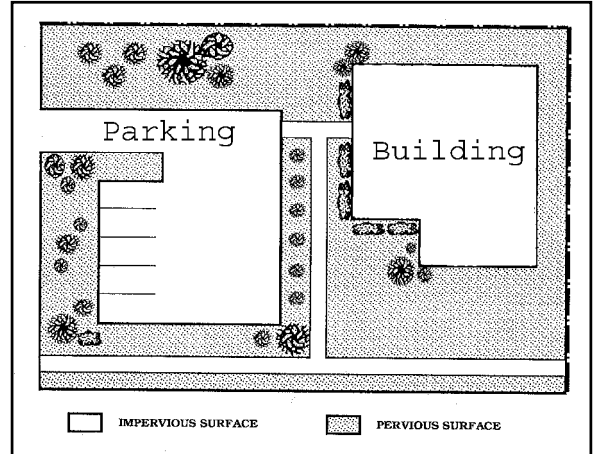


## 2.00 - SITE DEVELOPMENT GUIDELINES

### 2.1 REGULATIONS

The development regulations for light industrial and research and development projects are intended to regulate location, placement, and bulk of the proposed uses. These standards will encourage site development to occur in a manner that clusters uses to maximize open space benefit through preservation of contiguous open space. It is also the intent of these standards to minimize aesthetic impacts to peripheral properties through generous setbacks, landscaping and buffering.

- 2.1.1** Impervious surface shall be defined as any surface of land which has been compacted or covered with a layer of material that substantially reduces, makes highly resistant to or prevents the infiltration of stormwater into the ground. This includes graveled drives and parking lots, sidewalks, streets, parking lots, roofs, structures, buildings and other hard-surfaced, paved areas. See illustration right for impervious surface concept.



### 2.2 ENVIRONMENTAL PERFORMANCE STANDARDS

All buildings, uses, and facilities within these projects shall comply with Township Engineering standards. Compliance with the following environmental performance standards shall also be required. These standards are intended to ensure that proposed facilities will have minimal impacts on the natural environment, will make best use of existing topography, drainage, and landforms, and will be compatible with the character of surrounding properties and the community as a whole.

#### 2.2.1 Stormwater Management

The Township recognizes that stormwater runoff has been traditionally treated as a by-product of development to be disposed of as quickly and efficiently as possible. The result has often been increased flooding, degradation of water quality, soil erosion and sedimentation, and a failure to capitalize on the benefit of creative stormwater management. It is also recognized that certain community development standards may contribute to decreased pervious surface and increased stormwater runoff.

It is the intent of this Section to encourage the use of Best Management Practices (BMPs) which are structural, vegetative, or managerial practices designed to treat, prevent, or reduce degradation of water quality due to stormwater runoff. All development projects subject to review under the requirements of this Ordinance shall be designed, constructed, and maintained in accordance with Livingston County Drain Commissioner Rules and Regulations. The objectives of these standards will contribute to the prevention of flooding, protection of water quality, reduction of soil erosion, maintain and improve wildlife habitat, and substantial aesthetic values of the project. The particular stormwater management facilities and measures required shall reflect and incorporate existing grade, natural features, wetlands, and watercourses on the site, to the maximum extent feasible.

#### 2.2.2 Municipal Water and Sanitary Sewer Use

The intent of the RPD District is to foster and encourage uses related to office, research and development, and associated prototyping, warehousing, manufacturing, and support commercial. Such uses will require public utility services. All proposed facilities shall maintain an average

day use water demand per employee of no more than 20 gallons per day. However, water demands not used by employees for other associated uses will be considered on a case-by-case basis during the site plan review process. Proposed uses or facilities that request/require additional water usage shall be considered by the Township based on availability of infrastructure, sizing, and master utility plans for the District, upon review and recommendation by the Township Engineer.

### **2.2.3 Incineration Prohibited**

There shall be no incineration on any site of any waste material.

### **2.2.4 Vibration**

There shall be no activity on any site that causes ground vibration which is perceptible, without instruments, at the boundary line of the site.

### **2.2.5 Airborne Emissions**

All airborne emissions shall, at a minimum, comply with applicable regulations including the Federal Clean Air Act of 1970, as emended, and Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, PA 451 of 1994. In addition, the following standards shall be complied with regarding airborne emissions:

#### **A. Smoke**

Smoke shall be measured at the point of emission using the Ringelmann Smoke Chart published by the U. S. Bureau of Mines. Smoke which is not darker or more opaque than No. 1 on the Ringelmann Chart may be emitted, except that smoke which is not darker or more opaque than No. 2 on such chart may be emitted for periods not longer than four (4) minutes out of any thirty (30) minutes. These standards are applicable to visible grey smoke but shall also apply to visible grey smoke and visible smoke with a different color but an equivalent apparent opacity.

#### **B. Particulate Matter**

Solid particles shall not be emitted at any point in concentration exceeding one-tenth (0.10) grain of particulates per standard cubic foot being emitted.

#### **C. Gases**

Fumes or gases shall not be emitted at any point in concentrations or amounts which are noxious, toxic or corrosive. The values given in Table I, "Industrial Hygiene Standards - Maximum Allowance Concentration for Eight Hour Day, Five Days per Week," Table II, "Odor Thresholds," Table IV, "Concentrations of Substances Causing Pain in the Eyes," and Table V, "Exposures to Substances Causing Injury to Vegetation," in Chapter 5 of the Air Pollution Abatement Manual, Manufacturing Chemists' Association, Inc., Washington, D.C., and any amendments or revisions thereto, are hereby established as guides for determining the permissible concentrations or amounts of fumes or gases.

