



Celebrating 32 Years of Quality, Design & Excellent Client Service

1306 Rio Grande Blvd. NW, Albuquerque, NM 87104 • 505.255.6400 Voice • 505.268.6954 Fax
www.nca-architects.com info@nca-architects.com

ARCHITECTS • PLANNERS • AIA

ADDENDUM # One (01)

DATE: 6/1/2023

ARCHITECT

NCA Architects
Albuquerque, NM

PROJECT

Maljamar Fire Station
Lovington, New Mexico

OWNER

Lea County
Hobbs, New Mexico

This addendum forms a part of the Contract Documents and modifies the original specifications and drawings dated [Click here to enter a date..](#) Acknowledge receipt of this addendum in the space provided in the Bid Form. Failure to do so may subject the bidder to disqualification.

A. SPECIFICATIONS

1. SECTION 00-0200 – Invitation to Bid:
 - a. The final day for asking questions is Friday, June 2, 2023 before 1:00 pm.
 - b. Bids will be opened and read aloud at the time, date, and location noted.
2. SECTION 00-6600 – Wage Rates:
 - a. See attached wage rate determination number.
3. SECTION 07-2400 – EFIS System
 - a. Incorporate attached EFIS System specification into project manual for use on this project.
4. SECTION 08-3613 – Sectional Doors
 - a. Overhead sectional doors shall be side mounted operators.
 - b. Glazing in sectional doors shall be ¼” acrylic.

B. DRAWINGS

1. SHEET AS-101 – Site Plan:
 - a. Landscaping and irrigation by Owner. Irrigation sleeves by General Contractor.
 - b. Flagpoles shall 25’-6” (US flag) and 20’-0” (County and FD flags).
 - c. Power is on site. Overhead lines are along the south side of the site.
 - d. Water well will be drilled by Owner and conduit for power will be extended to the well by General Contractor.

C. SUBSTITUTION REQUESTS/ PRIOR APPROVALS

Based on data submitted to the Architect, prior to bid in accordance with Instructions to Bidders, substitution of equal products from the following manufacturers are allowed. Note, requests for substitution that are NOT made in accordance with Section 01630 - Product Substitution Procedures, shall NOT be considered.

1. SHEET M-101 – Mechanical Plan:
 - a. MagneGrip exhaust removal system is approved equal to specified system. Contact Bruce Sears at 214.551.7042, bsears@magnetgrip.com.

END OF ADDENDUM 01



LABOR RELATIONS DIVISION

401 Broadway NE
Albuquerque, NM 87102
Phone: 505-841-4400
Fax: 505-841-4424

226 South Alameda Blvd
Las Cruces, NM 88005
Phone: 575-524-6195
Fax: 575-524-6194

WWW.DWS.STATE.NM.US

1596 Pacheco St, Suite 103
Santa Fe, NM 87505
Phone: 505-827-6817
Fax: 505-827-9676

Wage Decision Approval Summary

1) Project Title: Maljamar Fire Station
Requested Date: 05/03/2023
Approved Date: 05/04/2023
Approved Wage Decision Number: LE-23-1350-B

Wage Decision Expiration Date for Bids: 09/01/2023

2) Physical Location of Jobsite for Project:
Job Site Address: SW 1/4 of SE 1/4 of Section 1, T169, R36E, NM
Job Site City: Lovington
Job Site County: Lea

3) Contracting Agency Name (Department or Bureau): Lea County
Contracting Agency Contact's Name: Kathy McLaughlin
Contracting Agency Contact's Phone: (575) 396-8521 Ext. 2356

4) Estimated Contract Award Date: 06/14/2023

5) Estimated total project cost: \$2,500,000.00
a. Are any federal funds involved?: No
b. Does this project involve a building?: Yes - Pre-engineered building structure, slab on grade with spot footings, interior metal stud wall with gypsum board, ceiling, floor and wall finishes hollow metal and aluminum door and window frames, mechanical and electrical requirements. Site grading and drainage, asphalt and concrete paving. Septic system and well.
c. Is this part of a larger plan for construction on or appurtenant to the property that is subject to this project?: No
d. Are there any other Public Works Wage Decisions related to this project?: No
e. What is the ultimate purpose or functional use of the construction once it is completed?: Fire station for local community.

6) Classifications of Construction:

Classification Type and Cost Total	Description
General Building (B) Cost: \$2,500,000.00	pre-engineered building with slab on grade, spot footing, interior metal stud wall, floor, ceiling and wall finishes, mechanical and electrical systems. Grading and drainage with asphalt and concrete paving. Septic system and well.



TYPE “B” – GENERAL BUILDING

Effective January 1, 2023

Trade Classification	Base Rate	Fringe Rate	Apprenticeship
Asbestos Workers/Heat and Frost insulators	35.56	12.26	0.60
Asbestos Workers/Heat and Frost insulators: Los Alamos County	37.99	12.26	0.60
Boilermaker/blacksmith	35.88	32.28	0.60
Boilermaker/blacksmith: San Juan County	36.83	31.88	0.60
Bricklayer/Block layer/Stonemason	24.97	9.50	0.60
Carpenter/Lather	27.73	12.14	0.60
Carpenter: Los Alamos County	33.18	13.58	0.60
Millwright/pile driver	37.10	28.30	0.60
Cement Mason	23.04	11.30	0.60
Electricians-Outside Classifications: Zone 1			
Ground man	25.43	11.76	0.60
Equipment Operator	36.48	16.09	0.60
Lineman or technician	46.09	18.52	0.60
Cable Splicer	47.22	18.81	0.60
Electricians-Outside Classification: Zone 2			
Ground man	25.43	11.76	0.60
Equipment Operator	36.48	16.09	0.60
Lineman or technician	46.09	18.52	0.60

