

TAIMUR HASSAN

Civil Engineer



Introduction:

Results-driven Civil Engineer with 8 years of experience in NATM tunneling, underground construction, and major hydropower infrastructure projects. Proven expertise in supervising tunnel excavation, sequential excavation, shotcreting, rock bolting, steel lattice girder installation, concrete lining, grouting, and ground support systems in accordance with approved drawings, method statements, and international quality and safety standards. Experienced in coordinating with geotechnical, survey, QA/QC, and construction teams to monitor ground conditions, tunnel support performance, and project progress while ensuring safe and efficient execution of underground works. Strong background in tunnel rehabilitation, rock mass stabilization, confined-space construction, contractor supervision, technical documentation, and delivering complex tunneling projects on schedule with the highest standards of quality and HSE compliance.

Personal Details:

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Education and Qualification:

September 2014 – August 2018
Bachelor Degree (BS) in Civil Engineering

International Islamic University Islamabad, Pakistan

Tunneling and Hydropower Project activities:

- Supervising the tunnel site activities and quality control and assurance of all materials and activities.
- The blast activities and rock support activities inside tunnel.
- The NATM method of tunneling and concrete lining activities.
- The Rock bolts and spilling bolts grouting and installation.
- All types of Grouting like Curtain, backfill, Contact and Consolidation Grouting.
- The Lattice girders welding and wire mesh installation.
- Checking and verifying contractor's as built drawings, cross sections.
- Inspection of tunnel activities with respect to the construction methodologies, workmanship and equipment capabilities to be used in the execution of the works.

Collapsed Tunnel restoration and repair Activities:

- Inspection of cracked shotcrete and shotcrete bond test to point out dummy areas in shotcrete.
- Supervision of Scaling and chipping of cracked shotcrete and repair shotcrete surface with approved Method.
- Stabilization of cavities in side tunnel and filling cavities with shotcrete and high strength cement

mortar and low weight concrete.

- Drilling and installation of rock bolts and canopy tubes in cavity areas.
- Inspection and supervision of Fore polling activities in collapsed area.

Concrete Lining/ Mass Concrete and reinforcement Activities:

- Execution of work as per drawings and specifications i.e cutting and fixing of Reinforcement, Movement of formwork, fixing of formwork, concrete pouring and maintaining Quality work.
- Inspection of Reinforcement as per quality standards.
- Inspection and Verification Bar Bending schedule as per approved drawing.
- Supervision of Steel bending and Reinforcement installation as per drawing.
- Supervision of concrete pouring activity and sequence on site during concrete lining to avoid cold joints.
- Inspection of concrete placing and compaction activity.
- Supervision of concrete vibrating activity to prevent honey combing, segregation and bleeding.
- Supervision of quality tests of concrete on site during pouring activity i.e slump, temperature etc.
- Treatment of construction and contraction joints as per contract specifications and drawings.

Professional Experience:

1.Feb 2024– till date

Employer : Pakistan Engineering Services
Project : Dasu Hydropower Project
Position : Civil Engineer (Main Works)

Duties & Responsibilities: -

- Working in the Dams and Tunnels Section of the Dasu Hydropower Project under the Main Works Department, responsible for supervision, inspection, and quality assurance of major civil structures.
- Leading construction, supervision, and monitoring of key project components, including Gallery Tunnels (inlet & outlet), Dyke Wall, Cofferdams, Cut-off Wall, and Starter Dam structures, ensuring adherence to approved drawings and specifications.
- Inspecting and verifying tunnel concrete lining works, including both primary shotcrete and secondary cast-in-situ concrete lining, to ensure full compliance with approved design drawings, specifications, and quality standards.
- Reviewing surface preparation, ensuring rock surfaces, waterproofing membranes, drainage layers, and reinforcement are properly installed and approved before concreting.
- Inspecting hydraulic lining arch formwork systems, verifying alignment, curvature, geometry, and form stability prior to concrete pouring, and witnessing formwork movement and stripping operations.
- Monitoring and witnessing concrete batching, delivery, placement, vibration, and curing, ensuring conformity with approved concrete mix designs and quality control procedures.
- Reviewing and witnessing field tests, including slump, temperature, air content, and compressive strength tests, ensuring all results meet specified acceptance criteria.
- Checking and approving installation of embedded items, such as PVC waterstops, drainage and instrumentation pipes, and embedded conduits, prior to concreting.
- Verifying alignment, profile, and lining thickness in coordination with the contractor's survey and geotechnical teams to ensure geometric and design accuracy.
- Executed concrete lining and reinforcement works as per design drawings, overseeing rebar cutting, fixing, formwork erection, and concrete pouring, ensuring strict quality control.

