CONSTRUCTION PLANS
FOR
241 TRUMBO RD,
LIMITED CONCRETE SPALLING REPAIRS
PHASE 2

SITE LOCATION

LOCATION MAP:

PROJECT LOCATION:
241 TRUMBO RD,
KEY WEST, FL 33040

SERGE MASHTAKOV
LICENSE
No. 71480
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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Date: 2022.01.03 18:39:53 -05'00'

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DATE:

SERGE MASHTAKOV
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE NO 71480

REV:	DESCRIPTION:	BY:	DATE:
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CA # 30835

CLIENT: WILLIAM P HORN PA

PROJECT: LIMITED CONCRETE SPALLING REPAIRS

SITE: 241 TRUMBO RD
KEY WEST, FL 33040

TITLE: COVER

SCALE AT 11x17:	DATE:	DRAWN:	CHECKED:
AS SHOWN	01/03/22	SAM	SAM
PROJECT NO:	DRAWING NO:		REVISION:
1907-09	G-100		1

General Requirements:

1. Prior to starting any work the Contractor shall review these plans and site conditions and notify the Engineer if any discrepancies are discovered.
2. The Engineer is not responsible for the supervision of the Contractor nor his employees during the construction. It is the Contractor's responsibility to provide means and establish methods of the construction to meet requirements of all applicable codes, industry standards and requirements of these plans.
3. Quality of the work shall meet or exceed industry standard practices.
4. Any deviations from these plans shall be reviewed and approved by the Engineer.

Design Data:

1. Applicable Building Code: FBC Existing Building 7th Edition (2020)
2. Applicable Design Loads: per ASCI/SEI 7-10
   Floor Live Load: 100 psf
   Roof Live Load: 20 psf (300 lb conc.)
   Basic Wind Speed: 180 MPH
   Exposure: D
   Structural Category: II

Flood Zone: AE9

All pressures shown are based on ASD Design,
with a Load Factor of 0.6

3.ASCE 24-14 FLOOD RESISTANT DESIGN AND CONSTRUCTION

Soils and Foundations:

Presumptive load-bearing values of foundation materials are used in lieu of a complete geotechnical exploration.
Foundations shall be placed on a "Sedimentary and foliated rock" with an allowable load bearing pressure of 3,000 psf. Notify the Engineer if soil conditions are different.

1. All foundations, slabs and footers shall be placed on stabilized undisturbed subgrade soil.
2. Minimum foundation depth shall be 24" unless otherwise is specified on the plans. If over-excavated - fill shall not be placed back into the trench unless approved by the Engineer.
3. Fill under the foundations shall be used only if approved by the Engineer. Clean fill material shall be placed in 6"-8" layers and compacted to 98% density using the Modified Proctor Test.
4. Fill material shall be clean granular sand or limerock mix without any organic materials, clay, muck and rocks larger than 4". Backfill shall not contain any wood or cellulose debris.

Augercast Piles

1. Augercast piles shall be 16" diameter with minimum embedment of 3ft into the cap rock unless otherwise shown on the plans.
2. Concrete for piles shall have a min. compressive strength of 5000 psi. Water/Cement ratio shall not exceed w/c=0.40.
3. Reinforcement shall be four (4) #5 rebar vertically with #3 stirrups at 12" o.c. Contractor shall use plastic chars or centralizers to provide a 3" cover on all sides of the reinforcement.

Concrete:

1. Applicable Code ACI 318 latest edition and ACI 301.
2. All concrete elements shall have a min. compressive strength of 4000 psi unless otherwise is shown on the plans. Water/Cement ratio shall not exceed w/c=0.40.
3. All cast-in-place concrete shall be cured and protected from overdrying per ACI 305R-10 "Hot Weather Concreting".
4. All exposed edges shall have 1/2" chamfers.
5. No cold joints are allowed unless otherwise approved by the Engineer.
6. TESTING: All Field and Laboratory Testing shall be performed by an independent specialized company. The contractor is responsible for all scheduling, coordination and cost of the testing company.

Three (3) samples shall be taken and tested each time.
Minimum Sampling Frequency:
a) Each day of concreting for every concrete mix;
b) Every 50 cubic yards;
c) Every 2000 sq.ft. of slab area.

All testing shall be per latest ACI and ASTM requirements.
Laboratory shall supply three (3) original signed&sealed report results to the Engineer.

