

TYPICAL DEEP CONCRETE REPAIR

N.T.S.

GENERAL:

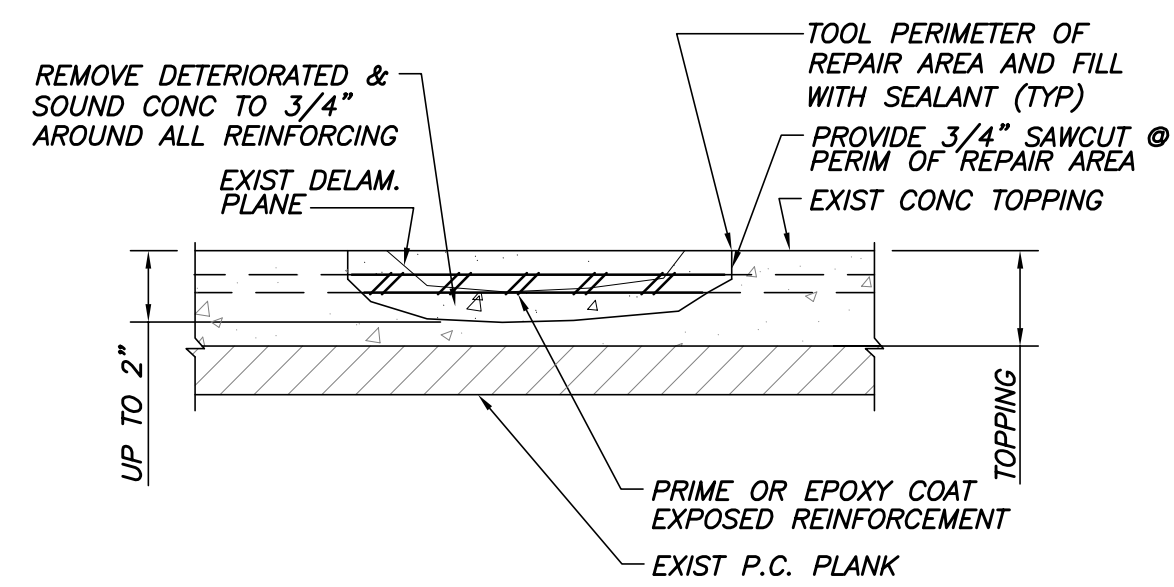
1. ALL TOPPING SLAB REPAIRS ARE ASSUMED TO BE 4" DEEP. PROVIDE COST PER SQUARE FOOT/INCH OF DEPTH.
2. DUST AND MOISTURE PROTECTION SHALL BE PROVIDED AT AND BELOW THE LEVELS OF REPAIR.

CONCRETE REMOVAL:

1. REFERENCES: ICRI 03750, 03732, ACI 546R-04.
2. AT EACH REPAIR AREA, REMOVE SMALL AREA OF CONCRETE TO CONFIRM DEPTH OF REINFORCEMENT PRIOR TO CUTTING.
3. SAW CUT PERIMETER OF REPAIR AREA TO A DEPTH OF 3/4". REFERENCE PARTIAL SLAB PLAN THIS SHEET FOR ADDITIONAL INFORMATION. NOTE THAT PERIMETER MAY NEED TO BE EXTENDED.
4. REMOVE ALL DETERIORATED, DELAMINATED AND UNSOUND CONCRETE TO THE TOP OF EXISTING PRECAST/PRESTRESSED PLANKS. CONCRETE SHALL BE REMOVED BY A METHOD THAT LIMITS THE DAMAGE TO SURROUNDING SOUND CONCRETE TOPPING, EXIST STEEL TRUSS REINF AND WITH MINIMAL DAMAGE TO EXISTING PRECAST/PRESTRESSED PLANKS.
5. MATERIAL REMOVAL SHALL CONTINUE UNTIL AGGREGATE PARTICLES ARE BEING BROKEN RATHER THAN BEING REMOVED FROM THE CEMENT MATRIX.
6. USE OF MECHANICAL IMPACT CHIPPING HAMMERS SHALL BE LIMITED TO JOIB WITH A 15lb RECOMMENDED. ALL NECESSARY PRECAUTIONS MUST BE TAKEN TO AVOID MICRO CRACKING (BRUISING) OF THE SURFACE OF THE PRECAST/PRESTRESSED PLANKS.
7. ALL EXISTING REINF AND STEEL TRUSS REINF SHALL BE SALVAGED.

