

**IOWA DEPARTMENT OF NATURAL RESOURCES
LAND & WATERS BUREAU
WALLACE STATE OFFICE BUILDING**

ADDENDUM No. 2

GREEN VALLEY STATE PARK
LAKE SPILLWAY REPAIRS
UNION COUNTY, IOWA
PROJECT NUMBER: 21-04-88-03

Date 03/15/2023

This Addendum is issued to modify, explain or correct the original Drawings and Specifications, and is hereby made a part of the Contract Documents. Please attach this Addendum to the Project Manual in your possession. Insert the number and issue date of this Addendum in the blank space provided on the Proposal Form.

Plans:

- A. Replace Sheets S000 and S500 with revised sheets attached with this addendum.

DESIGN INFORMATION

- 1. CODES:
 - A. EM 1110-2-2502, RETAINING AND FLOOD WALLS, US ARMY CORPS OF ENGINEERS 1989
 - B. EM 1110-2-2100 STABILITY ANALYSIS OF CONCRETE STRUCTURES, US ARMY CORPS OF ENGINEERS, 2005
 - C. EM 1110-2-2104, STRENGTH DESIGN FOR REINFORCED CONCRETE HYDRAULIC STRUCTURES, US ARMY CORPS OF ENGINEERS, 2016
 - D. AMERICAN CONCRETE INSTITUTE - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318)
 - E. AMERICAN CONCRETE INSTITUTE - CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES (ACI 350)
 - F. AMERICAN SOCIETY OF CIVIL ENGINEERS AND STRUCTURAL ENGINEERING INSTITUTE (ASCE/SEI 7) - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- 2. DESIGN LOADS
 - A. DEAD LOADS
STRUCTURE SELF WEIGHT AS SHOWN
 - B. LATERAL EARTH PRESSURES
AT-REST PRESSURE 95 PCF X DEPTH
(EQUIVALENT FLUID PRESSURE)
AT- REST SURCHARGE 100 PCF X DEPTH
- 3. SOILS INFORMATION BASED ON PRESUMPTIVE GEOTECHNICAL INFORMATION.
NET ALLOWABLE SOIL BEARING PRESSURES:
SPREAD FOOTINGS 1500 PSF

SUBMITTALS

- 1. CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL THE FOLLOWING SUBMITTALS FOR EACH MATERIAL INDICATED BELOW.
- 2. CONCRETE REINFORCING
 - A. SUBMIT CONCRETE REINFORCEMENT SHOP DRAWINGS IN ACCORDANCE WITH ACI 315 FOR APPROVAL.
 - a. DETAIL BARS IN ACCORDANCE WITH "ACI DETAILING MANUAL", PUBLICATION SP-66 AND THE LATEST EDITION OF ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- 3. CAST-IN-PLACE CONCRETE
 - A. SUBMIT CONCRETE MIX DESIGNS FOR EACH APPLICATION LOCATION INDICATED IN THE DRAWINGS.
 - B. SUBMIT SHOP DRAWING OF WEAP HOLE INSERTS.
- 4. EXCAVATE AND DEWATER
 - A. PROVIDE A DESCRIPTION AND PLAN SHOWING THE FOLLOWING:
 - EQUIPMENT TO BE USED AND APPROXIMATE LOCATIONS.
 - METHODS FOR DEWATERING INCLUDING PUMPS, PUMP LOCATIONS AND WATER DISCHARGE.
 - METHODS FOR REMOVAL OF SEDIMENT AND PLANS FOR DISPOSAL.
 - PLANS TO FOR POTENTIAL FLOODING OF THE EXCAVATION IN THE EVENT OF FLOW OVER THE DAM SPILLWAY.
 - METHODS AND MATERIALS FOR CONSTRUCTING TEMPORARY BERM OR SHEETING TO ALLOW DEWATERING.

GENERAL NOTES

- 1. ELEVATIONS ARE TAKEN FROM AVAILABLE EXISTING DRAWINGS. ELEVATION DATUM IS NOT KNOWN. ELEVATIONS IS SHOW APPROXIMATE DIFFERENCES BETWEEN PROJECT FEATURES FOR BIDDING PURPOSES. FIELD VERIFY ELEVATIONS AND DIMENSIONS BEFORE SUBMITTING SHOP DRAWINGS.
- 2. UNLESS NOTED OTHERWISE, DETAILS SHOWN ON DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
- 3. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- 4. EXISTING CONDITIONS:
 - A. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND EXISTING SERVICES ON SITE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING, WALLS, OPENINGS, PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES WITH THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
 - B. DURING CONSTRUCTION THE CONTRACTOR MAY ENCOUNTER EXISTING CONDITIONS WHICH ARE NOT KNOWN OR ARE AT VARIANCE WITH PROJECT DOCUMENTATION (DISCOVERY). SUCH CONDITIONS MAY INTERFERE WITH THE NEW CONSTRUCTION OR REQUIRE PROTECTION AND/OR SUPPORT OF EXISTING WORK DURING CONSTRUCTION. IT MAY ALSO CONSIST OF DAMAGED OR DETERIORATION OF STRUCTURAL MATERIALS OR COMPONENTS WHICH COULD JEOPARDIZE STRUCTURAL INTEGRITY. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL DISCOVERIES WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE WORK OR JEOPARDIZE STRUCTURAL INTEGRITY OF PRIOR TO PROCEEDING WITH THE WORK RELATED TO SUCH DISCOVERIES.
 - C. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT IT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
 - D. CONTRACTOR SHALL INVESTIGATE THE SITE DURING EARTHWORK OPERATIONS FOR FILL MATERIAL OR BURIED STRUCTURES. IMMEDIATELY NOTIFY THE ENGINEER IF ANY SUCH MATERIALS OR STRUCTURES ARE DISCOVERED.
- 5. BEFORE SUBMITTING A BID, EACH BIDDER SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, CONSTRUCTION REQUIREMENTS, RESTRICTIONS, QUANTITIES AND EQUIPMENT NECESSARY TO COMPLETE THE WORK. THE BID SHALL INCLUDE ALL ITEMS REQUIRED TO COMPLETE THE WORK WITHIN THE EXISTING CONDITIONS. DISRUPTION OF THE OWNERS NORMAL ACTIVITIES AROUND THE CONSTRUCTION SITE SHALL BE KEPT TO A MINIMUM.
- 6. ALL ELEMENTS AND SURFACES DAMAGED BY DEMOLITION, BUT NOT SCHEDULED FOR REMOVAL SHALL BE REPAIRED AND REFINISHED TO MATCH THE ADJACENT SURFACES AT NO ADDITIONAL COST TO THE OWNER.
- 7. CONTRACTOR SHALL REMOVE ALL DEBRIS AND WASTE MATERIALS RESULTING FROM CONSTRUCTION FROM THE SITE, UNLESS NOTED OTHERWISE.
- 8. CONTRACTOR SHALL MINIMIZE CREATION OF DUST, DIRT AND WINDBORNE DEBRIS FROM BLOWING ACROSS THE SITE AND ONTO ADJACENT SITES.
- 9. GREEN VALLEY LAKE IS EQUIPPED WITH A 3'X3' GATED LOW LEVEL DRAIN THAT CAN BE UTILIZED TO LOWER THE LAKE LEVEL DURING THE CONSTRUCTION PERIOD. THE SLUICE GATE ON THE LOW LEVEL DRAIN WILL BE OPERATED BY GREEN VALLEY LAKE DNR STAFF. THE GATE WILL BE FULLY OPENED TO LOWER WATER LEVEL OF THE LAKE BY UP TO 1' BELOW THE SPILLWAY CREST ELEVATION OF 1268'. THE GATE WILL BE CLOSED IF/WHEN THE LAKE LEVEL REACHES 1267'. GREEN VALLEY LAKE HAS A WATERSHED SIZE OF 8.2 SQUARE MILES (5,250 ACRES). THE LAKE BASIN CAN BE EXPECTED TO CAUSE RAPID RISES IN FLOWS TO/FROM THE LAKE DURING STORM EVENTS. CONTRACTOR SHALL CLOSELY MONITOR WEATHER FORCASTS DURING ALL PHASES OF WORK AND COMPLETE REMOVAL AND REPLACEMENT WORK TO MINIMIZE THE RISK OF DAMAGING SPILLWAY FLOWS DURING CRITICAL WORK PERIODS.
- 10. FOR ALL WORK NOT SPECIFIED IN THE CONTRACT DOCUMENTS, THE MOST RECENT EDITION OF THE IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION SHALL APPLY EXCLUDING MEASUREMENT AND PAYMENT SECTIONS.
- 11. GEOTECHNICAL AND MATERIALS TESTING BY AN INDEPENDENT TESTING LABORATORY SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. TESTING SHALL BE INCIDENTAL TO APPLICABLE BID ITEMS. MOISTURE AND DENSITY TESTING SHALL BE COMPLETED FOR FOUNDATION PREPARATION AND WALL BACKFILL. CONCRETE TESTING FOR AIR AND SLUMP OF PLASTIC CONCRETE SHALL OCCUR A MINIMUM OF ONCE PER DAY AND ONCE FOR EVERY 30 CUBIC YARDS OF CONCRETE POURED. A MINIMUM OF 4 TEST CYLINDERS SHALL BE CAST FOR EACH POUR. ONE SHALL BE BROKE AT 7 DAYS CURED, TWO SHALL BE BROKE AT 28 DAYS CURED, AND ONE BACKUP. SUBMIT ALL REPORTS TO THE FIELD ENGINEER.

