

1005 SUSTAINABLE SITE AND BUILDING DESIGN

[The title of Section 1005 changed by Ord. ZDO-224, 5/31/11]

1005.01 PURPOSE

Section 1005 is adopted to ensure sites are developed and buildings designed to:

- A. Efficiently utilize the land used in development, particularly urban land in centers, corridors, station communities and employment areas;
- B. Create lively, safe, attractive and walkable centers, corridors, station communities, employment areas and neighborhoods;
- C. Support the use of non-auto modes of transportation, especially pedestrian trips to and between developments;
- D. Support community interaction by creating lively, safe and attractive public use spaces within developments and on the street;
- E. Reduce impacts of development on natural features and vegetation;
- F. Utilize opportunities arising from a site's configuration or natural features;
- G. Encourage use of green building technologies and green site development practices, energy conservation and use of renewable energy resources;
- H. Design illumination so that dark skies are maintained to the extent possible, balanced with the lighting needs of safe and functional developments; and
- I. Accommodate the needs of the users to be located in developments.

[Amended by Ord. ZDO-224, 5/31/11]

1005.02 GENERAL PROVISIONS

[Repealed by Ord. ZDO-224, 5/31/11]

1005.02 APPLICABILITY

Section 1005 shall apply to institutional, commercial and industrial development; multifamily dwellings; and developments of more than one two- or three-family dwellings. Subsection 1005.04 (F) shall also apply to attached single-family dwellings.

[Added by Ord. ZDO-224, 5/31/11]

1005.03 GENERAL SITE DESIGN STANDARDS

Development shall be subject to the following standards:

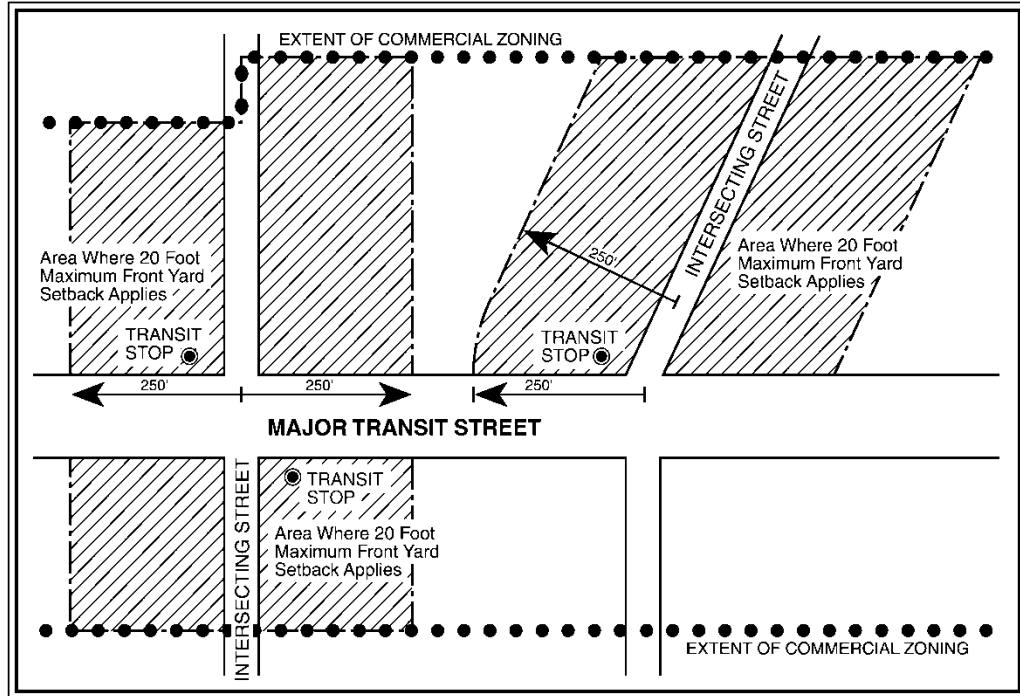
- A. Where feasible, cluster buildings within single and adjacent developments for efficient sharing of walkways, on-site vehicular circulation, connections to adjoining sites, parking, loading, transit-related facilities, plazas, recreation areas, and similar amenities.
- B. Cluster and modulate building masses to minimize disturbance of existing significant landforms and vegetation. Through the design review process, minimum front yard setbacks may be reduced or waived to minimize disturbance of natural landforms or vegetation. If a setback reduction is granted, a program for protection of those landforms and vegetation during construction, and for long-term maintenance, shall be provided.
- C. Incorporate existing significant plants, terrain or other natural features into the landscape design and development.
- D. Where feasible, design the site so that so that the longest building elevations can be oriented within 20 degrees of true south in order to maximize the south-facing dimensions.
- E. Minimum setbacks may be reduced by up to 50 percent as needed to allow improved solar access—as demonstrated by technical standards set forth in Section 1018 or by other credible evidence—when solar panels or other active or passive solar use is incorporated into the building plan.
- F. A continuous, interconnected on-site walkway system meeting the following standards shall be provided.
 - 1. Walkways shall directly connect each building public entrance accessible to the public to the nearest sidewalk or pedestrian pathway, and to all adjacent streets, including streets that dead-end at the development or to which the development is not oriented.
 - 2. Walkways shall connect each building to outdoor activity areas including parking lots, transit stops, children’s play areas and plazas.
 - 3. Walkways shall be illuminated. Separate lighting shall not be required if existing lighting adequately illuminates the walkway.
 - 4. Walkways shall be constructed with a well drained, hard-surfaced material or porous pavement and shall be at least five feet in unobstructed width.
 - 5. Standards for walkways through vehicular areas:

