



On-Job-Training Manual for Standard Pre-Approved Job Classifications

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To: Contractors Performing Highway Construction in Virginia

The Virginia Transportation Construction Alliance (VTCA) has updated the "On-Job-Training" Manual for specific pre-approved standard job classifications for highway construction in Virginia. This effort was coordinated with the Virginia Department of Transportation (VDOT), the U.S. Department of Labor, and the Virginia Division of the Federal Highway Administration (FHWA). Personnel from these agencies and from several contracting firms participated in this process and made revisions to this manual. Listed below are members who served on this committee:

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Special thanks go to these individuals for their contribution and to Ms. Sandra D. Norman, VDOT Civil Rights Administrator, for her support of this effort, and her leadership over the Civil Rights program. As demonstrated by this manual, VTCA is committed to serving the transportation industry and fostering improved transportation programs.

To: Users of the On-Job-Training (OJT) Manual

Included in this booklet are OJT descriptions for Craft and Operator classifications that are normally used on highway contracts in Virginia. These OJT descriptions have been approved by VDOT and VTCA and commented on by the Virginia Department of Labor and the FHWA. Contractors may use these OJT descriptions to meet their training obligations under the Federal Interim Orders and Contract Special Provisions. In the event an OJT Program is necessary or desired but does not appear in this manual or if a contractor desires a specific program, they can develop a training program outline and submit it to the appropriate District Civil Rights Manager for consideration and approval by VDOT.

In scanning the OJT classifications and descriptions shown in this book, you may note that a consistent format was intentionally established for both the Craft and Operator classifications. A classification name, followed by the classification description is always provided first. In most cases, the classification descriptions used in this manual are identical to the description incorporated in the January '93 revision of the Standard Job Classifications and Descriptions for Highway Construction in Virginia manual. The total recommended number of training hours is then shown for each classification. A training description for each classification is provided so that both the training advisor and the trainee are cognizant about the training. Training advisors should use good judgment in training the individual according to the training description and should distribute training hours to ensure competency is obtained by the trainee. Flexibility has intentionally been built into this program, and we encourage the program to be tailored to each individual's abilities.

In regards to both the Craft and Operator classifications, additional comments could easily be incorporated regarding the topic of safety. In order to keep this manual as brief as possible, detailed comments regarding safety practices, knowledge and attire were not mentioned. VTCA supports safe practices and operations and believes this is an inherent duty that is incorporated in each classification. We recognize the job duties described herein are not exhaustive and may need to be supplemented.

This updated manual should aid the construction transportation industry by expediting the approval of training programs for individuals in the pre-approved OJT classifications provided within this manual.

Jeffrey C. Southard
Executive Vice President
VTCA

INTRODUCTION & BACKGROUND

On September 2, 1970, the Federal Highway Administration (FHWA) issued Interim Training Order 7-2(2) to apply to certain federally funded highway construction projects. The concept of this order provided for the following:

1. To provide on job training (OJT) and upgrading to Veterans, Minorities, Women, the Economically Disadvantaged and all other interested persons, thereby increasing their skills and hiring and promotion opportunities.
2. To meet the needs of the Highway Construction Industry for knowledgeable and skilled workers.
3. To demonstrate that equality exists in highway construction training opportunities as it relates to the essential function of the job without regard to race, creed, color, sex, national origin, age or disability.

Under the Federal Aid Highway Act of 1968, the inclusion of an approved affirmative action plan became an important element in the pre-qualification of contractors for federal aid projects. The On-Job-Training (OJT) Program was identified as one specific area of Equal Employment Opportunity.

The purpose of this manual is to provide a standard construction OJT Program, which has been approved by VDOT and the Federal Highway Administration. It can be used by contractors who have a training special provision contained in their contract as well as those who may voluntarily choose to participate. The training programs are designed to serve as an aid to the contractor since prior approval has already been obtained. This will facilitate uniformity of training and expedite enrollment of trainees. Contractors also have the option to submit their own training programs to VDOT for approval. All OJT Programs approved for use will embody the objectives of fairness and equity as required by the Code Federal Regulations 23 CFR Chapter 1, Subpart C, Section 230.307 which states:

“Every employee and representative of State Highway Agencies shall perform all official equal employment actions in an affirmative manner, and in accord with the applicable statutes, executive orders regulations, and policies enunciated there under, to assure the equality of employment opportunity, without regard to race, color, religion, sex, or national origin both in its own workforce and in the workforces of contractors, subcontractors and material suppliers engaged in the performance of federal-aid highway construction contracts.”

OBJECTIVES

The primary objective of VDOT’s OJT Program is to provide training opportunities for women, minorities and disadvantaged persons which will increase their participation in every job classification in the highway construction industry. Established by the U.S. Congress as a special section of the Federal Aid Highway Act of 1968 after congressional hearing documented the absence of women, minorities and disadvantaged persons in the highway industry, the training goals were set by the FHWA for states and are

translated as specific training positions on construction projects. VDOT makes the assignment of training positions on federal-aid projects. *This training requirement is a binding contract specification and contractors are obligated to meet trainee assignment(s). It is expected that the contractor will graduate the number of trainees specified in the bid proposal and subsequent contract with VDOT.* These assignments are based upon the following considerations:

1. Location of the project.
2. Duration of the project.
3. Total workforce expected to be used.
4. Area's availability of targeted workers.
5. Dollar anticipation.
6. Types of available work during life of project.

It is the sincere desire of all parties concerned that all participating contractors will put forth a good faith effort toward the successful fulfillment of their training obligations.

NON-DISCRIMINATION IN PROGRAMS & ACTIVITIES

Pursuant to Title VI of the Civil Rights Act of 1964 as amended, the Restoration Act of 1987 and other nondiscrimination authorities, it is the policy of VDOT that discrimination based on race, color, national origin, sex, age or disability shall not occur in connection with any of its programs or activities.

The efforts to prevent discrimination must address, but not be limited to a program's impacts, access, benefits, participation, treatment, services, contracting opportunities, training opportunities, investigation of complaints, allocation of funds, prioritization of projects, and the functions of right-of-way research, planning and design.

Pursuant to 23 USC 302, the FHWA's primary recipient is the State Highway Transportation Agency. In Virginia, VDOT is that primary recipient. VDOT (and its sub recipients and contractors) irrespective of tier, is required to prevent discrimination and ensure nondiscrimination in all programs and activities whether they are federally funded or not.

Additionally, pursuant to FHWA 1273, the Contractor is to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship and/or on-the-job training.

The two main authorities enabling Title VI implementation, compliance and enforcement are the Civil Rights Act of 1964 and the Civil Rights Restoration Act of 1987. However, other statutes, laws, regulations, executive orders and the United States Constitution provide guidance for the effective execution of the objectives of Title VI. These include:

- Federal-Aid Highway Act of 1973
- Section 504 of the Rehabilitation Act of 1973
- Americans with Disabilities Act of 1990
- Age Discrimination Act of 1975
- Uniform Relocation Act of 1970
- Executive orders 12898 and 13166

Training and upgrading of minorities and women is a primary objective of the training Special Provision.

The program addresses the following considerations:

- Emphasis on the recruitment of trainees who are likely to become members of a Contractor's regular workforce upon completion of the program;
- Emphasis on training in skilled craft classifications; and
- Assisting Contractors in meeting their equal employment opportunity goals through training of minorities, women and disadvantaged individuals.

VDOT's Office of Civil Rights has the primary responsibility for administering the program and will depend on assistance from the Construction Division and District Offices in administering the program.

FEDERAL-AID HIGHWAY ACT OF 1968

PREVAILING RATE OF WAGE

Sec. 12(a) Section 113 of Title 23, United States Code, is amended to read as follows:

- "(a) The Secretary shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors or subcontractors on the initial construction work performed on highway projects on the Federal-aid systems, the primary and secondary, as well as their extensions in urban areas, and the Interstate System, authorized under the highway laws providing for the expenditure of Federal funds upon the Federal-aid systems, shall be paid wages at rate not less than those prevailing on the same type of work on similar construction in the immediate locality as determined by the Secretary of Labor in accordance with the Act of August 30, 1935, known as the Davis-Bacon Act (40 U.S.C. 267a).
- "(b) In carrying out the duties of subsection (a) of this section, the Secretary of Labor shall consult with the highway department of the State in which a project on any of the Federal-aid systems is to be performed. After giving due regard to the information thus obtained, he shall make a predetermination of the minimum wages to be paid laborers and mechanics in accordance with the provisions of subsection (a) of this section which shall be set out in each project advertisement for bids and in each bid proposal form and shall be made a part of the contract covering the project.
- "(c) The provisions of the section shall not be applicable to employment pursuant to apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting equal employment opportunity in connection with Federal-aid highway construction programs."

ON-JOB-TRAINING PROGRAM

A. INSTRUCTIONS TO THE CONTRACTOR/EMPLOYER

1. Eligibility

Any highway contractor or subcontractor is eligible to participate in this OJT program. However, no training allowance will be paid unless the corresponding special provision for Section 518 is included in the contract. The goal of the program is to ensure (1) compliance with the intent and policies of the equal employment opportunity program as required in 23 CFR 230, and the contract special provisions, and (2) that Veterans, Women, Minorities, and the Economically Disadvantaged are provided on-the-job training opportunities.

2. Responsibilities of the Contractor

- a. To pay as a minimum starting wage no less than the posted project prevailing unskilled labor rate or the employees current wage rate.
- b. To provide OJT exposure and training as called for in the training breakdown for that classification in which the trainee is enrolled.
- c. To assign the trainee to an individual who will be responsible for OJT and encourage other company employees to share their knowledge and skill with the trainee.
- d. To ensure that the trainee is properly enrolled in the OJT program on VDOT's Form C-65.
- e. To properly indicate on payroll or roster the training status of the trainee.
- f. To provide the same work week and overtime benefits for the trainee as is provided to other company personnel. Actual clock hours of overtime shall be credited to the period of training.
- g. To provide continuous employment for the trainee insofar as possible, even though the trainee may not be "in training" for certain periods of time. Only training and/or training related hours spent in actual training should be counted towards completion of the training period. However, all hours worked should be reported on the contractor's payroll.
- h. The contractor is free to use the trainee for duties other than those contained in the training breakdown if this is necessary to keep the trainee continuously employed, but only training and/or training related hours should be counted toward completion.