PREPARATION:

1. REMAINING EXISTING REINF AND STEEL TRUSS REINF SHALL BE PRIMED.
2. PRIOR TO PROCEEDING WITH REPAIR, INSPECT ALL CONCRETE SURFACES. INSTALLATION OF REPAIR MATERIAL INDICATES ACCEPTANCE OF ALL SUBSTRATE CONDITIONS.

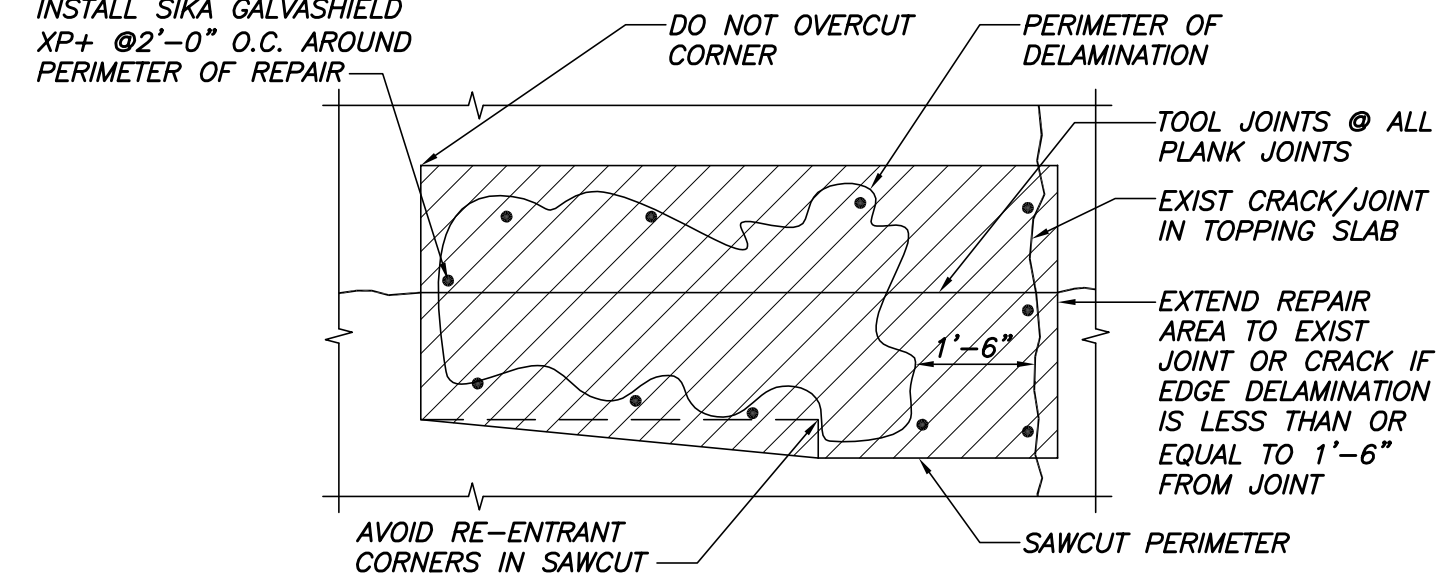


TYPICAL SHALLOW CONCRETE REPAIR

N.T.S.

