



Oregon Department of Forestry

2600 State St Salem OR 97310

PART III: EXHIBITS

EXHIBIT B

TIMBER SALE OPERATIONS PLAN

(See page 2 for instructions)

Date Received by State: _____

(5) State Brand Information (Complete)

(1) Contract Number: WO-341-2022-W00904-01

(2) Sale Name: Old Fort Combo

(3) Contract Expiration Date: 10/31/2023

(4) Purchaser Name: _____

(6) State Representatives:

<u>Name</u>	<u>Circle One</u>	<u>Phone No.</u>	<u>Cell No.</u>	<u>Alt Phone</u>
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			

(7) Purchaser Representatives:

<u>Name</u>	<u>Circle One</u>	<u>Phone No.</u>	<u>Cell No.</u>	<u>Alt Phone</u>
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			
	Logging Projects All			

(8) Name of Subcontractors and Start Dates:

<u>Project No.</u>	<u>Subcontractor Name.</u>	<u>Start Date</u>	<u>Completion Date</u>	<u>Cell No.</u>	<u>Alt Phone</u>

	<u>Subcontractor Name.</u>	<u>Start Date</u>	<u>Cell No.</u>	<u>Alt Phone</u>
FELLING				
YARDING				

(9) Comments:

(10) Operations Map: Attach a copy of timber sale Exhibit A or other suitable map which plainly shows the items listed on the instruction sheet.



Oregon Department of Forestry

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PART III: EXHIBITS

EXHIBIT B

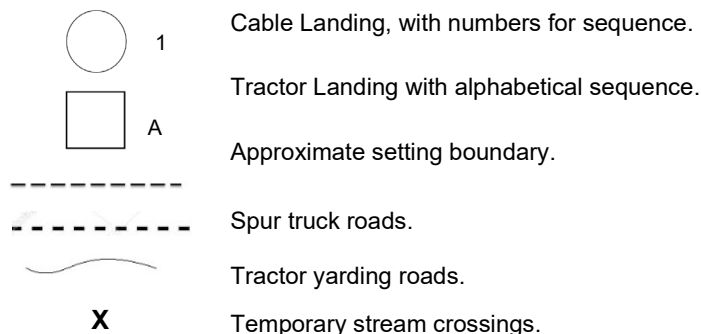
INSTRUCTION SHEET FOR OPERATIONS PLAN

SUBMIT ONE COPY OF PLAN STATE

Operations shall be limited to the work shown in the plan until a revised plan or supplemental plan is submitted covering additional work. Compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act. If STATE has prepared a required Forest Practices Act (FPA) "Written Plan" for operations, PURCHASER shall comply with all provisions of the Written Plan.

Explanation of Item No.(from Page 1)

- (5) All sales require you to use a brand furnished by STATE. If the State brand has not been assigned when the plan is submitted, it will be furnished and assigned later. Complete drawing. If more than one brand is assigned to the sale, complete both drawings.
- (6) The contract requires you to have a designated representative available on the sale area or work location who is authorized to receive in your behalf any notice or instruction given by STATE and to take action in regard to performance under the contract. If logging and project work is widely separated, a representative is required for each.
- (7) The STATE representative will be designated when your plan is approved and is the person who will inspect and issue instructions regarding performance.
- (8) Show names of subcontractors to be used for any or all phases of the operations. If subcontractors are not Known, or are changed later, give notification to the STATE representative prior to commencement of work by subcontractor.
- (9) Show projected dates for commencement of both projects and logging. If projected dates need to be changed at a later date, notification must be given to the STATE representative by supplemental plan or otherwise, prior to commencement of such operations.
- (10) The STATE representative will furnish extra copies of Exhibit A of the contract for your use in preparing the operations map. The map shall use the following legend and show:
 1. Landing locations, approximate setting boundaries, and probable sequence of logging the settings. Number the settings in sequence.
 2. Locations of spur roads planned for construction, other than required by the timber sale contract. Provide spur road specifications
 3. Locations of proposed tractor yarding roads. Show if and how marked on the ground.
 4. Locations of temporary stream crossings.
 5. List the sequence of performing project work.
 6. Location of rock sources - attach pit development plans.




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PART III: EXHIBITS

**EXHIBIT B
OPERATIONS PLAN**
Completion Timeline

Indicate on the appropriate timeline below, the dates by which you plan to complete the work as required under this contract. The purpose of this section is to develop a plan that will ensure you complete the work as required and meet the interim completion date(s) and contract expiration date. This plan is incorporated and made a part of the contract. When, in the opinion of STATE, operations are not commencing in a manner that meets the intent of this plan, you may be placed in violation of contract and your operations suspended until an amended plan is submitted and approved by STATE.

Projects

Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____

Work Commences	25%	50%	75%	Projects Complete

Harvest & Other Requirements

Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____	Month/Year Date ____/____

Work Commences	25%	50%	75%	Sale Complete

The Federal Endangered Species Act (ESA) prohibits a person from taking any federally listed threatened or endangered species. Taking under the federal ESA may include alteration of habitat. STATE's approval of this plan does not certify that PURCHASER's operation under the plan is lawful under the federal ESA. As provided in the timber sale contract, PURCHASER's must comply with all applicable state, federal, and local laws.

PURCHASER's compliance with this plan is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act.

APPROVED; Date: _____

 SUBMITTED BY:
PURCHASER

 STATE OF OREGON - DEPARTMENT OF
FORESTRY

Title _____

Title _____



Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE (WESTSIDE SCALE)
SCALING INSTRUCTIONS - LOCATION APPROVAL - BRAND INFORMATION
West Oregon - NWOA

(1) ORIGINAL REGISTRATION ☐ Date _____
REVISION NUMBER 000 ☐ Date _____
CANCELLATION ☐ Date _____

(2) TO: _____
(Third Party Scaling Organization)

(3) FROM: West Oregon Phone (541) 929-3266
(State Forestry District)
Address: 24533 ALSEA HWY
PHILOMATH, OR 97370

(4) PURCHASER: _____
Mailing Address: _____
Phone Number: _____

(5) MINIMUM SCALING SPECIFICATIONS	
SPECIES	MINIMUM NET VOLUME
Conifers	10
Hardwoods	10

*Apply minimum volume test to whole logs over 40' Westside

(6) WESTSIDE SCALE: _____
Use Region 6 actual taper rule. Logs over 40'.

