PETER QUINN ARCHITECTS
ARCHITECTURE
PLANNING
COMMUNITY DESIGN

20 Feb 2013

Mr. Sami Baghdady, Chairperson
Belmont Planning Board
Homer Municipal Building
19 Moore Street
Belmont, MA 02478

RE: Cushing Village - Parking Related Waivers

Dear Chairman Baghdady and Members of the Board:

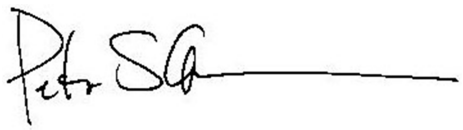
We submit for your consideration a request for certain Waivers from the Planning Board relating to Parking. These are:

1. Parking space and maneuvering aisle dimensions.
2. Distribution of compact space.
3. Parking space quantities below calculated requirement.

On the attached narrative we discuss each of these.

We appreciate your consideration in this matter.

Sincerely,



Peter Quinn AIA

Attached:
Waiver Request Narrative
Exhibit A1 and A2
Exhibits B through D

Cushing Village – CSOD SP Application (Supplement)
Waiver Request Narrative

Background

The proposed Cushing Village site consists of several lots all of which are located in the Cushing Square Overlay District (CSOD). As such, the Project is required to comply with the *CSOD Rules and Regulations*, dated 9 July 2008.

The purpose of this memo is to present a review of dimensional and quantity compliance for the parking and to indicate aspects for which the Applicant is requesting a Planning Board Waiver of requirements indicated in the *CSOD Rules and Regulations* and the *CSOD Bylaw (Article 8 of the Zoning By-law)*.

The applicant is requesting waivers for 1) typical parking space and maneuvering aisle dimensions, 2) distribution of compact space, and 3) parking space quantities below the calculated requirement.

The proposed layout consists of three buildings set over a common underground structure that is primarily intended for parking. Additionally, on grade there is a single parking lot.

Under a Land Purchase Agreement with the Town, the Applicant is required to provide 50 publically available municipal parking spaces.

The project proposes to provide parking according to the following table:

Area	Standard Size (9'-0" X 18'0")	Compact (8'-0" X 16'0" MIN)	HC Spaces Per MABC dim's	Total
On-Grade	8	11	2	**21**
Structured – Commercial *	34	18	2	**54**
Structured – Municipal *	34	14	2	**50**
Structured – Residential	63	32	4	**99**
Total	**139**	**75 (33% of total)**	**10**	**224**

* The designation of municipal and commercial spaces is subject to a future management agreement between the Applicant and the Town. Therefore, the final ratio of standard vs. compact is only estimated at this point. However, their respective totals are accurate.

There are also three public parking spaces proposed in the Williston St ROW that result from the development and these are not included in the table above.

In reference to the Waivers requested, please see Exhibits A1 and A2, which show a typical parking arrangement and distribution.

Waiver Request #1: Parking Space and Maneuvering Aisle Dimensions

The project proposes to seek a Waiver from the *Cushing Square Overlay District Rules and Regulations, Article IV – Parking, Section 1 - General Standards.* Specifically the accompanying Table and Diagrams require that a) standard parking spaces shall be a minimum of nine (9) feet by nineteen (19) feet and b) the maneuvering aisle shall be 24 feet wide. The 19 feet length is described as the sum of 17 feet for a paved parking area ending in a curb stop and two feet of overhang length. See Exhibit B.

The Applicant is requesting a Waiver to allow a typical standard parking space dimension of nine (9) feet by eighteen (18) feet. No waiver is requested for the typical compact space dimension and nearly all of the compact spaces are the same length (18 feet) as the standard spaces.

Secondly, the Applicant is also requesting a Waiver to allow a typical maneuvering aisle of 22 feet width.

In Support of this Request:

1) According to the *Town of Belmont Planning Board Design Review Guidelines, Section 3 Design Criteria, Item E Off-Street Parking*, dated 13 May 2009, parking spaces shall be a minimum of nine (9) feet by eighteen (18) feet in size, in addition to one hundred (100) square feet of maneuvering area per parking space. The maneuvering area is roughly equivalent to an area 9 feet by 11 feet wide or roughly a 22 foot wide aisle when matched with parking across an aisle. See Exhibit C. The proposed parking spaces are therefore consistent in size to those required in all other areas of Belmont.

