

# SHEET INDEX

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**SCOPE OF STRUCTURAL WORK (GENERAL)**

- The scope of work for this project is as follows:
  - Power wash interior walls and ceilings at 1st floor and 2nd floor of burn bldg. and maze room prior to repairs.
  - Epoxy injection to walls, ceiling, and elevated floor panel cracks.
  - Concrete patch repair to damaged walls, elevated floors and ceilings.
  - Install insulation system at 1st floor and 2nd floor burn building rooms and maze room.
  - Replace sealant in vertical joint where required on details.
  - Remove and replace (3) existing exhaust fans.

**REPAIR GENERAL NOTES**

- All parties involved in the repair work shall visit the site, become familiar with the existing conditions and verify those existing conditions shown on the drawings.
- Verify all dimensions and conditions prior to starting work. Notify the Engineer of any discrepancies or inconsistencies.
- Utility relocation and alterations may be required. Utilities are not shown on the plans and the Contractor shall identify all conflicts. The Contractor shall coordinate alterations to existing Mechanical, Plumbing, and Electrical utilities. The Contractor shall relocate existing utilities including duct work, sprinklers, water and gas lines, and electrical conduits as required. This relocation work shall be accomplished in accordance with the appropriate code as required by the City of Mesa. The Contractor is responsible for obtaining all permits as required for utility relocation. This work shall be performed at no additional cost to the City of Mesa. Cost shall be included in base bid.
- Any damage to existing ceilings, roofing, lights, fixtures or other materials caused by the repair work shall be repaired and/or replaced to match existing conditions. All painting and surface treatments (interior and exterior) shall also match existing conditions.
- Provide all necessary temporary bracing, shoring, guying or other means to avoid excessive stresses and to hold structural elements in place during construction.
- Shoring is required where shown and minimum shoring loads are provided. Details show conceptual shoring and other shoring configurations are possible. Shoring is the responsibility of the Contractor.
- The contractor shall remove all electrical equipment including conduit, wiring, lighting fixtures and switches from the burn bldg. and maze room as required. Provide fire caulk seals in all penetrations in walls. Provide continuation of existing circuits where required to continue feeds to equipment on outside of building to remain.
- Any engineering design provided by others and submitted for review shall bear the seal and signature of an Engineer registered in Arizona.

**STRUCTURAL NOTES**

(APPLY UNLESS NOTED OTHERWISE ON DRAWINGS)

**CODE**

- Comply with 2006 International Building Code

**CONCRETE REPAIRS**

- See Technical Specifications Book for this project dated April 20, 2012.
- Concrete wall & slab repair notes:
  - Shore existing concrete lintels and floor slabs as shown on details prior to demo.
  - Chip out existing concrete beyond existing corrosion & cracks per Spec. Section 03111.
  - Review with Structural Engineer.
  - Sandblast and prep surface in repair area per Spec. Section 03111.
  - Install new reinforcing and/or repair existing reinforcing per Det. 10/S1.
  - Drill & epoxy stainless steel ties where required per repair Details.
  - Apply rebar coating to existing and/or new reinforcing steel per Spec. Section 03222.
  - Saturate surface dry (SSD) existing concrete surface per Spec. Section 03111.
  - Replace removed concrete with repair patching material per Spec. Section 03360.
  - Finish and cure repair area per Spec. Section 03444.
  - Shoring to remain in place for 7 days after repair patching material has been placed.

**REINFORCING**

- ASTM A615, Grade 60, deformed bars, except #2 bars. CRSI and ACI manuals apply.
  - Field bent and/or welded bars: ASTM A706
  - Clear concrete coverage's per details.
  - Lap splices in concrete 36 bar diameters.
  - Securely tie all reinforcing embedded items in position before placing concrete.
  - Place reinforcing per ACI 318-05 and CRSI Standards.
  - Weld reinforcing bars in conformance with AWS D1.4/D1.4M:2005. Use low hydrogen electrodes.

**STRUCTURAL STEEL**

- AISC and AWS codes and handbooks apply.
- Plates, Bars and Angles: ASTM A36, Fy = 36 ksi minimum.
- Stainless Steel Rods: ASTM 242
- Bolts: ASTM A307
- Welding rods: E-70 low hydrogen. "Jet" welding rods (E7024) shall not be used for any structural welding. Comply with American Welding Society Codes and Standards. All welding shall be done by certified welders.
- Steel surfaces to be welded shall be thoroughly cleaned of all foreign matter including paint for at least 2 inches from the root of the weld.

**SPECIAL INSPECTION**

Special Inspection is required for all repair work. Call Structural Engineer for inspection; phone number (602) 285-1720. Provide 48 hours notice.

Special inspection is to be provided in addition to the inspections conducted by the Department of Building Safety and shall not be construed to relieve the Owner or his authorized agent from requesting the periodic and called inspections required by Section 109 of the International Building Code. The special inspector shall be approved by the City Building Official prior to starting work.

**SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING WORK:**  
(PER IBC SECTION 1704)

**CONCRETE:**

During the taking of test specimens and placing of reinforced concrete and pneumatically placed concrete.

**REINFORCING STEEL:**

During placing of reinforcing steel for all concrete required to have special inspection. This inspection may be done on a periodic basis in accordance with IBC Table 1704.4.

**FIELD WELDING:**

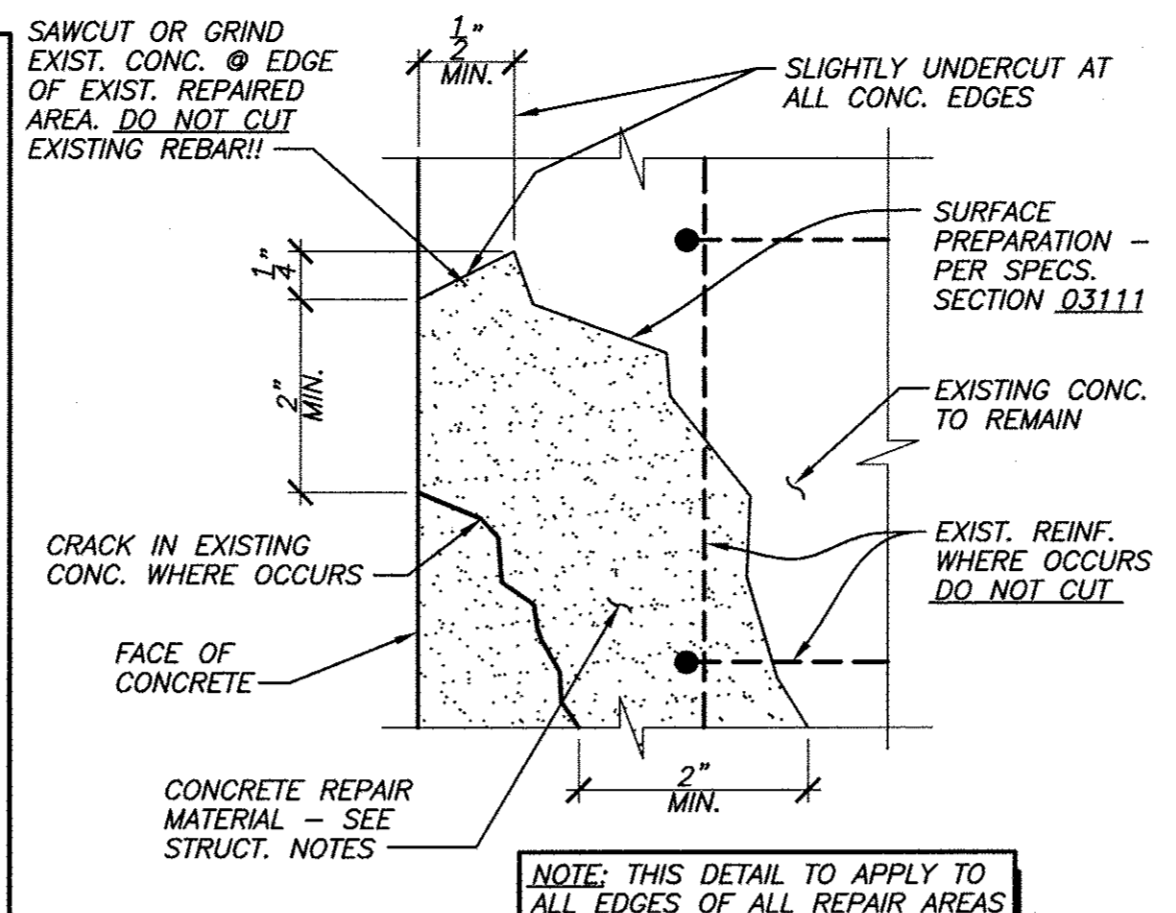
During all structural field welding, including reinforcing steel. This inspection may be done on a periodic basis in accordance with IBC Section 1704.3.

**EPOXY GROUTED ANCHORS:**

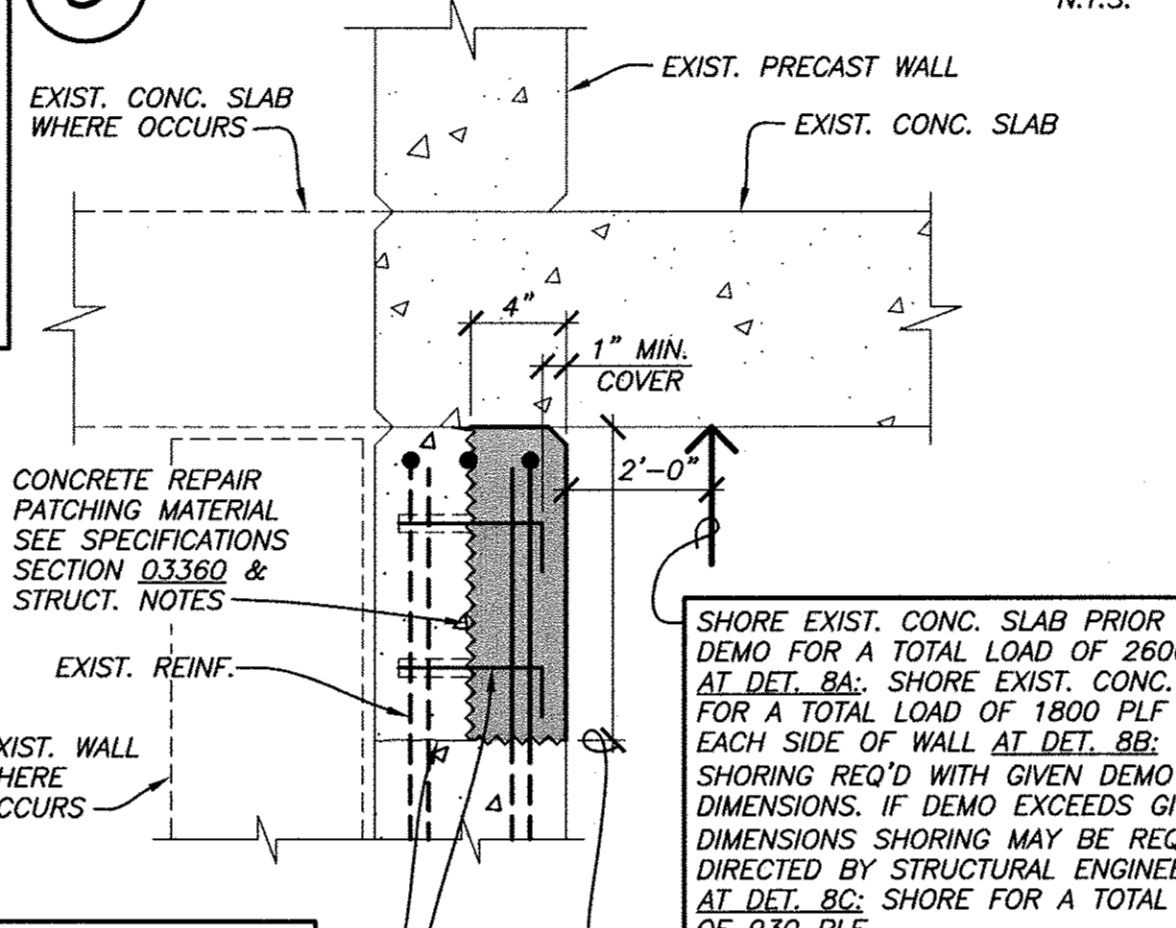
During installation of epoxy grouted anchors.

**CONCRETE REPAIR REQUIRED INSPECTIONS:**

- After chipping prior to sandblasting.
- After sandblasting prior to rebar coating.
- After rebar coating prior to repair material placement.
- During bond coat application prior to and during repair material placement.
- During repair material mixing, placement and curing.
- During all epoxy applications including epoxy injection, bonding agent, etc.



**3 UNDERCUT EDGE @ REPAIR AREAS**  
N.T.S.



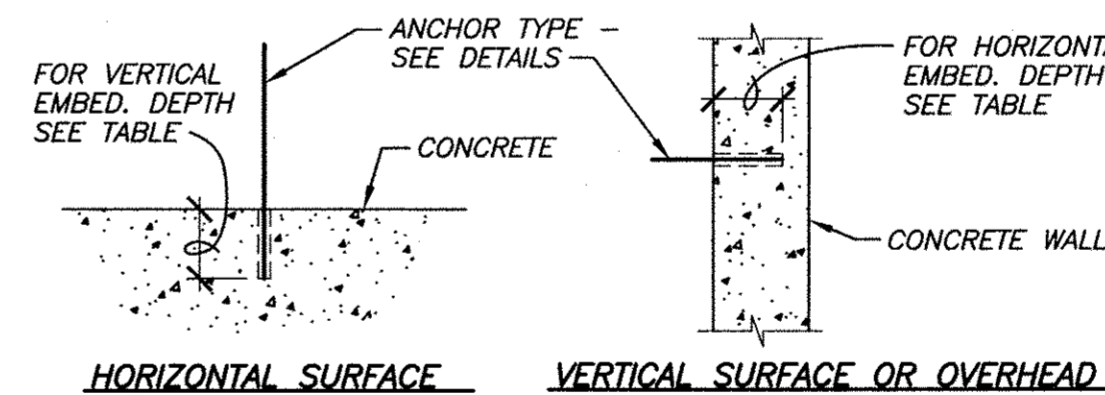
**4 SLAB REPAIR @ DOOR OPENING**  
1/2\"/>

**4 SLAB REPAIR @ DOOR OPENING**  
1/2\"/>

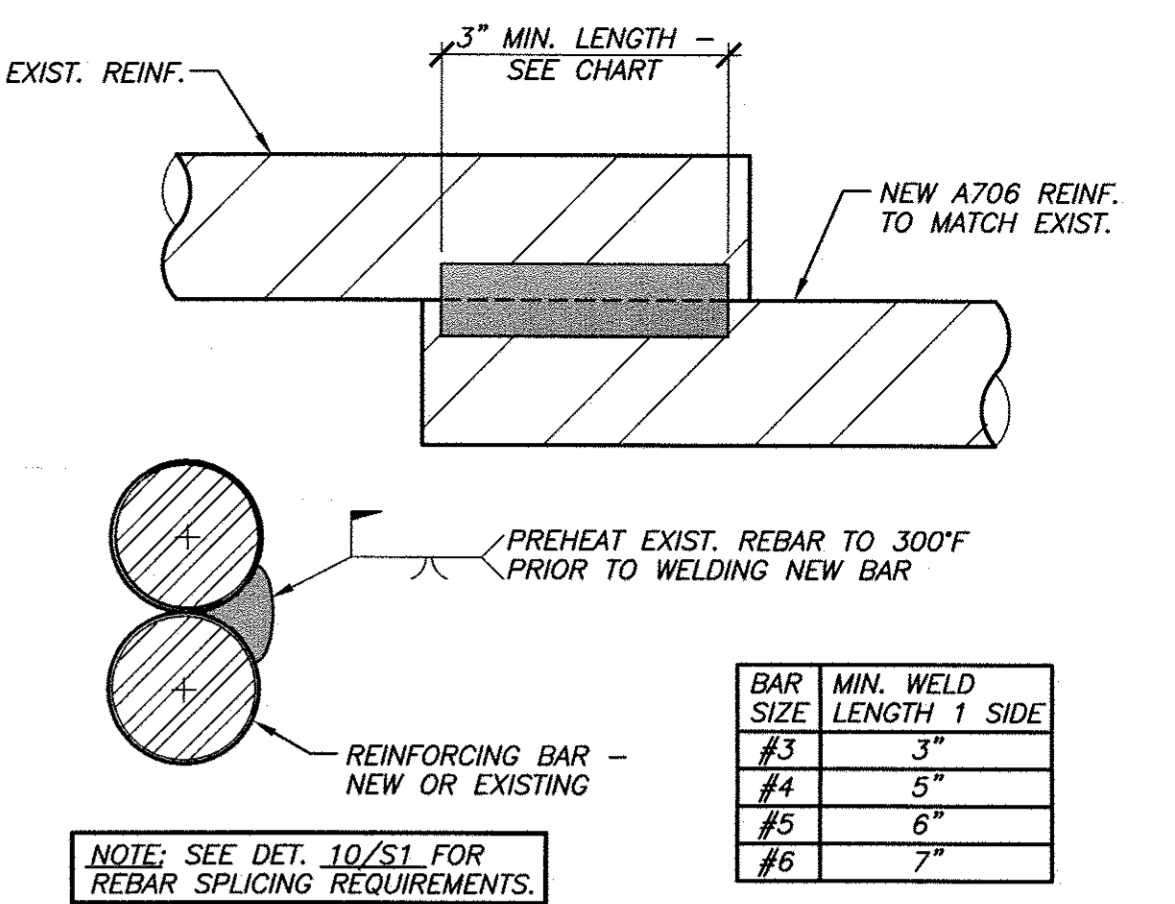
**ADHESIVE ANCHOR INSTALLATION PROCEDURE**

- DRILL HOLE:** See details for anchor type (i.e., rebar or all-thread rod) and anchor diameter. Drill hole in existing concrete with a rotary hammer and drill bit size 1/8\"/>

ANCHOR DIAMETER	VERTICAL EMBEDMENT DEPTH	HORIZONTAL EMBEDMENT DEPTH
1/2" - 5/8"	5"	5"
3/4" - 7/8"	7 1/2"	6 3/4"
1"	8 1/2"	-



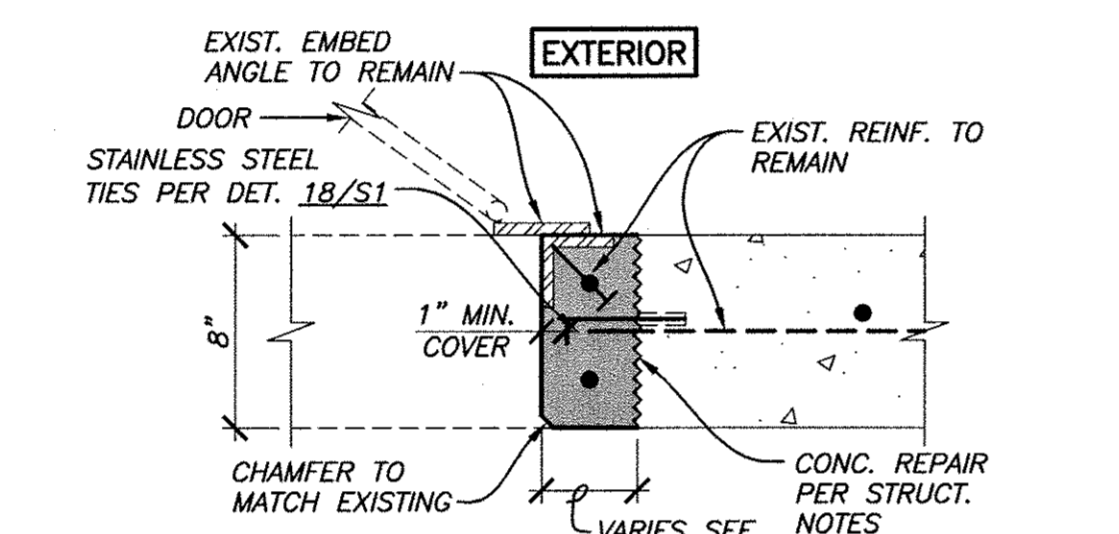
**14 ADHESIVE ANCHOR INSTALLATION FOR CONCRETE**  
1/09 9-104



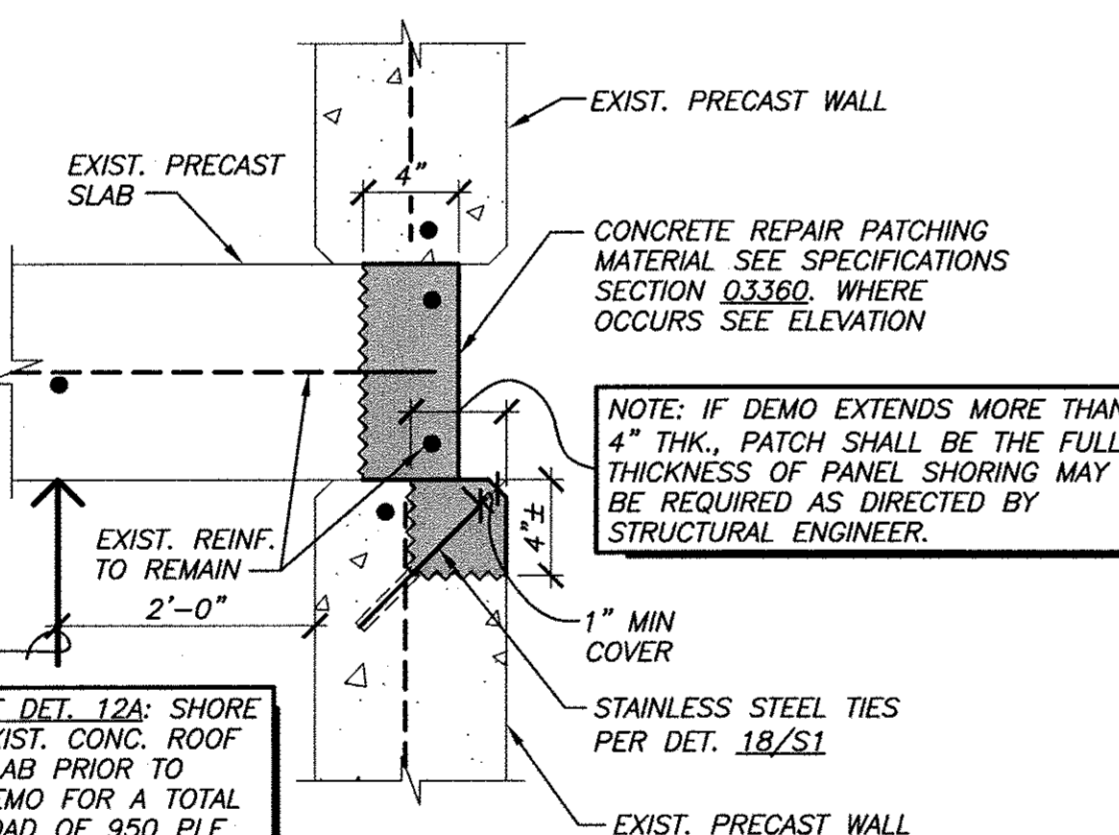
**5 LAP WELDED SPLICE FOR BARS #6 & SMALLER**  
NOT TO SCALE

**REBAR SPlicing REQUIREMENTS:**

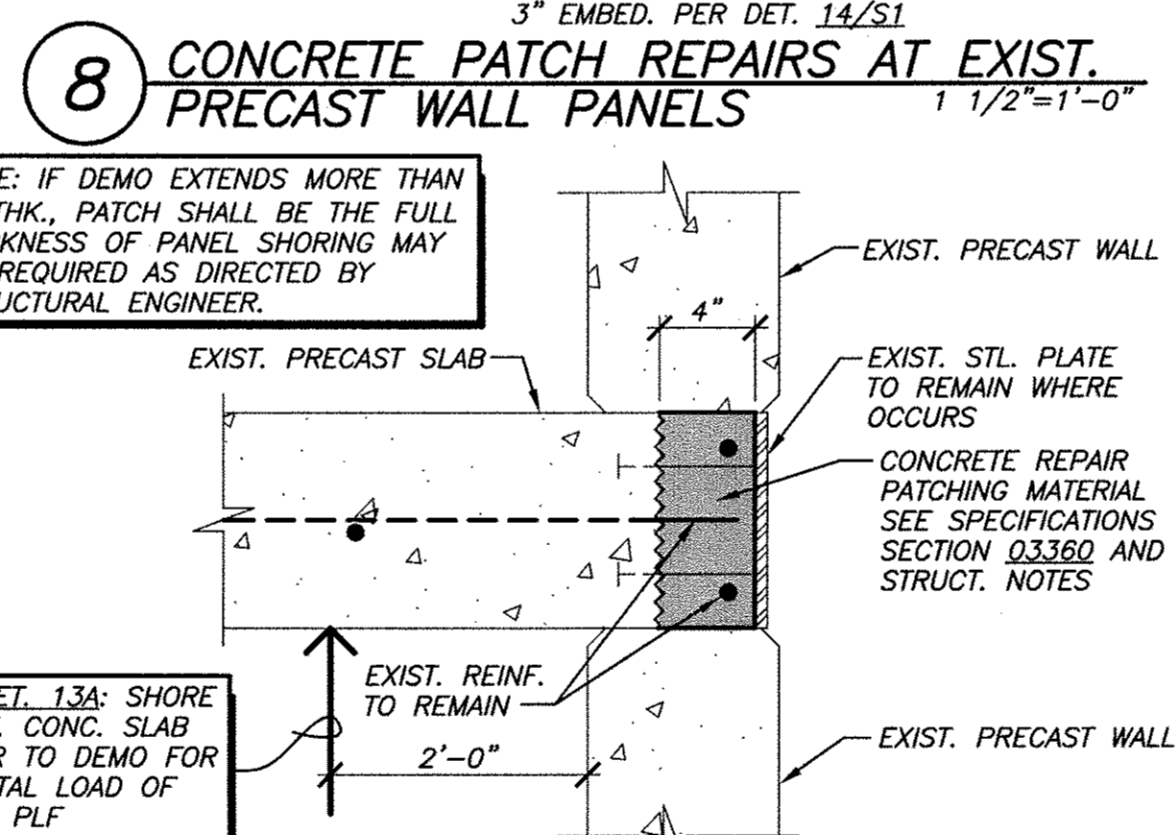
- REINFORCING DAMAGED BY CORROSION MAY REQUIRE REPLACEMENT. REBAR SHALL BE WELDED TO NEW BARS WHEN CROSS-SECTIONAL AREA HAS BEEN DECREASED BY MORE THAN 15%. THIS EQUATES TO THE FOLLOWING BAR EQUIVALENT DIAMETERS FOR THE CORRESPONDING BAR SIZE.
- | BAR SIZE | DIAMETER (INCHES) | 15% EQUIVALENT DIAMETER (INCHES) |
|----------|-------------------|----------------------------------|
| 2        | 0.25              | 0.23                             |
| 3        | 0.375             | 0.35                             |
| 4        | 0.5               | 0.46                             |
| 5        | 0.625             | 0.58                             |
| 6        | 0.75              | 0.69                             |
- THESE DIAMETERS ARE THE REMAINING DIAMETER AFTER SANDBLASTING.
- IF THE DIAMETER IS LESS THAN INDICATED IN THE CHART ABOVE, THE EXISTING BARS SHALL BE CUT OFF BEYOND THE AREA OF CORROSION, AND A NEW BAR SPLICED TO THE EXISTING BAR PER DET. 5/S1. THE SIZE SHAPE AND CONFIGURATION OF THE REINFORCING SHALL MATCH THE EXISTING ORIGINAL CONSTRUCTION.



