



Town Belmont
 Historic District Commission
 Homer Municipal Building, 2nd Floor
 19 Moore Street
 Belmont, MA 02478

COMMUN OFFICE USE
Case Number: HDC-18-08
7:10 JUN 11 PM 7:03

APPLICATION

In accordance with the Historic Districts Act, MGL Ch 40C, and the Town of Belmont General Bylaws, §40-315, the undersigned applies to the Belmont Historic District Commission for a Certificate of:

- Appropriateness Non-Applicability Hardship

1. PRELIMINARY INFORMATION:

Address of Property: 455 Concord Avenue
 Property Owner's Name: Town of Belmont
 Address: 455 Concord Avenue
 Email: sdorrance@belmont-ma.gov Phone: 617-993-2646

Agent Name: Steve Dorrance
 Address: 19 Moore Street, Belmont, MA
 Email: sdorrance@belmont-ma.gov Phone: 617-993-2646

I am the: Property Owner Agent
 Property is Owned by a Corporation, LLC, or Trust (Submit authorization to sign as owner)
 Property is a Condominium or Cooperative Association (submit authorization to sign as trustee)

If applicable: Architect: _____ Contractor: _____

2. BRIEF DESCRIPTION OF PROPOSED WORK:

- To temporarily repair the ornamental railing in front of Town Hall in order to remove the yellow safety tape, and make it safer in the event someone inadvertently falls into it.
- To determine what is behind the stone wall in the least intrusive way.

3. SIGNATURES:

As Owner, I make the following representations:

- I hereby certify that I am the Owner of the Property at: 455 Concord Avenue
- I hereby certify that if an Agent is listed on this Application, this Agent has been authorized to represent this Application before the Belmont Historic District Commission.

Owner: [Signature] Date: 6-11-18

As Applicant/Agent, I make the following representations:

- The information supplied on and in this Application is accurate to the best of my knowledge;
- I will make no changes to the approved plans without prior approval from the Belmont Historic District Commission.

Applicant/Agent: [Signature] Date: 6/11/18

* Incomplete applications and Insufficient documentation will not be accepted. *

Approved March 23, 2017

Project Description

Objectives:

1. To temporarily repair the ornamental railing in front of Town Hall in order to remove the yellow safety tape, and make it safer in the event someone inadvertently falls into it.
2. To determine what is behind the stone wall in the least intrusive way.

Summary:

A recent study recommended pinning the façade back to the substrate behind it. It seems as though someone believed something solid exists behind the stone, while others believe it is simply backfilled. If the latter is the case, the scope of the repair is much more involved and, therefore, more expensive. The replacement of the railing and balusters is not funded this fiscal year. Assuming it is funded in the next fiscal year, work is not likely to begin until the fall of calendar year 2019, or the spring of 2020. In consideration of this, a temporary repair is suggested.

Scope of work:

To sample the material behind the stone wall two 18 x 18 holes, one five feet from the top and the other five feet from the bottom, would be saw cut into the blacktop driveway above and behind the wall. DPW would run an 8" auger down 3 to 5 feet and determine if anything solid is behind the stone. If small stone and dirt come up there is likely nothing behind the wall but common backfill. If the auger hits something in both places it could be considered informative.

The temporary repair of the railing will include installing, with 5/8 wide steel straps, a continuous length of 1.25 fence pipe to the rear facing side of the top rail and straightening out bent balusters. The pipe is intended to restore the smooth contour of the top rail. No welding will be done to either the top rail or balusters. The straps, top rail, pipe, and balusters will be brush painted with high gloss black Rustoleum. Care will be taken to completely cover the granite top cap.

Steve Dorrance

Director, Facilities
Town of Belmont







Belmont Town Hall

Metal Railing and Stone Retaining Wall Study
455 Concord Avenue, Belmont, MA 02478



**McGinley Kalsow
& Associates, Inc.**

ARCHITECTS & PRESERVATION PLANNERS

324 Broadway ~ PO Box 45248
Somerville, MA 02145-2803
wendall@mcginleykalsow.com

February 12, 2018



INTRODUCTION

McGinley Kalsow & Associates, Inc. was engaged by the Town of Watertown to assess the metal railing and associated retaining wall at the Southeast corner of the Belmont Town Hall. The Town Hall is part of the Pleasant Street Local Historic District. A preservation restriction was recorded for the Town Hall on June 16, 1999 so that all work on the building and associated elements like this wall and railing are subject to review and approval by the Massachusetts Historical Commission. In addition, all work visible from a public way is subject to review and approval of the Belmont Historic District Commission.