### **2.2.6 Noise**

#### **A. Definitions**

The following definitions apply to the noise standards established by this Subsection.

1. dba: A unit for describing sound levels using an A-weighting network. This network modifies the measured sound pressure level at the various frequencies to account for differences in the sensitivity of the human ear to sounds of different frequency.

2. Decibel (abbreviated db): A unit which describes the sound pressure level or intensity of sound. The sound pressure level in decibels is twenty (20) times the logarithm to the base 10 of the ratio of the pressure of the sound to a reference pressure of 0.0002 microbar.
3. Impulsive noise: Noises of relatively short duration generally produced by striking two (2) or more objects so as to be heard as separate distinct noises.
4. Noise: A subjective description of an undesirable, unwanted, or un-warranted sound (see definition of "sound").
5. Sound: Rapid fluctuations of atmospheric pressure which are audible to the human ear.
6. Sound level meter: An instrument for measuring the overall sound pressure level which complies with the standards set forth in the "American Standard Specification for General Purpose Sound Level Meters," American National Standards Institute (ANSI S1. 4-1961).

**B. Measurement**

Noise shall be measured with a sound level meter at the lines of the property from which the noise is being emitted. The instrument shall be set to the A-weighted response scale, and the meter to slow response. Measurements shall be conducted with the "American Standard Method for the Physical Measurements of Sound," American National Standard Institute (ANSI S1. 2-1962). When more than one (1) sound level applies the more stringent one shall control.

**C. Standards**

Except as provided in Subsection F(4) immediately below, noise shall not exceed the following levels:

<u>Maximum Permitted Sound Level</u>	<u>When the Lot Is Adjacent To:</u>
60 dba*	Any Residential District
65 dba	Any Research Park District
70 dba**	Any major freeway corridor, i.e. I-96

\*When adjacent to any Residential District, the weighted sound level shall not exceed 60 dba during the hours of 7:00 a.m. to 9:00 p.m. and 55 dba during the hours of 9:00 p.m. to 7:00 a.m.

\*\* A maximum of 70 dba is required, or the sound level of adjoining traffic along a major freeway corridor, whichever is greater, measured at the boundary between the subject parcel and freeway right-of-way line.

**D. Exceptions to Standards**

The maximum sound levels in Subsection F(3) may be exceeded if one (1) of the following correction factors is applicable:

<u>Type of Operation or Character of Noise</u>	<u>Correction in Decibels</u>
Noise source operates less than 20% of any one hour period	Plus 5*
Noise source operates less than 5% of any one hour period	Plus 10*
Noise source operates continuously but at frequencies below 500 cycles per second	Plus 10*
Noise source operates less than 1% of any one hour period	Plus 15*
Noise of impulsive character, such as hammering, pounding, etc.	Minus 5

Noise of periodic character, such as humming, screeching, etc.

Minus 5

\* Apply only one of these correction factors

**E. Exclusion from Standards**

Noises which are not under the direct control of a use within the District, such as from independent transportation facilities, are excluded from the standards established by this Subsection.

**2.2.7 Glare**

Glare, whether direct or reflected, such as from floodlights or high temperature processes, and as differentiated from general illumination, shall not be visible at any property line.

**2.2.8 Lighting**

- A.** Glare from any process (such as or similar to arc welding or acetylene torch cutting) which emits harmful ultraviolet rays shall be performed in such a manner as not to be seen from any point beyond the property line, and as not to create a public nuisance or hazard along lot lines.
- B.** The design and/or screening of the development shall insure that glare from automobile and commercial or industrial vehicle headlights shall not be directed into any adjacent property, particularly residential property.
- C.** Exterior lighting shall be located and maintained to prevent the reflection and glare of light in a manner which creates a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses. This provision is not intended to apply to public street lighting.
- D.** Any operation, which produces intense glare or heat, shall be conducted within an enclosure so as to completely obscure and shield such operation from direct view from any point along the lot lines. If heat is a result of an industrial operation, it shall be so insulated as to not raise the temperature at any property line at any time.
- E.** Exterior doors shall be located, operated, and maintained so as to prevent any glare and light from creating a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses.
- F.** On-site lighting, i.e. parking, building lights, etc. shall conform to the following regulations:
  - 1.** It is the goal of the Township to minimize lighting levels to reduce off-site impacts, prevent the reflection and glare of light in a manner which creates a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses, and to promote “dark skies” in keeping with the rural character of Handy Township.
  - 2.** When site plan review is required, all lighting, including signage and ornamental lighting, shall be shown on site plans in sufficient detail with appropriate photometric studies to allow determination of the effects of such lighting upon adjacent properties, traffic safety, and overhead sky glow. The objectives of these specific actions are to minimize undesirable on-site effects.
  - 3.** Only non-glare, color-corrected lighting shall be permitted. For all non-residential uses, full cutoff shades are required for light sources so as to direct the light onto the site and

away from adjoining properties. The light source shall be recessed into the fixture so as not to be visible from off site. Building and pole mounted fixtures shall be parallel to the ground. Wall-pak type lighting shall be prohibited.

