

**STATE OF OHIO (DAS)
CLASSIFICATION
SPECIFICATION**

CLASSIFICATION SERIES: Surveyor	SERIES NO.: 8556
MAJOR AGENCIES: Administrative Services, Natural Resources, Transportation	EFFECTIVE DATE: 10/01/2017

SERIES PURPOSE:

The purpose of the surveyor occupation is to provide professional surveying services (i.e., gather, analyze, interpret & certify survey data for projects).

At the lower levels, incumbents assist higher-level surveyors in collection & analysis of survey data for projects & receive training in operation & maintenance of survey instruments&/or act as survey crew leader for standard survey projects &/or produce topographic base maps (CADD), centerline plats & boundary plats or coordinate complex survey projects.

At the supervisory/managerial level, incumbents direct overall survey operations in District or Central Office & supervise lower-level surveyors & survey technicians.

Glossary of Terms:

The following terms are to be interpreted to mean the following whenever they appear in this classification specification;

Base maps: 1) A map of the project's study area showing topography, roads, streams, project limits, property lines, ownership & other items of interest. 2) In CADD, a file containing information for the project area, which is referenced into sheet files showing specific portions of the project.

Boundary Survey: All surveys relating to the establishment or retracement of property boundaries & completed in accordance with Ohio Administrative Code Chapter 4733-37, a survey used to ascertain the boundary line, natural or artificial, dividing two parcels of real estate.

Computer-Aided Drafting & Design (CADD): Use of computers in designing, drafting, &/or modeling projects, plans or structures. CADD is the preferred method of preparing plans for the Ohio Department of Transportation (ODOT).

Complex Survey Projects: Characterized by planning & conducting survey work requiring professional judgment in the independent evaluation, selection, adaptation & modification of standard techniques, procedures & criteria. Employees devise new approaches to problems encountered possibly utilizing new technologies & equipment. The following are examples of complex survey projects: new structure location, new route alignment, multi-lane &/or bi-directional reconstruction & major structures, large scale boundaries of areas with multiple parcels, boundary surveys involving disputed or uncertain boundaries.

Coordinate Geometry (COGO): A method for calculating coordinate points from surveyed bearings, distances, & angles. Automated mapping software used in land surveying that calculates locations using distances & bearings from known reference points.

Field Survey: Any type of survey work done at the project site, including topographic survey, boundary survey, location & recovery of boundary monuments, control survey.

Geodetic Science: Geodetic Science is concerned with the size & shape of the Earth, the realization of terrestrial reference frames, & the estimation of spatial coordinates, Earth orientation parameters, crustal deformation, tides, the mean & time-variable gravity field, & mass fluxes associated with the Earth system.

Geographic Information Systems (GIS): A computerized data management system designed to capture, store, retrieve, analyze, & report on geographic & demographic information.

Global Positioning System (GPS): A system of satellites, computers, & receivers that is able to determine the latitude & longitude of a receiver on Earth by calculating the time difference for signals from different satellites to reach the receiver.

Hydrographic Survey: A survey having for its principal purpose the determination of data relating to bodies of water, & which may consist of the determination of one or several of the following classes of data; depth of water & configuration of bottom; directions & force of current; heights, times & water stages; & location of fixed objects for survey & navigation purposes.

Land Surveying: Land surveying can include associated services such as mapping & related data accumulation, construction layout surveys, precision measurements of length, angle, elevation, area, & volume, as well as horizontal & vertical control surveys, & the analysis & utilization of land survey data.

Major Structures: Steel girder bridges; multi-span steel beam bridges, with overall length equal to or greater than 500 feet; pre-stressed concrete I-Girder bridges; lift bridges; steel truss bridges; bridges with friction drilled shaft foundations; bridges with foundation conditions requiring stability &/or settlement analysis; bridges with counter fort abutments; bridges with complicated geometrics, requiring unusual framing or curved stringers; bridges with exotic components (e.g., pot bearings, spherical bearings, modular expansion joint seals); rehabilitation projects for major structures; rehabilitation projects for minor structures requiring in-depth computations for construction (i.e., removal & repair) loads. These types of structures generally require Hydrographic surveys & Control surveys over larger areas & possibly as-built surveys at height. The necessary Channel Cross sections will require some type of powered water craft to conduct.