CAST-IN-PLACE CONCRETE

- 1. ALL CONCRETE SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTES PUBLICATIONS: ACI 301, ACI 305.1, ACI 306.1, ACI 315, ACI 318, AND ACI 350 UNLESS NOTED OTHERWISE.
- 2. CONCRETE COMPRESSIVE STRENGTH (28 DAY)(F_c)
FOOTINGS 4000 PSI
SLAB ON GRADE 4000 PSI
- 3. CONCRETE REINFORCEMENT STANDARDS:
DEFORMED BARS ASTM A615 F_y = 60 KSI
- 4. ALL CONCRETE SHALL BE STONE AGGREGATE UNLESS NOTED OTHERWISE. SUBMIT MIX DESIGN AND DOCUMENTATION FOR APPROVAL PER ACI 318.
- 5. REINFORCEMENT PROTECTION FOR HYDRAULIC STRUCTURES PER ACI 350:
 - A. CONCRETE PLACED AGAINST AND PERMANENTLY EXPOSED TO EARTH - 3"
 - B. CONCRETE EXPOSED TO EARTH, LIQUID, WEATHER, OR SLABS SUPPORTING EARTH COVER:
 - a. SLABS AND JOISTS - 2"
 - b. FOOTINGS AND BASE SLABS, FORMED SURFACES - 2"
 - c. TOP OF FOOTINGS AND BASE SLABS - 2"
- 6. WHERE REQUIRED, DOWELS SHALL MATCH THE SIZE, NUMBER AND SPACING OF THE MAIN REINFORCING UNLESS NOTED OTHERWISE.
- 7. ALL SPLICES, STANDARD HOOKS, AND DEVELOPMENT LENGTHS TO BE PER THE REFERENCED EDITION OF ACI 318. MAKE BARS CONTINUOUS AROUND CORNERS. ALL SPLICES SHALL BE BY CONTACT LAP.
- 8. ALL SPLICES SHALL BE A CLASS "B" TENSION SPLICE AS DEFINED IN ACI 318. PROVIDE LAP SPLICES LENGTHS AS FOLLOWS:

BAR SIZE	4000 PSI	
	TYPICAL	TOP BARS
#3	19"	25"
#4	25"	33"
#5	31"	41"
#6	37"	49"
#7	54"	71"
#8	62"	81"
#9	70"	91"
#10	79"	102"
#11	87"	114"

LAP SPLICE LENGTHS GIVEN, ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM CLEAR COVER OF 1 BAR DIAMETER. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" ON FRESH CONCRETE BENEATH THE BARS.

- 9. WALLS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE, UNLESS APPROVED BY THE ENGINEER.
- 10. CONCRETE MIX - FOUNDATIONS
 - COARSE AGGREGATE 100% PASSING 1" SIEVE
 - FINE AGGREGATE 100% PASSING 3/8" SIEVE
 - WATER/CEMENT RATIO 0.45
 - SLUMP (NO WATER REDUCER) 4" +/- 1"
 - SLUMP (WITH WATER REDUCER) 4" TO 8"
 - AIR CONTENT 6% +/- 1.5%

11. PREFORMED JOINT FILLER, BACKER ROD AND SEALANT SHALL CONFORM TO THE REQUIREMENTS OF IOWA DOT STANDARD SPECIFICATIONS SECTION 4136.

FOUNDATIONS

- 1. ALL EXCAVATIONS SHALL BE COMPACTED AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS UNTIL CONCRETE HAS ATTAINED THE SPECIFIED COMPRESSIVE STRENGTH.
- 2. CONTRACTOR SHALL ACCOUNT FOR PUMPING OF WATER FROM THE EXCAVATION DUE TO SURFACE WATER, GROUND WATER AND SEEPAGE.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL SHEETING, SHORING AND CRIBBING REQUIRED TO SAFELY RETAIN THE EARTH BANK AROUND THE EXCAVATIONS.
- 4. ALL FOOTINGS SHALL BE PLACED ONTO FIRM UNDISTURBED SOIL OR ACCEPTABLE COMPACTED BACKFILL.
- 5. LOCALIZED AREAS OF UNACCEPTABLE SOILS OR POOR COMPACTION MAY BE DISCOVERED DURING THE EXCAVATION PROCESS REQUIRING OVEREXCAVATION AND BACKFILL WITH ACCEPTABLE FILL. FOOTING EXCAVATIONS SHALL BE LOWERED TO REACH SOIL MEETS THE DESIGN BEARING PRESSURE AND APPROVED BY A GEOTECHNICAL SPECIAL INSPECTION AGENCY.
- 6. ACCEPTABLE BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED EIGHT (8) INCHES IN LOOSE THICKNESS.
- 7. FOR FOOTING AND FOUNDATIONS, THE SUBGRADE OR FILL MATERIAL SHALL BE COMPACTED AND VERIFIED TO MEET 98% STANDARD PROCTOR MAXIMUM DRY DENSITY ACCORDANCE WITH ASTM D698. FOR RELATIVELY COHESIONLESS GRANULAR FILL WHICH HAS A PERCENT PASSING THE #200 SIEVE LESS THAN 10 PERCENT AND HAS ONLY A SLIGHT SENSITIVITY TO MOISTURE CHANGES, COMPACTION SHALL BE 75 PERCENT RELATIVE DENSITY IN ACCORDANCE WITH ASTM D4253 AND D4254. IF COMPACTION DOES NOT COMPLY, CONTRACTOR SHALL RECOMPACT AREA AND UNTIL TEST RESULTS ARE PASSING. AN AREA EXHIBITING WEAKNESS SUCH AS RUTTING OR PUMPING SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL.
- 8. FOOTING EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL SPECIAL INSPECTION AGENCY BEFORE CONCRETE IS PLACED. CONTRACTOR SHALL NOTIFY INSPECTION AGENCY WHEN EXCAVATION IS READY FOR TESTING. INSPECTION AGENCY SHALL PROVIDE A WRITTEN REPORT OF TEST RESULTS AND COMPLIANCE TO THE OWNER.
- 9. ACCEPTABLE SOIL SHALL BE DEFINED AS MEETING ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, SM OR A COMBINATION OF THESE TYPES.
- 10. UNACCEPTABLE SOILS SHALL BE DEFINED AS MEETING ASTM D2487 SOIL CLASSIFICATION GROUPS GC, SC, ML, MH, CL, CH, OL, OH, PT OR A COMBINATION OF THESE TYPES. GROUPS CL AND ML MAY BE ACCEPTABLE IF THE LIQUID LIMIT IS LESS THAN 45 AND THE PLASTICITY INDEX IS LESS THAN 20.
- 11. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADES BEFORE AND AFTER PLACING THE CONCRETE.
- 12. CONCRETE FOOTINGS AND SLABS SHALL NOT BE PLACED ON OR AGAINST SUBGRADES CONTAINING FROST, SNOW OR ICE. FROZEN SUBGRADES SHALL BE COMPLETELY THAWED AND RECONDITIONED BEFORE CONCRETE MAY BE PLACED.
- 13. REPEATED HEAVY CONSTRUCTION TRAFFIC OVER EXPOSED SUBGRADE WILL CAUSE RUTTING AND PUMPING WHEN SOIL IS ABOVE THE OPTIMUM MOISTURE CONTENT. AVOID EXCESS CONSTRUCTION ACTIVITY ON WET SOILS. IF SUBGRADE IS ABOVE THE OPTIMUM MOISTURE CONTENT DURING CONSTRUCTION, THEN DRYING OF THE SOIL SHALL BE CONDUCTED BY DISKING, SCARIFICATION, AND AERATION.
- 14. SOILS WITH A MOISTURE CONTENT ABOVE THE OPTIMUM LEVEL SHALL BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL.
- 15. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE NOT COVERED BY THE NOTES OF THIS SECTION.
- 16. CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF THE EXISTING FOUNDATIONS VARY FROM THAT SHOWN ON THE DRAWINGS.

