Protecting, Enhancing, and Restoring Our Environment
CTI Overview

- **Over 40 Years of Proven Success**
  - Delivered ~16,000 projects valued $300M+

- **SBA Small Business / Small Disadvantaged Business (NAICS <$15M)**

- **Specialized Experience**
  - Landfill / Geotechnical Engineering
  - Design-build contractor for 20+ projects
  - Construction
  - Remediation

- **Over 100 Professionals**
  - 7 Branch offices and multiple Project Management Offices

- **H&S is a CTI Core Value**
  - Current EMR = 0.68

- **Accomplished Prime Federal Contractor**
  - DOD, DOE, EPA, GSA, DHS
CTI Market Sectors and Professional Staff Resources

- Senior leadership has worked together for over 10 years
- Engineers (Landfill, Geotechnical, Environmental, Civil, Chemical)
- Scientists (Geologists, Geophysicists, Geochemists, Hydrogeologists, Biologists & Chemists)
- Specialists (CIH, CHMM, QA, Field Services)
- Construction Managers, Superintendents and QA/QC Technicians
- Craft Labor (Operators, Laborers and Technicians)

Market Sectors

- Federal Government 45%
- Publically Traded Companies 35%
- State and Local Municipalities 15%
- Other Private Sectors 5%

Education/Registration Experience

- Professional Registration/Certification, 39%
- Degreed, 48%
- Advanced Degree, 11%

Staff Years of Experience

- 24% < 5 Years
- 33% 5-9 Years
- 35% 10-20 Years
- 8% 20+ Years
Our Federal Footprint

USACE Districts
DOD and EPA Project Locations
DOE Project Locations
CTI Office Locations
Overview

Strong and enduring commitment to our clients:

- Successful completion of over 16,000 projects nationwide
- Specialized expertise in design and construction of horizontal and civil works projects, environmental consulting and remediation, advanced geotechnical engineering for waste disposal facilities
- Selected and awarded over $100M in USACE, DOD, DOE, DHS and GSA contracts since 2008
- Past and current Prime contracts with USACE Kansas City, Omaha, Louisville, Albuquerque, Mobile, St. Louis, Tulsa, Detroit and Rock Island including project experience with Baltimore, Buffalo, New York, Nashville, Seattle and Los Angeles Districts
- Experience with IRP, FUDS, BRAC, MMR programs as well as ESOHCAMP, ESOH-MIS, ECP, EMS, EIMS, and ERPIMS

Over 90% of CTI’s ongoing work is with repeat clients, demonstrating a high level of client satisfaction
Overview

Strong and enduring commitment to Safety:

- EMR - 0.68
- Established processes for safety planning, enforcement, corrective action and continuous improvement
- Active member of ISNetworld (member#400-240079)
- Received USACE SB Safety Performance Award (USACE St. Louis District & MVD)
- Received recognition from DOE for 8,000 hours of incident-free performance on demolition and asset recovery at the K-732 Switchyard
- CTI’s Corporate H&S Program, fully compliant with USACE EM-385-1-1
Overview

Strong and enduring commitment to the highest quality/cost/schedule performance:

- Completed 5+ years as Protégé to AECOM (URS); modeled internal quality, safety, accounting, and project management systems after their proven, world-class programs
- Independent quality processes ensure each TO meets/exceeds client expectations
- In the past seven years, CTI has managed/executed more than 55 Prime Task Orders valued at over $60M
- Received CPARS ratings of “Exceptional” and “Very Good” and CCASS ratings of “Above Average” or “Outstanding” in all categories

“The overall quality of CTI’s work is excellent due to several reasons: 1) A highly skilled and dedicated program/project manager performs an outstanding job of overseeing all aspects of work, quality control and staff support, 2) A highly skilled staff of engineers. As a result, the 88th USARC is extremely pleased…” - Josephine Newton-Lund, Project Manager, USACE Kansas
Summary of Capabilities
Environmental Consulting and Remediation Capabilities

Consulting and Remediation:
- RI/FS
- Fate & transport modeling/3D Vizio
- Risk assessment
- In-situ/ex-situ remediation design
- Remedial actions: in-situ/ex-situ
- Remedial construction
- RA-O/LTM and RPO
- Sediment remediation & dredging
- Landfill closure/caps
- Facility decontamination and demolition
- RCRA/CERCLA/TSCA experience
- UST/pipeline evaluations, R&R

Hazardous Materials/Health Sciences:
- Asbestos, mold, LBP abatement
- HazMat characterization/management
- Facility decontamination and decommissioning assessments
- Property transaction support

Regulatory Compliance:
- Experience with federal CWA, CAA, RCRA, CERCLA, TSCA, NCP programs
- Multi-media compliance auditing
- Compliance program development
- RCRA/OSHA training
- RCRA waste de-listing
- EMS/EMIS/EPRIMS/ARPIMS
Environmental Sustainability and Restoration Capabilities

- Military range sustainability
- Renewable energy
- Pollution Prevention (P2) programs
- Erosion and sedimentation controls
- Steep slope restoration/stabilization
- Stream and shoreline restoration
- Habitat/wetlands restoration
- Stormwater Pollution Prevention Plans (SWPPP)
- Stormwater harvesting/sustainable design
- Regulatory compliance
- Inter-agency coordination
Construction Capabilities

