PM Revision Instructions:

(1) The shaded “insert” fields throughout this section require one mouse click only. **DO NOT double click**—if you do accidentally double click, click on the Cancel button of the window that opens and try again. The entire field will be highlighted and deleted as soon as you begin to type.

(2) To apply appropriate styles to new material, press Ctrl + Shift + Alt + S to open the styles task pane to the right of the document. A single click on a style in this task pane will apply the style to the paragraph where your cursor is located. It is not necessary to highlight the entire paragraph. Only the styles used in this file are listed in the task pane. FYI: “Emphasis” style is for applying italics to selected characters; “Strong” style is for applying bold to selected characters.

(3) Do not use the term “the Contractor shall.” Begin each applicable instruction with an action verb.

(4) Entering header information below will update headers throughout the file. If any of the coding is lost during revision, header information will have to be entered manually.

MnDOT Design-Build ProgramBook 2—[insert full name of project] Design-Build Project

Federal Project No. [insert #]S.P. [insert #]

# Visual Quality Management

When a project includes only minor bridge or other aesthetic details, consider NOT USING this section, and instead including exhibits to address aesthetic needs (e.g., Retaining Wall Texture and others listed at end of this document).

## General

This Section 15 describes the requirements of the visual quality components of the Project. This includes visual quality management, development and implementation of a Visual Quality Management Plan (VQMP), identification of potential stakeholders and key groups, and descriptions of the visual quality elements of the Project.

## Administrative Requirements

### Standards

In the event of a conflict between the standards set forth in Book 3 relating to visual quality management, follow the order of precedence set forth below, unless otherwise specified:

* MnDOT Technical Memorandum No. 06-19-TS-07, Design Policy—Design Excellence through Context Sensitive Design and Solutions
* MnDOT Office of Bridges and Structures Aesthetic Guidelines for Bridge Design
* FHWA Flexibility in Highway Design
* AASHTO A Policy on Geometric Design of Highways and Streets
* MnDOT Technical Memorandum No. 08-06-MRR-03, Use of Dry-Cast Segmental Masonry Retaining Wall Units
* MnDOT Technical Memorandum No. 08-11-MRR-02, Use of Mechanically Stabilized Earth (MSE) Walls with Segmental Precast Concrete Panel Facing
* MnDOT Guidelines for Protecting, Salvaging and Replacing Vegetation along State Highways
* MnDOT Guidelines and Priorities for Landscaping State Highways
* American Society of Civil Engineers Practical Highway Esthetics
* Secretary of the Interior’s Standards for the Treatment of Historic Properties
* Remaining standards set forth in Book 3

### Visual Quality Manager

PM: Update as necessary. Consider need for setting forth VQ Manager’s authority regarding design decisions. To be effective, this individual needs to have enough authority to avoid measures that would diminish or eliminate visual quality elements.

The Visual Quality Manager reports to the Contractor’s Project Manager and MnDOT’s Project Manager. This individual must be available to be on Site during design and construction activities involving visual quality issues. The Visual Quality Manager is responsible for the following:

* Implementing the VQMP (Section 15.2.4)
* Overseeing and coordinating production of the Visual Quality Plan (VQP)
* Implementing the aesthetic concepts of the VQP.

PM: Determine if there is a Visual Quality Advisory Committee. If not, update this section as required.

* Coordinating visual quality issues with the VQAC, MnDOT, and the Contractor’s design and construction teams

### Meeting Requirements

#### Visual Quality Advisory Committee

Determine if there are any carry over stakeholders from EIS/EA phase of project such as Cultural Resource Unit, MnSHPO, National Park Service, etc. and update the list below.

The Visual Quality Advisory Committee (VQAC) has been assembled by MnDOT and consists of representatives from the following:

* MnDOT Office of Bridge and Structures
* MnDOT [name of district] District
* MnDOT Office of Environmental Stewardship
* Stakeholders as deemed appropriate by MnDOT to participate in the final design

At the onset of the design phase of the Project, the VQAC will meet with the Visual Quality Manager to review the VQMP and to be informed of VQAC’s role in the development of the design and construction of the Project. The VQAC members will have opportunity to review and comment on the VQMP. The VQAC will be called upon to participate in decisions related to changes or modifications to the design which differ from the VQP and this Section during the design and construction of the Project. Members of the VQAC are the link between their respective communities or agencies and the Contractor and have the capacity to make recommendations on behalf of their residents, businesses, or constituents.