GREEN VALLEY LAKE SPILLWAY REPAIR

SHIVE-HATTERY ARCHITECTURE + ENGINEERING

4125 WESTOWN PKWY, SUITE 100 WEST DES MOINES, IA 50266 515.223.8104 | SHIVE-HATTERY.COM

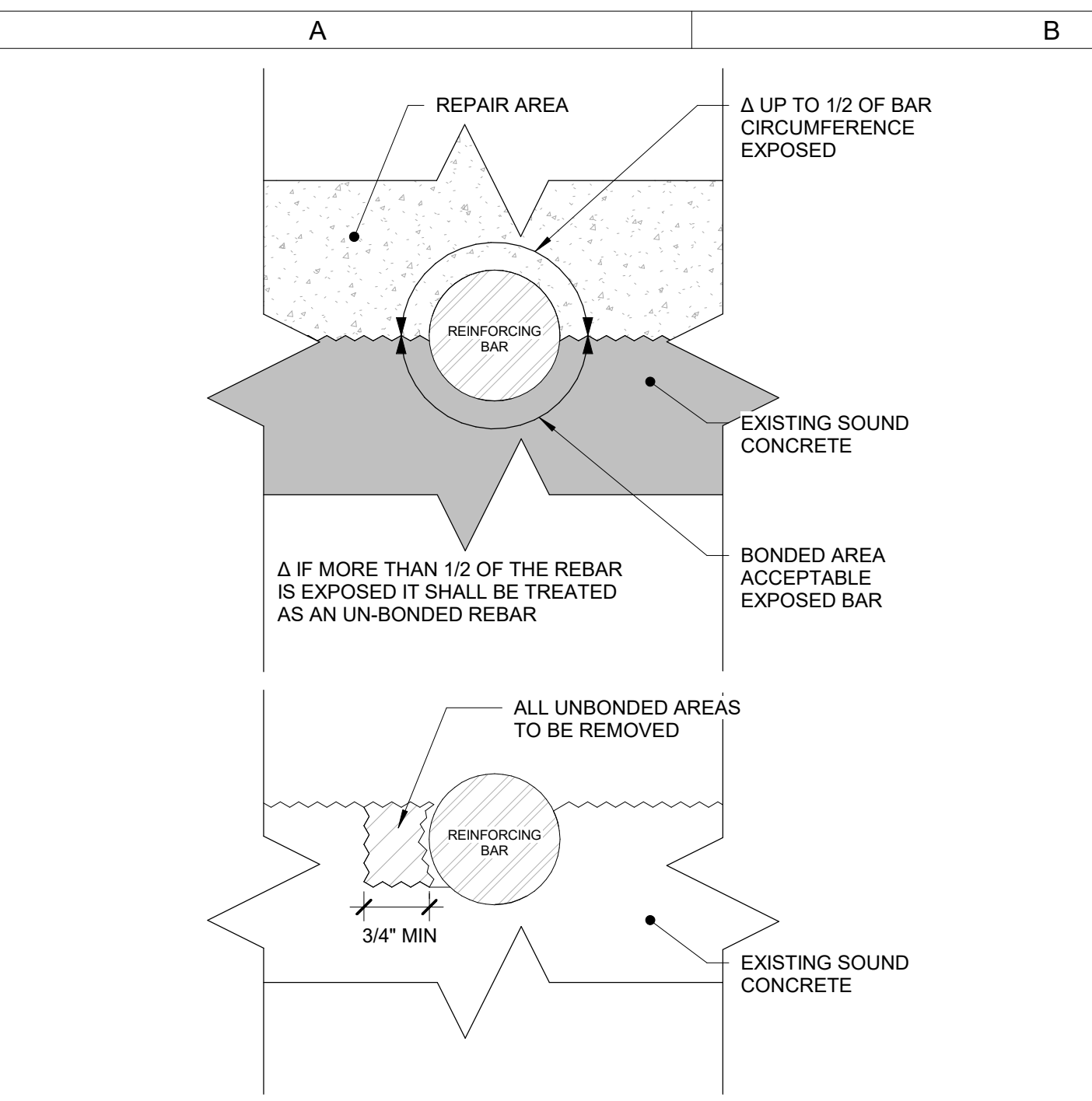
IOWA DEPARTMENT OF NATURAL RESOURCES 1480 130TH ST, CRESTON, IA 50801 UNION COUNTY, IA

