

# **STATE AGRICULTURE DEVELOPMENT COMMITTEE**

## **FARMLAND PRESERVATION PROGRAM**

### **SCOPE OF WORK FOR PROFESSIONAL LAND SURVEYING SERVICES**

#### **A. REFERENCE TO LAWS:**

All survey work will be performed in accordance with New Jersey laws and administrative codes pertaining to land surveying: NJSA 45:8 et seq., NJAC 13:40-1.1 et seq. and other laws pertaining to this professional activity as may be amended or newly enacted.

#### **B. REFERENCE TO SPECIFICATIONS:**

All requirements of accuracy and standards, whether conventional surveying methods (traversing, triangulation or trilateration) or Global Positioning System (GPS) kinematic methods are used, shall meet or exceed Third Order, Class I accuracy as stated in Classifications, Standards of Accuracy and General Specifications of Geodetic Control Surveys, U.S. Department of Commerce, N.O.A.A., N.O.S., Rockville, MD., and other federal publications and standards.

#### **C. BASIS OF BEARINGS:**

The basis of bearings for all surveys will be the New Jersey Plane Coordinate System NAD 1983 unless the site-specific RFP or “Notification of Engagement” award specifies an alternate bearing system. NAD 1927 Datum may be projected/converted to NAD 1983 Datum using the Federal CORPCON, or better, software to make this conversion. The grid factor shall be applied to survey distances stated in feet to two decimal places.

**D. TYPES OF SURVEY ACTIVITIES:**

**1. CONTROL/GLOBAL POSITIONING SYSTEM (GPS) SURVEYS  
New Jersey Plane Coordinate System**

**Control/GPS surveys provide the basis of bearings for the property survey in a given project area. Only published control data obtainable from the New Jersey Department of Transportation are acceptable unless this requirement is specifically waived or modified by the using agency. In addition to labeling the north arrow, the plan must contain a factual note that explains the Establishment of the Bearing System or similar title with language that explains how the bearing system for the project area was established and identifies the state or federal control stations used. If an alternate system is specified by the using agency, the filed map number or recording information of the deed used must be stated in a note and labeled on the north arrow. All requirements of accuracy and standards whether conventional surveying methods (traversing, triangulation or trilateration) or Global Positioning System (GPS) kinematic methods are used; shall meet or exceed Third Order, Class I accuracy.**

**2. PROPERTY SURVEYS**

**The New Jersey Licensed Land Surveyor is responsible for obtaining all records, measurements, and evidence to prepare a correct and accurate land survey, for providing a reproducible copy and paper copies of the land survey plats that depict the results of the survey, and for preparing and providing the corresponding “Description of Property”, prepared on company letterhead for the deed of conveyance. All deliverables must be received by the using agency within the time specified in the Engagement Award and before the passing of the date due. All property lines of the surveyed parcel must form closed polygons: all sides must be defined by mathematical survey expressions (with angular units being degrees, minutes and whole seconds of arc and horizontal distances, vertical elevations, radii of curves, lengths of arc, and New Jersey Plane Coordinate values of Northing and Easting stated in feet to two decimal places.) All requirements of accuracy and standards, whether conventional surveying methods (traversing, triangulation or trilateration) or Global Positioning System (GPS) methods are used, shall meet or exceed Third Order, Class I accuracy as specified above. Unless otherwise directed by the using agency in any site specific RFP, a separate plan of survey and description of property shall be prepared for each tax lot or group of contiguous tax lots in common ownership. Lots that are in common ownership but are not contiguous may be grouped onto a single plan only if detail and clarity of information is not sacrificed when the scale of the plan is reduced.**

### **3. TOPOGRAPHIC SURVEYS**

**When topographic surveys are specifically requested as part of any site specific engagement, the topographic surveys, as a minimum, will be performed using conventional or GPS leveling methods that meet or exceed Third Order, Class I accuracy, and shall engage published NGVD 1988. The contour interval shown on any plans shall be ten (10) feet. Unstable spot elevations on ground positions must be stated in feet to one decimal place (0.1') and stable positions such as on monuments or concrete must be stated in feet to two decimal places (0.01') unless the specifications and guidelines being furnished with the request specify otherwise at the time that price quotes are solicited for a site specific engagement.**

### **4. WETLAND SURVEY SERVICES**

**When work-involving wetlands is specifically requested, it shall be one of two types identified at the time that price quotes are solicited for a site specific engagement:**

- a. A site-specific engagement requesting that the wetlands be “shown” on the final plan of survey. The New Jersey Licensed Land Surveyor must obtain a copy of the appropriate New Jersey Freshwater Wetlands map for the area from the office of the county recorder or clerk. The upland limit line for those areas coded “01” on the map must be reproduced and an “approximate estimate of wetlands area” in acres on the plan must be derived to one decimal place (0.1 acre). The lines may be digitized or mechanically reproduced. The areas may be derived from the digitizing process or by planimeter to within 0.5 % accuracy; or**
- b. A site-specific engagement requesting that a “wetlands survey” or “wetlands delineation” be prepared, or that the wetlands be field investigated. The New Jersey Licensed Land Surveyor shall engage an environmentalist who is proficient in New Jersey wetlands investigations who will delineate the wetland areas in the field in accordance with adopted wetlands criteria in New Jersey. The New Jersey Licensed Land Surveyor shall field locate each marked position, add the wetlands areas to the survey plan, provide areas in acres to two decimal places (0.01 acre) and label the wetlands area on the survey. Additionally, the wetlands buffer area (50 feet, 100 feet or 150 feet as indicated by the environmentalist) must be shown with areas calculated. A wetlands delineation block stating the name of the individual marking the wetlands, the name of the environmental firm, address, phone number and signature of the environmentalist responsible for the delineation as well as the date(s) of the delineation and for whom it was prepared must appear on the survey. To avoid having to sign each copy of the survey plan, the environmentalist shall sign only the original survey plat prior to any copies or prints being**

made. Other specifications and guidelines, if any are needed, shall be furnished at the time a wetlands delineation is requested as part of a site specific engagement.