Minor Structures: single span concrete slab (SB-2-73); continuous concrete slab (CS-2-73); single or multi-span non-composite Pre-stress Concrete Box Beam (PSBD-1-81) (for multi-span), overall length less than 300 feet; single span steel beam bridges; multi-span steel beam bridges with integral or stub type abutments (overall length less than 500 feet); culverts; super spans; retaining wall (RW-1-63); rehabilitation projects. Hydrographic surveys of the channel are not usually required. These types of structures require Channel cross sections that generally can be obtained without the use of a powered watercraft. The control surveys required are smaller than those required for major structures.

Office: An organizational area within the Ohio Department of Transportation reporting to a Division Deputy Director or Assistant Director or Division within the Ohio Department of Natural Resources.

Office Administrator: Directs surveying staff in development of survey specifications, policies, procedures & standards having statewide impact for entire surveying program function, establishes work priorities, directs development & implementation of policies & procedures, evaluates program effectiveness, develops & administers budget to include federal dollars where appropriate & evaluates need & coordinates training for Office personnel.

Program Function: All activities pertaining to roadway construction, planning design, maintenance or materials control & testing.

Right of Way: A strip of land occupied or intended to be occupied by transportation & public use facilities, such as roadways, railroads, & utility lines. The land is either owned outright or controlled by easement by the public agency. Also, see ORC 4511.01 Traffic Laws – Operation of motor vehicles definitions - (UU) “Right of way”.

Right of Way Plans: A portion of a highway plan showing a graphical representation of a highway improvement & its relation to adjacent property, the parcel or portions thereof needed for highway purposes, & other pertinent information.

Right of Way Survey: A survey performed for the purpose of laying out an acceptable route for an easement or right of way for a road, pipeline, utility, or transmission line. This survey would include the establishment of all boundary lines & road crossings along the route.

Simple Survey Projects: Assignments are designed to develop surveying skills, knowledge & abilities requiring application of standard techniques, procedures & criteria in carrying out a sequence of surveying related tasks.

Limited exercise of judgment is required on details of work & in making selections & adaptations of survey methods to collect the data required for design. The following are examples of simple survey projects: guardrail, two-lane resurfacing, striping, ditch lay-overs, minor structures, traffic signs & signals, raised pavement markers, striping, ditch lay-overs, bridge painting & waterproofing, individual lots & easements.

Standard Survey Projects: Assignments require evaluation, selection & application of standard survey techniques using judgment to make minor adaptations & modifications. Assignments have clear & specified objectives & require the investigation of a limited number of variables. The following are examples of standard survey projects: surveys of bridge overlays, culvert replacements, minor structures, signing, roadway illumination, right of way, two-lane re-surfacing, two phase traffic signals, & boundaries of areas with multiple parcels.

Note: The classification series is reserved for persons who have been accepted for the Basic Fundamentals of Surveying Examination (i.e., SI), or hold a valid certificate as Surveyor in Training or hold licensure as a registered Professional Land Surveyor by Ohio State Board of Registration for Professional Engineers & Surveyors.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>PAY RANGE</u>	<u>EFFECTIVE</u>
Surveyor 1	85561	30	10/01/2017

CLASS CONCEPT:

The first developmental level class works under immediate supervision & requires working knowledge of Land Surveying & Geodetic Science in order to conduct simple survey projects & assist project surveyor or engineer on projects & receive training in operation & maintenance of survey instruments & survey applications

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>PAY RANGE</u>	<u>EFFECTIVE</u>
Surveyor 2	85562	31	10/01/2017

CLASS CONCEPT:

The full-performance level class works under general direction & requires considerable knowledge of Land Surveying & Geodetic Science in order to independently produce survey base maps (CADD), &/or calculate, adjust, organize & archive survey data &/or act as lead worker over survey field crew (i.e., survey technicians &/or surveyors) for standard survey projects & assist in preparation & review of right of way plans & legal descriptions.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>PAY RANGE</u>	<u>EFFECTIVE</u>
Surveyor 3	85563	33	10/01/2017

CLASS CONCEPT:

The advanced level class works under general direction & requires advanced knowledge of Land Surveying & Geodetic Science in order to coordinate with & advise consultant surveyors on survey requirements, manage complex surveying projects & boundary/centerline plats for easements, sale, lease or transfer of land &/or act as lead worker over survey field crew (i.e., survey technicians &/or surveyors) & prepare & review right of way plans & legal descriptions, testify in court on survey-related issues, provide advice/guidance to higher-level administrators & sign & certify plans & other documents as a Professional Land Surveyor.

