

PERFORMANCE STATEMENT OF WORK (PWS)

Common Stand Exam (CSE) Data Collection

C.1. GENERAL

C.1.1. SCOPE OF WORK

The scope of the work provides for stand examination and related data collection activities on the Laramie Ranger District and Brush Creek/ Hayden Ranger District of the Medicine Bow Routt National Forest. The Contractor shall furnish all labor, equipment, transportation, supervision, supplies (except those designated as Government-furnished), incidentals, and perform all work necessary to conduct stand examinations in compliance with terms, specifications, conditions, and provisions of this solicitation. Information shall be collected as outlined in (1) the attached Performance Work Statement, (2) Chapter 4 of the Government provided Common Stand Exam User Guide and (3) Region specific Appendices, unless specifically modified by the contents of this contract.

C.1.1.1. This contract is a Performance Based Contract.

C.1.1.2. Specific locations, maps, type of exam, number of plots per stand, and other site-specific information will be provided at the prework meeting.

C.1.1.3. The number of plots to be examined is 395 on Laramie RD and 438 plots on Brush Creek /Hayden RD. There are also option plots that may be included with 377 on Laramie RD and 382 plots on Brush Creek/ Hayden RD. The performance period will be from 06/15/2023 to 11/15/2023.

Laramie RD		Brush Creek/Hayden	
Mandatory- FY23 LRD	395 plots	Mandatory-Beaver Creek	438 plots
Option 1- FY23 LRD	377 plots	Option 1-Minor South	382 plots

C.1.1.4. Access: maps identifying access roads will be provided at the prework.

C. 2. DEFINITIONS

Biobased Products: A product determined by the Secretary of Agriculture (USDA) to be a commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products or renewable domestic agricultural materials (including plant, animal, and marine materials) or forestry materials. Information on biobased/biopreferred products can be found at <https://sftool.gov/green-products/>. In addition to the biobased products designated by the U.S. Department of Agriculture in the BioPreferred Program, the Contractor is encouraged to use other biobased products.

Borderline Tree: A tree that cannot be easily identified as being located inside or outside of a sample variable plot when measured with a wedge prism or angle gauge. When a borderline tree is encountered, the limiting distance of that tree must be calculated to determine the in/out status.

Calendar Days: Every day shown on the calendar, Sundays and holidays included.

Contracting Officer's Representative (COR): The on-site contract administrator for the Contracting Officer. The duties and responsibilities of the COR are defined in the letter of designation issued by the Contracting Officer.

Diameter at Breast Height (DBH): The outside bark diameter at 4.5 feet above the forest floor on the uphill side of a tree. See the Common Stand Exam User's Guide for special situations where measurement methods may differ.

Diameter at Root Collar (DRC): The diameter measured at the root collar or at the natural ground line, whichever is higher, outside the bark. See the Common Stand Exam User's Guide for special situations where measurement methods may differ.

Limiting Distance: The maximum distance that the center of a tree can be from plot center and still be within the variable plot. Limiting distance is a function of the actual DBH of the tree as measured by a diameter tape and the Plot Radius Factor (PRF).

Plot Radius Factor (PRF): An angle gauge constant calculated by dividing 8.696 by the square root of the Basal Area Factor (BAF) of the angle gauge.

Quality Assurance: The actions taken by the Government to assess the results to determine that they meet contract requirements. The methods for quality assurance are described in the Quality Assurance Surveillance Plan (QASP).

Quality Control: Those actions taken by a Contractor to control the production of outputs to ensure that they conform to the contract requirements. The methods for inspecting for quality control are described in the Contractor's Quality Control Plan (QCP).

Quality Control Plan: A plan established and maintained by the Contractor and acceptable to the Government to ensure the requirements of the contract are provided as specified.

Performance Requirements Summary (PRS): Identifies the key service outputs of the contract that will be evaluated by the Government to assure contract performance standards are met by the Contractor.

Work Plan: The Work Plan shall describe how the Contractor plans to perform the project, including methods, personnel, equipment, and proposed Schedule of Work.

C. 3. GOVERNMENT FURNISHED PROPERTY

The property and services that will be provided by the Government are as follows:

<i>item #</i>	<i>Item</i>	<i>Description</i>	<i>Where, When, How</i>
3.1	General Area Map	Maps of stands with access roads identified.	Provided with contract.
3.2	NAIP imagery and digital map file	A map displaying color aerial photography of the work area and a .shp or geodatabase file	Provided at prework meeting or electronically
3.3	Common Stand Exam User's Guide, appendices, and data collection forms	The USDA Forest Service's <u>Common Stand Exam User's Guide</u> , appendices, and data collection forms.	Available from the internet website: https://www.fs.fed.us/nrm/fsveg/index.shtml Or provided electronically
3.5	Topo maps	Topo maps covering the areas to be sampled.	Provided at prework meeting.
3.6	Publications	One copy of each publication needed to determine Plant Associations or Habitat Types.	Provided at prework meeting.
3.7	Aids to Determining Fuel Models for Estimating Fire Behavior: GTR-INT122	One copy of the publication.	Provided at prework meeting if required.
3.8	Forest Visitor's Map or transportation map	One copy of map.	Provided at prework meeting.
3.9	Use of Premises permit	Permit to occupy the national forest in excess of time limits imposed in standard orders.	Provided when needed.
3.10	Common Stand Exam Inspection Form	One copy of inspection form.	Provided at prework meeting. Exhibit 4 a-f
3.11	Portable Data Recorder software for CSE (Exams PDR)	Can be downloaded from the internet site: www.fs.fed.us/nrm/fsveg/index.shtml	Available from internet site.
3.12	PC-based CSE data entry software (Windows 10 operating system required) Exams PC	Can be downloaded from the internet site at https://www.fs.fed.us/nrm/fsveg/index.shtml	Available from internet site.
3.13	VEGPY program or Survey123	PC-based software for entering R2 FSveg Spatial Polygon Attribute form data	Provided at pre-work meeting or electronically.
3.14	VEGCPY or Survey123 User Guide	One electronic copy of VEGPY or Survey123 data entry and loading user guide	Provided at pre-work meeting or shared electronically.
3.15	GPS technical specifications	GPS datum and waypoints provided to plot centers.	Provided at prework meeting.