Cable Splicer	47.22	18.81	0.60
Electricians-Outside Classifications: Los Alamos County			
Ground man	26.15	11.78	0.60
Equipment Operator	37.54	16.13	0.60
Lineman or technician	47.29	18.82	0.60
Cable Splicer	51.93	19.98	0.60
Electricians-Inside Classifications: Zone 1			
Wireman/low voltage technician	36.75	12.40	0.60
Cable Splicer	40.43	12.51	0.60
Electricians-Inside Classification: Zone 2			
Wireman/low voltage technician	40.06	12.50	0.60
Cable Splicer	43.74	12.61	0.60
Electricians-Inside Classification: Zone 3			
Wireman/low voltage technician	42.26	12.57	0.60
Cable Splicer	45.94	12.68	0.60
Electricians-Inside Classification: Zone 4			
Wireman/low voltage technician	46.31	12.69	0.60
Cable Splicer	49.99	12.80	0.60
Electricians-Inside Classification: Dona Ana, Hidalgo, Luna and Otero Counties			
Wireman/low voltage technician	32.07	9.81	0.60
Cable splicer	32.07	9.81	0.60
Electricians-Inside Classification: Los Alamos County			
Wireman/low voltage technician	42.26	14.68	0.60
Cable Splicer	45.94	14.98	0.60
Elevator Constructor	48.93	37.49	0.60

Elevator Constructor Helper	39.14	37.49	0.60
Glazier			
Journeyman/Fabricator	21.25	6.70	0.60
Delivery Driver	12.00	6.70	0.60
Glazier: Los Alamos county	21.25	6.70	0.60
Ironworker	28.05	18.30	0.60
Painter	18.25	8.50	0.60
Painter: Los Alamos county	29.51	10.35	0.60
Paper Hanger	18.25	8.50	0.60
Paper Hanger: Los Alamos county	30.33	10.35	0.60
Drywall Finisher/Taper - Light Commercial & Residential			
Ames tool operator	26.82	8.40	0.60
Hand finisher/machine texture	25.82	8.40	0.60
Drywall Finisher/Taper – Light Commercial & Residential: Los Alamos county	29.51	10.35	0.60
Plasterer	24.34	9.79	0.60
Plumber/Pipefitter	35.11	13.40	0.60
Roofer	26.94	9.36	0.60
Sheet metal worker			
Zone 1	35.44	19.00	0.60
Zone 2 – Industrial	36.44	19.00	0.60
Zone 3 – Los Alamos County	37.44	19.00	0.60
Soft Floor Layer	21.00	9.20	0.60
Soft Floor Layer: Los Alamos county	29.55	10.45	0.60
Sprinkler Fitter	34.18	24.44	0.60
Tile Setter	24.46	8.81	0.60
Tile Setter Helper/Finisher	16.53	8.81	0.60
Laborers			
Group I- Unskilled	19.25	7.93	0.60

Group II – Semi-skilled	19.25	7.93	0.60
Group III- Skilled	20.25	7.93	0.60
Group IV - Specialty	22.50	7.93	0.60
Masonry Laborers			
Group I- Unskilled and Semi-Skilled	19.75	8.09	0.60
Group II- Skilled	21.50	8.09	0.60
Group III- Specialty	22.00	8.09	0.60
Operators			
Group I	23.32	7.67	0.60
Group II	25.48	7.67	0.60
Group III	25.94	7.67	0.60
Group IV	26.38	7.67	0.60
Group V	26.57	7.67	0.60
Group VI	26.78	7.67	0.60
Group VII	26.89	7.67	0.60
Group VIII	29.93	7.67	0.60
Group IX	32.32	7.67	0.60
Group X	35.72	7.67	0.60
Truck Drivers			
Group I-VII	16.65	8.27	0.60
Group VIII	16.71	8.27	0.60
Group IX	18.65	8.27	0.60

NOTE: All contractors are required to pay SUBSISTENCE, ZONE AND INCENTIVE PAY according to the particular trade. Details are located in a PDF attachment at WWW.DWS.STATE.NM.US. Search Labor Relations/Labor Information/Public Works/Prevailing Wage Rates.

For more information about the Subsistence, Zone, and Incentive Pay rates, or to file a wage claim, contact the Labor Relations Division at (505) 841-4400 or visit us online at www.dws.state.nm.us.

**SECTION 07 2400
EXTERIOR FINISH AND INSULATION FINISH SYSTEM (EIFS)**

PART 1 GENERAL

1.01 SUMMARY

- A. Provide EIFS with Air and Moisture Barrier for vertical above grade exterior wall substrate surfaces.
- B. RELATED SECTIONS (add/delete, depending on specific project requirements):
 - 1. Section 04 2200 Masonry Units
 - 2. Section 06 1000 Rough Carpentry
 - 3. Section 06 1150: Sheathing
 - 4. Section 07 1900: Vapor Retarders
 - 5. Section 07 1950: Air Barriers
 - 6. Section 07 6200: Sheet Metal Flashing And Trim
 - 7. Section 07 9200: Sealants And Caulking
 - 8. Section 08 1113 Hollow Metal Doors And Frames
 - 9. Section 08 3113 Access Doors And Frames
 - 10. Section 08 3323 Overhead Coiling Doors
 - 11. Section 08 3460 Detention Steel Doors And Frames
 - 12. Section 08 4113 Aluminum-Framed Entrances And Storefronts
 - 13. Section 08 5113 Aluminum Windows

1.02 SUBMITTALS

- A. Manufacturer's specifications, details, installation instructions and product data.
- B. Manufacturer's code compliance report.
- C. Manufacturer's standard warranty.
- D. Applicator's certificate of instruction.
- E. Samples for approval as directed by architect or owner.
- F. EPS board manufacturer's certificate of compliance with ASTM E 2430
- G. Sealant manufacturer's certificate of compliance with ASTM C 1382.
- H. Prepare and submit project-specific details (when required by contract documents).

