



TETRA TECH

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TRANSMITTAL

TO: Gila County Public Works
745 N. Rose Mofford Way
Globe, AZ 85501

FROM: Forrest Switzer, PE

ATTN: Michael Gillette, Construction Project Mgr

DATE: January 13, 2015

PHONE: 800.304.8505

PROJECT: Copper Administration Building
Site Development Design Plans

JOB NO: _____

<input checked="" type="checkbox"/>	Messenger - Delivery	<input checked="" type="checkbox"/>	Pickup	<input type="checkbox"/>	Other	<input type="checkbox"/>
<input type="checkbox"/>	Standard Mail					
<input type="checkbox"/>	FedEx Overnight					

REMARKS:

Proposal for Copper Administration Building Site Development Design Plans:

Proposal including:
 Design Approach
 Qualifications and Experience
 Timeline Schedule (Microsoft Project)
 References

Resumes:
 Forrest Switzer
 Jake Burdick
 David Lower
 Jack Pence

Sample Projects:
 Sawmill Crossing (Payson, AZ.)
 J. Michael McGrath School (Newhall, CA.)

Forrest Switzer

THESE ARE TRANSMITTED:

- | | | | |
|--------------------------|---------------------|-------------------------------------|-------------------------------|
| <input type="checkbox"/> | For Approval | <input type="checkbox"/> | As Requested |
| <input type="checkbox"/> | For Your Use | <input checked="" type="checkbox"/> | For Review and Comment |

COPY TO: Mark Guerena, P.E., R.L.S., County Engineer



PROPOSAL
Gila County Copper Administration Building
Grading and Drainage Plans

Tetra Tech proposes to provide the engineered grading and drainage plans for the site work associated with the new Copper Administration Building. Generally this design will utilize topographic survey information furnished by Gila County. It is expected that the design will be prepared on four 1" = 10' plans, two detail sheets and a cover sheet. It is anticipated that the grading and drainage construction may take place in two phases master planned on the single plan set, with finish surface conditions designed but with phasing established during design, and probably having Phase 2 bid as an add or deduct alternate. In addition to the possible two phase grading and drainage, additional items will be designed for separate bid prices which can be added or left out of the current construction project.

Tetra Tech expects to provide grading and drainage design which includes the general site area surrounding the new modular building, the parking area lying northwesterly of the "911" building, the area on the southeasterly side of Monroe Street. Drainage from the southerly middle of the site is to be conducted downslope, then along the face of the slope, in an open gunite "v" ditch, westerly to an existing undeveloped channel. Drainage from the easterly area of the new building is to be conducted to the top of the existing gunite slope and down the face of the slope. The southeasterly curb of Monroe Street is to be removed and relocated toward an alignment concentric with a newly defined Monroe centerline and reestablished as the "turndown" edge of a new pedestrian sidewalk. Parking lot pavement will be indicated with an approximate 10-inch design section. Parking stripes, curbs, and other features will be checked for best layouts. Curbs and planter areas will be located as requested. Grading surface slopes will be held between 1% and 3% if possible, with 2% maximum in any direction at accessible parking spaces. Advice will be given regarding accessible paths and other ADA requirements.

The County has asked for separate design and construction cost estimates regarding stairs and ADA ramps. Tetra Tech would like to design a combined stair/ramp to provide passage from the Court House to the new building. That recommendation may change but we generally feel these two items should be design as a unit even if they are built at separate times. They should work together, and the best way of assuring that is to design them as one unit together at the same location. The County has also requested a stairway down to the lower holding cell. Tetra Tech feels that this should not be associated with the current contract. There is no reason to delay any part of the project for this stair. Tetra Tech proposes that this contract grading plan build an upper concrete landing and a lower walk from the holding cell to a lower landing. Tetra Tech will discuss this proposed stair with a design build steel fabricator regarding needed landings and their



positions. After the rest of this project is bid and awarded either the County or Tetra Tech can have a steel fabricator manufacture a stairway that meets code and connects the concrete landings as a design build item that could even be done concurrently if needed. This should save time to the bid, and that stair would probably be done in the same manner by the site contractor.

The County has also requested a perimeter wall along the south side of the site. It might be possible to bid this separately but there would be concern about the two contractors working separately. If it should be decided to split this away from the site contractor, it is recommended to have the masonry contractor provide his own compaction under the wall footing. This could be done using a “stomper”. If the site contractor will be doing the wall, it may also be best to have him “stomp” the footing area.

