

# STAIRWELL REPAIR PROJECT

## PLAZA APARTMENTS ASSOCIATION

### 123-127 LEXINGTON PARKWAY

### ST. PAUL, MINNESOTA 55105

**WALDMAN ENGINEERING  
CONSULTANTS, INC**

4300 COMMERCE CT., SUITE 260  
LISLE, ILLINOIS 60532  
TEL: 630-922-3000  
FAX: 922-3003  
WEB: www.WaldmanEng.com

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LIST OF DRAWINGS		
DWG #	DESCRIPTION	REVISION DATES
1	TITLE SHEET # SITE LOCATION PLAN	11/16/2018
2	LIST OF ADDRESSES # LAYOUT PLAN	10/11/2018
3	STRUCTURAL STAIR - REFLECTED PLAN	11/16/2018
4	TYPICAL STAIR PLAN 2ND # 3RD FLOOR	11/16/2018
5	STAIR - BUILDING 123	11/16/2018
6	STAIR - BUILDING 125	11/16/2018
7	STAIR - BUILDING 127	11/16/2018
8	TYPICAL STAIR DETAILS	11/16/2018
9	TYPICAL MISCELLANEOUS DETAILS	11/16/2018
10	TYPICAL ELEVATION # BOLLARD DETAIL	11/16/2018
11	GENERAL NOTES	11/16/2018



#### ADOPTED BUILDING CODES

ALL WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH THE FOLLOWING:

1. MINNESOTA STATE BUILDING CODE, 2015
2. INTERNATIONAL BUILDING CODE 2012
3. NATIONAL ELECTRICAL CODE, 2017
4. MINNESOTA PLUMBING CODE, 2015
5. INTERNATIONAL MECHANICAL CODE, 2012
6. INTERNATIONAL FIRE CODE, 2012

#### KEY:

- AREA OF WORK
- EXISTING BUILDINGS (NO WORK)



REVISIONS		
NO.	DESCRIPTION	
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Engineer under the laws of the State of Minnesota.

*Mark Soderlund*  
**MARK SODERLUND**  
Date 11-22-2018 Registration No. 23685

- GENERAL NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL MEASUREMENTS AND MATERIAL QUANTITIES BEFORE CONTRACT IS PREPARED
  - THESE DRAWINGS TO BE WORKED WITH PROJECT SPECIFICATIONS DATED SEPTEMBER 7, 2018 TOGETHER WITH ANY SUBMITTED ADDENDA # REVISIONS.
  - ALL WORK TO COMPLY WITH CODES ADOPTED BY THE CITY OF ST. PAUL, MN.
  - ALL WORK TO BE PERFORMED IN WORKMAN LIKE MANNER MEETING ALL APPLICABLE INDUSTRY STANDARDS

STAIRWELL REPAIR PROJECT

TITLE SHEET  
#  
SITE LOCATION PLAN  
PLAZA APARTMENTS  
ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #: 18C-121MN

DRAWN BY: BMB

APPROVED BY: LMS/MS

DATE: SEPT. 7, 2018

SHEET NO: 1

**WALDMAN ENGINEERING  
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REVISIONS		
▲	ADDENDUM 1	10-11-18
NO.	DESCRIPTION	

ADDRESS	STAIR
1 23 LEXINGTON PARKWAY	NORTH
1 25 LEXINGTON PARKWAY	WEST
1 27 LEXINGTON PARKWAY	SOUTH



2
LAYOUT PLAN
N  
SCALE: NT5

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STAIRWELL REPAIR PROJECT  
  
 LIST OF ADDRESSES #  
 LAYOUT PLAN  
  
 PLAZA APARTMENTS  
 ASSOCIATION  
 ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
DRAWN BY:	BMB
APPROVED BY:	LMS/MS
DATE:	SEPT. 7, 2018
SHEET NO:	2

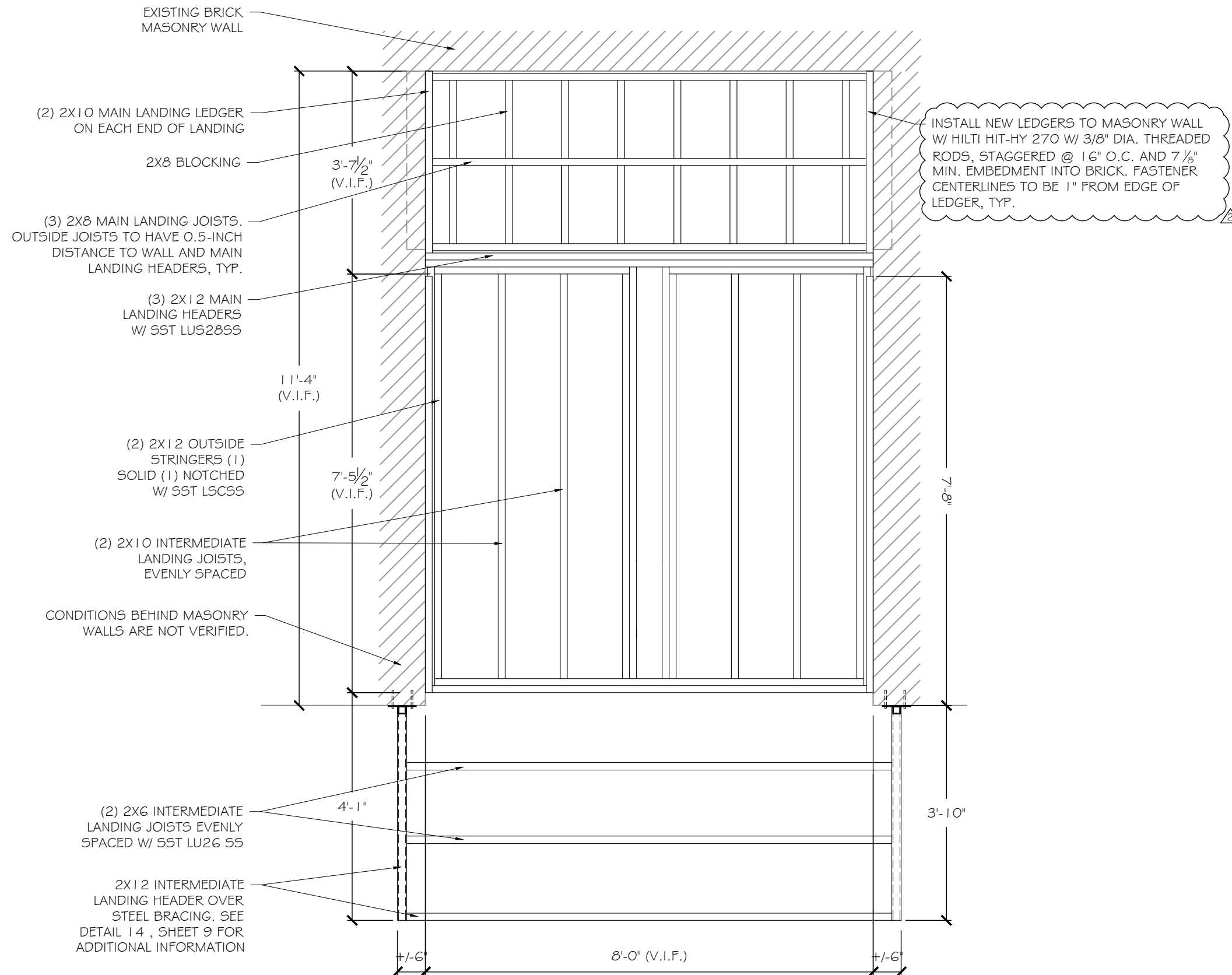
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INSTALL NEW LEDGERS TO MASONRY WALL W/ HILTI HIT-HY 270 W/ 3/8" DIA. THREADED RODS, STAGGERED @ 16" O.C. AND 7 1/8" MIN. EMBEDMENT INTO BRICK. FASTENER CENTERLINES TO BE 1" FROM EDGE OF LEDGER, TYP.

