COMPREHENSIVE
ENGINEERING

May 14, 2013

Ms. Melissa Sambiagio
General Professional Design Services
Department of Technology, Management & Budget
Facilities and Business Services Administration
Design and Construction Division
P.O. Box 30026
Lansing, MI 48909

RE: PART I – TECHNICAL & PART II – COST
Engineering Proposal
For 2013 ISID General Professional Design Services

Dear Ms. Sambiagio,

Enclosed please find Part I Technical and Part II Cost documentation in response to the State of Michigan Department of Technology, Management & Budget RFP for 2013 Indefinite Scope Indefinite Delivery for general professional design services.

Our in-house staff offers civil, structural, HVAC, plumbing, fire protection and electrical engineering services to the State. We have extensive experience in remodel work as well as new facilities and additions.

We will act as prime consultant on engineering projects or can subcontract with other professions as required by the State, such as architecture, historic preservation, surveying, interior design and landscape architecture

We appreciate the opportunity to submit our qualifications and remain available to answer questions you may have regarding this information.

Best Regards,

COMPREHENSIVE ENGINEERING, P.C.

Steve Romsek, P.E.
Senior Structural Engineer
Principal, Co-President

PART 1 - TECHNICAL

Section II - Part I - Technical

II-1 Understanding of Project and Tasks

Comprehensive Engineering is known for providing documents with the high level of detail that is required for successful renovation projects. Historically, our project work load has consisted of approximately 50% to 60% ***renovations and additions*** to existing facilities.

Our renovation projects typically begin with a ***facility assessment***. We send a team of engineers to the facility to meet with owner's representatives to hear first-hand, the issues they face at the facility. This meeting is followed by a facility walk through, often accompanied by the owner or maintenance staff, to review all of the systems. The walk through is documented with photographs and notes describing the age and condition of all equipment and systems. Existing drawings are also reviewed for relevance and insights as part of the facility assessment.

A detailed ***written report*** is provided which often includes items such as description of systems, system condition, anticipated life remaining, system deficiencies, building code violations, and recommendations on system improvements or replacements. Life cycle cost analyses are often provided for anticipated new systems. Potential energy savings improvements are often identified.

We also have extensive experience with ***forensic engineering***, primarily focused on building structural systems. We have worked for building owners to determine the cause of structural failures, foundation settlement, structural deficiencies, structure reinforcing, and water leakage issues and have worked for insurance companies such as State Farm Insurance for nearly 20 years.

As consulting engineers, we have always worked creatively to develop cost effective designs that reduce energy consumption for our clients. ***LEED Certification*** has formalized the process. At Comprehensive Engineering, our goal has always been to maximize value to the owner over the entire life of the facility and not to make decisions based solely on initial cost. The design principles we have used for 20 years dovetails well with today's "sustainable designs".

Our staff is trained in LEED design principles and we currently have two LEED accredited staff members. We have successfully completed 10 LEED certified projects. We routinely utilize energy models using Trane Trace software and develop "return on investment" calculations as tools to make design recommendations for HVAC systems, mechanical, plumbing, and electrical systems. Some of the cost effective and creative systems we have considered and utilized for energy reductions include:

- Automated lighting control systems including occupancy sensors and daylight harvesting.
- Energy efficient fluorescent fixtures.
- Domestic hot water using central plant steam conversion to hot water.
- Water efficient plumbing fixtures.
- HVAC control strategies such as Demand Control Ventilation and Fan Pressurization

As consulting engineers, we are often asked to evaluate and trouble shoot existing HVAC and electrical systems. We have an extensive selection of ***testing equipment*** available for use on such projects. Our testing equipment includes:

- Minolta T-1 self-calibrating light meter.
- Sensor Switch remote ballast indicator.
- Fluke 41B power harmonics analyzer.
- Gold Line DSP30 digital 3'rd octave band sound level meter.
- Paser Amprobe advance system tracer.
- TSI indoor air quality analyzer with air velocity, temperature, carbon dioxide, carbon monoxide, humidity, and dewpoint readings.

- TSI Accubalance supply diffuser air volume meter.
- Infrared surface temperature sensor.
- Hydronic circuit tester for water flow.
- Water pressure gage.

We have extensive experience with new construction on a wide variety of facility types including health care, commercial, retail, industrial, municipal, governmental, historic renovation, and educational projects. Recent governmental projects includes US Forest Service and Veteran's Administration

- Cadillac-Manistee Ranger District Office
- Baldwin/White Cloud Ranger District Office and Warehouse
- Baldwin/White Cloud Warehouse/Garages
- Greenville Armory
- Ft. Custer Training Center
- City of Grand Rapids Aggregate Storage Building
- City of Grand Rapids HVAC/Domestic Water Upgrades
- Grand Rapids Home for Veterans

Structural Engineering experience includes:

Superstructure design of structural steel, concrete, masonry, timber, & cold formed steel
Foundation design of spread footings, auger-cast piles, caissons, driven piles, micro piles
Structural investigations including building assessments, forensic studies, & insurance claims
Industrial design for conveyor support, equipment foundations, overhead cranes, mezzanines
Reinforcing existing structures
Building facade investigation and repairs

Mechanical Engineering experience includes:

HVAC design of central air handling systems, 4 pipe fan coils, water source heat pumps
Plumbing and piping design for sanitary, storm, and gas piping
Fire protection system design, layout, dry and wet systems
Design of make up air, dust collection, humidification, central chiller & boiler plants
System assessments, noise abatement analysis, indoor air quality analysis, energy studies
Test and balance of air systems, hydronic systems, and controls system verification

Electrical Engineering experience includes:

Lighting design, dimming systems, facade lighting, parking lot lighting
Power distribution, short circuit analysis, existing system analysis, emergency generator design
Lightning protection systems, air terminals & down conductors, UL Master "A" label systems
Fire alarm and security systems, addressable or hard wired, CCTV, card access
Sound and telephone systems, telephone equipment specifications, and sound masking
Nurse call systems, master control, and call stations
Controls, master lighting controls and master clock systems
Harmonics analysis, % THD on voltage & current, 3'rd & 5'th individual contribution

Civil Engineering experience includes:

Site layout, roadways, traffic and pedestrian circulation, vehicle maneuverability, parking
Pavement design including porous pavement
Sanitary sewer and storm sewer systems
Stormwater management and site grading
Water distribution systems
On-site sanitary sewage treatment systems

We are accustomed to working as the ***prime design professional***, often subcontracting for the services of architects, land surveyors, and landscape architects as required on primarily engineering driven projects.

PROJECT EXPERIENCE PROFILES

Proposed Facility

BALDWIN/WHITE CLOUD RANGER DISTRICT OFFICE AND WAREHOUSE

Huron Manistee National Forest, Baldwin, MI

Project Reference: Bruno Guerrera, USDA – Forest Service, 802-747-6748

Project Description: New Office Building with attached Heated Warehouse/Garage at Baldwin District Office campus. The Office Building is two story's with approximately 12,800 square feet and the Warehouse/Garage is approximately 6,500 square feet. The Office Building consolidates all District office functions at one central location.

The Warehouse/Garage is primarily used for large fire fighting vehicle storage. Construction cost $3,500,000. The building is designed to meet LEED Silver Certification.

Mechanical engineering includes wood pellet burning hot water boiler system, chiller with heat recovery, plumbing system with gray water recycling, solar heated domestic hot water system, building exhaust fans with controls to minimize ventilation requirements. The Trane Trace software used for building energy modeling.

Electrical engineering includes new underground electrical service, power, and lighting design for the building, new energy efficient site lighting improvements, new Advanced Metering system for monitoring power consumption, daylight harvesting with light level sensors, roof mounted photovoltaic system for on site renewable energy, electric vehicle charging stations. New Card access security system, IT cabling, jacks, patch panels and UPS systems will meet Forest Service standards including interconnection of all buildings on campus.

Structural engineering includes design of the wood framed super-structure and cast-in-place concrete foundation system. Super-structure incorporates engineered wood framing members for wall and floor construction. Wood trusses are used for the roof and floor systems. Main entrance canopies are framed with glulam timber beams and trusses. The Visitors Center & Lobby utilizes exposed glulam beams with tongue and groove decking to emphasize the forest products the Forest Service supervises.

Construction is pending funding.

Proposed Facility

Existing Office

CADILLAC-MANISTEE RANGER DISTRICT OFFICE

Huron Manistee National Forest
Wellston, MI

Project Reference: Bruno Guerrera, USDA – Forest Service, 802-747-6748

Project Description: The project includes extensive renovation and an addition to the existing 10,000 sf Chittenden Building. The new facility consolidates all District offices to one central location. The current building consists of four separate additions dating back to the 1950's. The project will be a LEED Silver certified building. Construction cost $1,600,000.

Mechanical engineering includes wood pellet burning hot water boiler system, chiller with heat recovery, plumbing system with gray water recycling, solar heated domestic hot water system, building exhaust fans with controls to minimize ventilation requirements, plumbing fixtures include dual flow faucets, waterless urinals and low flush water closets. The Trane Trace software used for building energy modeling.

Electrical engineering includes new electrical service, power, and lighting design for the building, new site lighting, new Advanced Metering system for monitoring power consumption, daylight harvesting at the building perimeter with light level sensors, roof mounted photovoltaic system for on site renewable energy, electric vehicle charging stations,

Structural engineering includes modifications to the existing facility including new sloped roof trusses over the existing flat roofs along with modifications to the existing wood framing and masonry walls. New main entrance canopies are framed with large glulam timber beams and trusses.

Civil engineering includes layout and design of pavements, new driveway entry per Michigan Department of Transportation standards, new parking areas, and barrier free parking and access routes, retaining walls and pedestrian circulation. New on-site sewage treatment facilities will be provided.

Construction pending funding.

Proposed Facility

New Entry Modifications for Improved Visibility and Traffic Flow

BLUFF STREET PARKING STRUCTURE

Marquette, Michigan

Project Reference: Mona Lang, Marquette Downtown Development Authority, 906- 228-9475

Existing Entry

Double Tee Connector Repairs

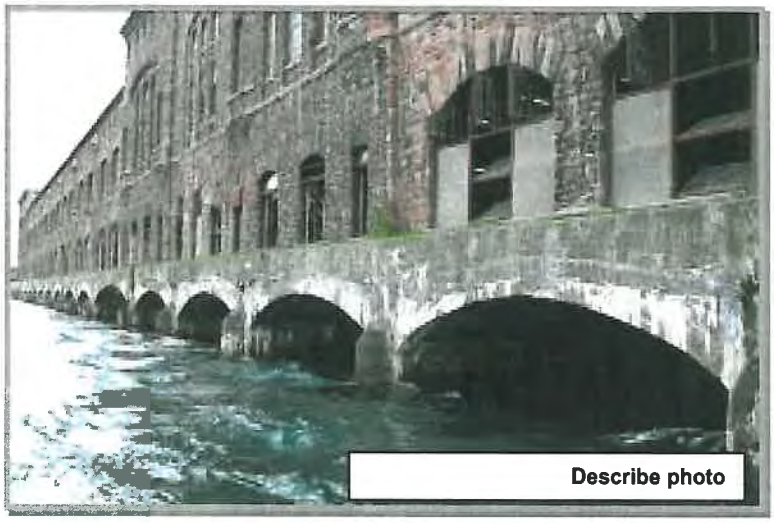
The Bluff Street Parking Structure project consists of structural repairs and improvements to the facility. The project includes structural repairs to double tee connectors, repairs to steel stairs in stair towers, replacement of pedestrian bridge supports and concrete support beam at stair tower.

Other improvements included new vestibules to the stair towers, new roofing at stair towers, new site wall along alley, entry reconfiguration to improve visibility and drainage, electric car charging stations, and new state of the art LED lighting at lower level and at stair towers.

Construction cost of $900,000. Construction completed in 2011.

New Concrete Site Wall with Masonry Form Liner at Alley

Existing Alley Prior to new Site Walls


Describe photo

CLOVERLAND HYDRO-ELECTRIC PLANT

Sault Ste. Marie, MI

Project Reference: Brent Belleau, Cloverland Electric Co-op, 906-632-5171

Project Description: This historic structure was constructed in 1902 to generate hydroelectric power and to house manufacturing of carbide for the Union Carbide Company. The powerhouse is a ¼ mile long and is constructed of reinforced concrete and native red sandstone. RETA & CE are teamed up to provide a structural investigation to determine the cause of deterioration to the red sandstone walls and arches, and to the reinforced concrete tailrace arches. Work will include developing cost estimates for repairs.

