

Saratoga Springs 2017 Engineering SOQ March 2, 2017

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SARATOGA SPRINGS

Executive Summary

Meridian Engineering, Inc. (Meridian) is a full-service Civil Engineering and Surveying firm headquartered on Redwood Road, minutes away from Saratoga Springs offices. Meridian, founded in 1997, provides a wide range of services to federal, state, and local governments, as well as private organizations.

Meridian employs a diversified staff of 36 professionals with strong technical backgrounds and experience. Our licensed staff includes engineers and land surveyors who are supported by a proficient design and technical staff.

As a leading Small Business serving communities along the Wasatch Front, Meridian encourages its staff to maintain their professional development and seek learning opportunities and experience in order to better serve clients.

Disciplines

Meridian has extensive experience in a wide variety of engineering disciplines, including:

- Sanitary Sewer
- Storm Drain
- Parks & Recreation
- Transportation
- Drinking Water
- Irrigation Water

Strengths and Capabilities

Meridian's corporate organization is structured to deliver outstanding management and technical strengths:

Leadership and Management

The Meridian Point of Contact (POC) is the sole contact for our clients and is responsible for the delivery of the project. Our POC reports directly to the City of Saratoga Springs and is the direct link for ensuring contract requirements and procedures are met. We embrace the team concept and will endeavor to become an extension of Saratoga Springs' staff, thereby integrating our experience in utilities, transportation, and parks and recreation services to provide superior results.

Commitment

We value our all clients. We work to manage projects in a manner consistent with our commitment, to ensure adequate resources are assigned to accommodate project workloads.

Collaboration and Communication

Meridian's organization defines clear reporting responsibilities across the management, administration and technical levels of a project. Established lines of communication are key in defining assignments, making decisions, resolving issues, and providing the structure needed to support the efficient operation of our team.

Meridian understands the importance of quality documentation and close coordination between our client and all stakeholders, which is necessary for keeping projects moving forward.

Work Quality

Meridian has embraced Total Quality Management as our corporate philosophy regarding Quality Control (QC) and Assurance (QA). We will divide projects into key milestones for quality review with each QC/QA plan tailored for every project, with its performance weighed against Saratoga Springs' expectations of success.

Schedule & Cost Control

Meridian develops realistic project schedules utilizing MS Project for delivering projects on time and within budget. We monitor key milestones on the critical path, and our POC reviews schedules with the team weekly. Any lapse in a schedule is addressed and corrective action taken, while keeping Saratoga Springs informed during coordination meetings.

Meridian is keenly aware of the critical nature of maintaining a project budget. We know every dollar counts and our experience has shown schedule control is the best way to keep projects within budget. Our commitment is to maintain schedules and projects within budget.

Technology Integration

Meridian recognizes technology is constantly evolving and enhancing our capabilities to provide more efficient services. In one such case, Meridian has taken the lead with UDOT and pioneered a workflow system to adjust available mapping grade mobile LIDAR data to meet engineering design standards.

Computer and CADD Capabilities

Meridian has a fully equipped office with a networked computer system that includes Computer-Aided Drafting & Design (CADD) stations, color plotters, printers, copiers, and the hardware and software required to succeed in today's engineering environment.



Meridian's standard CADD design software includes AutoCAD Civil 3D 2016. We also employ MicroStation V8i, InRoads V8i, and PowerInroads V8i.

GIS Capabilities

We are capable of supporting our clients with Geographical Information System (GIS) database design and support services utilizing ESRI ArcGIS products.

Survey Capabilities

In keeping up with the technology of tomorrow, Meridian utilizes state-of-the-art equipment for its survey crews. Each survey crew is equipped with the tools and technology needed to keep our surveyors as productive and efficient as possible while maintaining a safe work environment.

Meridian utilizes multiple Trimble GNSS (Global Navigation Satellite System) receivers along with a subscription to TURN GPS (The Utah Reference Network GPS) managed by the State of Utah through the AGRC (Automated Geographic Reference Center) to provide real-time latitude and longitude anywhere in the State of Utah.