4. Lighting for uses adjacent to residentially zoned or used property shall be designed and maintained such that illumination levels do not exceed 0.1 foot-candles along property lines. Lighting for uses adjacent to non-residential properties shall be designed and maintained such that illumination levels do not exceed 0.3 foot-candles along property lines.

Where lighting is required, maximum light levels shall not exceed twenty-five (25) foot-candles directly beneath a light fixture. Lighting levels shall not exceed three (3) foot-candles as measured directly between two (2) fixtures. The Township Board, after receiving a recommendation from the Planning Commission, may allow for an increased level of lighting above maximum permissible levels when the Board determines that the applicant has demonstrated that such lighting is necessary for safety and security purposes.

For the purposes of this ordinance, all lighting measurements shall be taken at ground level.

5. For parking lots of less than one hundred (100) parking spaces, lighting fixtures shall not exceed a height of sixteen (16) feet measured from the ground level to the centerline of the light source. For parking lots of more than one hundred (100) spaces, lighting fixtures shall not exceed a height of eighteen (18) feet measured from the ground level to the centerline of the light source.
6. Signs shall be illuminated only in accordance with the regulations set forth in this ordinance. In addition, signs within residential districts shall not be illuminated.
7. Building or roof-mounted lighting intended to attract attention to the building and/or use and not strictly designed for security purposes shall not be permitted.

#### **2.2.9 Hazardous Materials**

If the proposed uses or tenants of the project are known or propose to use and/or store hazardous materials (including hazardous wastes) onsite, the project shall be designed to comply with all applicable fire and building codes for the hazardous materials use, and adequate precautions shall be taken to protect against negative off-site impacts of a hazardous materials release, using best available technology.

### **2.3 SITE DESIGN GUIDELINES**

These guidelines are intended to enhance and maintain the quality of the site and architectural design of light industrial and research and development areas of the Township. The quality of a development site shall be produced through: generous setbacks to emphasize the natural landscape and rural character; attractive architecture consisting of finished materials and appropriate shape and design; accommodations for pedestrian access, connections, and maneuverability; clustering of facilities to preserve maximum areas of natural open space; natural landscaping for buffered, attractive development sites with minimal change and impacts to native existing, surrounding landscapes; and site lighting and signage that is uniform, compatible with building architecture, ensures public safety, and protects rural character.

### **2.3.1 General Standards**

- A.** New development shall enhance the character of its surrounding area through quality architecture, landscaping, and appropriate site arrangement.
- B.** In multi-building complexes, a distinct visual link shall be established among various buildings by using architectural or site design elements such as courtyards, plazas, landscaping, and walkways to unify the project.
- C.** Natural amenities such as views, mature trees, creeks, and similar features unique to the site should be preserved and used to enhance the design of new projects.
- D.** Transition shall be developed between projects with different uses and intensities on adjacent parcels to provide an effective visual and functional shift. Transition may be created through appropriate building setback, height, and landscape buffers.
- E.** All new facilities including support commercial shall comply with required setbacks and minimum separation to adjacent building to encourage clustered development and maximum preservation of contiguous open space in the project.

### **2.3.2 Non-Residential Design Standards**

- A.** The non-residential uses, including parking and vehicular traffic ways, shall be separated and buffered from residential units in a manner consistent with good land and community planning principles.
- B.** The project shall provide an environment of high quality and complementary building architecture and site design. Special emphasis should be placed upon methods that tend to reduce the large-scale visual impact of buildings, to encourage tasteful, imaginative design for individual buildings, and to create a complex of buildings compatible with the streetscape.

#### **1. Miscellaneous Design Criteria.**

- a.** Building entries shall be readily identifiable and accessible, with at least one (1) main entrance facing and open directly onto a connecting walkway with pedestrian frontage.
- b.** Architecture will be evaluated based upon its compatibility and relationships to the landscape, and vice versa.

#### **2. Building Massing and Form.**

- a.** Horizontal masses shall not exceed a height: width ratio of 1:3 without substantial variation in massing that includes a change in height and a projecting or recessed elements.
- b.** All buildings shall have a roof pitch of no less than two (2) feet of rise (vertical) over twelve (12) feet of run (horizontal).
- c.** The exterior of the building shall appear to have an abundance of individual uses through the inclusion of windows and varying architectural treatments, while the interior may consist of one individual use.



- D.** All regulations applicable to setbacks, parking and loading, general provisions, and other requirements shall be met in relation to each respective land use in the development based upon zoning districts in which the use is listed as a permitted use, or a use permitted by special use. In all cases, the strictest provisions shall apply.

Notwithstanding the immediately preceding paragraph, deviations with respect to such regulation may be granted as part of the overall approval of the project, provided features or elements demonstrated by the applicant and deemed adequate by the Planning Commission are designed into the project plan for the purpose of achieving the objectives of this Article.

