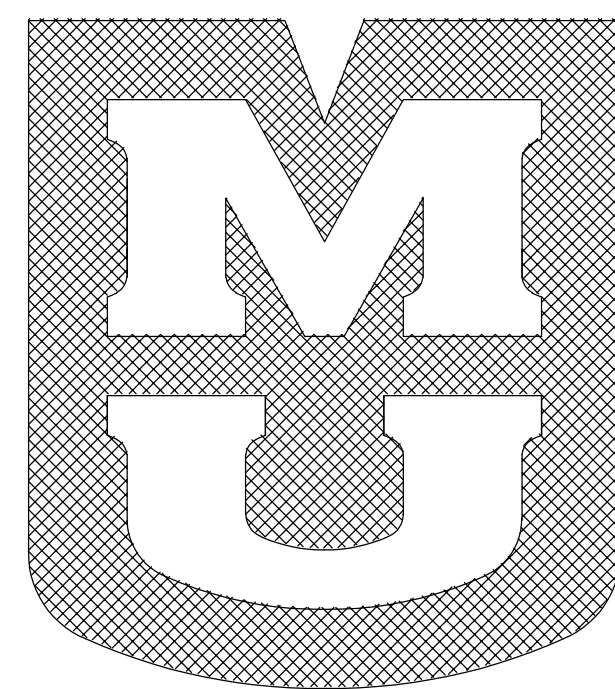


# VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

MU Project No. CP241161  
University of Missouri  
Columbia, Missouri




Prepared for the Curators of  
The University of Missouri

ENGINEER OF RECORD  
Richard R. McGuire  
MO PE-17563  
01/31/24



I hereby certify that these Drawings and/or Specifications have been prepared by me, or under my supervision. I further certify that to the best of my knowledge these Drawings and/or Specifications are as required by and in compliance with Building Codes of the University of Missouri.

Signature:   
Richard R. McGuire - MO License No: PE-17563

## DRAWING INDEX:

- Cover Sheet
- S001 - General Notes, Repairs Schedule
- S100 - University Ave Ground Level Repairs Plan
- S101 - University Ave Second Level Repairs Plan
- S102 - University Ave Third Level Repairs Plan
- S103 - University Ave Roof Level Repairs Plan
- S104 - Conley Ave Ground Level Repair Plan
- S105 - Conley Ave Second Level Repair Plan
- S106 - Conley Ave Third Level Repairs Plan
- S107 - Conley Ave Roof Level Repairs Plan
- S200 - University Ave Phase 1 Traffic Plans
- S201 - University Ave Phase 2 Traffic Plans
- S202 - Conley Ave Phase 1 Traffic Plans
- S203 - Conley Ave Phase 2 Traffic Plans
- S300 - Barrier Cables Repair Details
- S301 - University Ave. Repair Photos
- S302 - Conley Ave. Repair Photos

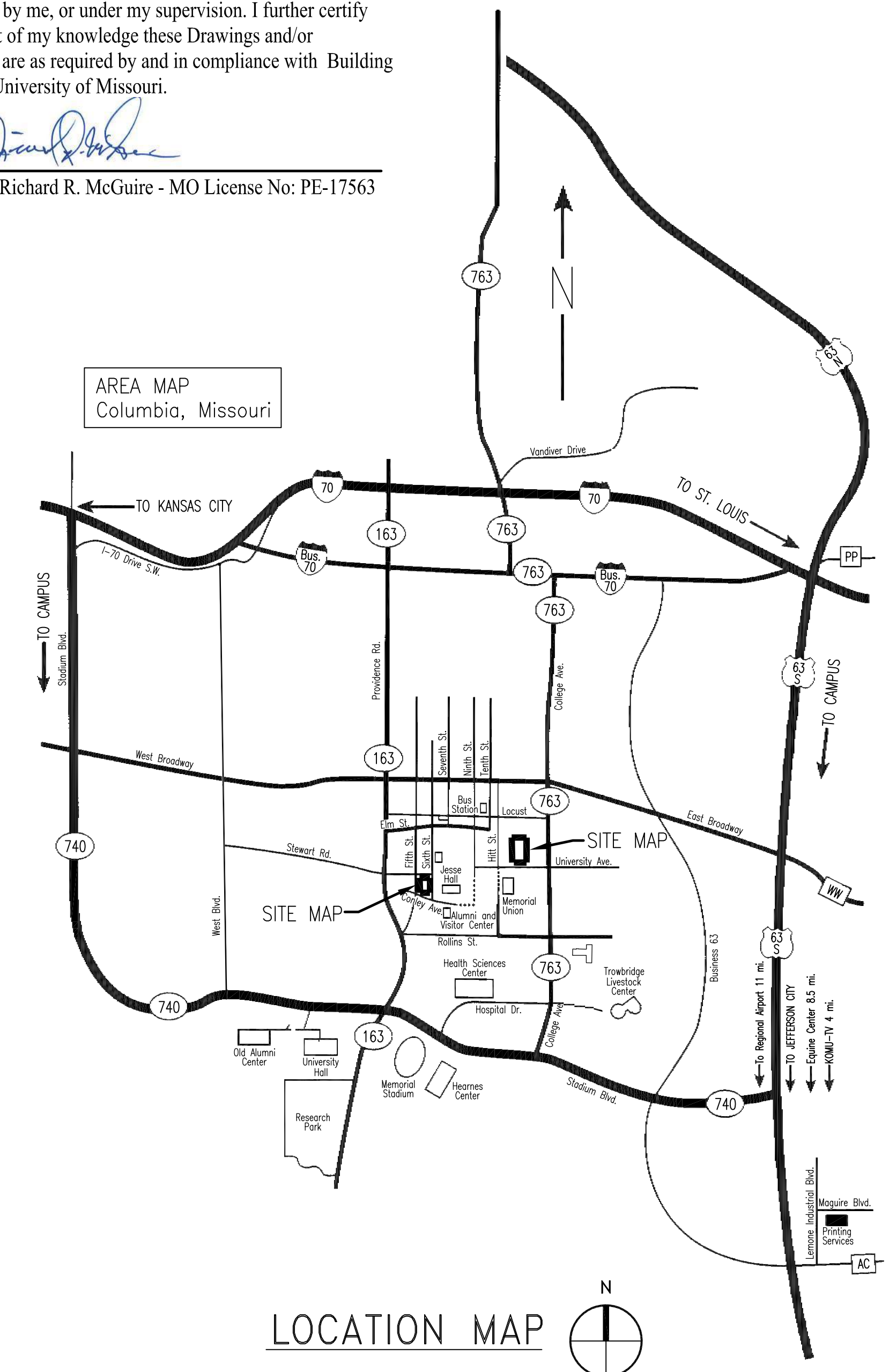
BID SET: JAN 31, 2024

PREPARED BY:

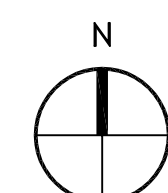
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LOCATION MAP



GENERAL CONSTRUCTION NOTES AND SPECIFICATIONS

A. GENERAL

- These notes shall be read in conjunction with the Specifications and the drawings. In the event of a conflict, notify the Engineer for clarification.
- Before executing anything herein shown, examine actual job conditions. Report any discrepancy, dimensional or otherwise, between architectural and structural drawings and existing conditions and any other error, omission, or difficulty affecting the work to the Structural Engineer for review. Record Drawings are available to the Contractor through written request to the Owner.
- The Owner or his Representative reserves the right to inspect any material, fabrication, or workmanship at any time in field or shop for conformance to the Specifications and Drawings.
- All details and sections are intended to be typical and shall be construed to apply to any similar situation elsewhere, except where a different detail is shown.
- Barrier cable replacement sequencing shall start at the top of the garage, working down along one side of the garage. Following the completion of one half of the garage, the Contractor shall move to the top of the other side and work down. See Phasing Plans.
- A 6' high chain link fence shall be used at the perimeter of the work zone to block off vehicular and pedestrian traffic. As contractor completes work the finished level should open back up to vehicular and pedestrian traffic and parking. RE: Project Manual Special Conditions.
- Contractor is responsible for traffic and parking signage during repairs and restoring parking spaces once work on that level is complete.

B. DESIGN

- Codes, specifications, and standards (latest editions, U.N.O.)
  - All design and construction shall conform to the International Building Code (2021) as amended and adopted by the University of Missouri.
  - All construction shall comply with the provisions of the following codes, specifications, and standards, except where noted to the contrary on drawings and specifications or where more stringent requirements are specified or shown:
 

ACI 117	"Standard Specifications for Tolerance for Concrete Construction and Materials"
ACI 301	"Specifications for Structural Concrete for Buildings"
ACI 318	"Building Code Requirements for Reinforced Concrete"
ACI 530	"Building Code Requirements for Masonry Structures"

C. SELECTIVE DEMOLITION

- Coordinate all selective demolition work with the Owner, and repair/patch all concrete slab anchor holes at the walls and columns.

D. CONCRETE

- Concrete used in the Work shall have the following minimum 28-day ultimate compressive strengths:
  - Framed slabs/decks and columns 5,000 psi
- Portland Cement: ASTM C 150, Type 1.
- Air entrain all exterior concrete (admixture: ASTM C 260).
- Reinforcing bars: ASTM A 615 Specifications, Grade 60, deformed. Bend bar cold.
- Welded wire fabric (WWF): ASTM A 185.
- Maintain minimum concrete coverage for reinforcing as indicated, unless noted otherwise.
  - 3 in. clear where concrete is deposited directly against earth.
  - 2 in. clear where concrete is exposed to the earth or weather but poured against forms for bars larger than #5.
  - 1-1/2 in. clear where concrete is exposed to earth or weather, but poured against forms for bars #5 or smaller.
  - 3/4 in. clear for slabs and wall formed above grade not exposed to weather.
  - 1-1/2 in. clear for beam and columns formed above grade and not exposed to weather.
- Lap all bars at splices in accordance with ACI 318, but not less than 48 bar diameters nor less than 24 inches, unless noted otherwise. All horizontal wall bars shall be developed at corners either by bending not less than 24 inches around corners or with properly placed hooked and lapped corner bars.
- All bar steel and WWR shall be properly supported and held accurately in place as recommended by the Concrete Reinforcing Steel Institute, except that maximum spacing of any bar support shall be 3 feet.
  - Support top slab bars with continuous high chairs.
  - Support beam bars on heavy beam bolsters.
  - Support footing and grade beam bottom reinforcing on concrete bricks, concrete blocks, or mounds of poured concrete. DO NOT use any other support materials without the approval of the Engineer.
  - Support WWR in slab-on-grade at the mid-depth of the slab. Hooking and pulling up mesh after concrete has started to take its initial set is prohibited.
- Openings in slabs and walls: Provide (2) #6 extra bars each side of opening extending 2 feet past the opening, unless noted otherwise. DO NOT use or cut any opening or sleeves in slabs or wall other than those shown on the Structural Drawings, unless approved by the Structural Engineer.

E. VEHICULAR BARRIER CABLE NOTES

- Tendons to be galvanized seven-wire, unbonded Monostand conforming to ASTM A416 (latest edition) low relaxation, with a guaranteed minimum ultimate strength of 270,000 psi.
- Tendon forces shown are effective forces and do not include any post-tension losses.
- Stressing tendons may commence when concrete has attained a compressive strength of 3500 psi. Coordinate with Special Inspector.
- Cut tendons and grout pockets with non-shrink grout after acceptance of stressing records.
- Provide complete loss calculations with shop drawings.
- All Post-Tensioned structural repairs shall conform with PTI DC 80.3-12/ICRI 320.6 "Guide for Evaluation and Repair of Unbonded Post-Tensioned Concrete Structures" and PTI Guide Specification "Specification for Seven-Wire Prestressing Steel Strand for Barrier Cable Applications."
- Submit drawings of cable or tendon layout and connections, anchorages, and prestressing details to the Engineer for approval.
- Keep records of all jacking forces and elongations and submit them to the Engineer.
- DO NOT use power-driven fasteners, saws, or core drills in prestressed concrete, except as approved by Engineer.

F. PRESTRESSING STEEL

- Prestressing steel shall be seven-wire low relaxation strand for prestressed concrete manufactured in accordance with ASTM A416 - Grade 270 ksi and free from corrosion having a minimum guaranteed ultimate tensile strength of 41,300 lbs.

Nominal Diameter	1/2"
Nominal Area	0.153 sq. in.
Modulus of Elasticity (Assumed)	28,800 ksi.
Minimum Breaking Load	41.3 kips
Max. temporary force (see ram calibration chart)	33.0 kips

G. BARRIER CABLES ANCHORAGES

- All prestressing Anchorages shall be fully encapsulated and meet the minimum requirements set forth in ACI Standard Building Code Requirements for Reinforced Concrete (ACI-318-11, Chapter 18, and ACI-A26.7).

H. BARRIER CABLES FABRICATION AND SHIPMENT

- Tendons will be fabricated with sufficient length beyond the edge form to allow stressing. A minimum length of twelve (12") inches at each stressing end is required.
- Tendons that are stressed from one end only shall have fixed-end anchorages attached to one end prior to shipment. Tendons are stressed intermediately at a construction joint shall have an anchorage placed at a predetermined distance along the tendon prior to shipment.
- Tendons will be fabricated in such sequence and quantity as to allow shipping in full truckloads.
- Contractor shall properly unload tendons upon arrival. Use of a nylon sling is recommended to prevent damage to the sheathing. Purchaser shall satisfactorily protect tendons at the jobsite from corrosion prior to placement. Sufficient protection shall also be provided for exposed prestressing steel at the ends of members to prevent deterioration.

I. BARRIER CABLES PLACEMENT

- Locate the centerline of the tendon bundles at the edge forms as shown on the tendon layout drawings. Locate and mark the anchorage centerlines. At stressing ends the contractor shall drill 1" diameter holes in the edge forms.
- Place support bars and tendons according to the tendon layout and support layout plans.
- Tendon placing procedures are as follows:

Uncoil tendons in accordance with the appropriate tendon placement sequence starting at the fixed ends, couplers, etc. Measure and record actual length of broken strand pulled from sheathing. Verify strand replacement lengths.

At stressing ends, remove sheathing inside the edge form flush with back side of the anchorage.

Tie fixed-ends as shown in the details.

At stressing ends pass tendons through anchorages. Allow at least 12" past the form for stressing.

J. BARRIER CABLES STRESSING

- The stressing operation must be under the immediate control of a person experienced in this type of work, must maintain a close check and rigid control of all operations, and be PTI Certified. (See also General Notes).
- The stressing operation can commence when concrete repairs test cylinders, cured under jobsite conditions, have been tested and indicate that the concrete has reached a minimum strength of 3,500 psi.
- All prestressing steel shall be stressed by means of hydraulic jacks, equipped with calibrated hydraulic pressure gauges. A calibration chart shall accompany each jack. If inconsistencies exceeding ± 7% occur between the calculated elongation and the measured elongation, the cause of the inconsistency shall be determined and resolved. The typical procedure for stressing tendons is as follows:
  - Remove grommets of stressing end, check inside each grommet hole to make sure that the anchorages are free from cement paste; if not, remove paste from anchorage
  - Insert wedges, side by side, by hand into each anchorage.
  - Put a paint mark on each tendon at each stressing end at a fixed distance 2" or 3" from the edge of the slab. Care should be taken to assure an even paint mark.
  - Close seating valve on O.T.C. pump. Stress barrier cable to estimated jacking force as indicated in the barrier cables schedule on each parking level plan.
  - Back stress tendon to 80% of ultimate capacity, i.e. 33 kips. (see ram calibration curve for gauge pressure.)
  - Open seating valve to seat the wedges in the anchorage using the hydraulic device built into the ram.
  - Remove the ram.
  - Close seating valve.
  - Measure final elongation. Record elongation, Complete detailed stressing logs.
- Tendons stressed from one end only shall be so indicated on the placing drawings. Tendons that are stressed from both ends need not be stressed from both ends simultaneously. These tendons may have more elongation at one end than at the opposite end. Elongation from both ends must total the elongation shown on the tendon layout drawings.
- If jobsite conditions warrant, the location of the fixed anchorage may be reversed with the location of the stressing end anchorage location.
- Tendon elongation shall be computed as follows:
 
$$\frac{PL}{AE}$$

Where P = Load in kips  
Where L = Length in inches  
Where A = Actual area of steel  
Where E = Actual modulus of elasticity
- The post-tensioning operation shall be so conducted that accurate elongation of tech prestressing steel can be recorded and compared with computations submitted and approved
- Records shall be kept of all elongations and submitted promptly to the structural engineer.
- Take safety precautions as necessary; DO NOT permit workmen to stand behind or over jacks while stressing tendons.

K. SEALING ANCHORAGE BLOCKOUTS

- After stressing is completed, elongations verified and with prior approval of the structural engineer, tendons shall be burned off within one inch (1") from the slab edge.
  - After tendons have been cut off, the contractor should drypack exposed anchorage blockouts. Basis of Design Grout: SikaGrout-212.
  - Carefully excavate existing grout pockets and adjacent column concrete (between grout pockets) to fully expose the designated P/T live stressing anchors and their strand tails for pre-repair evaluation by the Engineer. Do not damage the P/T wedge anchors.
  - Apply Sika Armotec 110, or approved equal corrosion inhibitor product to exposed anchors and strand tails at P/T ends.
  - Install new grease caps over strand tails to fully encapsulate these anchors.
- L. MISCELLANEOUS
- All the equipment used for handling and placing tendons must not damage or deteriorate the prestressing steel or the anchorages.
  - All inserts for suspended mechanical and architectural work must be cast-in-place. If additional fasteners are required, power-driven fasteners will be permitted only where they will not spall the concrete and not damage the tendons; contractors must locate tendons at the surface of the slab before driving fasteners.
  - All pockets and closures strips required for anchorages must be adequately reinforced so as not to decrease the strength of the structure.
  - Contractor shall prepare detail P/T repairs sequence plans and schedule, including temporary shoring, and safety measures. Coordinate with Owner's Representative.

UNIVERSITY AND CONLEY AVE. GARAGES STRUCTURAL REPAIRS SCHEDULE			
REPAIR MARK	REPAIR TYPE	REPAIR LOCATION	REMARKS
R-1	REPLACE ALL BARRIER CABLES	UNIVERSITY AND CONLEY AVE. GARAGES, ALL LEVELS	GENERAL NOTES AND SPECIFICATIONS, DETAILS: BARRIER CABLES SCHEDULE, 6/S300, 1-3/S301, AND 1-3/S302
R-2	PARTIAL DEPTH STRUCTURAL CONCRETE COLUMN AND WALL (VERTICAL) REPAIRS	UNIVERSITY AND CONLEY AVE. GARAGES, MULTIPLE LEVELS	DETAILS: 1/S300, 4-6/S301, AND 4-7/S302
R-3	PARTIAL DEPTH STRUCTURAL CONCRETE SOFFIT, BEAM, AND STAIRS (OVERHEAD) REPAIRS	UNIVERSITY AND CONLEY AVE. GARAGES, MULTIPLE LEVELS	DETAILS: 4/S300, 7-14/S301, AND 7-13/S302
R-4	PARTIAL DEPTH STRUCTURAL SLAB REPAIRS	UNIVERSITY AND CONLEY AVE. GARAGES, MULTIPLE LEVELS	DETAILS: 2 & 3/S300, 15/S301, AND 14/S302
R-5	CMU WALL CRACK REPAIRS	UNIVERSITY AND CONLEY AVE. GARAGES, MULTIPLE LEVELS	DETAILS: 5/S300, 16/S301, AND 15 & 16/S302

1 STRUCTURAL REPAIRS SCHEDULE



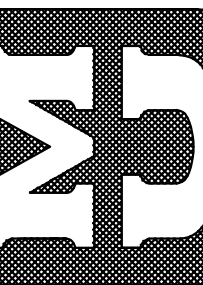
Signature

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Date \_\_\_\_\_

Revisions

Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Drawing Information

Project No: B2310003

Drawing No: S001

Drawn By: BRE

Date Drawn: 01/31/2024

Checked By: RRM

Last Modified: 1/26/24

Project Information

VARIOUS LOCATIONS - UAFS AND CAPS STRUCTURAL REPAIRS

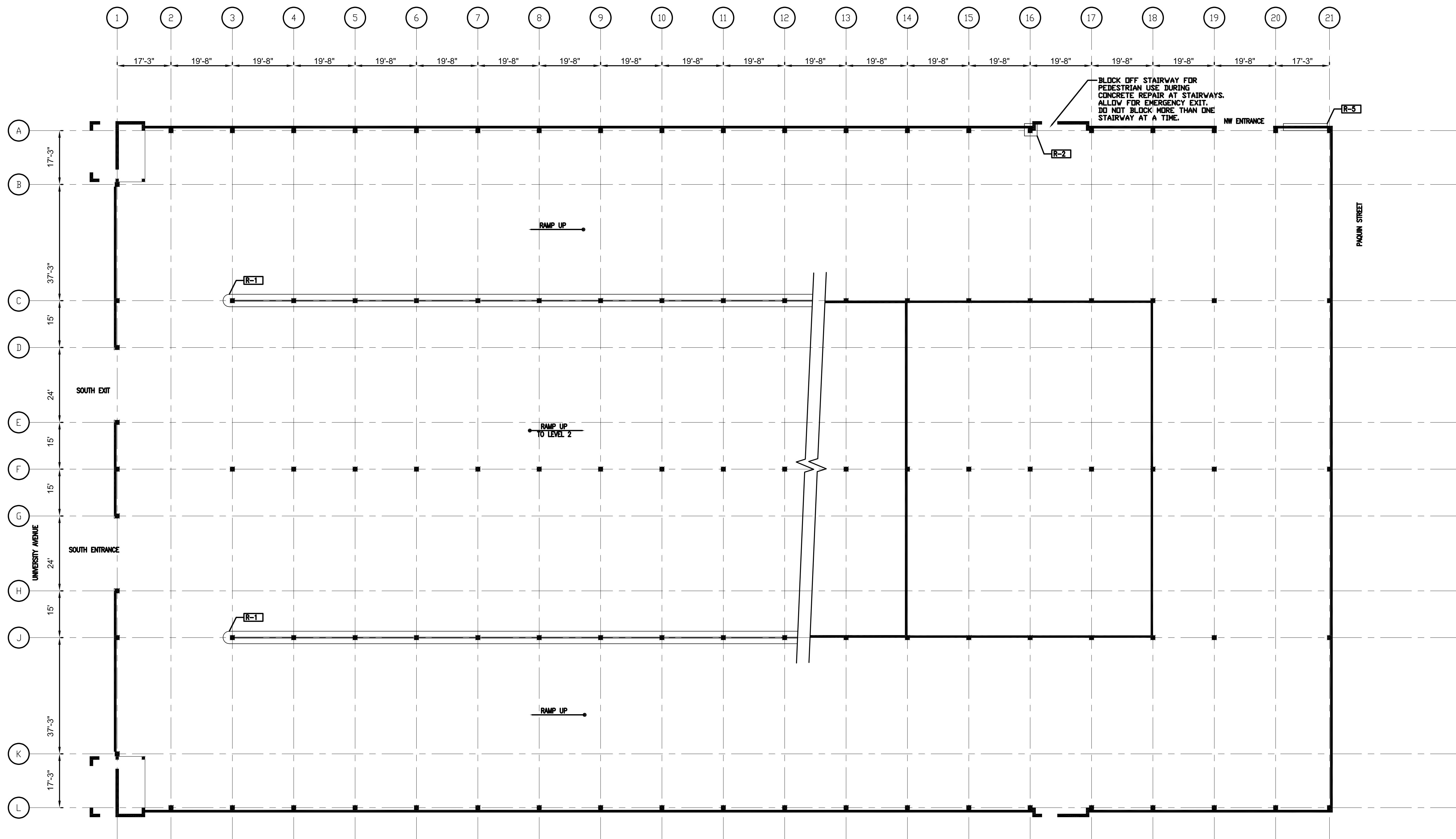
UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

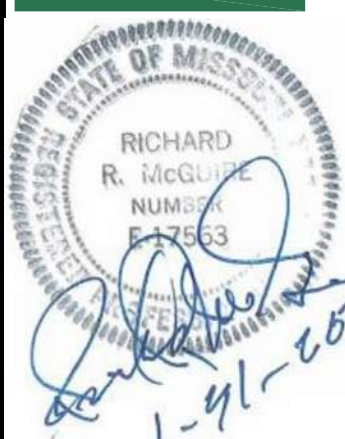
GENERAL NOTES

UNIVERSITY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
GROUND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	216'-4"***	3.625**	33**
2ND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	216'-4"***	3.625**	33**
3RD LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	216'-4"***	3.625**	33**
ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	216'-4"***	3.625**	33**
ROOF LEVEL GRIDS 3-4 EAST AND WEST SIDES (TOTAL 12 CABLES)	19'-8"***	4.00**	33**