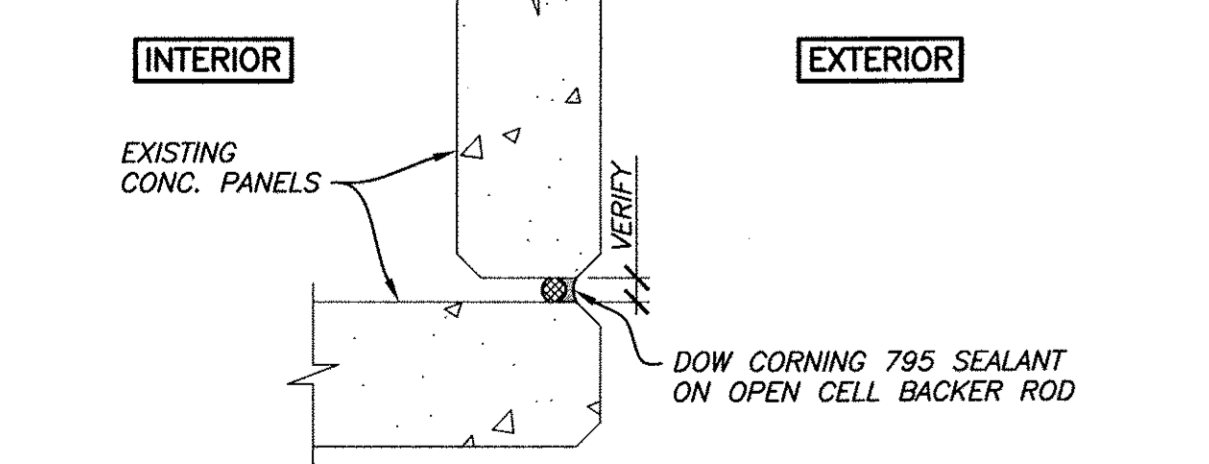
**7 JAMB REPAIR AT WINDOW & DOOR OPENINGS**  
1/2\"/>



**12 EXIST. PRECAST SLAB AT WALL**  
1/2\"/>

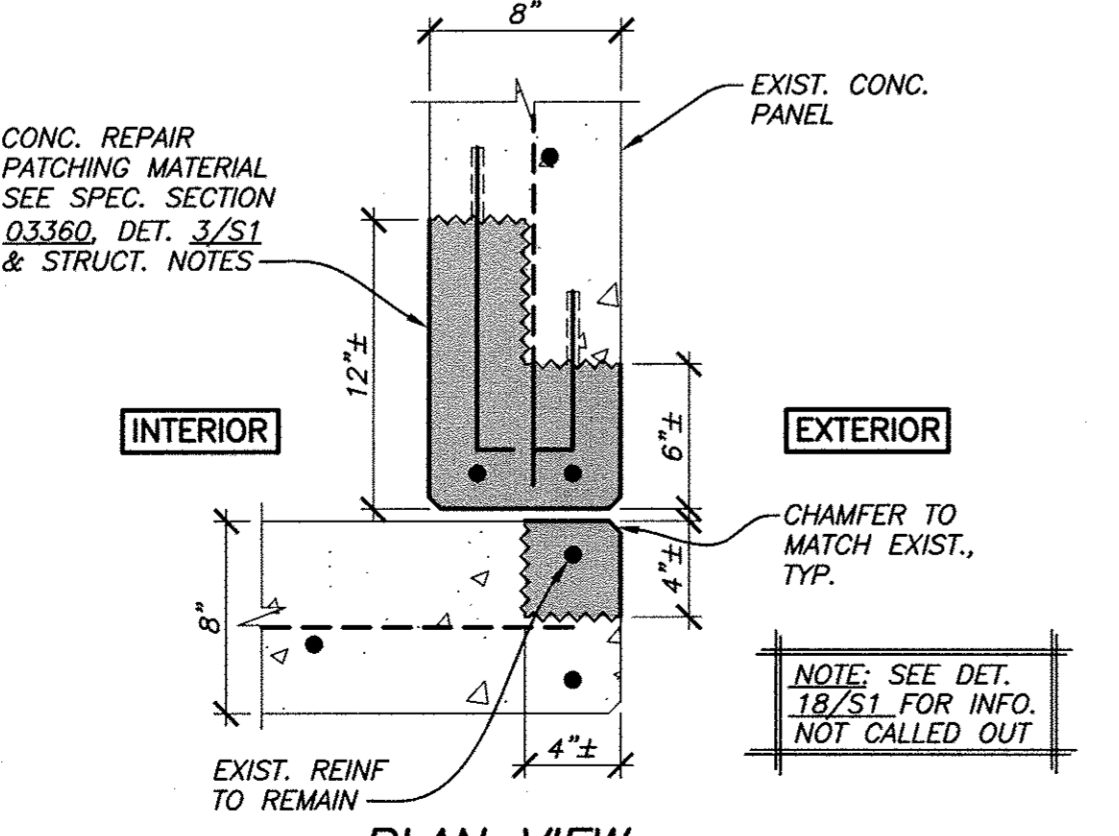


**13 EXIST. PRECAST SLAB AT WALL**  
1/2\"/>

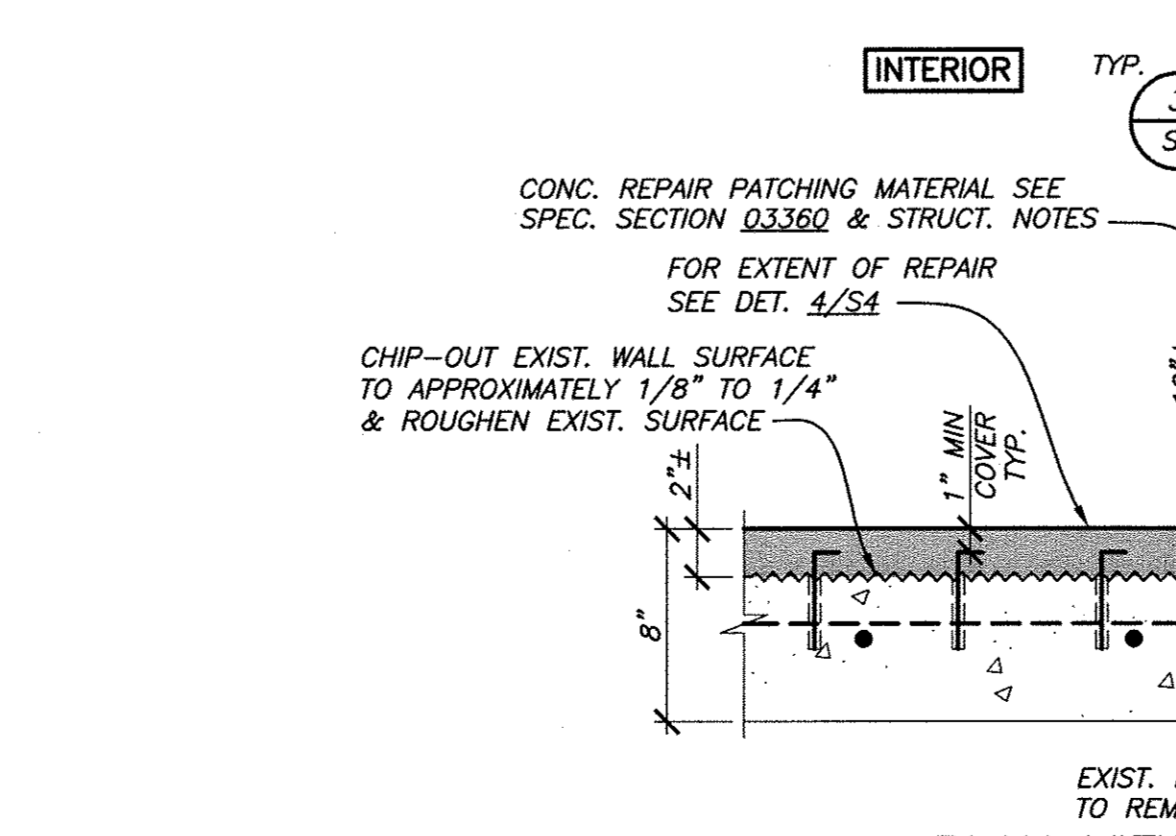


- NOTE:**
- CLEAN ALL JOINTS OF FOREIGN MATTER AND CONTAMINANTS DOWN TO BEAR CONCRETE.
  - USE STANDARD COLOR SEALANT CLOSEST TO EXISTING PAINT COLOR.
  - SEALANT TO BE INSTALLED OVER BACKER ROD AT A 2:1 WIDTH TO DEPTH RATIO EXCEPT, AT JOINTS WIDER THAN 1\"/>

**16 CONCRETE PANEL JOINT**  
N.T.S.

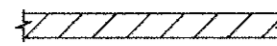
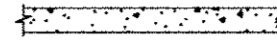