2) The According to *Parking Structures: Recommended Practice for Design and Construction* by the Precast Concrete Institute, an industry standard in the design and construction of commercial structures, the average new car in North America reduced considerably from 1975 to 1985 due to gasoline efficiency laws. The reduction in vehicle size has led to a corresponding reduction in size of the parking spaces particularly in a structured parking facility. In 1975, a common parking space width and module was 9'-0" x 62'-0", (19-24-19) while in 1985, 8'-6" x 58'-0" (18-22-18) was quite adequate and remains generally adequate today. See Exhibit D. We cite this particular model because the nature of a structured parking garage requires a rigorous analysis of cost-benefit relative to structure area.

3) Neighboring Towns have similar dimensional criteria to that which the Applicant is requesting. A brief survey for standard parking space and aisle width in adjoining towns zoning bylaws follows.

Municipality	**Standard/Regular Parking Space Dimension**	**Aisle Width**
Cambridge	8.5' X 18.0'	22.0' (20.0' for compact)
Waltham	9.0' X 18.0'	20.0'
Watertown	8.5' X 18.0'	24.0'
Lexington	9.0' X [17.0' + 2.0'] (overhang area)	22.0' (20.0' for compact)

As noted above most of the towns cited have adopted a standard parking space of nine (9) feet by eighteen (18) feet or smaller. Likewise, 22 feet can be considered average for aisle width.

In summary, the request for the Waiver follows reasonable guidelines supported by Belmont's own standards for similar projects outside the CSOD, informed industry standard, and neighboring communities.

Waiver Request #2: Distribution of Compact Parking

The project proposes to seek a Waiver from the *Cushing Square Overlay District Rules and Regulations, Article IV – Parking, Section 1 - General Standards.* Specifically Section 2 requires that '*compact car stalls should be located near the entrance to the use or the structure which the parking facility serves (except that handicapped parking comes first)*.'

The Applicant is requesting a Waiver to allow the compact spaces to be grouped generally in pairs on each side of structural columns. See Exhibits A1 and A2. This is only applicable to the basement structured parking and applies to approximately 64 of the 75 compact spaces proposed (the balance are on-grade and are grouped per the Regulations).

In Support of this Request

Given the cost of the proposed underground structure and the ensuing benefit it will have for Cushing Square in general, it is particularly important to regularize the structural system to provide the most economical structure possible. Based upon the anticipated design of the parking structure, the support columns within the parking area would be set at a 26 feet modular. This provides a layout of (2) two standard spaces and (1) compact space within each structural bay (9 feet + 9 feet + 8 feet). This rhythm would be alternated to cluster the compact spaces in a pair, one on each side of the column. See enlargement on Exhibit A1. Therefore, the compact spaces would be distributed throughout the underground parking facility, generally in pair described above, which typically would be matched across the aisle.

An alternative way to look at this issue is that a Waiver request could be made for a standard parking stall width of 8.5 feet which, as indicated above, is satisfactory in several neighboring municipalities. Under these conditions (and assuming the Planning Board would entertain such a request), nearing all the compact spaces would be eliminated and would become standard spaces under that Waiver.

Finally, the on-grade parking spaces are grouped by standard and by compact areas and therefore comply with the regulation. The waiver request only applies to the underground parking structure. Nearly half of underground spaces are in Residential parking areas. The spaces are likely to be assigned and therefore the distribution of the spaces, whether compact or standard, is immaterial. The assignment of the compact spaces could easily be handled by the Applicant's management system and it may even

prove beneficial to have the compact spaces broadly distributed so as to provide better user choice.

Therefore, the most relevant aspect of this Waiver request is the Municipal and Commercial structured parking which proposes to have 32 compact spaces in approximately eight groups. The graphic provided in Exhibits A1 and A2 shows the consistent grouping. We believe that this grouping meets the spirit of the Regulations and does not produce an encumbrance on the use of the parking lot.

Waiver Request #3: Parking Space Quantities below the Calculated Requirement

Calculation of Parking Requirement

Article 8 of the Belmont Zoning Bylaw (CSOD bylaw) provides a formula to calculate the required parking for both residential and specific commercial uses (Article 8.3.2.A).

The required parking rate, as it relates to Cushing Village Project, is summarized as follows:

Use	Rate (1 parking per X)
Residential	1 per unit
Restaurant	1 per 4 seats
Service, retail and offices	1/550-sf on ground floor 1/800-sf on other floors

The commercial parking requirement is based on projected commercial uses. This includes a restaurant and the reestablished Starbucks.

The residential parking requirement for the Project is based on a projected unit count of (up to) 118 units.