1.03 REFERENCES

- A. ASTM Standards:
 - 1. B 117 Test Method for Salt Spray (Fog) Testing
 - 2. C 578 Specification for Preformed, Cellular Polystyrene Thermal Insulation
 - 3. C 1177 Specification for Glass Mat Gypsum for Use as Sheathing
 - 4. C 1280 Specification for Installation of Sheathing
 - 5. C 1382 Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems (EIFS) Joints
 - 6. D 522 Test Methods for Mandrel Bend Test of Attached Organic Coatings
 - 7. D 882 Standard Test Methods for Tensile Properties of Thin Plastic Sheeting

8. D 968 Test Method for Abrasion Resistance of Organic Coatings by Falling Abrasive
 9. D 1382 Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish System (EIFS) Joints
 10. D 1784 Specification for Rigid Poly (Vinyl Chloride) (PVC) and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 11. D 2247 Practice for Testing Water Resistance of Coatings in 100% Relative Humidity
 12. D 2370 Test Method for Tensile Properties of Organic Coatings
 13. D 3273 Test for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
 14. E 84 Test Method for Surface Burning Characteristics of Building Materials
 15. E 96 Test Methods for Water Vapor Transmission of Materials
 16. E 108 Method for Fire Tests of Roof Coverings
 17. E 119 Method for Fire Tests of Building Construction and Materials
 18. E 283 Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences Across the Specimen
 19. E 330 Test Method for Structural Performance of Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
 20. E 331 Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference
 21. E 1233 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Difference
 22. E 2098 Test Method for Determining Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for Use in Class PB Exterior Insulation and Finish System after Exposure to a Sodium Hydroxide Solution
 23. E 2134 Test Method for Evaluating the Tensile-Adhesion Performance of an Exterior Insulation and Finish System (EIFS)
 24. E 2273 Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish System (EIFS) Clad Wall Assemblies
 25. E 2430 Specification for Expanded Polystyrene (EPS) Thermal Insulation Boards for use in Exterior Insulation and Finish Systems (EIFS)
 26. E 2485 Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings
 27. E 2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
 28. E 2570 Test Method for Water-Resistive (WRB) Coatings used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
 29. G 153 Recommended Practice for Operating Light-and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure of Nonmetallic Materials
 30. G 154 Recommended Practice for Operating Light-and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials
- B. Building Code Standards
1. AC235 Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (April, 2008)
- C. National Fire Protection Association (NFPA) Standards
1. NFPA 268, "Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source"
 2. NFPA 285, "Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Non-Load-Bearing Wall Assemblies containing Combustible Components Using the Intermediate-Scale, Multistory Test Apparatus"

D. Other Referenced Documents

1. American Association of Textile Chemists and Colorists AATCC-127 Water Resistance: Hydrostatic Pressure Test
2. GA-600 Fire Resistance Design Manual
3. APA Engineered Wood Association E 30, Engineered Wood Construction Guide
4. ICC-ES ESR-1748, Evaluation Report for StoTherm NExT EIFS.
5. ICC-ES ESR-1233, Evaluation Report for StoGuard

1.04 DESIGN REQUIREMENTS

A. Wind Load

1. Design for maximum allowable system deflection, normal to the plane of the wall, of L/240.
2. Design for wind load in conformance with code requirements. See [Structural Drawings](#) for wind load conditions.

B. Moisture Control

1. Prevent the accumulation of water behind the EIF system, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
 - a. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
 - b. Air Leakage Prevention-- provide continuity of air barrier system at foundation, roof, windows, doors and other penetrations through the system with connecting and compatible air barrier components to minimize condensation and leakage caused by air movement.
 - c. Vapor Diffusion and Condensation-- perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation. Avoid the use of vapor retarders on the interior side of the wall in warm, humid climates.

C. Impact Resistance

1. Provide ultra-high impact resistance to a minimum height of 8'-0" above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact. Indicate the areas with impact resistance other than "Standard" on contract drawings.

D. Color Selection:

1. As selected by Architect from manufacturer's standard color range.
2. Select finish coat with a light reflectance value of 20 or greater.

E. Joints

1. Design minimum 3/4 inch (19 mm) wide expansion joints in the EIFS where they exist in the substrate or supporting construction, where the EIFS adjoins dissimilar construction or materials, at changes in building height, and at floor lines in multi-level wood frame construction.
2. Design minimum 1/2 inch (13 mm) wide perimeter sealant joints at all penetrations through the EIFS (windows, doors, etc.).
3. Specify compatible backer rod and sealant that has been evaluated in accordance with ASTM C 1382, "Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish System (EIFS) Joints," and that meets minimum 50% elongation after conditioning.
4. Design joints so that Air Barrier continuity is maintained across the joint and drain joints to the exterior.
5. Provide expansion joints that are approved by EIFS manufacturer.

F. Grade Condition

1. Do not specify EIFS below grade (unless designed for use below grade and permitted by code) or for use on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure. Provide minimum 6 inch (152 mm) clearance above finished grade as required by code.
2. Provide below grade EIFS from bottom of above grade EIF to 6" below grade or to top of adjacent concrete slab. Install per EIFS manufacturer.

