

From: [Dan Grove](#)
To: [Molly McGuire](#)
Subject: Re: 2207-019 SUB4 Supplemental Retaining Wall comments
Date: Thursday, July 13, 2023 5:08:50 AM
Attachments: [SUB4 Retaining Wall - Updated.pdf](#)
[Resolution 18877 chapter28.pdf](#)

Hello Molly-

I realized that there was one piece of data missing. Please include the attached, updated version in the comments for Building Permit 2207-019.

I've also included King County Resolution 18877 from September 1958, which I referenced in the document.

I apologize for needing to send this updated version.

Thank you,
Dan Grove

On Wed, Jul 12, 2023 at 6:30 PM Molly McGuire <molly.mcguire@mercerisland.gov> wrote:

Thank you for the clarification.

Sincerely,

[Molly McGuire](#)

Planner

City of Mercer Island – Community Planning & Development

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From: Dan Grove <dan@grove.cx>
Sent: Wednesday, July 12, 2023 9:29 AM
To: Molly McGuire <molly.mcguire@mercerisland.gov>

Subject: Re: 2207-019 SUB4 Supplemental Retaining Wall comments

Hi Molly-

Great question! This is specifically responding to the supplemental SUB4 docs on the building permit.

I'll have separate public comments on CAO23-011. There's a lot to chew on there.

Thank you,

Dan

On Wed, Jul 12, 2023 at 6:26 PM Molly McGuire <molly.mcguire@mercerisland.gov> wrote:

Hi Dan,

Is this a public comment on the Critical Areas Ordinance Type 2 Application that was noticed on Monday, or do you want this included in the building permit?

Molly McGuire

Planner

City of Mercer Island – Community Planning & Development

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From: Dan Grove <dan@grove.cx>
Sent: Wednesday, July 12, 2023 4:50 AM
To: Molly McGuire <molly.mcguire@mercerisland.gov>
Subject: 2207-019 SUB4 Supplemental Retaining Wall comments

Hello Molly-

Please find attached some additional data on the "Existing Rockery Memo" recently submitted as part of 2207-019/SUB4.

Thank you,

Dan Grove

Ms. Molly McGuire
City of Mercer Island
RE: Response to 2207-019/"SUB4 - ADDITIONAL DOCUMENTS" - Retaining Wall
7/12/2023

Ms. McGuire:

The document provides data relevant to the [recent submission](#) on the legality of the existing retaining wall in Building Permit 2207-019.

In this submission, the Applicant reaches several conclusions, including:

1. "during the period at which this rockery was installed that rockeries would have been considered part of landscaping and not 'structure'"
2. "With the rockery being installed in 1961 the code in place at the time would have been the City of Mercer Island Zoning code of 1960. This zoning code does not provide requirements for the construction of retaining walls."

There are several problems with these conclusions, which I address in turn below:

Section 1: The Rockery was considered a retaining wall from the time of its construction

We agree that the rockery was constructed in the 1960's. During the 1960's, different versions of the Uniform Building Code were used by Mercer Island and King County. The Uniform Building Codes of [1946](#), [1955](#), [1958](#), and all use the same definition of Retaining Wall:

Retaining Wall is any wall used to resist the lateral displacement of any material.

King County used the 1946 Uniform Building Code starting in 1950, and Mercer Island used the 1958 Uniform Building Code from the moment of the City's incorporation - see Mercer Island [Ordinance 5](#) from July 20, 1960.

The rockery was considered a retaining wall from the date of its construction.

Section 2: The Rockery was considered a structure, not landscaping, from the time of its construction

With regards to whether this retaining wall was considered a structure at its date of construction, the record is clear. The Uniform Building Codes of [1946](#), [1955](#), and [1958](#) (in use in both King County and the City of Mercer Island from the early 1950's through the 1960's) all define "structure" identically to the current MICC 19.16.010:

Structure: That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner. (my emphasis)

Mercer Island's 1960 Zoning Code is clear that a retaining wall that contains a fill is "built" - Mercer Island's 1960 Zoning Code 19.01(4)(g) states that "Where a retaining wall contains a fill, the height of the retaining wall **built** to retain the fill shall..." (my emphasis)

The rockery met the 1960 Zoning Code definition of "structure". It is not "landscaping"

Section 3: The rockery was installed illegally, regardless of when in the 1960's it was installed

The Rockery illegally encroaches on the SE Maker Street Right-of-Way

While we have presented convincing evidence that the rockery was built after 1963, it would have been illegal even if it were built in 1960, under King County Code.

