WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

TIMBER NOTICE OF SALE

***SALE NAME**: SUZIE Q* ***AGREEMENT NO**: 30-107829*

AUCTION: March 27, 2025 starting at 10:00 a.m., Pacific Cascade Region Office, Castle Rock, WA **COUNTY:** Grays Harbor

SALE LOCATION: Sale located approximately 5 miles southwest of Porter, 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 downed timber 25 inches in diameter and larger, all timber 60 inches DBH and larger, and snags bound by the following:

Unit 1, white " Timber Sale Boundary" tags with pink flagging, the Q-1000 road, Q-1100 road and reprod;

All forest products above located on part(s) of Sections 5 and 8 all in Township 16 North, Range 5 West, W.M., containing 73 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	22	8	2,149			62	107		1,481	428	56	15
Maple	15.7		308						162	35	111	
Red alder	15.4		189						81	27	81	
Hemlock	15.7		119						76	31	12	
Redcedar	17.1		113							96	17	
Sale Total			2,878									

MINIMUM BID: $936,000.00 **BID METHOD:** Sealed Bids

PERFORMANCE SECURITY: $100,000.00 **SALE TYPE:** Lump Sum

EXPIRATION DATE: October 31, 2026 **ALLOCATION:** Export Restricted

BID DEPOSIT: $93,600.00 or Bid Bond. Said deposit shall constitute an opening bid at the appraised price.

HARVEST METHOD: This sale is estimated to be 20 percent ground based harvest and 80 percent cable harvest. Cable-assist restricted to slopes 75 percent or less, shovel restricted to sustained slopes of 40 percent or less, self-leveling shovels restricted to sustained slopes of 60 percent or less. Falling and Yarding will not be permitted from March 1 to August 31 unless authorized in writing by the Contract Administrator.

ROADS: 9.39 stations of optional construction. 129.80 stations of required prehaul maintenance.

Rock used in accordance with the quantities on the ROCK LIST may be obtained from any commercial source at the Purchaser's expense. Road construction will not be permitted from October 1 to April 30 unless authorized in writing by the Contract Administrator.

ACREAGE DETERMINATION

CRUISE METHOD: The sale acres were determined by GPS delineation. Cruise was completed using variable plot cruise methods.

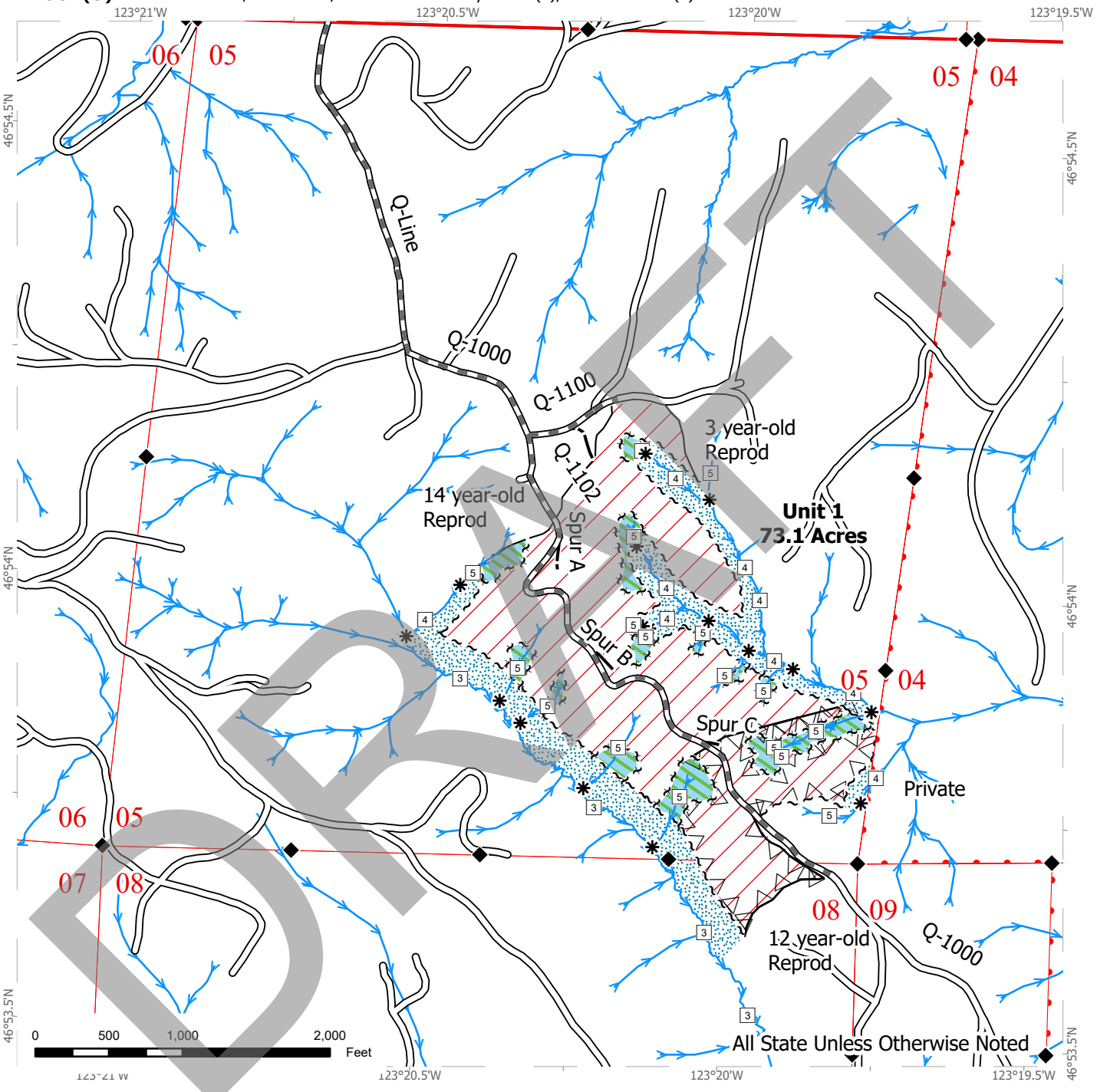
FEES: $48,926.00 is due on day of sale. $9.00 per MBF is due upon removal. These are in addition to the bid price.

SPECIAL REMARKS: This sale was designed for a 90 foot tower. Full suspension is required through all RMZ and Leave Tree Area Corridors. Trees cut within RMZ and Leave Tree Area Corridors must be left onsite. No road building or harvest operations may occur south of Spur C from March 1st to August 31st.

TIMBER SALE MAP

SALE NAME: SUZIE Q
AGREEMENT#: 30-107829
TOWNSHIP(S): T16R5W
TRUST(S): Charitable/Educational/Penal & Reformatory Instit. (6), Normal School (8)

REGION: Pacific Cascade Region
COUNTY(S): Grays Harbor
ELEVATION RGE: 120-760



- Variable Retention Harvest
- Non-Tradeable Leave Clump
- Riparian Mgt Zone
- Timing Restriction
- Sale Boundary Tags
- Leave Tree Tags
- Timber Type Change
- Property Line (carsonite posts)
- Existing Roads
- Required Pre-Haul Maintenance
- Optional Construction
- Streams
- Stream Type
- Stream Break
- Survey Monument

N

Prepared By: dsun490
Accessed: 01/09/2025 13:28

Modification Date: dsun490 11/13/2024

DRIVING MAP

SALE NAME: SUZIE Q
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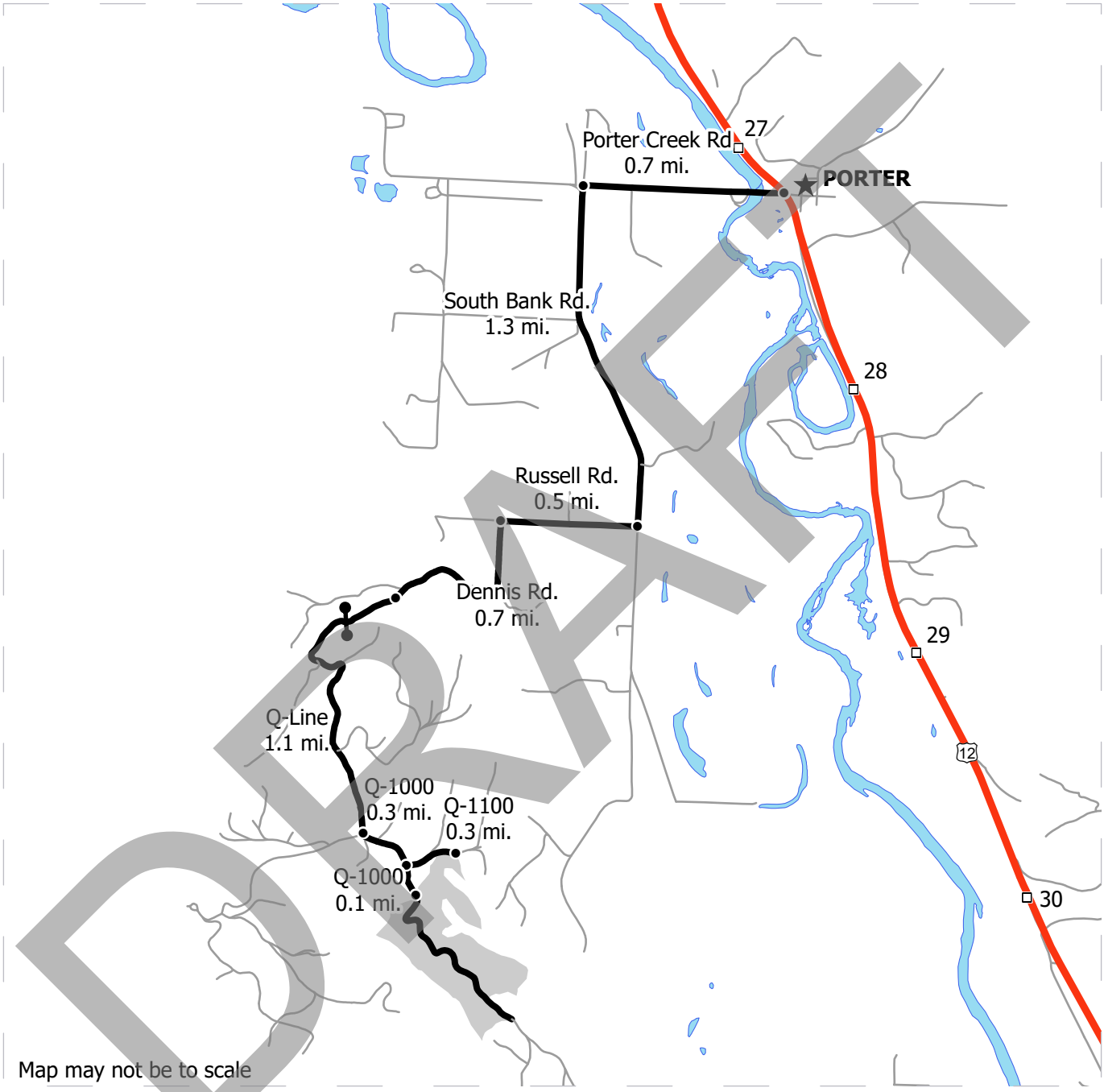


- Harvest Unit
- Highway
- Haul Route
- Other Route
- Milepost Marker
- Distance Indicator
- Gate (PCP1-1)
- Porter

DRIVING DIRECTIONS:

From US Highway 12 (Porter) turn west on to Porter Creek Road and follow for 0.7 miles.
Turn left on to South Bank Road and follow for 1.3 miles.
Turn right on to Russell Road and follow for 0.5 miles to Dennis Road.
Turn left on to Dennis Road and follow for 0.7 miles.
Continue on the Q-Line through the gate for 1.1 miles.
Follow the Q-1000 for 0.3 miles to the Q-1100.
Turn left on to the Q-1100 and follow for 0.3 miles to the top of Unit 1. Continue on the Q-1000 to the main access to Unit 1.