(8) APPROVED SCALING LOCATIONS (as shown on the ODF Approved Locations website)	YES NO		Species	Yard	Truck	Weight
	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

(9) **SALE NAME:** Old Fort Combo
COUNTY: Benton

(10) **STATE CONTRACT NUMBER:**
WO-341-2022-W00904-01

(11) **STATE BRAND REGISTRATION NUMBER:**

(12) **STATE BRAND INFORMATION:**



(13) **PAINT REQUIRED:** YES ☒
COLOR: Orange

(14) SPECIAL REQUESTS (Check applicable)	
PEELABLE CULL (all species).....	<input checked="" type="checkbox"/>
NO DEDUCTIONS ALLOWED FOR MECHANICAL DAMAGE	<input checked="" type="checkbox"/>
ADD-BACK VOLUME - Deductions due to delay...	<input checked="" type="checkbox"/>
OTHER : _____	

(15) **REMARKS:** "Mule Train" loads require a load ticket for each set of bunks.

Operator's Name (Optional inclusion by District): _____

(16) **SIGNATURES:**

Purchaser or Authorized Representative Date

State Forester Representative Date

State Forester Representative PRINT NAME

Notify the District within one hour when branding or painting is inadequate for quick identification, the receipts are missing, not correctly or completely filled out, and/or when logs presented for scaling are impossible to scale accurately.
General Distribution: TPSO, Approved Scaling Locations and Purchaser.



Oregon Department of Forestry
EXHIBIT C - SAWMILL GRADE
INSTRUCTIONS FOR EXHIBIT C
West Oregon - NWOA

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers.

- (2) Designate Third Party Scaling Organization (TPSO).

Columbia River Log Scaling & Grading Bureau
P.O.Box 7002, Eugene, OR 97401
Phone: (541) 342-6007 Fax: (541) 342-2631
Email: services@crls.com

Mountain Western Log Scaling & Grading Bureau
P.O.Box 580, Roseburg, OR 97470
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@southernoregonlogscaling.com

Northwest Log Scalpers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax: (360) 553-7213
Email: info@nwlogscalpers.com

Pacific Rim Log Scaling Bureau, Inc.
8288 28th Court North East, Lacey, WA 98516
Phone: (360) 528-8710 Fax: (360) 528-8718
Email: office@prlsb.com

Yamhill Log Scaling & Grading Bureau
P.O.Box 709, Forest Grove, OR 97116
Phone: (503) 359-4474 Fax: (503) 359-4476
Email: yamhilllog@frontier.com

- (3) State District office, address, and phone.
- (4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.
- (5) Minimum Scaling Specifications.
- (6) Westside - Region 6 actual taper segment scale. Check Yes or No. Special Service Rules on file with TPSO. See: Segment Scaling and Grading of Long Logs - All Species - State Forestry Department Scaling Practices (Westside).
- (7) Weight Scale Sample - Check box if sale is to be a Weight Scale Sample. All specifics for handling, scaling, and processing will be attached or explained in the Remarks section item (15).
- (8) Show scaling locations only applicable to TPSO. Location name should appear as it does on the ODF Approved Scaling Location web site: https://apps.odf.oregon.gov/Divisions/management/asset_management/scalinglocation.asp Locations with scaling and processing directions specific to their location should be on a separate form. Species should be identified if not capable of receiving "all" species. Check appropriate box for either: yard, truck scale, or weight. Refer to the web site listed above for the locations approval status.
- (9) Enter sale name and county.
- (10) Enter sale Contract number.
- (11) Enter Oregon's State Brand Registry Number **(REQUIRED)**.
- (12) Show brand assigned to timber sale. One brand only. If more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section item (15).
- (13) Check yes for Paint Required and designate "Orange" for color. Non required removal volumes may sometimes require blue paint.
- (14) Special Requests. These are requests that will be applied to ODF timber sales. All boxes applicable to the timber sales designated in the Exhibit C form must be "marked". If "Other" is indicated, it must contain a description and any necessary comments.
- (15) Use this space to designate any weight scale sample instructions or any other explanations to clarify scaling, processing and/or mailing requirements. If additional scaling locations are approved, revise original or current form showing all (old and new) locations. Check REVISION box at top of form and explain under remarks. Route as indicated.
- (16) Require purchaser to sign and date completed form in addition to State Forester Representative, sign, and print name on the form. Signatures not required on revisions.



**Oregon Department of Forestry
EXHIBIT C - PULP SORT
PROCESSING INSTRUCTIONS - LOCATION APPROVAL
BRAND INFORMATION**

West Oregon, NWOA

(1) ORIGINAL REGISTRATION ☐ Date _____
REVISION NUMBER 000 ☐ Date _____
CANCELLATION ☐ Date _____

(9) **SALE NAME:** Old Fort Combo

COUNTY: Benton

(2) TO: _____
(Approved Pulp Processing Facility)

(10) **STATE CONTRACT NUMBER:**

WO-341-2022-W00904-01

(3) FROM: West Oregon Phone (541) 929-3266
(State Forestry District)

(11) STATE BRAND REGISTRATION NUMBER: _____

(12) STATE BRAND INFORMATION:

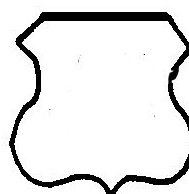
Address: 24533 ALSEA HWY
PHILOMATH, OR 97370

(4) PURCHASER: _____

(5) Scaling Bureau (TPSO) Processing Weight receipts:

Mailing Address: _____

Phone Number: _____



(13) **REMARKS:** "Mule Train" loads require a load ticket for each set of bunks.

(6) **STATE Definition of Approved Pulp Sort:**

- Top portion of the tree (tops).
- All logs with a diameter (Big End) greater than 8 inches marked with blue paint.

Operator's Name (Optional inclusion by District): _____

(7) PULP FACILITY PROCESSING INSTRUCTIONS:

- Pulp loads shall be weighed in lieu of scaling.
- One Ton = 2000 lbs (Short Ton).
- Pulp loads shall have a yellow Log Load Receipt attached.
- Gross weight and truck tare weight for each load shall be machine printed on the weight receipt.
- Weigher shall sign the weight receipt.
- Weigher shall record the Log Load Receipt number on the weight receipt.
- Weigher shall attach the Weight receipt to the Log Load Receipt and mail them weekly to the TPSO processing the Weight receipt.