**SAMPLE WETLANDS DELINEATION INFORMATION BLOCK:**

**WETLANDS DELINEATION INFORMATION**

**ENVIRONMENTALIST:**

(individual name) \_\_\_\_\_

(organization name) \_\_\_\_\_

(address) \_\_\_\_\_

(area code and phone number) \_\_\_\_\_

**DELINEATION PREPARED FOR:** \_\_\_\_\_

**DATE OF DELINEATION:** \_\_\_\_\_

\_\_\_\_\_  
Signature of Environmentalist

\_\_\_\_\_  
Date

**5. ROUTE SURVEYS**

When route surveys and corresponding descriptions of bicycle/walking/hiking trails or corridors are specifically requested as part of any site specific engagement, the survey will be performed using conventional or GPS surveying methods that, as a minimum, meet or exceed Third Order, Class I accuracy and shall be rotated into published NJGCS NAD 1983 and shown on the final survey plan. The area of the corridor shall be provided in acres to three decimal places (0.001 acre). A metes and bounds "Description of Property" shall be provided if the purpose of the survey is for a conveyance as specified in the site specific RFP. Other specifications and guidelines may be furnished at the time that price quotes are solicited for a site-specific engagement.

**6. FARMS PRESERVED UTILIZING FEDERAL FARM AND RANCH LANDS PROTECTION PROGRAM FUNDING**

For farms preserved utilizing Federal Farm and Ranch Lands Protection Program funding, the following additional requirements are mandatory.

Beginning with Federal Farm and Ranch Lands Protection Program funding allocations from Federal Fiscal Year 2004 and subsequent funding years, the property survey must include the identification of impervious surfaces. The purpose of this calculation is to identify the existing impervious surfaces on the Premises. The Deed of Easement will identify the percent of impervious surface existing on the Premises at the time the development easement is conveyed and the maximum percent of impervious

surface permitted pursuant to the federal restrictions. The survey plat will serve as a baseline for future reference.

As a notation on the survey plat, the surveyor must identify and calculate the area of impervious surface that exists on the Premises. The surveyor must "highlight" the area that is used to calculate the impervious surface and identify the area in "square feet" and "acres".

The following definition must also be shown on the plat:

"Impervious Surface is defined as permanent, non-seasonal rooftops, concrete and asphalt surfaces including residential buildings, agricultural buildings (with and without flooring), and paved areas located on the Premises. Conservation practices listed in the United States Department of Agriculture's Natural Resources Conservation Service Office Technical Guide are not considered impervious surface".

**7. GEOGRAPHIC INFORMATION SYSTEM/LAND INFORMATION SYSTEM (GIS/LIS) SURVEY COVERAGE DATA DEVELOPMENT**

One digital survey file containing only selected spatial features is required. The file must be a CADD drawing. Only the following selected features are to be included in the digital file: the farmland preservation easement boundaries, all internal lot lines, all exception boundaries, and a limited text block. The file must be in .dxf format. The file must be drawn at its real New Jersey State Plane Coordinate System (NJSPCS) coordinates in the North American Datum of 1983 (NAD83). The view must be unrotated so that the NJSP coordinate North points orthographically up (vertical) on the computer screen. The polygon(s) shall be created from the coordinate geometry of its survey point of beginning through the final course of survey and terminus point. To provide a uniform method of completing the closure of the surveyed polygons without degrading the quality of the NJSPCS surveyed bearings used, the acceptable radial error of survey closure in a zero tolerance data environment shall be entered as a final closing arc between the survey point of beginning and the survey point of ending as an additional course. Within the same layer, text annotation of the following must appear:

*Property Owner  
Project Name and Administrative Authorization Number  
Municipality, County with Tax Block & Lot Number (each lot)  
Survey Firm, Surveyor's Name and NJPLS License Number  
Date of Survey and Date of Last Revision  
Area of Lot in Acres (each lot)  
NAD used*

The closed line work polygon is drawn with only the limited text annotation added to the same layer. The file must be void of color, symbol or special text codes and in a single layer.

One digital survey file containing the full survey is required. The file must be in .dxf format. The file must be drawn at its real New Jersey State Plane Coordinate System (NJSPCS) coordinates in the North American Datum of 1983 (NAD83). The view must be unrotated so that the NJSP coordinate North points orthographically up (vertical) on the computer screen. The polygon(s) shall be created from the coordinate geometry of its survey point of beginning through the final course of survey and terminus point. To provide a uniform method of completing the closure of the surveyed polygons without degrading the quality of the NJSPCS surveyed bearings used, the acceptable radial error of survey closure in a zero tolerance data environment shall be entered as a final closing arc between the survey point of beginning and the survey point of ending as an additional course.

Additional specifications and guidelines for a specific data collection activity may be furnished at the time that price quotes are solicited for a specific engagement.

## **8. OTHER SURVEYS**

When other types of surveys such as ALTA Land Title Surveys or other professional surveying or geographic/land information system services are requested, specifications and guidelines will be furnished at the time that price quotes are solicited for a specific engagement.

## **E. GENERAL REQUIREMENTS OF THE PROPERTY SURVEY PLAT**

### **1. MATHEMATICAL CLOSURE**

All property surveys must form closed polygons with all sides defined by mathematical survey expressions (bearings and distances on all straight line segments/tie lines; radius, arc length, delta, chord bearing and chord distance on all curved lines.) General calls along roads or waterways are unacceptable. Tie lines are to be provided along waterways, and riparian claim lines.

### **2. AREA**

The area of a parcel being surveyed is generally to be stated in acres. The area is to be rounded to the nearest one one-thousandth acre (0.001 ac.) unless said parcel is bounded, all or in part, by a waterway or a riparian claim in which case the area will be rounded to the nearest one tenth acre (0.1 ac.). If the entire parcel is less than one (1) acre, the area shall be stated in square feet as well as acres. If the total area surveyed is less than one one-

thousandth acre (0.001 ac.), then the area is to be stated in square feet only and rounded to the nearest square foot.

**3. AERIAL PHOTOGRAPHS AND PLANIMETRIC MAPPING**

Aerial photographs or planimetric maps or manuscripts, when used to locate physical features upon the survey plat, will be controlled, conforming to National Map Accuracy Standards and be current to within two (2) years of the date of the survey plat, unless this time restriction is modified by the using agency. "Aerial Information" block shall be placed on the plat whenever aerial data has been used.

