

# STRUCTURAL REPORT

For

## Lantana Oceanfront Condominiums Building 1 - 1791 Florida A1A Indian Harbour Beach, Florida 32937

Prepared by:  
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Approved by:  
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CA#3728

Engineer's Project # 21-0530  
January 28, 2022

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Lantana Oceanfront Condominiums – Building 1  
Project # 21-0530  
January 28, 2022

## Table of Contents

1. Executive Summary
2. Description of Structure
3. Scope of Investigation and Limitations
4. Findings and Repair Recommendations
5. Conclusions

### APPENDICES

Appendix A Unit balcony findings drawings



# Lantana Oceanfront Condominiums – Building 1

Project # 21-0530

January 28, 2022

## 1. Executive Summary

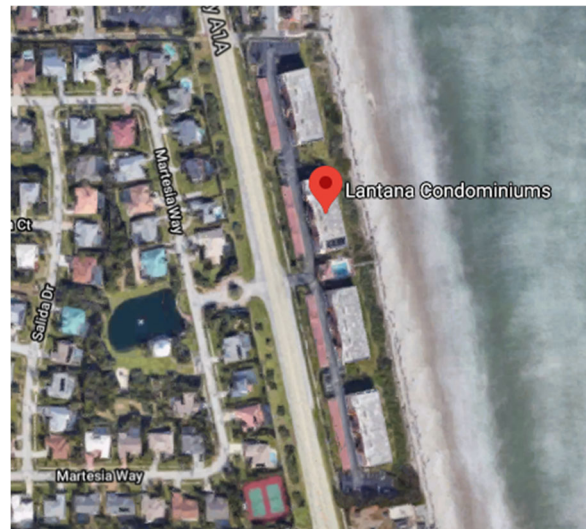
MBV Engineering, Inc. is pleased to submit this report following our directed, limited inspection and evaluation of the balconies of units 1202, 1203, 1204, 1205, 1302, 1303, 1304, 1305, 1402, 1403, 1404 and 1405, in Building No. 1, at Lantana Oceanfront Condominiums. This study was specifically requested to determine significances and extent of defects noted in the slabs, columns, and exterior walls at each unit balcony.

Representatives of MBV Engineering, Inc. inspected the above referenced unit balconies on Monday December 20, 2021.

## 2. Description of Structure

The Lantana Oceanfront Condominiums are located on Indian Harbour Beach, along SR A1A in Brevard County. The property consists of Four (4) 4-story residential building structures, detached parking/garage building structures, a recreation building structure and an in-ground pool. The front of the residential building structures faces the west. The buildings are rectangular shaped. The buildings were originally constructed in the year 2,000.

We inspected twelve (12), elevated, east exposure, interior location, unit balconies in Building No. 1. The structural system for the elevated slabs is a two-way flat concrete, post-tension reinforced, 6-inches thick floor slab and roof slab. The slabs are supported primarily on reinforced concrete columns; the exterior walls are infilled masonry block with stucco finishes. The building structure is supported on deep foundations.



## 3. Scope of Investigation and Limitations

The purpose of our inspection was to review the condition of the balcony slabs, columns and walls as they now stand, and to determine the elements which require structural (and/or cosmetic) repair.

Our visual and preliminary inspections are not expected to reveal elaborate defects, which are not evident by deterioration exposed to view or evident to the trained eye as the elements now stand. It must be understood that the Engineer can only provide certification of the conditions of the elements within the limits of the inspection performed; whether or not the structural members were sized and designed properly, if the structural framing materials, connections, or its construction are adequate or not, is beyond the extent of the inspection performed and is out of the scope of this assessment.

Our assessment included an audio, visual (non-destructive) inspection of the accessible exterior balcony concrete slab structure. The existing floor surfaces are finished with a cementitious overlay /



Lantana Oceanfront Condominiums – Building 1

Project # 21-0530

January 28, 2022

topping covering the concrete floor structure. Similarly, the existing ceiling surfaces have a plaster / stucco finish that covers the underside of the concrete slabs.

We marked, with a color chalk, the floor surfaces that currently show signs of distress; some of these areas are confirmed active concrete slab spalling and some are suspect and will require further verification after the existing floor finishes are removed.

For this investigation, we were provided with a copy of the structural drawings, as designed by Gerding Engineering, revision 3, dated 02-18-1998. Our evaluation and recommendations are being done with emphasis on the slab framing layout, and the location and conditions of the post-tensioning system, as shown in those structural plans, that are directly affected or in the vicinity of the noted slab problem areas.

- First and most important, we used our experience and training (trained eyes/ears) to do a visual (non-destructive) inspection of all the accessible balcony exterior surfaces.
- Visual examination was executed systematically.
- Surface imperfections such as cracks, distortion, sagging, excessive deflections, significant misalignment, signs of leakage, peeling, stains, delamination, and spalling of finishes and of the structural members are viewed critically as indications of possible issues.
- We took multiple photographs to document the conditions and to record signs of distressed elements and defects at the date and time of the inspection.
- We performed acoustic soundings through a hammer (or the use of a rotary percussion sounding device, per ASTM D4580-03) to help identify/confirm material delamination and or damage.
- Sketches of the location and geometry of the damaged areas were drawn in the field and then transferred into the AutoCAD drawings found in Appendix A.

#### **4. Findings and Repair Recommendations**

These balcony slabs are undergoing different stages and rate of deterioration within a particular slab and from one slab to another, ranging from incipient or minor concrete deterioration as evidenced by surface rust spots, and nearly inaudible hollow sounding areas, to severe deterioration due to heavy reinforcement corrosion, with obvious concrete spalling, cracking and exposed reinforcement.

The intent of the sounding procedure was to hear a dull or hollow sound indicating any delamination. Hollow sounding is an indication of concrete spalling, delamination or detached layers of concrete; it means the concrete is undergoing deterioration due to corrosion of the reinforcement.

A concrete restoration plan that can effectively repair the problems found and address the root causes will not only help reduce the rate of concrete deterioration but will delay their future recurrence.

Due to the inherent catastrophic failure potential from ruptured tendons from abuse or neglect, particular care, attention and prompt actions should be implemented with post-tensioned reinforced slab systems.

The following are some of the noted damages (and our recommended repairs) per each unit.:



Lantana Oceanfront Condominiums – Building 1

Project # 21-0530

January 28, 2022

- **Unit 1202:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - For more information see attached findings drawings.
  
- **Unit 1203:**
  - Possible concrete spall located by the south interior corner in front of the living room. This area is directly aligned with the band group of tendons (N-S orientation) along column grid line A. Both banded tendons and uniform tendons (E-W orientation) may be impacted if located directly over the possible slab spalling/repair areas, and may require de-tensioning / re-tensioning to allow the slab concrete repairs.
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - Observed water ponding locations. A slab pitch correction to these locations is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1204:**
  - Identified a few evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - Observed water ponding locations. A slab pitch correction to these locations is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1205:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - Observed water ponding locations. A slab pitch correction to these locations is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1302:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - For more information see attached findings drawings.



- **Unit 1303:**
  - The majority of the existing cementitious floor topping on the north half of the balcony is delaminated from the concrete substrate.
  - The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - A slab pitch verification and correction to these locations is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1304:**
  - Possible concrete spall located by the north interior corner in front of the living room. This area is directly aligned with the band group of tendons (N-S orientation) along column grid line A. Both banded tendons and uniform tendons (E-W orientation) may be impacted if located directly over the possible slab spalling/repair areas, and may require de-tensioning / re-tensioning to allow the slab concrete repairs.
  - Identified a few other evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - Observed water ponding locations. A slab pitch correction to these locations is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1305:**
  - The entire balcony floor has tile flooring finishes. The majority of the installed tile flooring is hollow sounding / delaminated from its substrate. Complete removal of the tile flooring is recommended to verify the condition and integrity of the substrate.
  - A slab pitch verification and correction is recommended to ensure the proper draining away of water.
  - For more information see attached findings drawings.
  
- **Unit 1402:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - Observed numerous rust spot (stains) locations on the cementitious floor topping.
  - For more information see attached findings drawings.
  
- **Unit 1403:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - For more information see attached findings drawings.



- **Unit 1404:**
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - For more information see attached findings drawings.
  
- **Unit 1405:**
  - Possible concrete spall located by the north interior corner in front of the living room. This area is directly aligned with the band group of tendons (N-S orientation) along column grid line A. Both banded tendons and uniform tendons (E-W orientation) may be impacted if located directly over the possible slab spalling/repair areas, and may require de-tensioning / re-tensioning to allow the slab concrete repairs.
  - Identified several evident hollow sounding floor overlay / topping area locations. The existing floor finishes directly over the identified hollow sounding floor surfaces should be removed to further verify and rule out the possibility of being actual concrete slab spalling.
  - For more information see attached findings drawings.

## **5. Conclusions**

A concrete restoration process should be implemented to properly repair the observed damages following the guidelines of the ICRI (International Concrete Repair Institute, Inc.) and the PTI (Post-Tensioning Institute).

