## SPECIAL CONTRACT REQUIREMENTS

The following Special Contract Requirements amend and supplement the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-24),* U.S. Department of Transportation, Federal Highway Administration.

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Use on all projects.

## Section 101. — TERMS, FORMAT, AND DEFINITIONS

**101.03(a) Acronyms.** Add the following:

**EEBACS** – Engineer’s Estimating, Bidding, Award, and Construction System

**101.04 Definitions.** Delete the definition of (c) Supplemental agreement under Contract Modification.

**101.04 Definitions.** Add the following:

**EEBACS** — A web-based system used by the Government, Contractors, and Subcontractors on this Government contract to prepare *Contractor Daily Inspection Reports* (CDRs)and measurement notes (pay notes and field measurement documentation).

Include if the project scope has non-conventional road construction items, such as trails, buildings, and lighting.

The FP-24 has a definition of ‘substantial completion’ as it relates to conventional road and bridge projects. For projects that include non-conventional items, such as trails, buildings, and lighting, the definition of ‘substantial completion’ may need to be clarified. If applicable, adjust the yellow-highlighted text below to fit project-specific conditions.

*Example text:*

For trail work, the point at which trail surfacing and sidewalk work is complete.

For trail work, the point at which bridge deck, parapet, trail pavement and surfacing, shoulder, drainage, permanent signing and markings, traffic barrier, safety appurtenance, utility, and lighting work is complete.

**Substantial Completion** Add the following:

<<<If applicable, insert project-specific definition of substantial completion.>>>

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Include if the contract type is negotiated 8(a). Verify contract type with PM.

## Section 102. — BID, AWARD, AND EXECUTION OF CONTRACT

**102.03 Bid Guarantee.** Delete the text.

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Use on all projects.

## Section 105. — CONTROL OF MATERIAL

**105.01 Source of Supply and Quality Requirements.** Add the following:

Materials containing petroleum-based solvents such as cutback asphalts and traffic paints may be restricted from use by local laws or ordinances in certain geographic areas. Upon presenting proof of such restrictions, alternate materials considered acceptable to the CO may be substituted for the materials specified in the contract.

Certify, according to Subsection 107.10(d), that sources of rock, sand, gravel, earth, subsoil, or other natural material imported into the project construction limits are noxious weed free.

Include if there is a government-furnished source.

**105.02(a) Government-furnished sources.** Add the following:

For the production of aggregates under Section <<<number>>>, obtain material from <<<name of source>>>.

Include if there is a royalty on material taken from the source.

Pay <<<name of person or company>>> a royalty fee of <<<dollar amount>>> per cubic yard, or if the material is weighed, <<<dollar amount>>> per ton, for material furnished from this source and used on the project.

Make monthly royalty payments directly to <<<owner of the source and address.>>>

Use on all projects.

**105.04 Handling and Storing Material.** Add the following after the second paragraph:

For Contractor-located, non-commercial staging, storing, and material handling areas, secure environmental clearances according to Subsection 107.10.

Include if there is a specific site available for a staging area.

Add the following:

The Contractor may use <<<description>>> for <<<describe what is allowed (examples include staging, storage of materials, hot plant site, stockpiles).>>>

Use products according to the manufacturer’s recommendations for handling, storage, and disposal. Follow the requirements of FAR Clause 52.236-10 Operations and Storage Areas and FAR Clause 52.236-12 Cleaning Up. Maintain the staging and storage areas in a clean, neat, and orderly condition.

Store construction, building and waste materials, and containers in designated areas indoors or protect with a suitable covering.

Keep the manufacturer’s SDS, an inventory of the material, and emergency numbers near the storage area. Take appropriate measures to ensure that incompatible chemicals are not stored next to each other.

Store construction materials within the limits shown in the plans. Properly store materials according to the applicable permit. Check the storage areas weekly and according to the applicable permit.

Submit a site map showing the material storage and stockpile locations at least 14 days before the start of construction activities.

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Use on all projects.

## Section 106. — ACCEPTANCE OF WORK

**106.01 Conformity with Contract Requirements.** Add the following:

If the accuracy of Government test results is disputed, inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request.

Where sample and testing procedures refer to AASHTO, ASTM, or other standards (designated as FLH T), use the procedure as modified in the FLH *Field Materials Manual*.

Where the specifications refer to AASHTO T 11, follow “Procedure B - Washing Using a Wetting Agent”.

Where the specifications refer to AASHTO T 310, follow the “Direct Transmission Method of In-Place Nuclear Density and Moisture Content”.

**106.03 Certification.** Delete the third paragraph and substitute the following:

See Table 106-3 for schedule for full or partial acceptance by material certification. Submit certification and sample of material for testing as required.

Check certifications before incorporating the material into the work to ensure that the requirements of the contract have been met. Mark the certifications with the following information: project number and name; pay item number and description; date; and Contractor-signed certification stating “to the best of our knowledge the materials certified by the attached certification represent the materials incorporated into the work of this contract”.

**Table 106-3**

**Schedule For Full or Partial Acceptance by Materials Certification**

| **Section** | **Description** | **Material** | **Material Property**  **Or Specification** | **Certification Frequency** | **Sample Frequency** |
| --- | --- | --- | --- | --- | --- |
| 302 | Crushed Aggregate | Crushed aggregate | Source, quality and gradation | 1 per source | 1 per source |
| 312 | Dust Palliative | Calcium chloride  magnesium chloride, lignosulfonate | As specified | 1 per shipment | First shipment |
| 403 | Asphalt Concrete | Aggregate asphalt mix | Source quality, gradation, stability, and grade | 1 per mix | 1 per source |
| 634 and 635 | Permanent Pavement Markings, Temporary Traffic Control | 634.02 as applicable, 635 as applicable | As specified | 1 per source | − |
| 701 | Cementitious Material | Portland cement, blended hydraulic cement, mortar cement | AASHTO M 85, M 240,  ASTM C91 and ASTM C1392 as applicable | 1 per shipment | 1 per 100 tons |
| 702.01 | Asphalt Binder | Asphalt cement | AASHTO M 226 or M 320,  as applicable | 1 per shipment | 1 per shipment |
| 702.02 | Emulsified Asphalt | Emulsified asphalt | AASHTO M 140 or  M 208 as applicable | 1 per shipment | 1 per shipment |
| 702.05 | Antistrip Additive | As specified | As applicable | 1 per shipment | − |
| 706 | Concrete Pipe | As specified | As applicable | 1 per shipment | − |
| 707 | Metal Pipe | As specified | As applicable | 1 per shipment | − |
| 708 | Plastic Pipe | As specified | As applicable | 1 per shipment | − |
| 709 | Reinforcing Steel and Wire Rope | As specified | As applicable | 1 per shipment | For 709.01 submit 3, 1-yard bars  of each size and grade of bar furnished.  For 709.02 submit 1  6-foot length for each size furnished |
| 710 | Fencing and Mesh Fabrics | As specified | As applicable | 1 per shipment | − |
| 711 | Concrete Curing  Material and Additives | As specified | As applicable | 1 per material source per material type | − |
| 712 | Joint Material | As specified | As applicable | 1 per shipment | − |
| 713 | Roadside Improvement Material | As specified | As applicable | 1 per shipment | − |
| 714 | Geosynthetic Material | As specified | As applicable | 1 per shipment | 1 per project per type |
| 715 | Piling | As specified | As applicable | 1 per shipment | − |
| 716 | Material for Timber Structures | Timber and hardware | As applicable | 1 per shipment | − |
| 717 | Structural Metal | As specified | As applicable | 1 per shipment | For 717.01(e) minimum  6 per shipment  for each size used.  For 717.09  1 per project |
| 718 | Traffic Signing and Marking Material | As specified | As applicable | 1 per shipment | − |
| 719 | Coating Material | As specified | As applicable | 1 per batch\lot | 1 sample for quantities  > 25 gallons |
| 720 | Structural Wall and Stabilized Embankment Material | As specified | As applicable | 1 per shipment per material type | − |
| 721 | Electrical and Illumination Material | As specified | As applicable | 1 per shipment per material type | − |
| 722 | Anchor Material | As specified | As applicable | 1 per shipment per material type | − |
| 723 | Dampproofing and Waterproofing Material | Asphalt materials used for damproofing and waterproofing concrete and masonry surfaces | As specified for each type of asphalt material | 1 per shipment | − |
| 724 | Guardrail | As specified | As applicable | 1 per shipment | − |
| 725 | Miscellaneous Material | As specified | As applicable | 1 per shipment per material type | − |

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Include if any of the following apply:

(a) Projects located on Tribal lands  
(b) Projects funded by the Tribal Transportation Program (TTP)  
(c) Other projects as determined by the Project Manager.

Any change to this specification (other than providing fill-in information) requires a Legal review.

## Section 107A. — INDIAN PREFERENCE (ADDED SECTION)

**107A.01 Definitions.**

**(a) Core workforce.** Contractor’s workforce composed of full-time employed individuals necessary to satisfy the Contractor’s reasonable needs for supervisory or especially experienced personnel to assure an efficient execution of the contract work. Includes any Indian already employed by the Contractor.

**(b) Indian.** A person who is an enrolled member of a federally recognized American Indian Tribe or Alaska Native.

**107A.02 Employment Opportunities.** To the extent feasible and consistent with the efficient performance of this contract, give preference in employment under this contract to Indians who are qualified to perform regardless of age (subject to existing laws and regulations), sex, religion, or Tribal affiliation.

**107A.03 Application.** This Section does not apply to the Contractor’s core workforce.

Except for the core workforce, follow the process set forth in this Section for the hiring of all construction workers who will be employed on this project.

**107A.04 Preliminary Meeting.** Within 20 days after award of the contract, set up a pre-construction, in-person meeting with the Tribe to discuss employment opportunities. The contact person is:

<<<Insert contact name>>>

<<<Insert contact title>>>

<<<Insert name of Tribe, Village, Company, or Department>>>

<<<Insert telephone number and email address>>>

**107A.05 Publicly Announced Preference.** Announce publicly the Contractor’s preference in employment to Indians for this project.

**(a) Advertising.** Advise recruitment sources in writing and include a statement in all advertisements for employment that qualified Indian applicants will be given preference in employment.

**(b)** **Initial notice.** Not more than 20 days after award of the contract, post a written notice to the Tribe identified in Subsection 107A.04. The notice shall set forth the Contractor’s employment needs, including:

**(1)** Approximate numbers and types of employees needed;

**(2)** Approximate dates of employment;

**(3)** The experience or special skills required for employment, if any; and

**(4)** Other pertinent information necessary to advise prospective employees of any other employment requirements.

Request the Tribe provide assistance to the Contractor in filling its employment needs.

Notify the Tribe that any employment preference is an Indian preference, not a Tribal preference. Equal opportunity for employment will be provided to all Indian applicants, regardless of Tribal affiliation.

**107A.06 Tribal Notice of Employment Needs.** Notify the Tribal office identified in Subsection 107A.04 of any specific need for employees. Provide this notice at least 1 week after the initial notice. The Tribal office will have 1 week after receiving the specific need notice to provide qualified or qualifiable applicants to satisfy the stated employment need.

**107A.07 Employment.** Give full consideration to all qualified job applicants identified by the Tribal office and to any other Indian applicant. If after giving full consideration, the Contractor’s employment needs remain unsatisfied, the Contractor may employ non-Indians as necessary to fill-out its workforce needs according to the “Equal Opportunity” clause in this contract. The Contractor is not required to employ any applicant who, in the Contractor’s opinion, is not qualified to perform the classification of work required.

**107A.08 Records.** Maintain and submit records concerning the Contractor’s Indian preference as follows:

**(a)** Maintain written records under this contract which indicate:

**(1)** The numbers of Indians seeking employment for each employment position available under this contract.

**(2)** The number and types of positions filled by Indians and non-Indians.

**(3)** The total number of Indians employed under this contract.

**(4)** For those positions where there are Indian applicants, and a non-Indian is selected for employment, the reason(s) why the Indian applicant was not selected.

**(b)** Submit to the CO for approval a quarterly report which summarizes the Contractor’s Indian preference activities and indicates the number and types of available positions filled by Indians and non-Indians.

**(c)** Maintain records pursuant to this clause and keep them available for review by the Government for one year after final payment under this contract, or for such longer period as may be required by any other clause of this contract or by applicable law or regulation.

**107A.09 Subcontracting.** Include the provisions of this clause, including this Subsection, in each subcontract awarded at any tier under this contract and notify the CO of such subcontracts.

**107A.10 Enforcement.** In the event of noncompliance with this clause, the CO may terminate the contract in whole or in part or may impose any other sanctions authorized by law or by other provisions of the contract.

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## Section 107. — LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

**107.01 Laws to be Observed.** Add the following:

Include (a) if a 401 or 404 permit is required. Coordinate with Environment on the permitting needs.

**(a) Section 401 and Section 404 of the Clean Water Act.** Comply with the terms and conditions of any permits that authorize the discharge of dredged or fill material in waters of the U.S., including Section 404 permits and Section 401 water quality certifications. See the Appendix for permits.

Include (b) if an NPDES permit is required. Coordinate with Environment on the permitting needs and for any project-specific requirements.

**(b) National Pollutant Discharge Elimination System (NPDES).** Comply with the requirements of the applicable Construction General Permit (CGP) as shown in Table 107-1. The applicable CGP is <<<fill in State / Agency from Table 107-1>>>.

Prepare a Stormwater Pollution Prevention Plan (SWPPP) according to Section 157. If the current CGP expires during the contract, amend the SWPPP when a new permit goes into effect to meet new permit conditions.

Obtain a separate NPDES permit associated with industrial activity for mobile asphalt and concrete plants that provide material for the project. Provide a copy of the permit and acknowledgement letter to the CO.

**(1) Notice of Intent (NOI).** After the SWPPP is approved, file the NOI according to the applicable CGP as shown in Table 107-1. Allow the regulatory review period, shown in Table 107-1, from submittal of NOI to receipt of authorization of coverage under the CGP. Provide a copy of the NOI and confirmation letter to the CO.

Post all project authorization numbers near the entrance to the site and on the bulletin board.

**(2) Payment of permit fees.** Submit the appropriate permit fees and renewal fees required for both the Contractor and Government to the regulatory agency.

**(3) Notice of Termination (NOT).** If applicable, file a NOT when the conditions listed in the CGP have been met or transfer the NOI to the maintaining agency after final acceptance.

Include the entire Table 107-1 – do not delete rows from the table.

For projects in Indian Country, revise the XX in the permit number to match the applicable state – see this EPA website for permit numbers <https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-b-areas-of-permit-cover.pdf>.

**Table 107-1**

**NPDES Permits**

| **State / Agency** | **Permit Number and Link** | **Effective Date** | **Expiration Date** | **Regulatory Review Period** |
| --- | --- | --- | --- | --- |
| Arizona | [AZG2020-001](https://static.azdeq.gov/permits/azpdes/cgp_permit.pdf) | 7/1/2020 | 6/30/2025 | 30 days |
| California(1) | [2022-0057-DWQ](https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2022/wqo_2022-0057-dwq.pdf) | 9/1/2023 | 8/31/2028 | 7 days |
| Colorado (Federal) | [COR10F000](https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-permit.pdf) | 2/17/2022 | 2/16/2027 | 14 days |
| Colorado (Other) | [COR400000](https://oitco.hylandcloud.com/CDPHERMPublicAccess/api/Document/AQfwokluDriUFw9rLI8HeKnA3FOQD9oxLj2WtUV%C3%896urJ3JjLHBBWZPGaal9FHPt1L9vF9iX3AMKBHphEdDOVvyQ%3D/) | 4/1/2024 | 03/31/2029 | 10 days |
| Hawaii | [HAR 11-55, Appendix C](https://health.hawaii.gov/cwb/files/2024/01/January-29-2024-11-55-Appendices-C-A.pdf) | 1/29/2024 | 1/29/2029 | 10 days |
| Indian Country | [XXR10I000](https://www.epa.gov/npdes/2022-construction-general-permit-cgp#2022cgp) | 2/17/2022 | 2/16/2027 | 14 days |
| Kansas | [S-MCST-2208-1](http://www.deq.state.ne.us/Publica.nsf/pages/WAT012) | 12/1/2021 | 11/30/2026 | 60 days |
| Nebraska | [NER210000](http://www.deq.state.ne.us/Publica.nsf/pages/WAT012) | 12/1/2021 | 11/30/2026 | 7 days |
| Nevada | [NVR100000](https://ndep.nv.gov/uploads/documents/Construction_SW_GPermit_2015_.pdf) | 1/5/2015 | 1/4/2020(2) | 14 days |
| New Mexico | [NMR100000](https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-permit.pdf) | 2/17/2022 | 2/16/2027 | 14 days |
| North Dakota | [NDR11-0000](https://deq.nd.gov/publications/wq/2_NDPDES/Stormwater/Construction/NDR11per20200401F.pdf) | 4/1/2020 | 3/31/2025 | 7 days |
| Oklahoma | [OKR10](https://www.deq.ok.gov/wp-content/uploads/water-division/OKR10-2022-Final-permit-1.pdf) | 10/18/2022 | 10/17/2027 | 14 days(3) |
| South Dakota | [SDR100000](https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/docs/DANR_ConstructionGeneralPermit2023.pdf) | 11/1/2023 | 10/31/2028 | 15 days |
| Texas (Small)(4) | [TXR150000](https://www.tceq.texas.gov/downloads/permitting/stormwater/general/construction/2023-cgp-txr150000.pdf) | 3/5/2023 | 3/5/2028 | 2 days |
| Texas (Large) | [TXR150000](https://www.tceq.texas.gov/downloads/permitting/stormwater/general/construction/2023-cgp-txr150000.pdf) | 3/5/2023 | 3/5/2028 | 7 days |
| Utah | [UTRC00000](https://documents.deq.utah.gov/water-quality/stormwater/construction/DWQ-2020-013890.pdf) | 07/1/2024 | 06/30/2029 | None |
| Wyoming (Small)(5) | [WYR10-A000](https://drive.google.com/file/d/1GMfaOewy9KN3CbobjDrwFJvM8fLu--nA/view) | 9/11/2020 | 8/1/2025 | None |
| Wyoming (Large) | [WYR100000](https://drive.google.com/file/d/1FwVC3LegHgCtbZpeRFX2F5UBy_x1rTm4/view) | 9/11/2020 | 8/1/2025 | 10 days |

(1) Upload the SWPPP to the California Water Boards Stormwater Multiple Application and Report Tracking System (SMARTS) and complete the NOI application previously started by the Government. Notify the CO once the NOI application is complete. Do not certify the NOI.