(14) SIGNATURES:

Purchaser or Authorized Representative _____ Date _____

State Forester Representative _____ Date _____

State Forester Representative PRINT NAME _____

(8) TPSO PROCESSING INSTRUCTIONS

- Submit data files daily (or each day of activity).
- Mail or deliver scale tickets weekly to ODF Headquarters in Salem.

Notify the District within one hour when branding is inadequate for quick identification, the logs are marked with orange paint, the receipts are missing, not correctly or completely filled out, and/or logs do not meet the specifications of the STATE definition of Approved Pulp Sort.

General Distribution: TPSO, Approved Scaling Locations and Purchaser.



**Oregon Department of Forestry
EXHIBIT C - PULP SORT
INSTRUCTIONS FOR EXHIBIT C**

West Oregon, NWOA

- (1) Check appropriate box. REVISION NUMBER requires comments. CANCELLATION requires logging and hauling to be complete, recall branding hammers.
- (2) Approved Pulp Processing Facility. Write in as written in the Approved Log Delivery Location https://apps.odf.oregon.gov/Divisions/management/asset_management/scalinglocation.asp
- (3) State District office, address, and phone.
- (4) Enter Purchaser's business name, address, and phone number as it appears on the Contract.
- (5) Third Party Scaling Organization that will be processing the weight tickets, mailing address, and phone number.

Columbia River Log Scaling & Grading Bureau
P.O.Box 7002, Eugene, OR 97401
Phone: (541) 342-6007 Fax: (541) 342-2631
Email: services@crls.com

Pacific Rim Log Scaling Bureau, Inc.
8288 28th Court North East, Lacey, WA 98516
Phone: (360) 528-8710 Fax: (360) 528-8718
Email: office@prlsb.com

Mountain Western Log Scaling & Grading Bureau
P.O.Box 580, Roseburg, OR 97470
Phone: (541) 673-5571 Fax: (541) 672-6381
Email: info@southernoregonlogscaling.com

Yamhill Log Scaling & Grading Bureau
P.O.Box 709, Forest Grove, OR 97116
Phone: (503) 359-4474 Fax: (503) 359-4476
Email: yamhilllog@frontier.com

Northwest Log Scalers Inc.
6137 NE 63rd St, Vancouver, WA, 98661
Phone: (360) 553-7212 ext. 4 Fax: (360) 553-7213
Email: info@nwlogscalers.com

- (6) Big end of log is not to exceed 2 inches greater than the minimum removal specifications in the contract. Example: Minimum removal specifications 6 inches and 20 board feet, then the Big end of log not to exceed 8 inches. When conifer and hardwood removal specifications are different, use the smaller removal diameter to determine this specification.
- (9) Enter sale name and county.
- (10) Enter sale Contract number.
- (11) Enter Oregon's State Brand Registry Number **(REQUIRED)**.
- (12) Show brand assigned to timber sale. One brand only, if more than one brand is assigned to the sale: (1) make a separate form for each brand and (2) on each form, explain and show other brand(s) in the Remarks section Item (13).
- (13) Use this section to list any special instructions or the reason for any revisions in section item (1).
- (14) Require purchaser to sign and date completed form in addition to State Forester Representative, sign, and print name on the form. Signatures not required on revisions.

EXHIBIT D
FOREST ROAD SPECIFICATIONS

SUBGRADE WIDTH	SURFACED WIDTH	POINT TO POINT	STATION TO STATION	DRAINAGE
14 feet	12 feet	1 to 2	0+00 to Pt. 3 Pt.3 to 171+00	Crowned Outsloped
14 feet	12 feet	3 to 4	0+00 to 15+20	Outsloped
14 feet	12 feet	5 to 6	0+00 to 8+70	Outsloped
14 feet	12 feet	7 to 8	0+00 to 13+70	Outsloped
14 feet	12 feet	9 to 10	0+00 to 1+50	Outsloped

CLEARING. This work shall consist of clearing, removing, and disposing of all trees, Snags, Down Timber, brush, surface objects, and protruding obstructions within the clearing limits.

All danger trees, leaners, and Snags outside the clearing limits which could fall and hit the road shall be felled.

CLEARING CLASSIFICATION.

New Construction - Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE.

Improvement - Where clearing limits have not been marked, the clearing limits shall extend 5 feet back of the top of the cutslope and 5 feet out from the toe of the fill slope, or as directed by STATE.

GRUBBING. This work shall consist of the removal or digging out of stumps and protruding objects.

All stumps shall be completely removed within the limits of required grubbing. Stumps overhanging cut slopes shall be removed.

GRUBBING CLASSIFICATION.

New construction - from the top of the cut slope to the toe of the fill.

Improvements and reconstructions - 4 feet back from the shoulder of the subgrade or ditch, whichever is widest, or as marked in the field.

CLEARING AND GRUBBING DISPOSAL. Clearing and grubbing debris shall not be placed or permitted to remain in or under any road embankment sections. Clearing and grubbing debris shall be left in a stable location, and not left lodged against standing trees.

Clearing, grubbing, and associated disposal shall be completed prior to subgrade approval.

EXHIBIT D

FOREST ROAD SPECIFICATIONS

EXCAVATION. Excavation and grading shall not be done when weather and/or ground conditions are such that damage will result to existing subgrade or cause excessive erosion.

Excavation shall conform to STATE-specified lines, grades, dimensions, and plans when provided.

Unless road plans show otherwise, all roads shall be on a balanced cross section, except when the slope is over 50 percent, the road shall be on full bench for the width specified.

Suitable excavated material shall be used for the formation of fills, shoulders, and drainage structure backfills. Embankment materials shall be free of woody debris, brush, muck, sod, frozen material, and other deleterious materials.

Sidecast includes any road generated excess excavation material which is not essential as part of the road prism, is not compacted, and is below the roadway. Sidecast shall not be placed where it will enter a stream course. Leaving sidecast below the road is only permissible if specifically allowed in "Full Bench and End Haul Requirements" in this Exhibit.

All fills shall be machine compacted according to the "Compaction and Processing Requirements" in this Exhibit.

