

INFORMATION HANDOUT

**For Contract No. 02-4E4404
At 02-Mod-139-R10.7/28.0**

**Identified by
Project ID 0200020285**

PLAC Summary

AGREEMENTS

U.S.Department of Agriculture – Forest Service

Timber Sale Contract (Ref FSM 2430, FSH 2409.18)

MATERIALS INFORMATION

Lufft IRS Series Surface Sensor Installation Procedure for Perez

02-4E4404
02-Mod-139-R10.7/28.0
Project ID 0200020285

PLAC Summary

PLAC CONDITION RESPONSIBILITY (PCR) SUMMARY

General:

This PCR Summary clarifies various PLAC requirements. Perform all work described in the PLACs on behalf of the Department unless otherwise stated below in Table 2. If a discrepancy exists between the PCR Summary and the PLAC, the PCR Summary governs.

Definitions:

Agency: A board, agency, or other entity that issues a PLAC

Activity: A task, event or other project element

PLAC Condition: a work activity and/or submittal required by a PLAC

Table 1 - Clarification of PLAC Requirements		
PLAC Name	Section of the PLAC	PLAC Requirement
All PLACs	Applicable PLAC sections	<p>Submittals: Submit to the Engineer when PLAC conditions require:</p> <ol style="list-style-type: none"> 1. Communications. The Engineer will contact the agencies. 2. Records to be maintained, within 5 working days after the activity. 3. Submittals 5 days before the agencies require them. The Engineer will review and submit to the agencies.
MODOC National Forest Service Agreement Contract No: FS-2400-3T (6/06)	Timber Designation Table	"Sale area" is the same as "Roadside Clearing Limit" shown on plans.
	CT6.24 Site Specific Special Protection Measure	No work is allowed within ESA fenced areas.
	CT6.6# Erosion Prevention and Control	Pure Live Seed Mix, shown on plans has been approved. Scarification and tillage are not required.
	CT-7 Slash Treatment	Burying, scattering, leaving piles or burning is not permitted. Firelines will not be required unless ordered.

Table 2 - Work to be Performed by the Department		
PLAC Name	Section of the PLAC	PLAC Requirement
MODOC National Forest Service Agreement	CT4.211, CT4.212 and CT4.4	
	BT3.0, BT4.0	

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AGREEMENTS

U.S.Department of Agriculture – Forest Service

Timber Sale Contract (Ref FSM 2430, FSH 2409.18)

Sale Name: <i>Highway 139 Recovery Zone Settlement</i>	Contract Number	Award Date	Termination Date (BT8.2)
Purchaser's Name and Complete Address:			05/31/2016
	Total Sale Acres	Acres to be Cut	Type of Sale
	400	12	Premeasured
Legal Description of Sale Area (BT1.1): T42N, R8E, sec. 3,4 & 5; T43N, R7E sec. 5,6,8,16,17,21,26,27,35 & 36; T43N, R 8E, sec. 31 & 32; T44N, R6E, sec. 11,12,13,24,25 &36; T44N, R7E, sec 31; MDB&M			

The parties to this contract are the United States of America, acting through the Forest Service, United States Department of Agriculture, hereinafter called Forest Service, and _____, hereinafter called Purchaser. Standard Provisions of this contract begin on page 2. Specific Conditions are given below. Numbers in parentheses refer to Standard and Special Provisions. Forest Service address to receive payments (BT4.0): USDA Forest Service, (at address on Bill For Collection). Measurement will be done before felling (BT6.8).

Included Timber (BT2.1, BT2.2, BT2.4, BT3.1, BT4.0, and BT6.4)

Species	Product	Estimated Quantity	Unit of Measure	Minimum Specifications					Payment Rates per Unit of Measure		
				DBH (Inches)	No. of Minimum Pieces per Tree	Length (Feet)	D.I.B. at Small End (Inches)	Net Merch. Factor	Base Rates \$	Bid Rates \$	Required Slash Disposal \$
Incense Cedar	Sawtimber	0.18	CCF	10.0	1	10	6.0	12	5.00		.00
Ponderosa Pine	Sawtimber	167.40	CCF	10.0	1	10	6.0	12	5.00		.00
Total Quantity		167.58	CCF	Total Sale Value \$							\$.00

Schedule of Payment Units

Payment Unit Number	Approximate Acres	Species	Product	Quantity	Unit of Measure	Total Payment \$ 1/	Total Associated Charges \$ 2/
1	12	Incense Cedar	Sawtimber	0.18	CCF		.00
		Ponderosa Pine	Sawtimber	167.40	CCF		
		Total PU Quantity And Value					

Inapplicable Standard Provisions: BT4.211 BT4.4	List of Special Provisions: CT2.35#, CT4.211, CT4.212, CT4.4, CT5.35#, CT6.24#, CT6.314, CT6.331, CT6.37, CT6.41#, CT6.5, CT6.6#, CT6.7#, CT6.83, CT7.2#, CT7.22#, CT8.65# (Option 1)
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Maximum Stump Height (BT6.412): 12.0	UNITED STATES OF AMERICA <hr/> <i>By (Signature)</i> Contracting Officer <hr/> <i>(Title)</i> PURCHASER <hr/> <i>By (Signature)</i> <hr/> <i>(Title)</i>
Purchaser's Operations Fire Suppression Liability (BT7.41) is: \$6,300.00 per Fire.	
Fire Precautionary Period (BT7.2): From: <i>May 01</i> To: <i>December 01</i>	
Responsibility to Furnish Crews & Equipment (BT7.3):	
Initial Suppression: 25 road miles	
Fire Suppression Reinforcement: 100 road miles	
Normal Operating Season First Period: From: <i>May 15</i> To: <i>October 15</i>	
(BT6.31): Second Period: From: To:	
Performance Bond Amount (BT9.1):	
Downpayment Amount (BT4.211):	
Periodic Payment Amount (BT4.213): Date:	
WITNESSES	
In witness hereof, the parties hereto have executed this contract as of the award date.	
_____ (Witness Signature)	
_____ (Witness Signature)	

CERTIFICATION

I, _____, certify that I am the _____ Secretary of the corporation named as Purchaser herein; that _____ who signed this contract on behalf of the Purchaser, was then _____ of said corporation; that said contract was duly signed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

CORPORATE SEAL

TIMBER SALE CONTRACT

BT1.0-SALE AREA

BT1.1 Sale Area Map. The boundaries of "Sale Area" and any Payment Unit thereof, are as shown on the attached "Sale Area Map" that is made a part hereof, and were, before timber sale advertisement, designated on the ground by Forest Service to meet the anticipated needs of the parties. The location of Sale Area and its approximate acreage are stated on Page 1. Payment Units may be revised and additional ones may be established only by written agreement. Upon Purchaser's request, Forest Service shall subdivide Payment Units to reduce them to a size that can be logged within 60 days at Purchaser's normal rate of logging. However, the rate of logging used in such adjustment of Payment Unit size shall not be less than a rate necessary for removal of all Included Timber during Normal Operating Seasons prior to Termination Date. Payment Units may be eliminated from Sale Area under conditions described in BT6.36.

Where applicable, the following are also identified on Sale Area Map:

- (a) Identified claims limiting Purchaser's rights under BT1.2;
- (b) Boundaries of Clearcutting Units, Overstory Removal Units, and Understory Removal Units under BT2.3;
- (c) Diameter limits for Overstory Removal Units and Understory Removal Units under BT2.33 and BT2.34;
- (d) Areas where leave trees are Marked to be left uncut under BT2.35;
- (e) Roads where log hauling or use is prohibited or restricted under BT5.12;
- (f) Roads and trails to be kept open under BT6.22;
- (g) Improvements to be protected under BT6.22;
- (h) Locations of known wildlife, plant habitat, and cave resources to be protected under BT6.24;
- (i) Locations of areas known to be infested with specific invasive species of concern under BT6.35;
- (j) Maximum stump heights when lower stump heights are required for special areas under BT6.412;
- (k) Skidding or yarding methods specified under BT6.42;
- (l) Streamcourses to be protected under BT6.5;
- (m) Locations of meadows requiring protection under BT6.61;
- (n) Locations of wetlands requiring protection under BT6.62;
- (o) Locations of temporary roads to be kept open under BT6.631; and
- (p) Other features required by standard or special provisions.

BT1.2 Claims. Valid claims are excluded from Sale Area, except those on which timber cutting is authorized in writing by the claimant and except mining claims on which cutting is authorized by the Act of July 23, 1955 (30 USC 614). Claims that limit Purchaser's rights to operate under this contract and that Forest Service has been able to identify are shown on Sale Area Map. Purchaser is not obligated to operate contrary to existing claim limitations. Forest Service shall designate boundaries of claims on the ground to the extent necessary to identify Included Timber.

BT2.0-TIMBER SPECIFICATIONS

BT2.1 Included Timber. "Included Timber" consists of:

BT2.11 Standard Timber. Live and dead trees and portions thereof that meet Utilization Standards under BT2.2 and are designated for cutting under BT2.3.

BT2.12 Substandard Timber. Live and dead trees that:

- (a) Do not meet Utilization Standards and
- (b) Are located in Clearcutting Units or are otherwise designated for cutting.

BT2.13 Damaged Timber.

BT2.131 Damaged by Purchaser. Undesignated live trees meeting Utilization Standards that are damaged by Purchaser in logging and are subsequently Marked before Purchaser has completed skidding or yarding operations in the immediate area.

By agreement, such trees may be left without charge if their removal would cause undue damage or be grossly uneconomic.

BT2.132 Negligent or Willful Damage. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Purchaser, if included by Contracting Officer.

BT2.134 Minor Damage by Natural Causes. Undesignated trees within Sale Area and meeting Utilization Standards, in amounts less than specified in BT8.22, that become insect infested, windthrown, suffer serious damage, or die, as designated by agreement.

BT2.14 Unintentionally Cut Timber. Trees, within or immediately adjacent to Sale Area, not designated for cutting under BT2.3 but that are cut through mistake by Purchaser, when included by Contracting Officer.

BT2.16 Other Material. Species or products not listed on Page 1, upon written approval of Contracting Officer under

BT3.41.

BT2.2 Utilization and Removal of Included Timber. "Utilization Standards" for trees and minimum pieces are stated on Page 1. To meet minimum tree specifications, trees must equal or exceed tree diameters listed on Page 1 and contain at least one minimum piece. Except for timber required or authorized to be left, Purchaser shall fell and buck such trees and shall remove from Sale Area all pieces that:

- (a) Meet minimum piece standards on Page 1 or
- (b) Do not meet such standards, but would have qualified as part of minimum pieces if bucking lengths were varied to include such material.

BT2.3 Timber Designations. Timber designated for cutting shall be confined to Sale Area, except as provided in BT2.131, BT2.14, BT2.32, and BT5.1.

The boundaries of Clearcutting Units, Overstory Removal Units, and Understory Removal Units were plainly Marked on ground before timber sale advertisement and are shown on Sale Area Map. Boundary trees shall not be cut. The approximate acreage of timber designations is stated on Page 1.

BT2.31 Clearcutting Units. All trees that meet Utilization Standards within "Clearcutting Units" are designated for cutting.

BT2.32 Clearing. All timber is designated for cutting that is within the clearing limits of authorized clearings. All dead or unstable live trees are designated for cutting that are sufficiently tall to reach Purchaser's landings or the roadbed of roads when Marked in advance of felling of timber in the immediate vicinity. Pieces meeting Utilization Standards from such dead or unstable live trees shall be removed, unless there is agreement that to do so could damage the road.

BT2.322 Authorized Clearings. Timber within authorized clearings for roads, landings, or other clearings is designated for cutting.

BT2.33 Overstory Removal Units. All trees within "Overstory Removal Units" are designated for cutting when they meet Utilization Standards and equal or exceed the diameter limits shown on Sale Area Map.

BT2.34 Understory Removal Units. All trees within "Understory Removal Units" are designated for cutting when they meet Utilization Standards and are smaller than the diameter limits shown on Sale Area Map.

BT2.35 Individual Trees. All trees to be cut, other than in the units described in BT2.31, BT2.32, BT2.33, and BT2.34, are Marked or designated by description. Trees are "Marked" when individually designated by Forest Service with paint marks above and below stump height.

Sale Area Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.

BT2.37 Designation Changes. Within Sale Area, minor adjustments may be made in boundaries of cutting units or in the timber individually Marked for cutting when acceptable to Purchaser and Forest Service.

BT2.4 Quantity Estimate. The estimated quantities of timber by species designated for cutting under BT2.3 and expected to be cut under Utilization Standards are listed on Page 1. Estimated quantity on Page 1 does not include the following:

- (a) Damaged timber under BT2.13;
- (b) Unintentionally cut timber under BT2.14;
- (c) Timber within clearing limits of roads or other authorized clearings and that is not designated under BT2.31, BT2.33, BT2.34, or BT2.35; or
- (d) Dead or unstable live trees that are sufficiently tall to reach Purchaser's landings or roads under BT2.32.

Estimated quantities for such timber not included on Page 1 shall be determined as stated in CT6.8.

BT2.43 Adjustment for Quantity Errors. An estimated quantity shown on Page 1 shall be revised by correcting identified errors made in determining estimated quantity that result in a change in total timber sale quantity of at least 10 percent or \$1,000 in value, whichever is less, when an incorrect estimated quantity is caused by computer malfunction or an error in calculations, area determination, or computer input.

No adjustments in quantity shall be made for variations in accuracy resulting from planned sampling and Measuring methods or judgments of timber quality or defect.

For payment purposes, corresponding revisions in quantity and total payment shall be shown on Page 1 for each Payment Unit involved. Adjustment in rates will not be made. Adjustment in quantities shall not obligate Forest Service to designate additional quantities when the original quantity estimate is overstated.

BT3.0-RATES OF PAYMENT

BT3.1 Current Contract Rates. Included Timber that is Released for Cutting shall be paid for at Current Contract Rates determined under this Section. "Current Contract Rates" are listed on Page 1, unless superseded by rates redetermined under BT3.3. In addition, "Required Deposits" shall be made as listed on Page 1 and CT5.32, or established under BT3.3.

In the event Termination Date is adjusted under BT8.21, Current Contract Rates shall be continued in the same manner as immediately prior to the adjustment period.

Current Contract Rates, based on rates redetermined under BT3.3, shall apply to all Payment Units from which removal of timber from Sale Area has not been completed on the effective date of the revised rates, except Current Contract Rates in effect at the time of Release for Cutting shall be applicable for not more than two other Payment Units from which removal from Sale Area has begun.

Notwithstanding the exceptions provided in this Section, rates redetermined under BT3.31 and BT3.33 shall apply to all Included Timber removed subsequent to the rate redetermination.

In event there are more than two Payment Units from which timber removal has not been completed on the effective date, the rates in effect at the time of Release for Cutting shall apply to the two units from which the greatest estimated proportions of Payment Unit quantities have been removed. Otherwise, in released Payment Units, redetermined rates shall apply to the entire quantity shown on Page 1 for those units. In addition, Required Deposits shall be made as listed on Page 1 and CT5.32, or established under BT3.3.

"Current Contract Value" is the sum of the products of Current Contract Rates and estimated remaining quantities by species of Included Timber meeting Utilization Standards. "Bid Premium Rates" are the amounts by which Purchaser's bid is in excess of Advertised Rates. "Advertised Rates" are the minimum acceptable Bid Rates for timber. "Bid Rates" are the rates bid by Purchaser. "Base Rates" are the lowest rates of payment for timber that are authorized by this contract.

BT3.3 Rate Redetermination. Rates may be redetermined as set forth in this Section. Bid Premium Rates shall be added to all redetermined rates, except as provided in BT3.31 and BT3.33.

Rate redeterminations shall be made in accordance with the standard Forest Service methods in effect 45 days prior to rate redetermination. Such methods shall take into consideration factors that may affect timber value at said rate redetermination date.

Redetermined rates shall not be less than Base Rates listed on Page 1, except for reduction under BT3.31 or BT3.33. Required Deposits shall be redetermined.

BT3.31 Rate Redetermination for Environmental Modification. In the event of a contract modification under BT8.33 or partial termination under BT8.34, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber remaining immediately prior to the revision and the appraised unit value of Included Timber to be cut under the modification.

Current Contract Rates in effect at the time of the revision will be adjusted by said differences to become the redetermined rates. Accordingly, Base Rates shall be adjusted to correspond to the redetermined rates if redetermined rates are less than the original Base Rates, subject to a new Base Rate limitation of the cost of essential reforestation or 25 cents per hundred cubic feet or equivalent, whichever is larger.

Redetermined rates and Required Deposits shall be considered established under BT3.1 for timber removed subsequent to the contract revision.

BT3.33 Rate Redetermination for Market Change. In the event of delay or interruption, exceeding 90 days, under BT8.33, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the delay or interruption and the appraised unit value of Included Timber immediately after the delay or interruption. The appraisal shall be done after any rate redetermination done pursuant to BT3.31, using remaining volumes.

Current Contract Rates in effect at the time of delay or interruption or established pursuant to BT3.31 will be reduced, if appraised rates declined during the delay or interruption. Increases in rates will not be considered. Accordingly, Base Rates shall be adjusted to correspond to the redetermined rates if redetermined rates are less than the original Base Rates, subject to a new Base Rate limitation of the cost of essential reforestation or 25 cents per hundred cubic feet or equivalent, whichever is larger.

Redetermined rates shall be considered established under BT3.1 for timber removed subsequent to the delay or interruption.

BT3.4 Other Payment Rates.

BT3.41 Material and Quantities Not on Page 1. Incidental amounts of products or portions of trees of species listed on Page 1 that do not meet Utilization Standards may be removed without charge. Such material may be purposely removed in more than incidental amounts without charge upon written approval of Contracting Officer, and subject to agreement on deposits if needed for road maintenance and use.

Other species or products not listed on Page 1 may be cut and removed upon written approval of Contracting Officer and subject to agreement on rates of payment and deposits if needed for road maintenance and use. When any material suitable for use in a product form included on Page 1 is removed in another product form, the rates of payment shall be not

less than but approximately equivalent to Current Contract Rates and Required Deposits.

BT3.42 Timber Cut Through Mistake. Undesignated timber meeting Utilization Standards, cut by Purchaser through mistake and included by Contracting Officer under BT2.14, shall be removed and paid for at Current Contract Rates and Required Deposits, unless such material is not listed on Page 1. In such event, Contracting Officer, in accord with standard Forest Service methods, shall establish rates to be paid.

BT3.43 Undesignated Timber Damaged Without Negligence. Undesignated timber meeting Utilization Standards, damaged without negligence by Purchaser and designated by Forest Service under BT2.131, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits.

BT3.44 Undesignated Timber Unnecessarily Damaged or Negligently or Willfully Cut. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Purchaser, if included by Contracting Officer under BT2.132, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits that are in addition to liquidated damages under BT3.45.

If such timber is of a species or size not listed on Page 1 or is of a quality different from designated timber, Contracting Officer shall establish payment rates in accord with standard Forest Service methods.

BT3.45 Liquidated Damages. Unnecessary damage to or negligent or willful cutting of undesignated timber, as described in BT3.44, on portions of Sale Area cut over under this contract is likely to cause substantial silvicultural or other damage to the National Forest. It will be difficult, if not impossible, to determine the amount of such damage. Therefore, Purchaser shall pay as fixed, agreed, and liquidated damages an amount equivalent to the amount payable at Current Contract Rates. If designated by Contracting Officer, Purchaser shall remove such damaged or cut timber and pay for it at Current Contract Rates.

BT4.0-PAYMENTS

BT4.1 Amount Payable for Timber. Except as provided in BT3.1, Current Contract Rates and Required Deposits in effect when a Payment Unit is Released for Cutting shall be applied to the timber quantities to determine the amount Purchaser shall pay. A "Payment Unit" is a portion of Sale Area established for payment purposes.

BT4.2 Timber Sale Account. The "Timber Sale Account" is an account maintained by Forest Service of all Purchaser's deposits, credits, payment guarantees, and the charges for:

- (a) Timber at Current Contract Rates,
- (b) Slash disposal and road maintenance at Required Deposit rates,
- (c) Cooperative work at rates established by specific agreement under BT4.218, and
- (d) Other charges provided in this contract.

Cash deposits shall be recorded currently in such account.

Charges for Payment Units Released for Cutting shall be made when Forest Service prepares and furnishes to Purchaser periodic statements of quantity and value of such timber.

Charges shall be made according to BT3.4 when trees are subsequently Marked or designated for cutting.

BT4.21 Cash Deposits. Within the limitations of this Subsection, Purchaser shall make cash deposits to meet Purchaser's obligations within 15 days of billing by Forest Service. Deposits shall be made to the address on Page 1. Forest Service shall explain the bill at the time it requests each deposit.

BT4.211 Downpayment. The downpayment amount shown on Page 1 may not be applied toward any other payment required under the provisions of this contract, except damages determined pursuant to BT9.4, transferred to other timber sales, or refunded until stumpage value representing 25 percent of the total bid value of the timber sale is shown on the Timber Sale Account to have been cut, removed, and paid for, or if 36 CFR 223.49(e) is applicable, the estimated value remaining to be cut and removed, as shown on the Timber Sale Account, is equal to or less than the amount of the downpayment. For lump sum timber sales, the downpayment may be applied to payment for release of the single payment unit.

If Forest Service makes a determination that this contract should not have been included under increased downpayment requirements (36 CFR 223.49(e)), the downpayment shall be revised and applied in accordance with 36 CFR 223.49(f).

BT4.212 Advance Deposits. Purchaser agrees to make cash deposits in advance of cutting to meet charges under BT4.2.

Forest Service billings for advance cash deposits shall be in such amounts that the Timber Sale Account will maintain an unobligated balance that covers the applicable charges for Payment Units Released for Cutting and designated material not included on Page 1 expected to be cut within the next 60 days. This advance cash deposit may be reduced to a smaller amount by the terms of BT4.211, BT4.213, and/or BT4.215. Except for amounts required pursuant to BT4.211, and BT4.213, Purchaser shall not be required to make advance deposits above those required under this Item.

When the credit balance in the Timber Sale Account is exceeded by the charges for timber within Payment Units Released for Cutting and for the estimated quantity to be cut in 10 days of cutting designated material not included on Page 1, Contracting Officer will suspend all or any part of Purchaser's Operations until payment or acceptable payment guarantee is received.

BT4.213 Periodic Payment Schedule. Purchaser shall make periodic payment for stumpage value, as shown on Page 1.

In the event Purchaser has not paid the amount stated on Page 1 as stumpage for volume removed by the periodic payment determination date, Forest Service shall issue a bill for collection for the difference between the required amount and payments made by Purchaser. If payment falls due on a date other than a normal billing date, the payment date shall be extended to coincide with the next Timber Sale Account billing date.

The amount of the periodic payment will be reduced if the payment would result in Purchaser's credit balance for timber charges exceeding the Current Contract Value.

Only cash may be used for this purpose. No other form of payment is acceptable. Forest Service will apply the payment to subsequent charges on this contract under the terms of BT4.212.

A periodic payment determination date that has not been reached shall be adjusted one day for each additional day of time granted.

BT4.215 Deposits When Payment Guaranteed. To the extent payment guarantee is provided under BT4.3, requirements for advance cash deposits under BT4.212 shall be waived for the value of timber on Sale Area that has been Released for Cutting, but not removed, and for the estimated value of products removed from Sale Area for not more than a monthly billing period, subject to the provisions of BT4.4.

