

**2022 SUPPLEMENTAL SPECIFICATIONS
FOR THE
2018 IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION**

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ON PAGE 11, U.S. CUSTOMARY MEASUREMENT SYMBOLS

Add the following U.S. Customary Measurement Symbols:

AU Acre Unit

MFBM Thousand Feet Board Measure

ON PAGE 14-15, SUBSECTION 101.03.1 – ORGANIZATIONS

Add:

ATF Bureau of Alcohol, Tobacco, Firearms, and Explosives

NIOSH National Institute of Occupational Safety and Health

NMFS National Marine Fisheries Service

USACE United States Army Corps of Engineers

USFWS U.S. Fish and Wildlife Service

ON PAGES 15-17, SUBSECTION 101.03.2 – ACRONYMS

In proper alphabetical position, add the following:

AAO	Asphalt Analyzer Offset
AFAD	Automated Flagger Assistance Device
BA	Biological Assessment
BGEPA	Bald and Golden Eagle Protection Act
BO	Biological Opinion
COD	Contractor-Obligated Defects
MARV	Minimum Average Roll Values
MBTA	Migratory Bird Treaty Act
NCOD	Noncontractor-Obligated Defects
NESHAP	National Emission Standards for Hazardous Air Pollutants
PTFE	Polytetrafluoroethylene
RCRA	Resource Conservation and Recovery Act
SHA	State Highway Archaeologist
SHPO	State Historic Preservation Office
TCS	Traffic Control Supervisor
THPO	Tribal Historic Preservation Office
TMA	Truck Mounted Attenuator

ON PAGE 18, SUBSECTION 101.04 – DEFINITIONS

Add the following definitions in alphabetical order:

Biodegradable. The material will decompose under ambient soil conditions into carbon dioxide, water, and other naturally occurring materials within a time period relevant to the product's expected service life.

Blaster In Charge. The person designated by the blast contractor, who is licensed in the state of Idaho, and responsible for inspecting the blast setup, clearing the blast area before detonation, and clearing the area after the blast for reentry.

Complete. A pay item is considered complete when all work associated with the pay item is acceptable, including all associated ITD forms or other documentation, material certifications or acceptance testing, and record drawings accepted by the Department. Unless otherwise specified, completed item measurements will be of the final, in place dimensions of the completed item.

Disadvantaged Business Enterprise (DBE) Authorized Representative. The person delegated by the owner of the DBE firm to represent the firm in the absence of the owner.

Manufacturer's Representative. A representative for a manufacturer who has technical and overall expertise in the manufacturer's products, materials, supplies, articles, or equipment and can provide manufacturer's recommended technical guidance for all applications on a project. The representative cannot be an employee of the contractor.

Responsive (Regular) Bid. A bid that meets all the requirements of the advertisement and proposal.

Street Monument. A survey monument set within the limits of the paved roadway, (1) on or in reference to a roadway centerline alignment so as to control the geometry of a roadway, or (2) at a PLSS section corner or at a PLSS quarter corner or, in urban areas, at a PLSS sixteenth corner.

Technical (or Technical Service) Representative. See Manufacturer's Representative.

ON PAGE 18, SUBSECTION 101.04 – DEFINITIONS

Replace "Performance (or Warranty) Bond" with "Performance Bond":

ON PAGE 19, SUBSECTION 101.04 – DEFINITIONS

Add the following to the end of the definition for "Contingency Item":

Payment for accepted work will be made using the Force Account method.

ON PAGE 20, SUBSECTION 101.04 – DEFINITIONS

Add the following under "Holidays":

Juneteenth

ON PAGE 23, SUBSECTION 101.04 – DEFINITIONS

In the Roadway Prism definition: delete both instances of:

1.5H:1.0V

And replace with:

2.0H:1.0V

ON PAGE 26, SUBSECTION 102.03 – EXAMINATION OF PLANS, SPECIFICATIONS, AND PROJECT SITE

Replace the first sentence of the 3rd paragraph with the following:

Immediately notify the Department in writing of any errors or omissions on the plans and proposal forms or inconsistencies between these documents and the project site. Do not take advantage of errors or omissions in the contract documents.

ON PAGE 27, SUBSECTION 102.04 – PREPARATION OF A PROPOSAL

In the second paragraph, replace “Expedite” with “Project Bids”.

Add the following to the last paragraph, as specified in [67-2310, Idaho Code](#).

ON PAGE 28, SUBSECTION 102.07- DELIVERY OF PROPOSAL

Delete the 2nd sentence and replace with the following:

Submit the proposal electronically or in a sealed envelope marked on the outside with: “Bid Enclosed”, the Key Number, and the Proposal Name”. Address the envelope to the attention of “Advertisement & Award”.

ON PAGE 28, SUBSECTION 102.10 – IRREGULAR PROPOSALS

Delete the subsection 102.10 and replace with:

102.10 Proposal Acceptance and Irregular Proposals.

Proposals will not be accepted or reviewed for the following reasons:

1. Not submitting the bid by the designated bid opening date and time.
2. Submitting multiple bid proposals for the same project, under the same or different name.

The Department will consider a proposal to be irregular and may reject it for the following reasons:

1. Submitting the proposal in pencil.
2. Not signing the proposal.
3. Submitting the proposal on proposal forms not provided by the Department.
4. Altering or detaching part of the proposal forms as provided by the Department.
5. Submitting the proposal with unauthorized additions, conditional or alternate bid, addenda omissions, or irregularities that might make the proposal incomplete, indefinite, or ambiguous.
6. Adding provisions to the proposal reserving the right to accept or reject an award or to enter into a contract, except as specified in 102.05.
7. Submitting the proposal without a proposal guaranty (bid bond).
8. Submitting the proposal without a unit price for each contract pay item on the bid schedule, except for alternate contract pay items as specified 102.04.

9. Not listing a specialty subcontractor (i.e., electrical, HVAC, plumbing) when required by the Department in the special provisions and in accordance with [67-2310, Idaho Code](#); or, not listing the estimated value of the specialty work, if the subcontractor possesses a public works license that limits them to less than the contract value.
10. Not acknowledging the number of addenda issued by the Department, if applicable.
11. Not submitting a completed ITD-2396 DBE Commitments form and supporting documentation within the time allowed on federally-funded projects.
12. Not meeting or exceeding the DBE participation goal, when applicable, or not providing a complete Good Faith Effort submittal substantiating that sufficient effort was made to meet the goal even though the goal was not met.
13. Not completing the state-funded contract acknowledgement form in the bid submittal for state funded projects.
14. The bidder is not listed on the QuestCDN plan holders list.
15. The bidder, or the subcontractors required to be listed at the time of bid, not possessing the appropriate license as specified in 107.03.
16. If the Department finds evidence of collusion among bidders.
17. Not completing the Anti-Boycott Israel acknowledgement form in the bid submittal.

Any information listed above that is considered proprietary will not be shared before contract award.

ON PAGE 29, SUBSECTION 102.12 – PROTESTING A PROPOSAL

Delete 102.12 and replace with:

To protest a determination made by the Department regarding the regularity or irregularity of a bid, submit a written protest to the Chief Engineer within 5 calendar days ([40-902, Idaho Code](#)) of the official results being posted to the Department's website (<https://apps.itd.idaho.gov/Apps/contractors/br.htm>). The protest must set forth in specific terms the reasons why the Department's determination is thought to be erroneous.

Protest by Apparent Low. If the protest is made by the apparent low bidder, the protest will be addressed by the Chief Engineer.

Third-Party Protest. If the protest is made by other than the apparent low bidder, the Chief Engineer will assign a hearing officer for a contested case hearing followed by a final decision by the Chief Engineer.

ON PAGE 29, SUBSECTION 102.14 – TIED BIDS

Delete the entire paragraph and replace with:

If there are tied bids, the apparent low bidder may be determined by random chance (e.g., drawing lots, tossing a coin) in the presence of a witness in accordance with [IDAPA 38.05.01.082](#). The Department will record video of the tie breaking event in case there is any question as to the fairness of the procedure.

ON PAGE 30, SUBSECTION 103.02 – AWARD OF CONTRACT

Add the following after the second paragraph:

In cases where approval from the Local Sponsor, the Board, and/or the FHWA must be required before award, the Department may delay the award for up to 60 calendar days without considering increases in costs because of the delay in award. In cases where the award is delayed longer than 60 calendar days, the Department will consider increases in costs because of the delay in award.

ON PAGE 30, SUBSECTION 103.02.A – FEDERAL-AID CONTRACTS

Delete the first sentence and replace with:

For contracts that include federal-aid funding, the 45-day period from the date of the bid opening may be extended a reasonable time for the lowest responsible bidder, or their specialty subcontractor(s), to secure a public works license, provided the license application is filed with the Public Works Contractors License Board within 1 business day following receipt of the notice of intent to award letter.

ON PAGE 31, 103.06 – FAILURE TO EXECUTE CONTRACT

Add the following after Item 2.

3. Failure to obtain the appropriate license as specified in 107.03.1.

ON PAGE 32, SUBSECTION 104.02.A.2 – GENERAL

Delete the second paragraph and the 2 bulleted items under 104.02.A. 2 and replace with the following:

Within 10 business days after receiving the Contractor's notification, the Engineer will provide a written response to the Contractor with one or more of the following responses:

- (1) If the Engineer determines that the RFC form is complete and agrees with it, the Engineer will approve the RFC and issue a change order revising the contract.
- (2) If the Engineer does not approve the request, the Engineer will reject the RFC and provide a written response as specified in 104.03.
- (3) If the Engineer needs more information to make a determination, the Engineer will request the information and specify a due date.

ON PAGE 38, SUBSECTION 105.04 – COORDINATION OF CONTRACT DOCUMENTS

Delete subsection 105.04, in its entirety, and replace with:

The specifications, plans, special provisions, and supplementary documents are all essential parts of the contract. In case of discrepancy between contract documents, the discrepancy is resolved by following this order of precedence (i.e., 1 presiding over 2, 3, 4, 5, 6, and 7; 2 presiding over 3, 4, 5, 6, and 7; etc.):

1. Bid Schedule.
2. DBE Documentation
3. Special Provisions
4. Quality Assurance Special Provision

5. Plan Details
6. Plan Sheets
7. Standard Supplementals
8. Standard Specifications
9. Standard Drawings
10. Quality Assurance Manual
11. Electronic Files (if specified as part of the contract)

Calculated dimensions govern over scaled dimensions.

Immediately notify the Engineer of an apparent error or omission encountered in the contract documents. Do not take advantage of errors or omissions in the contract documents. The Engineer will determine if an error or omission exists, interpret and correct the error or omission to fulfill the intent of the contract documents, and determine if a contract revision is required as a result of the error or omission as specified in 104.02.

If any discrepancies are found between the plans and the electronic files, the information in the plans presides over the electronic files.

ON PAGE 40, SUBSECTION 105.07 – UTILITY FACILITIES

Delete Bullet #2 starting with “For Kootenai County...” in its entirety and replace with:

For Kootenai County, contact the Kootenai County Utilities Council at 1-800-428-4950 or <https://kootenaicounty811.com> or by dialing 811.

Add Bullet #3 after the previous paragraph:

3. For Bonner, Boundary, Shoshone, and Benewah Counties, contact Pass Word, Inc. at 866-242-5844 or <https://nid811.com> or by dialing 811.
 - a. Bonner & Boundary County alternate phone number 800-626-4950.

ON PAGE 42, SUBSECTION 105.14.D – MAINTENANCE DURING CONSTRUCTION

Delete 105.14.D and replace with:

D. Maintenance of Traffic.

Maintain the road for use by traffic and minimize traffic delays during roadway construction, unless otherwise directed.

Before starting the work, provide a temporary traffic control plan for approval. Include the following information:

1. Construction phasing and work areas.
2. Phasing and sequencing for implementing the temporary traffic control plan and transitioning between phases.
3. Proposed detours.

4. Emergency vehicle and school bus route accommodations.
5. Pedestrian and bicycle accommodations.
6. Plan for preserving access to cross streets and approaches.
7. Temporary traffic control devices.

Submit changes to the approved temporary traffic control plan for approval. Allow at least 2 business days for review and approval.

Provide and maintain access to cross streets and approaches at no additional cost to the Department.

ON PAGE 60, SUBSECTION 106.04 – CERTIFICATION OF MATERIALS

Delete the last paragraph and replace with:

For the Engineer to accept material based on manufacturer certification, provide the certificate and backup documents (e.g., mill reports, invoice of materials if requested) with each shipment, and identify the certified material type and quantity in the shipment.

ON PAGE 61, SUBSECTION 106.06 – STORAGE AND HANDLING OF MATERIAL

Add the following after the first sentence:

When applicable store and handle all materials in accordance with the manufacturer's recommendations. Improperly stored or handled materials are subject to rejection.

ON PAGE 65, SUBSECTION 107.01.B – NON-FEDERAL-AID CONTRACTS

Delete the first sentence and replace with:

The Contractor and the subcontractors must comply with [Idaho Code, §§44-1001 through 44-1005](#), which requires that ninety-five percent (95%) of employees working on the project be *bona fide* Idaho residents, except for projects with fewer than 50 employees. For projects with fewer than fifty (50) employees, up to ten percent (10%) may be nonresidents, provided the Contractor and the subcontractors give employment preference to Idaho residents.

After award, the Department will require monthly certification with said laws. Along with the certification, the Department may request certified payroll or other information to verify compliance. The Contractor and the subcontractors must provide such information within five (5) business days. If noncompliance is determined or if the Contractor or the subcontractor fails to provide the requested information to verify compliance, this will be considered a breach of contract and may lead to contract revocation and other remedies by contract and law.

Failure to comply with the aforementioned Idaho laws may expose the Contractor to fines and/or imprisonment.

ON PAGE 66, SUBSECTION 107.08 – PRESERVATION, PROTECTION, AND RESTORATION OF PROPERTY AND LANDSCAPE

Add the following at the end of the subsection:

For each and every survey monument disturbed or destroyed by the Contractor, or as a result of project work, that either lies outside the work zone or that was marked by the PLS to be retained and protected, the Contractor will forfeit the sum of \$1,000.00.

ON PAGE 67, SUBSECTION 107.10 – RESPONSIBILITY FOR INJURY DAMAGE

In the fourth full paragraph, delete the entire paragraph starting with “Submit a certificate...” and replace it with the following:

Submit a certificate or other proof of insurance to itdplanroom@itd.idaho.gov and do not start work before obtaining approval of the insurance coverage by the Department.

ON PAGE 68, SUBSECTION 107.10.A – COMPREHENSIVE OR COMMERCIAL GENERAL LIABILITY INSURANCE

Delete the last sentence of the first full paragraph and replace with the following:

For comprehensive or commercial general liability insurance policy containing an aggregate limit, ensure a limit of at least \$4,000,000 on a per project basis.

ON PAGE 68, SUBSECTION 107.10.A – RESPONSIBILITY OF INJURY DAMAGE

Delete the following:

The above limits may be met by policies having limits such as \$1,000,000 per occurrence, \$2,000,000 aggregate plus an umbrella policy of \$2,000,000.

And replace with:

The above limits may be met by policies having limits such as \$1,000,000 per occurrence, \$2,000,000 aggregate plus an excess liability or umbrella policy of \$2,000,000. If an umbrella policy is used, it must follow the underlying coverage form.

ON PAGE 68, SUBSECTION 107.10.A – COMPREHENSIVE OR COMMERCIAL GENERAL LIABILITY INSURANCE

Add the following after C:

D. Proof of Insurance

Provide a certificate of insurance showing the required limits for the following:

1. Comprehensive or Commercial General Liability (aggregate on a per project basis)
 - a. XCU
2. Comprehensive Automobile Liability
3. Workers Compensation

The certificate of insurance must either reference the project specifically, or reference all ITD projects that the Contractor is insured under (blanket coverage) in the “Description” section of the certificate. Suggested wording for blanket coverage: “The Idaho Transportation Department is an additional insured

for all projects under contract with XXX “Contractor Business Name” during this policy period. General liability aggregate is covered on a per project basis.”

ON PAGE 69, SUBSECTION 107.11.C – RELIEF OF RESPONSIBILITY FOR DAMAGE BY PUBLIC TRAFFIC

Delete #4.

ON PAGES 71, SUBSECTION 107.17 – ENVIRONMENTAL AND CULTURAL RESOURCE PROTECTION

Delete in its entirety and replace with:

107.17 Environmental and Cultural Resource Protection.

A. Noncompliance.

Comply with federal, state, and local environmental and cultural resource laws, regulations, and ordinances. Comply with the project permits. Notify the Engineer immediately of:

1. Work that is out of compliance with regulations or permits. Immediately cease non-compliant activities and take corrective action to bring the work into compliance.
2. Discharges of pollutants, discharges exceeding water quality standards, discharges which may endanger health or the environment, or an upset (exceptional incident because of factors beyond the reasonable control of the permittee as defined in [40 CFR 122.41](#)). Perform actions to correct the discharge as soon as possible.
3. A notice of inspection or noncompliance from a state or federal resource agency. Cooperate with inspectors.

If a regulatory agency identifies a failure to comply with the permits and modifications thereto, or other federal, state, or local requirements, the Contractor is responsible for:

1. Penalties, including monetary fines and damages, proposed or assessed to the Department for the Contractor’s failure to comply with environmental regulations or permits.
2. Costs to mitigate or remediate violations or environmental damage or for the Department to resolve enforcement actions, including payments made or costs incurred in settlement for alleged violations of applicable laws, regulations, or requirements.

The Department may withhold money due to the Contractor subject to the following:

The Department will withhold money due to the Contractor, in an amount estimated by the Department, to include up to the full amount of penalties and mitigation costs proposed, assessed, or levied as a result of the Contractor's violation of the permits, or federal or state law, regulations, or requirements. Funds will be withheld by the Department until final disposition of these costs has been made. The Contractor will remain liable for the full amount until the potential liability is finally resolved with the entity seeking the penalties.

Instead of the withhold, the Contractor may provide a suitable bond in favor of the Department to cover the highest estimated liability for any disputed penalties proposed as a result of the Contractor's violation of the permits, law, regulations, or requirements.

The Department will give the Contractor 30 calendar days' notice of the Department's intention to withhold funds from payments which may become due to the Contractor before acceptance of the contract. Funds withheld after acceptance of the contract will be made without prior notice to the Contractor.

No withholds of additional amounts out of payments will be made if the amount to be withheld does not exceed the amount being withheld from partial payments as specified in 109.05.

If the Department has withheld funds and it is subsequently determined that it is not subject to the entire amount of the costs and liabilities assessed or proposed in connection with the matter for which the withhold was made, the Department will return the excess amount withheld to the Contractor in the progress payment following the determination. If the matter is resolved for less than the amount withheld, the Department will pay interest at a rate of 6 percent per year on the excess withhold.

If the work results in non-compliance of a permit or regulatory requirement, the work may be suspended and the permitting agency notified, if required.

The Contractor will not receive additional compensation, or time extensions, for any disruption of work or loss of time caused by any actions brought against the Contractor for failure to comply with good engineering, hydrologic, and pollution control practices.

B. Contractor Support Areas.

Contractor support activities (e.g., material sources, waste, stockpile or staging areas, access or haul roads) will not:

1. Encroach on regulated wetlands as defined by the U.S. Army Corps of Engineers.
2. Affect listed threatened or endangered species or critical habitat.
3. Adversely affect historic properties.

Support areas must receive environmental clearances. Commercial materials sources available and open to the public at the time of the project's bid opening are not considered a project-related action, and do not require Department environmental approvals. If the support area is on public lands, additional coordination will be needed with the land management agency. Allow a minimum of 30 business days to obtain clearance for Contractor Support Areas, provided no cultural sites are located. If sites are found, clearance may be delayed or disallowed. The Contractor will be responsible for the expenses involved in obtaining any clearance not provided by the Department. Any delay created by the clearance and resource agency concurrence will not relieve the Contractor from any contract obligations.

C. Permits

If a permit(s) has been obtained by the Department, the permit(s) and the permit application(s) is referenced in the contract bid package. Perform work in conformance with the description of work, work area, methods, sequencing, work windows, conditions, and mitigations contained within the permit application and permit.

D. Contract Revisions – Contractor Requested.

In compliance with 104.02 and 104.03, if the Contractor requests to add, delete, or modify work activities, work areas, methods, sequencing, or work windows may require a new or modified permit

or approval (e.g., Section 404 Clean Water Act, Endangered Species Act, National Historic Preservation Act Section 106, NEPA). Exception: A project without federal funds, a federal permit, or federal approval does not require approval under National Historic Preservation Act Section 106. Projects on federal lands require coordination with the appropriate federal lands management agency (e.g., BLM, Forest Service).

Submit a detailed description of new or modified work, along with the required environmental documentation. The Department will transmit documents to the approving agencies. Obtain the Engineer's written approval before beginning any work not included in the original contract. The Department will not pay or grant contract time extensions for delays due to Contractor-requested contract revisions.

E. Endangered Species Act (ESA).

If the work affects listed species or designated critical habitat (i.e., under the Endangered Species Act), a biological assessment (BA) or programmatic biological assessment (PBA) is referenced in the contract bid package. Projects with an adverse effect will also include a biological opinion (BO) prepared by the USFWS or NMFS.

Unless otherwise approved by the Engineer, perform work in conformance with the description of work, work area, methods, sequencing, work windows, conditions and mitigations contained within the BA or PBA and BO. Notify the Department of any issues identified as specified in 102.03. Refer conflict or ambiguity with the contract documents to the Engineer.

F. Birds.

1. Migratory Bird Treaty Act (MBTA).

The Migratory Bird Treaty Act protects migratory and non-game birds, their occupied nests, and their eggs.

Work that may impact migratory birds includes removal of vegetation or bridge structures and rock (cliff) excavation or blasting. See the contractor's note for the approximate nesting and breeding window for species that may be anticipated.

Notify the Engineer of a discovery of nesting birds. An active nest is defined as one with eggs or a bird living in it. If active migratory bird nests are discovered on a project site, immediately stop work within 50 feet of the nest(s) or bird(s) and notify the Engineer.

If a nest has been abandoned or there are no eggs present, it can be removed and destroyed as needed. An active nest must be protected from harm. If an active nest becomes established (i.e., there are eggs or young in the nest), cease any work with potential to disturb the nesting bird until the young have fledged and the nest is unoccupied.

Work with the Engineer as needed to develop a plan to avoid impacts to birds, nestlings, or eggs. When directed, use exclusion devices, nesting prevention measures or remove and dispose of partially constructed and unoccupied nests of migratory or non-game birds on a regular basis to prevent their occupation. Nest removal activities must not result in depositing into or allowing materials to enter waters of Idaho. Unless otherwise provided, directed work will be paid as extra work as specified in 104. Adjustments may be made for delays the Engineer determines are not due to the Contractor's failure to perform the provision of the contract.

2. Bald and Golden Eagle Protection Act (BGEPA).

If an active or inactive eagle nest is visible from the project site, immediately stop work and notify the Engineer of the discovery. Work with the Engineer as needed to develop a plan to avoid impacts to eagles. Unless otherwise provided, directed work will be paid as extra work as specified in 104. Adjustments may be made for delays the Engineer determines are not due to the Contractor's failure to perform the provision of the contract.

G. Bats.

Bats are a protected non-game species in Idaho ([IDAPA 13.01.06](#)). Work that may impact bats includes removal of living or dead woody vegetation, work on bridges or other structures, and rock (cliff, cave or rocky outcrop) excavation or blasting.

Notify the Engineer of a discovery of bats. If active bat roosts are discovered on a project site, immediately stop work within 50 feet of the roost(s) or bat(s) and notify the Engineer.

Work with the Engineer as needed to develop a plan to avoid impacts to bats. Unless otherwise provided, directed work will be paid as extra work as specified in 104. Adjustments may be made for delays the Engineer determines are not due to the Contractor's failure to perform the provision of the contract.

H. Hazardous Material.

Conditions (e.g., the presence of barrels, buried or above ground storage tanks, contamination indications, odors, excessively hot earth, stained and discolored soils, smoke, unidentifiable powders, sludges, pellets, debris) can be possible hazardous material indicators.

If an abnormal condition is encountered or exposed that indicates the presence of a hazardous material, immediately suspend work in the area, treat the conditions with extreme caution, and notify the Engineer. Do not attempt to excavate, open, or remove without approval. Notify the Engineer immediately after the discovery of either:

- i. A petroleum-based spill that meets the reportable release definition as defined in [IDAPA 58.01.02.851](#). This includes spills greater than 25 gallons or any spill that results in a sheen on a waterbody surface.
- ii. A hazardous waste spill that meets the disclosure definition as defined in [IDAPA 58.01.05](#) and [58.01.02.850](#).

Notify StateComm at 1-800-632-8000.

In the event of a petroleum or hazardous waste spill, implement measures, if safe to do so, to minimize contaminant spread using spill kits or other appropriate methods. Capture and dispose of the spilled materials under the Engineer's direction in accordance with DEQ and EPA requirements. Document the spill and response action, and submit a copy to the Engineer.

If load-bearing structures (e.g., bridges, culverts) will be modified or altered NESHAP compliance is required as required in 203.03.

Work occurring on existing structures that have been previously painted may contain RCRA metals (e.g., lead) and a test may be needed to verify the absence or presence. If presence of RCRA metals has not been previously determined and disclosed in the contract, the Contractor is responsible for testing previously painted structure components.

Work related to the encounter of unidentified hazardous materials will be considered differing site conditions or extra work and managed as specified in 104.

I. Inadvertent Discovery of Cultural Resources Including Human Remains.

Items that could potentially be cultural resources or human remains are to be treated as if they are cultural resources and/or human remains until a clear determination is made by the Department's State Highway Archaeologist (SHA).

The Contractor will notify the Engineer that potential resources have been identified during the work. The Engineer will then immediately notify the SHA of any cultural resources and/or human remains or items that could potentially be cultural resources and/or human remains.

In the event cultural resources or human remains are discovered within the project site, the Contractor as directed by the Engineer will implement the appropriate protocol outlined below:

1. Cultural Resources.

- a. In the event that cultural resources are discovered within the project site, at locations associated with the project, or planned for use on the project; all work within 50 feet in all directions will cease and the area will be cleared of all unnecessary personnel. The Contractor as directed by the Engineer will secure the area.
- b. The Contractor will immediately notify the Engineer. The Engineer will notify the SHA.
- c. The SHA will notify the State Historic Preservation Office (SHPO), the appropriate Tribal Historic Preservation Office (THPO), and/or Native American Tribes.

2. Human Remains.

- a. In the event that human remains (with or without associated cultural resources) are discovered within the project site, at locations associated with the work, or at locations planned for use; work within 150 feet of the human remains will cease and the area will be cleared of all personnel other than one or two Contractor employees or Department staff who will stay with the human remains until the SHA is notified. The Contractor or the Department staff will secure the area and immediately notify the Engineer, who will then contact the Department's SHA, and if necessary, the SHA will contact the appropriate law enforcement personnel.
- b. The SHA will notify the SHPO and Native American Tribes, if any.
- c. Photography of human remains is not allowed. This applies to cameras, cell phones, or any other devices having photo capabilities.
- d. The human remains will be completely covered with a tarp or plain piece of cloth (e.g., rug, towel, blanket). New ground disturbance should not occur within 100 feet.
- e. The human remains will not be touched, moved, or in any way caused to change position from that noted upon discovery.

- f. All information related to the discovery will be held in strictest confidence.
- g. All information related to the discovery known to the Contractor or staff will be provided to the SHA, and/or law enforcement.

3. Confidentiality.

In either case (i.e., discovery of cultural resources or human remains), the Contractor or the Department staff will keep all information strictly confidential. If information is shared with the Contractor or its subcontractor, that person will be fully informed about the confidentiality requirements and will agree to keep the information confidential. The SHA will consult with appropriate parties to determine an appropriate course of action.

4. Proceeding with Construction.

After an inadvertent discovery, some areas may be specified for close monitoring or 'no work zones'. Any such areas will be identified by the SHA, and locations made available to the Contractor and the Engineer. Additional cultural resources investigations may be required.

Payment and contract time extension due to the inadvertent discovery and required cultural resource clearance not previously identified in the contract is specified in 104.02 and 108.07.

J. Stormwater Pollution Prevention.

Each project will require one of the following:

- (1) A stormwater pollution prevention plan (SWPPP) ITD-2950 form as required by a construction general permit (CGP). A SWPPP is required when ground disturbance equals or exceeds 1 or more acres and discharges to waters of the U.S.
- (2) A pollution prevention plan (PPP) ITD-2788 form when required by the Department.

Both plans are documents that address best management practices (BMPs) (e.g., erosion and sediment control, good housekeeping practices, inspection procedures, spill prevention, response, clean-up). Meet applicable requirements of 212.

The plan sheets (project clearance summary) identifies if a PPP or a CGP is anticipated based on estimates of ground disturbance and/or discharges to waters of the U.S.

PPP	CGP SWPPP
If the addition of construction support activities causes the project ground disturbance area to meet the requirements for a CGP, follow CGP requirements.	—
The Contractor will prepare the entire PPP using the ITD-2788 form as a template provided by the Engineer.	Revise the draft SWPPP developed by the Department, consisting of plans sheets and a template narrative (using the ITD-2950 form), included with the bid package.
Conduct inspections by a person who is knowledgeable in erosion and sediment control and pollution prevention practices. This includes professional accreditation (e.g., the Department’s Water Pollution Control Manager (WPCM) training, Certified Professional in Erosion Control (CPESC), Certified Erosion, Sediment, and Stormwater Inspector (CESSWI)), or other applicable site management or project management experience, which can be documented and provided to the Engineer.	Conduct inspections by a certified WPCM. Training requirements are posted on the Department’s Environmental website under Stormwater Inspector Requirements.
Document the inspections using the ITD-2786 form available online. Conduct inspections every 7 calendar days unless otherwise approved by the Engineer.	Document the inspections using the ITD-2802 form available online.

Submit the plan and plan revisions for approval. The Engineer may also require submittal of an electronic, editable version of the plan. Allow 15 calendar days for review, unless otherwise specified. Revise to address comments and resubmit. Adjustments in cost or time are not allowed for SWPPP approval. Once approved, all operators will sign the plan. Obtain approval before commencing pollutant-generating activities. Provide the PPP upon request.

