WESTERN MICHIGAN UNIVERSITY

Design Standards for Business, Technology and Research Park

revised April 2010

MLC:mtd
4/29/2010

DECLARATION OF RESTRICTIONS, COVENANTS AND DESIGN STANDARDS FOR THE WESTERN MICHIGAN UNIVERSITY BUSINESS, TECHNOLOGY AND RESEARCH PARK

THIS DECLARATION OF RESTRICTIONS, COVENANTS AND DESIGN STANDARDS FOR THE WESTERN MICHIGAN UNIVERSITY BUSINESS, TECHNOLOGY AND RESEARCH PARK ("Declaration") is made as of the _____ day of _____, 2000, by _____, a _____, whose address is _____, herein referred to as "Declarant".

R E C I T A L S

Declarant owns certain real property located in the City of Kalamazoo and Township of Oshtemo, Kalamazoo County, Michigan, upon which Declarant desires to develop or cause to be developed a business, technology and research park in accordance with the zoning ordinances for the City of Kalamazoo. The property is described on Exhibit "A" attached hereto, and referred to herein as the "Property".

Declarant may subdivide the Property under the provisions of Act 59 of the Public Acts of 1978, Act 288 of the Public Acts of 1967, or as otherwise permitted by law.

It is the intention of Declarant to develop the Property in such a manner that the private sector and the University can enhance the competitive and economic environment of the City and County of Kalamazoo and the State of Michigan, strengthen technology development, strengthen the capabilities of the University to carry out its mission, and improve opportunities for faculty and students.

In pursuance of the foregoing, Declarant desires to provide guidelines for the orderly development of the Property, and for the preservation of the value of the Property and improvements constructed thereon.

NOW, THEREFORE, Declarant hereby declares that the Property shall be held, sold, utilized, and interests therein transferred, subject to the following restrictions, covenants and standards, which are for the purpose of protecting the value and desirability of, and shall run with, the Property and be binding upon all parties now or hereafter having

any right, title or interest in the Property, or any part thereof, and shall inure to the benefit of such parties, and their heirs, successors, legal representatives and assigns. Declarant further declares that any portion of the Property dedicated to, and accepted by, the City of Kalamazoo, Township of Oshtemo, the County of Kalamazoo, or any other governmental entity for street, drainage or other such public purposes, shall not be subject to the covenants, conditions and restrictions contained herein, so long as such real property is used for the purposes described in this sentence.

1. General Intent. It is the general intent of this Declaration and the standards and covenants contained herein:

(a) To limit the uses on the Property to business, technology, and research purposes as more specifically set forth below;

(b) To permit and encourage the orderly development of harmonious facilities for permitted uses;

(c) To preserve and to utilize to the extent practical the native growth and the unique features of topography of the Property;

(d) To permit the construction of aesthetically compatible improvements on the Property, while preserving appropriate open space;

(e) To assure that the facilities constructed on the Property will be operated in such manner as to substantially achieve the foregoing intent.

2. Additional Property. The Declarant shall have the right at any time within fifteen (15) years from the date of this Declaration, without the consent of any other person or entity, to make additional property, which is adjacent to or in close proximity to the Property, subject to this Declaration. The inclusion of any such property may be effected by the execution and recording by Declarant, of an amendment to this Declaration.

3. Use of Property. The Property shall be used for business and professional offices, research and development facilities, prototype development and assembly, processing assembly and packaging of instruments, compounds and equipment, laboratories, data processing, education, and other similar uses as approved by the Review Committee, including those which are accessory and incidental to the principal uses, all of which uses shall be in compliance with the zoning ordinance applicable to the portion of the Property in question.

4. Conservation.

(a) Erosion Control. The following provisions shall apply to any portion of the Property from which natural vegetation has been removed, and the amount

of surface water has been increased by virtue of activity in other areas, or to avoid the unnecessary destruction of natural vegetation from any cause.

(1) Exposed earth shall be protected from erosion or washing by the use of appropriate vegetation, barriers, shields or other such devices, or the installation of underground storm water facilities.

(2) Slopes, other than natural ones from which substantial natural vegetation has not been removed, which are to be created or maintained, shall not have a grade greater than 1 to 3.

(3) Retaining walls or other equivalent devices shall be installed on slopes having a grade greater than 1 to 2 and all such walls shall be constructed of fieldstone, masonry or other similar materials approved by the Review Committee.

(b) Vegetation. It is recognized that trees and other vegetation will from time to time have to be removed. The following standards shall be observed with respect to such activity:

(1) No existing healthy tree six (6) inches in diameter as measured 36 inches above grade shall be removed without the prior approval of the Review Committee.

(2) Trees which have not been approved for removal and which are materially injured, damaged, or destroyed during construction, shall be replaced by one of a similar type of at least two (2) inches in diameter as measured 36 inches above grade.

(3) Filling or cutting around existing trees shall be accomplished in accordance with proper horticultural practices. Retaining walls or tree wells shall be used as required.

(4) All vegetation which is not to be removed shall be adequately protected during construction and shall thereafter be properly protected, maintained and preserved.

5. Buildings. The following standards shall be observed and enforced with respect to all buildings constructed on any portion of the Property:

(a) The maximum area of any parcel or building site within the Property covered by building(s) shall be thirty percent (30%), unless a greater amount is approved by the Review Committee.

(b) External construction materials shall be of high quality and type and color to blend in with the natural surroundings and be compatible with existing improvements.

(c) All sides of a building shall be substantially the same in general appearance.

(d) The exterior character of all buildings shall relate to each other and shall, in the judgment of the Review Committee, be aesthetically compatible with other improvements on the Property.

6. Vehicle and Pedestrian Facilities. The following standards shall be observed and enforced with respect to all vehicular and pedestrian facilities within the Property:

(a) Adequate on-site parking facilities shall be provided within each individual parcel or building site within the Property, with the minimum parking spaces on each individual parcel or building site to be as provided for in the applicable zoning ordinance. Any shared parking arrangements shall be subject to the review and approval of the Review Committee.

(b) All traffic and pedestrian circulation in developed areas, excluding nature trails, shall be on hard, permanent surfaces, such as pavers, asphalt or concrete. Materials shall be selected whenever practical which will blend in the natural surroundings and be compatible with existing improvements. All parking areas and roads and driveways shall be of curb and gutter type construction.

(c) Hard surfaced areas shall be serviced by storm water facilities which are adequate to handle expected storm water run-off and which facilities shall be designed in such a manner as to blend in with the natural surroundings if possible.

(d) Whenever practical, the configuration of hard surfaced areas, such as parking lots, shall be of a non-rigid character and continuous expanses of hard surfaced areas shall be avoided.

7. Open Space. Not less than forty percent (40%) of each parcel or building site within the Property shall consist of open space. Open space may be used for vegetation, artistic displays or materials, or open facilities designed for recreation or relaxation, including pedestrian or bicycle walks or paths. Areas designated for vehicular traffic or parking are expressly excluded from the definition of open space for the purposes of this section.

8. Lighting. The purpose of lighting shall be to provide a safe atmosphere and to create a pleasing night time appearance. Lighting intensity shall be limited to a level of illumination necessary to adequately illuminate or highlight walks, parking areas, buildings and displays. The level and direction of lighting shall not create a daytime atmosphere or be at such a level of intensity or location as to create a nuisance in adjacent areas. Lighting shall be designed so that the source of the light is not visible beyond the boundaries of the parcel or building site on which it is located. All exterior lighting shall

be in compliance with the applicable zoning ordinance and shall be subject to review and approval by the Review Committee.

9. Sign Requirements. The following standards shall be observed:

(a) Free standing signs shall be so constructed and designed as to compliment the architecture of the adjacent building or buildings. Back-lighted signs shall not be permitted.

(b) Flashing lights, advertising flags, strips or other devices are prohibited.

(c) Building mounted signs shall be confined to front facades (facing roadway(s) and/or parking area(s)), and may not project above the roof line of the structure to which it is attached or may not project more than one foot from the structural façade.

(d) No signs, other than those identifying the names and businesses of the person or persons occupying the premises shall be permitted without the express written approval of the Review Committee. This restriction shall not apply to any signs erected by the Declarant or its designees or assigns in connection with the development and sale of the Property or parcels or building sites within it.

(e) All signs shall have the prior approval of the Review Committee and shall be aesthetically compatible with the character of buildings and other improvements. The use of a unified system of signage throughout the Property is encouraged. All signs shall be in compliance with the applicable zoning ordinance.

10. Screening and Landscaping. It is the purpose of these provisions to screen from adjacent areas objectionable noises, pollutants or sights. The following standards shall be observed:

(a) Noise. Improvements shall be so constructed and operated as to reasonably confine noise resulting from any operations to the site of such operation.

(b) Pollutants. Improvements shall be designed and operated as to conform with environmental standards which may from time to time be prescribed by federal, state or local law.

(c) Visual. Screening, either natural or artificial, shall be provided for all service, loading, storage, mechanical equipment, and refuse disposal areas, which shall be so designed and constructed as to effectively camouflage and not emphasize their existence.

(d) Fences. No fence shall be installed on any parcel or building site within the Property unless it shall have received the prior approval of the Review Committee. It is the intent of this Declaration that any fences installed for screening

purposes be located no closer to the street line than the front building line on any parcel or building site.

(e) Other. All cables, conduits, pipes and similar objects and devices shall, when possible, be placed underground. No exposed or exterior electronic transmitters or receiving antennae or dishes shall be erected, placed or maintained on any part of the Property, without the prior written approval of the Review Committee of the style, type, and location of the equipment.

(f) Landscaping. All areas of a parcel or building site upon which a building has been constructed, and which are not developed with buildings, drives, parking and loading areas, and other similar improvements, shall either be maintained in a natural state or shall be landscaped with grass or other ground cover, shrubbery, trees, bushes, vines or other suitable plantings. All plantings shall be properly and regularly maintained, and dead or dying materials replaced in accordance with approved landscape plans.

11. Building Construction. All construction on a parcel or building site shall be completed within two (2) years after commencement thereof unless an extension of time is granted in writing by the Review Committee. All buildings shall be basically of steel or other metal, masonry and glass construction. No wood or frame buildings shall be permitted without the prior written approval of the Review Committee. No used material shall be incorporated into any building without the prior written approval of the Review Committee.

12. Underground Storage Tanks. Underground storage tanks shall be permitted, only in full compliance with all federal, state and local regulations, and only upon the prior written approval of the Review Committee.

13. Operation and Use of Property and Facilities.

(a) Continuing. Except as otherwise expressly provided herein, each building or other structure or improvement constructed on any parcel or building site within the Property shall be operated in such a manner as to maintain on a continuing basis the standards and restrictions set forth herein.

(b) Rubbish. No rubbish, trash, garbage or other offensive or noxious items shall be permitted to be deposited on any portion of the Property, except in appropriate, screened, containers for the same. Grass, weeds and other growths on developed parcels or building sites shall be reasonably cut to levels approved by the Review Committee and no portion of the Property shall be used for the storage of any matter or thing which shall cause the Property to appear to be in an unclean or untidy condition. The foregoing provisions of this section shall not be applicable to the storage of construction materials during a reasonable construction period.