- i. To advise VDOT immediately if a trainee is terminated from the program, either by discharge, by voluntary or company initiated withdrawal from the program, by layoff, or by satisfactorily completing the program.
 - j. To ensure that Form C-67 (Weekly Trainee Report) is submitted to VDOT for reporting required training information and certifying that the information is accurate and complete.
 - k. In filling trainee openings, priority should be afforded to present employees who desire and demonstrate the ability to upgrade their skills.
3. Responsibilities of the Trainee
- a. To perform the work of the classification and other duties as assigned by the employer.
 - b. To respect and protect the property and equipment of the employer, and abide by the working rules and regulations of the employer.
 - c. To develop safe working habits and conduct themselves in such a manner as to assure their own safety and that of fellow workers.
 - d. To conduct themselves at all times in a creditable, ethical, and moral manner, realizing that much time, money, and effort is spent to afford them this training opportunity.
 - e. To notify the employer at any point when a change in training status is anticipated or when personal problems will affect their performance on the job or affect their employment or training.
 - f. Must demonstrate the ability to perform the essential function(s) of the job.

B. TRAINING GUIDELINES

A primary consideration of this program is to provide continuous training to participating individuals to provide new and/or advanced skills and increase promotional opportunities. Completion of the training for the individual is the ultimate objective of this program.

1. Selecting Training Classifications

The following considerations should enter into your selection of the appropriate classifications for use on a particular project:

- a. The time span of the project or phases of work should be such that sufficient time is available for the completion of the selected program(s) of training.

- b. The Company/Project EEO posture and staffing needs in each work classification as related to Affirmative Action endeavors.

It should be kept in mind that contractors are free to design their own training program and submit the proposed program to VDOT Civil Rights Division for their consideration and approval. On contracts which do not include the trainee special provision for Section 518, such provision and associated payment allowance may be included by work order.

It is the Contractor's responsibility to select those classifications in which training will be given, subject to the approval of VDOT.

2. Selection and Recruitment of Trainees

Management of the company is free to select those individuals who will be offered OJT opportunities under this program. However, a primary objective of the training program is training and upgrading of minorities and women towards skilled worker status. An initial survey of your present work force may reveal individuals suitable for upgrading into a higher classification, or you may select applicants who apply directly to your company for employment, or from those applicants referred to you by the Virginia Employment Commission.

Pro-active Recruitment Approaches

- a. The first element in a successful recruitment effort is to make a job description specific, concise and complete. The job description serves to tell people about the highway construction industry, it “demystifies” the skills and aptitude needed, encourages the applicant and instructs them on how to apply. Since these are training positions, companies should stress transferable skills or aptitudes in comparable qualifying experiences or craft areas that are needed or “desirable” in applicants rather than merely indicating the kinds of work to be done or equipment to be used.
- b. The second element to a successful recruitment effort is the widespread distribution of any vacancy announcement and a general/targeted outreach effort into the women, minority and disadvantaged person community. Following are recommended recruiting approaches:
 - 1) Place job advertisement announcements in newspapers, newsletters and in other publications that serve the women, minority and disadvantaged person community.
 - 2) Mail job announcements to organizations that serve the women, minority and disadvantaged person community, such as the State Chapter NAACP, the League of Women Voters, and the Virginia Coalition of Latino Organizations.

3) Establish a working rapport with community based agencies that serve the women, minority and disadvantaged person community. Conduct educational and informational workshops on the construction industry at the site of the community based agency.

4) Advertise job announcements on radio and television with high women, minority and disadvantaged person ratings, and utilize government access television channels and leased access cable television programs that reach the women, minority and disadvantaged person community.

5) Visit high schools, community colleges, colleges, universities and other institutions and attend career fairs where there is a significant women, minority and disadvantaged person population.

- c. Walk-ins who apply for employment may be considered for the OJT program.
- d. The Virginia Employment Commission should be informed of personnel needs on the project so that they may actively begin recruitment for trainees.
- e. The Contractor should notify in writing any local community action groups, such as minority organizations and women's groups, of the job and training opportunities which are available on the project. A copy of this recruitment correspondence should be placed in the Contractor's file.

3. Enrollment of Trainees

- a. All OJT trainees must be properly enrolled into the OJT program using VDOT Form C-65.
- b. Actual enrollment of the OJT trainee is based on the approval of the respective District Civil Rights Manager or their representative. Upon approval of trainee enrollment, the Contractor will be monitored to ensure compliance with their OJT obligations and to evaluate the progress of trainees.

4. Off-Site Training

Training at locations other than the project on which the trainee is enrolled may be considered and typically will be referred to as off-site training. Such training shall not constitute a significant part of the overall training and it shall be approved by the Department prior to implementation. The District Civil Rights Manager will outline appropriate and necessary steps regarding documentation of the off-site training on a case by case basis.

Payment for off-site training will only be made where the contractor does one or more of the following: contributes to the cost of the training, provides the instruction to the trainee, or

pays the trainee's wages during the off site training period.

Examples of off-site training that could occur:

- Training of individual by same contractor between two Districts.
- Training of individual on non-VDOT work performed by contractor
- Training of individual through educational or training courses
- Training of individual on two projects within the same District on which work is performed by the same contractor

5. Completion or Removal

Upon satisfactory completion of the program as assessed by the Contractor, Project Personnel, and the District Civil Rights Manager, a trainee shall receive a certificate of achievement.

A trainee can be terminated from the training program either by discharge, by voluntary or company initiated withdrawal from the program or by layoff.

TRAINING SYLLABUSES FOR THE CRAFTS

<u>Standard Title</u>	<u>Page No.</u>
Asphalt Raker	20
Carpenter Structure	21
Concrete Finisher	22
Deckhand	24
Electrician - Bridge	25
Fence Erector	26
Form Setter	27
Grade Checker	28
Guardrail Erector	29
Landscape Worker	30
Mason Structure	31
Mechanic	32
Oiler Greaser	33
Pile Driver Leadsperson	34
Pipe Layer	35
Pipe Layer Leadsperson	36
Reinforcing Iron Worker	37
Rodperson	38
Sign Erector	39
Structural Iron Worker	40
Waterproofers	41
Welder	42

CRAFT POSITIONS NOT INCLUDED

Asbestos Worker
Blaster
Construction Worker I
Construction Worker II
Flagger
Painters
Painter, Bridge
Plumbers
Sheet Metal Worker
Traffic Signal Installer/Maintainer

TRAINING SYLLABUSES FOR THE OPERATORS

<u>Standard Title</u>	<u>Page No.</u>
Air Compressor.....	44
Asphalt Distributor	45
Asphalt Paver.....	46
Backhoe.....	47
Bulldozer.....	48
Concrete Finish Machine.....	49
Concrete Paving Machine.....	50
Concrete Saw (Pavement)	51
Crane, Derrick, Dragline.....	52
Drill	53
Excavator	54
Front-End Loader.....	55
Fuel and Lubricant Service Truck Driver.....	56
Hydro Seeder	57
Motor Grader	58
Pavement Planing/Milling.....	59
Pile Driver.....	60
Power Tool.....	61
Roller.....	62
Safety Boat.....	63
Scraper Pan	64
Shovel	65
Slip-Form Paver.....	66
Stabilizer	67
Stone-Spreader.....	68
Subgrade Machine	69
Tractor.....	70
Truck Driver, Heavy Duty.....	71
Truck Driver, Multi-Rear Axle	72
Truck Driver, Single-Rear Axle	73
Truck Driver, Tandem-Rear Axle	74
Vacuum Machine.....	75

OPERATOR POSITIONS NOT INCLUDED

Concrete Pump	Plant
Crusher Tender	Shot Blast Machine
Log Skidder	Slurry Paver Machine
Mobile Mixer	Slurry Paver Truck
Pavement Marking Truck	Transit Mix Truck
Pavement Marker	Trenching Machine
Pipe Boring/Jacking Machine	

**TRAINING SYLLABUSES FOR THE
MISCELLANEOUS CLASSIFICATIONS**

<u>Standard Title</u>	<u>Page No.</u>
Asphalt Plan Quality Control Technician	<u>77</u>
Field Engineer Technician.....	<u>78</u>
Field Office Administrator	<u>80</u>
Field Office Clerk	<u>82</u>
Foreman	<u>83</u>
Quality Control Technician - Roadway.....	<u>84</u>

**CRAFT ON-THE-JOB
CLASSIFICATIONS
AND
TRAINING DESCRIPTIONS**

ASPHALT RAKER/LUTE PERSON: Distribute asphalt concrete to areas that require additional materials by asphalt rake or lute. Responsible for proper manipulation of asphalt concrete by hand methods at joints, intersections, extra widening, etc. May utilize a shovel for distributing material. Uses solvent to keep hand tools clean of excess asphalt material. May be responsible for checking thickness of asphalt mat. May adjust screed on paver. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

- | | | |
|----|---|-----------|
| 1. | ORIENTATION AND OBSERVATION | 20 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 5 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 30 hours |
| 4. | CARE AND MAINTENANCE | 45 hours |
| | A. Hand tools | |
| | B. Work Area | |
| 5. | APPLICABLE WORK ACTIVITIES | 420 hours |
| | A. Shovels dirt, stone and rubble | |
| | B. Prepare area to grade | |
| | C. Spreads asphalt by hand shovel | |
| | D. Guides and directs dump trucks | |
| | E. Receives and accumulates truck delivery tickets | |
| | F. Sets out barricades | |
| | G. Sets string line for alignment | |
| | H. Grade and cut joints | |
| | I. Matches and finishes freshly constructed paving joints | |
| | J. Smooths and adjusts surface irregularities | |
| | K. Restores surface finish after hand raking | |
| | L. Spreads asphalt to proper grade and finishes before compaction | |

