Rainbow Campground Reconstruction

Statement of Work and Request for Proposals

Mt. Hood National Forest, Oregon

Background and Statement of Work: The National Forest Foundation (NFF) in coordination with the USDA Forest Service (Forest Service) seeks proposals for the reconstruction of the Rainbow Campground on the Clackamas River Ranger District of the Mt. Hood National Forest. The campground will be rebuilt to the specifications that existed prior to the 2020 Riverside Fire which heavily damaged the site. This project involves repaving a 0.29-mile loop road for vehicular traffic, site preparation and reconstruction of 16 campsites including picnic tables and fire rings, installation of a kiosk, dumpsters, signs, and repainting and resealing the campground bathroom.

Information Requested

If interested in this project, please provide a bid for the above statement of work by providing approach, work experience, and cost. Please also include your capacity for this project and efficiency in campground construction, general contracting, and/or road construction projects in the past, if any.

This is a request for proposals only and bids furnished are not offers. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation or submission of the proposal or to contract for supplies or services.

General Specifications

(a) Description of Work – This Request for Proposals is for services related to reconstruction of Rainbow Campground, including the following:

1. Brushing out campsite footprints
2. Installation of 16 Carsonite sign posts
3. Installation of 16 combination fire ring/grills
4. Purchase and install 18 parking blocks
5. Repainting and resealing campground bathroom
6. Installation of 1-panel kiosk and Iron Ranger fee collection station
7. Purchase and install 3 bear bins and 2 small dumpsters
8. Install 10 picnic tables, Forest Service supplied
9. Move on-site boulders for use as parking barriers
10. Disposal of specified items
11. Repave 0.29 loop road and parking spurs, including 2 culverts
The Contractor shall identify which they can supply in terms of materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the work described. The Contractor shall perform all work in a safe and conscientious manner and abide by all OSHA standards.

(b) **Project Location** – This project is located on the Clackamas River Ranger District of the Mt. Hood National Forest. From Estacada, OR, take Hwy 224 / NF 46 for 25 miles to the campground. See Appendix A for maps of the area and project.

(c) **Work Schedule** – Contractor will agree on a start date and a work schedule with Forest Service after contract is signed. Contractor will be given leeway in regard to working weekdays, weekends, holidays, etc. within the project time frame. It is intended that this campground will be reopened for use before the end of the 2023 season.

### Pricing Schedule

Contractor shall price work according to the schedule below. Prevailing wages are required per conditions of funding sources. See attached Forest Service Scope of Work and Construction Plans for further detail, specifications, and product sourcing.

<table>
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<th>Unit</th>
<th>Unit Cost</th>
<th>Quantity</th>
<th>Total Cost</th>
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<td>Mobilization</td>
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<tr>
<td>Brush out campsites</td>
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<tr>
<td>Purchase and install Campsite Carsonite Signs</td>
<td>EA</td>
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<td>Purchase and install combination fire ring/grill. Remove, dispose of 17 specified relic fire rings</td>
<td>EA</td>
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<td>16</td>
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<td>Purchase and install parking blocks</td>
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<td>Double CXT, exterior and interior painting</td>
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<td>Double CXT, replace pipe seals around vent stacks</td>
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<td>Furnish and install sign panel, Forest Road destination</td>
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<tr>
<td>Purchase and install new 1 panel kiosk</td>
<td>EA</td>
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<td>Purchase and install Iron Ranger</td>
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<td>Purchase and install sanitation (bear bins)</td>
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<td>Description</td>
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<td>Purchase and install sanitation (dumpster, small)</td>
<td>EA</td>
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<td>Install picnic tables, FS supplied. Remove, dispose of 10 specified relic</td>
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<tr>
<td>picnic tables</td>
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<td>Move and place existing campground boulders and downed logs as parking</td>
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<tr>
<td>spur barriers</td>
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<td>Disposal of specified items</td>
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<td><strong>Total of Campground Items</strong></td>
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<td><strong>Description</strong></td>
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<td>Mobilization</td>
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<td>24-inch pipe culvert, corrugated aluminized steel pipe, compaction method</td>
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<td><strong>Project Total</strong></td>
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**Other Project Requirements and Specifications**

1. **Utilities**—There is no running water, electrical or housing services available. The Contractor shall coordinate with the Forest Service on approved locations for camping and staging of work. The Contractor shall make its own arrangements for any other temporary facilities if needed.
2. **Specifications** – Project work shall be accomplished in accordance with the attached Forest Service Specifications for the Rainbow Campground Reconstruction Project, all other specification and component sources identified in the design sheet, and additional attachments. Please note that for all construction projects on Federal lands, contractors must follow the Standard Specifications for the Construction of Roads and Bridges on Federal Highway Projects (FP-14) in addition to all site-specific attachments provided by the Forest Service.

**Contractor Qualifications**

1. **References** – Please provide three references.

2. **Past Experience** – Please provide a brief explanation of previous work experience with land management agencies.

**Insurance Requirements**

Upon selection of the winning bid, chosen contractor will be asked to affirm that it has and shall maintain State minimum workers’ compensation insurance coverage for its employees, if any. The selected contractor shall also maintain broad form general liability, property damage, and automotive liability insurance in the minimum amount of $1,000,000 for bodily injury, death, or damage to property of any person and $2,000,000 for bodily injury, death, or damage to property of more than one person. The Contractor shall name NFF an Additional Named Insured and provide NFF with documentation evidencing such coverages.

**Prohibited Telecommunications Services and Equipment**

The Contractor is responsible for compliance with the prohibition on certain telecommunications and video surveillance services or equipment identified in 2 CFR 200.216.

**Performance Security**

Chosen contractor shall post cash, a letter of credit, bond, or other financial security that is easily convertible into cash in a form acceptable to the NFF in its sole determination in the amount of 5% of the amount due to contractor, not to exceed $250,000 dollars, to assure completion of the work required under this Agreement and payment of all amounts lawfully due to all persons supplying or furnishing to the Contractor or Contractor’s subcontractors with labor, laborers, materials, rental machinery, tools or equipment used or to perform the work. As work is completed in integrated component parts, inspected, approved and, if applicable, conveyed to NFF, the Performance Security shall be released in a proportional amount, unless a lesser amount of release is necessary to maintain 5% Performance Security.
Pre-bid Meeting
The National Forest Foundation and the Forest Service will provide a pre-bid site meeting to answer any questions about the scope of work for the project. The meeting will be held on July 25, 2023, at 1PM. Interested contractors can meet at Rainbow Campground. Please note that this is during fire season and may be rescheduled if necessary.

Bid Submission
Submit bids via email to jmalik@nationalforests.org by August 11, 2023.

Contractor Selection Process
The NFF will use the Evaluation Factors below to review each submitted bid. Based on the outcomes of that selection process, the NFF will notify successful and unsuccessful bidders by September 8, 2023, and will prepare a separate contract document.

Evaluation Factors and Relative Importance
Level 3 Criteria:
- Price/cost
- Equipment and contractor capability
- Timing of when contractor can begin and/or finish the project
- Past performance, references, and USFS feedback

Level 2 Criteria:
- Technical proposal/proposed approach to the project
- Overall strategic benefits to meeting NFF goals and grant needs, requirements, and timelines

Level 1 Criteria:
- Benefits to the local community
- Relationship to local community

Point of Contact
For questions about the details of producing the bid, please contact:

Jeff Malik
National Forest Foundation, Oregon Recreation Projects Coordinator
541.808.8894
jmalik@nationalforests.org
Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, the National Forest Foundation is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.

List of Appendices:
Appendix A – Rainbow Campground Site Plan and Details
Appendix B – Rainbow Campground Statement of Work
Appendix C – Rainbow Campground Paving Plan
Appendix D – Rainbow Campground Paving Plan Supplemental Specifications
Appendix E – Bid Schedule
OREGON
CLACKAMAS COUNTY
(R6) PACIFIC NORTHWEST REGION
MT. HOOD NATIONAL FOREST
CLACKAMAS RIVER RANGER DISTRICT

RAINBOW CAMPGROUND
REBUILD DESIGN

FOREST LOCATION

VICINITY MAP

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<td>BULDGE BARRIER PLACEMENT GUIDE</td>
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<tr>
<td>35</td>
<td>LOG BARRIER PLACEMENT GUIDE</td>
<td>5/21/2023</td>
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</tbody>
</table>

RECOMMENDED BY:

[Signature]

APPROVED:

[Signature]

DIRECTOR OF ENGINEERING

 dates
NOTE FOR ALL SITES:

1. Boulders should be dissimilar in form as much as possible.
2. Boulders should be placed non-linearly.
3. Boulder locations for all site plans are conceptual and are approximated for reference.
4. Log barrier length for all site plans is conceptual, actual length of each log can vary to reflect available logs and feasibility of relocating logs.
5. Minimum diameter of logs shall be 1 ft.
6. Gaps between logs used for barriers to vary, but shall be no more than 5' wide.
7. Fire ring and picnic table placement, as well as campsite configuration is conceptual and subject to change with each site's varying topography and vegetation.
8. Tent outline for all site plans is conceptual to show minimum distances between campsite elements needed for accessibility—access.
NOTE:
1. SECTIONS DISTANCES BEYOND ROAD ARE MEANT TO BE CONCEPTUAL, ACTUAL LENGTHS WILL VARY AT EACH CAMPSITE.
2. ENSURE MINIMUM OF 48" CLEARANCE AROUND ALL FIXED CAMPSITE ELEMENTS SUCH AS PARKING BARRIERS.
NOTE:
1. Exact location of Campsite 5 access path to be determined by the West Zone Recreation Program Manager.
NOTE:
1. VEGETATION IN ISLAND SHOULD NOT OBSCURE LINE OF SIGHT TO ROAD
2. PARKING BARRIER MATERIAL CHOICE (BOULDER, LOG, OR CONCRETE LOG) WILL BE DECIDED BY WEST ZONE RECREATION PROGRAM MANAGER
3. BOULDER AND LOG BARRIER LOCATIONS ARE APPROXIMATE AND FOR REFERENCE AND SUBJECT TO CHANGE
TRAFFIC FLOW DIRECTION

28'

17'

R10'

22'

26'

20'

6'2"

6'2"

3' - 8"

16'

UTILITY PARKING AREA

BEARSAVER
- HA SERIES
- DOUBLE TRASH ENCLOSURE,
- ADA COMPLIANT
- HA2-P
- sanitation bear bin,
or equivalent
Bear Guardian T800
sanitation dumpster, or equivalent

CONCRETE PAD
NOTE:

1. The existing gravel pad for Campsite 5 parking shall be rendered inaccessible for future use.
2. Boulders shall be placed to prevent vehicles from parking on the existing gravel pad.
CONCRETE PAD

BEARSAVER
- HA SERIES DOUBLE TRASH ENCLOSURE, ADA COMPLIANT
- HA2-P sanitation bear bin, or equivalent
NOTE:

1. Bear Guardian T800 sanitation dumpster, or equivalent
Front Elevation

Concrete Pad

39 7/8"

14 7/8"

51 7/8"

31 7/8"

4 1/2"

4"

1/2" J BOLTS SUNK IN CONCRETE

CONCRETE PAD AXON

Side Elevation

CONCRETE PAD

CRUSHED AGGREGATE

BARE EARTH
NOTE:
1. Wood Product, WEST SLOPE Single STANDARD Panel Information Kiosk
2. 48" x 48" panel
3. All Metal Roof Kit, with brown powder coat steel roof, or equivalent
INSERT HANDLE

ENVELOPE DEPOSIT SLOT

FS1236A INSERT (1/4" 6061 ALUM.) OR EQUAL

FS1236 SHELL (12" SQ. TUBE, 1/4" WALL) OR EQUAL

(4) 3/8" x 6" STAINLESS STEEL J-BOLTS, WELD NUT TOPS WITH CONTINUOUS BEAD TO VANDALPROOF.

INTERNAL MOUNTING PLATE

GROUND LINE

CONCRETE

COMPACTED CRUSHED AGGREGATE AS REQUIRED

NOTE:

THIS SIDE FACES ROAD
BROWN COLOR

POUND DIRECTLY INTO GROUND

1 1/2

3 3/4
NOTES

1. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS AND SPECIFICATIONS.
   ALL CAMPGROUND UNIT PADS TO RECEIVE ACCESSIBLE FIRE RINGS.

2. WHEELCHAIR ACCESSIBLE CAMPFIRE RINGS WITH SWIVEL COOKING GRATE. PILOTRACK MODEL FSW-30/18/PA, OR EQUIVALENT
CONCRETE PICNIC TABLE

NOTE:
1. ALL PRE-CAST CONCRETE SHALL BE INTEGRAL COLORED COLOR SHALL BE SELECTED FROM CONTRACTOR SUPPLIED COLOR SWATCH SHEET FROM THE MANUFACTURER.

2. CRUSHED AGGREGATE SHALL BE SOURCED LOCALLY AND APPROVED BY THE WEST ZONE RECREATION PROGRAM MANAGER.

WOODGRAIN TEXTURE TABLE TOP

SMOOTH TEXTURE SEATS

CRUSHED AGGREGATE PAD (8") 2" DEPTH

11'5"
65"
33"
4' 2"
11"
3' 8"
1-3/8"
NCTE:
1. Nitterhouse Concrete Log Parking Blocks

Cross Section

Front Section

LEAVE 1/2" GAP BETWEEN LOG TOP AND REBAR

D. ANCHOR HOLES WITH 
#5 REBAR ANCHORING RODS
NOTES
1. Scatter boulder placement to appear natural
2. Retain a minimum of 4 ft. and a maximum of 6 ft. from edge of one boulder to edge of another boulder.
3. Boulders should range from a minimum of 3 ft. diameter to 5 ft. diameter.
4. Final location of barrier boulder to be field located by O.G.

4' MINIMUM BETWEEN BOULDERS, LOGS, AND ALL CAMPSITE AMENITIES

4' spacing between boulders and concrete log parking barrier is ideal if feasible on site.