- Sequenced and supervised concrete pouring operations to avoid cold joints and achieve seamless integration between lining sections.
- Supervised concrete vibration and compaction to eliminate segregation, honeycombing, and bleeding during the lining process.
- Inspecting final surface finishing and formwork removal, identifying defects (cracks, voids, honeycombing), and ensuring proper rectification and approval prior to acceptance.
- Reviewing daily inspection reports, test results, and concrete pouring records, maintaining proper documentation for quality assurance and progress verification.
- Coordinating with the Contractor, Design Office, and QA/QC teams for inspection approvals, material verifications, and addressing technical non-conformities.
- Preparing daily site observations and inspection requests (IRs), issuing comments or non-conformance reports (NCRs) where applicable, and following up on corrective actions.
- Ensuring strict adherence to safety standards during lining operations, particularly within confined tunnel environments.
- Supervising and evaluating a range of activities, including dam abutments excavation, installation of rock bolts, ground anchors, tendons, wire mesh, shotcrete, concrete, and reinforcement works, maintaining quality and specification compliance.
- Monitoring contractor performance on a daily basis, ensuring conformance with safety, quality, and environmental management plans.
- Reviewing and verifying work measurements for payment assessment accuracy.
- Coordinating with multidisciplinary teams to ensure integrated project delivery and implementing continuous improvement measures for better quality, durability, and sustainability.
- Supervising RCC (Roller Compacted Concrete) activities such as spreading, leveling, and compaction, and conducting on-site tests including Vee Bee and FDT compaction tests.
- Inspection and supervision of all tunnel supports as per the Q-System classification, ensuring rock stability and compliance with safety standards.
- Supervising and inspecting grouting operations including backfill, contact, consolidation, and curtain grouting to ensure watertight and stable structures.
- Conducting inspection of excavation works for main dams, cofferdams, and cut-off walls for diversion and dam foundations.
- Analyzing and interpreting construction and shop drawings to ensure accurate and compliant on-site execution.
- Preparing and submitting daily and monthly progress reports, detailing performance, progress, and challenges.

2. Dec 2022–Jan 2024

Employer : CGGC
 Project : Neelum Jhelum Hydroelectric Project AJK Pakistan
 Position : Site Engineer

Duties & Responsibilities: -

- Worked as a Site Engineer on the restoration of the collapsed Tailrace Tunnel, managing and supervising tunnel rehabilitation and associated civil construction works in accordance with approved drawings, technical specifications, method statements, QA/QC requirements, and HSE standards.
- Planned and coordinated daily construction activities, including manpower, equipment, materials, and subcontractor resources, to ensure the timely and efficient execution of tunnel rehabilitation works.

- Supervised concrete production, transportation, placement, vibration, finishing, and curing, ensuring compliance with approved mix designs, construction procedures, and quality requirements.
- Managed tunnel concrete lining works, including surface preparation, reinforcement fixing, waterproofing installation, formwork erection, concrete placement, and curing.
- Supervised the installation, alignment, and stability of hydraulic arch formwork systems and monitored formwork movement, concrete casting, and stripping operations to achieve the required tunnel profile and lining quality.
- Coordinated and supervised reinforcement works for tunnel lining, walls, and other structural elements, ensuring compliance with approved drawings and Bar Bending Schedules (BBS) regarding bar size, spacing, cover, lap lengths, and anchorage.
- Ensured the proper installation and inspection of embedded items, including PVC water stops, drainage pipes, anchors, and conduits, before concrete placement.
- Supervised tunnel lining thickness, surface finishing, construction joints, and joint treatment to achieve the required watertightness, structural performance, and long-term durability.
- Managed shotcrete repair and rehabilitation works, including scaling, chipping, surface preparation, bond testing, and shotcrete reapplication using the Reinforced Ribs Shotcrete (RRS) method.
- Supervised cavity treatment and filling in tunnel crowns and sidewalls using shotcrete, concrete, high-strength mortar, and cement grout in accordance with approved method statements.
- Coordinated the installation and grouting of tunnel support systems, including rock bolts, anchor bars, self-drilling bolts, Swellex bolts, and spiling bolts, ensuring compliance with approved support designs and construction procedures.
- Supervised backfill, pre-excavation, and curtain grouting activities, monitoring grout mix, injection pressure, volume, and grouting performance to achieve effective ground stabilization and seepage control.
- Coordinated with geologists, designers, surveyors, QA/QC personnel, and subcontractors for rock mass classification, support selection, excavation adjustments, and resolution of site-related technical issues.
- Ensured compliance with project HSE requirements during tunnelling, excavation, reinforcement, concreting, grouting, and confined-space activities.
- Prepared and submitted Requests for Inspection (RFIs), Method Statements, work plans, and other construction documents, while coordinating with the Engineer and QA/QC team for timely inspection and approval of works.
- Reviewed and implemented corrective actions related to NCRs, site observations, and quality issues, ensuring compliance with the project Quality Management System (QMS).
- Prepared daily progress reports, monitored construction productivity, maintained site records, and coordinated with the planning team to achieve project targets.
- Verified completed quantities, supported measurement and interim payment activities, and maintained accurate records of executed works.
- Assisted in the preparation of project completion documentation, including as-built drawings, final inspection records, and the Project Completion Report (PCR).

