

## DIVISION 00: INTRODUCTORY, PROCUREMENT & CONTRACTING INFORMATION

### INTRODUCTORY INFORMATION

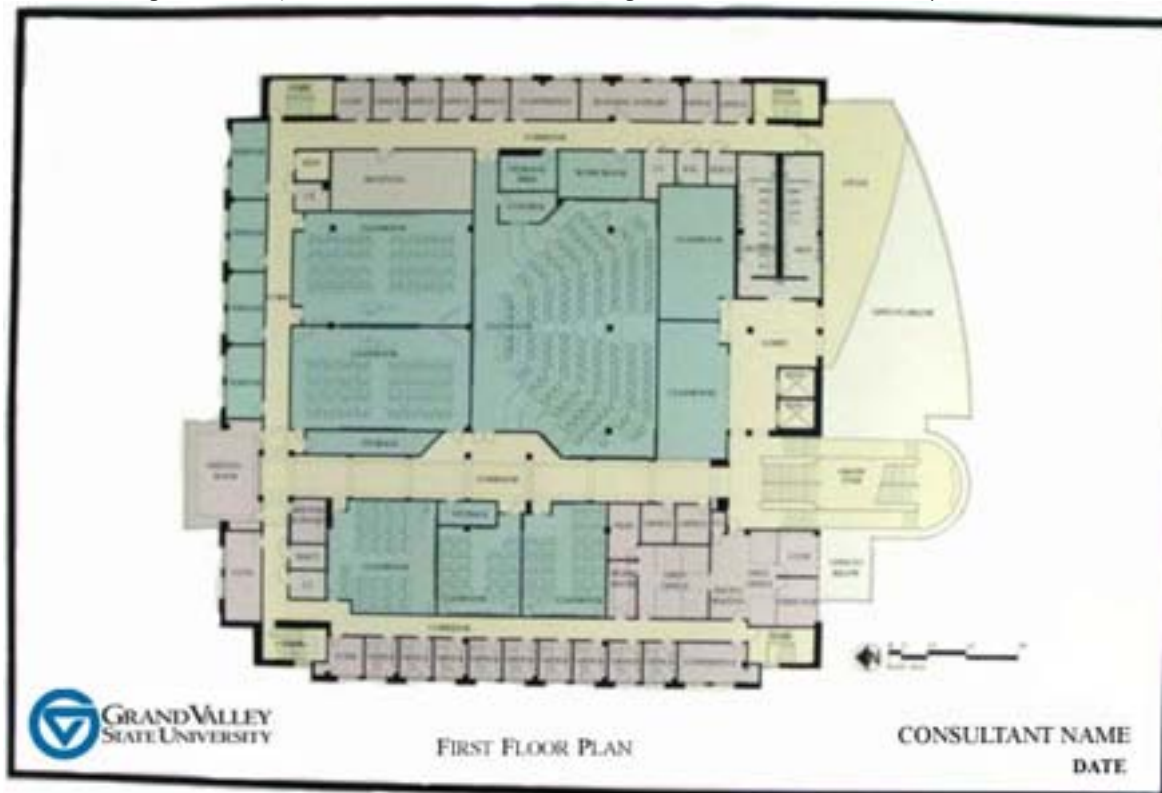
#### 00 01 00 GENERAL INFORMATION

##### 00 01 10 DOCUMENT STANDARDS

- 1 To facilitate uniformity in presentation documents and record keeping by Facilities Planning, the format of project documents are restricted as follows:

##### 00 01 11 PRESENTATION DOCUMENTS:

- 1 Standard is 24-inch high by 36-inch wide board with frame (frame is preferred if available, but if not may be frameless) graphic scale, 1/2-inch white space border, size image to fill board, project name, image description, north arrow (up or to the left), board production date, company name (to be minimum one font size smaller than GVSU logo and name), GVSU name and logo, space designations by function, color coded and/or legend (as required to illustrate new, existing, and renovation). See sample illustration below.



SAMPLE PRESENTATION BOARD

- 2 Two productions (design development stage, which shows preliminary furniture layouts) and start of construction, which shows proposed furniture layouts, three copies each. Second production to be

"colorized". Second production to be reduced to 8.5 x 11 size to allow responses to requests for publication.

- 3 Provide, at a minimum, for each project the following:
  - A - Site plan boards.
  - B - Floor plan boards. For multi-story buildings where there are typical floors, only one typical floor plan need be provided.
    - 1) 4 - Rendered exterior elevation boards.
    - 2) 4 - Rendered perspective boards (This requirement may be waived at the University's discretion).
    - 3) - Sets of all the above in 11" x 17" and 8-1/2" x 11" format.
    - 4) 1 - Electronic file of all the above illustrations in TIFF format that can be readily integrated into Microsoft Power Point.
- 4 Interior design presentations shall, at a minimum, conform to the following:
  - A A finish material presentation board with samples of all proposed finishes mounted to the board. Each material item shall be identified as to color and manufacturer. Each material item will be identified with a key number.
  - B Board mounted floors plans, color coded and identified with the corresponding key number used on the finish material presentation board. The intent is to provide a readily identifiable visual reference as to where selected materials are being used in the plan.

#### 00 01 12 SPECIFICATIONS:

- 1 Format shall comply with Construction Specification Institute's (CSI) MasterFormat 2004 or most current published Edition.
- 2 Paper size shall be 8-1/2" x 11" and will not have foldout pages. Permanently bound.
- 3 Omit all text which does not apply to the project. Avoid excess verbiage and vague statements. As you write, think how you would enforce.
- 4 When other standards (ASTM, ANSI, etc.) are referred to, architect/engineer will be able to produce a copy if needed. When referencing a standard, also include the standard date.
- 5 Include index for all sections in the Table of Contents.
- 6 Require Contractor to verify locations of all tunnel penetrations with the University prior to installing any piping or conduits. Failure to comply may result in the Contractor relocating required penetrations as directed by Owner and the Contractor paying for all associated costs of relocation, including repairs of damage to existing tunnel finishes.

