .....	___ Ton

*(Use the following subsection .90 when any of the following apply:*

- ~~• Grading at guardrail terminals are required and there is no earthwork on the Project.~~*
- ~~• Weatherized guardrail and painting of guardrail transitions and terminals are required.)~~*

**00810.90 Payment** - Replace the paragraph that begins "In item (a), the ..." with the following paragraph:

In item (a), the type of guardrail is inserted in the blank. Item (a) includes all posts including steel, base plates, and base plate concrete anchors.

Replace the paragraph that begins "Items (a), (b), and (k) include ..." with the following paragraph:

Items (a), (b), and (k) include constructing the respective items except for:

- End pieces
- Anchors
- Transitions
- Extra costs involved in constructing guardrail connections to existing Bridges
- Terminals
- Guardrail height conversions

Replace the paragraph that begins "In item (c), the ..." with the following paragraph:

In item (c), the type of anchor is inserted in the blank.

Replace the paragraph that begins "In item (d), the ..." with the following paragraph:

In item (d), the type of guardrail end piece is inserted in the blank.

Replace the paragraph that begins "In item (g) the ..." with the following paragraph:

In item (g), the type of terminal is inserted in the blank. Item (g) includes guardrail terminals, posts, anchors, rails, guards, end pieces, struts, Soil tubes, and all necessary appurtenances and hardware.

Replace the paragraph that begins "In item (h) the ..." with the following paragraph:

In item (h), the length of post is inserted in the blank. Item (h) includes installing 8 foot long or longer posts instead of standard 6-foot-long posts. The extra costs for the longer posts are costs that are not covered and included in the unit price for one or more of the other listed Pay Items.

Replace the paragraph that begins "In item (k), the ..." with the following paragraph:

In item (k), the type of guardrail is inserted in the blank. Item (k) includes all posts including steel, base plates, and base plate concrete anchors.

Replace the paragraph that begins "In item (l), the ..." with the following paragraph:

In Item (l), the type of guardrail is inserted in the blank. Item (l) includes posts, rails, and all necessary appurtenances and hardware to construct the guardrail height conversion.

Replace the paragraph that begins "Payment will be payment ..." with the following paragraph:

Payment will be payment in full for furnishing and placing all Materials, and providing all Equipment, labor and Incidentals necessary to complete the Work, as specified.

***(Use the following paragraph and Pay Items when grading at guardrail terminals are required and there is no earthwork on the Project or short radius guardrail systems are required. Delete Pay Items not included in the Schedule of Items. Do not change the alpha characters next to the Pay Items.)***

Add the following Pay Item to the Pay Item list:

<b>Pay Item</b>	<b>Unit of Measurement</b>
(m) Short Radius Guardrail System.....	Each
(n) Construct Grading at Guardrail Terminals .....	Each

***(Use the following two paragraphs when a short radius guardrail system is required.)***

Add the following paragraph after the paragraph that begins "In Item (l), the type...":

Item (m) includes all posts including steel, rail elements, cable, eye bolts terminal connectors, connection plates, anchor bolts, and all necessary appurtenances and hardware except the guardrail anchor and Type B end section.

***(Use the following two paragraphs when grading at guardrail terminals are required and there is no earthwork on the Project.)***

Add the following paragraph after the paragraph that begins "In Item (l), the type...":

Item (n) includes excavation and embankment work, Aggregate, and asphalt concrete mix.

*(Use the following two paragraphs when weatherized guardrail and painting of guardrail transitions and terminals are required.)*

Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for painting galvanized metal guardrail Material.