G. Trim, Projecting Architectural Features and Reveals

1. All trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface. Increase slope for northern climates to prevent accumulation of ice/snow and water on surface. Where trim/feature or bottom surface of reveal projects more than 2 inches (51 mm) from the face of the EIFS wall plane, protect the top surface with waterproof base coat. Periodic inspections and increased maintenance may be required to maintain surface integrity of EIFS on weather exposed sloped surfaces. Limit projecting features to easily accessible areas and limit total area to facilitate maintenance and minimize maintenance. Refer to Sto details 1.04a and 1.04b.
2. Do not use EIFS on weather exposed projecting ledges, sills, or other projecting features unless supported by framing or other structural support and protected with metal coping or flashing. Refer to Sto detail 10.61.

I. Insulation Thickness

1. Minimum EPS insulation thickness is 2 ½ inches (R10 Min) (62.5 mm).
2. Maximum EPS insulation thickness is 12 inches (305 mm) when installed in accordance with ESR-1748 (including architectural features).

H. Fire Protection

1. Do not use foam plastic in excess of 12 inches (305 mm) thick on noncombustible type construction unless approved by the code official.
2. Where a fire-resistance rating is required by code use EIFS over rated assembly (EIFS is considered to not add or detract from the fire-resistance of the rated assembly).
3. Refer to manufacturer's applicable code compliance report for other limitations that may apply.

1.05 PERFORMANCE REQUIREMENTS

Table 1—Air/Moisture Barrier Performance

TEST	METHOD	CRITERIA	RESULT
1. Water Penetration Resistance	AATCC 127 (Water Column)	Resist 21.6 in (55 cm) water for 5 hours before and after aging	Pass
2. Water Penetration Resistance after Cyclic Wind Loading	ASTM E 1233 / ASTM E 331	No water at exterior plane of sheathing after 10 cycles @ 80% design load and 75 minutes water spray at 6.24 psf (299 Pa) differential	No water penetration on Plywood, OSB, and Glass Mat Faced Gypsum sheathings
3. Water Resistance Testing	ASTM D 2247	Absence of deleterious effects after 14 day exposure	No deleterious effects
4. Water Vapor Transmission	ASTM E 96 Method B (Water Method)	Measure	Sto Gold Fill®*: 17.3 perms [994 ng/(Pa·s·m ²)]
5. Air Leakage	ASTM E 283	<0.06 cfm/ft ² (0.00030m ³ /s·m ²)	<0.0044 cfm/ft ² (0.000022 m ³ /s·m ²)
6. Structural Integrity	ASTM E 330	2-inches (51 mm) H ₂ O pressure (positive & negative) for 1 hour.	Pass
7. Dry Tensile Strength	ASTM D 882	20 lbs/in (3503 N/m), minimum before and after aging	Sto Gold Fill.* 159 lbs/in (27845 N/m)) before aging 213 lbs/in (37302 N/m) after aging
8. Pliability	ASTM D 522	No Cracking or Delamination using 1/8" (3 mm) mandrel at 14°F (-10°C) before and after aging	Pass
9. Surface Burning	ASTM E 84	Flame Spread 0 – 25 for NFPA Class A, UBC Class I	Flame Spread: 5 Smoke Density: 10
10. Tensile Adhesion	ASTM C 297	>15 psi (103 kPa)	>30 psi (207 kPa) to Plywood, OSB, Glass Mat Faced Gypsum sheathings

* Note: Sto Gold Fill testing with Sto Detail Mesh reinforcement

Table 2—EIFS Weather Resistance and Durability Performance

TEST	METHOD	CRITERIA	RESULTS
1. Accelerated Weathering	ASTM G 153 (Formerly ASTM G 23)	No deleterious effects* at 2000 hours when viewed under 5x magnification	Pass
2. Accelerated Weathering	ASTM G 154 (Formerly ASTM G 53)	No deleterious effects* at 2000 hours when viewed under 5x magnification	Pass @ 5000 hours
3. Freeze/Thaw Resistance	ASTM E 2485	No deleterious effects* at 10 cycles when viewed under 5x magnification	Pass @ 90 cycles
4. Water Penetration	ASTM E 331 (modified per ICC-ES AC 235)	No water penetration beyond the plane of the base coat/EPS board interface after 15 minutes at 6.24 psf (299 Pa) or 20% of design wind pressure, whichever is greater	Pass at 12.0 psf (575 Pa) after 30 minutes
5. Drainage Efficiency	ASTM E 2273	90% minimum	> 99%
6. Tensile Adhesion	ASTM E 2134	Minimum 15 psi (103kPa) tensile strength	Pass
7. Water Resistance	ASTM D 2247	No deleterious effects* at 14 day exposure	Pass @ 60 days
8. Salt Spray	ASTM B 117	No deleterious effects* at 300 hours	Pass @ 3000 hrs
9. Abrasion Resistance	ASTM D 968	No cracking or loss of film integrity at 528 quarts (500 L) of sand	Pass
10. Mildew Resistance	ASTM D 3273	No growth supported during 28 day exposure period	No growth at 42 days
11. Impact Resistance	ASTM E 2486	Level 1: 25-49 in-lbs (2.83-5.54J) Level 2: 50-89 in-lbs (5.65-10.1J) Level 3: 90-150 in-lbs (10.2-17J) Level 4: >150 in-lbs (>17J)	Pass with one layer Sto Mesh Pass with two layers Sto Mesh Pass with one layer Sto Intermediate Mesh Pass with one layer Sto Armor Mat and one layer Sto Mesh

*No deleterious effects: no cracking, checking, crazing, erosion, rusting, blistering, peeling or delamination

Table 3—EIFS and Air/Moisture Barrier Fire Performance

TEST	METHOD	CRITERIA	RESULT
1. Fire Endurance	ASTM E 119	Maintain fire resistance of existing rated assembly	Pass*
2. Intermediate Scale Multi-Story Fire Test	NFPA 285 (UBC Standard 26-9)	1. Resistance to vertical spread of flame within the core of the panel from one story to the next 2. Resistance to flame propagation over the exterior surface 3. Resistance to vertical spread of flame over the interior surface from one story to the next 4. Resistance to significant lateral spread of flame from the compartment of fire origin to adjacent spaces	Pass with 12 inches of EPS insulation *
3. Radiant Heat Ignition	NFPA 268	No ignition @ 20 minutes	Pass with 12 inches of EPS insulation
4. Surface Burning (individual components)	ASTM E 84	Individual components shall each have a flame spread of 25 or less, and smoke developed of 450 or less	Flame: 0 Smoke Developed: 5

Note: * indicates results based on extrapolation of data from series testing. ASTM E119 testing performed on assembly with 4 inch (305 mm) thick EPS.