<i>item #</i>	<i>Item</i>	<i>Description</i>	<i>Where, When, How</i>
3.16	Keys	Yale or Master keys for locks.	Provided at prework meeting.
3.17	Species List	One copy of a list of species that shall be recorded in the vegetation composition forms when present.	Provided in the contract.
3.18	R2 Supplement to the FSVEG Spatial User Guide and associated data collection form	One hard copy and one electronic copy of the R2 Supplement to the FSVEG Spatial User Guide including the data collection form.	Provided at prework meeting. Form in Exhibit 3e
3.19	Photo Series for Quantifying Forest Residues in Managed lands of the Medicine Bow national Forest	One copy of the publication.	Provided at prework meeting if required.
3.20	FSVeg Spatial Polygon Attributing Inspection Form	One copy of inspection form.	Exhibit 4f
3.21	Stand Exam inspection forms	One copy of inspection form.	Exhibit 4 a-f

Use of Premises permits may be required for Contractor's camp if it exceeds local occupation time limit of 14 days. All Government-furnished items shall be returned to the Government upon completion of the job or upon request of the Contracting Officer. Replacement cost for any lost, damaged, or unused Government property that is not returned shall be deducted from the Contractor's final payment.

C. 4. CONTRACTOR WORK REQUIREMENTS AND STANDARDS

C.4.1. General Specifications.

C.4.1.1. Accessibility: The Contractor shall be responsible for obtaining all necessary permission to gain access to sample locations. If the Contractor cannot obtain permission to access a sample location, the Contractor must notify the Government in writing.

Accessibility may be determined from maps and digital orthoquads which will be furnished by the Forest Service. Contractor shall be responsible for adhering to the USDA Forest Service travel management plan, including yearlong or seasonal closures to motor vehicles, unless authorization is obtained. Maps and photos may indicate that a road goes to the stand; however, vehicle access may be difficult or restricted. Stand locations may necessitate that Contractor walk to the stand or acquire some other means of travel.

Most roads are typically accessible between the months of May through October, though high clearance vehicles may be necessary on some roads. A four-wheel drive, high clearance vehicle is

recommended. The Government assumes no responsibility to maintain roads in a passable condition.

C.4.1.2. Resource Protection Conditions: Contractors are expected to respond to sensitive resource conditions, i.e. walk to plots where road conditions are poor/wet.

C.4.1.3 Work Plan and schedule: The Contractor shall prepare a work plan and schedule that demonstrates that work will be completed within the performance period described in Section F. The Contractor shall provide a general plan with the technical proposal. A supplementary plan and schedule shall be provided before work starts.

C.4.1.3.1 The Contractor shall advise the Contracting Officer of any periods that the Contractor will not be working, not specified in the accepted Work Plan.

C.4.1.3.2 The Contractor may update the work plan when work is in progress and submit for approval to the Contracting Officer.

C.4.1.4 Standards: The February 2014 Region 2 Common Stand Exam User's Guide and appendices shall be used. The specified version shall dictate the standards of data collection except when specified otherwise in this contract. In addition, the R2 Supplement to the FSVEG Spatial User Guide shall be used.

C.4.2. Technical Specifications

A. Locating Plots

1. Plot Location Determination. The UTM's of the plot locations for each stand will be provided. The contractor shall use a global position system (GPS) to locate the plots on the ground with datum and waypoint information provided by the government.
 - A. For standard data collection, a recreation grade GPS (e.g. Garmin, Magellan, etc.) is sufficient.
 - B. The COR may authorize moving plot locations in the field as appropriate (plot is in road or on a cliff). If plots are moved, the contractor will document and GPS the new location and provide new location to the COR.
2. Maps. Sample plot locations to be measured within each stand have been marked on one of the provided topographical maps. Plot numbers have been pre-assigned for each plot in each stand.
3. Locating Plot Center. Upon arrival at the specified coordinates, the Contractor shall check the map to confirm that he/she is at the correct sample plot location. Installing plots in the wrong stand shall result in rejection of data.
 - A. If this is the initial plot survey, the Contractor shall identify the sample plot location on the ground.
 - B. If this is a return visit for remeasurement, the Contractor shall locate the plot center monument or relocate the exact plot center using a combination of GPS and bearing trees, then remonument.
4. Non-functioning GPS.
 - A. For standard data collection, the contractor may elect to use traditional methods of plot location if the GPS is unable to acquire the necessary resolution to execute the traverse from waypoint data. In either case, the contractor must navigate to the location provided on the topo map.

B. Plot Center Identification/Flagging

For standard data collection, the Contractor shall identify sample plot centers with a hot pink 12-inch wire pin flag. Sample plot center markers shall be firmly driven into the ground.

The location, stand, and plot number shall be written legibly on the plot center markers using a waterproof marker. For example: "081701 Site 3 Pt 4."

To facilitate relocation of plots a piece of colored flagging (to be determined at the prework) at least 12 inches long shall be hung vertically at eye height as near as possible to plot center.

Upon inspection, the center point of the marker where it intersects the ground shall be used as plot center.

Variable Plot: the first tree to the North and the first (2) growth trees on each plot shall be identified by placing flagging at breast height, as well as any off-plot site trees.

Small Fixed Plot: the growth tree shall be identified with flagging.

C. Survey Technique

Plots shall be located using waypoint navigation with a GPS unit. During the initial establishment of the plot, the plot center monument may vary +/- 30 feet from the true plot location listed, unless otherwise specified. Recurring errors in the location of sample plots greater than the acceptable error shall make the stand survey unsatisfactory; relocation of sample plots and remeasurement shall be required.

In cases where government provided photo plot location differs from GPS location found on the ground, the GPS location will prevail.

D. Recording Requirements

The data fields to be collected and recorded are enumerated in sections C.4.3, *a-f*.