N

Prepared By: dsun490
Accessed: 01/09/2025 13:28

Modification Date: dsun490 11/13/2024

Timber Sale Cruise Report
Suzie Q

Sale Name: SUZIE Q

Sale Type: LUMP SUM

Region: PACIFIC CASC

District: LEWIS

Lead Cruiser: Dylan Buchanan

Other Cruisers: Blake Warnstadt, Dillon Adair

Cruise Narrative:
Location: The Suzie Q timber sale is located southwest of Porter. It can be accessed by taking Highway 12 to Porter Creek RD. Take Porter Creek Rd 0.7 and turn left onto South Bank Road. After 1.3 miles, turn right onto Russell Road and follow for 0.5 miles to Dennis Road. Turn left on Dennis Road and continue onto the Q-Line. It is 1.1 miles to the Q-1000, turn left and continue for 0.4 miles to the sale.

Cruise Design: Suzie Q was cruised using variable radius plots with two BAFs. A 62.5 BAF was used to cruise conifers and a 46.94 BAF was used for hardwoods and Red Cedar. Bole were measured to a break point of 40% of diameter at 16' or to a 5" top. Logs were scaled to 40' preferred lengths for conifers and 30' for hardwoods.

Timber Quality: This sale is Douglas Fir dominant with a fair amount of Maple, Red Alder, Western Hemlock, and Western Red Cedar. Average diameters here include, DF 22", MA 15", RA 15.4", WH 15", and RC 17.1". The DF looks good and has a mix of domestic sorts, HQ B, HQ A, SM, and 3P. The most common defects include spike knots, a few oversized branches, and small epicormic branches. The MA has a mix of tall, solid, fairly straight trees and shorter trees with multiple forks. The RA here isn't the tallest but looks decent. There is some light sweep in steeper areas, good lower boles, and forked tops. The RC on Suzie Q has good form with little defect and the WH looks okay.

Logging and Stand Conditions: Suzie Q has moderate to steep slopes and moderately broken ground. It is estimated to be 80% uphill cable logging and 20% ground-based logging. Ground cover is heavy sword fern and moderate devils club. Areas with a lot of maple are showing wider spacing between trees.

Timber Sale Notice Volume (MBF)

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.0	8.0		2,148	62	107	1,481	428	56	15
MA	15.7			307			162	35	111	
RA	15.4			189			81	27	81	
WH	15.7			119			76	31	12	0
RC	17.1			113				96	17	
ALL	18.3	8.0		2,876	62	107	1,800	617	275	16

Timber Sale Notice Weight (tons)

	Tons by Grade						
Sp	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	14,296	324	606	9,353	3,393	504	116
MA	3,109			1,436	279	1,394	
RA	1,710			593	208	909	
WH	1,032			551	306	169	6
RC	930				752	178	
ALL	21,077	324	606	11,934	4,937	3,154	122

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 (%)
261.7	4.8	150.3	3.8	39,345	6.1

Timber Sale Unit Cruise Design

Unit	Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
SUZIE Q	B2C: VR, 2 BAF (62.5, 46.94 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	73.1	90.9	77	29	2
All		73.1	90.9	77	29	2

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	16.4	40	16,284	15,786	3.1	7,220.6	1,153.9
DF	LIVE	2 SAW	HQ-A	14.4	40	1,438	1,432	0.5	720.4	104.7
DF	LIVE	2 SAW	HQ-B	16.0	40	3,086	3,038	1.6	1,412.3	222.1
DF	LIVE	3 PEELER	Domestic	27.6	40	849	849	0.0	323.6	62.0
DF	LIVE	3 SAW	Domestic	8.9	38	5,387	5,237	2.8	3,093.0	382.9
DF	LIVE	3 SAW	HQ-B	10.7	40	618	612	1.0	300.1	44.7
DF	LIVE	4 SAW	Domestic	6.2	26	781	759	2.8	503.6	55.5
DF	LIVE	CULL	Cull	6.6	3	45	0	100.0	0.0	0.0
DF	LIVE	SPECIAL MILL	HQ-A	20.4	40	1,464	1,458	0.4	606.4	106.6
DF	LIVE	UTILITY	Pulp	6.6	14	210	210	0.0	115.8	15.3
MA	LIVE	2 SAW	Domestic	14.2	30	2,732	2,215	18.9	1,436.0	161.9
MA	LIVE	3 SAW	Domestic	10.6	30	555	479	13.7	278.9	35.0

Sp	Status	Grade	Sort	Dia	Len	BF Gross	BF Net	Defect %	Tons	MBF Net
MA	LIVE	4 SAW	Domestic	6.2	30	1,855	1,512	18.5	1,393.9	110.5
MA	LIVE	CULL	Cull	5.7	6	177	0	100.0	0.0	0.0
RA	LIVE	2 SAW	Domestic	13.9	30	1,260	1,108	12.1	593.2	81.0
RA	LIVE	3 SAW	Domestic	10.7	30	398	370	7.2	207.7	27.0
RA	LIVE	4 SAW	Domestic	6.5	28	1,244	1,106	11.1	909.0	80.8
RA	LIVE	CULL	Cull	5.0	1	1	0	100.0	0.0	0.0
RC	LIVE	3 SAW	Domestic	10.2	39	1,410	1,320	6.4	751.9	96.5
RC	LIVE	4 SAW	Domestic	5.3	27	228	226	0.8	178.1	16.6
RC	LIVE	CULL	Cull	5.8	5	21	0	100.0	0.0	0.0
WH	LIVE	2 SAW	Domestic	16.9	40	1,092	1,041	4.7	551.3	76.1
WH	LIVE	3 SAW	Domestic	8.0	38	424	418	1.4	305.5	30.6
WH	LIVE	4 SAW	Domestic	5.2	32	177	164	7.3	169.5	12.0
WH	LIVE	CULL	Cull	5.2	8	26	0	100.0	0.0	0.0
WH	LIVE	UTILITY	Pulp	8.7	13	6	6	10.0	5.8	0.4

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	6.1	3	0	100.0	0.0	0.0
DF	5 - 7	LIVE	Pulp	6.2	14	162	0.0	87.9	11.9
DF	5 - 7	LIVE	Domestic	6.3	32	1,737	2.2	1,095.9	127.0
DF	8 - 11	LIVE	Pulp	9.2	14	47	0.0	27.9	3.4
DF	8 - 11	LIVE	Domestic	9.8	37	4,170	2.9	2,448.4	304.8
DF	8 - 11	LIVE	Cull	9.9	6	0	100.0	0.0	0.0
DF	8 - 11	LIVE	HQ-B	10.7	40	612	1.0	300.1	44.7
DF	12 - 15	LIVE	Cull	12.0	3	0	100.0	0.0	0.0
DF	12 - 15	LIVE	Domestic	13.8	40	5,497	3.2	2,831.7	401.8
DF	12 - 15	LIVE	HQ-A	13.9	40	1,173	0.0	615.5	85.7
DF	12 - 15	LIVE	HQ-B	14.0	40	1,184	2.6	574.5	86.5
DF	16 - 19	LIVE	HQ-A	16.1	40	227	2.5	104.3	16.6
DF	16 - 19	LIVE	HQ-B	17.6	40	1,369	0.4	627.0	100.1
DF	16 - 19	LIVE	Domestic	17.9	40	5,806	2.2	2,580.7	424.4
DF	20+	LIVE	HQ-B	22.0	40	485	2.3	210.9	35.4
DF	20+	LIVE	HQ-A	22.3	40	1,491	0.4	607.0	109.0
DF	20+	LIVE	Domestic	24.9	40	5,421	3.5	2,184.1	396.2
MA	5 - 7	LIVE	Cull	5.0	4	0	100.0	0.0	0.0
MA	5 - 7	LIVE	Domestic	5.9	30	1,313	17.5	1,139.8	95.9
MA	8 - 11	LIVE	Domestic	9.7	29	679	17.1	533.1	49.6

Sp	Bin	Status	Sort	Dia	Len	BF Net	Defect %	Tons	MBF Net
MA	12 - 15	LIVE	Domestic	13.4	30	1,535	15.3	919.6	112.2
MA	16 - 19	LIVE	Domestic	16.6	30	590	23.3	441.9	43.2
MA	16 - 19	LIVE	Cull	16.8	30	0	100.0	0.0	0.0
MA	20+	LIVE	Domestic	20.5	30	90	40.0	74.5	6.6
RA	5 - 7	LIVE	Cull	5.0	1	0	100.0	0.0	0.0
RA	5 - 7	LIVE	Domestic	5.8	27	735	9.8	629.3	53.7
RA	8 - 11	LIVE	Domestic	9.8	30	740	10.5	487.4	54.1
RA	12 - 15	LIVE	Domestic	13.5	30	857	11.1	464.7	62.6
RA	16 - 19	LIVE	Domestic	16.6	30	251	15.3	128.5	18.3
RC	5 - 7	LIVE	Cull	5.3	5	0	100.0	0.0	0.0
RC	5 - 7	LIVE	Domestic	5.6	31	449	2.0	362.9	32.8
RC	8 - 11	LIVE	Domestic	9.3	36	132	2.1	108.1	9.7
RC	8 - 11	LIVE	Cull	9.4	8	0	100.0	0.0	0.0
RC	12 - 15	LIVE	Domestic	14.5	36	169	4.6	89.0	12.3
RC	16 - 19	LIVE	Domestic	17.6	40	277	3.0	131.1	20.3
RC	20+	LIVE	Domestic	23.7	40	519	10.8	238.9	37.9
WH	5 - 7	LIVE	Cull	5.2	8	0	100.0	0.0	0.0
WH	5 - 7	LIVE	Domestic	5.8	35	377	4.4	333.0	27.6
WH	8 - 11	LIVE	Pulp	8.7	13	6	10.0	5.8	0.4
WH	8 - 11	LIVE	Domestic	10.2	33	92	1.7	61.8	6.7
WH	12 - 15	LIVE	Domestic	12.8	40	291	3.6	199.3	21.2
WH	16 - 19	LIVE	Domestic	17.4	40	475	6.0	263.5	34.7
WH	20+	LIVE	Domestic	23.0	40	389	2.6	168.7	28.5