### Visual Quality Management Plan

PM: Determine if a VQ Management Plan is required for the project. If not, delete the paragraphs in this subsection, retain subheading, and enter “Not Used.” If it is required, update as needed with project specific requirements.

PM: Determine if a VQ Management Plan is required for the project. If not, delete the paragraphs in this subsection, retain subheading, and enter “Not Used.” If it is required, update as needed with project specific requirements.

PM: If the Contractor will deviate from the Visual Quality Management Plan (VQMP) or is asked to provide new VQ elements, they will need to coordinate with the Visual Quality Advisory Committee. If they do not deviate or are not expected to provide additional VQ elements, no coordination is necessary.

Provide a VQMP that defines the following:

* Methods for coordinating and interacting with MnDOT.
* The role of the Visual Quality Manager and MnDOT in identifying areas or elements of the Project that present opportunities or concerns in the development of a visually acceptable design.

PM: Update the following if no Visual Quality Advisory Committee is needed for the project.

* Authority of the Visual Quality Manager and the process for coordinating input from MnDOT and the VQAC with the Contractor’s design and construction teams.
* Responsibilities and authority of the Visual Quality Manager in reviewing overall Project design details, mock-ups, samples, and other visual quality-related elements.
* Process for maintaining the record of visual quality recommendations and decisions throughout the Project.

PM: Update the following if not needed.

PM: Remove the following if no VQAC is required for the project.

* A list of VQAC members (provided by MnDOT), their contact information, a process and proposed schedule for interacting with them.

### Equipment/Software

PM: Determine if any specific equipment or software is required. If none, change subheading to “Not Used.”

### Permits/Authorizations

PM: Determine if any permits or authorizations are required, including historic considerations (SHPO). If none, change subheading to “Not Used.”

## Design Requirements

### General

This section includes design requirements for elements that will affect the Project’s visual quality, which are referred to as visual quality elements in this Section 15.

### Investigations/Supplemental Work

PM to determine if any specific investigations or supplement work are required. If none, retain change subheading to “Not Used.”

### Design Criteria

#### Visual Quality Details

Include with Released for Construction (RFC) Documents details specifying forms, sizes, patterns, textures, colors, finishes, and any other visual quality components or elements in the Project as included in the Visual Quality Plan.

#### Visual Quality Elements

PM: Update this section with project-specific requirements

Develop designs for and construct all visual quality elements of the Project in compliance with this Section 15.3.3.2. and in the Visual Quality Plan described in Section 15.3.4.1.

Do not allow any other disciplines to design visual quality elements prior to VQP Approval.

PM: Consider if all these items are required for the project. If a small, low-bid type job, all of these may not be appropriate.

Design and construct a Project that responds to the Project’s context and maintains or enhances existing visual quality. Develop designs that create visual harmony with the natural environment, visual order with the community setting, and design coherence within the highway corridor. Coordinate the architectural character and treatments for all elements within the Project to achieve a consistent architectural vision or family of complementary features.

##### Bridges

This section applies to all engineered structures constructed as part of the Project that include a superstructure resting on a substructure and that carry vehicular, bicycle, or pedestrian traffic.

PM: Determine if this section is applicable to the project. Update as required.

* Maintain a constant superstructure depth for all spans in a single bridge.
* For steel girder bridges and non-curved pre-stressed concrete beam bridges, provide fascia overhangs that maintain a constant dimension for the entire length of the bridge.

##### Retaining Structures

This section applies to any structure that is engineered to hold earth in a position steeper than a natural angle of repose. Include retaining wall locations, horizontal alignments, 1:1 elevations, wall type(s), surface texture, finish, and color in the Project VQP.

PM: Determine if this section is applicable to the project. Update as required for the project. Determine if there will there be a VQP for the project. If not, update Section as necessary.

* To the extent practicable, use retaining structures only in areas where such structures reduce adverse impacts to natural or cultural environmental assets or where they will eliminate or reduce the need for additional Right of Way.
* Design retaining structures with jointing that matches the simulated coursing or jointing of any surface rustication or architectural treatment.