DRAWN BY	CRM
APPROVED BY	LWS
ISSUED FOR	BIDDING
ISSUE DATE	2/7/2023
PROJECT NUMBER	2142202570
FIELD BOOK	

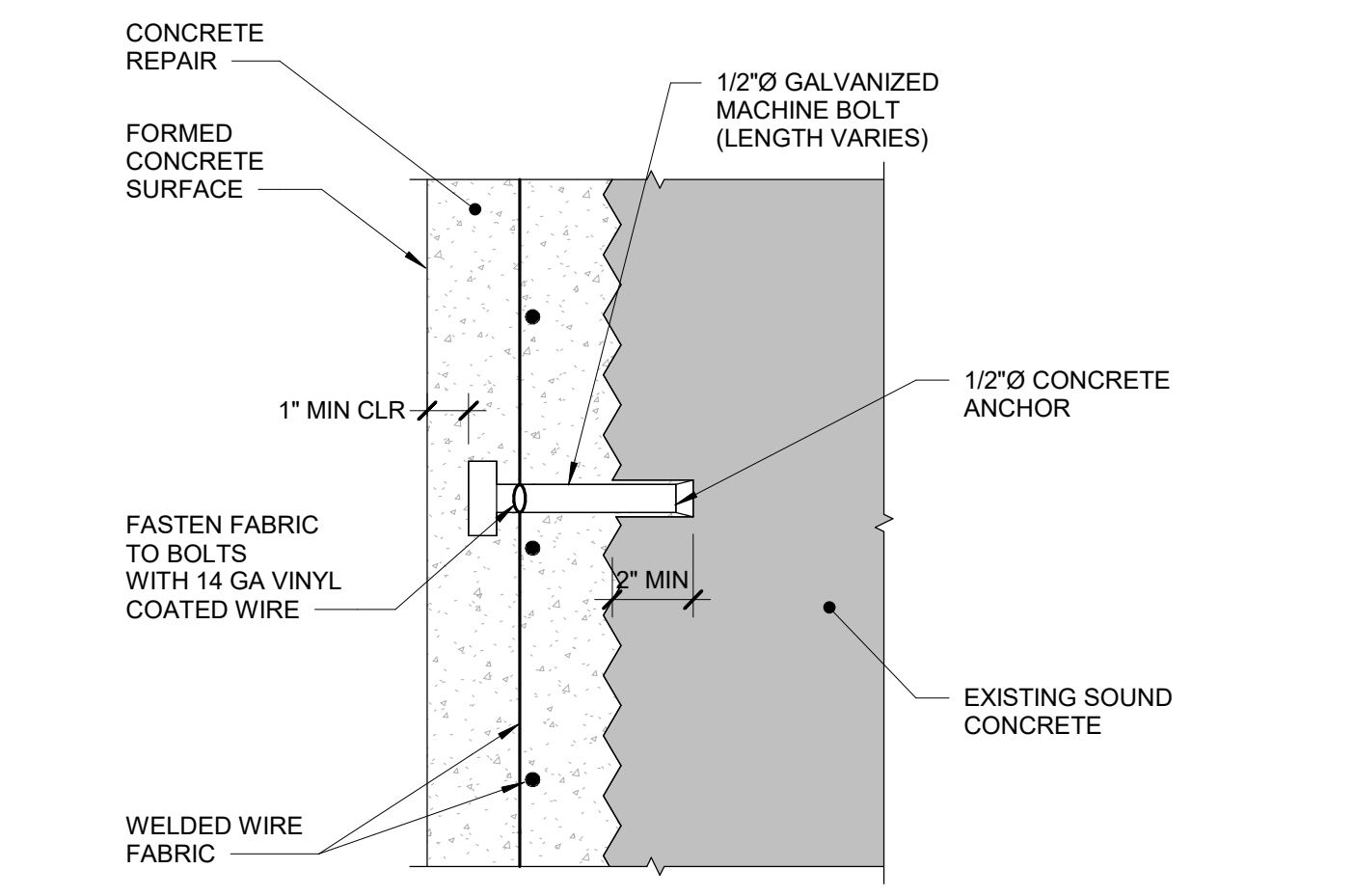
STRUCTURAL GENERAL INFORMATION

S000

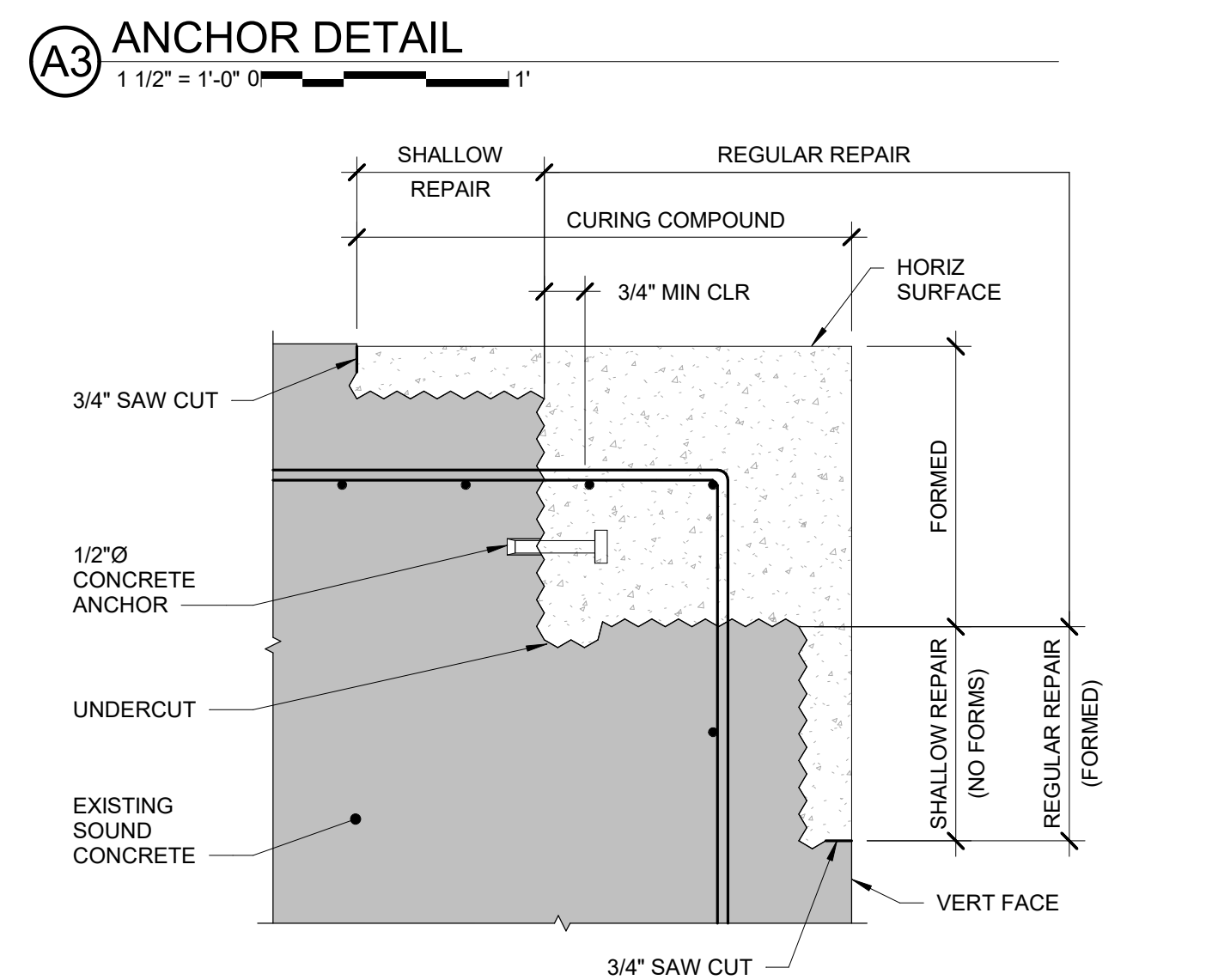
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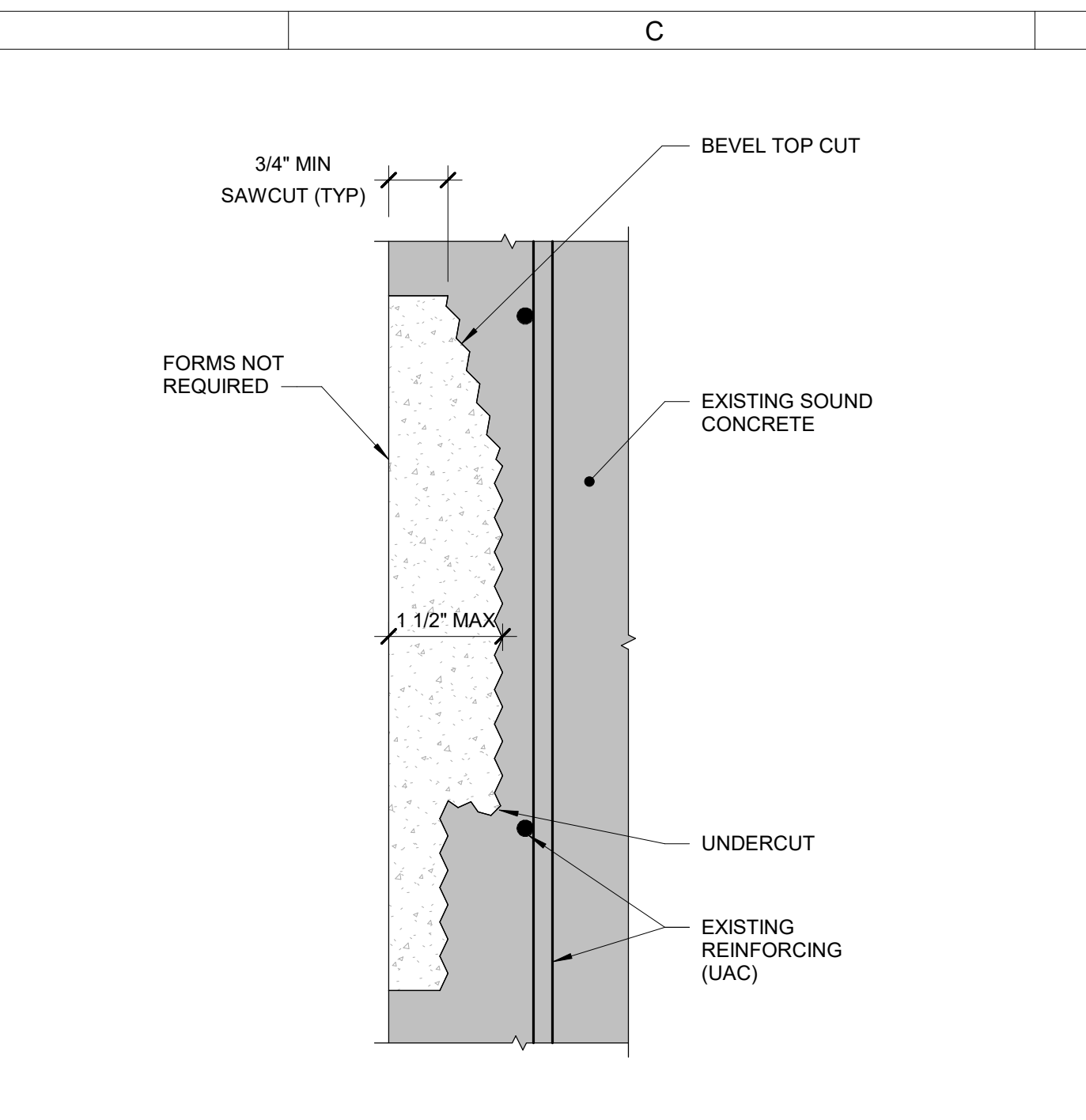
A2 CONCRETE REMOVAL ADJACENT TO REINFORCING
12" = 1'-0" 0 1.5"



