SERVICE PREQUALIFICATION CLASSIFICATIONS AND DESCRIPTIONS

Construction Services

Construction Engineering: Assistance
Technical Evaluator: Mike DeBoer

Provide road and bridge & ancillary structure engineering assistance, for project development and construction on new and rehabilitation projects. This includes, but is not limited to: construction project records review; contractors claim procedures, documentation and reviews; developing or reviewing "Critical Path Networks" for progress clauses and progress schedules; evaluating value engineering proposals; development of special contract language or specification writing; grading & drainage construction; traffic and safety (signs, signals, guardrail, etc.) projects; utility coordination work; measurements, reporting, computations, documentation and payment of quantities; reporting & record keeping; full adherence with all MDOT & FHWA regulations; meeting all Federal Aid project requirements, and closing out the project in a timely manner with all required project documentation complete.

Construction Engineering: Bridges & Ancillary Structures
Technical Evaluator: John Belcher

Provide construction engineering, project construction administration/oversight, and overall project management on new and rehabilitation bridge and ancillary structure projects. This includes overall project administration; oversight of all inspection/quality assurance testing/measurement, reporting, computation, and documentation of quantities; reporting & record keeping; full adherence with all MDOT & FHWA regulations; meeting all federal aid project requirements; and closing out the project in a timely manner with all required project documentation complete. Complete oversight and responsibility for administration of construction engineering projects meeting all MDOT and Federal requirements for final acceptance by the Project and Construction Engineering Services by the Department. Includes, but is not limited to, the following types of construction activities:

- Bridge Construction, Rehabilitation and Preservation
- Overhead Sign Truss and Cantilever Construction
- DMS Sign Construction
- Signal Strain Pole and Mast Arm Foundation Construction
- Light Standard and High Mast Luminaire Foundation Construction
- Earth Retaining Structure and Sound Wall Construction
- Pump Station Construction and Rehabilitation
- All other freeway appurtenances that require deep foundations

Construction Engineering: Roadway
Technical Evaluator: Mike DeBoer

Provide road construction engineering, project construction administration/oversight, and overall project management on new and rehabilitation road projects. This includes overall project administration; oversight of all inspection/quality assurance testing; measurements, reporting, computations, documentation and payment of quantities; reporting & record keeping; full adherence with all MDOT & FHWA regulations; meeting all federal aid project requirements, and closing out the project in a timely manner with all required project documentation complete. Complete oversight and responsibility for administration of road construction projects meeting all MDOT and Federal requirements for final acceptance of the Project/construction engineering services by the Department.

Construction Engineering: Roadway – Local Agency
Technical Evaluator: Mike DeBoer

Provide road engineering, project construction administration/oversight, and overall project management on new and rehabilitation Federal Aid Local Agency projects. This includes overall project administration; oversight of all inspection/quality assurance testing; measurements, reporting, computations, documentation and payment of quantities; reporting & record keeping; full adherence with MDOT & FHWA regulations; meeting all federal aid project requirements, and closing out the project in a timely manner with all required project documentation complete. Complete oversight and responsibility for administration of projects meeting all MDOT and Federal requirements for final acceptance of the Project/construction engineering services by the Department

Construction Inspection: Bridge Painting
Technical Evaluator: John Belcher

Provide inspection services for partial or full structural steel cleaning and coating operations for bridges. Services include, but are not limited to:

- Inspection and verification of protection of work and environment during cleaning operations, and all required project documentation
- Ensuring appropriate SSPC levels of cleanliness prior to coating
- Ensuring appropriate application and curing of primer, intermediate, and urethane topcoats
- Proper preparation of faying surfaces and connections

Construction Inspection: Bridges & Ancillary Structures
Technical Evaluator: John Belcher