Although this has not been discussed, it will be a good idea to have the Architect review lighting on ramps, stairs and walks even though down lighting from the building is proposed. It will also be advisable to have interconnecting sleeves placed under the paved areas.

QUALIFICATIONS AND EXPERIENCE

Primary design on this project will be shared by Forrest Switzer and Jake Burdick with support assistance by Jack Pence and David Lower (Resumes attached).

Jake has been with Tetra Tech since his graduation from Westwood College in Computer Drafting & Design, and does design almost exclusively in AutoCAD Civil 3D. He understands land shapes, slopes, earthwork and does most of the drafting design on our grading projects in Payson. These projects are both new and remodel or addition projects. Jake recently completed plans for the remodel of the Trailer Village RV camp site, for Xanterra, at the South Rim Grand Canyon, and currently is working on the retrofit of ADA compliant walks and ramps at the six South Rim Yavapai 2-Story Lodge Buildings, also for Xanterra. Jake and David have recently worked on Game and Fish accessible parking, launch ramp, and dock facilities at C.C. Cragin (Blue Ridge) Reservoir and at South Low Lake.

Forrest has been with Tetra Tech since 1996 and prior to that owned a consulting firm in Pasadena, California that specialized in Schools, Shopping Centers over 25-acres, and Senior (HUD) apartments, along with some specialty clients such as Disneyland and the Jet Propulsion Lab. Forrest has provided site civil for dozens of new middle and elementary schools, and dozens of school expansions, working as the Civil Consultant to Flewelling & Moody Architects. This being over a period of time from 1977 to present. Over 41 different schools in California have been worked on since joining the Payson office, and Forrest was asked last week if he could work on one in Inglewood and one in Santa Paula, California. Two sites were selected to be attached as



examples of the existing developments, along with pieces of the plan sets to demonstrate the variety of experience. In most cases “horizontal control” plans are included using survey coordinates at all curbs, walks, lines, grade breaks, etc., and the point files and AutoCAD drawing files furnished to the construction surveyor.

The first example is Sawmill Crossing in Payson showing: a Google Earth photograph of how it exists today, original Architects master plan, and land ownership along with buildings that originally existed overlaid by the proposed project in black. Phasing Plan, Sit work Cover Sheet, two of the grading plan sheets also showing designated accessible path, FEMA flood elevation map, and a detail of inner courtyard elevation design.

The second example is a combined kindergarten elementary school (J. Michael McGrath) in Newhall, California that is somewhat built on the side of a hill and is accessible from the frontage road through a series of ramp segments. This set shows: a Google Earth photograph of how it is today, two of the grading plan sheets and a detail sheet, a drainage plan sheet, another Google Earth Image. This project was pre-rough graded in a manner similar to the Copper Administration Building site, but required much more revision in the parking and drive connection areas than the County site. Separate plans were prepared for the entry and exit drives.

David is the Payson office CAD technical lead with experience going back to a time when he was working for the City of Fairbanks, Alaska prior to starting work in the Payson office around 17-years ago.

Jack is the Tetra Tech Payson office manager. He has experience as a County Engineer in Kentucky and considerable mining related experience. Most of his extensive experience in Arizona is in Civil Site Development, for residential and commercial developers.

TIME SCHEDULE

The attached Microsoft Project schedule is proposed as a workable schedule allowing time for meetings and review by the County. We have also indicated advertising, bid period, pre-bid meeting, last date for questions, addendum, and bid collection, etc. Some of the time periods like those for advertising and Board of Supervisors approval fall on specific dates and need to be adjusted. This schedule should allow for a 60-day construction period with completion near June 1st.



EXPERIENCE SUMMARY

Mr. Switzer has been a Registered Civil Engineer in Arizona since 1997 and is a Registered Civil Engineer/Land Surveyor in California since 1975. Mr. Switzer is also licensed as a Civil Engineering in Washington and has retired his licenses in Nevada and Idaho. Mr. Switzer owned a Civil Consulting firm in Southern California with a full time staff of up to 25 employees for 12 years preceding his move to Payson, Arizona in 1996.

Mr. Switzer's experience includes project management, survey, private and public site development and civil infrastructure design.