ROAD WIDTH LIMITATIONS. PURCHASER shall obtain advance written approval from STATE to construct the road to a greater width than specified. Extra subgrade width shall be required for:

Fill Widening. Add to each fill shoulder 1 foot for fills 3 feet to 6 feet high; 2 feet for fills over 6 feet high.

Curve Widening. Widen the inside shoulder of all curves as specified in the plans or as follows: 400 divided by the radius of the curve equals the amount of extra width.

DRAINAGE

Subgrade. Subgrade shall be crowned at 4 to 6 percent or outsloped at 3 to 4 percent as shown on the "Forest Road Specifications" table in this Exhibit.

Ditch. Construct V shaped ditch 3 feet wide and to a depth of 1 foot below subgrade.

Ditchouts. Construct ditchouts to drain away from subgrade at locations marked in the field or as directed by STATE.

TURNOUTS. Increase roadbed width an additional 8 feet for both subgrade and surfacing. Length shall be at least 50 feet, or as staked on the ground, plus 25-foot approaches at each end.

Location: Intervisible but not greater than 750 feet apart and as marked in the field.

SLOPES

Solid Rock

Fractured Rock

Soil - side slopes 50% and over

Soil - side slopes less than 50%

Cut Slopes

Vertical to $\frac{1}{4}$:1

$\frac{1}{2}$:1

$\frac{3}{4}$:1

1 :1

Fill Slopes

1½:1

1½:1

Top of cut slope shall be rounded.

LANDINGS. Landings shall be constructed as posted in the field, no less than 50 feet wide and no more than 70 feet wide unless otherwise approved by STATE. Surface is to be crowned for drainage with general grade no more than 3 percent. Surface as shown in the "Road Surfacing" table in this Exhibit.

TURNAROUNDS. Increase subgrade width an additional 20 feet for a length of 20 feet at locations marked in the field.

SEASONAL WINTERIZATION. All unsurfaced roads or unfinished subgrades shall be waterbarred in accordance with the specifications in these Exhibits, and blocked from vehicular traffic prior to October 1, annually and as directed by STATE.

EXHIBIT D
FOREST ROAD SPECIFICATIONS

GENERAL ROAD IMPROVEMENT INSTRUCTIONS:

- (1) Timber Removal. Remove all trees within posted Right-of-Way Boundary or individually marked with an orange "C", as specified in Section 2210, Designated Timber.
- (2) Sod Removal. Remove/separate sod from crushed rock surfacing as directed by STATE. Sod material shall be scattered in stable locations through openings in the timber outside of the cleared right-of-way. In areas where sod cannot be scattered in a stable location, material shall be end hauled to designated waste areas as shown on Exhibit A, or other stable locations as directed by STATE.
- (4) Bank Slough Removal. Excavate all bank slough. Bank slough material shall not be pulled across existing surfacing rock. Excavated material shall be hauled to the designated waste areas as marked in the field and/or designated on Exhibit A.
- (5) Waste areas shall be uniformly sloped and compacted for drainage.
- (6) Subgrade Preparation and Application of Surfacing Rock.
 - (a) Complete culvert installations, drainage ditches, ditchouts, fill construction, and other specified work prior to the application of surfacing rock.
 - (b) Subgrade shall be crowned at 4 to 6 percent or outsloped at 3 to 4 percent.
 - (c) Upon completion of above required work, apply, process, and compact surfacing rock in accordance with specifications in the "Compaction and Processing Requirements" in this Exhibit. Final road surface shall be crowned 4 to 6 percent or outsloped at 3 to 4 percent.

SPECIFIC ROAD IMPROVEMENT INSTRUCTIONS

1 to 2	0+00	Apply 110 CY of 1 ½"-0" rock for spot rock (as directed by STATE). Shape spot rock with grader 13 stations as directed by STATE. Process spot rock with grader and compact with vibratory roller.
	3+70	Install Gate per specifications under Project NO. 2 and in Exhibit E. Remove old gate and dispose of off State lands.
	141+30	Utilize 20 CY of 3"-0" rock for in road Landing rock, process and compact.
	162+20	Reopen Landing with grader. Rock Landing with 30 CY of jaw-run rock, process and compact.
	171+00	Rock existing Landing at Pt. 2 with 30 CY of jaw-run rock, process and compact.
3 to 4	0+00	Shape Surface with grader (3 stations) as directed by STATE.
	15+20	
5 to 6	0+00	Shape road and Landing Surface with grader and compact with vibratory roller 6 stations as directed by STATE.
	7+00	Rock existing Landing at Sta. 7+00 with 20 CY of 3"-0" rock.
	8+70	
7 to 8	0+00	Apply 50 CY of 1 ½"-0" rock for spot rock as directed by STATE. Shape Surface with grader and compact with vibratory roller, 6 stations as directed by STATE.
	13+40	Rock existing turnout with 10 cy of 3"-0" rock, shape and compact turnout rock.
	13+70	Rock existing Landing at Pt. 8 with 30 CY of jaw-run rock. Shape Landing rock with grader and compact with vibratory roller.
9 to 10	0+00	Rock existing Landing at Pt. 10 with 30 CY of jaw-run rock. Shape Landing rock with grader and compact with vibratory roller.
	1+50	

EXHIBIT D
ROAD SURFACING

ROAD SEGMENT	1 to 2			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (inches)	1 to 2		0+00 to 171+00			
				Volume (CY) per		Number of			
Landing rock	3"-0"	138+90	n/a	20	Landing	1	Landings	20	27
Landing rock	Jaw-Run	162+20	n/a	30	Landing	1	Landings	30	41
Landing rock	Jaw-Run	171+00	n/a	30	Landing	1	Landings	30	41
Spot rock	1 1/2"-0"	n/a	n/a	10	Load	11	Loads	110	149
Gate install	1 1/2"-0"	3+70	n/a	10	Gate	1	Gate	10	14
Total Rock for Road Segment		1 to 2						200	272

ROAD SEGMENT	5 to 6			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Locallon	Depth of Rock (inches)	5 to 6		0+00 to 8+70			
				Volume (CY) per		Number of			
Landing rock	3"-0"	7+00	n/a	20	Landing	1	Landings	20	27
Total Rock for Road Segment		5 to 6						20	27