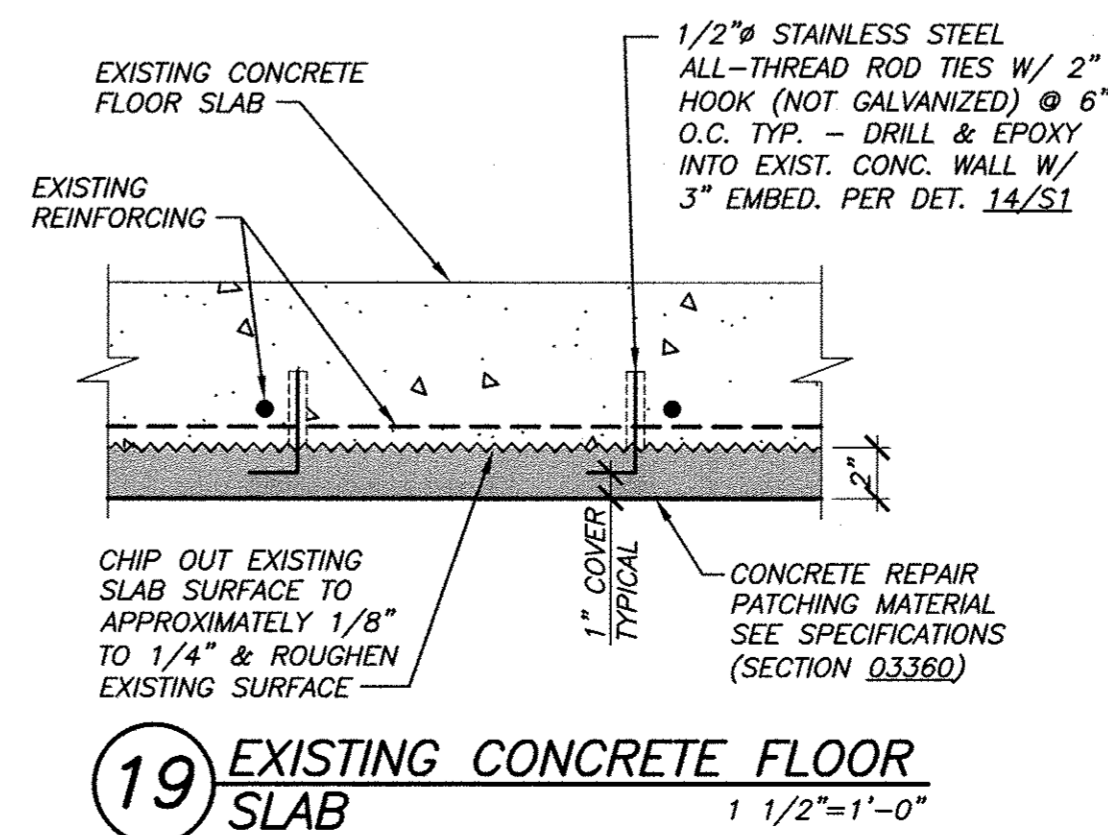
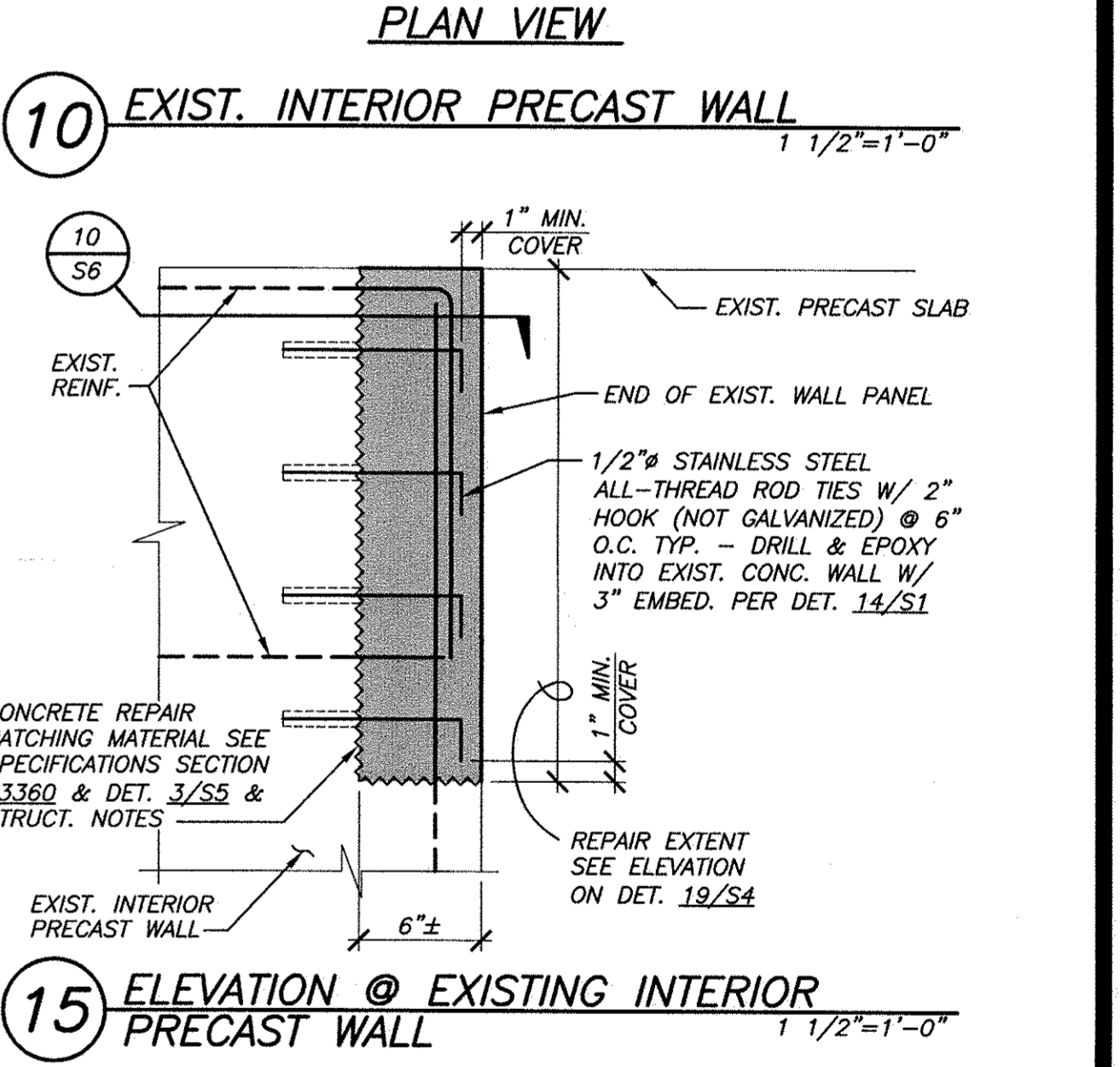
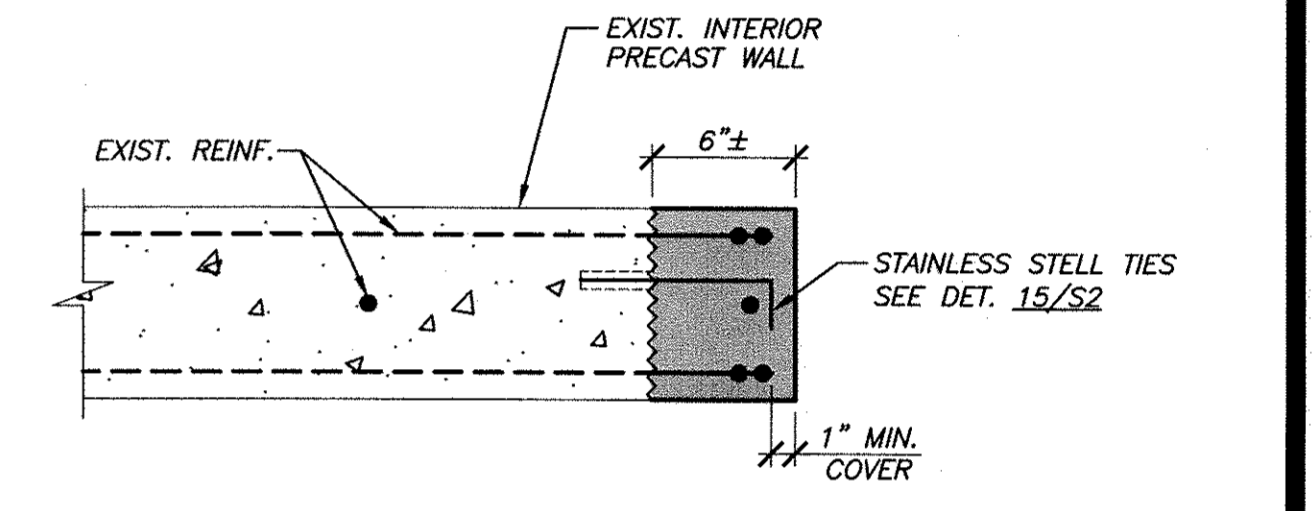
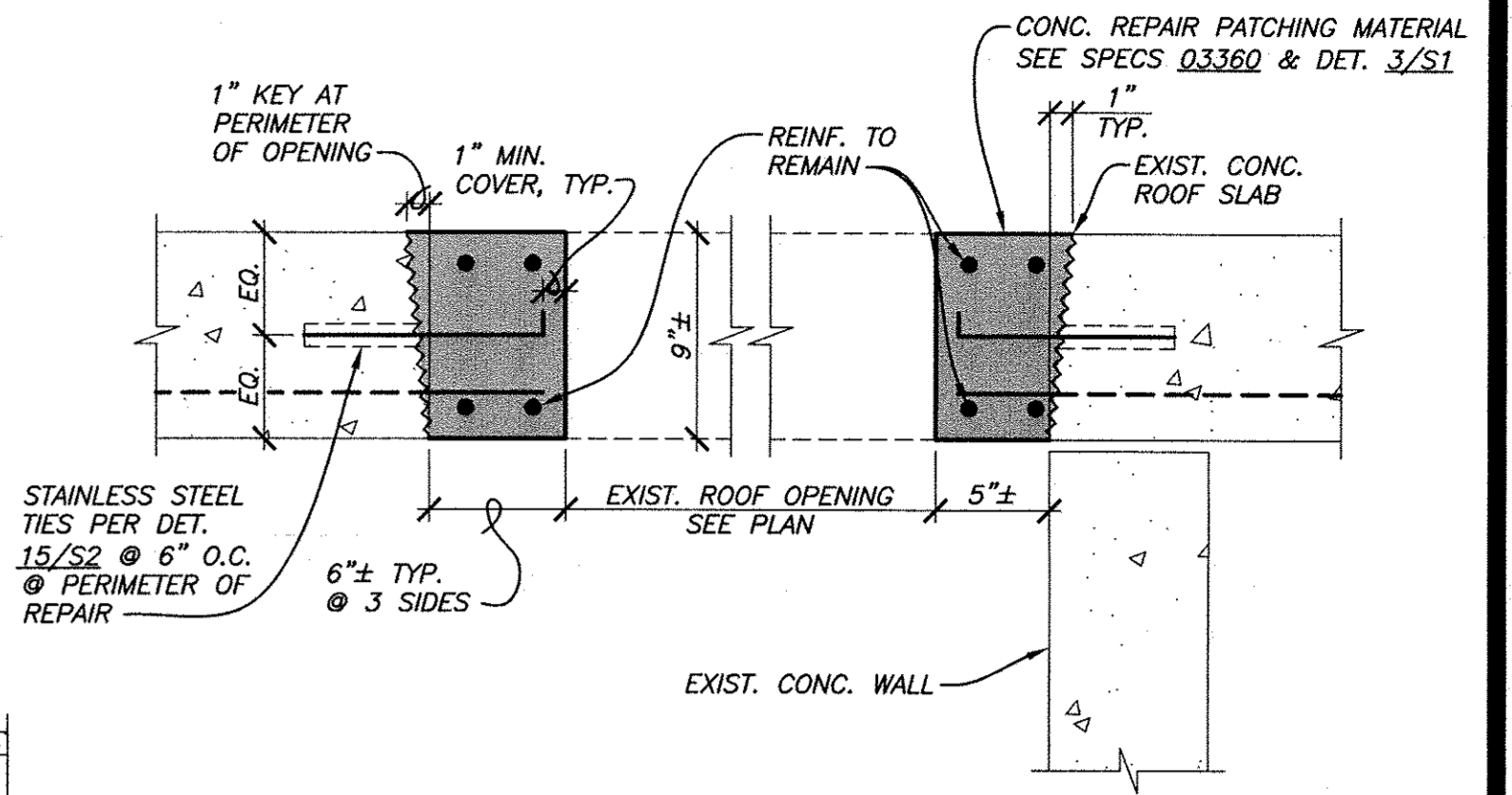
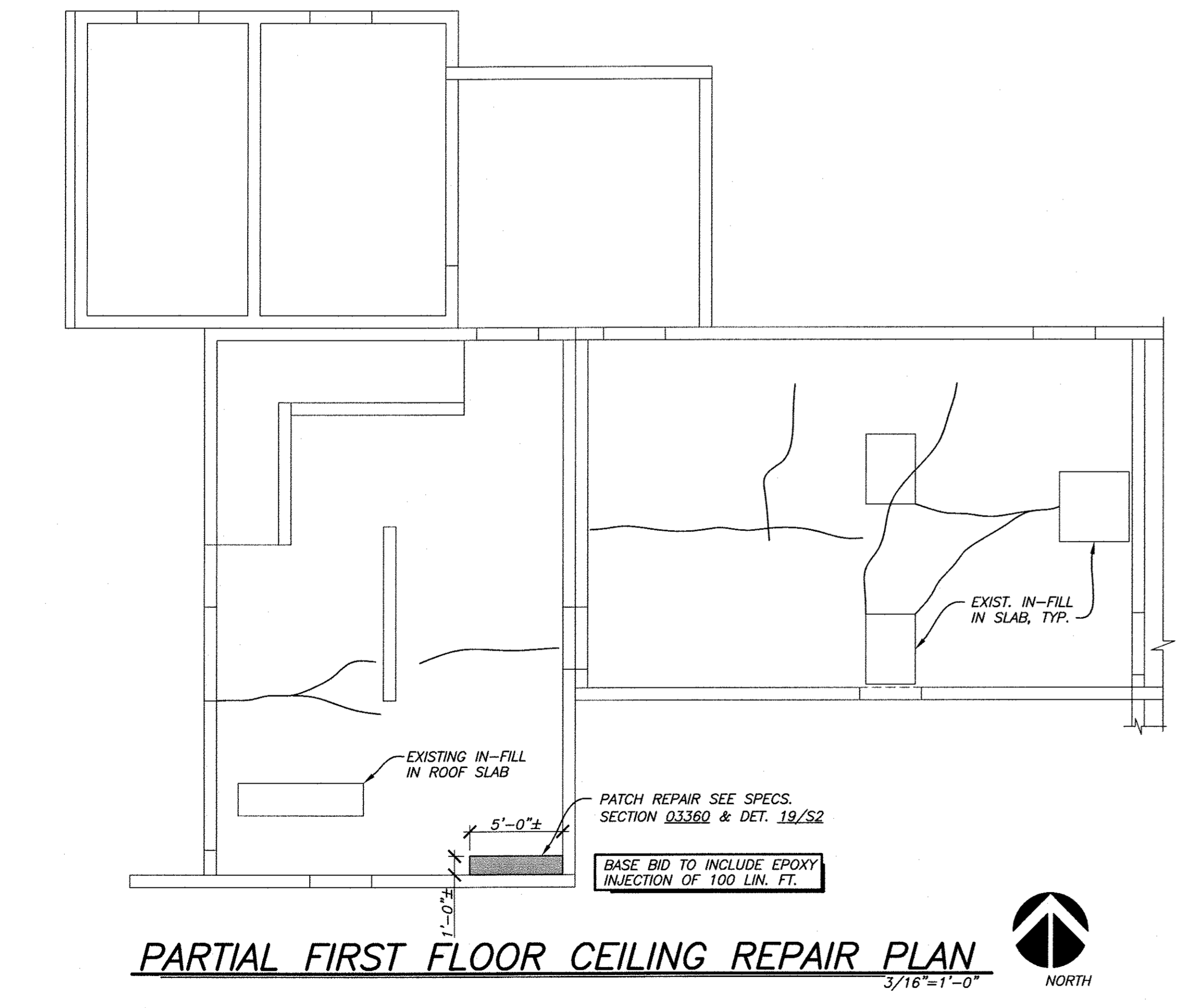
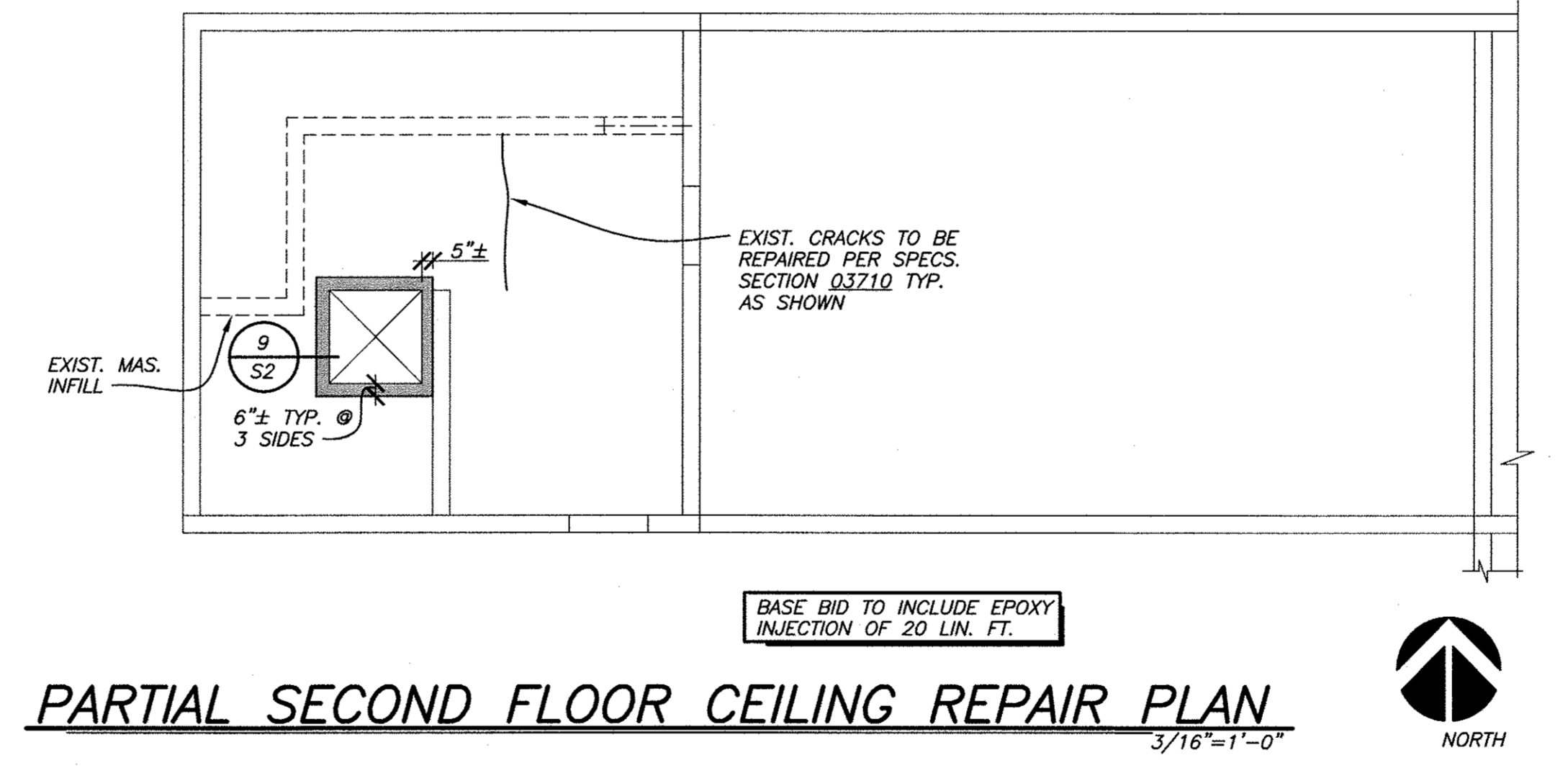
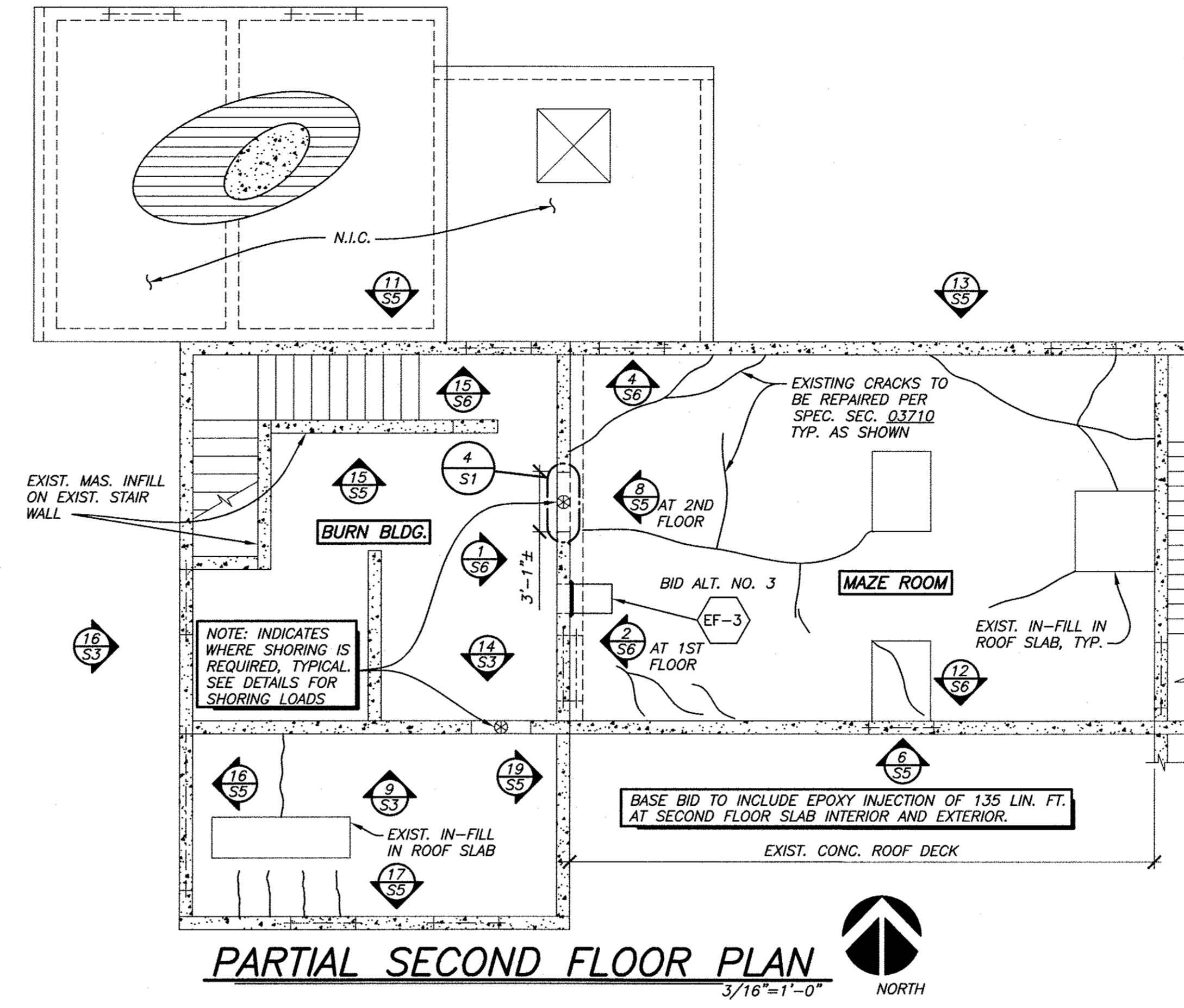
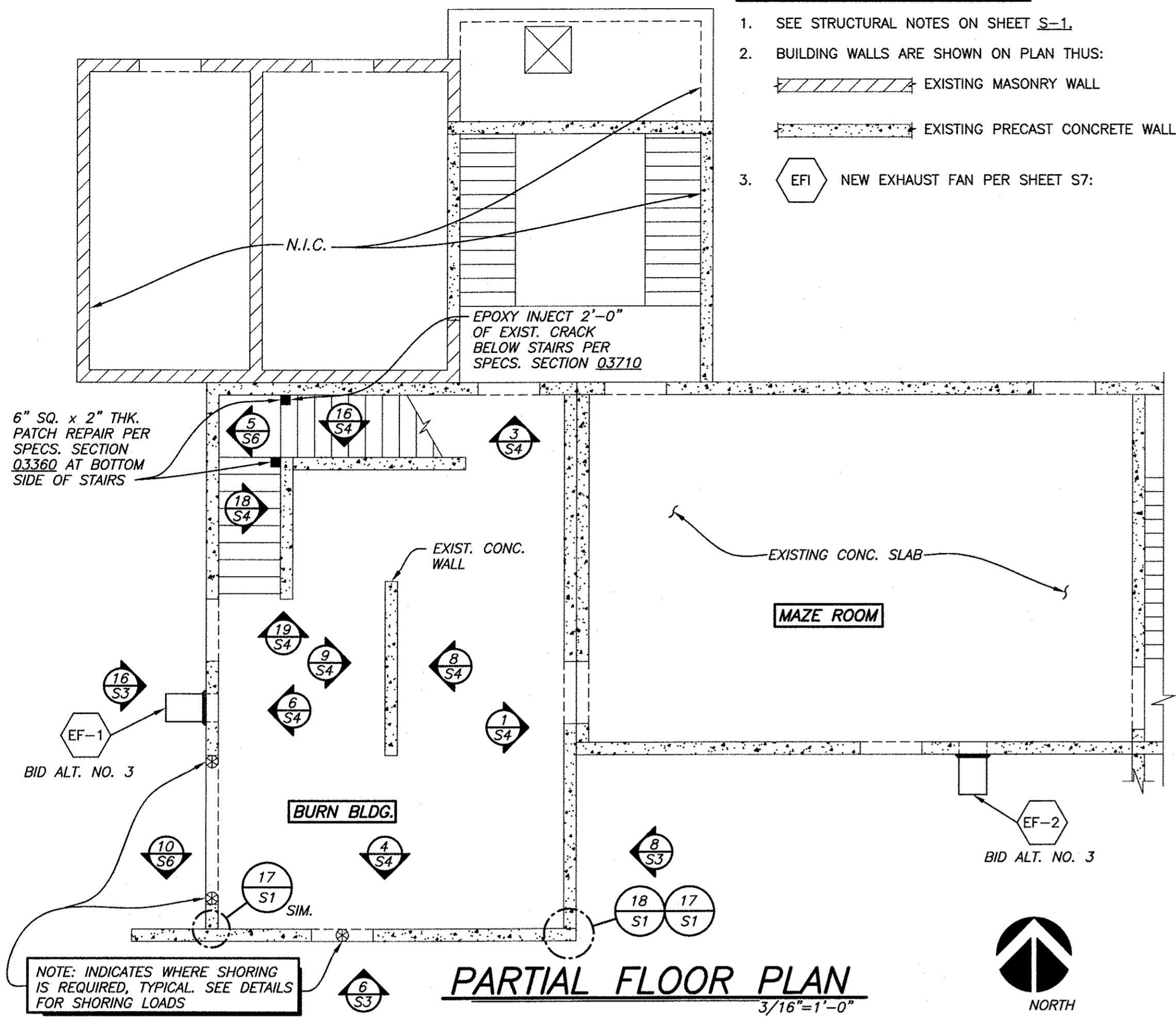
**17 EXIST. WALL REPAIR AT CORNER**  
1/2\"/>



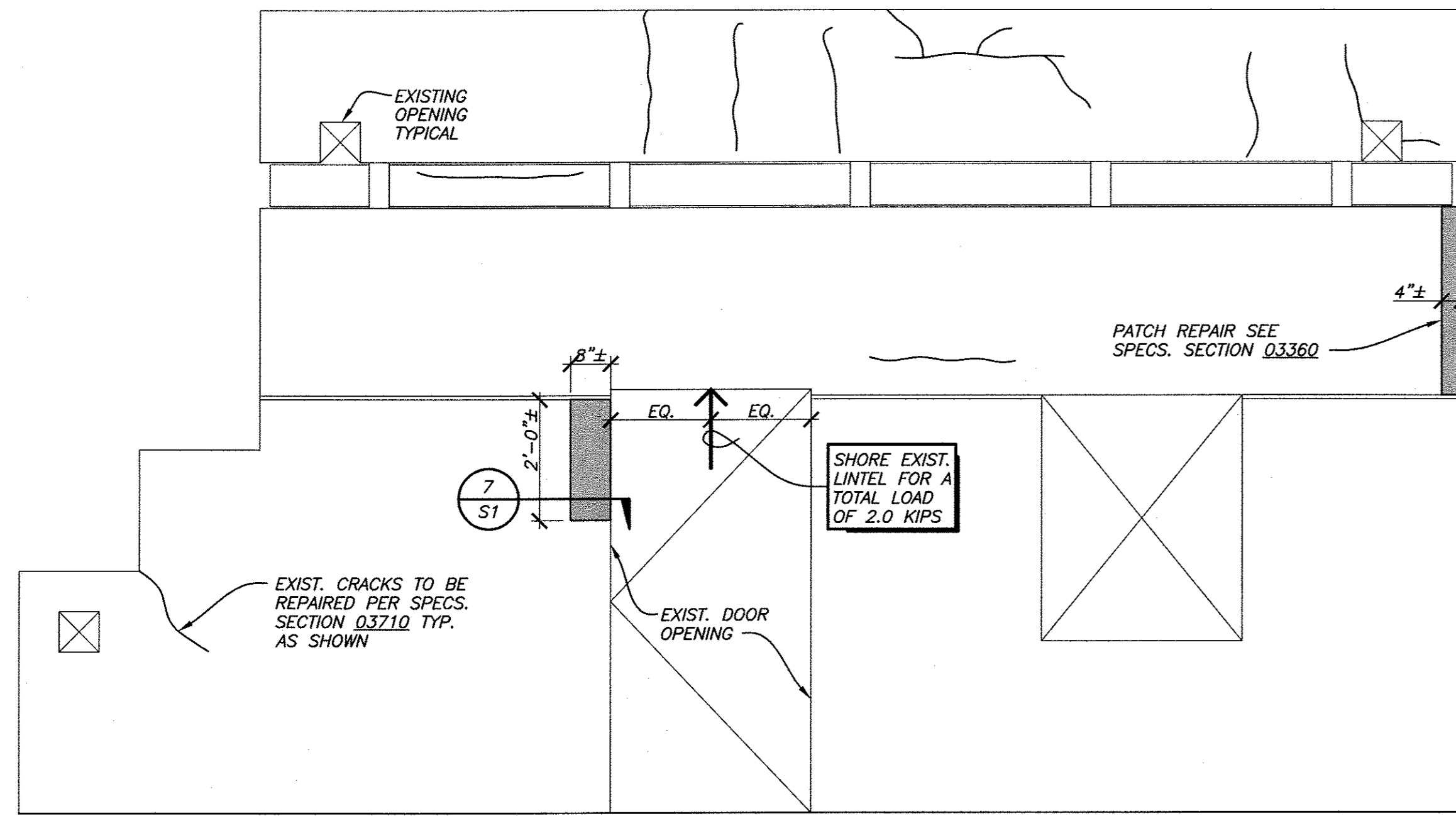
**18 EXIST. WALL REPAIR AT CORNER**  
1/2\"/>

**FOUNDATION NOTES:**

1. SEE STRUCTURAL NOTES ON SHEET S-1.
2. BUILDING WALLS ARE SHOWN ON PLAN THUS:  
 EXISTING MASONRY WALL  
 EXISTING PRECAST CONCRETE WALL.
3.  NEW EXHAUST FAN PER SHEET S7:



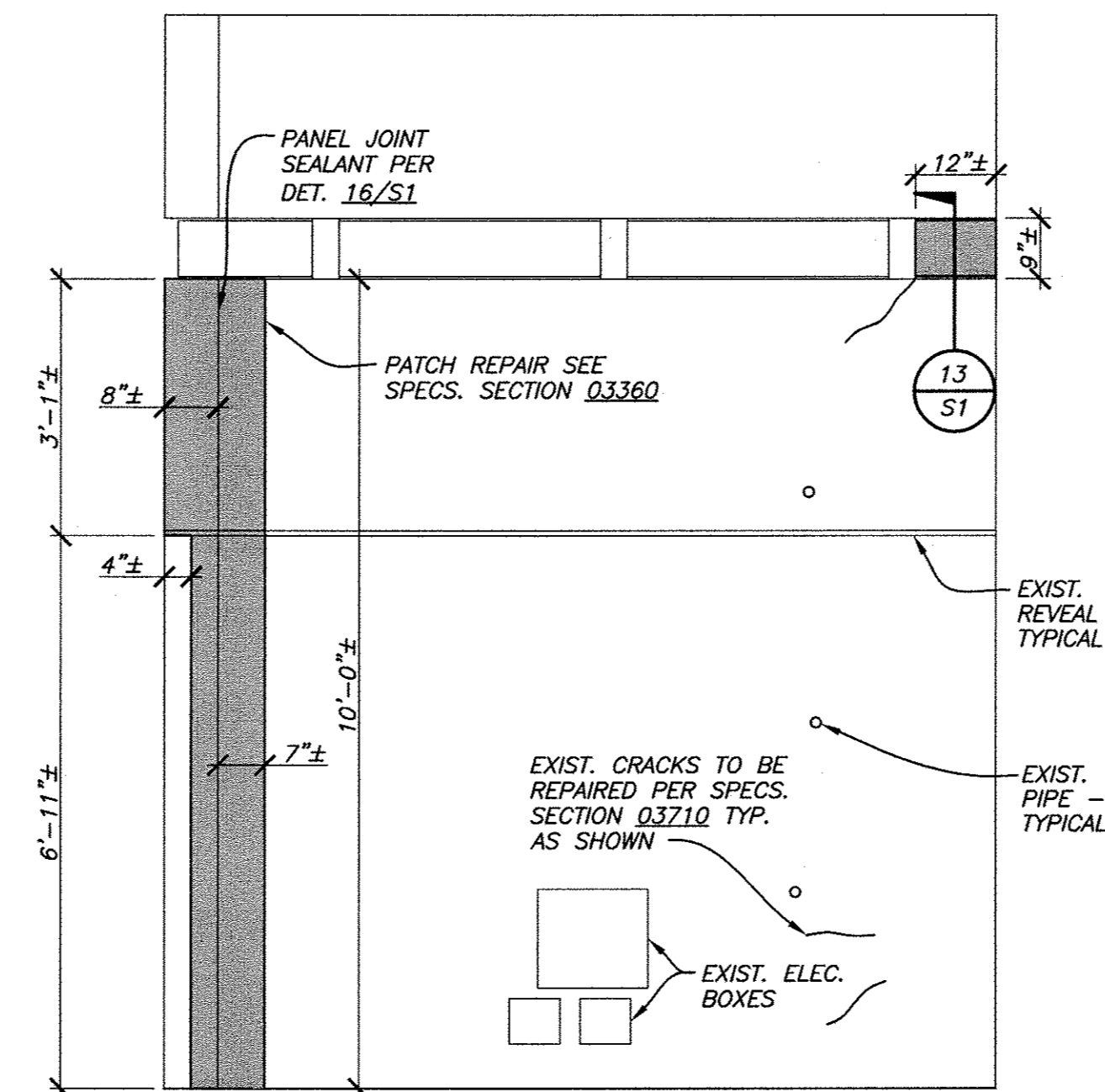
S:\0\projects\1.2003\307141\3071452.dwg, Plotted: 5/01/12 - 11:19am by Terry



BASE BID TO INCLUDE EPOXY INJECTION OF 50 LIN. FT.