RELEVANT EXPERIENCE

C.C. Cragin Pipeline and Related Improvements, Town of Payson, AZ – Prepared specifications and bid documents for a Water Infrastructure Finance Authority (WIFA) funded Aquifer Storage and Recovery Project, and 2-mile pipeline. Coordinated Federal Davis-Bacon interviews, Certified Payrolls, etc.

Chaparral Pines Phase 2 Subdivision, Payson, AZ – 600+ lots Project Manager for Roadway Infrastructure Design and Const. Assist. 1996 – 2003

The Rim Golf Club Subdivision, Payson, AZ – 319 Lots Project Manager for Civil Design and Construction Assistance. 1997 - 2003

Sawmill Crossing Center and Theater, Payson, AZ – Civil Project Manager for all site Civil Design and Construction Assistance.

Fossil Creek Road, Strawberry, AZ – Phase 1 – For Gila County - Completion of design, completion of Right-of-Way dedication and easement documents, bid administration, construction assistance and contract administration. Phase 2 design and Right-of-Way negotiations.

Ice House Canyon Wash Bridge & Approaches, Globe, AZ – For Gila County - Project Manager to complete plans and specifications and all clearances and approvals for American Recovery and Reinvestment Act (Stimulus) Funding, and to provide construction assistance.

Jesse Hayes Road, Globe, AZ – For City of Globe - Project Manager to complete plans, specifications and cost estimate for bid and construction.

Grand Canyon South Rim & Desert View for Xanterra (Grand Canyon National Park Lodges), AZ – Project Engineer for Civil Site Development on: New Mule Barn; Village propane gas transmission/distribution line; New apartment complex; Water line in Phantom Ranch area from Ranger Station, crossing Bright Angel Creek to Boat Beach (Backhoe and all construction equipment and supplies were brought in and taken out via raft including fuels, tools, etc. Residence and R.V. sites at Desert View; Parking pavement and drainage rehab/improvements for Yavapai Lodge East, Yavapai Lodge West, Maswik Lodge, Bright Angel Lodge, Thunderbird Lodge, Kachina Lodge, El Tovar Lodge; Design plans for repair of Historic Retaining Wall at El Tovar Lodge; Survey of Historic Motor Lodge area in preparation for complete

EDUCATION

California State University at Los Angeles

B.S., Civil Engineering; 1972

AREA OF EXPERTISE

Civil / Survey / Detail Grading and Site ADA Compliance

REGISTRATIONS/ CERTIFICATIONS

Registered Civil Engineer Arizona No. 31879, 1997

California No. C25089, 1975 (includes Surveying)

Idaho (allowed to expire)

Washington No. 30679, 1994

Nevada (allowed to expire)

AFFILIATIONS

The Society of American Military Engineers (Life Membership)

The American Society of Civil Engineers

OFFICE

Payson, Arizona

YEARS OF EXPERIENCE

38 +

YEARS WITH TETRA TECH

17

replacement of all utilities and surface facilities, new sewer design; Site work design for new Xanterra Warehouse; and Additional topographic survey work of the Railroad Station complex and the Xanterra Administration building. Design Engineer and Project Manager for ADA Compliance Plans for the six buildings at the Yavapai East Lodge. Grading and Drainage design for Yaki Point Mule Shade Structure and runoff mitigation; Tusayan Grand Hotel Drainage; Bus Parking area grading and drainage. 1997 to present

Commercial Shopping Centers, Central and Southern California – Served as Civil Project Manager, Design Engineer, and/or Record Surveyor on over 50 commercial shopping centers from 12 to 60 acres in size.

Senior and Federally Assisted Housing Projects– Served as Civil Project Manager, Design Engineer, and/or Record Surveyor on over 25 multi-story housing projects in San Diego, Riverside, Los Angeles, San Bernardino and Ventura Counties. Clients include Salvation Army and Presbyterian Homes.

School and University Projects– Served as Civil Project Manager, Project Engineer and/or Record Surveyor on over 130 school projects from the Elementary to University level including over 30 new Elementary and Middle Schools. Served as Civil/Survey Site infrastructure consultant to California State University at Fullerton for four years preceding move to Arizona. Civil Project Manager for over 40 California School projects since moving to Arizona. 1977 to present

Jet Propulsion Laboratory – Served as Site Civil/Survey consultant for four years.