ROAD SEGMENT	7 to 8			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (Inches)	7 to 8		0+00 to 13+70			
				Volume (CY) per		Number of			
Spot rock	1 1/2"-0"	n/a	n/a	10	Load	5	Loads	50	68
Landing rock	Jaw-Run	13+70	n/a	30	Landing	1	Landings	30	41
Turnout rock	3"-0"	13+40	n/a	10	Turnout	1	Turntout	10	14
Total Rock for Road Segment		7 to 8						90	123

ROAD SEGMENT	9 to10			POINT TO POINT		Sta. to Sta.		TOTAL VOLUME (CY)	TOTAL VOLUME (TONS)
Application	Rock Size and Type	Location	Depth of Rock (Inches)	9 to 10		0+00 to 1+50			
				Volume (CY) per		Number of			
Landing rock	Jaw-Run	1+50	n/a	30	Landing	1	Landings	30	41
Total Rock for Road Segment		9 to 10						30	41

ROCK CONVERSION FACTORS

Size	1 1/2"-0"	3"-0"	Jaw-Run	Pit-Run
Tons/CY	1.35	1.35	1.35	1.35

(Conversion factors from Hardrock Quarry)

Maintenance Rock Volumes in CY				
Rock Size	1 1/2"-0"	3"-0"	Jaw-Run	Pit-Run
Rock Totals	150	-	-	-

Total Rock Volumes For Projects				
Rock Size	1 1/2"-0"	3"-0"	Jaw-Run	Pit-Run
Rock Totals CY	170	50	120	0
Rock Totals TONS	230	68	162	0

EXHIBIT D

ROCK ACCOUNTABILITY

PURCHASER shall obtain subgrade approval from STATE prior to rocking. Rocking shall be limited to periods when weather conditions are acceptable to STATE and when sediment will not enter streams. Additional surfacing needed because of construction season or construction practice is not included in the preceding ROAD SURFACING table, and shall be furnished at PURCHASER expense.

Rock accountability shall be determined by the following methods, as directed by STATE. STATE shall be given 24 hours' notice prior to rocking.

Load Records. Notify STATE before spreading the rock and maintain a record of all rock delivered for spreading. Make the record available for STATE inspection. A report listing the amount of rock delivered the prior month must be submitted no later than the 15th of each month.

EXHIBIT D

COMPACTION AND PROCESSING REQUIREMENTS

Moisture Content: Compaction must take place when moisture content of the materials being compacted is favorable for effective compaction as determined by STATE.

Compaction Pass: A pass is defined as traveling a road section forward and then backward over that same section.

Subgrade. Subgrade surfaces of the road segments listed below shall be graded and compacted. Compaction shall be accomplished by traveling all surfaces from shoulder to shoulder until the surface is smooth and hard and visible deformation ceases. At least 3 passes shall be made over the entire width and length of the road. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Subgrade shall be crowned, outsloped, or insloped at 4 to 6 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

ROAD SEGMENT	SUBGRADE COMPACTION OPTIONS
Pts. 5 to 6	1

Crushed Rock. The rock shall be uniformly mixed and spread in layers on the approved roadbed. Each layer of crushed rock shall be moistened or dried to uniform moisture content suitable for maximum compaction and compacted in layers not to exceed 6 inches in depth. When more than 1 layer is required, each shall be shaped, compacted, and approved by STATE before the succeeding layer is placed. Any irregularities or depressions that develop during compaction of the top layer shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Each layer shall be compacted with a minimum of 3 passes over the entire width and length of the road until the surface is smooth and hard and visible deformation ceases. Compaction shall be accomplished by using one or more of the approved equipment options listed below:

Rock shall be compacted and processed during the same project period it is spread, unless otherwise approved in writing by STATE.

Rock shall be crowned at 4 to 6 percent or outsloped at 3 to 4 percent as specified in the "Forest Roads Specifications" table in Exhibit D.

ROAD SEGMENT	CRUSHED COMPACTION OPTIONS
All road segments requiring crushed rock.	1

- (1) Vibratory Rollers. The drum shall have a smooth surface, a diameter not less than 48 inches, a width not less than 58 inches, and a turning radius of 15 feet or less. (*Vibration frequency shall be regulated in steps to 1400, 1500, and 1600 VPM, corresponding to engine speeds of 1575, 1690, and 1800 RPM. The centrifugal force developed shall be 7 tons at 1600 VPM. It shall be activated by a power unit of not less than 25 horsepower.) The vibratory roller shall be self-propelled and operated at speeds ranging from 0.9 miles to 1.8 miles per hour, as directed by STATE.

EXHIBIT D

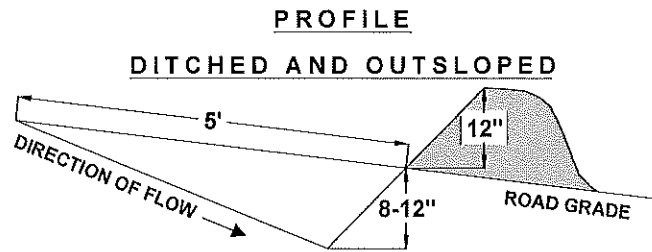
[DURABLE] CRUSHED ROCK SPECIFICATIONS

Grading Requirements

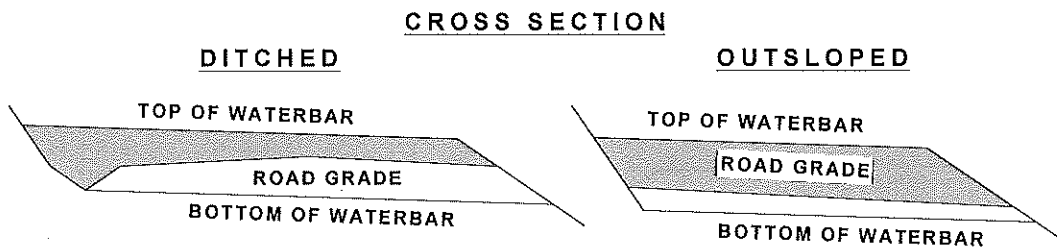
<u>For 1½"-0"</u>	Passing	2" sieve	100%
	Passing	1½" sieve	90-100%
	Passing	¾" sieve	60-90%
	Passing	¼" sieve	30-50%
	Passing	No. 10 sieve	15-30%
	Passing	No. 40 sieve	7-15%
<u>For 3"-0"</u>	Passing	4" sieve	100%
	Passing	3" sieve	90-100%
	Passing	1½" sieve	60-90%
	Passing	¾" sieve	40-60%
	Passing	¼" sieve	20-40%
	Passing	No. 10 sieve	5-20%
<u>For Jaw-Run</u>	Passing	6" sieve	100%
	Passing	3" sieve	45-65%

Control of gradation shall be by visual inspection by STATE.