(c) Offensive Activity. No noxious or offensive trade or activity shall be carried on, nor shall anything be done on the Property or any parcel or building site therein

which may be or become annoyance or nuisance to adjoining occupants or owners by reason of noxious, offensive, unhealthy or harmful odors, fumes, dust, smoke, waste, noise or vibration beyond that normally and reasonably expected in a development of the nature contemplated herein.

(d) Outside Storage. No outdoor storage shall be permitted on any portion of the Property, except during construction on a parcel or building site, and only with the prior written approval of the Review Committee, and only if permitted by the applicable zoning ordinance.

(e) Property Maintenance. Owners and occupants of a parcel or building site located within the Property shall maintain any and all improvements located on such parcel or building site in good and sufficient repair and keep lawns cut, shrubbery trimmed, windows glazed and otherwise maintain such improvements in an aesthetically pleasing manner and in the original condition as approved by the Review Committee, reasonable wear and tear excepted.

(1) Any improvement which is damaged by the elements or by fire or other casualty shall be restored and repaired as promptly as the extent of damage will permit and in all events within no more than two (2) years from the date of the casualty.

(2) Any buildings which shall happen to be vacant for any reason shall be kept locked and the windows shall be secured in order to prevent the entrance thereto by vandals.

(3) In the event of a violation of any of the covenants set forth in this section, the Declarant, or its assignee or successor-in-interest, shall have the right to go upon the parcel or building site in question and take such steps as are reasonably necessary to eliminate nuisance conditions, mow lawns, trim shrubbery or do anything reasonably necessary to repair and maintain the improvements on the parcel consistent with this Declaration. The cost of any such work and the cost or expense incurred in connection with such work shall be immediately due and payable upon written notice thereof being given by the Declarant (or other party undertaking such work) to the owner and/or occupant.

14. Powers and Duties of Review Committee. The Review Committee shall have the following powers and duties:

(a) Approval of Plans. All plans and specifications, including grading and landscaping plans, for the construction of any building, the exterior alteration of any building, and all exterior uses or improvements, including type and color of construction materials and landscaping and screening, shall be submitted to and be approved by the Review Committee prior to commencement of construction. The Review Committee may reject all or any portion of plans submitted, or require the modification or resubmission of any such plans. The Committee shall have the right to refuse to approve any such plans and specifications, including type and color of construction materials, and grading and landscaping plans, which are not suitable, in its opinion, for aesthetic or other reasons. In so

passing upon such plans and specifications, the Review Committee shall have the right to take into consideration the suitability of the proposed improvements and the harmony thereof with the natural features of the Property and with any other improvements that have been constructed on other portions of the Property.

(b) Failure to Approve. In the event that the Review Committee shall have failed to approve or disapprove such plans and specifications within thirty (30) days after the same are delivered to it, then the same shall be deemed to have been approved, provided that the plans and specifications are in conformity with existing buildings or structures on the Property, these standards, and the applicable zoning ordinance and building code.

(c) Variances. The Review Committee may grant variances in its discretion from the standards set forth herein, so long as the general intention of these standards shall be substantially achieved.

(d) Enforcement. The Review Committee shall have the primary responsibility for the application and enforcement of these standards. It shall have the right to take, or refuse to take, such action as herein provided, including legal or equitable proceedings, or other action reasonably calculated to achieve the purposes set forth herein. Any costs incurred by the Review Committee, including reasonably attorneys' fees and costs, by virtue of the violation of this Declaration by an owner of a parcel or building site shall be assessable against such owner and the parcel or building site owned by such owner with respect to which the violation arose, and may be enforced in the same manner as provided by law for the enforcement of real estate mortgages.

(e) Performance Escrow. The Review Committee shall be entitled to require that any owner of a parcel or building site commencing construction of any improvements thereon pay to the Review Committee, or to an escrow agent approved by the Review Committee, a sum, as determined by the Review Committee, although not to exceed Twenty Five Thousand and No/100 Dollars ($25,000.00), which shall be held for the purpose of guaranteeing construction of the improvements contemplated by such owner in accordance with the approved plans and specifications for the same, and in accordance with the provisions of this Declaration. The funds may be retained or expended by the Review Committee to defray the costs of enforcement of this Declaration brought about by the violation of this Declaration by such owner.

15. Review Committee Composition.

(a) Original Review Committee. The original Review Committee shall consist of five (5) members, which shall include the following: an at-large employee of Declarant; an architect or engineer employed by Declarant; and architect or land planner not employed by Declarant; a landscape architect not employed by Declarant; a representative of an owner or parcel or building site within the Property. The members shall be appointed by the Declarant and shall be subject to removal or reappointment by Declarant. All

decisions by the Review Committee shall require concurrence of at least three (3) of its members.

(b) Permanent Committee. At such time as ninety percent (90%) (by area) of the Property is owned by parties other than Declarant, a majority of the owners of the parcels or building sites subject to this Declaration shall have the right to designate one member of the Review Committee. At such time as 100% of the Property (exclusive of public streets) is owned by parties other than Declarant, Declarant shall have the option (but shall not be required) of requiring that all of the members of the Review Committee shall be elected by the owners of the parcels or building sites in the Property. Such owners shall have one (1) equal vote per parcel or building site. The members of such reconstituted Review Committee shall not be required to have the qualifications as set forth in subparagraph (a) above.

(c) Qualifications. The qualifications for a position on the Review Committee may be suspended if no persons having such qualifications shall be reasonably available to serve as a member.

(d) Design Standards. The Review Committee may adopt by a majority vote such design standards and procedures as it deems appropriate to administer the provisions of this Declaration. Such standards may include details with respect to the design review process and additional design guidelines. Any such standards shall incorporate the general intent of the standards contained herein.

(e) Liability. Each member of the Review Committee shall be expected to exercise judgment in good faith, but shall have no liability whatsoever to any persons for any act or failure to act made pursuant to this Declaration.

16. General Enforcement. The non-discretionary standards herein set forth, except to the extent a variance may have been granted by the Review Committee, may be enforced through any lawful means by the Declarant and by the owner of any parcel or building site within the Property.

17. Duration; Amendment. This Declaration shall run with and bind all of the Property for a term of forty (40) years from the date this Declaration is recorded, after which time this Declaration shall be automatically extended for successive periods of ten (10) years. This Declaration may be amended by the affirmative written consent of eighty percent (80%) of all owners of parcels or building sites within the Property; provided, however, that no provision of this Declaration shall be amended, directly or indirectly, without Declarant's prior written consent.

Declarant may amend this Declaration at any time, without the prior approval of any person for the purposes of:

(a) Making additional property subject to the provisions of this Declaration, as is authorized above.

(b) Correcting errors herein, or making such other amendments as may not materially affect the rights of any person having an interest in the Property or any portion thereof.

Any amendment to this Declaration shall be in compliance with the applicable zoning ordinance.

IN WITNESS WHEREOF, the Declarant has executed this Declaration as of the date set forth above.

WITNESSES: DECLARANT:

_____

By:_____

_____

Its:_____

STATE OF MICHIGAN)
)SS
COUNTY OF KALAMAZOO)

On this _____ day of _____, 2000, before me personally appeared _____, to me personally known, who being by me sworn, said that he is the _____ of _____, a _____ (the "Corporation") who executed this instrument; that this instrument was signed on behalf of the Corporation by authority of its board of directors; and that this instrument is acknowledged as the free act and deed of the Corporation.

_____

Notary Public
Kalamazoo County, Michigan
My Commission Expires:

This Instrument Drafted By:
Michael L. Chojnowski, Esq.
Cooper, Martin, Chojnowski & Beck, P.C.
259 East Michigan Avenue, Suite 208
Kalamazoo, Michigan 49007
402\wmu\leebaker\declaration of restrictions-cl2

EXHIBIT "A"

Property located in the City of Kalamazoo, County of Kalamazoo, Michigan and described as follows:

Western Michigan University

Business, Technology and Research Park

Site Design Standards

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I. INTRODUCTION

The Western Michigan University Business, Technology, and Research Park is a mixed use project that integrates technologically sophisticated business, research, and technology development with the various Colleges of the University in an environmentally sensitive site design. The University will actively seek out prospective BTR Park users whose research and development programs can establish mutually beneficial linkages with the University.

The Master Plan (see Appendix) sets a coherent basis for development of the BTR Park. It is very important that a unified image be maintained throughout the Park. Since the dominant University presence at the BTR Park will be the campus for the College of Engineering and Applied Sciences, development throughout the Park will be expected to enhance and contribute to a positive image for the campus. The design intent throughout should support the high-technology focus of the campus. The overall character of the Park, with the campus environment and the natural setting, is supportive of high technology business. It is the design intent to maintain and strengthen this character as well. With the advent of independent generation of electricity by wind or solar means, special attention will be given to the installation of generating equipment so as to maintain the intent of these Design Standards.

While it is important that the Park be perceived as a unit, a 'whole,' within the Kalamazoo Community, it is equally important that individual expression of specific users within the Park not be precluded. A balanced approach of providing unity and flexibility in development control is the goal. The design philosophy to achieve this goal dictates that treatment affecting the common areas of the Park be highly defined while those dealing

with individual building and site design are more flexible.

To achieve a unified Park image, **Design Standards** have been developed for those design elements which are exposed to public view and have the greatest impact on the overall Park image. **Design Guidelines** are proposed for the individual sites and buildings and energy generating equipment that recommend an approach for cohesion with overall Park character but allow individual expression.

II. DESIGN REVIEW

A Design Review Committee and a design review process have been established to ensure that development within the BTR Park is consistent with all applicable standards, guidelines, restrictions, and with existing uses within the Park, and that adjoining properties will not be adversely affected.

- Membership of the Design Review Committee:
  - (1) "At-large" Member of the University; appointed by the President
  - (2) Licensed Architect or Engineer, recommended by the University Architect; appointed by the President
  - (3) Licensed Architect or Planner; recommended by the University Architect, appointed by the President
  - (4) Licensed Landscape Architect; recommended by the University Architect, appointed by the President
  - (5) BTR Park Representative (see "Declaration" for selection guidelines)

- Function of the Design Review Committee:
  - (1) To ensure that projects are developed with sensitivity to their context, the Design Review Committee will have primary responsibility for interpretation of the standards and guidelines.
  - (2) The Design Review Committee is authorized to review and act on all development proposals in accordance with the review procedures, applying its judgment

in accordance with criteria set forth by the Declaration of Restrictions, Covenants and design Standards ("Declaration").

(3) Administrative Responsibility. At its discretion, the Committee may retain the services of professional or technical advisers such as Engineers, Architects, Landscape Architects, or Planners to assist in evaluating submissions on the basis of design and other technical considerations.

- The Design Review Process is a four-step process that must be followed by all applicants. The steps are:
    1) Pre-design Conference
    2) Conceptual Plan Review
    3) Preliminary Plan Review
    4) Final Design Development Plan Review and Approval.

  See the appendix for a detailed explanation of the process.

III. DESIGN STANDARDS

The following design standards, guidelines, and site considerations have been created to establish the basis for a cohesive character throughout the Park. It is intended that this document serve as a general introduction. Its purpose is twofold. The first is to complement the Declaration of Restrictions, Covenants and Design Standards and the City of Kalamazoo zoning ordinances for use by individual members of the Park during their site planning and development process. Secondly, the Design Standards establish criteria for use by the Review Committee when considering approval of any Park development.