Site Civil Construction:
- Mass earthwork
- Site utilities
- Reinforced concrete and HMA pavements
- Site drainage infrastructure
- Sediment and detention basins
- Shoreline protection / revetments
- RCP and CMP culverts
- CIP and pre-cast concrete structures
- Landfill capping (clay & geosynthetics)
- Land clearing, haul and access roads

Flood Control Infrastructure:
- Emergency response
- Levee construction and rehabilitation
- Ring and set-back levees
- Pump stations
- Slope protection and stabilization with rip rap, gabions, articulated block mats, and geotextiles
- Gate wells and sluice gates
- Cast-in-place headwalls structure demolitions and removals
- Hydraulic relief wells
Engineering Capabilities

Civil Engineering:
- Planning & site development
- Sustainable design (low-impact development)
- Hydrology and hydraulics
- Stormwater management infrastructure and control
- Wetland evaluations, permitting and mitigation
- Wastewater and landfill leachate treatment
- Sedimentation and hydraulic control
- Site utilities

Geotechnical Engineering and Quality Assurance/Control Testing:
- Waste disposal facilities
- Radiological landfill closures
- Landfill gas-to-energy consulting
- Site investigation / drilling services
- Slope stability analysis / landslide remediation
- Specialized ground reinforcement techniques
- Geophysical surveys
- Fixed and mobile geotechnical laboratory testing – USACE validated
- Site inspections and quality assurance oversight and QC
Representative Experience - Environmental
$830K Firm Fixed Price Task Order

Site is remnant of former US Army Lake Ontario Ordnance Works

Starting in 1944, site used for storage and transshipment of waste materials and residues associated with Uranium processing during Manhattan project

Soil and groundwater impacts with isotopes of Uranium, Radium and Thorium

CERCLA FS for “Balance of Plant” operable unit including all environmental media, structures, foundations, and utilities
  • Document review and data gap analysis
  • Developing ARARs and RAOs
  • Technical project planning meeting (2 day)
  • Detailed analysis of remedial alternatives
  • Fact sheet and BOP FS public workshop
  • Regulatory negotiation and stakeholder support
$202K Firm Fixed Price Task Order

- Project involves L2–L3 extended buffer area munitions response site (MRS)
- RI identified munitions and Explosives of Concern (MEC) and Material Potentially Presenting an Explosive Hazard (MPPEH)
- Average MEC density across the MRS is 1.579 MEC per acre
- CERCLA decision documents for L2-L3 EBA MRS encompassing 396 acres
  - Document review and data gap analysis
  - GeoSpatial data management
  - Developing ARARs and RAOs
  - Technical project planning meeting
  - Completing decision documents:
    - Feasibility study
    - Proposed plan / ROD
  - Community relations support
$1M Firm Fixed Price Task Order

JPG closed under BRAC on 30 September 1995

Chlorinated VOC/arsenic groundwater contamination

Six independent sets of project work plans
  - PMP/QASP, UFP-QAPP, HASP

Long-term groundwater/surface water monitoring

Monitoring well abandonment

Annual plume stability summary report

Soil vapor engineering evaluation report

CERCLA 5-year review report

No further action FS/PP/DD
USACE Kansas City/ EPA Region II Superfund Site Remediation
Rockaway Borough Operable Unit 002, NJ

- $2.2M Cost-Reimbursable Task Order
- Chlorinated VOC groundwater contamination
- Public water supply impacts – high regulatory involvement
- Transition during start-up/shakedown
- Groundwater pump and treat system O&M
- Long-term groundwater monitoring under UFP-QAPP
- Remedial investigation to close data gaps
- Monthly NJ DEPS reporting
- Optimization of pumping strategy
- Annual report with recommendations
- PLC remote telemetry
- Regulatory interface
$1.1M Firm Fixed Price Task Order
- Chlorinated VOC, herbicide/pesticide, arsenic groundwater contamination
- Groundwater LTM for operable unit 004
- NJ DEP Classified Exemption Area (CEA) biennial certification
- USEPA 5-year review report technical support
- Work plan development: CQCP, UFP-QAPP/APP/SSHP
- USEPA/NJ DEP database management
- LTM well network redevelopment/repairs
- Annual LTM report
- Regulatory interface
$400K Firm Fixed Price Subcontract
Chlorinated VOC groundwater contamination
Engineering support to Prime during construction
Operation during start-up/shakedown
Bedrock aquifer groundwater pump and treat system O&M
Optimization/modification to manage unforeseen geochemical fouling
Long-term groundwater monitoring under UFP-QAPP
Annual report with optimization recommendations
Quarterly NJ DEPS reporting
PLC remote telemetry
Regulatory interface
USACE Kansas City District, Long-Term Response Action (LTRA) Contracts, Multiple Locations

- 23 Firm Fixed Price Task Orders valued at $13.4M under two 8(a) IDIQ contracts
- Work completed under IRP, FUDS, BRAC and USEPA Superfund programs
- Environmental compliance assessments for CWA, CERCLA, RCRA
- Geotechnical and hydrogeologic/geologic investigations
- O&M of soil/groundwater treatment systems
- Waste characterization and compliance
- Optimization of site remedies including treatment and monitoring systems
- LTM of containment response actions and landfill/disposal cell closure remedies
- Collection, analysis, and evaluation of environmental data 5-year review support of response actions
$459K Firm Fixed Price Task Order

Two separate locations near active flight line
- Bldg. 301: Address residual impact from former UST
- Aircraft wash rack: Locate and characterize sources of naphthalene impacts

VOC/SVOCs soil & groundwater contamination

Historic record review and forensic analysis

Project work plans: PMP, QASP, UFP-QAPP, HASP

Determine nature and extent of soil & groundwater contamination

Determine contaminants of concern that exceed NMED SSLs

Submit RFI report to NMED for review and approval of findings

Prepare remedial action recommendations
CTI provided comprehensive environmental, engineering, and program management services at the 200-acre landfill

"CTI's team has demonstrated extraordinary knowledge and expertise, and has earned our business....They have implemented innovative strategies that produced instant cost savings and both short-term and long-term benefits....I highly recommend CTI and Associates, Inc."