BT4.216 Blanket Cash Deposits. Purchaser may make cash deposits under a written agreement to cover charges made under this and other timber sale contracts within the same National Forest. Forest Service shall allocate such deposits to such timber sales. When there is to be no timber cutting hereunder for 30 days or more and payment of current charges has been made, the allocation to this timber sale shall be reallocated to other timber sales within the same National Forest at Purchaser's request. Purchaser shall not start cutting until allocation has again been made to this timber sale.

BT4.218 Cooperative Deposits. On a basis of cooperation or assistance (16 USC 572) and by a written agreement, Forest Service shall perform all or portions of the work that Purchaser is obligated to perform under this contract, as well as furnish other services in connection with activities under this contract. When Forest Service is to perform such work, Purchaser shall make one or more deposits to cover the estimated cost of said work. On request of Purchaser, Forest Service shall render monthly accounts, as may be specified in such agreement.

BT4.22 Temporary Reduction of Downpayment. When, under BT8.33, Contracting Officer orders a delay or interruption of Purchaser's Operations for more than 30 days when scheduled operations would be occurring but for the order, the downpayment amount required shall be temporarily reduced upon the written request of Purchaser or at the discretion of the Contracting Officer. For the period of the delay or interruption, the downpayment on deposit may be reduced to \$1,000 or two (2) percent of the downpayment amount listed on Page 1, whichever is larger.

Any downpayment amount temporarily reduced pursuant to this Subsection may be refunded or transferred at the request of Purchaser. However, if Purchaser has outstanding debt owed to the United States, Contracting Officer must apply the amount of downpayment that could be refunded to the debt owed in accordance with the Debt Collection Improvement Act, as amended (31 USC 3701, et seq.).

Upon Purchaser's receipt of bill for collection and written notice from Contracting Officer that the basis for the delay or interruption no longer exists, Purchaser shall restore the downpayment to the full amount shown on Page 1 within 15 days after the date the bill for collection is issued, subject to the provisions of BT4.4. Purchaser shall not resume contract operations until the downpayment amount is fully restored.

BT4.23 Refund of Excess Cash. If at any time the credit balance of the Timber Sale Account exceeds the charges for timber within Payment Units Released for Cutting and for designated material not included on Page 1 that Forest Service estimates will be cut within the next 60 days, any portion of such excess that is due to cash in the account shall be refunded, if requested by Purchaser, unless deposited under BT4.211 or BT4.213. If Purchaser plans no cutting within the next 60 days, Forest Service may refund the entire unencumbered cash balance, except as provided in this Subsection. However, Forest Service shall not reduce the credit balance below the total value of partially cut Payment Units and designated material not included on Page 1 that is cut before operations cease. After a refund for a shutdown, deposits shall be made to meet the requirements of BT4.212 before additional timber may be cut.

BT4.24 Refund after Final Charges for Released Timber. Any cash deposit, in excess of that required to meet charges under BT4.2, shall be refunded or transferred within 15 days of Purchaser's request after final charges for Included Timber have been made, except for amounts estimated to be required under BT9.5.

BT4.3 Payment Guaranteed by Bond or Deposited Securities. To guarantee payment, Purchaser may furnish and maintain an acceptable surety bond or deposit in a Federal Depository negotiable securities of the United States. The securities shall be deposited through the Regional Fiscal Agent accompanied by a power of attorney and agreement authorizing the bond-approving officer to sell or collect such securities if payment is not made within 15 days of billing by Forest Service. The penal sum of such surety bond or the market value at time of deposit of such negotiable securities shall be the maximum amount of the payment guaranteed.

For payment purposes, said penal sum of the surety bond or market value at time of deposit of negotiable securities shall be in lieu of the performance bond furnished under BT9.1.

BT4.31 Blanket Bond. If Purchaser furnishes an acceptable bond, or deposits securities, in accordance with BT4.3, to guarantee payment for timber from this and other timber sales within the same National Forest, the amount of such bond or deposited securities shall be allocated to such timber sales by Forest Service. When there is to be no timber cutting hereunder for 30 days or more and payment of current charges has been made, the allocation to this timber sale shall be reallocated to other timber sales at Purchaser's request. Purchaser shall not start cutting hereunder until this timber sale receives an allocation that will meet the obligation for payment guarantee.

BT4.32 Letters of Credit for Payment Bond. Notwithstanding the provisions of BT4.3, Purchaser may use letters of credit in lieu of a surety bond for payment bond purposes when approved by Contracting Officer.

BT4.4 Payments Not Received. (a) Payments are due and payable on the date of issue indicated on the bill for collection. When a payment for timber cut and other charges is not received at the location designated by Forest Service by the date allowed in the bill for collection for receipt of payment Contracting Officer will suspend all or any part of Purchaser's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

- (i) Slash disposal and road maintenance deposits,
- (ii) Cooperative work at rates established by specific agreement under BT4.218,
- (iii) Damages pursuant to BT9.4,
- (iv) Road use fees,
- (v) Restoration of downpayment pursuant to BT4.22,
- (vi) Periodic payment pursuant to BT4.213, and
- (vii) Other mandatory deposits.

(b) Failure to pay amounts due by the date allowed in the bill for collection for receipt of payment shall be considered a breach under BT9.3. The 30-day notice period prescribed therein shall begin to run as of the end of business on the date allowed for receipt of payments. If the performance or payment is guaranteed by surety bond, the surety will receive a copy of the written notification of breach. Demand will be made on the surety or other institution providing the guarantee or bond instrument for immediate payment 10 days after issuance of written notification of the breach,

(c) Pursuant to the Debt Collection Improvement Act of 1996, as amended, if payment is not received by Forest Service within 15 days after the date of issue indicated on the bill for collection:

- (i) Simple interest shall be assessed at the higher of the Current Value of Funds Rate or the Prompt Payment Interest Rate as established by the Secretary of the Treasury. Interest will begin to accrue as of the date of issue indicated on the initial bill for collection.
- (ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.
- (iii) A penalty charge of six (6) percent per annum will be assessed on any portion of a debt delinquent more than 90 days. This penalty charge is in addition to interest and administrative charges under paragraphs (c)(i) and (c)(ii). The penalty charge shall accrue from the date of issue indicated on the bill for collection, and shall be assessed on all outstanding amounts, including interest and administrative costs assessed under paragraphs (c)(i) and (c)(ii).
- (iv) Payments will be credited on the date received by the Federal Depository or Collection Officer designated on the bill for collection.

(d) Forest Service remedies for Purchaser's failure to make payment for timber cut and other charges when due, except for accrual of interest, suspension of all or any part of Purchaser's Operations, and administrative offset, shall be stayed for so long as:

- (i) A bona fide dispute exists as to Purchaser's obligation to make such payment and
- (ii) Purchaser files and prosecutes a timely Claim.

BT5.0-TRANSPORTATION FACILITIES

BT5.1 Authorization. Purchaser is authorized to construct and maintain roads, bridges, and other transportation

facilities, as needed for harvesting Included Timber on National Forest lands.

Maintenance shall be governed by BT5.3. The location and clearing widths of all roads or facilities shall be agreed to before construction is started.

BT5.11 Requirements of Rights-of-Way. Purchaser's use on rights-of-way identified in attached list or CT5.11 shall be confined to rights-of-way and limited by the related easements and stipulations, if any, unless Purchaser makes other arrangements that will not infringe upon or adversely affect the grantee's rights. Easements or right-of-way documents are available in the offices of the Forest Supervisor and District Ranger.

BT5.12 Use of Roads by Purchaser. Except as provided herein, Purchaser is authorized to use existing National Forest system roads, when Forest Service determines that such use will not cause damage to the roads or National Forest resources.

CT5.12 lists existing roads shown on Sale Area Map that for such reasons as limitations in structural capacity, safety, and protection of soil, water, and roads:

- (a) Cannot be used for log hauling or
- (b) May be used only under the restrictive limitations stated therein.

BT5.3 Road Maintenance. Purchaser shall maintain roads, commensurate with Purchaser's use, in accordance with Road Maintenance Requirements in CT5.31 and the Road Maintenance Specifications. Performance of road maintenance work by Purchaser may be required prior to, during, or after each period of use. The timing of work accomplishment shall be based on Purchaser's Operating Schedule under BT6.31.

When two or more commercial users are simultaneously using the same road where Forest Service is not requiring maintenance deposits, the commercial users will develop maintenance responsibilities and arrangements for accomplishing the work. Forest Service must agree to this plan. If the commercial users cannot agree on maintenance responsibilities, Forest Service shall resolve the differences.

If Purchaser elects to use different roads than those listed in CT5.31, Forest Service shall determine Purchaser's commensurate share of road maintenance and revise road maintenance deposits in CT5.32.

If Forest Service cannot perform its full commensurate share of road maintenance, Forest Service shall make a cash payment to Purchaser for performance of such work.

Unless agreed in writing, prehaul maintenance shall be completed on any portion of road prior to hauling on that portion. Maintenance, as used in this contract, does not include road reconstruction or repairs of an extraordinary nature.

BT6.0-OPERATIONS

BT6.1 Representatives. Unless otherwise agreed, Purchaser shall designate, in writing, a representative who is authorized to receive notices in regard to performance under this contract and take related action. In no case shall Purchaser designate any representative to this contract who is currently debarred, proposed for debarment, or suspended by the Federal Government. Purchaser's representative shall provide a copy of the contract to Purchaser's field supervisor and persons authorized to assume responsibilities in the field supervisor's absence. Prior to initial operations and after shutdowns of 10 days or more, Purchaser's representative shall notify Forest Service 2 days, excluding weekends and Federal holidays, before any operations begin on Sale Area.

Purchaser's representative shall designate, in writing, a field supervisor, one of whose responsibilities shall be on-the-ground direction and supervision of Purchaser's Operations. The field supervisor shall be readily available to the area of operations when operations are in progress and shall be authorized to receive notices in regard to performance under this contract and take related action. The responsibilities of the field supervisor shall include the safeguarding of National Forest resources and performance within the terms of the contract. Purchaser representative will furnish Forest Service with names of persons authorized to assume responsibilities in field supervisor's absence. Such delegations may be made a part of Purchaser's annual Operating Schedule under BT6.31.

Unless Contracting Officer designates another Forest Service representative and notifies Purchaser in writing, the District Ranger is the representative of Forest Service. Forest Service representative shall:

- (a) Receive notice in regard to performance under this contract,
- (b) Take action in relation to this contract, and
- (c) Be readily available to the area of logging operations.

Contracting Officer or Forest Service representative shall designate other on-the-ground representatives in writing along with their specific contractual responsibilities and authority. Representatives with authority delegated in writing are the only Forest Service personnel authorized to provide notice or take related actions under the contract. Such delegation shall be made within 60 days of contract award.

BT6.11 Notices. Notices by either party as to action taken or to be taken by the other respecting this contract shall be

made in writing to the other party's designated representative.

BT6.2 Improvements. Purchaser shall comply with the rules and regulations governing the operation of premises that are occupied and shall perform the contract in a manner that will not interrupt or interfere with the conduct of Forest Service business.

Forest Service shall grant written permission before any camp, storage, or service area is opened or operated on National Forest land or administered land. A camp is interpreted to include the campsite or trailer parking area of any employee, agent, contractor, Subcontractor or their employees or agents working on the project for Purchaser. Such permission, if granted, shall be without charge to Purchaser.

BT6.22 Protection of Improvements. So far as practicable, Purchaser shall protect improvements (such as roads, trails, telephone lines, ditches, and fences):

- (a) Existing in the operating area,
- (b) Determined to have a continuing need or use, and
- (c) Designated on Sale Area Map.

Purchaser shall keep roads and trails needed for fire protection or other purposes and designated on Sale Area Map reasonably free of equipment and forest products, and debris resulting from Purchaser's Operations. Purchaser shall make timely restoration of any such improvements damaged by Purchaser's Operations and, when necessary because of such operations, shall move such improvements, as specified in CT6.22.

BT6.221 Protection of Improvements Not Owned by Forest Service. Forest Service will notify all utility companies, or other parties affected, and make arrangements for all necessary adjustments of the public utility fixtures, pipelines, and other appurtenances likely to be affected by Purchaser's Operations.

When Purchaser's Operations are adjacent to properties of railway, telephone, or power companies, or other property, work shall not begin until Purchaser has identified actions necessary to prevent damage.

Purchaser shall cooperate with the owners of any underground or overhead utility lines in their removal and/or rearrangement operations in order that these operations may progress in a reasonable manner, utility duplication or rearrangement work may be reduced to a minimum, and services shall not be unnecessarily interrupted.

In the event of interruption to utility services because of accidental breakage or as a result of lines being exposed or unsupported, Purchaser shall promptly notify the proper authority and shall cooperate with that authority in the restoration of service until the service is restored.

When materials are to be hauled across the tracks of any railway, Forest Service will make arrangements with the railroad for the use of any existing crossing or for any new crossing required. Purchaser shall make arrangements for use of alternate crossings. All work to be performed by Purchaser on the railroad right-of-way shall not damage railroad company's property.

BT6.222 Protection of Property. Purchaser shall not unnecessarily remove, deface, injure, or destroy trees, shrubs, or other natural features, unless specifically authorized. To the extent practicable, Purchaser shall confine operations to within the clearing limit or other areas designated in the contract and prevent the depositing of rocks, excavated materials, stumps, or other debris outside these limits.

Material that falls outside these limits shall be retrieved, disposed of, or incorporated in the work to the extent practicable and necessary to protect adjacent resource values, unless otherwise agreed.

BT6.23 Protection of Land Survey Monuments. Forest Service shall appropriately designate on the ground all known survey monuments, section corners, and other corner accessories. Forest Service shall post identifying signs on two sides of each known bearing tree.

Forest Service shall arrange protective or perpetuate action that does not cause unnecessary delay to Purchaser in authorized clearings, such as Clearcutting Units, and in other instances where damage to monuments, section corners, and other corner accessories is unavoidable.

Purchaser shall protect all known survey monuments, witness corners, reference monuments, and bearing trees against avoidable destruction, obliteration, or damage during Purchaser's Operations. If any known monuments, corners, or accessories are destroyed, obliterated, or damaged by Purchaser's Operations, Purchaser shall hire the appropriate county surveyor or a registered land surveyor to reestablish or restore at the same location the monuments, corners, or accessories. Such surveyors shall use procedures in accordance with the Bureau of Land Management "Manual of Instructions for the Survey of the Public Lands of the United States" for General Land Office surveys and in accordance with State law for others. Purchaser shall record such survey in appropriate county records.

BT6.24 Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.

(a) Areas, known by Forest Service prior to timber sale advertisement, needing special measures for the protection of plants, animals, cultural resources, and/or cave resources are shown on Sale Area Map and/or identified on the ground, and

shall be treated as follows:

(i) Unless agreed otherwise, wheeled or track laying equipment shall not be operated in areas identified as needing special measures except on roads, landings, tractor roads, or skid trails approved under BT5.1 or BT6.422. Purchaser may be required to backblade skid trails and other ground disturbed by Purchaser's Operations within such areas in lieu of cross ditching required under BT6.6. Additional special protection measures needed to protect such known areas are identified in CT6.24.

(ii) Unless agreed otherwise, trees will not be felled into areas identified as needing special measures.

(iii) Purchaser shall conduct operations in a manner that does not damage or disturb identified areas. In the event that protective measures identified by the Forest Service are for any reason inadequate, Contracting Officer may delay or interrupt Purchaser's operations, under this Contract, and/or modify this Contract pursuant to BT8.33.

(iv) Purchaser shall immediately notify the Forest Service if its operations disturb or damage any area identified as needing special protection, and shall immediately halt its operations in the vicinity of such area until the Forest Service authorizes continued operations. In the event that Purchaser's operations disturb or damage an area identified as needing special protection, then Purchaser shall reimburse the Forest Service for the full cost and expense of any evaluative and remedial measures undertaken by the Forest Service in connection with such disturbance or damage. Such payment shall not relieve Purchaser from civil or criminal liability under applicable law.

(b) Nothing contained in this Subsection shall establish, or be deemed to establish any express or implied warranty on the part of the Forest Service (i) that the Forest Service has identified all areas within the Sale Area requiring special protection, or (ii) that measures prescribed by the Forest Service for protection of such areas are adequate.

(c) Following sale advertisement, additional areas needing special measures for protection may be discovered or identified; protective measures may be revised or newly prescribed; and, additional species of plants and/or animals may be added to federal lists of protected species. In such event, Contracting Officer may delay or interrupt Purchaser's operations, under this Contract, and/or modify this Contract pursuant to BT8.33.

(d) Discovery, by either the Purchaser or the Forest Service, of additional areas, resources, species, or members of species needing special protection shall be promptly reported to the other party.

BT6.3 Control of Operations. Under this contract, "Purchaser's Operations" shall include activities of or use of equipment of Purchaser, Purchaser's employees, agents, contractors, Subcontractors, or their employees or agents, acting in the course of their employment in operations hereunder on National Forest lands or within Forest Service protection boundary (unless acting under the immediate supervision of Forest Service).

Purchaser's Operations shall be conducted in a workmanlike and orderly manner. The timing of required Forest Service designation of work on the ground and the performance of other Forest Service work shall not be such as to cause unnecessary delay to Purchaser.

"Release for Cutting" is written authorization to Purchaser to begin cutting in a Payment Unit. Upon Purchaser's request for release of a Payment Unit, Forest Service shall either:

- (a) Give tentative approval and bill Purchaser as necessary under BT4.21 or
- (b) Reject the request, stating reasons for rejection.

When payment or payment guarantee has been confirmed, Forest Service shall issue Release for Cutting within 10 days. Purchaser shall not cut timber in any Payment Unit until it is Released for Cutting.

BT6.31 Operating Schedule. Purchaser shall, before commencing operations, provide in writing an annual Operating Schedule of anticipated major activities and needs for logging Included Timber, such as logging and road maintenance. Upon reasonable notice to Forest Service, such schedule shall be subject to modifications necessitated by weather, markets, or other unpredictable circumstances.

Subject to BT6.6 and when the requirements of BT6.66 are met, Purchaser's Operations may be conducted outside Normal Operating Season. "Normal Operating Season" is the period(s) beginning and ending on the dates stated on Page 1 of any year.

BT6.32 Protection of Residual Trees. Purchaser's Operations shall not unnecessarily damage young growth or other trees to be reserved.

BT6.33 Safety. Purchaser's Operations shall facilitate Forest Service's safe and practical inspection of Purchaser's Operations and conduct of other official duties on Sale Area. Purchaser has all responsibility for compliance with safety requirements for Purchaser's employees.

In the event that Contracting Officer identifies a conflict between the requirements of this contract or agreed upon methods of proceeding hereunder and State or Federal safety requirements, the contract shall be modified and Purchaser may request an adjustment in Current Contract Rates to compensate for the changed conditions.

Unless otherwise agreed in writing, when Purchaser's Operations are in progress adjacent to or on Forest Service

controlled roads and trails open to public travel, Purchaser shall furnish, install, and maintain all temporary traffic controls that provide the user with adequate warning of hazardous or potentially hazardous conditions associated with Purchaser's Operations. Purchaser and Forest Service shall agree to a specific Traffic Control Plan for each individual project prior to commencing operations. Devices shall be appropriate to current conditions and shall be covered or removed when not needed. Except as otherwise agreed, flagmen and devices shall be as specified in the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) and as shown on Sale Area Map, Traffic Control Plan, or in specifications attached hereto.

BT6.34 Sanitation and Servicing. Purchaser shall take all reasonable precautions to prevent pollution of air, soil, and water by Purchaser's Operations. If facilities for employees are established on Sale Area, they shall be operated in a sanitary manner. In the event that Purchaser's Operations or servicing of equipment result in pollution to soil or water, Purchaser shall conduct cleanup and restoration of the polluted site to the satisfaction of Forest Service.

Purchaser shall maintain all equipment operating on Sale Area in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid. Purchaser shall not service tractors, trucks, or other equipment on National Forest lands where servicing is likely to result in pollution to soil or water. Purchaser shall furnish oil-absorbing mats for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. Purchaser shall remove from National Forest lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

BT6.341 Prevention of Oil Spills. If Purchaser maintains storage facilities for oil or oil products on Sale Area, Purchaser shall take appropriate preventive measures to ensure that any spill of such oil or oil products does not enter any stream or other waters of the United States or any of the individual States.

If the total oil or oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, Purchaser shall prepare a Spill Prevention Control and Countermeasures Plan. Such Plan shall meet applicable EPA requirements (40 CFR 112), including certification by a registered professional engineer.

Purchaser shall notify Contracting Officer and appropriate agencies of all reportable (40 CFR 110) spills of oil or oil products on or in the vicinity of Sale Area that are caused by Purchaser's employees, agents, contractors, Subcontractors, or their employees or agents directly or indirectly, as a result of Purchaser's Operations. Purchaser will take whatever initial action may be safely accomplished to contain all spills.

BT6.342 Hazardous Substances. Purchaser shall notify the National Response Center and Contracting Officer of all releases of reportable quantities of hazardous substances on or in the vicinity of Sale Area that are caused by Purchaser's employees, agents, contractors, Subcontractors, or their employees or agents directly or indirectly, as a result of Purchaser's Operations, in accordance with 40 CFR 302.

BT6.35 Equipment Cleaning. (a) Areas, known by Forest Service prior to timber sale advertisement, that are infested with invasive species of concern are shown on Sale Area Map. A current list of invasive species of concern and a map showing the extent of known infestations is available at the Forest Supervisor's Office. For purposes of this provision, "Off Road Equipment" includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles.

(b) Purchaser shall adhere to the following requirements with regard to cleaning "Off-Road Equipment":

(i) Prior to moving Off Road Equipment onto the Sale Area, Purchaser shall identify the location of the equipment's most recent operation. Purchaser shall not move any Off Road Equipment that last operated in an area infested with one or more invasive species of concern onto Sale Area without having cleaned such equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds, and having notified Forest Service, as provided in (iii). If the location of prior operation cannot be identified, then Purchaser shall assume that the location is infested with invasive species of concern.

(ii) Prior to moving Off Road Equipment from a cutting unit that is shown on Sale Area Map to be infested with invasive species of concern to, or through any other area that is shown as being free of invasive species of concern, or infested with a different invasive species, Purchaser shall clean such equipment of seeds, soil, vegetative matter, and other debris that could contain or hold seeds, and shall notify the Forest Service, as provided in (iii).

(iii) Prior to moving any Off-Road Equipment subject to the cleaning requirements set forth above, Purchaser shall advise Forest Service of its cleaning measures and make the equipment available for inspection. Forest Service shall have 2 days, excluding weekends and Federal holidays, to inspect equipment after it has been made available. After satisfactory inspection or after such 2 day period, Purchaser may move the equipment as planned. Equipment shall be considered clean when a visual inspection does not disclose seeds, soil, vegetative matter, and other debris that could contain or hold seeds. Purchaser shall not be required to disassemble equipment unless so directed by the Forest Service after inspection.

(iv) If Purchaser desires to clean Off Road Equipment on National Forest land, such as at the end of a project or prior to moving to, or through an area that is free of invasive species of concern, Purchaser shall obtain prior approval from Contracting Officer as to the location for such cleaning and measures, if any, for controlling impacts.

(v) Contracting Officer may order delay, interruption, or modification of this Contract pursuant to BT8.33.

(c) Nothing contained in this Section shall be interpreted as creating any warranty on the part of the Forest Service that all locations of invasive species of concern have been described herein, elsewhere in this Contract, or designated on the ground. Following sale advertisement, additional locations may be described or designated, and other species may be added to the list of invasive species of concern. In such event, Contracting Officer may order delay, interruption, or modification of this Contract pursuant to BT8.33.