Table 4—EIFS Component Performance

TEST	METHOD	CRITERIA	RESULT
1. Alkali Resistance of Reinforcing Mesh	ASTM E 2098	Greater than 120 pli (21 dN/cm) retained tensile strength	Pass
2. Requirements for Rigid PVC Accessories	ASTM D 1784	Meets cell classification 13244C	Pass

1.06 QUALITY ASSURANCE

A. Manufacturer requirements

1. Member in good standing of the EIFS Industry Members Association (EIMA).
2. System manufacturer for a minimum of twenty-five (25) years.
3. Manufacturing facilities ISO 9001:2000 Certified Quality System.
4. Manufacturer's wall assembly listed in Gypsum Association Fire Resistance Design Manual.

5. Manufacturer of Air & Moisture Barriers for twenty-five (25) years in North America.
- B. Contractor requirements
1. Engaged in application of EIFS for a minimum of ten (10) years.
 2. Knowledgeable in the proper use and handling of EIFS manufacturer's materials, possessing certificate of completion for manufacturer's EIFS application test.
 3. Employ skilled mechanics who are experienced and knowledgeable in EIFS application, and familiar with the requirements of the specified work.
 4. Successful completion of a minimum of three (3) projects of similar size and complexity to the specified project in the State of New Mexico.
 5. Provide the proper equipment, manpower and supervision on the job site to install the system in compliance with Manufacturer's published specifications and details and the project plans and specifications.
- C. Insulation board manufacturer requirements
1. Recognized by EIFS Manufacturer as capable of producing insulation board to meet system requirements, and hold a valid licensing agreement with EIFS Manufacturer.
 2. Listed by an approved agency.
 3. Label insulation board with information required by EIFS Manufacturer, the approved listing agency and the applicable building code.
- E. Inspections
1. Provide independent third party inspection where required by code or contract documents.
 2. Conduct inspections in accordance with code requirements and contract documents.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and identification of product.
- B. Protect coatings (pail products) from freezing and temperatures in excess of 90°F (32°C). Store away from direct sunlight.
- C. Protect Portland cement based materials (bag products) from moisture and humidity. Store under cover off the ground in a dry location.

1.08 PROJECT/SITE CONDITIONS

- A. Maintain ambient and surface temperatures above 40°F (4°C) during application and drying period, minimum 24 hours after application of Air/Moisture barrier and EIFS.
- B. Provide supplementary heat for installation in temperatures less than 40°F (4°C).
- C. Provide protection of surrounding areas and adjacent surfaces from application of materials.

1.09 COORDINATION/SCHEDULING

(The work in this section requires close coordination with related sections and trades. Sequence work to provide protection of construction materials from weather deterioration)

- A. Pre-construction meeting with trades to coordinate installation of air and moisture barrier.
- B. Provide site grading such that EIFS terminates above finished grade a minimum of 6 inches (150 mm) or as required by code.
- C. Coordinate installation of foundation waterproofing, foundation insulation and EIFS, roofing membrane, windows, doors and other wall penetrations to provide a continuous air and moisture barrier.
- D. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall.
- E. Coordinate installation of windows and doors so air barrier components are connected to them to provide a continuous air barrier.
- F. Install window and door head flashing immediately after windows and doors are installed.
- G. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- H. Install copings and sealant immediately after installation of the EIF system and when EIFS coatings are dry.
- I. Attach penetrations through EIFS to structural support and provide water tight seal at penetrations.

1.10 WARRANTY

- A. Provide manufacturer's 10-year warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide Air/Moisture Barrier, EIF System and accessories from single source manufacturer or approved supplier.
- B. The following are acceptable manufacturers:
 - 1. Basis of Design: Sto Corp.--Air/Moisture Barrier, EIF System- Sto Essence DPR
 - 2. Parex EIFS
 - 3. Product Substitutions accepted per Section 01630
 - 4. Plastic Components, Inc.--Accessories

2.02 AIR/MOISTURE BARRIER

- A. StoGuard
 - a. Joint Compound: Sto Gold Fill—ready mixed flexible joint compound for rough opening protection and joint treatment of wall sheathing (not required for concrete/masonry surfaces).

- b. Waterproof Coating: Sto Gold Coat®—ready mixed waterproof coating for wall substrates and sheathings.

2.03 ADHESIVE

A. Cementitious Adhesives

1. Sto Primer/Adhesive--acrylic based adhesive mixed with portland cement (for use over exterior glass mat faced gypsum sheathing (compliant with ASTM C 1177), exterior cementitious sheathing, concrete, masonry or cement plaster surfaces.
2. Sto Primer/Adhesive-B--one component polymer modified cement based, factory blend adhesive (for use over exterior glass mat faced gypsum sheathing (compliant with ASTM C 1177), exterior cementitious sheathing, concrete, masonry or cement plaster surfaces.