\*\*NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
 \*\*\*NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



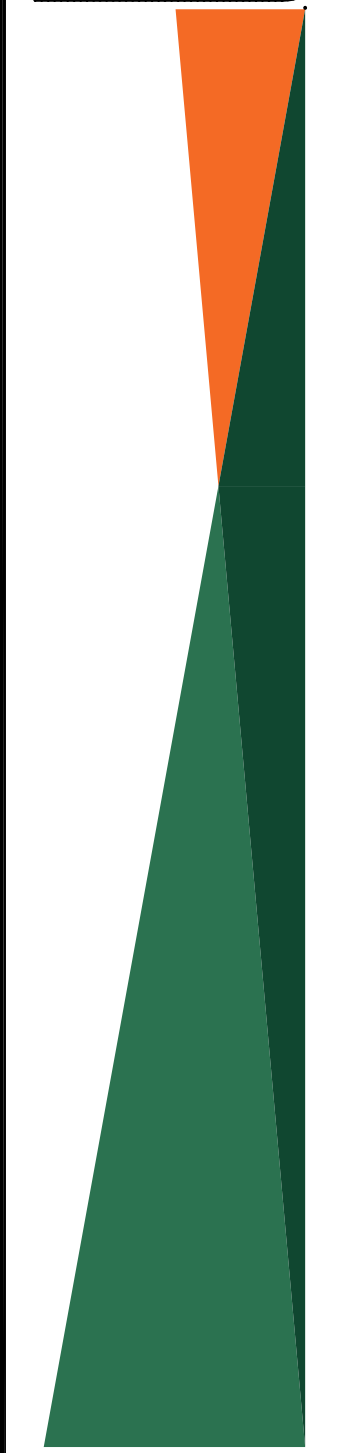
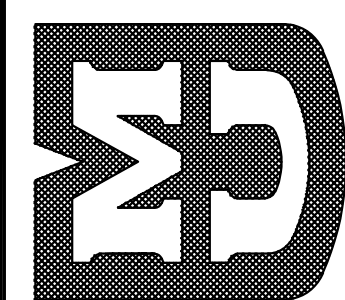
UNIVERSITY AVE. GARAGE  
 GROUND LEVEL REPAIRS PLAN  
 1/16" = 1'-0"



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 Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Project No: B2310003  
 Drawing No: S100  
 Drawn By: BRE  
 Date Drawn: 01/31/2024  
 Checked By: RRM  
 Last Modified: 1/25/24

Project Information  
 VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

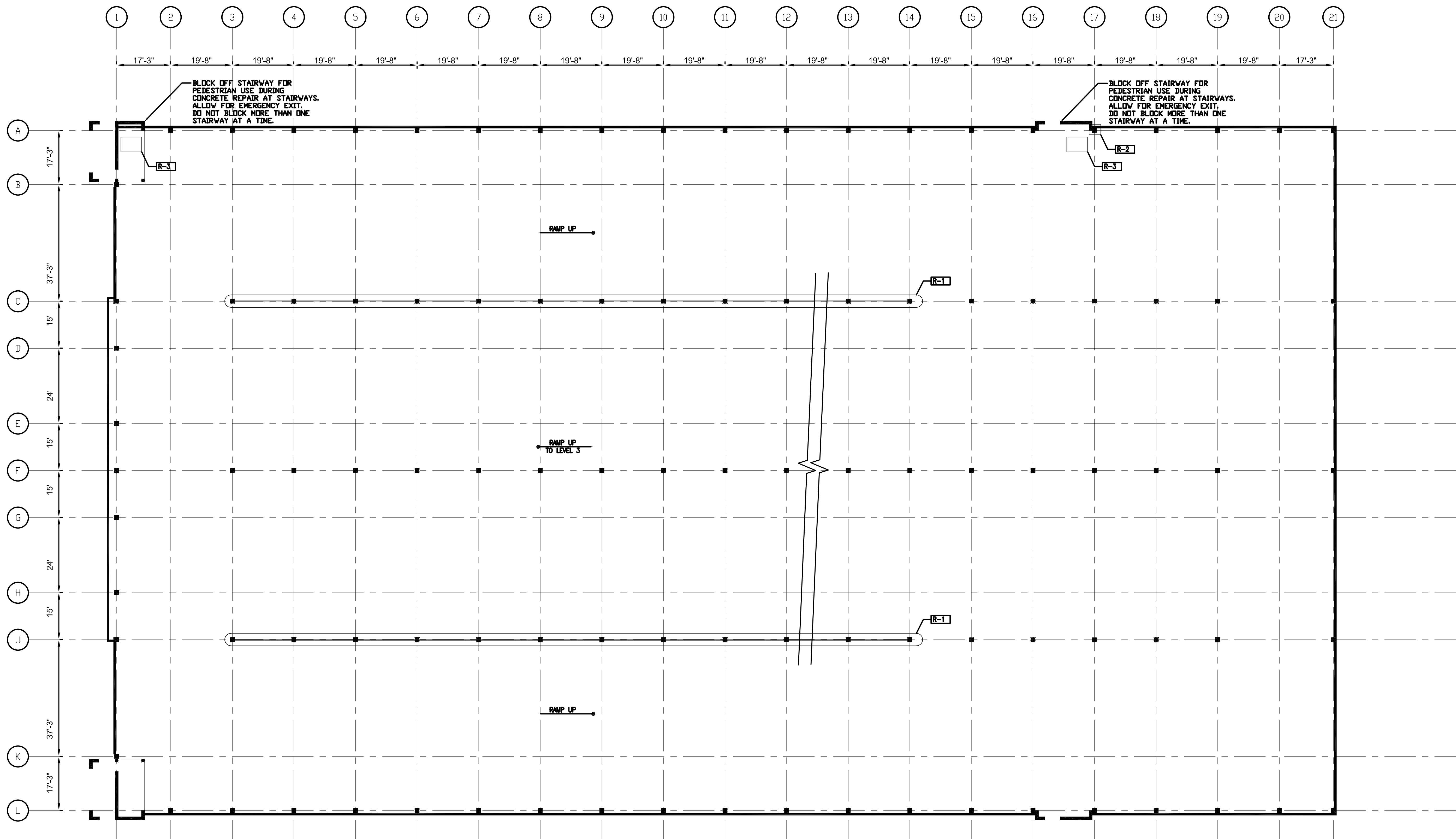
UNIVERSITY AVE GARAGE GROUND LEVEL REPAIRS PLAN

S100

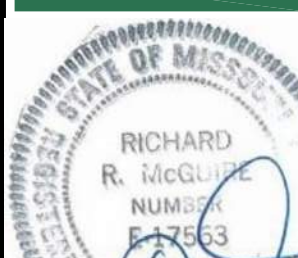
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UNIVERSITY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
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ROOF LEVEL GRIDS 3-4 EAST AND WEST SIDES (TOTAL 12 CABLES)	19'-8"***	4.00**	33**

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\*\*\*NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



UNIVERSITY AVE. GARAGE  
SECOND LEVEL REPAIRS PLAN  
1/16" = 1'-0"

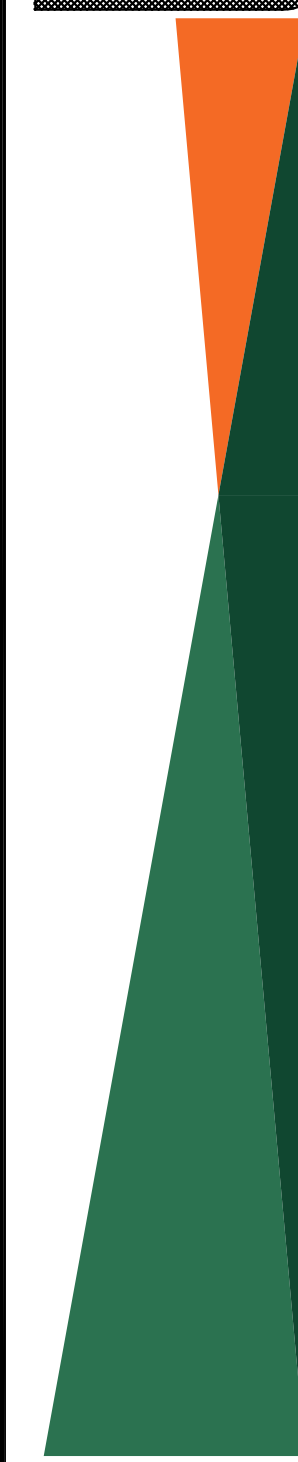
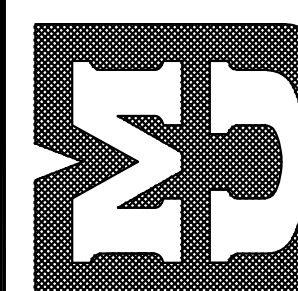


*Richard R. McGuffee*  
1-21-2024

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Project No: B2310003  
Drawing No: S101  
Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/25/24

VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

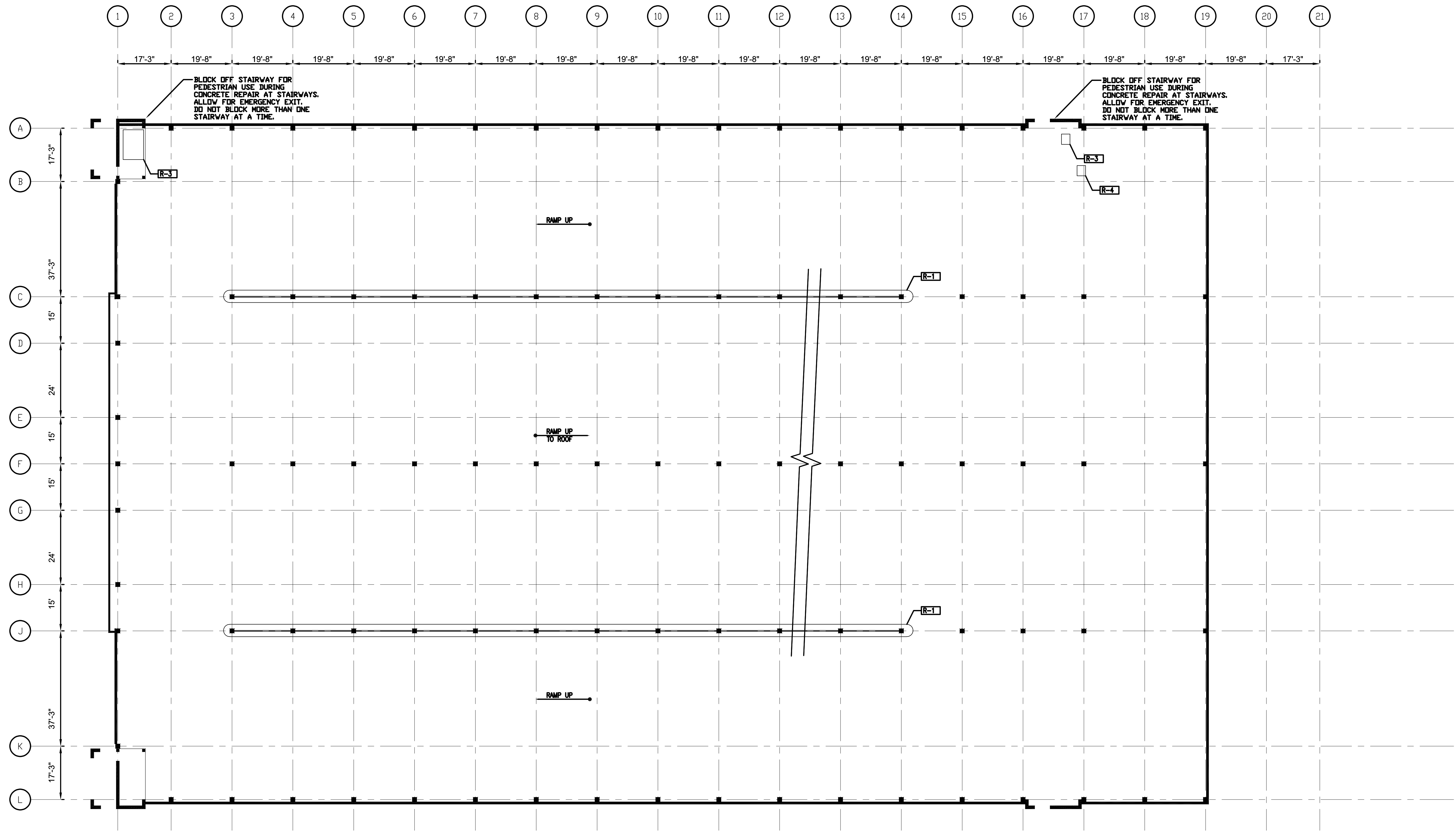
UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

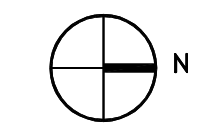
UNIVERSITY AVE GARAGE SECOND LEVEL REPAIRS PLAN

UNIVERSITY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
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\*\*\*NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES.  
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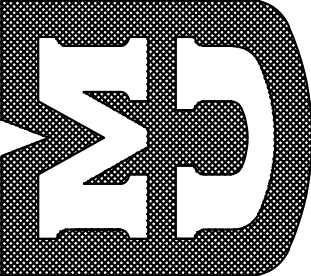


UNIVERSITY AVE. GARAGE  
 THIRD LEVEL REPAIRS PLAN  
 1/16" = 1'-0"



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Project No: B2310003  
 Drawing No: S102  
 Drawn By: BRE  
 Date Drawn: 01/31/2024  
 Checked By: RRM  
 Last Modified: 1/25/24

VARIOUS LOCATIONS - UAFS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

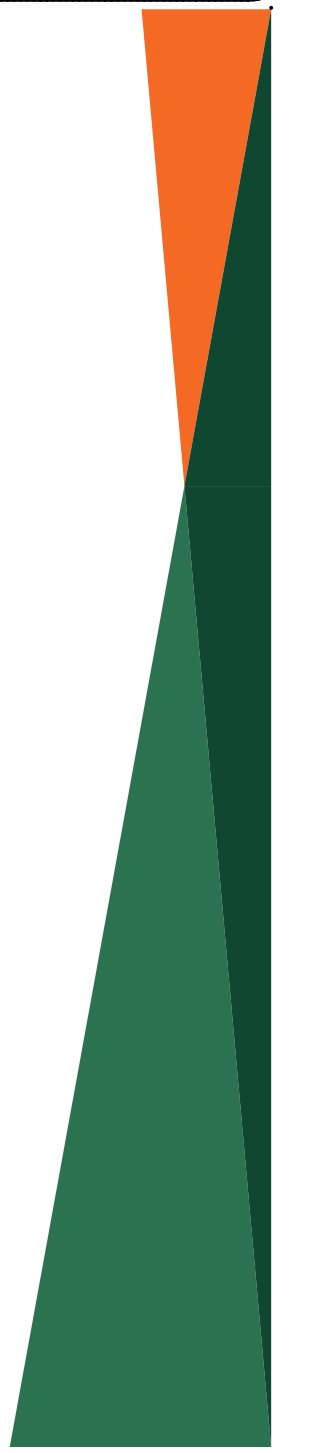
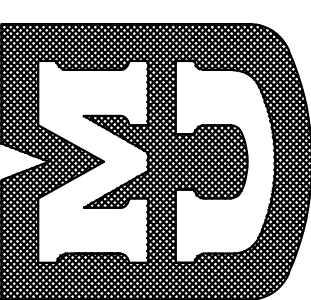
UNIVERSITY AVE GARAGE THIRD LEVEL REPAIRS PLAN



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Project No: B2310003  
Drawing No: S103  
Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/25/24

Project Information  
VARIOUS LOCATIONS - UAFPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

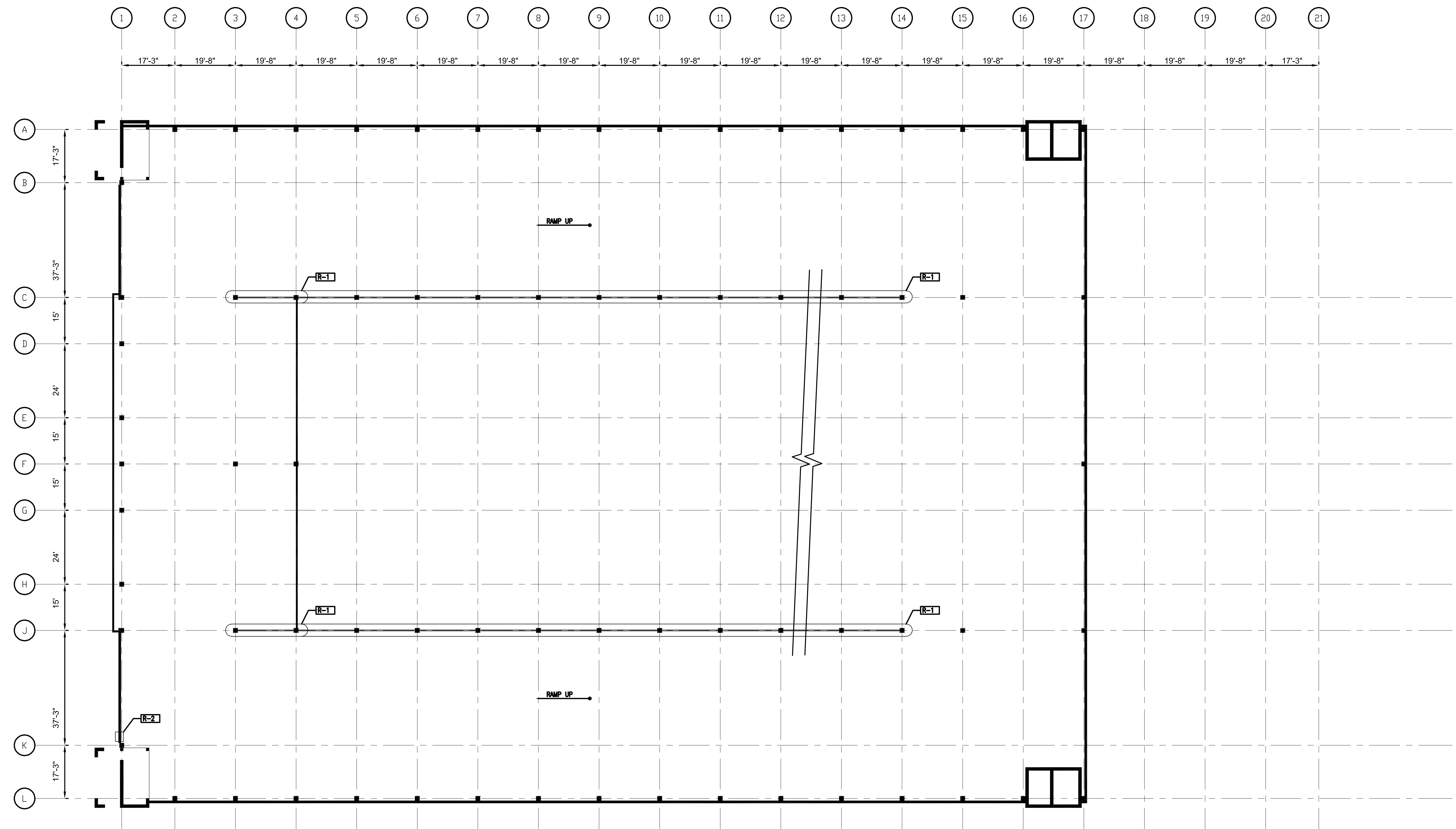
STRUCTURAL VEHICULAR BARRIERS REPAIR

UNIVERSITY AVE GARAGE ROOF LEVEL REPAIRS PLAN

S103

UNIVERSITY AVE. GARAGE BARRIER CABLES SCHEDULE			
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ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	216'-4"***	3.625**	33**
ROOF LEVEL GRIDS 3-4 EAST AND WEST SIDES (TOTAL 12 CABLES)	19'-8"***	4.00**	33**

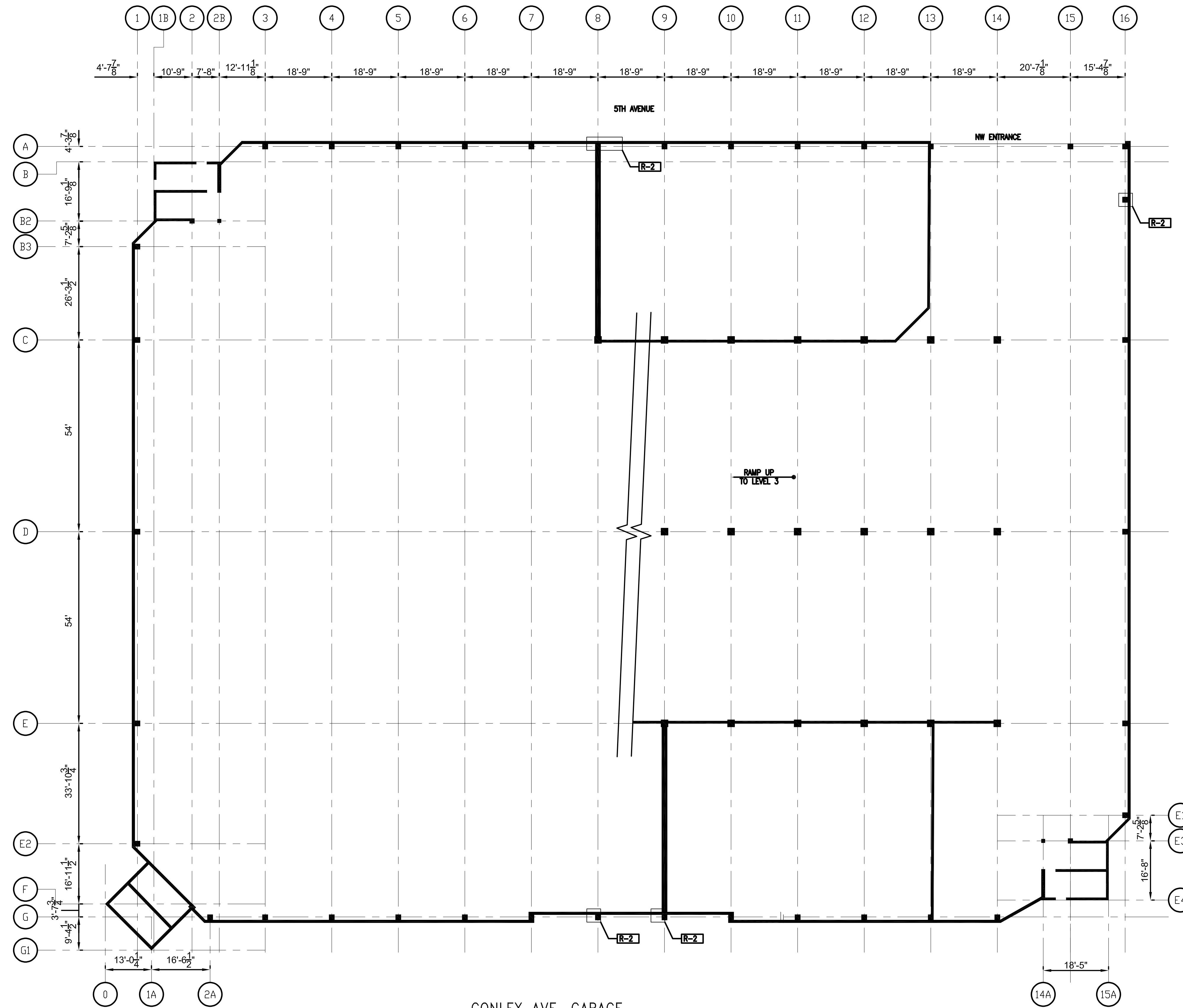
\*\*NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
\*\*\*NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



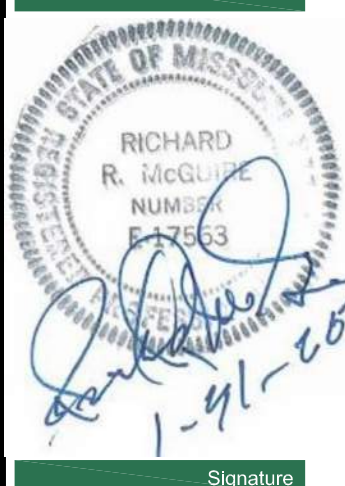
UNIVERSITY AVE. GARAGE  
ROOF LEVEL REPAIRS PLAN  
1/16" = 1'-0"  
N

CONLEY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
2ND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"***	3.655**	33**
3RD LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"***	3.655**	33**
ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	206'-3"***	3.655**	33**
ROOF LEVEL GRIDS 7-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	131'-3"***	4.025**	33**