**3 STAIR - REFLECTED / STRUCTURAL**  
SCALE: 1/2" = 1'-0"

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REVISIONS		
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT

STRUCTURAL STAIR REFLECTED PLAN

PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #: 18C-121MN

DRAWN BY: BMB

APPROVED BY: LMS/MS

DATE: SEPT. 7, 2018

SHEET NO: 3

**WALDMAN ENGINEERING  
CONSULTANTS, INC**

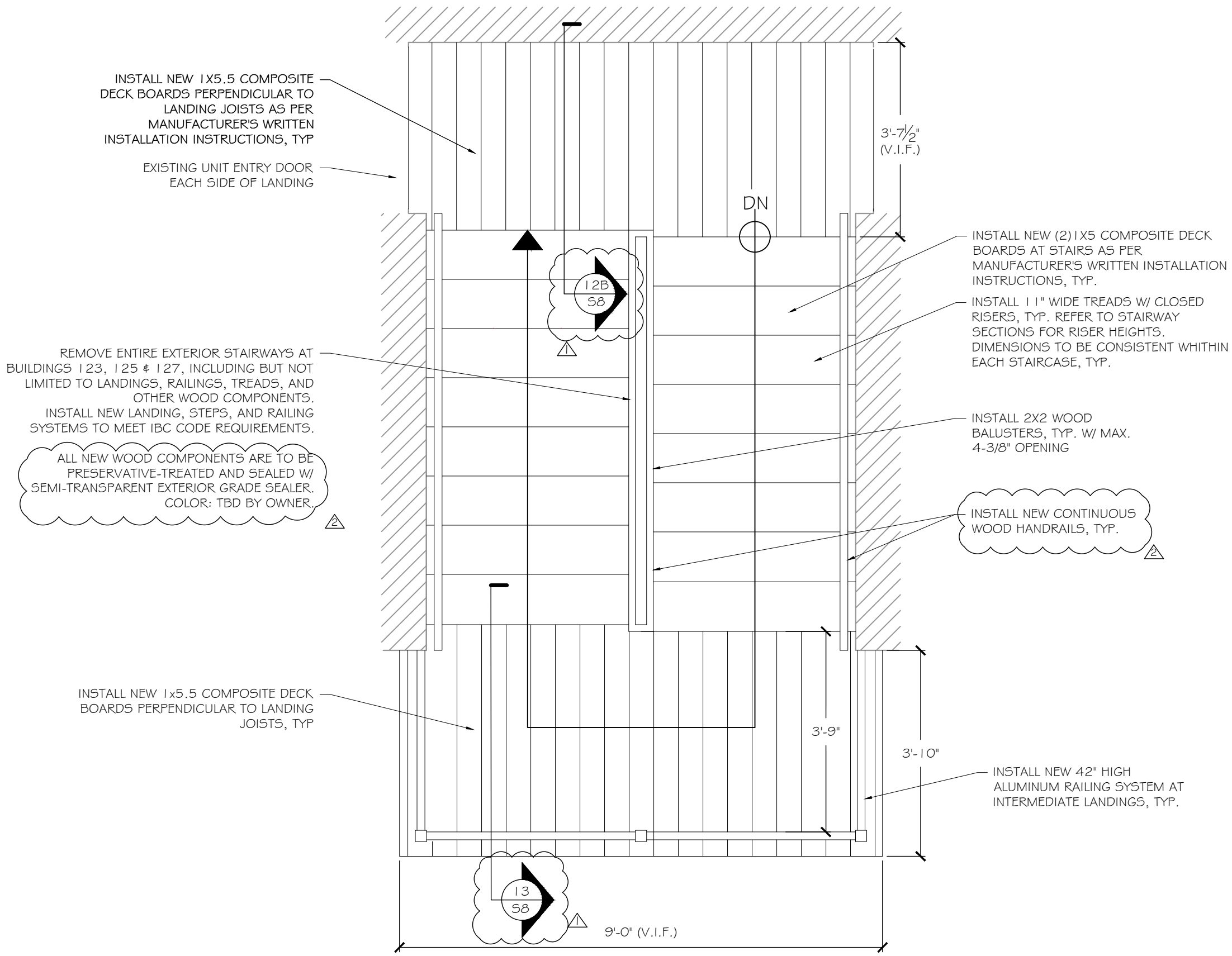
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▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	



**4** TYP. STAIR - PLAN (123/125/127) 2ND & 3RD FLOOR  
SCALE: 1/2" = 1'-0"

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STAIRWELL REPAIR PROJECT  
  
TYPICAL STAIR PLAN  
2ND & 3RD FLOOR  
  
PLAZA APARTMENTS  
ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #: 18C-121MN  
DRAWN BY: BMB  
APPROVED BY: LMS/MS  
DATE: SEPT. 7, 2018  
SHEET NO: 4

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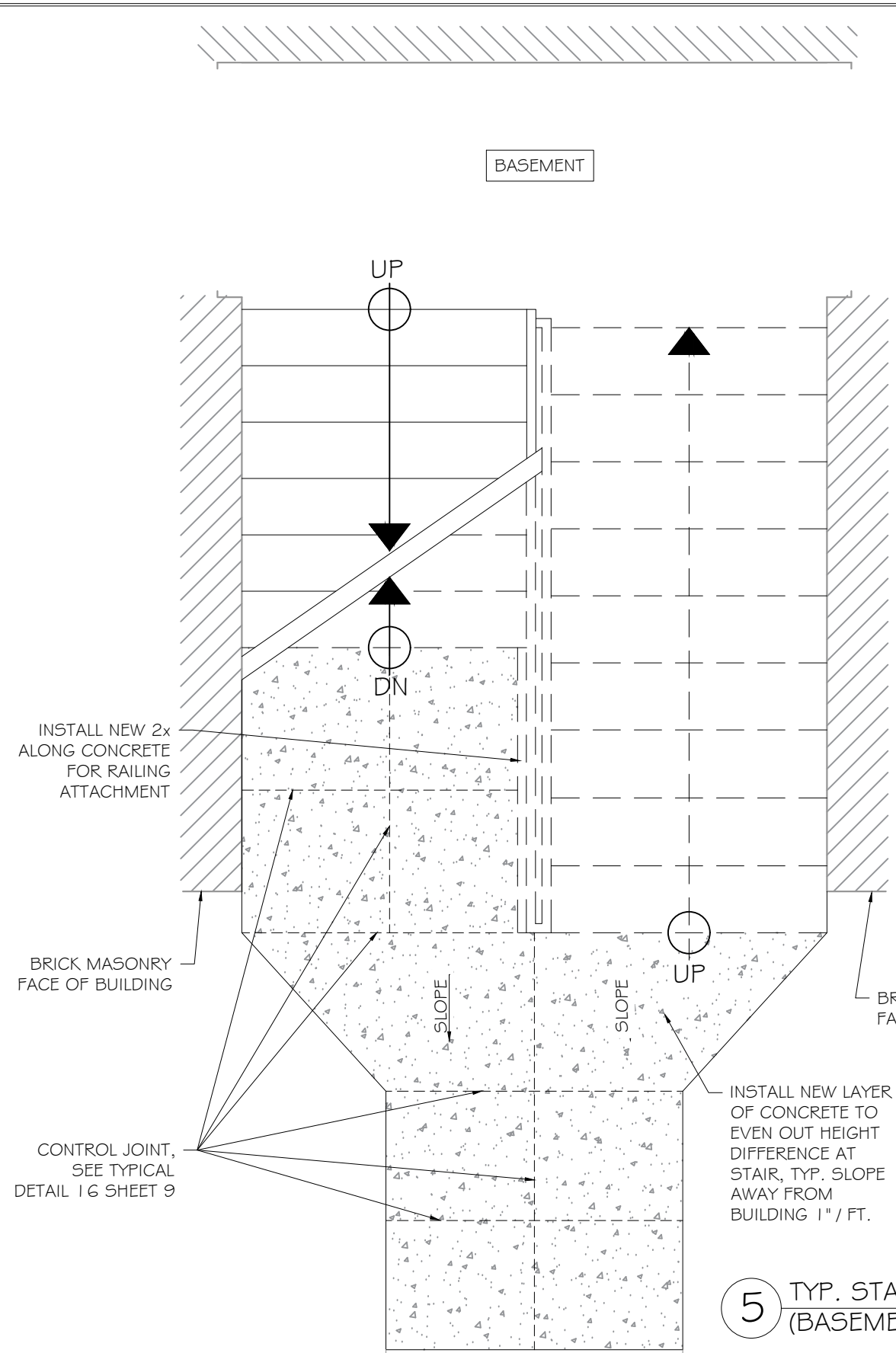
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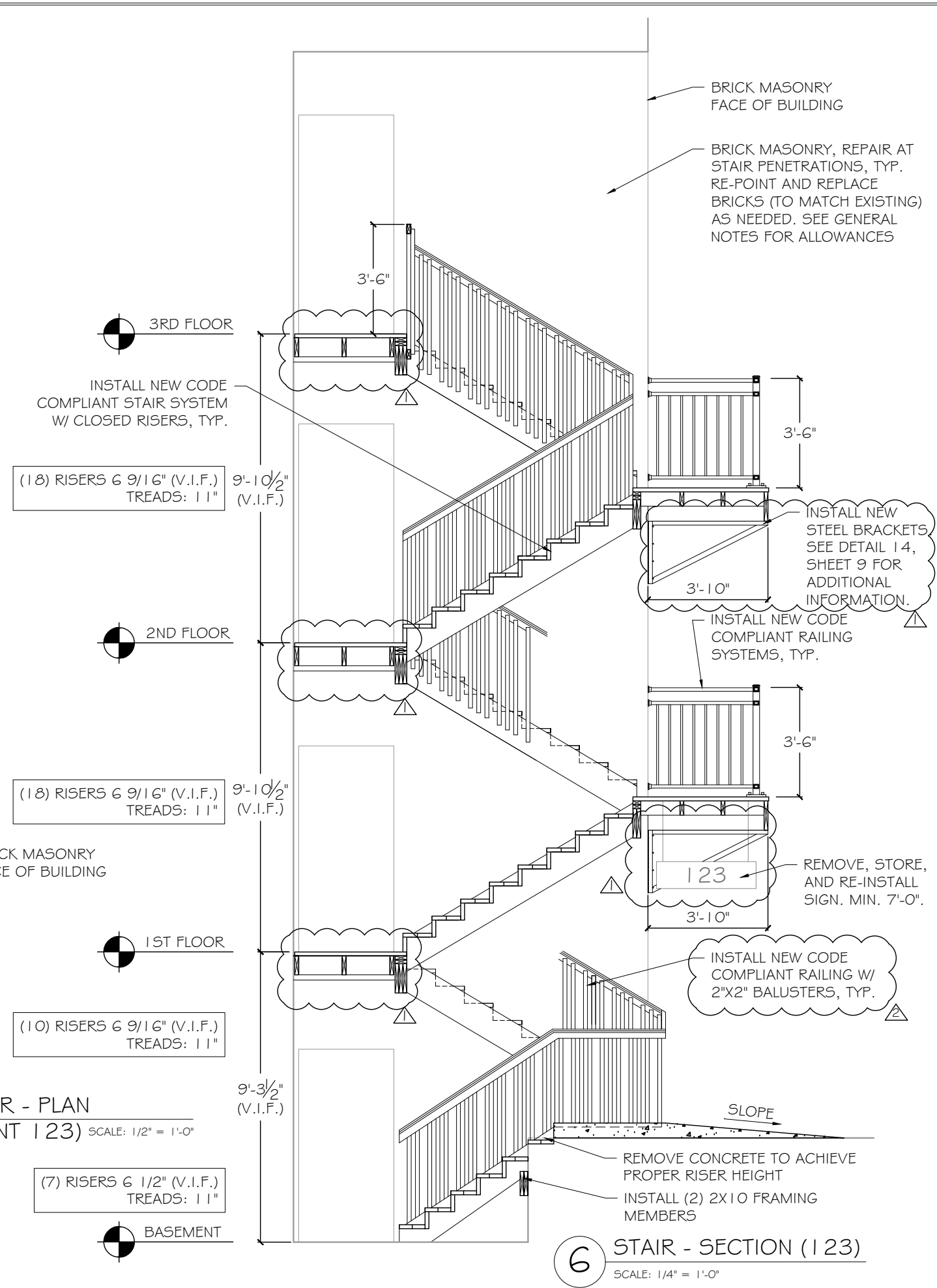
STAIRWELL REPAIR PROJECT  
STAIR BUILDING 123  
PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
DRAWN BY:	BMB
APPROVED BY:	LMS/MS
DATE:	SEPT. 7, 2018
SHEET NO:	5



