STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY
FOREST ROAD AND BRIDGE STANDARD DESIGN

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## Forest Road Performance Standards

1. All roads shall be built to the standards listed within this performance standard unless the project engineer determines otherwise.

2. All road designs and construction must be done in accordance with the standards set by the Department of Natural Resources.

3. Road classification and designation are set forth in the project documents. Additional drainage structures may be required.

4. Roadname shall be assigned by the local municipality.

5. Road speed limit shall be set by the local municipality.

<table>
<thead>
<tr>
<th>Road Classification</th>
<th>Design Speed (MPH)</th>
<th>Min. Horizontal Curve Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary (Main Haul)</td>
<td>30</td>
<td>30'</td>
</tr>
<tr>
<td>Secondary</td>
<td>20</td>
<td>140'</td>
</tr>
<tr>
<td>Spur</td>
<td>10</td>
<td>50'</td>
</tr>
<tr>
<td>Winter</td>
<td>15 or by Classification</td>
<td>75'</td>
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### Revisions

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### Notes

- GEOMETRIC STANDARDS taken from Chapter 15 of the ASDO for geometric design of Class III rural roads.
- Using a 0.80% grade in the winter road conditions.
**TYPICAL OVERLAY SECTION**

**NOT TO SCALE**

**CLEARING LIMITS**

- **Existing Ground**
- **2 m Min.**
- **Excavation**
  - See Forest Road Performance Standards
  - **Surfacing Material**
  - **3 - 5%**
- **Variable Slope as Designed/Styled**
- **Unusable Excavation, Stabilize As Appropriate (11 AAC 95.200 (C))**

**Prepared Ground Surface, Debris Wat or Bench Embankment, Variable Depth**

**Subgrade = See Forest Road Performance Standards**

**Deck Merchantable Timber Free of Debris and Place Parallel to Road Centerline. See Note 9 Sheet A-02.00**

** Additional Notes:**
1. Cross drainage is a concern where a layer of geotextile fabric on top of log.

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**TYPICAL THRU-CUT SECTION**

**NOT TO SCALE**

**CLEARING LIMITS**

- **5' Min.**
- **Existing Ground**
- **2' Min.**
- **1 to 2**
- **End of Log**
  - **Clearing, Undisturbed Stumps & Clearing Debris or Unmerchantable Logs.**
  - **Surfacing Material**
  - **3 - 5%**
- **Log Corrugated (Minimum 2" Top Diameter)**

**Subgrade = See Forest Road Performance Standards**

**Deck Merchantable Timber Free of Debris and Place Parallel to Road Centerline. See Note 9 Sheet A-02.00**

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**DEPARTMENT OF NATURAL RESOURCES**

**DIVISION OF FORESTRY**

**STATE OF ALASKA**

**ROADS, INFRASTRUCTURE AND BRIDGES SECTION**

**TYPICAL SECTIONS**
MIN. 6" OF SNOW ON MIN. 6" OF FROZEN SOILS. MAINTAIN A MIN. OF 3" COMPACTED SNOW AND ICE AT TOP GROUND SURFACE.

WINTER ROAD

NOT TO SCALE
1. Culvert joints shall have watertight gaskets and shall not leak.
2. Culvert placement shall be approved by the project engineer before backfilling.
3. All usable material (common excavation) shall be used as backfill for rehabilitation construction.
4. Side slopes shall be excavated at 0.5H:1V or flatter in accordance with all applicable safety requirements.
5. Bedding material shall at a minimum meet the same requirements as the subgrade material. Do not place rocks larger than 6 inches in diameter against culvert plate and compact bedding in lifts to adequately support the pipe.
6. Follow manufacturer's requirements for installation unless directed otherwise by the project engineer.
7. When joining two pipes together, the minimum length of pipe to be joined shall be six feet.

Typical Culvert Trench Section

NOT TO SCALE

Grade of culvert shall be same as existing stream channel or as directed by the project engineer.

Notes:
1. Do not pierce culverts.
2. Place culverts in alignment with the natural stream channel. Where no channel is apparent, install culverts at skew and slope to drain or as directed by the project engineer.
3. Minimum culvert grades shall be 3% or 1/2 of the tributary ditch grade.
4. Camber will depend on site conditions. Maximum camber is 2% (steel or aluminum culverts) or 1% (polyethylene culverts) of culvert length by no more than 2.5 inches at center.
5. Minimum culvert diameter is 18".
6. Culvert inlets and outlets shall extend 36 inches beyond the toe of the fill unless otherwise agreed to by the project engineer.
7. Culverts must be spaced to prevent pooling of water caused by the presence of the roadbed.
8. Provide energy dissipators at outlets of storm drain culverts (FIP 11 AAC 95.305 (2)).
9. Relief culvert spacing will depend on site conditions. Project engineer to advise.

Typical Culvert Installation

NOT TO SCALE

Excavate to grade. Remove unsuitable material within 1/2 of the culvert location. Backfill and compact with backfill material for bedding.

MINIMUM CULVERT SPACING 11 AAC 95.295 (B)

<table>
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<tr>
<th>Percent of Longitudinal Grade</th>
<th>Region I</th>
<th>Region II &amp; Region III</th>
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<tbody>
<tr>
<td>0 to 2</td>
<td>SEE NOTE #7</td>
<td>SEE NOTE #7</td>
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<tr>
<td>2 to 7</td>
<td>1,000</td>
<td>1,500</td>
</tr>
<tr>
<td>8 to 15</td>
<td>800</td>
<td>1,000</td>
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<tr>
<td>OVER 15</td>
<td>600</td>
<td>800</td>
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Department of Natural Resources
Division of Forestry
State of Alaska

Roads, Infrastructure and Bridges Section

Culvert Details

Prepared by
Reviewed by
Sheet E-01.00
NOTES:
1. PLACE 010-1 MILE MARKERS EVERY MILE.
2. DIAGRAM ABOVE SHOWS APPROXIMATE PLACEMENT OF SIGNS. PROJECT ENGINEER TO DETERMINE FINAL PLACEMENT BASED ON SITE CONDITIONS.
3. SEE SHEET S-01.00 FOR ADDITIONAL BRIDGE SIGNS.
ACTIVE LOGGING ROAD
YIELD TO LOGGING TRUCKS
TRUCKS USE CB CHANNEL XX

72"x94" BLACK MESSAGE AND BORDER ON WHITE BACKGROUND (CUSTOM)