- a. Walkways crossing driveways, parking areas and loading areas shall be constructed to be clearly identifiable to motorists through the use of different paving material, raised elevation, warning signs or other similar methods.
 - b. Where walkways are adjacent to driveways, they shall be separated by a raised curb, bollards, landscaping or other physical barrier.
 - c. Inside the Portland Metropolitan Urban Growth Boundary (UGB), if the distance between the building public entrance and street is 75 feet or greater and located adjacent to a driveway or in a parking lot, the walkway shall be raised, with curbs, a minimum four-foot-wide landscape strip and shade trees planted a maximum of 30 feet on center.
 - d. The exclusive use of a painted crossing zone to make walkways identifiable to motorists may be used only for portions of walkways which are shorter than 30 feet and located across driveways, parking lots, or loading areas.
 - e. Walkways bordering parking spaces shall be at least seven feet wide or a minimum of five feet wide when concrete bumpers, bollards, curbing, landscaping, or other similar improvements are provided which prevent parked vehicles or opening doors from obstructing the walkway.
 - f. The interconnected onsite walkway system shall connect to walkways in adjacent developments, or stub to the adjacent property line if the adjacent land is vacant or is developed without walkways.
 - g. Walkway stubs shall be located in consideration of topography and eventual redevelopment of the adjacent property.
 - h. Notwithstanding Subsections 1005.03 (F)(5)(f) and (g), walkway linkages to adjacent development shall not be required within industrial developments, to industrial developments, or to vacant industrially zoned land.
- G. Inside the UGB, except for industrial developments, a minimum of 50 percent of the street frontage of the development site shall have buildings located at the minimum front yard setback line.
- 1. If the minimum front yard setback is less than 20 feet, the setback may be increased to 20 feet provided pedestrian amenities are developed within the setback.
 - 2. Primary building entrances for buildings used to comply with Subsection 1005.03(G), shall:

- a. Face the street;
 - b. Be located at an angle facing both the street and a parking lot; or
 - c. Be located to the side of the building, provided that the walkway connecting to the street is a minimum of eight feet wide and is developed with landscaping and pedestrian amenities.
3. If a development has frontage on more than one street, Subsection 1005.03(G) must be met on only one frontage, as follows:
- a. If one of the streets is a major transit street, the standard shall be met on that street.
 - b. If neither or both are a major transit street, then the standard shall be met on the street with the higher functional classification.
 - c. If neither 1005.03(G)(3)(a) or (b) applies, then the standard shall be met on the longest frontage.
- H. Inside the UGB, parking lots larger than three acres in size shall be built with major on-site vehicular circulation ways that include raised walkways with curbs, a minimum four-foot-wide landscape strip and shade trees planted a maximum of 30 feet on center.
- I. Onsite vehicular circulation aisles for multifamily, mixed use, commercial, institutional and industrial developments shall be a maximum of 24 feet in width, unless additional width is required by the County Roadway Standards or in areas designed for truck circulation.
- J. Inside the UGB:
1. The development shall have no more than the minimum number of driveways allowed by the Department of Transportation and Development on all arterial and collector streets.
 2. For properties having more than one street frontage, driveways shall be located on the street with the lowest functional classification, if feasible.
 3. Driveways shall be no wider than the minimum width allowed by the County Roadway Standards.
 4. Driveways shall be located so as to maximize the number of allowed on-street parking spaces, the number of street trees and optimum street tree spacing.