\*\*\*NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
 \*\*NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



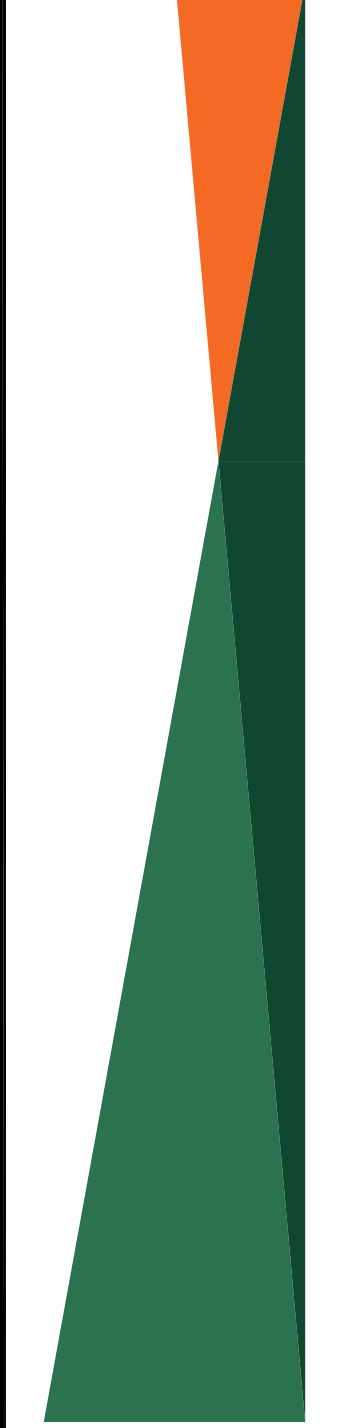
CONLEY AVE. GARAGE  
 GROUND LEVEL REPAIRS PLAN  
 1/16" = 1'-0"



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License No. \_\_\_\_\_  
 Date \_\_\_\_\_

Revisions  
 Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Drawing Information  
 Project No: B2310003  
 Drawing No: S104  
 Drawn By: BRE  
 Date Drawn: 01/31/2024  
 Checked By: RRM  
 Last Modified: 1/26/24

Project Information  
 VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

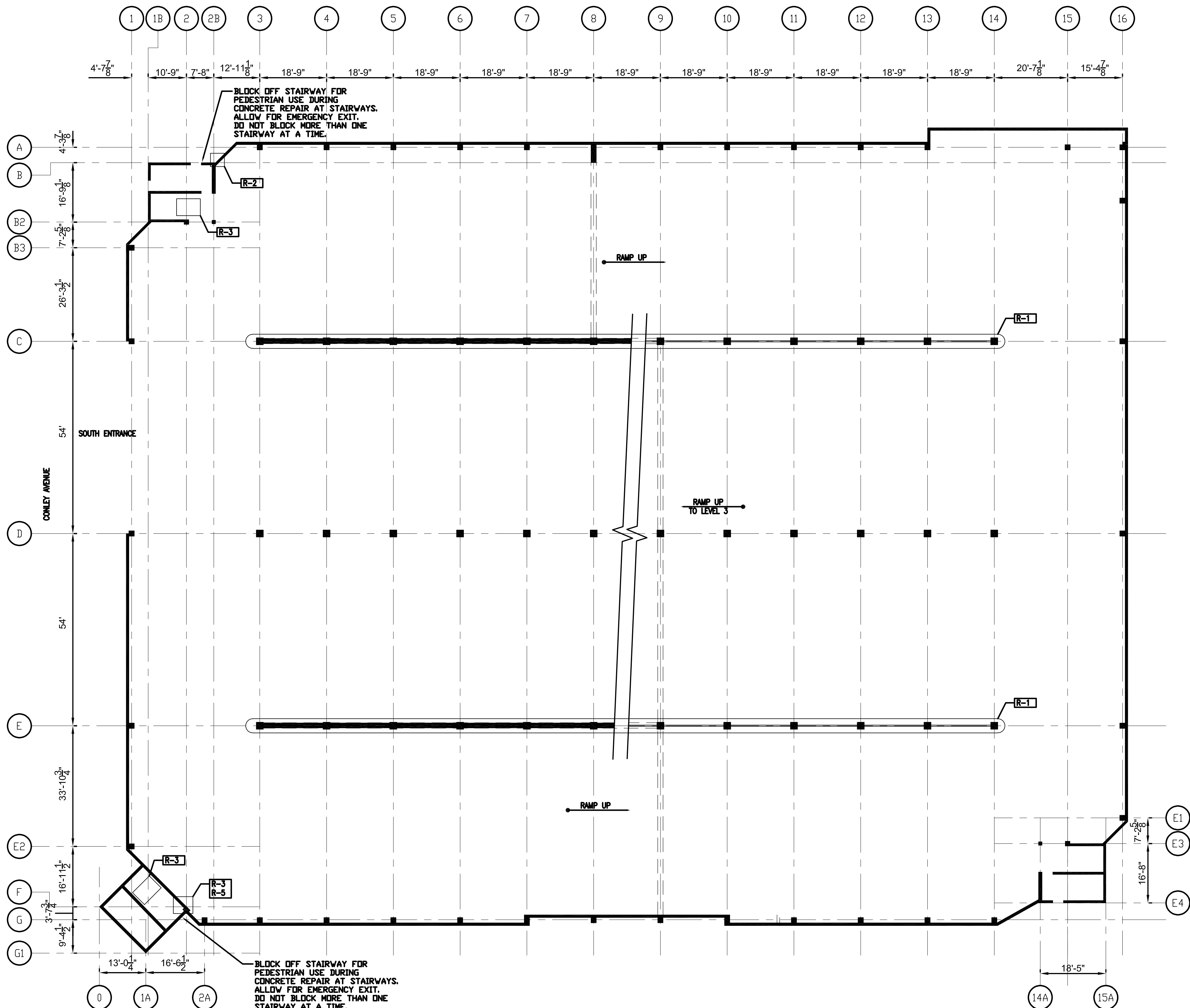
STRUCTURAL VEHICULAR BARRIERS REPAIR

CONLEY AVE GARAGE GROUND LEVEL REPAIRS PLAN

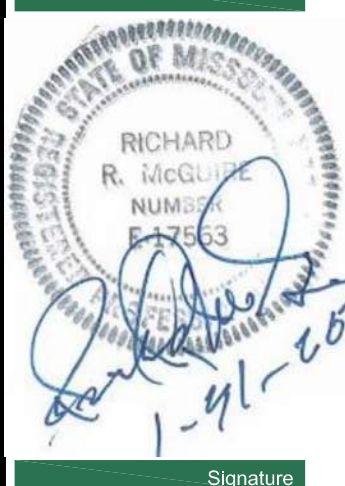
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CONLEY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
2ND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"MM	3.655M	33M
3RD LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"MM	3.655M	33M
ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	206'-3"MM	3.655M	33M
ROOF LEVEL GRIDS 7-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	131'-3"MM	4.025M	33M

NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
 NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.

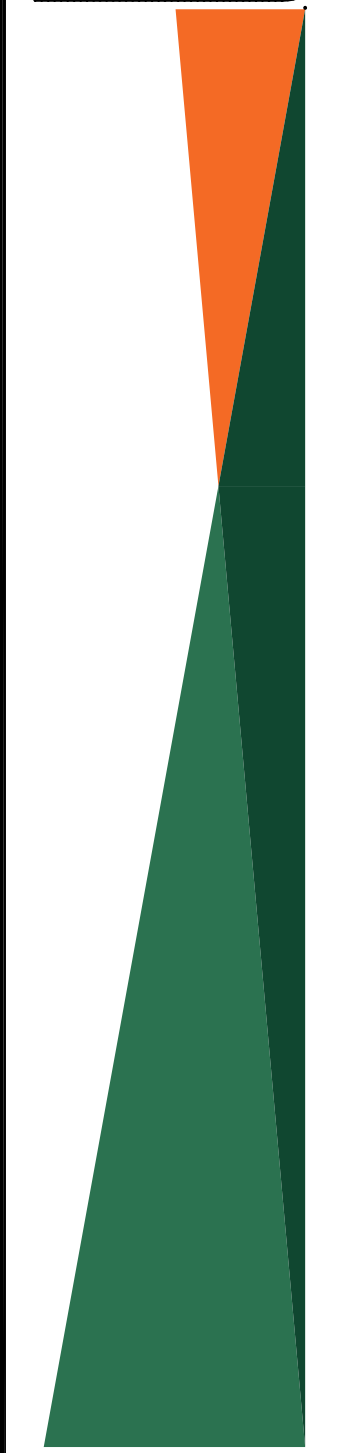
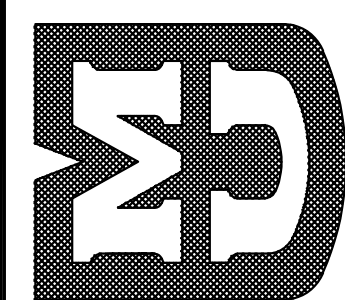


CONLEY AVE. GARAGE  
 SECOND LEVEL REPAIRS PLAN  
 1/16" = 1'-0"



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License No. \_\_\_\_\_  
 Date \_\_\_\_\_  
 Revisions \_\_\_\_\_  
 Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Drawing Information  
 Project No: B2310003  
 Drawing No: S105  
 Drawn By: BRE  
 Date Drawn: 01/31/2024  
 Checked By: RRM  
 Last Modified: 1/26/24

Project Information  
 VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

CONLEY AVE GARAGE SECOND LEVEL REPAIRS PLAN

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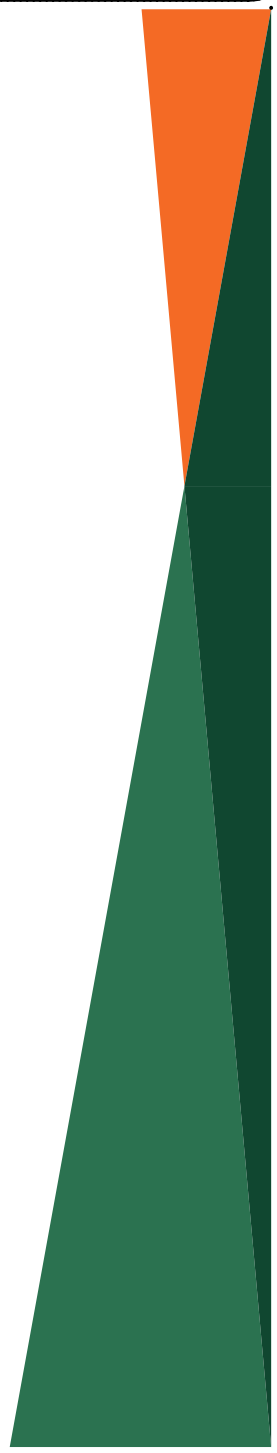
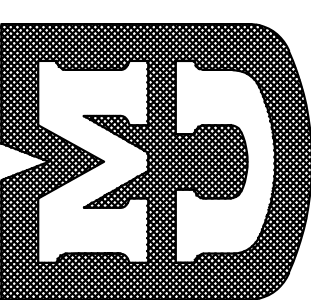




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Date \_\_\_\_\_

Revisions  
Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Project No: B2310003  
Drawing No: S106  
Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/26/24

VARIOUS LOCATIONS - UAFPS AND CAPS STRUCTURAL REPAIRS

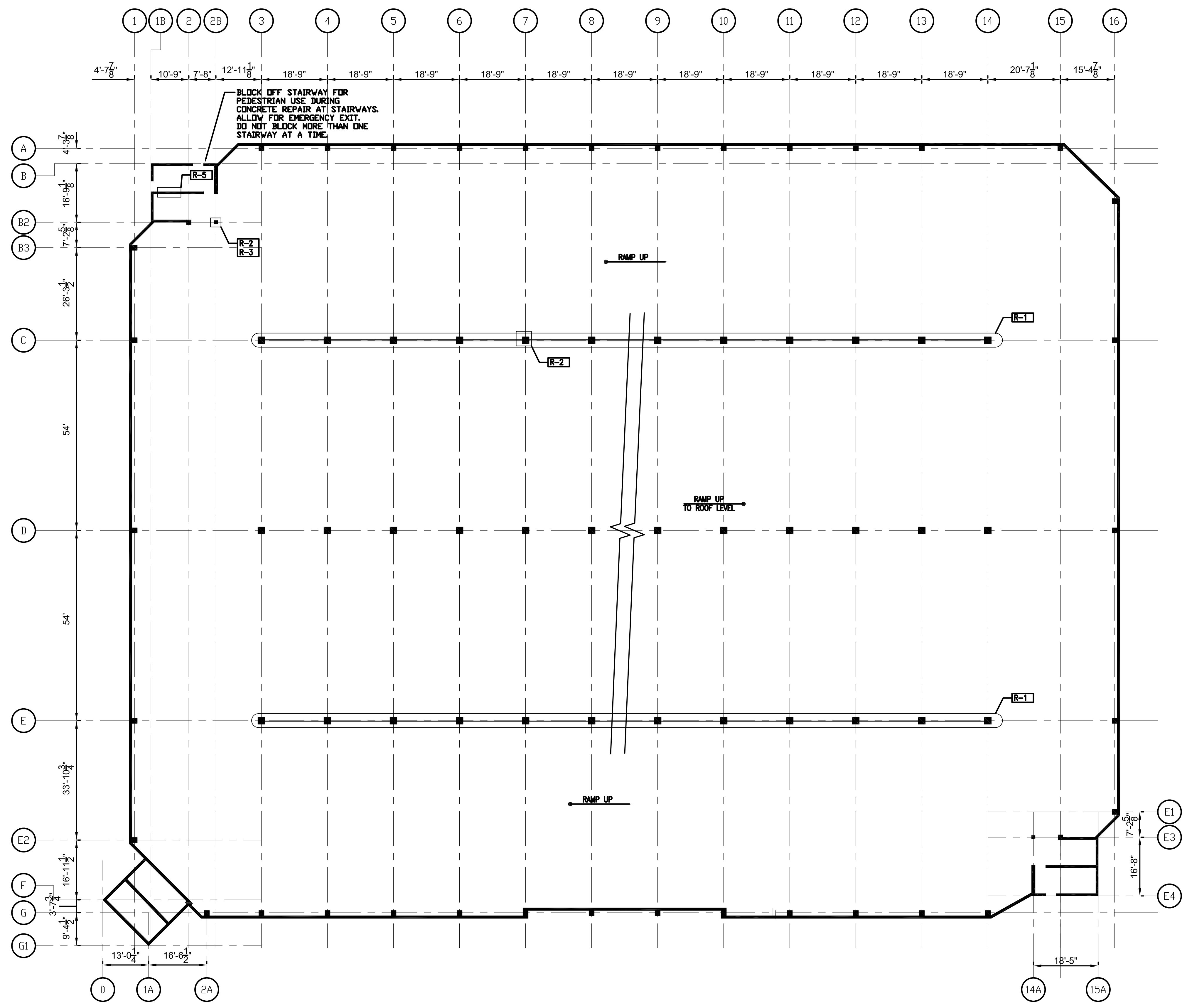
UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

**CONLEY AVE GARAGE THIRD LEVEL REPAIRS PLAN**

CONLEY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
2ND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"***	3.655**	33**
3RD LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"***	3.655**	33**
ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	206'-3"***	3.655**	33**
ROOF LEVEL GRIDS 7-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	131'-3"***	4.025**	33**

\*\*NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
\*\*\*NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



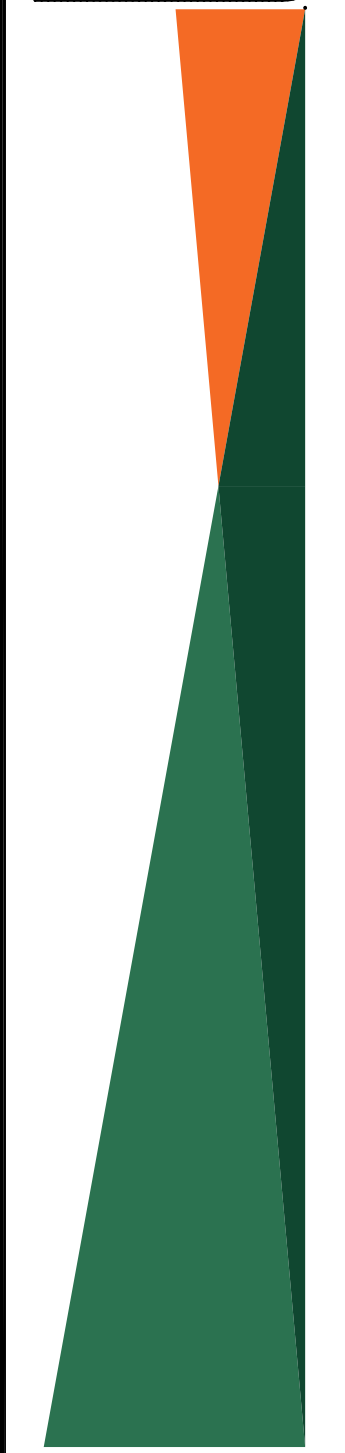
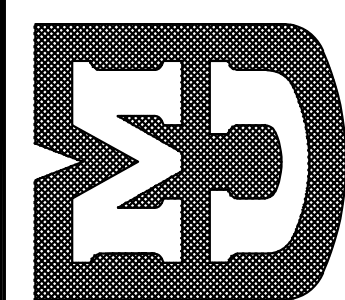
CONLEY AVE. GARAGE  
THIRD LEVEL REPAIRS PLAN  
1/16" = 1'-0"  
N



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Date \_\_\_\_\_

Revisions  
Revision No. \_\_\_\_\_ Date \_\_\_\_\_



Project Information  
Project No: B2310003  
Drawing No: S107

Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/26/24

Project Information  
VARIOUS LOCATIONS - UAFPS AND CAPS AND STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

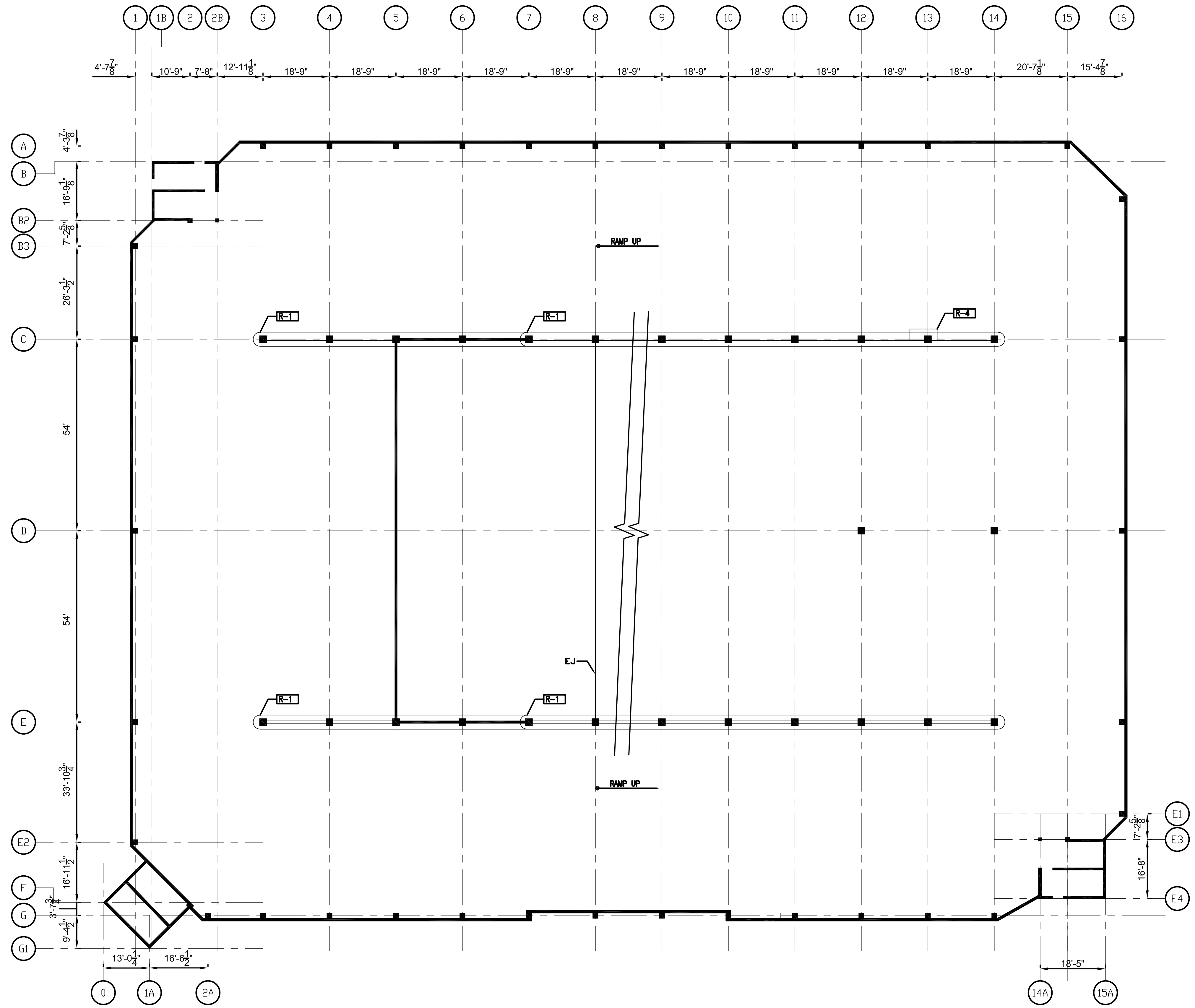
STRUCTURAL VEHICULAR BARRIERS REPAIR

CONLEY AVE GARAGE ROOF LEVEL REPAIRS PLAN

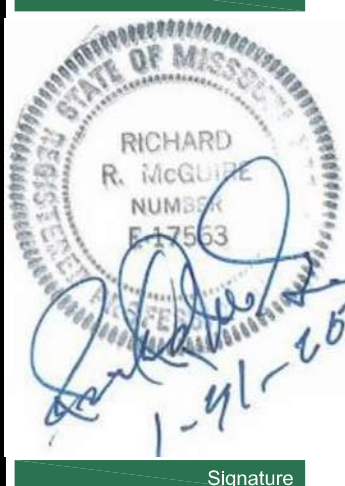
S107

CONLEY AVE. GARAGE BARRIER CABLES SCHEDULE			
BARRIER CABLE LOCATION	BARRIER CABLE LENGTH (CENTER LINE OF COLUMN TO CENTER LINE OF COLUMN)	ESTIMATED JACKING FORCE (KIPS)	BACK STRESSING FORCE (KIPS)
2ND LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"MM	3.655M	33M
3RD LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 24 CABLES)	206'-3"MM	3.655M	33M
ROOF LEVEL GRIDS 3-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	206'-3"MM	3.655M	33M
ROOF LEVEL GRIDS 7-14 EAST AND WEST SIDES (TOTAL 12 CABLES)	131'-3"MM	4.025M	33M

NOTE: CONTRACTOR TO PROVIDE BARRIER CABLE SHOP DRAWINGS AND CALCULATIONS WITH ALL BARRIER CABLE STRESSING FORCES, ELONGATIONS AND SEATING LOSSES. MAX. DEFLECTION OF BARRIER CABLES SHOULD NOT EXCEED 18 INCHES  
NOTE: FIELD VERIFY ALL BARRIER CABLE LENGTHS AND ANCHOR CONDITIONS.