ICRI methodology requires unsound concrete to be removed; affected reinforcement exposed until at least 4 to 6 inches of clean steel is encountered. The exposed steel will then be abrasively cleaned in order to remove the chlorides attached to it. Corroding steel tends to lose cross-section area and will need supplements if a threshold is reached. The existing reinforcement is treated / coated with corrosion inhibitors after being thoroughly cleaned.

Any cracks on the concrete members should be epoxy injected in order to repair the structural capacity of the affected elements.

The concrete is then redone with corrosion inhibitors and low water cement ratios.

Migrating corrosion inhibitors should be applied to the concrete surfaces that are not receiving a waterproofing system.

An adequate waterproofing system should be installed on all horizontal and vertical concrete slab surfaces. As a part of the waterproofing system, we also recommend the application of an adequate slab edge treatment at the juncture with the walls in order to properly seal and waterproof the balcony edge / perimeter. Also, prior to the waterproofing installation, the slab slope (pitch) will need to be reviewed to ensure proper water drainage away from the unit.

We do not recommend the use of elastomeric paints on the exterior wall or ceiling surfaces.



Lantana Oceanfront Condominiums – Building 1

Project # 21-0530

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The significant damages observed on the floor overlay / topping slabs on some of the units seem premature as the building is 20 years old but are consistent with the location of the buildings due to their proximity to the ocean and the fact that these slabs are not properly being waterproofed.

The Board should consider initiating a repair project to address as many of the repairs as can be afforded. These repairs should address the immediate damage and are aimed at taking preventative measures to slow the rates of corrosion; including waterproofing the slabs.

We feel by using the proposed methods of repair, it will be able to efficiently mitigate the damages to the structure and adequately ensure that the strength of the members is not exceeded by the design loads.

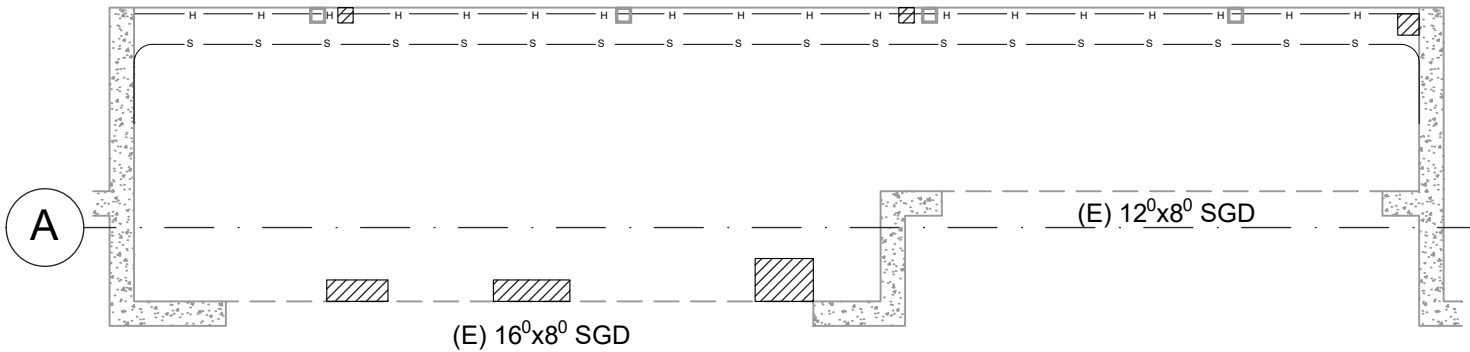
Should you have any questions regarding the above subject, please do not hesitate to contact our office.

Very truly yours,

Rodolfo Villamizar, P.E.  
FL PE# 61000

RV/jt



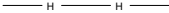
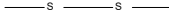


## **Appendix A**



**UNIT 1202**

BUILDING: 1  
 INSP. DATE: 12/20/2021

LEGEND:

- SLAB\* PARTIAL DEPTH REPAIR (SF) 
- TOPPING\* REMOVE & REPLACE (SF) 
- HANDRAIL 
- ACCORDION SHUTTERS 
- RUST SPOT 
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF) 

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

RODOLFO VILLAMIZAR  
 FL. P.E.#61000

DATE:

LANTANA  
 CONDOMINIUM  
 BALCONY INSPECTION  
 1811 A1A  
 INDIAN HARBOUR BEACH, FL

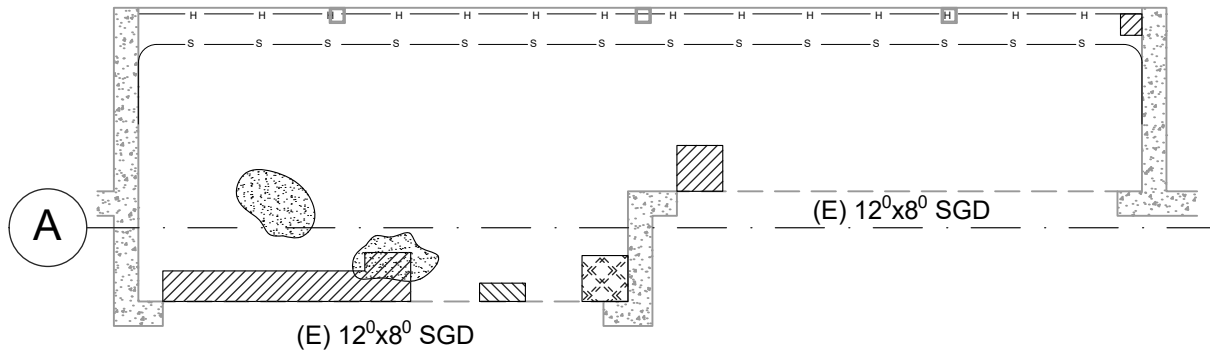
FINDINGS/REPAIRS

**MBV**  
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JOB NO.	21-0530
DESIGNED	JT
DRAWN	AER
CHECKED	RV
DATE	DEC 2021
SHEET	1 OF XX



**UNIT 1203**

BUILDING: 1  
 INSP. DATE: 12/20/2021

LEGEND:

- SLAB\* PARTIAL DEPTH REPAIR (SF) 
- TOPPING\* REMOVE & REPLACE (SF) 
- HANDRAIL 
- ACCORDION SHUTTERS 
- RUST SPOT 
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF) 

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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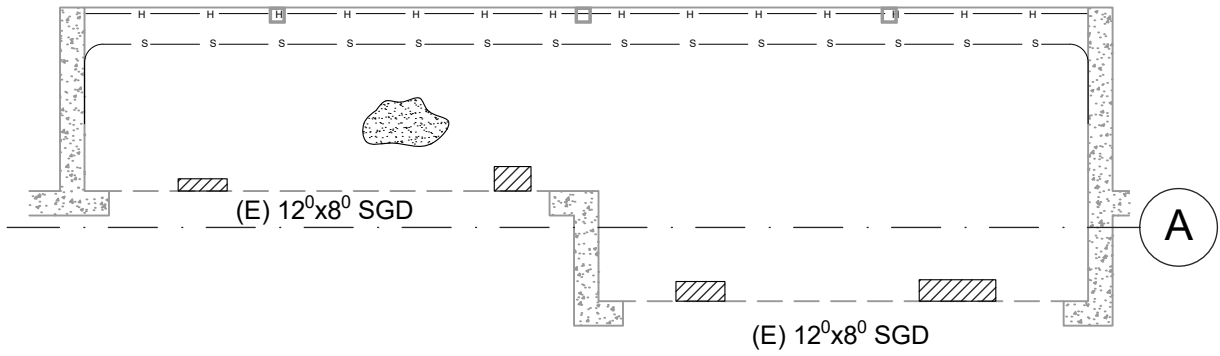
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JOB NO.	21-0530
DESIGNED	JT
DRAWN	AER
CHECKED	RV
DATE	DEC 2021
SHEET	2 OF XX



**UNIT 1204**

BUILDING: 1  
 INSP. DATE: 12/20/2021

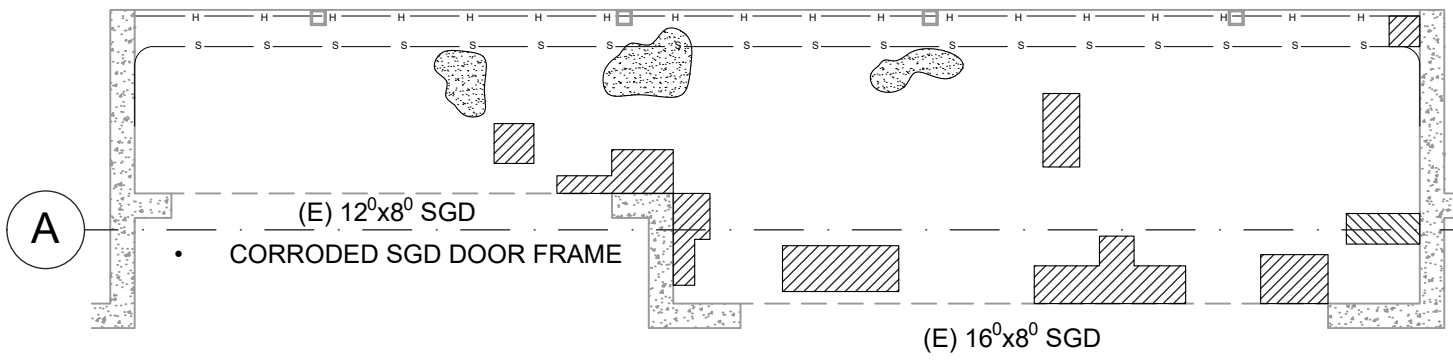
**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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DATE:



**UNIT 1205**

BUILDING: 1  
 INSP. DATE: 12/20/2021

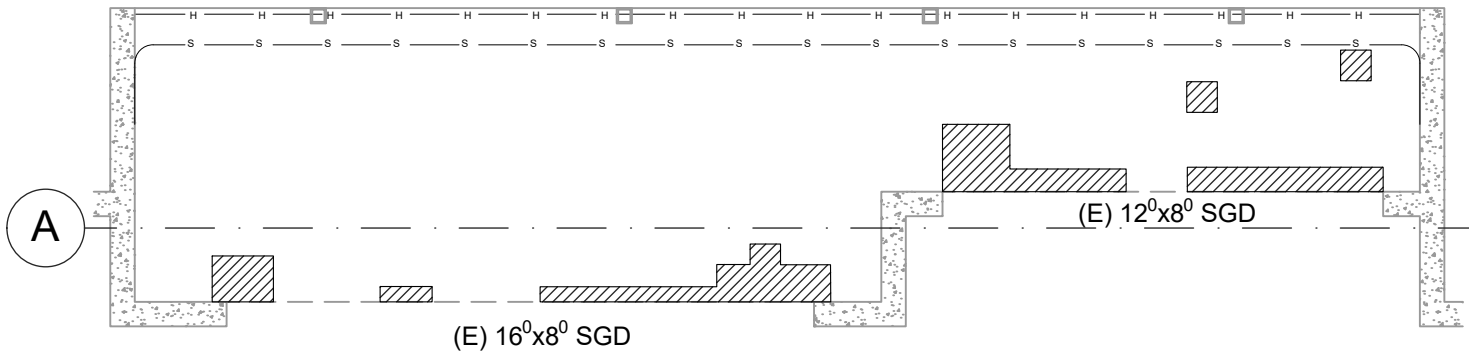
LEGEND:

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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DATE:



**UNIT 1302**

BUILDING: 1  
 INSP. DATE: 12/20/2021

**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

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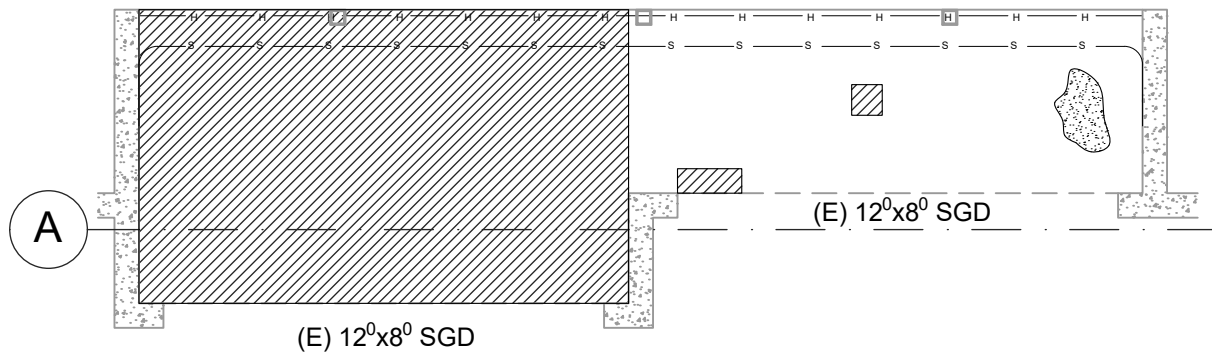
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JOB NO. 21-0530
DESIGNED JT
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CHECKED RV
DATE DEC 2021
SHEET 5 OF XX



**UNIT 1303**

BUILDING: 1  
 INSP. DATE: 12/20/2021

LEGEND:

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

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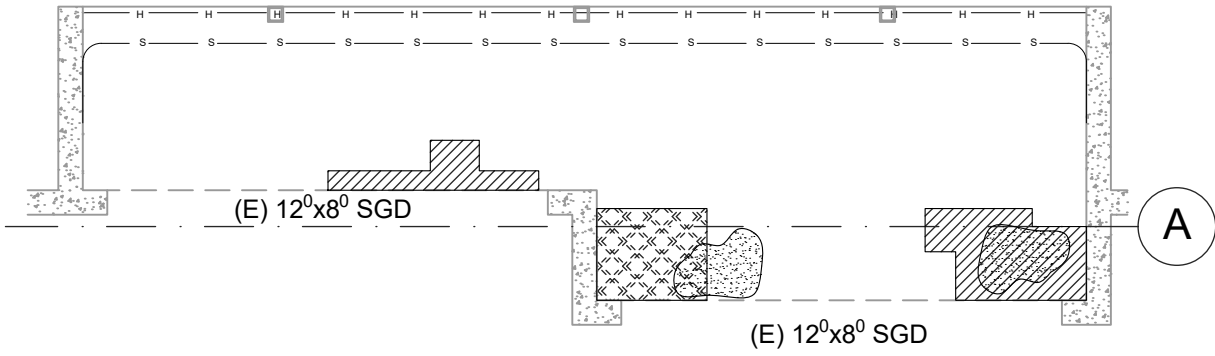
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CHECKED RV
DATE DEC 2021
SHEET 6 OF XX



**UNIT 1304**

BUILDING: 1  
 INSP. DATE: 12/20/2021

LEGEND:

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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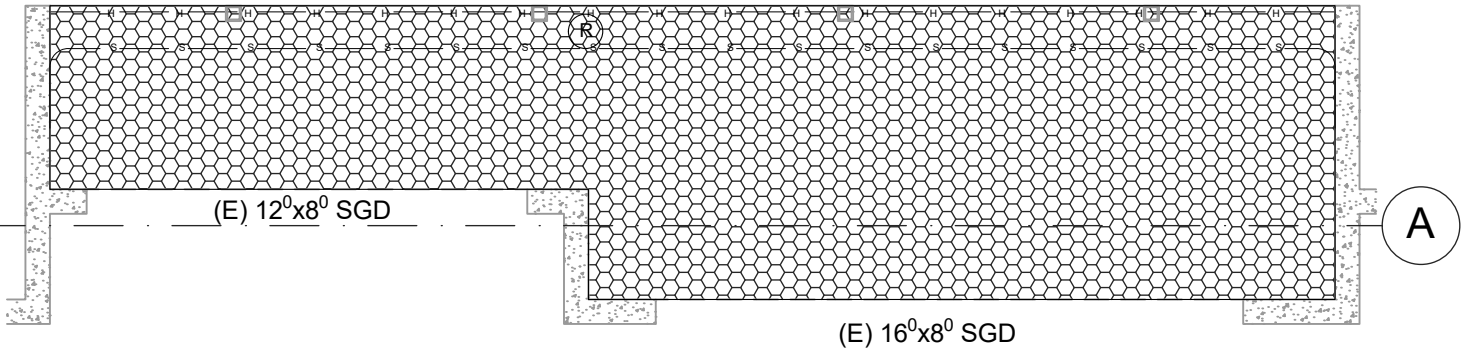
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JOB NO. 21-0530
DESIGNED JT
DRAWN AER
CHECKED RV
DATE DEC 2021
SHEET 7 OF XX



**UNIT 1305**

BUILDING: 1  
 INSP. DATE: 12/20/2021

- TILE FLOORING - MAJORITY IS DELAMINATED
- SHUTTERS INSTALLED OVER THE TILES

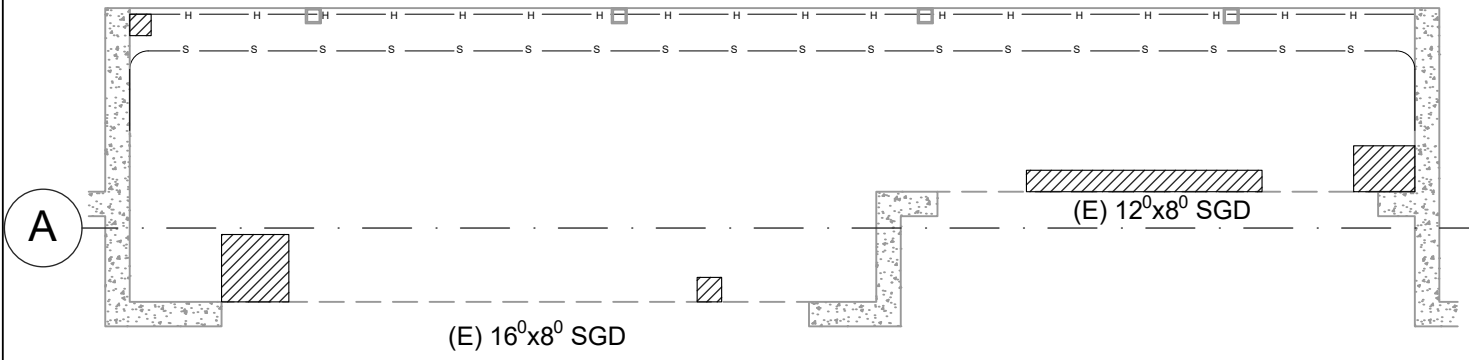
LEGEND:

TILE FLOORING - DELAMINATED (SF)	
SLAB* PARTIAL DEPTH REPAIR (SF)	
TOPPING* REMOVE & REPLACE (SF)	
HANDRAIL	— H — H —
ACCORDION SHUTTERS	— S — S —
RUST SPOT	
WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)	

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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
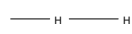
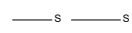


DATE:



**UNIT 1402**

BUILDING: 1  
 INSP. DATE: 12/20/2021

**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF) 
- TOPPING\* REMOVE & REPLACE (SF) 
- HANDRAIL 
- ACCORDION SHUTTERS 
- RUST SPOT 
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF) 

- NUMEROUS RUST SPOTS ON DECK

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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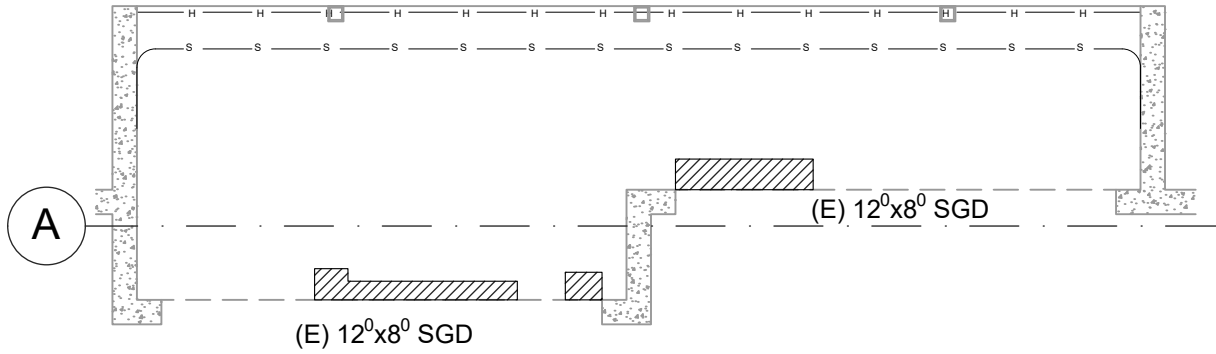
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**UNIT 1403**

BUILDING: 1  
 INSP. DATE: 12/20/2021

**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF) 
- TOPPING\* REMOVE & REPLACE (SF) 
- HANDRAIL 
- ACCORDION SHUTTERS 
- RUST SPOT 
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF) 

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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 FL. P.E.#61000  
 DATE:

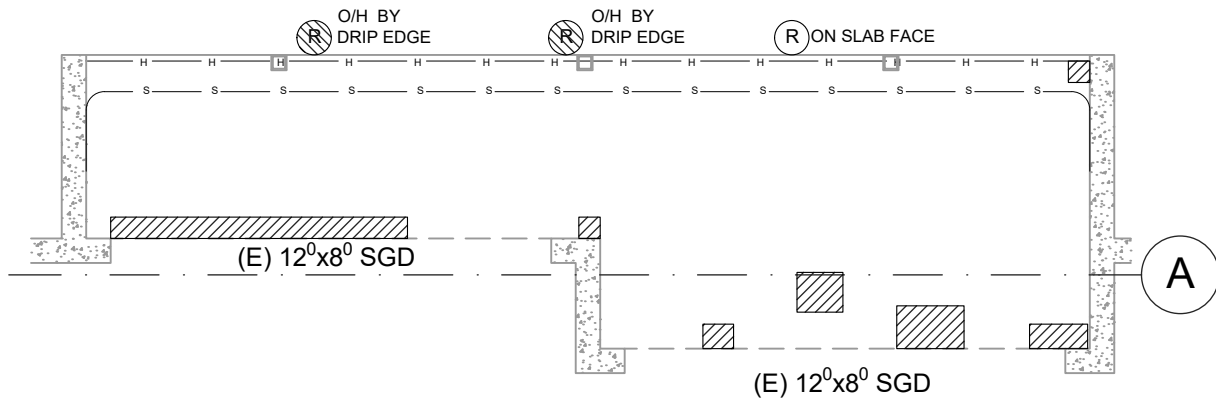
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FINDINGS/REPAIRS

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**UNIT 1404**

BUILDING: 1  
 INSP. DATE: 12/20/2021

**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF)
- TOPPING\* REMOVE & REPLACE (SF)
- HANDRAIL
- ACCORDION SHUTTERS
- RUST SPOT
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF)

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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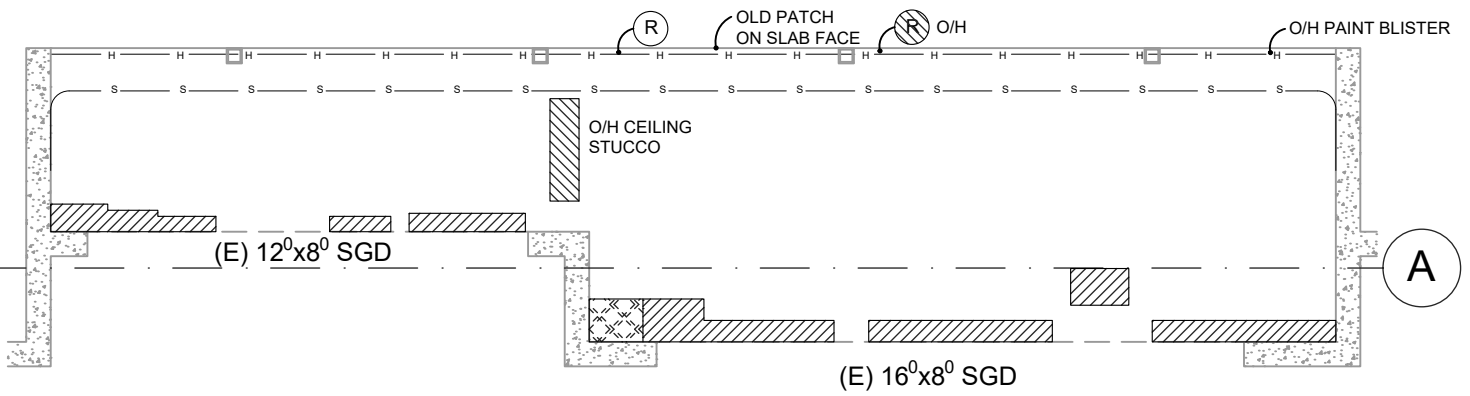
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




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**UNIT 1405**

BUILDING: 1  
 INSP. DATE: 12/20/2021

**LEGEND:**

- SLAB\* PARTIAL DEPTH REPAIR (SF) 
- TOPPING\* REMOVE & REPLACE (SF) 
- HANDRAIL 
- ACCORDION SHUTTERS 
- RUST SPOT 
- WATER PONDING LOCATION - SLAB PITCH CORRECTION REQUIRED (SF) 

\* REMOVE THE CEMENTITIOUS TOPPING ON HOLLOW SOUNDING AREAS TO EXPOSE THE CONCRETE SUBSTRATE, AND CONFIRM IF IT IS JUST THE TOPPING THAT IS DELAMINATED OR IF THE CONCRETE SLAB IS SPALLING, OR BOTH.