Construction activities, construction support activities, or other pollutant-generating activities not covered under another discharge permit are not allowed beyond the project site without being included in the approved PPP or SWPPP.

K. CGP Requirements.

Projects located within tribal lands are regulated by the Environmental Protection Agency (EPA) and projects located on all other lands are regulated by the Idaho Department of Environmental Quality (IDEQ).

For projects that require coverage under the national pollutant discharge elimination system (NPDES) or Idaho Pollutant Discharge Elimination System (IPDES) General Permit for Discharges from Construction Activities (CGP), comply with the permit and the following Department requirements:

1. Designate a qualified WPCM to manage project site pollution prevention and CGP requirements. Ensure the WPCM meets the training qualification requirements posted on the

Department's website. Submit the WPCM's contact information and training qualifications before the preconstruction meeting. Once approved, insert the qualification information into the SWPPP.

2. Revise the draft SWPPP template provided by the Department to include Contractor designated construction support activities, work areas, work methods, and phasing. Submit the revised SWPPP for review and approval before the preconstruction meeting.
3. Coordinate electronic NOI filing with the Engineer. Verify SWPPP certification requirements are met. IDEQ NOI filing requires application and annual fees. Fees are due upon submittal of the NOI. IDEQ CGP Fees are listed in IDAPA 58.01.25.110
4. Do not begin construction activities until the EPA has acknowledged receipt of required NOIs on the EPA's website and the 14 calendar day waiting period is over.

Do not begin construction activities until the IDEQ has approved the required NOIs on the IDEQ's website. If the review period exceeds 14 days, it is considered an excusable/compensable delay per 108.07.D.

5. Post the IPDES /NPDESID (permit tracking number associated with the project NOI) in addition to the other requirements of the CGP.
6. Inspect the project site and associated support areas per the CGP requirements. Use the current version of the ITD-2802 form. Sign the inspection report and insert it into the SWPPP within 24 hours of completion of any inspection. Submit a copy to the Engineer upon request. Joint inspections with the Department's inspector may be allowed at the discretion of the Engineer.
7. Field Controls. Ensure installation, operation, and maintenance of effective erosion and sediment control measures and pollution prevention measures per the CGP requirements. Ensure completion and documentation of corrective actions. Remove temporary erosion and sediment control measures and pollution prevention measures after project completion, unless otherwise approved.
8. Recordkeeping. In accordance with the CGP, amend the SWPPP to conform to the Contractor's current sequencing and operation throughout the work. Submit proposed modifications for approval. Obtain necessary signatures and certifications from operators for required SWPPP modifications and corrective actions. Maintain all SWPPP records. Retain completed copies of required documentation and recordkeeping in the SWPPP and at the project site or at an Engineer-approved offsite location.

L. Notice of Termination (NOT).

When conditions for terminating the CGP coverage have been met, request the Engineer's written approval to file a NOT using the ITD-2961 form. Do not submit a NOT without the Engineer's written approval. Provide the most current version of the SWPPP, at the time of work completion, to the Engineer.

M. Turbidity Monitoring.

Turbidity monitoring may be required for projects with USACE, USFWS or NMFS permits and may include a project-specific Water Quality Certification from Department of Environmental Quality.

Specific monitoring requirements are included within each agencies' permit conditions and are included in the contract.

N. Turbidity Monitoring for Contracts with CGP Coverage (if plume is visible).

1. Turbidity Monitoring. Turbidity monitoring is required for projects with CGP coverage that directly discharge pollutants from an unstabilized portion of the project site causing a visible plume into the waters of the U.S.
 - a. If a visible plume is observed, collect and record turbidity readings from within the plume and compare the results to background measurements (upstream of plume, 50 NTU over background) unless otherwise directed in project specific requirements.
 - b. If turbidity is less than 50 NTU (instantaneously) over the background turbidity, continue monitoring as long as the plume is visible. If over 50 NTU, then immediately cease earth-disturbing work.
 - c. Take immediate action to address the cause of the exceedance in accordance with the CGP.
 - d. Increase actions to address the cause of the exceedance and monitor frequency until state water standards are met.
 - e. Work may continue once turbidity readings return to within 50 NTUs (instantaneously) of background levels and 25 NTU for more than 10 consecutive calendar days over the background turbidity.
 - f. Provide a verbal report to the Engineer within 24 hours of any exceedance of the Idaho State Water Quality Standards, followed by a written report within 5 calendar days using the [ITD-2790](#) form.
2. Turbidity Logbook and Diary.
 - a. Maintain a legible, organized logbook and construction diary at the project site and make it available for inspection with the SWPPP.
 - b. Logbook entries must include the following information:
 - (1) Date.
 - (2) Time.
 - (3) Sample location.
 - (4) Turbidity result (NTUs).
 - (5) Cloud cover (i.e., cloudy, partly cloudy, or clear), wind direction and speed, precipitation (inches) in last 24 hours, and ambient air temperature (°F) at the time of sample collection.
 - (6) Visual observations of any discharge in accordance with the CGP.
 - (7) If applicable, corrective actions taken and their observed effectiveness.
 - (8) Printed name and signature of the sample collector.
 - c. Include photographic documentation of any visible variation in water quality.

Include a map or sketch, including GPS coordinates, of each sample location.

- d. Submit routine monitoring data to the Engineer or to regulatory agencies upon request.
- e. Include documentation in the SWPPP that any personnel collecting samples and testing water quality are qualified to perform this task.

O. Basis of Payment.

PPP or SWPPP development, revisions, modifications, and inspections are incidental and included in the contract pay items, unless otherwise specified.

ON PAGE 77, SUBSECTION 107.18 – FENCING

Delete the subsection.

ON PAGES 77-80, SECTION 107.19 – SURVEY MONUMENT PRESERVATION

Delete the section in its entirety and replace with the following:

107.19 Survey Monument Preservation.

Retain an Idaho licensed professional land surveyor (PLS) to:

1. Locate, verify, and tie the position of the known survey monuments documented on the plans, if any, for each assigned project.
2. Perform historical research and field search for other survey monuments within the project site that are not documented on the plans. For any additional monuments found, locate, tie, reference, and report them to the Engineer and the Contractor.
3. Provide written confirmation to the Engineer and the Contractor that the work under 107.19.1 and 107.19.2 have been completed before allowing the Contractor to occupy the project site.
4. Furnish the necessary materials, equipment, and labor to:
 - a. Adjust existing monuments.
 - b. Replace substandard monuments.
 - c. Install new vaults or adjust existing vaults around the monuments within the paved surfaces to the grade established or as directed.
 - d. Reestablish monuments disturbed by the work.
5. Record positions of all survey monuments found within the work area (e.g., the median, roadway, shoulders, roadway slopes) and, for contracts with work planned at the right of way, along the right of way fences. Copies of plans showing original right of way monument positions can be obtained from the Department.
6. Material acceptance will be by visual inspection. Materials required for the installations and adjustment of vaults will be as specified in 618.02 and as in:

Portland Cement	701
Aggregates	703
Metals	708
Concrete Curing Compounds and Admixtures	709

7. Preliminary Procedure.

Before commencing work that will or may disturb survey monuments, the Contractor will retain an Idaho licensed PLS to locate, reference, and tie all survey monuments within the project site including, but not limited to, the following:

- a. Public and private land corners and all accessories to those corners.
- b. Control points or benchmarks set by agencies of the United States government, the state of Idaho, counties, cities, or private surveyors.
- c. Right of way monuments that may be disturbed by the work.

A list of known survey monuments will be provided in the contract.

8. Preserve Existing Survey Monuments.

- a. The Contractor will retain and protect the survey monuments within the project site that are not shown on the plans to be disturbed by the work.
- b. The Contractor will not remove, destroy, bury, or alter any survey monuments, unless authorized by the PLS and the Engineer.

9. Survey Monuments Disturbed by the Work.

- a. For each survey monument shown in the plans, follow recommended actions. Survey monuments disturbed during construction will be re-established in kind or with a monument of superior quality as determined by the PLS before project completion. Any survey monument set, adjusted, or replaced will be in accordance with [54-1227, Idaho Code](#) and will be surmounted with a cap of such material and size that it can be permanently and legibly marked with the date and PLS license number in responsible charge of placing, adjusting, or replacing the monument.
- b. Public and private land corner monuments disturbed during construction will be reestablished and re-monumented in accordance with [55-16, Idaho Code](#). Any survey monument set or adjusted will be in accordance with [54-1227, Idaho Code](#) and for Public Land Survey System (PLSS) corner monuments will be surmounted with a cap of such material and size that it can be permanently and legibly marked in accordance with the current Manual of Surveying Instructions published by the United States Department of the Interior, Bureau of Land Management. Mark the cap in accordance with the Manual of Surveying instructions.
- c. Federal, state of Idaho, and local survey monuments disturbed by the work will be reestablished in the original position as determined before construction and in accordance with the standards, rules, and procedures of the original monumenting agency. In the case of NGS survey monuments, the Idaho's NGS Geodetic Coordinator on staff at Idaho State University (ISU), if available, or the NGS Northwest Regional Geodetic Advisor in Seattle, Washington will be consulted before the removal and reestablishment of any NGS or United States Coast and Geodetic Survey monument.

- d. Survey monuments lying within the paved portions that will or may be disturbed during the work will be treated as follows:
- (1) Installations for street monuments within the paved portions of the roadway and more than 1 foot inside the edge of the asphalt shoulder (edge of oil) that will or may be disturbed will conform to the specifications for a street monument as specified in 618.
 - (2) If an existing survey monument meets the minimum requirements of [54-1227, Idaho Code](#), it can be retained or adjusted vertically in place as determined by the PLS.
 - (3) If an existing survey monument does not meet the minimum requirements of [54-1227, Idaho Code](#), a new survey monument which meets or exceeds the minimum requirements of [54-1227, Idaho Code](#) or the standards of the original monumenting agency, whichever is a superior monument, will be installed by or under the direct supervision of the PLS.
 - (4) If an existing survey monument must be removed for the work, a new survey monument which meets or exceeds the minimum requirements of [54-1227, Idaho Code](#) or the standards of the original monumenting agency, whichever is a superior monument, will be installed by or under the direct supervision of the PLS.
 - (5) Each state highway system right of way monuments disturbed will conform to the specifications for a right of way marker as specified in 618.
- e. Any survey monument discovered during the work and not identified in the plans will be located, referenced, tied, and reported under the responsible charge of the PLS. If an unidentified monument is to be disturbed during construction, it will be re-established and re-monumented.
- f. Any survey monument disturbed and not identified on the plans or referenced by the PLS before it being disturbed will be reestablished and re-monumented under the responsible charge of the PLS from the best available evidence and information of record in accordance with accepted survey methods and procedures of the Idaho Code and/or the original monumenting agency. Re-monumentation will be in accordance with this section.
- g. Any survey monument not intended to be replaced by the work but that was willfully or carelessly disturbed or destroyed by the Contractor, or as a result of the contracted work, will be re-established and re-monumented as specified in this section.
- h. The PLS will mark his/her license number, the year, the word "RESET," and the original project stationing and offset on all centerline or right of way monuments reset, replaced, adjusted, restored, re-established, re-monumented, or reconstructed. All newly installed centerline, right of way, and street monuments on the state highway system will be in accordance with the Department's specifications.

10. Documentation.

Following the completion of the work, the PLS will verify the monument positions, stamp the survey monuments, and verify the vaults (casings) have been installed, if required.

- a. If public land corner monuments were adjusted or replaced, or if any accessories to the public land corner monuments have been established, the PLS will file the appropriate documentation in the county or counties where the project site is located in accordance with [55-16, Idaho Code](#).

- b. If private land corner monuments, centerline monuments, or right of way monuments were adjusted or replaced, a record of survey will be filed in accordance with [55-19, Idaho Code](#). Before filing the record of survey, submit drawing to the Engineer for review, complete the corrections noted and resubmit as indicated, and file the record of survey when approved.
- c. The PLS will submit a copy of the documents recorded at the county offices.
- d. If NGS survey monuments were disturbed and/or reset, the PLS will submit copies of the monument reset information as provided to and approved by the NGS.
- e. The PLS will submit a written report, which documents the actions taken by him/her or the Contractor to preserve or restore each survey monument within the project site.
 - (1) Before construction, include the Geodetic or State Plane coordinate positions (including coordinate system, datum, and project combination factor used) of each survey monument within the project site.
 - (2) After the work has been completed, include the Geodetic or State Plane coordinate positions of each survey monument.
 - (3) Include the actions taken by the Contractor and the PLS to preserve, adjust, or replace each and every survey monument.
 - (4) The PLS will seal and sign this document.

11. MCPD Submittal.

The PLS will obtain and complete the MCPD master template form, in its entirety, with global positions (e.g., WGS-84 latitude, longitude, and orthometric height) and with State Plane Coordinates of all survey monuments located, referenced, and tied during and checked after the work. The PLS will submit the completed MCPD template directly to the MCPD Data Steward at ISU (mcpd@isu.edu) and submit a copy to the Engineer. The MCPD template is available at http://giscenter.isu.edu/research/Techpg/GC/zip/MCPD_MASTER_TEMPLATE.zip. In the submittal of the MCPD to ISU, include a letter of transmittal signed and sealed by the PLS.

Survey monument preservation work to locate, reference, reestablish, replace, install, adjust, or reconstruct survey monuments and vaults, and to obtain and complete the MCPD template for submittal will be paid by force account as specified in 109.03.C.5.

ON PAGE 82, SUBSECTION 108.01 – SUBLETTING OF CONTRACT

Prior to the first full paragraph add the following:

A. General

ON PAGE 82, SUBSECTION 108.01 – SUBLETTING OF CONTRACT

Add the following at the end of the section:

B. Change in Ownership

If there is a change in ownership from one contractor to another, the new company must provide legal documentation showing the change in ownership. If approved by Legal, the following must occur:

For Contracts that are already executed and in progress will be the responsibility of the new owner once the following is provided:

1. The District will work with Legal to obtain an “Assignment of Contract” executed agreement in place.
2. New owner will provide updated insurance certificate showing the project is covered under their policy.
3. New owner will provide updated payment and performance bonds listing the new company name.
4. The new owner will provide a letter stating the names and titles of those who have authority to sign change orders, payments, etc.

For Contracts yet to be awarded, the Department will issue a new contract with the new owner's name. All insurance and bonds should be in the new company name.

ON PAGES 83, SUBSECTION 108.03.A – PROJECT SCHEDULE

Add the following to number 6 under part A:

Unless otherwise allowed by the Engineer.

ON PAGES 83, SUBSECTION 108.03.A – PROJECT SCHEDULE

Delete the second sentence in number 7 under part A and replace with:

Leads and lags may be used when applicable.

ON PAGES 84, SUBSECTION 108.03.A – PROJECT SCHEDULE

Delete the following after bullet number 2:

Ensure each CPM schedule submittal includes 1 electronic CPM schedule copy and 2 paper copies including:

Replace with:

Submit each CPM schedule in a format acceptable to the Engineer and in a format compatible with the most current version of Microsoft Project, including:

ON PAGE 89, SUBSECTION 108.08 – FAILURE TO COMPLETE ON TIME

Replace the first sentence with the following:

If the contract time expires, liquidated damages will be assessed as shown in the Special Provisions of the contract documents for each day the work remains substantially incomplete after the contract time or its most recent extension has expired. The daily rate will be assessed per working day for working day contracts and per calendar day for calendar day and completion date contracts.

ON PAGE 92, SUBSECTION 109.01 – MEASUREMENT OF QUANTITIES

Delete the first paragraph and add the following:

The Engineer will measure the contract pay item quantities, except for items that require the Contractor to provide survey measurement as specified in 675, using the units of measure specified in the contract and the methods of measurement and calculation as specified in this subsection. The U.S. customary system of weights and measures units is defined in [15 CFR](#).

Unless otherwise agreed upon by the Engineer, progress payments will not be issued for items requiring survey measurement until the Engineer has received a statement of quantities, along with supporting documentation and calculations, signed and sealed by a licensed Idaho professional engineer or professional land surveyor.

Measurements will be rounded as specified in Table 109.01-1.

Table 109.01-1 – Standard Rounding

Pay Unit	Rounding
Acre / Acre Unit (AU)	0.001
Contingency Amount (CA)	0.01
Cubic Foot (CF)	0.1
Cubic Yard (CY)	0.1
Day	1
Each	1
Foot (ft)	0.5
Gallon (gal)	1
Hour (hr)	0.5
Lump Sum (LS)	0.001
Mile	0.01
Month	1
Pound (lb)	1
Square Foot (SF)	0.1
Square Yard (SY)	0.1
Station (Sta)	0.01
Thousand Feet Board Measure (MFBM)	0.001
Thousand Gallons (MG)	1
Ton	0.01

ON PAGE 95, SUBSECTION 109.02.B – PRICE ADJUSTMENT

Delete the entire section and replace with the following:

B. Price Adjustment

The Department will consider progress estimate adjustments to applicable contract item costs as a payment to the Contractor, or a credit to the Department, when the indexes change as defined for asphalt and fuel.

For the current asphalt index (CAI), the Department will publish the index value on the first Monday of each month (an additional day will be allowed if the first Monday is a Holiday); the CAI is based on the previous month's average as reported by Poten & Partners, Inc. for the Boise area.

For the current fuel index (CFI), the Department will publish the value on the first day following the first Monday of the month (an additional day will be allowed if the first Monday is a Holiday); the CFI is based on the price of ultra-low sulfur, clear, and diesel #2 fuel, as reported by Oil Price Information Services.

The contract base asphalt index (BAI) and base fuel index (BFI) will be the last posted index amount preceding the bid opening date.

A payment to the Contractor will be applied or a credit to the Department will be deducted from monies due the Contractor for each affected progress estimate. Work performed at no expense to the Department will not be eligible for an adjustment. Compute the price adjustment using the Department's form (e.g., ITD-2624, ITD-2625).

The contract base asphalt index (BAI) and base fuel index (BFI) will be the last posted index amount preceding the bid opening date.

A payment to the Contractor will be applied or a credit to the Department will be deducted from monies due the Contractor for each affected progress estimate. Work performed at no expense to the Department will not be eligible for an adjustment. Compute the price adjustment using the Department's form (e.g., ITD-2624, ITD-2625).

1. Computing the Asphalt Price Adjustment.

A price adjustment will be made only when the CAI varies by more than 10 percent from the BAI and only for that portion of the variance in excess of 10 percent. Credits and payments are computed as follows:

- a. The tons of asphalt used during each progress estimate period will be computed for applicable contract items.

The plant mix asphalt quantity used, when the item includes asphalt and additives, will be calculated at the approved contractor job mix formula (C-JMF) percentage. Asphalt binder contained in RAP is not eligible for an asphalt price adjustment (APA). Only virgin asphalt binder in the mix will be eligible for an APA.

The APA for emulsified asphalt products will be calculated based on the percentage of asphalt in the emulsion, which is estimated at 65 percent and 32.5 percent for diluted emulsion.

- b. The total asphalt tons used for each progress estimate period will be summed for the applicable contract items.
- c. The APA credit or payment is computed from the following formula:

Contractor payment if CAI is greater than 110% of BAI:

$$\text{APA} = (\text{CAI} - 1.10 \text{ BAI}) * \text{Q} * \text{Sales Tax}$$

Department credit if CAI is less than 90% of BAI:

$$\text{APA} = (\text{CAI} - 0.90 \text{ BAI}) * \text{Q} * \text{Sales Tax}$$

Where:

APA = Asphalt price adjustment in dollars. BAI = Base asphalt index.

CAI = Current asphalt index.

Q = Total asphalt tons used for the progress estimate.

Sales Tax = Current Idaho Sales Tax of 6%

If the CAI increases by 50 percent or more over the BAI, the Department will determine the feasibility of continuing project construction. The Engineer will notify the Contractor in writing if the contract will be terminated as specified in 108.10. This adjustment will be applied only for material that is accepted and allowed to be left in place.

2. Computing the Fuel Price Adjustment.

A price adjustment will be made only when the CFI varies by more than 20 percent from the BFI, and only for that portion of the variance in excess of 20 percent. Credits and payments are computed as follows:

- a. The Engineer will obtain the work quantity performed from the progress estimate for the applicable contract items based on the categories in Table 109.02-1.
- b. Compute the fuel usage for each applicable contract item by multiplying the fuel usage rate by the work quantity performed for each item.
- c. Sum the total fuel usage in gallons (Q) for the applicable contract items.
- d. Compute the fuel price adjustment (FPA) credit or payment using the following formulas:

Contractor payment if CFI is greater than 120% of BFI:

$$\text{FPA} = (\text{CFI} - 1.20 \text{ BFI}) * \text{Q}$$

Department credit if CFI is less than 80% of BFI:

$$\text{FPA} = (\text{CFI} - 0.80 \text{ BFI}) * \text{Q}$$

Where:

FPA = Fuel price adjustment in dollars. BFI = Base fuel index.

CFI = Current fuel index.

Q = Total fuel gallons used for the progress estimate.

When the work under the contract is complete, the Engineer will reconcile final quantities adjustments over or under the estimated quantities paid in the progress estimates.

- a. Calculate an average CFI of the CFI's from individual pay estimates to which a FPA was applied.
- b. Determine the difference between estimated quantities and final quantities for each applicable work item.
- c. Calculate the final FPA by multiplying the applicable average CFI (a.) by the difference in work quantities (b.) by the fuel usage rate.

The final FPA will be paid or deducted on the final estimate.

Table 109.02-1 – Fuel Usage Rates

Item Category Description	Rate: Gal/Unit
Excavation, including topsoil	0.29 / CY
Excavation – Rock (must be specifically identified in the contract)	0.39 / CY
Borrow	0.29 / CY
Base	0.63 / Ton
Surface treatments, including seal coats	0.02 / SY; 1.47 / Ton
Concrete Pavements	0.03 / SY / inch of depth
Concrete (paid by the cubic yard)	0.98 / CY
Plant Mix Pavement	2.6 / Ton
Piling Driving	0.12 / ft
Rotomilling	0.02 / SY
Pulverizing / Mixing	0.02 / SY plus 0.015 / SY / ft of depth
Pilot / Pace Car, Pipe, Guardrail	19.0 / \$1,000
MSE Retaining Wall	19.0 / \$1,000

ON PAGE 100, SUBSECTION 109.03.C.5.d – PAYMENT FOR CONTRACT REVISIONS

Replace the word “feeds” with “fees”.

ON PAGES 104-105, SUBSECTION 109.04 – INCREASES OR DECREASES DUE TO TAXES

Delete all of 109.04 and replace with the following:

109.04 Increases or Decreases Due to Changes in Tax Rules.

The total contract amount includes applicable federal, state, and local taxes and duties.

The Department will not adjust the contract amount for increases or decreases due to taxes, unless the amount of an increase or decrease is greater than \$100 from the contract amount.

Notify the Engineer promptly of a statute, court decision, written ruling, or regulation that will result in an increase or decrease in the contract amount.

A. Increases Due to Changes in Tax Rules.

The Department will increase the contract amount if the following conditions exist:

1. A statute, court decision, written ruling, or regulation increases federal, state, or local excise tax or duty on the transactions or property covered by the contract and takes effect after the contract date.
2. The statute, court decision, written ruling, or regulation was unanticipated by the Department and the Contractor before the contract date.
3. The Contractor pays or bears the burden of the federal, state, local excise tax or duty, or rate increase.

The Department will increase the contract amount by the amount of the tax, duty, or rate increase paid by the Contractor. If requested by the Engineer, verify in writing the new federal, state, local excise tax or duty, or rate increase was not included in the contract amount.

B. Decreases Due to Changes in Tax Rules.

The Department will decrease the contract amount if the following conditions exist:

1. A statute, court decision, written ruling, or regulation decreases federal, state, or local excise tax or duty on the transactions or property covered by the contract and takes effect after the contract date.
2. The statute, court decision, written ruling, or regulation was unanticipated by the Department and the Contractor before the contract date.
3. The Contractor pays or bears a lesser burden for federal, state, local excise tax or duty, or rate decrease.

The Department will decrease the contract amount by the amount of the relief, refund, or drawback. Pay this amount to the Department as directed.

The Department will also decrease the contract amount if the Contractor, through fault or negligence or failure to follow the Engineer's instructions, is required to pay or bear the burden of a federal, state, or local excise tax or duty, or does not obtain a refund or drawback.

ON PAGE 106, SUBSECTION 109.05 – PARTIAL PAYMENTS

Add the following after the last paragraph:

As work progresses, payment will not be made on any pay item or portion thereof as specified in 109.05, until all acceptance documentation (e.g., material certifications, test results) and quantity calculations have been received and verified by the Department. Acceptance documentation and quantity measurement will be in accordance with the contract requirements.

ON PAGE 107, SUBSECTION 109.08 – ACCEPTANCE AND FINAL PAYMENT

Add the following before the first paragraph:

The Contractor will have 20 business days after the last charged contract day and notification by the Engineer to submit outstanding documentation on completed work or the Contractor will receive a pay reduction for failure to submit documentation for the applicable pay item(s) as documented on a change order.

Second to last paragraph, change 105.15 to 105.16.

ON PAGE 108, SUBSECTION 110.01 – GENERAL REQUIREMENTS

Delete section 110.01 replace with:

For federal-aid contracts, the Contractor will comply with 110 in accordance with the Special Equal Employment Opportunity Responsibilities under 23 CFR 140 and 23 CFR 230, Subpart A and D (also refer to United States Department of Transportation (USDOT) form FHWA-1273 attached to each contract). To find the nearest employment office, visit <https://www.labor.idaho.gov/dnn/Local-Office-Directory>

The Contractor will take affirmative action to assure equal employment opportunity as required by Executive Order 11246 and Executive Order 11375. The Contractor must ensure compliance with the Uniformed Services Employment and Reemployment Rights Act (USERRA) and the Vietnam Era Veterans' Readjustment Assistance Act (VEVRAA) where appropriate.

Contractors, consultants, suppliers, and service providers bidding and performing the Department's federal-aid funded projects must register as vendors at <https://itd.dbesystem.com>.

For more information, contact the Office of Civil Rights 208-334-8567 or email civilrights@itd.idaho.gov.

ON PAGE 108, SUBSECTION 110.02 – EQUAL EMPLOYMENT OPPORTUNITY

Delete the section and replace with:

110.02 Equal Employment Opportunity.**A. EMPLOYMENT LISTS, LABOR SELECTION, NON-DISCRIMINATION**

A local public employment agency has been designated by the State to prepare the employment lists for the project.

Employ all qualified unskilled labor possible from lists provided by the employment agency designated in the contract. The Contractor may use the services of the employment agency for obtaining labor of the intermediate and skilled grade.

In the performance of this contract, within the limitations of Subsection 107.01 requiring employment of 95% Idaho residents, give preference in employment to qualified honorably discharged Veterans of the United States Armed Forces.

1. Compliance with Regulations:

Comply with the Regulations relative to nondiscrimination in federally assisted programs of the U.S. Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the "Regulations").

2. Nondiscrimination:

Do not discriminate on the grounds of race, color, religion, sex, sexual orientation and gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. Do not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for Subcontracts. Including Procurements of Materials and Equipment:

In all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, notify each potential subcontractor or supplier of the Contractor's obligations of this contract and Regulations relative to nondiscrimination on the grounds of race, color, religion, sex, sexual orientation and gender identity, national origin, age, or disability.

4. Information and Reports:

Provide all information and reports required by Regulations and/or Directives issued and permit access to books, records, accounts, other sources of information, and facilities as may be determined by the Department or the FHWA to be pertinent to ascertain compliance with such Regulations or directives. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, inform the Department or the FHWA as appropriate, and set forth what efforts have been made to obtain the information.

5. Sanctions for Noncompliance:

In the event the Contractor is in noncompliance with the nondiscrimination provision of this contract, the Department will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

Withhold progress payments until it is determined that the contractor is found in compliance;

Suspend the contract in whole or in part, with no progress payments or time extensions made during this time, until the contractor or subcontractor is found to be in compliance

Cancel or terminate the contract for cause;

Assess against the contractor's final payment on this contract or any progress payments on current or future Idaho projects an administrative remedy by reducing the final payment or future progress payment in an amount equal to 10% of this contract or \$7,700, whichever is less.

Incorporation of the Provisions:

Include the provisions of paragraphs (1) through (5) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant

thereto. Take such action with respect to subcontractor or procurement as the Department or the FHWA may direct as a means of enforcing the provisions, including sanctions for noncompliance, provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Department to enter into such litigation to protect the interests of the State, and in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

B. LABOR PROVISIONS

Pay wages of labor in legal tender of the United States, except that this condition will be considered satisfied if payment is made by a negotiable check, on a solvent bank, which may be cashed readily by the employee in the local community for the full amount without discount or collection charges of any kind. Where checks are used for payment, make all necessary arrangements for them to be cashed and give information regarding such arrangements. Do not ask or accept fee of any kind from any person as a condition of employment on the project.

Do not charge employees for tools used in performing their respective duties except for reasonably avoidable loss or damage thereto.

Do not require employees working on the project to lodge, board or trade at a particular place or with a particular person.

Do not charge for any transportation provided by the contractor or his/her agents to any person employed on the work.

All laborers must be employed on a wage basis, but this must not be construed to prohibit the rental of teams trucks or other equipment from individuals. No such rental agreement or any charges for feed, gasoline, supplies or repairs on account of such agreement, shall cause any deduction from the wages accruing to any employee except as authorized by the regulations hereinbefore cited.

ON PAGE 108, SUBSECTION 110.03 – DISADVANTAGED BUSINESS ENTERPRISE (DBE)

Delete the 3rd full paragraph with link and replace with the following:

For additional DBE program information, see the Department's DBE program requirements located at: <https://apps.itd.idaho.gov/apps/ocr/ocrdbeprogram.aspx>.