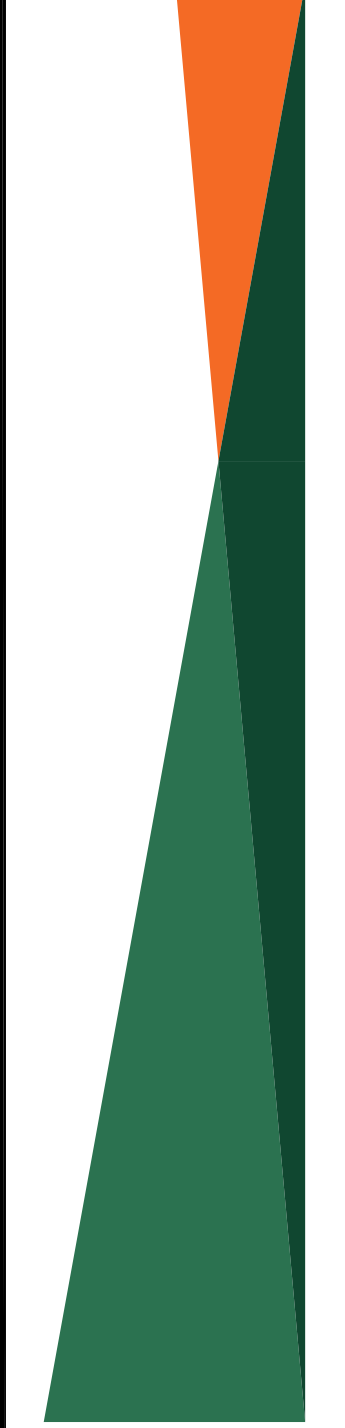
CONLEY AVE. GARAGE  
ROOF LEVEL REPAIRS PLAN  
1/16" = 1'-0"  
N



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License No. \_\_\_\_\_  
Date \_\_\_\_\_

Revisions  
Revision No. \_\_\_\_\_ Date \_\_\_\_\_

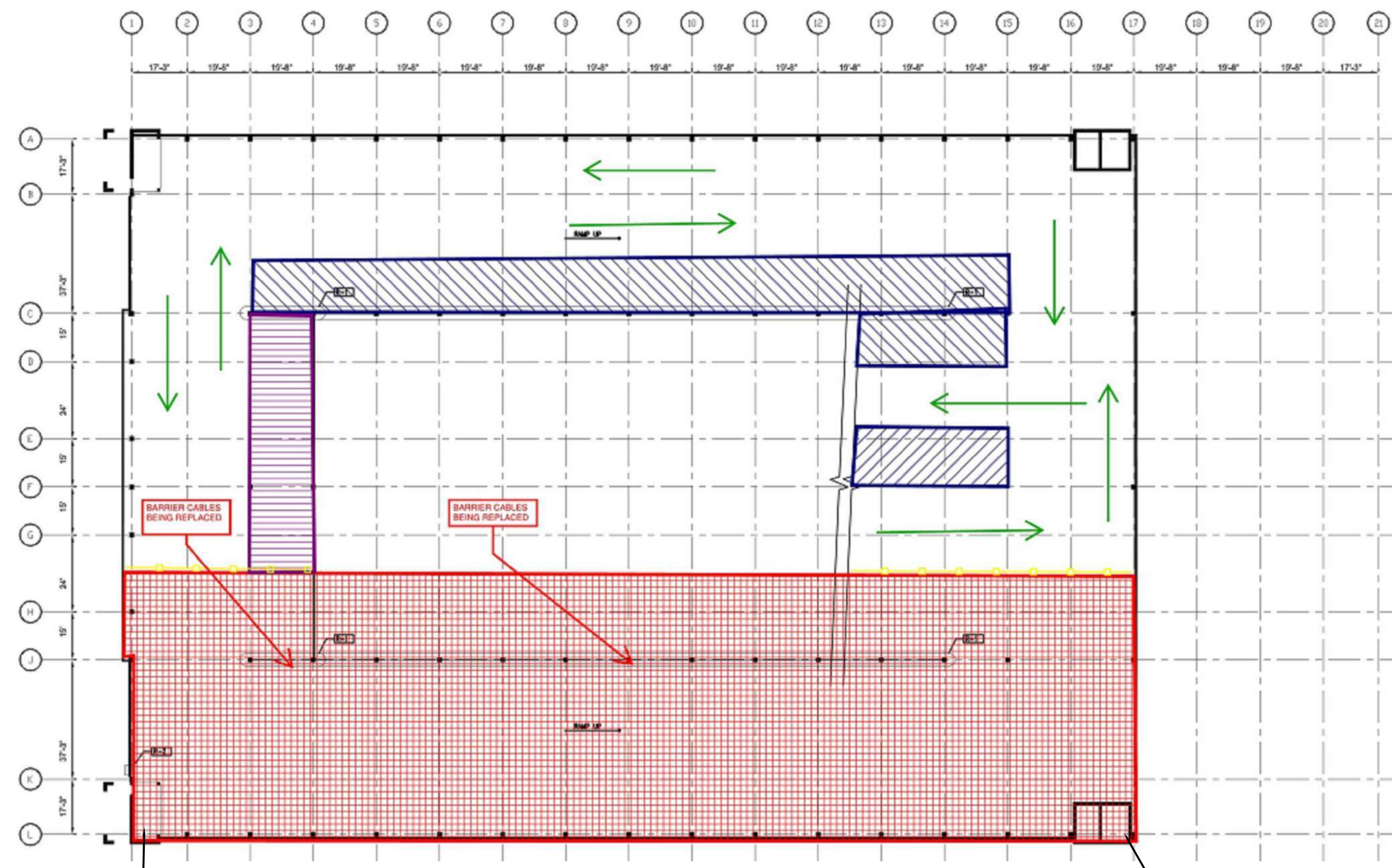


Project No: B2310003  
Drawing No: S200  
Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/25/24

VARIOUS LOCATIONS - UAFPS AND CAPS STRUCTURAL REPAIRS  
UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

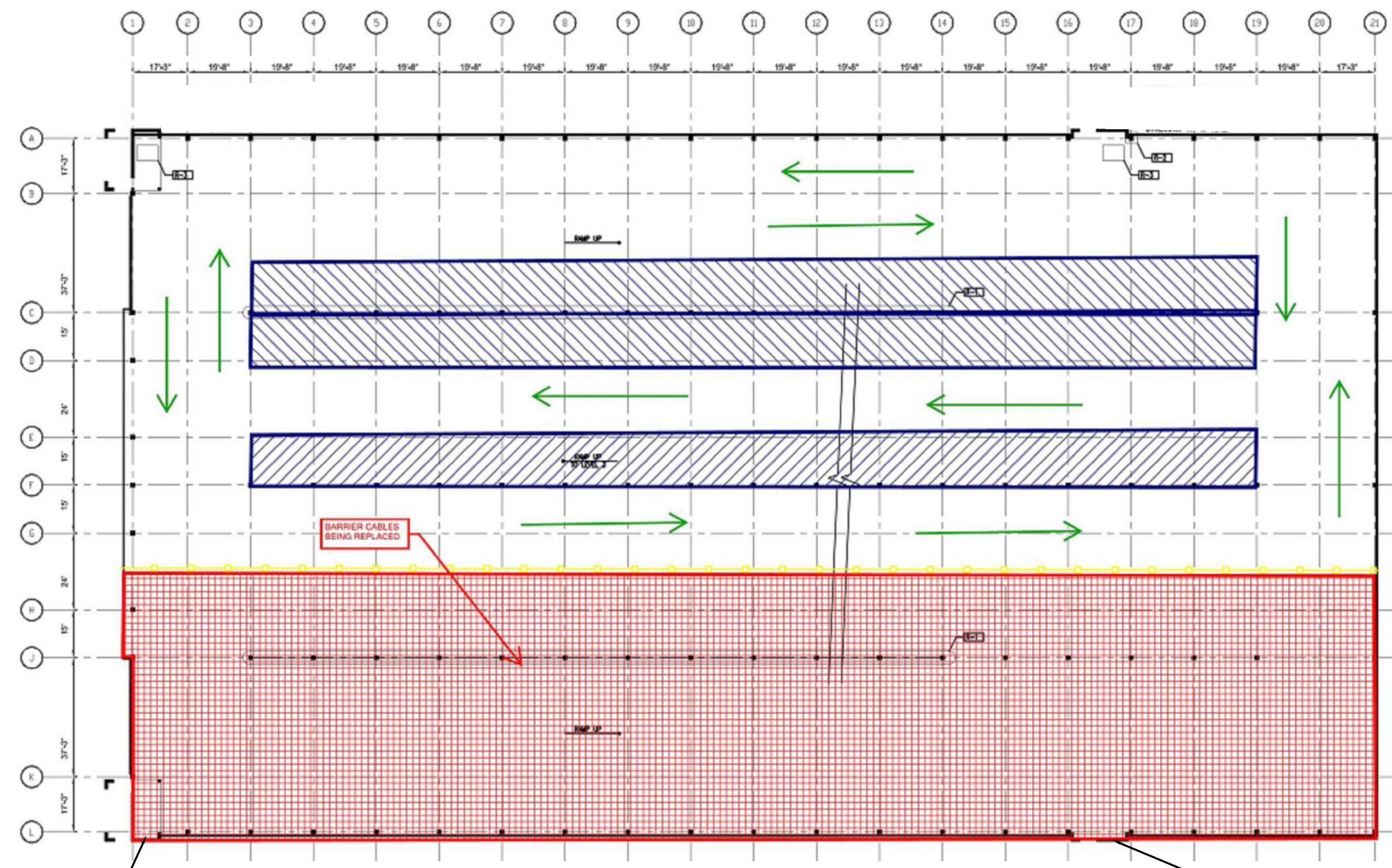
**UNIVERSITY AVE GARAGE PHASE 1 TRAFFIC PLANS**



**4 UNIVERSITY AVE. PHASE 1 ROOF LEVEL TRAFFIC PLAN**  
N.T.S.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.

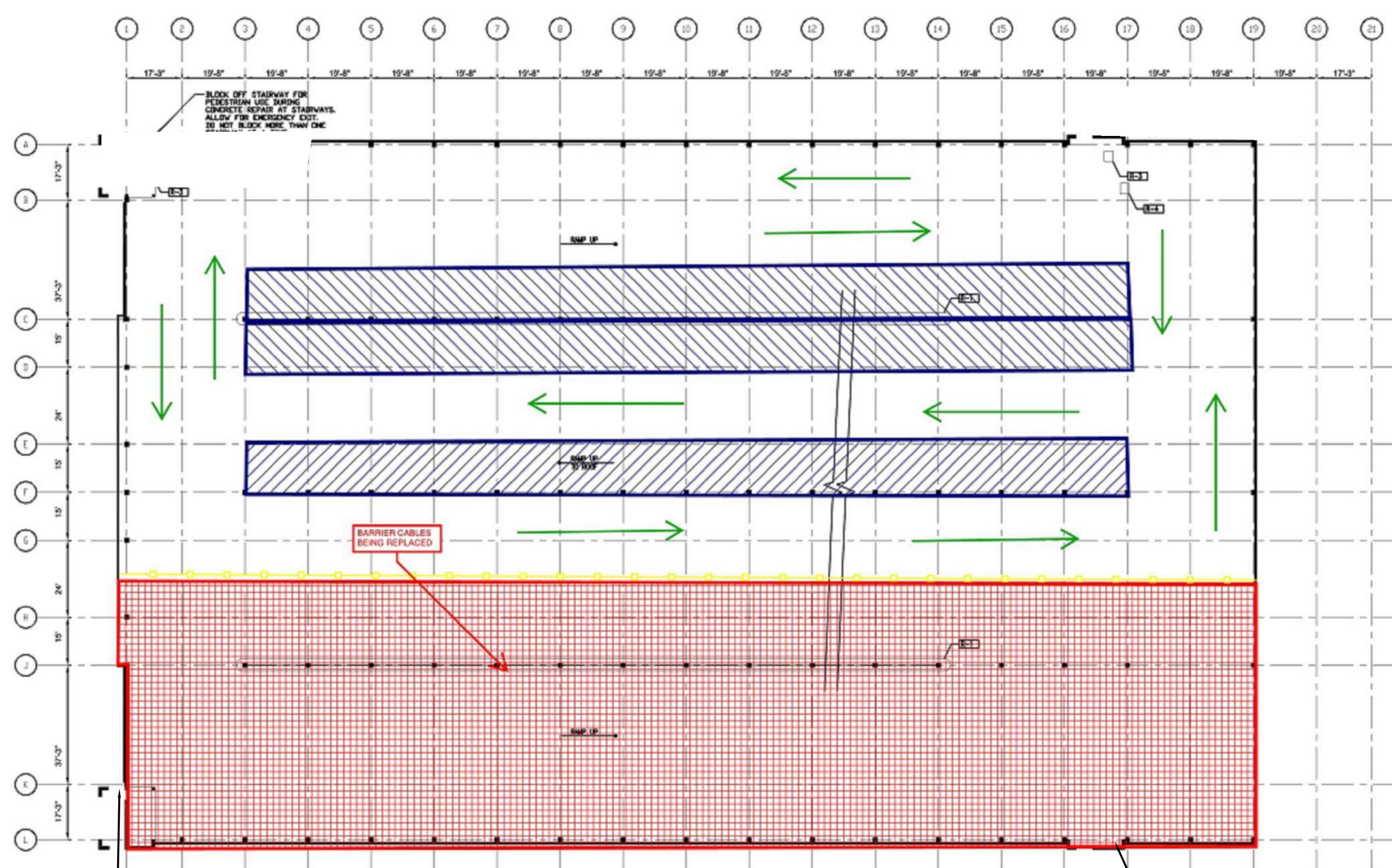
BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.



**2 UNIVERSITY AVE. PHASE 1 SECOND LEVEL TRAFFIC PLAN**  
N.T.S.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.

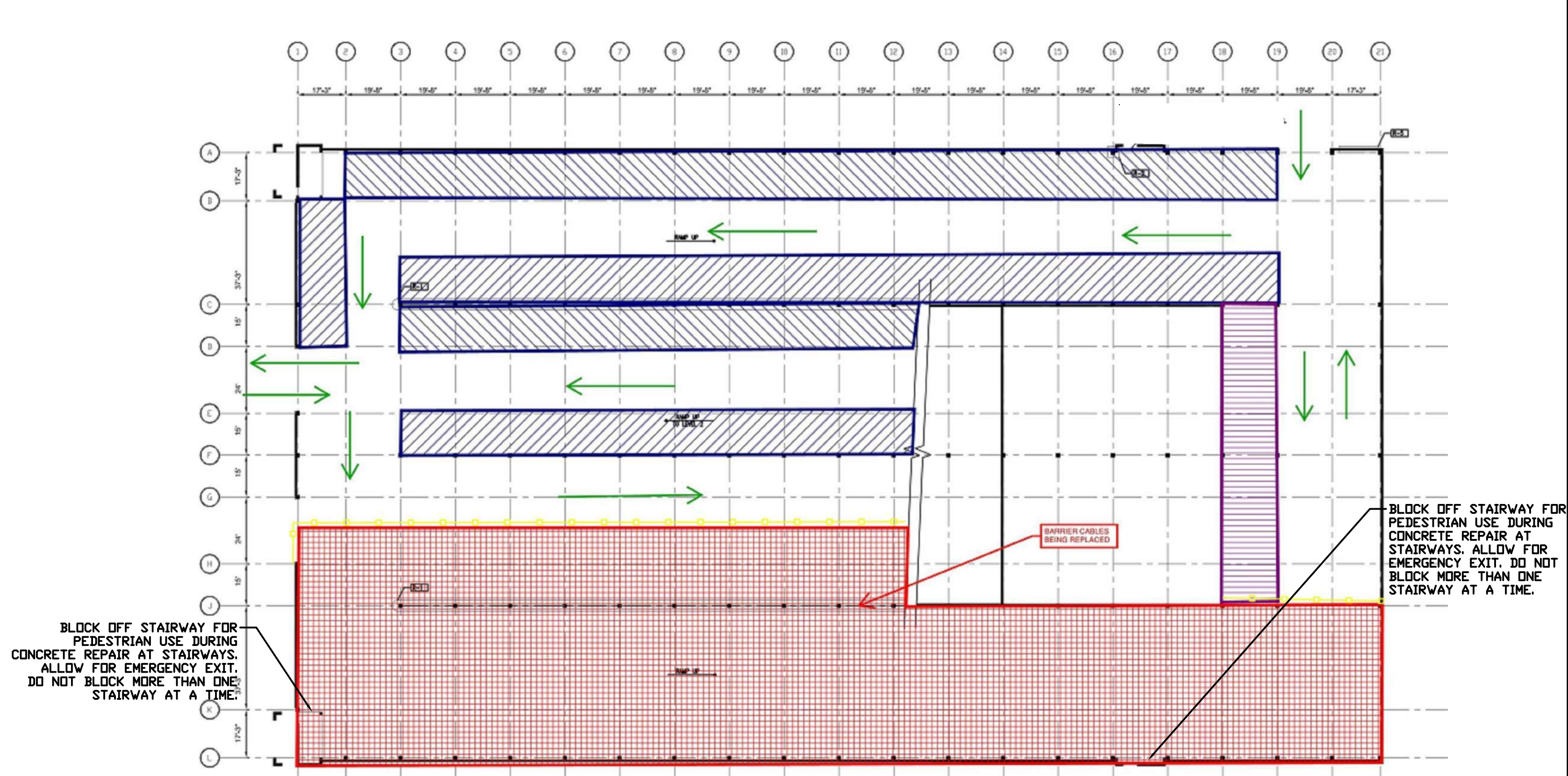
BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.



**3 UNIVERSITY AVE. PHASE 1 THIRD LEVEL TRAFFIC PLAN**  
N.T.S.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.



**1 UNIVERSITY AVE. PHASE 1 GROUND LEVEL TRAFFIC PLAN**  
N.T.S.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.

BLOCK OFF STAIRWAY FOR PEDESTRIAN USE DURING CONCRETE REPAIR AT STAIRWAYS. ALLOW FOR EMERGENCY EXIT. DO NOT BLOCK MORE THAN ONE STAIRWAY AT A TIME.

- NOTES:
- BEGIN WORK ON ROOF LEVEL AND WORK DOWN. OPEN TRAFFIC LANES AND PARKING AFTER FINISHING WORK AND MOVING TO ANOTHER LEVEL.
  - COORDINATE ALL PARKING AND TEMPORARY CONSTRUCTION MEASURES WITH MU CONSTRUCTION MANAGER AND MU PARKING AND TRANSPORTATION DEPARTMENT.
  - CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SIGNAGE FOR PARKING AND TRAFFIC LANES DURING REPAIRS.
  - REFER TO GEN. NOTES ON SHEET S-001.

- CONSTRUCTION AREA
- ANGLED PARKING
- TRAFFIC FLOW
- HEAD ON PARKING
- TEMPORARY CONSTRUCTION FENCING

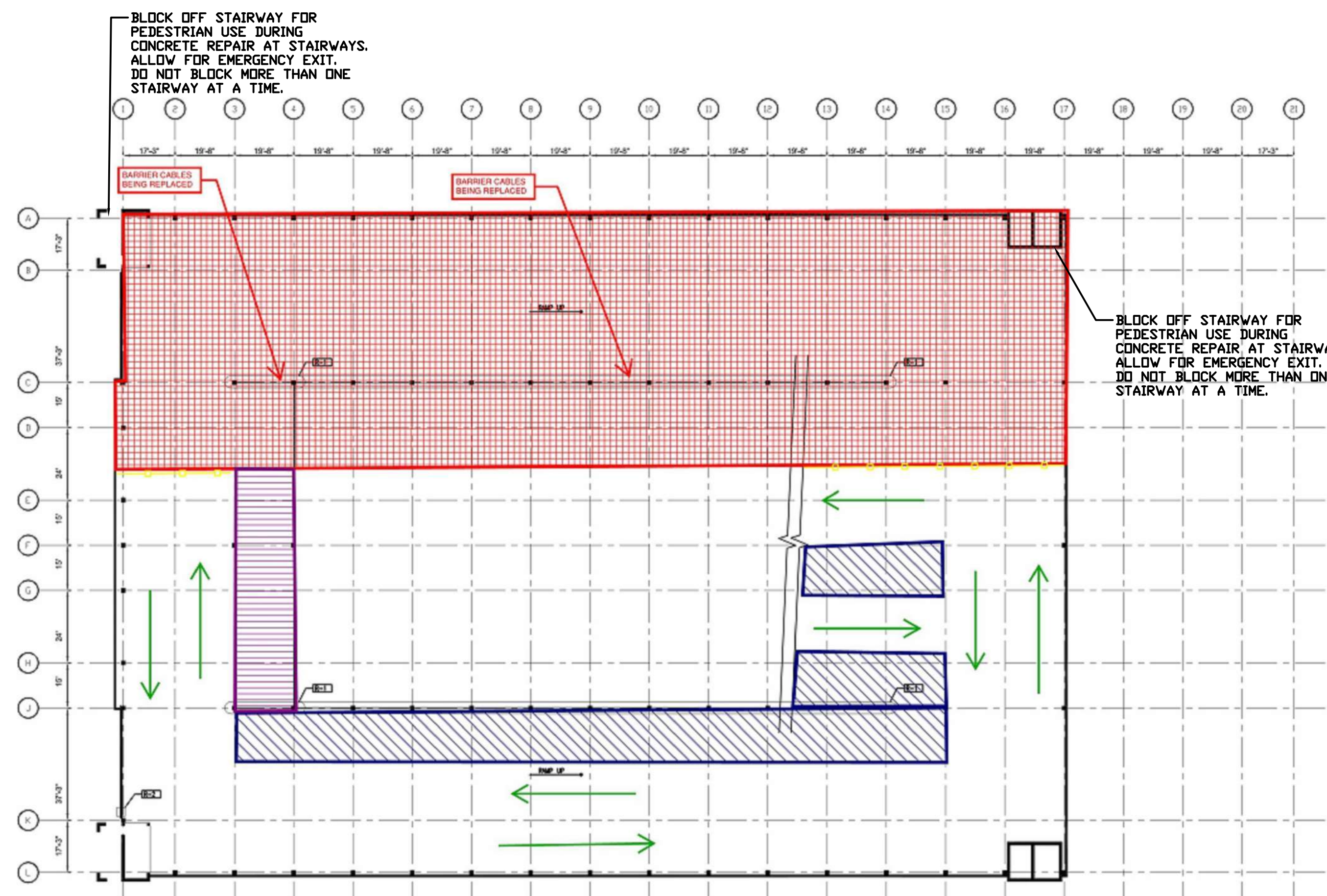
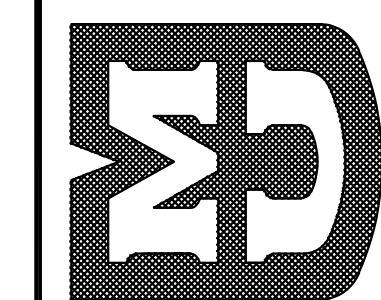
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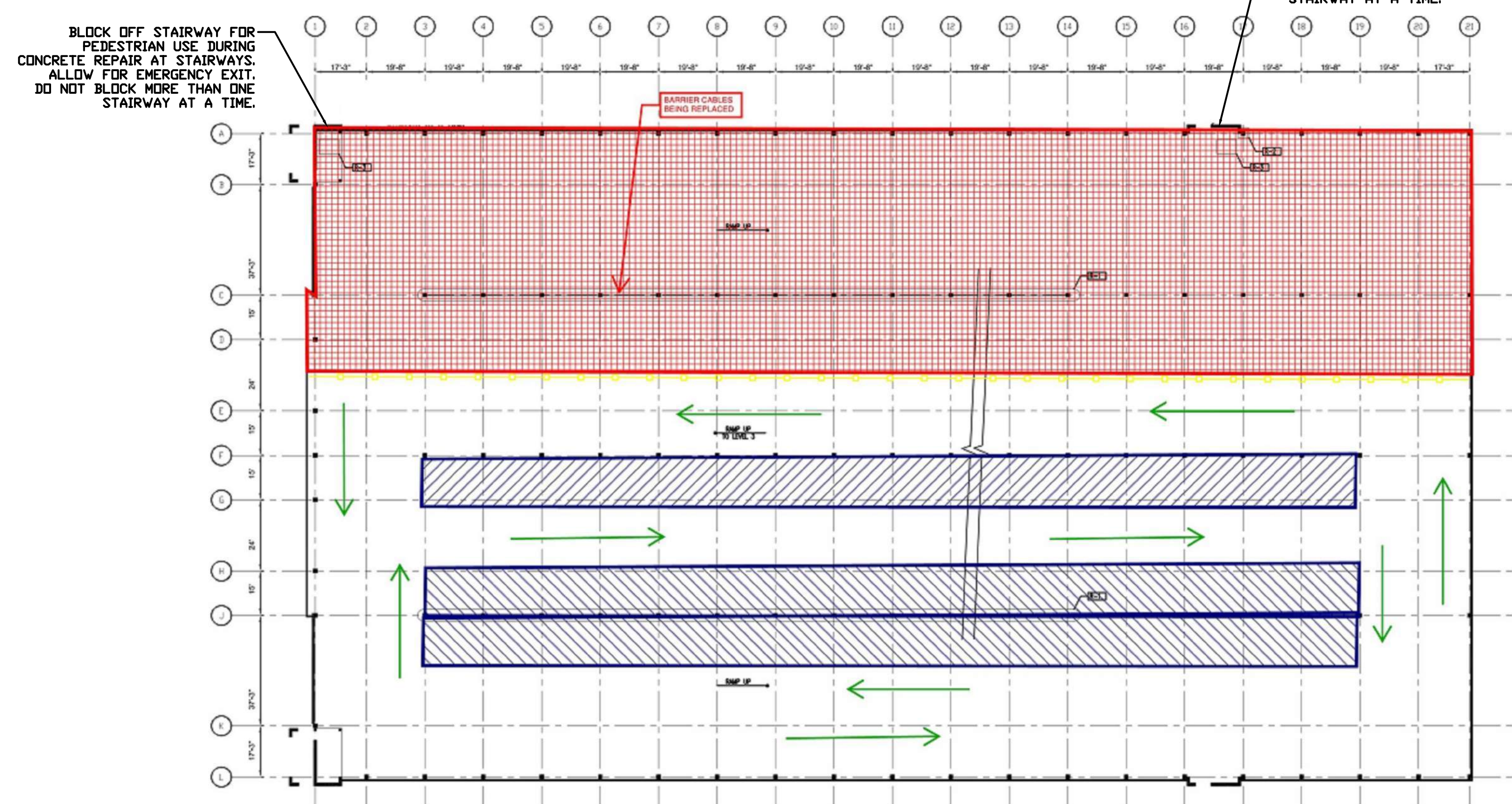
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License No. \_\_\_\_\_  
Date \_\_\_\_\_