- K. New retail, office, mixed use and institutional buildings located on major transit streets shall have at least one public entrance facing a major transit street, or street intersecting a major transit street.
1. A private street used to meet the standards in Subsection 1005.03(K) must have raised walking surfaces on both sides, street trees, curbs, and pedestrian-scale street lighting, and must connect at both ends to an existing or proposed street.
 2. If a development has frontage on more than one major transit street this orientation requirement needs to be met on only one side.
 3. The public entrance orientation requirement does not apply to warehouses or industrial buildings with less than 5,000 square feet of attached offices.
- L. Buildings located at or near a transit stop along a major transit street in the Community Commercial, General Commercial, Office Commercial, Retail Commercial (RTL), Business Park, or Corridor Commercial (CC) Districts shall have a maximum front yard setback of 20 feet from a state, County, public, or private road.
1. "At or near" means within 250 feet of an intersection along a major transit street where a transit stop is within 250 feet of the intersection, as illustrated in Figure 1005-1:
 2. The 20-foot maximum setback shall apply in both directions along the major transit street and along the intersection street to the depth of the designation of any zone identified in Subsection 1005.03(L). This setback applies to the side of the major transit street having the transit stop, and applies whether the intersection street is a public street or signalized private road.
 3. Except in the CC District, along a signalized private road, the maximum setback shall apply only along the first 250 feet from the major transit street.
 4. Buildings with nonconforming front yard setbacks may have additional height added as an expansion without being brought into conformance with this maximum setback.
 5. The maximum setback requirement does not apply to warehouses or industrial buildings with less than 5,000 square feet of attached offices.
 6. Except in the CC District, this maximum setback from major transit streets and, except in the RTL District, intersecting streets shall contain no onsite parking; however, vehicle circulation lanes are permitted if crossing walkways are designed to ensure safety for pedestrians.

Figure 1005-1



M. In Centers, Station Communities or along Corridor Streets as identified on Comprehensive Plan Map IV-8, *Urban Growth Concept*; X-CRC-1, *Clackamas Regional Center Area Design Plan, Regional Center, Corridors and Station Community*; X-SC-1, *Sunnyside Corridor Community Plan, Community Plan Area and Corridor Design Type Location*; or X-MC-1, *McLoughlin Corridor Design Plan, Design Plan Area* shall meet the following development standards:

1. Site plans shall illustrate potential future development on the site, including: additional buildings, expansions of proposed buildings, locations of understructure or structured parking, and circulation and connections to adjacent uses. For Corridor Streets, this shall apply to the depth of the multifamily, mixed use, commercial or industrial zoning.
2. The site shall be developed to accommodate the potential future development illustrated.

[Amended by Ord. ZDO-224, 5/31/11]

1005.04 BUILDING DESIGN

- A. The following standards apply to building facades visible from a public or private street or accessway and to all building façades where the primary entrance is located.
1. Building facades shall be developed with architectural relief, variety and visual interest and shall avoid the effect of a single, long or massive wall with no relation to human size. Examples of elements that subdivide the wall: change in plane, texture, masonry pattern or color, or windows.
 2. Building facades shall have particular architectural emphasis at entrances and along sidewalks and walkways.
 3. Provide visual interest through use of articulation, placement and design of windows and entrances, building trim, detailing, ornamentation, planters or modulating building masses.
 4. Utilize human scale, and proportion and rhythm in the design and placement of architectural features.
 5. Use architectural features which are consistent with the proposed use of the building, level and exposure to public view, exposure to natural elements, and ease of maintenance.
 6. When uses between ground-level spaces and upper stories differ, provide differentiation through use of bays or balconies for upper stories, and awnings, canopies, trim and other similar treatments for lower levels.
- B. Requirements for building entries:
1. Public entries shall be clearly defined, highly visible and sheltered with an overhang or other architectural feature, with a depth of at least four feet.
 2. Commercial, mixed-use and institutional buildings sited to comply with 1005.03(G) shall have public entries that face streets and are open to the public during all business hours.
- C. The street-facing façade of commercial, mixed-use and institutional buildings sited to comply with 1005.03(G) shall meet the following requirements:
1. Facades of buildings shall have transparent windows, display windows, entry areas, or arcades occupying a minimum of 60 percent of the first floor linear frontage.
 2. Transparent windows shall occupy a minimum of 40 percent of the first floor linear frontage. Such windows shall be designed and placed for viewing access by pedestrians.

