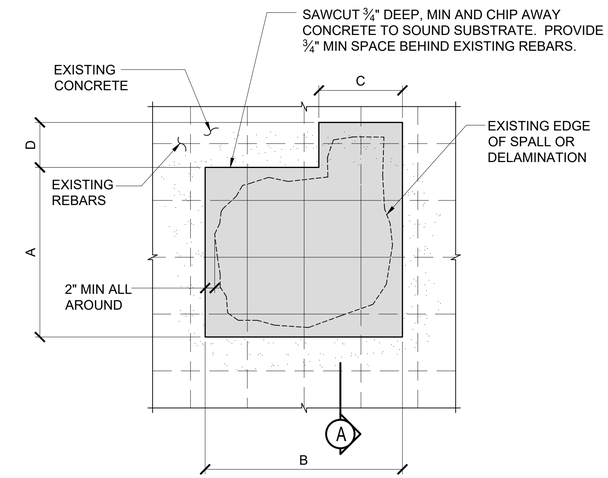
REPAIR NOTES:

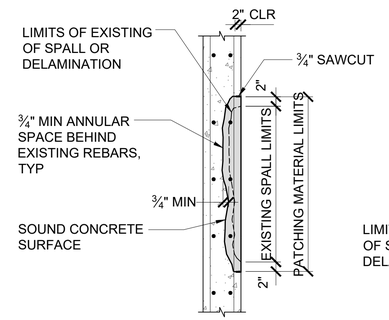
1. REMOVE LOOSE OR DELAMINATED CONCRETE ABOVE CORRODED REINFORCING STEEL.
2. ONCE INITIAL REMOVAL ARE MADE, PROCEED WITH UNDERCUTTING OF ALL EXPOSED CORRODED BARS. PROVIDE MINIMUM 3/4 INCH CLEARANCE BETWEEN EXPOSED REBARS AND SURROUNDING CONCRETE OR 1/4 INCH LARGER THAN THE LARGEST AGGREGATE IN REPAIR MATERIAL, WHICHEVER IS GREATER.
3. CONCRETE REMOVALS SHALL EXTEND ALONG THE BARS TO LOCATIONS ALONG THE BAR FREE OF BOND INHIBITING CORROSION, AND WHERE THE BAR IS WELL BONDED TO SURROUNDING CONCRETE.
4. IF NON-CORRODED REINFORCING STEEL IS EXPOSED DURING THE UNDERCUTTING PROCESS, CARE SHALL BE TAKEN NOT TO DAMAGE THE BAR'S BOND TO SURROUNDING CONCRETE. IF BOND BETWEEN BAR AND CONCRETE IS BROKEN, UNDERCUTTING OF THE BAR SHALL BE REQUIRED.
5. ANY REINFORCEMENT WHICH IS LOOSE SHALL BE SECURED IN PLACE BY TYING TO OTHER SECURED BARS OR BY OTHER APPROVED METHODS.
6. INSPECT THE CONDITION OF THE NEWLY EXPOSED REBARS AFTER CONCRETE REMOVED. WHEN CORROSION HAS CAUSED SIGNIFICANT SECTION LOSS OF THE REBARS, PER TABLE SHOWN IN REBAR DETAIL REPAIR, THE CONTRACTOR SHALL SPLICE A NEW SECTION OF REBAR INTO PLACE AS SHOWN IN REBAR REPAIR DETAIL.
7. COAT REBAR WITH CORROSION INHIBITOR IF RECOMMENDED BY MANUFACTURER.
8. APPLY BONDING AGENT IF RECOMMENDED BY MANUFACTURER.
9. REPAIR SPALL USING POLYMER MODIFIED CONCRETE PER MANUFACTURER'S RECOMMENDATION. FINISH SHOULD MATCH PATTERN OF EXISTING CONCRETE SURFACE.