- E.** To the maximum extent feasible, the development shall be designed so as to preserve the natural resources and natural features. The benefit, which would reasonably be expected to accrue from the proposal, shall be balanced against the reasonably foreseeable detriments of the activity, taking into consideration the local, state and national concern for the protection and preservation of the natural resources or features and the following criteria:
  - 1.** The availability of feasible and prudent alternative methods of accomplishing any development.
  - 2.** The extent and permanence of the beneficial or detrimental effects of the proposed activity.
  - 3.** The size, quality and rarity of the natural resources or natural features, which would be impaired or destroyed.
- F.** A perimeter setback and berming may be required by the Planning Commission for the purpose of buffering the development in relation to surrounding properties. If the project includes non-residential uses adjacent to a district authorizing residential uses, and/or if the project is larger than three (3) acres in area, such perimeter setback shall be established with a dimension from the property line of up to fifty (50) feet at the discretion of the Planning Commission, taking into consideration the use or uses in and adjacent to the development. The setback distance need not be uniform at all points on the perimeter of the development.
- G.** Native landscaping shall be used wherever possible.
- H.** Detention/retention areas shall be made to look as natural as possible. The use of native seed mixes that will help create a wetland appearance in the basin shall be provided where possible to improve the appearance of the basin and to improve stormwater quality.
- I.** Street trees shall be provided along all streets at a rate of one deciduous tree per fifty (50) feet.
- J.** Thoroughfare, drainage, and utility design shall meet or exceed the standards otherwise applicable in connection with each of the respective types of uses served.
- K.** Underground installation of utilities shall be required, including electricity and telephone.
- L.** Pedestrian walkways shall be separated from vehicular circulation, unless such collaboration is part of the overall development concept.
- M.** Signage, lighting, landscaping, building materials for the exterior of all structure, and other features of the project, shall be designed and completed with the objective of achieving an

integrated and controlled development, consistent with the character of the community, surrounding development or developments, and natural features of the area.

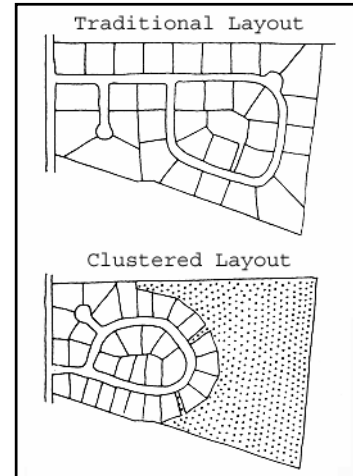
- N. Where non-residential uses adjoin off-site residentially zoned property, noise reduction and visual screening mechanisms such as earthen and/or landscape berms and/or decorative walls, shall be employed. The Planning Commission, at its discretion, shall review and approve the design and location of such mechanisms.

### **2.3.3 Site Organization and Design**

- A. All site components shall be arranged to emphasize the aesthetically pleasant components of the site such as existing mature trees, superior architectural features, and disguise its less attractive scenes such as service facilities (i.e. loading docks, utility meters, HVAC, trash compaction, etc), equipment areas (vehicle fleet, etc.), and trash enclosures through placement and design of the structure and landscaping.
- B. New sidewalks/pedestrian walkways shall be provided and integrated into the existing sidewalk network. The on-site walkway system shall link the proposed facility with existing or future support commercial areas, outdoor public gathering places, and other open space areas within the project. Further, convenient employee access to nearby support commercial uses and walkway systems should be provided when feasible.
- C. Where it is necessary for the primary pedestrian access to cross drive aisles or internal roadways, the pedestrian crossing shall emphasize and place priority on pedestrian access and safety. The material and layout of pedestrian access shall be continuous as it crosses the driveway, with a break in continuity of the driveway paving and not in the pedestrian walkway. The pedestrian crossings must be well-marked using pavement treatments, signs, striping, lighting, traffic calming techniques, median refuge areas, and landscaping.

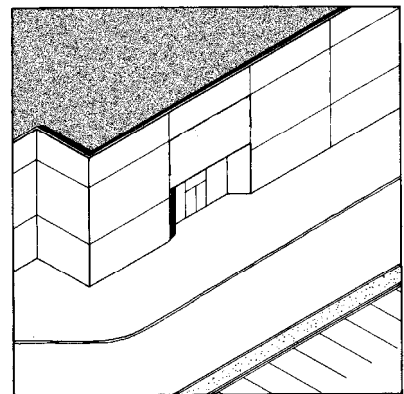
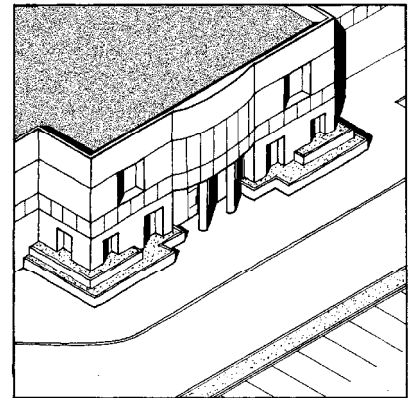
### 2.3.4 Open Space/Clustering

- A. An overall development plan or master plan of the District should be developed to determine conceptual location of proposed roads, lots, drainage facilities, existing natural features, and open space. In the absence of such a plan, it is the intent of this District to ensure the maximum preservation of contiguous open space, while clustering facilities and supporting commercial uses (see figure right).
- B. Commercial uses shall be clustered with other buildings and located to efficiently serve the employees of uses within the area. Such location should be integrated with and connected to pedestrian walkway systems to facilitate pedestrian/employee access to the commercial services.

