

REPAIR AND PREVENTIVE MAINTENANCE

OF THE

7 LEBANON STREET PARKING GARAGE HANOVER, NEW HAMPSHIRE

JUNE 10, 2025

OWNER: TOWN OF HANOVER
46 LYME ROAD
HANOVER, NEW HAMPSHIRE 03755

ENGINEER: DESMAN
18 TREMONT STREET, SUITE 300
BOSTON, MASSACHUSETTS 02108
TEL: (617) 778-9882

DESMAN
Design Management

| SCOPE OF WORK (SUMMARY) | DRAWING INDEX | GENERAL NOTES |
|--|--|---|
| <p>A. STRUCTURAL REPAIRS</p> <ol style="list-style-type: none"> FULL DEPTH CONCRETE REPAIR AT PRECAST TEES PARTIAL DEPTH CONCRETE REPAIR AT CAST-IN-PLACE CONCRETE OVERHEAD/VERTICAL CONCRETE REPAIR RE-WELD TEE CONNECTIONS <p>B. WATERPROOFING REPAIRS AND PREVENTIVE MEASURES</p> <ol style="list-style-type: none"> REMOVE AND REPLACE PRECAST JOINT SEALANTS REMOVE AND REPLACE WATERPROOFING MEMBRANE INSTALL NEW EXPANSION JOINT AT ROOF LEVEL | <p>R-1 TITLE SHEET</p> <p>R-2 7 LEBANON PARKING GARAGE - ROOF LEVEL FRAMING PLAN</p> <p>R-3 7 LEBANON PARKING GARAGE - MID LEVEL FRAMING PLAN</p> <p>R-4 7 LEBANON PARKING GARAGE - LOWER LEVEL FRAMING PLAN</p> <p>R-5 7 LEBANON PARKING GARAGE - TYPICAL DETAILS - SHEET 1</p> <p>R-6 7 LEBANON PARKING GARAGE - TYPICAL DETAILS - SHEET 2</p> | <p>THE FOLLOWING NOTES SHALL APPLY UNLESS NOTED OTHERWISE ON PLANS OR SPECIFICATIONS:</p> <ol style="list-style-type: none"> ALL DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE NEW HAMPSHIRE STATE BUILDING CODE (780 CMR) AS ADOPTED BY THE STATE BOARD OF BUILDING REGULATIONS AND STANDARDS AND ON FILE WITH THE OFFICE OF THE SECRETARY OF STATE. CONTRACTOR IS INSTRUCTED TO NOT SCALE OFF CONSTRUCTION DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS WITH EXISTING CONDITIONS PRIOR TO COMMENCING WORK. CONTRACTOR SHALL REPORT IMMEDIATELY TO THE ENGINEER ANY DISCREPANCIES OR INCORRECT INFORMATION WITH RESPECT TO THE DRAWINGS BASED ON EXISTING CONDITIONS. AFTER REPORTING ANY DISCREPANCIES, THE CONTRACTOR SHALL SUBMIT A WRITTEN REPORT (WITH DRAWINGS, AS REQUIRED) IMMEDIATELY FOR THE ENGINEER'S REVIEW. CONTRACTOR SHALL PROVIDE ALL NECESSARY METHODS AND EQUIPMENT FOR PROTECTING THE BUILDING, EQUIPMENT, MATERIALS AND PERSONNEL FROM THE HAZARDS OF THE WORK. THE WORK METHODS AND EQUIPMENT ARE SUBJECT TO APPROVAL BY THE CITY OF HANOVER FIRE DEPARTMENT, FIRE PROTECTION AND PREVENTION, AND THE CONSTRUCTION DRAWINGS SHALL BE IN ACCORDANCE WITH ALL LAWS AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO, THE LATEST I.N.F.P.A. REGULATIONS, OSHA, THE STATE OF NEW HAMPSHIRE, AND THE CITY OF HANOVER REGULATIONS AND ORDINANCES. THE CONTRACTOR SHALL COMPLY WITH ALL SAFETY AND HEALTH LAWS AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (AS AMENDED), THE CONSTRUCTION SAFETY ACT OF 1989 (AS AMENDED), OR THE CONSTRUCTION SAFETY ACT OF 1990 (AS AMENDED), WHENEVER IS APPLICABLE. THE CONTRACTOR SHALL ALSO COMPLY WITH THE MOST RECENT EDITION OF THE NEW HAMPSHIRE STATE BUILDING CODE AND ORDERS OF ANY PUBLIC AUTHORITY HAVING JURISDICTION OVER THE PROJECT IN ORDER TO PROTECT PERSONS AND/OR PROPERTY FROM DAMAGE, INJURY, OR LOSS. CONTRACTOR SHALL MAINTAIN AND MAINTAIN, AS REQUIRED BY EXISTING CONDITIONS AND PROGRESS OF THE WORK, ALL REASONABLE SAFEGUARDS FOR SAFETY AND PROTECTION, INCLUDING POSTING DANGER SIGNS AND OTHER WARNING AGAINST HAZARDS, AND SHALL NOTIFY THE OWNER, TENANTS, AND NOTICED THE OWNER, TENANTS, PATRONS AND USERS OF ADJACENT FACILITIES. THE CONTRACTOR SHALL ALSO ASSURE THAT ALL HIS SUBCONTRACTORS CONFORM TO ALL HEALTH AND SAFETY LAWS AND REGULATIONS. THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING AND SCAFFOLDING REQUIRED FOR SAFETY AND PROPER EXECUTION OF THE WORK. THE CONTRACTOR SHALL NOT ATTEMPT TO BRING ANY SPECIALIZED VEHICLE OR EQUIPMENT INTO THE PARKING FACILITY WITHOUT PRIOR WRITTEN AUTHORIZATION FROM A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE. THE CONTRACTOR SHALL NOT BRING ANY SPECIALIZED VEHICLE OR EQUIPMENT TO BE USED INSIDE THE PARKING FACILITY SHALL BE APPROVED BY THE ENGINEER. CONTRACTOR IS SOLELY RESPONSIBLE TO PREPARE SHOP DRAWINGS FOR ANY SPECIALIZED SHOPS WHICH MAY BE REQUIRED AND/OR SPECIALIZED EQUIPMENT WHICH MAY BE REQUIRED. THE DRAWINGS SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW HAMPSHIRE. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR IS NOT RESPONSIBLE FOR IDENTIFYING OR SAFELY REMOVING ANY EXISTING MATERIAL WITHIN THE PARKING FACILITY WHICH MAY BE HAZARDOUS TO HUMAN HEALTH. THE CONTRACTOR SHALL, HOWEVER, COORDINATE AND MAKE AN EFFORT WITH THE OWNER IN PROVIDING A SAFE WORK PLACE FOR CONSTRUCTION WORKERS AND SUBCONTRACTORS. A MANAGER, BUT NOT OWNER, NOTIFYING THE OWNER OF ANY POTENTIALLY HAZARDOUS MATERIALS OR CONDITIONS HE MAY FIND IN THE PARKING FACILITY AFTER SIGNS THE CONTRACT AND STARTS HIS WORK. ANY UTILITY LINES ABANDONED OR NO LONGER IN SERVICE THAT WOULD INTERFERE WITH THE PROJECT SHALL BE IDENTIFIED BY THE CONTRACTOR AND REMOVED FROM THE REPAIR AREAS BY THE OWNER, UNLESS NOTED OTHERWISE, PRIOR TO THE START OF WORK BY THE CONTRACTOR. |

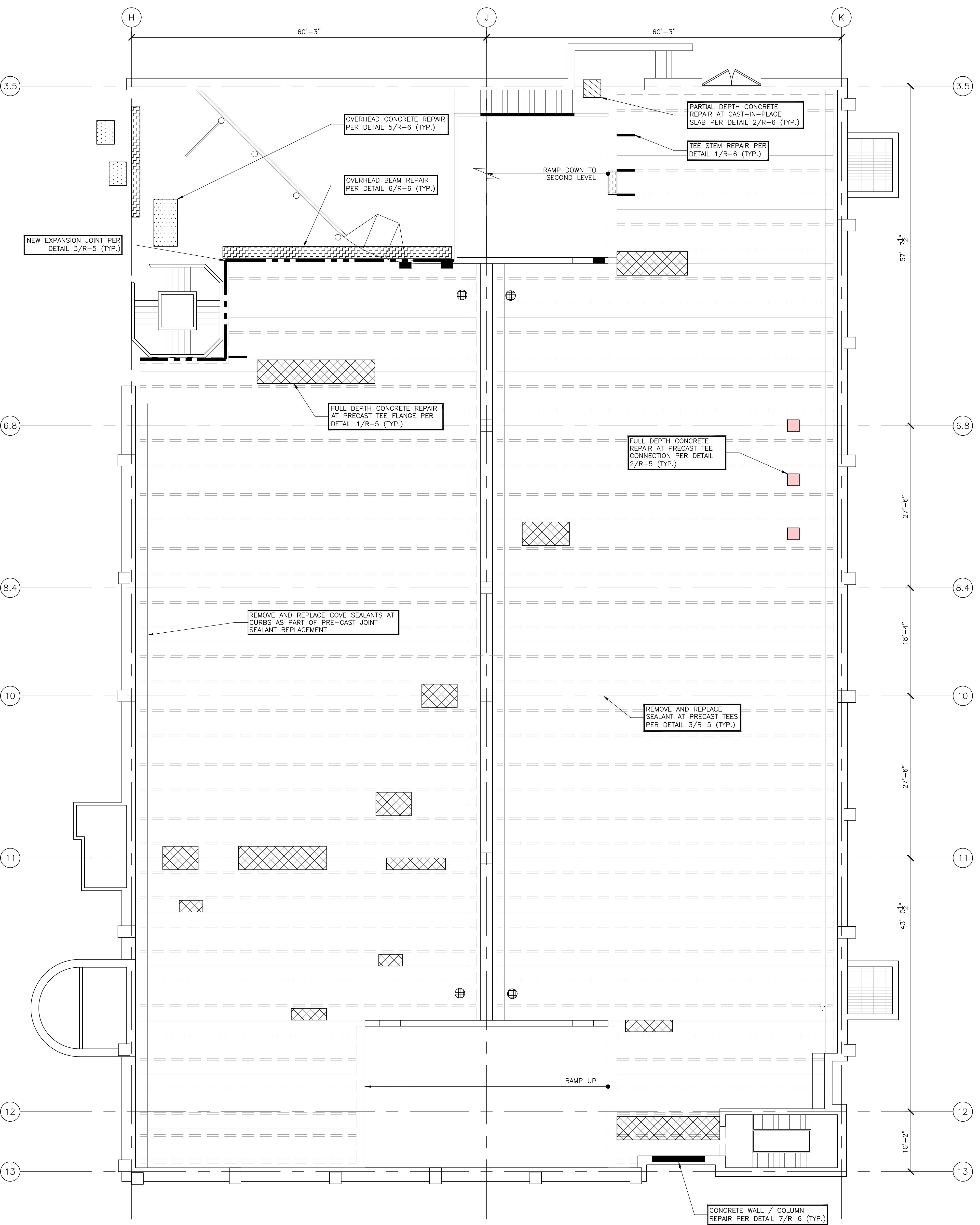
REPAIR AND PREVENTIVE MAINTENANCE
OF THE
7 LEBANON STREET PARKING GARAGE
HANOVER, NEW HAMPSHIRE

ISSUE
DRAWING TITLE
TITLE SHEET
DRAWING NO.
R-1
SCALE: AS NOTED
DATE: JUNE 10, 2025
PROJECT NO. 20-25120.00-2
DESIGN AC DRAWN ND CHKD MG
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7 LEBANON STREET PARKING GARAGE