ON PAGE 108, SUBSECTION 110.03.A – DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS

At the end of the first paragraph, replace <https://itd.dbesystem.com/> with <https://itd.idaho.gov/civilrights/>

ON PAGE 109, SUBSECTION 110.03.A.1 – DISADVANTAGE BUSINESS ENTERPRISE FOR RACE/GENDER – NEUTRAL CONTRACTS

Delete the third sentence of the third full paragraph and replace with the following:

The Department's Office of Civil Rights must receive the completed ITD-2396 form with all supporting documentation by 5:00 pm MT on the day of bid opening or the Contractor's bid will be deemed irregular as specified in 102.10. The ITD-2396 form, with all supporting documentation must be emailed to DBESubmittal@itd.idaho.gov or delivered to the Department's headquarters. The Department will provide an email receipt of delivery.

ON PAGE 112, SUBSECTION 110.03.B – DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS FOR RACE/GENDER – CONSCIOUS CONTRACTS

At the end of the first paragraph, replace <https://itd.dbesystem.com/> with <https://itd.idaho.gov/civilrights/>

ON PAGE 113, SUBSECTION 110.03.B.1 – DISADVANTAGE BUSINESS ENTERPRISE FOR RACE/GENDER – CONSCIOUS CONTRACTS

At the end of the second sentence of the third paragraph, replace <https://itd.dbesystem.com/> with <https://itd.idaho.gov/civilrights/>

Delete the third sentence of the third full paragraph and replace with the following:

The Department’s Office of Civil Rights must receive the completed ITD-2396 form with all supporting documentation by 5:00 pm MT on the day of bid opening or the Contractor’s bid will be deemed irregular as specified in 102.10. The ITD-2396 form, with all supporting documentation must be emailed to DBESubmittal@itd.idaho.gov or delivered to the Department’s headquarters. The Department will provide an email receipt of delivery.

ON PAGE 114, SUBSECTION 110.03.B.4 – DISADVANTAGE BUSINESS ENTERPRISE FOR RACE/GENDER – CONSCIOUS CONTRACTS

Delete Item 4 in its entirety and replace with:

1. The Department requires all bidders DBE commitments on the ITD-2396 form and all supporting documentation for a construction contract be received by the Department’s Office of Civil Rights by 5:00 pm MT on the day of bid opening. The ITD-2396 form, with all supporting documentation must be delivered to DBESubmittal@itd.idaho.gov or to the Department’s headquarters. The forms must contain:
 - a. The identity of the DBE firm(s) the Contractor is committing to use in meeting the contract’s DBE goals. Any DBE commitment statements of confirmation must be made to the Contractor regardless of subcontracting relationships.
 - b. Description of the work and associated dollar amounts each DBE firm offered to perform.
 - c. The DBE submittal package includes the ITD-2396 form, and the DBE quote or the ITD-2399 form which must include the:
 - (1) Commitment statement (a written statement that the DBE is committed to performing the work quoted, if selected).
 - (2) Date.
 - (3) Prime Contractor (can be shown as “To Prime Contractor” or “To All Prime Contractors”; cannot be shown as “To All Bidders”).
 - (4) Project identifier (project name and/or key number).
 - (5) DBE work items.
 - (6) DBE firm total (must match the ITD-2396 form).
 - (7) DBE signature, which can be in one of the following forms:

- (a) Handwritten signature or initials.
- (b) An electronic signature that is not typed using software (e.g., Adobe® Reader, Adobe Professional, Adobe E-Signature, DocuSign®).
- (c) Other acceptable forms of confirming the commitment include:
 - i. Email with the DBE email return address, project name, and key number in the subject line and place the committed dollar amount in body of the email with typed first and last name and title of sender.
 - ii. DBE firm letterhead with the project name, key number, and the committed dollar amount in body of the letter with a typed or signed first and last name and title.

ON PAGE 115, 110.03 B.7, DISADVANTAGED BUSINESS ENTERPRISE FOR RACE/GENDER – CONSCIOUS CONTRACTS

Delete the last 2 sentences of the second full paragraph and replace with the following:

Afterward, the Contractor must revise the DBE participation percentages by change order, identifying the replacement DBE, their quote, and statement of confirmation. The Engineer must approve the revised plan with concurrence from the Department’s Office of Civil Rights. Failure of the Contractor to meet 110.03.B will be a breach of contract.

ON PAGE 119, SUBSECTION 110.05 – TRIBAL EMPLOYMENT RIGHTS ORDINANCES (TERO)

Delete the last sentence.

ON PAGE 121, SUBSECTION 201.03 – CONSTRUCTION REQUIREMENTS

Delete the word “damaged” from the first sentence of the fourth paragraph

ON PAGE 123, SUBSECTION 203.03.A – GENERAL

Delete the following from the first paragraph:

Remove salvageable material without unnecessary damage, salvage material in sections or pieces that may be readily transported and stored at specified places within the project site. Unusable material may be disposed of out of view from the project site with written permission from the property owner before placing the material. Dispose of unusable material so no unsightly appearance will result. Submit copies of property owner agreements.

Remove from the last sentence of the first paragraph:

...prism of the construction.

Replace with:

...roadway prism.

ON PAGE 123, SUBSECTION 203.03.D – REMOVE SIGN ASSEMBLY

Replace Part D with the following:

D. Remove Sign Assembly. This includes signs, sign posts, and sign post foundations. If the sign is to be reinstalled, protect signs during transportation and storage to prevent damage.

ON PAGE 123, SUBSECTION 203.03.E.1.a – REMOVAL AND DISPOSAL OF ASBESTOS

Replace subsection a. with the following:

File the appropriate notification with the EPA Region 10 NESHAP Coordinator at least 10 calendar days before beginning the removal operation.

ON PAGE 125, SUBSECTION 203.03 – CONSTRUCTION REQUIREMENTS

Add the following after subsection E:

F. Removal of Fence. Ensure livestock confinement during the work, either by installing new fence prior to removing existing fence if possible, or by installing temporary fence rated for livestock confinement as specified in 610. Contact and coordinate with adjacent landowners at least 48 hours before removing the fence. If a temporary fence pay item is not included, temporary fence will be paid by force account as specified in 109.03.C.5.

ON PAGE 125, SUBSECTION 203.04 – METHOD OF MEASUREMENT

Add the following after the second sentence:

Removal of miscellaneous items will be by the lump sum and will include all items specified in the special provisions.

Removal of sign will be measured for each removed sign assembly regardless of the number of posts or the number of signs attached to the post(s).

ON PAGE 125, SUBSECTION 203.05 – BASIS OF PAYMENT

Delete the first two pay items and replace with:

- Removal of Miscellaneous Item..... Each, ft, SF, SY, LS
- Removal of Each, ft, SF, SY, LS

ON PAGE 126, SUBSECTION 204.03 – CONSTRUCTION REQUIREMENTS

Add the following paragraph to the end of the section:

For areas to be vegetated, remove or scatter unbound base and subbase material so that adequate friable soil conditions suitable for planting or seeding can be achieved as per Sections 620 and 621.

ON PAGE 127, SUBSECTION 205.01 – DESCRIPTION

After paragraph E add:

F. Guardrail Terminal Grading. Construct guardrail terminal grading.

ON PAGE 127, SUBSECTION 205.02.B – GRANULAR BORROW

Delete second and third sentences from the first paragraph and replace with:

If the material has a sand equivalent less than 30, it must have less than 5 percent passing the No. 200 sieve, in accordance with AASHTO T 27 / T 11.

ON PAGE 127, SUBSECTION 205.02.C – DUST ABATEMENT

Replace the subsection with the following:

C. Dust Abatement. Provide water for dust control. When magnesium chloride is required, provide a brine that is between 28 and 35 percent solution with a maximum of 5 percent impurities as determined by AASHTO T-143 and ASTM E-449.

ON PAGE 127, SUBSECTION 205.02.D – SHOULDER MATERIALS

Delete existing sentence and replace with:

Provide ¾-inch aggregate for untreated base that meets 703.04.

ON PAGE 128, SUBSECTION 205.02.H – GUARDRAIL TERMINAL MATERIALS

After paragraph G add:

H. Guardrail Terminal Materials. Provide ¾ inch aggregate for untreated base, Type A or B that meets 703.04.

ON PAGE 129, SUBSECTION 205.03.E – EXCAVATION AND REPAIR OF SOFT SPOT

Delete the last sentence of the first paragraph under part E and add the following:

Excavate down 2 feet minimum from the top of the roadbed or to the lines and grades as directed.

Delete the first sentence in the third paragraph.

ON PAGE 130, SUBSECTION 205.03.F.2 – ROCK EMBANKMENTS

Delete Subsection 205.03.F.2 and replace with:

2. Rock Embankments. Rock embankment material must classify as too granular to test per 205.03.G.1 after compaction at its final placement point. Otherwise, embankment compaction must meet Class A requirements per 205.03.G.1.

Maintain embankment material in a visibly wet condition during compaction.

The Engineer will allow the placement of isolated individual, competent rock fragments having dimensions greater than the specified loose layer thickness if:

- a. The clearance between adjacent rocks provides adequate space for placement and compaction equipment to compact the materials in horizontal layers as specified.
- b. The rocks are placed more than 36 inches below the roadbed. When a majority of the embankment materials are rocks or rock fragments, distribute the material in a manner that avoids nesting and provides spacing between the rocks to allow for filling and compacting smaller rocks and soil.

Compact rock embankments as follows:

- a. Compaction within 18 inches of the roadbed and rock backfill of over-excavated areas in rock cuts: Place material in loose layers 9 inches thick or less. Uniformly compact each layer with at least 12 full overlapping coverages of a vibratory roller meeting the minimum requirements specified in this subsection. The Contractor may reduce vibratory rolling by 1 full coverage for each 5,000

pound increase per impact above the specified minimum. Ensure at least 6 full overlapping coverages per each 9-inch loose lift or fractional portion.

- b. Compaction at a depth greater than 18 inches below the roadbed: Place material in loose layers 18 inches thick or less. Uniformly compact each layer with at least 3 full overlapping coverages for each 6 inches of loose lift thickness or fraction portion with rollers meeting the following minimum requirements:
- (1) Vibratory rollers having a rated centrifugal force of 30,000 pounds per impact and at least 1,000 vibrations per minute. Limit vibratory roller speed to less than 130 feet per minute.
 - (2) Grid rollers having a static weight of at least 20,000 pounds and 4000 pounds per foot of drum width. Limit grid roller speed to less than 350 feet per minute.

The Contractor may reduce rolling requirements by 1 coverage per each 6 inches of loose lift thickness, or fraction thereof, for each 5,000 pound increase per impact above the specified minimum for vibratory rollers, or 1000 pound increase per foot of drum width above the specified minimum for grid rollers. Ensure at least 1 complete overlapping coverage for each 6 inches of loose lift thickness or fractional portion.

If some of the embankment material generated classifies as testable material according to Table 205.03-1 in its final compacted place, then place and compact according to soil embankments in 205.03.F.1.

ON PAGE 131, SUBSECTION 205.03.G – CLASSES OF COMPACTION AND DENSITY REQUIREMENTS

Remove from the third sentence:

...below embankments...

Replace with:

...at the top of subgrade in excavations...

ON PAGE 131, SUBSECTION 205.03.G.1 – CLASS A COMPACTION

Remove from the first sentence:

...an approximate 2H:1V slope.

Replace with:

...the roadway prism.

Replace Table 205.03-1 with:

Table 205.03-1 – Class A Compaction (AASHTO T 99 Method C)

Material Property	Required Compactive Effort	Classification
10 percent or more retained on the 3 inch sieve; or more than 30 percent retained on the $\frac{3}{4}$ inch sieve	As specified in 205.03.F.2	Too granular to test
Less than 10 percent retained on the 3 inch sieve; and less than or equal to 30 percent retained on the $\frac{3}{4}$ inch sieve	Minimum of 95 percent of maximum dry density	Testable material

ON PAGE 131, SUBSECTION 205.03.G.4 – CLASS D COMPACTION

Remove from the first sentence:

...on an approximate 2H:1V slope...

ON PAGE 131, SUBSECTION 205.03.G – CLASSES OF COMPACTION AND DENSITY REQUIREMENTS

Add the following to “Classes of Compaction and Density Requirements”:

6. Perform in-place density testing for RAP/granular borrow mixtures at the frequency specified in this subsection using the following procedure:
 1. Establish the roller pattern by using in-place density from an uncorrected nuclear gauge. The required compaction is achieved and final process rolling is defined as when the final roller pass adds no more than 0.5 pounds per cubic foot to the previous in-place density.
 2. Make sufficient additional roller passes to determine that a “false break” or leveling-off point is not used for compaction density.
 3. Reestablish the roller pattern when mixture properties in the processed material change and at least every 7,200 square yards of finished surface for each lift.
 4. Perform additional tests where soil conditions have changed or as determined by the Engineer to ensure the required compaction is achieved.

ON PAGE 131, SUBSECTION 205.03.H – BLASTING

Delete subsection 205.03.H and replace with:

H. Blasting. Perform rock fragmentation blasting using production and controlled blasting techniques to construct engineered rock cuts. Plan and execute blasting operations in a safe and professional manner. The Engineer will review blasting plan submittals solely for compliance with the contract, plans, and specifications. The Engineer’s blasting plan submittal reviews do not relieve the Contractor’s responsibility for blasting accuracy, adequacy, and safety.

1. Definitions.
 - a. Production Blasting. Blasting using wider spaced blast holes that typically contain larger explosive charges to expedite movement and fragmentation for rock removal from the main excavation area adjacent to the controlled blast line or from the production holes in a rock quarry.
 - b. Controlled Blasting. Blasting that includes presplit blasting or cushion blasting techniques. Controlled blasting uses closer spaced and carefully aligned blast holes that

typically contain lighter charges than production blast holes to produce a stable, smooth surface or shear plane, along the specified line and grade of the final excavated backslope with minimal blast damage. Controlled blast holes are the first row of blast holes, normally located within 24 inches of the top of the staked slope.

- c. Presplit Blasting. Presplit blasting detonates a single line of lightly-loaded, closely spaced, final backslope blast holes either before production blast drilling or before adjacent production blast hole detonation, to produce a highly controlled, smooth cut face.
 - d. Cushion Blasting. Cushion blasting is similar to presplitting, except that cushion blast hole detonation along the final backslope is immediately after production and buffer blast hole detonation. Where the horizontal distance from the cut face to the existing rock face is less than 15 feet, the Contractor may cushion blast instead of presplitting. With the exception of these criteria, the requirements specified for presplitting also apply to cushion blasting.
2. Regulations. Comply with federal, state, and local laws, regulations, and conditional use permits for blasting operations, including the purchase, transportation, storage, and use of explosive material. Federal regulations include the following:
 - a. Safety and Health. OSHA, 29 CFR Part 1926, Subpart U.
 - b. Storage, Security, and Accountability. Bureau of Alcohol, Tobacco, and Firearms (BATF), 27 CFR Part 555, *Commerce in Explosives*.
 - c. Shipment. DOT, 49 CFR Parts 171-179, 390-397.
 3. Qualifications. Submit the following for approval at least 21 calendar days before the planned start of drilling and blasting operations:
 - a. Blaster-In-Charge. Provide a Blaster-In-Charge to supervise and direct blasting operations. Blasting material transportation, storage, drilling, loading, detonation, monitoring, reporting, and operations are under the Blaster-In-Charge's direct supervision. Provide the following minimum experience and qualifications:
 - (1) A résumé showing at least 5 years of successful experience in similar construction blasting work adjacent to utilities, residential or commercial structures, transportation facilities, and critical habitats. Quarry work is not acceptable experience.
 - (2) Include a list of blasting projects with the following information: dates, affiliations to the Contractor, explosive suppliers, and owner reference names and current contact information. Include a brief narrative with each project describing controlled blasting techniques, controlling fly rock to within the right of way, scaling, pre-blast surveys, post-blast surveys, vibration/noise/air overpressure monitoring, blast design, and blasting adjacent to utilities, structures, transportation facilities, and critical habitats, and any major recommended blast plan modifications made during the projects.
 - (3) Include a complete list of blasting licenses held, current, lapsed, or revoked.

- (4) Must have been responsible for 3 projects with at least 10,000 linear feet of documented successful presplit holes.
 - (5) Must be in good standing with licensing boards where they hold or have held licenses, regardless of state and federal regulatory agencies governing the use of explosives.
 - (6) Five (5) references with knowledge of qualifications and reliability. Include name, relationship, and current telephone number for each reference.
 - (7) Pre-approved blasting consultants on the Department's Consultant Term Agreement List for the G8. The blasting consultant service category would be acceptable as Blaster-In-Charge.
- b. Blasting Crew Personnel. Personnel names and evidence they have completed at least 24 hours of blasting safety training in the last 5 years or have at least 2 years of blasting experience, along with proof of a Federal Employee Possessor Permit for each crew person.
 - c. Drillers. Names and evidence the drillers are proficient in the drilling methods required to perform the work.
 - d. Vibration Specialist. Name and résumé showing at least 5 years of experience as a vibration specialist on projects with similar more complex work.

Upon receipt of a complete qualifications submittal, the Engineer will have 10 business days to approve or reject the proposed Blaster-In-Charge and other personnel. Do not start work, mobilize equipment, or order materials until the qualifications submittal has been approved by the Engineer.

An alternate Blaster-In-Charge requires Engineer prior-approval with the same submittal requirements as above. Work will be suspended if the Blaster-In-Charge is substituted without prior Engineer approval. The Contractor is fully liable for any additional costs and delays resulting from such work suspensions, with no adjustment in contract time or delay costs.

- 4. Blasting Plans. A general blasting plan and site-specific blasting plan are required for production and controlled blasting operations. Blasting plans are not required for boulder reduction blasts (e.g., mudcapping, blockholing).
 - a. General Blasting Plan. Submit a general blasting plan signed by the Blaster-In-Charge for review and approval by the Engineer at least 21 calendar days before beginning drilling and blasting operations. Upon receipt of a complete submittal, the Engineer will have 10 business days for general blasting plan review and approval. Do not deliver explosives to the project until the general blasting plan is accepted. If any approved general blasting plan revisions are required during construction, resubmit the entire general blasting plan package and allow 10 business days for Engineer review and approval. Include the following information in the general blasting plan:
 - (1) Safety Plan. Include procedures and safety precautions for transporting, handling, storing, loading, and detonating explosives, conducting pre-blast and post-blast surveys, monitoring blasts, managing misfires, and

removing and disposing of excess explosives. Include the following information:

- (a) Blaster-In-Charge name and current contact information. Certify the Blaster-In-Charge is responsible for the following:
 - i. Supervising and directing day-to-day drilling and blasting operations, including the transport, storage, handling, and loading of explosives and blasting agents (including primers and initiators).
 - ii. Clearing the blast site before each blast.
 - iii. Responsible person for required reports and documentation for blasting operations (e.g., general blast plan, site-specific blast plans/reports, drill logs, daily explosive material consumption, loss reports, monitoring reports).
 - iv. Checking for misfires and determining the blast site is safe to enter after each blast, including recovery and disposal of misfires or undetonated explosives.
 - (b) Flyrock and blast debris prevention plan, including methods to control flyrock within the right of way, and to prevent personal injury and property damage. Provide flyrock containment system designs as a contingency.
 - (c) Plan for recovery and disposal of misfires or undetonated explosives.
 - (d) Plan for potential blast site electrical hazards, including lightning detection and protection.
 - (e) Emergency plan to address personal injuries, including hospital and EMS phone numbers.
 - (f) Disposal plan for explosives packing materials.
 - (g) Anticipated work schedule and blast time(s). Blasting is only allowed during daylight hours, within ½ hour after sunrise and ½ hour before sunset.
- (2) Explosives transportation and storage plan, including:
- a. Explosives supplier names, addresses, and telephone numbers.
 - b. Explosives transport vehicle descriptions, license plate numbers, travel routes, proposed travel hours, and driver qualifications.
 - c. Magazine and day-box onsite locations.
 - d. Explosives and accessories inventory system.

- e. Contact information for person(s) responsible for security of blasting material and supplies.
- (3) Area security plan, including explosives and general site security, site communication methods, pre-blast and post-blast signage, audible signaling systems, road closure requirements, and pre-blast notification methods for affected agencies or entities.
 - (4) Manufacturer's technical and safety data sheets for proposed explosives, primers, initiators, and related blasting devices and accessories.
 - (5) Pre-blast scaling, pioneered access road, and drilling and blasting operations bench excavation plans, methods, and equipment lists. Indicate if angle or fan-drilled holes are anticipated.
 - (6) Production and controlled blasting scaled typical plan and section views, including station and offset limits, maximum blast length, free face, burden, hole pattern, holes per blast, hole inclination, hole depth, hole diameter, and subdrill depth.
 - (7) Anticipated loading diagram showing type and amount of explosives, primers, initiators, powder factor, charge weight per delay, stemming depth, and material description. Show explosive quantity to be used per delay and per blast.
 - (8) Initiation Method Sequence. Anticipated blast hole-initiation sequence diagram and explanation, including delay times for each blast hole. Identify the delay system type and associated delay periods.
 - (9) Methods for limiting dust and noise.
 - (10) Fire prevention and protection plan, including post-blast observers and fire watch duration.
 - (11) Temporary traffic control plan as specified in 105.14.D for Engineer review and approval when blasting operations will occur within 1,000 feet of a roadway. Cover or remove blasting signs when there are no explosives in the area or the area is otherwise secure. The Blaster-In-Charge is required to determine whether road users in the blasting zone will be endangered by the blasting operation. If there is danger, do not permit road users to pass through the blasting zone during blasting operations.
 - (12) Routine paperwork document templates (e.g., drill logs, ground vibration and air overpressure monitoring reports, pre-blast and post-blast survey forms).
- b. Site-Specific Blasting Plans (ITD-1006 Blast Plan form and ITD-1008 Blast Report form). Upon Engineer approval of the general blasting plan, submit site-specific blasting plans for each controlled and production blast. The site-specific blasting plan consists of two primary documents: the ITD-1006 Blast Plan and its companion ITD-1008 Blast Report. Submit the ITD-1006 Blast Plan for Engineer review and approval at least 24 hours before loading any holes. Submit the companion ITD-1008 Blast

Report with the same corresponding blast number within 24 hours after the blast. Include the following in the ITD-1006 Blast Plan:

- (1) Proposed excavation sequence.
 - (2) Proposed blast station limits and plan view, showing how the proposed blast fits into the lift excavation sequence.
 - (3) Top and bottom elevations of each lift.
 - (4) Scaled drawings for each blast showing access, containment, drill pattern plan and section views, clearing limits, free face, burden, blast hole locations and hole identification number, blast hole spacing, subdrill depths, lift height, blast hole diameters, and blast hole inclinations.
 - (5) Proposed loading diagram for each blast showing powder factor, charge per delay, type and quantity of explosives, primers, and initiators, decking locations, and range of stemming depths for variations within the drill pattern.
 - (6) Proposed blast hole initiation method and sequence for each blast. Include delay times, delay system, and down hole firing times.
 - (7) Flyrock, air overpressure (noise), and ground vibration control measures.
 - (8) Estimated in-place rock volume to be blasted. Include the total length of production and controlled blast holes.
 - (9) Drill logs for each blast hole with the following information: date, time, driller name/signature, helper name, hole identification number, hole collar location, hole depth, collar elevation, tip elevation, hole orientation, penetration rate, color and character of cuttings, and other pertinent information or observations. Include geologic features that could affect the blast loading or performance (e.g., groundwater, voids larger than 6 inches, zones of soft or weathered rock, mud pockets, changes in drill effort, loss of drill water, drill rod drops). Provide the drill logs with the ITD-1006 Blast Plan Form.
 - (10) Location and orientation of rock joints, fractures, faulting, bedding planes, or other rock mass structural features.
 - (11) Post-blast rockfall containment designs and procedures.
 - (12) When ground vibration or air overpressure damage is possible to buildings, structures, utilities, and sensitive natural features, include the attenuation study information for the affected items and indicate that the peak particle velocity versus peak frequency will not damage any item.
 - (13) Pre-blast condition survey records of nearby buildings, structures, utilities, and natural features for potential ground vibration or air overpressure, when applicable.
5. Pre-Blast Condition Survey and Vibration Monitoring and Control. The Contractor is responsible for damage resulting from blast related ground vibrations and air overpressure. Determine the

need for vibration monitoring depending on soil and rock conditions, blasting parameters as outlined in the blasting plans, and proximity of buildings, structures, utilities, and sensitive natural features that may be subject to damage from ground vibrations or air overpressure. If vibration or air overpressure monitoring is required, conform to the following requirements:

- a. If not specified in the contract, establish blasting criteria for buildings, structures, utilities, and natural features that conform to federal, state, or local regulations. Present blasting criteria in terms of distance of the facility or feature from blasting, maximum allowable peak particle velocity versus peak frequency limits for each structure type, and air overpressure structure damage limits.
- b. Conduct a pre-blast condition survey of nearby buildings, structures, utilities, and natural features that could become potentially damaged by blasting-related ground vibrations or air overpressure. Document the natural frequency of each affected structure or feature. Use a survey method acceptable to the Contractor's insurance company. Submit the pre-blast condition survey records with the ITD-1006 Blast Plan form.
- c. Control ground vibrations and air overpressure with properly designed delay sequences and maximum allowable charge weights per delay. Verify allowable charge weights per delay by an attenuation study using representative trial blasts and measuring ground vibrations and air overpressure levels. The attenuation study will enable successful prediction of the peak particle velocity in any component (longitudinal, transverse, or vertical) anywhere on the surface of the structure(s). Conduct test blasts with blast plan modifications that limit ground

vibrations and air overpressure to levels that will not cause damage to nearby buildings, structures, utilities, and/or natural features as determined by the vibration specialist. Submit the attenuation study results and predicted peak particle velocity versus peak frequency for each structure.

- d. When ground vibration or air overpressure damage is possible, monitor each blast with digital recording seismographs and air overpressure monitoring equipment calibrated within the last year and approved. Locate monitoring equipment in accordance with the vibration specialist's directions, placing a minimum of 3 recording stations between the blast area and closest susceptible structures, utilities, or natural features, as well as at least 1 station on each susceptible structure. For ground vibration monitoring, use self-triggering seismographs capable of measuring peak air overpressure and recording particle velocity, displacement, and acceleration for three mutually perpendicular components of vibration in the range generally found for controlled blasting. The instrument will contain internal calibration and triaxial orthogonal transducers with flat frequency response from 2 to 250 hertz, with a minimum sampling rate of 1,000 data points per second with sufficient memory to store the full blasting sequence and their locations. Seismographs must be capable of producing a permanent digital time history file for each ground motion episode.

Ensure blasting operations incorporate collected data and findings from vibration and air overpressure monitoring by having the vibration specialist interpret seismograph and air overpressure records. Submit the interpreted seismograph and air overpressure records with a certifying signature by the vibration specialist. If actual peak particle velocity versus peak frequency measurements exceed those predicted for a structure, adjust the site-specific blast

plan for the actual structural response to the blasting. Such adjustments may include changes to pattern, loading, timing, flyrock measures.

Record each blast using digital video equipment from 2 locations that clearly show the entire proposed blast site.

6. Test Blasting. Before beginning drilling for production or controlled blasting, demonstrate acceptable performance of a site-specific blasting plan for both a production blast and a controlled blast, by drilling, blasting, and excavating a test blast up to 100 lineal feet in length, as measured along roadway centerline, with the proposed containment measures in-place. Production and controlled drilling and blasting operations are not allowed until test blasting is complete and accepted by the Engineer. Conduct test blasting at Engineer-approved locations within the planned excavation area. Excavate shot rock to expose the entire back slope for test blast evaluation.

Space blast holes for controlled blasting (presplit or cushion) no more than 30 inches apart for the initial test blast. Adjust the spacing as necessary to produce acceptable results. Use the accepted spacing for future controlled blasting, or subsequent test blasts if necessary.

A test blast is unacceptable when any of the following occurs:

- a. Slopes are unstable.
- b. Slopes exceed overbreak tolerances within the limits of the excavation, as shown in the plans, or as determined by the Engineer for the site geology.
- c. Non-planar, irregular surface with overhangs, protrusions, ridges, or ledges are created.
- d. Excessive blast damage occurs within the limits of the excavation, as shown in the plans, or as determined.
- e. Poor fragmentation results in oversize material requiring secondary blasting and rehandling.
- f. Safety of the public is jeopardized.
- g. Property or natural features are endangered.
- h. Excessive or uncontrolled flyrock is generated and not contained within the right of way.
- i. Excessive ground vibration or air overpressure occur where damage to buildings, structures, utilities, or natural features is possible.
- j. Desired slope or rock face conditions are not produced.

Revise the site-specific blasting plan and conduct additional test blasts when a test blast is unacceptable. Production and controlled drilling and blasting may begin only after site-specific blasting plans are accepted by the Engineer. The Engineer has the authority to suspend the Contractor's blasting operations at any time throughout construction and require additional test blasts when the Contractor produces unacceptable results.

7. Blasting Operations.
 - a. General. Use explosives and initiating devices that are less than 1 year old or in accordance with the manufacturer's recommendations for specialty products. Blast holes are not allowed to remain loaded with explosives overnight, but must be detonated

the same day they are loaded. Stage explosives at locations directed by the Blaster-In-Charge, and as approved by the Engineer. Properly dispose of explosive packing materials and remove them from the project site before each blast.

Establish survey control necessary for the drilling to meet the required horizontal and vertical control tolerances. Establish a survey control method for transferring the blasting plan grid pattern on the accepted site-specific blasting plan form to the field. Paint or stake the drill hole identification number and collar elevation next to each drill hole for field identification.

Provide the drill logs with the ITD-1006 Blast Plan form for every blast.

Ensure blast holes are drilled to the correct depth and free of obstructions for the entire depth before placing charges. Take necessary precautions when placing charges so caving of material from the walls of the holes and the hole collar will not occur. If drill hole conditions vary from dry to wet, use appropriate explosive type(s) and/or blasting accessories to accomplish the specified results.

Protect blast holes with a temporary plug to keep overburden, drill cuttings, or other foreign material from falling into the holes after drilling. Fill unused drill holes with ½"-minus crushed stone or approved materials.

Mitigate uncontrolled gas pressure loss during blasting and excessive blast noise by stemming the upper portion of blast holes with appropriate dry granular material passing the ½ inch sieve. Do not stem holes with drill cuttings.