John Divozzo, Director, Wexford County Department of Public Works

- Negotiated a MDNR ROD to address off-site residential well CVOC contamination
- Developed and implemented a voluntary waste removal/relocation (2M CY) strategy by MDNR permit modification
- Completed RI/FS for 1-mile long, 2,500 feet wide, and 300 feet deep CVOC groundwater plume
- Negotiated presumptive remedy that included installation/construction of $2M public water supply system
- Prepared the remedial action plan for the water supply system and facilitated regulatory negotiations
- Prepared project plan to obtain state Drinking Water Revolving Fund (DWRF) program funding
$1M Firm Fixed Price Task Order
- MSAAP deactivated under BRAC on 4 March 2009
- Chlorinated VOC groundwater contamination
- Project work plans (PMP, QASP, UFP-QAPP, HASP)
- Long-term groundwater monitoring
- Monitoring well installation and abandonment
- Engineering remedial design optimization reports
- Annual engineering evaluation reports
- CERCLA 5 year review report
- Present supporting documents to support a “No Further Action” closure
USACE Kansas City, Installation Restoration Program
Ft. Riley, KS

- $2.7M Firm Fixed Price Task Order
- Ft. Riley was listed on the NPL effective 1 October 1990 pursuant to Section 105 of CERCLA where 5 OUs were identified and investigated following CERCLA processes and ROD. Since 2008 CTI performed:
  - Installation restoration program site operation and maintenance activities
  - Annual and 5-year review period of groundwater sampling, soil and groundwater investigation and remediation
  - Remedial and heavy civil construction support
- Received “Exceptional” and “Very Good” CPARs

“CTI provided a highly qualified and technically competent project delivery team, led by a customer-oriented and motivated project manager that met every project milestone on-time and within budget while satisfying customer and regulatory requirements.”
- Leland Fuerst, Branch Chief, USACE Kansas City District
Johnson Controls, Inc., Red Cedar River Dredging Region 5 RCRA Corrective Action Site, Fowlerville, MI

- $1.3M Professional Services Contract
- Design, permitting, community relations, construction oversight, and waste disposal
- Innovative design eliminated NPDES permitting for de-watering water
- 1,400 cy of PCB and metals-impacted sediment successfully removed and disposed
- Successes during corrective action scope negotiations:
  - No post-dredging chemical confirmation sampling
  - No long-term sediment monitoring program
- Construction completion report (currently under USEPA Region 5 review)
Johnson Controls, Performance Based Remediation
Multi-Site Nationwide Industrial Portfolio

- $5M+ Professional Services Contract
- Remediation Process Optimization (RPO)
- Ozone-sparging groundwater remediation
  - D/B, operate & maintain
- Monitored natural attenuation
  - LTM on MNA remedy at 2 sites
- SVE at operating manufacturing facility
  - D/B, operate & maintain
- Sediment characterization and dredging
  - Region 5 RCRA site – RFI/CMS, dredging design, contractor oversight, reporting
  - Region 5 Superfund site – post ROD investigation, ESD or ROD amendment
- Vapor intrusion: characterization and modeling, residential and commercial facilities
- RPO: optimize 3rd party groundwater plume
  RI/FS, now imbedded QC
USACE Kansas City, Manchester Annex FUDS
Shoreline Remediation and Habitat Restoration, WA

- $2.1M Firm Fixed Price Task Order
- High-profile FUDS and Superfund project on the Puget Sound, Seattle
- Remedial action
- Landfill cap maintenance
- Regulatory reporting
- Comprehensive semi-annual inspections
- Environmental stewardship
- Long and short-term monitoring
- Compliance with federal, state and USACE regulations
- Shoreline reconstruction / restoration in tidal environment
- Aquatic habitat restoration

“The contractor (CTI) has excellent communication skills and is very customer orientated.”
- May G. Carrell, USACE, NWS
Wright Patterson AFB, Remedial Process Optimization and Groundwater Treatment System Replacement Design, OH

- Fast-tracked $550K Firm Fixed Price Subcontract
- Field surveys
- Pilot testing
- Investigations to obtain design data
- Cost estimates
- Estimated construction period-of-performance
- Green sustainable remediation
- Title I environmental design
- Environmental remediation
- GW treatment system
- Design plans and specifications
- Upgrade of existing systems
- Operation and maintenance
DOE – ETTP, K-732 Switchyard Demolition and Remediation
Oak Ridge, TN

This $4M demolition and remediation project is part of DOE’s ongoing re-industrialization at ETTP.