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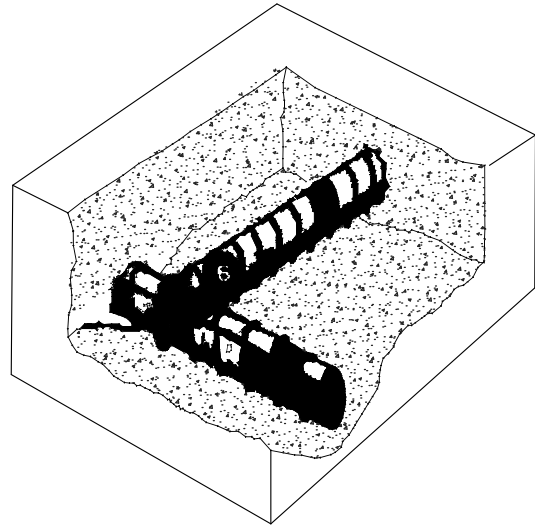
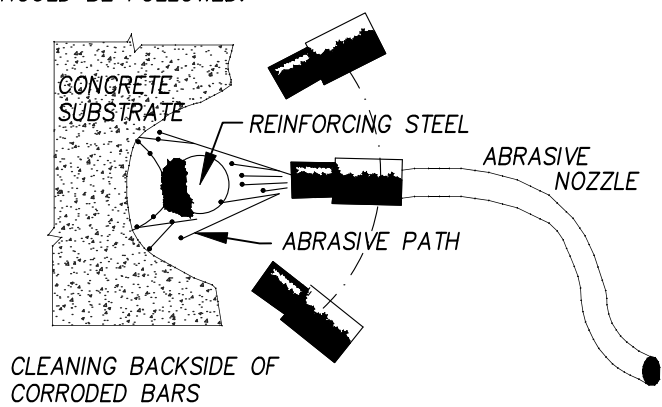
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# CLEANING AND REPAIR OF REINFORCING STEEL

## CLEANING OF REINFORCING STEEL

ALL HEAVY CORROSION AND SCALE SHOULD BE REMOVED FROM THE BAR AS NECESSARY TO PROMOTE MAXIMUM BOND OF REPLACEMENT MATERIAL. OIL FREE ABRASIVE BLAST IS THE PREFERRED METHOD. A TIGHTLY BONDED LIGHT RUST BUILD-UP ON THE SURFACE IS USUALLY NOT DETRIMENTAL TO BOND, UNLESS A PROTECTIVE COATING IS BEING APPLIED TO THE BAR SURFACE, IN WHICH CASE THE COATING MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION SHOULD BE FOLLOWED.

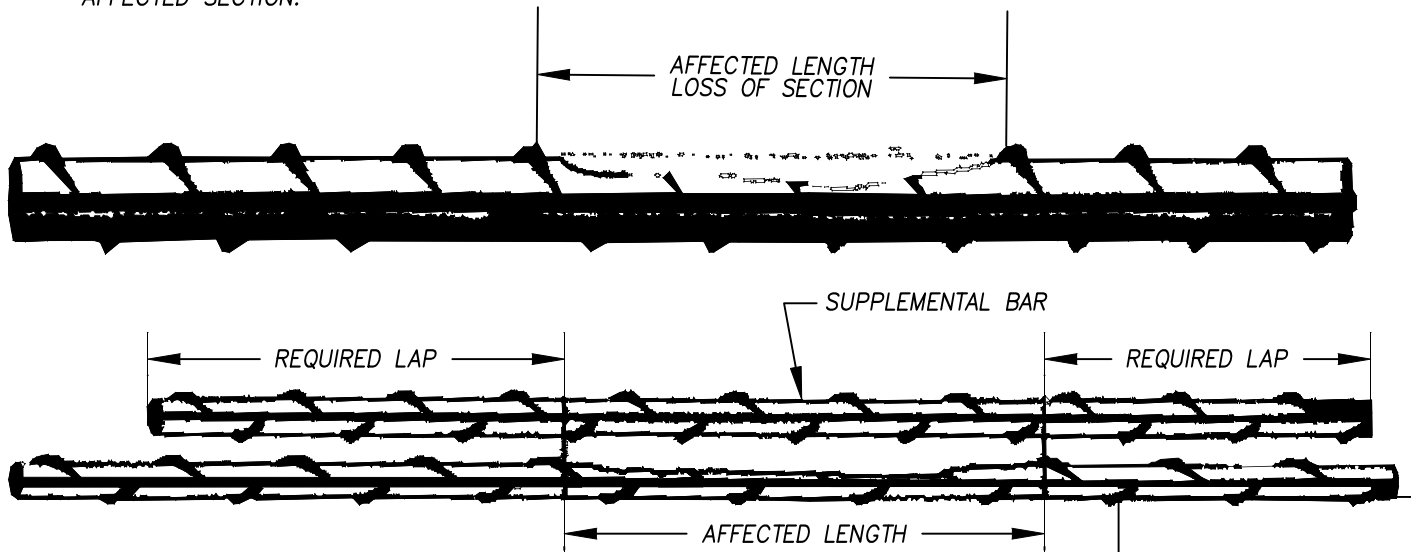


## REPAIR OF REINFORCING STEEL DUE TO LOSS OF SECTION

IF REINFORCING STEEL HAS LOST SIGNIFICANT CROSS SECTION, A STRUCTURAL ENGINEER SHOULD BE CONSULTED. IF REPAIRS ARE REQUIRED TO THE REINFORCING STEEL, ONE OF THE FOLLOWING REPAIR METHODS SHOULD BE USED:

- \* COMPLETE BAR REPLACEMENT, OR
- \* ADDITION OF SUPPLEMENTAL BAR OVER AFFECTED SECTION.

NEW BARS MAY BE MECHANICALLY SPLICED TO OLD BARS OR PLACED PARALLEL TO AND APPROXIMATELY  $\frac{3}{4}$  IN. (19 MM) FROM EXISTING BARS. LAP LENGTHS SHALL BE DETERMINED IN ACCORDANCE WITH ACI 318; ALSO REFER TO CRSI AND AASHTO MANUAL.



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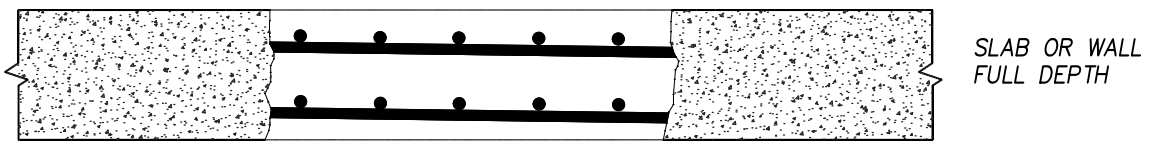
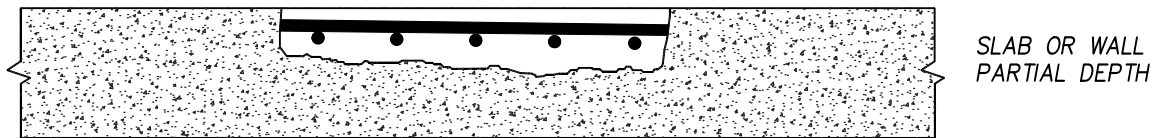
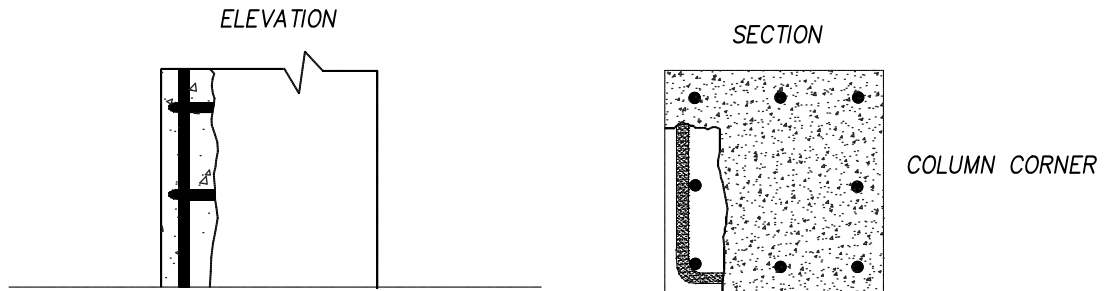
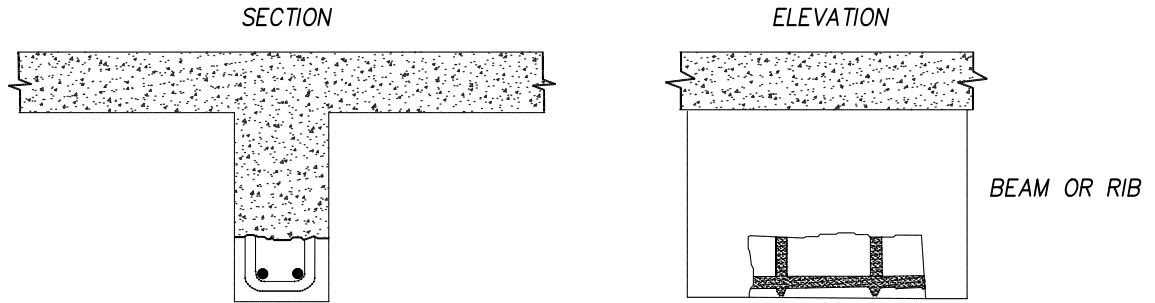
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# CONSTRUCTION RESTORATION REMOVAL GEOMETRY



CAUTION! BEFORE STARTING REMOVALS, REVIEW EFFECT OF REMOVABLE ON STRUCTURAL INTEGRITY. PROVIDE SHORING OF MEMBER AS NECESSARY. PARTICULAR CARE SHALL BE EXERCISED AT SLAB/BEAM CONNECTIONS TO COLUMNS.