Recreational Facilities – Prepared Survey, Site Design, Grading and Details for Spear “S”, Agua Fria, and Trilby Trailhead and parking areas for Maricopa Regional Park Trail System. Civil Engineering/Surveyor for a number of Southern California theater and park projects including seating for the Greek Theater. Civil/Survey consultant to WED Enterprises (Disney design offices at Burbank California) including projects in Disneyland and in Disneyworld, and served on loan to WED Enterprises for projects in California at Disneyworld. While at Wheeler and Gray Structural Engineers, prepared three dimensional positional calculations for the upper supports on the vertical supporting columns for the first Loop Ride at Six Flags Magic Mountain. (All upper supports being on curves or spiral curves with continuously varying slope and super elevation.)

Boundary, Topographic, ALTA and/or Construction Survey – Fullerton Town Center (40 Ac. ALTA); The Plaza at Puente Hills (60 Ac. Boundary & Topo); Victor Valley Community College (300 Ac. Boundary & Topo); Vasquez High School Site (50 Ac. Boundary & Topo); Hollywood Salvation Army (ALTA); Gemco/Target Conversions (4 ea, 10+ Ac. ALTA); Jet Propulsion Laboratory (Topographic Survey); and 30 additional of similar characteristics. Boundary Analysis and Survey oversight for the Tetra Tech Payson office since 2006. U.S. – Mexico Boundary location for design and construction of Boundary Fence; Construction Staking at Port of Long Beach, for redundant area wide Fiber-optic Communication and Security System (Homeland Security); Legal Boundaries and Easements in California for Schools; Local Topographic, Boundary, and ALTA survey calculations and mapping. 1984 to present

Whispering Hope Ranch, Gila County, AZ – Project Manager for site civil improvements on 45 Acre Retreat and Animal Shelter.

Santa Catalina Island, California, Water System – While at Wheeler and Gray, Structural Engineers – Prepared design plans for the water supply to the City of Avalon, including two high pressure, pressure reduction stations, with water hammer mitigation. Also prepared studies for upgrading the water service to the USC Marine Biology Center near the island isthmus. 1974 to 1976

U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS – While in the Army - serving as a Civil Engineering Technician in the Blast and Shock Section, Physical Sciences Branch, Nuclear Weapons Effects Division, from July 1966 to May 1969: Doing research and developing computer programs for analysis of response to nuclear blast effects. Then working as a civilian employee at the same location from May 1969 to January 1970, completing work started while in the Army, assisting a member of the German Army (part of an exchange program) with research; Thus completing a dynamic computer modeling program to determine the survivability of lined underground facilities within layered soil/rock strata when subjected to an above ground or surface nuclear warhead detonation, and calculating the cost benefit of the construction of that facility.



EXPERIENCE SUMMARY

As a CAD Designer, Mr. Burdick’s field of expertise is in Water/Wastewater and Site Development. His experience includes: creating water/wastewater construction sets, site grading and drainage plans and, knowledge in Architectural Design. A majority of his work includes:

- Lead designer for Water/Wastewater distribution/collection design
- Lead designer for Site layout and design
- Coordinate with other design teams/firms
- Use of multiple drafting design and analysis tools
 - AutoDesk
 - Land Desktop
 - Civil 3D
 - Bentley
 - StormCad
 - WaterCad
 - SewerCad
 - Microsoft Office

Mr. Burdick has over 9 years of experience in project design and over 14 years of AutoCAD knowledge.

RELEVANT EXPERIENCE

Water Supply/Wastewater Collection

C.C. Cragin Treated Water Pipeline Project-Town of Payson, AZ – Designer responsible for the preparation of plans for approximately 18,000 L.F. of 18-inch water main, 10,000 L.F. of 16-inch water main, and 20,000 L.F. of 12-inch water main to transfer treated water to the Town of Payson and distribute it within the existing Town of Payson domestic water distribution system The project consists of installing water pipeline in existing, built-out corridors within the Town of Payson.

Northern Gila County Sanitary District Airline/Luke Improvement District Project – Payson, AZ – Lead designer responsible for the preparation of the improvement plans for the installation of approximately 6,000 L.F. of 6-inch and 8-inch PVC Sewer Main in a built-out, unsewered area within the Town of Payson. Additionally, the project included approximately 7,000 L.F. of new domestic water line within the project boundary.

Northern Gila County Sanitary District American Gulch Sewer Replacement Project – Payson, AZ – Lead designer responsible for the preparation of the improvement plans for the replacement of approximately 4,000 L.F. of 10-inch VCP sewer main with new 12-inch to 18-inch sewer main within an existing, built-out portion of the community.