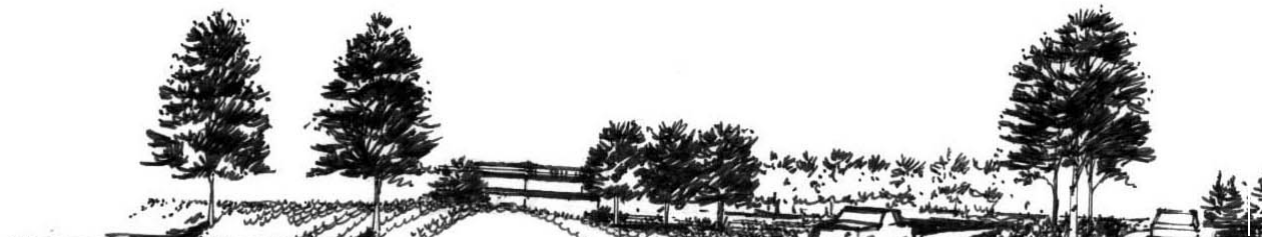
A. ENTRIES

The Central Parkway Loop has been created in the BTR Park to provide common access to the Western Michigan University Engineering Campus and to all privately developed sites. The Parkway also defines the boundary for the interior park and natural area.

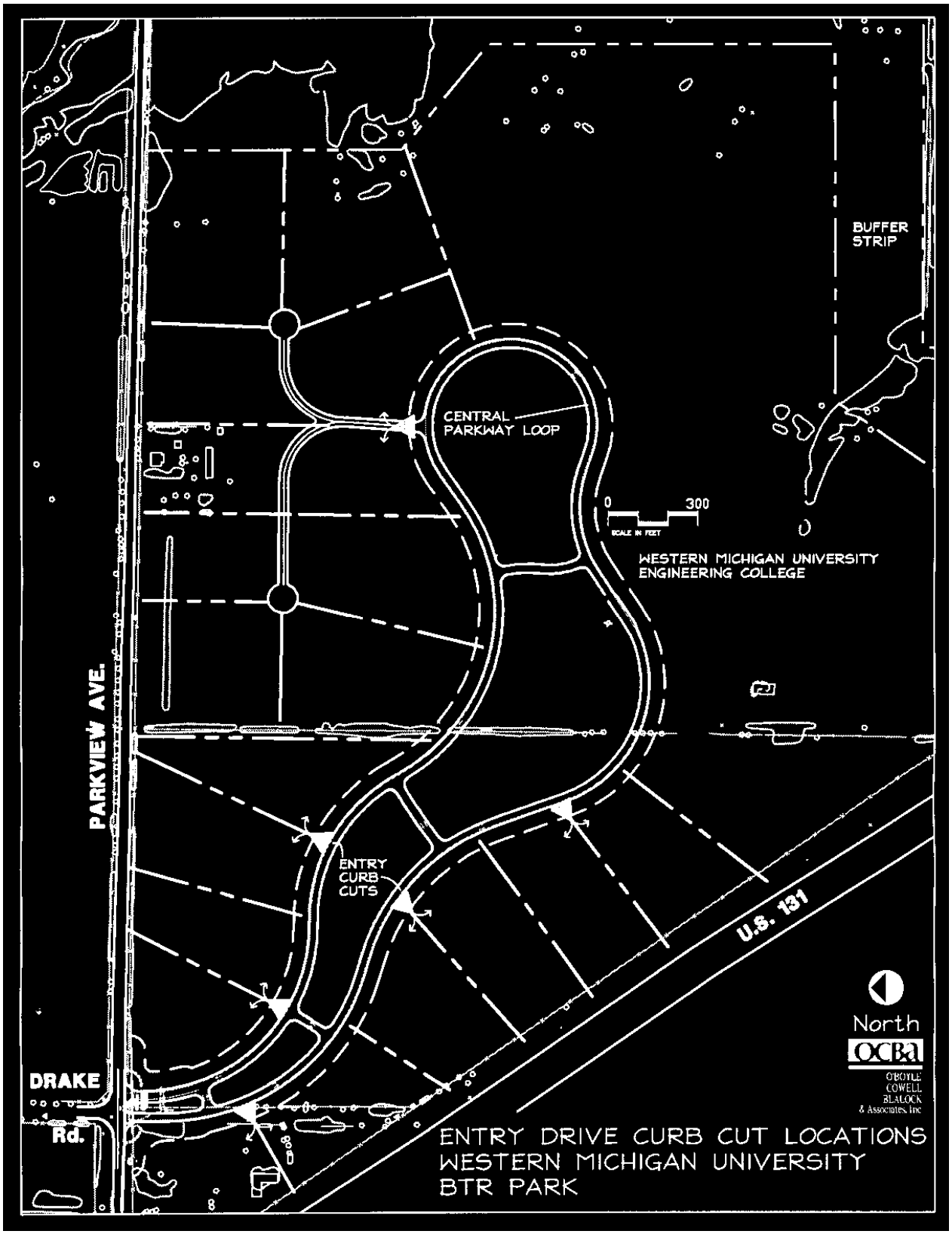
The following design standards for site entrance drives off the parkway have the following objectives: 1) to create a high quality image for the entire development, 2) to reduce vehicular and non-motorized circulation conflicts, and 3) to simplify 'way finding.'

- All individual sites shall ultimately be accessed from the Central Parkway Loop.
- No access will be permitted from Parkview Avenue.
- Access to individual sites will occur off the Central Parkway Loop where curb cuts are noted on drawings. The curb cuts are located on property lines to encourage adjacent sites to share entry drives. Deviation from the planned entry points shall be coordinated with and approved by the Design Review Committee (see page 8).
- A boulevard type entrance off the Central Parkway Loop shall be used incorporating an access lane and an exit lane, separated by a planting island.
- Each entry drive shall utilize the same curb and gutter design as the Central Parkway Loop, at least to the tangent of the entry driveway radius.

- The existing berm paralleling the Central



Parkway Loop shall be reshaped to accommodate the entry drive and to create safe sight lines.


BUFFER STRIP
CENTRAL PARKWAY LOOP
0
300
SCALE IN FEET
WESTERN MICHIGAN UNIVERSITY
ENGINEERING COLLEGE
PARKVIEW AVE.
ENTRY CURB CUTS
U.S. 131
North
OCBA
O'BOYLE COWELL BLALOCK & Associates, Inc
DRAKE
Rd.
ENTRY DRIVE CURB CUT LOCATIONS
WESTERN MICHIGAN UNIVERSITY
BTR PARK

B. SIGNAGE/ENTITY IDENTIFICATION

Identification of individual entities on site represents a very important visual design element that has a significant impact on the image and perceived quality of the Park. Signs are the obvious means to identify individual site occupants along the Central Parkway Loop. They will be required to be uniform in size, shape, location, and material as defined in these standards. (See Appendix for detailed signage standards.)

Additionally, the design of site specific signs for direction and information shall conform to the following standards:

- Back-lighted signs will not be permitted.
- The use of graphic corporate logos is encouraged on informational, directional, and regulatory signs.
- Not more than one identification sign per site will be permitted along the Central Parkway Loop.
- The business identification sign on the Central Parkway Loop shall be incorporated into the landscaping and, where possible, within a boulevard planting. Shared sign boards are encouraged.

C. SITE LIGHTING

Site lighting for parking lots, entry drives, and general area lighting shall conform to the standard pole, fixture, and luminaire selected for the BTR Park. The location of the site lighting shall be designed to avoid glare, spill light, and poor color rendition of objects in the landscape. (See Appendix for detailed standards.)

The following standards define the requirements for pedestrian oriented lights:

- Sharp cut-off down lights are required in all areas. (See also City of Kalamazoo zoning requirements.)

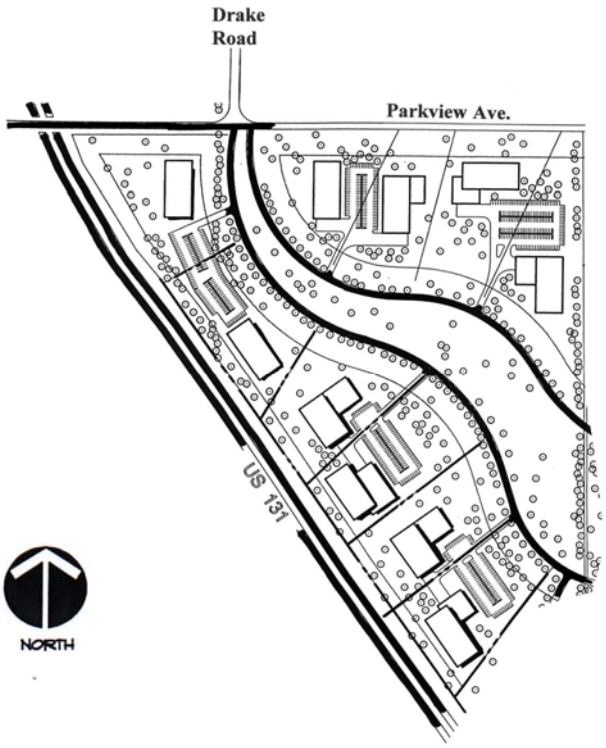
- High-pressure sodium or mercury vapor light fixtures are not permitted. Metal halide or incandescent are the preferred light sources.

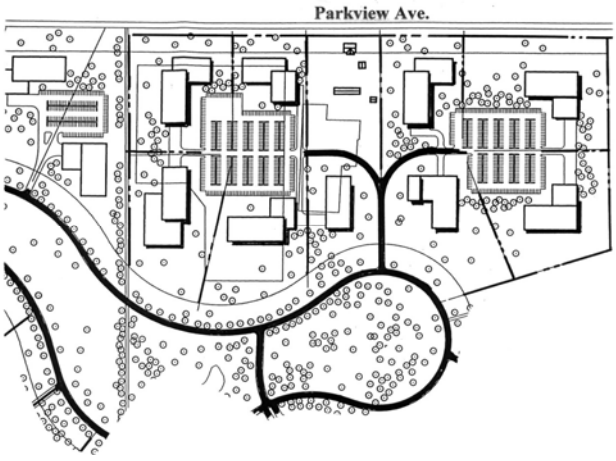
- Bollard lighting, (under 6' high), low wattage garden or pathway lighting is recommended for pedestrian areas.

- While safety is the responsibility of the individual site owner, a minimum light intensity of ½ foot candle is required in all use areas and an average light intensity value of no more than one foot candle is recommended.

- See also specific standards for lighting in the **City of Kalamazoo Zoning Ordinance.**

D. BUILDING SITING AND OPEN SPACES





The Western Michigan University Business, Technology and Research Park Development has committed to The City of Kalamazoo and to the immediate neighborhood to preserve an open, natural character and maintain a rate of stormwater runoff onto adjacent property not greater than currently exists as agricultural land.

The BTR Park is organized to have individual sites developed around the outside perimeter of a Central Parkway Loop Road that encompasses a large, open central park with a natural stormwater management system. The individual private sites shall be developed to visually and physically link with the central open space park and its storm management system.

The site development concept differs for parcels adjacent to US 131 from those adjacent to Parkview Avenue.