- Preparation of regulatory documents
- Radiation surveys of existing equipment and structures using MARSSIMs guidance
- Waste characterization and profiling
- Removal of (3) synchronous condensers each weighing over 120 tons
- Removal of non-asset equipment and disposal at Y-12 landfill
- Recovery of assets (switchgear, transformers, busses, cabling, structural steel, steel tanks, etc); assets used to partially fund project
- Characterization of site soils and development of corrective action plan
- Perform soil removal action to meet cleanup goals
- Site restoration
Daimler Corporation, Commingled CVOC Groundwater Plume Remediation, Dayton, OH

This performance-based $4.5M CVOC plume delineation and remediation was performed under Ohio EPA Voluntary Action Program

- CVOC plume delineation by MIP/EC direct push and well installation
- Commingled plume delineation by EVS 3-D visualization and flow modeling
- Source area delineation by SVE vapor recovery mapping using 120 extraction points and on-site GC analysis
- Designed/constructed/operated closed-loop reductive dechlorination bioreactor
  - Downgradient groundwater extraction with air strippers/NPDES discharge
  - Upgradient sodium lactate substrate re-injection to promote dechlorination
- Coordination to minimize disruption of ongoing plant manufacturing activities
- CTI performed 2,450 hours of investigation, construction, O&M, and monitoring without a safety incident
USACE Kansas City, In-Situ VOC Remediation
Former Naval Air Station FUDS, KS

- CTI was contracted by USACE to reduce contaminant mass from groundwater below the disposal trench via in-situ remediation

CTI performance monitoring confirmed ISCO treatment as a viable groundwater remediation technology

- $500K Cost Reimbursable Task Order
- In-situ Chemical Oxidation (ISCO) design and implementation for VOC impacted groundwater
- Investigation of hydrogeology and source area for design of ISCO layout
- 3-D plume modeling and interpretation of soil analytical results
- Engineering evaluation to select oxidant and optimize injection strategy
- Two catalyzed hydrogen peroxide (CHP) injection events 30 days apart
- Monitoring well installation and LTM
- KDHE Underground Injection Program (UIP) permit and Remedial Action Completion Report (RACR)

CTI was contracted by USACE to reduce contaminant mass from groundwater below the disposal trench via in-situ remediation
$1.9M Cost Reimbursable Contract

- Developed conceptual site model
- Quantified contaminant transport mechanisms and human/ecological risk exposure pathways to support Monitored Natural Recovery (MNR)
- Developed and implemented of the baseline and long-term river monitoring program using multiple lines of evidence to monitor and document MNR processes
- PCB contaminant trend analysis and Surface Weighted Average Concentration (SWAC) calculations
- Pilot testing of in-situ PCB bioremediation using genetically isolated and coded bacterium
- Regulatory team collaboration and negotiation
- Public relations to present interpreted monitoring results and future activities
$154K Performance-based FFP Task Order
Project plans: PMP and QASP
Two permit modification requests will be completed:
  • Class I PMR to add two conforming OB pads and delete reference to old OB pad
  • Class III PMR to request No Further Action (NFA) for 14 SWMUs current on the Part B Permit
Direct interaction with Arizona DEQ on comments for both PMRs
Public meeting and response to public comments for the Class III PMR
Technical assistance to YPG on their existing Class I, II and III PMRs and their current Part B Permit
USACE Los Angeles, RCRA Part B and Subpart X for OB/OD Permit Renewal, Edwards AFB, CA

- $300K Performance-based FFP Task Order
- Project plans: PMP and QASP
- Renewal package developed as 3 volumes
  - Volume I: Basewide application information
  - Volume II: Hazardous waste storage facility - contains information specific to the HWSF operations under Part B Permit
  - Volume III: Open burn/open detonation (OB/OD) units - contains information specific to the OB/OD operations under Part B, Subpart X Permit
- Direct interaction with California DTSC on comments
- Public meeting and response to public comments
$75K Firm Fixed Price Task Order
- Development of pre-audit evaluation
- Review of facility permits/licenses/work practices
- Preparation of site specific audit assessment tools
- On-site facility audit
- Identification of action items
- Evaluation of permit conditions
- Corrective action assessment
$353K Firm Fixed Price Task Order

Environmental compliance, RCRA/HSWA permit, solid waste, stormwater, air emissions, and on-site data management support including:

- GIS mapping and geospatial analysis
- Data integration, maintenance and validation
- Process model development
- Web-based mapping services
- Training
- Quality control
$930K Firm Fixed Price Task Order
On-site technical staff
Hazardous Materials Management System (HMMS) database management
Title V permitting
Air emissions inventory
Reporting of greenhouse gas emissions
EPCRA reporting
Stormwater monitoring plan
Pollution Prevention (P2)
MPS Group, Total Waste Management Group
Regulatory/Compliance Services

- Ongoing services contract
- Customized technical training
  - DOT hazardous materials
  - RCRA hazardous waste, TSCA (PCBs) & asbestos
- In-plant technical support
  - Audit of RCRA/DOT practices
  - Waste characterization
  - ISO 14001 support
Johnson Controls Automotive Regulatory/Compliance Services and Program Support

- $100K Professional Services Contract
- Customized technical training:
  - DOT & RCRA: On-site and webinar based
- Plant & corporate-level technical support:
  - RCRA generator requirements
  - DOT hazardous materials support
  - PCB management support
USACE Kansas City, Installation Restoration Program Support, Fort Riley, KS