King County Resolution 18877 (Section 2802), passed in September 1958, makes it clear that any increase in grade by adding fill had to be done completely within the Lot where the fill was being installed:

protected against settlement.
When the owner of any lot shall raise or lower the level of such lot by a fill or excavation, he shall at his own expense protect all adjoining property from encroachment by such fill or from danger of collapse due to such excavation either by the erection of a retaining wall or by sloping the sides of such fill or excavation entirely within the confines of said lot.

That wasn't done here - there is no disagreement that the rockery and fill encroach onto the SE Maker Street right-of-way. This installation would have been illegal if performed prior to the City's incorporation.

If the rockery was installed after the City's incorporation, an encroachment agreement would have been required. No encroachment agreement was reached with the City. As such, the rockery and the site that was built behind it are Illegal Nonconforming Structures under MICC 19.01.050(A)(3).

Mercer Island Zoning Code in 1960 Provides Requirements for the Construction of Retaining Walls

[1960 Mercer Island Zoning Code](#) Section 16.01(4) is titled "Fences or Retaining Walls", and restricts fill retaining walls in the Required Front Yard to 42 inches, and to 72 inches in the Required Side Yard. The Rockery violates both of these regulations.

Conclusion

There is broad agreement that the rockery was built in the 1960's. The rockery was considered both a retaining wall and a structure at the time, and illegally encroached on the SE Maker Street right-of-way. The rockery also violated Mercer Island's 1960 Zoning code when it was built.

As such, the rockery is an illegal nonconforming structure, and the site that was built behind the rockery is an illegal nonconforming site. MICC 19.01.050(A)(3).

R E S O L U T I O N

No. 18877

Red-356562
Auditors Recording

CHAPTER 1.

ADMINISTRATIVE - TITLE AND SCOPE

Sec. 101. This ordinance shall be known as the "Building Code," may be cited as such, and will be referred to herein as "this Code."

Sec. 102. The purpose of this Code is to provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures within the county and certain equipment specifically regulated herein.

Wherever in this Code reference is made to the Appendix, the provisions in the Appendix shall not apply unless specifically adopted.

Sec. 103. The provisions of this Code shall apply to the construction, alteration, moving, demolition, repair, and use of any building or structure within the county, except work located primarily in a public way, public utility towers and poles, mechanical equipment not specifically regulated in this Code, and hydraulic flood control structures.

Additions, alterations, repairs, and changes of use or occupancy in all buildings and structures shall comply with the provisions for new buildings and structures except as otherwise provided in Sections 104, 306, and 502 of this Code.

Where, in any specific case, different sections of this Code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

If any part of this Code is in conflict with any other Code or regulations issued by King County, the most restrictive regulation shall apply.

Sec. 104. (a) General. Buildings or structures to which additions, alterations, or repairs are made shall comply with all the requirements for new buildings or structures except as specifically provided in this Section.

For Construction in Fire Zones see Chapter 16.

(b) Additions, Alterations, and Repairs: More than 50 per cent. When additions, alterations, or repairs within any 12-month period exceed 50 per cent of the value of an existing building or structure, such building or structure shall be made to conform to the requirements for new buildings or structures.

(c) Additions, Alterations, and Repairs: 25 to 50 per cent. Additions, alterations, and repairs exceeding 25 per cent but not exceeding 50 per cent of the value of an existing building or structure and complying with the requirements for new buildings or structures may be made to such building or structure within any 12-month period without making the entire building or structure comply. The new construction shall conform to the requirements of this Code for a new building of like area, height, and occupancy. Such building or structure, including new additions, shall not exceed the areas and heights specified in this Code.

(d) Additions, Alterations and Repairs: 25 per cent or less. Structural additions, alterations, and repairs to any portion of an existing building or structure, within any 12-month period, not exceeding 25 per cent of the value of the building or structure shall comply with all of the requirements for new buildings or structures, except that minor structural additions, alterations, or repairs, when approved by the Building Official, may be made with the same material of which the building or structure is constructed. Such building or structure, including new additions, shall not exceed the areas and heights specified in this Code.

Resolution No. 18877

(e) Nonstructural Alterations and Repairs: 25 per cent or less. Alterations or repairs, not exceeding 25 per cent of the value of an existing building or structure, which are nonstructural and do not affect any member or part of the building or structure having required fire resistance, may be made with the same materials of which the building or structure is constructed.

