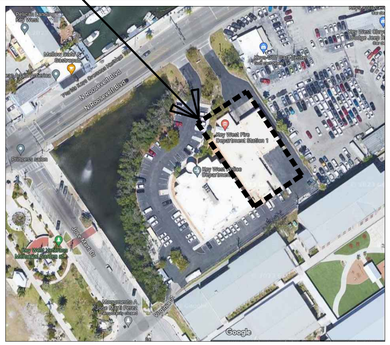
CITY OF KEY WEST FIRE STATION 1
WIND RETROFIT

1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA

LOCATION MAP

AREA OF WORK

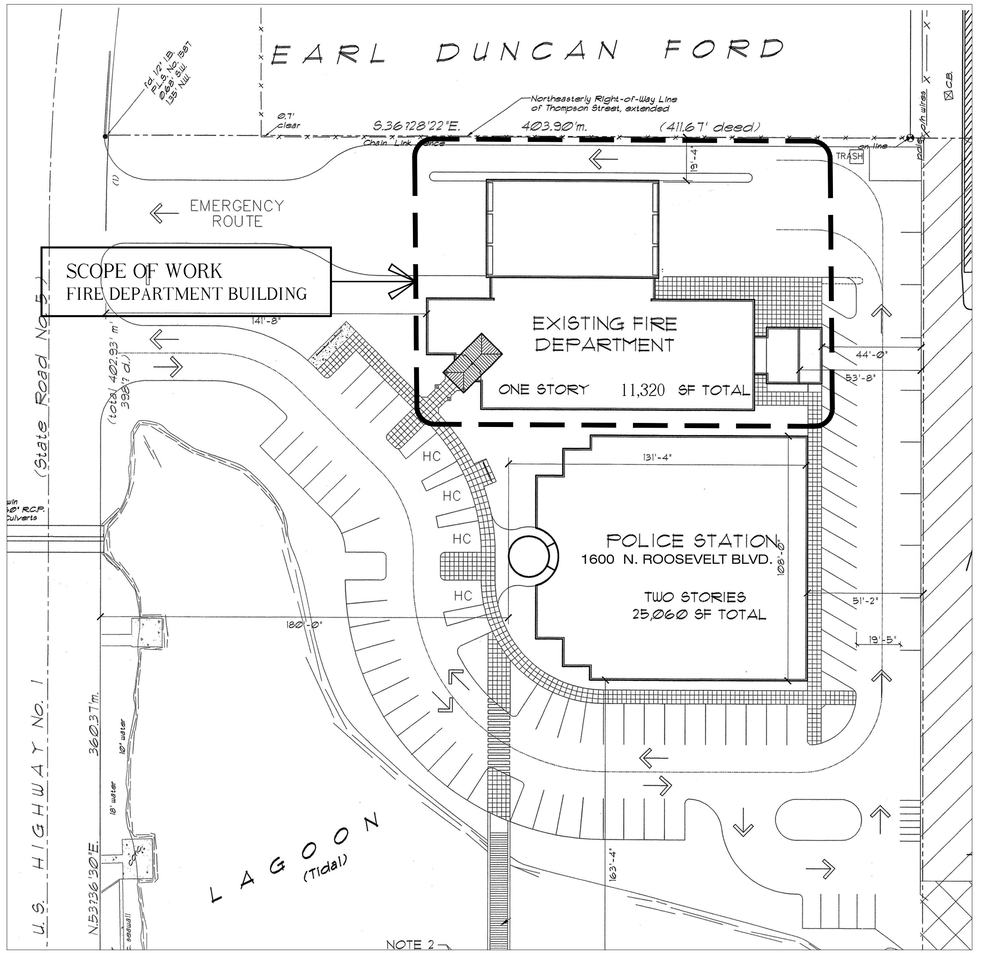


SITE -DATA

LAND USE : PS (PUBLIC SERVICE)

FLOOD ZONE: AE +6.0' (NGVD 29)

FINISHED FLOOR = 7.10' (NGVD 29)



KEY PERSONNEL

ARCHITECT:

WILLIAM P. HORN ARCHITECT, P.A.

WILLIAM P. HORN, RA, LEED AP

915 EATON ST.
KEY WEST, FL 33040
TEL. (305) 296-8302

STRUCTURAL ENGINEERING:

ARTIBUS DESIGN LLC

SERGE MASHTAKOV, PE

3710 N ROOSEVELT BLVD.
KEY WEST, FL 33040
TEL (305) 304-3512

OWNER:

CITY OF KEY WEST

GLYNN MEIENBURG
PROJECT MANAGER

1300 WHITE STREET
KEY WEST, FLORIDA 33040
TEL. (305) 809-3963

LIST OF DRAWINGS

A1.0 COVER PAGE
A1.1 PROPOSED ROOF PLAN
A1.2 PROPOSED FIRST FLOOR PLAN
A3.1 WINDOW SCHEDULE
A3.2 LOUVER & STOREFRONT SCHEDULE
A3.3 DOOR SCHEDULE
A4.1 ROOF DETAILS
A5.1 SPECIFICATIONS
A5.2 SPECIFICATIONS
~~A5.3 SPECIFICATIONS~~
A5.4 SPECIFICATIONS
A5.5 SPECIFICATIONS

REV 2

EX-1 EXISTING ROOF PLAN

S-100 GENERAL NOTES
S-101 DETAILS
S-102 DETAILS
S-103 EXISTING SITE CONDITIONS PHOTOGRAPHS

DESIGN CRITERIA

APPLICABLE BUILDING CODES:

- The Florida Building Code 2023
- Florida Building Code-Accessibility, 2023 Edition
- National Electric Code latest edition
- Florida Plumbing Code, 2023 Edition
- Florida Mechanical Code, 2023 Edition
- Florida Fuel Gas Code, 2023 Edition
- Florida Building Code, Energy Conservation, 2023 Edition
- ASCE 7 Latest Edition
- Basic Wind Speed: 200 MPH
- Exposure: D
- Structural Category: IV

SCOPE OF WORK

WORK INCLUDES ALL NEW IMPACT RATED GARAGE DOORS, EXTERIOR DOORS, EXTERIOR LOUVERS, WINDOWS AND STOREFRONT WINDOWS AND NEW ROOF SYSTEM. CONCRETE SPALLING REPAIRS AND RE-PAINTING THE EXTERIOR OF THE BUILDING TO PROTECT THE CONCRETE STRUCTURE FROM SALT INTRUSION IS ALSO PART OF THE SCOPE. SEE THE DRAWINGS AND SPECIFICATIONS FOR THE FULL SCOPE OF WORK.

REV 1

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AR 13537

CITY OF KEY WEST
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WIND RETROFIT
1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA · WILLIAM P HORN · AR0013537 · REGISTERED ARCHITECT

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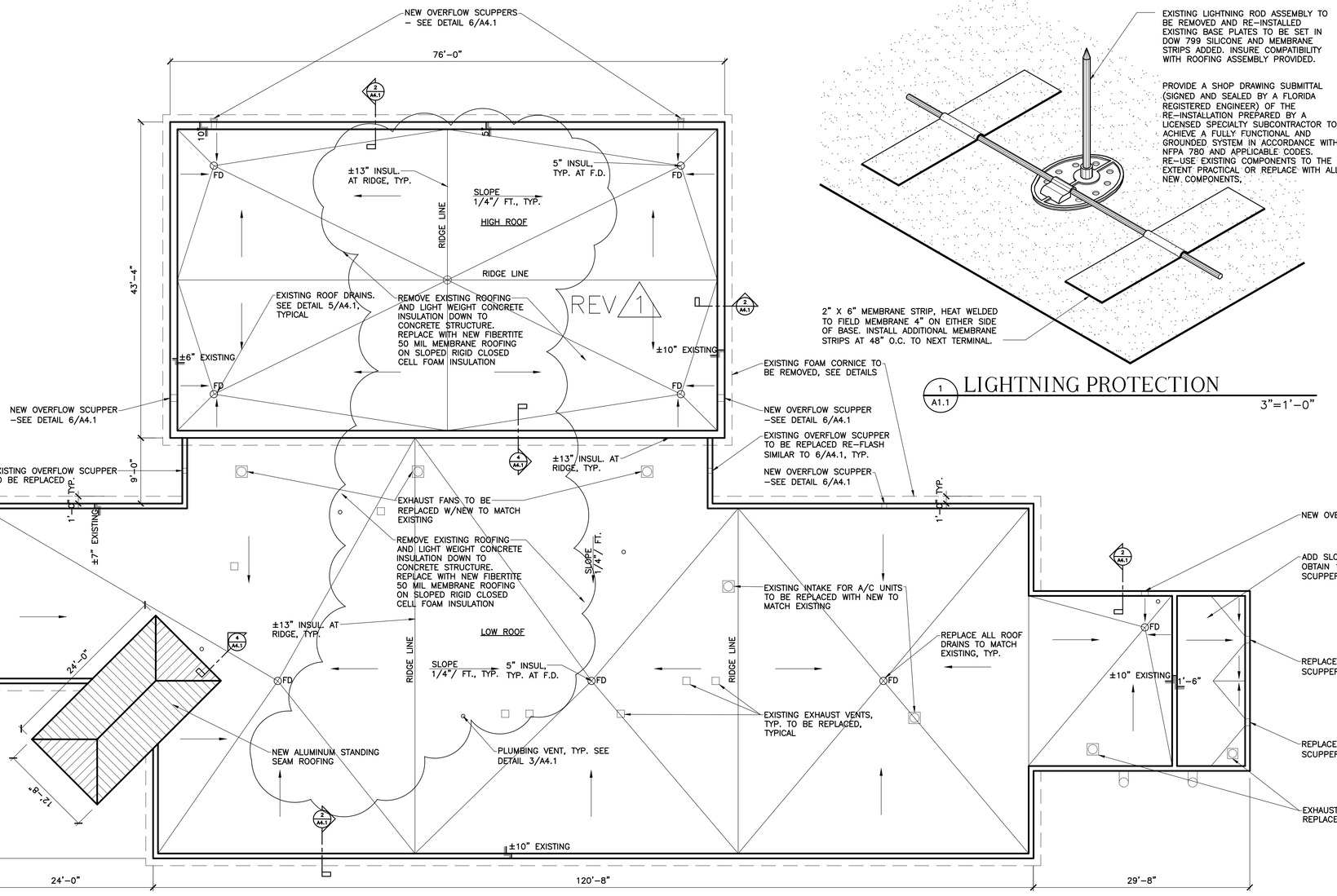

PROPOSED ROOF PLAN

SCALE: 1/8"=1'-0"

1 A1.1 LIGHTNING PROTECTION

3"=1'-0"

SCOPE OF NEW ROOF WORK

THE BUILDING SHALL BE OCCUPIED AND OPERATIONAL THROUGHOUT THE COURSE OF THE WORK.

REV 1

ROOF REPLACEMENT, SHALL CONSIST OF THE REMOVAL OF ALL EXISTING MEMBRANE ROOFING, FLASHING AND PARAPET TREATMENTS AS WELL AS EXISTING LIGHT WEIGHT CONCRETE INSULATION. NEW WORK TO INCLUDE INSTALLATION OF A FULLY ADHERED FIBERTITE, 50 MIL, SINGLE PLY ROOFING SYSTEM (BASIS OF DESIGN) OR EQUAL INCLUDING INSULATION WITH COVER BOARD OVER THE EXISTING CONCRETE DECK. ALL IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS AND WARRANTY REQUIREMENTS AS WELL AS THESE CONTRACT DOCUMENTS INCLUDING SPECIFICATIONS.
THE WORK WILL INCLUDE REVISED FLASHING AND COPING DETAILS FOR THE EXISTING RAISED CMU CURB/PARAPET AROUND THE PERIMETER OF THE BUILDING. THE WORK ALSO INCLUDES PARTIAL REMOVAL OF EXISTING E.F.I.S., TOTAL REMOVAL OF THE EXISTING CONTINUOUS E.F.I.S. CORNICE AND CLEANING OF EXPOSED SURFACES TO RECEIVE NEW STUCCO FINISH. SEE DETAIL 2/A5.4.

NEW ROOFING SYSTEM DETAILS SHALL BE APPLIED TO EXISTING CONDITIONS INCLUDING CURBS, PENETRATIONS, VENTS, SCUPPERS, CABLE WAYS AND LIGHTNING PROTECTION. SEE DRAWINGS AND SPECIFICATIONS.

EXISTING CURB MOUNTED INTAKE AND EXHAUST FANS, COWLS AND OTHER ITEMS ARE TO BE REMOVED AND REPLACED AS REQUIRED TO MATCH EXISTING. CONTRACTOR TO VERIFY EXISTING AND SUBMIT SHOP DRAWINGS OF ALL NEW EXHAUST AND INTAKE FANS, PREFABRICATED CURBS, COWLS, ANCHORAGE AND EQUIPMENT ATTACHMENT BASED ON PROJECT LOADING REQUIREMENTS PER STRUCTURAL DRAWINGS. SHOP DRAWINGS TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED ENGINEER. ANY DISRUPTION OF EXISTING FUNCTIONS, OR SERVICES, SHALL BE COORDINATED WITH THE OWNER. NO DISRUPTION OF COMMUNICATIONS WILL BE ALLOWED.

REV 1

ALTERNATE SECONDARY WATERPROOFING SYSTEM

PROVIDE AN ALTERNATE PRICE TO ADD A SECONDARY WATERPROOFING SYSTEM TO THE EXISTING CONCRETE DECK (FLAT ROOF AREA) AS PER SPEC SECTION 075600.

LIGHTING PROTECTION

CONTRACTOR TO PROVIDE A PRICE FOR DESIGNING AND INSTALLING A LIGHTNING PROTECTION SYSTEM. CONTRACTOR TO HAVE A FLORIDA REGISTERED ENGINEER SIGN AND SEAL DRAWINGS OF THE COMPLETE SYSTEM TO SUBMIT TO BUILDING DEPARTMENT FOR PERMIT AND CONSTRUCTION.

ROOFING ASSEMBLY – FLAT ROOF

BASIS OF DESIGN: FIBERTITE BY SEAMAN CORP., FIBER TITE–XT 50 MIL MEMBRANE ROOFING ASSEMBLY. DETAILS OF INSTALLATION INCLUDING FASTENERS AND MATERIALS SHALL BE IN ACCORDANCE WITH FLORIDA PRODUCT APPROVAL. INDICATING COMPLIANCE WITH PROJECT WINDLOAD REQUIREMENTS. THE INSTALLATION SHALL COMPLY WITH THE MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS, THE LATEST INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS.

PROVIDE A FULL SHOPDRAWING SUBMITTAL INCLUDING COMPLIANCE WITH PROJECT WIND LOADS AND ALL ACCESSORIES AND DETAILS REQUIRED FOR A COMPLETE WATERTIGHT INSTALLATION. REFER TO STRUCTURAL DRAWINGS FOR DESIGN PRESSURES.
PROVIDE A 30 YEAR FULL SYSTEM WATER TIGHT UNLIMITED WARRANTY.
BASIS OF DESIGN FIBERTITE FBC FL49 30–R25, SYSTEM C–14, C–VB–9. (–247.5 PSF)

ALUMINUM ROOFING – STANDING SEAM ROOFING

BASIS OF DESIGN: ENGLERT, INC. SERIES 2000, FL 11751.5 R8 (–157.5 PSF W/METHOD 3). USE ENGLERT HT UNDERLAYMENT, 40 MILS, SELF–ADHERED.

ROOF INSULATION / EXISTING LIGHTWEIGHT CONCRETE

THE EXISTING ROOFS HAVE SLOPED LIGHTWEIGHT CONCRETE OVER THE EXISTING CONCRETE ROOF DECKS. THE LIGHTWEIGHT CONCRETE IS 5" THICK AT ALL FLOOR DRAINS AND SLOPES UP AT 1/4" /FT TO ABOUT 12" THICK AT THE HIGH ROOF AND 9" THICK AT THE LOW ROOF. CONTRACTOR TO REMOVE ALL OF THE LIGHTWEIGHT CONCRETE DOWN TO THE EXISTING CONCRETE DECK. ADD NEW SECONDARY WATER–PROOFING SYSTEM PRIOR TO ADDING THE NEW SLOPED RIGID ROOF INSULATION. MATCH EXISTING MINIMUM R VALUE OF R20.5 AT THE DRAINS FOR THE NEW INSULATION WITH A MINIMUM SLOPE OF 1/4" / FOOT.

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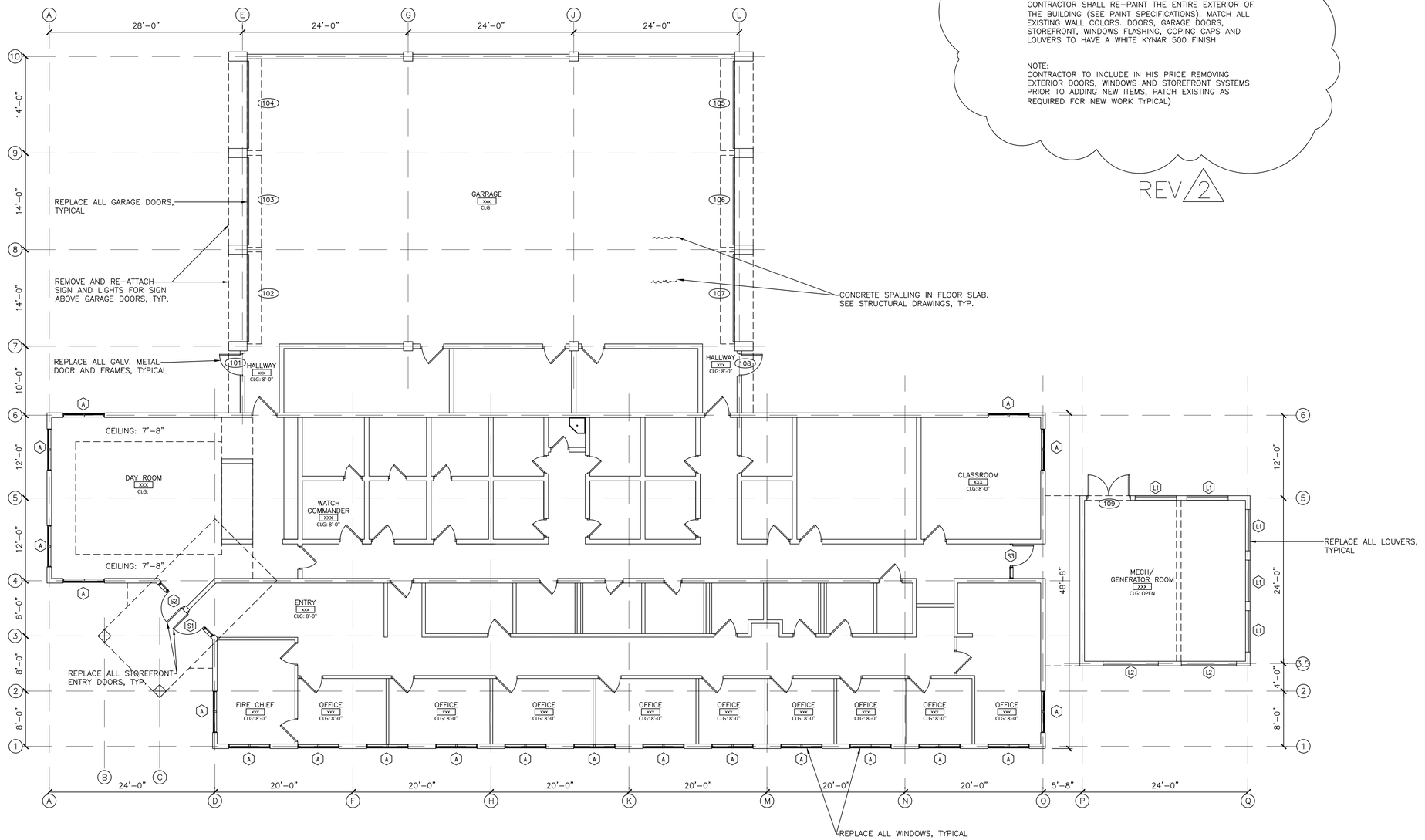
A1.1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA



NOTE:
CONTRACTOR SHALL RE-PAINT THE ENTIRE EXTERIOR OF THE BUILDING (SEE PAINT SPECIFICATIONS). MATCH ALL EXISTING WALL COLORS. DOORS, GARAGE DOORS, STOREFRONT, WINDOWS FLASHING, COPING CAPS AND LOUVERS TO HAVE A WHITE KYNAR 500 FINISH.