(d) The parties shall promptly communicate with one another with respect to description or designation of additional locations; discovery of locations of new species or new infestation; and, addition of species to the list of invasive species of concern.

BT6.36 Acceptance of Work. Upon Purchaser's written request and assurance that work has been completed, Forest Service shall perform an inspection within 5 days, excluding weekends and Federal holidays, so as not to delay unnecessarily the progress of Purchaser's Operations. Such a request may be for acceptance of:

- (a) Specific requirements on a Payment Unit (such as logging, slash disposal, erosion control, or snag felling) or
- (b) All contract requirements on a Payment Unit.

Forest Service may perform such inspections without request from Purchaser.

Within 2 days of inspection, excluding weekends and Federal holidays, Forest Service shall furnish Purchaser with written notice either of acceptance or of work remaining to be done.

In the event that Forest Service is unable to make such inspection within 5 days of Purchaser's request, Purchaser shall be notified in writing of necessity for postponement and time when inspection can be made.

When all contractual work of Purchaser has been accepted for any Payment Unit or cutting unit identified on Sale Area Map, said Payment Unit or cutting unit shall be eliminated from Sale Area on written notice of either party to this contract.

BT6.4 Conduct of Logging. Unless otherwise specifically provided herein, Purchaser shall fell trees designated for cutting and shall remove the portions that meet Utilization Standards, as provided in BT2.2, prior to acceptance of Payment Unit for completion of logging under BT6.36. Forest Service may make exceptions for occasional trees inadvertently not cut or trees or pieces not removed for good reason, including possible damage to forest resources or gross economic impracticability at the time of removal of other timber. Logging shall be conducted in accordance with the following, unless CT6.4 provisions set forth requirements to meet special or unusual logging conditions:

BT6.41 Felling and Bucking. Felling shall be done to minimize breakage of Included Timber and damage to residual timber. Unless agreed otherwise, felling shall be done by saws or shears. Bucking shall be done to permit removal of all minimum pieces set forth on Page 1. Purchaser may buck out cull material when necessary to produce pieces meeting Utilization Standards. Such bucked out material shall contain a minimum amount of sound wood, not in excess of the net Measure in percentage of gross Measure, or based on the merchantability factor, whichever is stated on Page 1. If necessary to assess extent of defect, Purchaser shall make sample saw cuts or wedges.

BT6.411 Felling in Clearings. Insofar as ground conditions, tree lean, and shape of clearings permit, trees shall be felled so that their tops do not extend outside Clearcutting Units, clearings, and areas of regeneration cutting.

BT6.412 Stump Heights. Stumps shall not exceed, on the side adjacent to the highest ground, the maximum height set forth on Page 1, except that occasional stumps of greater heights are acceptable when Purchaser determines that they are necessary for safe and efficient conduct of logging. Unless otherwise agreed Purchaser shall re-cut high stumps so they will not exceed height specified on Page 1 and shall dispose of severed portions in the same manner as other logging debris or as otherwise agreed. The stump heights shown on Page 1 were selected with the objective of maximum reasonable utilization of the timber, unless Sale Area Map shows special areas where stump heights are lower for aesthetic, land treatment, or silvicultural reasons.

BT6.413 Limbing. When Forest Service determines it is necessary to minimize damage to the residual stand during skidding, Purchaser shall cut exposed limbs from products prior to skidding. Purchaser may leave uncut those limbs that cannot be cut with reasonable safety.

BT6.42 Skidding and Yarding. Methods of skidding or yarding specified for particular areas, if any, are indicated on Sale Area Map. Outside Clearcutting Units and clearings, insofar as ground conditions permit, products shall not be skidded against reserve trees or groups of reproduction and tractors shall be equipped with a winch to facilitate skidding.

BT6.421 Rigging. Insofar as practicable, needed rigging shall be slung on stumps or trees designated for cutting.

BT6.422 Landings and Skid Trails. Location of all landings, tractor roads, and skid trails shall be agreed upon prior to their construction. The cleared or excavated size of landings shall not exceed that needed for efficient skidding and

loading operations.

BT6.423 Skidding on Roads. Products may be skidded on permanent roads authorized for hauling under BT5.12 only by prior written agreement.

BT6.424 Arches and Dozer Blades. Unless otherwise specified in CT6.424, skidding tractors equipped with pull-type arches or dozer blades wider than tractor width or C-frame width, whichever is greater, shall not be used in residual timber outside Clearcutting Units and other authorized clearings, except on constructed tractor roads or landings, unless there is written agreement that residual timber will not be damaged materially by such use.

BT6.5 Streamcourse Protection. "Streamcourses" that are subject to provisions of this Section are shown on Sale Area Map. Unless otherwise agreed, the following measures shall be observed to protect Streamcourses:

(a) Purchaser's Operations shall be conducted to prevent debris from entering Streamcourses, except as may be authorized under paragraph (d). In event Purchaser causes debris to enter Streamcourses in amounts that may adversely affect the natural flow of the stream, water quality, or fishery resource, Purchaser shall remove such debris as soon as practicable, but not to exceed 2 days, and in an agreed manner that will cause the least disturbance to Streamcourses.

(b) Culverts or bridges shall be required on roads at all points where it is necessary to cross Streamcourses. Such facilities shall be of sufficient size and design and installed in a manner to provide unobstructed flow of water and to minimize damage to Streamcourses. Trees or products shall not be otherwise hauled or yarded across Streamcourses unless fully suspended.

(c) Wheeled or track-laying equipment shall not be operated in Streamcourses, except at crossings designated by Forest Service or as essential to construction or removal of culverts and bridges.

(d) Flow in Streamcourses may be temporarily diverted only if Forest Service gives written authorization. Such flow shall be restored to the natural course as soon as practicable and, in any event, prior to a major storm runoff period or runoff season.

BT6.6 Erosion Prevention and Control. Purchaser's Operations shall be conducted reasonably to minimize soil erosion. Equipment shall not be operated when ground conditions are such that excessive damage will result. Purchaser shall adjust the kinds and intensity of erosion control work done to ground and weather conditions and the need for controlling runoff. Erosion control work shall be kept current immediately preceding expected seasonal periods of precipitation or runoff.

If Purchaser fails to do seasonal erosion control work prior to any seasonal period of precipitation or runoff, Forest Service may temporarily assume responsibility for the work and any unencumbered deposits hereunder may be used by Forest Service to do the work. If needed for such work, Purchaser shall make additional deposits on request by Forest Service. Any money deposited or used for this purpose shall be treated as cooperative deposits under BT4.218.

BT6.61 Meadow Protection. Reasonable care shall be taken to avoid damage to the cover, soil, and water in meadows shown on Sale Area Map. Vehicular or skidding equipment shall not be used on meadows, except where roads, landings, and tractor roads are approved under BT5.1 or BT6.422. Unless otherwise agreed, trees felled into meadows shall be removed by endlining. Resulting logging slash shall be removed where necessary to protect cover, soil, and water.

BT6.62 Wetlands Protection. Wetlands requiring protection under Executive Order 11990 are shown on Sale Area Map. Vehicular or skidding equipment shall not be used in such wetlands, except where roads, landings, and tractor roads are approved under BT5.1 or BT6.422. Additional measures needed to protect such areas are provided in CT6.62.

BT6.63 Temporary Roads. As necessary to attain stabilization of roadbed and fill slopes of temporary roads, Purchaser shall employ such measures as outslipping, drainage dips, and water-spreading ditches.

After a temporary road has served Purchaser's purpose, Purchaser shall give notice to Forest Service and shall remove bridges and culverts, eliminate ditches, outslope roadbed, remove ruts and berms, effectively block the road to normal vehicular traffic where feasible under existing terrain conditions, and build cross ditches and water bars, as staked or otherwise marked on the ground by Forest Service. When bridges and culverts are removed, associated fills shall also be removed to the extent necessary to permit normal maximum flow of water.

BT6.631 Temporary Roads to Remain Open. To maintain short term access to portions of Sale Area for post-sale treatments and other purposes after a temporary road has served Purchaser's purpose, pursuant to BT6.63, Purchaser agrees, that on temporary roads designated on Sale Area Map as "Remain Open," to construct cross ditches and water bars, as designated, staked, or otherwise directed by Forest Service, that can be traversed by a normal two-wheeled drive pickup truck. On "Remain Open" roads, all bridges and culverts shall remain in place and ditches shall not be eliminated. All drainage structures shall be left in functional condition.

BT6.64 Landings. After landings have served Purchaser's purpose, Purchaser shall ditch and slope them to permit water to drain or spread. Unless agreed otherwise, cut and fill banks around landings shall be sloped to remove overhangs and otherwise minimize erosion.

BT6.65 Skid Trails and Fire Lines. Purchaser shall construct cross ditches and water-spreading ditches on tractor

roads and skid trails, where staked or otherwise marked on the ground by Forest Service. Forest Service shall designate cross ditching on Purchaser-built fire lines prior to or during construction. By agreement, Purchaser may use other comparable erosion control measures, such as backblading skid trails, in lieu of cross ditching.

BT6.66 Current Operating Areas. Where logging is in progress but not completed, unless agreed otherwise, Purchaser shall, before operations cease annually, remove all temporary log culverts and construct temporary cross drains, drainage ditches, dips, berms, culverts, or other facilities needed to control erosion.

Such protection shall be provided, prior to end of a Normal Operating Season, for all disturbed, unprotected ground that is not to be disturbed further prior to end of operations each year, including roads and associated fills, tractor roads, skid trails, and fire lines. When weather permits operations after Normal Operating Season, Purchaser shall keep such work on any additional disturbed areas as up to date as practicable.

BT6.67 Erosion Control Structure Maintenance. During the period of this contract, Purchaser shall provide maintenance of soil erosion control structures constructed by Purchaser until they become stabilized, but not for more than 1 year after their construction. Contracting Officer may agree to perform such structure maintenance under BT4.218, if requested by Purchaser, subject to agreement on rates. Purchaser shall not be responsible for repair of such structures damaged by other National Forest users whose activities are not a part of Purchaser's Operations.

BT6.7 Slash Disposal. Purchaser's timing of product removal and preparatory work shall not unnecessarily delay slash disposal. Specific slash disposal measures to be employed by Purchaser are stated in CT6.7 and are in addition to Required Deposits for slash disposal.

BT6.8 Measuring. "Measuring" is the estimation of timber quantities using certain dimensions and applicable volume tables or formulae to determine the contents of trees or stands in a standard manner. Sampling may be on an individual tree or area basis. Examples of standard procedures are tree measurement, sample tree measurement, and area estimate. The quantity of timber designated or to be designated for cutting has been or shall be Measured, as specified in CT6.8.

BT6.81 Product Identification. For timber sales west of the 100th meridian, before removal from Sale Area, unless Contracting Officer determines that circumstances warrant a written waiver or adjustment, Purchaser shall:

(a) Hammer brand all products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter.

(b) Paint with a spot of highway-yellow paint all domestic processing products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter. Each paint spot must be not less than three (3) square inches in size.

Contracting Officer shall assign brands and, if Sale Area is within a State that maintains a log brand register, brands shall be registered with the State. Purchaser shall use assigned brand exclusively on logs from this sale until Contracting Officer releases brand. Purchaser will furnish and apply highway-yellow paint of a lasting quality (oil-base or equivalent).

All hammer brands and/or highway-yellow paint must remain on logs until they are domestically processed. Purchaser shall replace identifying marks if they are lost, removed, or become unreadable. Purchaser may remanufacture products into different log lengths. Except for logs remanufactured as part of the mill in-feed process immediately before processing, remanufactured products must be rebranded with the assigned timber sale brand and repainted with highway-yellow paint, unless otherwise agreed to in writing by Contracting Officer. For such remanufactured products, Contracting Officer may approve use of a brand to be used exclusively as a catch brand, in lieu of the assigned timber sale brand.

BT6.9 Records. Upon request, Purchaser shall provide access to appropriate annual records in Purchaser's books and accounts to enable Forest Service to obtain and analyze accurate operating costs and selling price data for appropriate use in appraising Federal timber. Operating cost and selling price data shall include that applicable for appraising timber obtained from Federal sources in or processed in the Region. Purchaser shall provide access to such data on behalf of subsidiary entities owned or controlled by Purchaser to the extent they participate in harvesting, manufacturing, or marketing said timber into products recognized in National Forest timber appraisals in the area. To a like extent, Purchaser shall request in writing Purchaser's contractors and Subcontractors to make such data available to Forest Service.

Information so obtained shall be treated as confidential, as provided in regulations issued by the Secretary of Agriculture (7 CFR 1.12), and shall be available for review by parties from whom such data are obtained.

BT7.0-FIRE PRECAUTIONS AND CONTROL

BT7.1 Plans. Prior to initiating Purchaser's Operations during Fire Precautionary Period, Purchaser shall file with Forest Service a Fire Prevention and Control Plan providing for the prevention and control of fires on Sale Area. Such Plan shall include a detailed list of personnel and equipment at Purchaser's disposal for implementing the Plan. This requirement may be met by preparing a single Plan for more than one timber sale.

BT7.2 Fire Precautions. Specific fire precautionary measures listed in CT7.2 shall be applicable during Purchaser's

Operations in "Fire Precautionary Period" described on Page 1. Contracting Officer may change the dates of Fire Precautionary Period by advance written notice, if justified by unusual weather or other conditions. Required tools and equipment shall be kept in serviceable condition and immediately available for fire fighting at all times during Purchaser's Operations in Fire Precautionary Period.

BT7.21 Substitute Precautions. Forest Service may authorize substitute measures or equipment, or waive specific requirements by written notice, if substitute measures or equipment will afford equal protection or some of the required measures and equipment are unnecessary.

BT7.22 Emergency Precautions. Forest Service may require the necessary shutting down of equipment on portions of Purchaser's Operations, as specified by the emergency fire precautions schedule of CT7.22. Under such conditions, after Purchaser ceases active operations, Purchaser shall release for hire by Forest Service, if needed, Purchaser's shutdown equipment for fire standby on Sale Area and personnel for fire standby or fire patrol, when such personnel and equipment are not needed by Purchaser for other fire fighting or protection from fire. Equipment shall be paid for at fire fighting equipment rates common in the area or at prior agreed rates and, if Purchaser requests, shall be operated only by personnel approved by Purchaser. Personnel so hired shall be subject to direction and control by Forest Service and shall be paid by Forest Service at fire fighting rates common in the area or at prior agreed rates.

BT7.3 Fire Control. Purchaser shall, both independently and in cooperation with Forest Service, take all reasonable and practicable action to prevent and suppress fires resulting from Purchaser's Operations and to suppress any forest fire on Sale Area. Purchaser's independent initial fire suppression action on such fires shall be immediate and shall include the use of all necessary personnel and equipment at Purchaser's disposal on Sale Area or within the distance of Sale Area stated on Page 1.

BT7.31 Purchaser's Reinforcement Obligations. Whenever an Operations Fire or Negligent Fire, whether on or off Sale Area, or any other forest fire on Sale Area, has not been suppressed by initial action and appreciable reinforcement strength is required, Forest Service may require further actions by Purchaser until such fire is controlled and mopped up to a point of safety. Such actions may include any or all of the following as necessary to fight such fire:

BT7.311 Suspend Operations. To suspend any or all of Purchaser's Operations.

BT7.312 Personnel. To release for employment by Forest Service any or all of Purchaser's personnel engaged in Purchaser's Operations or timber processing within the distance of Sale Area stated on Page 1. Any organized crew so hired shall include Purchaser's supervisor, if any. Personnel so employed shall be paid at Forest Service standard emergency fire fighting rates.

BT7.313 Equipment. To make available for Forest Service rental at fire fighting equipment rates common in the area or at prior agreed rates any or all of Purchaser's equipment suitable for fire fighting and currently engaged in Purchaser's Operations within the distance of Sale Area stated on Page 1. Equipment shall be operated only by personnel approved by Purchaser, if so requested by Purchaser.

BT7.4 Fire Suppression Costs. Purchaser's obligations for cost of fire suppression vary according to three classifications of fires as follows:

BT7.41 Operations Fire. An "Operations Fire" is a fire caused by Purchaser's Operations other than a Negligent Fire.

Forest Service, except as provided in BT7.3, shall use cooperative deposits under BT4.218 to perform fire suppression activities on Operations Fires. Purchaser agrees to reimburse Forest Service for such cost for each Operations Fire, subject to a maximum of the dollar amount stated on Page 1. The cost of Purchaser's actions, supplies, and equipment on any such fire provided pursuant to BT7.3, or otherwise at the request of Forest Service, shall be credited toward such maximum. If Purchaser's actual cost exceeds Purchaser's obligation stated on Page 1, Forest Service shall reimburse Purchaser for the excess.

BT7.42 Negligent Fire. A "Negligent Fire" is a fire caused by negligence or fault of Purchaser's Operations, including, but not limited to, one caused by smoking by persons engaged in Purchaser's Operations during the course of their employment, or during rest or lunch periods; or if Purchaser's failure to comply with the requirements of BT7.2 and BT7.3 results in a fire starting or permits a fire to spread. Damages and the cost of suppressing Negligent Fires shall be borne by Purchaser.

BT7.43 Other Fires on Sale Area. Forest Service shall pay Purchaser, at fire fighting rates common in the area or at prior agreed rates, for equipment or personnel furnished by Purchaser pursuant to BT7.3, or otherwise at the request of Forest Service, on any fire on Sale Area other than an Operations Fire or a Negligent Fire.

BT7.5 State Law. Purchaser shall not be relieved by the terms of this contract of any liability to the United States for fire suppression costs recoverable in an action based on State law, except for such costs resulting from Operations Fires.

Amounts due Purchaser for fire fighting expenditures in accordance with BT7.41 shall not be withheld pending settlement of any such claim or action based on State law.

BT7.6 Performance by Contractor. Where Purchaser's employees, agents, contractors, Subcontractors, or their employees or agents perform Purchaser's Operations in connection with fire responsibilities, Purchaser's obligations shall be the same as if performance was by Purchaser.

BT8.0-OTHER CONDITIONS

BT8.1 Title and Liability.

BT8.11 Title Passage. All right, title, and interest in and to any Included Timber shall remain in Forest Service until it has been Measured, removed from Sale Area, and paid for, at which time title shall vest in Purchaser. For purposes of this Subsection, timber in Payment Units Released for Cutting covered by cash deposit or payment guarantee under BT4.3 shall be considered to have been paid for. Title to any Included Timber that has been Measured and paid for, but not removed from Sale Area by Purchaser on or prior to Termination Date, shall remain in Forest Service.

BT8.12 Liability for Loss. If Included Timber is destroyed or damaged by an unexpected event that significantly changes the nature of Included Timber, such as fire, wind, flood, insects, disease, or similar cause, the party holding title shall bear the timber value loss resulting from such destruction or damage; except that such losses caused by insect or disease after felling of timber shall be borne by Purchaser, unless Purchaser is prevented from removing such timber for reasons that would qualify for Contract Term Adjustment. Deterioration or loss of value of salvage timber is not an unexpected event, except for deterioration due to delay or interruption that qualifies for Contract Term Adjustment or under BT8.33.

In the event Included Timber to which Forest Service holds title is destroyed, Purchaser will not be obligated to remove and pay for such timber. In the event Included Timber to which Forest Service holds title is damaged, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the value loss and the appraised unit value of timber after the loss. Current Contract Rates in effect at the time of the value loss shall be adjusted by differences to become the redetermined rates.

There shall be no obligation for Forest Service to supply, or for Purchaser to accept and pay for, other timber in lieu of that destroyed or damaged. This Subsection shall not be construed to relieve either party of liability for negligence.

BT8.2 Period of Contract. All obligations of Purchaser shall be discharged not later than "Termination Date" stated on Page 1, unless it is adjusted pursuant to BT8.21, excepting only those obligations for which Forest Service has given written permission to delay performance. Such written permission shall be considered a Contract Term Adjustment for the purpose of Purchaser completing performance of obligations covered by such permission.

BT8.21 Contract Term Adjustment. "Contract Term Adjustment" means adjustment only as provided for in the three circumstances described in this Subsection. Under said circumstances, the contract term shall be adjusted in writing to include additional calendar days in one or more Normal Operating Seasons equal to the actual time lost, except as limited by paragraph (b) in this Subsection.

To qualify for such adjustment, Purchaser shall give written notice of the lost time not later than 30 days after end of Normal Operating Season in which time was lost and at least 10 days before Termination Date. Contracting Officer shall make prompt written acknowledgment of such notice, indicating concurrence with the number of days in the notice or the number of days Forest Service considers as qualifying for the adjustment. Lost portions of days shall be disregarded in computing time lost. The three circumstances qualifying for a Contract Term Adjustment are:

(a) Purchaser experiences delay in starting scheduled operations or interruptions in active operations, either of which stops removal of Included Timber from Sale Area through curtailment in felling and bucking, yarding, skidding and loading, or hauling, as scheduled under BT6.31, for 10 or more consecutive days during a Normal Operating Season due to causes beyond Purchaser's control, including, but not limited to, acts of God, acts of the public enemy, acts of Government, labor disputes, fires, insurrections, or floods.

(b) Causes described in paragraph (a) substantially affect the disposition or processing of Included Timber during Normal Operating Season through their effects on primary timber processing facilities, with a resulting delay of 60 days or more in use of such facilities. In such event, Contract Term Adjustment shall not extend for more than 12 consecutive months.

(c) (i) Contracting Officer requests Purchaser, in writing, to delay or interrupt operations during the normal operating season for any purpose other than suspension under BT4.4 or BT9.3 or

(ii) Purchaser suffers a delay or interruption of Purchaser's Operations affecting skidding, yarding, and loading

because of fire emergency closure ordered by Forest Service (or another agency in its behalf), and the total of such lost time is 10 or more days during any Normal Operating Season.

BT8.22 Termination for Catastrophe. In event of Catastrophic Damage, this contract shall be terminated without liability to either party due to the termination. "Catastrophic Damage" is major change or damage to Included Timber on Sale Area, to Sale Area, to access to Sale Area, or a combination thereof:

(a) Caused by forces, or a combination of forces, beyond control of Purchaser, occurring within a 12-month period, including, but not limited to, wind, flood, earthquake, landslide, fire, forest pest epidemic, or other major natural phenomenon and

(b) Affecting the value of any trees or products meeting Utilization Standards, within Sale Area and estimated to total either:

- (i) More than half of the estimated timber volume stated on Page 1 or
- (ii) More than two hundred thousand cubic feet (2,000 CCF) or equivalent.

BT8.3 Contract Modification. The conditions of this timber sale are completely set forth in this contract. Except as provided in BT8.33, this contract can be modified only by written agreement between the parties. Only Contracting Officer may make contract modifications, with compensating adjustments to Current Contract Rates where appropriate, on behalf of Forest Service.

BT8.31 Changed Conditions. When it is agreed that the completion of certain work or other requirements hereunder would no longer serve the purpose intended because of substantial change in the physical conditions of Sale Area or Included Timber since the date of this contract, the requirements shall be waived in writing. The estimated cost of such waived work or other requirement shall be charged to the Timber Sale Account.