6 SOUTH EXTERIOR ELEVATION @ GROUND FLOOR ~ LOOKING NORTH

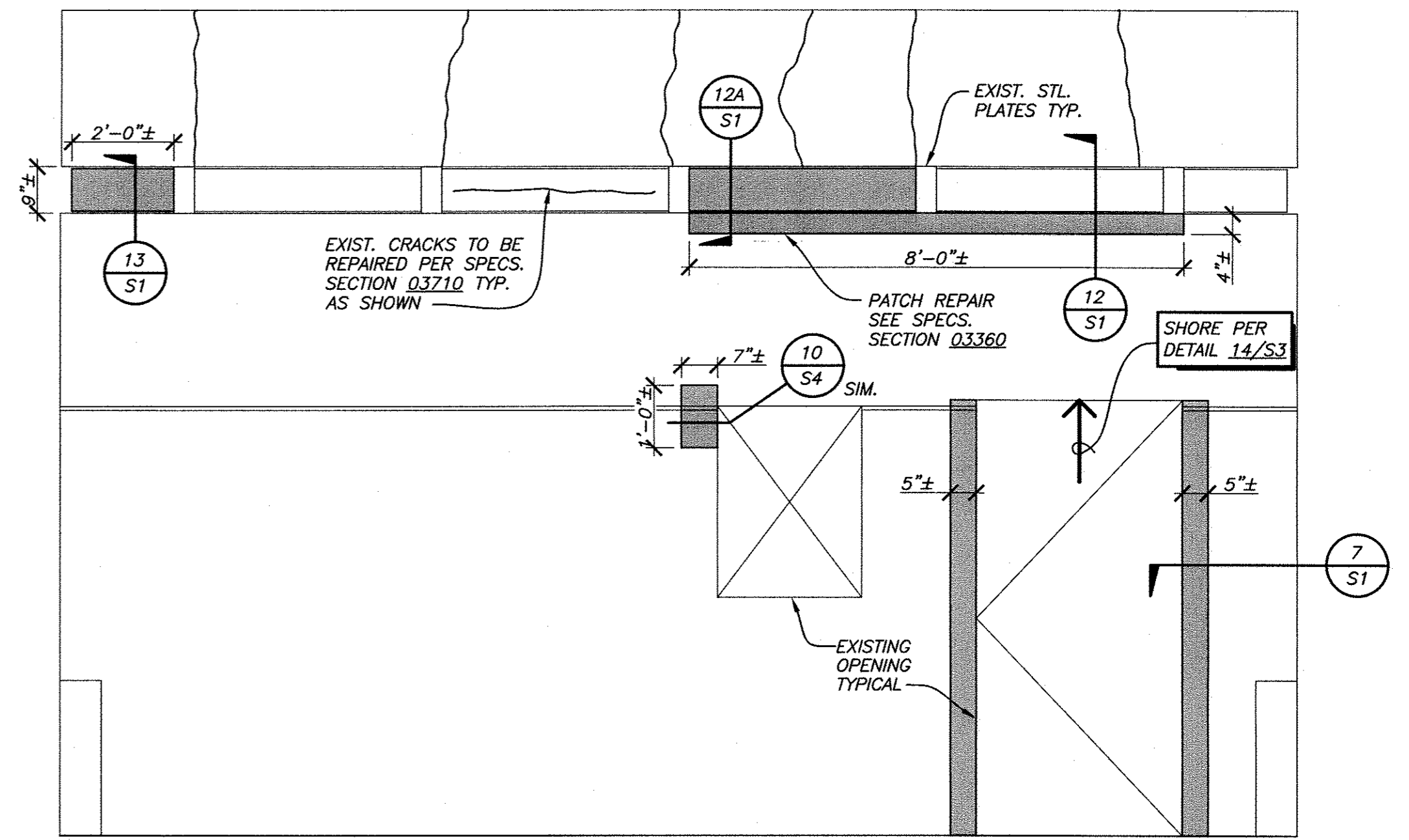
1/2"=1'-0"



BASE BID TO INCLUDE EPOXY INJECTION OF 10 LIN. FT.

8 EAST EXTERIOR ELEVATION ~ LOOKING WEST

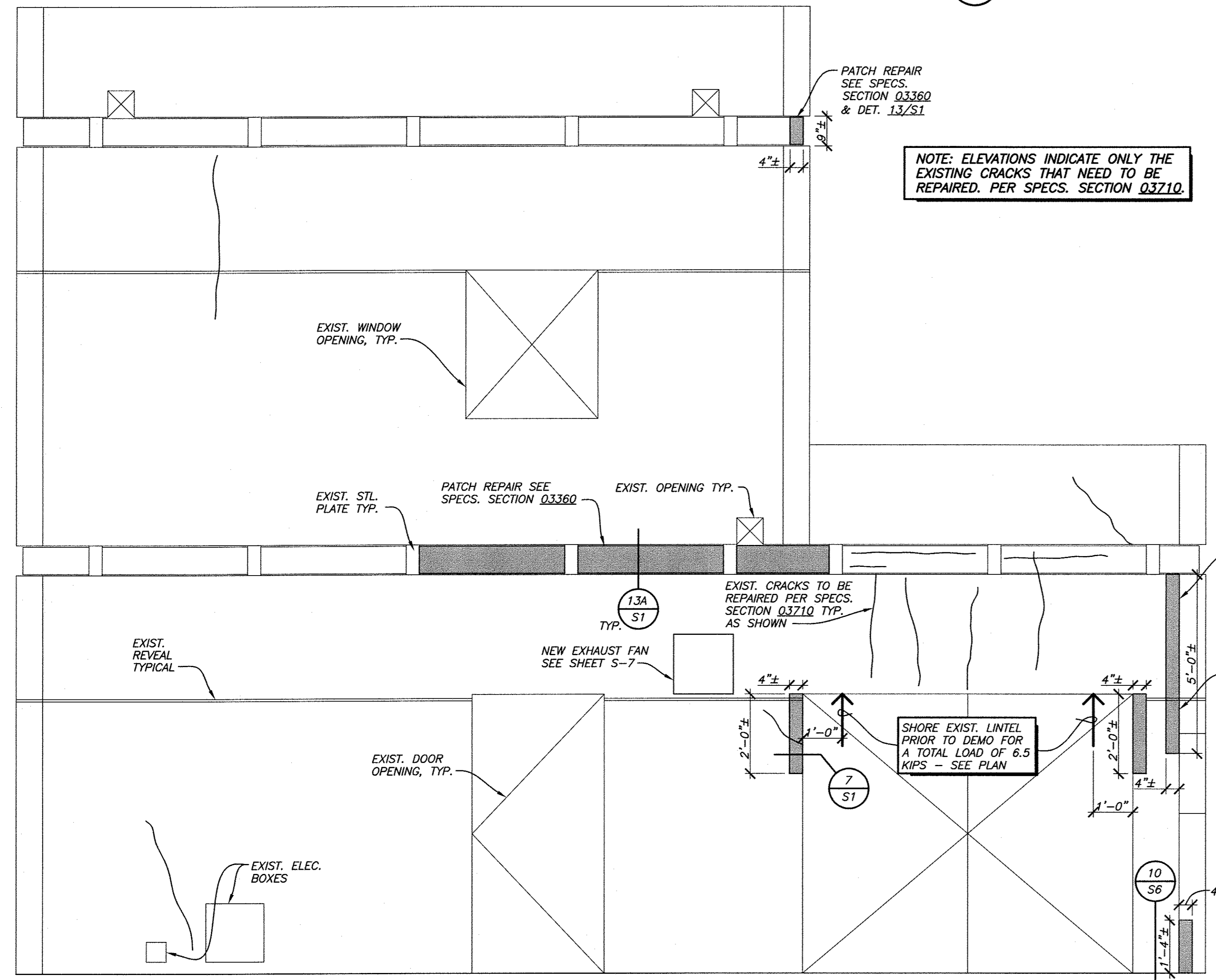
1/2"=1'-0"



BASE BID TO INCLUDE EPOXY INJECTION OF 30 LIN. FT.

9 SOUTH EXTERIOR ELEVATION @ SECOND FLOOR ~ LOOKING NORTH

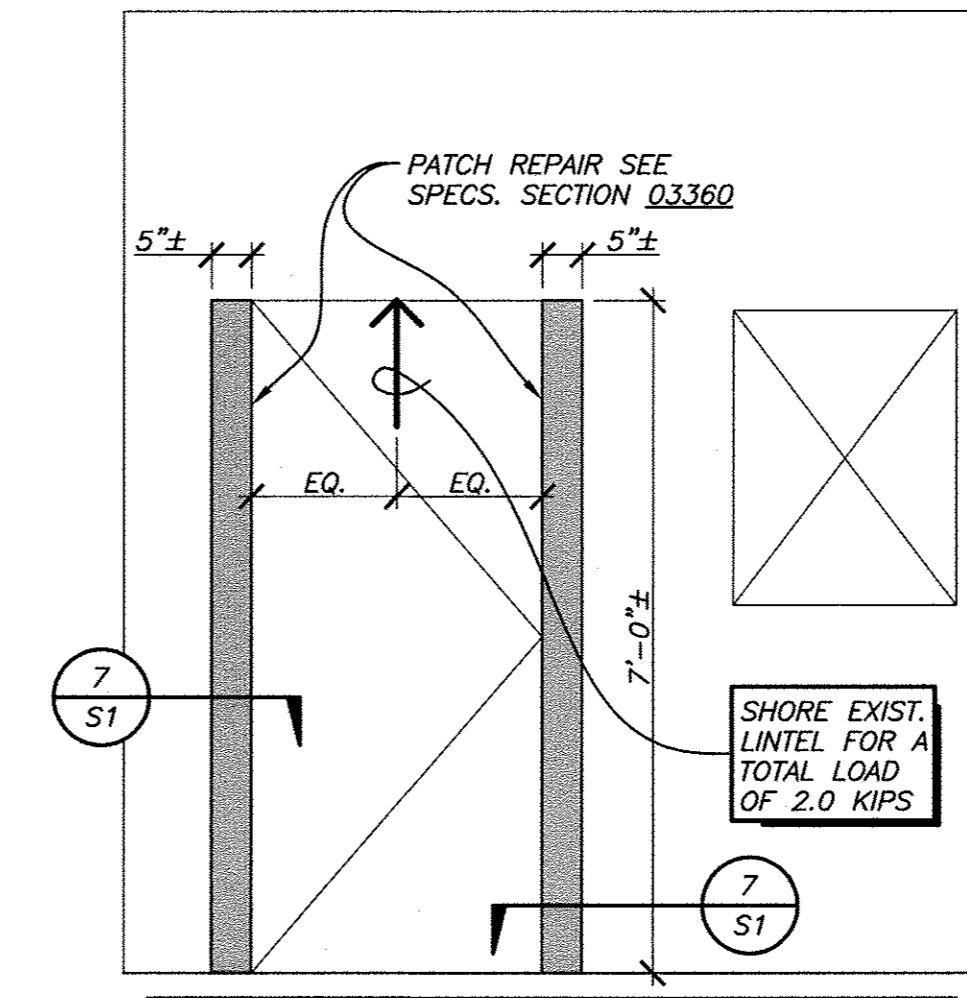
1/2"=1'-0"



BASE BID TO INCLUDE EPOXY INJECTION OF 70 LIN. FT.

16 WEST EXTERIOR ELEVATION ~ LOOKING EAST

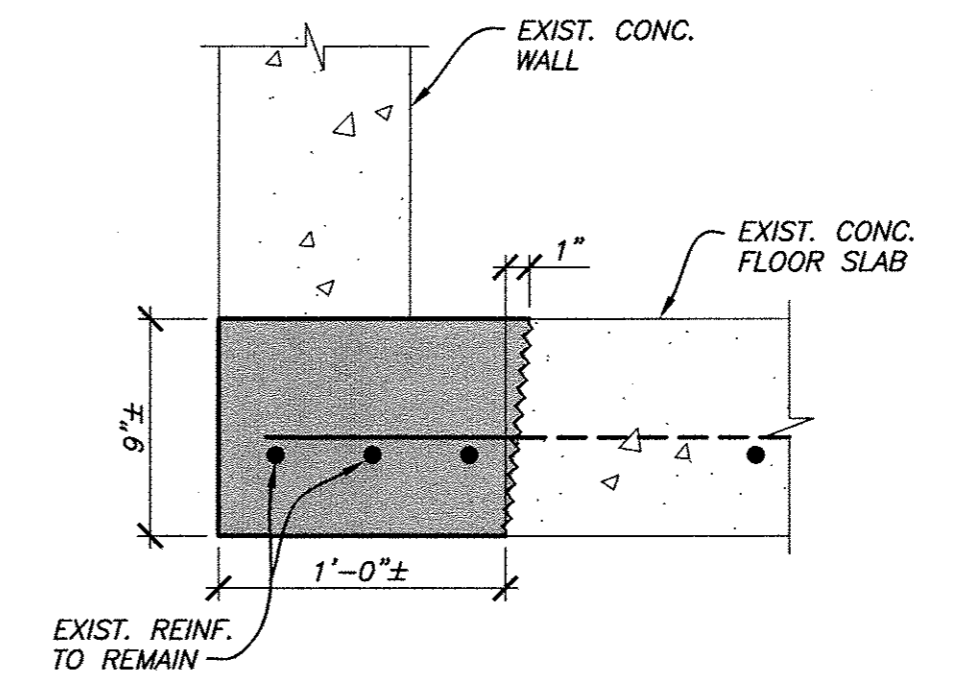
1/2"=1'-0"



BASE BID TO INCLUDE EPOXY INJECTION OF 15 LIN. FT.

14 SOUTH INTERIOR ELEVATION ~ LOOKING SOUTH @ 2ND FLOOR

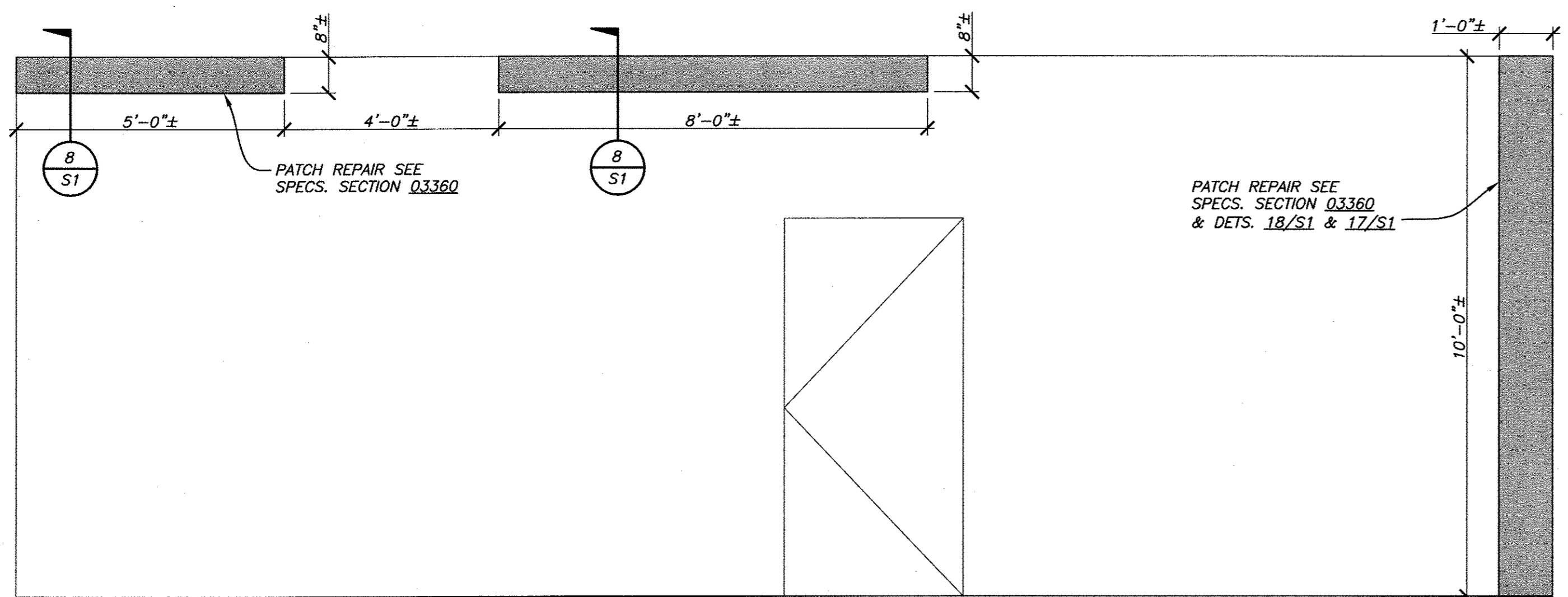
NOTE: SEE DET. 18/S4 FOR INFO. NOT CALLED OUT



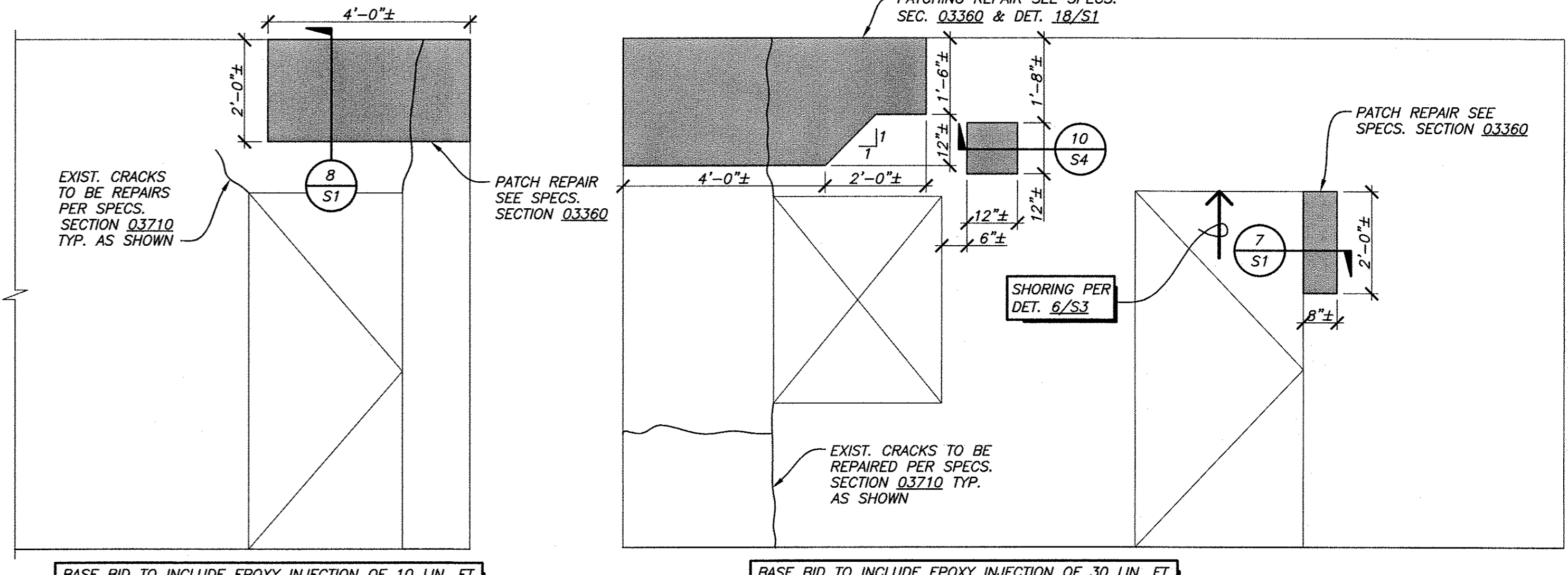
19 REPAIR AT EDGE OF FLOOR SLAB

1/2"=1'-0"

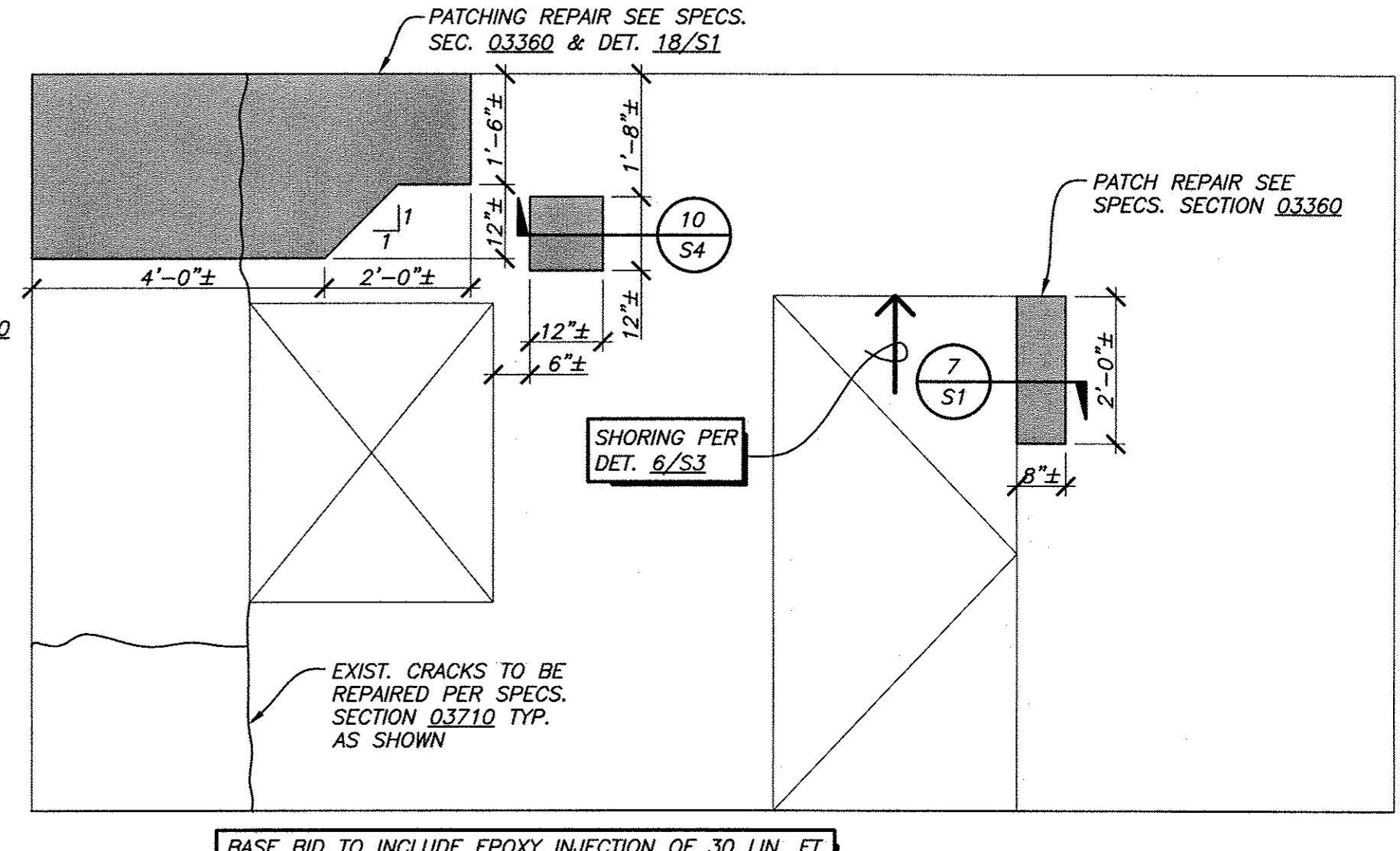
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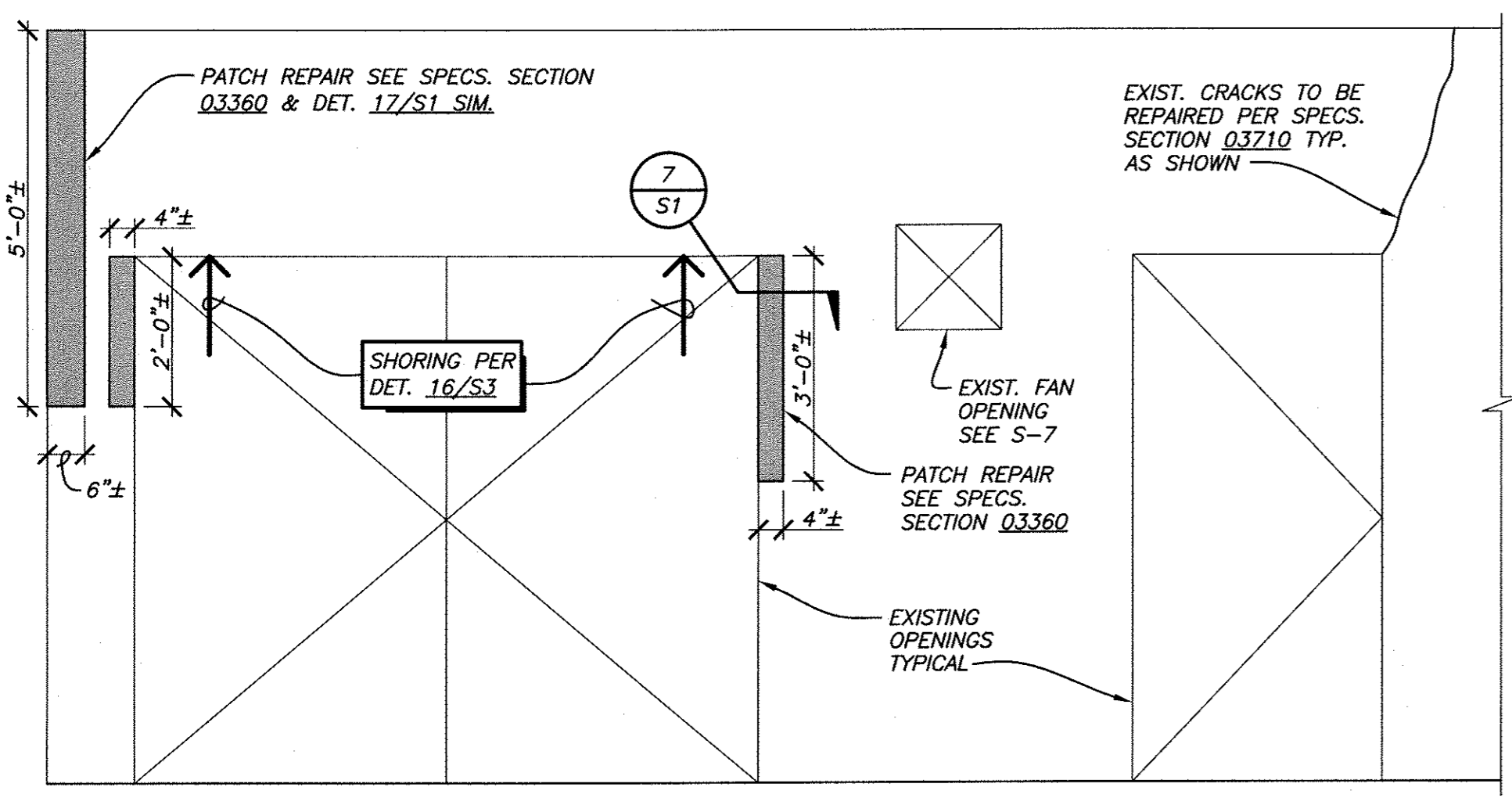
1 EAST INTERIOR ELEVATION ~ LOOKING EAST @ 1ST FLOOR 1/2"=1'-0"