**SAMPLE AERIAL INFORMATION BLOCK:  
AERIAL INFORMATION**

**TAKEN BY:** *(organization)*

**REFERENCE:** *(file number or identification)*

**DATE OF FLIGHT:** *(within 2 years of plat)*

**SCALE:** *(stated as a ratio, 1:xxxxx)*

**4. CLOUDED TITLE AREAS**

The New Jersey Licensed Land Surveyor is responsible for obtaining all records, measurements and evidence to prepare a correct and accurate land survey. As a result of this research, the survey may uncover areas of clouded title such as deed gores, deed overlaps and areas left unclear as to ownership due to deed ambiguities. Although the New Jersey Licensed Land Surveyor may be able to render a professional opinion as to how a deed problem was created, the surveyor is only responsible to show on the plan of survey the record condition as it now exists. Areas of confusion are to be located by bearings and distances and the area is to be clearly stated. The plat of a parcel being acquired must show the total area surveyed, subject to an area of confusion with an adjoining area for which the tax lot and block numbers are given. Any "Apparent Deed Gore", "Apparent Deed Overlap" or "Clouded Title Area" shall be labeled on the plats of all adjoining areas as an area of confusion being surveyed, including all bearings, distances, and area. The description of property may be written "subject to" an area of overlap, or the using agency may require that a separate metes and bounds description be prepared. Apparent gore areas found to exist as a result of the survey shall always be described by a separate metes and bounds description to provide the using agency the opportunity to obtain a quit claim deed.

**5. AREAS OF CLAIM OF RIPARIAN OWNERSHIP BY THE STATE OF NEW JERSEY**

The New Jersey Licensed Land Surveyor is responsible for obtaining the official state maps showing riparian claims of the state of New Jersey and

reproducing these claim lines on the survey plat. The area of the New Jersey claim is to be stated in acres to one-tenth acre (0.1 ac.). The sources to be used will be maps entitled, "Lands Subject To Investigation for Areas Now Or Formerly Below Mean High Water", which have been filed in the office of the county recorder or clerk. Contact the Land Use Regulation Program for further information.

## **6. WATERWAYS**

The New Jersey Licensed Land Surveyor is responsible for providing mathematical tie lines for survey courses that follow a waterline. The plan must clearly state the date/time of survey, the "Apparent Mean High Water", "Mean Low Water" or other acceptable survey terms as may be appropriate (the term "trash line" is not an appropriate nor an acceptable survey term). The tie lines may be eliminated from the plan when the waterline is surveyed and/or defined by mathematical survey expressions with angular units being stated in degrees, minutes and whole seconds of arc, and the horizontal distances, radii of curves or lengths of arc are stated in feet to two decimal places.

Pursuant to the State Agriculture Development Committee (SADC) Policy P-3-A Supplement, the acreage contained in permanent bodies of water such as ponds and lakes, perennial rivers and streams, which serve as a property boundary within the premises must be calculated and reflected in the survey. The licensed surveyor's best estimate of the water area contained within the premises can be determined by taking the average width and length of the stream or river. No legal metes and bounds description is needed for the sole purpose of establishing the area of the water body, stream or river in question.

This calculation is not required on that portion of the permanent body of water, river or stream affected by the following conditions:

1. If the surveyor has certified on the survey plat that the average width of the stream or river is so insignificant that it becomes impractical to calculate the area.
2. If the property line is situated so that the premise does not include the permanent body of water, the stream or the river.
3. If the permanent body of water, stream or river is bounded on both sides by lands contained within the premises.

## **7. ROADS**

The New Jersey Licensed Land Surveyor is responsible for preparing a survey and corresponding metes and bounds description, which cannot in any way be construed as modifying the apparent intention of the parties. Road rights-of-way and the principals of dedication of land for road purposes shall not be taken lightly by the surveyor. The lines of surveys prepared for the acquisition of land are to run with the lines of the deed

**description as written in the record unless the site specific engagement request directs some other course of action. If the fee title extends to the center of a public road, the survey lines should run to the center of the public road. The survey must also provide the bearings and distances of the right-of-way sidelines, as well as the area of the public right-of-way. The area in the right-of-way is subject to the paramount rights of the public and possible private rights and the area shall be stated as a separate item on both the plat and in the description. If there has been no dedication to define the sidelines of the right-of-way, the area of the right-of-way is defined as the area of the paved or traveled portion of the roadbed. Private roads crossing the parcel being surveyed must also be shown. The survey must indicate recording information for maps, deed book number and page number, or other pertinent information regarding the dedication of public ways or private easements.**

**Pursuant to SADC Policy P-3-A Supplement, in the event the survey of the premises extends to the middle of the road and contains the existing and/or proposed rights-of-way, the surveyor must provide the calculation of the acreage, resulting in the net acres of the area under the development easement. Furthermore, the area of the proposed rights-of-way must be described and excepted from the premises.**

## **8. EXCEPTIONS**

**Exceptions are portions of the applicant's land holdings, which are not to be encumbered by the deed restrictions. If the county intends to impose restrictions on "excepted" parcels, the bearings and distances of the "excepted" parcels shall be shown on the plat. A legal description of the "exception" is required and the acreage shall be shown on the plat and in the Area Summary. If the "exception" is not contained within the premises or will not be restricted, the "exception" does not have to be shown on the survey or contained in the metes and bounds description.**

## **9. SUBDIVISION OF LANDS**

**The State of New Jersey and, as an extension thereof, state-using agencies, is exempted from municipal subdivision ordinances. Other entities, such as municipal, county or non-profit groups operating under the Green Acres Program, Bureau of Green Trust Management or county agricultural programs that may be using this Scope of Work for Professional Surveying Services may not be exempted. The New Jersey Licensed Land Surveyor is responsible for determining if the Ultimate User is in fact the State of New Jersey. If not, the municipal subdivision laws apply and may supersede some of what is hereinafter provided. A part of a lot, intended to be acquired, is sometimes referred to as a "Partial Taking", the limits of which must be clearly labeled on the plan. The bearings and distances of the dividing line must be shown on the plat. The "Area to be Acquired" and the "Area to Remain" must be clearly labeled, and the areas stated in acres**

must be provided on the plan. When the original lot to be surveyed is ten (10) acres or less, the entire lot shall be surveyed and shown on the plat. When surveying the partial taking of a lot originally in excess of ten (10) acres, the plat need only show physical features and improvements of the "Area Remaining" within 500 feet of the dividing line. To visualize and understand the effect of the partial taking, the plat must show the entire lot, even if the "Area Remaining" is not surveyed but is determined from tax map or deed data. The surveyor must indicate the percent of area being acquired. Certification blocks required under the "Map Filing Law" shall be eliminated from subdivision plans prepared for state using agencies.