7. Cast-in-place and precast member erection tolerances shall be as specified in the table 8.2.2 or in section 8.3 of "PCI design handbook/Sixth edition".

Reinforcement:

1. All rebar shall be deformed carbon-steel ASTM A615/A615M-13 Grade 60 unless otherwise specified on the plans.
2. All requirements for placement, cover, tolerances, etc. Shall be per ACI 318-11.
3. All hooks and bends shall be factory made unless field bends are approved by the Engineer.
4. Only PLASTIC CHAIRS and CENTRALIZERS shall be used for rebar support.

Aluminum Components:

1. Type 6061-T6 aluminum.
2. MIG weld all joints w/ continuous 1/8" weld. Use 5356 filler wire alloy.
3. All aluminum in contact with concrete, pt wood, dissimilar metals and other corrosive materials shall coated with coal-tar epoxy or protected by other Engineer approved method.

Hardware:

1. Hardware shall be 316 Stainless Steel or better, unless otherwise specified.

Structural Lumber:

1. All wood members shall meet or exceed requirements specified in "ANSI/AF&PA National Design Specification (NDS) for Wood Construction" and all referenced standards.
2. All wood members shall be Pressure Treated Souther Pine No2 or Greater kiln dried as specified in the Standards, unless otherwise specified.
3. All wood members exposed to exterior, in direct contact with concrete or steel shall be Pressure-Treated (PT) UC3B grade per AWPA Standards.
4. All field cuts in pt lumber shall be treated on site.
5. Nailing shall be in accordance with FBC 7th Edition (2020). Nails and other fasteners for PT wood shall be Stainless Steel or ACQ Approved treated.
6. Sheathing shall be 19/32" CDX Plywood Sheathing Grade, unless otherwise is specified on the plans. Use 8d ring-shank nails with spacing of 4" o.c. on all edges and 6" o.c. in the field.

Structural Steel:

1. Structural steel components shall be as described in "Specifications for Structural Steel Buildings" AISC 2005 or later edition.
2. HSS shapes (structural tubing) shall be ASTM A500 (Fy=46 ksi).
3. Steel plates, flanges and miscellaneous elements shall be ASTM A36 (Fy=36 ksi) unless noted otherwise on the plans.
4. W-shapes, C-shapes and other formed steel shall be ASTM A992 (Fy=50 ksi).
5. All welding shall be in conformance with the latest specifications AWS D1.1/D1.1M:2010, Structural Welding Code - Steel.

Structural Steel Coating:

1. All surfaces shall be abrasive blast cleaned to near-white metal (per SSPC-SP10)

Exposed Steel:
2. All surfaces shall be primed with Polyamide Epoxy - one coat (8.0 mils DFT).
3. Apply Sealant at all locations where steel is welded, lapped, etc. Sealant material shall be compatible with the painting system.
4. Top layer shall be two (2) coat Polyurethane (3.0 mils DFT each).
5. Top paint shall be UV resistant or have a UV resistant coating.
6. Colors shall match existing or to be selected by the owner.

Non-Exposed Steel (Interior):
7. 2 coats of "Sumter Coatings" Universal Primer (6.0 mils DFT) or Approved Equal.

Reinforced Masonry (CMU):

1. All Masonry shall be reinforced concrete masonry unit in accordance with the latest edition of ACI 530/ASCE 5/TMS 402.
2. Install all blocks in Running bond.
3. Minimum masonry block (ASTM C90) strength shall (F'm) be 2000 psi.
4. Type "S" mortar (ASTM C270) shall be used using 3/8" full bedding reinforced w/ 9 gage 304SS ladder wire every 2nd row.
5. Filled cells shall be reinforced with #5 rebar @ 24" o.c. (unless otherwise is specified on the plans).
6. Grout shall be pea rock pump mix (ASTM C476) with a minimum compressive strength of 4000 psi (28 day) (ASTM C1019). Targeted slump shall be 8"-11".
6. Each grouted cell shall have cleanout openings at the bottom. There shall be no loose mortar or other debris in the bottom of the cell. Use blast pressure washing for surface preparation.