EDUCATION

A.A.S., Computer Drafting & Design, Westwood College, 2005

AREA OF EXPERTISE

AutoCad Civil 3d

OFFICE

Payson, Arizona

YEARS OF EXPERIENCE

9

YEARS WITH TETRA TECH

9

Site Planning/Land Development

Ponderosa Baptist Church Parking Lot Expansion – Payson, AZ – Lead designer responsible for the preparation of improvement plans for expansion of an existing parking lot and drainage Facilities.

Bonita Pines Condominiums – Payson, AZ – Lead designer responsible for the preparation of improvement plans 7 unit condominium complex and drainage facilities. Additionally, the project included Preliminary and final Platting and approximately 400 L.F. of new domestic water line expansion to the project boundary.

Center Ridge Apartments – Payson, AZ – Lead designer responsible for the preparation of improvement plans 7 unit apartment complex and drainage facilities.

Chaparral Highlands, Town of Payson, AZ – Lead designer responsible for the preparation of drainage plans for Chaparral Highlands, a 9.98 acre, 19 lot single family residential subdivision located in Payson, Arizona.

The Grand Canyon – Lead designer responsible for the ADA improvement plans to update existing facilities around the Grand Canyon South Rim to current standards.

Town of Payson / Gila County – Lead designer responsible for the preparation of multiple residential and commercial site improvement plans and grading and drainage plans.



EXPERIENCE SUMMARY

As a CAD Designer, Mr. Lower’s field of expertise is in Civil Development. His experience includes: creating complete plan sets for waterline, sewer line and roadway projects, new subdivisions, grading plans and plats. Mr. Lower is using Autodesk Civil 3D for all project design work.

Mr. Lower has over 17 years of experience in project design and over 32 years of AutoCAD knowledge.

RELEVANT EXPERIENCE

Forest Edge Subdivision, Confidential Client, Town of Payson, AZ., Lead Designer – Mr. Lower was the Lead Designer of this project for a private developer. The scope of work involved the Preliminary Plat through Construction Plans.

Chaparral Pines, Town of Payson, AZ, Lead Designer – Mr. Lower drafted the plans in all areas of this project. The scope of work included plans for the waterline and roadway P&P sheets, sanitary sewer P&P sheets, Final Plat sheets, and exhibits.

The Rim Golf Club, Town of Payson, AZ, Lead Designer – Mr. Lower drafted the plans in all areas of this project. The scope of work included plans for the waterline and roadway P&P sheets, sanitary sewer P&P sheets, Final Plat sheets, and exhibits.

C.C. Cragin Waterline, Town of Payson, AZ, Lead Designer – Mr. Lower is the Lead Designer for a multi-million dollar project for the Town of Payson, AZ. His responsibilities include preparation of 100% design plans for approximately 32,000 L.F. of 18-inch ductile iron water main, 12,000 L.F. of 12-inch water main and 4000 L.F. of 8-inch water main to transfer treated water to the Town of Payson and distribute it within the existing Town of Payson domestic water distribution system. The project was done in Civil 3D 2011 and includes the design of one (1) water booster station. The challenge of this scope of work is the installation of water pipeline in existing, built-out corridors within the Town of Payson, AZ.

Boulder Creek Sewer Plans, Confidential Client, Town of Payson, AZ, Lead Designer – Mr. Lower was the Lead Designer of this project for a private developer. This project served Boulder Creek subdivision and another adjacent subdivision with gravity sanitary sewer. The challenge was to then pump the gravity fed sewage back up the hill from which it came back to another gravity connection point.

EDUCATION

Associates Degree in Architectural Technology, Purdue University, 1980

AREA OF EXPERTISE

Growing Proficiency of Civil 3D software.

Advanced knowledge of Land Desktop software and its predecessors.

Advanced knowledge of AutoCAD and AutoCAD customization.

Proficient in MS Office and graphic editing software.

Assist IT with necessary remote help.

Create existing topo maps from survey data.

CAD Lead for the Payson, AZ. Office.

Coordinate with other design teams/firms.

REGISTRATIONS/ CERTIFICATIONS

OSHA 10-Hour Training Course for the Construction Industry.