(2) Permit administratively extended.

(3) 45 days for projects over 40 acres or in a sensitive watershed.

(4) Prepare a Construction Site Notice rather than an NOI.

(5) Prepare a SWPPP rather than an NOI. Implement the SWPPP before ground disturbing activities.

**107.02**(**d) Utilities.** Add the following:

Use on all projects. The Quality Level Certification defines the level of effort locating and mapping the utilities for the project. Be specific with spot locations, as applicable.

The locations of the utilities shown in the plans have been certified to a Quality Level <<<select A, B, C, or D>>>, with spot locations certified to a Quality Level <<<select A, B, C, or D>>> according to the CFLHD *Utility Data Quality Certification* requirements available at <https://highways.dot.gov/federal-lands/rw-util/cfl>.

Include if NO utilities exist within project limits.

**107.02**(**d) Utilities.** Add the following:

There are no known utilities within the project right of way.

Include if utilities exist within the project limits.

The Status of Utilities Table may be copied from the Right of Way and Utility Certification. Add additional language, as required, for project specific conditions. Add or delete rows from the table as needed.

Do not include Table 107-2 if there are no utilities within the project limits.

If applicable, additional information may need to be added to other parts of the PS&E for project utility conflicts:

**Status 1**: If utilities are in conflict with the project and require relocation by others during construction, include directions for any required coordination or notifications in this Subsection. Include any schedules and limits to construction in Section 108.

**Status 2:** If utilities are in conflict with the project and require relocation by the Contractor during construction, include the appropriate plan sheets, SCRs (may include Sections 611, 612, and 636) and pay items. Include any schedules and limits to construction in Section 108.

**Status 3:** If utilities are in conflict with the project and require relocation before construction, include the estimated date relocations will be completed in this Subsection. Include any schedules and limits to construction in Section 108.

**Table 107-2**

**Status of Utilities**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Utility Type** | **Company** | **Contact Name** | **Phone Number / Email** | **Status(1)** |
| 1 | Utility type | Company | Name | xxx-xxx-xxxx / email@email.com | Select 1, 2, 3, or 4 |
| 2 | Utility type | Company | Name | xxx-xxx-xxxx / email@email.com | Select 1, 2, 3, or 4 |
| 3 | Utility type | Company | Name | xxx-xxx-xxxx / email@email.com | Select 1, 2, 3, or 4 |
| 4 | Utility type | Company | Name | xxx-xxx-xxxx / email@email.com | Select 1, 2, 3, or 4 |
| 5 | Utility type | Company | Name | xxx-xxx-xxxx / email@email.com | Select 1, 2, 3, or 4 |

(1) Status is defined as follows:

Status 1: The utilities are in conflict with the project and require relocation by others during construction.

Status 2: The utilities are in conflict with the project and require relocation by the Contractor during construction.

Status 3: The utilities are in conflict with the project and require relocation by others before construction.

Status 4: The utilities are located within the project right-of-way but require no relocation.

Use on all projects.

**107.05 Responsibility for Damage Claims.** Delete the first sentence of the third paragraph and substitute the following:

Before work starts, submit “*certificates of insurance*” certifying that the policies will not be changed or canceled until 30 days’ written notice has been given to the Government.

**107.08 Sanitation, Health, and Safety.** Delete the first paragraph and substitute the following:

Follow the requirements of FAR Clause 52.236-13 Accident Prevention, Alternate 1. Submit an accident prevention plan.

**107.10(a) Federal Water Pollution Control Act (Clean Water Act) 33 USC § 1251 et seq.** Add the following:

**(4)** Do not ford running streams with construction equipment. Obtain approval from the CO to use temporary bridges or other structures whenever crossings are necessary.

**(5)** Locate machinery servicing and refueling areas away from streambanks, wetlands, shorelines, lakes, and reservoirs to reduce the possibility and minimize the impacts of accidental spills or discharges.

**107.10(b) Oil and hazardous substances.** Delete the third and fourth paragraphs and substitute the following:

Do not use equipment with leaking fluids. Repair equipment leaks immediately. Keep absorbent material manufactured for containment and cleanup of hazardous material on the job site. Sand and soils are not approved absorbent materials.

Notify the CO of hazardous spills. Report the spill to the appropriate federal, state, and local authorities as required by the SPCC plan or hazardous spill plan.

Use on all projects.

**107.10(c) Dirt, plant, and foreign material.** Add the following:

All vehicles and equipment entering the project area must be clean of noxious weeds and free from oil leaks and are subject to inspection. Thoroughly wash construction equipment, including the undercarriage and any surface where soil containing exotic seeds may exist. Allow the CO to inspect each piece of equipment before entering the project. Provide the cleaning and inspection records to the CO.

Use on all projects.

**107.10(d) Clearances for Contractor-selected, noncommercial areas.** Add the following to the end of the first paragraph:

Use rock, sand, gravel, earth, subsoil, or other natural materials from a Contractor-selected non-commercial materials source that has been certified free of noxious weeds. Materials imported into the project limits which do not include a noxious weed free certification may be rejected and ordered to be removed from the project limits. The CO has the discretion of requesting inspection of certified materials by a third party and rejecting the use of the source if noxious weeds or seeds thereof are found to be present.

Add the following after Subsection (4):

**(5) Any required certifications.**

Add any project-specific environmental commitments due to legal requirements, such as additional permits not already mentioned, safety and health restrictions, tribal ordinances, monitors, and animal/bird surveys.

Do not duplicate the same information in multiple sections.

Examples for this section:

-Provide a qualified archeological monitor during excavation activities between Station 787+00 and 810+00. See Subsection 623.03 for qualification requirements.

-Do not remove, injure, or destroy trees or other plants until approved.

-Clear all trees from September 15 through March 1.

-Construct riprap revetment during low flow periods of 200 cfs as measured at gauge 12345. Current stream gauge data is available at [website link]

-Notify the CO at least 14 days before working in archeological sensitive areas. Do not remove material in these areas until approved.

Add the following:

**107.10(e) Project-specific commitments.**

Coordinate with Environment for project-specific commitments.

The template text in (1) below is for migratory bird surveys; revise as needed for project-specific conditions.

If there is NO pay item for the migratory bird biologist, include the biologist qualifications here in Section 107:

**(1)** Provide a qualified biologist, at no additional cost to the Government, to perform the following:

*(a)* Conduct pre-construction nest surveys within the clearing limits if vegetation clearing or work on suitable nesting structures will occur within the breeding season (from <<<Month Date>>> to <<<Month Date>>>). Survey vegetation and suitable nesting structures, including bridges and culverts, at least <<<XX>>> days before <<<describe work that triggers survey>>> at the site begins. If vegetation clearing or suitable nesting structure work occurs outside of the breeding season, no surveys are required.

*(1)* Conduct nest survey in phases if vegetation removal or suitable nesting structure construction will occur in phases along the project route, so that no more than <<<XX>>> days lapses between survey and potential nest disturbance at any one location.

*(2)* Notify the CO immediately if any active nest that may be adversely affected by construction activities is discovered; include information on nesting species, activities in the vicinity of the nest, topographic and other visual barriers, and recommended protection measures. Establish a no-disturbance buffer, in coordination with the CO, around the nests that is sufficient to ensure that breeding is not likely to be disrupted by construction. Maintain buffers until the qualified biologist has determined the young have fledged or nests are no longer active.

*(3)* Submit a report documenting the methodology and results of the surveys to the CO within 7 days after completion of surveys. Include recommendation for handling of any unoccupied nests observed and nesting prevention recommendations, if appropriate.

*(b)* Conduct a resurvey of vegetation and suitable nesting structures, as needed, after any lapse in construction of <<<XX>>> days or more within the breeding season.

If there is a pay item for the migratory bird biologist, include the biologist qualifications in Section 623 and include this sentence in Section 107:

**(1)** Provide a qualified biologist according to Subsection 623.03(b).

**(2)** <<<describe commitment>>>

**(3)** <<<describe commitment>>>

Include if the partner agency has a fire plan. Check with the partner agency for the requirements of a fire plan and have the agency (Forest Service, Park Service, or similar) provide the fire plan.

Do not include the following paragraph if a fire plan is not required.

**107.11 Protection of Forests, Parks, and Public Lands.** Add the following:

Comply with the fire prevention plan included in the Appendix. The CO will order the emergency suspension of operations when conditions are unsafe as determined by the CO and the land management agency.

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Use on all projects.

## Section 108. — PROSECUTION AND PROGRESS

**108.01 Commencement, Prosecution, and Completion of Work.** Add the following:

Limit operations according to Sections 107 and 156.

Use on all projects.

Add general work restrictions that limit the contractor’s site availability, such as winter shutdown and holidays. Coordinate with the CFT and Partner Agency on specific project limitations. Include any restrictions or limitations on work not identified in other Sections.

*Example text:*

Do not perform onsite work from October 1 through April 30.

Complete underground utility work before constructing the subgrade.

Limit full depth reclamation work according to Section 304.

Limit operations as follows:

**(a)** <<<describe limitations>>>

**(b)** <<<describe limitations>>>

**(c)** <<<describe limitations>>>

Use on all projects.

Coordinate with the CFT and Partner Agency on specific holiday limitations. Adjust table as needed (for example, delete some of the federal holidays or add local holidays or events that may require work restrictions).

Perform no work except to maintain traffic control devices, erosion control devices, the roadway driving surface, and to control dust during the listed holidays and surrounding days as shown in Table 108-2.

Table 108-2

**Holidays and Surrounding Days**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **Holiday** | **Time** | **Remarks** | | --- | --- | --- | | Birthday of Martin Luther King, Jr. | Noon Friday to 6:00 a.m. Tuesday | − | | Washington’s Birthday | Noon Friday to 6:00 a.m. Tuesday | − | | Memorial Day | Noon Friday to 6:00 a.m. Tuesday | − | | Juneteenth National Independence Day | Noon June 18 to 6:00 a.m. June 20 | If June 19 falls on a Saturday, do not work the preceding Friday. If June 19 falls on a Sunday, do not work the following Monday. | | Independence Day | Noon July 3 to 6:00 a.m. July 5 | If July 4 falls on a weekend, Friday, or Monday, do not work the weekend. If July 4 falls on a Saturday, do not work the preceding Friday. If July 4 falls on a Sunday, do not work the following Monday. | | Labor Day | Noon Friday to 6:00 a.m. Tuesday | − | | Columbus Day | Noon Friday to 6:00 a.m. Tuesday | − | | Veterans Day | Noon November 10 to 6:00 a.m. November 12 | If November 11 falls on a Saturday, do not work the preceding Friday. If November 11 falls on a Sunday, do not work the following Monday. | | Thanksgiving Day | Noon Wednesday to 6:00 a.m. Monday | − | | Christmas Day / New Year’s Day | Noon December 23 to 6:00 a.m. January 2 | If December 23 or January 1 falls on a Monday, do not work the adjacent weekend and do not work on December 23. If January 1 falls on a Friday, do not work the weekend. | |

Schedule at least 2 non-workdays out of every 14 days. The selected non-workdays do not need to be consecutive, but they must be scheduled. Notify the CO at least 2 weeks before changing the scheduled days off.

The CO may grant written approval for exemptions to scheduled days off for specific project operations and for periods of limited duration.

Use on all projects.

If the project has multiple Schedules or Options, there may need to be multiple completion dates.

*Example text*:

The completion date for Schedule A is October 18, 2029. If Option X is awarded, the completion date for Option X is November 18, 2029.

Add the following:

The CO will issue the NTP before commencement of any work. The completion date is <<<fill in date>>>.

Use on all projects.

Add the following:

Use EEBACS to prepare all *Contractor Daily Inspection Reports* and measurement notes (pay notes and field measurement documentation).

Contact the CO to schedule a training session on the use of EEBACS. The virtual training session requires up to 2 hours and will be either a video presentation or live training as determined by the CO. The Contractor is responsible for training additional staff that were not present during the original training session.

Contact the CO for the *EEBACS User Account Form,* Form EEBACS-001, and submission instructions. Complete and electronically submit Form EEBACS-001 for each individual requiring EEBACS access. Submit forms to the CO at the preconstruction conference or at least 10 days before the start of any contract work or EEBACS training. As needed, request additional system access using Form EEBACS-001 and allow 7 days for system access.

Maintain active EEBACS accounts for all Contractor staff who use EEBACS. Notify the CO within 24 hours after an account holder is reassigned or no longer employed by the Contractor and submit a Form EEBACS-001 requesting their account be disabled.

**108.03 Subcontracting.** Delete the second paragraph and substitute the following:

Within 14 days of subcontract award, submit a completed SF 1413 and 1413S. Complete Part I for each Subcontractor, and include Part II when the Subcontractor performs on-site work. Complete other forms that may be required by the Government to show the work subcontracted and the total dollar amount of the subcontract. Submit the above required information for each Subcontractor at lower tiers.

Use on all projects.

The liquidated damages (LDs) amount will not be shown in the SCRs. PM or COE will use the CE Budget Spreadsheet to calculate the LDs: The LD amount will be provided to Acquisitions at PS&E check-in using the PS&E Advertisement Checklist. There is a specific field provided in the PS&E Advertisement Checklist for this. Acquisitions includes the LD amount in the contract using a contract provision/clause.

**108.05 Failure to Complete Work on Time.** Delete the second and third paragraphs and substitute the following:

Liquidated damages in the amount specified in FAR Clause 52.211-12 Liquidated Damages — Construction will be assessed for each day beyond the time allowed to complete the contract until substantial completion of the work.

If a winter shutdown occurs during this period, liquidated damages in an amount equal to 10 percent of the amount shown in FAR Clause 52.211-12 Liquidated Damages — Construction will be assessed for each day until work resumes at which time full liquidated damages will be assessed.

Delete Table 108-1.

Include if the project has critical schedule requirements, and interim completion dates or incentives/disincentives are needed (not common).

*Example text:*

Interim completion date incentive: Complete all work that requires daytime full closures before or on July 17, 2029. An incentive payment in the amount of $100,000 will be paid to the Contractor for meeting this date. The incentive payment will be reduced by $10,000 per allowable full closure workday until depleted on July 31, 2029. No incentive payment will be made after this date. No day closures will be allowed in this area after July 31, 2029. This is a no excuse specification.

Add the following:

<<<Describe any interim completion dates and any incentives or disincentives>>>.

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## Section 109. — MEASUREMENT AND PAYMENT

Include if project has quantities split between funding sources (for example FLAP and ERFO). Not required if funding sources are separated by schedule and option.

**109.01 Measurement of Work.** Add the following after the eighth paragraph:

Prepare, sign, and submit electronic measurement notes (pay notes and supporting field documentation) using EEBACS. Assign measurement note quantities to the correct funding source and account description for the work performed as designated in the plans. Measurement notes will be reviewed by the CO. Unacceptable measurement notes will be electronically rejected and returned. Correct rejected measurement notes and resubmit electronically.

Include if project does NOT have quantities split between funding sources. Use this for most projects.

**109.01 Measurement of Work.** Add the following after the eighth paragraph:

Prepare, sign, and submit electronic measurement notes (pay notes and supporting field documentation) using EEBACS. Measurement notes will be reviewed by the CO. Unacceptable measurement notes will be electronically rejected and returned. Correct rejected measurement notes and resubmit electronically.

*Asphalt Binder Price Adjustment Provision*

Include if all of the following apply:

(a) Duration longer than 1 year

(b) Construction Cost Estimate more than $5 million

(c) Approved by the COE and PM

**109.06A Asphalt Binder Price Adjustment Provision.** (Added Subsection).

**(a) General.** The Asphalt Binder Price Adjustment Provision provides for a price adjustment in the form of payment to the Contractor or a rebate to the Government for fluctuations in the cost of asphalt binder used in the performance of applicable construction work. Price adjustment provisions are applicable only to the asphalt binder, as defined in Subsection 702.01, and incorporated in the following contract pay items:

Edit this list to contain only items that apply to the contract. Be sure to enter the correct bid item number and description.

**(1)** <<<40101-XXXX Asphalt concrete pavement, ....>>>

**(2)** <<<40201-XXXX Asphalt concrete pavement, ….>>>

The price adjustment provisions are also applicable to eligible pay items when the Government adds work to the contract.

The provision will remain in effect throughout the duration of the contract. Enactment of the Asphalt Binder Price Adjustment Provision will only be considered when the increase or decrease in the price of asphalt binder exceeds 10 percent.

The Asphalt Binder Price Adjustment Provision is intended to reduce but not eliminate the cost effects of price uncertainty to the Contractor and the Government for asphalt binder used in the construction of this contract. It provides for sharing by the Government a portion of the Contractor’s risk, which could result from unusual price fluctuations. The provision is not intended to compensate the Contractor for normal day-to-day fluctuations and seasonal changes or to serve as a guarantee of full compensation for asphalt binder price fluctuations.

Contact the Construction Support Team for the applicable region.

The Construction Support Team will calculate and provide the base price index (shown in underline below in (b)(1). The BPI will be inserted into the spec by Acquisitions.

**(b) Price indexes.** The Government will post a monthly performance price index at <https://highways.dot.gov/federal-lands/business/escalation-factors-cfl>.

Poten & Partners, Inc. publishes a weekly report (*Asphalt Weekly Monitor*®) on high and low selling prices for states in five regions throughout the United States including East Coast/Northeast, Mid-Continent/Midwest, Gulf Coast/Mid-South, Rocky Mountains, and West Coast/Northwest.

Weekly high and low selling price data reported for <<<Select applicable region: East Coast/Northeast, Mid-Continent/Midwest, Gulf Coast/Mid-South, Rocky Mountains, or West Coast/Northwest>>> will be averaged and used to establish a base price index (BPI) for this project and a monthly performance price index (MPPI) for the duration of the contract. These indexes are defined as follows:

**(1) Base price index.** The BPI is the price index posted by the Government as determined by arithmetic average, as specified above, shown in the four *Asphalt Weekly Monitor*® publications immediately before contract award. It is as follows:

BPI for asphalt binder = $ See Note (1) below per ton

Note (1): BPI calculated by the Government and inserted here immediately before contract award.

**(2) Monthly performance price index.** The MPPI is the monthly price index at the time of performance of applicable work as determined by arithmetic average, as specified above, shown in the four *Asphalt Weekly Monitor*® publications issued before the last Wednesday of the month (the MPPI during which asphalt binder is used in the performance of applicable construction work).