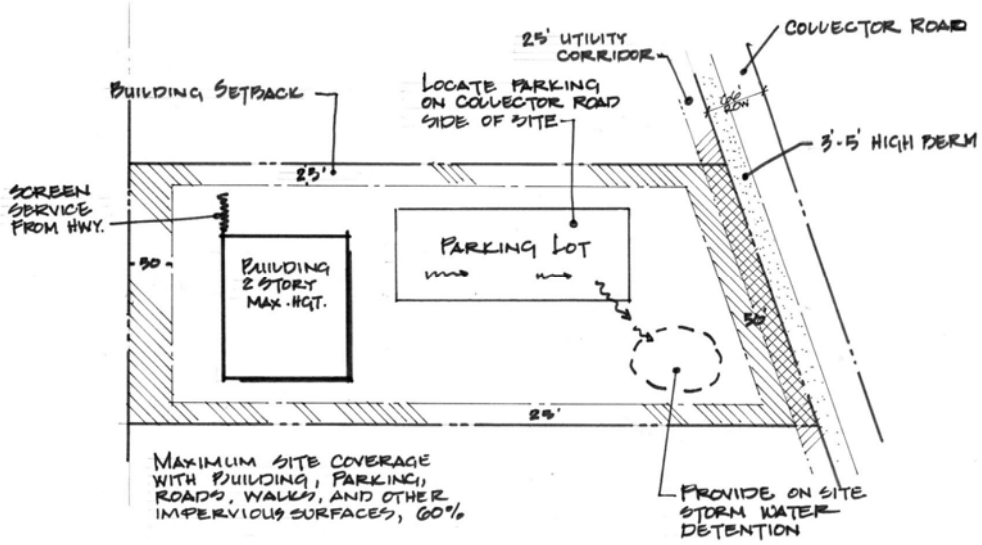
- Sites adjacent to US 131 shall be developed as individual sites, (i.e., structure, parking, drainage, etc. on each site). Entry drives are shared. See ENTRIES Section.

- Sites adjacent to Parkview Avenue are to be developed in a cluster concept, each structure is located on an individual lot but parking may be shared.

The intent throughout these standards, for both individual and multi-site developments, is to preserve and maintain the campus atmosphere and standards established by the Engineering College Campus.

In addition to the above development concept requirements the following standards shall be observed:

- The total impermeable lot coverage (buildings, parking, and walks) shall not exceed 60%. The maximum coverage allowed for buildings is 30%.



- Buildings shall be placed so that building and landscaping together visually buffer parking areas from US 131 and Parkview Avenue.

- Buildings shall be designed so that loading docks and service areas will not be easily visible from US 131, Parkview Avenue or the Central Parkway.

- Buildings shall be sited to respect the existing land forms and drainage patterns.

- Existing individual and grouped trees are important features and shall be preserved and maintained in all building placement. No existing tree shall be removed without the written approval of the review committee.

E. LANDSCAPING

For many decades this site has been in agricultural use. Two prominent tree lines crossed the former farm from north to south. One, in the approximate center of the Park, is a remnant of a fence row along a farm lane. The other is along what once was the extension of 12th Street to Parkview Avenue at Drake Road. These two tree lines, as well as the tree line along Parkview Avenue, are significant historic vegetation features that have been retained in the Park. Additional trees exist in the general vicinity of the historic home and outside the BTR Park in the buffer zone along the east and south edges of the site.

Plants within the loop of the Central Parkway consist of trees and shrubs native to Michigan. Prairie grasses, with mixtures of native wildflowers, are the predominant ground covers. A free flowing strip of varying width has been planted with low maintenance ornamental grasses (fescue) and will be mowed on a regular basis.

The right-of-way on the outside of the Parkway Loop, as well as those areas that have been disturbed to create infiltration basins, consist of fescue turf that will be regularly mowed. A tree line paralleling the Parkway Loop Road has been planted with native trees.

The vision for the development of the individual and collective sites is to utilize natural systems in the landscape as much as possible.

- Native trees, shrubs, and low maintenance turf grasses shall be used to the greatest extent possible. (A partial list of recommended plants is attached.)

- Planting design near a building can utilize a broader palette of ornamental species, but the plants shall be selected for low water

and fertilizer requirements as well as their ornamental value.

- The use of fertilizer, herbicides, and pesticides shall be avoided, especially outside the buildable area of each site. Turf areas that are to be mowed shall be planted with vigorous, low maintenance, and low nitrogen dependent grasses.

- One tree (minimum 3½" diameter) will be required for each ten parking spaces on a site. Tree islands and edge planting that creates low capacity parking rooms***** are desired.

- *A partial list of recommended plants and a list of invasive plants to be avoided is included in the Appendix.*

*****See Section 'H' 'Parking Lots'

F. DRAINAGE

Stormwater management for the entire BTR Park has been integrated within the plan for development. Provisions for accommodating stormwater for each individual parcel in the BTR Park has been considered in the Stormwater Management Plan and is based on the following concepts:

- To the greatest extent possible all drainage over impervious surfaces (buildings and paving, etc.) should be directed across the surface and into vegetated swales.

- The vegetated swales can, for the most part, be directed to temporary storage basins constructed near the Parkway Loop Road right-of-way. (Note: A few of the parcels may require on site detention and infiltration for a portion of the stormwater.)

- The temporary storage basins include surface catch basins that will pick up the overland conveyance of stormwater and route it into infiltrator pipes that extend to the vegetated system within the loop of the Central Parkway.

- The stormwater management system is designed to store runoff equal to a 100-year frequency storm after full site build-out and to release the peak discharge from a 5-year pre-development condition.

The following practices shall be followed to reinforce the master stormwater management system:

General Management Practices

- Stormwater from roofing and paving will be sheet drained across vegetated surface areas and vegetated swales.
- In dry lawn areas the use of low maintenance turf grasses such as a combination of wet and dry tolerant fescues is recommended: they require 50-60% lower water, fertilizer and pesticide applications than most turf grasses. Swales and depressions require a moisture tolerant grass such as Kentucky bluegrass. To simplify planting and provide a more uniform turf stand, a mixture of various fescues and Kentucky Bluegrass is recommended.
- Grassed swales and turf filter strips shall be mowed regularly to maintain vigorous growth.
- During construction, and until areas are permanently vegetated, erosion control measures will be enforced to prevent plugging of infiltrators, catch basins and storm water detention areas with sediment.
- After construction catch basins shall be monitored and cleaned out on a regular basis as needed to prevent storm water entering the Central Park detention area.

Infiltrators

- If additional infiltrator systems are installed as part of the individual parcel development, topsoil shall be maintained below the pipes. This will insure that adequate pollution reduction is achieved before the storm water enters the highly permeable sub-soil generally found at the site.
- The design velocity of the infiltrator drains shall be greater than 2 feet per second (fps) to prevent excessive buildup of sediment within the pipe.
- Pre-treatment to remove coarse sediments is necessary before water is routed into an

infiltrator drain. This can be efficiently accomplished by filling the catch basins at the inlets to the infiltrator drains with gravel wrapped in filter fabric.

- If it is desired to use several infiltrator drains adjacent to each other, they shall be spaced a minimum of 50 ft between drains.

Swales

- Water velocities of the design storm (25-year, 100-year) shall be calculated for each swale to ensure adequate size. In most cases the velocities in the well vegetated swales will be below 6 fps. In the event that the calculated velocity is above 6 fps then rip-rap or a stone bottom is suggested to prevent erosion.
- Swales shall be designed so that the ½ - year frequency storm will not have a velocity above 1.5 fps.
- Each swale shall hold the 2-year frequency storm a minimum of ten minutes over its entire length. The water level shall be 6" or less for short grasses or equal to one third the height of a taller vegetative cover.
- Trapezoidal channels are preferred over v-notch channels. They are easier to maintain, reduce the chance of erosion and provide greater treatment.
- If a swale has a single point of water entry, a check dam shall be installed to create a forebay area to settle out large particulate.
- Swale slopes shall be between 2% and 4%. Slopes under 2% may require under drains to minimize standing water.

Grass Filter Strips

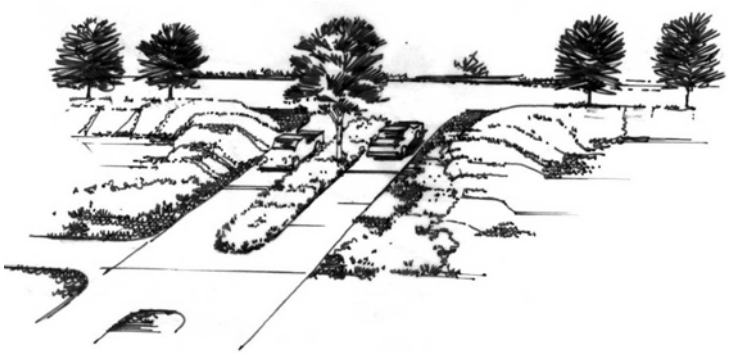
- Grass strips shall be used whenever possible to treat the stormwater. Sizes should be based on an evaluation of the following criteria:
  - (1) Percent of the ½-year frequency storm that can be infiltrated based on the soil permeability.
  - (2) Sediment trapping efficiency: The slope and length of filter strips are critical as they largely determine the pollutant capabilities. For 70% sediment trapping efficiency, 15 linear feet of grass filter strip per one percent of slope is required (i.e., slope=2%, use a 30 linear feet filter). For 90% sediment trapping efficiency, 45 linear feet of filter strip per one percent of slope is required (i.e., 2% slope, 90 linear feet filter length).
  - (3) The width-to-slope ratio: Ideally, the minimum width-to-percent slope ratio should be 4:1. (i.e., for a 2% slope the minimum width should be 8 feet).
- Concentrating the flow into a channel across the filter strip shall be avoided. Level spreaders are to be used in most instances to prevent concentration of flow.
- Grass filter strips used for parking lot runoff are to be planted with seed mixtures that are salt tolerant.

G. TOPOGRAPHY

A great deal of work has been completed along and within the Central Parkway Loop to enhance the character of the typically gentle gradients of the individual sites. A three to five foot earth berm has been constructed along the Central Parkway Loop that will require grading and shaping at the access point to each site. The intention of this constructed berm is to help reduce the visual impact of parking facilities from the Central Parkway Loop. Additionally, stormwater infiltration basins and pickup points have been constructed outside the berm, further enhancing the real and perceived character of the topography.

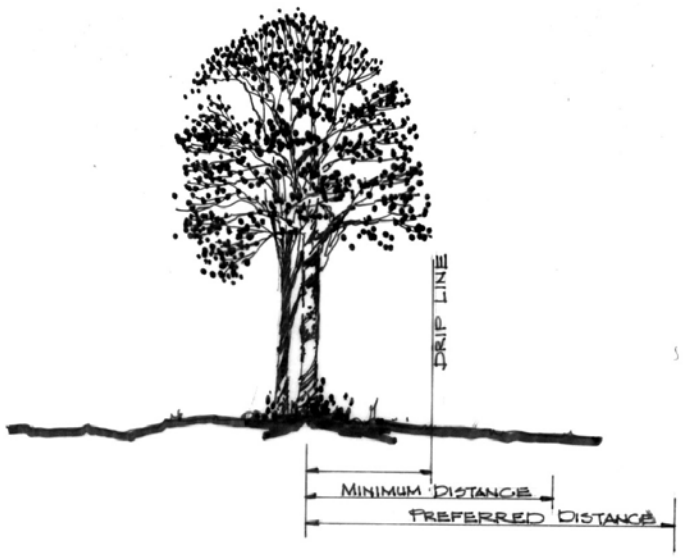
Topography and grading design standards:

- Incorporate the Central Parkway Loop berm into the entry design for each site.