#### 00 01 13 DRAWINGS:

- 1 Drawings shall be either 24" x 36" or 30" x 42", depending upon the requirements of the specific project.
- 2 Additional 1/2 size drawings are to be provided as part of the documents required at bidding.
- 3 Cover sheet of construction drawings shall indicate the following additional information:
  - A Total gross building area of new construction, and if applicable, renovated area.
  - B Total gross area, by floor, of new construction, and if applicable, renovated area.
  - C Total net assignable to gross ratio for building, expressed as percentage. Use the State of Michigan's definition of Net Assignable Area. See Appendix H. The University, for all building projects regardless of funding source, requires this calculation. This calculation is mandatory for all University projects receiving State funding. Refer to the following web page link for complete requirements published by the State of Michigan's Department of management and Budget.  
[http://www.michigan.gov/documents/finalDMB\\_78659\\_7.pdf](http://www.michigan.gov/documents/finalDMB_78659_7.pdf)
  - D Total gross useable area by floor, expressed as percentage of floor gross area.

- E Total number of living units by style and gross area per typical living unit. (Applicable only for student housing)
- F Total number of beds. (Applicable only for student housing)
- G Total number of handicap accessible units, by building and by floor. (Applicable only for student housing)
- 4 Fire Protection Plans:
  - A Architect/Engineer shall produce Fire Protection Plan which will show, at a minimum:
  - B Fire walls
  - C Smoke barrier walls
  - D Sprinkler head locations
  - E Locations of heat and smoke detectors, fire alarm panels, hand pulls, strobes and audible alarms.
  - F Fire extinguisher and fire extinguisher cabinet locations.
- 5 This drawing would be updated to reflect any field changes and shall be part of final closeout document submittals.
- 6 Final product consist of 24 x 36 or 30 x 42 print, half size drawing and Electronic copy, on CD, AutoCAD format (verify current version with University), and one copy in PDF format. See 01 78 00 for additional project closeout requirements.
- 7 Match Existing: When noting this requirement on drawings the Architect/Engineer shall have carefully and thoroughly investigated the "existing" condition to determine that a "match" is possible. If no match is possible then an alternative solution must be determined and noted on the drawings.

**00 01 15 PROJECT REVIEWS:**

- 1 Submissions shall be made, for University review, at 50% and 100% completion.
- 2 The University reviews drawings and specifications for compliance with these standards. The University's review is NOT to be substituted for the Consultants own internal quality control reviews for compliance with overall industry standards and best practices, and the University's standards.

**00 01 20 ADHERENCE TO STANDARDS**

- 1 Failure to Comply with Standards: It is the University's expectation that the Professional will comply with the University's Planning and Design Standards. Deviation from these standards is possible but only with the University's approval and following the process outlined below. The Professional will be held responsible, as stipulated in Chapter 3, Article 7 of the University's Contract for Professional Services, for any corrections required to the work when not in accordance with these Planning and Design Standards.
- 2 Request for deviation from the University's Design and Planning Standards shall be submitted on the Facility Standards/Guidelines Deviation Form included in Appendix E of this manual.

**00 01 30 BUDGET**

- 1 Construction budgets shall include all costs associated with construction including but not limited to site utilities, permits, site telecommunications, site preparation, storm water control, building construction period testing, any other contractor required testing, surveying, soil testing, project close-out and a construction contingency.
- 2 Design service budgets shall include all costs associated with the design services, including but not limited to: site surveys, telecommunication, Furnishings, Fixtures and Equipment (FF&E) design, site design, storm water control design, surveying, soil testing, project close-out, bidding, code review, plans revisions expenses, meetings, duplications, and presentations documents.

- 3 Design/Build budgets shall include all costs associated with the design and construction including but not limited to site utilities, site telecommunications, FF&E design, site preparation, storm water control,
- 4 building construction period testing, surveying, soil testing, project closeout and a construction contingency. The design portion of the budget shall be subdivided to allow review of the anticipated costs. Construction period support will be required of the design firm.
- 5 A project budget shall include all costs associated with design and construction (including temporary water, gas and electric charges) as well as FF&E, signage and permanent municipal water and sewer/meter charges.

#### **00 01 40    HAZARDOUS MATERIALS**

- 1 No **asbestos containing** building materials shall be employed in any GVSU facility. The General Contractor shall provide GVSU a statement certifying compliance as part of the projects closeout documentation. "No asbestos containing building materials was used in the construction of the \_\_\_\_\_ building at Grand Valley State University. The Architect/Engineer is to include this requirement in the projects specifications.

#### **00 01 50    PHOTOGRAPHIC MATERIALS**

- 1 Any Consultant, Contractor, Supplier or Vendor shall not photograph University projects without the expressed written permission of Grand Valley State University. Any photographs taken that include a person(s), whether or not this person(s) are employed by the University or whether or not these person(s) are students of the University, shall have the proper and legally required waivers granting permission for the photographer to use these photographs for other purposes. Such waivers shall also include and grant the same permission to Grand Valley State University. Copies of all waivers are to be provided to the University.
- 2 Photographs used for commercial advertising and/or marketing purposes shall be used for such purposes only when crediting and acknowledging Grand Valley State University as the Owner of the entity photographed.
- 3 One complete set of photographs taken shall be provided to the University, at no cost. Photographs provided shall be of the same size and quality as those provided to the party for whom the photographs were taken.

### **00 02 00    SITE PLANNING**

#### **00 02 10    GENERAL**

- 1 Site Investigation: Design firm is required to visit site and ascertain existing field conditions. Reliance upon GVSU supplied documents is not recommended as a basis for design. Effective on-site investigation is required. The intent is to provide adequate information to complete the design and to allow the contractor to prepare a comprehensive cost proposal
- 2 Architect/Engineer shall be responsible for identification of any site items which are to be protected during the course of a construction project, provide documentation, on drawings and/or specifications, for protection the item. The Architect/Engineer is to compile a list, for University approval, of such items to be coordinated prior to the project being released for bids.
- 3 Architect/Engineer shall assist the University in addressing the following 10 tasks:
  - A Does the proposed project affect pedestrian or auto traffic?
  - B If yes, to what extent does it impact normal operation?
  - C Is there an alternative to eliminate the disruption (discuss the proposed alternatives with Public Safety Department)?
  - D If no, what is required to detour traffic and/or pedestrians safely around construction activities.