Or

In District Office, develop & evaluate survey work plans & survey criteria for variety of projects & activities to be carried out by others & assess feasibility & soundness of proposed survey & control plans, evaluate & test products or equipment when survey data is insufficient or confirmation of data by testing is advisable. Employee may work in one or all of the following survey disciplines: Boundary & R/W Plans - Responsibilities include resolution of boundary issues, preparation of legal descriptions, & development & review of R/W plans; Construction - Responsibilities include development of 3D models, machine control, construction surveying & layout; Geodetic Control & Monitoring

- Responsibilities include performing horizontal & vertical control surveying & the monitoring of problem structures (e.g. bridges, culverts, retaining walls, pavements) & landslides.

Or

In Central Office is assigned specific area of expertise: CORS - Responsibilities include oversight & management of ODOT CORS Network; UAV & Remote Sensing - Responsibilities include oversight & management of Unmanned Aerial Vehicle (UAV) mapping & other types of Remote Sensing; GIS - Responsibilities include collection of asset information, development of databases, & mapping products using Geographic Information Systems (GIS); Mapping - Responsibilities include oversight, management, & development of Aerial mapping & photogrammetry information performed for ODOT projects & conducts quality assurance reviews.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>PAY RANGE</u>	<u>EFFECTIVE</u>
Surveyor 4	85564	15	10/01/2017

CLASS CONCEPT:

The supervisory/managerial level class provides general direction & requires thorough knowledge of professional Land Surveying & Geodetic Science in order to manage & oversee district or central office survey operations, supervise lower-level surveyors, survey technicians &/or other support personnel & sign & certify plans & other documents as Professional Land Surveyor.

Or

In Central Office, develop statewide surveying policies & quality assurance programs to review surveying-related operations/projects specific to areas of survey expertise: Boundary & R/W; Construction; Geodetic Control/ Monitoring; Mapping.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY RANGE</u>
Surveyor 1	85561	07	10/01/2017	30

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Conducts simple survey projects & assists project surveyor or engineer on projects & receives training in operation & maintenance of survey instruments (e.g. total stations, GPS receivers, digital levels, 3-D laser scanners & data collectors) & survey applications in order to survey simple survey projects; ensures survey field crew has supplies & equipment; keeps notes & records of survey data obtained; ensures policies & procedures are followed.

Gains exposure to all aspects of survey work flow; receives training in electronic data processing software operation (e.g., Computer-Aided Drafting & Design (CADD), Coordinate Geometry (COGO), Global Positioning System (GPS), Geographic Information Systems (GIS)) & word processing software operation (e.g., Microsoft Office software); aides in office calculations, data processing, coordinate computations, traverse adjustments & coordinate system transformations; organizes, digitizes & categorizes survey records & archives.

Researches state, county & city public records (e.g., maps, property deeds, surveys, highway plans, city plans, subdivision plats) &/or utility companies, private engineering firms & surveying firms to provide detailed information to higher-level surveyors for further analysis; assists higher-level surveyors in Right-of-Way plan design & drafting; stays abreast of new technology & developments as relates to position.

Operates state vehicles (e.g., trucks, vans), to transport equipment, instruments & personnel to project sites; carries field equipment & instruments through rough terrain (e.g., across creeks, up/down hills, over fences, through marshes); clears brush as required to facilitate surveying operations with appropriate equipment (e.g., machete, brush hook); operates hand tools & small equipment (e.g., posthole digger, sledgehammer, spud bar, jackhammer, power auger).

MAJOR WORKER CHARACTERISTICS:

Knowledge of: professional surveying; employee training & development*; OSHA & agency safety practices*.

Skill in: operation & maintenance of survey instruments (e.g., total stations, GPS receivers, digital levels, 3-D laser scanners & data collectors); operation of state vehicles (e.g., trucks, vans); operation of hand tools & small equipment (e.g., machete, brush hook, posthole digger, sledgehammer, spud bar, jackhammer, power auger); use of computer, electronic data processing software (e.g., CADD, COGO, GPS, GIS) & word processing software (e.g., Microsoft Office).