Describe photo

Describe photo

Dining Hall

DAVIS DINING HALL
WESTERN MICHIGAN UNIVERSITY
Kalamazoo, Michigan

Project Reference: Ray Kezenius
Western Michigan University
269-387-8425

Engineering services to renovate a 13,200 sf Kitchen and Dining Hall.

New lighting design and Daylight Harvest Controls to enhance dining food services.

Dining service facilities to include fireplace, restrooms and janitorial HVAC Ventilation and Heat with thermostat control.

Multiple food cooking stations.

Grease hoods with exhaust/make-up air and lights.

Canopy style compensating hoods.

New Power Service and Electrical transformer for increased cooking loads moved into Dining.

New Plumbing for Kitchen Hot Water System

New Lighting and Fire Protection systems for remodeled kitchen.

Partial topographic survey, exterior courtyard and parking access improvements.

Construction completed in 2012.

Existing Facility

FT. CUSTER TRAINING CENTER

Dept of Military/Veteran Affairs
Agusta, MI

Project Reference: Brian Bushnell, Dept. of Veteran and Military Affairs, 517-290-1738

Project Description: A new 3,500 sf Laundry Storage Addition was designed for the Fort Custer Training Center Building 2900 located Battle Creek, Michigan. The project cost budget was $500,000.

Mechanical Engineering: New HVAC, fire suppression, domestic water, sanitary sewer, gas piping, and DDC Controls for the addition.

Electrical Engineering: New Interior power distribution, lighting, fire alarm, security, telephone and data processing system provisions including empty conduit and junction box locations for the addition.

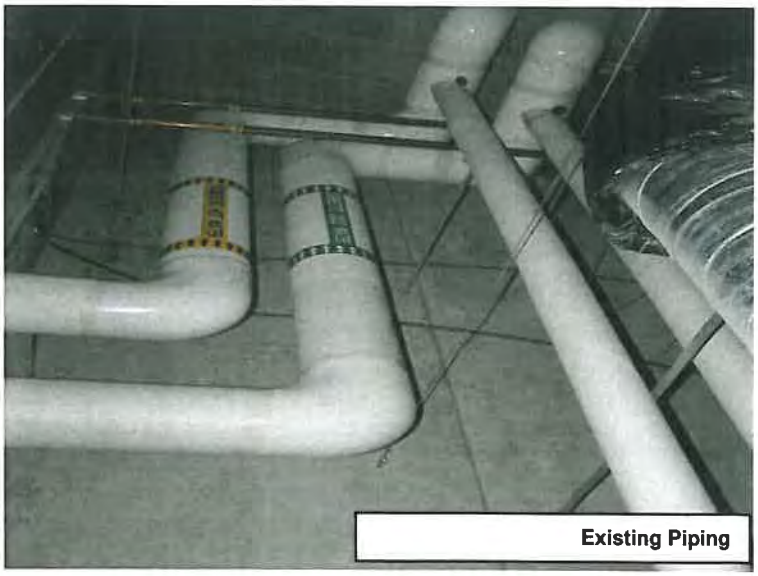
Structural Engineering: Foundation design, Superstructure design and all necessary provisions for all mechanical and electrical equipment.

Civil Engineering: Storm water sewer tie into and existing system.

Technical Issues: Engineers field verify existing system capacities and locate new to existing tie-in points working with Government Agency staff and personnel. The proposed DDC controls are "Single Sourced" to match the present Building Energy Management System.

Project Relevance: This project demonstrates our experience evaluating an existing site for development to meet the requirements of regulating agencies. New mechanical, plumbing and electrical systems were design working with the DMVA project design guidelines and extension of existing services and maintain consistency for present building systems at the Training Center.

Construction complete in 2013.


Existing Piping

GENESIS WEST APARTMENTS

Grandville, MI

Project Reference: John Wynbeek,
Genesis Non-Profit Housing,
616-98-2897x16

Project Description: New residential development located on a 3.5-acre parcel. The development includes 10 separate wood frame structures on cast in place concrete foundations, private road, parking facilities, public sanitary sewer and watermain extensions, stormwater management system. Provided structural, pavement and site design, site plan approval submittals, permitting and coordination with municipalities and utility companies. Project designed for LEED for Homes Certification. Construction cost $4.4 million.

Civil Engineering: This project consisted of a full residential housing development from the schematic phase through construction monitoring. The public utility extension required municipality approval and MDEQ permitting. The project was funded under the Michigan State Housing Development Authority therefore the site was design to provide handicap accessibility to all buildings and facilities on site. The barrier free accessibility affected the overall site grading, layout of parking and sidewalks to provide access according to code requirements.

Structural Engineering: Wood framed super-structures and cast-in-place concrete foundation system. Super-structure incorporates engineered wood framing members for wall and floor construction.

Construction scheduled for 2013.

Existing Site

Main Entry and Parking Area

GOLDEN CORRAL
Walker, MI

Project Reference: Michael Soule,
Roskam Baking Company,
616-450-3510

New 11,087 square foot buffet style restaurant located on a previously developed 4 acre parcel within the City of Walker. Construction cost $1,207,000

Engineering includes site design, layout, new drives entries, sidewalks, barrier free parking and access, grading, stormwater management system, sanitary, water services and landscape design.

The parking lot was designed to maximize the number of parking spaces. Connecting drives and cross access easements were designed to improve the vehicle circulation for the client as well as the adjacent property owners.

Semi truck delivery access as well as fire truck accessibility was accounted for in the layout of the site.

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Stormwater management system was designed to re-use the existing outlet. An infiltration/detention system was incorporated to reduce and filter runoff from the site.

Site plan approval was required from the City, therefore design was completed to satisfy zoning and municipal requirements.

Below Pavement Stormwater Detention System

New entrance with sidewalk and barrier free ramps

Provided project management for all phases of the project from preliminary design to the construction administration and closeout.

Construction completed in 2010.

Existing Facility – South Elevation

GREENVILLE ARMORY

Dept of Military/Veteran Affairs
Greenville, MI

Project Reference: Brian Bushnell, Dept. of Veteran and Military Affairs, 517-290-1738.

Project Description: The work consists of remodeling an existing armory to bring into compliance with DMVA Readiness Center Requirements. Deficiencies include the kitchen, toilets/shower/locker areas, personal equipment storage (PES), physical therapy (PT), supply rooms and unit storage, maintenance bay(s) and table/chair storage. The construction budget is about $1,500,000.

Mechanical Engineering: New HVAC, domestic water, boiler plant, sanitary sewer, gas piping, and kitchen MEP.

Electrical Engineering: Interior power distribution design, from the local branch panels to the branch circuit loads, interior lighting design including branch circuiting and switching, interior telephone and data processing system provisions including empty conduit and junction box locations, New Fire Alarm and Security systems.

Structural Engineering: Foundation designs, superstructure design and all necessary provisions for all mechanical and electrical equipment.

Project Relevance: This project demonstrates our experience evaluating an existing site for development to meet the requirements of regulating agencies. New mechanical, plumbing and electrical systems were design working with the DMVA project design guidelines.

Construction scheduled for 2013.

Existing Facility – East Elevation

New Boiler

GRAND RAPIDS PUBLIC SCHOOLS LINCOLN CAMPUS
HVAC SYSTEM UPGRADE AND REPLACEMENT
Grand Rapids, Michigan

Project Reference: Ken Klomparens
Grand Rapids Public Schools
616-819-3030

Separation of Domestic Hot Water (DHW) and Pool heating systems at both the Main and LDC buildings.

DHW heater replacement at the KVO building

DHW heater replacement at the Powerhouse building

New Mechanical

Air system duct repairs and/or replacement

Primary Cooling pump replacement

Control of cooling pumps

Piping and insulation repairs and/or replacement

Primary heating pump replacement

Control of heating pumps

GRPS Lincoln Central Plant

Boiler replacement in the Powerhouse Building

Rebalancing of all air/water systems

Services also included attending construction progress meeting and construction administration services.

Construction completed 2011.

LIGHTHOUSE DEVELOPMENT

Grand Rapids, Michigan

Project Reference: Chuck Hoyt, Lighthouse Development, 616-451-9140.

Existing Facility

The project includes remodeling an early 1900's 2 story wood framed building.

Civil engineering included site design, site layout, grading, and storm water management system. The new pavement area is designed to be porous pavement. The project received LEED Silver certification. This existing site had a failed stormwater management system with no connection to the public stormwater system. The proposed design had to be in accordance with the City guidelines for stormwater quality and not require an expensive connection to the public stormwater system located in the ROW. Coordination and cooperation with the City's planning department and new ordinance was required to gain approval.

Structural engineering included design for new stairs and new elevator shaft including all framing modifications and foundations. Check floor framing live load capacity for areas that are accessible below the first and second floors. Check roof framing capacity to carry new loads from a green roof system.

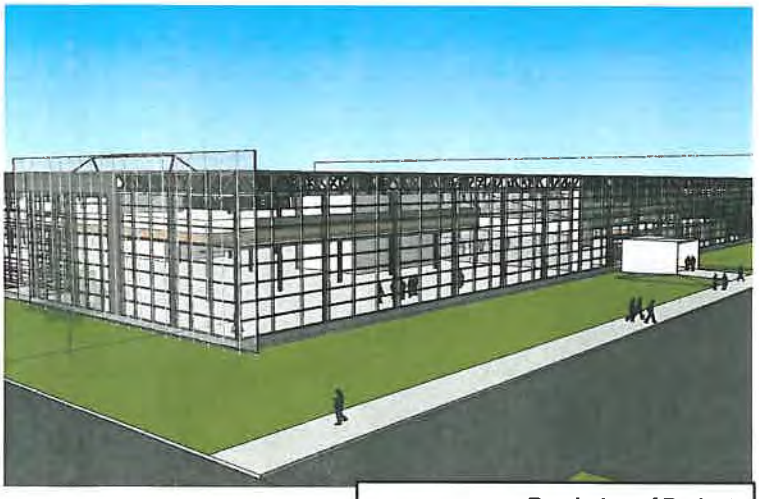
New Interior Space

Mechanical engineering for the building includes Heating, Ventilation and Air Conditioning (HVAC): Design to meet ASHRAE standards and the Michigan Energy Code for the building including ductwork and piping design. Plumbing design includes domestic water, sanitary sewer, gas piping, and roof stormwater drainage systems to a distance of 5 feet from the face of the building. Fire Protection design includes performance specifications along with sprinkler head layout.

Renovated Facility

Electrical engineering included Site lighting design, Interior power distribution design, from the main service panel to the branch circuit loads including power service design to the site along with coordination with the utility. Interior lighting design including branch circuiting and switching. Interior telephone and data processing system provisions including empty conduit and junction box locations. Telephone service provisions on the site, including coordination with the utility.

Construction completed in 2011.



Rendering of Project

MEIJER BUILDING 989

Meijer Inc.
Walker, MI

Project Reference: Matt Kellet, Meijer Inc.
616-791-3073

The project consists of renovation of an existing 300,000 square foot distribution center warehouse into an office building which includes an 80,000 square foot Second Floor addition. The project is a "fast track" design with six bid packages to speed up the construction process. Both floors of the building were modified to accept a new access floor systems.

Mechanical Engineering includes new under-floor air displacement HVAC system, domestic water, sanitary sewer, and gas piping. Separate boilers, chillers, and cooling towers are designed for the new central mechanical services building which is located adjacent to the building.

Electrical Engineering includes interior power distribution design, from the local branch panels to the branch circuit loads, interior lighting design including branch circuiting and switching, interior telephone and data processing system provisions including empty conduit and junction box locations, new fire alarm and security systems.

Structural Engineering includes design of new 80,000 sf Second Floor addition. Design to accommodate new interior courtyard, new entrances, and entire new glass and metal panel facade system. New bracing was designed to accommodate the new building facade. New stair and elevator towers and new monumental stairs at the building interior.