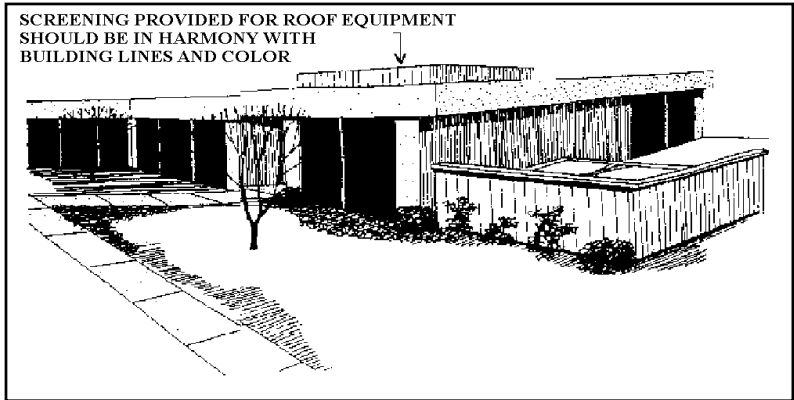


### 2.3.5 Building Architecture and Design

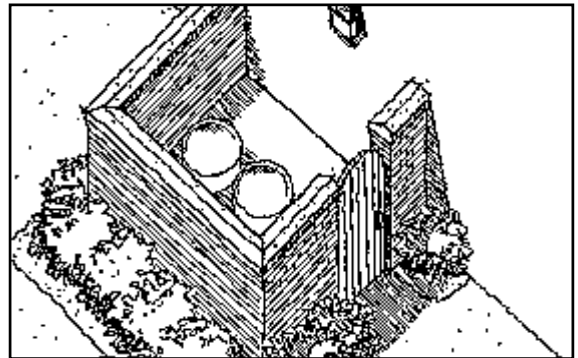
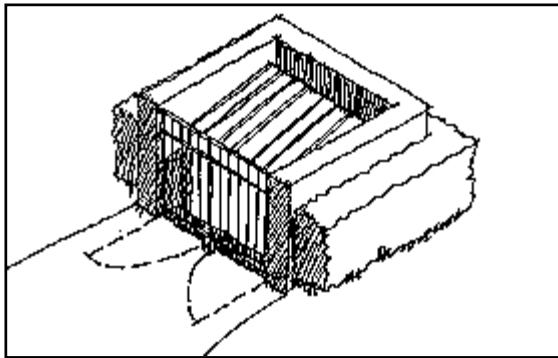
- A. Public entrances and primary building elevations should face the street. Main entrances to the buildings shall be well-defined.
- B. In multi-building complexes, a comprehensive architectural concept shall be developed and maintained. Various site components should be unified through the use of similar design, material, and colors.
- C. Bright, contrasting colors shall be used for trims and accents only.
- D. High quality metal siding may be used as exterior siding or in large expanses only if approved by the Planning Commission. It may be used for minor architectural features and trims.
- E. The color and material of building additions shall be coordinated with those of the principal buildings.
- F. Where function necessitates a basic, box-like building form, exterior articulation such as change in color, material, or plane shall be introduced on an outer decorative shell encompassing facades which are visible from public or private streets (see figure above right). Less architecturally interesting facades of buildings shall be substantially setback and screened from public view by mature, dense landscaping as an alternative to furnishing quality architecture (see figure right). Landscaping size and location shall be determined on a site-by-site basis by the Planning Commission, and may exceed the minimum required herein.
- G. Service doors shall be recessed and integrated into the overall design of the building.



- H. All roof-top equipment such as HVAC units shall be screened with a parapet wall or other screening feature (see figure below).

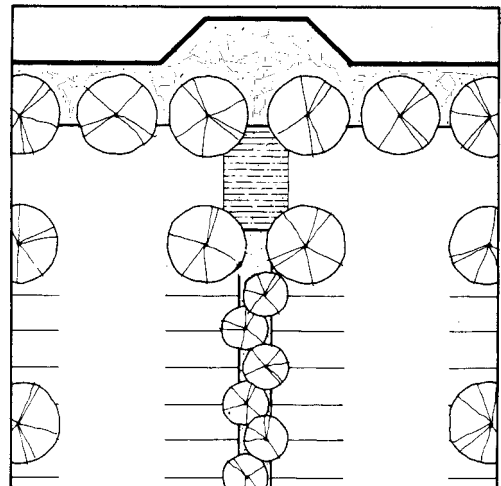


- I. All dumpsters, outdoor refuse containers, and mechanical equipment shall be properly screened from view. Landscaping shall be provided where appropriate (see figures below).



### 2.3.6 Parking and Circulation

- A. To avoid large expanses of paved areas, and to provide easy accessibility to buildings, large parking lots should be divided into smaller parking areas and dispersed around the site. Dedicated pedestrian pathways should be provided through large parking lots to allow clear access to buildings. (see figure right)
- B. Where large parking lots are needed, adequate landscaped pockets shall be integrated into parking areas, as required by Landscaping design standards.
- C. Whenever security gates are provided, sufficient parking should be provided outside of the gate area for visitors.



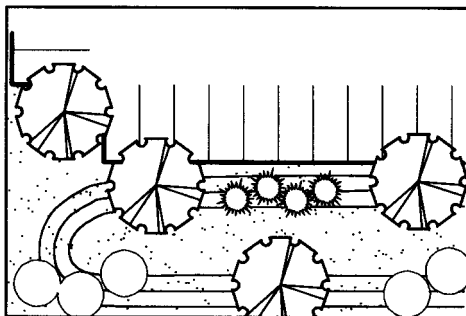
- D. Shared driveway access between adjoining properties is encouraged.

