



TIMBER NOTICE OF SALE

SALE NAME: LUNA TIX

AGREEMENT NO: 30-106422

AUCTION: December 19, 2024 starting at 10:00 a.m., **COUNTY:** Lewis
Pacific Cascade Region Office, Castle Rock, WA

SALE LOCATION: Sale located approximately 5 miles south of Mossyrock, WA

**PRODUCTS SOLD
AND SALE AREA:**

All timber, except leave trees bound by yellow "Leave Tree Area" tags, leave trees marked with blue paint, and all down timber existing 5 years prior to the day of sale, all timber 60 inches DBH and larger, all down timber greater than 45 inches in diameter and snags bound by the following;

Unit 1, white "Timber Sale Boundary" tags with pink flagging, W-500 road, timber type change and private property line marked with pink flagging and carsonite posts;

Unit 2, white "Timber Sale Boundary" tags with pink flagging, W-556A road, property line marked with pink flagging, and blue paint around tree blazes;

Unit 3, white "Timber Sale Boundary" tags with pink flagging, pink flagging, W-556 road and property line marked with pink flagging and carsonite posts;

All forest products above located on part(s) of Sections 13 and 14 all in Township 11 North, Range 3 East, W.M., containing 174 acres, more or less.

CERTIFICATION: This sale is certified under the Sustainable Forestry Initiative® program Standard (cert no: BVC-SFIFM-018227)

ESTIMATED SALE VOLUMES AND QUALITY:

| Species | Avg DBH | Ring Count | Total MBF | MBF by Grade | | | | | | | | |
|-------------|---------|------------|-----------|--------------|----|----|-----|----|-------|-----|-----|----|
| | | | | 1P | 2P | 3P | SM | 1S | 2S | 3S | 4S | UT |
| Douglas fir | 24.1 | 8 | 4,931 | | | 65 | 809 | | 3,304 | 631 | 94 | 28 |
| Hemlock | 18.3 | | 2,564 | | | | | | 1,573 | 838 | 125 | 28 |
| Silver fir | 22.5 | | 409 | | | | | | 292 | 101 | 14 | 2 |
| Red alder | 11.6 | | 106 | | | | | | | 43 | 63 | |
| Redcedar | 16.4 | | 76 | | | | | | | 56 | 20 | |
| Maple | 14 | | 1 | | | | | | | | 1 | |
| Sale Total | | | 8,087 | | | | | | | | | |

MINIMUM BID: \$2,945,000.00

BID METHOD: Sealed Bids

PERFORMANCE SECURITY: \$100,000.00

SALE TYPE: Lump Sum

EXPIRATION DATE: October 31, 2027

ALLOCATION: Export Restricted

BID DEPOSIT: \$294,500.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.



TIMBER NOTICE OF SALE

HARVEST METHOD: Cable, and Shovel. Harvesting activities are estimated to be 95 percent ground based yarding and 5 percent cable yarding. Ground based equipment is restricted to slopes of 45 percent and less, and shall operate only during dry soil conditions. Self-Leveling ground based yarding equipment will not be permitted on sustained slopes over 60 percent. See Clause H-140 for further harvest requirements. Falling and Yarding will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

ROADS: 1.00 stations of required construction. 11.70 stations of optional construction. 15.80 stations of optional reconstruction. 752.50 stations of required prehaul maintenance. 22.30 stations of optional prehaul maintenance. 28.50 stations of abandonment.

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the W-500 Pit located in Section 14, T11N, R3E, W.M. or potential rock source on the W-556D1 between Stations 0+80 and 15+00 on state land at no charge to the Purchaser. Required rock exploration on the W-556D1 location. Required rock exploration drilling is required in the W-500 Pit. See Road Plan Section 6-13 for further details.

Rock used in accordance with the quantities on the ROCK LIST may be obtained from commercial source at the Purchaser's expense.

Construction, Reconstruction, Pre-haul Maintenance and Abandonment are not allowed during the listed closure period of October 1 to April 30 unless authorized in writing by the Contract Administrator. The hauling of forest products will not be permitted from November 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: The sale acres were determined by GPS. The sale area was cruised using a variable plot cruise method.

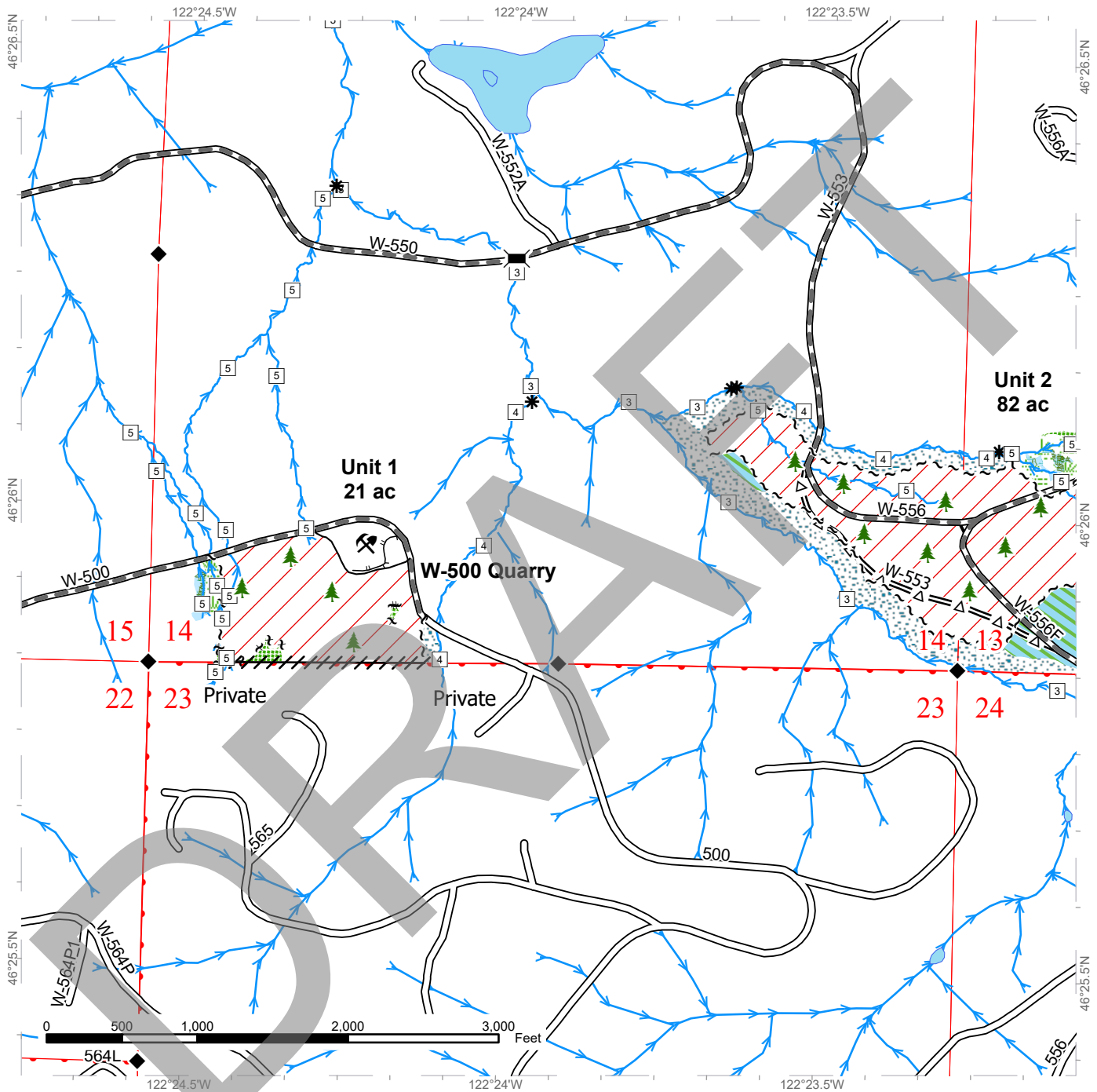
FEES: Check made payable to Weyerhaeuser Timber Holdings, Inc. for \$500.00 due on day of sale for Road Use Permit. Check will be forwarded to Weyerhaeuser. RUP expires December 31, 2026. \$137,000.00 is due on day of sale. \$9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale is estimated to contain 228 MBF Pole Grade Douglas-fir, 65 MBF Peeler Grade Douglas-fir, 809 MBF SM Douglas-fir, 1,211 MBF of HQ Douglas-fir 2 Saw and 61 MBF of HQ Douglas-fir 3 Saw. See Cruise for further details.

TIMBER SALE MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567

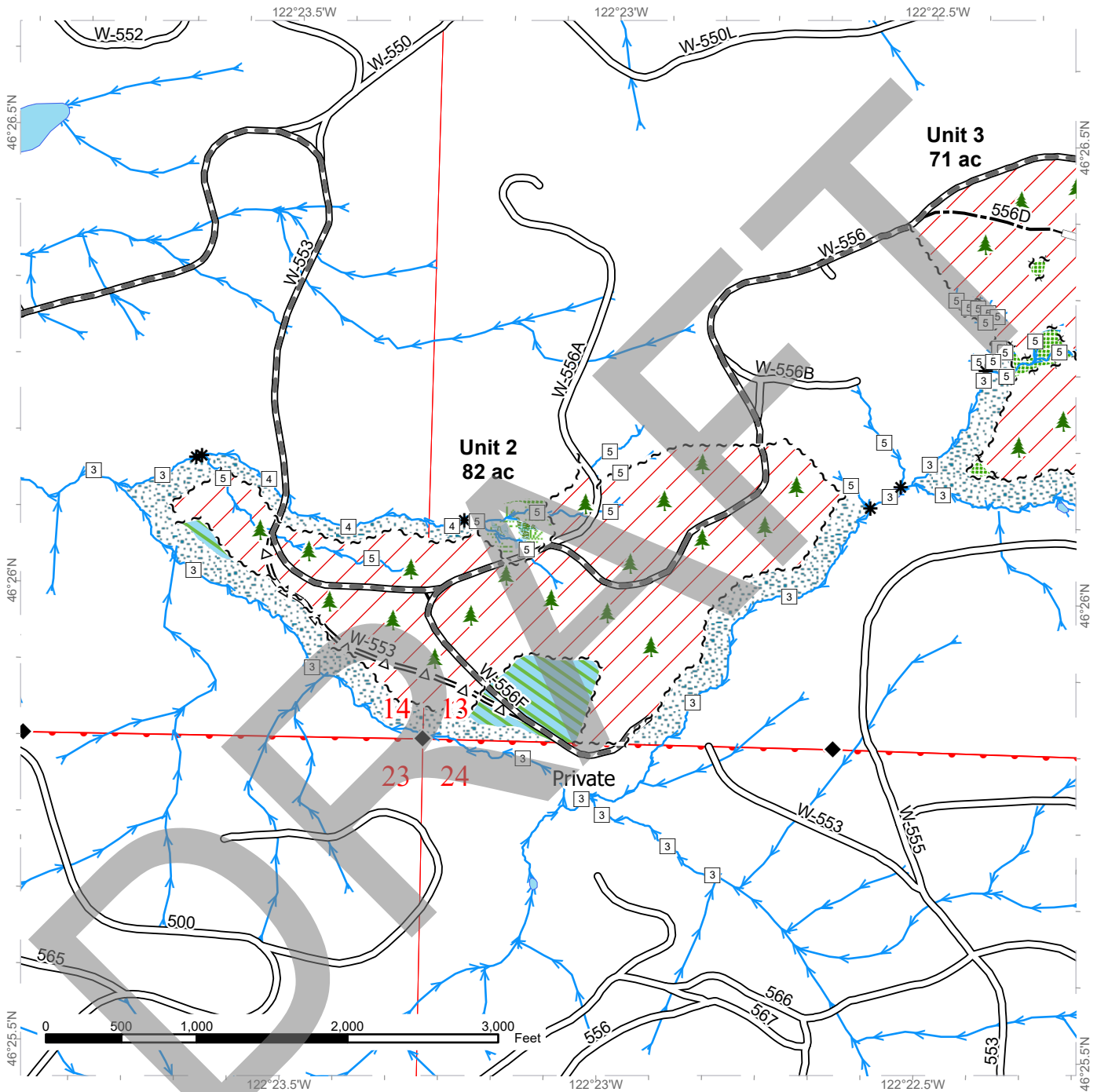


| | | |
|----------------------------|-------------------------------|---------------------------|
| Variable Retention Harvest | Flag Line | Streams |
| Non-Tradeable Leave Clump | Timber Type Change | Stream Type |
| Leave Tree Area | Existing Roads | Stream Type Break |
| Riparian Mgt Zone | Required Pre-Haul Maintenance | Bridge |
| Forested Wetland | Optional Pre-Haul Maintenance | Leave Tree Area <1/4-acre |
| Wetland Mgt Zone | Optional Construction | Rock Pit |
| Sale Boundary Tags | Designated Skid Trail | Survey Monument |
| Leave Tree Tags | DNR Managed Lands | |

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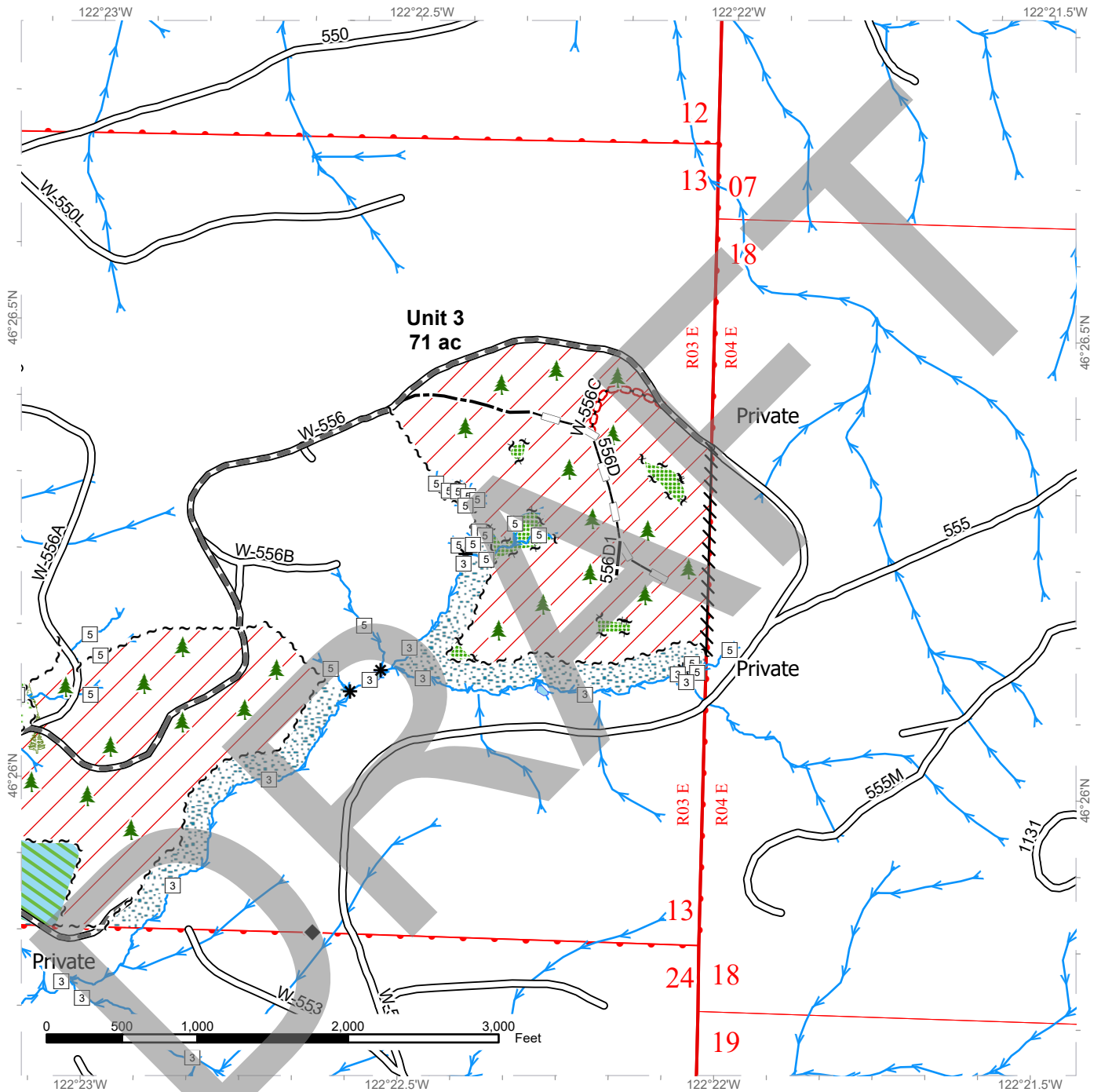
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|--|----------------------------|--|-------------------------------|--|---------------------------|
| | Variable Retention Harvest | | Leave Tree Tags | | Streams |
| | Non-Tradeable Leave Clump | | Existing Roads | | Stream Type |
| | Leave Tree Area | | Required Pre-Haul Maintenance | | Stream Type Break |
| | Riparian Mgt Zone | | Optional Pre-Haul Maintenance | | Leave Tree Area <1/4-acre |
| | Forested Wetland | | Optional Construction | | Survey Monument |
| | Wetland Mgt Zone | | Optional Reconstruction | | |
| | Sale Boundary Tags | | DNR Managed Lands | | |



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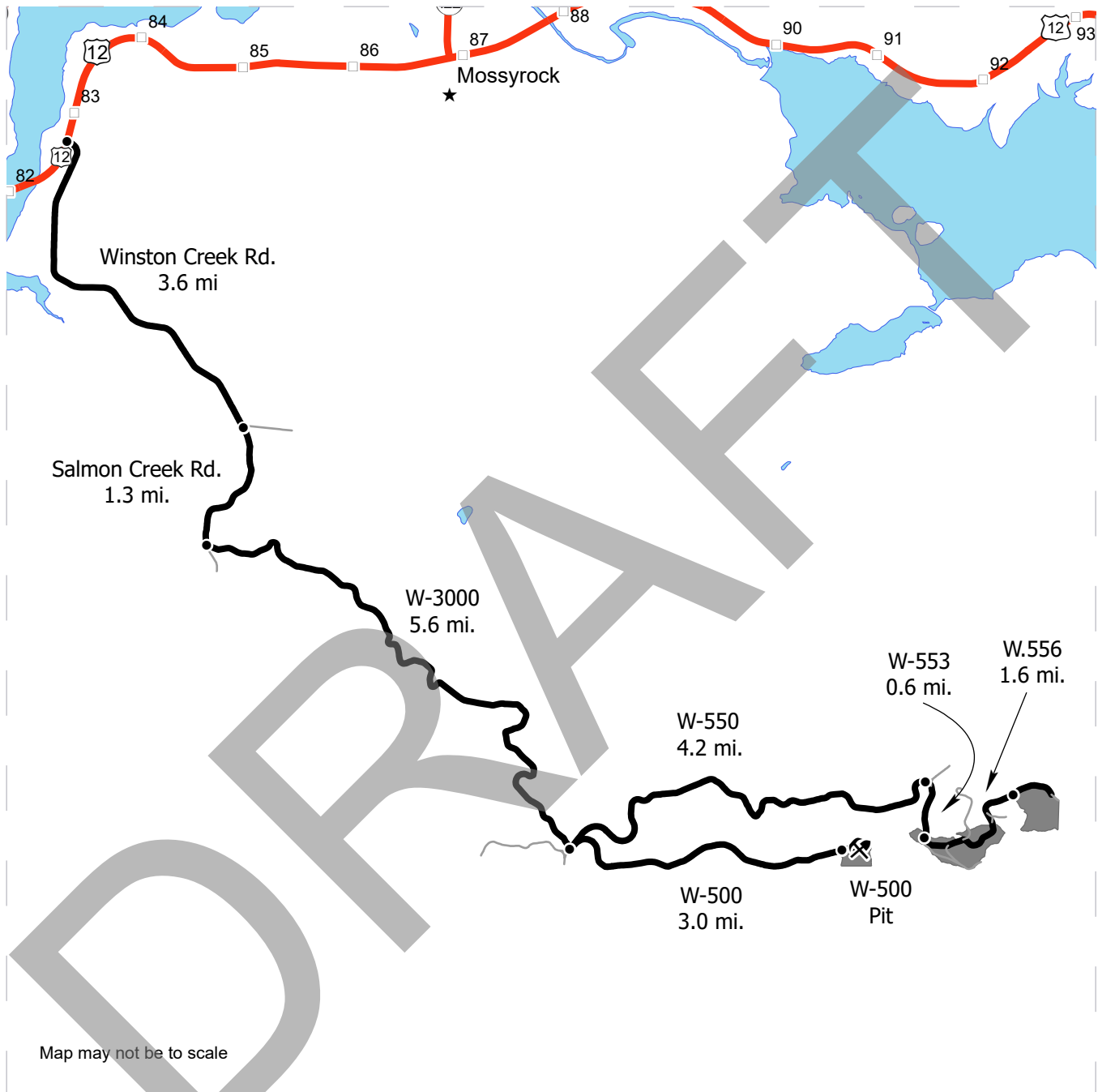
| | | | | | |
|--|----------------------------|--|-------------------------------|--|---------------------------|
| | Variable Retention Harvest | | Flag Line | | Streams |
| | Non-Tradeable Leave Clump | | Existing Roads | | Stream Type |
| | Leave Tree Area | | Required Pre-Haul Maintenance | | Stream Type Break |
| | Riparian Mgt Zone | | Optional Pre-Haul Maintenance | | Leave Tree Area <1/4-acre |
| | Forested Wetland | | Optional Construction | | Survey Monument |
| | Wetland Mgt Zone | | Optional Reconstruction | | |
| | Sale Boundary Tags | | Required Abandonment | | |
| | Leave Tree Tags | | DNR Managed Lands | | |



DRIVING MAP

SALE NAME: LUNA TIX
AGREEMENT#: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



Map may not be to scale

- Timber Sale Unit
- Highway
- Haul Route
- Other Road
- Milepost Markers
- Distance Indicator
- Rock Pit
- 12 HWY 12

DRIVING DIRECTIONS:

Between MP 82 and 83 on Highway 12, turn east onto Winston Creek Rd.
 Follow Winston Creek Rd. for 3.6 miles. Winston Creek Rd. turns into Salmon Creek Rd.
 Continue along Salmon Creek Rd. for 1.3 miles.
 To reach all units, turn left onto the W-3000 and travel for 5.6 miles to the W-500/550 junction.
 To reach Unit 1 and W-500 pit, follow the W-500 for 3 miles.
 To reach Unit 2, follow the W-550 for 4.2 miles. Turn right onto the W-553 for 0.6 miles.
 To reach Unit 3, turn left onto the W-556 from the W-553/556 junction and travel for 1.6 miles.



Timber Sale Cruise Report Luna Tix

Sale Name: LUNA TIX

Sale Type: LUMP SUM

Region: PACIFIC CASC

District: LEWIS

Lead Cruiser: Dylan Buchanan

Other Cruisers: Blake Warnstadt

Cruise Narrative:

Location: The Luna Tix Sale is located approximately 8.5 miles southeast of Mossyrock. It can be accessed by taking Highway 12 and Winston Creek Rd. to the W-3000. Its 10 miles of gravel out the W-3000 from Winston Creek Rd to the W-556 and W-500 roads.

Cruise Design: All Units were cruised with variable radius plots using a 54.44 BAF. Diameters were recorded to the nearest whole inch. Bole heights were measured to an estimated break point of 40% of the diameter at 16 feet. Trees were cruised to 40' preferred log lengths for conifers and 30' preferred lengths for hardwoods. Unit 1 was cruised with a measure to count plot ratio of 1:1 and units 2 and 3 were cruised using a measure to count plot ratio of 1:2.

Timber Quality: The Luna Tix Sale contains mostly a mature mix of DF and WH. Scattered through out the sale is a moderate amount of SF, RA, and RC with a trace of BC and MA. Unit 1 DF averages 24.5" at 4.5', SF 33", RC 15.3" and the WH average DBH is 18". Unit 2 Average diameters are DF 24.5", WH 17.6", SF 18.3", RC 15.9". Unit 3 has DF with a 23.4" average DBH, WH 19.2", SF 23.1", RA 11.7 and RC 17". All 3 stands in this sale have DF with good form and very little defect. There is a good mix of domestic, high quality B, high quality A and SM logs. There is also an opportunity to harvest DF poles throughout the sale and possibly some small RC poles in Unit 2. The WH here looks good. There was a small amount mistletoe observed in the south end of Unit 2 and minimal conks on live stems. There was a small amount of old machine damage observed from previous thinning. A few small gaps and mortality pockets can be found throughout the sale.

Logging and Stand Conditions: Consists of mostly gentle slopes and fairly dense WH understory. Harvesting is expected to be 95% ground based logging.

General Remarks:

Timber Sale Notice Volume (MBF)

| Sp | DBH | Rings/In | Age | MBF Volume by Grade | | | | | | |
|-----|------|----------|-----|---------------------|--------|-----------|-------|-------|-------|---------|
| | | | | All | Peeler | Spec Mill | 2 Saw | 3 Saw | 4 Saw | Utility |
| DF | 24.1 | 8.4 | | 4,929 | 65 | 809 | 3,304 | 631 | 94 | 28 |
| WH | 18.3 | | | 2,564 | | | 1,573 | 838 | 125 | 28 |
| SF | 22.5 | | | 409 | | | 292 | 101 | 14 | 2 |
| RA | 11.6 | | | 106 | | | | 43 | 63 | |
| RC | 16.4 | | | 76 | | | | 56 | 20 | |
| MA | 14.0 | | | 1 | | | | | 1 | |
| ALL | 19.4 | 8.4 | | 8,085 | 65 | 809 | 5,169 | 1,670 | 317 | 57 |

Timber Sale Notice Weight (tons)

| Sp | Tons by Grade | | | | | | |
|-----|---------------|--------|-----------|--------|--------|-------|---------|
| | All | Peeler | Spec Mill | 2 Saw | 3 Saw | 4 Saw | Utility |
| DF | 32,967 | 343 | 4,834 | 21,365 | 5,329 | 860 | 235 |
| WH | 21,844 | | | 12,116 | 8,136 | 1,346 | 247 |
| SF | 3,001 | | | 1,972 | 873 | 140 | 16 |
| RA | 958 | | | | 357 | 601 | |
| RC | 732 | | | | 526 | 206 | |
| MA | 23 | | | | | 23 | |
| ALL | 59,524 | 343 | 4,834 | 35,453 | 15,221 | 3,176 | 498 |

Timber Sale Overall Cruise Statistics

| BA (sq ft/acre) | BA SE (%) | V-BAR (bf/sq ft) | V-BAR SE (%) | Net Vol (bf/acre) | Vol SE (%) |
|--------------------|--------------|---------------------|-----------------|----------------------|---------------|
| 257.6 | 2.8 | 179.5 | 1.6 | 46,468 | 3.2 |

Timber Sale Unit Cruise Design

| Unit | Design | Cruise Acres | FMA Acres | N Plots | N Cruise Plots | N Void Plots |
|----------------|---|--------------|-----------|---------|----------------|--------------|
| LUNA TIX U1 | B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 21.0 | 22.3 | 21 | 12 | 0 |
| LUNA TIX U2 | B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 82.0 | 101.8 | 90 | 30 | 1 |
| LUNA TIX U3 | B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 71.0 | 76.3 | 72 | 27 | 0 |
| All | | 174.0 | 200.4 | 183 | 69 | 1 |

Timber Sale Log Grade x Sort Summary

| Sp | Status | Grade | Sort | Dia | Len | BF Gross | BF Net | Defect % | Tons | MBF Net |
|----|--------|----------|----------|------|-----|----------|--------|----------|----------|---------|
| DF | LIVE | 2 SAW | Domestic | 15.9 | 40 | 11,326 | 10,915 | 3.6 | 12,159.6 | 1,899.2 |
| DF | LIVE | 2 SAW | HQ-A | 15.2 | 40 | 1,818 | 1,740 | 4.3 | 2,044.5 | 302.7 |
| DF | LIVE | 2 SAW | HQ-B | 16.3 | 40 | 5,436 | 5,219 | 4.0 | 5,892.5 | 908.1 |
| DF | LIVE | 2 SAW | Pole | 15.3 | 40 | 1,112 | 1,112 | 0.0 | 1,268.8 | 193.6 |
| DF | LIVE | 3 PEELER | Domestic | 25.2 | 40 | 372 | 372 | 0.0 | 343.3 | 64.6 |
| DF | LIVE | 3 SAW | Domestic | 9.0 | 36 | 3,143 | 3,079 | 2.0 | 4,613.8 | 535.7 |
| DF | LIVE | 3 SAW | HQ-B | 10.4 | 39 | 353 | 353 | 0.2 | 449.3 | 61.4 |
| DF | LIVE | 3 SAW | Pole | 9.3 | 38 | 197 | 197 | 0.0 | 266.2 | 34.3 |
| DF | LIVE | 4 SAW | Domestic | 6.8 | 25 | 543 | 538 | 1.1 | 859.7 | 93.5 |

| Sp | Status | Grade | Sort | Dia | Len | BF Gross | BF Net | Defect % | Tons | MBF Net |
|----|--------|--------------|----------|------|-----|----------|--------|----------|----------|---------|
| DF | LIVE | CULL | Cull | 7.9 | 6 | 100 | 0 | 100.0 | 0.0 | 0.0 |
| DF | LIVE | SPECIAL MILL | HQ-A | 19.0 | 40 | 4,733 | 4,647 | 1.8 | 4,834.2 | 808.6 |
| DF | LIVE | UTILITY | Pulp | 7.4 | 14 | 172 | 159 | 7.5 | 234.7 | 27.7 |
| MA | LIVE | 4 SAW | Domestic | 5.0 | 30 | 9 | 8 | 12.5 | 22.9 | 1.4 |
| RA | LIVE | 3 SAW | Domestic | 11.3 | 30 | 277 | 246 | 11.1 | 356.6 | 42.8 |
| RA | LIVE | 4 SAW | Domestic | 5.4 | 30 | 404 | 360 | 10.9 | 601.1 | 62.7 |
| RA | LIVE | CULL | Cull | 5.3 | 1 | 0 | 0 | 100.0 | 0.0 | 0.0 |
| RC | LIVE | 3 SAW | Domestic | 11.0 | 38 | 345 | 321 | 6.9 | 526.0 | 55.8 |
| RC | LIVE | 4 SAW | Domestic | 5.5 | 27 | 125 | 117 | 6.6 | 205.9 | 20.3 |
| RC | LIVE | CULL | Cull | 7.6 | 7 | 1 | 0 | 100.0 | 0.0 | 0.0 |
| SF | LIVE | 2 SAW | Domestic | 16.3 | 40 | 1,743 | 1,681 | 3.6 | 1,971.6 | 292.5 |
| SF | LIVE | 3 SAW | Domestic | 9.0 | 39 | 588 | 583 | 0.8 | 873.2 | 101.5 |
| SF | LIVE | 4 SAW | Domestic | 5.7 | 21 | 81 | 80 | 1.2 | 140.1 | 13.9 |
| SF | LIVE | CULL | Cull | 7.0 | 5 | 14 | 0 | 100.0 | 0.0 | 0.0 |
| SF | LIVE | UTILITY | Pulp | 9.0 | 14 | 18 | 9 | 48.0 | 16.3 | 1.6 |
| WH | LIVE | 2 SAW | Domestic | 15.1 | 40 | 9,385 | 9,038 | 3.7 | 12,115.8 | 1,572.6 |
| WH | LIVE | 3 SAW | Domestic | 8.9 | 39 | 4,937 | 4,818 | 2.4 | 8,135.7 | 838.3 |
| WH | LIVE | 4 SAW | Domestic | 5.4 | 32 | 740 | 719 | 2.8 | 1,345.9 | 125.1 |
| WH | LIVE | CULL | Cull | 6.7 | 6 | 87 | 0 | 100.0 | 0.0 | 0.0 |
| WH | LIVE | UTILITY | Pulp | 6.6 | 13 | 165 | 158 | 4.3 | 246.6 | 27.5 |