Cruise Unit Report
SUZIE Q

Unit Sale Notice Volume (MBF): SUZIE Q

				MBF Volume by Grade						
Sp	DBH	Rings/In	Age	All	Peeler	Spec Mill	2 Saw	3 Saw	4 Saw	Utility
DF	22.0	8.0		2,148	62	107	1,481	428	56	15
MA	15.7			307			162	35	111	
RA	15.4			189			81	27	81	
WH	15.7			119			76	31	12	0
RC	17.1			113				96	17	
ALL	18.3	8.0		2,876	62	107	1,800	617	275	16

Unit Cruise Design: SUZIE Q

Design	Cruise Acres	FMA Acres	N Plots	N Cruise Plots	N Void Plots
B2C: VR, 2 BAF (62.5, 46.94 for some species) Measure/Count Plots, Sighting Ht = 4.5 ft	73.1	90.8	77	29	2

Unit Cruise Summary: SUZIE Q

Sp	Cruised Trees	All Trees	Trees/Plot	Ring-Count Trees
DF	85	179	2.3	2
MA	35	94	1.2	0
RA	31	46	0.6	0
WH	11	16	0.2	0
RC	16	33	0.4	0
ALL	178	368	4.8	2

Unit Cruise Statistics: SUZIE Q

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	143.7	93.5	10.6	204.5	24.2	2.6	29,381	96.5	11.0
MA	57.3	117.8	13.4	73.4	40.7	6.9	4,206	124.7	15.1
RA	28.0	184.7	21.0	92.1	25.7	4.6	2,583	186.5	21.5
WH	12.6	382.8	43.6	129.5	67.1	20.2	1,629	388.6	48.1
RC	20.1	255.1	29.1	76.9	79.8	19.9	1,546	267.3	35.3
ALL	261.7	42.3	4.8	150.3	50.8	3.8	39,345	66.1	6.1

Unit Summary: SUZIE Q

Sp	Status	Rx	N	D	DBH	BL	THT	BF Gross	BF Net	Defect %	TPA	BA	RD	MBF Net
DF	LIVE	CUT	85	ALL	22.0	94	123	30,162	29,381	2.6	54.4	143.7	30.6	2,147.7
MA	LIVE	CUT	35	ALL	15.7	48	64	5,318	4,206	20.9	42.6	57.3	14.5	307.4
RA	LIVE	CUT	31	ALL	15.4	53	68	2,903	2,583	11.0	21.7	28.0	7.1	188.8
RC	LIVE	CUT	16	ALL	17.1	39	49	1,659	1,546	6.8	12.6	20.1	4.9	113.0
WH	LIVE	CUT	11	ALL	15.7	51	65	1,726	1,629	5.6	9.4	12.6	3.2	119.1
ALL	LIVE	CUT	178	ALL	18.5	66	86	41,768	39,345	5.8	140.7	261.7	60.3	2,876.1
ALL	ALL	CUT	178	ALL	18.5	66	86	41,768	39,345	5.8	140.7	261.7	60.3	2,876.1

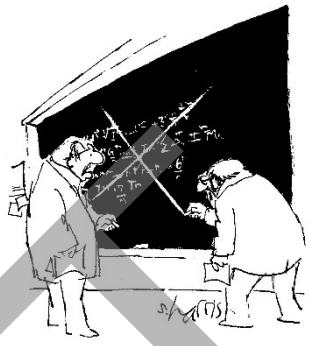
FPHP NEEDED (Y/N) N

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

PACIFIC CASCADE REGION - ENGINEERING

ROAD PLAN PEER REVIEW CHECKLIST

PROJECT: SUZIE Q



"That's it? That's peer review?"

This project has been reviewed for the following:

Initials:

___ G G **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.

___ G G **TYPICAL SECTION SHEET, ROCK LIST, & CULVERT LIST** – Sheets match clauses and maps. Requirements and quantities make sense. Rock List adds up correctly.

___ G G **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.

___ G G **DETAIL SHEETS** – All detail sheets referred to in the clauses are included. Detail sheets have been edited as necessary.

___ ___ **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.

___ G G **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.

___ GG **EXCISE TAX SHEET** – Totals match road plan.

___ G G **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

08/12/2024 — Date

REVIEWED
By Grant Gerritsen at 1:52 pm, Aug 21, 2024

Peer Reviewer

Date

Comments:

ROAD PLAN MAP

SALE NAME: SUZIE Q
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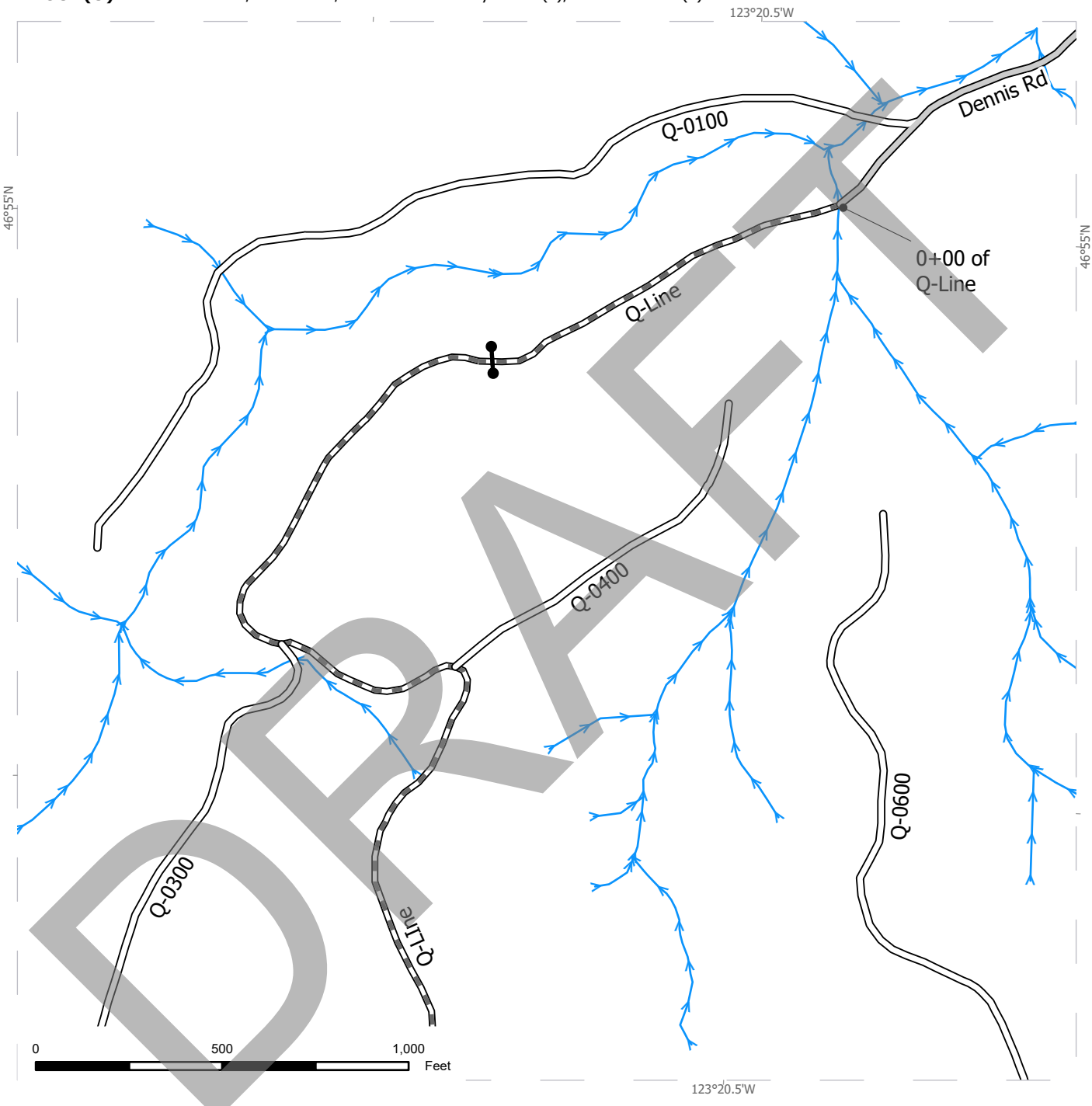