**5** TYP. STAIR - PLAN  
(BASEMENT 123) SCALE: 1/2" = 1'-0"

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**6** STAIR - SECTION (123)  
SCALE: 1/4" = 1'-0"

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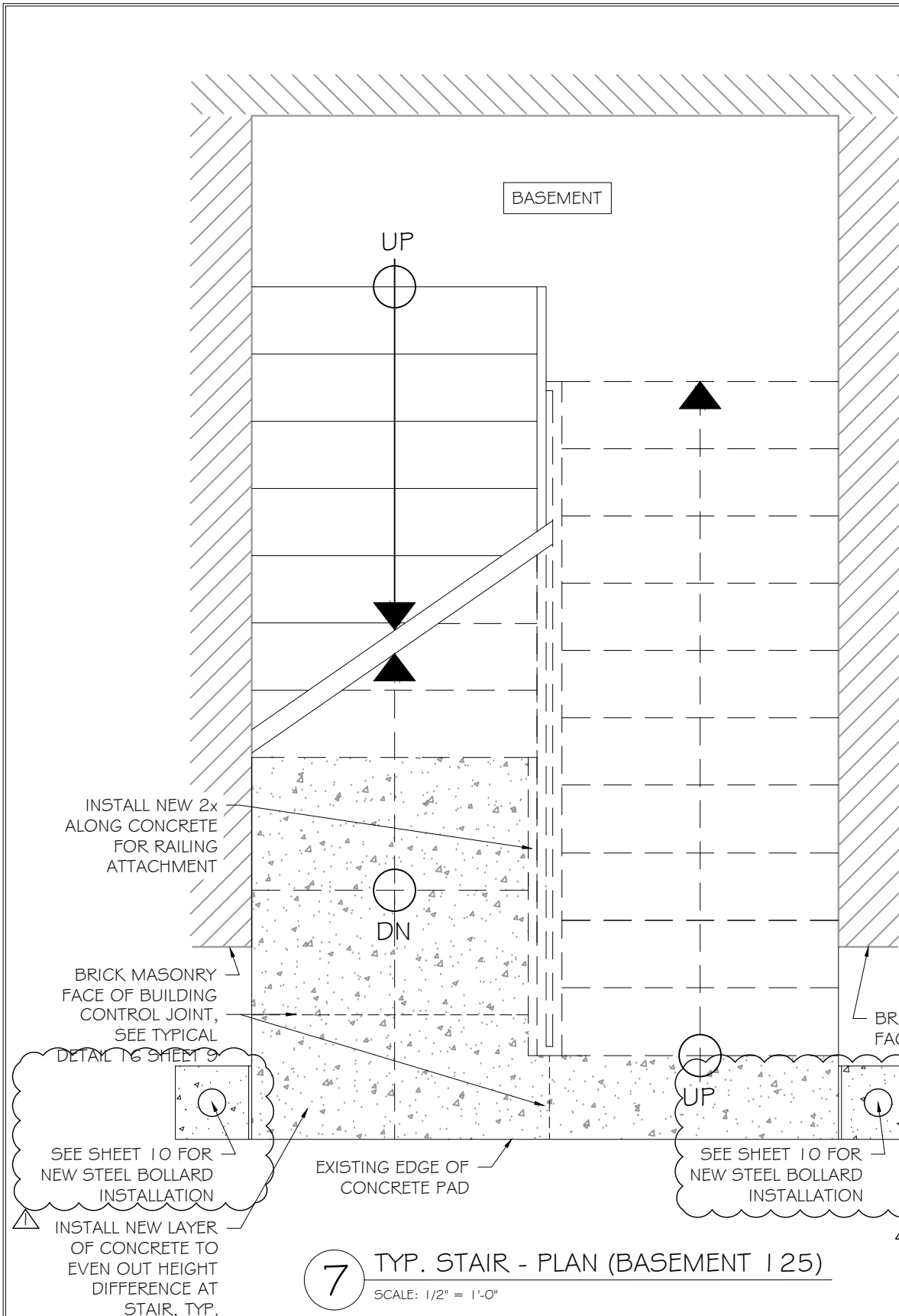
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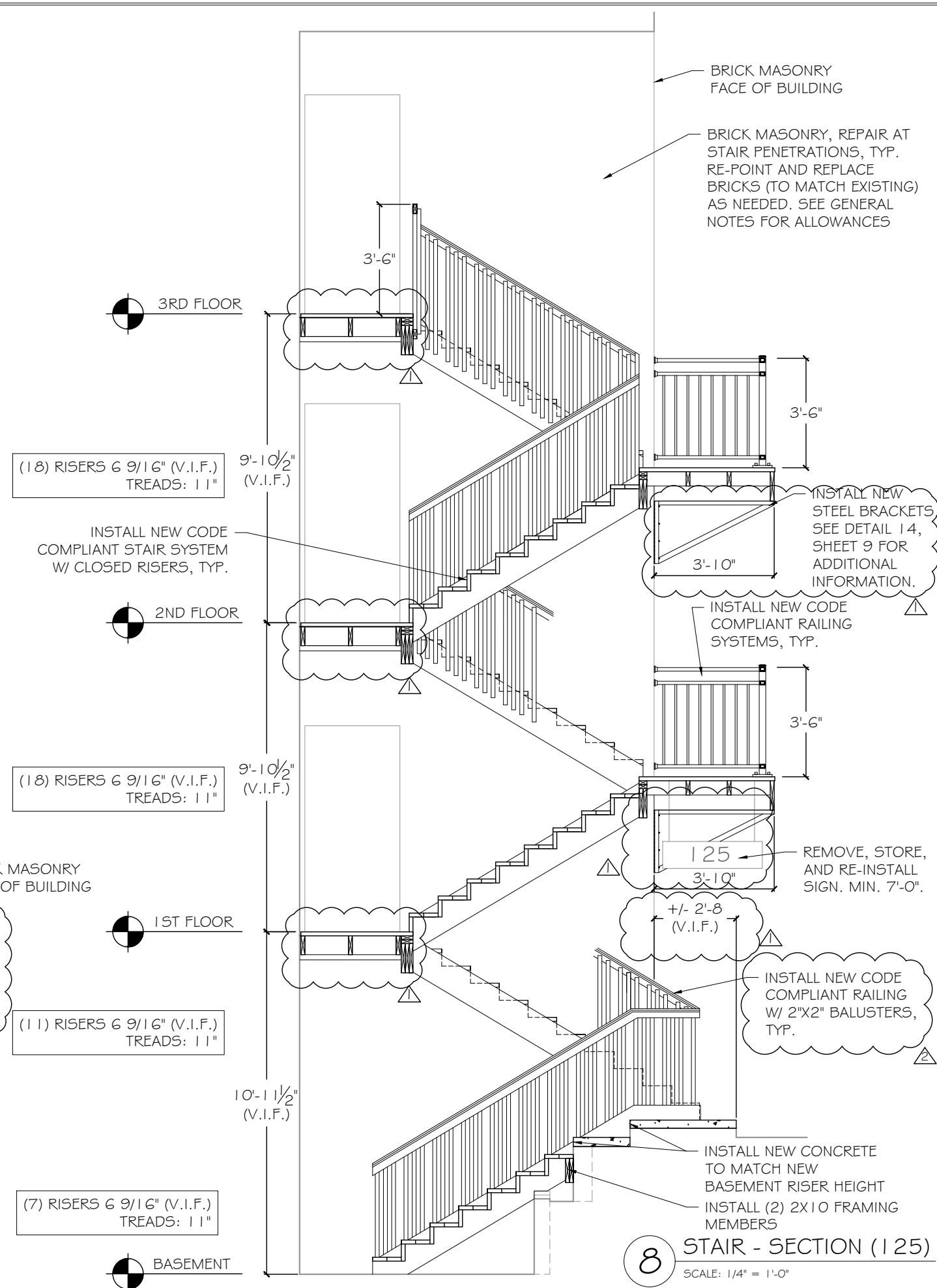
REVISIONS		
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT  
STAIR BUILDING 125  
PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
DRAWN BY:	BMB
APPROVED BY:	LMS/MS
DATE:	SEPT. 7, 2018
SHEET NO:	6