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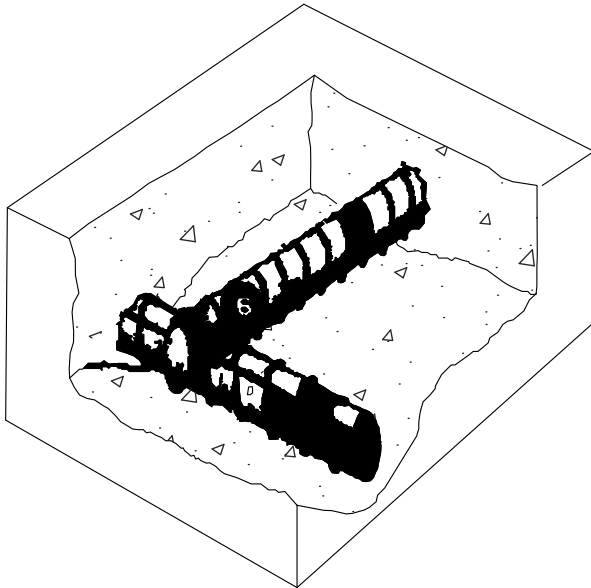
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# EDGE AND SURFACE CONDITIONING OF CONCRETE

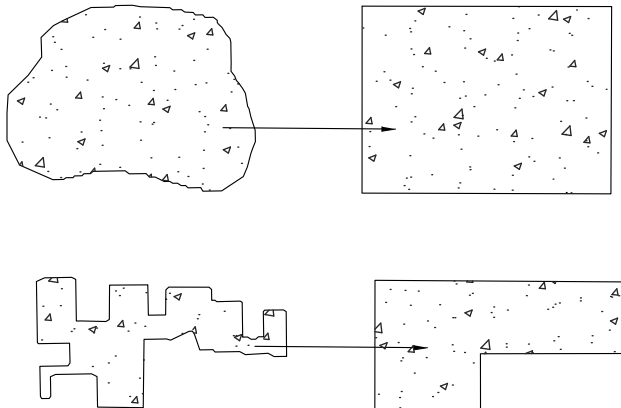
## EDGE AND SURFACE CONDITIONING OF CONCRETE

1. THESE DETAILS ARE APPLICABLE TO HORIZONTAL, VERTICAL, AND OVERHEAD LOCATIONS. THEY ARE ALSO APPLICABLE TO REMOVAL BY HYDRO-DEMOLITION, HYDROMILLING, AND ELECTRIC, PNEUMATIC OR HYDRAULIC IMPACT BREAKERS.
2. REMOVE DELAMINATED CONCRETE, UNDERCUT REINFORCING STEEL, REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
3. CHIP OUT THE CONCRETE TO EXPOSE THE ENTIRE CIRCUMFERENCE OF THE REBAR. REMOVAL SHALL CONTINUE ALONG THE LENGTH OF THE REINFORCING STEEL UNTIL AT LEAST 6" OF UNCORRODED STEEL IS OBSERVED.
4. AT EDGE LOCATIONS, PROVIDE RIGHT ANGLE CUTS TO THE CONCRETE SURFACE WITH EITHER OF THE FOLLOWING METHODS:
  - 4.1. SAWCUT 1/2" (13 MM) OR LESS AS REQUIRED TO AVOID CUTTING REINFORCING STEEL.
  - 4.2. USE POWER EQUIPMENT SUCH AS HYDRODEMOLITION OR IMPACT BREAKERS. AVOID FEATHER EDGES.
  - 4.3. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARED CORNERS.
5. AFTER REMOVALS AND EDGE CONDITIONING ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, CONCRETE SLURRY, LOOSELY BONDED AGGREGATES) BY ABRASIVE BLASTING OR HIGH PRESSURE WATERBLASTING WITH OR WITHOUT ABRASIVE.
6. CHECK THE CONCRETE SURFACES AFTER CLEANING TO INSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE, OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.
7. IF HYDRODEMOLITION IS USED, CEMENT AND PARTICULATE SLURRY MUST BE REMOVED FROM PREPARED SURFACES BEFORE SLURRY HARDENS.



BOUNDARY OF LOOSE AND DELAMINATED CONCRETE

RECOMMENDED LAYOUT



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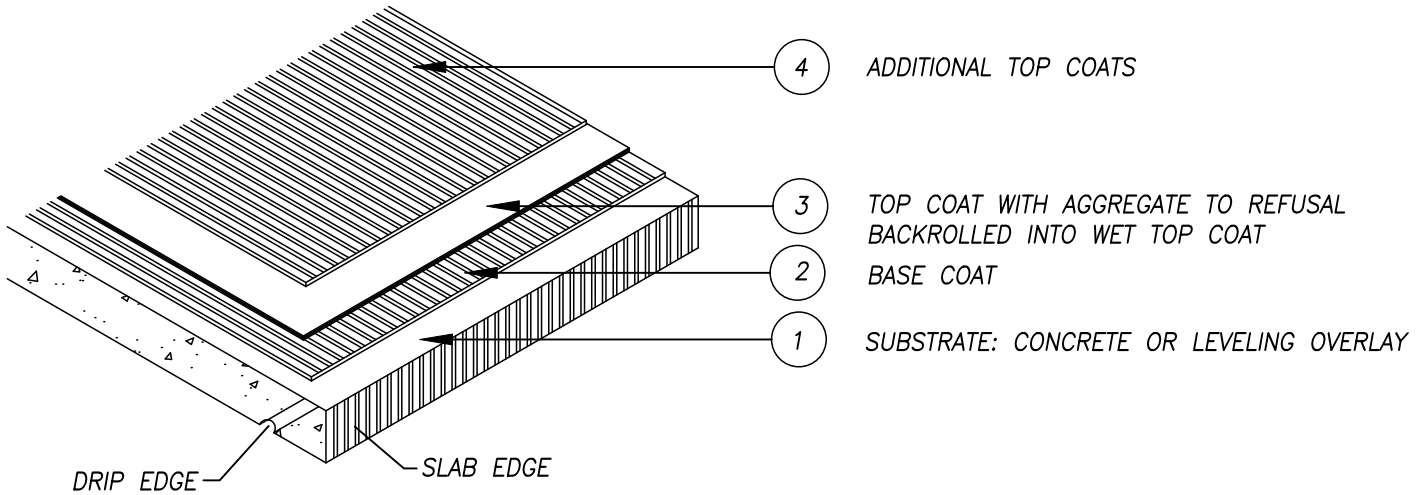
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# SLAB WATER PROOFING



## REPAIR PROCEDURE:

1. ALLOW CONCRETE DECKS TO DRY FOR 48 HOURS MINIMUM WITHOUT RAINFALL. CONCRETE MUST BE VISIBLY DRY WITH MAXIMUM 4% MOISTURE CONTENT. IF REQUIRED BY THE ENGINEER, A MAT TEST SHALL BE PERFORMED ON ONE OR MORE DECKS PRIOR TO BASE COAT APPLICATION. TEST SHALL COVER AN AREA OF FOUR SQUARE FEET, MAT SHALL BE A 6 MIL CLEAR POLYURETHANE SHEET, SEALED ALL AROUND WITH ADHESIVE TAPE AND IT SHALL REMAIN IN PLACE FOR A MINIMUM OF 16 HOURS. CONCRETE DECKS SHALL BE DRY, CLEAN, SOUND AND FREE OF ALL CONTAMINANTS WHICH MAY INTERFERE WITH ADHESION OR PROPER CURING.
2. APPLY BASE COAT TO TOP OF SLAB AND VERTICAL EDGES PER MANUFACTURER'S SPECIFICATIONS AND ALLOW IT TO CURE BEFORE TOP COAT APPLICATION. EXTEND APPLICATION TO VERTICAL EDGE OF SLAB AND TO DRIP EDGE IF APPLICABLE.
3. AFTER SUFFICIENT CURE TIME, SURFACE DEFECTS SHALL BE REMEDIED, CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING PONDING AREAS WITH COATINGS 3/16" OR LESS. ALLOW IT TO CURE FOR 72 HOURS MINIMUM BEFORE OPENING THE BALCONY TO TRAFFIC. TOP COAT APPLIED PER MANUFACTURER'S SPECIFICATIONS. BROADCAST SILICA SAND IMMEDIATELY INTO THE WET TOPCOAT AND BACK ROLL TO EVENLY DISTRIBUTE THE AGGREGATE. TOP COAT TO BE COMPATIBLE WITH BASE COAT.
4. APPLY FINAL TOP COATS PER MANUFACTURER'S INSTRUCTIONS.

TO THE BEST OF THE ARCHITECT'S OR ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH FS553 AND FS633.