Ability to: define problems, collect data, establish facts & draw valid conclusions; use geometry & trigonometry; use proper research methods in gathering data; gather, collate & classify information about data, people or things; cooperate with co-workers on group projects; lift up to 50 lbs. of equipment.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Accepted for Fundamental of Surveying examination (F.S) by Ohio Board of Registration for Professional Engineers & Surveyors; valid driver's license.

TRAINING & DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Must obtain Surveyor Intern (S.I.) Certification from Ohio Board of Registration for Professional Engineers & Surveyors during probationary period.

Upon successful completion of probation & obtainment of Surveyor Intern (S.I.) Certification, employee will automatically progress to the Surveyor 2, 85562.

UNUSUAL WORKING CONDITIONS:

May require travel & overnight stays; exposed to inclement weather, traffic, loud noise, rough terrain, ditches with water & sewage, poisonous plants & insects; may work flexible hours; may work in shallow water/boat.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY RANGE</u>
Surveyor 2	85562	13	10/01/2017	31

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Acts as lead worker over survey field crew (i.e., survey technicians &/or surveyors) for standard survey projects &/or produces survey base maps for engineering projects from topographic & planimetric survey data; &/or calculates, adjusts, organizes & archives survey data.

Trains personnel on operation & maintenance of survey instruments; determines appropriate methods & procedures for survey field work; ensures survey field crew has supplies & equipment; determines proper safety precautions based on site characteristics & coordinates traffic control for survey work within roadways/dangerous areas; ensures policies & procedures are followed; contacts land owners to discuss local survey work & gathers information needed for survey.

Operates & maintains survey instruments; monitors & accounts for factors pertaining to GPS surveying (e.g., solar storms, atmospheric interference, radio & cellular interference); performs field calculations; keeps notes & records of survey data obtained; determines acceptable quality of recorded survey positions.

Uploads, downloads & organizes digital survey data; performs office calculations, data processing, coordinate computations, traverse adjustment & coordinate system transformations; organizes, digitizes & categorizes survey records & archives; identifies tree species & other vegetation for environmental preservation, economic reimbursements & safety factors.

Researches state, county & city public records (e.g., maps, property deeds, surveys, highway plans, city plans, subdivision plats) &/or utility companies, private engineering firms & surveying firms to provide detailed information to higher-level surveyors for further analysis; performs Right-of-Way plan design & drafting & prepares legal descriptions under the direction of higher-level surveyors; stays abreast of new technology & developments as relates to position.

Operates state vehicles (e.g., trucks, vans), to transport equipment, instruments & personnel to project sites; carries field equipment & instruments through rough terrain (e.g., across creeks, up/down hills, over fences, through marshes); clears brush as required to facilitate surveying operations with appropriate equipment (e.g., machete, brush hook); operates hand tools & small equipment (e.g., posthole digger, sledgehammer, spud bar, jackhammer, power auger).

MAJOR WORKER CHARACTERISTICS:

Knowledge of: professional surveying; employee training & development*; OSHA & agency safety practices*; public relations*; ODOT Survey Standards, ODOT Policies, Minimum Standards for Boundary Surveys; 3-D point clouds*; photogrammetry*; Ohio State Plane Coordinate Systems.

Skill in: operation & maintenance of survey instruments (e.g., total stations, GPS receivers, digital levels, 3-D laser scanners & data collectors); operation of state vehicles (e.g., trucks, vans); operation of hand tools & small equipment (e.g., machete, brush hook, posthole digger, sledgehammer, spud bar, jackhammer, power auger); use of computer, electronic data processing software (e.g., CADD, COGO, GPS, GIS) & word processing software (e.g., Microsoft Office).

Ability to: define problems, collect data, establish facts & draw valid conclusions; use geometry & trigonometry; use proper research methods in gathering data; gather, collate & classify information about data, people or things; cooperate with co-workers on group projects; lift up to 50 lbs. of equipment.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Certification: Valid certificate as Surveyor Intern issued or accepted as equivalent by the Ohio Board of Registration for Professional Engineers & Surveyors & 12 months experience as Surveyor 1, 85561; valid driver's license.

OR Valid certificate as Surveyor Intern issued or accepted as equivalent by the Ohio Board of Registration for Professional Engineers & Surveyors & 12 months surveying-related experience; valid driver's license.