- GENERAL NOTES:**
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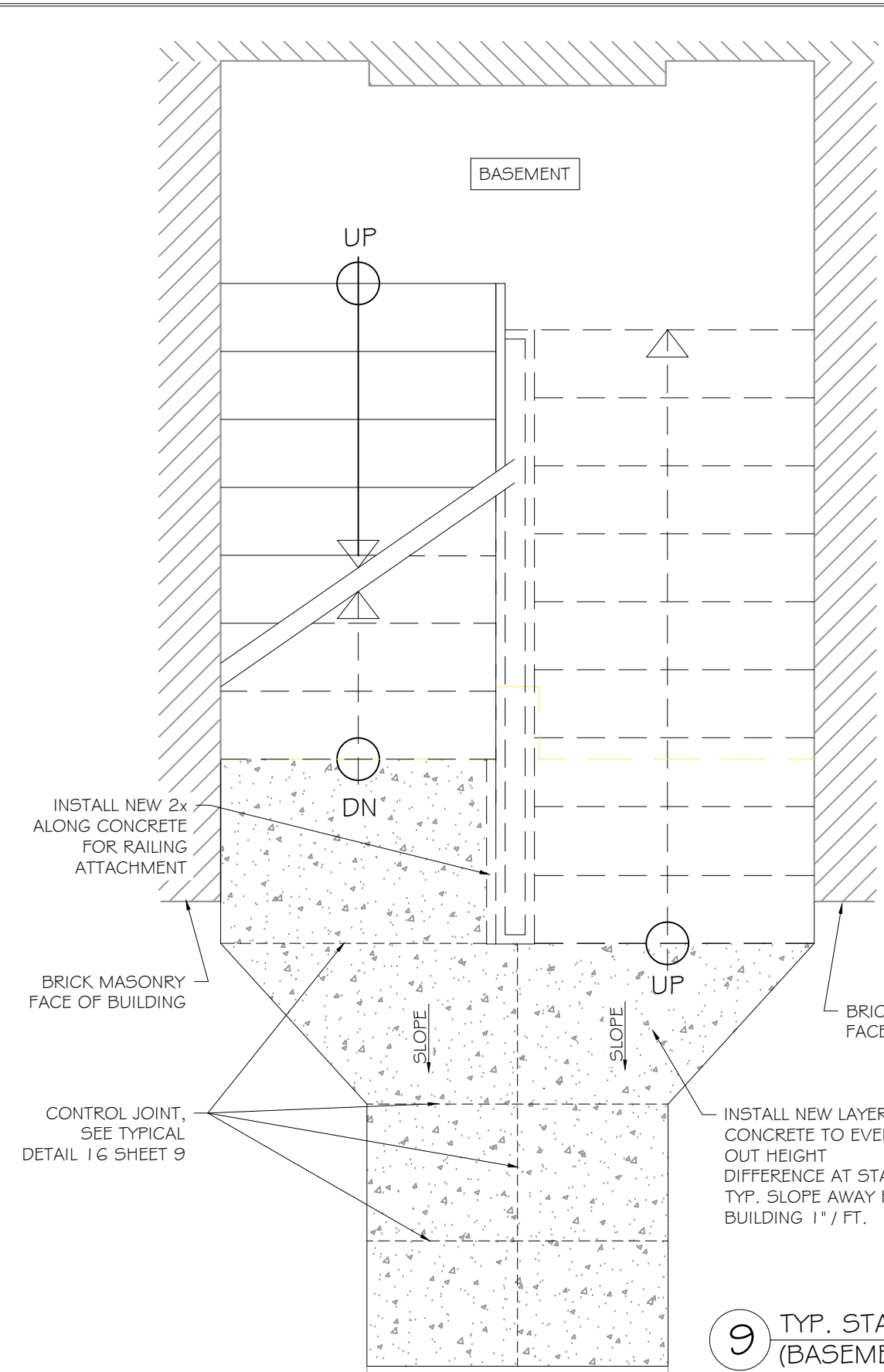
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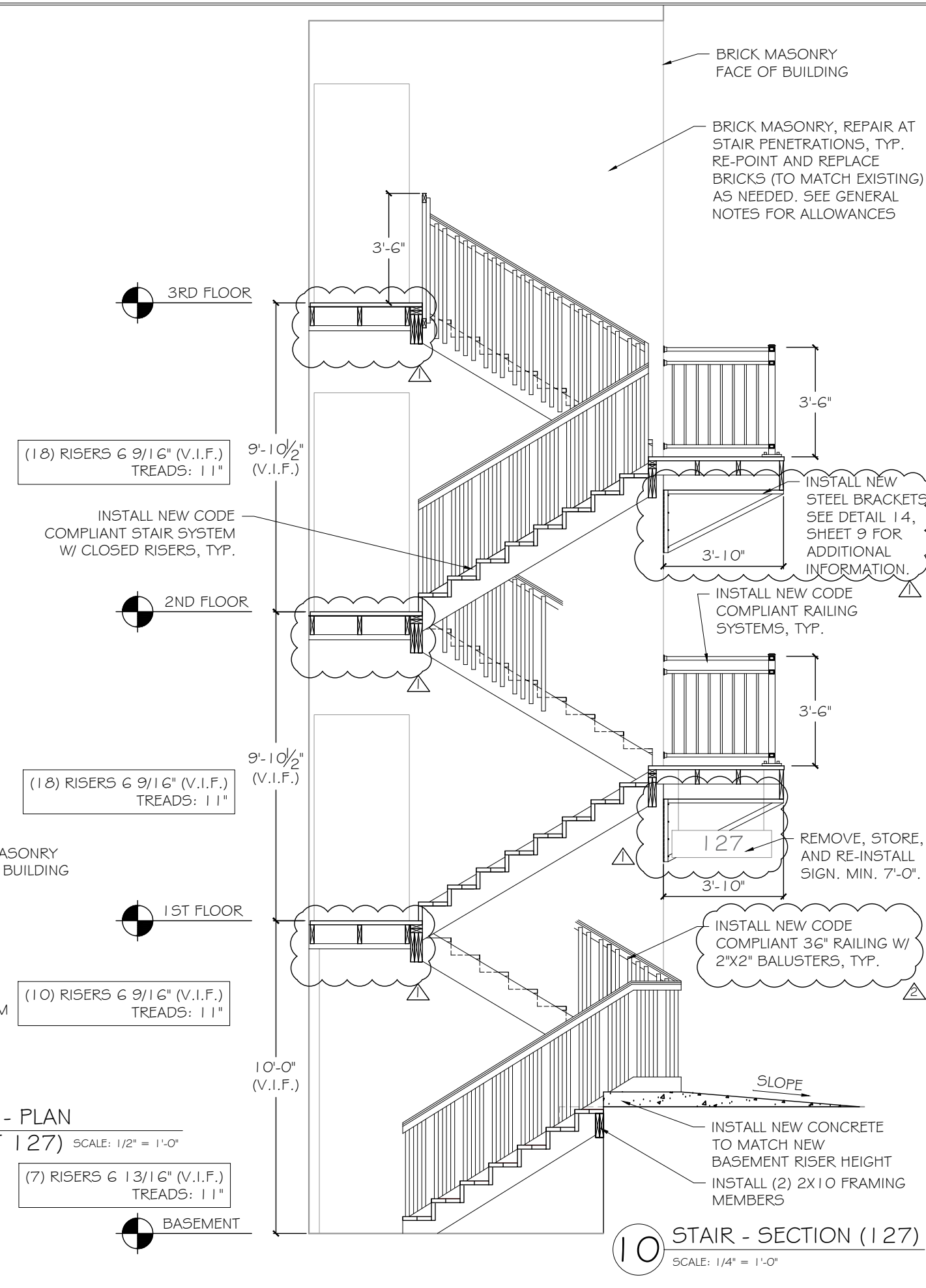
REVISIONS		
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT  
STAIR BUILDING 127  
PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
DRAWN BY:	BMB
APPROVED BY:	LMS/MS
DATE:	SEPT. 7, 2018
SHEET NO:	7