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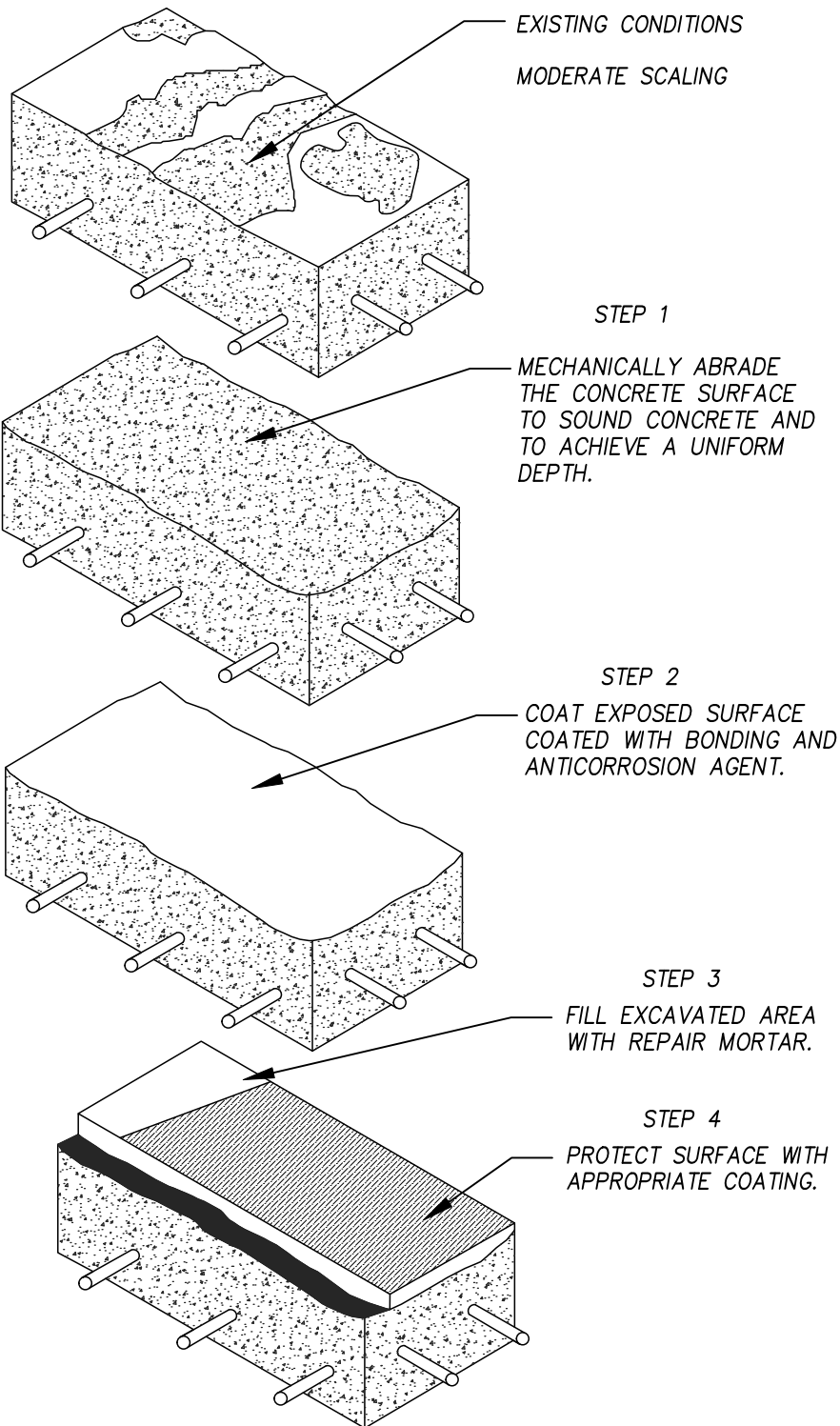
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# DECK OVERLAY SCALING / SLAB PITCH CORRECTION



**NOTES:**

1. SPALL/SCALING UP TO 1/4" (7mm) IN DEPTH WITH MINOR AGGREGATE LOOSE, BUT NO EXPOSURE TO REBARS.
2. AN EXPOSED AGGREGATE PROFILE OF +/- 1/8"(3mm) IS REQUIRED IN ORDER TO OBTAIN A GOOD MECHANICAL BOND TO THE SUBSTRATE. PRESSURE WASH AFTER EXCAVATION TO REMOVE DUST, LAITANCE AND OTHER BOND INHIBITING MATERIALS, SSD SUBSTRATE.
3. APPLY A 20 MIL. COATING OF BONDING AND ANTI-CORROSION AGENT ONTO THE SSD SURFACE TO INSURE PROPER BOND OF REPAIR MATERIAL.
4. FILL AND SCREED EXCAVATED AREA WITH THE APPROPRIATE REPAIR MORTAR, CONSOLIDATE, FINISH AND CURE AS REQUIRED.

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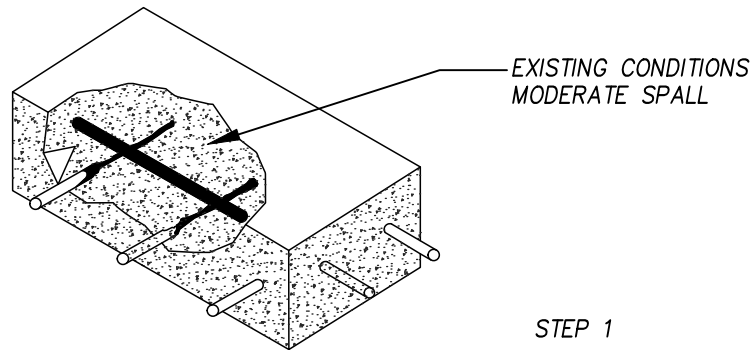
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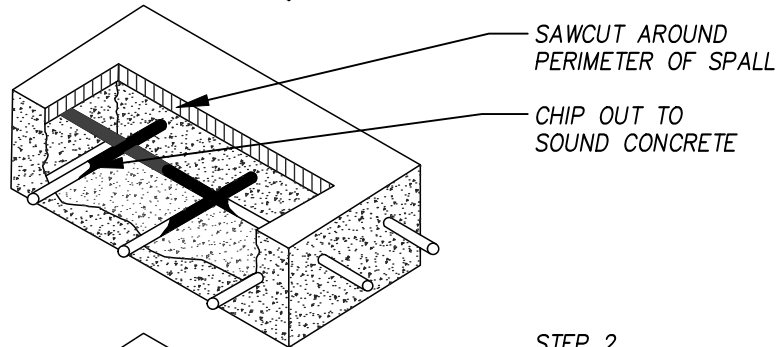
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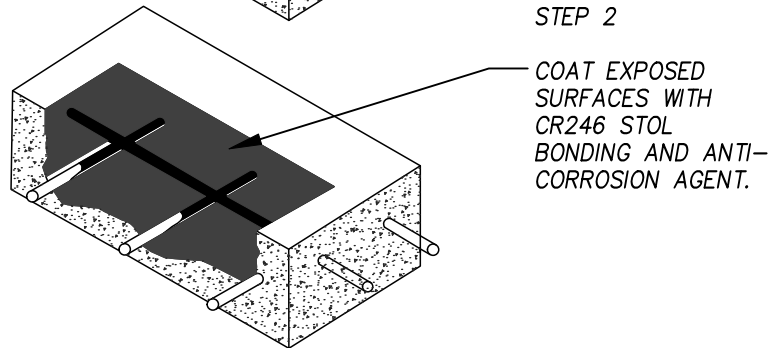
# CONCRETE SPALLS: MODERATE