3. Aug 2019 – Nov 2022

Employer : China Gezhouba Group Company CGGC
 Project : Mohmand Dam Hydropower Project Pakistan
 Position : Site Engineer

Duties & Responsibilities: -

- Supervised slope stabilization works, including rock bolts, wire mesh, shotcrete, and anchor cables.

- Checked and adjusted hydraulic arch and invert formwork for proper alignment, level, radius, and stability before each pour; monitored formwork movement and stripping after concrete setting.
- Supervised reinforcement works for tunnel lining, verifying bar sizes, spacing, overlaps, and cover as per approved Bar Bending Schedules (BBS) and structural drawings.
- Monitored steel bending, cutting, and fixing activities, ensuring correct placement and proper tying before concrete works.
- Checked formwork and reinforcement inspections jointly with QA/QC and consultant teams before concreting.
- Supervised concrete batching, transportation, pouring, vibration, and curing to ensure smooth finishing and adherence to project specifications.
- Witnessed quality control tests such as slump, temperature, and compressive strength during concrete works and maintained records for QA/QC documentation.
- Ensured proper joint treatment at construction and contraction joints to maintain watertightness and durability of the tunnel lining.
- Supervised secondary concrete lining, including repair of defects, crack sealing, and surface finishing as per approved procedures.
- Managed tunnel excavation and support works, including rock bolts, lattice girders, canopy tubes, and spiling bolts, ensuring installation as per approved RESS (Required Excavation and Support Sheet) and drawings.
- Supervised grouting activities such as backfill, contact, and consolidation grouting, controlling grout pressure, volume, and mix proportion.
- Executed anchor cable drilling, grouting, and stressing works, ensuring proper load transfer and installation accuracy.
- Supervised jet grouting, early strength shotcrete, and special support activities to improve ground stability in weak rock zones.
- Reviewed shop drawings and reinforcement drawings for tunnel lining, coordinated any discrepancies with the design and construction teams.
- Prepared daily progress reports, inspection checklists, and quantity records, assisting in billing and verification of work done.
- Coordinated closely with QA/QC engineers, foreman, and survey teams for quality assurance, progress monitoring, and technical problem solving.
- Ensured strict compliance with safety procedures, environmental guidelines, and quality control plans during all tunnelling and concrete lining activities.

4. Aug 2018 – July 2019

Employer : China Gezhouba Group Company CGGC
 Project : Dasu Dam Hydro Power Project
 Position : Civil Engineer (Diversion Works)

Duties & Responsibilities: -

- Managed and supervised complete tunnel construction activities, including excavation, rock support, and grouting, ensuring compliance with project drawings, specifications, and safety standards.
- Led and coordinated all tunnel concrete lining works in the headrace tunnel, surge chamber, vertical shaft, and pressure tunnel, ensuring smooth and safe execution.
- Supervised reinforcement work for concrete lining i-e bar cutting, bending, placing, and tying according to approved Bar Bending Schedules (BBS) and construction drawings.
- Checked reinforcement placement, spacing, cover, and overlaps before concreting to ensure proper structural strength and quality.
- Monitored formwork erection, including hydraulic arch and invert formwork systems, ensuring

accurate alignment, proper locking, and surface preparation before concrete placement.

- Supervised concrete lining activities, including batching, transportation, placement, vibration, and curing, ensuring a continuous and defect-free lining.
- Ensured proper sequence of concrete pouring to prevent cold joints and achieve a uniform finish in tunnel lining.
- Conducted quality control tests during concrete pouring, such as slump, temperature, and compressive strength tests, maintaining full QA/QC documentation.
- Supervised the treatment and sealing of construction and contraction joints as per approved specifications to achieve water tightness and durability.
- Monitored and guided repair works of concrete lining, such as fixing honeycombs, voids, or cracks using approved repair materials and methods.
- Conducted and reviewed core cutting and bond strength tests on shotcrete and lining concrete to verify material quality and performance.
- Supervised installation of rock supports, including shotcrete, rock bolts, grouting, wire mesh, and lattice girders as per Specifications.
- Monitored installation and tensioning of strand anchors and verified testing results as per design load requirements.
- Checked and supervised waterproofing, poling/spiling, and drainage system installation to ensure compliance with design and project requirements.
- Conducted alignment and profile checks during excavation and lining to ensure the tunnel follows design geometry.
- Regularly inspected and maintained ventilation, lighting, and safety systems to provide a safe working environment inside the tunnel.
- Supervised the 1.986 km diversion tunnel construction, covering excavation, rock support, reinforcement, concrete lining, and grouting operations.

License and certifications:

- Licensed Civil Engineer at Pakistan Engineering council with license number **CIVIL/51590**.
- Carried out training work shop on **Controlled Blasting** at WAH NOBEL GROUP, WAH Cantt, Pakistan

Language Capabilities:

Native language is Urdu and can speak, read and write English.