CONCRETE LOG PARKING BARRIER

Do not place boulders in a straight line

Do not place boulders of the same height next to each other
NOTES
2. Retain a 4'-6' distance between logs if used as barriers between parking spur and campsites.
3. Large, downed logs are acceptable alternatives to boulders in some instances. To ensure accessibility—standard gaps between barriers, prioritize using boulders along the length of parking spurs that connect to the campsites.
4. Due to the variable length of logs, they are most appropriate along the other sides of the parking spur to prevent vehicles encroaching beyond the parking spur boundary. If there are no paths or connections to the campsites along a parking spur edge, then no accessibility—standard gap is needed.
5. If there is a connection between the parking spur edge and a campsites, then accessibility—standard gaps between logs shall be provided.
6. If logs are cut 6' or shorter and used as barriers between a parking spur and campsites, then the logs should be anchored to prevent rolling.

LOG PARKING BARRIER ANCHORING

MINIMUM 18" Diameter Log

LEAVE 2" GAP BETWEEN LOG TOP AND REBAR
12"-18" Diameter Log
Flush Cut Log
Place directly on bare earth
#3 Rebar
Compacted Earth

LOG PARKING BARRIER PLACEMENT

NOTES
1. ALL LOGS MINIMUM 18" DIAMETER
2. LENGTH TO VARY WITH AVAILABLE MATERIAL — NO MINIMUM OR MAXIMUM LENGTH
3. LOGS SHOULD VARY IN LENGTH WHEN GROUPED ON THE SIDE OF A PARKING SPUR

Do not place logs in a straight line and at equal length
Environmental Considerations

The following are project design criteria required for Mt. Hood National Forest developed recreation sites damaged by the Riverside and Lionshead Fires, as determined by Clackamas Post-Fire Recreation Site and Trail Repair Categorical Exclusion.

<table>
<thead>
<tr>
<th>Design Criteria Number</th>
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<th>Law, Regulation, Policy, or LRMP Component</th>
<th>Applicable Area or Activity</th>
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<tr>
<td>BOTANY-2</td>
<td>Gravel or rock used for roads and parking areas within recreation sites will come from sources approved by the local botanist to meet weed-free standards.</td>
<td>2008 Site-Specific Invasive Plant Treatments for Mt. Hood National Forest and Columbia River Gorge National Scenic Area in Oregon, Including Forest Plan Amendment #16 Record of Decision (USDA Forest Service 2008a)</td>
<td>Developed recreation sites</td>
</tr>
<tr>
<td>BOTANY-3</td>
<td>All off-road equipment will be free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds prior to coming onto National Forest lands. This includes equipment or vehicles that need to stage off pavement on vegetated road shoulders.</td>
<td>USDA Forest Service 2008a</td>
<td>Developed recreation sites</td>
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<tr>
<td>BOTANY-5</td>
<td>For restoration, revegetation, or erosion control on disturbed ground, use of locally adapted native plant materials (i.e., seed, cuttings, divisions, corms, bulbs, and/or transplants) that have been collected from the Mt. Hood National Forest or nearby, genetically appropriate areas are preferred. If native plant materials are not available non-native, sterile seed use would be reviewed and approved by a botanist. The following would not be appropriate to use: materials from outside this sub-region, invasive plants, orchard grass (<em>Dactylis glomerata</em>), annual ryegrass (<em>Lolium multiflorum</em>; also known as <em>L. perenne</em> ssp. <em>multiflorum</em>) or the cultivar Madsen sterile wheat (<em>Triticum aestivum</em>). See hydrology design criteria for additional details regarding seeding.</td>
<td>Forest Service Manual (FSM) 2070</td>
<td>Restoration, revegetation, and erosion control</td>
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### Cultural

| CULTURAL-4 | All archaeological sites within the area of potential effect will be monitored post implementation to assess potential impacts. | National Historic Preservation Act | All |
| CULTURAL-5 | If previously unidentified cultural resources are encountered during project activities, all work will cease immediately, and the Zone Archaeologist will be contacted to evaluate the inadvertent discovery. A mitigation plan, if necessary, would be developed in consultation with the Oregon State Historic Preservation Office (SHPO) and the Confederated Tribes of Warm Springs and/or the Confederated Tribes of Grand Ronde as appropriate. | National Historic Preservation Act | All |

### Engineering

| ENGINE-2 | Any time equipment or other operations will be blocking or interrupting traffic in the roadway, provide advanced signage or flaggers as appropriate meeting current Manual of Uniform Traffic Devices (MUTCD) standards. All interruptions must be limited in duration. | 36 CFR 655; 36 CFR 212.5(a) | All |
| ENGINE-4 | Seek support/review from appropriate engineer for all applicable designs, utility decommissioning. | FSH 7309 | All |
| ENGINE-5 | Request overload permit for crossing any bridges with loads over the state legal limit. | LRMP S&G FW-412; 36 CFR 212.5(a)(2) | Equipment transport |

### Fisheries

| FISH-1 | Spill Prevention - An approved Spill Prevention Control and Containment Plan (SPCCP) will be created, which describe measures to prevent or reduce impacts from potential spills. The SPCCP will include a description of the hazardous materials that would be used, and a spill containment kit will be located on-site. All trucks used for refueling will carry a hazardous material recovery kit. All vehicles and machinery will be free of petroleum leaks. Any leaks that occur will be immediately repaired. Refuel power equipment at least 150 feet from water bodies to prevent direct delivery of contaminants into a water body. If local site conditions do not allow for a 150-foot setback, then refueling will be as far away as possible from the water body; defined in the Northwest Forest Plan as portions of a watershed. | 2018 Programmatic Biological Opinion for Routine Actions and Maintenance Activities of USDA Forest Service (RAMBO) | Near all bodies of water to include intermittent and perennial streams, wetlands, seeps and springs. |
directly coupled to streams and rivers, that is, the portions of a watershed required for maintaining hydrologic, geomorphic, and ecologic processes that directly affect standing and flowing waterbodies such as lakes and ponds, wetlands, streams, stream processes, and fish habitats. For all immobile equipment, absorbent pads will be used. All petroleum products being transported or stored will be in approved containers meeting Occupational Safety and Health Administration and Oregon Department of Transportation standards. The contracting officer will be notified of any spills. Any contaminated soil, vegetation or debris will be removed from National Forest System lands and disposed of in accordance with state laws.

| FISH-2 | Generally, road maintenance and reconstruction activities will occur during the dry season (generally June 1 to October 15) unless the road segment has no hydrologic connection to streams. | RAMBO | All where applicable |
| FISH-3 | All waste material generated from road maintenance (ditch cleaning, blading, etc.) will be placed in a pre-designated area outside of riparian reserves. | RAMBO | All where applicable |
| FISH-4 | It is always preferred that ditch lines remain vegetated, but conditions occur where ditch lines eventually need to be deepened/cleaned. When removing vegetation from ditch lines where ditches are hydrologically connected to any stream, install an effective sediment trap to prevent ditch erosion from entering streams (e.g., wattles, mulching cleared ditches within 100 feet of stream-crossing culverts) until vegetation is re-established. | RAMBO | All where applicable |
| FISH-6 | At recreation sites where human use has compacted soils or degraded vegetation adjacent to critical habitat streams or has increased the area of unstable streambank, control activities of users (e.g., close streamside camping sites, fence and plant degraded streambanks) as needed to restore riparian vegetation and functions. | RAMBO | All where applicable |
| FISH-7 | Do not remove downed wood from sites, except to clear trails and where downed wood poses a public risk, within 100 feet from streams with listed fish habitat or within 50 feet from perennial and intermittent streams within 1 mile of streams with listed fish habitat. An exception may be made in developed recreation areas where it is determined that felled trees need to be removed. | RAMBO | All where applicable |
| FISH-9 | For sites that are within a distance from streams with listed fish habitat equal to one site potential tree height where human use has compacted soils or degraded vegetation, or has increased the percentage of unstable streambank, retain all downed wood in degraded areas. An exception may be made in developed recreation areas where it is determined that felled trees need to be removed. | RAMBO | All where applicable |

**Hydrology**

| HYDRO-1 | Erosion-control measures will be implemented to prevent off-site movement of disturbed soils from equipment use, and other ground-disturbing actions. Where appropriate, erosion control treatment on bare soils may include silt fences, wattles, straw bales, matting, mulch, slash, water bars, ditch check dams, grass seed, or other products. Sediment control | LRMP S&G FW-055, FW-056 | Ground-disturbing actions |
| HYDRO-2 | Earth disturbing activities shall occur during the dry season (June 1 to October 15) or when onsite conditions are dry enough to allow operation, as determined by the Mt Hood National Forest West Zone Recreation Program Manager or their designee. | LRMP S&G FW-055, FW-056 | Ground-disturbing actions |
| HYDRO-3 | The Mt Hood National Forest West Zone Recreation Program Manager or their designee will monitor the implementation of the project design criteria during construction on a regular basis and/or take action if construction is not conducted according to the project design criteria. | LRMP S&G FW-055, FW-056 | Ground-disturbing actions |
| HYDRO-4 | All equipment operating on the site area will be in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid. | LRMP S&G FW-055, FW-056 | Equipment Use |
| HYDRO-5 | New vault toilet locations will be more than 50 feet from wells, springs, streams, or other water sources and five feet from adjacent structures. | LRMP S&G FW-055, FW-056 | New vault toilet construction |
| HYDRO-6 | Diaper all stationary power equipment (e.g., generators, cranes, stationary drilling equipment) operated within 150 feet of any waters of the state to prevent leaks, unless other suitable containment is provided to prevent potential spills from entering any waters of the state. | LRMP S&G FW-055, FW-056 | Equipment Use |
| HYDRO-7 | No staging areas, spoils piles, or other construction-related materials will be staged or stored in riparian reserves without authorization from the Mt Hood National Forest West Zone Recreation Program Manager or their designee. | LRMP S&G FW-055, FW-056 | Erosion Control |
| HYDRO-8 | Redundant erosion protection (such as two rows of straw wattles, straw bales, and/or more permanent structures such as logs) will be installed on bridge replacement projects. The redundant erosion control will be installed between the footing for the bridge and the stream. | LRMP S&G FW-055, FW-056 | Erosion Control |
| HYDRO-9 | Erosion control materials including wattles and Oregon State Certified weed-free straw or mulch must be present on the project prior to any excavation. | LRMP S&G FW-055, FW-056 | Erosion Control |
| HYDRO-10 | Exposed mineral soil will be mulched with certified weed-free wood straw (i.e., wood strand) or equivalent at a rate to achieve 70 percent ground cover or mulched with a certified weed-free straw and seeded with approved seed at a predetermined rate. Application rates will be validated and verified in the field to ensure that mulch application is not too sparse or too excessive. See botany design criteria for additional seeding details. Straw and mulch utilized for erosion control will be annual ryegrass straw or spring wheat straw certified as weed-free by the State of Oregon, preferably originating from Willamette Valley Oregon fields. In place of straw, wood fiber mulch (branches, stems, bark, root wads) may be used. Apply three to four inch thick mulch to prevent establishment of competing vegetation; increase thickness for greater effectiveness. See soils design criteria for additional erosion control design criteria. | LRMP S&G FW-055, FW-056; USDA Forest Service 2008a; FSM 2070 | Erosion Control |
| HYDRO-11 | Impacted areas must be seeded and mulched within two weeks of project completion or prior to any rain event (as defined by when the National Weather Service, or other accepted source, predicts a 50 | LRMP S&G FW-055, FW-056 | Erosion Control |
per cent or higher chance of measurable precipitation for the local area. Seeding (by hand outside of the earth disturbing timing restriction) is preferred to occur in the fall when precipitation is expected.

<table>
<thead>
<tr>
<th>HYDRO-12</th>
<th>Temporary erosion and sediment control measures (e.g., plastic sheeting, mulching) will be in place over soil stockpile areas prior to any rain event (as defined by when the National Weather Service, or other accepted source, predicts a 50 percent or higher chance of measurable precipitation for the local area).</th>
<th>LRMP S&amp;G FW-055, FW-056</th>
<th>Erosion Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRO-13</td>
<td>Stockpile areas, temporary roads, and other areas where soil compaction has occurred from this project will be ripped or scarified prior to the start of re-vegetation.</td>
<td>LRMP S&amp;G FW-055, FW-056</td>
<td>Erosion Control</td>
</tr>
<tr>
<td>HYDRO-14</td>
<td>Earth-disturbing construction operations will be suspended if there is more than 1.0 inch of rain in a 24-hour period. Operations will remain suspended until there is less than 1.0 inch of rain in a 24-hour period or onsite conditions are dry enough to allow operation, as determined by the Mt Hood National Forest West Zone Recreation Program Manager or their designee in coordination with the forest soils specialist. Precipitation would be measured according to a running average of the data measured from the nearest Remote Automated Weather Station.</td>
<td>LRMP S&amp;G FW-055, FW-056</td>
<td>Ground Disturbance</td>
</tr>
</tbody>
</table>