- ExamsCE program. The ExamsCE program runs on several types of PDR style computers with the Windows operating system.
- ExamsPC program. The ExamsPC data entry program runs on computers with Windows operating system. This may require data to be recorded on paper forms in the field and then entered into the ExamsPC program at a later time.
- Government provided VEGPY PC program or Survey123 for recording and entering the setting level Field Verification Polygon Data (Walkthrough) Form (FV) data.
- The contractor is responsible for providing the computer hardware necessary for running the software programs and for installing, maintaining and troubleshooting the most recent version of required software.

E. Qualifications

The success of this field inventory is dependent primarily on the Contractor's professionalism and expertise. It is necessary that the Contractor's staff meet certain standards. A crew can consist of one or more individuals. Minimum technical qualifications are specifically defined as follows:

1. Each crew must have a crew leader with undergraduate courses in mensuration, tree identification, plant identification, silviculture, and ecology and three months prior experience collecting data for Forest inventory or vegetation classification.
2. Each crew leader must also have the additional following minimum qualifications:
 - a. Proficient in the interpretation of aerial photography and associated maps.
 - b. Ability to distinguish between stand types both in the field, on original or photocopied aerial photographs, and on DOQs.
 - c. Knowledge in the use of hand held compass, data recorders, pacing, GPS equipments and map measurements.
 - d. Ability to accurately identify necessary tree, shrub, forb, and grass species needed for identifying local habitat types.
 - e. Knowledge of rating tree defects and parasitic plants.
 - f. Knowledge of common forest insect pests and diseases.
 - g. Familiar with habitat typing.
 - h. Proficient in the use of forest measurement equipment.
 - i. Proficient in the use of GPS equipment and data recorders.

Specific technical experience may be substituted for a given educational requirement.

The Contractor shall designate crew leaders for each crew. The crew leader shall be the individual responsible for ensuring plot measurements are taken in accordance with the accuracy standards.

The Contractor, by signing an offer, agrees to use only personnel meeting these qualifications for performance of the work specified herein. The Government reserves the right to make determinations of employees' or subcontractor's qualifications; any employee or subcontractor who does not meet the above described qualifications may be requested to leave the worksite with the Contractor responsible for the re-collection and resubmittal of any data supplied by that person. The Government may also request the removal of an employee or subcontractor with unsatisfactory past performance.

F. Work Plan and Progress Schedule

The Contractor shall prepare a work plan and progress schedule that demonstrates that work will be completed within the performance period of the contract. The Contractor shall provide a plan with the technical proposal for the contract. The contract time shall not exceed the negotiated completion date. The Contractor shall maintain progress at a rate that will assure completion and acceptance of work within the contract performance period. The minimum acceptable rate of progress will be calculated by dividing the total units of work for each item by time specified.

The Contractor shall advise the Contracting Officer of any periods that the Contractor will not be working that are not specified in the accepted Work Plan.

The Contractor shall provide a supplementary plan and schedule as needed to update the work plan when work is in progress.

C.4.3 Data Collection Specifications – Common Stand Exam (CSE)

This section describes the data collection forms and the fields on each form to be completed.

Detailed information and lists of valid codes for each of the following data forms are found in the Common Stand Exam (CSE) User Guide and Appendices (see Government Furnished Property).

If the following contract specifications differ from the provided Common Stand Exam User Guide and Appendices listed in C.4.4 below, the contract specifications shall take precedence.

a. Setting Form (CSE)

A setting is normally a stand in which the stand exam is being done. Following is a list of data fields required for each setting.

The Contractor shall be responsible for collecting and filling out the Setting Form for all data items that are set to “YES” in the Required column. The Contractor shall use the Setting Form in **Exhibit 3a** as the template.

Field Number	Field Description	Required on all plots	Data Source	Comments
	Project Name	YES	Government	FY23 CZ CSE
1	Region	YES	Government	“02”
2	Proclaimed Forest	YES	Government	“06”
3	District	YES	Government	“02” -BCH, “05” - Laramie
4	Location/Watershed Alias	YES	Site List	Given at prework
5	Stand	YES	Site List	Given at prework
6	Owner	YES		“USFS”
7	State	YES		WY
8	County	YES		001 –Albany, 007-Carbon
9	Admin Forest	YES		“06”
10	Date	YES	Contractor	Format is MM/DD/YYYY
11	Photo ID	NO	Contractor	Not Collected
12	Exam Level	YES	Government	3000
13	Exam Purpose	YES	Government	Always ‘SE’
14	Stratum	N/A		Not collected
15	Existing Vegetation	NO		SAF
16	Potential Veg Ref	NO	Contractor	207
17	Potential Vegetation	NO	Contractor	
18	Structure	YES	Contractor	
19	Capable Grow Area	YES	Contractor	
20	Fuel Model	NO	Contractor	
21	Elevation	YES	Contractor	
22	Aspect	YES	Contractor	
23	Slope	YES	Contractor	

24	Slope Position	NO		
25	Acres	YES	Contractor	On site list given at prework
26	Radial Growth Interval	YES	Contractor	Always "10"
27	Radial Growth Interval 2	N/A		Not collected
28	Height Growth Interval	YES	Contractor	Always "5"
29	Fuel Photo Reference	NO	Contractor	32 RMRS-GTR-172
30	Precision Protocol	YES		Always "CSE"
31	Examiner	YES	Contractor	First and Last Name
32	Setting Remarks	YES	Contractor	Detailed stand remarks **see below
33	Damage Category	NO	Contractor	
34	Damage Agent	NO	Contractor	
35	Damage Severity	NO	Contractor	
36	Species of Management Interest	NO	Contractor	
37	Sketch Map	YES	Contractor	

****Stand/setting remarks** shall include a general cover type, size classes (V, L, M, S) with Basal Area average for each, and Pine regen average size and density (trees per acre, clumpy/patchy).

*****Sketch Maps** Sketch maps are a requirement for this task order. The maps shall include a drawing of the unit shape, plot locations, and major features (e.g., roads, streams, trails, hill tops, ridges, powerlines, fences, private property). Only one stand may be depicted per map.