The Bylaw also requires that the calculation for mixed-use projects be determined by adding each separate use together (Article 8.3.2.A.v).

As indicated above, the Applicant is required under terms linked to the Project to replace the Town's Municipal Parking Lot with 50 publically available parking spaces.

Proposed Reductions

Article 8.3.2.B outlines several ways in which the parking requirement may be reduced at the discretion of the Planning Board. Of relevance to the Cushing Village are available reductions for *ii* – Shared parking among different uses allows for a calculated reduction; *iii* – uses within 250-ft of a municipal garage allows for a 20% reduction; and *v* – Uses within 200-ft of public transportation allows for a 10% reduction.

Calculation of Required Parking and Proposed Reduction

The parking requirement and proposed reduction for the Project are as follows:

Use	Rate	Unit	Spaces
Residential	1 per unit	118 units	118
Restaurant (incl Starbucks)	1 per 4 seats	198 seats	50
Commercial (all ground floor)	1 per 550-sf	30,500	56
Total Parking Required exclusive of Municipal Replacement			**224**
Parking Provided (see Table, page 2)		224	
Less required Municipal replacement		(50)	**(174)**
Parking provided excl. Municipal		174	
Reduction Request			**50**
Reduction as a percent of required			**22%**

In summary, the Applicant is requesting a parking reduction Waiver from the total parking requirement (exclusive of the municipal replacement) of approximately 22%. The Bylaw provides several mechanisms to allow that, namely proximity to municipal parking, proximity to public transportation, and shared use of parking resource. We request that the Board grant this Waiver on the basis that the Applicant has certainly met the criteria for these mechanisms.

Furthermore, the reduction in parking is consistent with the goals of a sustainable, transportation-oriented development such Cushing Village, wherein services and other conveniences are provided on site or in the Square to encourage other means of mobility (walking, bicycling, public transport) rather than the use of automobiles. The Applicant believes that the Cushing Village will attract residents who don't own automobiles or townspeople who don't need them to access the Square's conveniences.