Timber Sale Log Sort x Diameter Bin Summary

| Sp | Bin | Status | Sort | Dia | Len | BF Net | Defect % | Tons | MBF Net |
|----|---------|--------|----------|------|-----|--------|----------|---------|---------|
| DF | 5 - 7 | LIVE | Cull | 6.5 | 6 | 0 | 100.0 | 0.0 | 0.0 |
| DF | 5 - 7 | LIVE | Pulp | 6.5 | 14 | 91 | 0.0 | 129.1 | 15.8 |
| DF | 5 - 7 | LIVE | Domestic | 6.6 | 31 | 854 | 1.3 | 1,356.5 | 148.5 |
| DF | 5 - 7 | LIVE | Pole | 7.4 | 40 | 25 | 0.0 | 44.3 | 4.3 |
| DF | 8 - 11 | LIVE | Pulp | 9.1 | 15 | 30 | 0.0 | 57.0 | 5.3 |
| DF | 8 - 11 | LIVE | Cull | 9.4 | 5 | 0 | 100.0 | 0.0 | 0.0 |
| DF | 8 - 11 | LIVE | Domestic | 9.4 | 34 | 2,763 | 2.1 | 4,117.0 | 480.7 |
| DF | 8 - 11 | LIVE | Pole | 10.2 | 38 | 172 | 0.0 | 221.9 | 29.9 |
| DF | 8 - 11 | LIVE | HQ-B | 10.3 | 39 | 353 | 0.2 | 449.3 | 61.4 |
| DF | 12 - 15 | LIVE | Cull | 13.1 | 10 | 0 | 100.0 | 0.0 | 0.0 |
| DF | 12 - 15 | LIVE | Domestic | 13.7 | 40 | 4,310 | 2.1 | 5,181.5 | 750.0 |
| DF | 12 - 15 | LIVE | Pole | 14.1 | 40 | 593 | 0.0 | 720.1 | 103.2 |
| DF | 12 - 15 | LIVE | HQ-B | 14.2 | 40 | 2,006 | 1.7 | 2,388.1 | 349.0 |
| DF | 12 - 15 | LIVE | HQ-A | 14.4 | 40 | 1,248 | 3.0 | 1,494.0 | 217.1 |

| Sp | Bin | Status | Sort | Dia | Len | BF Net | Defect % | Tons | MBF Net |
|----|---------|--------|----------|------|-----|--------|----------|---------|---------|
| DF | 16 - 19 | LIVE | Pole | 17.7 | 40 | 519 | 0.0 | 548.7 | 90.4 |
| DF | 16 - 19 | LIVE | HQ-B | 17.8 | 40 | 2,038 | 5.7 | 2,304.8 | 354.6 |
| DF | 16 - 19 | LIVE | HQ-A | 18.0 | 40 | 3,136 | 1.8 | 3,355.3 | 545.7 |
| DF | 16 - 19 | LIVE | Domestic | 18.2 | 40 | 3,964 | 3.5 | 4,192.5 | 689.7 |
| DF | 16 - 19 | LIVE | Pulp | 18.5 | 16 | 38 | 25.4 | 48.6 | 6.6 |
| DF | 20+ | LIVE | HQ-A | 21.2 | 40 | 2,002 | 3.4 | 2,029.4 | 348.4 |
| DF | 20+ | LIVE | Domestic | 21.9 | 40 | 3,013 | 5.5 | 3,129.0 | 524.2 |
| DF | 20+ | LIVE | HQ-B | 22.2 | 40 | 1,175 | 4.8 | 1,199.6 | 204.4 |
| MA | 5 - 7 | LIVE | Domestic | 5.0 | 30 | 8 | 12.5 | 22.9 | 1.4 |
| RA | 5 - 7 | LIVE | Domestic | 5.1 | 30 | 309 | 11.7 | 519.8 | 53.8 |
| RA | 5 - 7 | LIVE | Cull | 5.3 | 1 | 0 | 100.0 | 0.0 | 0.0 |
| RA | 8 - 11 | LIVE | Domestic | 10.5 | 30 | 297 | 10.3 | 437.8 | 51.7 |
| RC | 5 - 7 | LIVE | Domestic | 5.4 | 27 | 128 | 6.0 | 255.7 | 22.3 |
| RC | 5 - 7 | LIVE | Cull | 7.6 | 7 | 0 | 100.0 | 0.0 | 0.0 |
| RC | 8 - 11 | LIVE | Domestic | 10.0 | 34 | 134 | 5.4 | 207.6 | 23.4 |
| RC | 12 - 15 | LIVE | Domestic | 12.4 | 40 | 42 | 3.7 | 72.7 | 7.4 |
| RC | 16 - 19 | LIVE | Domestic | 17.3 | 40 | 133 | 9.9 | 195.9 | 23.1 |
| SF | 5 - 7 | LIVE | Domestic | 6.2 | 29 | 138 | 2.2 | 241.8 | 23.9 |
| SF | 5 - 7 | LIVE | Cull | 6.7 | 4 | 0 | 100.0 | 0.0 | 0.0 |
| SF | 8 - 11 | LIVE | Pulp | 8.9 | 14 | 9 | 48.0 | 16.3 | 1.6 |
| SF | 8 - 11 | LIVE | Cull | 10.2 | 11 | 0 | 100.0 | 0.0 | 0.0 |
| SF | 8 - 11 | LIVE | Domestic | 10.2 | 37 | 526 | 0.5 | 771.6 | 91.4 |
| SF | 12 - 15 | LIVE | Domestic | 14.0 | 40 | 628 | 2.7 | 797.9 | 109.2 |
| SF | 16 - 19 | LIVE | Domestic | 17.9 | 40 | 567 | 0.3 | 630.0 | 98.6 |
| SF | 20+ | LIVE | Domestic | 22.2 | 40 | 487 | 8.1 | 543.8 | 84.7 |
| WH | 5 - 7 | LIVE | Pulp | 5.9 | 13 | 102 | 5.2 | 144.9 | 17.8 |
| WH | 5 - 7 | LIVE | Domestic | 6.1 | 35 | 1,827 | 2.4 | 3,621.7 | 317.9 |
| WH | 5 - 7 | LIVE | Cull | 6.4 | 6 | 0 | 100.0 | 0.0 | 0.0 |
| WH | 8 - 11 | LIVE | Cull | 8.6 | 7 | 0 | 100.0 | 0.0 | 0.0 |
| WH | 8 - 11 | LIVE | Pulp | 9.3 | 13 | 56 | 2.5 | 101.7 | 9.7 |
| WH | 8 - 11 | LIVE | Domestic | 10.0 | 39 | 3,710 | 2.5 | 5,859.8 | 645.5 |
| WH | 12 - 15 | LIVE | Domestic | 14.0 | 40 | 5,406 | 3.3 | 7,484.6 | 940.7 |
| WH | 16 - 19 | LIVE | Domestic | 17.8 | 40 | 2,927 | 2.8 | 3,722.4 | 509.3 |
| WH | 20+ | LIVE | Domestic | 21.1 | 40 | 705 | 9.7 | 908.9 | 122.7 |

Cruise Unit Report LUNA TIX U1

Unit Sale Notice Volume (MBF): LUNA TIX U1

| Sp | DBH | Rings/In | Age | MBF Volume by Grade | | | | | |
|-----|------|----------|-----|---------------------|-----------|-------|-------|-------|---------|
| | | | | All | Spec Mill | 2 Saw | 3 Saw | 4 Saw | Utility |
| DF | 24.5 | 8.0 | | 1,077 | 84 | 831 | 146 | 15 | 1 |
| WH | 18.0 | | | 304 | | 172 | 116 | 12 | 4 |
| SF | 33.0 | | | 14 | | 13 | 1 | | |
| RA | 15.0 | | | 5 | | | 4 | 1 | |
| RC | 15.3 | | | 4 | | | 2 | 1 | |
| MA | 14.0 | | | 1 | | | | 1 | |
| ALL | 20.8 | 8.0 | | 1,405 | 84 | 1,015 | 269 | 31 | 5 |

Unit Cruise Design: LUNA TIX U1

| Design | Cruise Acres | FMA Acres | N Plots | N Cruise Plots | N Void Plots |
|--|--------------|-----------|---------|----------------|--------------|
| B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 21.0 | 22.3 | 21 | 12 | 0 |

Unit Cruise Summary: LUNA TIX U1

| Sp | Cruised Trees | All Trees | Trees/Plot | Ring-Count Trees |
|-----|---------------|-----------|------------|------------------|
| DF | 40 | 86 | 4.1 | 1 |
| WH | 23 | 32 | 1.5 | 0 |
| SF | 1 | 1 | 0.0 | 0 |
| RA | 1 | 1 | 0.0 | 0 |
| RC | 2 | 2 | 0.1 | 0 |
| MA | 1 | 1 | 0.0 | 0 |
| ALL | 68 | 123 | 5.9 | 1 |

Unit Cruise Statistics: LUNA TIX U1

| Sp | BA (sq ft/acre) | BA CV (%) | BA SE (%) | V-BAR (bf/sq ft) | V-BAR CV (%) | V-BAR SE (%) | Net Vol (bf/acre) | Vol CV (%) | Vol SE (%) |
|----|-----------------|-----------|-----------|------------------|--------------|--------------|-------------------|------------|------------|
| DF | 222.9 | 62.2 | 13.6 | 230.0 | 16.5 | 2.6 | 51,267 | 64.4 | 13.8 |
| WH | 83.0 | 96.5 | 21.1 | 174.6 | 30.2 | 6.3 | 14,483 | 101.1 | 22.0 |
| SF | 2.6 | 458.3 | 100.0 | 255.5 | 0.0 | 0.0 | 662 | 458.3 | 100.0 |
| RA | 2.6 | 458.3 | 100.0 | 88.8 | 0.0 | 0.0 | 230 | 458.3 | 100.0 |
| RC | 5.2 | 315.8 | 68.9 | 35.8 | 35.8 | 25.3 | 186 | 317.9 | 73.4 |

| Sp | BA (sq ft/acre) | BA CV (%) | BA SE (%) | V-BAR (bf/sq ft) | V-BAR CV (%) | V-BAR SE (%) | Net Vol (bf/acre) | Vol CV (%) | Vol SE (%) |
|-----|--------------------|--------------|--------------|---------------------|-----------------|-----------------|----------------------|---------------|---------------|
| MA | 2.6 | 458.3 | 100.0 | 26.2 | 0.0 | 0.0 | 68 | 458.3 | 100.0 |
| ALL | 318.9 | 36.7 | 8.0 | 209.8 | 30.1 | 3.7 | 66,896 | 47.5 | 8.8 |

Unit Summary: LUNA TIX U1

| Sp | Status | Rx | N | D | DBH | BL | THT | BF Gross | BF Net | Defect % | TPA | BA | RD | MBF Net |
|-----|--------|-----|----|-----|------|-----|-----|-------------|-----------|-------------|-------|-------|------|------------|
| DF | LIVE | CUT | 40 | ALL | 24.5 | 114 | 146 | 53,043 | 51,267 | 3.3 | 68.1 | 222.9 | 45.0 | 1,076.6 |
| MA | LIVE | CUT | 1 | ALL | 14.0 | 31 | 36 | 78 | 68 | 12.5 | 2.4 | 2.6 | 0.7 | 1.4 |
| RA | LIVE | CUT | 1 | ALL | 15.0 | 68 | 84 | 300 | 230 | 23.2 | 2.1 | 2.6 | 0.7 | 4.8 |
| RC | LIVE | CUT | 2 | ALL | 15.3 | 27 | 32 | 217 | 186 | 14.5 | 4.1 | 5.2 | 1.3 | 3.9 |
| SF | LIVE | CUT | 1 | ALL | 33.0 | 110 | 142 | 684 | 662 | 3.1 | 0.4 | 2.6 | 0.5 | 13.9 |
| WH | LIVE | CUT | 23 | ALL | 18.0 | 83 | 105 | 15,101 | 14,483 | 4.1 | 46.9 | 83.0 | 19.6 | 304.1 |
| ALL | LIVE | CUT | 68 | ALL | 21.7 | 97 | 124 | 69,423 | 66,896 | 3.6 | 124.0 | 318.9 | 67.7 | 1,404.8 |
| ALL | ALL | CUT | 68 | ALL | 21.7 | 97 | 124 | 69,423 | 66,896 | 3.6 | 124.0 | 318.9 | 67.7 | 1,404.8 |

Cruise Unit Report LUNA TIX U2

Unit Sale Notice Volume (MBF): LUNA TIX U2

| Sp | DBH | Rings/In | Age | MBF Volume by Grade | | | | | | |
|-----|------|----------|-----|---------------------|--------|-----------|-------|-------|-------|---------|
| | | | | All | Peeler | Spec Mill | 2 Saw | 3 Saw | 4 Saw | Utility |
| DF | 24.5 | 9.0 | | 2,041 | 43 | 328 | 1,371 | 253 | 28 | 18 |
| WH | 17.6 | | | 1,227 | | | 760 | 377 | 74 | 16 |
| SF | 18.3 | | | 78 | | | 54 | 20 | 3 | 0 |
| RA | 10.9 | | | 38 | | | | 8 | 30 | |
| RC | 15.9 | | | 36 | | | | 23 | 13 | |
| ALL | 18.8 | 9.0 | | 3,421 | 43 | 328 | 2,185 | 681 | 149 | 34 |

Unit Cruise Design: LUNA TIX U2

| Design | Cruise Acres | FMA Acres | N Plots | N Cruise Plots | N Void Plots |
|--|--------------|-----------|---------|----------------|--------------|
| B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 82.0 | 101.8 | 90 | 30 | 1 |

Unit Cruise Summary: LUNA TIX U2

| Sp | Cruised Trees | All Trees | Trees/Plot | Ring-Count Trees |
|-----|---------------|-----------|------------|------------------|
| DF | 76 | 200 | 2.2 | 2 |
| WH | 59 | 157 | 1.7 | 0 |
| SF | 7 | 10 | 0.1 | 0 |
| RA | 9 | 11 | 0.1 | 0 |
| RC | 12 | 13 | 0.1 | 0 |
| ALL | 163 | 391 | 4.3 | 2 |

Unit Cruise Statistics: LUNA TIX U2

| Sp | BA (sq ft/acre) | BA CV (%) | BA SE (%) | V-BAR (bf/sq ft) | V-BAR CV (%) | V-BAR SE (%) | Net Vol (bf/acre) | Vol CV (%) | Vol SE (%) |
|-----|-----------------|-----------|-----------|------------------|--------------|--------------|-------------------|------------|------------|
| DF | 121.0 | 80.0 | 8.4 | 205.7 | 20.2 | 2.3 | 24,889 | 82.6 | 8.7 |
| WH | 95.0 | 81.3 | 8.6 | 157.6 | 21.3 | 2.8 | 14,968 | 84.1 | 9.0 |
| SF | 6.0 | 368.1 | 38.8 | 157.8 | 26.3 | 9.9 | 955 | 369.0 | 40.1 |
| RA | 6.7 | 296.1 | 31.2 | 69.9 | 37.0 | 12.3 | 465 | 298.4 | 33.6 |
| RC | 7.9 | 320.9 | 33.8 | 55.8 | 47.4 | 13.7 | 439 | 324.4 | 36.5 |
| ALL | 236.5 | 35.2 | 3.7 | 176.4 | 33.7 | 2.6 | 41,716 | 48.7 | 4.6 |

Unit Summary: LUNA TIX U2

| Sp | Status | Rx | N | D | DBH | BL | THT | BF Gross | BF Net | Defect % | TPA | BA | RD | MBF Net |
|-----|--------|-----|-----|-----|------|-----|-----|-------------|-----------|-------------|-------|-------|------|------------|
| DF | LIVE | CUT | 76 | ALL | 24.1 | 101 | 130 | 25,924 | 24,889 | 4.0 | 38.2 | 121.0 | 24.6 | 2,040.9 |
| RA | LIVE | CUT | 9 | ALL | 10.9 | 37 | 52 | 542 | 465 | 14.2 | 10.3 | 6.7 | 2.0 | 38.1 |
| RC | LIVE | CUT | 12 | ALL | 15.9 | 40 | 49 | 467 | 439 | 6.0 | 5.7 | 7.9 | 2.0 | 36.0 |
| SF | LIVE | CUT | 7 | ALL | 18.3 | 73 | 96 | 985 | 955 | 3.1 | 3.3 | 6.0 | 1.4 | 78.3 |
| WH | LIVE | CUT | 59 | ALL | 17.6 | 72 | 92 | 15,516 | 14,968 | 3.5 | 56.2 | 95.0 | 22.6 | 1,227.4 |
| ALL | LIVE | CUT | 163 | ALL | 19.5 | 77 | 99 | 43,434 | 41,716 | 4.0 | 113.7 | 236.5 | 52.7 | 3,420.7 |
| ALL | ALL | CUT | 163 | ALL | 19.5 | 77 | 99 | 43,434 | 41,716 | 4.0 | 113.7 | 236.5 | 52.7 | 3,420.7 |

DRAFT

Cruise Unit Report LUNA TIX U3

Unit Sale Notice Volume (MBF): LUNA TIX U3

| Sp | DBH | Rings/In | Age | MBF Volume by Grade | | | | | | |
|-----|------|----------|-----|---------------------|--------|-----------|-------|-------|-------|---------|
| | | | | All | Peeler | Spec Mill | 2 Saw | 3 Saw | 4 Saw | Utility |
| DF | 23.4 | 8.0 | | 1,812 | 21 | 397 | 1,102 | 232 | 50 | 9 |
| WH | 19.2 | | | 1,032 | | | 641 | 346 | 39 | 7 |
| SF | 23.1 | | | 317 | | | 225 | 81 | 10 | 1 |
| RA | 11.7 | | | 63 | | | | 31 | 31 | |
| RC | 17.0 | | | 36 | | | | 30 | 6 | |
| ALL | 19.5 | 8.0 | | 3,260 | 21 | 397 | 1,968 | 720 | 137 | 17 |

Unit Cruise Design: LUNA TIX U3

| Design | Cruise Acres | FMA Acres | N Plots | N Cruise Plots | N Void Plots |
|--|--------------|-----------|---------|----------------|--------------|
| B1C: VR, 1 BAF (54.44) Measure/Count Plots, Sighting Ht = 4.5 ft | 71.0 | 76.3 | 72 | 27 | 0 |

Unit Cruise Summary: LUNA TIX U3

| Sp | Cruised Trees | All Trees | Trees/Plot | Ring-Count Trees |
|-----|---------------|-----------|------------|------------------|
| DF | 67 | 168 | 2.3 | 1 |
| WH | 45 | 125 | 1.7 | 0 |
| SF | 9 | 35 | 0.5 | 0 |
| RA | 11 | 13 | 0.2 | 0 |
| RC | 5 | 8 | 0.1 | 0 |
| ALL | 137 | 349 | 4.8 | 1 |

Unit Cruise Statistics: LUNA TIX U3

| Sp | BA (sq ft/acre) | BA CV (%) | BA SE (%) | V-BAR (bf/sq ft) | V-BAR CV (%) | V-BAR SE (%) | Net Vol (bf/acre) | Vol CV (%) | Vol SE (%) |
|-----|-----------------|-----------|-----------|------------------|--------------|--------------|-------------------|------------|------------|
| DF | 127.0 | 82.6 | 9.7 | 200.9 | 15.9 | 1.9 | 25,518 | 84.2 | 9.9 |
| WH | 94.5 | 92.2 | 10.9 | 153.8 | 24.7 | 3.7 | 14,536 | 95.5 | 11.5 |
| SF | 26.5 | 276.2 | 32.5 | 168.9 | 18.6 | 6.2 | 4,469 | 276.8 | 33.1 |
| RA | 9.8 | 494.7 | 58.3 | 89.6 | 22.5 | 6.8 | 881 | 495.2 | 58.7 |
| RC | 6.0 | 284.8 | 33.6 | 84.4 | 31.0 | 13.9 | 511 | 286.5 | 36.3 |
| ALL | 263.9 | 38.7 | 4.6 | 174.0 | 28.3 | 2.4 | 45,914 | 47.9 | 5.2 |

Unit Summary: LUNA TIX U3

| Sp | Status | Rx | N | D | DBH | BL | THT | BF Gross | BF Net | Defect % | TPA | BA | RD | MBF Net |
|-----|--------|-----|-----|-----|------|----|-----|-------------|-----------|-------------|-------|-------|------|------------|
| DF | LIVE | CUT | 67 | ALL | 23.4 | 95 | 124 | 26,190 | 25,518 | 2.6 | 42.5 | 127.0 | 26.3 | 1,811.8 |
| RA | LIVE | CUT | 11 | ALL | 11.7 | 42 | 60 | 956 | 881 | 7.8 | 13.2 | 9.8 | 2.9 | 62.5 |
| RC | LIVE | CUT | 5 | ALL | 17.0 | 44 | 55 | 550 | 511 | 7.1 | 3.8 | 6.0 | 1.5 | 36.3 |
| SF | LIVE | CUT | 9 | ALL | 23.1 | 86 | 110 | 4,649 | 4,469 | 3.9 | 9.1 | 26.5 | 5.5 | 317.3 |
| WH | LIVE | CUT | 45 | ALL | 19.3 | 78 | 98 | 15,144 | 14,536 | 4.0 | 46.5 | 94.5 | 21.5 | 1,032.0 |
| ALL | LIVE | CUT | 137 | ALL | 20.5 | 80 | 103 | 47,489 | 45,914 | 3.3 | 115.1 | 263.9 | 57.6 | 3,259.9 |
| ALL | ALL | CUT | 137 | ALL | 20.5 | 80 | 103 | 47,489 | 45,914 | 3.3 | 115.1 | 263.9 | 57.6 | 3,259.9 |

DRAFT

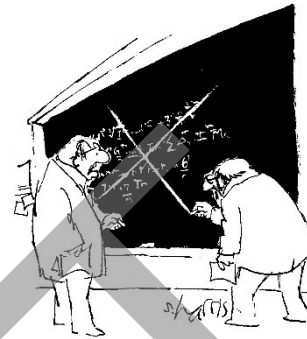
FPHP NEEDED (Y/N) N

Is abandonment of existing road required? (Y/N) Y

PACIFIC CASCADE REGION - ENGINEERING

ROAD PLAN PEER REVIEW CHECKLIST

PROJECT: LUNA TIX



This project has been reviewed for the following:

Initials:

- BW* **CONTRACT CLAUSES** – Selection of proper clauses. Clauses adequately describe desired work. Clauses do not conflict with maps, details, pit plans, etc. Punctuation, syntax, grammar and organization is correct.
- BW* **TYPICAL SECTION SHEET, ROCK LIST, & CULVERT LIST** – Sheets match clauses and maps. Requirements and quantities make sense. Rock List adds up correctly.
- BW* **MAPS** – All roads listed in Section 1 are shown on maps. Maps identify locations of all culverts, landings, waste areas, endhaul/overhaul areas, etc. Legend, north arrow and scale are shown. Line types are easy to identify. Map is at a legible scale.
- BW* **DETAIL SHEETS** – All detail sheets referred to in the clauses are included. Detail sheets have been edited as necessary.
- BW* **PIT PLANS** – Selection of proper clauses. Map clearly shows all areas of development, wasting, stockpiling, reclamation, etc. Development plan appears logical for long term use of pit. Development plan allows for safe operation in the pit.
- BW* **ROAD COST SPREADSHEET** –All cost elements captured. Material costs used are current. Summary cells are adding correctly. No conflicts exist between pages. Stationing, culverts and rock volume match the road plan.
- BW* **EXCISE TAX SHEET** – Totals match road plan.
- BW* **LOGGING PLAN** – Plan matches road plan clauses and maps.

I certify that I have reviewed this project for the elements initialed above and have found that it meets or exceeds Department and Regional Standards to the best of my knowledge.

RICH WALLMOW

Originator of Project

01/30/2024

Date

Brett Wallachy
Peer Reviewer

02/15/2024

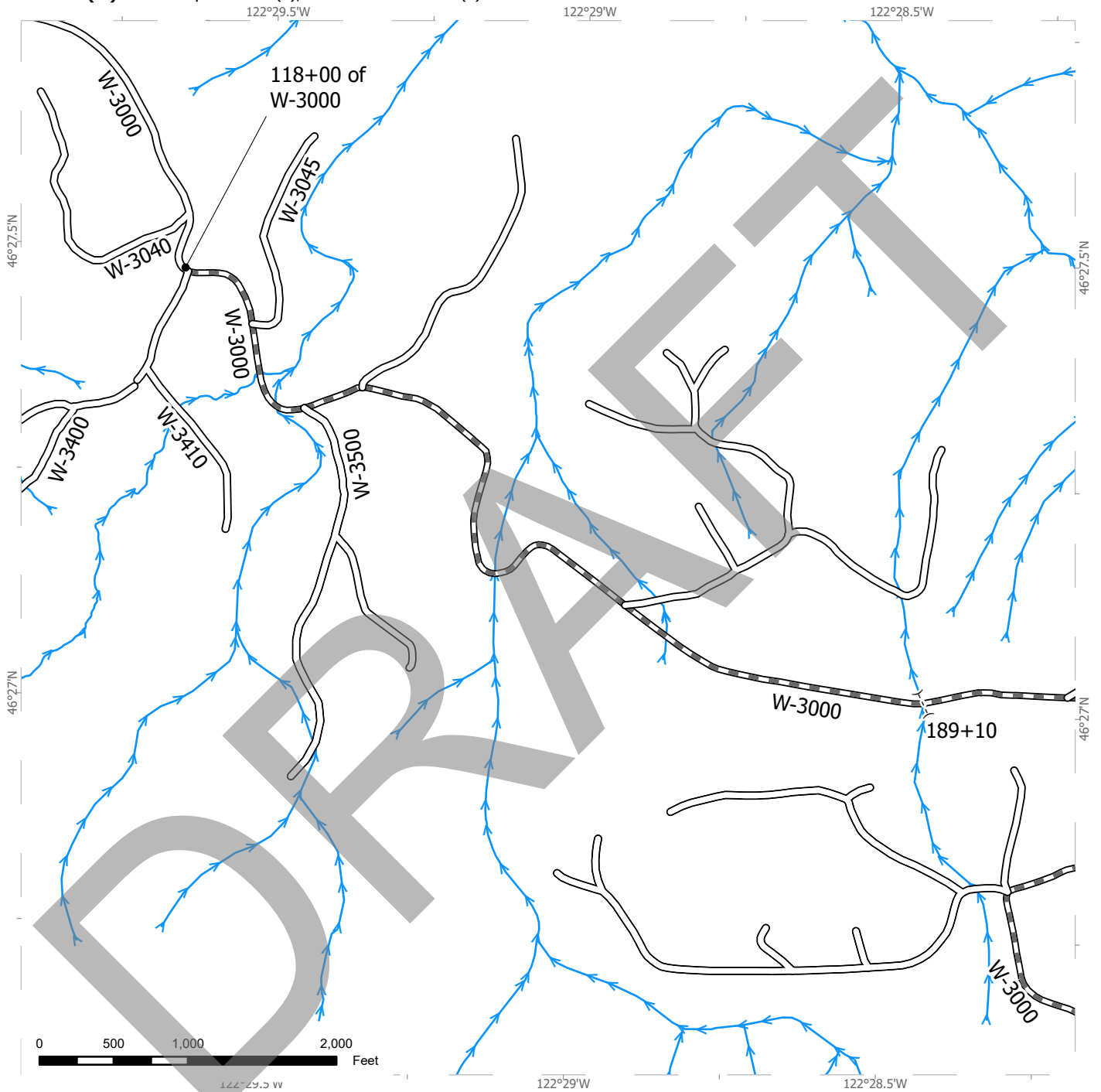
Date

Comments:

ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



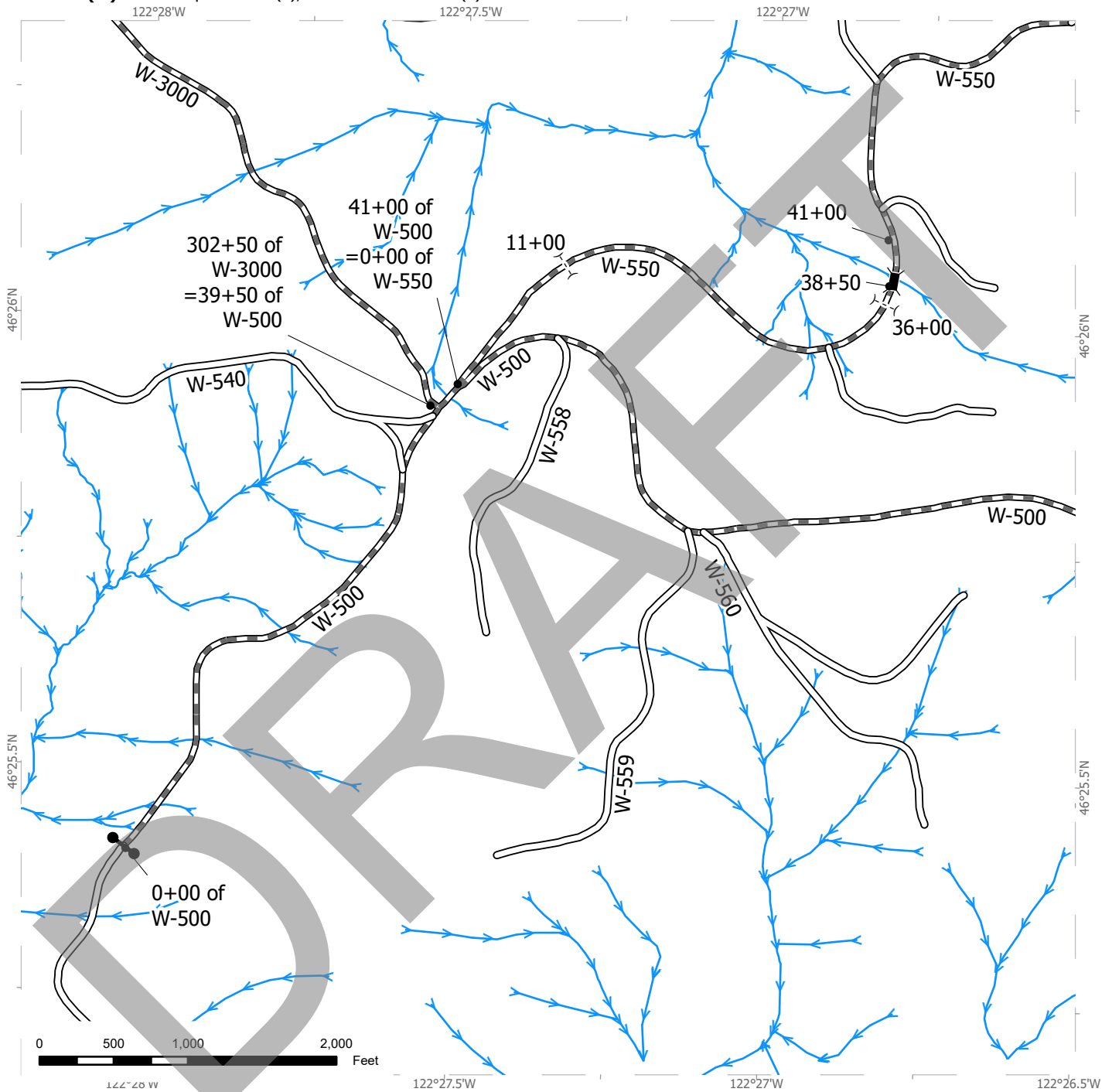
| | | |
|-------------------------------|---------------------|---------|
| Existing Roads | Cross-drain Culvert | Streams |
| Required Pre-Haul Maintenance | | |



ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT#: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



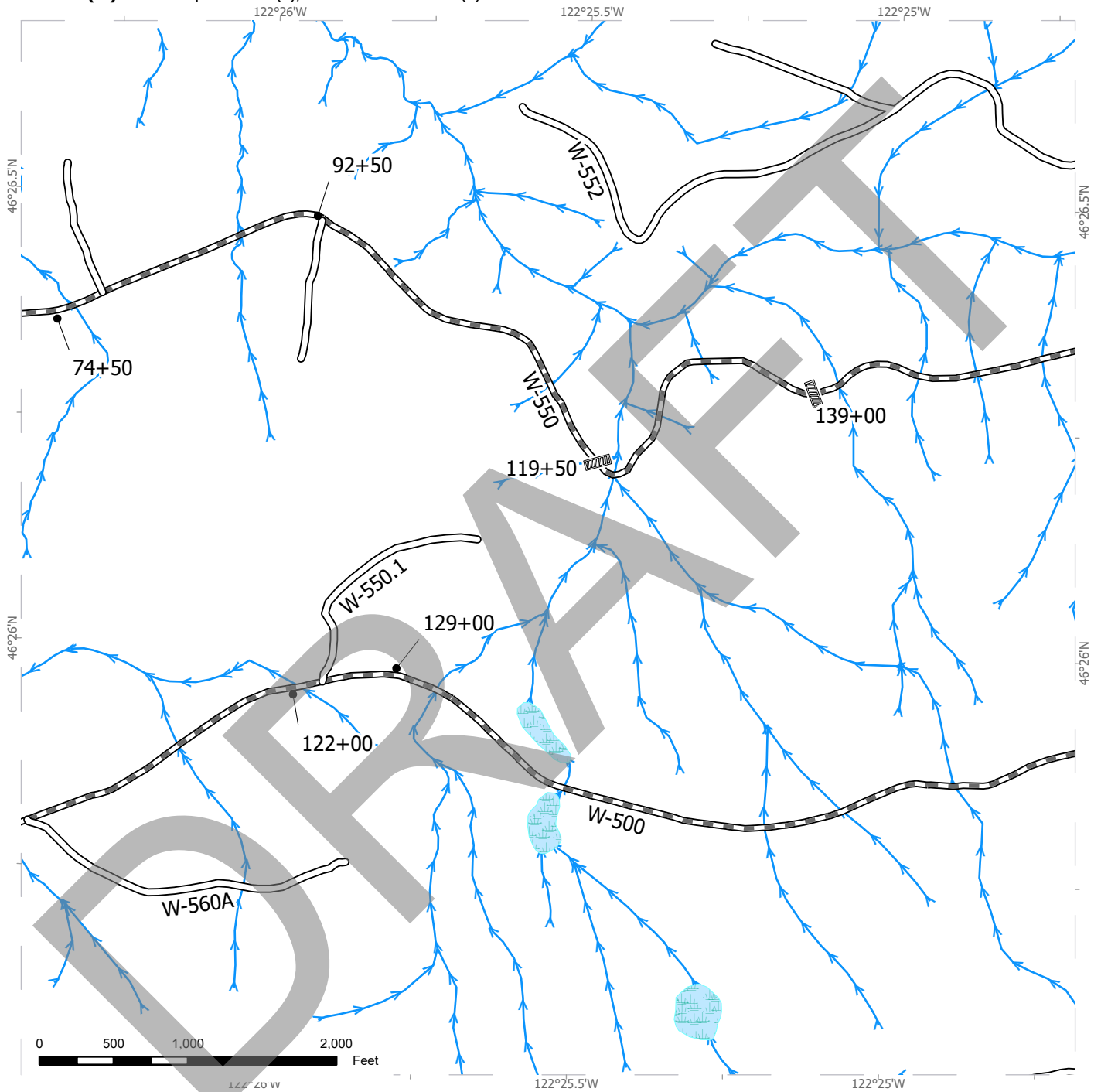
| | | |
|-------------------------------|---------------------|----------------|
| Existing Roads | Cross-drain Culvert | Streams |
| Required Pre-Haul Maintenance | Bridge | Gate (PCP 1-1) |







ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567

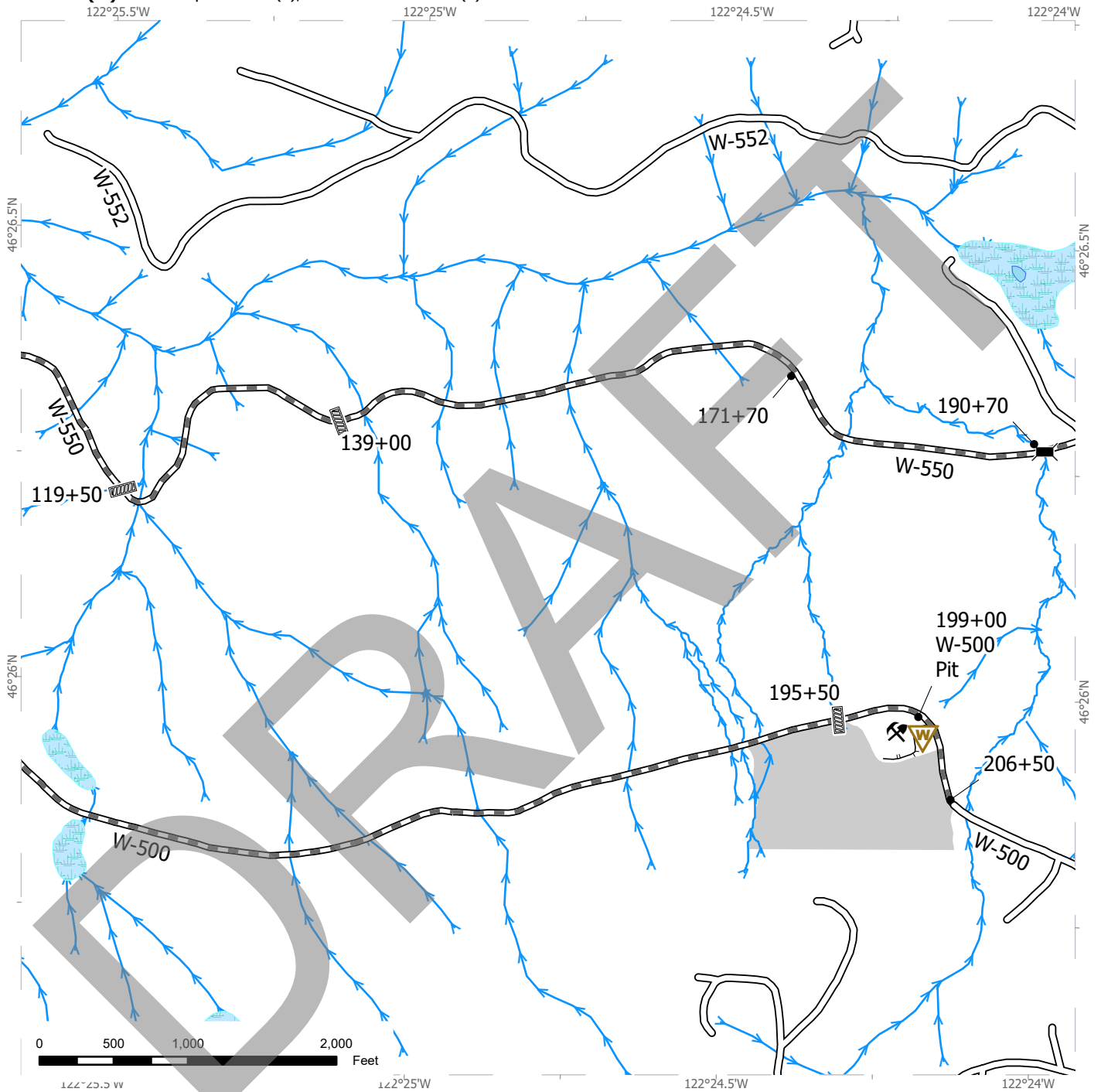


| | | |
|---|---|---|
|  Existing Roads |  Culvert |  Streams |
|  Required Pre-Haul Maintenance | | |

ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



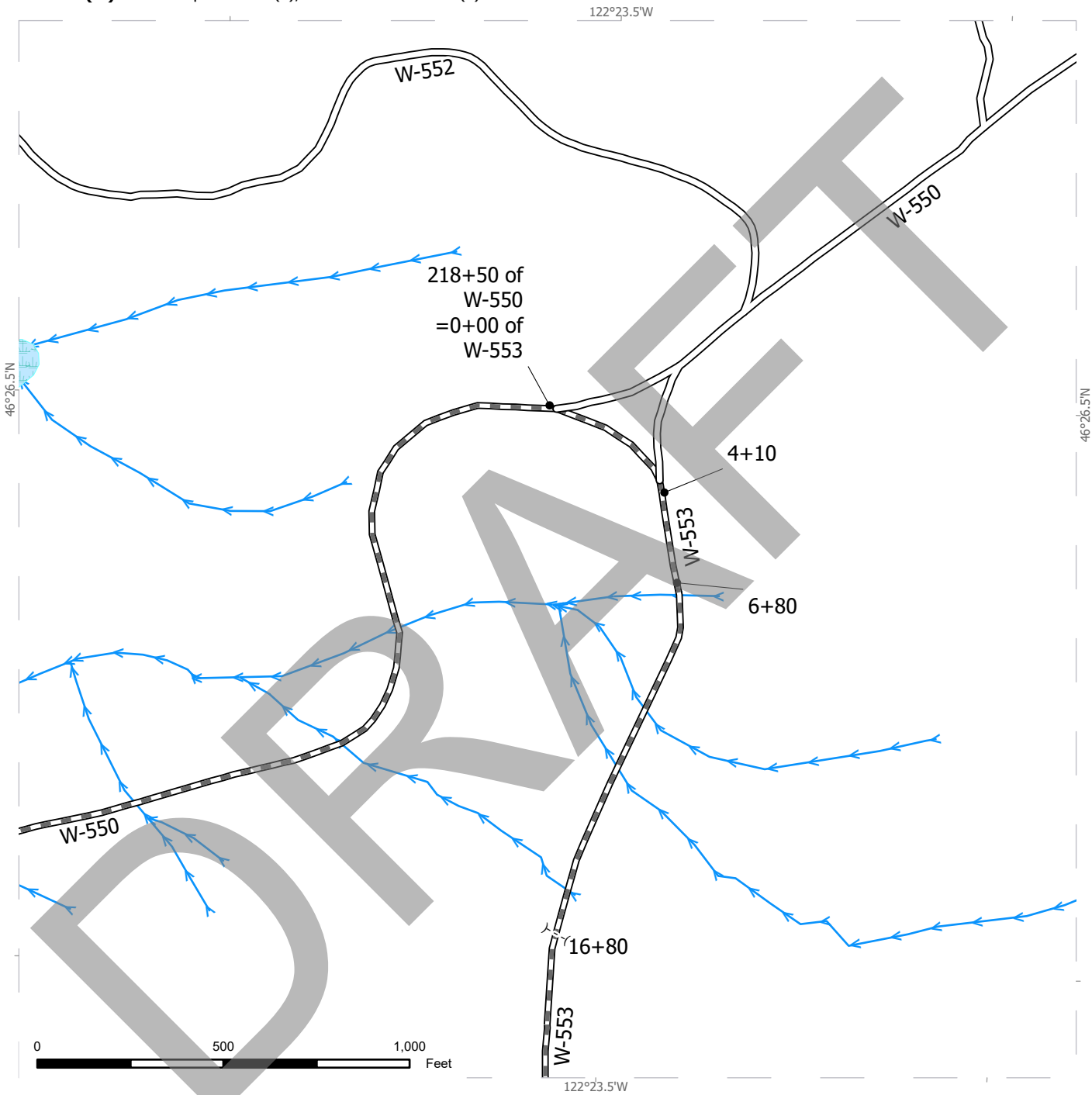
| | | |
|-------------------------------|------------|--------------|
| Existing Roads | Bridge | Harvest Unit |
| Required Pre-Haul Maintenance | Culvert | Streams |
| Designated Skid Trail | Rock Pit | |
| | Waste Area | |



ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



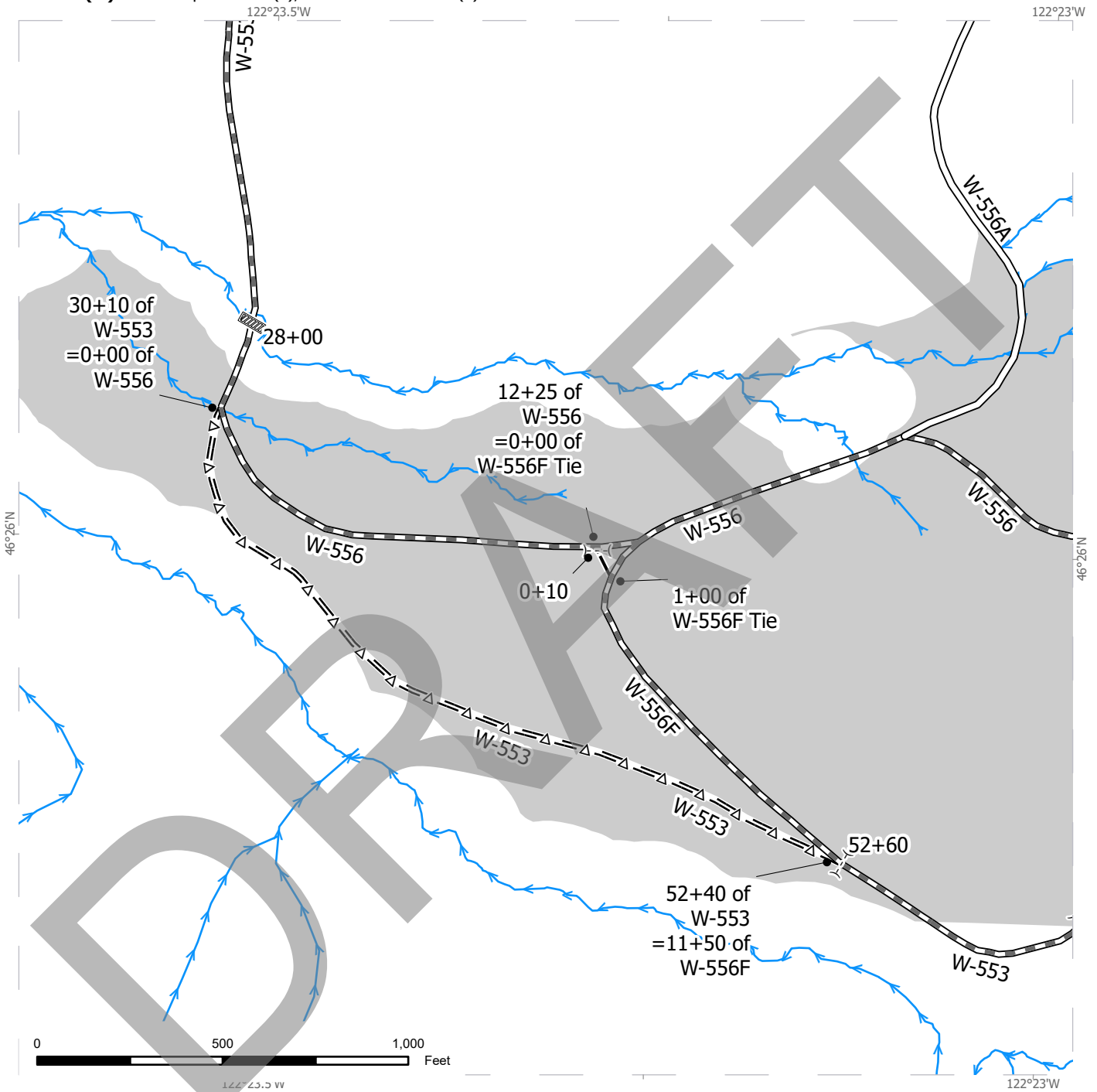
| | | |
|-------------------------------|---------------------|---------|
| Existing Roads | Cross-drain Culvert | Streams |
| Required Pre-Haul Maintenance | | |



ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



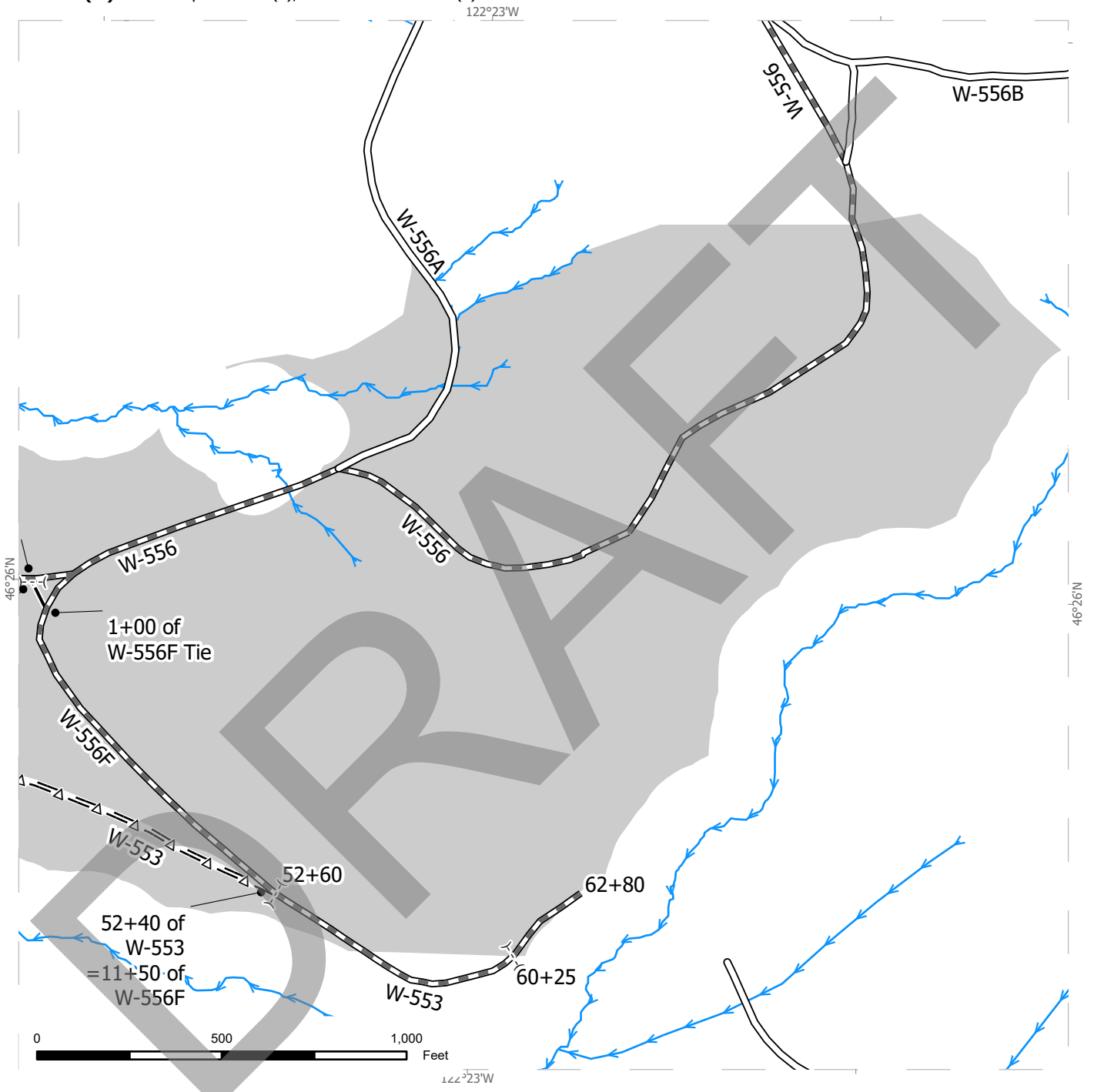
| | | |
|-------------------------------|---------------------|--------------|
| Existing Roads | Cross-drain Culvert | Harvest Unit |
| Required Pre-Haul Maintenance | Culvert | Streams |
| Optional Pre-Haul Maintenance | | |
| Optional Construction | | |



ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

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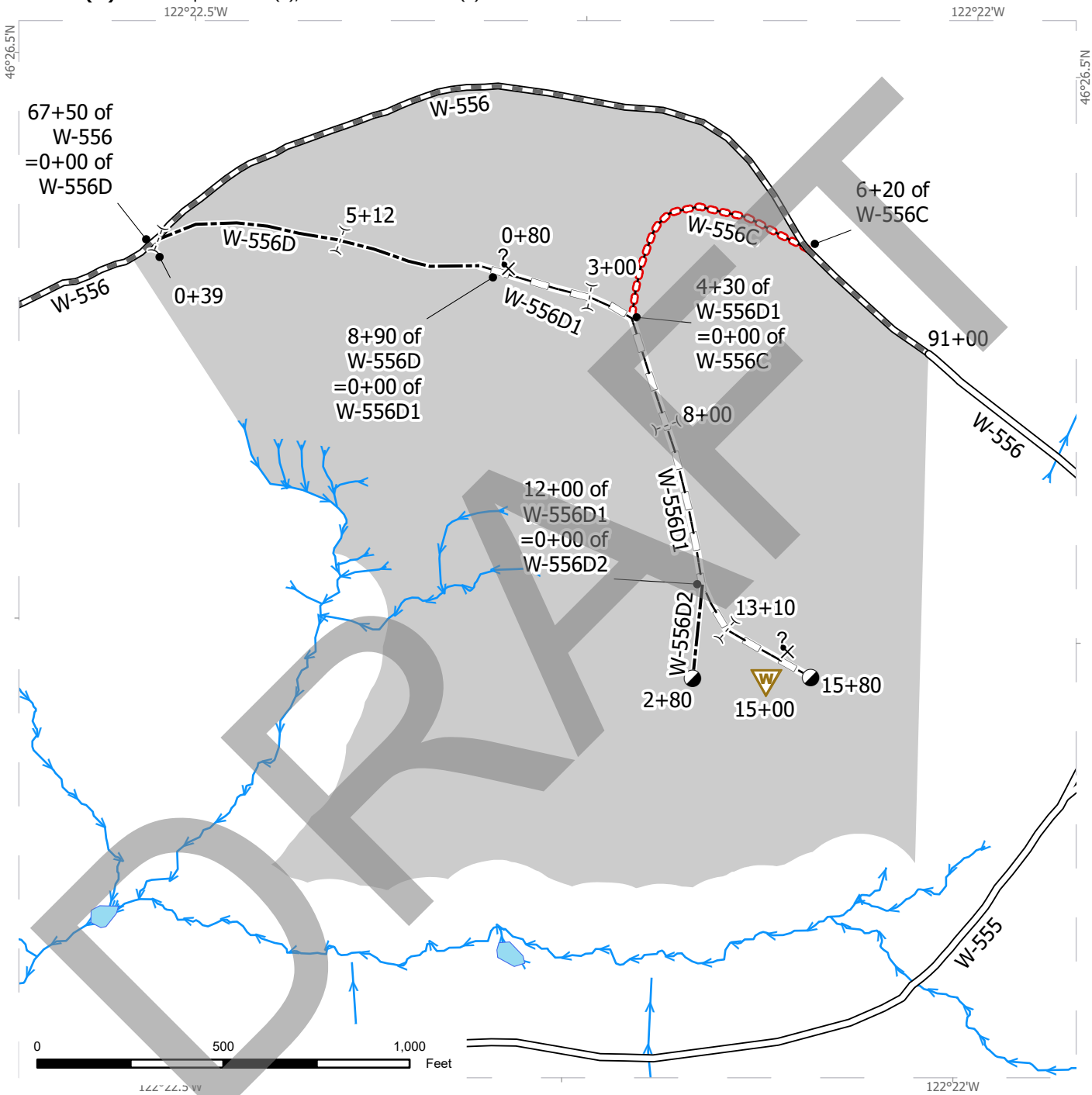
| | | |
|-------------------------------|---------------------|--------------|
| Existing Roads | Cross-drain Culvert | Harvest Unit |
| Required Pre-Haul Maintenance | Streams | |
| Optional Pre-Haul Maintenance | | |
| Optional Construction | | |



ROAD PLAN MAP

SALE NAME: LUNA TIX
AGREEMENT #: 30-106422
TOWNSHIP(S): T11R3E
TRUST(S): Capitol Grant (7), State Forest Transfer (1)

REGION: Pacific Cascade Region
COUNTY(S): Lewis
ELEVATION RGE: 2040-2567



| | | |
|-------------------------------|-----------------------|--------------|
| Existing Roads | Cross-drain Culvert | Harvest Unit |
| Required Pre-Haul Maintenance | Potential Rock Source | Streams |
| Optional Construction | Designated Landing | |
| Optional Reconstruction | Waste Area | |
| Required Abandonment | | |

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

LUNA TIX TIMBER SALE ROAD PLAN
LEWIS COUNTY
LEWIS DISTRICT
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-106422

STAFF ENGINEER: RICH WALLMOW

DRAWN & COMPILED BY: ALICIA COMPTON

SECTION 0 – SCOPE OF PROJECT

0-1 ROAD PLAN SCOPE

Clauses in this road plan apply to all road related work, including landings and rock source development, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

| <u>Road</u> | <u>Stations</u> | <u>Type</u> |
|-------------|------------------|----------------------|
| W-3000 | 118+00 to 302+50 | Pre-haul Maintenance |
| W-500 | 0+00 to 206+50 | Pre-haul Maintenance |
| W-550 | 0+00 to 218+50 | Pre-haul Maintenance |
| W-553 | 0+00 to 30+10 | Pre-haul Maintenance |
| | 30+10 to 52+40 | Abandonment |
| | 52+40 to 62+80 | Pre-haul Maintenance |
| W-556 | 0+00 to 91+00 | Pre-haul Maintenance |
| W-556F Tie | 0+00 to 1+00 | Construction |
| W-556F | 0+00 to 11+50 | Pre-haul Maintenance |
| W-556C | 0+00 to 6+20 | Abandonment |

0-3 OPTIONAL ROADS

The specified work on the following roads is not required. Any optional roads built by the Purchaser must meet all the specifications in the road plan.

| <u>Road</u> | <u>Stations</u> | <u>Type</u> |
|-------------|-----------------|----------------------|
| W-553 | 30+10 to 52+40 | Pre-haul Maintenance |
| W-556D | 0+00 to 8+90 | Construction |
| W-556D1 | 0+00 to 15+80 | Reconstruction |
| W-556D2 | 0+00 to 2+80 | Construction |

0-4 CONSTRUCTION

Construction includes, but is not limited to: clearing; grubbing; right-of-way debris disposal; excavation and/or embankment to subgrade; compaction of subgrade and embankment; landing construction; acquisition and installation of drainage structures; manufacture and application of rock.

0-5 RECONSTRUCTION

This project includes, but is not limited to the following reconstruction requirements:

| <u>Road</u> | <u>Stations</u> | <u>Requirements</u> |
|-------------|-----------------|--|
| W-556D1 | 0+00 to 15+80 | Clear and grub, widen road in accordance with TYPICAL SECTION SHEET and install culverts. Rock exploration. Grade, shape and compact prior to rock application; apply rock as shown on the ROCK LIST; grade, shape and compact the applied rock. |

0-6 PRE-HAUL MAINTENANCE

This project includes, but is not limited to the following pre-haul maintenance requirements:

| <u>Road</u> | <u>Stations</u> | <u>Requirements</u> |
|-------------|------------------|--|
| W-3000 | 118+00 to 302+50 | Install culverts. Grade and shape existing road surface prior to application of rock; apply rock in accordance with the ROCK LIST; grade, shape and compact after rock application. |
| W-500 | 0+00 to 206+50 | |
| W-550 | 0+00 to 218+50 | |
| W-553 | 0+00 to 62+80 | Brush in accordance with Clause 3-1. Clean ditches and culverts. Install culverts. Grade and shape existing road surface prior to application of rock; apply rock in accordance with the ROCK LIST; grade, shape and compact after rock application. |

0-6 PRE-HAUL MAINTENANCE CONTINUED

| <u>Road</u> | <u>Stations</u> | <u>Requirements</u> |
|-------------|-----------------|---|
| W-556 | 0+00 to 91+00 | Clean ditches in accordance with Clause 2-7. Clean culverts in accordance with 2-6. Spot grade, shape, and compact existing road. |
| W-556F | 0+00 to 11+50 | Brush, clean ditches and culverts. Spot grade, shape, existing road prior to application of rock; apply rock in accordance with the ROCK LIST; grade, shape and compact after rock application. |

0-7 POST-HAUL MAINTENANCE

This project includes post-haul road maintenance listed in Clause 9-5 POST-HAUL MAINTENANCE.

0-10 ABANDONMENT

This project includes abandonment listed in Clause 9-21 ROAD ABANDONMENT.

0-12 DEVELOP ROCK SOURCE

Purchaser may develop a new and/or an existing rock source. Rock source development will involve clearing, grubbing, stripping, drilling, shooting, and manufacturing rock. Work for developing rock sources is listed in Section 6 ROCK AND SURFACING.

SECTION 1 – GENERAL

1-1 ROAD PLAN CHANGES

If the Purchaser desires a change from this road plan including, but not limited to, relocation, extension, change in design, or adding roads; a revised road plan must be submitted in writing to the Contract Administrator for consideration. Before work begins, Purchaser shall obtain approval from the State for the submitted plan.

1-2 UNFORESEEN CONDITIONS

Quantities established in this road plan are minimum acceptable values. Additional quantities required by the state due to unforeseen conditions, or Purchaser's choice of construction season or techniques will be at the Purchaser's expense. Unforeseen conditions include, but are not limited to, solid subsurface rock, subsurface springs, saturated ground, and unstable soils.