**(c) Price adjustments.** Price adjustments calculated by the Government are not intended to reflect the Contractor’s actual purchase price. The ratio of the monthly performance price index and the base price index (MPPI/BPI) is calculated and used to determine price adjustments as follows:

**(1) No price adjustment.** when the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for any asphalt binder used in construction work performed during the relevant month.

**(2) Government rebate.** When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate determined according to the following formula:

Government Rebate = [0.90 – (MPPI/BPI)] (BPI) (Q)

**(3) Contractor payment.** When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment determined according to the following formula:

Contractor Payment = [(MPPI/BPI) – 1.10] (BPI) (Q)

The following definitions are applicable to both the Government rebate and the Contractor payment formulas:

MPPI = Monthly Performance Price Index for the month during which asphalt binder is used in the performance of applicable construction work.

BPI = Base Price Index that is established immediately before contract award.

Q = Quantity in tons of asphalt binder for each pay item that was used on the project during the progress payment period. The quantity will be calculated using the asphalt content of the approved mix design and the following formula:

Q = Asphalt Concrete Pavement tons placed x (% Asphalt/100)

**(d) Price adjustment compensation.** Monthly adjustments will be accrued. The final price adjustment will be paid, or rebated, after completion of all work for each eligible pay item. The Contractor may request in writing a partial price adjustment payment once every 12 months, or when the unpaid accrued increase exceeds $10,000. The Government will take a rebate when the deductive accrual exceeds $10,000.

No price adjustments will be made for work performed beyond the Government-approved contract completion date.

The maximum allowable monthly and final price adjustment to the Contractor or rebate to the Government is limited to a (MPPI/BPI) ratio of 1.6 and 0.4, respectively.

*Fuel Price Adjustment Provision*

Include if all of the following apply:

(a) Duration longer than 1 year

(b) Construction Cost Estimate more than $5 million

(c) Approved by the COE and PM

**109.06B Fuel Price Adjustment Provision.** (Added Subsection).

**(a) General.** The Fuel Price Adjustment Provision contained herein provides for a price adjustment in the form of payment to the Contractor or a rebate to the Government for fluctuations in the cost of diesel fuel consumed in the performance of applicable construction work. The price adjustment provisions are applicable only to contract items listed as eligible pay items in Table 109-1 below. The price adjustment provisions are also applicable to these eligible pay items when the Government adds work to the contract.

The provision will remain in effect throughout the duration of the contract. Enactment of the Fuel Price Adjustment Provision will only be considered when the increase or decrease in the price of diesel fuel as defined herein exceeds 10 percent.

The Fuel Price Adjustment Provision is intended to reduce but not eliminate the cost effects of price uncertainty to the Contractor and the Government for diesel fuel used in the construction of this contract. It provides for sharing by the Government in a portion of the Contractor’s risk, which could result from unusual price fluctuations. The provision is not intended to compensate the Contractor for normal day-to-day fluctuations and seasonal changes or to serve as a guarantee of full compensation for diesel fuel price fluctuations.

**(b) Price indexes.** The Government will post a monthly performance price index at: <https://highways.dot.gov/federal-lands/business/escalation-factors-cfl>.

If the project is in California replace Gross Ultra Low Sulfur, No. 2 Diesel Fuel below with “Gross CARB Ultra Low Sulfur, No. 2 Diesel Fuel”.

Contact the Construction Support Team for the applicable rack city.

<<<Gross Ultra Low Sulfur, No. 2 Diesel Fuel>>> using price data obtained from the Oil Price Information Service (OPIS), which publishes a weekly newsletter on the distillate wholesale rack prices for major cities throughout the United States. The OPIS 5-day newsletter average rack price reported for <<<insert the applicable rack city>>> will be averaged and used to establish a base price index (BPI) for this project and a monthly performance price index (MPPI), for the duration of the contract. These indexes are defined as follows:

**(1) Base price index.** The BPI is the price index posted by the Government as determined by arithmetic average, as specified above, shown in the four weekly publications immediately before contract award. It is as follows:

If the project is in California replace Gross Ultra Low Sulfur, No. 2 Diesel Fuel below with “Gross CARB Ultra Low Sulfur, No. 2 Diesel Fuel”.

BPI for <<<Gross Ultra Low Sulfur, No. 2 Diesel Fuel>>> = $ See Note (1) below per gallon

Note (1): BPI calculated by the Government and inserted here immediately before contract award.

**(2) Monthly performance price index.** The MPPI is the monthly price index at the time of performance of applicable work as determined by arithmetic average, as specified above, shown in the four weekly publications issued before the last Wednesday of the month (the MPPI during which diesel fuel is consumed in the performance of applicable construction work).

**(c) Price adjustments.** Price adjustments calculated by the Government are not intended to reflect the Contractor’s actual purchase price. The ratio of the monthly performance price index and the base price index (MPPI/BPI) is calculated and used to determine price adjustments for eligible pay items as follows:

**(1) No price adjustment.** when the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for any diesel fuel consumed in construction work performed during the relevant month.

**(2) Government rebate.** When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate determined according to the following formula:

Government Rebate = [0.90 – (MPPI/BPI)] (BPI) (Q) (FUF)

**(3) Contractor payment.** When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment determined according to the following formula:

Contractor Payment = [(MPPI/BPI) – 1.10] (BPI) (Q) (FUF)

The following definitions are applicable to both the Government rebate and the Contractor payment formulas:

MPPI = Monthly Performance Price Index for the month during which motor diesel fuel is consumed in the performance of applicable construction work.

BPI = Base Price Index that is established immediately before contract award.

Q = Quantity of work on the project during the progress payment period for eligible pay items shown in Table 109-1 below. The Government, to agree with the units associated with the applicable Fuel Usage Factor, will convert work quantities, as necessary.

FUF = Fuel Usage Factor shown in Table 109-1 applicable to No. 2 diesel fuel.

**Table 109-1**

**Fuel Usage Factors**

| **Pay Items** | **Fuel Usage Factor(2)** |
| --- | --- |
| **Section 204 – Excavation and Embankment**  20401 Roadway excavation  20402 Subexcavation  20403 Unclassified borrow  20404 Unclassified borrow(1)  20410 Select borrow  20411 Select borrow(1)  20420 Embankment construction  20421 Rock excavation | 0.30 gallons per cubic yard |
| **Section 301 – Untreated Aggregate Courses**  30101 Aggregate base  30102 Aggregate base(1)  30103 Aggregate base(1)  30105 Subbase  30106 Subbase(1)  30107 Subbase(1)  30110 Aggregate Surface Course  30111 Aggregate Surface Course(1)  30112 Aggregate Surface Course(1) | 0.70 gallons per ton |
| **Section 305 – Full Depth Reclamation (FDR) with Cement**  30501 FDR with Cement(1)  30502 FDR with Cement | 0.30 gallons per square yard |
| **Section 306 – FDR with Asphalt**  30601 FDR with Emulsified Asphalt(1)  30602 FDR with Emulsified Asphalt  30603 FDR with Foamed Asphalt(1)  30604 FDR with Foamed Asphalt | 0.30 gallons per square yard |
| **Section 308 – Emulsified Asphalt- Treated Base Course**  30801 Emulsified asphalt treated aggregate base  30802 Emulsified asphalt treated aggregate base(1)  30803 Emulsified asphalt treated aggregate base(1) | 0.70 gallons per ton |
| **Section 310 – Cold In-Place (CIP) Recycled Asphalt Base Course**  31001 CIP Recycled asphalt base(1)  31002 CIP Recycled asphalt base | 0.15 gallons per square yard |
| **Section 311 – Stabilized Aggregate Surface Course**  31101 Stabilized aggregate surface course(1)  31102 Stabilized aggregate surface course(1)  31103 Stabilized aggregate surface course | 0.70 gallons per ton |
| **Section 401 – Asphalt Concrete Pavement by Gyratory Mix Design Method**  40101 Asphalt concrete pavement, gyratory mix  40102 Asphalt concrete pavement, gyratory mix wedge and leveling course | 2.40 gallons per ton |
| **Section 402 – Asphalt Concrete Pavement by Hveem or Marshall Mix Design Method**  40201 Asphalt concrete pavement, Hveem or Marshall mix  40202 Asphalt concrete pavement, Hveem or Marshall mix, wedge and leveling course | 2.40 gallons per ton |
| **Section 405 – Open-Graded Asphalt Friction Course**  40501 Open-graded asphalt friction course | 2.40 gallons per ton |

(1) The Government will convert pay item quantities to match Fuel Usage Factor units.

(2) Fuel Usage Factor based on U.S. gallons.

**(d) Price adjustment compensation.** Monthly adjustments will be accrued. The final price adjustment will be paid, or rebated, after completion of all work for eligible pay items. The Contractor may request in writing a partial price adjustment payment once every 12 months, or when the unpaid accrued increase exceed $10,000. The Government will take a rebate when the deductive accrual exceeds $10,000.

No price adjustments will be made for work performed beyond the Government-approved contract completion date.

The maximum allowable monthly and final price adjustment to the Contractor or rebate to the Government is limited to a (MPPI/BPI) ratio of 1.6 and 0.4, respectively.

Use on all projects.

**109.08(a) General.** Delete the last sentence and substitute the following:

The CO may withhold partial progress payment according to Subsection 109.08(h) for failure to make satisfactory progress until a construction schedule or schedule update is approved.

**109.08(c) Government’s receiving report.** Delete this Subsection and substitute the following:

The Government’s receiving report will be developed using the measurements and quantities from Pay Notes received by the CO in EEBACS and determined acceptable.

**109.08(d) Closing date and invoice submittal date.** Add the following:

No closing dates will be permitted from September 1 to October 5. Do not submit invoices between September 1 and October 5.

**109.08(e)(1) Proper invoices.** Delete this Subsection and substitute the following:

**(1) Invoices received by the 7th day following the closing date.**

*(a) Proper invoices.* If the invoice meets the requirements of Subsection 109.08(b), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be paid.

*(b) Defective invoices.* If the invoice does not meet the requirements of Subsection 109.08(b), or if any of the quantities or unit prices shown on the Contractor's invoice exceed the corresponding quantities and unit prices shown on the Government's receiving report, the invoice will be deemed defective, and the Contractor so notified according to FAR Clause 52.232-27(a)(2). Defective invoices will not be corrected by the Government and will be returned to the Contractor within 7 days after the Government's designated billing office receives the invoice.

Revise and resubmit returned invoices by the 18th day following the closing date. The CO will evaluate the revised invoice. If the invoice is deemed proper, it will be forwarded for processing within 7 days of receipt. If the invoice still does not meet the requirements of Subsection 109.08(b), the Contractor will be so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the revised invoice meets the requirements of Subsection 109.08(b), but still has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item or work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing by the 23rd day following the closing date. The Contractor will be notified by the 23rd day following the closing date of the reasons for any changes to the invoice.

**109.08(e)(2) Defective invoices.** Delete this Subsection and substitute the following:

**(2) Invoices received between the 8th and 16th day following the closing date.**

*(a) Proper invoices.* If the invoice meets the requirements of Subsection 109.08(b), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the CO's receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

*(b) Defective invoices.* If the invoice does not meet the requirements of Subsection 109.08(b), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(b) but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Government's receiving report, the Government's data for that item of work will be used. The Contractor's invoice, as revised by the Government's receiving report, will be forwarded for processing within 7 days of the Government's receipt of the invoice. The Contractor will be notified of the reasons for any changes to the invoice.

**109.08(f) Partial payments.** Delete this Subsection and substitute the following:

**(f) Partial payments.** Progress payments may include partial payment for material to be incorporated in the work according to FAR Clause 52.232-5(b)(2), provided the material meets the requirements of the contract and is delivered on, or in the vicinity of, the project site or stored in acceptable storage places.

Partial payments for stockpiled manufactured material (aggregates) will be based on Contractor process control test results. If test results show the material to be out-of-specification, or in “reject” where statistical evaluation procedures are used, no payment for stockpiled materials will be made.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

Individual and cumulative partial payments for preparatory work and material will not exceed the lesser of:

**(1)** 80 percent of the contract bid price for the item; or

**(2)** 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract. The CO may adjust partial payments as necessary to protect the Government.

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## Section 152. — CONSTRUCTION SURVEY AND STAKING

**Construction Requirements**

Include if no survey data is available.

**152.04 General.** Add the following to the fifth paragraph:

No horizontal or vertical control information will be furnished.

Include if survey data is available. Revise as needed to match project-specific requirements.

**152.04 General.** Add the following to the fifth paragraph:

The Government will establish vertical and horizontal survey control points.

The Government will furnish the following for use during bidding and construction:

1. 3D LandXML models of existing ground, subgrade surface, final surface, and top of base course surface;
2. 3D coordinates and offset distance from centerline for subgrade and slope staking information and top of base course information at 50-foot intervals and miscellaneous intermediate stations;
3. Horizontal and vertical alignment listings;
4. Superelevation listing; and
5. Earthwork quantity information.

Contact [cflcontracts@dot.gov](mailto:cflcontracts@dot.gov) to request the files. These files are considered Physical Data according to FAR 52.236-4 Physical Data.

Include if survey data is available.

**152.05(b) Centerline establishment.** Add the following:

Reestablishment of centerline may be ordered and paid for under Section 623 for purposes other than to control the work.

Include if using pay item 15225-0000 Slope, reference, and clearing and grubbing control.

**152.05(d)(2) Conventional survey methods.** Add the following:

When the centerline curve radius is less than or equal to 250 feet, use a maximum longitudinal spacing between stakes of 25 feet. When the centerline is on a tangent or the curve radius is greater than 250 feet, use a maximum longitudinal spacing between stakes of 50 feet.

Include if using pay item 15236-2000 Survey control, grade finishing.

**152.05(f)(1) AMG method.** Delete this Subsection and substitute the following:

Use conventional survey methods for grade finishing.

Include if using pay item 15215-3000 Survey and staking, drainage structure.

**152.05(g) Culverts.** Delete this Subsection and substitute the following:

**(1)** Verify and set culvert locations at the inlet, outlet, and inlet basin points as shown in the plans. Plot to scale the profile along the culvert centerline. Show the existing ground, flow line, roadway section, and culvert including end treatments and other appurtenances. Show the elevations, grade, culvert length, degree of elbow, catch points, and hinge points on the plot.

**(2)** Perform the following if the culvert design shown in the plans does not fit field conditions, when the CO requires adjustment to a culvert location, or when a culvert design isn’t furnished for a new culvert, culvert replacement, or culvert extension:

*(a)* Recommend a revised culvert location and alignment if needed.

*(b)* Survey and record the ground profile along the culvert centerline and additional channel profile for an appropriate offset to capture required information in Subsection 152.05(g)(2)(e).

*(c)* Determine the slope catch points at the inlet and outlet.

*(d)*Set reference points and record information necessary to determine culvert length and end treatments.

*(e)* Plot to scale the profile along the culvert centerline. Show the existing ground, flow line, roadway section, culvert, end treatments, and other appurtenances. Show elevations, grade, culvert length, and degree of elbow.

*(1)* For single skewed culverts, submit a plotted field-design cross-section normal to roadway centerline and at each end section. Plot the offset and elevation of existing ground at the end section and at proposed template break points between centerline and the end section. Ensure the template design embankment slope is not exceeded.

*(2)* For multiple skewed culverts, submit a plotted field design cross-section normal to roadway centerline and at the end sections (left and right) nearest to the shoulder. Plot the offset and elevation of existing ground at the end section and at proposed template break points between centerline and the end section. Ensure the template design embankment slope is not exceeded.

*(3)* Submit the plotted field-design cross-section for approval of final culvert length and alignment. Plot at a clear and readable scale.

*(4)* Set inlet, outlet, and reference stakes when the field design has been approved. Stake inlet and outlet ditches to ensure the culvert and end treatments (such as drop inlets) are functional.

*(5)* Adjust slope, reference, and clearing stakes as necessary to provide for culvert inlet treatments in cut slopes. Readjust slope, reference, and clearing stakes as necessary when culvert inlets are moved from their plan locations. Review slope adjustments with the CO and obtain approval.

Include if project has walls or rockeries.

**152.05(i) Retaining walls, rockeries, special rock embankments, rock buttresses, gabion walls, and reinforced soil slopes.** Delete the first sentence and substitute the following:

Survey and record profile measurements along the face of the proposed wall, rockery, embankment, buttress, or reinforced soil slope along the face of the proposed wall or slope, and at 5 feet and 10 feet in front of the wall or slope face.

Include if using pay item 15210-3000 Centerline, verification and staking.

**152.05 Survey and Staking Requirements.** Add the following:

**(m) Centerline verification and staking.** Verify stationing shown in the plans by measuring along the existing centerline with an approved method. Calibrate all measuring devices and provide calibration data to the CO before use. Use landmarks, such as culverts, pullouts, and approach roads, to verify that the ground stationing matches the stationing shown in the plans. Use white spray paint to mark each centerline station. Add station equations to adjust field stationing to match the plans. Notify the CO of any readjustment or change to stationing or establishment of additional centerline points.

Measure the existing surface width at 200-foot intervals on tangent and at 50-foot intervals on curves. At each location, each side of the roadway and outside the construction limits, place an offset stake of adequate dimensions to place all required information. Label each stake with the following information:

**(1)** Station;

**(2)** Offset from striped centerline or other location as directed; and

**(3)** Offset from the proposed edge of pavement.

Measure stations to the nearest foot and offsets to the nearest 2 inches. Record the above information and provide to the CO.

Use this recorded information to control the proposed roadway width and reestablish striping.

Include if project scope is pavement preservation.

**152.05 Survey and Staking Requirements.** Add the following:

**(n) Pavement preservation roadway width verification.** Measure the existing pavement surface width at 500-foot intervals on tangents and at 100-foot intervals on curves. Use white spray paint to mark the pavement with the station on each side of the roadway. Take additional measurements between the above required intervals if the width varies more than 1 foot from the pavement surface width shown in the plans. Provide a record of width measurements and corresponding station locations to the CO for approval before starting surfacing operations. Take additional measurements, at no additional cost to the Government, when requested. The revised approved surface widths will become the new surfacing width unless otherwise directed.

Include if using pay item 15210-3000 Centerline, verification and staking.

**152.07** Add the following:

Measure centerline verification and staking only one time per project.

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Use on all projects.