3. For large-format retail buildings greater than 50,000 square feet, features to enhance the pedestrian environment, other than transparent window, may be approved through design review. Such items may include, but are not limited to display cases, art, architectural features, wall articulation, landscaping, or seating, provided they are attractive to pedestrians, are built to human scale, and provide safety through informal surveillance.

D. Requirements for roof design:

1. For buildings with pitched roofs:
 - a. Eaves shall overhang at least 24 inches.
 - b. Roof vents shall be placed on the roof plane opposite the primary street.
2. For buildings, other than industrial buildings, with flat roofs or without visible roof surfaces, a cornice or other architectural treatment shall be used to provide visual interest at the top of the building.

E. Requirements for exterior building materials:

1. Use architectural style, concepts, colors, materials and other features that are compatible with the neighborhood's intended visual identity.
2. Building materials shall be durable and consistent with the proposed use of the building, level and exposure to public view, exposure to natural elements, and ease of maintenance.
3. Walls shall be surfaced with brick, tile, masonry, stucco, stone or synthetic equivalent, pre-cast masonry, gypsum reinforced fiber concrete, wood lap siding, architecturally treated concrete, glass, wood, or a combination of these or other high-image materials.
4. Notwithstanding Subsection 1005.04(E)(3) metal may be approved as an exterior building material through design review pursuant to Section 1102 for specific high-image surfaces, canopies, awnings, doors, screening of roof-mounted fixtures, or other architectural features.

F. Additional building design requirements for multifamily dwellings, two- and three-family dwellings, and attached single-family dwellings:

1. Façades of buildings that are two or more stories in height shall have a minimum of one balcony or bay per four dwelling units.
2. Windows shall be frequent and coordinate with bays and balconies.

3. Where feasible, place the buildings to minimize the potential of windows facing directly toward primary living areas of other dwelling units.
4. For buildings that are one or two stories in height, roofs shall be hipped, gambrel or gabled to provide visual interest. Flat roofs shall be allowed in areas of these buildings where mechanical equipment is mounted or where they are used for roof gardens or other outdoor activities.
5. For multifamily developments, convenient areas shall be provided for storage of articles such as bicycles, barbecues, and outdoor furniture. These areas shall be completely enclosed and easily accessible to respective dwelling units.

G. Requirements to increase safety and surveillance:

1. Locate buildings and windows to maximize potential for surveillance of entryways, walkways, parking, recreation and laundry areas.
2. Provide adequate lighting for entryways, walkways, parking, recreation and laundry areas.
3. Locate parking and automobile circulation areas to permit easy police patrol.
4. Design landscaping to allow for surveillance opportunities.
5. Addresses shall be clearly marked. Addresses for complexes shall be visible from the street, and addresses of individual businesses and dwelling units shall be clearly marked at a pedestrian scale within the development.
6. Locate mail boxes where they are easily visible and accessible.
7. Limit fences, walls and, except for trees, landscaping between a parking lot and a street to a maximum of three feet in height.
8. Locate play areas for clear parental monitoring.

H. Solar access requirements:

1. Except for uses with greater cooling needs than heating needs, such as many retail uses, concentrate window areas on the south side of buildings (within 20 degrees of due south) where there is good southern exposure.
2. Provide overhangs, balconies, or other shading devices to prevent excessive summer heat gains.

3. Use architectural features, shape of buildings, fences, natural landforms, berms, and vegetation to catch and direct summer breezes for natural cooling, and minimize effects of winter winds.

I. Requirements for compatibility with the intent of the design type or with the surrounding area. For purposes of Subsection 1005.04(I), design types are Centers, Station Communities or Corridor Streets as identified on Comprehensive Plan Map IV-8, *Urban Growth Concept*; X-CRC-1, *Clackamas Regional Center Area Design Plan, Regional Center, Corridors and Station Community*; X-SC-1, *Sunnyside Corridor Community Plan, Community Plan Area and Corridor Design Type Location*; or X-MC-1, *McLoughlin Corridor Design Plan, Design Plan Area*. The intent of these design types is stated in Chapter 4 or 10 of the Comprehensive Plan.