Specialized survey equipment Meridian routinely utilizes to meet specific project and client requirements include:

- Trimble and Topcon GPS with GLONASS Capabilities
- Trimble Conventional and Robotic Total Stations
- Leica C-10 LiDAR Scanner
- Faro Focus 3D LiDAR Scanner
- Topcon Digital Level

Safety

Meridian maintains survey staff current with OSHA 10-hour, MSHA 24-hour, and HAZWOPER 24 & 40-Hour Training.

Professional Insurance Coverage

Meridian carries the following general and professional liability insurance:

- Professional Liability: \$2,000,000
- General Liability: \$1,000,000
- Umbrella Liability: \$5,000,000

Meridian's Professional Liability Carrier is XL Specialty Insurance Company; our General Liability Carrier is Travelers Property & Casualty Company of American; and our local insurance representative is American Insurance and Investment Corporation.



Sub-Consultants

The Meridian team is within minutes of Saratoga Springs for any project occurrence, whether planned or in an emergency. Meridian will work closely with Saratoga Springs as an extension of its staff, providing any needed services as necessary.

Meridian is prepared to offer any and all resources necessary for a project, and each team member's participation will vary based upon his or her ability to contribute to the project.



Firm Qualifications

Meridian employs a diverse team of experienced professionals, each with extensive technical backgrounds. The combination of Meridian's commitment to our staff's professional development through continuing education, along with adopting new technologies, has been a large part of Meridian's success in providing professional engineering services for the last two decades. The combined experience of our management team and design staff provides Meridian with a broad depth of various engineering disciplines.

Sanitary Sewer

Meridian is an established designer in utilities, including sewer collection 8" to 12", sewer trunk lines 15" to 24", sewer pump stations, sewer system master planning, and on-site waste treatment for remote areas.

Meridian has a wide range of experience working on sanitary sewer projects. Recent projects include:

- Fairbourne Station
- MTC Expansion
- Blue Sky Development
- University of Utah Housing Complex
- Gooding Hospital
- Aspen Grove Lodge
- BYU East Campus Renovation
- BYU South Campus Relocation
- Eagle Mountain High School
- Mid Valley Sewer District
- BYU Heritage Housing Complex

Storm Drain

Meridian has considerable experience providing storm drain design services that include site and roadway collection with pipe sizes from 15" to 60", detention/retention basins and storage, injection well permitting, storm drain master planning, etc. Meridian's Utilities Manager, Steven Johnson, has many years of experience managing storm drains and related projects.

Meridian's extensive storm drain experience includes the following recent projects:

- MTC Expansion
- BYU East Campus Renovation
- BYU South Campus Relocation
- BYU Laundry Complex
- Eagle Mountain High School
- Gooding Hospital

Parks & Recreation (& Irrigation Water)

Meridian has proven on numerous occasions its

experience with schools, parks, and playgrounds across the state. Meridian provides services including **irrigation main design**, site design, utility design, grading and drainage plans, construction phasing, storm drain design and reports, sewer extension and connections, construction site report reviews, record drawings, etc. Nichole Luthi is the Project Manager on parks and recreation projects, and she has personally managed over a hundred civil design projects in the intermountain region. She will work in conjunction with In-Site Landscape Design to complete Parks and Recreation projects.

Some recent Parks and Recreation projects include:

- Lone Peak Tennis Courts, Parking Lot
- Grovecrest Elementary School Replacement, Playgrounds
- Lehi High School Baseball Field, Football Bleachers, Concessions Stand
- Sage Hills Elementary Sidewalk, Detention Basin
- Harmony Park Restoration
- Fox Hollow Golf Course Clubhouse, Entry
- Riverside Country Club
- Alpine Country Club
- Sage Vista Park
- Legacy Farms Park

Transportation

Meridian's management team and design staff have extensive experience in all aspects of transportation services including roadway design, traffic signal design, trail design, roundabout modeling and design, pavement preservation and rehabilitation, ATMS, drainage, utility design & coordination, MOT, specification preparation, cost estimating, etc. Ryan Nuesmeyer recently joined the Meridian team and brings additional project experience that expands the breadth and depth of Meridian's transportation capabilities.

