#### A. DESCRIPTION

- 1.1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION INDICATED ON THESE CONSTRUCTION DOCUMENTS, WITH FINAL
- APPROVALS OF ALL WORK. 1.2. THE CONTRACTOR RESPONSIBLE FOR THE PORTION OF THE WORK REQUIRING INSPECTIONS BY GOVERNMENT AGENCIES, IS CHARGED WITH REQUESTING ALL SUCH INSPECTIONS.
- 1.3. CLOSE COORDINATION WILL BE REQUIRED BETWEEN GENERAL, MECHANICAL AND ELECTRICAL CONTRACTORS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE SCHEDULING AND PHASING OF CONSTRUCTION.
- 1.4. CLOSE COORDINATION OF FINAL EQUIPMENT CONNECTION REQUIREMENTS AND CONDITIONS WILL BE NECESSARY ON THIS PROJECT. ENGINEERING OF GAS, ELECTRIC, WATER AND SEWER AND VENTILATION SERVICES MAY VARY WITH FINAL SELECTIONS.

#### 0108 APPLICABLE STANDARDS

#### A. DESCRIPTION

- 1.1. WORK INCLUDED: THROUGHOUT THE CONTRACT DOCUMENTS, REFERENCE IS MADE TO CODES AND STANDARDS WHICH ESTABLISH QUALITIES AND TYPES OF WORKMANSHIP AND MATERIALS, AND WHICH ESTABLISH METHODS FOR TESTING AND REPORTING ON THE PERTINENT CHARACTERISTICS.
- 1.2. RELATED WORK DESCRIBED ELSEWHERE: SPECIFIC NAMING OF CODES OR STANDARDS OCCURS ON THE DRAWINGS AND IN OTHER SECTIONS OF THESE SPECIFICATIONS.
- B. QUALITY ASSURANCE: 1.1. FAMILIARITY WITH PERTINENT CODES AND STANDARDS: IN PROCURING ALL ITEMS USED IN THIS WORK IT IS CONTRACTOR'S RESPONSIBILITY TO VERIFY THE DETAILED REQUIREMENTS OF THE PREVAILING CODES AND STANDARDS AND TO VERIFY THAT THE ITEMS PROCURED FOR USE IN THE WORK MEET OR EXCEED THE
- SPECIFIED REQUIREMENTS. 1.2. REJECTION OF NON-COMPLYING ITEMS: THE TENANT RESERVES THE RIGHT TO REJECT ITEMS INCORPORATED INTO THE WORK, WHICH FAIL TO MEET THE SPECIFIED MINIMUM REQUIREMENTS. THE TENANT FURTHER RESERVES THE RIGHT. AND WITHOUT PREJUDICE TO OTHER RECOURSE THE TENANT MAY TAKE, TO ACCEPT NON-COMPLYING ITEMS SUBJECT TO AN ADJUSTMENT IN THE CONTRACT AMOUNT AS APPROVED BY THE OWNER.
- 1.3 APPLICABLE STANDARDS LISTED IN THESE SPECIFICATION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, STANDARDS PROMULGATED BY THE FOLLOWING AGENCIES
  - AND ORGANIZATION: AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) AMERICAN NATIONAL STANDARDS INSTITUTE
    - AMERICAN PLYWOOD ASSOCIATION (APA) AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM) AMERICAN WELDING SOCIETY (AWS ARCHITECTURAL ALUMINUM MANUFACTURERS ASSOCIATION (AAMA)
    - ARCHITECTURAL WOODWORK INSTITUTE (AWI) INTERNATIONAL BUILDING CODE (IBC) INTERNATIONAL CODE COUNCIL (ICC) ICC EVALUATION SERVICE, LLC INTERNATIONAL ASSOCIATION OF PLUMBING & MECHANICAL OFFICIALS (IAPMO) COMMERCIAL SPECIFICATIONS (CS) CONCRETE REINFORCING STANDARDS
  - NATIONAL ACOUSTICAL CONTRACTORS ASSOCIATION NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMA) NATIONAL BUILDERS HARDWARE ASSOCIATION
  - NATIONAL CONCRETE MASONRY ASSOCIATION NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
  - NATIONAL SANITATION FOUNDATION (NSF) NATIONAL WOODWORK MANUFACTURERS ASSOCIATION (NWMA) TILE COUNCIL OF AMERICA (TCA) UNDERWRITER LABORATORIES (UL)

# 0171 CLEANING

# A. DESCRIPTION:

- 1.1. SCOPE OF WORK: THROUGHOUT THE CONSTRUCTION PERIOD. MAINTAIN THE BUILDING AND SITE IN A STANDARD OF CLEANLINESS AS DESCRIBED IN THIS SECTION.
- 1.2. RELATED WORK: IN ADDITION TO STANDARDS DESCRIBED IN THIS SECTION, COMPLY WITH ALL REQUIREMENTS FOR CLEANING UP AS DESCRIBED IN VARIOUS OTHER SECTIONS OF THESE SPECIFICATIONS.
- 1.3 FINAL CLEANING:
  - a. DEFINITION: EXCEPT AS OTHERWISE SPECIFICALLY PROVIDED, "CLEAN" (FOR THE PURPOSE OF THIS ARTICLE) SHALL BE INTERPRETED AS MEANING THE LEVEL OF CLEANLINESS GENERALLY PROVIDED BY SKILLED CLEANERS USING COMMERCIAL QUALITY BUILDING MAINTENANCE EQUIPMENT AND MATERIALS.
  - b. GENERAL: PRIOR TO COMPLETION OF THE WORK, REMOVE FROM THE JOB SITE ALL TOOLS, SURPLUS MATERIALS, EQUIPMENT, SCRAP, DEBRIS, AND WASTE.
  - c. INTERIOR: VISUALLY INSPECT ALL INTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIAL, SMUDGES, AND OTHER FOREIGN MATTER. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES. REMOVE ALL PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES. USE ONLY THE SPECIFIED CLEANING MATERIALS AND EQUIPMENT.