## Section 153. — CONTRACTOR QUALITY CONTROL

**Description**

**153.01** Add the following:

This work also consists of using EEBACS to prepare electronic *Contractor Daily Inspection Reports* (CDRs)and measurement notes (pay notes), including entering labor, equipment, subcontractors, and inspection records into the system.

**Construction Requirements**

**153.03(b) QC procedures.** Add the following to Subsection (3):

List the material to be tested by pay item, tests to be conducted, the location of sampling, and the frequency of testing.

**153.03** **Quality Control Plan.** Add the following after Subsection (c):

**(d) Subcontractors and suppliers.** Include the work of all subcontractors. If a subcontractor is to perform work under this Section, explain how the subcontractor’s inspection plan will interface with the Prime Contractor first tier subcontractors and lower tier subcontractors and organizations, and the CO. Include the work of major suppliers and suppliers of structural and geotechnical services and materials.

**153.03** **Quality Control Plan.** Add the following:

Modifications or additions may be required to any part of the plan that is not adequately covered. Acceptance of the quality control plan will be based on the inclusion of the required information. Acceptance does not imply any warranty by the Government that the plan will result in consistent contract compliance. It remains the responsibility of the Contractor to demonstrate such compliance.

Include if the QCM can also perform other roles on the project (not required to be fulltime QCM). This typically will be smaller projects.

**153.04 Quality Control Manager.** Delete the second sentence and substitute the following:

The QCM may perform other roles on the project including managing and superintending the project. Provide a QCM with no responsibilities for performing operations on the project.

Use on all projects.

**153.05 Certifications and Submittals.** Delete this Subsection and substitute the following:

For materials or work accepted by certification according to Subsection 106.03, review all certifications to ensure compliance with the requirements of the contract before incorporating materials into the work and provide a signed copy of the reviewed certification to the CO. According to FAR Subpart 46.407, materials or work without proper certification will be rejected in writing, and payment for such material or work will be withheld until proper certification has been provided to the CO.

**153.06 Prosecution of Work.** Delete this Subsection and substitute the following:

Address each of the subjects shown for each phase of construction:

**(a)** **Preparatory phase.**

**(1)** In a preparatory phase meeting, review the contract requirements for the work; the process for constructing the work; and the plan for inspecting, testing, measuring, and reporting the work. Include the project superintendent, QCM, work foreperson, and the CO in the meeting. Schedule and conduct a preparatory meeting for each type of work to be performed at least one week prior to beginning the work.

**(2)** Review and coordinate certifications, submittals, plans, drawings, and permits.

**(3)** Verify the capabilities of equipment, material, and personnel. Provide training as necessary.

**(4)** Establish a detailed testing schedule based on the production schedule.

**(5)** Ensure preparatory testing and inspection is accomplished.

**(6)** Review accuracy of the surveying and staking.

**(b)** **Start-up phase.**

**(1)** In a start-up phase meeting, review the contract requirements and the processes for constructing the work with the personnel who will be performing the work. Invite the CO, project superintendent, QCM, testers, and inspectors of the work being performed, and the personnel directly supervising and performing the work. Review the planned testing, inspection, and reporting requirements with the quality control personnel responsible for the testing and inspection. Explain the reporting procedures to be used if defective work is identified. Conduct a start-up meeting for each type of work to be performed upon beginning the work.

**(2)** Inspect, test, and report start-up work according to the QCP and ensure the work conforms to the contract.

**(c)** **Production phase.**

**(1)** Inspect, test, and report according to the QCP and evaluate the acceptability of the work produced.

**(2)** Identify and correct deficiencies.

**(3)** Request Government inspection.

**(4)** Provide feedback on processes and deficiencies. Identify root causes of deficiencies and make timely and effective changes to work processes to prevent repeated deficiencies.

**153.07 Sampling and Testing.** Delete this Subsection and substitute the following:

Perform sampling and testing according to the approved QCP. As a minimum perform process control testing according to the Sampling, Testing, and Acceptance Requirements tables at the end of each Section where applicable. Where no minimums are specified, submit proposed tests to be performed and the proposed sampling and testing frequencies.

**(a) Sample splitting.** Schedules and times or locations for obtaining on-site split samples for Government use will be provided by the CO using a procedure for random sampling. Sample any material that appears defective or inconsistent with similar material being produced, unless such material is voluntarily removed and replaced or otherwise corrected according to Subsection 106.01

If a Government-furnished field laboratory is not available to the project, delete “If the Government-furnished field laboratory bid alternate is not exercised by the CO,” Include the remainder of the sentence: “Provide a laboratory equipped with all test equipment necessary to satisfy the requirements of the contract.

**(b) Testing.** <<<If the Government-furnished field laboratory bid alternate is not exercised by the CO,>>> provide a laboratory equipped with all test equipment necessary to satisfy the requirements of the contract. Ensure test equipment has been checked, calibrated, standardized, and otherwise verified according to AASHTO and ASTM standards by an individual qualified to perform the work. Perform an equipment inspection after the laboratory has been moved to its permanent location on the project site, and anytime it is moved thereafter. Inspect equipment within 45 days of actual use for project testing, and at least once a year thereafter. Do not use equipment that has not been inspected or is found to be deficient. Mark deficient equipment and take it out-of-service until repaired or replaced and shown by subsequent inspection to perform as required. Maintain records documenting laboratory equipment inspections. Provide certification stating the equipment conforms to testing requirements and provide evidence of current inspection. Keep laboratory facilities clean and maintain equipment in proper working condition. Allow the CO unrestricted access to the laboratory for inspection and review.

The CO may require a demonstration of proficiency in sampling and testing capabilities. One or more proficiency samples may be provided by the Government to verify basic qualifications. Provide the results of the proficiency samples to the CO within 48 hours of receipt of the material.

**153.08 Records and Control Charts.** Delete the first sentence and substitute the following:

Maintain complete testing and inspection records by pay item number and make them accessible to the CO.

**(a) QC and construction operations reports.** Delete the text and substitute the following:

For each day of the contract, prepare a CDR using EEBACS. Enter initial data for Labor/Equipment and Subcontractors before beginning any work. Maintain and update the Labor/Equipment and Subcontractors data to reflect ongoing changes as they occur. Report operations or items of work separately, with manpower and equipment assigned to each operation separately. Detail inspection results, including deficiencies observed and corrective actions taken. Complete a CDR for each contractor and subcontractor working that day.

When submitting test results on material being incorporated into the work, report test results within the reporting times indicated in the sampling and testing requirements at the end of each Section.

Enter the following data into EEBACS:

**(1) Subcontractor data.**

**(2) Labor/Equipment**.

*(a)* All manpower and equipment, including contractor and subcontractors. Complete all data fields.

*(b)* Labor: Type/classification, move-in date, move-out date, hourly rate, the contractor or subcontractor, and name.

*(c)* Equipment: Type/classification, move-in date, move-out date, make, model, and year of equipment manufacture.

Certify all CDRs using the following statement:

*“I certify that the information contained in this record is accurate and that work documented herein complies with the contract. Exceptions to this certification are documented as a part of this record.”*

Submit certified CDRs that have been signed by a person who has both responsibility for the inspection system and signature authority.

Submit the record and certification within 24 hours of the work being performed. If the CDR is incomplete, in error, or otherwise misleading, the CDR will be rejected and returned within EEBACS with corrections noted. Correct rejected CDRs and resubmit the revised CDR within 24 hours. If chronic errors or omissions occur, correct the procedures by which the records are produced.

**153.09 Acceptance.** Add the following:

The Government may charge to the Contractor the cost of any additional inspections required when the work being inspected is found not to comply with contract requirements during the initial inspection. Work stop orders, due to recurring deficiencies of work required by this Section, will be rescinded after the Contractor demonstrates to the CO that changes were made to the quality control plan and system which resulted in the correction of those deficiencies. There will be no adjustment in the contract time, or payments to the Contractor for any impacts, delays, or other costs due to any periods of work stoppage resulting from failure to comply with the requirements of this Section.

EEBACS electronic documentation will be evaluated under Subsection 106.02.

**Measurement**

**153.10** Add the following:

Do not measure EEBACS electronic documentation for payment.

**Payment**

**153.11** Add the following:

Progress payments for Contractor quality control by the lump sum will be paid as follows:

**(a)** 25 percent of the pay item amount, no more than 0.5 percent of the original contract amount, will be paid after the Contractor quality control plan is accepted; all testing facilities are in place; qualified quality control supervisor, inspection, and sampling and testing personnel are in position to provide quality control activities; and the work being inspected or tested has started.

**(b)** 65 percent of the pay item amount will be prorated for payment based on the completed portion of the total work not including the original 25 percent completed under (a) above.

**(c)** The remaining portion of the pay item amount will be paid when all inspections, test results, submittals, and reports are complete and accepted.

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## Section 154. — CONTRACTOR SAMPLING AND TESTING

**Construction Requirements**

Include if the project has concrete.

**154.03 Sampling.** Add the following:

Perform the initial curing of all concrete test cylinders. Provide for transporting the Government verification cylinders to the FHWA-Central Federal Lands Highway Division (CFLHD) Laboratory unless other testing facilities are approved.

Label each concrete mold with the name and number of the project, the cylinder number, date molded, location of the sample, and the test age (7, 14, or 28 days). Label the mold after casting and the cylinder after stripping to ensure the sample can be identified throughout the entire curing process.

Provide the required cylinder molds.

Include if the project requires significant material testing. Include both 154.04A and 154.04B.

Check with the PM and COE regarding the need for and availability of a Government-furnished field laboratory to the project. (Small, short duration projects and projects that do not include statistically accepted materials may not warrant a Government trailer).

If a Government-furnished field laboratory is not available or warranted, do not include Subsection 154.04A.

**154.04A Field Laboratory (Government-Furnished).** (Added Subsection).

Refer to the “Notice to Bidders”in the bid proposal for information regarding the option to use a Government-furnished field laboratory.

If the bid alternate Item 15401-0000 Contractor Testing (Using Government-furnished Field Laboratory) is exercised, the Government will furnish for the Contractor’s use a mobile field laboratory. If the Government-furnished field laboratory bid alternate is not exercised, provide a laboratory according to Subsection 154.04B.

The Government-furnished field laboratory includes testing equipment as follows:

**(a)** Thermolyne ignition oven

**(b)** AASHTO T 209 rice vacuum equipment

**(c)** AASHTO T 166 bulk specific gravity of compacted mix equipment

**(d)** Convection oven

**(e)** Liquid limit machine and grooving tool

**(f)** 30,000-gram balance

**(g)** 12,000-gram balance

**(h)** 4600-gram balance (readable to 0.01)

**(i)** Platform scale

**(j)** Mechanical compactor (moisture density) and accessories

**(k)** 12-inch sieve shaker and sieve stack

**(l)** Drill press with muller

**(m)** Large sample splitter

**(n)** Small sample splitter

**(o)** Pine AFG1A gyratory compactor

Provide any additional equipment or facilities necessary to fulfill the requirements of the contract.

Transport the laboratory from 12300 West Dakota Avenue, Lakewood, CO to the point of use and return the laboratory to the same Lakewood address upon completion of the work. The trailer will be available upon issuance of NTP and must be returned no later than 14 days following final acceptance. Contact the CFLHD Equipment Depot at (720) 963-3459 or (720) 963-3384 for specific directions to the laboratory storage location.

Assume responsibility for the replacement of all missing or damaged equipment and for the repair of any damage to the laboratory. Replacement cost for missing or damaged equipment or facilities will be deducted from any remaining monies owed the Contractor. If sufficient funds are not available under the contract for such retention, the Contractor agrees to make payment directly to the Government for all damaged or missing equipment or facilities.

Furnished equipment will be inspected by the Government by checking, standardizing, calibrating, and verifying, as appropriate, according to the applicable AASHTO and ASTM standards. The Government equipment inspection will be completed after the laboratory has been moved to its permanent location on the project site before actual use in project testing and at least once a year thereafter. Notify the CO at least 30 days before intent to use the testing equipment on the project so that Government equipment inspection can be scheduled and performed. Assume responsibility for additional equipment inspections prior to the Government’s yearly inspection if the mobile laboratory is moved. Maintain records documenting these inspections in the laboratory.

Maintain equipment in proper operating condition. Do not use equipment that is found to be deficient or defective. Mark deficient or defective equipment and take it out-of-service and immediately notify the CO. If Government-furnished testing components fail through no fault or negligence of the Contractor, the Government will replace or repair the equipment in the most expeditious manner practical. Requests for time extensions or delay damages will not be granted for delays of less than 48 hours for any one occurrence, or for cumulative delays amounting to less than 5 days in any one 365-day period. Requests for time extensions or damages due to equipment-related delays caused by equipment misuse or other Contractor fault will not be granted.

Provide water to the Government-furnished field laboratory, which is clear and free of oil, acid, rust, alkali, sugar, and vegetable substances. Provide 120/240-volt, 60-cycle, single-phase current adequate to operate all of the Government field laboratory facilities at all times. Supply enough power to support a 200-amp service panel. Equip the power supply with a regulator that limits the voltage of the power to the laboratory to not less than 220 volts and not more than 240 volts.

All equipment furnished by the Government and replaced by the Contractor will remain with the laboratory and will become the property of the Government.

Use of the laboratory is limited to testing materials in connection with this contract.

**154.04B Laboratory (Contractor-Provided).** (Added Subsection).

Provide a field laboratory or commercial laboratory equipped with all test equipment necessary to satisfy the requirements of the contract.

The sampling and testing services of a commercial laboratory meeting or exceeding the requirements described herein may be used if all contract sampling and testing requirements are satisfied by the use of the commercial facility.

Ensure test equipment has been checked, calibrated, standardized or otherwise verified according to AASHTO and ASTM standards by an individual qualified to do this work. Ensure mobile laboratories receive an equipment inspection after the laboratory has been moved to its permanent location on the project site and anytime it is moved thereafter. Inspect equipment within 45 days of actual use in project testing and at least once a year thereafter. Do not use equipment that has not been inspected or is found to be deficient. Mark deficient equipment and take it out-of-service until it is repaired or replaced and shown by subsequent inspection to perform as required. Maintain records documenting these inspections in the laboratory. Provide certifications stating the equipment conforms to testing requirements and provide evidence of current inspection.

The CO may require the Contractor to perform testing to demonstrate acceptable equipment and an acceptable level of technician competence. The CO may also check equipment and inspection records to verify condition. Repair or replace equipment not meeting applicable requirements. Keep laboratory facilities clean and maintain equipment in proper working condition. Provide the CO unrestricted access to the laboratory for inspection and review.

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Use on all projects.

## Section 155. — SCHEDULES FOR CONSTRUCTION CONTRACTS

**Construction Requirements**

**155.05 Baseline Construction Schedule.** Add the following:

Include activities for permit review and approval. Refer to the permitting agencies to determine an appropriate duration for permit application review, permit approval, and distribution of permits.

**155.06(d)(1)** Delete Subsection (*f*) and substitute the following:

(*f*) Revised construction activities affected by impacts addressed with an approved time impact analysis. Include a revised completion date for the total work.

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Use on all projects.

## Section 156. — PUBLIC TRAFFIC

**Construction Requirements**

**156.04 Maintaining Roadways During Work.** Add the following to Subsection (a):

Do not construct temporary traffic diversions outside of the clearing limits or use alternate route detours without approval.

Include if no traffic delays are allowed at certain times of day, such as rush hour periods.

**156.06 Limitations on Construction Operations.** Delete Subsection (a) and substitute the following:

**(a)** Limit construction-caused delays to public traffic to no more than 30 minutes per passage through the project except during the following times on Monday through Friday:

<<<time>>> a.m. through <<<time>>> a.m.

<<<time>>> p.m. through <<<time>>> p.m.

During the above times, allow traffic to pass through the construction without delay.

Use on all projects.

Adjust the highlighted dimensions to fit project-specific conditions. For example:

-If long vehicles or tight curvature is anticipated, increase the minimum lane width for alternate one-way traffic control.

-If the existing roadway width is less than 22 feet, adjust minimums appropriately.

**156.06 Limitations on Construction Operations.** Delete the first sentence of Subsection (d) and substitute the following:

For alternate one-way traffic control, provide a minimum lane width of <<<10>>> feet. For two-way traffic, provide a minimum roadway width of <<<22>>> feet.

Use on all projects.

Add any restrictions relating to public traffic, including access to pullouts, buildings, weekend work, lane closures, and detours. Depending on the scope of the project, maintaining uninterrupted public access may not be feasible or may be very costly (would need shoring or significant temporary traffic control). Confirm with the PM and the Partner Agency which restrictions are required.

Do not repeat limitations on public traffic in other Sections.

*Example text*:

-Maintain access to all approach roads, access roads, parking areas, pullouts, and trails during construction.

-Maintain access to the Colorado Trail throughout construction.

-Entrance Road may be closed to the public from June 1 through August 31. Open the road to the public one weekend per month from noon Friday to 6:00 a.m. Monday. Provide a two-week minimum notice to the CO regarding which weekend the road will be open each month.

-No weekend work will be allowed from August 31 through November 31.

-Maintain uninterrupted access to the Visitor’s Center and other buildings during construction.

**156.06 Limitations on Construction Operations.** Add the following:

**(j)** <<<describe restriction>>>

**(k)** <<<describe restriction>>>

**(l)** <<<describe restriction>>>

Include if the TCS can serve in more than one role, typically on small, uncomplicated projects. Verify with PM and COE.

**156.08 Traffic Control Supervisor.** Delete the second paragraph and substitute the following:

The superintendent may serve as the TCS provided the requirements of Subsection 156.02 are met.

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There are 2 options for Section 157 SCRs depending on the specific project NPDES permit requirements:

(1) projects that require coverage under an NPDES permit.

(2) projects that do NOT require coverage under an NPDES permit.

**Include if project requires coverage under an NPDES permit.**

Use with the following pay items:

15720-0000 Stormwater Pollution Prevention Plan LPSM and

One of the following:

15701-0000 Soil Erosion Control LPSM

Individual pay items for soil erosion control BMPs.

**Section 157. — SOIL EROSION AND SEDIMENT CONTROL**

Delete this Section and substitute the following:

**Section 157. — SOIL EROSION CONTROL, SEDIMENT CONTROL, AND STORMWATER POLLUTION PREVENTION PLAN**

**Description**

**157.01** This work consists of preparing and maintaining a SWPPP including non-stormwater pollution prevention. This work also consists of implementing the SWPPP including, but not limited to, furnishing, constructing, and maintaining soil erosion and sediment control devices to eliminate or minimize pollutants in stormwater discharges from the project.