BT8.33 Contract Suspension and Modification. (a) Contracting Officer may, by written order, delay or interrupt authorized operations under this contract or, notwithstanding BT8.3, modify this contract, in whole or in part:

- (i) To prevent environmental degradation or resource damage, including, but not limited to, harm to habitat, plants, animals, cultural resources, or cave resources;
- (ii) To ensure consistency with land and resource management plans or other documents prepared pursuant to the National Environmental Policy Act of 1969, 42 USC 4321 4347;
- (iii) To conduct environmental analysis, including, but not limited to, engaging in consultation pursuant to the Endangered Species Act of 1973, 16 USC 1531, et seq.; or
- (iv) Upon agreement of the Regional Forester, due to administrative appeal or litigation, regardless of whether Contracting Officer's order is required by a court order or this contract is named in such a proceeding.

(b) In the event of an order delaying or interrupting Purchaser's Operations under this Subsection, Purchaser's remedy shall be:

- (i) Contract Term Adjustment,
 - (ii) reimbursement for Out of Pocket Expenses,
 - (iii) rate redetermination to measure any decline in the market,
 - (iv) temporary reduction of downpayment, and
 - (v) temporary bond reduction. However, the foregoing remedies shall be available only to the extent that the Contracting Officer's order was the sole and exclusive cause of the delay or interruption of Purchaser's operations.
- (c) In cases of modification under this Subsection, Purchaser shall only receive a rate redetermination pursuant to BT3.31. However, if there is an order delaying or suspending operations in addition to a modification, then Purchaser shall also be entitled to the remedies provided under BT8.33(b) for such delay or suspension.

(d) Remedies awarded to the Purchaser shall not be duplicative, and Contracting Officer shall have the right to structure remedies provided herein to avoid duplicative compensation.

(e) Purchaser agrees that this Subsection, and the remedies provided herein shall apply regardless of any finding by any court or administrative body that the Forest Service failed to comply with any statute, regulation and/or policy in connection with awarding, advertising, or authorizing this sale, or a similar sale. However, nothing in this Subsection precludes Purchaser from exercising rights under the Contract Disputes Act.

BT8.34 Contract Termination This contract may be terminated, in whole or in part, by Forest Service or Purchaser, as provided in Items BT8.341 and BT8.342, respectively. In the event of any such termination, Purchaser shall be entitled to the applicable remedies, subject to the limitation upon duplicative compensation set forth in BT8.33(d). Purchaser agrees that this Subsection and the remedies contained in the following Items shall apply regardless of any finding by any court or administrative body that the Forest Service failed to comply with any statute, regulation and/or policy in connection with awarding, advertising, or authorizing this sale, or a similar sale. However, nothing in this Subsection precludes Purchaser from exercising rights under the Contract Disputes Act.

BT8.341 Termination by Forest Service. (a) The Chief or the Chief's designee may unilaterally terminate this contract, in whole or in part, for any of the reasons set forth in paragraph (a) of BT8.33.

(b) Purchaser's compensation for termination of this contract under this Item shall be:

(i) refund or release of advanced deposits for timber cut but not removed,
(ii) reimbursement for Out-of-Pocket Expenses, and
(iii) replacement timber under subparagraph (c), and/or liquidated damages under subparagraph (d); provided that liquidated damages shall be available if, and only if, after good faith efforts, the Parties (1) cannot locate replacement timber or agree upon the applicable stumpage price, or (2) the volume of deleted timber exceeds the volume of any replacement timber.

(c) Subject to applicable laws, regulations and policies, Forest Service and Purchaser shall make good faith efforts to identify replacement timber of similar volume, quality, access, and topography within Sale Area. If suitable replacement timber cannot be located within Sale Area, the parties shall expand the search to the National Forest in which the Sale Area is located. Stumpage price shall be adjusted under BT3.31 to account for differences between replacement timber and deleted timber. If Forest Service and Purchaser agree upon suitable replacement timber and the applicable stumpage price, then this contract shall not terminate and instead shall be modified pursuant to 36 CFR 223.85(c) and shall remain in force with respect to such replacement timber and, in the case of partial termination, any remaining Included Timber. If the parties cannot agree on suitable replacement timber or the applicable stumpage price of such timber, either party may end the search and Purchaser shall be compensated under subparagraph (d).

(d) Forest Service shall pay as fixed, agreed, and liquidated damages an amount equivalent to 15 percent of the estimated delivered log value of the volume of timber not harvested due to the termination or partial termination. Estimated delivered log value and volume of timber not harvested shall be determined by the Contracting Officer as of Termination Date, using Forest Service methods in use as of the Termination Date.

(e) In any instance of partial termination, in which the Forest Service deletes one or more cutting units from the Sale Area, Purchaser's sole and exclusive remedy with regard to remaining units shall be a rate redetermination pursuant to BT3.31. Purchaser shall be required to complete Contract Operations with regard to remaining units and any obligations pertaining to cessation of operations on deleted units, including without limit erosion control, brush disposal, and road maintenance. If Purchaser fails to fulfill any such duty or obligation, then Contracting Officer may make deductions from compensation due Purchaser, including without limit costs and expenses of completing such work.

BT8.342 Termination by Purchaser. (a) Purchaser may, by written notice, terminate this Contract, in whole or in part, as described herein,

(i) in the event of an order delaying or interrupting its operations pursuant to BT8.33, or

(ii) in the event of an order modifying this Contract pursuant to BT8.33, if Purchaser decides to reject the terms of the modification prior to its acceptance. Purchaser shall have the right to terminate this Contract in whole only when the Contracting Officer's order under BT8.33 applies to all cutting units within the Sale Area. When the order affects only a portion of the cutting units, Purchaser shall have the right to terminate this Contract in part, by deleting one or more of the units covered by the Contracting Officer's order. The foregoing right of termination, in whole or in part, shall not exist when the delay, interruption, or modification arises from wind, flood, landslide, fire, forest pest epidemic, or other major natural phenomenon.

(b) Purchaser's compensation for termination of this Contract, in whole or in part, under this Item shall be:

(i) refund or release of advanced deposits for timber cut but not removed,
(ii) reimbursement for Out of Pocket Expenses, and
(iii) if the duration of the delay or interruption exceeds either six months of Normal Operating Season time, or one calendar year from the date of the order, then: replacement timber as provided under (c) and/or liquidated damages under (d); provided that liquidated damages shall be available if, and only if, after good faith efforts, the Parties (1) cannot locate replacement timber or agree upon the applicable stumpage price, or (2) the volume of deleted timber exceeds the volume of any replacement timber.

(c) Subject to applicable laws, regulations and policies, Forest Service and Purchaser shall make good faith efforts to identify replacement timber of similar volume, quality, access, and topography within Sale Area. If suitable replacement timber cannot be located within Sale Area, the parties shall expand the search to the National Forest in which the Sale Area is located. Stumpage price shall be adjusted under BT3.31 to account for differences between replacement timber and deleted timber. If Forest Service and Purchaser agree upon suitable replacement timber and the applicable stumpage price, then this contract shall not terminate and instead shall be modified pursuant to 36 CFR 223.85(c) and shall remain in force with respect to such replacement timber and, in the case of partial termination, any remaining Included Timber. If the parties cannot agree on suitable replacement timber or the applicable stumpage price of such timber, either party may end

the search and Purchaser shall be compensated under subparagraph (d).

(d) Forest Service shall pay as fixed, agreed, and liquidated damages an amount equivalent to 15 percent of the estimated delivered log value of the volume of timber not harvested due to the termination or partial termination. Estimated delivered log value and volume of timber not harvested shall be determined by the Contracting Officer as of Termination Date, using Forest Service methods in use as of the Termination Date.

(e) In any instance of partial termination, in which Purchaser deletes one or more cutting units from Sale Area, Purchaser's sole and exclusive remedy with regard to remaining units shall be a rate redetermination pursuant to BT3.31. Purchaser shall be required to complete Contract Operations with regard to remaining units and any obligations pertaining to cessation of operations on deleted units, including without limit, erosion control, brush disposal, and road maintenance. If Purchaser fails to fulfill any such duty or obligation, then Contracting Officer may make deductions from compensation due Purchaser, including without limit costs and expenses of completing such work.

BT8.35 Out-of-Pocket Expenses. "Out of Pocket Expenses" are unrecovered expenditures arising directly from performing the contract that were rendered unrecovered due to delay, interruption, or termination pursuant to BT8.33 or BT8.34. An expenditure is "Unrecovered" within the meaning of this Subsection when Purchaser did not gain the benefit of its expenditure because Contract operations were not permitted. In determining whether an expenditure is "Unrecovered," Contracting Officer shall not conclude that an award of liquidated damages constitutes the benefit of that expenditure. (a) Out of Pocket Expenses shall not include, in particular and without limitation, any of the following:

- (i) attorneys fees;
- (ii) costs and expenses of operating a saw mill or other processing facility;
- (iii) expectancy damages; and,
- (iv) anticipatory profits

(b) Forest Service shall reimburse Purchaser for only the following Out of Pocket Expenses:

(i) Out of Pocket Expenses for maintenance of the timber sale performance and payment bonds during the period when operations were delayed or interrupted or, if terminated, from the date operations were halted until the expiration of the bonds;

(ii) Out of Pocket Expenses for maintenance of the downpayment or other cash deposits during the period when operations were delayed or interrupted or, if terminated, from the date operations were halted until the cash is returned to Purchaser;

(iii) Out of Pocket Expenses for the lesser of move out and move in or leaving equipment and/or logging camps on site, if the Purchaser and Contracting Officer have agreed to leave equipment and/or logging camps on site in lieu of move out and move in;

(iv) Out of Pocket Expenses for felling, bucking, lopping, skidding, yarding, and decking any products so processed, but not removed from Sale Area because: (1) the sale was terminated, or (2) the products no longer meet Utilization Standards because of delay or interruption;

(v) If terminated, in whole or in part, Out of Pocket Expenses for unamortized Temporary Roads, road maintenance, dust abatement and improvements authorized under BT6.2, and

(vi) If terminated, in whole or in part, Out of Pocket Expenses for bid preparation, including review of sale offering.

(c) Purchaser shall submit documentation of claimed expenditures, including those actually paid and those for which the Purchaser has a legal obligation to pay but has not yet paid, and supporting analysis to Contracting Officer to assist in Contracting Officer's calculation of reimbursement. Contracting Officer shall determine the amount of reimbursement under this Subsection using information from Purchaser and/or Forest Service methods in use on the date that operations were delayed, interrupted, or terminated. Purchaser's failure to substantiate any claimed Out of Pocket Expense may constitute grounds for Contracting Officer's denial of reimbursement.

(d) Purchaser shall make reasonable efforts to minimize its Out of Pocket Expenses.

Purchaser shall make all reasonable efforts to minimize Out-of-Pocket Expenses.

BT8.36 Termination for Market Change. (a) In the event of delay or interruption under BT8.33, exceeding 90 days, and Contract has not been modified to include replacement timber, this contract may be terminated upon election and written notice by Purchaser, if (i) a rate redetermination for market change under BT3.33 shows that the appraised weighted average Indicated Advertised Rate of all Included Timber remaining immediately prior to the delay or interruption has been reduced through a market change by an amount equal to or more than the the weighted average Current Contract Rate, or (ii) the appraised value of the remaining timber is insufficient to cover the adjusted base rates as determined under BT3.33.

(b) Prior to termination under this Subsection, Purchaser shall complete all obligations on areas not affected by the delay or interruption.

(c) Damages caused by termination of contract under this Subsection will be limited to Out-of-Pocket Expenses.

BT8.5 Sale of Other Materials. Forest Service reserves the right to sell from Sale Area during the period of this contract any materials or products not subject to its terms, but shall not permit removal, possession, or use thereof that will materially interfere with Purchaser's Operations. Purchaser shall not be obligated to do any work made necessary by the action of others.

BT8.6 Provisions Required by Statute.

BT8.61 Covenant against Contingent Fees. Purchaser warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial agencies maintained by Purchaser for the purpose of securing business. For breach or violation of this warranty, Forest Service shall have the right to annul this contract without liability or to require Purchaser to pay, in addition to the contract price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

BT8.62 Officials Not to Benefit. No member of Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, unless it is made with a corporation for its general benefit (18 USC 431, 433).

BT8.63 Nondiscrimination in Employment. If the total value of this contract is in excess of \$10,000, Purchaser agrees during its performance as follows:

(a) Purchaser will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Purchaser will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Purchaser agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by Forest Service setting forth the provisions of this Subsection.

(b) Purchaser will, in all solicitations or advertisements for employees placed by or on behalf of Purchaser, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) Purchaser will send to each labor union or representative of workers with which Purchaser has a collective bargaining agreement or other contract or understanding, a notice to be provided by Forest Service, advising the labor union or worker's representative of Purchaser's commitments under this Subsection, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) Purchaser shall comply with all provisions of Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 12086, and the rules, regulations, and relevant orders of the Secretary of Labor.

(e) Purchaser will furnish all information and reports required by Executive Order No. 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to books, records, and accounts by Forest Service and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In event of Purchaser's noncompliance with this Subsection or with any of such rules, regulations, or orders, this contract may be terminated or suspended, in whole or in part, and Purchaser may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246, as amended, and such other sanctions may be imposed and remedies invoked, as provided in Executive Order or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) Purchaser will include the provisions of paragraphs (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246, as amended, so that such provisions will be binding upon each Subcontractor or vendor. Purchaser will take such action with respect to any subcontract or purchase order as Forest Service may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event Purchaser becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by Forest Service, Purchaser may request the United States to enter into such litigation to protect the interests of the United States.

BT8.64 Debarment and Suspension Certification. Pursuant to 7 CFR 3017, Purchaser shall obtain certifications from its Subcontractors regarding debarment, suspension, ineligibility, and voluntary exclusion, including additional Subcontractors obtained after award of this contract. "Subcontractors" are participants in lower tier covered transactions.

Purchaser may rely upon a certification of a prospective Subcontractor that it is not proposed for debarment under 48

CFR 9.4, debarred, suspended, ineligible, or voluntarily excluded from participating in covered transactions or timber sales, unless Purchaser knows that the certification is erroneous.

Purchaser shall keep the certifications of its Subcontractors on file until timber sale Termination Date and any adjustments thereof, and will provide a copy at the written request of Contracting Officer. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this Subsection. The knowledge and information of Purchaser is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

If Purchaser knowingly enters into a timber sale transaction with a person who is proposed for debarment under 48 CFR 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in covered transactions or timber sales, in addition to other remedies available to the Government, Forest Service may pursue available remedies, including suspension and/or debarment.

The Subcontractor for a timber sale shall complete a "Subcontractor Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion."

BT8.65 Contract Consistency With Other Laws. The contract shall govern if State and local environmental quality laws conflict with or preclude performance of contractual requirements.

BT9.0-PERFORMANCE AND SETTLEMENT

BT9.1 Performance Bond. As a further guarantee of the faithful performance of the provisions of this contract, Purchaser delivers herewith and agrees to maintain a surety bond in the dollar amount stated on Page 1, unless the amount is adjusted as provided in BT9.11 or BT9.13. In lieu of surety bond, Purchaser may deposit into a Federal Depository, as directed by Forest Service under BT4.21, and maintain therein, cash in the dollar amount stated on Page 1 or negotiable securities of the United States having market value at time of deposit of not less than the dollar amount stated on Page 1.

Any adjustment of time for completion of this contract beyond 1 year may be granted only with the consent of surety on bond or delivery of a new bond. Should the sureties on the bond delivered herewith, or any bond delivered hereafter in connection with this contract, become unsatisfactory to Forest Service, Purchaser shall, within 30 days of receipt of demand, furnish a new bond with surety satisfactory to Forest Service.

BT9.11 Bond Reduction. Upon Purchaser's written request, Contracting Officer shall redetermine the amount of Purchaser's performance bond to an amount not less than Purchaser's remaining obligations, including the value of Included Timber remaining on Sale Area, plus the estimated cost of uncompleted work required of Purchaser and any unpaid billings due on the timber sale. Contracting Officer shall provide written notice of the redetermined amount to Purchaser and to Purchaser's surety. Similarly, Contracting Officer shall report to Purchaser in writing the amount of deposited cash or deposited securities required thereafter, if such deposits exist in lieu of a surety bond.

As soon as security for the performance of this contract or the settlement of Claims incident thereto is no longer necessary, appropriate notice shall be given to surety or deposits that may have been made in lieu of surety bond shall be returned to Purchaser, subject to the conditions in BT9.5.

BT9.12 Letters of Credit. Notwithstanding the provisions of BT9.1, approved letters of credit may be used in lieu of a surety bond for performance bond purposes. Such letters of credit shall be subject to approval by Contracting Officer.

BT9.13 Temporary Bond Reduction. When, under BT8.33, Contracting Officer orders a delay or interruption of Purchaser's Operations for more than 30 days when scheduled operations would be occurring but for the order, the performance bond amount required shall be temporarily reduced upon the written request of Purchaser or at the discretion of Contracting Officer. For the period of the delay or interruption, the performance bond may be reduced to an amount not less than the estimated cost of uncompleted work required of Purchaser and any unpaid billings due on the timber sale.

Upon Purchaser's receipt of written notice from Contracting Officer that the basis for the delay or interruption no longer exists, Purchaser shall restore the performance bond to the full amount shown on Page 1 within 15 days. Purchaser shall not resume contract operations until the performance bond amount is fully restored.

BT9.2 Disputes. This contract is subject to the Contract Disputes Act of 1978 (41 USC 601, et seq.). Except as provided in the Contract Disputes Act of 1978, all disputes arising under or relating to this contract shall be resolved in accordance with this Section.

As used herein, "Claim" means a written demand or assertion by one of the parties seeking, as a legal right, the payment of money, adjustment or interpretation of contract terms, or other relief, arising under or relating to this contract. A voucher, invoice, or request for payment that is not in dispute when submitted is not a Claim. However, where such submission is subsequently not acted upon in a reasonable time, or disputed either as to liability or amount, it may be converted to a Claim. A Claim by Purchaser shall be made in writing and submitted to Contracting Officer for decision. A Claim by the Government against Purchaser shall be subject to a decision by Contracting Officer.

For Purchaser Claims of more than \$100,000, Purchaser shall submit with the Claim a certification that the Claim is made in good faith; the supporting data are accurate and complete to the best of Purchaser's knowledge and belief; and the amount requested accurately reflects the contract adjustment for which Purchaser believes the Government is liable. Purchaser, if an individual, shall execute the certification. When Purchaser is not an individual, the certification shall be executed by a senior company official in charge at Purchaser's plant or location involved or by an officer or general partner of Purchaser having overall responsibility for the conduct of Purchaser's affairs.

For Purchaser Claims of \$100,000 or less, Contracting Officer must render a decision within 60 days. For Purchaser Claims in excess of \$100,000, Contracting Officer must decide the Claim within 60 days or notify Purchaser of the date when the decision will be made.

Contracting Officer's decision shall be final unless Purchaser appeals or files a suit.

The authority of Contracting Officer does not extend to Claims or disputes that by statute or regulation other agencies are expressly authorized to decide.

Interest, at the Prompt Payment Rate established by the Secretary of the Treasury, on the amount found due on Purchaser's Claim shall be paid from the date the Claim is received by Contracting Officer until the date of the payment.

Except as the parties may otherwise agree, pending final resolution of a Claim of Purchaser arising under the contract, Purchaser shall proceed diligently with the performance of the contract in accordance with Contracting Officer's decision.

BT9.21 Time Limits for Submission of Claim. Failure by Purchaser to submit a Claim within established time limits shall relinquish the United States from any and all obligations whatsoever arising under said contract or portions thereof. Purchaser shall file such Claim within the following time limits:

(a) For Payment Units or cutting units, Purchaser must file any Claim not later than 60 days after receipt of Forest Service written notification that Payment Unit has been accepted and

(b) In all other cases, Purchaser must file any Claim not later than 60 days after receipt of Contracting Officer written notification that timber sale is closed.

BT9.22 Contract Documents. All contract documents are intended to be consistent with each other. In case of discrepancy, the following is the order of precedence:

- (a) Special Provisions (CT)
- (b) Sale Area Map
- (c) Specific Conditions on Page 1
- (d) Standard Provisions (BT)
- (e) Special project specifications
- (f) Plans, such as slash, erosion control, dust abatement, etc.
- (g) Agreements between Purchaser and Forest Service, as authorized under the contract
- (h) Standard specifications

BT9.3 Breach. In event Purchaser breaches any of the material provisions of this contract, Forest Service shall give Purchaser notice of such breach and, allowing reasonable time for remedy of such breach and of Forest Service's election to suspend, may give notice to suspend all or any part of Purchaser's Operations. Such notice of breach and notice to suspend Purchaser's Operations shall be written, except oral notices may be given if such breach constitutes an immediate threat to human life or a threat of immediate and irreparable damage to National Forest resources. Notwithstanding Section BT6.1, such oral suspension notice may be given to Purchaser's work supervisor or, in work supervisor's absence, to those performing the operation. An oral suspension notice shall be promptly followed by telephone notice and a written explanation from Forest Service to Purchaser.

Suspension under this section shall not entitle Purchaser to any remedies arising under BT8.33.

Immediately upon oral or written suspension, Forest Service representative shall notify Contracting Officer of the suspension and related circumstances. Contracting Officer shall promptly review the suspension to determine if the suspension should be continued or lifted. Such suspension shall be lifted as early as conditions permit.

Upon receipt of oral or written notice of such breach, Purchaser shall remedy the breach as follows:

(a) If remedying such breach requires on-the-ground action by Purchaser, Purchaser shall have 30 practicable operating days during Normal Operating Season to remedy the breach, except under emergency conditions when action should not be delayed to prevent major damage or

(b) If such breach does not require on-the-ground action by Purchaser, such breach shall be remedied within 30 days.

BT9.31 Termination for Breach. Contracting Officer, with the concurrence of the Regional Forester, may terminate this contract for breach in the event Purchaser:

(a) Is convicted for violation of criminal statutes, civil standards, or any other offense indicating a lack of business integrity or honesty that seriously and directly affects the responsibility of Purchaser; including, but not limited to:

(i) Theft, forgery, bribery, embezzlement, falsification or destruction of records, making false statements, or receiving stolen property, any of which occurred in connection with obtaining, attempting to obtain, selling, trading, or processing public timber;

(ii) Fraud, criminal offenses, or violation of Federal or State antitrust laws, any of which occurred in connection with obtaining, attempting to obtain, or performing a public contract or subcontract; or

(iii) Threatening, resisting, intimidating, or interfering with Forest Officers engaged in, or on account of, the performance of their official duties involving the protection, improvement, or administration of National Forest lands;

(b) Is convicted for a violation of criminal statutes or civil standards, orders, permits, or other regulations for environmental protection issued by a Federal agency, State agency, or political subdivision thereof in the conduct of operations hereunder on National Forest lands, pursuant to BT6.01;

(c) Has engaged in a pattern of activity that demonstrates flagrant disregard for the terms of this contract, such as, but not limited to, repeated suspensions for breach pursuant to BT9.3, causing undesignated timber meeting Utilization Standards to be unnecessarily damaged or negligently or willfully cut, or causing other serious environmental degradation or resource damage;

(d) Fails to comply with contract provisions related to nondiscrimination in employment; or

(e) Fails to remedy a breach of contract within time limits stated in BT9.3.

Damages due the United States for termination under this Subsection shall be determined pursuant to BT9.4.

BT9.4 Damages for Failure to Cut or Termination for Breach. (a) In event of Purchaser's failure to cut designated timber on portions of Sale Area by Termination Date or termination for breach under BT9.31, Forest Service shall appraise remaining Included Timber, unless termination is under BT8.22 or BT8.34. Such appraisal shall be made with the standard Forest Service method in use at time of termination.