### 0550 - METAL FABRICATIONS

- 1. WORK INCLUDES MISCELLANEOUS SHOP FABRICATED FERROUS METAL ITEMS, INCLUDING BUT NOT LIMITED TO:
- A. LOOSE STEEL LINTELS MISCELLANEOUS FRAMING, SUPPORTS AND TRIM ROOF LADDERS D. STEEL DECK PANELS

# MATERIALS

- A. STEEL SECTIONS: ASTM A36.
- STEEL TUBING: ASTM A500 OR ASTM A501. STAINLESS STEEL: TYPE 304 (18-8), ASTM A269; SATIN POLISHED FINISH.
- STEEL PIPE: ASTM A53, GRADE B, STANDARD WEIGHT (SCHEDULE 40). MALLEABLE IRON CASTINGS; ASTM A47
- BOLTS, NUTS, AND WASHERS. ASTM A307. WEI DING MATERIALS: ASW D1.1: TYPE REQUIRED FOR MATERIALS BEING WELDED.
- AND FIELD TOUCH-UP. STEEL DECK PANELS: ASTM A446 WITH G90 GALVANIZED COATING, STEEL ASTM A611, GRADE C, SHOP PRIMED.

#### FABRICATION:

A. VERIFY DIMENSIONS IN FIELD PRIOR TO SHOP

PRIMER SSPC-PAINT 2, FOR SHOP APPLICATION

- FABRICATION. B. FABRICATE ITEMS WITH JOINTS TIGHTLY FITTED AND SECURED.
- FIT AND SHOP ASSEMBLE IN LARGEST PRACTICAL SECTIONS, FOR DELIVERY TO SITE.
- PRIME PAINT ITEMS SCHEDULE TO PROVIDE A UNIFORM DRY FILM THICKNESS OF 2.0 MILS.

### 0720 - THERMAL INSULATION

- A. GENERAL: PROVIDE THERMAL INSULATION WITH ACCESSORIES AS REQUIRED FOR COMPLETE INSTALLATION. 1. INSULATION INTEGRAL WITH ROOFING AND
- INSULATION IN EXTERIOR WALLS. B. ACCESSORIES: PROVIDE TAPE OR PENETRATION ANCHORS WHERE REQUIRED TO ENSURE PERMANENT INSTALLATION.

### A. MATERIALS:

- 1.1 ROOF INSULATION POLYISOCYANURATE INSULATION BOARD FIRESTONE STANDARD ISO 95+GL (OR EQUAL) COVER BOARD FIRESTONE ASTM C1289 TYPE II, CLASS 4 ISOGARD HD COMPOSITE COVER BOARD (OR EQUAL)
- 1.2 THERMAL BATT INSULATION: PREFORMED GLASS FIBER BATT WITH FSK-25 REFLECTIVE MEMBRANE ON ONE SIDE ASTM C665 TYPE III, CLASS A KNAUF INSULATION ECOBATT INSULATION (OR EQUAL).
- 1.3 TAPE: TO MATCH FOIL SCRIM KRAFT FACE; 2 INCH 1.4 EXTRUDED POLYSTYRENE (XPS) RIGID FOAM
- INSULATION UNDER GRADE. ASTM C578 TYPE IV OWENS CORNING FOAMULAR 250 (OR EQUAL). 1.5 ACOUSTICAL BATT INSULATION PERFORMED
- FIBER BATT UNFACED ASTM C665 TYPE I, CLASS A KNAUF INSULATION ECOBATT INSULATION (OR EQUAL).

# B. INSTALLATION:

- 1. INSTALL INSULATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS INDICATED 2. TRIM INSULATION NEATLY TO FIT SPACES.
- INSTALL WITHOUT GAPS OR VOIDS.
- 3. INSTALLATION OF THERMAL BATT INSULATION:
- 3.1. INSTALL INSULATION WITH VAPOR BARRIER TOWARD WARM SIDE OF BUILDING SPACES. VAPOR BARRIER SHALL BE CONTINUOUS. TAPE SEAL TEARS OR CUTS IN VAPOR
- 3.2. PACK BATT INSULATION IN SHIM SPACES AT PERIMETER OF WINDOW ASSEMBLY TO MAINTAIN CONTINUITY OF THERMAL

# 3.3. MECHANICAL FASTENING:

- 3.3.1. AT LOCATIONS WHERE NO FRAMING IS PRESENT TO SUPPORT THE INSULATION, PROVIDE METAL IMPALING PINS AND RETAINERS TO HOLD THE INSULATION FIRMLY IN PLACE.
- 3.3.2. MECHANICALLY OR ADHESIVELY BOND THE RETAINING PINS TO THE SUBSTRATE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 3.3.3. SPACE PINS AT MAXIMUM 24 INCHES ON CENTER ALONG THE EDGES AND WITHIN THE FIELD OF THE BLANKET. PLACE EDGE PINS WITHIN 6 INCHES FROM THE EDGE OF THE BATT.
- 4. INSTALLATION OF RIGID PERIMETER INSULATION: INSTALL INSULATION TO 24" BELOW GRADE WITH PROTECTION BOARD.

# C. R VALUE SCHEDULE:

1.1 PROVIDE INSULATION IN SUFFICIENT THICKNESS SEE INSULATION REQUIREMENTS ON SHEET A3.1 (BUILDING SECTIONS) AND COMCHECK REPORT.

### 7457 CEMENTITIOUS PANELS

#### PART 1 GENERAL

1.1. SECTION INCLUDES A. CEMENTITIOUS EXPRESS/REVEAL JOINTED PANELS WITH ACCESSORIES. (JAMES HARDIE HZ5 HARDIE REVEAL PANELS).

#### PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. ACCEPTABLE MANUFACTURER: JAMES HARDIE BUILDING PRODUCTS, INC., WHICH IS LOCATED AT: 231 SOUTH LASALLE STREET UNIT 2000, CHICAGO, IL 60606. ASD. TOLL FREE TEL: 866-274-3464; TEL: 312-705-6000; EMAIL: INFO@JAMESHARDIE.COM; WEB: HTTP://WWW.JAMESHARDIEPROS.COM/PRODUCTS /HARDIE-REVEAL-PANEL-SYSTEM
- 2.2 CLADDING A. CEMENT CLADDING PANELS: HARDIE REVEAL PANEL AS MANUFACTURED BT JAMES HARDIE BUILDING PRODUCTS, INC. 5/16 INCHES THICK, 3 FEET 11.5 INCHES (1206 MM) WIDE BY 7 FEET 11.5 INCHES (2426) MM LONG. PRODUCT SHALL BE ENGINEERED FOR CLIMATE CONDITIONS. 1. MANUFACTURER'S CLIMATE ZONE PRODUCT: HZ5 FOR COLD CLIMATES WITH A YELLOW TINT
- PRIMER SMOOTH FINISH. B. CODE COMPLIANCE REQUIREMENT FOR SIDING MATERIALS 1. FIBER-CEMENT SIDING, COMPLIES WITH ASTM C

1186 TYPE A GRADE II.

- 2. FIBER-CEMENT SIDING, COMPLIES WITH ASTM E 136 AS A NONCOMBUSTIBLE MATERIAL. 3. FIBER-CEMENT SIDING, COMPLIES WITH ASTM E 84
- FLAME SPREAD INDEX = 0, SMOKE DEVELOPED INDEX=5. 4. FIBER-CEMENT SIDING, COMPLIES WITH ASTM E
- 119 1 HOUR AND 2 HOUR FIRE RESISTIVE ASSEMBLIES LISTED WITH WARNOCK HERSEY 5. FIBER-CEMENT SIDING, TESTED TO ASTM E330 FOR TRANSVERSE LOADS. 6. INTERTEK WARNOCK HERSEY PRODUCT LISTING.
- 7. MANUFACTURER'S TECHNICAL DATA SHEET. 2.3 WEATHER BARRIER A. WEATHER BARRIER: JAMES HARDIE HARDIEWRAP AND HARDIEWRAP FLASHING AND SEAM TAPES (OR
- B. CODE COMPLIANCE REQUIREMENT FOR WEATHER BARRIFR: 1. THICKNESS, 11 MIL SHEET.
- 2. BREATHABILITY IN ACCORDANCE WITH ASTM E96. 3. TEAR STRENGTH IN ACCORDANCE WITH ASTM
- 4. WATER RESISTANCE IN ACCORDANCE WITH AATCC127. 5. AIR PENETRATION IN ACCORDANCE WITH
- TAPPI-T460. 6. HARDIEWRAP WEATHER BARRIER ICC-ES EVALUATION REPORT ESR-2258. 2.4 ACCESSORIES
- A. TRIMS: REVEAL TRIMS MANUFACTURED BY CUSTOM ALUMINUM OF ELGIN, IL IN THE FOLLOWING PROFILES SUPPLIED BY JAMES HARDIE. ALUMINUM ALLOY 6063-T5 WITH A MINIMUM THICKNESS OF 0.050 INCH. ALL REVEAL TRIMS ARE 8 FEET IN LENGTH. SURROUND HORIZONTAL TRIM.
- 2. SURROUND VERTICAL TRIM. 3. SURROUND HORIZONTAL END CUT TRANSITION TRIM. 4. SURROUND OUTSIDE CORNER TRIM. 5. SURROUND INSIDE CORNER TRIM. 6. SURROUND J CHANNEL TRIM. 7. SURROUND DRAINAGE FLASHING 8. RECESS HORIZONTAL TRIM.
- 9. RECESS HORIZONTAL EDGE TRIM. 10. RECESS VERTICAL F-TRIM. 11. RECESS OUTSIDE CORNER TRIM. 12. RECESS DRAINAGE FLASHING. B. TRIMS: TRIM BY FRY REGLET
- V2 VERTICAL MOLDING 2.5 FASTENERS A. FASTENERS: FOR ATTACHING HARDIE REVEAL PANEL DIRECT TO SHEATHING TO A RAIN SCREEN PROVIDE THE FOLLOWING: 1. WOOD FRAMING, FLATHEAD SCREWS: NO. 8 BY 1-1/2
- INCH LONG, PAINT TO MATCH PANELS. 2. FASTENERS SHALL BE OF HIGH QUALITY STAINLESS STEEL TO ENSURE RESISTANCE TO CORROSION. FOR FIELD PAINTING, FASTENERS SHALL BE TREATED TO ACCEPT PAINT ADHESION.

# PART 3 EXECUTION

- 3.1 EXAMINATION A. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED
- B. IF FRAMING PREPARATION IS THE RESPONSIBILITY OF ANOTHER INSTALLER, NOTIFY ARCHITECT OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING
- 3.2 PREPARATION A. CLEAN SURFACES THOROUGHLY PRIOR TO
- INSTALLATION. B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS. C. ENSURE THAT DRAINAGE PLANE IN INTACT AND ALL
- PENETRATIONS ARE SEALED. 3.3 INSTALLATION A. WOOD FRAMING: NOMINAL 2 INCH BY 4 INCH (51 MM BY 102 MM) WOOD FRAMING SELECTED FOR MINIMAL SHRINKAGE AND COMPLYING WITH LOCAL BUILDING CODES, INCLUDING THE USE OF WATER-RESISTIVE BARRIERS OR VAPOR BARRIERS WHERE REQUIRED. MINIMUM 1-1/2 INCHES (38 MM) FACE AND STRAIGHT
  - TRUE, OF UNIFORM DIMENSIONS AND PROPERLY ALIGNED. 1. INSTALL WATER-RESISTIVE BARRIERS AND CLADDINGS TO DRY SURFACES.
  - 2. REPAIR AND PUNCTURES OR TEARS IN THE WATER-RESISTIVE BARRIER PRIOR TO THE INSTALLATION OF THE SIDING. 3. PROTECT SIDING FROM OTHER TRADES.