EXHIBIT D WATERBAR SPECIFICATIONS



SPACING OF WATERBARS	
ROAD GRADE	DISTANCE
< 6 %	400'
6 - 10 %	200'
11 - 15 %	150'
> 15 %	100'



CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%.

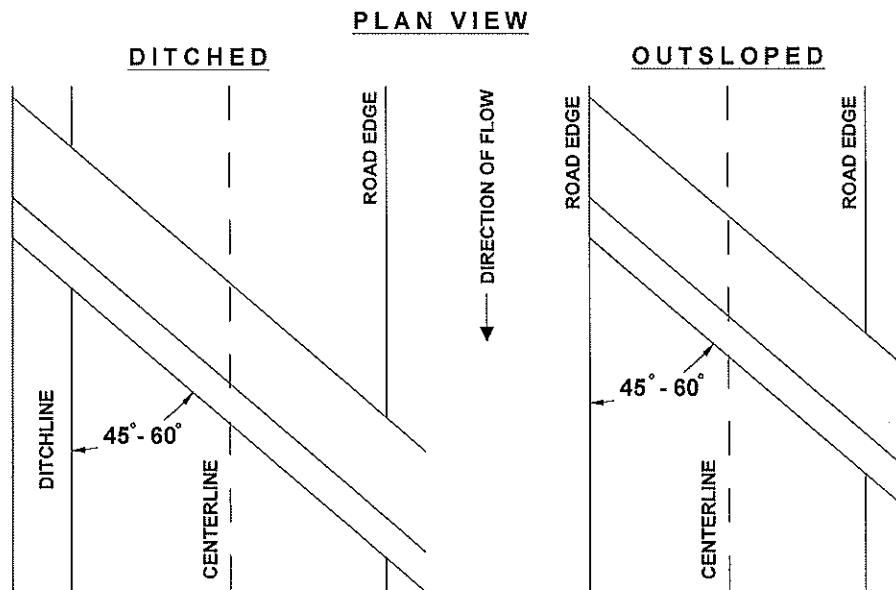
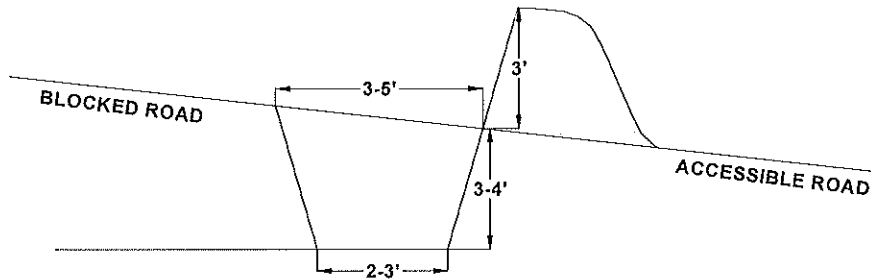


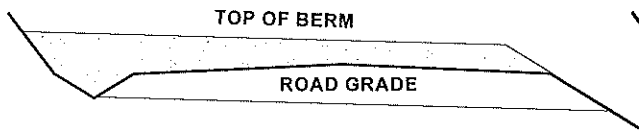
EXHIBIT D TANK TRAP SPECIFICATIONS

PROFILE
DITCHED AND OUTSLOPED

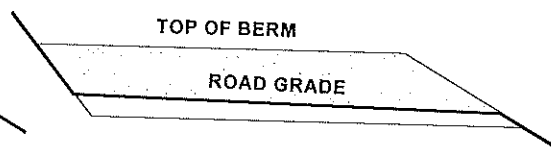


CROSS SECTION

DITCHED



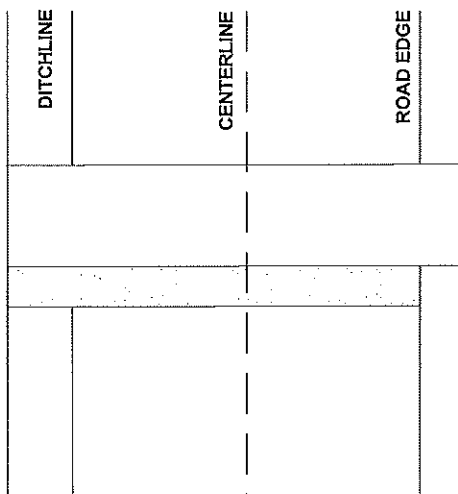
OUTSLOPED



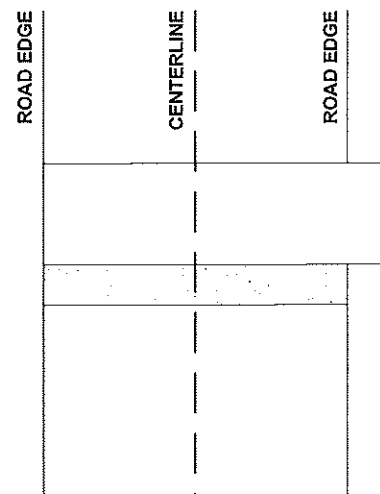
CONSTRUCT DITCHOUT THRU ANY EXISTING BERM.
CROSS DRAINAGE GRADIENT MINIMUM 3%

PLAN VIEW

DITCHED



OUTSLOPED



It should be sloped to drain with a relief ditch through the down slope edge of the road. The trench shall be behind the berm for approaching traffic.

EXHIBIT E

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

Tensioner Style Swing Gate

PURCHASER shall design, construct, and install a tensioner style swing gate at the following location: Station 3+70 on Pt. 1 to Pt. 2.

The project requires site visitation, gate construction (including painting), and installation at the above locations.