- E Does it involve trained personnel and signs to direct traffic and/or pedestrians around the construction activity?
  - F If yes, add the cost of the required staffing and signs to the project budget.
  - G Add the required traffic control requirements to the description of the project; note this requirement in discussions about the project (include in discussions with Executive Officers).
  - H At the pre-bid meeting for the project, describe the expectations for traffic control; make note of this discussion with the bidders in the project file.
  - I At the pre-construction meeting, confirm the arrangements for traffic and pedestrian control (include Public Safety in the discussions with the contractor(s)).
  - J Monitor the controls through each phase of the project.
- 4 If the answer to question one (1) is yes then the following points are to be addressed in the architect's/engineer's contract drawings and/or specifications:
- A Campus Drive and other primary streets must remain available for traffic at the peak times of the day and at class change periods.
  - B Prior warning of a traffic disruption must include at least a 10 day notice to the campus community with signs being erected at least seven (7) days before the closure or re-routing of traffic. If the work is delayed by weather, the work must proceed immediately upon arrival of appropriate weather.
  - C Temporary sidewalks and other pedestrian routes must accommodate the traffic load. If a temporary pedestrian way is expected to be used during snow removal season, it must support snow removal by pick-up tucks (snow removal capacity is not required if the contractor removes snow to University standards)
  - D In instances where the permanent surface is cut to allow the installation of new work, a permanent repair must be made immediately upon completion of the new work. A graveled trench will not be permitted in a permanent surface.
  - E All temporary pedestrian routes shall be ADA compliant.
  - F Is temporary lighting required for temporary pedestrian/vehicular detours? If yes, account for lighting in budget.
  - G Traffic control personnel must be trained, properly attired, dedicated to the traffic control task, given the responsibility to stop the work to relieve traffic problems, able to communicate with the work crew to summon assistance as required to keep traffic flowing.
  - H All temporary routes must allow the University to conduct normal operations. (For instance, a four (4) foot temporary sidewalk will not be permitted along an eight (8) foot route, as the 4 feet does not allow for normal University operations).
- 5 All preliminary planning must conform to the University's latest master plan.
- 6 In general, all building entrances except for loading docks shall be at grade level, with no steps from the accessible path at the adjacent street, sidewalk or parking lot to the entrance doors.
- 7 Minimize grades on all pathways and drives and round the corner areas off.
- 8 Provide for service entrance separate from a pedestrian entrance.
- 9 Provide screening for all parking areas using berms, walls and/or plant materials.
- 10 Use waste heat from campus utility tunnels for snow removal purposes (if practical).
- 11 Provide for adequate drainage for all exterior areas.
- 12 Provide for a minimum sidewalk width of 8'. See Appendix C, Details 32.001; 32.002 and 32.003.
- 13 Where provided for vehicular access to and around buildings, provide minimum turning radii for trucks and fire fighting apparatus in accordance with Standard Detail 00.001 as shown in Appendix C of this manual.
- 14 Avoid islands in pathways, particularly in front of building entrances. Islands hinder pedestrians and snow plow vehicles.
- 15 All hydrants to be placed at a minimum of 5' from pathways to prevent damage from snow plowing.
- 16 Irrigate shrub beds, unless otherwise specified by GVSU staff.

- 17 Base design on plant material that is hardy and easily maintained. Design specifications for plant material shall be reviewed with GVSU staff before bid process begins.
- 18 Avoid all raised structures at building entrances that would hinder snow removal.
- 19 Avoid long steep overhangs on the building to reduce icicle formation and buildup. Example: Kirkhof Center east side entrances.
- 20 All pathways constructed such that no cracks, depressions or shifting will occur. Please note that snow removal is accomplished with trucks; some over design is necessary to accommodate these loads and soil conditions.
- 21 The University presently uses a pickup truck with an 8' blade width for snow plowing on sidewalks and other pathways.
- 22 Provide parking for contractors, deliveries, mail, etc. at a service entrance. Design to accommodate delivery vehicles.
- 23 Provide for Service Drives and provide a large indoor trash storage room. (or design attractive outdoor trash holding area). Provide recycle container space. Confirm with GVSU.
- 24 During new building construction General Contractors are required to clean litter from site DAILY. Contractor is responsible for removal of windblown litter from the campus. Fences need to be checked and straightened daily or as need to keep visitors out of Construction Site.
- 25 Turf grass should be mixture of Perennial Ryegrass, Fescue and Bluegrass. Do not use Annual Ryegrass. See Division 32, Section 32 92 00 of these Standards.
- 26 Avoid using small radii corners at sidewalk intersections. These small angular pieces area prone to cracking and breaking off. Radius or flare and cut back to abutting concrete surface at ninety degrees for a distance no less than 6 inches.
- 27 At perimeter of buildings, provide 18-inch wide, 4-inch thick, concrete maintenance strip. Where sloped roofs are used without gutters, provide gravel maintenance strip, in lieu of concrete, of sufficient depth to catch roof run off at eaves and roof valleys.

#### **00 02 20    SOIL BORINGS**

- 1 Soil boring locations shall be determined by the Architect/Engineer.
- 2 The University will solicit proposals from and procure the services of a qualified Soils Engineer licensed in the State Of Michigan. The University shall contract separately and pay for services of the selected Soils Engineer
- 3 Soil borings shall be conducted in consideration of, and coordination around, existing ongoing operations such as parking, classroom schedule or other campus activities for which the soil boring activity may be in conflict with.
- 4 Miss Dig and GVSU Dig requirements shall be adhered to prior to the commencement of soil boring activities.

#### **00 02 30    FLOOD CONTROL**

- 1 The first floor elevation of any building shall be a minimum of 12" above the highest part of any adjacent surrounding roads.

#### **00 02 40    UTILITY DESIGN**

##### **00 02 41    GENERAL**

- 1 Where possible, all utilities should come into one area in the building

- 2 Excavation Plans should indicate all underground utilities and the effects of new grading should be carefully coordinated with existing utilities and other appurtenances.
- 3 The elevation and location of underground utilities shall be field verified by excavation or other reliable means during design.
- 4 On one drawing, all existing and all new utilities shall be shown to make apparent any interference and to help in coordinating the connection of new utility systems to the existing.
- 5 All new and existing utilities are to have profile drawings to show elevations for construction and clearances from other utilities.
- 6 Design of all new utilities will be performed in coordination with Facilities planning and Facilities Services Engineering.
- 7 All utility tunnel penetrations to be approved by Facilities services Engineering before Contract Documents are let for bidding.