NOTE:
CONTRACTOR TO INCLUDE IN HIS PRICE REMOVING EXTERIOR DOORS, WINDOWS AND STOREFRONT SYSTEMS PRIOR TO ADDING NEW ITEMS, PATCH EXISTING AS REQUIRED FOR NEW WORK TYPICAL)

REV 2

PROPOSED FIRST FLOOR PLAN

SCALE: 1/8"=1'-0"

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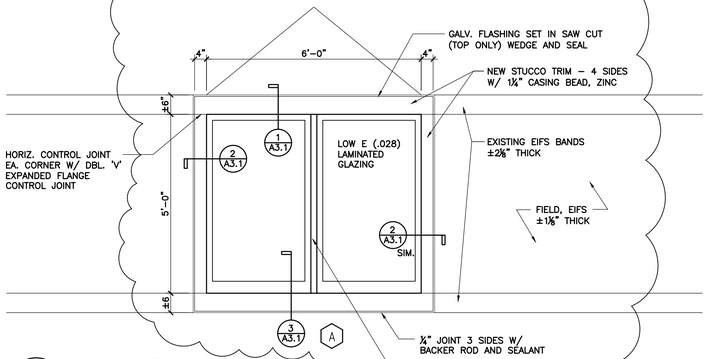
A1.2

REV 2



A / A3.1 WINDOW ELEVATION

SCALE: 1/2" = 1'-0"

WINDOW SCHEDULE

NO.	SIZE (APPROX.)*	FINISH	GLAZING	FRAME MAT.	DESIGN PRESSURES (FIELD)	DESIGN PRESSURES (CORNER)	PRODUCT APPROVAL #	MANUF. WIND LOAD RATING	MANUF./MODEL	TYPE
A	6'-0" x 5'-0"	PAINTED	IMPACT MISSILE 'E' RATED	ALUMINUM		58.47/-75.01	FL#19973	+100/-100	ALDORA-SERIES FRONT SET	FIXED WINDOW WITH LEVEL 'E' IMPACT RATED GLASS. ADD STRUCTURAL MULLION (PROVIDE FLORIDA APPROVALS)

*CONTRACTOR TO VERIFY ALL OPENING DIMENSIONS AND COORDINATE WITH MANUFACTURED PRODUCTS AVAILABLE. CONTRACTOR RESPONSIBLE FOR FINAL OPENING SIZES AND COORDINATION. CONTRACTOR TO INCORPORATE ANY REQUIRED MULLION STRUCTURAL SUPPORTS REQUIRED BY MANUFACTURER BETWEEN MULTIPLE OPENINGS.

NOTES:

1. ALL EXTERIOR OPENINGS SHALL BE PROVIDED WITH DOORS, WINDOWS, OR LOUVERS WHICH MEET ASCE/SEI 7-16, FLORIDA BUILDING CODE, 2023 EDITION. WIND PRESSURE ON COMPONENTS AND CLADDING (CH 30 PART 1) ALL PRESSURES SHOWN ARE BASED UPON ASD DESIGN, WITH A LOAD FACTOR OF 0.6. 200 MPH, WIND LOAD AND IMPACT REQUIREMENTS, SEE SPECIFICATIONS.
2. ALUM. STOREFRONT FRAMES, WINDOWS AND LOUVERS SHALL BE PREFINISHED WITH COLOR TO BE SELECTED BY THE ARCHITECT FROM MANUFACTURERS FULL RANGE OF AVAILABLE COLOR SELECTIONS.
3. MUTES, STOPS, THRESHOLD AND WEATHERSTRIPPING, ALL IN ACCORDANCE WITH STORMPROOF ASSEMBLY REQUIREMENTS. COORDINATE KEYING REQUIREMENTS WITH OWNER. A FULL SHOP DRAWINGS SUBMITTAL IS REQUIRED AND SHALL INCLUDE ALL COMPONENTS OF THE STOREFRONT, WINDOW AND LOUVER ASSEMBLIES, INCLUDING PRODUCT APPROVALS FOR EACH MANUFACTURED PRODUCT, INDICATING TESTED COMPLIANCE WITH LOADING AND IMPACT REQUIREMENTS AS WELL AS SIZE, TYPE AND SPACING OF THE ANCHORS TO MEET LOADING REQUIREMENTS. ACCESSORY COMPONENTS SUCH AS BLOCKING, FLASHING AND SEALS AND ADJACENT CONSTRUCTION SHALL BE INDICATED, WHETHER PROVIDED BY THE ASSEMBLY MANUFACTURER OR OTHERS.
4. DESIGN PRESSURES PROVIDED BY STRUCTURAL ENGINEER.
5. ALL EXTERIOR FENESTRATIONS SHALL HAVE A MAXIMUM U-FACTOR AND SHGC AS PER FLORIDA COMMERCIAL (AND RESIDENTIAL IF APPLICABLE) ENERGY CONSERVATION BUILDING CODE 2023 UNLESS OTHERWISE NOTED IN PROFORMANCE METHOD CALCULATIONS PROVIDED BY ENGINEER. THE THERMAL ENVELOPE OF THE BUILDING SHALL COMPLY WITH FLORIDA COMMERCIAL ENERGY CONSERVATION BUILDING CODE 2023 AND SECTION C402.5. AND TABLE C402.5.2. FOR AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. FOR RESIDENTIAL PROJECTS USE THE RESIDENTIAL SECTION OF THE CODE AND SECTION R402.4 AND TABLE 402.4.1.1 FOR MANDATORY AIR LEAKAGE REQUIREMENTS. CONTRACTOR TO ENSURE ALL EXTERIOR DOORS AND WINDOWS ARE SEALED TO COMPLY WITH AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. ALL EXTERIOR FENESTRATIONS SHALL BE GASKETED, WEATHER-STRIPPED OR OTHERWISE SEALED. ALL STOREFRONT SYSTEMS SHALL HAVE U-FACTOR=1.0, SHGC=0.50 MAX. AIR INFILTRATION RATES OF 0.5 CFM/SF FOR SWINGING GLAZED DOORS, WINDOWS=0.2 CFM/S.F. AND STOREFRONT GLAZING=0.06 CMF/S.F.
6. CONTRACTOR TO PROVIDE FULL SET OF SHOP DRAWINGS SPECIFIC TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO WINDOW, LOUVER AND STOREFRONT ELEVATIONS, SILL/JAMB/HEAD DETAILS, GLASS TYPE, NOA OR FLORIDA PRODUCT APPROVALS, FINISH SAMPLES, ETC.
7. PATCH ALL WALLS (EXTERIOR AND INTERIOR) AS REQUIRED TO MATCH EXISTING, TYPICAL.

REV 1

REV 2

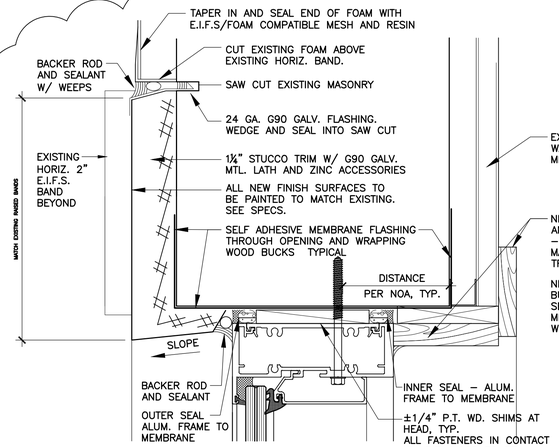
GENERAL NOTES :

1. THE SITE AND BUILDINGS WILL BE OCCUPIED AND IN-USE THROUGHOUT THE COURSE OF THE WORK. ACCESS TO THE BUILDING, USE OF LIMITED PARKING, STAGING AREA AND TRAFFIC FOR DELIVERIES ETC. WILL BE COORDINATED WITH THE OWNER.
2. PROVISIONS FOR SAFE ACCESS BY THE OWNER AND PUBLIC, TO THE BUILDINGS AND PARKING/DRIVE AND WALKWAYS SHALL BE MAINTAINED THROUGHOUT THE COURSE OF THE WORK. TEMPORARY COVERS AT ENTRIES AND CONSTRUCTION AREA BARRIERS WILL BE REQUIRED.
3. NOISE, DUST AND DISRUPTION DUE TO CONSTRUCTION ACTIVITIES IS TO BE KEPT TO A MINIMUM. MOST WORK IS TO BE DONE FROM THE EXTERIOR WITH ALL OPENINGS SECURE AT THE END OF WORK EACH DAY. IT IS INTENDED THAT INDIVIDUAL WINDOWS BE REMOVED AND THE NEW WINDOW INSTALLED IN THE SAME DAY. PREP WORK, INTERIOR AND EXTERIOR CAN BE DONE AHEAD.
4. INTERIOR WORK SHALL BE LIMITED TO INSTALLATION OF DUST CONTROL MEASURES AND WORK REQUIRED TO ADDRESS INTERIOR FINISHES, AND REMOVE EXISTING INTERIOR BLINDS FOR REINSTALLATION ONCE THE ROOM IS COMPLETE.

   REMOVE EXISTING GYP. BD. RETURNS AT HEAD, SILL AND JAMBS. PROVIDE ADDITIONAL WD. BLOCKING AND NEW FINISH WOOD TRIM (PAINTED) TO COVER EXPOSED EDGES OF GYP. BD.
5. ALL OPENINGS SHALL BE FIELD MEASURED PRIOR TO ORDERING REPLACEMENT WINDOWS (NOT ALL EXISTING OPENINGS ARE SAME SIZE). ALL DIMENSIONS SHALL BE PROVIDED ON SHOP DRAWINGS. REPLACEMENT WINDOWS SHALL BE ON SITE PRIOR TO REMOVAL OF EXISTING WINDOWS. (PULL INDIVIDUAL WINDOWS AND REPLACE, SAME DAY).
6. ALL EXISTING WINDOWS AND OTHER CONSTRUCTION DEBRIS SHALL BE PROPERLY AND LEGALLY DISPOSED OF BY THE CONTRACTOR. RECYCLING IS HIGHLY RECOMMENDED. IN NO EVENT SHALL OLD WINDOWS, TRASH OR DEBRIS BY ALLOWED TO ACCUMULATE ON SITE.
7. THE REVISION WORK TO THE TRIM AROUND THE WINDOW OPENING IS SIMILAR TO WHAT WAS COMPLETED ON THE POLICE STATION NEXT DOOR.

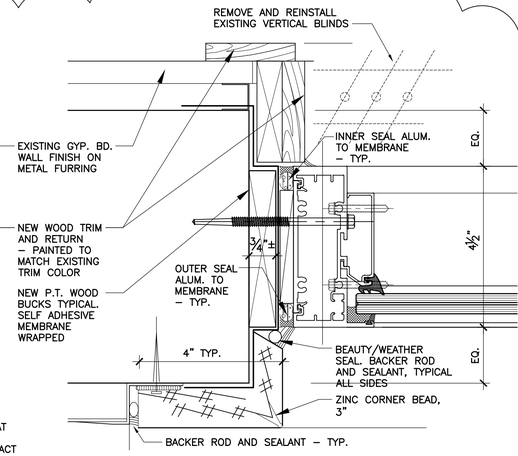
WINDOWS - BASIS OF DESIGN

WINDOW TO BE FIXED STOREFRONT WINDOWS BY ALDORA-SERIES FRONT SET.
EACH EXISTING OPENING WILL GET TWO FIXED WINDOWS WITH STRUCTURAL MULLION IN BETWEEN.
PRODUCT OF APPROVAL IS FL. #19973 (±100 PSF) WITH MISSILE 'E' IMPACT RATING.
OTHER "EQUAL" MANUFACTURERS WILL BE ALLOWED (SEE SPECIFICATIONS)



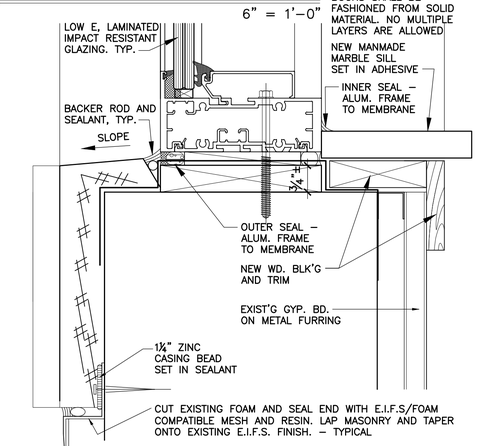
1 / A3.1 STOREFRONT HEAD DTL.

6" = 1'-0"



2 / A3.1 STOREFRONT JAMB DTL.

6" = 1'-0"



3 / A3.1 STOREFRONT SILL DTL.

6" = 1'-0"

REV 2

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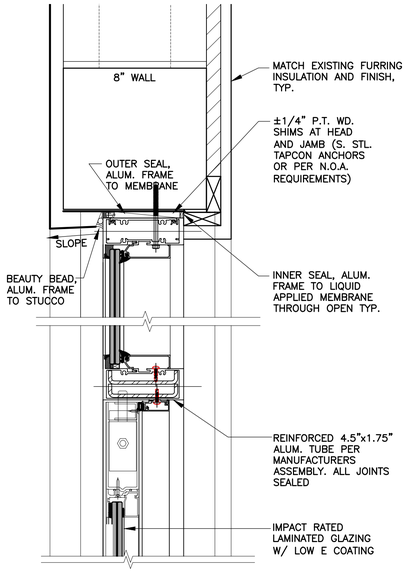
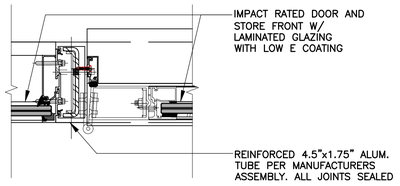


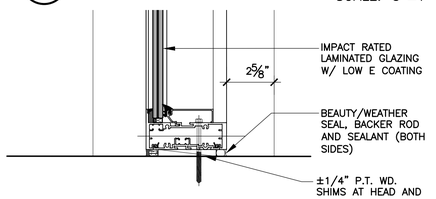
1 / A3.2 STOREFRONT HEAD DETAIL

SCALE: 3"=1'-0"



2 / A3.2 STOREFRONT DETAIL

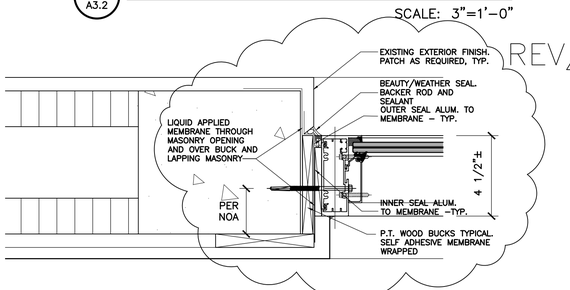
SCALE: 3"=1'-0"



3 / A3.2 STOREFRONT SILL DETAIL

SCALE: 3"=1'-0"

REV 2



4 / A3.2 STOREFRONT JAMB DETAIL

SCALE: 3"=1'-0"

REV 1

LOUVER SCHEDULE

NO.	WIDTH	HEIGHT	FINISH	FRAME MAT.	DESIGN PRESSURES (FIELD)	DESIGN PRESSURES (CORNER)	PRODUCT APPROVAL #	MANUF. WIND LOAD RATING	MANUF./MODEL	DESCRIPTION
L1	6'-0"	5'-0"	PRE-FINISHED	ALUMINUM		+54.28/-69.64	NOA #24-0605.04	+148/-148	RUSKIN COMPANY-MODEL ELF6375DXD	ALUMINUM LOUVER , IMPACT RESISTANT, W/BIRD SCREENS
L2	8'-0"	7'-0"	PRE-FINISHED	ALUMINUM		+51.95/-64.98	NOA #24-0605.04	+148/-148	RUSKIN COMPANY-MODEL ELF6375DXD	ALUMINUM LOUVER , IMPACT RESISTANT, W/BIRD SCREENS

STOREFRONT SCHEDULE

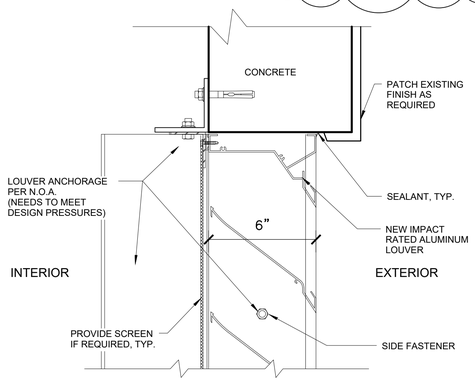
NO.	WIDTH	HEIGHT	THICK	FRAME	MATERIAL	FLORIDA APPROVAL #	MANUF. WIND LOAD RATING	DESIGN PRESSURES (FIELD)	DESIGN PRESSURES (CORNER)	MANUFACTURER	LABEL	DESCRIPTION
S1	4'-0"	8'-0"	1-5/16"	2½"x5"	PREFINISHED ALUM.	FL. #17682 FL. #19973	+100.0/-100.0 +100.0/-100.0		+58.21/-74.50	ALDORA-SERIES SUMMIT ALDORA-SERIES FRONT SET		SWINGING 3'-0"X7'-0" DOORS W/SIDELIGHT AND TRANSOM STOREFRONT SYSTEM, IMPACT RESISTANT, WEATHER STRIPPING, CLOSURE, HANDICAP THRESHOLD AND HARDWARE, LEVEL 'E' IMPACT
S2	4'-0"	8'-0"	1-5/16"	2½"x5"	PREFINISHED ALUM.	FL. #17682 FL. #19973	+100.0/-100.0 +100.0/-100.0		+58.21/-74.50	ALDORA-SERIES SUMMIT ALDORA-SERIES FRONT SET		SWINGING 3'-0"X7'-0" DOORS W/SIDELIGHT AND TRANSOM STOREFRONT SYSTEM, IMPACT RESISTANT, WEATHER STRIPPING, CLOSURE, HANDICAP THRESHOLD AND HARDWARE, LEVEL 'E' IMPACT
S3	5'-0"	8'-0"	1-5/16"	2½"x5"	PREFINISHED ALUM.	FL. #17682 FL. #19973	+100.0/-100.0 +100.0/-100.0		+57.31/-72.70	ALDORA-SERIES SUMMIT ALDORA-SERIES FRONT SET		SWINGING 3'-0"X7'-0" DOORS W/SIDELIGHT AND TRANSOM STOREFRONT SYSTEM, IMPACT RESISTANT, WEATHER STRIPPING, CLOSURE, HANDICAP THRESHOLD AND HARDWARE, LEVEL 'E' IMPACT

*CONTRACTOR TO VERIFY ALL OPENING DIMENSIONS AND COORDINATE WITH MANUFACTURED PRODUCTS AVAILABLE. CONTRACTOR RESPONSIBLE FOR FINAL OPENING SIZES AND COORDINATION. CONTRACTOR TO INCORPORATE ANY REQUIRED MULLION STRUCTURAL SUPPORTS REQUIRED BY MANUFACTURER BETWEEN MULTIPLE OPENINGS.