Recreation/Scenery

| REC-1 | The following scenery project design criteria will be incorporated where project activities are visible in the foreground from the locations (viewer positions) listed below. For the purposes of this document, the “immediate foreground” distance zone is equivalent to seen areas within 300 feet from non-trail viewer positions and within 660 feet from trails. The “foreground” distance zone is equivalent to one half mile from both trail and non-trail viewer positions. a) Roads, trails, and water bodies in Olallie Lake Special Interest Area (Retention visual quality objective [VQO]). b) Highway. 224 and Road 46 (Retention VQO). c) Clackamas River and adjacent trails (Retention VQO) - applies between Indian Henry recreation site and Tar Creek. d) Clackamas River and adjacent trails (Partial Retention VQO) - applies north of Indian Henry recreation site, as well as south of Tar Creek. e) Collawash River (Partial Retention VQO). f) Road 63, Road 70 (Partial Retention VQO). g) Recreation sites within the Olallie Lake Special Interest Area, and along Highway 224, Road 46, Road 63, and Road 70 (Partial Retention VQO). For the purposes of this document, “Retention VQO” means that management activities would not be visually evident and would repeat the form, line, color, and texture of the characteristic landscape. Changes in their qualities of size, amount, intensity, direction, and pattern should not be evident. “Partial Retention VQO” means that management activities would be visually subordinate to the characteristic landscape, as would changes in their qualities of size, amount, intensity, direction, and pattern. | LRMP Table Four-23, Table Four-24, S&G A4-014, A10-010; National Forest Landscape Management, Volume 2 | Identification of viewer positions, distance zones, and VQOs |

| REC-2 | Take measures to protect living trees within recreation sites and along trails. Natural diversity of plant species | LRMP S&G FW-057 | Equipment use, |
should be maintained where Retention and Partial Retention VQOs are prescribed in the foreground. Where tree removal is visible in the immediate foreground of the viewer position, the following actions will be taken, whenever feasible:

- Avoid operating equipment within the drip lines of living trees.
- Ground disturbance and the removal of living trees and vegetation would be minimized.
- Damage to residual trees and vegetation would be minimized, especially to live large diameter trees.
- The impacts from mechanized and hand treatments would be minimized to promote a naturally appearing setting.
- If paint is used, mark cut trees rather than leave trees.
- If flagging or signs are used, they would be removed following completion of activities.

| REC-4 | Ground disturbance created during construction of permanent and/or nonpermanent structures or facilities shall not remain visually evident in landscapes where Retention VQOs are prescribed, and shall not dominate over natural form, line, color, and texture in foreground of landscapes where Partial Retention VQOs are prescribed. Where areas of disturbance are visible in the immediate foreground of the viewer position, the following actions will be taken, whenever feasible:
- Evidence of equipment tracks would be repaired.
- All disturbed areas would be revegetated to a natural appearance incorporating a site-appropriate mix of native trees, shrubs, groundcover and/or grasses.
- Hydro-mulch seeding, where utilized, would feature dark brownish-green colorant to reduce color contrasts. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LRMP S&amp;G FW-572</td>
<td>Ground-disturbing actions</td>
</tr>
</tbody>
</table>

**Soils**

<table>
<thead>
<tr>
<th>SOIL-1</th>
<th>Limit new ground disturbance from heavy equipment as much as is feasible. Avoid travelling over undisturbed ground unless necessary to achieve project objectives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRMP S&amp;G FW-025, FW-035</td>
<td>Equipment Use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOIL-2</th>
<th>Limit all ground disturbance to existing disturbed soil footprint, where feasible.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRMP S&amp;G FW-001, FW-002, FW-003</td>
<td>Ground-disturbing actions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOIL-4</th>
<th>Equipment will generally operate on slopes less than 40 percent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To reduce erosion</td>
<td>Equipment Use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOIL-5</th>
<th>Effective ground cover will be installed on operational surfaces prior to shutting down for an extended period (e.g., two weeks or more). When operations occur when it is likely to soon become too wet to operate, erosion-control work would stay current and ground cover would be installed as soon as practicable. The coverage of effective ground cover would be sufficient to prevent off-site movement of soils as guided by land management plan standard and guidelines FW-025 and by Forest Service Handbook 2509 (R6 supplement). Additional erosion control details are described in hydrology design criteria.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRMP S&amp;G FW-025</td>
<td>Erosion Control</td>
</tr>
</tbody>
</table>

**Wildlife**

<table>
<thead>
<tr>
<th>WILD-1</th>
<th>If northern spotted owls are observed during implementation, immediately stop, and contact a Forest wildlife biologist for next steps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endangered Species Act</td>
<td>All</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WILD-2</th>
<th>If a raptor nesting area is found, it will be protected by minimizing activities within the defined protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRMP S&amp;G FW-245, FW-246</td>
<td>All</td>
</tr>
</tbody>
</table>
zones during the nesting season of March 1–May 30. If found, contact a forest wildlife biologist for additional guidance.

**Important Site Information**

Construction work on Riverside trail could be concurrent. Estimated start date July 1, 2023, and end date June 1, 2024.

Per Engineering:

- **Asphalt paving**: Parking spurs will require soil stabilization with varying depths of road base and then 2-2-inch asphalt lifts. Loop road and service parking for toilet pumping will require minor road base but more substantial asphalt lifts (3-2-inch lifts).

- **Trees and tree stumps**: All dead trees and tree stumps within 10 ft of paved asphalt will need to be removed prior to paving. No heavy equipment (dozers, excavators, etc.) shall be used to complete this task. However, bushhogs, power trimmers, chainsaws, stump grinder, and pole saws may be used as needed within the 10-foot boundary of the road prism. Brushing tasks must be completed prior to the paving project start. The contractor may use heavy equipment to fell the trees outside the road prism/campground.

**Objectives**

Complete items from task list as outlined below and according to specifications included in package:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brush out campsites</td>
<td>16</td>
<td>Brushing vegetation up to 3 inches in diameter, to 3 feet around campsite perimeter and within each 25 x 30 ft campsite. <em>Site 5 will also require a short, natural surface access path from the parking spur to the campsite. Contractor will coordinate with Forest Service Landscape Architect on final placement of path.</em></td>
<td>No heavy equipment (dozers, excavators, etc.) shall be used to complete this task. However, bushhogs, power trimmers, chainsaws, stump grinder and pole saws may be used as needed.</td>
</tr>
<tr>
<td>Purchase and install Campsite Carsonite Signs</td>
<td>16</td>
<td>Install 1 carsonite sign posts, and numeric decals at each campsite, as per site plan. Posts should be installed 18 inches into soil, and facing the road 2 feet to the right of the adjacent parking spur with a decal indicating the site number.</td>
<td>It’s important to purchase extra signs as they are known to shatter or split during pounding. Soil is rocky and narrow pilot holes might be required.</td>
</tr>
<tr>
<td>Purchase and install combination fire ring/grill. Remove,</td>
<td>Install 16. Remove 17.</td>
<td>Wheelchair Accessible Campfire Rings with swivel cooking grate. Pilotrock Model FSW-30/18/PA, or approved equivalent. Remove and dispose of all existing relic fire rings, install 1 new fire ring/grill at each</td>
<td>Important contractor understands that in addition to the model being accessible, that how it is installed</td>
</tr>
</tbody>
</table>

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**DRAFT**
<table>
<thead>
<tr>
<th>Task</th>
<th>Quantity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposal of specified relic fire rings</td>
<td></td>
<td>Note: there are 2 existing relic fire rings at Campsite 1 which will need to be removed. See Site Plan and Spec Sheet for installation instructions.</td>
</tr>
<tr>
<td>Repave loop road and parking spurs.</td>
<td>0.29 miles of road</td>
<td>See Engineering estimates:</td>
</tr>
<tr>
<td>Purchase and install parking blocks</td>
<td>18</td>
<td>Install Nitterhouse Concrete Log Parking Blocks (6” x 6”) or approved equivalent at each parking spur as per site plan plans. Blocks will clearly delineate parking for each campsite. Blocks will be concrete and look and feel like logs. Submittal: Supply mockups of parking block system and color system for approval prior to installation. Source: <a href="https://www.nitterhousemasonry.com/our-products/concrete-log-parking-blocks/#slider-7">https://www.nitterhousemasonry.com/our-products/concrete-log-parking-blocks/#slider-7</a>. See Site Plan and Spec Sheet for installation instructions.</td>
</tr>
</tbody>
</table>

- Site 1- Add 1 concrete log block
- Site 2- Add 1 concrete log block
- Site 3- Add 1 concrete log block
- Site 4- NO concrete block
- Site 5- Add 1 concrete log block
- Site 6- Add 1 concrete log block
- Site 7- Add 1 concrete log block
- Site 8- Add 1 concrete log block
- Site 9- Add 1 concrete log block
- Site 10- Add 1 concrete log block
- Site 11- Add 1 concrete log block
- Site 12- Add 1 concrete log block
- Site 13- Add 1 concrete log block
- Site 14- Add 1 concrete log block
- Site 15- NO concrete block
| Double CXT: exterior and interior painting | 1 CXT Tioga | Prepare and paint exterior of CXT toilet with the following:
All work must be supplied in accordance with Manufacturer’s specification for CXT Tioga Special Waterless Vault Restroom (extinc.com)
Color Exterior: AMS-STD-595A 34086 (Army forest green camo) or approved equivalent
Color Interior walls: AMS-STD-595A 17875 (White) or approved equivalent
Color interior floors: AMS-STD-595A 26152 (Gray) or approved equivalent
Paint:
- All paint and materials will conform to all federal specifications or be similar “top-of-the-line-components.”
- Paints will not contain more the 0.06% by weight of lead
- Type of paints for toilets:
  - Inside concrete surfaces:
    - Interior floors-chemical resistant urethane.
    - Interior walls and ceilings: modified acrylic, water repellant penetrating stain.
  - Exterior Concrete Surfaces
    - Exterior slab-clear sealer
    - Exterior walls and roof-water and mold repellant penetrating stain in specified dark earth tone colr followed by clear acrylic anti graffiti sealer
  - Metal surfaces (inside and out)
    - DTM ALKYD

**Submittal:** Supply mockups of each paint system and each color and finish selected to verify selections for approval prior to painting

<p>| Double CXT: replace pipe | 1 CXT Tioga | * Sealant must be applied when temperature is between 65°F and 85°F. | Ideal temperature for epoxy paint is over 77 degrees F. |</p>
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>seals around vent stacks</td>
<td>Pipe seals need to be stripped and resealed with a paintable polyurethane clear or color matching sealant. Source:</td>
<td></td>
</tr>
<tr>
<td>Purchase and install new 1 panel kiosk</td>
<td>Install Wood Product, WEST SLOPE Single STANDARD Panel Information Kiosk, All Metal Roof Kit, 48&quot; x 48&quot; panel, with brown powder coat steel roof on west side of the entry road in concrete pad as per site plans. Kiosk and Iron Ranger Fee tube will be installed side-by-side per site plan details Follow specs for concrete pads. Sources: <a href="https://www.woodproductsigns.com/roof-kits">https://www.woodproductsigns.com/roof-kits</a> <a href="https://www.woodproductsigns.com/bb-kits">https://www.woodproductsigns.com/bb-kits</a> <a href="https://www.woodproductsigns.com/usfs-bb-info-signs">https://www.woodproductsigns.com/usfs-bb-info-signs</a></td>
<td>See specs for concrete</td>
</tr>
<tr>
<td>Purchase and install Iron Ranger</td>
<td>Install (1) FS1236 Iron Ranger Fee Tube Kit (Consists of (1) FS1236 Shell PC Brown, (2) FS1236A Inserts PC Brown, (1) EB1-MTD Mounted Envelope Box) on west side of the entry road, tube should be installed next to information kiosk concrete pad as per site plans. Kiosk, Iron Ranger Fee tube and dumpsters to be installed side-by-side on concrete slab as per site plan. Fee tube will need to be installed in concrete base. Two sleeves per base tube are required for standard operations. Follow specs for concrete. Source: <a href="https://www.woodproductsigns.com/roof-kits">Iron Rangers LLC- Fee Collection Equipment</a></td>
<td>See specs for concrete</td>
</tr>
<tr>
<td>Purchase and install sanitation</td>
<td>Install 2 Bear Guardian T800 sanitation dumpsters on concrete pads as per site plans. See specs for concrete.</td>
<td></td>
</tr>
<tr>
<td>(dumpster, small)</td>
<td>Source: <a href="https://bearguardian.com/product/teton-series-model-t800-bear-proof-dumpster/?attribute_pa_color=brown-br">https://bearguardian.com/product/teton-series-model-t800-bear-proof-dumpster/?attribute_pa_color=brown-br</a></td>
<td>Install picnic tables. Remove, dispose of specified relic picnic tables</td>
</tr>
<tr>
<td>Move and place existing campground boulders and downed logs as parking spur barriers</td>
<td>Move and place minimum of 46 boulders</td>
<td>Only existing, on-site, boulders and logs identified by Recreation Program Manager or Forest Landscape Architect within the campground shall be used. Boulders  - Size: a minimum of 3 ft. diameter to 5 ft. Diameter.  - Spacing: minimum of 4 ft. and a maximum of 6 ft. from outside edges, boulder to boulder, to ensure</td>
</tr>
</tbody>
</table>
accessibility-standard is met and prevent vehicle access beyond spur.

- Placement: placed in irregular intervals and in a non-linear fashion to ensure natural-appearing variation among groupings

Large, downed logs are acceptable alternatives to boulders in some instances, but boulders should be prioritized. Final placement of log and boulders approved by Recreation Program Manager or Landscape Architect.

See Site Plan and Spec Sheet for installation instructions for each site:

- Site 1 - place 2 boulders
- Site 2 - place 2 boulders
- Site 3 - place 3 boulders
- Site 4 - place 3 boulders
- Site 5 - place 4 boulders
- Site 6 - place 2 boulders
- Site 7 - place 1 boulders
- Site 8 - place 2 boulders
- Site 9 - place 3 boulders
- Site 10 - place 4 boulders
- Site 11 - place 2 boulders
- Site 12 - place 4 boulders
- Site 13 - place 2 boulders
- Site 14 - place 3 boulders
- Site 15 - place 5 boulders
- Site 16 - place 2 boulders

- CXT Parking Area: Use logs
- Existing Site 5 parking area: place 2 boulders to close vehicle access

| Disposal items     | (1) old kiosk board | (2) dumpsters – (10) picnic tables (17) fire ring/grills (1) fee tube Misc. debris | All blue dumpsters belong to CLM Vista. After the 2020 fire, they declared all dumpsters as destroyed and abandoned them. Lilith Milam is currently working with CLM Vista to have dumpsters removed at their cost. |
Certain action items (asphalt paving, sealant application, painting) requires warmer temperatures for material application.