CONCRETE REPAIRS:

1. REMOVE ALL LOOSE AND UNSOUND CONCRETE.
2. EXPOSE ALL CORRODED REBAR FROM ALL SIDES (1.5" AROUND).
3. CLEAN ALL EXPOSED REBAR BY MECHANICAL MEANS TO NEAR-WHITE CONDITION.
4. PRESSURE WASH ALL CONCRETE AND REINFORCEMENT WITH POTABLE WATER.
5. PRIME EXISTING REINFORCEMENT W/ "SIKA ARMATEC 110 EPOCEM" OR APPROVED EQUAL. FOLLOW MANUFACTURER INSTRUCTIONS FOR SURFACE PREPARATION, APPLICATION AND CURING.
6. ALL REBAR WITH LOSS OF SECTION OVER 20% SHALL BE DUPLICATED WITH NEW REBAR OF EQUAL SIZE.
7. MINIMUM CONCRETE COVER SHALL BE 1.5" UNLESS OTHERWISE IS APPROVED BY THE ENGINEER.
8. INSTALL SACRIFICIAL ANODES "VECTOR GALVASHIELD XPT" (OR APPROVED EQUAL) AS SHOWN ON THE DIAGRAMS.

9. FOR SMALL PATCH REPAIRS (DEPTH UP TO 4", AREA UP TO 10 FT2) USE "SIKACRETE 211 SCC PLUS" REPAIR MORTAR. STRICTLY FOLLOW MANUFACTURER INSTRUCTIONS FOR SURFACE PREPARATION, APPLICATION AND CURING.

9A. FOR LARGE REPAIRS (FULL DEPTH SLAB, BEAM OR COLUMN REPAIR/REPLACEMENT) USE 4000 PSI CONCRETE MIX WITH W/C RATIO 0.4 MAX. WITH HIGH RANGE PLASTESIZER AND RUST INHIBITING ADMIXTURES.

10. FOR OVERHEAD REPAIR APPLICATION WITHOUT FORMING (SMALL DEPTH SLAB AND BEAM REPAIRS) USE "SIKAQUICK® VOH" TROWEL GRADE REPAIR MORTARS. STRICTLY FOLLOW MANUFACTURER INSTRUCTIONS FOR SURFACE PREPARATION, APPLICATION AND CURING.

11. THE CONTRACTOR IS RESPONSIBLE FOR ANY SHORING/RESHORING AND TEMPORARY SUPPORTS OF ALL STRUCTURAL ELEMENTS DURING THE REPAIR AND THROUGH THE CONCRETE CURING PERIOD.

! MOIST CURING FOR MINIMUM OF 4 DAYS IS REQUIRED. FOLLOW HOT WEATHER CONCRETING GUIDELINES.

! USE SIKA SET-XP ADHESIVE FOR ALL DOWELS AND REBAR EMBEDDED INTO EXISTING CONCRETE

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Date: 2022.01.03 18:40:08 -05'00'

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Serge Mashtakov
Professional Engineer
State of Florida
License No 71480

REV:	DESCRIPTION:	BY:	DATE:
STATUS:	Final		

Artibus Design
Engineering and Planning

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www.ArtibusDesign.com
CA # 30835

CLIENT: William P Horn PA

PROJECT: Limited Concrete Spalling Repairs

SITE: 241 Trumbo Rd
Key West, FL 33040

TITLE: Notes

SCALE AT 11x17:	DATE:	DRAWN:	CHECKED:
AS SHOWN	01/03/22	SAM	SAM
PROJECT NO:	DRAWING NO:		REVISION:
1907-09	G-101		1

SITE MAP

SCALE: NTS

WALL VIEW PHOTO

SCALE: NTS

AFTER ALL REPAIRS ARE COMPLETE AND CONCRETE IS CURED RESTORE MATCHING CEMENT STUCCO, PRIME AND PAINT EXTERIOR WALL SURFACES AND RESTORE ANY INTERIOR INSULATION AND FINISHES TO MATCH EXISTIGN CONDITIONS