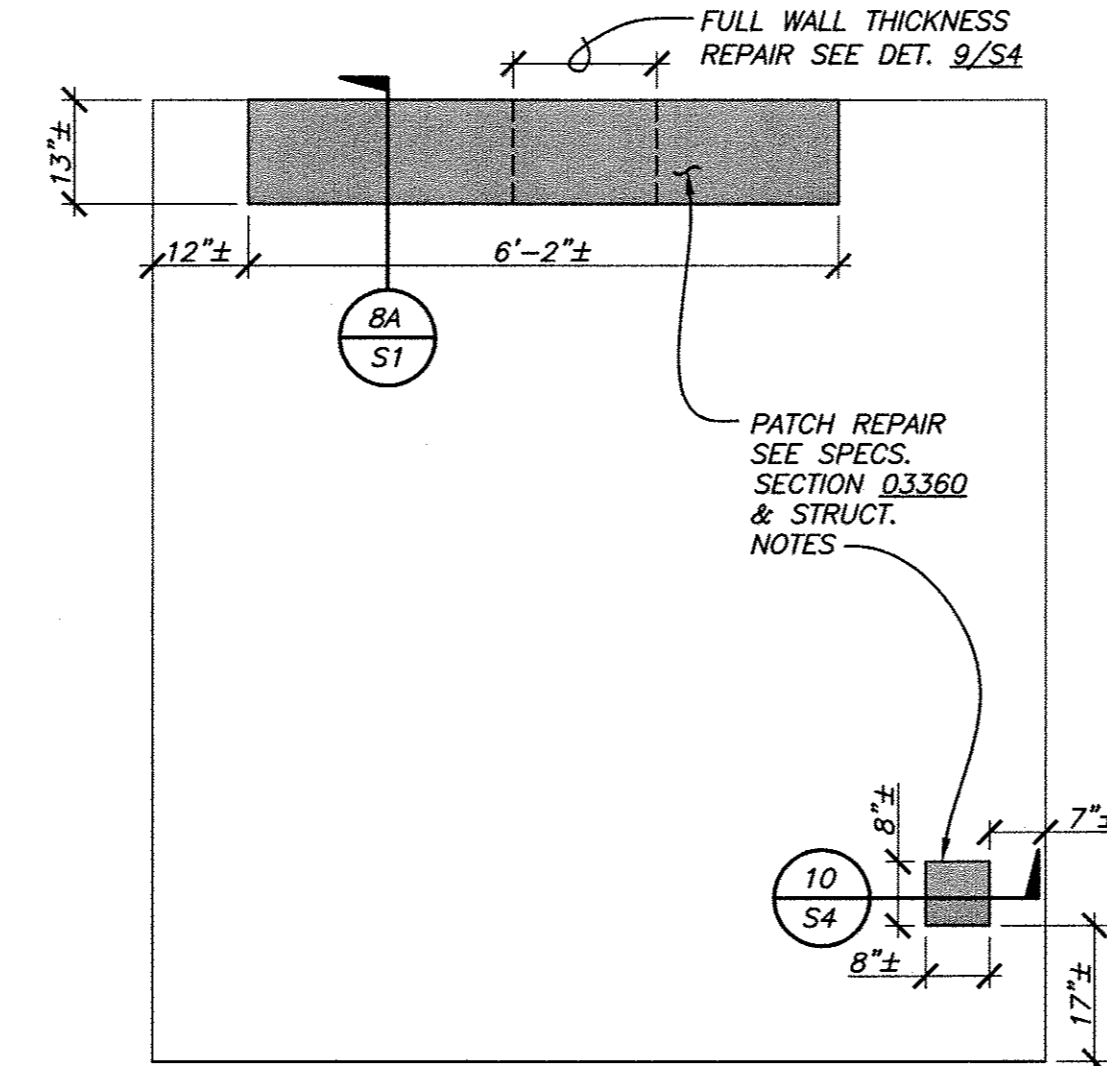
3 NORTH INTERIOR ELEVATION ~ LOOKING NORTH @ 1ST FLOOR 1/2"=1'-0"



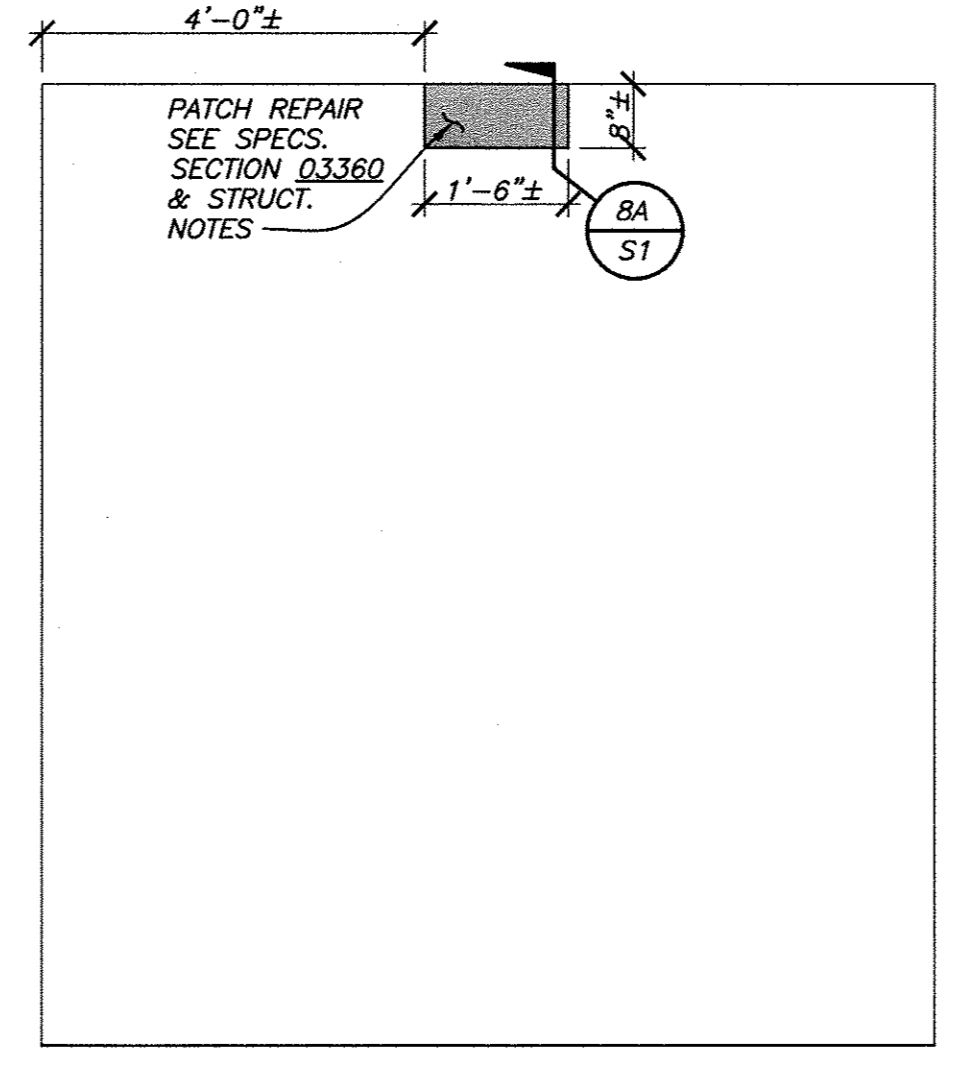
4 SOUTH INTERIOR ELEVATION @ FIRST FLOOR ~ LOOKING SOUTH 1/2"=1'-0"



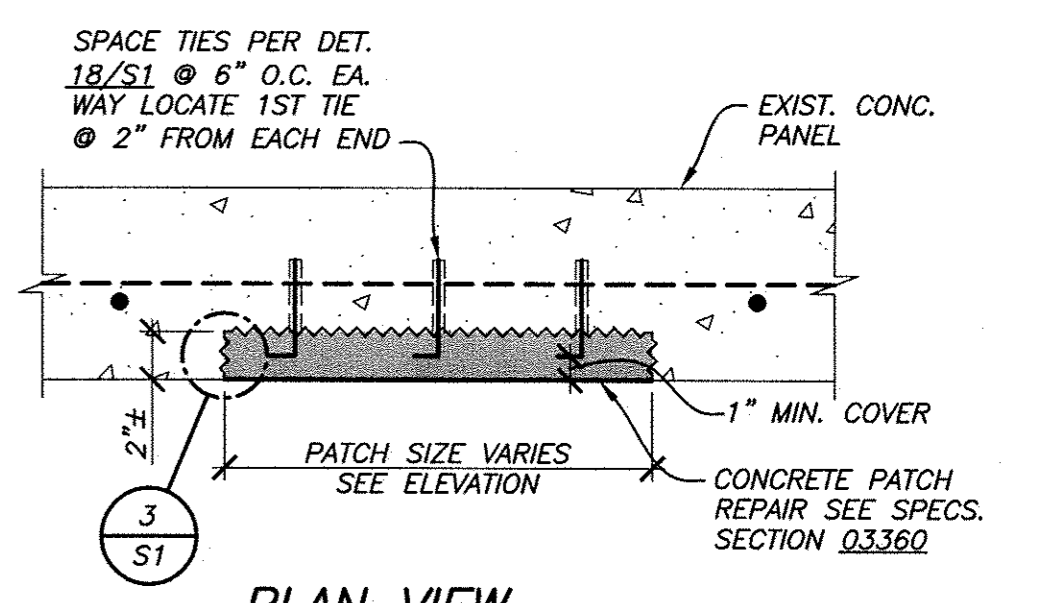
6 WEST INTERIOR ELEVATION @ FIRST FLOOR ~ LOOKING WEST 1/2"=1'-0"



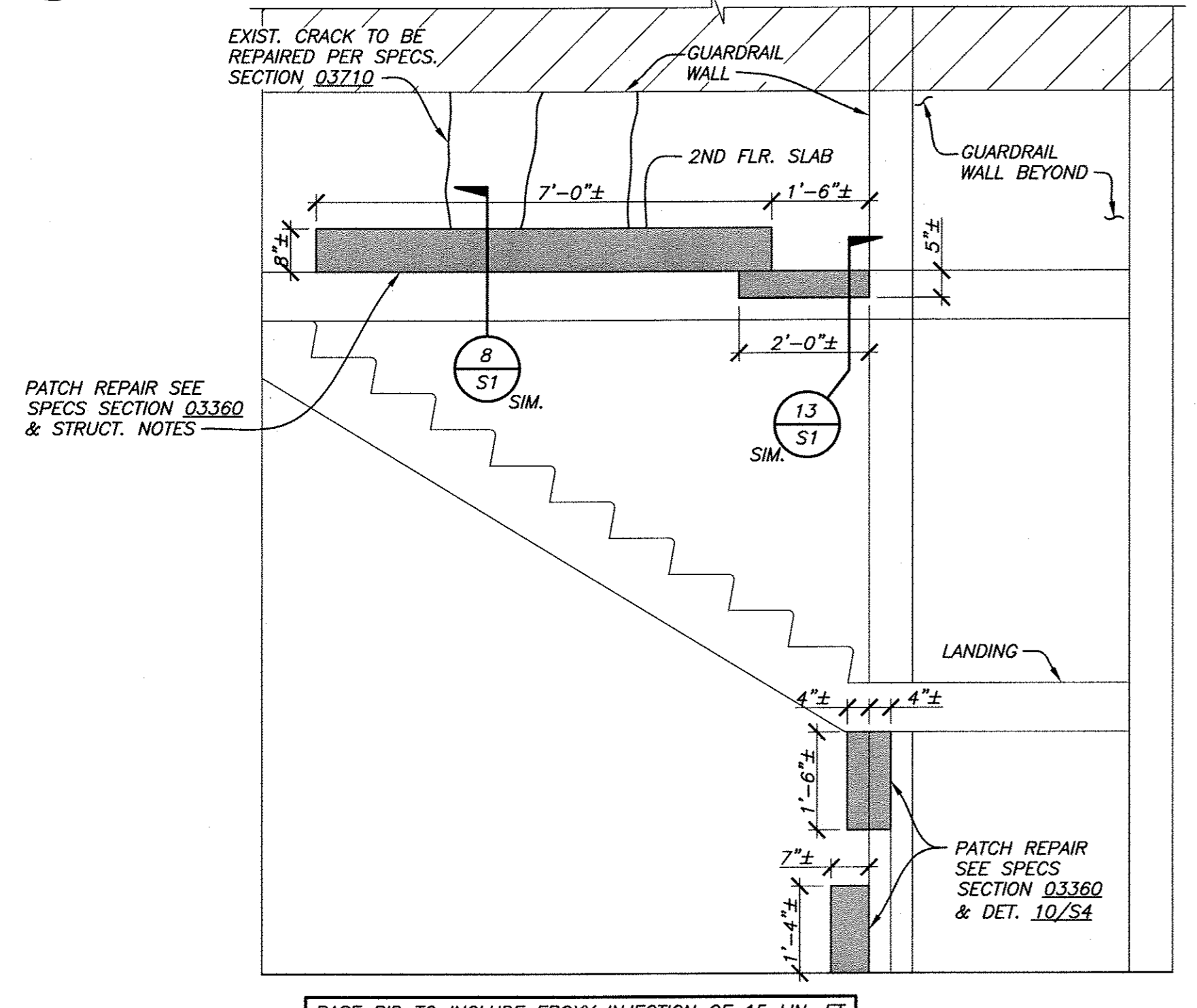
8 INTERIOR BRG. WALL ELEVATION ~ LOOKING WEST @ 1ST FLOOR 1/2"=1'-0"



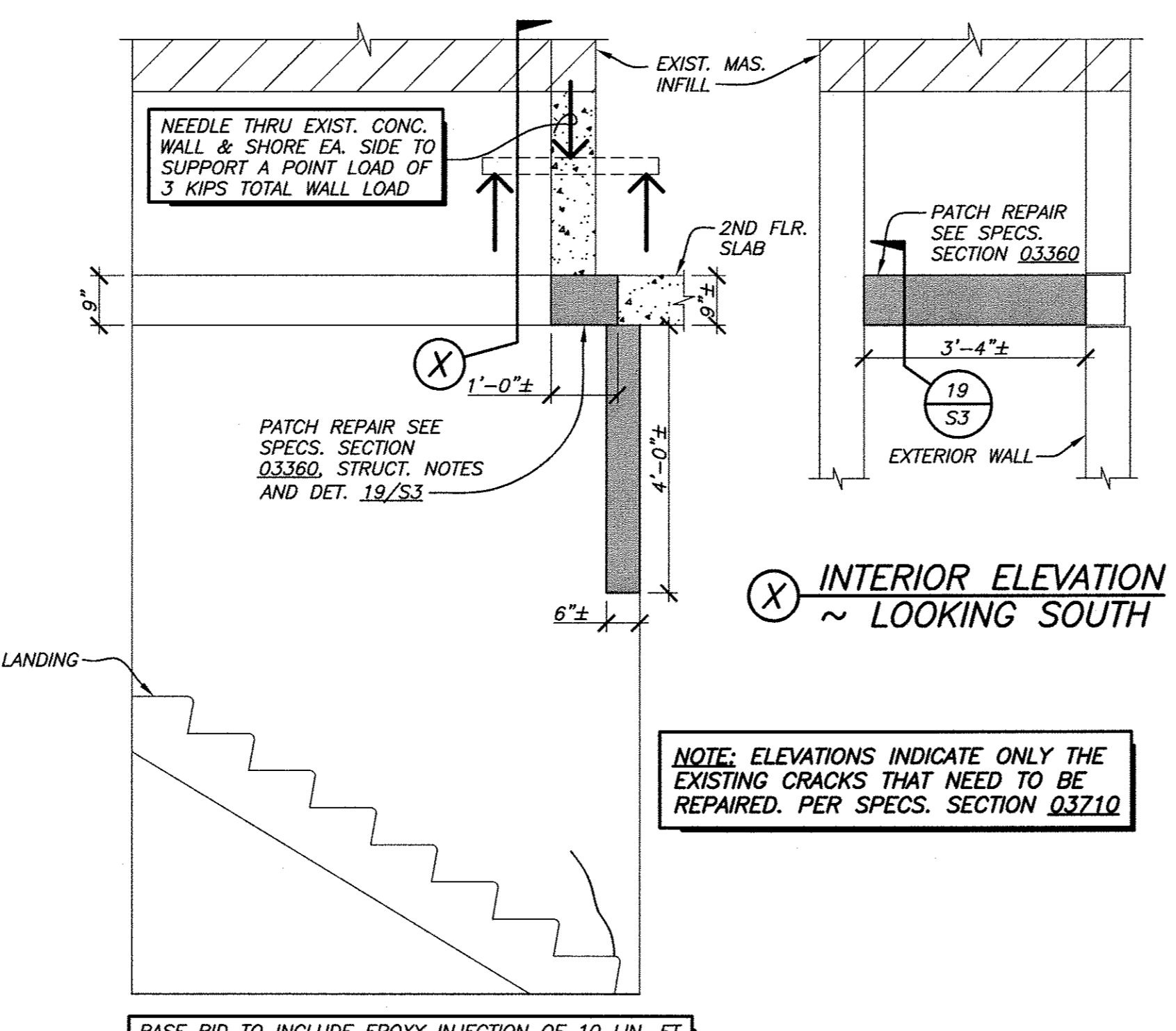
9 INTERIOR BRG. WALL ELEVATION ~ LOOKING EAST @ 1ST FLOOR 1/2"=1'-0"



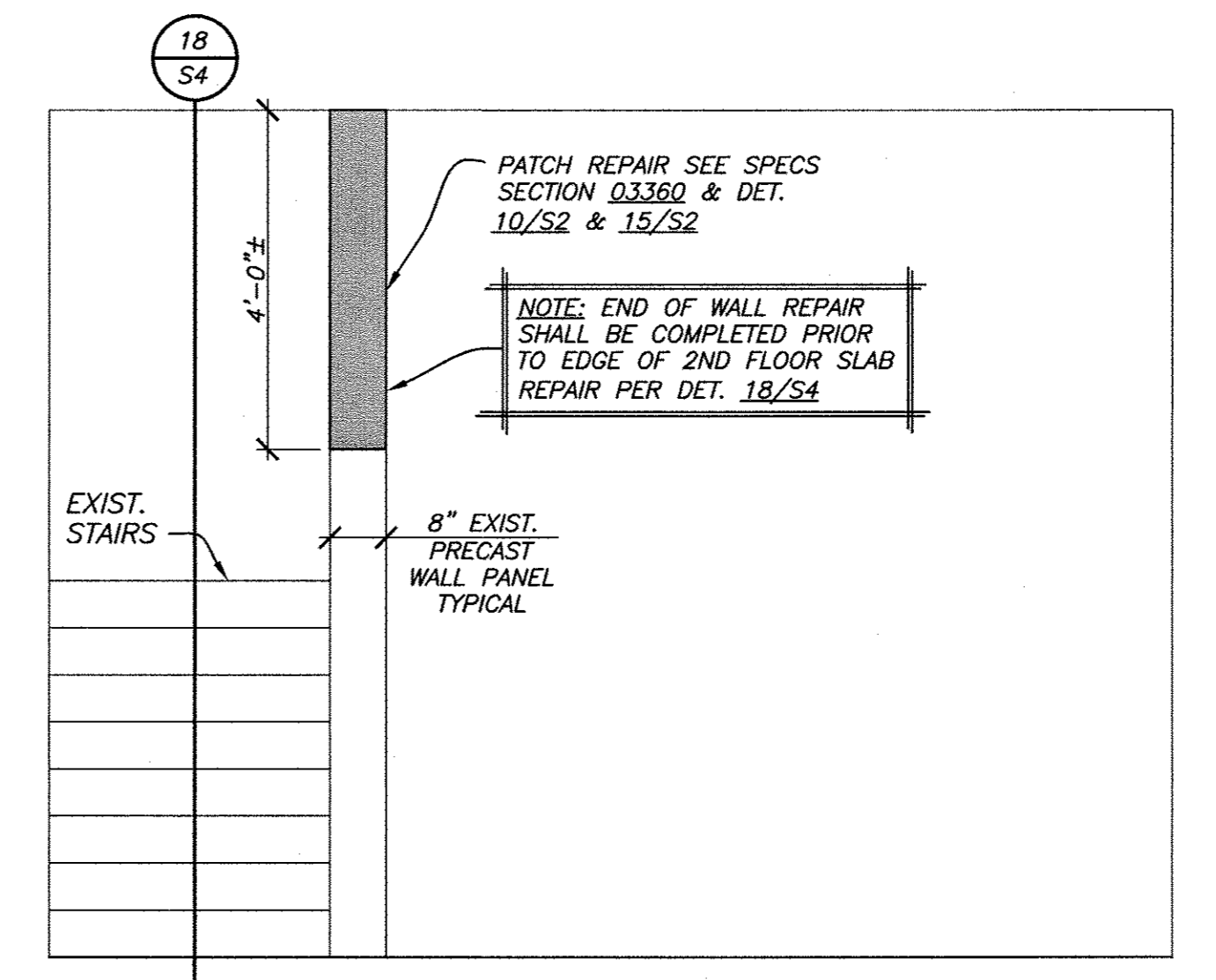
10 EXIST. CONC. PANEL REPAIR 1/2"=1'-0"



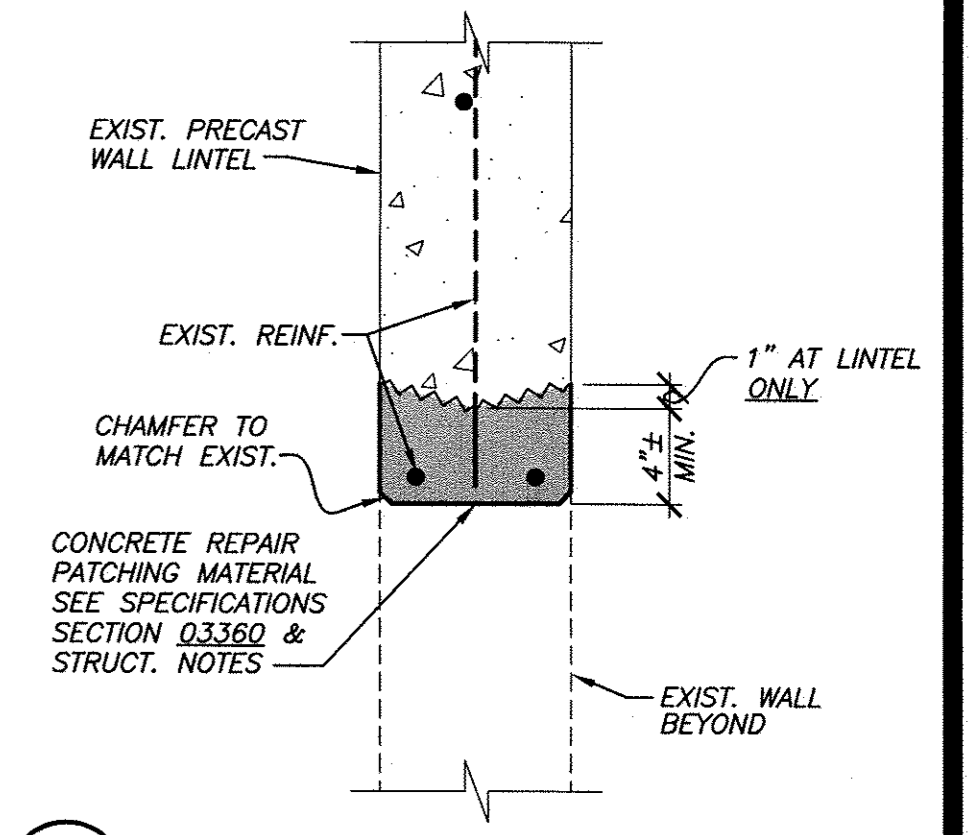
16 INTERIOR ELEVATION @ STAIRS ~ LOOKING SOUTH 1/2"=1'-0"