County Road
Existing Roads
Required Pre-Haul Maintenance
Gate (PCP 1-1)
Streams

N

Prepared By: accc490
Accessed: 01/09/2025 13:28

Modification Date: accc490 11/5/2024

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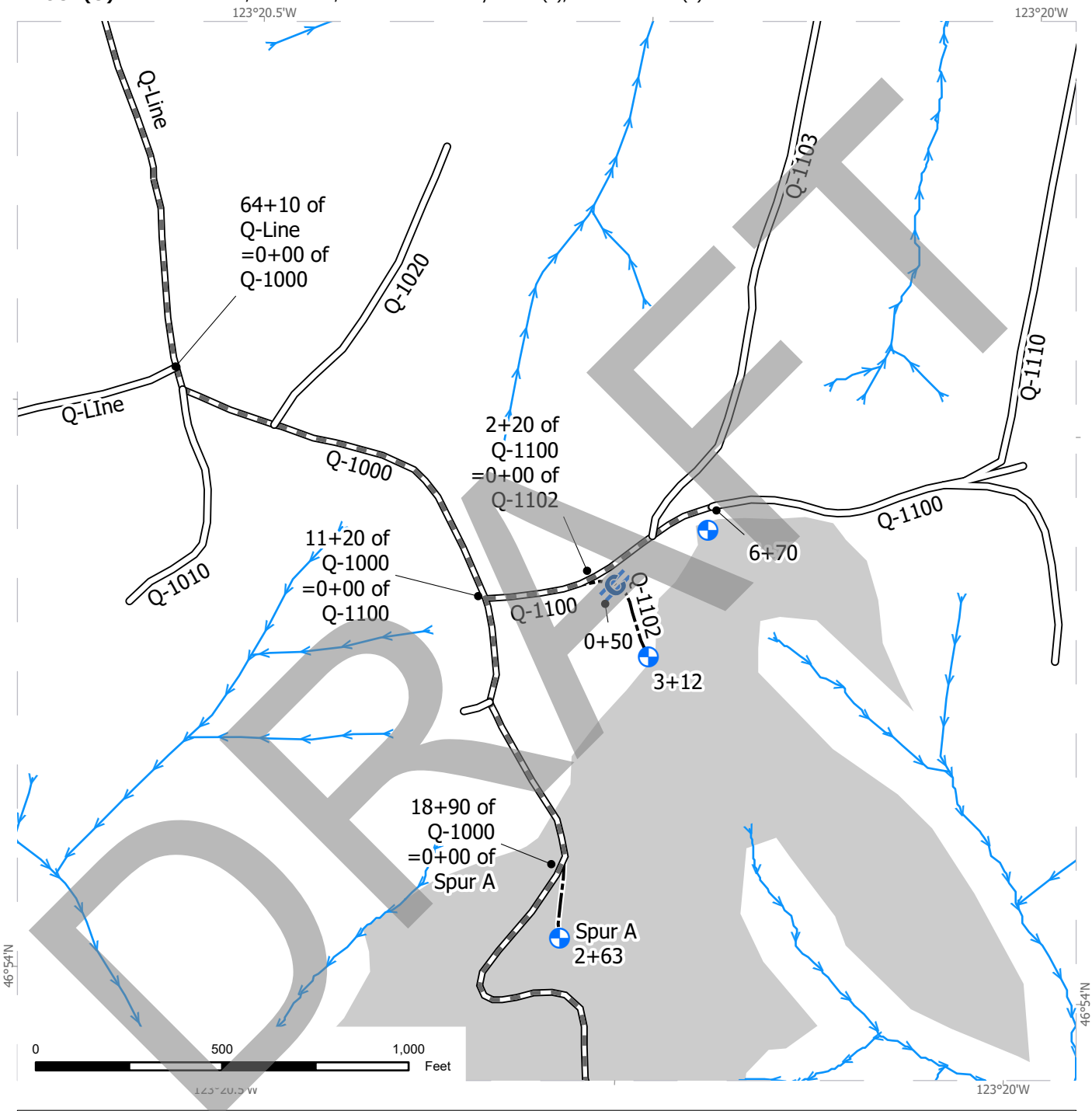

Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Landing - Proposed
Cross-drain Culvert
Harvest Unit
Streams

N

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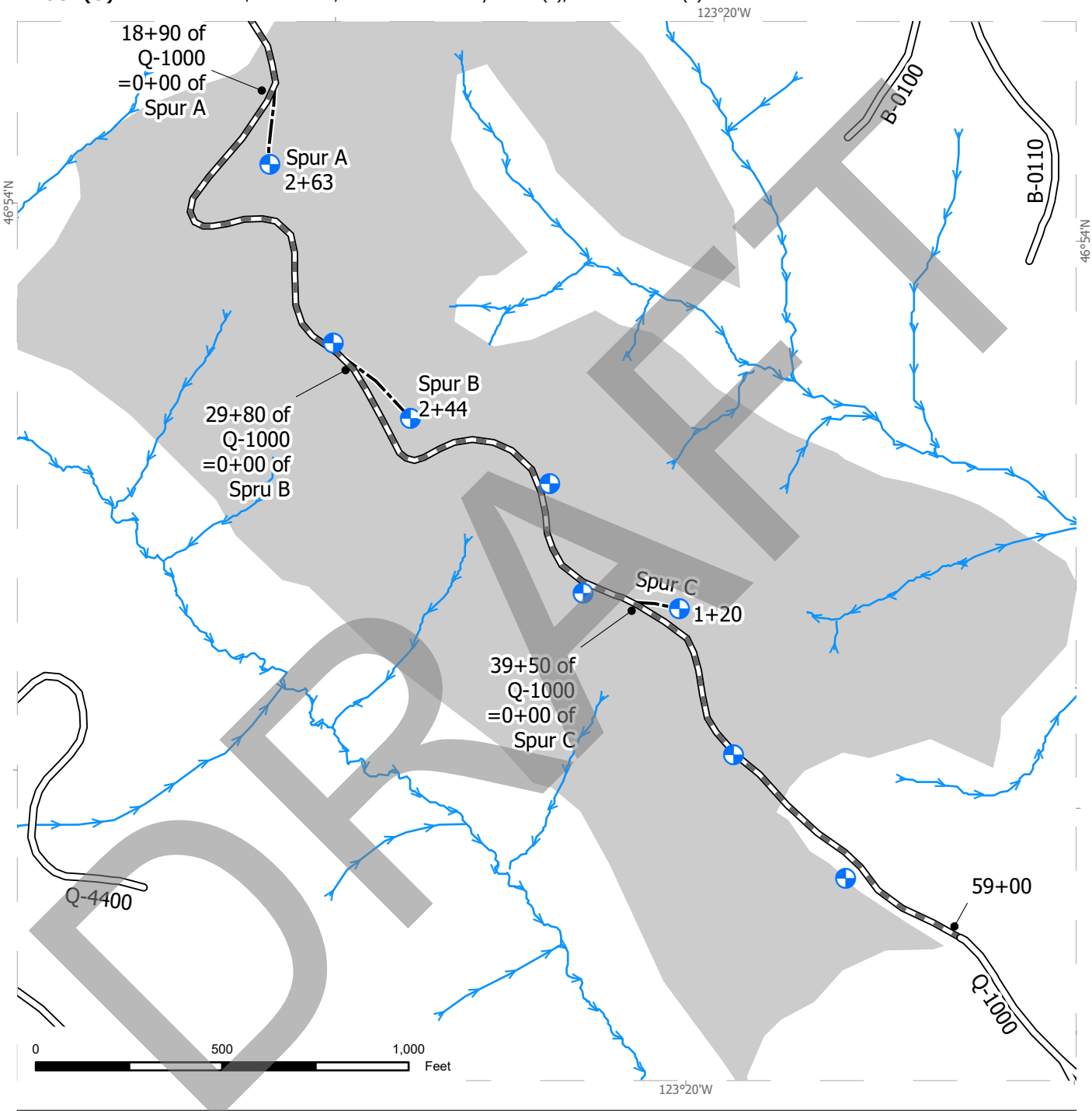

Existing Roads
Required Pre-Haul Maintenance
Optional Construction
Landing - Proposed
Harvest Unit
Streams

N

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STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
SUZIE Q TIMBER SALE ROAD PLAN
GRAYS HARBOR COUNTY
LEWIS DISTRICT
PACIFIC CASCADE REGION

AGREEMENT NO.: 30-107829 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 acquisition, unless otherwise noted.

0-2 REQUIRED ROADS

The specified work on the following roads is required.

Road	Stations	Type
Q-Line	0+00 to 64+10	Pre-haul Maintenance
Q-1000	0+00 to 59+00	Pre-haul Maintenance
Q-1100	0+00 to 6+70	Pre-haul Maintenance

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.

Road	Stations	Type
Q-1102	0+00 to 3+12	Construction
Spur A	0+00 to 2+63	Construction
Spur B	0+00 to 2+44	Construction
Spur C	0+00 to 1+20	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; landing construction; acquisition and installation of drainage structures; acquisition and application of rock.

0-6 PRE-HAUL MAINTENANCE

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

Road	Stations	Requirements
Q-Line	0+00 to 64+10	Brush, remove debris from ditches, culverts, and roadside. Grade and compact.
Q-1000	0+00 to 59+00	
Q-1100	0+00 to 6+70	

0-7 POST-HAUL MAINTENANCE

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

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.

Tolerance Class	A	B	C
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.

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, compaction and drainage installation
- Rock application and compaction

1-25 ACTIVITY TIMING RESTRICTION

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

Road	Activity	Closure Period
All Roads, except Q-1000 (41+50 to 59+00), Spur C	Construction, Pre-haul Maintenance	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 including those listed in contract Clause C-060 DESIGNATED ROAD MAINTAINER. If other operators are using, or desire to use these designated maintainer roads, a joint operating plan must be developed. All parties shall follow this plan.

1-28 TIMING RESTRICTION FOR NORTHERN SPOTTED OWL

On the following roads, any road work, right-of-way timber falling and yarding, rock pit operation, or heavy equipment operation is not allowed from March 1 through August 31. This restriction does not apply to hauling timber, rock, or equipment.

Road	Stations
Q-1000	41+50 to 59+00
Spur C	0+00 to 1+20

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 4 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.

1-33 SNOW PLOWING RESTRICTION

Snowplowing will be allowed after the execution of a SNOW PLOWING AGREEMENT, which is available from the Contact 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 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 and/or timber haul. Purchaser shall accomplish all grading using a motor grader with a minimum of 175 horsepower.

Road	Stations
Q-Line	0+00 to 64+10
Q-1000	0+00 to 59+00
Q-1100	0+00 to 6+70

2-6 CLEANING CULVERTS

On the following roads, Purchaser shall clean the inlets and outlets of all culverts and shall obtain written approval from the Contract Administrator before grading.

Road	Stations
Q-Line	0+00 to 64+10
Q-1000	0+00 to 59+00
Q-1100	0+00 to 6+70

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 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.

Road	Stations
Q-Line	0+00 to 64+10
Q-1000	0+00 to 59+00
Q-1100	0+00 to 6+70

3-1 BRUSHING

On the following road, Purchaser shall cut vegetative material up to 4 inches in diameter, including limbs, as shown on the ROADSIDE BRUSHING DETAIL. Brushing must be achieved by 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.

Road	Stations
Q-Line	0+00 to 64+10
Q-1000	0+00 to 59+00
Q-1100	0+00 to 6+70

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 outside of the grubbing limits 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.

3-23 PROHIBITED DISPOSAL AREAS

Purchaser shall not place organic debris in the following areas:

- Within 15 feet of a crossdrain 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.

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:

Material Type	Excavation Slope Ratio	Excavation Slope Percent
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:

Material Type	Embankment Slope Ratio	Embankment Slope Percent
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.

4-25 DITCH CONSTRUCTION AND RECONSTRUCTION

Purchaser shall construct 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.

4-29 DITCHOUTS

Purchaser shall construct ditchouts as identified and as needed. Ditchouts must be constructed in a manner that diverts ditch water onto the forest floor and must have excavation backslopes no steeper than a 1:1 ratio.

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.

4-38 PROHIBITED WASTE DISPOSAL AREAS

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

- Within 15 feet of a crossdrain 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 subgrades in accordance with the COMPACTION LIST by routing equipment over the entire width, except ditch. Purchaser shall obtain written approval from the Contract Administrator for subgrade compaction before rocking.