**Material**

**157.02** Conform to the following Subsections:

Fiber rolls 713.12

Filter rock 705.08

Floating turbidity curtains 713.21

General purpose tackifier 713.11(a)

Geotextile 714.01

Gravel bags 713.13

Mulch 713.05

Nonloadbearing concrete masonry units 725.07(c)

Plastic lining 713.22

Prefabricated filter insert 713.20

Rock for riprap 705.02

Rock mulch 705.07

Rolled erosion control products 713.17

Sandbags 713.14

Sediment filter bags 713.19

Seed 713.04

Silt fence 713.16

Soil and soil-aggregate materials 704.01

Temporary culvert pipe 713.15

Temporary plastic fence 710.08

Turf reinforcement mats 713.18

Water for vegetation 725.01(b)

**Construction Requirements**

**157.03 Qualifications.** Provide a SWPPP Developer, Erosion Control Supervisor, and On-Site Stormwater Lead with experience in implementing erosion and sediment control. Provide documentation that personnel meet the qualifications in the applicable Construction General Permit (CGP) or the qualifications below, whichever is more stringent. Include certifications in those states where applicable. One person may serve in more than one role if qualified.

Include the following sentence for big projects or extra environmentally-sensitive smaller projects.

<<<Do not designate the project superintendent to serve in any of these roles.>>>

Submit the following for approval as part of the SWPPP submittal:

**(a) SWPPP Developer**. A résumé describing the following:

**(1)** Have completed 40 hours of stormwater management training;

**(2)** Have 5 years of highway or equivalent experience developing SWPPPs and designing site-specific BMPs; and

**(3)** Be registered or certified in the state in which the project is located for one or more of the following:

*(a)* Professional engineer, geologist, or hydrologist;

*(b)* Licensed landscape architect; or

*(c)* Other state or nationally recognized certification program for erosion and sediment control professionals.

**(b) Erosion Control Supervisor.** A résumé describing the following:

**(1)** Both of the following:

*(a)* Have completed 24 hours of stormwater management training; and

*(b)* Have 3 years of highway or equivalent construction experience that included oversight of erosion, sediment, and pollution control BMPs; or

**(2)** One of the following:

*(a)* Meet requirements of SWPPP Developer above; or

*(b)* Be registered or certified as a stormwater inspector from a state or nationally recognized certification program for stormwater inspectors.

**(c) On-Site Stormwater Lead.** A résumé describing the following:

**(1)** Both of the following:

*(a)* Have completed 8 hours of stormwater management training;

*(b)* Have 1 year of highway construction experience including stormwater management duties; or

**(2)** One of the following:

*(a)* Meet requirements of Erosion Control Supervisor above; or

*(b)* Be registered or certified as a stormwater inspector from a state or nationally recognized certification program for stormwater inspectors.

**157.04 Roles and Responsibilities**.

**(a) SWPPP Developer**. Develop the SWPPP for the project based on requirements in the CGP, plans, and specifications. Show construction phasing of erosion, sediment, and pollution prevention BMPs for all construction activities on a site plan to meet water quality regulations. Review field changes and update the SWPPP when substantial changes occur.

**(b) Erosion Control Supervisor.** Implement the SWPPP, which includes but is not limited to, scheduling installation and maintenance of all BMPs, job site inspections, and other activities for pollution prevention. Review all inspection reports and ensure that the SWPPP and site plan are implemented and updated.

**(c) Stormwater Lead.** Install and maintain BMPs, conduct site inspections, monitor water quality, and perform all on-site and reporting activities required to comply with the CGP. Inform the Erosion Control Supervisor when changes are made. The Stormwater Lead is required to be on the project site during working hours, and available during non-work hours to do inspections before, during, and after qualifying rain events.

**157.05 General.** Develop, submit, and manage a SWPPP according to the CGP requirements. Contract permits amend the requirements of this Section. Submit the SWPPP to the CO at or before the preconstruction conference. Allow 14 days for CO review and approval.

If soil erosion and sediment pollution control measures are not functioning as intended, take corrective action to eliminate or minimize pollutants in stormwater discharges from the project.

Provide certified weed free devices.

Do not use monofilament plastic for erosion or sediment control products.

**157.06 Controls and Limitations on Work.** Mark clearing limits and construct sediment perimeter control measures before ground disturbing activities. Before the start of a construction activity, implement appropriate pollution prevention measures for the activity. No soil disturbing construction activity, including clearing and grubbing, may begin on the project until the SWPPP has been reviewed and approved, the NOI has been accepted by the permitting agency and is active, and the CO has authorized on-site work to proceed.

Limit the combined grubbing and grading operations areas to 5 acres of exposed soil at one time.

**157.07 Stormwater Pollution Prevention Plan.** Prepare, submit, and implement a Construction SWPPP following the SWPPP template of the state in which the project is located. Include the Federal Highway Administration as an operator on the project in charge of plans and specifications. If the state does not provide a template, follow the SWPPP template provided by the Environmental Protection Agency (EPA) (<https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates#swppp>).

Provide a SWPPP according to the CGP.

Provisions in the SWPPP are incorporated by reference into the contract. Provide an electronic copy of the SWPPP.

Based on the approved SWPPP, provide the CO a list of the planned pollution prevention devices for each of the following: erosion controls, sediment controls, and non-stormwater controls.

Implement the SWPPP as required throughout the construction period. Modify the erosion, sediment, and non-stormwater pollution control details and SWPPP plans as necessary to accommodate project site conditions and proposed construction operations. Update the SWPPP when modifying erosion, sediment, and non-stormwater pollution controls. Provide a copy of the updated SWPPP monthly to the CO for review.

**157.08 Soil Erosion Control.** Apply erosion control measures to stabilize soils and to control temporary concentrated flows throughout the duration of the project. Construct and maintain measures according to the manufacturer’s recommendations.

**157.09 Sediment Control.** Apply sediment control measures to intercept, slow, and detain the flow of stormwater throughout the duration of the project. Construct and maintain measures according to the manufacturer’s recommendations.

**157.10 Non-Stormwater Controls.** Apply non-stormwater measures as needed and as required in the SWPPP to control non-stormwater discharges, and to prevent or limit potential pollutants at their source from contact with stormwater throughout the duration of the project. Construct and maintain measures according to the manufacturer’s recommendations.

**157.11 Acceptance.** Material for erosion, sediment, and non-stormwater pollution control measures will be evaluated under Subsections 106.02 and 106.03.

Construction, maintenance, and removal of erosion control, sediment control, and non-stormwater controls will be evaluated under Subsections 106.02 and 106.04.

**Measurement**

**157.12** Measure the Section 157 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

Do not measure replacement erosion, sediment, or non-stormwater pollution control measures.

Do not measure additional or changed erosion, sediment, or non-stormwater pollution control measures required when planned controls are not functioning as intended and corrective actions are taken.

**Payment**

**157.13** The accepted quantities will be paid at the contract price per unit of measurement for the Section 157 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

**(a)** Progress payments for SWPPP will be paid as follows:

**(1)** 25 percent of the pay item amount will be paid on the approval of the SWPPP and upon receipt of authorization from the permitting agency that the project permit is active.

**(2)** An additional 50 percent of the pay item amount will be prorated based on total work completed in the contract.

**(3)** The remaining portion of the pay item amount will be paid when a copy of the final SWPPP and all accompanying documentation, including inspection reports, water quality sampling results, and annual report submittals, is submitted and accepted after resolution of the final inspection punch list items.

**(b)** Progress payments for erosion and sediment control measures or devices will be paid as follows:

**(1)** 80 percent of the pay item amount will be prorated based on total work completed in the contract.

**(2)** 20 percent of the pay item amount will be paid at final acceptance.

Include if project does NOT require coverage under an NPDES permit.

Use with either of the following pay items:

15701-0000 Soil Erosion Control LPSM or

Individual pay items for soil erosion control BMPs.

## Section 157. — SOIL EROSION AND SEDIMENT CONTROL

**Construction Requirements**

**157.04 General.** Delete this Subsection and substitute the following:

Provide and implement a site-specific soil erosion and sediment control plan coordinated with the Contractor’s operations. Develop a soil erosion and sediment control plan to include necessary measures to minimize erosion and keep eroded soil particles from leaving the construction site. Submit the soil erosion and sediment control plan to the CO at or before the preconstruction conference. Allow 30 days for CO review and approval.

Contract permits amend the requirements of this Section. Do not modify the type, size, or location of controls or practices without approval.

If soil erosion and sediment control measures are not functioning as intended, take corrective action to eliminate or minimize pollutants in stormwater discharges from the project.

Do not import wood chips without approval.

Provide certified weed free devices.

Do not use monofilament plastic for erosion or sediment control products.

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## Section 203. — REMOVAL OF STRUCTURES AND OBSTRUCTIONS

**Construction Requirements**

Include if project has concrete removal.

**203.05 Removing Material.** Add the following:

Remove concrete according to Subsection 572.06.

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## Section 204. — EXCAVATION AND EMBANKMENT

**Construction Requirements**

Include if topsoil will be conserved.

**204.05 Conserved Topsoil.** Delete the first sentence and substitute the following:

Conserve topsoil from the roadway excavation and from embankment foundation areas to the extent and depth determined by the CO.

Include if controlled blasting is required, even if no rock excavation pay item is included. Check with Geotech on the necessity of controlled blasting.

**204.06(a) Rock cuts.** Add the following:

When blasting rock, use controlled blasting methods according to Subsection 205.08(b).

Include if using pay item 20402-0000 Subexcavation.

**204.07 Subexcavation.** Delete this Subsection and substitute the following:

Geotech to specify whether separation (woven) or stabilization (non-woven) geotextile to be used for project.

Use <<<select either separation or stabilization>>> geotextile.

Notify the CO of the type and source of backfill material anticipated for subexcavation work at the preparatory phase meeting according to Subsection 153.06(a). Excavate unsuitable materials to the limits shown in the plans, or as directed. Notify the CO of any additional locations requiring subexcavation, or which require a change in surface dimension or depth. Advise the CO of any adverse conditions such as active subsurface water or unstable soil conditions before backfilling. Dispose of unsuitable material according to Subsection 204.14. Do not subexcavate during periods of inclement weather.

Submit a neat line drawing of the excavated volume for each subexcavation before backfilling. Place geotextile according to Section 207 before placing soil or aggregate backfill materials in the subexcavation. Place and compact soil or aggregate backfill according to Subsection 204.11. Replace removed pavement with asphalt concrete conforming to Section 403, Type II. Prevent backfill materials from becoming contaminated with unsuitable materials. Replace the excavated structural section with the structural section shown in the typical sections in the plans. Adjust the subgrade elevation to accommodate the replacement structural section.

Include if using pay item 20402-0000 Subexcavation.

**204.15 Acceptance.** Add the following:

Asphalt concrete will be evaluated under Section 403.

Include if using pay item 20401-0000 Roadway excavation.

**Measurement**

**204.16(a)(1)** Delete Subsection *(h)* and substitute the following:

*(h)* Conserved material taken from pre-existing stockpiles and used in Section 204 work, except topsoil measured under Section 624. Only approved materials required to be conserved are eligible for measurement under this item.

**Measurement**

Include if using pay item 20402-0000 Subexcavation.

**204.16(f) Subexcavation.** Add the following:

Do not measure geotextile for payment.

Include if using pay item 20401-0000 Roadway excavation.

**Payment**

**204.17** Add the following:

Payment for pay item 20401-0000 is limited to 10 percent of the plan quantity of excavation in the cut until the slope rounding in that cut is completed.

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Include if using a Section 207 pay item.

## Section 207. — EARTHWORK GEOSYNTHETICS

**Measurement**

**207.09** Delete this Subsection and substitute the following:

Measure the Section 207 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

Do not measure return wraps at edges of the reinforced areas.

02/25/2025

Include if using a Section 211 pay item.

## Section 211. — ROADWAY OBLITERATION

**Measurement**

**211.06** Delete this Subsection and substitute the following:

Measure the Section 211 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

Do not measure areas within slope stake limits.

02/25/2025

Include if project has rock buttresses or rockeries.

## Section 252. — ROCKERY, SPECIAL ROCK EMBANKMENT, AND ROCK BUTTRESS

**Table 252-1** Delete the Durability index (coarse) requirement for both Rock for Buttresses and Rock for Rockeries.

02/25/2025

Include if the project has MSE walls.

## Section 255. — MECHANICALLY-STABILIZED EARTH WALLS

**Material**

**255.02** Add the following:

Common backfill 704.01

**255.04 Wall Erection.** Delete the second sentence of footnote (1) in Table 255-1 and substitute the following:

For example, 65 feet height multiply 6.5×value.

02/25/2025

Include if the project has reinforced concrete retaining walls.

## Section 258. — REINFORCED CONCRETE RETAINING WALLS

**Measurement**

**258.08** Delete this Subsection and substitute the following:

When measuring retaining walls by the square foot, measure from gutter line at top of finished roadway to bottom of wall, excluding footings.

**Payment**

**258.09** Add the following:

Payment will be made under the reinforced concrete retaining wall pay item listed in the bid schedule which corresponds to the actual constructed height. For constructed wall heights that fall between two pay item heights, payment will be made under the pay item which most nearly describes the actual height. (For example, walls measuring 6.99 feet in height will be paid as a 6 foot wall, and walls measuring 7.00 feet in height will be paid as an 8 foot wall.)

02/25/2025

Include if using Section 301 pay item (project has **more** than 5000 tons (statistical acceptance) of aggregate base).

## Section 301. — UNTREATED AGGREGATE COURSES

**Construction Requirements**

**301.03 General.** Add the following:

For base course set target values within the gradation ranges shown in Table 703-1, grading C, D, or E.

For surface course set target values within the gradation range shown in Table 703-1, grading F, G, or H.

02/25/2025

Include if using a Section 302 pay item (projects with **less** than 5000 tons of crushed aggregate (certification acceptance)).

## Section 302. — CRUSHED AGGREGATE

**302.06 Acceptance.** Add the following to the second paragraph:

Sample material at the frequency shown in Table 302-1. Materials that do not meet the approved certification will be considered unacceptable.

Delete Table 302-1 and substitute the following:

**Table 302-1**

**Sampling, Testing, and Acceptance Requirements**

| **Material or Product** | **Type of Acceptance (Subsection)** | **Characteristic** | **Test Methods Specifications** | **Sampling Frequency** | **Point of Sampling** | **Split Sample** | **Reporting Time** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Production** | | | | | | | |
| Crushed aggregate(1) | Measured & tested for conformance (106.04) | Moisture- density | AASHTO T 180, Method D(3) | 1 per aggregate supplied | Production output or stockpile | Yes | Before using in work |
| Gradation(2) | AASHTO T 11 & T 27 | 1 per 500 tons | From the windrow or roadbed after processing | Yes | Before placing next layer |
| Density | AASHTO T 310 or other approved procedures | 1 per 500 tons | In-place after compaction | No | Before placing next lift |
| Crushed aggregate | Process control (153.03) | Moisture content (in-place) | AASHTO T 310 or other approved procedures | 1 per 500 tons | In-place after compaction | No | Before placement of next lift or as requested |
| **Finished Product** | | | | | | | |
| Crushed aggregate | Measured & tested for conformance (106.04) | Surface tolerance & grade | Subsection 301.06 | Determined by the CO | Surface of final course | No | Before placement of next layer or as requested |

(1) Sampling and testing required for roadway aggregate.

(2) Use only sieves indicated for the specified gradation.

(3) At least 5 points per proctor.

02/25/2025

Include if using a Section 304 pay item.

## Section 304. — FULL DEPTH RECLAMATION

**Construction Requirements**

**304.03 General.** Add the following:

Before starting full depth reclamation work, obtain approval of the Job-Mix Formula for pavement design and proposed construction schedule.

Complete pulverizing or processing and paving operations such that no portion of a pulverized or processed surface is left unpaved for more than 14 days.

Include if removal of the pavement section is necessary to correct the subgrade issues, such as making superelevation corrections or minor horizontal and vertical adjustments. This should only be used for specific areas and not for the entire project length.

Submit a plan for approval 14 days before starting pulverizing. Include in the plan details on the following for the pulverized material and new aggregate (if required):

**(a) Processing**. Describe procedures, methods, equipment, and extents of processing.

**(b) Removal and handling.** Describe procedures, methods, sequencing, and equipment used for removing the pulverized material.

**(c) Storage.** If the pulverized material will be moved to a separate location and stored, provide relevant details for storing the material, such as duration and location of stockpiling the material. If applicable, stockpile material according to Subsections 314.04 and 314.05.

**(d) Quantities.** Show the anticipated quantities in cubic yards of pulverized material that will be processed, removed, stored (if applicable), and re-used.

**(e) Sequencing.** Describe the timing and order of operations to complete the work.

**(f) Mixing and placement locations.** Describe the locations where the pulverized material will be placed and mixed with new aggregate (if required).

**304.05 Pulverizing.** Add the following:

Remove the pulverized material for use as crushed aggregate at the locations shown in the plans.

**304.05A Preparing Surface.** (Added Subsection).

Prepare the surface on which the pulverized material is placed according to Section 204 or 303 as applicable.

02/25/2025

Include if project has cold in-place recycled asphalt base course.

## Section 310. — COLD IN-PLACE RECYCLED ASPHALT BASE COURSE

**Material**

**310.02** Delete the following:

Lime for asphalt mixtures 725.03(c)

Add the following:

Lime for soil stabilization 725.03(b)

02/25/2025

Include if using a Section 401 pay item.

The CFL Incentives and Adjustments spreadsheet that matches the roughness calculations shown in this SCR has a revised date of 9/5/24.

## Section 401. — ASPHALT CONCRETE PAVEMENT BY GYRATORY MIX DESIGN METHOD

Enter the pavement roughness type and asphalt binder grade in the highlighted areas below. Materials will provide to the designer the following:

**Roughness type**: Use the following guidelines:

**Type I** is for 3R mill and fill ONElift. This requires before and after IRI measurement.

-Type I-A is for speeds greater than 35 mph.

-Type I-B is for speeds less than 35 mph.

**Type II** is for 3R mill and fill TWO lifts. This requires before and after IRI measurement.

-Type II-A is for speeds greater than 35 mph.

-Type II-B is for speeds less than 35 mph.

**Type III** is for 4R and 3R work with pulverization, base, or other typical section work prior to placing the asphalt.

-Type III-A is for speeds greater than 35 mph.