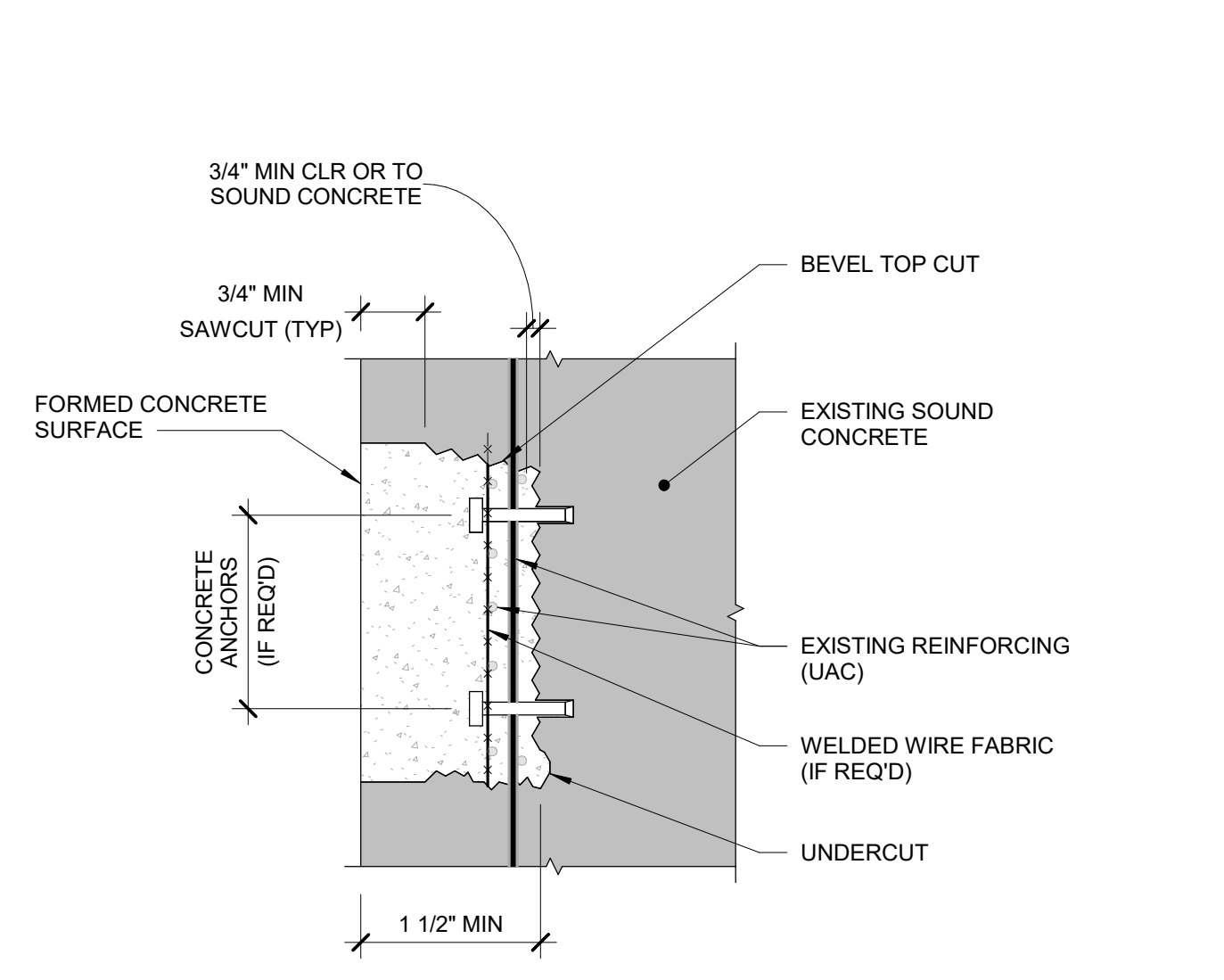
A3 ANCHOR DETAIL
1 1/2" = 1'-0" 0 1"