OF THE
HANOVER, NEW HAMPSHIRE

REPAIR AND PREVENTIVE MAINTENANCE



| LEGEND | |
|--------|--|
| | LARGE AREA FULL DEPTH CONCRETE REPAIR AT PRECAST TEES PER DETAILS 1/R-5 (TYP.) |
| | SMALL AREA FULL DEPTH CONCRETE REPAIR AT PRECAST TEES PER DETAILS 2/R-5 (TYP.) |
| | OVERHEAD TEE STEM REPAIR PER DETAIL 1/R-6 (TYP.) |
| | PARTIAL DEPTH CONCRETE REPAIR AT CAST-IN-PLACE SLAB PER DETAIL 2/R-6 (TYP.) |
| | CONCRETE WALL / COLUMN REPAIR PER DETAIL 7/R-6 (TYP.) |
| | CONCRETE STAIR TREAD REPAIR PER DETAIL 3/R-6 (TYP.) |
| | EXISTING FLOOR DRAIN |

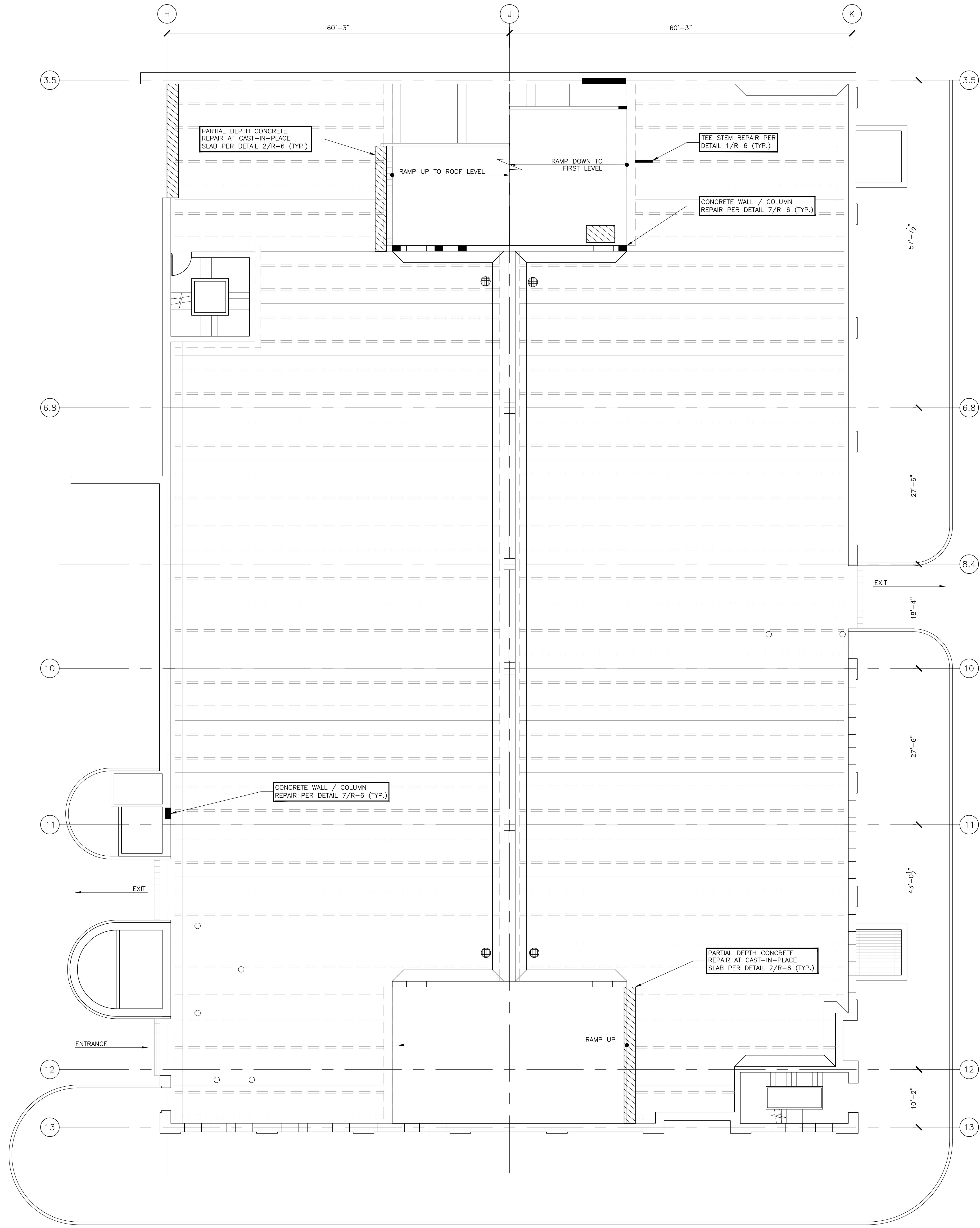
NOTES:

1. ALL REPAIR LOCATIONS AND QUANTITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. FOR TYPICAL REPAIR DETAILS SEE DRAWINGS R-5 AND R-6.
3. ALL NEW CONCRETE SHALL BE 5,000 PSI. CONCRETE DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING REPAIRS.
4. REMOVE EXISTING WATERPROOFING MEMBRANE AT ROOF LEVEL.
5. REMOVE AND REPLACE ALL SEALANT AT ROOF LEVEL T-JOINTS AND COVE JOINTS. RE-WELD TEE CONNECTIONS AS DIRECTED BY THE ENGINEER IN THE FIELD. WORK AS PER DETAIL 3/R-5 (TYP.).
6. PHASING: CONTRACTORS WILL BE ALLOWED TO CLOSE APPROXIMATELY HALF OF THE GARAGE AT ONE TIME IN ORDER TO PERFORM THEIR WORK. IT IS ANTICIPATED THAT THE CURRER PLACE EXIT CAN BE USED FOR ENTERING AND EXITING THE VEHICLES AND WILL CONSTITUTE THE BREAK BETWEEN TWO WORK PHASES.

7 LEBANON STREET GARAGE – ROOF LEVEL FLOOR PLAN

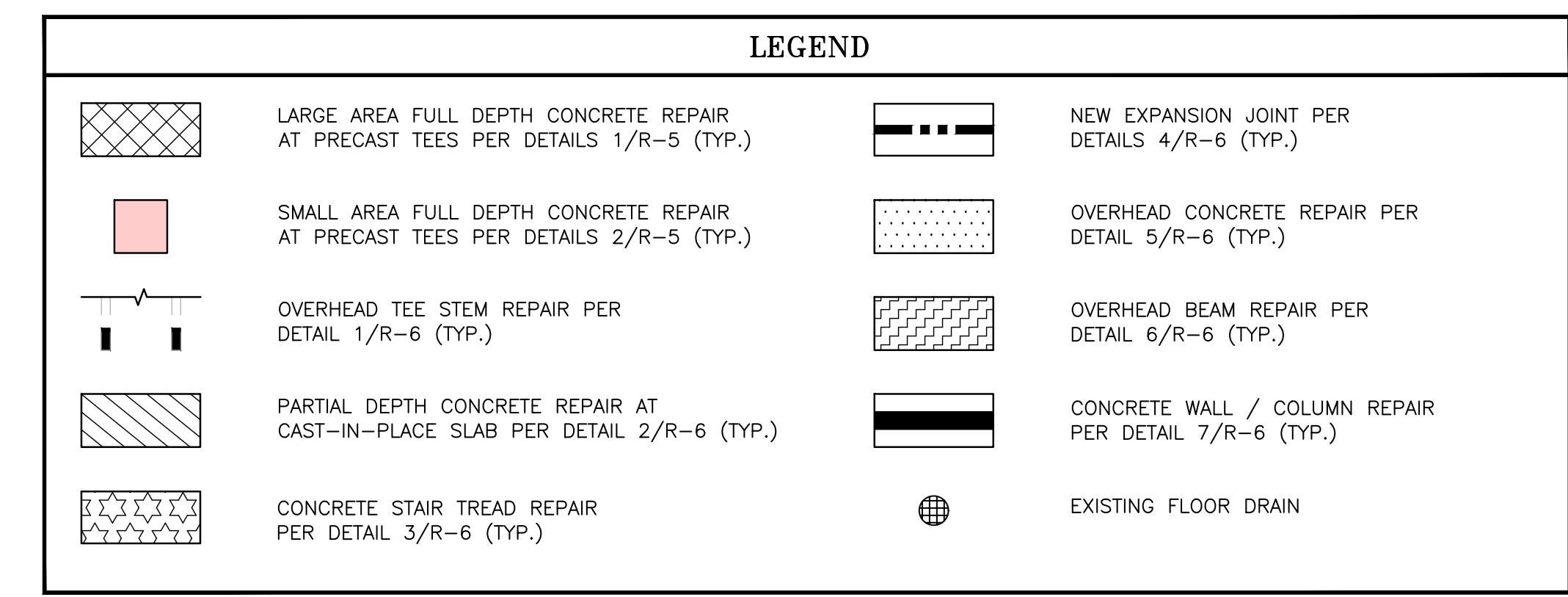
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| NO. | DESCRIPTION | DATE |
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| DRAWING TITLE | 7 LEBANON STREET GARAGE – ROOF LEVEL FLOOR PLAN | |
| DRAWING NO. | R-2 | |
| SCALE | AS NOTED | |
| DATE | JUNE 10, 2025 | |
| PROJECT NO. | 20-25120.00-2 | |
| DESIGN | AC | DRAWN |
| | | CHKD |
| | | MG |



7 LEBANON STREET GARAGE – MID LEVEL FLOOR PLAN

SCALE: 1/8"=1'-0"

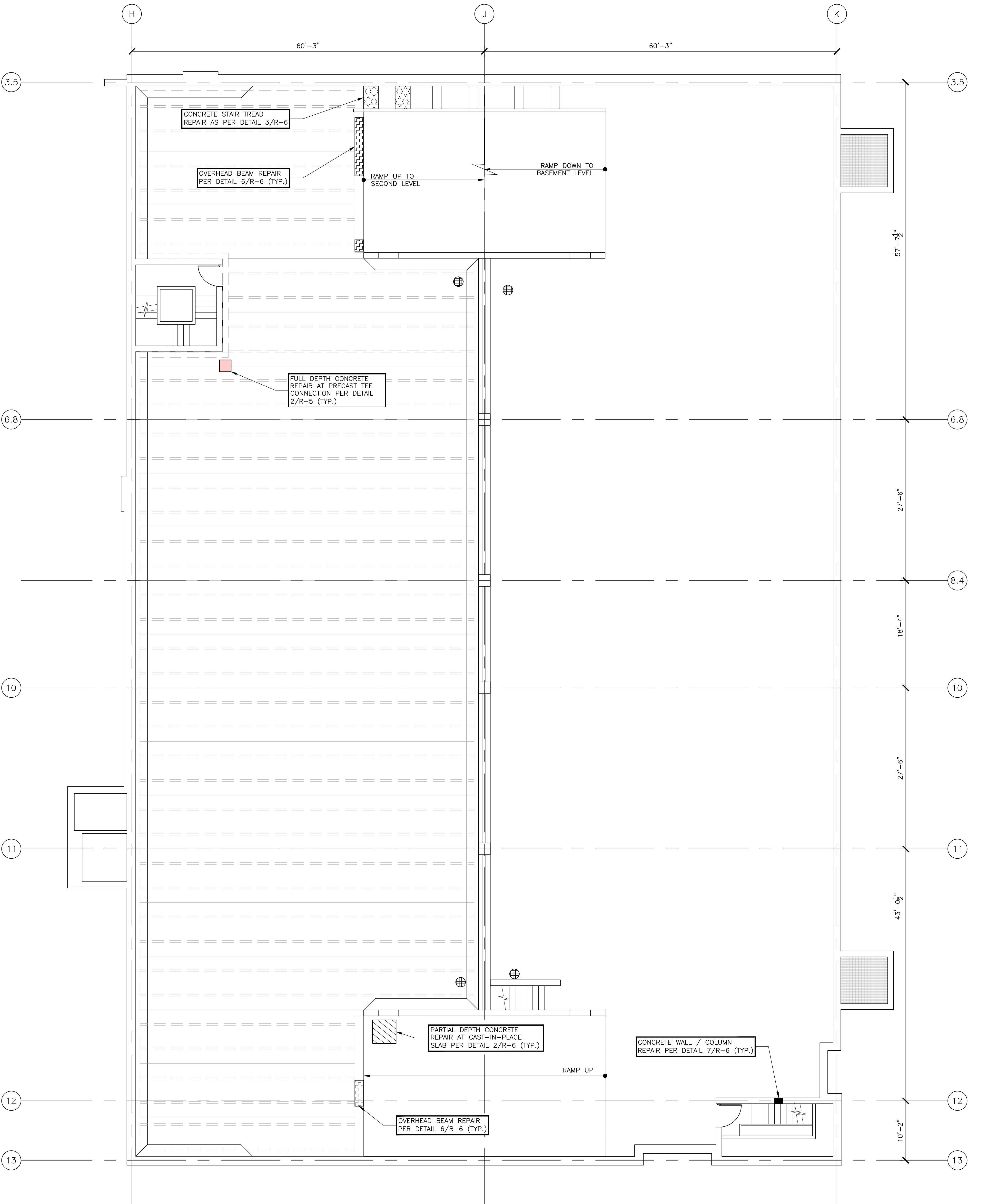


NOTES:

1. ALL REPAIR LOCATIONS AND QUANTITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. FOR TYPICAL REPAIR DETAILS SEE DRAWINGS R-5 AND R-6.
3. ALL NEW CONCRETE SHALL BE 5,000 PSI. CONCRETE DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING REPAIRS.
4. REMOVE EXISTING WATERPROOFING MEMBRANE AT ROOF LEVEL.
5. REMOVE AND REPLACE ALL SEALANT AT ROOF LEVEL T-JOINTS AND COVE JOINTS. RE-WELD TEE CONNECTIONS AS DIRECTED BY THE ENGINEER IN THE FIELD. WORK AS PER DETAIL 3/R-5 (TYP.).
6. PHASING: CONTRACTORS WILL BE ALLOWED TO CLOSE APPROXIMATELY HALF OF THE GARAGE AT ONE TIME IN ORDER TO PERFORM THEIR WORK. IT IS ANTICIPATED THAT THE CURRIER PLACE EXIT CAN BE USED FOR ENTERING AND EXITING THE VEHICLES AND WILL CONSTITUTE THE BREAK BETWEEN TWO WORK PHASES.

REPAIR AND PREVENTIVE MAINTENANCE
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HANOVER, NEW HAMPSHIRE

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|---|-------------|------|
| ISSUE | | |
| NO. | DESCRIPTION | DATE |
| DRAWING TITLE: 7 LEBANON STREET GARAGE – MID LEVEL FLOOR PLAN | | |
| DRAWING NO. R-3 | | |
| SCALE: AS NOTED | | |
| DATE: JUNE 10, 2025 | | |
| PROJECT NO. 20-25120.00-2 | | |
| DESIGN | DRAWN | CHKD |
| AC | ND | MG |

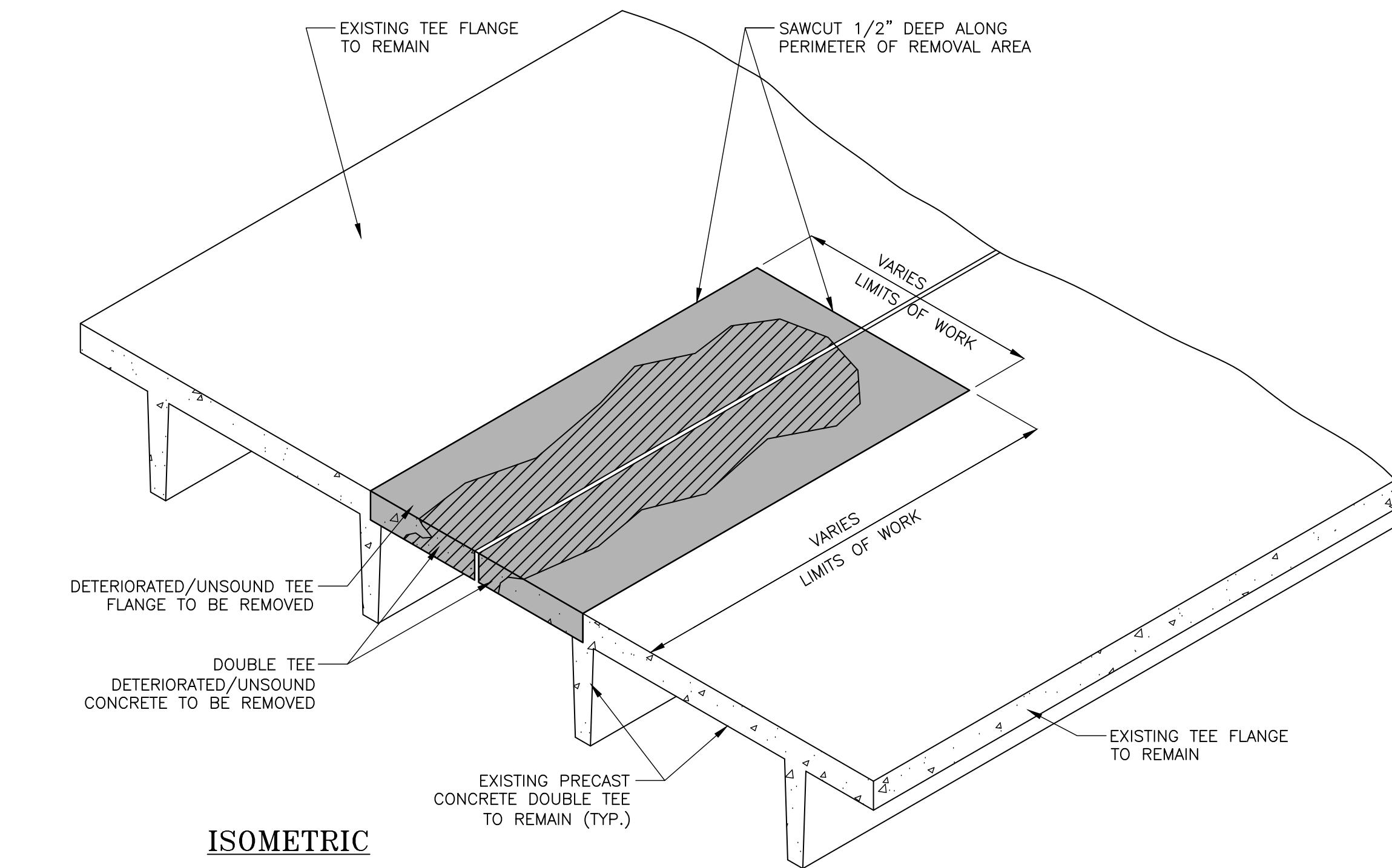
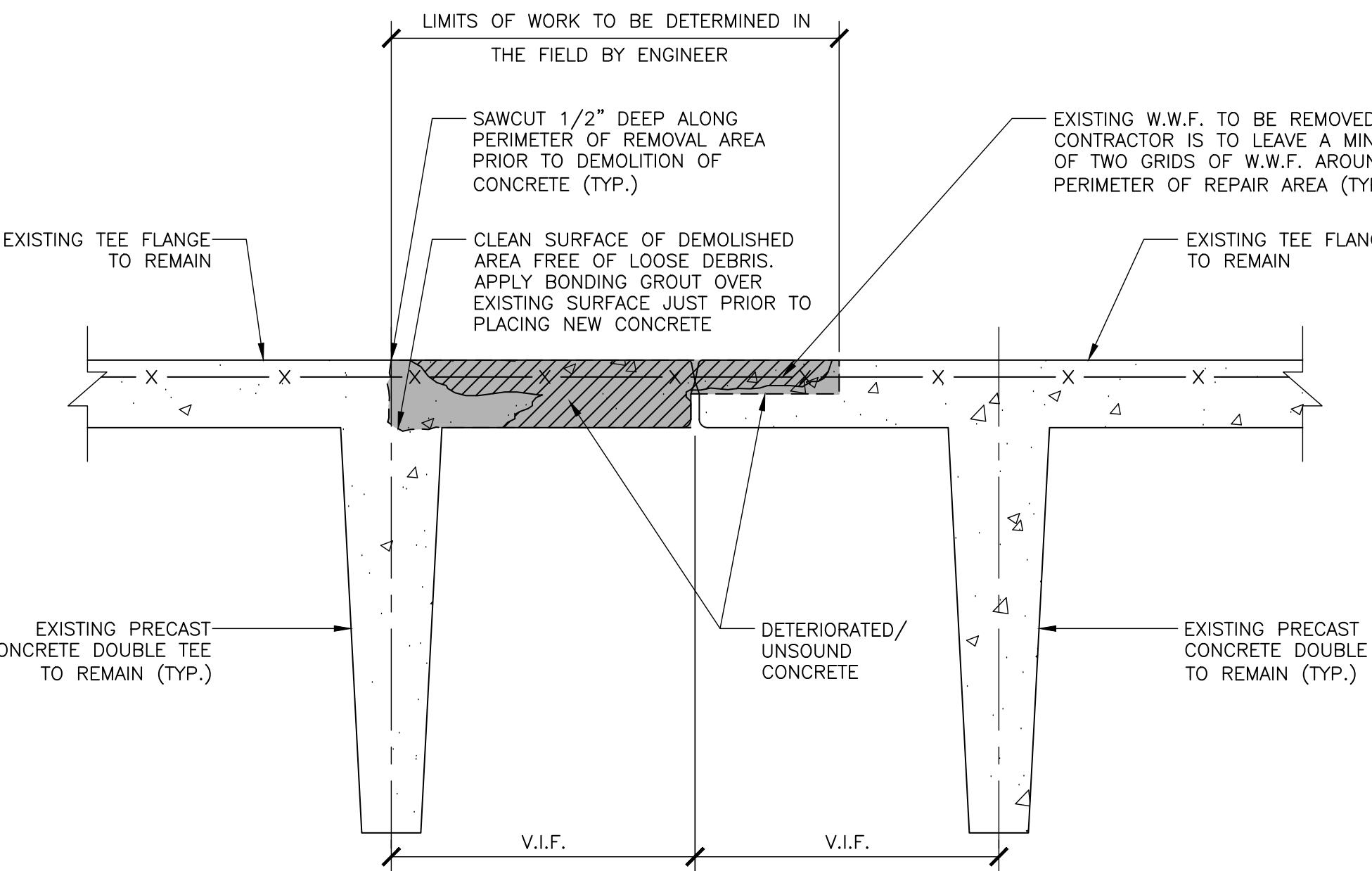
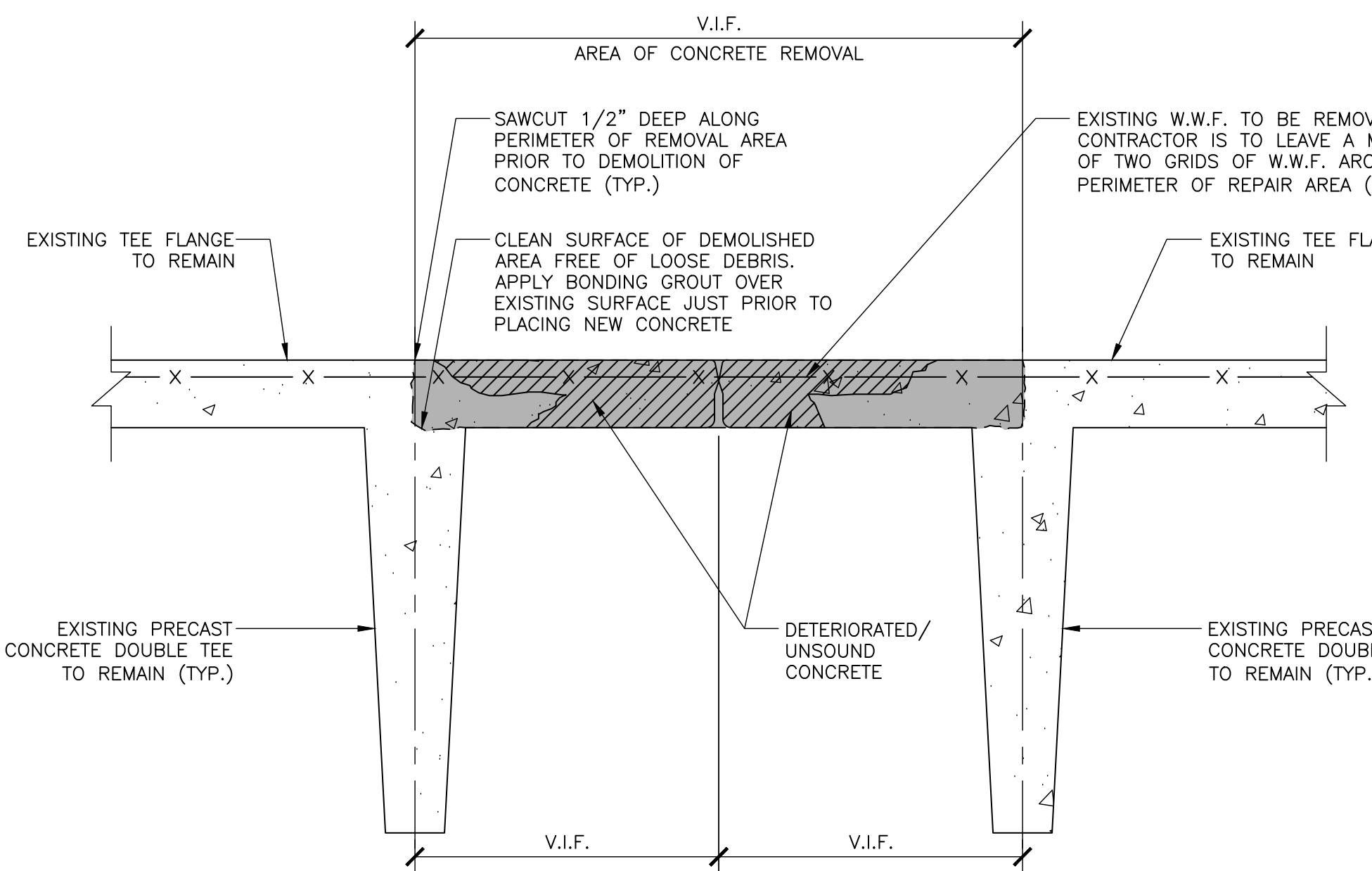