GENERAL:

4. APPLY POLYMER ADHESIVE/BONDING AGENT TO ALL CONCRETE SURFACES.
5. COAT ALL CONCRETE SURFACES WITH A CEMENT SLURRY PRIOR TO PLACING REPAIR MATERIAL.
6. INSTALL NEW REINF IF REQUIRED AND TIE TO EXISTING. PROVIDE CHAIRS AS REQUIRED TO MAINTAIN PROPER PLACEMENT. MINIMUM COVER=2".
7. REPAIR MATERIAL FOR LARGE AREAS (TOTAL PLACEMENTS OVER 1 YARD)
 - COMPRESSIVE STRENGTH (f'c) = 5,000 PSI (MIN)
 - AIR CONTENT = 6 1/2 ±2%
 - WATER/CEMENT RATIO (W/C) = 0.35 (MAX)
 - AGGREGATE = 3/8" MIN
 - ADMIXTURES: SHRINKAGE REDUCER = AS PER MANUFACTURER
8. REPAIR MATERIAL FOR SMALL PLACEMENTS (PLACEMENT LESS THAN 1 YARD) SHALL BE A ONE-COMPONENT, EARLY STRENGTH GAINING, CEMENTITIOUS REPAIR MATERIAL WITH THE FOLLOWING PROPERTIES (REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION):
 - COMPRESSIVE STRENGTH: 5,000 PSI (MIN)
9. PLACEMENT: ALL CIP REPAIR MATERIAL MUST BE TESTED AS PER THE SPECIFICATIONS.
10. ALL JOINTS SHALL BE HAND TOOLED.



PARTIAL SLAB PLAN

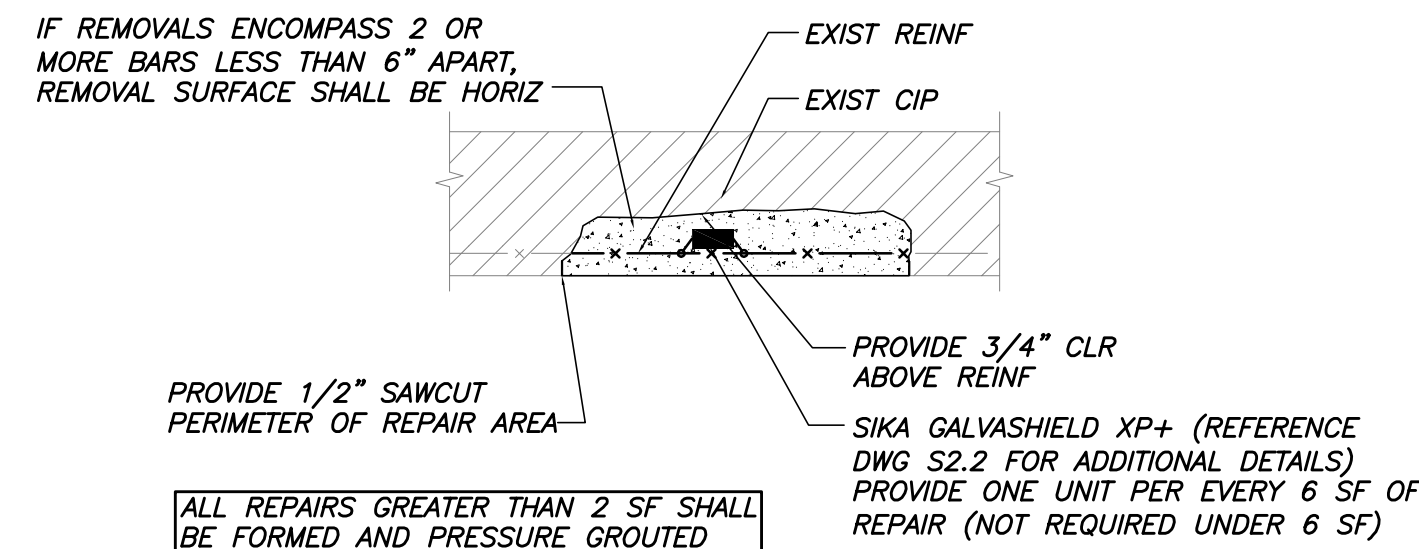
N.T.S.

NOTES:

1. [Symbol] AREA OF CONCRETE REPAIR.
2. 1'-0" MIN OF EXIST WWF SHALL BE SALVAGED AROUND PERIMETER OF REPAIR AREA AND BE LAPPED TO NEW WWF.
3. PROVIDE TOOLED JOINTS AROUND PERIMETER OF REPAIR AND AS NOTED IN PLAN.