Some of Ryan's recent projects include

- SR-186; Beck Street to North Temple
- Spanish Fork River Trail
- Washington Blvd. Mid-Block Crossing
- Pleasant View 2550 Pedestrian Improvements
- Draper Lone Peak Parkway Signal

Drinking Water

Meridian has decades worth of experience in drinking water systems. This expertise includes distribution services 8" to 12"; transmission lines 12" to 24"; site metering, back flow, and RRV systems; well pumping systems and connection to supply; water system master planning; etc.



Meridian's recent experience, specifically with drinking water, includes:

- MTC Expansion
- Blue Sky Development
- Fairbourne Station
- BYU East Campus Renovation
- BYU South Campus Relocation
- BYU Laundry Complex
- Eagle Mountain High School
- University of Utah Housing Complex
- BYU Heritage Housing Complex
- University Parkway and 900 East Extensions

Leadership and Management

Meridian's corporate organization is structured to deliver outstanding management and leverage technical strengths. Randall Vickers will be the single Point of Contact with Saratoga Springs and will be responsible for the delivery of the project.

Meridian feels that leadership and management of our internal team is a vital component of providing a quality design to our client and the development of our design staff. Our Project Managers are an integral part of the project team: they work closely with our design engineers to collaborate on project decisions and coordinate on the schedule and budget. Meridian utilizes project management software that aids our Project Managers in monitoring progress and budget. We use this information to make proactive corrective adjustments to ensure projects are delivered on time and within budget.

Collaboration and Communication

Meridian's organization defines clear reporting responsibilities between management and the technical levels of the project. These lines of communication are important for defining assignments, making decisions, resolving issues, and providing the structure needed to support the efficient operation of Meridian's design team.

Meridian understands the importance of maintaining communication through the transition from design to construction. During design, Meridian records information about key project decisions and completes meeting minutes for each project team meeting. This documentation allows us to provide design support during construction and convey the details surrounding decisions made during design.

Work Quality

Meridian has in place Quality Control and Quality Assurance (QC/QA) procedures which it follows for every deliverable. The QC/QA Manager, Brad

Mortensen, personally reviews each item before it is presented to the client.

Commitment

Meridian values our clients and we are committed to the success of our projects in terms of providing a constructible design that meets expectations. We manage all our projects in a manner consistent with our commitment and ensure adequate resources are assigned to accommodate project workloads.

Computer and CADD

Meridian Engineering has a fully equipped office that includes Computer Aided Drafting & Design (CADD) stations, plotters, printers, and copiers, along with the hardware and software required to succeed in today's engineering environment.

Meridian's standard CADD design software includes MicroStation, InRoads, and OpenRoads for supporting design projects. Our staff is experienced with 3D modeling and routinely employs AutoCAD Civil 3D for supporting our local government and private clients.

Topographical Survey & LiDAR

Meridian utilizes state-of-the-art equipment for its survey crews. Meridian operates multiple Trimble GPS receivers along with a subscription to TURN GPS (The Utah Reference Network GPS) managed by the State of Utah through the AGRC (Automated Geographic Reference Center) to provide real-time latitude and longitude anywhere in Utah.

In addition to traditional surveying technologies, Meridian employs the latest in LiDAR technologies. Meridian recently used LiDAR to survey overhead signs on multiple interstates. Using LiDAR for this project improved safety by keeping our surveyors out of traffic and gathered additional information that aided in design (e.g. retroreflectivity, exact sign dimensions, structure information, etc.).

ROW Documentation, Automation, & GIS

To support our design projects, Meridian utilizes our own proprietary right-of-way database and document automation process to manage and produce right-of-way ownership records, deeds, and easements for acquisition. Our ability to correlate right-of-way and ownership data with ESRI ArcGIS assists us in identifying parcel priorities and tracking their status. This allows delivery of right-of-way design, documents, and maps with the highest level of quality even under the most demanding schedules.

Cost Control Measures & Quality Assurance

Budget Management

Meridian is keenly aware of the critical nature of monitoring the project budget through delivery. We know every dollar counts and our experience has shown schedule control is the best way to keep a project within budget. Meridian is committed to maintain the baseline schedule and deliver projects within our proposed budget.