1-3 ROAD DIMENSIONS

Purchaser shall perform road work in accordance with the dimensions shown on the TYPICAL SECTION SHEET and the specifications within this road plan, unless controlled by construction stakes or design data (plan, profile, and cross-sections).

1-4 ROAD TOLERANCES

Purchaser shall perform road work within the tolerances listed below. The tolerance class for each road is listed on the TYPICAL SECTION SHEET.

| <u>Tolerance Class</u> | <u>A</u> | <u>B</u> | <u>C</u> |
|-------------------------------------|----------|----------|----------|
| Road and Subgrade Width (feet) | +1.5 | +1.5 | +2.0 |
| Subgrade Elevation (feet +/-) | 0.5 | 1.0 | 2.0 |
| Centerline alignment (feet lt./rt.) | 1.0 | 1.5 | 3.0 |

1-6 ORDER OF PRECEDENCE

Any conflict or inconsistency in the road plan will be resolved by giving the documents precedence in the following order:

1. Addenda.
2. Designs or Plans. On designs and plans, figured dimensions shall take precedence over scaled dimensions.
3. Road Plan Clauses.
4. Typical Section Sheet.
5. Standard Lists.
6. Standard Details.
7. Road Plan maps.

In case of any ambiguity or dispute over interpreting the road plan, the Contract Administrator’s or designee’s decision will be final.

1-8 REPAIR OR REPLACEMENT OF DAMAGED MATERIALS

Purchaser shall repair or replace all materials, roadway infrastructure, and road components damaged during road work or operation activities. The Contract Administrator will direct repairs and replacements. Repairs to structural materials must be made in accordance with the manufacturer’s recommendation and may not begin without written approval from the Contract Administrator.

1-9 DAMAGED METALLIC COATING

Any cut ends, or damaged galvanized or aluminized coating on existing or new bridge components, culverts, downspouts, and flumes must be cleaned and treated with a minimum of two coats of zinc rich paint or cold galvanizing compound.

1-15 ROAD MARKING

Purchaser shall perform road work in accordance with the state’s marked location. All road work is marked as follows:

- Centerline construction stakes, orange paint and orange flagging for new construction and RP’s.
- Orange painted trees, flagging for construction and reconstruction.
- Orange painted trees or construction stakes for pre-haul maintenance.

1-18 REFERENCE POINT DAMAGE

Purchaser shall reset reference points (RPs) that were moved or damaged at any time during construction to their original locations. Excavation and embankment may not proceed on road segments controlled by said RPs until Purchaser resets all moved or damaged RPs.

1-21 HAUL APPROVAL

Purchaser shall not use roads under this road plan for timber hauling, other than timber cut on the right-of-way, without written approval from the Contract Administrator.

1-22 WORK NOTIFICATIONS

Purchaser shall notify the Contract Administrator a minimum of 3 business days before work begins.

1-23 ROAD WORK PHASE APPROVAL

Purchaser shall obtain written approval from the Contract Administrator upon completion of each of the following phases of road work:

- Subgrade construction, subgrade compaction and drainage installation
- Rock application and compaction
- Rock Pit Completion
- Abandonment
- Final Road Maintenance

1-25 ACTIVITY TIMING RESTRICTION

The specified activities are not allowed during the listed closure period unless authorized in writing by the Contract Administrator.

| <u>Road</u> | <u>Activity</u> | <u>Closure Period</u> |
|-------------|---|-----------------------|
| All Roads | Construction, Reconstruction, Pre-haul Maintenance, Abandonment | October 1 to April 30 |

1-26 OPERATING DURING CLOSURE PERIOD

If permission is granted to operate during a closure period listed in Clause 1-25 ACTIVITY TIMING RESTRICTION, Purchaser shall provide a maintenance plan to include further protection of state resources. Purchaser shall obtain written approval from the Contract Administrator for the maintenance plan and shall put preventative measures in place before operating during the closure period. Purchaser is required to maintain all haul roads at their own expense.

1-29 SEDIMENT RESTRICTION

Purchaser shall not allow silt-bearing runoff to enter any streams.

1-30 CLOSURE TO PREVENT DAMAGE

In accordance with Contract Clause G-220 STATE SUSPENDS OPERATION, the Contract Administrator will suspend road work or hauling right-of-way timber, forest products, or rock under the following conditions:

- Wheel track rutting exceeds 6 inches on pit run, jaw run, or native surface roads.
- Wheel track rutting exceeds 2 inches on crushed rock roads.
- Surface or base stability problems persist.
- When, in the opinion of the Contract Administrator excessive road damage or rutting may occur.

Operations must stop unless authority to continue working or hauling is granted in writing by the Contract Administrator. In the event that surface or base stability problems persist, Purchaser shall cease operations, or perform corrective maintenance or repairs, subject to specifications within this road plan. Before and during any suspension, Purchaser shall protect the work from damage or deterioration.

1-32 BRIDGE SURFACE RESTRICTION

The use of metal tracked equipment is not allowed on bridge surfaces at any time. If Purchaser must run equipment on bridge surfaces, then rubber tired equipment or other methods, approved in writing by Contract Administrator, must be used.

If tracked equipment is used on bridge surfaces, Purchaser shall immediately cease all operations. Purchaser shall remove any dirt, rock, or other material tracked or spilled on the bridge surface(s) and have surface(s) evaluated by the Engineer or their designee for any damage caused by transporting equipment. Any damage to the surface(s) will be repaired, at the Purchaser's expense, as directed by the Contract Administrator.

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contract Administrator upon request. If damage occurs while plowing, further permission to plow may be revoked by the Contract Administrator.

1-40 ROAD APPROACHES TO COUNTY ROADS AND STATE HIGHWAYS

Purchaser shall immediately remove any mud, dirt, rock, or other material tracked or spilled on to county roads and state highways.

If additional damage to the surface, signs, guardrails, etc. occurs then the damage will be repaired, at the Purchaser's expense, as directed by the Contract Administrator when authorized by the county or WSDOT.

SECTION 2 – MAINTENANCE

2-1 GENERAL ROAD MAINTENANCE

Purchaser shall maintain all roads used under this contract in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS for the entire term of this contract. Maintenance is required even during periods of inactivity.

2-2 ROAD MAINTENANCE – PURCHASER MAINTENANCE

Purchaser shall perform maintenance on roads listed in Contract Clause C-050 PURCHASER ROAD MAINTENANCE AND REPAIR in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-3 ROAD MAINTENANCE – DESIGNATED MAINTAINER

Purchaser may be required to perform maintenance on roads listed in Contract Clause C-060 DESIGNATED ROAD MAINTAINER as directed by the Contract Administrator. Purchaser shall maintain roads in accordance with FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

2-4 PASSAGE OF LIGHT VEHICLES

Purchaser shall maintain all roads in a condition that will allow the passage of light administrative vehicles.

2-5 MAINTENANCE GRADING – EXISTING ROAD

On the following roads, Purchaser shall use a grader to shape the existing surface before rock application.

| <u>Road</u> | <u>Stations</u> | <u>Requirements</u> |
|-------------|------------------|---------------------|
| W-3000 | 118+00 to 302+50 | Grade and shape |
| W-500 | 0+00 to 206+50 | Grade and shape |
| W-550 | 0+00 to 218+50 | Grade and shape |
| W-553 | 0+00 to 62+80 | Grade and shape |
| W-556 | 0+00 to 91+00 | Grade and shape |
| W-556F | 0+00 to 11+50 | Grade and shape |

2-6 CLEANING CULVERTS

On the following road(s), Purchaser shall clean the inlets and outlets of all culverts before timber haul.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-553 | 0+00 to 62+80 |
| W-556 | 49+00 to 91+00 |
| W-556F | 0+00 to 11+50 |

2-7 CLEANING DITCHES, HEADWALLS, AND CATCH BASINS

On the following roads, Purchaser shall clean ditches, headwalls, and catchbasins. Work must be completed before grading and rocking and must be done in accordance with the TYPICAL SECTION SHEET. Pulling ditch material across the road or mixing in with the road surface is not allowed.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-553 | 0+00 to 62+80 |
| W-556 | 49+00 to 91+00 |
| W-556F | 0+00 to 11+50 |

SECTION 3 – CLEARING, GRUBBING, AND DISPOSAL

3-1 BRUSHING

On the following roads, Purchaser shall cut vegetative material up to 3 inches in diameter, including limbs, as shown on the ROADSIDE BRUSHING DETAIL. Brushing must be achieved by mechanical cutting of brush, trees, and branches. Root systems and stumps of cut vegetation may not be disturbed unless directed by the Contract Administrator. Purchaser shall remove brushing debris from the road surface, ditchlines, and culvert inlets and outlets.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-553 | 30+10 to 62+80 |
| W-556F | 0+00 to 11+50 |

3-5 CLEARING

Purchaser shall fall all vegetative material larger than 2 inches DBH or over 4 feet high between the marked right-of-way boundaries and within waste and debris areas, or if not marked in the field, between the clearing limits specified on the TYPICAL SECTION SHEET. Clearing must be completed before starting excavation and embankment.

3-8 PROHIBITED DECKING AREAS

Purchaser shall not deck right-of-way timber in the following areas:

- Within the grubbing limits.
- Within 50 feet of any stream.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- On slopes greater than 45%.
- Against standing trees, unless approved by the Contract Administrator.

3-10 GRUBBING

Purchaser shall remove all stumps between the grubbing limits specified on the TYPICAL SECTION SHEET. Purchaser shall also remove stumps with undercut roots outside the grubbing limits. Grubbing must be completed before starting excavation and embankment.

3-12 STUMP PLACEMENT

Purchaser shall place grubbed stumps adjacent to the road shoulder and in compliance with all other clauses in this road plan.

3-14 STUMPS WITHIN DESIGNATED WASTE AREAS

Purchaser is not required to remove stumps within waste areas if they are cut flush with the ground.

3-20 ORGANIC DEBRIS DEFINITION

Organic debris is defined as all vegetative material not eligible for removal by Contract Clause G-010 PRODUCTS SOLD AND SALE AREA or G-011 RIGHT TO REMOVE FOREST PRODUCTS AND CONTRACT AREA, that is larger than one cubic foot in volume within the grubbing and brushing limits.

3-21 DISPOSAL COMPLETION

Purchaser shall remove organic debris from the road surface, ditch lines, and culvert inlets and outlets. Purchaser shall complete all disposal of organic debris, before subgrade compaction, the application of rock, and timber haul.

3-22 DESIGNATED WASTE AREA FOR ORGANIC DEBRIS

Waste areas for organic debris are located within the cleared right-of-way or in natural openings as designated by the Contract Administrator.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream, or wetland.
- On road subgrades, or excavation and embankment slopes.
- On slopes greater than 45%.
- Within the operational area for cable landings where debris may shift or roll.
- On locations where brush can fall into the ditch or onto the road surface.
- Against standing timber.

3-24 BURYING ORGANIC DEBRIS RESTRICTED

Purchaser shall not bury organic debris unless otherwise stated in this plan.

3-25 SCATTERING ORGANIC DEBRIS

Purchaser shall scatter organic debris outside of the grubbing limits and in natural openings. Where natural openings are unavailable or restrictive, alternate debris disposal methods are subject to the written approval of the Contract Administrator.

SECTION 4 – EXCAVATION

4-2 PIONEERING

Pioneering may not extend past construction that will be completed during the current construction season. In addition, the following actions must be taken as pioneering progresses:

- Drainage must be provided on all uncompleted construction.
- Road pioneering operations may not undercut the final cut slope or restrict drainage.
- Culverts at live stream crossings must be installed during pioneering operations prior to embankment.

4-3 ROAD GRADE AND ALIGNMENT STANDARDS

Purchaser shall follow these standards for road grade and alignment, except as designed:

- Grade and alignment must have smooth continuity, without abrupt changes in direction.
- Maximum grades may not exceed 15 percent favorable and 12 percent adverse.
- Minimum curve radius is 60 feet at centerline.
- Maximum grade change for sag vertical curves is 5% in 100 feet.
- Maximum grade change for crest vertical curves is 4% in 100 feet.

4-5 CUT SLOPE RATIO

Purchaser shall construct excavation slopes no steeper than shown on the following table, unless construction staked or designed:

| <u>Material Type</u> | <u>Excavation Slope Ratio</u> | <u>Excavation Slope Percent</u> |
|---|-------------------------------|---------------------------------|
| Common Earth (on side slopes up to 70%) | 1:1 | 100 |
| Common Earth (on slopes over 70%) | ¾:1 | 133 |
| Fractured or loose rock | ½:1 | 200 |
| Hardpan or solid rock | ¼:1 | 400 |

4-6 EMBANKMENT SLOPE RATIO

Purchaser shall construct embankment slopes no steeper than shown on the following table, unless construction staked or designed:

| <u>Material Type</u> | <u>Embankment Slope Ratio</u> | <u>Embankment Slope Percent</u> |
|---------------------------------|-------------------------------|---------------------------------|
| Sandy Soils | 2:1 | 50 |
| Common Earth and Rounded Gravel | 1½:1 | 67 |
| Angular Rock | 1¼:1 | 80 |

4-7 SHAPING CUT AND FILL SLOPE

Purchaser shall construct excavation and embankment slopes to a uniform line and left rough for easier revegetation.

4-8 CURVE WIDENING

The minimum widening placed on the inside of curves is:

- 6 feet for curves of 50 to 79 feet radius.
- 4 feet for curves of 80 to 100 feet radius.

4-9 EMBANKMENT WIDENING

The minimum embankment widening is:

- 2 feet for embankment heights at centerline of 2 to 6 feet.
- 4 feet for embankment heights at centerline of greater than 6 feet.

Purchaser shall apply embankment widening equally to both sides of the road to achieve the required width.

4-10 WIDEN THE EXISTING SUBGRADE

On the following road(s), Purchaser shall widen the subgrade and fill slopes to the dimensions shown on the TYPICAL SECTION SHEET. If necessary, Purchaser shall reconstruct excavation slopes to provide sufficient width for the road surface and any ditches.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-556D1 | 0+00 to 15+80 |

4-21 TURNOUTS

Purchaser shall construct turnouts as designated on the ROCK LIST. Locations changes are subject to written approval by the Contract Administrator. Minimum dimensions are shown on the ROCK LIST.

4-22 TURNAROUNDS

Purchaser shall construct turnarounds as designated on the ROCK LIST. Turnarounds must be no larger than 30 feet long and 30 feet wide.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

Purchaser shall construct and reconstruct ditches into the subgrade as specified on the TYPICAL SECTION SHEET. Ditches must be constructed concurrently with construction of the subgrade.

4-28 DITCH DRAINAGE

Ditches must drain to cross-drain culverts or ditchouts.

4-35 WASTE MATERIAL DEFINITION

Waste material is defined as all dirt, rock, mud, or related material that is extraneous or unsuitable for construction material. Waste material, as used in Section 4 EXCAVATION, is not organic debris.

4-36 DISPOSAL OF WASTE MATERIAL

Purchaser may sidecast waste material on side slopes up to 45% if the waste material is compacted and free of organic debris. On side slopes greater than 45%, all waste material must be end hauled or pushed to the designated embankment sites and waste areas identified in Clause 4-37 WASTE AREA LOCATION.

4-37 WASTE AREA LOCATION

Purchaser shall deposit waste material in areas identified or approved by the Contract Administrator. The amount of material allowed in a waste area is at the discretion of the Contract Administrator.

| <u>Road</u> | <u>Waste Area Location</u> | <u>Comments</u> |
|-------------|--------------------------------|-----------------|
| W-500 | See W-500 PIT DEVELOPMENT PLAN | |
| W-556D1 | 15+00 | On right |

4-38 PROHIBITED WASTE DISPOSAL AREAS

Purchaser shall not deposit waste material in the following areas, except as otherwise specified in this plan:

- Within 25 feet of a cross drain culvert.
- Within 50 feet of a live stream or wetland.
- On side slopes steeper than 45%.
- In locations that interfere with the construction of the road prism.
- In locations that impede drainage.
- Against standing timber.

4-48 NATIVE MATERIAL

Native material consists of naturally occurring material that is free of organic debris, trash, and rocks greater than 4 inches in any dimension.

4-55 ROAD SHAPING

Purchaser shall shape the subgrade and surface as shown on the TYPICAL SECTION SHEET. The subgrade and surface shape must ensure runoff in an even, un-concentrated manner, and must be uniform, firm, and rut-free.

4-60 FILL COMPACTION

Purchaser shall compact all embankment and waste material in accordance with the COMPACTION LIST by routing equipment over the entire width of each lift. Waste material may be placed by end-dumping or sidecasting until sufficiently wide enough to support the equipment.

4-61 SUBGRADE COMPACTION

Purchaser shall compact constructed and reconstructed subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch.

4-63 EXISTING SURFACE COMPACTION

Purchaser shall compact maintained road surfaces in accordance with the COMPACTION LIST by routing equipment over the entire width.

SECTION 5 – DRAINAGE

5-5 CULVERTS

Purchaser shall install culverts as part of this contract. Culverts must be installed concurrently with subgrade work and must be installed before subgrade compaction and rock application. Culvert locations and the minimum requirements for culvert length and diameter are designated on the CULVERT LIST. Culvert, downspout, and flume lengths may be adjusted to fit as-built conditions and may not terminate directly on unprotected soil. Culverts must be new material and meet the specifications in Clauses 10-17 through 10-22.

5-10 CULVERT MARKER INSTALLATION

At all new culverts, Purchaser shall provide and install culvert markers at the inlet in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL.

5-12 UNUSED MATERIALS STATE PROPERTY

On required roads, any materials listed on the CULVERT LIST that are not installed will become the property of the state. Purchaser shall stockpile materials as directed by the Contract Administrator.

5-15 CULVERT INSTALLATION

Culvert installation must be in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL and the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings". Corrugated Polyethylene pipe must be installed in a manner consistent with the manufacturer's recommendations. Culverts shall be banded using lengths of no less than 10 feet, and no more than one length less than 16 feet. Shorter sections of banded culvert shall be installed at the inlet end.

5-16 APPROVAL FOR LARGER CULVERT INSTALLATION

Purchaser shall obtain written approval from the Contract Administrator for the installation of culverts 24 inches in diameter and over before backfilling.

5-17 CROSS DRAIN SKEW AND SLOPE

Cross drains, on road grades in excess of 3%, must be skewed at least 30 degrees from perpendicular to the road centerline, except where the cross drain is at the low point in the road culverts will not be skewed. Cross drain culverts must be installed at a slope steeper than the incoming ditch grade, but not less than 3% or more than 10%.

5-18 CULVERT DEPTH OF COVER

Cross drain culverts must be installed with a depth of cover of not less than 1 foot of compacted subgrade over the top of the culvert at the shallowest point. Stream crossing culverts must be installed with a depth of cover recommended by the culvert manufacturer for the type and size of the pipe.

5-20 ENERGY DISSIPATERS

Purchaser shall install energy dissipaters in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify the placement of rock. The type of energy dissipater and the amount of material and must be consistent with the specifications on the CULVERT LIST, except for temporary culverts. Placement must be by zero drop-height method only. Energy dissipater installation is subject to approval by the Contract Administrator.

5-25 CATCH BASINS

Purchaser shall construct catch basins in accordance with CULVERT AND DRAINAGE SPECIFICATION DETAIL. Minimum dimensions of catch basins are 3 feet wide and 4 feet long.

5-26 HEADWALLS FOR CROSS DRAIN CULVERTS

Purchaser shall construct headwalls in accordance with the CULVERT AND DRAINAGE SPECIFICATION DETAIL at all culverts on the CULVERT LIST that specify placement of rock, except for temporary culverts. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets. Minimum specifications require that rock be placed at a width of one culvert diameter on each side of the culvert opening, and to a height of one culvert diameter above the top of the culvert. Rock may not restrict the flow of water into culvert inlets or catch basins.

5-27 ARMORING FOR STREAM CROSSING CULVERTS

At the following culverts, Purchaser shall place LIGHT LOOSE RIP RAP in conjunction with or immediately following construction of the embankment. Rock must be placed on shoulders, slopes, and around culvert inlets and outlets as designated on the CULVERT LIST and CULVERT AND DRAINAGE SPECIFICATION DETAIL. Rock may not restrict the flow of water into culvert inlets or catch basins. Rock must be set in place by machine. Placement must be with a zero-drop-height only. Light loose rip rap must meet the specifications in Clause 6-50 LIGHT LOOSE RIP RAP.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-500 | 195+50 |
| W-550 | 139+00 |
| W-553 | 28+00 |

5-33 NATIVE SURFACE ROADS

If overwintered, native surface roads must be waterbarred by October 15. Purchaser shall construct waterbars according to the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical distance of no more than 10 feet between waterbars or between natural drainage paths, and with a maximum spacing of 300 feet.

SECTION 6 – ROCK AND SURFACING

6-2 ROCK SOURCE ON STATE LAND

Rock used in accordance with the quantities on the ROCK LIST may be obtained from the following source on state land at no charge to the Purchaser. Purchaser shall obtain written approval from the Contract Administrator for the use of material from any other source. If other operators are using, or desire to use the rock source, a joint operating plan must be developed. All parties shall follow this plan. Purchaser shall notify the Contract Administrator a minimum of 3 business days before starting any operations in the listed locations.

| <u>Source</u> | <u>Location</u> | <u>Remarks</u> |
|-------------------------|-------------------|-----------------------|
| W-500 Pit | Sec. 14, T11N R3E | |
| W-556D1 @ 0+80 or 15+00 | Sec. 13, T11N R3E | Potential Rock Source |

6-5 ROCK FROM COMMERCIAL SOURCE

Rock used in accordance with the quantities on the ROCK LIST may be obtained from commercial source at the Purchaser's expense. Rock sources are subject to written approval by the Contract Administrator before their use.

6-10 ROCK SOURCE DEVELOPMENT PLAN BY STATE

Purchaser shall conduct rock source development and use at the following sources, in accordance with the written ROCK SOURCE DEVELOPMENT PLAN prepared by the state and included in this road plan. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 3 business days before starting any operations in the rock source.

| <u>Source</u> |
|---------------|
| W-500 Pit |

6-11 ROCK SOURCE DEVELOPMENT PLAN BY PURCHASER

Purchaser shall conduct rock source development and use at the following sources, in accordance with a written ROCK SOURCE DEVELOPMENT PLAN to be prepared by the Purchaser. The plan is subject to written approval by the Contract Administrator before any rock source operations. Upon completion of operations, the rock source must be left in the condition specified in the ROCK SOURCE DEVELOPMENT PLAN and approved in writing by the Contract Administrator. Purchaser shall notify the Contract Administrator a minimum of 5 business days before starting any operations in the rock source.

| <u>Source</u> | <u>Remarks</u> |
|-------------------------|-----------------------|
| W-556D1 @ 0+80 or 15+00 | Potential Rock Source |

Rock source development plans prepared by the Purchaser must show the following information:

- Rock source location.
- Rock source overview showing access roads, development areas, stockpile locations, waste areas, and floor drainage.
- Rock source profiles showing development areas, bench locations including widths, and wall faces including heights.
- Must follow written pit development plan clauses for the W-500 Pit, unless otherwise approved in writing by Contract Administrator.

6-13 ROCK EXPLORATION

Purchaser shall provide an excavator and/or rock drill with operator for up to a total of 10 hours of exploration of rock and other related work as directed by the Contract Administrator at the following site(s).

| <u>Site</u> | <u>Location</u> | <u>Remarks</u> |
|-------------------------|-------------------|---------------------------------|
| W-500 Pit | Sec. 14, T11N R3E | Tracked rock drill. |
| W-556D1 @ 0+80 or 15+00 | Sec. 13, T11N R3E | Excavator with at least 140 HP. |

6-22 FRACTURE REQUIREMENT FOR ROCK

A minimum of 50% by visual inspection of coarse aggregate must have at least one fractured face. Coarse aggregate is the material greater than 1/4-inch in size.

6-23 ROCK GRADATION TYPES

Purchaser shall manufacture rock in accordance with the types and amounts listed in the ROCK LIST. Rock must meet the following specifications for gradation and uniform quality when placed in hauling vehicles. Purchaser shall provide a sieve analysis upon request from the Contract Administrator.

6-29 1 ½-INCH MINUS CRUSHED ROCK

| | |
|-----------------------------|-------------|
| % Passing 1 ½" square sieve | 100% |
| % Passing 1" square sieve | 50 - 85% |
| % Passing U.S. #4 sieve | 30 - 50% |
| % Passing U.S. #40 sieve | 16% maximum |
| % Passing U.S. #200 sieve | 5% maximum |

The portion of aggregate retained on the No. 4 sieve may not contain more than 0.2 percent organic debris and trash. All percentages are by weight.

6-41 SELECT PIT RUN ROCK

No more than 50 percent of the rock may be larger than 8 inches in any dimension and no rock may be larger than 12 inches in any dimension. Pit Run rock may not contain more than 5 percent by weight of organic debris, dirt, and trash. Rock may require processing to meet this specification.

6-50 LIGHT LOOSE RIP RAP

Light loose rip rap must consist of angular, hard, sound, and durable stone. It must be free from segregation, seams, cracks, and other defects tending to destroy its resistance to weather. Light loose rip rap must be free of rock fines, soil, organic debris or other extraneous material, and must meet the following requirements:

| <u>Quantity</u> | <u>Approximate Size Range</u> |
|-----------------|--------------------------------|
| 20% to 90% | 500 lbs. to 1 ton (18" - 28") |
| 15% to 80% | 50 lbs. to 500 lbs. (8" - 18") |
| 10% to 20% | 3 inch to 50 lbs. (3" - 8") |

6-55 ROCK APPLICATION MEASURED BY COMPACTED DEPTH

Measurement of specified rock depths are defined as the compacted depth using the compaction methods required in this road plan. Estimated quantities specified in the ROCK LIST are loose yards. Purchaser shall apply adequate amounts of rock to meet the specified rock depths. Specified rock depths are minimum requirements and are not subject to reduction.

6-56 ROCK MEASUREMENT BY TRUCK VOLUME

Measurement of energy dissipater, headwall, light loose rip rap, spot, landing, culvert backfill and bedding rock is on a cubic yard truck measure basis. The Contract Administrator will measure each truck box before rock hauling. An average of such volumes for each truck will be used to tally the volume hauled. The Contract Administrator may periodically require that a load be flattened off and its volume calculated. Purchaser shall maintain load tally sheets for each truck and shall give them to the Contract Administrator on a weekly basis during rocking operations.

6-70 APPROVAL BEFORE ROCK APPLICATION

Purchaser shall obtain written approval from the Contract Administrator for subgrade construction and drainage installation before rock application.

6-71 ROCK APPLICATION

Purchaser shall apply rock in accordance with the specifications and quantities shown on the ROCK LIST. Rock must be spread, shaped, and compacted full width concurrent with rock hauling operations. Road surfaces must be compacted in accordance with the COMPACTION LIST by routing equipment over the entire width.

6-73 ROCK FOR WIDENED PORTIONS

Purchaser shall apply rock to turnarounds, turnouts, and areas with curve widening to the same depth and specifications as the traveled way, unless otherwise specified in the ROCK LIST.

6-75 OPTIONAL ROCK EXCEPTION

On the following roads, Purchaser may provide and place less rock than shown on the ROCK LIST, when approved in writing by the Contract Administrator.

If less rock is applied, Purchaser shall submit a written plan, for approval, describing how these roads will be constructed, used, maintained, and treated post-haul. Purchaser shall meet post-haul specifications in Section 9 POST-HAUL ROAD WORK, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-556D1 | 0+00 to 15+80 |
| W-556D2 | 0+00 to 2+80 |

6-76 DRY WEATHER ROCK COMPACTION

On the following roads, the Contract Administrator may require the application of water to facilitate compaction of the rock surfacing. The method of water application is subject to approval by the Contract Administrator.

| <u>Road</u> | <u>Stations</u> |
|-------------|---|
| W-500 | 122+00 to 129+00, 195+00 to 198+00 |
| W-550 | 0+00 to 41+00, 74+50 to 92+50, 171+70 to 209+50 |

SECTION 7 – STRUCTURES

7-5 STRUCTURE DEBRIS

Purchaser shall not allow debris from the installation or removal of structures to enter any stream. Components removed from existing structures must be removed from state land. Purchaser shall maintain a clean jobsite, with all materials stored away from the high water mark or other area presenting a risk of the materials entering a stream. Debris entering any stream must be removed immediately and placed in the site designated for stockpiling or disposal. Purchaser shall retrieve all material carried downstream from the jobsite.

7-6 STREAM CROSSING INSTALLATION

Purchaser shall install stream crossing structures in accordance with the manufacturer's requirements, Forest Practice Permit, and STREAM DIVERSION PROCEDURE.

7-70 GATE CLOSURE

On the following road, Purchaser shall keep gates closed and locked except during periods of haul. All gates must be closed and locked daily in accordance with DNR ACCESS PROCEDURES THROUGH WEYERHAEUSER’S LONGVIEW AREA GATE LOCKING PROCEDURE.

| <u>Road</u> | <u>Station or Mile Post</u> |
|-------------|-----------------------------|
| W-500 | MP 0.00 |

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment ponds, silt fences, or other methods as approved in writing by the Contract Administrator.

8-2 PROTECTION FOR EXPOSED SOIL

Purchaser shall provide and evenly spread a 4-inch layer of straw to all exposed soils within 25 feet of a stream or wetland. Soils must be covered before the first anticipated storm event. Soils may not sit exposed during any rain event.

8-15 REVEGETATION

On the following roads, Purchaser shall spread grass seed on all exposed soils resulting from road work activities using manual dispersion. Other methods of covering must be approved in writing by the Contract Administrator. Required seed not spread by the termination of this contract will become the property of the state.

| <u>Road</u> | <u>Location</u> | <u>Qty (lbs)*</u> | <u>Type</u> | <u>Remarks</u> |
|-------------|-----------------|-------------------|-------------|-------------------------|
| W-500 | 195+50 | 3 | Grass Seed | Stream Culvert Installs |
| W-550 | 119+50, 139+00 | 6 | Grass Seed | |
| W-553 | 28+00 | 3 | Grass Seed | |
| | 30+10 to 52+40 | 80 | Grass Seed | Abandonment only. |
| W-556F Tie | 0+00 to 1+00 | 3 | Grass Seed | |
| W-556D | 0+00 to 8+90 | 26 | Grass Seed | |
| W-556D1 | 0+00 to 15+80 | 31 | Grass Seed | |
| W-556D2 | 0+00 to 2+80 | 9 | Grass Seed | |
| W-556C | 0+00 to 6+20 | 23 | Grass Seed | Abandonment |
| W-500 | W-500 Pit | 10 | Grass Seed | Waste area |

*Quantities are estimates only. Actual quantities may vary and are the responsibility of the Purchaser.

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the grass seed.

8-17 REVEGETATION TIMING

Purchaser shall revegetate after road work is completed and between March 15 and September 30, unless otherwise approved by Contract Administrator.

8-19 ASSURANCE FOR SEEDED AREA

Purchaser shall ensure the growth of a uniform and dense crop (at least 50% coverage) of 2-inch tall grass. Purchaser shall reapply the grass seed in areas that have failed to germinate or have been damaged through any cause. Restore eroded or disturbed areas, clean up and properly dispose of eroded materials, and reapply the grass seed at no addition cost to the state.