#### **10. MATHEMATICAL SURVEY EXPRESSIONS**

The New Jersey Licensed Land Surveyor is responsible for defining all courses of the parcel being surveyed by mathematical survey expressions. All straight line courses will be defined by bearings and distances with angular units stated in degrees, minutes and whole seconds of arc. Curves will be defined by radius, arc length, chord bearing and chord length, and the horizontal distances, radii of curves or lengths of arc must be stated in feet to two decimal places.

#### **11. LEGEND OF ACQUISITION**

The New Jersey Licensed Land Surveyor is responsible for providing a standard title block as required by the State Board of Professional Engineers & Land Surveyors. In addition to the surveyor's standard title block, all plats must contain the following "Legend of Acquisition", listing each lot surveyed and providing an "Area Summary" for each lot surveyed. The "Area Summary" shall list individual lot areas for categories as appropriate. Repetition of lot numbers may be necessary to insure that all area within each lot is accounted for.

## SAMPLE “LEGEND OF ACQUISITION” BLOCK:

### LEGEND OF ACQUISITION

PURPORTED OWNER: \_\_\_\_\_ OWNER ID No. \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

PROJECT

NAME \_\_\_\_\_ ADMIN. AUTH. No. \_\_\_\_\_ SURVEY REF. No. \_\_\_\_\_

*(repeat the following as needed, deleting any unused/inappropriate headings)*

BLOCK \_\_\_ LOT \_\_\_ INTEREST *(percentage to be acquired in fee and/or easement to be obtained)*

ACRES \_\_\_\_\_

SUBJECT TO:

ACRES IN ROAD \_\_\_\_\_ ACRES OF NJ CLAIM \_\_\_\_\_ ACRES OF OVERLAP \_\_\_\_\_

ACRES WATER *(exclusive of area included in NJ CLAIM above)* ACRES CLOUDED \_\_\_\_\_

MUNICIPALITY \_\_\_\_\_ COUNTY \_\_\_\_\_

AREA SUMMARY:

TOTAL AREA ACQUIRING \_\_\_\_\_ ACRES

TOTAL EASEMENT AREA TO BE OBTAINED \_\_\_\_\_ ACRES

TOTAL AREA IN ROAD \_\_\_\_\_ ACRES

TOTAL AREA NJ CLAIM \_\_\_\_\_ ACRES

TOTAL AREA OVERLAP \_\_\_\_\_ ACRES

TOTAL AREA UNDER WATER (OUTSIDE NJ CLAIM) \_\_\_\_\_ ACRES

TOTAL AREA CLOUDED TITLE \_\_\_\_\_ ACRES

## 12. CORNER MARKING

The New Jersey Licensed Land Surveyor is responsible for determining the ultimate user of the survey, the survey plat and the corresponding description(s) as defined by the New Jersey State Board of Professional Engineers and Land Surveyors. For the purposes of this State Board rule, the “Ultimate User” shall be considered the Using Agency, generally the client, except when this Scope of Work for Professional Land Surveying Services is being used by the seller of a property to hasten the acquisition process. To clearly define where corner markers must be set and where they may be omitted, the following shall apply:

- a) Corner markers must be set at the limits of a project area where the limits adjoin private lands not being acquired as a part of the project. This shall apply to fee acquisition and easement area acquisitions for both public access and non public access easements, unless this requirement is modified by the using agency at the time that a site-specific engagement is requested.
- b) Corner markers shall be omitted when corners are common to other lands owned by the using agency, are within a project area limits, or are surrounded by other lands being acquired as part of the overall

project being surveyed, unless, in the professional judgment of the surveyor, they should be set. Corner markers that are omitted must be identified on the plan as omitted by contractual agreement using the language required by the State Board of Professional Engineers and Land Surveyors. (See N.J.A.C. 13:40-5.1/d).

- c) A detail of the stamping or casting of each type of cap, disk, shiner, etc., actually set to mark corners shall be drawn on the survey plan and shall be stamped with the name of the survey firm and include the month and year set.
- d) At the time of the survey, any corner location that is found to be inaccessible must be set as an offset on line. The marker must be set on line as near to the corner as is practical, stamped "OFFSET" on the cap, and clearly identified on the plan as having been set back from the corner, with the actual distance to the corner clearly labeled.
- e) To maintain the coordinate system for potential future surveys or resurveys, the surveyor must set a minimum of two concrete monuments, visible from one to another whenever possible, at each grouping of contiguous parcels in a project area. One monument is to be selected as a description point of beginning and the NJPCS Northing and Easting values must be stated. If the corner selected to be the "Description Point of Beginning" was previously marked, then a monument must be set on an alternate corner to maintain the two monument minimum requirement.
- f) Corner markers that are found in the field to be within a radius of 1.5 feet of the true corner calculated by the surveyor, shall be presumed to mark the corner and no new corner marker shall be set. The plan of survey shall clearly indicate the two offset distances (north or south and east or west) of the found marker from the true calculated corner per the surveyor 's calculations.