Blast according to the accepted site-specific blasting plan. Use blasting mats, rockfall containment systems, and other protective devices to prevent damage to surrounding features and contain flyrock within the right of way.

Stop drilling and blasting operations immediately and perform additional test blasting when any of the below unacceptable results occurs:

- a. Slopes are unstable.
- b. Slopes exceed overbreak tolerances within the limits of the excavation, as shown in the plans, or as determined by the Engineer for the site geology.
- c. Non-planar, irregular surface with overhangs, protrusions, ridges, or ledges are created.
- d. Excessive blast damage occurs within the limits of the excavation, as shown in the plans, or as determined.
- e. Poor fragmentation results in oversize material requiring secondary blasting and rehandling.
- f. Safety of the public is jeopardized.
- g. Property or natural features are endangered.
- h. Excessive or uncontrolled flyrock is generated and not contained within the right of way.

- i. Excessive ground vibration or air overpressure occur where damage to buildings, structures, utilities, or natural features is possible.
- j. Desired slope or rock face conditions are not produced.

The Engineer has the authority to suspend the Contractor's blasting operations at any time when any of the above unacceptable results occurs.

Remove or stabilize cut face rock that is loose, hanging, or potentially dangerous after each blast. Scale by hand or machine methods as approved by the Engineer. Do not drill the next lift until slope stabilization and blast cleanup work is complete. Scaling and stabilization requirements also apply to excavated soil slopes, and ripped or blasted rock slopes associated with pioneer and access roads.

- b. Production Blasting. Drill a lighter-loaded buffer row of production holes on a parallel plane adjacent to the controlled blast line to prevent blast damage to the final backslope face when performing controlled blasting. Detonate production holes in a controlled delay sequence.

Drill production blast holes on the pattern in accordance with the accepted site-specific blast plan within two drill hole diameters of the planned collar location. If more than 5 percent of the drill hole collars in a lift are out of tolerance, fill each hole outside of the location tolerance with $\frac{1}{2}$ "-minus crushed stone, or approved material, and redrill at the proper location, at no additional cost to the Department.

Drill production blast holes to the design depth on the accepted site-specific blast plan. Redrill shallow holes to the proper depth if more than 5 percent of the production blast holes in a lift do not conform to the design depth requirements. Except when subdrilling, do not drill production blast holes below the controlled blast hole base plane.

- c. Controlled Blasting. Use angle- or fan-drilled holes for pioneering the tops of rock cuts and preparing working platforms. Use equipment or methods approved by the Engineer for areas not accessible to track drill equipment.

Remove potentially dangerous boulders or other material located beyond the excavation limits before drilling controlled blast holes. Removal of material located beyond the excavation limits is extra work.

Before drilling, completely remove overburden, soil, and loose or decomposed rock along the top of the excavation for a distance of at least 30 feet beyond the end of the production hole drilling limits, or to the end of the cut.

Use controlled blasting to form the final backslope of rock cuts where the design slope ratio is $\frac{3}{4}H:1V$ or steeper and the slope height is more than 10 feet above the ditch grade.

Control drilling operations by using equipment and techniques that accurately control the drill angle as it enters the rock, to ensure that no hole deviates from the excavated backslope planned final plane by more than 9 inches from the proposed spacing and alignment, either in the parallel or normal direction. If more than 5 percent of the holes exceed the variance, reduce the lift height and modify drilling operations until the holes are within tolerance.

The maximum allowable horizontal offset bench width for drill equipment clearance for multi-lift blasts is 2 feet. Adjust the initial controlled blast hole locations to account for additional width needed for planned offset benches. Remove benches during excavation of the next lift to a slope of at least 45° below horizontal. The Department will not pay for presplit holes exceeding these tolerances.

Drill controlled blasting holes a maximum of 3 inches in diameter and within 3 inches of the staked collar location. Fill and redrill blast holes outside of the location tolerance when more than 5 percent of the hole collars in a lift are outside of the location tolerance. Use ½"-minus, crushed stone or other approved material to fill the blast holes before redrilling. Drill the controlled blast hole line at least 30 feet beyond loaded production holes or to the end of the cut.

Do not exceed 30 feet for bench height or drill hole length, unless longer holes are approved by the Engineer and can be successfully demonstrated in a test blast. Limit subdrilling to one-half of the hole spacing or 24 inches, whichever is deeper.

Do not use bulk ammonium nitrate and fuel oil (ANFO) for controlled blasting. Use only standard explosives manufactured specifically for controlled blasting in controlled blast holes, unless approved by the Engineer.

Use explosives in controlled blast holes with a maximum diameter of no greater than one-half the controlled blast hole diameter.

As long as satisfactory presplit slopes are obtained, the Contractor may either detonate the presplit blasting holes forming the final backslope face before drilling for production blasting, or detonate the presplit blasting holes within the same production blast event, provided the presplitting drill holes are detonated at least 25 milliseconds ahead of the adjacent production blast holes.

If blasting operations cause fracturing of the final rock face, repair or stabilize it in an approved manner at no cost to the Department. Repair or stabilization may include removal, rock bolting, rock dowels, or other slope stabilization techniques, as approved by the Engineer.

8. Reporting.

- a. Post-Blast Report (ITD-1008 Blast Report Form). For each site-specific blasting plan's ITD-1006 Blast Plan form, submit a post-blast report on the ITD-1008 Blast Report form with the same corresponding blast number. Submit the complete blast report within 24 hours following a blast and before loading for the next blast. The purpose of the ITD-1008 Blast Report is to record the actual drill hole and loading configuration that took place in the field versus what was planned in the ITD-1006 Blast Plan form. The ITD-1008 Blast Report also serves as the official record for measurement and payment for controlled blasting. Include the following in the ITD-1008 Blast Report:
 - (1) Brief blast results narrative (e.g., overbreak, blast damage, noise levels, flyrock, drill trace retention, fragmentation, material containment, material rehandling requirements, misfires).
 - (2) Proposed changes for future blasts that will improve results (e.g., pattern, loading, timing).

- (3) Proposed repairs or stabilization plan for unstable or blast damaged slopes.
- (4) Blast hole depth measurements verified by the Blaster-In-Charge.
- (5) Blast layout with station and offset limits, plan and section views, drill pattern, free face, burden, blast hole spacing, blast hole diameters, blast hole angles, lift height, and sub drill depth.
- (6) Actual loading diagram with type and amount of explosive, primers, initiators, and stemming depth.
- (7) Actual blast hole-initiation sequence, including delay times and delay system in each blast hole.
- (8) Trade names and sizes of explosives, primers, and initiators used.
- (9) Measurement of any overbreak quantities following lift mucking.
- (10) Ground vibration and air overpressure records as specified in 205.03.H.8.b.
- (11) Daily explosive material consumption and report of loss report (e.g., ATF daily summary of magazine transactions) with Blaster-In-Charge signature.
- (12) Blast loading and detonating date and time.
- (13) Blaster-In-Charge name and signature.

b. Monitoring. Submit digital videos within 24 hours after each blast.

If vibration and/or air overpressure monitoring is required, submit a vibration and air overpressure report for review within 24 hours following a blast and before loading for further blasting.

Include the following:

- (1) Vibration or air overpressure recording station type used and instrument identification numbers.
- (2) Name of vibration specialist observing the blast and interpreting vibration and air
- (3) Blast identification number and blast location.
- (4) Distance and direction of ground vibration and air overpressure recording stations from the blast area.
- (5) Type of material ground vibration recording stations were sitting on at the blast time.
- (6) Maximum applicable charge weight per delay.
- (7) Peak displacement, particle velocity, and frequency recorded at each ground vibration sensor location.
- (8) Peak overpressure recorded at each air overpressure sensor location.
- (9) Dated and signed copy of instrument records.
- (10) Post-blast condition survey noting changes from the pre-blast survey.

- (11) Comments on blasting success in terms of adherence to established ground vibration or air overpressure criteria and management practices.

When failing to meet ground vibration and air overpressure criteria and management requirements, submit proposed changes to future site-specific blasting plans that will produce acceptable results.

Submit the final post-blast survey reports with property owners' acknowledgement of receipt (e.g., email, letter) to the Engineer. Repair damage to public or private property caused by the use of explosives as a first order of work. The Department will not pay for damage repairs.

- c. Close-out. Submit a written statement signed by the Blaster-In-Charge certifying:
- (1) Blast holes loaded with explosive material have been either detonated or unloaded and disposed of properly.
 - (2) Blasting is complete and explosive material has been removed from the project site.

ON PAGE 137, SUBSECTION 205.03 – CONSTRUCTION REQUIREMENTS

After paragraph H. Blasting add:

I. Guardrail Terminal Grading. Place aggregate in sufficient quantities to match the plans. Ensure grading is sloped at 10:1 or flatter and ensure foundation tubes and terminal struts will not protrude more than 4 inches. Compact the guardrail terminal area to meet Class D requirements or as directed. Broom adjacent pavement to remove aggregate.

ON PAGE 137, SUBSECTION 205.03 – CONSTRUCTION REQUIREMENTS

After subsection I. Guardrail Terminal Grading add the following:

J. Dust Abatement. Apply water at a sufficient rate and frequency to control dust pollution to the satisfaction of the Engineer.

When magnesium chloride is required, apply as recommended by the manufacturer.

ON PAGE 138, SUBSECTION 205.04 – METHOD OF MEASUREMENT

Replace Item 4 with the following:

4. Water for dust abatement and magnesium chloride brine for dust abatement will be per thousand gallons (MG), by means of calibrated tanks, distributors, or accurate water meters.

ON PAGE 138, SUBSECTION 205.04 – METHOD OF MEASUREMENT

Delete number 5 and replace with:

5. Controlled blasting will be measured by the linear foot of accepted drilled holes as recorded on the ITD- 1008 Blast Report form.

ON PAGE 138, SUBSECTION 205.04 – METHOD OF MEASUREMENT

Add the following to the end of the section:

- 10. Shoulder aggregate will be measured by the cubic yard or by the ton.
- 11. Excavation and soft spot repair will be measured by the cubic yard of excavated material in its original position.
- 12. Guardrail terminal grading will be measured by each.
- 13. Process old road will be by the lump sum.

ON PAGE 138, SUBSECTION 205.05 – BASIS OF PAYMENT

After Soft Spot Repair add:

Guardrail Terminal Grading	Each
Process Old Road	LS
Magnesium Chloride Brine for Dust Abatement.....	MG

ON PAGE 138, SUBSECTION 205.05 – BASIS OF PAYMENT

Replace the 13th paragraph with the following:

The Department will pay for the over-drill limits made necessary for offset benches in multi-lift cuts as specified in 205.03.H.7.c.

ON PAGE 138, SUBSECTION 205.05 – BASIS OF PAYMENT

Add at the end of the subsection:

Work required by, and associated with, the Blaster-in-Charge is incidental to controlled blasting.

Slope finishing is incidental and the work included in other contract pay items.

Surveys associated with blasting including surveys for drill holes are incidental. Reducing oversize material from rock excavations are incidental.

Payment for controlled blasting will be based on accepted quantities documented on the ITD-1008 Blast Report form.

ON PAGE 139, SUBSECTION 205.05 – BASIS OF PAYMENT

Add at the end of the subsection:

Guardrail terminal grading materials will be paid for under their respective items unless otherwise noted.

ON PAGE 138, SUBSECTION 205.05 – BASIS OF PAYMENT

Add at the end of the subsection:

Work required by, and associated with, the Blaster-In-Charge is incidental to controlled blasting. Slope finishing is incidental and the work included in other contract pay items.

ON PAGES 143-145, SECTION 210 – STRUCTURE EXCAVATION AND COMPACTING BACKFILL

Delete section 210 in its entirety, and replace with:

210.01 Description. Excavate and dispose of materials required for the construction of structures, unless otherwise specified as structural excavation. Include necessary drainage, pumping, bailing, sheeting, shoring, and the construction and removal of cribs and cofferdams. Remove old structures or parts as required. Place and compact backfill material as compacting backfill. Include sloping and cleaning up the sites.

The contract pay item structure excavation schedule no. 1 includes excavation for bridges, boxes, and stiffleg culverts. The contract pay item structure excavation schedule no. 2 includes excavation for other structures.

210.02 Materials. Provide materials as specified in:

Granular Borrow	205.02
Controlled Density Fill	522.02
Aggregate for Untreated Base	703.04
Aggregate for Granular Borrow.....	703.11

210.03 Construction Requirements.

A. General. Remove and dispose of unsuitable foundation material below the designed elevation as directed. Use suitable surplus excavated material in the construction of embankments. Replace material removed below the designed elevation with approved material.

Sheet and brace trenches if necessary. Do not remove sheeting or bracing until backfill has progressed enough to prevent damage to pipelines or structures.

Remove sheeting and bracing used in supporting structure excavation.

Where rock, hardpan, or other unyielding material is encountered and a yielding material is required, remove the unyielding material below the grade specified and backfill as directed.

Do not begin structure construction or backfill placement until the foundation has been approved. Do not use frozen material as backfill, and do not place backfill on snow-covered or frozen surfaces.

Place backfill consisting of suitable material in 8-inch maximum, uncompacted layers and compact to Class A compaction as specified in 205.03.G.

For backfill material placed within 3 feet of a concrete structure or retaining wall, uniformly distribute the backfill material in layers of no more than 8 inches and compact with lightweight compacting equipment having an impact force of 1,000 to 3,000 pounds. Compact the backfill to the density requirements for Class A compaction as specified in 205.03.G, before successive layers are placed. For backfill material determined by the Engineer as too granular to test, apply at least 5 overlapping compacting equipment passes per 8-inch lift or less.

Compact backfill in areas not within a roadway prism, or special backfill around pipe underdrains not requiring a higher degree of compaction for some other purpose, to approximately the same density as the adjacent undisturbed soil or gravel. Perform compaction by any effective means.

A. Structures. For structures or retaining walls founded on rock, excavate rock to the elevation shown in the plans. Remove any weathered, highly broken rock at the excavation bottom. Level excavated rock

surfaces to the plan elevation with Class 15 or higher class concrete before constructing the structure or wall foundations.

Use appropriate equipment and take precautions to ensure that structure and retaining wall foundation soils are not disturbed during excavation that may affect their bearing capacity. Remove disturbed, soft, or unsuitable materials from the excavation and backfill with granular borrow or other approved material to the plan elevation. Replace material disturbed by the Contractor's operations at no additional cost to the Department.

Compact the bottom of soil excavations with a minimum of 5 overlapping passes with an approved compactor.

Take precaution when pumping water from foundation enclosure interiors to prevent the possibility of concrete materials being carried away. Do not pump during the placing of concrete or for at least 24 hours after, unless it is done from a suitable sump or well point separated from the concrete work.

When placing backfill material under water, place backfill in layers not thicker than 2 feet. Compaction is not required for this placement type.

Do not place backfill against newly constructed masonry or concrete structures before meeting the requirements in Table 502.03-5.

210.04 Method of Measurement. The Engineer will measure acceptably completed work by the cubic yard based on planned quantity.

The Engineer will measure structure excavation as the volume of material within prism-limiting planes as follows:

1. Structures:
 - a. The bottom of the foundation.
 - b. The vertical planes 2 feet outside of and parallel to the outside lines of the structure, in the case of bents with individual column footings, the entire bent are considered as 1 structure.
 - c. With upper limits as follows:
 - (1) In embankment sections, the existing ground surface as cross-sectioned.
 - (2) In roadway cut sections or channel changes, the planes of the roadway cut or channel change as excavated.

The Engineer will measure compacting backfill by the cubic yard of backfill material placed and as follows:

- b. Structures:
 - a. Below the original ground surface. A volume equal to the volume of structure excavation less the volume of the permanent structure, including the opening, contained within the limits of measurement for structure excavation.
 - b. Above the original ground surface. The volume contained between the outside walls of the structure and vertical planes 4 feet outside the original ground surface or the horizontal plane 1 foot above the top of the structure or of the subgrade, whichever is less.
 - c. Volumes of backfill placed through water around abutments, wing walls, and piers will not be included in the measurement of quantities for compacting backfill.

210.05 Basis of Payment. The Department will pay for acceptable quantities at the contract unit prices as follows:

Pay Item	Pay Unit
Structure Excavation Schedule No. 1	CY
Structure Excavation Schedule No. 2	CY
Compacting Backfill	CY

When the contract does not include a contract pay item for structure excavation or compacting backfill, this work is incidental and included in other contract pay items.

The Department will pay for required structure backfill or bedding material whose source is other than structure excavation at the contract unit price for the material being used or as extra work if no unit price was established.

If the Contractor is directed to remove material below the elevation specified, the Department will pay for the excavation work at the contract unit price or as extra work.

The Department will pay for Class 15 concrete used to backfill rock excavation below the bottom of the design footing grade based on the actual quantity used, but not to exceed a prism 1 foot outside the footing neat lines with an average depth of 1 foot below the bottom of footing.

Payment will not be made by the Department to excavate, backfill, and compact material removed for safety purposes or foundation soils that become disturbed due to the Contractor's operations.

The Department will pay using plan quantities as specified in 109.01.

Procedures to do the work including drainage, pumping, bailing, sheeting, shoring, cribs, and cofferdams are incidental unless separate items are included in the contract.

ON PAGE 150, SUBSECTION 212.05 – BASIS OF PAYMENT

Delete number 10 and replace with:

- 10. Removal of BMPs as determined necessary.

ON PAGE 152, SUBSECTION 213.03 – CONSTRUCTION REQUIREMENTS

Delete the following:

Western Laboratory; Parma, ID

ON PAGE 152, SUBSECTION 213.03 – CONSTRUCTION REQUIREMENTS

Delete the second to last paragraph of this subsection:

Incorporate approximately ½ pound of the total seed mix per acre into the topsoil before placement begins. Apply the remaining seed mix over the topsoil after placement.

ON PAGE 155, SECTION 215 – GEOSYNTHETIC REINFORCED ABUTMENT BACKFILL

Add the following to the 200 section:

SECTION 215 – GEOSYNTHETIC REINFORCED ABUTMENT BACKFILL

215.01 Description. Provide materials and construct geosynthetic reinforced abutment backfill.

215.02 Materials.

$\frac{3}{4}$ " Aggregate for Untreated Base, Type A or B in accordance with Subsection 703.04.

Subgrade Separation Geotextile, Type III in accordance with Subsection 718.07.

215.03 Construction Requirements. Prepare the excavation base to a smooth, uniform condition without ruts, potholes, or protruding objects such as rocks or sticks, with Class A Compaction in accordance with 205.03.G.

Place the geotextile in accordance with 640 with the roll direction perpendicular to the abutment back wall or wing walls. Install geotextile without wrinkles or folds, and tension the geotextile while placing the backfill. Cover each geotextile layer entirely before starting the next lift. If geotextile from a different orientation overlaps the geotextile behind the abutment, maintain a minimum 4" vertical separation between geotextile layers. Place the abutment geotextile in 16 inch lifts, or as shown in the plans. The geotextile does not have to be wrapped at the ends unless specified in the plans.

Place backfill in such a manner as not to misalign or damage the abutment walls, wing walls or drainage system. Do not place backfill against newly constructed masonry or concrete structures until all Subsection 502.03 requirements have been fulfilled.

Ensure that the backfill material maximum lift thickness after compaction is 8 inches or less. Compact backfill in accordance with Class A compaction requirements. Field density testing will be performed at the same frequency as bridge abutments and approach slabs per the "Structure Backfill" construction type under Item 210 – Compacting Backfill in the Quality Assurance Manual. Compact backfill within 3 feet of the structure by at least 5 passes of a lightweight mechanical tamper or roller. Density tests are not required within 3 feet of the walls

Slope the backfill away from all wall faces at the end of each day's operation to direct surface runoff away from the walls. Do not allow surface runoff from adjacent areas to enter the wall construction site.

215.04 Method of Measurement. The Engineer will measure acceptably completed work by the cubic yard based on plan quantity.

Pay Item	Pay Unit
Geosynthetic Reinforced Abutment Backfill.....	CY

Subgrade Separation Geotextile, Type III and $\frac{3}{4}$ " Aggregate for Untreated Base, Type A or B are incidental to the Geosynthetic Reinforced Abutment Backfill.

Structure excavation and compacting backfill will be measured and paid in accordance with Section 210. Excavation and backfill outside the limits for structure excavation and compacting backfill defined in Section 210 are incidental to the Geosynthetic Reinforced Abutment Backfill. The drainage system, if required, is incidental to Geosynthetic Reinforced Abutment Backfill.

ON PAGE 155, SUBSECTION 251.03 – CONSTRUCTION REQUIREMENTS

Add to the end of #2:

During the nesting season, monitor vegetation or structures for nesting birds. Preemptive measures to avoid migratory bird species include clearing outside the nesting season, regular monitoring of bird activity, removal and disposal of unoccupied nests to prevent occupation, and exclusion devices (e.g., bird repellent spray, netting) that does not result in death or injury to adult birds.

ON PAGE 161, SUBSECTION 303.03.A – GENERAL

Delete “Mix the base by 1 or a combination of the following 4 methods:” and delete 1-4.

ON PAGE 163, SUBSECTION 304.03 – CONSTRUCTION REQUIREMENTS

Change 205.03.D to 205.03.E.

ON PAGE 168, SUBSECTION 308.04 – METHOD OF MEASUREMENT

Delete #2 and replace with:

At the Engineer’s request, randomly selected, empty transporting vehicles may be weighed on a local, certified scale able to produce a scale ticket for the Engineer’s documentation and verification.

ON PAGE 172, SUBSECTION 403.02 – MATERIALS

Under Item 2, change the reference of Table 703.06-2 to Table 703.06-1.

In Table 403.02-2, change the reference of Table 703.02-2 to Table 703.06-1.

ON PAGE 173, SUBSECTION 403.03.C – BROOMING

Delete the first sentence of #1 and replace with:

Broom loose chips from the roadway and other areas listed in 403.03.C.2 at the end of each day’s operations.

Delete 2 a. and replace with:

- a. In curb/gutter and on sidewalk sections.

Delete #5 and renumber #6 to #5.

ON PAGE 175, SUBSECTION 403.05 – BASIS OF PAYMENT

Replace the last paragraph with the following:

The Contractor is eligible to receive 100 percent of payment for work completed after limited acceptance has been issued. The Contractor’s performance bond will be used as the chip seal warranty bond. The entire value of the performance bond must remain in effect for the duration of the chip seal coat warranty. The Department will release the performance bond as specified in 103.04 after the Engineer terminates the chip seal coat warranty.

ON PAGE 179, SUBSECTION 404.05 – BASIS OF PAYMENT

Replace CY with SY.

ON PAGE 212, SUBSECTION 409.01.A – CLASSIFICATION

In Table 409.01-1 under “Minimum Cementitious Content” replace 660 with 600 and replace AASHTO TP 110 with AASHTO T 380.

ON PAGE 215, SUBSECTION 409.02 – MATERIALS

Replace AASHTO TP 110 with AASHTO T 380.

ON PAGE 216, SUBSECTION 409.03.A – PROPORTIONING

Delete all references to “ASTM C1567” and replace “AASHTO TP 110” with “AASHTO T 380”.

ON PAGE 221, SUBSECTION 409.03.H.4.a.(1) – JOINTS/LOAD TRANSFER DEVICES/DOWEL BAR ASSEMBLIES/FABRICATION

Delete (1) and replace with:

- (1) Fabrication. Fabricate dowel bar assemblies, or baskets, in single units for appropriate lanes before being placed on grade. Submit material detail sheets with basket size and complete anchoring details for approval.

ON PAGE 222, SUBSECTION 409.03.H.4.b.(3) – JOINTS/LOAD TRANSFER DEVICES/DOWEL BAR INSERTERS/DOWEL BARS

Replace “TFE” with “PTFE”.

ON PAGE 237, SUBSECTION 415.03.A – MIX DESIGN

Add the following to the end of the section:

Provide an optimized emulsion content for the microsurfacing mix design, using no less than 3 emulsion contents spread over a range not to exceed 2.0 percent residual.

ON PAGE 238, SUBSECTION 415.03.F – AUXILIARY EQUIPMENT

Add the following:

Screen the aggregate when loading units going from the stockpile area to the lay down operation.

ON PAGE 238, SUBSECTION 415.03.G – CALIBRATION

Add the following:

In the Engineer’s or their representative’s presence, demonstrate that the calibration data has been entered into the computerized control unit used to print the pay ticket.

ON PAGE 240, SUBSECTION 415.03.R.5 – PRODUCTION MICROSURFACING

Delete Item 5 and replace with:

5. Limit the emulsion content to within 1.0 percent of the job-mix design, not to exceed specifications.

ON PAGE 240, SUBSECTION 415.03.S.1 – REPORTING

Delete Item 1 and replace with:

1. Maintain quality control documentation and make available to the Engineer upon request or at completion of daily work. This includes machine counts for aggregate, emulsion, and water.

ON PAGE 241, SUBSECTION 415.04 – METHOD OF MEASUREMENT

Replace this section with:

The printouts from the calibrated computerized monitoring will be used to measure the pay items. Microsurfacing aggregate will be measured by the ton (dry weight basis). Polymer-modified emulsified asphalt will be measured by the ton, as delivered to the project site. Submit printouts daily. Make daily machine counts available for verification of Contractor supplied printouts.

ON PAGE 255, SUBSECTION 431.03 – CONSTRUCTION REQUIREMENTS

Add the following after the 6th paragraph:

Mill a consistent straight line to the Engineer's satisfaction.

ON PAGE 260, SUBSECTION 502.01.A – CLASSIFICATION

Delete Table 502.01-1 and replace with:

Table 502.01-1 Basic Mix Design Parameters

Concrete Class (100 psi)(28 day) ^(a)	Minimum Cementitious Content lb/yd ³ ^{(b)(c)}	Maximum Cementitious Content lb/yd ³	Maximum Water Cement Ratio	Air Content Percent
65 and greater, Self-consolidated concrete ^{(d)(e)(f)(g)}	660	NA	0.42	0-6.0
45 to less than 65 ^{(d)(e)(f)(g)}	560	710	0.44	0-6.0
35 to less than 45 ^{(d)(e)(f)(g)}	470	615	0.44	0-6.0
30	470	570	0.50	6.5±1.5
Seal Concrete	660	NA	0.6	0-6.0

ON PAGE 260, SUBSECTION 502.01.A – CLASSIFICATION

Delete Table 502.01-2 and replace with:

Self-consolidated concrete must meet the requirements in Table 502.01-2 for mix design approval and field acceptance testing.

Table 502.01-2 – Self-Consolidating Concrete

Flow, in (AASHTO T 347)	Visual Stability Index (AASHTO T 351)	J-Ring Test Value (J), in (AASHTO T 345)	Static Segregation, % (ASTM C1610)
20-30	1.5 maximum	J < 0.75	10% maximum
Field Test	Field Test	Mix Design	Mix Design

ON PAGE 263, SUBSECTION 502.02 – MATERIALS

Delete the following under “Sampling Freshly Mixed Concrete”:

When concrete is delivered by means of a concrete pump, obtain samples at the final point of placement (discharge pipe).

Replace with:

When concrete is delivered by means of a concrete pump, obtain samples from the truck chute.

ON PAGE 263, SUBSECTION 502.02 – MATERIALS

Delete the following:

Standard Method of Test for Slump Flow of Self-Consolidating Concrete Cylinders

And replace with:

Standard Practice for Static Segregation of Hardened Self-Consolidating Concrete Cylinders.

ON PAGE 263, SUBSECTION 502.03.A – PROPORTIONING

Replace all references to AASHTO TP 110 with AASHTO T 380 and delete all references to ASTM C1567.

ON PAGE 263, SUBSECTION 502.03.A – PROPORTIONING

Under Subsection A. Proportioning add the following to the end of the first paragraph:

Submit the mix design on the ITD-916 form along with the following documentation:

1. Proposed mix design.
2. Copies of test reports.
3. Aggregate gradations.
4. Final set time.
5. ASR determination.

6. Slump.
7. Water source.
8. Aggregate size number.
9. Design air content.
10. Basic mix design strength.
11. Design mix strength.
12. Laboratory qualification.
13. Tester qualification.

ON PAGE 267, SUBSECTION 502.03.D.7.a – MIXING AND DELIVERY

Add the following to the end of 7.a:

If a set stabilizer meeting ASTM C494 is used, the Contractor may extend the discharge time and revolution count in accordance with the manufacturer's recommendations. Submit this information with the mix design for approval.

ON PAGE 267, SUBSECTION 502.03.D.7.e – MIXING AND DELIVERY

Delete e and Table 502.03-4.

ON PAGE 274, SUBSECTION 502.03.E – FALSEWORK AND FORMS

Replace Table 502.03.5 with the following, but keep notes (a) through (e):

Table 502.03-5 – Form and Falsework Removal and Loading of Concrete

Part 1: Removal of Forms and Falsework Structural Element	Minimum Days ^{(a)/(b)/(f)}	Percent of Design Strength ^(e)
Side forms for: footings, abutment caps, pier caps, traffic and pedestrian barriers, end diaphragms, intermediate diaphragms, sleeper beams, moment slabs, and other side forms not supporting the concrete mass	1	—
Columns, abutment backwalls, and retaining walls	3	50
Cantilever bridge deck sidewalks	7	—
Bridge decks, top slabs of concrete box culverts or stifflegs ^(c)	10	80
Crossbeams, caps, box girders, T-beam Girders, and flat slab superstructures ^(c)	7	80

Part 1: Removal of Forms and Falsework Structural Element	Minimum Days ^{(a)(b)(f)}	Percent of Design Strength ^(e)
Signal, Luminaire, and Sign Support Foundations	7	80
Part 2: Subsequent Loading ^(d) of Structural Element	Minimum Days ^(a)	Percent of Design Strength^(e)
Footings and abutments	3	80
Approach slabs, sleeper beams, moment slabs, and bottom slabs of box girders with falsework in place	5	80
Columns and walls	5	100
Bridge decks, top slabs of concrete box culverts or stifflegs and other members	10	100
Signal, Luminaire, and Sign Support Foundations	7	100
Erecting girders on pier caps	7	100

ON PAGE 274, SUBSECTION 502.03.E – FALSEWORK AND FORMS

Add after note (e) below Table 502.03-5:

(f) 1 day is 24 hours

ON PAGE 276, SUBSECTION 502.03.F.4 – PLACING CONCRETE/MASSIVE PLACEMENT

Delete the second paragraph and replace with:

Concrete used in massive placements must not exceed a temperature of 158 °F at any time from placement through the full 7-day curing period. The difference between the surface temperature and the center of mass temperature for a placement must not exceed 35 °F at any time from placement throughout the full 7-day curing period.