Construction to be completed in 2013.

Elevation View of Existing Building

New Entrance

PORT AUSTIN MARINA
Phase 1
Port Austin, MI

Project Reference: Amanda Porath, PE
Northwest Design Group, 231-348-1180

Phase 1, new shore power for 23 slips on the east pier with new Eaton "Lighthouse" pedestals according to DNR requirements with 30 and 50 amp receptacles.

Also included was power for the existing fuel building and new sign lighting at the pier end.

Pedestals have LED lighting and wireless electric metering.

Feeders serving the pedestals are protected with a "Marina Guard" GFI sensing system to reduce the possibility of electrocution.

New Toilet Building Lighting

Typical Marine Pedestals and Pole Mounted Light Fixture

Also, included was the design of a new community toilet building on the site with daylight harvesting, occupancy sensor lighting controls and a security system that automatically locks the building down at night.

Project Site

PORT AUSTIN MARINA
Phase 2
Port Austin, MI

Project Reference: Amanda Porath, PE
Northwest Design Group, 231-348-1180

We are in the process of completing the design of the west pier with an additional 48 slips, including ADA compliant slips and de-icers that allow the floating dock to remain in place throughout the winter.

Feeders serving the pedestals are protected with a "Marina Guard" GFI sensing system to reduce the possibility of electrocution.

Pedestals will have LED lighting and wireless electric metering.

Existing slip power box to be replaced with new pedestal

Existing West Pier pole lighting and power boxes to be replaced

Estimated electrical construction cost is approximately $575,000.

Construction scheduled to be completed in spring 2014.

Completed Interior "After"

REO Depot

Lansing Board of Water & Light
East Lansing, MI

Project Reference: Dick Peffley,
Lansing Board of Water and Light
517-702-6312

The project consists of historic renovation of an early 1900's train station into a meeting facility for the Lansing Board of Water & Light as well as a community center for the surrounding areas. Construction completed in 2013.

Mechanical Engineering includes new HVAC system, domestic water, sanitary sewer, and gas piping.

Electrical Engineering includes Interior power distribution design, interior lighting design, and interior telephone and data processing system provisions.

Structural Engineering includes replacement of the entire wood floor structure which had deteriorated beyond repair. Repair and replacement of deteriorated roof framing and support of new HVAC equipment.

Elevation View of Existing Building

Building Exterior

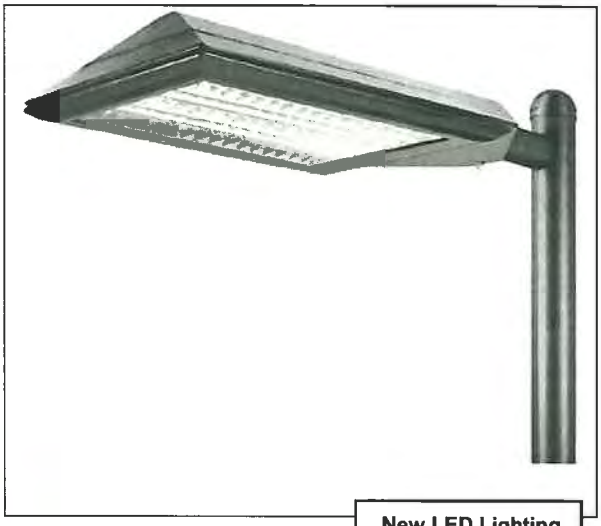
Existing Gate

Selfridge Boat Access Site

Macomb County, MI

Project Reference: Amanda Porath, PE
Northwest Design Group, 231-348-1180

Phase 1, relighting of the Boat Access Site, including a new power distribution system for the site, new sliding gate system for site access control.



New LED Lighting

Existing Power Distribution Equipment to be replaced

Design of Phase 2 includes relighting of the remainder of the site is about to start, which includes about 25 more pole mounted fixtures and relocation of the existing attendant station.

Construction scheduled to be completed in Spring 2014.

KEY PERSONNEL RESUMES

II-2 Personnel

Our strength is our staff. We have a dedicated staff of engineering and design professionals who strive to provide our clients with high quality, on-time, personalized service. We have over 300 years of collective experience in buildings and facilities related to the construction industry. This experience includes commercial, health care, industrial, retail, municipal, retail, historic renovation, governmental, and educational projects. Our engineers perform site inspections, develop engineering calculations, drawings, provide detailed cost estimates, and write specifications.

We have licensed engineers in each discipline of mechanical, electrical, structural, and civil engineering. Our technical staff is experienced, averaging nearly 27 years of experience per person.
Our project managers are the principals of the firm and at least one principal will have direct involvement in every one of our projects. We are "right-sized" - our customers benefit from their experience and leadership. Our company is project driven and quality engineering along with client satisfaction is our most important goal.

The majority of our staff has been with the firm for over 12 years with very little turn over of employee's. This consistency translates into substantial experience in working with each other as team members on projects. We have built our business on satisfied repeat customers. For additional information, see attached ***Organization Chart***.

Staff Summary:

Gary Johnson, PE	39 years	Electrical	Principal
Steve Romsek, PE	33 years	Structural	Principal
Ken Reigler, PE	30 years	Mechanical	Principal
Elaine Westhouse, PE	29 years	Civil	
Bob Boverhof, PE	35 years	Structural	
Russ Nichols, PE	35 years	Mechanical	
Rich Kipke, PE	23 years	Structural	
Bob Tracy, PE	38 years	Structural	
Mike Staszel	35 years	Mechanical	
Dennis Smalley	34 years	Mechanical	
Scott Bowkamp	32 years	CAD	
Leanne Weaver	25 years	Electrical/CAD	

GARY L. JOHNSON, P.E.

Position
Electrical Engineer, Co-President

Professional Registration

California	Colorado	Connecticut	Kentucky
Michigan	Ohio	Virginia	Washington

Education
Michigan State University: Bachelor of Science in Electrical Engineering.

Professional Experience

Mr. Johnson began his career at Fairbrother Corporation (presently FTC&H) where he worked for 10 years in electrical engineering on a variety of commercial, health care, educational, industrial, and municipal projects. His engineering experience included power and lighting design along with a variety of specialty electrical systems. In 1983 Mr. Johnson joined The WBDC Group, West Michigan's largest AE firm, where he worked in electrical engineering in addition to holding a number of key management positions, including Division Manager of Electrical Engineering and Vice President of the firm. As part of the management duties, Mr. Johnson was responsible for quality control, code compliance, functional accuracy and error and omission reduction. In addition, he developed extensive experience in special electrical systems such as fire alarm and security systems, lightning protection, sound systems, nurse call systems, emergency power and un-interrupted power, and lighting control systems.

Over 39 years of professional experience:

Power and Lighting

Fire Alarm Systems

Security Systems

Emergency Power Systems

As a principal of Comprehensive Engineering, Mr. Johnson provides project management and electrical engineering services on a wide variety of projects. His experience on complex projects provides clients with expertise in conceptual design, reliability evaluation (single point failure identification), value engineering, and project budgeting.

Health Care
Commercial
Retail
Educational
Industrial
Religious
Municipal

Project Experience

Over the past 39 years, Mr. Johnson has been involved in the design and construction of new facilities, along with additions, and renovations to many different building types. Project experience varies from Health Care to Industrial.

Municipal Experience:

District Office Remodel – USDA Forest Service, Cadillac-Manistee National Forest, Wellston, MI – Lead electrical engineer for renovation of an existing 10,200 sf office building. The project will include all new sustainable HVAC and electrical systems. All existing overhead power distribution by the utility in the 80 acre site will be relocated underground. The project will be a LEED Silver certified building. Construction cost $1,600,000. Project is pending funding.

Project Rendering
Cadillac-Manistee District Office

Baldwin/White Cloud Ranger District Office & Warehouse – Huron-Manistee National Forest, Baldwin, MI - Lead electrical engineer for a new 12,800 square foot office building and an attached 6,500 square foot vehicle storage building. The project included demolition of numerous existing building on the site and renovation of several warehouse buildings on site into temporary office buildings to allow staff to continue work during construction of the new building. Provisions for communication interconnection of all the existing four warehouses on site plus a new warehouse and new crew quarters. New energy efficient site lighting was engineered, plus new power services to allow phased construction. The new office building has daylight harvesting, photovoltaic arrays tied into the building power distribution grid on both the main building roof and the mechanical power house building. It has "Advanced Metering" for power consumption, electric vehicle charging stations on the site, card access, IT cabling, UPS power and standby generator. Construction cost $3,500,000.

Grand Rapids Home for Veterans - Nurse Call System Upgrades, Grand Rapids, MI - Lead electrical engineer for replacement of existing nurse call system. The majority of the campus wide nurse call system is required to be replaced for code requirements and resident safety. Approximately 535 beds plus about 375 ancillary rooms are required to be retrofitted. The construction cost was $565,000.

Grand Rapids Home for Veterans - Fire Protection System Upgrades, Grand Rapids, MI - Lead electrical engineer for new fire suppression system for 150,000 square foot McLeish Building. Design is in accordance with State Bureau of Fire Services and State Department of Management and Budget codes. Funding and approval is by Military Veterans Affairs Department. Construction cost $700,000.

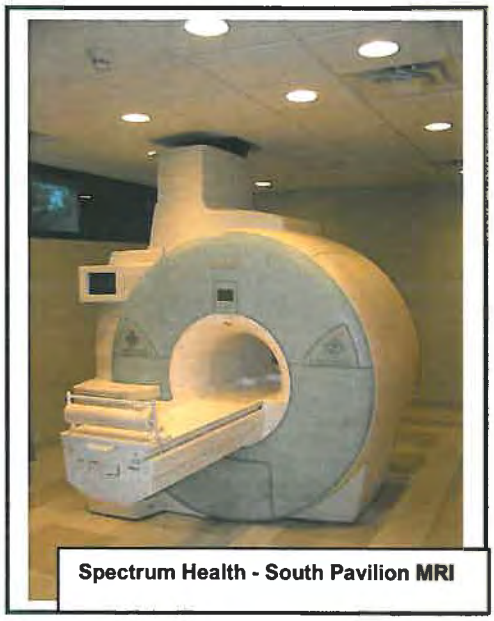
Port Austin Community Center, Port Austin, MI – The Village of Port Austin wanted a community Center for visitors use. We provided electrical engineering including site lighting design with decorative bollards, interior lighting design with residential style chandeliers per the owners request. A unique aspect of this project was bath room facilities for 24/7 operation. The center is used by fishermen and women as it is adjacent to a public boat launch. A CCTV system with automatic digital video recording employing motion detection covered the entrances to the building. A distributed sound reinforcement system was specified for the facility with three independent zones of speaker control. This allows separate sources to play in the meeting room, lobby and building exterior.

East Grand Rapids Community Complex - East Grand Rapids, MI - 23,150 sf two story building renovations plus 28,850 sf Library, Municipal Offices, City Hall, Engineering Offices, and Recreation & Grounds departments additions. Sustainable mechanical and electrical system designs were developed for LEED (Leadership in Energy and Environmental Design) certification. The City of East Grand Rapids is currently seeking a LEED certificate for this project. Construction cost $7.6 million.

Greenville Armory Renovations, Department of Military and Veteran Affairs, Greenville, MI - Lead electrical engineer on renovation of this existing armory. New underground power distribution service was designed along with an upgrade of capacity to handle new air conditioning loads. New more energy efficient lighting was specified with occupancy sensors or lighting relay panel for energy saving controls. A new fire alarm system was engineered as well as new card reader system and vault security provisions. The kitchen was remodeled with new power and interface of the kitchen hood fire suppression system with the building fire alarm system according to code. A new IT room temperature sensing system with automatic alarming and shutdown was designed along with a boiler emergency power shutdown system. A new internal power distribution system was engineered to replace the aged circuit breaker panel system and it's branch wiring. Construction cost $1,500,000.