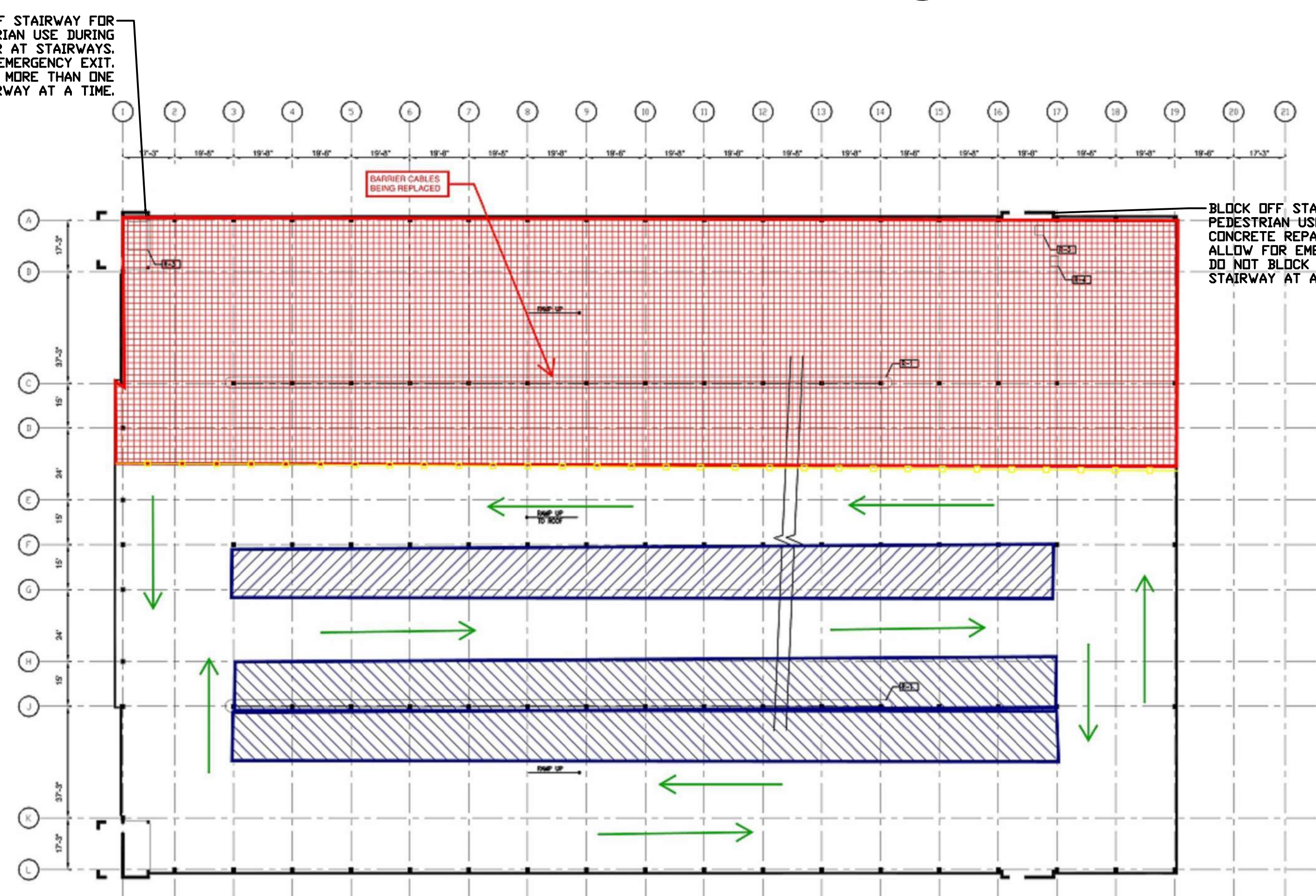
Revisions  
Revision No. \_\_\_\_\_ Date \_\_\_\_\_



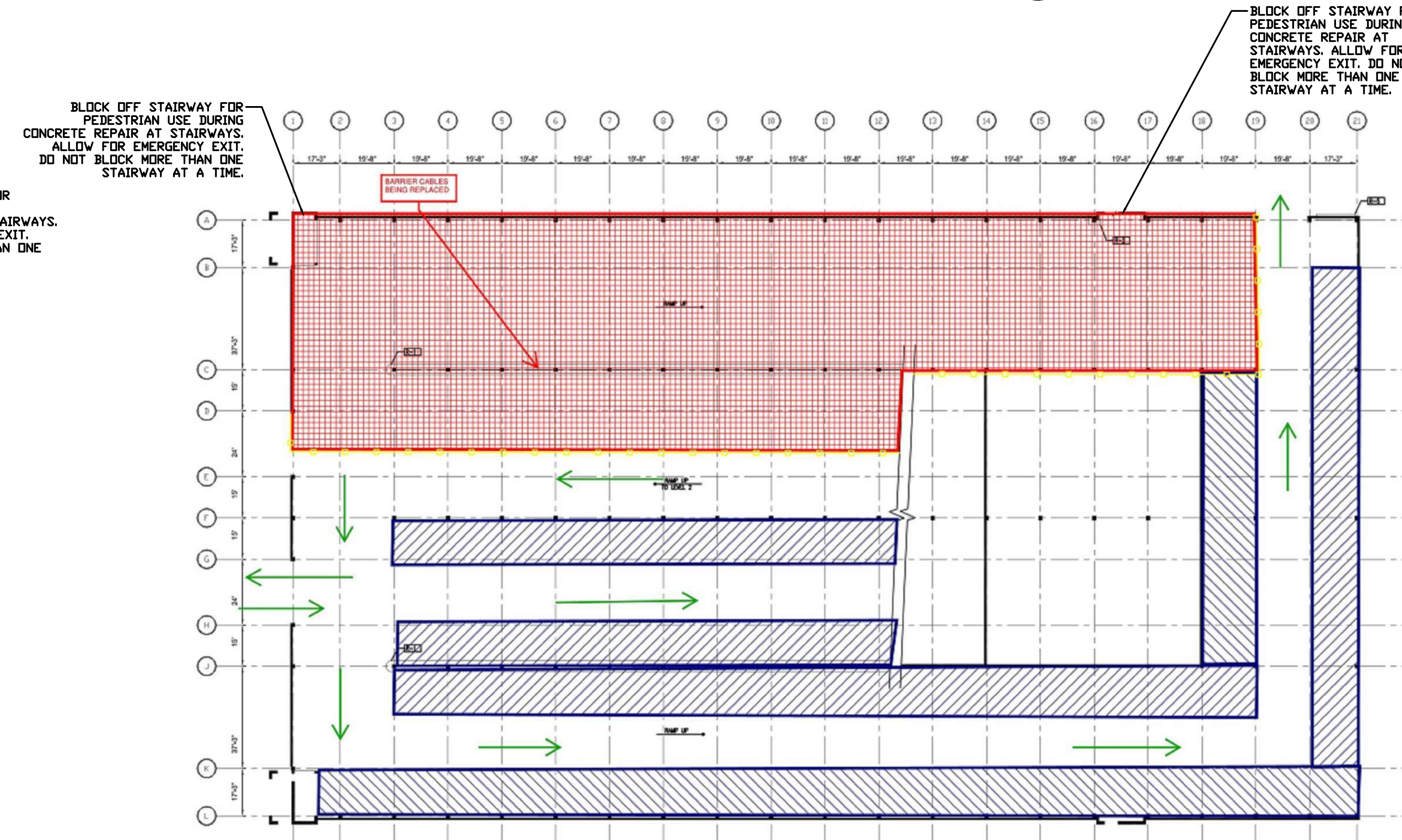
UNIVERSITY AVE. PHASE 2  
4 ROOF LEVEL TRAFFIC PLAN  
N.T.S.



UNIVERSITY AVE. PHASE 2  
2 SECOND LEVEL TRAFFIC PLAN  
N.T.S.



UNIVERSITY AVE. PHASE 2  
3 THIRD LEVEL TRAFFIC PLAN  
N.T.S.



UNIVERSITY AVE. PHASE 2  
1 GROUND LEVEL TRAFFIC PLAN  
N.T.S.

NOTES:  
1. BEGIN WORK ON ROOF LEVEL AND WORK DOWN. OPEN TRAFFIC LANES AND PARKING AFTER FINISHING WORK AND MOVING TO ANOTHER LEVEL.  
2. COORDINATE ALL PARKING AND TEMPORARY CONSTRUCTION MEASURES WITH MU CONSTRUCTION MANAGER AND MU PARKING AND TRANSPORTATION DEPARTMENT.  
3. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SIGNAGE FOR PARKING AND TRAFFIC LANES DURING REPAIRS.  
4. REFER TO GEN. NOTES ON SHEET S-001.

- CONSTRUCTION AREA
- ANGLED PARKING
- TRAFFIC FLOW
- HEAD ON PARKING
- TEMPORARY CONSTRUCTION FENCING

Drawing Information	
Project No:	B2310003
Drawing No:	S201
Drawn By:	BRE
Date Drawn:	01/31/2024
Checked By:	RRM
Last Modified:	1/25/24

Project Information  
VARIOUS LOCATIONS - UAFPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

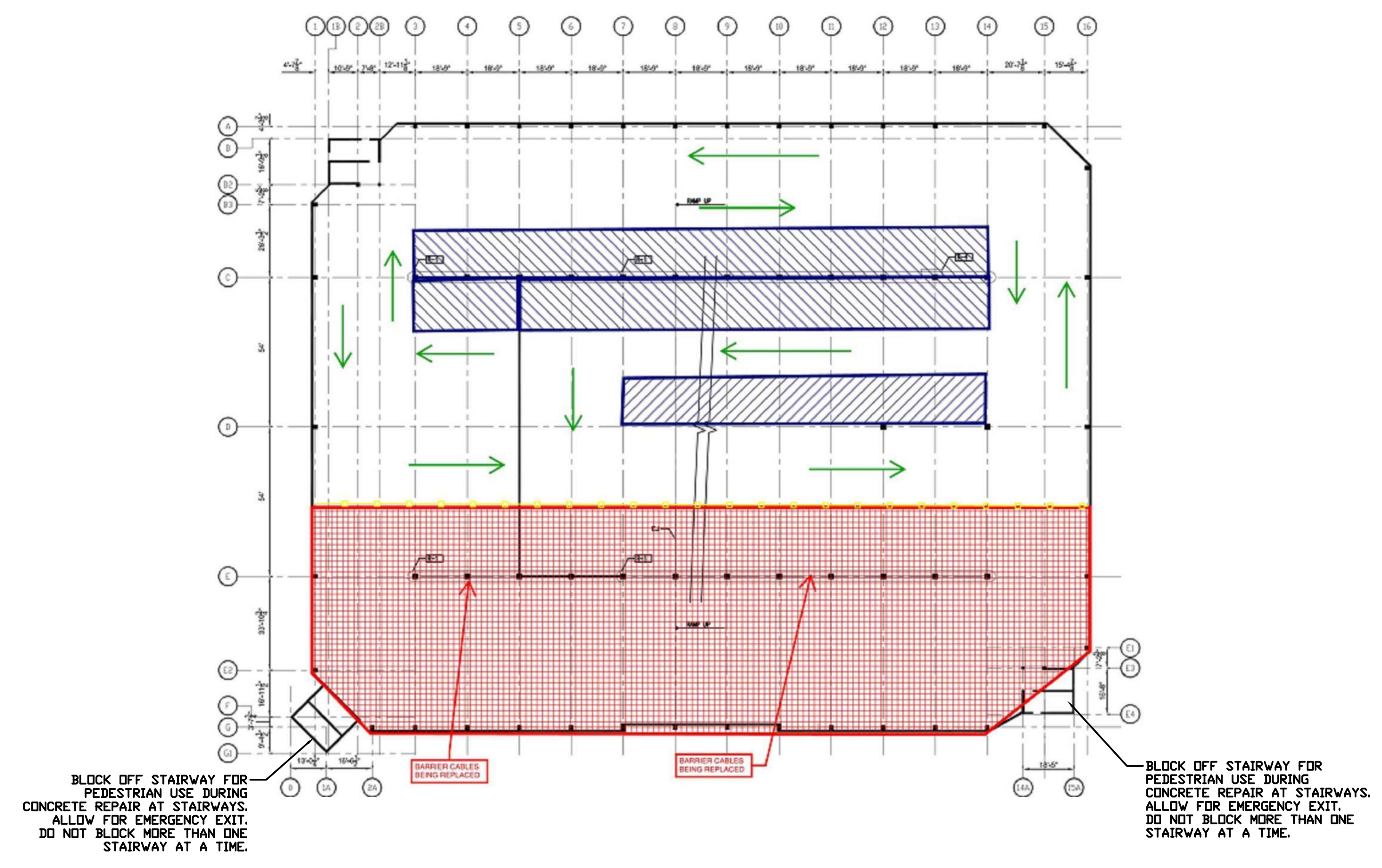
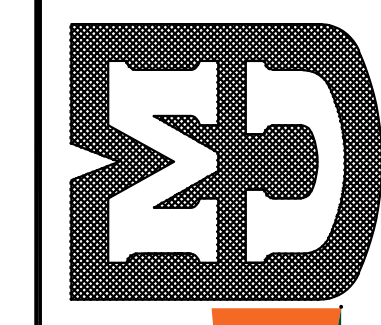
STRUCTURAL VEHICULAR BARRIERS REPAIR

UNIVERSITY AVE GARAGE PHASE 2 TRAFFIC PLANS

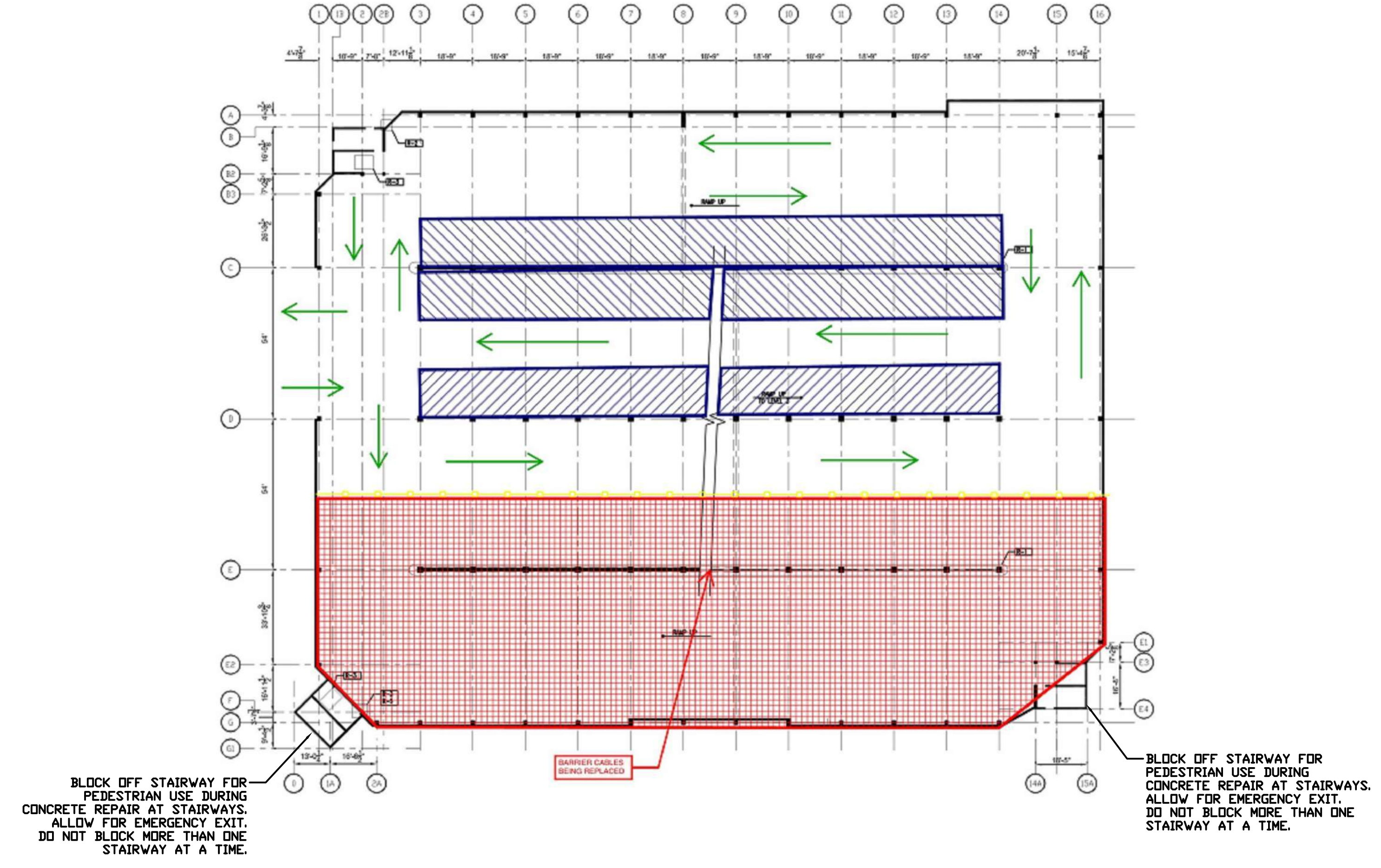


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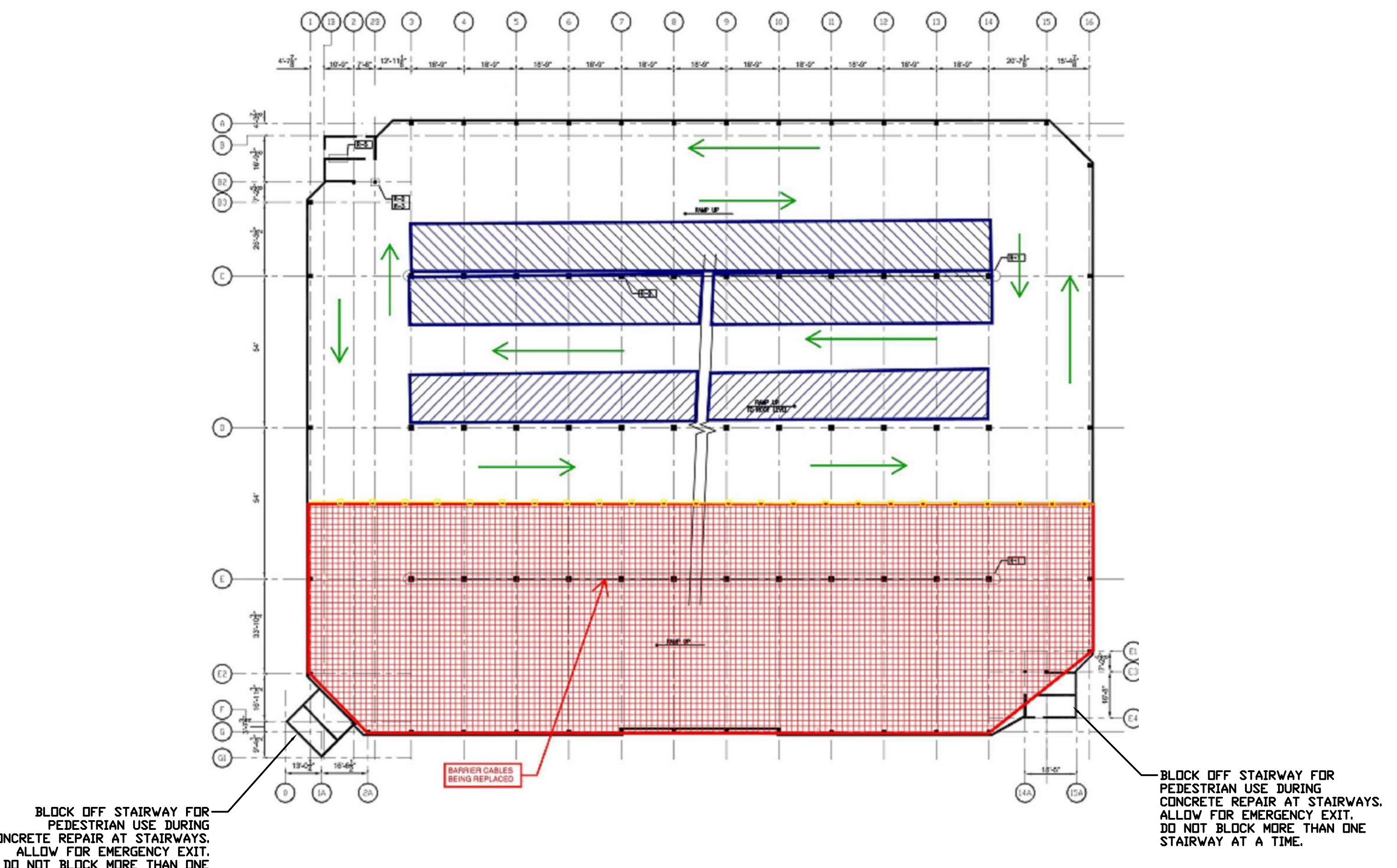
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Date \_\_\_\_\_  
Revisions \_\_\_\_\_  
Revision No. \_\_\_\_\_ Date \_\_\_\_\_



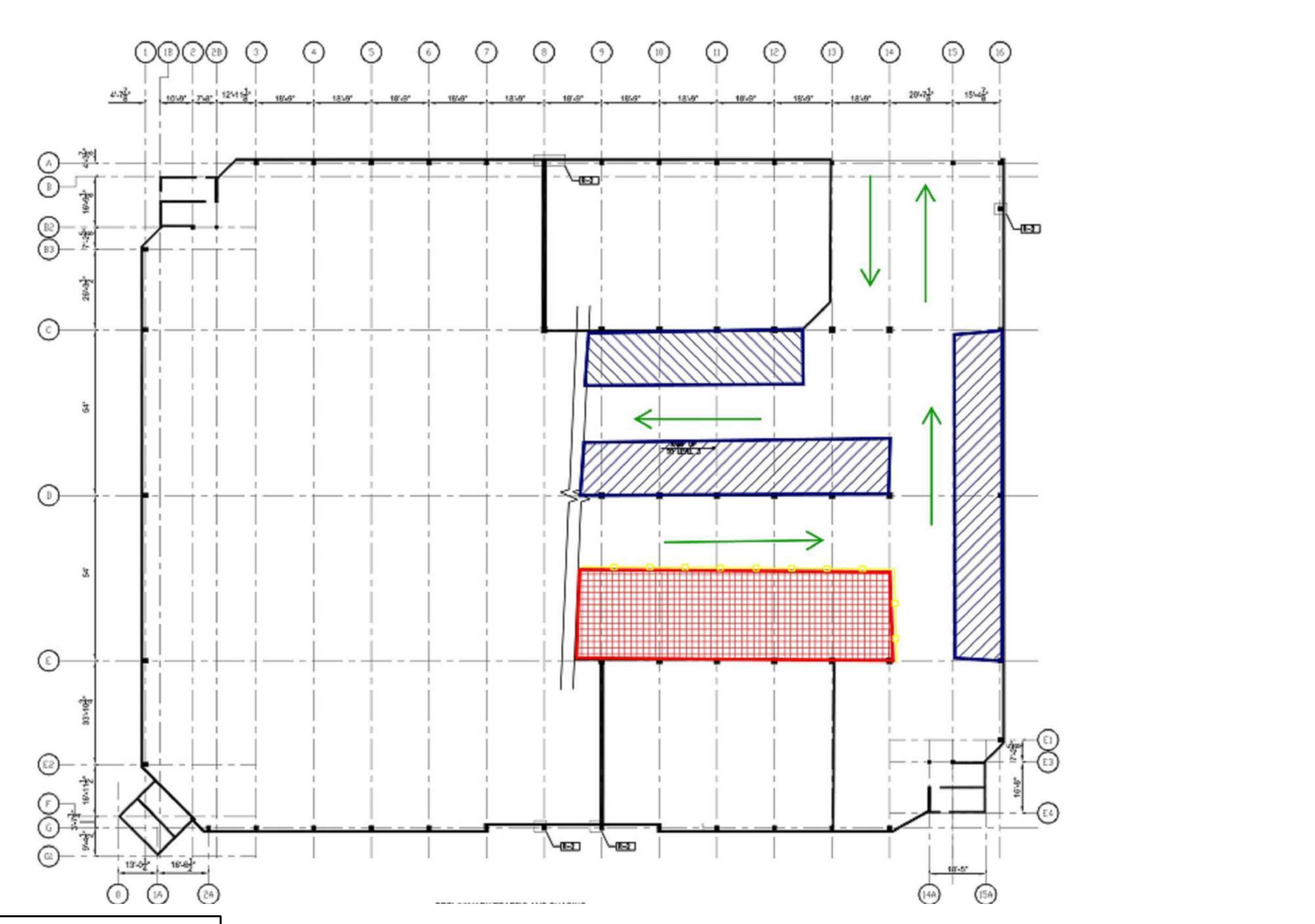
4 CONLEY AVE. PHASE 1  
ROOF LEVEL TRAFFIC PLAN  
N.T.S.