- $1.9M Firm Fixed Price Task Orders
- Groundwater and soil investigation
  - Abandoned gasoline line (soil/groundwater)
  - Pesticide storage facility (OU002) (soil)
- In-situ remediation – DCFA (OU003)
  - Cap 18 injections for chlorinated solvent
  - Impacted groundwater cleanup
- Soil investigation and removal
  - Camp Funston WWI Incinerator
  - Investigation and removal of arsenic-contaminated soil
- Long-term groundwater monitoring at 4 sites:
  - SW Funston Landfill, Custer Hill Landfill, Dry Cleaning Facility Area and Building 354
USACE Kansas City District, Long-Term Response Action, Custer Hill Landfill, Fort Riley, KS

- Repair 1,700 LF landfill cover drainage
- Clearing and grubbing
- Finish grading to promote drainage
- Installation of geotextile fabric
- Placement of riprap
- Culvert restoration
Representative Experience - Construction
DOE, Design/Construction of ET Landfill Cover System
Los Alamos Airport, Los Alamos NM

- $4.4M Landfill design-build evapotranspiration (ET) landfill cap (5.5 acres)
- Excavation/re-grading eroded slope area involving complex grading, steep slope (1H:1V) and a 24ft tall concrete retaining wall
- Improvement of existing sedimentation basins with geosynthetics and riprap
- Characterization, demolition, transportation, and disposal of approx. 5.5 acres of asphalt and concrete landfill cap, including 5 reinforced concrete hangar pads.
- Excavation, relocation, grading and compaction of cover soils to construct a 5.5 acre ET cover system
- Amendment of cover soil, seed, mulch and erosion control measures (20,000SF of 40mil LLDPE-lined channels)
- Design/construction of ~9500SF, 9" thick reinforced concrete hangar pad and 2000SY of new taxi-way asphalt placement
- Site restoration including seeding / mulching & asphalt pavement
USACE Kansas City District, Manchester Annex FUDS Superfund Site
Manchester, WA

- $950K Firm Fixed Price Task Order
- 10-acre landfill Superfund site located on the west shore of the Puget Sound
- Failing landfill cover drainage and shoreline protection system. Work involved:
  - Integrated design/construction services
  - Site drainage improvements
  - Culvert jetting and repairs
  - Drainage structure evaluation and repairs
  - Shoreline reconfiguration and armoring
  - Aquatic (fish & clam) habitat restoration
  - Daily schedule alignment with coastal tides
  - Negotiations with multiple stakeholders including USACE, USEPA, NOAA, and Suquamish Native American Tribe
$370K Firm Fixed Price Task Orders

Engineering design of stormwater improvements that meet NRCS design guidelines with the objective of maintaining compliance with Fort Leonard Wood's site-specific industrial stormwater operating permit

Project work plans (CQCP, APP/SSHP, SWP3)

Construction of stormwater improvements at the Range 11 and Training Area 244 sites

Installation of terraces, grass waterways, riprap channels, detention basins, and site restoration

No-till drill seed of the 25-acre range

Required coordination with range control to facilitate construction activities on active firing range with minimal disruption to mission

Construction completion report
USACE Kansas City District
Multiple US Army Reserve Installations

- $7.1M Firm Fixed Price Task Order
- Coordination of simultaneous work at multiple active military installations
- Civil/geotechnical engineering and plan development
- Site preparation and erosion controls
- Mass earth grading
- Reinforced concrete and HMA pavements
- Sustainable features including bio-swales, rain gardens, infiltration basins, porous pavements
- RCP sewer and CMP culvert installations
- Installation of pre-cast concrete drainage structures
- Rehabilitation of sediment control basins and construction of new storm water detention facilities
- Site electrical utilities including parking lot lighting
- Shoreline protection

CTI completed work at 15 installations with zero H&S incidents and over $500K in savings as a result of Value Engineering

www.cticompanies.com
$1.8M Firm Fixed Price Task Order
Managed/executed rapid 3-month repair schedule to meet mandated level of protection (01 March 2009).
Use of alternate fills meeting performance requirements
Unique design and deployment of geotextile liner to preserve hydraulic integrity
Compacted clay placement in winter conditions
Installation of 60" culverts and gate structures
Construction of temporary access and haul roads
Erosion controls
Emergency temporary closure of breaches during abnormally high river stages due to upstream dam releases
Construction quality control

CTI's Innovative Value Engineering approach structures resulted in $100K in cost savings to USACE
USACE Louisville District, Design/Build Site Utility Project
Detroit Arsenal Garrison, Warren, MI

- $5.8M C-type contract
- Engineering design for new water distribution and fire protection systems for a 500+AC Military installation
- Extensive subsurface utility investigation using EM, GPR, magnetometry and “soft digs”
- Approximately 19,000 LF of new 8” to 12” ductile iron pipe with over 16,000 LF of horizontal drilling to minimize site disruptions
- 57 pre-cast gate wells with valve operators
- 35 hydrant assemblies
- Concrete and asphalt pavement removal/replacement
- Jack and bore for cased water main under city roadway intersections
- Soil erosion controls and vehicular traffic controls
- Demolition/removal/grouting of defunct structures
USACE St. Louis District, Levee and Flood Control Structure Repairs
Mississippi River, MO and IL

- $5.9M C-type contract
- Removal and replacement of 95,000 CY of embankment
  - Early schedule completion under Fast-Track schedule
  - Hydrated lime treatment of “fat” clay materials
  - Worked with USACE to improve testing procedures
- Repair collapsed CMP & slip-line with HDPE
  - Twin 72” CMPs, collapsed at gate well
  - Levee removal and deep excavation to 40 fbg
  - Construction of earthen cofferdams & dewatering
  - Shoring and CMP section replacement
  - Slip-lining 600 LF with 63” OD HDPE, butt fused and grouted in place

