

Design Standards Letter

Letter Number: G-1996-14

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Effective Date: 03/01/1997

Section/Plan No.: D4-09, P732.00, P606.00

Subject: Guardrail, Flared End Sections, Special Sheets, STDLIB Changes

Body

The following items will be effective with the March 1997 bid opening. Please make sure all Design personnel are aware of these items.

Revised Job Special Provision - Crashworthy Guardrail Terminal DSP-93-04G

The job special provision for crashworthy guardrail terminals has been revised. The special provision gives the contractor the option of using an SRT-350 instead of the ET-2000. Since the SRT-350 is 12.5 feet shorter than the ET-2000, an additional segment of guardrail is necessary to provide a length equivalent to the ET-2000. The SRT-350 also requires additional embankment as shown on the attached *Guardrail* Special Sheet. The special provision now includes this additional section of guardrail and embankment for the SRT-350 as a requirement. A printed copy of this revised special provision is attached and the electronic copy accessible through Ami Pro has been updated.

Guardrail Length of Need

Section 4-09.8(4) of the Policy Procedure and Design Manual (PPDM) currently specifies use of a 15-degree encroachment angle in determining length of need for guardrail. Using this 15-degree rule for determining runout length may result in an inadequate length of guardrail. A future revision of the PPDM will address this issue. Until that revision is completed, guardrail length of need should be based on the tables for runout length in Section 5.6 of the AASHTO Roadside Design Guide instead of the 15-degree rule.

Flared End Sections

Standard Plan 732.00 does not include dimensions or quantities for precast flared end sections for pipe diameters greater than 66 inches. Use of 72 inch, 78 inch or 84 inch (or metric equivalent) flared end sections will require a special design done by district personnel. The relatively high cost of the larger flared end sections may justify use of a concrete box culvert rather than reinforced concrete pipe, and this alternative should be considered.

Special Sheets

Printed copies of Special Sheets now available on the CADD system are attached. These special sheets are intended for use in situations not adequately addressed by standard plans. If deemed necessary, individual Special Sheets may become standard plans in the future. The following Special Sheets are now available in both English and Metric units:

- *Concrete Traffic Barrier - Type C
- *Traffic Control Plan - Leveling Course (4 Sheets)
- *Traffic Control Plan - Bridge Strengthening
- *Post Base Details
- *Traffic Signals - Tubular Steel Posts (2 Sheets)
- *Raised Pavement Markers - Exit and Entrance Ramps (3 Sheets)
- *Guardrail (8 Sheets)

Recently, problems with use of Type C Concrete Traffic Barrier in project plans have been experienced due to confusion between Modified Type C and Type C Concrete Traffic Barrier. In order to eliminate this confusion, Modified Type C Concrete Traffic Barrier will no longer be used. The *Concrete Traffic Barrier - Type C* Special Sheet shall be used in the plans for any project using Type C Concrete Traffic Barrier. Any previously existing drawings for Type C or Modified Type C Concrete Traffic Barrier should be discarded. Pay item *617-30.00 Concrete Traffic Barrier, Type C* or *617-10.35 Concrete Traffic Barrier, Type C - Metric* shall be used for this item.

The *Raised Pavement Markers - Exit and Entrance Ramps* Special Sheet is to be included in the plans along with the Raised Reflective Pavement Markers (Snowplowable) job special provision (DSP-93-07E) for any project where raised pavement markers are used.

The *Guardrail* Special Sheet is a revised version of Standard Plan 606.00, incorporating the following changes:

Sheet 1 of 8

This sheet now includes details showing grading limits for both flared and non-flared guardrail end treatments.

Sheet 2 of 8

The details for protecting piers at the centerline of 60' (18.0 m) or greater medians were moved to a new sheet and the detail was revised to show a factory-formed radius at the bend in the Type E guardrail.

Sheet 3 of 8

New sheet to show details for protecting piers at the centerline of medians less than 60' (18.0 m) in width.

Sheets 4 of 8 thru 8 of 8

These sheets have minor revisions and details have been moved among sheets to better organize similar details.

If needed, and time permits, this *Guardrail* Special Sheet may be used in plans for the February 1997 bid opening.

STDLIB Changes

Due to the change in sign terminology from "Road Construction..." to "Road Work...", TC2 and m-TC2 of the STDLIB are revised and updated on the district computer systems. Please make sure all future jobs using signs with this terminology are changed to the new wording and are referenced with the proper sign numbers.

Grading Requirements for Guardrail End Treatments

Projects receiving a design exception for existing guardrail installations where there is less than two feet of fill behind the guardrail posts and where new end treatments are used shall follow the grading requirements shown in the attached figures.

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Attachments