We will discuss the condition and recommendation for the railing and retaining wall separately; however, the repairs and restoration work needs to be undertaken at the same time. The granite coping on the stone wall needs to be reset and repairs to the stone wall made before the fence is reinstalled.

METAL RAILING – EXISTING CONDITIONS

The railing appears to be made of 3 different materials. The top rail or cap is cast iron. A steel flat bar is used to secure the cap to the pickets. The pickets appear to be wrought iron showing significant areas of rust but very little loss in cross-section. The two straight sections of railing at the stair and entry landing are in quite good condition needing only rust removal, priming (or galvanizing) and painting. The main curved section of railing is in quite poor condition having suffered much damage from plows or vehicles. There are many broken and displaced sections of the cast iron cap or top rail. Ineffective attempts have been made to field-weld these breaks. The steel sub-rail is badly rusted and broken at many locations. The twisted square pickets are in fair but repairable condition. Every other picket runs full height while the alternate pickets stop at an intermediate sloped or horizontal railing. This entire railing was originally connected with screws and pins. The pickets were secured to holes in the granite coping stone with lead and one original lead joint remains between original sections of the cast iron rail cap.

The railing functions as a guard railing and at the stair as a handrail. The retaining wall at the top of the stair is approximately 12' above the bottom of the retaining wall and 9' high at the bottom of the stair. The existing railing height is 2'-2" above the granite with maximum openings between pickets of about 7". The current building code height requirement is 3'-6" tall and a maximum opening of 4". The deteriorated condition of the curved railing and the dimensions of all the railings raises public safety and liability concerns for the town which need to be addressed.

See the following photographs for additional information.



1. The straight railing sections at stairs and upper landing are generally good except for rust and lack of dimensional conformance to guardrail requirements.

2. The curved section of railing is in very poor condition with many broken sections of the cast iron top rail or cap as well as a lack of dimensional conformance to guard rail requirements.





1. Close up view of railing showing broken top rail and ineffective attempts to weld.



2. Close up view of railing pickets. Picket to the left is missing, center picket is bent and loose. Note lead around very shallow embedment of pickets.



3. Close up view of top rail showing broken welds and severely rusted sub-rail.



4. Close up view of top rails showing both welds and screws.



5. Close up view showing an original lead joint between sections of cast iron.



6. Close up view showing decorative (non-functional) bolts and broken weld.

METAL RAILING – RECOMMENDATIONS

1. The entire railing assembly needs to be disassembled and removed for shop repair and restoration which includes:
 - a. De-leading and sandblasting to remove all lead and rust.
 - b. Replacement of the sub-rail with a new steel flat bar.
 - c. Replacement of all or most of the curved cast iron top rail.
 - d. Straightening and repair of the wrought iron pickets and elements and lengthening of the pickets by about 3” to allow conventional attachment to the granite.
 - e. Galvanizing, priming, and painting of wrought iron and steel elements.
 - f. Testing needs to be done to see if galvanizing or a zinc rich primer will produce the best results on the cast iron top rail or cap before the finish paint system is applied.
 - g. The final sequence of painting and re-assembly needs to be developed.
2. For the curved section of railing, separating the walking area from the railing with a well planted landscape buffer is probably the only effective way which allows re-use of the historic railing and to meet the intent of the State Building Code.
3. For the straight sections of railing at the stairs and upper landing we recommend that some type of conforming guard rail be installed in addition to the historic railing. A glass guard rail is probably the least visible approach to meet the guard rail requirements.

See plans for additional information.

STONE RETAINING WALL – EXISTING CONDITIONS

The stone retaining wall has a granite coping stone, brick posts with brownstone tops and shale or shale-like field stone. The lower brick post is missing its original brownstone spherical finial. The height of the wall ranges from approximately 12’ to 0”.

Overall the condition of the wall is fair to poor. Various repointing campaigns have taken place. It appears that all repointing has been with too hard of a mortar which has cracked and trapped water. The bottom brick pier has been hit by a plow or truck and knocked off its foundation. The entire pier has shifted and needs to be rebuilt. The coping stone at the bottom stair tread has moved approximately 1½”.