CTI developed a soil stockpile management plan to rapidly restore flood readiness conditions in the event of rising flood waters
$1.2M Firm Fixed Price Task Order

Phase I included:

• Planning and survey
• Clearing and grubbing
• Self-perform re-construction – 1000 ft. of levee
• Challenging work area constraints adjacent to private property owners
• Articulated concrete mat placement above and below normal stream elevation
• Site restoration and pavement repairs
• Zero safety incidents – zero lost time

Phase II included:

• Sole sourced based on successful performance on Phase I
• 600 ft. of similar levee re-construction

CTI's alternative method of construction resulted in the avoidance of significant impact to both cost and schedule due to rapidly fluctuating river levels.
$3.6M Firm Fixed Price Task Order
Storm water control
Erosion and sediment control
Site clearing
Maintenance and control of traffic
Aggregate base haul road construction & maintenance
Borrow source excavation and hauling
Excavation and compacted fills
Storm drainage improvements
Demolition and removal
Permanent seeding
Asphalt paving

CTI developed a behavior-based safety program to successfully overcome a client designated “Challenged Safety Site”
USACE Omaha District, 2011 Flood Recovery
Missouri River, Council Bluffs, IA

- $2.2M Firm Fixed Price Task Order
- Fast-track construction during winter conditions
- 24/7 operations during several phases to meet “Level of Protection” deadline set by USACE
- Complete demolition and removal of two pump stations including wet wells, inlets/outlets
- Mass earthwork including excavation, stockpiling, and grading
- Construction of temporary roads
- RCP sewer and CMP culverts with flowable fills
- Pre-cast and CIP concrete drainage structure installation
- Dewatering and water management
- Construction of gate wells with H-pile reinforced foundations
- Site controls including erosion controls and fencing
- Construction quality control
**USACE Kansas City District, Stream Bank Stabilization**
Fort Leonard Wood, MO

- $560K Firm Fixed Price Task Order
- Rapid response to the restoration of stream banks and in-stream structures damaged due to recent flash flooding
- Early completion under tight time constraints
- Clearing, stripping and site removals
- Soil placement and site grading for covering exposed landfill waste
- Over 3,000 lineal feet of bank armoring with 400-pound rip rap
- Geotextile fabric underlayment
- Willow stake installation
- Stream channel grading
- Spur dike construction
- Seeding and full site restoration
- Construction Quality Control
USACE St. Louis District,  Chain of Rocks Canal
Granite City, IL

- $2.4M Firm Fixed Price Task Order
- Site clearing, stripping and grubbing
- Drilling 30-inch diameter, reverse circulation boreholes to depths of up to 85 feet. Installation of 10-inch diameter stainless steel wells
- Well development performed by high velocity jetting and air lift
- Pump testing up to 500 gpm and Rossum sand filter testing
- Installation of 48-inch, 72-inch and 96-inch diameter manhole structures with outlet works at discharge elevations 18 fbgs
- Construction of over 3,500 lineal feet of 12-inch, 36-inch and 54-inch diameter RCP storm sewer
- Cast-in-place reinforced concrete headwalls
- Temporary cofferdams during outlet construction and rip-rap placement
- Gravel haul road construction
$200K self-performed renovation

Vertical separation of current facility to break away a file storage location and soils materials lab with separate entrances including security provisions

Lab construction included:
- Plumbing and carpentry
- Electrical
- False ceiling
- Environmentally-controlled cure room
- Small tools and equipment storage facility
- Fire safety
- City building permit and fire safety approvals
Confidential Client, PCB Decontamination/Remediation
Aurora, CO

- $500K Fixed-Unit-Price Contract
- Project work plans: SWM/ESCP, HASP, RAWP
- 35,000 SF magnesium extrusion facility with PCB contaminated soils and concrete
- Set PPE requirements and established exclusion, contaminant reduction, and support zones
- Monitored air quality: dust levels, CO, O₂, etc.
- HEPA vacuum cleaning of PCB contaminated dust
- Selective demolition of existing building sections
- Demo and removal of existing concrete floor slab
- Removal of PCB contaminated soils and replacement with clean backfill soil
- Placement of new concrete floor slab
USACE Kansas City, PCB Abatement at Former NIKE Base
Region 5 TSCA Self-Implementing Cleanup, Joliet, IL

- $380K Firm Fixed Price Task Order
- Design, permitting, construction oversight, and waste disposal
- Draining, removal and disposal of two 500 KV transformers containing high levels of
- Demolition and rebuilding of interior walls to allow removal of the two 16,900 pound units
- Decontamination of concrete and tiled floor areas by washing and scarification
- Flushing and sealing of PCB impacted conduits leading from transformers to utility vaults
- Demolition and removal of two utility vaults impacted by PCBs
- Confirmation sampling per EPA requirements
- Site restoration, concrete and asphalt paving
- Construction completion report
$1.2M Cost Reimbursable Contract
Re-design and re-construction of landfill cap at active airport to address landfill subsidence
Geotechnical investigation, engineering design and construction plan preparation
Sealing of existing asphalt and concrete pavement
Project work plans: SWM/ESCP and HASP
Riprap check dams and 2’ layer of riprap in existing porous detention areas and sedimentation basin
Backfill and repair of significant rills
Repair and extension of existing riprap-lined benches
Installation of riprap-filled gabion baskets
Restoration of all disturbed vegetation areas
Ohio Environmental Protection Agency (OEPA)
Portage County Landfill, Portage County, OH