PROJECT REQUIREMENTS AND MINIMUM SPECIFICATIONS

- (a) Coordinate site visitation, construction, and installation of gate with STATE.
- (b) Site visitation to determine the final location, direction of swing, and width for gate shall occur prior to submitting final detailed design.
- (c) Gate post location shall be marked on ground by STATE.
- (d) The gate construction shall meet the following specifications:
 - (1) The gate shall be a tensioner style swing gate. The structure shall have an underground cross-arm and stabilizers.
 - (2) The gate opening shall be a minimum of 16 feet, and no more than 20 feet. The total structure height shall be a minimum of 8 feet.
 - (3) The gate shall be constructed with steel component materials as shown on this Exhibit, unless approved in writing by STATE. The Stabilizer shall be a minimum of 3 feet in length, extending from the posts; with a total minimum length of 6 feet.
 - (4) A blocking post shall be installed beside the road in the direction of the swing on the hinge side of the road; and have a three foot chain attached for securing the gate in the open position. The blocking post shall be constructed with a minimum of 3" SCH 40 steel pipe, 8 feet in length and a three foot chain attached within 6 inches of the top of the post.
 - (5) The tops of all posts shall have 1/4" caps.
 - (6) The gate shall utilize a lock box capable of a minimum of two locks. The PURCHASER shall supply a minimum of 2 splitters and one pin for each gate. The pin shall be permanently connected to the lock box with chain.
 - (7) Prior to painting, the gates and posts shall be cleaned and free of rust scale. Paint with a rust resistant primer coat and a topcoat of a rust resistant high visibility yellow paint. Gate shall be painted prior to delivery.
- (e) Construct the gate as to the specifications above and below.

EXHIBIT E

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

Tensioner Style Swing Gate

PROJECT REQUIREMENTS AND MINIMUM SPECIFICATIONS

- (f) Install the gate at the proper location and as approved by STATE.
- (g) Apply 10 CY of 1½"-0" rock to cap underground support.
- (h) Tensioner turnbuckle shall be tack welded in place and spot painted in the field after any adjustments are made during installation and after receiving final approval from STATE.

EXHIBIT E

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

Tensioner Style Swing Gate

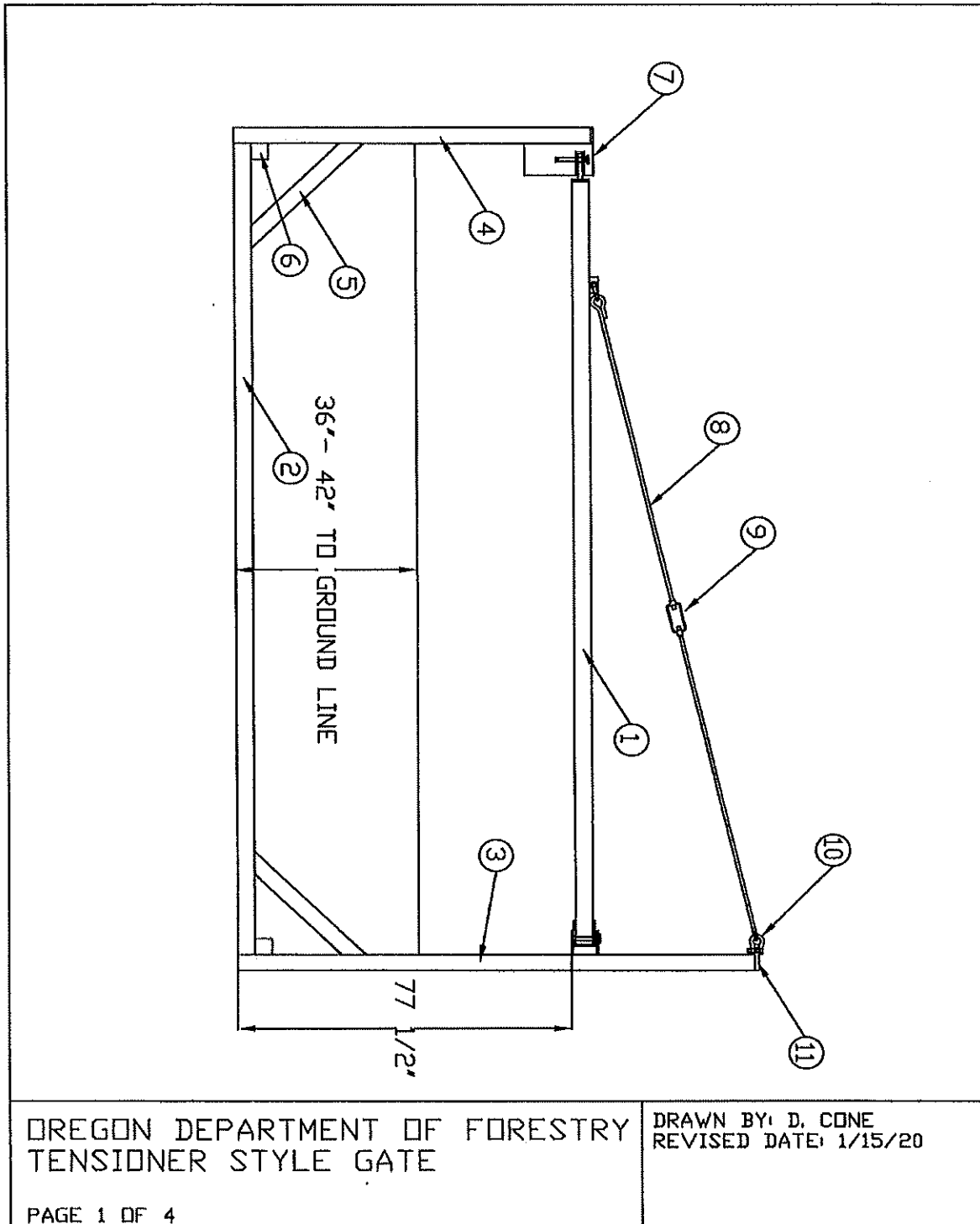
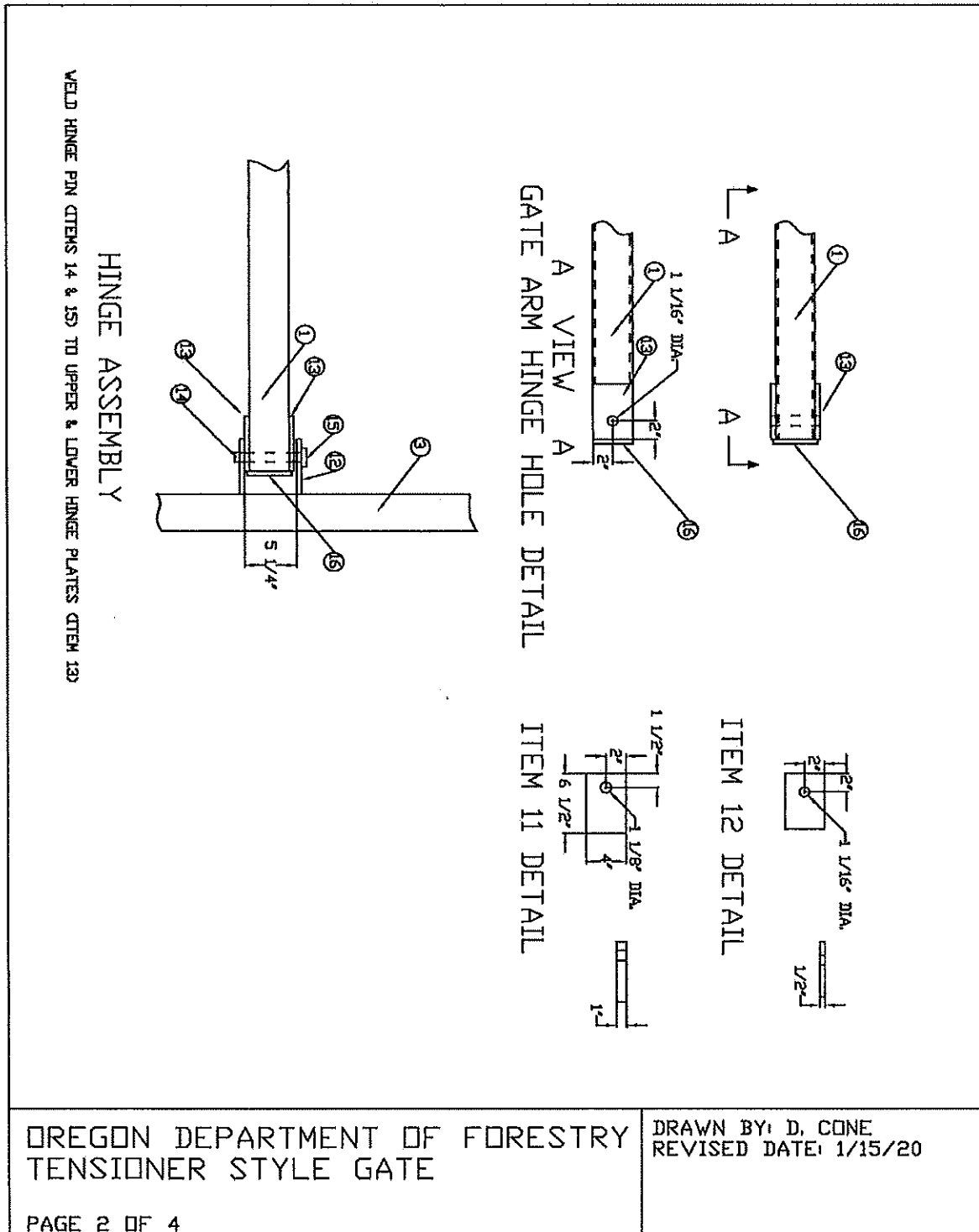