TOTAL

520 hours/13 weeks

CARPENTER STRUCTURE: Constructs built-in-place forms for molding concrete structures, scaffolds, falsework and chutes for pouring concrete, according to sketches, plans or oral instructions. Reads plans and specifications to determine dimensions of structure. Measures and marks cutting lines. Cuts materials to desired sizes and joins material together. Assembles forms on construction site according to plans and specifications. Inserts spreaders and tie rods between opposite faces of form to maintain specified dimensions. Anchors and braces forms to fixed objects. Erects scaffolding and ladders for performing work above or below ground level. Builds falsework to temporarily strengthen, protect, or disguise structure undergoing construction. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	95 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	20 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Hand Tools	
	B. Equipment	
	C. Work Area	
5.	APPLICABLE WORK ACTIVITIES	890 hours
	A. Indoctrination to working at high levels	
	B. Selection of materials	
	C. Formwork for piers, caps and railing	
	D. Deck formwork	
	E. Endwall formwork	
	F. Drainage formwork including box culverts, inlets and headwalls	
	G. Plan reading	
	H. Familiarity with basic construction design	
	I. Application of line and grade theory and basic elementary surveying principles	
	J. Stripping and salvaging of forms	
	K. Cleaning tools and forms for re-use	
	L. Removal of tools, equipment from construction site	
	M. Pile driving operations	

TOTAL

1,040 hours/26 weeks

CONCRETE FINISHER: Smooths and finishes surfaces of poured concrete roadways, decks, walls, sidewalks, curbs or floors to specified grade and texture, using hand or power tools. Uses vibrator to eliminate air voids within concrete. Levels concrete to specified depth and workable consistency, using hand held screed and floats. Finishes concrete surfaces using power trowel, or wets and rubs concrete with abrasive stone to impart finish. Molds expansion joints and edges, using edging tools, jointers and straightedge. May produce rough concrete surface, using appropriate tools. May signal operator to expedite pouring concrete from truck or bucket into forms. May spread concrete into inaccessible sections of form using rake or shovel. May direct subgrade work, mixing of concrete, and setting of forms. May apply compounds or covers for proper curing.

Finishes surface of concrete products or structural elements after forms have been removed by mixing sand, cement, and water in specified proportions to make cement grout or slurry. Wets surface of concrete to create proper bond. Fills holes and cracks with grout or slurry and smooths surface, using trowel. Clamps wooden forms to corners and pours grout or slurry into forms to patch broken corners. Chips, scrapes, rubs and grinds high spots, ridges, and rough projections from surface to remove chipped area, using wire brush. Feels and observes surface to detect irregularities and rough or uneven surfaces. Selects abrasive stone according to finish specified or step in finishing process. Wets concrete surface and rubs surface with stone to obtain specified finish. May utilize epoxy materials to seal cracks, joints, etc. Cleans equipment, hand tools, and work site. May apply muriatic acid to concrete to clean surface. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

- | | | |
|----|--|----------|
| 1. | ORIENTATION AND OBSERVATION | 70 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 10 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 20 hours |
| 4. | CARE AND MAINTENANCE | 50 hours |
| | A. Cleaning of work area, materials, tools and equipment | |
| | B. Fueling, lubrication and servicing of power equipment | |

5.	APPLICABLE WORK ACTIVITIES	890 hours
	A. Basic operation of tools	
	B. Forming and finishing edges, joints, curbs, gutters, paving and structures	
	C. Use of trowels, straight edges, floats and finishing machine	
TOTAL		1,040 hours/26 weeks

DECKHAND: May assist others on the vessel in preparing for the loading and unloading and discharging of cargoes. May build tows by handling lines and cables to tie and untie barges and boats. May perform scheduled maintenance, care for tools and equipment, and perform general housekeeping duties as assigned by their supervisor. Adhere to company safety policy and procedures, environmental rules and governmental regulations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 440 hours/11 weeks

1.	ORIENTATION AND OBSERVATION	35 hours
	A. Safety procedures	
	B. Observation of overall dredge operation	
2.	CARE AND MAINTENANCE	405 hours
	A. Safety Procedures	
	B. Routine procedure for handling ropes and cables	
	C. Routine procedure for mooring tugs, barges, and other floating equipment	
	D. Routine procedure for adding and removing floating and discharged line	
	E. Routine procedure for good housekeeping aboard the dredge and tender	
	F. Routine removal of pump and suction chokes	
	TOTAL	440 hours/11weeks

ELECTRICIAN – BRIDGE: Help lay out work from plans or sketch. Cut and thread conduit, install anchors and straps, pull wire, etc. Equipment setting. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 2,080 hours/52 weeks

1.	ORIENTATION AND OBSERVATION	320 hours
	A. Safety procedures	
	B. Use of power and hand tools	
	C. Materials selection	
2.	CARE AND MAINTENANCE	1,270 hours
	A. Safety procedures	
	B. Setting up benders	
	C. Bending conduit	
	D. Installing conduit	
	E. Pulling wire	
3.	BLUE PRINT OR CONSTRUCTION PLANS READING & APPLICATIONS	140 hours
4.	SETTING EQUIPMENT	255 hours
	A. Safety procedures	
	B. Setting MCCs, transformers, generators	
5.	TOOL STORING AND CLEAN UP	95 hours
	A. Safety procedures	
	B. Tool storing	
	C. Clean up	
TOTAL		2,080 hours/52 weeks

FENCE ERECTOR: Erects and repairs fences and gates along roadways, using tractor or truck mounted equipment (auger, driver, etc.), power or hand tools. Establishes fence line from plans and marks positions for post holes. Digs post holes and sets posts in upright position. Aligns posts using string line or by sighting along edges of posts. Secures post in posthole with concrete or other materials to embed post. Verifies vertical alignment of post with plumb bob or level. Constructs horizontal bracing between posts when required. Stretches material, if necessary, to produce a uniform product and attaches fence to post. Attaches hardware as necessary for gates, etc. May be required to blast rock or clear trees and shrubs along fence line. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	20 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	25 hours
4.	CARE AND MAINTENANCE	60 hours
	A. Power and hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	410 hours
	A. Lays out and clears fence lines	
	B. Determines post locations	
	C. Digs hole and sets post or drives post to proper alignment and grade	
	D. Pours incidental concrete	
	E. Cuts and installs braces	
	F. Stretches and Fastens Wire or attaches fence material	
	G. Final alignment and cleanup	
TOTAL		520 hours/13 weeks

FORM SETTER: Assembles, aligns, and sets to grade prefabricated forms for holding concrete in place. Various tools and implements are employed in the trade, such as hammer, saw, level and fastening devices. May prepare subgrade to specified grade. May clean, lubricate, and strip forms. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

- | | | |
|----|---|-----------|
| 1. | ORIENTATION AND OBSERVATION | 50 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 5 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 15 hours |
| 4. | CARE AND MAINTENANCE | 40 hours |
| | A. Reclaiming of forms used for concrete pours | |
| | B. Cleaning of tools, implements and forms | |
| | C. Work area | |
| 5. | APPLICABLE WORK ACTIVITIES | 410 hours |
| | A. Drives stakes for braces, helps erect scaffolding | |
| | B. Holds, aligns, sets and strips forms | |
| | C. Assists in setting Precast Concrete Items | |
| | D. Plan reading and interpretation | |
| | E. Use simple surveying principles for line and grade and reading survey stakes | |
| | F. Measures space between forms, fits together, lines, plumbs vertically, sets to elevation | |
| | G. Checks forms while concrete is being placed | |
| | H. Grading of earth | |

TOTAL		520 hours/13 weeks
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GRADE CHECKER: Responsible for checking all or part of grades on projects such as slope, fine grades, or pipe stakes, etc. Reads survey stakes to determine grade. Measures horizontally and vertically, in specified slope ratio, from survey stake to juncture of embankment and initial excavation, using survey rod and hand level. Delineates excavation reference points on stakes. Repeats measuring at specified intervals to verify conformance to stake references and notifies equipment operators or supervisor of deviations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	20 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Hand tools	
	B. Survey instruments	
5.	APPLICABLE WORK ACTIVITIES	435 hours
	A. Reading of plans to establish lines, points and grades	
	B. Use of levels to establish grade	
	C. Use of chain to establish points and slopes	
	D. Supervise Rodperson	
TOTAL		520 hours/13 weeks

GUARDRAIL ERECTOR: Erects and repairs various types of guardrail according to plans, standards and specifications. Assist with layout and marking for proper spacing and alignment. Ensures proper depth of post. Uses power and hand tools in conjunction with hanging and attaching rail. May require mixing/placing concrete for post and anchor installations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	85 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATION	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	25 hours
4.	CARE AND MAINTENANCE	50 hours
	A. Hand tools	
	B. Power tools	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	555 hours
	A. Reading plans, standards and specifications	
	B. Layout work area	
	C. Incidental concrete pouring and post setting	
	D. Post hole digging and post driving equipment operation	
	E. Guard rail attachment and finishing	
TOTAL		720 hours/18 weeks

LANDSCAPE WORKER: Moves soil, equipment, and materials, digs holes for plants and trees, using pick and shovel or power equipment. Mixes fertilizer or lime with dirt in bottom of holes to enrich soil, places plants or trees in holes and adds material to fill holes. Attaches wires from planted trees to stakes to support trees. Hauls or spreads topsoil, using wheelbarrow and rake. Waters trees and plants. Spreads straw over seeded soil. Places decorative stones. Plants flowers and mows grass, using power mower. May prune or trim plants as necessary. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	20 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	25 hours 40 hours
4.	CARE AND MAINTENANCE	
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	430 hours
	A. Comprehension of landscape site plans and landscaping procedures	
	B. Site preparation activity	
	C. Perform landscape operations (planting, pruning, trimming, seeding, mulching, watering, aesthetics activities, fertilizing and liming, spreading topsoil, staking plants, etc.)	
TOTAL		520 hours/13 weeks

MASON, STRUCTURE: Lays building materials, such as brick, structural tile and concrete cinder, glass, gypsum and terra cotta block to construct or repair walls, partitions, arches, sewers, manholes, catch basins and other structures. Measures distance from reference points and marks guidelines on working surface to lay out work. Spreads mortar that serves as base and binder for block. Applies mortar to block and positions block in mortar bed. Taps block to level, align and embed in mortar, allowing specified thickness of joint. Removes excess mortar from face of block. Finishes mortar between brick or block. Cuts or breaks material to fit spaces too small for whole brick or block. Determines vertical and horizontal alignment of courses. Fastens brick or terra cotta veneer to face of structures, with tie wires embedded in mortar between bricks or in anchor holes in veneer brick. May weld metal parts to steel structural members. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	95 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	880 hours
	A. Comprehension of plans	
	B. Excavation knowledge	
	C. Setting up template and guide lines	
	D. Proficient with hand tools, trowel, etc.	
	E. Placement of materials	
	F. Anchor or tie material	
	G. Proper use of materials, including brick, concrete block, tile, mortar and other materials	
	H. Final finish	
	I. Site cleanup	
TOTAL		1,040 hours/26 weeks

MECHANIC: Assembles, sets up, adjusts, welds, repairs and maintains electric, diesel, gasoline and pneumatic industrial equipment, following manuals and using hand tools, power tools and knowledge of electrical power, transmissions, brake and other systems. Reads job order and observes and listens to equipment in operation to determine malfunction and to plan work procedures. Installs new ignition systems, aligns front wheels, changes or recharges batteries and replaces transmissions and other parts, using hand tools. Overhauls gas or diesel engines, using mechanic's hand tools, welding equipment, standard charts and hoists. Examines protective guards, loose bolts and specified safety devices on trucks and makes adjustments, using hand tools. Lubricates moving parts and operates repaired equipment to verify conformance to specifications. May fabricate special lifting or towing attachments, hydraulic systems, shields or other devices according to blueprints or schematic drawings. May be required to possess a [Commercial Driver's License](#). May perform other related duties.