## 00 02 50 CAMPUS UTILITY SYSTEMS

### 00 02 51 GENERAL

- 1 The following utility systems are located underground throughout the Allendale campus:
  - A Steam: Central high-pressure steam is available at 50 psi to most new structures for heating. The system is generally extended via walk through tunnels which house steam supply and pumped condensate.
  - B Potable water: Is provided by a campus loop system from Allendale Township and City of Grand Rapids water supply mains located in M-45 and Pierce Street. At Zumberge Library, approximately the center of campus, pressures average 54 psi. At the north end of campus, near the student Living Centers, pressures are at 70 psi.
  - C Chilled Water: For air conditioning purposes is available from a central chilled water plant located at the Central Utilities Building (CUB) at the north end of campus and east of the Facilities Services Building and at the South Utilities Building (SUB) located at the east end of Calder Dr., across from parking Lot "M" and Lake Ontario Hall. The Architect/Engineer shall contact Facilities Services Engineering, (616) 895-2694, to verify available additional capacity.
  - D Sanitary Sewer: Sanitary sewers are connected to a central system leading to the Allendale Township 12-inch trunk line running thru campus from Pierce St. to M-45 and leads to their sewage treatment plant located north of M-45.
  - E Storm Sewer: Storm water is run separately into a central system and eventually leads to the river on the east or to ravines bordering M-45 and heading to the north. In keeping with the University's Sustainable initiatives it is the intent of the University to minimize outflow of storm water off the University's main campus. Storm water design will be handled on a project by project basis but whenever possible storm water should be managed by utilizing various methodologies such as, but not necessarily limited to, the following:
    - 1) Retention and detention (both surface and underground). Couple retention with irrigation opportunities if any.
    - 2) Rain Gardens
  - F Electric: Electricity is provided by a 12,470 volt distribution system. Distribution system is fed by a Consumers Energy main transmission line at the north end of campus and feeds a campus sub-station located at north end of campus, west of the Central Utilities Building. All switches on the primary loops are to be non-fused. Switches may be fused to the respective building they serve.
  - G Site Lighting: Underground distribution with voltages of 277 and 480.
  - H Communications: Telephone and data systems are provided by GVSU.

- I Natural gas: Provided by DTE (formerly Michigan Consolidated Gas Company). Main lines are 60#.
  - J Irrigation: GVSU uses Toro irrigation systems for all lawn and plant irrigation throughout its campuses.
- 2 Facilities Services Engineering shall approve placement and location of all utilities placed in the existing campus utility tunnel.

## 00 03 00 ARCHITECTURAL REQUIREMENTS

### 00 03 10 GENERAL

#### 00 03 11 ORIENTATION

- 1 Where possible, buildings should be oriented on the site in a manner that will reduce the effect of winter winds on heating, summer sun on cooling, and infiltration of winter winds at entrances.
- 2 Be cognizant of building entrances and their relationship to handicap parking and bus stops.

#### 00 03 12 ARCHITECTURAL CHARACTER

- 1 The University desires new buildings to be distinctively designed but sensitive and complementary to the existing campus. Alterations to exterior of existing buildings shall match the existing building and
- 2 Additions to existing buildings shall match or, at a minimum, harmonize with the existing building unless otherwise directed by the University.
- 3 Brick is a predominate exterior building material.
- 4 University may elect to have architect employ interior design professional as selected by GVSU. Architect to coordinate design and costs

#### 00 03 13 SUSTAINABLE DESIGN

- 1. It is the intent of the university to utilize sustainable design strategies, following the standards established by the U.S. Green Building Council in its Leadership in Energy and Environmental Design (LEED®) rating systems, where applicable and appropriate for specific projects. It is the University's intent that all new building construction shall meet LEED Silver Certification requirements.
- 2. When registering and University project with USGBC the LEED AP shall do the following:
  - a. Obtain approved project name from the University's project manager.
  - b. The University's name shall be spelled out fully as "Grand Valley State University" on all USGBC/LEED submittals, correspondence and other related documentation. The acronym GVSU IS NOT to be used.
- 3. Design Professionals and Construction Managers, through their document preparation and work execution, will insure that all projects on the Allendale Campus can meet the following requirements of the LEED-NC 2.2 Rating System:
  - Sustainable Sites:** Prerequisite 1, Credits 4.1, 5.1, 5.2, 6.1, 7.2, and 8.
  - Water Efficiency:** Credits 1.1, 3.1, and 3.2.
  - Energy & Atmosphere:** Prerequisites 1-3, Credit 1 (14% new building/7% existing building for 2 points), Credit 4.
  - Materials & Resources:** Prerequisite 1, Credits 2.2, 2.2, 4.1, 4.2, and 5.1.
  - Indoor Environmental Quality:** Prerequisites 1 and 2, Credits 1, 3.1, 3.2, 4.1, 4.2, 4.3, 4.4, 5, 6.1, 6.2, 7.1, and 7.2.
  - Innovation & Design Credits:** Credits 1.1, 1.2, 1.3, 1.4, and 2.

**Sustainable Sites:** Credits 1, 4.2, 4.3, 4.4, 6.2, and 7.1.

**Water Efficiency:** Credits 1.2 and 2.

**Energy & Atmosphere:** Credit 1 (21% new building/14% existing building for 2 additional points), Credits 2, 3, 5, and 6..

**Materials & Resources:** Credits 1.1, 1.2, 1.3, 3.1, 3.2, 5.2, 6, and 7.

**Indoor Environmental Quality:** Credits 2, 8.1, and 8.2.

The selection of any of the above-listed project-specific credits will be communicated to design consultants by GVSU's Facilities Planning Office.

#### 00 03 13.01 SITES

- 1 Erosion and sedimentation control plans
- 2 Conserve existing natural areas and restore damaged areas.
- 3 Storm water management techniques such as porous pavement and rain gardens.
- 4 A site lighting criterion that maintains safe light levels but avoids off-site lighting and night sky pollution.
- 5 Use of native species plantings whenever possible.
- 6 Design for minimal irrigation use and/or efficient systems and supplement with collected storm water runoff. Provide alternative transportation options, including bicycle racks, access to bus routes, reduced parking capacity, and parking for carpooling and low emitting/fuel-efficient vehicles.