Schedule Management

Meridian develops realistic project schedules utilizing MS Project for delivering projects on-time and within budget. Meridian also recognizes the importance of keeping the UDOT Project Management Office (PMO) website up to date to accurately reflect project progress. We monitor key milestones on the critical path and the Project Manager reviews schedules with the project team weekly. Any discrepancies from the baseline schedule are addressed and corrective action is taken. During this time, Meridian is in constant communication with the Department's Project Manager to keep them apprised of project progress and details.

Quality Assurance

Recognizing the importance of Quality Control and Quality Assurance (QC/QA), Meridian has developed a company philosophy that every deliverable (regardless of how large or small) go through a complete QC/QA review. Meridian's QC/QA process is based on the UDOT QC/QA Documentation Standards. As a result, all documents and design elements are formally reviewed prior to each milestone and the documentation of that QC/QA review (redlines, checklists, etc.) are saved in the UDOT ProjectWise system before each milestone meeting.

Meridian has a QC/QA Manager on staff, whose sole purpose is to review all deliverables. Brad Mortensen is a professional engineer and surveyor with over 24 years of experience in the fields of engineering and surveying. With this experience, Mr. Mortensen has developed into an experienced and well qualified QC/QA Manager. Mr. Mortensen brings a wealth of knowledge to all aspects of engineering and surveying, while grounded knowledge in QC/QA principles.

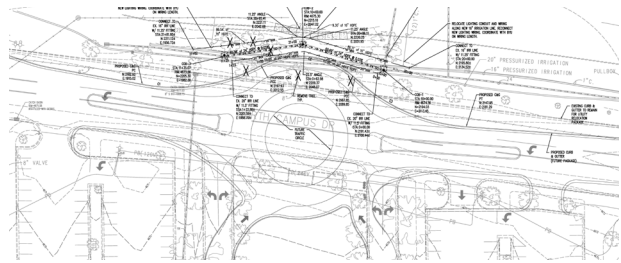


BYU Front Entrance Roundabout

East Campus Road Relocation

Brigham Young University

Meridian designed 12" and 8' water line extensions along 900 East and University Parkway to connect the new MTC expansion to a new 20" Provo City water main. Design included a new 10" water meter system, 10" pressure reducing station, and 12" back flow system connection to the new city water system expanded to the MTC. Water line design included plan and profiles reflecting the numerous utilities in both major roadways that had to be avoided with the new water system extension. Coordination with crossing the BOR easement in 900 East was required as part of the water line design, as well as potholing data that was collected for the installation of these new lines and the 66" BOR line in 900 East.

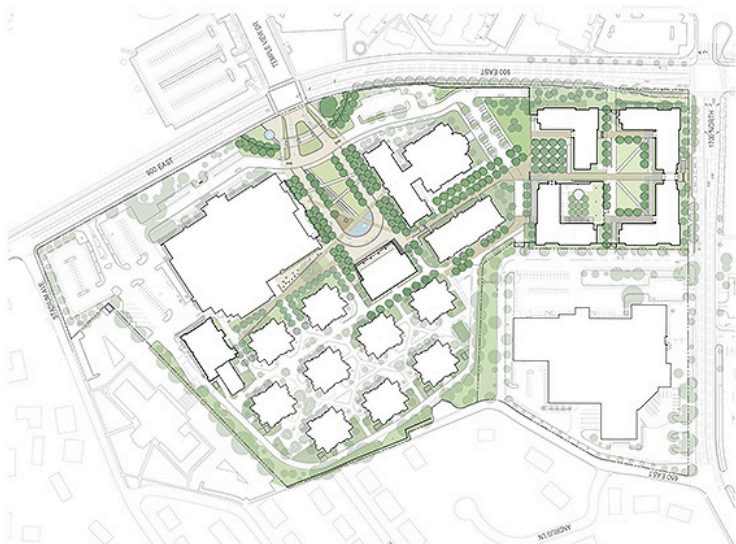


Sanitary Sewer	<input checked="" type="checkbox"/>
Storm Drain	<input checked="" type="checkbox"/>
Drinking Water	<input checked="" type="checkbox"/>

MTC Expansion

The Church of Jesus Christ of Latter-day Saints

Meridian completed the design and construction-period services to relocate South Campus Drive at BYU. The relocation included moving the utilities in the existing roadway to the new location. New work included relocation of 700 LF buried concrete utility tunnel (7'x7'), 1400 LF of 12" chilled water line relocation, 900 LF of 8" water line, 1400 LF of 15" to 18" storm drain, and sanitary sewer relocation into the new roadway as well as an acid waste system relocation using specialized acid-resistant piping. Design included providing temporary access to surrounding buildings during construction and phasing demolition and reconstruction to maintain utility services with minimal disruptions to the entire southwest corner of the campus.