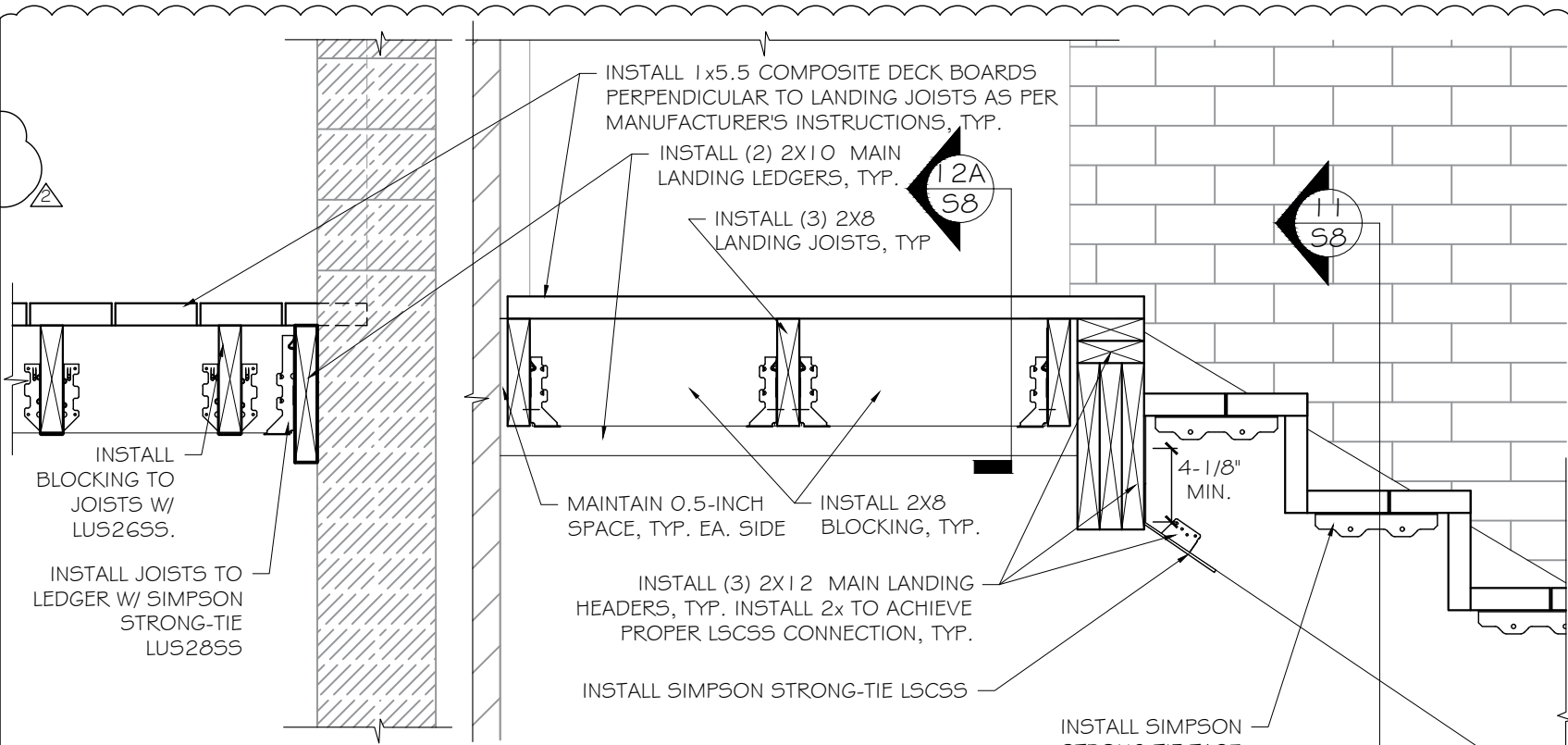
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**10 STAIR - SECTION (127)**  
SCALE: 1/4" = 1'-0"

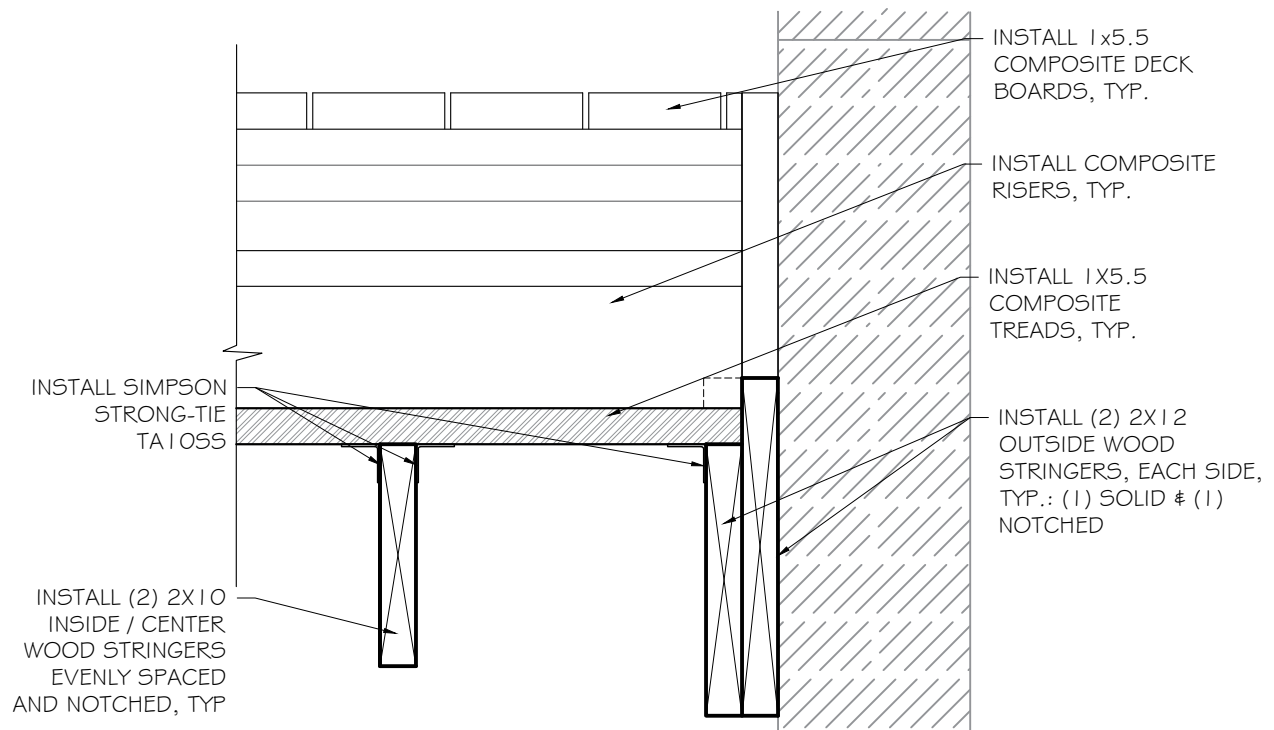
**TOTAL STAIR REPLACEMENT**

- REMOVE EXISTING STAIRS AND REPLACE WITH IBC CODE COMPLIANT TREAD AND RISER DIMENSIONS: DIMENSIONS TO BE CONSISTENT WITHIN EACH STAIRCASE.
- ALL WOOD COMPONENTS TO BE PRESERVATIVE-TREATED.
- ALL COMPOSITE MATERIALS TO BE INSTALLED PER MANUFACTURERS INSTALLATION INSTRUCTIONS.
- OUTSIDE STRINGERS (2X12): (1) SOLID, (1) NOTCHED MEMBER EACH.
- INSIDE / CENTER STRINGERS (2X10), NOTCHED.
- TREADS: (2) 1x5.5, COMPOSITE
- RISERS: 6-9/16", TYP. REFER TO SECTIONS. FIELD VERIFY. COMPOSITE.
- LANDING: 1X5.5", COMPOSITE DECKING.
- HANDRAIL: 2X4 WITH GRIP
- INTERMEDIATE LANDING JOISTS: 2X6, EQUALLY SPACED
- INTERMEDIATE LANDING HEADER: (2) 2X12
- INTERMEDIATE LANDING LEDGERS - BACKSIDE (AWAY FROM STAIRCASE): 2X12
- MAIN LANDING JOISTS: (3) 2X8, MAINTAIN 0.5" SPACE TO EA. SIDE
- MAIN LANDING HEADER: (3) 2X12
- MAIN LANDING LEDGER: (1) 2X10 AT EA. SIDE OF LANDING
- TREAD TO STRINGER CONNECTION: SIMPSON STRONG TIE TA1055 STAIRCASE ANGLE
- JOIST TO HEADER CONNECTION - MAIN LANDING: SST LUS2855 JOIST HANGER
- JOIST TO HEADER CONNECTION - INTERMEDIATE LANDING: SST LUS2655 JOIST HANGER
- STRINGER TO HEADER: SST LSC55