ON PAGE 277, SUBSECTION 502.03.I – FINISHING CONCRETE

Delete the first sentence of Paragraph I and replace it with the following:

Provide an ordinary surface finish for all formed surfaces that are not exposed.

ON PAGE 277, SUBSECTION 502.03.I – FINISHING CONCRETE

Delete the last sentence of paragraph 502.03.I.1.

ON PAGE 281, SUBSECTION 502.03.J – CURING CONCRETE

Replace all instances of "AASHTO M 148" with "ASTM C309-19."

ON PAGE 283, SUBSECTION 503.02 – MATERIALS

Add the following:

Splices 708.32

Add the following after the second paragraph:

Order additional mechanical splices to account for field sampling.

ON PAGE 285, SUBSECTION 503.03.E – SPLICES

Delete the fifth full paragraph and replace with:

Make one tension test specimen splice to represent each lot of bars spliced at the project site and submit for testing 15 calendar days before installation. A lot consists of every 50 epoxy-coated or every 50 non-epoxy-coated bars spliced at the project site of one size. Tension test each specimen to destruction or to the specified ultimate strength, whichever is less.

ON PAGE 303, SUBSECTION 505.03.A – GENERAL

In the second sentence of the second paragraph delete:

required production pile length

And replace with:

revised estimated production pile length

ON PAGE 303, SUBSECTION 505.03.A – GENERAL

Add the following to the end of A. General:

Piles must achieve the required pile driving criteria through 2 consecutive, 1-foot or 1-inch penetration intervals.

ON PAGE 304, SUBSECTION 505.03.E – STEAM, AIR, DIESEL, HYDRAULIC HAMMERS

Add the following to the end of E. Steam, Air, Diesel, Hydraulic Hammers:

Provide hydraulic hammers with at least 3 hydraulic control settings that ensure predictable energy or equivalent ram stroke. The maximum stroke for concrete piles is 2 feet. The hydraulic hammer stroke must be able to be set at 0.5-foot increments up to the maximum stroke. Supply hammer instrumentation with an electronic read out and control unit that allows the Engineer to monitor, and the operator to read and adjust the hydraulic hammer energy or equivalent ram stroke. When pressure measuring equipment is required to determine hydraulic hammer energy, calibrate the pressure measuring equipment before use in accordance with the hammer manufacturer’s written requirements. Provide an acceptable written record of the calibration before beginning pile driving. If the Contractor is unfamiliar with hydraulic hammer operation, a manufacturer’s representative must be onsite for the first driven piles to ensure that the equipment is operated properly.

ON PAGE 305, SUBSECTION 505.03.O – ALIGNMENT, LOCATION, AND ORIENTATION

Delete the first five sentences of the paragraph and replace with the following:

Drive piles with a variation of plumbness of not more than ¼ inch per foot from the vertical or from the batter shown in the bridge plans. Drive piles for elevated pier caps so the pile cap may be placed without inducing excessive stresses in the piles as determined by the Engineer. The Engineer will determine excessive stressed based on loading conditions, pile type, and unsupported length. Ensure pile locations at cutoff are within 6 inches (2 inches for elevated pier caps) of plan location. Ensure the distance to the as-driven centroid (the distance from any edge of concrete of the footing or abutment to the as-driven centroid) of the pile group is within 5 percent of the distance to the plan centroid location of the pile group (the distance from any edge of concrete of the footing or abutment to the plan centroid).

ON PAGE 306, SUBSECTION 505.04 – METHOD OF MEASUREMENT

Delete Item 1 and replace with the following:

- 1. Provide and drive piles and test piles will be by the foot of pile below the cutoff elevation not including the pile shoe or tip.

ON PAGE 306, SUBSECTION 505.05 – BASIS OF PAYMENT

In the second sentence of the second paragraph delete:

required pile lengths

And replace with:

revised estimated pile lengths

Add the following after the last paragraph:

The cost to drive pile shoes or tips is incidental.

ON PAGE 314, SECTION 507 – BRIDGE BEARINGS

Add the following Section:

SECTION 507 – BRIDGE BEARINGS

507.01 Description. Provide and place bearings including plain unreinforced elastomeric pads, reinforced elastomeric pads with steel laminates, or polytetrafluoroethylene (PTFE) pads with stainless steel mating surface that meet AASHTO Specifications for Highway Bridges at girder supports as specified in the plans.

Provide bearings with the dimensions, material properties, elastomer grade, and type of laminates specified. Show the design load specified and testing requirements.

If filled PTFE sheet is used, only glass-fiber filler will be approved.

507.02 Materials. Provide bearings as specified in:

- Elastomeric Bearings 720.02
- Polytetrafluoroethylene (PTFE) Bearings 720.03

Provide manufacturer certificates of compliance for materials used in the bearings.

507.03 Construction Requirements.

1. Fabrication. Fabricate bearings as specified in 720.02.
2. Testing. Test materials for elastomeric bearings and finished bearings as specified in 720.02.
3. Installation. Install bearings as specified in 720.02.

507.04 Method of Measurement. The Engineer will measure acceptably completed work by the each.

507.05 Basis of Payment. The Department will pay for acceptable quantities as follows:

Pay Item	Pay Unit
Elastomeric Bearings – Plain	Each
Elastomeric Bearings – Laminated	Each
PTFE Bearings	Each

ON PAGE 316, SUBSECTION 509.01 – DESCRIPTION

Delete the second paragraph and replace with:

Submit a proposed mix design using ITD-0916 for approval.

ON PAGE 317, SUBSECTION 509.03.A – PROPORTIONING

Delete section A entirely and replace with:

A. Proportioning. Submit a concrete mix design on an ITD 0916 and include compressive strength data from the Contractor's laboratory or an approved independent laboratory. Uniquely identify each submitted mix design. Submit the proportion of the ingredients for each mix design for Engineer review.

For aggregates with an AASHTO T 380 expansion of 0.031 to 0.12 percent, a mix containing at least 20 percent fly ash, or equivalent pozzolan, slag, or admixture, meeting the requirements for fly ash as a mineral admixture, as specified in 714, is adequate for ASR mitigation.

For aggregates with an AASHTO T 380 expansion greater than 0.12 percent, do one of the following:

1. Test in accordance with AASHTO T 380 or CRD C 662, using the cement, fly ash, and/or other mitigative additives proposed for use in the mix design. Determine the lithium nitrate dosage in accordance with CRD C 662 when using lithium nitrate for ASR mitigation. Do not allow expansion mortar bars to exceed 0.10 percent with the addition of fly ash, slag, or other additives when tested in accordance with CRD C 662. Do not allow the miniature concrete prisms to exceed 0.02 percent at 56 days or 0.04 percent expansion at 112 calendar days when tested in accordance with AASHTO T 380. The Contractor may test the coarse and fine aggregates together or separately. If testing is performed on the coarse and fine aggregate together, report the blend percentage on the test and be within 2 percent of the blend percentage used in the mix design. When tested separately, base mitigation actions on the aggregate requiring the most mitigation.
2. Use a concrete mix containing 30 percent Class F fly ash approved for use in mitigating ASR. Class 22 and Class 15 concrete will not require ASR mitigation measures.

ON PAGE 320, SUBSECTION 510.02.E – PACKAGING

Add the following title to the latex-modified concrete properties table:

Table 510.02-2 – Latex-Modified Concrete Properties

ON PAGE 321, SUBSECTION 510.02.E – PACKAGING

Add the following title to the silica fume concrete properties table:

Table 510.02-3 – Silica Fume Concrete Properties

Delete the minimum cement content of 560 lb/yd³ and replace with 520 lb/yd³.

ON PAGE 324, SUBSECTION 510.03.E –PLACING AND FINISHING

Add the following to the end of the section:

Apply a continuous fog spray of water to screeded and finished concrete. Provide fogging equipment for spreading a fine mist over concrete surfaces without ponding water. Continue fogging behind the final floating operation until placement of the cure system, and as directed by the Engineer. Do not fog concrete surfaces to aid surface finishing.

ON PAGE 327, SUBSECTION 511.02 – MATERIALS

Delete the following:

- Precoated Preformed Membrane Sheet, Type D System Tapecoat M860, Phillips
Petrotac, Polyguard nw-75, or PavePrep GeoTac
- Penetrating Water Repellent, Type C System as follows:

ON PAGE 327, SUBSECTION 511.02.A – PRECOATED PREFORMED MEMBRANE SHEET TYPE D.

Delete the following:

- Sand Membrane Protection Blanket see
703.02.B

ON PAGE 328, SUBSECTION 511.02.C – SPRAY-APPLIED WATERPROOFING SYSTEM TYPE E SYSTEM

Delete D4541 and replace with D7234.

ON PAGE 328, SUBSECTION 511.02.C.4 – SPRAY-APPLIED WATERPROOFING MEMBRANE (BASE COAT)

Add the following after the first paragraph:

Toning pigments must be laminar silicates, titanium dioxide, and inorganic oxides only. There must be no settling or color variation. Tinting must occur at the factory at the time of manufacture and placement in containers, prior to initial shipment. Use of vegetable or marine oils, paraffin materials, stearates, or organic pigments in any part of coating formulation is not allowed. Submit a 1-quart wet sample, a drawdown color sample, and spectrophotometer or colorimeter readings taken in accordance with ASTM D2244, for each batch and corresponding standard color card.

ON PAGE 334, SUBSECTION 511.03.C – PROTECTION AND OVERLAYING

Delete the second paragraph and replace with:

Uniformly place 1 to 2 inches of sand (See 703.02.B) over the membrane surface if a base aggregate or borrow course is to be placed on the waterproof membrane.

ON PAGE 335, SUBSECTION 512.04 – METHOD OF MEASUREMENT

Delete the sentence and replace with:

The Engineer will measure acceptably completed work by the square foot of wall surface area from the bottom to the top of the gabion baskets.

ON PAGE 335, SUBSECTION 512.05 – BASIS OF PAYMENT

Delete the section and replace with:

512.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit price as follows:

Pay Item	Pay Unit
Gabion Structure	SF

Structural excavation, gabion basket backfill, geotextile, backfill behind gabion baskets, and compacting backfill are incidental.

ON PAGE 336, SECTION 519 – CONCRETED H-PILES

Add the following section:

SECTION 519 – CONCRETED H-PILES

519.01 Description. Provide and install steel H piles into pre-drilled holes filled with concrete.

519.02 Materials.

1. Piles. Steel H piles as shown in the bridge plans.
2. Concrete. Class 40A self-consolidating per 502.01.A.

519.03 Construction Requirements. Provide a work plan at least three weeks before drilling begins. The work plan must include the following as a minimum:

- A description of planned drilling methods,
- Materials and methods to maintain a stable drill hole,
- Methods for bracing the piles to maintain their position within the specified tolerances,
- Methods to place concrete around pile bases,
- Methods to fill and stabilize the annular space around the piles above the concrete backfill.

Do not begin drilling operations until the work plan is approved.

After drilling, clean the sidewall in bedrock and bottom of the drilled holes to the Engineer’s satisfaction before installing piles. No more than 1” of loose material is allowed in the drilled hole bottom before placing concrete.

This may require the placement of temporary casings, or additional cleaning with compressed air or other cleaning tools and/or methods before installing H-piles and concrete.

Install piles at the drilled hole centers within 0.25” per foot of pile length from the vertical, or batter shown in the plans. Ensure the pile position at cutoff is within 2” of the plan location. Ensure the pile orientation is within 15 degrees of that shown in the plans. Use braces to keep the piles in the required position before and after placing concrete.

Place concrete no later than 72 hours after pile installation. Place concrete from the bottom of the rock socket with a tremie pipe or a concrete pump. Make sure the concrete filling the rock socket excavation flows around the H-piles and completely fills the rock socket excavation.

Maintain piles in the required position as specified above and braced until the concrete has set.

Design and construct corrective measures if the pile location or alignment specified above is not met, and if the Engineer determines that corrective measures are necessary. The Department will not pay for the expense, including schedule delays, associated with the corrective measures.

Fill the soil portions of the drilled hole with coarse aggregate for concrete to the top of the drilled holes, as specified in Section 520.

Remove casing from the hole as the concrete and aggregate is placed, maintaining the concrete and aggregate top above the casing bottom.

519.04 Method of Measurement. The Engineer will measure acceptably completed work by the foot from the pile cutoff elevation to the pile tip elevation.

519.05 Basis of Payment. Payment for accepted work will be made as follows:

Pay Item	Pay Unit
Concreted H-Piles	ft

Hole drilling, coarse aggregate for concrete, and casing if used, will be paid for under Section 520, as applicable. Concrete is incidental.

ON PAGE 337, SUBSECTION 521.03.A – TESTING/GENERAL

In the last sentence, delete “additional” and change “An” to “A”.

ON PAGE 337, SUBSECTION 521.03.B – TESTING/TESTING AND REPORTING

Delete the first sentence and the first 3 bullets.

ON PAGE 337, SUBSECTION 521.03.B – TESTING/TESTING AND REPORTING

Delete the first sentence of the second paragraph and replace with:

The consultant engineer will operate the pile driving analyzer and monitor pile driving in real time on- site or remotely, from the beginning to the end, or as directed.

ON PAGE 337, SUBSECTION 521.03.B – TESTING/TESTING AND REPORTING

Add to the end of the second numbered list:

4. Graphs showing RMX, BLC, CSI, STK, and FMX by depth of penetration.
5. The hammer stroke and blow count when the CAPWAP analysis is performed will also be included.

ON PAGE 337, SUBSECTION 521.03.B – TESTING/TESTING AND REPORTING

Delete the last paragraph on the page and replace with:

The Contractor will submit a final CAPWAP analysis report to the Engineer that is sealed and signed by an Idaho licensed professional engineer within 2 working days after the test(s) completion for each project site visit. The report will contain the required information and the CAPWAP analysis. The report must include the project key number, and information on the test pile, soil conditions, pile driving hammer, field test results (including the pile hammer stroke height at the hammer blow used for the CAPWAP analysis and the interval pile hammer blow count), and CAPWAP analysis with any comments that the consultant may have on the results.

ON PAGE 340, SUBSECTION 522.02 – MATERIALS

Delete Table 522.0-1 – CDF Mixture Properties and replace with:

Table 522.02-1 – CDF Mixture Properties

CDF Mix Property	
Maximum gallons of mixing water per cubic yard	50
Pounds of cement per cubic yard	50 ± 5
Pounds of fly ash per cubic yard	250 ± 10
Pounds of dry aggregate per cubic yard (an	3,200 ± 100
Slump, inches	6-8

ON PAGE 340, SUBSECTION 522.02 – MATERIALS

Delete the following sentence at the end of the subsection:

Provide CDF verification test results from 3 compressive strength testing cylinders.

ON PAGE 341, SUBSECTION 551.01.A – GENERAL

Add the following after the first paragraph:

Survey the bridge deck and approach slabs before overlay surface preparation and after overlay placement as specified in 675.03.S.3.e.

ON PAGE 345, SUBSECTION 551.03.B.1.a – CONTRACTOR QUALIFICATION AND TRIAL OVERLAY/EXPERIENCE/TRIAL OVERLAY

Replace the second sentence of the third paragraph with the following:

The pull-off tests must have a minimum tensile bond strength of 250 psi or a failure area at a depth of 1/8 inch or more into the base concrete in at least 50 percent of the test area.

ON PAGE 346, SUBSECTION 551.03.B.2.a – CONTRACTOR QUALIFICATION AND TRIAL OVERLAY/NO EXPERIENCE/TRIAL OVERLAY

Delete the first paragraph and replace with:

Trial Overlay. Meet the requirements for a trial overlay given in 551.03.B.1 except the minimum plan dimensions of the concrete pad and trial overlay are 12 feet in width and 75 feet in length. The trial overlay must meet the following additional requirements:

ON PAGE 348, SUBSECTION 551.03.F – PLACEMENT OF PPC

Add the following after the last paragraph:

Ensure a minimum $\frac{3}{4}$ inch overlay depth. If the overlay thickness at any location on the bridge or approach slab is expected to be more than 1 inch thick, string lines must be used for grade control of the finishing machine.

ON PAGE 350, SUBSECTION 551.03.J – CHECKING PPC FOR THICKNESS

Add the following to the beginning of the subsection:

Minor surface irregularities on the prepared deck surface to receive PPC overlay are expected. The Contractor must ensure a minimum $\frac{3}{4}$ inch overlay depth.

ON PAGE 350, SUBSECTION 551.04 – METHOD OF MEASUREMENT

Replace the entire subsection with the following:

Completed work will be measured as follows:

1. Prepared & Placed PPC Overlay will be by the square yard using plan quantity as specified in 109.01.B.
2. Furnished PPC Overlay Material will be by the cubic yard as recorded by PPC proportioning printouts.

ON PAGE 351, SUBSECTION 551.05 – BASIS OF PAYMENT

Delete the last two paragraphs and replace with the following:

If the volume used exceeds the neat line volume by more than 10 percent, the Department will pay for the volume exceeding 10 percent of the neat line volume at 50 percent of the contract unit price.

Surface preparation, trial overlay, and obliteration of pavement markings are incidental.

ON PAGE 352, SECTION 553 – EPOXY OVERLAY

Delete the entire section and replace with the following:

SECTION 553 – EPOXY OVERLAY

553.01 Description. Prepare and apply an epoxy and aggregate overlay on the concrete bridge deck surface area between the curb faces and from the beginning to the end of the bridge and on the approach slabs as specified. Submit the following:

- A. Submit the name and phone number of the epoxy material manufacturer's technical representative at the preconstruction meeting.
- B. At least 10 calendar days before the epoxy overlay placement, submit:
 1. The epoxy materials manufacturer's written mixing instructions, safety data sheets, independent test results, and a certificate of compliance stating the epoxy materials meet the requirements listed in Table 553.02-1.
 2. Independent test results and a certificate of compliance stating the aggregates meet the requirements listed below in Tables 553.02-2 and 553.02-4 or in Tables 553.02-3 and 553.02-4 and that it is compatible with the epoxy material.

553.02 Materials. Provide an epoxy resin base and hardener that is a modified Type III, 2-component system that meets the requirements of ASTM C881, Grade 1, Classes B and C. Store the epoxy in accordance with the manufacturer's specifications. Ensure epoxy properties meet Table 553.02-1:

Table 553.02-1 – Epoxy Requirements

Property	Requirement	Test Method
Gel Time	≥ 15 to ≤ 45	ASTM C881, Paragraph 11.2 modified
Tensile Strength (neat)	≥ 2,000 psi to ≤ 5,000 psi at 7 days	ASTM D638
Tensile Elongation (neat)	≥ 40% to ≤ 80% at 7 calendar days	ASTM D638
Viscosity	> 7 to < 25 poises	ASTM D2393, Brookfield RVT Spindle No. 3 at 20 rpm
Minimum Compressive Strength at 3 hours	1,000 psi at 75 °F	ASTM C579 modified (with plastic inserts), mixed with aggregate
Minimum Compressive Strength at 24 hours	5,000 psi at 75 °F	ASTM C579 modified (with plastic inserts), mixed with aggregate
Minimum Adhesion Strength at 24 hours	250 psi at 75 °F	ACI 503R, Appendix A, VTM 92
Permeability to chloride ion at 28 days	100 coulombs maximum	AASHTO T 277

Pack materials in puncture, rupture, and leak proof containers. Label each container as part A or part B and clearly mark the name and address of the manufacturer, name of the product, mixing proportions and instructions, lot and batch numbers, date of manufacture, and quantity.

Provide aggregate topping that is clean, dry, and free from deleterious matter. Ensure the aggregate is compatible with the epoxy material. Furnish aggregates in appropriate packaging that is clearly labeled (i.e., showing the name of the manufacturer and location of processing) and protects the aggregate from contaminants, rain, and other moisture. Provide aggregate as shown in the plans and that meets the properties in Tables 553.02-2 or 553.02-4. If aggregate is not specified in the plans, either aggregate is acceptable. Provide an aggregate with gradation that meets the requirements in Table 553.02-3 or 553.02-5, as appropriate.

Table 553.02-2 – Calcined Bauxite Aggregate Requirements

Property	Requirement	Test Method
Resistance to Degradation – LA Abrasion Test	20% maximum	AASHTO T 96 or ASTM C131 “D” Grading
Resistance to Degradation – Micro-Deval Abrasion Test	5% maximum	AASHTO T 327 or ASTM D6928
Moisture Content	0.2% maximum	AASHTO T 255
Aluminum Oxide	87% minimum	ASTM C25
Mohs Scale Hardness	8 minimum	-----

Table 553.02-3 – Bauxite Aggregate Gradation

Sieve Size	Total Percent Passing
No. 4	100
No. 6	95 – 100
No. 16	0-5

Table 553.02-4 – Standard Aggregate Requirements

Properties	Requirement	Test Method
Resistance to Degradation – LA Abrasion Test	20% maximum	AASHTO T 96 or ASTM C131, “D” Grading
Resistance to Degradation – Micro-Deval Abrasion Test	10% maximum	AASHTO T 327 or ASTM D6928
Moisture Content	0.2% maximum	AASHTO T 255
Mohs Scale Hardness	7 minimum	-----

Table 553.02-5, Standard Aggregate Gradation Requirements

Sieve Size	Total Percent Passing
No. 4	100
No. 10	10-35
No. 20	0-10

553.03 Construction Requirements

Ensure the epoxy overlay manufacturer's representative is on the project site at all times and who, upon consultation with the Engineer, may suspend work items that do not meet specification requirements.

Work may resume only after taking appropriate remedial action to satisfy the manufacturer's representative and the Engineer. Plan and perform the work to allocate the specified minimum curing periods, or other longer curing periods prescribed by the manufacturer, before opening to public or construction traffic.

A. Equipment. For mechanical applications, provide equipment with a minimum of an epoxy distribution system, aggregate spreader, application squeegee, moisture and oil-free compressed air, and a source of lighting if work will be performed at night. Ensure the epoxy distribution system accurately blends the epoxy materials in accordance with the manufacturer's written specifications and distributes epoxy at the specified application rates to cover 100 percent of the work area. Propel aggregate spreader to uniformly and accurately apply the aggregate.

For manual applications, provide equipment with calibrated containers for measuring epoxy volumes, a paddle-type mixer, squeegees, shovels, and brooms that are suitable for mixing the epoxy and applying the epoxy and aggregate at the specified application rates.

B. Preparation of Concrete Surfaces. Repair minor potholes and delamination in the deck surface by removing the damaged concrete and patching with an Engineer-approved cementitious patching material before installation of the overlay. Epoxy overlay material is an acceptable alternate patching material. Strike off patches so they are level with the existing deck and finish with wooden floats. Portland cement concrete patches require a minimum cure period of 28 calendar days before application of the overlay.

Before placing the overlay, obliterate all pavement markings and thoroughly clean the entire concrete deck by steel shot blasting to ensure proper bonding between the epoxy and the concrete substrate. Achieve a final surface texture meeting numbers 5 through 7 as defined in ICRI Guideline No. 03732 and as shown by surface profile samples available from ICRI, or ASTM E965 pavement macrotexture depth of 0.04 to 0.08 inches. Shot blasting is meant to expose the coarse aggregate and ensure the surface is cleaned of asphalt material, oil, dirt, rubber, curing compounds, paint carbonation, laitance, weak surface mortar, and other potentially detrimental materials, which may interfere with the bonding, or curing of the overlay. Remove and repair loosely bonded patches and remove pavement markings. Use moisture and oil-free compressed air or high volume leaf blowers to remove dust that adheres to the prepared surface.

In order to determine the adequacy of the surface preparation, perform at least 1 bond test per lane of each bridge. For each test, apply palm-sized patties of binder aggregate, $\frac{1}{4}$ to $\frac{3}{8}$ inch thick at 3 locations. After the samples have cured, remove the patties with a hammer, and chisel to examine the fracture and delamination plane. Verify concrete with fractured aggregate has attached to the entire underside of the patty. If only lattice or small particles of concrete are attached, further deck preparation is required.

C. Overlay Application. Handle and mix the epoxy resin and hardening agent in a safe manner to achieve the desired results in accordance with the specifications and the manufacturer's written instructions. Only apply epoxy overlay materials when weather or surface conditions allow the material to be properly handled, placed, and cured within the specified requirements for project sequencing, traffic control, or when rain is not imminent within the manufacturer's recommended cure times. Completely dry the prepared surface when applying epoxy. The Engineer may allow moisture and oil-free heat sources or torches to dry the surface. Ensure the temperature of the deck surface, epoxy, and aggregate components are at least 55 °F and rising at the time of application. Do not apply epoxy if the gel time is less than 5 minutes or if pavement temperatures exceed 115 °F. In situations where road closures are not under strict time constraints, obtain the Engineer's approval to apply epoxy at lower temperatures.

Apply the epoxy overlay and aggregate using a double pass method. The double pass method applies the epoxy and aggregate in 2 separate layers at the corresponding application rates specified in Table 553.03-1.

TABLE 553.03-1 – Double Pass Method – Epoxy and Aggregate Application Rates

Double Pass Method	Estimated Epoxy Rate gal/yd ²	Aggregate lbs/yd ² (a)
1 st Course	0.22	10
2 nd Course	0.45	14.5

(a) Application of aggregate must be of sufficient quantity to completely cover the epoxy.

Mix the epoxy at a volume ratio of 1 part A to 1 part B and mechanically stir with a paddle-type mixer for 3 minutes or according to the epoxy manufacturer's written instructions. After the epoxy has been properly mixed, immediately and uniformly apply to the pavement surface with a ³/₁₆ to ¹/₄ inch V-notched squeegee. Apply the aggregate to cover the epoxy material while the epoxy material while the epoxy is still fluid. Remove and replace first course applications that do not receive enough aggregate before gelling.

Ensure each course of epoxy overlay cures before removing the excess unbonded aggregate to prevent tearing or damaging of the surface. Use moisture and oil-free compressed air, high-volume leaf blowers, or vacuum broom to remove excess aggregate. After loose aggregate is removed, remove remaining dust using moisture and oil-free compressed air, high-volume leaf blowers, or vacuum broom. Obtain the Engineer's approval before opening the first course to traffic. Begin application of the second course only after removing dust. The Department prohibits traffic on the overlay until it has cured sufficiently to prevent damage from wheel loads as specified in Table 553.03-2.

Table 553.03-2 – Typical Curing Times

Average Temperature of Deck, Epoxy, and Aggregate Components in °F						
Course	60-64	65-69	70-74	75-79	80-84	Above 85 (a)
1	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr
2	6.5 hr	5 hr	4 hr	3 hr	3 hr	less than 3 hr

(a) Refer to manufacturer's written instructions.

Apply the second course at the rates specified in Table 553.03-1. Apply epoxy to ensure the wet epoxy does not coat the wear (top) surface of the aggregate. Once the epoxy is cured, remove loose aggregate from the surface with moisture and oil-free compressed air, high volume leaf blowers, or vacuum broom. After removing loose aggregate, if there are any areas where epoxy has coated the top surface stone, remove the excess epoxy using a light shot or sandblast.

Protect the bridge deck expansion joints with a bond breaker (e.g., duct tape) that can adequately seal the joints from the epoxy. The Contractor may also use duct tape to delineate application areas. The Department recommends taped areas or bond breakers be removed before epoxy starts to harden. The Contractor may also remove epoxy by scoring the overlay before gelling or by saw cutting after cure. Feather the overlay out at the end of the bridge or approach slab and at expansion joints (edge of armor angle) in accordance with the manufacturer’s written instructions.

If the Contractor’s operations or actions damage or mar the overlay, remove the damaged areas and reapply the overlay to the Engineer’s satisfaction. In the event that part of the epoxy mixture does not cure, completely remove the overlay from the affected area and discard. Completely remove residual epoxy remaining on the pavement by mechanical means (e.g., steel shot, abrasive blasting, scarifying) before reapplying the overlay.

Maintain and provide records for each batch provided, including:

1. Number of batches mixed and volume per batch.
2. Location of batches as placed on deck, referenced by stations.
3. Batch time.
4. Gel time (50 milliliter sample).
5. Temperature of the air, deck surface, and epoxy components.
6. Loose aggregate removal time.
7. Time open to traffic.

553.04 Method of Measurement. The Engineer will measure acceptably completed work by the square foot of deck surface.

553.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit price as follows:

Pay Item	Pay Unit
Epoxy Overlay	SF

Surface preparation, including obliteration of pavement markings, is incidental. Patch and repair of concrete will be paid under 582.

ON PAGE 358, SUBSECTION 565.01 – DESCRIPTION

Delete products 2, 3, and 4.

ON PAGE 358, SUBSECTION 565.02.A – BINDER MATERIAL

Delete existing sentence and replace with:

Provide premixed, premeasured polymer asphalt expansion joint binder material and aggregate. Ensure joint binder material meets the requirements in Table 565.02-1. Ensure aggregate is crushed, double washed, and dried granite, basalt, or orthoquartzite and is premixed with binder material.

ON PAGE 359, SUBSECTION 565.02.B – AGGREGATE

Delete in its entirety.

ON PAGE 359, SUBSECTION 565.03.C – BINDER

Delete the last sentence.

ON PAGE 360, SUBSECTION 565.03.G – AGGREGATE PREPARATION

Delete in its entirety.

ON PAGE 360, SUBSECTION 565.03.H – AGGREGATE PROPORTION AND LAYER THICKNESS

Delete in its entirety.

ON PAGE 361, SUBSECTION 566.02 – MATERIALS

Delete the entire subsection and replace with the following:

566.02 Materials. Provide neoprene seals and adhesive as specified on the plans or an approved equal and as specified in 704.04.

ON PAGE 361, SUBSECTION 566.03 – CONSTRUCTION REQUIREMENTS

Add the following sentence at the beginning of the second paragraph:

Submit compression seal expansion joint opening size dimensions and temperature at the time of measurement to the Engineer for approval before ordering materials.