# 07462 SIDING

# PART 1 GENERAL

- 1.1. SECTION INCLUDES A. FIBER CEMENT LAP SIDING, PANELS, SHINGLE, TRIM, FASCIA, MOULDING AND ACCESSORIES; JAMES
- HARDIE HZ5 ENGINEERED FOR CLIMATE SIDING. 1.2 WARRANTY A. PRODUCT WARRANTY: LIMITED, NON-PRO-RATED PRODUCT WARRANTY.
- 1. HARDIEPLANK HZ5 LAP SIDING FOR 30 YEARS. B. WORKMANSHIP WARRANTY: APPLICATION LIMITED WARRANTY FOR 2 YEARS.

### **07462 SIDING**

### PART 2 PRODUCTS

- 2.1 MANUFACTURERS A. ACCEPTABLE MANUFACTURER: JAMES HARDIE 92691; TOLL FREE TEL: 866-274-3464; TEL: 949-367-4980; FAX: 949-367-4981; EMAIL: REQUEST INFO (INFO@JAMESHARDIE.COM); WEB:
- BUILDING PRODUCTS, INC., WHICH IS LOCATED AT: 26300 LA ALAMEDA SUITE 400 ; MISSION VIEJO, CA WWW.JAMESHARDIECOMMERCIAL.COM 2.2 SIDING A. HARDIEPLANK HZ5 LAP SIDING:
- 1. FIBER-CEMENT SIDING COMPLIES WITH ASTM C 1186 TYPE A GRADE II. 2. FIBER-CEMENT SIDING - COMPLIES WITH ASTM E 136 AS A NONCOMBUSTIBLE MATERIAL 3. FIBER-CEMENT SIDING - COMPLIES WITH ASTM E 84 FLAME SPREAD INDEX = 0, SMOKE
- DEVELOPED INDEX = 5. 4. CAL-FIRE, FIRE ENGINEERING DIVISION BUILDING MATERIALS LISTING - WILDLAND URBAN
- INTERFACE (WUI) LISTED PRODUCT. 5. NATIONAL EVALUATION REPORT NO. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC). 6. CITY OF LOS ANGELES, RESEARCH REPORT NO.
- 7. MIAMI DADE COUNTY, FLORIDA NOTICE OF ACCEPTANCE 02-0729.02. 8. US DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT MATERIALS RELEASE 1263D.
- 9. CALIFORNIA DSA PA-019. 10. CITY OF NEW YORK M EA 223-93-M. 11. FLORIDA STATE PRODUCT APPROVAL FL889. 12. TEXAS DEPARTMENT OF INSURANCE PRODUCT EVALUATION EC-23.
- 13. ICC ESR REPORTS #2290, #1844 A. LAP SIDING: HARDIEPLANK HZ5 LAP AS MANUFACTURED BY JAMES HARDIE BUILDING PRODUCTS, INC. 1. TYPE: SELECT CEDARMILL 6-1/4 INCHES (159 MM)
- WITH 5 INCHES (127 MM) EXPOSURE. 1. HARDIETRIM HZ5 BOARDS AS MANUFACTURED BY JAMES HARDIE BUILDING PRODUCTS, INC. 2. HARDIETRIM HZ5 FASCIA BOARDS AS
- MANUFACTURED BY JAMES HARDIE BUILDING PRODUCTS, INC. 2.3 FASTENERS A. WOOD FRAMING FASTENERS:
- 1. WOOD FRAMING: 4D COMMON CORROSION RESISTANT NAILS. 2. WOOD FRAMING: 6D COMMON CORROSION RESISTANT NAILS.
- 3. WOOD FRAMING: 8D BOX RING COMMON CORROSION RESISTANT NAILS. 4. WOOD FRAMING: 0.089 INCH (2.2 MM) SHANK BY 0.221 INCH (5.6 MM) HEAD BY 2 INCHES
- (51 MM) CORROSION RESISTANT SIDING NAILS. 5. WOOD FRAMING: 0.093 INCH (2.4 MM) SHANK BY 0.222 INCH (5.6 MM) HEAD BY 2 INCHES (51 MM) CORROSION RESISTANT SIDING NAILS 6. WOOD FRAMING: 0.093 INCH (2.4 MM) SHANK BY
- 0.222 INCH (5.6 MM) HEAD BY 2-1/2 INCHES (64 MM) CORROSION RESISTANT NAILS. 7. WOOD FRAMING: 0.091 INCH (2.3 MM) SHANK BY 0.221 INCH (5.6 MM) HEAD BY 1-1/2 INCHES (38 MM) CORROSION RESISTANT SIDING NAILS. 8. WOOD FRAMING: 0.091 INCH (2.3 MM) SHANK BY 1.3 SYSTEM DESCRIPTION
- 0.225 INCH (5.7 MM) HEAD BY 1-1/2 INCHES (38 MM) CORROSION RESISTANT SIDING NAILS. 9. WOOD FRAMING: 0.121 INCH (3 MM) SHANK BY 0 371 INCH (9 44 MM) HEAD BY 1-1/4 INCHES (32 MM) CORROSION RESISTANT ROOFING
- 10. WOOD FRAMING: NO. 11 GAUGE 1-1/4 INCHES (38 MM) CORROSION RESISTANT ROOFING 11. WOOD FRAMING: NO. 11 GAUGE 1-1/2 INCHES
- (38 MM) CORROSION RESISTANT ROOFING 12. WOOD FRAMING: NO. 11 GAUGE 1-3/4 INCHES (44 MM) CORROSION RESISTANT ROOFING
- 2.4 FINISHES A. FACTORY PRIMER: PROVIDE FACTORY APPLIED UNIVERSAL PRIMER. 1. PRIMER: FACTORY PRIMED BY JAMES HARDIE.