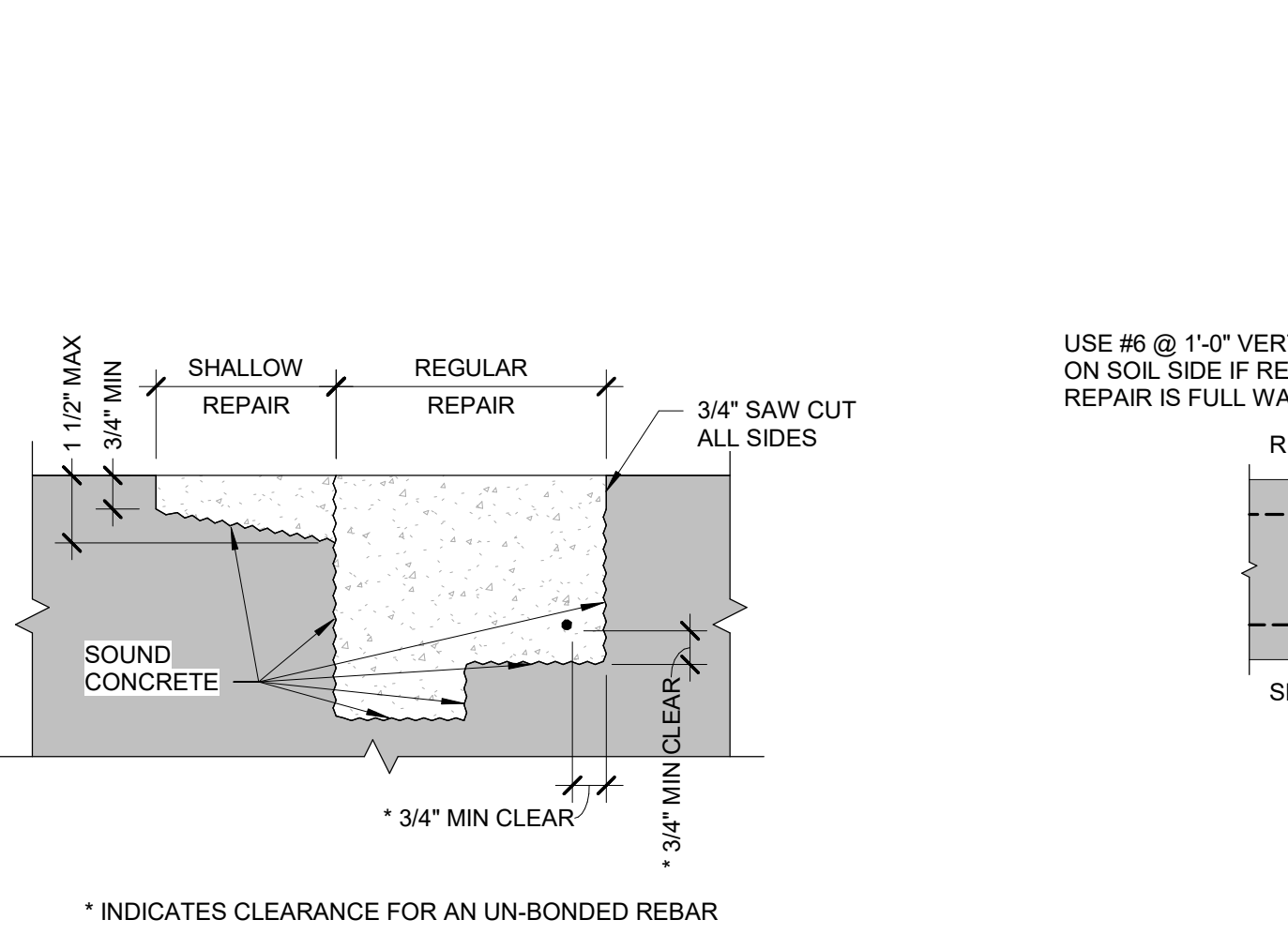
A4 CORNER REPAIR
3/4" = 1'-0" 0 2"



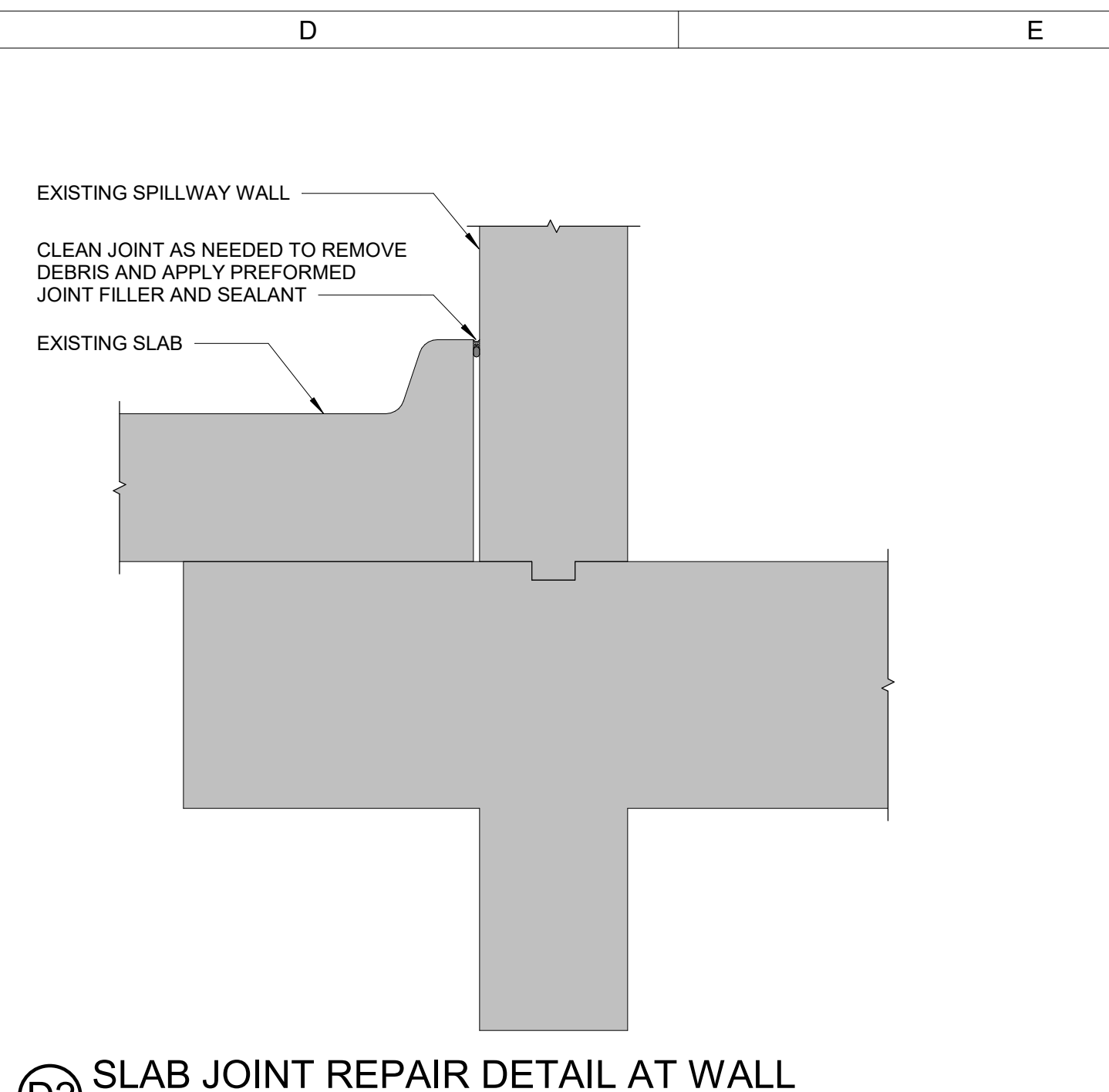
B2 SHALLOW REPAIR VERTICAL FACE
1 1/2" = 1'-0" 0 1"