ON PAGE 361, SUBSECTION 566.04 – METHOD OF MEASUREMENT

Replace the entire subsection with the following:

566.04 Method of Measurement. The Engineer will measure acceptably completed work as follows:

1. Compression seal expansion joint by the foot.
2. If the required size of the joint seal differs from plan, additional materials will be measured by the contingency amount (force account).

ON PAGE 361, SUBSECTION 566.05 – BASIS OF PAYMENT

Delete the first line under Pay Item and add the following:

Compression Seal Expansion Joint Materials (Per plan).....FT
 Compression Seal Expansion Joint Materials (Different from plan).....CA

ON PAGE 363, SECTION 568 – ELASTOMERIC CONCRETE HEADER

Delete the entire section and replace with the following:

SECTION 568 – ELASTOMERIC CONCRETE HEADER

568.01 Description. Provide and install elastomeric concrete headers in prepared blockout areas as specified. Include the collection and disposal of waste debris.

568.02 Materials. Provide elastomeric concrete that consists of a field-mixed, 2-part polyurethane material and pre-graded aggregate mix; the Department does not allow epoxy-based materials.

Provide a manufacturer's certification that attests the proposed materials are pre-tested and meets this specification.

A. Elastomeric Concrete. Provide ambient cure material, 100 percent solids, 2-component polyurethane with pre-graded aggregate mix exhibiting the physical properties listed in Tables 568.02-1 and 568.02-2. When properly mixed and poured, the elastomeric concrete cures rapidly, flows and fills voids, spalls, or irregularities to form a monolithic unit.

Table 568.02-1 – Elastomeric Cured Binder

Physical Properties	Test Method	Minimum Requirement
Tensile Strength	ASTM D638	1,000 psi
Ultimate Elongation	ASTM D638	150%
Tear Resistance	ASTM D624	80 lb/in

Table 568.02-2 – Elastomeric Cured Binder and Aggregate

Physical Properties	Test Method	Minimum Requirement
Compressive Strength	ASTM D695	2,000 psi
Resilience @ 5% deflection	ASTM D695	90%
Wet Bond Strength to Concrete	Note 1	250 psi
Impact Resistance @ -20 °F	Note 2	No cracks
Durometer Hardness	ASTM D2240	50

Note 1: Saw briquette in half so that cut surface area equals approximately 1 square inch. Ensure mortar briquette conforms to ASTM C190. Place briquette in mold and cast elastomeric concrete against sandblasted surface. Submerge specimen in room temperature water for 7 calendar days. Test specimen to failure using a Riehle Briquette Tester. Failure can occur anywhere within the test specimen.

Note 2: Cast 2.5-inch diameter and 0.375-inch thick disc test specimens then condition for 4 hours at test temperature. Drop a 1 pound steel ball onto the center of the specimen through a plastic tube from a height of 7 feet.

B. Bonding Agent. Provide manufacturer's 2-component, 100 percent solids bonding agent. Apply bonding agent to the sides and base of the preformed concrete blockout before elastomeric concrete placement. Store, mix, and apply in accordance with the manufacturer's safety data sheet and written instructions.

Identify liquid components by the following information:

Part A – Resin Color: Clear

Part B – Activator Color: Tan

Submit certified test results meeting the requirements in Tables 568.02-1 and 568.02-2 for the proposed products for approval before use.

568.03 Construction Requirements. Meet with the Engineer and discuss the method of installation before performing the work pertaining to the elastomeric concrete headers.

Ensure a qualified manufacturer's representative is onsite during the initial installation to meet with the Contractor and the Engineer, to train the Contractor in mixing and placement procedures, and to ensure the installation procedures are in accordance with the manufacturer's warranty requirements.

Ensure the concrete blockout has cured for 7 calendar days and has reached a minimum compression strength of 3,000 psi before placing elastomeric concrete. Sandblast and vacuum the blockout surfaces and immediate surrounding concrete area to remove dirt, dust, sand, oil, grease, paint, corrosion deposits, laitance, and bond-inhibiting materials immediately before placing the elastomeric concrete.

Prime the substrate surface as specified by the manufacturer and ensure joint gap is as specified on the plans before placing the elastomeric concrete. Mix and place the elastomeric concrete in accordance with the manufacturer's instructions and as specified. Provide the Engineer with 1 set of the manufacturer's instructions at least 1 week before the placement begins. Install the elastomeric concrete when the temperature is at least 45 °F and rising.

568.04 Method of Measurement. The Engineer will measure acceptably completed work by the cubic yard.

568.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit price as follows:

Pay Item	Pay Unit
Elastomeric Concrete Header.....	CY

Removal of existing expansion joint material within designated blockout areas and expansion joint seal installation are covered in other contract pay items.

ON PAGE 366, SECTION 574 – ANTI-GRAFFITI COATING

Add the following section.

SECTION 574 - ANTI-GRAFFITI COATING

574.01 Description. Coat exposed surfaces of designated concrete superstructures and substructures, retaining walls and MSE walls and coping to a line one foot below finished grade. Cover surfaces of the bridges and walls except the deck surfaces and the underside of the decks.

574.02 Materials. Provide anti-graffiti coating system consisting of either a one or two coat system to create a continuous pinhole-free film; the combination of coatings may be pigmented or clear. Use an aliphatic urethane system with a clear finish for graffiti system topcoat coating. Use a permanent type anti-graffiti coating for the protection of raw concrete substrates. Provide color pigment of base or sealer coat specified on the plans.

Apply in accordance with the manufacturers guidelines so that the coating system qualifies for all the guarantees and warranties provided by the manufacturer. Furnish the terms of the guarantees and warranties given by the manufacturer.

574.03 Construction Requirements. Provide an ordinary surface finish on all surfaces to be coated in accordance with 502.03 or provide textured concrete surface as shown in the plans. Cure concrete in accordance with 502.03 after surface acceptance. Sandblast all surfaces to be coated clean and free from any foreign substances, such as form release agents, curing compounds, dirt, laitance, leachates, oils, grease or other surface contaminants.

Apply base or sealer coat to the concrete surfaces as required by manufacturer. Apply anti-graffiti coating in accordance with manufacturer's written instructions, including surface preparation, application rate and environmental conditions.

574.04 Method of Measurement. The Engineer will measure acceptably completed work by the square foot.

574.05 Basis of Payment. The Department will pay for acceptable quantities at the contract unit price as follows:

Pay Item	Pay Unit
Anti-Graffiti Coating	SF

ON PAGE 367, SECTION 576 – GLASS FIBER REINFORCED POLYMER (GFRP) REINFORCEMENT

Delete the entire section and replace with:

SECTION 576 – GLASS FIBER REINFORCED POLYMER (GFRP) REINFORCEMENT

576.01 Description. Provide and place glass fiber reinforced polymer (GFRP) as specified.

576.02 Materials. Provide GFRP reinforcement meeting ASTM D7957/D7957M. Provide GFRP reinforcement that is deformed and/or sand coated.

A. Submittals. Provide 2 copies of written certifications that the GFRP reinforcement meets this specification. The written certification must list the identifying lot information and test values and test procedures used to determine the physical properties of the GFRP reinforcement. Provide certifications bearing the notarized signature of a manufacturer’s representative having quality control responsibility. Identify each bundle of GFRP reinforcement with a durable tag displaying the corresponding lotnumbers.

B. Repair Material. Comply with the bar manufacturer’s requirements for the material used to repair the cut ends of GFRP reinforcement. Perform all repairs of cut ends at the GFRP reinforcement manufacturer's plant unless otherwise approved.

576.03 Construction Requirements.

A. Material Handling. When handling GFRP reinforcement, use equipment that avoids damaging or abrading the GFRP reinforcement. Do not drop or drag the GFRP reinforcement.

B. Storage. Store GFRP reinforcement above the ground surface on platforms, skids, or other supports as close as possible to the point of placement. Cover the bars with opaque plastic or other types of cover to protect the bars from the external environment. Prevent exposure of GFRP reinforcing bars to temperatures above 120 °F during storage.

C. GFRP Placement. Secure GFRP reinforcement firmly in place before and during concrete placement by means of bar supports adequate in strength and number to prevent displacement and to keep the reinforcing at the proper distance from the forms and as specified in 503.03.D. Steel tie wires, bar chairs, supports, or clips must be fully coated with either epoxy or plastic. Provide adequate vertical restraint of GFRP reinforcement to prevent upward movement in the fresh concrete due to buoyancy.

When placed in the work, reinforcement must be free from dirt, paint, grease, oil, or other foreign materials deleterious to bonding with the surrounding concrete. Before placing concrete, remove foreign materials by cleaning the bars using methods and materials recommended by the bar manufacturer and Engineer approved.

D. Field Cutting. Field cutting GFRP reinforcement is not permitted, except with the Engineer’s prior approval. Shear cutting and flame cutting are not permitted methods of field cutting. Coat field cut ends as

described in this specification. Repair all surface damage due to field cutting GFRP reinforcement as described below or replace the bar with an undamaged bar.

E. Bending. If bent GFRP reinforcement is required, the bends must be pre-fabricated. Field bending or straightening of GFRP reinforcement is not permitted.

F. Repair of Bar Damage. Repair all visible damage to the accepted GFRP reinforcement. Repair damaged areas using materials and procedures specified by the GFRP manufacturer.

G. Concrete Placement. If the reinforcement is not adequately supported or tied to resist settlement, floating upward, or movement in any direction during concrete placement, halt concrete placement until corrective measures are taken.

576.03 Method of Measurement. The Engineer will measure GFRP reinforcement by the foot.

576.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit price as follows:

Pay Item	Pay Unit
Glass Fiber Reinforced Polymer (GFRP) Reinforcement	ft

Ties, bar chairs, supports, or clips used for fastening GFRP reinforcement in place are incidental.

ON PAGE 370, SUBSECTION 577.03.A – CONCRETE COLUMNS

Add the word “at” in the third sentence, so the text reads “Install spacer sets at the top, bottom, and at intervals of 6 feet or less along the column.”

ON PAGE 370, SUBSECTION 577.02.B – SHELL OR H-PILES

Delete the word “course” and replace with “coarse”.

ON PAGE 370, SUBSECTION 577.03.B – SHELL OR H-PILES

Delete “Shell or” from letter B.

Add letter C:

C. Shell Piles. Fill the lower 5 feet of the sleeves with coarse aggregate before placing and compacting the MSE backfill, and after the pile is lowered into the sleeve but before pile driving begins. Ensure the inside sleeve is not closer than 2 inches from the steel pile.

ON PAGE 370, SUBSECTION 577.03.D – COARSE AGGREGATE FINISHING

Add the following new subsection heading before the last paragraph:

D. Coarse Aggregate Finishing.

Also, in the same paragraph, replace “course” with “coarse”.

ON PAGE 371, SUBSECTION 578.01.B – SUBMITTALS

Delete the second paragraph.

At the end of the subsection add:

Submit the electronic as-built shop drawings in PDF format before contract closeout.

ON PAGE 372, SUBSECTION 578.03 – CONSTRUCTION REQUIREMENTS

Add the following sentence to the end of the second paragraph:

Ensure that dimensional tolerances meet ASTM C1577, Section 12.

ON PAGE 372, SUBSECTION 578.03 – CONSTRUCTION REQUIREMENTS

Delete the eighth paragraph and replace with the following:

Apply a waterproof membrane as specified in 511 to the top slab of all buried culverts. Use waterproof membrane Type D when ballast and asphalt pavement are placed across the culvert. Use waterproof membrane Type E when only asphalt pavement is placed across the culvert.

ON PAGE 378, SUBSECTION 582.02.A – PREPARATION OF CONCRETE SURFACES

Delete the heading for part A and replace with the following:

A. Preparation of Concrete Surfaces.

Delete the 5 requirements and replace with:

1. Compressive Strength: 4,500 psi minimum at 28 days, per ASTM C109.
2. Bond Strength: slant shear: 1,500 psi minimum at 28 days, per ASTM C882.
3. Drying shrinkage: less or equal to 0.10 percent, per ASTM C157.
4. Permeability will be 2,000 coulombs or lower at 28 days, per ASTM C1202.
5. Freeze-thaw resistance will have a durability factor of 90 percent or higher after a minimum of 300 cycles, per ASTM C666.
6. Coefficient of thermal expansion: between $5.3 \times 10^{-6}/^{\circ}\text{F}$ and $6.4 \times 10^{-6}/^{\circ}\text{F}$, per ASTM C531 (optional).

ON PAGE 381, SUBSECTION 584.03 – CONSTRUCTION REQUIREMENTS

Delete the word “specific” from the second paragraph

ON PAGE 381, SUBSECTION 584.03 – CONSTRUCTION REQUIREMENTS

Add the following to the end of item 2:

...showing all soil or rock layers with design parameters and top and bottom elevations (including groundwater elevation) that are the basis for the submitted design.

ON PAGE 381, SUBSECTION 584.03 – CONSTRUCTION REQUIREMENTS

In the last paragraph, add the following after “Phase IV Materials Report”:

or Geotechnical Engineering Report

ON PAGE 381, SUBSECTION 584.03 – CONSTRUCTION REQUIREMENTS

Add item 9 to the list:

- 9. Include specific elevations below which not to excavate before placing internal bracing or anchors and highest allowable ground surface elevation outside (behind) the temporary shoring system.

ON PAGE 394, SECTION 601 – PIPES, GENERAL

Delete the word “Conduits” from the section title and replace with the word “Pipes”.

ON PAGE 394, SUBSECTION 601.02 – MATERIALS

Add as the new first sentence in this subsection:

¾” Aggregate for Untreated Base, Type B per 703.04 with Class A compaction may be used in the bedding zone of culverts outside the roadway prism in shallow trenches (e.g., for approaches, driveways).

ON PAGE 394, SUBSECTION 601.02 – MATERIALS

In the second sentence of the first paragraph, replace “AASHTO PP 63” with “AASHTO R 82”.

ON PAGE 394, SUBSECTION 601.03.A – GENERAL

Add the following to the end of 601.03.A:

Minimum and maximum pipe cover heights will be measured from top of pipe to finished grade.

Designs for larger pipe sizes, different pipe cover heights or conditions not included in these Standard Specifications or the Special Provisions, must be performed by an Idaho licensed professional engineer.

ON PAGE 394, SUBSECTION 601.03.B – CONCRETE PIPE

Add the following to 601.03.B after the first paragraph:

Recess the pipe bedding to receive pipe bells.

Pipes that show cracks or other damage will be rejected.

Minimum concrete pipe cover is 1 foot.

ON PAGE 394, SUBSECTION 601.03.D – PLASTIC PIPE

Add the following to the end of 601.03.D:

Table 601.03.D-1 – Minimum Plastic Pipe Cover Heights

Road Surface Type	Minimum Plastic Pipe Cover Height ^(a) (ft)
Flexible Pavement or Unpaved	2.0
Rigid Pavement	1.5

^(a) Minimum cover for plastic pipe larger than 48 inch diameter is half the pipe diameter.

ON PAGE 396, SECTION 602 – CULVERTS

Delete section 602, in its entirety, and replace with:

SECTION 602 – CULVERTS

602.01 Description. Provide and install culverts.

602.02 Materials. Provide materials as specified in 601.

Provide pipe joints that are either silt-tight or leak-resistant as specified in 601.02.

Provide size No. 1, 2a, or 2b coarse aggregate for concrete as specified in 703.02 and ¾ inch minus aggregate for untreated base as specified in 703.04.

Controlled density fill as specified in 522.

602.03 Construction Requirements. Install pipes as specified in 601.03.

In continuous water flow situations (e.g., creek crossings), place controlled density fill in the bedding zone for 3 feet of culvert length at the upstream end.

602.04 Method of Measurement. The Engineer will measure acceptably completed work by the foot along pipe centerline. The Engineer will allow an additional 1 foot for each connecting band used in making an authorized extension of existing corrugated metal pipe. The Engineer will include culvert sections attached to aprons in culvert measurements.

Pipe aprons required only because PVC or PE pipe is used will not be measured or paid for separately when other pipe material is acceptable.

602.05 Basis of Payment. The Department will pay for accepted quantities as follows:

Pay Item	Pay Unit
____ Pipe Culverts	ft
____ Pipe Arch	ft

Structure excavation, compacting backfill, trench zone backfill, and pipe bedding zone material are incidental and included in the culvert contract unit price.

ON PAGE 397, SECTION 603 – PIPE SIPHONS

Delete section 603, in its entirety, and replace with:

SECTION 603 – PIPE SIPHONS

603.01 Description. Provide and install pipe siphons.

603.02 Materials. Provide materials as specified in 601.

Provide pipe joints that are leak-resistant with a maximum working pressure of 10 psi as specified in 601.02.

Provide size No. 1, 2a, or 2b coarse aggregate for concrete as specified in 703.02 and ¾ inch minus aggregate for untreated base as specified in 703.04.

603.03 Construction Requirements. Install metal pipe siphons as specified in 601.03.

Completely fill the siphon with water and repair leaks that develop before backfilling, using approved methods. If there are leaks around joints in rubber-gasketed concrete pipe, encase the joint using an approved

reinforced concrete collar. Only 2 collar and joint repairs are allowed for each 150 feet of pipe. Empty the siphon of water before making repairs and then refill, retest, and obtain approval before backfilling.

603.04 Method of Measurement. The Engineer will measure acceptably completed work by the foot along pipe centerline. The Engineer may calculate the length from the dimensions of the approved siphon layout.

603.05 Basis of Payment. The Department will pay for acceptable quantities as follows:

Pay Item	Pay Unit
_____ Pipe Siphon	ft

Structure excavation, compacting backfill, trench zone backfill, and pipe bedding zone material are incidental and included in the pipe siphon contract unit price.

ON PAGE 398, SECTION 604 – IRRIGATION PIPELINES

Delete section 604, in its entirety, and replace with:

SECTION 604 – IRRIGATION PIPELINES

604.01 Description. Provide and install irrigation pipelines.

604.02 Materials. Provide materials as specified in 601.

Provide pipe joints that are leak-resistant with a maximum working pressure of 10 psi as specified in 601.02.

Provide Size No. 1, 2a, or 2b coarse aggregate for concrete as specified in 703.02 and ¾ inch minus aggregate for untreated base as specified in 703.04.

604.03 Construction Requirements. Install pipe as specified in 601.03.

Test for leaks by closing off a section with suitable water bulkheads, filling the line with water, and applying pressure to the line equal to the maximum static head the finished line will be subjected to at the point of testing. Locate and repair leaks as approved.

604.04 Method of Measurement. The Engineer will measure acceptably completed work by the foot along pipe centerline. The Engineer will allow an additional 1 foot for each connecting band used in making an authorized extension of existing corrugated metal pipe.

604.05 Basis of Payment. The Department will pay for accepted quantities as follows:

Pay Item	Pay Unit
_____ Irrigation Pipe	ft

Structure excavation, compacting backfill, trench zone backfill, and pipe bedding zone material are incidental and included in the irrigation pipe contract unit price.

ON PAGE 399, SECTION 605 – SEWERS, STORM SEWERS, MANHOLE, VALVE COVERS, AND DRYWELLS

Delete section 605, in its entirety, and replace with:

SECTION 605 – SEWERS, STORM SEWERS, MANHOLE, VALVE COVERS, AND DRYWELLS

605.01 Description. Construct sewers and storm sewers with manholes, catch basins, inlets, drywells, connections, and other appurtenances. Adjust and repair manhole and valve covers.

605.02 Materials. Provide materials as specified in:

Nonstructural Concrete	509
Pipes, General.....	601
Portland cement.....	701
Aggregates	703
Grout and Mortar	705
Pipes	706
Metals	708
Concrete Curing Compounds and Admixtures	709
Geotextiles.....	718

Use corrugated PE pipe only for storm sewers as specified in 706.16 and with the following additions:

1. Use Type S pipe.
2. Do not subject a pipeline with couplings to pressure flow.

Provide size No. 1, 2a, or 2b coarse aggregate for concrete as specified in 703.02 and ¾ inch minus aggregate for untreated base as specified in 703.04. Provide size No. 4 or 5 coarse aggregate for concrete as specified in 703.02 for drywell drain rock.

605.03 Construction Requirements. Use only precast concrete manufacturers that hold current certification under the NPCA Plant Certification Program, the PCAA Plan Certification Program, the ACPA QCast Plant Certifications Program, or the PCI Plant Certification Program.

A. Sewers and Storm Sewers.

The Contractor may tunnel or jack to cross under cross walks, house drives, or service pipes. Excavate and compact backfill as specified in 210.

Lay concrete pipe for sanitary sewer lines beginning at the lower (downstream) end with the receiving end upstream and with ends fully joined using suitable means to prevent air circulation within the pipeline. Install rubber-gasketed joints as specified in 601.03.

Install and test pipes as specified in 601.03.

Install spiral rib corrugated steel pipe and ABS pipe in accordance with the manufacturer’s written instructions.

Test the line for leaks before accepting the sewer line as follows:

1. Close off a section with suitable watertight bulkheads.
 - a. Fill the line with water.
 - b. Apply 4 feet of head pressure to the line measured from the top of the pipe at the upstream end, and supplying water to the section under test so the water loss may be measured.

The Engineer will not accept the sewer line if the water loss exceeds 200 gallons per inch of pipe diameter per mile per day. Locate and correct any leaks if the loss exceeds the volume allowed.

The Contractor may test by the low pressure air method as an acceptable alternate to hydraulic testing as follows:

1. Test installation on runs or sections. The Department will allow preliminary testing before backfilling. Test when the pipe is in a wet condition.
2. Use an approved apparatus and method recommended by the pipe manufacturer.
3. Prepare the installation being tested, between its plugged ends, by pressurizing it to an internal pressure of 4 psi. Air pressure is defined as the pressure in excess of back pressure on the installation that would occur if the pipe were submerged in water. Hold an air pressure of 4 psi for at least 2 minutes or as long as needed for the pressure to stabilize.
4. The tested section, when tested on the air pressure drop method, will be if the time required for the pressure to drop from 3.5 to 2.5 psi coincides with ASTM C924.

The Contractor may test connections to inlet and outlet structures by blocking off a pipe section of the outlet, filling the structure with water, and observing the water surface drop. To be acceptable, water loss must not exceed 0.002 gallons per inch of inside perimeter of connection per foot of structure height or length per hour with no outside back pressure.

Construct manhole covers and rings, catch basins, and inlets as specified in 708.22.

B. Manholes, Valves, Catch Basins, Inlets, and Drywells.

Construct manholes, valve frames and covers, catch basins, inlets, and drywells.

Adjust existing manhole and valve frames and covers to the finished pavement grade. Coordinate with the utility owner 5 business days before making adjustments. Replace damaged manhole or valve frames and covers.

Install concrete collars around manhole and valve frames. Use Idaho IR 87 to test surface smoothness.

605.04 Method of Measurement. The Engineer will measure the acceptably completed work as follows:

1. By the foot along pipe centerline, excluding the distance across catch basins, manholes, inlets, and other structures where the pipe, or a portion of pipe, is not actually incorporated in the finished product.
2. Manholes, valve frames and covers, catch basins, inlets, and drywells by the each.
3. Manhole and valve frame and cover adjustment and replacement by the each.

The Engineer will not measure structure excavation and backfill.

605.05 Basis of Payment. The Department will pay for acceptable quantities as follows:

Pay Item	Pay Unit
_____ Storm Sewer Pipe.....	ft
_____ Sanitary Sewer Pipe	ft
Manholes, Type _____	Each
Catch Basis, Type _____	Each
Inlets, Type _____	Each
Sediment and Oil Trap Manhole	Each
Sediment Control Catch Basin.....	Each
Drywell.....	Each
Adjust Manhole Covers	Each
Adjust Valve Covers	Each
Replace Damaged Manhole Frame.....	Each
Replace Damaged Valve Risers.....	Each

Structure excavation, compacting backfill, and trench zone backfill and pipe bedding zone material are incidental, and included in the contract unit prices.

ON PAGE 406, SUBSECTION 609.02 – MATERIALS

Delete from the 2nd full paragraph starting with “Accompany each...” through to the fifth paragraph starting with “The Engineer will reject”.

ON PAGE 408, SUBSECTION 610.01 – DESCRIPTION

Replace the subsection with the following:

Description. Provide and erect fence and gates.

ON PAGE 408, SUBSECTION 610.02 – MATERIALS

Add the following paragraph to the end of the section:

For temporary construction fence, provide high-visibility orange high-density polyethylene mesh, at least 4 feet tall, with metal or wood support posts.

ON PAGE 408, SUBSECTION 610.03 – CONSTRUCTION REQUIREMENTS

Add the following paragraph to the end of the section:

Temporary Construction Fence. Space temporary construction fence posts at 8 feet. Maintain the temporary construction fence when it is damaged, has fallen off its supports, has faded, or is otherwise deficient as determined by the Engineer. Repair or replace materials as necessary at no additional cost to the Department.

ON PAGE 409, SUBSECTION 610.05 – BASIS OF PAYMENT

Add the following:

Temporary Construction Fence	ft
Temporary Fence, Type _____	ft
Temporary Gate, Type _____	Each
Temporary Brace.....	Each

Removal of temporary materials is incidental.

ON PAGE 411, SUBSECTION 612.02 – MATERIALS

Add:

Excavation and Embankment.....	.205
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ON PAGE 411, SUBSECTION 612.03.A – GUARDRAIL

Add the following after paragraph 4:

Install guardrail terminals in accordance with the manufacturer’s written installation instructions. Provide and install self-adhesive object marker sheeting to the end of guardrail terminals or provide an object marker for each guardrail terminal.

ON PAGE 411, SUBSECTION 612.04 – METHOD OF MEASUREMENT

Delete the 612.04 section and replace with:

612.04 Method of Measurement. The Engineer will measure acceptably completed work as follows:

1. W-beam guardrail, precast concrete barrier, and cast-in-place concrete barrier will be by the foot, including the length of anchors, terminals, and transitions.
2. Guardrail anchors, guardrail terminals, guardrail transitions, concrete barrier terminals, and concrete barrier transitions will be per each.

ON PAGE 412, SUBSECTION 612.05 – BASIS OF PAYMENT

Delete the 612.05 section and replace with:

612.05 Basis of Payment. The Department will pay for acceptable quantities at the contract unit prices as follows:

Pay Item	Pay Unit
W-beam Guardrail	ft
Guardrail Anchor	Each
Guardrail Terminal.....	Each
Guardrail Transition	Each
Precast Concrete Barrier	ft
Concrete Barrier Terminal	Each

- Concrete Barrier Transition..... Each
- Cast-in-place Concrete Barrier ft

The additional payment for anchors, terminals, and transitions cover the additional materials and work necessary for these items. The chamfered barrier for guardrail transition is incidental to the guardrail transition pay items.

Guardrail terminal grading is measured and paid in as specified in 205.

Miscellaneous guardrail or barrier components are incidental and the cost included in the guardrail or barrier contract unit prices.

ON PAGE 418, SUBSECTION 616.03.D.2 – FOUNDATIONS/OVERHEAD SIGN BRIDGES, CANTILEVER SIGN STRUCTURES, TEE SIGN STRUCTURES

Delete the third paragraph and replace with:

Tighten bolts that are not anchor rods as specified in 504.03.L.2.

ON PAGE 418, SUBSECTION 616.04 – METHOD OF MEASUREMENT

Add the following after item 6:

- 7. Reinstalled signs will be per each sign reinstallation. Sign posts and foundations will be paid by their respective pay items.

ON PAGE 421, SUBSECTION 618.03 – CONSTRUCTION REQUIREMENTS

Delete the last sentence of the first paragraph starting with “Mark right of way...” and replace with the following:

Mark right-of-way and centerline monuments with station and offset.

ON PAGE 422, SUBSECTION 618.05 – BASIS OF PAYMENT

At the end of the subsection add the following:

Payment for marker posts and street monuments required under 107.19 are not included in the quantities of work under this section.

ON PAGE 425, SUBSECTION 619.03.D – POLES

In the last paragraph, delete “Formula No. 14” and replace with “Formula No. 2”.

ON PAGE 429, SUBSECTION 621.01 – DESCRIPTION

Add the following to the end of the first paragraph: “specified”

ON PAGE 429, SUBSECTION 621.01 – DESCRIPTION

Add the following sentence to the end of the first paragraph:

Seed all disturbed areas on the project site, including foreslope, backslope, and embankment areas.

ON PAGE 431, SUBSECTION 621.03.D – SEEDING

Delete the first sentence in the third paragraph.

ON PAGE 434, SUBSECTION 621.03.G – WATERING

Replace “May 30 and September 15” with “May 1 and October 14”.

ON PAGE 438, SUBSECTION 624.05 – BASIS OF PAYMENT

Delete the following:

“Riprap/control” from the first sentence of the last paragraph.

And replace with:

Riprap/Erosion Control

ON PAGE 440, SECTION 626 – TEMPORARY TRAFFIC CONTROL

Delete section 626 and replace with the following:

SECTION 626 – TEMPORARY TRAFFIC CONTROL

626.01 Description. Provide, install, maintain, remove, and relocate temporary traffic control devices.

626.02 Materials. Provide material as specified in:

Guardrail and Concrete Barrier	612
Crash Cushions.....	613
Signs and Sign Supports.....	616
Pavement Markings	630
Retroreflective Sheeting.....	712.02

Provide temporary traffic control devices in acceptable condition as defined in American Traffic Safety Services Association’s (ATSSA) Quality Guidelines for Temporary Traffic Control Devices and Features.

A. Temporary Traffic Control Signs. Provide temporary traffic control signs meeting 616.

B. Channelizing Devices. Provide weighted base tubular markers, surface-mounted tubular markers, vertical panels, drums, barricades, or other channelizing devices.

Provide weighted base or surface-mounted tubular markers that are at least 36 inches high and have at least 3 inches width when facing traffic.

Provide barricades that have the following minimum lengths:

1. Type 1: 2 feet.
2. Type 2: 2 feet.
3. Type 3: 7 feet.

C. Temporary Pavement Markings. Provide temporary pavement marking tape, temporary waterborne pavement marking paint, or temporary raised pavement markers.