**Specifications:**

Some of the links below are to documents stored on the US Forest Service Box online platform. Contractors who do not already have a Box account can create a free account and then access these files. Other links are to external vendors of approved products.

- **031000 FL - Concrete Forming and Accessories**
- **033000 FL - Cast-In-Place Concrete**
- **033020_concrete from packaged mix**
- **311000_clearing_and_grubbing_R4**
- **312000_earthwork_DF**
- **321204_crushed_agg_base_or_surface_coarse_R4**
- **Division 403 asphalt concrete and Division 702 asphalt material from FP 14**
- **321513_Foot_Trail**
- **322205_barrier_rocks_DF**

**Timeline**

Intention is to have site open before the end of the 2023 season.
TRAVEL DIRECTIONS:
FROM CLACKAMAS RIVER RANGER STATION (16400 CHAMPION WAY, SANDY, OR 97055), HEAD WEST ON US-26 E FOR 0.2 MILES, TURN RIGHT ON 362ND AVE AND CONTINUE FOR 1.8 MILES. TURN RIGHT ON OR-211 S AND CONTINUE FOR 3.9 MILES. TURN LEFT ON OR-211S/OR-224 E AND CONTINUE FOR 30.6 MILE TO REACH THE END OF THE HIGHWAY AND THE JUNCTION OF NFSR 4600 AND RAINBOW CAMPGROUND LOOP ROAD. GPS COORDINATES FOR THIS POINT ARE: 45.07813, -122.03333.
1. PRIOR TO DIGGING, CALL "DIG SAFELY OREGON" 1-800-332-2344. LOCATING AND PROTECTION OF ALL UTILITIES (PUBLIC & PRIVATE) IS THE RESPONSIBILITY OF THE CONTRACTOR. THERE ARE KNOWN UTILITIES ON THESE ROADS.

2. PERFORM CONSTRUCTION IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES ON FEDERAL LANDS FF-14, US CUSTOMARY UNITS, EXCEPT AS MODIFIED BY SUPPLEMENTAL SPECIFICATIONS AND CLAUSES IN THE CONTRACT DOCUMENT OR THE PLANS.

3. WATER FOR FIRE PREVENTION & SUPPRESSION REQUIREMENTS UNDER THE CONTRACT, AS WELL AS FOR USE WITH CONSTRUCTION ACTIVITIES, MAY BE OBTAINED FROM IDENTIFIED WATER SOURCES, SHOWN IN WORK SHEETS AND ON VICINITY MAP, AT THE PROJECT SITE. ALL WATER WITHDRAWALS FOR FIRE OR CONSTRUCTION SHALL ABIDE BY CURRENT NMFS WATER DRAFTING GUIDELINES. AT A MINIMUM, ANY WATER WITHDRAWAL IN ACTIVE STREAMS WITH FISH PRESENT SHALL HAVE SCREENED INTAKES WITH A MAXIMUM SCREEN OPENING OF 3/32 INCH, MAXIMUM INTAKE VELOCITY OF 0.4 FEET PER SECOND AND WILL NOT REDUCE STREAM FLOW BY MORE THAN 10% BY VISUAL MEASURE. WATER WITHDRAWAL FROM ANY OTHER SOURCE SHALL BE APPROVED IN WRITING, PRIOR TO USE, BY THE CO.

4. CONTRACTING OFFICERS APPROVAL IS NEEDED WITH A MINIMUM OF 72 HRS NOTICE PRIOR TO THE PLACEMENT OF THE FOLLOWING ITEMS: BEDDING OR LEVELING COURSE OF ANY STRUCTURE AND ASPHALT CONCRETE.

5. REMOVE ALL CONSTRUCTION RELATED REFUSE FROM GOVERNMENT LAND PRIOR TO FINAL ACCEPTANCE.

6. REPAIR ANY DAMAGE TO THE EXISTING ROAD SYSTEM DUE TO CONTRACTOR'S OPERATIONS, INSIDE OR OUTSIDE THE PROJECT BOUNDARY, AT THE CONTRACTOR'S EXPENSE, PRIOR TO FINAL ACCEPTANCE.

7. CONFINE CONSTRUCTION EQUIPMENT TO THE ROADWAY OR DESIGNATED WASTE DISPOSAL SITES, UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CO.

8. STORING OF ALL EQUIPMENT ON GOVERNMENT LANDS WILL BE AT THE CONTRACTOR'S RISK AND AT A LOCATION APPROVED BY THE CO.

9. DEPTHS OF SOIL AND AGGREGATE ARE GIVEN AS FINAL COMPACTED DEPTHS.

10. CONSTRUCTION TOLERANCE IS 'A' UNLESS OTHERWISE NOTED ON THE DRAWINGS.

11. SPREAD CONTRACTOR FURNISHED CERTIFIED WEED FREE MULCH OVER DISTURBED SOIL AT ALL INSTALLATIONS, DISPOSAL AREAS AND OTHER DISTURBED SOIL SITES AS DIRECTED BY THE CONTRACTING OFFICER. ALL DISTURBED/CONSTRUCTED SLOPES FLATTER THAN 1V: 1 H SHALL BE COVERED WITH MULCH. MULCH SHALL BE APPLIED MINIMUM 1" THICK SO THAT NO GAPS EXIST BETWEEN SOIL AND MATRIX.

12. THE CO WILL FLAG THE DISPOSAL AREAS PRIOR TO PLACEMENT OF MATERIAL. SMOOTH, SHAPE, AND COMPACT TO DRAIN WITH CONSTRUCTION EQUIPMENT AS DIRECTED BY CONTRACTING OFFICER.

13. CONSTRUCTION TOLERANCE CLASS A FOR ALL ROADS.

14. THE SUBMITTED TRAFFIC CONTROL PLAN SHALL INCLUDE METHODS TO WARN PUBLIC TRAFFIC OF ROAD WORK ACTIVITIES. ALL CONSTRUCTION SIGNS SHALL MEET MUTCD REQUIREMENTS.

15. SALVAGE AND STOCKPILE EXISTING AGGREGATE OR PULVERIZED ASPHALT DURING EXCAVATION AND USE AS INITIAL BACKFILL MATERIAL.

16. FOREST SERVICE BRIDGES: USE OF ROADS BY COMMERCIAL USERS WITH LOADS EXCEEDING OREGON STATE LEGAL LOADING FOR A STP (SINGLE TRIP PERMIT) AND THAT WILL CROSS BRIDGES UNDER FOREST SERVICE JURISDICTION SHALL APPLY FOR A BRIDGE OVERLOAD USE PERMIT (FSM 7736. 05). PROCESSING APPLICATIONS FOR BRIDGE OVERLOAD PERMITS MAY TAKE (30) DAYS OR LONGER. CONTACT THE CO FOR THE BRIDGE OVERLOAD PERMIT FORM.

17. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING TEMPORARY AGGREGATE IN ALL FILL REPAIRS TO MATCH THE EXISTING ADJACENT ASPHALT GRADE WHEN ALLOWING TRAFFIC ONTO REPAIRS PRIOR TO ANY PLANNED PAVING OPERATIONS. LOOSE GRAVEL, ROAD NARROWS AND SLOW SIGNS SHALL BE REQUIRED AS DIRECTED BY THE CO ON BOTH SIDES OF EACH SEPARATE WORK SITE. ALL WORK, MATERIALS, SIGNAGE, AND FLAGGERS SHALL BE INCIDENTAL TO PAY ITEMS 63501A & 63501B.

18. UNLESS NOTED ELSEWHERE, WATER SOURCE WILL BE CONTRACTOR PROVIDED OFF OF NATIONAL FOREST LANDS.

ABBREVIATIONS:
BOP - BEGINNING OF PROJECT
EOP - END OF PROJECT

NFSR - NATIONAL FOREST SYSTEM ROAD
FS - FOREST SERVICE

CO - CONTRACTING OFFICER
FSSS - FOREST SERVICE SUPPLEMENTAL SPECIFICATIONS

X.XXX

3
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>PAY UNIT</th>
<th>QUANTITY</th>
<th>NATIONAL FOREST SYSTEM ROAD:</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>15101</td>
<td>MOBILIZATION</td>
<td>LUMP SUM</td>
<td>ALL</td>
<td>FIRE PROTECTION, WEED PREVENTION, AND EQUIPMENT CLEANING ARE INDIRECT TO THIS PAY ITEM. ITEM 15101 WILL BE PAID LUMP SUM ITEM WITH OTHER PROJECT ROADS INDIRECT TO THE ONE PAID ROAD. TEMPORARY TRAFFIC CONTROL IS ALSO INDIRECT TO THIS PAY ITEM.</td>
<td></td>
</tr>
<tr>
<td>15713</td>
<td>SOIL EROSION &amp; POLLUTION CONTROL</td>
<td>LUMP SUM</td>
<td>ALL</td>
<td>INCLUDES ALL EROSION AND POLLUTION CONTROL MEASURES. DEWATERING, SETTING DITCH CHECKS, AND SEEDING &amp; MULCHING OF ALL DISTURBED AREAS IS INDIRECT TO THIS PAY ITEM. ITEM 15713 WILL BE PAID AS A SINGLE LUMP SUM ITEM WITH OTHER PROJECT ROADS INDIRECT TO THE ONE PAID ROAD. WHEN DEWATERING IS REQUIRED, THE CONTRACTOR WILL SUBMIT A DEWATERING PLAN FOR APPROVAL BY THE CO.</td>
<td></td>
</tr>
<tr>
<td>20302</td>
<td>REMOVAL OF CULVERT, DISPOSAL METHOD (a)</td>
<td>EACH</td>
<td>1</td>
<td>INCLUDES REMOVAL FROM NATIONAL FOREST SERVICE LAND &amp; DISPOSAL OF EXISTING CULVERTS (DISPOSAL METHOD (a))</td>
<td></td>
</tr>
<tr>
<td>20304</td>
<td>REMOVAL OF EXISTING ASPHALT, DISPOSAL METHOD C</td>
<td>SY</td>
<td>205</td>
<td>SAWCUTS ARE REQUIRED AND PAID INDIRECT TO THIS ITEM. REMOVED ASPHALT MAY DISPOSED AS BASE MATERIAL BELOW NEW ASPHALT PER METHOD C.</td>
<td></td>
</tr>
<tr>
<td>30201</td>
<td>AGGREGATE BASE, METHOD 2 PLACEMENT, GRADING B, COMPACTION METHOD (b)</td>
<td>CY</td>
<td>283</td>
<td>3/4&quot; MINUS CRUSHED ROCK, COMMERCIAL SOURCE. FOR BASE MATERIAL FOR PADS AND LOOP ROAD AND CULVERT INSTALLATIONS. WATERING IS CONSIDERED INDIRECT TO THIS PAY ITEM.</td>
<td></td>
</tr>
<tr>
<td>40304</td>
<td>ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22</td>
<td>TON</td>
<td>791</td>
<td>INCLUDES ALL MATERIALS AND LABOR FOR PAVING AS SHOWN ON PLANS. COMMERCIAL SOURCE MATERIAL. 4-INCH SECTION ((2)-2-INCH LIFTS) FOR PADS (APPROX. 860 SY TOTAL AREA), 6-INCH SECTION ((2)-3-INCH LIFTS) FOR LOOP ROAD (9-FOOT WIDE MIN. APPROX 14,211 SY) AND PAD #5 (APPROX. 168 SY) AS STAKED BY COR. PADS TO BE SLOPED AT 2% TO DRAIN.</td>
<td></td>
</tr>
<tr>
<td>60201A</td>
<td>24 INCH PIPE CULVERT, CORRUGATED ALUMINIZING STEEL PIPE, COMPACTION METHOD (a)</td>
<td>FOOT</td>
<td>95</td>
<td>INCLUDES ALL MATERIALS, LABOR, AND EQUIPMENT FOR INSTALLATION OF EACH CULVERT AS SHOWN ON THE DRAINAGE LISTING. ALL MATERIALS COMMERCIAL SOURCE. INCLUDES TREE REMOVAL AS NEEDED TO INSTALL CULVERTS PER SPECIFICATION; ANY MERCHANTABILITY TIMBER NEEDS TO BE APPROVED BY CO PRIOR TO FELLING AND DECKED AS AGREED UPON WITH CO.</td>
<td></td>
</tr>
</tbody>
</table>
## RAINBOW CAMPGROUND LOOP ROAD CONSTRUCTION SUMMARY

<table>
<thead>
<tr>
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<th>PAY ITEM</th>
<th>UNIT</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0+00</td>
<td>BEGIN EXISTING PAVED LOOP ROAD - JCT WITH NFSR 4600 000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8+56</td>
<td>40304</td>
<td>TONS</td>
<td>13.60</td>
<td>CAMPsite 1 PAD RIGHT - APPROX. 546 SF. PLACE ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR. TIE INTO EXISTING ASPHALT.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>7</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
</tr>
<tr>
<td>8+88</td>
<td>40304</td>
<td>TONS</td>
<td>13.71</td>
<td>CAMPsite 2 PAD RIGHT - APPROX. 553 SF. PLACE ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR. TIE INTO EXISTING ASPHALT.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>9</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
</tr>
<tr>
<td>9+30</td>
<td>20304</td>
<td>SY</td>
<td>205</td>
<td>REMOVAL OF EXISTING ASPHALT, DISPOSAL METHOD C. SAWCUTS ARE REQUIRED AND PAID INDIRECT TO THIS ITEM. REMOVED ASPHALT MAY BE DISPOSED AS BASE MATERIAL BELOW NEW ASPHALT PER METHOD C.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>130</td>
<td>PLACE AGGREGATE AS NEEDED FOR BASE MATERIAL BELOW LOOP ROAD WHERE EXISTING SURFACE MATERIAL IS UNSUITABLE FOR BASE.</td>
<td></td>
</tr>
<tr>
<td>40304</td>
<td>TONS</td>
<td>533</td>
<td>PLACE ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (3)-2-INCH LIFTS NO LESS THAN 9'-WIDE AT ANY POINT AS STAKED BY COR. TIE INTO LOOP ROAD.</td>
<td></td>
</tr>
<tr>
<td>11+15</td>
<td>END EXISTING ASPHALT REMOVAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12+41</td>
<td>40304</td>
<td>TONS</td>
<td>9.76</td>
<td>CAMPsite 16 PAD LEFT - APPROX. 392 SF. PLACE ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR. TIE INTO NEW ASPHALT.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>4</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
</tr>
<tr>
<td>13+07</td>
<td>40304</td>
<td>TONS</td>
<td>30.37</td>
<td>CAMPsite 15 PAD LEFT - APPROX. 1,227 SF. PLACE ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR. TIE INTO NEW ASPHALT.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>4</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
</tr>
</tbody>
</table>