# PART 3 EXECUTION

- PREPARATION A. CLEAN SURFACES THOROUGHLY PRIOR TO
- INSTALLATION. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS. C. INSTALL A WATER-RESISTIVE BARRIER IS
- REQUIRED IN ACCORDANCE WITH LOCAL BUILDING CODE REQUIREMENTS. D. THE WATER-RESISTIVE BARRIER MUST BE APPROPRIATELY INSTALLED WITH PENETRATION AND JUNCTION FLASHING IN ACCORDANCE WITH LOCAL BUILDING CODE REQUIREMENTS. INSTALLATION- HARDIEPLANK HZ10 LAP SIDING
- INSTALL MATERIALS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. B. STARTING: INSTALL A MINIMUM <sup>1</sup>/<sub>4</sub> INCH (6 MM) THICK LATH STARTER STRIP AT THE BOTTOM COURSE OF THE WALL. APPLY PLANKS HORIZONTALLY WITH
- MINIMUM 1-1/4 INCHES (32 MM) WIDE LAPS AT THE TOP THE BOTTOM EDGE OF THE FIRST PLANK OVERLAPS THE STARTER STRIP. ALLOW MINIMUM VERTICAL CLEARANCE BETWEEN THE EDGE OF SIDING AND ANY OTHER MATERIAL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S
- INSTALLATION INSTRUCTIONS D. ALIGN VERTICAL JOINTS OF THE PLANKS OVER FRAMING MEMBERS.
- E. MAINTAIN CLEARANCE BETWEEN SIDING AND ADJACENT FINISHED GRADE F. LOCATE SPLICES AT LEAST ONE STUD CAVITY AWAY FROM WINDOW AND DOOR OPENINGS.

G. USE OFF-STUD METAL JOINER IN STRICT

ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. H. WIND RESISTANCE: WHERE A SPECIFIED LEVEL OF WIND RESISTANCE IS REQUIRED HARDIEPLANK LAP SIDING IS INSTALLED TO FRAMING MEMBERS AND SECURED WITH FASTENERS DESCRIBED IN TABLE NO. 2 IN

NATIONAL EVALUATION SERVICE REPORT NO.

NFR-405. FACE NAIL TO SHEATHING. LOCATE SPLICES AT LEAST 12 INCHES (305 MM) AWAY FROM WINDOW AND DOOR OPENINGS.

# 0753 - ROOFING SYSTEM

#### PART 1 GENERAL

# 1.1 SUMMARY A. MEMBRANE TYPE: DURO-LAST 50-MIL MEMBRANE (ROLL

- GOODS) 1. ROLL WIDTH: 60" (INSTALLED WIDTHS MAY VARY) 2. MEMBRANE COLOR: WHITE 3. ATTACHMENT TYPE: MECHANICALLY FASTENED
- 4. FASTENERS: DURO-LAST® HD SCREW (#14) 5. PLATES: DURO-LAST® CLEAT PLATE™ B. INSULATION LAYER 1 TYPE: DURO-GUARD® ISO HD COMPOSITE (COATED GLASS FACER) 1. BOARD APPLICATION: FLAT STOCK
- 2. BOARD STYLE: LAYER THICKNESS 3. BOARD SIZE: 4' X 8' 4. THICKNESS: 2.5" 5. ATTACHMENT TYPE: MECHANICALLY FASTENED
- 6. FASTENERS: DURO-LAST® HD SCREW (#14) 7. PLATES: DURO-LAST® INSULATION PLATE C. INSULATION LAYER 2 TYPE: DURO-GUARD® ISO II (GLASS
- REINFORCED FACER) 1. BOARD APPLICATION: FLAT STOCK 2. BOARD STYLE: MIN. ASSEMBLY R-VALUE
- BOARD SIZE: 4' X 8' 4. THICKNESS/R-VALUE: R-25 5. ATTACHMENT TYPE: MECHANICALLY FASTENED 6. FASTENERS: DURO-LAST® HD SCREW (#14)
- 7. PLATES: DURO-LAST® 3-INCH METAL PLATE C. DECK TYPE: PLYWOOD (1/2 IN.) D. PREFABRICATED FLASHINGS, CORNERS, PARAPETS, STACKS, VENTS, AND RELATED DETAILS
- E. FASTENERS, ADHESIVES, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE ROOFING INSTALLATION. F. TRAFFIC PROTECTION.

# 1.2 REFERENCES

- A. ASTM INTERNATIONAL (ASTM) 1. (2019) STANDARD TEST METHODS FOR COATED
- FABRICS (D751) 2. (2021) STÀNDARD SPECIFICATION FOR POLY(VINYL CHLORIDE) SHEET ROOFING
- (D4434/D4434M) 3. (2022) STANDARD SPECIFICATION FOR FACED RIGID CELLULAR POLYISOCYANURATE THERMAL INSULATION
- BOARD (C1289) 4. (2020) STANDARD TEST METHODS FOR FIRE TESTS OF ROOF COVERINGS (E108) 5. (2020) STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING CONSTRUCTION AND
- MATERIALS (E119) B. UL SOLUTIONS (UL)
- 1. (2021) UL ROOFING SYSTEMS (TGFU.R10128) C. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 1. (2007) MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE STANDARD - ASCE/SEI
- 2. (2014) MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE STANDARD - ASCE/SEI
- PART 2 PRODUCTS 3. (2017) MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
- (ASCF STANDARD ASCF/SFI 7-16) NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA) 1. (2019) NRCA ROOFING MANUAL - MEMBRANE SYSTEMS