(f) Repairs: Roof covering. Not more than 25 per cent of the roof covering of any building or structure shall be replaced in any 12-month period unless the new roof covering is made to conform to the requirements of this Code for new buildings or structures.

(g) Existing Occupancy. Buildings in existence at the time of the passage of this Code may have their existing use or occupancy continued, if such use or occupancy was legal at the time of the passage of this Code, provided such continued use is not dangerous to life.

Any change in the use or occupancy of any existing building or structure shall comply with the provisions of Sections 306 and 502.

(h) Moved Buildings. Buildings or structures moved into or within the county shall comply with the provisions of this Code. See Section 1604 ~~(e)~~ for requirements in Fire Zones.

(i) Maintenance. All buildings or structures both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition. All devices or safeguards which are required by this Code in a building or structure when erected, altered, or repaired, shall be maintained in good working order. The owner or his designated agent shall be responsible for the maintenance of buildings and structures.

Sec. 105. The provisions of this Code are not intended to prevent the use of any material or method of construction not specifically prescribed by this Code, provided any such alternate has been approved.

The Building Official may approve any such alternate provided he finds that the proposed design is satisfactory and complies with the provisions of Chapter 23, and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in this Code in quality, strength, effectiveness, fire resistance, durability, and safety.

The Building Official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use.

For the requirements as an approved fabricator see Sections 305 and 402.

Sec. 106. Whenever there is insufficient evidence of compliance with the provisions of this Code or evidence that any material or any construction does not conform to the requirements of this Code, or in order to substantiate claims for alternate materials or methods of construction, the Building Official may require tests as proof of compliance to be made at the expense of the owner or his agent by an approved agency.

Test methods shall be as specified by this Code for the material in question. If there are no appropriate test methods specified in this Code, the Building Official shall determine the test procedure.

Copies of the results of all such tests shall be retained for a period of not less than two years after the acceptance of the structure.

DETAILED REGULATIONS
CHAPTER 28 - EXCAVATIONS, FOUNDATIONS, AND RETAINING WALLS

Sec. 2801. The quality and design of materials used structurally in excavations, footings and foundations shall conform to the requirements specified in Chapters 23, 24, 25, 26, and 27 of this Code.

Sec. 2802. Excavations for buildings and excavations accessory thereto shall be protected and guarded against danger to life and property. Permanent excavations shall have retaining walls of masonry or concrete of sufficient strength to retain the embankment together with any surcharged loads. No excavation for any purpose shall extend within one foot (1') of the angle of repose or natural slope of the soil under any footing or foundation, unless such footing or foundation is first properly underpinned or protected against settlement.

When the owner of any lot shall raise or lower the level of such lot by a fill or excavation, he shall at his own expense protect all adjoining property from encroachment by such fill or from danger of collapse due to such excavation either by the erection of a retaining wall or by sloping the sides of such fill or excavation entirely within the confines of said lot.

Sec. 2803. (a) General. The classification of the soil under all portions of every building shall be based upon the examination of adequate test borings or excavations made at the site when required by the Building Official. The location of the test borings or excavations and the nature of the subsurface materials shall be indicated on the plans.

EXCEPTION: Certain buildings of Type V construction may have footings and foundations designed in accordance with the provisions of Section 2806 and Table No. 28-A.

(b) Moisture Content. Due allowance shall be made in determining the capacity of subsurface materials for the effect of possible change in moisture content.

(c) Unequal Loads. Where footings are to be placed at varying elevations the effect of adjacent loads shall be included in the foundation analysis.

TABLE NO. 28-A -- MINIMUM FOUNDATION REQUIREMENTS FOR STUD BEARING WALLS

NUMBER OF STORIES	THICKNESS OF FOUNDATION WALL (Inches)		WIDTH OF FOOTING (Inches)	THICKNESS OF FOOTING (Inches)	DEPTH OF FOUNDATION BELOW NATURAL SURFACE OF GROUND AND FINISH GRADE (inches)
	Concrete	Unit Masonry			
1	6	6	12	6	12
2	8	8	15	7	18
3	10	10	18	8	24

Where unusual conditions or frost conditions are found, footings and foundations shall be as required in Section 2806 (a).
The ground under the floor may be excavated to the elevation of the top of the footing.