PETER QUINN ARCHITECTS
ARCHITECTURE
PLANNING
COMMUNITY DESIGN

PETER QUINN ARCHITECTS LLC
1904 MASS AVE, 2ND FLOOR
CAMBRIDGE, MA 02140
PH 617-354-3989 FAX 617-868-0280

SEAL

CONSULTANT

LINE COMPANY ARCHITECTS Incorporated

CONSULTANT

PROJECT

CUSHING VILLAGE
CUSHING SQUARE
BELMONT, MA

PREPARED FOR

SMITH LEGACY PARTNERS
6 LITTLEFIELD ROAD
ACTON, MA 01720

DRAWING TITLE

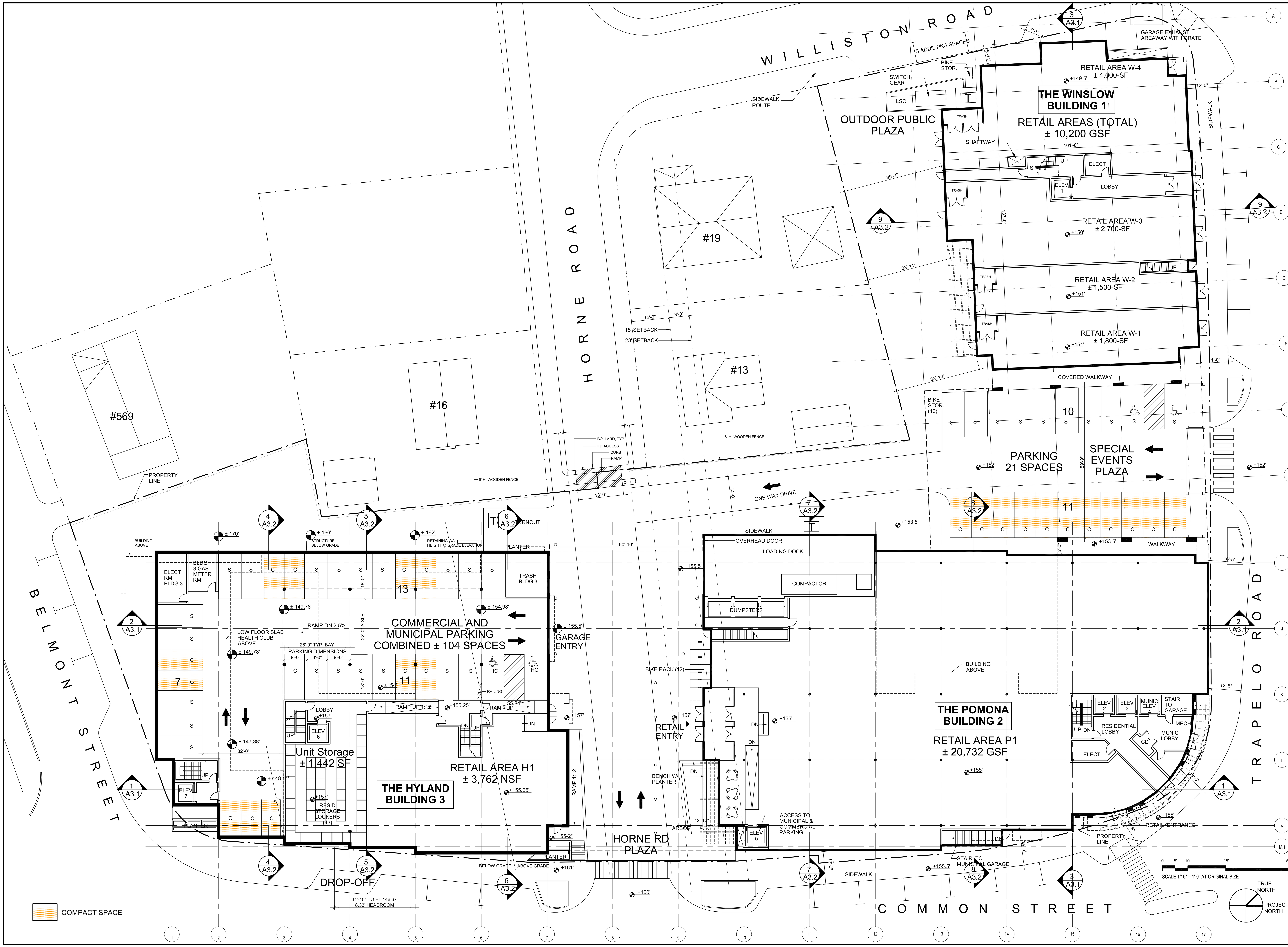
BASEMENT/
PARKING PLAN

SCALE AS NOTED

REVISION	DATE
WAIVER RQST	20 FEB 2013

DRAWN BY	REVIEWED BY
CY	PQ

SHEET
EXHIBIT
A1



PETER QUINN ARCHITECTS

ARCHITECTURE
PLANNING
COMMUNITY DESIGN

PETER QUINN ARCHITECTS LLC
1904 MASS AVE, 2ND FLOOR
CAMBRIDGE, MA 02140
PH 617-354-3989 FAX 617-868-0280

SEAL

CONSULTANT

LINE COMPANY ARCHITECTS Incorporated

CONSULTANT

PROJECT
CUSHING VILLAGE
CUSHING SQUARE
BELMONT, MA

PREPARED FOR
SMITH LEGACY PARTNERS
6 LITTLEFIELD ROAD
ACTON, MA 01720

DRAWING TITLE
SITE PLAN/ GRADE PLAN

SCALE AS NOTED

REVISION	DATE
WAIVER RQST	20 FEB 2013

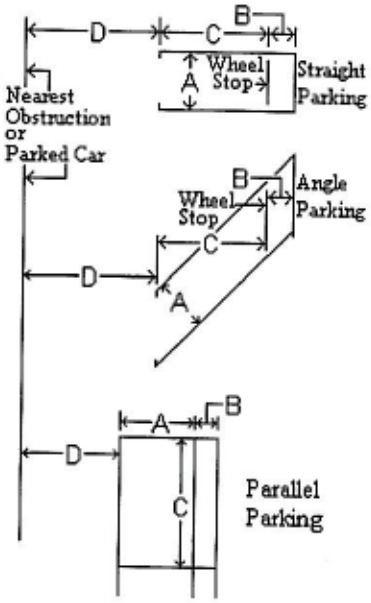
DRAWN BY	REVIEWED BY
CY	PQ

SHEET
EXHIBIT
A2

EXHIBIT B

PARKING: MINIMUM DIMENSIONS (refer to Diagram A)					
Angle	Auto Type	Stall Width (A)	Clearance (B)	Stall Length (C)	Aisle Width (D)
90° (shown on Diagram A)	Standard Compact	9 feet 8 feet	2 feet 2 feet	17 feet 14 feet	24 feet 24 feet
60°	Standard Compact	9 feet 8 feet	2 feet 2 feet	18 feet 15 feet	18 feet 18 feet
45° (shown on Diagram A)	Standard Compact	9 feet 8 feet	2 feet 2 feet	16 feet 14 feet	13 feet 13 feet
30°	Standard Compact	9 feet 8 feet	2 feet 2 feet	14 feet 12 feet	12 feet 12 feet
Parallel Parking	Standard Compact	8 feet 7 ft. 6 in.	3 feet 3 feet	22 feet 18 feet	13 feet 13 feet

