



TIMBER SALE PRESCRIPTION

GENERAL

| | |
|--|---|
| Date 08/01/2011 | Forest, Mineral and Fire Management Unit Baraga |
| Timber Sale Number (if applicable) 11-010-11-01 | Sale Name (or prescription name) T. P. Hardwood Test A & C |

LOCAL CONTACT

| | |
|--|-----------------------------|
| Name Tom Seablom | Telephone (906) 485-1966 |
| Email Address seablomt@michigan.gov | FAX () - |

Map of Project Area Attached

LEGAL DESCRIPTION

T52N R36W Section(s) 3 Description SESE

Year of Entry: 2011 Compartment(s): 32 Stand Number(s): 4

THIS TIMBER SALE CONTRACT IS BASED ON THE FOLLOWING ACREAGE

Estimated Acres: 37 Source: OI GPS Other _____

Payment will be made on the basis of these estimated acres.

TREATMENT & OBJECTIVE

| STAND # | COVER TYPE | ACRES | BA | TREATMENT | MANAGEMENT OBJECTIVE |
|---------|------------|-------|-----|-----------|----------------------|
| 4 | M9 | 37 | 146 | Selection | Northern Hardwoods |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

PRESCRIPTION

- Initial BA ranges from 120 to 210 BA. Marked to 70-90 sq. BA. Favored oak, white pine and hemlock where present.
- An after marking cruise shows that it was marked down to 100 BA.
-
-
-
-
-
-

Access Elm River Tower Rd

| DNR PREPARATION WORK TO BE DONE PRIOR TO CONTRACT WORK | ESTIMATED DATE |
|--|----------------|
| N/A | |
| | |
| | |

CONTRACT WORK CAN BEGIN

Immediately Date: November 1st, 2011 (the work could begin earlier if temporary plot establishment is completed earlier)

CONTRACT WORK MUST BE COMPLETED BY December 31, 2011

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 type="checkbox"/> | <input type="checkbox"/> Blue | <input type="checkbox"/> Other: |
| Sale boundary | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Red | <input type="checkbox"/> Other: |
| Sale cutting unit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Yellow | <input type="checkbox"/> Other: |
| Stand type line | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Other: |

Exclusions to mark and why

Standards for marking lines against private land

AREA CALCULATION

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

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

Special Instructions:

TIMBER CRUISING SPECIFICATIONS

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

Required Basal Area Factor: 10 20 Other: 5

Cruise Line Directions The plots are currently being established. The plot locations and numbering will be provided by the DNR.

| CRUISING UNITS | NUMBER OF PLOTS PER ACRE | SPACING (CHAINS) |
|--------------------------------------|--------------------------|------------------|
| North Twenty Test A | 1 | N/a X N/a |
| South Twenty Test C | 1 | N/a X N/a |
| | | X |
| | | X |
| TOTAL NUMBER OF CRUISE POINTS | 40 | |

Cruise Special Instructions:

Temporary plots have been established. The test measurement can't be done by the same person or persons that established the plots. Plot center is a wooden stake or PVC pipe sticking out at least 4" above the ground, flagged, painted, numbered and easy to see. Additional flagging has been placed overhead so the plot may be easily located. All trees, whether 'marked', 'marked & sub-sample' or 'leave', that are 'in' using a Limiting Distance Table with a Basal Area Factor of 5, have been marked and numbered. Marking consists of a horizontal line (about 6") at dbh and a tree number anywhere on the tree, but clearly visible from plot center. Tree numbers start at 1 for each plot.

Azimuth and distance to the center of the tree at the base from the plot center have been recorded along with species. This information will be provided to you by the DNR in an Excel format. When trees are near the edge of the stand, the 'walkthrough' method (Ducey et al 2004) was used to determine 'in' trees. Trees 'in' from the 'walkthrough' method have been counted twice, have two numbers painted on the tree and are listed twice on the Excel spreadsheet.

Using the tree data in the spreadsheet, cruise each tree on the plot according to the following procedure. Leave Trees only need DBH. An example of the data and tally card is shown on page 5. The entire spreadsheet will be emailed to the winning bidder. Note that Test C requires additional measurements on the 'sub-sample' trees.

DBH: Measure Diameter at Breast Height (DBH) in the location marked on each tree. Round down to the nearest 10th. Use a d-tape, or the average of a caliper where two measurements are taken at 90°.