PLAN/ELEVATION

1 S-200 SPALL REPAIR DETAIL, TYPE I

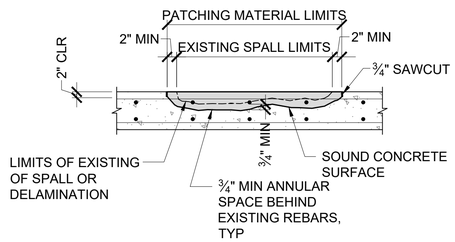
NOT TO SCALE



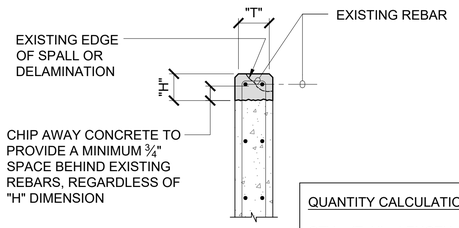
A VERTICAL REPAIR

QUANTITY CALCULATION:

QTY = A x B + C x D (S.F.)



A HORIZONTAL REPAIR

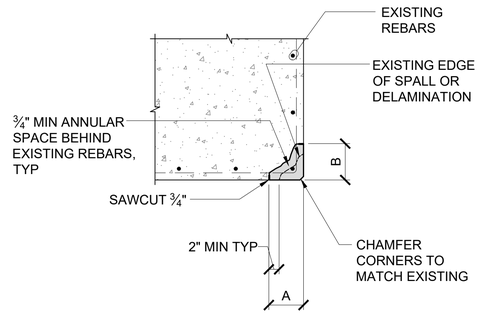


QUANTITY CALCULATION:

QTY = (T+H) x LENGTH (S.F.)

2 S-200 TYPE II SPALL REPAIR

NOT TO SCALE

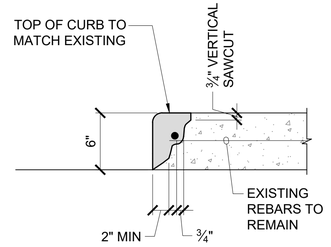


QUANTITY CALCULATION:

QTY = (A+B) x LENGTH (S.F.)

3 S-200 TYPE III SPALL REPAIR

NOT TO SCALE

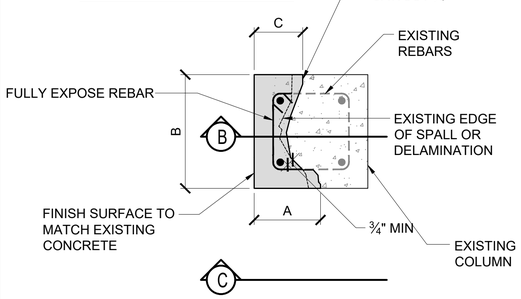


5 S-200 CURB REPAIR DETAIL

NOT TO SCALE

QUANTITY CALCULATION:

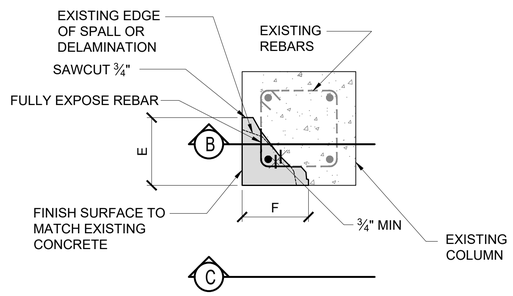
QTY = (A+B+C) x LENGTH (S.F.)



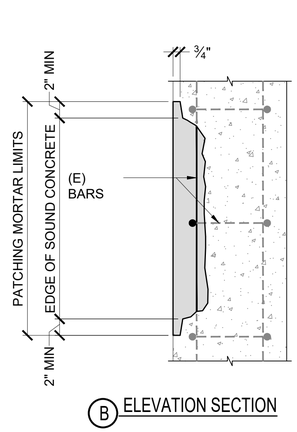
FULL FACE REPAIR

QUANTITY CALCULATION:

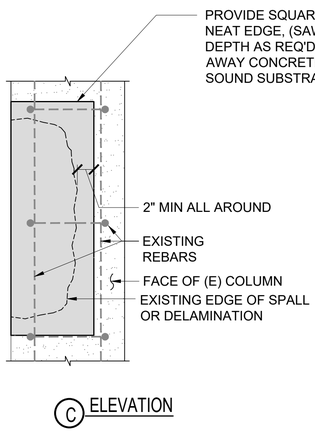
QTY = (E+F) x LENGTH (S.F.)