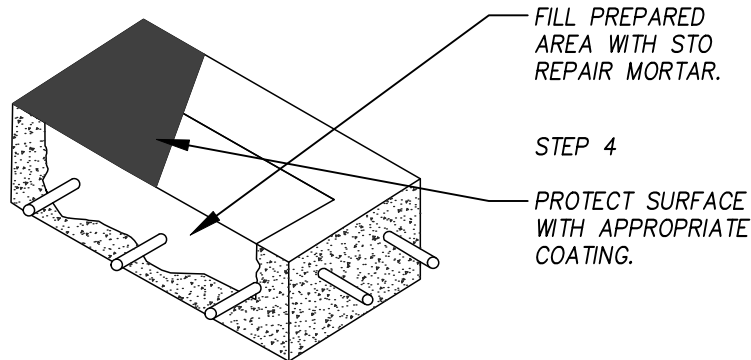
STEP 1



STEP 2



STEP 3



STEP 4

**NOTES:**

1. MODERATE SPALLS ARE DEEPER THAN 1/4" (7MM) WITH AGGREGATE LOSS, AND EXPOSED RE-BAR, BUT LESS THAN 30% OF SLAB THICKNESS.
2. REMOVE ALL DAMAGED OR UNSOUND CONCRETE FOLLOWING THE CONDITIONING OF CONCRETE GUIDELINES.
3. SAWCUT THE PERIMETER OF THE REPAIR AREA FORMING A SHOULDER PERPENDICULAR TO THE SUBSTRATE.
4. THE VERTICAL AND HORIZONTAL SURFACES SHALL BE ROUGHENED WITH 1/4" AMPLITUDE.
5. SANDBLAST, HYDROBLAST, OR GRIND THE EXPOSED CONCRETE AND REBAR TO REMOVE DUST, LAITANCE AND OTHER BOND INHIBITING MATERIALS. AVOID DAMAGING OR CUTTING EXISTING REINFORCEMENT.
6. INSERT NEW BARS OF EQUAL DIAMETER NEXT TO THOSE THAT HAVE DETERIORATED BY MORE THAN 15%. ALL NEW STEEL SHALL BE ASTM A-615 GRADE 60. LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318.
7. COAT ALL NEW AND EXISTING REBAR WITH TWO 10 MILS OF EPOXY, POLYMER CEMENT SLURRY OR A ZINC-RICH COATING FOR CORROSION PROTECTION. INSTALLATION SHALL BE DONE FOLLOWING THE MANUFACTURER SPECIFICATIONS.
8. THE BONDING AGENT SHALL BE INSTALLED AS DESCRIBED IN THE MANUFACTURER SPECIFICATIONS TO SSD (SATURATED-SURFACE- DRY) CONCRETE SURFACE.
9. FILL THE EXCAVATION WITH REPAIR MORTAR OR READY MIX CONCRETE PLACED AS DESCRIBED IN THE MANUFACTURER SPECIFICATIONS. REPAIR MIX SHALL HAVE A COMPRESSIVE RESISTANCE OF 5,000 PSI AT 28 DAYS AND A WATER CEMENT RATIO OF 0.45 OR LESS.
10. FINISH SURFACE TO TEXTURE AND SMOOTHNESS REQUIRED FOR THE SPECIFIC APPLICATION.
11. UPON COMPLETION OF FINISHING OPERATIONS, ALLOW MATERIAL TO CURE IN ACCORDANCE WITH MANUFACTURERS'S RECOMMENDATIONS.
14. APPLY PROTECTIVE WATERPROOF COATING TO PREPARED SUBSTRATE.
15. PROVIDE THE ARCHITECTURAL FINISH AS REQUIRED BY THE OWNER.
16. FOR MATERIAL SELECTION, PHYSICAL PROPERTIES, MIXING, APPLICATION AND CURING INFORMATION REFER TO APPROPRIATE TECHNICAL SPECIFICATIONS FROM MANUFACTURER.

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# FLASHING AT WALL

**CEMENTITIOUS WATERPROOFING NOTES:**

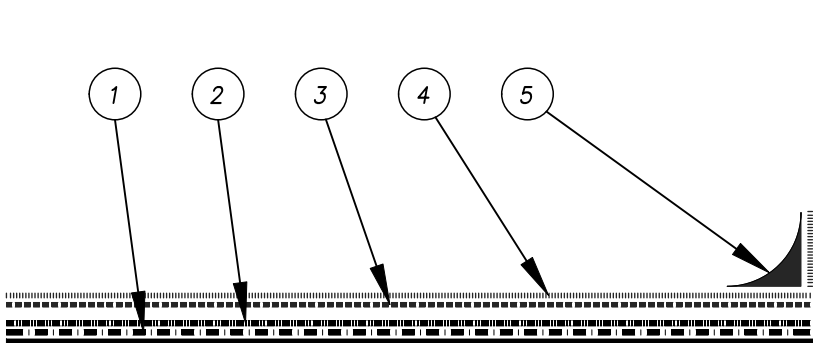
- SUBSTRATE SHALL BE PREPARED BY MECHANICAL MEANS TO REMOVE ALL BOND-INHIBITING MATERIALS TO SANDPAPER LIKE TEXTURE.
- FILL ALL VOIDS, REPAIR CONCRETE SPALLS, OR INSTALL REQUIRED SLOPING MATERIALS AS DIRECTED BY THE ENGINEER PRIOR TO INSTALLING THE WATERPROOFING SYSTEM.
- SUBSTRATE MUST BE THOROUGHLY SATURATED SURFACE DRY (SSD) PRIOR TO INSTALLING WATERPROOFING SYSTEM.

**DECORATIVE COATING SYSTEM NOTES:**

- ALLOW THE INSTALLED WATERPROOFING SYSTEM TO-CURE SO THAT THE SURFACE CAN TAKE FOOT TRAFFIC WITHOUT HARMING THE CEMENTITIOUS COATING.
- IF NECESSARY USE A RUBBING STONE TO SMOOTH OUT ANY TROWEL MARKS THAT APPEAR IN THE FINISH OF THE WATERPROOFING SYSTEM.
- RINSE OR BLOW OFF (WITH OIL-FREE COMPRESSED AIR) ENTIRE AREA TO REMOVE ALL DIRT, DUST, AND DEBRIS PRIOR TO INSTALLING COATING.

**WATERPROOFING & ACRYLIC COATING SYSTEM (SIKAGARD-OPTION):**

1. BASE COAT OF SIKAGARD FLEXCOAT AT 35-45 MILS THICK OVER ENTIRE SURFACE AREA.
2. TOP COAT OF SIKAGARD FLEXCOAT AT 35-45 MILS THICK OVER ENTIRE SURFACE AREA.
3. BASE COAT - SIKAGARD FLEXCOAT ATC, APPLY WITH ROLLER, BRUSH OR SPRAY EQUIPMENT AT A UNIFORM THICKNESS OF APPROXIMATELY 5-6 WET MILS.
  - ALLOW TO COMPLETELY DRY.
4. TOP COAT - SIKAGARD FLEXCOAT ATC, APPLY WITH ROLLER, BRUSH OR SPRAY EQUIPMENT AT A UNIFORM THICKNESS OF APPROXIMATELY 5-6 WET MILS.
  - ALLOW TO COMPLETELY DRY PRIOR TO ALLOWING FOOT TRAFFIC.
5. CONTINUOUS CANT BEAD - SIKAFLEX 2C NS OR SIKAFLEX 1A AND APPROPRIATE SIKAFLEX PRIMER (PRIME AS REQUIRED) ALONG ENTIRE PERIMETER OF SLAB TO WALL TRANSITION AND ALL DOOR THRESHOLDS.
  - REFER TO SEALANT AND PRIMER TECHNICAL DATA SHEETS FOR INSTALLATION REQUIREMENTS.



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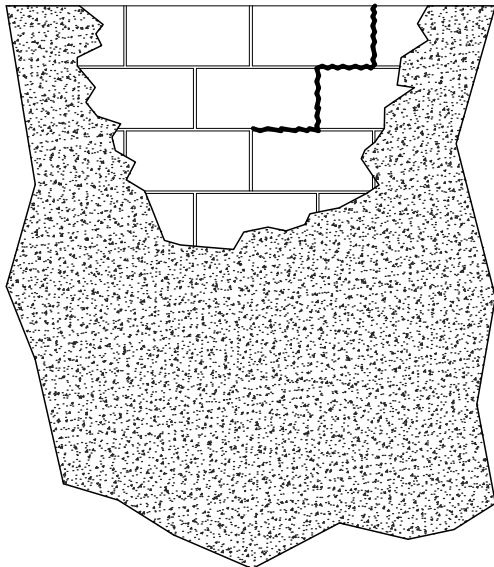
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DATE	DEC 2021
SHEET	19 OF XX

# WALL REPAIR



NOTES FOR GENERAL REPAIR:

1. CHIP AND REMOVE CRACKED MORTAR OR LOOSE WALL CONCRETE.
2. THOROUGHLY CLEAN MASONRY SUBSTRATE AND REMAINING STUCCO SURFACES (EXPOSED EDGES INCLUDED) WITH CONCRETE/MASONRY CLEANER OR TRISODIUM PHOSPHATE/WATER SOLUTION.
3. REPAIR CRACKED AND/OR SPALLED MASONRY SUBSTRATE INCLUDING CONCRETE BLOCK UNITS, MORTAR JOINTS, AND GROUT FILLED CELLS IN ACCORDANCE WITH REPAIR DETAILS AND SPECIFICATIONS PROVIDED HEREIN.
4. REPAIR CRACKS WITH "UGL DRYLOK MASONRY CRACK FILLER", "ELASTIPOXY" OR SIMILAR EPOXY JOINT & CRACK FILLER MATERIAL; FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS. FOR LARGER CRACKS TO PREVENT THE EPOXY FROM RUNNING OUT OF THE CRACK, INSERT FOAM BACKER ROD OF SUITABLE DIAMETER OR FILL IN WITH CAULK.
5. FILL HOLLOW CORE HOLES WITH EXPANDABLE FOAM FILLER MATERIAL TO PROVIDE A BACKING SUBSTRATE.
6. COAT ALL SIDES OF GAP/HOLE WITH BONDING AGENT.
7. PATCH REPAIR AREAS WITH NEW REPAIR MORTAR SYSTEM OR EXTERIOR STUCCO SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
8. MATCH EXISTING FINISH TEXTURE AND COLOR AS CLOSE AS POSSIBLE.
9. FINISH/PAINT/COAT REPAIRED AREA IN ACCORDANCE WITH THE GENERAL NOTES.

RODOLFO VILLAMIZAR  
FL. P.E.#61000

DATE:

LANTANA  
CONDOMINIUM  
BALCONY INSPECTION  
1811 A1A  
INDIAN HARBOUR BEACH, FL

DETAILS

**MBV**  
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JOB NO.	21-0530
DESIGNED	JT
DRAWN	AER
CHECKED	RV
DATE	DEC 2021
SHEET	20 OF XX