NOTES:

1. ALL EXTERIOR OPENINGS SHALL BE PROVIDED WITH DOORS, WINDOWS, OR LOUVERS WHICH MEET ASCE/SEI 7-16, FLORIDA BUILDING CODE, 2023 EDITION. WIND PRESSURE ON COMPONENTS AND CLADDING (CH 30 PART 1) ALL PRESSURES SHOWN ARE BASED UPON ASD DESIGN, WITH A LOAD FACTOR OF 0.6. 200 MPH, WIND LOAD AND IMPACT REQUIREMENTS, SEE SPECIFICATIONS.
2. ALUM. STOREFRONT FRAMES, WINDOWS AND LOUVERS SHALL BE PREFINISHED WITH COLOR TO BE SELECTED BY THE ARCHITECT FROM MANUFACTURERS FULL RANGE OF AVAILABLE COLOR SELECTIONS.
3. STOREFRONT ENTRY DOOR SHALL HAVE HARDWARE BY THE ASSEMBLY MANUFACTURER TO INCLUDE BUTTS, PULLS, DEADBOLTS WITH INSIDE THUMB TURN OPERATION, CONCEALED CLOSURE WITH HOLD OPEN, MUTES, STOPS, THRESHOLD AND WEATHERSTRIPPING, ALL IN ACCORDANCE WITH STORMPROOF ASSEMBLY REQUIREMENTS. COORDINATE KEYING REQUIREMENTS WITH OWNER. A FULL SHOP DRAWINGS SUBMITTAL IS REQUIRED AND SHALL INCLUDE ALL COMPONENTS OF THE STOREFRONT, WINDOW AND LOUVER ASSEMBLIES, INCLUDING PRODUCT APPROVALS FOR EACH MANUFACTURED PRODUCT, INDICATING TESTED COMPLIANCE WITH LOADING AND IMPACT REQUIREMENTS AS WELL AS SIZE, TYPE AND SPACING OF THE ANCHORS TO MEET LOADING REQUIREMENTS. ACCESSORY COMPONENTS SUCH AS BLOCKING, FLASHING AND SEALS AND ADJACENT CONSTRUCTION SHALL BE INDICATED, WHETHER PROVIDED BY THE ASSEMBLY MANUFACTURER OR OTHERS.
4. DESIGN PRESSURES PROVIDED BY STRUCTURAL ENGINEER.
5. ALL EXTERIOR FENESTRATIONS SHALL HAVE A MAXIMUM U-FACTOR AND SHGC AS PER FLORIDA COMMERCIAL (AND RESIDENTIAL IF APPLICABLE) ENERGY CONSERVATION BUILDING CODE 2023 UNLESS OTHERWISE NOTED IN PROFORMANCE METHOD CALCULATIONS PROVIDED BY ENGINEER. THE THERMAL ENVELOPE OF THE BUILDING SHALL COMPLY WITH FLORIDA COMMERCIAL ENERGY CONSERVATION BUILDING CODE 2023 AND SECTION C402.5. AND TABLE C402.5.2. FOR AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. FOR RESIDENTIAL PROJECTS USE THE RESIDENTIAL SECTION OF THE CODE AND SECTION R402.4 AND TABLE 402.4.1.1 FOR MANDATORY AIR LEAKAGE REQUIREMENTS. CONTRACTOR TO ENSURE ALL EXTERIOR DOORS AND WINDOWS ARE SEALED TO COMPLY WITH AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. ALL EXTERIOR FENESTRATIONS SHALL BE GASKETED, WEATHER-STRIPPED OR OTHERWISE SEALED. ALL STOREFRONT SYSTEMS SHALL HAVE U-FACTOR=1.0, SHGC=0.50 MAX. AIR INFILTRATION RATES OF 0.5 CFM/SF FOR SWINGING GLAZED DOORS, WINDOWS=0.2 CFM/S.F. AND STOREFRONT GLAZING=0.06 CMF/S.F.
6. CONTRACTOR TO PROVIDE FULL SET OF SHOP DRAWINGS SPECIFIC TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO WINDOW, LOUVER AND STOREFRONT ELEVATIONS, SILL/JAMB/HEAD DETAILS, GLASS TYPE, NOA OR FLORIDA PRODUCT APPROVALS, FINISH SAMPLES, ETC.
7. PROVIDE LOW 'E' GLASS, IMPACT RATED, TYPICAL.
8. COORDINATE W/OWNER ON HARDWARE AND LOCKING REQUIREMENTS. (MATCH EXISTING AS BEST AS POSSIBLE WHILE MEETING N.O.A. REQUIREMENTS), TYPICAL. COORDINATE W/OWNER ON SECURITY HARDWARE REQUIRE MENTS AND KEYING.
9. PATCH ALL WALLS (EXTERIOR AND INTERIOR) AS REQUIRED TO MATCH EXISTING, TYPICAL.

REV 2

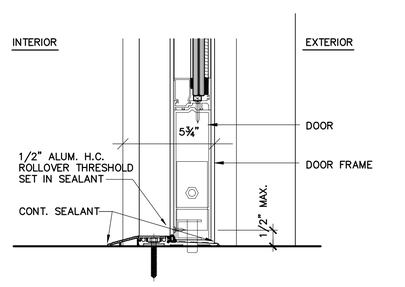


5 / A3.2 LOUVER HEAD DETAIL

SCALE: 3"=1'-0"

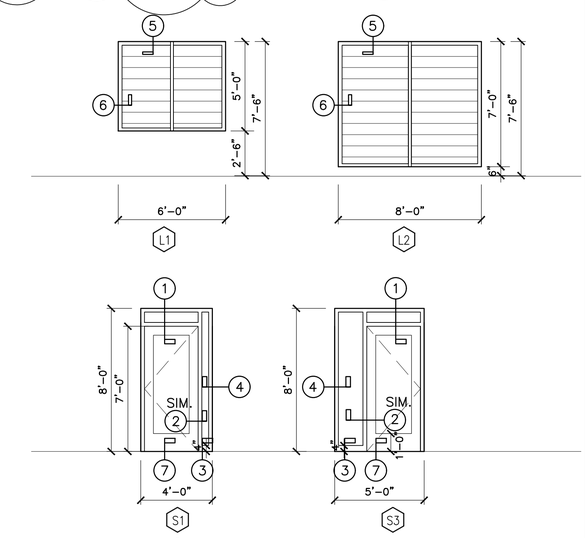
6 / A3.2 LOUVER SILL DETAIL

SCALE: 3"=1'-0"



7 / A3.2 THRESHOLD DETAIL

3'=1'-0"



REV 1

REV 2

LOUVER - BASIS OF DESIGN

RUSKIN COMPANY – MODEL ELF6375 DXD ALUMINUM LOUVER
ALTERNATE LOUVER:
PROVIDE A COST TO USE GREENHECK FAN CORPORATION MODEL EVH-501D ALUMINUM LOUVER, NOA #25-0317.02 (+/-130 PSF, MISSILE 'E' RATED)

STOREFRONT DOORS AND WINDOWS - BASIS OF DESIGN

WINDOWS = ALDORA– SERIES FRONT SET ALUMINUM STOREFRONT SYSTEM– IMPACT RESISTANT GLASS, BLAST RESISTANT (HVHZ) (MISSILE LEVEL E).
USE REINFORCED MULLION CONFIGURATION AS PER FLORIDA PRODUCT APPROVAL REQUIREMENTS FOR EXTERIOR MULLIONS, TYP. USE ANCHORING PER FLORIDA PRODUCT APPROVAL THAT MEETS DESIGN WIND LOAD REQUIREMENTS, TYPICAL.

EXTERIOR DOORS = ALDORA– SERIES SUMMIT (IMPACT RESISTANT GLASS AND BLAST MITIGATING STOREFRONT ENTRANCE SYSTEM, MISSLE LEVEL E).
USE REINFORCED MULLION CONFIGURATION AS PER FLORIDA PRODUCT APPROVAL REQUIREMENTS FOR EXTERIOR MULLIONS, TYP. USE ANCHORING PER FLORIDA PRODUCT APPROVAL THAT MEETS DESIGN WIND LOAD REQUIREMENTS, TYPICAL.

COLOR = WHITE (KYNAR 500 FINISH)

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT
1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA · WILLIAM P HORN · AR0013537 · REGISTERED ARCHITECT

Digitally signed by William Horn
Date: 2025.07.23 15:22:41-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

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JW
EMA

PROJECT NUMBER
2315

A3.2

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

DOOR SCHEDULE

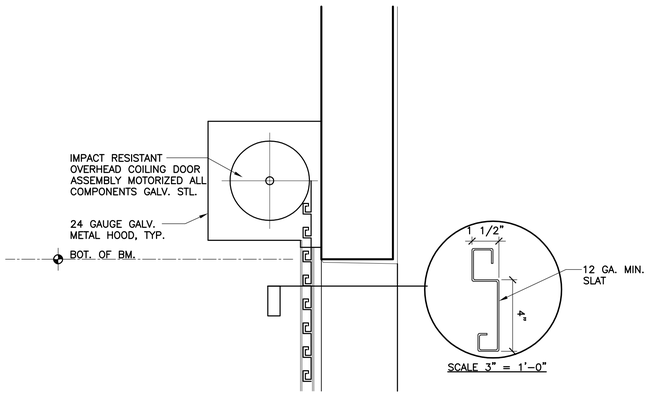
NO.	LOCATION	SIZE (APPROX.)● WIDTH	HEIGHT	THICK	DOOR MATERIAL	FINISH	TYPE	FRAME MATERIAL	FINISH	HARDWARE	N.O.A. #	DESIGN PRESSURES (FIELD)	(CORNER)	MANUF. WIND LOAD RATING	MANUFACTURER	REMARKS
101	HALLWAY	3'-0"	7'-0"	1 3/4"	GALV. METAL	PAINT	A	GALV. METAL	PAINT		NOA #23-0821.16	+59.90/-77.88		+100/-100	STEELCRAFT 'H' SERIES	EXTERIOR, FLUSH SWINGING DOOR, IMPACT RESISTANT, WEATHER STRIPPING, INSULATED, HANDICAP HARDWARE
102	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
103	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
104	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
105	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
106	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
107	GARAGE	12'-8"	16'-0"	2"	ALUMINUM	PAINT	C	ALUMINUM	PAINT		NOA #23-1103.05	+50.79/-59.66		+65/-65	CORNELL IRON WORKS, INC.	EXTERIOR, OVERHEAD ROLL UP DOOR, IMPACT RESISTANT, WEATHER STRIPPING AT BOTTOM
108	HALLWAY	3'-0"	7'-0"	1 3/4"	GALV. METAL	PAINT	A	GALV. METAL	PAINT		NOA #23-0821.16	+59.90/-77.88		+100/-100	STEELCRAFT 'H' SERIES	EXTERIOR, FLUSH SWINGING DOOR, IMPACT RESISTANT, WEATHER STRIPPING, INSULATED, HANDICAP HARDWARE
109	MECH BUILDING	6'-0" PAIR	7'-0"	1 3/4"	GALV. METAL	PAINT	B	GALV. METAL	PAINT		NOA #23-1218.04	+53.02/-67.13		+70/-70	QUALITY ENGINEERED PRODUCT CO.	EXTERIOR, LOUVERED SWINGING DOOR, IMPACT RESISTANT, WEATHER STRIPPING, HANDICAP HARDWARE

REV 1

*CONTRACTOR TO VERIFY ALL OPENING DIMENSIONS AND COORDINATE WITH MANUFACTURED PRODUCTS AVAILABLE. CONTRACTOR RESPONSIBLE FOR FINAL OR WOOD FRAMED OPENING SIZES AND COORDINATION. CONTRACTOR TO INCORPORATE ANY REQUIRED MULLION STRUCTURAL SUPPORTS REQUIRED BY MANUFACTURER BETWEEN MULTIPLE OPENINGS.

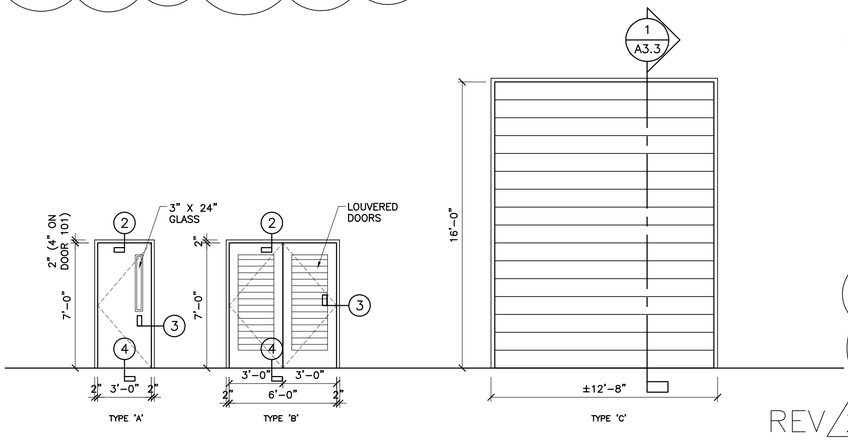
1. ALL EXTERIOR OPENINGS OF THE BUILDING ENVELOPE SHALL BE PROVIDED WITH DOORS AND WINDOWS WHICH MEET ASCE/SEI 7-16, FLA. BUILDING CODE, 2023 EDITION.
   WIND PRESSURE ON COMPONENTS AND CLADDING (CH 30 PART 1)
   ALL PRESSURES SHOWN ARE BASED UPON ASD DESIGN, WITH A LOAD FACTOR OF 0.6.
   200 MPH, WIND LOAD AND IMPACT REQUIREMENTS, SEE SPECIFICATIONS.
2. DOORS SHALL BE PREFINISHED TO BE SELECTED BY THE ARCHITECT FROM THE MANUFACTURERS FULL RANGE OF AVAILABLE COLOR SELECTIONS INCLUDING CLEAR ANODIZED ALUM. COLOR
3. DESIGN PRESSURES ARE PROVIDED BY THE STRUCTURAL ENGINEER.
4. ALL FIRE RATED DOORS TO HAVE A PERMANENTLY AFFIXED LABEL NOTING RATING.
5. ALL EXTERIOR FENESTRATIONS SHALL HAVE A MAXIMUM U-FACTOR AND SHGC AS PER FLORIDA COMMERCIAL (AND RESIDENTIAL IF APPLICABLE) ENERGY CONSERVATION BUILDING CODE 2020 UNLESS OTHERWISE NOTATED IN PROFORMANCE METHOD CALCULATIONS PROVIDED BY ENGINEER.
6. THE THERMAL ENVELOPE OF THE BUILDING SHALL COMPLY WITH FLORIDA COMMERCIAL ENERGY CONSERVATION BUILDING CODE 2023 AND SECTION C402.5. AND TABLE C402.5.2. FOR AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. CONTRACTOR TO ENSURE ALL EXTERIOR DOORS AND WINDOWS ARE SEALED TO COMPLY WITH AIR LEAKAGE AND AIR BARRIER REQUIREMENTS. FOR RESIDENTIAL PROJECTS USE THE RESIDENTIAL SECTION OF THE CODE AND SECTION R402.4 AND TABLE 402.4.1.1 FOR MANDATORY AIR LEAKAGE REQUIREMENTS. ALL EXTERIOR FENESTRATIONS SHALL BE GASKETED, WEATHER-STRIPPED OR OTHERWISE SEALED.
7. PROVIDE A FULL SET OF PROJECT SPECIFIC SHOP DRAWINGS MEETING DESIGN WIND LOADS FOR EACH OPENING AND INCLUDING ALL ELEVATIONS, JAMB/HEAD/THRESHOLD DETAILS AND ANY REQUIRED NOA'S OR FLORIDA PRODUCT APPROVALS.
8. ALL METAL EXTERIOR DOORS TO BE INSULATED AND HAVE PROPER WEATHER STRIPPING IN ADDITION TO NOA REQUIREMENTS.
9. CONTRACTOR TO MEET ALL CODE AND N.O.A. (OR FL. PRODUCT APPROVAL) REQUIREMENTS.
10. CONTRACTOR TO PROVIDE FULL SET OF SHOP DRAWINGS SPECIFIC TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO WINDOW, LOUVER AND STOREFRONT ELEVATIONS, SILL/JAMB/HEAD DETAILS, GLASS TYPE, NOA OR FLORIDA PRODUCT APPROVALS, FINISH SAMPLES, ETC.
11. ALL DOOR HARDWARE TO MATCH EXISTING AS BEST AS POSSIBLE (MAINTAIN N.O.A. REQUIREMENTSO. COORDINATE WITH OWNER ON ALL HARDWARE AND SECURITY REQUIREMENTS.
12. PATCH WALLS (EXTERIOR AND INTERIOR) AS REQUIRED TO MATCH EXISTING, TYPICAL.

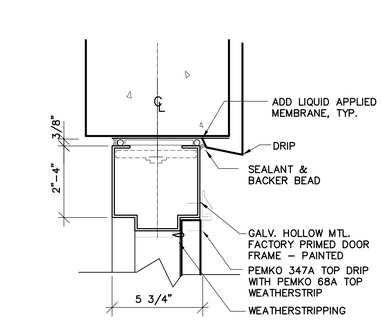
REV 2



1 A3.3 OVERHEAD ROLL UP DOOR DETAIL

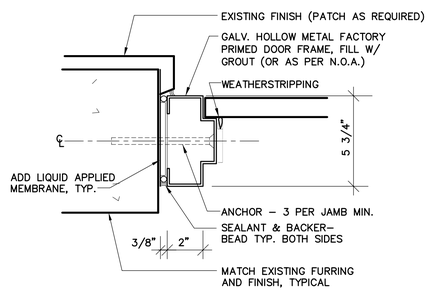
SCALE: 1"= 1'-0"





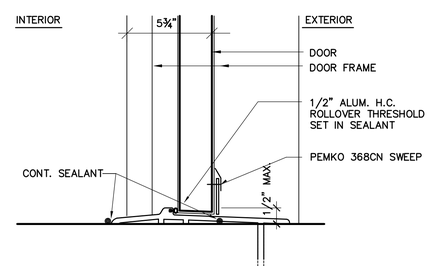
2 A3.3 HEAD DETAIL

EXT. DOOR FRAME-METAL 3"=1'-0"



3 A3.3 JAMB DETAIL

EXT. DOOR FRAME-METAL 3"=1'-0"



4 A3.3 THRESHOLD DETAIL - H.C.

3'=1'-0"

SWINGING DOORS BASIS OF DESIGN
1. SINGLE SWINGING DOOR WITH GLASS VISION PANEL
   - STEELCRAFT H SERIES FLUSH OUTSWING GALV. METAL DOOR NOA #23-0821.16 (+100/-100)
2. DOUBLE LOUVERED DOORS
   QUALITY ENGINEERED PRODUCT COMP. - SERIES 'HMF'
   - 14 GA OUTSWING FULL LOUVERED DOORS
   NOA #23-1218.04

GARAGE DOOR BASIS OF DESIGN

CORNELL IRON WORK, INC. - NON-INSULATED STEEL ROLL UP DOOR. OTHER "EQUAL" MANUFACTURERS WILL BE CONSIDERED.

BASE BID:
N.O.A #24-1220.02 STORM DEFENDER- MISSILE 'E' RATED (+200psf/-200psf RATING) WITH G90 GALVANIZED FINISH
(WITH WHITE KYNAR 500 FINISH)

ALL DOOR MOTORS TO BE 2-H.P., MINIMUM (SEE SPEC SECTION 08330). CONTRACTOR TO PROVIDE SHOP DRAWING SHOWING NEW WIRING, CONDUIT + BREAKER BACK TO EXISTING PANEL 'OM'.

GARAGE DOORS TO MEET ALL SPECIAL REQUIREMENTS AND CODES FOR FIRE STATIONS, TYPICAL. SEE SPECIFICATION 08330.

REV 1

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT

1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

Digitally signed by William Horn
Date: 2025.07.23 15:22:45-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

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JFS
JW
EMA

PROJECT NUMBER
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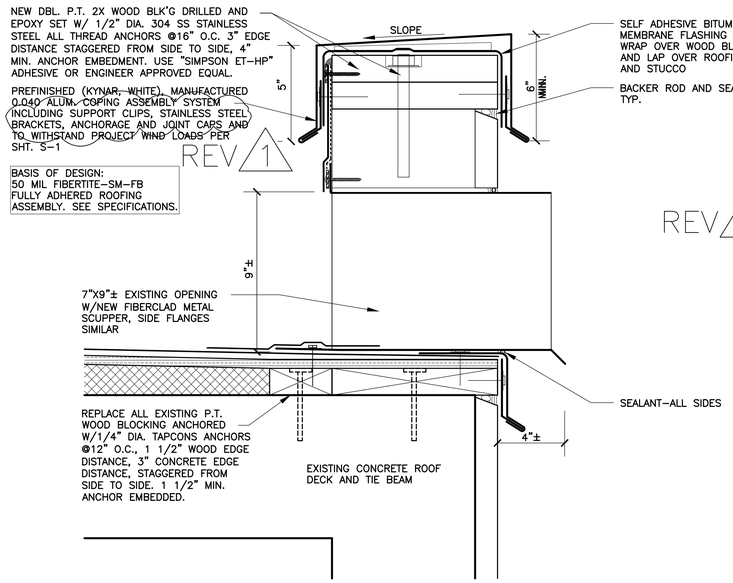
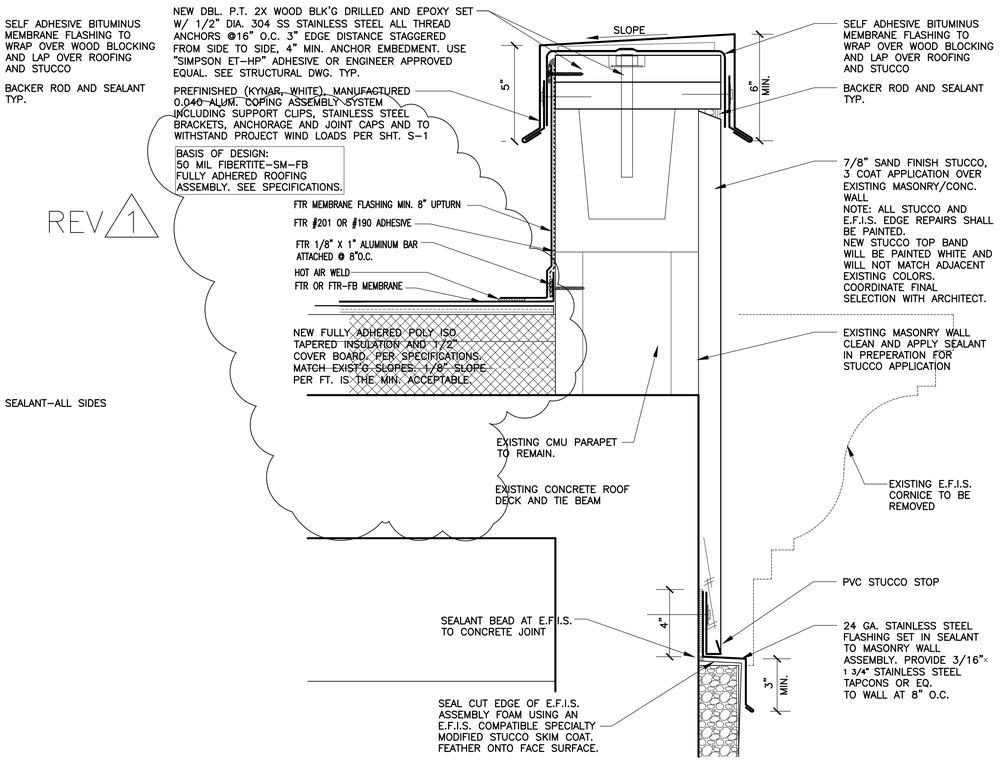
A3.3

