



**PRESCRIPTION**

1. Stands 15, 34, 45, and 81: 73 acres of Single tree selection. Mark timber to 80 BA residual, except do not mark more than 1/3 of the BA in any given area. Create one regeneration gap per 5 acres, the diameter of which equals the height of the dominant stems.
2. Stand 19: 13 acre clearcut. Paint boundary lines and paint out any slopes that are inoperable. Leave all red and white pine. In addition paint out 0.5 acre retention pocket.
3. Stands 43, 55, 56, 65, 69, 71, 74, 88, and 92: 384 acres of thinning. Mark timber to 80 BA residual. BA may be less when necessary due to other marking requirements outlined in the "Compleat Marker" and the contract.
4. Put in harvest unit boundary lines (red) and payment unit lines (yellow) see attached map. Determine harvest unit acreage by GPS.
5. Paint out any areas that are too steep to operate, details will be discussed at the pre-work meeting. Also paint a 2 chain buffer around any seeps, vernal ponds, and any clumps of cedar or hemlock.
6. Identify each 100" saw log by a paint dot on the tree. Cruise marked tree pulpwood volumes and tally marked sawtimber volumes. Tally sawtimber by species, cruise pulpwood by aspen, basswood, birch, oak, and mixed hardwood pulp.
7. See contract and appendix for specific instruction on marking and cruising.

**Access** These stands can be accessed from Camp 30 RD and Growler Club Rd.

DNR PREPARATION WORK TO BE DONE PRIOR TO CONTRACT WORK	ESTIMATED DATE
NA	NA

**CONTRACT WORK CAN BEGIN**

Immediately     Date:

**CONTRACT WORK MUST BE COMPLETED BY** Date **08/15/2012**

**PAINT LINE WORK**

This is included in the bid     This is not included in the bid

**Paint line work to be performed: (See attached map for locations)**

TYPE OF LINE	WORK TO BE DONE	NOT APPLICABLE	PAINT COLOR	
Private boundary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Blue	<input type="checkbox"/> Other:
Sale boundary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Red	<input type="checkbox"/> Other:
Sale cutting unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yellow	<input type="checkbox"/> Other:
Stand type line	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yellow	<input type="checkbox"/> Other:

**Exclusions to mark and why**

0.5 acres retention pocket in stand 19. All slopes that are too steep to operate, as well as seeps, vernal ponds, and cedar/hemlock pockets. Use red paint for all exclusion lines

**Standards for marking lines against private land**

NA

**AREA CALCULATION**

This is included in the bid     This is not included in the bid

UNIT	METHOD	STANDARD
Sale	<input checked="" type="checkbox"/> GPS <input type="checkbox"/> String Chain <input type="checkbox"/> Other	
Payment Unit	<input checked="" type="checkbox"/> GPS <input type="checkbox"/> String Chain <input type="checkbox"/> Other	
Stand	<input checked="" type="checkbox"/> GPS <input type="checkbox"/> String Chain <input type="checkbox"/> Other	

**Special Instructions:**

All stand and payment units will need the area calculated using a GPS unit as described in the contract. These files need to be submitted by any sort of "electronic format" acceptable to the LCA. A corrected map at a scale of 1:15840 indicating plot locations also needs to be submitted to the LCA.

**TIMBER CRUISING SPECIFICATIONS**

This is included in the bid     This is not included in the bid

**Required Basal Area Factor:**     10     20     Other:

**Cruise Line Directions**    East/West or North/South

CRUISING UNITS	NUMBER OF PLOTS PER ACRE	SPACING (CHAINS)
Stands 15,19,34,43,45,55,71,81	Approx. 158 plots total	3 X 3
Stands 88,92	Approx. 103 plots total	3 X 4
Stands 56,65,69,74	Approx. 87 plots total	4 X 5
<b>TOTAL NUMBER OF CRUISE POINTS</b>	Approx. 348 Total Plots	

**Cruise Special Instructions:**

Stand 19: Cruise pulpwood and sawtimber

All other stands: Cruise marked pulpwood and 100% tally marked saw logs

Tally saw logs by species. Cruise pulpwood by the following species groups: aspen, basswood, birch, oak, and mixed hardwood.

Cruise residual BA for all stands.

Refer to contract and attached appendix for detailed cruise instructions.

**Unless otherwise specified, the tally sheets used must be those supplied by the Forest, Mineral and Fire Management Unit.**

**TIMBER MARKING SPECIFICATIONS**

This is included in the bid     This is not included in the bid

Precise specifications to be delineated at pre-work meeting with DNR staff

**Total Merchantable Residual BA (Basal Area) “Stands: 15, 34, 45, and 81”:** 80 (Minimum 70 to Maximum 90)

**“Stands: 43, 55, 56, 65, 69, 71, 74, 88, and 92”:** 80 (Minimum 70 to Maximum 90)

TREATMENT		NUMBER	SIZE
Regeneration Gaps Per Acre “Selection Stands”		1 per 5 acres	Height of dominant trees
Girdled Trees Per Acre		NA	NA
PRODUCT	MARKING SYMBOL	MINIMUM DBH	TOP DIB
Sawlogs	Orange X with dots	10 inch	8 inch
Sawbolts	NA	NA	NA
Pulpwood	Orange slash	4.6 inch	4 inch

TYPE OF WORK	WORK TO BE DONE	NOT APPLICABLE	PAINT COLOR
Trees marked to leave	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Green <input type="checkbox"/> Other
Trees marked to cut	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Orange <input type="checkbox"/> Other

**TALLY INTENSITIES**

SPECIES / PRODUCT	RATIO
Hardwood sawtimber by species	1 : 1
	1 :
	1 :
	1 :

**SPECIAL MARKING INSTRUCTIONS**

Refer to the contract and attached appendix and maps for detailed instruction.  
 Stands 15, 34, 45, and 81: do not mark more than 1/3 of the BA in any given area.  
 Stands 43, 55, 56, 65, 69, 71, 74, 88, and 92: BA may be less than 80 when necessary due to the marking guidelines set fourth in the “Compleat Marker” and Appendix 1 of the Prescription.  
 All trees marked, including line trees, must have stump marks.