Health Care Experience:

Spectrum South Pavilion MRI, Kentwood, MI – The project includes a 1500 sf addition with 200 sf of renovation work for a new fixed MRI. The fixed MRI requires all electrical to be supplied with emergency power. The project included utility relocation for vehicle access for the temporary and fixed MRI location. The project required coordination with the copper shielding consultant to ensure the MRI equipment would not be adversely affected by stray electromagnetic fields. Coordination required layout of the M/E infrastructure so that all penetrations into the MRI room were at one centralized location and electronic filters were tuned for each penetration. Construction cost $806,000 not including the MRI equipment which was over one million dollars



Spectrum Health - South Pavilion MRI

Spectrum Labor and Delivery, Butterworth Campus, Grand Rapids, MI – Renovation of 28 rooms on the second and third floors at the Butterworth Campus. This project included remodeling of the rooms to provide more efficient environment for the staff by relocating millwork, cabinetry and associated electrical power, telephone, nurse call and fire alarm wall mounted equipment. The patient bed lighting was also upgraded from incandescent to compact fluorescent sources.

Stockbridge Munsee Health Center, Bowler, WI - New 25,000 square foot, two story medical office building on Native American Reservation. The facility included Exam Rooms, X-ray Rooms, Mental Health, Social Workers, Pharmacy, Medical Records, Laboratory, Pharmacy, Dental, and offices for all Doctor's, Dentists, and support staff. Electrical engineering includes power distribution, emergency power standby generator system, interior and site lighting. Construction cost $3.0 million.

Battle Creek Office Development Enterprise - Battle Creek, MI - New 42,000 square foot, two story medical office building. Electrical engineering included lighting and power distribution which included emergency standby generator system. Construction cost $3.7 million.

Spectrum Lakeshore Area Radiation Oncology Center, Holland, MI - Addition and renovation of existing 11,000 square foot medical office building. The addition includes a new linear accelerator vault and renovations to the existing medical office building. Electrical services included site lighting design, electrical provisions for the linear accelerator based on the site specific shop drawings, interior lighting design including branch circuiting and switching, interior telephone and data processing system provisions including empty conduit and junction box locations, telephone and data outlet provisions and fire alarm system expansion. Construction cost $1.6 million.

Educational Experience:

Lakewood High School, Lake Odessa, MI - The district needed a 67,491 square foot addition to their existing high school. The project cost for this work was $10 million. Electrical engineering included site lighting design employing cut off fixtures, interior power distribution design, from the main service panel to the branch circuit loads. This included power service design to the site along with coordination with the utility. A new gym with all its amenities was designed, including wrestling mat hoists, scoreboards, motorized backboards and paging system provisions. A new auditorium including acoustical clouds and house lighting was designed. We coordinated our work with an acoustical consultant and theatrical consultant. We also provided rough-in and power for the technology system as well as coordinated our design with the technology consultant. A new addressable and automatically adjustable fire alarm system design was designed throughout the facility.

West Catholic High School Photovoltaic Array, Grand Rapids, MI – This renewable energy project is a 5KW array using 88 amorphous silicon cells with a roof mounted weather station and educational TV monitor/PC equipment that displays the PV system operation in real time. We worked for the prime system component provider and designed the entire electrical for the installation including cell interconnection and the low voltage wiring for the monitoring equipment. Construction cost $300,000.

Commercial Experience:

Hollister Building Remodel - Lansing, MI - Seven story high rise remodel with continued occupancy of tenants during construction.

Standard Federal Bank - Troy, MI - $85 million Corporate Headquarters. This project included a data center that controlled 86 branch offices and over 100 ATM's. The client could not tell us if they would be using Unisys or IBM mainframes, so we needed to make provisions for both. SFB had very strict security requirements because of a branch office located on the first level. The Building security system included CCTV, proximity card access and a central security room.

Religious Experience:

Bethany House - DeWitt, MI - New 21,600 square foot addition and renovation to existing retreat center. The renovation included existing commercial kitchen, dining, conference rooms, chapel and guest rooms. New construction included a two story guest room addition. Construction cost $4.2 million.

Holy Childhood of Jesus Catholic Church - Harbor Springs, MI - Renovation and addition to existing church constructed in late 1800's. Electrical engineering included power distribution, circuiting for lighting, telephone and data processing and fire alarm design. Construction cost $2.3 million.

STEVEN R. ROMSEK, P.E.

Position

Structural Engineer, Co-President

Professional Registrations

Michigan	Florida	Maryland	North Carolina	Texas
Alabama	Georgia	Massachusetts	Ohio	Virginia
Colorado	Indiana	Missouri	Pennsylvania	Wisconsin
Connecticut	Kansas	New York	Tennessee	Wyoming

Education

Michigan Technological University: Bachelor of Science in Civil Engineering, structural major, 1979
Michigan State University: Graduate studies in structural engineering.

Professional Experience

Mr. Romsek began his career at the firm of Carl Walker and Associates (currently Walker Parking Consultants) where he worked for six years in structural engineering and project management in both Michigan and Minnesota. His engineering experience also included structural investigations and structural repairs to precast and post-tensioned concrete parking structures.

In 1985, Mr. Romsek joined West Michigan's largest AE firm, The WBDC Group, where he worked in both construction administration, and later served as Division Manager of Structural Engineering and a principal of the firm.

Over 33 years of professional experience:

Structural Engineering

Construction Inspections

Forensic Investigations

Project Management

In 1993, Mr. Romsek started Comprehensive Engineering with friend and colleague, Gary Johnson, PE. As a principal at Comprehensive Engineering, Mr. Romsek provides project management, structural engineering, and forensic engineering services on a variety of commercial, industrial, health care, educational, and municipal projects. His design and construction experience provides clients with insight on project constructability, structural system selection, construction cost estimating, and building forensic investigation. In addition, he provides construction inspection services to lending institutions.

Health Care
Commercial
Retail
Educational
Industrial
Parking Structures
Religious
Municipal

Project Experience

Over the past 33 years, Mr. Romsek has been involved in the design and construction of new facilities, along with additions, and renovations to many different building types. His project experience includes structure reinforcing, forensic studies, and building assessments.

Municipal Projects:

East Grand Rapids Community Center

East Grand Rapids Community Center Complex – East Grand Rapids, MI - Renovation and expansion of 52,000 square foot Library, City Hall, City Council Chambers, City Engineering and Grounds Department at the Complex. The original underground concrete water storage tanks were renovated into multi-purpose rooms. Structural engineering included design for new foundations placed on auger-cast concrete piles and grade beams. Sustainable mechanical and electrical system designs were developed for LEED (Leadership in Energy and Environmental Design) certification. East Grand Rapids is has received LEED Certificate for this project. Construction cost $7.8 million.

Fort Custer Training Center - Addition to Education Center Building Augusta, MI - Structural engineer for new 3,500 square foot addition to the Education Center building. Structural steel, steel joists, and load bearing masonry construction. The construction cost is $500,000.

District Office Remodel – USDA Forest Service, Cadillac-Manistee National Forest, Wellston, MI - Structural engineer for renovation of an existing 10,200 sf office building. The project will include all new sloped wood truss roof system over existing flat roof building. The project will be a LEED Silver certified building. Construction cost $1,600,000

United States Forest Service, Baldwin/White Cloud Ranger District Office - Baldwin, MI - New Forest Service District Office building with attached heated garage for storage of fire fighting trucks. Two story wood framed construction. Design includes engineered I-joists, laminated veneer lumber, glued laminated timber framing, and timber trusses. Construction cost $4.7 million.

Grand Haven City Hall Renovations - Grand Haven, MI
Renovation of City Council Chambers, barrier free toilet rooms, and barrier free ramps with snow melt system. Construction cost $250,000.

Commercial Projects:

Frederik Meijer Gardens Amphitheater

Frederik Meijer Gardens Amphitheater Grand Rapids, MI - New 5,000 square foot outdoor amphitheater and terraced seating. Structural engineering for this facility included a 90 foot clear span bowstring truss and special slide bearing connections for thermal expansion and contraction. Construction cost $3.0 million.

Frederik Meijer Gardens, DaVinci Horse Plaza - Grand Rapids, MI - Design of a 1075 square feet exterior plaza for displaying the 8 foot model of the Davinci Horse located at the Frederik Meijer Gardens & Sculpture Park. The project included design of a 1400 square feet of concrete retaining wall to be placed in a existing berm, brick pavers, grading, and stormwater management. Heavy soils created challenges from water pressure behind the retaining wall and drainage issues. The proposed site features were to blend with the existing site features limiting the disturbance of the existing surrounding area.The new retaining wall was used to mount granite plaques describing the sculpture. Construction cost $114,000.

Hollister Building Renovation - Lansing, MI - Major renovation of existing 100 year old building in downtown Lansing. Structural engineering included analyzing the existing wood, steel and reinforced concrete portions of the structure to meet current code requirements which included extensive materials testing. Construction cost $2.9 million.

Kingsbury Place – Grand Rapids, MI - New residential development located on a 4.26-acre parcel. The development includes 10 separate buildings, retaining walls, private road, parking facilities, public sanitary sewer and watermain extensions, stormwater management system and a 60,000 gallon rainwater storage facility for re-use as irrigation. Provided structural, electrical, mechanical, HVAC, fire protection, site design, site plan approval submittals and coordination with team members, municipalities and utility companies. This project consisted of a full residential housing development from the schematic phase through construction. The public utility extension required municipality review, approval and MDEQ permitting. The project was funded under the Michigan State Housing Development Authority therefore the site was design to provide handicap accessibility to all buildings and facilities on site. The barrier free accessibility affected the overall site grading, layout of parking and sidewalks to provide access according to code requirements Project received Green Communities Certification. Construction cost $4.7 million including $500,000 in site construction.

Newberry Place Co-Housing - Grand Rapids, MI - New residential development located on a 1-acre parcel in the City of Grand Rapids. The development includes 7 separate buildings containing 20 living units plus a Common House, carports and garages, parking facilities, private sanitary sewer, domestic water and fire service laterals, stormwater management system including below pavement detention/infiltration storage and design of the public cul-de-sac. There are primarily three main unit designs. Types A, B, and C. The typical units are 2-1/2 floors with a full basement. The units are grouped together in 2, 3, or 4 unit buildings. This project consisted of a full residential housing development from the schematic phase through construction. The layout included modifications to the public road cul-de-sac and public utilities. Site development included vacating an existing alley and public utilities. This site was extremely compact and providing proper access to all units, drainage, stormwater management and parking was very challenging The project was developed as a condominium association. Construction cost $3.5 million, including $250,000 site construction cost.

The Village at 48 West Student Housing Development - Allendale, MI – Structural engineering for student housing development at Grand Valley State University. This housing development has 17 buildings including (6) 3 story 6-plex townhomes, (1) 3 story 8-plex townhome, (4) 3 story apartments, (3) 4 story apartments, (2) 3 story village center mixed use retail and apartments, and (1) student center commons building. Construction cost $40 million.

Health Care Projects:

Stockbridge-Munsee Health Center - Bowler, WI - New 25,000 square foot, two story medical office building on Native American Reservation. Load bearing masonry construction with steel bar joist floor and roof structure. Construction cost $3.0 million.

Spectrum Lakeshore Area Radiation Oncology Center, Holland, MI - Addition and renovation of existing 11,000 square foot medical office building. The addition includes a new linear accelerator vault and renovations to the existing medical office building. Structural engineering included new reinforced concrete vault along with modifications required for the additions. Special structural support of lead shielding for duct work passing through the concrete shielding walls. Construction cost $1.6 million.

Spectrum Health South Pavilion MRI, Grand Rapids, MI - Addition of 1,500 sf and renovation for a new fixed MRI. Medical gases and nurse call system included in scan room and the entire room and equipment was supported by emergency power. Design included temporary relocation of existing mobile MRI during construction. Construction cost $600,000.

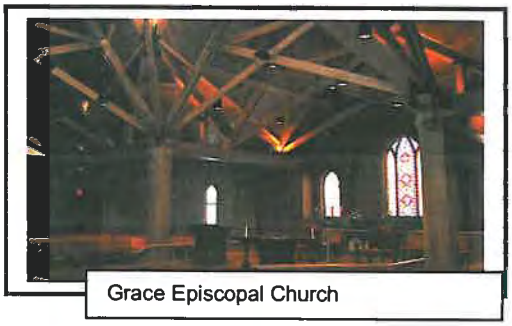
Blodgett Hospital Linear Accelerator Addition - Grand Rapids, MI - Two story reinforced concrete structure incorporating lead radiation containment into the structure. Concrete vault located on second floor of two story structure. Utility tunnel located under portion of structure. Construction cost $2.0 million.