TRAINING OUTLINE

Approximate training time: 2,080 hours/52 weeks

1.	ORIENTATION AND OBSERVATION	10 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	50 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Hand tools	
	B. Shop equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	1,985 hours
	A. Lubrication	
	B. Replace deteriorated parts	
	C. Starters, generators and electronics	
	D. Diagnostic equipment	
	E. Transmissions and rear ends	
	F. Injector-governor	
	G. Engine repair or rebuild: diesel, gas and/or small engines	
	H. Machine shop familiarization	
	I. Paint and body	
	J. Heavy equipment parts and familiarization	
	K. Heavy equipment shop	
TOTAL		2,080 hours/52 weeks

OILER GREASER: Oils and greases moving parts of friction surfaces of mechanical equipment according to specified procedures and oral instructions. Fills container, such as oil can, grease gun or tank, with specified lubricant. Squirts or pours oil on moving parts and friction surfaces, or into holes, oil cups, or reservoirs. Turns oil cup valves to regulate flow of oil to moving parts. Forces grease into bearings with grease gun, smears grease on friction surfaces, or packs grease cups by hand. May clean machines or service equipment and performs general maintenance work on asphalt or concrete plant and equipment. May have to transport stock or perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	20 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	35 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Hand tools	
	B. Equipment	
	C. Clean work area	
5.	APPLICABLE WORK ACTIVITIES	430 hours
	A. Familiar with equipment maintenance procedures	
	B. Proper lubrication	
	C. Minor adjustments	
	D. Cleanup and upkeep of equipment and work site	
TOTAL		520 hours/13 weeks

PILE DRIVER LEADSPERSON: Lays out pile locations from plans or reference points. Sets pile template. Sets pile in leads. Sets pile in correct position. Guides sheet steel pile into grooves of adjacent pile. Places cap, signals pile driver operator to start or stop hammer and adjusts direction and angle of leads for alignment, movement and adjustment of machinery to conform to grade specifications and plan locations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	35 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Hand tools	
	B. Equipment - pile hammer, compressors, welders, etc.	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	920 hours
	A. Comprehending plans	
	B. Use of hand signals for crane operator	
	C. Unloading, stacking and handling of piling	
	D. Preparation of piling for driving (pointing, etc.)	
	E. Setting of leads and piles in leads (level and plumb)	
	F. Procedure for placing pile under hammer (climbing levels)	
	G. Driving of piles	
	H. Determine bearing capacity	
	I. Cut-off to grade and cleanup site	
TOTAL		1,040 hours/26 weeks

PIPE LAYER: Lays clay, concrete, steel, C.I., PVC, or other type of pipe for water main, gas main, sanitary sewer, storm sewer; telephone, electrical or other types of conduit. Prepares bedding area. Applies joint sealing materials, attaches bands or performs other steps related to pipe coupling. Installs geotextile material, ensures proper layering of backfill, materials and compaction. May establish line and grade from reference points. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	100 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	55 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	540 hours
	A. Ditch grading using power equipment or hand spade	
	B. Setting grades	
	C. Work as a Chainman locating and transferring points	
	D. Lay all types of pipe and backfill same	
TOTAL		720 hours/18 weeks

PIPE LAYER LEADSPERSON: Upon completion, the candidate will lead others to install concrete, steel, C.I., PVC, or other type of pipe for water main, gas main, sanitary sewer, storm sewer, telephone, electrical or other types of conduit. Train others regarding correct bedding/haunch installation compaction for pipe. Develop the ability to supervise and train other crew members' installation procedures for applicable pipe for specifications. Advance previous pipe layer training by fully understanding specifications, plan reading, structure layout and developing line and grade per stakeout. Teach supervisory aspects of the position regarding safety, time keeping and company policy.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	100 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	55 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	540 hours
	A. Plan reading	
	B. Specification knowledge	
	C. Structure layout – level and transit training	
	D. Calculation of grades	
	E. Time keeping	
	F. Supervisory skills	
	G. Rigging	
TOTAL		720 hours/18 weeks

REINFORCING IRON WORKER: Determines number, sizes, shapes and locations of reinforcing rods from plans, sketches or oral instructions. Selects and places rods in forms, assuring proper spacing and alignment requirements, fastening rods together to maintain proper overlap and anchoring. Cuts bars to required lengths. May bend and tie bars into racks, cages, etc. prior to placing within forms. May weld reinforcing bars together using arc-welding equipment. May clean and re-epoxy rods as necessary and perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	75 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	40 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	570 hours
	A. Comprehending plans	
	B. Placing reinforcing steel in the forms	
	C. Placing steel, setting rods in place	
	D. Install chairs, spacing rods, measuring depths and tying steel	
	E. Adaptation to working on high structures	
TOTAL		720 hours/18 weeks

RODPERSON: Uses surveyor's chain to measure distance as directed by Instrument Engineer. May mark reference points. May hold engineering rod at points designed by Instrument Engineer to establish or obtain elevation of those points. May set stakes. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 240 hours/6 weeks

1.	ORIENTATION AND OBSERVATION	15 hours
	A. Safety procedures	
	B. Observation of Rodperson	
2.	APPLIED TECHNIQUES OF THE TRADE	75 hours
	A. Use of the chain	
	B. Use of the rod	
	C. Placing stakes	
3.	ACTUAL OPERATIONS	150 hours
	A. Measuring distances with chain	
	B. Establishing elevation with rod	
	TOTAL	240 hours/6 weeks

SIGN ERECTOR: Erects signs on structures, according to sketches, drawings, or blueprints. Erects, assembles and maintains roadside signs at designated locations, using hand and power tools. Digs hole and places post in hole. Fills hole and tamps to hold post in vertical position. Drives channel metal post into ground. Bolts, screws or nails plywood or metal sign panels to sign post or frame. Replaces worn and damaged signs. Makes layout for erection of signs; sets forms for concrete; cuts, ties and sets reinforcing steel; pours concrete; sets anchor bolts; erects wood or metal structures; places clamps, brackets or other required hardware on structures. May erect metal sign support structures over highways. May operate hydraulic boom to position sign. May operate banding machine to band signs on poles. May dismantle and number sign sections for transfer and reassembly at new locations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

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|----|--|-----------|
| 1. | ORIENTATION AND OBSERVATION | 55 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 5 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 30 hours |
| 4. | CARE AND MAINTENANCE | 40 hours |
| | A. Hand tools | |
| | B. Equipment | |
| | C. Work area | |
| 5. | APPLICABLE ACTIVITIES | 590 hours |
| | A. Plan reading | |
| | B. Use of tools | |
| | C. Erection layout | |
| | D. Forming and pouring concrete | |
| | E. Erection of structures | |
| | F. Panel assembly | |
| | G. Sign attachment | |
| | H. Sign maintenance | |

TOTAL		720 hours/18 weeks
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STRUCTURAL IRON WORKER: Performs any combination of following duties to raise, place and unite girders, columns and other structural members to form completed structures or structure framework, working as a member of a crew. Sets up hoisting equipment for raising and placing structural members. Fastens cable or hoist to members, using chain, cable or rope. Signals worker operating hoisting equipment to lift and place member. Guides member, using tag line (rope) into position. Pulls, pushes or pries members into approximate position while member is supported by hoisting device. Positions members into place, using turnbuckles, crowbars, jacks and hand tools. On steel members aligns holes with corresponding holes in previously placed member by driving drift pins or handle of wrench through holes. Verifies vertical and horizontal alignment of members, using plumb bob and level. On steel members is responsible for bolting aligned members in position until they can be permanently riveted, bolted or welded in place. Willingness to work on high structures is essential. May cut and weld steel members to make alterations, using oxyacetylene welding equipment; reads and interprets plans. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	145 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	50 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Hand tools	
	B. Equipment	
5.	APPLICABLE WORK ACTIVITIES	800 hours
	A. Reading plans	
	B. Erection of structural steel	
	C. Assembling structural steel	
	D. Adapt to working on high structures	
	E. Orientation in cutting and welding	
	F. Use of hand signals in assisting equipment operator	
	G. Rigging structural steel requiring bolting	
TOTAL		1,040 hours/26 weeks

WATERPROOFER: Prepares and cleans surfaces by spraying material such as water, sand or steam. Applies caulking compound by hand or with caulking gun to seal crevices. Sprays vinyl paint, or stucco through hose or mops, brushes or spread paints, epoxies or bituminous compounds over surface for protection. Applies prefabricated membrane or mats to prepared surfaces. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	15 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	30 hours
4.	CARE AND MAINTENANCE	60 hours
	A. Hand tools	
	B. Equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	410 hours
	A. Prepare surface	
	B. Mix and prepare compounds	
	C. Apply compounds to surface	
	D. Ensure proper adhesion and cure	
	E. Finish surface	
	F. Work with prefabricated materials	
	G. Cleanup	
TOTAL		520 hours/13 weeks