18 INTERIOR ELEVATION @ STAIRS ~ LOOKING EAST 1/2"=1'-0"

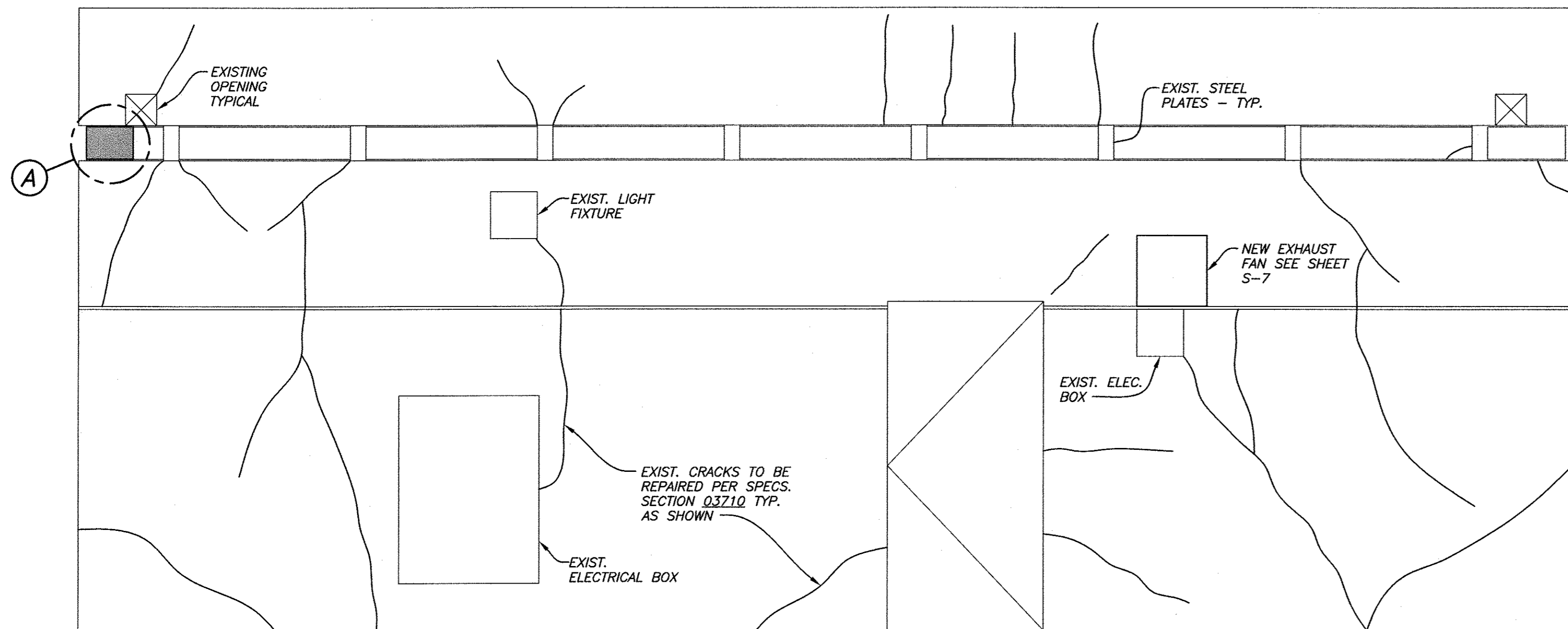


19 INTERIOR ELEVATION @ STAIRS ~ LOOKING NORTH 1/2"=1'-0"



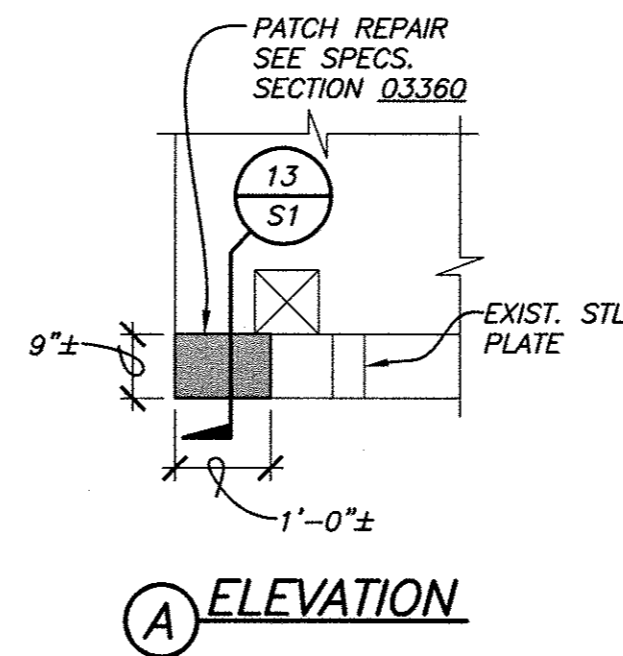
15 CONC. REPAIR AT EXISTING LINTEL @ OPENINGS 1/2"=1'-0"

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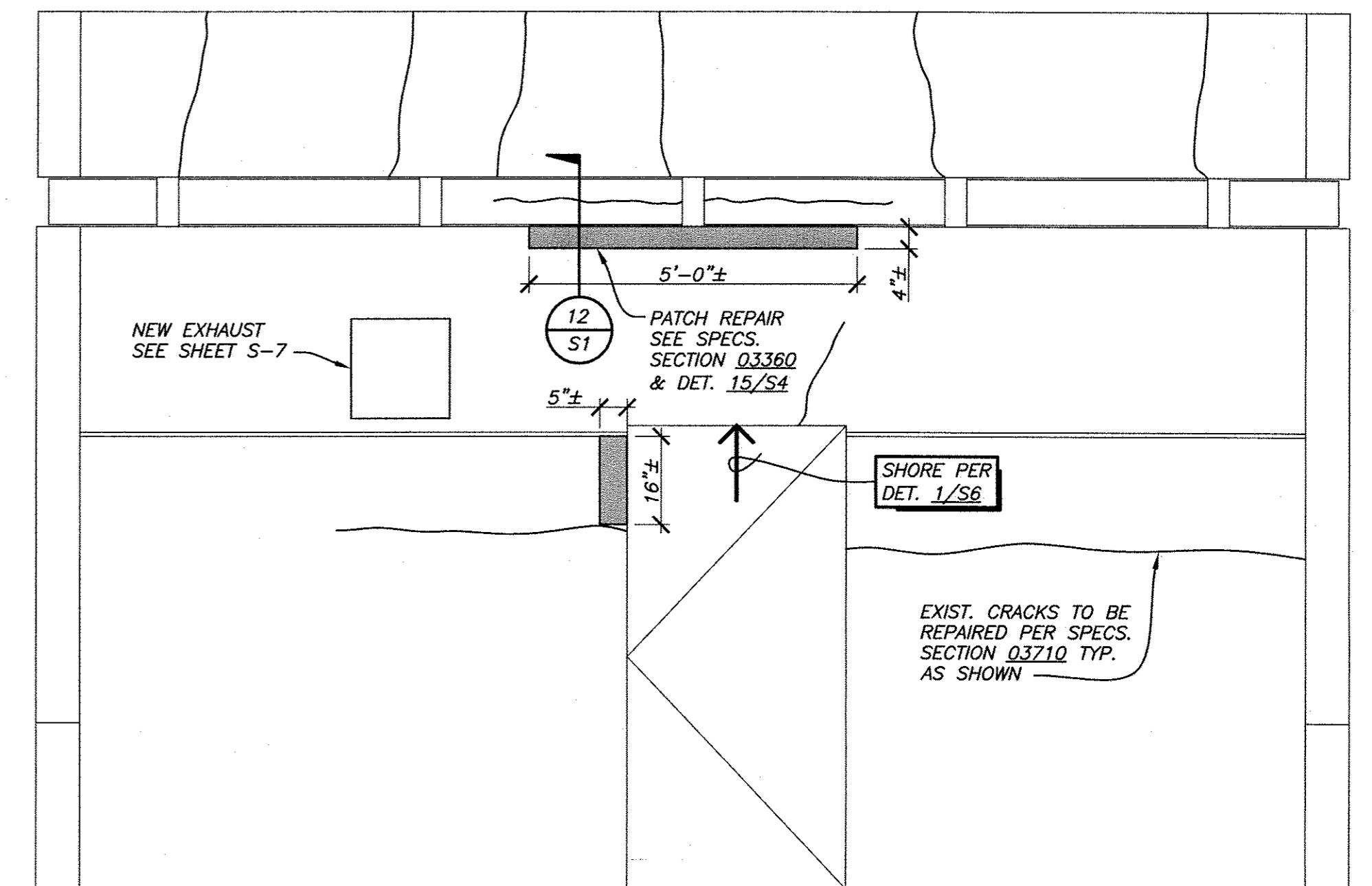


BASE BID TO INCLUDE EPOXY INJECTION OF 130 LIN. FT.

6 SOUTH EXTERIOR ELEVATION @ MAZE ROOM ~ LOOKING NORTH

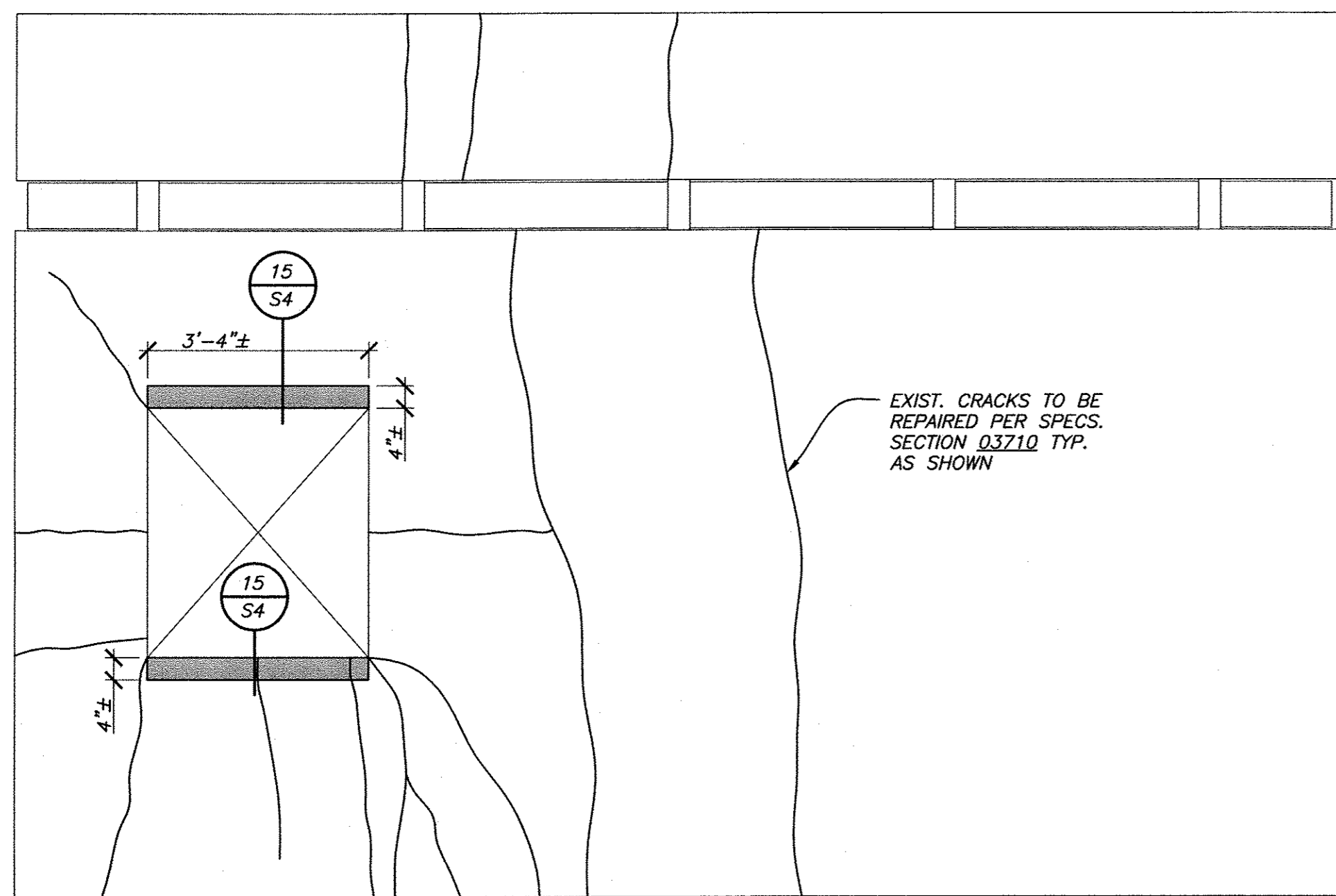


A ELEVATION



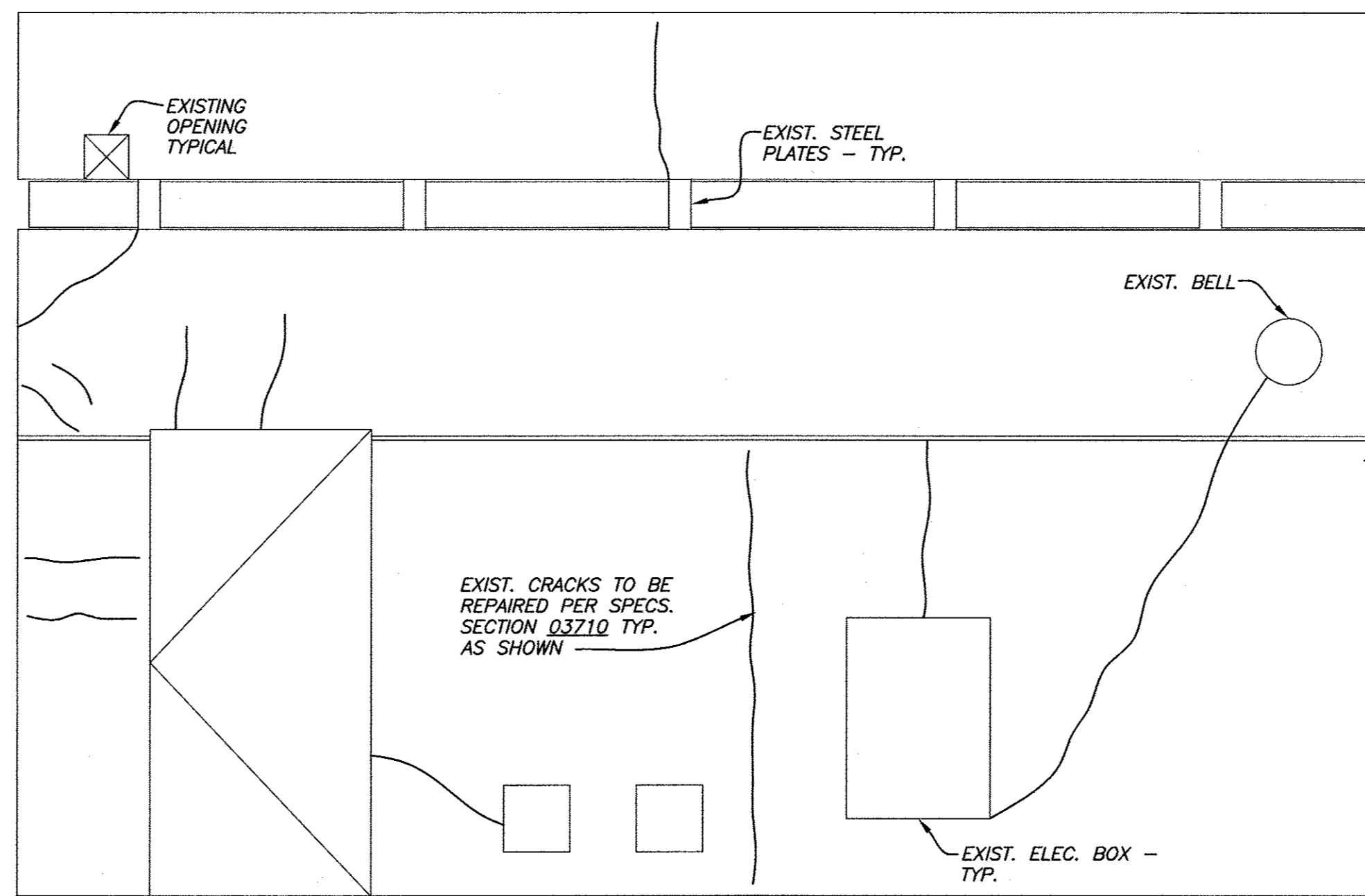
BASE BID TO INCLUDE EPOXY INJECTION OF 60 LIN. FT.

8 EAST EXTERIOR ELEVATION @ SECOND FLOOR ~ LOOKING WEST



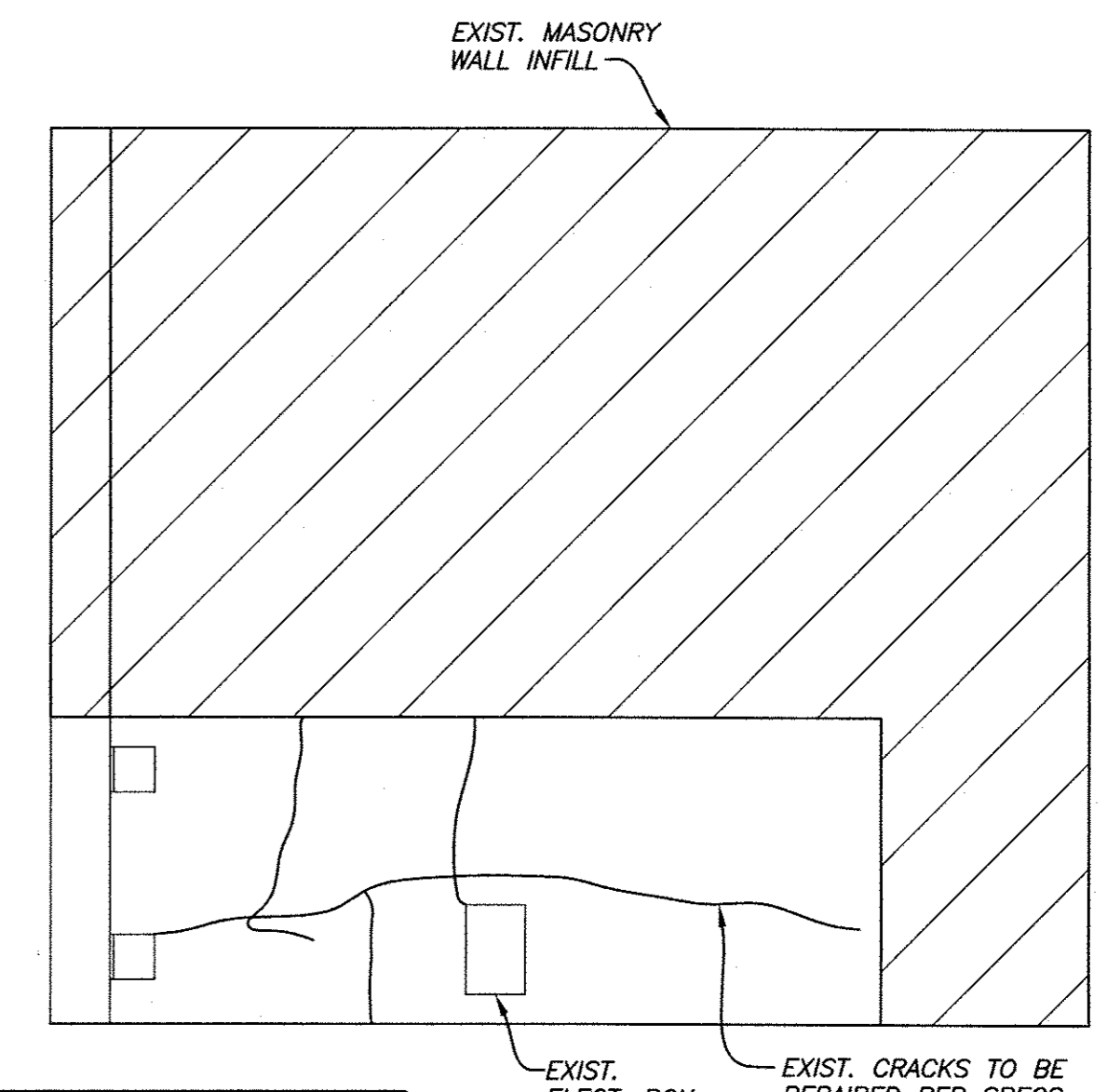
BASE BID TO INCLUDE EPOXY INJECTION OF 80 LIN. FT.

11 NORTH EXTERIOR ELEVATION @ SECOND FLOOR ~ LOOKING SOUTH



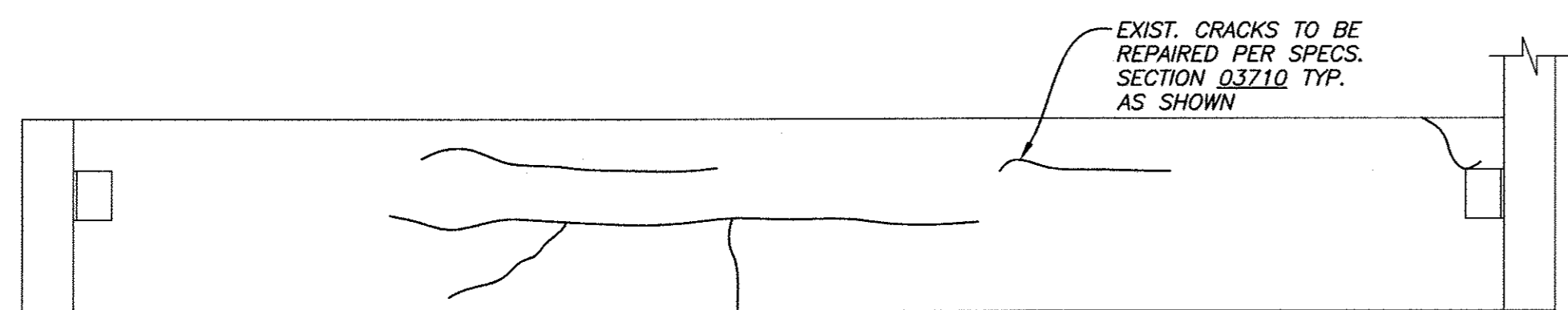
BASE BID TO INCLUDE EPOXY INJECTION OF 50 LIN. FT.

13 NORTH PARTIAL EXTERIOR ELEVATION @ MAZE ROOM ~ LOOKING SOUTH



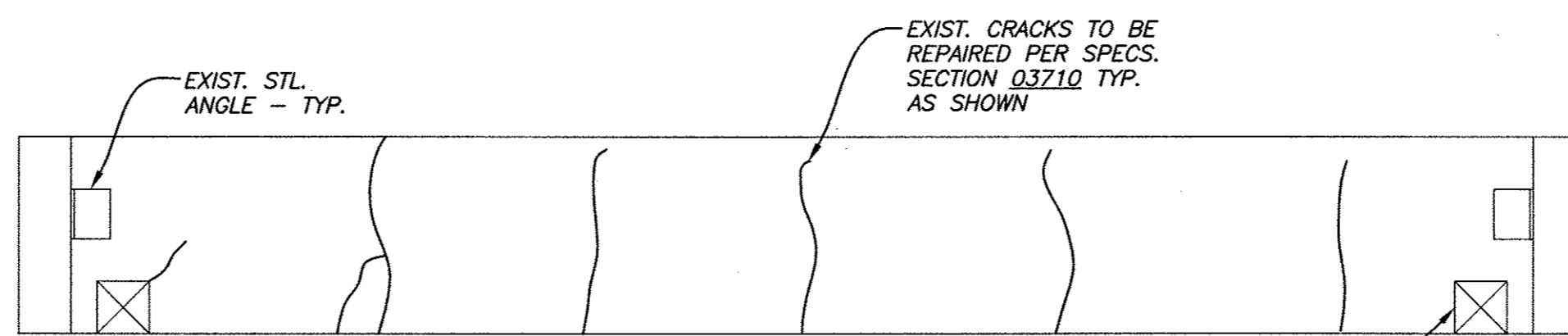
BASE BID TO INCLUDE EPOXY INJECTION OF 20 LIN. FT.

15 NORTH INTERIOR ELEVATION @ SECOND FLOOR ~ LOOKING NORTH



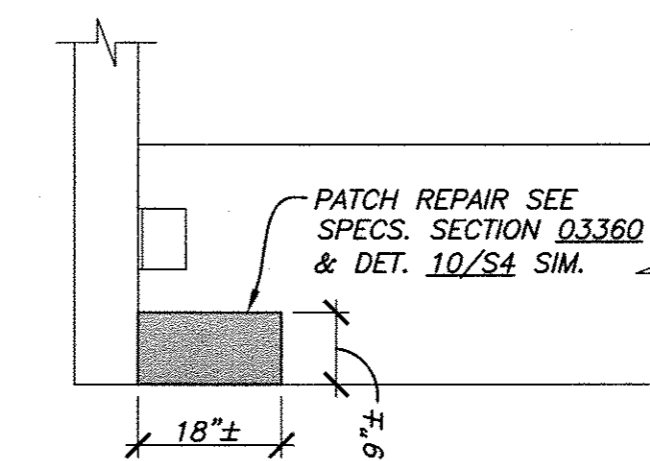
BASE BID TO INCLUDE EPOXY INJECTION OF 20 LIN. FT.