Spectrum Health Radiation Oncology - Grand Rapids, MI - New 3,000 square foot addition to the Butterworth Campus for new CT scan and linear accelerator equipment, plus 1,400 square foot renovation to the present Radiation Oncology Clinic. Remodeled areas included construction of administration, patient waiting, and exam rooms. The site presented many challenges including significant elevation changes and maintaining emergency exiting requirements from the main hospital. Structural design of reinforced concrete vault structure used for radiation shielding. Construction budget $1.6 million. This project was not constructed due to budget constraints at the hospital.

Spectrum Health Blodgett Campus MRI Building, East Grand Rapids, MI - New 1,000 square foot modular MRI building. The building superstructure along with integral MRI unit is constructed off site at the manufacturer's facility, then delivered to the site, placed on a new foundation system and connected to all necessary utilities.

Religious Projects:

Grace Episcopal Church – Traverse City, MI - New 8,000 square foot Worship Space along with 3,600 square foot renovation. Glulam and steel framed roof construction. Construction cost $1.6 million.


Grace Episcopal Church

Holy Childhood of Jesus Catholic Church – Harbor Springs, MI - Renovation and addition to existing church constructed in late 1800's. Structural engineering included analysis of existing heavy timber roof trusses and replacement with new wood truss system. Construction cost $2.3 million.

St. Christopher's Episcopal Church - Grand Blanc, MI - New 18,000 square foot church, social hall and educational facility. The structure utilizes load bearing masonry, structural steel, custom timber trusses, metal plate connected wood trusses and steel bar joists. Construction cost $3.5 million.

Mayflower Congregational Church - East Grand Rapids, MI - Renovation of existing facility and unique enclosure of central outdoor courtyard into enclosed atrium. Renovation included new movable partition walls in lower level multipurpose room, new covered entry walkway, new boilers, and air conditioning to the sanctuary, church parlor and chapel. Construction cost $3.0 million.

Industrial Projects:

RSDC of Michigan - Holt, MI - New 600,000 square foot coil steel distribution center. Structural engineering for foundations and floor slabs for pre-engineered metal building. Special 12 inch thick steel fiber reinforced concrete floor slabs. Tunnels, press pits, special equipment foundations. Construction cost $45 million.

UPS Distribution Center - Chicago, IL - Structural engineering of mezzanines, catwalks, and conveyor support systems for 1,000,000 square foot distribution center for Rapistan Demag.

Amway Corporation Building 29/42 Make-up Air - Ada, MI - Provide make-up air in manufacturing area of plant subject to severe negative air pressure due to process exhaust. Structural support of three new make-up air units and access platforms.

Parking Structure Projects:

Standard Federal Parking Structure - Troy, MI - Structural investigation of deterioration of two existing precast concrete parking structures including repair recommendations.

Jefferson Bank Parking Structure - New Orleans, LA - Two story precast concrete parking structure, structural engineer.

Gillette Parking Structure - Gillette, WY - Three story post-tensioned concrete parking structure for City of Gillette, Structural Engineer.

Cedar Rapids Parking Structure - Cedar Rapids, IA - Five story precast concrete parking structure, Structural Engineer.

Logan Square Parking Structure - Philadelphia, PA - New seven story post-tensioned parking structure, Structural Engineer.

Norwest Bank Parking Structure - Minneapolis, MN - Structural investigation and repair recommendations for existing two story precast concrete parking structure.

Rush and Ohio Streets Parking Structure - Chicago, IL - Structural investigation and repair recommendations for existing four story cast-in-place concrete parking structure.

Structural Investigations:

State Farm Insurance Company - Over 100 structural investigations. Perform structural assessment of residential buildings to determine cause of damages due to severe weather and to make repair recommendations.

Trinity Lutheran Church - Reed City, MI - Structural investigation of deterioration to existing church constructed in the late 1800's. Determine cause of deterioration, develop cost estimates, make repair recommendations.

Sacred Heart Church - Grand Rapids, MI
Structural investigation and repairs to deterioration of brick and terra cotta facade at existing church constructed in the late 1800's.

St. Andrew's Cathedral - Grand Rapids, MI -
Structural investigation and report on the existing church constructed in the late 1800's.

Sacred Heart Church

Professional Affiliations

Structural Engineers Association of Michigan (SEAMi)
American Concrete Institute (ACI)
American Institute of Steel Construction (AISC)

KENNETH H. REIGLER, P.E. – LEED-A.P.

Position
Senior Mechanical Engineer, Principal

Professional Registration
Michigan Indiana Kentucky New York

Education
Michigan Technological University: Bachelor of Science in Mechanical Engineering.

LEED Accredited
Leadership in Energy & Environmental Design (LEED)

Professional Experience

Mr. Reigler's career began at The WBDC Group where he spent six years providing mechanical engineering design services specializing in Heating, Ventilation, and Air Conditioning (HVAC) systems.

In 1989, Mr. Reigler joined WW Engineering and Science where he worked as a project engineer and project manager for projects which included Campus Chiller Plant Design, Industrial HVAC, and Boiler Plant Design.

Over 30 years of professional experience:

HVAC

Plumbing and Fire Protection

Building Assessments

Project Management

As a principal at Comprehensive Engineering, Mr. Reigler provides project management and mechanical engineering services on a variety of commercial, industrial, health care and educational projects. His professional experience offers clients with insights on project management, mechanical system design, and construction cost estimation.

Health Care
Commercial
Retail
Educational
Industrial
Religious
Municipal
Food Service

Project Experience

Over the past 30 years, Mr. Reigler has been involved in the design and construction of new facilities, along with additions, and renovations to many different building types. He has extensive experience in LEED projects and is accredited by the US Green Building Council.

Municipal Projects:

East Grand Rapids Community Complex - East Grand Rapids, MI - Renovation and expansion of 52,000 square foot Library, City Hall, City Council Chambers, City Engineering and Grounds Department at the Complex. The original underground concrete water storage tanks were renovated into multi-purpose rooms. Structural engineering included design for new foundations placed on auger-cast concrete piles and grade beams. Calculations were based on ASHRAE 90.1-1999 for LEED credits EAp2 & EAc1. The City of East Grand Rapids has received a LEED NC 2.1 certification for this project. Construction cost $7.6 million.

Port Austin Veterans Park Pavilion – Village of Port Austin, MI - Mechanical and electrical engineering design services are required for a new 1,600 square foot Pavilion building. Electrical engineering is also required to provide new site lighting based on the established fixture type to be used in the MDNR Boat Access Site. Construction cost $800,000.

Port Austin Toilet Building - Village of Port Austin, MI – Toilet room design for a large area on Lake Huron shoreline for the MDNR in the Village of Port Austin. Mechanical and electrical engineering is required to demolish the existing community toilet building and design a new 2,000 square foot facility at the same location on the site. The MDNR requested that the facility be designed to basic LEED criteria. Construction cost $350,000.

East Grand Rapids Public Safety Building - East Grand Rapids, MI - Renovation and expansion of 11,000 square foot Police and Fire Safety Department. Mechanical, electrical, and structural engineering. New variable air volume HVAC system and upgrade of communications systems, power and lighting. The project included conversion of an existing cast-in-place concrete water storage reservoir into locker rooms and parking for public safety vehicles. Construction cost $1.0 million.

East Grand Rapids Chiller Replacement - East Grand Rapids, MI - Installation of new 160 ton air-cooled screw chiller serving City Hall, Library, and Public Safety buildings. Mechanical, electrical, and structural engineering. Chiller replacement included new circulating pump, chilled water piping, and controls. Chiller installation included cast-in-place concrete enclosure to minimize noise transmission to adjacent buildings and is supported by an auger-cast concrete pile foundation system. Construction cost $300,000.

Grand Rapids Parking Services - Grand Rapids, MI - Renovation and expansion of 8,400 square feet of office space currently occupied by G.R. Parking Services. The renovation included HVAC system upgrade with addition zone control and cooling capacity. Construction cost $250,000.

Grand Haven City Hall Renovations - Grand Haven, MI - Renovation of City Council Chambers, barrier free toilet rooms, and barrier free ramps with snow melt system. Construction cost $250,000.

Religious Projects:

Holy Childhood of Jesus Catholic Church - Harbor Springs, MI - Renovation and addition to existing church constructed in late 1800's. Mechanical engineering included HVAC, plumbing, and fire protection systems. Construction cost $2.3 million.

St. Jude's Church - Grand Rapids, MI - New 21,400 square foot classroom and office administration addition with a second floor multipurpose room. Mechanical system utilizes 4 pipe fan coil system to fit in limited ceiling space. Air conditioning was added to the existing church sanctuary. Construction cost $2.7 million.

Bethany House - DeWitt, MI - New 21,600 square foot addition and renovation to existing retreat center. The renovation included existing commercial kitchen, dining, conference rooms, chapel and guest rooms. New construction included a two story guest room addition. Construction cost $4.2 million.

Holy Childhood of Jesus

Calvary Baptist Church - Grand Rapids, MI - New 18,400 square foot classroom addition. Mechanical included variable-air-volume cooling/hot water heating with radiant floor heating in toddler classrooms. Air conditioning was added to the existing sanctuary. Construction cost was $2.8 million.

Commercial Projects:

Hispanic Center - Grandville, MI - Mechanical engineering design for a 6,300 sf, 2 story, a historical fire house building renovation. The HVAC design includes furnace splits for the 1st floor level and rooftop systems for the 2nd floor level with energy star and environmental refrigerant system. The Hispanic Center is currently seeking a LEED certificate for this project.

Hispanic Center - Grandville, MI – The project includes mechanical engineering for a 6,300 sf, 2 story historical building renovation of an existing fire house facility. The HVAC design includes furnace splits for the 1st floor level and rooftop systems for the 2nd floor which are energy star rated and the use of environmentally friendly refrigerant. Demand Control Ventilation (DCV) provided an 8% annual energy savings. The Hispanic Center has received a LEED GOLD certification for this project. Construction Cost $1.5 million

Lighthouse Development – Grand Rapids, MI - The project included a remodel of an early 1900's 2 story wood framed building. The main floor is an open office developed for multiple 400 square foot incubator businesses and the second floor to be occupied by the Lighthouse Development offices. Since this project is over 5,000 square feet, the design is required to comply with the Michigan Energy Code. This project includes performing energy model studies, life cycle cost analysis, and design provisions beyond that required to meet the current energy code and building code. The project is to be LEED NC 2.2 certified. Our engineering staff is currently performing Fundamental Commissioning of the building energy systems for verification of the building' s energy related systems in accordance to the owner's project requirements, basis of design, and construction documents. Construction cost $1.2 million.

Fredrik Meijer Gardens 2008 Remodels– Grand Rapids, MI – The projects consist of Front Entrance Enclosure, Café / Gift Expansions, Remodel Kitchen and Dining, 2-story North Office Addition, Remodel Existing Office space, and 2-Story West Horticulture. FMG received a LEED NC 2.2 Silver certification for this project. We are currently evaluating the existing facility for LEED EB certification. Construction cost $7.2 Million.

Educational Projects:

Grand Valley State University - Allendale, MI - Mechanical, electrical, and plumbing engineering on numerous projects completed at the Main Allendale Campus for GVSU. Projects include Dean Suite Remodel, Air handling replacement, Calder Arts Spray Booth, Lake Huron and Lake Michigan Hall remodeling, lighting design for the cashier's office. The projects were phased construction to accommodate continuing operations.

WMU Davis Dining Hall, Kalamazoo, MI – Engineering services to renovate 13,200 sf kitchen and Dining Hall. Mechanical design included HVAC Ventilation and Heat with thermostat control, multiple food cooking stations, grease hoods with exhaust/make-up air and lights, New Plumbing for Kitchen Hot Water System and Canopy style compensating hoods. Electrical Engineering included new lighting design and Daylight Harvest Controls to enhance dining, New Power Service and Electrical transformer for increased cooking loads moved into Dining, New Lighting and Fire Protection systems for remodeled kitchen. Civil engineering included partial topographic survey, exterior courtyard and parking access improvements

Grand Rapids Public Schools Riverside Middle School, Grand Rapids, MI – Remodel of the café, serving line and kitchen during the summer of 2009. Direct/indirect ambient fixtures were used with supplemental accent lighting above the serving employing pendant mounted fluorescent fixtures with decorative glass housings. Matching sconces were used above the perimeter tables. Floor service fittings were used for power and data in the open areas. We coordinated our engineering with the districts food service consultant.

