

# DENNIS GROUP

## Career Pathway Civil Group



# Your Journey Starts Here

Below are general guidelines on skills that are expected for our Civil Engineers at Dennis Group. The skills outlined cover Junior Engineer, Engineer, Lead Engineer, Senior Engineer, Team Leader.

If you desire to dedicate 100% of your time within your discipline working in projects, you can aim to become a Technical Expert. This position is highly valuable at Dennis Group as we are frequently facing engineering challenges that require a lot of technical knowledge and experience.

If you wish to keep working within your discipline but prefer to assume a leadership position, you can aim to become a Team Lead. It is very important to the growth of the company that we have leaders that can help in the development of our younger employees and the management of resources within each department. Dennis Group offers a variety of resources, training and support for those in leadership positions.

Finally, if you wish to start managing projects, you can aim to become a Project Manager. If you choose this pathway, there is a different document that comprises the skill of different levels of project management.

# Civil Role Minimum Competencies

General Skills	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Breaks down problems into tasks without priority	●	●	●	●	●
Assigns priority to tasks and timing with respect to deadlines		●	●	●	●
Analyze multiple scenarios to quickly determine the optimal scenario with respect to cost/layout/schedule				●	●
Uses experience and expertise to provide solutions to non-traditional issues that arise during design and/or construction			●	●	●

Site Layout and Design	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Develop site basis of design document	●	●	●	●	●
Determine impacts of applicable zoning and development ordinances to determine project constraints		●	●	●	●
Review historical site drawings to determine if site objectives align with existing conditions, and if further actions are required (i.e. re-plat parcels)			●	●	●
Develop permitting schedule and required submission dates for reviewing agencies				●	●
Develop parking lot layout that satisfies development ordinances and regulations	●	●	●	●	●
Design moderately complex site in accordance with bulk zoning requirements (e.g. building coverage, imperviousness, etc.)		●	●	●	●
Perform turning analyses for trucks and emergency responder vehicles		●	●	●	●
Understanding of pavement materials, design of pavement sections, and construction methods			●	●	●
Uses experience and expertise to provide solutions to non-traditional issues that arise during design and/or construction				●	●

Site Grading and Drainage	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Determine land use characteristics and assign runoff coefficients	●	●	●	●	●
Calculate times of concentrations	●	●	●	●	●
Delineate simple watersheds	●	●	●	●	●
Delineate complex watersheds and determine how to model watershed			●	●	●
Pre-development hydrologic analysis for simple sites	●	●	●	●	●
Pre-development hydrologic analysis for complex sites		●	●	●	●
Develop design approach for site factoring in topography, existing drainage conditions, outfalls, site constraints, etc.			●	●	●
Detention pond design and outlet control structure to meet pre-development discharge rate			●	●	●
Design of channel linings			●	●	●

Basic site grading by hand		●	●	●	●
Basic site grading using Civil 3D		●	●	●	●
Advanced site grading using Civil 3D			●	●	●
Develop Base Flood Elevation (BFE) for area not established by FEMA				●	
Cut/Fill Analysis using Civil 3D		●	●	●	●

Site Utilities	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Analysis of existing utility services, flow directions, and constraints devices, & other (backflow, metering devices, hose stations)		●	●	●	●
Preliminary utility layout (sewer, process waste, fire, water)		●	●	●	●
Understanding of pipe materials, pipe joints, applications, and limitations		●	●	●	●
Correct application (type/location) of valves used for site/civil applications		●	●	●	●
Thrust restraint calculations for pressure systems			●	●	●

Erosion Protection and Sedimentation Control (EPSC)	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Understanding of BMPs for EPSC	●	●	●	●	●
Design of BMPs that require sizing such as temporary sediment basins		●	●	●	●
EPSC narrative			●	●	●
Prepare operations and maintenance narrative for EPSC measures			●	●	●

Drawings and Documentation	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Create Site Removals Plans		●	●	●	●
Create Site Layout Plans		●	●	●	●
Create Grading and Drainage Plans		●	●	●	●
Create Erosion Control Plans		●	●	●	●





Coordination and Editing Plans/Details		●	●	●	●
Development of Non Standard Details			●	●	●
Review Discipline Coordination Drawings			●	●	●
Prepare Storm Drainage Report (sections)	●	●			
Prepare Storm Drainage Report (complete)		●	●	●	●
Prepare Storm Water Pollution Prevention Plan			●	●	●
Review Reports Prepared by Others			●	●	●

Specific Areas of Expertise	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Site Layout			●	●	●
Storm Drainage - Hydraulics and Hydrology			●	●	●
Site Utilities – Fire Protection			●	●	●
Site Utilities – Water Distribution			●	●	●
Site Utilities – Pump Stations			●	●	●

Procurement	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Prepare RFP for Sub-Consultants		●	●	●	●
Evaluate Proposals and Provide Recommendations for Sub-Consultants			●	●	●
Developing Bidders List	●	●	●	●	●