2 CONLEY AVE. PHASE 1  
SECOND LEVEL TRAFFIC PLAN  
N.T.S.



3 CONLEY AVE. PHASE 1  
THIRD LEVEL TRAFFIC PLAN  
N.T.S.



1 CONLEY AVE. PHASE 1  
GROUND LEVEL TRAFFIC PLAN  
N.T.S.

NOTES:  
1. BEGIN WORK ON ROOF LEVEL AND WORK DOWN. OPEN TRAFFIC LANES AND PARKING AFTER FINISHING WORK AND MOVING TO ANOTHER LEVEL.  
2. COORDINATE ALL PARKING AND TEMPORARY CONSTRUCTION MEASURES WITH MU CONSTRUCTION MANAGER AND MU PARKING AND TRANSPORTATION DEPARTMENT.  
3. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SIGNAGE FOR PARKING AND TRAFFIC LANES DURING REPAIRS.  
4. REFER TO GEN. NOTES ON SHEET S-001.

- CONSTRUCTION AREA
- ANGLED PARKING
- TRAFFIC FLOW
- HEAD ON PARKING
- TEMPORARY CONSTRUCTION FENCING

Drawing Information	
Project No:	B2310003
Drawing No:	S202
Drawn By:	BRE
Date Drawn:	01/31/2024
Checked By:	RRM
Last Modified:	1/25/24

VARIOUS LOCATIONS - UAPs AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

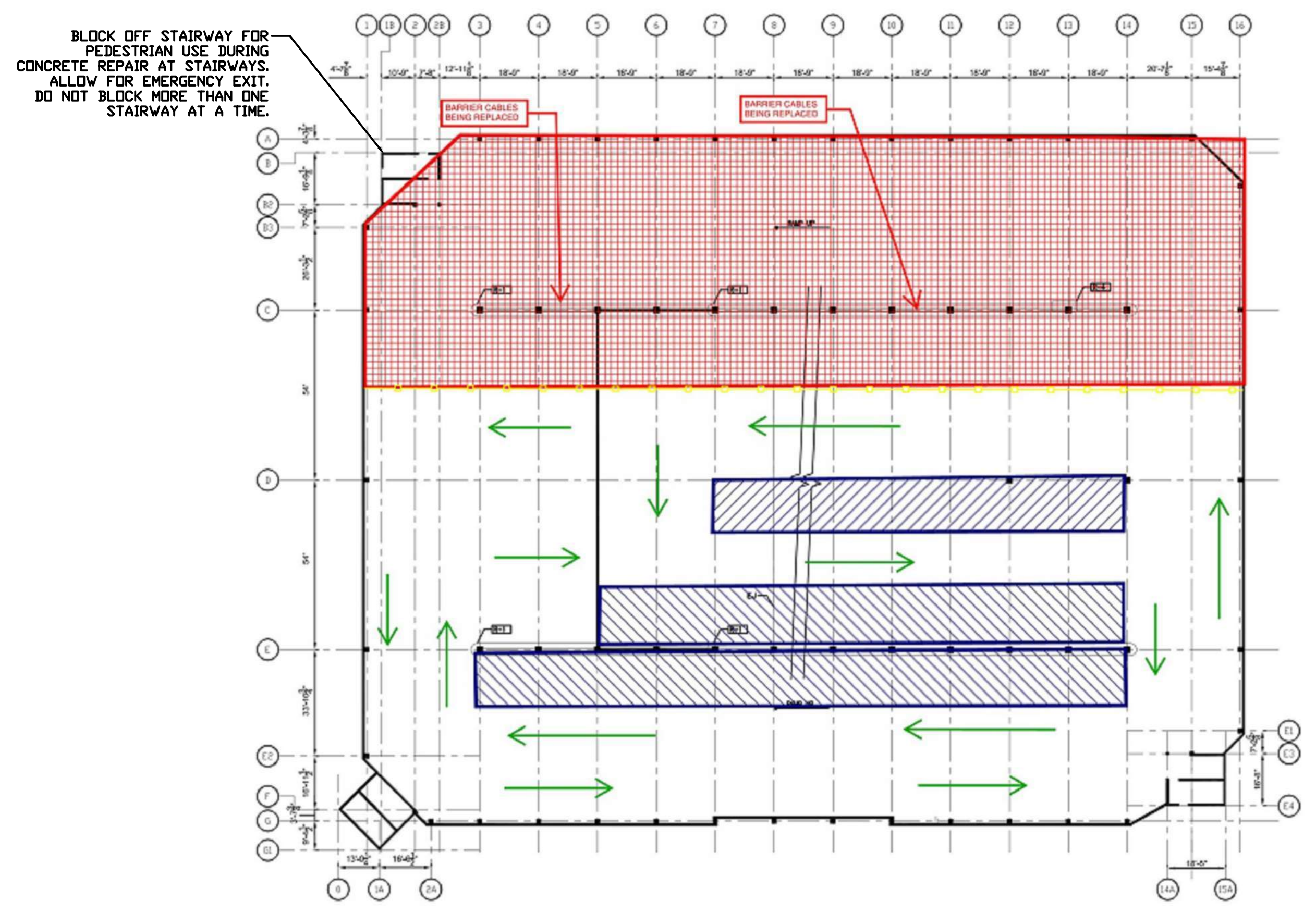
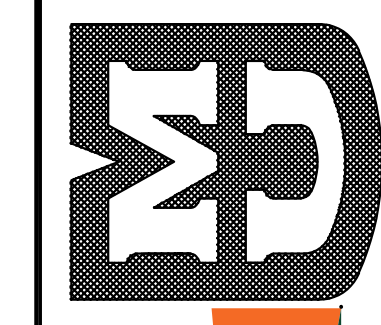
STRUCTURAL VEHICULAR BARRIERS REPAIR

CONLEY AVE GARAGE PHASE 1 TRAFFIC PLANS

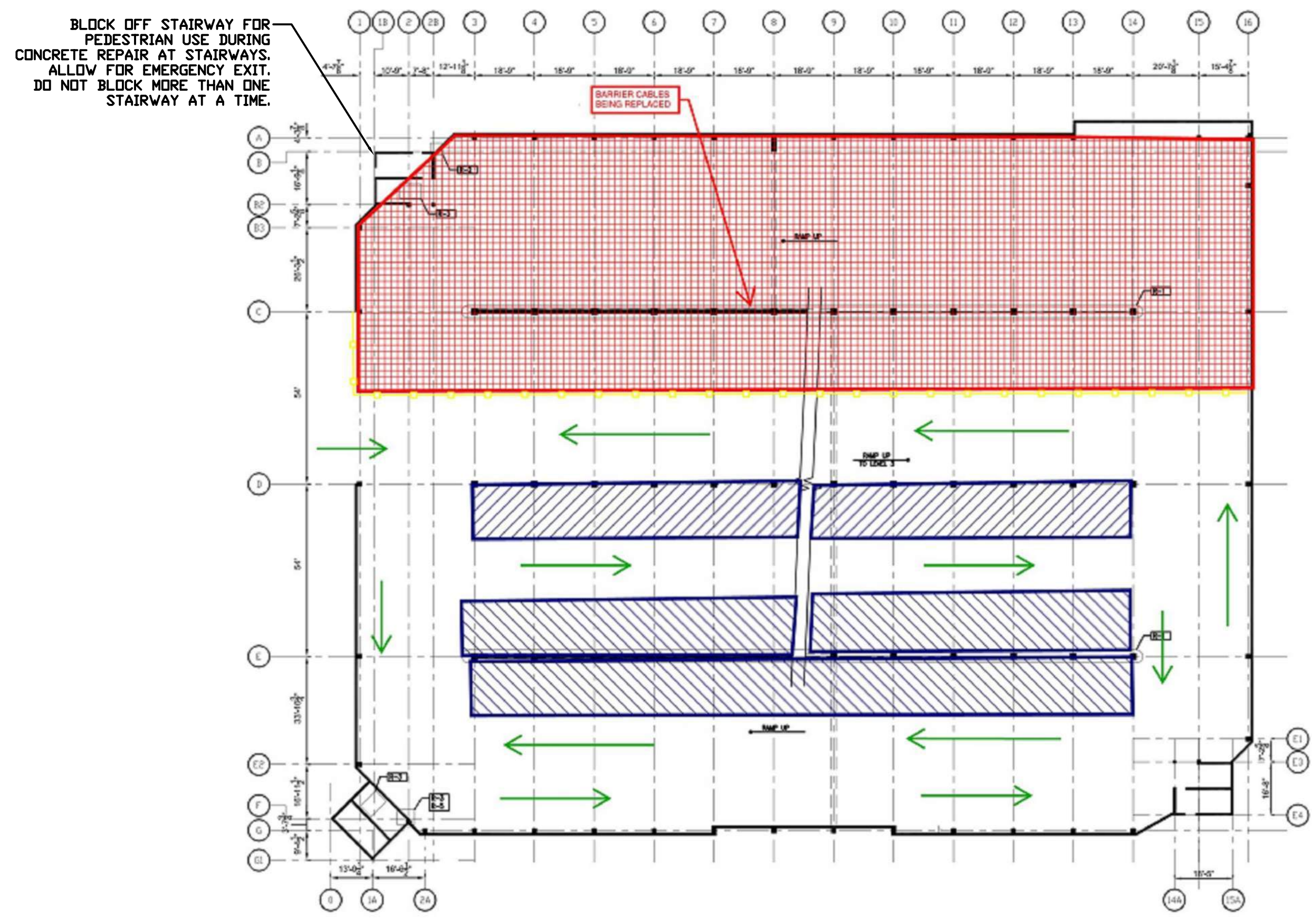


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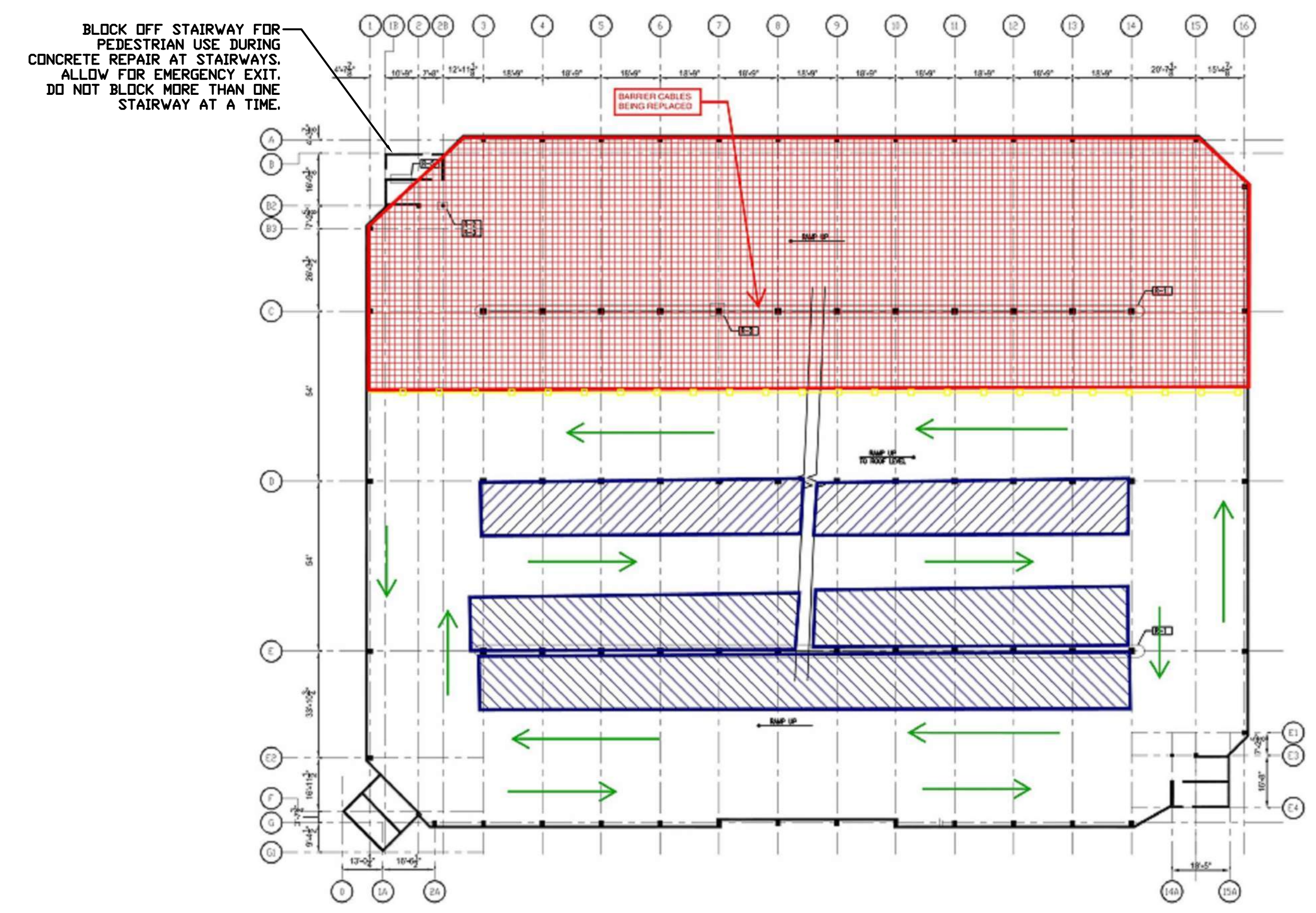
License No. \_\_\_\_\_  
Date \_\_\_\_\_  
Revision No. \_\_\_\_\_  
Date \_\_\_\_\_



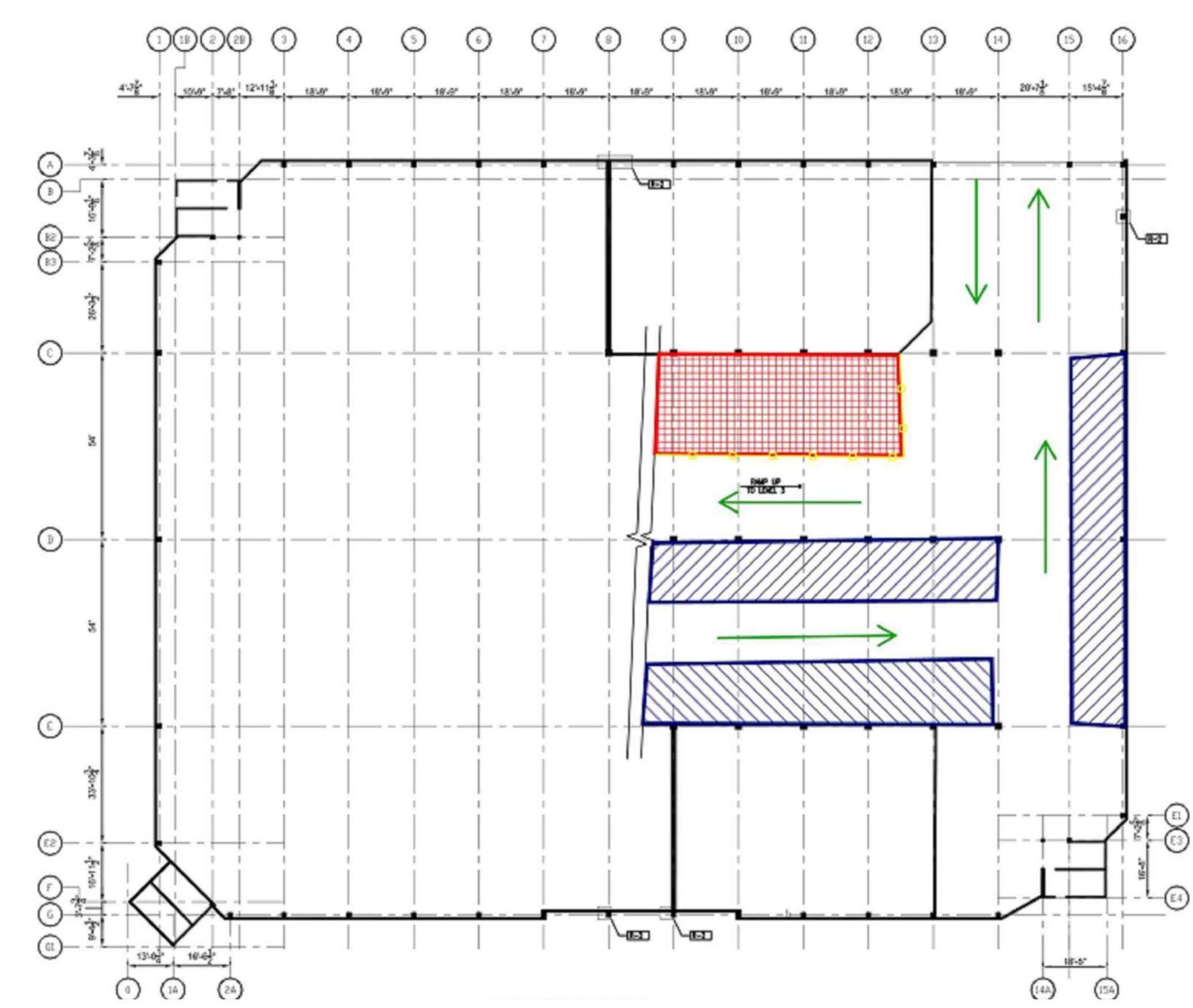
4 CONLEY AVE. PHASE 2  
ROOF LEVEL TRAFFIC PLAN  
N.T.S.



2 CONLEY AVE. PHASE 2  
SECOND LEVEL TRAFFIC PLAN  
N.T.S.



3 CONLEY AVE. PHASE 2  
THIRD LEVEL TRAFFIC PLAN  
N.T.S.



1 CONLEY AVE. PHASE 2  
GROUND LEVEL TRAFFIC PLAN  
N.T.S.

NOTES:  
1. BEGIN WORK ON ROOF LEVEL AND WORK DOWN. OPEN TRAFFIC LANES AND PARKING AFTER FINISHING WORK AND MOVING TO ANOTHER LEVEL.  
2. COORDINATE ALL PARKING AND TEMPORARY CONSTRUCTION MEASURES WITH MU CONSTRUCTION MANAGER AND MU PARKING AND TRANSPORTATION DEPARTMENT.  
3. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SIGNAGE FOR PARKING AND TRAFFIC LANES DURING REPAIRS.  
4. REFER TO GEN. NOTES ON SHEET S-001.

- CONSTRUCTION AREA
- ANGLED PARKING
- TRAFFIC FLOW
- HEAD ON PARKING
- TEMPORARY CONSTRUCTION FENCING

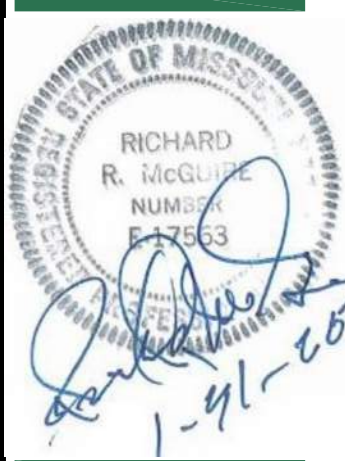
Drawing Information	
Project No.	B2310003
Drawing No.	S203
Drawn By:	BRE
Date Drawn:	01/31/2024
Checked By:	RRM
Last Modified:	1/25/24

VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

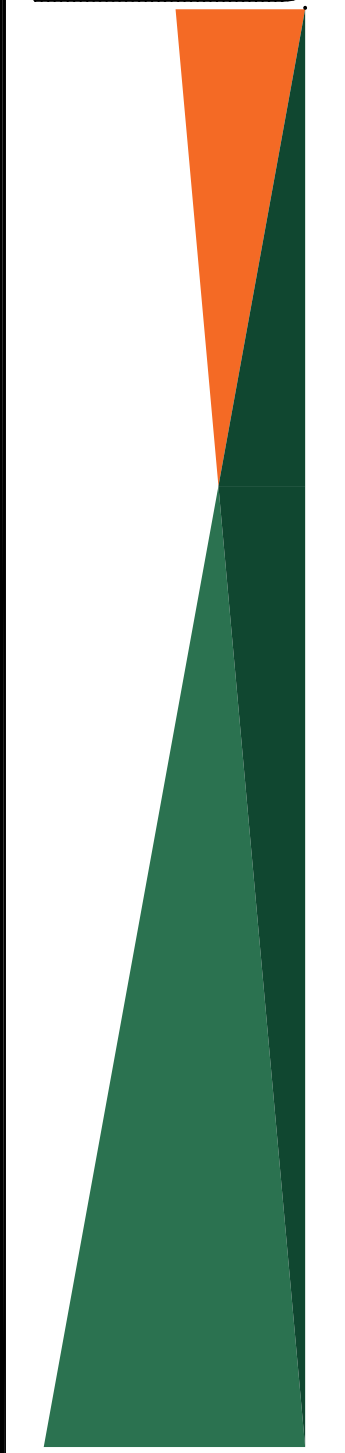
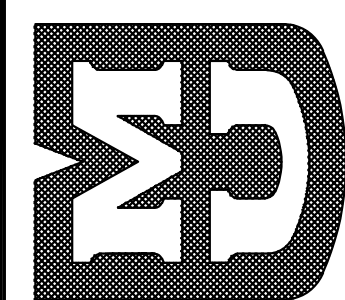
STRUCTURAL VEHICULAR BARRIERS REPAIR