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CLIENT: WILLIAM P HORN PA

PROJECT: LIMITED CONCRETE SPALLING REPAIRS

SITE: 241 TRUMBO RD
KEY WEST, FL 33040

TITLE: SITE MAP
WORK ZONE

SCALE AT 11x17:	DATE:	DRAWN:	CHECKED:
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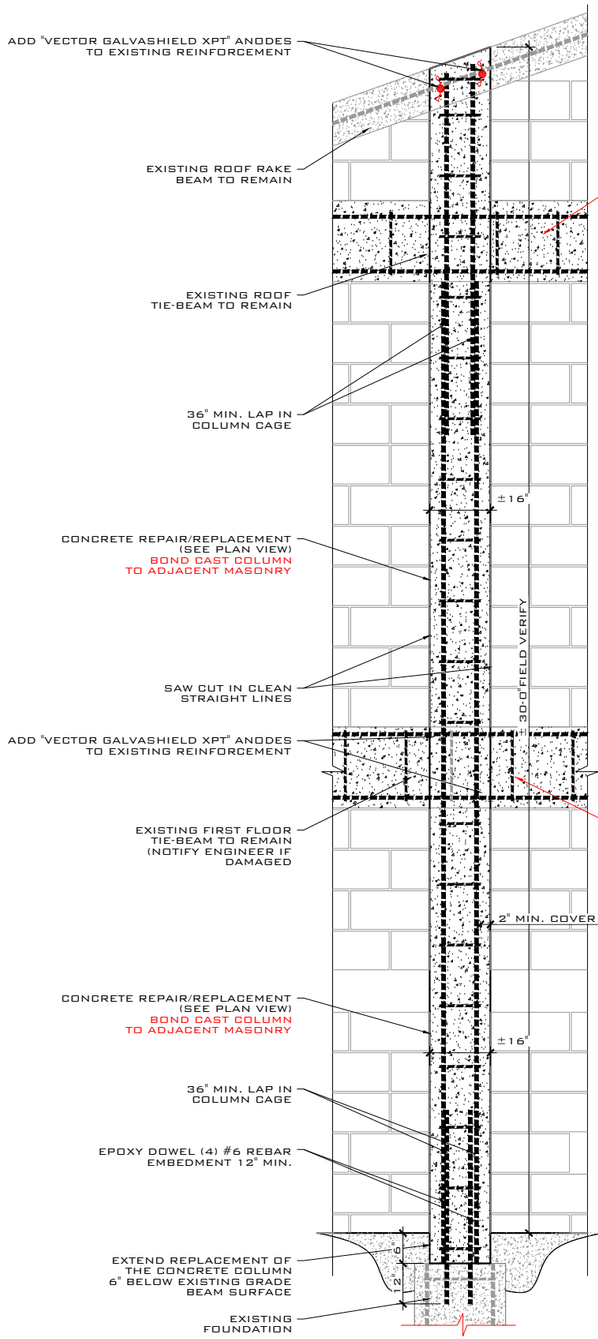
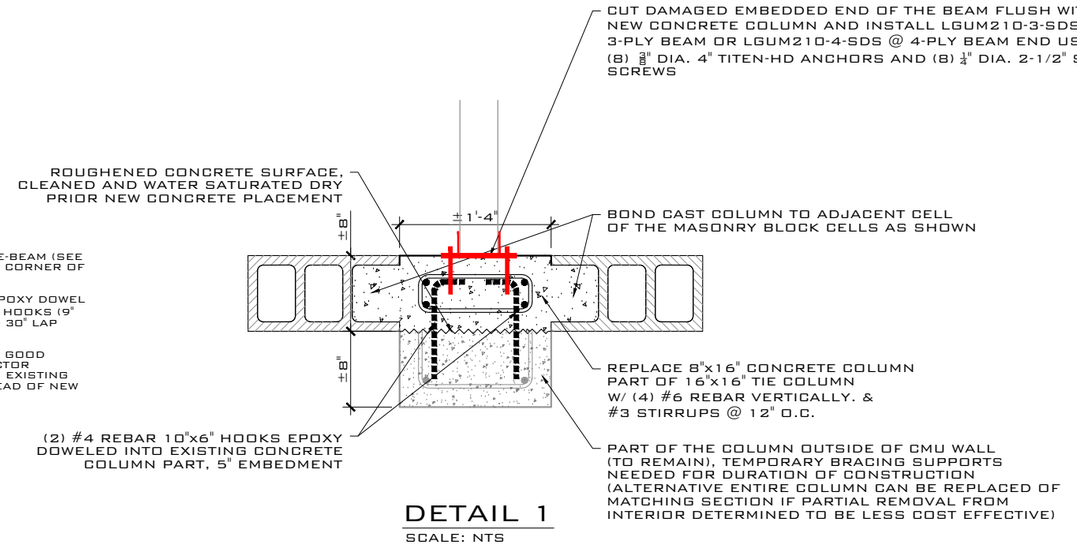
1907-09	S-101	1



