|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Summary of Estimated Hours for Engineering Tasks** | | | | |
|  | **Task** | **Maximum Allowable Hours \*** | | |
| **CADD**  **Operator \*\*** | **Project**  **Engineer \*\*** | **Project Manager/**  **Senior Engineer \*\*** |
| 1 | Slope Stability (per analysis) | N/A | 4.0 | 0.5 |
| 2 | Settlement (per analysis) | N/A | 5.0 | 1.0 |
| 3 | Deep Foundation (per analysis) | N/A | 5.0 | 1.0 |
| 4 | Wave Equation Drivability (per analysis) | N/A | 5.0 | 1.0 |
| 5 | Negative Skin Friction (per analysis) | N/A | 3.0 | 0.5 |
| 6 | Bearing Capacity (per analysis) | N/A | 4.0 | 0.5 |
| 7 | Retaining Wall (per analysis) | N/A | 6.0 | 1.0 |
| 8 | Drafting (per sheet) | 7.0 | 1.0 | N/A |
| 9 | Logging Rock Cores (per hour) \*\*\* | N/A | N/A | N/A |
| \* These hours will generally be used to determine letter agreement upset limits and apply to most projects; however, there may be project-specific exceptions, if pre-approved in writing.  \*\* Typical personnel are listed and may vary depending on the firm's personnel classification system. The Geotechnical Support & Review Branch may specify classifications of personnel on a project-by-project basis.  \*\*\* Logging rock cores will be paid for the actual number of hours for a geologist to log the cores, with an estimated rate of 250 feet per 8-hour day.  The maximum allowable hours for the following tasks will be estimated for each project.   * Preliminary Plans * Preliminary Meetings * Rock Core Meetings * Local Meetings * Virtual Meetings * Interim Meetings * Final Meetings * Report Writing * Publication of Reports   The estimated hours for specialty or out-of-the-ordinary tasks such as those below will be negotiated for each project.   * Tieback or Soil Nail Retaining Wall Analyses * Analyses for Abnormally Large Fills (i.e. > ≈ 200 ft.) * Analyses for Abnormally Deep Foundations (i.e. > ≈ 150 ft.) * Seismic Analyses * Tunnel Analyses   There will be no increase in allowable hours for LRFD Analyses since LRFD is now standard practice.  Any other miscellaneous tasks will be discussed on a project-specific basis. | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Summary of Laboratory Tests and <TBODY><DIV align=center>Specified Production Rates**  **</DIV>** | | | | | |
|  | **Test Description** | | **Applicable Test Method(s) \***  **and/or Comments** | **Pay Unit** | **Hours \*\*** |
| 1 | Moisture Content | | T265 | Test | 0.25 |
| 2 | Soil Classification | | KM519, T89, T90, T100 & Classify  (plastic soil) | Sample | 4.0 |
| 3 | Wash Gradation | | D 1140, % Finer than #200 Sieve, Gradation, & Classify (non-plastic soil) | Sample | 1.0 |
| 4 | Moisture-Density, CBR, &  Soil Classification | | KM511, KM501, KM519, T89, T90, T100 | Sample | 9.5 |
| 5 | Moisture-Density | | KM 511 | Sample | 3.0 |
| 6 | Slake Durability Index &  Jar Slake Test  including pulling sample from the core box | | KM513, KM514 | Sample | 1.25 |
| 7 | Unconfined Compression Test on Soil | | KM522 | Test | 1.0 |
| 8 | Unconfined Compression Test on Rock | | KM523 or D2938 w/ stress-strain curve, includes sawing and capping sample | Sample | 2.0 |
| 9 | One-Dimensional  Consolidation Test | | T216 | Test | 9.0 |
| 10 | CU Triaxial Test  w/ Pore Pressure Measurements | | KM502 | Test  (1 stress path) | 6.0 |
| 11 | UU Triaxial Test | | KM521 | Test | 2.0 |
| 12 | Undisturbed tube extraction including, waxing, moisture contents, pocket pens & vane tores. | | T265 | Tube | 0.5 |
| 13 | Resilient Modulus Test\*\*\* | | T307 | Test | 3.0 |
| 14 | Remolding Sample for Permeability or Triaxial Testing | | Includes moisture adjustments,  Remolding, & extrusion | Sample | 1.0 |
| 15 | Constant Head Permeability Test  on Granular Soil | | D2434 | Test | 5.0 |
| 16 | Falling Head Permeability Test  on Cohesive Soil (Flexible Wall) | | D5084 | Test | 8.0 |
| 17 | Falling Head Permeability Test  on Rock (Flexible Wall) | | D5084 | Test | 16.5 |
| 18 | CU Triaxial Test  w/ Pore Pressure Measurements (Large Scale) | | T297, aggregate, 6 inch dia. X 12 inch | Test  (1 stress path) | 10.0 |
| 19 | Direct Shear Test (Large Scale) | | T236, aggregate, 18 inch x 18 inch | Test  (1 normal force) | 10.0 |
| 20 | Direct Shear Test | | T236 | Test  (1 normal force) | 3.5 |
| \* T = AASHTO Test Methods, D = ASTM Test Methods, KM = Kentucky Methods  \*\* Specified hours are for a laboratory technician or the firm's equivalent personnel classification, as approved by the Geotechnical Support & Review Branch. Blended rates consisting of more than one classification (e.g. 80% Technician, 20% Senior Technician) may be used if justification is provided and approved by the Branch.  \*\*\* Unlike the historic CBR test set, the scope of Resilient Modulus test does not include Soil Classification and Moisture-Density tests. Resilient Modulus testing may be performed by the firm, subcontracted to a KYTC approved lab, or performed by KYTC’s lab (with sufficient capacity and pre-approval, on a project-specific basis.) | | | | | |
| SPECIAL INSTRUCTIONS | | **Other Requirements**  All test information for any type of lab test on a project will be entered gINT or KYTC approved software, the Department will provide the data template to the consultant and they will fill it out and submit it back to the department electronically.  The consultant will also be responsible for checking and/or obtaining, information from the drilling consultant and design surveyors and making sure it is correct in gINT for all projects that the consultant writes the geotechnical report on, including all lab testing done on soil and rock. All coordinates will be checked to verify their locations are plotted in the right location on the map.  The consultant will supply draft electronic copies for review and final electronic copies of the report when completed.  The consultant will supply the following electronic files for each completed project.  Projects with Lab testing only:   * The gINT file named with the correct tracking number for the project (S-XXX-20XX.gpj or R-XXX-20XX.gpj). * CU Triaxial test results shall be put in a (.pdf) file labeled with the file named as setup in gINT. * Consolidation test results shall be in a (.pdf) file labeled with the file named as setup in gINT. * UU Triaxial test results shall be in a (.pdf) file labeled with the file named as setup in gINT. * All other test results in one (.pdf) file labeled (Lab results for S-XXX-20XX.pdf)   Projects with Report writing:   * Consultant is responsible for submittal of all of the above files whether they were performed in-house, subcontracted or done by others.      * All final drill logs shall be in a (.pdf) file labeled (Drill logs for S-XXX-20XX.pdf). * All (.DGN files) for the project. * The word document for the report in a file labeled (S-XXX-20XX.doc). | | | |
| SPECIAL INSTRUCTIONS | | * The report in a (.pdf) file labeled (S-XXX-20XX.pdf). * All email correspondence for the project. * All engineering analyses for the project. * All electronic maps made for the project. * All photos for the project. * And any other electronic files made for the project. * Pay Estimates     All files shall not be locked in any way. | | | |