Provide construction inspection services on new and rehabilitation bridge and ancillary structures projects. This includes performance of all inspection/quality assurance testing; measurement, reporting, computation, and documentation of quantities; reporting & record keeping; full adherence with all MDOT & FHWA regulations; and finalizing of all project documentation in a timely manner; for construction work to be performed and completed by the Construction Contractor, and final acceptance of the Project/construction engineering services by the Department. Includes but is not limited to the following activities:

- Bridge Construction, Rehabilitation and Preservation
- Overhead Sign Truss and Cantilever Construction
- DMS Sign Construction
- Signal Strain Pole and Mast Arm Foundation Construction
- Light Standard and High Mast Luminaire Foundation Construction
- Retaining Wall and Sound Wall Construction
- Pump Station Construction and Rehabilitation
- All other freeway appurtenances that require deep foundations

Construction Inspection: HMA Pavement
Technical Evaluator: Kevin Kennedy

Provide bituminous pavement inspection services including but not limited to:

- Yield calculations and temperature checks
- Width and alignment checks
- Joint layouts
- Visual inspection for the pavement mat
- Slope and grade checks
- Sampling and core location determination

Construction Inspection: Roadway
Technical Evaluator: Mike DeBoer

Provide road construction inspection on new and rehabilitation road projects. This includes all inspection/quality assurance testing; measurements, reporting, computations, documentation and payment of quantities; reporting & record keeping; full adherence with all MDOT & FHWA regulations; meeting all federal aid project requirements, and closing out the project in a timely manner with all required project documentation complete. Meeting all MDOT and Federal requirements for final acceptance of the Project/construction engineering services by the Department.

Construction Inspection: Traffic & Safety
Technical Evaluator: Chris Brookes

Construction inspection services to inspect for proper placement, uniformity, and operation of traffic control and safety devices. This includes inspection of pavement markings, temporary traffic signal support structure, signing, guardrails, impact attenuators, work zone traffic control operations, etc.

Construction Services: Office Technician
Technical Evaluator: Mike DeBoer

Provide Office Technician services, on new and rehabilitation road and bridge & ancillary structure projects. This includes overall project administration; oversight of all inspection/quality assurance testing; measurements, reporting, computations, documentation and payment of quantities; review certified payrolls and other documentation to determine prevailing wage compliance: reporting & record keeping; full adherence with all MDOT & FHWA regulations; meeting all federal aid project requirements, and closing out the project in a timely manner with all required project documentation complete. Complete oversight and responsibility for administration of projects meeting all MDOT and Federal requirements for final acceptance of the Project/construction engineering services by the Department

Construction Testing: Aggregates
Technical Evaluator: John Staton

Provide quality assurance (QA) sampling, testing of **unbound** aggregates representing that which is to be taken from an aggregate stockpile at either the source or project site, or on the grade including but not limited to:

- Granular fill (Level 1)
- Sub-base (Level 1)
- Base (Level 1)
- Concrete aggregates (Level 2)
- Chip Seal aggregates (Level 2)
- Bituminous aggregates (Level 1)

Aggregate testing certification should be included in all projects where acceptability of the item of work is contingent on the quality and suitability of the unbound aggregate, as specified by the contract documents.

Note: *Recent changes to the Michigan Certified Aggregate Testing (MCAT) Program define two levels of certification, depending on the nature of sampling and testing proficiency required for the application (Level 1 or Level 2). All current MCAT certifications will continue in effect until the expiration date. The equivalency between the new system and old system is: Level 1 = Endorsements A, B, & C; Level 2 = Endorsements D & E.*

Construction Testing: Concrete
Technical Evaluator: John Staton

Provide quality assurance (QA) sampling, testing and inspection of fresh Portland cement concrete for concrete elements including, but not limited to:

- Concrete Pavements
- Bridge substructure and superstructure
- Bridge approach
- Sidewalks, curb and gutter
- Signposts and sign/signal foundations
- Cable guardrail foundations
- Drilled shafts and other concrete foundations

Construction Testing: Density
Technical Evaluator: Dave Gauthier

Construction testing services to perform density and inspection. Services include but are not limited to:

- Bridge construction, replacement or widening
- Retaining wall construction
- Culvert replacement or extension
- Road or shoulder construction
- Structure back-fill
- Subbase, aggregate base or aggregate surface course work
- Crush and shape
- Road widening and grade raise or lowering
- Utility Work: storm sewer, sanitary sewer, water main, drainage structures, etc.
- Drainage improvements
- Underdrain work
- Curb and gutter work
- Sidewalk: New or Rehabilitation
- Embankment construction

Construction Testing: HMA
Technical Evaluator: John Barak

Construction testing services to perform HMA testing and sampling in a certified consultant laboratory.

Construction Testing: HMA Assistance
Technical Evaluator: John Barak

Construction testing services to perform HMA testing and sampling utilizing MDOT facilities and laboratory equipment.

Design Services

Design - Bridges
Technical Evaluator: Brad Wagner

Single and multi-span bridges; span lengths to 300 feet.

- Includes small span straight girder bridges and precast culverts

Design - Bridges: Complex
Technical Evaluator: Brad Wagner

Single and multi-span bridges with factors that increase the complexity of a project such as:

- Curved Girders
- Long spans – over 300 feet
- Steel box girders, trusses, or arch bridges
- Concrete segmental structures

Design – Bridges: Load Rating
Technical Evaluator: Daniel Yalda

Perform bridge load rating analysis in conformance with National Bridge Inspection Standards (NBIS) and MDOT policies and procedures. The load rating analysis consists of calculating the Federal Inventory, Federal Operating and Michigan Operating ratings, including load posting requirements and Michigan Overload Class. Bridge load rating analysis is required for the following work types:

- New structure
- Bridge or culvert replacement
- Superstructure replacement
- Deck replacement or widening
- Bridge barrier railing replacement
- Pin and hanger replacement
- Shallow or deep overlay
- Miscellaneous work that could affect the structural capacity

Design – Bridges: Moveable Span
Technical Evaluator: Jeremy Vanlerberg

Complete structural, electrical, and mechanical designs of Moveable Span Bridges. Bridge types include:

- Lift
- Swing
- Bascule

Design - Bridges: Railroad
Technical Evaluator: Brad Wagner

Bridges carrying railroads over roadways

Design – Bridges: Safety Inspections
Technical Evaluator: Brian Zakrzewski

Provide bridge safety inspection services in accordance with the National Bridge Inspection Standards (NBIS) and MDOT procedures. This prequalification is for "routine inspection" as defined by the NBIS, 23 CFR 650.305

Design – Bridges: Safety Inspection - Underwater
Technical Evaluator: Brian Zakrzewski

Provide underwater bridge safety inspection services using divers to assess submerged components of bridge structures in accordance with the National Bridge Inspection Standards (NBIS) and MDOT procedures. This prequalification is for "underwater inspection" as defined by the NBIS, 23 CFR 650.305

Design – Bridges: Scoping
Technical Evaluator: Kelly Davis

Bridge project scoping includes:

- Perform a detailed physical inspection of the bridge(s)
- Collect rehabilitation quantities for specific areas in need of repair
- Evaluate various repair alternatives
- Develop cost estimates for repair work
- Recommend the optimum rehabilitation or preservation activities
- Write and submit a report that adequately conveys the above information

Design - Buildings
Technical Evaluator: Kristin Schuster (interim)

Design services for complete building design including all architectural, structural, mechanical and electrical components. Projects may include:

- Toilet rooms
- Rest areas/welcome centers
- Pump station structures (Design, Buildings prequalification does not guarantee Design, Utilities, Pump Station prequalification)
- Transit stations
- Pavilions and shelters
- Miscellaneous buildings associated with Transportation operations

Design – Geotechnical
Technical Evaluator: Ryan Snook

Design engineering to provide geotechnical recommendations for routine roadway projects. This work includes, but not limited to, the following:

- Subsurface exploration, with in-situ and laboratory strength and classification testing to characterize pavements, base, subbase, and subgrade materials,
- Delineation of frost susceptible and/or unsuitable soils for removal by undercut, or routine method A swamp treatment using MDOT standard plan,
- Engineering analysis for design of pavements,
- Geotechnical engineering analysis for drainage features including underdrains, bank drains, ditches, culverts, sewers, wetlands, and detention and retention ponds,
- Design of construction excavations,
- Foundation design recommendations based on Standard Plans for highway appurtenances including strain poles, cantilever and truss signs, and cable median guard rail.