1. Use shapes, colors, materials, textures, lines, and other architectural design features that enhance the design type area and complement the surrounding area and development.
2. Use colors, materials and scale, as appropriate, to visually connect building exteriors to adjoining civic/public spaces such as gateways, parks, plazas and transit stations.
3. Use building orientation and physical design, including setbacks and modulations, to ensure a development is compatible with other activities onsite, nearby properties, intended uses and the intent of the design type.
4. Orient loading and delivery areas and other major service activity areas of the proposed project away from existing dwellings.
5. Inside the Portland Metropolitan Urban Growth Boundary, use colors, materials and architectural designs to visually reduce the impact of large buildings.
6. In unincorporated communities, design structures to reflect and enhance the local character and to be in scale with surrounding development.
7. In rural and natural resource areas, use materials, colors and shapes that imitate or complement those in the surrounding areas, such as those used in typical farm structures.
8. In open space or scenic areas, use natural color tones, lines and materials which blend with the natural features of the site or site background.

J. Requirements for screening mechanical equipment:

1. Rooftop mechanical equipment, except for solar energy systems, shall be screened from view by the use of parapet walls or a sight-obscuring enclosure around the equipment. The screen shall be constructed of one of

the primary materials used on the primary facades, and shall be an integral part of the building's architectural design.

2. Ground mounted mechanical equipment shall be located away from the intersection of two public streets, to the extent practicable, and shall be screened by ornamental fences, screening enclosures, or landscaping that blocks at least 80% of the view.
3. Wall mounted mechanical equipment shall not be placed on the front of a building or on a façade that faces a street. Wall mounted mechanical equipment that extends six inches or more from the outer building wall shall be screened from view from the streets; from residential, public, and institutional properties; and from public areas of the site or adjacent sites through one of the screening techniques used in 1005.04(J)(1) or (2).

[Amended by Ord. ZDO-224, 5/31/11]

1005.05 SITING AND DESIGN FOR COMPATIBILITY

[Moved to Subsection 1005.04 and amended by Ord. ZDO-224, 5/31/11]

1005.05 OUTDOOR LIGHTING

A. Outdoor lighting devices:

1. Shall be architecturally integrated with the character of the associated structures, site design and landscape.
2. Shall not direct light skyward.
3. Shall direct downward and shield light; or direct light specifically toward walls, landscape elements or other similar features, so that light is directed within the boundaries of the subject property;
4. Shall be suitable for the use they serve, e.g. bollard lights along walkways, pole mounted lights for parking lots;
5. Shall be compatible with the scale and intensity of uses they are serving. Height of pole mounted fixtures shall not exceed 25 feet or the height of the tallest structure onsite, whichever is less; and
6. At entrances, shall be glare-free. Entrance lighting may not exceed a height of 12 feet and must be directed downward.

B. The following are exempt from Subsection 1005.05(A):

1. Temporary lights used for holiday decorations;
2. Street lights regulated in Section 1006; and

3. Lighting associated with outdoor recreation uses such as ball fields or tennis courts.

[Added by Ord. ZDO-224, 5/31/11]

1005.06 SECURITY AND CRIME PREVENTION

[Moved to Subsection 1005.04 and amended by Ord. ZDO-224, 5/31/11]

1005.06 ADDITIONAL REQUIREMENTS

In addition to the requirements listed in Subsections 1005.03 through 1005.05, development shall comply with a minimum of one of the following techniques per 20,000 square feet of site area. Regardless of site size, a minimum of one and a maximum of five techniques are required. Partial site area numbers shall be rounded.

- A. Install a solar energy system in the development.
- B. Use passive solar heating or cooling techniques to reduce energy consumption. Examples of techniques:
 1. Modulate building masses to maximize solar access.
 2. For developments with more than one structure, locate taller structures to minimize negative impacts on solar access for the development site and adjacent sites, as demonstrated by technical standards set forth in Section 1018 or by other credible evidence.
 3. Locate buildings to maximize windbreaks.
 4. Locate structures and landscaping to avoid winter shading on the south side and optimize summer shading on the west and southwest sides of buildings.
 5. Utilize deciduous trees to provide summer shade and allow winter sun.
 6. Utilize deciduous vines on fences, trellises, and arbors to provide summer shade.
 7. Locate and form berms to protect buildings and exterior use spaces against winter winds or utilize dense evergreens or conifers to screen winter wind and protect against hostile winter elements.
 8. Provide skylights or clerestory windows to provide natural lighting, and/or solar heating of interior spaces.
- C. Use highly reflective (high albedo) materials on roof surfaces.