Grand Rapids Public Schools Westwood Middle School, Grand Rapids, MI - Remodel of the café and serving line with minor kitchen changes were done during the summer of 2008. Demolition began after school ended in June with project completion before school began in the fall. Direct/indirect ambient fixtures were used in the dining area with supplemental pendant accent lighting above the serving line. Also, fixtures simulating skylights were placed in the space.

Health Care Projects:

Metro Health Emergency Department Remodel, Wyoming, MI - New 5,000 square foot remodel of Metro Health's existing Emergency Department. The project was divided into four separate areas for construction, phased to reduce the impact on the Department. The existing Hospitals mechanical, electrical and plumbing infrastructure was modified to the new program needs. New architectural walls, ceilings and finishes were provided for a complete remodel.

Spectrum Ambulatory Surgical Care (ASC) - Kentwood, MI - New 28,236 square foot tenant fit up within Hughes Medical Office Building. Tenant fit-up consists of 8 operating rooms and 30 patient rooms. Mechanical engineering included HVAC, plumbing, medical gas, and fire protection. Electrical engineering consisted of lighting and power distribution, phone, data, fire alarm, security, and design of emergency generator. Construction cost $3.5 million.

Spectrum Endoscopy, Kentwood, MI - Engineering services for (10) Endoscopy Operating Rooms tenant fit-up. Mechanical systems include new central AHU with pressure, temperature, humidity, filtration control, new plumbing fixtures and piping including medical gases and complete fire protection coverage. Electrical systems include new lighting design, power distribution with branch circuiting, nurse call systems, engineered power generator to a new generator system.

Spectrum Health Breast Care Services - Grand Rapids, MI - Renovation of 10,000 square feet at the Blodgett Campus for the Betty Ford Clinic. Radiology office and administration, patient waiting, ultra-sound/mammography rooms, recovery and exam/procedure rooms. Design included HVAC, plumbing, medical gases. Construction cost $800,000.

Industrial Projects:

Haworth Wood Finishing Plant - Holland, MI - Upgrade of HVAC system to improve room climate control for the Wood Finishing Plant. Climate control included adding air conditioning, dehumidification, filtration, room pressure control and winter humidification using high pressure spray atomization. Construction cost $2.5 million.

Nelson Metal Products - Grandville, MI - New 68,000 square foot plant addition to existing manufacturing building. Mechanical engineering for mechanical process, plumbing, and ventilation systems. The addition included five new casting machines. Construction cost $1.3 million.

Roskam Bakery - Grand Rapids, MI - Provide mechanical engineering on several plant modification projects. Our services included new cereal and bagger lines, including equipment and product conveyor layouts.

Amway Corporation Building 29/42 Make-up Air - Ada, MI - Provide make-up air in manufacturing area of plant subject to severe negative air pressure due to process exhaust. Design of three new make-up air units, including pressurization control, structural support of units, access platforms, new power for the units.

Food Service Projects:

Kraft General Foods - Battle Creek, MI - Project manager responsible for engineering design and the installation of a new cereal line production. Up to 18 engineers and staff were placed on-site to develop design installation documents for this $13 million, nine month project.

Kelloggs Cereal - Battle Creek, MI - Engineer responsible for domestic water service upgrade which included new plate and frame heat exchanger, skid mounted pumps, and electronic controls.

Zeeland Chemicals - Zeeland, MI - Utilities engineer responsible for utility supports for the installation of new $12 million Aspartame (Nutra-Sweet) line.

Parke-Davis - Holland, MI - HVAC engineer for a new 20,000 sq. ft. pharmaceutical laboratory with 12 fume hoods.

Professional Affiliations

Michigan Society of Professional Engineers (MSPE)
National Society of Professional Engineers (NSPE)
American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
U.S. Green Building Council (USGBC)

ELAINE G. WESTHOUSE, P.E.

Position
Senior Civil Engineer

Professional Registration
Licensed Professional Engineer: Michigan

Education
Michigan State University, Bachelor of Science in Civil Engineering

Professional Experience

Ms. Westhouse's career began at Morrison-Knudsen, a construction management firm based out of Boise, Idaho where she performed scheduling and field engineering on a variety of projects. In 1987, Ms. Westhouse joined The WBDC Group, West Michigan's largest AE firm, where she worked as a design engineer specializing in underground utility design and layout, site development, grading, storm water management, and septic drain field design developing civil construction drawings and specification.

Over 25 years of professional experience:

Civil Engineering

Site Design

Site Plan Approvals

Engineering Studies

In 1994, she started WB Engineering, Inc. As the president of the company, Ms. Westhouse provided project management and civil engineering design services for various commercial, industrial, health care, educational and municipal projects. Specializing in site layout, road, watermain, sanitary, and storm sewer design, grading, storm water management and erosion control. Typical projects required coordination of owners, architects, surveyors, geotechnical design, landscape architects and material testing as well as municipality requirements and standards. Other duties included marketing, office manager, accounting and payroll.

Ms. Westhouse's career continued at Driesenga and Associates where she worked as a senior project manager responsible for design of residential, commercial, industrial and private land developments. Project management responsibilities included scheduling and coordination with other disciplines, state and local municipalities, invoicing and client communications.

Ms. Westhouse joined Comprehensive Engineering in 2008 and is responsible for project management and providing civil engineering design services as well as marketing civil engineering services. Her professional experience provides clients with insight on project management, site plan approval processes, stormwater management systems and other underground utility designs, land use management and permitting.

Health Care
Commercial
Educational
Industrial
Religious
Municipal

Project Experience

Over the past 29 years, Ms. Westhouse has been involved in the design and construction of a large variety of new facilities, additions, and renovations on many different building types. Her construction experience, along with a varied design background are an asset to projects at Comprehensive Engineering.

Municipal Projects:

USDA Forest Service, Cadillac-Manistee National Forest, District Office Remodel - Wellston, MI - Civil engineer for renovation of existing Office Building and Site improvements. Site modifications include new pavement for access roads, new drive entry per Michigan DOT standards, parking areas, sidewalks, barrier free parking. Project includes grading, stormwater management for 10 acre site incorporating infiltration and retention storage. New on-site sewage treatment facilities will be provided for the office building. Site was designed to meet LEED Certification. Construction cost $1,600,000. Project is pending funding.

Grand Rapids Aggregate Storage Building – Grand Rapids, MI Design of a new aggregate storage building for the City of Grand Rapids. The facility is used by the Environmental Services Department to store five aggregate materials to be used during construction and maintenance of the public sanitary sewer system. The project included design of the concrete structure with a steel roof, site layout, pavement, grading, stormwater management and permitting. Provided project management for all phases of the project from design study to the construction administration. Construction cost $113,410.

City of Grand Rapids Aggregate Storage

Grand Rapids Water/Environmental Services Facility - Grand Rapids, MI - Site development of a 5-acre site for the new Grand Rapids Water Department. This project consisted of site layout, grading, storm water management including below pavement detention storage, infiltration trenches and permeable pavers, relocation of city drainage ditch, MDEQ permit, and relocation of existing underground utilities as well as new services. The project was designed to LEED certification criteria.

Commercial Projects:

Golden Corral Restaurant – Walker, MI - New 11,000 square foot buffet style restaurant located on a previously developed 4 acre parcel. Included site layout, drives entries, sidewalks, barrier free parking and access, grading, stormwater management, sanitary, water services and landscape design. Demolition of existing building and pavement. Provided site plan approval submittals and coordination with team members, municipalities and utility companies. Provided project management for all phases of the project from preliminary design to the construction administration. Construction cost $1,207,000.

Golden Corral Restaurant

Light House Communities Development Center – Grand Rapids, MI – Renovation to an existing building and adding parking area located on a 0.6-acre parcel. The project design includes site layout, grading and stormwater management system. The existing and new pavement area is designed to be porous pavement. The project is designed to LEED certification criteria. Estimated construction cost $800,000.

Lake Michigan Credit Union – Allendale, MI – New 3,960 square foot banking facility located on a 0.9 acre parcel in an approved PUD in Allendale Township. The site design and layout of the new banking facility included four drive-through lanes, new MDOT drive entrance, porous pavement and stormwater management design. The overall site layout was designed to provide circulation to adjacent property within the PUD to create a coordinated circulation pattern.

Educational Projects:

Kendall College of Art at Ferris State University – Grand Rapids, MI – Renovation of the existing Federal Building and site located in downtown Grand Rapids. The renovation of the building and site was done in accordance with the State Historical Preservation Organization. The site design included layout, new curb cut, pavement, grading, and relocation of domestic water and fire protection services, providing new sanitary and storm sewer connections to the public systems. Coordination with local and state municipalities was essential for this project. The project is designed to LEED certification criteria.

Oxbow School of Art - Saugatuck, MI – Addition to the main building on campus to provide new food preparation area and living quarters and two new student resident building. The site is located in the critical dune area therefore site layout and grading was coordinated with the MDEQ permit requirements. Site design included new sanitary sewer and watermain to provide services to new building as well as stormwater management design. Construction budget was 2.5 million.

Waverly Community Schools - Lansing, MI – Renovation to nine existing school sites. Site grading and storm sewer revisions required for site improvements and building additions. Storm water calculations and submittals to local jurisdiction. Rerouting existing utilities interfering with building additions as well as designing new sanitary and water services to site improvements.

Health Care Projects:

West Michigan Oral Surgery – Holland, MI - New 4,000 square foot facility located on a 1.5- acre parcel in Holland Township. Site design and layout new health care facility including separate employee and customer parking, and stormwater management design. Overall site layout including adjacent property to create a coordinated circulation pattern.

Spectrum Health South – Grand Rapids, MI – Site development of a new medical facility on a 14-acre parcel located in Gaines Township. This project consisted of site layout, grading, storm water management system that included below pavement detention/infiltration, sanitary, domestic and fire protection services for the facility.

Spectrum Health South MRI Addition – Grand Rapids, MI – Site grading and layout for MRI addition. Also included minor utility relocation.

Industrial Projects:

Tiara Yachts – Holland, MI – Addition to manufacturing facility to connect the existing structure and various other buildings and renovations on site. This project included site grading, evaluation of the existing stormwater system and design stormwater system improvements to accommodate the increased impervious area, parking area layout and coordination with the City of Holland to accommodate fast track schedule.

Residential Projects:

Genesis West Apartments - Grandville, MI - Civil engineer for the development of a 4 acre site to accommodate 10 multi-family residential buildings. The project includes buildings, road and parking layout, pavement design, exterior barrier free access, stormwater management and grading, public watermain and public sanitary sewer extensions, which includes MDEQ permitting. Provided schematic site evaluation, design and construction monitoring. This project was designed to be certified under LEED for Homes criteria. Construction is scheduled for 2013.