This prequalification classification should not be used if very soft cohesive soil, or organic soils are to be improved (not removed). Furthermore, do not use if penetration of shallow foundations into shallow rock is anticipated. If any of the aforementioned soil types are anticipated then the prequalification classification Design, Geotechnical, Advanced should be used.

Design Geotechnical: Advanced
Technical Evaluator: Ryan Snook

Design engineering to provide geotechnical analyses and recommendations for complex projects including subsurface exploration, in-situ soil testing, laboratory strength and classification testing, structure foundations, specialty slopes, pump stations, geotechnical instrumentation, deep cut and high fill sections, embankments over soft soil, deep swamp treatments, ground improvements, dewatering systems, retaining walls over 4 feet tall, tunnels, deep sewers, and non-standard foundations for highway appurtenances.

Design - Hydraulics I
Technical Evaluator: Elizabeth McCann

Provides the hydraulic design and analysis of non-depressed roadways and / or drainage courses with drainage areas smaller than two (2) square miles on projects including but not limited to:

- Storm sewer design
- Watershed hydrology
- Culvert hydraulic sizing
- Basic project drainage studies

Design – Hydraulics II
Technical Evaluator: Elizabeth McCann

Provides the hydraulic design and analysis for depressed roadways and / or drainage courses with drainage areas greater that two (2) square miles on project including but not limited to:

- Bridge / culvert hydraulic sizing
- Pump station and / or inverted siphon analysis
- Water surface profile modeling
- Bridge scour analysis
- Scour countermeasure design
- Detention / retention sizing
- Storm sewer design
- Stormwater best management practice design
- Corridor drainage studies

Design - Roadway
Technical Evaluator: Gary Mazurek

3R (Rehabilitation) work on roadways consisting of but not limited to:

- No ROW impacts
- No significant geometry changes
- Minor utility impacts
- Minor drainage work
- Minor grading

Example projects may include: Mill and resurface; bridge approach work; concrete joint repair; minor safety upgrades; shoulder widening; shoulder paving

Design – Roadway: Complex
Technical Evaluator: Gary Mazurek

3R(Rehabilitation)/4R(Reconstruction) work on roadways consisting of but not limited to:

- Major ROW impacts
- Major geometry changes or new complex alignments
- Highly restrictive site conditions
- Major utility impacts
- Extensive drainage work
- Major grading

Example projects may include: Interchange construction/reconstruction; grade separations; freeway or non-freeway reconstruction in an urban area or central business district; and new drainage systems

Design – Roadway: Intermediate
Technical Evaluator: Gary Mazurek

3R (Rehabilitation)/4R(Reconstruction) work on roadways consisting of but not limited to:

- Minor ROW impacts
- Minor geometry changes or new alignments
- Restrictive site conditions
- Moderate utility impacts
- Significant drainage work
- Moderate grading

Example projects may include: Resurfacing or pavement reconstruction, superelevation/crown corrections, addition of lanes, intersection reconstruction, storm sewer replacements, and ditching

Design – Traffic: Capacity & Geometric Analysis
Technical Evaluator: Imad Gedaoun

Services to provide operational analysis including but not limited to capacity analysis. Provide expertise to make recommendations on geometric elements addressing the design exception elements, access management, intersection, interchange, and freeway improvements and/or upgrades.