H_S(1'): Record H_S(1') for all trees with DBH ≥ 9.1". Measure height for the sawtimber portion of the tree in feet to a 9" Diameter Outside Bark (DOB) or to the sawlog stopper, which is a lower point on the tree (see Product Standards and Cruising Manual). Round down to the nearest 1'. Minimum recordable height is 9' (considers a 1' stump). Record heights less than 9' as 0'. This may occur on a tree with no 8' minimum log (9.1" tree with a fork at 6') or has no quality (9.1" tree with branches all the way to the ground). Use Gator Eyes®, a Wheeler Pentaprism®, a Criterion RD 1000®, Laser Ace® or similar device to determine the 9" location on the stem and a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device to determine H_S.

L_{DS}: If a sub-portion of the stem is defective between H_S and the stump, record the total cumulative length of defect to the nearest 1'. This may be in one section or multiple sections, but is recorded as one number. If in multiple sections, add the sections together and record one number. The minimum length for a sawlog is 8'. There is no maximum length. See Product Standards and Cruising Manual for information on deduct.

L_{DSR}: If a portion of L_{DS} is recoverable as pulpwood, record the length of deduct that is recoverable to the nearest 1'. The minimum length for recoverable pulpwood is 8'. There is no maximum length. For example, if there is a (H_S =)30' sawlog section in a tree with a 10' section in the middle that is defective (L_{DS} = 10'), 9' of which could be a pulp log, then L_{DSR} = 9'.

H₄(1'): Record H₄(1') for all trees with DBH ≥ 4.6". Measure height of the tree in feet to a 4" Diameter Outside Bark (DOB) regardless of merchantability. Round down to the nearest 1'. This can be, but is not necessarily the merchantable height. Record height to a 4" DOB regardless of the location of the pulpwood stopper (denoted as H_p). Use Gator Eyes®, a Wheeler Pentaprism®, a Criterion RD 1000®, Laser Ace® or similar device to determine the 4" location on the stem and use a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device to determine H₄.

H_p(1'): If the limit of pulpwood merchantability is lower on the tree than H₄, record H_p(1'), the height to a pulpwood stopper (See Product Standards and Cruising Manual); otherwise record H_p as H₄. The minimum recordable height for H_p is 9' (considers a 1' stump). If the tree does not contain at least one 8' pulp log, record H_p = 0. Use a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device to determine H_p.

L_{D4}: If a sub-portion of the stem is defective between H_S and H₄ (or H_p, if H₄ ≠ H_p) or between H_p and the stump when H_S = 0, record the total cumulative length of defect to the nearest 1'. This may be in one section or multiple sections, but is recorded as one number. If in multiple sections, add the sections together and record one number. The minimum length for pulpwood is 8'. There is no maximum length. See Product Standards and Cruising Manual for information on deduct.

In addition to the tree measurements, you must track your time conducting this test. If you are using a portable data recorder, this could be used for time tracking. Time starts when you leave your truck to begin measurement and ends when you return to your truck. If you take breaks or

lunch in the woods, then stop your time at the beginning of each break and start when you resume work. This is an important attribute of our test so it is important that you remember to start and stop your time appropriately.

TEST C ONLY

Sub-sample trees on each plot have been painted with a different colored number, e.g. tree #102, tree #705, etc. These are the sub-sample trees. The sub-sample trees will require 3 additional measurements: DFH, H1' and Hc1'.

DFH is the diameter at form-class height (17.3') measured to the nearest 0.1" using Gator Eyes®, a Wheeler Pentaprism®, a Criterion RD 1000®, Laser Ace® or similar device. The location, i.e. 17.3', would be determined using a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device. If the Hc1' height is less than 17.3', then record zero.

H1' is the total height of a tree measured to the nearest 1' using a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device.

Hc1' is the height at the base of the (merchantable) crown (where the base of the first merchantable branch occurs) to the nearest 1' using a clinometer, Relaskop®, TruPulse®, Forestry 550®, Laser Ace® or similar device. If there is no merchantable branch, then record zero. A fork is considered a merchantable branch. The main stem would be considered the stem with the most value.

Tally sheets or an electronic data recorder will be provided by the contractor. The final product to the DNR will be in Excel, a hardcopy map and GPS plot locations.