## 2.3.7 Landscaping

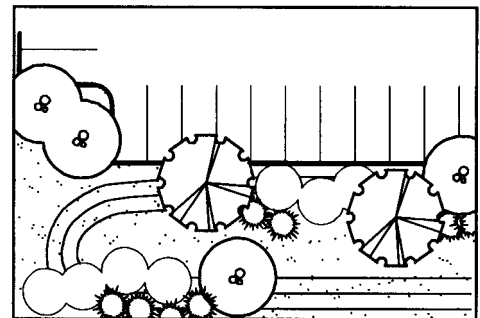
### A. General Standards

Landscape improvements associated with light industrial and research and development projects in the Township shall recognize the value of native plant communities on the site. Plants native to Handy Township have evolved over thousands of years existing in particular soil, topographic, and hydrological conditions found within each plant community. It is the intent of this Section to incorporate use of native plant species and communities in appropriate areas of the site that will complement the general landscaping of the site, including but not limited to, foundation plantings, lawn areas, screening and greenbelt areas, parking lots, and surface stormwater conveyance and detention features. Landscaping with native plants also encourages environmentally sound maintenance practices by requiring little or no pesticide or fertilizer use, and minimal irrigation. Landscaping shall comply with the following standards:

1. Existing native vegetation shall be preserved to the greatest extent possible. New development should be located in previously disturbed areas of the site, leaving naturally occurring woodlands, grasslands and wetlands intact. Native plant communities that are contiguous with other tracts of existing natural areas or designated open space shall be given priority protection.
2. Existing hydrology of a site should be maintained to the greatest extent possible.
3. Wetland and watercourse buffer regulations of the Zoning Ordinance shall be adhered to.
4. Landscape design shall follow an overall concept and shall link various site components together.
5. Areas not covered by structures, service yards, walkways, driveways and parking spaces shall be landscaped.
6. Those yards facing the perimeter of the District, where larger setbacks are required along peripheral roads (Grand River, Fowlerville, I-96 etc.), shall be landscaped with combinations of berms, trees, shrubs and other native plantings. This will create an attractive edge to the District, while screening activity to adjoining properties. It shall be a priority to preserve existing natural vegetation where appropriate, and supplement where necessary with new landscaping. Landscaping installed along the perimeter of the District shall be arranged to simulate a natural setting such as massings or staggered rows (see below). A variety of native species is encouraged. The equivalent of one (1) tree per every 40 feet of linear frontage along peripheral roads to the project shall be required. Evergreens shall comprise no more than 50% of any street tree planting along each individual right-of-way.

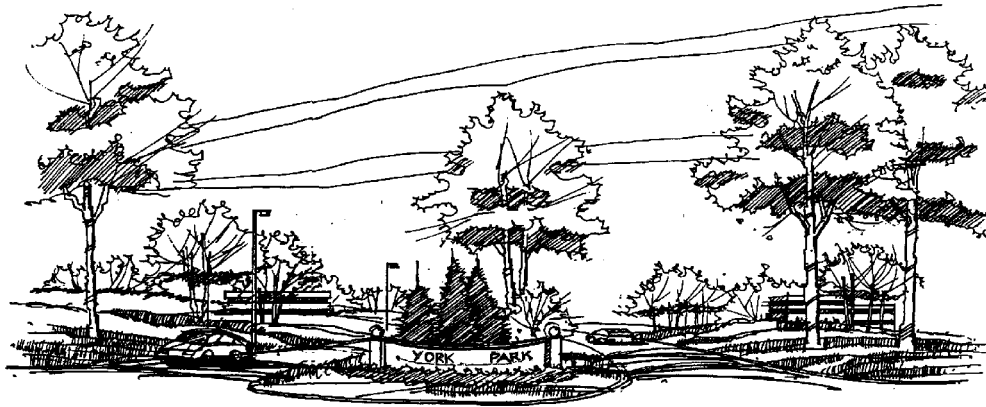


Formal Fashion



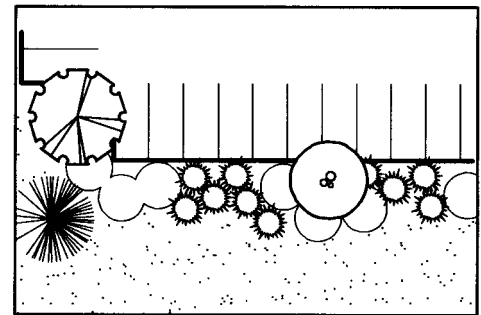
Naturalized Fashion

7. Site entryways shall be generously landscaped with evergreen and deciduous materials, but not interfere with visibility to and from the site. (See figure below)



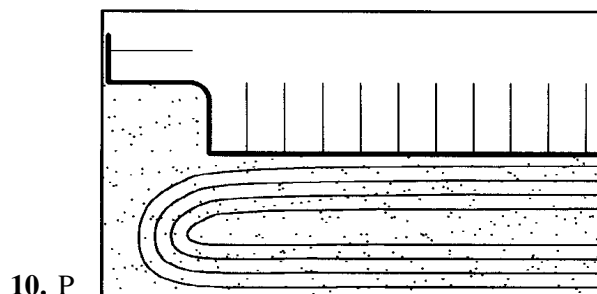
8. Landscaping shall be provided around and within parking lots to reduce large expanses of pavement, provide scale, and improve traffic circulation.
9. Parking lots facing a public or private street shall be screened from view with a berm, vegetation buffer, or combination thereof, at least five (5) feet in height.