CONLEY AVE GARAGE PHASE 2 TRAFFIC PLANS



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

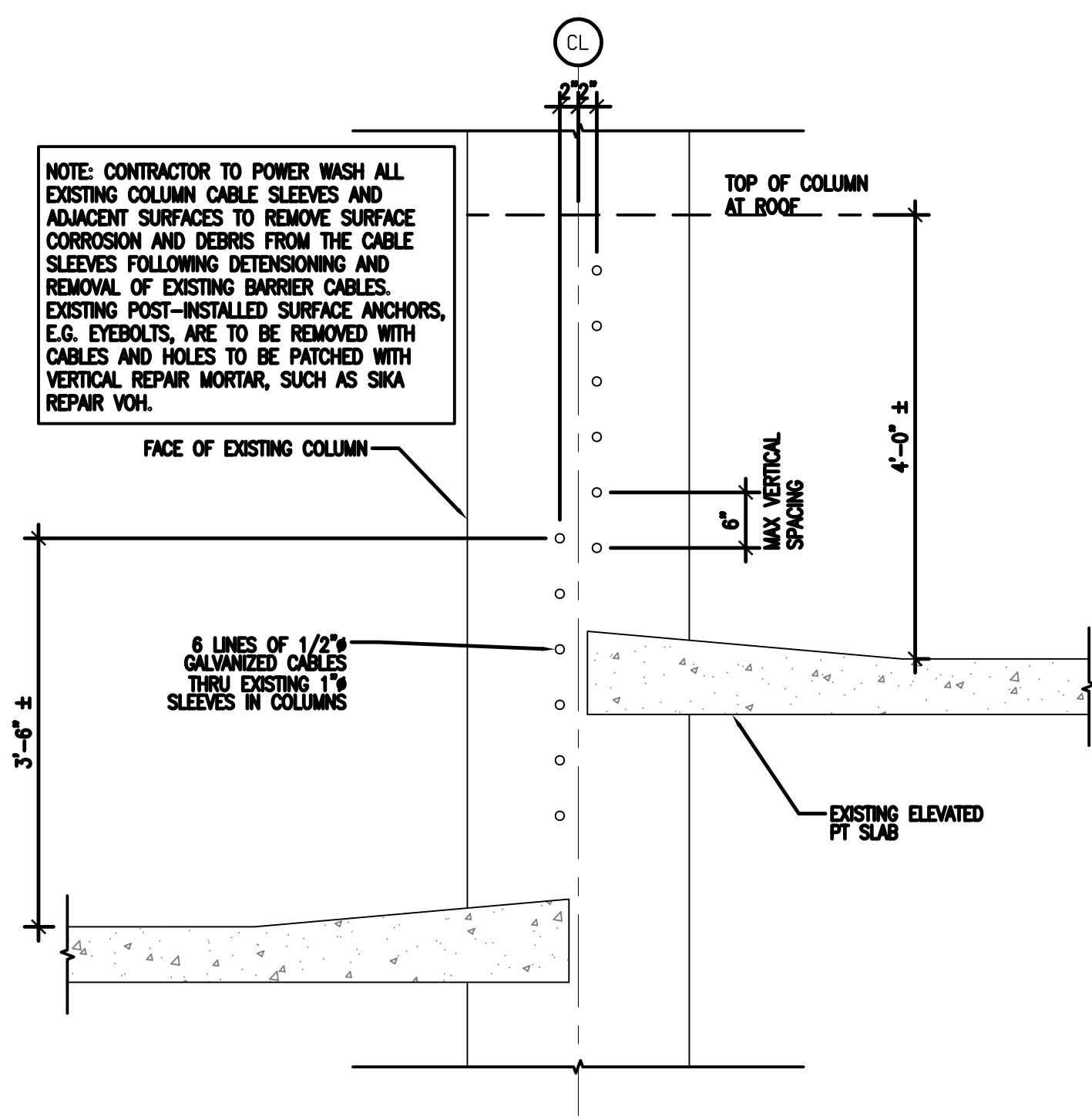
License No. \_\_\_\_\_  
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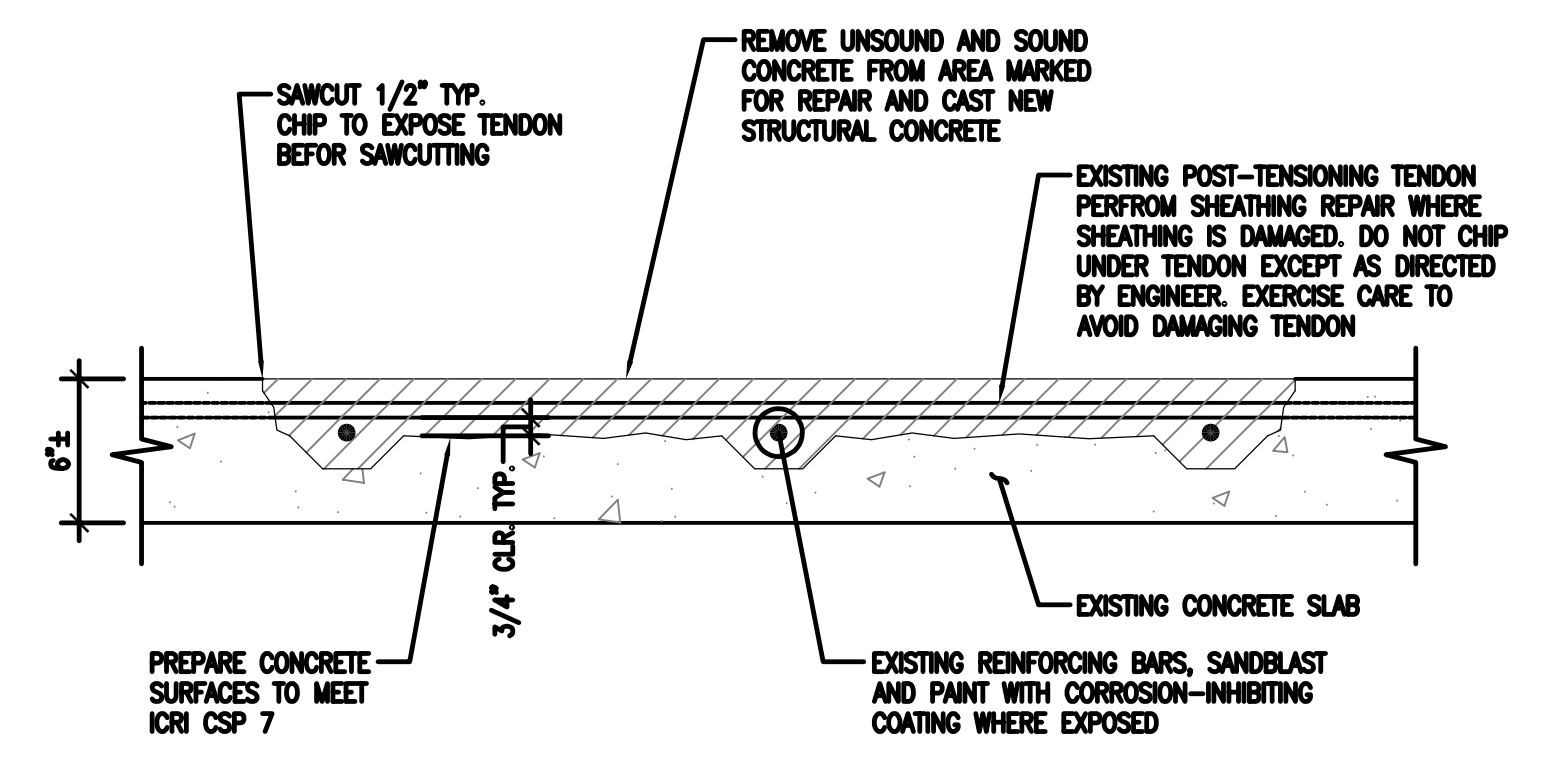
Project No: B2310003  
Drawing No: S300  
Drawn By: BRE  
Date Drawn: 01/31/2024  
Checked By: RRM  
Last Modified: 1/8/24

Project Information  
VARIOUS LOCATIONS - UAFS AND CAPS STRUCTURAL REPAIRS  
UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI  
STRUCTURAL VEHICULAR BARRIERS REPAIR

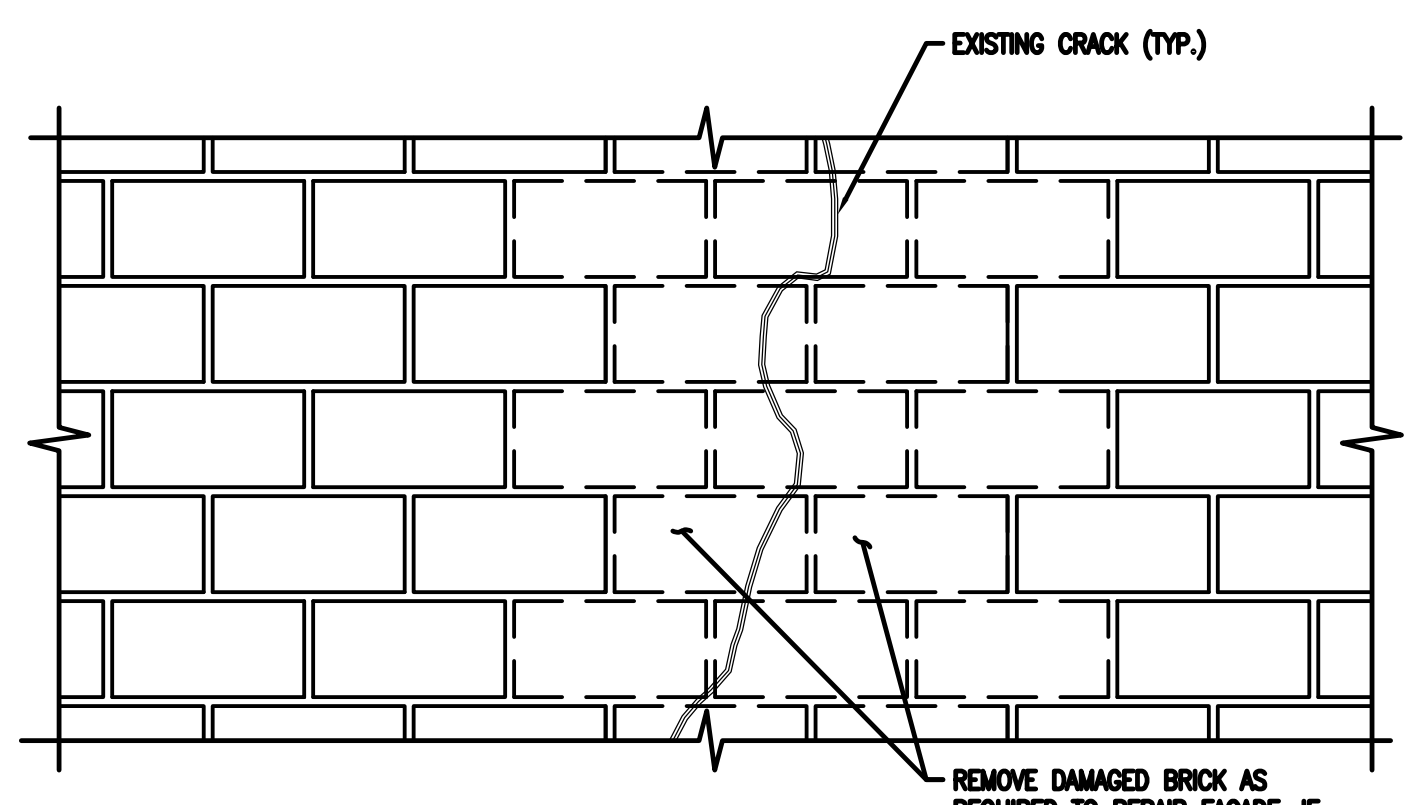
REPAIR DETAILS  
S300



6 TYPICAL BARRIER CABLE SECTION  
N.T.S.

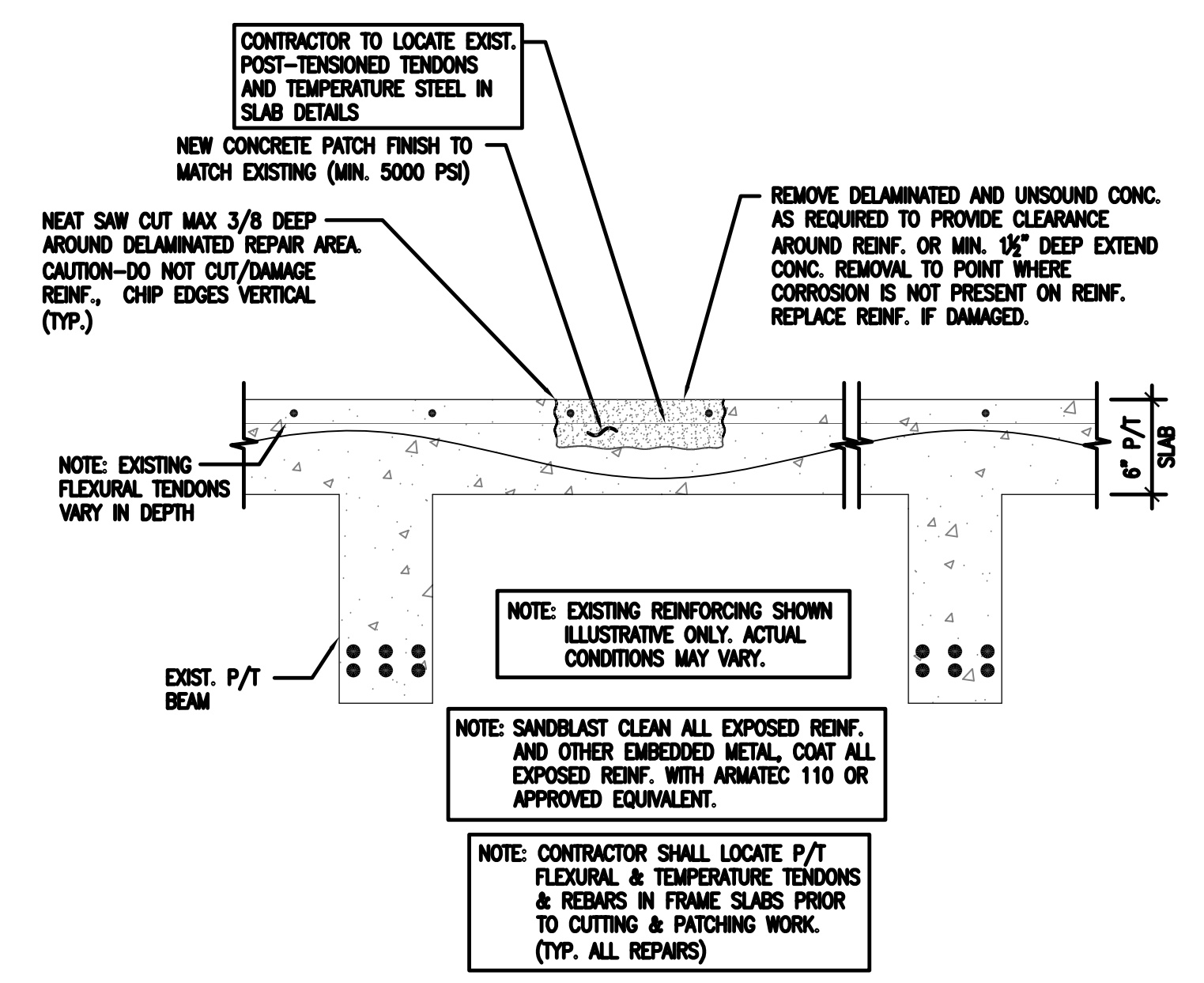


3 TYPICAL ENLARGED PARTIAL DEPTH CONCRETE SLAB REPAIR  
N.T.S.

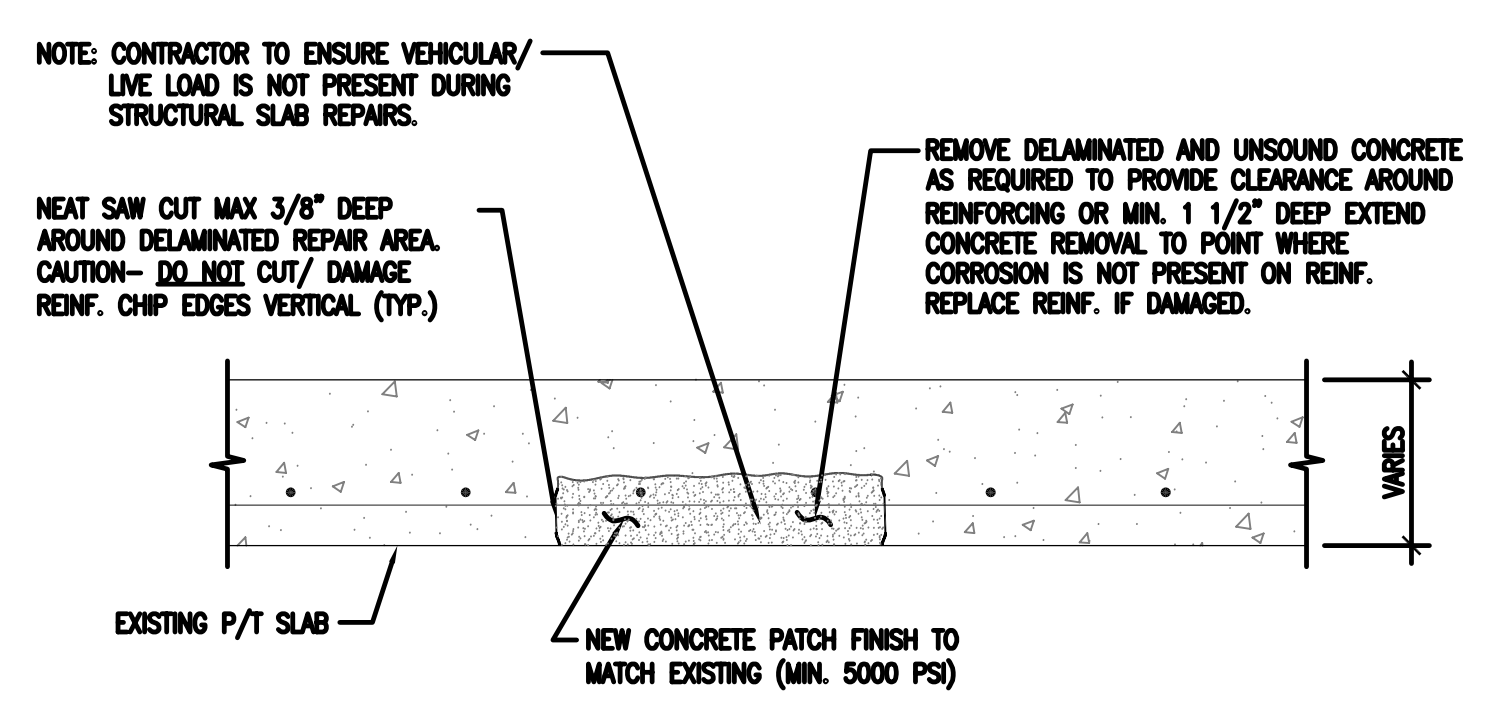


- NOTE:
1. IF WIDTH OF BRICK DEMOLITION EXCEEDS 3'-0", ADDITIONAL SHORING IS REQUIRED.
  2. FIELD VERIFY REPAIR CONDITIONS AT COVERED WALKWAYS AFTER EXISTING CANOPY DEMOLITION.

5 TYP. BRICK WALL CRACK OR INFILL REPAIR  
1 1/2"=1'-0"



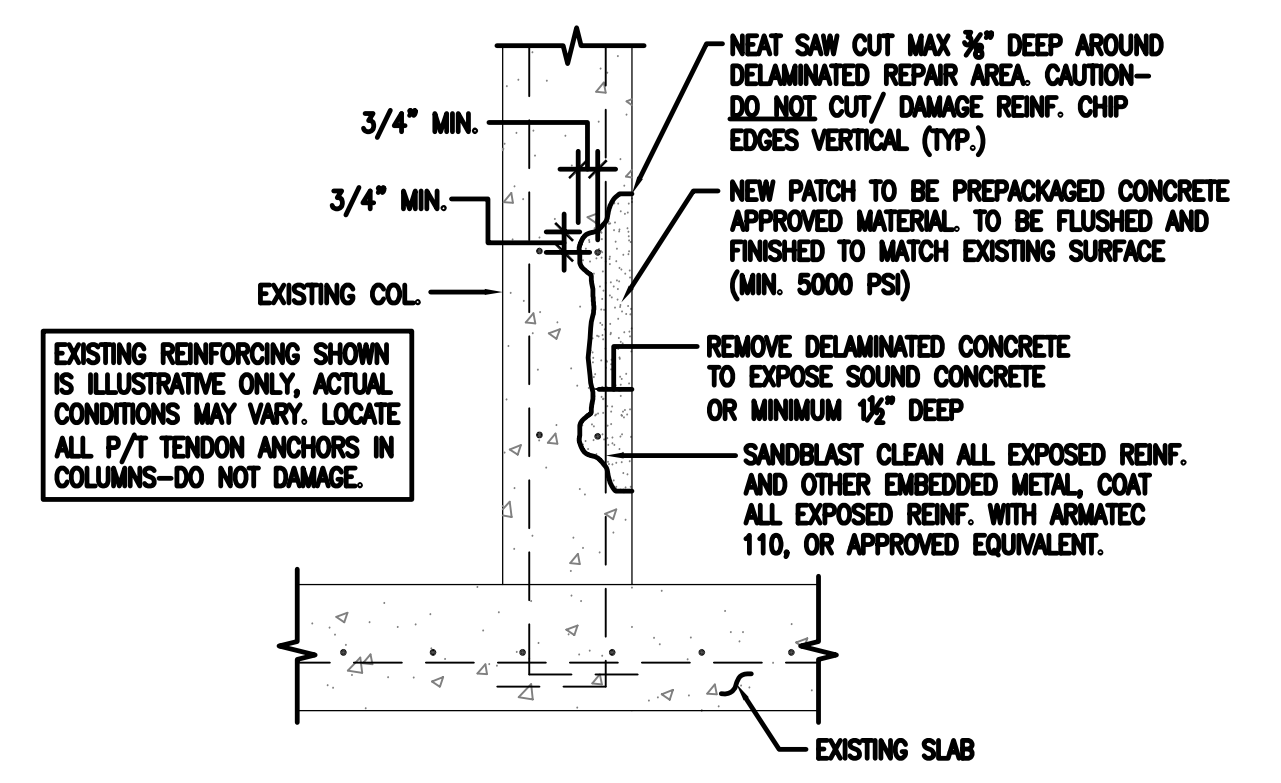
2 PARTIAL DEPTH P/T SLAB DELAMINATION REPAIR BAY SECTION  
N.T.S.



NOTE: SANDBLAST CLEAN ALL EXPOSED REINF. AND OTHER EMBEDDED METAL. COAT ALL EXPOSED REINF. WITH ARMATEC 110 OR APPROVED EQUIVALENT.

NOTE: EXISTING REINFORCING SHOWN ILLUSTRATIVE ONLY. ACTUAL CONDITIONS MAY VARY.

4 PARTIAL DEPTH SOFFIT DELAMINATION REPAIR  
N.T.S.



1 TYP. COLUMN AND WALL/VERTICAL REPAIRS  
N.T.S.



R-5: SEE DETAIL 5/S300

16 CMU WALL CRACK AT GROUND LEVEL NW CORNER  
N.T.S.



R-3: SEE DETAIL 4/S300

12 DELAMINATED SOFFIT AT 2ND LEVEL SW STAIR  
N.T.S.



R-3: SEE DETAIL 4/S300

8 DELAMINATED SOFFIT AT 2ND LEVEL NW STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

4 DELAMINATED COLUMN AT 2ND LEVEL NW STAIRS  
N.T.S.



R-4: SEE DETAIL 2/S300 AND 3/S300

15 DELAMINATED SLAB AT 3RD FLOOR NW CORNER  
N.T.S.



R-3: SEE DETAIL 4/S300

11 DELAMINATED SOFFIT AT 3RD LEVEL SW STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

7 DELAMINATED SOFFIT AT 2ND LEVEL NW STAIR  
N.T.S.



SAWCUT, CHIP AND REMOVE EXISTING GROUT POCKETS TO EXPOSE CABLE AND WEDGES AT EACH END. REMOVE EXISTING WEDGES FROM END ANCHORS.

3 BARRIER CABLE GROUT POCKETS  
N.T.S.



R-3: SEE DETAIL 4/S300

14 DELAMINATED SOFFIT AT 3RD LEVEL NW STAIR  
N.T.S.



R-3: SEE DETAIL 4/S300

10 DELAMINATED SOFFIT AT 3RD LEVEL SW STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

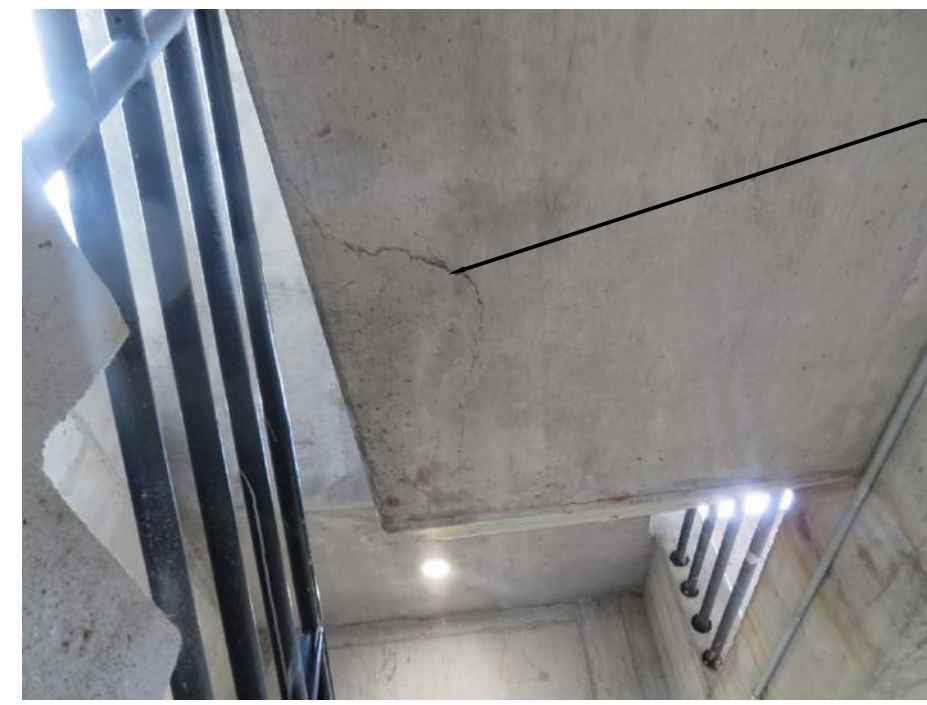
6 DELAMINATED SPANDEL AT ROOF LEVEL SE CORNER  
N.T.S.