UNUSUAL WORKING CONDITIONS:

May require travel & overnight stays; exposed to inclement weather, traffic, loud noise, rough terrain, ditches with water & sewage, poisonous plants & insects; may work flexible hours; may work in shallow water/boat.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY RANGE</u>
Surveyor 3	85563	13	10/01/2017	33

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Independently oversees & manages complex survey projects &/or prepares legal descriptions & boundary/centerline plats for easements, sale, lease or transfer of land &/or acts as lead worker over survey field crew(s) (i.e., survey technicians &/or surveyors) & reviews, signs & certifies right-of-way plans, survey plats, & other documents as Professional Land Surveyor.

Coordinates & enforces complex plan/project priorities, policies & methodologies; coordinates project activities with other offices; oversees projects & communicates with consultants, utilities, federal, state & local agencies, general public &/or property owners to obtain project specific information (e.g., parcel evidence, property lines, corner monuments); interviews property owners to gather information needed for survey; communicates plan/project purposes with general public.

Provides advice/guidance to higher-level administrators in areas such as Global Positioning Systems, horizontal & vertical geodetic control, topographic mapping, consultant management, public trust lands, submerged lands &/or boundary line retracement; assists with preparation of scope of services; determines methods & procedures necessary to obtain requested survey data; coordinates plan/project activities with other offices; coordinates with & advises consultant surveyors on survey requirements & oversees preparation of survey drawings & calculations; prepares legal descriptions; prepares exhibits for public & court use (e.g., gathers factual data in boundary disputes); testifies in court regarding methods used, final product & related issues; meets with public, property owners & public officials regarding surveys, existing & proposed right of way plans &/or acquisition of property; stays abreast of new technology & developments as relates to position.

Operates, maintains & calibrates survey instruments; monitors & accounts for factors pertaining to GPS surveying (e.g., solar storms, atmospheric interference, radio & cellular interference); performs field calculations; keeps notes & records of survey data obtained; determines acceptable quality of recorded survey positions.

Uploads, downloads & organizes digital survey data; performs office calculations, data processing, coordinate computations, traverse adjustment & coordinate system transformations; organizes, digitizes & categorizes survey data, records & archives; analyzes survey data via statistical, algebraic & geometrical methods (e.g., standard deviations, area, volume, curves, spiral curves, vertical curves, coordinate geometry, least squares adjustments, elevations, traverse closure); calculates sources of error to identify &/or correct random, systematic & procedural errors in survey measurements; resolves discrepancies in deeds & surveys; produces survey base maps for engineering projects from topographic & planimetric & photogrammetric survey data; identifies tree species & other vegetation for environmental preservation, economic reimbursements & safety factors.

Researches state, county & city public records (e.g., maps, property deeds, surveys, highway plans, city plans, subdivision plats) &/or utility companies, private engineering firms & surveying firms to provide detailed information for further analysis.

Operates state vehicles (e.g., trucks, vans), to transport equipment, instruments & personnel to project sites; carries field equipment & instruments through rough terrain (e.g., across creeks, up/down hills, over fences, through marshes); clears brush as required to facilitate surveying operations with appropriate equipment (e.g., machete, brush hook); operates hand tools & small equipment (e.g., posthole digger, sledgehammer, spud bar, jackhammer, power auger).

MAJOR WORKER CHARACTERISTICS:

Knowledge of: professional surveying; OSHA & agency safety practices*; employee training & development*; public relations*; real estate law*; ODOT Survey Standards, ODOT Policies, Minimum Standards for Boundary Surveys pursuant to Section 4733-37 of the Ohio Administrative Code; 3-D point clouds*; photogrammetry*; Ohio State Plane Coordinate Systems.

Skill in: operation & maintenance of survey instruments (e.g., total stations, GPS, digital levels, field data collectors); operation of state vehicles (e.g., trucks, vans); operation of hand tools & small equipment (e.g., machete, brush hook, posthole digger, sledgehammer, spud bar, jackhammer, power auger); use of computer, electronic data processing software (e.g., CADD, COGO, GPS, GIS) & word processing software (e.g., Microsoft Office).

Ability to: define problems, collect data, establish facts & draw valid conclusions; use geometry & trigonometry; use proper research methods in gathering data; gather, collate & classify information about data, people or things; handle sensitive inquiries from & contacts with officials & general public; lift up to 50 lbs. of equipment.