8-25 GRASS SEED

Purchaser shall evenly spread the seed mixture listed below on all exposed soil at a rate of 50 pounds per acre of exposed soil. Grass seed must meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
 - a. Common name of seed
 - b. Net weight
 - c. Percent of purity
 - d. Percentage of germination
 - e. Percentage of weed seed and inert material
5. Seed must conform to the following mixture, unless a comparable mix is approved in writing by the Contract Administrator for all roads.

| <u>Kind and Variety of Seed in Mixture</u> | <u>% by Weight</u> |
|--|--------------------|
| Perennial Rye | 35-45 |
| Red Fescue | 30-40 |
| Highland Bent | 5-15 |
| White Clover | 10-20 |
| Inert and Other Crop | 0.5 |

SECTION 9 – POST-HAUL ROAD WORK

9-1 EARTHEN BARRICADES

Purchaser shall construct barricades in accordance with the EARTHEN BARRICADE DETAIL.

| <u>Road</u> | <u>Stations</u> |
|-------------|-----------------|
| W-553 | 30+10, 52+40 |
| W-556C | 0+00, 6+20 |

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

Culverts removed from roads become the property of the Purchaser and must be removed from state land.

9-5 POST-HAUL MAINTENANCE

Purchaser shall perform post-haul maintenance in accordance with the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS.

9-10 LANDING DRAINAGE

Purchaser shall provide for drainage of the landing surface.

9-11 LANDING EMBANKMENT

Purchaser shall slope landing embankments to the original construction specifications.

9-21 ROAD ABANDONMENT

Purchaser shall abandon the following roads before the termination of this contract. Work must be in accordance with the ROAD ABANDONMENT CROSS SECTIONS DETAIL.

| <u>Road</u> | <u>Stations</u> | <u>Type</u> |
|-------------|-----------------|-------------|
| W-553 | 30+10 to 52+40 | Medium |
| W-556C | 0+00 to 6+20 | Medium |

9-23 MEDIUM ABANDONMENT

- Fill in ditches.
- Rip the surface to a minimum depth of 10 inches.
- Construct non-drivable waterbars in accordance with the attached NON-DRIVABLE WATERBAR DETAIL at a maximum spacing that will produce a vertical drop of no more than 10 feet between waterbars or between natural drainage paths and with a maximum spacing of 100 feet, or as marked in the field.
- Skew waterbars at least 30 degrees from perpendicular to the road centerline on roads in excess of 3 percent grade.
- Key waterbars into the cut-slope to intercept the ditch. Waterbars must be outsloped to provide positive drainage. Outlets must be on stable locations.
- Block roads with earthen barricades in accordance with the attached EARTHEN BARRICADE DETAIL.
- Remove ditch cross drain culverts and leave the resulting trench open in accordance with CROSS DRAIN REMOVAL DETAIL.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Apply grass seed concurrently with abandonment and in accordance with Section 8 EROSION CONTROL.
- Provide and evenly spread a 4-inch layer of straw to all exposed soils associated with stream culvert and puncheon removals, as well as all waste material generated by fill removal that is within 25 feet of excavation limits.
- Scatter woody debris onto abandoned road surfaces.

SECTION 10 MATERIALS

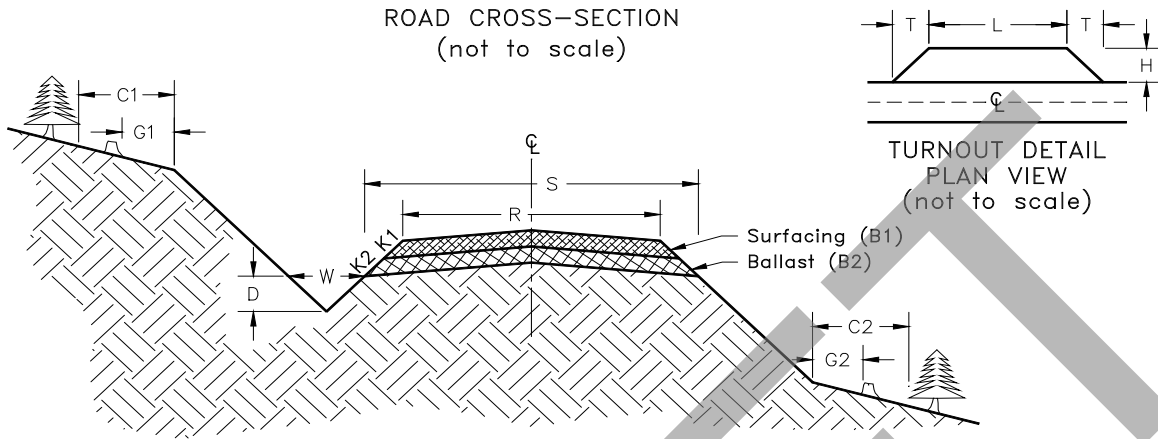
10-17 CORRUGATED PLASTIC CULVERT

Polyethylene culverts must meet AASHTO M-294 specifications, or ASTM F-2648 specifications for recycled polyethylene. Culverts must be Type S – double walled with a corrugated exterior and smooth interior.

10-22 PLASTIC BAND

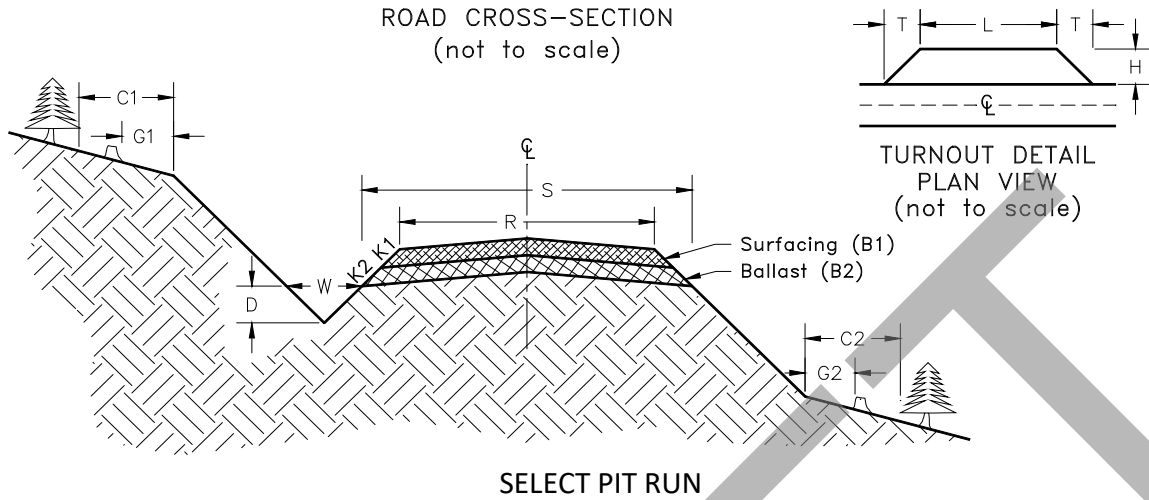
Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe joint.

TYPICAL SECTION SHEET



| Road Number | From Station | To Station | Tolerance Class | Subgrade Width | Road Width | Ditch Width | Ditch Depth | Crown @ CL | Grubbing Limits | | Clearing Limits | |
|-------------|--------------|------------|-----------------|----------------|------------|-------------|-------------|------------|-----------------|----|-----------------|----|
| | | | | ft | ft | ft | ft | | ft | ft | ft | ft |
| | | | | S | R | W | D | | G1 | G2 | C1 | C2 |
| W-3000 | 118+00 | 302+50 | A | - | 12 | - | - | 4 | - | - | - | - |
| W-500 | 0+00 | 206+50 | A | - | 12 | - | - | 4 | - | - | - | - |
| W-550 | 0+00 | 218+50 | A | - | 12 | - | - | 4 | - | - | - | - |
| W-553 | 0+00 | 62+80 | A | - | 12 | 3 | 1 | 4 | - | - | - | - |
| W-556 | 0+00 | 49+00 | A | - | 12 | - | - | 4 | - | - | - | - |
| | 49+00 | 91+00 | A | - | 12 | 3 | 1 | 4 | - | - | - | - |
| W-556F Tie | 0+00 | 1+00 | C | 18 | 12 | 3 | 1 | 4 | 5 | 5 | 10 | 10 |
| W-556F | 0+00 | 11+50 | A | - | 12 | 3 | 1 | 4 | - | - | - | - |
| W-556D | 0+00 | 8+90 | C | 18 | 12 | 3 | 1 | 4 | 5 | 5 | 10 | 10 |
| W-556D1 | 0+00 | 15+80 | B | 14 | 12 | 3 | 1 | 4 | 2 | 2 | 10 | 10 |
| W-556D2 | 0+00 | 2+80 | C | 18 | 12 | 3 | 1 | 4 | 5 | 5 | 10 | 10 |

ROCK LIST

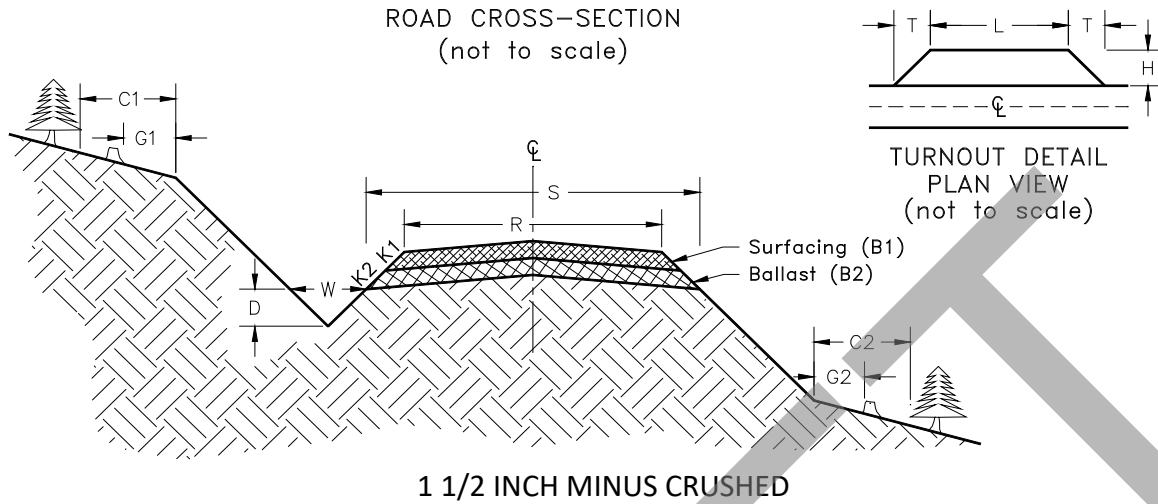


| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth (in) | C.Y. per Station or Unit | # of Stations or Units | C.Y. Subtotal | Rock Source W-500 Pit or W-556D1 Potential Pit | Turnout | | |
|-------------|--|------------|------------|---------------------------|--------------------------|------------------------|-----------------------|---|------------------|-----------------|-----------------|
| | | | | | | | | | Length L (ft) | Width H (ft) | Taper T (ft) |
| | | | K2 | B2 | | | | | | | |
| W-3000 | Energy Dissipater | | | | | | 1 | | | | |
| W-550 | Energy Dissipater | | | | | | 4 | | | | |
| W-553 | Energy Dissipater | | | | | | 3 | | | | |
| W-556F Tie | 0+00 1+00 Junctions Energy Dissipater | | 1 1/2:1 | 15 | 81 22.5 | 1.00 2 | 81 45 1 | | | | |
| W-556D | 0+00 8+90 Turnarounds Curve Widening Junctions Energy Dissipater | | 1 1/2:1 | 15 | 81 43 15 | 8.90 1 2 | 721 43 30 2 | | | | |
| W-556D1 | Turnarounds Turnouts Energy Dissipater Landings | | | | 43.5 23 70 | 2 1 1 | 87 23 70 | | 40 | 10 | 25 |
| W-556D2 | * 0+00 2+80 * Turnouts * Curve Widening * Junctions * Landings | | 1 1/2:1 | 15 | 81 23 15 70 | 2.80 1 1 1 | 227 23 15 70 | | 40 | 10 | 25 |

*Optional Rock in accordance with 6-75

REQUIRED SELECT PIT RUN: 1139 CY
 OPTIONAL SELECT PIT RUN: 343 CY
 TOTAL SELECT PIT RUN: 1482 CY

ROCK LIST



| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth (in) | C.Y. per Station or Unit | # of Stations or Units | C.Y. Subtotal | Rock Source | Turnout | | |
|-------------|--|------------|------------|---------------------------|--------------------------|------------------------|---------------|-------------|---------|----|-----------|
| | | | | | | | | | K1 | B1 | W-500 Pit |
| W-3000 | Spot Rock | | | | | | 100 | | | | |
| | Culvert Backfill/Bedding (189+10) | | | | | | 20 | | | | |
| W-500 | 122+00 | 129+00 | 1 1/2:1 | 4 | 20 | 7.00 | 140 | | | | |
| | 195+00 | 198+00 | 1 1/2:1 | 4 | 20 | 3.00 | 60 | | | | |
| | Spot Rock (46+90, 100+00, 136+00) | | | | 10 | 3 | 30 | | | | |
| | Spot Rock (56+00, 70+50, 109+50, 160+50, 177+60) | | | | 20 | 5 | 100 | | | | |
| | Culvert Backfill/Bedding (195+50) | | | | 40 | 1 | 40 | | | | |
| W-550 | 0+00 | 41+00 | 1 1/2:1 | 4 | 20 | 41.00 | 820 | | | | |
| | 74+50 | 92+50 | 1 1/2:1 | 4 | 20 | 18.00 | 360 | | | | |
| | 171+70 | 209+50 | 1 1/2:1 | 4 | 20 | 37.80 | 756 | | | | |
| | Turnouts | | | | 6 | 8 | 48 | | 40 | 10 | 25 |
| | Curve Widening | | | | | | 64 | | | | |
| | Junctions | | | | 12 | 1 | 12 | | | | |
| | Spot Rock (131+00, Bridge Approaches @ 190+70) | | | | 20 | 3 | 60 | | | | |
| | Spot Rock (114+50, 134+50, 144+50) | | | | 10 | 3 | 30 | | | | |
| | Spot rock (139+00) | | | | 30 | 1 | 30 | | | | |
| | Culvert Backfill/Bedding (11+00, 36+00) | | | | 20 | 2 | 40 | | | | |
| | Culvert Backfill/Bedding (119+50) | | | | 30 | 1 | 30 | | | | |
| | Culvert Backfill/Bedding (139+00) | | | | 60 | 1 | 60 | | | | |

ROCK LIST

1 1/2 INCH MINUS CRUSHED

| Road Number | From Station | To Station | Rock Slope | Compacted Rock Depth (in) | C.Y. per Station or Unit | # of Stations or Units | C.Y. Subtotal | Rock Source | Turnout | | |
|-------------|--|----------------|------------|---------------------------|--------------------------|------------------------|---------------|-------------|---------|--------|--------|
| | | | | | | | | | Length | Width | Taper |
| | | | K1 | B1 | | | | W-500 Pit | L (ft) | H (ft) | T (ft) |
| W-553 | 4+10 | 6+80 | 1 1/2:1 | 6 | 30 | 2.70 | 81 | | | | |
| | Spot Rock (28+00) | | | | 30 | 1 | 30 | | | | |
| | Spot Rock (52+40 to 62+80) | | | | | | 120 | | | | |
| | Culvert Backfill/Bedding (16+80, 52+60, 60+25) | | | | 20 | 3 | 60 | | | | |
| | Culvert Backfill/Bedding (28+00) | | | | 50 | 1 | 50 | | | | |
| W-556F Tie | 0+00 | 1+00 | 1 1/2:1 | 4 | 20 | 1.00 | 20 | | | | |
| | Junctions | | | | 10 | 2 | 20 | | | | |
| W-556F | 9+50 | 11+50 | 1 1/2:1 | 4 | 20 | 2.00 | 40 | | | | |
| W-556D1 | * * * | 0+00 | 1 1/2:1 | 4 | 20 | 15.80 | 316 | | | | |
| | | Curve Widening | | | | | | | | | |
| | | 8+00, 13+10) | | | 20 | 3 | 60 | | | | |

*Optional Rock in accordance with 6-75

REQUIRED 1 1/2-INCH MINUS CRUSHED ROCK: 3281 CY
 OPTIONAL 1 1/2-INCH MINUS CRUSHED ROCK: 325 CY
 TOTAL 1 1/2-INCH MINUS CRUSHED ROCK: 3606 CY

LIGHT LOOSE RIP RAP (FILL ARMOR)

| Road Number | CY |
|-------------|----|
| W-500 | 20 |
| W-550 | 18 |
| W-553 | 10 |
| Total: | 48 |

CULVERT LIST

| Road Number | Location | Culvert | | | (C.Y.) | | | Backfill | Bedding | Inlet | Remarks | |
|-------------|----------|----------|--------|------|--------|--------|------|----------|----------|--------|-------------|-------------|
| | | Dia (In) | Length | Type | Inlet | Outlet | Type | Material | Material | Marker | | |
| W-3000 | 189+10 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | Ns, Type 5. | |
| W-500 | 195+50 | 24 | 70 | PD | 6.0 | 14.0 | LL | CR/NT | CR | Y | | |
| W-550 | 11+00 | 18 | 30 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| | 36+00 | 18 | 30 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| W-553 | 119+50 | 18 | 50 | PD | 1.0 | 1.0 | SP | CR | CR | Y | | |
| | 139+00 | 24 | 50 | PD | 6.0 | 12.0 | LL | CR/NT | CR | Y | | |
| | 16+80 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| W-556 | 28+00 | 30 | 60 | PD | 4.0 | 6.0 | LL | CR/NT | CR | Y | | Np, Type 4. |
| | 52+60 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| W-556F Tie | 60+25 | 18 | 30 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| | 0+10 | 18 | 40 | PD | 0.5 | 0.5 | SP | NT | NT | Y | | |
| W-556D | 0+39 | 18 | 30 | PD | 0.5 | 0.5 | SP | NT | NT | Y | | |
| | 5+12 | 18 | 30 | PD | 0.5 | 0.5 | SP | NT | NT | Y | | |
| W-556D1 | 3+00 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| | 8+00 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |
| | 13+10 | 18 | 40 | PD | 0.5 | 0.5 | SP | CR | CR | Y | | |

Key:

- SP - Select Pit Run
- NT - Native (bank run)
- CR - 1 1/2 Inch Minus Crushed
- LL - Light Loose Rip Rap
- PD - Polyethylene Pipe Double Wall
- PSDS - Polyethylene Downspout Single Wall

COMPACTION LIST

| Road | Type | Max Depth Per Lift (inches) | Equipment Type | Equipment Weight (lbs) | Minimum Number of Passes |
|-----------|--------------------|-----------------------------|-----------------------|------------------------|--------------------------|
| All Roads | Subgrade | 12 | Vibratory Smooth Drum | 14,000 | 4 |
| All Roads | Embankment or Fill | 18 | Vibratory Smooth Drum | 14,000 | 4 |
| All Roads | Waste Area | 24 | Excavation | 28,000 | - |
| All Roads | Pre-haul Surface | 6 | Vibratory Smooth Drum | 14,000 | 5 |
| All Roads | Rock | 12 | Vibratory Smooth Drum | 14,000 | 3 |

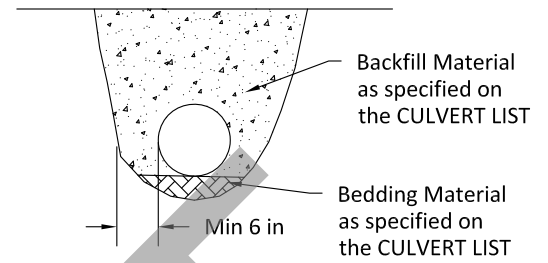
CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 1 OF 2

INSTALLATION REQUIREMENTS:

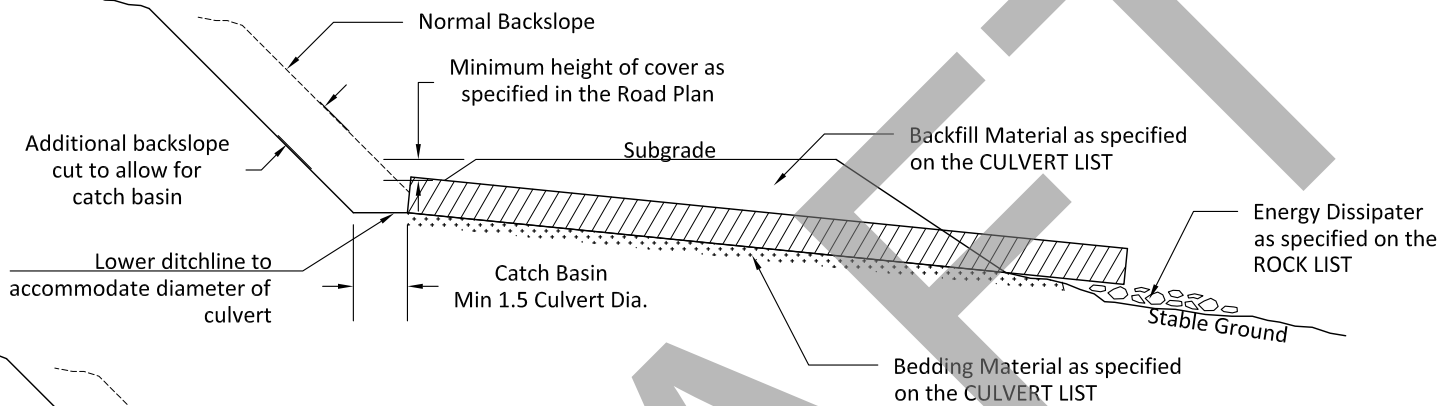
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly supported along the barrel.
2. Backfill material shall be compacted under the culvert haunches, around the sides, and above the culvert in accordance with the COMPACTION LIST.

ALL DRAWINGS ARE NOT TO SCALE

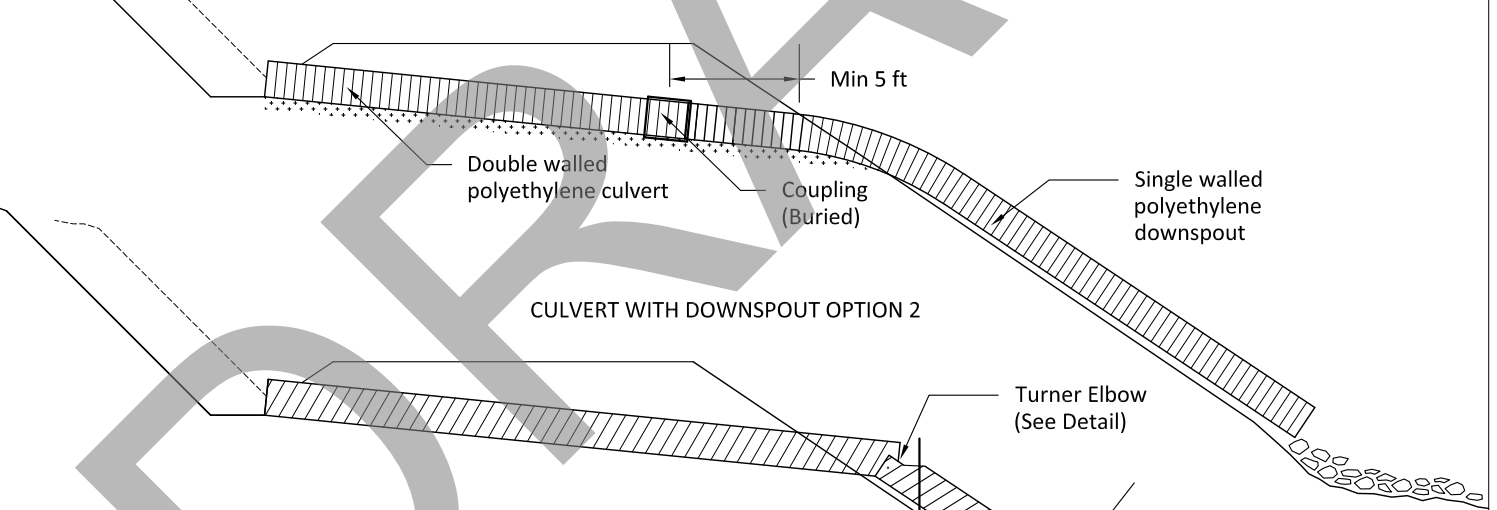
CROSS SECTION



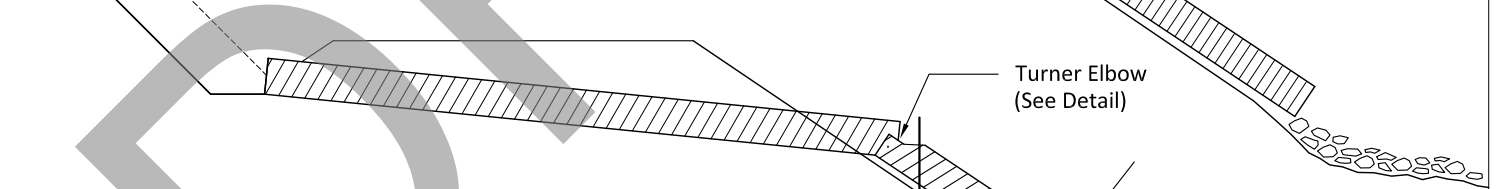
CULVERT PROFILE (TYPICAL)



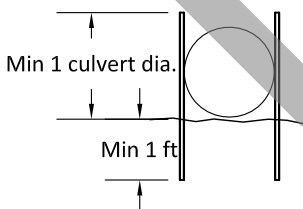
CULVERT WITH DOWNSPOUT OPTION 1



CULVERT WITH DOWNSPOUT OPTION 2

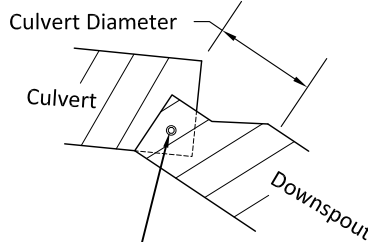


SUPPORT STAKES



Stake Material: T-post with rust protection coating.
Connections: Bolt support stakes to the culvert with $\frac{5}{8}$ " u-bolts, with washers on both the inside and outside of the culvert.
Alternative staking methods may be approved, in writing, by the Contract Administrator.

TURNER ELBOW

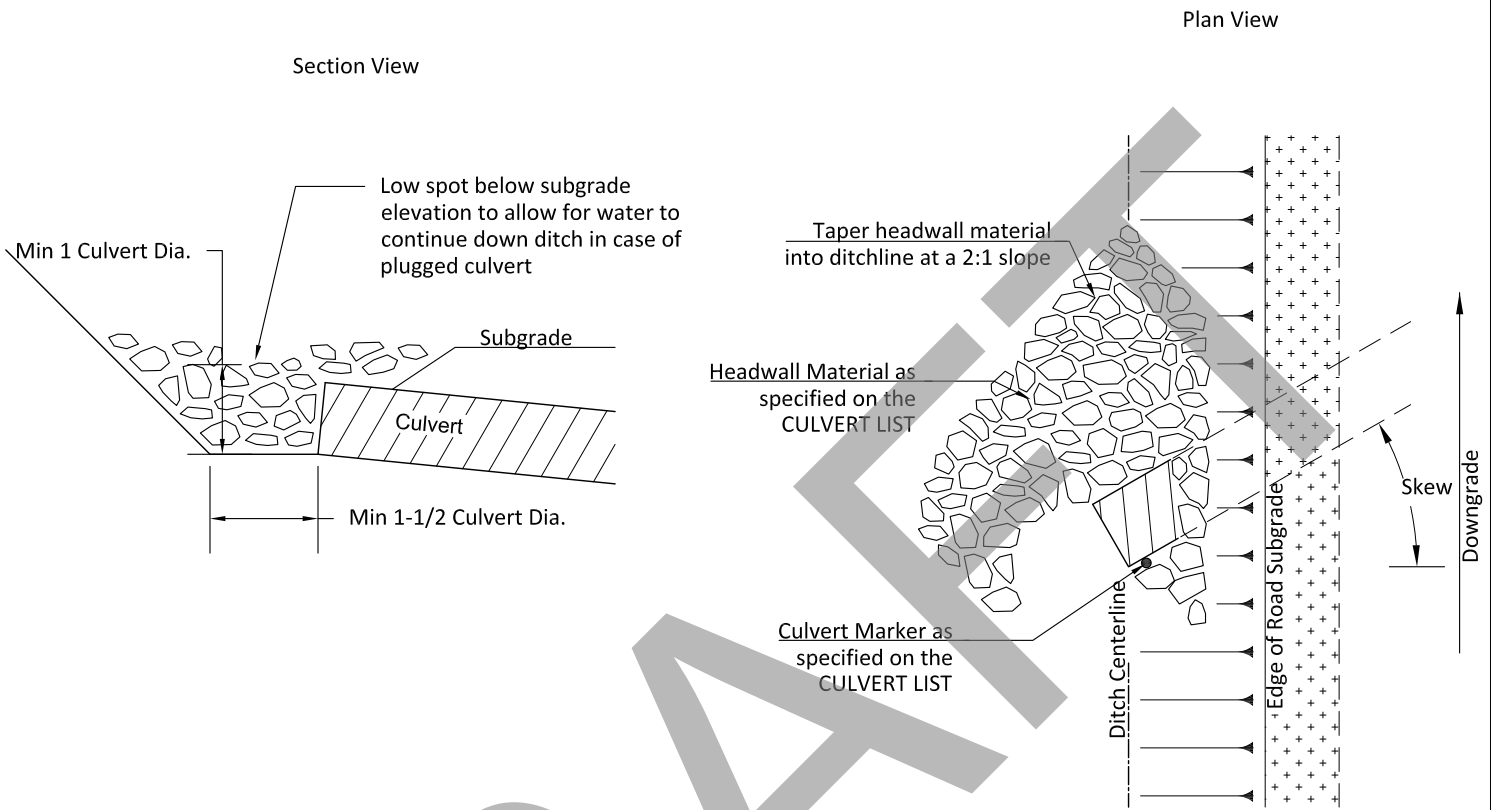


Bolted with $\frac{5}{8}$ " galvanized bolts and washers (both sides)
Downspout must be 6 inches larger in diameter than the culvert.