(b) If the sale is resold, damages due shall be the amount by which Current Contract Value, plus costs described in paragraph (d) of this Section, exceeds the resale value at new Bid Rates.

(c) If the contract is not reoffered or there are no responsive bids on the reoffered contract, damages due shall be the amount by which Current Contract Value exceeds the value determined by appraisal, plus costs described in paragraph (d) of this Section.

(d) If applicable, the following costs shall be included in damages:

(i) The cost of resale or reoffering, including, but not limited to, salary costs, document preparation and duplication costs, mailing costs, and timber sale advertisement costs.

(ii) If Purchaser has failed to cut individual trees in the portions of Sale Area cut over and there is no resale of such individual trees, Purchaser shall pay Forest Service for cost of felling and removal or otherwise eliminating such uncut trees, except for occasional trees not cut for reasons stated in BT6.4.

(iii) The Government's loss caused by the delay in receipt of stumpage payments. Such loss will be measured by interest at the Current Value of Funds Rate established by the Secretary of the Treasury, on the unpaid contract value at Termination Date. Interest will be charged for the total number of months, or portions thereof, from Termination Date until midpoint of the contract resale period, less any time in excess of 1 year needed to make the resale.

(iv) Any increase in reforestation costs, including site preparation, seeding, and planting caused by Purchaser's failure to harvest Included Timber by Termination Date.

BT9.5 Settlement. If obligations of Purchaser have not been fully discharged by Termination Date, any money advanced or deposited hereunder shall be retained and applied toward unfulfilled obligations of Purchaser without prejudice to any other rights or remedies of Forest Service. Such funds may be treated as cooperative deposits under BT4.218 for uncompleted work 30 days after receipt of written notice from Forest Service to Purchaser of work to be done and Purchaser's failure to deny the obligation or to do the work.

BT9.6 Contract Closure. Contracting Officer shall give appropriate written notice to Purchaser when Purchaser has complied with the terms of this contract. Purchaser shall be paid refunds due from the Timber Sale Account under BT4.24 and excess cooperative deposits under BT4.218.

CT2.35# - DESIGNATION OF TIMBER, CUTTING UNIT BOUNDARIES, AND SUBDIVISION/PAYMENT UNIT BOUNDARIES (06/2012)

Trees are designated for cutting under BT2.35 only if designated as shown in the Timber Designation table below. The boundaries of Subdivisions/Payment Units and Cutting Units are designated as shown in the Boundary Designation table below. Trees used for boundary designation are not to be cut.

SPECIFICATIONS PURSUANT TO CT2.35# - DESIGNATION OF TIMBER, CUTTING UNIT BOUNDARIES, AND SUBDIVISION/PAYMENT UNIT BOUNDARIES

SPECIFICATIONS PURSUANT TO CT2.35# - DESIGNATION OF TIMBER, CUTTING UNIT BOUNDARIES, AND SUBDIVISION/PAYMENT UNIT BOUNDARIES

Timber Designation Table

Cutting Unit/ Subdivision/Area/ Payment Unit	Tree Paint Color	Designation or Specification
Sale Area	Green	<p><u>Hazard Tree.</u> Notwithstanding BT2.32 all dead and unstable live trees which are leaning towards a road or are otherwise hazardous to a road, and are sufficiently tall to reach Purchaser's landings or the roadbed of National Forest System roads within Sale Area, shall be felled by Purchaser when Marked in the specified paint color above and below stump height by Forest Service in advance of felling any other timber in the vicinity. Pieces meeting Utilization Standards from such dead and unstable live trees shall be removed unless Purchaser is notified in writing that removal would cause unacceptable damage to areas requiring special protection such as residual timber, roads, administrative sites, streamside management zones, and areas identified on Sale Area Map or on the ground.</p>
Unit 1	Green	<p><u>Individual Tree Mark.</u> Individual trees are designated for cutting only if Marked above and below stump height with the specified paint color.</p>
		<p><u>Leave Tree Mark.</u> All live <u>Conifer</u> are designated for cutting unless Marked as leave trees. Leave trees are Marked above and below stump height with the specified paint color. Sale Area Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.</p>
		<p><u>Wildlife Trees.</u> Notwithstanding the designation for cutting under BT2.31, BT2.33, BT2.34, or BT2.35, trees which are identified by standard Forest Service metal wildlife tree sign or painted with the specified paint color on the uphill and downhill side, shall be left uncut. In event such trees are destroyed in Purchaser's Operations, Forest Service may designate alternate trees to be saved.</p>
Sale Area	Black	<p><u>Marked Out Trees.</u> When it is necessary to delete previously marked trees, an unique tree marking paint color will be Marked over or adjacent to the original mark, but will not obscure the original marking. Trees Marked with the original marking paint color and the unique tree marking paint color are not Included Timber.</p>
		Designation by Spacing CT2.351#
		Designation by Species and Diameter, CT2.352#
		Designation by Damage Class, CT2.353#
		Designation by Row Spacing, CT2.354#

Subdivision/Payment Unit and Cutting Unit Boundary Designation Table

<u>Subdivision/Payment Unit</u>	<u>Boundary Paint Color</u>	<u>Boundary Designation</u>
<u>Cutting Unit</u>	<u>Boundary Paint Color</u>	<u>Boundary Designation</u>
Unit 1	N/A	Unit boundary is the CalTran Right of Way between the fences

CT4.211 - DOWNPAYMENT (02/2008)

The downpayment amount shown on Page 1 may not be applied toward any other payment required under the provisions of this contract, except damages determined pursuant to BT9.4, transferred to other timber sales, or refunded until (a) stumpage value representing 25 percent of the total bid value of the timber sale is shown on Timber Sale Account to have been cut, removed, and paid for, or (b) the estimated value remaining to be cut and removed, as shown on Timber Sale Account, is equal to or less than the amount of the downpayment, or (c) if 36 CFR 223.49(e) is applicable, the estimated value remaining to be cut and removed, as shown on Timber Sale Account, is equal to or less than the amount of the downpayment. For lump sum timber sales, the downpayment may be applied to payment for release of the single payment unit.

If Forest Service makes a determination that this contract should not have been included under increased downpayment requirements (36 CFR 223.49(e)), the downpayment shall be revised and applied in accordance with 36 CFR 223.49(f).

CT4.212 - TEMPORARY REDUCTION OF DOWNPAYMENT (08/2009)

Notwithstanding BT4.211 or CT4.211, upon the Purchaser's written request Forest Service may temporarily reduce the downpayment when Purchaser's scheduled operations are delayed or interrupted for 30 or more consecutive days, or the contract term is extended for 30 or more consecutive days for any of the following reasons:

- (1) Forest Service requests or orders Purchaser to delay or interrupt scheduled operations for reasons other than breach;
- (2) Purchaser interrupts or delays scheduled operations to work on a sale designated by the Forest Service as in urgent need of harvesting; or
- (3) An adjustment of the contract term authorized upon a determination of substantial overriding public interest, or an urgent removal contract term extension under 36 CFR 223.53.

When Purchaser is not cutting or removing timber under contract during a qualifying period of delay, interruption, or extension listed above the downpayment may be reduced to \$1000 or 2 percent of the downpayment amount stated in the contract, whichever is greater. The Purchaser must restore the downpayment to the full amount stated in the contract within 15 days from receipt of the bill for collection and written notice from the Contracting Officer that the basis for temporarily reducing the downpayment no longer exists. Purchaser shall not cut or remove timber on a contract where the downpayment has been temporarily reduced until the downpayment amount stated in the contract is fully restored.

CT4.4 - PAYMENTS NOT RECEIVED (08/2012)

(a) Payments are due and payable on the date of issue indicated on the bill for collection. When a payment for timber cut and other charges is not received at the location designated by Forest Service by the date specified in the bill for collection, Contracting Officer will suspend all or any part of Purchaser's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

- (i) Slash disposal and road maintenance deposits;
- (ii) Cooperative work at rates established by specific agreement under BT4.218;
- (iii) Damages pursuant to BT9.4;
- (iv) Road use fees;
- (v) Restoration of downpayment pursuant to BT4.22;
- (vi) Periodic payments pursuant to BT4.213;
- (vii) Extension Deposits pursuant to BT4.217; and
- (viii) Other mandatory deposits.

(b) Failure to pay amounts due by the date specified in the bill for collection shall be considered a breach under BT9.3. The 30-day notice period prescribed therein shall begin to run as of the end of business on the date specified for receipt of payments. If the performance or payment is guaranteed by surety bond, the surety will receive a copy of the written notification of breach. Demand will be made on the surety or other institution providing the guarantee or bond instrument for immediate payment 10 days after issuance of written notification of the breach.

(c) Pursuant to the Debt Collection Improvement Act of 1996, as amended, if payment is not received by Forest Service within 15 days after the date of issue indicated on the bill for collection:

- (i) Simple interest shall be assessed at the Current Value of Funds Rate as established by the Secretary of the Treasury. Interest will begin to accrue as of the date of issue indicated on the initial bill for collection.
- (ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.
- (iii) A penalty charge of six (6) percent per annum will be assessed on any portion of a debt delinquent more than 90 days. This penalty charge is in addition to interest and administrative charges under paragraphs (c)(i) and (c)(ii). The penalty charge shall accrue from the date of issue indicated on the bill for collection and shall be assessed on all outstanding amounts, including interest and administrative costs assessed under paragraphs (c)(i) and (c)(ii).
- (iv) Payments will be credited on the date received by the Federal Depository or Collection Officer designated on the bill for collection.

(d) Forest Service remedies for Purchaser's failure to make payment for timber cut and other charges when due, except for accrual of interest, suspension of all or any part of Purchaser's Operations, and administrative offset, shall be stayed for so long as:

- (i) A bona fide dispute exists as to Purchaser's obligation to make such payment and
- (ii) Purchaser files and prosecutes a timely Claim.

CT5.35# - ROAD AND WATER SUPPLY USE (05/2008)

National Forest water supply locations, access, method of filling trucks, period of water availability and procedures designed to maintain water quality at each location shall be agreed in advance of use. Such use shall at no time reduce water supplies to the level that further use may be detrimental to aquatic resources or other established use. Waterholes and other improvements relating to said water supplies shall be put into condition, prior to expected seasonal periods of precipitation or runoff, to avoid resource damage.

Damage to resources at such locations caused by Purchaser's Operations, other than fire suppression activities, shall be repaired by Purchaser in a timely and agreed manner to the extent practicable to restore and prevent further resource damage.

Unless otherwise agreed, Purchaser's use of roads and other water supply requirements shall conform to the following table.

See Table A

SPECIFICATIONS PURSUANT TO CT5.35# - REQUIREMENTS OF ROAD AND WATER SUPPLY USE

<p>Load Limitations</p>	<p>Purchaser shall notify Forest Service in writing of the planned size and load distribution for equipment which exceeds the State of California Vehicle Code legal size and weight, and the National Forest System roads to be used. Such notice may be part of plan of operation under BT6.311. Within 15 days after receipt of the written notice Forest Service shall notify Purchaser in writing of any regulations or restrictions that may be needed to protect National Forest Transportation Facilities.</p> <p>A written permit shall be required for moving any vehicle which is in excess of the established legal size and weight which is not listed in the above plan, except as may be authorized in prior written agreements.</p>
<p>Existing Non-National Forest System Roads</p>	<p>Roads not shown on Sale Area Map may be used as Temporary Roads if there is agreement before use is started.</p>
<p>Snow Removal</p>	<p>If Purchaser removes snow from roads, such work shall be done with Forest Service approval and in a manner that will protect roads and adjacent resources.</p> <p>Snow berms shall be removed or placed to avoid accumulation of melt water on the road and prevent water concentration on erosive slopes or soils.</p> <p>Snow must not be removed to the road surface. A minimum < > inch snow depth must be left to protect the roadway. If the road surface is damaged, Purchaser shall replace lost surface material and repair structures damaged in blading operations prior to hauling, unless climatic conditions prevent necessary work from being accomplished or as otherwise agreed in writing.</p> <p>Single lane roads shall be plowed full width including turnouts. In event double lane roads are not plowed to full width, warning signs shall be required and plowing shall be no less than single lane (12 feet) with intervisible turnouts.</p>

<p>Water Supply Deposits</p>	<p>If Purchaser utilizes the water site located at Hackamore Reservoir; T43N, R7E, NW sec. 23 or Lime Pit on forest road 46N10E in T42N, R9E, NE ¼ section 6, for any listed activity, Purchaser shall make deposit with Forest Service for that activity at the time and in the amount shown in the Water Supply Deposit Schedule table below.</p> <p style="text-align: center;">WATER SUPPLY DEPOSIT SCHEDULE</p> <table border="1" data-bbox="418 453 1430 705"> <thead> <tr> <th data-bbox="418 453 618 541">Activity</th> <th data-bbox="618 453 821 541">Unit of Payment</th> <th data-bbox="821 453 1024 541">Unit Cost</th> <th data-bbox="1024 453 1227 541">Total Cost</th> <th data-bbox="1227 453 1430 541">Time of Payment</th> </tr> </thead> <tbody> <tr> <td data-bbox="418 541 618 596">N/A</td> <td data-bbox="618 541 821 596"></td> <td data-bbox="821 541 1024 596"></td> <td data-bbox="1024 541 1227 596"></td> <td data-bbox="1227 541 1430 596"></td> </tr> <tr> <td data-bbox="418 596 618 651"></td> <td data-bbox="618 596 821 651"></td> <td data-bbox="821 596 1024 651"></td> <td data-bbox="1024 596 1227 651"></td> <td data-bbox="1227 596 1430 651"></td> </tr> <tr> <td data-bbox="418 651 618 705"></td> <td data-bbox="618 651 821 705"></td> <td data-bbox="821 651 1024 705"></td> <td data-bbox="1024 651 1227 705"></td> <td data-bbox="1227 651 1430 705"></td> </tr> </tbody> </table>	Activity	Unit of Payment	Unit Cost	Total Cost	Time of Payment	N/A																													
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<p>Surface Replacement Deposits</p>	<p>Purchaser shall make Required Deposits for deferred surface replacement (16 U.S.C. 537) for use of existing surfaced roads. If applicable, such deposits shall be based upon the volume and distance hauled on the roads and at the applicable rates listed in the table below titled Surface Replacement Deposit Schedule. If Purchaser uses surfaced roads under jurisdiction of Forest Service other than those listed, Forest Service may establish applicable rates for such surfaced roads.</p> <p style="text-align: center;">SURFACE REPLACEMENT DEPOSIT SCHEDULE</p> <table border="1" data-bbox="418 1083 1430 1461"> <thead> <tr> <th data-bbox="418 1083 618 1138">Road No.</th> <th data-bbox="618 1083 821 1138">From</th> <th data-bbox="821 1083 1024 1138">To</th> <th data-bbox="1024 1083 1227 1138">Miles</th> <th data-bbox="1227 1083 1430 1138">Rate</th> </tr> </thead> <tbody> <tr> <td data-bbox="418 1138 618 1192">N/A</td> <td data-bbox="618 1138 821 1192"></td> <td data-bbox="821 1138 1024 1192"></td> <td data-bbox="1024 1138 1227 1192"></td> <td data-bbox="1227 1138 1430 1192"></td> </tr> <tr> <td data-bbox="418 1192 618 1247"></td> <td data-bbox="618 1192 821 1247"></td> <td data-bbox="821 1192 1024 1247"></td> <td data-bbox="1024 1192 1227 1247"></td> <td data-bbox="1227 1192 1430 1247"></td> </tr> <tr> <td data-bbox="418 1247 618 1302"></td> <td data-bbox="618 1247 821 1302"></td> <td data-bbox="821 1247 1024 1302"></td> <td data-bbox="1024 1247 1227 1302"></td> <td data-bbox="1227 1247 1430 1302"></td> </tr> <tr> <td data-bbox="418 1302 618 1356"></td> <td data-bbox="618 1302 821 1356"></td> <td data-bbox="821 1302 1024 1356"></td> <td data-bbox="1024 1302 1227 1356"></td> <td data-bbox="1227 1302 1430 1356"></td> </tr> <tr> <td data-bbox="418 1356 618 1411"></td> <td data-bbox="618 1356 821 1411"></td> <td data-bbox="821 1356 1024 1411"></td> <td data-bbox="1024 1356 1227 1411"></td> <td data-bbox="1227 1356 1430 1411"></td> </tr> <tr> <td data-bbox="418 1411 618 1461"></td> <td data-bbox="618 1411 821 1461"></td> <td data-bbox="821 1411 1024 1461"></td> <td data-bbox="1024 1411 1227 1461"></td> <td data-bbox="1227 1411 1430 1461"></td> </tr> </tbody> </table> <p>Sale Area Average Rate: N/A</p>	Road No.	From	To	Miles	Rate	N/A																													
Road No.	From	To	Miles	Rate																																
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Sale Name: Highway 139 Recovery Zone Settlement

CT6.24# - SITE SPECIFIC SPECIAL PROTECTION MEASURES (01/2004)

Special protection measures needed to protect known areas identified on Sale Area Map or on the ground include:

Cultural Resource Protection Measures: Purchaser operations are prohibited from entering, at any time with the exception of manual felling, the boundary of the controlled areas identified on the ground with orange fencing. Dragging or other ground disturbing removal of any sawtimber felled within the controlled area is not permitted. Burning of any logging slash within the boundary of the controlled area is NOT PERMITTED.

Wildlife and Botanical Protection Measures: n/a.

Cave Resource Protection Measures: n/a.

CT6.314 - RELEASE OF PAYMENT UNIT (08/2006)

Forest Service shall not Release for Cutting more Payment Units than can be logged within 60 calendar days at Purchaser's normal rate of logging. Unless otherwise agreed in writing, upon completion of all contract requirements in a Payment Unit, additional Payment Units may be Released for Cutting.

CT6.331 - LOG TRUCKING (08/2006)

To promote safe operations on National Forest roads and on Specified Roads, loads shall be safely secured before trucks move from the landing or loading location.

CT6.37 - SUBSTITUTE METHODS (08/2006)

Notwithstanding other provisions herein, for minor changes such as changes in logging systems for areas smaller than 5 acres, Purchaser and Forest Service may agree in writing that use of substitute methods or equipment will achieve Forest Service objectives under this contract and may be used in lieu of those specified for Purchaser's Operations.

CT6.41# - FELLING, BUCKING, AND LIMBING (08/2007)

Unless otherwise agreed in writing, Purchaser's felling, bucking, and limbing operations shall be conducted as specified in the table below.

See Table A

SPECIFICATIONS AND TREATMENTS PURSUANT TO CT6.41# - FELLING, BUCKING
AND LIMBING

Treatment Method and Applicable Map Symbol	Felling, Bucking and Limbing Specifications
Limbing	Outside of construction clearings, Clearcutting Units and regeneration units, unless otherwise provided by BT6.414, Purchaser shall, prior to skidding/yarding operations, cut exposed limbs from products which are to be skidded/yarded. Such limbing of stems shall be done to a top diameter of approximately 20 inches, at which point the top shall be cut from the remainder of the stem.
No Lop "No Lop"	Within units or subdivisions designated NO LOP on Sale Area Map, trees shall be skidded/yarded to agreed landing locations prior to lopping.
Whole Tree Yarding "Whole"	Notwithstanding the requirements above, within units or subdivisions designated "Whole" on Sale Area Map, trees smaller than 24 inches DBH shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to 21 inches DBH shall be bucked into two or more pieces with the butt portion being no longer than 41 feet prior to skidding/yarding. The butt log shall not be limbed prior to skidding/yarding.
Directional Felling "DF"	Within areas designated DF on Sale Area Map, Included Timber shall be directionally felled away from fences, controlled areas, streamside management zones, property lines, travel routes and improvements with the use of specialized equipment. Such directional felling shall not be required when in the faller's judgment it is unsafe to do so, and shall be left standing.
Treatment of Stumps "TS"	<p>Within areas shown on Sale Area Map, Purchaser shall treat stumps of all live conifer and juniper trees equal to or greater than 14 inches stump diameter, (measured inside bark) unless otherwise agreed in writing. Treatment shall be with a borate compound registered by EPA in the State of California for prevention of annosus root disease.</p> <p>Treatment shall consist of removal of sawdust and other loose debris from the cut surface of the stump and application of a thin layer of the borate compound uniformly over the entire cut surface, including exposed wood surfaces on the stump sides, at the rate specified on the product label. Any</p>

surface irregularities on the stump preventing application of a uniform layer of borate compound shall be cut level prior to treatment. Unless waived in writing, Purchaser shall also apply an approved colorant mixed with the borate compound to insure complete coverage. Treatment should be done as soon as possible but shall be completed no later than 4 hours after felling, otherwise stumps shall be re-cut and treated.

Purchaser shall not apply borate compound during heavy rain fall or when such precipitation rate is predicted within 4 hours of application to cause borate compound to be flushed off the stump and become ineffective, in that case treatment shall be reapplied. Application shall be completed within 24 hours of the precipitation having ceased. Borate compound also shall not be applied to stumps located within 100 feet of live streamcourses and meadows/wetlands shown on Sale Area Map and/or 50 feet of sensitive plant location boundaries as flagged on the ground.

Purchaser shall provide the borate compound and colorant and apply it in compliance with the State of California laws and regulations pertaining to pesticides and pest control operations. Borate compound storage shall be located such that any spillage will not contaminate water. All spills shall be promptly cleaned up and spilled material disposed of according to the product label. All spills occurring in water or over 25 pounds shall be reported to Forest Service within 24 hours.

Purchaser shall submit at the end of each month a "Monthly Summary of Pesticide Use Reports" to the appropriate County Agricultural Commissioner with a copy to the District Ranger.

Maximum Log Length

Cut trees shall be bucked prior to skidding so that resulting logs shall not exceed the maximum log length including trim allowance shown in following table:

Unit Number	Maximum Log Length
All	41'

Minimum Stump Height

Unit/Subdivision	Minimum Stump Height (inches)	Purpose or Reason
All	0"	Accountability

CT6.5 - STREAMCOURSE PROTECTION (08/2006)

Unless otherwise agreed in writing, wheel or track laying equipment shall not operate within "Buffer Strips" except as necessary for fire suppression activities. "Buffer Strips" are areas marked on the ground or are within the distances identified on the Sale Area Map measured from the apparent high water mark of streamcourses. Boundaries of Buffer Strips may be modified by agreement in writing to meet unforeseen operating conditions.

Culverts, bridges, or other suitable structures shall be required on skid roads and trails only at points where it is necessary to protect Stream courses. The type of crossing structures, method of installation and removal shall be determined by agreement. Purchaser in accordance with CT6.6 - Erosion Prevention and Control, shall remove such structures and associated fills.

Damage to Stream course or Buffer Strips caused by unauthorized Purchaser's Operations shall be repaired by Purchaser in a timely and agreed manner to the extent practical as determined by Forest Service to restore and prevent further damage to Stream courses.

CT6.6# - EROSION PREVENTION AND CONTROL (05/2008)

Erosion prevention and control work, including Streamcourse protection, required by CT6.5 and BT6.6 shall be completed within 15 calendar days after skidding operations related to each landing are substantially completed or after Forest Service designation on the ground of work where such designation is required hereunder. Said time limit shall be exclusive of full days lost in Purchaser's Operations due to causes beyond Purchaser's control. Such on the ground designation shall be done as promptly as feasible unless it is agreed that the location of such work can be established without marking on the ground. After September 15 and as long thereafter as operations continue the work shall be done as promptly as practicable. Damage resulting from Purchaser's Operations due to failure to perform required work shall be repaired by Purchaser.