-Type III-B is for speeds less than 35 mph.

**Asphalt binder grade**: Binder grade is project specific.

**Pressure Aging Vessel Temperature**: The default temperature should be 212°F. If the project is in a desert environment the temperature could change to 230°F in thehighlighted area below.

**Construction Requirements**

**401.03 Composition of Mix (Job-Mix Formula).** Add the following:

A minimum of one percent antistrip additive, type 3 (lime) is required in the asphalt concrete mixture.

Pavement roughness is type <<<I-A, I-B, II-A, II-B, III-A, or III-B>>>, and IV as shown in Subsection 401.16.

Asphalt binder grade is PG <<<xx-xx>>>. The Pressure Aging Vessel test temperature is <<<212>>> °F.

Add the following after the first paragraph:

Compact specimens with the gyratory effort corresponding to the design ESAL level of 0.3 to <3 million. Use a gyratory compactor which meets the internal angle requirement according to AASHTO T 312.

If more than 1.0 percent hydrated lime is proposed in the JMF, provide AASHTO T 283 test results showing the additional lime is necessary to meet the minimum tensile strength ratio requirements in Table 401-1.

**(e) Verification.** Delete the first paragraph and substitute the following:

The verification process starts when all required job mix formula documentation and materials are received.The information supplied in the Contractor’s job mix formula must agree with the verification test results within the tolerances shown below. Do not begin asphalt concrete mix production for the control strip until the JMF has been approved.

**(e) Verification.** Delete Subsections (3) and (4) and substitute the following:

**(3) Bulk specific gravity of aggregate (Gsb).** The Contractor’s coarse and fine Gsb is verified if the CO’s results are within 0.038 for AASHTO T 85 and 0.066 for AASHTO T 84.

**(4) VMA.** The Contractor’s VMA is verified if the CO’s result is within the specification limit in Table 401-1.

**(e) Verification.** Add the following:

**(8) Hveem stabilometer value**. The Contractor’s Hveem stabilometer value is verified if the CO’s result is above the minimum specification of 30.

**Table 401-1 Gyratory Asphalt Concrete Mix Design Requirements, AASHTO R 35.** Add the following note:

(5) For AASHTO T 283, use 4-inch diameter specimens. Note that AASHTO T 283 requires a freeze-thaw cycle.

**401.15 Joints, Trimming Edges, and Cleanup.** Add the following:

Make the longitudinal joint in the top layer at the centerline of the pavement on two-lane roadways or at the lane lines of roadways with more than two lanes. Establish the centerline of the pavement from recorded data defined in Subsection 152.05(b) or construction staking data if furnished by the Government. Offset the longitudinal joint in the layer immediately below at least 6 inches from the joint.

See the plans for curve widening locations and details. For two-lane roadways make the longitudinal joint at the centerline of the pavement. Do not vary the shoulder width where curve widening exists.

At connections to existing pavements and previously placed lifts, make the transverse joints vertical to the depth of the new pavement. Form transverse joints by cutting back the previous run to expose the full depth of the course.

**401.16 Pavement Roughness.** Add the following to the first paragraph:

Coordinate profiling operations with the CO. Export each profile (elevation, distance data, header, and marker information) in pavement profile format (ppf) and format specific to the profiler manufacturer to a CD or DVD and submit after profiling. Do not submit non-continuous data files.

**401.16(c) Type III pavement roughness.** Delete this Subsection and substitute the following:

Measure the profile of the final pavement surface for payment. Measure the profile before placing a surface treatment and within 21 days of completing roadway paving. No defective area corrections are allowed on the final pavement surface except at locations that do not meet Subsection 401.16(d). Submit electronic files and the analysis to the CO for analysis. Correct locations that do not meet Subsection 401.16(d) according to Subsection 401.17.

Pay factors from Table 401-5 will be used in conjunction with the long continuous histogram printout from ProVAL’s Smoothness Assurance Analysis function using a long continuous 528-foot segment length for analysis. The final PFrough is equal to the sum of the products of the individual pay factors indicated in Table 401-5 multiplied by the ratio of individual lane miles to the overall project lane miles and by ProVAL’s corresponding histogram percentages, divided by 100. The final PFrough will be determined to three decimal places.

Lower paving lifts can be profiled to locate areas of localized roughness and estimate the final profile pay factor. Defective areas can be corrected on lower paving lifts according to Subsection 401.17.

If the final roadway MRI for the entire traveled way is greater than the value shown in Table 401-5, place a minimum 1-inch overlay over the entire paved surface.

Delete Tables 401-8 and 401-9 and substitute the following:

Table 401-8

Type III Pavement Roughness Pay Factors

| **Mean Roughness Index**  **(MRI)**  **Type III-A, inch/mile** | **Mean Roughness Index**  **(MRI)**  **Type III-B, inch/mile** | **Pay Factor**  **(PFrough)** |
| --- | --- | --- |
| Localized roughness threshold  170 inch/mile | Localized roughness threshold  190 inch/mile |  |
| If MRI of entire roadway  is greater than  125 inch/mile | If MRI of entire roadway  is greater than  140 inch/mile | Correct with Overlay |
| Greater than 95.0 | Greater than 110.0 | 0.700 |
| 95.0 to 90.0 | 110.0 to 105.0 | 0.750 |
| 90.0 to 85.0 | 105.0 to 100.0 | 0.800 |
| 85.0 to 80.0 | 100.0 to 95.0 | 0.850 |
| 80.0 to 75.0 | 95.0 to 90.0 | 0.900 |
| 75.0 to 70.0 | 90.0 to 85.0 | 0.950 |
| 70.0 to 65.0 | 85.0 to 80.0 | 0.970 |
| 65.0 to 60.0 | 80.0 to 75.0 | 1.000 |
| 60.0 to 55.0 | 75.0 to 70.0 | 1.010 |
| 55.0 to 50.0 | 70.0 to 65.0 | 1.020 |
| 50.0 to 45.0 | 65.0 to 60.0 | 1.030 |
| 45.0 to 40.0 | 60.0 to 55.0 | 1.040 |
| 40.0 to 35.0 | 55.0 to 50.0 | 1.050 |

**Table 401-9**

**Localized Roughness and Straightedge Measurement Pay Reductions**

| **Type I** | **Type II** | **Localized**  **Roughness Limit**  **MRI** | **Localized**  **Roughness**  **Limit**  **MRI, inch/mile** | **Type III-A** | **Type III-B** |
| --- | --- | --- | --- | --- | --- |
| **Deduction**  **per**  **Occurrence** | **Deduction**  **per**  **Occurrence** | **Deduction**  **per**  **Occurrence** | **Deduction**  **per**  **Occurrence** |
| $200 | $300 | Computed MRI value  according to Subsection:  401.16(b) for Types I and II  401.16(c) for Type III | 170.0 to 179.9 | $200 | - |
| 180.0 to 189.9 | $400 | - |
| 190.0 to 199.9 | $600 | $300 |
| 200.0 to 209.9 | $800 | $400 |
| 210.0 to 219.9 | $1,000 | $500 |
| 220.0 to 229.9 | $1,500 | $750 |
| 230.0 to 239.9 | $2,000 | $1,000 |
| > 240.0 | $4,000 | $1,500 |

02/25/2025

Include if using a Section 402 pay item (projects with **more** than 7000 tons of asphalt concrete pavement).

Use on projects when a Hveem or Marshall job-mix formula will be developed for the specific project, and statistical acceptance will be used. Be mindful of the project duration: it takes 1 month to do a mix design.

## Section 402. — ASPHALT CONCRETE PAVEMENT BY HVEEM OR MARSHALL MIX DESIGN METHOD

Enter the pavement roughness type and asphalt binder grade in the highlighted areas below. Materials will provide to the designer the following:

**Roughness type**: Use the following guidelines:

**Type I** is for 3R mill and fill ONE lift. This requires before and after IRI measurement.

-Type I-A is for speeds greater than 35 mph.

-Type I-B is for speeds less than 35 mph.

**Type II** is for 3R mill and fill TWO lifts. This requires before and after IRI measurement.

-Type II-A is for speeds greater than 35 mph.

-Type II-B is for speeds less than 35 mph.

**Type III** is for 4R and 3R work with pulverization, base, or other typical section work prior to placing the asphalt.

-Type III-A is for speeds greater than 35 mph.

-Type III-B is for speeds than 35 mph.

**Asphalt binder grade**: Binder grade is project specific.

**Pressure Aging Vessel Temperature**: The default temperature should be 212°F. If the project is in a desert environment the temperature could change to 230°F in thehighlighted area below.

**Construction Requirements**

**402.03 Composition of Mix (Job-Mix Formula).** Add the following:

A minimum of 1.0 percent antistrip additive type 3 (lime) is required in the asphalt concrete mixture.

Aggregate grading designation is ¾-inch or ½-inch as shown in Table 703-4.

Pavement roughness is type <<<I-A, I-B, II-A, II-B, III-A, or III-B>>> and IV as shown in Subsection 402.16.

Asphalt binder grade is PG <<<xx-xx>>>. The Pressure Aging Vessel test temperature is <<<212>>> °F.

Add the following after the first paragraph:

If more than 1.0 percent hydrated lime is proposed in the JMF, provide AASHTO T 283 test results showing the additional lime is necessary to meet the minimum tensile strength ratio requirements in Table 402-1.

**402.03(e) Verification.** Delete Subsections (3) and (7) and substitute the following:

**(3) Bulk specific gravity of aggregate (Gsb).** The Contractor’s coarse and fine Gsb is verified if the CO’s results are within 0.038 for AASHTO T 85 and 0.066 for AASHTO T 84.

**(7) TSR.** The Contractor’s TSR result is verified if the CO’s result is within the specification limit in Table 402-1.

02/25/2025

Include if using a Section 403 pay item (projects with a short duration or quantity less than 7000 tons).

This section does not use statistical acceptance or QlPay and only requires a 10-foot straightedge for ride control (unless IRI is added).

## Section 403. — ASPHALT CONCRETE

**Construction Requirements**

**403.02 Composition of Mix (Job-Mix Formula).** Add the following:

If the project warrants specifying a special grade of asphalt binder that may not be commonly used, add the grade below. This could include a polymer modified binder or a very cold climate binder.

Use an asphalt binder that would be specified for the project location and is designated according to AASHTO M 320.

The CO may perform mix design-verification testing to confirm the mix meets the contract requirements. If verification testing is required, submit a loose mix sample to the CO 14 days before placement.

Subsection 403.11 Pavement Straightedge Measurement: if the length of the project is greater than 5 lane miles OR if speed is greater than 35 MPH, consider deleting the straightedge requirement and adding the IRI requirement from Section 401/402. This should be discussed with the Project Manager and Materials.

02/25/2025

Include if using a double course chip seal pay item measured by SQYD (not needed if double chip seal measured by the ton).

## Section 407. — CHIP SEAL

**Measurement**

**407.14** Add the following:

When double course chip seal (chip seal, type 2) is measured by the square yard, measure the area only once. Chip seal, type 2 by the square yard includes both applications.

02/25/2025

Include if all the following apply:

(1) NPS or BLM project;  
(2) Funded by the Great American Outdoors Act; and  
(3) Confirmed by the PM.

## Section 431. — ASPHALT CONCRETE PAVEMENT WARRANTY (ADDED SECTION)

**Description**

**431.01** This work consists of providing a warranty for hot or warm mix asphalt concrete pavement.

**Construction Requirements**

**431.02** **General.** Follow the requirements of FAR Clause 52.246-21 Warranty of Construction, as amended.

**431.03** **Warranty Requirement.** A 1-year warranty is required on all asphalt pavement items. The 1-year period begins from the date of final acceptance. Repair all warranty work items at no additional cost to the Government. Table 431-1 contains warranty criteria information.

The CO will make a determination on conditions exceeding contract thresholds in Table 431-1 values requiring remedial action and notify the Contractor. During the warranty period, the Contractor may monitor the project using nondestructive methods and may participate with the CO in the field evaluations upon request.

**Table 431-1  
Evaluation Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Warranty Indicator** | **Threshold/Description** | **Initial Identification** | **Evaluation Methods(2)** | **Possible Remedial Action** |
| Shoving/Rutting | An occurrence of a localized depression of greater than 0.375 inch | Visual inspection | Measure and document length and width of shoving/rutting. | Mill distressed area to a full lane width and 50-foot length on each side and replace surfacing. Depth of milling not to exceed pavement depth. |
| Potholes, Raveling, Slippage/ delamination | 1. Pothole - area of 1 ft2 or greater and depth greater than 1 inch 2. Raveling - wearing away of the pavement surface to a depth exceeding 0.5 inch. 3. Slippage/Delamination - tearing of the asphalt surface | Visual inspection | Confirm initial findings by measurement and visual observation. Document locations and quantity of distress exceeding threshold. | Remove and replace distressed area to a depth no greater than the pavement depth, to a full lane width, and 50-foot length on each side. |
| Cracking (Longitudinal and Transverse)(1) | Visible cracking greater than 0.125 inch in width | Visual inspection | Measure and document crack type, length, and width. | Remove and replace distressed area to a depth no greater than the pavement depth and to the full lane width |

Note: If distance between repair areas is less than 100 feet, the CO may require one continuous repair.

(1)Longitudinal and transverse joints will not be considered cracks.

(2)Measure using methodologies in FHWA-HRT-13-092 (Rev May 2014)

**431.04 Remedial Work.** Submit a remedial action plan within 15 days of notification of the CO determination. Begin remedial work within 30 days of action plan approval. Complete all work within 90 days of notification of the CO determination unless otherwise approved.

Notify the CO in writing before beginning any remedial work. Complete remedial work according to the specifications for that work item and as approved. Submit a traffic control plan and provide temporary traffic control during the remedial work according to Sections 156 and 635. If remedial work necessitates a corrective action to overlying asphalt layers, pavement markings, adjacent lanes, roadway shoulders, or other affected contract work, perform these corrective actions as part of the remedial action. Complete all remedial work as approved.

**431.05 Acceptance.** The CO will furnish written acceptance of the warranted construction upon expiration of the warranty period or satisfactory completion of any required remedial actions, whichever is later.

**Measurement and Payment**

**431.06** Do not measure warranty remediation for payment. See Subsection 109.05.

02/25/2025

Include if project has concrete pavement

## Section 501. — MINOR CONCRETE PAVEMENT

**Construction Requirements**

**501.03 Composition (Concrete Mix Design).** Delete the second sentence and substitute the following:

Submit concrete mix designs for approval on Form FHWA 1606, *Minor Portland Cement Concrete Mix Design*, at least 30 days before production.

02/25/2025

Include if all the following apply:

(1) NPS or BLM project;  
(2) Funded by the Great American Outdoors Act; and  
(3) Confirmed by the PM.

## Section 510. — CONCRETE PAVEMENT WARRANTY (ADDED SECTION)

**Description**

**510.01** This work consists of providing a warranty for concrete pavement.

**Construction Requirements**

**510.02 General.** Follow the requirements of FAR Clause 52.246-21 Warranty of Construction, as amended.

**510.03** **Warranty Requirement.** A 1-year warranty is required on all concrete pavement items. The 1-year period begins from the date of final acceptance. Repair warranty work items at no additional cost to the Government. Table 510-1 contains warranty criteria information.

The CO will make a determination on conditions exceeding contract threshold values requiring remedial action and notify the Contractor. During the warranty period, the Contractor may monitor the project using nondestructive methods and may participate with the CO in the field evaluation upon request.

**Table 510-1  
Evaluation Method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Warranty Indicator** | **Threshold/Description/Severity** | **Initial Identification** | **Evaluation Methods(2)(3)** | **Potential Remedial Action** |
| Cracking(1) | All cracking including corner cracks, longitudinal & transverse cracks, and durability cracking. | Visual | Measure and document crack type, width, and lengths. | Remove and replace cracked slabs |
| Spalling | Breaking, chipping, or fraying of slab edge, 2-inches or greater width | Visual | Measure and document the spall locations widths, and lengths | Work with CO to determine extent of repair and remediation needed. Remediation will be dependent on the extent and severity of spalling. |
| Surface Defects | 1. Popouts - pieces of pavement broken loose from the surface with a diameter of greater than 2 inches and a depth greater than 0.5 inch. 2. Scaling - deterioration of the upper concrete slab surface including loss of surface mortar and aggregate. | Visual | Confirm initially survey findings by measurement and visual observations. Document locations and quantity of distress exceeding threshold requirements. | Work with CO to determine extent of repair and remediation needed. Remediation will be dependent on the extent and severity of distress. |
| Faulting / Dropoff | Difference in elevation across a joint exceeding 0.5 inch | Visual | Measure using a faultmeter. Take as many measurements as needed to properly characterize the distress location. | Remove and replace distressed slabs including correction of the cause of faulting/dropoff. |

(1)Longitudinal and transverse joints will not be considered cracks.

(2)Detailed pavement evaluation completed if need is identified during initial condition survey.

(3) Measure using methodologies in FHWA-HRT-13-092 (Rev May 2014)

**510.04 Remedial Work.** Submit a remedial action plan within 15 days of notification of the CO determination. Begin remedial work within 30 days of action plan approval. Complete all work within 90 days of notification of the CO determination unless otherwise approved.

Notify the CO in writing before beginning any remedial work. Complete remedial work according to the specifications for that work item and as approved. Submit a traffic control plan and provide temporary traffic control during the remedial work according to Sections 156 and 635. If remedial work necessitates a corrective action to pavement markings, adjacent lanes, roadway shoulders, or other affected contract work, perform these corrective actions as part of the remedial action. Complete all remedial work as approved.

**510.05 Acceptance.** The CO will furnish written acceptance of the warranted construction upon expiration of the warranty period or satisfactory completion of any required remedial actions, whichever is later.

**Measurement and Payment**

**510.06** Do not measure warranty remediation for payment. See Subsection 109.05.

02/25/2025

Include if integral color is required in structural concrete. Generally structural concrete is required for bridges, culverts, walls, and foundations (items that require load analysis or “that you can drive on”).

Insert the description of the concrete to be colored and the color number in the spaces provided below.

## Section 552. — STRUCTURAL CONCRETE

**552.14 Finishing Formed and Deck Concrete Surfaces.** Add the following:

**(h) Class 8 - Integral color finish.** Provide integral color for all concrete in the <<<describe>>> by adding a concrete coloring agent. Match the color AMS-STD-<<<fill in number>>> in AMS Standard 595A for the colored concrete (after curing).