OFFICE

Payson, Arizona

YEARS OF EXPERIENCE

32

YEARS WITH TETRA TECH

13



EXPERIENCE SUMMARY

Mr. Pence is a Professional Civil Engineer. He has 20 years' experience in the mining field and 15 years in the design and construction of retail, commercial and residential projects. Mr. Pence has extensive experience in contract documents, permit applications, plans, specifications, budgeting, cost analyses and construction supervision, public relations, environmental reports and quality control. He is proficient in document interpretation, submittal review and RFI's.

Mr. Pence is currently the office manager responsible for office supervision/management, marketing, accounts payable/receivables, project planning/review for five professionals working on civil/environmental projects. Previously, Project Manager for the Upper Rio Grande Levee Rehabilitation Program for the International Boundary and Waterway Commission (IBWC). Mr. Pence is responsible for 3 levee projects in West Texas/Southwestern New Mexico area: Mesilla Phase 1 (32 miles/\$26.1M), Mesilla Phase 2 (19.6 miles/\$13.7M) and Sunland Park (12.2 miles/\$9.2M). His is responsible for RFI, submittal review, weekly construction meetings and monthly reports. Previously, Mr. Pence was responsible for project administration for 3 levee projects in South Texas: Main Floodway (41.4 miles/\$19.7M), North and Arroyo Colorado Floodways (48.6miles/\$21M) and Lateral A (13.2 miles/\$18.9M). He also performed daily construction inspection of the Main Floodway for 50% of the project duration.

RELEVANT EXPERIENCE

Senior Project Manager - Project Manager for approximately 20 Master Plan Communities in the Phoenix Area.

County Engineer, Daviess County, KY, Chief Administrative Officer – Mr. Pence was the chief administrative officer of the Davies County Engineering Department including landfills, drainage and public works programs and zoning/building codes administration. He was construction manager for the County Transfer Station and Contained Landfill.

Consolidation Coal Company, WV and PA. Project Construction Manager – Mr. Pence was responsible for the design and construction of acid mine drainage treatment plants, valley fills slurry impoundments, refuse piles and associated earthen dams in North America. His duties included: permit applications, plans, specifications, cost analyses and construction supervision.

Manager of Engineering at Golden Oak Mining Company, KY – Mr. Pence was responsible for all engineering activities, legislative and environmental affairs and land management. His duties also included mine planning, feasibility studies, engineering, permitting, exploration, leasing and contract administration for the company's surface and deep mine operations, which produced approximately two million tons of coal annually.

EDUCATION

B.S., Civil Engineering, University of Kentucky

12 Hours Post Graduate Studies, University of Pittsburgh

REGISTRATIONS/ CERTIFICATIONS

Professional Engineer

Arizona No. 39568

Kentucky No. 11287

Indiana No. 18394

New Mexico No. 20565

Nevada No. 22023

AFFILIATIONS

American Society of Civil Engineers

OFFICE

Phoenix, Arizona

YEARS OF EXPERIENCE

35

YEARS WITH TETRA TECH

4.5

RELEVANT PROJECT EXPERIENCE

Barrick Goldstrike Mine, Carlin, NV . Project Manager for Deep Mine Infrastructure, including Equipment Shop, Backfill and Shotcrete Plants and Ore Containment Pads. Also, Project Manager for Water Treatment Plant Feasibility Report. Project includes temporary water treatment plant and design of permanent plant of mine process water.

Couer Rochester, Lovelock, NV . Project Manager for Design, procurement and commissioning of a potable water treatment plant for Couer Rochester. Project consisted of Preliminary Engineering Report (PER), Well Design and Permitting, WaterCAD Model, Contract Documents and Contractor Bids, Onsite Construction Observation, Construction Commissioning, As-Built plans, Sampling-Monitoring Plan and O&M Manual. Project is located in Lovelock, Nevada. Project was started in August 2012 and completed in November 2013. Construction cost was approximately \$1m. Engineering and construction management cost was approximately \$200,000.

African Barrick Gold Tanzania, Africa Site Manager for Water Treatment Plant. Project included final commissioning of the MF and RO systems and design and installation of a permanent pumping station. Also, single point of contact for all Treatment Plant coordination involving contractors, supply chain, mine resources, electricians and sampling.

Hikes Lane Sewer Interceptor, Louisville, KY,– Project Engineer for Design of 72 inch Sewer line in Louisville, KY - Assisted the Louisville office in Design and Construction Documents for approximately 3 miles of sanitary sewer for the Metropolitan Sewer District. Perform quality control on Plans.