- Utilize the standards published under Drainage, Section F.
- Follow these gradient standards:
  (1) Parking lots: Minimum 1%, maximum - follow barrier free design standards.
  (2) Walks: 5% maximum without handrails - 8.33% with handrails - 2% maximum cross slope.
- Meet adjoining property lines at grade.

- Establish all grading limits and excavations at existing tree lines, or at trees to be saved, a distance equal to 1 (minimum) - 2 (preferred) times the distance from the trunk to the drip line.



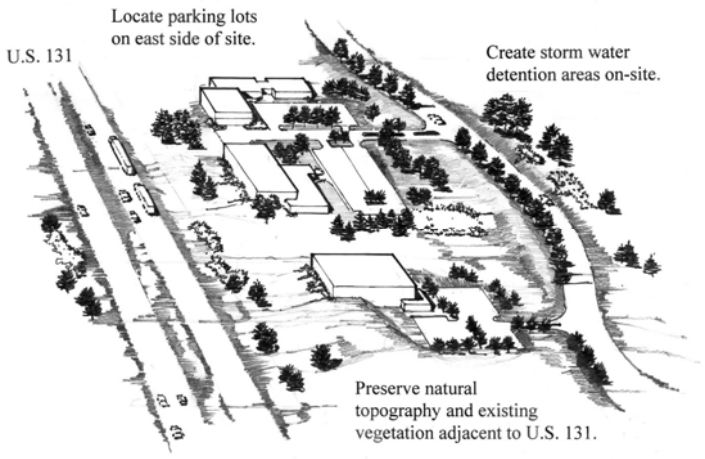
H. PARKING LOT DESIGN/LOCATION

Parking lots are an important functional element in the BTR Park. They must be convenient, efficient, and safe. The design philosophy of the Park is to maintain a natural character to the greatest extent possible. Parking lots therefore should be designed to have a minimal visual impact and a stormwater handling plan that can be managed within the total BTR Park system. To achieve this end the following standards are required.

- Parking lots shall be subdivided into a collection of smaller parking rooms by tree canopy, planting islands, and pedestrian ways.

- Each individual parking area shall not have a capacity over 50 cars, a 30 car capacity is preferred.

- Parking lots shall be located in such a manner on individual sites that buildings and landscaping together visually buffer the lot from US 131, Parkview Avenue and the Central Parkway Loop.



- Landscaping, drainage, and lighting have been addressed in separate sections of the standards. They are all factors that must be carefully followed in the design of parking facilities.

- Energy generation equipment shall be located so as to provide maximum open spaces and shall not be positioned to create fences or barriers between sites.

I. FENCING/WALLS

The vision for the Business, Technology and Research Park is to create a cohesive, contextual environment with high quality spaces. To accomplish this, the design within individual sites shall recognize that property boundaries are legal definitions that shall not be reinforced by fencing, walls, or any three dimensional barriers. Specifically, the following standards apply:

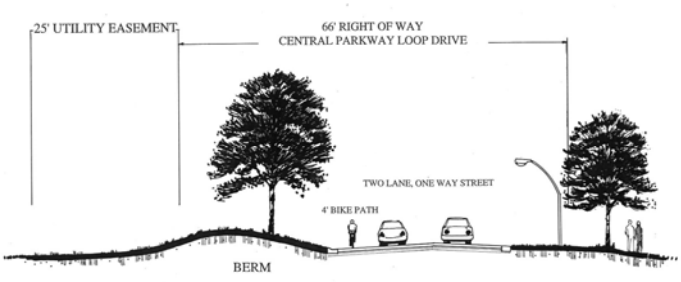
- Fencing may be used for specific purposes as an extension of a building but shall not define property lines.

- No wood rail, rustic wood fences, or chain link fences shall be used unless they are immediately adjacent to, built as part of, or reflect the character of the primary use structure on site.

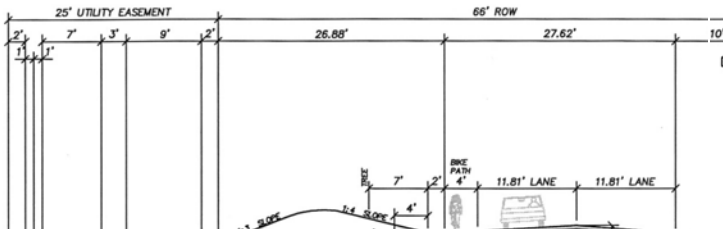
- Dumpsters, utilities, and service areas shall not be located on a street frontage. They shall be screened from view and separated from pedestrian use areas (see also Building Guidelines).

J. UTILITIES/PARKWAY LOOP R.O.W. CORRIDOR

A 25 foot wide corridor has been established as part of the construction of the Central Parkway Loop and described within the dedicated street right-of-way. All utility service currently available to the BTR sites and the WMU College of Engineering have been assigned a specific path within this corridor. All utilities are underground and located according to the illustrated cross section. The stub-outs to individual lots have been



installed. All utilities from these stub-out points shall be continued underground within each individual site.



IV. DESIGN GUIDELINES

A. BUILDING DESIGN INTENT AND CONTEXT

The design intent for the BTR Park is to maintain a cohesive appearance that supports a high technology environment for WMU's College of Engineering and Applied Sciences and for the Park users, and to enhance and contribute to a positive image for the College campus. "State-of-the-art," "cutting-edge," and "21st Century" are terms that reflect this intent.

The Engineering College Campus establishes the atmosphere and standards that are to be maintained. Using existing development within the park and the Engineering College Campus as a design reference will ensure consistency of development. Contextual buildings that are coherent additions to the buildingscape contribute to a successful development.

Compatible architectural features, fenestration patterns, and building proportions help integrate buildings into context. "Contextual Patterns" are established through:

- Similar articulation.
- Similar scale and proportion.
- Similar or complementary architectural style.
- Similar building details and fenestration patterns.
- Similar or complementary materials.

B. ARCHITECTURAL CONCEPT

Building design elements, details and massing should create a well-proportioned and unified building form and exhibit an overall architectural concept. Details and features shall relate to the structure and not appear as add-ons.

Building design, whether part of an individual or a multiple-site development, shall reinforce the campus image. Clustered or otherwise articulated and differentiated forms will be recommended over monolithic forms.

C. BUILDING ARTICULATION

The pattern and proportion of a building's windows and doors and the modulation of its form are important in determining a building's architectural character as well as adding visual interest. Following the proportion and pattern of neighboring buildings will increase the consistency of the Parkscape.

Facade modulation, stepping back or extending forward a portion of the facade can add character and scale. Changes in roof lines help to modulate a building's form.

Large expanses of blank walls with little or no articulation are strictly discouraged.

D. MATERIALS

The selection and use of exterior materials is a key ingredient in determining how a building will look. Some materials, such as masonry, can give a sense of permanence or can provide texture and scale to a building facade. Other materials, such as glass and metal panels or siding, can help give a "high tech" image appropriate to the BTR Park.

Building exteriors are to be constructed of durable and maintainable materials that are attractive even when viewed up close. Materials that have texture, pattern, or lend themselves to a high quality of detailing are encouraged.

Materials that are often used to look like something they are not, such as EFIS Systems, are discouraged.

In general, colors should be natural or muted with bright colors used only as accents. Glass with low reflectance is preferred.

E. BUILDING ENTRIES

Building entries are very important for visitor orientation. A well-designed entry gives a welcoming impression and contributes to a positive image.

Buildings shall have at least one formal entry, visible from the site entrance off of the Central Parkway.

- Entries shall be clearly defined and attractive.
- A canopy or protective element is preferred.
- Liberal use of glass will help make the entry inviting.

F. MECHANICAL AND ELECTRICAL EQUIPMENT

Mechanical and electrical equipment, whether on a roof or next to a building, should be screened from view unless it is a well-coordinated design element and supports the architectural design intent for the building and site.

G. SERVICE AREAS

Dumpsters, utilities, and service areas shall not be located on a street frontage. They shall be screened from view and separated from pedestrian use areas.

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APPENDIX

- ***Master Plan***
- ***Design Review Process***
- ***Signage Standards***
- ***Lighting Standards***
- ***Planting/Landscaping***

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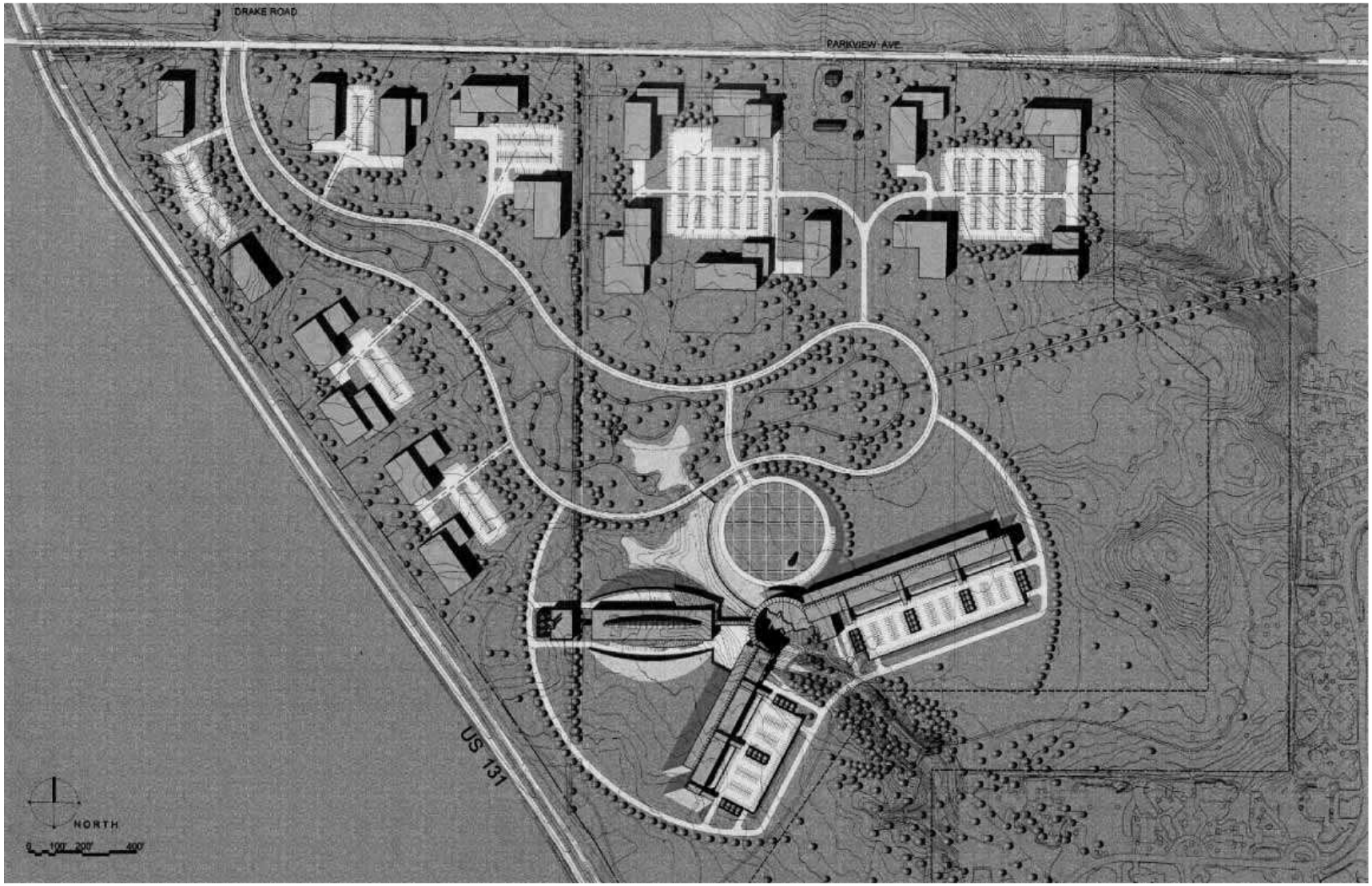
• *Master Plan*

Following is the University’s Master Plan for BTR Park development.