REMOVE EXISTING BARRIER CABLES AND REPLACE WITH NEW 1/2" GALVANIZED BARRIER CABLE

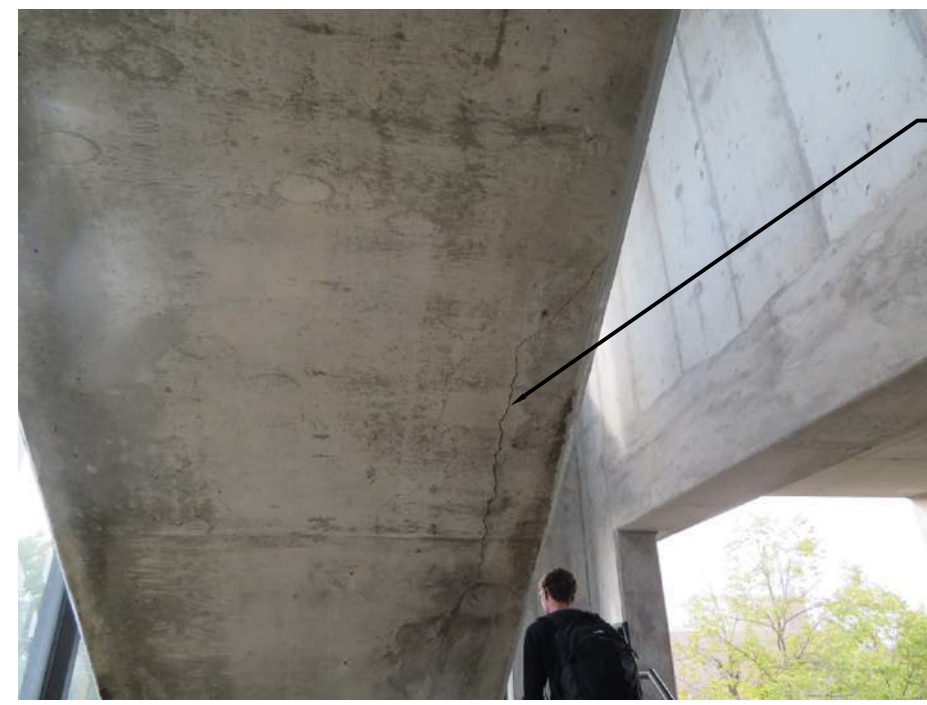
LEAVE PIPE GUARD IN PLACE

2 BARRIER CABLES AT COLUMN  
N.T.S.



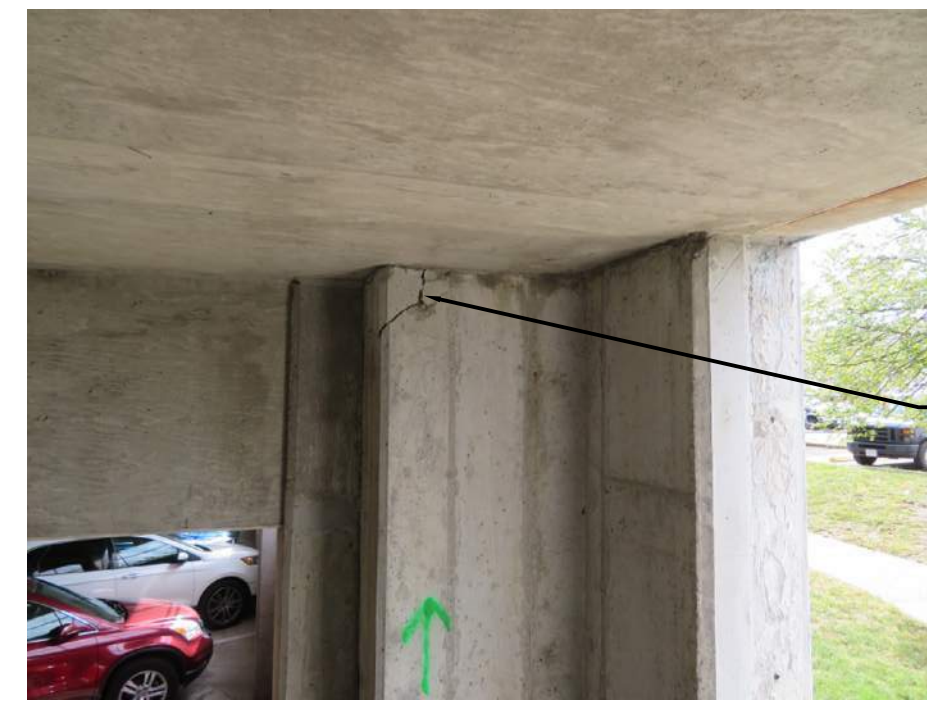
R-3: SEE DETAIL 4/S300

13 DELAMINATED SOFFIT AT 2ND LEVEL SW STAIR  
N.T.S.



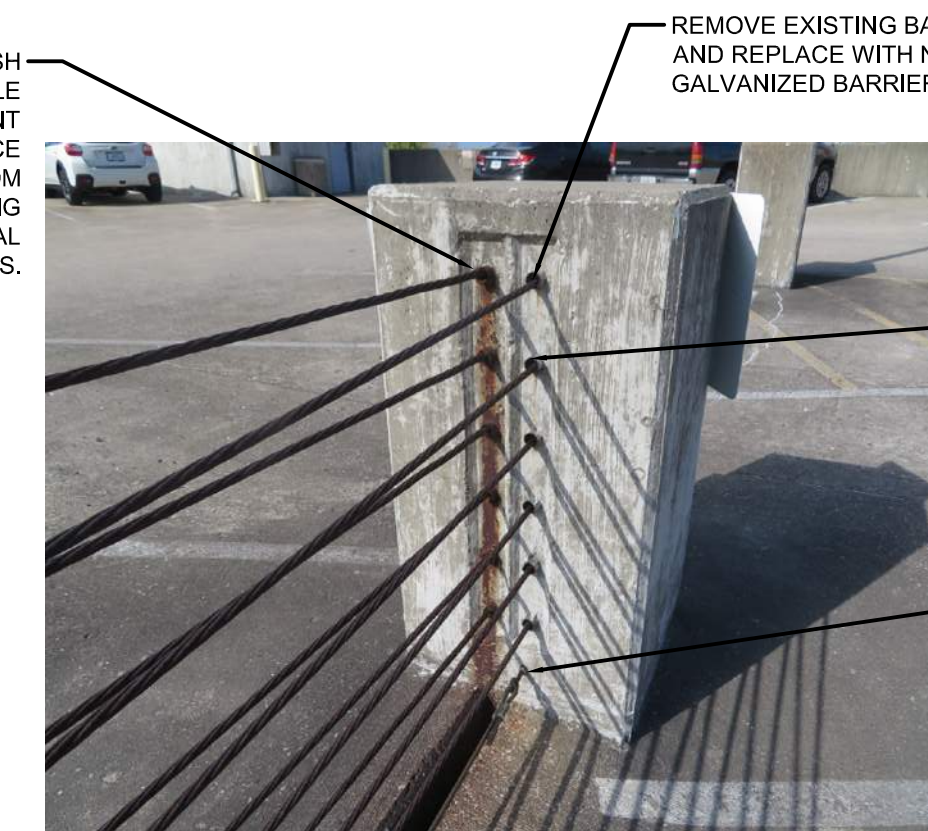
R-3: SEE DETAIL 4/S300

9 DELAMINATED SOFFIT AT 3RD LEVEL SW STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

5 DELAMINATED COLUMN AT GROUND LEVEL NW CORNER  
N.T.S.



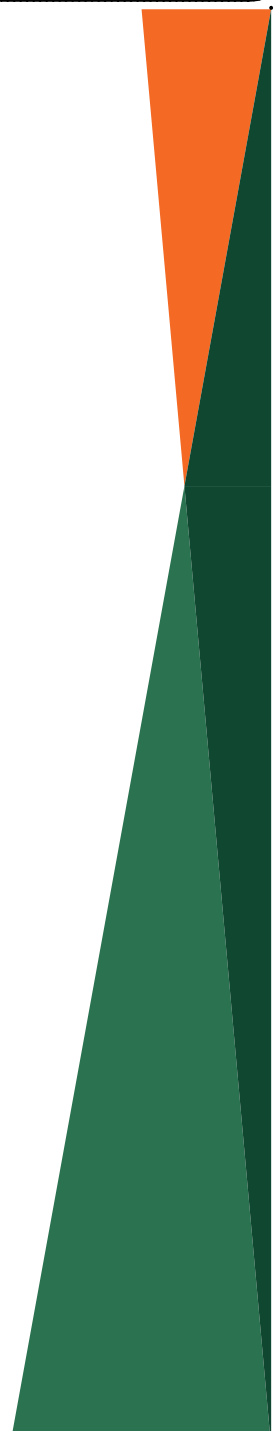
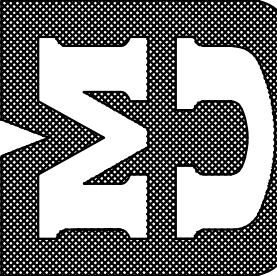
CONTRACTOR TO POWER WASH ALL EXISTING COLUMN CABLE SLEEVES AND ADJACENT SURFACES TO REMOVE SURFACE CORROSION AND DEBRIS FROM THE CABLE SLEEVES FOLLOWING DETENSIONING AND REMOVAL OF EXISTING BARRIER CABLES.

REMOVE EXISTING BARRIER CABLES AND REPLACE WITH NEW 1/2" GALVANIZED BARRIER CABLE

AFTER GROUTING OUTSIDE ANCHOR POCKETS, APPLY SIKAFLEX-2C URETHANE TO TOP HALF OF PIPE SLEEVES AT END COLUMNS.

LEAVE EXISTING LOWER EYEBOLT AND CABLE, TYP.

1 BARRIER CABLES INTO COLUMN  
N.T.S.



Drawing Information	
Project No:	B2310003
Drawing No:	S301
Drawn By:	BRE
Date Drawn:	01/31/2024
Checked By:	RRM
Last Modified:	1/8/24

Project Information  
VARIOUS LOCATIONS - UAPS AND CAPS STRUCTURAL REPAIRS

UNIVERSITY OF MISSOURI COLUMBIA, MISSOURI

STRUCTURAL VEHICULAR BARRIERS REPAIR

UNIVERSITY AVE REPAIR PHOTOS

C:\Users\BIBran\OneDrive\Documents\Braun Intertec\30110003 University of Missouri - 03/11/2024 11:23:30 AM





R-5: SEE DETAIL 5/S300

16 CMU WALL CRACK AT 2ND LEVEL SE STAIR  
N.T.S.



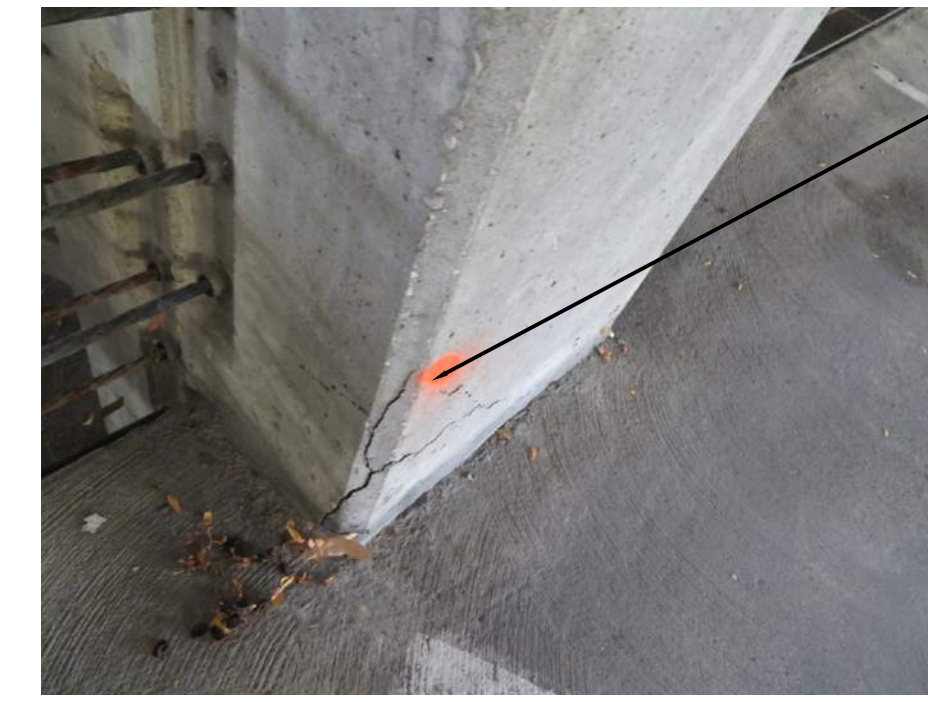
R-3: SEE DETAIL 4/S300

12 DELAMINATED SOFFIT AT 2ND LEVEL SW STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

8 DELAMINATED BEAM AT GROUND LEVEL EAST SIDE  
N.T.S.



R-2: SEE DETAIL 1/S300

4 DELAMINATED COLUMN AT 3RD LEVEL WEST SIDE  
N.T.S.



R-5: SEE DETAIL 5/S300

15 CMU WALL CRACK AT 3RD LEVEL SW STAIR  
N.T.S.



R-3: SEE DETAIL 4/S300

11 DELAMINATED SOFFIT AT 2ND LEVEL SE STAIR  
N.T.S.



R-3: SEE DETAIL 4/S300

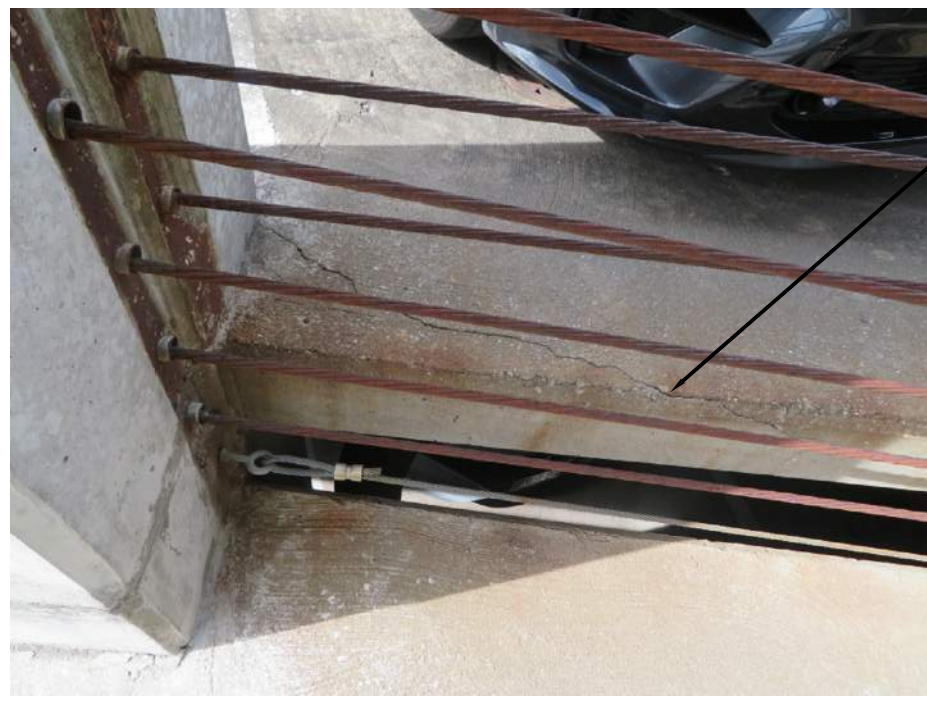
R-2: SEE DETAIL 1/S300

7 DELAMINATED COLUMN AND SOFFIT AT 3RD FLOOR SW STAIR  
N.T.S.



SAWCUT, CHIP AND REMOVE EXISTING GROUT POCKETS TO EXPOSE CABLE AND WEDGES AT EACH END, REMOVE EXISTING WEDGES FROM END ANCHORS.

3 BARRIER CABLES GROUT POCKETS  
N.T.S.



R-4: SEE DETAIL 2/S300 AND 3/S300

14 DELAMINATED SLAB AT ROOF LEVEL WEST SIDE  
N.T.S.



R-2: SEE DETAIL 1/S300

10 DELAMINATED BEAM AT GROUND LEVEL WEST SIDE  
N.T.S.



R-2: SEE DETAIL 1/S300

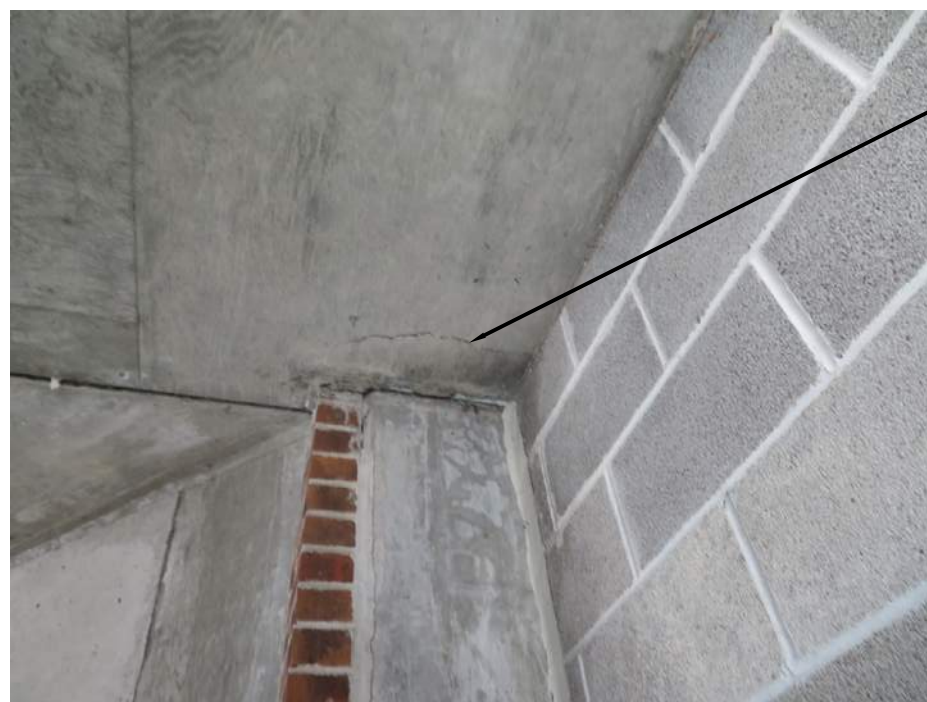
6 DELAMINATED COLUMN AT GROUND LEVEL NORTH SIDE  
N.T.S.



REMOVE EXISTING BARRIER CABLES AND REPLACE WITH NEW 1/2" GALVANIZED BARRIER CABLE

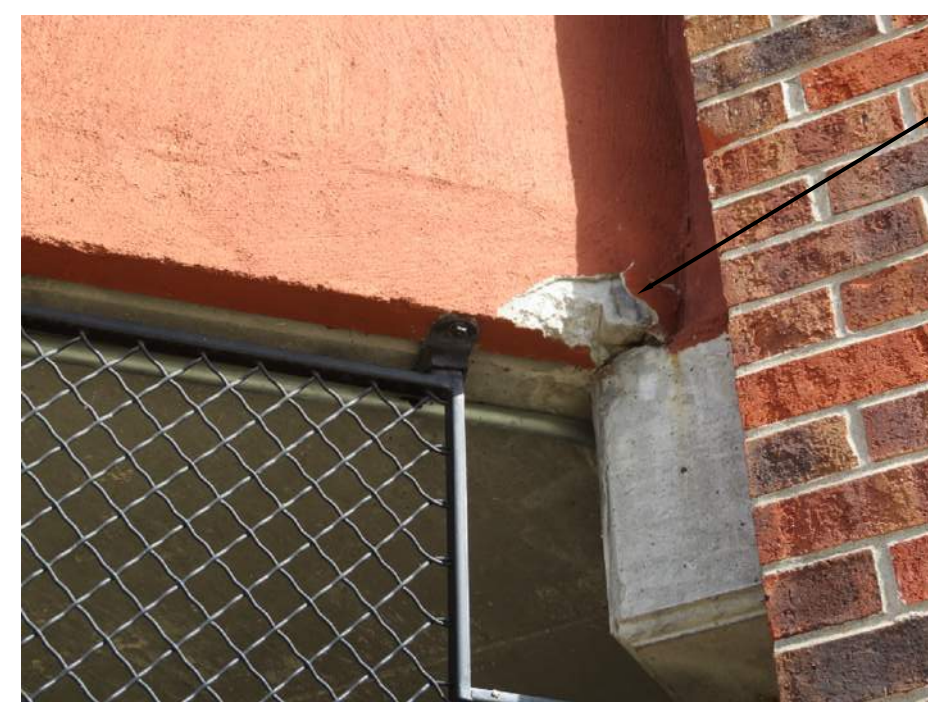
REMOVE TEMPORARY CABLE AND EYEBOLT, PATCH HOLES USING SIKAREPAIR VOH.

2 BARRIER CABLES INTO COLUMN  
N.T.S.



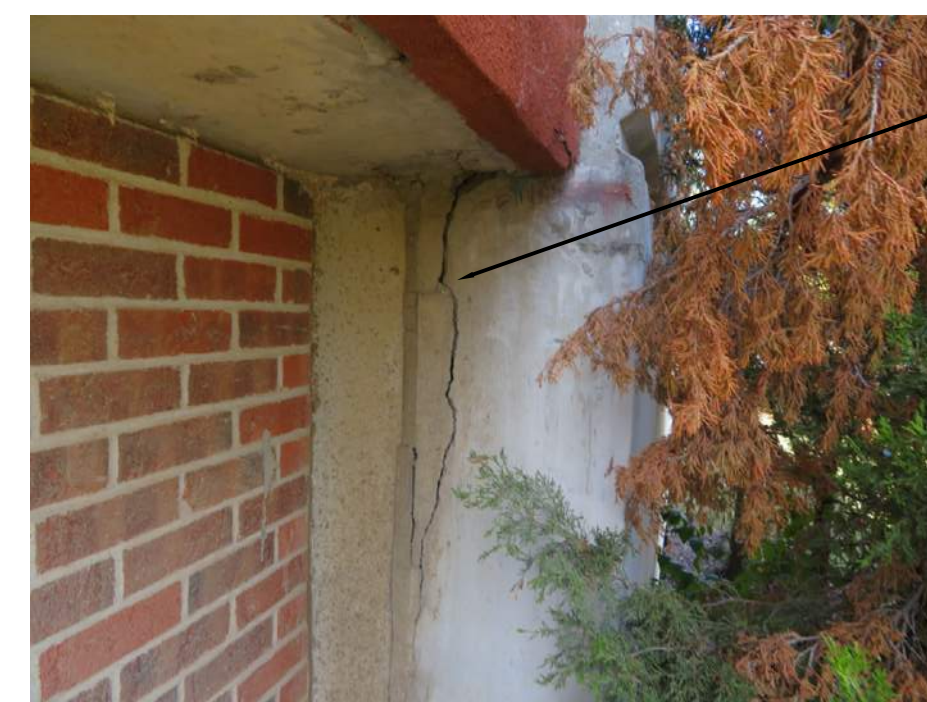
R-3: SEE DETAIL 4/S300

13 DELAMINATED SOFFIT AT 2ND LEVEL SE STAIR  
N.T.S.



R-2: SEE DETAIL 1/S300

9 DELAMINATED BEAM AT 2ND LEVEL SW CORNER  
N.T.S.



R-2: SEE DETAIL 1/S300

5 DELAMINATED SHEAR WALL AT GROUND LEVEL EAST SIDE  
N.T.S.



REMOVE EXISTING BARRIER CABLES AND REPLACE WITH NEW 1/2" GALVANIZED BARRIER CABLE

AFTER GROUTING OUTSIDE ANCHOR POCKETS, APPLY SIKAFLEX-2C URETHANE TO TOP HALF OF PIPE SLEEVES AT END COLUMNS.

1 BARRIER CABLES INTO COLUMN  
N.T.S.

CONTRACTOR TO POWER WASH ALL EXISTING COLUMN CABLE SLEEVES AND ADJACENT SURFACES TO REMOVE SURFACE CORROSION AND DEBRIS FROM THE CABLE SLEEVES FOLLOWING DETENSIONING AND REMOVAL OF EXISTING BARRIER CABLES.

REMOVE TEMPORARY CABLE AND EYEBOLT, PATCH HOLES USING SIKAREPAIR VOH.