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.

5-17 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 2 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.

6-5 ROCK FROM COMMERCIAL SOURCE

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

Possible Sources	Location
Northwest Rock, Inc.	Oakville, WA

6-22 FRACTURE REQUIREMENT FOR ROCK

Rock types shall have 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.

6-39 6-INCH JAW RUN ROCK

% Passing 6” in one dimension	100%
% Passing 3” square sieve	45 - 65%

Rock may not contain more than 5 percent organic debris and trash. All percentages are by weight.

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 MEASURMENT BY TRUCK VOLUME

Measurement of energy dissipaters and landing 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, if hauling takes place from June 1 to September 30 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 and Clause 9-22, the FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS, or other conditions of the approved plan.

Road	Stations
Q-1102	0+00 to 3+12
Spur A	0+00 to 2+63
Spur B	0+00 to 2+44
Spur C	0+00 to 1+20

SECTION 8 – EROSION CONTROL

8-1 SEDIMENT CONTROL STRUCTURES

Sediment control shall be accomplished using sediment traps, silt fences, settling ponds, 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 50 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 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.

Road	Location	Qty (lbs)*	Type
Q-1102	0+00 to 3+12	9	Seed
Spur A	0+00 to 2+63	8	Seed
Spur B	0+00 to 2+44	7	Seed
Spur C	0+0 to 1+20	3	Seed
	Total:	27	

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

8-16 REVEGETATION SUPPLY

The Purchaser shall provide the seed.

8-17 REVEGETATION TIMING

Purchaser shall revegetate after road work is completed and between March 15 and September 30. Soils may not be allowed to sit exposed for longer than one month without receiving revegetation treatment unless otherwise approved in writing by the 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.

Kind and Variety of Seed in Mixture	% by Weight
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

9-3 CULVERT MATERIAL REMOVED FROM STATE LAND

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

9-5 POST-HAUL MAINTENANCE

Contractor 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.

9-22 ABANDONMENT

- Remove road shoulder berms except as directed.
- Rip the surface to a minimum depth of 10 inches.
- Construct non-drivable waterbars according to 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 150 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.
- Slope all trench walls and approach embankments no steeper than 1.5:1.
- Scatter woody debris onto abandoned road surfaces.

SECTION 10 MATERIALS

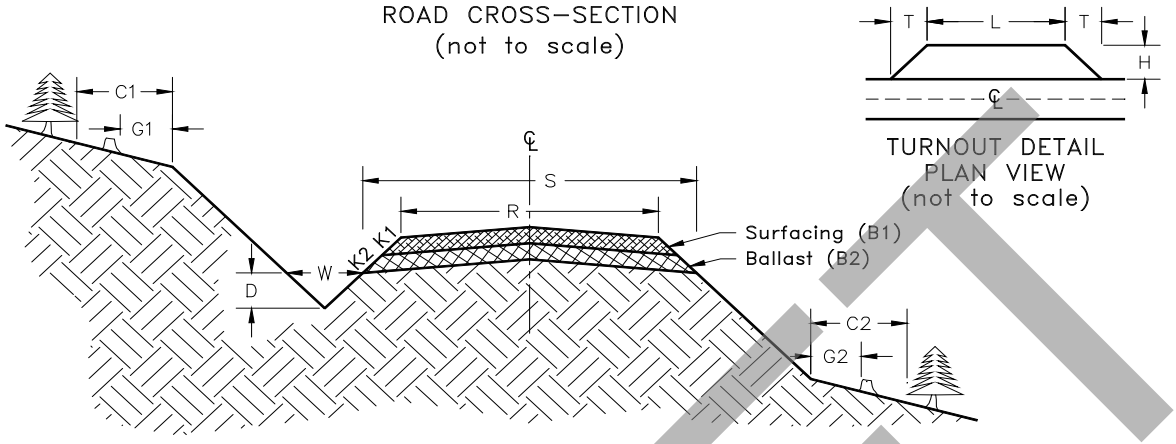
10-17 CORRUGATED PLASTIC CULVERT

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

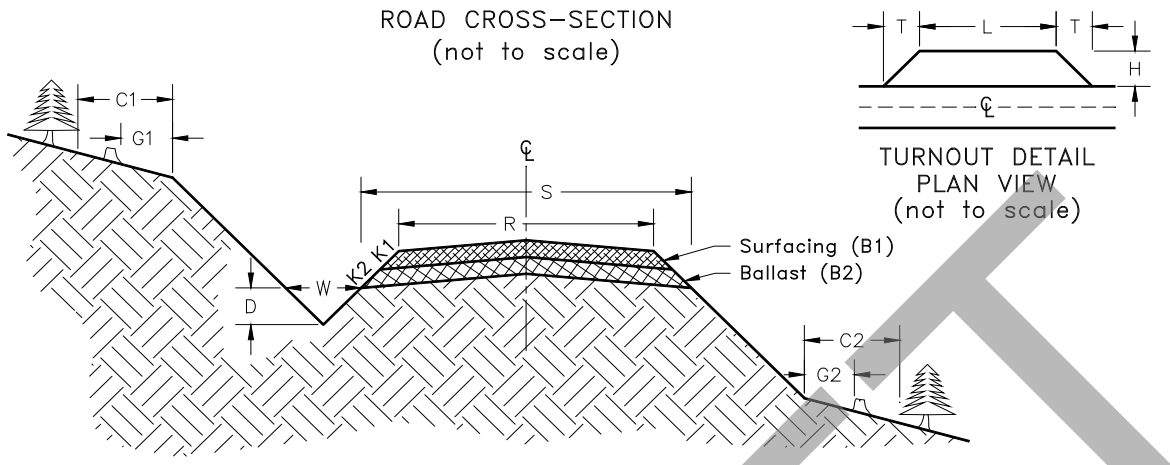
Plastic coupling and end bands must meet the AASHTO specification designated for the culvert. Only fittings supplied or recommended by the culvert manufacturer may be used. Couplings must be split coupling band. Split coupling bands must have a minimum of four corrugations, two on each side of the pipe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

TYPICAL SECTION SHEET



Road Number	From Station	To Station	Tolerance Class	Subgrade Width ft	Road Width ft	Ditch Width ft	Ditch Depth ft	Crown @ CL in	Grubbing Limits ft		Clearing Limits ft	
				S	R	W	D		G1	G2	C1	C2
Q-Line	0+00	68+50	A	-	12	3	1	4	-	-	-	-
Q-1000	0+00	59+00	A	-	12	3	1	4	-	-	-	-
Q-1100	0+00	6+70	A	-	12	3	1	4	-	-	-	-
Q-1102	0+00	3+12	C	16	12	3	1	4	2	2	10	10
Spur A	0+00	2+63	C	16	12	3	1	4	2	2	10	10
Spur B	0+00	2+44	C	16	12	3	1	4	2	2	10	10
Spur C	0+00	1+20	C	16	12	3	1	4	2	2	10	10

ROCK LIST



6-INCH JAW RUN

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	Turnout Width	Turnout Taper
				K2	B2				Commercial	L (ft)	H (ft)	T (ft)
Q-1000	*	Landings (29+50, 37+00, 40+00, 42+50, 47+20, 51+50)				80	6	480				
Q-1100	*	Landing (6+50)				80	1	80				
Q-1102	*	0+00	3+12	1 1/2:1	15	81	3.12	253				
	*	Energy Dissipater				1	1	1				
	*	Curve Widening						9				
	*	Junctions				15	1	15				
	*	Landings				70	1	70				
Spur A	*	0+00	2+63	1 1/2:1	15	81	2.63	213				
	*	Curve Widening						7				
	*	Junctions				15	1	15				
	*	Landings				70	1	70				
Spur B	*	0+00	2+44	1 1/2:1	15	81	2.44	198				
	*	Curve Widening						7				
	*	Junctions				15	1	15				
	*	Landings				70	1	70				
Spur C	*	0+00	1+20	1 1/2:1	15	81	1.20	97				
	*	Junctions				15	1	15				
	*	Landings				70	1	70				

*Optional Rock in accordance with 6-75

OPTIONAL 6-INCH JAW RUN: 1685 CY

CULVERT LIST

Road Number	Location	Culvert			Armoring (C.Y.)			Backfill Material	Bedding Material	Inlet Marker	Remarks
		Dia (In)	Length	Type	Inlet	Outlet	Type				
Q-1102	0+50	18	40	PD	0.5	0.5	6"	NT	NT	Y	

Key:

6" - 6" Jaw Run
NT - Native Material
CR - 3 Inch Minus Crushed
LL - Light Loose Riprap
PD - Polyethylene Pipe Double Wall
PSDS - Polyethylene Downspout Single Wall

COMPACTION LIST

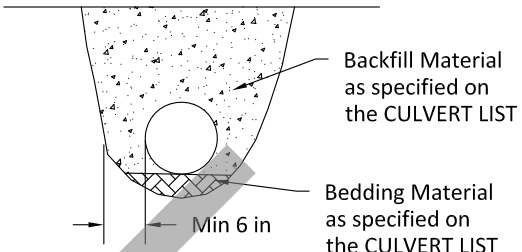
Road	Type	Max Depth Per Lift (inches)	Equipment Type	Equipment Weight (lbs)	Minimum Number of Passes
All Roads	Subgrade	12	Vibratory Smooth Drum	20,000	4
All Roads	Embankment or Fill	18	Vibratory Smooth Drum	20,000	4
All Roads	Waste Area	24	Excavation	28,000	-
All Roads	Pre-haul Surface	6	Vibratory Smooth Drum	20,000	5
All Roads	Rock	12	Vibratory Smooth Drum	20,000	3

INSTALLATION REQUIREMENTS:

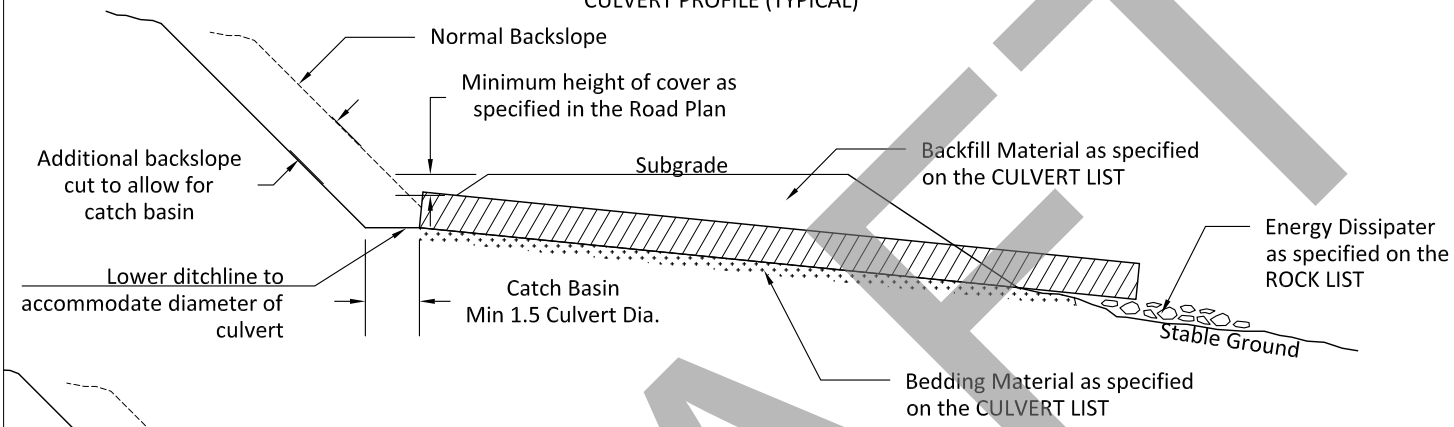
1. Proper preparation of foundation and placement of any required bedding material shall precede the installation of all culverts. This includes necessary leveling of the native trench bottom and compaction of required bedding material to form a uniform, dense, unyielding base. The pipe must be uniformly 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

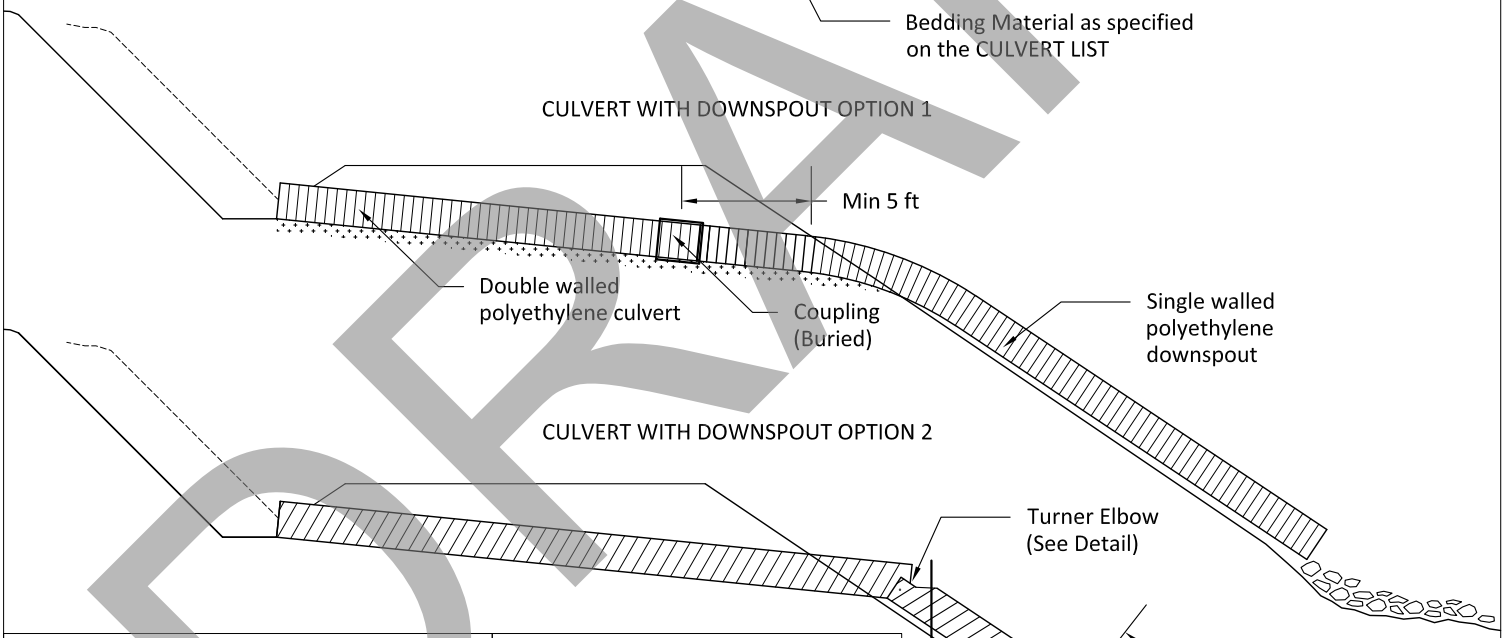
CROSS SECTION



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.

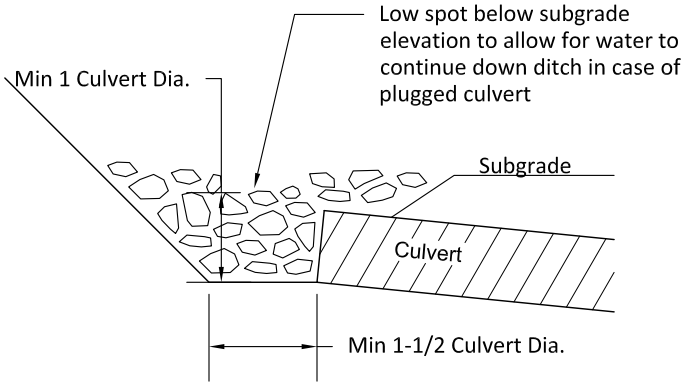
TURNER ELBOW

Bolted with $\frac{5}{8}$" galvanized bolts and washers (both sides)

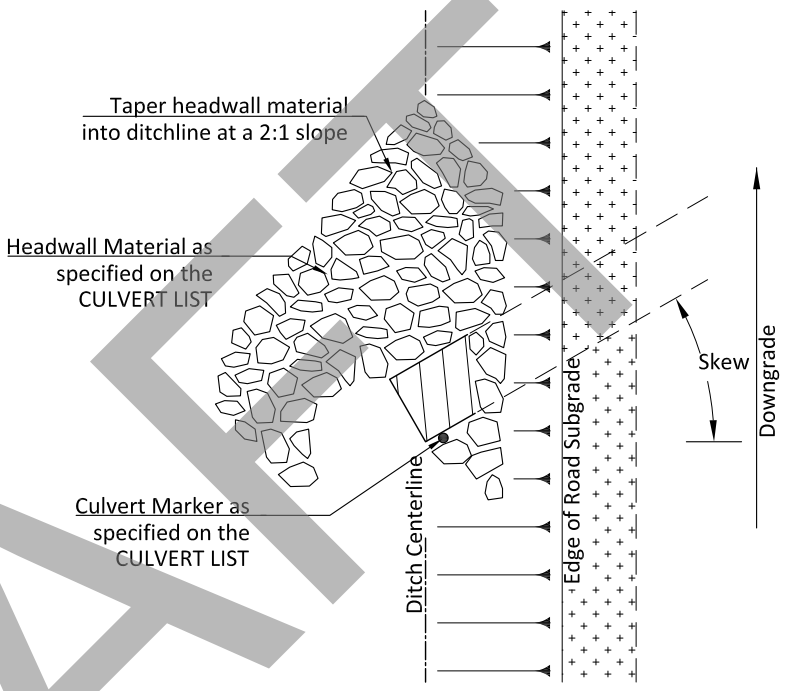
Downspout must be 6 inches larger in diameter than the culvert.

HEADWALLS

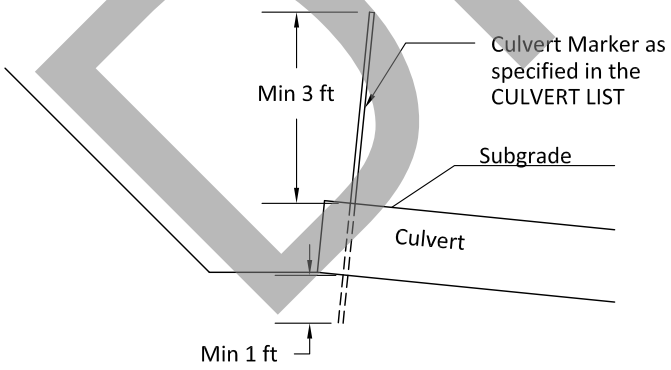
Section View



Plan View

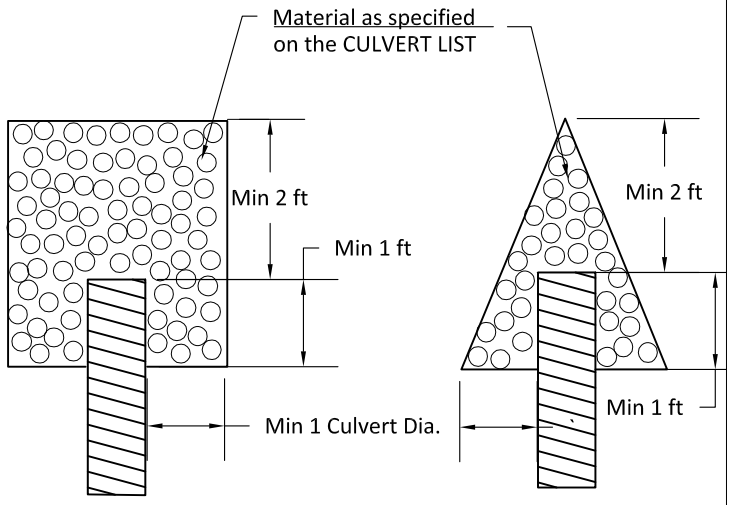


CULVERT MARKERS



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 DISSIPATERS



Min Energy Dissipater Depth: 1 Culvert Dia.

FOREST ACCESS ROAD MAINTENANCE SPECIFICATIONS

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.