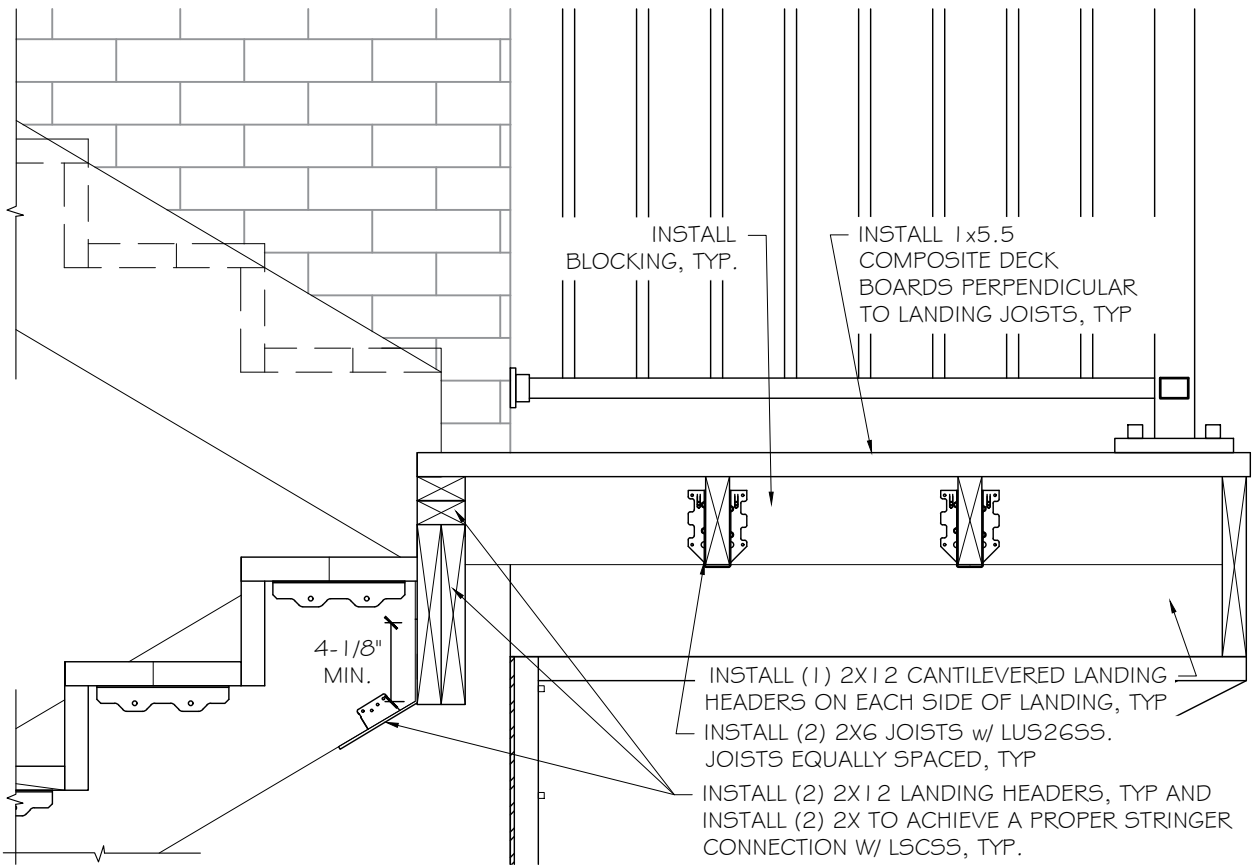


**12A SECTION A-A**  
SCALE: 1" = 1'-0"

**12B TYP. STAIR SECTION @ MAIN LANDING**  
SCALE: 1" = 1'-0"



**11 TYP. PERPENDICULAR SECTION**  
SCALE: 1 1/2" = 1'-0"



**13 TYP. STAIR SECTION @ INTERMEDIATE LANDING**  
SCALE: 1" = 1'-0"

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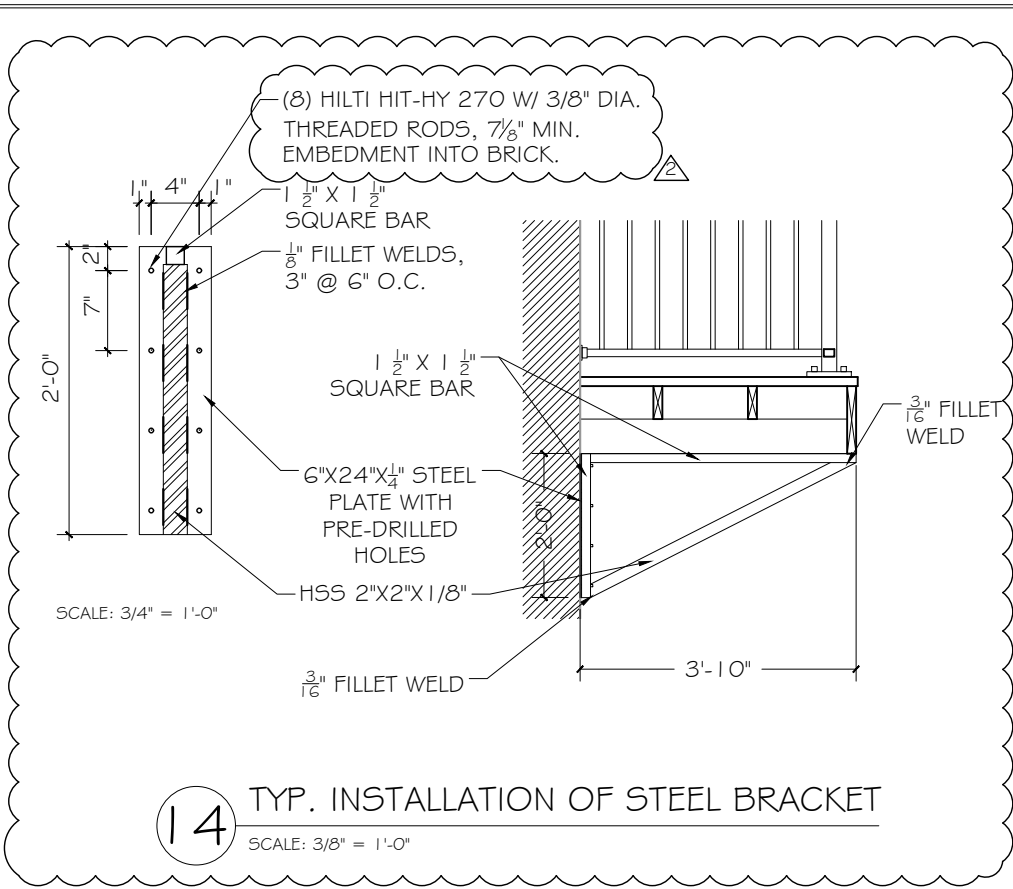
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▲	ADDENDUM 2	11-16-18
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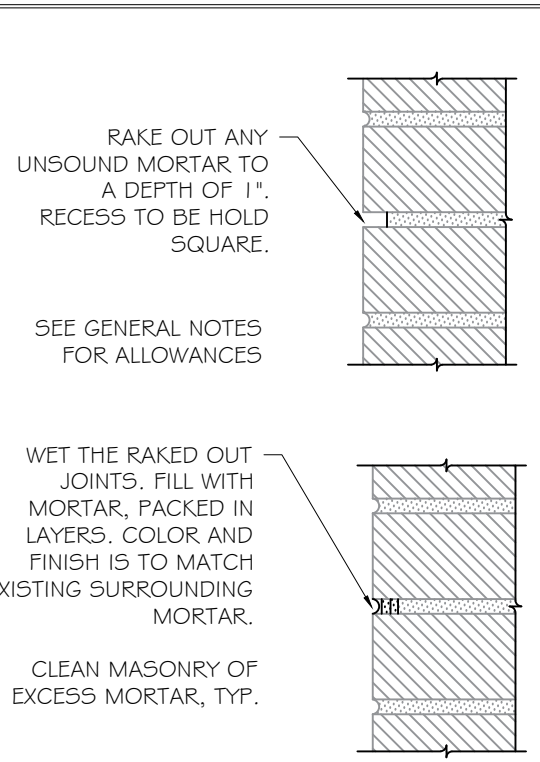
STAIRWELL REPAIR PROJECT  
TYPICAL STAIR DETAILS  
PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
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APPROVED BY:	LMS/MS
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SHEET NO:	8