### 13. CERTIFICATION

The New Jersey Licensed Land Surveyor is responsible for the work that is produced under signature, seal and certification. The following certification must appear on the plan of survey:

**I hereby certify to {at this place, the surveyor is directed to insert the State of New Jersey, or, in the event this standardized Scope of Work for Professional Land Surveying Services is used by another agency, then 'to' that using agency/ultimate user} and on their behalf, to their title insurer that this plan is based on an actual field survey conducted under my immediate supervision and that this survey meets or exceeds the federal requirement for Third Order, Class I Accuracy. I further declare, to best of my professional knowledge and belief, that**

**this plan is a correct and accurate representation of conditions existing on the site as of (*month / year*), subject to such notes as may appear hereon.**

\_\_\_\_\_  
**Signature of Surveyor**

\_\_\_\_\_  
**Date Signed**

\_\_\_\_\_  
**New Jersey Licensed Land Surveyor No.**

**14. LOCATION MAP**

**A location map must be provided in the upper right hand corner of the plat indicating the site. A portion of a U.S.G.S. Quadrangle 1" = 2000' is preferred and if used, the name of the quad is to be stated. The scale, north arrow and "site" must be shown.**

**15. PLAT SIZE**

**The final survey plat is to be prepared or reproduced on 8 ½ " X 14" (Legal Size) paper or folded to size with the Standard Title Block facing up. Clarity of information will determine the actual size of the plat, however standard sizes in accordance with the "Map Filing Law" are required. Paper copies of the survey that are submitted in a tube or rolled without being of the proper folded size are not acceptable. The reproducible or sepia type Mylar also required must be submitted in a tube or rolled without any creases. If it is necessary to produce a booklet type plan of the area surveyed, the first sheet or cover sheet of any such booklet must be an index to show alignment with the remaining sheets of the survey. Each sheet must contain the required elements of the survey such as title block, north arrow, signature and seal, etc.**

**16. MISCELLANEOUS ITEMS ON PLAT**

**The New Jersey Licensed Land Surveyor is responsible for presenting all of the findings on the final survey plat. In addition to all the State Board of Professional Engineers and Land Surveyors requirements and those previous requirements specified above, the surveyor must show the following items:**

- a. Street address of the subject parcel being surveyed only if the municipality has assigned a common street number;**
- b. Tax Block and Lot number of the parcel being surveyed and those of adjoining;**
- c. Any permanent type buildings, paved or concrete improvements or structures. Residential units, farm buildings and other structures must be labeled on the survey plat. In particular, there should be a**

**distinction between single family, multi-family or duplex residential units used to house agricultural labor.**

- d. Any utility easements, visible or known of record, overhead wires or pole lines within the parcel being surveyed (except that those within a dedicated public road right-of-way may be omitted);**
- e. Encroachments clearly drawn, labeled and dimensioned. A detail of the encroachment may be necessary to clearly show sheds, buildings or structures.**
- f. Watercourses, including the name and showing the direction of flow and area contained must be drawn and labeled on the plan.**
- g. Drains and sewers that are visible on the surface of and within the limits of the parcel. Drains and sewers within a dedicated public road right-of-way need not be shown;**
- h. The name of record owners and the latest deed book and page reference for adjoining lands to indicate that those records had been examined in the survey process and that there are no areas of confusion in the record, except for those that may be shown on the plan, if any;**
- i. Roads not open are to be so indicated. Paper streets that have not been vacated are subject to possible public and or private rights and the area contained by them must be indicated on the plan;**
- j. If the survey indicates that the municipal tax map erroneously locates the parcel, this discrepancy should be noted on the plat;**
- k. The deed book and page number of the reference deed actually used must be indicated somewhere on the plan in a factual way.**

**These items shall not be excluded or limited in appearance through the use of notes except that the surveyor may limit his search of records to the obvious and reasonable and may produce a plan noting that the work is subject to the findings of an accurate and up-to-date title search by a competent title company.**

## **17. POINT OF BEGINNING**

**The point of beginning used in the metes and bounds description must be clearly labeled “Description Point of Beginning” or “P.O.B.” (or similar) and must be tied into a corner of record or road intersection. The NJPCS NAD 1983 Northing and Easting coordinate values stated in feet to two decimal places must be labeled on the plan and stated in the description. The surveyor must set a concrete monument at the point of beginning for**

each parcel, unless this requirement is waived or modified by the using agency at the time that the bids for a site-specific engagement are solicited.

#### **18. FARMS PRESERVED UTILIZING FEDERAL FARM AND RANCH LANDS PROTECTION PROGRAM FUNDING**

For farms preserved utilizing Federal Farm and Ranch Lands Protection Program funding, the following additional requirements are mandatory.

Beginning with Federal Farm and Ranch Lands Protection Program funding allocations from Federal Fiscal Year 2004 and subsequent funding years, the property survey must include the identification of impervious surfaces. The purpose of this calculation is to identify the existing impervious surfaces on the Premises. The Deed of Easement will identify the percent of impervious surface existing on the Premises at the time the development easement is conveyed and the maximum percent of impervious surface permitted pursuant to the federal restrictions. The survey plat will serve as a baseline for future reference.

As a notation on the survey plat, the surveyor must identify and calculate the area of impervious surface that exists on the Premises. The surveyor must "highlight" the area that is used to calculate the impervious surface and identify the area in "square feet" and "acres".

The following definition must also be shown on the plat:

"Impervious Surface is defined as permanent, non-seasonal rooftops, concrete and asphalt surfaces including residential buildings, agricultural buildings (with and without flooring), and paved areas located on the Premises. Conservation practices listed in the United States Department of Agriculture's Natural Resources Conservation Service Office Technical Guide are not considered impervious surface".

#### **F. DEED DESCRIPTION FORMAT**

The New Jersey Licensed Land Surveyor is responsible for preparing a separate metes and bounds type "Description of Property" from the survey plan. This description is to agree with the results of the survey in every particular and for that reason; the description must not include any information, which does not appear graphically or in a factual note on the survey plat. One description may include several contiguous tax lots in common ownership grouped together into one or more "survey tracts". The description must be prepared in accordance with the following:

**1. SURVEYOR'S LETTERHEAD**

The New Jersey Licensed Land Surveyor shall prepare an original metes and bounds type description of property, separate and apart from the prepared final plan of survey and must be submitted on an original company letterhead 8 ½ "in width by 11", 13" or 14" in length. The media is to be a good quality paper, not legal left edge lined paper or plain paper.