PM: Determine if the noise wall section is applicable to the project. Include project-specific requirements. Determine if berms will be allowed as a noise wall. If yes, revise bullet points accordingly.

##### Noise Walls

This section applies to all constructed or installed elements meant to reduce the ability of sensitive receptors (as defined by federal and State regulations) to hear sounds generated by traffic moving on the proposed or reconstructed highway.

PM: Provide an Exhibit if using this and update the Exhibit call out.

* Design the noise wall and construct to appear as illustrated in Exhibit 15‑D. Prepare sufficient illustrations to fully communicate the visual character of the proposed noise wall, including elevations, Material designation, textures, and colors for all components of the wall for inclusion in the VQP. During the VQP preparation, present the design to the VQAC for evaluation and approval.
* For finish of newly constructed noise walls, follow the manufacturer’s recommendations for surface preparation and application and MnDOT’s guidance regarding approved products and procedures. Ensure that final noise wall Design Documents defines elements to be constructed as a mock-up for Approval by MnDOT.

##### Traffic Barriers

This section applies to all constructed devices used to redirect errant vehicles away from obstacles, including steep embankments, bridge piers and abutments, sign structures, trees, and other immovable objects. It also includes devices used to separate modes of transportation, such as motorized vehicles from pedestrians or buses from automobiles. Traffic barriers may also separate different directions of travel. Curbs are not considered traffic barriers.

PM: Consider what barriers are appropriate. Consider use of P-2 barrier in all locations where separation of trail users and vehicles is required. The P-2/T-1 barrier can be used in specific areas on the project.

* [xxxxx]
* [xxxxx]

##### Signing

PM: Review and update as required for project. Can signs be mounted to bridges?

This section applies to all signs installed on Right of Way as part of the Project, maintained by MnDOT or other governmental agencies and including regulatory, advisory, directional, service, logo, and attraction signs.

* Do not mount signs on bridges unless replacing existing signs on the same structure.
* Use uniform sign panel heights when sign placement requires that more than one sign panel on a signing structure when possible. If multiple signs or sign structures are required to be mounted on the bridge(s), use signs that have the same vertical dimensions and mount them at the same elevation when possible.
* When mounting signs on bridge(s) required to service motorists passing under the bridge(s), attach the signs in an unobtrusive manner. Do not extend any part of a sign above the top of concrete portion of the bridge rail or below the bottom of the outside girder.

##### Pedestrian Railings

PM to update as appropriate for project. Update Exhibit as necessary.

* Design and construct pedestrian railing for Bridge [bridge identification] and for other site locations, as required, as shown in Exhibit 15-B.
* Design and construct pedestrian railing for trail facilities railings as shown in Exhibit 15-C. Paint all pedestrian railings a similar color.

##### Surface Water

PM: Update with any project specific requirements. Consider pond appearance and grades of side slope, etc. If none, delete the paragraph, retain the subheading and change to “Not Used”.

This section applies to any construction that results in creating, eliminating, altering, or obscuring any surface water features, including both standing and running bodies of water. Standing bodies of surface water include those commonly referred to as lakes, ponds, marshes, fens, swamps, wetlands, retention ponds, and detention ponds. Running bodies of surface water include those commonly referred to as rivers, streams, creeks, channels, canals, swales, and ditches, or other visible drainage features.

##### Slope Protection

This section applies to any non-structural treatment engineered to hold earth in a position equal to or less than a natural angle of repose. Slope protection includes paving, paved berms, riprap, and any bioengineered or vegetative method of slope stabilization.

PM: Update with project specific requirements. Coordinate with Section 11.

* To the extent practicable, avoid the use of paving, riprap, or other engineered slope protection in areas where light and water conditions would adequately support vegetative cover that would stabilize slopes and control erosion.

PM: Discuss with bridge group for any additional requirements

* Provide concrete slope paving and concrete walk or geo-cell supported aggregate protection in areas where natural light and water conditions will not support vegetation, especially beneath bridges.
* Employ on slope protection areas a consistent surface treatment or family of complementary surface treatments that are compatible with the overall theme of the corridor.
* Provide pavement for boulevards that are less than 6 feet wide.

##### Culverts

This section applies to all structures that traverse beneath a roadway, trail, driveway, or similar facility to convey something that would impede traffic if allowed to cross the road, trail, or driveway at grade.