- a. If vegetation only is used to create the screen, the plants should be of varied species of deciduous and evergreen trees and shrubs. (See Recommended Plant List.) The plants should be arranged in a naturalized way generally parallel to the parking area (see figure right).

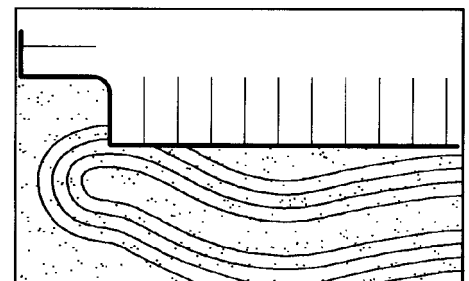


**Naturalized Screening**

- b. If a berm is used to screen the parking area, the berm should be parallel to the parking area in an organic form, versus a geometric form (see below). The slopes shall not exceed one foot of vertical rise to three feet of horizontal distance. In addition, berm slopes should be planted with a mixture of deciduous shade trees, understory/ornamental trees, evergreen trees, deciduous shrubs, evergreen shrubs, and other plantings to augment the screen and prevent erosion.



10. P  
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**Geometric Form**

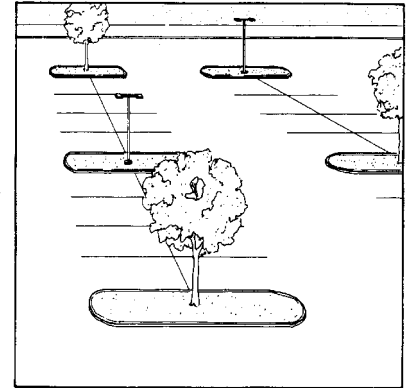


**Organic Form**

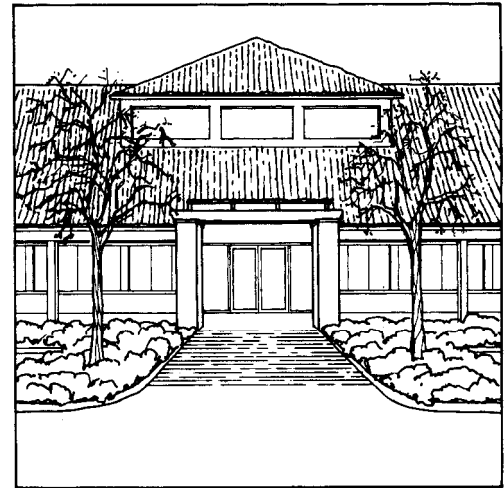
king lot trees shall be provided in the interior to break up pavement and provide shade and be calculated on the following basis:

<i>Parking Lot Size</i>	<i>Minimum Tree Standard</i>
1 to 100 spaces	1 canopy tree per 8 spaces
101 to 300 spaces	1 canopy tree per 10 spaces
301 or more spaces	1 canopy tree per 12 spaces

11. All required interior parking lot trees shall either be placed within the parking lot, or within 20 ft. of the edge of the parking lot. However, at least 50% of the required trees shall be placed within the interior of the lot, rather than surrounding the lot. Parking lot islands within the interior shall be at least 150 square feet to provide for adequate infiltration of water, and curbed to protect the plantings. Proposed light fixtures should not replace planned trees within islands. (See figure right)



12. Landscaping shall be provided in the area immediately surrounding the building, which will enhance the exterior appearance of the building. Trees should be used in front of long, blank facades or multi-story structures. Foundation landscaping shall be provided at least in those areas visible from street rights-of-way. (See figure right).



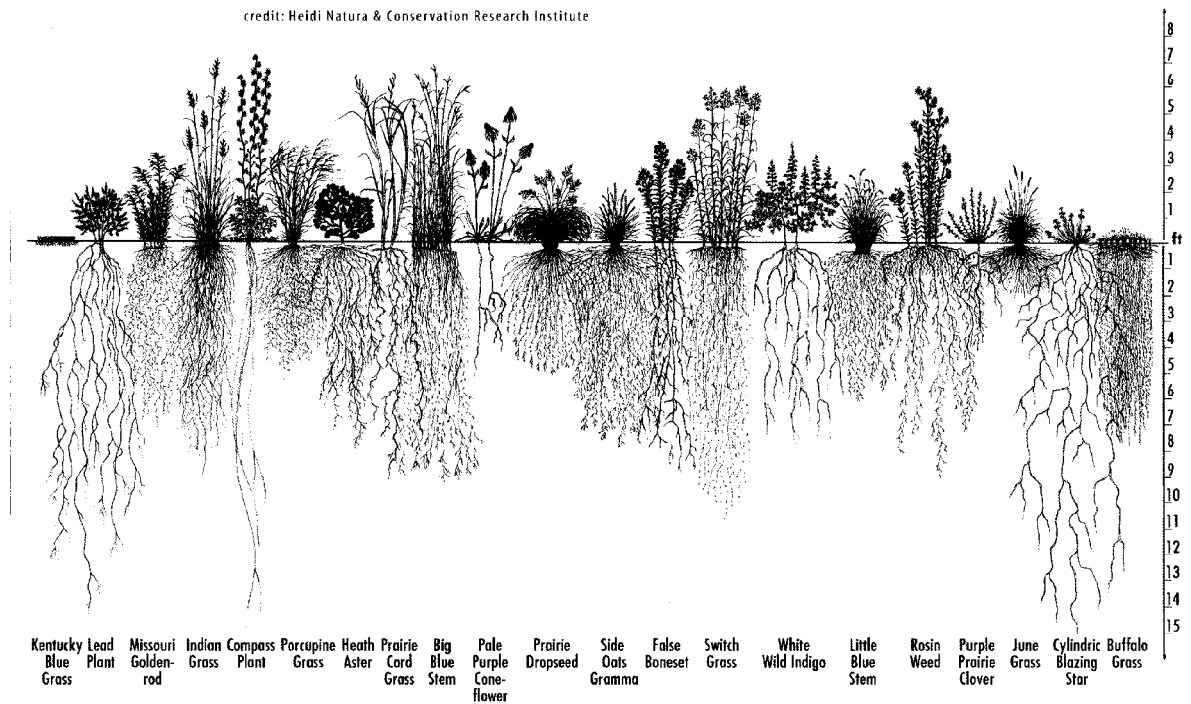
13. If a project is to be constructed in phases, each phase shall be self-contained and land clearing, grubbing or grading shall only be conducted immediately preceding the construction of that phase. This is to reduce the probability of erosion and limit aesthetic impacts. If a subsequent phase is to follow the preceding phase within the same growing period (March – October), then this requirement may be waived as long as adequate measures are taken, such as seeding or sodding cleared areas, to prevent erosion and reduce aesthetic impacts.