**2. HEADING OF DESCRIPTION**

All headings must appear at the top of the page, but below any company logo, address, or name. The heading must read as shown below:

**DESCRIPTION OF PROPERTY**

*(Administrative authorization number and project name)*

*(Municipality)*

*(Date)*

*(County)*

*(Block\_\_\_\_, Lot\_\_\_\_)*

**Lands N/F** *(Purported owner)*

*(Street address)*

**3. FIRST PARAGRAPH OF DESCRIPTION**

The first paragraph of the metes and bounds description must begin:

“All that certain tract or parcel of land located at *(Street Address)* in the *(City, Borough, Town, or Township)* of \_\_\_\_\_, County of \_\_\_\_\_, New Jersey, bounded and described as follows:”

**4. SECOND PARAGRAPH OF DESCRIPTION**

The second paragraph will describe the point of commencement, if any, leading to the beginning point, including its New Jersey Plane Coordinates (NAD 1983) or bearing system used similar to the following:

Commencing at the intersection of the westerly line of *First Street (xx feet wide R.O.W.)* with the Northerly line of *Kings Highway (99 feet wide R.O.W.)* and on a New Jersey Plane Coordinate System NAD 1983 (NJPCS) bearing of South 0X degrees 0X minutes and 0X seconds West, a distance of *xxx.xx feet* to the TRUE POINT OF BEGINNING, (said beginning point having NJPCS values *N xxx,xxx.xx feet* and *E xxx,xxx.xx feet*), and from said beginning point and in the said bearing system running, thence:

**5. BODY OF DESCRIPTION**

The New Jersey Licensed Land Surveyor shall prepare the description in his own style from information that is shown on the final plan of survey. No information shall be provided in the description that does not appear drawn

graphically or provided in a note form on the plan. All courses of the description must be numbered in sequence. To avoid having the description state that the bearings are in the "reverse" of those shown on the plan some bearings appearing on the plan shall be labeled in each direction (i.e. NE and SW or NW and SE).

**6. QUALIFYING AND AUGMENTING CLAUSES SHALL BE INCLUDED WHERE REQUIRED**

The surveyor is reminded that an easement of access that will be acquired with the surveyed parcel should be written in the description as a conveyance "together with" an easement for access whereas an easement of access that benefits the adjoiner should be written in the description as a conveyance "subject to an easement for access containing xx.xx acres." The description of property where a mapped claim of the State of New Jersey is not used as the property line in the survey must state, "The total area of the surveyed parcel contains xxx.xxx acres, subject to a riparian claim of the State of New Jersey containing xx.x acres." Alternately, if the claim is cut out of the lines of the survey and the survey binds along the riparian claim of the State of New Jersey, the description must state that the parcel is being conveyed "together with a riparian grant from the State of New Jersey containing xx.x acres, subject to" the conditions stated in the grant.

**7. AREAS OF THE SURVEY MUST BE STATED**

The area(s) of the parcel(s) must be clearly stated in the description as well as on the plan of survey. If there is more than one lot included in the surveyed parcel, state the total area of the survey and the area for each included lot according to the categories indicated on the Surveyor's Certification and Summary Form. In addition, state separate areas for other possible reasons, if any, as indicated in the above clauses.

**8. FINAL PARAGRAPH OF DESCRIPTION**

To provide a uniform closing "call for survey" the final paragraph in all descriptions must read as follows:

The above description was written pursuant to a survey of property designated as Block \_\_\_\_\_, Lot \_\_\_\_\_, on the municipal tax map of (\_\_\_\_\_*municipality name*\_\_\_\_\_), County of (\_\_\_\_\_*county name*\_\_\_\_\_), State of New Jersey. Said survey was prepared by (\_\_\_\_\_*Your firm's name and address*\_\_\_\_\_), (\_\_\_\_\_*date*\_\_\_\_\_), revised through (\_\_\_\_\_*last revision date, if any*\_\_\_\_\_) and is marked as file No. \_\_\_\_\_.

**9. SIGNATURE AND SEAL OF THE NEW JERSEY LICENSED LAND SURVEYOR**

The separate metes and bounds “Description of Property” must bear the original ink signature and embossed seal of the surveyor who prepared the survey plan. A rubber stamp facsimile or mechanically reproduced signature is not acceptable.

**G. NEW JERSEY LICENSED LAND SURVEYOR**

**1. ORIGINAL SIGNATURE AND SEAL**

All survey plans and the original description must be signed and sealed by a New Jersey Licensed Professional Land Surveyor responsible for the work who is a member of the survey firm under contract. To insure that the plan is the product of the licensee, the signature must be the original signature in ink on each copy of the plan of survey and original description. A rubber stamp or computer-generated signature is unacceptable.

**2. RESEARCH**

The New Jersey Licensed Land Surveyor is responsible for obtaining sufficient documentation and evidence to render a survey plat, which is correct as well as accurate to the stated specifications and standards. The using agency will not withhold information from the surveyor; for site specific bidding purposes, the surveyor shall conduct all research required to complete the work by the due date.

**3. FIELD PROCEDURES AND CREW RESPONSIBILITIES**

The New Jersey Licensed Professional Land Surveyor shall be responsible for the work of all survey crews operating from the firm. The crew shall endeavor to cause as little inconvenience as possible to property owners when conducting the field survey. Whenever possible, random traverse lines shall be run within the property being surveyed rather than upon the lands of an adjoiner. If traverse lines are run upon the lands of an adjoiner, no clearing of lines shall be conducted without the prior written consent of the party whose name appears as the property owner as indicated in the tax rolls of that municipality. Copies of the consent must be forwarded to the using agency. Painting and flagging evidence shall be kept to a minimum whenever possible. Littering or damaging the property may subject the offenders and licensee to possible civil action. Large trees shall not be cut to clear line without the prior consent of the using agency. Brushing-out of lines shall be kept to a minimum. The surveyor is responsible for compliance with regulations, including procuring of permits with regard to disturbance of wetland vegetation.