## RAINBOW CAMPGROUND PAVING PLAN

**MT. HOOD NATIONAL FOREST**

**CLACKAMAS RIVER RANGER DISTRICT**

**DATE:** 5/1/2023

**DESIGNER:** D. MATTHEWS

**DRAWN:** D. MATTHEWS

**CHECKED:** X.XXX

**ARCHIVE NO.:**

**Dwg Sheet No.:** 5

**PROJECT NO.:** SHEET 5 OF 9
RAINBOW CAMPGROUND LOOP ROAD
CONSTRUCTION SUMMARY - CONTINUED

<table>
<thead>
<tr>
<th>STA</th>
<th>PAY ITEM</th>
<th>UNIT</th>
<th>QTY</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>19+65</td>
<td>40304</td>
<td>TONS</td>
<td>9.45</td>
<td>CAMPSITE 12 PAD RIGHT- APPROX. 383 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>13</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD. ADDITIONAL MATERIAL NEEDED TO REPLACE UNSUITABLE REMOVED MATERIAL AND TO BRING THE PAD TO GRADE.</td>
<td></td>
</tr>
<tr>
<td>19+80</td>
<td>40304</td>
<td>TONS</td>
<td>9.15</td>
<td>CAMPSITE 11 PAD LEFT- APPROX. 370 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>10</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD. ADDITIONAL MATERIAL NEEDED TO REPLACE UNSUITABLE REMOVED MATERIAL AND TO BRING THE PAD TO GRADE.</td>
<td></td>
</tr>
<tr>
<td>20+70</td>
<td>40304</td>
<td>TONS</td>
<td>9.60</td>
<td>CAMPSITE 10 PAD RIGHT- APPROX. 389 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
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<td>15</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD. ADDITIONAL MATERIAL NEEDED TO REPLACE UNSUITABLE REMOVED MATERIAL AND TO BRING THE PAD TO GRADE.</td>
<td></td>
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<tr>
<td>21+28</td>
<td>40304</td>
<td>TONS</td>
<td>10.20</td>
<td>CAMPSITE 9 PAD LEFT- APPROX. 413 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>5</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
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<tr>
<td>21+50</td>
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<td>TONS</td>
<td>8.99</td>
<td>CAMPSITE 8 PAD RIGHT- APPROX. 364 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
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<td>6</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
<td></td>
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<tr>
<td>22+14</td>
<td>40304</td>
<td>TONS</td>
<td>14.10</td>
<td>CAMPSITES 5 &amp; 7 PAD LEFT- APPROX. 569 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>7</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
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<tr>
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<td>TONS</td>
<td>10.65</td>
<td>CAMPSITE 6 PAD RIGHT- APPROX. 429 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
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<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
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<tr>
<td>24+04</td>
<td>40304</td>
<td>TONS</td>
<td>8.76</td>
<td>CAMPSITE 4 PAD RIGHT- APPROX. 356 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
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<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
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<td>24+21</td>
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<td>9.90</td>
<td>CAMPSITE 3 PAD LEFT- APPROX. 400 SF OF ASPHALT CONCRETE OREGON STATE DOT, TYPE 1/2-INCH DENSE GRADED HMAC, LEVEL II, ASPHALT CEMENT PG 64-22. (2)-2-INCH LIFTS AS STAKED BY COR.</td>
</tr>
<tr>
<td>30201</td>
<td>CY</td>
<td>4</td>
<td>PLACE AGGREGATE FOR 4-INCH COMPACTED LIFT OF BASE MATERIAL BELOW NEW ASPHALT PAD.</td>
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<tr>
<td>25+09</td>
<td>END 6-INCH PAVEMENT. END OF PROJECT</td>
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</tbody>
</table>
RAINBOW CAMPGROUND PAVING PLAN
MT. HOOD NATIONAL FOREST
CLACKAMAS RIVER RANGER DISTRICT

LEGEND

- 4-INCH ASPHALT SECTION FOR PADS
- 6-INCH ASPHALT SECTION FOR LOOP ROAD AND PAD #5

SCALE (FEET)

0 60'

DATE: 5/1/2023
ARCHIVE NO.

DESIGNER: D. MATTHEWS

DRAWN: D. MATTHEWS

CHECKED: X.XXX

PROJECT NO.

DWG SHEET NO.

SHEET 7 OF 9
**CULVERT INSTALLATION TYPES**

**TYPE 1**

- **DO NOT RAISE OUTLET ABOVE ORIGINAL GROUND OR STREAM BED**
- **FINISHED GRADE (NEW 6-INCH AC)**

**MATERIALS DEPOSAL**

1. **DISPOSE OF INSUSABLE OR EXCESS SOILS ONLY AT THE DESIGNATED PROJECT DISPOSAL SITE. THE DESIGNATED SITE FOR THIS PROJECT SHALL BE DESIGNATED BY COR.**

**CULVERT INSTALLATION NOTES**

1. Location and lengths of culverts identified on these plans is approximate. Contractor shall survey and stake the final location, skew length, elevations, and grade according to Section 152.056 of the specifications. Do not order culvert material until the contracting officer has accepted the final structure size, length, and alignment.
2. Backfill all culverts in accordance with FT-14, Section 209 structure excavation and backfill.
3. All excavation and trenching operations shall conform to Oregon occupational safety & health administration (O-P-Sama) requirements.
4. Do not operate any heavy equipment over any culvert until it has been properly backfilled with a minimum of 1-foot cover.
5. Culverts shall be installed with a minimum of 6% slope unless feasible, except where approved by C.O.
6. The minimum length of a single pipe section for any installation shall not be less than 10 ft.
7. All new steel culverts shall be aligned steel type 2 with standard 2-1/2"x1/2" corrugations.
8. All work in low streams must take place within the contour prescribed by stream work window, between July 15th and August 31st, unless otherwise approved in writing by the C.O. The contractor shall provide the government with an erosion control and debris plan a minimum of 7 calendar days prior to the initiation of work activity on each road or at each stream crossing. All costs associated with debrising and erosion control measures shall be considered indirect to pay item 15713. - Soil erosion and pollution control.

---

**OUTLET DITCH**

- **DITCH GRADE = CULVERT GRADE + 1%**

**DRainage Listing and Details**

- **DRAINAGE LISTING AND DETAILS**
- **RAINBOW CAMPGROUND PAVING PLAN**
- **MT. HOOD NATIONAL FOREST**
- **CLACKAMAS RIVER RANGER DISTRICT**
- **UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE**
- **PACIFIC NORTHWEST REGION**
- **DRAWN**
- **CHECKED**
- **DESIGNER**
- **DRAWING TITLE**
- **DRAW SHEET NO.**
- **PROJECT NO.**
- **DATE**
- **ARCHIVE NO.**
- **IMAGE TYPES**
- **PACIFIC NORTHWEST REGION**
United States Department of Agriculture
Forest Service

PACIFIC NORTHWEST REGION

RAINBOW CAMPGROUND PAVING PLAN

MT. HOOD NATIONAL FOREST

CLACKAMAS RIVER RANGER DISTRICT

TYPICAL DETAILS

DATE
5/1/23

ARCHIVE NO.

DESIGNER
D. MATTHEWS

DRAWN
D. MATTHEWS

CHECKED

PROJECT NO.

DWG SHEET NO.
9

TYPICAL ROAD CROSS SECTION AFTER MILLING

TYPICAL ROAD CROSS SECTION BEFORE MILLING

ASPHALT PAVEMENT PULVERIZATION DETAIL

PULVERIZATION APPLIES TO STA. 9+30 TO 11+15

NOT TO SCALE
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Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-14 for construction of National Forest System Roads.
101 - Terms, Format, and Definitions

Add the following paragraph to Subsection 101.01:

101.01 Meaning of Terms.
Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

Add the following to Subsection 101.03:

101.03 Abbreviations.
(a) Acronyms.
AGAR — Agriculture Acquisition Regulations
AFPA — American Forest and Paper Association
FSAR — Forest Service Acquisition Regulations
MSHA — Mine Safety and Health Administration
NESC — National Electrical Safety Code
WCLIB — West Coast Lumber Inspection Bureau

(f) Miscellaneous unit abbreviations.
MP — milepost location
ppm — parts per million volume
STA — station location

Make the following changes to Subsection 101.04:

101.04 Definitions.
Delete these definitions and replace the following:

Bid Schedule — The Schedule of Items.
Bridge — A structure, including supports, erected over a depression or an obstruction such as water along a road, a trail, or a railway and having a deck for carrying traffic or other loads.
Contractor — The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the “Purchaser”.

Culvert — Any structure with a bottom, regardless of fill depth, depth of invert burial, or presence of horizontal driving surface, or any bottomless (natural channel) structure with footings that will not have wheel loads in direct contact with the top of the structure.

Drawings — (Public Works Contracts) Design sheets or fabrication, erection, or construction details submitted to the CO by the Contractor according to FAR Clause 52.236-21 Specifications and Drawings for Construction. Also refers to submissions and submittals.

Notice to Proceed — (Public Works Contracts) Written notice to the Contractor to begin the contract work.

Right-of-Way — A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private lands), or (2) Real property necessary for the project, including roadway, buffer areas, access, and drainage areas.

Solicitation — (Public Works Contracts) The complete assembly of documents (whether attached or incorporated by reference) furnished to prospective bidders.

Add the following definitions:

Adjustment in Contract Price — “Equitable adjustment,” as used in the Federal Acquisition Regulations, or “construction cost adjustment,” as used in the Timber Sale Contract, as applicable.

Change — “Change” means “change order” as used in the Federal Acquisition Regulations, or “design change” as used in the Timber Sale Contract.

Forest Service — The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Neat Line — A line defining the proposed or specified limits of an excavation or structure.

Pioneer Road — Temporary construction access built along the route of the project.

Purchaser — The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

Protected Streamcourse — A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

Road Order — An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

Shop Drawings — (Timber and Stewardship Contracts) Referred to as “Drawings” in FP-14, include drawings, diagrams, layouts, schematics, descriptive literature, illustrations, lists or tables, performance and test data, and similar materials furnished by Purchaser to explain in detail specific portions of the work required by the contract.

Utilization Standards —

The minimum size and percent soundness of trees described in Public Works contract specifications or Timber Sale and IRTC contract provisions to determine merchantable timber.
Add Figure 101-1—Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.
Delete Section 102 in its entirety.
Delete Section 102.

103 - Scope of Work

Delete all of Section 103 except Subsection 103.01 Intent of Contract.
Delete Subsections 103.02, 103.03, 103.04, 103.05.

104 - Control of Work

Delete Subsections 104.01, 104.02, and 104.04.
Delete Subsections 104.01, 104.02, 104.04.

Add the following to Subsection 104.06:

104.06 Use of Roads by Contractor.
The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

105 - Control of Material

105.05 Use of Material Found in the Work.
Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. Place excess material safely at government-approved location, at no additional cost to government.
Delete Subsection 106.01 and replace with the following:

106.01 Conformity with Contract Requirements.
Follow the requirements of FAR Clause 52.246-12 Inspection of Construction.

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

Incorporate manufactured materials into the work according to the manufacturer’s recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor’s results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove, repair, or replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted. Removing, repairing, or replacing work; providing temporary traffic control; and any other related work to accomplish conformity will be at no cost to the Government.

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

1. Sampling method;
2. Number of samples;
3. Sample transport;
4. Test procedures;  
5. Testing laboratories;  
6. Reporting;  
7. Estimated time and costs; and  
8. Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory’s accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

1. Have the work accepted at a reduced price; or  
2. Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

Delete Subsection 106.02 and replace with the following:

106.02 Visual Inspection.
Acceptance is based on visual inspection of the work for compliance with the specific contract requirements. Use prevailing industry standards in the absence of specific contract requirements or tolerances.

Delete Subsection 106.07.

106.07 Partial and Final Acceptance.
107 - Legal Relations and Responsibility to the Public

Delete Subsection 107.05.

Delete Subsection 107.05.

108 - Prosecution and Progress

Delete Section 108 in its entirety.

Delete Section 108.

109 - Measurement and Payment

Delete Subsections 109.06, 109.07, 109.08, and 109.09:


Delete the third paragraph and Table 109-1 of Subsection 109.01 and replace with the following:

109.01 Measurement of Work.

Take measurements as described in Subsection 109.02 unless otherwise modified by the Measurement Subsection of the section controlling the work being performed. Table 109-1 indicates the accuracy required for quantities of the various pay units used in the Schedule of Items. Use this guide to determine the decimal placement in the final payment.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Level of Precision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Foot</td>
<td>1</td>
</tr>
<tr>
<td>Exception--Timber, Steel, and concrete Piles</td>
<td>0.1</td>
</tr>
<tr>
<td>Station</td>
<td>0.1</td>
</tr>
<tr>
<td>Mile</td>
<td>0.01</td>
</tr>
<tr>
<td>Square Foot</td>
<td>0.1</td>
</tr>
<tr>
<td>Square Yard</td>
<td>0.1</td>
</tr>
<tr>
<td>Each</td>
<td>1</td>
</tr>
<tr>
<td>Acre</td>
<td>0.01</td>
</tr>
<tr>
<td>Gallon</td>
<td>1</td>
</tr>
<tr>
<td>M-Gals.</td>
<td>0.1</td>
</tr>
<tr>
<td>Cubic Yard</td>
<td>1</td>
</tr>
<tr>
<td>Exception--Structure Excavation; Sheathing Materials; Bedding, Bed Course, and Backfill Materials; Gabions;</td>
<td>0.1</td>
</tr>
<tr>
<td>Exception--Concrete; Masonry</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Add the following sentence to Subsection 109.02(b):

109.02 Measurement Terms and Definitions.
   (b) Contract quantity.

   Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

155 - Schedules for Construction Contracts

Delete Section 155 in its entirety.