2.04 INSULATION BOARD

- A. Nominal 1.0 lb/ft³ (16 kg/m³) Expanded Polystyrene (EPS) insulation board in compliance with ASTM E 2430 and ASTM C 578 Type I requirements (*Note: minimum required thickness is 1 inch [25 mm] and maximum allowable thickness is 12 inches [305 mm] when installed in accordance with ICC-ES ESR 1748.*)

2.05 BASE COAT

A. Cementitious Base Coats

1. Sto Primer/Adhesive--acrylic based base coat mixed with portland cement.
2. Sto Primer/Adhesive-B—one component polymer modified cement based factory blend base coat.

B. Non-cementitious Base Coat

1. Sto RFP—one component ready mixed non-cementitious, fiber reinforced acrylic base coat.

C. Waterproof Base Coat

1. Sto Flexyl—two component fiber reinforced acrylic based waterproof base coat mixed with portland cement (*for use as a waterproof base coat for foundations, parapets, splash areas, trim and other projecting architectural features*).

2.06 REINFORCING MESHES

A. Standard Mesh

1. Sto Mesh--nominal 4.5 oz./yd² (153 g/m²), symmetrical, interlaced open-weave glass fiber fabric made with alkaline resistant coating for compatibility with Sto materials (*achieves Standard Impact Classification*).

C. Ultra-High Impact Mesh

1. Sto Armor Mat--nominal 15 oz./yd² (509 g/m²), ultra-high impact, double strand, interwoven, open-weave glass fiber fabric with alkaline resistant coating for compatibility with Sto materials Install to a minimum height of 8 feet

D. Specialty Meshes

1. Sto Detail Mesh--nominal 4.2 oz/yd² (143 g/m²), flexible, symmetrical, interlaced glass fiber fabric, with alkaline resistant coating for compatibility with Sto materials *(used for standard EIFS backwrapping, aesthetic detailing, and reinforcement of sheathing joints and protection of rough openings with air/ moisture barrier).*

2.07 PRIMER (optional)

- A. Sto Primer Sand—acrylic based tinted primer with sand for roller application.
- B. Sto Primer Smooth – acrylic based tinted primer for spray application.

2.08 FINISH COAT

- A. Sto Essence DPR Finish —acrylic based textured wall coating with graded marble aggregate.
- B. StoCoat Acryl Plus – An acrylic-based high performance coating that can be used on previously coated EIFS to restore color or cover up graffiti.

2.09 JOB MIXED INGREDIENTS

- A. Water--Clean and potable.
- B. Portland cement--Type I, Type II, or Type I-II in conformance with ASTM C 150.

2.10 ACCESSORIES

- A. Starter Track— Rigid PVC (polyvinyl chloride) plastic track Part No. STDE as furnished by Plastic Components, Inc., 9051 NW 97th Terrace, Miami, Florida 33178 (800 327-7077) or equivalent.

2.11 MIXING

- A. Sto Gold Fill--mix with a clean, rust-free high speed mixer to a uniform consistency.
- B. Sto Gold Coat-mix with a clean, rust-free high speed mixer to a uniform consistency.
- C. Sto Primer/Adhesive: mix ratio with portland cement is 1:1 by volume. Pour Sto Primer/Adhesive into a clean mixing pail. Add portland cement, mix to a uniform consistency and allow to set for approximately five minutes. Adjust mix if necessary by adding up to 8 fl. oz. (0.24L) of water per pail and remix to a uniform trowel consistency. Avoid re-tempering. Keep mix ratio consistent.
- D. Sto Primer/Adhesive-B: mix ratio with water: 5-6.5 quarts (4.7-6.2 L) of water per 50 pound (23 kg) bag of Sto Primer/Adhesive-B. Pour water into a clean mixing pail. Add Sto Primer/Adhesive-B, mix to a uniform consistency and allow to set for approximately 5 minutes. Adjust mix if necessary by adding up to 12 fl. oz. (0.35L) of water per bag and

re-mix to a uniform trowel consistency. Avoid re-tempering. Keep mix ratio consistent. Do not exceed maximum amount of water in mix ratio.

- E. Sto RFP--mix with a clean, rust-free high speed mixer to a uniform consistency.
- F. Sto Flexyl--mix ratio with portland cement: 1:1 ratio by weight. Pour Sto Flexyl into a clean mixing pail. Add portland cement, mix to a uniform consistency and allow to set for approximately five minutes. Adjust mix if necessary with additional Sto Flexyl and remix to a uniform trowel consistency. Avoid retempering. Keep mix ratio consistent.
- G. Sto primer--mix with a clean, rust-free high speed mixer to a uniform consistency.
- H. Sto Essence DPR Finish --mix with a clean, rust-free high speed mixer to a uniform consistency. A small amount of water may be added to adjust workability. Limit addition of water to amount needed to achieve the finish texture
- I. Mix only as much material as can readily be used.
- J. Do not use anti-freeze compounds or other additives.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

- A. Prequalify under Quality Assurance requirements of this specification (section 1.06 B).

3.02 EXAMINATION

- A. Inspect surfaces for:
 - 1. Contamination—algae, chalkiness, dirt, dust, efflorescence, form oil, fungus, grease, laitance, mildew or other foreign substances.
 - 2. Surface absorption and chalkiness.
 - 3. Cracks—measure crack width and record location of cracks.
 - 4. Damage and deterioration.
 - 5. Moisture content and moisture damage—use a moisture meter to determine if the surface is dry enough to receive the EIFS and record any areas of moisture damage.
 - 6. Compliance with specification tolerances—record areas that are out of tolerance (greater than ¼ inch in 8-0 feet [6mm in 2438 mm] deviation in plane).
- B. Report deviations from the requirements of project specifications or other conditions that might adversely affect the Air/Moisture Barrier and EIFS installation to the General Contractor. Do not start work until deviations are corrected.