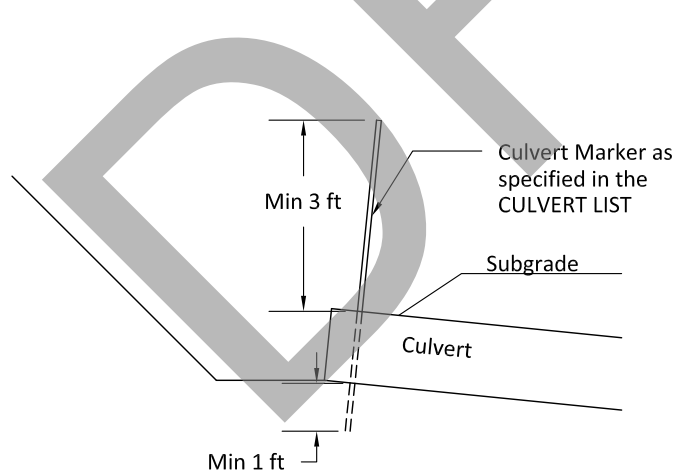
Support Stakes (See Detail)

CULVERT AND DRAINAGE SPECIFICATION DETAIL
PAGE 2 OF 2

HEADWALLS

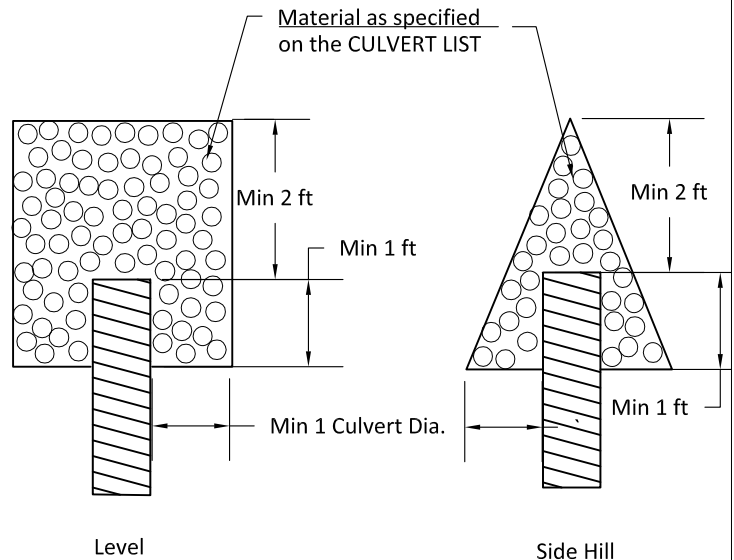


CULVERT MARKERS



Culvert Marker Material: 1 Inch I.D., Schedule 40 PVC Pipe, White. Marker must be capped on the top.
 Culvert Marker Placement: Place on uphill side of culvert, between corrugations if possible.
 Alternative culvert marker types may be approved, in writing, by the Contract Administrator.

ENERGY DISSIPATORS



Min Energy Dissipater Depth: 1 Culvert Dia.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 1 of 2

Cuts and Fills

- Maintain slope lines to a stable gradient compatible with the cut slope/fill slope ratios. Remove slides from ditches and the roadway.
- Repair fill-failures, in accordance with Clause 4-6 EMBANKMENT SLOPE RATIO, with selected material or material approved by the Contract Administrator. Remove overhanging material from the top of cut slopes.
- Waste material from slides or other sources shall be placed and compacted in stable locations identified in the road plan or approved by the Contract Administrator, so that sediment will not deliver to any streams or wetlands.
- Slide material and debris shall not be mixed into the road surface materials, unless approved by the Contract Administrator.

Surface

- Grade the road surface, turnouts, and shoulders to the original shape on the TYPICAL SECTION SHEET to provide a smooth, rut-free traveled surface and maintain surface water runoff in an even, unconcentrated manner.
- Blading shall not undercut the backslope or cut into geotextile fabric on the road.
- If required by the Contract Administrator, water shall be applied as necessary to control dust and retain fine surface rock.
- Surface material shall not be bladed off the roadway. Replace surface material when lost or worn away, or as directed by the Contract Administrator.
- Remove shoulder berms, created by grading, to facilitate drainage, except as marked or directed by the Contract Administrator.
- For roads with geotextile fabric: spread surface aggregate to fill in soft spots and wheel ruts (barrel spread) to prevent damage to the geotextile fabric.

Drainage

- Prevent silt bearing road surface and ditch runoff from delivering sediment to any streams or wetlands.
- Maintain rolling dips and drivable waterbars as needed to keep them functioning as intended.
- Maintain headwalls to the road shoulder level with material that will resist erosion.
- Maintain energy dissipaters at culvert outlets with non-erodible material or rock.
- Keep ditches, culverts, and other drainage structures clear of obstructions and functioning as intended.
- Inspect and clean culverts at least monthly, with additional inspections during storms and periods of high runoff. This shall be done even during periods of inactivity.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

Page 2 of 2

Preventative Maintenance

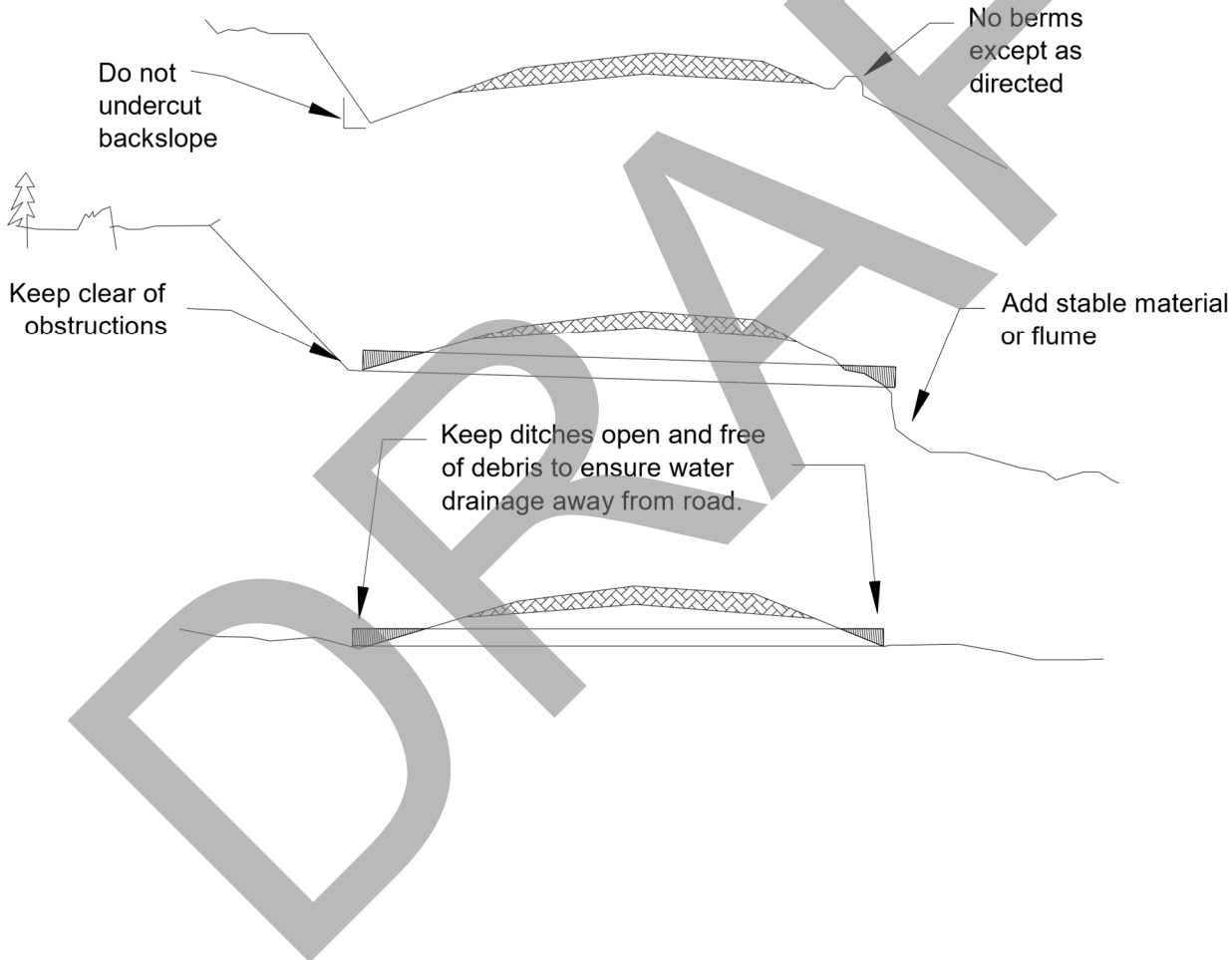
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

- Remove fallen timber, limbs, and stumps from the slopes, roadway, ditchlines, and culvert inlets.



DNR Access Procedures through Weyerhaeuser's Longview Area

Gate Locking Procedure

The gate tag procedure is to improve Weyerhaeuser tree farm security and restrict unauthorized public access.

Gates that would allow the public to access Weyerhaeuser ownership are to remain locked unless they need to be open for active timber sales or operations. If you go through a gate on the perimeter of Weyerhaeuser ownership that is open and not tagged, please close it after passing through.

While on Weyerhaeuser property a hard hat, hi-visibility clothing and ankle supporting footwear shall be worn at all times when outside of vehicle.

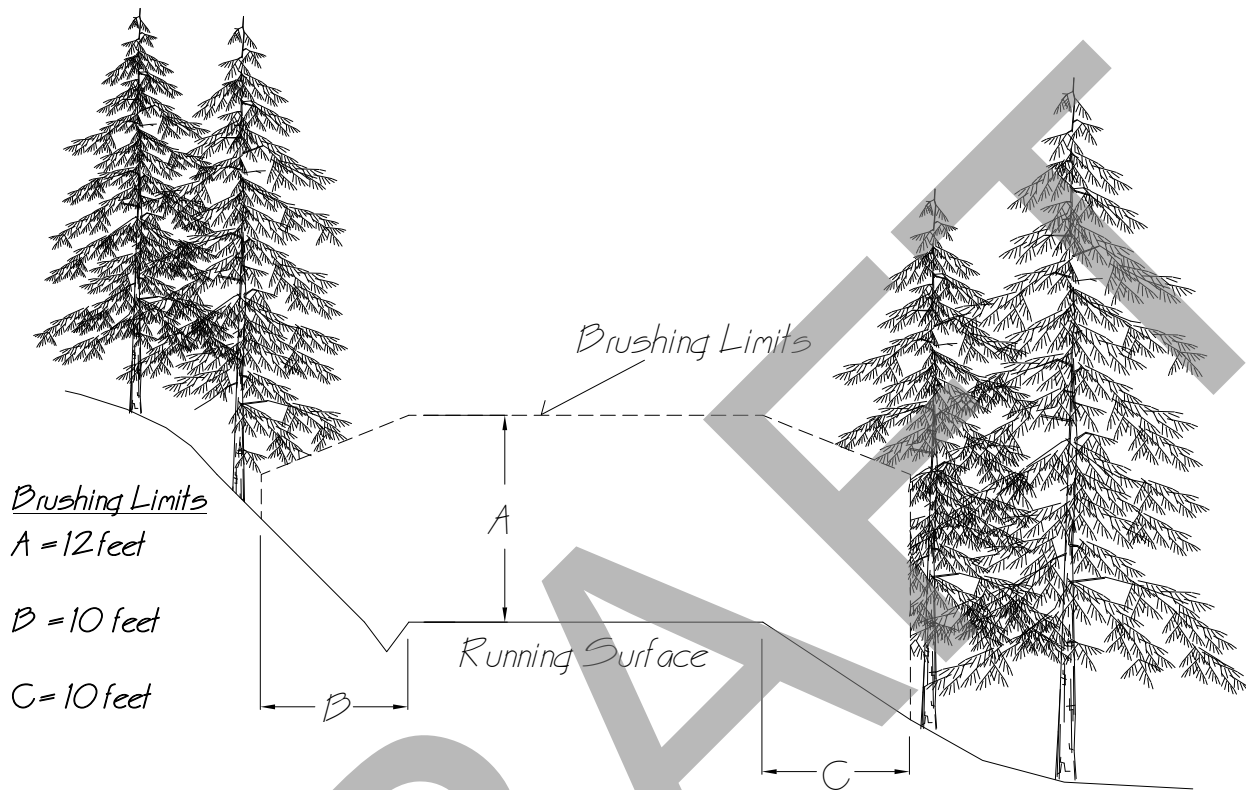
GATES:

- Gates will be locked with specific Weyerhaeuser/ DNR locks currently stamped with ABA. These keys will only open the specific DNR easement gates.
- ABA keys will be checked out to prospective purchasers, contractors, and personnel having business on DNR property. Keys may be obtained from Pacific Cascade Region, Product Sales Staff. At the conclusion of DNR operations or contracts, keys are to be returned to DNR region office.
- During active operations when there is a specific safety or operational need to leave gates open during business hours, a blue aluminum tag will be affixed by locking it to the open gate. This will notify security personnel, Weyerhaeuser employees, and DNR staff that a gate is being left open for business purposes.
- Blue tags are available from the Contract Administrator.
- If multiple operations are using the same access point, each contractor shall post their tag to the open gate.
- Each flag color represents a unique landowner. Weyerhaeuser- Yellow, Weyerhaeuser contractor - Green, DNR – Blue, and Weyerhaeuser Security - Orange
- Tags for Weyerhaeuser Security (Orange), will be locked on gates that are to be left open for public access such as during hunting seasons.
- Buncher operators, cutters, cruisers, prospective purchasers or anyone that does not need to leave the gate open for haul traffic are not required to tag the gate open. The gate maybe LOCKED behind them for the day to keep unauthorized vehicles out if they are the only one working in the area.
- Anyone going through an open gate and not tagging the gate open should lock it behind them if there is no tag present.

Keys:

Keys are to be used for business and authorized activity only. (Personal use of a key is not allowed) Keys are not to be loaned out for any reason without authorization from DNR.

ROADSIDE BRUSHING DETAIL



GENERAL NOTES

- 1) Vegetative material, including limbs, up to 4 inches in diameter shall be cut within the brushing limits shown on the drawing above. This includes vegetative material growing on the running surface.
- 2) Vegetative material shall be cut as near flush with the ground as possible, but shall not extend more than 6 inches above the ground.
- 3) Brushing Limit C may be increased on the inside of curves to improve sight distance if approved by the Contract Administrator

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
PACIFIC CASCADE REGION

W-500 PIT DEVELOPMENT PLAN

SW ¼ Section 14, Township 11 North, Range 3 East, W.M.

Page 1 of 3

1. Existing oversized rock must be used prior to using Area A. Development shall then occur in Area A and proceed to Area B. Development in any other area must be approved in writing by Contract Administrator.
2. All vegetation including stumps shall be cleared a minimum of 20 feet beyond the top of all working faces. Trees shall be cleared to a minimum of 3/4 of the height of the tallest tree adjacent to the pit.
3. Overburden shall be pushed or end hauled to the designated waste area and compacted. Minimal acceptable compaction is achieved by placing waste material in 2 foot or shallower lifts and routing excavation equipment over entire width of the lifts.
4. Root wads and organic debris larger than one cubic foot in volume shall be separated from overburden material and piled in the designated waste area.
5. Pit faces shall not exceed 30 feet in height and shall be sloped no steeper than ¼:1.
6. Working bench width shall be a minimum of 20 feet.
7. The pit floor shall have continuity of slope, providing drainage to the North towards the W-500 road at a minimum of 2 percent, unless otherwise approved in writing by Contract Administrator.
8. The location and amount of material to be placed in a stockpile are subject to approval of the Contract Administrator.
9. Oversize material remaining in the rock source at the conclusion of use shall not exceed 5 percent of the total volume mined during that operation. Oversize material is defined as rock fragments larger than two feet in any direction. At the conclusion of operations, oversize material shall be placed as directed by the Contract Administrator.
10. All operations shall be carried out in compliance with all regulations of:
 - a. Regulations and Standards Applicable to Metal and Nonmetal Mining and Milling Operations (30 CFR) U.S. Department of Labor, Mine Safety and Health Administration.
 - b. Safety Standards for Construction Work (296-155 WAC), Washington Department of Labor and Industries.
11. The Operator shall submit an informational drilling and shooting plan to the Contract Administrator 10 working days prior to any drilling (Form # M-126PAC).

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
PACIFIC CASCADE REGION

W-500 PIT DEVELOPMENT PLAN

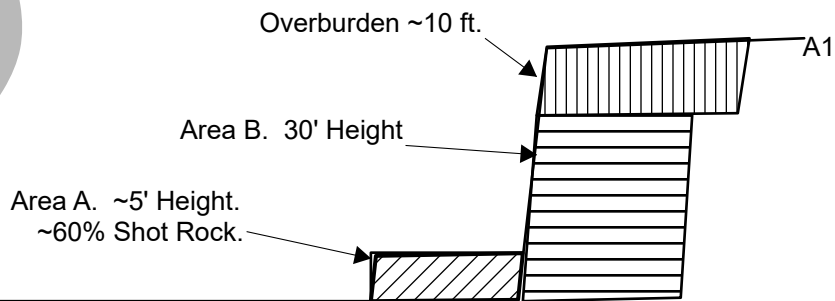
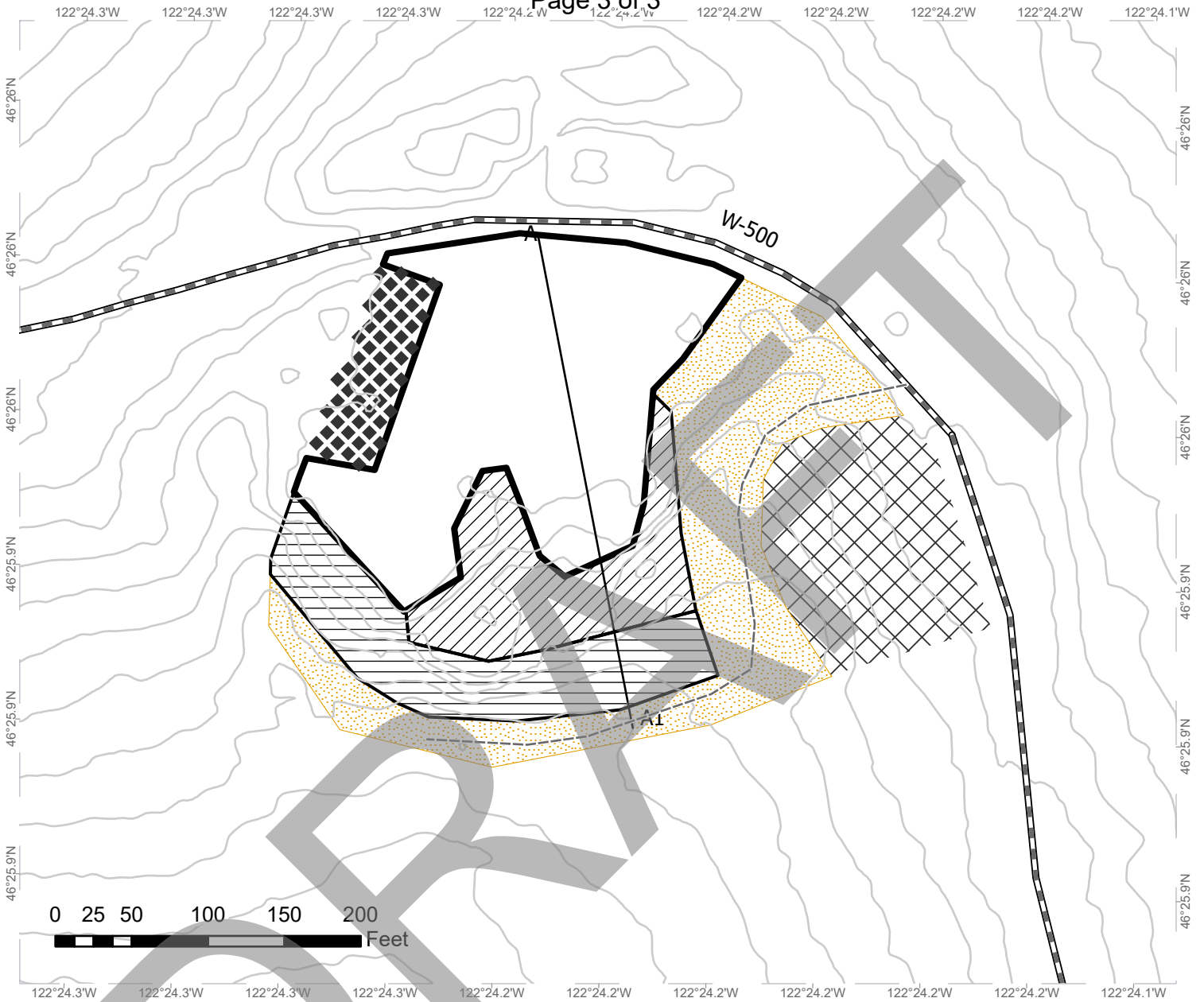
SW ¼ Section 14, Township 11 North, Range 3 East, W.M.

Page 2 of 3

12. Upon completion of pit operations:
- a. The pit floor shall be left in a smooth and neat condition. The surface of pit floors and benches must be uniform and free-draining at a minimum 2% outslope gradient.
 - b. All exposed soil in the waste area shall be grass seeded in accordance with Road Plan Clauses 8-15 REVEGETATION and 8-25 GRASS SEED.
 - c. Pit faces and walls shall be scaled and cleared of loose and overhanging material.
 - d. Benches and faces shall have safety berms constructed or access blocked to highway vehicles.
 - e. The area will be left in a condition that will not endanger public safety, damage property, or be hazardous to animal or human life. The site shall be cleared of all temporary structures, equipment and rubbish, and shall be left in a neat and presentable condition.
 - f. Prior to termination of the contract, quarry condition and compliance with all terms of the contract shall be approved in writing by the Contract Administrator.
13. Reclamation will not be required following use.

W-500 PIT DEVELOPMENT PLAN

Sec. 14, T11N, R3E, W.M.



Legend

| | | | |
|----------------|----------------|-----------------------|-------------------------------|
| Contours 10 ft | Area A | Future Area | Existing Roads |
| Layer | Area B | Waste Area | Required Pre-Haul Maintenance |
| Pit Floor | Oversized Rock | Designated Skid Trail | |

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
PACIFIC CASCADE REGION

INFORMATIONAL BLASTING PLAN

Timber Sale/Project Name: _____ App./Project No.: _____

1. Blaster-in-Charge: Name: _____
Company: _____
Address: _____
Telephone: _____
2. Quarry Name/Location: _____
3. Total Estimated Cubic Yards in Blast (loose): _____
4. Hole Spacing: _____
5. Burden: _____
6. Hole Diameter: _____
7. Hole Depth: _____
8. Sub Drill: _____
9. Number of Holes: _____
10. Stemming Depth: _____
11. Explosive (mfg., name, density, %, V.O.D.): _____

12. Type and Size of Primer (if applicable): _____
13. Total Weight of Primers for Shot: _____
14. Calculated Powder Factor/Cubic Yard: _____
15. Number of Delays (in M.S.): _____

M-126PAC (03/04)

INFORMATIONAL BLASTING PLAN

Page 2 of 3

16. Number of Holes Fired on Each Delay: _____

17. Total Amount of Explosives Fired on Each Delay: _____

18. Type of Blasting Machine: _____

19. Date, Start Drilling: _____

20. Date and Time, Start Loading: _____

21. Date and Time of Blast (approx.): _____

DRAFT

INFORMATIONAL BLASTING PLAN

Page 3 of 3

22. Detail drawing of delay system (show hole pattern and delays in milliseconds). Attach additional sheets if required:

23. Typical cross-section of hole (show primer, main charge, sub drill, and stemming):

23. Submitted by: _____ Date: _____

24. Received by: _____ Date: _____

Note: Attach copies of manufacturer=s data sheet(s) for explosive and caps.

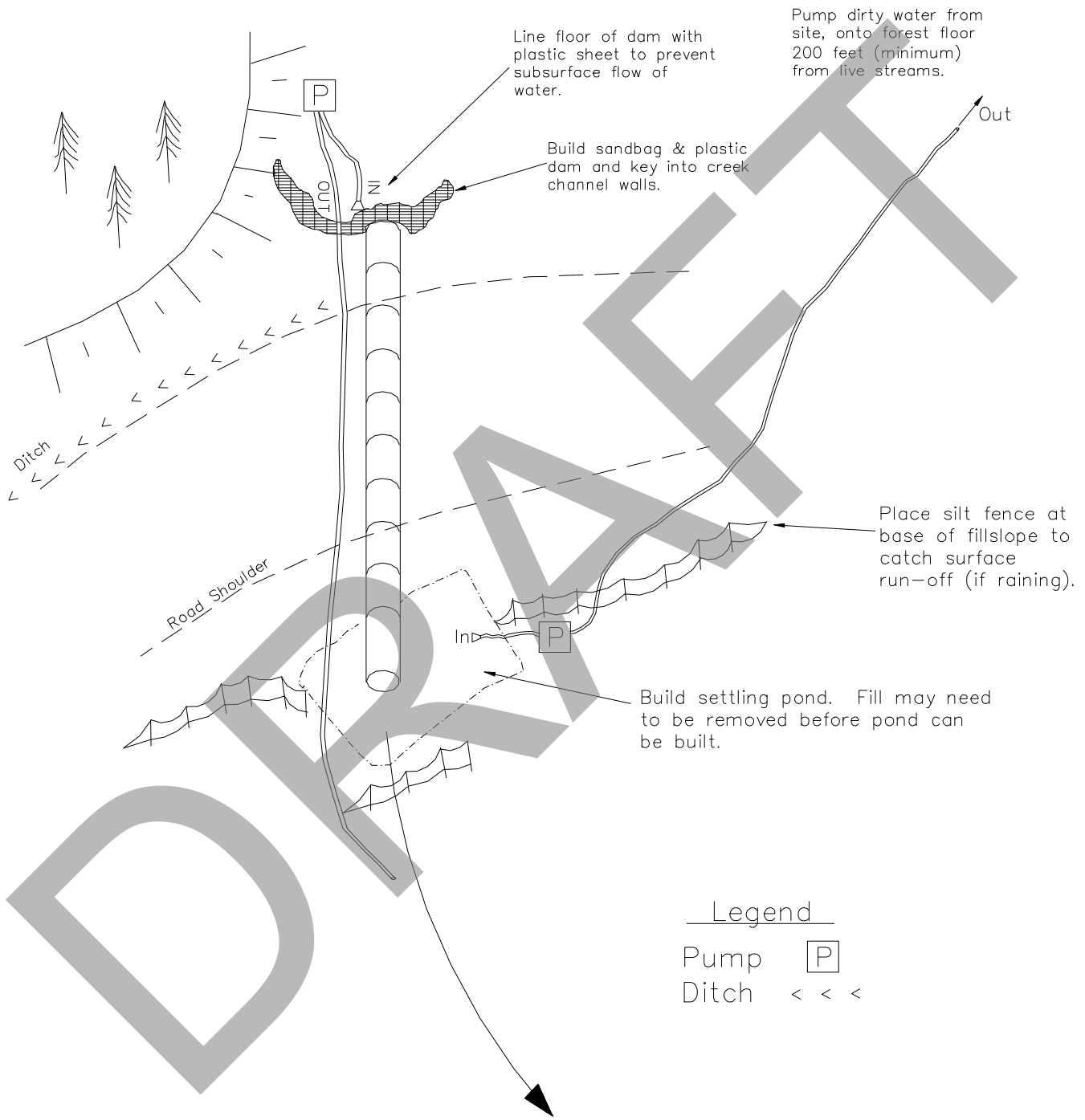
M-126PAC (03/04)

STREAM DIVERSION PROCEDURE

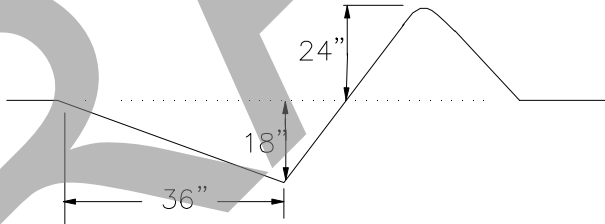
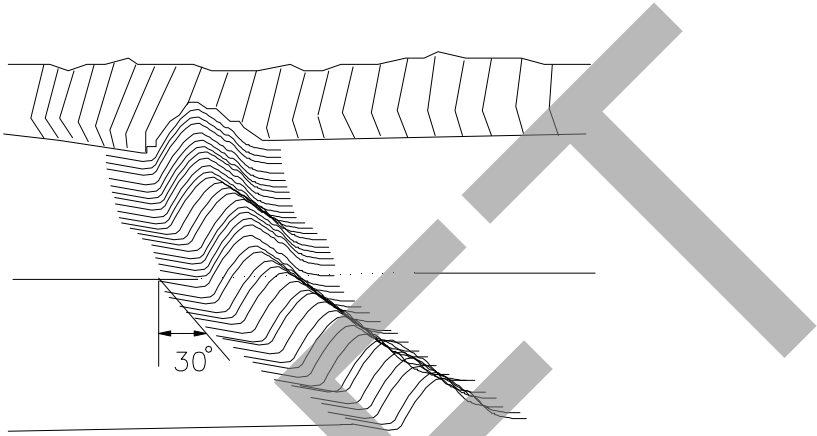
For culvert installation or removal in live waters, sites shall be dewatered within the area of direct influence of the stream. Stream culvert installations or removals will occur as follows, any deviations shall be approved, in writing, by the Contract Administrator.

1. Prior to any work within the high waterline, Purchaser shall contact the Contract Administrator for an on-site pre-work to submit a plan for pumping and/or diverting all stream flow around the work area and pumping and/or diverting any groundwater flow from out of the work area, as approved, in writing, by the Contract Administrator. The SETTLING POND AND PUMP DETAIL, included herein, is an example of a pre-approved dewatering plan.
2. Once the stream has been pumped and/or diverted, stream flow shall not be allowed through the work area until all work below the ordinary high water line has been completed and approved, in writing, by the Contract Administrator.
3. Sedimentation shall be avoided during culvert installation or removal in accordance with Road Plan Clause 1-29 SEDIMENT RESTRICTION.
4. Per Road Plan Clause 8-1 SEDIMENT CONTROL, Purchaser shall install silt fences or other suitable sediment control methods as approved by the Contract Administrator.
5. Backfill any settling ponds and remove any diversion culverts.
6. Maintain a clean jobsite in accordance with Road Plan Clause 7-5 STRUCTURE DEBRIS.