Based on field observations at a couple loose face stones, it appears that face stones have separated from the back-up masonry for about 50% of the wall. We did not see displacement of the back-up masonry but recommend some further exploration work during the design and contract document process.

See attached photographs for additional information.



1. Overall view of granite stairs. The joint at the left side of the stairs is $\frac{1}{2}$ " compared to the joint at the right side of 2" indicating that the top of the retaining wall has moved $1\frac{1}{2}$ ".

2. Overall view of retaining wall.





3. View of North end of the stone retaining wall showing connection with the buildings brick walls.



4. Close up view showing cracked mortar joints and displaced stone work.



5. Close up view showing differential movement between granite pier and shale as well as between granite pier and granite coping stone.



6. View of lower brick pier which has been knocked off of its foundation and is missing its spherical finial.

STONE RETAINING WALL – RECOMMENDATIONS

- i. Remove and reset the granite coping stone and rebuild top 12” of field stone. See Detail 2, Drawing A1.2
2. Remove and reset face wythe of field stone for approximately 50% of wall. See Elevation 1, Drawing A1.2
3. Remove 1 face stone at every 3’-0” o.c. max. each way and install ½” stainless steel threaded rod with nuts at both ends to tie the face wythe to back-up masonry.
4. Repoint 100% of masonry which is not rebuilt.
5. Disassemble and rebuild the 2 brick, granite and brownstone piers.
6. Supply and install spherical brownstone finial at lower pier.
7. Drill or install 2” diameter drainage holes near base of wall at 5’-0” o.c. max.

Study Phase Cost Estimate

1. Metal Railing Restoration		
a. Dismantle		\$5,000
b. De-lead and sandblast		\$5,500
c. Pattern and casting new curved top rail		\$10,000
d. Repair and restoration		\$25,000
e. Finish system		\$5,500
f. Reinstallation		\$10,250
g. Glass or similar guardrail at stairs and landing		\$10,000
h. Handrails		\$2,500
	Subtotal	\$73,750
2. Stone Retaining Wall Restoration		
a. Remove and reset coping stones and top of field stones		\$8,000
b. Rebuild brick, brownstone and granite piers		\$7,500
c. Rebuild face wythe		\$22,000
d. Repoint balance of wall		\$6,000
e. Replicate missing spherical finial		\$3,000
	Subtotal	\$46,500
3. Planting Area and Repaving of Walk		
a. Planting area to separate pedestrians from wall (allowance)		\$15,000
b. Ballard's and repaving of walk (allowance)		\$16,000
	Subtotal	\$31,000
	Sub-total Trade Costs	\$151,250
General Conditions	(10%)	\$15,125
Design Contingency	(20%)	\$30,250
Construction Contingency	(10%)	\$15,125
	Sub-total Constructions	\$211,750
Architectural and Engineering Services	(15%)	\$31,762.50
	Total Project Estimate	\$243,512.50

Belmont Town Hall

Fence and Masonry Study



**Belmont Town Hall
Fence and Masonry Study**
455 Concord Ave,
Belmont, MA 02478

Date: 02/08/18
Scale:
Drawn By: RL
Reviewed By: WCK
Project No: 1794.00

MK & A McGinley Kalsow & Associates, Inc.
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Cover

No.
A1.0

Architectural	
Sheet Number	Sheet Name
A1.0	Cover
A1.1	Existing Site Plan
A1.2	Existing Conditions Elevation
A1.3	Details
A1.4	Proposed Site Plan