CORNER FACE REPAIR



B ELEVATION SECTION



C ELEVATION

4 S-200 TYPE IV SPALL REPAIR

NOT TO SCALE

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

SAEID POURJALALI
LICENSED PROFESSIONAL ENGINEER
No. 11475-S
HAWAII, U.S.A.

04/30/2024
Licensed Expiration Date

This work was prepared by me or under my supervision

DSGN.	DRWN.	CHKD.	APPD.
MG	MG	SP	

KEY PLAN / NOTES:

NO.	DATE	REVISIONS

CONSTRUCTION DOCUMENTS

SEPTEMBER, 2022
DATE

PROJECT TITLE :

EWA AND DH CONCOURSE ROADWAY IMPROVEMENTS PHASE 1

AT
DANIEL K. INOUYE INTERNATIONAL AIRPORT
HONOLULU, OAHU, HAWAII

PROJECT NO.:

AO1043-32

SHEET TITLE:

TYPICAL SPALL REPAIR DETAILS

DATE :	DWG. NO.
SEPTEMBER, 2022	S-200
SHEET :	
23 OF 247 SHEETS	

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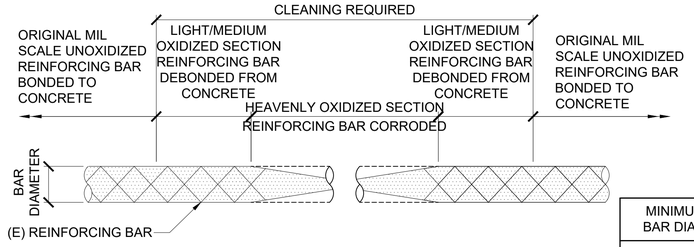
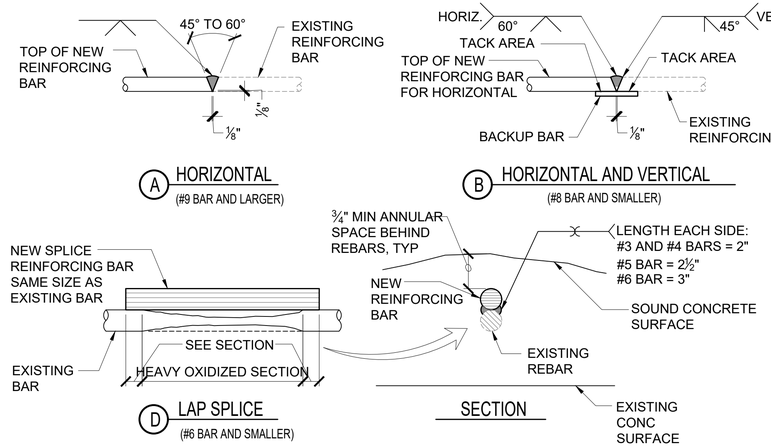


NOTES:
1. ALL HEAVY OXIDES, CORROSION, SCALE AND BOND INHIBITING AGENTS SHALL BE REMOVED FROM REINFORCING BAR BY MECHANICAL MEANS. ABRASIVE BLAST SHALL BE FREE OF OIL. TIGHTLY BONDED LIGHT OXIDE BUILD-UP ON THE SURFACE MAY RESULT AFTER BLAST CLEANING. THIS IS ACCEPTABLE UNLESS COATING MANUFACTURER REQUIRES CLEANER REINFORCING BAR SURFACE.
2. CHECK REMAINING SECTION IN ACCORDANCE WITH CHART, WHEN DIAMETER IS LESS THAN MINIMUM, SPLICE PER REBAR WELDED SPLICE DETAIL OR SPLICE SUPPLEMENT REBAR DETAIL.