Delete Section 155.

156 - Public Traffic

Delete Section 156 in its entirety and replace with the following:

Section 156. – PUBLIC TRAFFIC

Description

156.01 This work consists of controlling and protecting public traffic adjacent to and within the project.

Material

156.02 Conform to the MUTCD and the following Sections and Subsections:

   Permanent Traffic Control  633
   Traffic Signing and Marking Material  718
Concrete Barriers and Precast Guardwalls 618
Temporary plastic fence 710.11

Construction Requirements

156.03 General. Accommodate traffic according to MUTCD, approved traffic control plan and this section. Perform work in a manner that ensures safety and convenience of the public. Unless otherwise provided for in Table 156-1, keep existing roads open to all traffic during road improvement work, and maintain them in a condition that will adequately accommodate traffic. Delays may not exceed 180 minutes at any one time followed by an open period of no less than 20 minutes. Accommodate public traffic on roads adjacent to and within the project until the project is accepted according to Subsection 106.07(b).

Submit traffic control plan at least 30 days prior to intended use. Perform no work that interferes or conflicts with traffic or existing access to the roadway surface until a traffic control plan has been approved.

Post construction signs and traffic control devices in conformance with MUTCD and Forest Service EM 7100-15. All required signs will be in place and approved prior to beginning work on project.

If the Contractor agrees in writing to allow public traffic to use a new road being constructed prior to completion, it will be considered an existing road for traffic control purposes.

156.04 Temporary Traffic Control. Install and maintain temporary traffic control devices adjacent to and within the project as required by the approved traffic control plan and the MUTCD. Install and maintain traffic control devices as follows:

(a) Furnish and install traffic control devices before the start of construction operations.

(b) All detours outside of clearing limits will be approved in writing by the Contracting Officer as part of the traffic control plan.

(c) Install only those traffic control devices needed for each stage or phase.

(d) Relocate temporary traffic control devices as necessary.

(e) Remove devices that no longer apply to the existing conditions.

(f) Immediately replace any device that is lost, stolen, destroyed, or inoperative.

(g) Keep temporary traffic control devices clean.

(h) Remove all temporary traffic control devices upon contract completion or when approved.

(i) When required, use flaggers certified by the American Traffic Safety Services Association, the National Safety Council, the International Municipal Signal Association, a state agency, or other acceptable organization. Perform the work described under MUTCD Part 6. Use type III, VII, VIII, or IX retroreflective sheeting on flagger paddles. Do not use flags. Flaggers must wear high visibility safety apparel as required by MUTCD 6E.02.
156.05 Temporary Closures. Road segments may be closed as shown in Table 156-1. The maximum consecutive days of closure shall be followed by a minimum number of consecutive days open to traffic as shown. Maintain traffic control devices during closure period(s). Appropriate barricades and signs will be erected and maintained as shown in the traffic control plan or as otherwise designated.

Prior to closing roads during construction, give written notice to the Contracting Officer at least 10 days in advance.

<table>
<thead>
<tr>
<th>Road Number</th>
<th>From Terminus</th>
<th>To Terminus</th>
<th>Maximum Consecutive Days of Closure</th>
<th>Minimum Consecutive Days Open</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

156.06 Acceptance. Public traffic work will be evaluated under Subsection 106.02.

Measurement and Payment

156.07 Do not measure Public Traffic for payment. Payment for contract work is provided indirectly. See Subsection 109.05.

157 - Soil Erosion and Sediment Control

Delete Subsection 157.04 and replace with the following:

157.04 General.
Thirty (30) days prior to the start of construction, submit a written plan according to subsection 104.03 with all necessary permits that provides permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction. Do not begin work until the necessary controls for that particular phase of work have been implemented. Do not modify the type, size, or location of any control without approval.

When erosion control measures are not functioning as intended, take corrective action to eliminate or minimize pollutants in storm water discharges from the project.
203 - Removal of Structures and Obstructions

Make the following changes to Subsection 203.04(b):

203.04 (b) General.
Delete the fifth paragraph of Subsection 203.04(b) and replace with the following:

Remove structures and obstructions in the roadbed to 12 inches (300 millimeters) below subgrade elevation. Remove structures and obstructions outside the roadbed to 12 inches (300 millimeters) below finished ground or to the natural stream bottom.

Delete the seventh paragraph of Subsection 203.04(b) and replace with the following:

When abandoning an existing culvert pipe, remove the upstream and downstream portion of the culvert to within 12 inches (300 millimeters) of the subgrade or embankment slope. Ensure the abandoned pipe is at least 48 inches (1200 millimeters) from a new culvert or structure. Seal the abandoned culvert ends with a tight-fitting plug of concrete at least 6 inches (150 millimeters) thick. Ensure the structure does not entrap water.

Add the following to Subsection 203.05:

203.05 Disposing of Material.
(e) Windrowing Construction Slash. Place construction slash outside the roadway in neat, compacted windrows approximately parallel to and along the toe line of embankment slopes. Do not permit the top of the windrows to extend above subgrade. Use construction equipment to matt down all material in a windrow to form a compact and uniform pile. Construct breaks of at least 15 feet at least every 200 feet in a windrow. Do not place windrows against trees.

(f) Scattering. Scatter construction slash in designated areas without damaging trees. Limb all logs. Place logs and stumps away from trees, positioned so they will not roll, and are not on top of one another. Limb and scatter other construction slash to reduce slash concentrations. When scattering for erosion control, place construction slash as flat as practicable on the completed slope.

(g) Chipping. Use an approved chipping machine to chip slash longer than 3 feet. Deposit chips on embankment slopes or outside the roadway to a loose depth less than 6 inches. Minor amounts of chips or ground woody material may be permitted within the roadway if they are thoroughly mixed with soil and do not form a layer.

(h) Debris Mat. Use tree limbs, tops, cull logs, split stumps, wood chunks, and other debris to form a mat upon which construction equipment is operated. Place stumps upside down and blend stumps into the mat.

(i) Decking. Remove brush from designated log deck areas. Limb and top logs.

Logs not meeting the Utilization Standards described in Subsection 201.04(c) shall be cut to lengths less than <number> feet and decked in designated log deck location.
Merchantable timber not associated with an existing timber sale shall be cut to length meeting the Utilization Standards described in Subsection 201.04(c).

Deck logs so that logs are piled parallel to one another; can be removed by standard log loading equipment; will not damage standing trees; will not interfere with drainage, and will not roll. Keep logs in log decks free of brush and soil.

(j) Removal to designated locations. Remove construction slash to designated locations.

(k) Piling. Pile construction slash in designated areas. Place and construct piles so that if the piles are burned, the burning will not damage remaining trees. Keep piles free of dirt from stumps.

204 - Excavation and Embankment

Delete Section 204 in its entirety and replace with the following.

Section 204. — EXCAVATION AND EMBANKMENT

Description

204.01 This work consists of excavating material and constructing embankments. This work also includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky material.

204.02 Definitions.

(a) Excavation. Excavation consists of the following:

(1) Roadway excavation. Material excavated from within the right-of-way or easement areas, except subexcavation covered in Subsection 204.02(a)(2) and structure excavation covered in Sections 208 and 209. Roadway excavation includes all material encountered regardless of its nature or characteristics.

(2) Subexcavation. Material excavated from below subgrade elevation in cut sections or from below the original ground-line in embankment sections. Subexcavation excludes the work required by Subsection 204.05 or 204.06.

(3) Borrow excavation. Material used for embankment construction that is obtained from outside the roadway prism. Borrow excavation includes unclassified borrow, and topping.

(b) Embankment construction. Embankment construction consists of placing and compacting roadway or borrow excavation. This work includes:

(1) Preparing foundation for embankment;

(2) Constructing roadway embankments;

(3) Benching for side-hill embankments;

(4) Constructing dikes, ramps, mounds, and berms; and

(5) Backfilling subexcavated areas, holes, pits, and other depressions.

(c) Conserved topsoil. Excavated material conserved from the roadway excavation and embankment foundation areas that is suitable for growth of grass, cover crops, or native vegetation.
(d) Waste. Excess and unsuitable roadway excavation and subexcavation that cannot be used.

Material

204.03 Conform to the following Subsections:

<table>
<thead>
<tr>
<th>Material</th>
<th>Subsection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topping</td>
<td>704.05</td>
</tr>
<tr>
<td>Unclassified borrow</td>
<td>704.06</td>
</tr>
<tr>
<td>Water</td>
<td>725.01(c)</td>
</tr>
</tbody>
</table>

Construction Requirements

204.04 Preparation for Roadway Excavation and Embankment Construction. Clear the area of vegetation and obstructions according to Sections 201 and 203.

Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation and embankment. Maintain drainage during pioneering operations.

204.05 Conserved Topsoil. When designated, conserve topsoil from roadway excavation and embankment foundation areas. Stockpile conserved topsoil in low windrows immediately beyond the rounding limits of cut and embankment slopes or in other approved locations. Separate conserved topsoil from other excavated material. When designated, place conserved topsoil on completed slopes according to Section 624.

204.06 Roadway Excavation. Excavate as follows:

(a) Rock cuts. Blast rock according to Section 205. Excavate rock cuts to 6 inches (150 millimeters) below subgrade within the roadbed limits. Backfill to subgrade with topping or other suitable material. Compact the material according to Subsection 204.11.

(b) Earth cuts. Scarify earth cuts to 6 inches (150 millimeters) below subgrade within the roadbed limits. Compact the scarified material according to Subsection 204.11.

(c) Pioneer Roads. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

(d) Drainage Feature. Drainage feature includes construction of all ditches, minor channel changes, drainage dips, catch basins, surface water deflectors, and other minor drainage structures. Compact the material according to Subsection 204.11. Excavate on a uniform grade between control points.

Do not disturb material and vegetation outside the construction limits. Retrieve material deposited outside the construction limits. Dispose of unsuitable or excess excavation material according to Subsection 204.14. Replace shortage of suitable material caused by premature disposal of roadway excavation.

Shape to drain and compact the work area to a uniform cross-section at the end of each day's operations.
204.07 Subexcavation. Excavate material to the required limits. Dispose of unsuitable material according to Subsection 204.14. Take cross-sections according to Section 152. Backfill subexcavated area with suitable material in horizontal layers not exceeding 12 inches (300 millimeters) in compacted thickness and compact according to Subsection 204.11. Prevent unsuitable material from mixing with suitable backfill material.

204.08 Borrow Excavation. Use suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation. Deduct excess borrow excavation from the total borrow excavation quantity.

Obtain borrow source approval according to Subsection 105.02. Develop and restore borrow sources according to Subsections 105.03 and 105.06. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) Embankment over natural ground. Remove topsoil and break up the ground surface to a minimum depth of 6 inches (150 millimeters) by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) Embankments over an existing asphalt, concrete, or gravel road surface. Scarify gravel roads to a minimum depth of 6 inches (150 millimeters). Scarify or pulverize asphalt and concrete roads to 6 inches (150 millimeters) below the pavement. Reduce particles to a maximum size of 6 inches (150 millimeters) and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) Embankment across ground not capable of supporting equipment. Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) Embankment on an existing slope steeper than 1V:3H. Cut horizontal steps in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Step the slope as the embankment is placed and compacted in layers. Begin each step at the intersection of the original ground and the vertical cut of the previous step.

204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Obtain written approval before beginning construction of embankments over 6 feet (2 meters) high at subgrade centerline. Construct embankments as follows:

(a) General. At the end of each day’s operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes with a tamping foot roller, by walking with a dozer, or by over-building the fill and then removing excess material to the final slope line. For slopes 1V:1¾H or steeper, compact the slopes as embankment construction progresses.

(b) Embankment within the roadway prism. Place embankment material in horizontal layers not exceeding 12 inches (300 millimeters) in compacted thickness. Incorporate oversize boulders or rock fragments into the
12-inch (300-millimeter) layers by reducing them in size or placing them individually as required below. Compact each layer according to Subsection 204.11 before placing the next layer.

Material composed predominately of boulders or rock fragments too large for 12-inch (300-millimeter) layers may be placed in layers up to 24 inches (600 millimeters) thick. Incorporate oversize boulders or rock fragments into the 24-inch (600-millimeter) layer by reducing them in size or placing individual rock fragments and boulders greater than 24 inches (600 millimeters) in diameter as follows:

1. Reduce rock to less than 48 inches (1200 millimeters) in the largest dimension;
2. Distribute rock within the embankment to prevent nesting;
3. Place layers of embankment material around each rock to a depth not greater than that permitted above. Fill voids between rocks; and
4. Compact each layer according to Subsection 204.11(a) before placing the next layer.

(c) Embankment outside of roadway prism. When placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches (600 millimeters) in compacted thickness. Compact each layer according to Subsection 204.11.

204.11 Compaction. Compact the embankment using one of the following methods as specified.

(a) Placement Method 1. Use AASHTO T 27 to determine the quantity of material retained on a No. 4 (4.75-millimeter) sieve. Compact as follows:

1. More than 80 percent retained on a No. 4 (4.75-millimeter) sieve. Adjust the moisture content to a level suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Use compression-type rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Compact each layer of material full width with one of the following and until there is no visible evidence of further consolidation:

   a. Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds (180 kilonewtons) impact per vibration and a minimum frequency of 1000 vibrations per minute;
   b. Eight roller passes of a 20-ton (20-metric ton) compression-type roller; or
   c. Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds (130 kilonewtons) impact per vibration and a minimum frequency of 1000 vibrations per minute.