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA



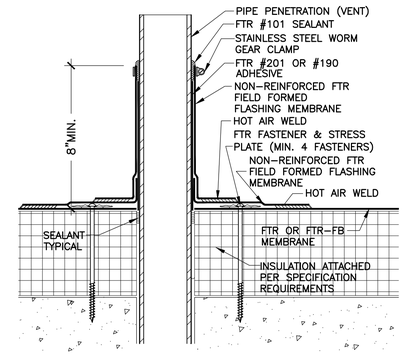
1 A4.1 NEW SCUPPER DETAIL

3"=1'-0"



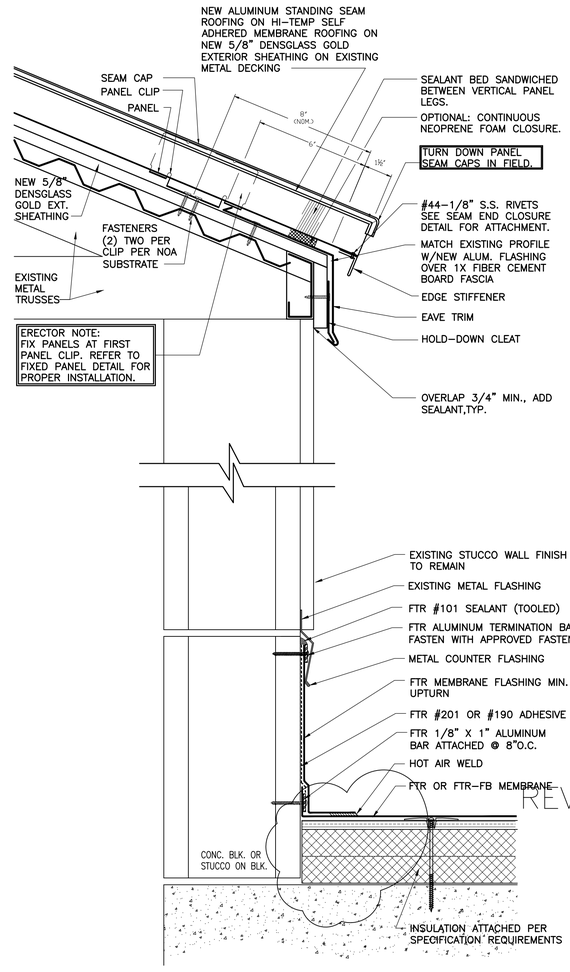
2 A4.1 NEW PARAPET DETAIL

3"=1'-0"



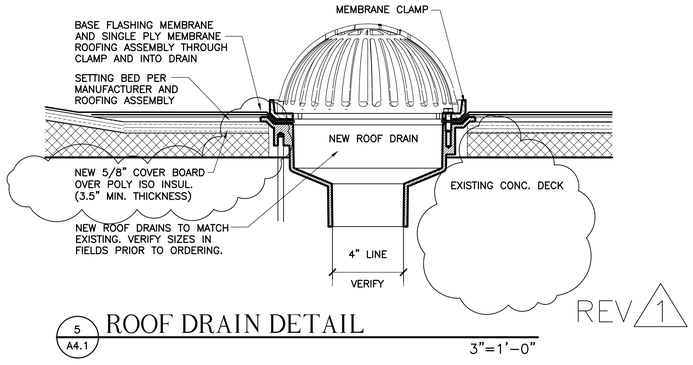
3 A4.1 PENETRATION FLASHING

3"=1'-0"



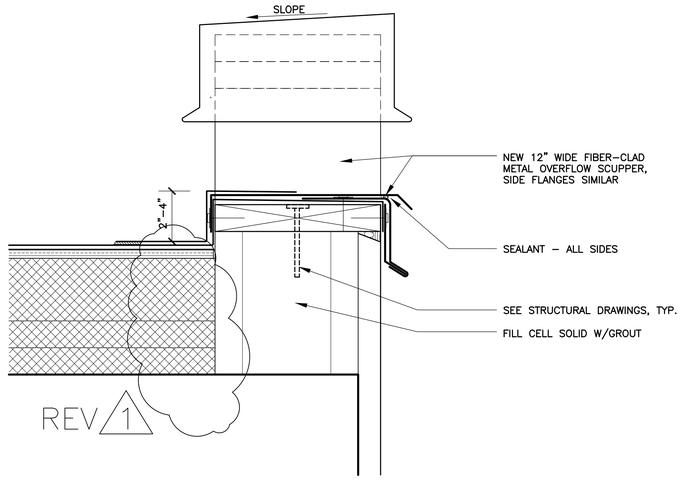
4 A4.1 WALL FLASHING DETAIL

3"=1'-0"



5 A4.1 ROOF DRAIN DETAIL

3"=1'-0"



6 A4.1 NEW OVERFLOW SCUPPER DETAIL

3"=1'-0"

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STATE OF FLORIDA · WILLIAM P HORN · AR0013537 · REGISTERED ARCHITECT

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01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
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JW
EMA

PROJECT NUMBER
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CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

A4.1

01800 - GENERAL REQUIREMENTS

Project Description The Contractor shall furnish all labor and materials required and necessary to provide a complete habitable, weatherproof, safe and secure finish building, suitable for human occupancy in accordance with Specifications, Drawing and Project Documents.

The Florida Building Code 2023 Edition, as amended by Governing Local Ordinances and requirements of the State of Florida "Coastal Zone Protection Act", together with applicable requirements of governing public agencies and the following listed codes shall apply to this project.

Florida Existing Building Code, 2023 Edition

Florida Building Code-Accessibility, 2023 Edition

Florida Building Code-Energy Conservation, 2023 Edition

National Electric Code Latest Edition

Florida Plumbing Code, 2023 Edition

Florida Mechanical Code, 2023 Edition

FEMA- Coordinate all building items required to be above flood elevation for project and other FEMA regulations that apply to the project.

Lead paint safety requirements: The contractor is required to use lead safe work practices for buildings built before 1978. All lead paint shall be removed or covered as per EPA and other code requirements. Contractor to coordinate with owner for investigative methods, removal solutions and costs.

Asbestos Testing in Existing Buildings: Prior to demolishing items and or buildings in an existing building the contractor shall coordinate with the owner and obtain any asbestos reports required by Code.

Contractor shall visit the site to become familiar with existing conditions and requirements of construction prior to bidding.

Contractor shall complete new work in conformance with these drawings. Notify Architect if conflicts appear or are uncovered during the progress of the work prior to any field modifications or construction. Deviations from permitted drawings without Architects prior written approval shall be at the Contractors responsibility. Contractor is to verify all dimensions of project prior to proceeding with construction. Notify architect of any conflicts or problems so solutions can be achieved prior to construction. In event of conflict between drawings and specifications the most stringent requirements shall apply. Verification shall include, but not limited to, coordination of existing conditions, buildings and utilities. Notify architect of any conflicts so solution can be worked out prior to construction.

Contractor shall provide all subcontractors complete set of drawings, including drawings from other disciplines. Change orders will not be allowed because a subcontractor only looked at drawings for his discipline and not other disciplines. Contractor must review all drawings and notify Architect of any conflicts. If a conflict arises assume worst case scenario for bidding and or Construction (or notify Architect for clarification prior to bidding). General Contractor is responsible for reviewing the complete set of drawings and specifications and assuring that his and his subcontractors bids include complete work and systems (free of conflict with other contractors and subcontractors).

Contractor and subcontractor shall follow industry standards for each discipline. Drawings do not show every condition, fastener, etc. . If something is not detailed, follow industry standards. Provide complete functioning systems.

Contractor needs to coordinate final color selections with owner and architect prior to ordering items. Factory finished items such as roofing, windows and doors need color and finish selections verified in writing by owner and architect prior to ordering.

General Notes:

A. Engineer's approval must be secured for all structural substitutions.

B. Verify all openings through floors, roof and walls with mechanical and electrical contractors. Verification of locations, sizes, lintel and required connections are contractor's complete responsibility.

C. Prior to installation of mechanical and electrical equipment or other items to be attached to the structure, engineer's approval of connections and supports shall be obtained. Unless specifically detailed on architectural and structural drawings,respective sub-contractor shall furnish all hangers, connections, etc., required for installation of his items.

D. Provide all embedded items in structure as noted on architectural, mechanical,electrical as well as structural drawings. Miscellaneous embedded items and anchor bolts shall be furnished by steel supplier and installed by concrete contractor.

E. Contractor to verify all dimensions before proceeding with any new work

F. Provide temporary bracing and precautions necessary to withstand all construction and/or wind loads until all field connections are completed and shear walls and decks are in place. All shoring is the responsibility of the contractor including use of a specialty engineer if required.

G. Submit shop and erection drawings for all items required by the drawing or elsewhere In the specifications for written approval. The manufacture or fabrication of any items prior to written approval of shop drawings will be entirely at the risk of the contractor.

All references to standards to be of the latest issue applicable.

H. This project is in a coastal salt water environment. Contractor shall consider this in selections of materials used in the exterior and non-air conditioned areas. All materials shall be salt resistant.

I. Manufactured assemblies; such as roofing, soffits, panels, storefront, doors, windows and other external assemblies incorporated into the project shall require detailed shop drawing submittals. Miami Dade N.O.A'S or Florida product approvals providing tested assembly installation details and windload compliance are required. Manufacturers recommendations and requirements (including warranty requirements) shall be incorporated along with the latest industry standards and best practices. All final color selections or finishes shall be coordinated and verified with the owner and architect prior to ordering (typical).

J. Waterproofing, vapor barriers, waterstop, air seals,, etc. shall be as indicated in the Specifications and as per manufacturer and industry standards.

K. All penetrations of fire rated construction shall be treated with dampers, seals, collars, etc.

L. When working within occupied or partially occupied buildings it is the contractors responsibility to provide safe access and to maintain in operation all features of existing life safety systems including alarms, detectors, lighting and exit ways throughout the course of construction.

M. If in the event of conflicting, or overlapping requirements in any area of the proposed documents, technical specifications, or drawings, the most stringent condition shall be proposed and constructed.

DIVISION 2 - SITE AND CIVIL WORK

02250 - Demolition shall include the removal of all items as indicated on the drawings, as well as incidental items necessary for new work to progress. All work shall be done in a workman like manner with minimal disturbance to existing to remain; see structural specifications for temporary shoring and bracing. All unwanted material to be removed from the site and properly disposed of. Unless noted otherwise, patch all areas to remain to match existing in areas damaged by demolition.

DIVISION 3 - CONCRETE - SEE STRUCTURAL DRAWINGS

DIVISION 4 - MASONRY - SEE STRUCTURAL DRAWINGS

DIVISION 5 - METALS - SEE STRUCTURAL DRAWINGS

DIVISION 6 - WOOD AND PLASTICS

06100 - Rough Carpentry all framing (and truss) lumber shall be dry southern pine, 19% MC, No. 2 or better, (Fb = 975 PSI Minimum). Member sizes noted on drawings are nominal.

Provide 1"x4" cross bridging not over 8 feet o.c. for all wood joist and 2 x solid blocking between joist at all supports. Provide 1x4 furring at 16"o.c. for all trusses that will have a finished ceiling below unless clearly written not to have furring in drawings.

06130 Pressure Treated: All wood indicated shall be pressured-treated with chemicals to protect from decay and insects. Dry after treatment. All metal connectors to be by Simpson Strong-Tie Company or equal approved in writing by the engineer and to be stainless steel finish, unless otherwise noted. All connectors to be installed with all Manufacture specified fasteners before loading. All nails used in pressure treated shall be stainless steel. Alternate connector/fastener materials may be approved on submittal of manufacturers data indicating compatibility with specific pressure treatment chemicals used in this project.

Note: It is intended to limit the use of pressure treated wood to avoid need for specialized or stainless steel anchor devises and fasteners. However, pressure treated is to be used in all moist and or exposed locations such as sills on concrete, near grade installations, exposed decks and rails, exterior open stairs, etc. and as required by code. Coordinate any questionable areas with architect.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07311 - Roofing Underlayment: At all sloped roofing installations, provide a high temperature, self-adhesive, membrane underlayment such as Grace 'Ultra' as manufactured by Grace Construction Products, or equal. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Carlisle Coating & Waterproofing Inc.

b. GCP Applied Technologies Inc.

c. Henry Company

The underlayment is intended to function as secondary roof membrane over the decking. As such the membrane shall be continuous over all portions of the roof, with seams laped a minimum of 3" and all penetrations for plumbing vents or other, sealed to the membrane. The membrane shall be self-sealing for small penetrations such as roofing assembly fasteners to the deck (nails or screws).

The underlayment membrane shall be provided for all sloped roofing assemblies including; V crimp, standing seam, shingles and ceramic tile, unless specifically noted, not to be installed. The contractor shall verify compatibility of roofing materials and anchorage devises with the membrane and coordinate with roofing manufacturers requirements. Note that standing seam aluminum roofing assemblies require an additional layer of 30# felt between the membrane and roof material.

07315 - Roofing Shop Drawings: All roofing assemblies require shop drawing submittals. The submittal shall include all components of the assembly including base sheets (if any), insulation if integral to the assembly, cover board, membranes and attachment, including edge conditions. The submittal shall include N.O.A. test data for the entire assembly, as a unit, or for each component used, including anchorage/ attachment to its supporting substrate on down to the structural deck.

Documentation that the project specific roofing assembly meets design wind loading is required.

This can be accomplished by submittal of N.O.A. test data or by signed and sealed certification by a Florida Registered Engineer. Provide manufacturer's requirements and installation instructions for review.

REV 2

075416 - Single Ply Kee Roofing Systems:

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Adhered Roofing Systems.

1.2 RELATED SECTIONS

A. SECTION 07 56 00 LIQUID APPLIED POLYMETHYL METHACRYLATE (PMMA) FLASHINGS

1.3 REFERENCES

A. ASTM International (ASTM):
1. ASTM D6754 - Standard Specification for Ketone Ethylene Ester Based Sheet Roofing.
2. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
3. ASTM C473 - Standard Test Methods for Physical Testing of Gypsum Panel Products.
4. ASTM D6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

B. American Society of Civil Engineers (ASCE):
1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. FM Approvals (FM):
1. FM Standard 4470 - Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction.
2. Loss Prevention Data Sheets 1-28, 1-29.

D. FBC - Florida Building Code.

E. UL - Fire Resistance Directory.
1. UL-790 - Standard Test Method for Fire Tests of Roof Coverings.

F. Submit under provisions of Project Administrative Requirements.

G. Product Data:
1. Storage and handling requirements and recommendations by the roofing manufacturer.
2. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations and acceptance by roofing manufacturer.
3. Safety Data Sheets (SDS) relating to all products, chemicals and solvents.

H. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

I. Warranty: Specimen warranty from roofing manufacturer with building name and street address included on the document.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data:
1. Most recent published technical literature and guide specifications issued by Manufacturer.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Dimensioned shop drawings, including roof plan detailing perimeter enhancement, flashing methods, terminations, and acceptance by Manufacturer.
5. Written approval from Manufacturer confirming any accessories submitted, not manufactured or expressly approved in FiberTite literature are acceptable and compatible with the proposed roofing system.
6. Safety Data Sheets (SDS) relating to all products, chemicals and solvents.
7. Certification that the system specified complies with identifiable building code requirements.

C. Verification Samples: Two representative units of each type, size, pattern and color.

1.5 QUALITY ASSURANCE

A. The roofing systems shall be installed only by a roofing contractor authorized by the specified roofing manufacturer.

B. Roofing contractor's key personnel shall have received specialized training by the roofing manufacturer.

C. FiberTite Roofing Systems shall be installed in accordance with the most current guide specifications and details as amended or authorized by the roofing manufacturer for specific project requirements.

D. A quality assurance inspection of the roof system shall be performed by the roofing manufacturer for acceptance and approval. This inspection shall be performed upon completion and certification by the Contractor that the roofing system has reached one hundred (100) percent completion.

1.6 COORDINATION

A. Prior to installation of materials, a pre-roofing conference shall be held with the roofing contractor and Owner or Owner's Representatives to discuss the specified roofing system, coordinate its proper application and the expectations of all parties involved. The authorized roofing contractor and the Owner's representative shall notify all parties prior to the meeting.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to the job site in manufacturer's original, unopened containers, with legible labels and in sufficient quantity to allow for continuity of work.

B. Store and handle in strict compliance with manufacturer's written instructions and recommendations.

C. Materials, having been determined by the Owner's representative to be damaged, shall be immediately removed from the construction site and replaced at no cost to the Owner.

1.8 JOB CONDITIONS

A. Safety:
1. Take necessary precautions regarding worker health and safety when using solvents, adhesives.
2. Worker safety is paramount.
3. Comply with OSHA requirements for roof construction and fall protection.

B. Protection:
1. Provide proper protection on newly completed roofing.
2. Protect walls, rooftop units, windows and other components during installation.

C. Additional Precautions:
1. Daily production schedules shall be limited to what can be made one hundred (100) percent watertight at the end of each day, including flashing and night seals.

1.9 DESIGN CONDITIONS

A. Concrete Deck - Florida Building Code Non-HVHZ Approvals (FBC)
1. KEE Single Ply Membrane with Rigid Insulation and Cover Board
a. FiberTite FBC FL4930-R25, System C-14, C-VB-9.

B. Florida Building Code, Non-High Velocity Hurricane Zone (Non-HVHZ).

C. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

D. LEED: Roof system shall meet the reflectivity and emissivity criteria to qualify for one point under the LEED credit category, SSc7.2, Heat Island Effect - Roof.

1.8 WARRANTY

A. Upon Inspection and Acceptance by the roofing manufacturer will issue the preauthorized warranty, subject to the terms and conditions of the specimen warranty and contract documents.
1. Warranty Type:
a. Full System Unlimited/NDL Material and Labor Warranty
b. Warranty to include manufactured copings and edge metal assemblies.
2. Time Period:
a. Thirty (30) year warranty.
3. Maintenance Requirements: Provide a set of instructions included detailing preventative maintenance requirements on the part of the building Owner and noting a list of harmful substances that may damage the FiberTite membrane.

REV 1

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: FiberTite, Seaman Corporation, Web: https://www.fibertite.com

Alternate Manufacturers:
a. Tremco
b. Garland

B. Substitutions: Roofing manufacturer must comply in all respects to the specified roofing membrane ASTM standards and local building code to be considered for equivalency.

C. Requests for substitutions will be considered in accordance with the provisions of this Section and Product Requirements.

2.2 MEMBRANE

A. Standards Compliance: ASTM D6754, Current Edition, Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing

B. Field Membrane:
4. FiberTite 50mil XT KEE Membrane: Nominal 50mil ketone ethylene ester (KEE) membrane reinforced with polyester reinforcement.

C. Flashing Membrane:
1. FiberTite 50mil KEE Membrane: Nominal 50mil ketone ethylene ester (KEE) membrane reinforced with polyester reinforcement.

2.3 ACCESSORY MATERIALS

A. Field Membrane Adhesive:
2. 190e Bonding Adhesive: VOC compliant solvent borne, contact (two-sided) bonding adhesive, for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

B. Flashing Adhesive:
3. 190e Bonding Adhesive: VOC compliant solvent borne, contact (two-sided) bonding adhesive, for bonding non-fleece back FiberTite membranes to properly prepared and preauthorized horizontal and vertical substrates.

C. Fasteners:
4. Securing membranes to structural concrete decks.
a. FiberTite Magnum Series: No. 14, buttress threaded, No. 3 Phillips head fastener constructed of case-hardened carbon steel with a reduced diameter drill point and corrosion resistant coating.

D. FTR Stress Plates: Used to anchor membranes at penetrations.
5. FTR Magnum 2S: 2.375-inch Barbed Round Stress Plate; 20-gauge galvanized steel.