Notwithstanding other provisions in this contract and unless otherwise agreed in writing, any hay, straw, or mulch used in this contract shall be State of California certified weed free.

Additional erosion control requirements of this contract are listed in the following table.

See Table A

SPECIFICATIONS PURSUANT TO CT6.6# - EROSION PREVENTION AND CONTROL.

Vegetative Soil Stabilization Where soil has been disturbed by Purchaser's Operations and the establishment of vegetation is needed to minimize erosion, Purchaser shall take appropriate measures normally used to establish an adequate cover of grass or other vegetation acceptable to Forest Service or take other agreed stabilization measures. Forest Service shall designate on the ground such disturbed areas annually as logging and Temporary Road construction are completed.

Forest Service upon request shall provide advice as to soil preparation and the application of suitable seed mixtures, mulch and fertilizer and the timing of such work. In no event shall Purchaser be required to treat more acres than that shown in the legend of Sale Area Map.

Purchaser shall use the type of native seed mixtures, mulch, and fertilizer as listed below:

Seed Mix	Pounds/Acre	Type of Mulch	Fertilizer

Special Erosion Prevention Measures Purchaser shall give adequate treatment by spreading slash or wood chips or by agreement giving other treatment to portion of tractor roads, skid trails, landings, cable yarding corridors, tractor-end lined corridors and Temporary Road fills where necessary to supplement other erosion prevention measures required elsewhere in this contract. In no event shall Purchaser be required to treat more acres than that shown in the legend of Sale Area Map. The specific locations to be treated shall be designated on the ground by Forest Service. These special erosion prevention measures are to be done within the same date and time periods as stated above.

Soil Scarification. In addition to meeting the requirements of BT6.63 and BT6.64, Purchaser shall scarify the following areas; unless otherwise agreed:

- (a) Traveled Way of National Forest System roads used by Purchaser and listed in the legend of Sale Area Map.
- (b) Roadbeds of any Temporary Roads used for log hauling by Purchaser.
- (c) Landings or portions thereof located outside Roadbed limits of National Forest System roads not designated for scarification.

Scarification shall be to a depth of 6 inches, with intervals between striations not to exceed 12 inches, unless otherwise agreed.

Backblading Within recreation development sites and public use areas designated on Sale Area Map, Purchaser shall, at Forest Service request, backblade skid trails in lieu of cross ditching.

Tillage In addition to meeting the requirements of BT6.64, unless otherwise agreed in writing, tillage shall be required on the areas listed in the following table.

Tillage shall be accomplished by equipment that will lift and fracture the soil by vertical and lateral shattering, leaving soil loosened through the full width and depth of the compacted layer with the topsoil remaining substantially in place rather than being inverted.

Tillage depth is shown in the following table. Agreement in writing may be made to a lesser depth if rocks or other limiting site conditions are encountered.

Tillage shall be limited to periods when soil dryness will result in crumbled soil, avoiding the formation of large clods. Purchaser and Forest Service shall agree in writing on the timing of completion of such work to coordinate with desirable soil moisture conditions.

Areas to Till	Tillage Depth (Inches)	Maximum Acres to Treat
Landings		
Main Skid Roads and Tractor Roads designated by Forest Service		
Temporary Roads		

CT6.7# - SLASH TREATMENT (08/2006)

Purchaser shall pile, scatter, yard, construct firelines or otherwise treat slash defined in specifications below, within designated areas. Work required of Purchaser shall be in accordance with the following slash plan and specifications, and the Sale Area Map.

All vegetative debris associated with construction of Specified Roads such as unutilized timber, brush and grubbed stumps is Construction Slash. Measures to be taken by Purchaser for treatment of Construction Slash are set forth in the attached road construction specifications and in the attached slash treatment specifications.

Vegetative debris larger than 1 inch in diameter outside bark and 3 feet long resulting from Purchaser's Operations, other than Construction Slash, is Logging Slash. Measures to be taken by Purchaser for treatment of Logging Slash are set forth below unless otherwise agreed in writing.

Forest Service and Purchaser shall jointly develop a schedule for completion of slash treatment on the various portions of Sale Area prior to Purchaser's Operations.

Removing may be substituted for treatment of any other specified method.

By agreement in writing, certain slash may be left for fuelwood. When the specified treatment is by a combination of methods, Logging Slash not treated by one of the methods shall be treated by the other(s).

See the slash treatment specification table below.

See Table A.

SPECIFICATIONS PURSUANT TO CT6.7# - SLASH TREATMENT (8/2006)

Specified slash treatment methods shall be shown on Sale Area Map or listed in the following tables by the following symbols:

Slash Treatment Methods

<u>Symbol</u>	<u>Method</u>	<u>Definition</u>
Buck-L	"Bucking Large Logging Slash"	Tops and limbs over 4 inches diameter outside bark (d.o.b.), not to be otherwise treated, shall be bucked into lengths not to exceed 6 feet, unless agreed otherwise.
Buck-P	"Bucking and Piling"	Logging Slash smaller than < > inches and larger than 4 inches in large end d.o.b. shall be bucked into lengths not to exceed <> feet and left in place. Logging Slash 4 inches and smaller in large end d.o.b. shall be hand Piled within Required Disposal Strip for Forest Service disposal.
Bury	"Burying"	Logging Slash shall be buried where agreed in borrow areas, pits, trenches, or other locations reasonably near the area of origin. Logging Slash shall be matted down in layers and shall be covered with at least 2 feet of rock and soil so that the final surface is sloped to drain and relatively smooth.
Chip	"Chipping"	Chippable Logging Slash up to 4 inches in d.o.b. shall be processed through a chipping machine. Chips shall be scattered to a loose depth not exceeding 6 inches.
Deck	"Decking" large material	Logging Slash <> inches or larger in large end d.o.b. and <> feet or more in length shall be Decked for disposal by Forest Service by piling pieces parallel to each other.
Mach	"Machine Piling"	Concentrations of Logging Slash, excluding scattered individual pieces, shall be Machine Piled by tractor equipped with brush rake for disposal by Forest Service.
Pile	"Piling" small material	Logging Slash smaller than <> inches in large end d.o.b. and <> feet long shall be hand Piled for disposal by Forest Service.
Remove	"Removing"	Logging Slash shall be moved or hauled to locations shown on Sale Area Map and designated on the ground where it shall

be piled for disposal by Forest Service.

Scat 18" "Scattering"
Scat 30"

Logging Slash shall be scattered to reduce slash concentrations with slash being generally left within 18 or 30 inches of the ground as shown on Sale Area Map. Logging Slash shall be scattered into openings away from and without unnecessary damage to residual trees. All scattered logs shall be limbed, placed away from trees and positioned so they will not roll. When Scattering is specified, another method may be used by agreement.

Stack "Stacking" small material

Logging Slash <> inches or smaller in large end d.o.b. and <> feet or more in length shall be stacked for disposal by Forest Service by piling pieces parallel to each other.

View "Visible Slash Treatment"

Designated on Sale Area Map with boundaries posted on the ground are <> with distance limitations for visible slash treatment. Within such units and the area of visible Logging Slash adjacent thereto, Logging Slash shall be treated by Purchaser. Primary treatment shall be by Removing, Burying, Chipping, Piling, Machine Piling, or a combination of these means unless a method is specified or prohibited on Sale Area Map. Logging Slash not readily treated by the selected or specified method shall be removed to designated areas or treated as agreed.

YUMD "Yarding Unutilized Material-Decking"

All unutilized material developed by Purchaser's Operations shall be treated by the d.o.b. and length specifications as shown in the unit specification table. All unutilized material shall be Yarded to landings and Decked. Where this is impractical, or other reasons, other locations shall be agreed upon.

Unit	Large End d.o.b. (in)	Length (feet)

YUME "Yarding Unutilized Material-Exterior Boundary"

All unutilized material developed by Purchaser's Operations shall be treated by the d.o.b. and length specifications as shown in the unit specification table. All unutilized material shall be yarded to locations a minimum of 50 feet slope distance within the exterior boundaries of such units and positioned so the yarded material will not roll.

Unit	Large End d.o.b. (in)	Length (feet)

YUML "Yarding Unutilized Material-Landing"

All unutilized material developed by Purchaser's Operations shall be treated by the d.o.b. and length specifications as shown in the unit specification table. All unutilized shall be yarded to locations within 100 feet slope distance of landing. Where this is impractical, or other reasons, other locations shall be agreed upon.

Unit	Large End d.o.b. (in)	Length (feet)

YUMR "Yarding Unutilized Material-Removal"

All unutilized material developed by Purchaser's Operations shall be treated by the d.o.b. and length specifications as shown in the unit specification table. All unutilized shall be removed to locations shown on Sale Area Map and designated on the ground, or other agreed locations, and Decked.

Unit	Large End d.o.b. (in)	Length (feet)

Cover "Covering Piles"

All piles shall be covered with a durable waterproof covering as approved by Forest Service. The material shall be at least six feet in width. Piles shall not be less than fifty percent covered, with the covering extending not less than half way down all sides. Pieces of burnable material shall be placed on top of the durable waterproof covering to keep the covering from blowing off the pile.

Fell "Damaged Small Tress"

Unless treated under other provisions, all trees smaller than the minimum d.b.h. in AT2, over 5 feet in height, and damaged beyond recovery by Purchaser's Operations shall be felled. Such trees shall be limbed to a stem diameter outside bark of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and shall be bucked into lengths not exceeding 20 feet.

Fire-L "Firelines"

Shown on Sale Area Map and to be flagged on ground after logging by Forest Service are firelines to be constructed by Purchaser unless otherwise agreed in writing. Purchaser shall construct not more than <> chains of fireline by hand and not more than <> chains of fireline by tractor.

Firelines constructed by hand shall be cleared of all vegetative debris larger

than one inch in d.o.b. and three feet long. The width of firelines shall be at least <> feet, except across the top of cutting units where the width shall be at least <> feet. At least <> feet shall be scraped to mineral soil. In areas where there is potential for burning material to roll, the fireline shall be constructed in a trenched manner on the downhill side.

Tractor lines shall be cleared of all vegetative debris, larger than one inch in diameter and three feet long, to a width of at least <> feet, with at least <> feet to mineral soil. No slash, brush, or other vegetative debris shall be buried in or under berms created in the construction of firelines. All limbs overhanging into the fireline, shall be removed to a minimum height of 8 feet.

Firelines shall be completed on each unit in accordance with B6.311 unless otherwise agreed in writing.

In subdivisions <> and shown on Sale Area Map, Logging Slash shall be scattered within <> feet slope distance of the inside edge of firelines.

Fuel-B "Fuelbreaks"

Shown on Sale Area Map, with boundaries designated on the ground, are "Fuelbreaks" of varying width. Within such Fuelbreaks all Logging slash and Construction slash shall be treated by Purchaser. Primary treatment shall be by Removing, Burying, Chipping, Piling, Machine Piling, or a combination of these methods unless a method is specified or prohibited on Sale Area Map. Slash larger than treatment size requirements of selected or specified methods shall be scattered outside Fuelbreak, or treated as agreed.

PILING SPECIFICATIONS. All piles shall be reasonably compact and free of soil to facilitate burning and shall be constructed of such size and at such distance from trees so that burning shall not result in unnecessary damage to residual timber. Such Logging Slash shall be bucked into lengths not exceeding ten feet prior to piling. Maximum width of tractor, with brush rake attached, shall not exceed n/a inches. Machine Piling is not required on areas where use of tractors would cause undue damage to residual timber or where slopes exceed n/a percent. Piles shall be located a distance of at least twice their height in feet from the outer edge of tree crowns or snags. Piles shall be no less than four feet in height or greater than 10 feet in height. Material extending three feet or more outside the edge of a pile shall be trimmed. An eight foot fuelbreak shall be cleared of all but fine material around each Machine Pile and an 18 inch wide fireline shall be cleared to mineral soil around the outer ring of the fuelbreak. For hand

piles, Purchaser shall construct a fireline cleared to mineral soil and at least 3 feet wide around each pile. In areas where there is a potential for burning material to roll, firelines, including those for Machine Piles, shall be trenched on the downhill side of each pile to adequately prevent material from crossing firelines. Trenches shall be constructed by hand unless otherwise agreed.

UNIT AND SUBDIVISION.SLASH TREATMENT SPECIFICATIONS.

SLASH TREATMENT		
Subdivision or Unit No	Specified Method	Prohibited Method
All units	Fell	N/A

LANDINGS AND DISPOSAL SITES. Unutilized logs accumulated at landings and disposal sites shall be Decked by Purchaser for disposal by Forest Service. The maximum height of decks is shown in the following table. Other slash accumulated at landings and disposal sites shall be kept separate from unutilized logs and treated by the method shown in the following table.

SLASH TREATMENT			
	Subdivision or Unit No.	Specified Method	Maximum Height of Decks
<u>Landings</u>	All units	MACH	10 feet
<u>Disposal Sites</u>			

TREATMENT ALONG PERMANENT ROADS Permanent roads that require roadside slash treatment are listed in the attached table and shown on Sale Area Map. All Logging and Construction Slash within Required Disposal Strips shall be treated by Purchaser. "Required Disposal Strips" are those areas adjacent to permanent roads where slash treatment is required for resource objectives. The width of Required Disposal Strips is shown in the attached table and is measured in slope distance from Roadbed edges of permanent roads. By agreement, in Clearcutting Units and regeneration units slash from Required Disposal Strips may be treated with other Logging Slash. By agreement the location of Required Disposal Strips may be adjusted from side to side without materially changing the total work required.

Slash treatment in Required Disposal Strips shall be accomplished without affecting the proper functioning of channels leading to and from drainage structures.

Logging Slash larger than treatment size requirements of the specified method shall either be Scattered outside Required Disposal Strip, within Required Disposal Strip or Decked at agreed locations as shown in the attached table.

SLASH TREATMENT				
	Subdivision and/ or Unit No. or Road	Width of Required	Specified	Slash Larger Than Treatment Size

Road No.	Juncitons (From To)	Disposal Strip	Method	Requirements of Specified Method

TREATMENT ALONG TEMPORARY ROADS. Outside of Clearcutting Units or regeneration units, all trees felled or pushed over and trees damaged beyond recovery by Temporary Road construction shall be felled, limbed to a stem d.o.b. of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and stem shall be bucked into lengths not exceeding <> feet. Such slash shall be Scattered free of soil to reduce concentrations unless treatment is required by another specified method.

ADDITIONAL SLASH TREATMENT REQUIREMENTS. Within areas shown on Sale Area Map, Purchaser shall perform work according to the specifications in the attached Table, unless otherwise agreed in writing.

Subdivision, Payment Units, Roads and or Road Segments	Additional Slash Treatment Requirements
	<p>Yard all stem material to a top d.o.b. of 1 inch, from timber designated for cutting, with the following exception: broken portions of logs and tops less than 4 feet in length need not be yarded.</p> <p>Broken ends of merchantable logs shall not be bucked off in the units.</p> <p>Slash and Substandard Material accumulated at the landings shall be Decked or Machined Piled, in accordance with specifications above.</p> <p>Material accumulated at landings shall be considered as Timber Subject to Agreement under CT2.11#, described as Substandard Material and may be removed and paid for at Purchaser's option.</p>

ASSISTANCE IN SLASH BURNING. If Forest Service requests, Purchaser shall furnish equipment and equipment operators to assist in preparation for slash burning at agreed times prior to the normal slash burning season in the area.

Purchaser shall furnish equipment and equipment operators for burning and mop-up when requested. The amount and kind of equipment requested shall be that normally used in slash treatment work and reasonably available under the existing equipment organization of Purchaser. Forest Service shall reimburse Purchaser for such work at rates common in the area or at previously agreed rates.

CT6.83 - ACCOUNTABILITY (08/2006)

Forest Service and Purchaser shall agree upon the haul route(s) prior to use. All products removed from Sale Area shall be transported over the designated route of haul.

Purchaser shall:

(a) Require truck drivers to sign form R5-2400-242, product removal permit, assure permit is attached to the load prior to removal from the Sale Area and while in transit to load destination.

(b) Assign a competent individual at the landing to record the following information for each load on the product removal permit provided by Forest Service:

1. Date and time load is punched out with a paper punch or equivalent
2. Truck ID or license number
3. Load destination

Used books of product removal permits (stub portion) shall be returned to the Forest Service at least weekly, unless otherwise agreed.

(c) Require truck drivers to stop for transportation inspections, if requested by Forest Service, when products are in transit from Sale Area to Purchaser's processing facility(s).

(d) Inform truck drivers of the designated route(s) of haul, the agreed upon location(s) for transportation inspections, the method of alerting drivers of an impending stop, and the fact that loads may be inspected at other locations where it is safe and possible to do so.

(e) Require truck drivers to assure the product removal permit is secured to each load of product (including chip vans, dump trucks or other container used for removing material) on the front lower corner of the drivers side of the load. Staple product removal permits to a log or attached piece of wood or other suitable material. Product removal permit shall remain attached to log until manufactured into products or if chips, until load has been unloaded. After logs are processed or load of chips unloaded the product removal permit shall be either destroyed or otherwise rendered unusable, unless otherwise agreed.

CT7.2# - SPECIFIED FIRE PRECAUTIONS (06/2012)

Purchaser or a designated Purchaser's Representative shall certify compliance with specific Timber Sale Contract and California Public Resources Code (CPRC) fire precautionary measures in BT7.1 Plans, CT7.2# and CT7.22#. Certification shall be provided prior to starting operations during Fire Precautionary Period and shall be updated as needed.

Listing of specific fire precautionary measures in the following subsections is not intended to relieve Purchaser in any way from compliance with State fire laws covering fire prevention and suppression equipment applicable to Purchaser's Operations.

Upon request of Forest Service, Purchaser shall permit and assist in periodic testing and inspection of required fire equipment.

The following definitions shall apply to CT7.2# and CT7.22#:

Active Landing: A location Purchaser is skidding logs into, or performing other operations such as delimiting, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiled chips only on a cleared landing does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head (i.e., full rotation lateral tilt head).

Mechanical Operations: The process of felling, skidding, chipping, shredding, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimiters, skidders etc.

Specific equipment requirements and fire precautionary measures are shown in the following table and in CT7.22#:

Table A

A. Fire Tools and Equipment

Purchaser shall meet applicable parts of Section 4428 of the CPRC.

Unless agreed otherwise, Fire tools kept at each Active Landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Purchaser's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. Fire tools shall be kept in a sealed fire tool box adjacent to the Active Landing and readily accessible in event of fire.

Where cable yarding is used, Purchaser shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a serviceable 5 gallon backpack pump filled with water or a fire extinguisher bearing a label showing at least a 4-A rating must be within 25 feet of each tail and corner block.

Trucks, tractors/skidlers, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or larger with an overall length of not less than 28 inches.

All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.

B. Fire Extinguishers

Purchaser shall equip each internal combustion yarder, fuel truck, and loader with a (4-A:60-B:C) fire extinguisher for oil and grease fires.

Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.

Fire extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Purchaser shall equip all mechanized harvesting machines and log processors with hydraulic systems, powered by an internal combustion engine (e.g. masticator, chipper, feller/buncher, harvester, forwarder, Hot Saw, stroke delimeter, etc), with at least two 4-A:60-B:C fire extinguishers or an acceptable CAFS substitute identified in Section K.

C. Spark Arresters and Mufflers

Except for tractors and other equipment with exhaust-operated turbochargers, Purchaser shall equip each operating tractor and any other internal combustion engine with an approved spark arrester. There shall be no exhaust bypass on any system.

Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the National Wildfire Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be properly mounted and maintained according to manufacturer's specifications.

Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

D. Power Saws

Each power saw shall be equipped with a spark arrester approved and maintained in effective working order as identified in the Spark Arrestor Guide in Section C. above and according to applicable parts of CPRC Section 4442 or 4443. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating saw.

A size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can, but not more than 300 feet from each power saw when used off cleared landing areas.

E. Fire Supervisor & Fire Patrolperson

Purchaser shall designate in the fire plan required by BT7.1 and furnish on Sale Area during operating hours a fire supervisor, named in writing and authorized to act on behalf of Purchaser in fire prevention and suppression matters.

Unless agreed otherwise, Purchaser shall furnish and designate in writing, a Fire Patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, the Fire Patrolperson is required to patrol the operation for the prevention and detection of fires, to take suppression action where necessary and to notify Forest Service as required under Sections I. Reporting Fires and L. Communications. This Fire Patrol is required on foot, unless otherwise agreed.

By written agreement, one Fire Patrolperson may provide patrol on this and adjacent projects or sales. No Fire Patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.

F. Seasonal Permits

Purchaser shall obtain written permits from Forest Service before allowing welding, warming fires or burning, subject to CT7.22# - Emergency Precautions.

G. Clearing of Fuels

Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Tail or corner haulback blocks:	All running blocks on a cable yarding operation shall be located in the center of an area that is cleared to mineral soil at least 15

	feet in diameter.
Lines near, between or above blocks:	Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.

Purchaser shall clear away, and keep clear, fuels and logging debris as follows:

H. Smoking

All smoking shall be confined within a car, truck, crew rig or other enclosed cab after 1:00 PM on Ev days and all hours on E days (CT7.22#). At other times, any smoking shall be done while sitting in an area at least 3 feet in diameter, cleared of flammable materials. Burning tobacco and matches shall be extinguished before they are properly disposed.

I. Reporting Fires

As soon as feasible, but no later than **15 minutes** after discovery, Purchaser shall notify Forest Service of any fires on Sale Area or along roads used by Purchaser.

J. Tank Truck

Purchaser shall provide a water tank truck or trailer on or in proximity to Sale Area during Purchaser's Operations hereunder during Fire Precautionary Period unless otherwise agreed.

Tank truck or trailer shall contain at least 300 gallons of water and comply with the following requirements:

(1) Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Sale Area by Forest Service using a 5/16 inch orifice with a one inch in line test kit and shall meet or exceed the pressure values identified in the following table for nearest temperature and elevation:

T e m p	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
	55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

(2) 300 feet of 3/4-inch inside diameter rubber-covered high-

pressure hose mounted on live reel attached to pump with no segments longer than 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.

(3) A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

(4) Sufficient fuel to run pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

(5) When Purchaser is using Hot Saws or Masticators an additional 250 feet of light weight hose, approved by Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurturances in (2) and (3) above.

(6) This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in CT7.22#.

K. Compressed Air
Foam System
(CAFS)

A fire suppression system where compressed air is added to water and a foaming agent. By agreement, Purchaser may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

1. Variable foam expansion ratio - 10:1 to 20:1.
2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellent.
4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an

adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in CT7.22#.

L. Communications Purchaser shall furnish a serviceable communications system such as a telephone, radio-telephone, radio system or satellite phone connecting each operating side within the Sale Area with Purchaser's headquarters, and capable of notifying Forest Service within **15 minutes** of discovery of any fires on the Sale Area or along Purchaser's haul route. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may agree to a reasonable alternative notification method.

A Citizen's Band (CB)radio is not acceptable communications.

M. Cable Yarding Tank Unit When all or part of Included Timber will be harvested by a long span (over 1,500 feet)cable yarding operation, Purchaser shall provide at each active cable yarding landing a tank truck, trailer or acceptable CAFS substitute which can be lifted and transported by the carriage.

The unit shall meet the same requirements as specified for the tank truck, trailer or approved CAFS substitute.