REPAIR:

1. INSTALL SIKA GALVASHIELD XP+ (WWW.SIKACONSTRUCTION.COM)
 - A. ENSURE ALL EXPOSED EXISTING REINFORCEMENT IS TIED W/ STEEL TIE WIRES.
 - B. INSTALL ANODES USING A SUITABLE WIRE TWISTING TOOL TO ELIMINATE FREE MOVEMENT AND ENSURE GOOD ELECTRICAL CONNECTION. ANODE SHALL HAVE 3/4" MINIMUM COVER AND BE PLACED WITHIN 6" OF EDGE OF REPAIR.



TYP OVERHEAD REPAIR

N.T.S.

PREPARATION:

1. SAWCUT PERIMETER OF DAMAGED AREA TO A DEPTH OF 1/2". DO NOT CUT REINFORCEMENT. REMOVE, BY HAND, A SECTION TO DETERMINE DEPTH OF REINFORCEMENT IF REQUIRED.
2. REMOVE DETERIORATED AND SOUND CONCRETE AS NECESSARY W/ 15LB(MAX) CHIPPING HAMMER. EXCAVATE 3/4" AROUND ALL REINFORCEMENT.
3. STEEL REINFORCEMENT SHOULD BE THOROUGHLY PREPARED BY MECHANICAL CLEANING TO REMOVE ALL TRACES OF RUST. THE STEEL SHOULD BE HIGH-PRESSURE WASHED WITH CLEAN WATER AFTER MECHANICAL CLEANING.
4. REMOVE LOOSE, DETERIORATED, AND BOND INHIBITING MATERIALS FROM SURFACE. PREPARATION WORK SHALL BE DONE BY HIGH PRESSURE WATER BLAST, SHOT BLAST, OR OTHER APPROPRIATE MECHANICAL MEANS TO OBTAIN AN EXPOSED AGGREGATE SURFACE WITH A MINIMUM SURFACE PROFILE OF +1/-1/8".
5. SATURATE SURFACE WITH CLEAN WATER. SUBSTRATE SHOULD BE SATURATE SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION.

INSPECTION:

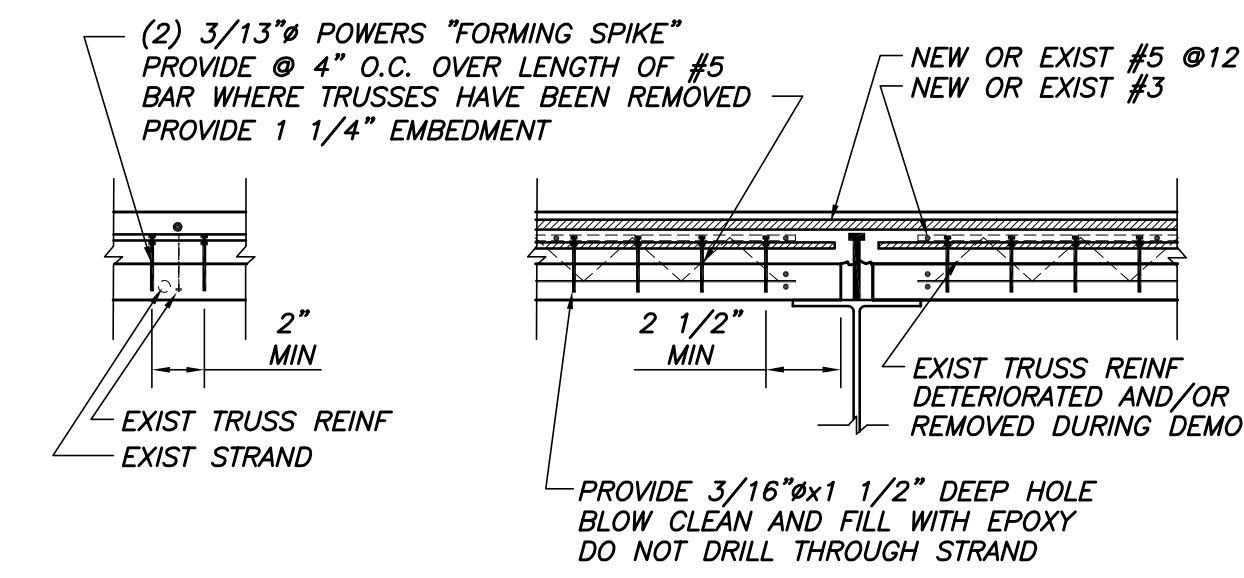
1. INSPECT ALL CONCRETE SURFACES PRIOR TO APPLICATION OF PRIMERS/ADHESIVES TO INSURE PROPER PREPARATION AND SURFACE DRYING.
2. CONFORM TO ALL THE MANUFACTURERS PREPARATION INSTRUCTIONS.
3. ESTIMATE SECTION LOSS OF DETERIORATED REINFORCEMENT. IF SECTION LOSS EXCEEDS 25%, NOTIFY ENGINEER PRIOR TO PROCEEDING WITH PATCH. SEE TYPICAL DETAIL THIS DWG.