E. Additional Accessory Components:
1. Flashing Terminations Sealant: FTR-101. Single-component gun-grade polyether.
2. Fabricated Metal Flashing: FiberClad Metal 48 x 120-inch sheets, .040 Aluminum.
3. FTR Non-Reinforced Membrane: Field fabrication membrane, 60 mil non-reinforced vinyl membrane.
4. Walkway and Protection Pads: FTR Tuff Trac walkway and protection material with slip-resistant design.
5. FTR-Termination Bar: Membrane flashings restraint and termination seals. 0.125 x 1 x 120 inch 6060-T5 extruded aluminum bar with pre-punched slots, 8 inches on center.
6. FiberTite Seam Cleaner: FiberTite Seam Cleaner is to be used with clean white cotton cloths or rags to clean contamination from the seam areas of the membrane prior to welding.
7. FTR Cover Strips: 50mil KEE 6" x 100' stripping for perimeter enhancement of fasteners and plates in Zones 2 and 3.
8. FTR T Joint Covers: Pre-cut 4 x 4 inches, 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.
9. Forti-lock PMMA Flashing System by FiberTite, Seaman Corporation.
10. Alsan RS LO Primer: Manufactured by Soprema.
11. U-Anchor U2400: Tie Down Anchors and Straps for mechanical equipment by FiberTite, Seaman Corporation.
12. FiberTite Coping Cap - Metal Era.040 Aluminum, Standard Color, Kynar 500 Coating, 16 gauge stainless steel brackets.

2.4 VAPOR RETARDERS

A. Vapor Retarder - Concrete Decks:
1. Modified SBS Base Sheet:
a. FTR SBS Poly 3.7 by Seaman Corporation.
1) ASTM D6164, Type 1, Grade S, FiberTite SBS Membrane.
2. Primer: FiberTite Blackhawk ASTM D41 asphalt primer.
3. Roof Cement: FiberTite Blackhawk asphalt roof cement.

2.5 RELATED MATERIALS

A. Wood Nailers: No. 2 or better construction grade lumber.
1. Installation of other types of treated lumber should be verified with a design professional and manufacturer representative.

2.6 INSULATION - CONCRETE DECK

A. Products must be pre-approved in writing by Manufacturer and comply with minimal characteristics and classification listed for the products below:
1. Polyisocyanurate Rigid Insulation: ASTM C1289, Type II, Class 2, Grade 2
a. FTR-Value H or FTR-Value A Polyisocyanurate Rigid Insulation.
1) Minimum thickness three and one-half (3 1/2) inches
2) Maximum Forty-eight (48) by Forty-eight (48) inches in dimension
3) Finished tapered slope and crickets at roof line of one-quarter (1/4) inch per foot
4) Compressive Strength: 20psi
5) Coated Glass Facer
2. Gypsum Cover Board: ASTM C473
1) Securock Gypsum Fiber
2) Minimum thickness five-eights (5/8) inch
3) Maximum Forty-eight (48) by Forty-eight (48) inches in dimension

B. Adhesives for Insulation Attachment:
1. Approved Insulation Adhesives:
a. Polyurethane Adhesive: Either a dual or single component polyurethane, dispensed from a portable pressurized container or traditional foam equipment.
1) Approved Products:
a) FTR-601-ECO

PART 3 EXECUTION

3.1 GENERAL

A. Authorized Roofing Contractor: Ensure strict compliance with manufacturer guide specifications for installation of roofing membrane systems.
1. Provide suitable substrate for proper installation of roofing system, roof insulation and specified components.
2. Coordinate installation ensuring system remains watertight at end of each working day.

B. Application of roofing materials constitutes an agreement that roofing contractor inspected and found the substrate suitable for installation of roofing system.

3.2 SUBSTRATE PREPARATION

A. Roofing Contractor: Verify the deck condition or existing roof construction is suitable for the specified installation.

B. Examine surfaces for inadequate anchorage, low areas that will not drain properly, foreign material, wet insulation, unevenness, or any other defect which would prevent the proper execution and quality application roofing system as specified.

C. Prepared substrate shall be smooth, dry, and free of debris or any other irregularities which would interfere with proper installation.

D. Adhesives will not bond to wet, damp or inadequately cured materials.

E. Do not proceed with any part of the application until all defects and preparation work have been corrected and complete.

F. Removal of Existing Roof Systems:
1. Remove all existing roofing materials including all lightweight insulating concrete to the structural concrete deck, including all flashings, metal and deteriorated wood blocking and legally dispose off-site.
2. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made one hundred (100) percent watertight at the end of the day or first sign of inclement weather.

G. Structural Concrete:
1. Deteriorated decking shall be repaired or replaced with appropriate materials according to standard industry regulations and practices.
2. Repair any depressions or areas where reinforcing has become exposed.
3. The application of adhesives directly to structural concrete or temporary roofing requires priming prior to application.
4. When insulation system is to be installed using an approved adhesive.
a. Cracks and or camber differentials greater than 3/16 inch shall be repaired using an appropriate cementitious grout or fill and feathered to promote a smooth transition.
b. All surface irregularities shall be leveled to ensure complete contact with the decking for insulation bonded in approved adhesives.

3.3 WOOD NAILERS

A. Install pressure treated lumber at same heights as insulation layer or adjacent construction plus or minus one-quarter (1/4) inch. Install continuous treated wood nailers at all perimeters, around roof projections and penetrations as shown in approved details.

B. Wood Nailers Installed Directly on the Substrate: Carefully examine substrates to confirm the entire area provides a suitable fastening surface.

C. Nailers (WxH): 3.5 x 1.5 inches. Installed and anchored in such a manner to resist a force of two hundred fifty (250) lbs per linear foot, of wood blocking in any direction.

D. Nailers along parapets, curbs and expansion joints are required.

3.4 VAPOR RETARDERS

A. General:
1. Approved vapor retarder, when required or specified, shall be applied only to properly prepared and preapproved substrates.
2. Install no more than can be covered or made one hundred (100) percent watertight during the same working day.
3. Vapor retarders shall be installed starting at the low point of the roof deck.
4. Vapor retarder shall be side lapped, a minimum of three (3) inches and properly shingled to shed water to the roof drains.

B. Vapor Barrier - Concrete Deck
1. Prime deck prior to the application according to manufacturer recommendations after the roof is removed.
2. Install FTR Poly 3.7 SBS Base Sheet using FTR SBS Adhesive cold process Adhesive to adhere one ply to the entire surface of the concrete deck and flashings.
3. Shingle in direction of slope of roof to shed water on each area of roof to drains.

3.5 ROOF INSULATION INSTALLATION

A. General:
1. The finished tapered slope at the single ply membrane must be a minimum of one-quarter (1/4) inch per foot in all directions to the primary drainage.
2. Insulation Boards: Maximum four (4) x four (4) feet.
3. Gypsum Coverboards: Maximum four (4) x four (4) feet.
4. Install insulation with minimum joint dimensions and tightly butted where possible.
a. Maximum Joint Widths: three-eights (3/8) inch.
b. Damaged Corners: Cut out and replaced with an insulation piece a minimum of twelve (12) by twelve (12) inches. Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.
5. Install no more than can be covered during the same working day.
6. Taper roof insulation to drain sumps using tapered edge strips.
a. If insulation layer is one and one-half (1.5) inches or less, taper twelve (12) inches from drain bowl.
b. If insulation thickness exceeds one and one-half (1.5) inches, taper eighteen (18) inches from drain bowl.
c. Taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.
7. When a cover board or multiple layers are installed, each layer must be offset from the previous layer a minimum of twelve (12) inches on center.
8. At the end of each working day, provide a watertight cover on all unused insulation as to avoid moisture penetration.

B. Adhered Insulation and Cover Board - Concrete Deck
1. Polyurethane Foam Adhesive:
a. Adhesive shall be applied only to properly prepared and pre-approved substrates, free of any debris, dirt, grease, oil or moisture.
b. The minimum product temperature at time of application shall be seventy (70) degrees F.
c. Adhesives shall not be applied when surface or ambient temperatures are below forty (40) degrees F or above one hundred ten (110) degrees F.
d. Insulation shall be fully bonded to the substrate with a maximum board size of forty-eight (48) x forty-eight (48) inches.
e. Insulation shall be set into a continuous one-half (1/2) inch bead of adhesive at a minimum rate required by the manufacturer.
f. Adhesive rates are to be increased in roof perimeter and corner zones according to specific project requirements and manufacturer's design recommendations.
g. Place the boards onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.
h. A second walking may be required after 10 minutes to ensure maximum contact and bond strength.

3.6 INSTALLATION OF MEMBRANES

A. Quality Control:
1. It is the responsibility of the roofing contractor to initiate and maintain a Quality Control program to govern all aspects of the installation.
2. The project foreman and or supervisor will be responsible for the daily execution of the Quality Control program which will include but is not limited to the supervision, inspection and probing of all heat welded seams incorporated within roofing system.
3. If inconsistencies in quality of the application of the composite, membrane or welds are found, work shall cease until corrective actions are taken to ensure the continuity the installation.

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ARCHITECT , P.A.

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT

1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA
WILLIAM P HORN
AR0013537
REGISTERED ARCHITECT

Digitally signed by William Horn
Date: 2025.07.23 15:22:51-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

PROJECT NUMBER
2315

A5.1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

B. General:

1. Coordinate work ensuring that sequencing of installation promotes a one hundred (100) percent watertight installation at the end of each day.
2. Roofing systems to be designed in accordance with ASCE Standard 7, current edition.
3. Restrictions regarding outside ambient air temperature are relative only to the exposure limits of the workers or adhesives when necessary.
4. Curing or drying time of the adhesive will be affected by ambient temperatures and must be taken into consideration.
5. Humidity can affect the drying time of solvent borne adhesives or cause condensation to form on the newly applied adhesive.
6. No moisture may be present on the adhesives prior to mating or application of membranes.
7. Adhered membrane systems are to be broomed in place first and then completed by pressing the membrane into the adhesive with a weighted, foam-covered lawn roller or fifty (50) lb linoleum roller. Lawn rollers should be filled with between six (6) and eight (8) gallons of water.
8. Roofing systems shall only be installed over properly prepared and sound substrates, free from excessive surface roughness, dirt, debris and moisture.

C. Roofing Membrane Fully Adhered to Insulation

1. Single Ply KEE Membrane Adhered with Bonding Adhesive:
   a. Position the roofing membrane and fold the sheet to allow a workable exposure of the underside of the sheet.
   b. Apply a one hundred (100) percent continuous coat of bonding adhesive to the exposed bottom side of the membrane and a mirrored area of the substrate.
   c. The amount of membrane and substrate that can be coated with adhesive will be determined by application method, ambient temperature, humidity and available manpower.
   d. Adhesive may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.
   e. Roller applied adhesive shall utilize a solvent resistant three-eights (3/8) inch nap roller, spreading the adhesive to ensure a smooth, even one hundred (100) percent coverage of the substrate and membrane.
   f. Spray applied adhesive must be spread out by roller to ensure a smooth, even one hundred (100) percent coverage of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.
   g. Adhesive coverage should average one hundred (100) square feet per gallon of applied adhesive with a 50 sq ft per gallon, net coverage, plus or minus 10 percent, for the membrane and substrate combined.
   h. Allow the adhesive to dry or cure to a point of being tacky, but not stringy to the touch on both surfaces. Do not allow adhesive to completely dry out on either surface.
   i. When sufficiently cured, carefully maneuver the glued portion of the membrane onto the glued substrate surface, avoiding any wrinkles or air pockets.
   j. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
   k. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
   l. No adhesive shall be applied to the lap seam areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch or strip.
   m. Do not use bad or marginal adhesives. Contact the Manufacturer if the quality of the adhesive is suspect.

D. Welding:

1. General:
   a. Field seams exceeding ten (10) feet in length shall be welded with an approved automatic welder.
   b. Field seams must be clean and dry prior to initiating any field welding.
   c. Remove foreign materials from the seams including dirt and oils with Acetone or authorized alternative.
   d. Use clean white cotton cloths and allow approximately five (5) minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
   e. Welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. Contaminated areas within a seam will inhibit proper welding and will require a membrane patch or strip.
2. Hot Air Hand Welding:
   a. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
   b. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
   c. The nozzle of the hand-held hot air welder shall be inserted into the lap at a forty-five (45) degree angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a one and one-half (1.5) inch wide nozzle, to create a homogeneous weld, a minimum of one and one-half (1.5) inch in width.
   d. Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum one (1) inch weld.
3. Automatic Hot Air Machine Welding:
   a. Proper welding of the FiberTite Membrane can be achieved with a variety of automatic welding equipment.
   b. Follow all manufacturers' instructions for the safe operation of the automatic welder.
   c. Follow local code requirements for electric supply, grounding and surge protection.
   d. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.
   e. Properly welded seams shall utilize a one and one-half (1.5) inch wide nozzle, to create a homogeneous weld, a minimum of one and one-half (1.5) inch in width.

E. Inspection:

1. The job foreman or supervisor shall initiate daily inspections of all completed work which shall include but not limited to, the probing of all field welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.
2. Ensure all aspects of installation including sheet layout, attachment, welding and flashing details are in strict accordance with the most current manufacturer recommendations.
3. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of final inspection for warranty acceptance.
4. Any deviation from pre-approved specifications or details requires written authorization from the roofing manufacturer prior to application to avoid any warranty disqualification.
5. It is the Contractor, job foreman, supervisor, or quality control personnel's responsibility to perform a final self-inspection on all seams prior to requesting the inspection for warranty issuance by the roofing manufacturer.

F. T-Joint Cover Installation:

1. Installation of T-Joint Covers is mandatory daily on roofing systems nominal 50 mil or greater.
2. Install T-Joint Covers, centered and aligned so edges are parallel to roof system seams.
3. The T-Joint Cover shall be one hundred (100) percent welded.

3.7 FLASHING

A. Clean vents, pipes, conduits, tubes, walls, and stacks to bare metal. Protrusions must be properly secured to roof deck with approved fasteners.
B. Remove and discard lead, pipes and drain flashing. Flash penetrations according to approved details.
C. Remove loose or deteriorated cant strips and flashings.
D. Flash curbs, parapets and interior walls in strict accordance with approved details.
E. All flashings shall be adhered to properly prepared, approved substrates with bonding adhesive or mastic applied in sufficient quantity to ensure total adhesion.
F. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of eight (8) inches.
G. Vertical flashing shall be terminated no less than eight (8) inches above the plane of the deck with approved termination bar and counter-flashings or metal cap flashing.
H. Complete all inside and outside corner flashing details with preformed corners or an approved field fabrication detail.
I. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.
J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. Refer to the related trade for the technical specification.

3.8 METAL FLASHING

A. All perimeter edge details, surface mounted counterflashings are to be a prefabricated counterflashing system supplied by the roofing system manufacturer providing the warranty.
B. Enlarge existing or add new overflow scuppers with sizes and quantities required according to the drainage calculations submitted for the roofing permit.
C. Ensure all details extend a minimum of two (2) inches lower than the bottom of the wood nailers.
D. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners eight (8) inches on center.
E. Forti-Lock Liquid Flashing
   1. For aberrant penetrations and pitch pan avoidance, follow FiberTite Forti-Lock guidelines and details for substrate preparation and installation of Forti-Lock liquid flashing on pre-authorized aberrant penetrations.
   2. Forti-Lock Metal Primer: is required for all metal tie-ins and applications with high mechanical stresses, on detail work with small contact areas, metal components with large linear thermal expansion or edge metal terminations.
F. Pitch Pans:
   1. Every reasonable effort shall be made to eliminate the need for pitch pans including the removal of existing pans.
   2. In the event of no alternative, fabricate metal pans from clad metal, installed in accordance with roofing manufacturer details, ensuring proper attachment, maintaining a minimum of two (2) inch clearance around the penetration.
   3. In the event a minimum of two (2) inch clearance cannot be achieved around the penetration or distance from a wall then a PMMA flashing system detail needs to be installed instead of a pitch pan.
   4. All details with less than a minimum of two (2) inch clearance requires a shop drawing to be approved by the Owner's Representative and approved in writing by the roofing manufacturer that all details comply with the specified warranty.
   5. Pitch Pans shall be filled with non-shrinking grout to within one (1) inch of the top of the pan. Allow the grout to dry and fill remainder of the pan with pourable urethane sealant.
   6. Pitch Pans and the sealant will require periodic maintenance by the building Owner's maintenance personnel.

3.9 EXPANSION JOINTS

A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to FiberTite specifications. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.
B. If the expansion joint is a preformed system, the manufacturer, description and a drawing illustrating the method of installation must be included when the (FTR-PIN) is submitted.

3.10 SEALANTS

A. Apply authorized sealants to all surface mounted counterflashings and per project requirements. Sealants are to shed water while following all manufacturer installation guidelines.
B. Use primer when recommended by the roofing system manufacturer.

3.11 TEMPORARY SEALS

A. At the end of each working day or at the sign of rain, install temporary, one hundred (100) percent watertight seals where the completed new roofing adjoins the uncovered deck or existing roof surface.
B. The authorized roofing Contractor shall create and maintain the temporary seal in such a
C. If water is allowed to enter beneath the newly completed roofing, the affected areas shall be removed and replaced at no additional expense to the building Owner.
D. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose of offsite.

3.12 WALKWAYS

A. Walkways and protection pads shall be installed in identical locations to the layout in the approved shop drawings based on the Bid Document roof plan.
B. Walkway Installation:
   1. Roofing membrane to receive walkway material shall be clean and dry.
   2. Cut and position the walkway material as directed by the specifications or agreement.
   3. Hot air weld the entire perimeter of the walkway to the previously cleaned roofing membrane. Avoid excessive heating of the walkway material to prevent scorching the underlying roofing membrane.

3.13 COMPLETION

A. Remove all debris, excess materials and scrap of any kind from the roof and surrounding premises prior to demobilization.
B. Inspect all field welds, detailing and terminations to ensure a one hundred (100) percent the watertight installation.

3.14 FINAL INSPECTION FOR WARRANTY

A. Upon completion of the project, the authorized roofing contractor shall complete and submit the manufacturer required completion and inspection reports.
B. Upon receipt of the notice of completion, a roofing manufacturer technical representative will schedule an inspection with a representative of the authorized roofing contractor to thoroughly review the installation and verify compliance with specifications.
C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty will be noted on the final inspection.
D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the roofing manufacturer will be issued.

075600 - Liquid Applied Polymethyl Methacrylate (PMMA) Flashings :

PART 1 GENERAL

1.01 SUMMARY

A. The secondary waterproofing flashing system shall consist of a cold liquid applied reinforced waterproofing membrane and finish layers as specified.
B. Work shall include, but is not limited to, the following:
   1. Preparation of existing flashing substrates.
   2. Liquid applied, reinforced flashings.
   3. All related materials and labor required to complete specified waterproofing.

1.02 RELATED SECTIONS

A. Section 07 54 16 - Single Ply KEE Roofing Systems

1.03 DEFINITIONS

A. ASTM D 1079- Standard Terminology Relating to Roofing and Waterproofing.
B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 REFERENCES

A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.
B. AMERICAN STANDARD OF TESTING METHODS (ASTM):
   1. ASTM C 836 - Standard Specification for High Solids Content, Cold Liquid applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
   2. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
C. FLORIDA BUILDING CODE (FBC):
   1. 2023 Florida Building Code (FBC).
D. NATIONAL ROOFING CONTRACTORS' ASSOCIATION (NRCA).
   1. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
   2. UL 1256 - Fire Test of Roof Deck Constructions.

1.05 ACTION SUBMITTALS

A. Product Data Sheets: Submit manufacturer's product data sheets, installation instructions and/or general requirements for each component.
B. Safety Data Sheets: Submit manufacturer's Safety Data Sheets (SDS) for each component.

1.06 INFORMATIONAL SUBMITTALS

A. Submit a letter from the roofing manufacturer indicating the contractor is an authorized applicator.

1.07 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS:
   1. Manufacturer shall have 20 years of manufacturing experience.
   2. Manufacturer shall have trained technical service representatives employed by the manufacturer, independent of sales.
   3. Manufacturer shall provide site visit reports in a timely manner.
B. CONTRACTOR QUALIFICATIONS:
   1. Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
   2. Applicators shall have completed projects of similar scope using same or similar materials specified.
   3. Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roofing from beginning through satisfactory project completion.
   4. Applicators shall be skilled in the application methods for all materials.
   5. Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
   6. Contractor shall maintain a copy of all submittal documents, on-site, available always for reference.
C. FLASHING SUBSTRATE EVALUATION:
   1. Contractor shall evaluate substrate moisture content and adhesion of waterproofing materials to substrate throughout the work and record with daily inspection reports or other form of reporting acceptable to the owner or his designated representative and waterproofing manufacturer.
      a. Moisture content: Evaluate substrate moisture content to determine acceptability for application of the specified liquid applied waterproofing materials. Moisture testing shall be performed by means suitable to the project application, or by testing substrate relative humidity (RH) in accordance with ASTM F 2170 when needed, required, or if substrate moisture content is in question.
      b. Adhesion: Evaluate soundness and surface preparation of concrete and masonry substrates. Prepare representative areas using specified methods complete with applied primer and waterproofing membrane.
      c. Test for minimum acceptable tensile bond strength values as required in accordance with ASTM D 4541. Evaluate all areas where concrete appears to differ in appearance or consistency, if multiple areas are involved in the scope of work, evaluate each area with a minimum of (3) tests for every 5,000 ft^2 or as required by project conditions.
D. SOLVENT CONTAINING ROOF MASTICS, COATINGS & ADHESIVES
   1. Cold liquid applied PMMA flashings should not be applied on, over or in conjunction with newly applied solvent containing roof mastics, coatings, and adhesives.