All Setting Form fields, whether required by this contract or not, are included on the setting form provided in the exhibits. Fields not specifically required by this contract are to be skipped on the form.

b. Sample Design Form (CSE)

The Sample Design will be Variable Plot to sample large trees (live or dead). Fixed area plots shall be used to sample small trees.

Live and Dead Large Trees: Variable Plot. -Sample live and dead standing trees 5.0" DBH/DRC and larger. The Contractor shall determine which Basal Area Factor (BAF) to use to sample the large trees. To determine the BAF or variable plot size, a minimum of 5 trees per plot (greater than 5.0 inches DBH) average must be obtained on the plots in the stand. **Allowable BAF factors are 20, or 30.**

Small Trees: Fixed Plot. -Sample live standing trees less than 5.0" DBH/DRC **OR** at least 0.5" in height. Sample dead standing trees less than 5.0" DBH/DRC **and** at least 1.0" in diameter. Sample dead standing trees between 1.0" and 4.9" DBH/DRC. Use a fixed 1/100th ac plot (radius of 11.78').

The same BAF and plot sizes must be used throughout the stand.

Three (3) site tree minimum per stand required.

The contractor shall be responsible for collecting and filling out the Sample Design Form for all data items that are set to "YES" in the "Required" column of the following table. The contractor shall use

the Sample Design form in **Exhibit 3b** as the template for all plots. All sample design fields, whether required by this contract or not, are included on the design form provided in the exhibits. Fields not specifically required by this contract are to be skipped on the form.

Field Num	Field Description	Required	Data Source	Comments
	Region	YES	Government	“02”
	Proclaimed Forest	YES	Government	“06”
	District	YES	Government	“02”, “05”
	Location/Watershed Alias	YES	Site List	
	Stand Number	YES	Site List	
1	Sample Selection Method	YES	Government	BAF and Fixed
2	Sample Expansion Factor	YES	Contractor or Government	20/30 and 1/100
3	Starting Azimuth	NO		
5	Subpop Filter	YES	Government	
7	Selection Criteria #	YES	Government	
8	Subpop Variable	YES	Government	
9	Subpop Minimum Value	YES	Government	
10	Subpop Maximum Value	YES	Government	
6	Remarks	NO	Contractor	

c. Plot Form (CSE)

The following items are required to be recorded at each plot on the Plot form. Detailed information and lists of valid codes for each data item are found in the Common Stand Exam Users Guide and Appendices (see Government Furnished Property). The Contractor shall be responsible for collecting and filling out the Plot Data Form for all data items that are set to “YES” in the “Required” column of the table below. All plot data fields, whether required by this contract or not, are included on the plot data form provided in **Exhibit 3c**. Fields not specifically required by this contract are to be skipped on the form.

Amend Common Stand Exam User Guide, Chapter 4, Plot Data with the following:

Capable Grow Area Percent. Based on a 1/10th acre plot, ocular estimate and record the percent of the area that can support tree growth. If the plot has no trees present and is not capable of supporting tree growth (nonstockable), record a 0 percent. If a portion of the plot is capable of supporting trees (stockable), record the percent of the plot area that is capable of supporting trees.

Field Num	Field Description	Required	Data Source	Comments
	Region	YES	Government	“02”
	Proclaimed Forest	YES	Government	“06”
	District	YES	Government	“02”, “05”
	Location/Watershed Alias	YES	Site List	
	Stand Num	YES	Site List	
1	Plot Num	YES	Site List	
2	Latitude	YES	Contractor	GPS - format dd mm ss.s
3	Longitude	YES	Contractor	GPS - format dd mm ss.s

4	Capable Grow Area	YES	Contractor	Measured on a 1/10 ac plot
5	Aspect	NO	Contractor	
6	Slope	NO	Contractor	
7	Slope Position	NO	Contractor	
8	Slope Horz Shape	N/A		Not collected
9	Slope Vert Shape	N/A		Not collected
10	Elevation	NO	Contractor	
11	Existing Vegetation	N/A		Not collected
12	Potential Vegetation	NO	Contractor	
13	Plot History	NO	Contractor	
14	Plot History Date	NO	Contractor	
15	Fuel Model	YES	Contractor	Derived from INT-122
16	Residue Descriptive Code	YES	Contractor	Code 32 Quantifying Forest Residues in Managed lands of the Medicine Bow national Forest Photo Series - provided at prework
17	Distance to Seed Wall	NO	Contractor	
18	Plot Remarks	YES	Contractor	Border Line/Limiting Distance Trees, other things that stand out in plot

d. Tree Form (CSE)

Begin recording standing tree data on the Tree Form at azimuth 360 (North), progressing in a clockwise direction around plot center. Trees shall be recorded in the following order:

- 1) Growth Sample Trees located on the variable radius plot.
- 2) Live and Dead Trees located on the variable radius plot.
- 3) Growth Sample Trees located on the small fixed plot.
- 4) Small Live and Dead Standing Trees located on the small fixed plot.
- 5) Site trees that are located off plot.
 - Put directions for relocating off plot trees in tree remarks field.

During fixed plot survey, group small trees of the same species with DBH less than 5 inches into one of classes, as described in the table below. Enter an average height for the trees that fall into each category.

For trees less than 4.5'

Height Class	Contains trees with Height of:	Comments
0.5	0.1-.0.9	
1.5	1.0 – 2.99	
4	3.0-4.4	

For trees 4.5' with a DBH of .01" to 4.99"

Diameter Class	Contains trees with DBH of:	Comments
0.5	0.01 – 0.99	
2	1.00 – 2.99	
4	3.00 – 4.99	

Amend Common Stand Exam User Guide, Chapter 4, Tree Data with the following:

Field 4: Site/Growth Trees. A minimum of **3** site trees will be sampled per stand. Site tree species selected will be representative of the species comprising the cover type of the stand.

Growth Sample Trees (GST): If only one tree species is expected to be present in the stand, two large (≥ 5.0 "DBH) GST and one small (< 5.0 "DBH) GST will be measured on each plot.

Hardwoods shall not be selected as a growth tree unless the species comprises 50 percent or greater of the number of large trees in the variable plot.

Measure the first two live standing trees (large) and first live standing tree (small), when moving clockwise from north.