REPAIR (REPAIR AREA <2 SF):

1. ALL REINFORCEMENT SHALL BE PRIMED OR EPOXY COATED WITH A PRODUCT COMPATIBLE WITH THE CONCRETE PATCH MATERIAL.
2. APPLY SIKA FERROGARD 903 TO ALL CONCRETE SURFACES TO BE COVERED WITH REPAIR MATERIAL AS PER MANUFACTURERS INSTRUCTIONS. ALLOW 24 HOURS FOR FERROGARD 903 TO DRY AND PENETRATE. REMOVE RESIDUE BY PRESSURE WASHING PRIOR TO PLACING REPAIR MATERIAL.
3. APPLY PRIMER TO CONCRETE SUBSTRATE COMPATIBLE WITH REPAIR MATERIAL.
4. INSTALL REPAIR MATERIAL AS PER MANUFACTURER'S RECOMMENDATION. DO NOT EXCEED THE MAXIMUM LIFT THICKNESS SPECIFIED BY MANUFACTURER.
5. CURING SHALL BE AS SPECIFIED BY MANUFACTURER AND AS PER ACI.

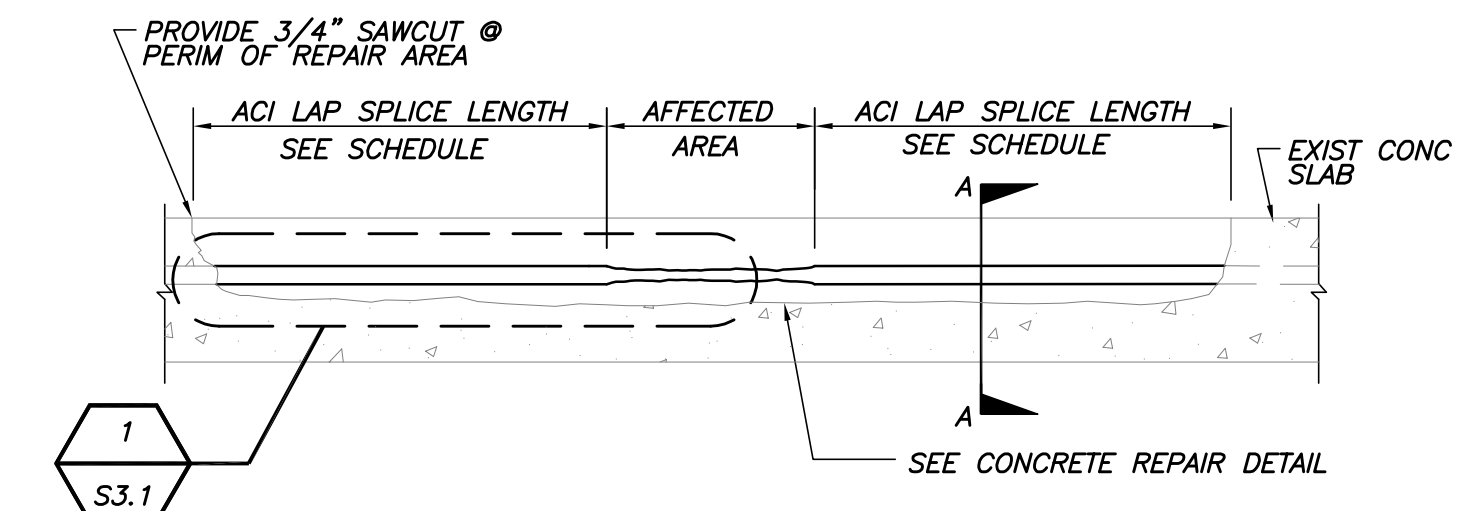
REPAIR (REPAIR AREA >2 SF):