MINIMUM ALLOWABLE BAR DIAMETER CHART	
BAR SIZE	MIN DIA
#4	3/8"
#5	1/2"
#6	5/8"
#7	1 1/16"
#8	1 3/16"
#9	7/8"

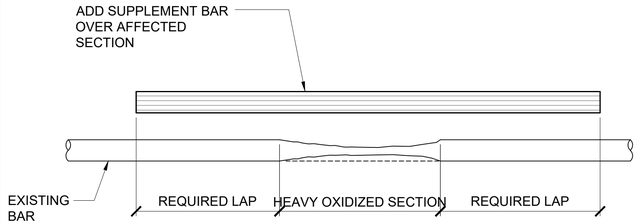
1 S-201 **REBAR REPAIR CRITERIA**
NOT TO SCALE



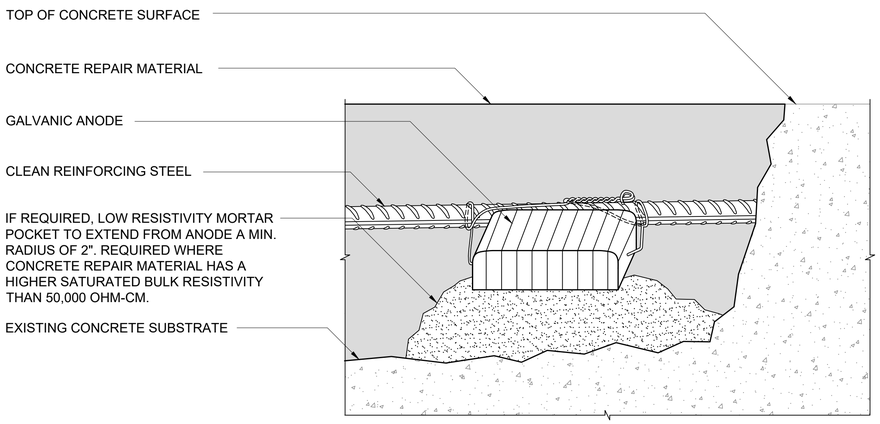
NOTES:
1. CHIP, GRIND, OR GOUGE TO SOUND METAL BEFORE WELDING.
2. IF MATERIAL TEST REPORTS OR CHEMICAL COMPOSITION DATA IS UNAVAILABLE FOR THE EXISTING REBAR, THE MINIMUM PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS SHALL BE AS FOLLOWS:
   a. UP TO #6 BARS INCLUSIVE..... 500°F [260°C]
   b. #7 BARS AND LARGER..... 300°F [150°C]
3. IF MATERIAL TEST REPORTS OR CHEMICAL COMPOSITION DATA IS AVAILABLE, REFER TO AWS D1.4 FOR MINIMUM PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS.
4. PREHEAT THE EXISTING REINFORCING BARS SUCH THAT THE CROSS-SECTION OF THE BAR IS AT OR ABOVE THE MINIMUM PREHEAT TEMPERATURE FOR AT LEAST SIX INCHES ON EACH SIDE OF THE JOINT TO BE WELDED.
5. USE E70 ELECTRODES FOR STIRRUPS, E90 ELECTRODES FOR ALL OTHERS.
6. NEW REINFORCING BARS SHALL CONFORM TO ASTM A706.

2 S-201 **REBAR WELDED SPLICE DETAIL**
NOT TO SCALE

NOTES:
1. SUPPLEMENT REBAR SIZE TO MATCH THE EXISTING REBAR SIZE.
2. SUPPLEMENT REBAR SHALL BE MECHANICALLY SLICED TO THE EXISTING REBARS OR PLACE PARALLEL TO AND APPROXIMATELY 3/4 IN FROM EXISTING REBAR.
3. LAP LENGTH SHALL BE DETERMINED IN ACCORDANCE WITH ACI 318/ AASHTO LRFD.



