B760 - NOISE BARRIER SYSTEMS
(As specified in OPSS 760 November 2025)

760.1 GENERAL

The work under these items consists of construction of noise barrier systems. The work under these items includes fabrication, delivery and installation of noise barrier systems.

Proprietary noise barrier systems are designed and manufactured by the noise barrier companies in accordance with the Canadian Highway Bridge Design Code (CHBDC) and the ministry's acoustical, material and construction requirements including CSA Standard for Certification of Noise Barriers Z107.9-00.

Noise barrier systems accepted for use on ministry contracts are listed in the ministry's Designated Sources for Materials (DSM).

760.2 REFERENCES

- Canadian Highway Bridge Design Code (CDHBC)
- CSA Standard Z107.9-00 (R2004) for Noise Barriers
- Ministry of Transportation Publications - Roadside Design Manual
- Ministry of Transportation Publications - Structural Manual
- Ministry of Transportation Publications - Environmental Guide for Noise
- Ministry of Transportation Publications - DSM Lists - Noise Barriers

760.3 TENDER ITEMS

Item Code	Title	Col Type	U.O.M.	PQP
0760-5100	2 m Noise Barrier System	Normal	m	Y
0760-5105	2.5 m Noise Barrier System	Normal	m	Y
0760-5110	3 m Noise Barrier System	Normal	m	Y
0760-5115	3.5 m Noise Barrier System	Normal	m	Y
0760-5120	4 m Noise Barrier System	Normal	m	Y
0760-5125	4.5 m Noise Barrier System	Normal	m	Y
0760-5130	5 m Noise Barrier System	Normal	m	Y
0760-5111	3 m Noise Barrier System Including Precast Noise/Traffic Barrier	Normal	m	Y
0760-5116	3.5 m Noise Barrier System Including Precast Noise/Traffic Barrier	Normal	m	Y
0760-5121	4 m Noise Barrier System Including Precast Noise/Traffic Barrier	Normal	m	Y
0760-5126	4.5 m Noise Barrier System Including Precast Noise/Traffic Barrier	Normal	m	Y
0760-5131	5 m Noise Barrier System Including Precast Noise/Traffic Barrier	Normal	m	Y
0760-5117	3.5 m Noise Barrier System on Structures	Normal	m	Y
0760-5122	4 m Noise Barrier System on Structures	Normal	m	Y
0760-5132	5 m Noise Barrier System on Structures	Normal	m	Y
0760-5164	Noise Barrier Access	Normal	each	Y

760.4 SPECIFICATIONS

The requirements for noise barrier systems are contained in OPSS 760.

760.5 SPECIAL PROVISIONS - None

760.6 STANDARD DRAWINGS

There are no standard drawings for noise barrier systems.

760.7 DESIGN

760.7.1 General

The tender package should be prepared in a manner to permit the contractor to select appropriate noise barrier systems from the DSM meeting the requirements of the contract.

Working drawings for noise barrier systems are prepared by the manufacturer of the noise barrier system selected by the contractor.

760.7.2 Noise Barrier Design Elements

Refer to DSM for product attributes for each noise barrier system.

760.7.3 Design Loads

Structural design of noise barrier systems is determined by the noise barrier system manufacturer, based on loadings specified in the CHBDC and the Contract Documents.

Reference wind load along with its respective area or city (e.g. 415 Pa for Hamilton area) shall be specified in SSP 760F01.

760.7.4 Acoustics

Existing Noise Report(s) for noise barrier systems will contain recommendations for reflective barriers or for single or double-sided sound-absorptive barrier material on a project and/or site-specific basis. The acoustical characteristics of the noise barrier system shall be specified in SSP 760F01.

760.7.5 Aesthetics

The number of colours, textures and their proportions of the overall noise barrier area shall be specified in SSP 760F01.

760.7.6 Noise Barrier Footings

Sub-surface conditions along the barrier alignment should be investigated during the design phase of the project. The borehole data shall be included in the contract drawings. The rock line, based on the summary of borehole logs, shall be shown on profile drawings. The related soil design parameters shall be specified in SSP 760F01.

In areas where unsuitable soils, shale, rock, non-level ground surface (slopes) or high water table are encountered, additional investigations may be required to determine if any non-standard special provisions or operational constraints are required in the Contract.

760.7.7 Noise Barrier Systems on Structures

A separate tender item is required for noise barrier systems anchored onto bridge, culvert headwall, and retaining wall structures.

When a noise barrier is to be installed on or within 6 m of a structure (bridge, culvert or retaining wall), the designer shall consider guidance in the Structural Manual.

760.7.8 Noise Barrier Systems including Precast Noise/Traffic Barrier

A separate item is required for Noise Barrier System including Precast Noise/Traffic Barrier.

Noise barrier systems are considered to be roadside obstacles and should be treated as such according to the Roadside Design Manual. Any required protection (i.e. roadside barrier, guide rail) shall be detailed under their respective tender items.

In some cases where there is not enough physical room adjacent to the roadway to install a separate noise barrier behind a guide rail system, combined proprietary noise/traffic barrier systems are available and listed on the applicable noise barrier DSM.

Locations of transitions from standard roadside barrier to proprietary noise/traffic barrier systems shall be identified in the Contract Drawings.

760.7.9 Noise Barrier Access

A separate tender item is required for noise barrier access.

When required, the Contract shall include the installation of access openings for fire hose access, person door access, or any other purposes. The designer shall establish locations for the access openings.

760.8 COMPUTATION

Tender items for all Noise Barrier System items are Plan Quantity Payment Items.