02/25/2025

Include if project has reinforcing steel.

## Section 554. — REINFORCING STEEL

**554.08 Placing and Fastening.** Delete the fourth sentence of the fourth paragraph and substitute the following:

Place reinforcing steel in deck slabs within +¼  inch of the vertical plan location.

02/25/2025

Include if steel structures are required.

## Section 555. — STEEL STRUCTURES

**Construction Requirements**

The AISC Quality Certification Program identifies categories related to bridge fabrication. Insert the applicable category. Coordinate with the Bridge Engineer.

**555.07 Fabrication.** Delete the first sentence of the first paragraph and substitute the following:

Fabricate the structural steel in a fabricating plant that is <<<Certified Bridge Fabricator-Simple (SBR), Certified Bridge Fabricator-Intermediate (IBR) OR Certified Bridge Fabricator-Advanced (ABR) with supplemental program requirements for: Applicators of Complex Coatings Endorsement (CCE) or Fracture Control Endorsement (FCE)>>>, under the AISC, *Quality Certification Program*.

The AISC Quality Certification Program identifies categories related to bridge erection. Insert the applicable category. Coordinate with the Bridge Engineer.

**555.18 Erection.** Delete the third sentence of the first paragraph and substitute the following:

Use steel erector certified under the Certification Program for Erectors (CSE) with <<<Seismic Endorsement, Metal Deck Endorsement, or Bridge Endorsement>>> under the AISC, *Quality Certification Program*.

03/04/2025

Include if removing concrete by hydrodemolition.

## Section 560. — REMOVAL OF CONCRETE BY HYDRODEMOLITION

**Construction Requirements**

**560.04 General.** Delete the third paragraph and substitute following:

Dispose of wastewater and debris according to Subsection 203.07.

02/25/2025

Include if project includes staining riprap, boulders, slopes, guardrail or wall facing.

## Section 563. — COATING

**Description**

**563.01** Add the following:

This work also consists of finishing surfaces with a reactive colorant to produce a natural weathered appearance.

**Material**

**563.02** Add the following:

Weathering agent 725.21

**Construction Requirements**

**563.06 Protection of Public, Property, and Workers.** Add the following:

Comply with all applicable federal, state, and local regulations. Furnish material SDS for all cleaning and staining products.

**563.12A Weathering Agents.** (Added Subsection).

Include if staining guardrail is required.

Apply weathering agent to the required galvanized surfaces at the manufacturer’s facility. After application, cure the treated guardrail materials to develop the full coloration according to the manufacturer’s recommendations.

Repair damages or discoloration to the final finish by field applying weathering agent according to the manufacturer’s recommendations.

Include if staining rock slopes, wall facing, boulders, or riprap is required.

Apply weathering agent to slopes, wall faces, placed boulders, and riprap as directed. Prepare surfaces and apply weathering agents according to the manufacturer’s recommendations.

Repair damage to the final finish on non-metallic surfaces by applying weathering agent to damaged areas until the finish matches that of the approved applicable test section.

**(a) Slopes and wall faces.** Prepare a minimum of three test sections, each 5 feet by 5 feet, before production application of the weathering agent. After application, cure the test sections to develop the full coloration according to the manufacturer’s recommendations. Use different dilutions and application methods on the test sections to determine the mix and method to best match the surrounding terrain. Mark each section and record mixture and application used on each section.

After the curing period, the CO will select a test section for production work.

If none of the test sections are approved, adjust the dilutions and application methods and prepare additional test sections at no additional cost to the Government.

Use the approved dilution and application method during production work. Control overspray and protect adjacent surfaces.

**(b) Rock and boulders.** Apply weathering agent at the rate necessary to achieve the desired color. Prepare a test section, 3 feet by 3 feet, before production application of the weathering agent. Use the approved application rates to apply the weathering agent over the CO designated areas. Control overspray and protect adjacent surfaces.

Include if staining riprap, boulders, slopes, guardrail or wall facing is required.

**563.13 Acceptance.** Add the following:

Reactive colorant finishes will be evaluated under Subsection 106.02.

02/25/2025

Include if bridge project with bearing devices.

## Section 564. — BEARING DEVICES

**Construction Requirements**

**564.04 Elastomeric Bearings.** Add the following:

Use material that meets the flash tolerance, finish, and appearance requirements of the *Rubber Handbook* as published by the Rubber Manufacturer’s Association Incorporated, RMA F3 and T.063 for molded bearings and RMA F2 for extruded bearings.

02/25/2025

Include if project has drilled shafts.

## Section 565. — DRILLED SHAFTS

**565.08 Concrete for Drilled Shafts.** Delete Table 565-4 and substitute the following:

**Table 565-4**

**Concrete for Drilled Shafts**

|  |  |  |
| --- | --- | --- |
| **Method** | **Class** | **Slump** |
| Shafts constructed without drilling fluid | C(1) | 7±1 inches |
| Shafts constructed with drilling fluid | C(1) | 8±1 inches |
| Shafts for underwater placement | S | – |

(1) Use Class C(AE) concrete on portions of the drilled shaft above the finished ground-line unless otherwise noted.

02/25/2025

Include if project has structural concrete removal. Verify with Bridge. Edit hammer impact strength if necessary to meet project-specific conditions.

## Section 572. — CONCRETE REPAIR

**572.06. Concrete Repair.** Delete the second sentence of the first paragraph and substitute the following:

Use power-driven hand tools and other hand tools to remove existing concrete. Do not use jackhammers heavier than 30 pounds. Do not operate jackhammers and mechanical chipping tools at an angle more than 45 degrees measured from the surface of the concrete.

02/25/2025

Include if project has concrete for minor structures.

## Section 601. — MINOR CONCRETE

Delete Table 601-2 and substitute the following:

**Table 601-2**

**Sampling, Testing, and Acceptance Requirements**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Material or Product (Subsection)** | **Type of Acceptance (Subsection)** | **Characteristic** | **Test Methods Specifications** | **Sampling Frequency** | **Point of Sampling** | **Split Sample** | **Reporting Time** | **Remarks** |
| **Source** | | | | | | | | |
| Aggregate (fine & coarse) | Measured & tested for conformance (106.04 & 105) | Quality | Subsections 703.01 & 703.02 | 1 per material type | Source of material | Yes | Before producing | **−** |
| **Mix Design** | | | | | | | | |
| Concrete composition (601.03) | " | All | Subsection 601.03 | 1 per mix design | Source of material | If requested | Before producing | **−** |
| **Production** | | | | | | | | |
| Concrete(1) | Measured & tested for conformance (106.04) | Density | AASHTO T 121 | 1 set per truck load, but not less than 1 per day | Point of discharge | No | Upon completing tests | − |
| Air content | AASHTO T 152 or AASHTO T 196 | " | " | " | " | − |
| Slump | AASHTO T 119 | " | " | " | " | − |
| Temperature | ASTM C1064 | " | " | " | " | − |
| Compressive strength(2)(3) (28-day) | AASHTO R 100 & T 22 | 1 set per 30 yd3, but not less than 1 per day | Point of discharge(4) | Yes | 28 days | (5) |
| (1) Sample according to AASHTO R 60, except composite samples are not required.  (2) Cast at least four compressive strength test cylinders for 6- by 12-inch specimens or six compressive strength cylinders for 4‑ by 8-inch and carefully transport the cylinders to the job site curing facility.  (3) A single compressive strength test result is the average result from two 6- by 12-inch or three 4- by 8-inch cylinders cast from the same load.  (4) If the point of placement is different from the point of discharge, correlate the discharge tests with the placement tests to document the changes.  (5) Deliver cylinders to the CO or designated laboratory for scheduled testing. | | | | | | | | |

02/25/2025

## Section 609. — CURB AND GUTTER

Include if project has existing asphalt gutters that will be overlaid.

**Construction Requirements**

**609.06 Asphalt Concrete Curb or Gutter.** Add the following:

Before overlaying existing asphalt gutters, clean and seal the cracks according to Section 414.

Include if project has asphalt gutter or asphalt curb.

**Measurement**

**609.11** Add the following:

When measuring asphalt gutters, measure the length along the face of the curb.

Do not measure the asphalt mixture included in asphalt curb or asphalt gutter.

02/25/2025

## Section 617. — GUARDRAIL

**Construction Requirements**

Include if using flared or tangent w-beam guardrail terminals.

Check with the maintaining agency to determine whether a specific terminal type (e.g. MSKT, SRT-350, FLEAT, or others) is required. If so, insert the specific terminal type/name in the highlighted area below. Write a ‘brand name or approved equal’ memo to justify use of a specific proprietary terminal. If the maintaining agency does not have a preference, insert either flared or tangent in the highlighted area below.

Specify the crash testing criteria required (typically MASH, limited situations will use NCHRP 350).

Specify the required test level (test level 2 (for 45 mph and less) or 3 (for 50 mph and greater)).

**617.04 General.** Add the following:

Provide <<<flared or tangent>>> terminals meeting <<<MASH or NCHRP 350>>> Test Level <<<2 or 3>>>.

Include if galvanized steel guardrail system elements require an aesthetic finish by using a reactive colorant product applied to the guardrail.

**617.04** **General.** Add the following:

Treat all galvanized material for guardrail systems with a weathering agent according to Section 563.

**617.11 Acceptance.** Add the following:

Coating will be evaluated under Section 563.

02/25/2025

Include if using a pay item for biological or archeological services.

## Section 623. — GENERAL LABOR

**Construction Requirements**

**623.02 General.** Delete the first paragraph and substitute the following:

The CO will order in writing labor and specialized labor, excluding biological and archeological services, to complete work and services on the project. Provide competent workers to perform the work.

Perform biological and archeological services according to Subsection 107.10(e).

Add the required qualifications of the biologist and archeologist. Coordinate with Environment.

**623.03(b) Technical services.** Add the following:

**(1) Biological and archeological services**. <<<Describe qualifications.>>>

02/25/2025

Include if a specific seeding season will be identified in the contract or has been requested by a Maintaining/Cooperating Agency.

## Section 625. — TURF ESTABLISHMENT

**Construction Requirements**

**625.03 General.** Delete the first sentence and substitute the following:

Perform all seeding from <<<fill in date>>> to <<<fill in date>>>.

Include if paying for turf establishment by the acre or square yard.

**Measurement**

**625.11** Delete the second sentence and substitute the following:

When measuring turf establishment and supplemental applications by the acre or square yard, measure on the ground surface.

02/25/2025

Include if the Contractor is required to construct a temporary stream diversion.

## Section 628. — TEMPORARY STREAM DIVERSIONS

**Construction Requirements**

**628.04 General.** Delete the first sentence and substitute the following:

Provide a stream diversion system for expected flow during in-water work activities that accommodates at least a <<<2-year>>> peak flood event of <<<350>>> cubic feet per second.

**628.05(d)** **Bypass pumping diversion.** Delete the third sentence and substitute the following:

Place a mesh screen over the intake with a maximum mesh size of 3/32 inch.

02/25/2025

Include if project has rumble or mumble strips.

## Section 633. — PERMANENT TRAFFIC CONTROL

**Construction Requirements**

**633.07 Rumble and Mumble Strips.** Add the following:

Provide equipment capable of milling concave indentations with a vacuum attachment to remove the residue from the roadway.

02/25/2025

## Section 634. — PERMANENT PAVEMENT MARKINGS

**Construction Requirements**

Include if project has striped parking areas.

**634.03 General.** Add the following:

Do not apply glass beads to parking area pavement markings.

Include if project has Type B waterborne paint.

**634.05 Waterborne Pavement Markings (Type B).** Delete the text and substitute the following:

Apply markings when pavement and air temperature are 50 °F and rising.

Do not heat the paint above 120 °F. Apply paint at a rate of 100 square feet per gallon.

Apply Type 1 glass beads on the paint at a rate of 6 pounds per gallon of paint.

Apply two coats of paint and glass beads. Apply the second coat in the opposite direction of the first application. Apply the second coat after the first coat is tack free.

Include if project has Type C waterborne paint.

**634.06 High-Build Waterborne Pavement Markings (Type C)**. Delete the text and substitute the following:

Apply markings when pavement and air temperature are 50 °F and rising.

Do not heat the paint above 120 °F. Apply paint at a rate of 70 square feet per gallon.

Apply glass beads using two dispensers. Apply Type 3 glass beads on the paint at a rate of 8 pounds per gallon immediately followed by Type 1 glass beads at a rate of 6 pounds per gallon.

**Measurement**

Include if project has pavement markings.

**634.13** Delete the third paragraph and substitute the following:

When pavement markings are measured by the linear foot or mile, measure the length of line applied along the centerline of each line applied regardless of color or line width. Measure broken and dotted pavement lines from end to end of the line including gaps. Measure solid pavement lines from end to end of each continuous line.

02/25/2025

## Section 635. — TEMPORARY TRAFFIC CONTROL

Include if the project has temporary construction signs.

**Construction Requirements**

**635.07 Construction Signs.** Add the following:

Provide the same type of sheeting on all post-mounted construction signs.

Include if temporary pavement markings are required.  
Also include Standards 635-2 and 635-3 in the plans.

**635.14 Temporary Pavement Markings and Delineation.** Add the following to (c):

For seasonal suspensions, apply the permanent pavement marking pattern with temporary traffic paint.

Add the following after paragraph (c):

**(d) Delineation for unmarked pavements with vehicle positioning guides.** For unmarked pavements, install signs and vehicle positioning guides as shown in the plans.

Add the following to the last paragraph:

If permanent pavement markings are not placed within 14 days, provide, at no additional cost to the Government, additional temporary delineation equivalent to the permanent pavement marking pattern.

**Measurement**

**635.26** Add the following:

Include if the project has a temporary pavement marking pay item.

Do not measure temporary signs and raised pavement markers used for vehicle positioning guides installed according to Standard 635-3.

Include if the project has a flagger or TCS pay item.

Do not measure flagging or pilot car operations performed by the TCS.

02/25/2025

Include if project has speed feedback signs.

## Section 636. — TRAFFIC SIGNAL, TRAFFIC COUNTER, LIGHTING, AND ELECTRICAL SYSTEMS

**Description**

**636.01** Add the following:

This work also includes installing speed feedback signs.

**636.06 Traffic Signal and Lighting Systems.** Add the following:

Provide speed feedback signs, including all pertinent installation hardware, conforming to the following:

**(a)** MUTCD compliant for color, location, legibility, light conditions, design, and installation requirements;

**(b)** Solar powered, 20 watt minimum;

**(c)** Theft-resistant and tamper-resistant battery with 2-year minimum manufacturer’s warranty;

**(d)** Commercially available;

**(e)** Breakaway pole or post mounted;

**(f)** Lettering size meeting the minimum design speed requirements; and

**(g)** Includes “YOUR SPEED XX MPH” message.

Include if partners want this option, as it is commercially available.

**(h)** Data acquisition capability.

02/25/2025

Include if the Contractor is required to provide the Government office. Coordinate with Construction.

## Section 637. — FACILITIES AND SERVICES

**637.03(a) Field office.** Add the following:

Provide a storage facility according to Subsection 637.04(c).

**637.04(l) Telephone.** Delete the first sentence.

**637.04(k)(1)** Delete this Subsection and substitute the following:

**(1)** One of the following:

*(a)* Fiber Optic Service (FIOS), Cable Internet Service, or Digital Subscriber Line (DSL), with the following properties:

*(1)* Download speed of at least 25 megabits per second; and

*(2)* Upload speed of at least 10 megabits per second; or

*(b)*Satellite connection with the following capabilities:

*(1)* Download speed of at least 5 megabits per second;

*(2)* Upload speed of at least 2 megabits per second; and

*(3)* Capable of mobile operation.

**637.04** Add the following after Subsection (m):

**(n) Hygiene supplies.** Provide toilet paper, hand soap, and paper towels for bathrooms.

**(o) All-in-One (AIO) device.** A self-feeding plain paper printer, copier, and scanner with the following minimum capabilities:

**(1)** Printing, copying, and scanning black and white and color hardcopies, for 3 sizes of paper (8½- by 11-inch, 8½- by 14-inch, and 11- by 17-inch);

**(2)** Equipped with 3 separate paper trays, 1 for each size paper;

**(3)** Automatic document feeder capable of making at least 20 copies per minute for each size paper;

**(4)** Reducing or enlarging originals, including duplex (double-sided) copying, for each size paper;

**(5)** Capable of scanning at 600 dpi for each size paper;

**(6)** Reducing or enlarging originals, including duplex (double-sided) copying, for each size paper;

**(7)** Copying to Universal Serial Bus (USB) flash drive in Adobe Acrobat (\*.pdf) file format; and

**(8)**Built-in wireless technology (Wi-Fi capable).

Furnish all necessary supplies for the AIO device, including paper.

Delete Table 637-3 and substitute the following:

**Table 637-3**

**Services Provided for Facilities**

|  |  |
| --- | --- |
| **Service** | **Field**  **Office** |
| Electricity (120 and 240 V, 60 cycle as applicable) | ✓ |
| Water | ✓ |
| Natural gas, propane, and heating oil(1) | ✓ |
| Sewer(1) | ✓ |
| Portable toilet(2) | ✓ |
| Trash and waste disposal | ✓ |
| Drinking water | ✓ |
| Snow removal(3) | ✓ |
| Landscape maintenance(3) | ✓ |
| Pest control(3) | ✓ |
| High-speed internet | ✓ |
| Telephone | ✓ |
| All-in-One (AIO) device | ✓ |

(1) If required for provided appliances or furnishings.

(2) If indoor flush toilets are not available.

(3) Provide service if directed.

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There are 2 options for Section 650 SCRs depending on the project needs:

(1) Contractor is required to design, construct, maintain and remove the temporary traffic diversion. The plans do NOT include a project specific temporary traffic diversion design.

(2) Contractor is required to construct, maintain, and remove the temporary traffic diversion. The plans include a temporary traffic diversion layout in the plans.

Include if the plans do NOT include a project specific temporary traffic diversion design. Use pay item 65001-1000 Temporary Traffic Diversion. Revise the SCR to fit project-specific requirements.

## Section 650. — TEMPORARY TRAFFIC DIVERSIONS (ADDED SECTION)

**Description**

**650.01** This work consists of designing, constructing, maintaining, and removing temporary traffic diversions.

**Material**

**650.02** Conform to the following Subsection:

Water for construction 725.01(c)

**Design Requirements**

Revise yellow highlighted areas below to fit the project-specific conditions. Consider adding more detailed design requirements for curve widening or superelevation for higher speed or higher volume roadways.