(*) Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Licensure: Current registration as professional surveyor pursuant to section 4733.02 of Ohio Revised Code; valid driver's license.

&

Experience: 12 mos. exp. as Surveyor 2, 85562

OR

12 mos. exp. in responsible charge of survey projects

TRAINING & DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Renewal of registration as professional surveyor pursuant to section 4733.15 of revised code.

UNUSUAL WORKING CONDITIONS:

Requires travel & overnight stays; exposed to inclement weather, traffic, loud noise, rough terrain, ditches with water & sewage, poisonous plants & insects; may work flexible hours; may work in shallow water/boat.

<u>CLASS TITLE</u>	<u>CLASS NUMBER</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY RANGE</u>
Surveyor 4	85564	EX	10/01/2017	15

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

In District or Central Office, supervises lower-level surveyors, survey technicians &/or other support personnel & manages district/central office survey operations (i.e., establishes goals, objectives, & priorities for survey program; develops budget for equipment & supplies, establishes policies & procedures for survey operations; testifies in court as expert witness regarding methods used, final product & related issues; oversees inventory & determines maintenance/repair schedule for instruments & equipment; coordinates plan/project activities. reviews, signs & certifies plans & other documents as Professional Land Surveyor; oversees preparation of survey drawings & calculations; stays abreast of scientific methods & developments affecting department & recommends changes in emphasis of programs).

Or

In Central Office, develops statewide surveying policies & quality assurance programs to review surveying-related operations/projects specific to areas of survey expertise: Boundary & R/W; Construction; Geodetic Control/ Monitoring; Mapping.

Manages consultant projects (e.g., meets with land-holding divisions or agencies to review surveying needs & develops plan to address needs within budgetary limits; prepares project advertisement, scope of services, controlling board information & other contract documents; recommends consultants; negotiates fees & other contract provisions; authorizes payments to consultants; reviews consultant survey work products; reviews & maintains policies & procedures for consultant evaluation systems; communicates project purposes with consultants, utilities, local, state & federal agencies & general public).

Operates survey instruments; monitors & accounts for factors pertaining to GPS surveying (e.g., solar storms, atmospheric interference, radio & cellular interference); performs field calculations; keeps notes & records of survey data obtained; determines acceptable quality of recorded survey positions; performs boundary retracement surveys; analyzes survey results; prepares survey plats drawings & certifies results of property surveys; prepares exhibits for court use & public displays (e.g., prepares factual data in boundary disputes).

Operates state vehicles (e.g., trucks, vans) & meets with district &/or area managers to review survey-related problems & recommend solutions; researches records in courthouse & other locations; meets with public, property owners & public officials regarding surveys, existing & proposed right of way plans &/or acquisition of property; serves on professional & steering committees.

MAJOR WORKER CHARACTERISTICS:

Knowledge of: professional surveying; budgeting; inventory control; workforce planning; management; supervisory principles; OSHA & agency safety practices*; public relations*; agency policies & procedures*; government structure & process*; interviewing*; real estate law*; Minimum Standards for Boundary Surveys pursuant to section 4733-37 of the Ohio Administrative Code; 3-D point clouds*; photogrammetry*; Ohio State Plane Coordinate Systems.

Skill in: operation & maintenance of survey instruments (e.g., total stations, GPS, digital levels, field data collectors); operation of state vehicles (e.g., trucks, vans); use of computer, electronic data processing software (e.g., CADD, COGO, GPS, GIS) & word processing software (e.g., Microsoft Office).

Ability to: define problems, collect data, establish facts & draw valid conclusions; use geometry & trigonometry; use proper research methods in gathering data; gather, collate & classify information about data, people or things; handle sensitive inquiries from & contacts with officials & general public; lift up to 50 lbs. of equipment.

(*)Developed after employment.

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

Licensure: Current registration as professional surveyor pursuant to section 4733.02 of Ohio Revised Code; valid driver's license.

&

Experience: 12 mos. exp. as Surveyor 3, 85563

OR

24 mos. exp. in responsible charge of survey projects

TRAINING & DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Renewal of registration as professional surveyor pursuant to section 4733.15 of revised code.

UNUSUAL WORKING CONDITIONS:

Requires travel & overnight stays; exposed to inclement weather, traffic, loud noise, rough terrain, ditches with water & sewage, poisonous plants & insects; may work flexible hours; may work in shallow water/boat.