1.08 DELIVERY, STORAGE AND HANDLING

A. Refer to each product data sheet or other published literature for specific requirements.
B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.
C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.
D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 inches or more above ground level. Carefully cover storage with “breathable” tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.
F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.

1.09 SITE CONDITIONS

A. SAFETY:
   1. The contractor shall be responsible for complying with all project-related safety and environmental requirements.
   2. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid applied or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
   3. The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified hot asphalt-applied materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
   4. The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.
B. ENVIRONMENTAL CONDITIONS:
   1. Monitor substrate and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.
   2. Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.
   3. Contractor shall implement odor control measures where required during the application of waterproofing materials and adjust methods as necessary to accommodate varying project conditions.

1.10 WARRANTY

A. Manufacturer Waterproofing Warranty: The manufacturer of the specified roofing membrane shall provide the owner with the manufacturer's warranty according to the specified terms in Section 07 54 16.
B. The contractor shall guarantee workmanship and shall provide the owner with the contractor's warranty covering workmanship for a period of 2 years from completion date.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Basis of Design: FiberTite, Seaman Corporation, Web: https://www.fibertite.com. Alternate Manufacturers: 1. Tremco 2. Garland.
B. Substitutions: Roofing manufacturer must comply in all respects to the specified roofing membrane ASTM standards and local building code to be considered for equivalency.
C. Requests for substitutions will be considered in accordance with the provisions of this Section and Product Requirements.

2.02 LIQUID APPLIED FLASHING SYSTEM

A. Forti-lock PMMA Flashing System by FiberTite, Seaman Corporation.
   1. Forti-lock Liquid Flashing - Summer Grade, Gray Color
   2. Forti-lock Catalyst Powder
   3. Forti-lock Fleece

2.03 ACCESSORIES

A. PRIMERS:
   1. Soprema Alsan RS LO Primer: Low odor, two-part, epoxy-based primer for concrete, metals, and other approved substrates.
      a. SOPREMA ALSAN RS LO PRIMER PART A:
         i VOC content: 0 g/L
         ii Color: Black
      b. SOPREMA ALSAN RS LO PRIMER PART B:
         i VOC content: 0 g/L
         ii Color: Amber
B. SUBSTRATE PATCHING & REPAIR:
   1. POLYMETHYL METHACRYLATE PASTE (PMMA):
      a. Soprema Alsan RS Paste: Rapid curing, polymethyl methacrylate (PMMA) paste resin used to fill small cracks and voids on non-traffic bearing substrates prior to the application of PMMA/PMA membranes.
         i VOC content: 4.4 g/L
         ii Color: Pebble Grey

PART 3 EXECUTION

3.01 EXAMINATION

A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions are satisfactory to begin and remain satisfactory throughout the project.
B. The contractor shall examine all waterproofing substrates including, but not limited to decks, walls, curbs, equipment, fixtures, and wood blocking.
C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing and waterproofing materials.

3.02 FLASHING SUBSTRATE PREPARATION

A. Before commencing work each day, the contractor shall prepare all substrates to ensure conditions are satisfactory to proceed with the installation of specified materials.
B. Preparation of substrates includes, but is not limited to, the following:
   1. General:
      a. All substrates must be clean, dry, and free from gross irregularities, loose, unsound, or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of primer and/or resin materials to the substrate. Most surfaces will require mechanical abrasion in the form of scarifying, shot blasting or grinding to achieve a suitable substrate.
      b. Inspect all substrates and correct defects before application of waterproofing materials. Fill all surface voids 1/16 in (1.5 mm) or greater wide and/or deep with appropriate fill material.
   2. Concrete Substrates:
      a. Concrete shall comply with requirements of ACI 301 and ACI 308.
      b. Concrete compressive strength: 3,500 psi for all primers or 2,500 psi minimum when use of a moisture mitigation primer is required.
      c. Adhesion: Adhesion of specified primer and structural substrate shall be 116 psi for non-traffic bearing areas per ASTM D4541.
      d. Areas of spalls, voids, bug holes and other deterioration on vertical or horizontal surfaces shall be repaired as required or recommended.
   3. Masonry Substrates:
      a. Walls shall be structurally sound concrete block or waterproof concrete block construction.
      b. Liquid applied membrane must not be applied over soft or scaling brick or block, faulty mortar joints, or walls with broken, damaged, or leaking coping. Areas of spalls, voids, bug holes and other deterioration on vertical surfaces shall be repaired as required or recommended.
      c. Walls of ordinary hollow tile or other materials which in themselves are not waterproofed, should not be accepted as suitable to receive liquid applied membrane unless properly waterproofed to prevent moisture infiltration from above or behind the new liquid applied membrane.
      d. Relative humidity: Maximum 75 percent per ASTM F2170 unless otherwise approved.
   4. Metal Substrates:
      a. Clean and prepare metal to near-white metal in accordance with SSPC - SP3 (power tool clean) to a point maximum 1/8 in (3 mm) beyond the termination of liquid applied membrane materials and wipe with solvent cleaner to remove oils, debris, or contaminants.
      b. Stainless Steel Series 300 and 400: Abrade to provide rough, open surface and wipe with solvent cleaner to remove oils, debris, or contaminants.
      c. Galvanized & Zinc-Rich Metals: Galvanized and/or zinc rich metals are coated with either a layer of oil to prevent white rust or is passivated which must be completely removed prior to applying primer or liquid applied waterproofing. This can be confirmed by applying a coat of copper sulfate solution to the prepared and cleaned galvanized/zinc metal. A properly prepared surface will turn black indicating the passivator has been removed. If the surface does not turn black, additional abrasive cleaning will be required.
      d. Adhesion: Examine metal substrates by conducting adhesion testing. Prime with specified metal primer where required to achieve adequate adhesion.
   5. Rigid Plastics (PVC & ABS):
      a. Rigid plastics should be lightly abraded and wiped with solvent cleaner. Extend preparation maximum 1/8 in (3 mm) beyond the specified termination of the liquid applied membrane flashing materials.
   6. Smooth SBS Modified Bitumen and Asphalt BUR Membrane:
      a. The top surface of existing smooth SBS modified bitumen or Asphalt BUR membrane shall be clean and dry. Remove all dust, dirt, or debris from the surface of the membrane by broom, blower, or power vacuuming.
   7. Tie-In to Other Compatible Flashing Surfaces:
      a. Remove all contaminants and prepare substrate as needed to receive liquid applied waterproofing.
      b. Lightly scrub surface with an abrasive pad and wipe with acceptable cleaner.
      c. Adhesion: Examine substrates by conducting adhesion testing. Prime with specified primer where required to achieve adequate adhesion. If acceptable adhesion is not obtained, attempt higher degree of surface abrasion and repeat.
C. Where conditions are found to be unsatisfactory, work shall not begin until conditions are adjusted appropriately. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 PRIMER APPLICATION (GENERAL)

A. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
B. Examine all substrates and conduct adhesion peel tests as necessary to ensure satisfactory adhesion is achieved.

3.04 EPOXY PRIMER APPLICATION FOR METAL SURFACES

A. Low Odor Primer Applications:
   1. Mix A and B parts using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of primer that can be used within the application time.
   2. Apply primer to compatible, clean, and prepared substrate preferably with falling temperature to reduce potential for pinholes from “off-gassing” and as required to enhance adhesion of new specified waterproofing materials.
   3. Apply primer using notched squeegee and roller or brush at the rate published on the product data sheet. Do not allow primer to pond or collect in low areas.
   4. When primer will be left exposed beyond recommended recoat times, broadcast to excess with #1 (0.7 - 1.2mm) kiln-dried quartz into the final coat of epoxy primer while still wet at the rate of 30 lb/100 ft^2 (1.5 kg/m^2) as a mechanical bonding layer. After cure, remove loose aggregate and keep dry until subsequent system components are applied.
   5. Project conditions vary throughout the day. Monitor changing conditions, and the curing time of primers.
   6. Allow primer to fully cure and remove excess aggregate before membrane application.

3.05 SUBSTRATE PATCHING, LEVELING & REPAIR

A. GENERAL:
   1. After priming and before commencing with application of liquid applied waterproofing, the contractor shall patch, level, or repair all substrates as required to eliminate bug holes, voids, cavities, low spots, repair cracks or any other condition that may be detrimental to proper application of the liquid applied waterproofing.
B. PATCHING, LEVELING & REPAIRS:
   1. Contractor shall use proprietary paste or resin-mortar for all patching, leveling or repairs wherever possible. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
   2. Non-traffic bearing horizontal or vertical substrates: Use paste or resin-mortar for all substrate leveling, patching and repairs.
   3. Application:
      a. Install paste or resin-mortar over a fully cured primer.
      b. The substrate shall be dry and free of any dust or loose particles.
      c. Mix paste resin and/or resin-mortar using a slow speed agitator prior to pouring into a larger container.
      d. When required, combine the paste or resin-mortar with #1 (0.7 - 1.2mm) kiln-dried quartz aggregate as recommended for deep voids or large areas.
      e. Mix paste and/or resin-mortar and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of product that can be used within the application time.
      f. Apply the catalyzed paste and/or resin-mortar onto the substrate using a smoothing trowel, working the material into the surface for complete coverage and full adhesion.
      g. Paste and/or resin-mortar should be placed in lifts no greater than the maximum thicknesses recommended.
      h. If additional lifts will be required, broadcast top surface of the placed paste or resin-mortar with clean dry #1 (0.7 - 1.2 mm) kiln-dried quartz aggregate at approximately 25% coverage while the paste and/or resin-mortar is wet. Place next lift once the paste and/or resin-mortar has cured.

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT

1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA
WILLIAM P HORN
AR0013537
REGISTERED ARCHITECT

Digitally signed by William Horn
Date: 2025.07.23 15:22:57-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

PROJECT NUMBER
2315

A5.2

REV 1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

C. NON-MOVING (STATIC) CRACKS - 1 mm or less:
1. Determine that crack is non-moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin mortar or paste as required.

D. MOVING (DYNAMIC) CRACKS - 1 mm or less:
1. Determine that crack is moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin-mortar or paste as required. After the resin-mortar or paste has cured, apply minimum 4 in (100 mm) wide strip of reinforced cold liquid applied membrane centered over crack.

E. MOVING (DYNAMIC) CRACKS - 3 mm or less:
1. Determine that crack is moving. Remove any existing filler and clean out crack by brushing and oil-free compressed air. Fill crack with resin-mortar or paste as required. After the resin-mortar or paste has cured, apply bond breaker tape 5 times in width greater than the maximum anticipated expansion. Then cover with a strip of reinforced cold liquid applied membrane centered over crack sized to provided 2 in (50 mm) minimum cover beyond all side of the bond breaker tape but no less than 6 in (150 mm) minimum width.

F. MOVING (DYNAMIC) CRACKS - Greater than 3 mm:
1. Moving cracks greater than 3 mm must be treated as an expansion joint.

3.06 INSTALLATION & STAGING

A. Follow accepted procedure for applying cold liquid applied membrane flashings to substrate. In all cases the substrate is prepared, primed, and flashings are installed to the in-situ waterproofing membrane. When applying broadcast aggregate, the aggregate should not be left subject to the elements and therefore must be top coated with finish the same day of application whenever possible.

B. If work is interrupted for more than 12 hours, use manufacturer's proprietary cleaner to clean and reactivate applied primer, resin mortar, flashing membrane or field membrane transition areas. Cleaner should be allowed a minimum of 20 minutes evaporation time after application and covered within 60 minutes of application or as recommended by the manufacturer.

3.07 FLASHING MEMBRANE APPLICATION

A. General:
1. Refer to manufacturer's detail drawings, product data sheets and published general requirements for application rates and specific installation instructions.
2. Provide a minimum vertical height of 8 in (200 mm) for all flashing terminations wherever possible. Flashing height shall be at least as high as the potential water level that could be reached because of a deluging rain and/or poor slope.
3. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.
4. All flashing shall be terminated as required by the manufacturer. Cap flashings or counter flashings may be constructed of metal, stone, tile, or other materials properly installed in accordance with industry-accepted practice.
5. Install all flashing membranes before installing field membranes.
6. The primed substrate shall be dry and free of any dust, loose particles, or contaminants.
7. Precut reinforcing fleece to conform to terminations, transitions and penetrations being flashed. Ensure a minimum 2 in (50 mm) overlap of fleece at side laps and extend flashing 4 in (100 mm) minimum horizontally onto deck unless otherwise specified. Ensure the completed liquid applied flashing membrane is fully reinforced.
8. Wherever possible factory pre-cut fleece pipe penetration and universal corners shall be used.
9. Mix waterproofing resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of waterproofing resin that can be used within the application time.
10. Apply the base coat of catalyzed waterproofing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
11. Immediately apply the reinforcing fleece into the wet base coat of resin making sure the smooth side is up. Using a brush or roller, work the reinforcing fabric into the wet resin while applying the second coat of catalyzed waterproofing resin to completely encapsulate the fleece. Avoid any folds and wrinkles.
12. At membrane tie-ins, clean cured membrane with specified cleaner before application of adjacent membrane.

B. Base and Wall Flashings:
1. Install all flashing membranes before installing rigid insulation system and field membranes.
2. The primed substrate shall be dry and free of any dust, loose particles, or contaminants.
3. Precut reinforcing fleece to conform to terminations, transitions and penetrations being flashed. Ensure a minimum 2 in overlap of fleece at side laps and extend flashing 4 in minimum horizontally onto deck unless otherwise specified. Ensure the completed liquid applied flashing membrane is fully reinforced.
4. Mix waterproofing resin and catalyst approximately 2 minutes using a clean spiral agitator on slow speed or stir stick until evenly mixed. Do not aerate. Mix only the amount of waterproofing resin that can be used within the application time.
5. Apply the base coat of catalyzed waterproofing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion.
6. Immediately apply the reinforcing fleece into the wet base coat of resin making sure the smooth side is up. Using a brush or roller, work the reinforcing fabric into the wet resin while applying the second coat of catalyzed waterproofing resin to completely encapsulate the fleece. Avoid any folds and wrinkles.
7. At membrane tie-ins, clean cured membrane with specified cleaner before application of adjacent membrane.

C. Penetrations & Flashings:
1. Pipes, Conduits, Posts, Supports and Unusual Shaped Penetrations:
   a. Pipes, conduits, and other items to be flashed must be separated with ½ in (13 mm) minimum clearance or as recommended by manufacturer to adequate waterproof each individual penetration.
   b. All penetrations must be flashed individually. Two or more items ganged together in a flashing will NOT be permitted.
   c. Flash penetrations using cold liquid applied reinforced membrane or proprietary fibrated flashing resin as recommended. Flashing shall be applied using factory pre–cut fleece wherever possible consisting of a reinforced deck skirt/target flashing applied over a reinforced vertical wrap finger flashing.
2. Drains:
   a. Flash drains using cold liquid applied membrane. Flashing shall consist of a membrane target extending minimum 12 in (300 mm) horizontally onto the substrate applied over a finger flashing extended into the prepared drain bowl a minimum of 3 in (75 mm).
   b. At no time should the cold liquid applied membrane be installed to restrict or reduce the drain inlet in size.
   c. For new drains, contractor shall include cost of all plumbing work, piping, and connection to existing storm sewer system.
3. Hot Pipes:
   a. Protect cold liquid applied membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 150F (65.5C). In all such cases flash to an intermediate "cool" sleeve.
   b. Fabricate "cool" sleeve in the form of a metal cone using non-ferrous metal in accordance with manufacturer details.
   c. Flash sleeve using cold liquid applied reinforced membrane like a standard pipe flashing. Flashing shall consist of a reinforced target applied over a reinforced vertical wrap finger flashing.
4. Flexible Penetrations:
   a. Provide a weather-tight gooseneck set in manufacturers resin paste and secured to the deck.
   b. Flash gooseneck penetrations using cold liquid applied reinforced membrane as recommended. Flashing shall consist of a reinforced target and reinforced vertical wrap finger flashing.
5. Walls, Curbs and Bases:
   a. Flash all walls, curbs and bases using cold liquid applied reinforced membrane. Wherever possible extend flashing up and over tops of walls, curbs, and bases so the membrane terminates on the opposite face of the vertical element.
6. Expansion Joints:
   a. Flash all expansion joints with minimum two layers of manufacturers cold liquid applied reinforced membrane applied over an expansion joint compressible filler, expansion tube, backer rod and/or bond breaker tape as recommended by manufacturer.
7. Non-standard Flashing Details:
   a. When required, consult manufacturer for recommendations on flashing non-standard conditions, penetrations, or protrusions.

D. Thru-Wall Flashings, Mud-set Masonry, & Poured-In-Place Concrete Bonding/Protection Layer:
1. For all areas to receive new direct applied cement, concrete, or mortar setting bed, apply a supplementary wearing coat of the membrane manufacturer's cold liquid applied resin.
   a. Using a lambswool roller, apply an even layer of cold liquid applied resin at the minimum consumption of 30 lbs/100 ft^2 (1.5 kg/m^2) or as recommended by the membrane manufacturer and broadcast #1 (0.7 - 1.2mm) kiln-dried quartz aggregate into the wet resin to excess for full coverage.
   b. Allow resin bonding layer to cure as recommended by the membrane manufacturer prior to continuing application or applying loads. Remove excess un-adhered aggregate from surface by broom, vacuum, or oil-free blower prior to apply overburden.
   c. When required, consult manufacturer for recommendations on flashing non-standard conditions, penetrations, or protrusions.

3.08 CLEAN UP

A. Uncured resin is considered a hazardous material. Unused resin must be catalyzed and cured prior to disposal.

B. Clean up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

3.09 PROTECTION

A. Upon completion of new work (including all associated work), institute appropriate procedures for surveillance and protection of finished work during remainder of construction period. Protect all areas where waterproofing membrane has been installed.

07610- Sheet Metal Roofing

PART 1 - GENERAL

REV 2

1.1 SUMMARY

A. This Section includes the following:
1. Standing-Seam metal roofing: aluminum sheet (Alt. #1)

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide complete sheet metal roofing system, including, but not limited to, metal roof panels, cleats, clips, anchors and fasteners, sheet metal flashing and drainage components related to sheet metal roofing, fascia panels, trim, underlayment, and accessories as indicated and as required for a weathertight installation.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Energy Performance: Provide roof panels that are listed on the EPA/DOE's ENERGY STAR "Roof Product List" for steep-slope roof products.

D. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested according to ASTM E1680 or ASTM E283 at the following test-pressure difference:
1. Test Pressure: 6.24 lbf/sq. ft.

E. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646 or ASTM E331 at the following test-pressure difference:
1. Test Pressure: 6.24 lbf/sq. ft.

F. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E2140.

G. High Wind Zone Design Approval: Miami-Dade NOA for velocity hurricane zone.

H. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

I. Thermal Movements: Provide sheet metal roofing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal roofing thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.3 SUBMITTALS

A. Product Data: For each product indicated. Include details of construction relative to materials, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show fabrication and installation layouts of sheet metal roofing, including plans, elevations, and keyed references to termination points. Distinguish between shop- and field-assembled work. Include the following:
1. Details for forming sheet metal roofing, including seams and dimensions.
2. Details for joining and securing sheet metal roofing, including layout of fasteners, clips, and other attachments. Include pattern of seams.
3. Details of termination points and assemblies, including fixed points.
4. Details of expansion joints, including showing direction of expansion and contraction.
5. Details of roof penetrations.
6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings.
7. Details of special conditions.
8. Details of connections to adjoining work.
9. Details of the following accessory items, at a scale of not less than 1-1/2 inches per 12 inches (1:10):
   a. Flashing and trim.

C. Coordination Drawings: Roof plans drawn to scale and coordinating penetrations and roof-mounted items. Show the following:
1. Sheet metal roofing and attachments.
2. Purlins and rafters.

D. Samples for Initial Selection: For each type of sheet metal roofing indicated with factory-applied color finishes.
1. Include similar Samples of trim and accessories involving color selection.

E. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Roofing: 12 inches (300 mm) long by actual panel width, including finished seam. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim and Closures: 12 inches (300 mm) long. Include fasteners and other exposed accessories.
3. Accessories: 12-inch- (300-mm-) long Samples for each type of accessory.

F. Qualification Data: For Installer.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for sheet metal roofing portable roll-forming equipment. Include reports for structural performance.

H. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of sheet metal roofing.