PM: Determine if there are any specific culvert requirements for the project. Typically an issue for very large, visible culverts. If none, delete the bullet point.

##### Lighting, Signals, and Utilities

Do not place conduits at the following locations:

* Outboard side of box girders
* Outboard side of precast concrete fascia beams
* External face of substructures, wingwalls, or abutments

PM: Determine if conduit cannot be attached as indicated above.

### Reports and Plans

#### Visual Quality Plan

Produce a VQP that sets forth design intention and details for elements noted in Section 15.3.3.2 (Visual Quality Elements). Comply with the VQP and this Section 15.3 when developing RFC documents for the Project.

Include in the VQP a descriptive narrative and graphic exhibits thoroughly illustrating all aesthetic details to be employed on the Project. Includes color palette, texture, and details, such as Plans, elevations, sections, and perspective sketches of all aesthetic details.

PM: Visual Quality Plan will only be a deliverable if MnDOT does NOT provide it. If MnDOT provides, delete all but the final paragraph of this section. If Contractor provided, determine whether any hardcopies are to be supplied and, if so, how many. PM may wish to require thumb drive copies of the plan for distribution, as document may be too large to email.

Present the draft VQP to the VQAC for its consent prior to submittal to MnDOT. Submit one hardcopy in a binder, with the words “Draft Visual Quality Plan,” and PDF of complete document. Include in the draft VQP all drawings and text necessary to convey the requirements of this Section 15.3.

Revise VQP as needed and, within 10 Days of MnDOT Approval, submit one hardcopy of document in a three-ring binder with waterproof cover that includes the words “Approved Visual Quality Plan,” the name of the Contractor, the name of the Project, and the date of MnDOT Approval. Print document on 8.5-by-11-inch bond paper or 11-by-17-inch bond paper accordion-folded to form an 8.5-by-11-inch page. Submit a complete PDF of the Approved VQP.

Obtain approval for any visual quality elements not covered in the VQP that the Contractor intends to incorporate in the Project design. Approval of any such elements is required; these designs and approvals then become part of the Approved VQP for the Project.

## Construction Requirements

### General

PM: Determine if there are project specific requirements for this section. If none, change subheading to “Not Used.”

### Construction Criteria

PM: Determine if there are project specific requirements for this section. If none, change subheading to “Not Used.”

### Materials/Testing Requirements

PM: Determine if there are specific items that will require a mock up. Identify those items below and update subheadings as required. If none, remove the paragraph and change the subheadings below to “Not Used”.

Provide mock-ups or samples for the items described in this Section 15.4.3 a minimum of 15 Days prior to construc­tion or installation of each element.

Mock-ups or samples Accepted by MnDOT become the reference standard(s) for the Project. Maintain the reference standard(s) undisturbed until Substantial Completion of the Project.

#### Retaining Structures

Construct a minimum 4-foot by 4-foot mock-up for each type of retaining wall as indicated by the VQP for Acceptance by MnDOT.

#### Bridges

Construct a minimum 4-by-4-foot mock-up for each architectural concrete texture as indicated by the VQP or proposed by the Contractor.

#### Noise Walls

Construct an 8-by-8-foot mock-up of the Project noise wall.

## Deliverables

Table 15-1, which lists Deliverables identified in this Section 15, is not intended to be exhaustive. It is Contractor’s responsibility to determine and submit all Deliverables, as required by the Contract.

PM: VQMP will be a deliverable only if MnDOT does NOT provide the VQP. Otherwise, delete from table.

Table 15-1 Nonexhaustive List of Deliverables

|  |  |  |
| --- | --- | --- |
| Name | Acceptance or Approval | Section Reference |
| Draft Visual Quality Management Plan | Approval | 15.2.4 |
| Approved Visual Quality Management Plan | Approval | 15.2.4 |
| **Draft Visual Quality Plan** | Approval | 15.3.4.1 |
| **Approved Visual Quality Plan** | Approval | 15.3.4.1 |
| **Visual Quality Mock-ups and Samples** | Approval | 15.4.3 |

EXHIBITS

All exhibits are provided as electronic files.

Exhibit 15-A Retaining Wall Texture

Exhibit 15-B Bridge Aesthetics and Pedestrian Railing

Exhibit 15-C Trail Facilities Pedestrian Railing

Exhibit 15-D Noise Wall