N. Helicopter Yarding Fire Precautions Purchaser shall provide and maintain fire equipment as follows:

1. The fire tool box required under this provision shall be equipped for attachment to the helicopter long line so that it may be hauled to needed locations. Such attachment device shall not interfere with access to fire tools. Unless agreed otherwise, the fire tool box shall be located at the Active Landing ready for immediate dispatch.
2. An external helibucket readily attachable to the helicopter, with a capacity of at least 500 gallons, and having a remote control door mechanism adequate for rapid dropping of water. The helibucket shall be located at the helicopter service landing and shall be filled with water ready for immediate dispatch unless otherwise agreed.
3. All aircraft used in conjunction with Purchaser's Operations shall be equipped with an operable radio system capable of meeting Region Five avionics requirements.
4. For protection of fuel servicing operations, fire extinguishers which have the following ratings based on the open hose discharge capacity, i.e., "broken hose," of the aircraft fueling system shall be readily available:
 - a. Where said capacity does not exceed 200 gallons per minute, at least one approved extinguisher having a minimum rating of 20-B;
 - b. Where said capacity is in excess of 200 gallons per minute, but not over 350 gallons per minute, one approved extinguisher having a minimum rating of 80-B;

c. Where said capacity is in excess of 350 gallons per minute, two approved extinguishers, each having a minimum rating of 80-B.

5. By agreement, a suitable CAFS may also be used in lieu of the above extinguishers.
6. Extinguishers of over 50 pounds gross weight shall be of wheeled type or be mounted on carts to provide mobility and ease of handling.

CT7.22# - EMERGENCY PRECAUTIONS (06/2012)

Purchaser's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Unless otherwise agreed in writing, Project Activity Levels applicable to this project shall be the predicted levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Sale Area Map legend.

Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Purchaser shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Purchaser is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL (PAL) & CT7.22# - EMERGENCY PRECAUTIONS

PROJECT ACTIVITY LEVEL (PAL) - CT7.22# - EMERGENCY PRECAUTIONS**PROJECT ACTIVITY LEVEL TABLE**

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
A	Minimum required by CT7.22#.
B	1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.
C	1. When Hot Saws or Masticators are operating, a tank truck, trailer or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. 2. Immediately after Mechanical Operations cease, Fire Patrol is required for two hours.
D	1. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. 2. No Dead Tree felling after 1:00 PM, except recently dead. 3. No Welding or cutting of metal after 1:00 PM, except by special permit.
Ev	1. The following activities may operate all day: <ul style="list-style-type: none"> a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. 2. Hot Saws or Masticators may operate until 1:00 PM; provided that: <ul style="list-style-type: none"> a) A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. b) Any additional restrictions specified by the Forest. 3. All other conventional Mechanical Operations are permitted until 1:00 PM. 4. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are: <ul style="list-style-type: none"> • Rubber Tire Skidding • Chipping on Landings • Helicopter Yarding

	<p style="text-align: center;">• Fire Salvage</p> <p>When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Purchaser's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
E	<p>The following activities may operate all day:</p> <ol style="list-style-type: none"> 1. Loading and hauling logs decked at approved landings. 2. Loading and hauling chips stockpiled at approved landings. 3. Servicing Equipment at approved sites. 4. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). 5. Chainsaw operation associated with loading at approved landings. <p>All other activities are prohibited.</p>

Project Activity Level Climatology								
Station/SIG/Unit	Forest Average				Years Analyzed		2007-2013	
	A	B	C	D	Ev	E	Days	
Month	Expected Days per Month at Each PAL Value						Analyzed	
May	4.9	3.4	8.3	0.4	0	0	86	
June	6	5.7	13.3	3.1	1.9	0	201	
July	0	0.4	8.2	8.8	13.6	0	216	
August	0.3	1.2	4	9.5	14.3	1.7	215	
September	1.3	1.4	6.4	8.6	7.2	4.9	200	
October	3.4	3.1	5.8	1.6	0.5	0.5	83	
							1001	

Project Activity Level Climatology								
Station/SIG/Unit	Forest Average				Years Analyzed		2007-2013	
	A	B	C	D	Ev	E	Days	
Year	Actual Days per year at Each PAL Value						Analyzed	
2007	15	7	51	27	45	7	152	
2008	15	9	29	35	43	8	139	
2009	13	20	43	31	39	7	153	
2010	28	20	38	26	30	0	142	
2011	9	10	44	34	23	5	125	
2012	4	9	39	39	38	21	150	
2013	11	18	47	24	40	0	140	
Average	14.6	14.3	44.8	33.2	39.7	7.3	143	

CT8.65# (Option 1) - USE OF TIMBER (01/2004)

(a) This contract is subject to the Forest Resources Conservation and Shortage Relief Act of 1990, as amended (16 USC 620, et seq.).

(b) Except for none determined pursuant to public hearing to be surplus, unprocessed Included Timber shall not be exported from the United States nor used in direct or indirect substitution for unprocessed timber exported from private lands by Purchaser or any person as defined in the Act (16 USC 620e).

(c) Timber in the following form will be considered unprocessed:

(i) Trees or portions of trees or other roundwood not processed to standards and specifications suitable for end product use;

(ii) Lumber, construction timbers, or cants intended for remanufacturing not meeting standards defined in the Act (16 USC 620e); and

(iii) Aspen or other pulpwood bolts exceeding 100 inches in length.

(d) Unless otherwise agreed in writing, unprocessed Included Timber shall be delivered to a domestic processing facility and shall not be mixed with logs intended for export.

(e) Prior to award, during the life of this contract, and for a period of 3 years from Termination Date, Purchaser shall furnish to Forest Service, upon request, records showing the volume and geographic origin of unprocessed timber from private lands exported or sold for export by Purchaser or affiliates.

(f) Prior to delivering unprocessed Included Timber to another party, Purchaser shall require each buyer, exchangee, or recipient to execute an acceptable agreement that will:

(i) Identify the Federal origin of the timber;

(ii) Specify domestic processing for the timber involved;

(iii) Require the execution of such agreements between the parties to any subsequent transactions involving the timber;

(iv) Require that all hammer brands and/or yellow paint must remain on logs until they are either legally exported or domestically processed, whichever is applicable; and

(v) Otherwise comply with the requirements of the Act (16 USC 620d).

(g) No later than 10 days following the execution of any such agreement between Purchaser and another party, Purchaser shall furnish to Forest Service a copy of each such agreement. Purchaser shall retain, for 3 years from Termination Date, the records of all sales, exchanges, or dispositions of all Included Timber.

(h) Upon request, all records dealing with origin and disposition of Included Timber shall be made available to Contracting Officer.

(i) For breach of this Subsection, Forest Service may terminate this contract and take such other action as may be provided by statute or regulation, including the imposition of penalties. When terminated by Forest Service under this Subsection, Forest Service will not be liable for any Claim submitted by Purchaser relating to the termination.

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Project ID 0200020285

MATERIALS INFORMATION

Lufft IRS Series Surface Sensor Installation Procedure for Perez

CALTRANS

Lufft IRS Series Surface Sensor Installation Procedure for Perez

RWIS Surface Sensor Installation Guide

Beyer, Michael R@DOT

9/25/2014

This document describes the installation procedure for Lufft IRS series of roadway surface sensors.



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1.0 { TC "1.0 Purpose and Scope" } Purpose and Scope

This purpose of this guide is to detail the Caltrans D02 accepted procedure for installation of the Lufft IRS series Roadway Surface Sensors (RSS) installation for both new construction and replacement where the replacement requires the installation of a new housing.

The procedure scope includes the minimum requirements and limitations regarding the pre-qualification of both the RSS devices and the pavement they are to be installed in, RSS sensor placement in the lane, RSS leveling with the pavement, RSS plastic insert torque requirements, cable installation and sealing in the pavement, cable extension & splicing, cable and RSS correlation identification, subsurface sensor installation, and minimum cable slack length in RWIS cabinet and pull boxes.



2.0 { TC "2.0 Materials and Tools" }Materials and Tools Suggested List

The following equipment and supplies are recommended to complete the install procedure:

- Torque wrench calibrated to 2 Nm with a 3 MM hex drive bit.
- Concrete saw with blades for cutting ½' wide by 3" deep slot in pavement.
- Hole saw for cutting 6" diameter hole, 3" deep in pavement.
- Hammer Drill with ¾" by 18" masonry bit for drilling holes for sub-surface sensors.
- Water supply to wash the saw cuts and holes clean.
- Power Washer to wash the cuts and holes.
- Air compressor with blow pipe to clean and dry the saw cuts and holes.
- A wet/dry vacuum with a small nozzle to clean in and around sub-surface sensor hole.
- 5/8" backer rod.
- Joint sealant to fix the RSS in the pavement.
- Duct tape to keep joint sealant build up from occurring at interface of RSS hole, saw cuts and pavement.
- Sealant for sealing the cabling in the saw cuts.
- Method for layout of saw cuts and holes, chalk line, paint, etc.
- Straight Edge (Level)
- Weights to hold the RSS in place while pouring the joint sealant
- Tool for seating backer rod & cable in saw cuts.
- Common hand tools (screwdrivers, wrenches)



3.0 { TC "3.1 Initial setup" \ 2 } Warnings

- The cable connections at the body of the RSS must not be opened under any circumstances.
- The Cable can only be shortened at the end furthest from the sensor itself.
- The sensor cable must be protected by a sheath or backer rod.
- Damage to the sheathing of the communications cable or external sensors will lead to the ingress of water into the sensor. Sensors with damaged cables must not be installed and can only be repaired by Lufft.
- Install road sensors level with the surface of the road. Do not allow the road sensor to protrude above the surface of the road due to potential damage from snow-plows.
- The RSS and Sensor Lead-In Cable must not be exposed to temperatures greater than 175° F
- The sealants must be applied to clean dry surfaces in dry weather conditions.
- The retention screws holding the plastic insert in the sensor must be torqued to 2 Nm.
- Do not allow traffic on the lanes until the sealants have cured properly.



4.0 { TC "3.1 Initial setup" \ 2 } Initial Preparation

4.1 Roadway Surface Sensor Pre-Install Inspection

4.1.1 Insure Watertight Integrity of RSS

Pre-inspection of the Roadway Surface Sensors, (RSS), shall be performed to insure the RSSs and cabling are acceptable for installation. Any damage to the seal in the cable connection to RSS housing or cuts or abrasion in the cable jacket which could allow water intrusion will void the warranty and exclude that RSS from being installable. See Figure 1 RSS Housing with Cable Glands Highlighted.

The Sensor body shall have no visible defects or damage. This device is rated IP68 which is rated for continuous immersion in water and is hermetically sealed. Any damage to the shape of the body, the screw fasteners that hold the plastic electronics body in the housing, or the plastic electronics body itself will void the unit from being installable and must be returned to the manufacturer for repair or replacement.



Figure 1 RSS Housing with Cable Glands Highlighted

4.1.2 Check for Installation Leveling Aids and Protective Covering

In addition the surface sensor shall have the installation aids, metal L brackets, and green protective film intact. See Figure 2 Installation Aids and Green Protective Film.



Figure 2 Installation Aids and Green Protective Film

4.1.3 Sub-Surface Sensor Checks

If any of the RSSs have Sub-Surface Sensors, (SSS), the lengths will need to be measured. These measurements will be needed a later step, they should be approximately 20”.

If one or more of the temperature sensors is marked with a red cable flag on which a depth is marked, notify the Engineer and do not use without approval.

4.1.4 Check for Presence of 120 Ohm Termination Resistor

Check for the presence of a RS 485 termination resistor by measuring the resistance on the communications wiring. All sensor lead-in cables have four wires and a braided shield, some are color coded with Green and Yellow designating the RS-485 communications wires, some have all black wires numbered 1 through 4 with the numbers printed in white and numbers 3 and 4 indicating the RS-485 communication wires. Use an Ohmmeter to measure the resistance between the two RS-485 communications wires it should read near 120 Ohms give or take 20 Ohms. If the resistance is significantly different please contact the Engineer to have the RSSs checked and resistors installed if necessary. See Table 1 Below:

Table 1 Extension Cable Color Code

Sensor Lead-In Cable Color	Sensor Lead-In Cable #	Extension Cable Color	Wire Designation
White	1	Gray Pair	Negative Power Supply
Brown	2	Brown Pair	Positive Power Supply
Green	3	Green Pair	RS-485A
Yellow	4	Orange Pair	RS-485 B



5.0 Layout { TC "3.0 Procedure" }for Holes and Saw Cuts

5.1 RSS Hole and Saw Cut { TC "3.1 Initial setup" \ 2 }Layout

At the location designated on the plans, place markings on the pavement for the placement of the RSSs in the center of each lane, not in the wheel tracks. Adjust placement of each RSS so that a straight saw cut from the pull box entry conduit to each RSS can be accomplished without the need to have more than one sensor lead-in cable per saw cut. Insure that the saw cuts do not come closer than 6" while still in the traffic lane. See Figure 3 Radial Saw Cut Layout.

The communication cable for the RSSs is not suitable for angled cuts with sharp corners, straight cuts are preferred.

The layout in Figure 3 is an example to illustrate straight radial cuts from pull box to RSS and only 1 cable per saw cut. Actual layout to be as shown on project plans.

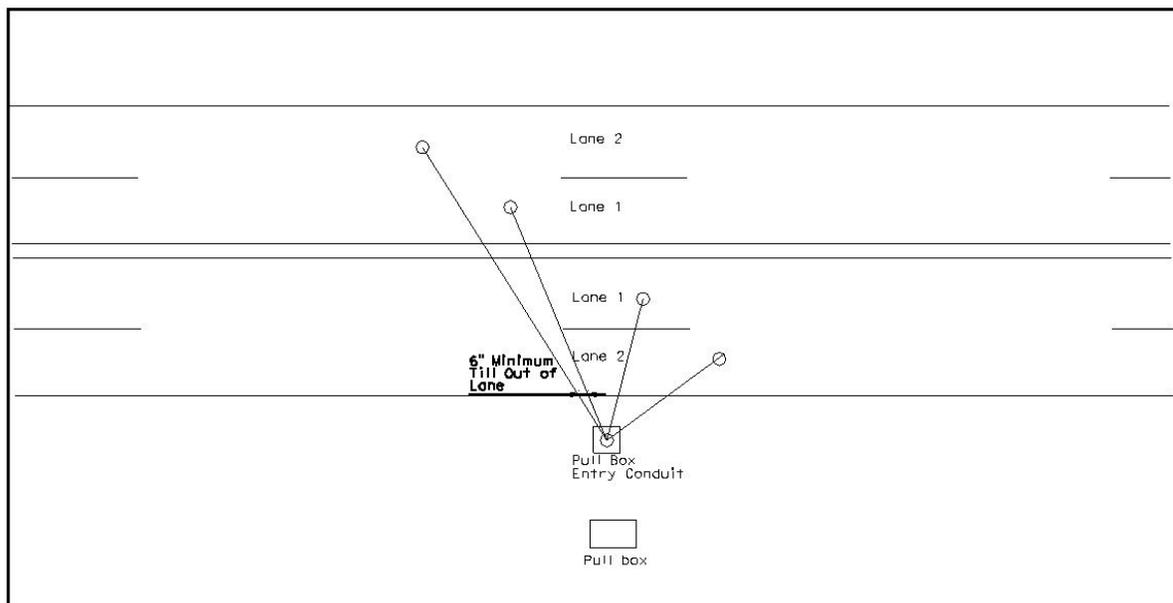


Figure 3 Radial Saw Cut Layout

5.2 SSS Hole and Saw Cut to Accommodate { TC "3.1 Initial setup" \ 2 }Sub-Surface Sensor/Sensors

Some RSSs will include one or two sub-surface temperature sensors and the associated hole will need to be modified for the installation of the SSS. The sub surface sensors are designed to be installed at specific depths, see Figure 4 Sub-Surface Sensor Designation.

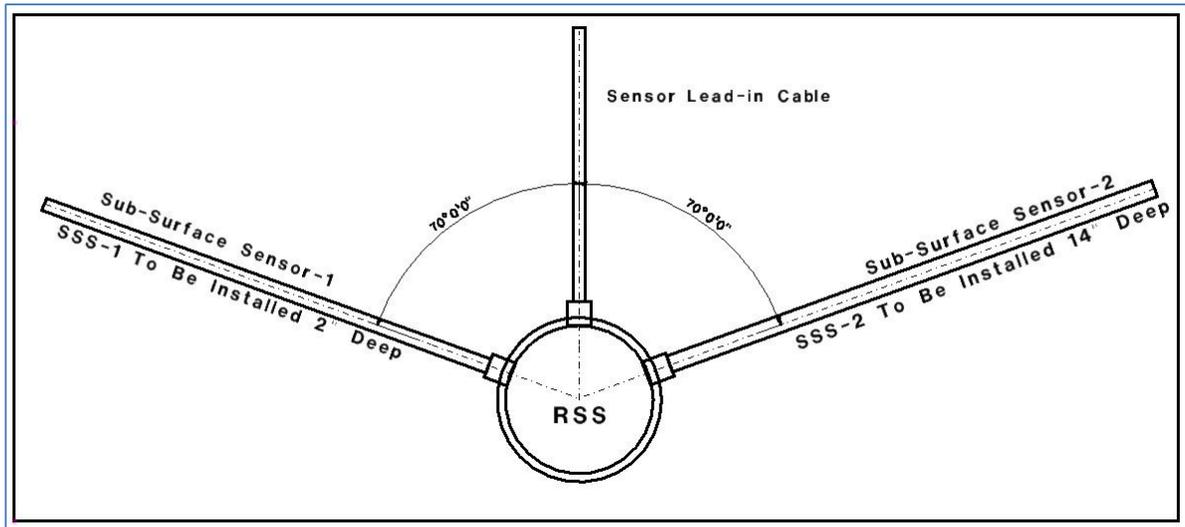


Figure 4 Sub-Surface Sensor Designation

5.2.1 Sub-Surface Sensor-1

For SSS-1 a saw cut is required at 70° CCW in relation to the Sensor Lead-In Cable the cut shall be ½' wide and 3" deep and the length will depend on the measurement taken in step 4.1.3 under Initial Preparation. The depth of the sensor which is located at the very tip of the cable will need to be at the specified depth so the saw cut will have to run till the arbor, or center axis of the saw blade, passes over the point where the tip of the cable will extend to ensure the sensor is not raised up in the trailing end of the saw cut. See Figure 7 - 2" Deep Sub-Surface Sensor 1.

5.2.2 Sub-Surface Sensor-2

For SSS-2 a 3" deep cut will also be necessary to extend out 7.75" at 70° CW in relation to the Sensor Lead-In Cable. Again the saw arbor will have to extend over the 7.75" mark to ensure the cut is 3" deep all the way to the 7.75" mark. At the 7.75" mark a hole will need to be drilled ¾" in diameter and 11" in depth as measured from the bottom of the saw cut, or 14" from the pavement surface there should be no sharp corner where the SSS cable bends down into the hole, use a hammer and chisel or screwdriver if necessary to round the corner. See Figure 5 Hole and slot for Sub-Surface Sensor.

5.2.3 Sub-Surface Sensor Special Case - Sensor-2 is Omitted

If temperaturesub-surface sensor 2 is omitted and temperature sensor 1 is included it will be installed as per the instructions for temperature sensor 2. i.e. as per Figure 5.

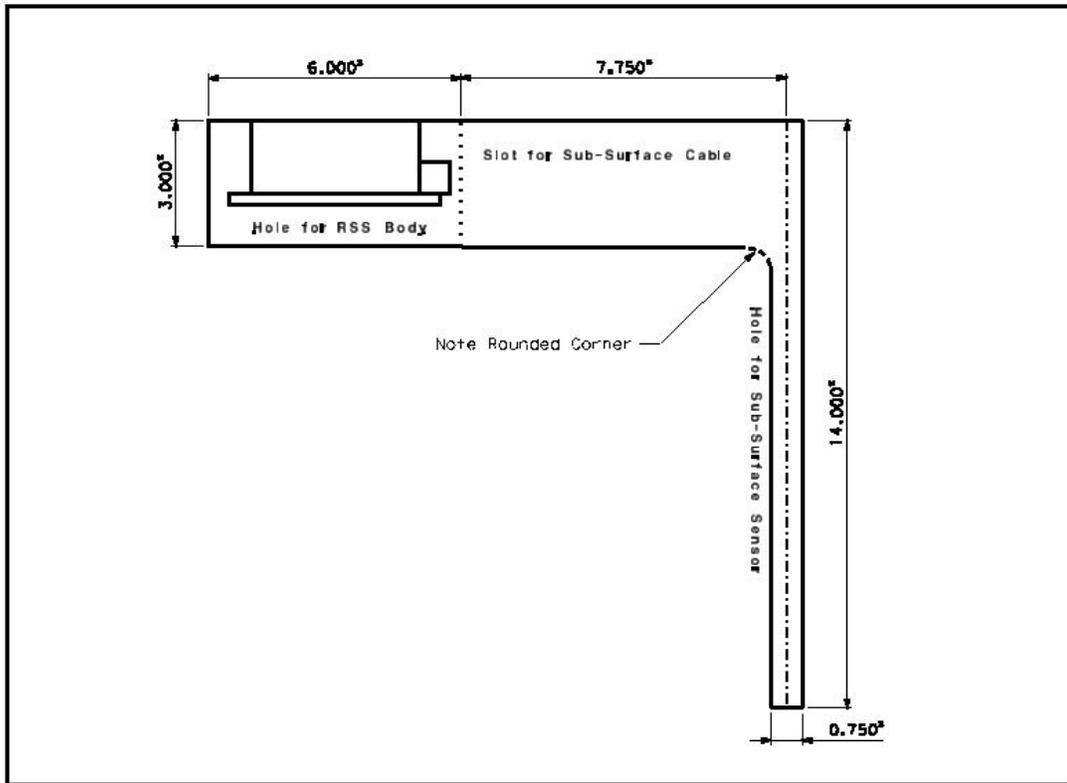


Figure 5 Hole and Slot for Sub-Surface Sensor 2

6.0 Drilling, Cutting, and Cleaning

6.1 RSS Hole Drilling

The hole drilled for the sensor must be 6" in diameter and 3" deep. This will accommodate the body of the sensor and the cable glands. Saw cuts where any SSS cables extend will accommodate the enlarged SSS cabling with waterproofing heat shrink. The RSS hole must be drilled first and the bottom of the hole cleared to a level surface at 3" depth.

6.2 Saw Cuts for Communications Cable

The saw cuts for the communication cables shall be straight runs from the pull box entry conduit to the RSS hole. The saw cut will extend through the hole to the extent that the arbor, or centerline of the saw blade passes the edge of the hole where the Sensor Lead-In Cable passes into the RSS hole thus making the bottom of the cut level at 3" deep all the way into the RSS hole. See Figure 6 Sensor Lead-In Cable Saw Cut to RSS Hole.