16 WEST ELEVATION @ SECOND FLOOR ~ LOOKING WEST

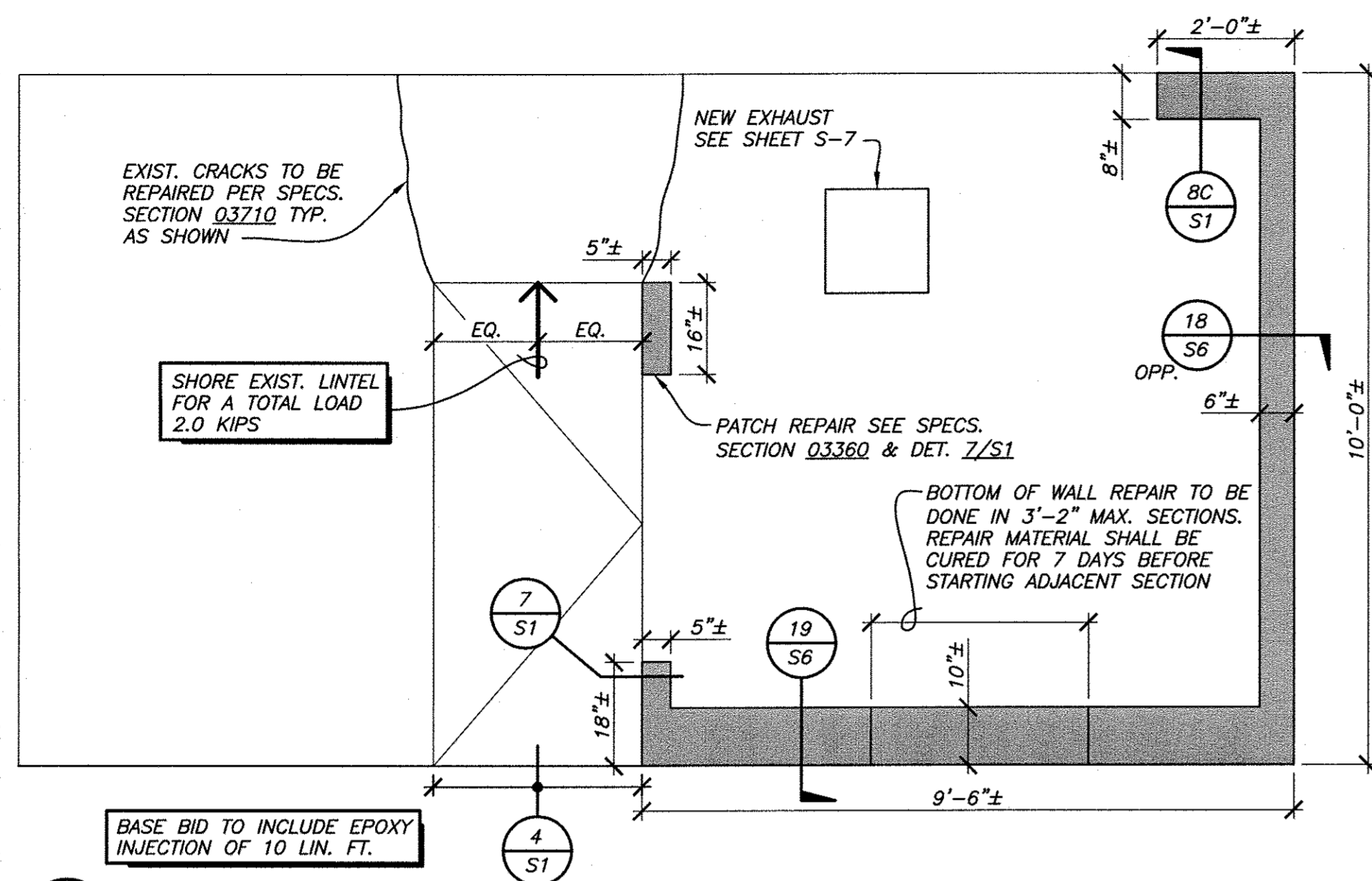


BASE BID TO INCLUDE EPOXY INJECTION OF 20 LIN. FT.

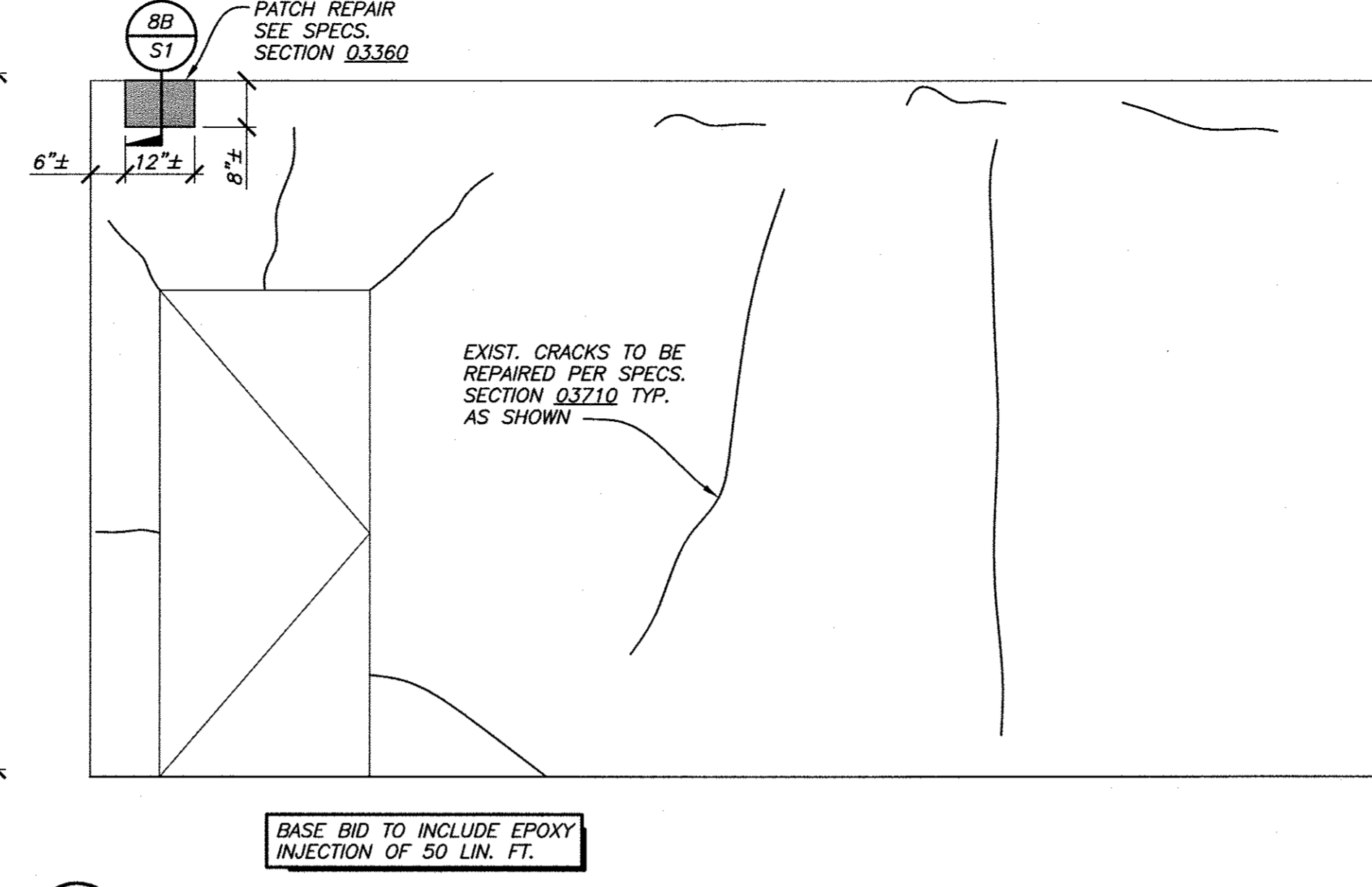
17 SOUTH ELEVATION @ SECOND FLOOR ~ LOOKING SOUTH



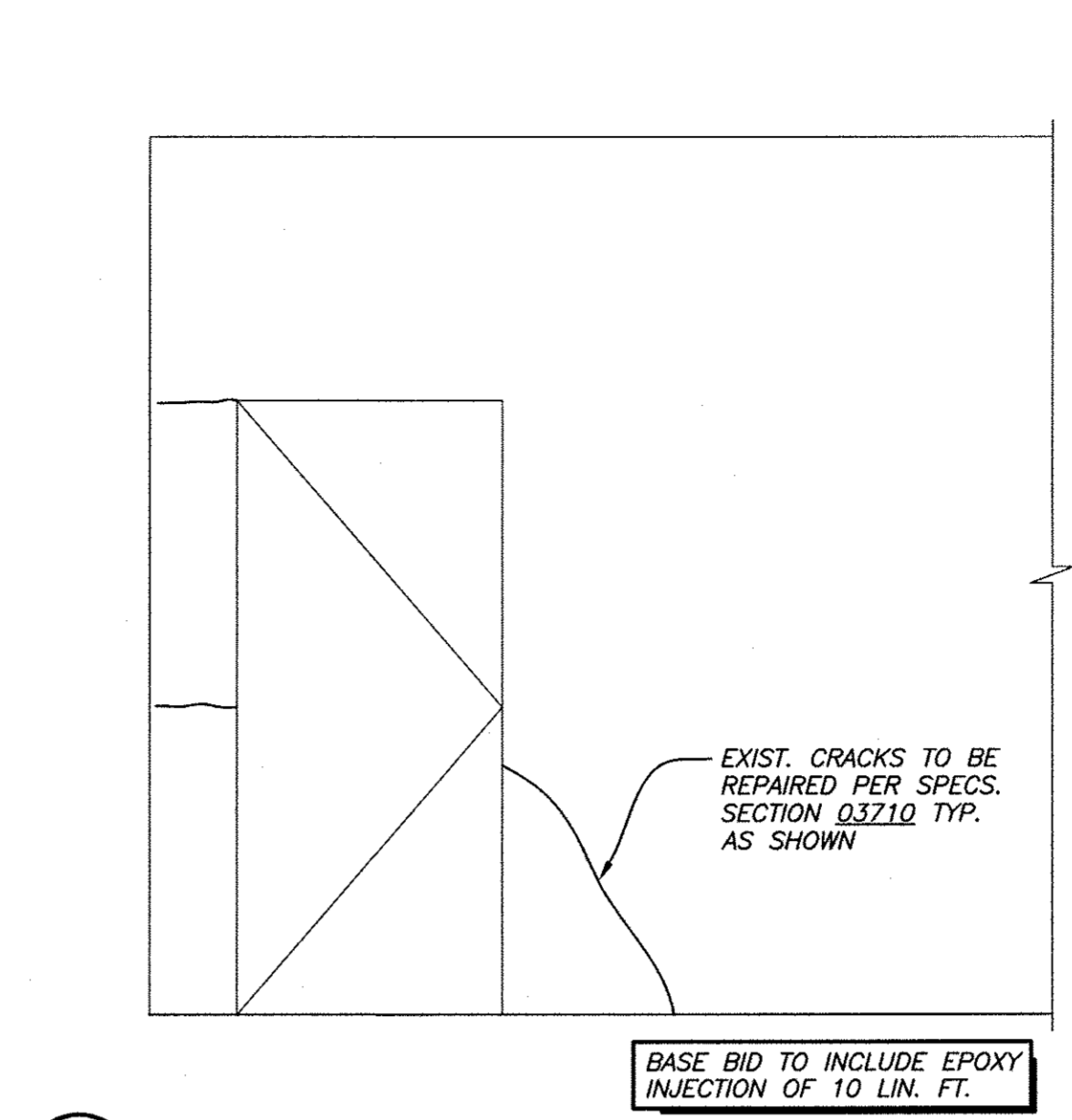
19 PARTIAL EAST ELEVATION @ SECOND FLOOR ~ LOOKING SOUTH



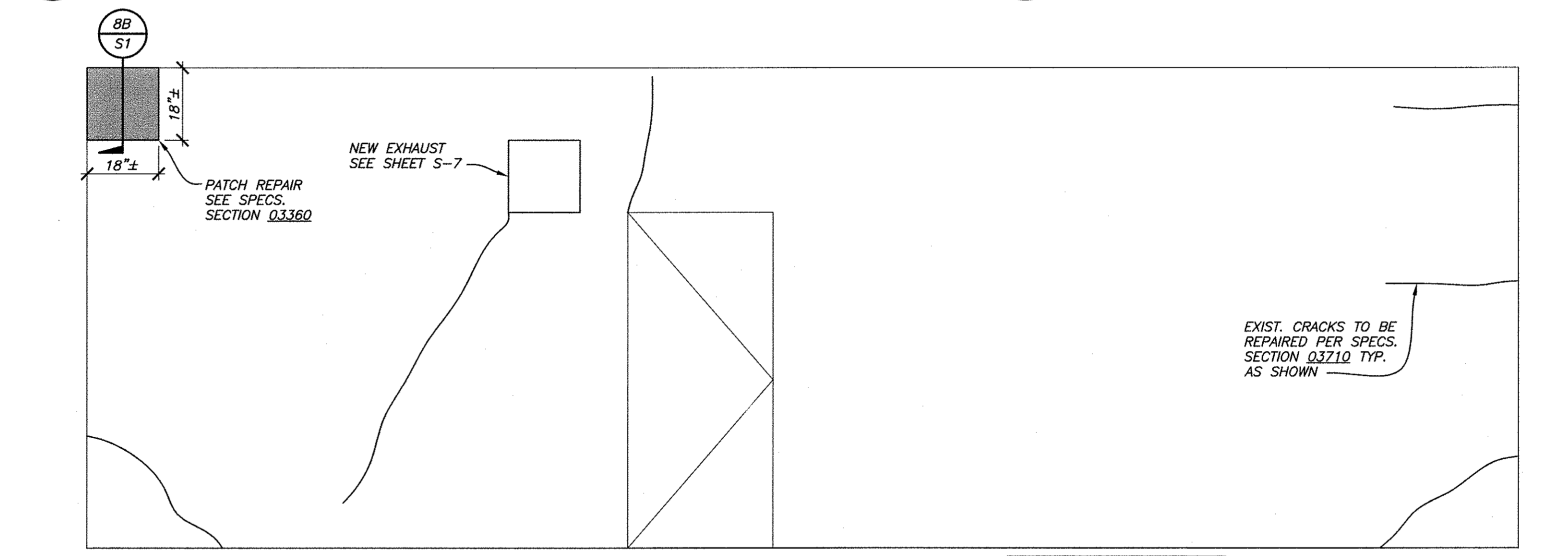
1 EAST INTERIOR ELEVATION @ SECOND FLOOR ~ LOOKING EAST  
1/2"=1'-0"



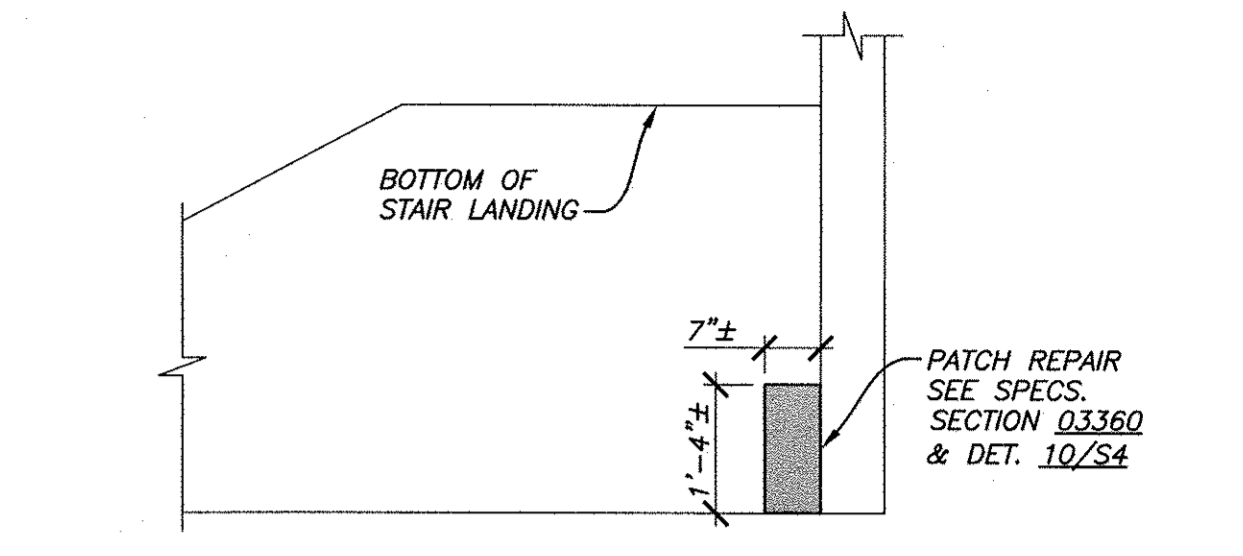
2 WEST INTERIOR ELEVATION @ MAZE ROOM ~ LOOKING WEST  
1/2"=1'-0"



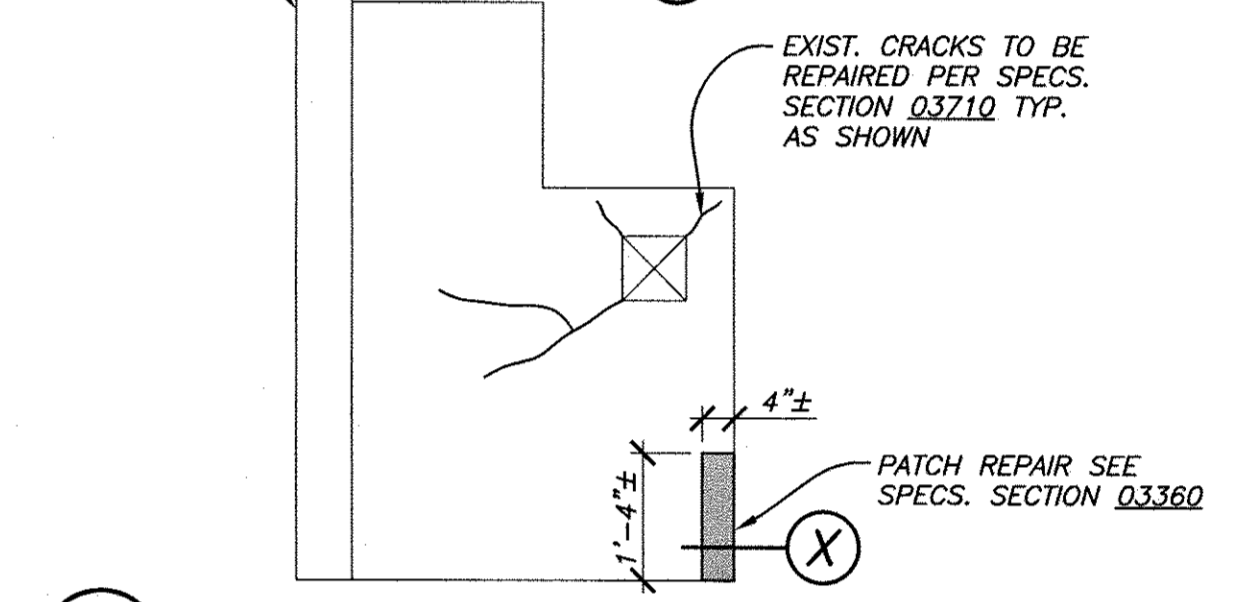
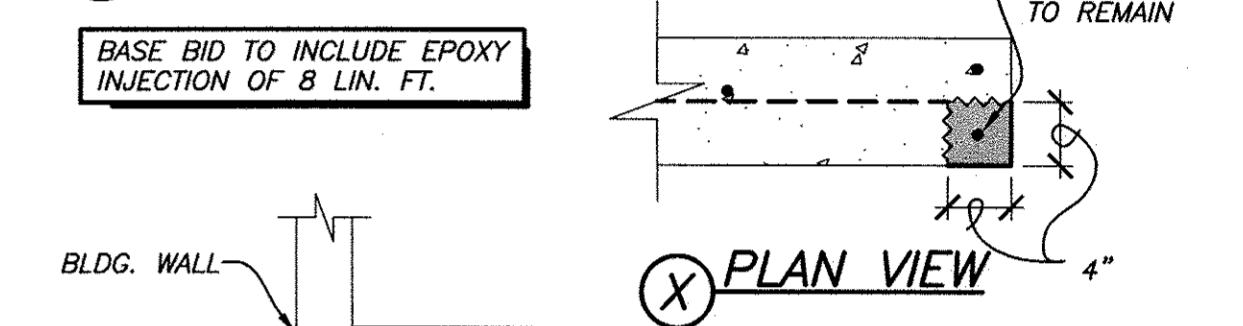
4 NORTH INTERIOR ELEVATION @ MAZE ROOM ~ LOOKING NORTH  
1/2"=1'-0"



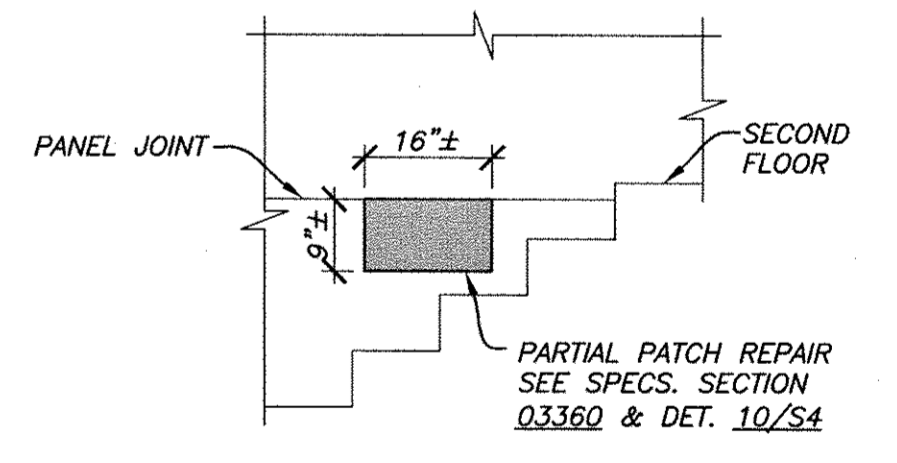
12 SOUTH INTERIOR ELEVATION @ MAZE ROOM ~ LOOKING SOUTH  
1/2"=1'-0"



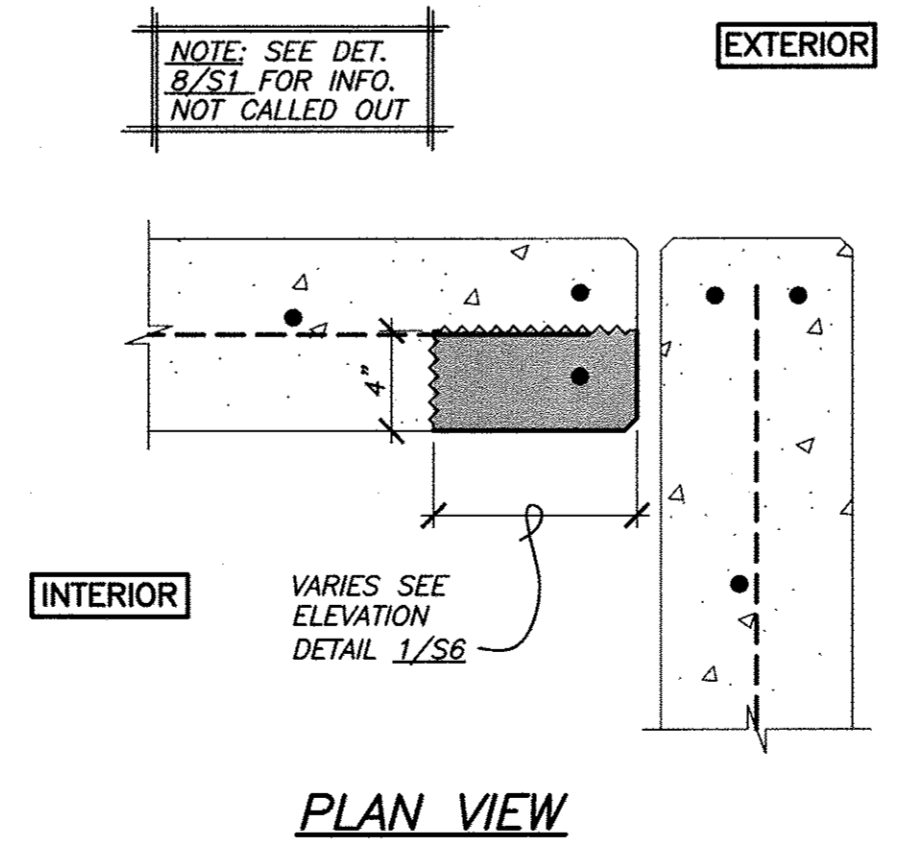
5 INTERIOR ELEVATION @ STAIRS ~ CORNER  
1/2"=1'-0"