- If the first tree (s) has a broken top or tree rot do not use it as a growth tree. Use the next healthy tree (s) for growth specimens.
- If there are no live trees it is a null plot.

If more than one tree species is expected to be present in the stand, two large (≥ 5.0 "DBH) and two small (< 5.0 "DBH) GST will be measured on each plot. The first live standing tree, both large and small, of each species encountered moving clockwise from north, will be measured until two trees of different species are assessed.

The increment bore samples shall be placed in such a manner as to allow preservation for later inspection. Increment bore shall not be left on the ground.

Field 8: DBH/DRC. For DRC species, standing dead and down dead trees that are grouped, the diameter breakdown will be 5.0"-6.9" = 5.0", 7.0"-8.9" = 7.0", 9.0"-10.9" = 9.0", etc. Saplings (trees that are greater than 4.5' with a diameter of 0.1" – 4.9") may be grouped into 1.0" diameter classes.

Field 9: Height. Heights will be required for all trees recorded. For saplings, DRC species, and standing dead trees that are grouped, heights can be averaged as long as averaged height is within 10% of actual height.

Field 21, 22, 24 : Damage. The presence or absence of Dwarf mistletoe will be checked on all pine species and White Spruce. Always record if present, regardless of what other damages have been recorded. For all other damages, record only those significant damages that are most affecting tree growth and/or longevity. For all trees, a maximum of 3 damages will be recorded. If a tree has no significant damage, record no damages for that tree.

The table below shows the maximum amount of tree data fields that shall be collected for the intensive exam. The contractor shall be responsible for collecting and filling out the Tree Data Form for all data items that are set to "X" in the "Required" column for the specified exam level as listed in the table below. See the Common Stand Exam Users Guide for accuracy standards for each type of exam. All tree data fields,

whether required by this contract or not, are included on the Tree Data Form provided in **Exhibit 3d**. Fields not specifically required by this contract are to be skipped on the form.

Detailed information and lists of valid codes for each data field are found in the Common Stand Exam User Guide and Appendices (see Government Furnished Property).

Field Number	Field Description	Required by Exam Level			Data Source	Required for:
		Intensive	Extensive	Quick Plot		
	Location/Watershed Alias	X			Site List	
	Stand Number	X			Site List	
1	Plot Number	X			Government	
2	Tag ID	X			Contractor	
3	Tree Status	X			Contractor	
4	Site/GST	Site & Growth			Contractor	
5	Species	X			Contractor	
6	Tree Count	X			Contractor	
7	DRC Number Stems	X			Contractor	DRC species only
8	DBH/DRC	X			Contractor	Trees > 4.5' tall.
9	Height	X			Contractor	All trees
10	Height to Crown	X			Contractor	All live trees \geq than 4.5' in height
11	Radial Growth	X			Contractor	Growth sample trees >3+inches DBH or DRC
12	Radial Growth 2	N/A				Not collected
13	Height Growth	X			Contractor	Growth sample trees < 3 inches DBH/DRC or < 4.5' in height
14	Age	Site & Growth			Contractor	Site & growth sample trees
15	Crown Ratio	X			Contractor	All live trees \geq 4.5' in height
16	Crown Class	X			Contractor	All live trees \geq 4.5' in height
17	Crown Width	X			Contractor	All live trees \geq 4.5' in height
18	Wildlife Use				Contractor	
19	Log/Snag Decay				Contractor	
20	Cone Serotiny	X			Contractor	Lodgepole pine trees 1+ inches DBH
21	Damage Category	X			Contractor	All trees with damage. Record 3 most severe.
22	Damage Agent	X			Contractor	Required if damage category is not blank
23	Damage Part	X			Contractor	
24	Damage Severity	X			Contractor	Required if damage category is not blank
25	Tree Remarks	X			Contractor	Put tree class here: DE, AC, UA

e. Field Verification of Polygon Data (Walkthrough) Form (FV)

This form shall be completed for each stand that is included in the contract. The field crew should walk through the entire stand before completing the form. Detailed information and lists of valid codes are in the R2 Supplement to the FSVEG Spatial User Guide.

The Contractor will be responsible for collecting and entering all provided and collected data into VEGPY or Survey123 for each polygon listed in the contract, and will complete all data items that are set to “YES” in the required column of the table below. All data will be submitted in the appropriate files format to the Government.

- No entry less than 10% given to any one species unless it is a tree (minimum of 5%). Increments of 5% after the initial 10%.
- Grass species can be combined to make up a component of 10%. The grass species comprising the majority being coded for.
- Forb species can be combined to make up a component of 10%. The forb species comprising the majority being coded for.
- Shrub species can be combined to make up a component of 10%. The shrub species comprising the majority being coded for.
- **Remarks are not needed for the walkthrough**

All data fields, whether required by this contract or not, are included on the Spatial Field Data Collection Form provided in **Exhibit 3e**.

Item Description	Required	Data Source	Comments
<i>POLYGON INFORMATION</i>			
Region, Forest, District code	YES	Government	02, 06, 02/05
Location	YES	Government	Survey Stand List
Polygon ID	YES	Government	Survey Stand List
Species Survey Method	YES	Government	CROWN
Sample Recorder	YES	Contractor	First, Last
Sample Date	YES	Contractor	MM/DD/YYYY
Purpose Code	YES	Contractor	“WV”
Stocking Flag	YES – if applicable	Contractor	A ‘YES’ flag indicates the polygon has been restocked with trees after a man-made or natural disturbance, such as a harvest, burn, beetle epidemic, or other natural event. ‘NO’ is indicated by a null/blank value.