3.03 SURFACE PREPARATION

- A. Remove surface contaminants on concrete and concrete masonry surfaces.
- B. Apply conditioner by sprayer or roller to chalking or excessively absorptive surfaces.
- C. Replace weather-damaged sheathing and repair damaged or cracked surfaces.
- D. Level surfaces to comply with required tolerances.
- E. Repair cracks, spalls or damage in concrete or concrete masonry surfaces.

3.04 INSTALLATION

A. Air/Moisture Barrier

For Installation over Concrete or Concrete Masonry Unit (CMU) surfaces:

1. Repair cracks up to 1/8 inch (3 mm) wide with Sto Gold Fill. Rake the crack with a sharp tool to remove loose or friable material and blow clean with oil-free compressed air. Apply Sto Gold Fill by spray, trowel or putty knife over the crack and tool surface smooth. For cracks wider than 1/8 inch (3mm) up to 1/4 inch (6mm) wide, use a paintable acrylic latex caulk to fill crack, tool flush, and allow to dry. *(Note: For moving cracks or cracks larger than 1/4 inch (6mm), consult with a structural engineer for repair method).* Protect repair from weather until dry.
2. Liberally apply two coats of Sto Gold Coat to the surface with a 3/4 inch nap roller or spray equipment to a minimum wet thickness of 10 mils each and up to a total maximum of 30 mils depending on surface condition. Additional coats may be necessary to provide a void and pinhole free surface. Protect from weather until dry.
3. Coordinate installation of connecting air barrier components with other trades to provide a continuous air tight membrane.
4. Coordinate installation of flashing and other moisture protection components with other trades to achieve complete moisture protection such that water is directed to the exterior, not into the wall assembly, and drained to the exterior at sources of leaks (windows, doors and similar penetrations through the wall assembly).
5. Coordinate installation of windows and doors to be installed immediately following installation of the air/moisture barrier and work should be sequenced accordingly. (Consult with window manufacturer for installation requirements to maintain air barrier continuity and for head, jamb, sill flashing and perimeter sealant requirements).

B. Starter Track

1. Strike a level line at the base of the wall to mark where the top of the starter track terminates.
2. Attach the starter track even with the line into the structure a maximum of 16 inches (406 mm) on center with the proper fastener: Type S-12 corrosion resistant screws for steel framing with minimum 3/8 inch (9 mm) penetration, and galvanized or zinc coated nails for wood framing with minimum 3/4 inch (19 mm) penetration. Attach between studs into blocking as needed to secure the track flat against the wall surface. For solid wood sheathing or concrete/masonry surfaces, attach directly at 12 inches (305 mm) on center maximum.
3. Butt sections of starter track together. Miter cut outside corners and abut. Snip front flange of one inside corner piece (to allow EPS Board to be seated inside of track) and abut.
4. Install Starter Track at other EIF System terminations as designated on detail drawings: above roof along dormers or gable end walls, and beneath window sills with concealed flashing.

C. Splice Strips for Starter Track and Flashing

1. Starter Track, Window/Door Head Flashing and Side Wall Step Flashing: install 2 inch (51 mm) wide diagonal splice strips of detail mesh at ends of head flashings. Install minimum 4 inch (100 mm) wide splice strips of detail mesh between back

flange of starter track, head flashings and roof/side wall step flashing. Center the mesh so it spans evenly between the back flange of the Starter Track or flashing and the sheathing. Embed the mesh in the wet joint compound and trowel smooth.

2. Apply waterproof coating over the splice strip when the joint compound is dry (refer to Sto Details 10.00 and 10.23b).

D. Backwrapping

1. Apply a strip of detail mesh to the dry air/moisture barrier at all system terminations (windows, doors, expansion joints, etc.) except where the Starter Track is installed. The mesh must be wide enough to adhere approximately 4 inches (100 mm) of mesh onto the wall, be able to wrap around the insulation board edge and cover a minimum of 2 ½ inches (64 mm) on the outside surface of the insulation board. Adhere mesh strips to the air/moisture barrier and allow them to dangle until the backwrap procedure is completed (paragraph I.1). Alternatively, pre-wrap terminating edges of insulation board.

E. Adhesive Application and Installation of Insulation Board

1. Rasp the interior lower face of insulation boards to provide a snug friction fit into the Starter Track. (*Note: rasping prevents an outward bow at the Starter Track*).
2. Apply adhesive to the back of the insulation board with the proper size stainless steel notched trowel. Apply uniform ribbons of adhesive parallel with the SHORT dimension of the board so that when boards are placed on the wall the ribbons will be VERTICAL. Apply adhesive uniformly so ribbons of adhesive do not converge.
3. Immediately place insulation boards in a running bond pattern on the wall with the long dimension horizontal. Start by inserting the lower edge of the boards inside the starter track at the base of the wall until they contact the bottom of the track. Apply firm pressure over the entire surface of the boards to ensure uniform contact of adhesive. Bridge sheathing joints by a minimum of 6 inches (152 mm). Interlock inside and outside corners.
4. Butt all board joints tightly together to eliminate any thermal breaks in the EIFS. Care must be taken to prevent any adhesive from getting between the joints of the boards.
5. Cut insulation board in an L-shaped pattern to fit around openings. Do not align board joints with corners of openings.
6. Remove individual boards periodically while the adhesive is still wet to check for satisfactory contact with the substrate and the back of the insulation board, and for spacing between ribbons of adhesive. An equal amount of adhesive must be on the substrate and the board when they are removed, as an indication of adequate adhesion. Do not use nails, screws, or any other type of non-thermal mechanical fastener.