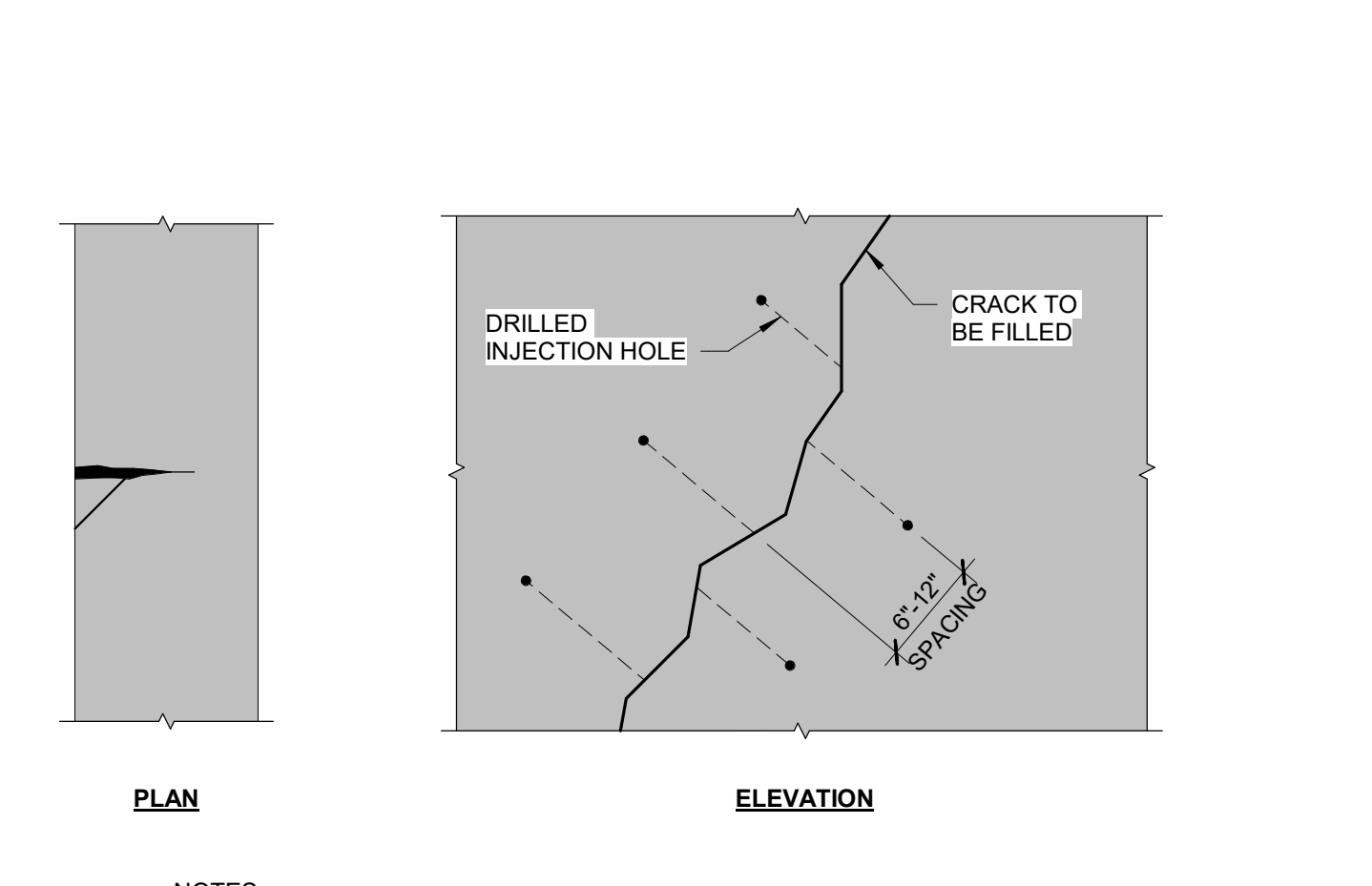
B3 REGULAR REPAIR VERTICAL FACE
3/4" = 1'-0" 0 2"



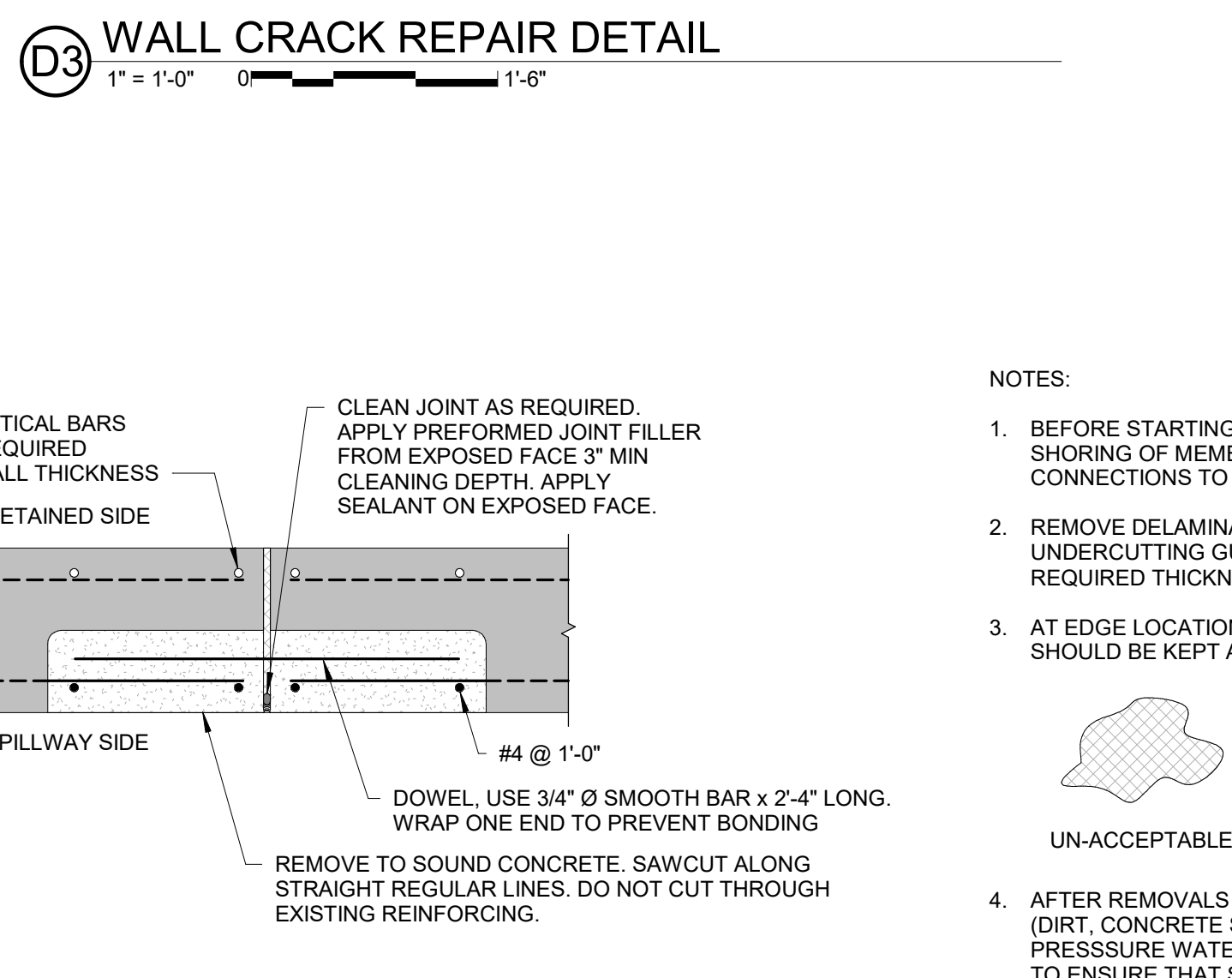
B4 REPAIR DEFINITION
3" = 1'-0" 0 6"