#### **4. COST ESTIMATING**

**The New Jersey Licensed Professional Land Surveyor shall be responsible for preparing accurate proposals to cover all projected costs associated with the completion of work in accordance with the contract to the satisfaction of the using agency. Failure on the part of the New Jersey Licensed Professional Land Surveyor to adequately project costs will not be accepted as justification for “additional work” payment requests.**

#### **H. NOTIFICATION OF PARTIES AND SURVEYORS RIGHT OF ENTRY**

**Pursuant to the “Underground Facility Protection Act”, NJSA 2C:17-5, three business days prior to starting a job where digging to look for corner markers or the setting of new corner markers will be required, the New Jersey Licensed Land Surveyor shall call 1-800-272-1000 for a mark out of underground utilities on any affected properties. Pursuant to the Surveyor’s Trespass Law, NJSA 45:8-44.1, the New Jersey Licensed Land Surveyor has the authority to go on, over and upon lands of others during reasonable hours to make a land survey. Pursuant to the provisions for “Preliminary Entry” of the Eminent Domain Statute, NJSA 20:3-16, agent surveyors of a prospective condemner may enter lands during reasonable business hours to make a land survey. Upon State Agriculture Development Committee authorization, land surveyors may enter on any lands for the purpose of making surveys or other inspections. The New Jersey Licensed Land Surveyor shall be responsible for sending written notice 10 days prior to entry unless waived by the using agency to the property owner or designated representative and occupant, if any, and any adjacent property owner upon whose land it may be necessary to enter to complete the survey. The notices shall be prepared on company letterhead with a copy being sent to the using agency and to the local police department(s) where the job is located. The original notifications must be sent via the United States Postal Service as Certified Mail, Return Receipt Requested and must read substantially in accordance with the following format:**

**SAMPLE NOTIFICATION LETTER:**

*to*

*date*

**RE:** *Administrative Authorization No.* \_\_\_\_\_ *Project Name* \_\_\_\_\_  
*Municipality, County*  
*Tax Block and Lot Numbers*  
*Street Address or location*  
**Survey Reference No.** \_\_\_\_\_

**Dear** \_\_\_\_\_ :

**Our firm is under contract to provide Professional Land Surveying Services to** ( \_\_\_\_\_ *using agency* \_\_\_\_\_ ) **in connection with the above referenced land acquisition project.**

**In order to perform the land survey, our staff must gather field evidence, make measurements and obtain data relative to existing physical characteristics and conditions of the lands being surveyed and sometimes on those lands, which adjoin the project area as well. It is therefore necessary for our land survey crew to enter upon your property for this purpose.**

**Be advised that there are several laws that provide specific authority for land surveyors to enter property for the purpose of making surveys and this letter is being provided to you as written notice that members of this office will be on your property during the period between ( \_\_\_\_\_ time period \_\_\_\_\_ ) and ( \_\_\_\_\_ time period \_\_\_\_\_ ).**

**Your cooperation in this success of this engagement is important to us. We would greatly appreciate you loaning to us copies of any prior surveys or deed documents that you may have in your possession that would assist in the completion of this project. Please call me here at the office to advise if you have any such documents.**

**If you have any questions concerning this project, please call ( \_\_\_\_\_ *project coordinator identified in the site specific RFP* \_\_\_\_\_ ) who can be reached by calling ( \_\_\_\_\_ *area code and phone number* \_\_\_\_\_ ). While the work is being performed, we will make every effort to cause as little inconvenience as possible.**

**Very truly yours,**

*Name and signature of New Jersey Licensed Land Surveyor*

*c. ( \_\_\_\_\_ *project manager, using agency* \_\_\_\_\_ )  
( \_\_\_\_\_ *municipal police department* \_\_\_\_\_ )*

## **I. DELIVERABLES**

**The New Jersey Licensed Land Surveyor is responsible for submitting all deliverable work products on or before the date specified in a site specific engagement to the using agency or such other location as may be specified in the site specific RFP. As appropriate for the type of survey ordered, the deliverables shall include all of the following or such other items as may be directed in the site specific RFP:**

- 1. Copies of all written notices sent to the property owners or designated representatives and occupants, if any, and adjacent property owners upon whose land it may have been necessary to enter to complete the survey. The notices shall have been prepared on company letterhead and a copy sent to the municipal police department;**
- 2. A computer printout of the coordinate geometry (COGO) survey data files demonstrating that the mathematical survey expressions used to define the parcel as used on the plan and in the description of the property form a closed polygon and verify that the areas as stated are correct. The precision of the survey must be stated and the bearing and distance of the radial error of closure of the adjusted survey (distance from the terminus of the final course to the point of beginning) must be given;**
- 3. Six (6) signed, sealed and dated paper copies of the survey plat depicting the results of the field and record investigation and survey. These plans must be folded to approximately 8 ½ " x 14" with the title block facing up prior to being submitted;**
- 4. One (1) full size original type Mylar of the survey plat which must be dated, bear the original signature and embossed sealed of the Licensed Land Surveyor and must be suitable for recording in the county. This plan may be submitted to the using agency rolled and in a tube;**
- 5. One (1) 8 ½ " x 11" photographically reduced copy of the survey plan which shall be reproduced onto Mylar. This reduced copy should not be bent or folded and may be submitted between cardboard sheets. This sheet must be a true reduction of the original plan as submitted and may not be altered in order to provide clarity of data. (It is understood that data appearing on this plan may not be entirely legible. This plan is not to be sealed with the embossed seal of the New Jersey Licensed Land Surveyor);**
- 6. Six (6) originals of the metes and bounds "Description of Property" that corresponds to and has been derived from the plan of survey. Each description must be prepared on original company letterhead (8 ½ " x 11" or 8 ½ " x 14") and must bear the original signature and must bear the raised impression type seal of the New Jersey Licensed Land Surveyor who has prepared the description and plat. The description must**

not contain information not also stated in a factual note or shown graphically on the survey plan;