MASTER PLAN

• *Design Review Process*

ARCHITECTURAL AND PLANNING CONTROL

A. Design Review Committee Membership

1. "At-Large" Member of the University; appointed by the President
2. Licensed Architect/Engineer; recommended by the University Architect, appointed by the President
3. Licensed Architect/Planner; recommended by the University Architect, appointed by the President
4. Licensed Landscape Architect; recommended by the University Architect, appointed by the President
5. BTR Park Representative (see "Declaration" for selection guidelines)

B. Function of the Design Review Committee

1. The Design Review Committee is appointed and authorized by the President to review and act on all development proposals in accordance with the review procedures, applying its judgments in accordance with criteria set forth by the Site Design Standards and the Declaration of Restrictions, Covenants, and Design Standards.
2. Administrative Responsibility: At its discretion, the Committee may retain the services of professional or technical advisers such as Architects, Landscape Architects, Planners, or Engineers to assist in evaluating submissions on the basis of design and other technical considerations.

C. Plan Compliance

No improvement shall be commenced, erected, or constructed, nor shall any addition thereto, or change or alterations therein be made (except the interior of a building), until there has been full compliance with the plan review procedures as set forth in this document.

D. Plan Submittal and Approval

All required plans shall be submitted to the Design Review Committee for review. The Committee reserves the right to approve or disapprove, in writing, the plans relative to all particulars therein including but not limited to the location and method of construction of any improvement, the quality, type of materials and colors used; harmony of external design with adjacent existing or planned improvements and landscaping; and location as the same relates to existing vegetation, topography, setbacks, grade, driveways, parking lots, and size of building.

All plans submitted must be on 24"x36" sheets with a predetermined scale for site plans, landscape and irrigation plans, and building plans, with printing capable of being reduced by 50% while retaining legibility. In instances where

the required scale will not fit on the sheet size noted the next larger standard size sheet may be mutually agreed to.

E. Design and Plan Review Procedures

1. **Design Review Process**: The Design Review Process is a four-step process, and must be met by all applicants. These steps are as follows:

   Step 1 – Pre-Design Conference
   Step 2 – Conceptual Plan Review
   Step 3 – Preliminary Plan Review
   Step 4 – Final Design Development Plan Review and Approval

   Step 1 is for orientation purposes only. It is required that the applicant and a representative from his/her design team participate in a Pre-Design Conference. In Steps 2 and 3, the Design Review Committee will respond directly to the University on recommendations or requests for more specific information regarding any plans or unacceptable plans in Steps 2 and 3. It is the responsibility of the Committee to provide recommendations for bringing plans to acceptability. In Step 4 the Committee will make a recommendation for approval or disapproval directly to the University on compliance.

   Step 1 – Pre-Design Conference

   Prior to committing to any site plan or building design and as a method of project orientation, it is required that the applicant and a representative from their design team participate in a Pre-Design Conference. The conference will be with the Committee and representatives from the University. It is expected that the applicant will outline the project in terms of land use, building size, number of potential employees, business operations, hours, and products produced, project budget, and a preliminary construction timetable. A Committee liaison person will be identified. The Committee will provide a copy of the development standards, review the covenants and guidelines, and indicate the proper procedures to follow through the design review process.

   Step 2 – Conceptual Plan Review

   The application or his/her representative shall transmit conceptual drawings of the proposed building and site improvements.

   The Concept Plans shall illustrate the relationship of new buildings, parking and other site improvements to existing topography, vegetation, adjacent buildings and off-site views. Include:

   a. Building location(s)
   b. Future expansion area(s)
   c. Location of energy generating equipment.
   d. Proposed exterior architectural treatment (including materials, colors and textures)

e. Tabulation of square footage for all construction
f. Location of entrance drives
g. Location and preliminary layout of parking areas
h. Service areas and drives
i. Proposed grading concept and erosion control
j. Proposed drainage concept, including on-site detention areas or access to park retention areas
k. Proposed utility locations, including easements
l. Proposed landscape concept
m. Construction timetable
n. Any other information as may be required in order to determine the acceptability or appropriateness of the proposal

Step 3 – Preliminary Plan Review

After Concept approval, the preliminary plan shall be prepared to illustrate greater detail. This plan would contain typical site plan review information needed by the City of Kalamazoo and Oshtemo Township. In addition to the above, it would include:

a. Applicant/Developers name, address, and telephone number, the name, address and telephone number of the firm(s) preparing the plan, the lot designation, the scale and north arrow, the date of submission, property legal description, and site statistics.
b. Location plan of the proposed improvements, dimension of front, side, and rear yards and other related site development information and calculations.
c. Location, size and quantity of energy generation equipment. Provide manufacturers drawings and specifications of equipment to be installed.
d. Clearing, grading and drainage plan showing proposed clearing limits, existing and proposed contours at one-foot intervals, and drainage plan with erosion control measure indicated. Existing plant materials of significant value shall be indicated as well.
e. Utilities plan showing sanitary sewer, water, gas, electric, telephone, fiber optics, industrial waste disposal method, and lighting for the building exterior, parking lot, and landscaping. (The final submissions shall include shop drawings and mounting details for all exterior light fixtures.)
f. Landscape plans and irrigation intent indicating existing and proposed plant material and water sources for all planted areas. (The final submission shall indicate quantity, quality, species, and sizes for the plant material.)
g. Drives and parking lots with the parking stalls and isles indicated, service drives, service areas, and loading drives, and docks, and refuse container locations.

h. Elevations of buildings from all sides at an appropriate scale sufficient to clearly indicate the placement and massing of the buildings. The following improvement details shall also be provided:
    1. Heights of all improvements. The final submission shall indicate, by a two-dimensional drawing and graphic representation, the mounting heights of all lighting fixtures.
    2. Windows, doors, and other fenestrations.
    3. All exterior materials and colors. (The final submission shall include the manufacturer's name and catalogue numbers of all materials and colors and/or samples of same.)

h. Roof Plan: At an appropriate scale indicating the location and sizes of all roof mounted equipment and proposed method for screening all equipment.

i. Signage system, showing all sign locations and details.

j. A plan for traffic engineering, showing anticipated number and types of vehicles and how they will be routed.

k. Pedestrian pathway connections to the building and adjacent Common Area.

l. Outline specifications for the proposed construction.

m. A preliminary report addressing all environmental performance standards such as glare, noises, odor, etc. as outlined in this document.

n. Site improvement locations such as walls, steps, fences, walks, etc.

Step 4 – Final Plan Review and Approval (Construction Documents)

Based on approval of preliminary plans, the applicant will submit detailed construction plans consisting of:

a. A Site Plan sheet showing the relationship of the building's location on the lot relative to existing and proposed topography, landscaping, drainage, including lot calculations as indicated by the covenants and construction guidelines.

b. Drawings showing the front, rear, and side elevations and heights of the proposed building(s).

c. Brief report of operation, maintenance and quantity of energy developed by energy generation system.

d. Drawings showing the proposed layout of the internal floor plan, including detailing of roof construction and mechanical equipment.

e. Where appropriate, cross sections of the applicants site and those adjacent sites containing improvements at a scale of 1" = 20' in longitudinal and transverse directions, indicating the relationship for the buildings and parking lots and major grading to the street and major landscaping. The plan and sections shall be sufficiently

accurate to permit analysis of building mass, visual screening, erosion control, drainage, tree protection, and landscape architectural design.

f. Sample of all exterior building materials to be utilized showing textures, colors, fenestration and other detailing necessary to accurately depict the finished building and its lot.
g. Specifications for architectural, structural, mechanical, electrical, and site elements, including landscaping.
h. Detailed drawings showing the proposed design of all exterior signs, including elevation, dimension, location, material, lettering, color and lighting. This would include drawings depicting the design of the main entrance onto the lot.
i. A report detailing the operation relative to environmental questions of noise, odor, glare, vibration, smoke, dust, ashes, radiation, hazardous or noxious wastes, and any other impact factors requested by the Committee.
j. Right-of-way lines of existing and proposed streets immediately adjoining and within the proposed lot, and the names of all proposed streets and all property set back lines for the proposed site and those adjacent.
k. Location of curb cuts off public roadways.
l. Location, dimension and proposed use off all paved areas.
m. Location of all building entrances.
n. The site plan should clearly show the relationship of all proposed site improvements to those of adjacent sites as it relates to the buildings, parking and landscaping.
o. Utility plan, indicating water supply (potable and industrial), fire hydrants, sanitary and storm sewers, phone, and fiber optics, cable T.V., gas and electric improvements.
p. Estimated number of employees, cars, and expected types and times of service delivery.
q. A landscape plan, indicating location, type and size of existing trees and vegetation, identifying those to be preserved and location, type and size of trees, vegetation and other amenities to be provided.
r. Location of adjacent Common Area.
s. Location of all proposed site and immediately adjacent existing lighting facilities, fences, street furniture, and directional signs.
t. A grading plan with 1’ contour intervals and important spot elevations showing existing and finished grades and proposed methods of handling storm runoff from the roof and paved areas.
u. Storm drainage calculations by a qualified professional.
v. Such other reasonable information as may be required by the Design Review Committee.