1. ALL REINFORCEMENT SHALL BE PRIMED OR EPOXY COATED WITH A PRODUCT COMPATIBLE WITH THE CONCRETE PATCH MATERIAL.
2. APPLY SIKA FERROGARD 903 TO ALL CONCRETE SURFACES TO BE COVERED WITH REPAIR MATERIAL AS PER MANUFACTURERS INSTRUCTIONS. ALLOW 24 HOURS FOR FERROGARD 903 TO DRY AND PENETRATE. REMOVE RESIDUE BY PRESSURE WASHING PRIOR TO PLACING REPAIR MATERIAL.
3. INSTALL GALVASHIELD XP+ ANODE AT LOCATIONS SHOWN ON DRAWINGS. ATTACH ANODE TO CLEAN REINFORCING STEEL OR TO STEEL WASHERS TACK WELDED TO STEEL ANGLES WITH WIRE TIES. LOCATE THE ANODE ON THE SIDE OR BENEATH THE REINFORCING STEEL PROVIDING MINIMUM 3/4" COVER AND 1/4" CLEARANCE TO SUBSTRATE CONCRETE.
4. APPLY PRIMER TO CONCRETE SUBSTRATE COMPATIBLE WITH REPAIR MATERIAL.
5. FORM WORK MUST BE CONSTRUCTED/INSTALLED TO A STRENGTH SUFFICIENT TO HANDLE INDUCED PRESSURE BY HYDROMATIC PRESSURE AND THE ADDITIONAL PUMP PRESSURE REQUIRED TO CONSOLIDATE REPAIR MATERIAL.
6. FORM SHALL BE VENTED.
7. FORMS SHALL BE CONSTRUCTED TO FIT TIGHTLY AGAINST EXISTING CONCRETE SURFACES.
8. MATERIAL: PROVIDE PRE-PACKAGED REPAIR MATERIALS WHICH ARE DESIGNED FOR PUMPING AND INCORPORATE SHRINKAGE COMPENSATING ADMIXTURES. ARRANGE PORTS BASED ON SIZE OF PUMP AND MATERIAL MANUFACTURERS RECOMMENDATIONS.
9. PLACEMENT: START PUMPING FROM THE LOWEST POINT, FILLING IN A MANNER THAT PREVENTS AND ENTRAPMENT.
10. PRESSURE GAGE SHALL BE ATTACHED TO THE PUMP LINE NEAR THE EXIT PORT TO MONITOR CAVITY PRESSURE. CAVITY PRESSURE SHALL NOT EXCEED FORM DESIGN PRESSURE.
11. FORM WORK SHALL REMAIN IN PLACE UNTIL MATERIAL ACHIEVES MINIMUM STRENGTH OF f'c=4,000 PSI.



TYPICAL REINF TRUSS REPAIR

N.T.S.



TYPICAL REINFORCEMENT REPAIR

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PREPARATION:

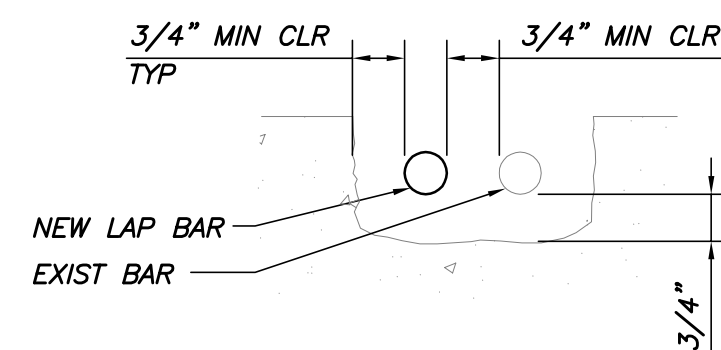
1. SEE TYPICAL CONCRETE REPAIR FOR REMOVAL/REPLACEMENT OF CONCRETE.