   Increase the compactive effort for layers deeper than 12 inches (300 millimeters) as follows:

   • For each additional 6 inches (150 millimeters) or fraction thereof, increase the number of roller passes in Subsection 204.11(a)(1)(a), by four passes; or
   • For each additional 6 inches (150 millimeters) or fraction thereof, increase the number of roller passes in Subsection 204.11(a)(1)(b) and (c), by eight passes.

2. 50 to 80 percent retained on a No. 4 (4.75-millimeter) sieve. Classify the material according to AASHTO M 145. Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content. Use AASHTO T 99 to determine the optimum moisture content of the portion of the material passing a No. 4 (4.75-millimeter) sieve. Multiply this number by the percentage of
material passing a No. 4 (4.75-millimeter) sieve, and add 2 percent to determine the optimum moisture content of the material.

Use nonvibratory rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Compact each layer of material full width according to Subsection 204.11(a)(1).

(3) Less than 50 percent retained on a No. 4 (4.75-millimeter) sieve. Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 99, Method C.

Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures. When required, use AASHTO T 224 to correct for coarse particles.

(b) Placement Method 2. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate roller compaction equipment over the full width of each layer until there is no visible evidence of further consolidation or, if when a sheepsfoot roller is used, the roller “walks out” of the layer. Make at least three complete passes. Use compression-type rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Ensure rollers meet the following requirements:

(1) Steel wheeled rollers, other than vibratory, capable of exerting a force of not less than 250 pounds per inch (4.5 kilogram/millimeter) of width of the compression roll or rolls.

(2) Vibratory steel wheeled rollers equipped with amplitude and frequency controls with a minimum dynamic force of 30,000 pounds (130 kilonewtons) impact per vibration, specifically designed to compact the material on which it is used.

(3) Pneumatic-tired rollers with smooth tread tires of equal size that will provide a uniform compacting pressure for the full width of the roller and capable of exerting a ground pressure of at least 80 psi (550 Kilopascals).

(4) Sheepsfoot, tamping, or grid rollers capable of exerting a force of 250 pounds per inch (4.5 kilogram/millimeter) of width of roller drum.

(c) Placement Method 3. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate hauling and spreading equipment uniformly over the full width of each layer until there is no visible evidence of further consolidation. Make at least three complete passes.

(d) Placement Method 4. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate hauling and spreading equipment uniformly over the full width of each layer.

(e) Placement Method 5. Adjust the moisture content of the material to a moisture content suitable for compaction. Compact the complete surface with a bucket of an excavator larger than 39,000 pounds (18
metric ton) Gross Vehicle Weight using a minimum of three blows. Overlap compaction by ½ width of bucket.

(f) Placement Method 6. Adjust the moisture content of the material to a moisture content suitable for compaction. Compact using an approved mechanical tamper for a minimum of three complete passes.

When compacting with rollers or hauling and spreading equipment is not practical, use approved mechanical tampers for a minimum of three complete passes.

204.12 Drainage Features. Slope, grade, and shape all drainage features. Remove projecting roots, stumps, rock, or similar matter. Maintain all drainage features in an open condition and without sticks, and other debris.

Form furrow ditches by plowing or using other acceptable methods to produce a continuous furrow. Place excavated material on the downhill side so the bottom of the ditch is approximately 18 inches (450 millimeters) below the crest of the loose material. Clean the ditch using a hand shovel or other suitable method. Shape to provide drainage without overflow.

204.13 Sloping, Shaping, and Finishing. Complete subgrade, slopes, drainage features, culverts, riprap, and other underground minor structures before placing aggregate courses. Slope, shape, and finish to the designated tolerance class as defined in Table 204-2 as follows:

(a) Sloping. Leave earth slopes with uniform roughened surfaces, except as described in Subsection 204.13(b), with no noticeable break as viewed from the road. Except in solid rock, round tops and bottoms of slopes including the slopes of drainage ditches. Round material overlaying solid rock to the extent practical. Scale rock slopes. Slope rounding is not required on tolerance class D through M roads.

If a slide or slipout occurs on a cut or embankment slope, remove or replace the material and repair or restore damage to the work. Bench or key the slope to stabilize the slide. Reshape the cut or embankment slope to an acceptable condition.

(b) Stepped slopes. Where required, construct steps on slopes of 1⅓V:1H to 1V:2H. Construct the steps approximately 18 inches (450 millimeters) high. Blend the steps into natural ground at the end of the cut. If the slope contains non-rippable rock outcrops, blend steps into the rock. Remove loose material found in transitional area. Except for removing large rocks that may fall, scaling stepped slopes is not required.

(c) Shaping. Shape the subgrade to a smooth surface and to the cross-section required. Shape slopes to gradually transition into slope adjustments without noticeable breaks. At the ends of cuts and at intersections of cuts and embankments, adjust slopes in the horizontal and vertical planes to blend into each other or into the natural ground.

(d) Finishing. Ensure that the subgrade is visibly moist during shaping and dressing; smooth and uniform, and shaped to conform to the typical sections. Remove material larger than 6 inches (150 millimeters) from the top 6 inches (150 millimeters) of the roadbed. Remove unsuitable material from the roadbed, and replace it with suitable material. Scarify to 6 inches (150 millimeters) below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material.

Maintain proper ditch drainage.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material at designated sites or according to Subsection 203.05(a)
When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.15 Acceptance. See Table 204-1 for sampling, testing, and acceptance requirements.

Material for embankment and conserved topsoil will be evaluated under Subsections 106.02 and 106.04.

Excavation and embankment construction will be evaluated under Subsections 106.02 and 106.04.

Subexcavation will be evaluated under Subsections 106.02 and 106.04.

Measurement

204.16 Measure the Section 204 pay items listed in the bid schedule according to Subsection 109.02 and the following as applicable:

(a) Roadway excavation. Measure roadway excavation in its original position as follows:

(1) Include the following volumes in roadway excavation:

(a) Roadway prism excavation;

(b) Rock material excavated and removed from below subgrade in cut sections;

(c) Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item for subexcavation is not listed in the bid schedule;

(d) Ditches, except furrow ditches measured under a separate pay item;

(e) Conserved topsoil;

(f) Borrow material used in the work when a pay item for borrow is not listed in the bid schedule;

(g) Loose scattered rocks removed and placed as required within the roadway;

(h) Conserved material taken from pre-existing stockpiles and used in Section 204 work, except topsoil measured under 624; and

(i) Slide and slipout material not attributable to the Contractor's method of operation.

(2) Do not include the following in roadway excavation:

(a) Overburden and other spoil material from borrow sources;

(b) Overbreakage from the backslope in rock excavation;

(c) Water or other liquid material;

(d) Material used for purposes other than required;

(e) Roadbed material scarified in place and not removed;

(f) Material excavated when stepping cut slopes;

(g) Material excavated when rounding cut slopes;

(h) Preparing foundations for embankment construction;
(i) Material excavated when benching for embankments;

(j) Slide or slipout material attributable to the Contractor’s method of operation;

(k) Conserved material taken from stockpiles constructed at the option of the Contractor;

(l) Material excavated outside the established slope limits; and

(m) Road pioneering for the convenience of the Contractor.

(3) When both roadway excavation and embankment construction pay items are listed in the bid schedule, measure roadway excavation only for the following:

(a) Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not listed in the bid schedule;

(b) Slide and slipout material not attributable to the Contractor’s method of operations; and

(c) Drainage ditches, channel changes, and diversion ditches.

(b) Unclassified borrow, and topping. When measuring by the cubic yard (cubic meter) measure in its original position. If borrow excavation is measured by the cubic yard (cubic meter) in-place, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden. Do not measure borrow excavation until suitable roadway excavation is depleted.

(c) Embankment construction. Measure embankment construction in its final position. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:

(a) Roadway embankments;

(b) Material used to backfill subexcavated areas, holes, pits, and other depressions;

(c) Material used to restore obliterated roadbeds to original contours; and

(d) Material used for dikes, ramps, mounds, and berms.

(2) Do not include the following in embankment construction:

(a) Preparing foundations for embankment construction;

(b) Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed; and

(c) Material used to round fill slopes.

(d) Rounding cut slopes. If a pay item for slope rounding is included in the bid schedule measure rounding cut slopes horizontally along the centerline of the roadway. If a pay item is not included for slope rounding is not included in the bid schedule payment will be considered indirect to roadway excavation.

(e) Waste. Measure waste by the cubic yard (cubic meter) in its final position. Take initial cross-sections of the ground surface after stripping overburden. Upon completion of the waste placement, retake cross-sections before replacing overburden.
(f) **Slope scaling.** Measure slope scaling by the cubic yard (cubic meter) in the hauling vehicle.

(g) **Subexcavation.** Measure subexcavation by the cubic yard (cubic meter) in its original position.

(h) **Drainage features.** Measurement includes all excavation, embankment, shaping, and grading necessary for a completed drainage feature.

**Payment**

204.17 The accepted quantities will be paid at the contract price per unit of measurement for the Section 204 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.
<table>
<thead>
<tr>
<th>Material or Product (Subsection)</th>
<th>Type of Acceptance (Subsection)</th>
<th>Characteristic</th>
<th>Category</th>
<th>Test Methods Specifications</th>
<th>Sampling Frequency</th>
<th>Point of Sampling</th>
<th>Split Sample</th>
<th>Reporting Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topping (704.05)</td>
<td>Measured and tested for conformance (106.04 &amp; 105)</td>
<td>Classification(^{(1)})</td>
<td>–</td>
<td>AASHTO M 145</td>
<td>1 per soil type and source of material</td>
<td>Processed material</td>
<td>Yes</td>
<td>Before using in work</td>
</tr>
<tr>
<td>Unclassified borrow (704.06)</td>
<td>&quot;</td>
<td>&quot;</td>
<td>–</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td><strong>Production</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topping (704.05) and (204.11(a))</td>
<td>Measured and tested for conformance (106.04)</td>
<td>Moisture-density</td>
<td>–</td>
<td>T 99, Method C(^{(2)})</td>
<td>1 per soil type, but not less than 1 per each 13,000 yd(^{3}) (10,000 m(^{3}))</td>
<td>Processed material</td>
<td>Yes</td>
<td>Before using in work</td>
</tr>
<tr>
<td>Density</td>
<td></td>
<td></td>
<td></td>
<td>AASHTO T 310 or other approved procedures</td>
<td>1 per 3500 yd(^{3}) (3000 m(^{3})), but not less than 3 per layer</td>
<td>In-place</td>
<td>No</td>
<td>Before placement of next layer</td>
</tr>
<tr>
<td>Unclassified borrow (704.06) and (204.11(a))</td>
<td>&quot;</td>
<td>Moisture-density</td>
<td>–</td>
<td>T 99, Method C(^{(2)})</td>
<td>1 per soil type, but not less than 1 per each 13,000 yd(^{3}) (10,000 m(^{3}))</td>
<td>Processed material</td>
<td>Yes</td>
<td>Before using in work</td>
</tr>
</tbody>
</table>
### Table 204-1
Sampling, Testing, and Acceptance Requirements

<table>
<thead>
<tr>
<th>Material or Product (Subsection)</th>
<th>Type of Acceptance (Subsection)</th>
<th>Characteristic</th>
<th>Category</th>
<th>Test Methods Specifications</th>
<th>Sampling Frequency</th>
<th>Point of Sampling</th>
<th>Split Sample</th>
<th>Reporting Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>-</td>
<td>Density</td>
<td>-</td>
<td>AASHTO T 310 or other approved procedures</td>
<td>1 per 3500 yd(^2) (3000 m(^2)), but not less than 3 per layer</td>
<td>In-place</td>
<td>No</td>
<td>Before placement of next layer</td>
</tr>
<tr>
<td>Production (continued)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earth embankment (204.11(a))</td>
<td>Measured and tested for conformance (106.04)</td>
<td>Classification</td>
<td>-</td>
<td>AASHTO M 145</td>
<td>1 per soil type</td>
<td>Source of material</td>
<td>Yes</td>
<td>Before using in work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moisture-density</td>
<td>-</td>
<td>T 99, Method C(^2)</td>
<td>1 per soil type, but not less than 1 per each 13,000 yd(^3) (10,000 m(^3))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Density</td>
<td>-</td>
<td>AASHTO T 310 or other approved procedures</td>
<td>1 per 3500 yd(^2) (3000 m(^2)), but not less than 3 per layer</td>
<td>In-place</td>
<td>No</td>
<td>Before placement of next layer</td>
</tr>
<tr>
<td>Top of subgrade (204.11(a))</td>
<td>&quot;</td>
<td>Density</td>
<td>-</td>
<td>AASHTO T 310 or other approved procedures</td>
<td>1 per 2500 yd(^2) (2000 m(^2)), but not less than 3 per layer</td>
<td>In-place</td>
<td>No</td>
<td>Before placement of next layer</td>
</tr>
<tr>
<td>Finished Product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 204-1
Sampling, Testing, and Acceptance Requirements

<table>
<thead>
<tr>
<th>Material or Product (Subsection)</th>
<th>Type of Acceptance (Subsection)</th>
<th>Characteristic</th>
<th>Category</th>
<th>Test Methods Specifications</th>
<th>Sampling Frequency</th>
<th>Point of Sampling</th>
<th>Split Sample</th>
<th>Reporting Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadbed (204.13)</td>
<td>Measured and tested for</td>
<td>Final line &amp; grade</td>
<td>–</td>
<td>Field measured</td>
<td>Determined by the CO</td>
<td>Determined by the CO</td>
<td>No</td>
<td>Before placement of next layer</td>
</tr>
</tbody>
</table>

(1) Not required when using Government-provided source.
(2) Minimum 5 points per proctor.
<table>
<thead>
<tr>
<th>Location Description</th>
<th>Tolerance Class (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Roadbed width (ft)</td>
<td>+0.5</td>
</tr>
<tr>
<td>Subgrade elevation (ft)</td>
<td>±0.1</td>
</tr>
<tr>
<td>Centerline alignment (ft)</td>
<td>±0.2</td>
</tr>
<tr>
<td>Slopes, excavation, and embankment (% slope (b))</td>
<td>±3</td>
</tr>
</tbody>
</table>

(a) Maximum allowable deviation from construction stakes and drawings.
(b) Maximum allowable deviation from staked slope measured from slope stakes or hinge points.
(c) Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.
207 - Earthwork Geotextiles

Delete third sentence of Subsection 207.04 and replace with the following:

207.04(c)(1) First layer placement and compaction.
Spread the end-dump pile of cover material maintaining 8 inch(es) lift over the geosynthetic.