Diagram A



SECTION 2. SPECIFIC STANDARDS

Compact Cars - In parking facilities where standard and compact cars are segregated, not more than one-third of the total stalls may be for compact cars, except that the Planning Board may authorize a larger percentage if the applicant submits survey data specific to his own case substantiating that higher percentage.

Compact car stalls should be located near the entrance to the use or the structure which the parking facility serves (except that handicapped parking comes first).

Compact car stalls must be identified with signs.

SECTION 3. HANDICAPPED PARKING

For handicapped parking standards see Massachusetts Architectural Access Board Regulations 521 CMR 3.00 published July 10, 1987, the uniform Federal Accessibility Standards, the ADA Accessibility Guidelines and all subsequent revisions.

Standards for handicapped parking are the same whether standard or compact cars are mixed or segregated.

SECTION 4. DENSE PARKING

In special circumstances, the Planning Board may authorize departure from these standards to allow tandem parking, as in the case of valet parking and parking provisions for large audience events where the entire audience will leave substantially at the same time, but only in cases where there is documented assurance of the permanence of the circumstances justifying the departure. Any occupancy permit granted on the basis of such authorized departure shall become invalid upon termination of the special circumstances.

8. All landscaping shall be properly maintained in a healthy condition in perpetuity.

E. Off-Street Parking

EXHIBIT C

1. Parking areas shall be set back from street lines and property lines a minimum of ten feet (10'). Parking layouts should minimize nuisance from car headlights that beam into residential dwellings through the use of visual screening by use of plantings or fencing. Alleys are permissible to provide multi-purpose parking areas.

2. Parking spaces shall be a minimum of nine (9) feet by eighteen (18) feet in size, in addition to one hundred (100) square feet of maneuvering area per parking space.

3. Design and construction of shared parking facilities is strongly encouraged in order to minimize both vehicular curb cuts on public streets and the need for vehicular travel lanes within the Lots.

BELMONT PLANNING BOARD
DESIGN REVIEW GUIDELINES
APPROVED 5/13/09

FROM PRECAST INSTITUTE - "REC'D PRACTICE FOR DESIGN & CONSTRUCTION" 1997

EXHIBIT D
P1 OF 2

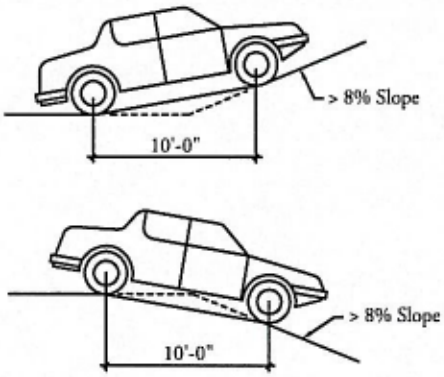


Figure 2-23

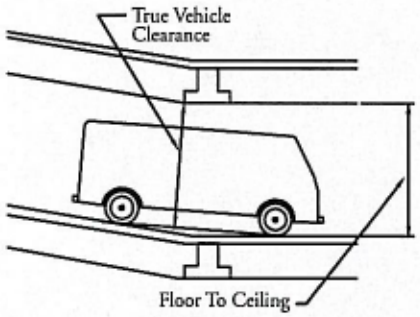


Figure 2-24

Typical grades in continuous ramp facilities on the parking floors generally do not exceed 6% (6 inches in 100 inches). However, continuous ramp grades up to 7% have been used successfully. Speed ramps (non-parking) should be limited to a 12% grade unless pedestrians specifically are excluded from the ramp by signage. Ramp grades greater than 15% can be psychological barriers to some drivers, particularly when the ramp is down-bound. When the ramp's break over slope exceeds 8%, a vertical-curve transition or a transition slope of half the ramp slope should be used (**Figure 2-23**).