WELDER: Welds metal components together to fabricate or repair products such as machine parts, equipment, motors, and generators, according to layouts, blueprints, or work orders, using brazing and variety of arc and gas welding equipment: welds metal parts together using both gas welding or brazing and any combination of arc welding processes. Performs related tasks such as thermal cutting and grinding. Repairs broken or cracked parts, fills holes, and increases size of metal parts. Positions and clamps together components of fabricated metal parts preparatory to welding. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	40 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	40 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Welding equipment	
	B. Safety equipment	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	900 hours
	A. Materials selection	
	B. Gas cutting, brazing, and welding	
	C. Arc cutting and welding	
	D. Plan reading	
	E. Cutting, layout, fitting, and welding of various metals	
	F. Fabrication and repair	
TOTAL		1,040 hours/26 weeks

**OPERATOR ON-THE-JOB
CLASSIFICATIONS
AND
TRAINING DESCRIPTIONS**

AIR COMPRESSOR OPERATOR: Tends air compressor to generate and supply compressed air. Starts and stops air compressor, regulates and adjusts controls to maintain continuous air supply to pneumatic tools or equipment. Observes temperature, pressure, and other gauges and adjusts controls accordingly, connects pipes and/or hoses leading from compressor to equipment. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

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|----|---|-----------|
| 1. | ORIENTATION AND OBSERVATION | 30 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical experience/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 5 hours |
| 3. | SAFETY ASSOCIATED WITH THIS OPERATION | 25 hours |
| 4. | CARE AND MAINTENANCE | 30 hours |
| | A. Routine fueling, lubrication and servicing | |
| | B. Minor repairs | |
| | C. Operation adjustments | |
| | D. Cleaning of equipment and work area | |
| 5. | APPLICABLE WORK ACTIVITIES | 430 hours |
| | A. Starting and stopping | |
| | B. Regulating valves | |
| | C. Making proper connections | |
| | D. Observing and understanding gauges | |
| | E. Adjusting controls | |

TOTAL		520 hours/13 weeks
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ASPHALT DISTRIBUTOR OPERATOR: Requires [Commercial Driver's License](#) prior to enrollment in program. Drives asphalt distributor truck. Loads distribution tank with asphalt material and regulates burner to maintain specified temperature. Sets spray bar on manual, automatic or semiautomatic distributors that spray tar, asphalt, road oils and emulsions over highways, streets and parking areas. Observes distribution of material over surface and monitors instruments to ensure uniform distribution. Directs hand held nozzle to control spray over designated area with specified coverage. [HAZMAT endorsements](#) from DMV required before completion of program. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 760 hours/19 weeks

1.	ORIENTATION AND OBSERVATION	50 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	590 hours
	A. Drive vehicle on highway	
	B. Load distribution tank with asphalt material	
	C. Regulate burner to maintain specified temperature	
	D. Set controls on spray bar per job specifications	
	E. Familiarization with computerized controls	
	F. Operate hand held nozzle	
	G. Make field adjustments to compensate for job site conditions	
	H. Operate distributor on job site	
6.	HAZMAT ENDORSEMENT	40 hours
TOTAL		760 hours/19 weeks

ASPHALT PAVER OPERATOR: Operates asphalt paver that spreads and levels hot asphalt concrete material on prepared surface. Bolts extensions to screed to adjust width. Lights burners to heat screed. Starts engine and controls paving machine to maintain constant flow of asphalt concrete into hopper. Observes distribution of paving material along screed and controls direction of screed to eliminate voids at curbs and joints. May service and make normal operating adjustments to the equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	160 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	75 hours
	A. OSHA requirements	
	B. Review of equipment operations manual	
4.	CARE AND MAINTENANCE	75 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor Repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	720 hours
	A. Operate paver	
	B. Bolt extensions to screed	
	C. Light burners to heat screed	
	D. Familiarization with computerized controls	
	E. Observe and controls distribution of paving material	
	F. Control direction of screed	
	G. Make field adjustments to compensate for job site conditions	
TOTAL		1,040 hours/26 weeks

BACKHOE OPERATOR: Operates power shovel on which digger is pulled toward machine to excavate. All machines to be 1/2 cubic yard or under - may have front end loader attached - can be track or rubber tired. Grades to line and grade. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	35 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor Repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	610 hours
	A. Moving equipment	
	B. Manipulating controls	
	C. Trenching operations	
	D. Excavating	
	E. Loading	
	F. Special applications and functions	
TOTAL		720 hours/18 weeks

BULLDOZER OPERATOR: Operates tractor with blade attached across front to excavate, level and distribute earth and to push trees and rocks. Fastens attachments to tractor. Connects hydraulic hoses, belts, mechanical linkage or power takeoff shaft to tractor to provide power to raise, lower or tilt attachment. Operates controls to manipulate tool bars, carriers and disks. Operates controls to maneuver tractor and raise, lower and tilt attachments to clear right-of-way. Listens for stalling action of engine to estimate depth of cut. Operates bulldozer in successive passes to raise or lower terrain to specified grade following markings on grade stakes or hand signals. May service and make normal operating adjustments to equipment.

TRAINING OUTLINE

Approximate training time: 840 hours/21 weeks

1.	ORIENTATION AND OBSERVATION	50 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	715 hours
	A. Operation of controls	
	B. Push loading pans	
	C. Clearing and grubbing	
	D. Rough grading	
	E. Construction of slopes	
TOTAL		840 hours/21 weeks

CONCRETE FINISH MACHINE OPERATOR: Operates a machine used to develop the finish surface on freshly placed concrete. Operation usually consists of floating the concrete, and may provide a specified texture on the concrete surface, and utilizing an acceptable curing process. May be responsible for installing expansion joints and/or other materials. Responsible to ensure finish process is coordinated with the paving operation. May assist in set-up, maintenance/servicing and repair of the equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	60 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	590 hours
	A. Set-up of equipment and guide apparatus	
	B. Operation of machine	
	C. Regulate equipment to float concrete	
	D. Monitor surface finish for conformance to standards	
	E. Make field adjustments during operation	
TOTAL		720 hours/18 weeks

CONCRETE PAVING MACHINE OPERATOR: Operates machine to place and smooth freshly poured concrete surfaces for concrete roads and landing fields. Adjusts proper controls which enable machine to satisfactorily vibrate screed, strike-off (remove excess), place longitudinal joints and finish surface of concrete. Ensures constant feed of concrete and proper consolidation. May be required to assist in initial set-up of machine and paving operation. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	60 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	910 hours
	A. Set-up of equipment and guide apparatus	
	B. Operation of machine	
	C. Coordination with finish machine operator	
	D. Make field adjustments during operation	
TOTAL		1,040 hours/26 weeks

CONCRETE SAW OPERATOR (PAVEMENT): Operates a self-propelled, water-cooled power saw with either a diamond blade or an abrasive blade to saw expansion and contraction joints in concrete paving. May also be used to saw asphaltic pavements. Operates saw to cut concrete or asphalt along marked line. Installs appropriate blade, using hand tools. Positions and lowers guide arm of saw over marked cutting line. Connects water hose to supply coolant between cutting blade and surface. Operates controls to lower blade into surface until specified depth has been attained. Operates controls to activate and guide self-propelled saw along marked line. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	30 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	60 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
	E. Blade selection and maintenance	
5.	APPLICABLE WORK ACTIVITIES	390 hours
	A. Operation of saw	
	B. Techniques to improve operation (wedges, depth, coolant application)	
	C. Sawing in new/old concrete pavement (expansion joint/contracting joints, loop detectors)	
	D. Replacing joints and concrete slabs - pavement rehabilitation	
	E. Sawing in asphalt pavement	
TOTAL		520 hours/13 weeks

CRANE, DERRICK, DRAGLINE OPERATOR: Operates crane, derrick, drag line. Grades to line and grade from reference points. Operates crane to hoist and move materials, raise and lower heavy weights (loads), charge cold feed bins, etc. Uses drag line, clam shell, orange peel and other related attachments. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 2,080 hours/52 weeks

1.	ORIENTATION AND OBSERVATION	60 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	40 hours
4.	CARE AND MAINTENANCE	60 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
	E. Daily inspection of equipment	
5.	APPLICABLE WORK ACTIVITIES	1,910 hours
	A. Operation of controls	
	B. Lifting and lowering	
	C. Excavating	
	D. Handling of materials	
	E. Use of related attachments	
TOTAL		2,080 hours/52 weeks

DRILL OPERATOR: Operates drilling machine to bore holes in various materials according to specifications. Measures and marks pattern for drilling. Regulates speed of drilling machine, flow of water (coolant), and drilling speed. May sharpen drill bits. May operate portable air compressor. May charge and set off explosives in blasting holes under authorized supervision. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	35 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	610 hours
	A. Operate machine	
	B. Set-up of equipment	
	C. Make necessary connections	
	D. Manipulate controls	
TOTAL		720 hours/18 weeks

EXCAVATOR OPERATOR: Operates power shovel on which digger is pulled toward machine to excavate. All machines will be over 1/2 cubic yard. Can be on track or rubber tired and also included under this title will be gradall or wrist-o-twist type equipment. Grades to line and grade. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	80 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	35 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment	
5.	APPLICABLE WORK ACTIVITIES	890 hours
	A. Operate machine	
	B. Manipulate controls	
	C. Excavate	
	D. Cut to grade	
TOTAL		1,040 hours/26 weeks

FRONT-END LOADER OPERATOR: Operates straight or articulated rubber tired or crawler type machine equipped with front mounted hydraulically powered bucket, scoop or other accessories used to grade, excavate, lift, transport or load materials. Operates loader by shifting gears, levers and controls to direct movement and force bucket into materials. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	25 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	425 hours
	A. Manipulating controls	
	B. Loading/unloading	
	C. Transporting	
	D. Excavating/grading	
	E. Lifting	
TOTAL		520 hours/13 weeks

FUEL AND LUBRICANT SERVICE TRUCK DRIVER: Requires [Commercial Driver's License](#) prior to enrollment in program. [HAZMAT endorsements](#) required before completion of program. Drives truck to deliver gasoline, fuel oil, lubricating oil, or liquefied petroleum gas to work site. Drives truck into position to load or distribute products. Connects hoses to tank and opens valves. May start pump to fill tanks, read gauges or meters and record quantity loaded. May attach ground wire to truck. May lubricate parts and wearing surfaces of equipment as assigned. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 760 hours/19 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	25 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	35 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment/vehicle and work area	
5.	APPLICABLE WORK ACTIVITIES	580 hours
	A. Drives vehicle on/off highway	
	B. Loads fuel and lubricants onto truck	
	C. Connects hoses and opens valves	
	D. Starts pump	
	E. Reads gauges or meters and records quantity loaded	
	F. Keeps inventory records	
	G. Lubricates parts and wearing surfaces	
	H. Changes filters	
	I. Makes normal operating adjustments	
6.	HAZMAT ENDORSEMENT	40 hours
TOTAL		760 hours/19 weeks