- GENERAL: PROVIDE INSTALLED ROOFING MEMBRANE AND BASE FLASHINGS THAT REMAIN WATERTIGHT; DO NOT UPLIFT PRESSURES, THERMALLY INDUCED MOVEMENT, 2.2 ROOFING SYSTEM COMPONENTS AND EXPOSURE TO WEATHER WITHOUT FAILURE.
- B. MATERIAL COMPATIBILITY: PROVIDE ROOFING MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER UNDER CONDITIONS OF SERVICE AND APPLICATION REQUIRED, AS DEMONSTRATED BY ROOFING MEMBRANE MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
- C. PHYSICAL PROPERTIES (MUST MEET OR EXCEED): 1. ROOF PRODUCT MUST MEET THE REQUIREMENTS OF TYPE III PVC SHEET ROOFING AS DEFINED BY ASTM
- 2. THICKNESS: 50 MIL. NOMINAL. IN ACCORDANCE WITH ASTM D751 3. THICKNESS OVER SCRIM: ≥ 28 MIL IN ACCORDANCE
- WITH ASTM D7635 4. BREAKING STRENGTH: ≥ 438 LBF. (MACHINE DIRECTION) AND ≥ 390 LBF. (CROSS MACHINE DIRECTION) IN ACCORDANCE WITH ASTM D751
- GRAB METHOD. 5. ELONGATION AT BREAK: ≥ 31% (MACHINE DIRECTION) AND ≥ 31% (CROSS MACHINE DIRECTION) IN ACCORDANCE WITH ASTM D751 GRAB METHOD.
- 6. SEAM STRENGTH: ≥ 417 LBF. IN ACCORDANCE WITH ASTM D751 GRAB METHOD. 7. TEAR STRENGTH: ≥ 132 LBF. (MACHINE DIRECTION) AND ≥ 163 LBF. (CROSS MACHINE
- DIRECTION) IN ACCORDANCE WITH ASTM D751 PROCEDURE B. 8. LOW TEMPERATURE BEND: PASS AT -40 °F IN

ACCORDANCE WITH ASTM D2136

- 9. HEAT AGING: PASS AFTER BEING CONDITIONED FOR 56 DAYS IN OVEN MAINTAINED AT 176°F IN ACCORDANCE WITH ASTM D3045. 10. ACCELERATED AGING: PASS AFTER 10,000 HOURS OF TOTAL TEST TIME IN ACCORDANCE WITH ASTM G155. 11. DIMENSIONAL STABILITY: CHANGE OF -0.30% (MACHINE
- DIRECTION) AND -0.45% (CROSS MACHINE DIRECTION) IN ACCORDANCE WITH ASTM 1204. 12. WATER ABSORPTION: < 1.7% AT 158 °F FOR 168 HOURS
- IN ACCORDANCE WITH ASTM D570. 13. STATIC PUNCTURE RESISTANCE: ≥ 56 LBF. IN ACCORDANCE WITH ASTM D5602.
- 14. DYNAMIC PUNCTURE RESISTANCE: ≥ 14.7 FT-LBF. IN ACCORDANCE WITH ASTM D5635 D. COOL ROOF RATING COUNCIL (CRRC) (MEMBRANE MUST BE LISTED ON THE CRRC WEBSITE)

1. SOLAR REFLECTANCE (INITIAL): ≥ 86%

2. SOLAR REFLECTANCE (3-YEAR AGED): ≥ 74% 3. THERMAL EMITTANCE (INITIAL): ≥ 89% 4. THERMAL EMITTANCE (3-YEAR AGED): ≥ 89% 5. SOLAR REFLECTANCE INDEX (SRI) (INITIAL): ≥ 108%

6. SOLAR REFLECTANCE INDEX (SRI) (3-YEAR AGED): ≥

2. DURO-GUARD® ISO II (GLASS REINFORCED FACER)

E. INSULATION: GENERAL REQUIREMENTS a. INSTALL USING A MINIMUM OF TWO LAYERS. b. CONFIGURATION AS INDICATED ON THE DRAWINGS.

a. MIN. ASSEMBLY R-VALUE: R-25

# 0753 - ROOFING SYSTEM

- 1.4 SUBMITTALS A. PRODUCT DATA SHEETS TO BE USED, WITH THE FOLLOWING INFORMATION INCLUDED: 1. PREPARATION INSTRUCTIONS AND
  - RECOMMENDATIONS 2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS
- 3. INSTALLATION METHODS 4. MAINTENANCE REQUIREMENTS B. SUSTAINABILITY DOCUMENTATION: 1. NSF/ANSI STANDARD 347 CERTIFICATE

2. TYPE III PRODUCT-SPECIFIC ENVIRONMENTAL

- PRODUCT DECLARATION C. SHOP DRAWINGS: INDICATE INSULATION PATTERN, OVERALL MEMBRANE LAYOUT, FIELD SEAM LOCATIONS, JOINT OR TERMINATION DETAIL CONDITIONS, AND LOCATION OF FASTENERS D. PROVIDE VERIFICATION SAMPLES FOR EACH
- PRODUCT SPECIFIED (TWO SAMPLES REPRESENTING EACH PRODUCT, COLOR AND

INSTALLER IS APPROVED, AUTHORIZED, OR

MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PRODUCTION OF PVC MEMBRANES SYSTEMS AND

UTILIZING A QUALITY CONTROL MANUAL DURING

THE PRODUCTION OF THE MEMBRANE ROOFING

SYSTEM THAT HAS BEEN APPROVED BY AND IS

INSPECTED BY UNDERWRITERS LABORATORIES

SYSTEMS SIMILAR TO THOSE SPECIFIED IN THIS

SPECIALIZING IN INSTALLATION OF ROOFING

PROJECT AND APPROVED BY THE ROOFING

D. SOURCE LIMITATIONS: OBTAIN COMPONENTS FOR

MEMBRANE ROOFING SYSTEM FROM ROOFING

E. THERE SHALL BE NO DEVIATIONS FROM THE ROOF

THE APPROVED SHOP DRAWINGS WITHOUT THE

A. MANUFACTURER: DURO-LAST ROOFING, WHICH IS

LOCATED AT: 525 MORLEY DRIVE, SAGINAW, MI

OR APPROVED BY DURO-LAST ROOFING, INC.