#### 00 03 13.02 BUILDING ENVELOPE & BUILDING SYSTEMS

- 1 Design building envelope and building systems to maximize energy efficiency.
- 2 Design to ASHRAE/IESNA 90.1-2004.
- 3 Utilize Energy Star performance criteria and, when applicable, Energy Star - rated equipment and appliances.
- 4 Require zero use of CFC-based refrigerants for new systems; complete a comprehensive CFC phase-out conversion when reusing existing systems. Select refrigerants and HVAC&R that minimize or eliminate the emission of compounds that contribute to ozone depletion and global warming.
- 5 When possible, specify products which are extracted, harvested or recovered, as well as manufactured within 500 miles of the project site.
- 6 When possible, to encourage the use of rapidly renewable materials, specify materials and products that are made from plants that are typically harvested within a ten-year or shorter cycle.
- 7 Design systems that meet or exceed minimum indoor air quality requirements established in ASHRAE 62.1- 2004, Ventilation for Acceptable Indoor Air Quality and approved Addenda.
- 8 Design HVAC system and building envelope to optimize air change effectiveness.
- 9 Specify low-VOC materials; follow guidelines established in applicable Green Seal Standards and South Coast Air Quality Management District Rules.
- 10 Design systems that establish temperature and humidity comfort ranges and design the building envelope and HVAC system to maintain these comfort ranges, in accordance with ASHRAE 55-2004.
- 11 Design structures to maximize daylight and views to the exterior, consistent with the required function of interior building spaces.
- 12 When appropriate, specify vegetated roofs to reduce heat island effects, reduce and manage stormwater volumes, increase on-site stormwater infiltration, reduce contaminants and pollutants, promote wildlife habitat and promote biodiversity, and increase insulation levels.

### 00 03 13.03 COMMISSIONING

1. Require Fundamental Commissioning. LEED® certification prerequisites include commissioning of building energy systems using a Commissioning Authority (CxA) chosen using LEED® guidelines. The CxA will insert commissioning requirements in the construction documents, develop and implement a commissioning plan, and complete a summary commissioning report. As part of the process, the Owner must generate a Owner's Project Requirements (OPR) document outlining the functional needs of the building. The design team must develop a Basis of Design (BOD) document that answers these needs. Both of these must be submitted to the CxA.
2. Require Enhanced Commissioning. A LEED® credit can be obtained by using a totally independent Commissioning Authority (CxA), as well as having the CxA perform a review of the OPR and BOD prior to the mid construction document phase of the project. The CxA must also review all contractor submittals, relating to commissioned systems, against the OPR and BOD (concurrent with A/E review), and submit that review to the Owner. The CxA will also develop systems manuals for commissioned systems, as well as verify that training for operating personnel and occupants has taken place. They must also review building operations ten months after substantial completion and have created a plan to resolve any outstanding system issue.
3. Contractors do not change a location of a valve, pump, alter design work, change system operating procedures, etc. unless when directed by the design engineer or owner in writing. Commissioning agents do not have the authority to have system parameters modified unless approved by the owner or design engineer in writing.

### 00 03 16 ACCESSIBLE DESIGN

- 1 Designs shall conform to, at a minimum, the American with Disabilities Act of 1990. See Appendix I.
- 2 **IMPORTANT NOTE:** The University's requirement for side and front reach is 36-inches from floor or walk surface to the centerline of the control, switch, or other similar control device.

### 00 03 20 BUILDING ENVELOPE

#### 00 03 21 GENERAL

- 1 Building envelope including glass must conform to Michigan Energy Code. Provide calculations and copies of manufacturer's performance testing data. All attic insulation to have minimum uniform R-Value of R 50.
- 2 Attic areas shall have sufficient ventilation to minimize roof snow melts and subsequent ice dams at eaves and valleys that cause water leaks and roof damage. The attic ambient air temperature shall not vary more than 10 degrees from the outside ambient air temperature.
- 3 Provide overhang at all entrances, to reduce snow accumulation. Overhang needs to be adequate for given conditions, such as directional orientation, exposure to prevailing winds, etc. The Architect shall take these factors into consideration in design of overhangs to provide adequate protection of building entrances.
- 4 Roof and canopy surfaces shall be sloped in such a manner so as to prohibit snow slide-off of snow and/or ice onto walk surfaces and building entrances. Do not design roofs or canopies that slope down toward building entrances or exits.
- 5 Building exterior should have no exterior material that will flake off or that will break off.
- 6 Fresh Air Intakes: Do not locate where vehicle exhaust from standing vehicles may be present; locate at least 25 feet away from any designated smoking areas. Consider prevailing winds and other mechanical exhaust locations.
- 7 Docking and Loading Areas: Provide armor-plated doors at dock or trash loading areas.

- 8 Provide protection of entrances to protect from ice and snow slides from roof. Design solutions shall include ice melt and ice management features so that icicles do not form at entries in any type of snow or ice conditions.
- 9 Window Cleaning: For buildings 3 stories or higher, provide roof mounted window-washing supports

#### **00 03 22 EXTERIOR WALL CONSTRUCTION**

- 1 Design for severe wind-driven rain conditions. Design for secondary means of weather protection -do not just caulk joints. Assume that water will get past primary weather barrier.
- 2 No brick sills.
- 3 No exposed rowlock courses on top of brick walls or parapets.
- 4 Include vapor barriers.
- 5 Avoid face brick with high initial rates of absorption. See Section 04 01 20 of these Standards. Review actual product with GVSU.

#### **00 03 23 ROOF**

- 1 Refer to Division 7 for additional requirements
- 2 Provide means of access for maintenance personnel, to roof-mounted equipment, which will protect roofing. Protective walk way pads, minimum 30" wide and minimum 60" wide around roof top equipment.
- 3 Provide stairs to any roof mechanical penthouses so maintenance personnel can climb with a toolbox and parts in one hand and grip a railing with the other. Do not use ship's ladders.

#### **00 03 30 ACOUSTICAL CONSIDERATIONS**

- 1 Design firm shall be responsible for determining and reviewing acoustic requirements with the University. Sound control, both reduction and management, shall be addressed.
- 2 In office areas, corridor doors should not face each other.
- 3 Conference and counseling areas, including offices, shall support confidential conversations.

#### **00 03 40 SPACE ALLOCATIONS**

##### **00 03 41 CUSTODIAL/BUILDING SUPPORT ROOMS**

1. Design firm shall identify and show, on each design submission, rooms, which are required for the cleaning, maintenance, and operation of the building. In general, one custodial/building support room should be provided per floor; however actual requirements are to be reviewed on a project -by-project basis. Furnishing of these rooms is base building construction. These rooms shall be provided with water and drain, lights, a dedicated ventilation system, and power. The exhaust rate for the ventilation system shall be at least 0.50 cfm/s.f., with no air re-circulation. The pressure differential with the surrounding spaces shall be at least 5 Pa (0.02 inches of water gauge) on average and 1 Pa (0.04 inches of water) at a minimum when the doors to the rooms are closed. Provide self closing doors and deck-to-deck partitions or a hard-lid ceiling. The loss of these spaces (or program storage space) late in the design process to accommodate electrical and mechanical needs will not be viewed favorably. Provide one custodial room for each floor of each building unit.
2. Each Custodial/Building Support room is to have space for a stepladder, walk off mats, vacuum, wet-dry vacuum, extractor, trash cart, mop bucket cart, and basic supplies such as lamps, paper towels, toilet tissue, liners for wastebaskets, etc. Provide adequate shelving and mounting for equipment. During the winter, the

room is a temporary location for snow removal equipment and chemicals. Consult with GVSU on special storage requirements (i.e. large floor scrubber) that would impact room size.