| LEGEND | |
|--------|--|
| | LARGE AREA FULL DEPTH CONCRETE REPAIR AT PRECAST TEES PER DETAILS 1/R-5 (TYP.) |
| | SMALL AREA FULL DEPTH CONCRETE REPAIR AT PRECAST TEES PER DETAILS 2/R-5 (TYP.) |
| | OVERHEAD CONCRETE REPAIR PER DETAIL 5/R-6 (TYP.) |
| | OVERHEAD BEAM REPAIR PER DETAIL 6/R-6 (TYP.) |
| | PARTIAL DEPTH CONCRETE REPAIR AT CAST-IN-PLACE SLAB PER DETAIL 2/R-6 (TYP.) |
| | CONCRETE WALL / COLUMN REPAIR PER DETAIL 7/R-6 (TYP.) |
| | NEW EXPANSION JOINT PER DETAILS 4/R-6 (TYP.) |
| | OVERHEAD TEE STEM REPAIR PER DETAIL 1/R-6 (TYP.) |
| | EXISTING FLOOR DRAIN |

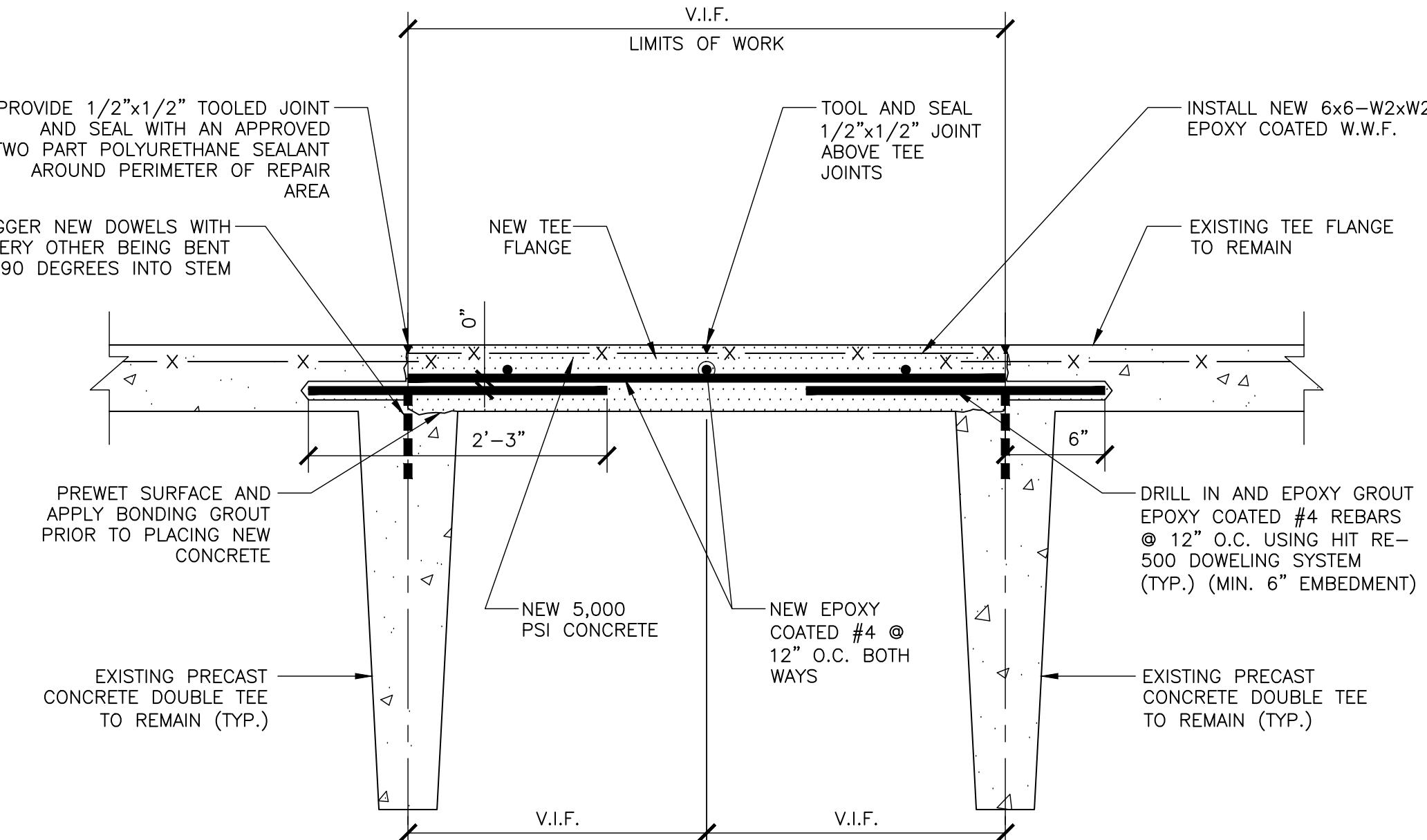
NOTES:

1. ALL REPAIR LOCATIONS AND QUANTITIES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER.
2. FOR TYPICAL REPAIR DETAILS SEE DRAWINGS R-5 AND R-6.
3. ALL NEW CONCRETE SHALL BE 5,000 PSI. CONCRETE DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCING REPAIRS.
4. REMOVE EXISTING WATERPROOFING MEMBRANE AT ROOF LEVEL.
5. REMOVE AND REPLACE ALL SEALANT AT ROOF LEVEL T-JOINTS AND COVE JOINTS. RE-WELD TEE CONNECTIONS AS DIRECTED BY THE ENGINEER IN THE FIELD. WORK AS PER DETAIL 3/R-5 (TYP.)
6. PHASING: CONTRACTORS WILL BE ALLOWED TO CLOSE APPROXIMATELY HALF OF HTE GARAGE AT ONE TIME IN ORDER TO PERFORM THEIR WORK. IT IS ANTICIPATED THAT THE CURRIER PLACE EXIT CAN BE USED FOR ENTERING AND EXITING THE VEHICLES AND WILL CONSTITUTE THE BREAK BETWEEN TWO WORK PHASES.

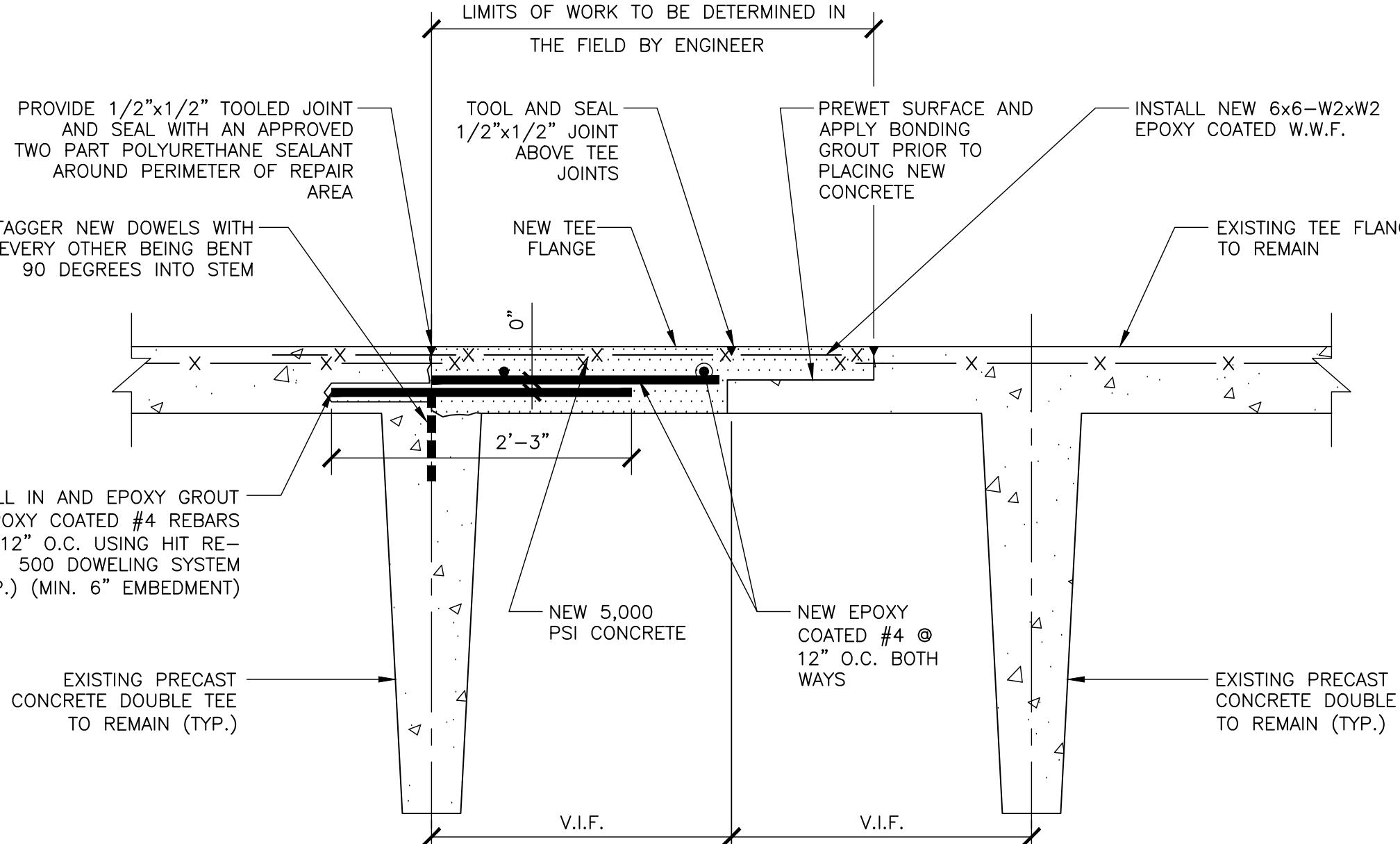
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| DRAWING TITLE: 7 LEBANON STREET GARAGE - FIRST LEVEL FLOOR PLAN | | |
| DRAWING NO. R-4 | | |
| SCALE: AS NOTED | | |
| DATE: JUNE 10, 2025 | | |
| PROJECT NO. 20-25120.00-2 | | |
| DESIGN | DRAWN | CHKD |
| AC | ND | MG |