3 S-201 **REBAR SUPPLEMENT SPLICE DETAIL**
NOT TO SCALE



4 S-201 **CATHODIC REBAR PROTECTION OPTION**
NO TTO SCALE

NOTES:
1. CONTRACTOR SUBMIT INSTALLATION PLAN INCLUDING ANODE LAYOUT AND SPACING, MEANS AND METHODS FOR REBAR AND ANODE CONNECTIONS, AND MEANS AND METHODS FOR TESTING AND CORRECTION OF ELECTRICAL DISCONTINUITIES. INSTALLATION PLAN SHALL INCLUDE SEPARATE DETAILS FOR MONITORED LOCATIONS IF REQUIRED.
2. SURFACE MOUNTED GALVANIC SHEET ANODES SHALL BE A PRE-MANUFACTURED ANODE UNIT CONSISTING OF A 10 MIL THICK 99.9% PURE ZINC SHEET WITH AN IONICALLY CONDUCTIVE PRESSURE SENSITIVE ACRYLIC ADHESIVE. ANODE SUPPLIER SHALL HAVE A MINIMUM OF 10 YEARS OF EXPERIENCE IN SUPPLYING AND INSTALLING CATHODIC PROTECTION SYSTEMS FOR REINFORCED CONCRETE STRUCTURES.
3. AT LEAST ONE CONNECTION TO THE CONVENTIONAL STEEL REINFORCING AND ONE TO THE PRESTRESSING STRANDS SHALL BE ESTABLISHED AND THERE SHALL BE A MINIMUM OF TWO CONNECTIONS PER INDIVIDUAL BEAM END PROTECTED.
4. EPOXY MORTARS OR BONDING AGENTS SHALL NOT BE PERMITTED EXCEPT AS SPECIFICALLY NOTED IN THE PLANS REBAR CONNECTIONS CAN BE ESTABLISHED AT LOCATIONS WHERE STEEL IS EXPOSED BY REMOVAL OF SPALLED OR DELAMINATED CONCRETE. IF NO EXPOSED STEEL EXISTS, LOCATE REINFORCING STEEL WITH REBAR LOCATOR AND CHIP OUT CONCRETE TO EXPOSE REBAR.
5. REBAR CONNECTIONS SHOULD BE MADE PRIOR TO APPLICATION OF PROTECTIVE CORROSION INHIBITOR COATING ON THE REBAR AND PRESTRESSING STRANDS. IF ELECTRICAL CONNECTIONS ARE MADE FOLLOWING COATING APPLICATION, THE AREA AROUND THE CONNECTION SHALL BE BLASTED OR GROUND CLEAN SO THAT CONNECTIONS ARE MADE TO BARE REINFORCING STEEL.
6. ELECTRICAL CONTINUITY SHOULD BE VERIFIED BETWEEN EXISTING REINFORCING STEEL IN SPALLED CONCRETE LOCATIONS WITH A STANDARD DC MULTI-METER AT A MINIMUM OF FIVE LOCATIONS PER 1000 SQUARE FEET. READINGS GREATER THAN 1 MV POTENTIAL BETWEEN LOCATIONS INDICATE DISCONTINUOUS REBAR.
7. DISCONTINUOUS STEEL SHOULD BE MADE CONTINUOUS BY INSTALLATION OF A CONTINUITY BOND USING A STEEL WIRE TIE OR OTHER APPROVED MEANS.
8. ALL CONCRETE SPALL REPAIR AND EXCAVATIONS CREATED FOR REBAR CONNECTION SHALL BE REPAIRED WITH COMPATIBLE CONCRETE REPAIR MATERIAL.

Airports Division
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

SAEED POURJALALI
LICENSED PROFESSIONAL ENGINEER
No. 11475-S
HAWAII, U.S.A.

04/30/2024
Licensed Expiration Date

This work was prepared by me or under my supervision

DSGN.	DRWN.	CHKD.	APPD.
MG	MG	SP	

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