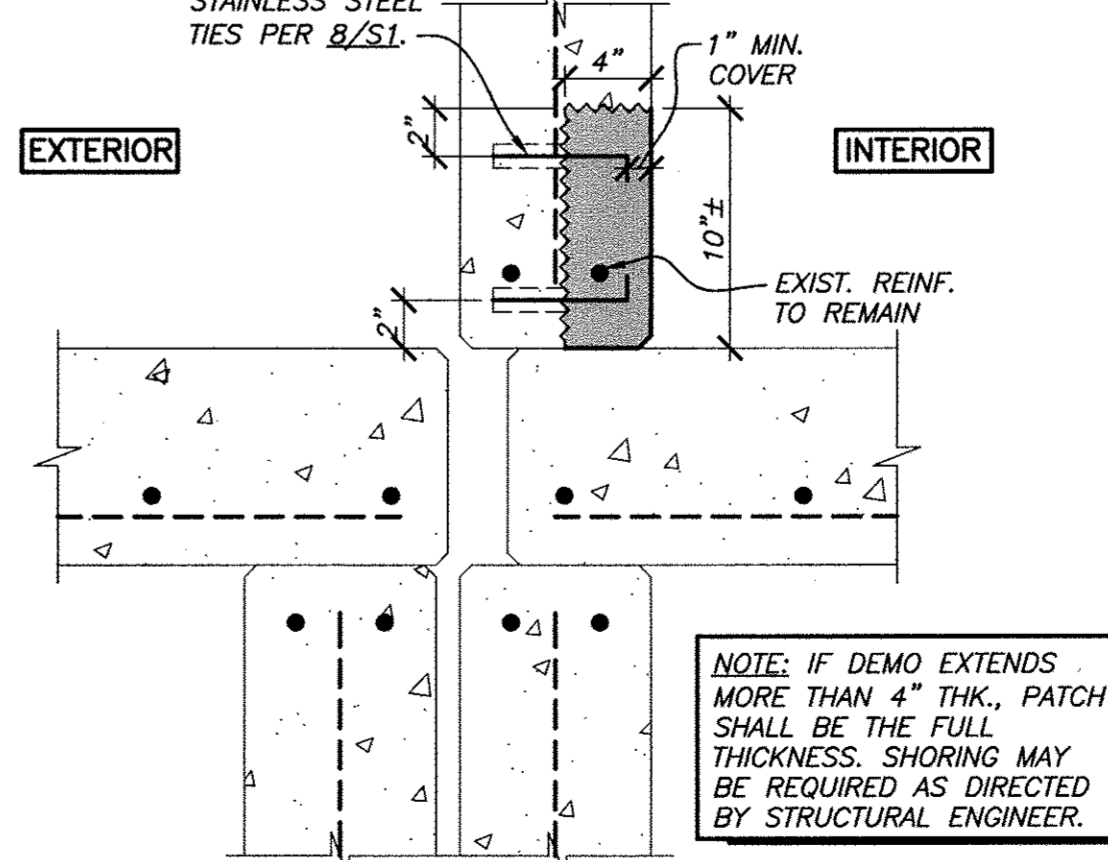
10 EXTERIOR PANEL @ GROUND FLOOR ~ LOOKING SOUTH  
1/2"=1'-0"



15 INTERIOR ELEVATION ~ LOOKING NORTH  
1/2"=1'-0"

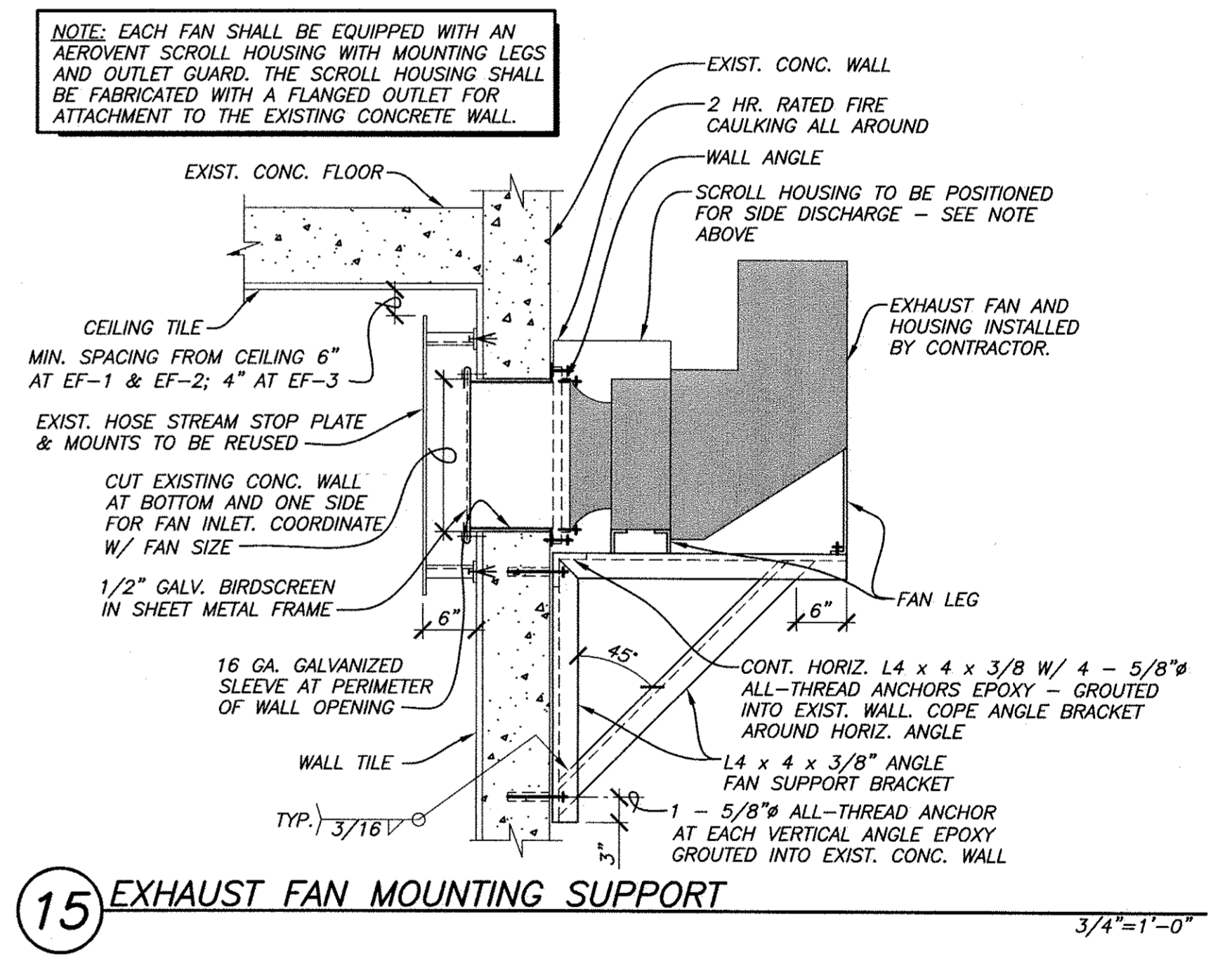
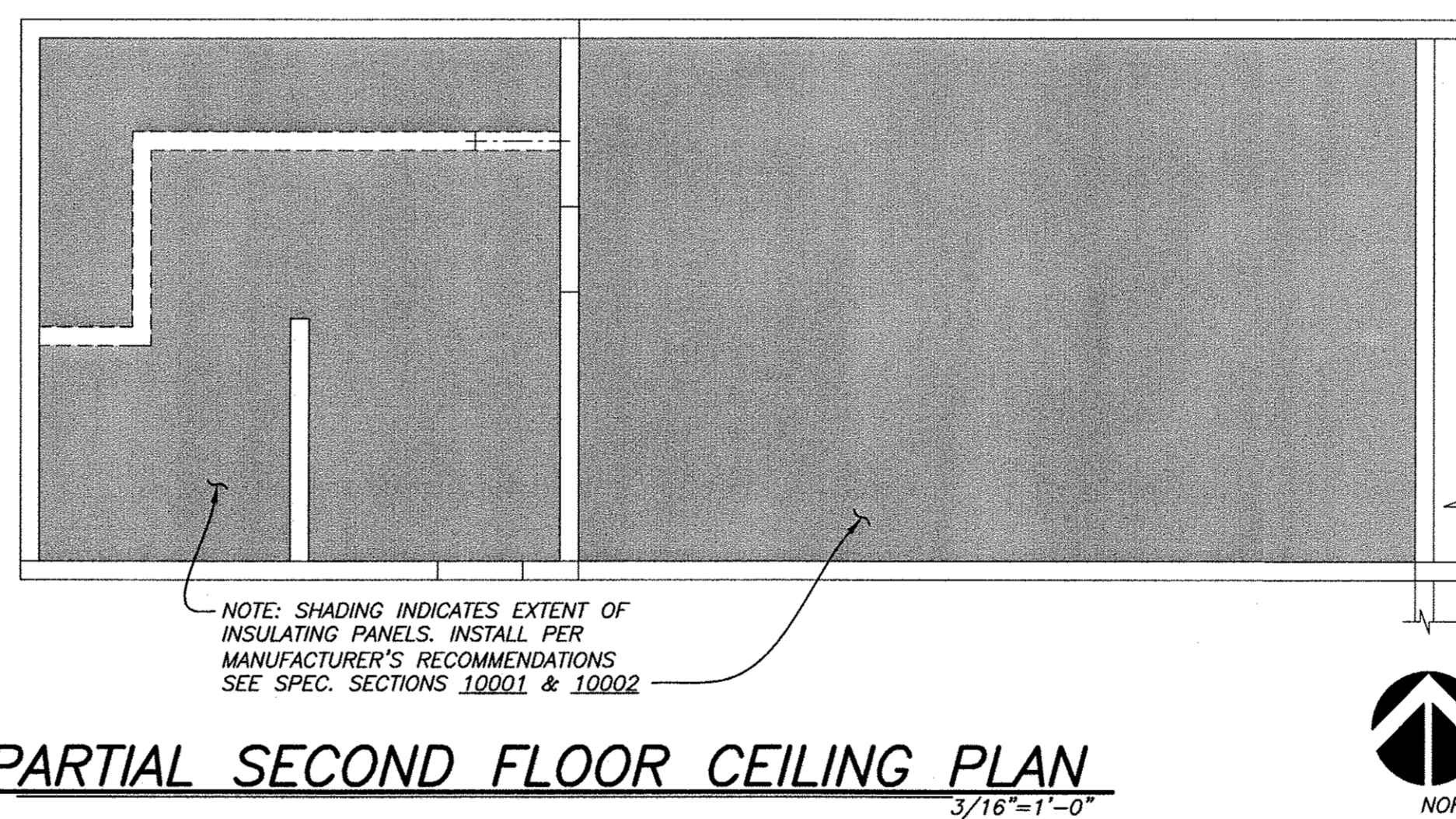
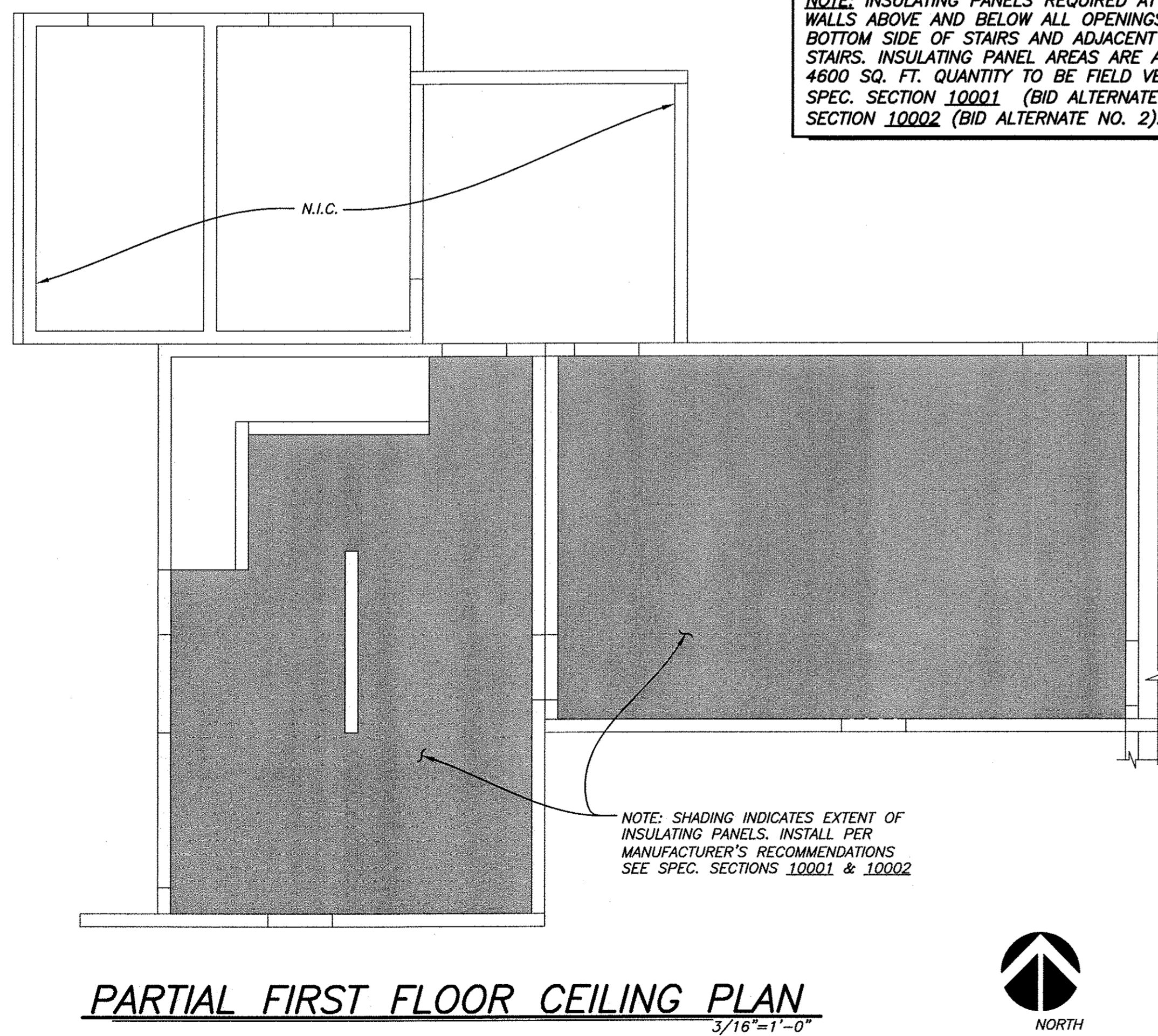
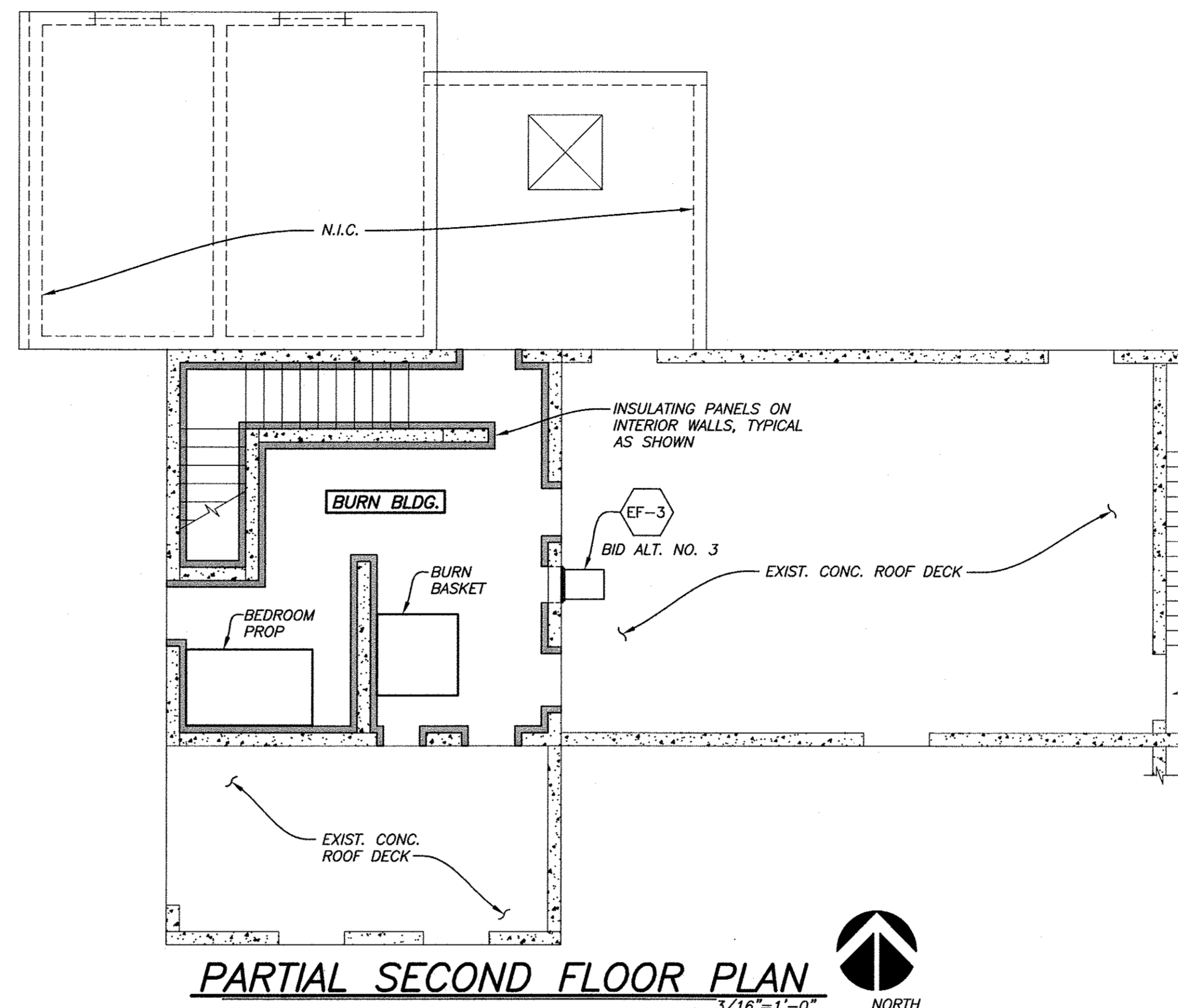
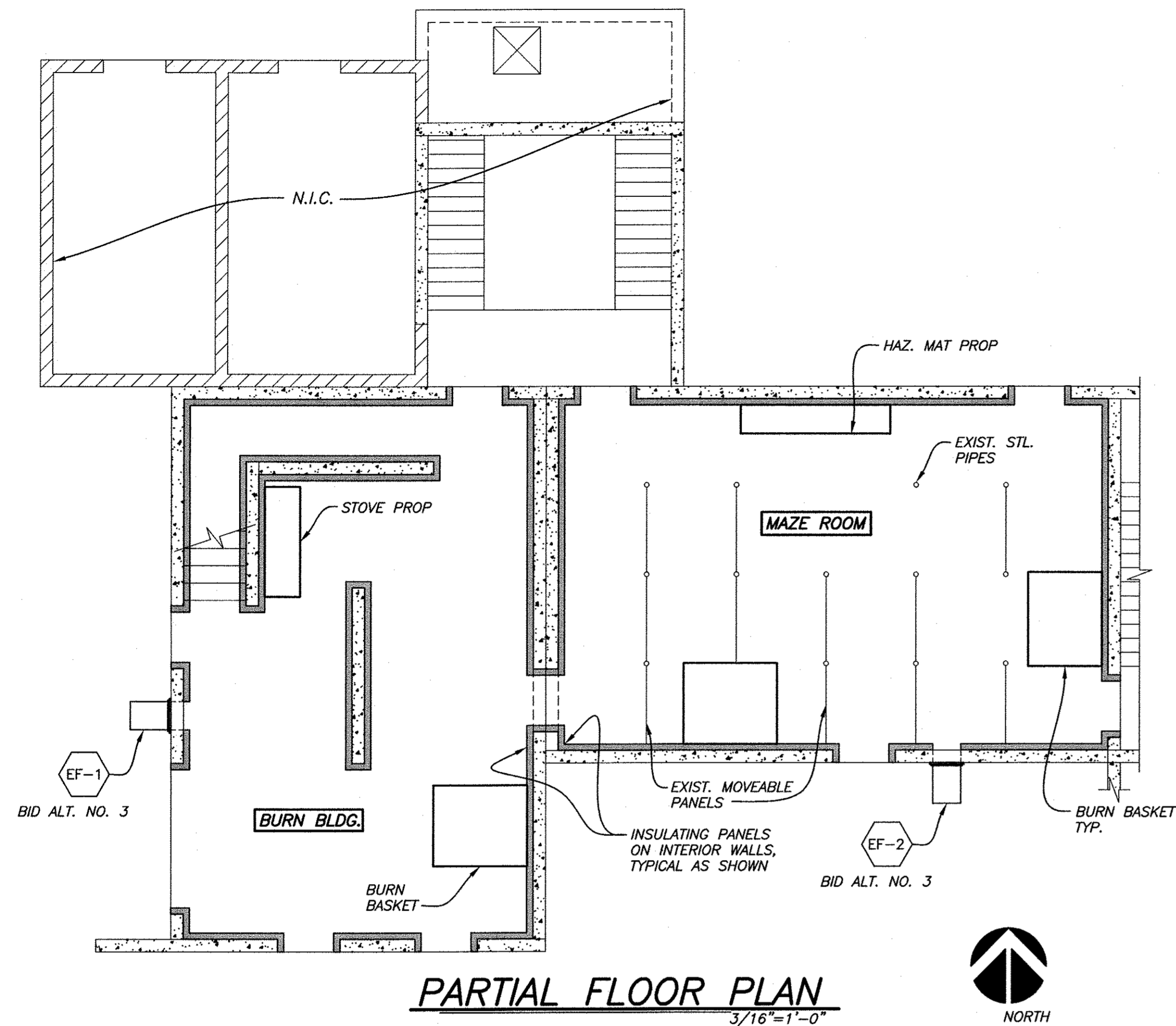


18 REPAIR AT 2ND FLOOR CORNER  
1/2"=1'-0"



19 EXIST. BOTTOM OF WALL REPAIR  
1/2"=1'-0"

S:\Projects\12033\120714\12071456.dwg - Plotted: 5/01/12 - 11:24am by Terry



NOTE: INSULATING PANELS REQUIRED AT ALL INTERIOR WALLS ABOVE AND BELOW ALL OPENINGS, CEILINGS, BOTTOM SIDE OF STAIRS AND ADJACENT WALLS BELOW STAIRS. INSULATING PANEL AREAS ARE APPROXIMATELY 4600 SQ. FT. QUANTITY TO BE FIELD VERIFIED. SEE SPEC. SECTION 10001 (BID ALTERNATE NO. 1) & SECTION 10002 (BID ALTERNATE NO. 2).

NOTE: SHADING INDICATES EXTENT OF INSULATING PANELS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS SEE SPEC. SECTIONS 10001 & 10002

NOTE: SHADING INDICATES EXTENT OF INSULATING PANELS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS SEE SPEC. SECTIONS 10001 & 10002

EXHAUST FAN SCHEDULE														
MARK	MANUFACTURER	MODEL	FAN TYPE	WHEEL TYPE	CFM	ESP (IWG)	DRIVE	FAN RPM	MAX TIP SPEED (FPM)	HP	VOLT/Φ	B.D.D.	WEIGHT (LBS.)	REMARKS
EF-1	AEROVENT	CPF-B1 25	GUARD	BACKWARD	5400	0.5	BELT	886	5558	2	230/460V	NO	550	
			BELT	INCLINED										
EF-2	AEROVENT	CPF-B1 25	GUARD	BACKWARD	5800	0.5	BELT	886	5752	2	230/460V	NO	550	
			BELT	INCLINED										
EF-3	AEROVENT	CPF-B1 16	GUARD	BACKWARD	2700	0.5	BELT	1549	6387	1	230/460V	NO	300	
			BELT	INCLINED										