**650.03 Design.** Design temporary traffic diversions conforming to Table 650-1. Maintain <<<alternate one-way or two-way>>> traffic. Design temporary traffic diversions to fit within the construction limits shown in the plans.

**Table 650-1**

**Design Requirements for Temporary Traffic Diversion**

|  |  |
| --- | --- |
| **Criteria** | **Requirement** |
| Design speed | <<<25>>> mph |
| Superelevation | <<<2>>> % normal crown, <<<6>>> % maximum |
| Lane width | See Subsection 156.06(d). Provide additional width on horizontal curves as needed to accommodate public traffic. |
| Horizontal curve radius | <<<144>>> feet minimum |
| Vertical grade | <<<11>>> % maximum |
| Vertical curve length | <<<50>>> feet minimum |
| Structural section | <<<2 inches asphalt over 4 inches crushed aggregate>>> |
| Embankment slope | <<<1V:2H>>> or flatter |

**650.04 Submittals.** At least 14 days before starting temporary traffic diversion work, submit the following according to Subsection 104.06:

1. Plan and profile drawings showing the horizontal and vertical alignment, superelevation design, edge of roadway, and limits of construction;

**(b)** Typical section drawing, including structural section information; and

**(c)** Description of roadway design standards used.

**Construction Requirements**

**650.05 General.** Complete construction of the temporary traffic diversion before use by public traffic.

Delete the yellow highlighted sentence if the temporary traffic diversion does not need to be paved.

Install erosion and sediment control devices according to Section 157. If required, construct temporary stream diversion according to Section 628. Perform earthwork according to Section 204. Place crushed aggregate according to Section 302. <<<Place asphalt according to Section 403.>>>

Provide temporary traffic control according to Section 635.

**650.06 Maintenance.** Maintain the temporary traffic diversion, including erosion and sediment control and temporary traffic control, the entire time it can be used for public traffic.

**650.07 Removal.** Remove the temporary traffic diversion to approximate original or planned contours once the mainline is open to the public and can accommodate two-way traffic. Dispose of unsuitable or excess material according to Subsection 203.07.

**650.08 Acceptance.** Design, construction, maintenance, and removal of the temporary traffic diversion will be evaluated under Subsections 106.02 and 106.04.

Delete the yellow highlighted sentence if the temporary traffic diversion does not need to be paved.

<<<Asphalt will be evaluated under Section 403.>>>

Crushed aggregate will be evaluated under Section 302.

Erosion and sediment control will be evaluated under Section 157.

Roadway excavation and embankment will be evaluated under Section 204.

Temporary stream diversion will be evaluated under Section 628.

Temporary traffic control will be evaluated under Section 635.

**Measurement**

**650.09** Measure the Section 650 pay items listed in the bid schedule according to Subsection 109.02.

Do not measure individual items required to design, construct, maintain, and remove the temporary traffic diversion for payment.

**Payment**

**650.10** The accepted quantities will be paid at the contract price per unit of measurement for the Section 650 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments will be paid as follows:

**(a)** 50 percent of the pay item amount will be paid after installation.

**(b)** The remaining portion of the pay item amount will be paid after the temporary traffic diversions are removed from the project.

Payment for all or part of this item may be retained if the temporary traffic diversion is not adequately maintained.

Include if the plans DO include a project specific temporary traffic diversion design. Use pay item 65001-1000 Temporary Traffic Diversion. Revise the SCR to fit project-specific requirements.

## Section 650. — TEMPORARY TRAFFIC DIVERSIONS (ADDED SECTION)

**Description**

**650.01** This work consists of constructing, maintaining, and removing temporary traffic diversions.

**Material**

**650.02** Conform to the following Subsection:

Water for construction 725.01(c)

**Construction Requirements**

**650.03 General.** Complete construction of the temporary traffic diversion before use by public traffic.

Delete the yellow highlighted sentence if the temporary traffic diversion does not need to be paved.

Install erosion and sediment control devices according to Section 157. If required, construct temporary stream diversion according to Section 628. Perform earthwork according to Section 204. Place crushed aggregate according to Section 302. <<<Place asphalt according to Section 403.>>>

Provide temporary traffic control according to Section 635.

**650.04 Maintenance.** Maintain the temporary traffic diversion, including erosion and sediment control and temporary traffic control, the entire time it can be used for public traffic.

**650.05 Removal.** Remove the temporary traffic diversion to approximate original or planned contours once the mainline is open to the public and can accommodate two-way traffic. Dispose of unsuitable or excess material according to Subsection 203.07.

**650.06 Acceptance.** Construction, maintenance, and removal of the temporary traffic diversion will be evaluated under Subsections 106.02 and 106.04.

Delete the yellow highlighted sentence if the temporary traffic diversion does not need to be paved.

<<<Asphalt will be evaluated under Section 403.>>>

Crushed aggregate will be evaluated under Section 302.

Erosion and sediment control will be evaluated under Section 157.

Roadway excavation and embankment will be evaluated under Section 204.

Temporary stream diversion will be evaluated under Section 628.

Temporary traffic control will be evaluated under Section 635.

**Measurement**

**650.07** Measure the Section 650 pay items listed in the bid schedule according to Subsection 109.02.

Do not measure individual items required to construct, maintain, and remove the temporary traffic diversion for payment.

**Payment**

**650.08** The accepted quantities will be paid at the contract price per unit of measurement for the Section 650 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments will be paid as follows:

**(a)** 50 percent of the pay item amount will be paid after installation.

**(b)** The remaining portion of the pay item amount will be paid after the temporary traffic diversions are removed from the project.

Payment for all or part of this item may be retained if the temporary traffic diversion is not adequately maintained.

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Include if using Section 501, 601, or 552 concrete.

## Section 701. — CEMENTITIOUS MATERIAL

**701.03 Pozzolans.** Delete Subsection (a) and substitute the following:

**(a) Fly ash.** Conform to AASHTO M 295 4.5 percent maximum

Class C or Class F.

When used to mitigate alkali-silica reactivity,

also available alkalis as equivalent Na2O

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## Section 702. — ASPHALT MATERIAL AND ADDITIVES

Include if project has paving (Sections 401, 402 or 403).

**702.01 Asphalt Binder.** Delete this Subsection and substitute the following:

Conform to AASHTO M 320, Table 1.

In AASHTO M 320, Table 1 replace footnote *f* with the following:

*f* If the creep stiffness is below 300 MPa, the direct tension test is not required. If the creep stiffness is between 301 and 600 MPa, use the creep stiffness value. The *m*-value requirement must be satisfied in both cases.

Include if using an Open-Graded Friction Course (Section 405) in **Nevada.** Anywhere other than Nevada check with Materials for the correct table.

**702.01 Asphalt Binder.** Add the following:

Provide asphalt binder Grade PG 76-22NV conforming to Table 702-3 for the asphalt concrete pavement and open-graded asphalt friction course. Blend the PG 76-22NV at the source of supply and deliver as a completed mixture to the job site. Do not transport PG 76-22NV by railroad car.

**Table 702-3  
Asphalt Binder Grade PG 76-22NV for Open-Graded Friction Course**

|  |  |  |
| --- | --- | --- |
| **Test** | **Test Method** | **Requirement** |
| **Tests on Original Binder** | | |
| Viscosity @ 135°C, Pa⋅s | AASHTO T 316 | 3.00 maximum |
| Dynamic Shear, G\*/sin δ, Test Temp 76°C @  10 rad/s, kPa | AASHTO T 315 | 1.30 minimum |
| Ductility @ 4°C, 5 cm/min, cm | AASHTO T 51 | 20 minimum |
| Polymer Content, % by mass | (1) | 3.0 minimum |
| **Tests on Residue from R.T.F.O., AASHTO T 240** | | |
| Mass Loss, % | AASHTO T 240 | 0.50 maximum |
| Dynamic Shear, G\*/sin δ, Test Temp 76°C @  10 rad/s, kPa | AASHTO T 315 | 2.20 minimum |
| Multiple Stress Creep Recovery, Test Temp 76°C  @ 3200 Pa, % | AASHTO TP 70 | 25 minimum |
| Ductility @ 4°C, 5 cm/min, cm | AASHTO T 51 | 10 minimum |
| **Tests on Residue from Pressure Aging Vessel, AASHTO R28 @ 110°C** | | |
| Dynamic Shear, G\*sin δ , Test Temp 31°C @  10 rad/s, kPa | AASHTO T 315 | 5000 maximum |
| Creep Stiffness, S, Test Temp −12°C @  60 sec, MPa | AASHTO T 313(2) | 300 maximum |
| Creep Stiffness, m-value, Test Temp −12°C @  60 sec | AASHTO T 313(2) | 0.300 minimum |
| Direct Tension, Failure Strain, Test Temp −12°C  @ 1.0 mm/min, % | AASHTO T 314(2) | 1.00 minimum |

(1) Provide certificates of compliance for the material certifying that the minimum polymer content is present.

(2) If the creep stiffness is below 300 MPa, the direct tension test is not required. If the creep stiffness is between 300 and 600 MPa, the direct tension failure strain can be used in lieu of the creep stiffness requirement. The m-value requirement must be satisfied in both cases.

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## Section 703. — AGGREGATE

Include if project has concrete.

**703.01 Fine Aggregate for Concrete.** Add the following:

**(c)** Sand equivalent value, AASHTO T 176, 75 minimum

Alternate Method No. 2

Include if project has subbase or base aggregate using Section 301.

**703.05(a) General.** Delete Subsections (3) and (4).

**703.05(b) Subgrade or base course aggregate.** Delete Subsection (2) and substitute the following:

**(2)** Liquid limit, AASHTO R 58 and T 89 25 maximum

Include if project has surface course aggregate using Section 301.

**703.05(c) Surface course aggregate.** Add the following:

**(4)** Dust ratio, 2/3 maximum

Include if project has surface course aggregate using Section 302.

**703.06 Crushed Aggregate.** Add the following:

When aggregate is used as a surface course, provide an aggregate with a plasticity index (AASHTO T 90) conforming to Table 703-2a.

**Table 703-2a**

**Surface Course Gradation and Plasticity Index**

|  |  |
| --- | --- |
| **Sieve Size** | **Percent by Mass Passing**  **Designated Sieve**  **(AASHTO T 27 & T 11)** |
| ¾ inch | 100 |
| No. 4 | 41 to 71 |
| No. 40 | 12 to 28 |
| No. 200 | 5 to 20 |
| Plasticity Index (PI) | 4 to 12 |

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## Section 704. — SOIL

Include if using structural backfill for structures such as bridge abutments, wing walls, and similar items.

**704.01 Soil and Soil-aggregate Materials.** Add the following to Table 704-1 in the Other Requirements row in the Structural Backfill column:

Liquid limit, AASHTO R 58 and T 89, 30 maximum

Include if using select borrow in subexcavation, rock excavation, or GRS.

**704.02 Select Borrow.** Add the following:

**(c)** Plasticity index, AASHTO R 58 and T 90 6 maximum

Include if using MSE walls.

**704.03(a)** **General.** Add the following:

**(6)** Liquid limit, AASHTO R 58 and T 89 30 maximum

**704.03(b)** **MSE walls with metallic reinforcements.** Delete the last sentence and substitute the following:

Tests for sulfate and chloride content are not required when the pH is between 6.0 and 8.0 and resistivity is greater than 5000 ohm centimeters.

02/25/2025

Include if the project requires pre-compressed foam-supported silicone joint seal

## Section 712. — JOINT MATERIAL

**712.01 Sealants, Fillers, and Seals.** Delete Subsections (h) and (i) and substitute the following:

**(h)** **Pre-compressed foam-supported silicone joint seal.** Provide a joint system comprised of the following:

* 1. Cellular polyurethane foam impregnated with hydrophobic 100 percent acrylic, water-based emulsion, factory coated with highway-grade, fuel resistant silicone conforming to Table 712-3.
  2. Field-applied epoxy adhesive primer conforming to Table 712-4.
  3. Field-injected silicone sealant bands conforming to Table 712-5.

**Table 712-3**

**Impregnated Foam Requirements**

|  |  |  |
| --- | --- | --- |
| **Property** | **Test Method** | **Minimum Requirement** |
| Base material | – | Cellular, high density, polyurethane foam |
| Tensile strength | ASTM D3574 | 18 psi |
| UV and moisture resistance | ASTM G155 | No changes - 2000 hours, Pass |
| Density | ASTM D545 | 4 lb./cu. ft. |
| Elongation | ASTM D3574 | 125% |
| Temperature service range | ASTM C711 | -40 to 185 °F |

**Table 712-4**

**Epoxy Adhesive Requirements**

|  |  |  |
| --- | --- | --- |
| **Property** | **Test Method** | **Minimum Requirement** |
| Tensile strength | ASTM D638 | 3500 psi |
| Shear strength | ASTM D732 | 3000 psi |
| Bond strength | ASTM D882 | 2500 psi |
| Compressive strength | ASTM D695 | 8000 psi |

**Table 712-5**

**Silicone Sealant Bands Requirements**

|  |  |  |
| --- | --- | --- |
| **Property** | **Test Method** | **Requirement** |
| Color | Visual | Black |
| Movement capability | ASTM C719 | ±50% |
| Elongation | ASTM D412 | > 600% |
| Tensile strength | ASTM D412 | ≥ 100 psi |

**(i) Reserved.**

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Include if the Contractor is required to apply seed. Ask the partner agency for a specific seed mix to use.

*Example text:*

Use the following seed mix for all upland areas of disturbance:  
Yarrow (Achillea millefolium) 2 pounds PLS/acre  
Spike trisetum (Tristeum spicatum) 3 pounds PLS/acre  
Wheeler's bluegrass (Poa wheeleri) 1 pound PLS/acre  
Idaho Fescue (Festuca idahoensis) 4 pounds PLS/acre  
Beaked Sedge (Carex rostrata) 1 pound PLS/acre  
Lupine (Lupinus argentus) 1 pound PLS/acre

Total = 12 pounds PLS/acre

## Section 713. — ROADSIDE IMPROVEMENT MATERIAL

**713.04 Seed.** Add the following:

Use the following seed mix:

<<<Fill in project-specific seed mix>>>

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Coordinate with the project geotechnical engineer or engineering geologist and hydraulics on the design in situ soil type and select one of the following cases:

-Case 1: <15 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

-Case 2: 15 to 50 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

-Case 3: >50 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

## Section 714. — GEOSYNTHETIC MATERIAL

Case 1: Include if the project requires geotextile filter with <15 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

**714.01(c) Geotextile filter.** Delete this Subsection and substitute the following:

**(1)** Conform to AASHTO M 288 Table 1, Class 1 (either <50 percent elongation or ≥50 percent elongation) and the following for riprap, special rock embankment, rock buttress, and other high survivability applications:

*(a)* Minimum permittivity, ASTM D4491 0.7 sec-1

(*b)* Maximum apparent opening size, ASTM D4751 0.43 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

**(2)** Conform to AASHTO M 288 Table 1, Class 2 (either <50 percent elongation or ≥50 percent elongation) and the following for underdrains and other subsurface drainage applications:

*(a)* Minimum permittivity, ASTM D4491 0.5 sec-1

*(b)* Maximum apparent opening size, ASTM D4751 0.43 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

Case 2: Include if the project requires geotextile filter with 15 to 50 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

**714.01(c) Geotextile filter.** Delete this Subsection and substitute the following:

**(1)** Conform to AASHTO M 288 Table 1, Class 1 (either <50 percent elongation or ≥50 percent elongation) and the following for riprap, special rock embankment, rock buttress, and other high survivability applications:

*(a)* Minimum permittivity, ASTM D4491 0.2 sec-1

(*b)* Maximum apparent opening size, ASTM D4751 0.25 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

**(2)** Conform to AASHTO M 288 Table 1, Class 2 (either <50 percent elongation or ≥50 percent elongation) and the following for underdrains and other subsurface drainage applications:

*(a)* Minimum permittivity, ASTM D4491 0.2 sec-1

*(b)* Maximum apparent opening size, ASTM D4751 0.25 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

Case 3: Include if the project requires geotextile filter with >50 percent of in situ soil passing the No. 200 (0.075 mm) sieve.

**714.01(c) Geotextile filter.** Delete this Subsection and substitute the following:

**(1)** Conform to AASHTO M 288 Table 1, Class 1 (either <50 percent elongation or ≥50 percent elongation) and the following for riprap, special rock embankment, rock buttress, and other high survivability applications:

*(a)* Minimum permittivity, ASTM D4491 0.1 sec-1

(*b)* Maximum apparent opening size, ASTM D4751 0.22 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

**(2)** Conform to AASHTO M 288 Table 1, Class 2 (either <50 percent elongation or ≥50 percent elongation) and the following for underdrains and other subsurface drainage applications:

*(a)* Minimum permittivity, ASTM D4491 0.1 sec-1

*(b)* Maximum apparent opening size, ASTM D4751 0.22 mm maximum average

roll value

*(c)* Minimum ultraviolet stability, ASTM D4355 50 percent strength retained

after 500 hours of exposure

Consult with the project geotechnical engineer or engineering geologist. Include subgrade stabilization geotextile when very soft/weak subgrades require a product with higher reinforcement strength than a typical stabilization geotextile.

**714.01 Geotextile.** Add the following:

**(e) Subgrade stabilization geotextile.** Conform to AASHTO M 288 Table 12, Class 4A Geotextile.

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Include if weathering agent will be applied to rocks, guardrail, or slopes.

## Section 725. — MISCELLANEOUS MATERIAL

**725.21** **Weathering Agent.** (Added Subsection).

Provide a weathering agent that colors rock, cementitious, and galvanized surfaces to a brownish earth tone, and contains no pigments. Provide a material that contains chemical components that have no adverse reactions or effects on soils, plants, and animals. The material cannot contain corrosive by-products once the product has been applied.

Natina® products are acceptable for coloring rock surfaces; cementitious surfaces; and galvanized surfaces. Identification by brand name is intended to be descriptive, not restrictive, and is intended to indicate the quality and characteristics of products that will be satisfactory. Submit “or equal” products meeting the following salient characteristics to the CO for approval:

**(a)** A soluble solution that contains organic acids and natural oxidizers.

**(b)** All coloring developed through a reactionary process that etches surfaces, producing a finish that is resistant to fading from exposure to sunlight, with an expected performance life exceeding 10 years in nonaggressive climates.

**(c)** A product that causes negligible zinc coating losses when applied to galvanized surfaces.