Note: *All 4R and some 3R work (i.e. intersection and interchange improvements) requires this prequalification classification*

Design - Traffic: ITS – Design & System Manager
Technical Evaluator: Collin Castle

Design of Intelligent Transportation System (ITS) devices including power and communications infrastructure, and System Manager Services for their implementation.

Design – Traffic: Pavement Markings
Technical Evaluator: Mary **Bramble**

Design work for permanent pavement markings on freeways, highways, streets, airports and parking lots. Includes longitudinal markings, legends, and symbols. Permanent pavement marking design will be required for projects consisting of, but not limited to:

- Mill & resurface
- Roadway Reconstruction
- CPM Projects
- Road diets
- Alignment changes
- Other projects that result in the removal of existing permanent pavement markings

Design – Traffic: Safety Studies
Technical Evaluator: Heidi Spangler

Design services to evaluate the safety performance of roadways. These services may include, but are not limited to the following:

- Crash analysis encompassing statewide and local intersection surveillance
- 3R/4R safety reviews
- Corridor safety reviews
- Corridor safety studies
- Deer crash analysis
- Motor carrier safety analysis
- Project improvement effectiveness analysis
- Litigation data assistance
- RSA

Note: *MDOT requires a safety analysis on all 3R and 4R projects and some CPM*

Design – Traffic: Signal
Technical Evaluator: Erik Smalley

This service consists of but is not limited to design services of electronic/electrical devices including:

- Traffic signals
- Detection methods (embedded/wireless loops, cameras, microwave)
- Interconnect methods (wireless, hardwire and fiber optic)
- Pedestrian facilities (pedestrian indications, pedestrian pushbuttons, audible pedestrians, HAWK signals, Rectangular Rapid Flashing Beacons (RRFB), ADA compliant sidewalk ramps)
- Overhead flashing beacons
- Sign opticals
- Modifications to existing or temporary traffic signal devices to accommodate maintenance of traffic (detours, intersection widening, part-width construction of bridges) during construction
- New technology as adopted by MDOT for use

Design – Traffic: Signal Operations
Technical Evaluator: Doug Adelman

Traffic signal design services requiring signal timing permits for a maximum of three traffic signals. The services include but are not limited to:

- Design and construction projects with traffic signals within the project limits
  - Construction Staging
  - Installing new or modifying existing pedestrian facilities
  - Traffic Signal installation or modification
- Traffic operations studies
  - Studies include existing or proposed electronic traffic control devices
  - Traffic impact studies

Design – Traffic: Signal Operations – Complex
Technical Evaluator: Doug Adelman

Traffic signal design services requiring signal timing permits for four (4) or more traffic signals. The services include, but are not limited to:

- Design and construction projects with traffic signals within the project limits
  - Construction staging
  - Installing new or modifying existing pedestrian facilities
  - Traffic signal installation or modification
- Traffic operations studies
  - Studies including existing or proposed electronic traffic control devices
  - Traffic impact studies
  - Signal Optimization Studies

Design – Traffic: Signing - Freeway
Technical Evaluator: Alonso Uzcategui

Design engineering for permanent signs located on freeways

Design – Traffic: Signing - Non-Freeway
Technical Evaluator: Alonso Uzcategui

Design engineering for permanent signs located on all roadways, excluding freeways

Design – Traffic: Work Zone Maintenance of Traffic
Technical Evaluator: Chris Brookes

Design engineering to develop temporary traffic control plans (TTCP) and Special Provisions.

Note: *This classification does not include mobility analyses or complete Transportation Management Plans (TMP) for projects with "significant" impacts on mobility. For all TMP activities other than the TTCP, use "Design – Traffic: Work Zone Mobility & Safety".*

Design - Traffic: Work Zone Mobility & Safety
Technical Evaluator: Chris Brookes

Design engineering to perform mobility analyses on an in-depth Transportation Management Plan (TMP) for projects with impacts on mobility, as defined per the most current version of the Work Zone Safety and Mobility Manual.