TPC Flood Control Channel, Scottsdale, AZ, – Project Manager for Channel and Access Road Design to the TPC Golf Course - Plans included detailed design of 24 foot channel and adjacent road. All plans were approved by City of Scottsdale.

Insignia, Buckeye, AZ, – Project Manager for this 540 acre Master Planned Community in Buckeye, AZ - Project includes Master Water/Sewer studies, CLOMR for floodplain elimination, Canal Crossings and all constructions documents for the development.

Marbella Vineyards Phase 1, Gilbert, AZ,– Project Manager - Provided Design Topography, Water and Sewer studies, Final Plat, Onsite and Offsite Paving, Sewer and Water Plans, Signage and Striping Plans, SWPPP/NOI, Quantities and Cost Estimates for this 300 lot development in Gilbert, Arizona. Conducted extensive coordination with sub-consultants providing traffic engineering, transportation planning, Irrigation Plans, Lighting Plans, Section 404 delineation, as well as with Town of Gilbert staff regarding drainage issues.

Foothills Reserve, Phoenix, AZ,– 200 lot subdivision located in the City of Phoenix - The project includes complex hillside grading design and high-level coordination with City managers and planning and engineering staff to facilitate necessary approvals. The project also includes extensive public coordination for resolution of community concerns.

Mesa 215 Fire Station, Mesa, AZ, – Project Manager for four acre Fire Station at Mesa Gateway Airport. Provided Paving, Water, Sewer, Grading and Drainage Plans. Project included coordination with Architect, City of Mesa, Airport Board and other Consultants.

Peoria DES, Peoria, AZ, – Project Manager for Commercial Office Building. Provided Water, Sewer, Paving and Drainage Plans for four acre site. Work also included detailed Water Pressure modeling to meet Building Code, Construction Staking, Inspection and Engineer of Record Drawings.

Cornerstone Crossing, Casa Grande, AZ, – Project Manager for eight acre Retail Center in Casa Grande, Arizona. Provided both onsite and offsite Water, Sewer, Paving and Drainage Plans. Plans required extensive coordination with ADOT, ADEQ and Arizona Water Company.

Lakeshore 461, Tempe, AZ, – Project Manager for Commercial Office Building. Provided Grading, Paving and Drainage Plans for one acre site.

Western Avenue, Goodyear, AZ, – Project Manager for Street and Sidewalk Improvements on Western Avenue for the City of Goodyear. Plans included paving, drainage, signing and striping plans.

MCCS Scottsdale Campus, Scottsdale, AZ– Provided Grading and Paving Plans for Parking Lot E at the Scottsdale Campus in Scottsdale. Work also included construction inspection and engineer of record drawings. All plans were approved by the Salt River Pima Maricopa Indian Community.

Villages at Verona, Phoenix, AZ,– Project Manager for 28 acre, 120 Lot residential subdivision in Phoenix, Arizona. Provided Water, Sewer, Paving, Grading and Drainage Plans.

Mesquite Trails, Casa Grande, AZ, – Project Manager for this 80 acre master planned community in Casa Grande Arizona. Provided engineering and technical support of Development Master Plan and Planned Area Development applications including arterial and collector roadway layout, storm drainage issues, irrigation system relocation and water and wastewater facilities locations. Conducted extensive coordination with sub-consultants providing traffic engineering, transportation planning, Section 404 delineation, wastewater management and hydrogeological services as well as with County staff regarding zoning, planning, and drainage issues. Served as the developer's representative in coordination and negotiations with City of Casa Grande staff.

Northern Lights, Maricopa County, AZ, – Project Manager for this 440 acre, 1200 Lot master planned community in Maricopa County, Arizona. Provided information to Planners for the Planned Area Development and Preliminary Development Plan. Prepared the Preliminary Plat and necessary design information. Developed the Final plat including Grading and Drainage Plans, Final Drainage Report, Water, Sewer and Paving Plans. Infrastructure plans included paving, water, sewer and one mile of arterial road design with signage and striping and a major irrigation ditch relocated and tiled.

Las Colinas Sagradas, Santa Cruz County, AZ– Project Manager for this 1000-lot subdivision located in Santa Cruz County, Arizona. The project included design of complex hillside development including retaining walls, Grading and Drainage, Water, Sewer and Paving Plans.