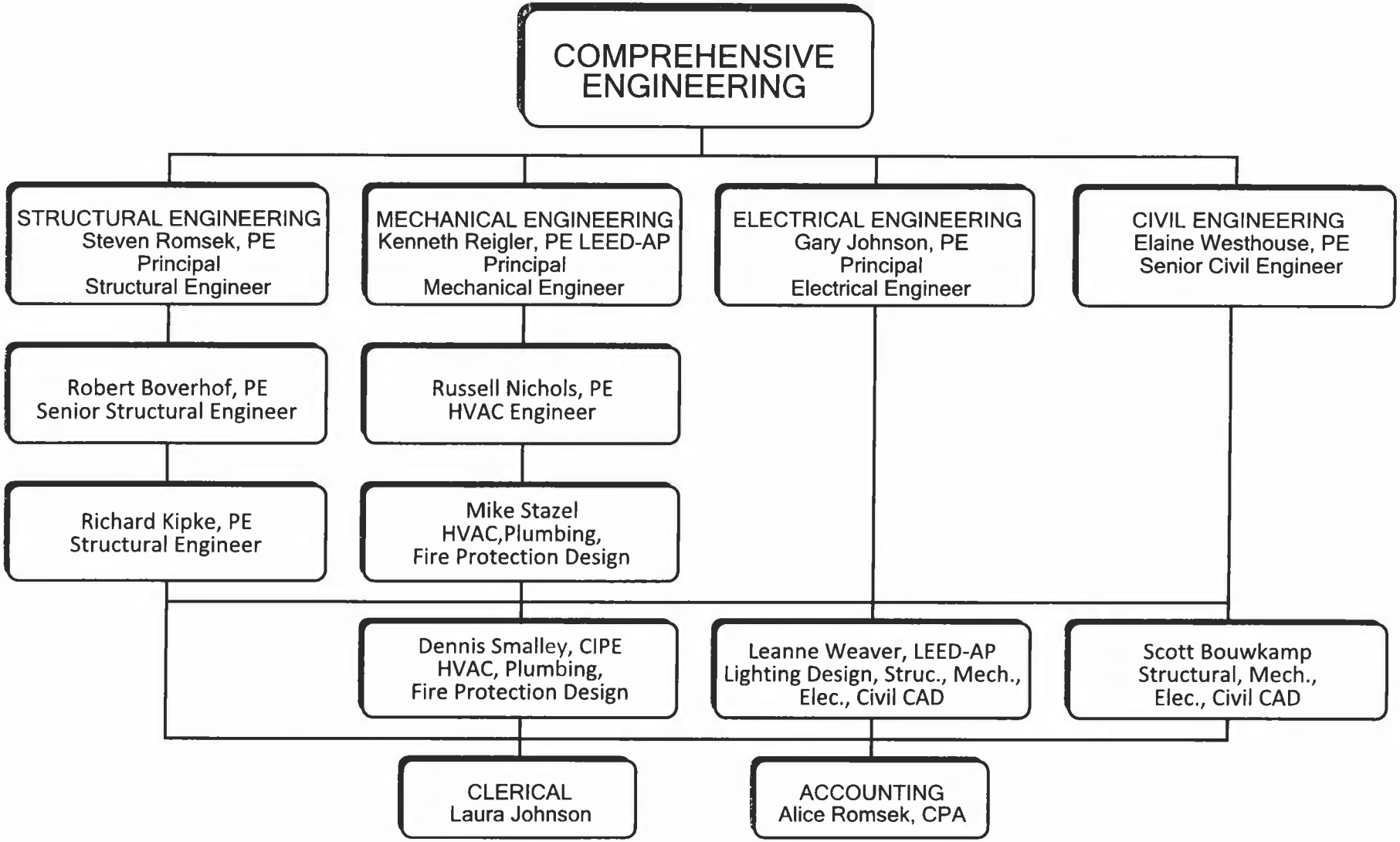
Madison Square Senior Apartments – Grand Rapids, MI – Renovation of an existing apartment building which included three new building additions with an accumulated area of 7,149 square foot located on a 2.3 acre parcel. The site design included evaluating the existing grades and pedestrian access and revising to meet barrier free code requirements, pavement, grading, and stormwater management. The project was funded under the Michigan State Housing Development Authority. The project is designed to LEED for Homes certification criteria. The construction budget is 6.5 million.

Woodland Harbor – South Haven, MI – New residential development located on a 40-acre parcel contiguous with the Black River in the City of South Haven. The development included 9,500 linear feet of private road, 6,631 linear feet of public sanitary sewer, 7,345 linear feet of public watermain, and 6,808 linear feet of private storm sewer, water and sanitary laterals for 181 site condominiums. The project required estimations of excavation of contaminated soils, overall site grading and cut and fill calculation. A MDEQ permit was obtained for impact to existing regulated wetlands. This project also included project management through out the construction for the infrastructure.

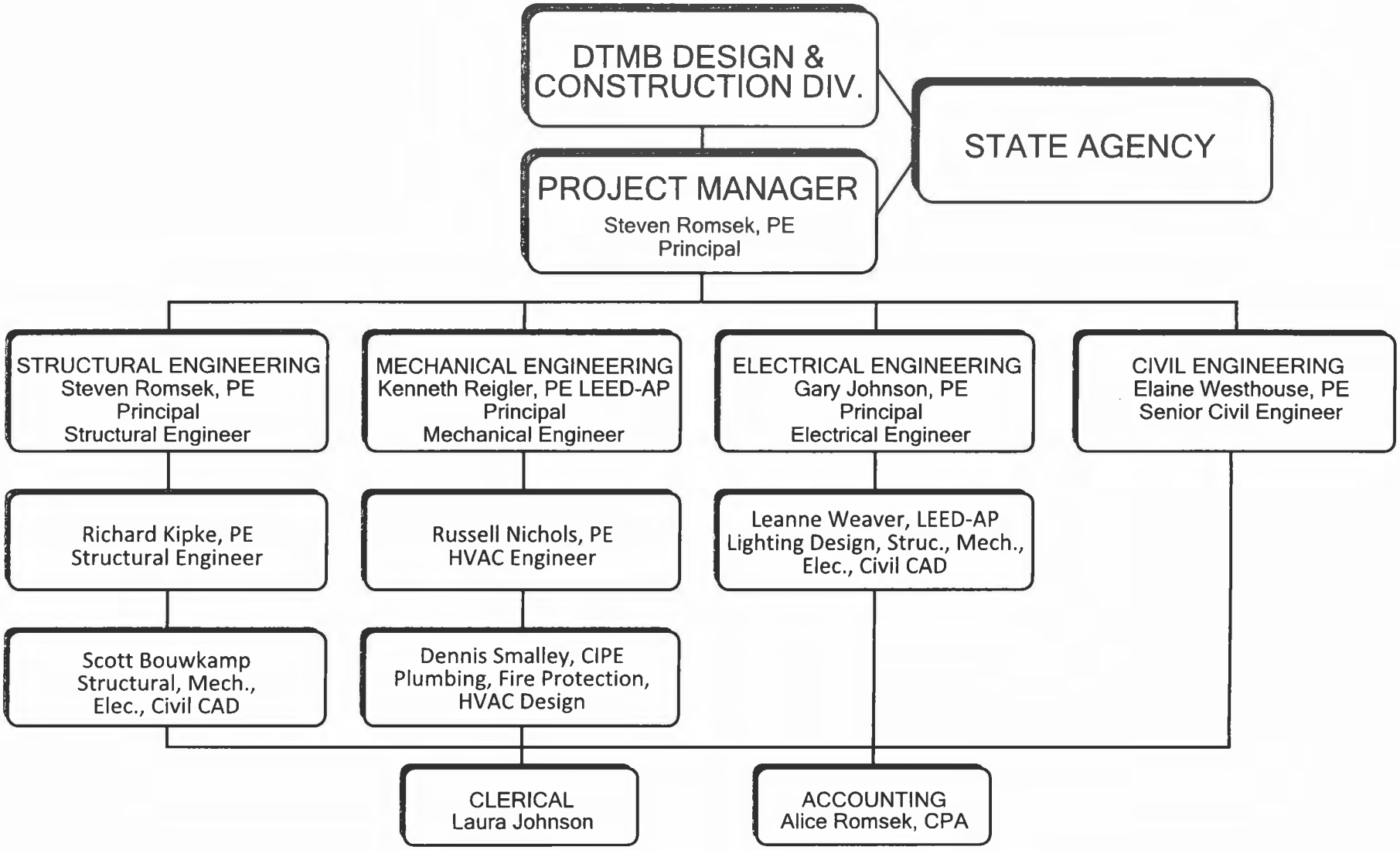
Newberry Co-Housing – Grand Rapids, MI - New residential development located on a 1-acre parcel in the City of Grand Rapids. The development includes 7 separate buildings containing 20 living units plus carports and garages, parking facilities, private sanitary sewer, domestic water and fire service laterals, stormwater management system including below pavement detention/infiltration storage and design of the public cul-de-sac. Construction cost $3.5 million, including $250,000 site construction cost.

ORGANIZATIONAL CHART

COMPANY
ORGANIZATIONAL CHART



TYPICAL PROJECT ORGANIZATIONAL CHART



II-3 Management Summary, Work Plan, and Schedule

Our management approach is clearly project driven. The principals of our firm are our project managers insuring involvement of at least one principal on every project. Our focus is project based with coordination between disciplines and good communication with owners being paramount. We are large enough to handle substantially large sized projects, yet small enough that no project is too small for us to efficiently and effectively complete.

We have companywide scheduling meetings on a weekly basis to assure all project deadlines are met and all disciplines are aware of project coordination issues. Manpower and staffing is evaluated with excel spread sheets which project anticipated hours to complete projects as assigned to various personnel. Adjustments are made to manpower shortages by evaluating project schedules and temporarily re-assigning staff, working overtime, and hiring full time or contract staff as necessary. We respectfully turn down new projects if we cannot meet schedule requirements of potential new projects.

Our project management approach is to have regular project team meetings to discuss project issues and schedules. Each team member discusses their project status including conflicts, coordination issues, and status of on time completion on the project. We have always been able to meet project schedules, even in the event of loss of a key team member, by re-allocation of staff, hiring of new staff or even hiring a sub-consultant to assist in short term work overages.

Projects with construction cost of $500,000 to $2,000,000 are typically a good fit for our firm, although we are successfully just now completing a project of $30 million in construction cost. Projects with fee's under $100,000 are considered a moderately sized project and staffing projects this size are typical. Depending on the project schedule, a project this size would occupy approximately 25% to 50% of total available time for any individual assigned to the project, leaving adequate time to maintain other projects concurrently.

We believe that our firm has more than enough capacity to provide timely completion of the various projects which may arise. Our current back log of design work is approximately 4 to 6 weeks and we are actively looking for new work.

Quality control is accomplished by having a series of scheduled progress reviews. On more complex projects, we utilize a detailed milestone schedule which details the main components required by each disciple at the various stages of the project to assure the entire team progresses at the same pace. Each team member reviews the progress drawings along with a review by the project manager. Sub-consultants are included in project meetings and review packages.

All drawings can be furnished in either AutoCAD, Microstation, or PDF format, depending on owner preference and requirements. Specifications, including "Front End's" can be furnished in Microsoft Word or PDF format. Spread sheets for facility analysis studies and cost estimates are provided in Microsoft Excel or PDF format.

Questionnaire for Professional Services

Department of Technology, Management and Budget
2013 Indefinite-Scope Indefinite-Delivery – Request for Qualifications
Architecture, Engineering, and Landscape Architecture Services
Various Locations, Michigan

INSTRUCTIONS: Firms shall complete the following information in the form provided. A separate sheet may be used if additional space is needed; please key the continuation paragraphs to the questionnaire. Answer questions completely and concisely to streamline the review process.

ARTICLE 1: BUSINESS ORGANIZATION

1. Full Name: Comprehensive Engineering, P.C.
   Address: 4653 Plainfield Avenue, NE Grand Rapids, MI 49525
   Telephone and Fax: 616-365-9933 (p) 616-365-9937 (f)
   Website: www.compeng.com E-Mail: _____
   Professional(s) federal I.D. number(s): 38-3110758

   If applicable, state the branch office(s), partnering organization or other subordinate element(s) that will perform, or assist in performing, the work: N/A

2. Check the appropriate status:

   ☐ Individual firm ☐ Association ☐ Partnership ☒ Corporation, or ☐ Combination – Explain:

   If you operate as a corporation, include the state in which you are incorporated and the date of incorporation: Michigan, May 3, 1993
   Include a brief history of the Professional's firm:
   Comprehensive Engineering, P.C. is an independent consulting engineering firm based in Grand Rapids, Michigan. The firm was incorporated in June of 1993 as a Professional Corporation in the State of Michigan. We provide mechanical, electrical, structural and civil engineering services to the building design and construction industry. The firm's principals Gary Johnson, PE, Co-President, Steve Romsek, PE, Co-President, and Ken Reigler, PE, Senior Engineer and Principal are licensed engineers in electrical, structural, and mechanical engineering respectively.

   Our strength is our staff. We have a dedicated staff of engineering and design professionals who strive to provide our clients with high quality, on-time, personalized service. We have over 300 years of collective experience in the engineering design and construction industry. This experience includes commercial, health care, industrial, retail, municipal, State of Michigan and educational projects.