**Unless otherwise specified, the tally sheets used must be those provided by the Forest, Mineral and Fire Management Unit.**

**RESTRICTIONS**

1. Forest, Mineral and Fire Management Division must to be able to identify who did what on the timber sale.
2. The contractor may not have more than two markers in one payment unit without prior approval.
3. Each marker should have an assigned area to mark (not strips).

**PAINT**

1. Call Chad Fate at (989) 785-4251 x 5245, to make arrangements for paint.
2. Paint will be supplied from Atlanta Field Office.
3. Contractor’s work schedule must coincide with the DNR work schedule for paint supply.
4. The DNR will not be available on weekends or evenings.

**DELIVERABLES**

1. A list of names that marked or cruised each payment unit.
2. A summary of paint used (in quarts).
3. Tally summaries for each payment unit (one summary, regardless of the number of markers) and all of the original tally sheets.
4. GPS files for any GPS work.

## Compartment 31 Oak and Hardwood Contract APPENDIX 1, TIMBER SALE PREPERATION

### When establishing paint lines:

- The attached type maps delineate the contract marking area.
- There are no lines that border private land.
- Use red paint for all external sale boundaries. Use yellow paint for all internal stand lines and payment unit lines as shown on the attached map.
- Avoid using dead/badly damaged trees or small (fast-growing) stems – boundary trees must last for the duration of the timber sale (up to 3-4 years).
- Paint the boundary lines so that it can be seen both from the inside of the sale area and from either direction along the line. Stump mark all merchantable line trees except interior yellow painted trees.
- Place marks approximately six feet above the base of the tree.
- Electronic shapefiles (.shp) of the treatment boundaries are available by request.
- The contractor will keep track of total quarts of paint used per-sale by color (Lines and Marking).
- The contractor will use a GPS unit to determine enclosed acreage to the nearest one-tenth acre, unless an alternative method is approved prior by Unit Management.
- GPS setup used must be able to output ESRI shapefiles (SHP.) Supply a copy of the traverse files, including the PRJ files, along with a hard copy of the corrected traverse file.
- For Trimble Geo series GPS units, Position Mode must be set so that GPS receiver collects data from a minimum of four satellites. PDOP mask must be less than or equal to 8 and SNR setting must be less than or equal to 4.
- For TDS/Trimble NOMADs and Recon, HDOP must be 4 or less. Positions must be determined using at least 4 satellites.
- Sale boundaries are to be recorded as an area feature, not a line.
- Payment unit lines may be recorded as a line feature bisecting the sale. Payment Unit lines should split the stand in equal units (see map for stand and payment unit line locations).
- Excessively steep slopes near the edge of an external boundary may be excluded from the sale using the red painted boundary. Excessively steep slopes within the sale will be marked out with red paint and a V-shaped paint mark.

### When Cruising:

- Contractor must follow the cruising guidelines in the Michigan DNR's "Product Standards and Cruising Manual"
- Data must be recorded so volume can be determined by stand. All data must be summarized by species within the stand, using the LCA provided forms or other approved method.
- Each plot location will be identified with a piece of "pink" flagging on a stick or in the ground at plot center and a piece of "pink" flagging hung at eye level no less than 24 inches in length with plot # and cruiser initials on the flag.
- All saw logs must be 100% tallied by species and diameter (except in stand 19, cruise all sawlogs by species).
- Within all marked treatments, cruise all marked pulpwood tree species that will yield one or more 100" pulpwood sticks with a minimum top diameter of four (4) inches DIB. Cruise aspen, basswood, and oak separately. Cruise all other hardwood pulp as mixed hardwood.
- Within all marked stands, residual basal area (merchantable sized trees by species) at each plot must also be recorded on the cruise sheets. Borderline residual trees do not have to be measured, but every other borderline tree should be counted.
- Plot centers must be marked according to contract specifications and correspond to a legible 1:15840 scale cruise map. Cruise specifications may be altered as necessary by the LCA.

### When marking, prioritize selection of trees to be cut in the following order:

1. Marking must comply with the Michigan DNR's "Compleat Marker" and the "Within Stand Retention Guidelines" (IC4110.)
2. Of the residual trees in the marked stands retain the following when possible:
  - a. Under-represented species.
  - b. Mast trees – at least 3 trees per acre when available.
  - c. Leave all super canopy trees or "legacy Trees" – remnants of the historical stands.
  - d. Live cavity trees and snags.
3. Mark all stems including non-merchantable stems within the regeneration gaps.
4. Release approximately 50 crop trees per acre.
  - Manage for best tree in place.
  - For trees less than 8" DBH, release all sides of the crown. For trees greater than 8" DBH, remove the two most significant crown competitors. (Refer to The Compleat Marker for crop tree specifications.)
  - Be certain that marked trees can be felled using modern logging equipment.
5. Remove high risk and cull trees.
6. Thin from below until stocking is reached.
7. All marking must be done in dry weather and on dry bark surfaces.

### Reserved Species:

- Do not mark within 100' of any raptor nest trees. Report these to the LCA as soon as possible and directions will be given at that time.