Sec. 2804. The allowable unit soil pressure upon every footing shall not exceed the values as set forth in Table No. 28-B.

EXCEPTION: The tabulated values may be modified as prescribed in Section 2805.

Sec. 2805. (a) Requirements. Whenever, in the opinion of the Building Official, the adequacy and class of a soil cannot be determined by the test borings or excavations required by the provisions of Section 2803 (a), he may require a special soil investigation before approving the use of the footing.

(b) Deviations. Deviations from the allowable unit soil pressures set forth in Table No. 28-B shall be permitted only after performance of a special soil investigation by an agency acceptable to the Building Official. The Building Official may approve such deviations only after receiving a written opinion from the investigating agency together with substantiating evidence.

(c) Stresses. Where the bearing capacity of the soil is not definitely known or is in question, the Building Official may require load tests or other adequate proof as to the permissible safe bearing capacity at that particular location. To determine the safe bearing capacity of soil it may be tested by loading an area not less than two square feet (2 sq. ft.) to not less than twice the maximum bearing capacity desired for use. Such load shall be sustained by the soil until no additional settlement takes place for a period of not less than 48 hours in order that such desired bearing capacity may be used. Examination of subsoil conditions may be required when deemed necessary.

TABLE NO. 28-B--ALLOWABLE SOIL PRESSURE

CLASS OF MATERIAL	MINIMUM DEPTH OF FOOTING BELOW ADJACENT VIRGIN GROUND	VALUE PERMISSIBLE IF FOOTING IS AT MINIMUM DEPTH. POUNDS PER SQUARE FOOT	INCREASE IN VALUE FOR EACH FOOT OF DEPTH THAT FOOTING IS BELOW MINIMUM DEPTH. POUNDS PER SQUARE FOOT	MAXIMUM VALUE. POUNDS PER SQUARE FOOT
1	2	3	4	5
Rock	0' 0"	20% of ultimate crushing strength	0	20% of ultimate
Compact coarse sand	1' 0"	1500*	300*	8000
Compact fine sand	1' 0"	1000*	200*	8000
Loose sand	2' 0"	500*	100*	3000
Hard clay or sandy clay	1' 0"	4000	800	8000
Medium-stiff clay or sandy clay	1' 0"	2000	200	8000
Soft sandy clay or clay	2' 0"	1000	50	2000
Adobe	1' 6"	1000**	50	
Compact inorganic sand and silt mixtures	1' 0"	1000	200	4000
Loose inorganic sand silt mixtures	2' 0"	500	100	1000
Loose organic sand and silt mixtures and muck or bay mud	0' 0"	0	0	0

*These values are for footings one foot in width and may be increased in direct proportion to the width of the footing to a maximum of three times the designated value.
 **For depths greater than eight feet use values given for clay of comparable consistency.

Sec. 2806. (a) Footings and Foundations. Footings and foundations, unless specifically provided, shall be constructed of masonry or concrete and shall in all cases extend below the frost line. Footings shall be designed to minimize differential settlement. Mortar used in foundation walls and footings shall be as specified in Section 2403 (s).

Bearing walls shall be supported on continuous solid masonry or concrete footings or piles, which shall be of sufficient size to support

safely the loads imposed as determined from the character of the soil. Foundation walls supporting wood shall extend at least six inches (6") above the finished grade adjacent to the wall at all points. Foundation plates or sills shall be bolted to the foundation or foundation wall with not less than one-half-inch (1/2") bolts, embedded at least seven inches (7") into the masonry and spaced not more than six feet (6') apart.

EXCEPTIONS: 1. Interior bearing walls in one-story buildings may be supported on piers.

2. For Type V buildings (except Group H and I occupancies), isolated piers of solid masonry or concrete may be used for post and girder construction.

3. A one-story building (except a Group I occupancy) which does not exceed four hundred square feet (400 sq. ft.) in area, including additions, may be constructed without a masonry or concrete foundation if the walls are supported on a wood foundation plate.

Foundation plates or sills shall be no wood other than Foundation Grade redwood, Foundation Grade cedar, all heartwood cypress, or any species of wood pressure-treated with an approved preservative, all marked or branded by an approved agency.

Minimum foundation requirements for stud bearing walls shall be as set forth in Table No. 28-A.

Foundations for all buildings where the surface of the ground slopes more than one foot (1') in ten feet (10') shall be level or shall be stepped so that both top and bottom of such foundation are level.