NOT FOR CONSTRUCTION



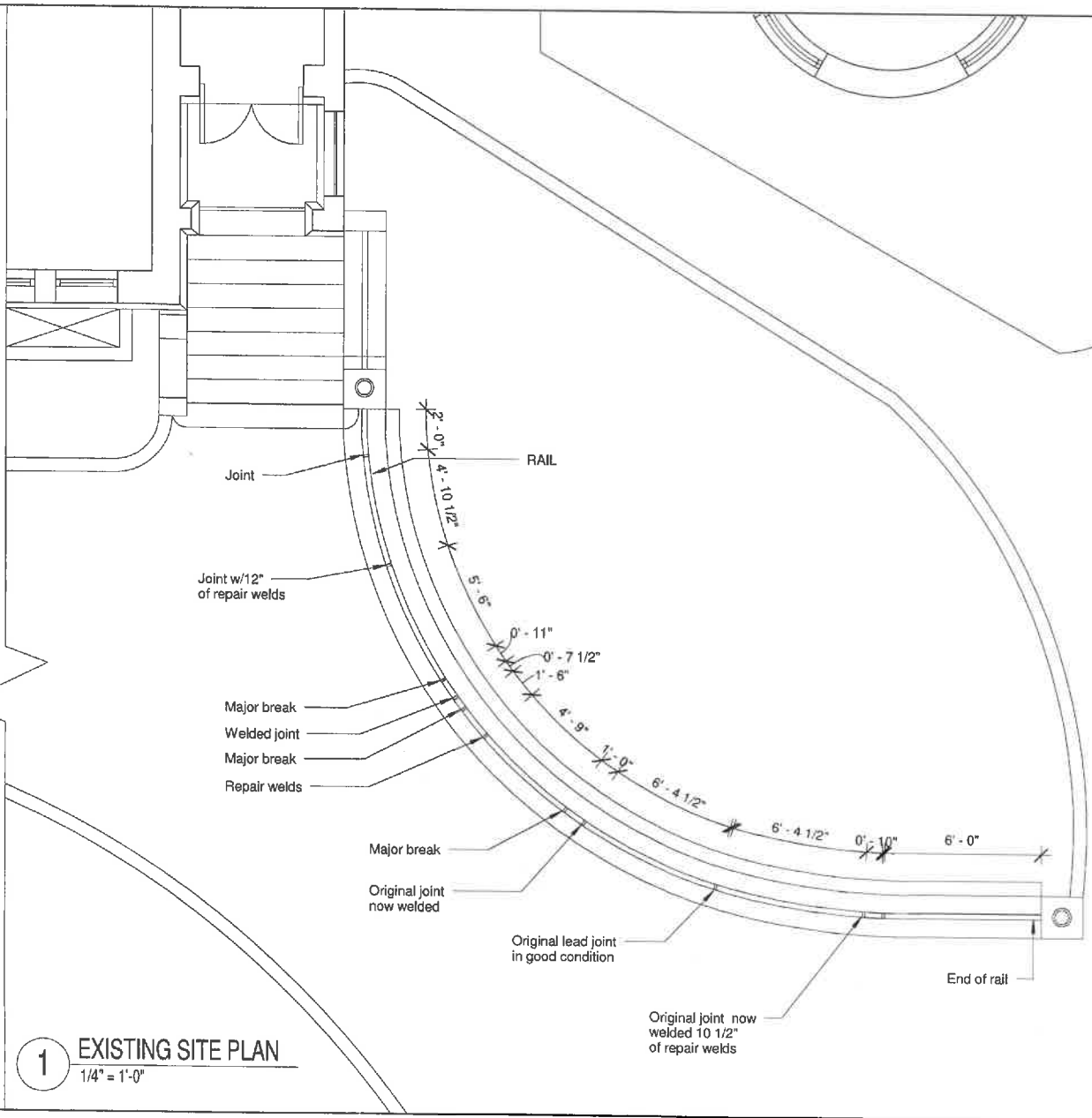
Belmont Town Hall
Fence and Masonry Study
455 Concord Ave.
Belmont, MA 02478

Date: 02/08/18
Scale: 1/4" = 1'-0"
Drawn By: RL
Reviewed By: WCK
Project No: 1794.00

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Existing Site Plan




No.
A1.1



1 EXISTING SITE PLAN
1/4" = 1'-0"

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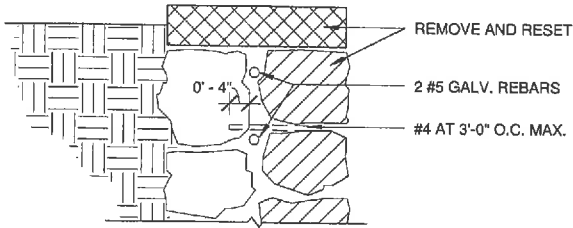
KEY