EXHIBIT E

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

Tensioner Style Swing Gate



FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

NOTE, CUT LOCK SLOT TO MATCH GATE OPENING DIRECTION.
INSTALL GATE WITH HINGE POST ON CUT BANK SIDE OF ROAD-
GATE TO SWING IN THE DOWNHILL DIRECTION.

LOCK BOX DETAIL

LOCK PIN DETAIL

LOCK TONGUE DETAIL

OREGON DEPARTMENT OF FORESTRY
TENSIONER STYLE GATE

DRAWN BY: D. CONE
REVISED DATE: 1/15/20

PAGE 3 OF 4

EXHIBIT E

FOREST ROAD GATE DESIGN, CONSTRUCTION, AND INSTALLATION

Tensioner Style Swing Gate

MATERIALS LIST				
ITEM	QTY	MAT'L	DESCRIPTION	COMMENTS
1	1	MS	4' X 1/4" SQ. TUBE X 16'	LENGTH FOR 16' GATE- VARY FOR LONGER GATE
2	1	MS	4' X 1/4" SQ. TUBE X 17'	LENGTH FOR 16' GATE- VARY FOR LONGER GATE
3	1	MS	4' X 1/4" SQ. TUBE X 10'	
4	1	MS	4' X 1/4" SQ. TUBE X 83"	
5	2	MS	4' X 1/4" SQ. TUBE X 37"	CUT ENDS AT 45°
6	2	MS	4' X 1/4" SQ. TUBE X 6'	
7	1	MS	8' X 1/4" SQ. TUBE X 16'	CUT TONGUE SLOT TO MATCH GATE SWING
8	2	MS	3/4" RND. BAR X 89"	WELD LOOP 1 END/THREAD FOR TURNBUCKLE 1 END
9	1		3/4" X 9' TURNBUCKLE	
10	2		3/4" SCREW PIN ANCHOR SHACKLE	WELD PIN IN PLACE
11	1	MS	4' X 6' X 1/2" X 1" PLATE	
12	2	MS	4' X 6' X 1/2" PLATE	
13	2	MS	4' X 6' X 1/2" PLATE	
14	1	MS	1' RND. BAR X 6' 3/4"	
15	1	MS	2' X 2" X 1/2" PLATE	
16	1	MS	4' X 4' X 1/2" X 1/2" PLATE	
17	2	MS	4' X 4' X 1/2" X 1/2" PLATE	
18	2	MS	8' X 8' X 1/2" PLATE	1 3/8" DIA HOLE CENTERED/ROUND CORNERS TO FIT
19	1	MS	6' 1/2" X 4' X 1/2" PLATE	
20	1	MS	1' DIA. RND. BAR X 7' 1/4"	
21	1	MS	2' X 2" X 1/2" PLATE	
22	1	MS	1/2" DIA. RND. BAR X 3'	

OREGON DEPARTMENT OF FORESTRY
TENSIONER STYLE GATE

DRAWN BY: D. CONE
REVISED DATE: 1/15/20