Site Development RFQ		●	●	●	●
Prepare Addenda Documentation and Narratives			●	●	●
Bid Tabulation	●	●	●	●	●
Recommendation for Award			●	●	●
<b>Construction Administration</b>	<b>Junior</b>	<b>Engineer</b>	<b>Lead Engineer</b>	<b>Senior Engineer</b>	<b>Team Leader</b>
Review of standard submittals	●	●	●	●	●
Review of complex submittals		●	●	●	●
Responding to RFIs		●	●	●	●
Revisions Due to Field Conditions		●	●	●	●

Training, Coordination, Client Interface	Junior	Engineer	Lead Engineer	Senior Engineer	Team Leader
Small Project Primary Client Technical Contact		●	●	●	●
Mid-Size Project Primary Client Technical Contact		●	●	●	●
Large Scale Contact Primary Client Technical Contact				●	●
Small Project Primary DGL Engineering Coordination Resource		●	●	●	●
Mid-Size Project Primary DGL Engineering Coordination Resource		●	●	●	●
Large Scale Project Primary DGL Engineering Coordination Resource				●	●
Lead Team of Engineers on a Specific Project			●	●	●
Encourage & inspire coworkers to succeed	●	●	●	●	●
Maintain professional behavior with regard to schedule, dress, attitude, and behavior	●	●	●	●	●

Encourage & inspire coworkers to succeed					
Maintain professional behavior with regard to schedule, dress, attitude, and behavior					
Takes initiative to continue learning and improve problem solving skills					

# Junior Engineer Level I

Typical Minimum Experience: 0-3 Years

- Works within a work team.
- License: None
- Acquires basic knowledge and develops skills.
- Applies standard techniques, procedures, and criteria to perform assigned tasks as part of a broader assignment.
- Exercises limited judgement on details of work and in application of standard methods for conventional work.
- Performs basic design tasks. Assists on other tasks such as: preparation of permit applications, drawings and CAD work.
- Performs basic procurement tasks such as bid list development, contractor initial contact, bid tabulation, and preliminary bid evaluation.
- Acquires basic drawing literacy; develops an understanding of discipline specific plan elements, and how to navigate a set of drawings.
- Performs basic construction administration tasks including submittal review.
- Follows through on assigned tasks in a timely manner.
- Receives close supervision, and all aspects of work are reviewed.
- Limited to no direct client contact.

*Intra-Discipline Mobility: Engineer*

# Engineer Level II

Typical Minimum Experience: 3 - 6 Years

- Works within a work team for complex projects, or independently for simple projects.
- License: EIT
- Applies broad knowledge of principles and practices.
- Collaboratively uses judgement to determine adaptations in methods for non-routine aspects of assignments.
- Performs moderate design tasks, receives guidance when necessary, on unconventional or complex problems, direction on modified techniques, and new approaches on assignments with conflicting criteria.
- Prepare partial to complete project documentation, including complete CAD drawings.
- Performs procurement tasks including bid package and addendum preparation.
- Edits project specifications.
- Develops drawing proficiency; develops an understanding of multidiscipline plan elements, and how to navigate a complete set of drawings.
- Performs construction administration tasks including shop drawing review.
- Receives supervision, and general review of work.
- Limited client contact.

*Intra-Discipline Mobility: Lead Engineer*

# Lead Engineer

Typical Minimum Experience: 6 - 8 Years

- Works as discipline lead for simple to moderately complex projects.
- License: PE
- Applies broad knowledge of principles and practices.
- Designs a complete project, responsible for complete project documents.
- Assigns tasks to/and directs engineers, designers, and drafters.
- Receives general direction on key objectives.
- Interacts with clients.

*Intra-Discipline Mobility: Senior Engineer, Team Leader*



# Senior Engineer

Typical Minimum Experience: 8+ Years

- Subject matter expert.
- Licensed: PE
- Independently applies extensive and diversified knowledge of principles and practices to a wide range of materials and construction techniques.
- Reviews complete project documentation for conformity and quality assurance.
- Possesses advanced oral and written communication skills.
- Interacts with clients

*Intra-Discipline Mobility: Team Leader*

# Team Leader

Typical Minimum Experience: 8+ Years

- Fully versed in all activities associated with design and execution.
- Licensed: PE
- Has successfully executed several projects.
- Responsible for managing Junior Engineers, Engineers, and Lead Engineers. In this capacity they are responsible for:
  - Assigning and monitoring work
  - Mentoring
  - Setting goals and evaluating performance
  - Mapping career movement
  - Addressing workplace performance issues
- Works with the Office Discipline Manager and project managers to obtain work.
- Interfaces with project managers to review deliverables and milestone schedule.
- Responsible for review of project scopes of work and budget preparation.
- Supports project teams and backs up team members as necessary.
- Interacts directly with clients.

*Intra-Discipline Mobility: Office Discipline Manager, Senior Engineer*

# Engineering Manager / Office Discipline Manager

Typical Minimum Experience: 12+ Years

- Fully versed in all activities associated with design and execution.
- Licensed: PE
- Has successfully executed several large projects.
- Makes decisions and recommendations that are authoritative and have an important impact on extensive organizational activities.
- Sets priorities and reconciles directions from competing interests.
- Interacts directly with clients.

*Intra-Discipline Mobility: Discipline Manager*