Regen EV Code/Previous Cover Type (*required when Stocking Flag = 'YES' – optional when 'previously treed' but non-stocked)	YES – if applicable	Contractor	If the polygon does not currently have a total of 25% crown cover of trees, and the Stocking Flag = 'YES', code the species of the regenerating tree type. If the polygon does not currently have a total of 25% crown cover of trees, but was previously tree cover and is currently not stocked due to a recent harvest or burns, enter the expected regenerating cover type or the previous cover type: TAA - Aspen TDF – Douglas Fir TLP – Lodgepole Pine TPP – Ponderosa Pine TSF– Spruce-Fir
Horizontal Diversity	YES	Contractor	Enter 'P' or 'C' (Refer to code list definitions) If the patches make up at least 20 percent of the polygon, then the polygon is considered to be patchy and not continuous.
Crown condition	YES	Contractor	Enter 'A', 'P', 'D', or 'S' (Refer to code list definitions)
Habitat Structural Stage	NO	Government	Calculated from the data collected
Tree Canopy Closure		Contractor	Used for the CANOPY survey method only. Record the total crown cover of LIVE trees within the polygon on one plane looking down, corrected for overlap. Codes 1-100.
Change Category	YES – if applicable	Contractor or Government	Record the primary reason for the significant vegetation change: H – Harvest F – Fire W – Wind I – Insect and Disease O – Other
Change Date		Contractor or government	The date of the significant change in vegetation as recorded in the Change Category
Photo Project	NO	Contractor	
Photo Date	NO	Contractor	
Lifeform/GSC	YES	Contractor	Refer to code list definitions
Layer	YES	Contractor	0 – Unknown (Shrubs Only) 1 – Top Layer 2 - Middle Layer 3 – Bottom Layer
Species Symbol	YES	Contractor	National Plants Database plant codes http://plants.usda.gov/java/

Plant Cover % (Live)	YES	Contractor	Record the % live cover. Minimum of 10% for grass, and forbs to be counted in the overall %.
Tree Size Class	YES	Contractor	Record the size of tree lifeforms – (E, S, M, L, V)
Shrub Size Class	YES	Contractor	Record the size of shrub lifeforms – (S, M, L, U). Minimum of 10% to be counted in the overall %.
Tree Dead % (Standing Dead)	NO	Contractor	Record the % of live cover lost to dead – 1-100

f. Data Format

Data recorded on paper forms shall not be accepted (except sketch maps). Data shall be provided to the Government in electronic files. An email with a zipped attached file containing walk through .TRU files, the .cse data file, self inspection documentation for each data collector, a site list showing locations, sites and plots for each crew member, and the sketch maps is preferred to avoid data corruption. With any electronic media, data must be readable by the Government's computers (Windows 10 operating system). Adjustments shall not be made for software or hardware errors that result in data error or loss of data.

R2 FSVEG Field Verification Polygon Data Form (Walkthrough) data shall be submitted in the .TRU or appropriate file format for each stand in the contract. Specific electronic file naming conventions shall be outlined during the prework meeting. A listing of all settings and plots contained in each submitted data file shall also be provided.

C.4.4. Standards

The February 2014 Common Stand Exam User's Guide and appendices shall be used. This version shall dictate the standards of data collection except when specified otherwise in this contract. In addition, the R2 Supplement to the FSVEG Spatial User Guide will be used.

C.5 Sustainable Procurement/Biobased products

The Contractor shall make maximum use of biobased oils and lubricants that are designated by the United States Department of Agriculture unless the product cannot be acquired:

- Competitively within a time frame providing for compliance with the contract performance schedule;
- Meeting contract performance requirements; or
- At a reasonable price.

Information about this requirement and these products is available at

<http://www.biopreferred.gov/>

The Federal Acquisition Regulation (FAR) requires Contractors to report the purchase of biobased products under service and construction contracts during the previous Government fiscal year (October 1 thru September 30) and to submit this report no later than:

1. October 31 of each year during contract performance; and
2. At the end of contract performance.

Information about this requirement is available at

<http://www.biopreferred.gov/FARReporting/FARReporting.xhtml>

C5.1 Sustainable products identified for this solicitation:

C5.1.1 Transportation to the job site

The main category where you can find these products on the green purchasing website is “vehicles and vehicle products.” In that category, there are several products that could be used in this contract such as: Alternative fuel vehicles and alternative fuels, engine coolants, engine crankcase oil and gasoline fuel additives etc.

The individual products available for use can be found under “Vehicles and Equipment Maintenance” and then under “Vehicle Maintenance.”

C5.1.2 Other products that may be needed or used in the execution of your needs include:

- Paper/printer ink – field forms
- Pens/pencils – field forms
- Batteries – GPS
- Other miscellaneous items
- Biodegradable flagging

All of these products can be found at

<http://www.biopreferred.gov/ProductCategories.aspx>

C.6. PERFORMANCE REQUIREMENTS SUMMARY

C.6.1. Performance Requirements Summary Table

The following describes the major items in the contract with the incentives and deductions for the work described.

Work Statement	Performance Standard	Gov't Method of Assessment	Incentive/Deduction
Stand Exam Data Collection, and Polygon Vegetation Attributing C.4.3 a-e	Quality meets or exceeds acceptable performance standard in C.4.3, Exhibits 4a-f. 90% Acceptable Quality Level (AQL) and or Pass/Fail.	COR or Government Technical Monitor conduct periodic monitoring of operations and random plot inspections consistent with QASP.	<ul style="list-style-type: none"> The Contractor's quality will be reflected in the performance evaluation either as positive or negative incentive. If Contractor achieves acceptable performance quality, the Contractor will receive unit price as incentive. If Contractor does not achieve at least acceptable performance quality, rework at no expense to the Government. If rework does not meet acceptable performance quality negative incentive would be reduced pay, termination for default, and/or adverse performance evaluation.
Quality Control E.1	Contractor maintains good quality control on all aspects of operation. Actions not consistent with contract specifications are corrected as per the Quality Control Plan.	COR or Government Technical Monitor randomly sample work and observe operations.	<ul style="list-style-type: none"> The Quality Control provided by the Contractor will be reflected in the performance evaluation as either positive or negative incentive. Achieving acceptable quality control is necessary to receive full unit price as positive incentive. If Contractor does not achieve at least acceptable performance quality, rework at no expense to the Government. If rework does not meet acceptable performance quality negative incentive would be, reduced pay, termination for default, and/or adverse performance evaluation. The Government may charge for re-inspection of a block in accordance with E.1.
	Contractor and Government passes pass-fail check of specified standards. Contractor and Government's verification scores < 5.0 and Total Score < 10.0.	COR or Government Technical Monitor randomly observe Contractor inspection per Quality Assurance Plan. Review Contractor inspection forms.	
Work Plan and Schedule F.2. and C.4.1.3	Work meets schedule as per the accepted work plan. Contractor inspection completed to meet timeframes.	COR and Government Technical Monitor conduct periodic monitoring. Government inspection completed to meet timeframes.	<ul style="list-style-type: none"> The Contractor's ability to maintain the work schedule and complete work on schedule will be reflected in the performance evaluation as either positive or negative incentive. Completing work on schedule is necessary to receive full unit price as positive incentive. Work not completed on schedule is subject to Default and may result in assessment of actual costs.