HYDRO SEEDER OPERATOR: Operates truck-mounted hydro-sprayer to cover designated areas with mixture of grass seed, fertilizer and mulch according to specifications. Pumps water and dumps seed, fertilizer, and wood fiber into hydro-sprayer tank according to formula. Connects hoses and nozzles, selected according to terrain and distribution pattern requirements. Starts motors and engages machinery, such as hydro-sprayer agitator and pump. Lifts, pushes and swings nozzle, hose, and tube to direct spray over designated area. Covers area to specified depth, applying knowledge of weather conditions, such as humidity and wind velocity; machinery capacities, such as droplet size and elevation-to-distance ratio; and obstructions, such as trees and buildings. Gives instructions to truck driver, using hand and horn signals, to ensure complete coverage of designated area. Cleans equipment and may service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	35 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	405 hours
	A. Fills hydro-sprayer tank with appropriate material	
	B. Connects hoses and nozzles	
	C. Operates hydro-sprayer with attachments	
	D. Observes and controls distribution of material	
	E. Familiar with applicable specifications	
	F. Makes field adjustments to compensate for weather conditions, machinery capacities and obstructions	
	G. Coordination with truck driver	
TOTAL		520 hours/13 weeks

MOTOR GRADER OPERATOR: Operates grader to spread and level materials to approximate grade specifications in either construction or maintenance operations. Operates grader and moves controls to regulate height and angle of grader blade, lowers scarifier that loosens packed material to permit grading, and tilts front wheels when necessary. Operates grader in successive passes over working area, observing from reference stakes, lines or hand signals of assisting worker, to level surface to approximate grade. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	85 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	35 hours
4.	CARE AND MAINTENANCE	60 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	855 hours
	A. Moves machine	
	B. Manipulates controls and attachments	
	C. Spreading and leveling material with grader	
	D. Works with ground assistant	
	E. Understands grade stakes as they relate to grade	
TOTAL	Motor Grader Operator (Rough)	1,040 hours/26 weeks
	Motor Grader Operator (Fine)	additional <u>1,040 hours/26 weeks</u>
		<u>2,080 hours/52 weeks</u>

Additional Applicable Work Activities (Fine)

- A. Shaping and grading subgrade
- B. Balancing and shaping base course material
- C. Fine grading and dressing of shoulders and slopes
- D. Understands and operates automatic blade control

PAVEMENT PLANING/MILLING OPERATOR: Operates a "Pavement Planing Machine" capable of performing either "Hot Planing Methods" or "Milling and Cold Planing Methods" as required in the Specifications. Manipulates and makes adjustments by use of a control panel to regulate depth and alignment of pavement planing operation. May maintain, service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	50 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation of equipment	
	D. Practice experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs and replacing and cutting teeth	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	605 hours
	A. Set up and prepare equipment	
	B. Operate controls for speed, depth of cut, discharge, etc.	
	C. Operation of machinery	
	D. Coordination with ground person	
TOTAL		720 hours/18 weeks

PILE DRIVER OPERATOR: Operates pile driver mounted on skids, barge, crawler treads, or locomotive crane to drive piling as foundation for structures or sheet piling for protecting or corrodoring work areas. Manipulates controls to operate diesel, electric, gasoline, steam-powered hoisting equipment to position piling leads. Hoist piling into leads and positions hammer over top of pile. Moves controls to activate hammer or raise and lower drop hammer to drive pile to required depth. May service and make normal operating adjustments. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	100 hours
	A. Safety procedures	
	B. Observation of machine in operation	
	C. Starting and manipulating levers for moving equipment and attachments	
2.	CARE AND MAINTENANCE	350 hours
	A. Safety procedures	
	B. Routine fueling, lubricating and servicing	
3.	ACTUAL OPERATION OF EQUIPMENT	590 hours
	A. Safe operating procedures	
	B. Basic operation of crane or pile driving rig in hoisting and moving	
	C. Placement of pile in preparation for driving	
	D. Seating of pile hammer on pile in preparation for driving	
	E. Driving of pile	
	TOTAL	1,040 hours/26 weeks

POWER TOOL OPERATOR: Performs any combination of tasks related to the operation of mechanical or pneumatic hand tools, such as jack hammer, tamper, pavement breaker, saws, chain saw, concrete vibrator, air hammer, torque wrench, grinders, drills, etc. Equipment may be electric, hydraulic, air or fuel powered. Required to start, stop, fuel, and service equipment. May also be required to start and stop accompanying portable air compressor, generator, etc. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 280 hours/7 weeks

1.	ORIENTATION AND OBSERVATION	30 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation of tools and equipment	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs/sharpen/adjust/calibrate, etc.	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	200 hours
	A. Selecting and/or connecting to appropriate power source	
	B. Operation of tool(s)	
TOTAL		280 hours/7 weeks

ROLLER OPERATOR: Operates controls to guide machine in making successive overlapping passes over the material to be compacted. Determines speed and direction of machine based on knowledge of compressibility of material. Operates self-propelled steel wheeled, rubber tired, sheep foot, vibratory, segmented, or other type roller to compact earth, subgrade, subbase, shoulder materials, or stone cover on surface treatment. May also operate roller on bases and asphalt surface. Greater operative skills are generally associated with the operation and control of finish surface rollers. May be required to operate equipment in accordance with a Department approved method of compaction (roller pattern). May service equipment and make normal operating adjustments. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	25 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	345 hours
	A. Operate controls	
	B. Compacting different materials	
	C. Perform proper compaction (roller patterns)	
	D. Utilize different types of rollers	
TOTAL	Roller Operator (Rough)	440 hours/11 weeks
	Roller Operator (Fine)	additional <u>80 hours/2 weeks</u>
		520 hours/13 weeks
	Additional Applicable Work Activities (Fine)	
	A. Rolling of finish surface	
	B. Techniques to obtain proper finish	

SAFETY BOAT OPERATOR: Have working knowledge of coast guard rules, regulations, and procedures for inland waterways, harbor construction zones on waterways, and general knowledge of vessels underway inland. Provide warnings, assistance and other services to vessels underway and approaching construction zones by use of electronic communications, visual displays and sound equipment. Monitor U. S. Coast Guard safety regulations within the construction zone. Provide first aid to workers within the construction zone and provide rescue service in emergency situations when necessary. Operate small craft and vessels on inland waterways and construction zones. Provide assistance in the docking and securing of small craft, barges, tugs and other vessels working in the construction zone.

TRAINING OUTLINE

Approximate training time: 640 hours/16 weeks

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|----|---|-----------|
| 1. | ORIENTATION AND OBSERVATION | 40 hours |
| | A. Study of Coast Guard rules and regulations | |
| | B. Maintain marine logs and weekly observations | |
| 2. | SAFETY TRAINING | 160 hours |
| | A. Safety and First Aid courses | |
| | B. OSHA Training - Construction | |
| | C. Advanced training for rules and regulations for vessels underway and proceeding through construction zones | |
| | D. Rescue operations, procedures for handling fires, administering first aid for water victims (CPR), burns, cuts, heart attacks, falls, etc. | |
| | E. Seamanship Training including docking and securing vessels, safety inspections, maintaining safety equipment including life vests, rope, flashlights, operating lights, etc. | |
| 3. | ACTUAL OPERATION OF EQUIPMENT | 440 hours |
| | A. Operation of marine equipment including radio communication, radar equipment, computer equipment, onboard warning systems, etc. | |
| | B. Operation of small craft and related training for Coast Guard certification | |
| | C. Operation of small vessels on inland waterways and within the construction zone | |
| | D. Alert vessels entering the construction zone and monitor all vessels entering and departing the construction zone | |
| | E. Provide assistance to construction tugs, barges, divers, and other personnel within the construction zone | |

TOTAL		640 hours/16 weeks
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SCRAPER PAN OPERATOR: Operates scraper to excavate, move, haul, deposit and grade earth on construction sites, such as roadbeds, slopes, borrow sites, etc. Moves controls to vary speed of equipment, adjusts loading gate, depth of cuts, raises closes/opens bucket for hauling and spreading material. May service equipment and make normal operating adjustments and perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	25 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	425 hours
	A. Operation of controls	
	B. Loading	
	C. Spreading material	
	D. Rough grading	
TOTAL		520 hours/13 weeks

SHOVEL OPERATOR: (Power Shovel Operator) Operates power-driven machine equipped with movable shovel to excavate or move dirt, rock, sand and other materials. Operates controls to move machine, to lower and push shovel into material and to lift, swing and dump contents of shovel into truck, railcar, conveyor, hopper, etc. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instruction and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	940 hours
	A. Moving machine	
	B. Manipulating controls	
	C. Excavating/grading	
	D. Loading material	
TOTAL		1,040 hours/26 weeks

SLIP-FORM PAVER OPERATOR: Operates machine that extrudes materials such as concrete, asphalt, etc. onto prepared surfaces for construction of barriers, either parapet or median, raised median or curb and gutter, etc. Makes adjustments to controls to assure required distribution of materials. Also controls speed and movement of equipment in conjunction with distribution of material. May establish reference points for grade and alignment. May select and install proper form (die) in the machine for the designated product. May cut expansion joint at specified intervals or insert joint material. May service equipment and make normal operating adjustments. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instruction and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	620 hours
	A. Establishing reference points	
	B. Selecting and installing dies	
	C. Cutting/inserting joint material	
	D. Adjusting controls	
TOTAL		720 hours/18 weeks

STABILIZER OPERATOR: (Road-Mixer Operator) Operates machine that mixes material with soil for stabilization. Uses controls to set depth and pulverize soil. Starts engine to propel machine and power rotary digging and mixing blades. Starts pump and adjusts controls to feed materials, such as cement, chemicals, and bituminous binders into mixing mechanism. Controls alignment and speed of machine in prescribed path. Inspects mixed material and adjusts valves to regulate flow of additive, judging content of mixture by appearance. May service and make normal operation adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	25 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work	
5.	APPLICABLE WORK ACTIVITIES	420 hours
	A. Set-up of equipment	
	B. Operation of machine	
	C. Operate pump and adjust controls	
	D. Control alignment and speed of machine	
	E. Observe and control material mixed by machine	
	F. Adjust valves to regulate flow	
	G. Make field adjustments	
TOTAL		520 hours/13 weeks