Preventative Maintenance

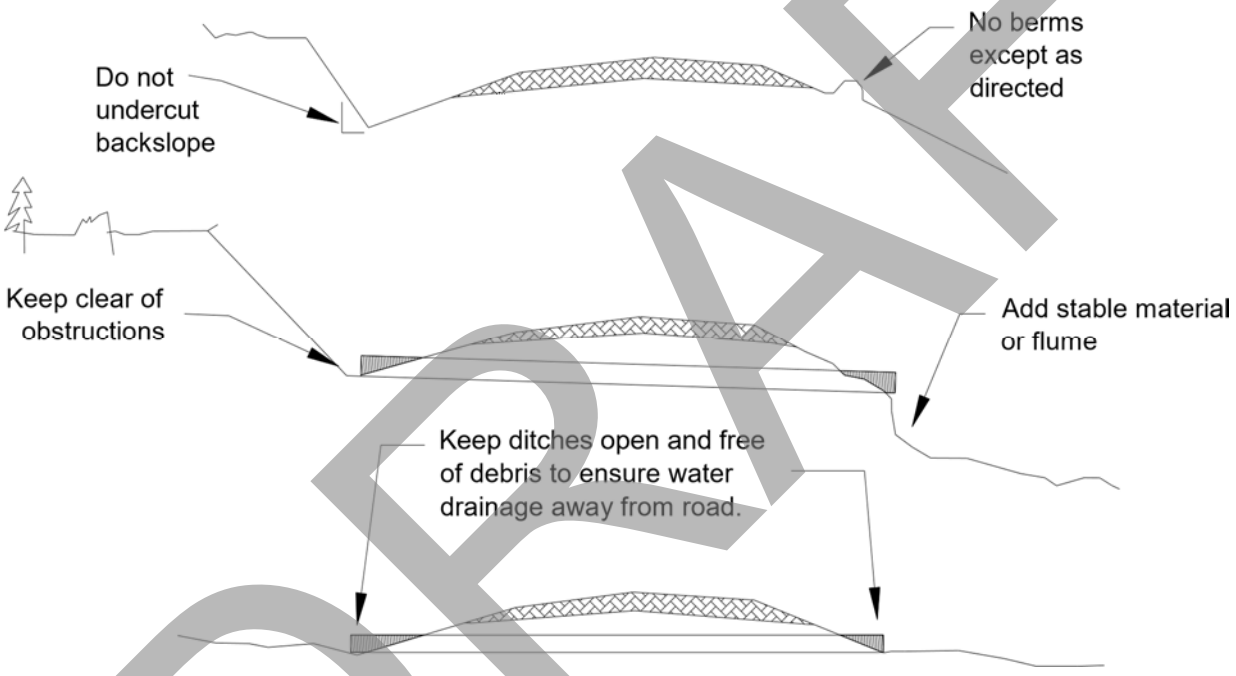
- Perform preventative maintenance work to safeguard against storm damage, such as blading to ensure correct runoff, ditch and culvert cleaning, and waterbar maintenance.

Termination of Use or End of Season

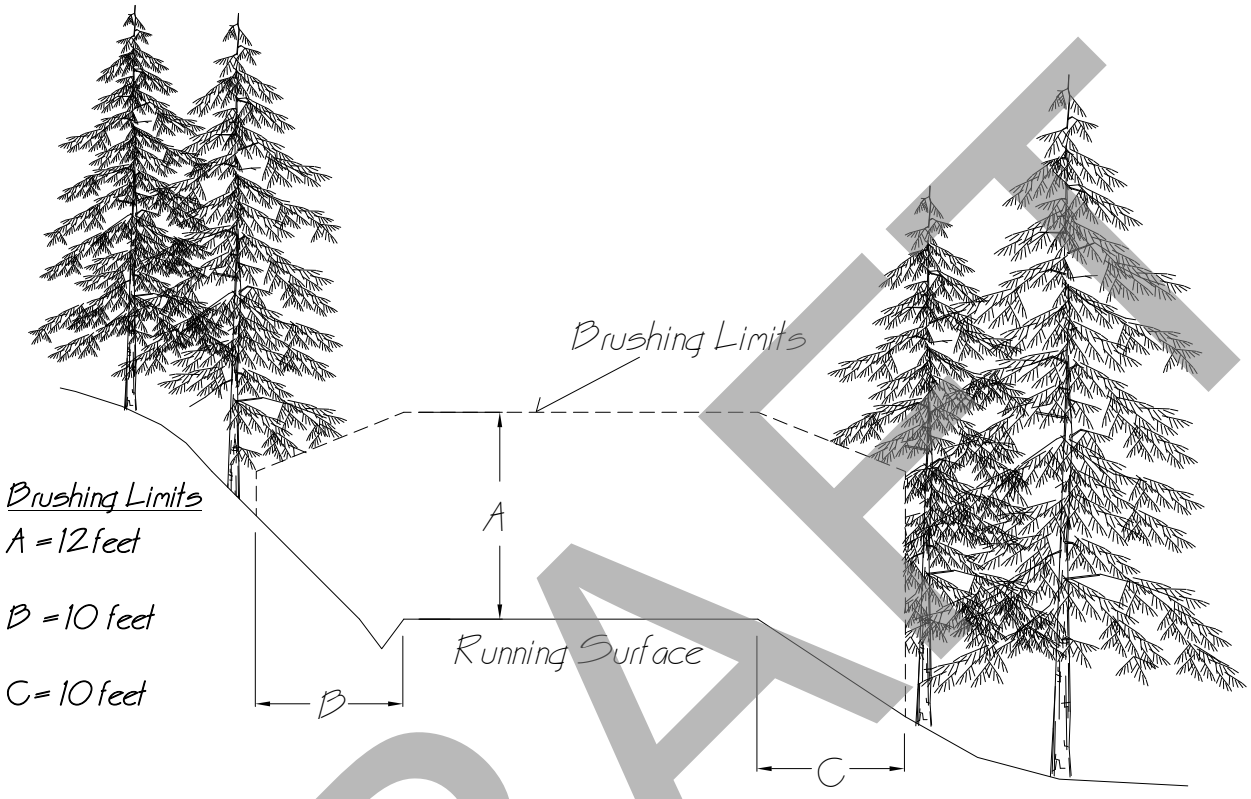
- At the conclusion of logging operations, ensure all conditions of these specifications have been met.

Debris

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



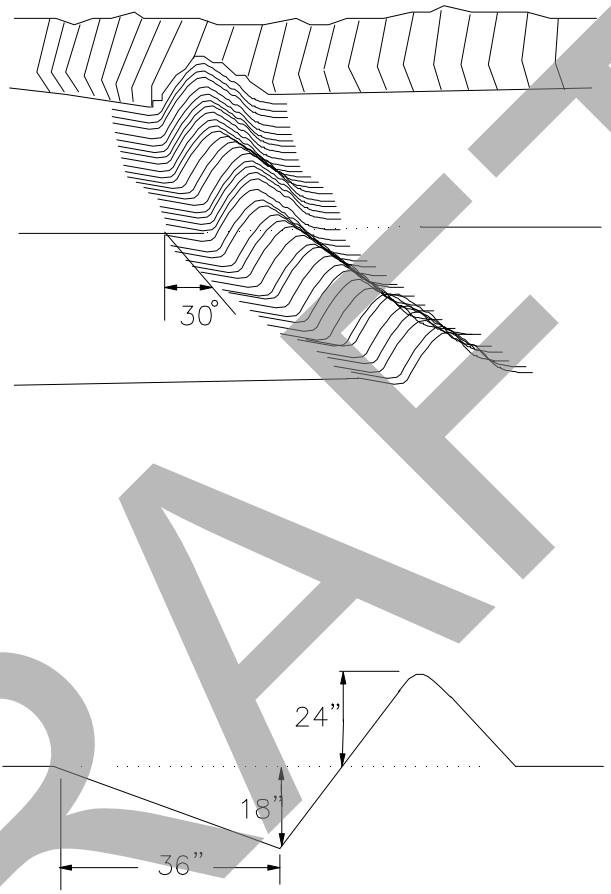
ROADSIDE BRUSHING DETAIL



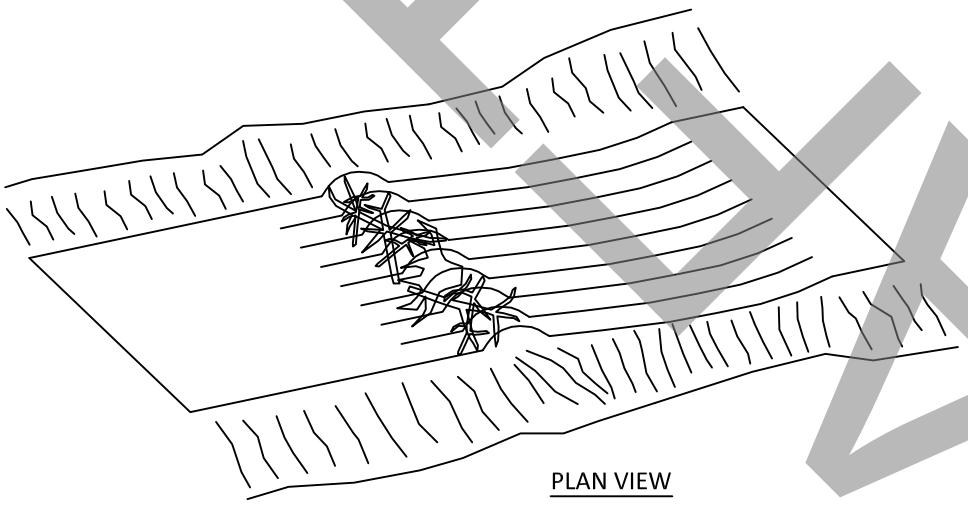
GENERAL NOTES

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

NON-DRIVABLE WATER BAR DETAIL

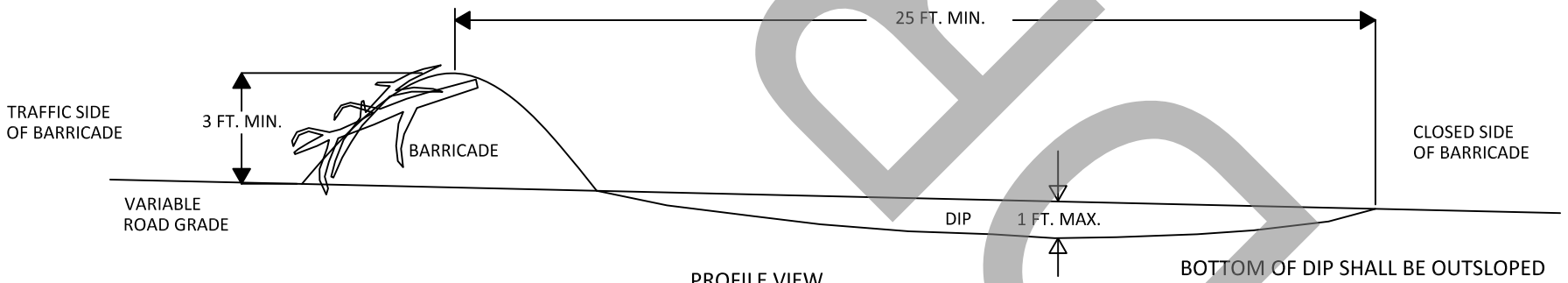


EARTHEN BARRICADE DETAIL



PLAN VIEW

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



PROFILE VIEW

BOTTOM OF DIP SHALL BE OUTSLOPED SO AS TO DRAIN FREELY

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FINALIZED DATE: NOVEMBER 26, 2024
30-107829
SUZIE Q
Accessed: 01/09/2025 13:28