-  DISMANTLE/REBUILD
-  DISMANTLE/REBUILD FACE WYTHE. SEE DETAIL
-  100% CUT/REPOINT

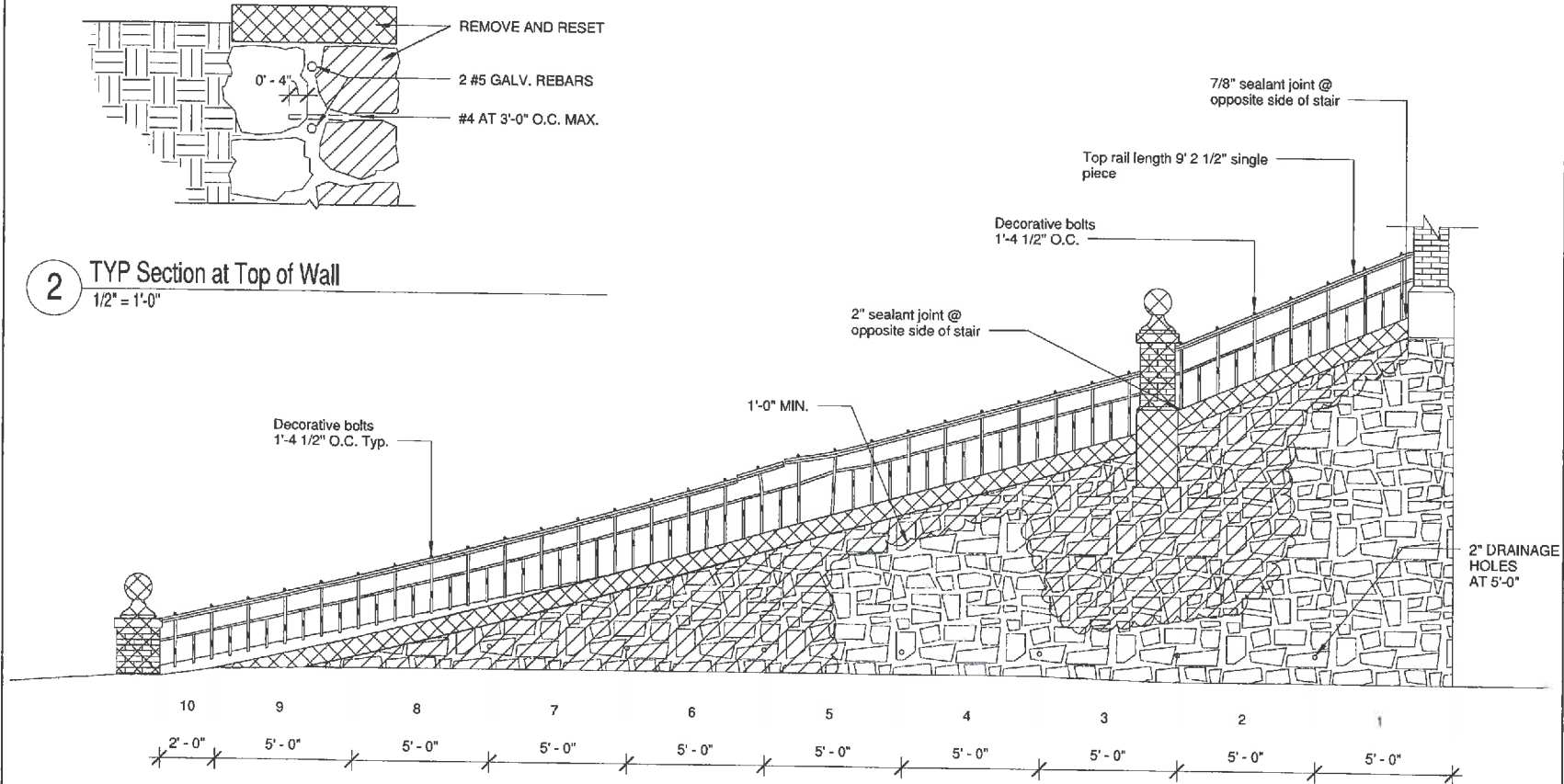
NOTE

1. REMOVE 1 FACE STONE EVERY 3'-0" O.C. MAX EACH WAY AND INSTALL 1/2" S.S. THREADED ROD WITH NUTS AT BOTH ENDS. APPROX 2'-0" LONG. BEND TO FIT FIELD CONDITION, GROUT BACK HALF OF ROD AND MORTAR FACE STONE HALF OF ROD.