Design - Utilities: Municipal
Technical Evaluator: Kristin Schuster (interim)

Design of Water Main Systems and Sanitary Sewer

Design - Utilities: Pump Stations
Technical Evaluator: Kristin Schuster (interim)

Pump station design including structural hydraulics and hydrology, mechanical, electrical, HVAC and all other disciplines required for the complete design of a pump station.

Design - Utilities: Roadway Lighting
Technical Evaluator: Kristin Schuster (interim)

Lighting on the roadway including:

- Conventional
- Median
- Tower/high mast
- Tunnel
- Under bridge

Design - Utilities: Subsurface Utility Engineering
Technical Evaluator: Nick Lefke

Design services to provide Subsurface Utility Engineering (SUE) office and field work which accurately locates, identifies, characterizes, and maps underground utilities. Vendor must be capable of providing SUE services at Utility Quality Levels A and B.

Landscape Architecture
Technical Evaluator: Kristin Schuster (interim)

Design Services for MDOT projects including planting design, site restoration and community oriented design using Context Sensitive Solutions. Design services may include:

- Planting design, tree replacements and native plant establishment
- Slope stabilization and site restoration
- Streetscapes, greenways and placemaking
- Rest area sites and roadside parks
- Pedestrian and bicycle facilities, river-walks and trails
- Sustainable landscapes, green streets, green infrastructure & drainage
- Aesthetic Design Guide development

Design: Project Development Studies
Technical Evaluator: Tom Hanf

Services to provide location/design/engineering studies of alternatives that are evaluated in conjunction with social, economic and environmental effects to determine the selection of an alignment and design features.

Design: Value Engineering Facilitator
Technical Evaluator: Dina Tarazi

Value Engineering (VE) is defined as a systematic process of review and analysis of a project, during the concept and design phases, by a multidiscipline team of persons not involved in the project that is conducted to provide recommendations for:

- Providing the needed functions safely, reliably, efficiently, and at the lowest overall cost
- Improving the value and quality of the project
- Reducing the time to complete the project

Note: *This classification is frequently coupled with various Design prequalification classifications. Contingent on project specifications, team requirements will be detailed in Request for Proposal.*

Design: Wetlands
Technical Evaluator: Kristin Schuster (interim)

Design services for MDOT projects including wetland planting design and wetland restoration. Services include but are not limited to:

- Hydraulic and hydrologic studies/models
- Wetland engineering including water control structures, and water budget development/evaluations
- Wetland plant selection and planting plans
- Habitat restoration
- Site grading and drainage plans
- Cost estimating for wetland implementation

Environmental Services

Environmental: Archaeology - Historic
Technical Evaluator: James Robertson

Environmental services including preparation of historic archaeological research designs and land-use histories, Phase 1 Archaeological Surveys of historic archaeological sites, Phase 2 National Register Evaluations of historic archaeological sites, and Phase 3 Data Recovery Investigations of historic archaeological sites.

Environmental: Archaeology, Prehistoric
Technical Evaluator: James Robertson

Environmental services including preparation of prehistoric archaeological research designs, Phase 1 Archaeological Surveys of prehistoric archaeological sites, Phase 2 National Register Evaluations of prehistoric archaeological sites, and Phase 3 Data Recovery Investigations of prehistoric archaeological sites.

Environmental: Botanical
Technical Evaluator: David Schuen

Botanical and endangered plant assessment includes:

- Perform field surveys to identify all plant species present throughout Michigan, assess their population size, describe their critical habitat, its size and quality and use this information to perform impact analysis for the proposed project.
- Document species and habitats through the use of MNFI plant and community field forms, photographs and GPS point/polygon data in a manner adequate to facilitate Michigan Department of Natural Resources (MDNR) endangered species permitting or U. S. Fish and Wildlife Service (USFWS) Section 7 Consultation if required.
- Perform an analysis to determine the impacts of the proposed project to the species identified and their habitat. This analysis will look at avoidance measures, minimization strategies and mitigation as a last resort.