14. Underground sprinkling systems in areas other than directly adjacent to the building shall be discouraged.

**B. Plant Material**

1. Plant material that is native to Handy Township shall be used to the greatest extent possible in all plantings and landscaping.
2. Where it is possible to discern the original plant community(ies) on a site, species that are members of that community should be considered first in designing a landscape plan. If plantings are installed adjacent to an existing natural feature to remain, native species (not cultivars) to that feature should be used.

3. Naturalized planting arrangements shall be encouraged. “Natural arrangements” capture the character and spirit of nature by arranging plants in a community context similar to their arrangement in nature.
4. Foundation or Entryway Plantings. Plantings in areas where aesthetics are of primary importance can consider cultivars of native plant species to ensure, to a certain degree, the plant’s appearance.
5. Alternatives to Lawn . Use of native prairie grasses and perennials should be considered in overall landscape design, in both formal landscaped areas and large areas that would otherwise be lawn. Native prairie grasses and perennials appropriately used in landscape design will reduce maintenance, eliminate the need for irrigation, and chemical pesticides and fertilizers, create stormwater infiltration areas, and provide a more natural appearance to the site than using turf grasses. The main reason for this is that prairie plants have much longer root systems that reach and store significantly more water than a typical turf grass (compare roots of native prairie plants with that of Kentucky Blue Grass on far left, below).



6. Retention/Detention Facilities. Design and planting of these facilities shall follow the Livingston County Drain Commissioner’s Design Standards. The vegetation installed in such systems play an important role in slowing the velocity of the water, allowing sediments to settle out, and absorption of pollutants before the water reaches a natural water feature. However, not just any vegetation will perform these functions. Only plants native to wetlands, open water edges and riparian corridors will function in these ways to the highest level. Therefore, the use of vegetation native to the local wetland, open water and riparian systems should be used in the design of any constructed stormwater facility.
7. The following plants are not allowed for use in landscaping. These species are considered “exotic invasives.” They are not native to the area, have no natural controls

and are able to out-compete and gradually displace native plants. They all reproduce profusely and have potentially harmful effects on natural ecosystems.

<u>Common Name</u>	<u>Scientific Name</u>
Autumn /Russian Olive	Eleagnus umbellate, E. angustifolia
Barberry	Berberis pinnata
Buckthorn	Rhamnus cathartica, R. frangula
Burning Bush	Euonymus alatus
Creeping Bugleweed	Ajuga reptans
Crown Vetch	Coronilla varia
English Ivy	Hedra helix
European Alder	Alnus glutinosa
Honeysuckle	Lonicera tatarica, L. japonica, L. maackii, L. morowi
Japanese Knotweed	Polygonum cuspidatum
Japanese Silver Grass	Miscanthus sinensis
Japanese Spiraea	Spiraea japonica
Multiflora Rose	Rosa multiflora
Norway Maple	Acer platinoides
Oriental Bittersweet	Celastrus orbiculatus
Pampas Grass	Cortaderia selloana, C. jubata
Periwinkle (Myrtle)	Vinca minor
Privet	Ligustrum vulgare
Purple Loosestrife	Lythrum salicaria
Reed Canary Grass	Phalaris arundinacea
Siberian Elm	Ulmus pumila
Tree of Heaven	Ailanthus altissima
White Mulberry	Morus alba
Wintercreeper	Euonymus fortunei

### C. Mail Boxes/Express Deliveries/Snow Removal

1. Light industrial and Research and development projects are encouraged to provide a unified design, appearance and location of mail boxes throughout the park.
2. All mail boxes should be consolidated and located at common delivery points where possible, in accordance with US Postal Service guidelines.
3. Drop boxes for express delivery companies such as FedEx, UPS, or DHL, should be located in convenient and safe locations within the park to minimize pedestrian/traffic conflicts. In addition, loading and parking zones for express deliveries should be designated for each building expected to receive such shipments, to minimize traffic conflicts.
4. Areas for snow storage and removal shall be designated within each site. Such areas shall be sufficient in area to at least accommodate expected levels of snow for a typical snowfall event.