760.8.1 Noise Barrier Systems
Noise Barrier Systems including Precast Noise/Traffic Barrier
Noise Barriers Systems on Structures

760.8.1.1 Sources of Information

In order to establish the horizontal barrier alignment upon which the computed quantities are based, major sources of information available to the designer include but not limited to existing Noise Report(s). The information supplied includes the acoustical recommendations of absorption requirements, the recommended height and approximate alignment of the noise barrier which will provide the most cost-effective attenuation of traffic noise. The recommended height of the noise barrier is assumed to be from the original ground line along the barrier alignment unless otherwise specified.

Geotechnical investigation reports include borehole data, description of subsurface conditions and soil design parameters along the barrier alignment.

Structural information if required include existing structure details, design recommendations for noise barriers mounted on or within 6 m of structures and typical mounting and/or footing details related to these conditions.

Surveys and Plans include B-plans, ETR plates, "as constructed" plans, and field survey notes as needed.

760.8.1.2 Method of Calculation

The basic unit for the computation of quantities is the linear metre. Quantities are determined from the plans, along the horizontal barrier alignment.

Stepping of the noise barrier panels at termination points, shall be calculated as part of the adjoining barrier as if there were no difference in height. When it is necessary to make a transition from one barrier height to another, the length of barrier involved in accomplishing the transition is calculated as part of the higher barrier.

Quantities for "Noise Barrier Systems including Precast Noise/ Traffic Barrier" are computed along the horizontal alignment between, but not including the Precast "Noise/ Traffic Barrier" approach treatment and any traffic barrier termination treatment required as well as any areas which may only require the "Precast Noise/Traffic Barrier" without a noise barrier mounted on top of it. A separate item must be included for these traffic barrier treatments. The maximum height of the noise barrier system including precast noise/traffic barrier shall be 5.0m above the pavement elevation.

Quantities for 'Noise Barriers Systems on Structures' are computed along the horizontal barrier alignment between the end posts connected to the structure wall. The maximum height of the noise barrier system on structures shall be 5.0m above the pavement elevation or top of sidewalk.

760.8.2 Noise Barrier Access

760.8.2.1 Source of Information

The designer shall establish locations for the access openings for fire hose, person door, or any other accesses.

760.8.2.2 Method of Calculation

The basic unit for the computation of quantities is "each".

760.9 DOCUMENTATION

760.9.1 Contract Drawings

Noise barrier system location and height are to be provided in the contract drawings through plans, profile, typical sections and quantity sheets. Soils information consisting of a summary of borehole logs, shall be included for all ground-mounted noise barrier systems.

760.9.1.1 Plan

Noise barrier systems shall be represented on the plan view by a distinctive prominent line for each type of barrier with appropriate labels defining the type of the noise barrier systems.

In order to define the exact location of the barrier, the following information shall be shown on the drawings:

a) barrier limits, identified by stations, and

b) intermediate barrier section ends and changes in the horizontal alignment of the barrier defined by stations and offsets (offsets, in metres, shown from a well-defined line such as the centreline, edge of pavement, curb or structure)

760.9.1.2 Profile

Profiles of the top and base of the noise barrier systems shall be shown on the profile view with the barrier limits defined by stations.

a) Ground-Mounted Noise Barriers

For ground-mounted applications, the following information shall be shown:

i. original ground line,
ii. rock line (where applicable),
iii. bottom-of-barrier profile
iv. top-of-barrier profile,
v. where applicable, a profile inset for any section of barrier at an angle to the control line.

Stepping required for maintaining barrier height, horizontal panel position along a gradient transition and end treatments shall not be shown on the profile.

b) Noise Barriers on Structures

The profile view for noise barrier systems mounted on structures (bridge, culvert or retaining wall) shall show the top of noise barrier systems and details of the structure. Noise barrier height shall be indicated.

The profile of the structure barrier wall, culvert headwall, or retaining wall shall show the station and elevation at each end of the structure. The percent gradient between break points shall be indicated.

760.9.1.3 Typical Sections and Details

Typical sections for noise barrier systems shall be detailed on contract drawings:

a) grading details,

b) design features of earth berms and the installation of noise barrier systems along these berms,

c) top soil, seeding/sodding, or paving requirements adjacent to noise barrier systems,

d) drainage details (ditches, culverts, ditch inlets, sub-drains),

e) installation requirements for noise barrier systems in close proximity to utilities, chain link security fences, and traffic barriers,

f) installation of traffic barriers.

Special footings, mounting of noise barriers on structures, termination of noise barriers at existing conditions, etc. shall be shown in typical drawings and details.

760.9.1.4 No-Plans Contract Format

The use of the no-plans contract format is not recommended for noise barrier projects.

760.9.2 Quantity Sheets

760.9.2.1 Noise Barrier Systems
Noise Barrier Systems including Precast Noise/Traffic Barrier
Noise Barrier Systems on Structures

The entry of quantities for all noise barrier items on the Miscellaneous 1 Quantity Sheets is described in Chapter F.

Quantities are entered on the Miscellaneous 1 Quantity Sheets on a station-to-station basis by location and offset for each change in the horizontal alignment of the barrier. Stations and calculated quantities are recorded in whole numbers. Offsets, from a well-defined line, such as the centreline, curb, retaining wall, or edge of pavement, are entered to the nearest tenth of a metre.

A separate column is required for each tender item. Each column is totalled and the total transferred to the tender form with the proper item description, unit and specification entry.

760.9.2.2 Noise Barrier Access

Each fire hose access opening is entered on the Miscellaneous 1 Quantity Sheets by station, location and by the fire hydrant sign number (km). Fire hydrant sign numbers, which are based on official highway kilometre posts, are recorded to the nearest 50 metres.

Each person door access opening is entered on the Miscellaneous 1 Quantity Sheets by station, location and by the fire hydrant sign number (km).

All other access openings are entered by station number, type and size. Stations are recorded in whole numbers.

The item is totalled and the total transferred to the tender form along with the proper item description, unit and specification entry.