Environmental: Contamination
Technical Evaluator: Steve Adams

Environmental Services to investigate the location and concentration of soil and groundwater contamination.

Environmental: Historic Assessment
Technical Evaluator: Lloyd Baldwin

Environmental services to perform reconnaissance level or intensive level surveys to determine the presence of historically and architecturally significant properties, assess the eligibility for the National Register of Historic Places and recommend whether or not Determinations of Eligibility are needed for important resources. In many cases, a reconnaissance level survey is used to determine if an intensive level survey is warranted. Services also include evaluating impacts of proposed projects and recommending mitigation measures as necessary.

Environmental: Noise Assessment
Technical Evaluator: Tom Hanf

Environmental services to measure and document existing noise levels at sensitive areas, predict future noise levels using FHWA criteria, and provide a comparison. Services also include determining reasonable and feasible abatement measures for impacted areas to be included in proposed projects and assisting in public involvement activities.

Environmental: Wetland Assessment
Technical Evaluator: Jeremie Wilson
Environmental services to identify wetlands by type, delineate their boundaries, assess their values and functions, assess the impact of a transportation project on the wetland, identify alternatives to taking the wetlands, and develop procedures to mitigate for any wetlands loss.

Survey Services

Surveying: Construction Staking
Technical Evaluator: Karl Brandys

Generation of staking data needed for transportation infrastructure at time of construction; verifying existing project control and supplementing horizontal and vertical survey control at time of construction; three dimensional staking and/or positioning of equipment to enable construction; alignment and right-of-way determination and staking at time of construction.

This classification is intended for the following applications:

- Engineer staking: checking design survey control on a construction site
- Construction staking of state trunklines, bridges, and associated underground utilities
- Staking of Right of Way at time of construction
- PLSS monument preservation and perpetuation activities at the time of construction

This classification is not intended for stand-alone boundary or right-of-way surveying.

Surveying: Hydraulics
Technical Evaluator: Karl Brandys

Surveying for Flood plain modeling by water surface and cross-section measurements of a watercourse, including vegetation changes and water surface elevations.

This classification is intended for the following applications:

- Supplying survey data formatted for hydraulics analysis of flood flow and scour characteristics for trunkline bridges and culverts

Note: *This classification is frequently coupled with "Surveying, Structure" for bridge over watercourse projects.*

Surveying: Right of Way
Technical Evaluator: Karl Brandys

Retracement and determination of the location of legal roadway alignments, public Right of Way and parcel boundaries; location, witnessing and perpetuation of Public Land Survey Corners.

This classification is intended for the following applications:

- Right of Way, alignment and/or property boundary location and staking in support of design activities, real estate acquisition activities, and boundary dispute resolution, as well as wetland mitigation sites and conservation easements.
- Mandatory for design projects with permanent real estate acquisition.
- Mandatory for design projects for which determination of the legal alignments and/or Right of Way location is needed.

Note: *This classification is frequently coupled with "Surveying, Road Design."*

Surveying, Road Design
Technical Evaluator: Karl Brandys

Perform topographic mapping and digital terrain modeling. Includes the establishment of project horizontal and vertical control, usually based on Michigan State Plane Coordinates, International Feet and the North American Vertical Datum 1988, to be used through survey, design and construction processes.

This classification is intended for the following applications:

- Establish project horizontal and vertical control to MDOT Design Survey Standards
- Conventional survey data acquisition, feature and terrain modeling in support of design.
- Determination of non-legal as-constructed alignments, potentially based on historical stationing
- Mobile and/or static LiDAR acquisition for design surveys

Surveying: Structure
Technical Evaluator: Karl Brandys

Observing and reporting bridge structure elements: reference points and lines, underclearances, abutments, piers; elevation of footings; elevation view and plan view presentations.

Note: *This classification is frequently coupled with "Surveying, Hydraulics" for bridge over watercourse projects.*