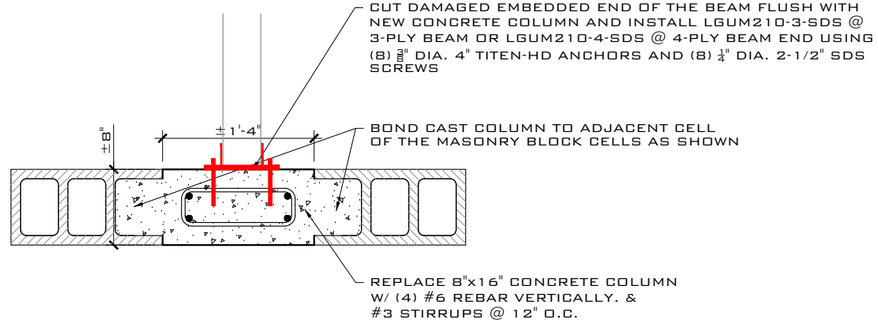
TYPICAL TIE-COLUMN REPAIR ELEVATION VIEW

SCALE:NTS



DETAIL 1

SCALE: NTS



DETAIL 2

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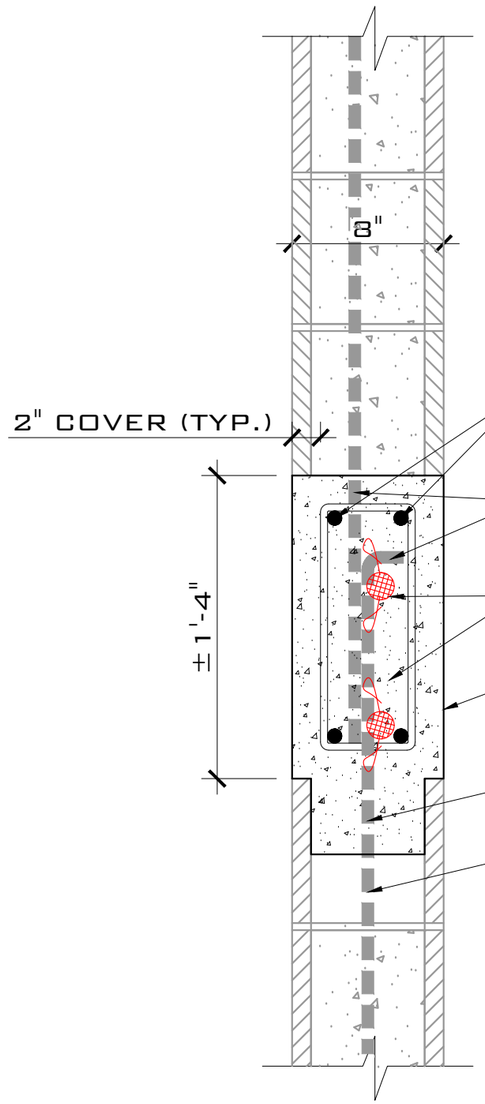
PROJECT: LIMITED CONCRETE SPALLING REPAIRS

SITE: 241 TRUMBO RD
KEY WEST, FL 33040

TITLE: DETAILS

SCALE AT 11x17:	DATE:	DRAWN:	CHECKED:
AS SHOWN	01/03/22	SAM	SAM
PROJECT NO:	DRAWING NO:		REVISION:
1907-09	S-102		1



EPOXY DOWEL ALL NEW REINFORCEMENT AT THE BEAM JOINT 12" AND PROVIDE 30" REBAR LAP, (SIMPSON SET-XP ADHESIVE OR ENGINEER APPROVED EQUAL)

EXISTING CMU REINFORCEMENT TO REMAIN (IF PRESENT)

"VECTOR GALVASHIELD XPT" ON ENDS OF REPAIR @ EXISTING REINFORCEMENT

NEW 8"X16" CONCRETE BEAM 4000 PSI CONCRETE W/(2) #5 REBAR BOTTOM , (2) #5 REBAR TOP #3 STIRRUPS @ 10" O.C.

BOND CAST 4" MIN. W/ EXISTING CMU

EXISTING CMU BLOCK WALL TO REMAIN

NOTES: 1. ROOFING SYSTEM AND OTHER DETAILS ARE NOT SHOWN FOR CLARITY.
2. CLEAN AND RESTORE ANY EXISTING EMBEDMENT DETAILS.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY SHORING FOR A DURATION OF CONSTRUCTION AND CONCRETE CURING PROCESS(28 DAYS AFTER PLACEMENT).

DETAIL 3
TYPICAL TIE-BEAM REPLACEMENT SECTION VIEW
SCALE: NTS

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TITLE: DETAIL 3

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