3. Mop sink shall be floor-type, located near the door, and should be accessible without having to move all items out of the room to get at it. Provide hot and cold water and install in accordance with Standard Detail 22.001 in Appendix C. Provide wall mounted cam style broom and mop hanger similar or equal to Bobrick model #B239. (see Standard Detail 10.002 in Appendix C.)
- 4 Provide ground fault electrical outlets in custodial room at 4 feet above finish floor.
- 5 Do not locate electrical panels in Custodial rooms.

#### 00 03 42 MECHANICAL EQUIPMENT ROOMS

- 1 Lay out so all equipment can be readily serviced and replaced if necessary. Provide at a minimum, clearances as recommended by equipment manufacturers and/or code requirements. For rooftop penthouses, provide openings through which units can be removed. Note on mechanical drawings emphasizing need for maintenance clearance and ability to remove equipment such as boilers and water tanks without complete disassembly of major components and shut down of entire systems. This is unacceptable and will not be permitted. Where mechanical equipment rooms are located in a basement an area well shall be provided adjacent to the mechanical room and of sufficient size so as to permit the removal of equipment. The area well shall be provided with proper and adequate drainage. Corrections, as a result of non-compliance with this standard, and that are required in the field, during construction will be performed at the cost of the architect/engineer responsible for the inadequate and non-compliant design.
- 2 Provide floor drains where needed for draining coils and other items of equipment. Provide watertight, (sealed finish), curbed floor sloped to drain if room is above a finished space. Drains to be at lowest point in floor.
- 3 Piping labeled in accordance with Sections 21, 22 and 23 of this Standard.
- 4 Provide adequate fluorescent lighting to service all equipment.
- 5 Provide MIOSHA-approved means of access to different levels.
- 6 Provide floor service sink and hose bib with hot and cold water for cleaning of coils. Provide all coils with a means for allowing draining and internal flushing with a hose. (Applicable for steam heating systems)
- 7 Provide ground-fault outlets near points of service of equipment for testing equipment, trouble lamps, etc. Within 6 feet of every unitary control and/or any other HVAC control cabinet.
- 8 Provide wall-mounted diagram of all piping and equipment in room.
- 9 Provide access panels or access means for all equipment mounted inside of air ducts.
- 10 Provide and identify coil and filter removal areas.
- 11 Mechanical rooms should have exterior access and adequate space for replacement of heavy equipment.
- 12 Mechanical spaces housing high heat generating equipment shall be adequately insulated and ventilated to protect equipment and adjoining areas.

#### 00 03 43 TOILET ROOMS

- 1 Also refer to Section 10 20 00
- 2 Water closets: Specify code-conforming dual-flush or flush type (Sloan®) valves in high public use areas. Confirm type with GVSU.
- 3 Urinal flush valves. Specify waterless or Sloan® valves, low-water use type; in high public use areas. Confirm type with GVSU.
- 4 Avoid vinyl wall covering as a wall finish. Ceramic mosaic tile walls are preferred and can be wainscot height.
- 5 No black laminate shall be used for finish surfaces in restrooms.
- 6 No black finishes shall be used for toilet partitions.

- 7 Provide centrally located floor drain. Floor slopes to provide positive drainage to floor drain from all points in toilet room.

#### **00 03 44 ELECTRICAL EQUIPMENT ROOMS**

- 1 Electrical closets for electrical equipment shall be separate spaces and not contain any other non-electrical related equipment and not be combined with custodial spaces or storage spaces. Sufficient space shall be provided for future electrical panels and equipment.
- 2 Emergency generators shall be located on an exterior wall with adequate ventilation.

#### **00 03 45 TELECOM EQUIPMENT ROOMS**

- 1 See Division 27

#### **00 03 46 BUILDING CLUSTER MECHANIC WORK ROOMS**

- 1 For University housing, academic, food service and student activity buildings provide space, separate from mechanical, electrical or other building support spaces that are assigned as a cluster mechanics work room. Room to be a maximum of 250 square feet . Coordinate, with University, for the number of rooms required per housing project. Requirements for space are, but not necessarily limited, to the following:
  - A Bookcase or shelving for books and reference manuals. (Owner FF&E)
  - B 1 - 4 drawer lateral file cabinets. (Owner FF&E)
  - C Minimum 8ft. work bench. (Owner FF&E)
  - D Desk (Owner FF&E)
  - E 2 - 5 shelf metal shelving units for parts storage. (Owner FF&E)
  - F Computer and telephone ports. (by A/E & Contractor)
  - G Outside access door, where feasible. (by A/E & Contractor)
  - H Proximity to service parking
  - I Proximity to elevator, if elevator is provided in housing unit.
  - J HVAC system, equal to housing unit, to support space. (by A/E & Contractor)
  - K Sink (by A/E & Contractor)
  - L Adequate electrical suitable for small motor loads such has drills, saws and other small power tools. (by A/E & Contractor)
  - M Sound isolation from adjacent spaces. (by A/E & Contractor)
  - N Floor drain (by A/E & Contractor)
  - O Allow space for small air compressor with air piping to and quick connect at workbench. (by A/E & Contractor)..
- 2 The above requirements are to be reviewed on a project by project basis.

#### **00 03 50 ROOM AND EQUIPMENT NUMBERING**

- 1 Architect and University shall meet to establish the room numbers for the building. This shall be done at the end of schematic design and shall be finalized during design development. The number scheme shall allow effective directions within the building. The room numbers follow through on the mechanical and electrical systems.
- 2 Engineer and University shall meet to establish equipment numbers during design development. Final equipment numbers shall be used in the drawings, specifications, submittals and controls programming.

- 3 Where an addition or renovation is being made to an existing structure, room and equipment numbers shall not be duplicated.