B. ALL ROOFING SYSTEM COMPONENTS TO BE PROVIDED

a. TYPE: DURO-LAST 50-MIL MEMBRANE (ROLL

b. ROLL WIDTH: 60" (INSTALLED WIDTHS MAY

d. ATTACHMENT TYPE: MECHANICALLY FASTENED

b. FABRIC-REINFORCED, PVC, NSF/ANSI 347 GOLD

PRODUCT-SPECIFIC THIRD-PARTY VERIFIED

POST-INDUSTRIAL AND 0% POST-CONSUMER.

FLOORING OR CONCRETE EXPANSION JOINTS.

BOARDS THAT COMPLY WITH REQUIREMENTS

FROM MANUFACTURER'S STANDARD SIZES.

b. PROVIDE PREFORMED SADDLES, CRICKETS,

AND OTHER INSULATION SHAPES WHERE

c. PROVIDE ROOF INSULATION ACCESSORIES

APPROVED BY THE ROOF MEMBRANE

INSULATION MANUFACTURER FOR THE

1. TYPE: DURO-GUARD® ISO II (GLASS REINFORCED

4. METHOD: MIN. ASSEMBLY R-VALUE: PER BUILDING

5. ATTACHMENT TYPE: MECHANICALLY FASTENED

1. CLOSED-CELL POLYISOCYANURATE FOAM CORE

2. COMPLYING WITH ASTM C1289, TYPE II, FELT OR

GLASS-FIBER MAT FACER ON BOTH MAJOR

3. PROVIDE DURO-LAST FACTORY-COATED STEEL

IN FMG 4470, DESIGNED FOR FASTENING

IN CONFORMANCE TO SPECIFIED DESIGN

FASTENERS AND METAL OR PLASTIC PLATES

MEETING CORROSION-RESISTANCE PROVISIONS

INSULATION AND/OR INSULATION COVER BOARDS

6. FASTENERS: DURO-LAST® HD SCREW (#14)

7. PLATES: DURO-LAST® 3-INCH METAL PLATE

AND REFERENCED STANDARDS, AS SELECTED

INDICATED FOR SLOPING TO DRAIN. FABRICATE

MANUFACTURER AND AS RECOMMENDED BY

d. RECYCLED AT END OF LIFE INTO RESILIENT

a. PROVIDE PREFORMED ROOF INSULATION

ENVIRONMENTAL PRODUCT DECLARATION.

e. FASTENERS: DURO-LAST® HD SCREW (#14)

f. PLATES: DURO-LAST® CLEAT PLATE™

OR PLATINUM CERTIFICATION, AND A

c. MINIMUM RECYCLE CONTENT 7%

c. MEMBRANE COLOR: WHITE

a. ASTM D4434, TYPE III

1. GENERAL REQUIREMENTS

TO SLOPES INDICATED.

2. BOARD APPLICATION: FLAT STOCK

INTENDED USE

SECTIONS SHEET A3.1.

COMPONENT:

FACER)

SIZE: 4' x 8'

b. FEATURES:

SURFACES.

REQUIREMENTS.

INSULATION BOARD.

a. PROPERTIES:

MEMBRANE MANUFACTURER'S SPECIFICATIONS OR

LICENSED BY MANUFACTURER TO INSTALL

ROOFING SYSTEM.

1.5 QUALITY ASSURANCE

F. MANUFACTURER'S WARRANTIES.

A. PERFORM WORK IN ACCORDANCE WITH

MANUFACTURER SPECIALIZING IN THE

INSTALLER QUALIFICATIONS: COMPANY

SYSTEM MANUFACTURER.

MEMBRANE MANUFACTURER

MANUFACTURER.

A. ROOFING MEMBRANE:

PROPERTIES:

FEATURES:

B. INSULATION:

GOODS)

TELEPHONE: 800-248-0280

C. SUBSTITUTIONS: NOT PERMITTED.

PRIOR WRITTEN APPROVAL OF THE

B. MANUFACTURER QUALIFICATIONS: A

- 1. 4-INCH BY 6-INCH SAMPLE OF ROOFING MEMBRANE, OF COLOR SPECIFIED. 2. 4-INCH BY 6-INCH SAMPLE OF WALKWAY PAD. 3. TERMINATION BAR, FASCIA BAR WITH COVER DRIP EDGE, AND GRAVEL STOP IF TO BE USED DURO-LAST ROOFING, INC.
- 4. EACH FASTENER TYPE TO BE USED FOR a. DURO-LAST® CLEAT PLATE™ INSTALLING MEMBRANE, INSULATION/RECOVER b. DURO-LAST® 3-INCH METAL PLATE BOARD, TERMINATION BAR AND EDGE DETAILS. SUPPLIED BY DURO-LAST ROOFING, INC. E. INSTALLER CERTIFICATION: CERTIFICATION FROM THE ROOFING SYSTEM MANUFACTURER THAT
  - a. DURO-CAULK® PLUS
    - a. UNIVERSAL 2-PIECE COMPRESSION SYSTEM
    - 7. GUTTER AND DOWNSPOUT: SUPPLIED BY DURO-LAST ROOFING, INC.

# PART 3 EXECUTION

- READY TO RECEIVE WORK. OF DEPRESSIONS, WAVES, OR PROJECTIONS, AND PROPERLY SLOPED TO DRAINS, VALLEYS, EAVES,
- SCUPPERS OR GUTTERS. E. VERIFY THAT THE DECK SURFACES ARE DRY AND FREE
- THROUGH THE ROOF ARE SOLIDLY SET. G. IF SUBSTRATE PREPARATION IS THE RESPONSIBILITY OF ANOTHER CONTRACTOR, NOTIFY ARCHITECT OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING.