F. Slivering and Rasping of Insulation Board Surface

1. After insulation boards are firmly adhered to the substrate, fill any open joints in the insulation board layer with slivers of insulation or spray foam. Use spray foam that is identified by the spray foam manufacturer as suitable for this use.
2. Rasp the insulation board surface to achieve a smooth, even surface and to remove any ultraviolet ray damage.
3. EPS insulation board exposed to sunlight will develop a powdery residue on the surface. This residue must be entirely removed by rasping the surface

G. Trim, Reveals and Projecting Aesthetic Features

1. Attach features and trim where designated on drawings with adhesive to the insulation board or sheathing surface. Slope the top surface of all trim/features minimum 1:2 (27°) and the bottom of all horizontal reveals minimum 1:2 (27°).
2. Cut reveals/aesthetic grooves with a hot-knife, router or groove-tool in locations indicated on drawings.
3. Offset reveals/aesthetic grooves minimum 3 inches (75 mm) from insulation board joints.
4. Do not locate reveals/aesthetic grooves at high stress areas such as corners of windows, doors, etc.
5. A minimum ¾ inch (19 mm) thickness of insulation board must remain at the bottom of the reveals/aesthetic grooves.

H. Completion of Backwrapping

1. Complete the backwrapping procedure by applying base coat to exposed edges of insulation board and approximately 4 inches (100 mm) onto the face of the insulation board. Pull mesh tight around the board and embed it in the base coat with a stainless steel trowel. Use a corner trowel for clean, straight lines. Smooth any wrinkles or gaps in the mesh.

I. Base Coat and Reinforcing Mesh Application

1. Apply minimum 9x12 inch (225x300 mm) diagonal strips of detail mesh at corners of windows, doors, and all penetrations through the system. Embed the strips in wet base coat and trowel from the center to the edges of the mesh to avoid wrinkles.
2. Apply detail mesh at trim, reveals and projecting architectural features. Embed the mesh in the wet base coat. Trowel from the base of reveals to the edges of the mesh.
3. Ultra-High impact mesh application (recommended to a minimum height of 6'-0" [1.8 m] above finished grade at all areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact, and where indicated on contract drawings): apply base coat over the insulation board with StoSilo spray equipment or a stainless steel trowel to a uniform thickness of approximately 1/8 inch (3 mm). Work horizontally or vertically in strips of 40 inches (1016 mm), and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Butt the mesh at seams. Allow the base coat to dry.
4. Standard mesh application: Apply base coat over the insulation board, including areas with Ultra-High impact mesh, with StoSilo spray equipment or a stainless steel trowel to a uniform thickness of approximately 1/8 inch (3 mm). Work horizontally or vertically in strips of 40 inches (1016mm), and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Overlap mesh not less than 2-½ inches (64 mm) at mesh seams and at overlaps of detail mesh. Feather seams and edges. Double wrap all inside and outside corners with minimum 2-½ inch (64 mm) overlap in each direction. Avoid wrinkles in the mesh. The mesh must be fully embedded so that no mesh color shows through the base coat when it is dry. Re-skim with additional base coat if mesh color is visible.
5. Sloped Surfaces: for trim, reveals, aesthetic bands, cornice profiles, sills or other architectural features that project beyond the vertical wall plane more than 2

inches (51 mm) apply waterproof base coat with a stainless steel trowel to the weather exposed sloped surface and minimum four inches (100 mm) above and below it. Embed standard mesh or detail mesh in the waterproof base coat and overlap mesh seams a minimum of 2-½ inches (65 mm).

6. Allow base coat to thoroughly dry before applying primer or finish.
 7. All trim and projecting architectural features must have a minimum 1:2 [27°] slope along their top surface. All horizontal reveals must have a minimum 1:2 [27°] slope along their bottom surface. Where trim/feature or bottom surface of reveal projects more than 2 inches (51 mm) from the face of the EIFS wall plane, protect the weather exposed sloped surface with waterproof base coat.
 9. Do not use EIFS on weather exposed projecting ledges, sills, or other projecting features unless supported by framing or other structural support and protected with metal coping or flashing. Refer to Sto detail 10.61.
- K. Primer application (Optional)
1. Apply primer evenly with brush, roller or proper spray equipment over the clean, dry base coat and allow to dry thoroughly before applying finish.
- L. Finish Coat Application
1. Apply finish directly over the base coat or primed base coat when dry. Apply finish by spraying or troweling with a stainless steel trowel, depending on the finish specified. Follow these general rules for application of finish:
 - a. Avoid application in direct sunlight.
 - b. Apply finish in a continuous application, and work to an architectural break in the wall.
 - c. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.
 - d. Do not install separate batches of finish side-by-side.
 - e. Do not apply finish into or over sealant joints. Apply finish to outside face of wall only.
 - f. Do not apply finish over irregular or unprepared surfaces or surfaces not in compliance with the requirements of the project specifications.
- J. Non-aggregated coatings – provide one 5-gallon pail of each color used on project to Owner for future use in restoring color or covering up graffiti.

3.05 PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed materials from dust, dirt, precipitation, freezing and continuous high humidity until they are fully dry.

3.06 CLEANING, REPAIR AND MAINTENANCE

- A. Clean and maintain the Exterior Insulation and Finish System (EIFS) for a fresh appearance and to prevent water entry into and behind the system. Repair cracks, impact damage, spalls or delamination promptly.

- B. Maintain adjacent components of construction such as sealants, windows, doors, and flashing, to prevent water entry into the wall assembly.
- C. Refer to Manufacturer's Repair and Maintenance Guide for detailed information on EIFS restoration - cleaning, repairs, recoating, resurfacing and refinishing, or re-cladding.

END OF SECTION