Much of our project workload is in Michigan; however, we provide engineering services on many projects located throughout the country. We have engineers licensed in over 30 states. Comprehensive Engineering has professional liability insurance through the industry leading, Navigators Insurance Co, with an annual aggregate coverage of $2,000,000.

Provide an organization chart depicting all personnel and their roles/responsibilities.

Provide an organization chart depicting key personnel and their roles for a typical assigned project. Include generic supporting staff positions.

ARTICLE 2: PROJECT TYPES AND SERVICES OFFERED

Identify the project types and professional services for which your firm is exceptionally qualified and experienced. Provide attachments illustrating a minimum of three examples, with references, of successful projects performed in the last five years for each item checked. Identification of specialties will not exclude selected firms from project types, but will assist the DCD Project Directors in matching firms with projects.

- ☐ ADA facility assessment and remodeling
- ☒ Boilers and steam systems
- ☐ Bridges – pedestrian and vehicular
- ☒ Building and structure additions
- ☒ Building envelope investigation, repair, upgrade
- ☐ Correctional facilities
- ☐ Door and window replacement
- ☒ Fire and security alarm systems
- ☐ Fish passage structures
- ☒ General architectural and/or engineering design
- ☒ HVAC equipment replacement, upgrade, selection
- ☒ HVAC controls replacement, upgrade, selection
- ☐ Interior remodeling and renovation
- ☐ Laboratory facilities
- ☐ Landscape architecture
- ☐ Land Planning
- ☐ Locks and dams
- ☒ Maintenance and facility preservation
- ☒ Marine work - boat launch facilities, docks, harbors
- ☒ Parking and paving
- ☐ Roof repair, restoration and/or replacement design
- ☐ Site surveying
- ☒ Stormwater management and drainage plans
- ☒ Structural investigation and assessment
- ☐ Toilet and/or shower room remodeling or design
- ☐ Trail design and development
- ☐ Wastewater systems
- ☐ Water supply systems
- ☐ Water diking systems, water control structures

ARTICLE 3: PROJECT LOCATION

Identify the regions where your firm can most efficiently provide services. Assignments may vary from the regions checked, depending on the specialties and services required.

☐ Western Upper Peninsula (west of Marquette)
☒ Eastern Upper Peninsula (east of Marquette)
☒ Northern Lower Peninsula (north of Grayling)
☒ Saginaw Bay area (east of 127, north of I-69 and M 57, south of Grayling)
☒ Western Lower Peninsula (west of 127, north of Muskegon, south of Grayling)
☒ Central Lower Peninsula (east of Battle Creek, west of Chelsea, south of M 46 and M 57)
☒ Southwestern Lower Peninsula (west of Battle Creek, south of Muskegon)
☒ Southeastern Lower Peninsula (east of Chelsea, south of I-69)

ARTICLE 4: CONTRACT UNDERSTANDING: The following items should be addressed on the assumption that your firm is awarded an Indefinite-Scope, Indefinite-Delivery contract. (See attached sample contract).

4.1 Is it understood that your firm is required to respond to small projects (less than $25,000) as well as large projects?
Yes ☒ No ☐

4.2 Is it understood that there is no guarantee of any work under this contract?
Yes ☒ No ☐

4.3 Is it understood that your firm will be required to execute the attached standard State of Michigan contract language for professional services?
Yes ☒ No ☐

4.4 Is it clearly understood that professional liability insurance is required at the time of execution of the ISID contract? (See Article 5 of the attached Sample Contract.)
Yes ☒ No ☐

4.5 Is it understood that your firm must comply with State of Michigan law as it applies to your services?
Yes ☒ No ☐

4.6 It is understood that your firm must obtain a State of Michigan, Department of Civil Rights Certificate of Awardability (see RFP for information regarding the Certificate of Awardability)? If your firm currently has a Certificate of Awardability, provide its expiration date. _____
Yes ☒ No ☐

ARTICLE 5: CAPACITY AND QUALITY

5.1 Briefly describe your firm's methods and procedures for quality control for your deliverables and services.
Our company goal is to minimize errors and ommisions by using the following procedures:

1. ***Provide progress review drawing and specification check sets for the owner, in-house multi-discipline team and any outside consultants. The number of reviews are dependent on the size and complexity of the project.***
2. ***The designs of all disciplines are referenced into the working drawings for coordination and to minimize spacial conflicts.***
3. ***Design team members are consistent throughout the design and construction of any given project.***
4. ***All final documents are checked by the lead engineer of the specific discipline as well as the project manager before issuance.***

5.2 Has your firm been involved in claims or suits associated with professional services errors and/or omissions?
Yes ☒ No ☐

If yes, explain
Beaver Island Community Center, in 2004, our client went into arbitration with the owner over the responsibility of construction cost estimating for the project as it came in substantially over budget due to owner directed scope changes. The arbitration settled the issue.

Newaygo ISD, in 2001, the owner went into arbitration with the Construction Manager. The CM, who had hired the architect, who had, in turn, hired us as engineers went into mediation with both of us and a settlement was reached without court litigation.

Comprehensive Engineering has had no claims or suits in nine years.

5.3 Will there be a key person who is assigned to a project for its duration?
Yes X No ☐

5.4 Please present your understanding of the relationship between your firm, the DTMB Design and Construction Division, and the State Agency for whom a project will be completed.
It is our understanding that the DTMB will facilitate the design and construction of a specific project for a State Agency. The State Agency is the client. Comprehensive Engineering, as the consulting engineer, will provide design services to DTMB to accomdate the clients specific needs and requirement.

5.5 Describe your approach if a bidder proposes a substitution of a specified material during bidding.
During the bidding process, substitution should not be allowed to keep all bidding contractors pricing the same materials for cost comparison. A voluntary alternate could be submitted by a contractor for evaluation as long as the specified material is included in the quote.

5.6 Describe your approach if a constractor proposes a substitution of a specified material or detail with shop drawing submittals or in construction.
A request for substitution after the contract is awarded will be evaluated for comparitive quality, cost , availability and any other related issue. Documented approval from the owner/engineer would be required prior to installation.

5.7 How will your firm provide consistent and continuous communication pertaining to project activities and project status to the State of Michigan during the progress of projects?
We assign a project manager to be a single point contact for the State. This person is selected based on the type of project and experience of the individual. For instance, a small project that deals mainly with HVAC would have a senior HVAC engineer as project manager. On larger projects, one of our principals would be the project manager. Of course, we all have e-mail, desk phones, cell phones and we are available for meetings. Documentation is always crucial to continuous communication. It is our typical practice to write up meeting notes and phone records to further clarify the intent and follow up action for team members. We distribute these records to not only those present, but to those not present that need to know what was discussed.

5.8 Does your company have an FTP or similar site for quick posting and distribution of information, drawings, field inspection reports, and other communications?
Yes X No ☐

5.9 Describe your method of estimating construction costs and demonstrate the validity of that method.
Based on our design we will do a quanitity take-off, using our standard cost estimating spread sheet by specification division. Our estimated construction costs generally come from RS Means. This method tends to be time consuming but provides a more accurate estimate than a general cost by square foot.

5.10 Describe your approach to minimizing construction cost over-runs.
The estimated construction cost is established in the schematic design phase then periodically updated throughout the construction document phase to monitor the estimated cost with respect to the budget. If cost estimates start going over budget, it is brought to the attention of the State with recommendations to get back in budget.

5.11 What percentage of construction cost should be devoted to construction administration (office and field)?
20%. When we are the Prime Design Professional, we typically allocate 20%

5.12 What portion of the assigned work will be performed with your staff and what portion will be provided by sub-consultants?
100%, although this percentage is project dependent. If we are the prime consultant and other services are required, such as architecture or landscape architecture, we will team up with a State approved consultant to provide the service.

5.13 On a typical project, what would be your response time, from the time receive a project assignment to starting investigation and design work? A typical project might be one involving several disciplines and in the neighborhood of a $25,000 fee.)
We will usually begin within two (2) weeks of receipt of signed contract.

5.14 How do you assess whether a construction bidder is responsive and responsible?
A construction bidder is responsive if phone calls are returned promptly, within 24 hours, and requested additional written information if submitted within 3 days. References from past projects would be the best gage of their responsibility.

5.15 Describe your firm's understanding of Sustainable Design and LEED Certification.

As consulting engineers, we have always worked creatively to develop cost effective designs that reduce energy consumption for our clients. LEED Certification has formalized the process. At Comprehensive Engineering, our goal has always been to maximize value to the owner over the entire life of the facility and not to make decisions based solely on initial cost. The design principles we have used for 20 years dovetails well with today's "sustainable designs".
Our staff is trained in LEED design principles and we currently have two LEED accredited staff members. We have successfully completed 10 LEED certified projects. We routinely utilize energy models using Trane Trace software and develop "return on investment" calculations as tools to make design recommendations for HVAC systems, mechanical, plumbing, and electrical systems. Sustainable site designs utilize Low Impact Design or "LID" strategies. Site layout and storm water management is evaluated to provide Low Impact Design features. We have utilized asphalt reclamation and porous pavement designs on projects to achieve LEED points towards certification.

5.16 Describe your experience with similar open-ended contracts.

We have experience with a similar open-ended contract with the City of Grand Rapids in 2008 – 2011. We completed a number of projects for the City during this time period.

5.17 Describe your methodology for obtaining information about the existence and condition of an existing, facility's components and systems.

The collection of information about an existing facility starts in the office with reviewing existing building and site drawings, aerial photos, and any other documentation. A site visit is scheduled with the maintenance personnel to become familiar with the existing facility. During the site visit our engineers will ask question, document existing conditions, utility layout & components, structural components, site features, drainage, grades and take photos. We have an extensive selection of testing equipment available for use on such projects. Our testing equipment includes:

- ***Minolta T-1 self-calibrating light meter.***
- ***Sensor Switch remote ballast indicator.***
- ***Fluke 41B power harmonics analyzer.***
- ***Gold Line DSP30 digital 3'rd octave band sound level meter.***
- ***Paser Amprobe advance system tracer.***
- ***TSI indoor air quality analyzer with air velocity, temperature, carbon dioxide, carbon monoxide, humidity, and dew point readings.***
- ***TSI Accubalance supply diffuser air volume meter.***
- ***Infrared surface temperature sensor.***
- ***Hydronic circuit tester for water flow.***
- ***Water pressure gage.***

5.18 Describe your approach to securing permits/approvals for the following: campgrounds, critical dunes, coastal zone management, projects adjacent to Michigan lakes and rivers.

During the design development phase it is important to meet with the appropriate permitting agency to review the general overview of the project and discuss the pertinent design requirements that will need to be addressed to receive approval. The timeline for the approval process must be reviewed to incorporate that schedule into the design schedule. Close coordination and communication with the reviewing agency is needed to secure a permit.

5.19 Describe your approach to a construction contractor's request for additional compensation for a change in the project scope.

First, we would review the request along with the contract drawings and specs to verify if the request for additional compensation is reasonable and legitimate.

Changes to the scope of work must be documented in bulletins or other legal form in accordance with the contract with the contractor. The contractor will price the changes to the scope, add or deduct. The DTMB (Owner) has the option to accept or deny the quoted fee. If the owner does not accept the quoted fee the scope of work does not change. Upon approval from the owner we would issue a Change Order that would adjust the contract amount.

Sometimes there are unforeseen conditions that arise and need immediate attention. In this case we would contact the owner to discuss the issue and document it in an expedient fashion to keep construction operation underway.

DTMB QUESTIONNAIRE

If your company is interested in participating in the MiDEAL program, please sign below and return to this letter to the letterhead address, Attention: Melissa Sambiagio

FOR THE STATE OF MICHIGAN

Robert C. Hall, RA, NCARB, Director
Design and Construction Division
Facilities Administration

FOR THE PROFESSIONAL

Comprehensive Engineering agrees to extend the terms, conditions, and pricing of our 2013 General ISID Architectural/Engineering Services contract, No. 00428, to MiDEAL members and will remit the one percent (.01) administrative payment fee along with the quarterly report as outlined.

Signature

1-30-14
Date

STEVEN ROMSEK CO-PRESIDENT
Print Name/Title