EXISTING CONDITION AND REMOVAL



EXISTING CONDITION AND REMOVAL



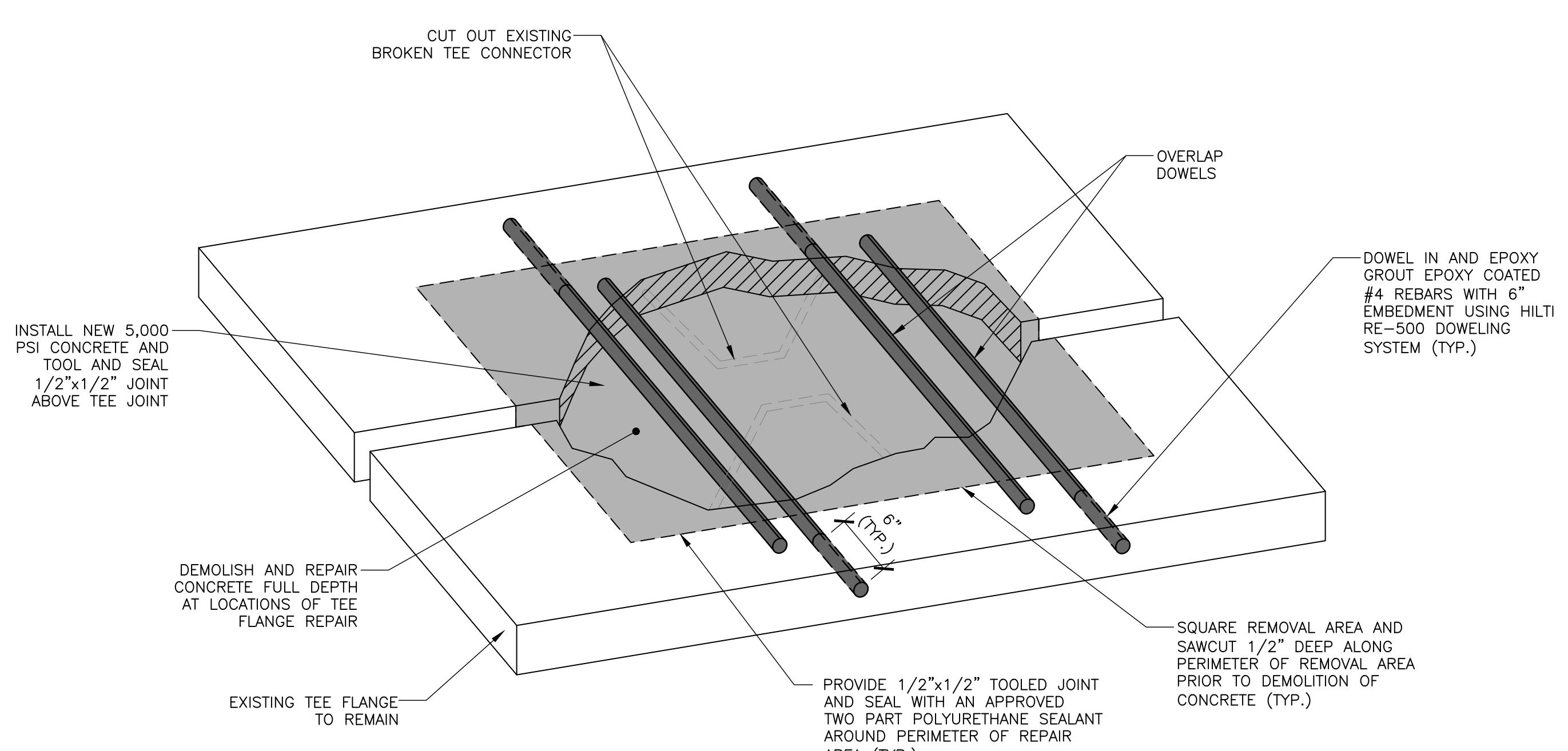
ISOMETRIC

REPAIR PROCEDURE:

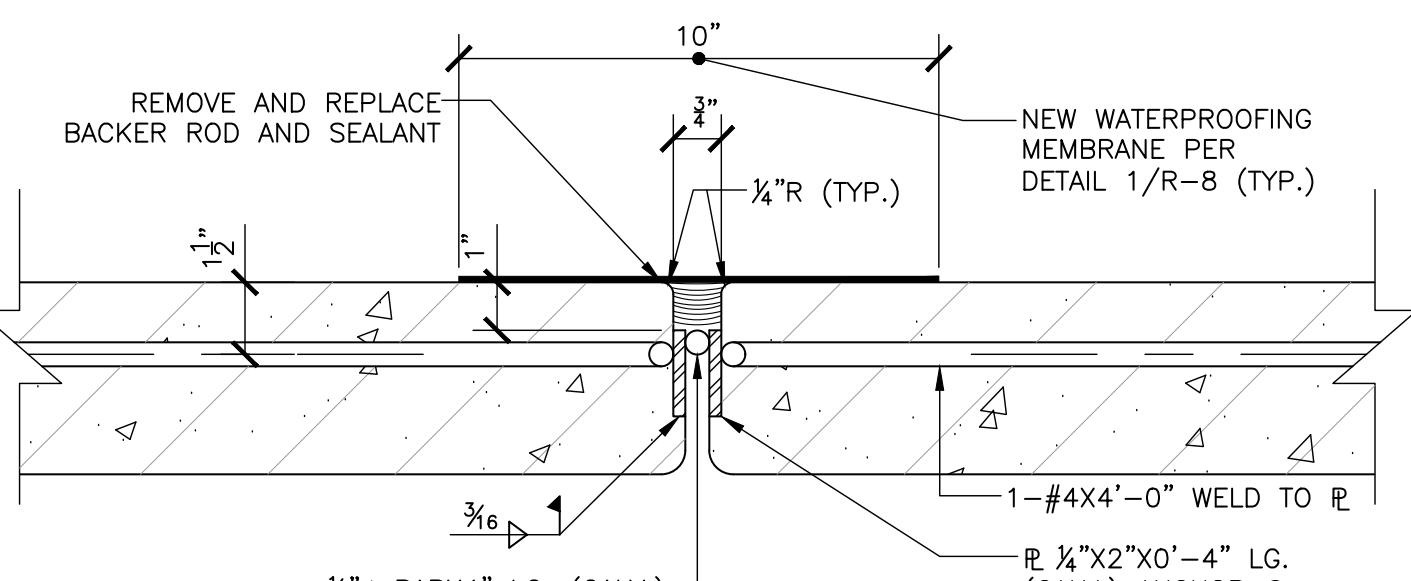
1. MARK OUT REPAIR AREA IN THE PRESENCE OF THE ENGINEER AND SAWCUT 1/2" DEEP ALONG PERIMETER OF REPAIR AREA.
2. REMOVE DELAMINATED AND SOUND CONCRETE AS SHOWN FULL DEPTH.
3. DRILL IN AND INSTALL EPOXY COATED #4 DOWELS AT 12" O.C. USING THE HILTI HIT RE 500 SYSTEM WITH A 6" MINIMUM EMBEDMENT.
4. REFER TO DETAIL 2/R-5 FOR TEE CONNECTION REPAIR AND DETAIL 3/R-5 FOR TEE CONNECTION RE-WELD, WHERE REQUIRED.
5. CLEAN SURFACE OF DEMOLISHED CONCRETE TEE FREE OF LOOSE MATERIAL AND DEBRIS. APPLY BONDING GROUT OVER EXISTING SURFACE JUST PRIOR TO PLACING NEW CONCRETE.
6. FORM AND PLACE NEW 5,000 PSI, FIBER REINFORCED, CONCRETE AND WET CURE AS PER SPECIFICATIONS. TOOL 1/2"x1/2" JOINTS ALONG PERIPHERY OF REPAIR AREA AND ABOVE ORIGINAL TEE JOINTS AND SEAL THE SAME WITH AN APPROVED TWO PART URETHANE SEALANT.

1 **LARGE AREA FULL DEPTH REPAIR AT PRECAST CONCRETE TEES**
R-5 SCALE: N.T.S.

REPAIRED CONDITION
FULL DEPTH REPAIR AT ADJACENT TEE FLANGES



REPAIRED CONDITION
FULL DEPTH REPAIR AT ONE TEE FLANGE



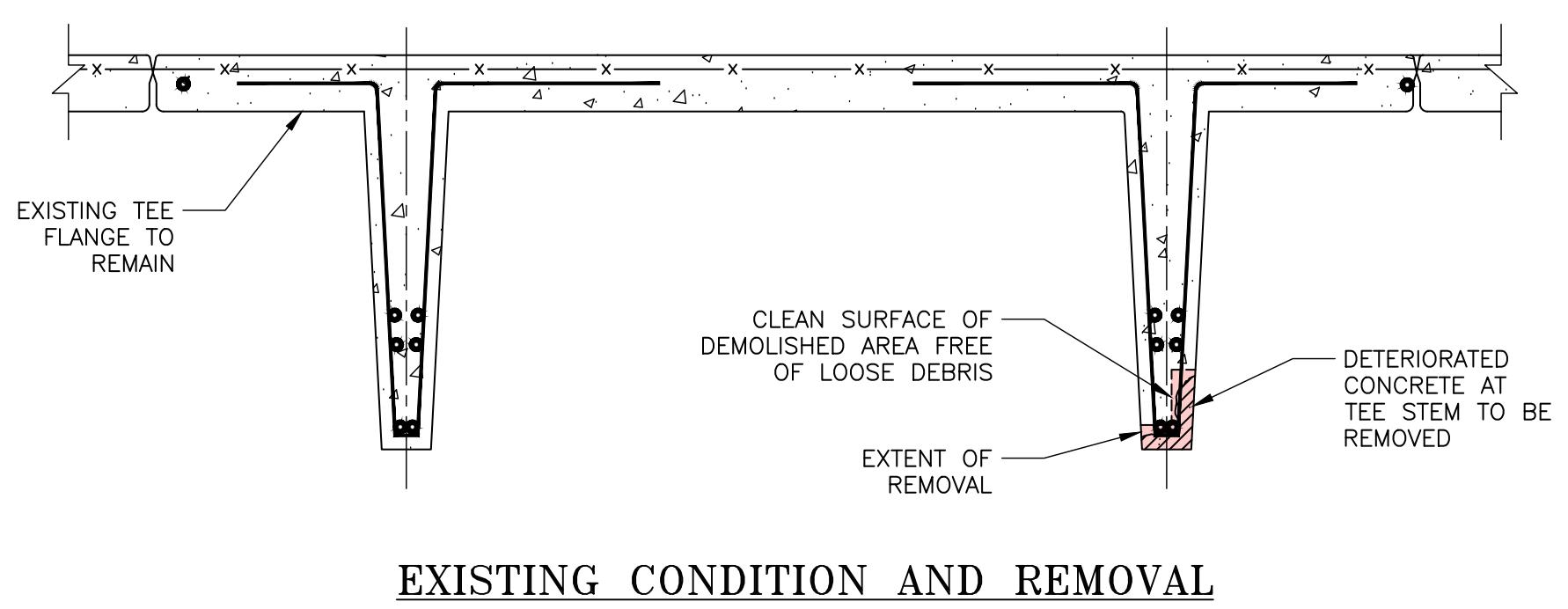
3 **REMOVE AND REPLACE SEALANT AT PRECAST JOINTS AND RE-WELD TEE CONNECTION**
R-5 SCALE: N.T.S.