1. Temporary Pavement Marking Tape. Provide retroreflective or non-retroreflective pavement marking tape.
 - a. Retroreflective Pavement Marking Tape. Use white or yellow retroreflective pavement marking tape in accordance with ASTM D4592 Type I. When used for broken-line pavement markings, use 2-foot long line segments or as otherwise shown.
 - b. Non-Retroreflective Pavement Marking Tape. Use black or gray non-retroreflective tape to cover conflicting pavement markings in accordance with ASTM D4592 Type I, except without retroreflective elements.
2. Temporary Waterborne Pavement Marking Paint. Use white or yellow waterborne pavement marking paint as specified in 630.
3. Temporary Raised Pavement Markers. Provide white or yellow 2-sided temporary flexible raised pavement markers when used on undivided highways.

Provide white or yellow reflectorized rigid raised pavement markers for temporary applications. Provide 2-sided markers when used on undivided highways. Install in accordance with the manufacturer's written installation instructions. Ensure that markers are removable without the use of heat, grinding, or blasting.

D. Floodlights. Provide floodlights capable of illuminating flagger stations, work areas, and equipment crossings with at least 5 foot-candles or greater. Ensure floodlights are equipped with a meter that records hours of operation.

E. Arrow Boards. Provide arrow boards with a meter that records hours of operation.

F. Portable Changeable Message Signs (PCMS). Provide PCMS with message sign, control system, power source, and mounting and transporting equipment components. Provide PCMS equipped with a meter that records hours of operation.

G. Temporary Traffic Control Signal. Provide portable temporary traffic control signals in accordance with NEMA TS-5 Type TR1. Provide portable temporary traffic control signals with a meter that records hours of operation.

H. Temporary Concrete Barrier. Provide temporary concrete barrier meeting 612.

I. Temporary Crash Cushion. Provide temporary crash cushions meeting 613. Provide test-level 2 or 3 temporary crash cushions when the highway posted speed is less than 45 mph. Provide test-level 3 temporary crash cushions when the highway posted speed is greater than or equal to 45 mph.

J. Shadow Vehicle and Truck Mounted Attenuator (TMA) or Trailer Attenuator. Provide a shadow vehicle and TMA or shadow vehicle with trailer attenuator in accordance with the manufacturer's written instructions. Provide test level 2 or 3 TMAs or trailer attenuators when the highway posted speed is less than 45 mph. Provide test-level 3 TMAs or trailer attenuators when the highway posted speed is greater than or equal to 45 mph.

K. Temporary Pedestrian Facilities. Provide temporary pedestrian facilities.

1. **Pedestrian Channelizing Devices.** Provide pedestrian channelizing devices that are crashworthy, detectable to long cane users, visible to pedestrians with vision disabilities, and have continuous bottom and top surfaces. Provide a smooth and continuous hand-trailing edge between 32 and 38 inches above the walkway. Provide a continuous detection plate between 2 and 8 inches above the walkway. Ensure the hand-trailing edge and detection plate are in the same vertical plane.

On the pedestrian side of pedestrian channelizing devices or when not exposed to traffic, provide retroreflective or non-retroreflective sheeting in a contrasting pattern of alternating light and dark colors on the hand-trailing edge, positioned vertically or at a 45 degree angle, and consisting of a minimum of 6 inches of sheeting or other contrasting materials. When exposed to vehicular traffic, provide retroreflective sheeting on the hand-trailing edge and bottom detection plate.

2. **Temporary Curb Ramps.** Provide temporary curb ramps meeting ADA requirements.

L. Radar Speed Feedback Trailers. Provide radar speed feedback trailers capable of showing a Speed Limit sign above a Vehicle Speed Feedback plaque and capable of automatically dim light output to 50 percent in low light conditions. Provide the Vehicle Speed Feedback plaque with the legend YOUR SPEED in black text on an orange or yellow retroreflective background and a changeable legend displaying the speed of the approaching vehicle with two digits in orange or yellow luminous text on a black opaque background. Disable flashing, color changing, strobe lights, word messages, or other dynamic elements if the device is equipped with these features.

Ensure the changeable display is dark when no vehicles are approaching and that the changeable display goes dark when the speed of an approaching vehicle exceeds the speed limit by more than 10 mph.

Ensure the Speed Limit and Vehicle Speed Feedback signs are the same size and that the bottom of the signs are at least 7 feet above the pavement.

M. Temporary Rumble Strips. Provide temporary portable rumble strips that are black, orange, or white, require no adhesives or anchors for installation, weigh at least 100 pounds, have a profile no greater than $\frac{3}{4}$ inch tall, are at least 10 inches wide, and that can be used on highways with speeds up to 80 mph.

N. Flagger Equipment. Provide flaggers and flagger equipment.

1. Provide flaggers with high-visibility safety apparel and a STOP/SLOW paddle.
2. Provide Automated Flagger Assistance Devices (AFAD).

O. Pilot Car. Provide a vehicle with a PILOT CAR FOLLOW ME sign mounted on the rear of the pilot vehicle. Show the company name of the pilot car contractor on each side of the vehicle.

626.03 Construction Requirements. Perform temporary traffic control work as follows:

A. General. Identify a project traffic control supervisor (TCS) certified by ATSSA or Evergreen Safety Council to direct the installation, modification, and maintenance of temporary traffic control devices. Provide contact information for the TCS. Provide a schedule and contact information for personnel working under the direction of the TCS that can be contacted will respond 24 hours per day during the duration of the temporary traffic control operations to provide temporary traffic control maintenance.

Under the direction of the TCS, install temporary traffic control devices before changing traffic patterns. Do not use devices for purposes other than those for which they are intended. Cover or remove temporary traffic control devices when not applicable.

Keep temporary traffic control zones as short as practical. Restore normal traffic operations to the extent practical during non-working hours and during planned or unplanned work stoppages. As specified in 105.14.D, ensure individual traffic delays do not exceed 15 minutes and traffic delays do not exceed a total of 30 minutes through the length of the project site, unless otherwise approved in writing. Implement remedial action to eliminate the excess traffic delays.

Repair or replace devices that are marginal or unacceptable as defined in the ATSSA guidelines referenced in 626.02. Ensure temporary traffic control devices remain in place and serviceable when in the travel way. At least once per week, ensure temporary traffic control devices function well during non-daylight hours.

Obtain approval before removing temporary traffic control devices.

B. Temporary Traffic Control Maintenance. Monitor and maintain the temporary traffic control plan and devices during the duration of the temporary traffic control operations. Temporary traffic control maintenance includes repairing, replacing, and cleaning temporary traffic control devices, restoring displaced devices, removing and resetting devices (excluding temporary concrete barrier) for different phases, and inspecting the temporary traffic control. Initial setup and final removal of temporary traffic control is incidental and included in the contract price for the temporary traffic control devices. Coordinate temporary traffic control maintenance operations before performing the work.

C. Temporary Traffic Control Signs. Ensure signs remaining in place for more than 3 calendar days are installed on breakaway sign post(s). Sign posts, as specified in 616, at the following heights:

- 5 feet from the bottom of the sign to the elevation of the near edge of the pavement in rural areas.
- 7 feet from the bottom of the sign to the top of the curb where parking or pedestrian movements are likely to occur.
- Secondary signs mounted below another sign may be 1 foot less than the heights describe above.

Provide additional temporary traffic control signs if traffic queues extend upstream of the first temporary traffic control device. Remove or cover the signs when no longer needed.

D. Channelizing Devices. Provide weighted bases when necessary to ensure channelizing devices remain in place.

Attach surface-mounted tubular markers with an adhesive in accordance with the manufacturer's written installation instructions. Do not nail or bolt tubular markers to the pavement.

E. Temporary Pavement Markings. Install temporary markings as soon as practical. For temporary pavement markings, omit the test strip when waterborne paint is used. Use temporary flexible raised pavement markers or temporary rigid raised pavement markers to supplement or as a substitution for other pavement markings. Use 2 raised pavement markers placed side by side with a 3 inch gap between markers to mark double lines. Use 2 raised pavement markers placed side by side to mark wide lines. The Engineer may require additional markers placed at a reduced spacing. Ensure pavement markings are visible in the day and night. Repair damaged markings.

Remove surface-mounted tubular markers, temporary paving market tape, temporary raised pavement markers, and rigid raised pavement markers without damaging pavement surface.

F. Floodlights. Illuminate flagger stations, work areas, and equipment crossings with floodlights when nighttime work is being performed. Provide lighting 30 minutes before sunset and up to 30 minutes after

sunrise when workers or operational equipment are present. Ensure floodlighting does not produce a glare condition for approaching road users, flaggers, or workers.

When floodlights are used, provide an extra floodlight onsite for backup. When a flagger station or work area is moved, use the backup floodlight to illuminate the new station.

G. Arrow Boards. Secure the arrow board control system with a lock and change the default control system password to prevent tampering.

H. Portable Changeable Message Signs (PCMS). Secure the PCMS and temporary traffic control signal control systems with a lock and change the default control system password to prevent tampering.

I. Temporary Traffic Control Signal. Obtain timing plan approval prior to temporary traffic control signal operations.

Secure the temporary traffic control signal control systems with a lock and change the default control system password to prevent tampering.

J. Temporary Concrete Barriers. When necessary for construction phasing, remove, store, and reset temporary concrete barrier. Store the removed barrier outside the highway clear zone. Replace damaged sections of temporary concrete barrier.

Provide temporary traffic control until the temporary concrete barrier is reset. Coordinate removing and resetting temporary concrete barrier before performing the work.

K. Temporary Crash Cushions. When necessary for construction phasing, remove, store, and reset temporary crash cushion in accordance with the manufacturer's installation instructions. Store removed crash cushions outside the highway clear zone. Replace damaged crash cushions. Provide temporary traffic control until the temporary crash cushion is reset.

J. Shadow Vehicles and TMAs or Trailer Attenuator. Use a shadow vehicle with TMA or trailer attenuator to provide positive protection between the work space and highway users. Do not use the shadow vehicle transport material or to perform work tasks. Replace TMAs and trailer attenuators when damaged. Coordinate shadow vehicle and TMA or trailer attenuator use before deployment.

K. Temporary Pedestrian Facilities. Use pedestrian channelizing devices to close sidewalks and to delineate alternate routes when work activities impact pedestrian facilities to ensure accessibility features consistent with the features of the preconstruction pedestrian facility. When sidewalks are closed, ensure that pedestrian channelizing devices cover the entire width of the sidewalk.

Use temporary curb ramps when work activities impact accessibility features. Ensure the temporary curb ramps are consistent with the features of the preconstruction pedestrian facilities.

L. Radar Speed Feedback Trailers. When used, place the radar speed feedback trailer near the work space. When used, program the Vehicle Speed Feedback plaque to turn off the changeable display when the speed of an approaching vehicle exceeds the speed limit by more than 10 mph. Coordinate temporary traffic control maintenance operations before performing the work.

M. Temporary Rumble Strips. Use temporary rumble strips in accordance with the manufacturer's written instructions to attract the attention of highway users to temporary traffic control zone features.

N. Flagger Control. Perform flagger control with certified flaggers. Certified flaggers have completed a flagger training course from a Department-approved source and carry a current certificate of training. Certifications issued by other state Departments of Transportation that have a reciprocity agreement with the

Department and foundations will be accepted. Use AFADs to provide physical separation between highway users and the flagger. Use one flagger to control each AFAD. Coordinate flagging operations, including AFAD use, before performing the work.

O. Pilot Car. Coordinate pilot car operations before performing the work.

626.04 Method of Measurement. The Engineer will measure acceptably completed work as follows:

1. Temporary traffic control signs will be by the square foot of sign.
2. Weighted based tubular markers, surface-mounted tubular markers, vertical panels, drums, and barricades will be per each.
3. Temporary pavement marking tape and temporary pavement marking waterborne paint will be by the foot and will include removal when applicable.
4. Temporary flexible raised pavement markers and temporary rigid raised pavement markers will be per each.
5. Floodlights will be by the hour or day.
6. Arrow boards will be by the hour or day.
7. Portable changeable message signs will be by the hour or day.
8. Temporary traffic control signal will be by the hour or day.
9. Temporary concrete barrier and removing and resetting temporary concrete barrier will be by the foot.
10. Temporary crash cushions and removing and resetting temporary crash cushions will be per each.
11. Shadow vehicles with TMAs or trailer attenuators and replacement of damaged TMAs or trailer attenuators will be per each.
12. Pedestrian channelizing devices will be by the foot. Temporary curb ramps will be per each.
13. Radar speed feedback trailers will be by the hour or day.
14. Temporary rumble strips will be per each temporary rumble strip array.
15. Miscellaneous temporary traffic control items will be measured and paid by force account as specified in 109.03.C.5.
16. Temporary traffic control maintenance will be by the hour.
17. Flagger control will be by the hour and is limited to the number of hours flagging stations are staffed. A separate payment for each AFAD used will be by the number of hours operated by a flagger.
18. Pilot car operation will be by the hour.

Maintain a daily record of hours for temporary traffic control maintenance, and other items measured by the hour. Provide the records weekly for approval of hours recorded. Provide a weekly report of each non-daylight hour temporary traffic control inspection to include temporary traffic control activities, the time the temporary traffic control was reviewed, any actions taken, and any other pertinent information. If allowed by the Engineer, no additional payment will be made for temporary traffic control plan changes, flagging, and pilot car operations for the Contractor's sole convenience.

626.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit prices as follows:

Pay Item	Pay Unit
Temporary Traffic Control Signs.....	SF
Weighted Base Tubular Markers	Each
Surface-Mounted Tubular Markers	Each
Vertical Panels.....	Each
Drums	Each
Barricade, Type__	Each
Temporary Pavement Marking Tape	ft
Temporary Flexible Raised Pavement Markers.....	Each
Temporary Rigid Raised Pavement Markers.....	Each
Temporary Pavement Marking – Waterborne.....	ft
Floodlights.....	Hour or Day
Arrow Board, Type__.....	Hour or Day
Portable Changeable Message Sign (PCMS).....	Hour or Day
Temporary Traffic Control Signal.....	Hour or Day
Temporary Concrete Barrier	ft
Remove and Reset Temporary Concrete Barrier	ft
Temporary Crash Cushion.....	Each
Remove and Reset Temporary Crash Cushion	Each
Shadow Vehicle and TMA or Trailer Attenuator.....	Each
Pedestrian Channelizing Devices	ft
Temporary Curb Ramp.....	Each
Radar Speed Feedback Trailer.....	Hour or Day
Temporary Rumble Strips.....	Each
Miscellaneous Temporary Traffic Control Items	CA
Temporary Traffic Control Maintenance	Hour
Flagger Control.....	Hour
Automated Flagger Assistance Device (AFAD).....	Hour
Pilot Car.....	Hour

Initial setup and final removal of temporary traffic control is incidental and included in the contract price for the temporary traffic control devices. Lights and flags on signs and sign posts are incidental and included in the contract price for temporary traffic control signs.

ON PAGE 452, SUBSECTION 629.01 – DESCRIPTION

Replace the entire subsection with the following:

629.01 Description. Mobilization consists of the necessary preparations to do the work. It includes the movement of personnel, equipment, supplies, and incidentals to the project site, the establishment of offices, buildings, and other facilities necessary for work, premiums on bond and insurance, and other work and costs incurred before beginning production work on contract items. Mobilization payments are divided to account for the preparatory work that is required throughout the contract term.

ON PAGE 452, SUBSECTION 629.05 – BASIS OF PAYMENT

Replace the three paragraphs after the pay item with the following:

After contract award, and upon written request by the Contractor, the Department will issue the first progress payment up to 20 percent of the contract unit price or 2 percent of the total contract amount, whichever is less. Productive work on the project is not required for this payment.

Once the Contractor has initiated productive work on the project site, the Department will pay 40 percent of the contract unit price or 4 percent of the total contract amount, whichever is less, on the next progress estimate. If the Contractor did not request the first progress payment, this payment will be up to 60 percent of the contract unit price or 6 percent of the total contract amount, whichever is less.

The Department will pay 40 percent of the contract unit price or 4 percent of the total contract amount, whichever is less, on the next progress payment estimate.

On completion of work, the Department will pay any remaining mobilization bid amount

ON PAGE 453, SUBSECTION 630.02 – MATERIALS

Replace this section with: Provide materials as specified in:

Paint.....	707
Glass Beads Used in Pavement Markings	720.08

Provide paint and beads in original packaging showing the lot numbers. Preapproved lots do not need to be tested. For paint lots that have not been preapproved, sample paint materials in accordance with Idaho IR 7 and submit the samples for testing to the Central Materials Laboratory. For bead lots that have not been preapproved, provide a sample 50 pound bag of glass beads for testing by the Central Materials Laboratory. Receive lab approval before using the paint or glass beads. Allow 2 weeks for laboratory testing.

ON PAGE 453, SUBSECTION 630.03.A – WATERBORNE PAINT

Delete the third and fourth sentences in 1 and replace with:

Place 2 paint applications for permanent pavement markings and 1 paint application for temporary traffic control pavement markings unless otherwise specified in the plans or as Engineer directed. When applying pavement markings on undivided highways to a centerline rumble strips or a seal coat, place the second application of centerline paint in the opposite direction of the first application to ensure full visibility of the pavement markings in each direction.

ON PAGE 455, SUBSECTION 631.02 – MATERIALS

Delete “Not specified.” and add the following:

Provide materials as specified in:

Fog Coat.....	408
Emulsified Asphalts	702.03

Provide CSS-1 or CSS-1H diluted emulsified asphalt for the fog coat.

ON PAGE 455, SUBSECTION 631.03 – CONSTRUCTION REQUIREMENTS

Delete the third paragraph and add the following:

Remove debris and apply fog coat as specified in 408. When applicable, remove and dispose of debris before opening adjacent lanes to traffic.

When rumble strips are installed under pavement markings, place 1 application of temporary pavement markings, construct and fog coat rumble strips, then place 2 applications of pavement markings as specified in 630.

ON PAGE 455, SUBSECTION 631.05 – BASIS OF PAYMENT

After the last sentence add:

Rumble strips that deviate 2 inches or greater longitudinally from the initial marking will be paid at 50 percent of the unit price for the length of the deviation. Deviations of 4 inches or greater longitudinally from the marking will be paid at 0 percent of the unit price for the length of the deviation. The length of the deviation will be measured to the nearest foot.

The first application of pavement markings will be paid for as temporary pavement markings as specified in 626. The permanent pavement markings will be paid as specified in 630.

ON PAGE 457, SUBSECTION 632.03.B – CLASS B REMOVAL

In the first paragraph change ASTM D458 to ASTM D4580.

ON PAGE 461, SUBSECTION 640.03.F – UNDERGROUND DRAINAGE

Delete the third paragraph of 640.03.F in its entirety.

ON PAGE 461, SUBSECTION 640.03.G – EROSION CONTROL

Add the following to the end of the first sentence in the first paragraph:

and as shown in the plans.

ON PAGE 461, SUBSECTION 640.03.G – EROSION CONTROL

Delete the second paragraph and replace with:

Lap geotextile up against structures one half the riprap layer depth. Anchor geotextile upstream edges, downstream edges, top edges not against structures and bottom edges as shown in the plans.

ON PAGE 461, SUBSECTION 640.03.G – EROSION CONTROL

Delete the last paragraph of 640.03.G in its entirety.

ON PAGE 463, SUBSECTION 641.02 – MATERIALS

Delete the third paragraph and replace with:

Provide the test dates on the certification. As a means of identification, provide tags on the product rolls with the manufacturer's name, full product name, style or product code number, and lot and/or roll number, which will permit field determination of the product delivered to the project site is covered by the certification.

ON PAGE 463, SUBSECTION 641.02 – MATERIALS

Delete the footnote in Table 641.02-1 and replace with:

- (a) Minimum Average Roll Values (MARV) in the weakest direction. The geogrid type is shown on the plans. When the geogrid type is not shown, use Type II.

ON PAGE 463, SUBSECTION 641.02.A – GEOGRID PROPERTY REQUIREMENTS

Delete "GRI-GG2 (2000)" from Table 641.02-1.

Replace with: "ASTM D7737".

ON PAGE 464, SUBSECTION 641.03 – CONSTRUCTION REQUIREMENTS

In the third sentence of the second paragraph delete the following:

first the

And replace with:

the first

ON PAGE 464, SUBSECTION 641.03 – CONSTRUCTION REQUIREMENTS

In the last paragraph, delete "by construction activity".

ON PAGE 465, SUBSECTION 645 – LABORATORIES

Delete 645 and replace with the following:

SECTION 645 – FIELD LABORATORIES

645.01 Description. Provide and maintain the specified class of field laboratory at an approved location for the Engineer's exclusive use for this contract. If the Engineer, or consultant working under the Engineer's direction, is responsible for damage to the field laboratory or its equipment beyond what is expected during normal use, the Engineer will reimburse the Contractor for the damage at a reasonable replacement or maintenance cost. The Contractor must demonstrate to the Engineer that the damage was beyond normal wear and tear before the Engineer will reimburse the Contractor for damage.

1. Class I Field Laboratory – Aggregate and Soils.
2. Class II Field Laboratory – Aggregate, Soils, and Superpave HMA SP 2.
3. Class III Field Laboratory – Aggregate, Soils, and Superpave HMA SP 3 and SP 5.
4. Class IV Field Laboratory – Superpave HMA SP 3 and SP 5.

645.02 Materials.

A. All Field Laboratories. Provide field laboratories meeting these requirements:

1. Certified in accordance with the Department's laboratory qualification program.
2. Single trailer, 2 separate trailers, or onsite building.
3. Exterior door(s) meeting applicable requirements for egress. At least 1 door will have a nominal width measuring not less than 36 inches.
4. Minimum of 3 exterior windows, not smaller than 3 feet by 3 feet.
5. Weather tight.
6. Lockable windows and doors.
7. Minimum ceiling height of 7 feet 6 inches.
8. Minimum total interior floor space of 192 square feet.
9. Meet all applicable federal and state safety codes.
10. Equipped with adequate ventilation, meeting all manufacturer's recommendations for the evacuation of fumes created by heating or testing of hot mix asphalt.
11. Hardware necessary to allow the Engineer to secure the field laboratory with Department locks on all doors.
12. Provide electric heating and electric air conditioning, capable of maintaining a room temperature within 5° of 70° F continuously, with lights, furnaces, and ovens operating.
13. Steps of nonskid metal, with metal handrails and level landing platform secured to the field laboratory.

Maintain and repair field laboratory and all equipment.

Stage field laboratory trailers in a manner to reduce vibration and excessive movement. Additional measures may be required to promote a stable facility for ignition oven scales to perform properly (e.g., screw jacks, adjustable jack stands).

Furnish the field laboratory with the following items or their approved equivalent:

1. Lighting and Electrical. Provide exterior and interior lighting with sufficient 115 and 220 VAC wall outlets to power all necessary test apparatus with a minimum of 2 extra 115 VAC outlets.
2. Counter. Provide a minimum of 66 unobstructed square feet of counter space measuring 24 to 30 inches wide. Metal clad counters are required for class II, III, and IV field laboratories. Round sharp edges. The counter must be equipped with a stainless steel sink, with minimum dimensions of 15 inches by 20 inches by 8 inches deep, and will include a faucet, flexible hose type sprayer, and drain.
3. Furniture. Office desk and chair.

B. Class I Field Laboratory – Aggregate and Soils.

1. Scales. One (1) electronic scale with digital readout sensitive to 0.1 grams and a minimum range of 25 kilograms. 1 electronic scale with digital readout sensitive to 0.1 pound and 200 pound capacity.
2. Quartering Canvas. One (1) vinyl coated canvas with an approximate size of 6 feet by 8 feet, 1 with approximate size of 3 feet by 3 feet.
3. Mechanical Sieve Shaker. Permanently fixed to floor or with approved stabilized base, leveled, with a minimum tray size of 14 inches by 14 inches equipped with screens and pan.
4. Rocker Screen Set. Manual screen set, 1 foot by 1 foot with the following screens: 4 inch, 3 inch, 2 inch, $\frac{3}{4}$ inch, and No.4.
5. Sieve Shaker with Sound Enclosure. Motor driven shaker capable of handling 12 inch diameter, half height brass wire U.S. standard sieves. Sieves will meet ASTM E11 standards. Sieve sizes will be 1", $\frac{3}{4}$ ", $\frac{1}{2}$ ", $\frac{3}{8}$ ", No. 4, No. 8, No. 16, No. 30, No. 50, No. 100, No. 200, and a pan with lid.
6. Deep Frame Wet Washing Sieves. A 12 inch diameter, half height No. 10, and full height No. 200 brass wire, or stainless steel sieve.
7. Laboratory Oven. One (1) oven with a minimum 7.5 cubic foot chamber with 2 or more shelves.
8. Hot Plate. A 2-burner electric or propane hot plate.
9. Sand Equivalent Shaker. Electrically operated with electronic timer.
10. Sample Splitters. One (1) adjustable sample splitter with adjustable chute width of $\frac{1}{2}$ inch to 3 inches and 3 sample pans. One (1) fixed width sample splitter with fixed chute width of 1 inch and 3 sample pans.
11. Microwave Oven. Microwave oven with a minimum chamber size 1.55 cubic feet and a minimum of 900 watts with 3 microwave pans.
12. Safety Equipment. Fire extinguisher, first aid kit, eyewash kit, and other safety equipment required by law.
13. Miscellaneous Equipment. Additional equipment (e.g., oven mitts, brushes water squeeze bottle, mixing spoons, disposable gloves) to perform the following tests:
 - a. Idaho IT 72.
 - b. AASHTO T 99 Method C.
 - c. AASHTO T 180 Method D.
 - d. AASHTO T 176.
 - e. AASHTO T 27.
 - f. AASHTO T 11.

C. Class II Field Laboratory – Aggregate, Soils, and Superpave SP 2.

Same as Class I field laboratory plus the following:

1. Laboratory Oven. Add a second oven with a minimum 10 cubic foot chamber with 2 or more shelves.
2. NCAT Ignition Furnace. Including the equipment and personal protection gear necessary to perform AASHTO T 308 Method A internal balance and AASHTO T 30.

3. Specific Gravity Station. Including the necessary equipment and accessories to perform the AASHTO T 209 (bowl method) and AASHTO T 166 Method A.
4. Miscellaneous Equipment. Additional equipment (e.g., oven mitts, brushes water squeeze bottle, mixing spoons) to perform the following tests:
 - a. Idaho IT 99.
 - b. AASHTO T 304.
 - c. ASTM D4791.
 - d. AASHTO T 329.
 - e. AASHTO R47.

D. Class III Field Laboratory – Aggregate, Soils, and Superpave SP 3 and SP 5.

Same as Class II field laboratory plus the following:

1. Scales. Two (2) (electronic), with digital readout, sensitive to 0.1 grams with a minimum range of 0 to 20,000 grams.
2. Gyrotory Compactor. Pine Instrument Gyrotory Compactor Models AFG1 or AFG2 (105-125 VAC), 12 Amp 60 Hz., including manuals and software. Included with the gyrotory compactor will be 2 molds and the equipment to perform AASHTO T 312.
3. Specific Gravity Station. Including the necessary equipment and accessories to perform the AASHTO T 209 (bowl method) and AASHTO T 166.

E. Class IV Field Laboratory - Superpave SP 3 and SP 5.

The Class IV laboratory does not require aggregate or soils testing. Equip with the following:

1. Scales. Two (2) (electronic), with digital readout, sensitive to 0.1 grams with a minimum range of 0 to 20,000 grams.
2. Quartering Canvas. Vinyl coated fabric with an approximate size of 4 feet by 4 feet.
3. Sieve Shaker with Sound Enclosure. Motor driven shaker capable of handling 12 inch diameter, half height brass wire U.S. Standard sieves. Sieves will meet ASTM E11. Sieve sizes will be 1", $\frac{3}{4}$ ", $\frac{1}{2}$ ", $\frac{3}{8}$ ", No.4, No. 8, No. 16, No. 30, No. 50, No. 100, No. 200, and a pan with lid.
4. Deep Frame Wet Washing Sieves. A 12 inch diameter, half height No. 10, and full height No. 200 brass wire, or stainless steel sieve.
5. Laboratory Oven. Two (2) ovens with minimum 10 cubic foot chambers with 2 or more shelves.
6. Gyrotory Compactor. Pine Instrument Gyrotory Compactor Models AFG1 or AFG2 (105-125 VAC), 12 Amp 60 Hz., including manuals and software. Included with the gyrotory compactor will be 2 molds and the equipment to perform AASHTO T 312.
7. NCAT Ignition Furnace. Including the equipment and personal protection gear necessary to perform AASHTO T 308 Method A internal balance and AASHTO T 30.
8. Specific Gravity Station. Including the necessary equipment and accessories to perform the AASHTO T 209 (bowl method) and AASHTO T 166.
9. Safety Equipment. Fire extinguisher, first aid kit, eyewash kit, and other safety equipment required

by law.

10. Additional Equipment. Additional equipment to perform the following tests as necessary:

- a. Idaho IT 99.
- b. AASHTO T 27.
- c. AASHTO T 11.
- d. AASHTO T 304.
- e. ASTM D 4791.
- f. AASHTO T 329.
- g. AASHTO R 47.

645.03 Construction Requirements. The field laboratory will be clean and operational for at least 10 working days before the start of testing and will only terminate 14 working days after completion of paving, or as directed. Material requiring testing will not be accepted until the field laboratory is properly equipped, operational, and approved. Do not move the field laboratory without written approval.

Provide and maintain an all-weather parking area for the field laboratory. Provide a parking area approximately 15 feet wide and 35 feet long, leveled across its length and width, cleared of vegetation and debris, and sloped to drain. Restore the impacted area upon completion of the work. Provide electrical service or electric generator installed by a licensed electrician. The electrical contractor must file for an electrical inspection permit with the Idaho Department of Labor and Industrial Services, and the field laboratory electrical service approved by a licensed electrical inspector before turning over to the Engineer. Provide the following:

1. Trash Containers. Provide appropriate trash containers with bags. Haul trash as necessary.
2. Water. Provide an adequate supply of potable water at all times for testing purposes. The water supply must be plumbed into the field laboratory sink and have sufficient pressure to wash samples. Control the discharge of waste water from the field laboratory in an approved manner. Waste water is not allowed to create muddy conditions around the field laboratory.
3. Portable Toilet. Provide a portable toilet for use by the field laboratory personnel. Ensure the portable toilet is serviced weekly.
4. Cleaning Equipment. Broom, dustpan, 5 gallon wet/dry vacuum, mop, and pail.
5. Printer. Provide 1 printer with toner and paper capable of connecting to a laptop computer via a USB port.