- $1M + D/B landfill closure project
- 75,000 CY of cut/fill subgrade earthwork
  - 100,000 CY of imported cohesive soil
  - 500+ tons of waste/debris relocation and complete site restoration with native
  - Vegetation and leachate mitigation
  - Vegetative species
- Met all final CLOSER cap objectives
  - Surface water management plan
  - Erosion prevention measures
  - Leachate management controls
  - Low hydraulic conductivity soil cap

Future CLOSER sites include bankrupt Central Waste Landfill facility in Canton, OH with a permitted waste-burial area of 56 acres and the Harvard Road Landfill facility in Cleveland, OH

“I would like to commend CTI’s excellent performance on the completion of the CLOSER program’s Portage Landfill Capping and Improvement project…our project team appreciated the professionalism and teamwork displayed…this outstanding teamwork resulted in a project that was delivered on-time and under budget with no accidents or safety incidents.”

- Connie Livchak, CLOSER Supervisor, OEPA
Representative Experience - Engineering
Wayne County Airport Authority (WCAA), Runway and Taxiway Rehabilitation/Construction, Multiple Locations, MI

- Detroit Metropolitan Airport – Detroit, MI
- Willow Run Airport – Ypsilanti, MI
  - 14.5-17” concrete pavement
  - 9” bituminous pavement
  - 18” aggregate base

Services included:
- Quality control
- Soil and concrete sampling and laboratory testing
- Geotechnical investigation
  - Performed over 150 borings and 800 lab tests
Detroit Metropolitan Airport, Runway 4R-22L
Romulus, MI

- Reconstruction of runway 4R-22L
  - Over 460,000 SY of pavement replacement
  - Asphalt shoulder reconstruction

- Services included:
  - Quality Control for aggregate base density
  - Soil sampling
  - Laboratory soil testing
    - Gradation
    - Moisture/density
Willow Run Airport, Runway 5R-23L
Ypsilanti, MI

- Reconstruction of runway 5R-23L
  - 4,650 LY of pavement and base replacement
  - Improvement of runway safety area
  - Installation of storm sewer and underdrain

- Services included:
  - Quality control for concrete and soil density
  - Soil sampling and lab testing
    - Gradation
    - Moisture/density
  - Concrete sampling and lab testing
    - Compressive strength
    - Air content
    - Slump
Detroit Metropolitan Airport, Taxiways Whiskey and Sierra
Romulus, MI

- Reconstruction of geometry of Taxiways Whiskey and Sierra
  - Removal of 156,000 SY of pavement
  - Installation of over 175,000 SY of new pavement
  - Improvement of taxiway underdrains and storm sewer

- Services included:
  - Quality Control for concrete and soil density
  - Soil sampling and lab testing
    - Gradation
    - Moisture/density
  - Concrete sampling and lab testing
    - Compressive strength
    - Air content
    - Slump
Reconstruction of runway 4L-22R

- Phase I: Geotechnical investigation
- Subsurface borings
- Pavement cores

Services included:

- Over 150 sample locations across the runway and several taxiways
- Laboratory testing of soil and pavement samples
  - 535 moisture content
  - 125 grain size distributions
  - 46 Atterberg limits
  - 128 unconfined compression
  - 37 loss on ignition
- Geotechnical investigation report
$1.6M Firm Fixed Price Task Order

Providing on-site GIS technical support at the Pentagon, MCB Quantico, MCB Albany, and MCAS Beaufort. Services include:

- GIS data management
- Geospatial analysis and modeling
- Cartographic product development
- Geospatial support for renewable energy efforts
- Specialized and complex two and three-dimensional geospatial queries and analysis
- Training and technical support
- Quality control
USACE St. Louis District, Geotechnical/HTRW Investigations
Multiple Locations

- $3.5M 8(a) sole source contract
- HTRW waste handling, characterization and management
- HTRW sample collection and laboratory analyses
- Regulatory permitting
- Project planning and technical reports
- Geotechnical testing and evaluation
- Engineering analysis and support
- Land-based and overwater drilling
- Soil and sediment sampling
- Piezometer Installation
- Geotechnical laboratory testing
- Relief well development and high capacity pump testing
- Engineering and construction
Landfill/Site Investigation, FTL-72 and FTL-75 Landfill
Fort Leavenworth, KS

- $120K Firm Fixed Price Task Order
- Site preparation and clearing
- Geophysical investigation
  - EM-31 terrain conductivity survey
  - Magnetic gradient survey
  - Data reduction and mapping
  - Technical report
- Test pit excavation
  - Delineation of waste limits and depth
  - Inspection of geophysical anomalies and waste type
  - Finish grading and restoration
- Geoprobe investigation
  - Delineation of waste limits and depth
  - Soil and groundwater sampling
BAE Systems Bradley Fighting Vehicle Test Track
Sterling Heights, MI