| NO. | DESCRIPTION | DATE |
|-------------|---|------|
| DRAWING NO. | DRAWING TITLE 7 LEBANON STREET GARAGE - TYPICAL REPAIR DETAILS - SHEET 1 | |

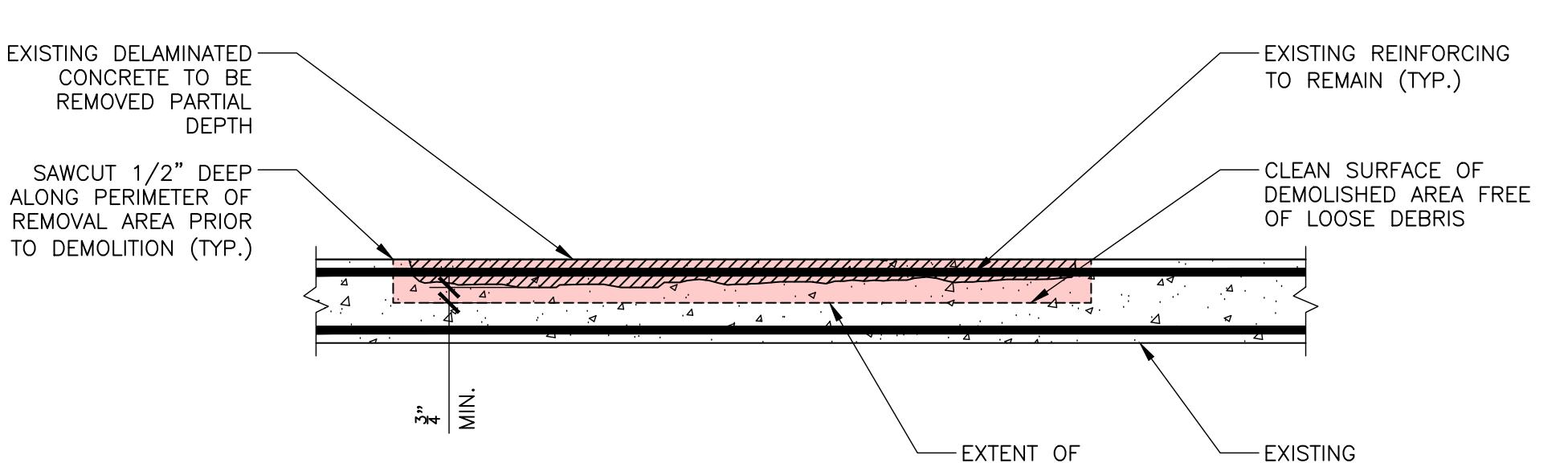
R-5

SCALE: AS NOTED
DATE: JUNE 10, 2025
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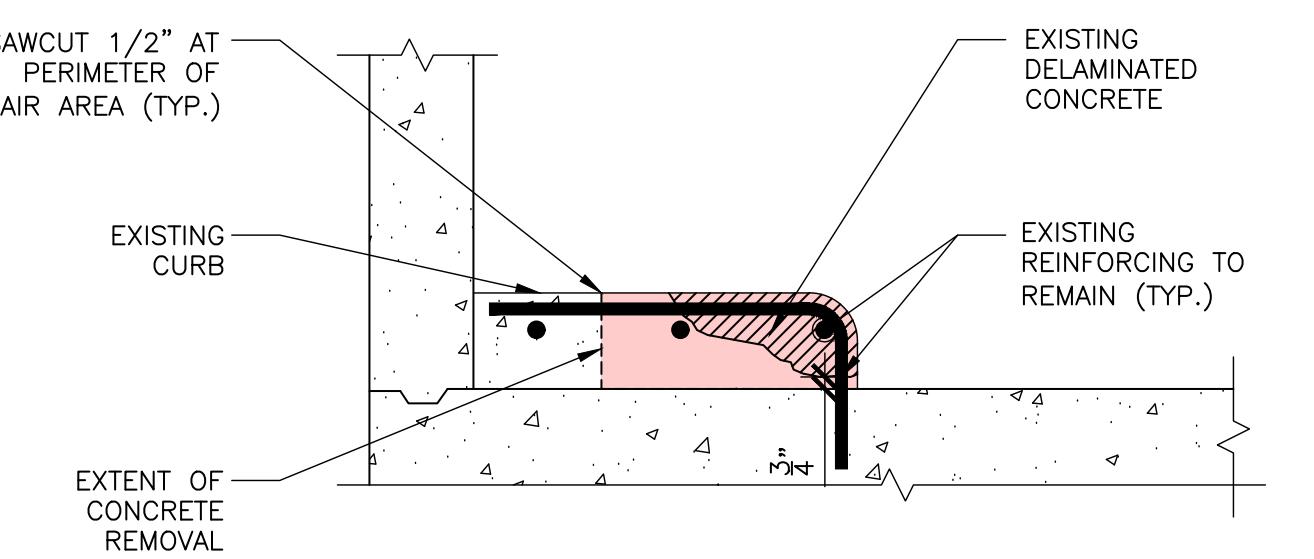
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| DRAWING TITLE | 7 LEBANON STREET GARAGE - TYPICAL REPAIR DETAILS - SHEET 2 | |
| DRAWING NO. | R-6 | |
| SCALE: | AS NOTED | |
| DATE: | JUNE 10, 2025 | |
| PROJECT NO. | 20-25120.00-2 | |
| DESIGN | AC | |
| DRAWN | ND | |
| CHKD | MG | |



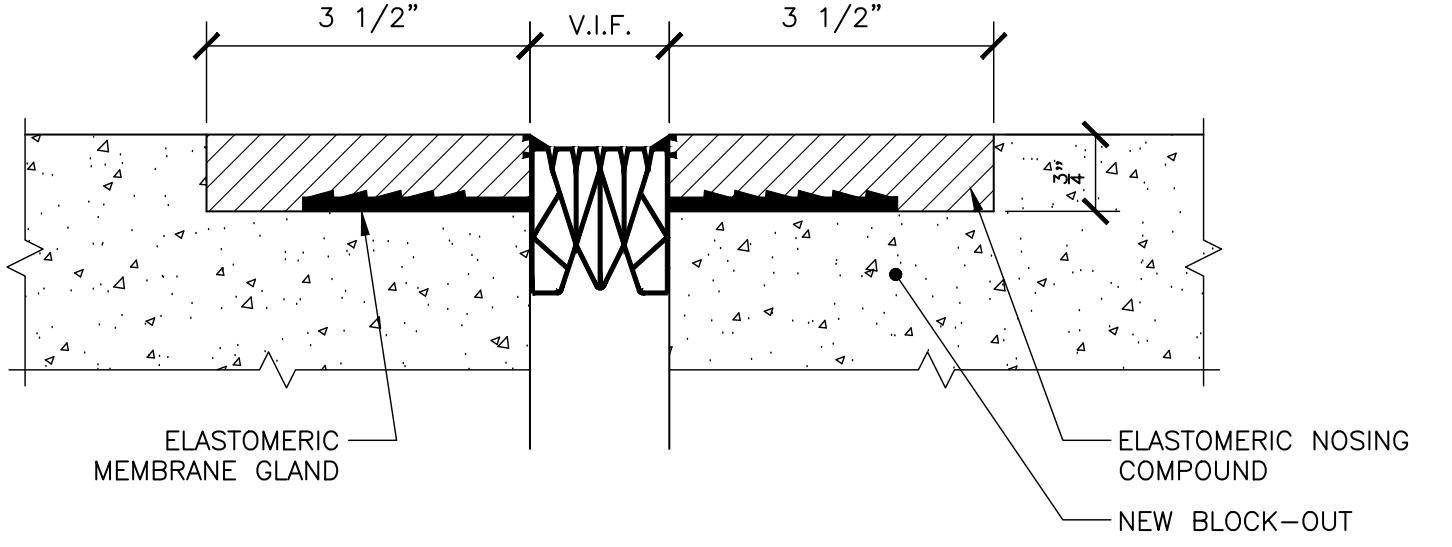
EXISTING CONDITION AND REMOVAL



EXISTING CONDITION AND DEMOLITION

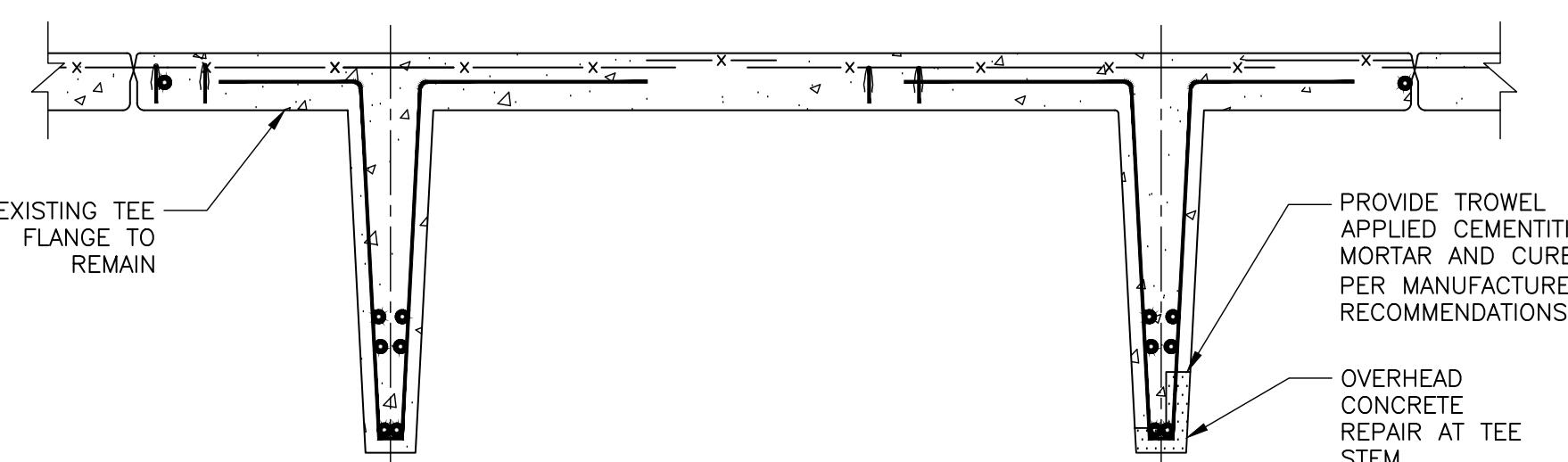


EXISTING CONDITION AND DEMOLITION

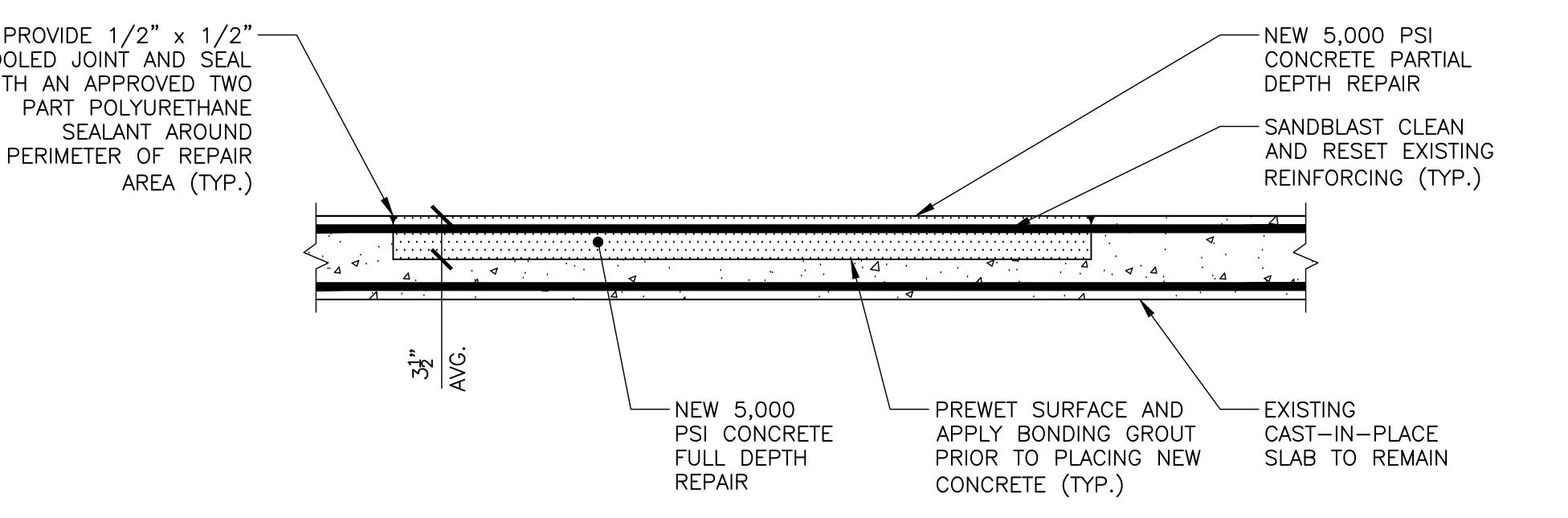


REPAIR PROCEDURE:

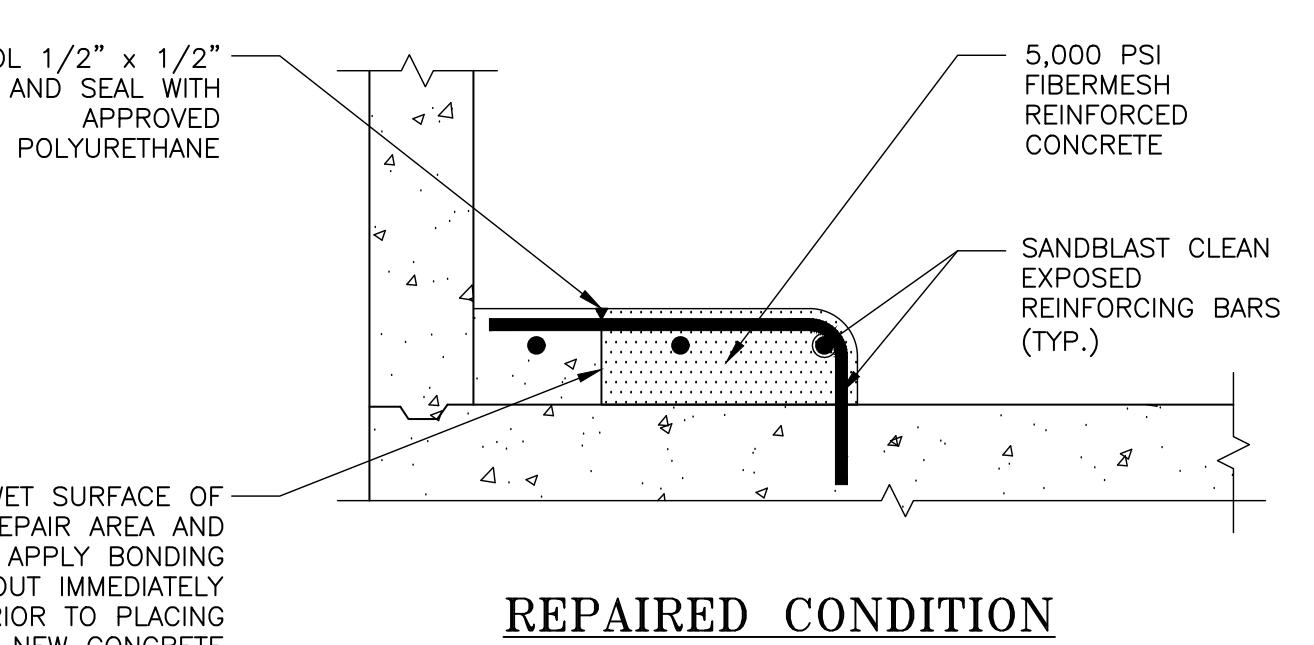
1. SAWCUT 1/2" AT PERIMETER OF CONCRETE REMOVAL AREA AS SHOWN ON PLAN AND DETAILS.
2. REMOVE AND REPAIR CONCRETE AS MAY BE NECESSARY. CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE THE EXISTING REINFORCING SCHEDULED TO REMAIN. ALL EXPOSED STEEL SHALL BE SANDBLAST CLEANED. CLEAN SURFACE FREE OF ALL DELETERIOUS MATERIALS.
3. APPLY BONDING GROUT AND PLACE NEW 5,000 PSI FIBER REINFORCED CONCRETE OR APPROVED REPAIR MATERIAL HEADER WITH BLOCK-OUT REQUIRED FOR THE NEW EXPANSION JOINT SEAL. CONCRETE SHALL BE PLACED AND CURED IN ACCORDANCE WITH DIVISION 3 OF THE SPECIFICATIONS.
4. TOOL 1/2" X 1/2" V-GROOVE ALONG PERIMETER OF THE REPAIR AREA AND SEAL THE SAME WITH AN APPROVED TWO-PART URETHANE CAULK.
5. ONCE THE CONCRETE HAS CURED, INSTALL THE NEW EXPANSION JOINT SEAL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION PROCEDURES.



REPAIRED CONDITION



REPAIRED CONDITION



REPAIRED CONDITION

REPAIR PROCEDURE:

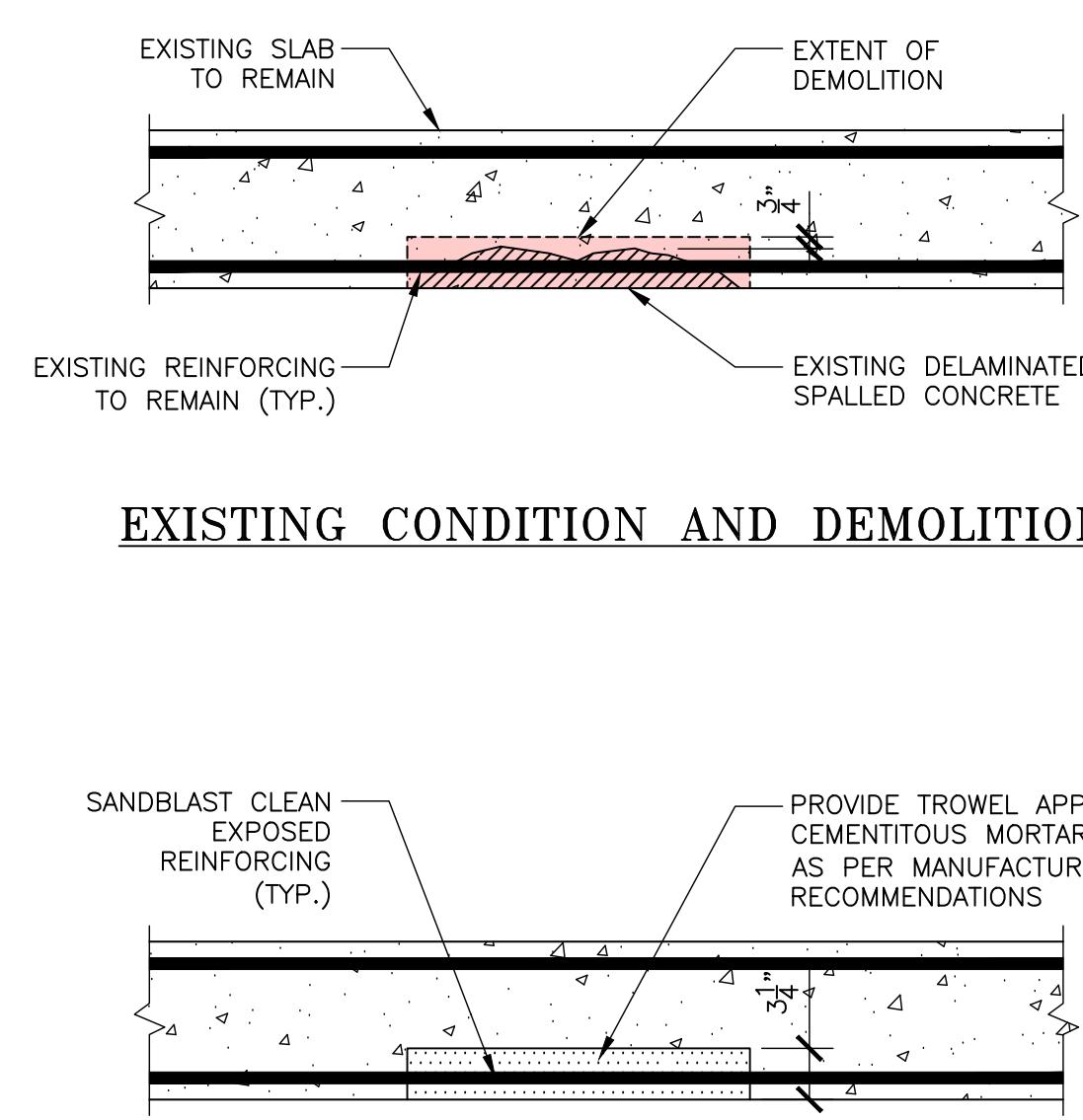
1. REMOVE UNSOUND AND SOUND CONCRETE AS DIRECTED BY THE ENGINEER TO A DEPTH OF 3" BEHIND EXISTING REINFORCING USING CHIPPING HAMMERS AND SANDBLAST CLEAN EXPOSED STEEL.
2. SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS SECTION WITH NEW EPOXY COATED #4 BARS. NEW REINFORCING SHALL BE PROPERLY LAP SPLICED TO EXISTING.
3. APPLY NON SAG REPAIR MORTAR IN LAYERS AS PER MANUFACTURER'S REPAIR PROCEDURE. LAYERS SHALL BE LIMITED IN THICKNESS. EXISTING CONCRETE SURFACE SHALL BE PREWET PRIOR TO APPLICATION.
4. CURE AND PROTECT FINISHED REPAIR.