NOT FOR CONSTRUCTION



2 TYP Section at Top of Wall
1/2" = 1'-0"



1 Existing Condition Elevation
1/4" = 1'-0"



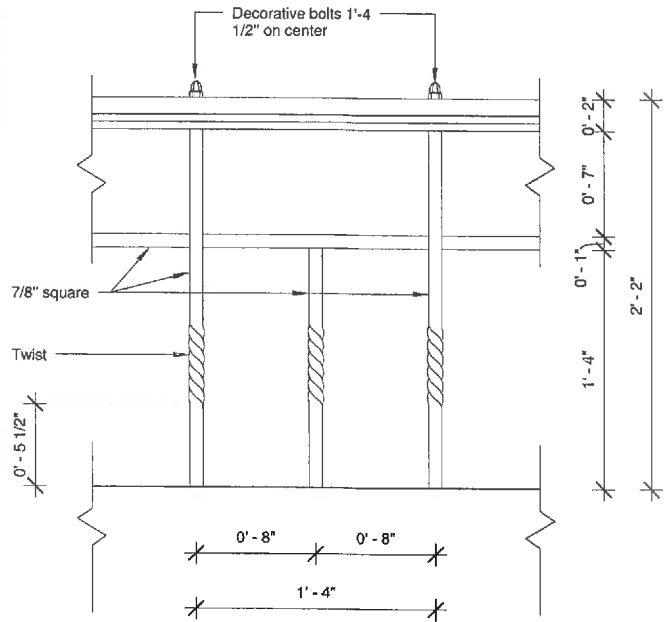
**Belmont Town Hall
Fence and Masonry Study**
455 Concord Ave,
Belmont, MA 02478

Date: 02/08/18
Scale: As indicated
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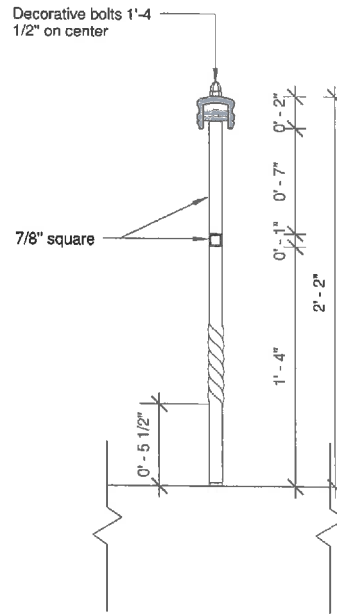
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Existing Conditions Elevation
No. A1.2

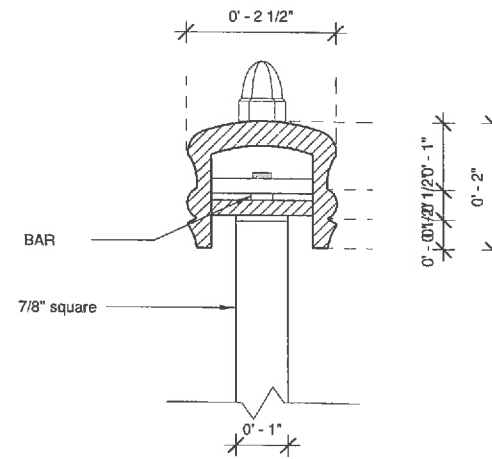
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1 Typ. Post Elevation
1 1/2" = 1'-0"



2 Typ. Rail Section
1 1/2" = 1'-0"



3 Rail Detail
6" = 1'-0"



4 Existing Rail Elevation
12" = 1'-0"



5 Existing Top Rail Photo
12" = 1'-0"



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Details

No.

A1.3

NOT FOR CONSTRUCTION

NEW 3'-0" GUARD
 SHOP RESTORE EXISTING RAILING
 NEW HAND RAILING
 NEW 3'-0" GUARD
 SHOP RESTORE EXISTING RAILING

BOLLARDS

PLANTINGS

2'-0"

BOLLARDS

1 PROPOSED SITE PLAN
 1/4" = 1'-0"



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Proposed Site Plan

No. **A1.4**

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