209 - Structure Excavation and Backfill

Make the following Changes to Subsection 209.09:

209.09 Backfill.

Add the following to Subsection 209.09(a):

(a) General.
Backfill without damaging or displacing the culvert or structural plate structure. Replace any pipe that is distorted by more than 5 percent of nominal dimensions, or that is ruptured or broken.

Add the following to Subsection 209.09(b)

(b) Pipe culverts.
Do not place or backfill pipe that meets any of the following conditions until the excavation and foundation have been approved in writing by the CO:

- Embankment height greater than 6 feet at subgrade centerline.
- Installation in a protected stream course.
- Round pipe with a diameter of 48 inches or greater.
- Pipe arches with a span of 50 inches or greater.
- Any box culvert or structure other than pipe culverts.

Delete Subsection 209.10 and replace with the following:
209.10 Compacting.
Compact the embankment using one of the following methods as specified.

(a) Compaction Method 1. Use AASHTO T 27 to determine the quantity of material retained on a No. 4 (4.75-millimeter) sieve. Compact as follows:

(1) More than 80 percent retained on a No. 4 (4.75-millimeter) sieve. Adjust the moisture content to a level suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Use compression-type rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Compact each layer of material full width with one of the following and until there is no visible evidence of further consolidation:

(a) Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds (180 kilonewtons) impact per vibration and a minimum frequency of 1000 vibrations per minute;
(b) Eight roller passes of a 20-ton (20-metric ton) compression-type roller; or
(c) Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds (130 kilonewtons) impact per vibration and a minimum frequency of 1000 vibrations per minute.

Increase the compactive effort for layers deeper than 12 inches (300 millimeters) as follows:

• For each additional 6 inches (150 millimeters) or fraction thereof, increase the number of roller passes in Subsection 209.10(a)(1)(a), by four passes; or
• For each additional 6 inches (150 millimeters) or fraction thereof, increase the number of roller passes in Subsection 209.10(a)(1)(b) and (c), by eight passes.

(2) 50 to 80 percent retained on a No. 4 (4.75-millimeter) sieve. Classify the material according to AASHTO M 145. Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content. Use AASHTO T 99 to determine the optimum moisture content of the portion of the material passing a No. 4 (4.75-millimeter) sieve. Multiply this number by the percentage of material passing a No. 4 (4.75-millimeter) sieve, and add 2 percent to determine the optimum moisture content of the material.

Use nonvibratory rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Compact each layer of material full width according to Subsection 209.10(a)(1).

(3) Less than 50 percent retained on a No. 4 (4.75-millimeter) sieve. Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 99, Method C.
Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures. When required, use AASHTO T 224 to correct for coarse particles.

(b) Compaction Method 2. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate roller compaction equipment over the full width of each layer until there is no visible evidence of further consolidation or, if when a sheepsfoot roller is used, the roller “walks out” of the layer. Make at least three complete passes. Use compression-type rollers at speeds less than 6 feet (1.8 meters) per second and vibratory rollers at speeds less than 3 feet (1 meter) per second. Ensure rollers meet the following requirements:

1. Steel wheeled rollers, other than vibratory, capable of exerting a force of not less than 250 pounds per inch (4.5 kilogram/millimeter) of width of the compression roll or rolls.
2. Vibratory steel wheeled rollers equipped with amplitude and frequency controls with a minimum dynamic force of 30,000 pounds (130 kilonewtons) impact per vibration, specifically designed to compact the material on which it is used.
3. Pneumatic-tired rollers with smooth tread tires of equal size that will provide a uniform compacting pressure for the full width of the roller and capable of exerting a ground pressure of at least 80 psi (550 Kilopascals).
4. Sheepsfoot, tamping, or grid rollers capable of exerting a force of 250 pounds per inch (4.5 kilogram/millimeter) of width of roller drum.

(c) Compaction Method 3. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate hauling and spreading equipment uniformly over the full width of each layer until there is no visible evidence of further consolidation. Make at least three complete passes.

(d) Compaction Method 4. Adjust the moisture content of the material to a moisture content suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Operate hauling and spreading equipment uniformly over the full width of each layer.

(e) Compaction Method 5. Adjust the moisture content of the material to a moisture content suitable for compaction. Compact the complete surface with a bucket of an excavator larger than 39,000 pounds (18 metric ton) Gross Vehicle Weight using a minimum of three blows. Overlap compaction by ½ width of bucket.
(f) **Compaction Method 6.** Adjust the moisture content of the material to a moisture content suitable for compaction. Compact using an approved mechanical tamper for a minimum of three complete passes.

When compacting with rollers or hauling and spreading equipment is not practical, use approved mechanical tampers for a minimum of three complete passes.

### 301 - Untreated Aggregate Courses

*Add the following to Subsection 301.03:*

#### 301.03 General.

Written approval of the roadbed is required before placing aggregate.

For pit run or grid-rolled material, furnish material smaller than the maximum size, no gradation will be required otherwise. After processing on the road, remove all oversize material from the road and dispose as directed by the CO.

Provide additives or binder, if required, at the proportions specified.

Develop and use Government furnished sources according to Section 105.

If the aggregate is produced and stockpiled before placement, handle and stockpile according to Section 314.

*Delete Subsection 301.05 and replace with the following:*

#### 301.05 Compacting.

Compact each layer full width. Roll from the sides to the center, parallel to the centerline of the road. Along curbs, headers, walls, and all places not accessible to the roller, compact the material with approved tampers or compactors.

Compact the aggregate using one of the following methods as specified:

(a) **Compaction A.** Operating spreading and hauling equipment over the full width of the travelway.

(b) **Compaction B.** Operate rollers and compact as specified in Subsection 204.11(a)(1).
(c) **Compaction C.** Moisten or dry the aggregate to a uniform moisture content between 5 and 7 percent based on total dry weight of the mixture. Operate rollers and compact as specified in Subsection 204.11(a)(1).

(d) **Compaction D.** Compact to a density of at least 95 percent of the maximum density, as determined by AASHTO T 99, method C or D.

(e) **Compaction E.** Compact to a density of at least 95 percent of the maximum density, as determined by AASHTO T 180, method C or D.

For all compaction methods, blade the surface of each layer during the compaction operations to remove irregularities and produce a smooth, even surface. When a density requirement is specified, determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

### 703 - Aggregate

Delete Subsection 703.05(c)(3) and Replace with the following:

**703.05  Subbase, Base, Surface Course, and Screened Aggregate.**

(a) **Subbase or base aggregate.** Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

<table>
<thead>
<tr>
<th>Gradation</th>
<th>Liquid limit, AASHTO T 89</th>
<th>Plastic limit, AASHTO T 90</th>
<th>Los Angeles abrasion, AASHTO T 96</th>
<th>Sodium sulfate soundness loss (5 cycles), AASHTO T 104</th>
<th>Durability index (coarse), AASHTO T 210</th>
<th>Durability index (fine), AASHTO T 210</th>
<th>Fractured faces, ASTM D 5821</th>
<th>Free from organic matter and lumps or balls of clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Gradation</td>
<td>(2) Liquid limit, AASHTO T 89</td>
<td>(3) Plastic limit, AASHTO T 90</td>
<td>(4) Los Angeles abrasion, AASHTO T 96</td>
<td>(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104</td>
<td>(6) Durability index (coarse), AASHTO T 210</td>
<td>(7) Durability index (fine), AASHTO T 210</td>
<td>(8) Fractured faces, ASTM D 5821</td>
<td>(9) Free from organic matter and lumps or balls of clay</td>
</tr>
<tr>
<td>Table 703-2</td>
<td>25 max.</td>
<td>Nonplastic</td>
<td>40% max.</td>
<td>12% max.</td>
<td>35 min.</td>
<td>35 min.</td>
<td>50% min.</td>
<td></td>
</tr>
</tbody>
</table>

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(b) **Surface course aggregate.** Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

<table>
<thead>
<tr>
<th>Gradation</th>
<th>Liquid limit, AASHTO T 89</th>
<th>Plastic Index, AASHTO T 90</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Gradation</td>
<td>(2) Liquid limit, AASHTO T 89</td>
<td>(3) Plastic Index, AASHTO T 90</td>
</tr>
<tr>
<td>Table 703-3</td>
<td>35 max.</td>
<td></td>
</tr>
<tr>
<td>a) If the percent passing the No. 200 sieve is less than 12%</td>
<td>2 to 9</td>
<td></td>
</tr>
<tr>
<td>b) If the percent passing the No. 200 sieve is greater than 12%</td>
<td>Less than 2</td>
<td></td>
</tr>
</tbody>
</table>
(4) Los Angeles abrasion, AASHTO T 96 40% max.
(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104 12% max.
(6) Durability index (coarse), AASHTO T 210 35 min.
(7) Durability index (fine), AASHTO T 210 35 min.
(8) Fractured faces, ASTM D 5821 75% min.
(9) Free from organic matter and lumps or balls of clay

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Do not furnish material that contains asbestos fibers.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(c) Screened aggregate – Furnish hard, durable particles or fragments of stone, slag, or gravel conforming the following:

(1) Gradation Table 703-16
(2) Plastic Index, AASHTO T 90 Less than 9
(3) Los Angeles abrasion, AASHTO T 96 55% max.
(4) Free from organic matter and lumps or balls of clay.

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary.
Table 703-2
Target Value Ranges for Subbase and Base Gradation

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th></th>
<th>Grading Designation</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)</td>
<td>A (Subbase)</td>
<td>B (Subbase)</td>
<td>C (Base)</td>
<td>D (Base)</td>
</tr>
<tr>
<td>2½ inch</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 inch</td>
<td>97 – 100</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1½ inch</td>
<td></td>
<td>97 – 100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 inch</td>
<td>65 – 79 (6)</td>
<td>80 – 100 (6)</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4 inch</td>
<td></td>
<td>64 – 94 (6)</td>
<td>86 – 100 (6)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>1/2 inch</td>
<td>45 – 59 (7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8 inch</td>
<td></td>
<td>40 – 69 (6)</td>
<td>51 – 82 (6)</td>
<td>62 – 90 (6)</td>
<td></td>
</tr>
<tr>
<td>No. 4</td>
<td>28 – 42 (6)</td>
<td>40 – 60 (8)</td>
<td>31 – 54 (6)</td>
<td>36 – 64 (6)</td>
<td>36 – 74 (6)</td>
</tr>
<tr>
<td>No. 40</td>
<td>9 – 17 (4)</td>
<td></td>
<td>12 – 26 (4)</td>
<td>12 – 26 (4)</td>
<td></td>
</tr>
<tr>
<td>No. 200</td>
<td>4.0 – 8.0 (3)</td>
<td>4.0 – 12.0 (4)</td>
<td>4.0 – 7.0 (3)</td>
<td>4.0 – 7.0 (3)</td>
<td>4.0 – 7.0 (3)</td>
</tr>
</tbody>
</table>

( ) The value in the parentheses is the allowable deviation (±) from the target values.
Delete Table 703-3 and replace with the following:

Table 703-3
Target Value Ranges for Surface Gradation

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grading Designation</td>
</tr>
<tr>
<td></td>
<td>F</td>
</tr>
<tr>
<td>1 1/2 inch</td>
<td>100</td>
</tr>
<tr>
<td>1 inch</td>
<td>97-100</td>
</tr>
<tr>
<td>3/4 inch</td>
<td>76-89 (6)</td>
</tr>
<tr>
<td>1/2 inch</td>
<td></td>
</tr>
<tr>
<td>3/8 inch</td>
<td>56-68 (6)</td>
</tr>
<tr>
<td>No. 4</td>
<td>43-53 (7)</td>
</tr>
<tr>
<td>No. 8</td>
<td></td>
</tr>
<tr>
<td>No. 16</td>
<td>23-32 (6)</td>
</tr>
<tr>
<td>No. 200</td>
<td>10.0–16.0 (4)</td>
</tr>
</tbody>
</table>

(*) The value in the parentheses is the allowable deviation (±) from the target values.
If the plasticity index (PI) is greater than 0, the TV range for the No. 200 sieve size is 8-12 (±).
Add Table 703-13:

Table 703-13
Gradation Requirements for Screened Aggregate

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grading Designation</td>
</tr>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td>6 inch</td>
<td>100</td>
</tr>
<tr>
<td>4 inch</td>
<td></td>
</tr>
<tr>
<td>3 inch</td>
<td></td>
</tr>
<tr>
<td>2 inch</td>
<td></td>
</tr>
<tr>
<td>No. 4</td>
<td>15-45</td>
</tr>
</tbody>
</table>

704 - Soil

Delete Subsection 704.02(a) and replace with the following:

704.02 Bedding Material.
(a) Maximum particle size 3 in (75 millimeters) or half the corrugation depth, whichever is smaller
July 17: NFF releases Request for Proposals
July 25: Pre-bid meeting – 1PM at Rainbow Campground
August 11: Proposals are due to NFF
August 14 (week of): NFF & USFS review proposals and select contractor
September 4 (week of): Contractor is notified and NFF service agreement is developed

September: Pre-work Meeting with selected contractor

Contact Jeff Malik with any questions: jmalik@nationalforests.org or 541-808-8894.