(b) Structural Design. Except for special provisions of Section 2808, covering the design of piles, all portions of footings shall be designed in accordance with the structural provisions of this Code.

Sec. 2807. When grillage footings of structural steel shapes are used on soils, they shall be completely embedded in concrete with at least six inches (6") on the bottom and at least four inches (4") at all other points.

Sec. 2808. (a) General. The allowable axial and lateral loads on piles shall be determined by an approved formula, by load tests, or by a foundation investigation by an approved agency. A foundation investigation shall be made if required by the Building Official.

(b) Allowable Loads. 1. Axial loads. The allowable axial load on a pile shall not exceed the value given by the following formulas unless such load is otherwise determined as specified in Section 2805.

Allowable Axial Load = $R/4$ for all piles.

WHERE

$$R \text{ (for steel piles)} = \frac{12 Wh \frac{W + 0.25P}{W + P}}{S + \frac{RL 24,000}{AE}}$$

$$R \text{ (for other piles)} = \frac{12 Wh \frac{W + 0.1P}{W + P}}{S + \frac{RL 24,000}{AE}}$$

WHERE

- R = ultimate driving resistance, in tons.
- W = weight of striking parts, in tons.
- h = height of fall of striking parts, in feet.
- Wh = striking energy, in foot tons.
- P = weight of pile, in tons.
- S = permanent settlement of pile under the average of the last 10 blows, in inches.
- L = length of pile, in feet.
- A = average right cross-sectional area of pile material, in square inches.
- E = modulus of elasticity of pile, in pounds per square inch.

2. Group action. Consideration shall be given to the reduction of allowable pile load when piles are placed in groups. Where soil conditions make such load reductions advisable or necessary, the allowable axial load determined for a single pile shall be reduced by any rational method or formula approved by the Building Official.

3. Static load tests. When the allowable axial load of a single pile is determined by load test, one of the following methods shall be used:

Method 1. It shall not exceed 50 per cent of the yield point under test load. The yield point shall be defined as that point at which an increase in load produces a disproportionate increase in settlement.

Method 2. It shall not exceed one-half of the load which causes a net settlement, after deducting rebound, of one one-hundredth inch (.01") per ton of test load, which has been applied for a period of at least 24 hours.

Method 3. It shall not exceed one-half of that load under which, during a 40-hour period of continuous load application, no additional settlement takes place.

4. Column action. All piles standing unbraced in air, water, or material not capable of lateral support, shall conform with the applicable column formula as specified in this Code. Such piles driven into firm ground may be considered fixed and laterally supported at five feet (5') below the ground surface and in soft material at ten feet (10') below the ground surface unless otherwise prescribed by the Building Official after a foundation investigation by an approved agency.

5. Piles in subsiding areas. Where piles are driven through subsiding fills or other subsiding strata and derive support from underlying firmer materials, consideration shall be given to the downward frictional forces which may be imposed on the piles by the subsiding upper strata.

(c) Protection of Pile Materials. Where the boring records of site conditions indicate possible deleterious action on pile materials because of soil constituents, changing water levels, or other factors, such materials shall be adequately protected by methods or processes approved by the Building Official. The effectiveness of such methods or processes for the particular purpose shall have been thoroughly established by satisfactory service records or other evidence which demonstrates the effectiveness of such protective measures.

(d) Structural Strength of Piles and Limiting Values of Stresses. The allowable compressive stresses on all piling materials shall not exceed the values as specified below, except that stresses may be increased on submission of satisfactory data for specially protected, selected, or high-strength material.

1. Concrete - $.225 f'_c$.

2. Structural steel - 9000 pounds per square inch.

3. Wood - The allowable stress in compression parallel to the grain of round wood piles shall not exceed 60 per cent of the basic stress for clear material as set forth in U.B.C. Standard No. 25-1-58 and in no event shall the stress exceed 1000 pounds per square inch.

4. Reinforcing steel - as in Chapter 26.

The full load shall be assumed as carried on the pile cross section located at the upper surface of the soil supporting the pile.

Where the influence of subsiding fills is considered as imposing loads on the pile, the above stresses may be increased if satisfactory substantiating data are submitted.

(e) Round Wood Piles. 1. Quality. Except where untreated piles are permitted, wood piles shall be pressure-treated in accordance with U.B.C. Standard No. 25-17-58. The basic material shall conform to that of untreated piles.