## 00 03 60 HOUSING CONSIDERATIONS

### 1 ARCHITECTURAL

- A Access to spare parts for modular furniture if needed.
- B Standard metal hardware on all cabinetry. Hinges to be surface mounted to allow full 180-degree swing on cabinet doors.
- C Provide door stops on drywall behind doors. Requires adequate blocking within wall.
- D See Division 8 for door and door frame requirements.
- E Use double hung windows. No crank casement windows. See Division 8 for additional requirements.
- F 1 pc. acrylic shower units. Provide grouted sub-base in void beneath shower floor, if any, and if not expressly prohibited by manufacturer's installation instructions.
- G pc. acrylic combination tub and shower units. Provide grouted sub-base in void beneath tub floor, if any, and if not expressly prohibited by manufacturer's installation instructions.
- H For accessible housing units with showers that accommodate slide-off and roll-in configurations, in accordance with ADA requirements. In a housing facility provide at least one of each style shower accommodation.
- I Provide, in each unit entry door, a privacy/security-viewing device (peep hole). In accessible units provide two in the entry door. One at standard mounting height and one at ADA required mounting height.
- J Provide air locks/vestibules at building entrances. Provide ADA required clearances.
- K Sheet vinyl in kitchens, entrances, and toilets. Heat welded seams with matching color.
- L If possible, dishwashers and garbage disposals should be avoided, they create huge maintenance problem because of abuse. (At design and development review rough-in opportunities with GVSU.)
- M It is very critical to provide good drainage at entrance (outside) cement slabs.
- N Avoid ceramic tile in shower stalls (use acrylic if possible).
- O For Public toilet rooms within Housing buildings, toilet paper holders, towel dispensers, and soap dispensers should comply with GVSU standards.
- P Double access doors for maintenance; removable, key secured mullion.
- Q High-density particleboard constructed counter tops should be of 1 piece construction (no joints) with integrated back splash.
- R Where sink counters are provided that are handicapped accessible, the counter construction shall be in conformance with Standard Detail 06.001 in Appendix C of this manual.
- S No exposed aggregate inside or out (vertical walls is permissible).
- T Exterior doors--heavy-duty metal and heavy duty hinge straps--welded corners. Provide weather stripping (magnetic type) and bottom/threshold sweep.
- U Provide a means to walk across roofs at times with heavy load, without damaging roofing materials. (Applies to flat roof designs)
- V Provide stairs to roof mechanical penthouses so maintenance personnel can climb with a toolbox and parts in one hand and grip a railing with the other.
- W Avoid concealed spline type ceiling systems.
- X Specify commercial grade bathroom exhaust fans, field-tested to a minimum 110 CFM and equipped with an internal adjustable time-delay shutoff. Such fans shall be included in Fundamental and Enhanced Commissioning of the building energy systems. Fan motors shall meet Energy Star performance criteria.
- Y 2 foot square access panels for bathroom plumbing fixtures and heating components.
- Z Ball valves in plumbing and piping systems.

- AA Vanity sinks attached to counters and not just caulked into counter tops. Provide adequate intermediate and end supports.
- BB When providing card access at entrances insure that locations of card readers and controls for barrier free access are properly located to allow wheelchair user to operate both card swipe and depress door activation button and access door without door closing on user. Operations cannot be remote from one another and should be reasonably adjacent to entrance door. Keep in mind that some wheelchair users have limited upper body movement, or use chairs with electrified operation, and require additional time to operate card swipe and button and then move safely through open door. The cost of relocating improperly located card swipes and door activation buttons will be born by the design professional.

## 2 PLUMBING

- A Copper supply plumbing throughout system. (Type "L")
- B Provide isolation valves in heating and plumbing systems on all branch piping.
- C If PVC elbows and fitting covers are used, they must be reinforced so they can't collapse and can be painted.
- D Floor level janitor sink.
- E Provide floor drains where needed for draining coils and other items of equipment especially over finished space (watertight).
- F Provide single bowl sink at kitchens. Minimum 25"x22"x8". Single hole preferred.
- G Do not locate any piping near exterior air intakes; avoid exposing piping to freeze situations.
- H Provide clearance for maintenance and code compliance between all equipment and any installed obstruction.
- I Gas meters shall be located in such a manner as to avoid damage from falling roof ice.

## 3 MECHANICAL

- A Consider steam or gas instantaneous domestic water heating system with storage tank.
- B Units can be grouped to accommodate larger utility systems--hot water, heat, etc.
- C Provide access panels for coil cleaning up and down stream of coil. Size the panels to allow access by maintenance personnel. Keep access to coils, valves and filters unobstructed by other piping, conduit, ductwork, etc. Provide minimum 24" square access door. See Section 08 31 00 for additional requirements.
- D Coils should be accessible for service from hallways wherever possible.
- E Provide air bleeds at every coil and at system high points.
- F Provide ball valves on each side of control valves. Circuit setters are not to be used for isolation.
- G Use Bell and Gosset for small pumps under 15 HP due to quick service (less than 12 hours).
- H Do not install fin tube heat adjacent to water closets.
- I Coordinate thermostat and other control device location with furniture plan. Furniture shall not block these devices.
- J Provide clearance for maintenance and code compliance between all equipment and any installed obstruction.
- K Maintainable venting (no turns) on dryer and other exhausts.
- L Direct mounted thermostat for baseboard radiators (mounted on radiators). Remote electronic type acceptable.
- M Consider in-floor radiant floor heating for slab-on grade applications.
- N All exposed duct work and piping mounted below 7' should be covered with foil faced fiberglass duct wrap and faced pipe insulation in accordance with Section 22 07 00 of this Standard

#### 4 ELECTRICAL

- A Where Romex is used as a wiring method and permitted by the National Electric Code (NEC), and an isolated ground is required by the NEC or these Standards, the ground wire must be a covered (not bare) copper wire to point of connection at both termination points.
- B Underground high voltage lines shall be installed in conduit. Consider budget costs for encasing in concrete.
- C If underground junction vaults are used they must be adequately drained so as to prevent standing water accumulating in vault or junction box.
- D Consider security implications for lighting of housing developments. Review with GVSU public safety unit at design development. Coordinate with LEED requirement for light pollution reduction.
- E In meeting rooms, switch lights nearest white board separate from remainder. Check with GVSU on need for dimmable light systems in rooms.
- F All devices to have circuits identified on back (inside) of device cover plate with marker pen.
- G Provide conduit to entrance doors to nearest electrical panel to support future installation of auto door operators. Provide auto door operators at communal entrances and at "commons" buildings.
- H All low voltage control transformers used to control valves to base board room heating in living center, are to be remotely located, not within the baseboard housing.
- I Fully addressable and ADA compatible fire alarm fixtures. Review code requirements and options with GVSU at design development.