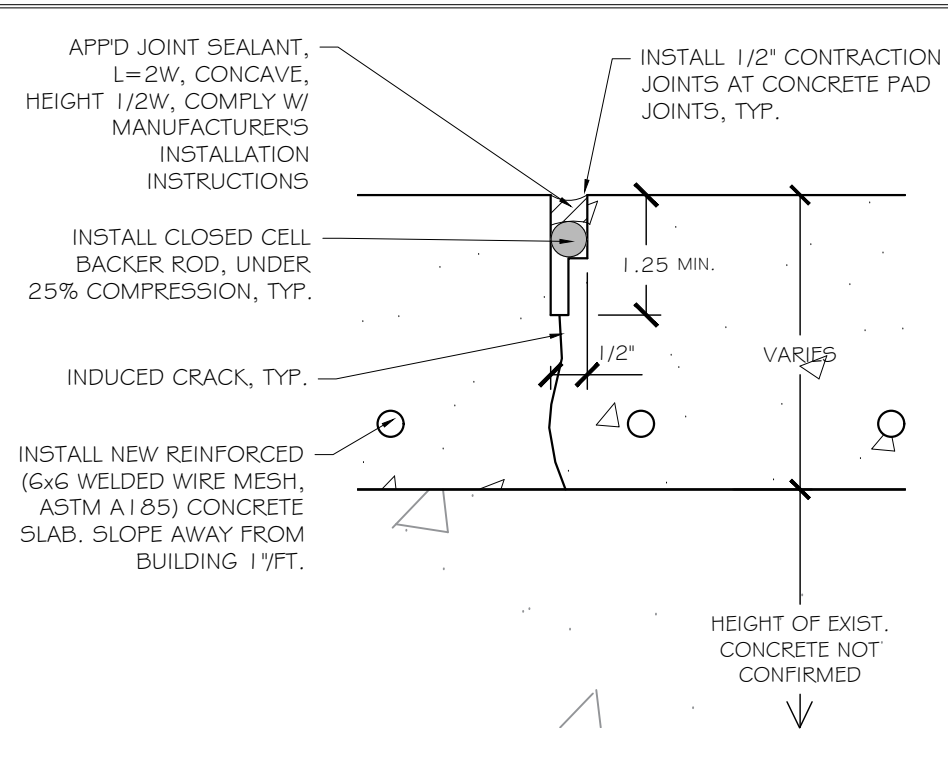




**14** TYP. INSTALLATION OF STEEL BRACKET  
SCALE: 3/8" = 1'-0"



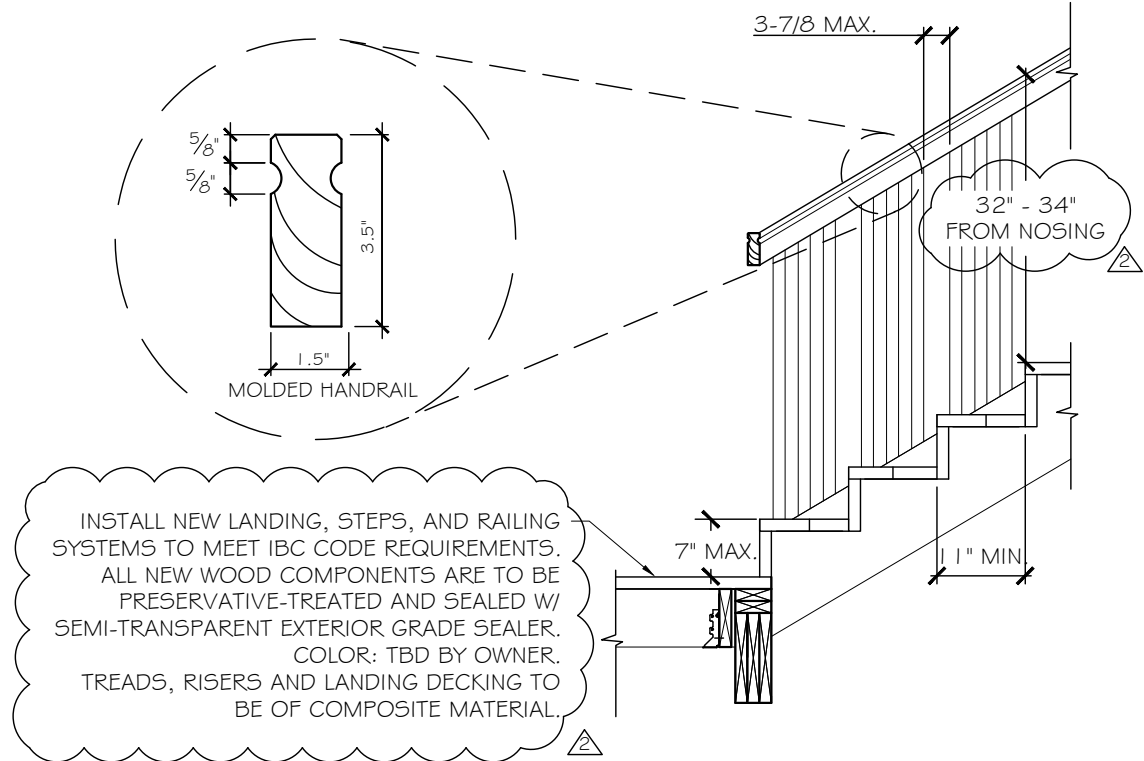
**15** TYP. RE-POINTING DETAILS  
SCALE: NTS



**16** TYP. CONTRACTION JOINT DETAIL  
SCALE: 6" = 1'-0"

Railings to meet code must be tested to meet IBC building codes. The tests include:

- Infill Load Test: The strength of the balusters are tested so that a 1 square foot area must resist 125lbs of force.
- Uniform Load Test: The top rail must be able to sustain 125 lbs of force applied horizontally or vertically.
- Concentrated Load Test: The top rail must be capable of holding a point load of 200 lbs of force applied to the mid span, on the side of a post, and on top of a post.
- A safety factor of 2.5 is usually added to the testing.
- These tests are performed by an accredited third party testing agency.



**17** TYP. RAILING  
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

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- ALL WORK TO COMPLY WITH CODES ADOPTED BY THE CITY OF ST. PAUL, MN.
- ALL WORK TO BE PERFORMED IN WORKMAN LIKE MANNER MEETING ALL APPLICABLE INDUSTRY STANDARDS

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REVISIONS		
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT  
MISCELLANEOUS DETAILS  
PLAZA APARTMENTS ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #: 18C-121MN  
DRAWN BY: BMB  
APPROVED BY: LMS/MS  
DATE: SEPT. 7, 2018  
SHEET NO: 9

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REVISIONS		
▲	ADDENDUM 1	10-11-18
▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT

TYPICAL ELEVATION #  
BOLLARD DETAIL

PLAZA APARTMENTS  
ASSOCIATION  
ST. PAUL, MINNESOTA

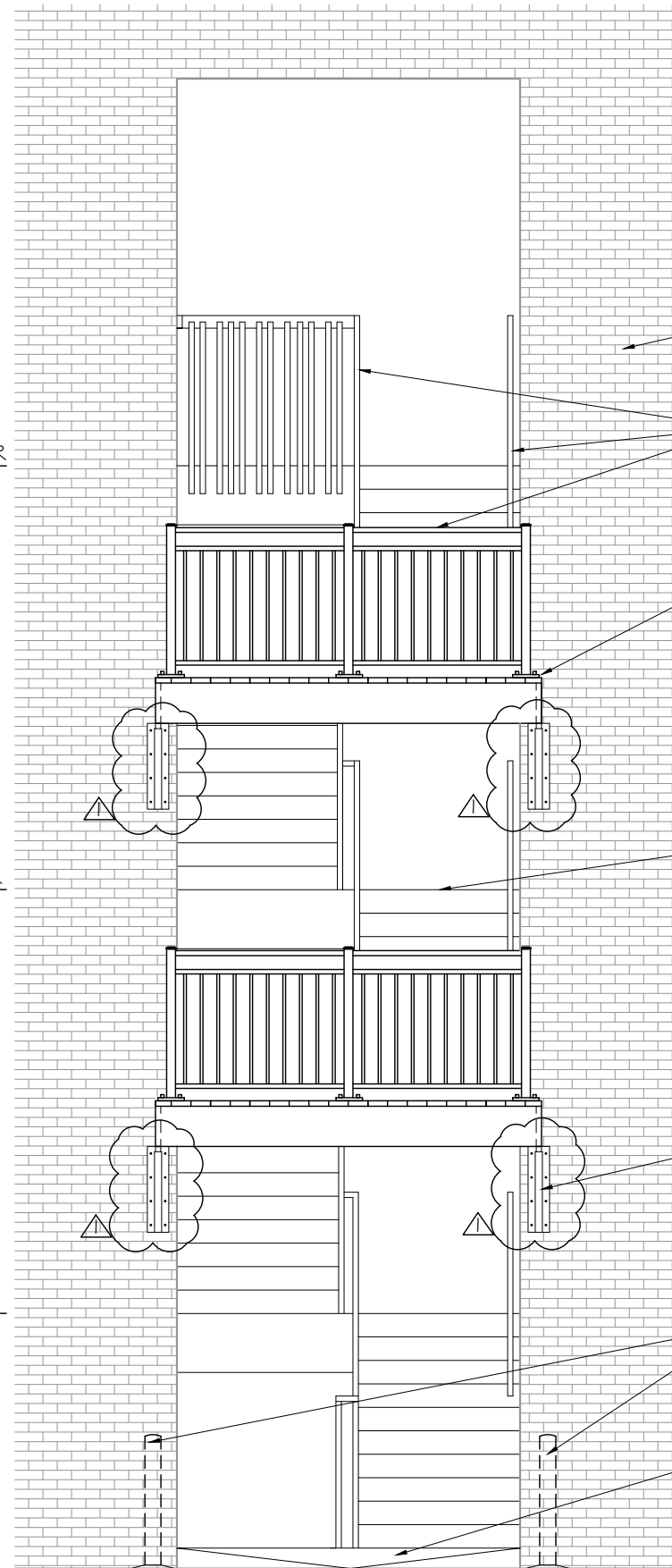
PROJECT #: 18C-121MN

DRAWN BY: BMB

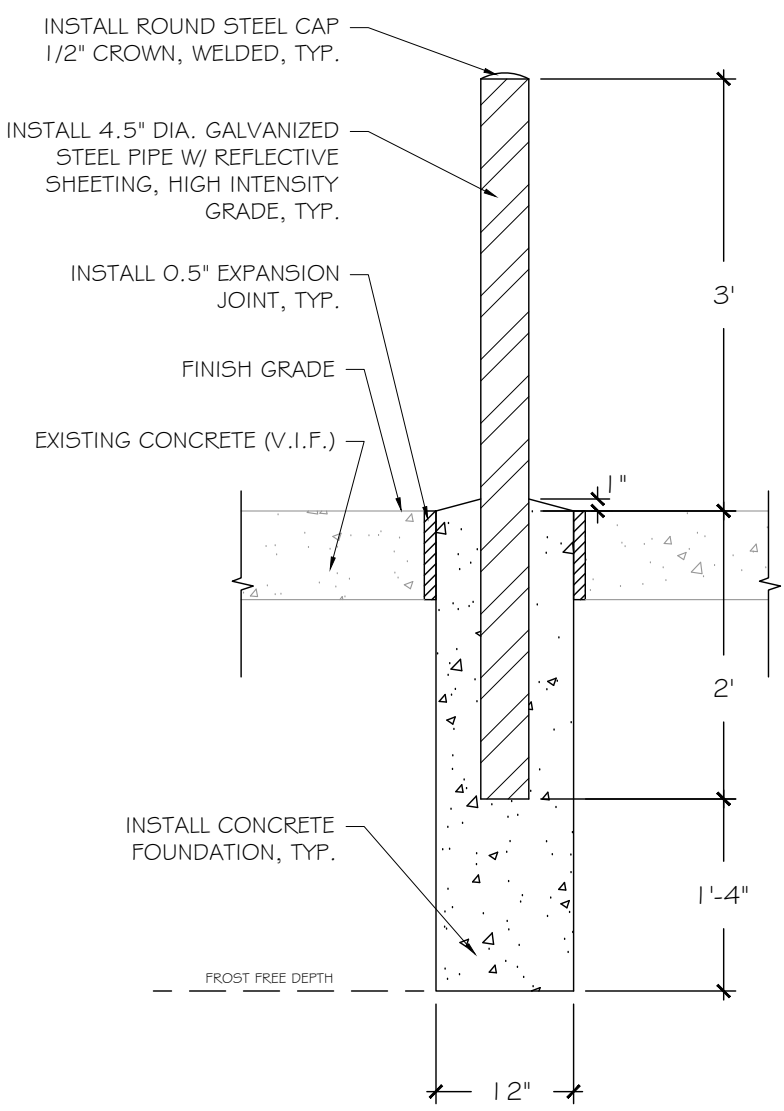
APPROVED BY: LMS/MS

DATE: SEPT. 7, 2018

SHEET NO: 10



**18** TYP. ELEVATION  
SCALE: 1/4" = 1'-0"



**19** STEEL BOLLARD (1 25)  
SCALE: 3/4" = 1'-0"

- GENERAL NOTES:
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General Notes:

This project involves the replacement of (3) staircases at the Lexington Condominium Association, St. Paul, Minnesota.

1. The scope includes the following:

- a. Remove entire staircase at each building including but not limited to all landings, wood components and metal railings.
- b. Install new IBC code compliant staircase. Contractor must verify that all railing connections are sound. Install interim fall protection.
- c. All new wood components are to be preservative-treated and sealed w/ semi-transparent exterior grade sealer. Color: TBD by Owner.
- d. All treads, risers and landing decking are to be of composite material.
- e. Install new code compliant aluminum railing at intermediate landing.
- f. Install new sloped concrete pads at 1st floor, incl. contraction joints.
- g. Install (2) 4.5" Dia. embedded steel bollards at Building 125.
- h. Install all new exterior grade soffit panels. No work at soffit panels under stairway roofs.
- i. Re-point brick at above landings. Consider a total allowance of 200 SF.
- j. Replace damaged bricks to match existing in size, color & texture, including re-pointing. Consider a total allowance of 100 Bricks.
- k. Install new steel bracing beneath intermediate landings as indicated on drawings.
- l. Remove ceiling lights at landings and all other light fixtures in stair wells. Install new wall-mounted light fixtures w/ light sensors centered above landing. Fixtures to be chosen by Owner.
- m. A licensed electrician is required to remove and re-install all existing electrical wiring in accordance with local municipal codes.
- n. Alternate #1: Use equivalent galvanized hangers and brackets.
- 2. All work shall conform to the applicable codes of the local jurisdiction, and the State of Minnesota at the time of permit and construction. The contractor shall verify, in field, all dimensions, angles and existing conditions before proceeding with any work.
- 3. Variations in the field conditions relative to the contract documents shall be reported to the engineer in writing. Work shall not progress until clarification from architect/engineer is obtained.
- 4. All work shall be erected plumb, level and true and in accordance with details.
- 5. All permit fees or business licenses to be paid by respective sub-contractors. The owner shall pay the general building permit fee.
- 6. "Job copy" original permit drawings and original permit card to be kept at the job site and accessible to inspector at all times.
- 7. No substitutions will be allowed without prior written approval of the architect / engineer.
- 8. These drawings indicate the intent, general character requirements and approximate locations of the work shown. The contractor shall be expected to work with unforeseen field conditions requiring minor design adjustments.

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Structural Notes:

A. Design & Loading:

1. Allowable unit stresses shall be in accordance with the latest specifications of the AISC, ACI, and City of St. Paul, MN, Building Code requirements.
2. Design Loads as follows:  
Live Load: 40 psf  
Staircase Live Load: 100 psf  
Dead Load: 10 psf  
Snow Load: 35 psf

B. Concrete:

1. All reinforced concrete work shall be per "Building Code Requirements for Reinforced Concrete" (ACI-318).
2. All concrete for pad installation shall be normal weight having a minimum compressive strength of 3000 psi at 3 days.
3. All weather-exposed concrete shall be air-entrained 5 to 8 percent by volume.
4. All exposed projecting corners of concrete work shall be beveled 1" unless noted.
5. Concrete shall not have any chloride additive.
6. All reinforcing bars shall be ASTM A615 Grade 60. All welded wire mesh shall be ASTM A185.
7. The free drop of concrete during placement shall not exceed five feet. Concrete shall be vibrated during and immediately after placement. All concrete shall be thoroughly compacted during placing using vibrators.

C. Sealant:

1. All sealant to be BASF MasterSeal NP1 or Engineer approved equal.
2. Install in accordance with Manufacturer's specifications.

D. Structural Steel:

1. All structural steel work shall conform to the latest edition of AISC "Specification for Design, Fabrication, and Erection of Structural Steel for Buildings" and the latest edition of AISC "Code of Standard Practice of Steel Buildings".
2. All structural steel to be coated with a rust prohibitive primer with a minimum thickness of 3 mils unless otherwise noted.
3. Structural angles, channels, and plates to conform to ASTM A36.
4. Steel W-Sections to conform to ASTM A992.
5. All bolts, nuts, and washers shall conform to the requirements of ASTM A325. Use one hardened washer under the turned portion of the connection.
6. Main landing ledger attachment to have 7/8" minimum embedment.

Masonry Repairs:

Brick: ASTM Standard C216, Grade SW, Type FBS. Min. compressive strength shall be 2,500 psi.  
Do not exceed variations in color and texture of samples accepted by the Owner. Provide brick that has been tested according to ASTM C67, "Standard Methods of sampling and testing brick and structural clay tile and is rated "not efflorescent".

Mortar: Portland Cement: ASTM C150., Type 1-normal.

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REVISIONS		
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▲	ADDENDUM 2	11-16-18
NO.	DESCRIPTION	

STAIRWELL REPAIR PROJECT

GENERAL NOTES

PLAZA APARTMENTS  
ASSOCIATION  
ST. PAUL, MINNESOTA

PROJECT #:	18C-121MN
DRAWN BY:	BMB
APPROVED BY:	LMS/MS
DATE:	SEPT. 7, 2018
SHEET NO:	11