2. Untreated Piles. Untreated piles may be used only when it has been established that the cut-off will be below lowest ground-water level assumed to exist during the life of the structure. Every wood pile shall conform to the specification for Class A or Class B piles in U.B.C. Standard No. 25-19-58.

(f) Precast Concrete Piles. 1. Quality. Precast concrete piles shall be cast in one piece and prior to driving and at 28 days after pouring shall develop an ultimate compressive strength (f'_c) of at least 3000 pounds per square inch.

2. Reinforcement ties. The longitudinal reinforcement in driven precast concrete piles shall be laterally tied with steel ties or wire spirals. Ties and spirals shall be spaced not more than three inches (3") apart, center to center, for a distance of two feet (2') from the ends and not more than eight inches (8") elsewhere.

3. Gauge of reinforcement. The gauge of ties and spirals shall be as follows:

For piles having a diameter of sixteen inches (16") or less, wire shall be not smaller than No. 5 gauge.

For piles having a diameter of more than sixteen inches (16") and less than twenty inches (20"), wire shall be not smaller than No. 4 gauge.

For piles having a diameter twenty inches (20") and larger, wire shall be not smaller than one-fourth-inch ($1/4$ ") round or No. 3 gauge.

4. Stresses. Precast concrete piling shall be designed to resist stresses induced by handling and driving as well as by loads.

(g) Uncased Cast-in-Place Piles. 1. Quality. Concrete piles cast in place against earth in drilled or bored holes shall be made in such a manner as to insure the exclusion of any foreign matter and to secure a full-sized shaft. The length of such pile shall be limited to not more than 30 times the average diameter. Concrete shall have an ultimate compressive strength (f'_c) of not less than 2500 pounds per square inch.

2. Friction. Any uncased cast-in-place pile may be assumed to develop a frictional resistance equal to one-sixth of the bearing value of the soil material at minimum depth as set forth in Table No. 28-B but not to exceed 500 pounds per square foot unless a greater value is prescribed by the Building Official after a soil investigation as specified in Section 2805.

3. Combined friction and bearing prohibited. Frictional resistance and bearing resistance shall not be assumed to act simultaneously.

(h) Metal-Cased Concrete Piles. 1. Dimensions. Every metal casing for a concrete pile shall have a sealed tip with a diameter of not less than eight inches (8").

Concrete piles cast in place in metal shells shall have shells driven for their full length in contact with the surrounding soil and left permanently in place. The shells shall be sufficiently strong to resist collapse and sufficiently watertight to exclude water and foreign material during the placing of the concrete.

2. Concrete. All concrete used in metal-cased concrete piles shall have an ultimate compressive strength (f'_c) of not less than 2500 pounds per square inch.

3. Order of driving. Piles shall be driven in such order and with such spacing as to insure against distortion of or injury to piles already in place. No pile shall be driven within four and one-half average pile diameters of a pile filled with concrete less than 24 hours old unless approved by the Building Official.

(i) Concrete-Filled Steel Pipe Piles. 1. Steel pipe. Steel pipe piles shall conform to U.B.C. Standard No. 27-11-58. If it is desired to use pipe of other material, satisfactory substantiating data must be submitted.

2. Concrete. The concrete used in concrete-filled steel pipe piles shall have an ultimate compressive strength (f'_c) of not less than 2500 pounds per square inch.

3. Allowable loads. The allowable load on concrete-filled steel pipe piles shall not exceed 9000 pounds per square inch on the steel plus .225 of the ultimate compressive strength (f'_c) of the concrete.

(j) Rolled Structural Steel Piles. Structural steel piles shall conform to U.B.C. Standard No. 27-1-58.

No section shall have a nominal thickness of metal less than three-eighths inch ($3/8$ ").

(k) Jetting. Jetting shall not be used except where and as specifically permitted by the Building Official. When used, jetting shall be carried out in such a manner that the carrying capacity of existing piles and structures shall not be impaired. After withdrawal of the jet, piles shall be driven down until the required resistance is obtained.

(l) Special Piles or Special Conditions. The use of types of piles not specifically mentioned herein, and the use of piles under conditions not specifically covered herein, shall be permitted, subject to the approval of the Building Official, upon submission of acceptable test data, calculations, or other information relating to the properties and load-carrying capacity of such piles.

CHAPTER 29 - VENEERED WALLS

Sec. 2901. (a) Limitations. Veneer shall not be assumed to add to the strength of any wall.