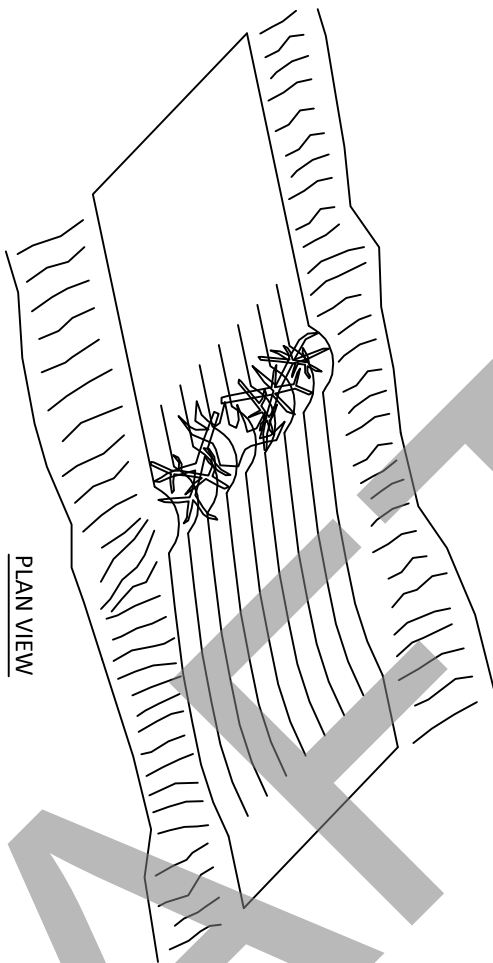
SETTLING POND AND PUMP DETAIL



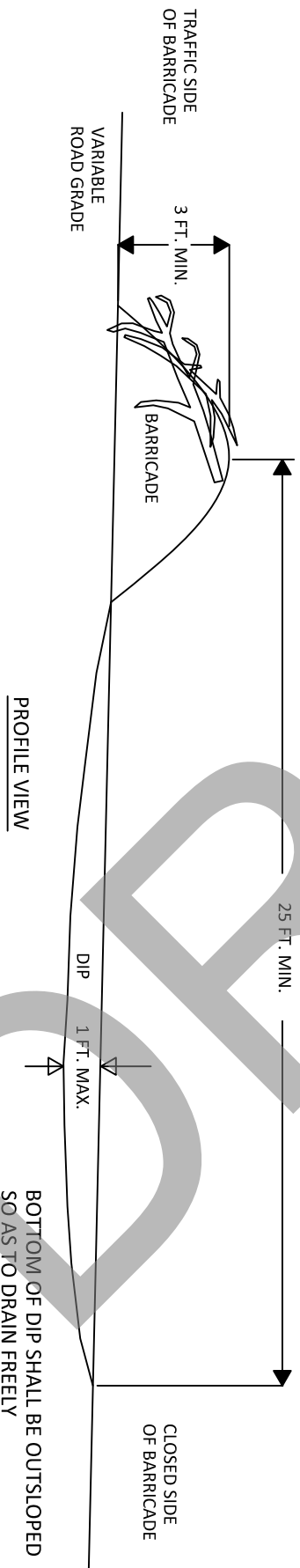
NON-DRIVABLE WATER BAR DETAIL



EARTHEN BARRICADE DETAIL

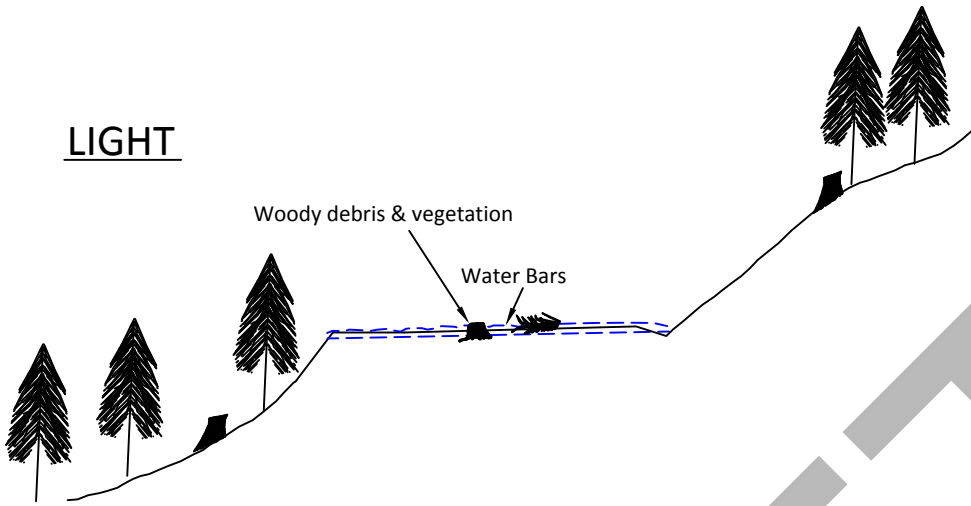


SLASH AND ROOT WADS SHALL BE INCORPORATED INTO THE TRAFFIC SIDE OF THE BARRICADE.

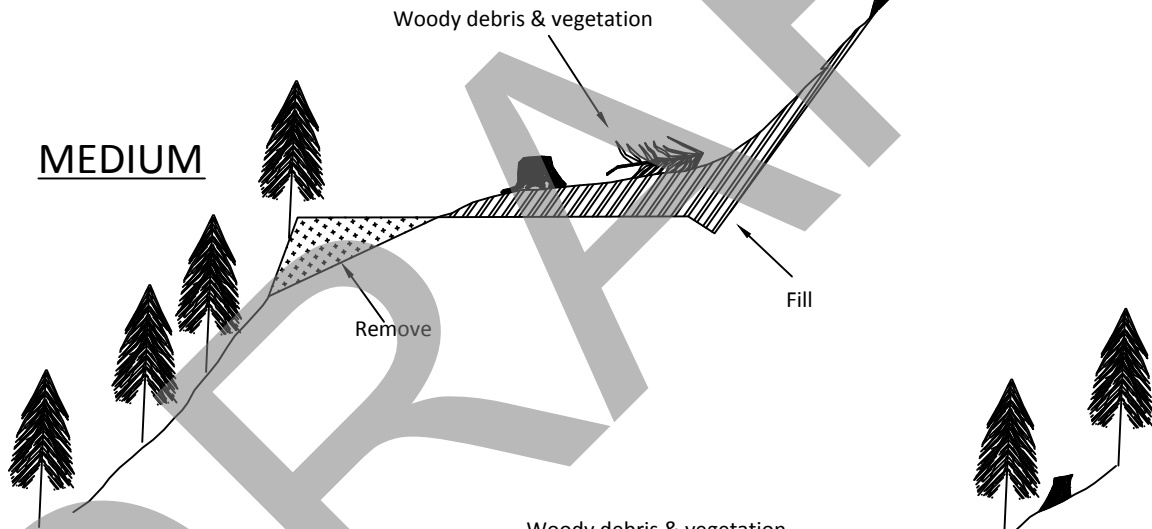


ROAD ABANDONMENT CROSS SECTIONS

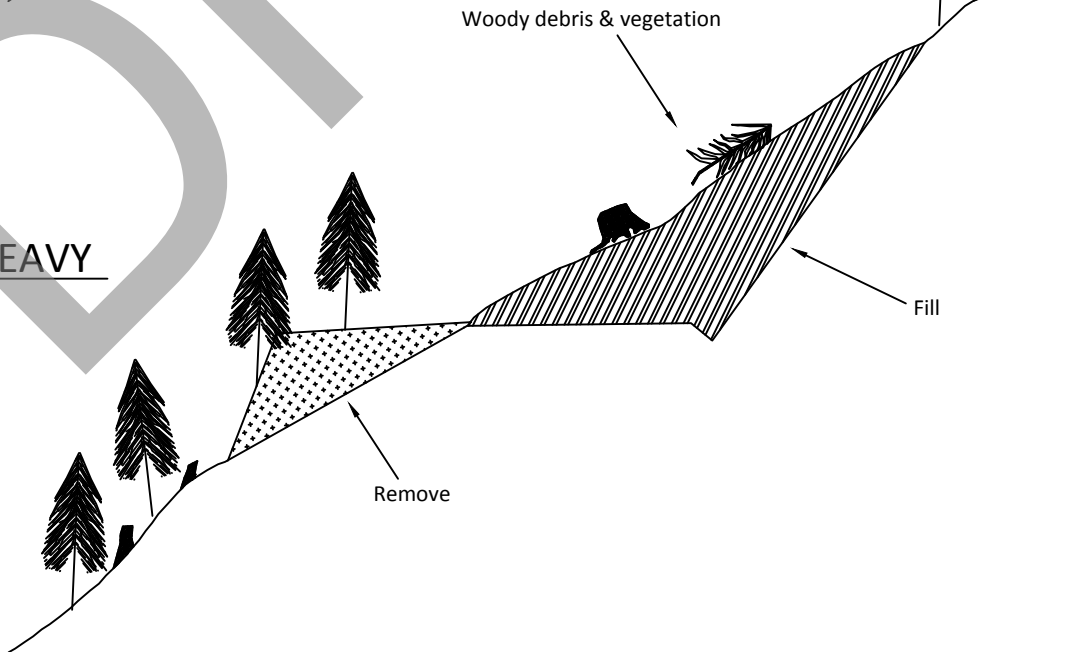
LIGHT



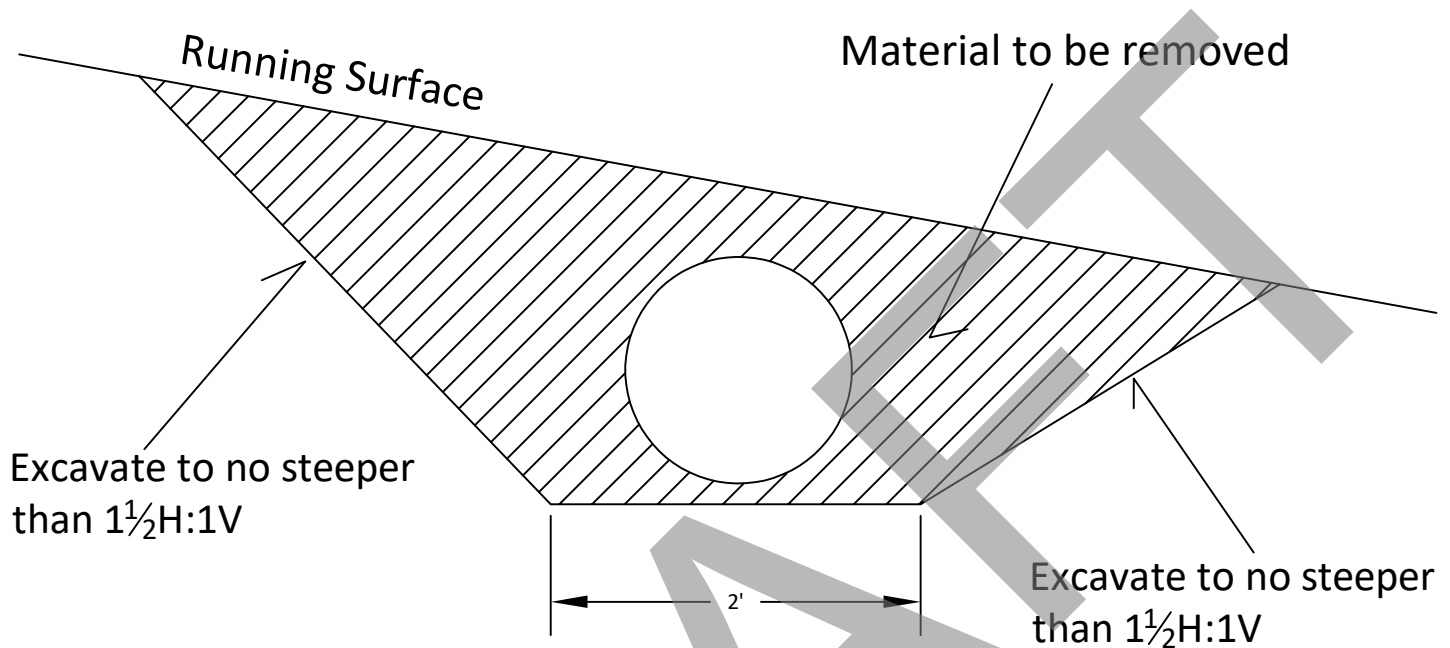
MEDIUM



HEAVY



CROSSDRAIN REMOVAL DETAIL



1) Excavated material may be wasted on the road surface on the downhill side of the excavation. Waste material shall be sloped at no steeper than 1½ H:1V.

2) Resulting trench shall be keyed into the ditchline and sloped towards the outside edge of the road with a drop of at least 1 foot in 10 feet.

SUMMARY - Road Development Costs

REGION: Pacific Cascade

DISTRICT: Lewis

SALE/PROJECT NAME: Luna Tix

AGREEMENT #: 30-106422

ROAD NUMBERS: Optional: W-553 (30+10 to 52+40), W-556D, W-556D1, W-556D2
Required: W-3000, W-500, W-550, W-553 (0+00 to 30+10 & 52+40 to 62+80),
W-556, W-556F Tie, W-556F, W-556C

| ROAD STANDARD: | Construction | Reconstruction | Maintenance |
|--|--------------|----------------|--------------|
| NUMBER OF STATIONS: | 12.70 | 15.80 | 774.80 |
| CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.: | \$6,787.61 | \$5,612.87 | \$31,619.57 |
| ROAD ROCK: | | | |
| Optional: | \$7,748.37 | \$14,999.22 | \$0.00 |
| Required: | \$22,089.40 | \$0.00 | \$75,477.58 |
| Total: | \$29,837.77 | \$14,999.22 | \$75,477.58 |
| STOCKPILE: | - | - | \$0.00 |
| CULVERTS AND FLUMES: | \$3,074.00 | \$3,684.00 | \$18,612.00 |
| STRUCTURES: | - | - | - |
| MOBILIZATION: | \$1,501.29 | \$1,241.46 | \$6,993.65 |
| TOTAL COSTS: | \$41,200.67 | \$25,537.55 | \$132,702.80 |
| COST PER STATION: | \$3,244 | \$1,616 | \$171 |
| ROAD DEACTIVATION & ABANDONMENT COSTS: | \$0.00 | \$0.00 | \$3,649 |

| | |
|---|---------------------|
| 10% OVERHEAD AND GENERAL EXPENSE = | \$19,944.10 |
| TOTAL (All Roads) = | \$223,034.12 |
| TOTAL (Minus Optional Rock) = | \$200,286.53 |
| SALE VOLUME MBF = | 8,087 |
| TOTAL \$/MBF = | \$27.58 |
| TOTAL \$/MBF (Minus Optional Rock) = | \$24.77 |

Profit and Risk costs are accounted on an individual basis.

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-3000

Required
Pre-Haul Maintenance- 184+50 stations
3.49 miles

Required
Reconstruction - 0+00 stations
0.00 miles

Required
Construction - 0+00 stations
0.00 miles

Required Abandonment- 0+00 stations
0.00 miles

Optional
Reconstruction - 0+00 stations
0.00 miles

Optional
Construction - 0+00 stations
0.00 miles

PRE-HAUL MAINTENANCE

| MISC. | 184.50 | stations @ | \$18.25 | per station | \$3,367.13 |
|--|--------|------------|---------|-------------|-------------------|
| Grade and shape existing road surface - | 184.50 | stations @ | \$9.70 | per station | \$1,789.65 |
| Roll shaped road surface w/ vibratory roller prior to rockng - | | | | | |
| TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. | | | | | \$5,156.78 |

CULVERTS - MATERIALS & INSTALLATION

| | | | | | | |
|-------------------------------------|----|-----------|-------------------|---|-----------|-------------------|
| <u>Culverts</u> | 40 | LF of 18" | <u>\$1,220.00</u> | 0 | LF of 24" | \$0.00 |
| | | | \$1,220.00 | | | \$0.00 |
| <u>Culvert Stakes & Markers</u> | | | | | | |
| | 1 | markers | <u>\$8.00</u> | | | |
| TOTAL CULVERTS | | | | | | \$1,220.00 |

ROCK

| | | | | | | | | |
|--------------------------|---------------|-----|--------|---------|---|---------|-----------|-------------------|
| Culvert Backfill/Bedding | See Rock List | 20 | cy. of | Crushed | @ | \$23.11 | per c.y.= | \$462.20 |
| Spot Rock | See Rock List | 100 | cy. of | Crushed | @ | \$23.11 | per c.y.= | \$2,311.00 |
| Energy Dissipator | See Rock List | 1 | cy. of | Pit-Run | @ | \$23.06 | per c.y.= | <u>\$23.06</u> |
| TOTAL ROCK | | | | | | | | \$2,796.26 |

SUBTOTAL **\$9,173.04**

MOBILIZATION

SUBTOTAL **\$1,140.58**

OVERHEAD & GENERAL EXPENSES

SUBTOTAL **\$1,031.36**

Optional Rock? NO

TOTAL **\$11,344.98**

COST PER STATION **\$61.49**

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-500

Required
Pre-Haul Maintenance- 206+50 stations
3.91 miles

Required
Reconstruction - 0+00 stations
0.00 miles

Required
Construction - 0+00 stations
0.00 miles

Required Abandonment- 0+00 stations
0.00 miles

Optional
Reconstruction - 0+00 stations
0.00 miles

Optional
Construction - 0+00 stations
0.00 miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing 0.00 miles @ \$1,170.00 per mile = \$0.00

MISC.

Grade and shape existing road surface - 206.50 stations @ \$18.25 per station \$3,768.63
 Roll shaped road surface w/ vibratory roller prior to rocking - 206.50 stations @ \$9.70 per station \$2,003.05
 Grass Seed 3.00 @ \$4.00 per lb. \$12.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$5,783.68**

CULVERTS - MATERIALS & INSTALLATION

Culverts

70 LF of 24" \$4,054.10
 \$4,054.10

Culvert Stakes & Markers 1 markers

\$8.00
 \$8.00

TOTAL CULVERTS **\$4,062.10**

ROCK

122+00 to 129+00 140 cy. of Crushed @ \$19.56 per c.y. = \$2,738.40
 Culvert Backfill/Bedding 195+50 40 cy. of Crushed @ \$18.32 per c.y. = \$732.80
 Fill Armor 195+50 20 cy. of Riprap @ \$24.41 per c.y. = \$488.20
 Spot Rock See Rock List 130 cy. of Crushed @ \$19.56 per c.y. = \$2,542.80
 195+00 to 198+00 60 cy. of Crushed @ \$19.56 per c.y. = \$1,173.60

TOTAL ROCK **\$7,675.80**

SUBTOTAL **\$17,521.58**

MOBILIZATION

SUBTOTAL **\$1,279.24**

OVERHEAD & GENERAL EXPENSES

10%

SUBTOTAL **\$1,880.08**

TOTAL \$20,680.90

Optional Rock? NO

COST PER STATION \$100.15

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-550

| | | |
|---|---|---|
| Required Pre-Haul Maintenance - 218+50 stations 4.14 miles | Required Reconstruction - 0+00 stations 0.00 miles | Required Construction - 0+00 stations 0.00 miles |
| Required Abandonment- 0+00 stations 0.00 miles | Optional Reconstruction - 0+00 stations 0.00 miles | Optional Construction - 0+00 stations 0.00 miles |

PRE-HAUL MAINTENANCE

| | | | | |
|---|--------|------------|---|------------------------|
| MISC. | | | | |
| Grade and shape existing road surface - | 218.50 | stations @ | \$18.25 | per station \$3,987.63 |
| Roll shaped road surface w/ vibratory roller prior to rocking - | 218.50 | stations @ | \$9.70 | per station \$2,119.45 |
| Grass Seed | 6.00 | @ | \$4.00 | per lb. \$24.00 |
| | | | | \$6,340.20 |
| | | | TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. | |

CULVERTS - MATERIALS & INSTALLATION

| | | | | | |
|-------------------------------------|-----------|------------|----|-----------------------|-------------------|
| <u>Culverts</u> | | | | | |
| 110 | LF of 18" | \$3,355.00 | 50 | LF of 24" | \$1,681.50 |
| | | \$3,355.00 | | | \$1,681.50 |
| <u>Culvert Stakes & Markers</u> | | | | | |
| 4 | markers | \$32.00 | | | |
| | | \$32.00 | | | |
| | | | | <u>TOTAL CULVERTS</u> | \$5,068.50 |

ROCK

| | | | | | | | |
|--------------------------|---------------|--------|---------|---|---------|-----------|--------------------|
| 0+00 to 41+00 | 875 | cy. of | Crushed | @ | \$23.38 | per c.y.= | \$20,457.50 |
| Culvert Backfill/Bedding | See Rock List | 130 | Crushed | @ | \$23.38 | per c.y.= | \$3,039.40 |
| Fill Armor | See Rock List | 18 | Riprap | @ | \$31.37 | per c.y.= | \$564.66 |
| Spot Rock | See Rock List | 120 | Crushed | @ | \$23.38 | per c.y.= | \$2,805.60 |
| Energy Dissipator | See Rock List | 4 | Pit Run | @ | \$23.36 | per c.y.= | \$93.44 |
| 74+50 to 92+50 | 385 | cy. of | Crushed | @ | \$23.38 | per c.y.= | \$9,001.30 |
| 171+70 to 209+50 | 800 | cy. of | Crushed | @ | \$23.38 | per c.y.= | \$18,704.00 |
| | | | | | | | <u>TOTAL ROCK</u> |
| | | | | | | | \$54,665.90 |

SUBTOTAL **\$66,074.60**

MOBILIZATION

SUBTOTAL **\$1,402.33**

OVERHEAD & GENERAL EXPENSES

10%

SUBTOTAL **\$6,747.69**

TOTAL \$74,224.62

Optional Rock? NO

COST PER STATION \$339.70

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-553

| | | |
|---|--|--|
| Required/Optional Pre-Haul Maintenance- 62+80 stations 1.19 miles | Required Reconstruction - 0+00 stations 0.00 miles | Required Construction - 0+00 stations 0.00 miles |
| Required Abandonment- 22+30 stations 0.42 miles | Optional Reconstruction - 0+00 stations 0.00 miles | Optional Construction - 0+00 stations 0.00 miles |

PRE-HAUL MAINTENANCE

| | | | | | |
|---|-------|------------|------------|-------------|-------------------|
| CLEARING | | | | | |
| Roadside Brushing | 0.62 | miles @ | \$2,028.00 | per mile = | \$1,257.36 |
| EXCAVATION | | | | | |
| Clean ditch & culverts- | 62.80 | stations @ | \$67.19 | per station | \$4,219.53 |
| MISC. | | | | | |
| Grade and shape existing road surface - | 62.80 | stations @ | \$18.25 | per station | \$1,146.10 |
| Roll shaped road surface w/ vibratory roller prior to rocking - | 62.80 | stations @ | \$9.70 | per station | \$609.16 |
| Grass Seed | 3.00 | @ | \$4.00 | per lb. | \$12.00 |
| TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. | | | | | \$7,453.27 |

CULVERTS - MATERIALS & INSTALLATION

| | | | | | |
|-------------------------------------|-----------|------------|--|--|-------------------|
| <u>Culverts</u> | | | | | |
| 110 | LF of 18" | \$3,355.00 | | | |
| 60 | LF of 30" | \$4,874.40 | | | |
| | | \$8,229.40 | | | |
| <u>Culvert Stakes & Markers</u> | | | | | |
| 4 | markers | \$32.00 | | | |
| | | \$32.00 | | | |
| TOTAL CULVERTS | | | | | \$8,261.40 |

ROCK

| | | | | | | | | |
|--------------------------|---------------|-----|--------|---------|---|---------|-----------|-------------------|
| 4+10 to | 6+80 | 81 | cy. of | Crushed | @ | \$26.02 | per c.y.= | \$2,107.62 |
| Culvert Backfill/Bedding | See Rock List | 110 | cy. of | Crushed | @ | \$26.02 | per c.y.= | \$2,862.20 |
| Fill Armor | 28+00 | 10 | cy. of | Riprap | @ | \$32.16 | per c.y.= | \$321.60 |
| Spot Rock | See Rock List | 150 | cy. of | Crushed | @ | \$26.02 | per c.y.= | \$3,903.00 |
| Energy Dissipator | See Rock List | 3 | cy. of | Pit-Run | @ | \$24.00 | per c.y.= | \$72.00 |
| TOTAL ROCK | | | | | | | | \$9,266.42 |

ADDITIONAL REQUIREMENTS

| | | | | | |
|--------------------------------------|------|--------|----------|---------|-----------------|
| Stream diversion installation- | 2.00 | hrs @ | \$256.60 | per hr | \$513.20 |
| Stream pumping | 0.50 | days @ | \$183.20 | per day | \$91.60 |
| TOTAL ADDITIONAL REQUIREMENTS | | | | | \$604.80 |

ABANDONMENT

| | | | | | |
|--------------------------------------|-------|-------|----------|---------|-------------------|
| Construct waterbar - | 15.00 | @ | \$60.00 | each | \$900.00 |
| Construct Spoil Berm - | 2.00 | @ | \$180.00 | each | \$360.00 |
| Rip road - | 5.00 | @ | \$180.00 | each | \$900.00 |
| Grass seed and fertilize - | 80.00 | lbs @ | \$4.00 | per lbs | \$320.00 |
| Remove culverts from state lands - | 3.00 | @ | \$417.42 | total | \$417.42 |
| TOTAL ADDITIONAL REQUIREMENTS | | | | | \$2,897.42 |

SUBTOTAL **\$28,483.31**

MOBILIZATION

SUBTOTAL **\$1,648.52**

OVERHEAD & GENERAL EXPENSES

10% SUBTOTAL **\$3,013.18**

TOTAL \$33,145.01

Optional Rock? NO

COST PER STATION \$527.79

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556

Required
Pre-Haul Maintenance- 91+00 stations
1.72 miles

Required
Reconstruction - 0+00 stations
0.00 miles

Required
Construction - 0+00 stations
0.00 miles

Required Abandonment- 0+00 stations
0.00 miles

Optional
Reconstruction - 0+00 stations
0.00 miles

Optional
Construction - 0+00 stations
0.00 miles

PRE-HAUL MAINTENANCE

EXCAVATION

Clean ditches & culverts- 49+00 to 91+00

42.00 stations @ \$67.19 per station \$2,821.98

MISC.

Grade and shape existing road surface -

91.00 stations @ \$18.25 per station \$1,660.75

Roll shaped road surface w/ vibratory roller prior to rocking -

91.00 stations @ \$9.70 per station \$882.70

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$5,365.43**

SUBTOTAL **\$5,365.43**

MOBILIZATION

SUBTOTAL **\$1,186.73**

OVERHEAD & GENERAL EXPENSES

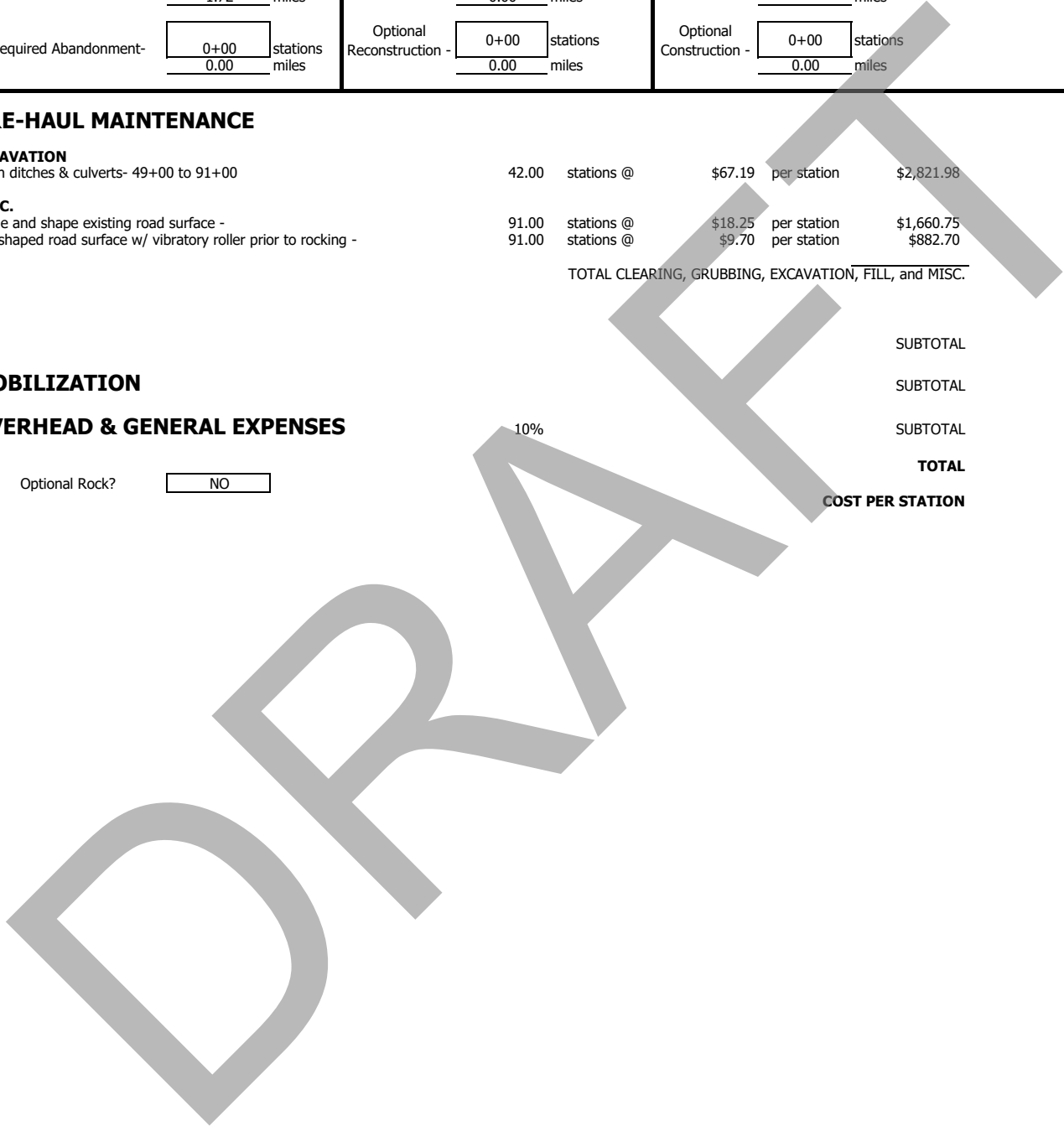
10%

SUBTOTAL **\$655.22**

Optional Rock? NO

TOTAL \$7,207.38

COST PER STATION \$79.20



SUMMARY OF ROAD

| | | | | | |
|-----------------------------------|--|-------------------|------------------------------|--|-------------------|
| Sale: | Luna Tix | | Road: | W-556F Tie | |
| Required Pre-Haul Maintenance- | 0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00 | stations miles | Required Reconstruction - | 0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00 | stations miles |
| Required Abandonment- | 0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00 | stations miles | Optional Reconstruction - | 0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00 | stations miles |
| | | | Required Construction - | 1+00 <hr style="width: 50%; margin: 0 auto;"/> 0.02 | stations miles |
| | | | Optional Construction - | 0+00 <hr style="width: 50%; margin: 0 auto;"/> 0.00 | stations miles |

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris 1.00 sta @ \$280.00 per sta \$280.00

EXCAVATION

Road Construction Earthwork 1.00 sta. @ \$152.17 per sta. = \$152.17
 Grade and shape subgrade - 1.00 stations @ \$14.60 per station \$14.60

MISC.