B. Custom-Fabricated Sheet Metal Roofing Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate sheet metal roofing similar to that required for this Project and whose products have a record of successful in-service performance.

C. Roll-Formed Sheet Metal Roofing Fabricator Qualifications: An authorized representative of roll-formed sheet metal roofing manufacturer for fabrication and installation of units required for this Project.

D. Sheet Metal Roofing Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

E. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and qualities of materials and execution.
1. Build mockup of typical roof eave, including fascia, and soffit as shown on Drawings; approximately 48 inches (1200 mm) square by full thickness, including attachments, underlayment, and accessories.
2. Approval of mockups is for other material and construction qualities specifically approved by Architect in writing.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

F. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site. Comply with requirements for preinstallation conferences in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roof deck construction and sheet metal roofing including, but not limited to, the following:
1. Meet with Owner, Architect, Owner's insurer if applicable, sheet metal roofing Installer, manufacturer's representative for sheet metal roofing portable roll-forming equipment, metal deck Installer, and installers whose work interfaces with or affects sheet metal roofing including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to sheet metal roofing installation, including portable roll-forming equipment manufacturer's written instructions.
4. Examine purlin and rafter conditions for compliance with requirements, including flatness and attachment to structural members.
5. Review structural loading limitations of purlins and rafters during and after roofing.
6. Review flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal roofing.
7. Review governing regulations and requirements for insurance, certificates, and testing and inspecting if applicable.
8. Review temporary protection requirements for sheet metal roofing during and after installation.
9. Review roof observation and repair procedures after sheet metal roofing installation.

G. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to sheet metal roofing including, but not limited to, the following:
1. Meet with Owner, Architect, Owner's insurer if applicable, sheet metal roofing Installer, manufacturer's representative for sheet metal roofing portable roll-forming equipment, metal deck Installer, and installers whose work interfaces with or affects sheet metal roofing including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to sheet metal roofing installation, including portable roll-forming equipment manufacturer's written instructions.
4. Examine metal deck conditions for compliance with requirements, including flatness and attachment to structural members.
5. Review structural loading limitations of metal deck during and after roofing.
6. Review flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal roofing.
7. Review governing regulations and requirements for insurance, certificates, and testing and inspecting if applicable.
8. Review temporary protection requirements for sheet metal roofing during and after installation.
9. Review roof observation and repair procedures after sheet metal roofing installation.
10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver metal coils, sheet metal roofing pans, components, and other sheet metal roofing materials so as not to be damaged or deformed. Package sheet metal roofing materials for protection during transportation and handling.

B. Unload, store, and erect sheet metal roofing materials in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal coils and sheet metal roofing materials to ensure dryness. Do not store metal coils or sheet metal roofing materials in contact with other materials that might cause staining, denting, or other surface damage.

D. Protect strippable protective covering on sheet metal roofing from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal roofing installation.

1.6 WARRANTY

A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal roofing that shows evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
   a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
   b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
   c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 30 years from date of Substantial Completion.

B. Special Weathertightness Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
1. Warranty Period: 30 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, including applicable Florida Product Approval, provide Englert, Inc. Series 2000, FL 11751.5 R8 for Aluminum or a comparable product by one of the following:
1. ATAS International, Inc.
2. Englert, Inc.
3. Fabral
4. Firestone Building Products
5. MBCI
6. McElroy Metal, Inc.
7. Merchant and Evans.
8. Morin - A Kingspan Group Company
9. PAC-CLAD; Petersen Aluminum Corporation; a Carlisle company.
10. Garland Company, Inc.

REV 2

2.2 STANDING SEAM METAL ROOF PANELS

A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips inside laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
1. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1637.

B. Vertical-Rib, Seamed-Joint, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and a flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together with 180 degree bend.

C. Vertical-Rib, Snap-Joint, Standing-Seam Metal Roof Panels (contractor opinion): Formed with vertical ribs at panel edges and a flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and snapping panels together.
1. Aluminum Sheet: Coil-coated sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
   a. Thickness: Not less than 0.032 inch.
   b. Surface: Smooth, flat finish.
   c. Exterior Finish: Two-coat fluoropolymer, KYNAR 500 finish
   d. Color: As selected by Architect from manufacturer's full range.
2. Clips: Two-piece floating to accommodate thermal movement.
   a. Material: 0.0625-inch (1.2 mm)-thick, stainless steel sheet.
3. Join Type: Double folded or snap seam.
4. Panel Coverage: 16 to 18 inches.
5. Panel Height: 1.5 to 3.0 inches.

2.3 UNDERLAYMENT MATERIALS

A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
1. Thermal Stability: Stable after testing at 240 deg F; ASTM D1970.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D1970.

2.4 MISCELANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for a complete roofing system and as recommended by fabricator for sheet metal roofing.

B. Fasteners: 316 stainless steel self-tapping screws and other suitable fasteners designed to withstand design loads.
1. Exposed Fasteners: Heads matching color of sheet metal roofing by means of plastic caps or factory-applied coating.
2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
3. Blind Fasteners: High-strength aluminum or stainless-steel rivets.

C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

D. Elastomeric Joint Sealant: ASTM C 920, of base polymer, type, grade, class, and use classifications required to produce joints in sheet metal roofing that will remain weathertight and as recommended by roll-formed sheet metal roofing manufacturer for installation indicated.

E. Expansion-Joint Sealant: For hooked-type expansion joints, which must be free to move, provide nonsetting, nonhardening, nonmigrating, heavy-bodied polyisobutylene sealant.

2.5 ACCESSORIES

A. Sheet Metal Roofing Accessories: Provide components required for a complete sheet metal roofing assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of sheet metal roofing, unless otherwise indicated.
1. Closures: Provide closures at eaves and ridges, fabricated of same metal as sheet metal roofing.
2. Clips: Minimum 0.0625-inch- (1.6-mm-) thick, stainless-steel panel clips designed to withstand negative-load requirements.

B. Flashing and Trim: Formed from 0.0239-inch thick, zinc-coated (galvanized) steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent sheet metal roofing.

C. Pipe Flashing: Premolded, EPDM pipe collar with flexible aluminum ring bonded to base.

2.6 FABRICATION

A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

D. Fabricate sheet metal roofing to allow for expansion in running work sufficient to prevent leakage, damage, and deterioration of the Work. Form exposed sheet metal work to fit substrates without excessive oil canning, buckling, and tool marks, true to line and levels indicated, and with exposed edges folded back to form hems.
1. Form and fabricate sheets, seams, strips, cleats, valleys, ridges, edge treatments, integral flashings, and other components of metal roofing to profiles, patterns, and drainage arrangements shown and as required for leakproof construction.

E. Sealant Joints: Where movable, nonexpansion-type joints are indicated or required to produce weathertight seams, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.

F. Metal Protection: Where dissimilar metals will contact each other, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturers of dissimilar metals or by fabricator.

G. Sheet Metal Accessories: Custom fabricate flashings and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Obtain field measurements for accurate fit before shop fabrication.
1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
3. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
4. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
6. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
   a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.7 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Aluminum Panels and Accessories:
1. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions for seacoast and severe environments.

PART 3 - EXECUTION

REV 2

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, sheet metal roofing supports, and other conditions affecting performance of work.
1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed.
2. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances.
3. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored, and that provision has been made for flashings, and penetrations through sheet metal roofing.
4. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.

B. Examine roughing-in for components and systems penetrating sheet metal roofing to verify actual locations of penetrations relative to seam locations of sheet metal roofing before sheet metal roofing installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Install flashings and other sheet metal to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim."

B. Install fasciae and copings to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim."

3.3 UNDERLAYMENT INSTALLATION

C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof sheathing under sheet metal roofing. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply at locations indicated below, in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.
1. Entire roof surface area

D. Install flashings to cover underlayment to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim."

E. Apply slip sheet over underlayment before installing sheet metal roofing where recommended by panel manufacturer.

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT
1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

Digitally signed by William Horn
Date: 2025.07.23 15:23:01-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

PROJECT NUMBER
2315

A5.3

REV 1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

3.4 INSTALLATION, GENERAL

A. Install metal panels in accordance with high wind zone approval installation instructions.

B. Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
7. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

C. Fasteners:

1. Steel Roofing: Use 316 stainless-steel fasteners.
2. Aluminum Roofing: Use 316 stainless-steel fasteners.

D. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by fabricator of sheet metal roofing or manufacturers of dissimilar metals.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Fascia: Align bottom of sheet metal roofing and fasten with blind rivets, bolts, or self-tapping screws. Flash and seal sheet metal roofing with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

G. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.
2. Snap Joint: Nest standing seams and fasten together by interlocking and completely engaging factory-applied sealant.
3. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
4. Watertight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.

b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

3.5 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete sheet metal roofing assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

C. Pipe Flashing: Form flashing around pipe penetration and sheet metal roofing. Fasten and seal to sheet metal roofing as recommended by manufacturer.

3.6 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal roofing within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.7 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films, if any, as sheet metal roofing is installed. On completion of sheet metal roofing installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

077100 - Roof Specialities:

Part 1 GENERAL

1.1 SECTION INCLUDES

A. Copings
B. Fascia
C. Gutters
D. Downspouts
E. Counter Flashings

1.2 RELATED REQUIREMENTS

A. Section 07 54 16 - Single Ply KEE Roofing Systems

1.3 REFERENCE STANDARDS

A. Factory Mutual (FM Global) (www.fmglobal.com):
1. FM 1-49

B. Single Ply Roofing Industry (SPRI) (www.spri.org):
1. ANSI/SPRI/FM 4435/ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems. RE-1, RE-2 and RE-3 Test.

C. International Building Code (IBC) (https://codes.iccsafe.org):
1. Chapter 15, Section 1504.6 Edge Securement for low-slope roofs. **(2021 IBC)**
2. Chapter 15, Section 1504.6.1 Gutter Securement for low-slope roofs. **(2021 IBC)**
3. Designed and installed for wind loads in accordance with Chapter

D. American Society of Civil Engineers (ASCE-7) Minimum Design Loads for Buildings & Other Structures
1. Chapter 26, Wind Loads: General Requirements
2. Chapter 30, Wind Loads: Components and Cladding

E. Miami-Dade County, Florida Notice of Acceptance (NOA)

1.4 PREINSTALLATION MEETINGS

A. Convene preinstallation meeting 2 weeks before start of installation of materials.

B. Require attendance of parties directly affecting Work of this Section, including Contractor, Architect, installer, and manufacturer's representative.

C. Review the Following:
1. Materials.
2. Installation.
3. Adjusting.
4. Cleaning.
5. Protection.
6. Coordination with other Work.

1.5 SUBMITTALS

A. Comply with Division 01.

B . Product Data: Submit manufacturer's product data, including installation instructions.

C . Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating dimensions, materials, components, fasteners, finish, and accessories.

D. Samples: Submit manufacturer's sample of materials.
1. Sample Length: Minimum 5-1/2 inches.

E. Color Samples: Submit manufacturer's color samples of materials, consisting of complete color chart representing manufacturer's full range of available colors.
1. Submit metal chips of specific colors as requested by the Architect.

F. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.

G. Warranty Documentation: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are ANSI/SPRI FM4435 ES -1 tested. Manufacturer regularly engaged in the manufacturing of materials of similar type to that specified for a minimum of 10 years. Products shall be manufactured in specified manufacturer's facilities. Products fabricated by installer or other fabricator will not be acceptable unless fabricator can demonstrate to Architect's satisfaction that products have been tested and passed SPRI RE-1, RE-2 and RE-3 Wind Design Standard and meet specified design pressures for perimeter and corner zones.

B. Installer's Qualifications
1. Installer regularly engaged in installation of materials of similar type to that specified for a minimum of 5 years.
2. Use persons trained for installation of materials of similar type to that specified following manufacturer's installation instructions.

C. Testing: Meet specified testing requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging.

B. Storage and Handling Requirements:
1. Store and handle materials in accordance with manufacturer's instructions.
2. Keep materials in manufacturer's original, unopened containers and packaging until installation.
3. Store materials in clean, dry area indoors.
4. Do not store materials directly on floor or ground.
5. Protect materials and finish during storage, handling, and installation to prevent damage.

1.8 WARRANTY

A. Warranty Period, Product:
1. Coping: 20 years provided by the Manufacturer of the roofing membrane as a Full System 20 Year NDL Warranty

B. Warranty Period, Finish:
1. Limited 30-year warranty for prefinished coil-coated steel and aluminum coated with Kynar 500 standard colors covering fade, chalk, and film integrity.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Metal-Era provided by Seaman Corporation, 1600 Airport Road, Waukesha, Wisconsin 53188. Phone 800-558-2162. Fax 800-373-9156. www.metalera.com. info@metalera.com.

B. Substitutions: Roofing manufacturer must comply in all respects to the specified roofing membrane ASTM standards and local building code to be considered for equivalency.

C. Requests for substitutions will be considered in accordance with the provisions of this Section and Product Requirements.

2.2 PRODUCTS

A. Copings: Metal-Era Perma-Tite Coping
1. Version: Tapered for Parapet Walls and Flat for Gables.
2. Cover Material: 0.040 aluminum, Standard Color.
3. Cover Formed Lengths: 12'-0".
4. Concealed Splice Plates: 8 inches wide; with factory-applied, dual, non-curing, isocryl butyl sealant strips at each joint.
5. Anchor Clips: 16-gauge stainless steel.
6. Inside Face: Indicated on the Drawings.
7. Outside Face: Minimum four (4) inches or as indicated on the Drawings.
8. Horizontal Space Provided for Wall Size Variations: 3/8 inch, inside face.
9. All fasteners shall be supplied by specified manufacturer and installed per manufacturer's written instructions.
10. FM approved for wind uplift protection
11. ANSI/SPRI GT-1, 150 psf: 0.040-inch aluminum.

2.3 FINISHES

1. Finish: Kynar 500
2. Color: Selected by Owner's Representative from Standard Color Chart.

2.4 ACCESSORIES

A. Factory-Fabricated Perma-Tite Coping Accessories
1. Miters:
a. Outside Miters: 90 degrees.
b. Inside Miters: 90 degrees.
c. Transition miters.
d. Straight transition miters.
e. T-miters.
f. Z-miters.
g. Step-up miters.
h. Peak/valley miters.
10. Endcaps:
a. Right endcaps.
b. Left endcaps.
11. Endwall Flashings, Coping Version:
a. Right endwall flashings.
b. Left endwall flashings.
12. Pilaster caps.
13. Accessory Type: Quicklock.

Part 3 EXECUTION

3.1 EXAMINATION

A. Examine areas to receive materials.

B. Verify surfaces to support materials are clean, dry, straight, secure, and of proper dimensions.

C. Notify Architect of conditions that would adversely affect installation.

D. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

A. Install materials in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Remove protective vinyl film immediately before installation.

C. Install materials to provide watertight termination at leading edge of roofing material.

D. Install materials to allow for thermal movement.

E. Joint Sealants: Apply joint sealants in accordance with manufacturer's instructions.

3.3 ADJUSTING

A. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

B. Remove and replace with new material, damaged components that cannot be successfully repaired, as determined by Architect.

3.4 CLEANING

A. Clean materials promptly after installation in accordance with manufacturer's instructions.

B. Do not use harsh cleaning materials or methods that could damage finish.

3.5 PROTECTION

A. Protect installed materials to ensure that, except for normal weathering, materials will be without damage or deterioration at time of Substantial Completion.

07920 - Sealants

A. Siliconized Acrylic Caulk - 25 years, paintable, non-staining, mildew resistant. For interior and exterior use, wood and masonry, as a filler for cracks voids and holes in preparation for paint or other finish. - See existing wood preparation.

B. Polyseamseal all purpose adhesive caulk, paintable, non-staining, mildew resistant. For interior and exterior use as a filler and joint seal at tile, tub and counters.

C. Silicone Rubber Sealant - FSTT-S-001543, class A, one part non-sag low modules silicone rubber sealant. For interior and exterior use in working joints where some movement is anticipated, wood, masonry, metal and glass.

Provide backer rod depth control in all joints in excess of 1/4"

D. All interior architectural caulks and sealants to have a VOC limit of 250 g/L.

DIVISION 8 - DOOR AND WINDOWS

Doors and windows shall be impact resistant and meet wind pressures required by code. Unless otherwise noted, place windows and doors flushed to the inside face of the wall and add required trim and sill to outside of wall.

08100 - Doors and Windows shall be manufactured units designed and installed to allow a maximum of 0.5 CFM infiltration per linear foot of operable sash crack and a maximum 0.5 CFM per sq.ft.of exterior door area. Units shall be gasketed, weather-stripped or otherwise sealed.

08101 - All doors in fire rated walls to be fire rated (3/4 hour for a 1-hour rated wall, 1 ½ hour for a 2-hour wall) and have door closures.

08110 - Standard steel doors and frames:

A. Manufacturers, Basis of Design Product: Subject to compliance with requirements, provide Steelcraft H series single and double flush outswing doors (NOA 23-0821.18+ NOA 23-0821.19) by Schlage Lock Company, LLC. or a comparable product but are not limited to one of the following:
1. Ceco Door; ASSA ABLOY
2. Curries Company; ASSA ABLOY
3. Fleming Door Products Ltd.; Assa Abloy Group Company
4. Steelcraft; an Allegion brand.

B. Doors: seamless composite construction standard steel doors for interior and exterior locations (galvanized G90). Doors to be provided in the types and styles indicated, and in accordance with ANSI/SDI-100, GRADE III, extra heavy duty, w/minimum 16 gage galvanized steel faces. Comply with the applicable requirements of ANSI A115 Series specifications for door and frame, preparation for hardware.

C. Frames to be minimum 16 gage at interior locations and 14 gage at exterior locations, galvanized steel with mitered, welded construction, and concealed anchors to suite wall construction.

D. Doors and frames shall be factory primed for field painting.

E. Shop drawing submittal showing fabrication, installation, anchorage and Label Construction Certification of fire-rated assemblies, is required for approval prior to any fabrication or delivery of material.

08330- StormDefender Hurricane Protection Rolling Doors

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Electric operated, automatic closing, overhead rolling doors

B. Products That May Be Supplied, But Are Not Installed Under This Section:
1. Control Station
2. Annunciator

1.2 SYSTEM DESCRIPTION

A. Design Requirements:
1. Wind Loading:
a. Supply doors to withstand at least 200 psf design wind load (hurricane) (300 psf test pressure at 1.5 times the design wind load)
b. Provide with Miami Dade NOA #24-1220.02, 200 psf, 80 FPS Impact Rating

1.3 SUBMITTALS

A. Reference Section 01 33 00-Submittal Procedures; submit the following items:
1. Product Data
2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
3. Manufacturer's installation instructions.
4. Closeout Submittals:
a. Operation and Maintenance Manual.
b. Certificate stating that installed materials comply with this specification.
c. Warranty Statement

1.4 QUALITY ASSURANCE

A. Qualifications:
1. Manufacturer Qualifications: ISO 9001:2015 registered and a minimum of five years' experience in producing fire and smoke control units of the type specified.
2. Installer Qualifications: Manufacturer's approval.

1.5 DELIVERY STORAGE AND HANDLING

A. Reference Section 01 66 00-Product Storage and Handling Requirements.

B. Follow manufacturer's instructions.

1.6 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.

B. Maintenance: Submit maintenance service agreement for installed products for owner's consideration and acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer:

Cornell: 24 Elmwood Avenue, Mountain Top, PA 18707. Telephone: (800) 233-8366.

B. Alternates:
1. Cookson
2. Clopay

2.2 PRODUCT INFO

A. Model: PSD361

2.3 MATERIALS

A. Curtain:
1. Steel with Finish as Described Below: Minimum 12 gauge, ASTM A1008 or ASTM A1011 grade 40 steel
2. Finish:
a. SpectraShield© Coating System:
1) Zirconium pre-treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better
2) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range, over 180 colors; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better

B. Endlocks:
1. Retention groove integrated into the body of the slat used to retain the slats within the guides.
2. 16 gauge aluminum secured with tabs integrated into the body of the slat used to restrain the slats in a horizontal position relative to one another.

C. Bottom Bar:
1. Configuration:
a. 12G formed bottom bar profile with steel strengthening insert
2. Finish:
a. SpectraShield© Coating System:
1) Zirconium pre-treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better

D. Guides:
1. Fabrication
a. Minimum 1/4 inch structural steel Top of inner and outer guide shapes to be flared outwards to form bellmouth for smooth entry of curtain into guides. Top 16 1/2" of coil side guide shapes to be removable for ease of curtain installation and as needed for future curtain service.
2. Finish:
a. SpectraShield© Coating System:
1) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range, over 180 colors; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better

E. Counterbalance Shaft Assembly:
1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot of width
2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door.
3. Provide tension wheel for applying and adjusting spring torque.