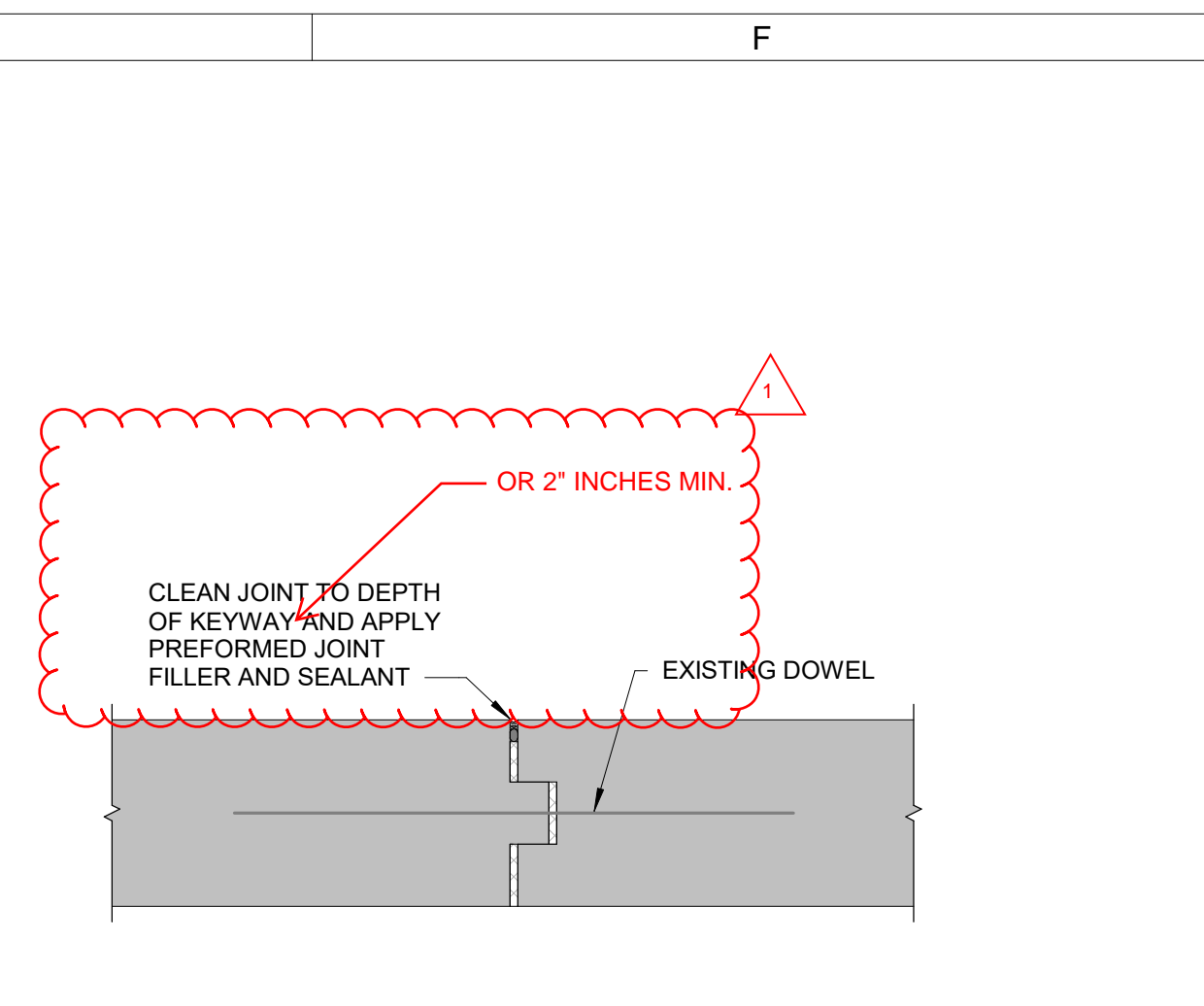
D2 SLAB JOINT REPAIR DETAIL AT WALL
1" = 1'-0" 0 1'-6"



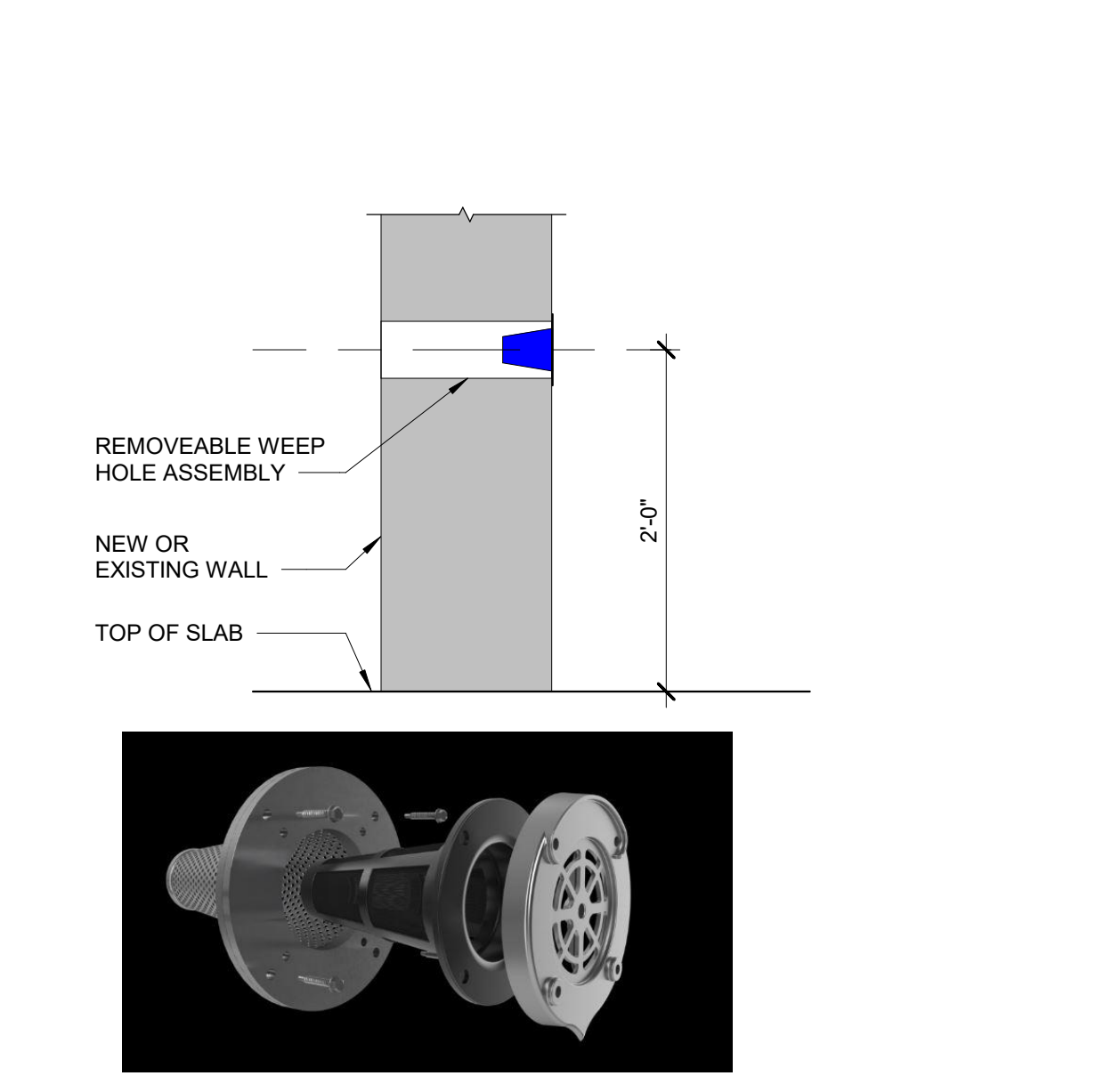
D3 WALL CRACK REPAIR DETAIL
1" = 1'-0" 0 1'-6"



C4 WALL JOINT REPAIR DETAILS
1" = 1'-0" 0 1'-6"



E2 SLAB JOINT REPAIR DETAIL
1" = 1'-0" 0 1'-6"



E3 WEEP HOLE DETAIL
1" = 1'-0" 0 1'-6"

- NOTES:**
- BEFORE STARTING REMOVALS, REVIEW EFFECT OF REMOVALS ON STRUCTURAL INTEGRITY; PROVIDE SHORING OF MEMBER AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB CONNECTIONS TO WALLS.
 - REMOVE DELAMINATED CONCRETE, UNDERCUT REINFORCING STEEL (REFER TO REINFORCING STEEL UNDERCUTTING GUIDELINES). REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
 - AT EDGE LOCATION PROVIDE RIGHT ANGLE CUTS. AVOID FEATHER EDGES. PATCH CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE. FOR EXAMPLE:
 - UN-ACCEPTABLE
 - ACCEPTABLE
 - UN-ACCEPTABLE
 - ACCEPTABLE
 - AFTER REMOVALS AND EDGE CONDITIONING ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, CONCRETE SLURRY, LOOSELY BONDED AGGREGATES) BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVE. CHECK THE SURFACES AFTER CLEANING TO ENSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE, OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.