SUMMARY - Road Development Costs

REGION: Pacific Cascade
DISTRICT: Lewis

SALE/PROJECT NAME: Suzie Q AGREEMENT #: 30-107829

ROAD NUMBERS: Optional: Q-1102, Spur A, Spur B, Spur C

Required: Q-Line, Q-1000, Q-1100

ROAD STANDARD:		Construction	Reconstruction	Maintenance
NUMBER OF STATIONS:		9.39	0.00	129.80
CLEARING & GRUBBING, EXCAVATION AND FILL, MISC.:		$6,835.84	$0.00	$14,861.67
ROAD ROCK:				
	Optional:	$32,736.34	$0.00	$16,351.20
	Required:	$0.00	$0.00	$0.00
	Total:	$32,736.34	$0.00	$16,351.20
STOCKPILE:		-	-	$0.00
CULVERTS AND FLUMES:		$1,228.00	$0.00	$0.00
STRUCTURES:		-	-	-
MOBILIZATION:		$2,530.82	$0.00	$5,502.20
TOTAL COSTS:		$43,331.00	$0.00	$36,715.07
COST PER STATION:		$4,614.59	$0.00	$282.86
ROAD DEACTIVATION & ABANDONMENT COSTS:		$0.00	$0.00	$0.00

10% OVERHEAD AND GENERAL EXPENSE = $8,004.61
TOTAL (All Roads) = $88,050.68
TOTAL (Minus Optional Rock) = $38,963.14
SALE VOLUME MBF = 2,876
TOTAL $/MBF = $30.62
TOTAL $/MBF (Minus Optional Rock) = $13.55

Profit and Risk costs are accounted on an individual basis.

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Q-Line**

Required Pre-Haul Maintenance-	64+10	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	1.21	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles

PRE-HAUL MAINTENANCE

CLEARING						
Roadside Brushing	1.21	miles @	$1,170.00	per mile =	$1,415.70	
EXCAVATION						
Remove debris from ditches, culverts and roadside -	64.10	stations @	$33.60	per station	$2,153.76	
MISC.						
Grade and shape existing road surface -	64.10	stations @	$18.25	per station	$1,169.83	
Roll shaped road surface w/ vibratory roller -	64.10	stations @	$9.70	per station	$621.77	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$5,361.06**
				SUBTOTAL		**$5,361.06**
MOBILIZATION				SUBTOTAL		**$1,984.81**
OVERHEAD & GENERAL EXPENSES	10%			SUBTOTAL		**$734.59**
				TOTAL		**$8,080.46**
Optional Rock? NO				**COST PER STATION**		**$126.06**

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Q-1000**

Required Pre-Haul Maintenance-	59+00 stations 1.12 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	1.12	miles	@	$1,170.00	per mile =	$1,310.40	

EXCAVATION

Construct Landings @ 29+50,37+00, 40+00, 42+50, 47+20, 51+50 -	6.00		@	$538.46	each	$3,230.76	
Remove debris from ditches, culverts and road side -	59.00	stations	@	$33.60	per station	$1,982.40	

MISC.

Grade and shape existing road surface -	59.00	stations	@	$18.25	per station	$1,076.75	
Roll shaped road surface w/ vibratory roller -	59.00	stations	@	$9.70	per station	$572.30	
					TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$8,172.61**

ROCK

Landing Rock @ 29+50, 37+00, 40+00, 42+50, 47+20, 51+50	480	cy. of	6" Jaw Run	@	$29.24	per c.y.=	$14,035.20
						TOTAL ROCK	**$14,035.20**

	SUBTOTAL	**$22,207.81**
MOBILIZATION	SUBTOTAL	**$3,025.73**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$2,523.35**
	TOTAL	**$27,756.89**
	COST PER STATION	**$470.46**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Q-1100**

Required Pre-Haul Maintenance-	6+70 stations 0.13 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	0.13	miles	@	$1,170.00	per mile =	$152.10

EXCAVATION

Construct Landing @ 6+50 -	1.00		@	$538.46	each	$538.46
Remove debris from ditches, culverts and roadside -	6.70	stations	@	$67.19	per station	$450.17

MISC.

Grade and shape existing road surface -	6.70	stations	@	$18.25	per station	$122.28
Roll shaped road surface w/ vibratory roller prior to rocking -	6.70	stations	@	$9.70	per station	$64.99

TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC. **$1,328.00**

ROCK

Landing Rock @ 6+70	80	cy. of	6" Jaw Run	@	$28.95	per c.y.=	$2,316.00

TOTAL ROCK **$2,316.00**

SUBTOTAL **$3,644.00**

MOBILIZATION

SUBTOTAL **$491.66**

OVERHEAD & GENERAL EXPENSES

10%

SUBTOTAL **$413.57**

TOTAL **$4,549.23**

Optional Rock? YES

COST PER STATION **$678.99**

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Q-1102**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	3+12	stations
	0.00	miles		0.00	miles		0.06	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	3.12	sta @	$280.00	per sta	$873.60	
EXCAVATION						
Road Construction Earthwork	3.12	sta. @	$152.17	per sta. =	$474.77	
Grade and shape subgrade -	3.12	stations @	$14.60	per station	$45.55	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	3.12	stations @	$12.12	per station	$37.81	
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.		**$2,006.19**

CULVERTS - MATERIALS & INSTALLATION

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

ROCK

0+00 to	3+12	347	cy. of	6" Jaw Run	@	$28.92	per c.y.=	$10,035.24
Energy Dissipator	0+50	1	cy. of	6" Jaw Run	@	$34.05	per c.y.=	$34.05
							TOTAL ROCK	**$10,069.29**

	SUBTOTAL	**$13,303.48**
MOBILIZATION	SUBTOTAL	**742.7471813**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,404.62**
	TOTAL	**$15,450.85**
Optional Rock? YES	**COST PER STATION**	**$4,952.20**

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Spur A**

Required Pre-Haul Maintenance-	0+00 stations 0.00 miles	Required Reconstruction -	0+00 stations 0.00 miles	Required Construction -	0+00 stations miles
Required Abandonment-	0+00 stations 0.00 miles	Optional Reconstruction -	0+00 stations 0.00 miles	Optional Construction -	2+63 stations 0.05 miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	2.63	sta @	$280.00	per sta	$736.40	
EXCAVATION						
Road Construction Earthwork	2.63	sta. @	$194.44	per sta. =	$511.38	
Grade and shape subgrade -	2.63	stations @	$14.60	per station	$38.40	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	2.63	stations @	$12.12	per station	$31.88	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	8.00	lbs @	$4.00	per lbs	$32.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,888.52**

ROCK

0+00	to	2+63	305	cy. of	6" Minus	@	$29.05	per c.y.=	$8,860.25
								TOTAL ROCK	**$8,860.25**

	SUBTOTAL	**$10,748.77**
MOBILIZATION	SUBTOTAL	**$699.18**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,144.80**
	TOTAL	**$12,592.75**
	COST PER STATION	**$4,788.12**

Optional Rock? YES

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Spur B**

Required Pre-Haul Maintenance-	0+00	stations	Required Reconstruction -	0+00	stations	Required Construction -	0+00	stations
	0.00	miles		0.00	miles		0.00	miles
Required Abandonment-	0+00	stations	Optional Reconstruction -	0+00	stations	Optional Construction -	2+44	stations
	0.00	miles		0.00	miles		0.05	miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	2.44	sta @	$280.00	per sta	$683.20	
EXCAVATION						
Road Construction Earthwork	2.44	sta. @	$194.44	per sta. =	$474.43	
Grade and shape subgrade -	2.44	stations @	$14.60	per station	$35.62	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	2.44	stations @	$12.12	per station	$29.57	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	7.00	lbs @	$4.00	per lbs	$28.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,789.28**

ROCK

0+00	to	2+44	290	cy. of	6" Minus	@	$29.19	per c.y.=	$8,465.10
								TOTAL ROCK	**$8,465.10**

SUBTOTAL		**$10,254.38**
MOBILIZATON	SUBTOTAL	**$662.44**
OVERHEAD & GENERAL EXPENSES 10%	SUBTOTAL	**$1,091.68**
	TOTAL	**$12,008.50**
Optional Rock? YES	**COST PER STATION**	**$4,921.52**

SUMMARY OF ROAD

Sale: **Suzie Q** Road: **Spur C**

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 -	1+20 stations 0.02 miles

CONSTRUCTION

CLEARING/GRUBBING						
Scattering Organic Debris	1.20	sta @	$280.00	per sta	$336.00	
EXCAVATION						
Road Construction Earthwork	1.20	sta. @	$194.44	per sta. =	$233.33	
Grade and shape subgrade -	1.20	stations @	$14.60	per station	$17.52	
MISC.						
Roll subgrade w/ vibratory roller prior to rocking -	1.20	stations @	$12.12	per station	$14.54	
Construct landing -	1.00	@	$538.46	each	$538.46	
Grass seed and fertilize -	3.00	lbs @	$4.00	per lbs	$12.00	
				TOTAL CLEARING, GRUBBING, EXCAVATION, FILL, and MISC.		**$1,151.85**

ROCK

0+00	to	1+20	182	cy. of	6" Minus	@	$29.35	per c.y.=	$5,341.70
								TOTAL ROCK	**$5,341.70**

SUBTOTAL	**$6,493.55**
MOBILIZATION SUBTOTAL	**$426.45**
OVERHEAD & GENERAL EXPENSES 10% SUBTOTAL	**$692.00**
TOTAL	**$7,612.00**
COST PER STATION	**$6,343.33**

Optional Rock? YES

ROCK DEVELOPMENT COST SUMMARY

Pit: Commercial Location: Oakville, WA
Sale: **Suzie Q** Road: 1685 c.y.
Total Truck Loads: 1685 c.y.

Base Cost= $16.40 Per Cu.Yd. (Purchase price 6" Jaw Run)

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
Q-1000	$11.84	$1.00	$16.40	$29.24	480	33	64000	$14,035.20
Q-1100	$11.55	$1.00	$16.40	$28.95	80	33	62200	$2,316.00
Q-1102	$11.52	$1.00	$16.40	$28.92	347	33	62000	$10,035.24
Q-1102 Energy Dissipator	$11.65	$6.00	$16.40	$34.05	1	33	62800	$34.05
Spur A	$11.65	$1.00	$16.40	$29.05	305	33	62800	$8,860.25
Spur B	$11.79	$1.00	$16.40	$29.19	290	33	63700	$8,465.10
Spur C	$11.95	$1.00	$16.40	$29.35	182	33	64700	$5,341.70
				Total C.Y.	1685		Sub Total	$49,087.54

TOTAL ROCKING COSTS $49,087.54