Paloma Estates, Maricopa County, AZ, – Project Manager for this 160 acre, 140 Large Lot community in Maricopa County, Arizona. Provided Design Topography, Drainage Studies, 404 delineation. Final Plat, Onsite and Offsite Paving, Grading, Water Plans and Striping Plans, SWPPP/NOI, Quantities and Cost Estimates.

Shadow Canyons, Buckeye, AZ, – Project Manager for Infra-structure design for 3 residential communities in Buckeye, Arizona. Project includes offsite paving, water and sewer plans and associated master water/sewer and drainage analyses.

Villages at Sundance, Buckeye, AZ– Project Manager for re-design of a 700 lot Master Planned Community in Buckeye, Arizona. Client was not satisfied with original design by other and asked us to check plans and re-design where necessary to provide a buildable set of Construction Documents.

Bellasera, Peoria, AZ, – Project Manager for this 55 unit townhouse condominium Project in Peoria, Arizona. Project includes Preliminary Grading, Drainage, Utility Plans, Landscape Architecture and Final Construction Documents.

Maricopa Opus, Pinal County, AZ, – Project Manager for this 720 lot residential development in Pinal County. Project includes Grading and Drainage Plans, Water/Sewer Plans and Reports, and Paving Plans.

White Tank Foothills, Maricopa County, AZ, – Project Manager for this 640-acre master planned community in Maricopa County, Arizona near the City of Glendale. Prepared Water Master Plan for potable water infrastructure that included analysis and schematic design for 6.1 miles of water transmission and distribution mains, a 1.5 MG reservoir and single-zone booster station. Provided engineering and technical support of Development Master Plan and Planned Area Development applications including arterial and collector roadway layout, storm drainage issues, irrigation system relocation and water and wastewater facilities locations. Conducted extensive coordination with sub-consultants providing traffic engineering, transportation planning, Section 404 delineation,

wastewater management and hydrogeological services and worked with County staff regarding zoning, planning, and drainage issues.

Old Stone Ranch, Chandler, AZ, – Project Manager for this 240 acre, 589 Lot master planned community in Chandler, Arizona. Provided information to Planners for the Planned Area Development and Preliminary Development Plan. Prepared the Preliminary Plat and necessary design information. Prepared the Final plat, Grading and Drainage Plans, Final Drainage Report, Water, Sewer and Paving Plans. Infrastructure plans included paving, water, sewer and one mile of arterial road design with signage and striping. A major irrigation ditch is being relocated and tiled. Assisted and coordinated the design of a turnout structure with three reservoirs for reclaimed water.

Santa Rosa Springs Pinal County, AZ, – Project Manager for this 700 lot development in Pinal County. Provided Design Topography, Water and Sewer studies, Final Plat, Onsite and Offsite Paving, Sewer and Water Plans, Signage and Striping Plans, SWPPP/NOI, Quantities and Cost Estimates. Conducted extensive coordination with sub-consultants providing traffic engineering, transportation planning, Irrigation Plans, Lighting Plans, Section 404 delineation, as well as with County staff regarding drainage issues. Acted as the developers' representative in coordination with Irrigation District and County Staff.

Scottsdale National, Scottsdale, AZ– Project Engineer for this 240-acre, 141-lot residential development in Scottsdale, Arizona. Project included preparation of construction documents for 3.5-mile water main extension ranging in diameter from 24-inch to 12-inch, preparation of Wastewater Master Plan and Design Report including 2 lift stations, 3.6-mile force main, and gravity sewer collection system. Conducted extensive coordination with sub-consultant providing water master planning services as well as with City staff regarding water and wastewater issues.

Western Century, Florence, AZ, – Project Manager for this 200 lot residential subdivision development in Florence, Arizona. Project included due diligence, extensive coordination with Town staff, land planning, site layouts, and preparation of preliminary plat. Project included evaluation of existing municipal wastewater system infrastructure, conceptual design of off-site sewer trunk mains and preparation of opinion of probable cost of construction. Work also included coordination with sub-consultants and ADOT on encroachment permits.

First American, Florence, AZ,– Project Manager over this project in Florence, Arizona. Off-site infrastructure included conceptual design of Water and Sewer lines. Project included Topographic survey and Conceptual Site layout preparation of opinion of probable of cost of construction.

Estrella Village Manor 2, Phoenix, AZ, Project Manager over this 40 lot project in Phoenix, Arizona. Off-site infrastructure included Paving and design of Water and Sewer lines. Project included Topographic survey and Conceptual Site layout preparation of opinion of probable of cost of construction.