645.04 Method of Measurement. The field laboratory will be measured as a lump sum.

645.05 Basis of Payment. The Department will pay for the accepted field laboratory as follows:

Pay Item	Pay Unit
Class I Field Laboratory – Aggregate and Soils.....	LS
Class II Field Laboratory – Aggregate, Soils, and Superpave SP 2.....	LS
Class III Field Laboratory – Aggregate, Soils, and Superpave SP 3 and SP 5.....	LS
Class IV Field Laboratory – Superpave SP 3 and SP 5.....	LS

Furnishing, maintaining, and repairing the field laboratory, parking area, equipment, other costs related to the field laboratory’s operation, and restoration of the field laboratory site are incidental costs included in the contract unit price.

Obtain electrical inspection permits at no additional cost to the Department.

Costs associated with the field laboratory operation, including insurance and utilities, will be paid by the Contractor.

ON PAGE 482, SUBSECTION 656.02 – MATERIALS

In the first full paragraph, replace "Class 40" with "Class 40A".

ON PAGE 486, SECTION 657 – FLASHING BEACONS

Add the following section:

SECTION 657 – FLASHING BEACONS

657.01 Description. Provide and install beacons and Rectangular Rapid Flashing Beacons (RRFB).

657.02 Materials. Provide materials as specified in:

Concrete	502
Signs and Sign Supports	616
Traffic Signal Installation	656
Traffic Signal Materials	713

Use Class 40 concrete for pole foundations.

A. Beacons. Provide 120-volt AC powered or solar powered beacons as shown in the plans. The AC powered beacon assembly consists of more pole, foundation, flashers (signal indications), signs, controller cabinet, conduit, mounting hardware, and hardware to complete the assembly. The solar powered flashing beacon assembly consists of pole, foundation, solar panel, flashers (signal indications), signs, controller cabinet, battery cabinet, batteries, wireless communications hardware, conduit, mounting hardware, and hardware to complete the assembly.

Provide beacons with two alternately flashing circular yellow signal sections which flash at a rate of not less than 50 or more than 60 times per minute and where the illuminated period of each flash is a minimum of ½ and not more than 2/3 of the total cycle. Ensure beacons dim to automatically adjust brightness.

Provide NEMA 3R enclosures.

When solar powered, size solar panels and batteries to ensure 100, 30-second, activations per day for up to 14 days between charging. Provide copies of calculations used to size the solar panels and batteries. Ensure batteries are installed in a weatherproof enclosure to ensure that exposure to the weather will not interfere beacon operation.

B. Rectangular Rapid Flashing Beacons (RRFB). Provide 120-volt AC powered or solar powered RRFBs as shown in the plans. The AC powered RRFB assemblies consist of a paired crosswalk assembly of poles, foundations, RRFBs, signs, pushbutton assemblies, controller cabinet, conduit, and mounting hardware. The solar powered RRFB assemblies consists of a paired crosswalk assembly of poles, foundations, solar panels, RRFBs, signs, pushbutton assemblies, controller cabinet, battery cabinet, batteries, wireless communications hardware, conduit, mounting hardware, and hardware to complete the assembly.

Ensure the peak luminous intensity (candelas) meet the requirements of SAE J595, Class 1.

When actuated by a pedestrian, ensure the RRFB provides 75 flashing sequences per minute. Ensure the left and right RRFB indications operate as follows during each 800-millisecond flashing sequence:

1. Illuminate the left-hand side indication for approximately 50 milliseconds.
2. Darken both indications for approximately 50 milliseconds.
3. Illuminate the right-hand side indication for approximately 50 milliseconds.
4. Darken both indications for approximately 50 milliseconds.
5. Illuminate the left-hand side indication for approximately 50 milliseconds.
6. Darken both indications for approximately 50 milliseconds.
7. Illuminate the right-hand side indication for approximately 50 milliseconds.
8. Darken both indications for approximately 50 milliseconds.
9. Illuminate the both indications for approximately 50 milliseconds.
10. Darken both indications for approximately 50 milliseconds.
11. Illuminate the both indications for approximately 50 milliseconds.
12. Darken both indications for approximately 250 milliseconds.

Ensure paired RRFB installations simultaneously illuminate and darken.

Equip each RRFB with an automatic signal dimming device to reduce illumination levels during periods of reduced ambient light.

Provide NEMA 3R enclosures.

When solar powered, size solar panels and batteries to ensure 100, 30-second, activations per day for up to 14 days between charging. Provide copies of calculations used to size the solar panels and batteries. Ensure batteries are installed in a weatherproof enclosure to ensure exposure to the weather will not interfere RRFB operation.

657.03 Construction Requirements.

A. Beacons. Install beacons as shown in the plans. Provide controller enclosure keys.

B. Rectangular Rapid Flashing Beacons (RRFB). Install RRFBs as shown in the plans and manufacturer's written instructions. Provide controller enclosure keys. When actuated by a pedestrian, operate the RRFBs for 30 seconds unless otherwise specified.

657.04 Method of Measurement. The Engineer will measure acceptably completed work as follows:

1. Beacons will be by per each assembly.
2. RRFBs will be per each assembly.

657.05 Basis of Payment. The Department will pay for accepted quantities at the contract unit prices as follows:

Pay Item	Pay Unit
Beacons, AC Powered	Each
Beacons, Solar Powered	Each
RRFB, AC Powered.....	Each
RRFB, Solar Powered	Each

Separate payment will not be made for signs or traffic signal materials.

ON PAGE 486, SUBSECTION 675.01 – SURVEYING

Delete the following from the first sentence of the first paragraph:

...and quantity computations for pay items requiring area, volume, and linear measurement.

And replace with:

...quantity computations for pay items requiring volume measurements.

ON PAGE 490, SUBSECTION 675.03.H.7.a – CONFIDENCE POINTS/CONFIDENCE POINT DELIVERABLES

Delete “(current version of Bentley Inroads.dtm files)”.

ON PAGE 491, SUBSECTION 675.03.I.4.a – GRADE VERIFICATION POINTS/CONSTRUCTION TOLERANCES/AREAS WITH SPECIFIED TOLERANCE VALUES

Delete the subsection and replace with the following:

- a. Areas with Specified Tolerance Values.

In constructing the work, meet the given tolerances below or as approved.

Material / Location	Tolerance
Subgrade / Section 200	± 0.10 ft
Aggregate / Section 300	± 0.08 ft

ON PAGE 494, SUBSECTION 675.03.S.3 – STRUCTURE AND PROCESS SPECIFICATION REQUIREMENTS/BRIDGES

Add the following to the end of the last paragraph:

For PPC deck overlays, survey the bridge deck and approach slabs along profile grade line, along edges of deck, along curb flow lines, and along lane lines. Collect survey information including stations, offsets, and elevations at 1/10 point intervals along each span of the bridge and ends of approach slabs. Collect survey information for the following steps: before grinding, after grinding (before overlay surface preparation begins), and after overlay placement.

Provide survey information to verify cross-slope and profile grade to the Engineer for acceptance. Do not begin next step until survey for the previous step has been accepted.

ON PAGE 495, SUBSECTION 675.04 – METHOD OF MEASUREMENT

Delete the following:

Directed surveying office computations will be measured and paid by force account as specified in 109.03.C.5.

Only hours documented in the diary will be paid on this item.

Directed surveying crew will be measured and paid by force account as specified in 109.03.C.5. Only hours documented in the diary will be paid on this item. Travel time to and from the project site is incidental.

Replace with:

Directed surveying will be measured and paid by force account as specified in 109.03.C.5. Only authorized hours documented in the diary will be paid.

ON PAGE 495, SUBSECTION 675.05 – BASIS OF PAYMENT

Delete:

Directed Surveying Office Computations..... CA
 Directed Surveying Crew..... CA

Replace with:

Directed Surveying CA

ON PAGE 496, SECTION 676 – RECORD OF EXISTING PAVEMENT MARKINGS

Replace section 676 in its entirety with the following:

SECTION 676 – RECORD AND REESTABLISH PAVEMENT MARKINGS

676.01 Description. Record existing pavement markings in order to sufficiently reestablish them in the same location, type, and form after they are covered or removed by the work.

676.02 Materials. Provide materials as specified in:

Pavement Markings..... 630

676.03 Construction Requirements. Before removing or modifying pavement markings, do the following:

1. Propose a method for recording existing pavement markings that is accurate to within 2 inches of the original location.
2. Record existing pavement markings.
3. Submit documentation of existing pavement markings through a diagram and/or video.
4. Receive approval to remove pavement markings.

To reestablish pavement markings, place reference markings on each lane line at no greater than 100 foot intervals on tangent sections and no greater than 50 foot intervals on curves and tapers. Reestablish pavement markings, including broken and dotted line patterns, as shown on the pavement markings standard drawing. Accurately reestablish no-passing zones. Mark the approximate center of word, arrow, symbol, or other markings.

Place pavement markings as specified in 630.03.

676.04 Method of Measurement. The Engineer will measure acceptably completed work by the foot or by the square foot.

676.05 Basis of Payment. Payment for accepted work will be made as follows:

Pay Item	Pay Unit
Record and Reestablish Pavement Markings.....	ft, SF

Reference marking materials and other items needed to accomplish the work are incidental.

ON PAGE 500, SUBSECTION 701.01 – GENERAL REQUIREMENTS

Delete the first sentence in the first paragraph and replace with:

Do not use portland cement containing more than 0.8 percent total alkali.

ON PAGE 500, SUBSECTION 701.01 – GENERAL REQUIREMENTS

Delete the first sentence in the third paragraph and replace with:

For portland cement Type I, II, and III, the Contractor may use limestone additions of up to 5.0 percent by mass of the cement, provided the chemical and physical requirements of the finished cement meet AASHTO M 85.

ON PAGE 501, SUBSECTION 702.02 – POLYMER MODIFIED EMULSIFIED ASPHALTS

Delete AASHTO M 140 and replace with AASHTO M 316.

ON PAGE 501, SUBSECTION 702.03 – EMULSIFIED ASPHALTS

Delete #5 and renumber the list.

ON PAGE 503, SUBSECTION 702.04.1 – ANTI-STRIPPING ADDITIVE

Delete the second and third sentences and replace with:

Determine an amount of anti-stripping additive per ton of asphalt to achieve passing test results and maintain that amount throughout production. If the asphalt mixture requires anti-strip additive, the asphalt binder samples will be tested in accordance with Idaho IT 99.

ON PAGE 505, SUBSECTION 703.02.A – CONCRETE AGGREGATE/GENERAL

Delete the second paragraph and replace:

Do not use limestone for fine or coarse aggregate in concrete wearing surfaces.

Delete the third and fourth paragraphs and replace with:

Perform AASHTO T 380, ASTM C1293, or ASTM C295 testing to determine the potential alkali silica reactivity. The Department will require mitigating measures for aggregates found to be reactive or potentially reactive in accordance with AASHTO T 380, ASTM C1293, or ASTM C295. Potentially reactive aggregates are those with expansion greater than 0.04 percent as determined by ASTM C1293 and AASHTO T 380. If ASTM C295 indicates an aggregate composition containing a percentage of the following materials greater than shown in Table 703.02-2, the Engineer will consider the aggregate potentially reactive.

After determination of potential reactive aggregates, submit mitigation measures for approval. The Contractor's mitigation measures may include the use of fly ash, lithium admixtures, or other approved material. Submit test results from AASHTO T 380, ASTM C1293, or CRD C662 that show the proposed mitigation used with the cement and aggregates will control the potential expansion. Do not use an aggregate source for concrete before approved.

ON PAGE 508, SUBSECTION 703.03 – MICROSURFACING AGGREGATE

In the table, change the method for the Sand Equivalent Test to read "AASHTO T 176 Modified Alternate Method No. 2 Pre-Wet".

ON PAGE 509, SUBSECTION 703.03 – MICROSURFACING AGGREGATE

Add to Table Header with Stockpile Tolerances to read:

Stockpile Tolerance from the Mix Design Gradation

And add the following:

The gradation of the aggregate stockpile must not vary by more than the stockpile tolerance from the mix design gradation while also remaining within the specification gradation band. The percentage of aggregate passing any 2 successive sieves must not change from one end of the specified range to the other end.

ON PAGE 513, SUBSECTION 703.09 – PEA GRAVEL

Delete "Not specified" and replace with the following:

703.09 Pea Gravel

Provide clean, well rounded, uncrushed gravel meeting the quality requirements of Table 703.02-1 and the following gradation:

<u>SIEVE SIZE</u>	<u>PERCENT PASSING</u>
½ inch	100
3/8 inch	85-100
No. 8	0-15

ON PAGE 516, SUBSECTION 703.12 – SAMPLING AND TESTING

Delete the following:

- Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali Silica Reaction.....AASHTO T 303
- Low alkali cement may be used. Baseline testing, with cement and aggregate only, is required.

Add the following test methods:

- Potential Alkali Reactivity of Aggregates and Effectiveness of ASR MitigationAASHTO T380
- Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction.....ASTM C1293
- Standard Guide for Petrographic Examination of Aggregates for ConcreteASTM C295

ON PAGE 516, SUBSECTION 703.13.4 – FINE AGGREGATE FOR CONCRETE

Delete the following:

- Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali Silica Reaction..... AASHTO T 303
- Low alkali cement may be used. Baseline testing, with cement and aggregate only, is required.

Add the following test methods:

- Potential Alkali Reactivity of Aggregates and Effectiveness of ASR Mitigation..... AASTHO T380
- Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica ReactionASTM C1293
- Standard Guide for Petrographic Examination of Aggregates for ConcreteASTM C295

ON PAGE 516, SUBSECTION 703.13.5 – COARSE AGGREGATE FOR CONCRETE

Delete the following:

Accelerated Detection of Potentially Deleterious

Expansion of Mortar Bars Due to Alkali Silica Reaction..... AASHTO T 303

Low alkali cement may be used. Baseline testing, with cement and aggregate only, is required.

Add the following test methods:

Potential Alkali Reactivity of Aggregates and Effectiveness of

ASR Mitigation..... AASTHO T380

Standard Test Method for Determination of Length Change of

Concrete Due to Alkali-Silica ReactionASTM C1293

Standard Guide for Petrographic Examination of Aggregates for ConcreteASTM C295

ON PAGE 517, SUBSECTION 704.04 – NEOPRENE COMPRESSION SEAL

Delete the 1st paragraph and replace with the following:

704.04 Neoprene Compression Seal. Meet AASHTO M 220 for concrete pavement and AASHTO M 297 for bridges.

Provide a seal adhesive in accordance with the seal manufacturer’s written instructions and appropriate for use with the seal shown on the plans. Where an adhesive lubricant is required, meet ASTM D2835 for concrete pavement and ASTM D4070 for bridges. Where an epoxy adhesive is required, meet ASTM C881, Types I, II, IV, V, Grade 3, Classes B and C.

ON PAGE 523, SUBSECTION 706.19 – POLYPROPYLENE PIPE

Replace this subsection in its entirety with:

Meet ASTM F2764 for corrugated double and triple wall pipe. Limit double wall pipe to 30 inches maximum diameter and triple wall pipe from 30 inches to 60 inches maximum diameters.

ON PAGE 525, SUBSECTION 707.02 – PAINT FORMULA

Delete the following:

Formula No. 14 Highway Traffic Line Paint, Latex

Replace with:

Formula No. 14 Highway Pavement Marking Paint, Waterborne”.

ON PAGE 525, SUBSECTION 707.02 – PAINT FORMULA

Insert the following table:

Table 707.02-1 – Waterborne Paint Criteria

Parameter	White	Yellow
Density of Paint lb/gal	Within ± 0.20 lb/gal of qualification sample	
Consistency:		
at 122°F (Kreb Units)	80 minimum	80 minimum
at 77°F (Kreb Units)	85-95	85-95
at 50°F (Kreb Units)	100 maximum	100 maximum
Total Nonvolatile Solids (%)	78 minimum	78 minimum
Pigment Solids (%)	65 maximum	65 maximum
Nonvolatile Vehicle, (%) by weight of the vehicle	40 minimum	40 minimum
Vehicle Composition	100% Acrylic Emulsion	
Pigment Composition (lb/gal) (Rutile TiO ₂)	1.0 minimum	0.30 maximum
Scrub Resistance (Cycles)	800 minimum	800 minimum
pH (Standard Units)	9.8 minimum	9.8 minimum
VOC (grams/Liter)	150 maximum	150 maximum
Dry Through (Minutes) (Early Washout)	130 maximum	130 maximum
Static Heat Stability (Kreb Units)	± 7 maximum	± 7 maximum
Freeze-Thaw (Kreb Units)	± 5 maximum	± 5 maximum
Color (as approved)	37875	33538
Bleeding Ratio	0.98 minimum	0.98 minimum
Contrast Ratio	0.95 minimum	0.90 minimum
Directional Reflectance (%)	90 minimum	60 minimum
Yellowness Index	0.040 maximum	Not Tested
Settling (Inches)	1/4 maximum	1/4 maximum
Cake Depth (Inches)	3.5 maximum	3.5 maximum
Skinning	Pass	Pass
Flexibility	Pass	Pass
Cracking	Pass	Pass
No-tracking Time (Sec.) (Vehicle Field Test)	75 maximum	75 maximum

ON PAGE 526, SUBSECTION 708.03 – DOWEL BARS

Delete the second paragraph and add the following:

Epoxy coat the steel dowel bars in accordance with AASHTO M254 and as modified:

- (1) Apply 7-13 mils epoxy coating thickness.
- (2) Epoxy coat the ends of the dowel bars as required by the manufacturer. Apply epoxy coating in a fusion bonded epoxy coating plant certified by the CRSI or another organization approved by the Materials Engineer.

The Engineer may allow the use of alternate dowel bar materials.

ON PAGE 526, SUBSECTION 708.04 – TIE BARS

Add the following to the end of the first paragraph

Provide epoxy-coated tie bars in accordance with ASTM A775.

ON PAGE 534, SUBSECTION 708.18 – HARDWARE FOR SIGNS

Delete the second specification for Class No. Fe/Zn 25 and replace with:

Grade 5, Fe/Zn 3

ON PAGE 535, SUBSECTION 708.19 – ILLUMINATION POLES AND BASES

Delete the word “Standard” from paragraph 2.

ON PAGE 537, SECTION 708 – METALS

Add the following subsection:

708.32 Mechanical Splices. Provide mechanical splices that meet ASTM A1034.

ON PAGE 543, SUBSECTION 711.04 – RIPRAP

Delete the following from the first sentence: “from an approved source”. Add the following text and table to the end of Subsection 711.04:

Provide riprap classes sized as shown in the Table 711.04-2.

Table 711.04-2 – Gradation Requirement for Riprap ^(a)

Class	Nominal Riprap Size, D₅₀ ^(b) (inches)	Percent of Rock Equal or Smaller, D_x	Range of Intermediate Dimensions ^(c) (inches)
III	12	100	24 ^(d)
		85	15 - 19
		50	11 - 14
		15	7 - 11
V	18	100	36 ^(d)
		85	23 - 28
		50	17 - 21
		15	11 - 16
VII	24	100	48 ^(d)
		85	31 - 37
		50	23 - 28
		15	14 - 21
VIII	30	100	60 ^(d)
		85	39 - 46
		50	28 - 35
		15	18 - 26
IX	36	100	72 ^(d)
		85	47 - 56
		50	34 - 42
		15	22 - 32
X ^(e)	42	100	84 ^(d)
		85	54 - 65
		50	40 - 49
		15	25 - 37

^(a) Riprap class, size, and gradation consistent with FHWA – Hydraulic Engineering Circular No. 23.

^(b) The size for which 50% by weight of the particles are smaller.

^(c) Furnish rock with intermediate dimension (width and thickness) of at least one-third its length (longest axis).

^(d) Maximum intermediate dimension.

^(e) For any riprap larger than Class X, a qualified Engineer will determine the riprap size through an appropriate evaluation and provide a suitable gradation.

ON PAGE 544, SUBSECTION 711.05.B – SEED/RANDOM SAMPLING

Delete the second sentence and replace with:

The Engineer will weigh seed according to size, approximately 616 gram samples for lupine species and 125 gram samples of mostly native seed (550 gram samples of grain or similar size seed) from unblended and individually packaged seed containers of each species.

ON PAGE 547, SUBSECTION 711.11 – ROLLED EROSION CONTROL

Delete the last sentence of the last paragraph.

ON PAGE 548, SUBSECTION 711.20 – FIBER WATTLES

Delete the first paragraph and replace with:

711.20 Fiber Wattles. Provide fiber wattles that consists of certified noxious weed free 100% biodegradable material wrapped in biodegradable netting.

ON PAGE 549, SUBSECTION 711.20 – FIBER WATTLES

Delete the word “degradable” in the last sentence of the second paragraph and replace with “biodegradable”.

ON PAGE 549, SUBSECTION 711.21 – COMPOST SOCKS

Replace 711.18 with 654.

ON PAGE 550, SUBSECTION 712.02 – RETROREFLECTIVE SHEETING

Change numbers 1 and 2 as follows:

1. Sheet Aluminum and Plywood Signs. Provide Type IV direct applied retroreflective sheeting for signs with white backgrounds. Provide Type XI direct applied retroreflective sheeting for all other background colors. Provide Type XI direct applied retroreflective sheeting for white sign legends.
2. Extruded Aluminum Sign Panels. Provide Type XI direct applied retroreflective sheeting for the background and legend.

ON PAGE 552, SUBSECTION 713.01.A – TESTING AND COMPLIANCE BY THE MANUFACTURER

Under Item 5, delete “08” from LM-79.

ON PAGE 552, SUBSECTION 713.01.B – FIXTURE CONSTRUCTION

Under Item 10, delete “2001” from ANSI/IEEE C136.31.

ON PAGE 553, SUBSECTION 713.01.C.9 – ELECTRICAL REQUIREMENTS

Delete Item “c” and replace with:

- c. Meets ANSI/IEEE C136.2 requirements (20kV/10kA).

ON PAGE 555, SUBSECTION 713.08 – SIGNAL POLES

Delete subsections 2.b and 2.c.

ON PAGE 556, SUBSECTION 713.08 – SIGNAL POLES

Under Item 3, replace “Pedestal” with “Pedestrian”.

ON PAGE 556, SUBSECTION 713.09 – ILLUMINATION POLES

Under item 2.b, delete the word “Standard”.

ON PAGE 558, SUBSECTION 713.11.2 – PEDESTRIAN SIGNAL HEADS

Under Item c, delete the word “tunnel”.

ON PAGE 560, SUBSECTION 714.02 – FLY ASH

Delete the first sentence and replace with:

Provide fly ash that meets AASHTO M 295 Class F, except loss of ignition (LOI) must not exceed 3.0 percent.

Provide natural pozzolans that meet AASHTO M 295 Class N.

ON PAGE 560, SUBSECTION 714.05 – BLENDED SECONDARY CEMENTITIOUS MATERIALS

Add the following subsection to 714 SECONDARY CEMENTITIOUS MATERIALS:

714.05 Blended Secondary Cementitious Materials. Provide blended secondary cementitious materials conforming to ASTM C1697. Each cementitious material must be sampled before blending.

ON PAGE 564, SUBSECTION 718.03 – SAMPLES

Delete the second sentence of the third paragraph and replace with:

The Department defines a lot as geotextile rolls within the same consignment or shipment that a manufacturer produced with the same lot number, and product name or designation.

ON PAGE 565, SUBSECTION 718.05 – DRAINAGE GEOTEXTILE PROPERTY REQUIREMENTS

Delete 718.05 and replace with:

718.05 Drainage Geotextile Property Requirements. Provide nonwoven or monofilament woven geotextiles. The Engineer will not accept slit film or slit tape geotextiles for drainage applications. Meet the requirements in Table 718.05-1.

Table 718.05-1 – Drainage Geotextile Criteria

Geotextile Property	Test Method	Minimum Average Roll Values (in weaker principal direction)
Grab Tensile Strength, lb	ASTM D4632	180
Puncture Strength, lb	ASTM D6241	450
Apparent Opening Size (AOS), Standard Sieve	ASTM D4751	#70 or finer
Permittivity, sec ⁻¹	ASTM D4491	0.7

Note: Strength properties of drainage geotextiles placed on level or near level surfaces (e.g., under drain blankets, on subgrade) must meet those specified in 718.07.

ON PAGE 565, SUBSECTION 718.06 – RIPRAP/EROSION CONTROL GEOTEXTILE PROPERTY REQUIREMENTS

Delete 718.06 and replace with:

718.06 Riprap/Erosion Control Geotextile Property Requirements. Provide nonwoven or monofilament woven geotextiles. The Engineer will not accept slit film or slit tape geotextiles for riprap/erosion control applications, including installation behind gabions. Meet the requirements in Table 718.06-1.

Table 718.06-1 – Riprap/Erosion Geotextile Criteria

Geotextile Property	Test Method	Minimum Average Roll Values (in weaker principal direction)
Grab Tensile Strength, lb	ASTM D4632	315 / 200
Grab Elongation, %	ASTM D4632	<50% / ≥50%
Puncture Strength, lb	ASTM D6241	600 / 450
Trapezoidal Tear, lb	ASTM D4533	110 / 80
Apparent Opening Size (AOS), Standard Sieve	ASTM D4751	#40 or Finer
Permittivity, sec ⁻¹	ASTM D4491	0.7
Ultraviolet (UV) Radiation Stability	ASTM D4355	70% Strength Retained @ 150 hours

^(a) The dual values for strengths for each geotextile type are related to the grab elongation. For geotextiles with elongation which is less than 50%, the first strength values are applied. For geotextiles with elongation which is equal or greater than 50%, the second strength values are applied. Higher strength is required for geotextiles with lower elongation.

ON PAGE 566, SUBSECTION 718.07 – SUBGRADE SEPARATION GEOTEXTILE PROPERTY REQUIREMENTS

Delete 718.07 and replace with:

718.07 Subgrade Separation Geotextile Property Requirements. Provide nonwoven or monofilament woven geotextiles, except only nonwoven geotextile can be used for Type III. The Engineer will not accept slit film or slit tape geotextiles for subgrade separation. Meet the requirements in Table 718.07-1.

Table 718.07-1 – Subgrade Separation Geotextile Criteria

Geotextile Property	Test Method	Minimum Average Roll Values ^(d) (in weaker principal direction)		
		Type I ^(a)	Type II ^(b)	Type III ^{(b)(c)}
Grab Tensile Strength, lb ^(d)	ASTM D4632	180 / 110	270 / 180	270 / 180
Grab Elongation, % ^(d)	ASTM D4632	< 50% / ≥ 50%		
Puncture Strength, lb ^(d)	ASTM D6241	500 / 300	600 / 450	600 / 450
Trapezoidal Tear Strength, lb ^(d)	ASTM D4533	70 / 40	100 / 75	100 / 75
Apparent Opening Size (AOS), Standard Sieve	ASTM D4751	#30 or Finer	#40 or Finer	#70 or finer
Permittivity, sec ⁻¹	ASTM D4491	0.05	0.05	0.7

^(a) Type I refers to moderate survivability conditions. Moderate survivability is low to moderate ground pressure equipment, 40 psi or less, with 12 to 18 inch initial lift thickness or high ground pressure equipment, greater than 40 psi, with more than 18 inch initial lift thickness.

^(b) Type II and Type III refers to high survivability conditions. High survivability is low to moderate ground pressure equipment with 6 to 12 inch initial lift thickness or high ground pressure equipment with 12 to 18 inch initial lift thickness.

^(c) Type III is used when subgrade separation geotextile will also function in a drainage application.

^(d) The dual values for strengths for each geotextile type are related to the grab elongation. For geotextiles with elongation which is less than 50%, the first strength values are applied. For geotextiles with elongation which is equal or greater than 50%, the second strength values are applied. Higher strength is required for geotextiles with lower elongation.

The subgrade condition is assumed to be cleared of rocks, stumps and large limbs, and graded reasonably smooth. If subgrade preparation or clearing is not as stated, or cover material is angular shot rock, even higher survivability geotextiles may be necessary.

ON PAGE 568, SUBSECTION 720.03 – POLYTETRAFLUOROETHYLENE BRIDGE BEARING PADS

Delete all references to “TFE”.

ON PAGE 570, SUBSECTION 720.07.3.B – RAP TESTING AND TEST FREQUENCY/CATEGORY 2

Delete number 2 and replace with and add:

- (2) AASHTO T 335 and ASTM D4791 at a minimum testing frequency of 1 test per 500 tons for the first 2,000 tons and 1 test per 1,000 tons thereafter. Perform at least 6 tests per stockpiles less than 4,000 tons.
- (3) AASHTO T 304, AASHTO T 308, and IT 146 at a minimum testing frequency of 1 test per 5,000 tons on a blended composite sample of material obtained at 1,000 ton increments. Perform a minimum of 5 tests per stockpile. Provide test results on a spreadsheet with the mix design submittal and update the spreadsheet, if additional RAP is produced before producing.

ON PAGE 571, SUBSECTION 720.08 – GLASS BEADS USED IN PAVEMENT MARKINGS

Add a new subsection:

720.08 Glass Beads Used in Pavement Markings. Glass beads used in pavement markings will be tested in accordance with Federal Specification TT-B-1325D. Provide glass beads meeting AASHTO M 247, Type 1 and as follows:

- i. Glass Beads for Thermoplastic Pavement Markings. Provide beads with moisture resistance and adherence coatings.
- ii. Glass Beads for Waterborne Pavement Markings. Provide beads with moisture resistance and adherence coatings. Modify Type 1 gradation as follows:

Microns	U.S. Sieve No.	Percent By Weight, Passing
1,000	18	100
850	20	90 – 100
425	40	15 – 35
300	50	0 – 5
180	80	0 – 2