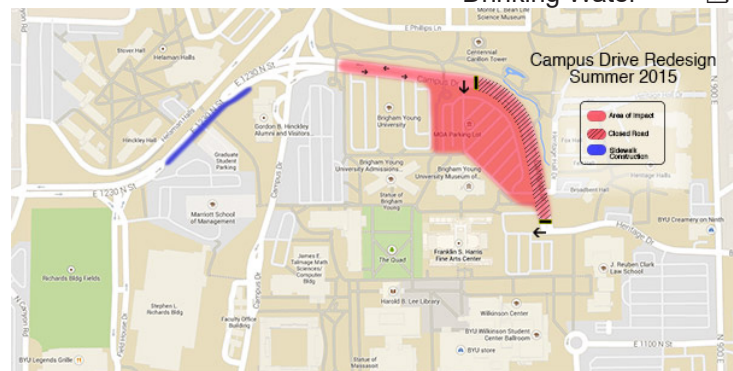


Sanitary Sewer	<input checked="" type="checkbox"/>
Drinking Water	<input checked="" type="checkbox"/>

South Campus Drive

Brigham Young University

Meridian completed the design and construction-period services for the utility location required for the East Campus Road relocation. Design included replacing the existing 20" Provo City line through campus with a new 12" water line (2000 LF) supplied with a new 12" meter and 8" meter with backflow devices from a new 20" Provo City main. The new water line included switching over a number of fire and domestic water service systems to the new 12" water main while maintaining service to



Sanitary Sewer	<input checked="" type="checkbox"/>
Storm Drain	<input checked="" type="checkbox"/>
Drinking Water	<input checked="" type="checkbox"/>

adjacent buildings, connection of two new meter connection vaults including separate back flow devices, and abandonment and disconnection of the 20" system through campus. The work also included new 15" through 24" (3500 LF) storm drain collection and piping to direct drainage from new roadways and parking to alleviate drainage issues from a large impervious area of campus. The new drainage system included 16 new collection points to split up the new system from the existing drainage system in the area.

Provo City Center Temple Grounds

The Church of Jesus Christ of Latter-day Saints

Parks & Recreation ☒

ISDG provided a turnkey solution for this project. ISDG provided the site design including layout and design of walkways, fencing, curb and gutter, parking lot, seat walls, raised planters, stairs, handrails, stone dumpster enclosure with metal gate, brick veneer perimeter wall around maintenance building, stone veneer for walls and wall caps, custom fountain design including original artwork for fountain casting, selection of all site furnishings including light poles, bollards, benches, trash receptacles, etc. ISDG also designed the roof top garden including the geo foam and soils plan, planting and irrigation plans, construction details and written specifications. ISDG provided on-site construction management during the course of construction.



Creekside Park

Alpine City

Parks & Recreation ☒

This park is a 22.5 acre park located in Alpine, Utah. Design elements included Parking Lots, Multiple playgrounds, Basketball Court, Picnic Areas, Tennis Courts, Jogging/Walking Path, Skate Architecture Area, Racquetball Court, Volleyball Court, Maintenance Facilities, Restrooms and Multiple Pavilions. There is a large detention basin incorporated into the design of this park. We worked on a team with a civil engineer to take this project from concept design through bid documents. ISDG's scope: Revised Existing Concept, Produce Master Plan, Splash Pad Design, Irrigation Design, Complete Landscape Design and Construction Documents, Cost Estimates, Specifications, Color Renderings, 3D renderings, City meetings and presentations, partial grading and drainage (the utility and civil work was performed by Epic Engineering whom we worked as a subconsultant for.)