STONE-SPREADER OPERATOR: Operates any self-propelled equipment on wheels or tracks which spreads stone or other granular materials. Adjust controls and speed to regulate flow and pattern of material onto road to ensure material is applied per specification. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instruction and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	25 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	420 hours
	A. Operating machine	
	B. Controlling speed	
	C. Manipulating controls	
	D. Regulating spread and depth	
	E. Controlling alignment	
TOTAL		520 hours/13 weeks

SUBGRADE MACHINE OPERATOR: Operates grading machine which is usually equipped with adjustable, revolving cutterhead to cut the final grade for a roadway. Aligns grader with stakes and guidelines on ground. Regulates depth of cut and speed of machinery. Observes conveyor that moves loose dirt to regulate flow. Responsible to determine cutting depth to achieve final grade. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

1.	ORIENTATION AND OBSERVATION	60 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	590 hours
	A. Setup of equipment and guide apparatus	
	B. Operation of machine	
	C. Make field adjustments during operation	
	D. Check to verify achieve final grade	
TOTAL		720 hours/18 weeks

TRACTOR OPERATOR (CRAWLER OR UTILITY): Operates tractor that furnishes motive power to other equipment units, such as, but not limited to, rollers, harrows, rippers, planers, plows, mixers, etc.; or tractor with special types of attachments for digging post holes, driving posts or pins, backfilling, mowing, sweeping, etc. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	415 hours
	A. Operation of machine	
	B. Operation of controls	
	C. Utilization of specialty attachments	
	D. Monitor activity to achieve desired results	
	E. Coordination with other work activities	
TOTAL		520 hours/13 weeks

TRUCK DRIVER, HEAVY DUTY: Operates heavy duty truck typically designed and used for "off road" transportation of earth, rock or other mass or bulk materials. Equipment may be, but not necessarily limited to, a back/rear/end dump or bottom dump. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 280 hours/7 weeks

1.	ORIENTATION AND OBSERVATION	25 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	25 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs or adjustments	
	C. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	200 hours
	A. Pre-trip/post trip inspection	
	B. Operate controls	
	C. Positioning truck for loading and unloading	
	D. Dumping/off loading	
TOTAL		280 hours/7 weeks

TRUCK DRIVER, MULTI-REAR AXLE: Operates multi-rear axle truck for transporting construction materials, equipment, commodities, etc. Pulls semi-trailer or a trailer with more than 10,000 pounds gross vehicle weight rating (GVWR). May pull various kinds of trailers such as flat or dump beds, tanker, "low boy", conveyor-rear discharge, etc. Requires a Class A [Commercial Driver's License](#) to operate vehicle. May assist certified mechanic with servicing and normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 440 hours/11 weeks

1.	ORIENTATION AND OBSERVATION	45 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	35 hours
4.	CARE AND MAINTENANCE	35 hours
	A. Routine fueling, lubrication and servicing	
	B. Assisting with minor repairs or adjustments	
	C. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	320 hours
	A. Pre-trip/post trip inspection	
	B. Operate controls, make hose/line connections	
	C. Backing and "tracking" of trailer	
	D. Positioning truck/trailer for loading and unloading	
	E. Use/operation of trailer assembly	
	F. Securing cargo	
TOTAL		440 hours/11 weeks

TRUCK DRIVER, SINGLE-REAR AXLE: Operates a single axle (may include auxiliary axle) truck for transporting construction materials or products and/or items related to construction activities. Unit may have any one of several beds or assemblies attached such as, but not limited to, dump or flat bed, water tank, service tanks and attachments, hoisting equipment, etc. Operator may be required to obtain or possess a [Commercial Driver's License](#) with proper endorsements. May assist certified mechanic with some servicing and normal operating adjustments to the vehicle. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 280 hours/7 weeks

1.	ORIENTATION AND OBSERVATIONS	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Assisting with minor repairs or adjustments	
	C. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	170 hours
	A. Pre-trip/post trip inspections	
	B. Operate controls	
	C. Positioning truck for loading/unloading	
	D. Use/operation of attachment(s)	
TOTAL		280 hours/7 weeks

TRUCK DRIVER, TANDEM-REAR AXLE: Requires [Commercial Driver's License](#) prior to enrollment in program. [HAZMAT endorsements](#) required before completion of program. Operates a tandem axle (may include auxiliary axles) truck for transporting construction materials or products and/or items related to construction activities. Unit may have any one of several beds or assemblies attached such as, but not limited to, dump or flat bed, water tank, service tanks and attachments, hoisting equipment, etc. May assist certified mechanic with some servicing and normal operating adjustments to the vehicle. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 320 hours/8 weeks

1.	ORIENTATION AND OBSERVATIONS	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	5 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	30 hours
4.	CARE AND MAINTENANCE	30 hours
	A. Routine fueling, lubrication and servicing	
	B. Assisting with minor repairs or adjustments	
	C. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	215 hours
	A. Pre-trip/post trip inspections	
	B. Operate controls	
	C. Positioning truck for loading/unloading	
	D. Use/operation of attachment(s)	
TOTAL		320 hours/8 weeks

VACUUM MACHINE OPERATOR: Operates a machine that removes loose debris from roadway surfaces. Determines proper alignment and speed of machinery ensuring surface is cleaned per specifications. Maintains record of operations. Unloads collected debris from machinery. May be required to possess a [Commercial Driver's License](#) in order to transport equipment. May service and make normal operating adjustments to equipment. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 280 hours/7 weeks

1.	ORIENTATION AND OBSERVATION	20 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical experience/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS OPERATION	15 hours
4.	CARE AND MAINTENANCE	20 hours
	A. Routine fueling, lubrication and servicing	
	B. Minor repairs	
	C. Operation adjustments	
	D. Cleaning of equipment and work area	
5.	APPLICABLE WORK ACTIVITIES	215 hours
	A. Operation of machine	
	B. Make field adjustment during operation	
	C. Monitor activity to achieve desired results	
TOTAL		280 hours/7 weeks

**MISCELLANEOUS ON-THE-JOB
CLASSIFICATIONS
AND
TRAINING DESCRIPTIONS**

ASPHALT PLANT QUALITY CONTROL TECHNICIAN: Read and understand specifications, sample all products produced, perform the required tests and calculations for stockpile gradations, AC content, mix gradation, and volumetric properties. Be able to understand results and conformity to specifications, be able to make mix adjustments to maintain mix within specification. Maintain records on sample results. Check mix temperature during start up and randomly throughout the day. Keep lab clean and orderly, maintain equipment and calibrations. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 520 hours/13 weeks

1.	ORIENTATION AND OBSERVATION	40 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
2.	ENVIRONMENTAL CONSIDERATIONS	10 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	40 hours
4.	CARE AND MAINTENANCE	40 hours
	A. Equipment	
	B. Hand tools	
	C. Work area	
5.	APPLICABLE WORK ACTIVITIES	390 hours
	A. Comprehension of specifications	
	B. Inspection duties	
	C. Representative sampling	
	D. Ignition furnace procedures	
	E. Asphalt content	
	F. Gradation	
	G. Marshall or superpave procedures	
	H. Maximum specific gravity	
	I. Site clean up	
	J. VDOT certification schools and other training seminars	
TOTAL		520 hours/13 weeks

FIELD ENGINEER TECHNICIAN: Utilizes various surveying instruments to perform construction surveying under the direction of a Field Engineer. Responsible for the proper use, care and maintenance of tripods, levels, total stations, data collectors and various other surveying related tools. Responsible for note keeping and correctly marking stakes. Responsible for reading and interrupting road and bridge plans. Perform basic surveying calculations using basic algebra, trigonometry and coordinate geometry. Responsible for drawing sketches and performing volume and quantity calculations. Will occasionally fill in for the Field Engineer during brief periods of absence. Will perform other related duties as directed by the Field Engineer. Position similar to Survey Instrument Operator.

TRAINING OUTLINE

Approximate training time: 2,080 hours/52 weeks

- | | | |
|----|---|----------|
| 1. | ORIENTATION AND OBSERVATION | 40 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Professionalism and ethics | |
| | D. Instructions and observation | |
| | E. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 5 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 40 hours |
| | A. Working in close proximity to traffic | |
| | B. Working in close proximity to heavy earth moving equipment | |
| | C. Working in close proximity to cranes | |
| | D. Using safety lanyards when working on tall structures | |
| | E. Working around nuclear density gauges | |
| | F. Working with machetes and brush axes | |
| | G. Defensive driving | |
| | H. Blood borne pathogens | |
| 4. | CARE AND MAINTENANCE | 80 hours |
| | A. Hand Tools/radios/chains/cloth tapes | |
| | B. Tripods | |
| | C. Levels | |
| | D. Total stations | |
| | E. Calculators/data collectors | |
| | F. Vehicles | |

5. APPLICABLE WORK ACTIVITIES 1,915 hours

- A. Basic mathematics
- B. Basic coordinate geometry
- C. Basic plan reading
- D. Tripod/tribrack setup
- E. Level setup and operation
- F. Total Station setup and operation
- G. Data collection setup and operation
 - 1. Field collection of data
 - 2. Stake out operations
 - 3. Interface with office computer
- H. Instruction in record keeping
- I. Instruction in reading and understanding road and bridge plans
- J. Instruction in clearing and grubbing stakes and references
- K. Instruction in drainage stakes and references
- L. Instruction in box culvert and wingwall stakes and references
- M. Instruction in centerline stakes and reference
- N. Instruction in edge of pavement stakes and references
- O. Instruction in curb and gutter stakes and references
- P. Instruction in slope stakes
- Q. Instruction in bridge stakeout
 - 1. Footing layout
 - 2. Pile layout and center of gravity check
 - 3. Form layout and checking
 - 4. Anchor bolt layout and checking
 - 5. Structural steel deflection checking
 - 6. Establishing deck grades
- R. Instruction in specialty stakeout
 - 1. Water and sewer facilities
 - 2. Signs and signals
 - 3. Soundwalls

TOTAL

2,080 hours/52 weeks

FIELD OFFICE ADMINISTRATOR: Provides skills in administration of matters concerning contract compliance and construction management. Responsible for coordination of information required by VDOT from contractors and subcontractors such as EO forms, employment data, training reports and other project related reports. Perform customer service including answering of phone and receiving complaints from the public (i.e., regarding hazard risks). Maintains inventory of materials on hand and procures supplies for field crew. Prepares various VDOT reports, files invoices and other documents. Attends progress meetings and prepares minutes of meetings. Prepares and maintains payroll records, pay quantities and general diaries of work activities. Will utilize Construction Workbook System and office equipment in the management of the office, as needed.