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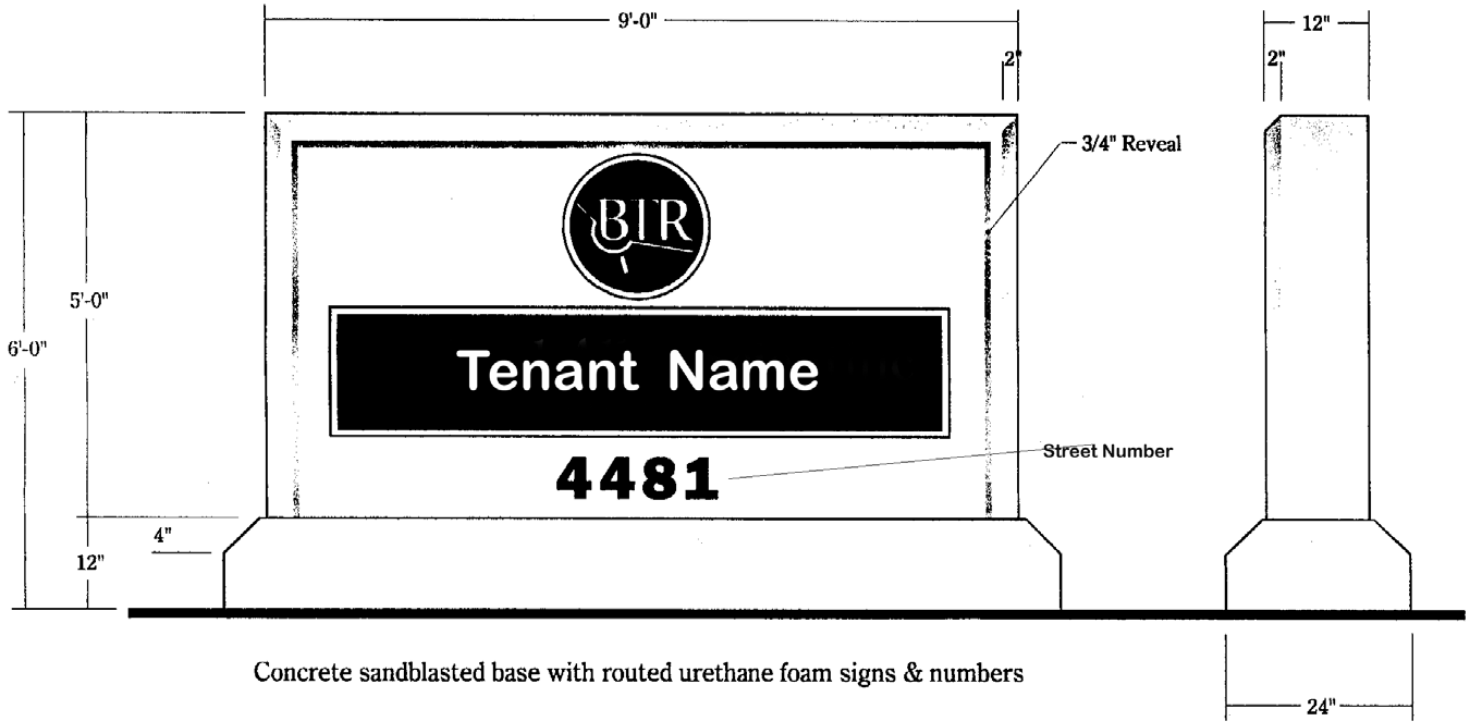
. *Signage Standards*

The Parkway identification sign standard follows this page. Individual building signs shall comply with all City or Township zoning ordinances, the Declaration of Restrictions, Covenants and Design Standards.

MONUMENT TENANT SIGNS 1 SIDED



Concrete sandblasted base with routed urethane foam signs & numbers

Stone Creations
Simulated Stone Products

TYPICAL SIGN

Approved for: _____

By: _____ Date: _____

3306 Mindi Lane Kalamazoo, MI 49001
(269) 226-9100 fax (269) 226-9976

Western Michigan University

. *Lighting Standards*

Lighting standards throughout the BTR Park shall be developed in coordination with the lighting standards established for the Engineering College Campus. Final selections will be in place by January 2001. All lighting design, selection, and installation shall follow City or Township zoning ordinances and all related guidelines found in these Site Design Standards.

Cut Sheets ~~for~~ COE Site.

"OA"

COOPER UTILITY LIGHTING

OVYLOW-PROFILE DROP PRISMATIC

150-400W

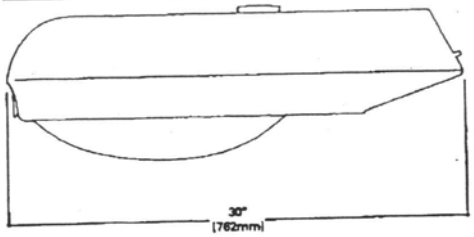
High Pressure Sodium
Metal Halide
Mercury

ROADWAY LUMINAIRE

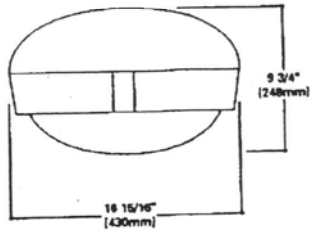
APPLICATION

The OVY Low-Profile Drop Prismatic roadway luminaire is ideal for roadways, parking areas, residential neighborhoods and bridge structures. Suitable for 3G vibration conditions. Up to 65% less glare than typical drop lens refractor.

DIMENSIONS



FRONT



OK

EPA
Effective Projected Area: .51 Square Feet

ORDERING INFORMATION

SAMPLE NUMBER: OVY15SWW2D4

OVY	25	M	W	V	2		

Product Family [1]
OVY

Lamp Wattage
15=150 [2]
20=200
25=250
31=310
40=400
24=250/400 wired 250
42=400/250 wired 400

Lamp Type [2]
S=HPS
V=Mercury [6]
M=MH [6]

Ballast Type [3]
C=CWI
M=Mag. Reg.
W=CWA
R=Reac./NPF
P=Hi. Reac./NPF
H=Reac./HPF
N=Hi Reac./NPF
K=10KV CWA [4]

Voltage [3]
2=120V
0=208V
4=240V
7=277V
8=480V
F=120/240 wired 120V
P=240 w/PCR wired 120V
W=Multi-Tap wired 120V
N=Multi-Tap wired 277V
V=Multi-Tap wired 240V

Distribution [4]
2=Type II
3=Type III
4=Type IV

Cutoff
D=MCO
E=MSCO
J=LNCO

Options (add as suffix) [5]
1=Single Fuse, Internally Mounted (120, 277V)
2=Double Fuse, Internally Mounted (208, 240 & 480V)
4=Photocontrol Receptacle
6=White
7=Black
8=Bronze
E=150W/100V/HPS Ballast
H=Plug-in Starter Receptacle
K=Level Indicator
L=Lamp
M=MOV Lightning Surge Protector [7]
T=Swing-down Ballast Bridge

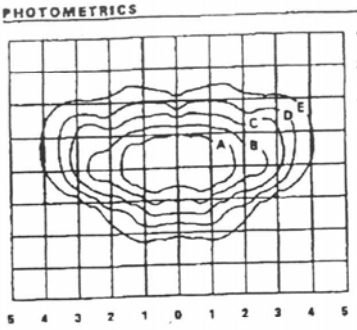
Accessories (order separately)
RA1003=Cutoff Visor
OA/RA1013=Photocontrol Shorting Cap
OA/RA1014=120V Photocontrol
OA/RA1016=105V-285V Photocontrol
OA/RA1027=480V Photocontrol

Post-it® Fax Note 7671	Date 6/7/01	# of pages ▶ 2
To Evie	From Carey	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 7-3539	Fax #	

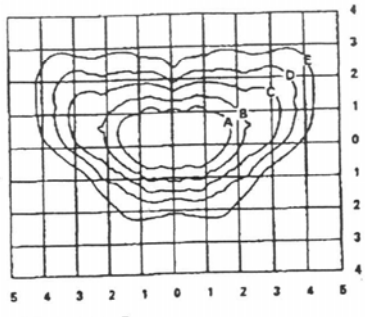
Catalog Number	Lamp Wattage	Lamp Type	Ballast Type	Voltage	Photometric Distribution	Input Watts	Net Wt. (lbs.)	Shipping Volume (cu. ft.)
OVY15SWW2D4	150	HPS	CWA	Multi-Tap	II MCO	194	26	3.5
OVY20SCW3E4	200	HPS	CWI	Multi-Tap	III MSCO	245	27	3.5
OVY25SWW3E4	250	HPS	CWA	Multi-Tap	III MSCO	300	28	3.5
OVY25SW83E4	250	HPS	CWA	480V	III MSCO	300	28	3.5
OVY31SC23E4	310	HPS	CWI	Multi-Tap	III MSCO	365	33	3.5
OVY40SWW3E4	400	HPS	CWA	Multi-Tap	III MSCO	458	32	3.5
OVY40SW83E4	400	HPS	CWA	480V	III MSCO	465	32	3.5
OVY40MWW3D4 [6]	400	MH	CWA	Multi-Tap	III MCO	460	30	3.5
OVY40MW83D4 [6]	400	MH	CWA	480V	III MCO	460	30	3.5
OVY24SWW3E4	250/400	HPS	CWA	Multi-Tap	III MSCO	297	31	3.5
OVY42SWW3E4	400/250	HPS	CWA	Multi-Tap	III MSCO	465	31	3.5

NOTE: [1] Standard color is grey, other finish colors available. Consult factory. [2] 150W units are for S55 lamp. [3] Refer to technical section for lamp/ballast/voltage compatibility. [4] Other distributions & cutoffs available. Consult factory. [5] When ordering options, order in alphanumeric order. [6] 400W Metal Halide requires ED28 lamp. [7] MOV option is not available for any system requiring a three position terminal block (Example—240V with PCR wired 120V). In order for MOV option to function center terminal of three position terminal block must be connected to "Earth" ground.

PHOTOMETRICS



OVY40SWX2D
400-Watt HPS
50,000-Lumen Clear Lamp
Type II-MCO



OVY40SWX3E
400-Watt HPS
50,000-Lumen Clear Lamp
Type III-MSCO

Footcandle Table

Select mounting height and read across for footcandle values of each isofootcandle line. Distance in units of mounting height.

Mounting Height OVY	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
25'	3.92	1.96	0.98	0.49	0.20
30'	2.72	1.36	0.68	0.34	0.14
35'	2.00	1.00	0.50	0.25	0.10
40'	1.52	0.76	0.38	0.19	0.08

PHOTOMETRIC DISTRIBUTION (curve number)

Wattage	Light Source [1]	Lens Type	III MSCO	IV MSCO	II MCO	III MCO
150	HPS	Low Profile	N/A	N/A	766737 (150W)	766739 (150W)
200-400	HPS	Low Profile	766710 (400W)	766757 (400W)	766709 (400W)	N/A
250-400	MH (ED28)	Low Profile	N/A	N/A	766743 (400W)	766742 (400W)
250	MV (ED28)	Low Profile	N/A	N/A	766751 (250W)	766752 (250W)

NOTE: [1] All light sources are clear unless noted otherwise.

SPECIFICATION FEATURES

A--Housing
Die-cast aluminum housing and latch. Standard grey polyester powder coat finish. Other finish colors available. Consult factory. Optional NEMA twistlock photocontrol receptacle also available.

B--Socket
Adjustable mogul-base porcelain socket.

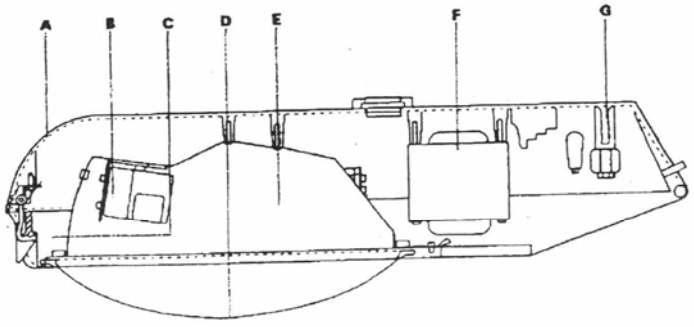
C--Door
Die-cast aluminum door frame with integral hinges for hands free installation, relamping and maintenance. ANSI wattage/source label.

D--Lens
Removable borosilicate glass refractor for use with high pressure sodium, metal halide and mercury lamp sources.