C.7. SUBMITTALS:

Document Name	Contract Section:	Due
Quality Control Plan	E.1	With technical proposal
Safety Plan	F.4	With technical proposal
Work Plan	F.2 & C.4.1.3	At prework

INSPECTION AND ACCEPTANCE

52.246-4 Inspection of Services – Fixed-Price. (AUG 1996)

E.1. Contractor Quality Control

The Contractor shall provide and maintain an inspection system acceptable to the Government covering the services under this contract. Services include field inspection, documentation on plots surveyed, electronic data supplied, and material furnished or utilized in the performance of services. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Government for six months after purchase order completion.

The Contractor shall update and follow a Quality Control Plan (QCP) and Schedule once the contract is issued. The QCP and Schedule will become a part of the awarded contract. Any changes to the submitted QCP and Schedule will be agreed to in advance by both the Government and the Contractor.

All Contractor inspection records shall be provided to the Government at the time a block of data is submitted for acceptance. All records shall be signed and dated by the person who conducted the inspection.

E.1.1. Quality Control Plan (QCP)

The Contractor shall provide a general Quality Control Plan (QCP) with the technical proposal. The QCP must demonstrate how the Contractor will meet the requirements and specifications of the contract, and that work is progressing in compliance with specifications quality (for example, demonstrating survey intensity). The Contractor's quality control inspection system shall be used in the administration of the requirements for all service work.

E.2. Government Quality Assurance Surveillance Plan (QASP)

The purpose of this plan is to provide quality surveillance for the tasks performed under this contract. This plan provides a basis for the Contracting Officer's Representative (COR) to evaluate the quality of the Contractor's performance. The oversight provided for the contract and this plan will help to ensure that quality levels of Contractor's service(s) reach the required levels of performance.

By monitoring the Contractor's service work, the COR will determine whether the performance levels set forth in the contract have been attained. Quality standards for all tasks are specified in the Performance Requirements Summary Table in Section C.6.

The Government has the right to inspect and test all services called for by the contract tasks in the contract, to the extent practicable at all times and places during the term of the contract. The Government will perform inspections and tests in a manner that will not unduly delay the Contractor(s) work.

If any of the services do not conform to contract requirements, the Government may require the Contractor to perform the service again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by reworking, the Government may:

- a. Require the Contractor to take necessary action to ensure that future performance conforms to contract requirements; and
- b. Reduce the contract price to reflect the reduced value of the services performed (see Section G.2.2)

E.2.1. Government Inspection of Services

The Government will inspect service tasks completed by the Contractor (or Subcontractor) as a basis for acceptance and payments, and to provide recommendations to improve work quality while work is in progress. The Contractor is responsible for providing quality control to assure that work complies with requirements of contract specifications.

The Government will review the inspections performed by the Contractor as well as any required paper forms and electronic data or other work submitted to determine whether the quality is sufficient for inspection for acceptance. As an initial guide, the Government may inspect up to 10% of the stands in a block submitted for acceptance and up to 5% of the plots within those stands.

An inspection block, as established by the Government, will contain a minimum of 20 plots and a maximum of 150 plots and all blocks will consist of complete stands. The **initial** inspection may be done on less than 20 plots if requested by Contractor. The Government normally starts compliance inspection of each block of completed stands within 10 calendar days of receipt. Contractor will be informed if this timeframe cannot be met.

Upon written request from the Contractor, the Government will perform one demonstration inspection of one sample plot at no cost to the Contractor as an example of inspection procedures and demonstration of potential problems. The Contractor shall accompany the Government inspector on the inspection.

All work included in the contract specifications is subject to inspections by the Government at periodic intervals throughout the performance of this contract. Treatment inspections are for the sole benefit of the Government and shall not release the Contractor of the responsibility of providing quality control measures to assure that the work strictly complies with the contract requirements.

E.2.2. Inspection of Work

The completed work shall be submitted within ten calendar (10) days after completion of each block. The Government will inspect no more than 150 plots of submitted and completed work per week.

Completed work, consisting of any required paper forms, electronic data, and sketch maps will be turned in for inspection in blocks. Inspection will only be made on completed stands. When electronic data is provided, the inspection will be based on a printout of the electronic data and/or based on the .cse files, as applicable.

E.2.3. Work Quality Percentage

Work quality percentages are derived from inspection of submitted data using the formula found as a part of each individual inspection form which are found in Section J Exhibits 4 a-f of this solicitation.

E.2.4. Acceptable Quality Level (AQL)

Acceptance of work will be based on compliance with all Specifications in Section C.4; refer to the Performance Requirements Summary in Section C.6. Work meeting the AQL described in the Requirements Summary Table will receive a satisfactory performance rating.

E.2.5. Unsatisfactory Work

If work quality falls below the AQL described in the Requirements Summary Table, the COR will issue a work order or notice of noncompliance to the Contractor in writing. Unsatisfactory deliverables shall be reworked to obtain satisfactory work quality.

In the event that work is performed that is contrary to the requirements in the contract, the Government is not liable for costs incurred by the Contractor during negligent performance that is without the fault or negligence of the Government.

E.2.6. Re-inspection

If the Pass/Fail or AQL is not being met, and a need for re-inspection of the Contractor's services arises, the following procedures will be implemented:

- If the Contractor has not met the AQL described in the Performance Requirements Summary, Section C.6 of this contract, the Contractor will be required to go back and complete missed or unsatisfactory areas.
- The Contractor will be charged for any costs of inspection of services, for which the Contractor is requesting inspection, are not ready at the time specified by the Contractor.