7. Six (6) paper copies of the original 8½ " x 11" photographically reduced survey plan. These reduced copies should not be bent or folded and may be submitted with the original reduced plan between cardboard sheets.
8. For each property to be surveyed, two digital survey files are required for GIS use. One file will contain selected spatial features and one file will contain the full survey.
  - a. One digital survey file containing only selected spatial features is required. The file must be a CADD drawing. Only the following selected features are to be included in the digital file: the farmland preservation easement boundaries, all internal lot lines, all exception boundaries, and a limited text block. The file must be in .dxf format. The file must be drawn at its real New Jersey State Plane Coordinate System (NJSPCS) coordinates in the North American Datum of 1983 (NAD83). The view must be unrotated so that the NJSP coordinate North points orthographically up (vertical) on the computer screen. The polygon(s) shall be created from the coordinate geometry of its survey point of beginning through the final course of survey and terminus point. To provide a uniform method of completing the closure of the surveyed polygons without degrading the quality of the NJSPCS surveyed bearings used, the acceptable radial error of survey closure in a zero tolerance data environment shall be entered as a final closing arc between the survey point of beginning and the survey point of ending as an additional course. Within the same layer, text annotation of the following must appear:

*Property Owner  
Project Name and Administrative Authorization Number  
Municipality, County with Tax Block & Lot Number (each lot)  
Survey Firm, Surveyor' s Name and NJPLS License Number  
Date of Survey and Date of Last Revision  
Area of Lot in Acres (each lot)  
NAD used*

The closed line work polygon is drawn with only the limited text annotation added to the same layer. The file must be void of color, symbol or special text codes and in a single layer.

- b. One digital survey file containing the full survey is required. The file must be in .dxf format. The file must be drawn at its real New Jersey State Plane Coordinate System (NJSPCS) coordinates in the North American Datum of 1983 (NAD83). The view must be unrotated so that the NJSP coordinate North points orthographically up (vertical) on the computer screen. The polygon(s) shall be created from the

**coordinate geometry of its survey point of beginning through the final course of survey and terminus point. To provide a uniform method of completing the closure of the surveyed polygons without degrading the quality of the NJSPCS surveyed bearings used, the acceptable radial error of survey closure in a zero tolerance data environment shall be entered as a final closing arc between the survey point of beginning and the survey point of ending as an additional course.**

**Digital files for GIS must be on a Windows compatible 3.5 inch diskette or Windows compatible CD ROM. The files are to be named using the first eight letters of the property owner 's name unless multiple files are combined in a project area. If this is the case, then use the first eight letters of the project name.**

- 9. One (1) completed "Surveyor 's Certification and Summary Form", bearing the original signature and date signed, and the embossed seal of the New Jersey Licensed Land Surveyor who prepared the survey, survey plat and "Description of Property." The form shall be prepared on 8½ " by 14" single sided white paper of good quality and must accompany all other deliverables:**

{At this heading, insert the full name of the using agency. For example:}  
NEW JERSEY STATE AGRICULTURE DEVELOPMENT COMMITTEE  
FARMLAND PRESERVATION PROGRAM  
**SURVEYOR ' S CERTIFICATION & SUMMARY FORM**

**PROJECT INFORMATION**

AUTHORIZATION No. \_\_\_\_\_

PROJECT: \_\_\_\_\_

**PARCEL INFORMATION**

OWNER ID: \_\_\_\_\_ PURPORTED OWNER: \_\_\_\_\_  
(REPEAT BLOCK, LOT, INTEREST, ETC. AS NEEDED TO IDENTIFY ALL PARCELS BEING WITHIN THE LINES OF SURVEY)

BLOCK: \_\_\_\_\_ LOT: \_\_\_\_\_ INTEREST: \_\_\_\_\_ %ACQUIRING \_\_\_\_\_

MUNICIPALITY: \_\_\_\_\_ COUNTY: \_\_\_\_\_

**SURVEY INFORMATION**

PREPARED FOR USING AGENCY: \_\_\_\_\_

SURVEY FIRM: \_\_\_\_\_ SURVEY REF. No. \_\_\_\_\_

SURVEYOR: \_\_\_\_\_ NJPLS No. \_\_\_\_\_

DATE ON SURVEY PLAN: \_\_\_\_\_ DATE SIGNED: \_\_\_\_\_ DATE LAST REVISED: \_\_\_\_\_

**TITLE INFORMATION**

TITLE COMPANY \_\_\_\_\_  
(IF NO COPY OF SEARCH WAS SUPPLIED BY USING AGENCY, PLEASE STATE SUBJECT TO FINDINGS OF TITLE SEARCH ABOVE)

COMMITMENT No. \_\_\_\_\_ DATE OF COMMITMENT \_\_\_\_\_

DEED USED FOR REFERENCE: \_\_\_\_\_

**CERTIFICATION**

**I hereby certify** that I have completed the above survey in accordance with the "Scope of Work For Professional Land Surveying Services" contained in a written contract with the above using agency. Based upon an actual field survey of the above property conducted under my supervision, my examination of field and record evidence and the above title report, (if any supplied by using agency), the parcel being acquired consists of a total surveyed area of \_\_\_\_\_ acres, **subject to** the following:

EASEMENTS \_\_\_\_\_  
RESTRICTIONS \_\_\_\_\_  
CONDITIONS: \_\_\_\_\_  
ROAD: \_\_\_\_\_ AC. CLAIMED AS NJ TIDELANDS: \_\_\_\_\_ AC. OVERLAP: \_\_\_\_\_ AC.  
UNDER WATER \_\_\_\_\_ AC. GORE BETWEEN ADJOINING LANDS \_\_\_\_\_ AC.  
ENCROACHMENTS (YES)\_\_\_(NO)\_\_\_\_  
NUMBER OF SEPARATE DESCRIPTIONS PREPARED \_\_\_\_\_

\_\_\_\_\_  
**SURVEY REVIEWED BY (USING AGENCY)**

\_\_\_\_\_  
**SURVEYORS SIGNATURE,  
DATE & SEAL**

**Items, which are improperly submitted, or are deficient, shall be discarded by the using agency and the Licensed Land Surveyor shall be responsible for supplying replacement deliverables at no additional costs to the using agency.**

**No payments shall be processed until all deliverables have been properly received and accepted by the using agency.**

*END OF SCOPE OF WORK FOR  
PROFESSIONAL LAND SURVEYING SERVICES*

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Updated March 11, 2005