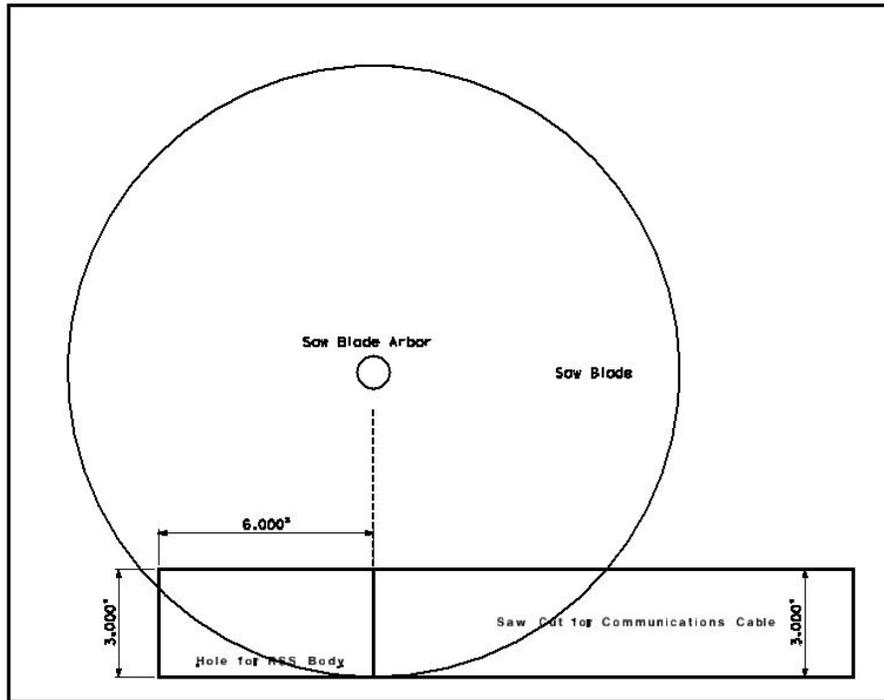


Figure 6 Sensor Lead-In Cable Saw Cut to RSS Hole

6.3 Saw Cuts for 2" Deep Sub-Surface Sensor 1

The saw cut for SSS-1, if used, will be 3" deep the entire length of the sensor cable and sensor itself, it will extend from the edge of the RSS hole to the tip of the sensor, will not have any sharp edges and will not cause the sensor to rise up at the end of the saw cut. See Figure 7 2" Deep Sub-Surface Sensor.

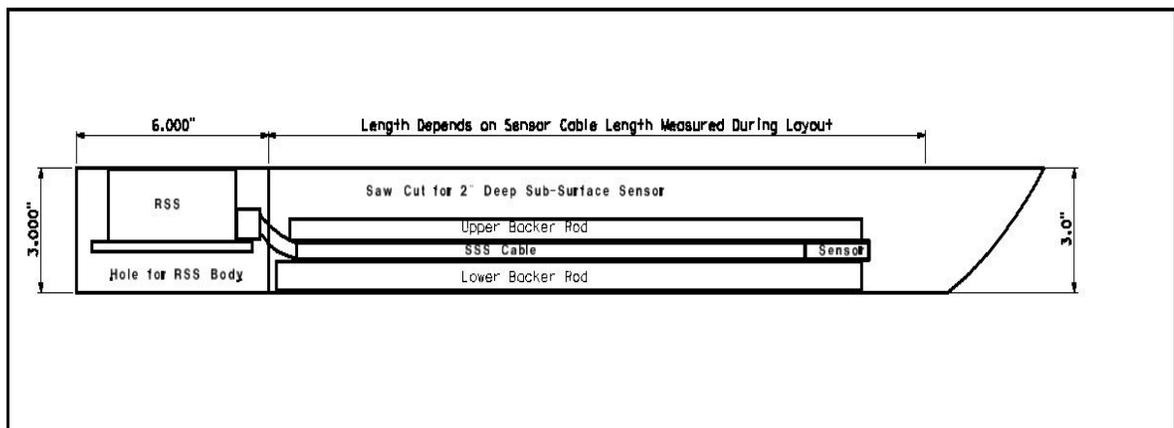


Figure 7 2" Deep Sub-Surface Sensor 1

6.4 Saw Cuts for 14" Deep Sub-Surface Sensor 2

The saw cut for SSS-2 will be 3" deep between the RSS hole and the SSS-2 hole with no sharp edges the hole depth may need to be modified so there is room for the sensor to fit all the way in without cable sticking up in the saw cut. See Figure 8 SSS-2 In Place.

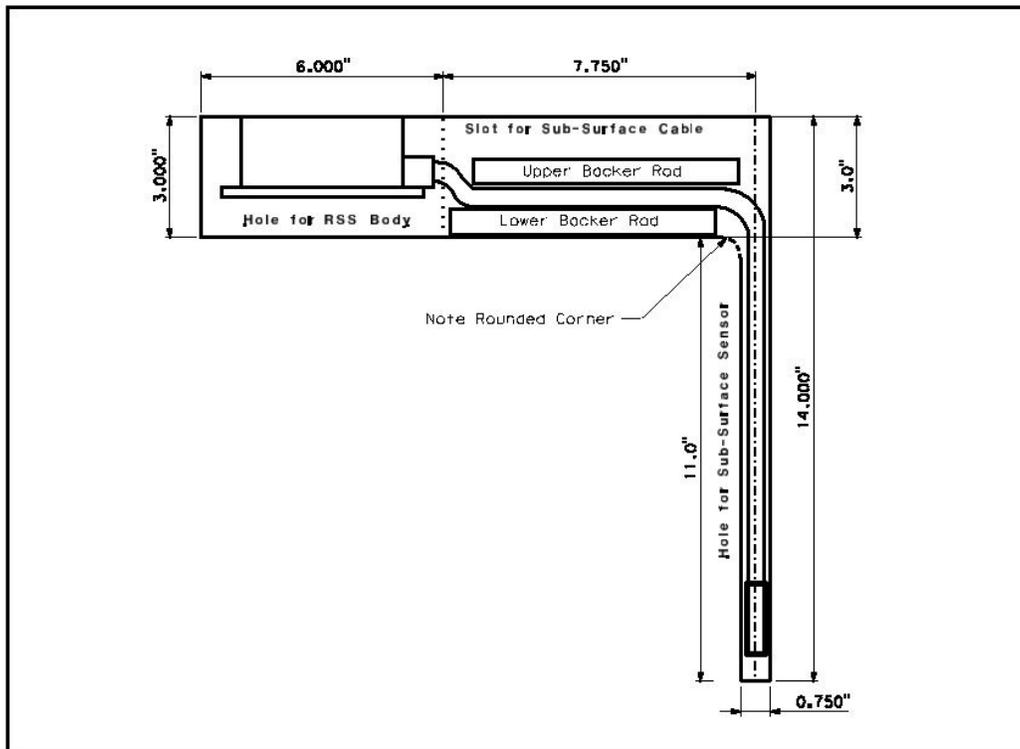


Figure 8 Sub-Surface Sensor-2 - In Place

6.5 Cleaning the Holes and Saw Cuts

6.5.1 Initial Cleaning After Saw Cuts and Holes are Drilled

After the saw cutting and hole drilling is complete power wash the slots and 6" hole with water as a solvent to loosen and displace the slurry left from the cutting processes, then blow out thoroughly with compressed air till dry. Inspect the RSS hole and saw cuts for even bottom surfaces with no jagged or rough protrusions into the areas where cabling will be laid. Inspect the saw cuts and holes for slurry, sand or mud on the edges or bottoms that will prohibit the integrity of the adhesion of the sealants to the surrounding pavement. Scrape, wash and use compressed air to blow dry to remove any remaining



dirt and debris. The holes and saw cuts must be clean and dry prior to continuing the install. Water will damage the joint sealant and dirt will prevent a permanent bond between the sealant and pavement edges which can cause failure of the sealant.

6.5.2 Hole for 14" Deep Sub-Surface Sensor

The hole for SSS-2 should not be drilled until after the flushing and cleaning with water has been completed and slot has dried. The hole shall be 3/4" diameter and a minimum of 14" deep as measured from the pavement surface. The center of the hole will be 7-3/4" from the edge of the RSS hole. See figure 8 Sub-Surface Ssensor -2 In Place.

6.5.3 Cleaning the 14" Deep Sub-Surface Sensor-2 Hole

The 14" deep hole for SSS-2 will need to be cleaned running the drill in and out of the hole to remove the debris. This will be an iterative process till the hole is clean to a depth that will accommodate the sensor fitting all the way in place with no cable left sticking up in the slot. Use a vacuum with a narrow nozzle to clean the slot of debris. No water is to be allowed in this hole. Wetness could cause the sealant to change state and not perform as intended to form a watertight seal around the sensor head at the bottom of the hole.

6.5.4 Masking the RSS Hole and Saw Cuts

Use duct tape to mask off the edges of the 6" hole and saw cuts to avoid spillage from the sealing proces. See Figure 9.

7.0 Installing the Backer Rod, Roadway Surface Sensors, and Cabling

7.1 Placing the Lower Backer Rod

All saw cuts that will receive Sensor Lead-In Cable will have 5/8" backer rod installed fully seated in the bottom of the saw cut below the cable. The backer rod shall start at the interface between the saw cut and the RSS hole and continue to either:

1. The hole in the pavement for the pull box entry conduit
2. The end of the sensor cable in the 3" deep cut for SSS-1
3. The beginning of the slope into the vertical hole for SSS-2

Use a roller designed for the purpose, a stick handle with an 8" diameter, 3/8" thick plywood wheel attached, or other tool as long as the rod is fully seated in the bottom of the saw cut and not damaged.

7.2 Placing the RSS

The first step will be placing the RSS so it is centered in the hole with the Sensor Lead-In Cable and SSS cables aligned with their respective slots. Measure the distance from at least three points around the sensor to the edge of the hole to make certain the RSS is centered in

the 6” hole. When the sensor is in the correct position, the installation aids will need to be held in place with weights, one on each side. Heavy pieces of steel, 5 to 10 pounds each, are ideal because they are less intrusive to the work area. Cinder blocks will work as long as the RSS is held firmly in place and there is enough access to make the necessary measurements and adjustments in placement, as well as allow access for applying the sealant.

With the RSS centered in the hole and the Sensor Lead-In Cable(s) aligned, level the RSS with the surrounding pavement by using a straight edge passing over the RSS and onto the pavement on both sides from multiple angles to insure the RSS does not protrude above nor drop below the surrounding pavement. Slight bends to the installation aids may be necessary to accomplish the best fit. Adjust the weights on the installation aids to hold the RSS in place level with the pavement surface taking care to keep the RSS centered in the hole. See Figure 9, Weights on RSS Installation Aids.



Figure 9 Weights on RSS Installation Aids

7.3 Placing SSS-1

If both SSS-1 and SSS-2 are present, SSS-1 will be installed in a 3” deep saw cut like that in Figure 7. In this case the sensor will have been placed in the saw cut while the RSS was being placed and it will only be necessary to insure the sensor and cable are in the bottom of the saw cut with the sensor tip laying flat approximately 2” from the surface of the pavement.



Note the backer rod will keep the sensor up a bit from the bottom of the saw cut. Be sure the backer rod does not extend beyond the end of the sensor. The end or tip of the sensor must be sticking out just beyond the end of the backer rod to keep the temperature sensor from being insulated from the surrounding pavement/joint sealant temperature. See Figure 7

7.4 Placing SSS-2

Feed the sub-surface sensor 2 carefully into the 14” deep hole to avoid moving the RSS from its placement. Ensure that the sensor fits loose enough in the hole so that when the joint sealant is poured it will have room to run around the tip of the sensor and fill the bottom of the hole. Make certain the cable between the RSS body and the curve down into the 14” deep hole is laying in the bottom of the saw cut firmly on the backer rod and not bowed up. See Figure 8 SSS-2 In Place.

7.5 Placing Sensor Lead-In Cable

The communication cable can be laid into the saw cut over the lower backer rod and rolled or pressed down so that it is firmly in contact with the backer rod. In all cases the cable must have room for at least 1.25” of sealant over the upper backer rod.

It may be that with live traffic on one or more lanes it will be necessary to stop at a certain point and set the remaining sensor lead-in cable to the side. Place a temporary dam for the sealant at that point then fill the saw cut with sealant up to that point. After traffic has been switched to another lane remove the temporary dam and continue laying the backer rod and cable in place before continuing the sealing process. Where this is necessary, be sure to clean the backer rod used as a dam completely out of the saw cut prior to continuing the sealing process. This will minimize the potential for a fissure between the between the sealant applications which may allow water intrusion to the cable.

7.6 Placing Upper Backer Rod

After the sensor lead-in and SSS cables are in place, the upper backer rod will need to be installed. Use 5/8” backer rod firmly pressed down into the saw cut, using a wheeled tool or other tool to insure the backer rod is pressed down enough to hold the cabling in place with no space between the upper and lower backer rod.

8.0 Application of Joint Sealants

8.1 Sealing the Roadway Surface Sensor in Place

8.1.1 RSS Joint Sealer Properties and Application

The joint sealant used to fix the RSS and SSSs in place shall be Fabick MP-55, or equivalent, see 11.1 Fabick Joint Sealant Properties. This is a fast setting, self leveling sealant that can be applied under a wide temperature range 20°F to 180°F. However it is not to be applied in wet conditions, as the product will change state in the presence of water and will not perform as



intended. The surfaces therefore shall be dry and the process not attempted in rainy conditions. The application of the sealant to fix the RSS in place must be done using the manufacturer supplied, or approved, mixing apparatus.

8.1.2 Applying the Sealant to the RSS and SSSs

Once the RSS and any associated SSSs are in place begin the application of the sealant at the 14” deep SSS, if one exists, inject enough sealant to fill the hole, move and wiggle the cable of the SSS where it goes down the hole to bring any trapped air to the top and make sure the sealant penetrates to the bottom of the hole and completely encases the sensor cable and sensor end. Then fill the hole the rest of the way and work back through the saw cut to the RSS hole.

Fill the RSS hole slowly at first and observe that the sealant runs under the entire RSS and no air gaps are trapped under the RSS. Only fill the hole till the sealant reaches midway up the body of the sensor. Let the sealant cure till the sensor is fixed solidly in place, then remove the installation aids. Replace the screws that held the installation aids in place firmly, but not so tight as to move the sensor. Tape over the screws so no epoxy gets into the screw caps. This is to keep the installation aids from being sealed in place by the sealant. Note; do not torque the screws at this time wait till all the sealant has been placed, level with the pavement, and sealant has cured.

Then fill the RSS hole to the level of the pavement taking care to not over or under fill the hole. It may be that on a slanted surface it will be necessary to tape over the lower portion of the hole even with the pavement and fill from the high side.

8.1.3 Approved Sealant for Use on the Sensor Lead-In Cable

The Sealant used on the Sensor Lead-In Cable can be the same as used for the RSS and SSS or can be one of those specified in the Caltrans 2010 Standard Specifications sections:

- 86-5.01A(3)(a) **Elastomeric Sealant**
- 86-5.01A(3)(d) **Epoxy Sealant for Inductive Loops**

Other sealants included in Section 86-5 of the Caltrans 2010 Standard Specifications are not acceptable.

Do not use Hot-Melt Rubberized Asphalt Sealant because the sensor lead-in cable connected to the RSSs is not rated for use in temperatures above 175°F even short term exposure to temperatures consistent with hot melt are not acceptable and will damage the cable.

Do not use asphaltic emulsion due to, shrinkage and curing time.

8.1.4 Applying the Sealant to the Sensor Lead-In Cable

Completely remove any backer rod dams used to hold other sealants back at stopping points or as delineators between sealant types. With the saw cuts clean and masked off apply the

sealant as per the manufactures instruction taking care to fill the saw cuts to the level of the surrounding pavement.

8.1.5 Removing the Plastic Film and Masking Tape

After the sealants have cured remove the green plastic film and masking tape and examine the results for any imperfections in the leveling of the sealants and fill or cut as necessary to achieve a smooth level surface between the pavement and the sealants.

8.2 Allowing Traffic Back in the Lanes

Do not allow traffic over the freshly installed RSSs until the sealants have properly cured for both the RSS and Sensor Lead-In Cables. Follow the sealant manufactures timing instructions and confirm the hardness of the material prior to switching traffic from lane to lane.

9.0 Insuring Proper Torque on the RSS Insert

After the sealant has cured, torque all six of the hex head screws to the specified 2 Nm using the sequence in Figure 10 RSS Torque Pattern. Make a 2nd pass with the torque wrench to confirm all screws are at the specified torque.

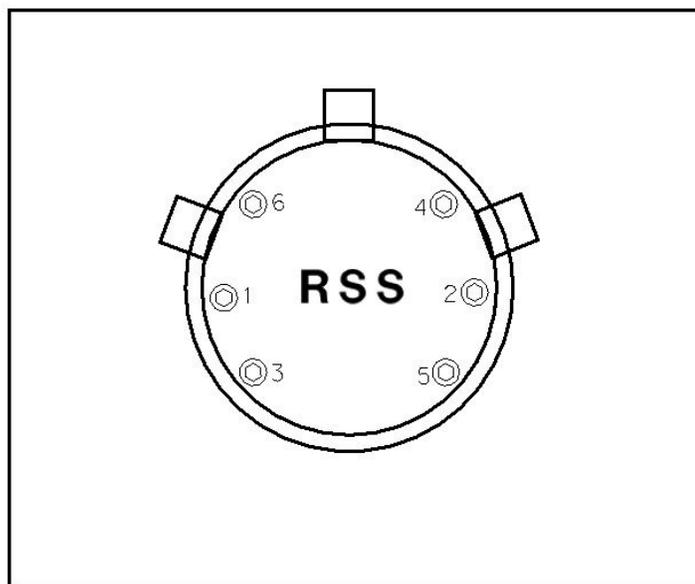


Figure 10 RSS Torque Pattern

10.0 Routing Sensor Lead-In Cable to the RWIS Cabinet

10.1 Marking the Cables

Each cable must be permanently marked to correspond with the lane the surface sensor is located in and indicate if it has a SSS by adding SSS. The numbering will start from the



innermost lane and include the lane number and direction, i.e. NB 1, NB 2, SB 1, & SB 2 SSS for instance. The identification will be plastic cable markers designed for the purpose and attached using wire ties. Markings will be in the pull box nearest the sensors themselves and in the RWIS cabinet. The markings will be located 6” from the entry to the pull box or RWIS cabinet. It may be necessary to temporarily mark the cables during pulling and permanently after they are in place.

10.2 Pulling the Cables into the Pull Box Leaving Service Loops

For each sensor cable, leave three loops, the size of the pull box, and include sensor identification in the pull box nearest the sensors and the pullbox nearest the RWIS cabinet. Intermediate pull boxes will not require labeling or the service loops. In the RWIS cabinet leave 6’ minimum and include identification marking 6” from entry into the cabinet.



11.0 Appendix

11.1 Fabick MP-55 Joint Sealant Properties

Product Description:

Fabick MP-55 material is a two component 100% solid hybrid polyurethane/polyurea based joint sealant. **MP-55** is a self-leveling joint sealant designed to protect horizontal concrete expansion and control joints from spalling, chipping, and breakdown. This elastomer displays fast cure times and excellent adhesion to concrete. **MP-55** can be applied at temperatures ranging 20° F to 180° F. This hybrid polyurethane/polyurea elastomer displays excellent chemical resistance, water insensitivity, and thermal stability at high and low temperatures. **MP-55** may also be used under traditional floor coatings (such as epoxies, polyureas and polyurethanes) or tiles to smooth the joints and provide protection from cracking and sinking caused by non-elastomeric joints sealants.

Typical Physical Properties: 2:1

Tensile Strength (PSI)	ASTM D412		2950
Elongation (%)	ASTM D412		350
100% Modulus	ASTM D412		1620
Tear Strength (PLI)	ASTM D412		500
Hardness (Shore A)	ASTM D2240		95A
Flexibility (1/8 "Mandrel)	ASTM D1737		Pass
Flashpoint (°F)	ASTM		>200
Pensky-Martin			
Taber Abrasion (mg loss) CS18 Wheel 1 kg per 1000 cycles	ASTM D4060		25
Viscosity	B Side	CPS	1200
Viscosity	A Side	CPS	400

Typical Processing Properties:

Gel Time	Minutes	2
Tack Free Time	Minutes	5
Open to Industrial Traffic	Minutes	15

Application Equipment:

This material may be applied using a plural component pump (2:1 or by volume), or by plural component cartridges. This proportioning unit must be capable of supplying the correct pressure and heat for the required hose length on a consistent basis. This characteristic is mandatory to apply this elastomer in a consistent, efficient manner. The applicators for the plural component cartridges can be manual, pneumatic, or battery operated.

Available Colors:

- Black
- Custom tinting on request

Installation Recommendations:

MP-55 adheres well to sound concrete substrates. All surfaces should be free of moisture, loose particles and debris. Any moisture present in the joint should be eliminated prior to installation. Using a diamond blade saw,

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saw the joint vertically to 90° angles to a minimum depth of 1 inch. The joint should be widened slightly to ensure adhesion to freshly opened concrete. Care should be taken not to adversely affect adhesion by “burnishing” the sides of the joint with a grinder. After sawing or grinding, care should be taken that minimal amounts of dust and debris are left over in the joint. The joint should be vacuumed using a common “shop-vac” to remove as much dust and debris as possible or high-pressure air depending on the site location. **MP-55** should be placed in the joint full depth, overfilled, and allowed to cure for a minimum of ten minutes before shaving level with the concrete.

Clean-Up Disposal:

Cured product may be disposed of without restriction. The uncured isocyanate and resin portions should be mixed together and disposed of in a normal manner. “Drip-free” containers should be disposed of in accordance with local, state and federal laws.

Shelf Life and Storage:

Six months in factory delivered unopened drums or plural component cartridges. Keep away from extreme heat, cold, direct sunlight, and moisture. It is recommended to keep the material at a stable storage temperature between 60°F and 80°F as much as possible. The components used in the MP-55 have been specially formulated to withstand a certain amount of low temperature applications. However, it is recommended to warm the material to a minimum of 60°F before application if the material is cold. This is to help with flow and proper mixing.

Limitations:

MP-55 is an aromatic polyurethane. While the physical properties may not be affected, the elastomer could yellow and chalk with exposure to UV or Hg vapor light. It is highly recommended to use a dark color for any applications requiring color stability. If color stability is mandatory, contact the manufacturer for recommendations. The chemical resistance chart should be consulted prior to any application. **MP-55** was designed to protect the edges of concrete control and expansion joints. **MP-55** will pull away from the joint edges if too much slab movement is encountered. This characteristic allows for early replacement and to alert the property owners that movement is present.

Adhesion Results:

ASTM D-4541 Elastomeric

Concrete (No Primer) >400 psi Concrete

Chemical Resistance: Chemical	Result (25 °C)	Chemical	Result (25 °C)
Acetic Acid (100%)	RC	NaCl/ h2o (10%)	R
Brake Fluid (DOT3)	RC	Potassium Hydroxide (10%)	R
Clorox® (10%) H2O	C,Dis	Sodium Hydroxide (10%)	R
Diesel Fuel	R	Sodium Bicarbonate	R
Gasoline	R	Sugar/H2o (10%)	R
Hydrochloric Acid (10%)	R	Sulfuric Acid (10%)	R, Dis
Hydraulic Fluid (Oil)	R, Dis	Sulfuric Acid (>22%)	NR
Mineral Spirits	R	Vinegar/H2o (5%)	R
Motor Oil	R, Dis	Water	R
Muriatic Acid (10%)	R	Xylene	C

Coverage Calculations:

Coverage Rate=ft./gal: Does not include overfilling.

Joint Width (Inches)	Inches	1/8 inch	1/4 inch	1/2 inch	3/4 inch	1 inch
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1/8	1230	615	308	205	154
1/4	615	308	154	102	77
1/2	308	154	77	51	38
3/4	205	103	51	34	25
1	154	77	38	25	19
1 1/2	103	51	25	17	12
2	77	38	19	12	9
3	52	25	12	8	6



12.0 References

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