1 OVERHEAD TEE STEM REPAIR
R-6 SCALE: N.T.S.

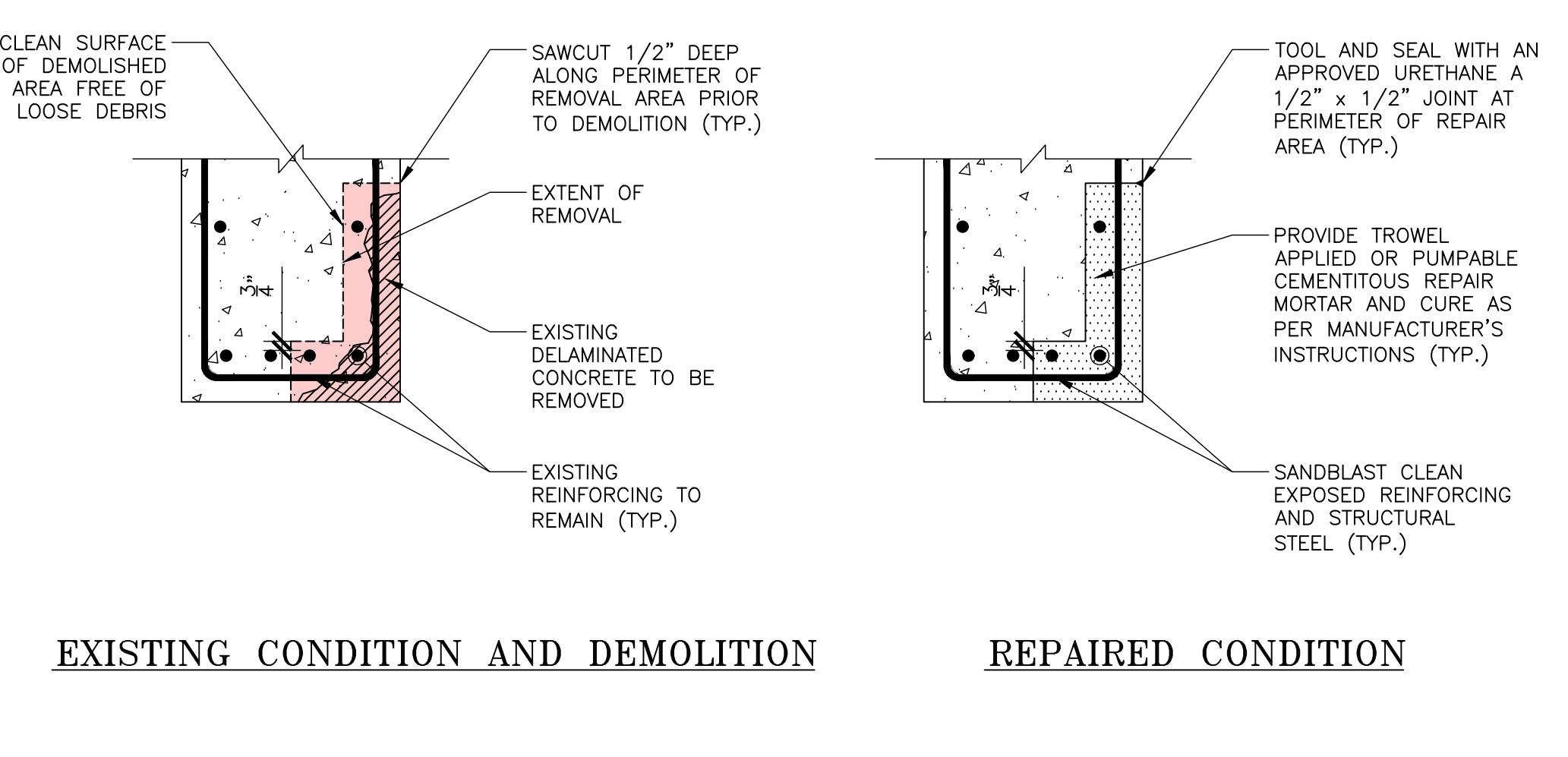
2 PARTIAL DEPTH CONCRETE CAST-IN-PLACE SLAB REPAIR
R-6 SCALE: N.T.S.

3 CONCRETE CURB REPAIR DETAIL
R-6 SCALE: N.T.S.

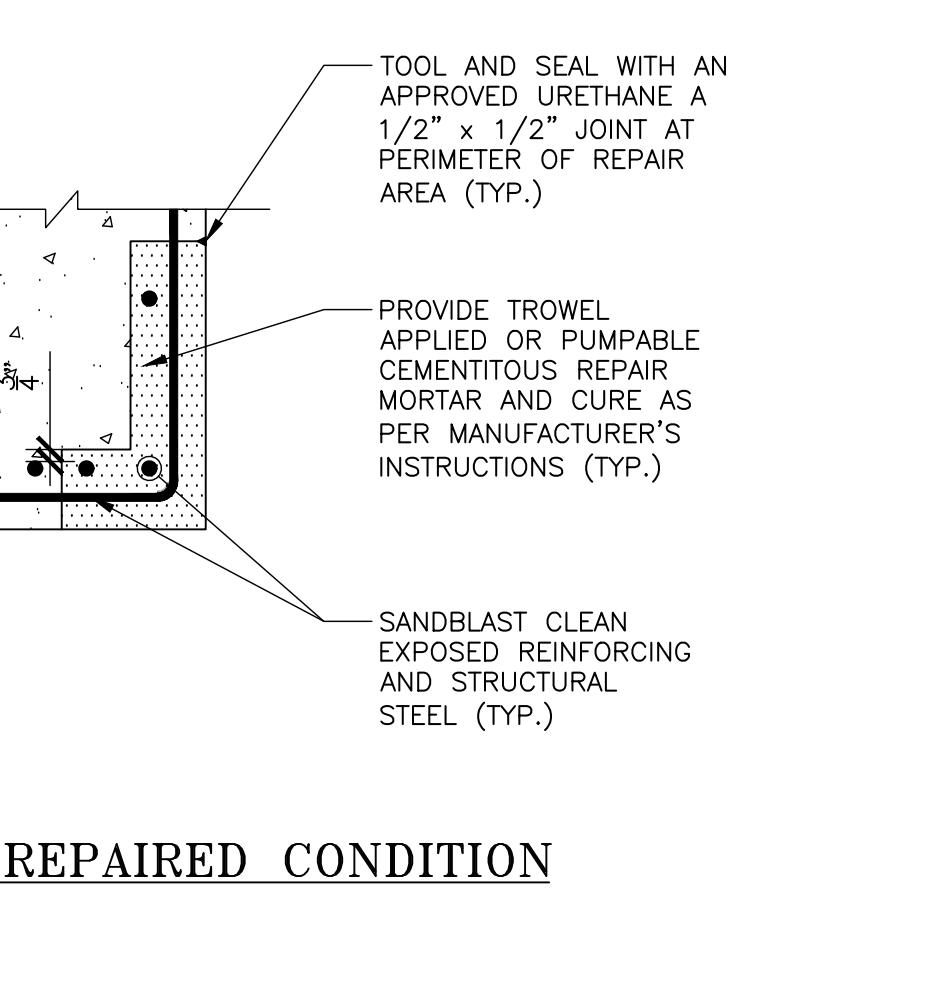
4 NEW WINGED EXPANSION JOINT SEAL
R-6 SCALE: N.T.S.



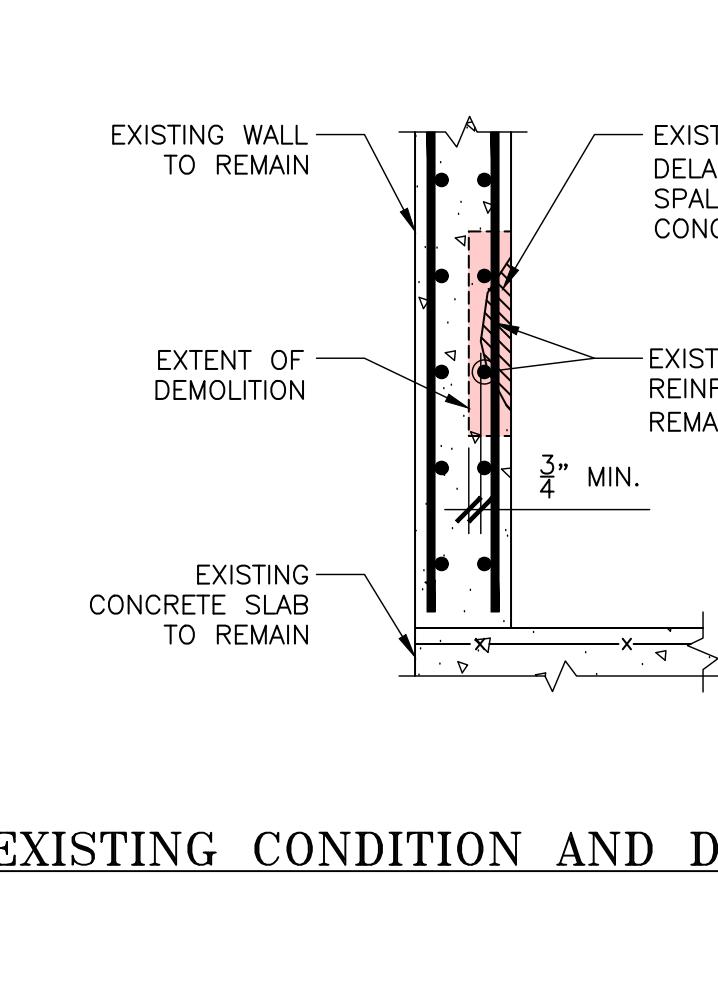
EXISTING CONDITION AND DEMOLITION



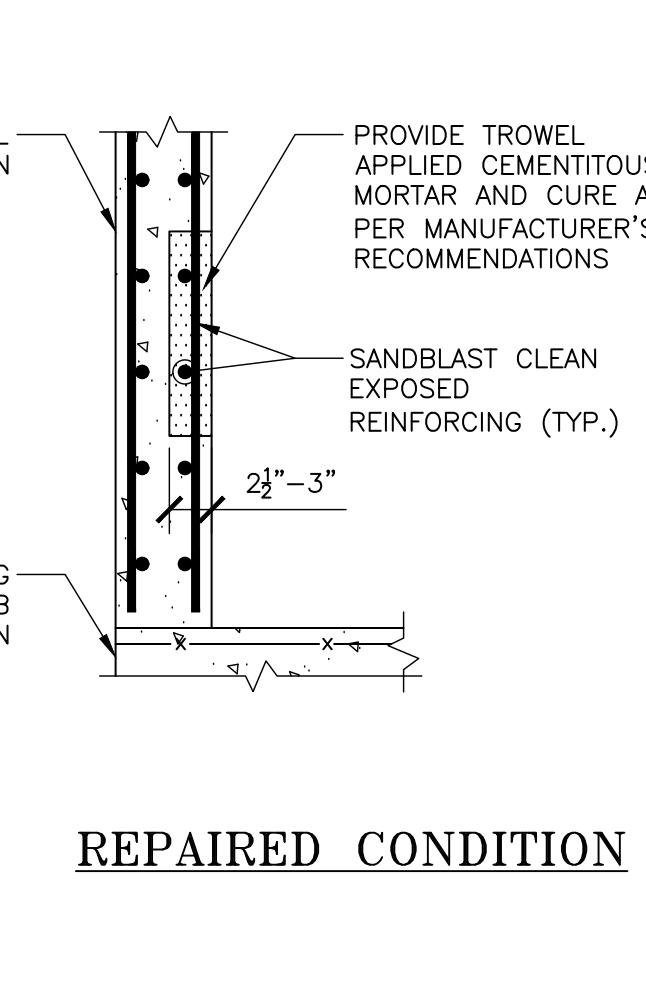
EXISTING CONDITION AND DEMOLITION



REPAIRED CONDITION



EXISTING CONDITION AND DEMOLITION



REPAIRED CONDITION

REPAIR PROCEDURE:

1. REMOVE UNSOUND AND SOUND CONCRETE AS DIRECTED BY THE ENGINEER TO A DEPTH OF 1/2" BEHIND EXISTING REINFORCING USING CHIPPING HAMMERS AND SANDBLAST CLEAN EXPOSED STEEL.
2. CLEAN SURFACE OF DEMOLITION AREA FREE OF LOOSE DEBRIS. SUPPLEMENT EXISTING REINFORCING BARS THAT HAVE LOST MORE THAN 20% OF THEIR ORIGINAL CROSS SECTION WITH NEW EPOXY COATED #4 BARS. NEW REINFORCING SHALL BE PROPERLY LAP SPLICED TO EXISTING.
3. APPLY NON SAG REPAIR MORTAR IN LAYERS AS PER MANUFACTURER'S REPAIR PROCEDURE. LAYERS SHALL BE LIMITED IN THICKNESS. EXISTING CONCRETE SURFACE SHALL BE PREWET PRIOR TO APPLICATION.
4. CURE AND PROTECT FINISHED REPAIR.

5 OVERHEAD CONCRETE REPAIR
R-6 SCALE: N.T.S.

6 OVERHEAD BEAM REPAIR DETAIL
R-6 SCALE: N.T.S.

7 CONCRETE WALL REPAIR DETAIL
R-6 SCALE: N.T.S.