INSPECTION:

1. IF REINFORCEMENT HAS LOST MORE THAN 25% OF ITS CROSS SECTIONAL AREA, NOTIFY STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH PATCH.

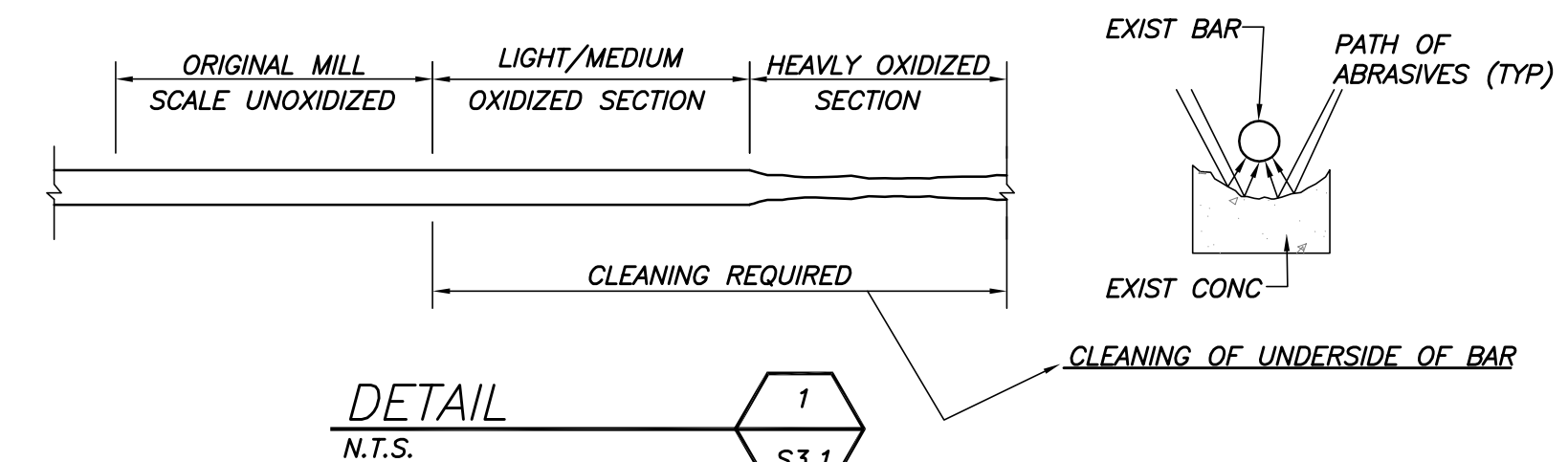
REPAIR:

1. LAP BARS AS NOTED ABOVE.
2. SEE TYPICAL CONCRETE REPAIR.



SECTION A-A

N.T.S.



DETAIL

N.T.S.

REBAR LAP SPLICE TABLE

BAR SIZE	LAP LENGTH
#3	30"
#4	36"
#5	48"
#6	56"
#7	81"