No charge will be made for the initial inspection. One complimentary re-inspection on the contract will be made, if needed. Thereafter, any contract re-inspection required will be at the Contractor's expense. These charges will include vehicle mileage, COR's time, and inspector's time as identified in Section G.2.3. Time expended by the Forest Service identified as the "start up, learning curve" period is not considered here. The Government will inspect service tasks completed by the Contractor (or Subcontractor) as a basis for acceptance and payments, and to provide recommendations to improve work quality while work is in progress. The Contractor is responsible for providing quality control to assure that work complies with requirements of contract specifications.

All work included in the contract specifications is subject to inspections by the Government at periodic intervals throughout the performance of this contract. Treatment inspections are for the sole benefit of the Government and shall not release the Contractor of the responsibility of providing quality control measures to assure that the work strictly complies with the contract requirements.

E.2.7. Re-inspection upon Contractor Request

If the original inspection results are not acceptable to the Contractor, a re-inspection may be requested, in writing, up to seven (7) days after receiving notification of unacceptable work. If the original inspection results in failure due to an unacceptable Form Score or Total Score, but re-inspection results in a fully passing score, then the Government assumes the cost of re-inspection. However, if the original inspection results in failure due to an unacceptable Form Score or Total Score, and re-inspection **does**

not result in a fully passing score, then the Contractor shall reimburse the Government for actual costs incurred for performing re-inspection.

E.3. Stop-Work Order. (AUG 1989)

(a) The Contracting Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop-work order issued under this clause.

Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Contracting Officer shall either -

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if -

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; provided, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon the claim submitted at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

452.211-75 Effective Period of the Contract. (FEB 1988)

The effective period of this contract is from May 1, 2022, through December 1, 2022.

DELIVERIES OR PERFORMANCE

F.1. Suspension of Work

Whenever the Contracting Officer determines that the ground conditions, winds, or combination of these and other physical conditions have become unsuitable for project to continue in any area, the Contractor shall move the work force to another area(s) prescribed by the Contracting Officer. When no other area is available, the Contracting Officer will issue a suspend work order for the bid item and contract time will stop for that item. When conditions are again favorable, the Contracting Officer will issue a verbal resume work order and confirm the resumption in writing. Contract time will resume on the effective work resumption date. In all cases, the Contractor shall resume work within 10 calendar days after the effective work resumption date. It is the Contractor's responsibility to keep the Contracting Officer currently advised as to where the Contractor or the Contractor's Representative may be reached by telephone during periods of work suspension. If the Contractor cannot be reached at the telephone number provided, or if the Contractor fails to leave a number, a written resume work order will be mailed and contract time will resume on the date specified on the resume work order.

F.1.1 Environmental

Contractors are expected to respond to sensitive resource conditions, i.e. walk to plots where road conditions are poor/wet.

Contractor needs to assure resource damage is not being caused by employees trying to access stands over wet or poor ground conditions. Contractor shall build in sufficient time in work plan for anticipated weather delays.

F.1.2 Preservation of Historical and Archeological Resources

If, in connection with operations under this contract, the Government, the Contractor, Subcontractor(s), or the employees of any of them, discovers, encounters or becomes aware of any objects or sites of cultural value on the project area, such as historical or pre-historical ruins, graves or grave markers, fossils, or artifacts, the Contractor shall immediately suspend all operations in the vicinity of the cultural value and shall notify the COR in writing of the findings. No objects of cultural resource value may be removed. Operations may resume at the discovery site upon receipt of written instructions. Actions taken under this paragraph shall be subject to the Suspension of Work clause.

F.2. Schedules for Service Contracts

If Contractor's progress falls behind progress work schedule, the Contractor shall take such action as necessary to improve his/her progress; in addition, the Contracting Officer may require Contractor to submit a revised schedule and proposed work plan to ensure completion of the work within the time set forth in the contract.

In the event of unexpected delays or the contract falling behind the 10% guideline the government may request an updated work plan. As a general rule the government would expect that the percentage of submitted and accepted data be within 10% of the contract time used. Example if the contractor has used 50% of the allotted contract time it would be expected that no less than 40% of the required data has been submitted inspected and accepted by the government.

Contractor shall schedule work to allow enough time for final inspections and any possible reworks to be completed by the contract end date.

F.3. Contract Performance Time and Required Rate of Progress.

The Contractor shall start work promptly after receipt of Notice to Proceed (NTP). Contract time will start on the date specified on the NTP. Whenever it is determined that environmental conditions become unsuitable for continued service work, the Contractor will move to another area determined by the Contracting Officer. When no other area is available, service work will cease. It is the responsibility of the Contractor to determine when conditions again permit service tasks to be completed.

The Contractor shall not begin work on the contract until the effective date of the NTP, and shall continue performance of the work under the contract without delay or interruption except for causes beyond his/her control as defined in the contract, or by the receipt of a "Suspend Work Order" issued by the Government.

F.4 Safety Plan**Safety Plan**

1. The Contractor shall provide a copy of their safety plan. This copy of the Safety plan shall be kept in the contract folder for OSHA's review.
2. The Safety Plan should be available to all employees and subcontractors working on the contract.
3. The Safety Plan should cover at a minimum:
 - a. Safety briefings covering the work area, equipment being used, and any special considerations for the work under the contract.
 - b. Personal Protective Equipment required for the work under the contract.
 - c. Identify appropriate OSHA requirements for the type of work under the contract.
 - d. Weather considerations for the time of year of the contract.
 - e. Communication issues and locations of the nearest medical facilities.
 - f. Name and point of contact information of supervisor responsible for enforcing Safety Plan.
 - g. Name, position title and point of contact information of company executive responsible for approving the Safety Plan.
 - h. Specific contingency plans for emergencies such as medical, fire, hazard material spills and any other contract assessed hazard prevention and abatement requirement needs that apply to this project.
 - i. Emergency contact information for crew personnel