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): _____ (Minimum _____ to Maximum _____)

| TREATMENT | | NUMBER | SIZE |
|----------------------------|--------------------------|--------------------------|---|
| Regeneration Gaps Per Acre | | | |
| Girdled Trees Per Acre | | | |
| PRODUCT | MARKING SYMBOL | MINIMUM DBH | TOP DIB |
| Sawlogs | | | |
| Sawbolts | | | |
| Pulpwood | | | |
| TYPE OF WORK | WORK TO BE DONE | NOT APPLICABLE | PAINT COLOR |
| Trees marked to leave | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Green <input type="checkbox"/> Other |
| Trees marked to cut | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> Orange <input type="checkbox"/> Other |

TALLY INTENSITIES

| SPECIES / PRODUCT | RATIO |
|-------------------|-------|
| | 1 : |
| | 1 : |
| | 1 : |
| | 1 : |

SPECIAL MARKING INSTRUCTIONS

RESTRICTIONS

1. Forest Management Division must to be able to identify who did what on the timber sale.
2. This work is to be performed by one person.

PAINT

1. None needed.

DELIVERABLES

1. The name of the person that did the cruising.
2. Tally from each plot in the Excel spreadsheet provided by the DNR.

| Plot # | Tree # | Species | Status | Azimuth | Dist. | TEST A & C | | | | | | | TEST C ONLY | | |
|--------|--------|---------|---------|---------|-------|------------|-------------------|-----------------|------------------|-------------------|-------------------|-----------------|-------------|-----|-------------------|
| | | | | | | DBH | H _s 1' | L _{DS} | L _{DSR} | H _p 1' | H ₄ 1' | L _{D4} | DFH | H1' | H _c 1' |
| 1 | 1 | SM | Cut | 36 | 19.2 | | | | | | | | - | - | - |
| 1 | 2 | SM | Leave | 52 | 22.8 | | - | - | - | - | - | - | - | - | - |
| 1 | 3 | SM | Cut-Sub | 59 | 18.3 | | | | | | | | | | |
| 1 | 4 | SM | C | 82 | 38.4 | | | | | | | | - | - | - |
| 1 | 5 | SM | C | 103 | 31.4 | | | | | | | | - | - | - |
| 1 | 6 | SM | L | 164 | 33.8 | | - | - | - | - | - | - | - | - | - |
| 1 | 7 | SM | L | 168 | 18.6 | | - | - | - | - | - | - | - | - | - |
| 1 | 8 | SM | C-S 126 | 180 | 27.8 | | | | | | | | | | |
| 1 | 9 | SM | L | 210 | 20.1 | | - | - | - | - | - | - | - | - | - |
| 1 | 10 | SM | L | 215 | 30.9 | | - | - | - | - | - | - | - | - | - |
| 1 | 11 | SM | L | 290 | 39.2 | | - | - | - | - | - | - | - | - | - |
| 1 | 12 | SM | C | 299 | 34.5 | | | | | | | | - | - | - |
| 1 | 13 | SM | C | 305 | 17.3 | | | | | | | | - | - | - |
| 1 | 14 | SM | C-S 700 | 340 | 18 | | | | | | | | - | - | - |
| 1 | 15 | SM | C | 350 | 24 | | | | | | | | - | - | - |
| 2 | 1 | SM | C | 16 | 36.4 | | | | | | | | - | - | - |
| 2 | 2 | SM | C | 48 | 6.2 | | | | | | | | - | - | - |
| 2 | 3 | SM | L | 100 | 30.4 | | - | - | - | - | - | - | - | - | - |
| 2 | 4 | SM | L | 117 | 12.4 | | - | - | - | - | - | - | - | - | - |
| 2 | 5 | SM | C-S 216 | 118 | 31 | | | | | | | | | | |
| 2 | 6 | SM | L | 165 | 10.8 | | - | - | - | - | - | - | - | - | - |
| 2 | 7 | SM | L | 165 | 23.9 | | - | - | - | - | - | - | - | - | - |
| 2 | 8 | SM | L | 190 | 27.1 | | - | - | - | - | - | - | - | - | - |
| 2 | 9 | SM | C | 199 | 39.8 | | | | | | | | - | - | - |
| 2 | 10 | SM | C | 215 | 20.7 | | | | | | | | - | - | - |
| 2 | 11 | SM | C-S 702 | 229 | 36.1 | | | | | | | | | | |
| 2 | 12 | SM | C | 264 | 30.8 | | | | | | | | - | - | - |
| 2 | 13 | SM | C | 323 | 31.6 | | | | | | | | - | - | - |
| 2 | 14 | SM | L | 349 | 37.3 | | - | - | - | - | - | - | - | - | - |
| 2 | 15 | SM | L | 351 | 22.5 | | - | - | - | - | - | - | - | - | - |