- $2.1M Firm Fixed Price Task Order
- Design and construction of new 2,395 LF high speed test track for Bradley Fighting Vehicle
- Design included integration of existing site pavement features to minimize overall construction cost
- Project work included:
  - Geotechnical investigations and engineering design
  - Earth balancing and over 15,000 CY of new fills
  - Over 8,000 SY of heavy duty asphalt pavement on 15” aggregate base course
  - Test vehicle obstacle lane 900 LF long
  - Reinforced concrete barrier wall capable of re-directing the 38-ton vehicle traveling at 50 mph
Smiths Creek Landfill, Design/CM/QA Citizens Drop Off
St. Clair County, MI

- $300K Firm Fixed Price Task Order
- Design and construction of a citizens drop-off for municipal solid waste
- Design included on-site fly ash stabilization using high-strength geotextile
- Project work included:
  - Geotechnical investigation and soil stabilization
  - High-strength geotextile placement for stability, dewatering and consolidation
  - Reinforced wall and pavement design
  - Permitting and compliance with waste segregation and disposal regulations
- Designed and provided CM and QA for this project including assisting with contractor selection process
Smiths Creek Landfill, Septage Receiving Station, Leachate Pretreatment and Gas-to-Energy Plant, St. Clair County, MI

- $4.7M Firm Fixed Price Task Order
- Design and construction of a septage receiving station and bio filter building including pump station, force main and related appurtenances
- CM and QA for gas-to-energy (GTE) building construction and leachate pre-treatment facility
- Building includes separate meeting facility, office, machine room, and control room
- CTI Services include:
  - CM and QA
  - Contractor selection process
  - Permitting
  - State Revolving Fund (SRF) management and reporting
  - ARRA PM and reporting protocol
PennDOT, I-99 Acid Rock Drainage Remediation Centre County, PA

- Designed cover system using HDPE geomembrane protected by a reinforced aggregate layer anchored from the top of slope
- Provided a long-term solution for a containment challenge that requires a stable slope protection and stormwater management systems
- Reduced the construction cost by a factor of three or more over the alternatives
- Largest known application of similar design

CTI designed and inspected construction of unique geosynthetic system, covering 1.5M sq. ft. of steep exposed acid rock slope (max. 400 ft. long) preventing rainwater from leaching acid and metals into local drinking water and wildlife habitat.
Geotechnical Engineering Services
Multiple Federal/Commercial Clients, CONUS & OCONUS

- Over 200 completed projects including:
  - Site investigation via soil borings or geophysical methods
  - Foundation engineering
  - Groundwater evaluation and control
  - Slope stability analysis
  - Stress distribution and settlement analysis
  - Design of earth retention systems
  - Vibration studies and monitoring
  - Pavement designs for highways, airports and parking
  - Soil stabilization through chemicals and/or geotextiles
  - Design and field control of engineering fill
  - Caisson and pile inspection and load testing
  - Failure investigations of structural elements
  - Engineering evaluation for legal purposes
Wexford County DPW, Wexford County Landfill
Manton, MI

- $4.5M Professional Services Contract
- Landfill planning, engineering and construction services
- Provided full range of engineering, environmental and construction services over
- Competed RI field program, RI/FS reporting, and decision documents within tight regulatory schedule
- Extensive hydrogeological investigation to delineate extensive groundwater contamination plume
- Successfully negotiated shut-down of the groundwater pump-and-treat remediation system
- Relocated over 1 million CY of waste from unlined cells to newly constructed cells
- Implemented environmental compliance management system
- Developed public outreach education and presentations
City of Midland Landfill, Renewable Energy
Midland, MI

- Developed a FS for offsetting energy consumption at the WWTP
- Supported a renewable energy purchase agreement including:
  - Renewable energy credits
  - Self-perform/lease decision over operations
- Prepared generator interconnection application
- Pipeline Hazardous Materials Safety Administration (PHMSA) compliance and reporting and audit/inspection support; also provided regulatory support under Part 192 (MPSC – LARA)
- Designed public awareness program, conducted public awareness meetings and public hearings
- Developed plans and provided management support for SRF funding program including securing green energy credit as 40% loan forgiveness
Wexford County Landfill, Renewable Energy Program
Manton, MI

- Explored renewable energy options for the Wexford County Landfill:
  - Determined current capacity
  - Determined best use for methane (pipeline, GTE, plasma gasification, leachate evaporator)
  - Pipeline supply main runs near landfill
- Explored ways to increase methane production
  - Bioreactor with mined aged waste
- Secured SRF financing with debt forgiveness
Integration of environmental, engineering and construction services

Management of radioactive waste-related issues associated with contaminated soils and other waste streams

Regulatory compliance and negotiations

Design of final closure cap

Project quality and S&H management

Engineering, permitting, and data analysis

Work plan development

Construction management

Construction performance and onsite QA

Data reporting
SUMMARY

- Proven and successful delivery of environmental, engineering and construction services to Government, industrial and municipal customers since 1976
- Over 7 years of experience working as a Federal Prime Contractor performing Heavy Civil Construction, A/E, and Environmental Services to 12 USACE Districts, and the US Army, Army Reserves, Air Force, Marines, NGB, DOE, NNSA, DHS and GSA
- Bonding capacity of $10M individual/$25M aggregate
- Seasoned team of Program and Project Managers, Engineers, Scientists, Construction Managers, Site Superintendents, and Craft Laborors/Operators
- Relationships with other large firms through Mentor-Protégé, Joint Venture and traditional Prime/Sub arrangements to access the depth and breadth of capabilities needed to successfully deliver projects of any magnitude
- Documented history that demonstrates our ability and commitment to deliver high quality construction services – safely, on-time and on-budget
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