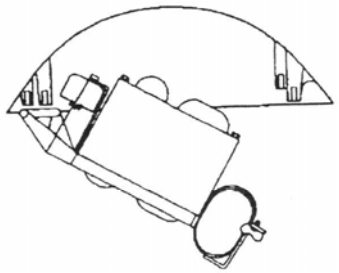
E--Reflector
The optical system is a hydroformed anodized aluminum reflector with a Dacron polyester filter.

F--Ballast Assembly
Hard mounted ballast with encapsulated starter for protection from environmental abuse. Standard two position tunnel type compression terminal block. Optional swing-down ballast bridge also available (Not available for 3G applications).

G--Mounting
Two-bolt/one bracket slipfitter with cast-in pipe stop and leveling steps. Fixed-in-place birdguard seals around 1 1/4" or 2" mounting arms.



SWING-DOWN BALLAST MODULE

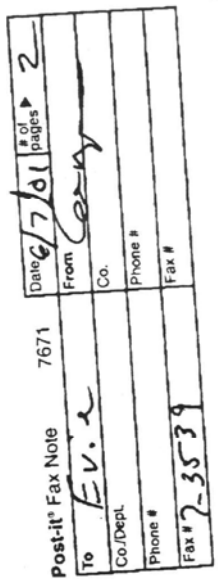


NOTE: Specifications and Dimensions subject to change without notice.

"OA"

RIHA, DONALD

Subject: FW: Light Fixture Specs



-----Original Message-----
From: Tim Britain [mailto:tbritain@ocba.com]
Sent: Tuesday, February 20, 2001 8:24 AM
To: RIHA, DONALD
Cc: awu@raanet.com
Subject: FW: Light Fixture Specs

Don/Albert,
This is the fixture that the university has decided to use per George Wilson. I believe it is the same overhead fixture used throughout the BTR Park. Please contact me with any questions.
I also received a fax sketch from Albert concerning the edge treatment of the pond north of the engineering building and have the following comments.
1. If rip-rap is used should we continue this detail around the entire pond? Because this pond is to be lined the rip-rap may screen the liner wall connection. Rip-rap of the entire pond edge will be costly in addition to the concrete retaining wall. If rip-rap will the top of the retaining wall be 4' above static water elevation? If so do we want 4' of exposed hardscape?
2. Perhaps the courtyard area could have a guardrail or shrub mass to separate sloped area.
Tim

-----Original Message-----
From: Ken Peregon
Sent: Monday, February 19, 2001 5:02 PM
To: Tim Britain
Subject: FW: Light Fixture Specs

Tim,

This is the WMU BTR Park light fixture info I received from George Wilson.

Ken

-----Original Message-----
From: Robert C Fishel [mailto:rcfishel@cmsenergy.com]
Sent: Monday, January 29, 2001 10:32 AM
To: Ross D Bierma
Cc: WILSONG@ucs5.cc.wmich.edu
Subject: Re: Light Fixture Specs

The components I specified were:

[Light fixtures: Cobraheads from Cooper Lighting (OVY25MWV3D4H GRAY)
Poles: 30 ft MH steel davit from Millerbernd (LDA6-300 GRAY)] *

Sorry for the delay.
Anything more, let me know.

Ross D Bierma
'29/2001 09:19 AM

To: Robert C Fishel/Ln/Consumers/CMS@CMS

. *Planting / Landscaping*

The following pages *i* and *ii* contain a partial list of native trees and shrubs that are acceptable for landscaping in the BTR Park. Native plants not listed in these Site Design Standards may be approved by the Design Review Committee.

The following pages *iii*, *iv*, and *v* contain a list of alien plant species which will not be accepted for landscaping use in the BTR Park.

Native Deciduous Trees

Black Maple	*Acer nigrum*
Red Maple	*Acer rubrum*
Sugar Maple	*Acer saccharum*
Ohio Buckeye	*Aesculus glabra*
Shadblow Serviceberry	*Amalanchier laevis*
Paw Paw	*Asimina triloba*
Yellow Birch	*Betula alleghaniensis*
River Birch	*Betula nigra*
Blue Beech, Musclewood	*Carpinus caroliniana*
Bitternut Hickory	*Carya cordiformis*
Pignut Hickory	*Carya glabra*
Shellbark Hickory	*Carya laciniosa*
Shagbark Hickory	*Carya ovata*
Redbud	*Cercis canadensis*
Flowering Dogwood	*Cornus florida*
Hawthorn species	*Crataegus spp.*
American Beech	*Fagus grandifolia*
Black Ash	*Fraxinus nigra*
Green Ash	*Fraxinus pennsylvanica*
Honeylocust	*Gleditsia triacanthos intermis*
Kentucky Coffeetree	*Gynmocladus dioicus*
Butternut	*Juglans cinera*
Black Walnut	*Juglans nigra*
Tulip Tree	*Liriodendron tulipifera*
Wild Crabapple	*Malus coronaria*
Black Gum	*Nyssa sylvatica*
American Hophornbeam	*Ostrya virginiana*
Cottonwood	*Populus deltoides*
Big-toothed Aspen	*Populus grandidentata*
Quaking Aspen	*Populus tremuloides*
Wild Plum	*Prunus americana*
Pin Cherry	*Prunus pensylvanica*
Wild Black Cherry	*Prunus serotina*
White Oak	*Quercus alba*
Swamp White Oak	*Quercus bicolor*
Bur Oak	*Quercus macrocarpa*
Chinkapin Oak	*Quercus muehlenbergii*
Pin Oak	*Quercus palustris*
Red Oak	*Quercus rubra borealis*

Black Oak	*Quercus velutina*
Sassafras	*Sassafras albidum*
Basswood	*Tilia americana*

Native Evergreen Trees

Red Cedar	*Juniperus virginiana*
Eastern White Pine	*Pinus strobus*

Native Shrubs

Bearberry	*Arctostaphylos uva-ursi*
Chokeberry	*Aronia prunifolia*
Alternate Leaf (Pagoda) Dogwood	*Cornus alternifolia*
Silky Dogwood	*Cornus amomum*
Gray Dogwood	*Cornus foemina (racemosa)*
Redosier Dogwood	*Cornus sericea*
Witch-hazel	*Hamamelis virginiana*
Winterberry	*Ilex verticillata*
Common Juniper	*Juniperus communis*
Spicebush	*Lindera benzoin*
Potentilla	*Potentilla fruiticosa*
Winged Sumac	*Rhus cappalina*
Smooth Sumac	*Rhus glabra*
Staghorn Sumac	*Rhus typhina*
Shrubs Rose	*Rosa carolina*
Arrowwood Viburnum	*Virburnum dentatum*
Blackhaw Viburnum	*Viburnum prunifolium*
American Highbush Cranberry	*Viburnum trilobum*

ALIEN PLANT SPECIES WHICH ARE PESTS IN MIDWEST NATURAL AREAS

These non-native plants, mostly from Europe or Asia, have been found to invade natural areas and destroy them by changing ecosystem processes, e. g., shrinking supplies of surface water; shading out and/or crowding out native species; and hybridizing with native species and potentially eliminating native genetic strains.

Such plants threaten all types of natural or semi-natural areas, including rangelands, grasslands, wetlands, and forests. In national parks and nature preserves, they threaten some of the very species these lands are intended to preserve. These invasive, non-native plants should not be planted even in yards, for fear that they will escape to, and infest, nearby natural areas.

Characteristic of most of these plants is the production of many small seeds which are dispersed by birds and other wildlife—a process we cannot control except by not planting these dangerous plants in our yards and not allowing them to be planted in our cities, counties, and states.

Alien trees

Amur maple	*Acer ginnala*
Norway maple	*Acer platanoides*
Tree-of-heaven	*Ailanthus altissima*
Paper mulberry	*Broussonetia papyrifera*
White poplar, silver poplar	*Populus alba*
Black locust [native to N. A., but not Midwest]	*Robinia pseudoacacia*
Tamarisk [can invade northern wetlands]	*Tamarix ramosissima*
	T. chinensis
	T. parviflora
Siberian Elm	*Ulmus pumila*
Wayfaring Tree	*Viburnum lantana*

Alien shrubs

Japanese barberry	*Berberis thunbergii*
Russian olive [infests 17 western states]	*Elaeagnus angustifolia*
Autumn olive	*E. umbellata*
Winged euonymus, burning bush	*Euonymus alatus*
Wintercreeper, climbing euonymus	*E. fortunei*
Privet	*Ligustrum vulgare*
	L. sinense
	L. japonicum
Amur honeysuckle	*Lonicera maackii*

Bella honeysuckle	*L. x bella*
Morrow's honeysuckle	*L. morrowii*
Tatarian honeysuckle	*L. tatarica*
White mulberry	*Morus alba*
Common buckthorn, European buckthorn, Hart's thorn, European waythorn, Rhineberry	*Rhamnus cathartica*
Smooth buckthorn, glossy buckthorn, alder buckthorn, columnar buckthorn European alder, fen buckthorn	*R. frangula*
Multiflora rose	*Rosa multiflora*
Japanese spirea [pink spirea]	*Spirea japonica*
Japanese yew [already a problem in Northeast]	*Taxus cuspidata*
European highbush cranberry, Guelder rose	*Viburnum opulus* var.*opulus*

Alien vines

Porcelain berry	*Ampelopsis brevipedunculata*
Oriental bittersweet, Asiatic bittersweet	*Celastrus orbiculatus*
Japanese honeysuckle, Hall's honeysuckle	*Lonicera japonica*
Mile-a-minute [already a problem in Northeast]	*Polygonum perfoliatum*
Kudzu	*Pueraria lobata*

Alien herbaceous plants

Garlic mustard	*Alliaria petiolata*
Cornflower, bachelor's button	*Centaurea cyanus*
Spotted knapweed	*C. maculosa*
Lily-of-the-valley	*Convallaria*
Crown vetch	*Coronilla varia*
Ox-eye daisy	*Chrysanthemum leucanthemum*
Queen Anne's Lace	*Daucus carota*
Cut-leaf teasel	*Dipsacus laciniatus*
Teasel	*Dipsacus sylvestris*
Leafy spurge	*Euphorbia esula*
Japanese knotweed	*Fallopia japonica* or *Polygonum cuspidatum*
Baby's breath	*Gypsophila paniculata*
Dame's rocket	*Hesperis matronalis*
Common St. John's wort	*Hypericum perforatum*
Bird's-foot trefoil, deer vetch	*Lotus corniculatus*
Money plant, Chinese money	*Lunaria annua*
Moneywort	*Lysimachia nummularia*
Purple loosestrife	*Lythrum salicaria*
White sweetclover	*Meliotus alba*

Yellow sweetclover	*Meliotus officinalis*
Wild parsnip	*Pastinaca sativa*
Sulfur cinquefoil	*Potentilla recta*
Mexican bamboo	*Polygonum cuspidatum*
Bouncing Bet	*Saponaria officinalis*
Vinca, periwinkle, myrtle	*Vinca minor*

Alien grasses

Quack grass	*Agropyron repens*
Smooth brome	*Bromus inermis*
Tall fescue, taller fescue, meadow fescue	*Festuca arundinacea (F. elatior)*
Reed canary grass	*Phalaris arundinacea*
Johnson grass	*Sorghum halepense*

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