TRAINING OUTLINE

Approximate training time: 1,520 hours/38 weeks

- | | | |
|----|--|-----------|
| 1. | ORIENTATION AND OBSERVATION | 70 hours |
| | A. Overview of contract and EEO requirements | |
| | B. Forms required by contract | |
| | C. Attend EEO meeting and meet VDOT personnel | |
| | D. Familiarity with EEO responsibilities | |
| 2. | PRACTICAL EXPERIENCE/APPLIED TECHNIQUES | 360 hours |
| | A. Advertisement of positions available | |
| | B. Verify EO reports and company payrolls and maintain EO bulletin board | |
| | C. Maintain filing system and keep records; employment applications | |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 40 hours |
| | A. Knowledge of OSHA Safety Regulations and VDOT Safety Regulations | |
| 4. | CARE AND MAINTENANCE | 20 hours |
| | A. Office equipment including PC | |
| | B. Work area | |
| 5. | APPLICABLE WORK ACTIVITIES | 300 hours |
| | A. Customer service and complaint resolution (telephone, public) | |
| | B. Filing system | |
| | C. Time keeping procedures, payroll and on-job trainee hours | |
| | D. Procurement policy and procedures | |

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|----|---|-----------|
| 6. | DOCUMENTATION AND PAY ESTIMATES | 730 hours |
| | A. Construction Workbook System | |
| | B. Daily calculate and measure contract pay items | |
| | C. Become familiar with and record pay item quantities | |
| | D. Daily verify and enter pay quantities with contractor and construction quality control team | |
| | E. Gain knowledge of general contract requirements and terminology | |
| | F. Daily and general diaries shall include a description of work items performed by subcontractors, material deliveries, daily manpower and equipment | |
| | G. Prepare monthly pay estimate per VDOT's Construction Workbook System | |
| | H. Continuously monitor and advise Contractor and Construction Quality Control Team of required documentation in conjunction with prompt payment | |

TOTAL		1,520 hours/38 weeks
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FIELD OFFICE CLERK: Answers phone, greets visitors; files invoices and other documents; types correspondence; maintains employment, EEO, and other project related records. Prepares payrolls and weekly safety reports; records pay item quantities; prepares various VDOT reports. May procure supplies for field crew. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 720 hours/18 weeks

- | | | |
|----|--|-----------|
| 1. | ORIENTATION AND OBSERVATION | 40 hours |
| | A. Overview of industry | |
| | B. Company policies and procedures | |
| | C. Instructions and observation | |
| | D. Practical exercise/applied techniques | |
| 2. | ENVIRONMENTAL CONSIDERATIONS | 10 hours |
| 3. | SAFETY ASSOCIATED WITH THIS POSITION | 10 hours |
| 4. | CARE AND MAINTENANCE | 30 hours |
| | A. Office equipment | |
| | B. Work area | |
| 5. | APPLICABLE WORK ACTIVITIES | 630 hours |
| | A. Telephone etiquette | |
| | B. Meeting the public | |
| | C. Filing systems | |
| | D. Employment records | |
| | E. EEO requirements | |
| | F. Time keeping procedures | |
| | G. Payroll procedures | |
| | H. Office equipment | |
| | I. VDOT forms and reports | |
| | J. Procurement policy and procedure | |

TOTAL		720 hours/18 weeks
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FOREMAN: Supervises and coordinates activities of work crews engaged in any facet of highway construction. Reads plans and interprets specifications. Establishes or adjusts work procedures to meet schedules, assigns duties. Maintains time and production records. May train workers in various processes and procedures, including operation of equipment. May estimate and requisition needed materials and supplies. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	100 hours
	A. Overview of industry	
	B. Company policies and procedures	
	C. Instructions and observation	
	D. Practical exercise/applied techniques	
2.	ENVIRONMENTAL CONSIDERATIONS	40 hours
3.	SAFETY ASSOCIATED WITH THIS POSITION	50 hours
4.	CARE AND MAINTENANCE	50 hours
	A. Hand tools	
	B. Survey instruments	
	C. Equipment	
	D. Work area	
5.	APPLICABLE WORK ACTIVITIES	800 hours
	A. Plan reading	
	B. Specification interpretation	
	C. Planning and scheduling	
	D. Employee relations	
	E. Coordination with inspectors and supervisors	
	F. Administrative procedures	
	G. Record keeping	
TOTAL		1,040 hours/26 weeks

QUALITY CONTROL TECHNICIAN – ROADWAY: Operates nuclear gauge to monitor compaction and laydown of asphalt. Operates coring rig in cutting core samples of asphalt for comparison against lab densities. Completes necessary paperwork for contractor and VDOT. May perform other related duties.

TRAINING OUTLINE

Approximate training time: 1,040 hours/26 weeks

1.	ORIENTATION AND OBSERVATION	90 hours
	A. Safety procedures (general roadway)	
	B. Observation of nuclear gauge and coring rig in operation	
2.	CARE AND MAINTENANCE	150 hours
	A. Care of nuclear gage	
	B. Care of coring rig	
	C. Care of other related equipment	
3.	BASIC RECORD KEEPING	325 hours
	A. Safety procedures in operating nuclear gauge	
	B. Paperwork required when operating nuclear gauge	
	C. Paperwork required by the Department of Transportation	
	D. Proper filing and record keeping	
4.	BASIC JOB DUTIES (INCLUDING REQUIRED CLASS TIME)	475 hours
	A. Attends class and receives certification in operating nuclear gauge as required by VDOT	
	B. Safety procedures in operating and maintaining nuclear gauge	
	C. Operating and monitoring nuclear gauge	
	D. Operating coring rig; cutting cores for testing at lab	
	E. Maintains proper care and handling of cut cores during transportation to lab for testing of compaction, density, etc.	
	F. Attends roadway technician class and receives certification required by VDOT	
TOTAL		1,040 hours/26 weeks

ENCLOSURES

- A. VDOT Form C-65 – Trainee Enrollment Form
- B. VDOT Form C-67 – Weekly Trainee Report
- C. Certificate of Achievement

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
TRAINEE ENROLLMENT FORM
ON-THE-JOB TRAINING

Date _____ Route _____ Federal Project Number _____
Project No: _____
Contract Id. No. _____
Contractor: _____
Subcontractor: _____
Name of Trainee: _____ Trainee Program Selected
Social Security Number _____ Apprenticeship-
(Last 4 numbers) _____ DOL
Address _____ VTCA-VDOT
*Other _____
*Explain and attach training schedule
Identification: White _____ Black _____ American Indian or Alaskan Native _____
Asian & Pacific Islanders _____ Hispanic _____
Vietnam Era Veteran Yes _____ No _____ Age _____ Sex _____
Trainee Job Classification: _____ Length of Training _____ Hours
Date Training Started: _____
Trainee Minimum Wage Rates \$ _____ for _____ Hrs. Trainee is: New Hire _____
(Show actual wage rates to \$ _____ for _____ Hrs. Upgrade _____
be paid by Contractor) \$ _____ for _____ Hrs. Upgrade from: _____
Wage Rate \$ _____ after completion _____
Summary of previous Training: (Show approximate hours of previous training received in this or similar classification
as per interview with the Trainee) _____

Trainee Signature _____ Date _____ Contractor Representative Signature/Title _____ Date _____

Approved _____
District Civil Rights Manager Signature _____ Date _____

Copies: Contractor
Responsible Charge Engineer
Trainee

Certificate of Achievement



This certifies that

has successfully completed _____ hours of On-the-Job Training as a

_____ under a training program approved by the Virginia Department of Transportation, U. S. Department of Labor, and the Federal Highway Administration in cooperation with the Virginia Transportation Construction Alliance.

Presented this _____ day of _____, _____.

Training was provided and administered by

Employer Name

Employer Representative

_____ VDOT Civil Rights Manager

GLOSSARY OF TERMS

ON JOB TRAINING (OJT) PROGRAM

A program of training designed to provide opportunities for skill enhancement and ultimately increase knowledge of job tasks through a guided "hands-on" approach. Normally there will be a scale of wages proportionate to the skill level attained during training. At a minimum, journeyman rates are to be paid upon successful completion of the training. By comparison, OJT programs on transportation related projects (roadway/bridges) may be more concentrated and shorter in duration than those common to other construction industries or programs offered through unions.

- CRAFT:** A trade or profession requiring training, special skills, and knowledge in planning, making, or executing production of a product or trade either by hand or power tool.
- FEDERAL-AID CONTRACT:** Any contract between the Virginia Department of Transportation and a Contractor that is paid for in whole or in part with U.S. Department of Transportation assistance.
- JOURNEYMAN:** A person who is capable of performing all the duties within a given job classification or craft.
- OPERATOR:** One who performs the practice or mechanical operation of a specified machine or device as his/her regular occupation.
- SUPPORTIVE SERVICES:** Those services provided to increase the overall effectiveness of approved on-the-job training programs for highway construction workers and highway contractors through the performance of various functions necessary to the program but which are not considered to be part of the actual on-the-job craft training.
- TRAINEE:** A person who is receiving on-the-job training through any program approved by the FHWA or the U.S. Department of Labor.

ABOUT VTCA

The Virginia Transportation Construction Alliance (VTCA) is the Commonwealth's only trade association solely dedicated to advancing the interests of Virginia's transportation construction industries and aggregate producers. VTCA serves as an advocate for our members' interests with the Virginia Department of Transportation, the Virginia Department of Mines, Minerals and Energy, the Virginia Department of Environmental Quality and other state and local agencies whose activities impact our members. We provide our members with current industry information, education and training, legislative representation and regulatory advocacy.

STOP