#### 00 03 70 FURNITURE, FIXTURES & EQUIPMENT (FF&E)

- 1 When a design firm is requested to prepare a project budget, such budget shall include all costs associated with the design, purchase, and installation of FF&E. FF&E shall include such items as waste receptacles and coffee makers.
- 2 GVSU has established standards for most items installed in its buildings. For the current standard, contact the Facilities Office.
- 3 GVSU has established standards for the FF&E finishes. For the current standard contact the Facilities Office.
- 4 Electrical connections to FF&E shall be included in the construction cost. GVSU campus electrician does NOT perform this work.
- 5 Wall mounted items shall be included in the construction cost i.e. shelves, tack boards, whiteboards, display cases, projection screens...
- 6 Coordinate building devices with furniture plan: i.e. thermostats, electrical outlets, data location....
- 7 GVSU has established standards for workrooms, offices, file rooms, conference rooms, computer labs and classroom. For the current standard, contact the Facilities Office.
- 8 Shelving: Custodial rooms, office, file room and work room shelving to be included in construction budget and installed by construction contractor.
- 9 Furniture Selection: Furnishings selected by the design professional shall be appropriate for the use intended in terms of durability and maintenance. Materials, including fabrics, shall be suitable for anticipated use and wear. Acceptance by the University of selections proposed by the design
- 10 professional shall not exempt design professional from using all reasonable due diligence in investigation of products proposed and the appropriateness of selected products for their intended use.

### PROCUREMENT PROCEDURES

#### 00 10 00 SOLICITATION

## 00 11 00 ADVERTISEMENT AND INVITATION

- 1 Bid security and performance/labor and material bonds may be required; verify with GVSU.
- 2 Bid Due Date: select Tuesday, Wednesday or Thursday PM, (usually at 2:00 P.M.). Project must be publicly advertised. Bid opening will be public, by GVSU, and at GVSU Service Building unless otherwise determined. GVSU will receive sealed bids only; no faxes or phone bids.
- 3 University projects are required to be bid in under the Prevailing Wage Law, Act 166 of the Michigan Public Acts of 1965. Architect, Engineer and/or Construction Manager is to procure from the State of Michigan the current rate schedule for inclusion into the Contract Documents based upon the required bid due date and anticipated initiation of the Owner/Contractor Agreement.
- 4 Contractors Qualification Statement: suggest including since bidding will be open to all; GVSU prefers pre-qualification of bidders and major subcontractors
- 5 Sales Tax: must be included by all contractors.

## CONTRACTING REQUIREMENTS

### 00 70 00 CONDITIONS OF THE CONTRACT

#### 00 72 00 GENERAL CONDITONS

- 1 General Conditions referenced in contract documents shall be in conformance with GVSU contractual documents.

#### 00 73 00 SUPPLEMENTARY CONDITIONS

##### 00 73 16 INSURANCE REQUIREMENTS

- 1 Builders Risk: GVSU will provide as a part of its coverage. Discuss with Mick Doxey, Business Office, 331-2284. Architect shall submit 2 (two) sets of working drawings and specifications, at 50% and 100% completion to GVSU insurance carrier for review.
- 2 Submit to: TVA Fire & Life Safety Inc. ATT: Dottie Gartee, Project Coordinator  
23937 Research Drive  
Farmington Hills, MI. 48335  
Telephone number: (248) 699-7960; Fax number: (248) 476-1597  
Email: [dgartee@tvafiresafety.com](mailto:dgartee@tvafiresafety.com)
- 3 Submission to be made with transmittal. Copy transmittal to Mick Doxey at the GVSU Business Office and the GVSU Project Manager.
- 4 Allow 14 to 21 working days for response. Review response with University and be prepared to include changes as agreed with the University.

##### 00 73 19 HEALTH AND SAFETY REQUIREMENTS

- 1 Contractor is responsible for construction site safety of workers and general public. GVSU to determine when fencing is needed. Contractor shall comply with MIOSHA Standards, and other State and Federal regulations including lock out and tag out of electrical equipment.
- 2 Temporary electrical power system shall not rely upon electrical cords being extended from inside a building to the exterior of a building.
- 3 Design A/E shall include 6 feet high chain link fence in all construction projects as a separate cost item in the General Conditions. GVSU (only) has the option to remove or accept.

- 4 Design A/E shall develop and show on the plans routes for construction traffic, pedestrian traffic and normal vehicle traffic. The plans shall also include any necessary conditions, which assure that these routes are maintained throughout the course of the project.
- 5 The Contractor shall not knowingly permit any worker on site that is a convicted felon.
- 6 The Contractor shall not knowingly permit any worker on site that is registered on the Public Sex Offender Registry (PSOR)

**00 73 36 EQUAL OPPORTUNITY EMPLOYMENT REQUIREMENTS**

- 1 There shall be no discrimination against any individual because of race, religion, color, national origin, age or sex. Take affirmative action to insure that applicants for employment and employees during employment are treated without regard to their race, religion, color, national origin, age or sex. Such action shall include, but not be limited to, employment, upgrading, demotion or transfer; recruitment advertising, solicitations or advertisements for employees; layoff or termination; rates or pay or other forms of compensation; and selection for training and apprenticeship
- 2 Comply with all laws and all published rules, regulations, reporting requirements, directives, and orders of the Michigan Civil Rights Commission relevant to 1976 PA 453, as amended.

**00 73 43 WAGE RATE REQUIREMENTS**

- 1 Prevailing wage rates, as published by the State of Michigan, shall be used on all University projects. On any University project where Federal funding is used, wage rates shall be in accordance with Davis-Bacon rate schedules. Wage rate schedules will be provided by the University's Office of Facilities Planning and are time sensitive and issued separately for each specific project:

**WAGE & HOUR DIVISION  
MICHIGAN DEPARTMENT OF  
LABOR & ECONOMIC GROWTH  
7150 HARRIS DRIVE  
P.O. BOX 30476  
LANSING, MI 48909-7976  
Tel: 517.322.1825  
Fax: 517.322.6352  
[WHINFO@MICHIGAN.GOV](mailto:WHINFO@MICHIGAN.GOV)**

END OF SECTION