With the popularity of vans and over-height recreational vehicles and the requirements of the Americans with Disabilities Act (ADA), some parking structures are developed with special high-clearance areas. Often this is done on the first or grade tier, where the grade slab can be lowered to create the additional clear height required at minimal additional cost. Generally for passenger vehicles, a 7'-0" minimum clear height is used, although 7'-4" to 7'-8" and even greater may provide a more spacious feeling. For over-height vehicles and ADA van-accessible spaces, clear heights of 8'-2" or greater are used. Height clearances on ramp breaks should be checked from the wheel line, not from the floor surface (**Figure 2-24**).

2.5 Parking Configuration

One of the major advantages of using precast prestressed concrete to construct a parking structure is its ability to provide economical clear spans of the parking bay. This creates a number of advantages. First, it eliminates columns between parking spaces, thus promoting the ease of entering the parking space without the "fender bender" stigma. Second, the columns take space used for parking in a clear-span structure. Third and most important, the clear span allows for future restriping of the parking spaces.

The advantages of being able to restripe in a clear span facility can be seen easily in light of the historical decline in car size. The average new car in North America reduced considerably from 1975 to 1985 due to gasoline efficiency laws. In 1975, a common parking space width and module was 9'-0" x 62'-0", while in 1985, 8'-6" x 58'-0" was quite adequate and remains generally adequate today (Figure 2-25).

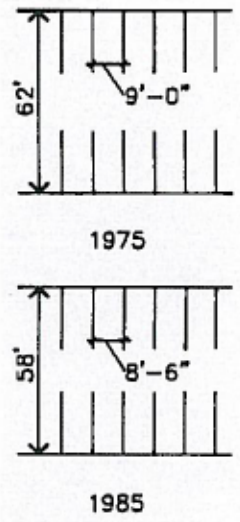


Figure 2-25

EXHIBIT D
P2 OF 2

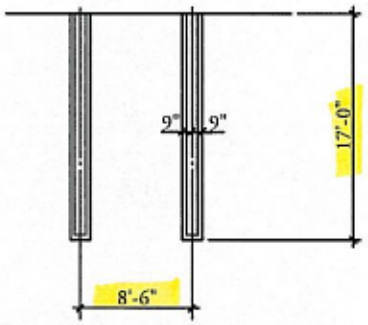


Figure 2-28

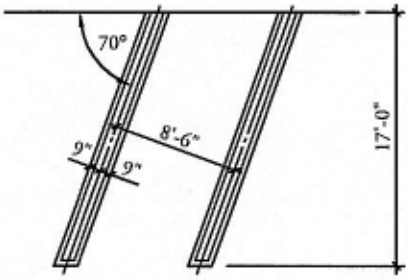


Figure 2-29

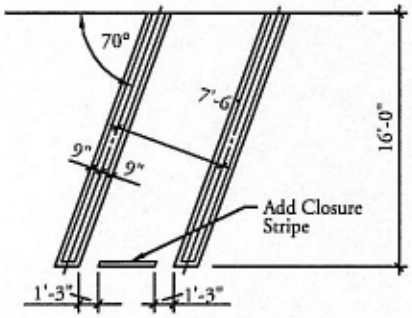


Figure 2-30

Parking-space module and space dimensions as recommended by the Parking Consultants Council of the National Parking Association are shown in **Table 2-1**. Note that where large and small cars are mixed, a one-size-fits-all space is developed as determined by the weighted average of the small-and large-car space dimensions.

Dimensional efficiencies can be achieved with angle parking by interlocking the spaces as shown on **Table 2-1**. Again, one-size-fits-all spaces can be developed by using a weighted average on the dimensions shown.

2.5.1 Accessible Parking

With the advent of the Americans with Disabilities Act of 1990 (ADA), more emphasis is required in hiring practices to eliminate discrimination in employment and in the physical design of new and renovated facilities. This translates into mandated improvements to create accessibility for the disabled in existing and new parking structures.

In new parking facilities, barrier-free provisions are required as follows:

- Minimum number of accessible parking spaces. See **Table 2-2**.
- Minimum sizes and clearances for accessible parking spaces along with requirements for "van-accessible" spaces.
- Types of accessible routes including stairs, slopes, ramps, etc.
- Types and capacities of elevators.
- Accessibility standards for employees such as barrier-free offices, washroom facilities, and hardware accessories.

Table 2-2

ADA Accessibility Guidelines: Space Requirements

Total Spaces In Facility	Minimum # of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total
1,001 and over	20 plus 1 for every 100 over 1,000

*Care should be taken to design for accessibility according to the guidelines of ADA and also according to local and state codes or ordinances that may require more restrictive designs (**Figures 2-31**). Health care facilities may have more stringent requirements under ADA.