- D. Place major outdoor use areas such as plazas, playgrounds, gardens, etc. on the south side of buildings.
- E. Construct a minimum of 75 percent of walkway area of porous pavement.
- F. Construct a minimum of 75 percent of all parking spaces with porous pavement.
- G. Provide additional landscaping area at least 10 percent above the requirements for the site pursuant to Table 1009-1. For example, if the minimum area requirement is 20 percent, then 22 percent shall be provided. Credit shall be given for green roofs or other areas of vegetation that exceed the minimum area requirements.
- H. Include additional swales in development landscaping, pursuant to Section 1009. Credit shall be given for additional swale(s) that exceed the requirements of Subsection 1009.04(A)(2) by at least 10 percent of area. For example, if 1009.04(A)(2) requires 200 square feet of swale area, then an additional 20 square feet of swale area would be required.
- I. Collect rainwater from roofs and/or other impervious surfaces and use it for irrigation.
- J. Apply other techniques for onsite storm water treatment identified by the surface water management regulatory authority.
- K. Lay out sites and locate buildings and on-site vehicular circulation to create functional open areas such as plazas, courtyards, outdoor recreation areas, mini-parks, and accessways that are open to the general public.
- L. Enhance sidewalks and/or walkways by providing additional width, using higher quality materials; shielding from vehicular traffic with enhanced planting strips, street trees and on-street parking, and/or providing pedestrian amenities that are compatible with the design of the development as well as the neighborhood as a whole.
- M. Coordinate development between adjacent uses to provide for a more attractive and lively streetscape, enhance connections, minimize conflicts and provide common-use areas.
- N. Enhance the pedestrian connection between the development and neighborhood shopping areas, nearby transit, trails, bikeways or parks. Examples include additional width or pedestrian amenities.
- O. Provide functional and accessible rooftop gardens.
- P. For multifamily dwelling units that face the street, raise first floor units a minimum of two feet above street level.

- Q. Provide structured or under-structure parking to meet all or part of the parking need.
- R. Provide no more than the minimum number of surface parking spaces set out in Table 1015-2, all of which shall be no greater than the minimum dimensions allowed in Subsection 1015.04(B)(2).
- S. Lay out sites or orient structures, to maximize significant vistas.
- T. Locate and design structures to protect scenic views or vistas from adjacent properties and public thoroughfares. Setbacks, building height, and bulk should be considered.
- U. Utilize rail service opportunities abutting the site.
- V. Inside the UGB, a minimum of 75 percent of the street frontage of each lot shall have buildings located at the minimum front setback line. If the minimum front setback is zero, up to 20 feet of additional setback may be provided where plazas, outdoor seating, or other pedestrian amenities are located.
- W. Outside the UGB, or for industrial developments, a minimum of 25 percent of the street frontage of each lot shall have buildings located at the minimum front setback line. Up to 20 feet of additional setback may be provided where plazas, outdoor seating, or other pedestrian amenities are located.
- X. Locate buildings at the minimum side yard setback or within 10 feet of the side setback line, whichever is greater.
- Y. For developments not in Centers, Station Communities or along Corridor Streets site plans shall illustrate potential future buildings and potential future expansions of proposed buildings, locations of understructure or structured parking, and circulation and connections to adjacent uses. Lay out and develop the site to accommodate future additional buildings, circulation and structured parking.

[Added by Ord. ZDO-224, 5/31/11]

1005.07 PRIVACY STANDARDS FOR MULTIFAMILY DEVELOPMENTS

[Moved to Subsection 1005.04 and amended by Ord. ZDO-224, 5/31/11]

1005.07 MODIFICATIONS

Modification of any standard identified in Subsections 1005.03 and 1005.04 may be approved as part of design review if the proposed modification will result in a development that achieves the purposes stated in Subsection 1005.01 as well or better than the requirement listed.

[Added by Ord. ZDO-224, 5/31/11]