TYP. CRACK/C.J. REPAIR DETAIL

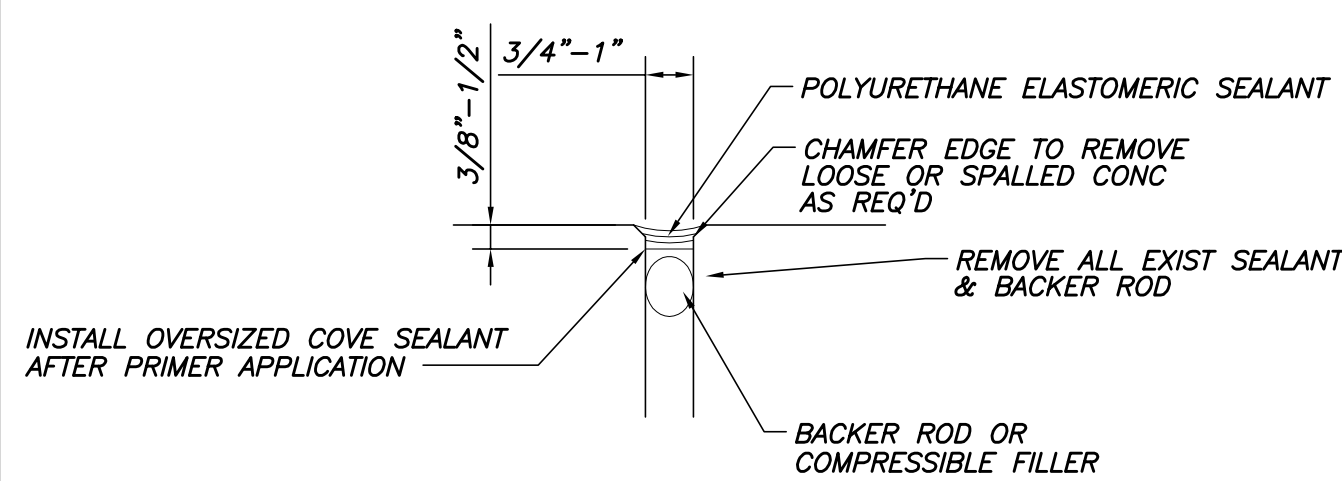
N.T.S.

PREPARATION:

1. CENTER ROUTED GROOVE ON CRACK.
2. REMOVE ALL LOOSE AND DETERIORATED MATERIAL.
3. ALL JOINT-WALL SURFACES MUST BE CLEAN, SOUND, AND FROST FREE. JOINT WALLS MUST BE FREE OF OILS, GREASE, CURING COMPOUND RESIDUES, AND ANY OTHER FOREIGN MATTER THAT MIGHT PREVENT BOND. THIS SHOULD BE ACCOMPLISHED BY BLAST CLEANING OR EQUIVALENT MECHANICAL MEANS.
4. CONFORM TO ALL MANUFACTURER'S PREPARATION REQUIREMENTS.
5. JOINT PREPARATION SHALL BE CONFIRMED BY SEALANT INSTALLER. INSTALLATION OF SEALANT SHALL IMPLY PROPER JOINT PREPARATION.

CRACK SEALANT INSTALLATION:

1. INSTALLATION SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
2. INSTALL SEALANT EVENLY AND RECESS 1/16" BELOW SURFACE. DO NOT OVERFILL JOINT.



TYP. JOINT SEALANT DETAIL

N.T.S.

PREPARATION:

1. REMOVE EXISTING JOINT SEALANT MATERIAL.
2. GRIND JOINT EDGES TO REMOVE ALL LOOSE AND DETERIORATED MATERIAL.
3. ALL JOINT-WALL SURFACES MUST BE CLEAN, SOUND, AND FROST FREE. JOINT WALLS MUST BE FREE OF OILS, GREASE, CURING COMPOUND RESIDUES, AND ANY OTHER FOREIGN MATTER THAT MIGHT PREVENT BOND. THIS SHOULD BE ACCOMPLISHED BY MECHANICAL MEANS.
4. INSTALL BACKER ROD OR BOND BREAKER TAPE.

PRIMING:

1. PREPARE AND ALLOW FOR PRIMER TO CURE PROPERLY PRIOR TO INSTALLING SEALANT.
2. PROVIDE A PRIMER APPROVED BY SEALANT MANUFACTURER.
3. INSTALLATION SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.

JOINT SEALANT INSTALLATION:

1. INSTALLATION SHALL CONFORM TO MANUFACTURER'S REQUIREMENTS.
2. INSTALL SEALANT EVENLY AND RECESS 1/16" BELOW SURFACE. DO NOT OVERFILL JOINT.
3. DO NOT EXCEED 2:1 WIDTH TO DEPTH RATIO.

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FORE STREET PARKING FACILITY
 PORTLAND, MAINE
 TYP REPAIR SECTIONS & DETAILS

Designed	AMJ	Scale	AS NOTED
Drawn	MK	Date	9/13/13
Checked	TMN	Becker Job Number	3144

S3.1