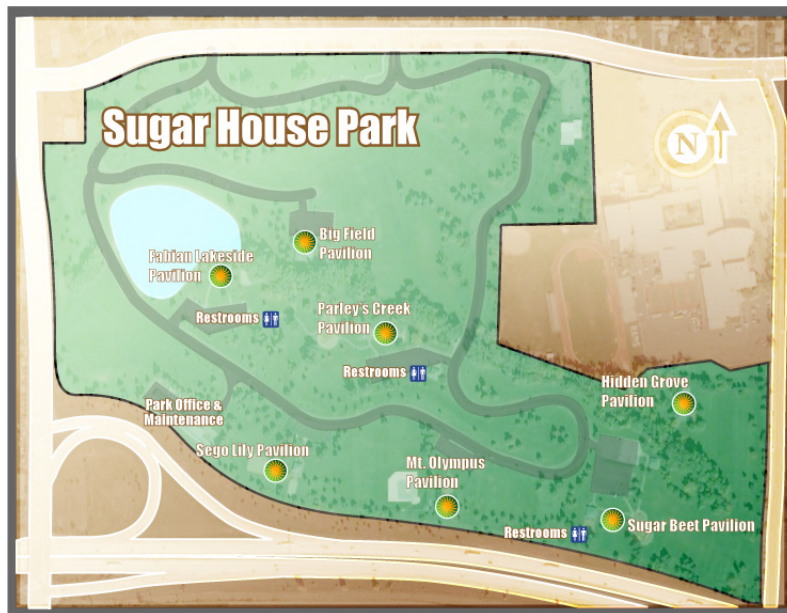


Sugarhouse Park

Sugarhouse City

Sanitary Sewer	<input checked="" type="checkbox"/>
Storm Drain	<input checked="" type="checkbox"/>
Parks & Recreation	<input checked="" type="checkbox"/>
Irrigation Water	<input checked="" type="checkbox"/>

Meridian designed two new restroom facilities at Sugarhouse Park. Meridian provided the design of new waterline, sewer line, and gas lines to service the new buildings. The close approximation to Parley's Creek required close coordination with Salt Lake County Flood Control.



Harmony Park

South Salt Lake City

Storm Drain	<input checked="" type="checkbox"/>
Parks & Recreation	<input checked="" type="checkbox"/>
Irrigation Water	<input checked="" type="checkbox"/>

Meridian designed the new storm water detention basin and drainage plans at Harmony Park. Meridian provided hydrological analysis and repair for remediation of existing storm water flooding on site.



Capitol Signal—SR-186; Beck Street to North Temple

Utah Department of Transportation

Storm Drain ☒
 Transportation ☒

This roadway resurfacing project included a new traffic signal and aesthetic improvements near the state capital, which together, increased safety, accessibility and maintained regional mobility along SR-186 for residents, State Capitol employees and visitors. The project team partnered with community members to preserve the historic aesthetic elements surrounding the Capitol. A signal at 500 North and Columbus Street, multiple crosswalks, landscaped medians, and a bike lane along 500 North and East Capitol Boulevard improved bicyclist and pedestrian safety throughout the project area.



Given the historic area and aesthetic impacts of placing a new traffic signal adjacent to the state capitol, the project team was tasked with matching the custom signal pole and mast arms of a nearby signal. Ryan coordinated with steel suppliers and manufacturer's to match the existing steel and provide a context-sensitive solution to make the necessary transportation improvements while balancing the aesthetic impacts to the surrounding community.

PROTRIP

Utah Transit Authority

Transportation ☒

Hales Engineering completed the traffic analysis and design support for the Provo Orem Transportation Improvement Project (PROTRIP). Hales Engineering used VISSIM modeling software to complete a detailed analysis of the Bus Rapid Transit (BRT) corridor including transit signal priority, dedicated bus lanes, bus stops, and mixed flow traffic. The analysis completed by Hales Engineering provided details to the design team including lane configuration, transit signal priority recommendations, turn pocket lengths, travel times and bus route/stop recommendations. The project involved extensive coordination with UTA, UDOT, Orem City, Provo City, and BYU. The project is currently under construction.