F. Brackets: Fabricate from minimum 3/8 inch steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures
1. Finish:
a. SpectraShield© Coating System:
1) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range, over 180 colors; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better

G. Hood:

Minimum 24 gauge galvanized steel with reinforced top and bottom edges, square hood construciton.
1. Finish:
a. SpectraShield© Coating System:
1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat
2) Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect from manufacturer's standard color range, over 180 colors; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better

2.4 OPERATION

A. Motor Operation:
1. Motor - Continuous Use - Model SG (Super Duty Gear Head) Operator:
2. The operator must not extend above or below the door coil when mounted front-of-coil.
3. cULus listed (to comply with UL requirements in The United States and Canada).
4. Totally Enclosed Fan Cooled gear head operators rated 2 hp as recommended by door manufacture for size and type of door, 408 Volts, 3 Phase.
5. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist provided up to 2 hp and control station.
6. Motor shall be high starting torque, industrial type, with overload protection.
7. Primary speed reduction shall be heavy-duty gears running in grease or oil bath with mechanical braking to hold the door in any position.
8. When equipped, the emergency manual chain hoist assembly is automatically disengaged when motor is energized.
9. A disconnect chain shall not be required to engage or release the manual chain hoist.
10. Operator drive and door driven sprockets shall be provided with minimum #50 roller chain.
11. Operator shall be capable of driving the door at a speed of up to 9" per second or as recommended for door size.
12. Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door.
13. The motor shall be removable without affecting the limit switch settings.

The electrical contractor shall mount the control station and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions

B. Control Stations:
1. Surface mounted: "Open/Close/Stop" push buttons; NEMA 1 (standard)

C. Control Operation:
1. Momentary Contact to Close:

Fail-safe, UL325-2010 Compliant Entrapment Protection for Motor Operation.
a. SafetyGard UL325 Light Curtain with Dynamic Sequential Blanking: Provide monitored, non-contact light curtain consisting of a transmitter and a receiver to be mounted to the guide assembly of the door in the provided mounting channel, projecting a thru beam across the width of the door for the height of the light curtain (3ft or 6ft depending on opening size of the door). Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position
b. SmartSync Wireless Edge Kit - continuously monitored, wireless sensing/weather edge seal extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Wireless edge kit will use Zigbee wireless technology. Radio band wireless sensing edges will not be permitted

2.5 ACCESSORIES

A. Operator and Full Bracket Mechanism Cover:
1. Provide minimum 24 gauge galvanized steel sheet metal cover to enclose exposed moving operating components at coil area of unit. Finish to match door hood

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Commencement of work by installer is acceptance of substrate.

3.2 INSTALLATION

A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

3.3 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

3.4 FIELD QUALITY CONTROL

A. Site Test: Test doors for normal operation and automatic closing.

3.5 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.6 DEMONSTRATION

A. Demonstrate proper operation, testing and reset procedures to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures

08530 - Aluminum Storefront and Doors: provide a completed pre-engineered, pre-finished aluminum store front system, including impact resistant insulated, missile level 'E' and low E-glass, aluminum framed systems, including anchorage, capable of withstanding all required loads including wind, impact (large and small missile) and thermal movements. Provide full shop drawings, Signed and Sealed by a Florida Registered Engineer, showing all unit sizes and shape, details of all section profiles and N.O.A. #'s of Systems. Provide manufacturers 10 years warranty.

Manufacturers

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Basis od Design Product: The design for aluminum-framed systems is based on Aldora Series front set and series summit for doors. Subject to compliance with requirements, provide the named product or a comparable product, including but not limited to products by one of the following:
1. EFCO Corporation
2. Kawneer
3. United States Aluminum
4. Oldcastle Building Envelope, Inc.
5. YKK AP America Inc.

Pre-finished organic coating: 3 coat, thermocured system, inhibitive primer, fluoropolymer colorcoat and clear fluoropolymer top coat.

08710 - Hardware: Furnish and install complete hardware for each condition as manufactured by Schlage; Yale or approved equal. ANSI grade 1 or better for heavy commercial use. Finish and style to be selected. All exterior installations to be salt resistant and suitable for use in a coastal salt water environment.

08810 - Glass and Glazing provide impact resistant of type required by code for size and location called for. Glazing shall be gasketed or otherwise sealed. Provide safety glass where required by code, and where shown on drawings. All commercial storefront to be tempered safety glass and be of thickness as shown on drawing and required by code. All glass shall have a low E coating.

REV 2

REV 1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT
1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA
WILLIAM P HORN
AR0013537
REGISTERED ARCHITECT

Digitally signed by William Horn
Date: 2025.07.23 15:23:03-04'00'

DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

PROJECT NUMBER
2315

A5.4

DIVISION 9 - FINISHES

09220- Stucco - Comply with ASTM C 926 for Portland cement base and finish coat mixes using Portland cement - ASTM C 150, masonry cement, lime - ASTM C 206, and sand ASTM C 897.Provide min. of three coat system w/scratch coat, brown coat, and finish coat. Finish coat shall consist of 1 part Portland cement, 1-1/2 to 2 parts lime, 3 parts sand. Additional base layers may be applied to achieve desired thickness over expanded metal galvanized lath. Provide control joints @ max. 12' to 16' vertically and horizontally, corners of wall penetrations (coordinate with architect), and at all substrate exp. joints or change of materials. Provide accessories of high impact poly vinyl chloride, to include stops casing beads, one and two piece control joints (two piece where movement is required) and corner bead. Expanded metal galvanized lath over a membrane air, moisture barrier shall be provided over all non masonry substrates. Stucco finish shall go on all concrete or masonry exterior surfaces unless otherwise noted to be skim coat stucco or just painted.

09900 - Painting - This section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.

A. Paint exposed surfaces whether or not colors are designated in "schedules", except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the architect will select from standard colors or finishes available.

1. Painting includes field painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.

2. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

3. Labels: do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

B. Submit Data: Manufacturer's technical information, label analysis, and application instructions for each material proposed for use.

1. List each material and cross-reference the specific coating and finish system and application. Identify each material by the manufacturer's catalog number and general classification.

2. Samples for initial color selection in the form of manufacturer's color charts.

C. Provide samples of each color and materials to be applied, with texture to simulate actual conditions, or representative samples of actual substrate. Define each separate coat, including block fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

1. Provide a list of material and application for each coat of each sample. Label each sample as to location and application.

D. Paints and coating used on the interior of the building (i.e., inside of the weather proofing system and applied on - site) shall comply with the following criteria:

1. Architectural paints, coating and primers applied to interior walls and ceilings:

Do not exceed the VOC content limits established in the Green Seal Standard

GS-11, Paints, First Edition, May 20, 1993. Primers must meet the VOC limit for

non-flat paint.

Flats: 50 g/L

Non-Flats: 100 g/L

2. Anti-corrosive and anti-rust paints applied to interior ferrous substrates: Do not exceed the VOC content limit of 250 g/L established in Green Seal Standard GS-03, Anti-corrosive Paints, Second Edition, January 7, 1997.

3. Clear wood finishes, floor coatings, stains, primers, and shellacs applied to interior elements must no exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

Provide paint as shown with all materials by Benjamin Moore subject to compliance with requirements, other equal paint manufacturers areas follows:

1. PPG Architectural Finishes, Inc.

2. Sherwin-Williams Company

3. Glidden Professional

Colors and finish shall be selected by owner:

Exterior wood:

Primer: .....Spot prime Knots & surrounding area w/Bin Schulac

(1 coat) Fresh start 100% Acrylic Superior Primer #046, VOC = 44 g/L

Finish:.....Moorgard 100% Acrylic Low Lustre House Paint # W103, VOC = 50 g/L

(2 coats)

Exterior Fiber cementitious siding and trim:

Primer……Pre-primed

Finish:……Mooregard 100% Acrylic Low Lustre House Paint #W103

or Moorlife 100% Acrylic Flat House Paint #W105 VOC = 50 g/L

(2 coats)

Exterior stucco or Masonry: (to be painted)

Primer:.....Super Spec Masonry Interior/Exterior 100% Acrylic Masonry Sealer

#608 VOC = 46 g/L . Use Moore's High Build Acrylic Masonry Primer

#N609 VOC= 46 g/L for very porous conditions.

Finish:.....(2 coats) Regal select Flat Finish #N400 or Regal select Soft Gloss Finish

#N403 VOC = 50 g/L.

Galvanized metal and Aluminum (Non Ferrous Metal)

Clean surfaces with Super Spec HP oil and grease emulsifier (P83) to remove contaminants

Primer:.....One coat Super Spec HP D.T.M. Acrylic Semi-Gloss #HP29 VOC = 148 g/L

Finish:……One coat Super Spec HP D.T.M. Acrylic Semi-Gloss #HP29 VOC = 148 g/L

Gypsum Board:

Primer:.....Fresh start 100 % Acrylic Superior Primer #046 VOC = 44 G/l.

(1coat)

Finish:.....2 coats Regal. Select Matte Finish #N548 or Flat #N547, VOC = 48g/L

Ceilings……Waterborne Ceiling Paint #508, VOC = 50 g/L

(2 coats)

Structural Steel and Iron: (Ferrous Metal)

Primer and Finish…2 Coats Super Spec HP D.T.M.

Acrylic Semi-Gloss #HP29, VOC = 45 g/L

Natural-Finish Woodwork:

Primer……Benwood stays clear Acrylic Polyurethane

High Gloss #W422, VOC = 250 g/L (1 coat)

Finish…… Benwood stays clear Acrylic Polyurethane

High Gloss #W422, VOC = 250 g/L (2 coats)

Powder Coat Paint Finish System: (Applied in Shop)

1. Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.

2. Minimum hardness measured in accordance with ASTM D3363: 2H.

3. Direct impact resistance tested in accordance with ASTM D2794. Withstand 160 inch-pounds.

4. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95 degrees F and 95 percent relative humidity and after 1000 hours less than [3/16 inch] [5 mm] undercutting.

5. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted at 45 degrees.

6. Firm with manufacturing and delivery capacity required for the project, shall have successfully completed at least ten projects within the past five years, utilizing finish systems, and techniques as herein specified.

7. Supplier must own and operate its own Painting and Finishing facility to assure single source responsibility and quality control.

8. All materials shall be protected during finishing, shipment, site storage and erection to prevent damage to the finished work from other trades. Store materials inside a well-ventilated area, away from uncured concrete and masonry, and protected from the weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

9. Clean all surfaces following installation. If necessary use only a mild soap or detergent solution such as TSP-90 or Ivory with a soft cloth to remove dirt and hand prints. Black handling marks can be removed using a mixture of isopropyl alcohol and an abrasive cleanser like Comet. Replace units having scratches, abrasions, or other defects, with unblemished materials.

09940 - Existing wood preparation: Contractor to remove and replace all rotted or damaged wood to match existing (use pressure treated wood). Splice in new boards as inconspicuously as possible and stagger joints as required. Scrape all loose paint of existing wood surfaces, sand smooth prior to prime coat paint. (see paint specification). After prime coat, caulk all seams, joints and holes as required prior to finish coats (see sealant specifications).

DIVISION 10 - SPECIALTIES

10200 - Aluminum louvers: provide aluminum stormproof and impact resistant louvers with factory fluoropolymer three-coat coating system finish as shown on elevation drawing. Louver to be horizontal drainable stormproof fixed blade louvers with extruded aluminum frames and stormproof blades. Louver depth of 6 inches min..

Extruded aluminum to conform to ASTM B 221, Alloy 6063-t5 or t-52 or T6, fasten louver with non corrosive compatible materials. Provide N.O.A. of Systems.

Manufacturers

Basis of Design Products: Louver designs are based on the products indicated. Subject to compliance with requirements, provide the named product or a comparable product, including but not limited to, products by the following manufacturers:

1. Fixed Horizontal Louvers: prefinished aluminum louvers to provide full impact resistance.
   a. Basis of Design Product: Ruskin Company - model EMES20MD
      - Airolite Company (The)
      - American Warming and Ventilating, Inc.
      - Greenheck
      - Nystrom Building Products
      - Reliable Products; Hart & Cooley, Inc.
      - Ruskin Company; Tomkins PLC.

DIVISION 11 - EQUIPMENT - NOT USED

DIVISION 12, 13 & 14 - NOT USED

DIVISION 15 - MECHANICAL - SEE MECHANICAL DRAWINGS

DIVISION 16 - ELECTRICAL

16010 - General Electric Notes:

1. All work shall be in accordance with the National Electrical code and other applicable codes and standards.
2. Contractor shall coordinate w/local utility for new service and any special requirements.
3. The contractor is responsible for evaluating field conditions by visiting the site prior to commencing bidding/work.
4. The contractor shall satisfactorily repair/replace equipment or part of structure

damaged as a result of his work. Surfaces and finishes areas shall be restored to match adjacent areas.

5. Approval shall be obtained from the Engineer prior to cutting or drilling any structural support members. Holes of any size shall not be drilled within the top or bottom 2" of wooden joists, rafters or beams. Unless specifically approved by the engineer.
6. All electrical equipment shall be removed from structure to be removed. Accessible raceways, wires, boxes, switches and other electrical items associated with this work shall be removed if not required for new equipment to continue in service.
7. Wire shall be removed back to source from inaccessible raceways not reused. Install blank plates on flush outlets not reused. Plate color shall match adjacent surface as near as possible in finished areas.
8. Modify and reroute existing wiring as required to accomplish indicated work and continue service to loads beyond area in which work is done.
9. All material removed shall be disposed of as directed by owner.
10. All wiring indicated as existing in base or original contract drawings is to be verified by contractor at job site.
11. Wire size shall be # 12 THHN/THWN unless otherwise noted on plans. Conductors 6 and larger shall be THW.
12. All conductors shall be copper.
13. All material shall be U.L. approved.
14. All branch circuits shall be properly phase balanced.
15. Contractor shall seal all floor openings with a fire seal similar to 'oz' flame seal.
16. All non-power related wiring in ceiling air conditioning plenum running without conduit shall be Teflon coated classified for use in plenums.
17. All branch circuits to have a green equipment grounding conductor sized as per

N.E.C. 250.95.

18. All cables shall be run without splices except otherwise indicated.
19. All pull and junction boxes shall be determined in field.
20. Exact point and methods of connection shall be determined in field.
21. All work shall be done in a neat and workmanlike manner.

Provide all new wiring as per code.

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LICENSE NO.
AR 13537

CITY OF KEY WEST
FIRE STATION 1
WIND RETROFIT

1600 N. Roosevelt Blvd.
KEY WEST, FLORIDA
PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA
WILLIAM P HORN
AR0013537
REGISTERED ARCHITECT

Digitally signed by William Horn
Date: 2025.07.23 15:23:07-04'00'

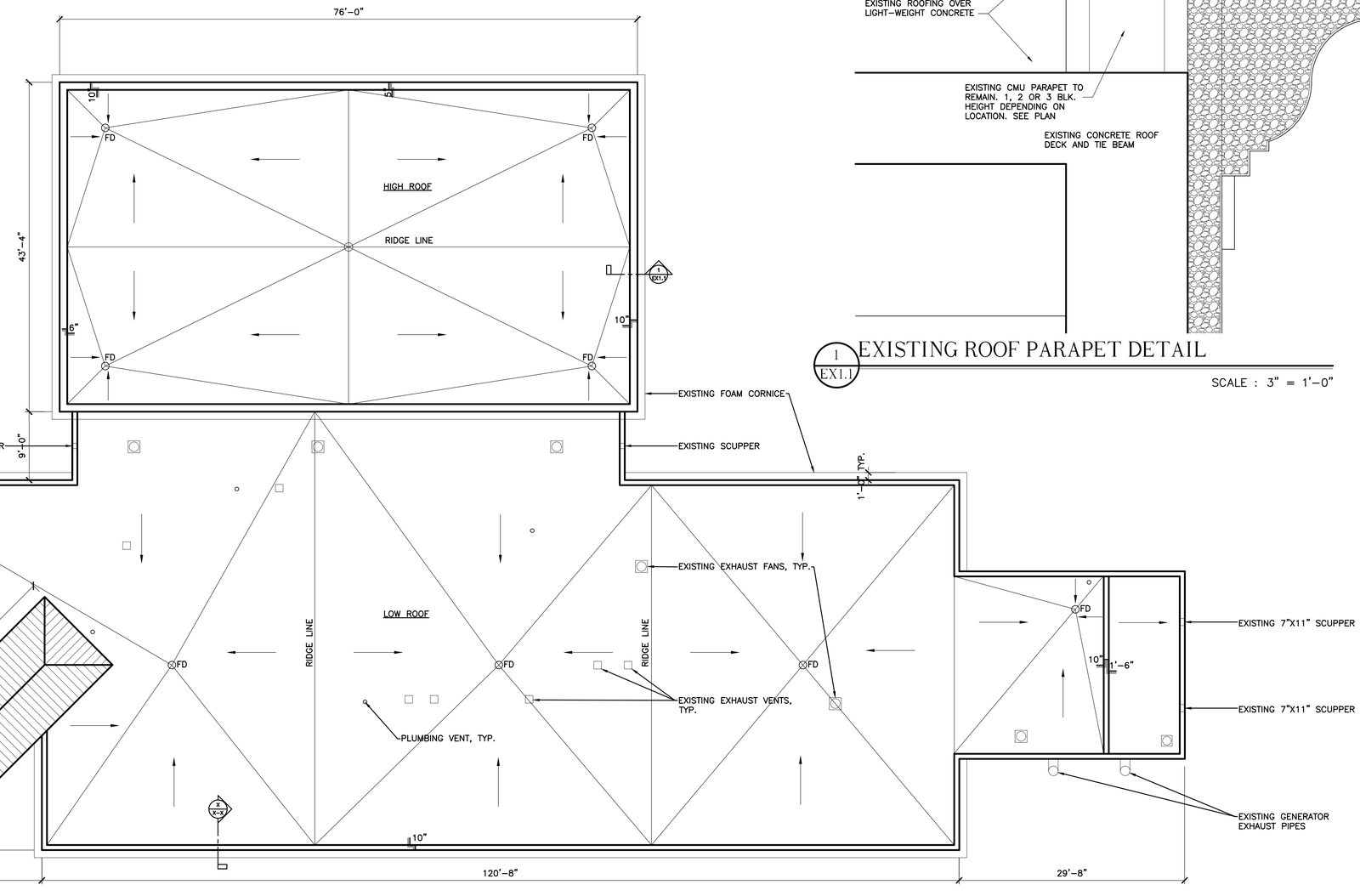
DATE
11-03-2023
12-12-2023 BLDG. DEPT.
05-08-2025 BID

REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

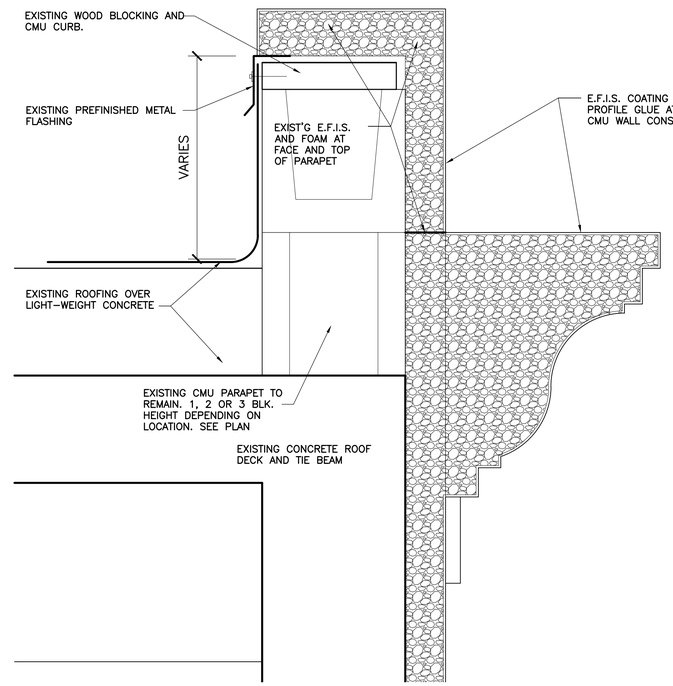
PROJECT NUMBER
2315

A5.5



EXISTING ROOF PLAN

SCALE: 1/8"=1'-0"



1 EX1.1 EXISTING ROOF PARAPET DETAIL

SCALE : 3" = 1'-0"

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WIND RETROFIT

1600 N. Roosevelt Blvd.
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PROJECT NUMBER - 4337-441-R

SEAL

STATE OF FLORIDA · WILLIAM P HORN · AR0013537 · REGISTERED ARCHITECT

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11-03-2023
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REVISIONS
01-06-2024 REV. 1
06-19-2025 REV. 2

DRAWN BY
JFS
JW
EMA

PROJECT NUMBER
2315

EX1.1

CITY OF KEY WEST- FIRE STATION 1 WIND RETROFIT
1600 NORTH ROOSEVELT BLVD.
KEY WEST, FLORIDA