#### SHARP EDGES, LOOSE AND FOREIGN MATERIAL, OIL, GREASE, AND BITUMEN.

- 1. GENERAL REQUIREMENTS ROOF MANUFACTURER'S REQUIREMENTS.
- c. WHERE FIELD TRIMMED, INSULATION SHALL BE FITTED TIGHTLY AROUND ROOF PROTRUSIONS WITH NO GAPS GREATER THAN 1/4
- d. TAPERED INSULATION BOARDS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSULATION MANUFACTURER'S SHOP DRAWINGS. e. NO MORE INSULATION SHALL BE APPLIED THAN
- INCLEMENT WEATHER. f. IF MORE THAN ONE LAYER OF INSULATION IS USED, ALL JOINTS BETWEEN SUBSEQUENT LAYERS SHALL BE OFFSET BY AT LEAST 6
- THE ROOF MANUFACTURER. FASTENING PATTERNS MUST MEET APPLICABLE DESIGN REQUIREMENTS. b. INSTALL FASTENERS IN ACCORDANCE WITH THE ROOF MANUFACTURER'S REQUIREMENTS. FASTENERS THAT ARE IMPROPERLY INSTALLED MUST BE REPLACED OR CORRECTED.

WITH END JOINTS STAGGERED 50% AND

- ADJACENT BOARDS BUTTED TOGETHER WITH NO GAPS GREATER THAN 1/4 INCH. **B. ROOFING MEMBRANE:**
- b. CUT MEMBRANE TO FIT NEATLY AROUND ALL PENETRATIONS AND ROOF PROJECTIONS. 2. DURO-LAST 50-MIL MEMBRANE (ROLL GOODS) a. USE ONLY FASTENERS, STRESS PLATES AND FASTENING PATTERNS ACCEPTED FOR USE BY THE ROOF MANUFACTURER, FASTENING
- b. INSTALL FASTENERS IN ACCORDANCE WITH THE ROOF MANUFACTURER'S REQUIREMENTS. FASTENERS THAT ARE IMPROPERLY INSTALLED MUST BE REPLACED OR CORRECTED. c. MECHANICALLY FASTEN MEMBRANE TO THE STRUCTURAL DECK UTILIZING FASTENERS AND FASTENING PATTERNS IN ACCORDANCE
- REQUIREMENTS. C. WELD OVERLAPPING SHEETS TOGETHER USING HOT AIR. MINIMUM WELD WIDTH IS 1-1/2 INCHES. D. CHECK FIELD WELDED SEAMS FOR CONTINUITY AND

END OF EACH WORK DAY.

# C. DECK TYPE:

- 1. PROPERTIES: a. TYPE: OSB DECK (1/2 IN.)
- D. ACCESSORY MATERIALS: PROVIDE ACCESSORY MATERIALS SUPPLIED BY OR APPROVED FOR USE BY DURO-LAST ROOFING, INC.:
- 1. SHEET FLASHING: MANUFACTURER'S STANDARD REINFORCED PVC SHEET FLASHING. 2. PREFAB FLASHINGS: MANUFACTURED USING
- STANDARD REINFORCED PVC MEMBRANE. a. DURO-LAST® TWO-WAY AIR VENT b. DURO-LAST® INSIDE AND OUTSIDE CORNERS
- c. DURO-LAST® STACK FLASHING d. DURO-LAST® CURB FLASHING e. DURO-LAST® MATERIAL SCUPPERS 3. FASTENERS: FACTORY-COATED STEEL FASTENERS
- MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING MEMBRANE AND INSULATION TO SUBSTRATE. SUPPLIED BY DURO-LAST ROOFING, INC.
- a. DURO-LAST® HD SCREW (#14) 4. PLATES: METAL OR PLASTIC PLATES MEETING CORROSION-RESISTANCE PROVISIONS IN FMG 4470, DESIGNED FOR FASTENING MEMBRANE AND INSULATION TO SUBSTRATE. SUPPLIED BY
- 5. CAULK: COMPATIBLE WITH ROOFING SYSTEM AND
- 6. METAL TERMINATION: SUPPLIED BY DURO-LAST ROOFING, INC.
- i. ANSI/SPRI ES-1 COMPLIANT WITH 3" TO 8" BASE AND COVER

### a. DOWNSPOUT b. CONDUCTOR HEAD

- 3.1 EXAMINATION B. VERIFY THAT THE SURFACES AND SITE CONDITIONS ARE
  - C. VERIFY THAT THE DECK IS SUPPORTED AND SECURED. D. VERIFY THAT THE DECK IS CLEAN AND SMOOTH, FREE
- OF STANDING WATER, ICE OR SNOW. F. VERIFY THAT ALL ROOF OPENINGS OR PENETRATIONS

- 3.2 PREPARATION
- A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION. B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR
- ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS. C. SURFACES SHALL BE CLEAN, SMOOTH, FREE OF FINS,

- 3.3 INSTALLATION
  - A. INSULATION:
  - a. INSTALL INSULATION IN ACCORDANCE WITH THE b. INSULATION SHALL BE ADEQUATELY SUPPORTED TO SUSTAIN NORMAL FOOT TRAFFIC WITHOUT DAMAGE.

  - CAN BE COVERED WITH THE ROOF MEMBRANE BY THE END OF THE DAY OR THE ONSET OF
  - 2. DURO-GUARD® ISO II (GLASS REINFORCED FACER) a. USE ONLY FASTENERS, STRESS PLATES AND FASTENING PATTERNS ACCEPTED FOR USE BY
- c. INSTALL ALL LAYERS IN PARALLEL COURSES
  - GENERAL REQUIREMENTS a. INSTALL MEMBRANE IN ACCORDANCE WITH THE ROOF MANUFACTURER'S REQUIREMENTS.
  - PATTERNS MUST MEET APPLICABLE DESIGN REQUIREMENTS.
  - WITH THE ROOF MANUFACTURER'S INTEGRITY AND REPAIR ALL IMPERFECTIONS BY THE



MUNICIPAL APPROVAL STAMP



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ERIC STYER LONG GROVE 10-28-24

LICENSE EXPIRES ON DATE OF SIGNATURE:

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SHEET TITLE & NUMBER

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**ARCHITECTURAL SPECIFICATIONS**