Roll subgrade w/ vibratory roller prior to rocking - 1.00 stations @ \$12.12 per station \$12.12
 Grass seed and fertilize - 3.00 lbs @ \$4.00 per lbs \$12.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$470.89**

CULVERTS - MATERIALS & INSTALLATION

| | | | |
|--------------------------|----------------|------------|-------------------|
| Culverts | 40 LF of 18" | \$1,220.00 | |
| | | \$1,220.00 | |
| Culvert Stakes & Markers | 1 markers | \$8.00 | |
| | | \$8.00 | |
| | TOTAL CULVERTS | | \$1,228.00 |

ROCK

| | | | | | | |
|-------------------|------------|----------|---|---------|------------|-------------------|
| 0+00 to 1+00 | 40 cy. of | Crushed | @ | \$27.28 | per c.y.= | \$1,091.20 |
| Energy Dissipator | 0+10 | 1 cy. of | @ | \$26.91 | per c.y.= | \$26.91 |
| 0+00 to 1+00 | 126 cy. of | Pit Run | @ | \$20.86 | per c.y.= | \$2,628.36 |
| | | | | | TOTAL ROCK | \$3,746.47 |

SUBTOTAL **\$5,445.36**

MOBILIZATION

SUBTOTAL **\$104.15**

OVERHEAD & GENERAL EXPENSES

10% SUBTOTAL **\$554.95**

TOTAL \$6,104.46

Optional Rock? NO

COST PER STATION \$6,104.46

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556F

Required
Pre-Haul Maintenance- 11+50 stations
0.22 miles

Required
Reconstruction - 0+00 stations
0.00 miles

Required
Construction - 0+00 stations
0.00 miles

Required Abandonment- 0+00 stations
0.00 miles

Optional
Reconstruction - 0+00 stations
0.00 miles

Optional
Construction - 0+00 stations
0.00 miles

PRE-HAUL MAINTENANCE

CLEARING

Roadside Brushing 0.22 miles @ \$2,028.00 per mile = \$446.16

EXCAVATION

Clean ditch & culverts - 0+00 to 11+50 2.20 stations @ \$67.19 per station \$147.82

MISC.

Grade and shape existing road surface - 11.50 stations @ \$18.25 per station \$209.88

Roll shaped road surface w/ vibratory roller prior to rocking - 11.50 stations @ \$9.70 per station \$111.55

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$915.41**

ROCK

9+50 to 11+50 40 cy. of Crushed @ \$26.83 per c.y. = \$1,073.20
TOTAL ROCK **\$1,073.20**

SUBTOTAL **\$1,988.61**

MOBILIZATION

SUBTOTAL **\$202.47**

OVERHEAD & GENERAL EXPENSES

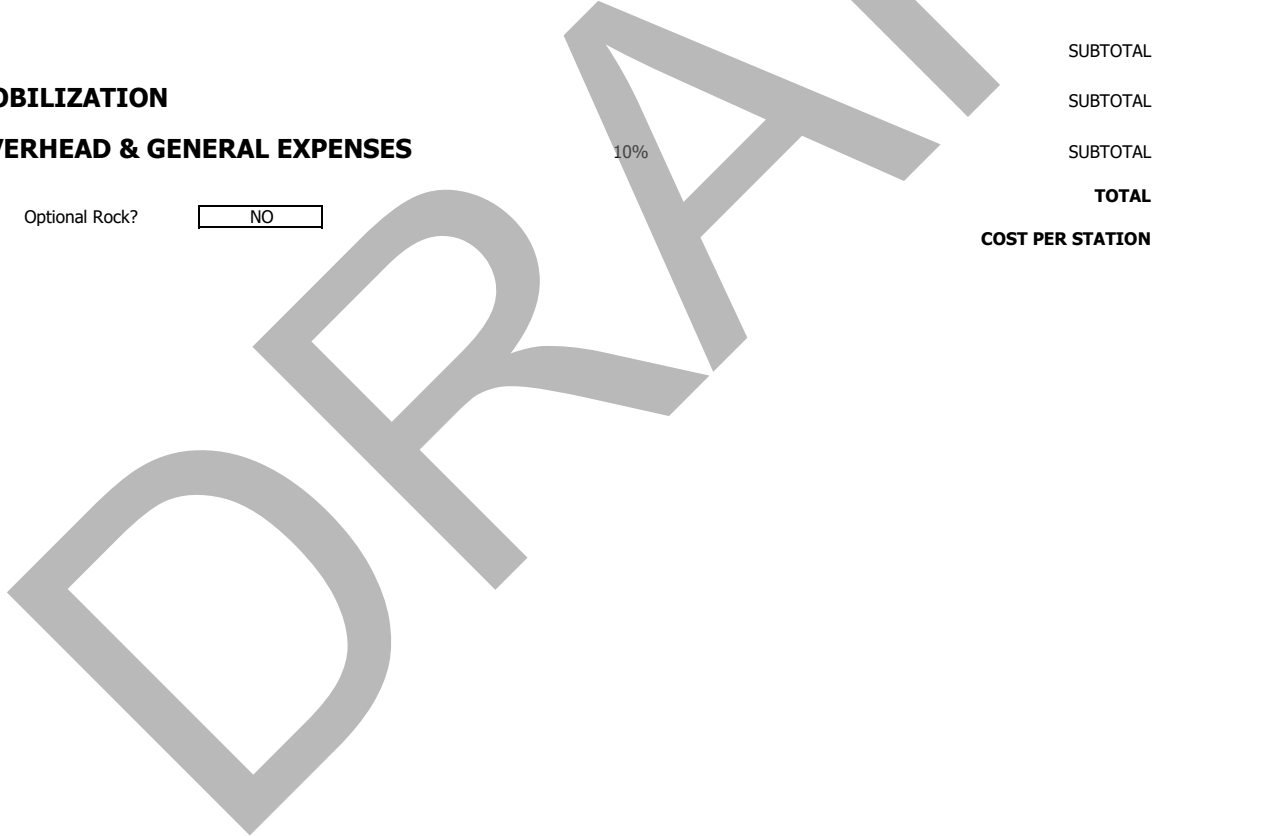
10%

SUBTOTAL **\$219.11**

TOTAL \$2,410.19

Optional Rock? NO

COST PER STATION \$209.58



SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556D

Required
Pre-Haul Maintenance- 0+00 stations
0.00 miles

Required
Reconstruction - 0+00 stations
0.00 miles

Required
Construction - 0+00 stations
0.00 miles

Required Abandonment- 0+00 stations
0.00 miles

Optional
Reconstruction - 0+00 stations
0.00 miles

Optional
Construction - 8+90 stations
0.17 miles

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris 8.90 sta @ \$280.00 per sta \$2,492.00

EXCAVATION

Road Construction Earthwork 8.90 sta. @ \$152.17 per sta. = \$1,354.31
Grade and shape subgrade - 8.90 stations @ \$14.60 per station \$129.94

MISC.

Roll subgrade w/ vibratory roller prior to rocking - 8.90 stations @ \$12.12 per station \$107.87
Construct turnaround @ sta. - 1.00 @ \$134.62 each \$134.62
Grass seed and fertilize - 26.00 lbs @ \$4.00 per lbs \$104.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$4,322.74**

CULVERTS - MATERIALS & INSTALLATION

Culverts
60 LF of 18" \$1,830.00
Culvert Stakes & Markers
2 markers \$16.00
\$16.00

TOTAL CULVERTS **\$1,846.00**

ROCK

Energy Dissipator 0+00 2 cy. of Pit-Run @ \$27.33 per c.y. = \$54.66
0+00 to 8+90 819 cy. of Pit Run @ \$22.33 per c.y. = \$18,288.27
TOTAL ROCK \$18,342.93

SUBTOTAL **\$24,511.67**

MOBILIZATION

SUBTOTAL **\$956.11**

OVERHEAD & GENERAL EXPENSES

10%

SUBTOTAL **\$2,546.78**

TOTAL \$28,014.56

Optional Rock? NO

COST PER STATION \$3,147.70

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556D1

| | | |
|---|---|--|
| Required Pre-Haul Maintenance- <input style="width: 50px; text-align: center;" type="text"/> stations 0.00 miles | Required Reconstruction - <input style="width: 50px; text-align: center;" type="text"/> stations 0.00 miles | Required Construction - <input style="width: 50px; text-align: center;" type="text"/> stations 0.00 miles |
| Required Abandonment- <input style="width: 50px; text-align: center;" type="text"/> stations 0.00 miles | Optional Reconstruction - <input style="width: 50px; text-align: center;" type="text"/> stations 15+80 stations 0.30 miles | Optional Construction - <input style="width: 50px; text-align: center;" type="text"/> stations 0.00 miles |

RECONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris 15.80 sta @ \$140.00 per sta \$2,212.00

EXCAVATION

Reconstruct ditch- 15.80 stations @ \$67.19 per station \$1,061.60
 Grade and shape subgrade - 15.80 stations @ \$14.60 per station \$230.68

MISC.

Roll subgrade w/ vibratory roller prior to rocking - 15.80 stations @ \$12.12 per station \$191.50
 Reconstruct turnouts @ sta. - 1.00 @ \$134.62 each \$134.62
 Reconstruct turnaround @ sta. - 2.00 @ \$134.62 each \$269.24
 Reconstruct landing - 1.00 @ \$269.23 each \$269.23
 Grass seed and fertilize - 31.00 lbs @ \$4.00 per lbs \$124.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$4,492.87**

CULVERTS - MATERIALS & INSTALLATION

| | | | |
|-------------------------------------|-----------|------------|--|
| <u>Culverts</u> | | | |
| 120 | LF of 18" | \$3,660.00 | |
| | | \$3,660.00 | |
| <u>Culvert Stakes & Markers</u> | | | |
| 3 | markers | \$24.00 | |
| | | \$24.00 | |

TOTAL CULVERTS **\$3,684.00**

ROCK

| | | | | | | | | |
|--------------------------|---------------|-----|--------|---------|---|---------|-----------|------------|
| 0+00 to | 15+80 | 325 | cy. of | Crushed | @ | \$28.23 | per c.y.= | \$9,174.75 |
| Culvert Backfill/Bedding | See Rock List | 60 | cy. of | Crushed | @ | \$28.23 | per c.y.= | \$1,693.80 |
| Energy Dissipator | See Rock List | 3 | cy. of | Pit-Run | @ | \$27.49 | per c.y.= | \$82.47 |
| 0+00 to | 0+00 | 180 | cy. of | Pit Run | @ | \$22.49 | per c.y.= | \$4,048.20 |
| | | | | | | | | TOTAL ROCK |

\$14,999.22

ADDITIONAL REQUIREMENTS

Rock Exploration 4.00 @ \$280.00 each \$1,120.00

TOTAL ADDITIONAL REQUIREMENTS **\$1,120.00**

SUBTOTAL **\$24,296.09**

MOBILIZATION

SUBTOTAL **\$993.74**

OVERHEAD & GENERAL EXPENSES

SUBTOTAL 10% **\$2,528.98**

TOTAL \$27,818.81

Optional Rock? YES

COST PER STATION \$1,760.68

SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556D2

| | | |
|---|--|--|
| Required Pre-Haul Maintenance- 0+00 stations 0.00 miles | Required Reconstruction - 0+00 stations 0.00 miles | Required Construction - 0+00 stations 0.00 miles |
| Required Abandonment- 0+00 stations 0.00 miles | Optional Reconstruction - 0+00 stations 0.00 miles | Optional Construction - 2+80 stations 0.05 miles |

CONSTRUCTION

CLEARING/GRUBBING

Scattering Organic Debris 2.80 sta @ \$280.00 per sta \$784.00

EXCAVATION

Road Construction Earthwork 2.80 sta. @ \$152.17 per sta. = \$426.08
 Grade and shape subgrade - 2.80 stations @ \$14.60 per station \$40.88

MISC.

Roll subgrade w/ vibratory roller prior to rocking - 2.80 stations @ \$12.12 per station \$33.94
 Construct turnouts @ sta. - 1.00 @ \$134.62 each \$134.62
 Construct landing - 1.00 @ \$538.46 each \$538.46
 Grass seed and fertilize - 9.00 lbs @ \$4.00 per lbs \$36.00

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **\$1,993.98**

ROCK

0+00 to 2+80 343 cy. of Pit Run @ \$22.59 per c.y. = \$7,748.37
TOTAL ROCK \$7,748.37

SUBTOTAL **\$9,742.35**

MOBILIZATION

SUBTOTAL **\$441.03**

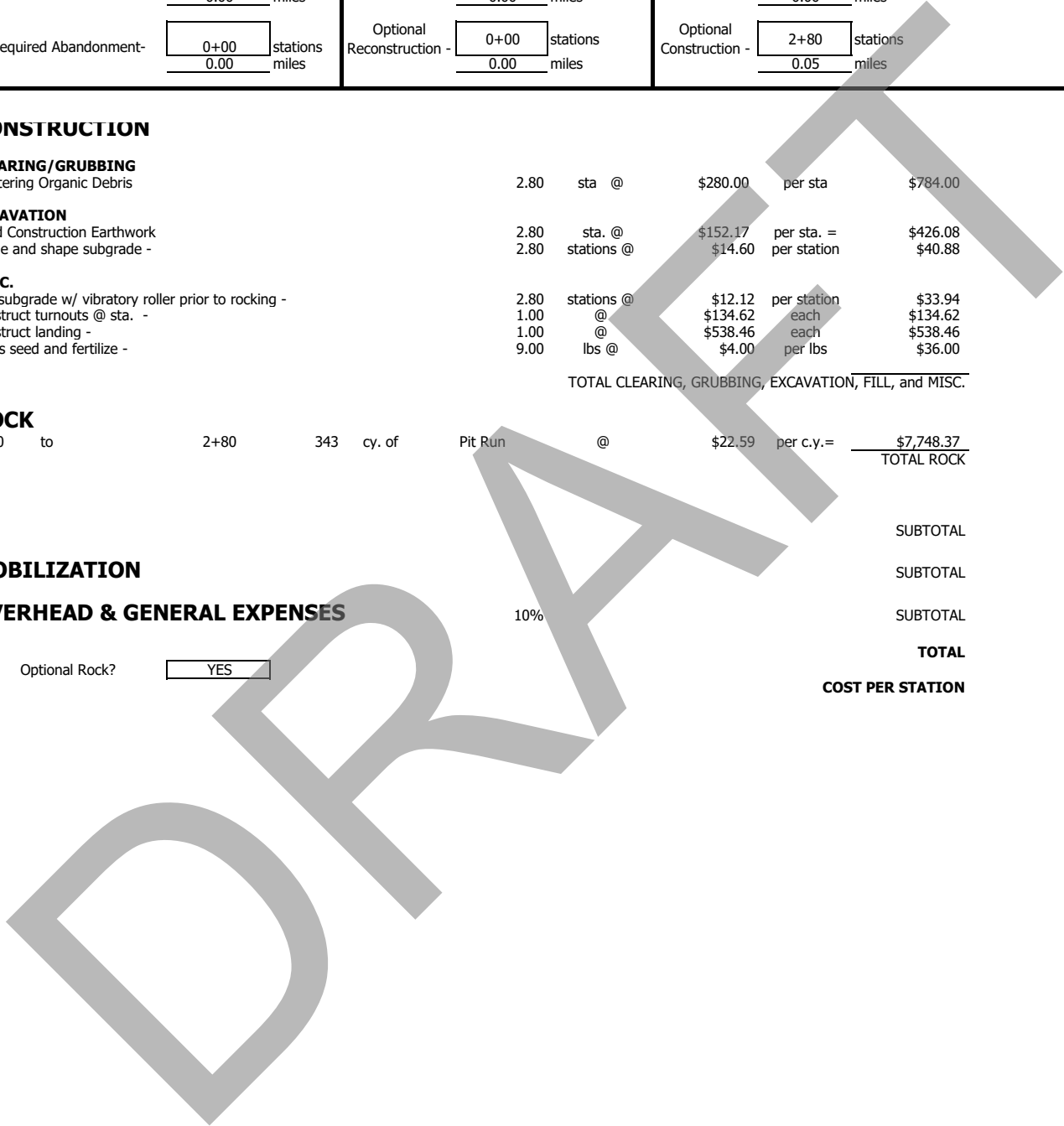
OVERHEAD & GENERAL EXPENSES

10% SUBTOTAL **\$1,018.34**

Optional Rock? YES

TOTAL \$11,201.72

COST PER STATION \$4,000.61



SUMMARY OF ROAD

Sale: Luna Tix

Road: W-556C

| | | |
|---|--|--|
| Required Pre-Haul Maintenance- 0+00 stations 0.00 miles | Required Reconstruction - 0+00 stations 0.00 miles | Required Construction - 0+00 stations 0.00 miles |
| Required Abandonment- 6+20 stations 0.12 miles | Optional Reconstruction - 0+00 stations 0.00 miles | Optional Construction - 0+00 stations 0.00 miles |

ABANDONMENT

| | | | | | | |
|----------------------------|-------|-------|-------------------------------|---------|----------|-----------------|
| Construct waterbar - | 4.00 | @ | \$75.00 | each | \$300.00 | |
| Construct Spoil Berm - | 2.00 | @ | \$180.00 | each | \$360.00 | |
| Grass seed and fertilize - | 23.00 | lbs @ | \$4.00 | per lbs | \$92.00 | |
| | | | TOTAL ADDITIONAL REQUIREMENTS | | | \$752.00 |

SUBTOTAL **\$752.00**

MOBILIZATION

SUBTOTAL **\$166.33**

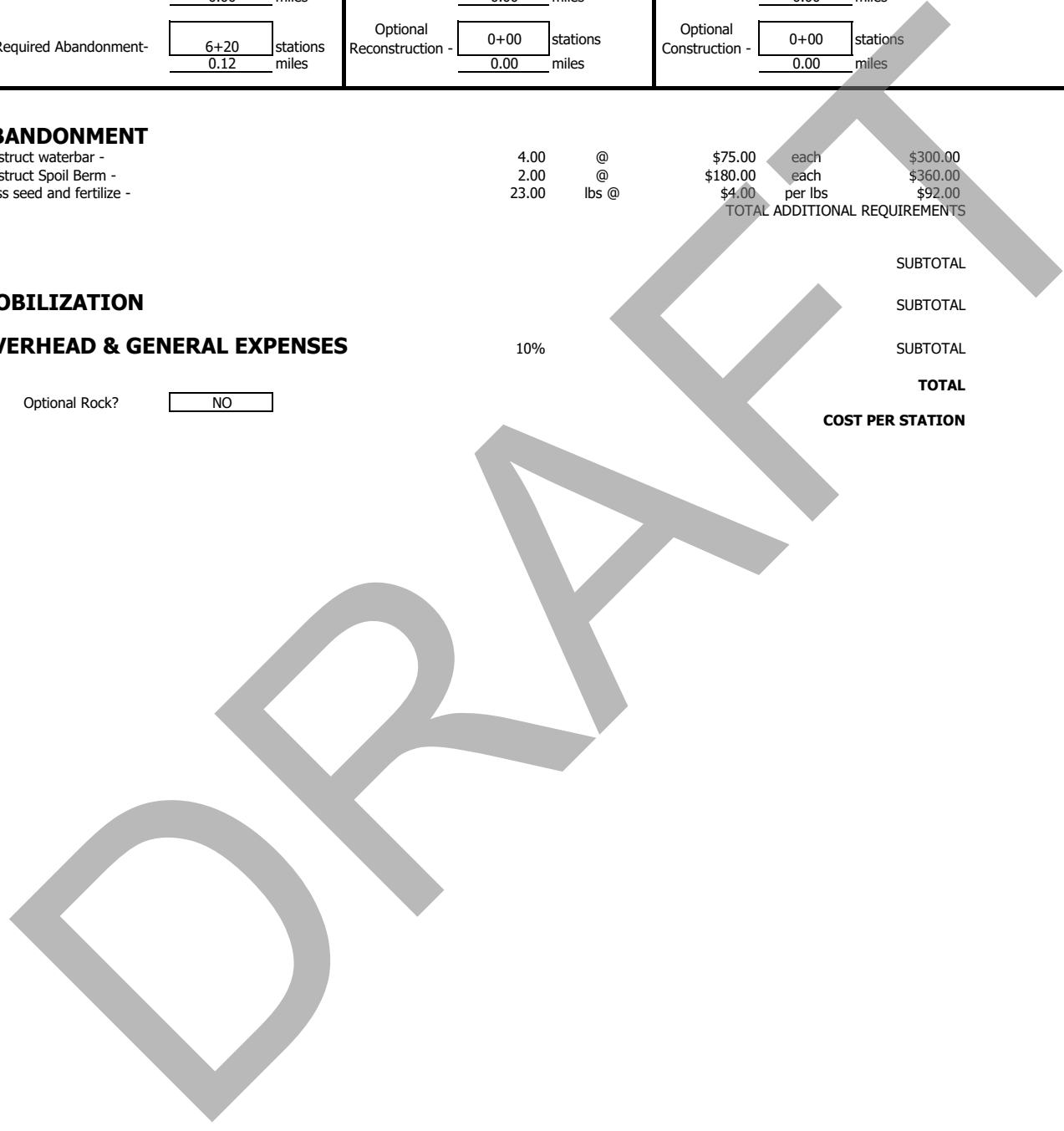
OVERHEAD & GENERAL EXPENSES

SUBTOTAL **\$91.83**

TOTAL \$1,010.16

Optional Rock? NO

COST PER STATION \$162.93



ROCK DEVELOPMENT COST SUMMARY

| | | | |
|-------------|-----------------|--------------------|-------------------|
| Pit: | W-500 | Location: | Sec. 14, T11N R3E |
| Sale: | Luna Tix | Road: | 1530 c.y. |
| Swell: | 1.40 | Stockpile: | c.y. |
| Shrinkage: | 1.16 | Total Truck Loads: | 1530 c.y. |
| Drill Pct.: | 60% | In Place Total: | 1093 c.y. |

| | | | |
|--|-----------------|--------------|-------------|
| Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden in Waste Area, spread and compact. | | | |
| | \$1.40 /cu.yd x | 2500 cu.yds. | \$3,500.00 |
| Drill & Shoot: | \$4.50 /cu.yd x | 656 cu.yds. | \$2,952.00 |
| Rip Rock: | \$2.50 /cu.yd x | 437 cu.yds. | \$1,092.50 |
| Push Rock: | \$0.67 /cu.yd x | 1530 cu.yds. | \$1,025.10 |
| Load Dump Truck: | \$2.00 /cu.yd x | 1530 cu.yds. | \$3,060.00 |
| | | Subtotal | \$11,629.60 |

| | | | | | |
|---|---|---|----------|----------|------------|
| Required Rock Drill Exploration | 6 | @ | \$380.00 | = | \$2,280.00 |
| Move In and set up Drill and Compressor | 1 | @ | \$374.23 | = | \$374.23 |
| | | | | Subtotal | \$2,654.23 |

| | | | | | |
|------------|---------|------------|------------------------|------------------|-------------|
| Base Cost= | \$9.34 | Per Cu.Yd. | | | |
| | \$15.34 | Per Cu.Yd. | TOTAL PRODUCTION COSTS | (Select Pit Run) | \$14,283.83 |
| | | | (Light Loose Riprap) | | |

| Road Segment | Haul Cost /cu.yd. | Application Cost /cu.yd. | Base Cst. /cu.yd. | Cost /cu.yd. | Number Cu. Yds | Speed (Mi/hr.) | One-Way Dist (ft) | ROCK COST |
|------------------------------|-------------------|--------------------------|-------------------|--------------|----------------|----------------|-------------------|-------------|
| W-3000 Energy Dissipator | \$7.72 | \$6.00 | \$9.34 | \$23.06 | 1 | 25 | 25175 | \$23.06 |
| W-500 Fill Armor | \$3.07 | \$6.00 | \$15.34 | \$24.41 | 20 | 5 | 400 | \$488.20 |
| W-550 Fill Armor | \$10.03 | \$6.00 | \$15.34 | \$31.37 | 18 | 25 | 26500 | \$564.66 |
| W-550 Energy Dissipator | \$8.02 | \$6.00 | \$9.34 | \$23.36 | 4 | 25 | 26500 | \$93.44 |
| W-553 Fill Armor | \$10.82 | \$6.00 | \$15.34 | \$32.16 | 10 | 25 | 29300 | \$321.60 |
| W-553 Energy Dissipator | \$8.66 | \$6.00 | \$9.34 | \$24.00 | 3 | 25 | 29300 | \$72.00 |
| W-556F Tie Energy Dissipator | \$11.57 | \$6.00 | \$9.34 | \$26.91 | 1 | 25 | 42100 | \$26.91 |
| W-556F Tie | \$10.52 | \$1.00 | \$9.34 | \$20.86 | 126 | 25 | 42100 | \$2,628.36 |
| W-556D Energy Dissipator | \$11.99 | \$6.00 | \$9.34 | \$27.33 | 2 | 25 | 49210 | \$54.66 |
| W-556D | \$11.99 | \$1.00 | \$9.34 | \$22.33 | 819 | 25 | 49210 | \$18,288.27 |
| W-556D1 Energy Dissipator | \$12.15 | \$6.00 | \$9.34 | \$27.49 | 3 | 25 | 50000 | \$82.47 |
| W-556D1 | \$12.15 | \$1.00 | \$9.34 | \$22.49 | 180 | 25 | 50000 | \$4,048.20 |
| W-556D2 | \$12.25 | \$1.00 | \$9.34 | \$22.59 | 343 | 25 | 50500 | \$7,748.37 |
| | | | | Total C.Y. | 1530 | | Sub Total | \$34,440.20 |

TOTAL ROCKING COSTS \$34,440.20

ROCK DEVELOPMENT COST SUMMARY

| | | | |
|-------------|-----------------|--------------------|-------------------|
| Pit: | W-500 | Location: | Sec. 14, T11N R3E |
| Sale: | Luna Tix | Road: | 3606 c.y. |
| Swell: | 1.40 | Stockpile: | c.y. |
| Shrinkage | 1.16 | Total Truck Loads: | 3606 c.y. |
| Drill Pct.: | 60% | In Place Total: | 2576 c.y. |

Pit Development & Cleanup including Clearing and grubbing of Waste Area @ adjacent to pit, place overburden

| | | | | | |
|------------------------------------|--------|----------|------|---------|-------------|
| in Waste Area, spread and compact. | \$1.20 | /cu.yd x | 2500 | cu.yds. | \$3,000.00 |
| Drill & Shoot: | \$4.50 | /cu.yd x | 1546 | cu.yds. | \$6,957.00 |
| Load Crusher: | \$1.00 | /cu.yd x | 3606 | cu.yds. | \$3,606.00 |
| Crush 1 1/2" Rock: | \$7.00 | /cu.yd x | 3606 | cu.yds. | \$25,242.00 |
| Load Dump Truck: | \$2.00 | /cu.yd x | 3606 | cu.yds. | \$7,212.00 |
| Oversize Reduction: | \$5.05 | /cu.yd x | 800 | cu.yds. | \$4,040.00 |
| Subtotal | | | | | \$50,057.00 |

| | | | | | |
|---|---|---|------------|---|------------|
| Move In/Set-up 3 Stage Crusher | 1 | @ | \$5,604.63 | = | \$5,604.63 |
| Move In and set up Drill and Compressor | 1 | @ | \$374.23 | = | \$374.23 |
| Subtotal | | | | | \$5,978.86 |

TOTAL PRODUCTION COSTS \$56,035.86
(1 1/2" Minus Crushed)

Base Cost= \$15.54 Per Cu.Yd.

| Road Segment | Haul Cost /cu.yd. | Application Cost /cu.yd. | Base Cst. /cu.yd. | Cost /cu.yd. | Number Cu. Yds | Speed (Mi/hr.) | One-way Dist (ft) | ROCK COST |
|----------------------------------|----------------------|-----------------------------|----------------------|-----------------|-------------------|-------------------|-------------------------|--------------|
| W-3000 Culvert Backfill/Bedding | \$6.57 | \$1.00 | \$15.54 | \$23.11 | 20 | 25 | 25175 | \$462.20 |
| W-3000 Spot Rock | \$6.57 | \$1.00 | \$15.54 | \$23.11 | 100 | 25 | 25175 | \$2,311.00 |
| W-500 | \$3.02 | \$1.00 | \$15.54 | \$19.56 | 140 | 25 | 8000 | \$2,738.40 |
| W-500 Culvert Backfill/Bedding | \$1.78 | \$1.00 | \$15.54 | \$18.32 | 40 | 5 | 400 | \$732.80 |
| W-500 Spot Rock | \$3.02 | \$1.00 | \$15.54 | \$19.56 | 130 | 25 | 8000 | \$2,542.80 |
| W-500 | \$3.02 | \$1.00 | \$15.54 | \$19.56 | 60 | 25 | 8000 | \$1,173.60 |
| W-550 | \$6.84 | \$1.00 | \$15.54 | \$23.38 | 875 | 25 | 26500 | \$20,457.50 |
| W-550 Culvert Backfill/Bedding | \$6.84 | \$1.00 | \$15.54 | \$23.38 | 130 | 25 | 26500 | \$3,039.40 |
| W-550 Spot Rock | \$6.84 | \$1.00 | \$15.54 | \$23.38 | 120 | 25 | 26500 | \$2,805.60 |
| W-550 | \$6.84 | \$1.00 | \$15.54 | \$23.38 | 385 | 25 | 26500 | \$9,001.30 |
| W-550 | \$6.84 | \$1.00 | \$15.54 | \$23.38 | 800 | 25 | 26500 | \$18,704.00 |
| W-553 | \$9.48 | \$1.00 | \$15.54 | \$26.02 | 81 | 25 | 39300 | \$2,107.62 |
| W-553 Culvert Backfill/Bedding | \$9.48 | \$1.00 | \$15.54 | \$26.02 | 110 | 25 | 39300 | \$2,862.20 |
| W-553 Spot Rock | \$9.48 | \$1.00 | \$15.54 | \$26.02 | 150 | 25 | 39300 | \$3,903.00 |
| W-556F Tie | \$10.74 | \$1.00 | \$15.54 | \$27.28 | 40 | 25 | 45360 | \$1,091.20 |
| W-556F | \$10.29 | \$1.00 | \$15.54 | \$26.83 | 40 | 25 | 43200 | \$1,073.20 |
| W-556D1 | \$11.69 | \$1.00 | \$15.54 | \$28.23 | 325 | 25 | 50000 | \$9,174.75 |
| W-556D1 Culvert Backfill/Bedding | \$11.69 | \$1.00 | \$15.54 | \$28.23 | 60 | 25 | 50000 | \$1,693.80 |
| Total C.Y. | | | | | 3606 | Sub Total | | \$85,874.37 |

TOTAL ROCKING COSTS \$85,874.37



WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOREST EXCISE TAX ROAD SUMMARY SHEET

Region:

Timber Sale Name:

Application Number:

EXCISE TAX APPLICABLE ACTIVITIES

Construction: linear feet
Road to be constructed (optional and required) but not abandoned

Reconstruction: linear feet
Road to be reconstructed (optional and required) but not abandoned

Abandonment: linear feet
Abandonment of existing roads not reconstructed under the contract

Decommission: linear feet
Road to be made undriveable but not officially abandoned.

Pre-Haul Maintenance: linear feet
Existing road to receive maintenance work (optional and required) prior to haul

EXCISE TAX EXEMPT ACTIVITIES

Temporary Construction: linear feet
Roads to be constructed (optional and required) and then abandoned

Temporary Reconstruction: linear feet
Roads to be reconstructed (optional and required) and then abandoned

All parties must make their own assessment of the taxable or non-taxable status of any work performed under the timber sale contract. The Department of Revenue bears responsibility for determining forest road excise taxes. The Department of Natural Resources developed this form to help estimate the impact of forest excise taxes. However, the information provided may not precisely calculate the actual amount of taxes due. The Department of Revenue is available for consultation by calling 1.800.548.8829.
(Revised 9/18)